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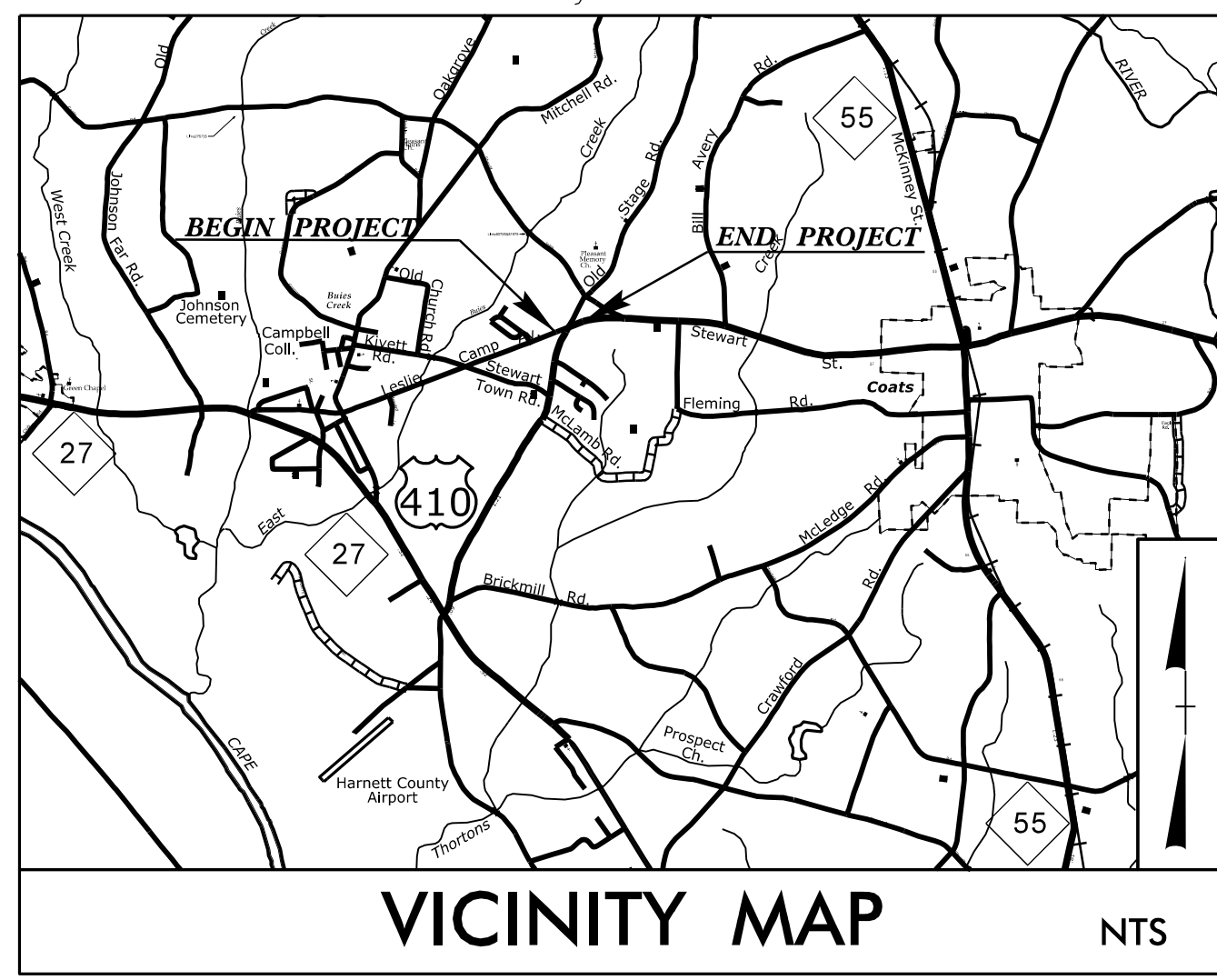
09/08/2024

2/7/2024  
U:\Roadway\Proj\W5706L\_Rdy\_tsh.dgn  
stsmallwood

**TIP PROJECT: W-5706L**

**CONTRACT: DF00465**

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

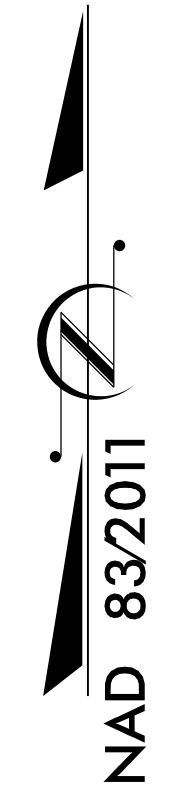
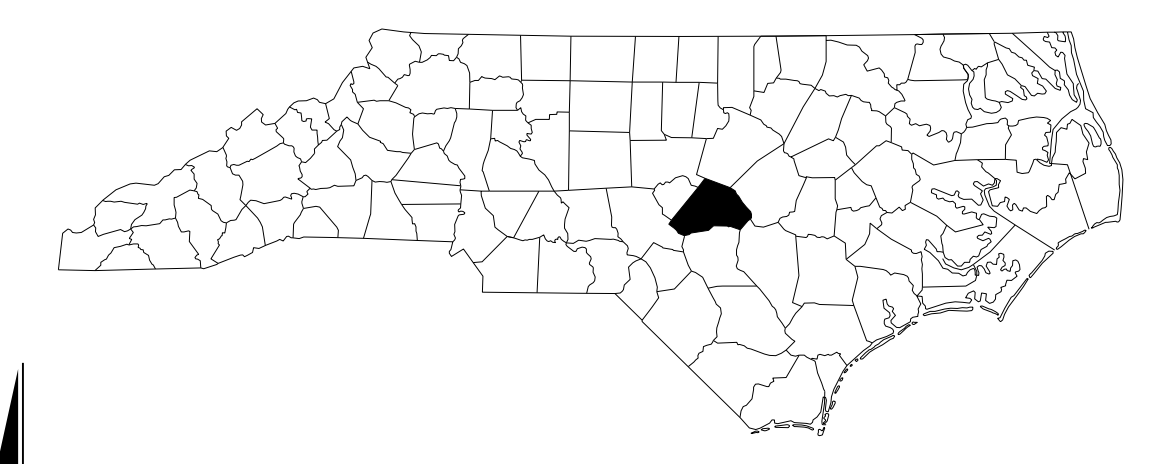


STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS  
**HARNETT COUNTY**

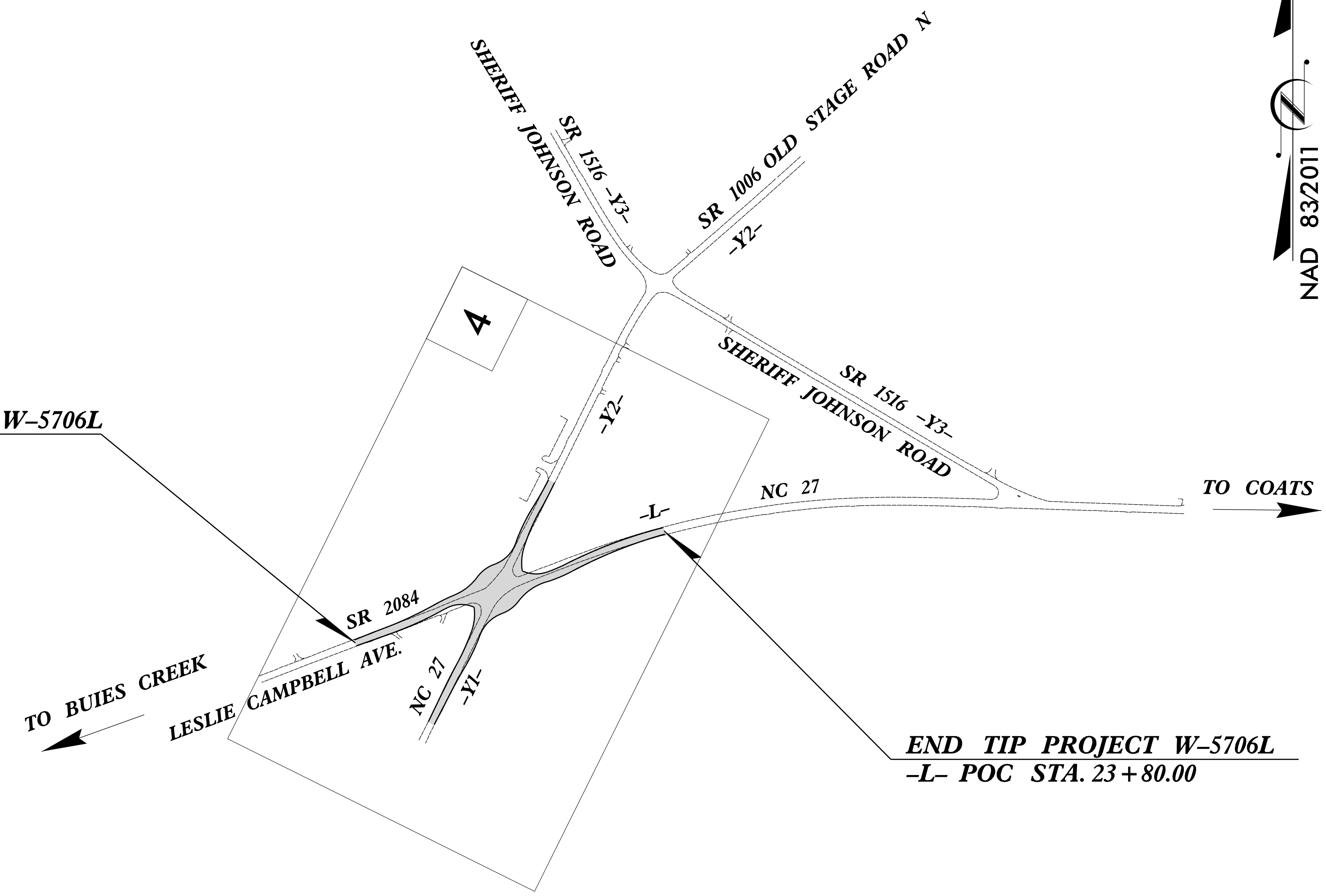
**LOCATION: NC 27/SR 1006(OLD STAGE RD. N)/  
SR 2084(LESLIE CAMPBELL AVE)**

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

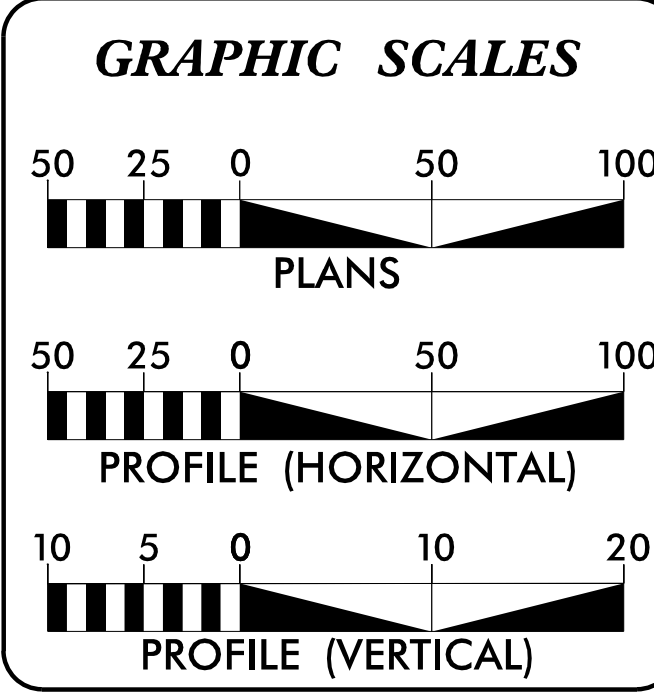
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	<b>W-5706L</b>	<b>1</b>	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
44852.1.12	HSIP-0027(019)	PE	
44852.2.12	HSIP-0027(019)	R / W	
44852.2.33	HSIP-0027(019)	UTIL.	
44852.3.12	HSIP-0027(019)	CONSTR.	



**BEGIN TIP PROJECT W-5706L**  
**-L- POT STA. 13 + 20.00**



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**DESIGN DATA**

ADT 2022 =	5,750
ADT 2040 =	7,400
K =	12 %
D =	55 %
T =	5 % *
V =	50 MPH
* TTST = 2% DUAL 3%	
FUNC CLASS =	RURAL
ARTERIAL	
REGIONAL TIER	

**PROJECT LENGTH**

LENGTH OF ROADWAY TIP PROJECT W-5706L =	0.201 MILES
TOTAL LENGTH OF TIP PROJECT W-5706L =	0.201 MILES

Prepared In The Offices of:

Stantec Consulting Services Inc.  
801 Jones Franklin Road  
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**SUNGATE DESIGN GROUP, P.A.**

805 JONES FRANKLIN ROAD  
RALEIGH, NORTH CAROLINA 27606  
TEL. (919) 859-2243  
ENG FIRM LICENSE NO. C-890

for the North Carolina Department of Transportation

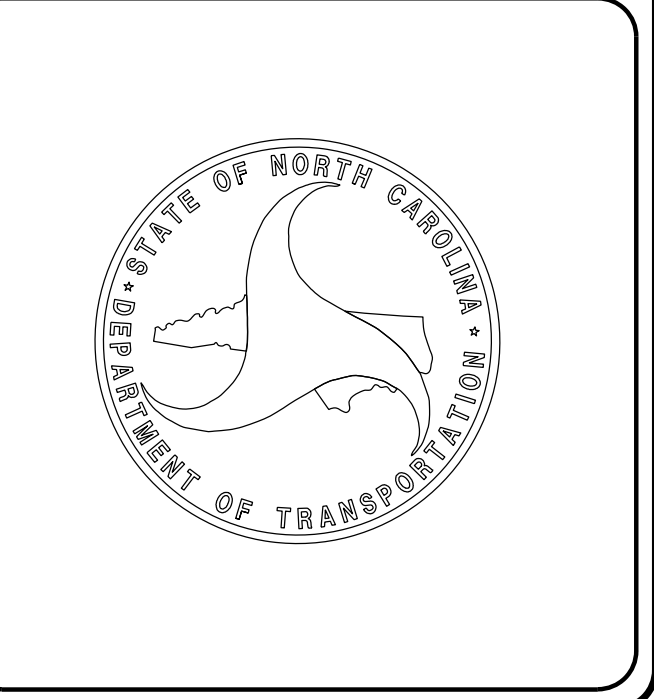
2024 STANDARD SPECIFICATIONS	STANTEC CONTACT
RIGHT OF WAY DATE: SEPTEMBER 30, 2021	STEVE SMALLWOOD, PE PROJECT ENGINEER
LETTING DATE: APRIL 3, 2024	NCDOT CONTACT: ALEX HENDERSON

**HYDRAULICS ENGINEER**

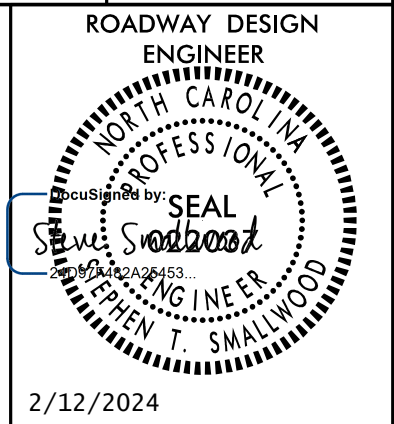
DocuSigned by:  
Joshua G Dalton  
SIGNATURE: 2/12/2024

**ROADWAY DESIGN ENGINEER**

DocuSigned by:  
Steve Smallwood  
SIGNATURE: 2/12/2024



8/17/99



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SHEET NUMBER	SHEET
1	TITLE SHEET
1A	INDEX OF SHEETS, GENERAL NOTES, AND STANDARD DRAWINGS
1B	CONVENTIONAL SYMBOLS
2A-1 THRU 2A-3	TYPICAL SECTIONS, PAVEMENT SCHEDULE & MISC. DETAILS
2B-1	INTERSECTION DETAIL
2B-2	JOINT LAYOUT DETAIL
2C-1	MODIFIED CONCRETE FLUME
2C-2	REINFORCED CONCRETE DRIVEWAY
2D-1	DRAINAGE DETAILS
3B-1	SUMMARY OF EARTHWORK & GUARDRAIL
3D-1	DRAINAGE SUMMARIES
3G-1	GEOTECHNICAL SUMMARIES
4 THRU 6	PLAN AND PROFILE SHEET
TMP-1 THRU TMP-7	TRAFFIC MANAGEMENT PLANS
PMP-1 THRU PMP-3	PAVEMENT MARKING PLANS
EC-1 THRU EC-7	EROSION CONTROL PLANS
SIGN-1 THRU SIGN-7	SIGNING PLANS
UC-1 THRU UC-4	UTILITIES CONSTRUCTION PLANS
UD-1 THRU UD-2	UTILITIES BY OTHERS PLANS
X-A	INDEX SHEET
X-1A	CROSS-SECTION SUMMARY SHEET
X-1 THRU X-21	CROSS-SECTIONS

**GENERAL NOTES:**

2024 SPECIFICATIONS  
EFFECTIVE: 01-16-2024  
REVISED:

**GRADE LINE:  
GRADING AND SURFACING:**

THE GRADE LINES SHOWN DENOTE THE FINISHED ELEVATION OF THE PROPOSED SURFACING AT GRADE POINTS SHOWN ON THE TYPICAL SECTIONS. GRADE LINES MAY BE ADJUSTED AT THEIR BEGINNING AND ENDING AND AT STRUCTURES AS DIRECTED 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

**SUBSURFACE DRAINS:**

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

**GUARDRAIL:**

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

**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

WATER/SEWER - HARNETT COUNTY

POWER - DUKE ENERGY

TELECOMMUNICATIONS - BRIGHTSPEED

TELECOMMUNICATIONS - SPECTRUM

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 CONTRACT.

2024 ROADWAY ENGLISH STANDARD DRAWINGS

EFF. 01-16-2024  
REV.

The following Roadway Standards as appear in "Roadway Standard Drawings" Highway Design Branch - N. C. Department of Transportation - Raleigh, N. C., Dated January, 2018 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
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	
654.01	Pavement Repairs
DIVISION 8 - INCIDENTALS	
815.02	Subsurface Drain
838.01	Concrete Endwall for Single and Double Pipe Culverts - 15" thru 48" Pipe 90 Skew
838.11	Brick Endwall for Single and Double Pipe Culverts - 15" thru 48" Pipe 90 Skew
838.75	Notes for Reinforced Brick Endwall - Std. Dwg 838.51 thru 838.70
838.80	Precast Endwalls - 12" thru 72" Pipe 90 Skew
840.00	Concrete Base Pad for Drainage Structures
840.18	Concrete Grated Drop Inlet Type B - 12" Thru 36" Pipe
840.25	Anchorage For Frames-Brick or Concrete or Precast
840.27	Concrete Brick Drop Inlet Type B - 12" Thru 36" Pipe
840.24	Frames and Narrow Slot Sag Grates
840.35	Traffic Bearing Grated Drop Inlet- For Cast Iron Double Frame and Grates
840.45	Precast Drainage Structure
840.66	Drainage Structure Steps
846.01	Concrete Curb, Gutter, and Curb and Gutter
848.01	Concrete Sidewalk
852.01	Concrete Islands
852.06	Method for Placement of Drop Inlets in Concrete Islands
862.01	Guardrail Placement
862.02	guardrail Installation
876.01	Rip Rap in Channels
876.02	Guide for Rip Rap at Pipe Outlets
876.04	Drainage Ditches with Class 'B' Rip Rap

2/7/2024  
[U:\Roadway\Proj\W5706L\Fdy\_psh\_1A.dgn  
stampwood

# 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	(123)
Existing Fence Line	-x-x-x-
Proposed Woven Wire Fence	○
Proposed Chain Link Fence	□
Proposed Barbed Wire Fence	◇
Existing Wetland Boundary	---WLB---
Proposed Wetland Boundary	WLB
Existing Endangered Animal Boundary	---EAB---
Existing Endangered Plant Boundary	---EPB---
Existing Historic Property Boundary	---HPB---
Known Contamination Area: Soil	---S---
Potential Contamination Area: Soil	---S---
Known Contamination Area: Water	---W---
Potential Contamination Area: Water	---W---
Contaminated Site: Known or Potential	☠ ?

### BUILDINGS AND OTHER CULTURE:

Gas Pump Vent or U/G Tank Cap	○
Sign	○
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	---WLB---
Proposed Lateral, Tail, Head Ditch	-----
False Sump	-----

### RAILROADS:

Standard Gauge	-----
RR Signal Milepost	○
Switch	□
RR Abandoned	-----
RR Dismantled	-----

### RIGHT OF WAY & PROJECT CONTROL:

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

### ROADS AND RELATED FEATURES:

Existing Edge of Pavement	-----
Existing Curb	-----
Proposed Slope Stakes Cut	---C---
Proposed Slope Stakes Fill	---F---
Proposed Curb Ramp	-----
Existing Metal Guardrail	-----
Proposed Guardrail	-----
Existing Cable Guiderail	-----
Proposed Cable Guiderail	-----
Equality Symbol	⊕
Pavement Removal	-----
VEGETATION:	
Single Tree	○
Single Shrub	○
Hedge	-----

Woods Line	-----
Orchard	-----
Vineyard	-----

### EXISTING STRUCTURES:

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

### UTILITIES:

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

POWER:	
Existing Power Pole	●
Proposed Power Pole	○
Existing Joint Use Pole	●
Proposed Joint Use Pole	○
Power Manhole	○
Power Line Tower	□
Power Transformer	□
U/G Power Cable Hand Hole	□
H-Frame Pole	●
U/G Power Line Test Hole (SUE - LOS A)*	⊕
U/G Power Line (SUE - LOS B)*	-----
U/G Power Line (SUE - LOS C)*	-----
U/G Power Line (SUE - LOS D)*	-----

### TELEPHONE:

Existing Telephone Pole	●
Proposed Telephone Pole	○
Telephone Manhole	○
Telephone Pedestal	□
Telephone Cell Tower	⊕
U/G Telephone Cable Hand Hole	□
U/G Telephone Test Hole (SUE - LOS A)*	⊕
U/G Telephone Cable (SUE - LOS B)*	-----
U/G Telephone Cable (SUE - LOS C)*	-----
U/G Telephone Cable (SUE - LOS D)*	-----
U/G Telephone Conduit (SUE - LOS B)*	-----
U/G Telephone Conduit (SUE - LOS C)*	-----
U/G Telephone Conduit (SUE - LOS D)*	-----
U/G Fiber Optics Cable (SUE - LOS B)*	-----
U/G Fiber Optics Cable (SUE - LOS C)*	-----
U/G Fiber Optics Cable (SUE - LOS D)*	-----

### WATER:

Water Manhole	○
Water Meter	○
Water Valve	⊗
Water Hydrant	⊕
U/G Water Line Test Hole (SUE - LOS A)*	⊕
U/G Water Line (SUE - LOS B)*	-----
U/G Water Line (SUE - LOS C)*	-----
U/G Water Line (SUE - LOS D)*	-----
Above Ground Water Line	-----

### TV:

TV Pedestal	□
TV Tower	⊗
U/G TV Cable Hand Hole	□
U/G TV Test Hole (SUE - LOS A)*	⊕
U/G TV Cable (SUE - LOS B)*	-----
U/G TV Cable (SUE - LOS C)*	-----
U/G TV Cable (SUE - LOS D)*	-----
U/G Fiber Optic Cable (SUE - LOS B)*	-----
U/G Fiber Optic Cable (SUE - LOS C)*	-----
U/G Fiber Optic Cable (SUE - LOS D)*	-----

### GAS:

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

### SANITARY SEWER:

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

### MISCELLANEOUS:

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

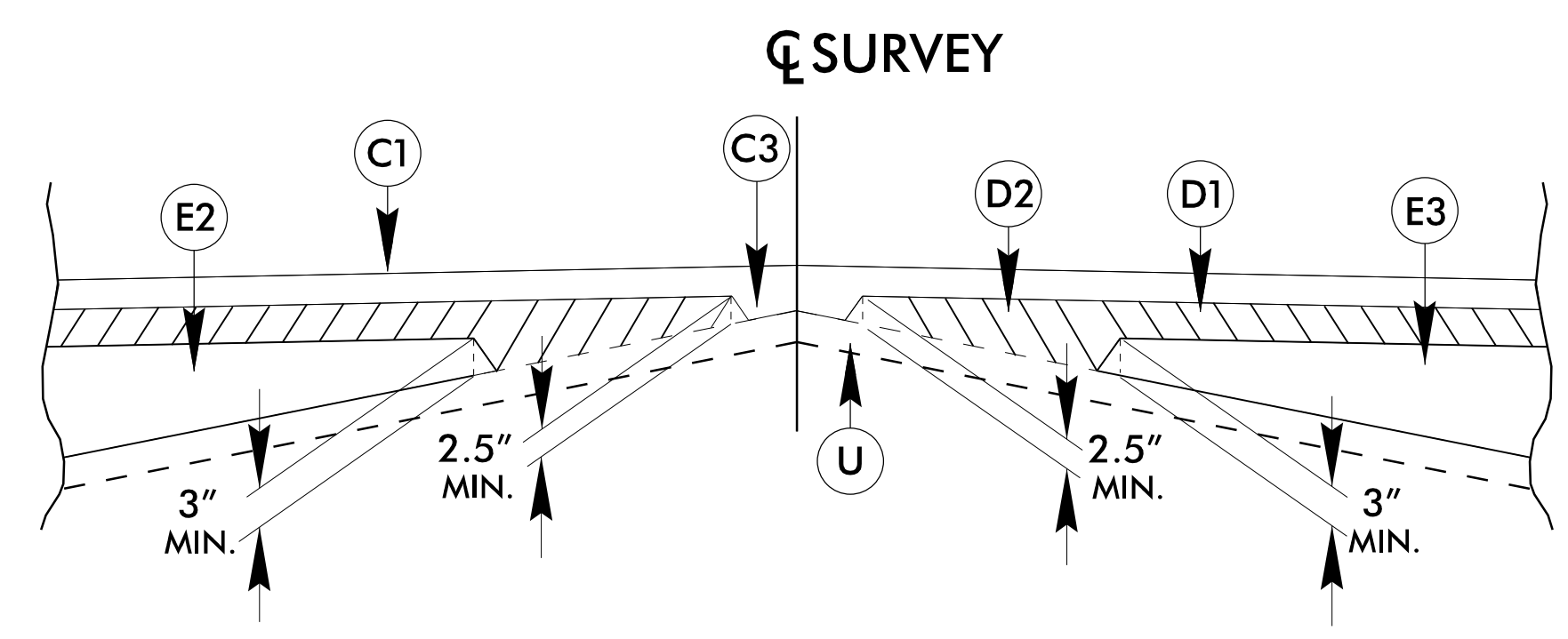


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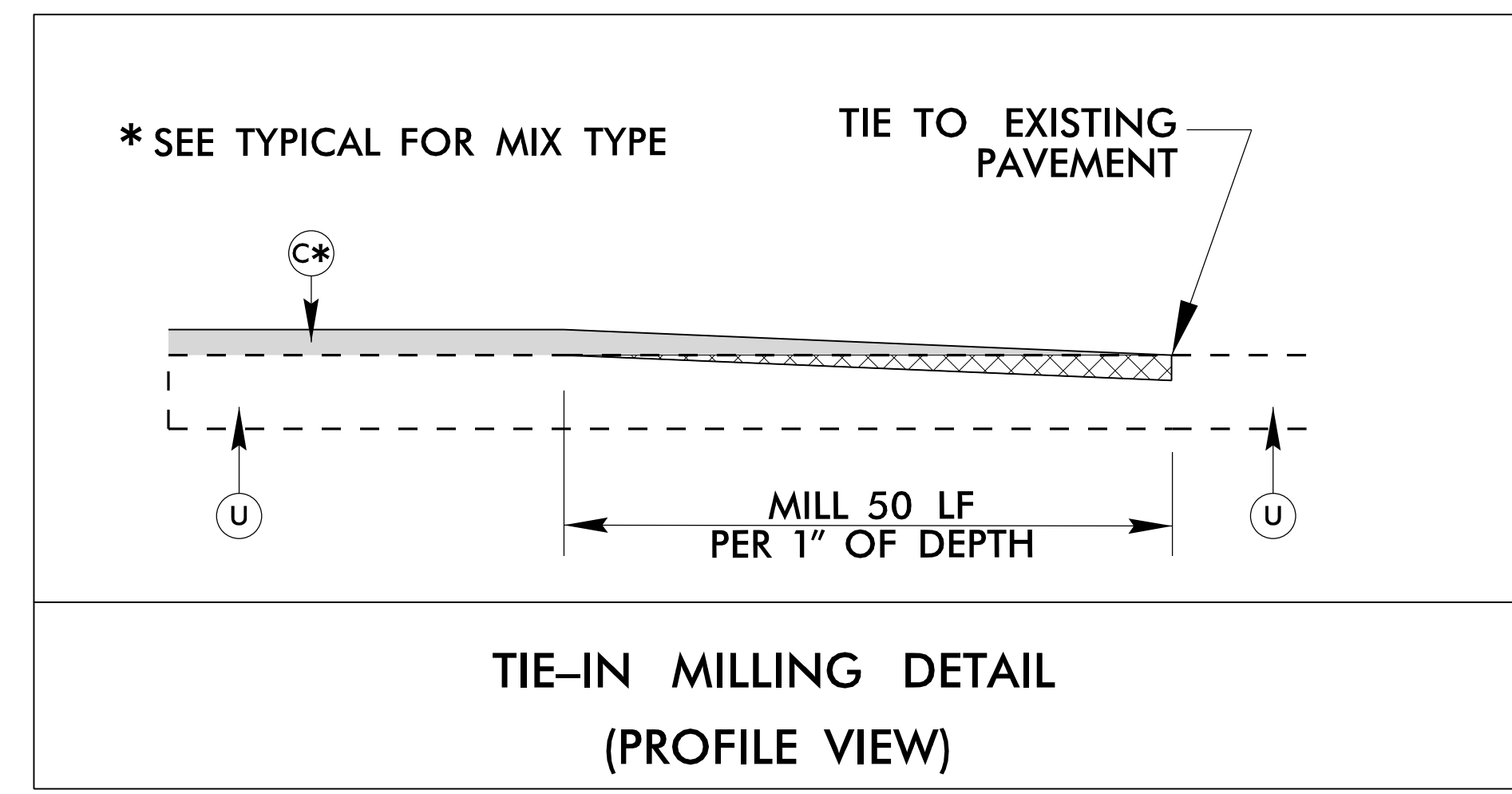
PROJECT REFERENCE NO. W-5706L	SHEET NO. 2A-1
ROADWAY DESIGN ENGINEER STEPHEN T. SMALLWOOD LICENSE NO. 422037 2/12/2024	PAVEMENT DESIGN ENGINEER DANIEL R. RIGGS, JR. LICENSE NO. 41155 2/12/2024
<b>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</b>	

FINAL PAVEMENT SCHEDULE			
A1	10" PORTLAND CEMENT CONCRETE PAVEMENT WITHOUT DOWELS. WIRE MESH 6X6 W1.4 X W1.4. 15' MINIMUM RADIAL JOINT SPACING.	R2	8" X 18" CONCRETE CURB
C1	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE TYPE S9.5B, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.	R3	5" MONOLITHIC ISLAND (KEYED-IN)
C2	PROP. APPROX. 1½" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD.	R4	PROP. 2'-6" CONCRETE CURB AND GUTTER.
C3	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT TO EXCEED 2" IN DEPTH.	R5	PROP. 4" CONCRETE ISLAND COVER
D1	PROP. APPROX. 4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.	S	PROP. 4" CONCRETE SIDEWALK
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.	T	EARTH MATERIAL.
E1	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.	U	EXISTING PAVEMENT.
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.	W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE STANDARD WEDGING DETAIL).
R1	ROLLED CONCRETE CURB AND GUTTER (SEE DETAIL SHEET 2A-1).		

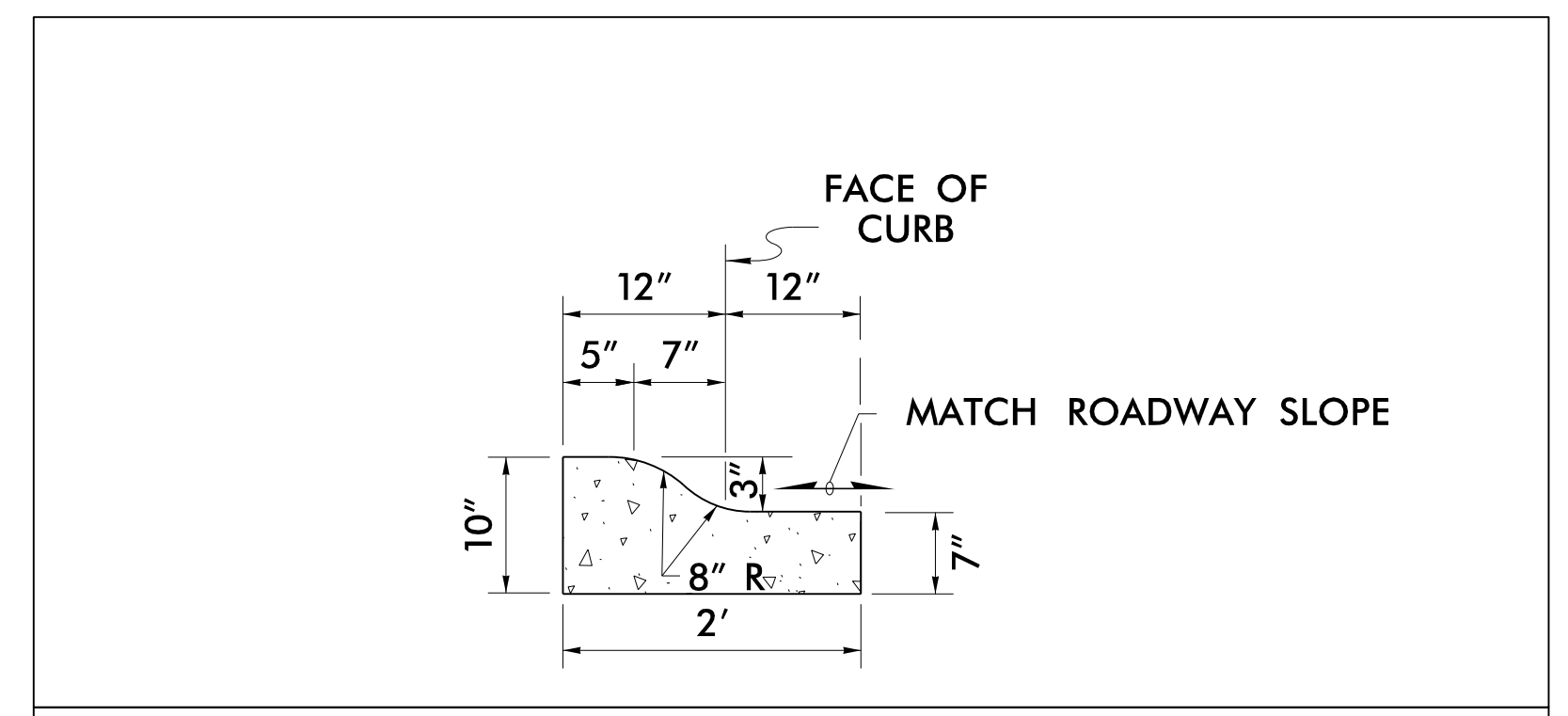
NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.



Detail W Showing Method of Wedging



TIE-IN MILLING DETAIL  
(PROFILE VIEW)

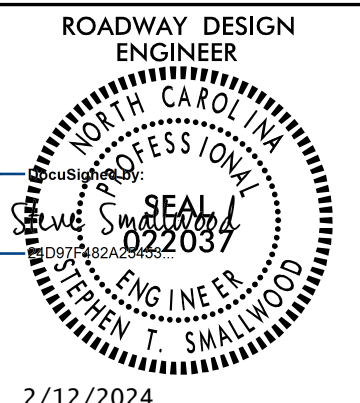
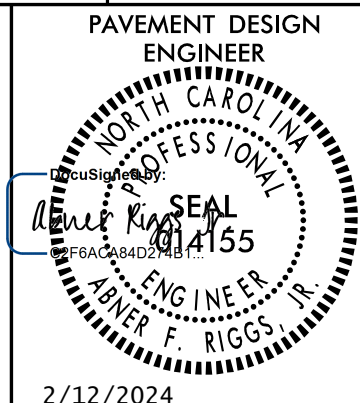


R1: ROLLED CURB  
DETAIL FOR ROUNDABOUT TRUCK APRON  
CONCRETE CURB & GUTTER

6/2/2024



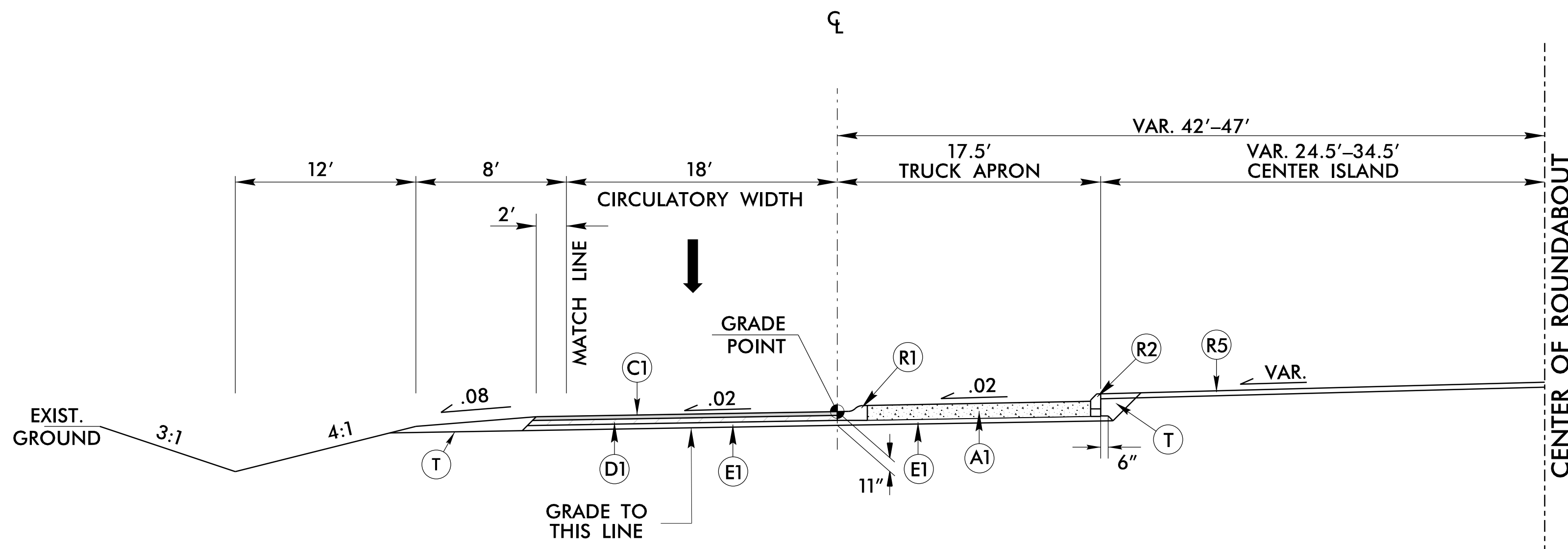
Stantec Consulting Services Inc.  
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 Fax. (919) 851-7024  
 www.stantec.com  
 License No. F-0672

PROJECT REFERENCE NO. W-5706L	SHEET NO. 2A-2
ROADWAY DESIGN ENGINEER  STEPHEN T. SMALLWOOD ENGINEER 2/12/2024	PAVEMENT DESIGN ENGINEER  DEBRA K. RIGGS ENGINEER 2/12/2024

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PAVEMENT SCHEDULE	
A1	10" PORTLAND CEMENT CONCRETE PAVEMENT WITHOUT DOWELS
C1	3" S9.5B
C2	1.5" S9.5B
C3	VAR. S9.5B
D1	4" I19.0C
D2	VAR. I19.0C
E1	4" B25.0C
E2	VAR. B25.0C
R1	ROLLED C & G
R2	8" X 18" CONCRETE CURB
R3	5" MONOLITHIC ISLAND (KEYED-IN)
R4	2'-6" C & G
R5	4" CONCRETE ISLAND COVER
S	SIDEWALK
T	EARTH MATERIAL
U	EXISTING PAVEMENT
W	WEDGING (SEE DETAIL ON SHT. 2A-1)

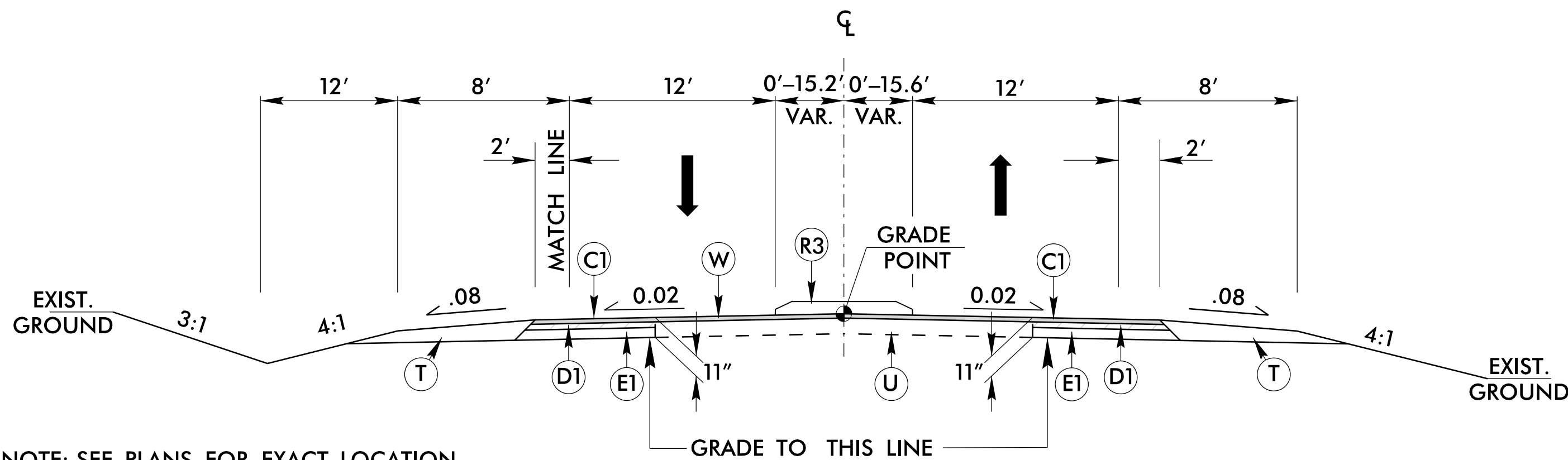
NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.



**TYPICAL SECTION NO. 1**  
 -RBT1- STA. 10+00.00 TO STA. 14+12.37

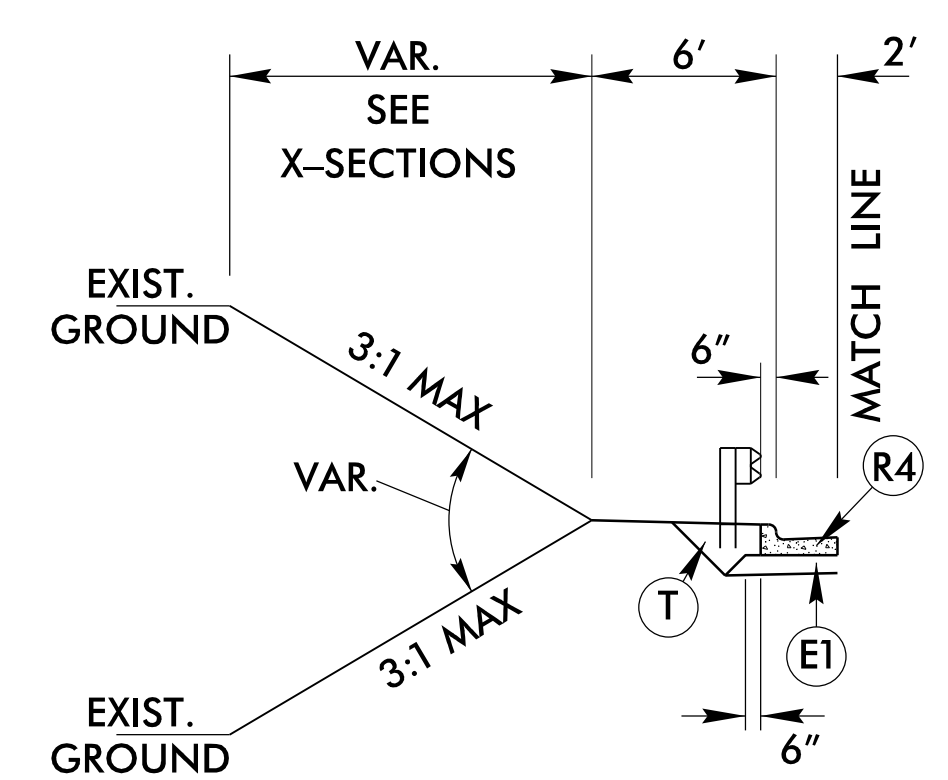
NOTE: CONSTRUCT A 2' WIDE TURF SHOULDER IN THE LOCATIONS WHERE THE PAVED SHOULDER WIDTH EXCEEDS THE USUABLE SHOULDER WIDTH OF THE APPLICABLE TYPICAL SECTION.

THESE AREAS INCLUDE BUT NOT LIMITED TO THE FOLLOWING:  
 -L- STA. 16+70.06 RT TO -Y1- STA. 11+83.75 RT  
 -L- STA. 19+47.40 LT TO -Y2- STA. 24+71.90 LT

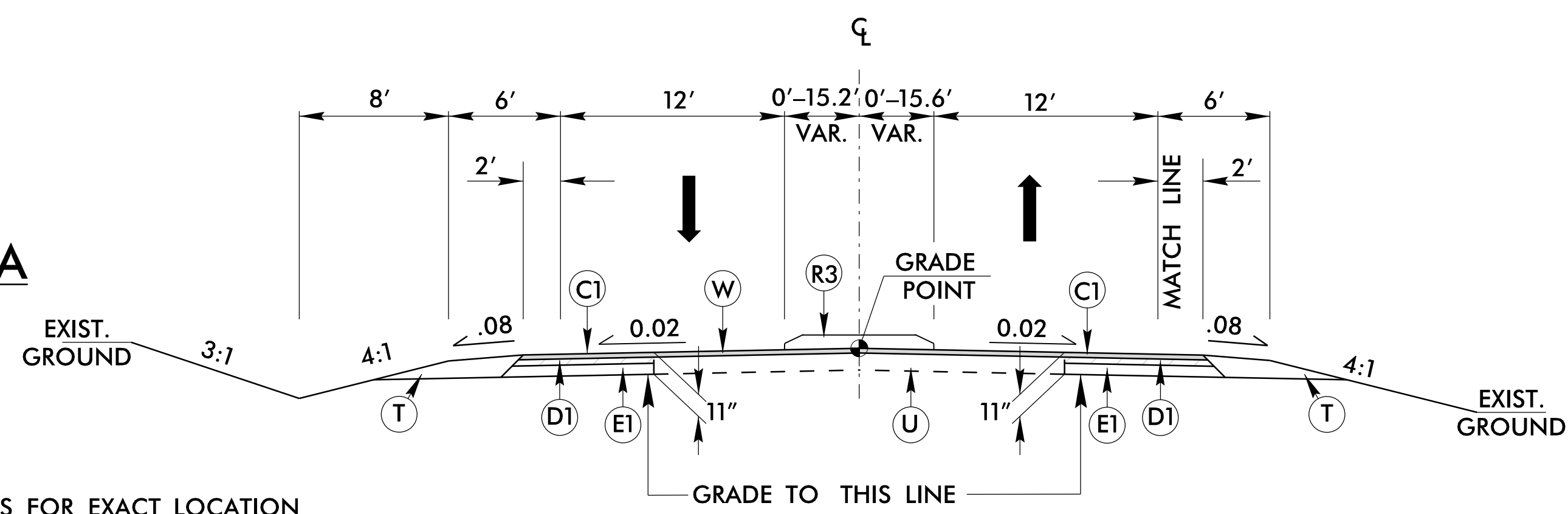


**TYPICAL SECTION NO. 2**  
 -L- STA. 13+20.00 TO STA. 17+23.15  
 -L- STA. 19+04.38 TO STA. 23+80.00

NOTE: SEE PLANS FOR EXACT LOCATION AND DIMENSIONS OF ISLANDS



**PARTIAL TYPICAL SECTION NO. 2A**  
 USE IN CONJUNCTION WITH TYPICAL SECTION NO. 2  
 -L- STA. 13+90.97 TO -L- 16+50.99



**TYPICAL SECTION NO. 3**  
 -Y1- STA. 10+70.00 TO STA. 14+60.00

NOTE: SEE PLANS FOR EXACT LOCATION AND DIMENSIONS OF ISLANDS

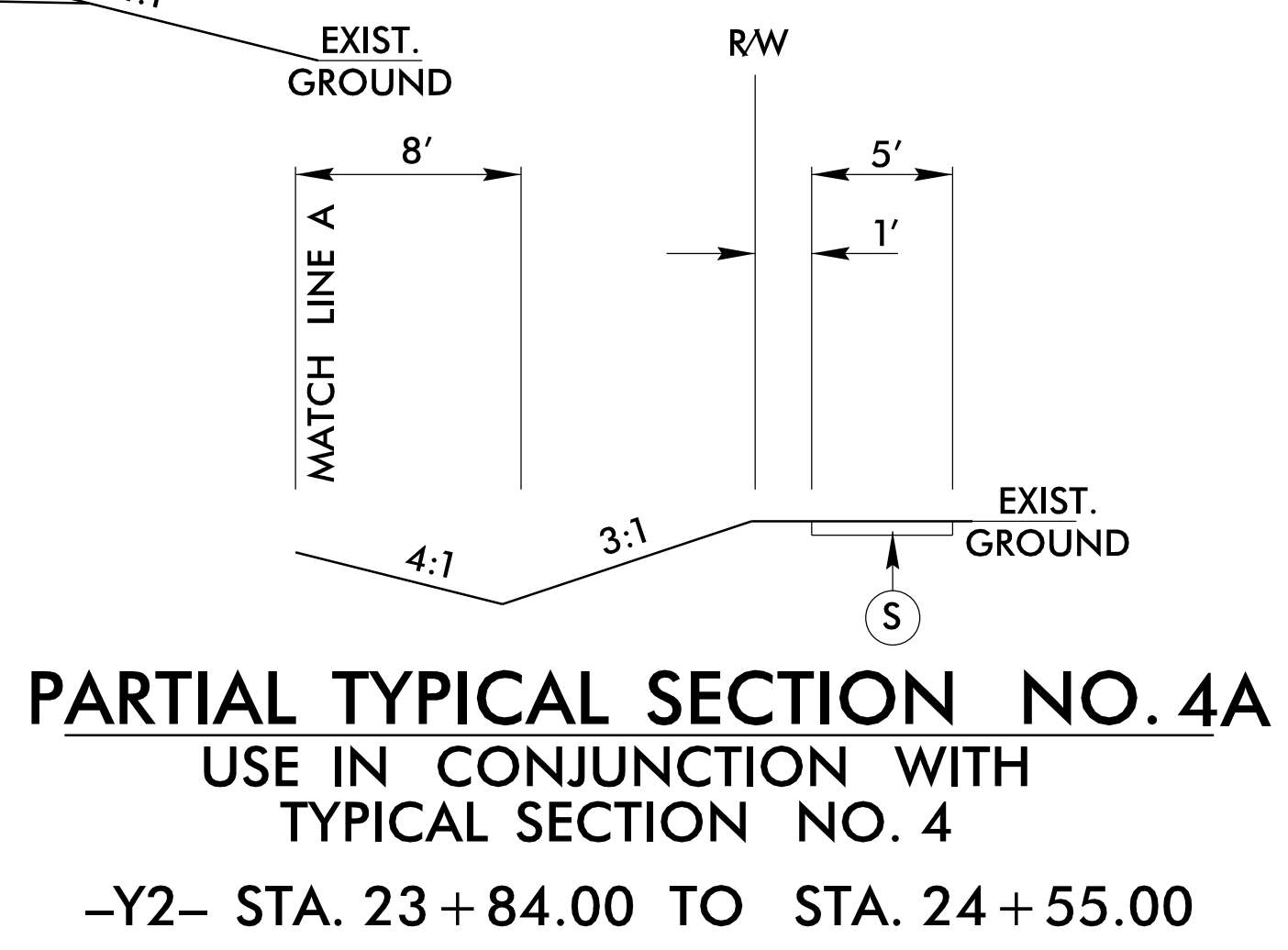
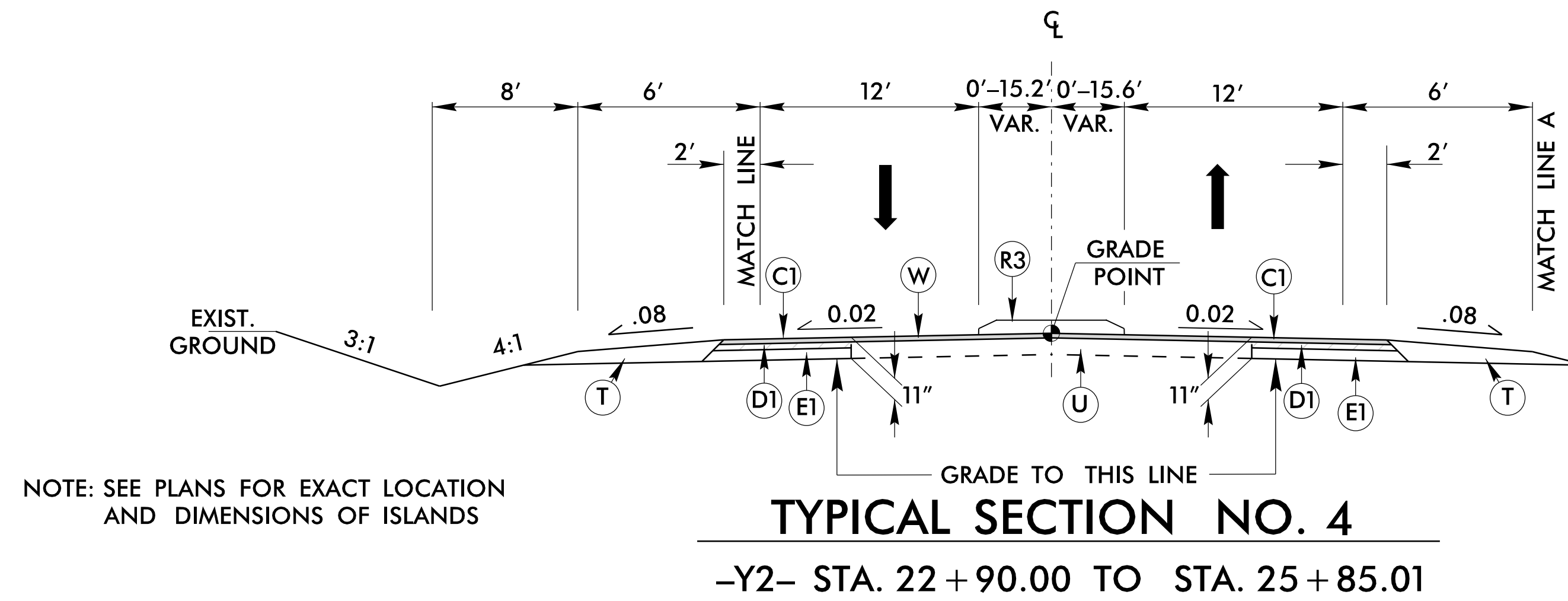
2/7/2024  
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 stam11wood



Stantec Consulting Services Inc.  
 801 Jones Franklin Road  
 Suite 300  
 Raleigh, NC 27606  
 Tel. (919) 851-6866  
 Fax. (919) 851-7024  
 www.stantec.com  
 License No. F-0672

PROJECT REFERENCE NO. W-5706L	SHEET NO. 2A-3
ROADWAY DESIGN ENGINEER SEAL 2/22/2024 STEPHEN T. SMALLWOOD ENGINEER	PAVEMENT DESIGN ENGINEER SEAL 2/22/2024 WALTER F. RIGGS, JR. ENGINEER
2/12/2024	2/12/2024

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

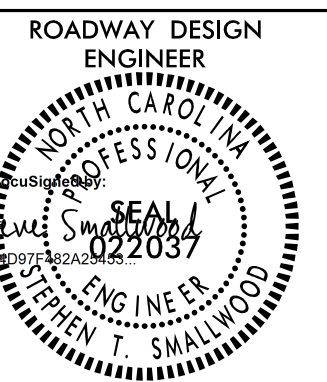


PAVEMENT SCHEDULE	
A1	10" PORTLAND CEMENT CONCRETE PAVEMENT WITHOUT DOWELS
C1	3" S9.5B
C2	1.5" S9.5B
C3	VAR. S9.5B
D1	4" I19.0C
D2	VAR. I19.0C
E1	4" B25.0C
E2	VAR. B25.0C
R1	ROLLED C & G
R2	8" X 18" CONCRETE CURB
R3	5" MONOLITHIC ISLAND (KEYED-IN)
R4	2'-6" C & G
R5	4" CONCRETE ISLAND COVER
S	SIDEWALK
T	EARTH MATERIAL
U	EXISTING PAVEMENT
W	WEDGING (SEE DETAIL ON SHT. 2A-1)

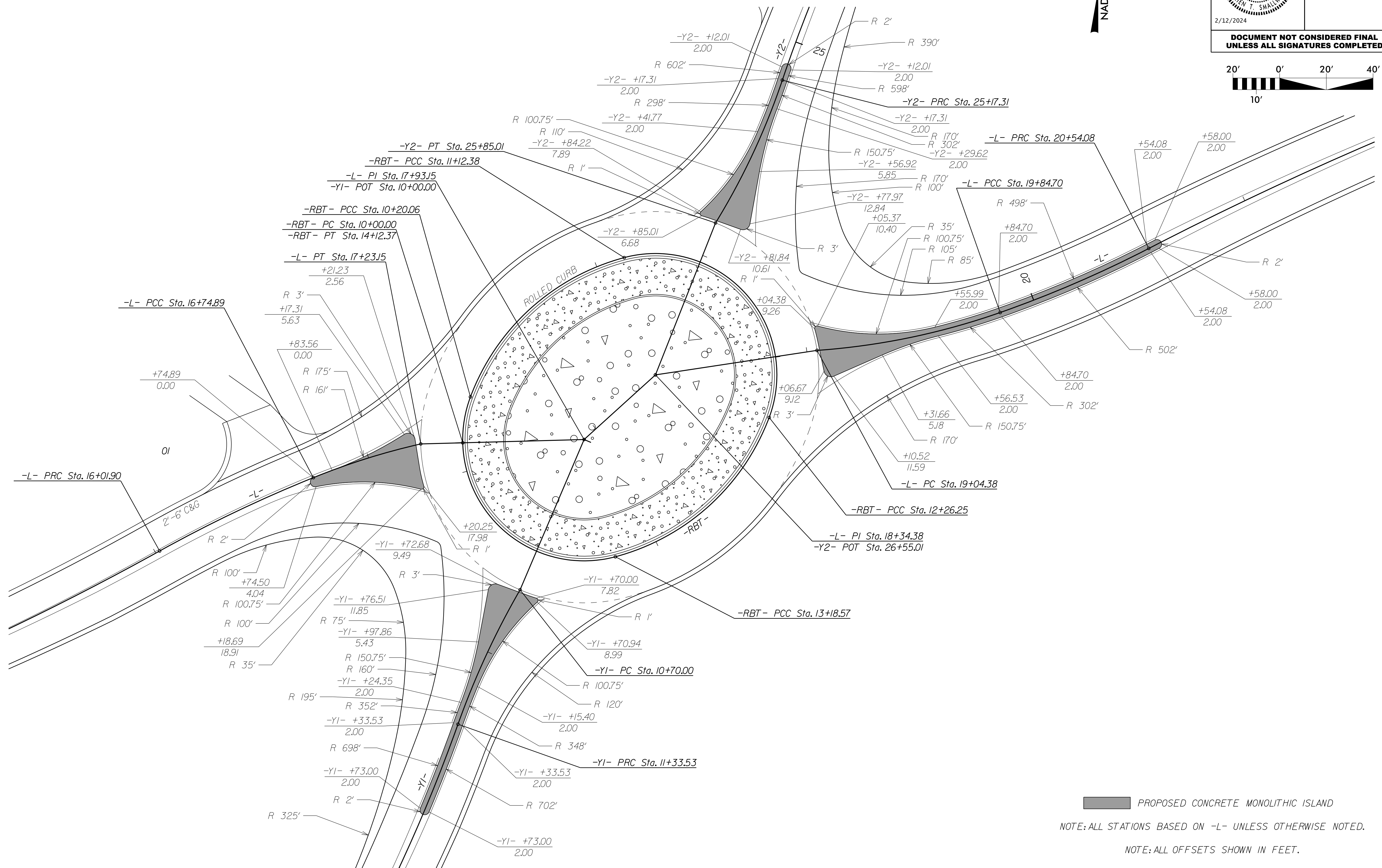
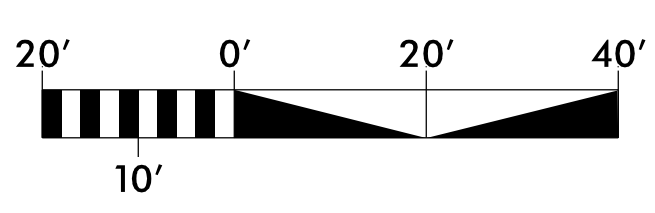
NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.

8/17/99

# INTERSECTION DETAIL NC 27 AT LESLIE CAMPBELL AVENUE AND OLD STAGE ROAD

PROJECT REFERENCE NO. W-5706L	SHEET NO. 2B-1
ROADWAY DESIGN ENGINEER 	
2/12/2024	
<b>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</b>	

NAD 83 / 2011



 PROPOSED CONCRETE MONOLITHIC ISLAND

NOTE: ALL STATIONS BASED ON -L- UNLESS OTHERWISE NOTED.

NOTE: ALL OFFSETS SHOWN IN FEET.

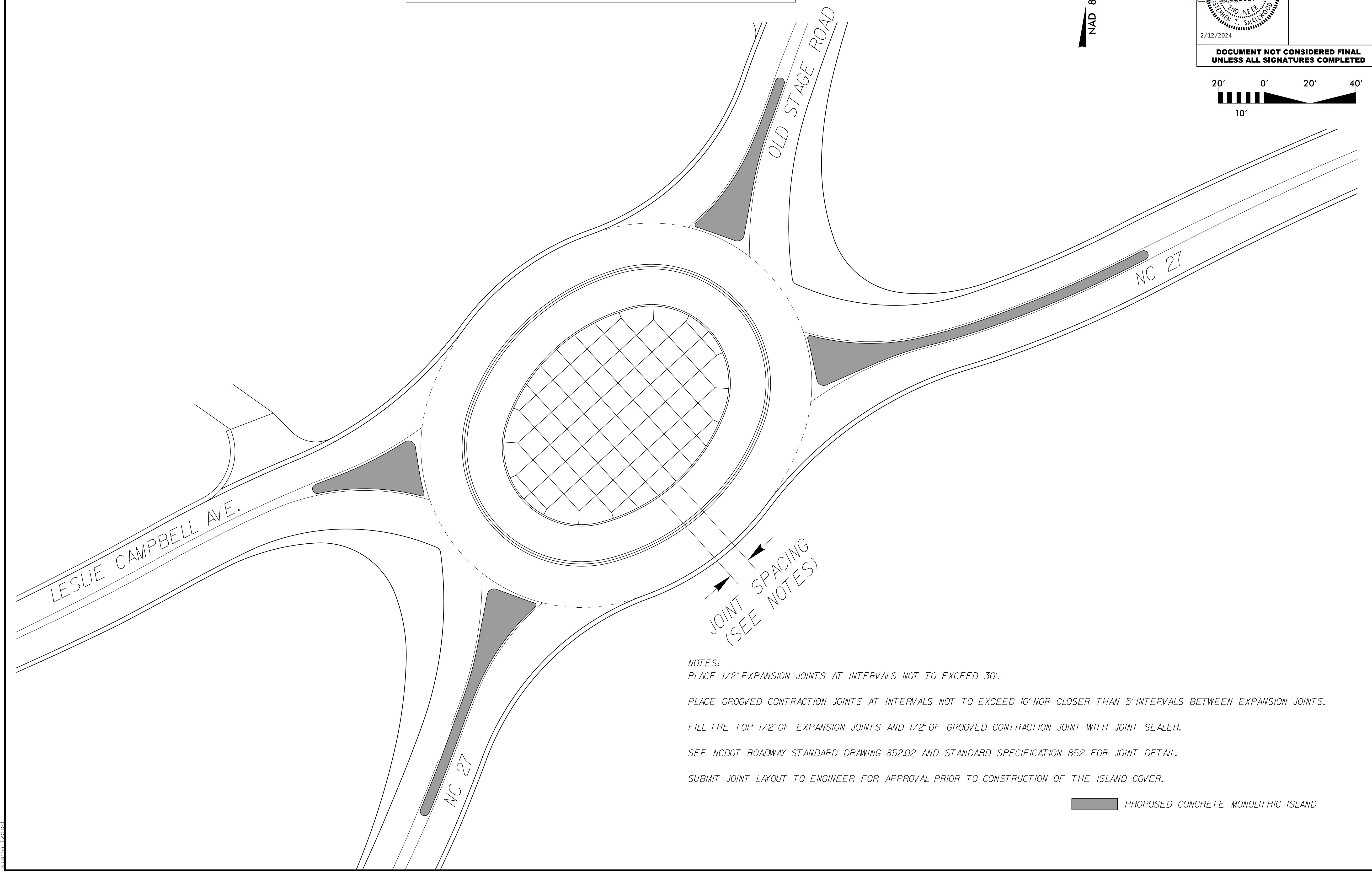
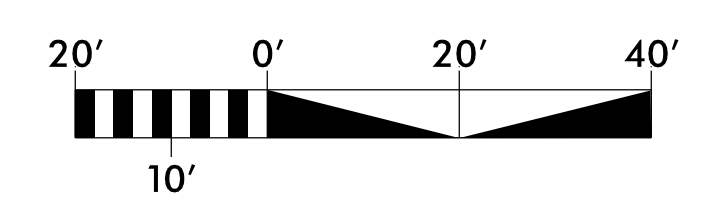
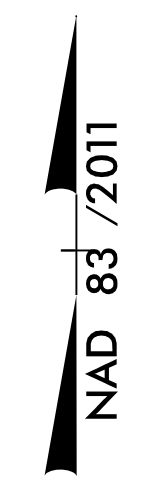
2/7/2024  
[Path to drawing file]



8/17/99

# CONCRETE ISLAND COVER JOINT LAYOUT NC 27 AT LESLIE CAMPBELL AVENUE AND OLD STAGE ROAD

PROJECT REFERENCE NO. W-5706L	SHEET NO. 2B-2
ROADWAY DESIGN ENGINEER SEAL STEPHEN T. SMALLWOOD 2/12/2024	
<b>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</b>	



- NOTES:
- PLACE 1/2" EXPANSION JOINTS AT INTERVALS NOT TO EXCEED 30'.
  - PLACE GROOVED CONTRACTION JOINTS AT INTERVALS NOT TO EXCEED 10' NOR CLOSER THAN 5' INTERVALS BETWEEN EXPANSION JOINTS.
  - FILL THE TOP 1/2" OF EXPANSION JOINTS AND 1/2" OF GROOVED CONTRACTION JOINT WITH JOINT SEALER.
  - SEE NCDOT ROADWAY STANDARD DRAWING 852.02 AND STANDARD SPECIFICATION 852 FOR JOINT DETAIL.
  - SUBMIT JOINT LAYOUT TO ENGINEER FOR APPROVAL PRIOR TO CONSTRUCTION OF THE ISLAND COVER.

PROPOSED CONCRETE MONOLITHIC ISLAND

2/7/2024  
C:\Users\smallwood\Documents\Projects\W5706L\Fdy\_psh\_2B-2.dgn

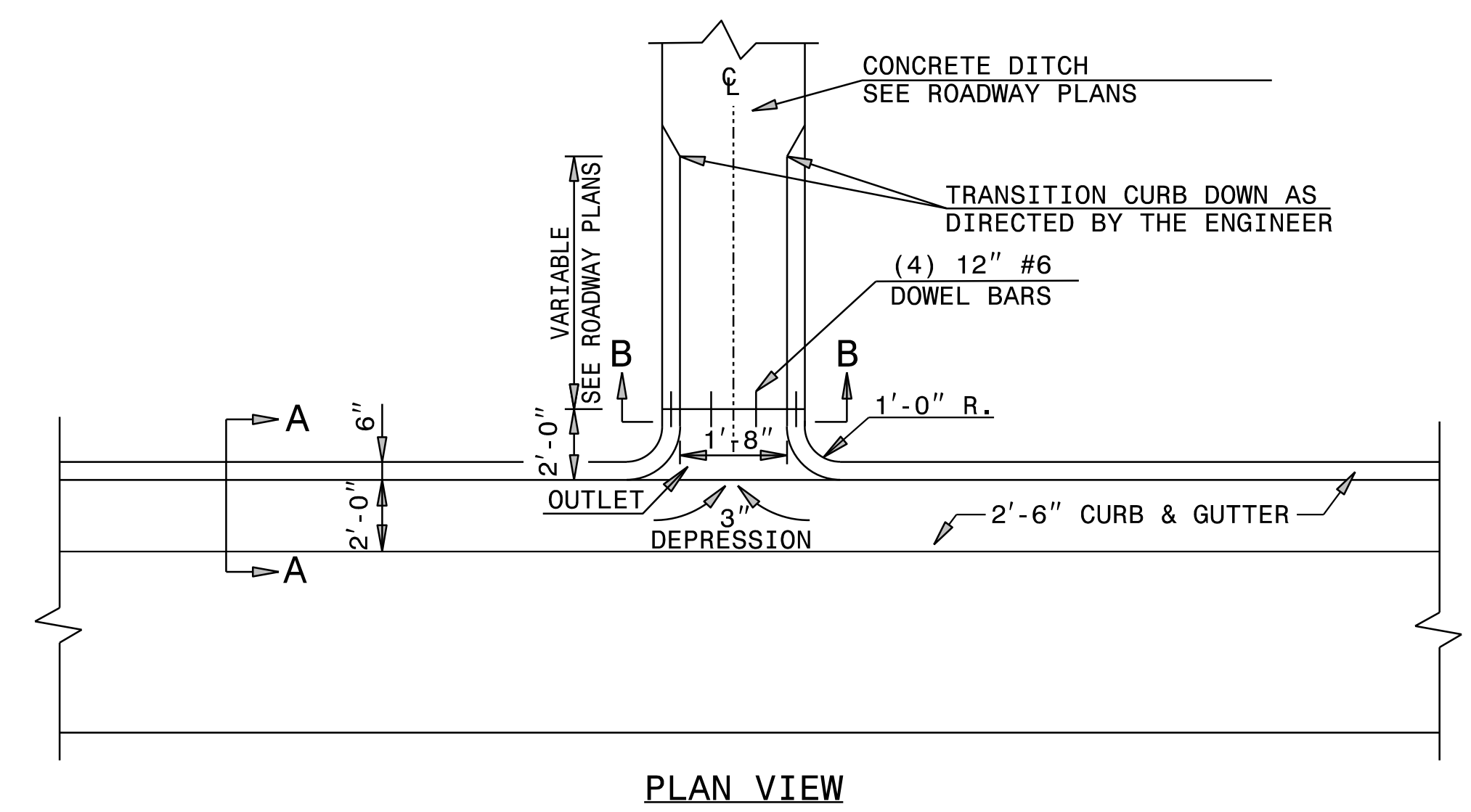
5/14/99

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

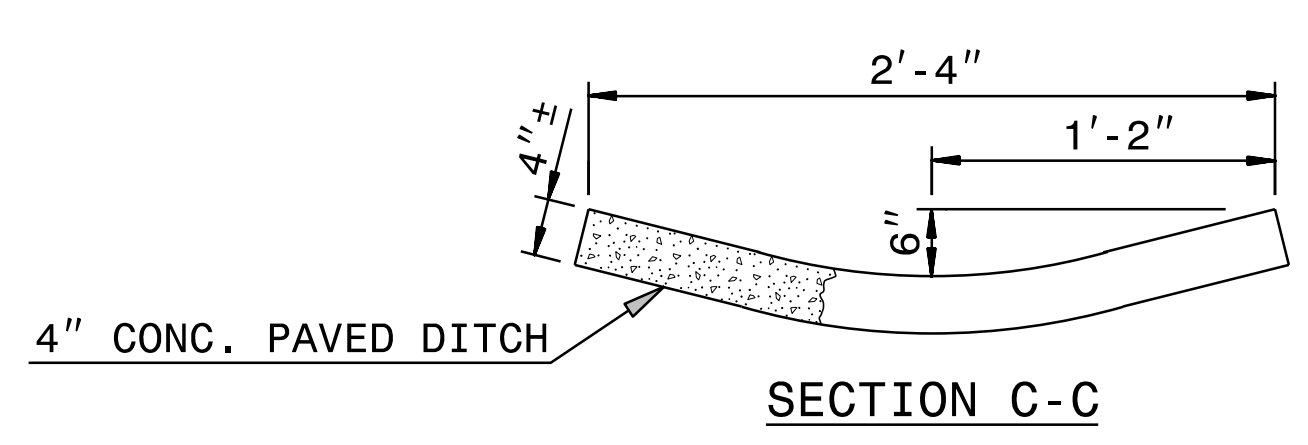
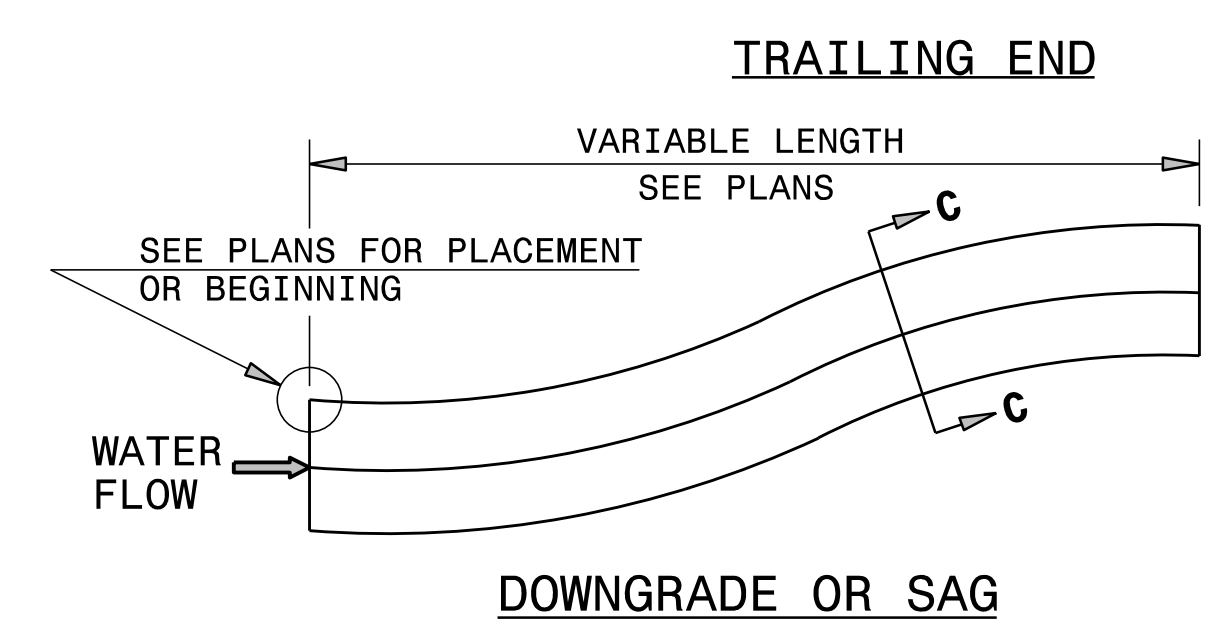
ENGLISH DETAIL DRAWING FOR  
**2'-6" CURB AND GUTTER**  
DRAINAGE INSTALLATION IN

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

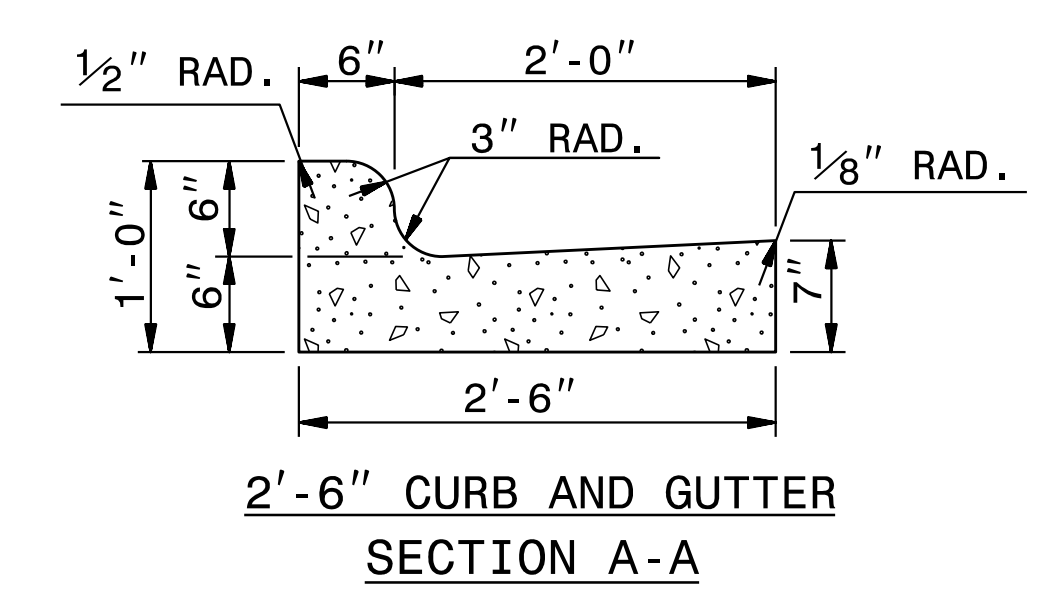
ENGLISH DETAIL DRAWING FOR  
**2'-6" CURB AND GUTTER**  
DRAINAGE INSTALLATION IN



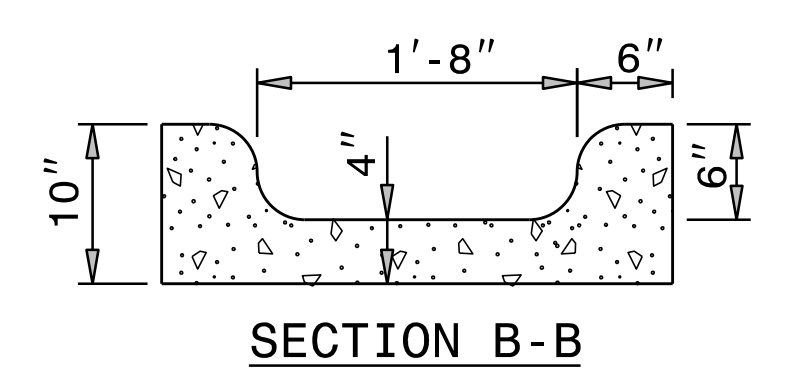
PLAN VIEW



SECTION C-C



2'-6" CURB AND GUTTER  
SECTION A-A



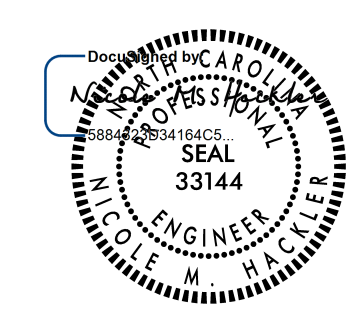
SECTION B-B

NOTES:

- CONSTRUCT CONCRETE DITCH IN ACCORDANCE WITH STD. DWG. NO. 850.01.
- CONCRETE 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.

SHEET 1 OF 1  
C&GDTCH

SHEET 1 OF 1  
C&GDTCH



2/13/2024

DESIGN SERVICES UNIT  
STANDARDS AND SPECIAL DESIGN  
Office 919-250-4128 FAX 919-250-4119

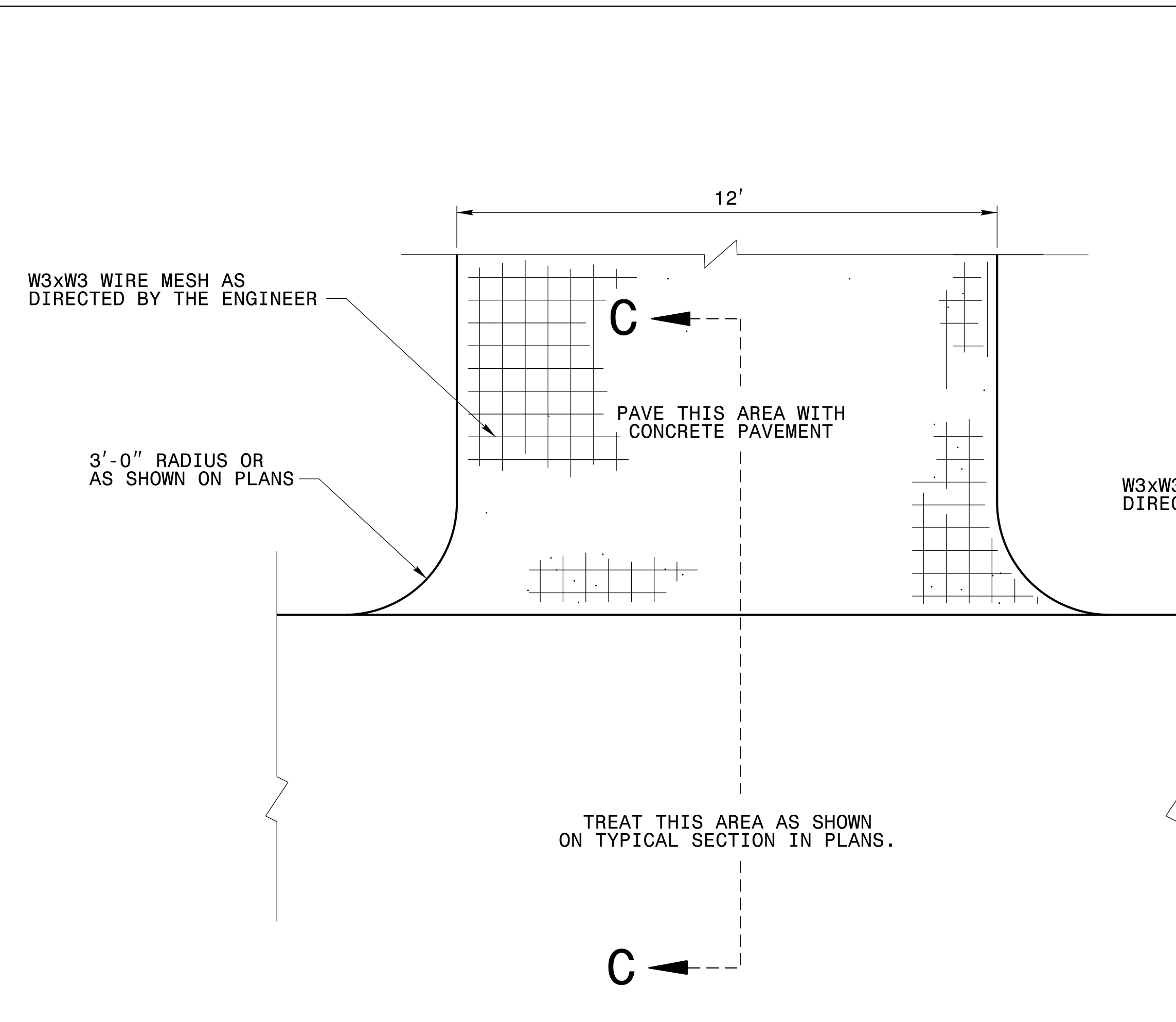
**SEE PLATE FOR TITLE**

ORIGINAL BY: E.E. Ward DATE: 3-12-02  
 MODIFIED BY: DATE:   
 CHECKED BY: DATE:   
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STATE OF  
NORTH CAROLINA  
DEPT. OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
RALEIGH, N.C.

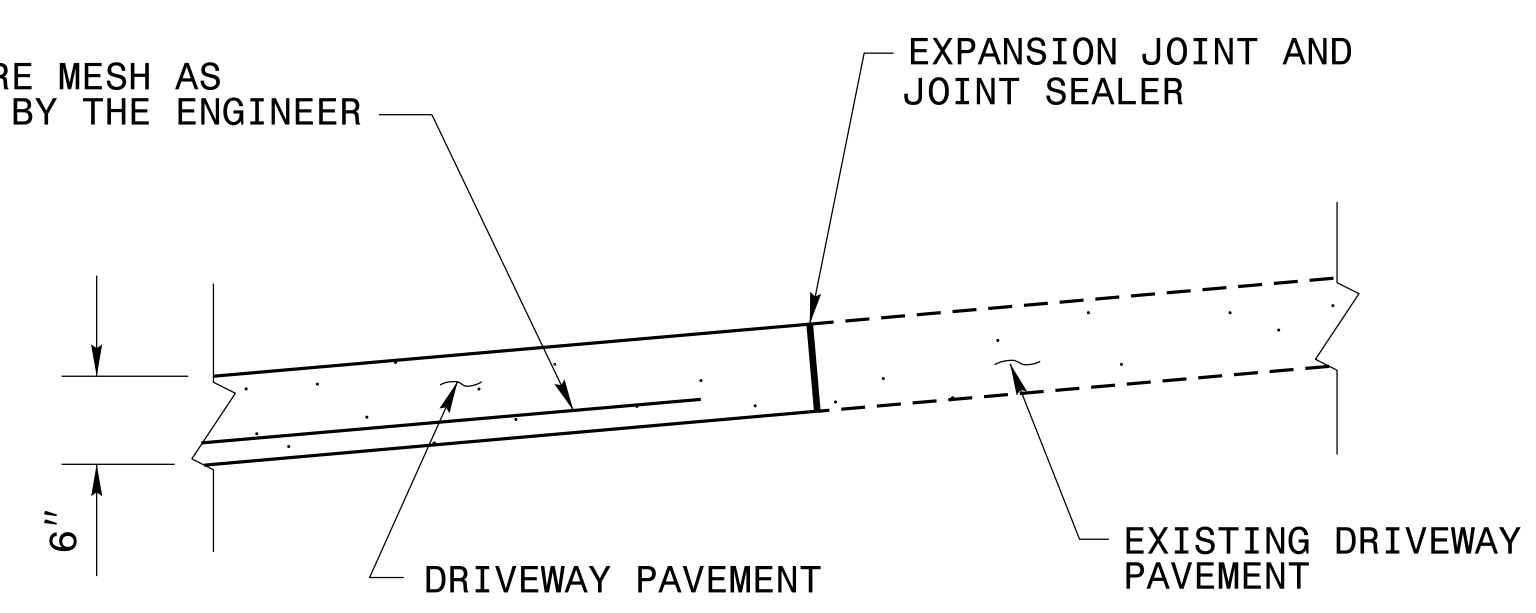
ENGLISH DETAIL DRAWING FOR  
**DRIVEWAY TURNOUT**  
RADIUS TYPE

SHEET 1 OF 1  
**848D02**



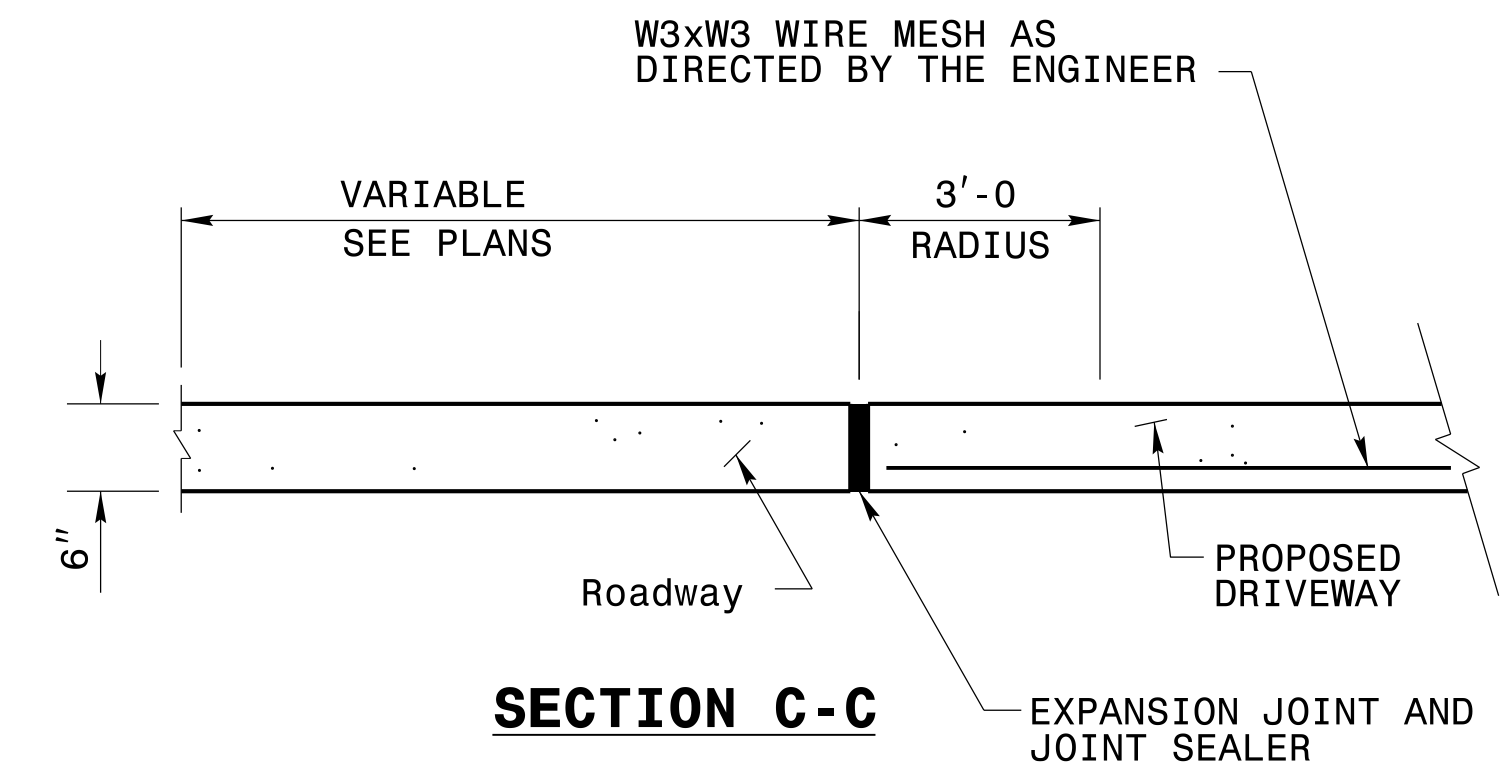
**PARTIAL PLAN OF PAVED DRIVEWAY TURNOUT**

- NOTES:
- CONSTRUCT STANDARD DRIVEWAY THE WIDTH OF EXISTING DRIVE. CONSTRUCT DRIVE 6" THICK UNLESS OTHERWISE NOTED ON PLANS.
  - PLACE 1/2" EXPANSION JOINT BETWEEN DRIVEWAY AND ROADWAY AND AT LOCATIONS AS DIRECTED BY THE ENGINEER. SEAL JOINT WITH JOINT SEALER (SEE STD. SECTION 1028)
  - PLACE WIRE MESH IN BOTTOM THIRD OF CONCRETE DRIVEWAY.
  - SAW CUT OR FORM CONTRACTION JOINTS IN DRIVEWAY @ 10' INTERVALS. AT EVERY THIRD JOINT, PLACE EXPANSION MATERIAL AS SHOWN IN SECTION C-C.



**METHOD OF TIE IN**

WHEN EXISTING DRIVEWAY PAVEMENT IS CONCRETE, SAW CUT A 2" DEEP JOINT AT THE POINT OF TIE IN WITH EXISTING DRIVEWAY GRADE.  
SAW JOINT PERPENDICULAR TO EDGE OF EXISTING DRIVEWAY PAVEMENT.



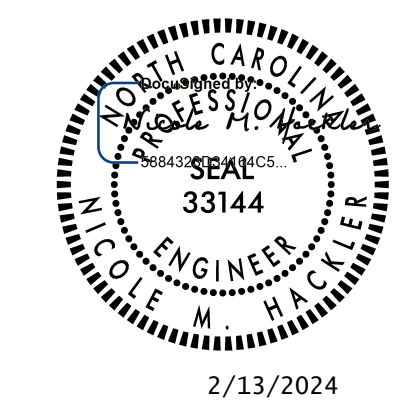
**SECTION C-C**

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

ENGLISH DETAIL DRAWING FOR  
**DRIVEWAY TURNOUT**  
RADIUS TYPE

SHEET 1 OF 1  
**848D02**

30-JAN-2018 12:40 S:\Contracts\Special Details\english\misc\conc drive.dgn Jhoverton AT CSD-292595



2/13/2024

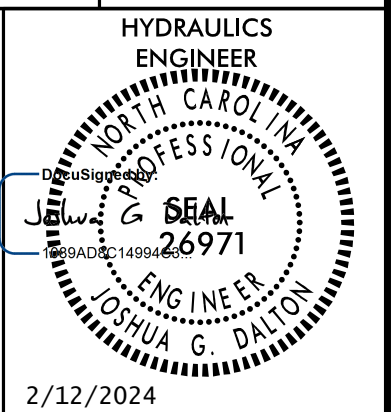
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

CONTRACT STANDARDS & DEVELOPMENT UNIT  
STANDARDS AND SPECIAL DESIGN  
Office 919-707-6950 FAX 919-250-4119

**REINFORCED CONCRETE DRIVEWAY**

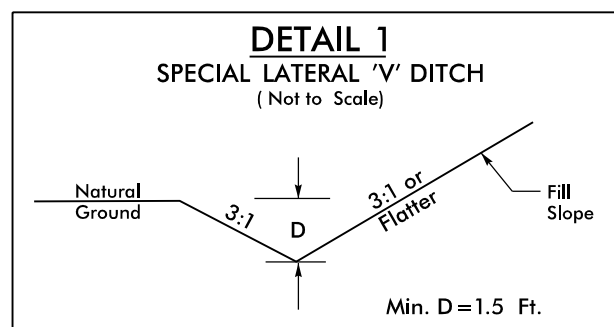
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CHECKED BY: \_\_\_\_\_ DATE: \_\_\_\_\_  
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PROJECT REFERENCE NO. <i>W-5706L</i>	SHEET NO. <i>2D-1</i>
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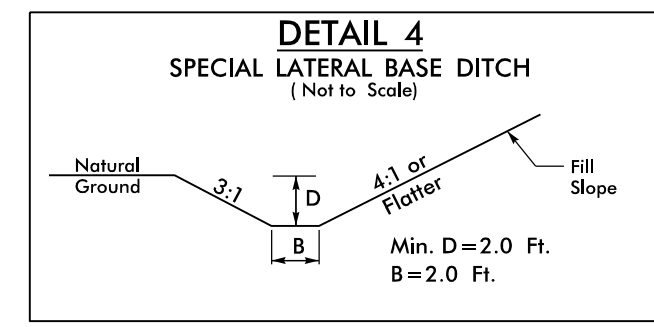


**DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED**

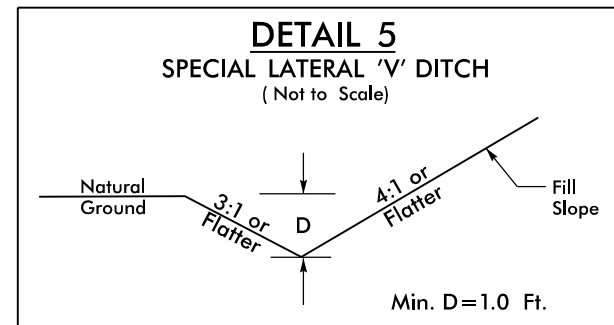
**SUNGATE DESIGN GROUP, P.A.**  
 908 JONES FRANKLIN ROAD  
 RALEIGH, NORTH CAROLINA 27609  
 NC COA No. C-0890



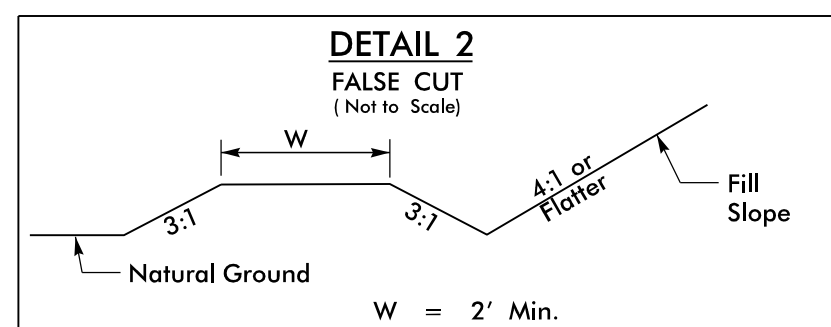
FROM STA. 16+85 TO STA. 17+19 -L- LT  
 FROM STA. 19+07 TO STA. 20+53 -L- RT  
 FROM STA. 10+80 TO STA. 13+50 -Y1- LT  
 FROM STA. 11+00 TO STA. 11+32 -Y1- RT  
 FROM STA. 22+75 TO STA. 25+20 -Y2- LT  
 FROM STA. 23+00 TO STA. 24+65 -Y2- RT  
 FROM STA. 10+25 TO STA. 11+25 -RBT1- LT  
 FROM STA. 12+50 TO STA. 13+25 -RBT1- LT



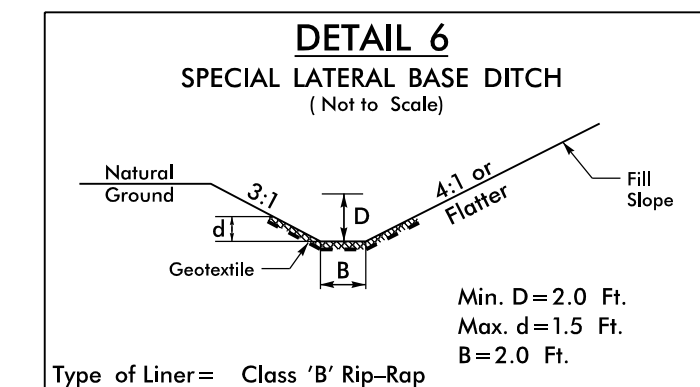
FROM STA. 20+50 TO STA. 24+00 -L- LT



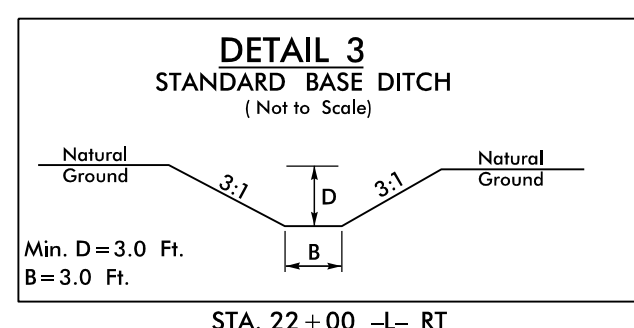
FROM STA. 12+24 TO STA. 16+83 -L- RT  
 FROM STA. 12+25 TO STA. 16+54 -Y1- RT



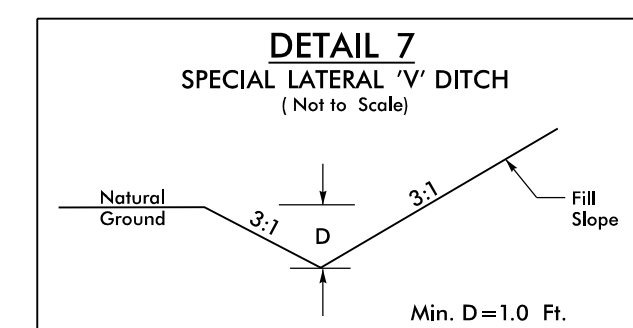
FROM STA. 11+50 TO STA. 13+50 -L- LT



Type of Liner = Class 'B' Rip-Rap  
 FROM STA. 19+45 TO STA. 20+50 -L- LT  
 FROM STA. 25+20 TO STA. 25+50 -Y2- LT



STA. 22+00 -L- RT



FROM STA. 13+50 TO STA. 14+12 -L- LT

**EARTHWORK SUMMARY**

IN CUBIC YARDS

LOCATION	UNCLASSIFIED EXCAVATION	EMBT + %	BORROW	WASTE
SUMMARY NO. 1				
-L- LT STA. 11+50.00 TO STA. 17+23.15	62	249	187	
-Y2- RT STA. 23+00.00 TO STA. 25+85.01	177	9		168
-RBTI- STA. 10+00.00 TO STA. 11+50.00	84	1,009	925	
SUBTOTAL SUMMARY NO. 1	323	1,266	1,111	168
SUMMARY NO. 2				
-L- RT STA. 11+50.00 TO STA. 17+23.15	244	11		233
-Y1- RT STA. 10+70.00 TO STA. 15+00.00	163	64		99
-RBTI- STA. 11+50.00 TO STA. 12+00.00	1	371	370	
SUBTOTAL SUMMARY NO. 2	408	446	370	332
SUMMARY NO. 3				
-L- LT STA. 19+04.38 TO STA. 24+00.00	1,278	351		1,427
-Y2- LT STA. 22+75.00 TO STA. 25+85.01	299	58		242
-RBTI- STA. 12+00.00 TO STA. 13+50.00	50	1,996	1,946	
SUBTOTAL SUMMARY NO. 3	1,527	2,405	1,946	1,668
SUMMARY NO. 4				
-L- RT STA. 19+04.38 TO STA. 24+00.00	174	11		163
-Y1- LT STA. 10+70.00 TO STA. 14+75.00	215	70		145
-RBTI- STA. 13+50.00 TO STA. 14+12.37		440	440	
SUBTOTAL SUMMARY NO. 4	389	521	440	308
TOTAL	3,247	4,639	3,867	2,476
MATERIAL FOR SHOULDER CONSTRUCTION		813	813	
LOSS DUE TO CLEARING AND GRUBBING	250		-250	
WASTE IN LIEU OF BORROW			-1,876	-1,876
PROJECT TOTAL	3,497	5,451	2,554	600
EST. 5% TO REPLACE TOP SOIL ON BORROW PIT			128	
GRAND TOTAL	3,497	5,451	2,681	600
SAY	3,500		2,700	

ESTIMATE DDE = 330 CY  
 ESTIMATED SHALLOW UNDERCUT = 250 CY  
 ESTIMATED CLASS IV SUBGRADE STABILIZATION = 500 TONS

These earthwork quantities are based in part on subsurface data provided by the Geotechnical Engineering Unit.

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

**SUMMARY OF ASPHALT PAVEMENT REMOVAL**

IN SQUARE YARDS

SURVEY LINE	STATION	STATION	LOCATION LT/RT/CL	YD <sup>2</sup>
-L-	15+07	16+87	RT	117
-L-	19+28	22+80	LT	303
TOTAL:				420
SAY:				430

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

**GUARDRAIL SUMMARY**

SURVEY LINE	BEG. STA.	END STA.	LOCATION	LENGTH			WARRANT POINT		"N" DIST. FROM E.O.L.	TOTAL SHOUL. WIDTH	FLARE LENGTH		W		ANCHORS										IMPACT ATTENUATOR			SINGLE FACED GUARDRAIL	REMOVE EXISTING GUARDRAIL	REMOVE AND STOCKPILE EXISTING GUARDRAIL	REMARKS	
				STRAIGHT	SHOP CURVED	DOUBLE FACED	APPROACH END	TRAILING END			APPROACH END	TRAILING END	XI MOD	XI	GREU TL-2	M-350	XIII	CAT-1	VI MOD	TES	AT-1	EA G NG										
																						EA	G	NG								
-L-	15+55.00	16+48.00	LT	75'	30'		16+15.00	16+15.00	2.5'			25'		1'			1															
SUBTOTAL				75'	30'												1															
LESS ANCHOR DEDUCTIONS																																
GREU TL-2					1	@ 25'	-25'																									
AT-1					1	@ 6.25'	-6.25'																									
TOTAL							43.75'	30'									1															
SAY							50'	37.5'																								
ADDITIONAL GUARDRAIL POSTS = 5 EACH																																



COMPUTED BY: K.R. PLUMMER DATE: NOVEMBER 27, 2023  
 CHECKED BY: A.F. RIGGS, JR. DATE: NOVEMBER 27, 2023

PROJECT NO.	SHEET NO.
44852.1.1 (W-5706L)	3G-1

(2-3-23)

**STATE OF NORTH CAROLINA  
 DIVISION OF HIGHWAYS**

**SUMMARY OF AGGREGATE SUBGRADE/STABILIZATION**

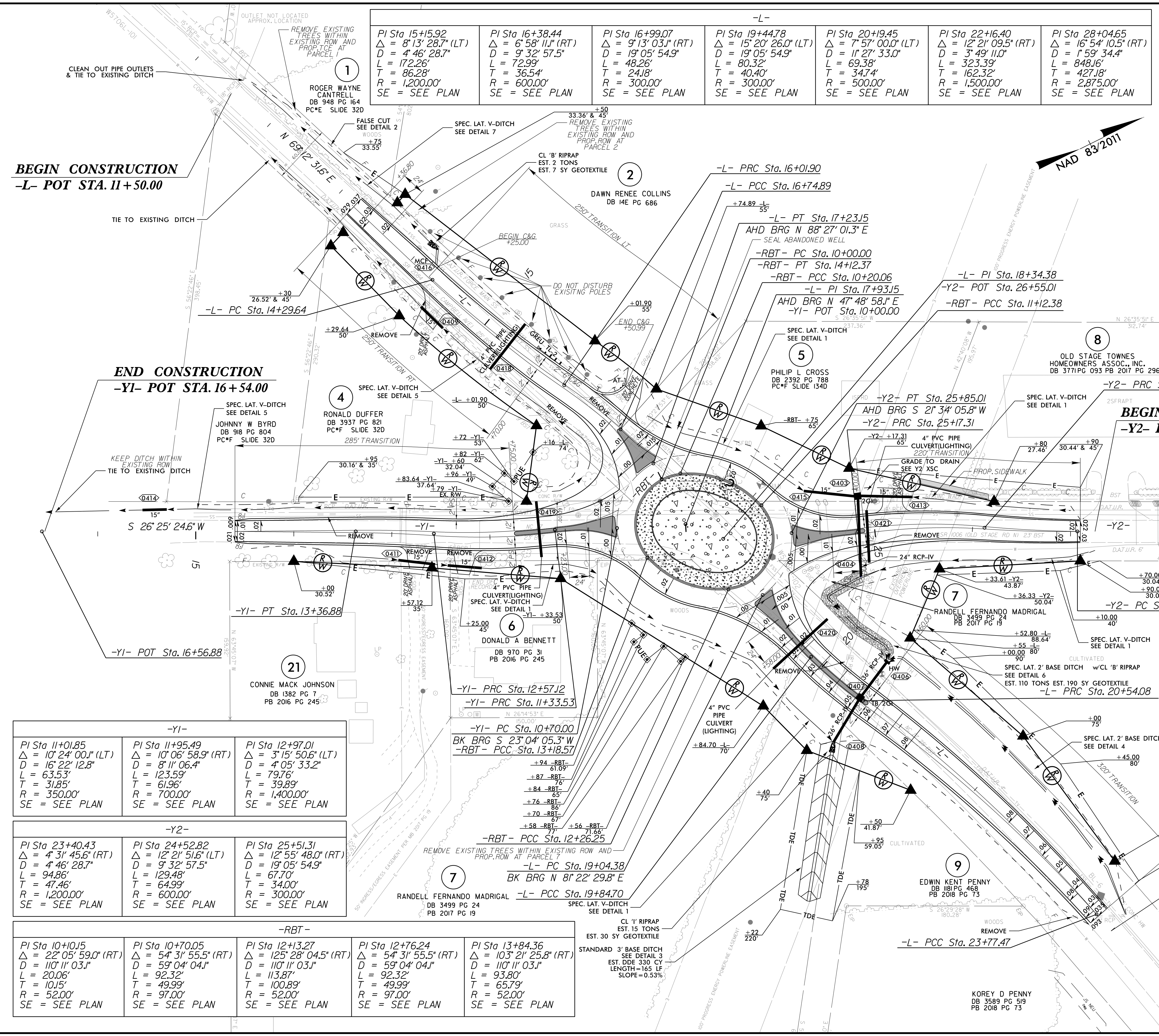
LINE	Station	Station	Aggregate Type* ASU(1/2)/AST	Aggregate Thickness INCHES [8" for ASU(2)]	Shallow Undercut CY	Class IV Subgrade Stabilization TONS	Geotextile for Subgrade Stabilization SY	Stabilizer Aggregate TONS	Class IV Aggregate Stabilization TONS
-L-	21+75	23+75	ASU (1)	12"	50	125	200		
-Y2-	22+90	25+80	ASU (1)	12"	150	275	450		
CONTINGENCY					50	100	150		
<b>TOTAL CY/TONS/SY:</b>					250	500**	800**	0	0

\*ASU(1/2) = Aggregate Subgrade (Type 1 or 2)

\*AST = Aggregate Stabilization

\*\*Total tons of "Class IV Subgrade Stabilization" and total square yards of "Geotextile for Subgrade Stabilization" are only the estimated quantities for ASU(1/2)/AST and may only represent a portion of the subgrade stabilization and geotextile quantities shown in the Item Sheets of the Proposal.

8.17.7.99  
3/12/2024  
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M:\Information\Proj\W5706L\Proj\W5706L\_Rdy\_psh4.dgn



PI Sta 15+15.92 $\Delta = 8'13''28.7''$ (LT) $D = 4'46''28.7''$ $L = 172.26'$ $T = 86.28'$ $R = 1,200.00'$ SE = SEE PLAN	PI Sta 16+38.44 $\Delta = 6'58''11.1''$ (RT) $D = 9'32''57.5''$ $L = 36.54'$ $T = 36.54'$ $R = 600.00'$ SE = SEE PLAN	PI Sta 16+99.07 $\Delta = 9'13''03.1''$ (RT) $D = 19'05''54.9''$ $L = 48.26'$ $T = 24.18'$ $R = 300.00'$ SE = SEE PLAN	-L- PI Sta 19+44.78 $\Delta = 15'20''26.0''$ (LT) $D = 19'05''54.9''$ $L = 80.32'$ $T = 40.40'$ $R = 300.00'$ SE = SEE PLAN	PI Sta 20+19.45 $\Delta = 7'57''00.0''$ (LT) $D = 11'27''33.0''$ $L = 69.38'$ $T = 34.74'$ $R = 500.00'$ SE = SEE PLAN	PI Sta 22+16.40 $\Delta = 12'21''09.5''$ (RT) $D = 3'49''11.0''$ $L = 323.39'$ $T = 162.32'$ $R = 1,500.00'$ SE = SEE PLAN	PI Sta 28+04.65 $\Delta = 16'54''10.5''$ (RT) $D = 1'59''34.4''$ $L = 848.16'$ $T = 427.18'$ $R = 2,875.00'$ SE = SEE PLAN
--------------------------------------------------------------------------------------------------------------------------------------------	-----------------------------------------------------------------------------------------------------------------------------------------	------------------------------------------------------------------------------------------------------------------------------------------	--------------------------------------------------------------------------------------------------------------------------------------------------	------------------------------------------------------------------------------------------------------------------------------------------	----------------------------------------------------------------------------------------------------------------------------------------------	----------------------------------------------------------------------------------------------------------------------------------------------

**BEGIN CONSTRUCTION**  
-L- POT STA. 11+50.00

**END CONSTRUCTION**  
-Y1- POT STA. 16+54.00

**BEGIN CONSTRUCTION**  
-Y2- POT STA. 22+75.00

**END CONSTRUCTION**  
-L- POC STA. 24+00.00

-Y1-		
PI Sta 11+01.85 $\Delta = 10'24''00.1''$ (LT) $D = 16'22''12.8''$ $L = 63.53'$ $T = 31.85'$ $R = 350.00'$ SE = SEE PLAN	PI Sta 11+95.49 $\Delta = 10'06''58.9''$ (RT) $D = 8'11''06.4''$ $L = 123.59'$ $T = 61.96'$ $R = 700.00'$ SE = SEE PLAN	PI Sta 12+97.01 $\Delta = 3'15''50.6''$ (LT) $D = 4'05''33.2''$ $L = 79.76'$ $T = 39.89'$ $R = 1,400.00'$ SE = SEE PLAN

-Y2-		
PI Sta 23+40.43 $\Delta = 4'31''45.6''$ (RT) $D = 4'46''28.7''$ $L = 94.86'$ $T = 47.46'$ $R = 1,200.00'$ SE = SEE PLAN	PI Sta 24+52.82 $\Delta = 12'21''51.6''$ (LT) $D = 9'32''57.5''$ $L = 129.48'$ $T = 64.99'$ $R = 600.00'$ SE = SEE PLAN	PI Sta 25+51.31 $\Delta = 12'55''48.0''$ (RT) $D = 4'05''33.2''$ $L = 67.70'$ $T = 34.00'$ $R = 300.00'$ SE = SEE PLAN

-RBT-				
PI Sta 10+10.15 $\Delta = 22'05''59.0''$ (RT) $D = 110'11''03.1''$ $L = 20.06'$ $T = 10.15'$ $R = 52.00'$ SE = SEE PLAN	PI Sta 10+70.05 $\Delta = 54'31''55.5''$ (RT) $D = 59'04''04.1''$ $L = 92.32'$ $T = 49.99'$ $R = 97.00'$ SE = SEE PLAN	PI Sta 12+13.27 $\Delta = 125'28''04.5''$ (RT) $D = 110'11''03.1''$ $L = 113.87'$ $T = 49.99'$ $R = 52.00'$ SE = SEE PLAN	PI Sta 12+76.24 $\Delta = 54'31''55.5''$ (RT) $D = 59'04''04.1''$ $L = 92.32'$ $T = 49.99'$ $R = 97.00'$ SE = SEE PLAN	PI Sta 13+84.36 $\Delta = 103'21''25.8''$ (RT) $D = 110'11''03.1''$ $L = 93.80'$ $T = 65.79'$ $R = 52.00'$ SE = SEE PLAN

**Stantec**  
 Stantec Consulting Services Inc.  
 801 Jones Franklin Road  
 Suite 300  
 Raleigh, NC 27606  
 Tel. (919) 851-6866  
 Fax. (919) 851-7024  
 www.stantec.com  
 License No. F-0672

**SUNGATE DESIGN GROUP, P.A.**  
 805 JONES FRANKLIN ROAD  
 RALEIGH NORTH CAROLINA 27606  
 NC COA No. C-0890

PROJECT REFERENCE NO. W-5706L	SHEET NO. 4
ROADWAY DESIGN ENGINEER S. Smallwood Professional Engineer License No. 222037	HYDRAULICS ENGINEER J. G. Seal Professional Engineer License No. 26971
3/12/2024	3/12/2024

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

SEE SHEET 6 FOR -RBT-  
SEE SHEET 6 FOR -L- PROFILE  
SEE SHEET 7 FOR -Y1- & -Y2- PROFILES  
REMOVE ALL DRIVE PIPES ON  
PROJECT UNLESS OTHERWISE NOTED  
COORDINATE WITH ENGINEER BEFORE  
INSTALLING LIGHTING PVC



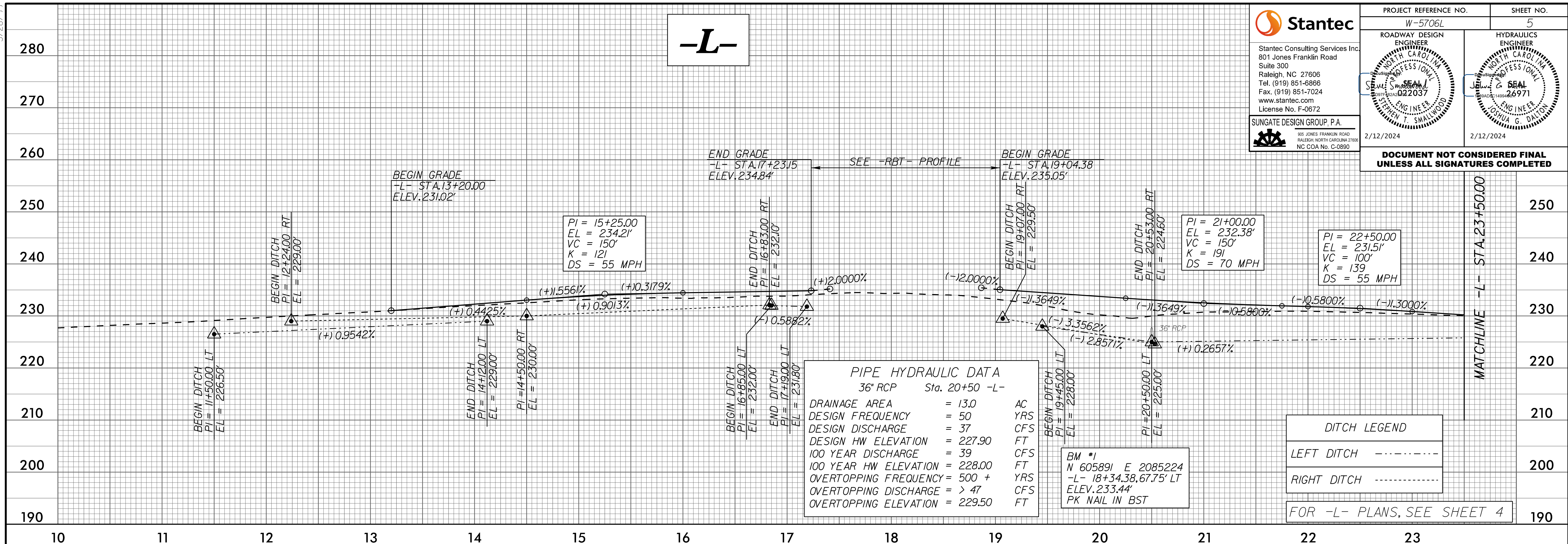
5/28/24

**Stantec**  
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 Raleigh, NC 27606  
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 www.stantec.com  
 License No. F-0672

SUNGATE DESIGN GROUP, P.A.  
 902 JONES FRANKLIN ROAD  
 RALEIGH, NORTH CAROLINA 27609  
 NC COA No. C-0890

PROJECT REFERENCE NO. W-5706L	SHEET NO. 5
ROADWAY DESIGN ENGINEER STEPHEN T. SMALLWOOD LICENSE NO. 022037	HYDRAULICS ENGINEER JOSHUA G. DALTON LICENSE NO. 26971
2/12/2024	2/12/2024

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



**PIPE HYDRAULIC DATA**  
 36" RCP Sta. 20+50 -L-

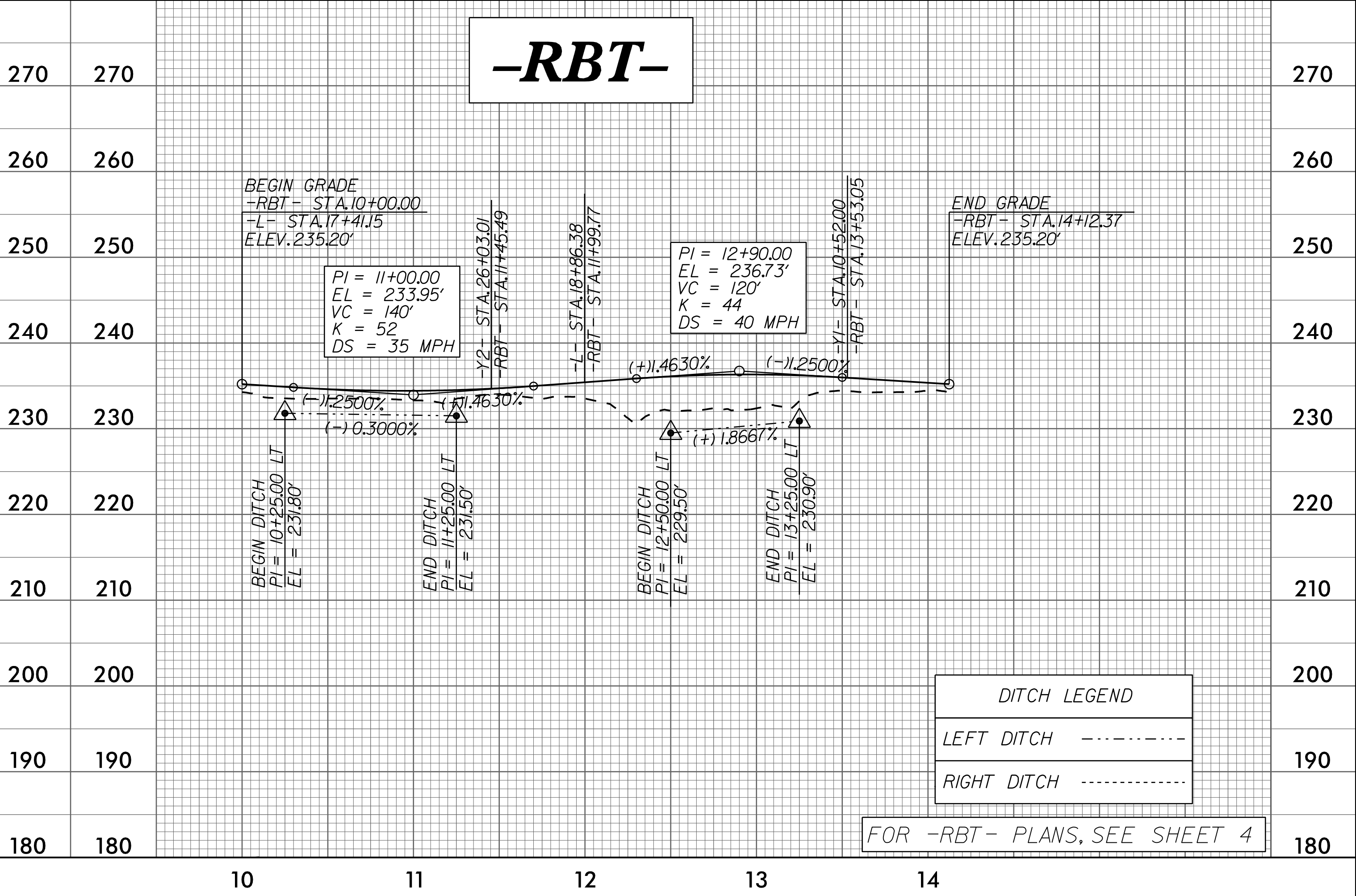
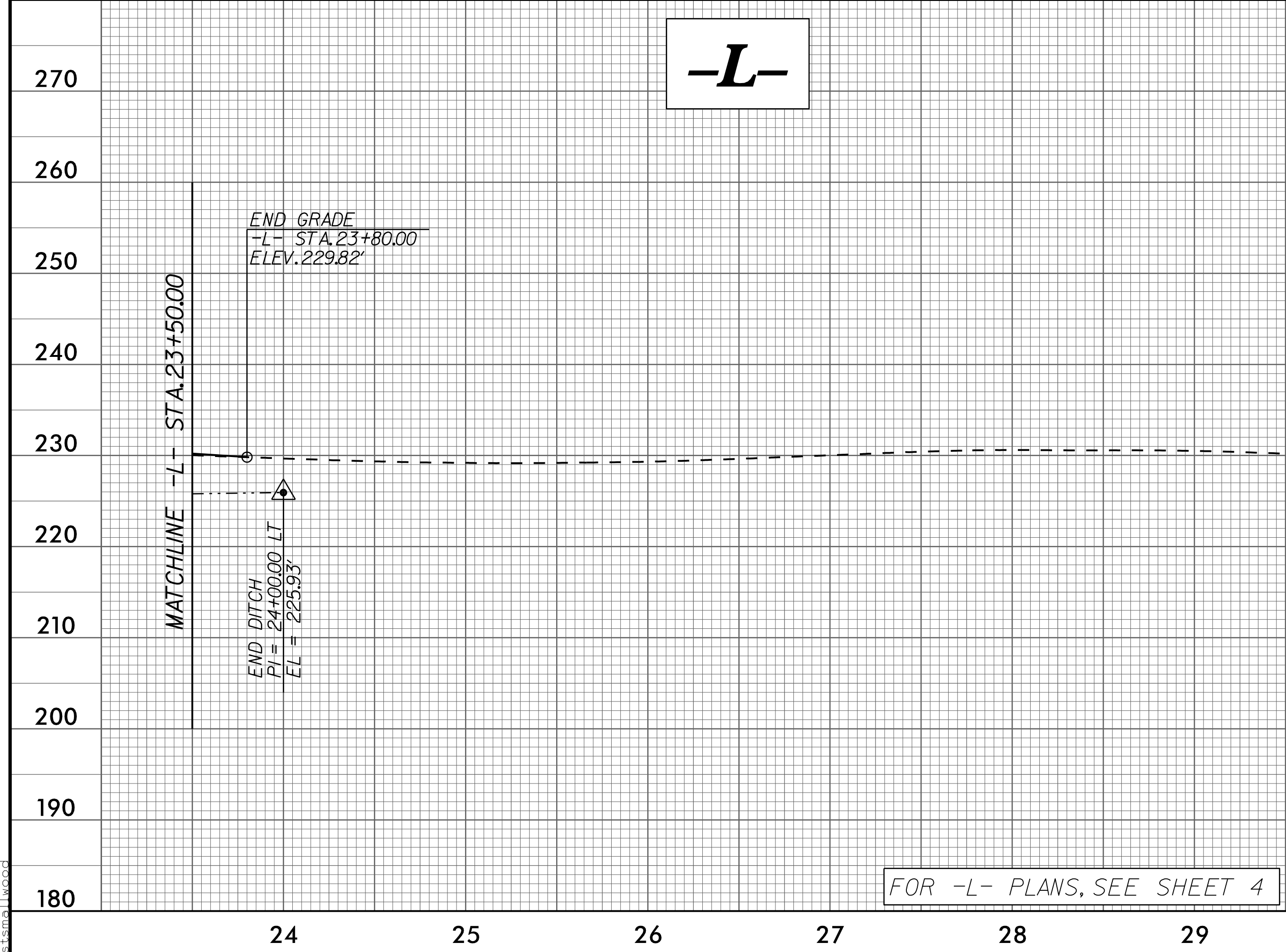
DRAINAGE AREA	= 13.0	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 37	CFS
DESIGN HW ELEVATION	= 227.90	FT
100 YEAR DISCHARGE	= 39	CFS
100 YEAR HW ELEVATION	= 228.00	FT
OVERTOPPING FREQUENCY	= 500 +	YRS
OVERTOPPING DISCHARGE	= > 47	CFS
OVERTOPPING ELEVATION	= 229.50	FT

BM #1  
 N 605891 E 2085224  
 -L- 18+34.38, 67.75' LT  
 ELEV. 233.44'  
 PK NAIL IN BST

**DITCH LEGEND**

LEFT DITCH	-----
RIGHT DITCH	-----

FOR -L- PLANS, SEE SHEET 4



2/7/2024  
 C:\Users\p11\OneDrive\Projects\W5706L\_rdy.p11.dwg  
 stanwood

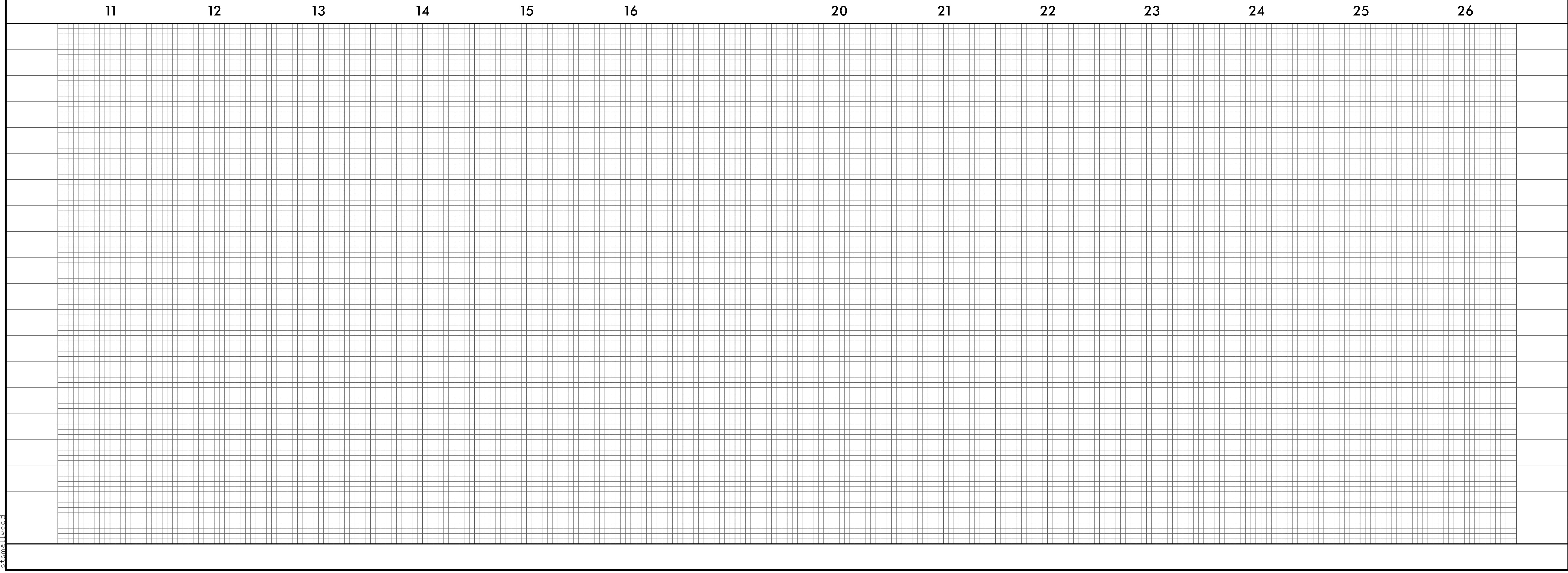
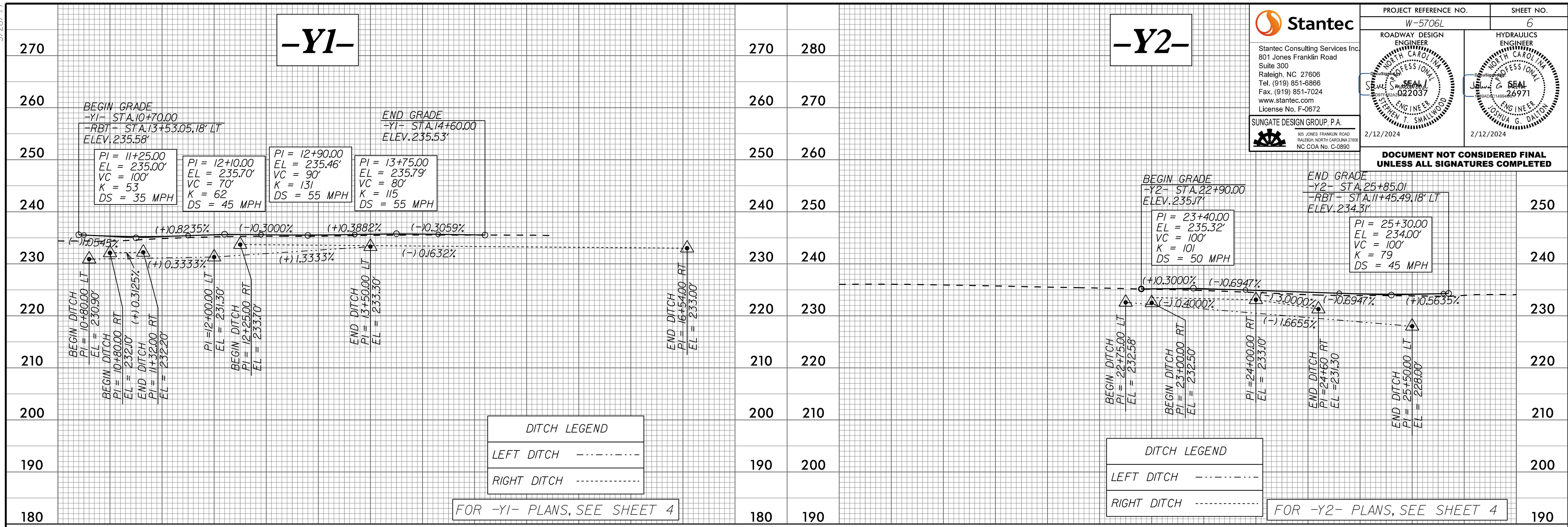
5/28/24

**Stantec**  
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 Raleigh, NC 27606  
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 www.stantec.com  
 License No. F-0672

SUNGATE DESIGN GROUP, P.A.  
 905 JONES FRANKLIN ROAD  
 RALEIGH, NORTH CAROLINA 27609  
 NC COA No. C-0890

PROJECT REFERENCE NO. W-5706L	SHEET NO. 6
ROADWAY DESIGN ENGINEER STEPHEN T. SMALLWOOD LICENSE NO. 022037	HYDRAULICS ENGINEER JOSHUA G. DALTON LICENSE NO. 26971
2/12/2024	2/12/2024

DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED



2/7/2024  
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stantec

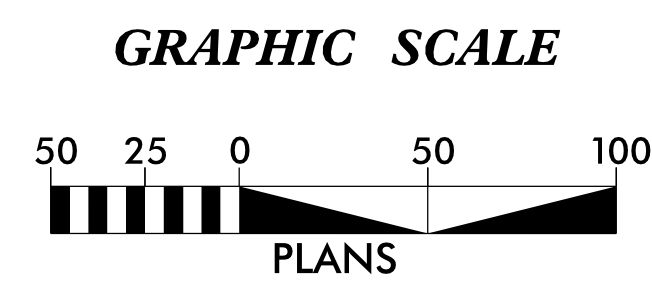
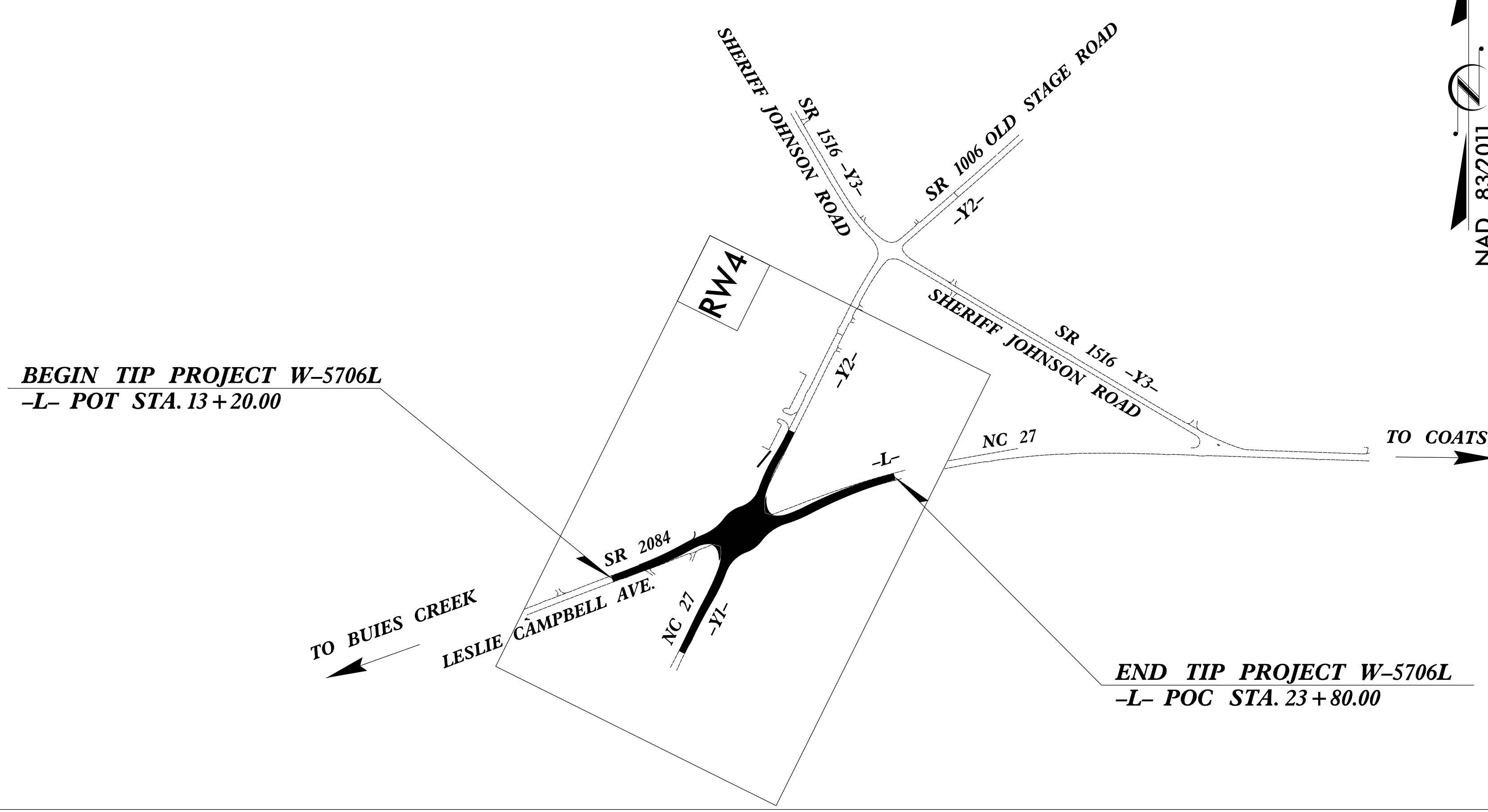
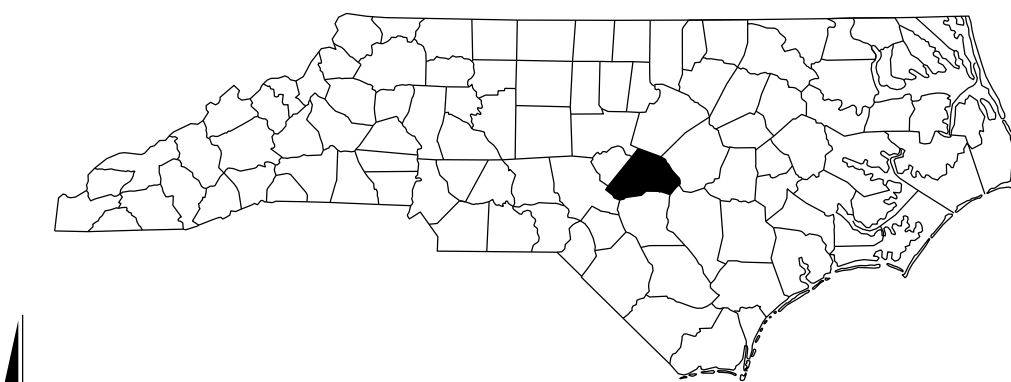
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	W-5706L	RW01	7

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

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

**HARNETT COUNTY**

**TIP PROJECT: W-5706L**



**DATUM DESCRIPTION**

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "W-5706L-101" WITH NAD 83/NSRS 2011 STATE PLANE GRID COORDINATES OF NORTHING: 605503.2805(ft) EASTING: 2084481.6765(ft) ELEVATION: 228.80(ft) THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99987076 (1/x=1.000129257) THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "W-5706L-101" TO -L- STATION 10+00.00 IS N 10° 44' 17.38" E 28.02(ft) ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES VERTICAL DATUM USED IS NAVD 88

Prepared in the Office of:

NCDOT  
LOCATION & SURVEYS  
DIVISION 6 FIELD OFFICE  
4834 US HWY 301 S  
HOPE MILLS, NC 28348

2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:  
09/30/2021

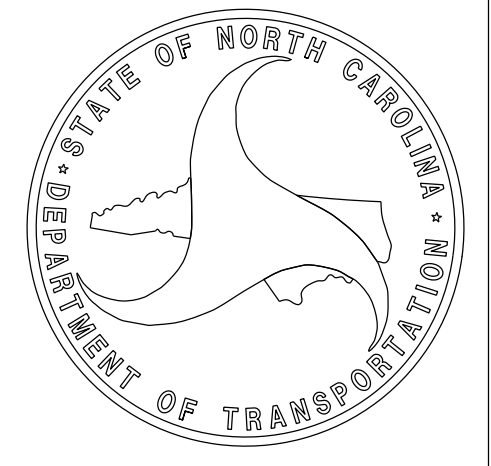
LETTING DATE:  
04/03/2024

PROFESSIONAL LAND SURVEYOR



DocuSigned by:  
Keith E. Overpeck  
SIGNATURE

12/11/2023  
Date:



11=DEC-2023 10:59  
S:\Units\Div06\HOPE\_MILLS\_PROJECTS\W-5706L\1-control\sheet\w-series\w5706L\is\_r\_w01.dgn  
wilson AT LS-329499L

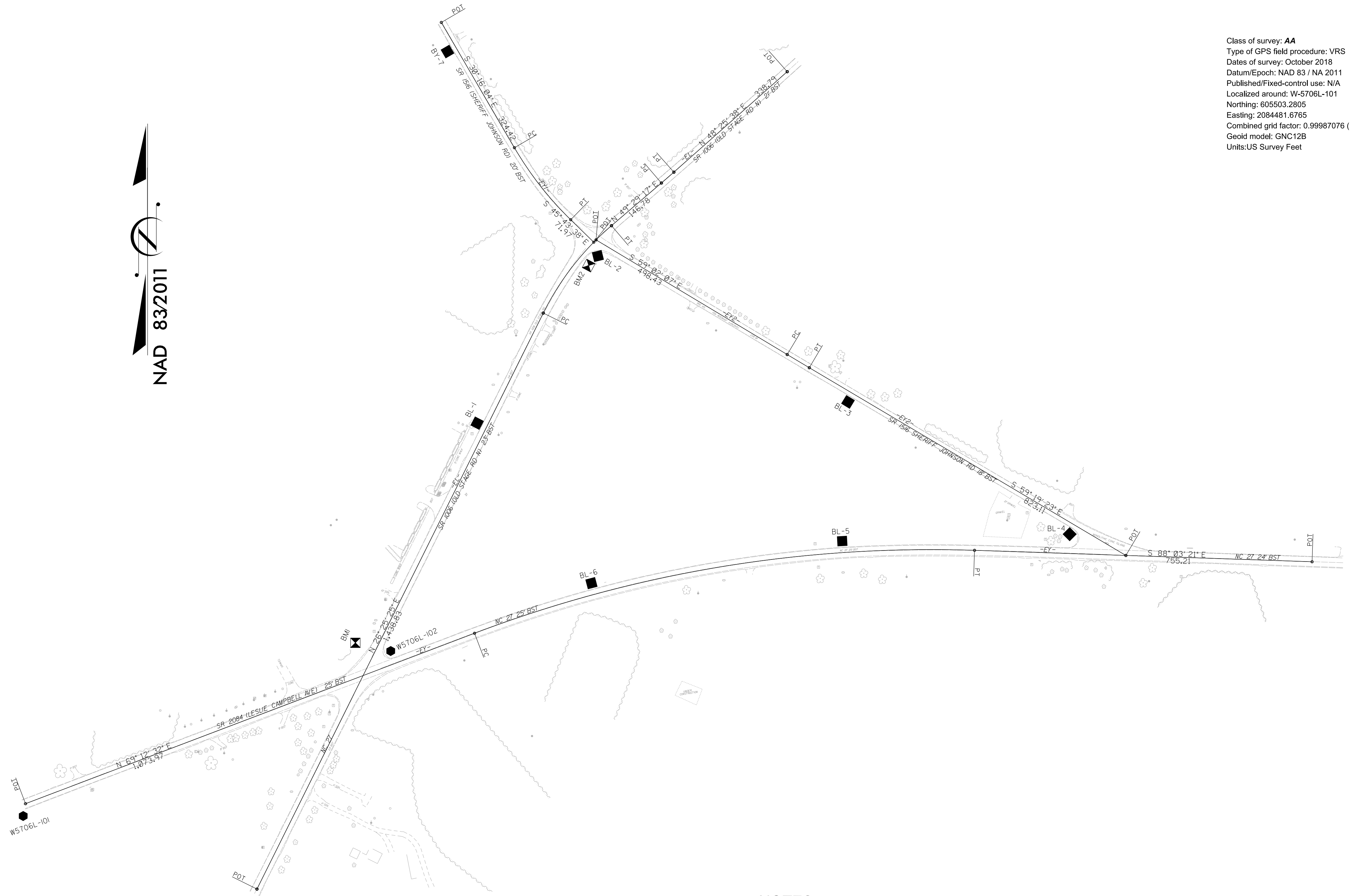
09/08/99

PROJECT REFERENCE NO.	SHEET NO.
W-5706L	RW02C-1
<b>Location and Surveys</b>	
NCDOT LOCATION & SURVEYS DIVISION & FIELD OFFICE 4834 US HWY 301 S HOPE MILLS, NC 28348	

# SURVEY CONTROL SHEET

*W/ EXISTING CENTERLINE ALIGNMENTS PRIOR TO CONSTRUCTION*

Class of survey: AA  
 Type of GPS field procedure: VRS  
 Dates of survey: October 2018  
 Datum/Epoch: NAD 83 / NA 2011  
 Published/Fixed-control use: N/A  
 Localized around: W-5706L-101  
 Northing: 605503.2805  
 Easting: 2084481.6765  
 Combined grid factor: 0.99987076 (1/x=1.000129257)  
 Geoid model: GNC12B  
 Units: US Survey Feet



**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.

# SURVEY CONTROL SHEET

**W/ EXISTING CENTERLINE ALIGNMENTS PRIOR TO CONSTRUCTION**

PROJECT REFERENCE NO. W-5706L	SHEET NO. RW02C-2
<b>Location and Surveys</b>	
NCDOT LOCATION & SURVEYS DIVISION & FIELD OFFICE 4834 US HWY 301 S HOPE MILLS, NC 28348	

Class of survey: **AA**  
 Type of GPS field procedure: VRS  
 Dates of survey: October 2018  
 Datum/Epoch: NAD 83 / NA 2011  
 Published/Fixed-control use: N/A  
 Localized around: W-5706L-101  
 Northing: 605503.2805  
 Easting: 2084481.6765  
 Combined grid factor: 0.99987076 (1/x=1.000129257)  
 Geoid model: GNC12B  
 Units: US Survey Feet

BL	POINT	DESC.	NORTH	EAST	ELEVATION
102	W5706L	GPS-102	605867.9349	2085295.9371	233.26
1	W5706L	BL-1	606373.5025	2085501.1575	235.30
2	W5706L	BL-2	606760.8485	2085763.9386	236.43

BY1	POINT	DESC.	NORTH	EAST	ELEVATION
17	W5706L	BY1-7	607219.3982	2085436.0760	229.44
20	W5706L	BL-2	606760.8485	2085763.9386	236.43
3	W5706L	BY1-3	606436.7386	2086331.7144	232.61
4	W5706L	BY1-4	606141.3012	2086826.5932	220.90

BY	POINT	DESC.	NORTH	EAST	ELEVATION
101	W5706L	GPS-101	605503.2805	2084481.6765	228.80
102	W5706L	GPS-102	605867.9349	2085295.9371	233.26
6	W5706L	BY-6	606013.8243	2085754.2563	230.10
5	W5706L	BY-5	606108.2315	2086312.9882	230.44
40	W5706L	BY1-4	606141.3012	2086826.5932	220.90

EL	POINT	N	E	BEARING	DIST	DELTA	D	L	T	R
POT		605339.815	2085004.405							
LINE				N 26°25'24.6" E	1438.83					
PC		606628.330	2085644.689							
CURVE				N 37°57'20.6" E	247.90	23°03'51.9"(RT)	09°14'28.5"	249.58	126.50	620.00
PT		606823.795	2085797.160							
LINE				N 49°29'16.6" E	146.78					
PC		606919.142	2085908.749							
CURVE				N 48°57'27.3" E	37.03	01°03'38.6"(LT)	02°51'53.2"	37.03	18.51	2000.00
PT		606943.454	2085936.675							
LINE				N 48°25'38.0" E	338.79					
POT		607168.266	2086190.128							

EY	POINT	N	E	BEARING	DIST	DELTA	D	L	T	R
POT		605530.813	2084486.898							
LINE				N 69°12'31.6" E	1073.97					
PC		605912.033	2085490.931							
CURVE				N 80°34'35.1" E	1133.35	22°44'07.1"(RT)	01°59'34.4"	1140.82	578.01	2875.00
PT		606097.599	2086608.983							
LINE				S 88°03'21.4" E	755.21					
POT		606071.979	2087363.761							

.....  
 BM1 ELEVATION = 233.44  
 N 605891 E 2085224  
 PK NAIL IN BST  
 .....

EY1	POINT	N	E	BEARING	DIST	DELTA	D	L	T	R
POT		607278.361	2085416.622							
LINE				S 30°16'04.0" E	324.42					
PC		606998.163	2085580.145							
CURVE				S 37°59'50.8" E	204.44	15°27'33.7"(LT)	07°32'20.1"	205.06	103.16	760.00
PT		606837.057	2085706.003							
LINE				S 45°43'37.7" E	71.97					
POT		606786.820	2085757.532							

.....  
 BM2 ELEVATION = 238.01  
 N 606735 E 2085746  
 PAINTED BOLT ON FIRE HYD  
 .....


EY2	POINT	N	E	BEARING	DIST	DELTA	D	L	T	R
POT		606791.979	2085762.657							
LINE				S 59°02'07.3" E	498.43					
PC		606535.532	2086190.054							
CURVE				S 59°10'44.9" E	57.52	00°17'15.3"(LT)	00°30'00.0"	57.52	28.76	11459.16
PT		606506.062	2086239.449							
LINE				S 59°19'22.6" E	823.11					
POT		606086.113	2086947.370							

**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.

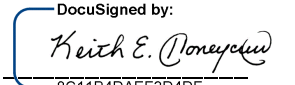
REVISIONS

# PROPOSED ALIGNMENT CONTROL SHEET

PROJECT REFERENCE NO. W-5706L	SHEET NO. RW02D-1
<b>Location and Surveys</b>	
NCDOT LOCATION & SURVEYS DIVISION 6 FIELD OFFICE 4834 US HWY 301 S HOPE MILLS, NC 28348	
PROJECT SURVEYOR 	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

I, Keith E. Honeycutt, PLS, certify that the data compiled came from available surveys/mapping performed by others and provided to me by NCDOT and do not certify to the accuracy or quality of the individual data sources.

This 11th day of December, 2023.

  
 Keith E. Honeycutt  
 Professional Land Surveyor L-4169

L

TYPE	STATION	NORTH	EAST
POT	10+00.00	605530.8128	2084486.8978
PC	14+29.64	605683.3201	2084888.5613
PRC	16+01.90	605755.7938	2085044.6669
PCC	16+74.89	605787.2318	2085110.4864
PT	17+23.15	605801.6788	2085156.4818
POT	17+93.15	605803.5718	2085226.4562
POT	18+34.38	605831.2589	2085257.0081
PC	19+04.38	605841.7567	2085326.2165
PCC	19+84.70	605857.9845	2085404.6383
PRC	20+54.08	605885.4447	2085468.2887
PCC	23+77.47	606001.8240	2085769.3424
PT	32+25.63	606097.5986	2086608.9830
POT	39+80.84	606071.9789	2087363.7608

Y1

TYPE	STATION	NORTH	EAST
POT	10+00.00	605803.5718	2085226.4562
PC	10+70.00	605739.1690	2085199.0284
PRC	11+33.53	605681.5635	2085172.4460
PRC	12+57.12	605569.3592	2085121.0052
PT	13+36.88	605498.9847	2085083.4989
POT	16+56.88	605212.4154	2084941.0980

Y2

TYPE	STATION	NORTH	EAST
POT	19+00.00	606510.0092	2085585.8931
PC	22+92.97	606158.0926	2085411.0201
PRC	23+87.83	606074.8968	2085365.4940
PRC	25+17.31	605957.5590	2085311.3492
PT	25+85.01	605896.3575	2085282.7408
POT	26+55.01	605831.2589	2085257.0081

RBT

TYPE	STATION	NORTH	EAST
PC	10+00.00	605802.1656	2085174.4752
PCC	10+20.06	605821.8251	2085177.7652
PCC	11+12.38	605881.5063	2085243.6216
PCC	12+26.25	605813.0056	2085305.6992
PCC	13+18.57	605753.3244	2085239.8427
PT	14+12.37	605802.1556	2085174.4755

Y3

TYPE	STATION	NORTH	EAST
POT	22+00.00	606490.4365	2086265.7890
POT	29+92.48	606086.1126	2086947.3697

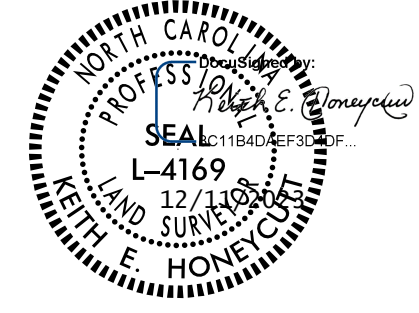
REVISIONS

I:\REG-2023\12\16\HOPE MILLS\_PROJECTS\W-5706L\1-control sheets\d-series\w5706L\_1s\_r\w02d-1.dgn  
 12/16/2023 10:06:50 AM  
 W. Wilson

**NOTES:**

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

# RIGHT OF WAY CONTROL SHEET

PROJECT REFERENCE NO. W-5706L	SHEET NO. RW03E-1
<b>Location and Surveys</b>	
NCDOT LOCATION & SURVEYS DIVISION 6 FIELD OFFICE 4834 US HWY 301 S HOPE MILLS, NC 28348	
PROJECT SURVEYOR 	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

ROW MARKER IRON PIN AND CAP-E

ALIGN	STATION	OFFSET	NORTH	EAST
L	13+30.00	26.52	605623.1623	2084804.8202
L	13+30.00	45.00	605605.8813	2084811.3816
L	13+50.00	-45.00	605697.1198	2084798.1324
L	13+50.00	-33.36	605686.2421	2084802.2626
L	14+29.64	50.00	605636.5761	2084906.3095
L	16+01.90	50.00	605712.0695	2085068.9195
L	16+01.90	-55.00	605803.8905	2085017.9891
L	16+74.89	-55.00	605838.2103	2085089.8420
L	19+84.70	70.00	605791.9433	2085427.8452
L	20+40.00	75.00	605811.5799	2085488.2119
L	20+55.00	-80.00	605956.9715	2085432.4444
L	21+50.00	41.87	605888.3487	2085571.6593
L	22+00.00	-75.00	606015.6569	2085573.2158
L	23+50.00	-50.12	606042.6691	2085729.0469

ROW MARKER IRON PIN AND CAP-E

ALIGN	STATION	OFFSET	NORTH	EAST
RBT	10+75.00	-65.00	605917.1608	2085171.1069

NOT SET

ROW MARKER IRON PIN AND CAP-E

ALIGN	STATION	OFFSET	NORTH	EAST
Y1	11+33.53	-50.00	605664.8146	2085219.5573
Y1	11+60.00	32.04	605668.6637	2085133.3462
Y1	12+57.12	-35.00	605552.0247	2085151.4111
Y1	14+00.00	-30.52	605428.8773	2085082.7436

NAIL SET

ROW MARKER IRON PIN AND CAP-E

ALIGN	STATION	OFFSET	NORTH	EAST
Y2	22+90.00	-30.01	606147.3961	2085439.2212
Y2	23+80.00	27.46	606095.5948	2085345.8631
Y2	24+33.61	-43.87	606015.1534	2085382.7010
Y2	25+17.31	65.00	605978.2790	2085249.7401

NOTES:

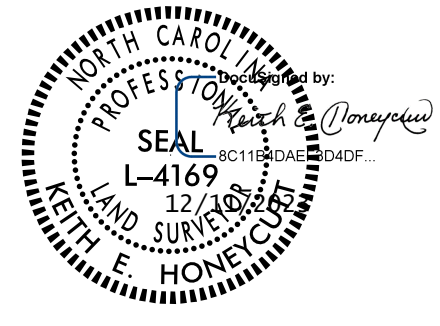
1. IF FURTHER INFORMATION REGARDING PROJECT CONTROL IS NEEDED PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.
2. PROJECT CONTROL WAS ESTABLISHED USING GNSS, THE GLOBAL NAVIGATION SATELLITE SYSTEM.
3. RIGHT OF WAY MONUMENTATION ESTABLISHED 11/30/2023 TO 12/05/2023 .

I, Keith E. Honeycutt, certify that the right of way and permanent easement monumentation for this project shown herein was completed under my direct and responsible charge from an actual survey made under my supervision; that all horizontal closures had a minimum ratio of precision of 1:10,000 (Class A). Field work was performed from 11/30/23 to 12/5/23, and all coordinates are based on NAD83/2011; That this survey was performed to meet the requirements of 21NCAC 56.1600 as applicable.

This 11th day of December, 2023.  
 Keith E. Honeycutt  
 Professional Land Surveyor L-4169

REVISIONS

# RIGHT OF WAY CONTROL SHEET

PROJECT REFERENCE NO.	SHEET NO.
W-5706L	RW03E-2
<b>Location and Surveys</b>	
NCDOT LOCATION & SURVEYS DIVISION 6 FIELD OFFICE 4834 US HWY 301 S HOPE MILLS, NC 28348	
PROJECT SURVEYOR	
	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

ROW MARKER PERMANENT EASEMENT - E

ALIGN	STATION	OFFSET	NORTH	EAST
L	16+16.00	74.10	605696.8664	2085091.4852

ROW MARKER PERMANENT EASEMENT - E

ALIGN	STATION	OFFSET	NORTH	EAST
RBT	12+56.00	-71.66	605742.9351	2085347.5502
RBT	12+58.00	-77.00	605736.8362	2085349.5111
RBT	12+70.00	-67.00	605728.3054	2085327.9845
RBT	12+76.00	-86.00	605706.9989	2085332.6565
RBT	12+84.00	-65.00	605714.9026	2085308.5719
RBT	12+87.00	-76.00	605702.9026	2085310.5224
RBT	12+94.00	-61.09	605709.3676	2085292.5529

ROW MARKER PERMANENT EASEMENT - E

ALIGN	STATION	OFFSET	NORTH	EAST
Y1	11+72.00	53.00	605666.1586	2085109.6828
Y1	11+79.00	33.22	605652.3832	2085125.3183
Y1	11+82.00	62.00	605661.2531	2085097.8011
Y1	11+96.00	49.00	605644.1775	2085104.4006

I, Keith E. Honeycutt, certify that the right of way and permanent easement monumentation for this project shown herein was completed under my direct and responsible charge from an actual survey made under my supervision; that all horizontal closures had a minimum ratio of precision of 1:10,000 (Class A). Field work was performed from 11/30/23 to 12/5/23, and all coordinates are based on NAD83/2011; That this survey was performed to meet the requirements of 21NCAC 56.1600 as applicable.

This 11th day of December, 2023.  
 Keith E. Honeycutt  
 Professional Land Surveyor L-4169

REVISIONS

I:\DEC-2023\1225\HOPE MILLS\_PROJECTS\W-5706L\1-control sheets\e-series\w5706L.1s.rw03e-2.dgn  
 AT L:\S-2024\91\wilson

**NOTES:**

1. IF FURTHER INFORMATION REGARDING PROJECT CONTROL IS NEEDED PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.
2. PROJECT CONTROL WAS ESTABLISHED USING GNSS, THE GLOBAL NAVIGATION SATELLITE SYSTEM.
3. RIGHT OF WAY MONUMENTATION ESTABLISHED 11/30/2023 TO 12/05/2023 .



**REVISIONS**

R/W REVISION NO. 1: 12/22/21 - REVISED -RBT1- DESIGN AND APPROACH LEGS -L-, -Y1- & -Y2-SS

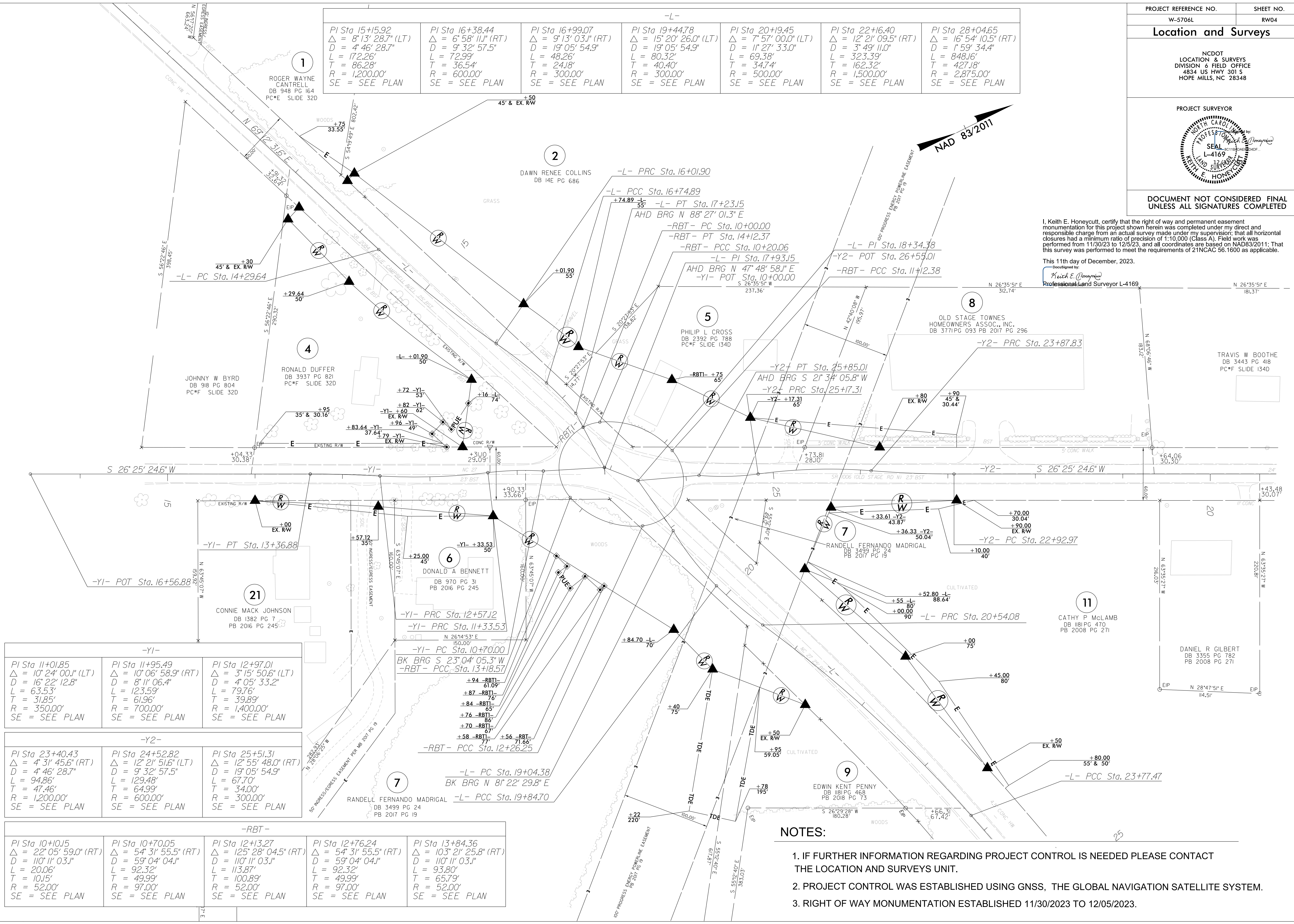
R/W REVISION NO. 2: 11/21/22 - REVISED -RBT1- DESIGN AND APPROACH LEGS -L-, -Y1- & -Y2-ELIMINATED -RBT2-SS

R/W REVISION NO. 3: 11/10/23 - REVISED PROPERTY OWNER NAME AND DEED BOOK FOR PARCEL 4 & 8. ADDED SIGNS ON PARCEL 7 SS

R/W REVISION NO. 4: 3/11/23 - ADDED NOTE TO REMOVE TREES WITHIN EXISTING ROW AND PROPOSED RIGHT OF WAY ON PARCELS 1, 2, & 7 SS

R/W REVISION NO. 5: 5/19/23 - ADDED NOTE TO REMOVE TREES WITHIN EXISTING POWER POLES ALONG PARCEL 2. MBF

11 DEC 2023 13:11 HOPE MILLS PROJECTS.W - jobs.w-5  
 11 DEC 2023 13:11 AT L.S.-3234391  
 W. WILLIAMS



PI Sta 15+15.92 Δ = 8° 13' 28.7" (LT) D = 4' 46" 28.7" L = 172.26' T = 86.28' R = 1,200.00' SE = SEE PLAN	PI Sta 16+38.44 Δ = 6° 58' 11.1" (RT) D = 9' 32' 57.5" L = 72.99' T = 36.54' R = 600.00' SE = SEE PLAN	PI Sta 16+99.07 Δ = 9° 13' 03.1" (RT) D = 19° 05' 54.9" L = 48.26' T = 24.18' R = 300.00' SE = SEE PLAN	-L- PI Sta 19+44.78 Δ = 15° 20' 26.0" (LT) D = 19° 05' 54.9" L = 80.32' T = 40.40' R = 300.00' SE = SEE PLAN	PI Sta 20+19.45 Δ = 7° 57' 00.0" (LT) D = 11° 27' 33.0" L = 69.38' T = 34.74' R = 500.00' SE = SEE PLAN	PI Sta 22+16.40 Δ = 12° 21' 09.5" (RT) D = 3' 49' 11.0" L = 323.39' T = 162.32' R = 1,500.00' SE = SEE PLAN	PI Sta 28+04.65 Δ = 16° 54' 10.5" (RT) D = 1' 59' 34.4" L = 848.16' T = 427.18' R = 2,875.00' SE = SEE PLAN
-----------------------------------------------------------------------------------------------------------------------------	--------------------------------------------------------------------------------------------------------------------------	---------------------------------------------------------------------------------------------------------------------------	-----------------------------------------------------------------------------------------------------------------------------------	---------------------------------------------------------------------------------------------------------------------------	-------------------------------------------------------------------------------------------------------------------------------	-------------------------------------------------------------------------------------------------------------------------------

-Y1-		
PI Sta 11+01.85 Δ = 10° 24' 00.1" (LT) D = 16' 22' 12.8" L = 63.53' T = 31.85' R = 350.00' SE = SEE PLAN	PI Sta 11+95.49 Δ = 10° 06' 58.9" (RT) D = 8' 11' 06.4" L = 123.59' T = 61.96' R = 700.00' SE = SEE PLAN	PI Sta 12+97.01 Δ = 3° 15' 50.6" (LT) D = 4' 05' 33.2" L = 79.76' T = 39.89' R = 1,400.00' SE = SEE PLAN

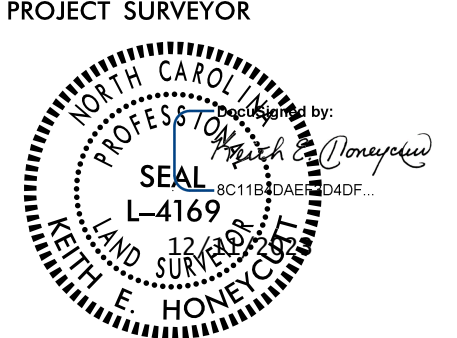
-Y2-		
PI Sta 23+40.43 Δ = 4° 31' 45.6" (RT) D = 4' 46' 28.7" L = 94.86' T = 47.46' R = 1,200.00' SE = SEE PLAN	PI Sta 24+52.82 Δ = 12° 21' 51.6" (LT) D = 9' 32' 57.5" L = 129.48' T = 64.99' R = 600.00' SE = SEE PLAN	PI Sta 25+51.31 Δ = 12° 55' 48.0" (RT) D = 19° 05' 54.9" L = 67.70' T = 34.00' R = 300.00' SE = SEE PLAN

-RBT-				
PI Sta 10+10.15 Δ = 22° 05' 59.0" (RT) D = 110° 11' 03.1" L = 20.06' T = 10.15' R = 52.00' SE = SEE PLAN	PI Sta 10+70.05 Δ = 54° 31' 55.5" (RT) D = 59° 04' 04.1" L = 92.32' T = 49.99' R = 97.00' SE = SEE PLAN	PI Sta 12+13.27 Δ = 125° 28' 04.5" (RT) D = 110° 11' 03.1" L = 113.87' T = 49.99' R = 52.00' SE = SEE PLAN	PI Sta 12+76.24 Δ = 54° 31' 55.5" (RT) D = 59° 04' 04.1" L = 92.32' T = 49.99' R = 97.00' SE = SEE PLAN	PI Sta 13+84.36 Δ = 103° 21' 25.8" (RT) D = 110° 11' 03.1" L = 93.80' T = 65.79' R = 52.00' SE = SEE PLAN

PROJECT REFERENCE NO. W-5706L SHEET NO. RW04


**Location and Surveys**

NCDOT  
 LOCATION & SURVEYS  
 DIVISION 6 FIELD OFFICE  
 4834 US HWY 301 S  
 HOPE MILLS, NC 28348

PROJECT SURVEYOR  


DOCUMENT NOT CONSIDERED FINAL  
 UNLESS ALL SIGNATURES COMPLETED

I, Keith E. Omyear, certify that the right of way and permanent easement monumentation for this project shown herein was completed under my direct and responsible charge from an actual survey made under my supervision that all horizontal closures had a minimum ratio of precision of 1:10,000 (Class A). Field work was performed from 11/30/23 to 12/5/23, and all coordinates are based on NAD83/2011. That this survey was performed to meet the requirements of 21NCAC 56.1600 as applicable.

This 11th day of December, 2023.  
 Documented by:  
  
 Professional Land Surveyor L-4169

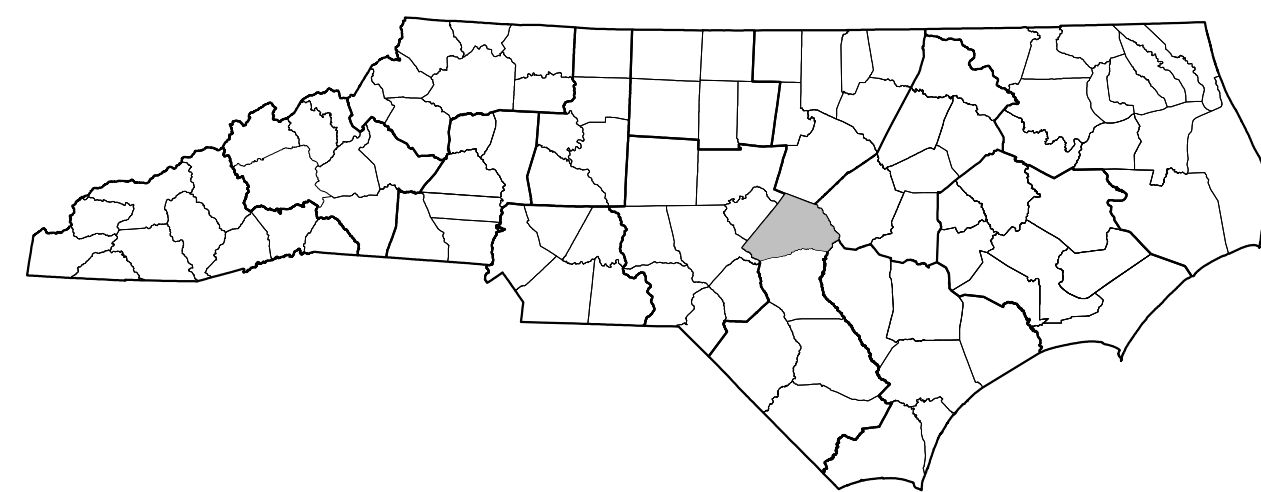
- NOTES:**
1. IF FURTHER INFORMATION REGARDING PROJECT CONTROL IS NEEDED PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.
  2. PROJECT CONTROL WAS ESTABLISHED USING GNSS, THE GLOBAL NAVIGATION SATELLITE SYSTEM.
  3. RIGHT OF WAY MONUMENTATION ESTABLISHED 11/30/2023 TO 12/05/2023.

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

**TRANSPORTATION MANAGEMENT PLAN**

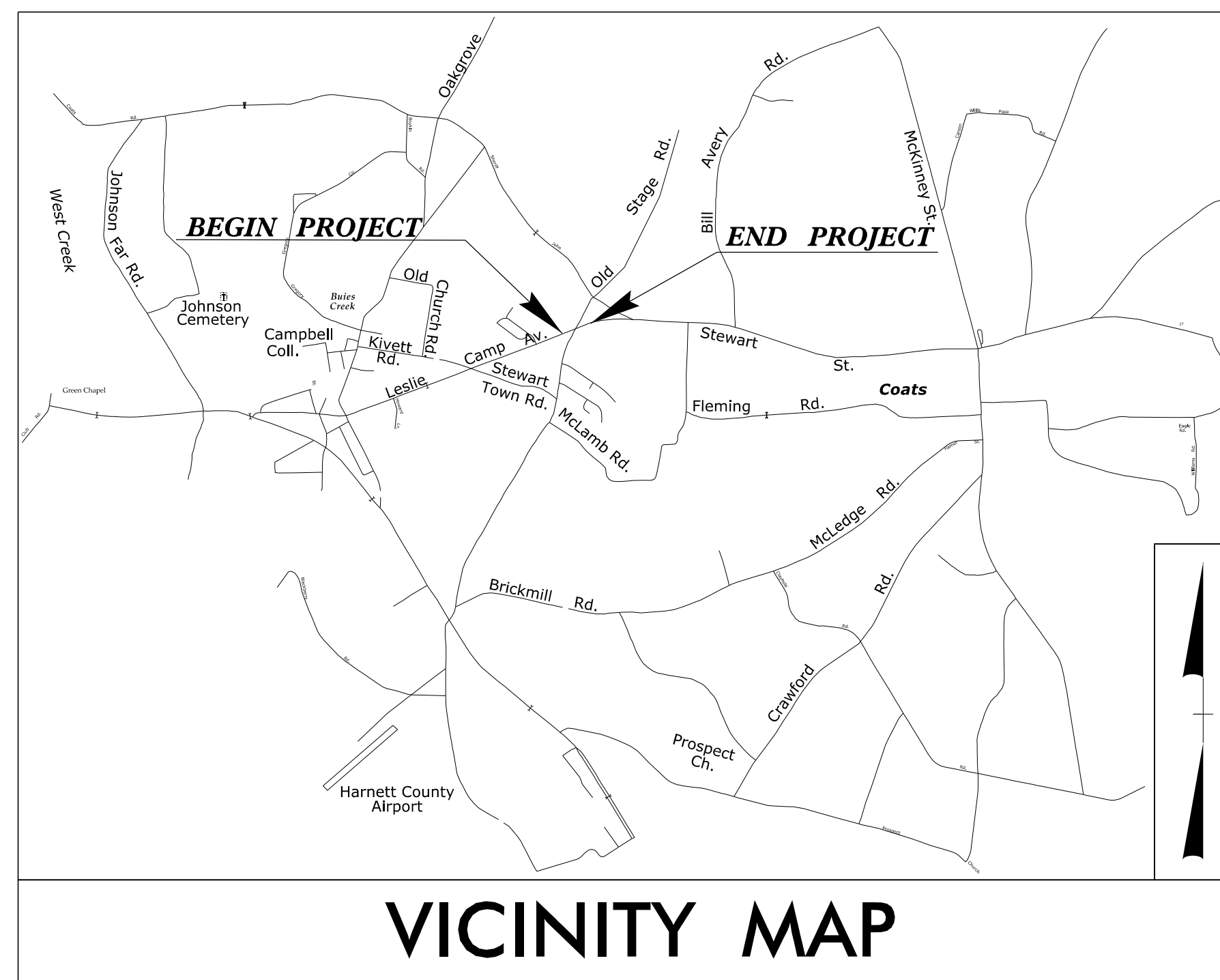
**HARNETT COUNTY**

**DIVISION 6**



**LOCATION: NC 27/SR 1006 (OLD STAGE RD N)/SR 2084 (LESLIE CAMPBELL AVE)**

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



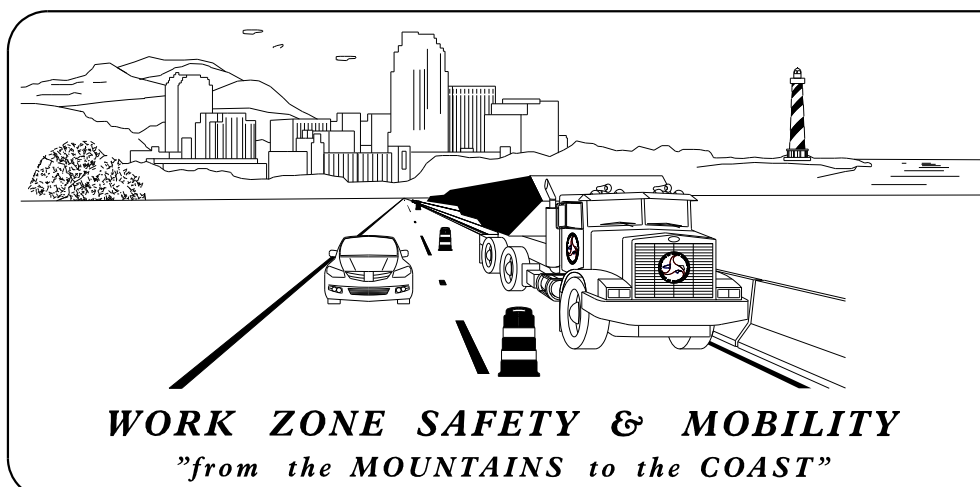
**VICINITY MAP**

**INDEX OF SHEETS**

SHEET NO.	TITLE
TMP-1	TITLE SHEET, VICINITY MAP, AND INDEX OF SHEETS
TMP-1A	LIST OF APPLICABLE ROADWAY STANDARD DRAWINGS, LEGEND, AND MANAGEMENT STRATEGIES
TMP-2	GENERAL NOTES
	TEMPORARY TRAFFIC CONTROL PLAN (TTC)
TMP-3	TEMPORARY TRAFFIC CONTROL PHASING
TMP-4	PHASE I
TMP-5	PHASE II
TMP-6 & TMP-7	SECTION VIEWS

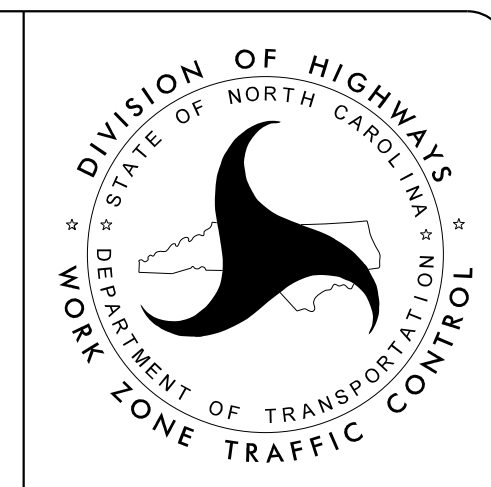
SHEET NO.  
TMP-1

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dorichardson



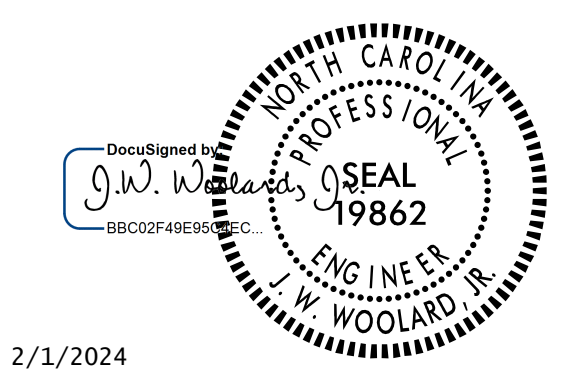
**PLANS PREPARED BY:**  
  
J. W. WOOLARD, PE  
SENIOR TRANSPORTATION ENGINEER  
  
D. E. RICHARDSON  
TRANSPORTATION DESIGNER

**NCDOT CONTACTS:**  
  
ALEX HENDERSON



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2/1/2024

**TIP PROJECT: W-5706L**

# ROADWAY STANDARD DRAWINGS

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

### DIVISION 11 - WORK ZONE TRAFFIC CONTROL

1101.01	WORK ZONE ADVANCE WARNING SIGNS
1101.02	TEMPORARY LANE 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
1130.01	DRUMS
1135.01	CONES
1145.01	BARRICADES
1150.01	FLAGGING DEVICES

### DIVISION 12 - PAVEMENT MARKINGS, MARKERS AND DELINEATORS

1205.01	PAVEMENT MARKINGS - LINE TYPES AND OFFSETS
1205.04	PAVEMENT MARKINGS - INTERSECTIONS
1205.14	PAVEMENT MARKINGS - ROUNDABOUTS
1250.01	PAVEMENT MARKER SPACING
1251.01	RAISED PAVEMENT MARKERS - PERMANENT AND TEMPORARY
1253.01	SNOWPLOWABLE RAISED PAVEMENT MARKERS
1266.01	RAISED PAVEMENT MARKERS

# MANAGEMENT STRATEGIES

BUILD THE ROUNDABOUT TO EDGE AND ELEVATION WITH FLAGGING.

RESURFACE AND WEDGE AS NECESSARY TO CONSTRUCT TO GRADE WITH FLAGGING.

# LEGEND

## GENERAL

- DIRECTION OF TRAFFIC FLOW
- EXIST. PVMT.
- PROPOSED PVMT.
- NORTH ARROW
- TEMP. SHORING (LOCATION PURPOSES ONLY)

- WORK AREA
- RESURFACING/WEDGING
- PAVEMENT REMOVAL
- TEMPORARY PAVEMENT

## PAVEMENT MARKINGS

- EXISTING LINES
- TEMPORARY MARKINGS**
- WHITE EDGE LINE
- YELLOW EDGE LINE
- BROKEN LANE LINES
- MINISKIP LANE LINES
- DOUBLE YELLOW LINES
- GORELINE
- STOP BAR

## PAVEMENT MARKING SYMBOLS

- EXISTING PAVEMENT MARKING SYMBOLS (HOLLOW)
- TEMPORARY SYMBOLS**
- PAVEMENT MARKING SYMBOLS
- PAVEMENT MARKING ALPHANUMERIC CHARACTERS

## TRAFFIC CONTROL DEVICES

- TEMPORARY DEVICES**
- BARRICADE (TYPE III)
- CONE
- DRUM
- FLAGGER

## TEMPORARY SIGNING

- TEMPORARY SIGNS**
- PORTABLE SIGN
- STATIONARY SIGN
- STATIONARY OR PORTABLE SIGN

## PAVEMENT MARKERS

- CRYSTAL/CRYSTAL
- CRYSTAL/RED
- YELLOW/YELLOW

## TEMPORARY PAVEMENT MARKINGS

SYMBOL	DESCRIPTION
	PAINT PAVEMENT MARKING LINES (4")
(P1)	WHITE EDGELINE
(P10)	YELLOW EDGELINE
(P13)	YELLOW DOUBLE CENTER
	PAINT PAVEMENT MARKING LINES (8")
(P40)	WHITE GORELINE
	PAINT PAVEMENT MARKING LINES (12")
(P55)	3 FT. - 3 FT./SP WHITE MINISKIP
(P52)	YELLOW DIAGONAL
	PAINT PAVEMENT MARKING SYMBOLS
(P102)	12" YIELD LINE TRIANGLE

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DocuSigned by:  
J.W. Williams  
19862  
2/1/2024

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

ROADWAY STANDARD DRAWINGS, AND LEGEND

# GENERAL NOTES

PROJ. REFERENCE NO.	SHEET NO.
W-5706L	TMP-2

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 UNDESIRABLE 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.

### LANE AND SHOULDER CLOSURE REQUIREMENTS

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

ROAD NAME	DAY AND TIME RESTRICTIONS
ANY ROADS	7:00 A.M.-8:30 A.M. MONDAY THRU FRIDAY (SCHOOL DAYS ONLY)

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

ROAD NAME  
ANY ROADS

HOLIDAY

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

C) DO NOT STOP TRAFFIC AS FOLLOWS:

ROAD NAME	DAY AND TIME RESTRICTIONS	DURATION AND OPERATION
ANY ROADS	SUNDAY TO SATURDAY 5:00AM TO 10:00PM	30 MINUTES TRAFFIC SHIFTS

### LANE AND SHOULDER CLOSURE REQUIREMENTS

- D) REMOVE LANE CLOSURE DEVICES FROM THE LANE WHEN WORK IS NOT BEING PERFORMED BEHIND THE LANE CLOSURE OR WHEN A LANE CLOSURE IS NO LONGER NEEDED OR AS DIRECTED BY THE ENGINEER.
- E) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN 15 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN SHOULDER USING ROADWAY STANDARD DRAWING NO. 1101.04 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL OR A LANE CLOSURE IS INSTALLED.
- F) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING ON THE SHOULDER ADJACENT TO AN UNDIVIDED FACILITY AND WITHIN 5 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN TRAVEL LANE USING ROADWAY STANDARD DRAWING NO. 1101.02 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL.

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

- G) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN A LANE OF TRAVEL OF AN UNDIVIDED OR DIVIDED FACILITY, CLOSE THE LANE ACCORDING TO THE TRANSPORTATION MANAGEMENT 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.
- H) PROVIDE TRAFFIC CONTROL FOR APPROPRIATE LANE CLOSURES FOR SURVEYING DONE BY THE DEPARTMENT.

### PAVEMENT EDGE DROP OFF REQUIREMENTS

- I) BACKFILL AT A 6:1 SLOPE UP TO THE EDGE AND ELEVATION OF EXISTING PAVEMENT IN AREAS ADJACENT TO AN OPEN TRAVEL LANE THAT HAS A 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.
- J) 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 FT IN ADVANCE AND A MINIMUM OF ONCE EVERY HALF MILE THROUGHOUT THE UNEVEN AREA.

### TRAFFIC PATTERN ALTERATIONS

- K) NOTIFY THE ENGINEER THITY (30) CALENDAR DAYS PRIOR TO ANY TRAFFIC PATTERN ALTERATION.

### TRAFFIC CONTROL DEVICES

- L) 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.

### PAVEMENT MARKINGS AND MARKERS

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


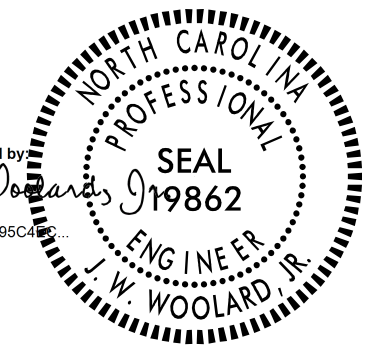
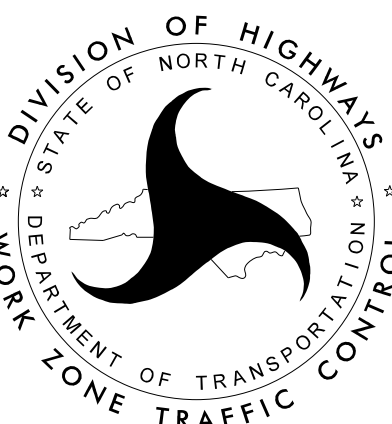
ROAD NAME	MARKING	MARKER
ALL ROADS	PAINT	TEMPORARY RAISED

- N) 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.
- O) TIE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING LINES.
- P) REMOVE/REPLACE ANY CONFLICTING/DAMAGED PAVEMENT MARKINGS AND MARKERS BY THE END OF EACH DAY'S OPERATION.
- Q) TRACE THE PROPOSED MONOLITHIC ISLAND LOCATIONS WITH THE PROPER COLOR PAVEMENT MARKING PRIOR TO INSTALLATION. PLACE DRUMS TO DELINEATE ANY PROPOSED MONOLITHIC ISLANDS BEFORE INSTALLATION.

### MISCELLANEOUS

- R) MAY USE LAW ENFORCEMENT TO MAINTAIN TRAFFIC THROUGH THE WORK AREA OR INTERSECTIONS AS SHOWN IN PLANS OR DIRECTED BY THE ENGINEER.
- S) MAINTAIN VEHICULAR ACCESS TO ALL DRIVEWAYS DURING THE LIFE OF THE CONTRACT, UNLESS OTHERWISE NOTED IN THE PHASING OR DIRECTED BY THE ENGINEER. USE INCIDENTAL STONE WHEN NECESSARY.
- T) COMPLETE ANY PROPOSED OR TEMPORARY WIDENING IN SUCH A MANNER THAT PONDING OF WATER WILL NOT OCCUR IN THE TRAVEL LANE.

3/13/2024  
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 <p>Stantec Consulting Services Inc. 801 Jones Franklin Road Suite 300 Raleigh, NC 27606 Tel. 919.851.6866 Fax. 919.851.7024 www.stantec.com License No. F-0672</p>	<p>DocuSigned by: <i>J.W. Woollard</i> 3/13/2024</p>  <p><b>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</b></p>		<p style="text-align: center; font-weight: bold;">GENERAL NOTES</p>
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# PHASING

## PHASE I

STEP 1  
USING RSD 1101.01, INSTALL ADVANCE WARNING SIGNS ON ALL ROADS

STEP 2  
USING RSD 1101.02, SHEET 1, CONSTRUCT -L-, -Y1-, AND -Y2- UP TO THE PROPOSED SUBGRADE AND INSTALL ALL PROPOSED DRAINAGE. SEE TMP-4.

STEP 3  
USING RSD 1101.02, SHEET 1, CONSTRUCT -L-, -Y1-, AND -Y2- UP TO, BUT NOT INCLUDING, THE FINAL LAYER OF SURFACE COURSE.

NOTE: INSTALL TEMP PVMT MARKINGS AND MARKERS ON INTERMEDIATE LAYERS IN EXIST PATTERN AS NECESSARY. SEE TMP-4.

STEP 4  
USING RSD 1101.02, SHEETS 1 AND 18, INSTALL TEMPORARY PAVEMENT MARKINGS IN FINAL PATTERN. SEE TMP-5 AND PMP.

## PHASE II

STEP 1  
USING RSD 1101.02, SHEETS 1 AND 18, SHIFT TRAFFIC TO THE PROPOSED PATTERN. SEE TMP-5.

STEP 2  
USING RSD 1101.02, SHEETS 1 AND 18, INSTALL ALL CONCRETE ISLANDS.

STEP 3  
USING RSD 1101.02, SHEETS 1 AND 18, INSTALL FINAL LAYER OF SURFACE COURSE TO -L-, -Y1-, AND -Y2- TO FINAL LAYER OF SURFACE COURSE. SEE TMP-5.

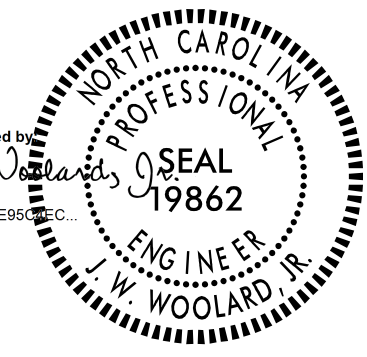
STEP 4  
USING RSD 1101.02, SHEETS 1 AND 18, INSTALL ALL PERMANENT PAVEMENT MARKINGS AND MARKERS.

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2/1/2024

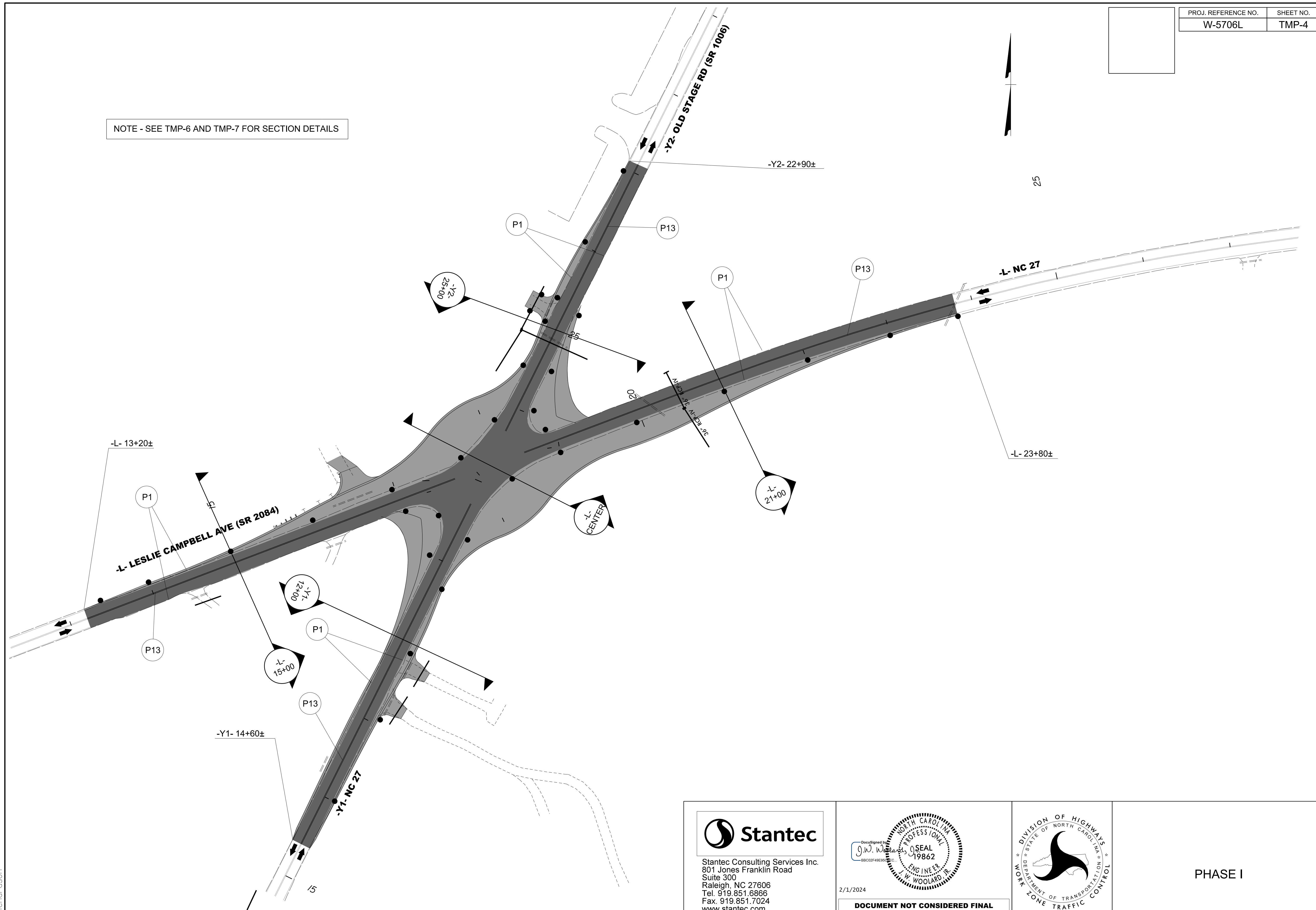
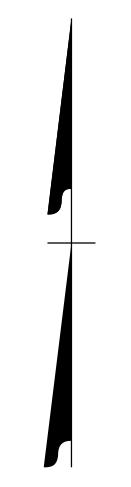
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DIVISION OF HIGHWAYS  
STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
WORK ZONE TRAFFIC CONTROL

PHASING

NOTE - SEE TMP-6 AND TMP-7 FOR SECTION DETAILS



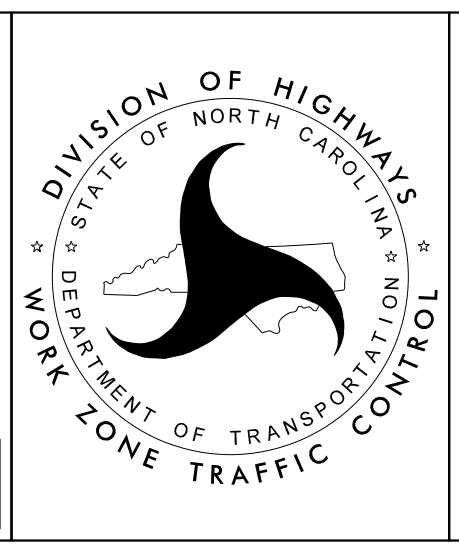
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dorichardson

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License No. F-0672

DocuSigned by:  
J.W. Woolard  
BBOC2F49E93C...

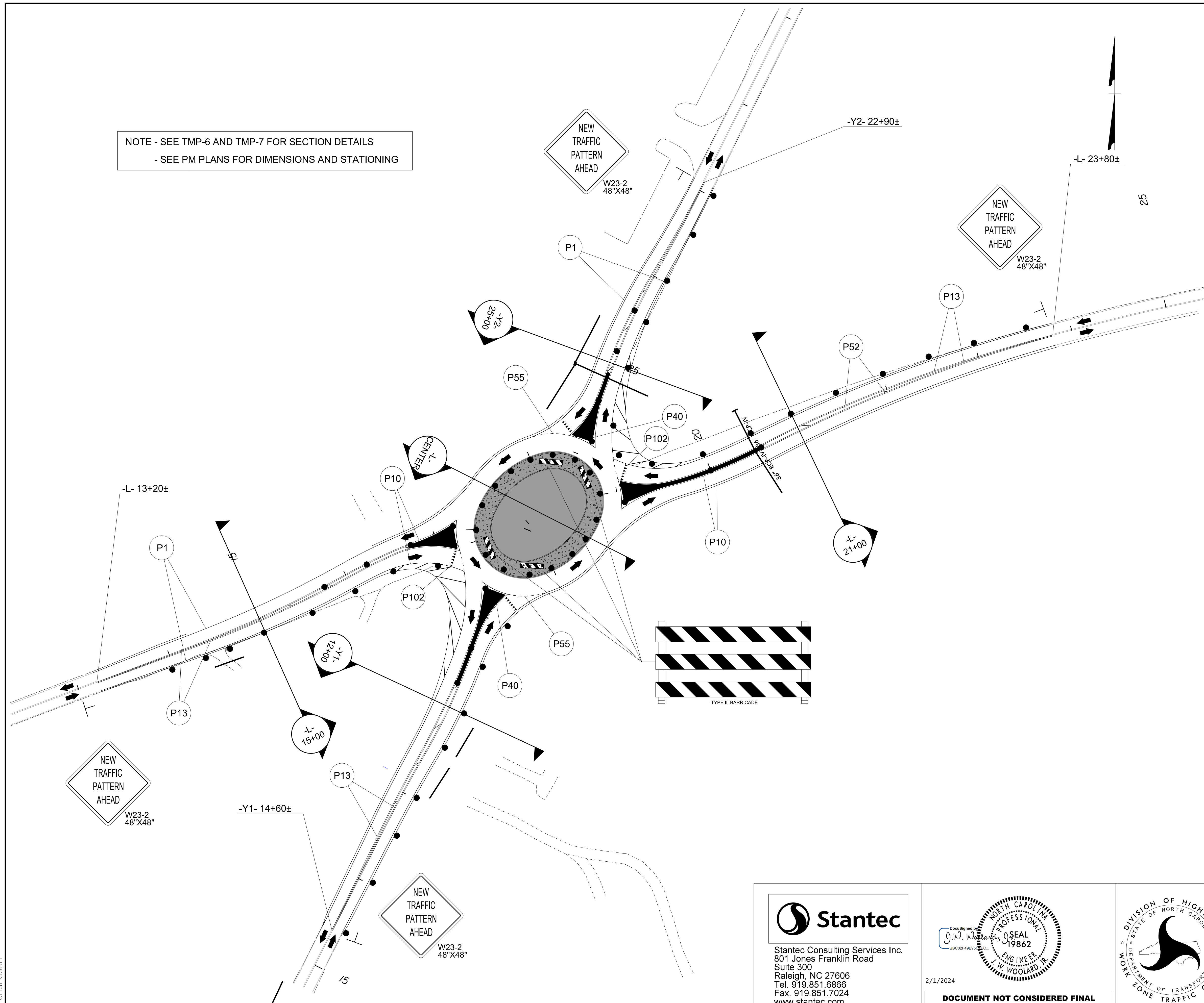
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UNLESS ALL SIGNATURES COMPLETED**



PHASE I

NOTE - SEE TMP-6 AND TMP-7 FOR SECTION DETAILS  
 - SEE PM PLANS FOR DIMENSIONS AND STATIONING



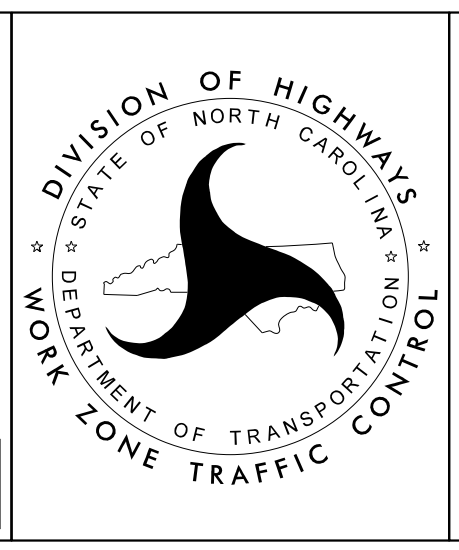
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 dorichardson

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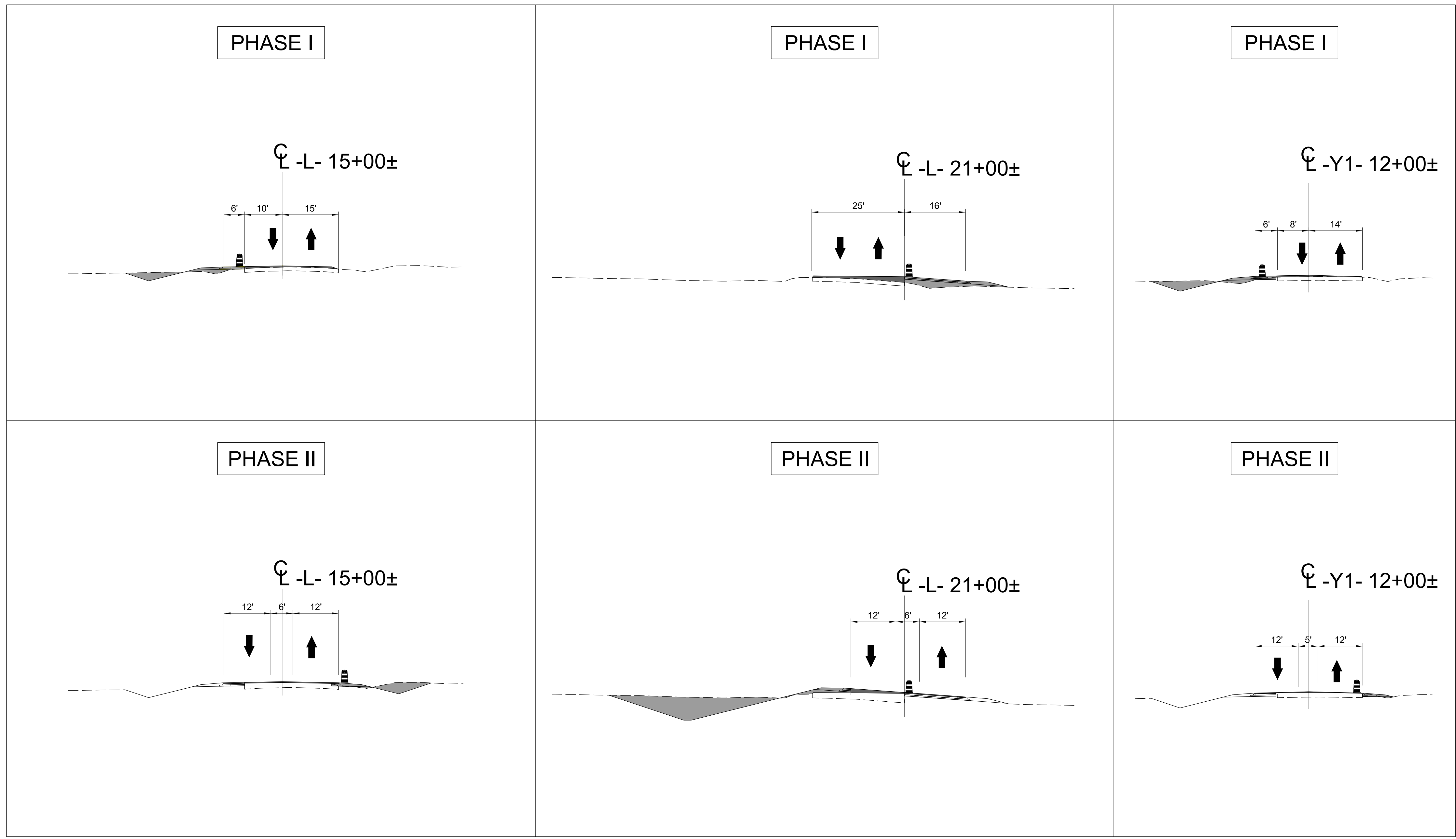
DocuSigned by:  
 J.W. Woolard  
 2/1/2024

PROFESSOR  
 SEAL  
 19862  
 ENGINEER  
 W. WOOLARD, R.

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PHASE II

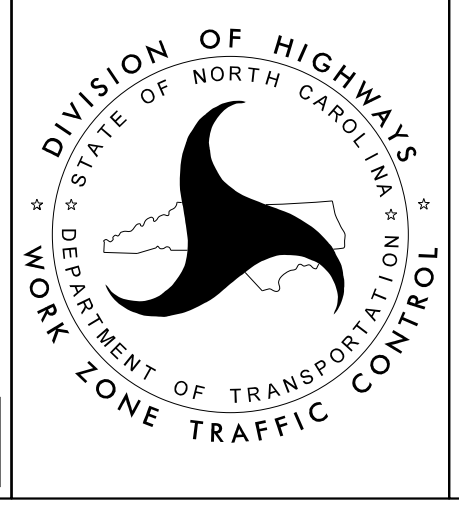


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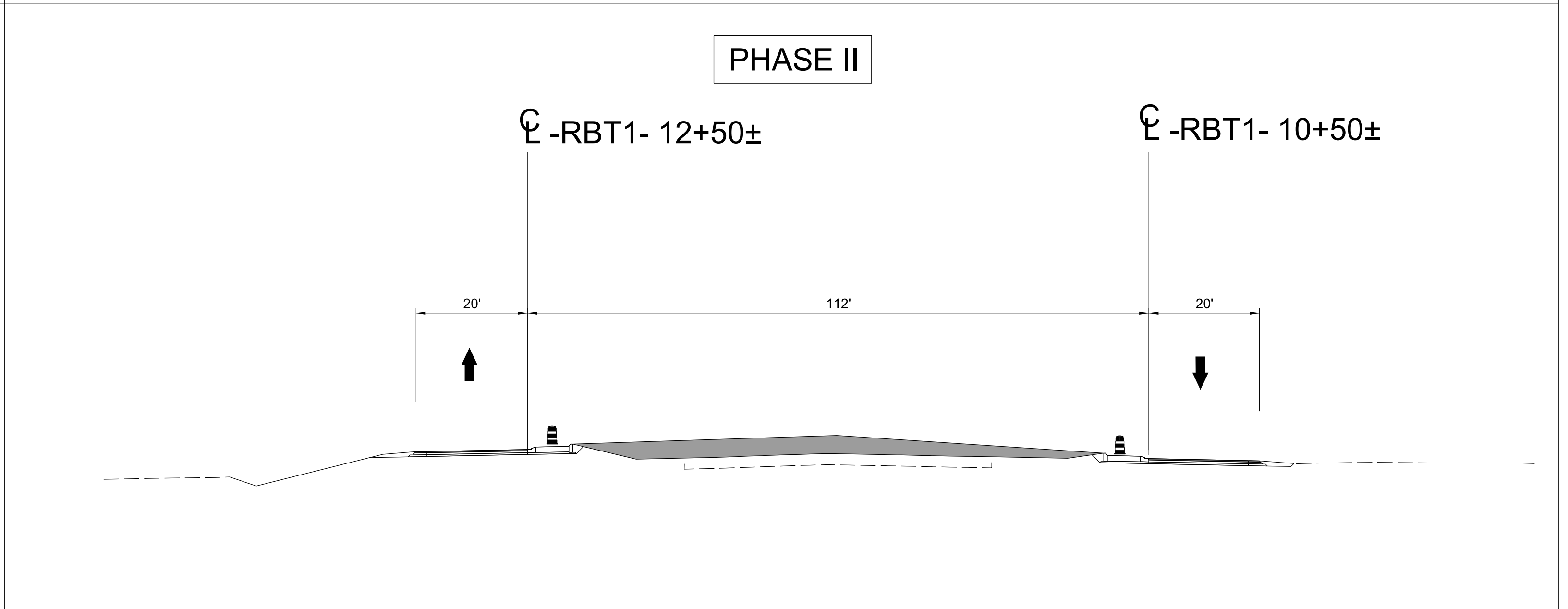
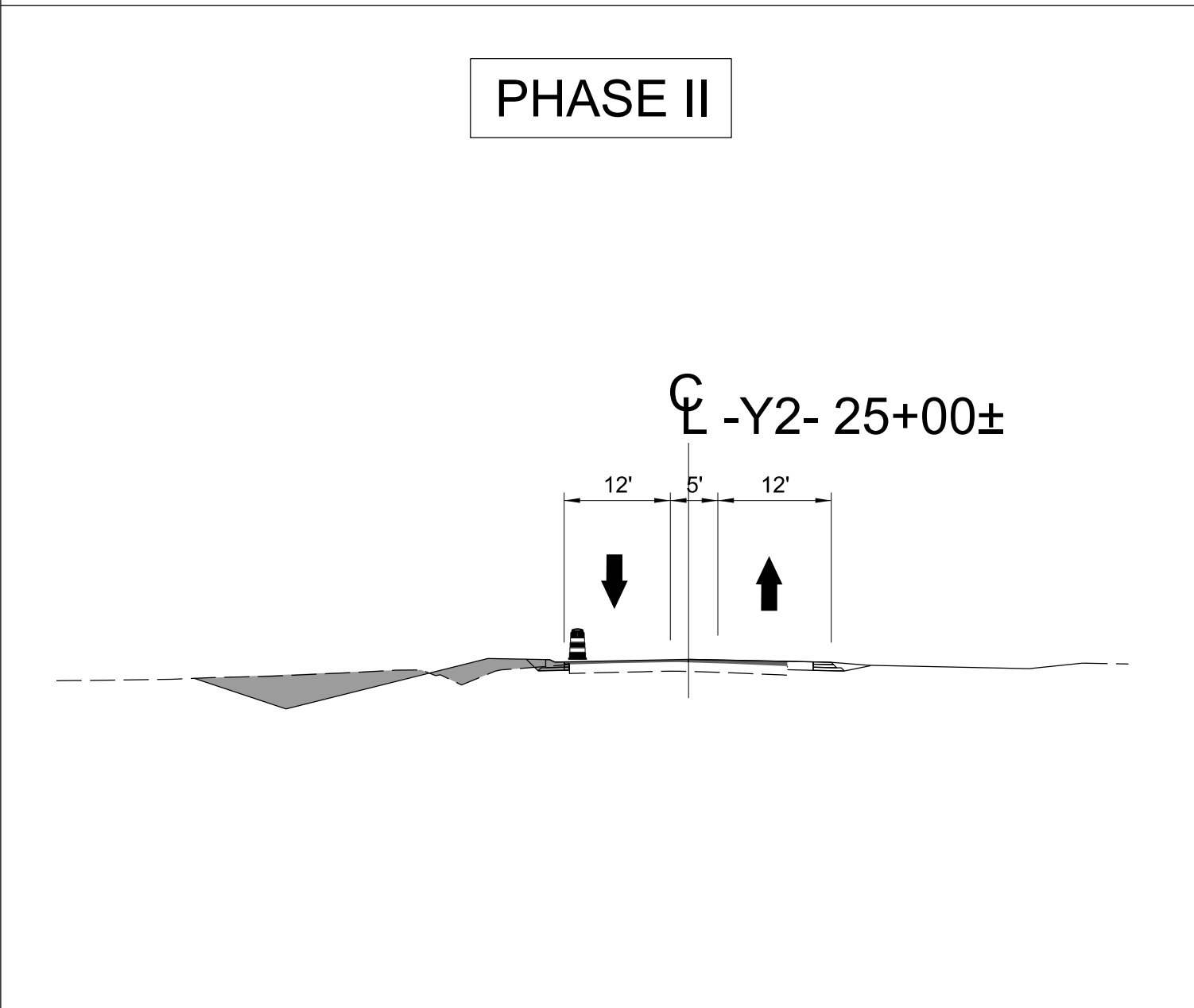
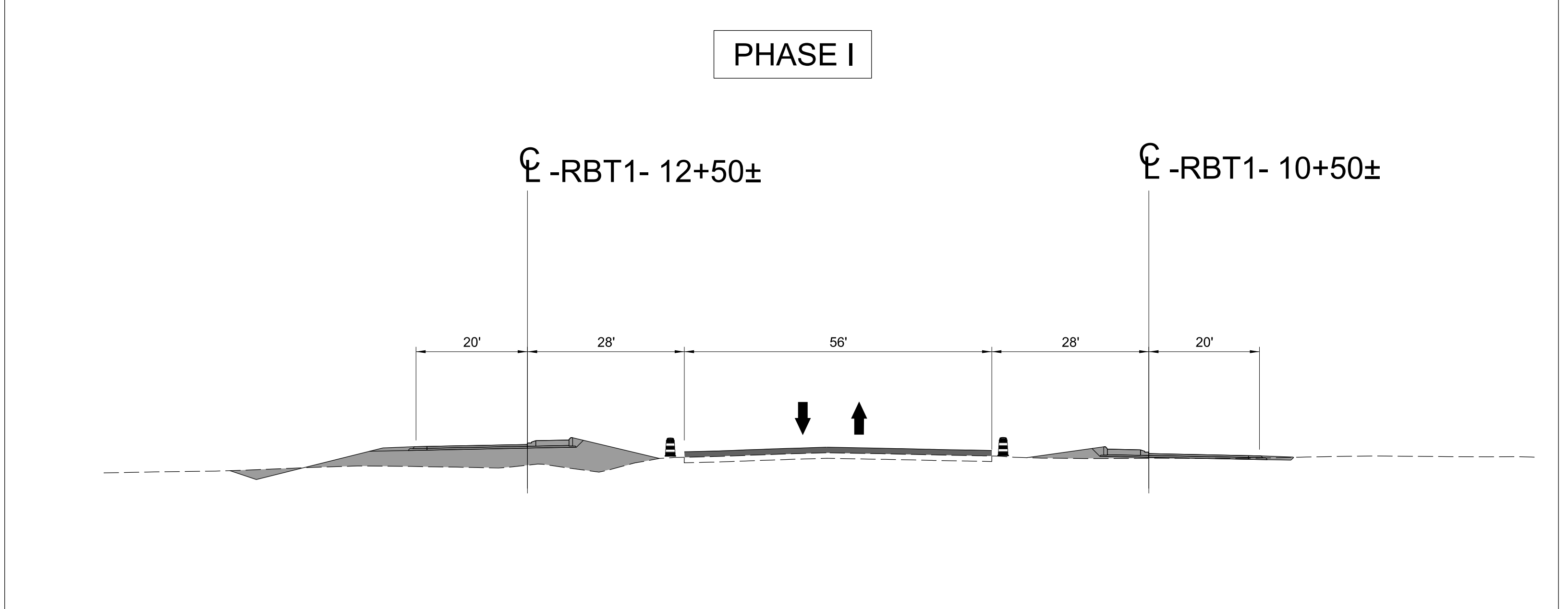
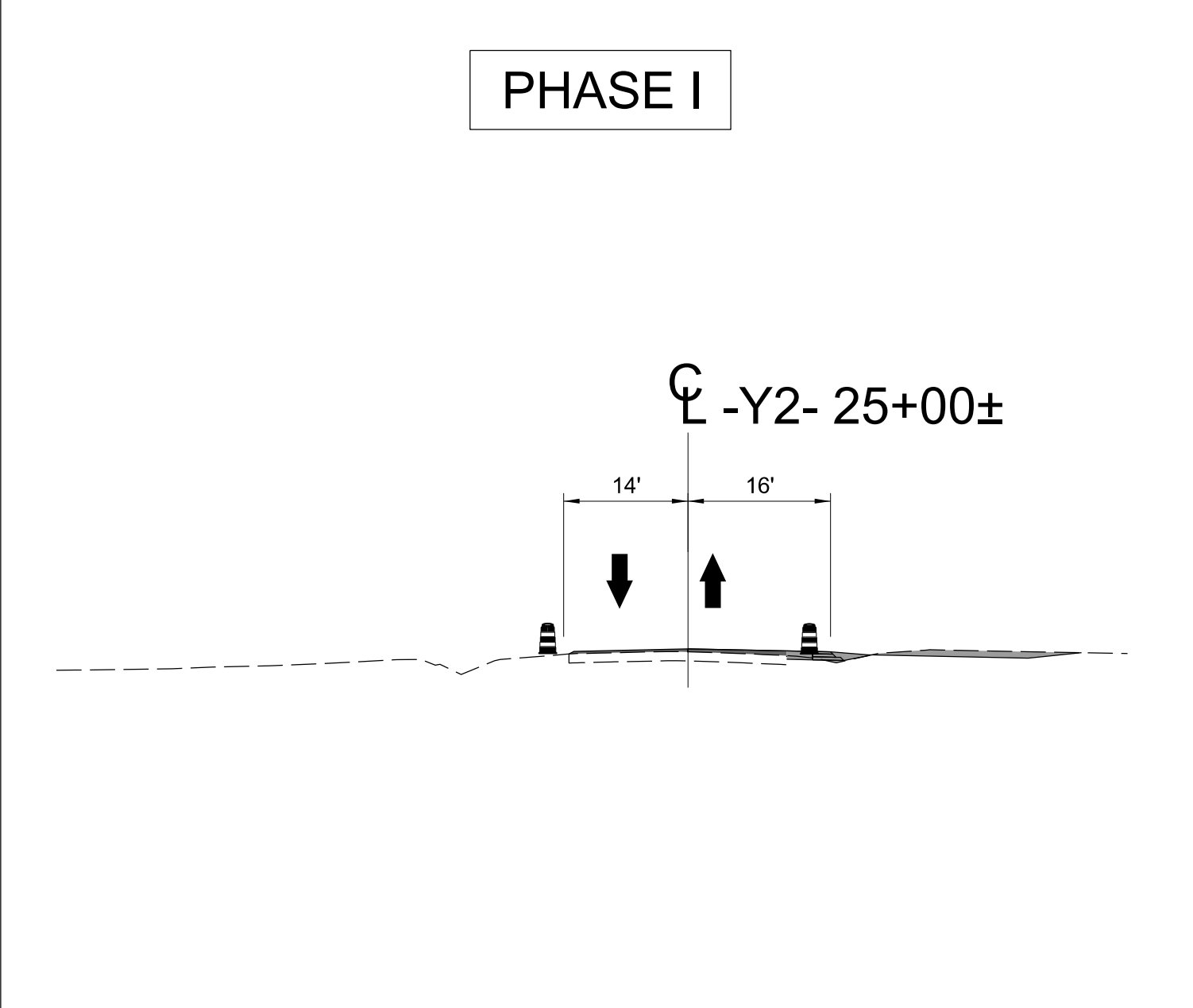
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J.W. Williams  
19862

2/1/2024  
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SECTION VIEWS



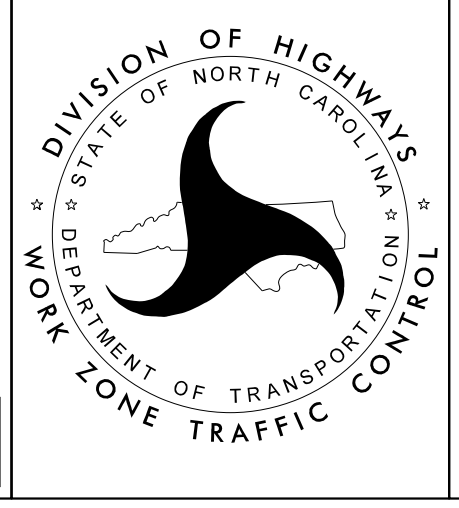


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2/1/2024

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**SECTION VIEWS**

**CONTRACT NO. DF00465 TIP PROJECT: W-5706L**

**STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION**

**PAVEMENT MARKING PLAN  
HARNETT COUNTY**

**LOCATION: NC 27/SR 1006 (OLD STAGE RD N)/SR 2084 (LESLIE CAMPBELL AVE)**

<b>PROJECT NAME</b> W-5706L	<b>SHEET NO.</b> PMP - 1
<b>APPROVED:</b> <small>DocuSigned by: Regina M. Muncey CFE51B522454FA</small>	
<b>DATE:</b> 3/26/2024	
<b>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</b>	

**ROADWAY STANDARD DRAWINGS**

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

STD. NO.	TITLE
1205.01	PAVEMENT MARKINGS - LINE TYPES & OFFSETS
1205.02	PAVEMENT MARKINGS - 2 LANE & MULTILANE ROADWAYS
1205.04	PAVEMENT MARKINGS - INTERSECTIONS
1205.08	PAVEMENT MARKINGS - SYMBOLS & WORD MESSAGES
1205.09	PAVEMENT MARKINGS - PAINTED ISLANDS
1205.14	PAVEMENT MARKINGS - ROUNDABOUTS
1250.01	RAISED PAVEMENT MARKERS - INSTALLATION SPACING
1251.01	RAISED PAVEMENT MARKERS - PERMANENT & TEMPORARY
1261.01	GUARDRAIL AND BARRIER DELINEATORS - INSTALLATION SPACING
1261.02	GUARDRAIL & BARRIER DELINEATORS - TYPES AND MOUNTING
1262.01	GUARDRAIL END DELINEATION

**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	RAISED
- B) TIE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING LINES.
- C) REMOVE/REPLACE ANY CONFLICTING/DAMAGED PAVEMENT MARKINGS AND MARKERS.
- D) PASSING ZONES WILL BE DETERMINED IN THE FIELD AND MUST BE APPROVED BY THE ENGINEER.
- E) 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.

**FINAL PAVEMENT MARKING SCHEDULE**

SYMBOL	DESCRIPTION	PAY ITEM
T1	WHITE EDGELINE	(4", 90 MILS) THERMOPLASTIC
T10	YELLOW EDGELINE	(4", 90 MILS) THERMOPLASTIC
T13	YELLOW DOUBLE CENTER	(4", 90 MILS) THERMOPLASTIC
T40	WHITE GORELINE	(8", 90 MILS) THERMOPLASTIC
T51	WHITE DIAGONAL	(12", 240 MILS) THERMOPLASTIC
T52	YELLOW DIAGONAL	(12", 90 MILS) THERMOPLASTIC
T55	3FT-3FT/SP WHITE MINISKIP	(12", 90 MILS) THERMOPLASTIC
T103	24" YIELD LINE TRIANGLE	(90 MILS) THERMOPLASTIC

**INDEX**

SHEET NO.	DESCRIPTION
PMP - 1	PAVEMENT MARKING PLAN TITLE AND SCHEDULE SHEET
PMP - 2	PAVEMENT MARKING DETAIL

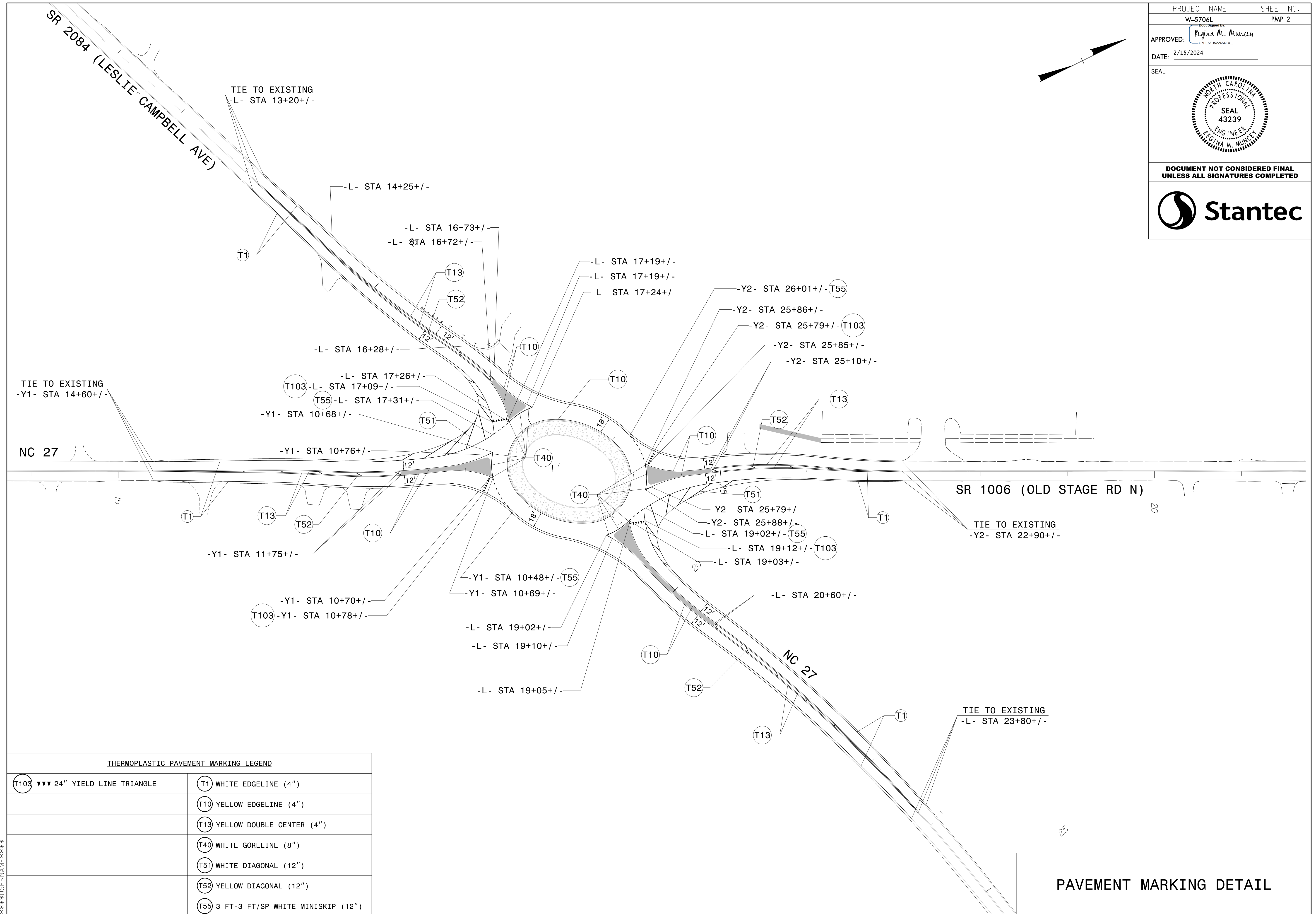
**PLAN PREPARED BY:**

**REGINA M. MUNCEY, PE** TRANSPORTATION ENGINEER  
**ROSI R. HENNEIN** TRANSPORTATION DESIGNER



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PROJECT NAME	SHEET NO.
W-5706L	PMP-2
APPROVED: <i>Regina M. Muncy</i>	
DATE: 2/15/2024	
<b>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</b>	



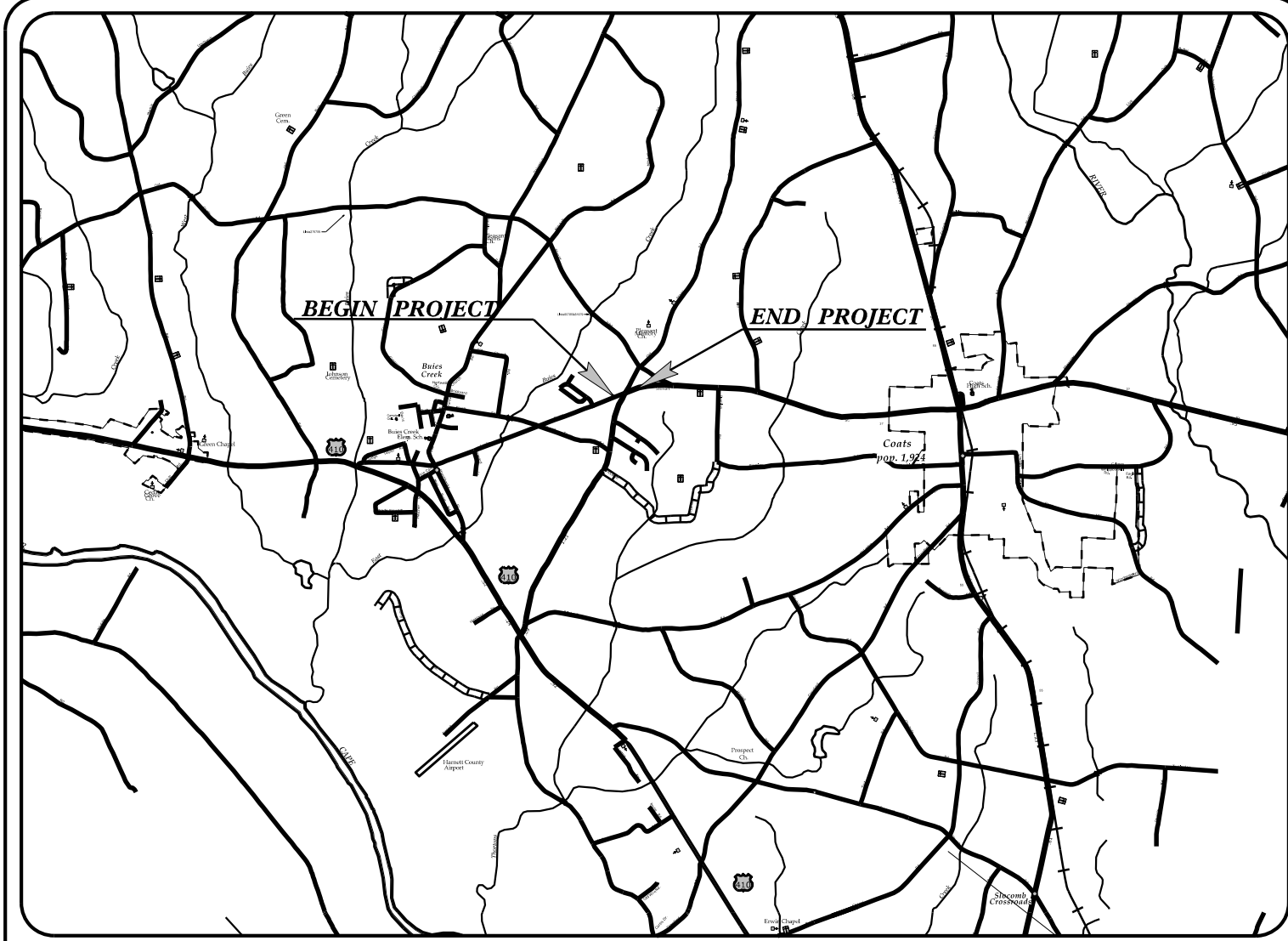
THERMOPLASTIC PAVEMENT MARKING LEGEND	
T103 ▼▼▼ 24" YIELD LINE TRIANGLE	T1 WHITE EDGELINE (4")
	T10 YELLOW EDGELINE (4")
	T13 YELLOW DOUBLE CENTER (4")
	T40 WHITE GORELINE (8")
	T51 WHITE DIAGONAL (12")
	T52 YELLOW DIAGONAL (12")
	T55 3 FT-3 FT/SP WHITE MINISKIP (12")

**PAVEMENT MARKING DETAIL**

\$\$\$SYTIME\$\$\$\$\$  
 \$\$\$DGN\$\$\$\$\$  
 \$\$\$USERNAME\$\$\$\$\$

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	W-5706L	EC-1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
44852.1.12	HSIP-0027(019)	PE	
44852.2.12	HSIP-0027(019)	R / W	
44852.2.33	HSIP-0027(019)	UTIL.	
44852.3.12	HSIP-0027(019)	CONSTR.	

**TIP PROJECT: W-5706L**



**VICINITY MAP**  
NOT TO SCALE

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS  

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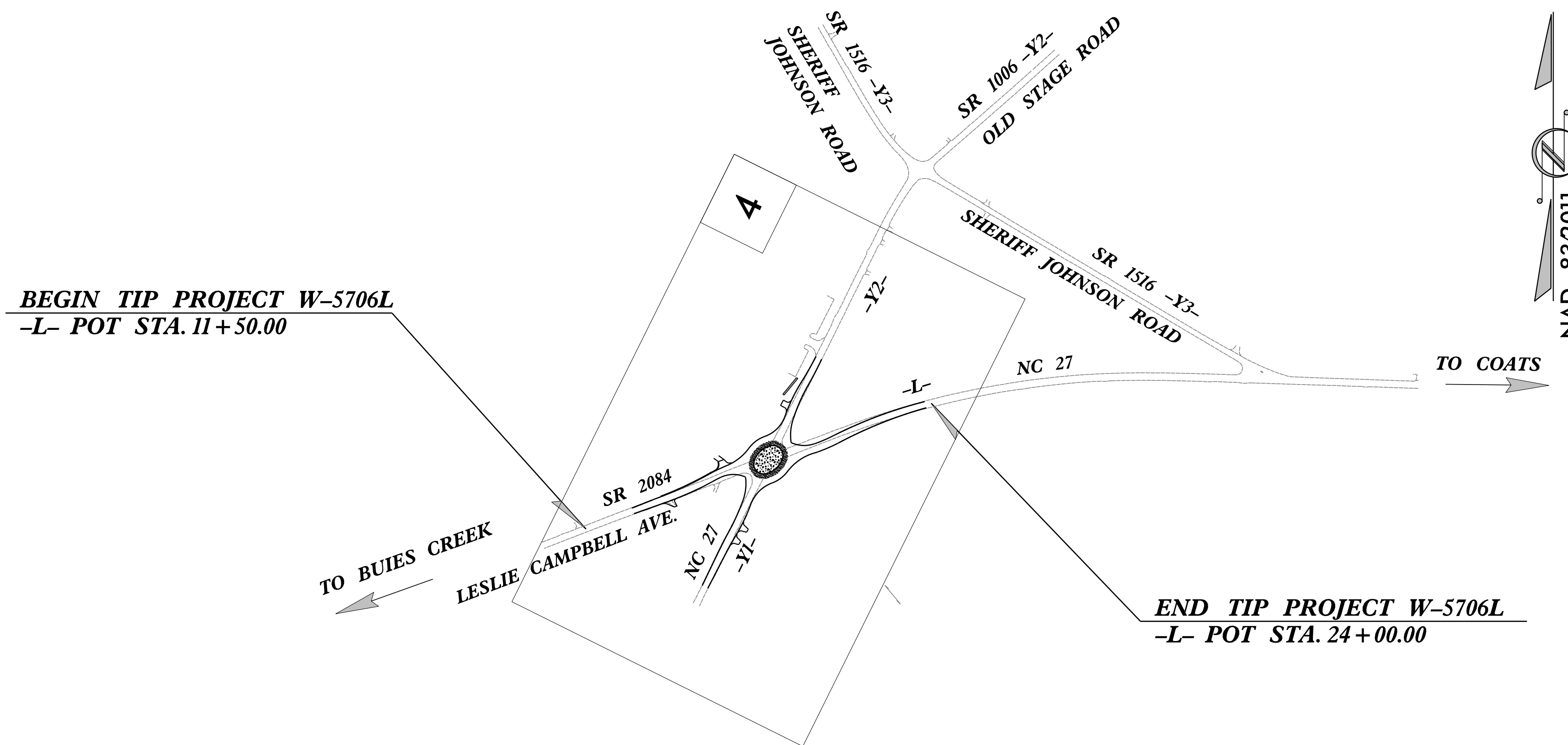
**PLAN FOR PROPOSED  
HIGHWAY EROSION CONTROL**  

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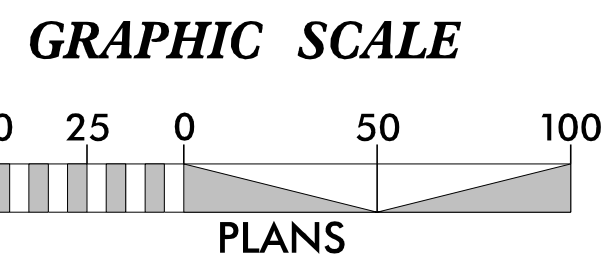
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**HARNETT COUNTY**

LOCATION: NC 27/SR 1007(OLD STAGE RD.)  
SR 2084(LESLIE CAMPBELL AVE)  
TYPE OF WORK: GRADING, DRAINAGE, & PAVING



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



THESE EROSION AND SEDIMENT CONTROL PLANS COMPLY  
WITH THE REGULATIONS SET FORTH BY THE  
NCG-010000 GENERAL CONSTRUCTION PERMIT EFFECTIVE APRIL 1, 2019  
ISSUED BY THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND  
NATURAL RESOURCES DIVISION OF WATER QUALITY.

Prepared in the Office of:  
**SUNGATE DESIGN GROUP, P.A.**

905 JONES FRANKLIN ROAD  
RALEIGH, NORTH CAROLINA 27606  
TEL (919) 859-2243  
ENG FIRM LICENSE NO. C-890

**2024 STANDARD SPECIFICATIONS**

Designed by:  
**JAKE STANOVICH** **4461**  
NAME LEVEL III CERTIFICATION NO.

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

12/19/2023 EC.dsn\_psh\_01.dgn  
J.Stanovich

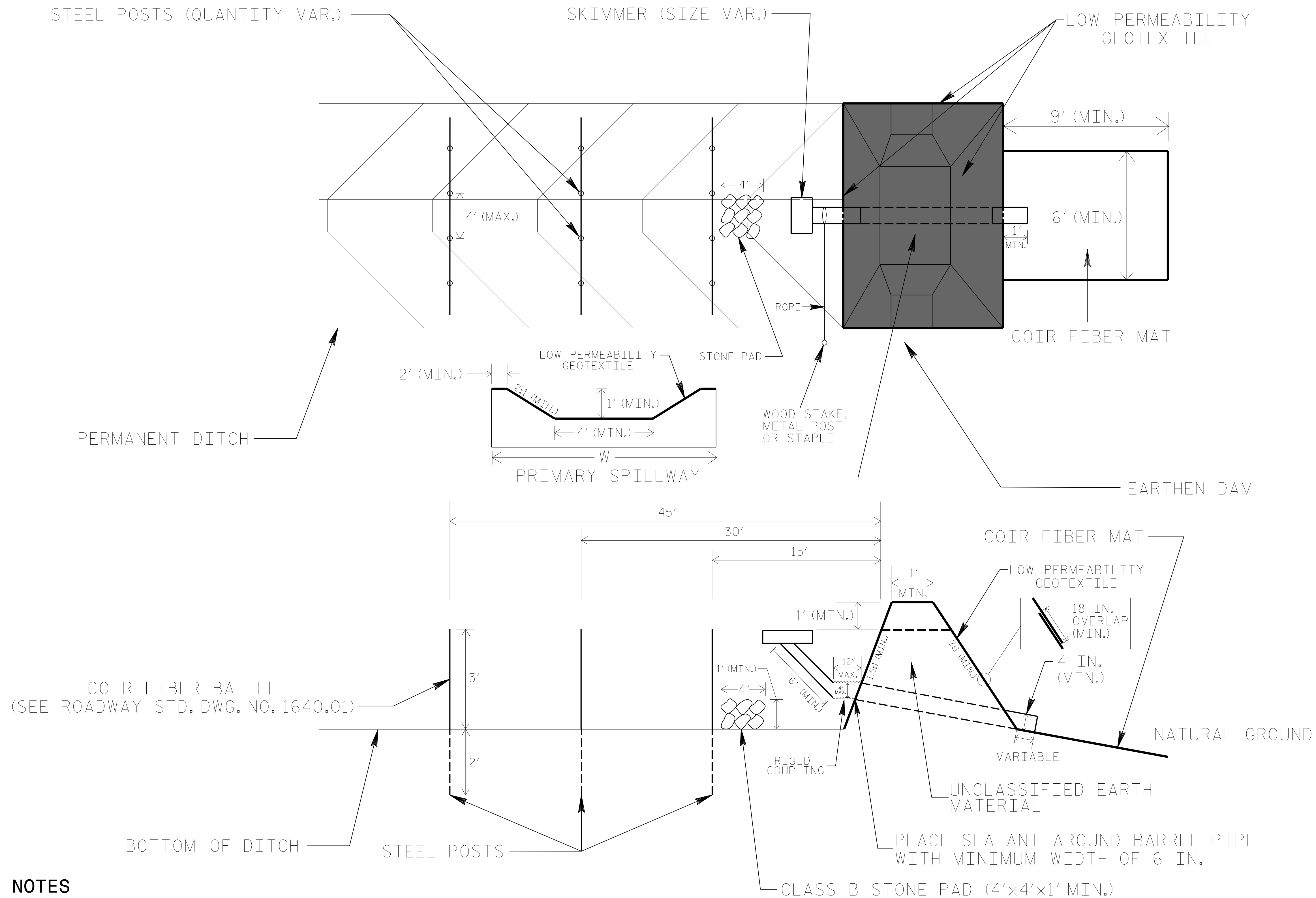
# DIVISION OF HIGHWAYS

PROJECT REFERENCE NO.	SHEET NO.
<b>W-5706L</b>	<b>EC-02</b>
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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

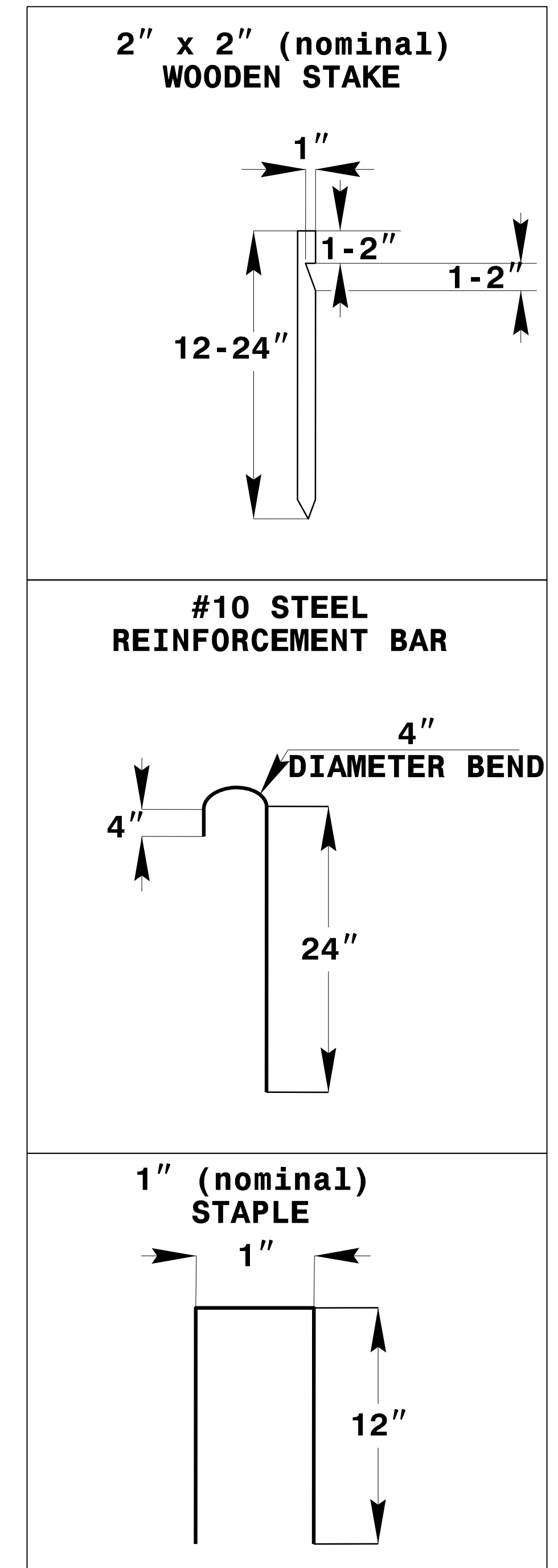
# EARTHEN DAM WITH SKIMMER DETAIL (EAST)

PROJECT REFERENCE NO. W-5706L	SHEET NO. EC-2A
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



## NOTES

1. LIMIT EARTHEN DAM HEIGHT TO 5 FT.
2. DETERMINE PRIMARY SPILLWAY LENGTH (FT.) USING  $Q/0.8$ , WHERE Q IS FLOW RATE (CFS) INTO BASIN.
3. LOW PERMEABILITY GEOTEXTILE FOR PRIMARY SPILLWAY SHALL BE ONE CONTINUOUS PIECE OF MATERIAL OR OVERLAPPED 18 IN. (MIN.).



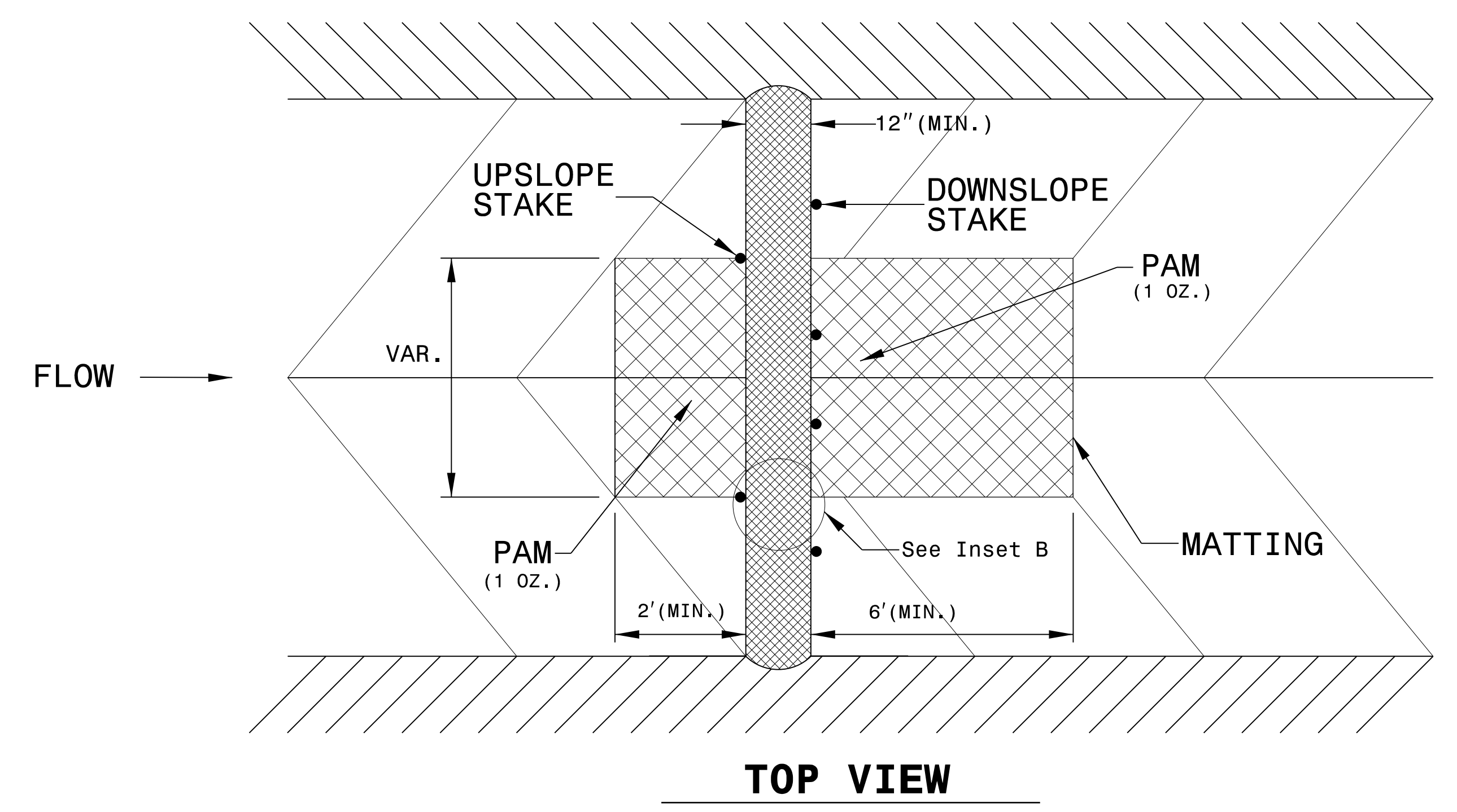
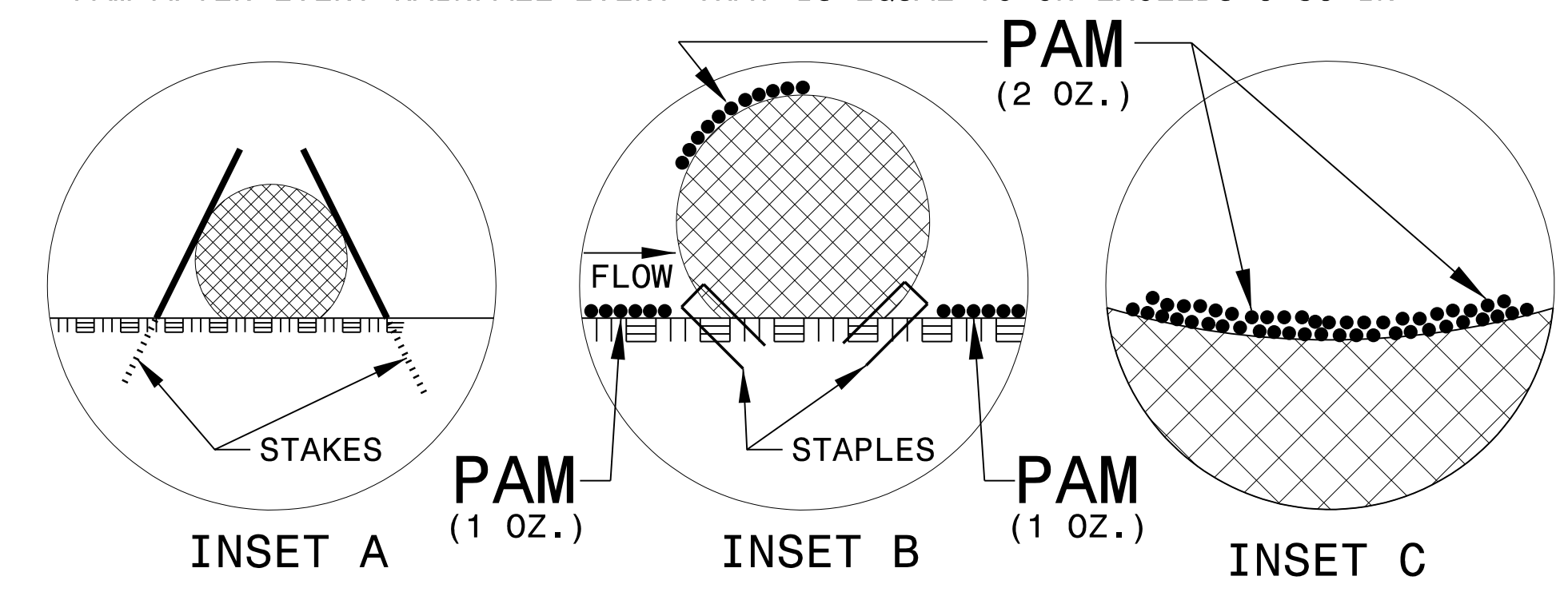
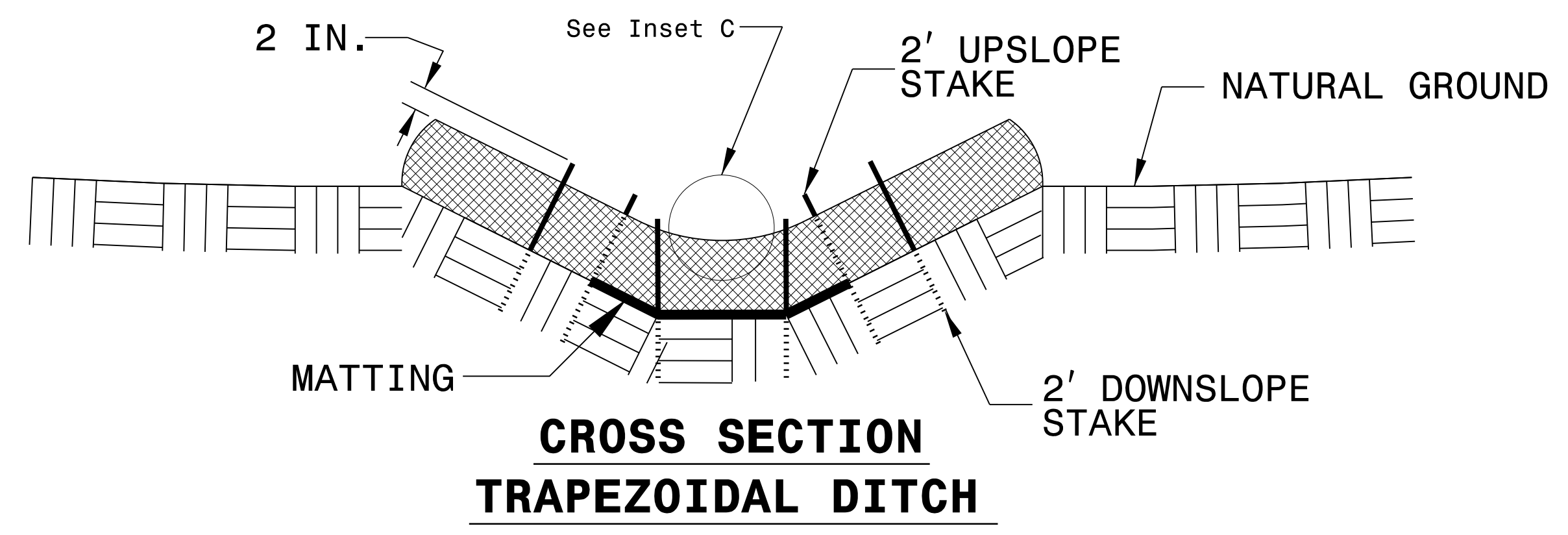
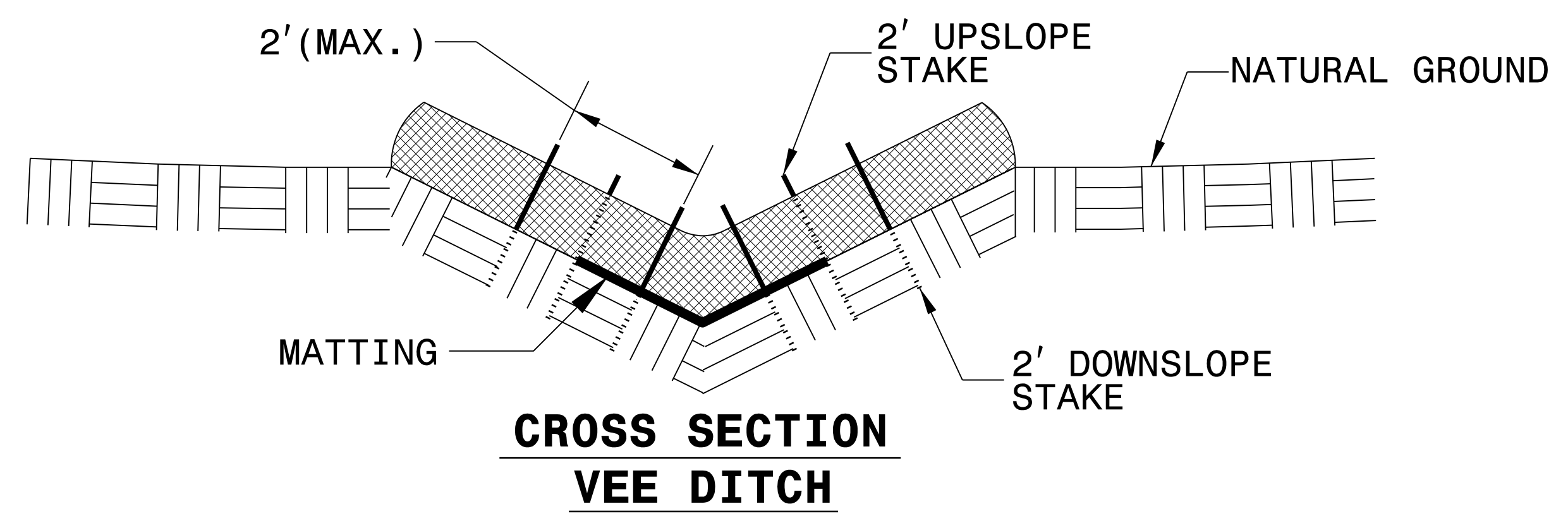
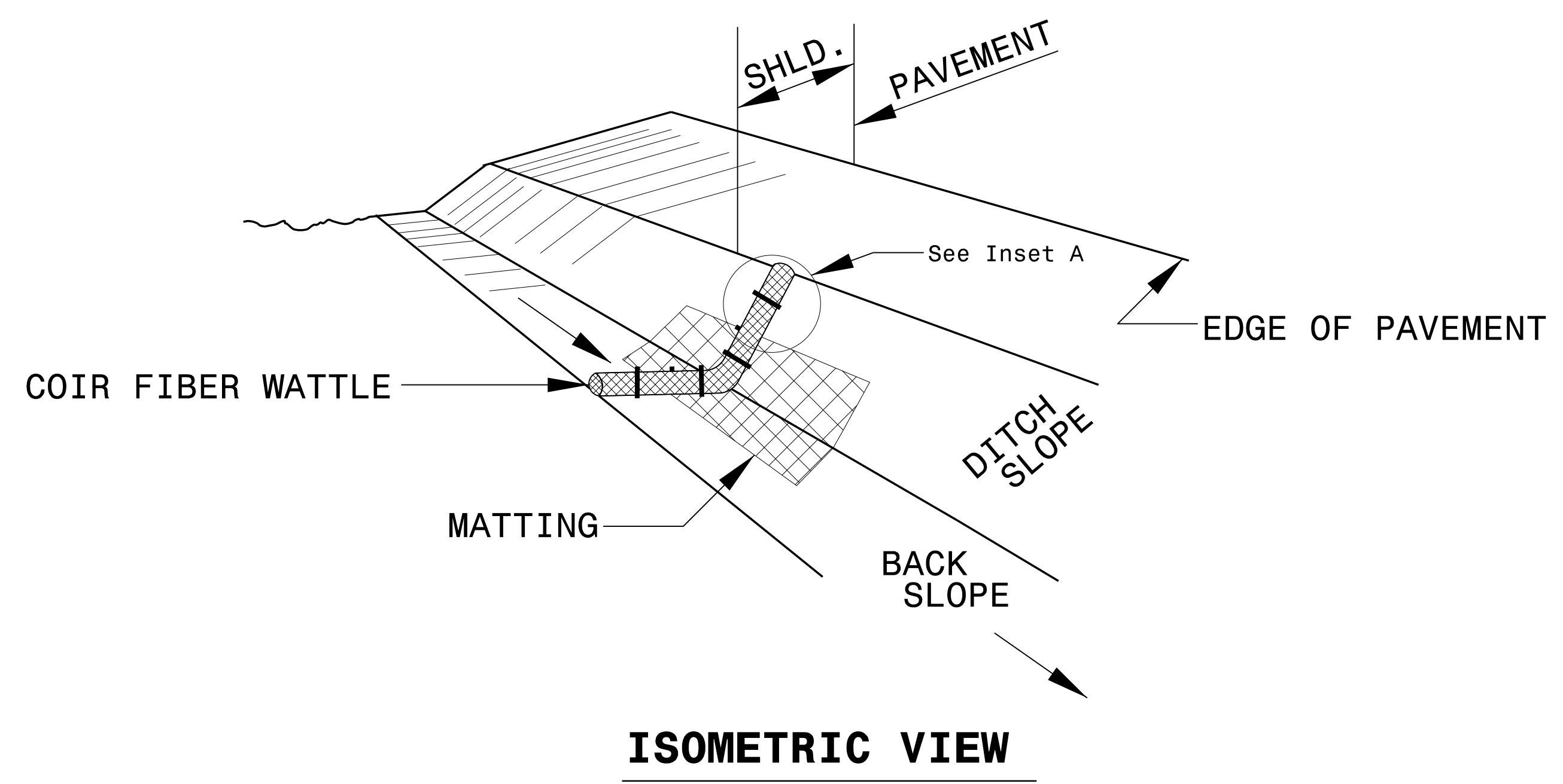
## COIR FIBER MAT ANCHOR OPTIONS

NOT TO SCALE

PROJECT REFERENCE NO. W-5706L	SHEET NO. EC-2B
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

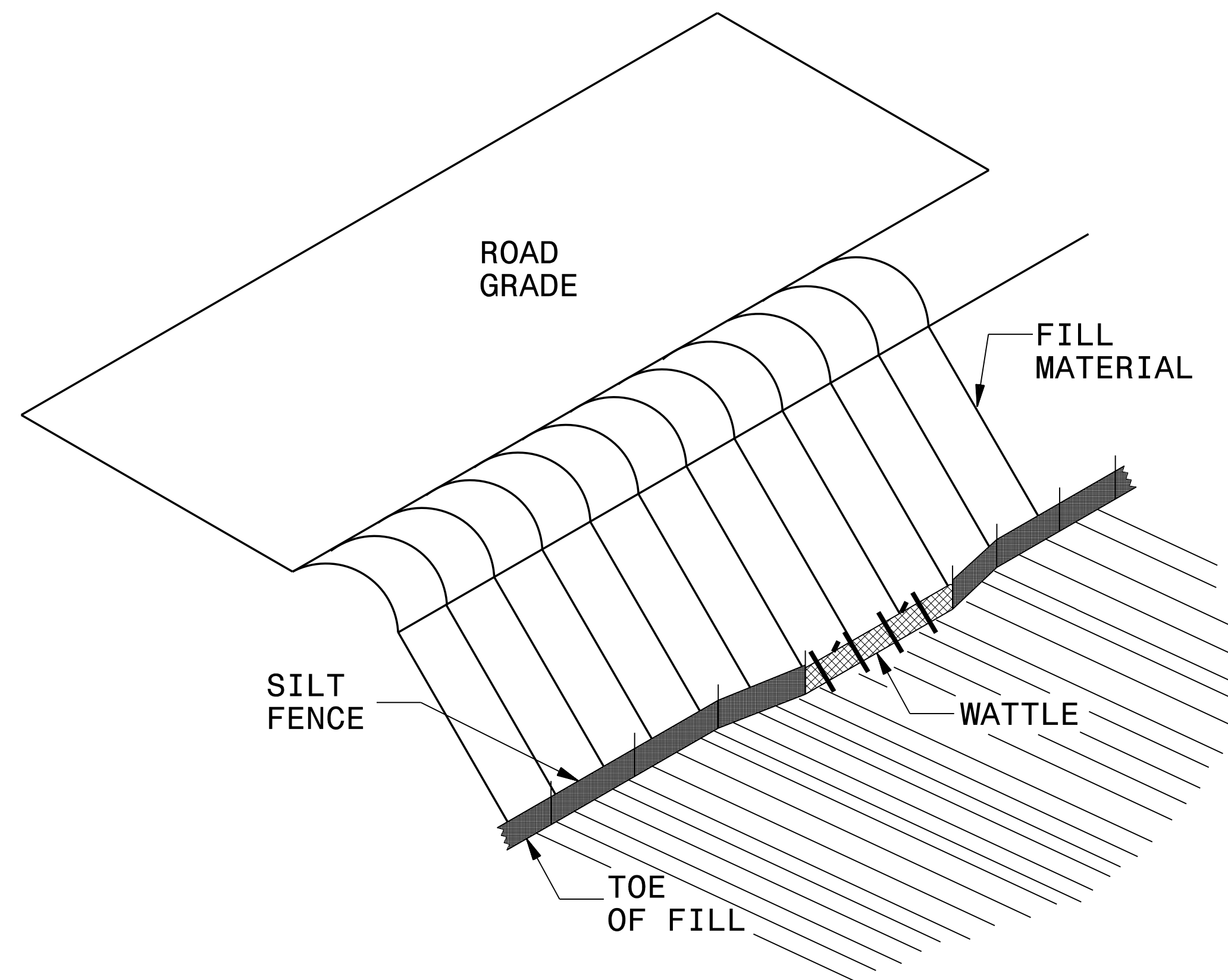
# COIR FIBER WATTLE WITH POLYACRYLAMIDE (PAM) DETAIL

- NOTES:
- USE MINIMUM 12 IN. DIAMETER COIR FIBER (COCONUT FIBER) WATTLE.
  - USE 2 FT. WOODEN STAKES WITH A 2 IN. BY 2 IN. NOMINAL CROSS SECTION.
  - ONLY INSTALL WATTLE(S) TO A HEIGHT IN DITCH SO FLOW WILL NOT WASH AROUND WATTLE AND SCOUR DITCH SLOPES AND AS DIRECTED.
  - INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO BOTTOM OF DITCH.
  - PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12" IN LENGTH.
  - INSTALL STAPLES APPROXIMATELY EVERY 1 LINEAR FOOT ON BOTH SIDES OF WATTLE AND AT EACH END TO SECURE IT TO THE SOIL.
  - INSTALL MATTING IN ACCORDANCE WITH SECTION 1631 OF THE STANDARD SPECIFICATIONS.
  - PRIOR TO POLYACRYLAMIDE (PAM) APPLICATION, OBTAIN A SOIL SAMPLE FROM PROJECT LOCATION, AND FROM OFFSITE MATERIAL, AND ANALYZE FOR APPROPRIATE PAM FLOCCULANT TO BE APPLIED TO EACH WATTLE.
  - INITIALLY APPLY 2 OUNCES OF ANIONIC OR NEUTRALLY CHARGED PAM OVER WATTLE WHERE WATER WILL FLOW AND 1 OUNCE OF PAM ON EACH SIDE OF WATTLE. REAPPLY PAM AFTER EVERY RAINFALL EVENT THAT IS EQUAL TO OR EXCEEDS 0.50 IN.



# SILT FENCE COIR FIBER WATTLE BREAK DETAIL

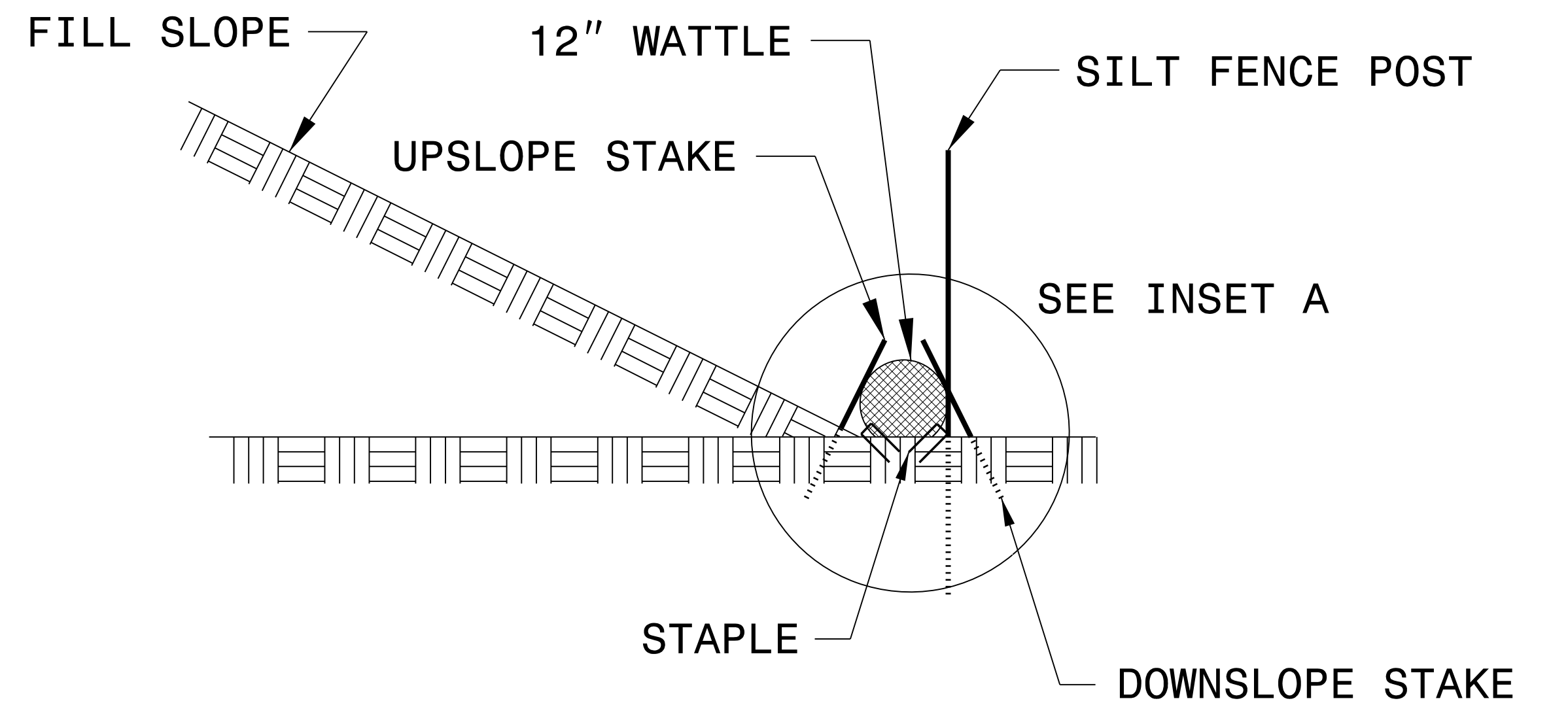
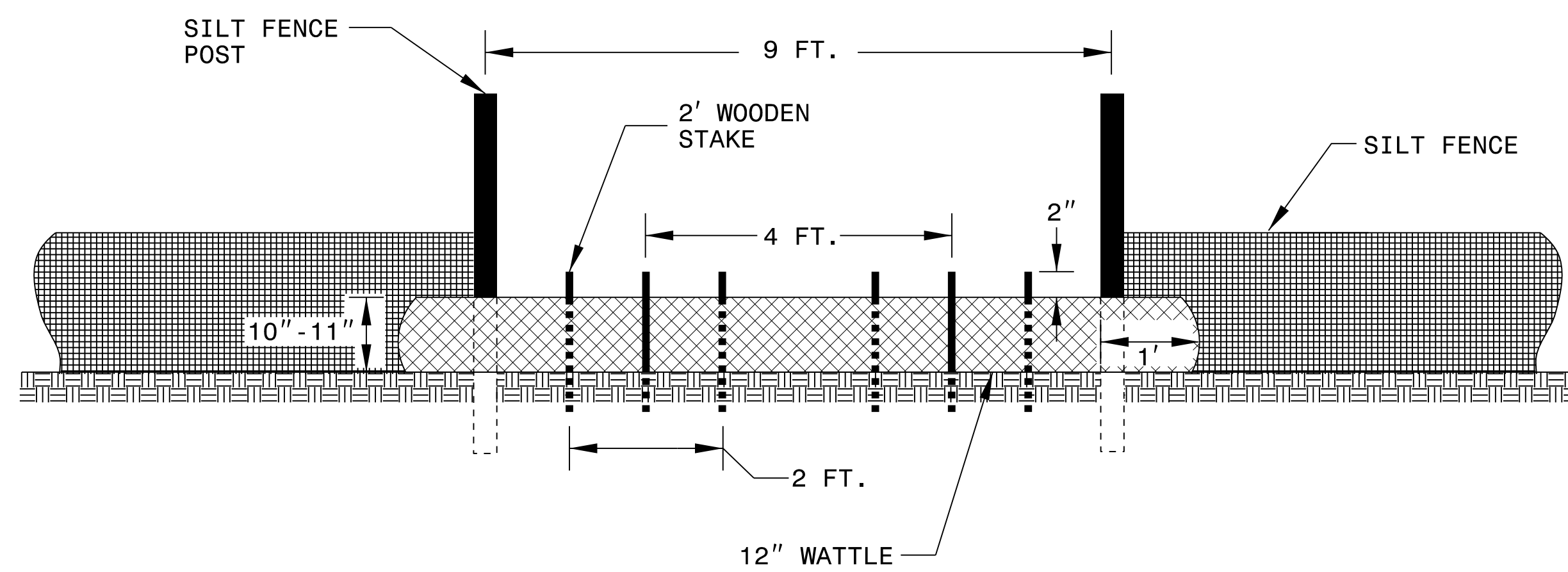
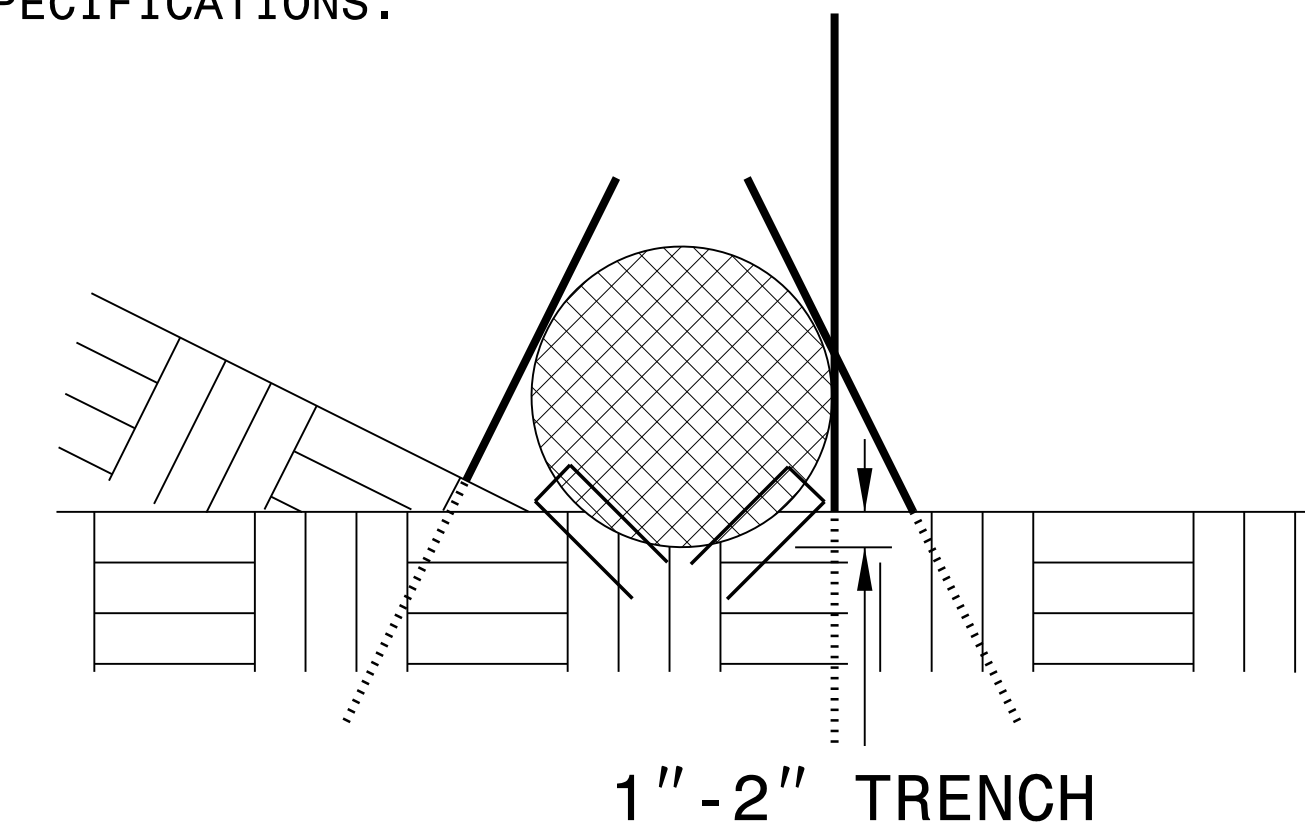
PROJECT REFERENCE NO. <i>W-5706L</i>	SHEET NO. <i>EC-2C</i>
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



**NOTES:**

- USE MINIMUM 12 IN. DIAMETER COIR FIBER (COCONUT FIBER) WATTLE AND LENGTH OF 10 FT.
- EXCAVATE A 1 TO 2 INCH TRENCH FOR WATTLE TO BE PLACED.
- DO NOT PLACE WATTLE ON TOE OF SLOPE.
- USE 2 FT. WOODEN STAKES WITH A 2 IN. BY 2 IN. NOMINAL CROSS SECTION.
- INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO GROUND.
- PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12" IN LENGTH.
- INSTALL STAPLES APPROXIMATELY EVERY 1 LINEAR FOOT ON BOTH SIDES OF WATTLE AND AT EACH END TO SECURE IT TO THE SOIL.
- WATTLE INSTALLATION CAN BE ON OUTSIDE OF THE SILT FENCE AS DIRECTED.
- INSTALL TEMPORARY SILT FENCE IN ACCORDANCE WITH SECTION 1605 OF THE STANDARD SPECIFICATIONS.

**INSET A**







DIVISION OF HIGHWAYS  
STATE OF NORTH CAROLINA

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PROJECT REFERENCE NO. <i>W-5706L</i>	SHEET NO. <i>EC-3A</i>
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

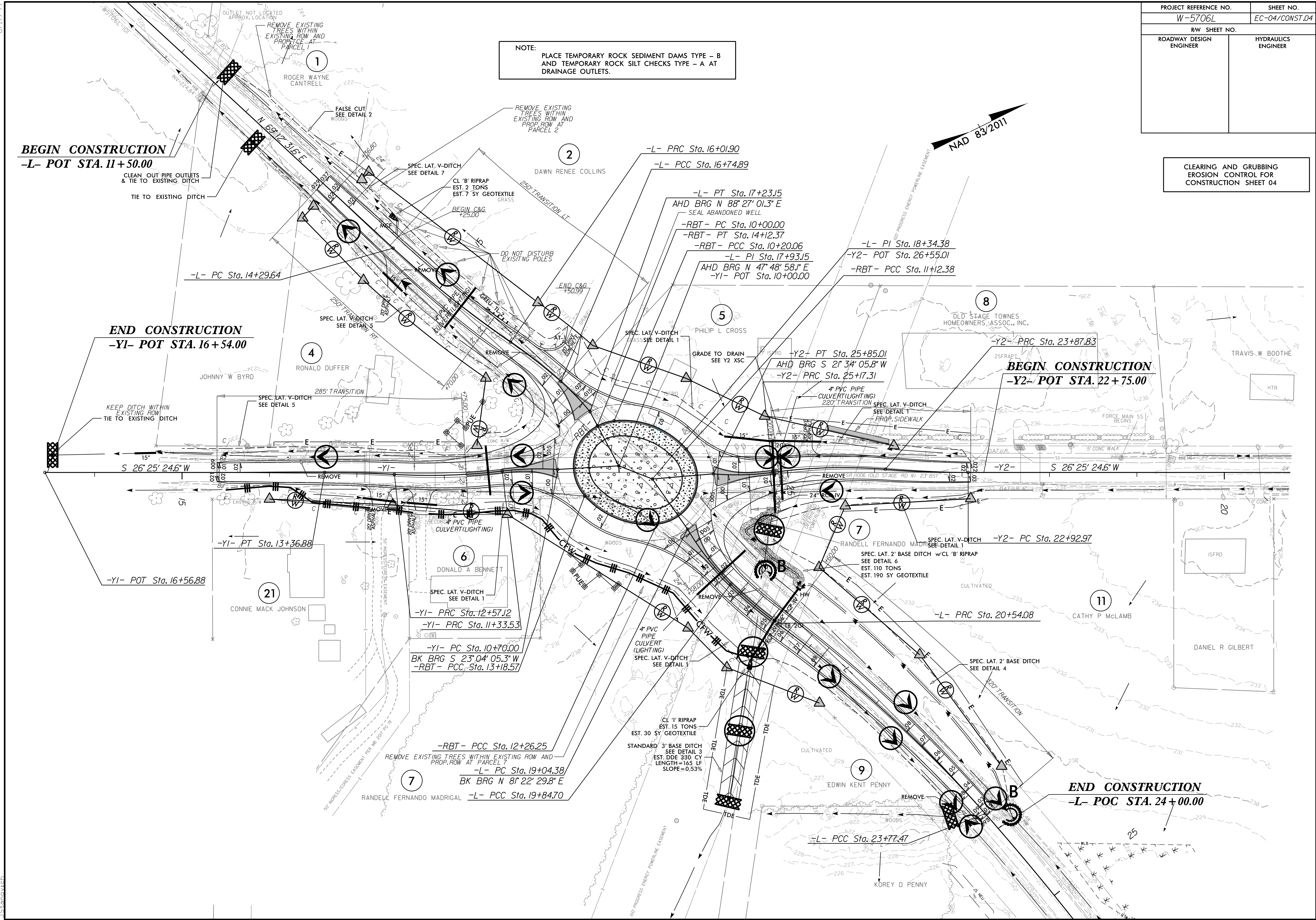
# ***SOIL STABILIZATION TIMEFRAMES***

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

R/W REVISION NO.1:12/22/21 - REVISED -RBT1- DESIGN AND APPROACH LEGS -L-, -Y1- & -Y2-  
 R/W REVISION NO.2:11/21/22 - REVISED -RBT1- DESIGN AND APPROACH LEGS -L-, -Y1- & -Y2-  
 R/W REVISION NO.3:1/10/23 - REVISED PROPERTY OWNER NAME AND DEED BOOK FOR PARCEL 4 & 8. ADDED SIGNS ON PARCEL 7 SS  
 R/W REVISION NO.4:3/11/23 - ADDED NOTE TO REMOVE TREES WITHIN EXISTING ROW AND PROPOSED RIGHT OF WAY ON PARCELS 1,2,& 7 SS  
 R/W REVISION NO.5:9/13/23 - ADDED NOTE "DO NOT DISTURB EXISTING POWER POLES" ALONG PARCEL 2.MBF

PROJECT REFERENCE NO.	SHEET NO.
W-5706L	EC-04/CONST.04
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

CLEARING AND GRUBBING  
 EROSION CONTROL FOR  
 CONSTRUCTION SHEET 04



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

**BEGIN CONSTRUCTION**  
 -L- POT STA. 11+50.00

**END CONSTRUCTION**  
 -Y1- POT STA. 16+54.00

**BEGIN CONSTRUCTION**  
 -Y2- POT STA. 22+75.00

**END CONSTRUCTION**  
 -L- POC STA. 24+00.00

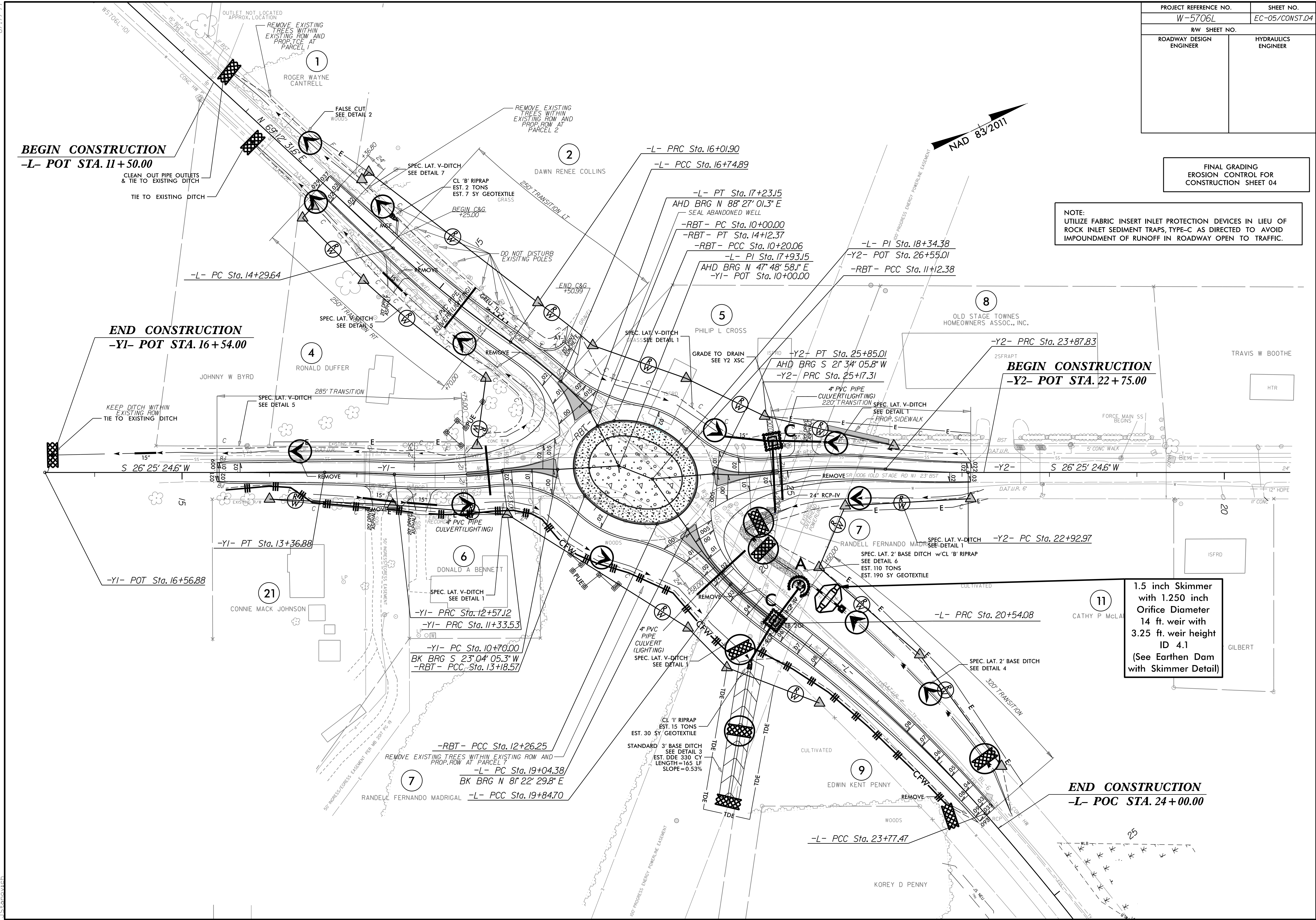
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R/W REVISION NO.1:12/22/21 - REVISED -RBT1- DESIGN AND APPROACH LEGS -L-, -Y1- & -Y2-  
 R/W REVISION NO.2:11/21/22 - REVISED -RBT1- DESIGN AND APPROACH LEGS -L-, -Y1- & -Y2-  
 R/W REVISION NO.3:1/10/23 - REVISED PROPERTY OWNER NAME AND DEED BOOK FOR PARCEL 4 & 8. ADDED SIGNS ON PARCEL 7 SS  
 R/W REVISION NO.4:3/11/23 - ADDED NOTE TO REMOVE TREES WITHIN EXISTING ROW AND PROPOSED RIGHT OF WAY ON PARCELS 1,2,& 7 SS  
 R/W REVISION NO.5:9/13/23 - ADDED NOTE "DO NOT DISTURB EXISTING POWER POLES" ALONG PARCEL 2. MBF

PROJECT REFERENCE NO.	SHEET NO.
W-5706L	EC-05/CONST.04
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

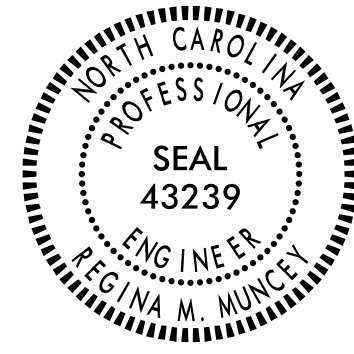
FINAL GRADING  
 EROSION CONTROL FOR  
 CONSTRUCTION SHEET 04

NOTE:  
 UTILIZE FABRIC INSERT INLET PROTECTION DEVICES IN LIEU OF  
 ROCK INLET SEDIMENT TRAPS, TYPE-C AS DIRECTED TO AVOID  
 IMPOUNDMENT OF RUNOFF IN ROADWAY OPEN TO TRAFFIC.



1.5 inch Skimmer  
 with 1.250 inch  
 Orifice Diameter  
 14 ft. weir with  
 3.25 ft. weir height  
 ID 4.1  
 (See Earthen Dam  
 with Skimmer Detail)

2/18/2024  
 Ec.dsn\_psh\_06.fg.dgn  
 15:20:00

PROJECT NAME	SHEET NO.
W-5706L	SIGN-1
APPROVED BY: <i>Regina M. Muncey</i> C7FEE1B522454FA	
DATE: 2/15/2024	
SEAL	
	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

**STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION**

**SIGNING PLAN  
HARNETT COUNTY**

**LOCATION: NC 27/SR 1006 (OLD STAGE RD N)/SR 2084 (LESLIE CAMPBELL AVE)**

**CONTRACT NO. DF00465 TIP PROJECT: W-5706L**

**ROADWAY STANDARD DRAWINGS**

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
901.50	ARROWS AND SHIELDS
901.70	SIGN STRINGERS AND SUPPORT SPACING
904.10	ORIENTATION OF GROUND MOUNTED SIGNS
904.50	MOUNTING OF TYPE 'D', 'E' AND 'F' SIGNS ON 'U' CHANNEL POSTS
910.40	SINGLE LANE ROUNDABOUT (SHEET 1 OF 2) (PEDESTRIAN APPLICATION DOES NOT APPLY)
910.50	SIGNING FOR SPEED REDUCTION ZONE

**GENERAL NOTES**

- . SIGNS FURNISHED BY CONTRACTOR.
- . ALL TYPE 'D' SIGNS SHALL BE MOUNTED ON TWO U-CHANNEL POSTS UNLESS OTHERWISE INDICATED ON THE PLANS.
- . 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' & 'F' SIGNS SHALL BE FIELD LOCATED BY THE ENGINEER.
- . ALL EXISTING SIGNS ON "U" CHANNEL POST WITHIN THE PROJECT LIMITS SHALL BE REMOVED AND DISPOSED OF UNLESS OTHERWISE NOTED ON PLANS.
- . WHEN EXISTING SIGNS ARE REMOVED AND INSTALLED ON NEW SUPPORTS, THE RE-ERECTION SHALL IMMEDIATELY FOLLOW THE REMOVAL.
- . THE BACKGROUND FOR TYPE E & F SIGNS SHALL BE TYPE C REFLECTIVE SHEETING.
- . SEE ROADWAY PLANS FOR GUARD/GUIDE RAIL DETAILS.

**SUMMARY OF QUANTITIES**

ITEM NO.	DESC. NO.	SECT. NO.	ITEM DESCRIPTION	QUANTITY	UNIT
4025000000	901	901	CONTRACTOR FURNISHED, TYPE D SIGN.....	73.25	SF
4025000000	901	901	CONTRACTOR FURNISHED, TYPE E SIGN.....	215.20	SF
4025000000	901	901	CONTRACTOR FURNISHED, TYPE F SIGN.....	44.75	SF
4072000000	903	903	SUPPORTS, 3-LB STEEL U-CHANNEL.....	750	LF
4096000000	904	904	SIGN ERECTION, TYPE D.....	4	EA
4102000000	904	904	SIGN ERECTION, TYPE E.....	45	EA
4108000000	904	904	SIGN ERECTION, TYPE F.....	6	EA
4116100000	904	904	SIGN ERECTION, RELOCATE TYPE E (GROUND MOUNTED).....	2	EA
4155000000	907	907	DISPOSAL OF SIGN SYSTEM, U-CHANNEL.....	21	EA
4192000000	907	907	DISPOSAL OF SUPPORT, U-CHANNEL.....	2	EA
4370000000	SP	SP	GENERIC SIGNING ITEM (DISPOSAL OF FLASHER SYSTEM).....	4	LS

**INDEX**

SHEET NO.	DESCRIPTION
SIGN-1	TITLE SHEET
SIGN-2	SIGN DESIGNS
SIGN-3	TYPE 'E' & 'F' SIGNS
SIGN-4-7	SIGNING PLAN SHEETS

**PLAN PREPARED BY:**

**REGINA M. MUNCEY, PE** TRANSPORTATION ENGINEER  
**ROSI R. HENNEIN** TRANSPORTATION DESIGNER



Stantec Consulting Services Inc.  
801 Jones Franklin Road  
Suite 300  
Raleigh, NC 27606  
Tel. (919) 851-6866  
Fax. (919) 851-7024  
www.stantec.com  
License No. F-0672

\$\$\$\$\$SYTIME\$\$\$\$\$  
\$\$\$\$\$DGN\$\$\$\$\$  
\$\$\$\$\$USERNAM\$\$\$\$\$

SIGN NUMBER: 301  
 TYPE: D  
 QUANTITY: 1  
 SIGN WIDTH: 42"  
 HEIGHT: 42"  
 TOTAL AREA: 12.3 Sq.Ft.  
 BORDER TYPE: FLUSH  
 RADII: 3"  
 WIDTH: 0.75"  
 RECESS: 0"  
 NO. Z BARS: LENGTH:

BACKG COLOR: Green  
 COPY COLOR: White

SYMBOL	X	Y	WID	HT
AR_Type D	17.4	3.9	6	9

MAT'L: 0.080" (2.0MM) ALUMINUM

DESIGN BY: RRH CHECKED BY: R. MUNCEY DATE: Apr 14, 2022  
 PROJECT ID: W-5706L DIV: 6

BORDER R=3" TH=0.75" MOUNT ON TWO U-POSTS

Spacing Factor is 1 unless specified otherwise

USE NOTES  
 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.

LETTER POSITIONS

Letter spacings are to start of next letter											Series/Size Text Length
L	e	s	l	i	e						D 2000
11.3	4.3	4	3.6	2.2	1.9	3.5	11.3				19.5
C	a	m	p	b	e	l	l				D 2000
4.5	5	4.6	7.1	4.6	4.3	4.4	2.2	1	4.5		33
A	v	e	n	u	e						D 2000
7.4	5.4	4.7	4.4	4.6	4.5	3.5	7.4				27.2

SIGN NUMBER: 302  
 TYPE: D  
 QUANTITY: 1  
 SIGN WIDTH: 54"  
 HEIGHT: 24"  
 TOTAL AREA: 9.0 Sq.Ft.  
 BORDER TYPE: FLUSH  
 RADII: 3"  
 WIDTH: 0.75"  
 RECESS: 0"  
 NO. Z BARS: LENGTH:

BACKG COLOR: Green  
 COPY COLOR: White

SYMBOL	X	Y	WID	HT
AR_Type D	38	9	6	9

MAT'L: 0.125" (3.2MM) ALUMINUM

DESIGN BY: RRH CHECKED BY: R. MUNCEY DATE: Dec 18, 2023  
 PROJECT ID: W-5706L DIV: 6

BORDER R=3" TH=0.75" MOUNT ON TWO U-POSTS

Spacing Factor is 1 unless specified otherwise

USE NOTES  
 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.

LETTER POSITIONS

Letter spacings are to start of next letter											Series/Size Text Length
C	o	a	t	s							D 2000
10	5	4.3	4	2.7	2.8	25.1					18.9
B	e	n	s	o	n						D 2000
7	4.7	4.4	4.3	3.4	4.6	3.5	22				25

SIGN NUMBER: 303  
 TYPE: D  
 QUANTITY: 1  
 SIGN WIDTH: 30"  
 HEIGHT: 42"  
 TOTAL AREA: 8.8 Sq.Ft.  
 BORDER TYPE: FLUSH  
 RADII: 3"  
 WIDTH: 0.75"  
 RECESS: 0"  
 NO. Z BARS: LENGTH:

BACKG COLOR: Green  
 COPY COLOR: White

SYMBOL	X	Y	WID	HT
AR_Type D	11.4	3.9	6	9

MAT'L: 0.080" (2.0MM) ALUMINUM

DESIGN BY: RRH CHECKED BY: R. MUNCEY DATE: Dec 18, 2023  
 PROJECT ID: W-5706L DIV: 6

BORDER R=3" TH=0.75" MOUNT ON ONE U-POST

Spacing Factor is 1 unless specified otherwise

USE NOTES  
 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.

LETTER POSITIONS

Letter spacings are to start of next letter											Series/Size Text Length
O	l	d									D 2000
9.5	5.5	1.9	3.6	9.5							11
S	t	a	g	e							D 2000
5.2	4.4	2.8	4.3	4.6	3.5	5.2					19.6
R	d	N									D 2000
6.5	4.7	3.6	4.5	4.1	6.5						16.9

SIGN NUMBER: 304  
 TYPE: D  
 QUANTITY: 1  
 SIGN WIDTH: 60"  
 HEIGHT: 24"  
 TOTAL AREA: 10.0 Sq.Ft.  
 BORDER TYPE: FLUSH  
 RADII: 3"  
 WIDTH: 0.75"  
 RECESS: 0"  
 NO. Z BARS: LENGTH:

BACKG COLOR: Green  
 COPY COLOR: White

SYMBOL	X	Y	WID	HT
AR_FISHOOK	5.6	6.6	9.9	10.8

MAT'L: 0.125" (3.2MM) ALUMINUM

DESIGN BY: RRH CHECKED BY: R. MUNCEY DATE: Dec 11, 2023  
 PROJECT ID: W-5706L DIV: 6

BORDER R=3" TH=0.75" MOUNT ON TWO U-POSTS

Spacing Factor is 1 unless specified otherwise

USE NOTES  
 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.

LETTER POSITIONS

Letter spacings are to start of next letter											Series/Size Text Length
L	i	l	l	i	n	g	t	o	n		D 2000
21.5	4.5	2.2	2.2	2.2	2.2	4.4	4.3	2.8	4.6	3.5	32.8
D	u	n	n								D 2000
28.9	5.2	4.7	4.7	3.5	13						18.2

APPROVED: Regina M. Muncey  
 DATE: 2/15/2024

DOCUMENT NOT CONSIDERED FINAL  
 UNLESS ALL SIGNATURES COMPLETED



\$\$\$\$\$SYTIME\$\$\$\$\$  
 \$\$\$\$DGN\$\$\$\$\$  
 \$\$\$USERNAME\$\$\$\$\$

TYPE 'D' SIGNS

APPROVED: Regina M. Muncy

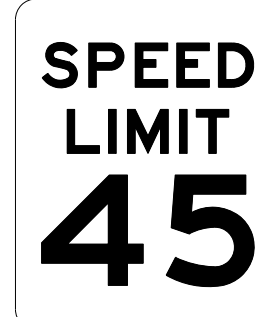
DATE: 2/15/2024



DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



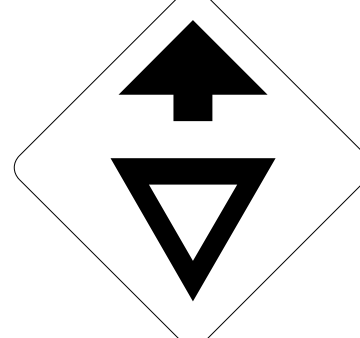
401 QUANTITY REQ'D 5



24 X 30  
R2-1

ONE SIGN POST PER SIGN

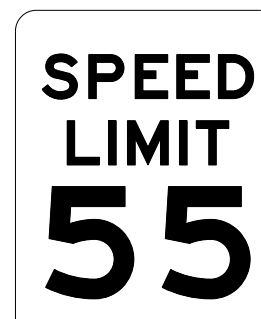
406 QUANTITY REQ'D 4



36 X 36  
W3-2

ONE SIGN POST PER SIGN

402 QUANTITY REQ'D 2



24 X 30  
R2-1

ONE SIGN POST PER SIGN

407 QUANTITY REQ'D 2




36 X 36  
W3-5

ONE SIGN POST PER SIGN

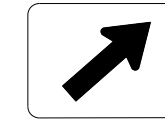
501

EAST



1 - 24 X 12

1 - 24 X 24




1 - 21 X 15

ONE SIGN POST PER SIGN

506

WEST

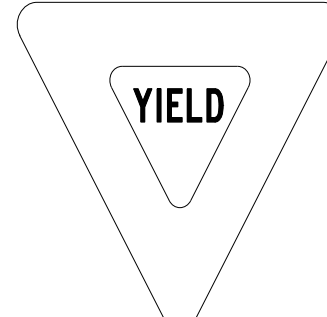


1 - 24 X 12

1 - 24 X 24

ONE SIGN POST PER SIGN

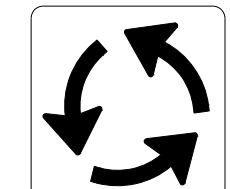
403 QUANTITY REQ'D 8



36 X 36 X 36  
R1-2

ONE SIGN POST PER SIGN

408 QUANTITY REQ'D 8



18 X 18  
R6-5P

MOUNT BELOW SIGN 403  
IN 8 INSTALLATIONS

404 QUANTITY REQ'D 4



36 X 12  
R6-1R

ONE SIGN POST PER SIGN

409 QUANTITY REQ'D 4




18 X 18  
OM1-3

MOUNT BELOW SIGN 410  
IN 4 INSTALLATIONS

502

EAST




1 - 24 X 12

1 - 24 X 24

ONE SIGN POST PER SIGN

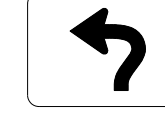
503

WEST



1 - 24 X 12

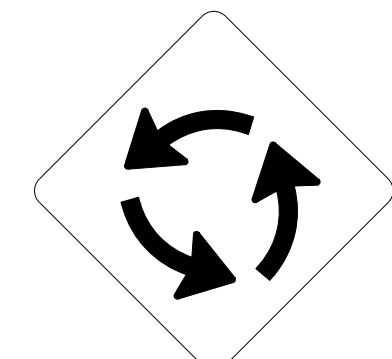
1 - 24 X 24



1 - 21 X 15

ONE SIGN POST PER SIGN

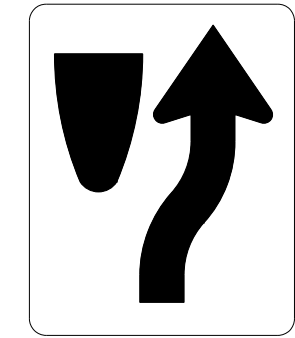
405 QUANTITY REQ'D 4



36 X 36  
W2-6

ONE SIGN POST PER SIGN

410 QUANTITY REQ'D 4



24 X 30  
R4-7

ONE SIGN POST PER SIGN

406 QUANTITY REQ'D 5




24 X 30  
R2-1

ONE SIGN POST PER SIGN

504

EAST



1 - 24 X 12

1 - 24 X 24




1 - 21 X 15

ONE SIGN POST PER SIGN

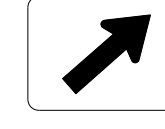
505

WEST



1 - 24 X 12

1 - 24 X 24




1 - 21 X 15

ONE SIGN POST PER SIGN

506

WEST



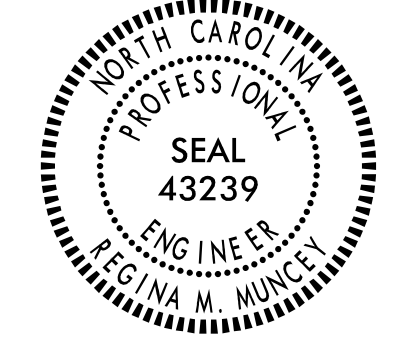

1 - 24 X 12

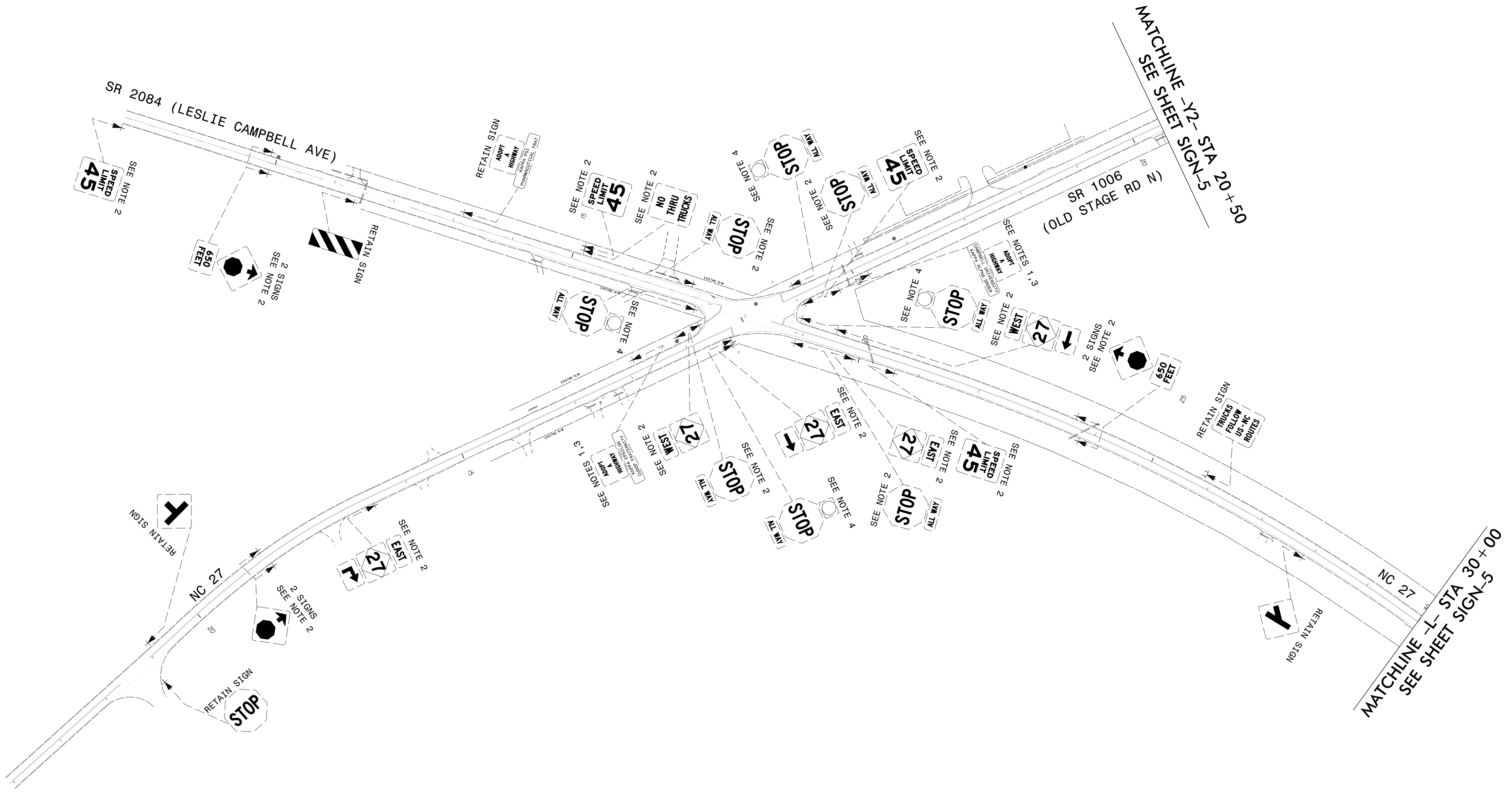
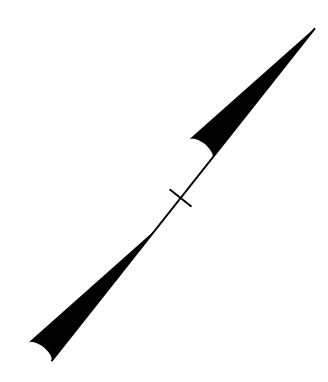
1 - 24 X 24

ONE SIGN POST PER SIGN

\$\$\$\$\$SYSTEMTIME\$\$\$\$\$  
\$\$\$\$\$USERID\$\$\$\$\$  
\$\$\$\$\$DGN\$\$\$\$\$  
\$\$\$\$\$USERNAME\$\$\$\$\$

TYPE 'E' & 'F' SIGNS

PROJECT NAME <b>W-5706L</b>	SHEET NO. <b>SIGN-4</b>
APPROVED: <i>Regina M. Muncey</i> <small>REGISTERED PROFESSIONAL ENGINEER 07FEB18022454FA</small>	
DATE: 2/15/2024	
SEAL	
	
<b>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</b>	
	





**PROJECT NOTES**

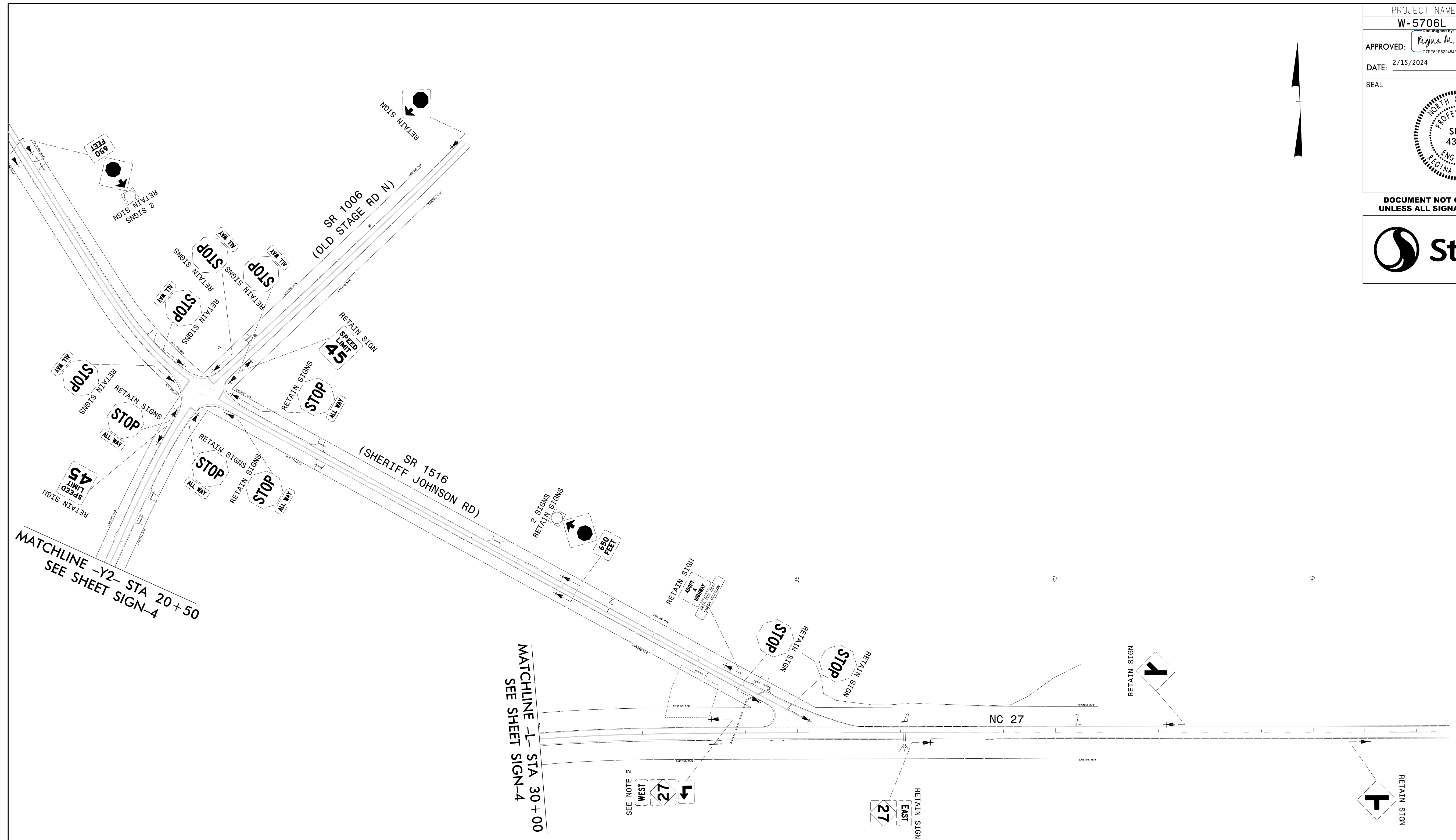
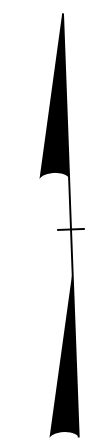
- 1 SIGN ERECTION, RELOCATE TYPE E SIGN
- 2 DISPOSAL OF SIGN SYSTEM, U-CHANNEL
- 3 DISPOSAL OF SUPPORT, U-CHANNEL
- 4 DISPOSAL OF FLASHER SYSTEM

**EXISTING SIGNING**  
**SR 2084/NC 27**  
**-L- STA 7+45 TO 30+00**

\$\$\$\$\$SYTIME\$\$\$\$\$  
 \$\$\$\$\$\$DGN\$\$\$\$\$  
 \$\$\$\$\$\$USERNAME\$\$\$\$\$



PROJECT NAME	SHEET NO.
W-5706L	SIGN-5
APPROVED: <i>Regina M. Muncey</i> <small>07FES18022454FA</small>	
DATE: 2/15/2024	
SEAL	
	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
	

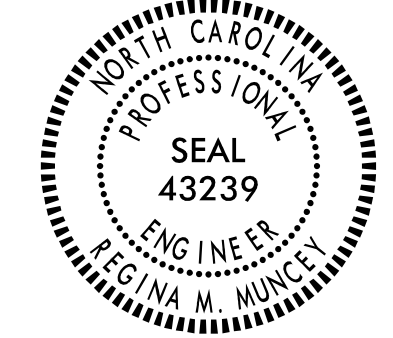



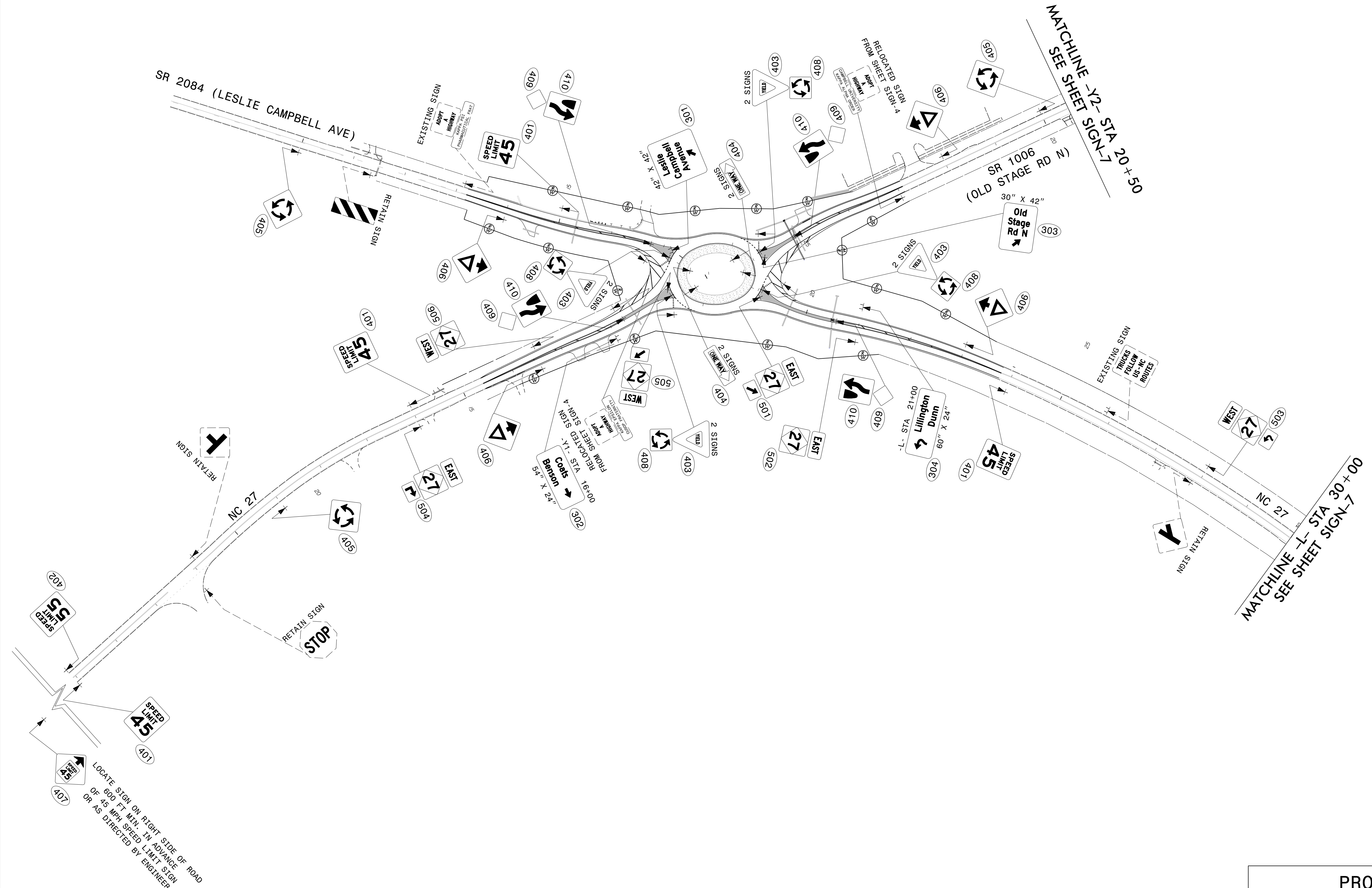
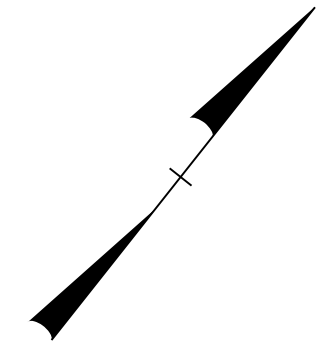
**PROJECT NOTES**

- 1 SIGN ERECTION, RELOCATE TYPE E SIGN
- 2 DISPOSAL OF SIGN SYSTEM, U-CHANNEL
- 3 DISPOSAL OF SUPPORT, U-CHANNEL
- 4 DISPOSAL OF FLASHER SYSTEM

EXISTING SIGNING  
SR 2084/NC 27  
-L- STA 30+00 TO 47+65

\$\$\$\$\$SYTIME\$\$\$\$\$  
\$\$\$\$\$DGN\$\$\$\$\$  
\$\$\$\$\$USERNAME\$\$\$\$\$

PROJECT NAME	SHEET NO.
W-5706L	SIGN-6
APPROVED: <i>Regina M. Muncie</i> <small>REGISTERED PROFESSIONAL ENGINEER</small>	
DATE: 2/15/2024	
SEAL	
	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
	



\$\$\$SYTIME\$\$\$  
 \$\$\$SDGN\$\$\$  
 \$\$\$USERNAME\$\$\$

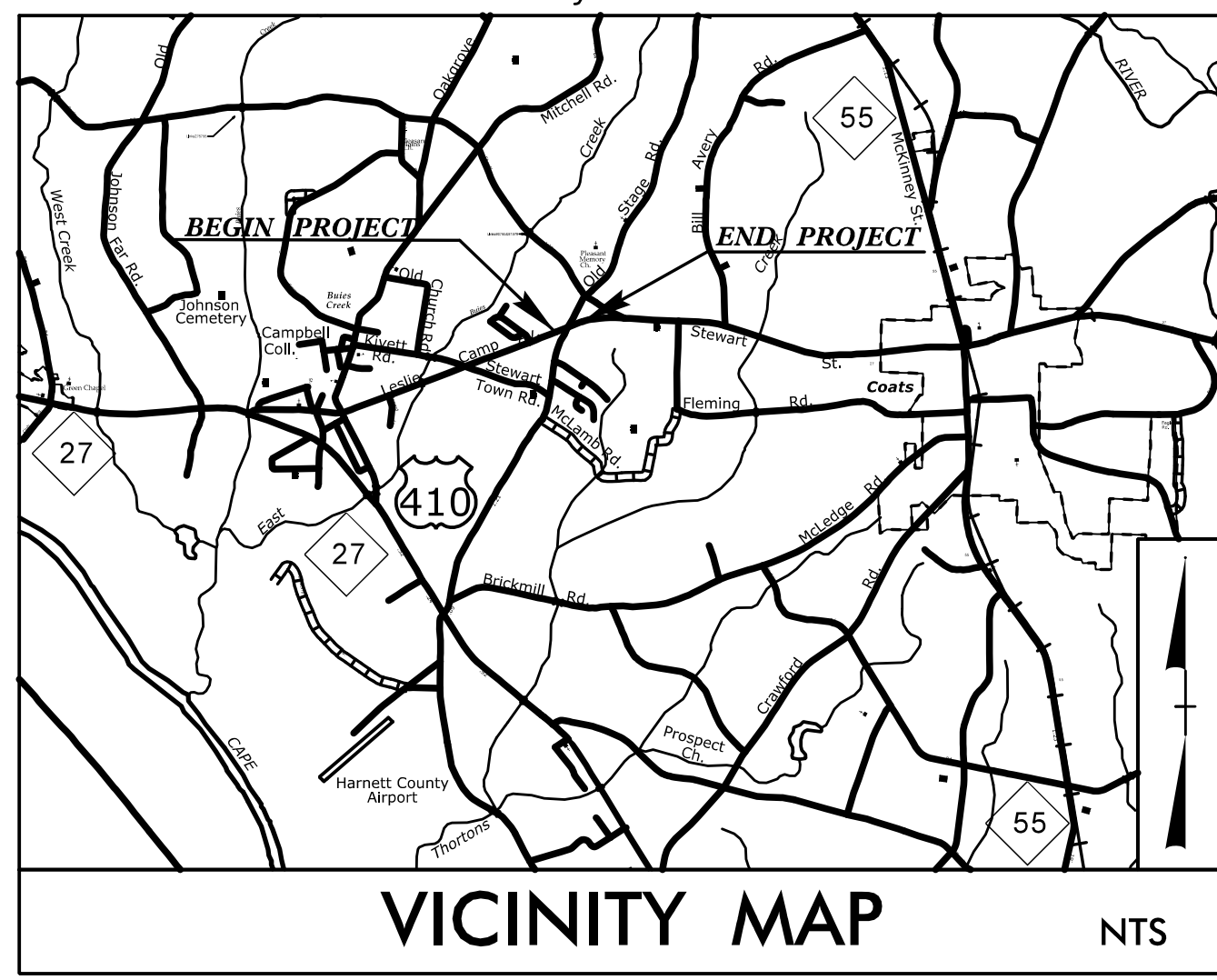
**PROPOSED SIGNING**  
**SR 2084/NC 27**  
**-L- STA 7+45 TO 30+00**



09/08/2019

**TIP PROJECT: W-5706L**

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

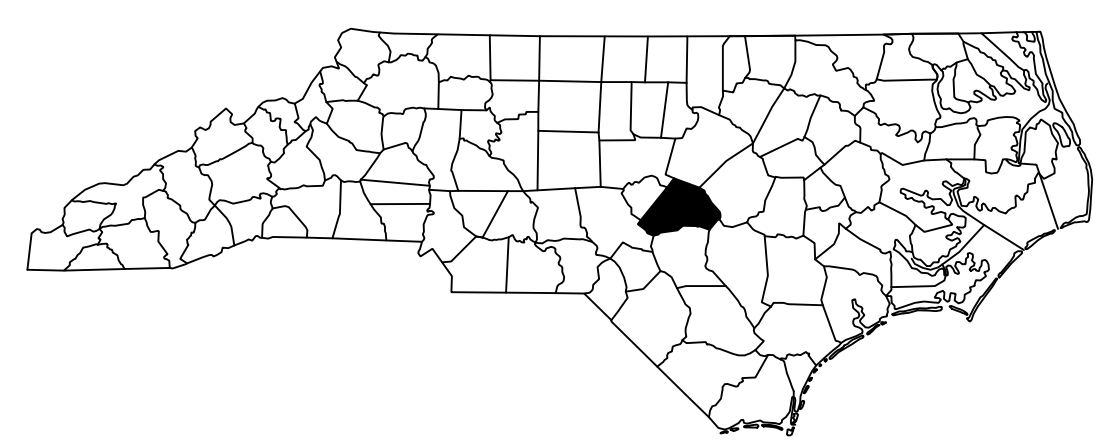


STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS  
**HARNETT COUNTY**

**LOCATION: NC 27/SR 1007(OLD STAGE RD.)/  
SR 2084(LESLIE CAMPBELL AVE)**

**TYPE OF WORK: WET UTILITY CONSTRUCTION**

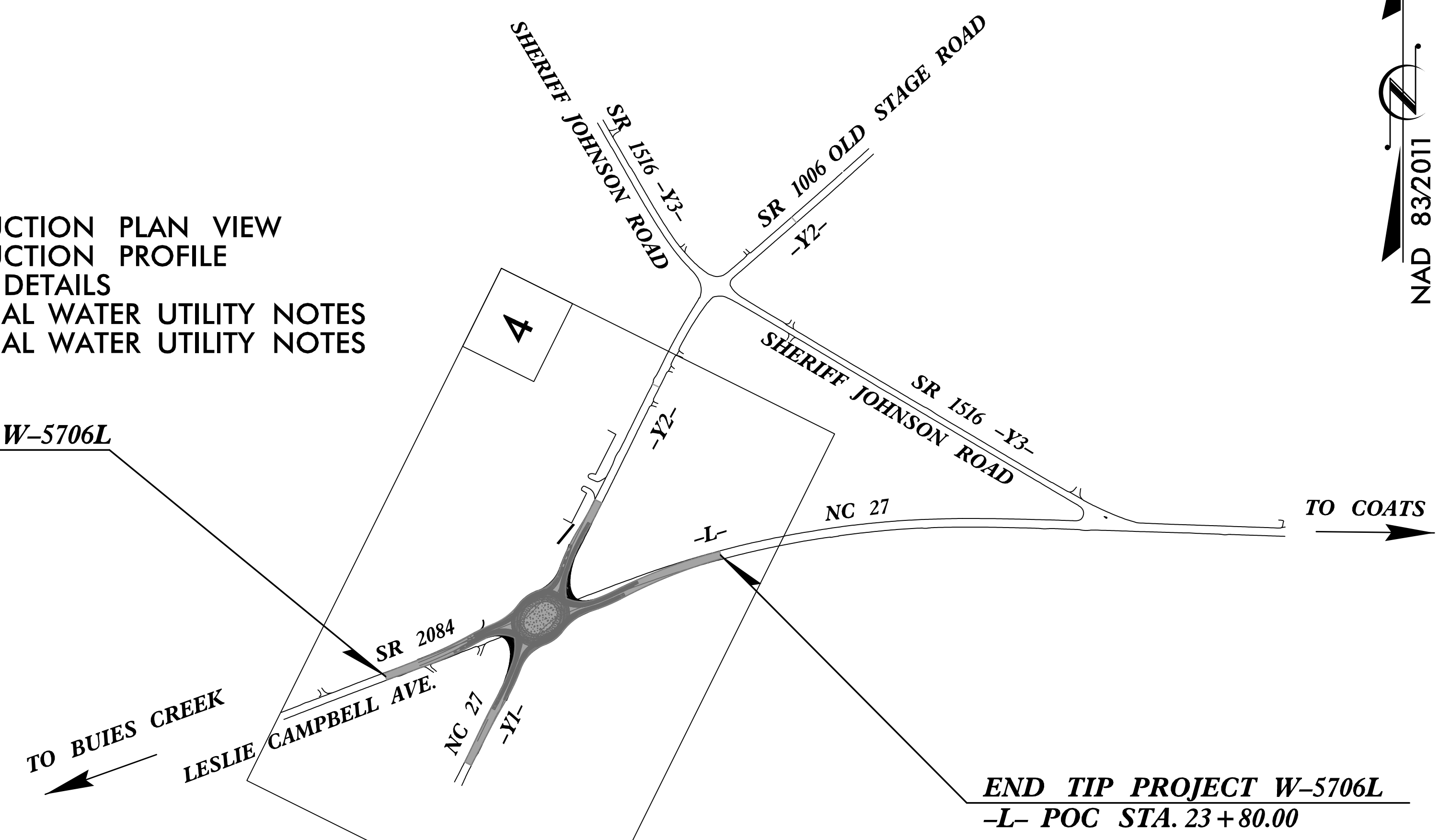
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	W-5706L	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
44852.1.12	HSIP-0027(019)	PE	
44852.2.12	HSIP-0027(019)	R / W	
44852.2.33	HSIP-0027(019)	UTIL.	



**INDEX OF SHEETS**

SHEET NO.	DESCRIPTION
UC-1	TITLE SHEET
UC-2	UTILITY CONSTRUCTION PLAN VIEW
UC-3	UTILITY CONSTRUCTION PROFILE
UC-4	CONSTRUCTION DETAILS
UC-5	HARNETT REGIONAL WATER UTILITY NOTES
UC-6	HARNETT REGIONAL WATER UTILITY NOTES

**BEGIN TIP PROJECT W-5706L**  
**-L- POT STA. 13+20.00**



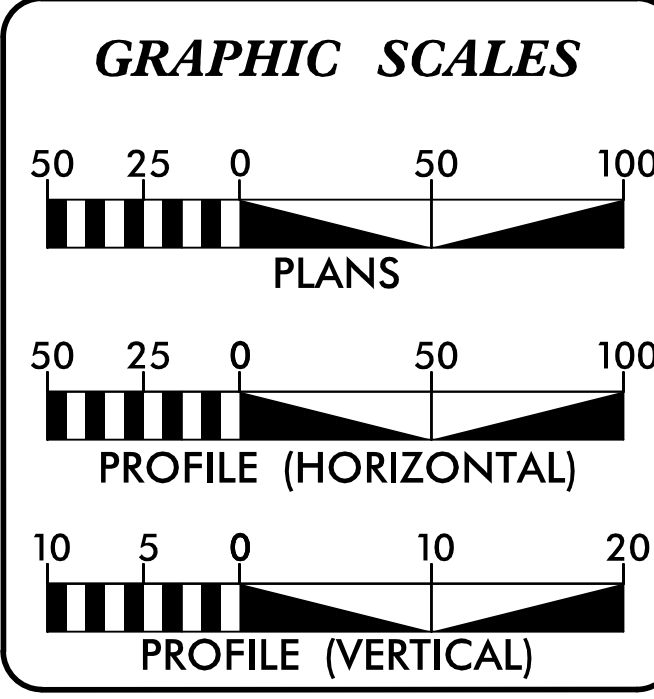
**END TIP PROJECT W-5706L**  
**-L- POC STA. 23+80.00**

ALL WORK ASSOCIATED WITH THE INSTALLATION OF WATER MAINS AND FORCE MAINS SHALL BE IN ACCORDANCE WITH THE NCDOT STANDARD SPECIFICATIONS FOR ROADS AND BRIDGES, LATEST EDITION.

**INCOMPLETE PLANS**  
DO NOT USE FOR R/W ACQUISITION

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

**CONTRACT:**



**DESIGN DATA**

ADT 2022 =	5,750
ADT 2040 =	7,400
K =	12 %
D =	55 %
T =	5 % *
V =	50 MPH
* TTST =	2% DUAL 3%
FUNC CLASS =	RURAL
ARTERIAL	
TIER	

**WATER AND SEWER OWNERS ON PROJECT**  
HARNETT REGIONAL WATER

**LENGTH OF UTILITY MAINS ON PROJECT**  
6" WATER MAIN - 998 LF  
4" FORCE MAIN - 486 LF

Prepared for the North Carolina Department of Transportation  
In the Office of:

940 Main Campus Drive, Suite 500  
Raleigh, NC 27606  
NC License No. C-3105

2018 STANDARD SPECIFICATIONS	
<b>RIGHT OF WAY DATE:</b> SEPTEMBER 30, 2021	<b>BRANDON BARHAM, PE</b> UTILITIES PROJECT ENGINEER
<b>LETTING DATE:</b> APRIL 3, 2024	<b>JOHN M. KAMPRATH, PE</b> UTILITIES PROJECT DESIGN ENGINEER
<b>NCDOT CONTACT:</b>	<b>ALEX HENDERSON</b> ENGINEERING SPECIALIST

**UTILITIES DESIGN ENGINEER**

DocuSigned by:  
*John M. Kamprath*  
SIGNATURE: **John M. Kamprath** P.E.

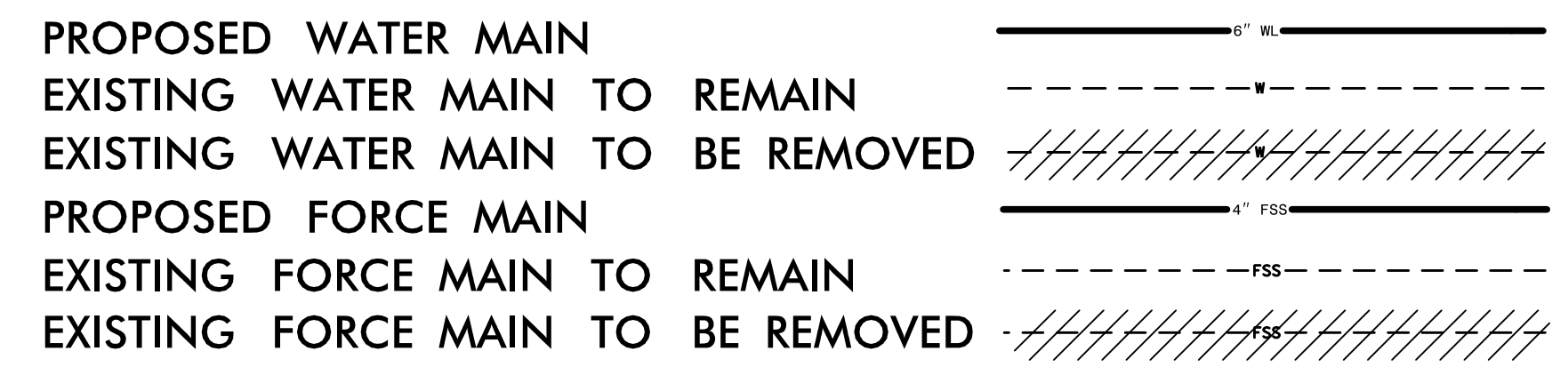
**DIVISION OF HIGHWAYS**  
**DIVISION 6**  
500 TRANSPORTATION DRIVE  
FAYETTEVILLE, NC 28301

**RICK HANDLIN -**  
DIVISION UTILITIES ENGINEER

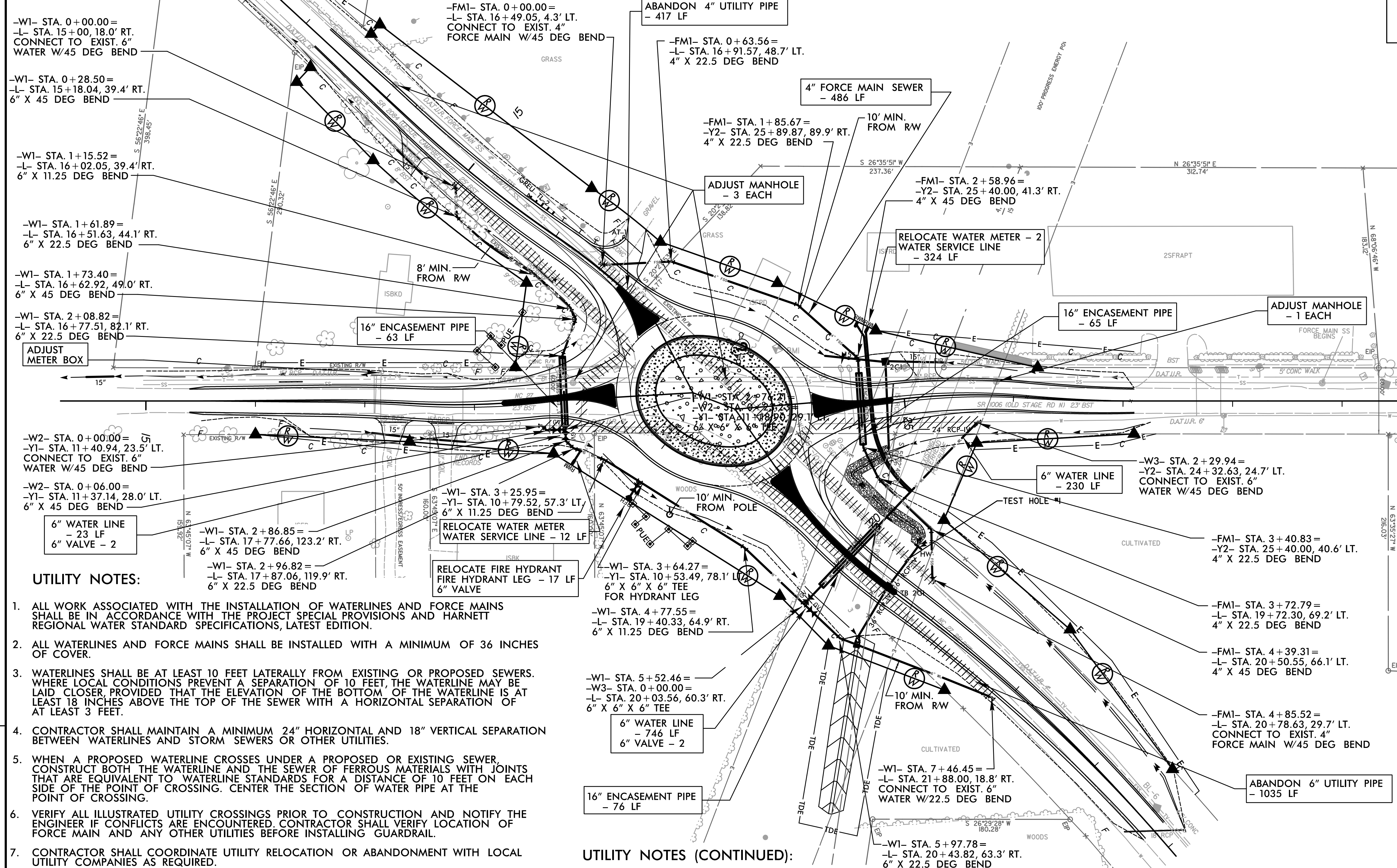
**SHAWN L. EVANS -**  
DIVISION UTILITIES COORDINATOR

8/17/99

# UTILITY CONSTRUCTION LEGEND



PROJECT REFERENCE NO. <b>W-5706L</b>	SHEET NO. <b>UC-2</b>
RW SHEET NO.	
UTILITIES ENGINEER	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



### UTILITY NOTES:

- ALL WORK ASSOCIATED WITH THE INSTALLATION OF WATERLINES AND FORCE MAINS SHALL BE IN ACCORDANCE WITH THE PROJECT SPECIAL PROVISIONS AND HARNETT REGIONAL WATER STANDARD SPECIFICATIONS, LATEST EDITION.
- ALL WATERLINES AND FORCE MAINS SHALL BE INSTALLED WITH A MINIMUM OF 36 INCHES OF COVER.
- WATERLINES SHALL BE AT LEAST 10 FEET Laterally FROM EXISTING OR PROPOSED SEWERS. WHERE LOCAL CONDITIONS PREVENT A SEPARATION OF 10 FEET, THE WATERLINE MAY BE LAID CLOSER PROVIDED THAT THE ELEVATION OF THE BOTTOM OF THE WATERLINE IS AT LEAST 18 INCHES ABOVE THE TOP OF THE SEWER WITH A HORIZONTAL SEPARATION OF AT LEAST 3 FEET.
- CONTRACTOR SHALL MAINTAIN A MINIMUM 24" HORIZONTAL AND 18" VERTICAL SEPARATION BETWEEN WATERLINES AND STORM SEWERS OR OTHER UTILITIES.
- WHEN A PROPOSED WATERLINE CROSSES UNDER A PROPOSED OR EXISTING SEWER, CONSTRUCT BOTH THE WATERLINE AND THE SEWER OF FERROUS MATERIALS WITH JOINTS THAT ARE EQUIVALENT TO WATERLINE STANDARDS FOR A DISTANCE OF 10 FEET ON EACH SIDE OF THE POINT OF CROSSING. CENTER THE SECTION OF WATER PIPE AT THE POINT OF CROSSING.
- VERIFY ALL ILLUSTRATED UTILITY CROSSINGS PRIOR TO CONSTRUCTION AND NOTIFY THE ENGINEER IF CONFLICTS ARE ENCOUNTERED. CONTRACTOR SHALL VERIFY LOCATION OF FORCE MAIN AND ANY OTHER UTILITIES BEFORE INSTALLING GUARDRAIL.
- CONTRACTOR SHALL COORDINATE UTILITY RELOCATION OR ABANDONMENT WITH LOCAL UTILITY COMPANIES AS REQUIRED.
- ALL CONNECTIONS TO EXISTING WATERLINES AND FORCE MAINS SHALL BE MADE WITH THRUST COLLARS IN ACCORDANCE WITH THE DETAIL IN THESE PLANS.
- CONTRACTOR SHALL COORDINATE ALL UTILITY SHUTDOWNS WITH HARNETT REGIONAL WATER AND WILL GIVE 48 HOURS NOTICE OF ANY SERVICE INTERRUPTIONS. THE OWNER MAY REQUIRE THAT ANY SERVICE INTERRUPTIONS BE SCHEDULED FOR OFF-PEAK TIMES AND MAY LIMIT THE LENGTH OF ANY SERVICE SHUTDOWNS.

### UTILITY NOTES (CONTINUED):

- WATERLINE AND SEWER CONSTRUCTION/RELOCATION AND TIE-IN SHALL BE COORDINATED AND INSPECTED BY HARNETT REGIONAL WATER CONSTRUCTION INSPECTOR CHAD EVERETTE. HE CAN BE REACHED AT 910-263-0356.
- NO WATER OR SEWER WORK MAY BE PERFORMED ON WEEKENDS, HOLIDAYS, OR AFTER 6:00 P.M. WITHOUT PRIOR APPROVAL FROM HARNETT REGIONAL WATER.
- WATERLINES SHALL BE PVC SDR-21 OR DUCTILE IRON PIPE.

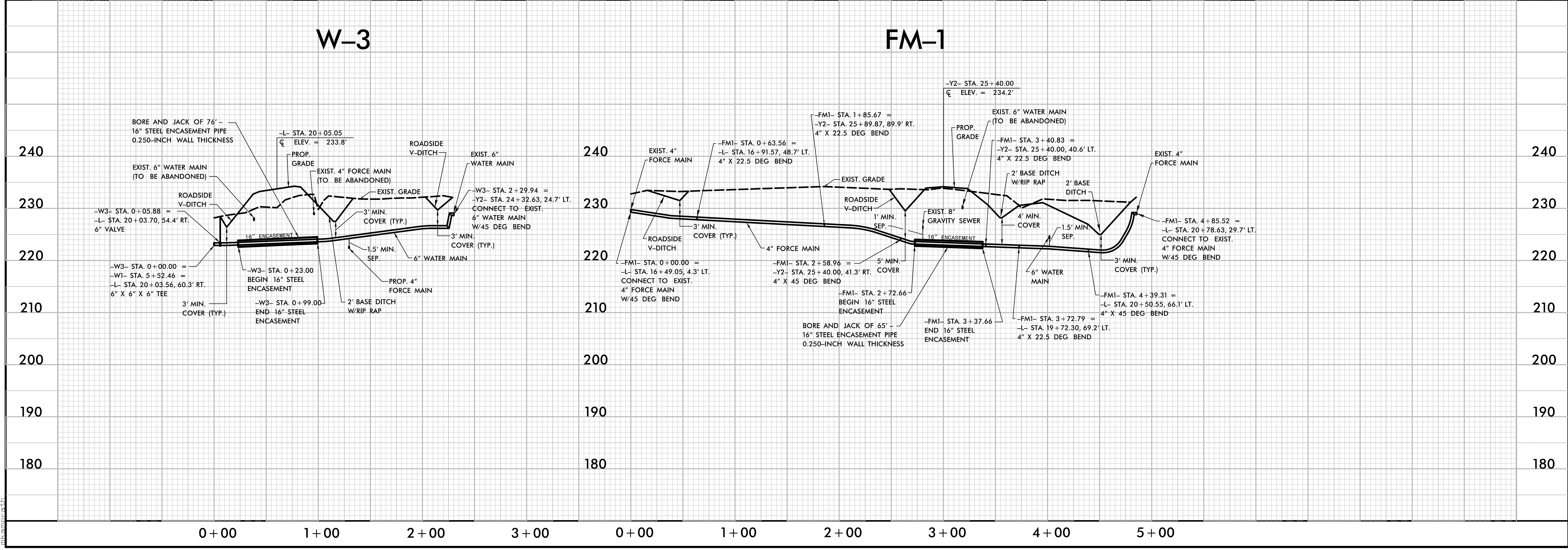
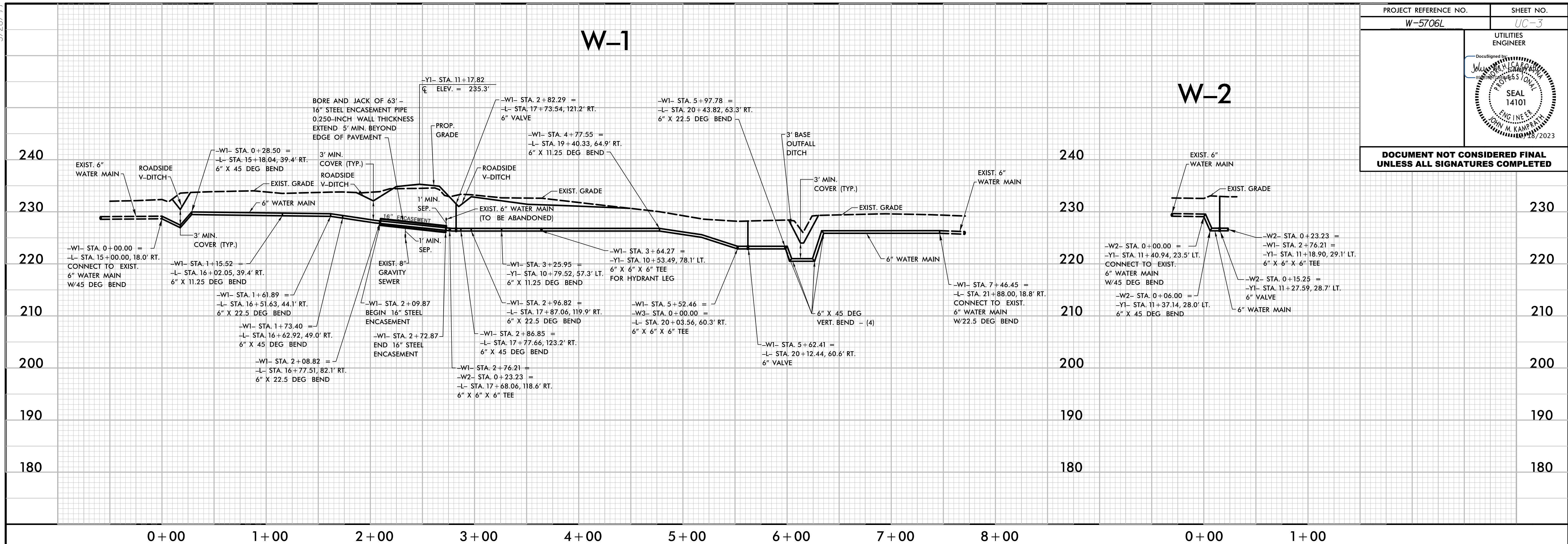
- DUCTILE IRON WATER PIPE FITTINGS - 1800 LBS.
- DUCTILE IRON SEWER PIPE FITTINGS - 400 LBS.
- SEE SHEET UC-3 FOR UTILITY PROFILES

REVISIONS

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 mhammond

5/28/2019

PROJECT REFERENCE NO. <b>W-5706L</b>	SHEET NO. <b>UC-3</b>
UTILITIES ENGINEER	
<b>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</b>	



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- D. The Utility Contractor shall provide the HRW Utility Construction Inspector with material submittals and shop drawings for all project materials prior to the construction of any gravity sewer line(s), manhole(s), sewer lift station(s) and associated sewer main(s) in Harnett County. The materials to be used on the project must meet the established specifications of HRW and be approved by the Engineer of Record prior to construction. All substandard materials or materials not approved for use in Harnett County found on the project site must be removed immediately when notified by the HRW Utility Construction Inspector.
- E. The sanitary sewer lateral connections should be installed 90° (perpendicular) to the sanitary sewer gravity lines with schedule 40 PVC pipe. HRW requires the Utility Contractor to provide the Professional Engineer (PE) with accurate measurements for locating sanitary sewer service lateral and associated each sanitary sewer clean-out. These measurements should be taken from the nearest downstream manhole up along the sanitary sewer main to the in-line wye fitting (or tapping saddle) and then another measurement from the in-line wye fitting (or tapping saddle) to the 4" x 4" long sweep combination wye fitting at the bottom of the sewer clean-out stack. These field measurements must be provided to the Professional Engineer (PE) in the red line drawings from the Utility Contractor for proper documentation in the As-Built Record Drawings submitted to HRW.
- F. The Utility Contractor shall be responsible to locate the newly installed sanitary sewer gravity line(s), sanitary sewer force main(s), sanitary sewer service lateral(s) and all associated sewer clean-out(s) in the proposed sanitary sewer system for other utility companies and their contractors until the new sanitary sewer line(s) and associated appurtenances have been approved by the North Carolina Department of Environmental Quality (NCDEQ) and accepted by HRW. All new sanitary sewer lines must have at least three (3 ft.) feet of cover and extend under all existing water main and storm water lines with a least 24" of vertical clearance below the bottom of the existing water main and storm water lines. ALL ductile iron sewer piping must be 401 epoxy coated or approved equal.
- G. The sanitary sewer gravity line(s), manhole(s), sanitary sewer service lateral(s) and associated clean-out(s) shall be

- O. relocation of existing utilities and/or securing existing utility poles, pipes, wires, cables, signs and/or utilities including services in accordance with the utility owner's requirements during sanitary sewer line installation, grading and street construction. When making a tap on an existing sewer force main, the Utility Contractor must have a permit from the North Carolina Department of Environmental Quality (NCDEQ) prior to begin the tap work. The Utility Contractor shall conduct a pneumatic pressure test using compressed air or other inert gas on the stainless steel tapping sleeve and gate valve prior to making the tap on an existing sanitary sewer force main. This pneumatic pressure test must be witnessed by the HRW Utility Construction Inspector. The Utility Contractor shall use Romac brand stainless steel tapping sleeve(s) or approved equal for all taps made on sanitary sewer force mains in Harnett County. The Utility Contractor shall use Romac brand Style "CB" sewer saddles with stainless steel bands or approved equal for all taps made on existing sanitary sewer gravity lines in Harnett County.
- P. The Utility Contractor shall provide a grease trap for each sanitary sewer service lateral that will be connected to a restaurant, food processing facility and any other commercial or industrial facility as required by the Harnett County Fat, Oil & Grease Ordinance. The grease trap must be rated for a minimum capacity of at least 1,000 gallons unless otherwise approved in writing by the HRW Pre-Treatment Coordinator. Garbage disposals should not be installed in homes and businesses that discharge wastewater to the Harnett Regional Water's Sanitary Sewer System as they are not approved by HRW.
- Q. Each sewer lift station must be provided with three phase power (at least 480 volts) and constructed to meet the minimum requirements of the latest version of the National Electrical Code (NEC) and Harnett Regional Water standard specifications and details. If three phase power is not available from the power company other arrangements must be approved by HRW Engineering prior to the start of construction.
- R. Where a new sanitary sewer force main is connected to an existing manhole in the Harnett Regional Water sewer collections system, the Utility Contractor must provide a protective coating (epoxy) for the interior surfaces of the manhole to protect it against corrosion, erosion and deterioration from the release of sewer gases such as methane and hydrogen sulfide.
- S. The sewer lift station design and associated equipment must meet or exceed the MINIMUM REQUIREMENTS FOR HARNETT COUNTY SEWER LIFT STATIONS. Each sanitary sewer lift station

- H. constructed in strict accordance with the standard specifications of the Harnett Regional Water. The sanitary sewer gravity line(s) must pneumatically pressure tested with compressed air at 5 psi and the sanitary sewer force main(s) must hydrostatically pressure tested with water or air at 200 psi. Sanitary sewer manholes must be vacuum tested to 10 inches of mercury and cannot drop below 9 inches in 60 seconds for 4 ft. diameter manholes, 75 seconds for 5 ft. diameter manholes. The test must be in accordance with the following standards: For ductile iron pipelines test in accordance with the applicable requirements of ASTM C924. For PVC pipelines test in accordance with ASTM F1417-98 and BPPA UMI-B-6. Vacuum testing shall be performed in accordance with ASTM C1244. The HRW Utility Construction Inspector and Engineer must witness all tests mentioned above.
- I. Prior to acceptance, all sewer service laterals will be inspected to ensure that they are installed at the proper depth. All sewer clean-outs must be installed so the 4" x 4" long sweep combination wye is at least three (3') feet but no more than four (4') feet below the finish grade unless otherwise approved in writing by HRW. The sewer cleanouts shall have a four (4") schedule 40 PVC pipe stubbed up from both ends of the 4" x 4" long sweep combination wye to be at least two (2') feet above the finish grade and cover each end with a four (4") inch temporary cap to keep out dirt, sand, rocks, water and construction debris. The vertical stack on each clean-out must be provided with a concrete donut for protection.
- J. Once the sanitary sewer gravity line(s) have been installed, pneumatically pressure tested and in place for at least 30 days, the Utility Contractor must contact the HRW Utility Construction Inspector to witness the mandrel test on each PVC sanitary sewer gravity line. The Utility Contractor will notify HRW to schedule the mandrel testing. The mandrel and proving ring must be supplied by the Utility Contractor. Closed circuit video camera inspections (at the Utility Contractor's expense) may be required by the HRW Utility Construction Inspector if the mandrel and mirror tamping testing cannot be completed with satisfactory results. The sanitary sewer lines should be flushed clean using a sewer ball of the proper diameter before any mandrel testing can be performed. The Utility Contractor is responsible to remove all dirt, sand, silt, gravel, mud and debris from the newly constructed sewer lines exercising care to keep the Harnett Regional Water's existing sanitary sewer systems clean. Sanitary sewer force main(s) shall be pressure tested to 200 psi for at least 2 hours like water lines.

- T. must be constructed with an all-weather access road that is at least 20 feet wide. The lift station site must be covered with weed blocking material and at least six (6") inches of ABC stone (crush and run). Once a sewer lift station has been installed, the Utility Contractor is responsible to schedule a draw down test with HRW Engineering and Collections staff, the Professional Engineer (PE), the Electrician, the original equipment manufacturers (OEM) representatives [For both the Pumps and the Generator]. This draw down test must be completed with power supplied from the electrical utility company and with power supplied by the emergency generator with satisfactory results before final inspections are conducted by the HRW Utility Construction Inspector.
- U. Once the Utility Contractor completes the installation of a sewer lift station, the Professional Engineer (PE) must submit the sewer permit certification and As-Built Record Drawings to the North Carolina Department of Environmental Quality (NCDEQ) and HRW for final approval. The Utility Contractor must supply HRW Engineering staff with three original Operation & Maintenance (O&M) Manuals along with the associated pump curves and electrical schematics for the associated sewer lift station equipment including all warranty information and documentation.
- V. Once the Utility Contractor completes the installation of a sewer lift station, the Developer must pay HRW the established System Control and Data Acquisition (SCADA) fees before the SCADA system will be installed at the new sewer lift station. The SCADA system must be installed and operational before the utilities may be accepted by HRW and placed into operation.
- W. HRW requires the Utility Contractor to provide all necessary equipment and devices for the testing and inspection of the sanitary sewer system. The equipment and devices may include but not limited to lamping with mirrors, mandrels, sewer balls, plugs, air compressors and associated compressed air lines. If the HRW Utility Construction Inspector deems that a closed circuit video camera inspection of the newly constructed sewer system is necessary, then all costs for the closed circuit camera inspection will be the responsibility of the Utility Contractor. All closed circuit video camera inspections must be recorded on VHS tapes that will be released to HRW for record keeping, review and approval of the sewer system.
- X. Any use of sewer plugs to temporarily block Harnett Regional Water's existing sanitary sewer lines must be coordinated with the HRW Collections Supervisor at least two (2) days in advance of installing the plugs. The sewer plugs must be removed as soon

- J. The Utility Contractor shall be responsible to locate the newly installed sanitary sewer system(s) for other utility companies and their contractors until the new sanitary sewer system(s) have been approved by the North Carolina Department of Environmental Quality (NCDEQ) and accepted by HRW.
- K. HRW requires that the Utility Contractor install tracer wire in the trench with all sanitary sewer force mains. The tracer wire shall be 12 ga. insulated, solid copper conductor and it shall be terminated at the top of the valve boxes or manholes. No spliced wire connections shall be made underground on tracer wire installed in Harnett County. The tracer wire may be secured with duct tape to the top of the pipe before backfilling. The tracer wire is not required for the gravity sewer line(s) between manholes.
- L. The Utility Contractor shall provide the Professional Engineer (PE) and HRW Utility Construction Inspector with a set of red line drawings identifying the complete sewer system installed for each project. The red line drawings should identify the materials, pipe sizes and approximate depths of the sewer lines as well as the installed locations of the manhole(s), sanitary sewer gravity line(s), sanitary sewer service laterals, clean-outs, sewer lift station(s) and associated force main(s). The red line drawings should clearly identify any deviations from the NCDEQ approved plans. All change orders must be approved by HRW and the Professional Engineer (PE) in writing and properly documented in the red line field drawings.
- M. Prior to the commencement of any work within established utility easements or NCDOT right-of-ways the Utility Contractor is required to notify all concerned utility companies in accordance with G.S. 87-102. The Utility Contractor must call the NC One Call Center at 811 or (800) 632-4949 to verify the location of existing utilities prior to the beginning of construction. Existing utilities shown in these plans are taken from maps furnished by various utility companies and have not been physically located by the P.E. (i.e. TELEPHONE, CABLE, WATER, SEWER, ELECTRICAL POWER, FIBER OPTIC, NATURAL GAS, ETC.).
- N. The Utility Contractor shall spot dig to expose each existing utility pipe or line which may conflict with construction of proposed sanitary sewer line extensions well in advance to verify locations of the existing utilities. The Utility Contractor shall provide both horizontal and vertical clearances to the Professional Engineer (PE) to allow the PE to adjust the sanitary sewer line design in order to avoid conflicts with existing underground utilities. The Utility Contractor shall coordinate with the utility owner and be responsible for temporary

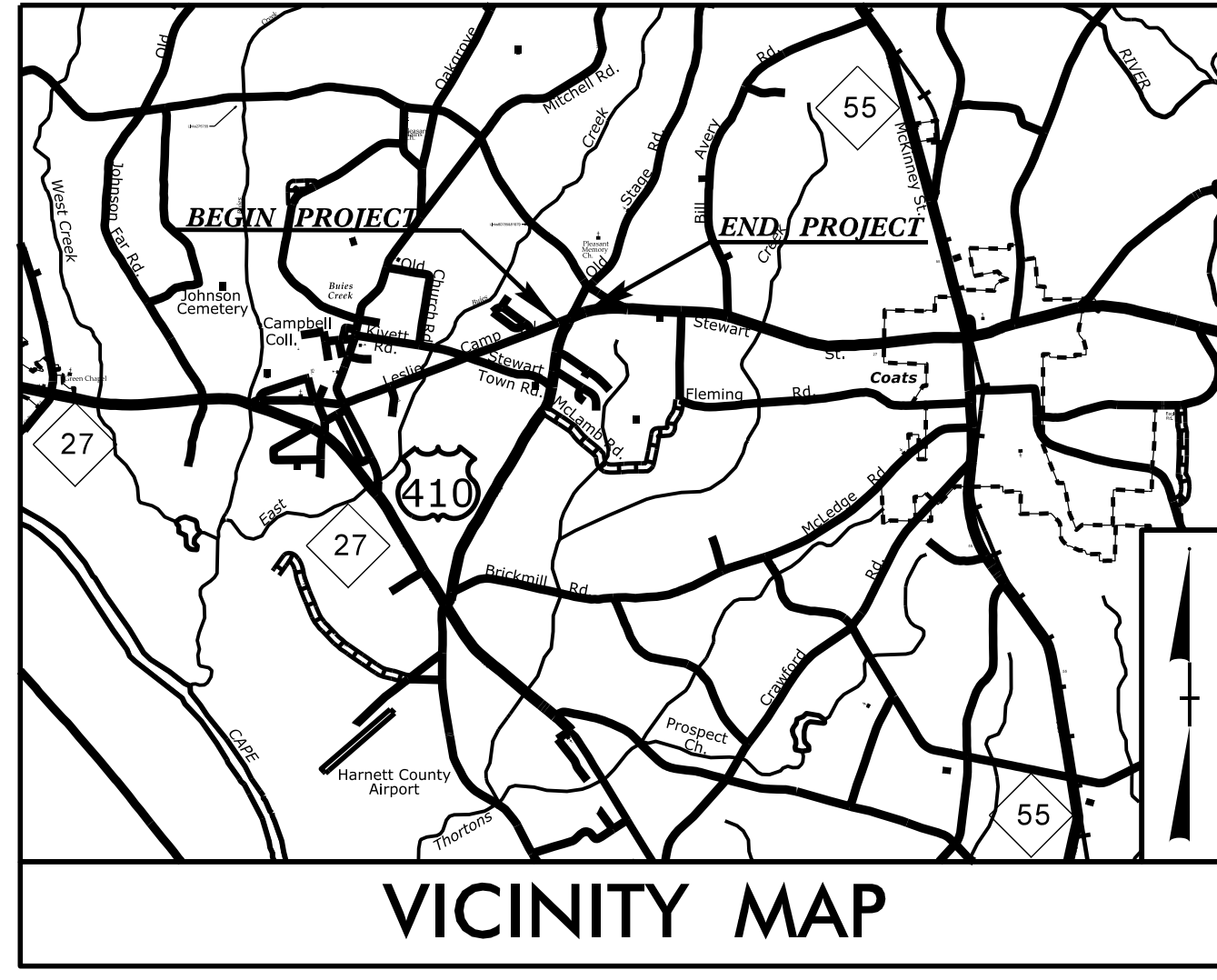
- Y. as possible once the new sanitary sewer lines have been inspected, pressure tested, mandrel tested, approved by the North Carolina Department of Environmental Quality (NCDEQ) and accepted by HRW to allow the sewer to flow as designed in Harnett Regional Water's existing sanitary sewer lines or when so ordered by the HRW Collections Supervisor to limit interruptions to the normal flow of the sanitary sewer collection system(s). The Utility Contractor must provide the pumps hoses and necessary connectors for a temporary pump around setup if required by the HRW Collections Supervisor. Mr. Randolph Clegg, HRW Collections Supervisor may be contacted between 8:00 am and 5:00 pm Monday through Friday at (910) 893-7575 extension 3241.
- Z. The Utility Contractor will be responsible for any and all repairs due to leakage or damage resulting from poor workmanship during the one (1) year warranty period once the sewer system improvements have been approved by the North Carolina Department of Environmental Quality (NCDEQ) and accepted by HRW. The Utility Contractor will be responsible for any and all repairs due to damages resulting from failure to locate the new sanitary sewer lines and associated appurtenances for other utilities and their contractors until the sanitary sewer lines have been approved by NCDEQ and accepted by HRW. HRW will provide maintenance and warranty repairs if necessary due to lack of response within 48 hours of notification of warranty work. HRW will invoice the Developer and/or Utility Contractor for materials and labor in such cases.
- AA. In developments and projects that require utility easements to be established for future HRW right-of-way, the Registered Land Surveyor (RLS) shall provide the HRW Right-of-Way Agent with an official copy of the recorded plat and legal description of the said easement as recorded with the Harnett County Register of Deeds. The recorded documents must be provided to the HRW Right-of-Way Agent before the utility improvements within the said easement can be placed into operation. Any and all easements that must be obtained from adjoining property owners must be provided to HRW by the Developer at no cost to Harnett County. The final inspection of all sanitary sewer system improvements cannot be scheduled with HRW until the streets have been paved; the rights-of-way and utility easements have been seeded and stabilized with an adequate stand of grass in place to prevent erosion issues on site.
- BB. The Engineer of Record is responsible to ensure that construction is, at all times, in compliance with accepted sanitary engineering practices and approved plans and specifications. No field changes to the approved plans are allowed without prior written approval

by HRW. A copy of each engineer's field report is to be submitted to HRW as each such inspection is made on system improvements or testing is performed by the contractor. Water and sewer infrastructure must pass all tests required by HRW specifications and those of all applicable regulatory agencies. These tests include, but are not limited to: air test, vacuum test, mandrel test, visual test, pressure test, bacteriological test, etc. A HRW Inspector must be present during testing and all test results shall be submitted to HRW. All tests must be satisfied before the final inspection will be scheduled with the HRW Inspector. The Engineer of Record must request in writing to schedule the final inspection once all construction is complete. The Developer's Engineer of Record and the HRW Utility Construction Inspector shall prepare a written punch list of any defects or deficiencies noted during the final inspection, should any exist. Upon completion of the punch list, the Developer's Engineer of Record will schedule another inspection. In the event the number of inspections performed by the HRW exceeds two, additional fees may be assessed to the Developer.

PROJECT REFERENCE NO. <i>W-5706L</i>	SHEET NO. <i>UC-6</i>
RW SHEET NO.	
UTILITIES ENGINEER	
<b>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</b>	

09.08/99

**TIP PROJECT: W-5706L**



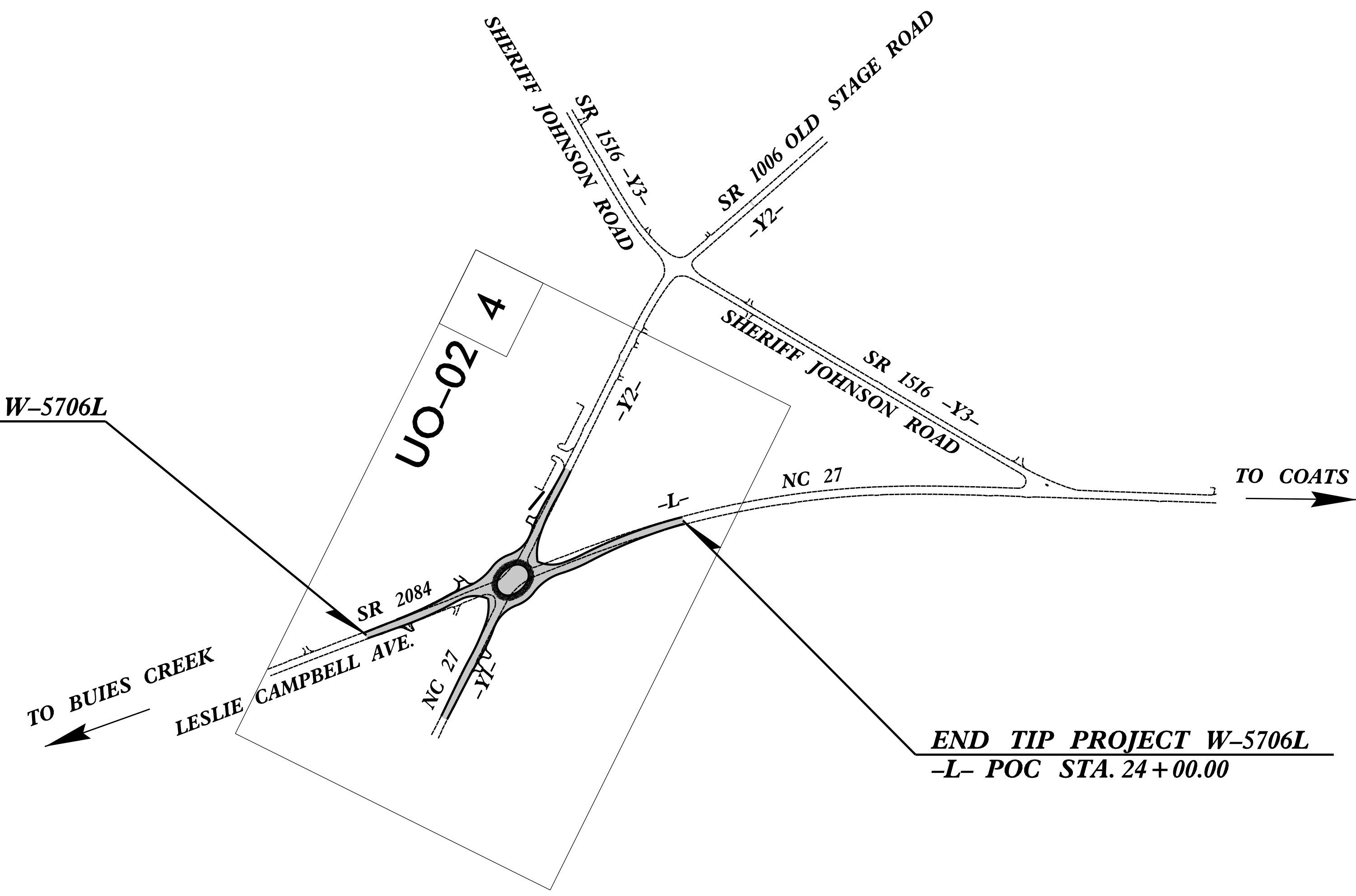
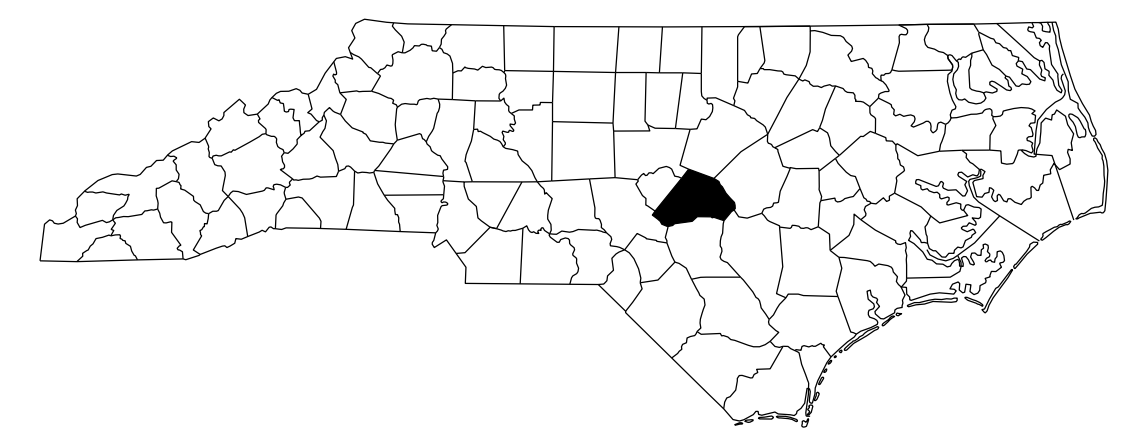
STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

**UTILITIES BY OTHERS PLANS  
HARNETT COUNTY**

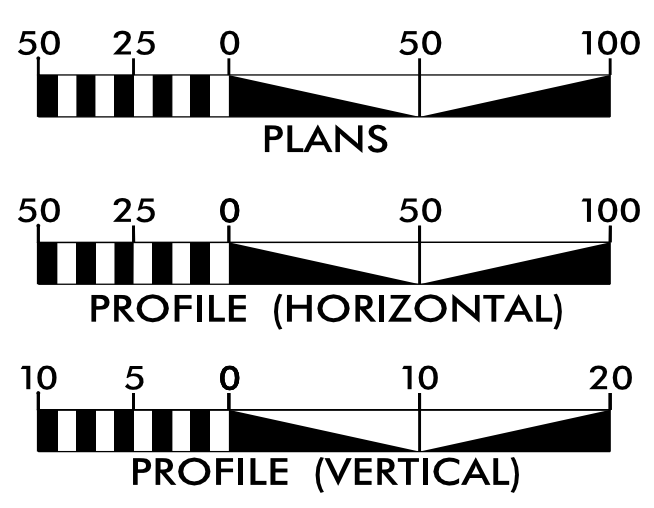
LOCATION: ROUNDABOUT@NC 27 AND SR 1007 (OLD STAGE RD.)  
TYPE OF WORK: POWER (DISTRIBUTION) AND COMMUNICATIONS

T.I.P. NO.	SHEET NO.
W-5706L	UO-1

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



**GRAPHIC SCALES**



**INDEX OF SHEETS**

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

**UTILITY OWNERS WITH CONFLICTS**

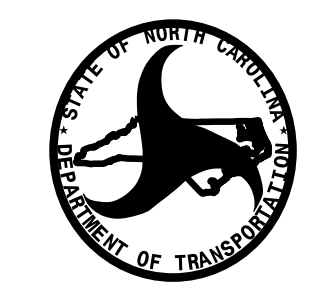
- (A) POWER - DUKE ENERGY
- (B) COMMUNICATIONS - BRIGHTSPEED
- (C) COMMUNICATIONS - SPECTRUM

PREPARED IN THE OFFICE OF:



2641 Sumner Boulevard  
Suite 116  
Raleigh, NC 27616  
(919) 878-7466

Freddie Bunn                      UTILITY PROJECT MANAGER  
Kenny Stutts                     PROJECT UTILITY COORDINATOR



DIVISION OF HIGHWAYS  
DIVISION 6  
DIV ADDRESS  
558 Gillespie Street  
Fayetteville, NC

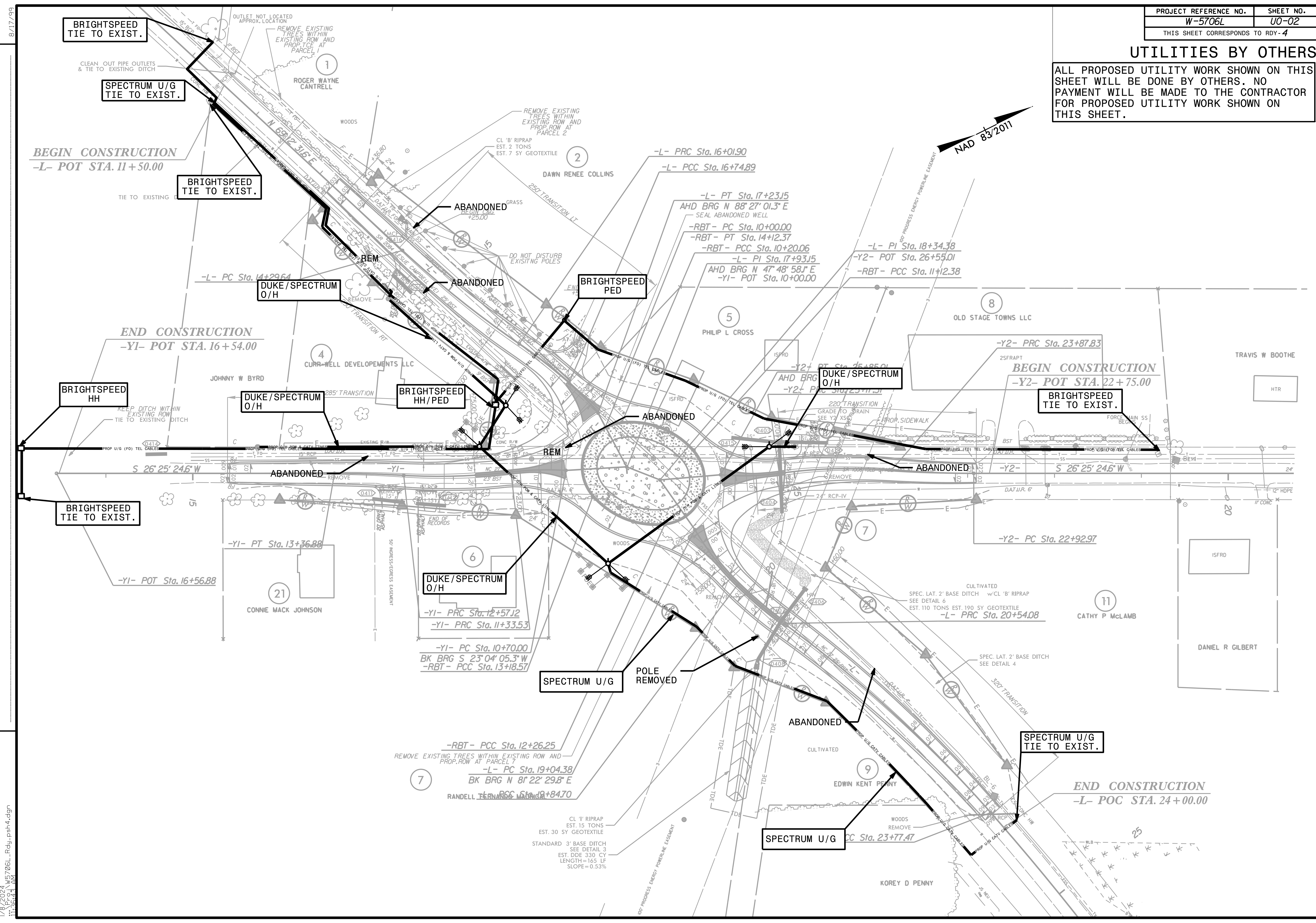
Rick Handlin                     DIVISION UTILITY ENGINEER  
John Walters                    UTILITY COORDINATOR

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### 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.

R/W REVISION NO.1:12/22/21 - REVISED -RBT1- DESIGN AND APPROACH LEGS -L-, -Y1- & -Y2-



8/17/99  
1/8/2024  
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## **CROSS SECTION INDEX OF SHEETS**

<b>-L-</b> .....	<b>X-1 TO X-6</b>
<b>-RBT1-</b> .....	<b>X-7 TO X-11</b>
<b>-Y1-</b> .....	<b>X-12 TO X-16</b>
<b>-Y2-</b> .....	<b>X-17 TO X-20</b>

**STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS**

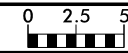
PROJ. REFERENCE NO.	SHEET NO.
W-5706L	X-1A

**NOTE: EMBANKMENT COLUMN DOES NOT INCLUDE BACKFILL FOR UNDERCUT**

**CROSS-SECTION SUMMARY**

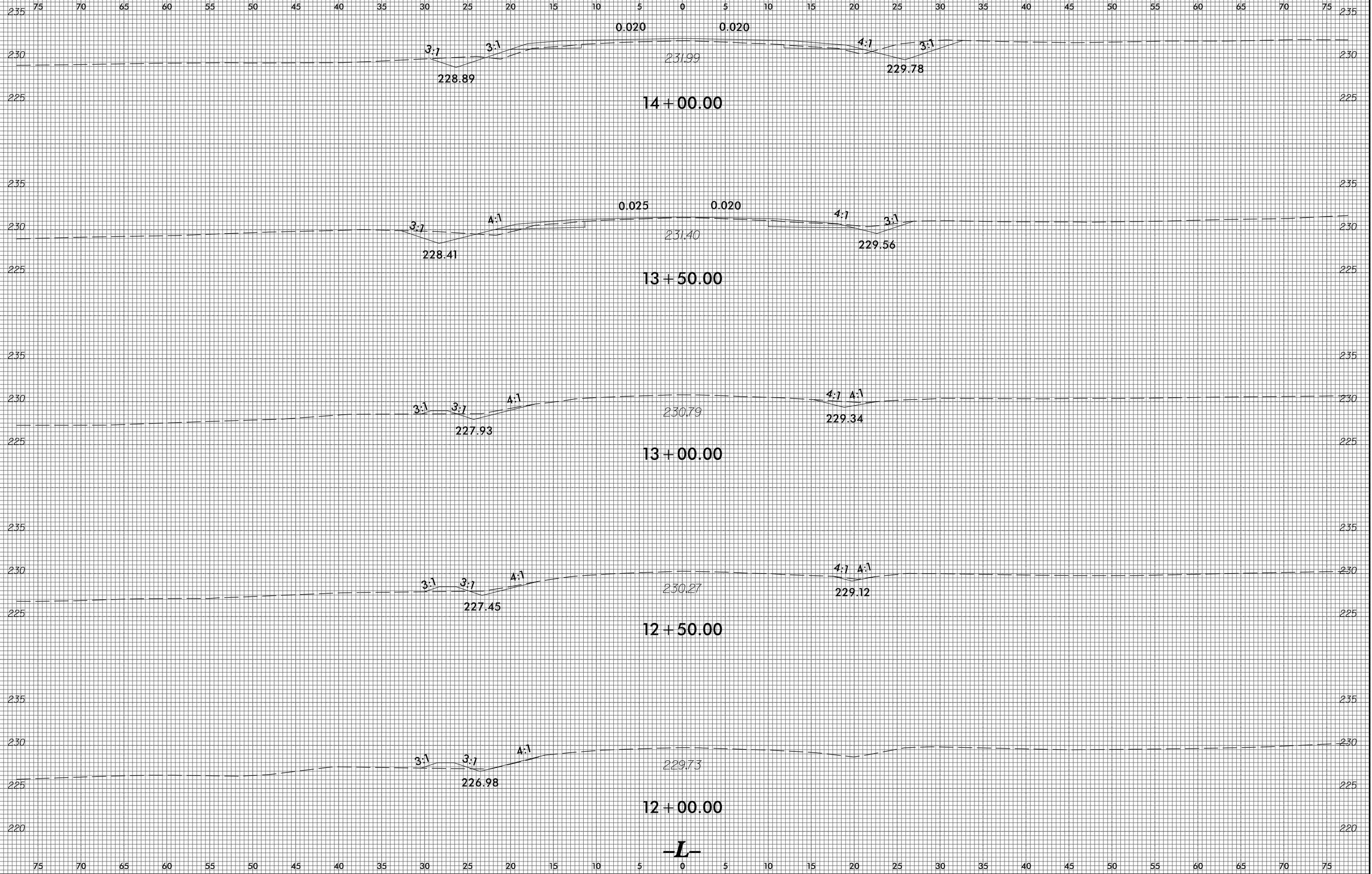
Station	Uncl. Exc.	Embt	Station	Uncl. Exc.	Embt	Station	Uncl. Exc.	Embt	Station	Uncl. Exc.	Embt	
L	(cu. yd.)	(cu. yd.)	L	(cu. yd.)	(cu. yd.)	Y1	(cu. yd.)	(cu. yd.)	Rbt	(cu. yd.)	(cu. yd.)	
12+00.00	0	3	19+04.38	0	0	14+00.00	13	0	11+50.00	0	0	<b>Approximate quantities only. Unclassified excavation, borrow excavation, fine grading, clearing and grubbing, and removal of existing pavement will be paid for at the lump sum price for "Grading".</b>
12+50.00	2	5	19+50.00	44	188	14+25.00	10	0	11+75.00	1	142	
13+00.00	4	3	20+00.00	32	200	14+50.00	10	0	12+00.00	0	155	
13+20.00	4	1	20+50.00	51	138	14+60.00	4	0				
13+50.00	9	1	21+00.00	35	63	14+75.00	5	0	<b>Station</b>	<b>Uncl. Exc.</b>	<b>Embt</b>	
14+00.00	14	4	21+50.00	2	35	15+00.00	5	0	<b>Rbt</b>	<b>(cu. yd.)</b>	<b>(cu. yd.)</b>	
14+50.00	5	18	22+00.00	3	17							
15+00.00	0	32	22+50.00	1	12	<b>Station</b>	<b>Uncl. Exc.</b>	<b>Embt</b>	12+00.00	0	0	
15+37.00	0	24	23+00.00	2	9	<b>Y2</b>	<b>(cu. yd.)</b>	<b>(cu. yd.)</b>	12+25.00	0	206	
15+50.00	0	9	23+50.00	3	6	22+90.00	0	0	12+50.00	5	295	
15+63.00	0	10	23+80.00	1	2	23+00.00	2	1	12+75.00	11	322	
15+89.00	0	20	24+00.00	0	0	23+25.00	7	4	13+00.00	14	308	
16+00.00	0	9				23+50.00	8	4	13+25.00	14	269	
16+15.00	0	12	<b>Station</b>	<b>Uncl. Exc.</b>	<b>Embt</b>	23+75.00	11	3	13+50.00	6	197	
16+50.00	0	28	<b>Y1</b>	<b>(cu. yd.)</b>	<b>(cu. yd.)</b>	24+00.00	15	2	<b>Station</b>	<b>Uncl. Exc.</b>	<b>Embt</b>	
17+00.00	9	19	10+70.00	0	0	24+25.00	20	1	<b>Rbt</b>	<b>(cu. yd.)</b>	<b>(cu. yd.)</b>	
17+23.15	15	1	10+75.00	0	7	24+50.00	24	2				
<b>Station</b>	<b>Uncl. Exc.</b>	<b>Embt</b>	11+00.00	8	22	24+75.00	31	2	13+50.00	0	0	
<b>L</b>	<b>(cu. yd.)</b>	<b>(cu. yd.)</b>	11+25.00	18	8	25+00.00	43	3	13+75.00	0	150	
12+50.00	0	0	11+50.00	20	5	25+25.00	44	6	14+00.00	0	139	
13+00.00	3	0	11+75.00	22	5	25+50.00	56	6	14+12.37	0	63	
13+20.00	4	0	12+00.00	25	6	25+75.00	38	7				
13+50.00	10	0	12+25.00	17	3	25+85.01	0	5				
14+00.00	19	1	12+50.00	15	0							
14+50.00	28	1	12+75.00	16	0	<b>Station</b>	<b>Uncl. Exc.</b>	<b>Embt</b>				
15+00.00	40	2	13+00.00	16	0	<b>Y2</b>	<b>(cu. yd.)</b>	<b>(cu. yd.)</b>				
15+37.00	31	2	13+25.00	21	0	23+00.00	0	0				
15+50.00	10	0	13+50.00	18	0	23+25.00	13	2				
15+63.00	9	0	13+75.00	9	0	23+50.00	8	0				
15+89.00	16	0	14+00.00	2	0	23+75.00	8	0				
16+00.00	7	0	14+25.00	2	0	24+00.00	8	0				
16+15.00	13	0	14+50.00	3	0	24+25.00	13	1				
16+50.00	32	1	14+60.00	2	0	24+50.00	23	1				
17+00.00	21	1	14+75.00	1	0	24+75.00	25	1				
17+23.15	1	1	<b>Station</b>	<b>Uncl. Exc.</b>	<b>Embt</b>	25+00.00	17	0				
<b>Station</b>	<b>Uncl. Exc.</b>	<b>Embt</b>	<b>Y1</b>	<b>(cu. yd.)</b>	<b>(cu. yd.)</b>	25+25.00	14	1				
<b>L</b>	<b>(cu. yd.)</b>	<b>(cu. yd.)</b>	10+70.00	0	0	25+50.00	12	1				
19+04.38	0	0	10+75.00	0	3	25+75.00	19	0				
19+50.00	126	47	11+00.00	7	26	25+85.01	17	0				
20+00.00	160	23	11+25.00	15	15							
20+50.00	247	28	11+50.00	26	2	<b>Station</b>	<b>Uncl. Exc.</b>	<b>Embt</b>				
21+00.00	293	27	11+75.00	17	1	<b>Rbt</b>	<b>(cu. yd.)</b>	<b>(cu. yd.)</b>				
21+50.00	254	29	12+00.00	2	1	10+00.00	0	0				
22+00.00	216	33	12+25.00	4	0	10+25.00	7	133				
22+50.00	174	35	12+50.00	5	0	10+50.00	16	143				
23+00.00	133	28	12+75.00	5	0	10+75.00	24	144				
23+50.00	101	17	13+00.00	6	1	11+00.00	23	138				
23+80.00	55	10	13+25.00	8	1	11+25.00	11	128				
24+00.00	19	4	13+50.00	9	1	11+50.00	3	121				
			13+75.00	12	0							

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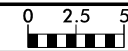
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SHEET NO.  
X-1

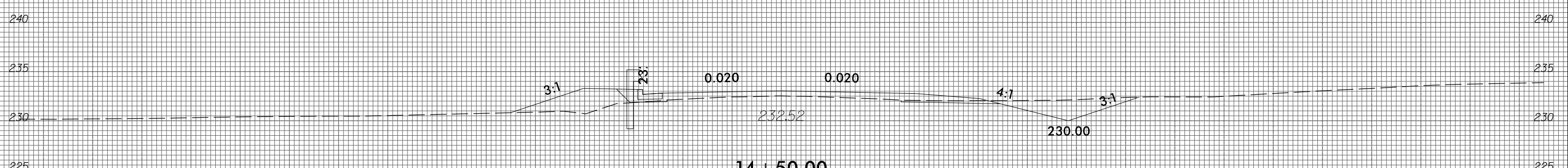
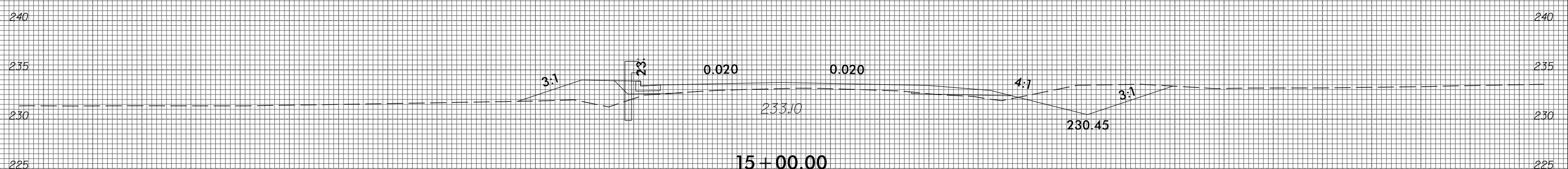
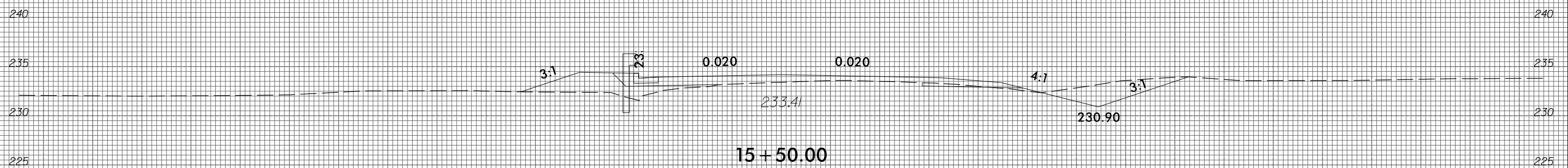
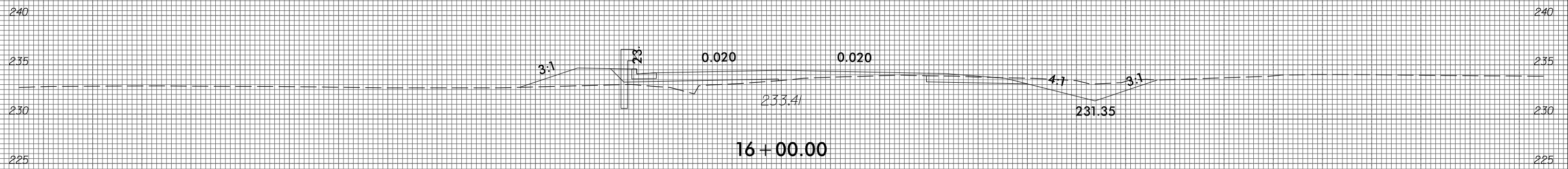


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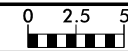
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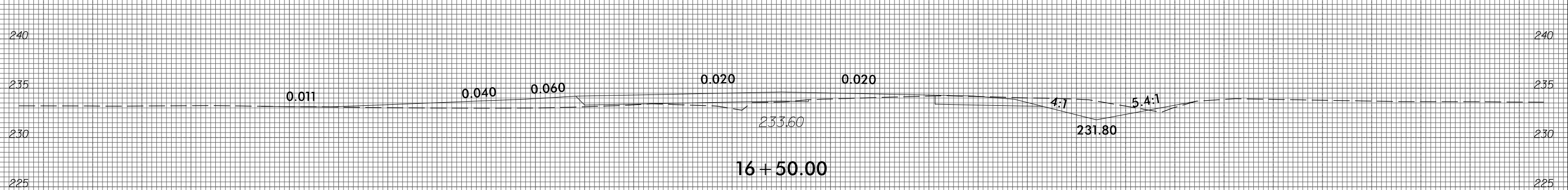
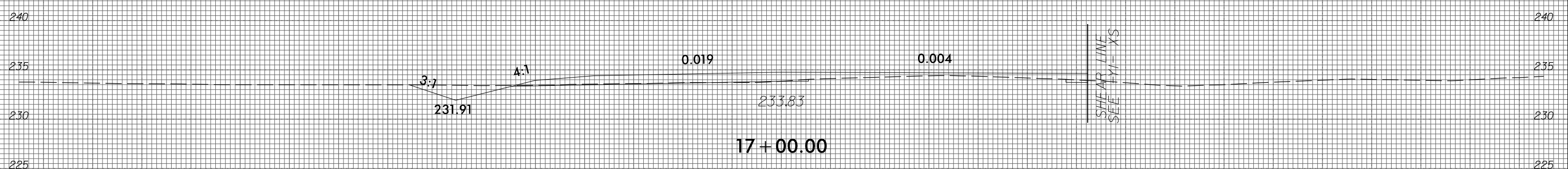
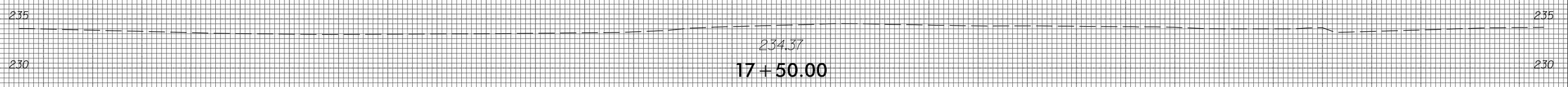
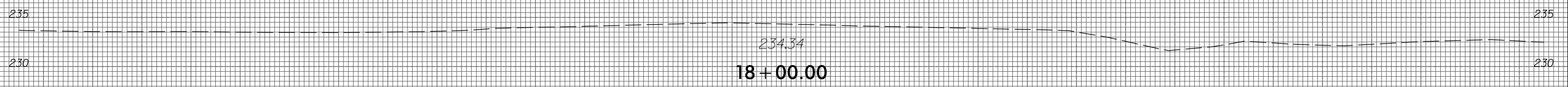
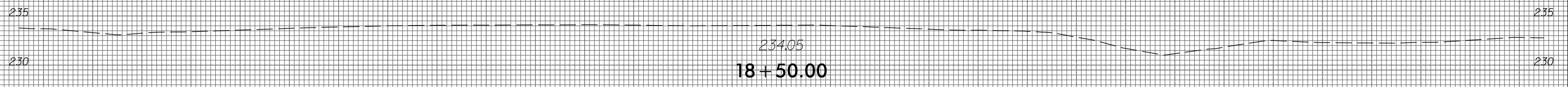
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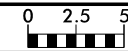


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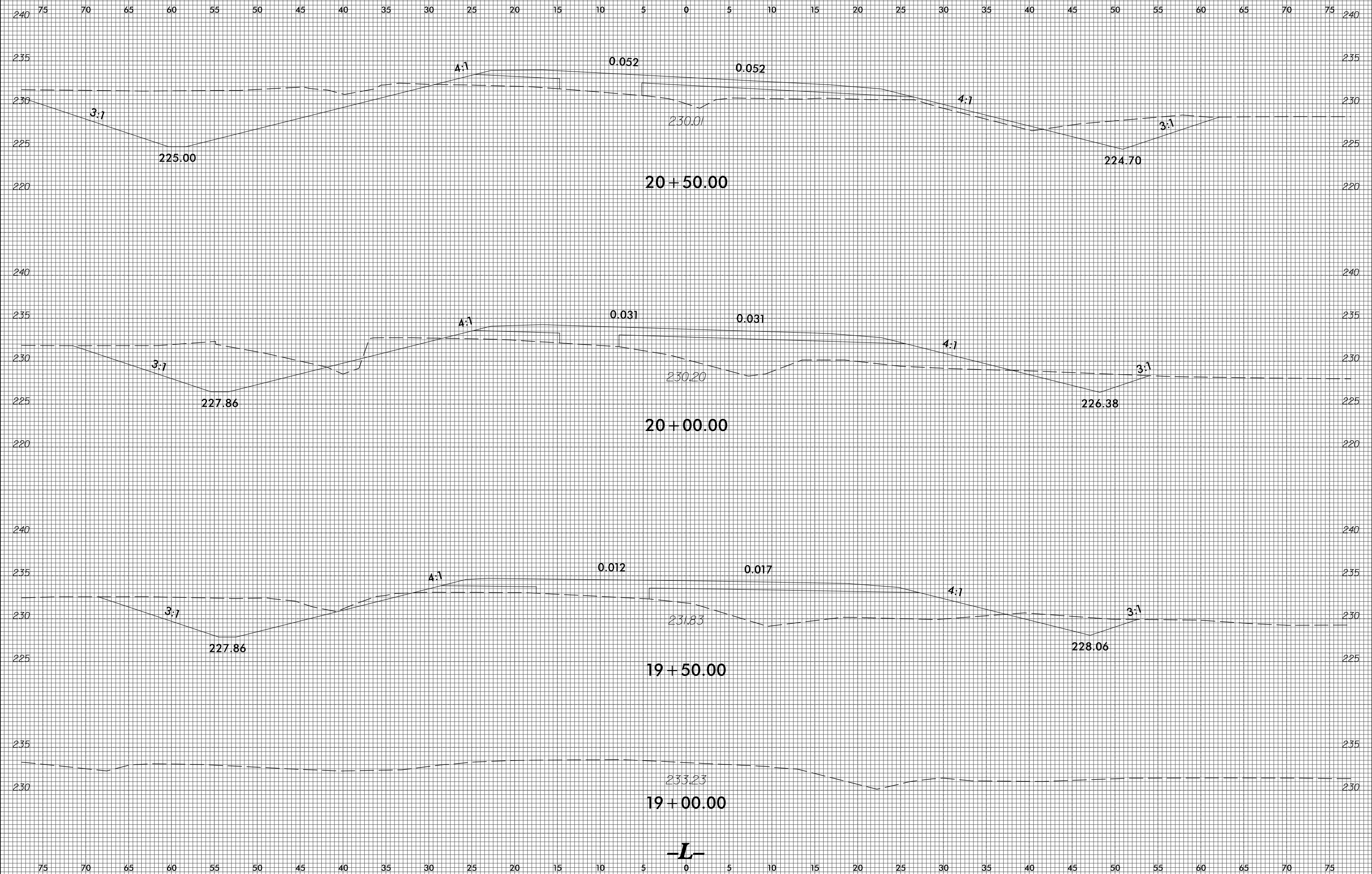
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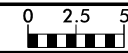


PROJ. REFERENCE NO.	SHEET NO.
W-5706L	X-4

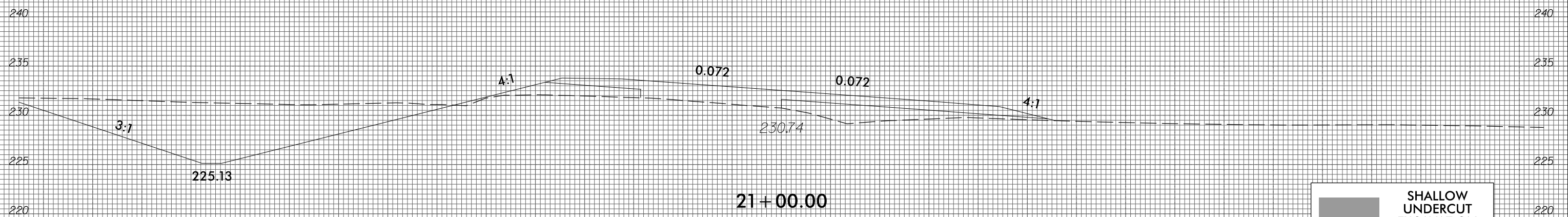
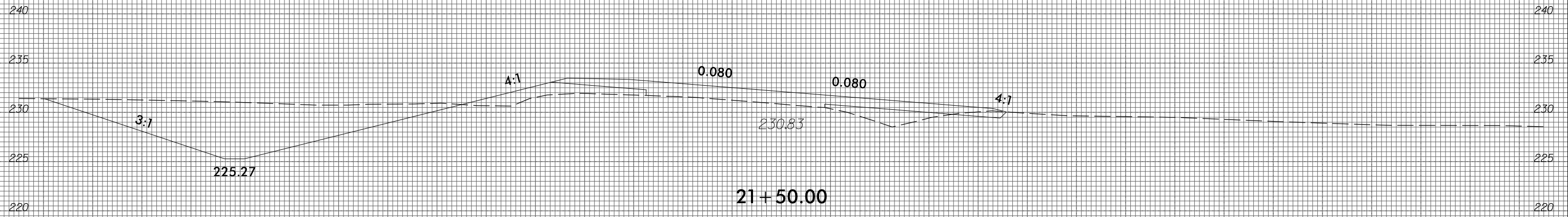
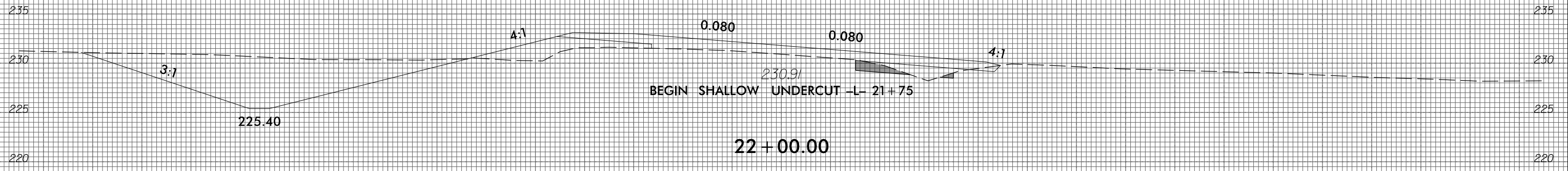


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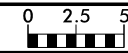
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 SHALLOW UNDERCUT EXCAVATION

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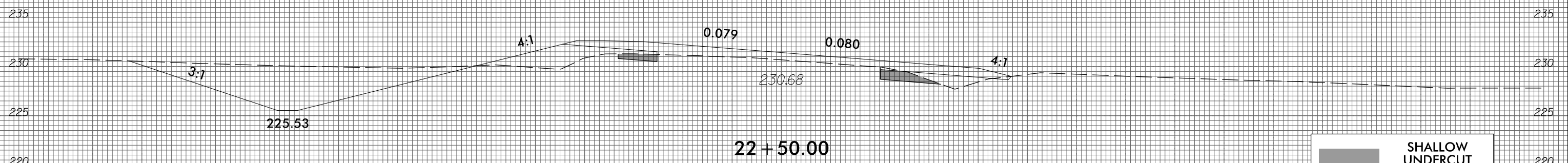
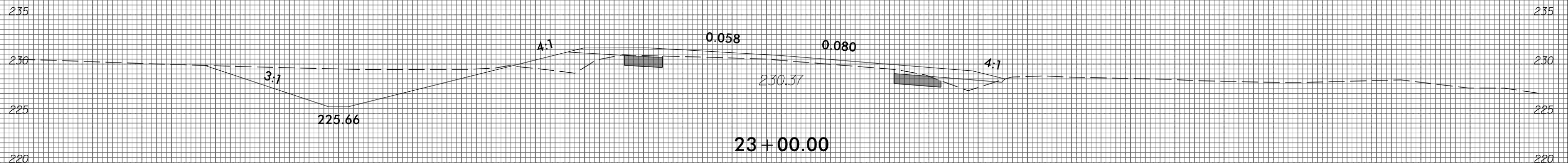
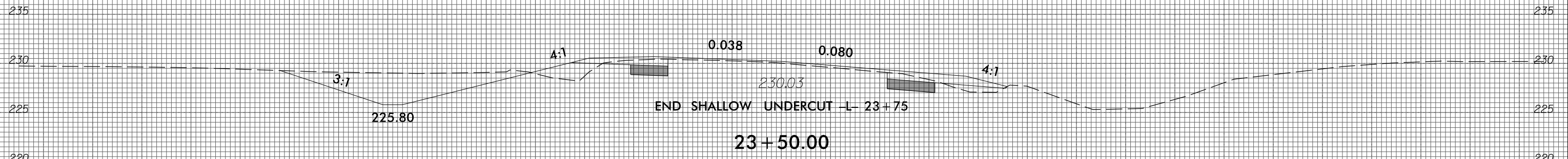
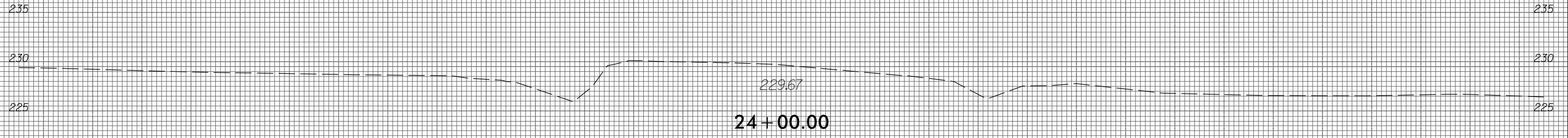
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PROJ. REFERENCE NO.  
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SHEET NO.  
X-6

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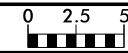
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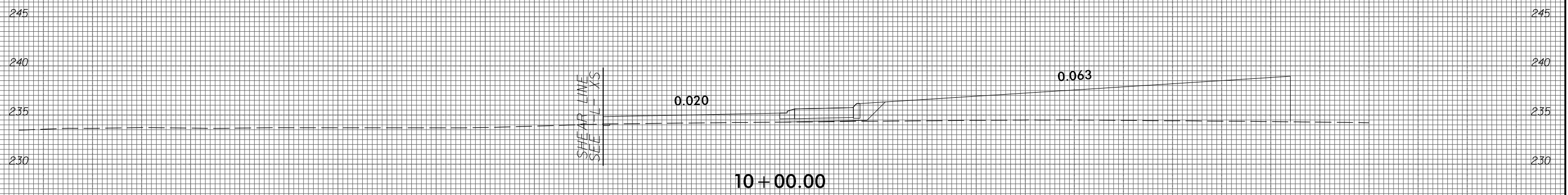
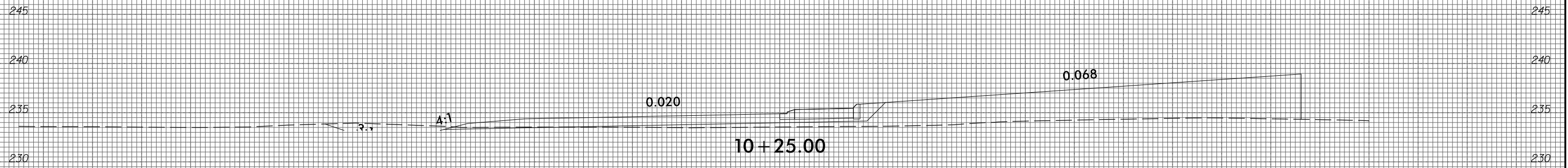
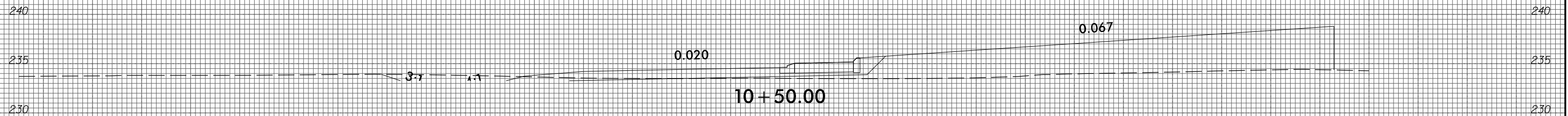
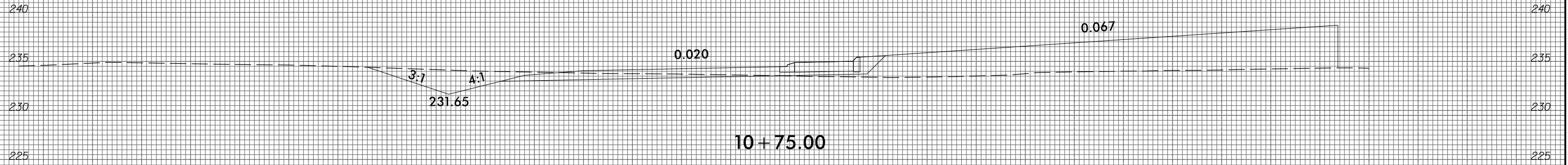
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SHEET NO.  
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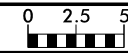
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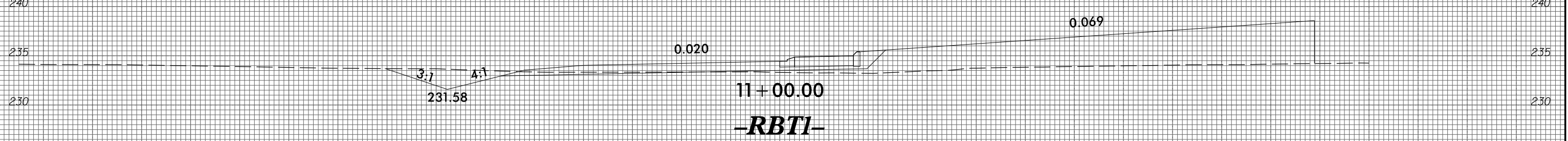
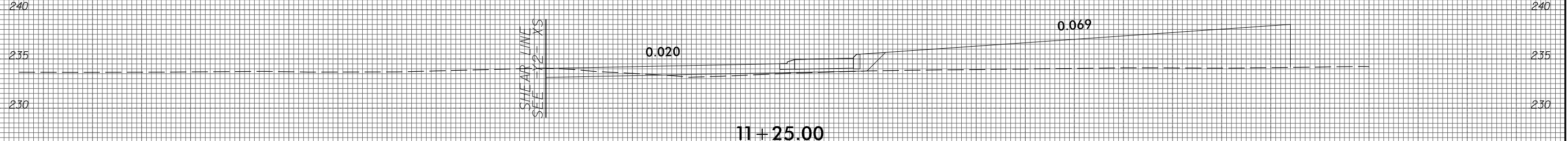
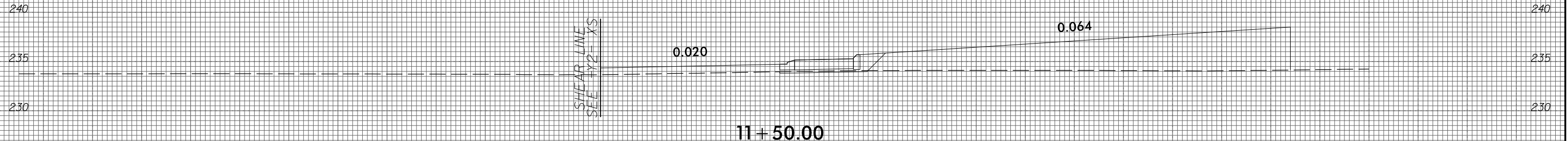
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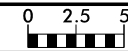


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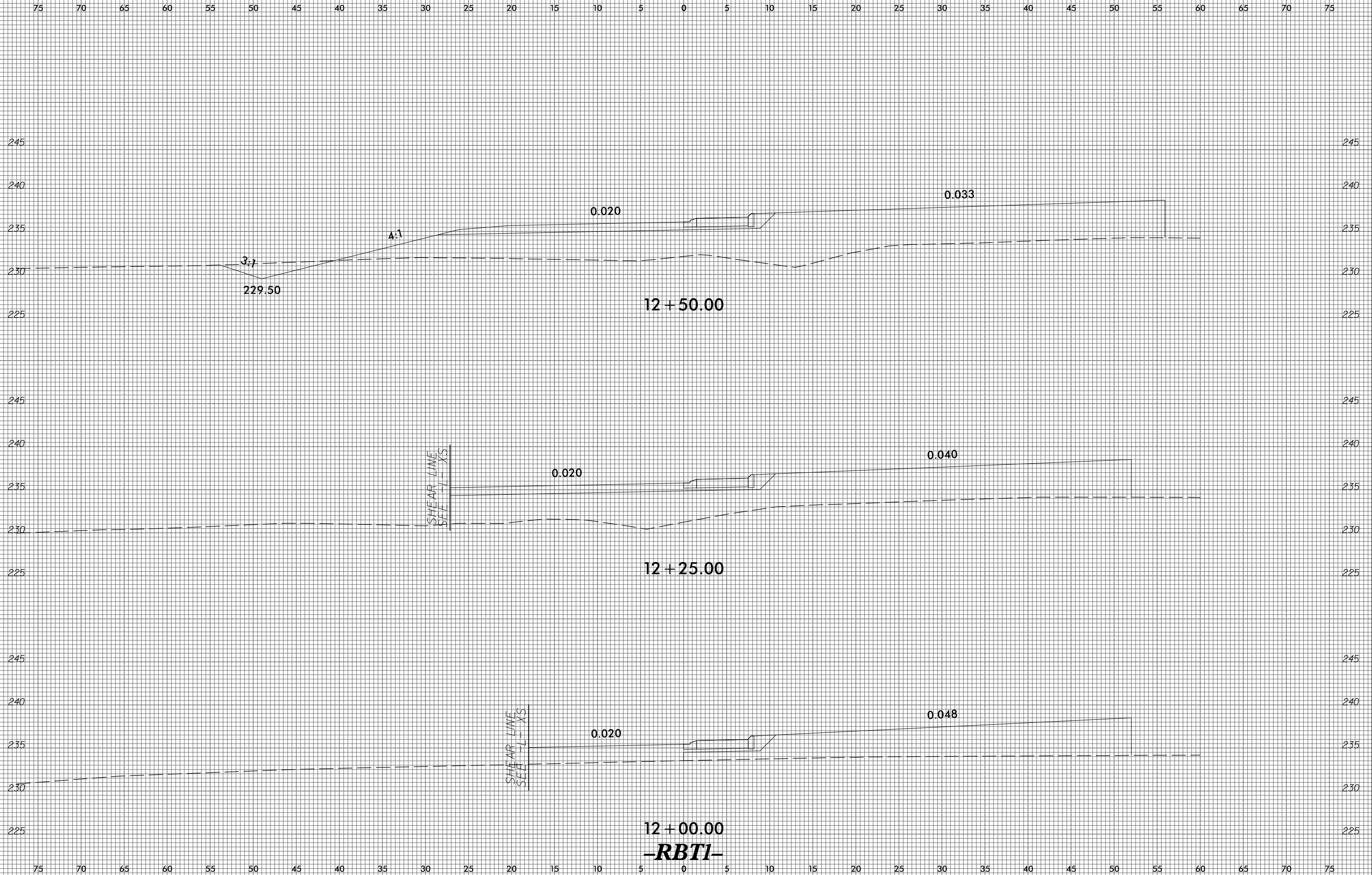
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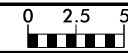
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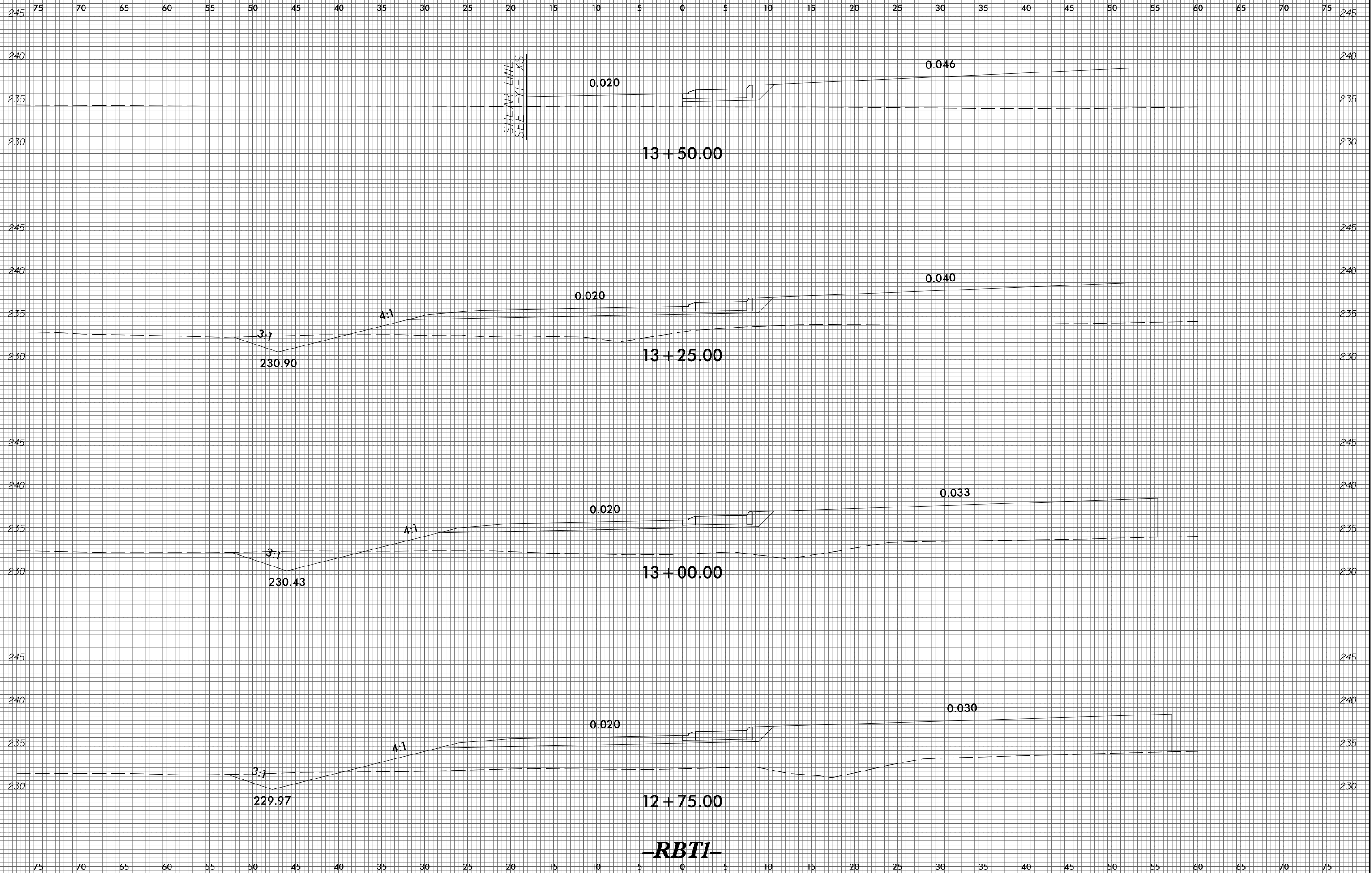
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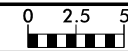
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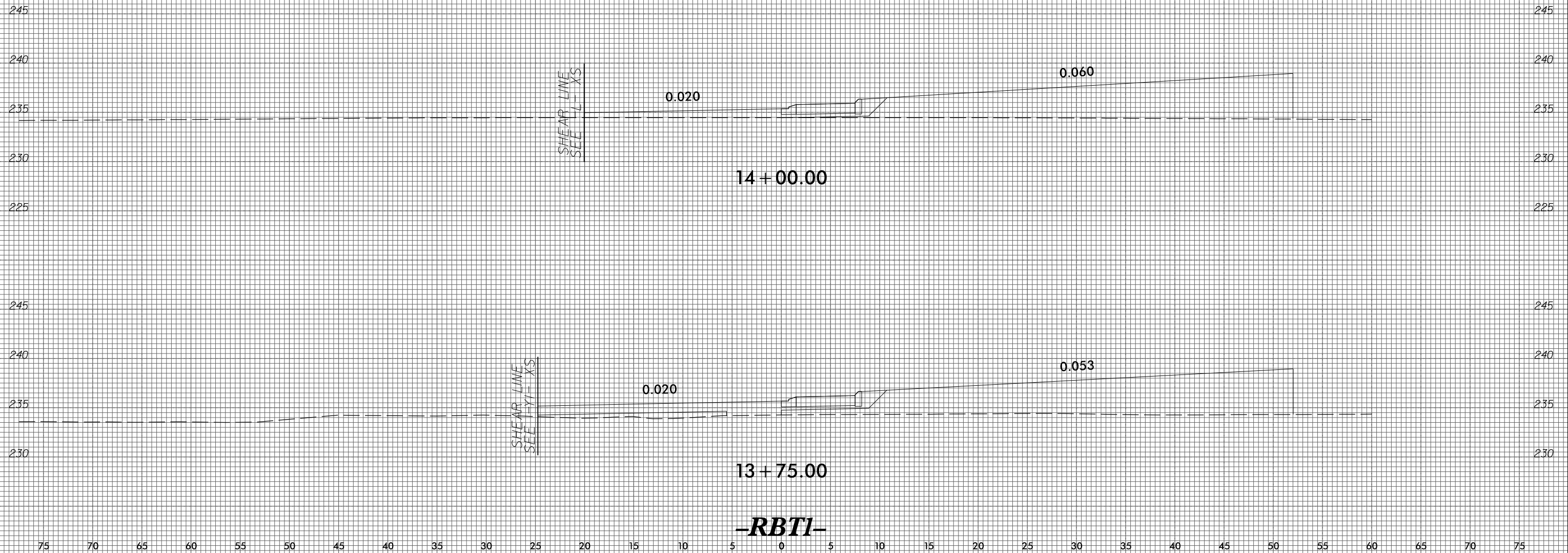
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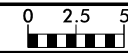


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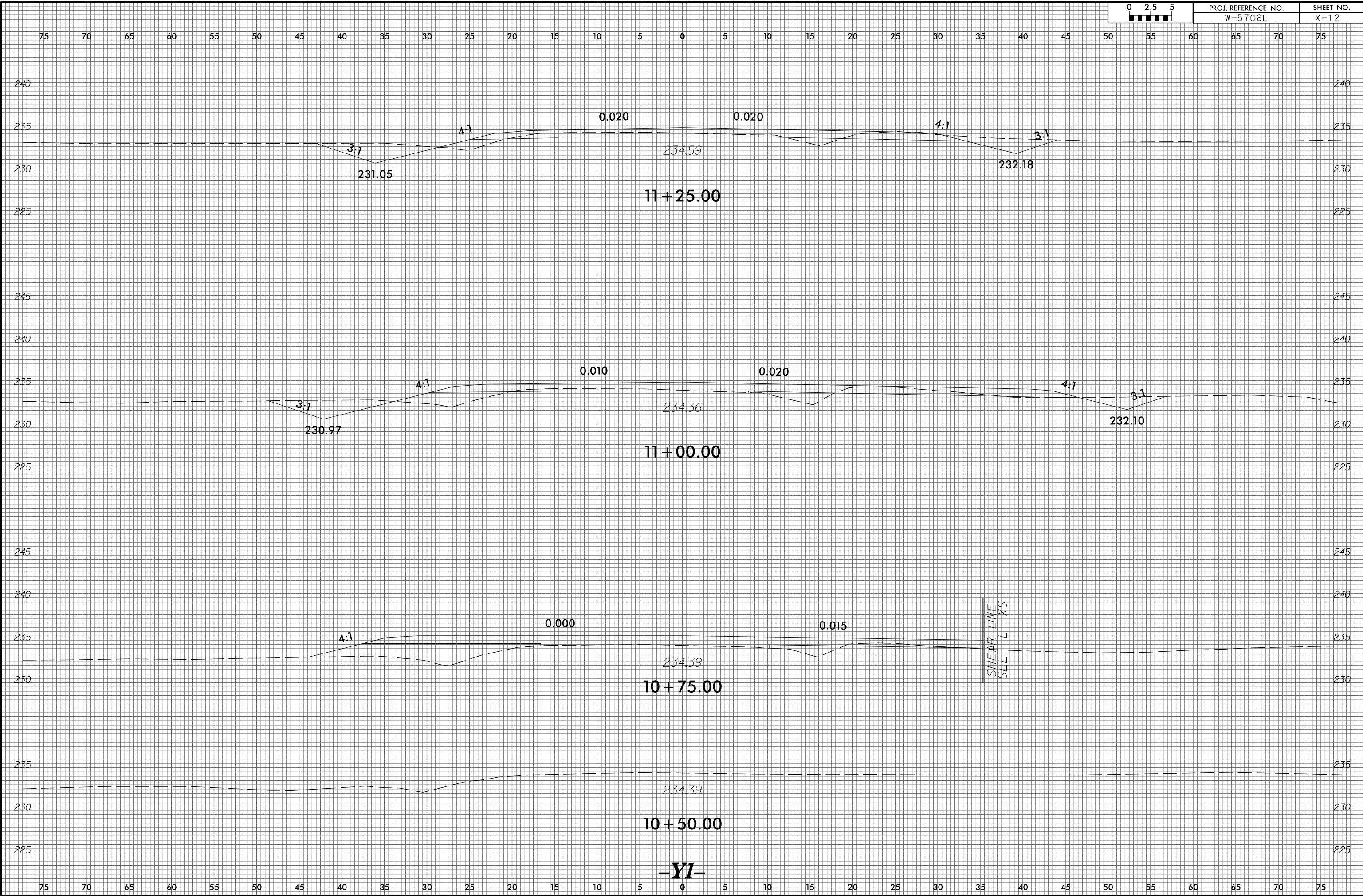
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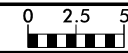


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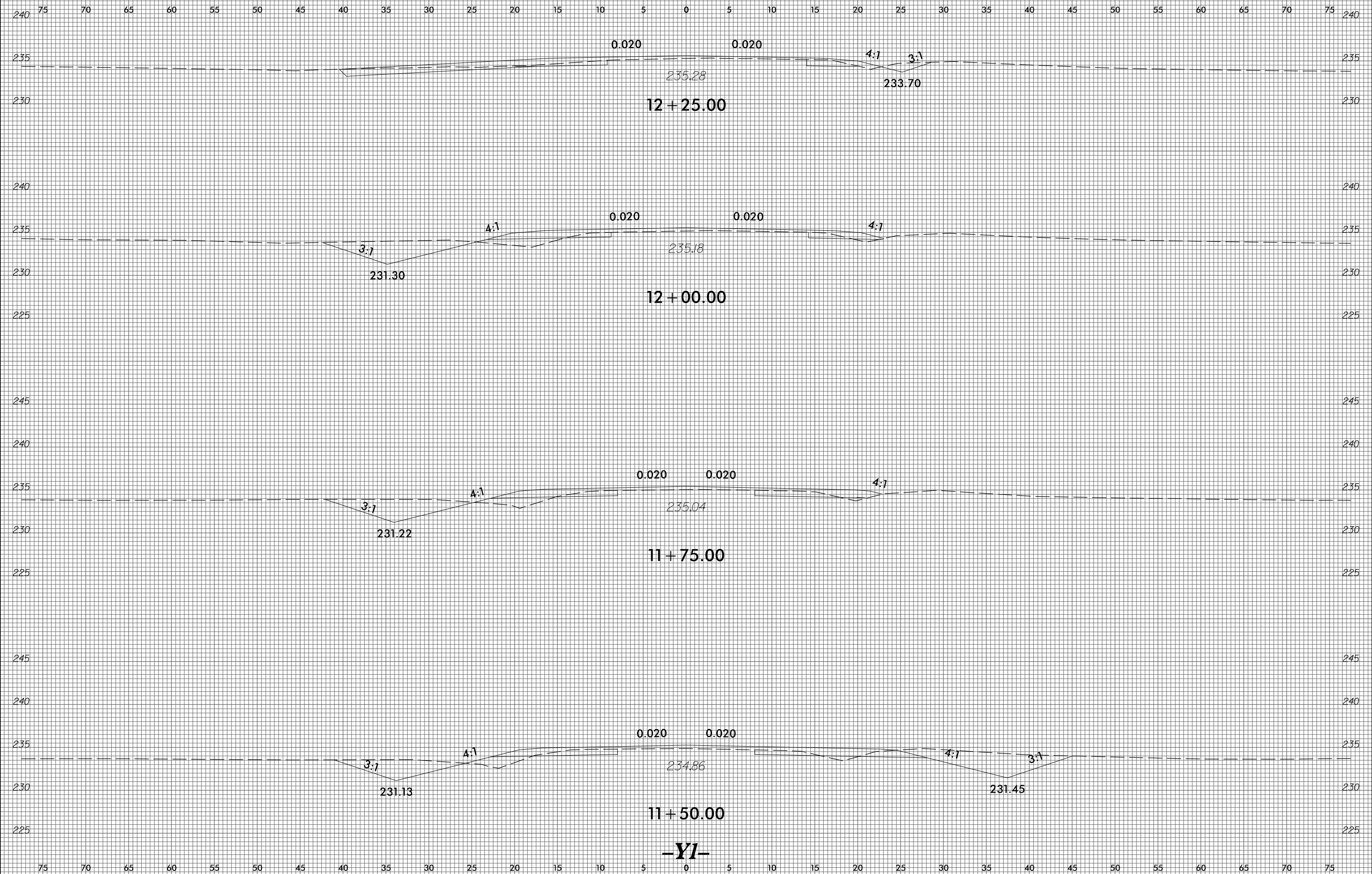
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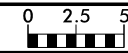
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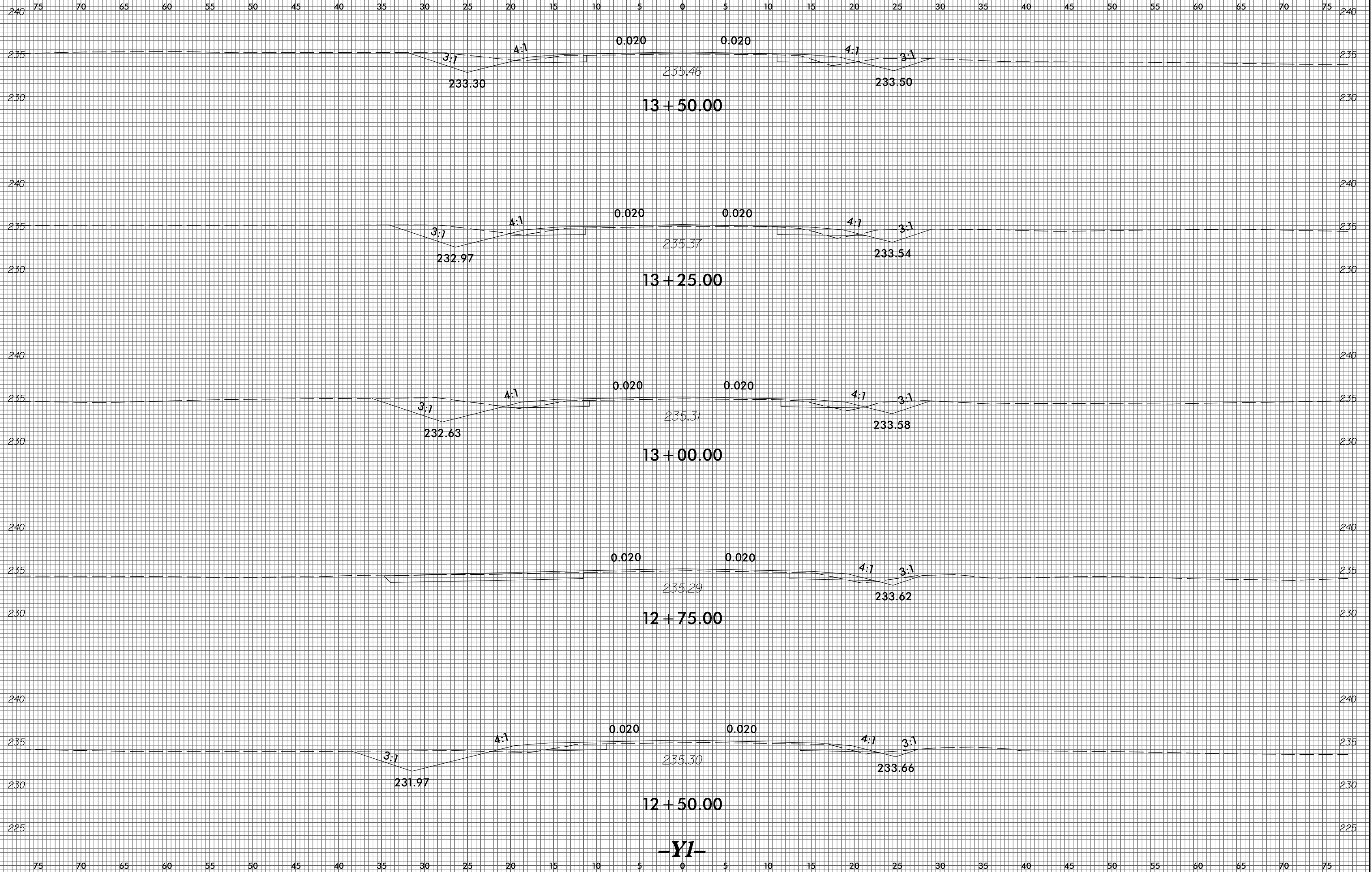
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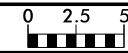


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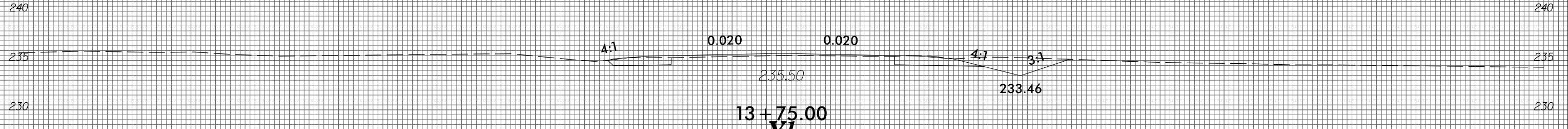
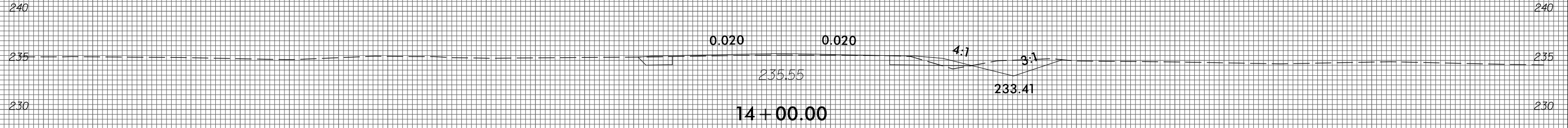
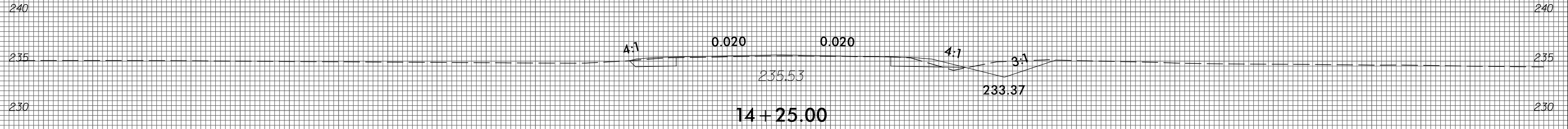
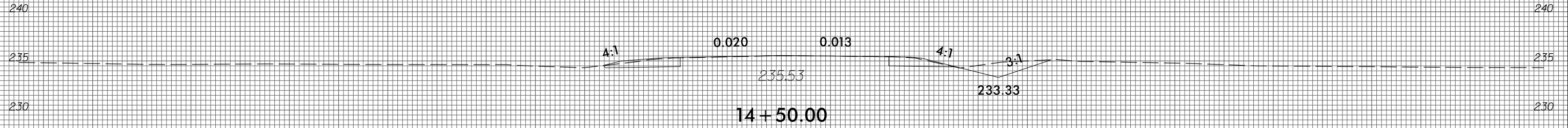
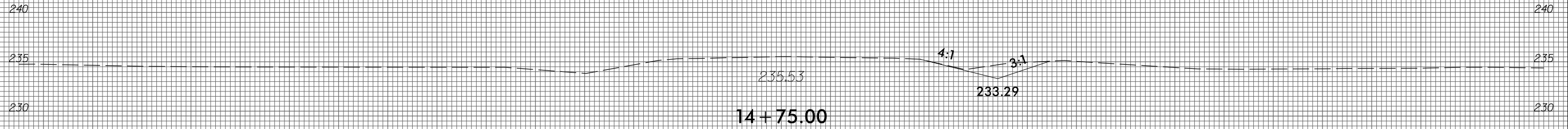
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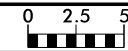


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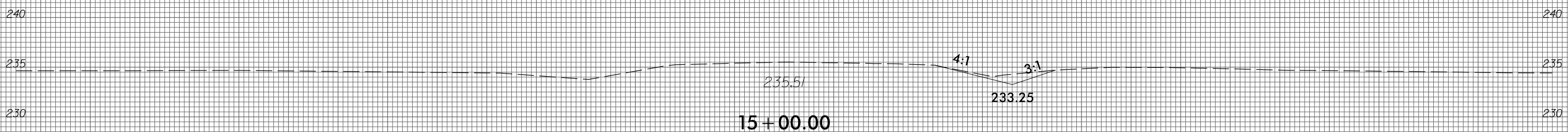
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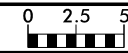
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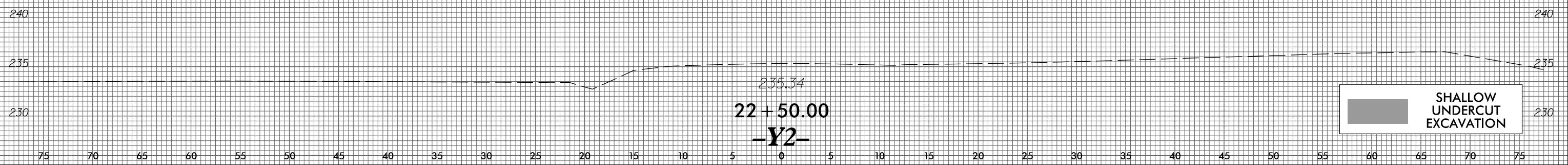
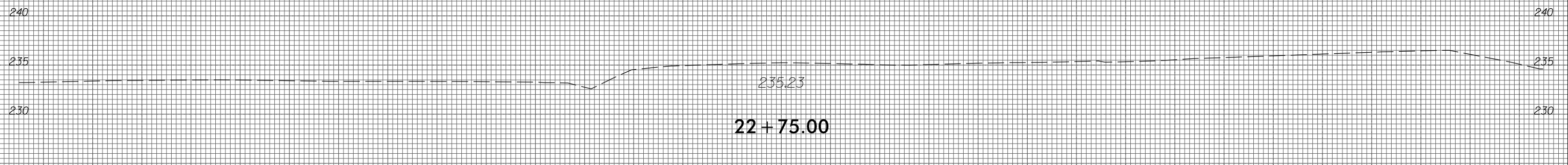
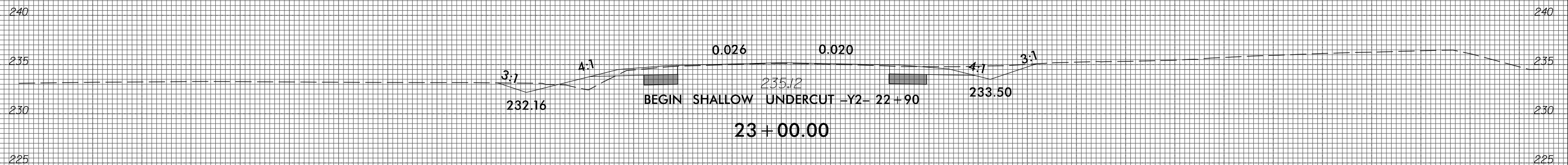
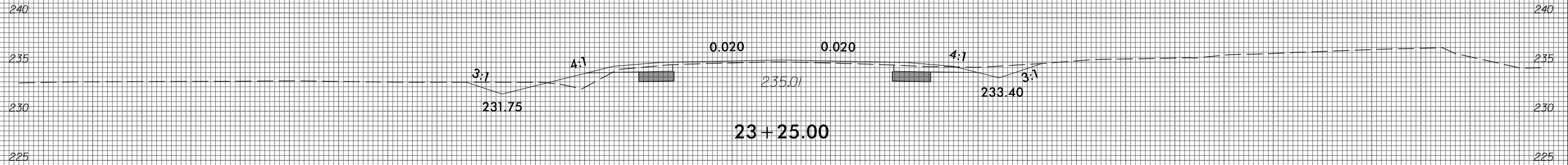
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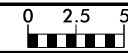


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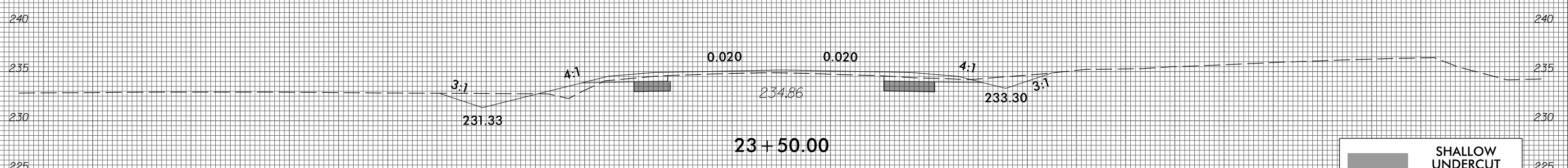
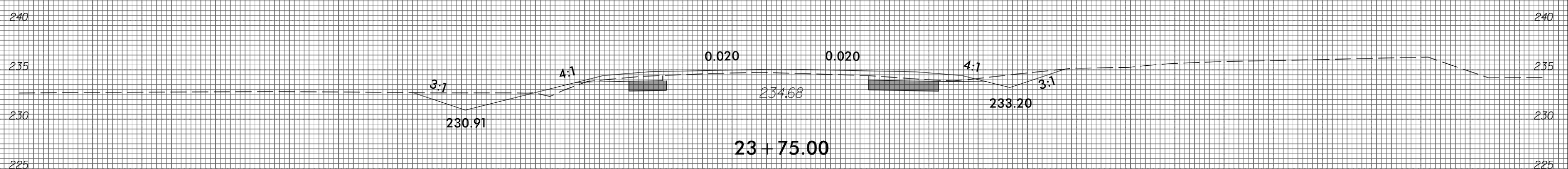
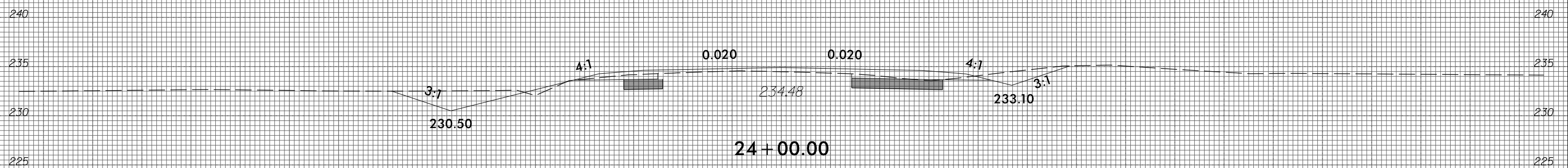
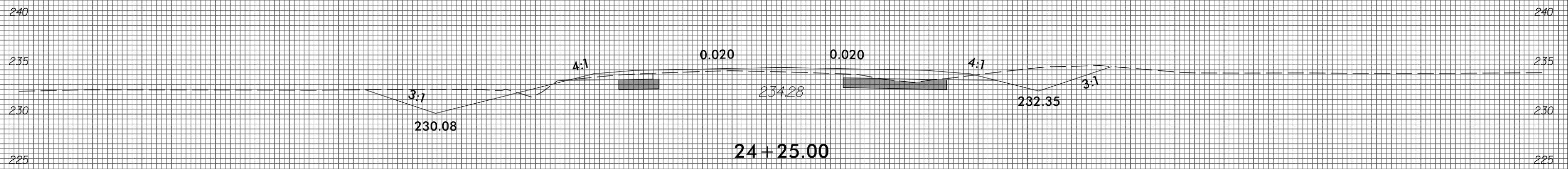
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W-5706L

SHEET NO.  
X-18

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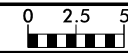
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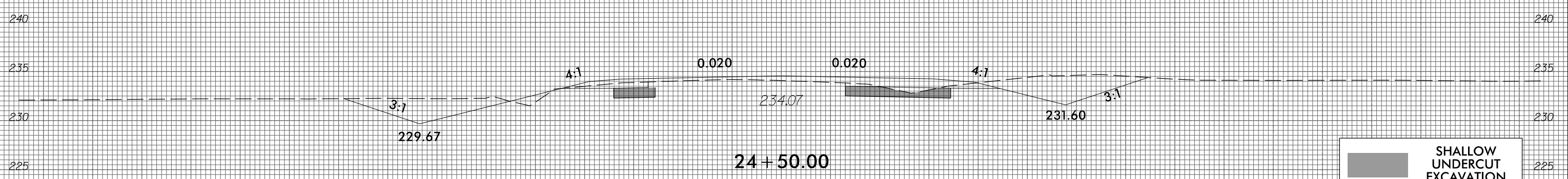
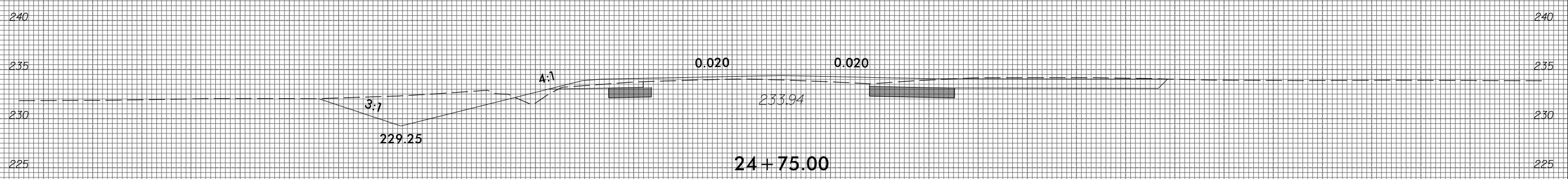
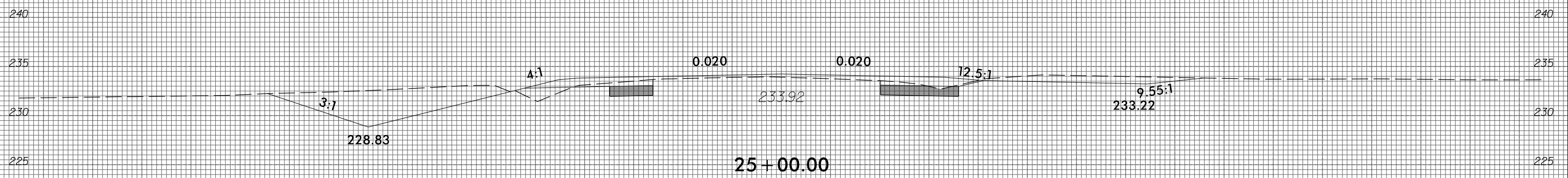
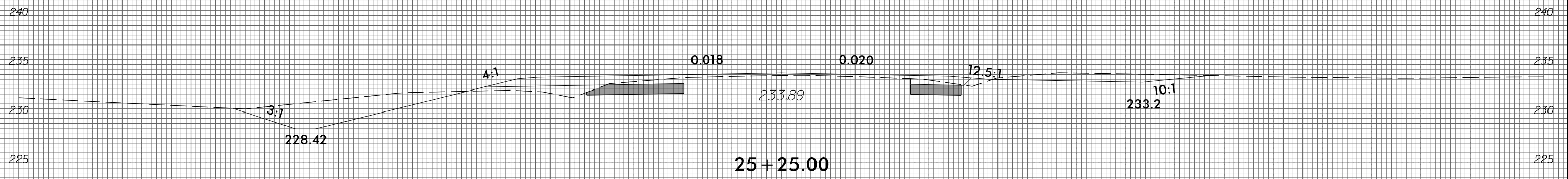
6/23/16



PROJ. REFERENCE NO.  
W-5706L

SHEET NO.  
X-19

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SHALLOW UNDERCUT EXCAVATION

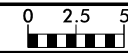
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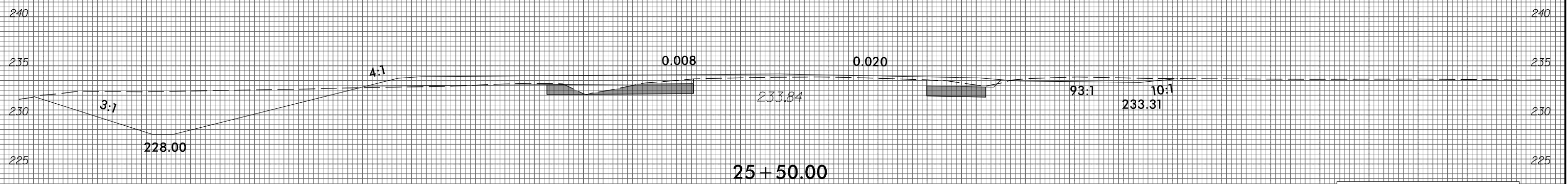
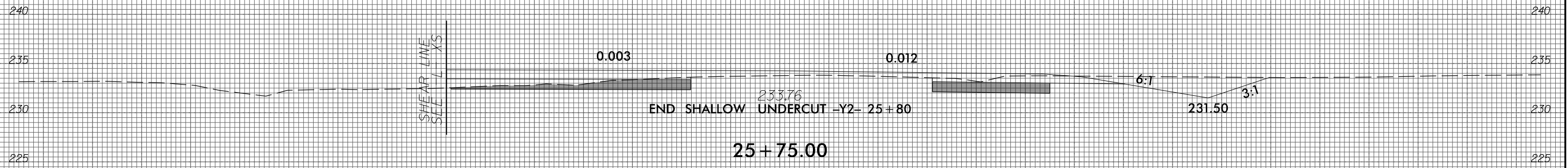
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**SHALLOW UNDERCUT EXCAVATION**

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