

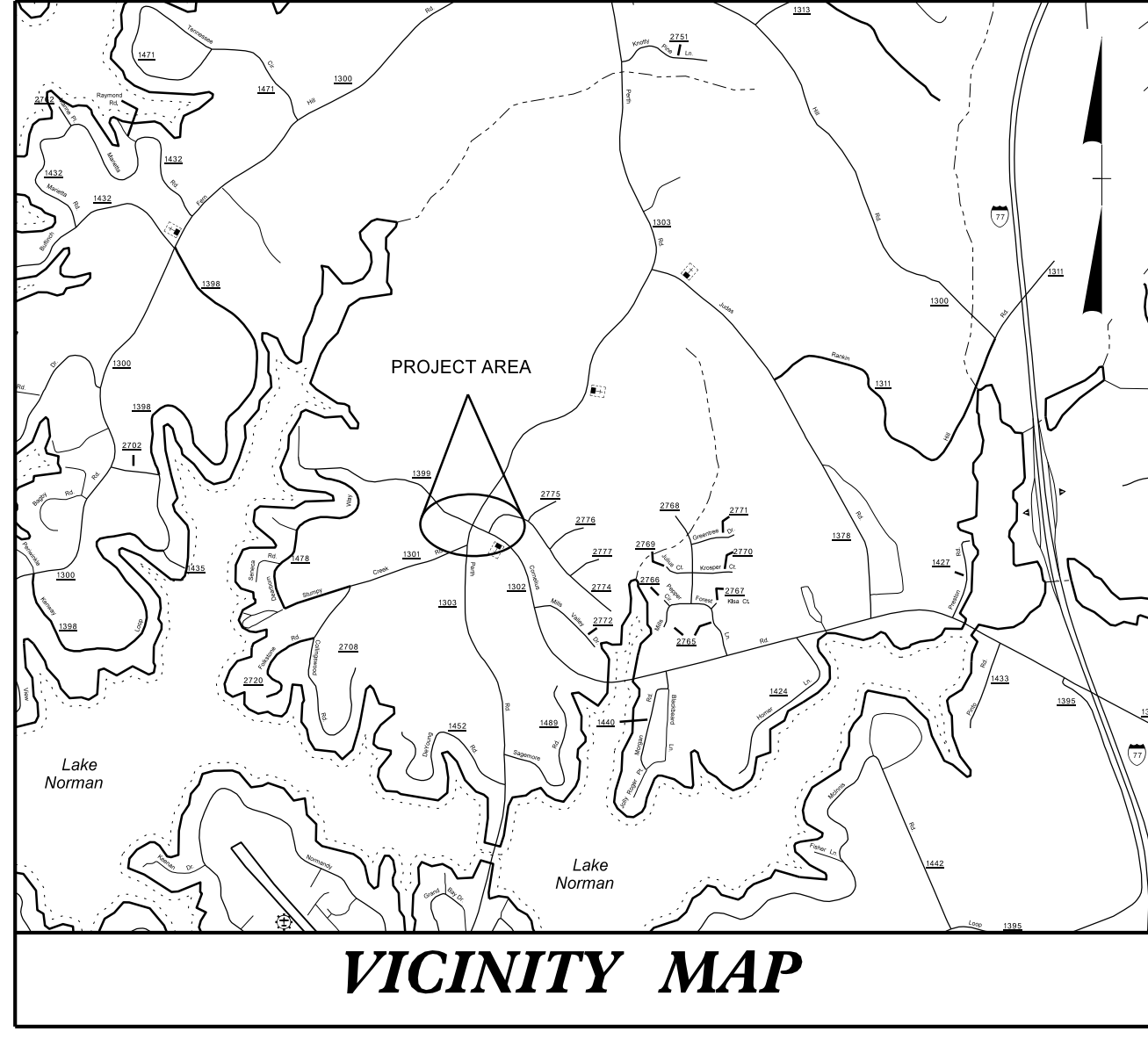
**This electronic collection of documents is provided  
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and is Not a Certified Document –**

**The documents contained herein were originally issued  
and sealed by the individuals whose names and license  
numbers appear on each page, on the dates appearing  
with their signature on that page.**

**This file or an individual page  
shall not be considered a certified document.**

09.08/199

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



STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

**IREDELL COUNTY**

**LOCATION: INTERSECTION OF SR 1303 (PERTH RD.) AND  
SR 1302 (CORNELIUS RD.)/SR 1399 (LIVA LN.)**

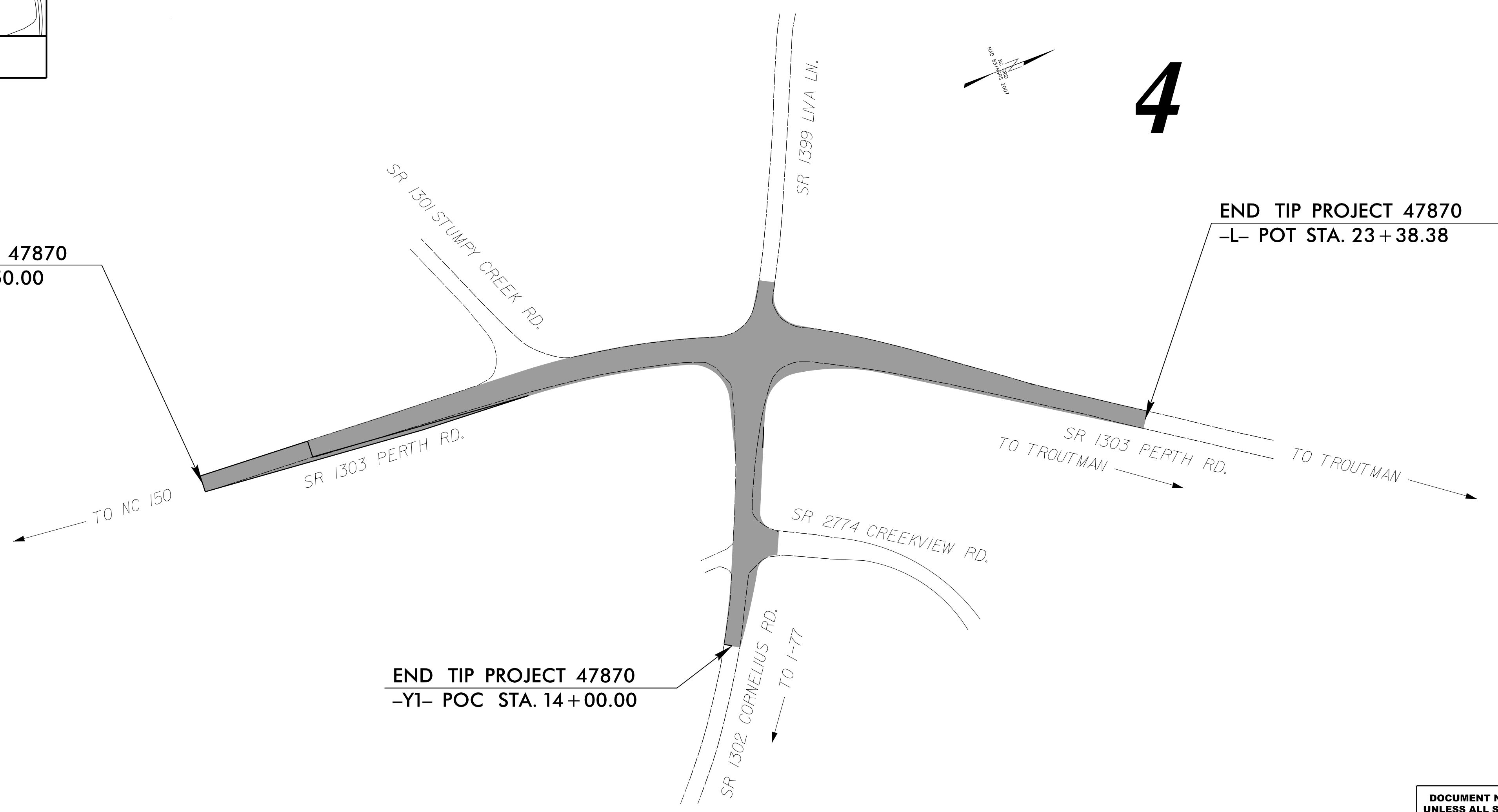
**TYPE OF WORK: GRADING, PAVING, DRAINAGE, SIGNALS,  
PAVEMENT MARKINGS AND PAVEMENT MARKERS**

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	47870	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
45342.1.10	HRRR-1302(60)	PE	
45342.2.25		ROW	
47870		CONST.	

**TIP PROJECT: 47870**

**CONTRACT: DL00299**

BEGIN TIP PROJECT 47870  
-L- POT STA. 10 + 50.00

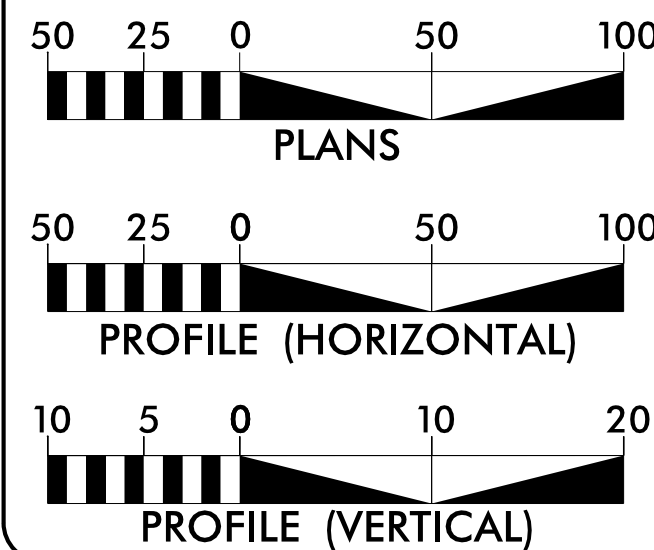


END TIP PROJECT 47870  
-L- POT STA. 23 + 38.38

END TIP PROJECT 47870  
-Y1- POC STA. 14 + 00.00

DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED

**GRAPHIC SCALES**



**DESIGN DATA**

ADT 2022 = 11,500  
K = 12 %  
D = 60 %  
T = 2 % \*  
V = 35 MPH  
\* TTST = 1% DUAL 1%  
FUNC CLASS =  
RURAL COLLECTOR  
REGIONAL TIER

**PROJECT LENGTH**

LENGTH ROADWAY TIP PROJECT 47870 = 0.128 MI  
LENGTH STRUCTURE TIP PROJECT 47870 = 0.000 MI  
TOTAL LENGTH OF TIP PROJECT 47870 = 0.128 MI

Prepared In the Office of:  
**DIVISION OF HIGHWAYS**  
1710 E. MARION ST., SHELBY, NC 28150

2018 STANDARD SPECIFICATIONS

**RIGHT OF WAY DATE:**  
OCTOBER 14, 2022

**LETTING DATE:**  
MAY 9, 2023

**C.G. GURLEY, PE**  
PROJECT ENGINEER

**B.K. SOWELL, PE**  
PROJECT DESIGN ENGINEER

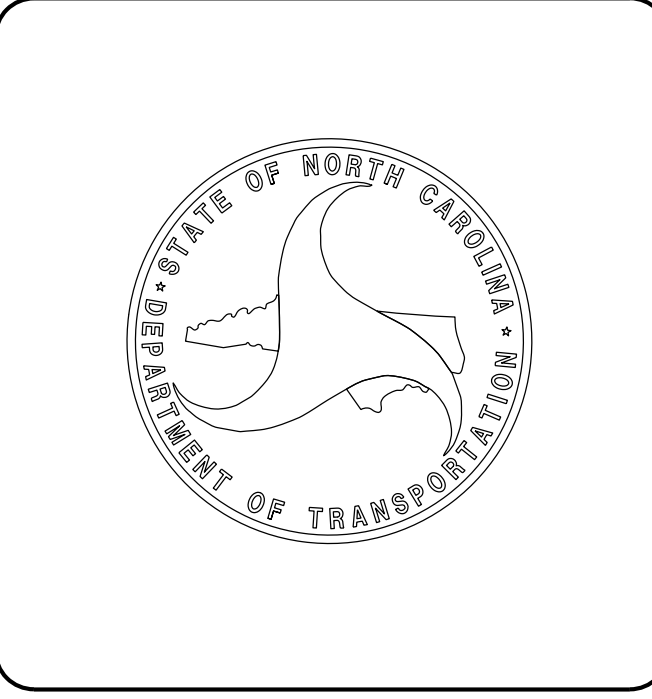
**HYDRAULICS ENGINEER**

SIGNATURE: \_\_\_\_\_ P.E.

**ROADWAY DESIGN ENGINEER**

**Bryan Sowell**  
SIGNATURE

**Professional Engineer Seal:**  
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 043888  
BRYAN K.D. SOWELL  
P.E.  
04/14/2023



14-APR-2023 08:10  
R:\Roadway\Proj\Rescoped for Signal\W-5212J(B)\_Rdy\_rsh.dgn  
\$\$\$\$\$SERNAME\$\$\$\$\$

# STATE OF NORTH CAROLINA, DIVISION OF HIGHWAYS

## CONVENTIONAL PLAN SHEET SYMBOLS

12/2/2016

### BOUNDARIES AND PROPERTY:

State Line	-----
County Line	-----
Township Line	-----
City Line	-----
Reservation Line	-----
Property Line	-----
Existing Iron Pin	○ EIP
Computed Property Corner	-----
Property 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	○ S
Well	○ W
Small Mine	✕
Foundation	□
Area Outline	□
Cemetery	□
Building	□
School	□
Church	□
Dam	□

### HYDROLOGY:

Stream or Body of Water	-----
Hydro, Pool or Reservoir	□
Jurisdictional Stream	--- JS ---
Buffer Zone 1	--- BZ 1 ---
Buffer Zone 2	--- BZ 2 ---
Flow Arrow	←
Disappearing Stream	→
Spring	○
Wetland	--- WLB ---
Proposed Lateral, Tail, Head Ditch	--- FLOW ---
False Sump	▽

### RAILROADS:

Standard Gauge	-----
RR Signal Milepost	○ MILEPOST 35
Switch	□ SWITCH
RR Abandoned	-----
RR Dismantled	-----

### RIGHT OF WAY & PROJECT CONTROL:

Secondary Horiz and Vert Control Point	◆
Primary Horiz Control Point	○
Primary Horiz and Vert Control Point	◆
Exist Permanent Easement Pin and Cap	◇
New Permanent Easement Pin and Cap	◆
Vertical Benchmark	▲
Existing Right of Way Marker	△
Existing Right of Way Line	-----
New Right of Way Line	○ R W
New Right of Way Line with Pin and Cap	○ R W ▲
New Right of Way Line with Concrete or Granite R/W Marker	▲ R W
New Control of Access Line with Concrete C/A Marker	△ R W
Existing Control of Access	△
New Control of Access	△
Existing Easement Line	--- E ---
New Temporary Construction Easement	--- E ---
New Temporary Drainage Easement	--- TDE ---
New Permanent Drainage Easement	--- PDE ---
New Permanent Drainage / Utility Easement	--- DUE ---
New Permanent Utility Easement	--- PUE ---
New Temporary Utility Easement	--- TUE ---
New Aerial Utility Easement	--- AUE ---

### ROADS AND RELATED FEATURES:

Existing Edge of Pavement	-----
Existing Curb	-----
Proposed Slope Stakes Cut	--- C ---
Proposed Slope Stakes Fill	--- F ---
Proposed Curb Ramp	--- CR ---
Existing Metal Guardrail	--- T ---
Proposed Guardrail	--- T ---
Existing Cable Guiderail	--- T ---
Proposed Cable Guiderail	--- T ---
Equality Symbol	⊕
Pavement Removal	⊗

### VEGETATION:

Single Tree	☼
Single Shrub	☼

*Note: Not to Scale*      \*S.U.E. = *Subsurface Utility Engineering*

Hedge	-----
Woods Line	-----
Orchard	☼ ☼ ☼ ☼
Vineyard	□ Vineyard

### EXISTING STRUCTURES:

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

### UTILITIES:

POWER:	
Existing Power Pole	●
Proposed Power Pole	○
Existing Joint Use Pole	●
Proposed Joint Use Pole	○
Power Manhole	○ P
Power Line Tower	⊗
Power Transformer	⊗
U/G Power Cable Hand Hole	○
H-Frame Pole	●
U/G Power Line LOS B (S.U.E.*)	--- P ---
U/G Power Line LOS C (S.U.E.*)	--- P ---
U/G Power Line LOS D (S.U.E.*)	--- P ---

### TELEPHONE:

Existing Telephone Pole	●
Proposed Telephone Pole	○
Telephone Manhole	○ T
Telephone Pedestal	□ T
Telephone Cell Tower	⊗
U/G Telephone Cable Hand Hole	○ T
U/G Telephone Cable LOS B (S.U.E.*)	--- T ---
U/G Telephone Cable LOS C (S.U.E.*)	--- T ---
U/G Telephone Cable LOS D (S.U.E.*)	--- T ---
U/G Telephone Conduit LOS B (S.U.E.*)	--- TC ---
U/G Telephone Conduit LOS C (S.U.E.*)	--- TC ---
U/G Telephone Conduit LOS D (S.U.E.*)	--- TC ---
U/G Fiber Optics Cable LOS B (S.U.E.*)	--- T FO ---
U/G Fiber Optics Cable LOS C (S.U.E.*)	--- T FO ---
U/G Fiber Optics Cable LOS D (S.U.E.*)	--- T FO ---

### WATER:

Water Manhole	○ W
Water Meter	○
Water Valve	⊗
Water Hydrant	⊕
U/G Water Line LOS B (S.U.E.*)	--- W ---
U/G Water Line LOS C (S.U.E.*)	--- W ---
U/G Water Line LOS D (S.U.E.*)	--- W ---
Above Ground Water Line	--- A/G Water ---

### TV:

TV Pedestal	□
TV Tower	⊗
U/G TV Cable Hand Hole	○ TV
U/G TV Cable LOS B (S.U.E.*)	--- TV ---
U/G TV Cable LOS C (S.U.E.*)	--- TV ---
U/G TV Cable LOS D (S.U.E.*)	--- TV ---
U/G Fiber Optic Cable LOS B (S.U.E.*)	--- TV FO ---
U/G Fiber Optic Cable LOS C (S.U.E.*)	--- TV FO ---
U/G Fiber Optic Cable LOS D (S.U.E.*)	--- TV FO ---

### GAS:

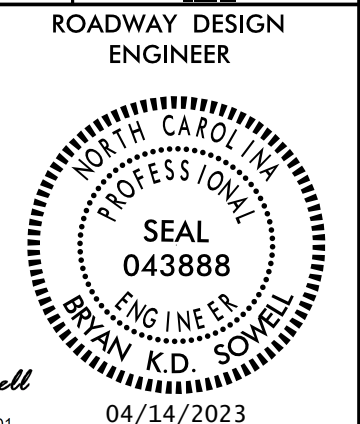
Gas Valve	◇
Gas Meter	⊕
U/G Gas Line LOS B (S.U.E.*)	--- G ---
U/G Gas Line LOS C (S.U.E.*)	--- G ---
U/G Gas Line LOS D (S.U.E.*)	--- G ---
Above Ground Gas Line	--- A/G Gas ---

### SANITARY SEWER:

Sanitary Sewer Manhole	⊕
Sanitary Sewer Cleanout	⊕
U/G Sanitary Sewer Line	--- SS ---
Above Ground Sanitary Sewer	--- A/G Sanitary Sewer ---
SS Forced Main Line LOS B (S.U.E.*)	--- FSS ---
SS Forced Main Line LOS C (S.U.E.*)	--- FSS ---
SS Forced Main Line LOS D (S.U.E.*)	--- FSS ---

### MISCELLANEOUS:

Utility Pole	●
Utility Pole with Base	□
Utility Located Object	○
Utility Traffic Signal Box	□
Utility Unknown U/G Line LOS B (S.U.E.*)	--- 2UTL ---
U/G Tank; Water, Gas, Oil	□
Underground Storage Tank, Approx. Loc.	⊕
A/G Tank; Water, Gas, Oil	□
Geoenvironmental Boring	⊕
U/G Test Hole LOS A (S.U.E.*)	⊕
Abandoned According to Utility Records	AATUR
End of Information	E.O.I.



DocuSigned by  
Bryan Sewell  
79EABDC0DEE1MD1

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

GENERAL NOTES: 2018 SPECIFICATIONS  
EFFECTIVE: 01-16-2018  
REVISED:

GRADING AND SURFACING OR RESURFACING AND WIDENING:  
THE GRADE LINES SHOWN DENOTE THE FINISHED ELEVATION OF THE PROPOSED SURFACING AT GRADE POINTS SHOWN ON THE TYPICAL SECTIONS. WHERE NO GRADE LINES ARE SHOWN, THE PROFILES SHOWN DENOTE THE TOP ELEVATION OF THE EXISTING PAVEMENT ALONG THE CENTER LINE OF SURVEY ON WHICH THE PROPOSED RESURFACING WILL BE PLACED. GRADE LINES MAY BE ADJUSTED BY THE ENGINEER IN ORDER TO SECURE A PROPER TIE-IN.

CLEARING:  
CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD 11.

SUPERELEVATION:  
ALL CURVES ON THIS PROJECT SHALL BE SUPERELEVATED IN ACCORDANCE WITH STD. NO. 225.04 USING THE RATE OF SUPERELEVATION AND RUNOFF SHOWN ON THE PLANS. SUPERELEVATION IS TO BE REVOLVED ABOUT THE GRADE POINTS SHOWN ON THE TYPICAL SECTIONS.

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

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

DRIVEWAYS:  
DRIVEWAYS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STD. 848.02 USING 3 FOOT RADII OR RADII AS SHOWN ON THE PLANS. LOCATIONS OF DRIVES WILL BE AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER.

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  
AT&T (Phone), Duke Energy (Power), Spectrum (Cable).

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

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

EFF. 01-16-2018  
REV.

2018 ROADWAY ENGLISH STANDARD DRAWINGS

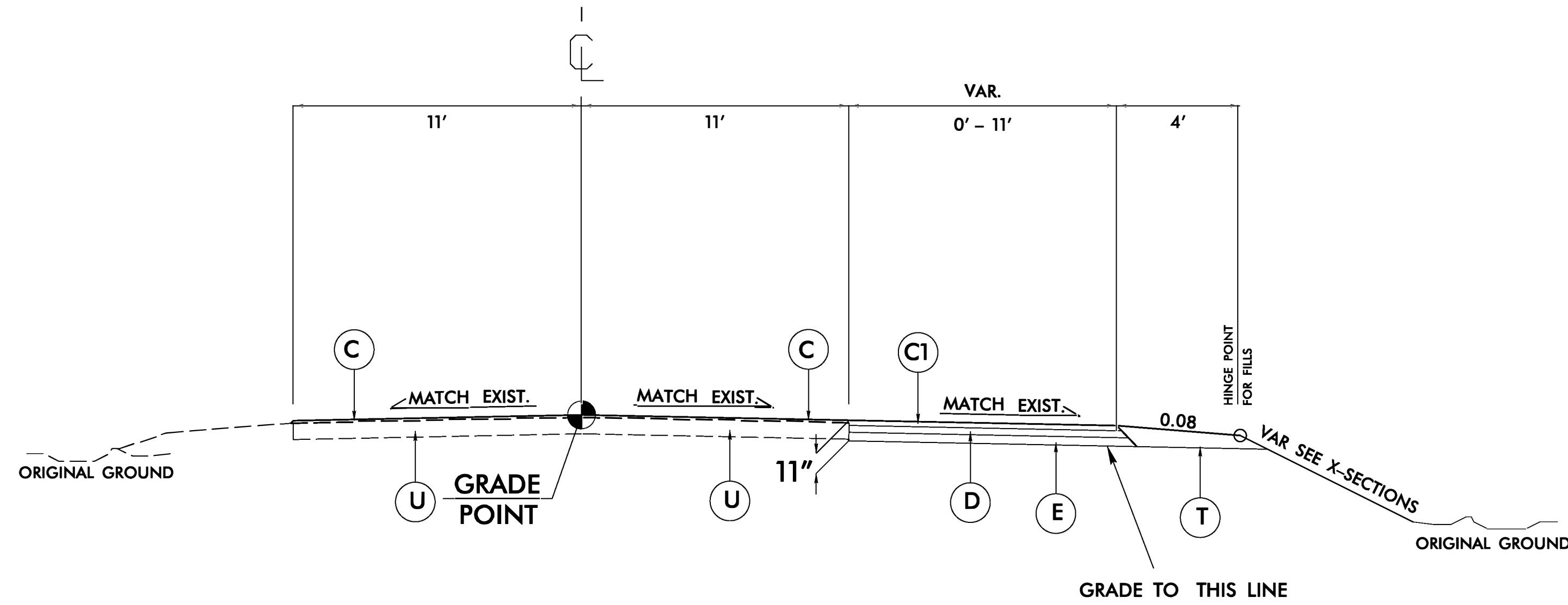
The following Roadway Standards as appear in "Roadway Standard Drawings" Highway Design Branch - N. C. Department of Transportation - Raleigh, N. C., Dated January, 2018 are applicable to this project and by reference hereby are considered a part of these plans:

STD.NO.	TITLE
DIVISION 2 - EARTHWORK	
200.02	Method of Clearing - Method 11
225.02	Guide for Grading Subgrade - Secondary and Local
225.04	Method of Obtaining Superelevation - Two Lane Pavement
225.06	Method of Grading Sight Distance at Intersections
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 1
DIVISION 8 - INCIDENTALS	
840.01	Brick Catch Basin - 12" thru 54" Pipe
840.02	Concrete Catch Basin - 12" thru 54" Pipe
840.03	Frame, Grates and Hood - for Use on Standard Catch Basin
840.22	Frame and Wide Slot Sag Grates
840.45	Precast Drainage Structure
840.72	Pipe Collar
846.01	Concrete Curb, Gutter and Curb & Gutter
848.02	Driveway Turnout - Radius Type
876.02	Guide for Rip Rap at Pipe Outlets
876.04	Drainage Ditches with Class 'B' Rip Rap

SHEET NUMBER	SHEET
1	TITLE SHEET
1A	INDEX OF SHEETS, GENERAL NOTES, AND STANDARD DRAWINGS
1B	CONVENTIONAL SYMBOLS
2A-1	PAVEMENT SCHEDULE AND TYPICAL SECTIONS
3B-1	ROADWAY SUMMARIES & DRAINAGE SUMMARIES
4 THRU 5	PLAN AND PROFILE SHEET
TMP-1	TRAFFIC MANAGEMENT PLAN
PMP-1 THRU PMP-2	PAVEMENT MARKING PLANS
EC-1 THRU EC-2	EROSION CONTROL PLANS
SIGN-1 THRU SIGN-2	SIGNING PLANS
SIG-1 THRU SIG-1.1	SIGNAL PLANS
X-1 THRU X-7	CROSS-SECTIONS

5/14/99

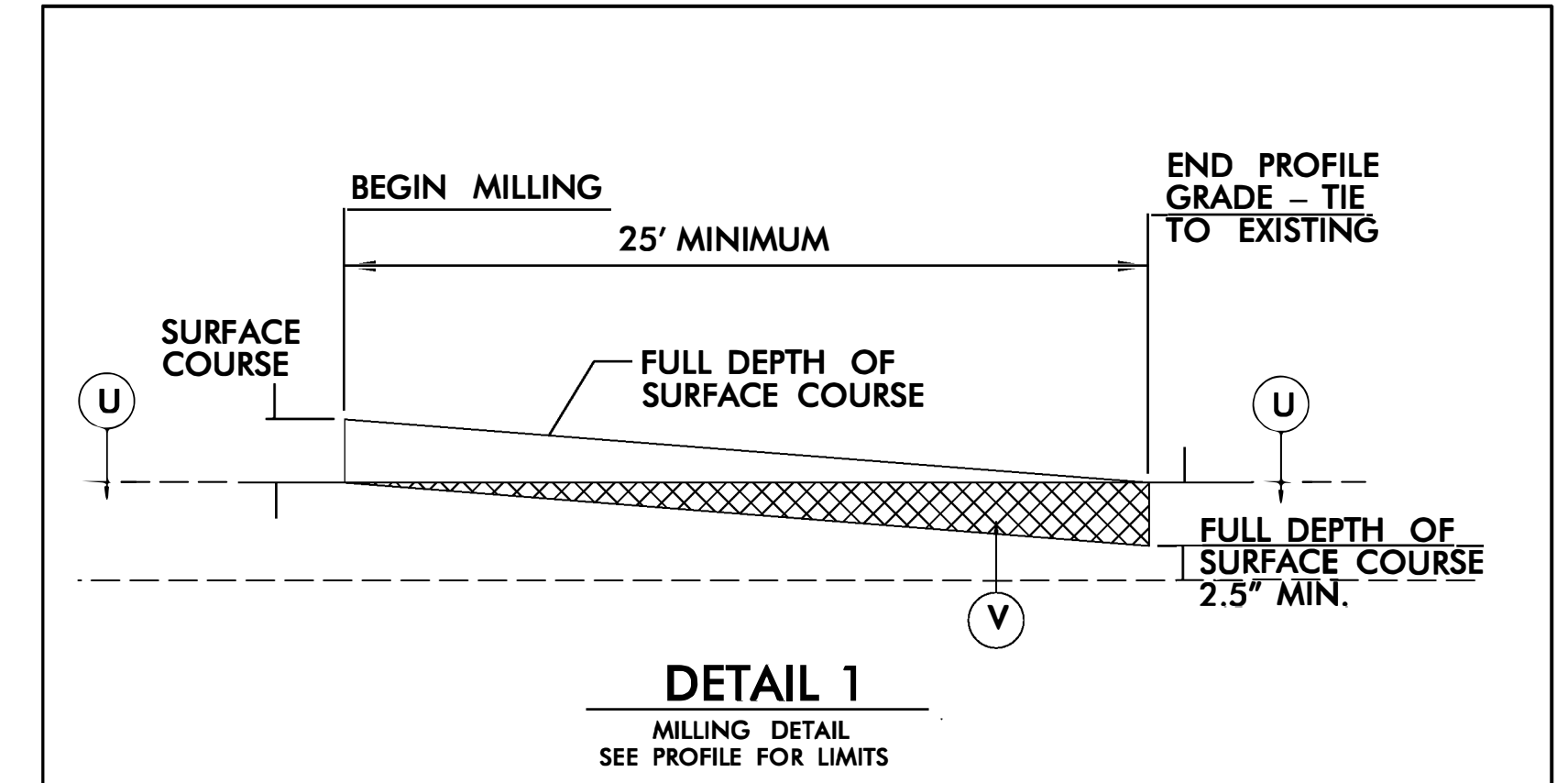
# -L- PERTH ROAD



**TYPICAL SECTION NO. 1**

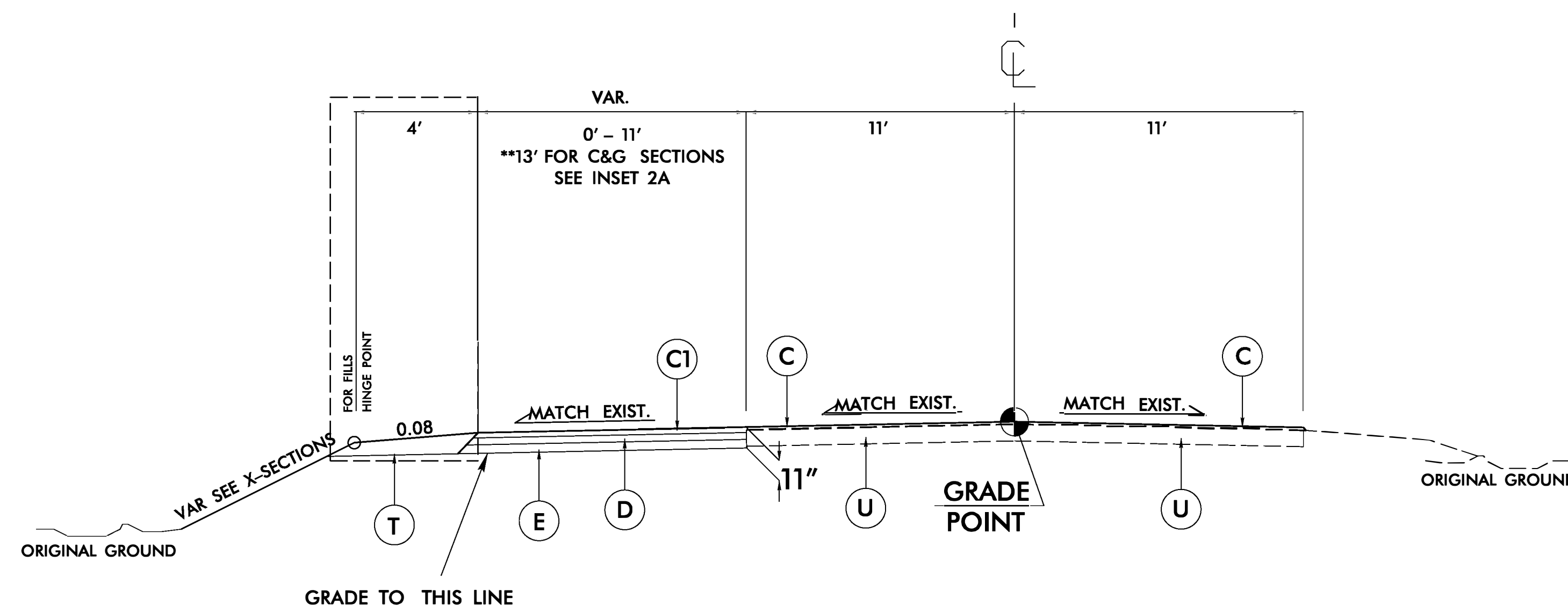
USE TYPICAL SECTION NO. 1  
 -L- STA. 10+50 TO 23+38.38

PROJECT REFERENCE NO. 47870	SHEET NO. 2
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>DOCUMENT NOT CONSIDERED FINAL          UNLESS ALL SIGNATURES COMPLETED</b>	



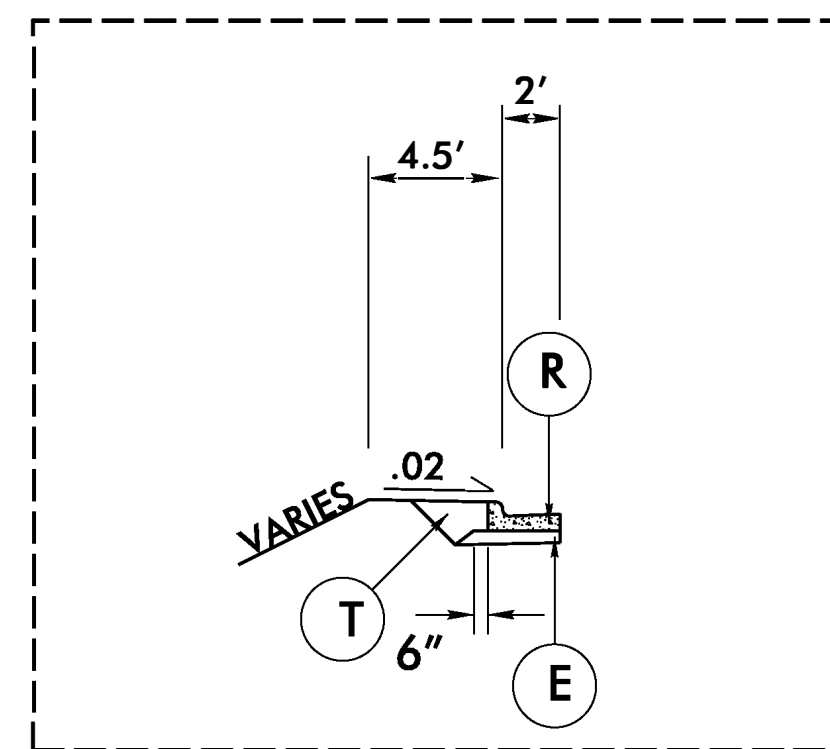
**DETAIL 1**  
 MILLING DETAIL  
 SEE PROFILE FOR LIMITS

# -Y1- CORNELIUS ROAD



**TYPICAL SECTION NO. 2**

USE TYPICAL SECTION NO. 2  
 -Y1- STA. 10+00 TO 14+00.00



**INSET 2A**

USE TOGETHER WITH TYPICAL SECTION 2 AT:  
 -Y1- STA. 10+75 TO STA. 12+22 LEFT

## PAVEMENT SCHEDULE

FINAL PAVEMENT DESIGN

C	PROP. APPROX. 1.5" OF ASPHALT CONC. SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LB. PER SQ. YARD.
C1	PROP. APPROX. 3.0" OF ASPHALT CONC. SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LB. PER SQ. YARD IN EACH OF TWO LAYERS.
C2	PROP. VARIABLE DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE 112 LBS. PER SQ. YD. PER 1" DEPTH TO BE PLACED IN LAYERS NOT TO EXCEED 2" IN DEPTH
D	PROP. APPROX. 4.0" OF ASPHALT CONC. INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 456 LB. PER SQ. YARD.
D1	PROP. VARIABLE DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" IN DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 2.5" IN DEPTH OR GREATER THAN 4" IN DEPTH
E	PROP. APPROX. 4.0" OF ASPHALT CONC. BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 456 LB. PER SQ. YARD.
E1	PROP. VARIABLE DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE 114 LBS. PER SQ. YD. PER 1" IN DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 3" IN DEPTH OR GREATER THAN 5.5" IN DEPTH
R	2'-6" CONCRETE CURB & GUTTER
T	EARTH MATERIAL.
U	EXISTING PAVEMENT.
W	WEDGING.

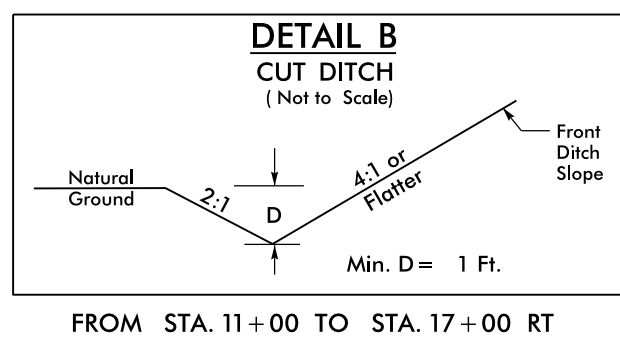
NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.

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 5/14/99



$PI\ Sta -L- 17+66.12$   
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 $T = 274.97'$   
 $R = 980.00'$

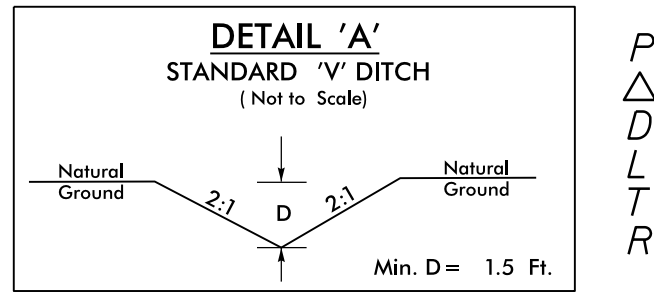
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 $R = 2,000.00'$



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**-L- POT STA. 10+00.00**

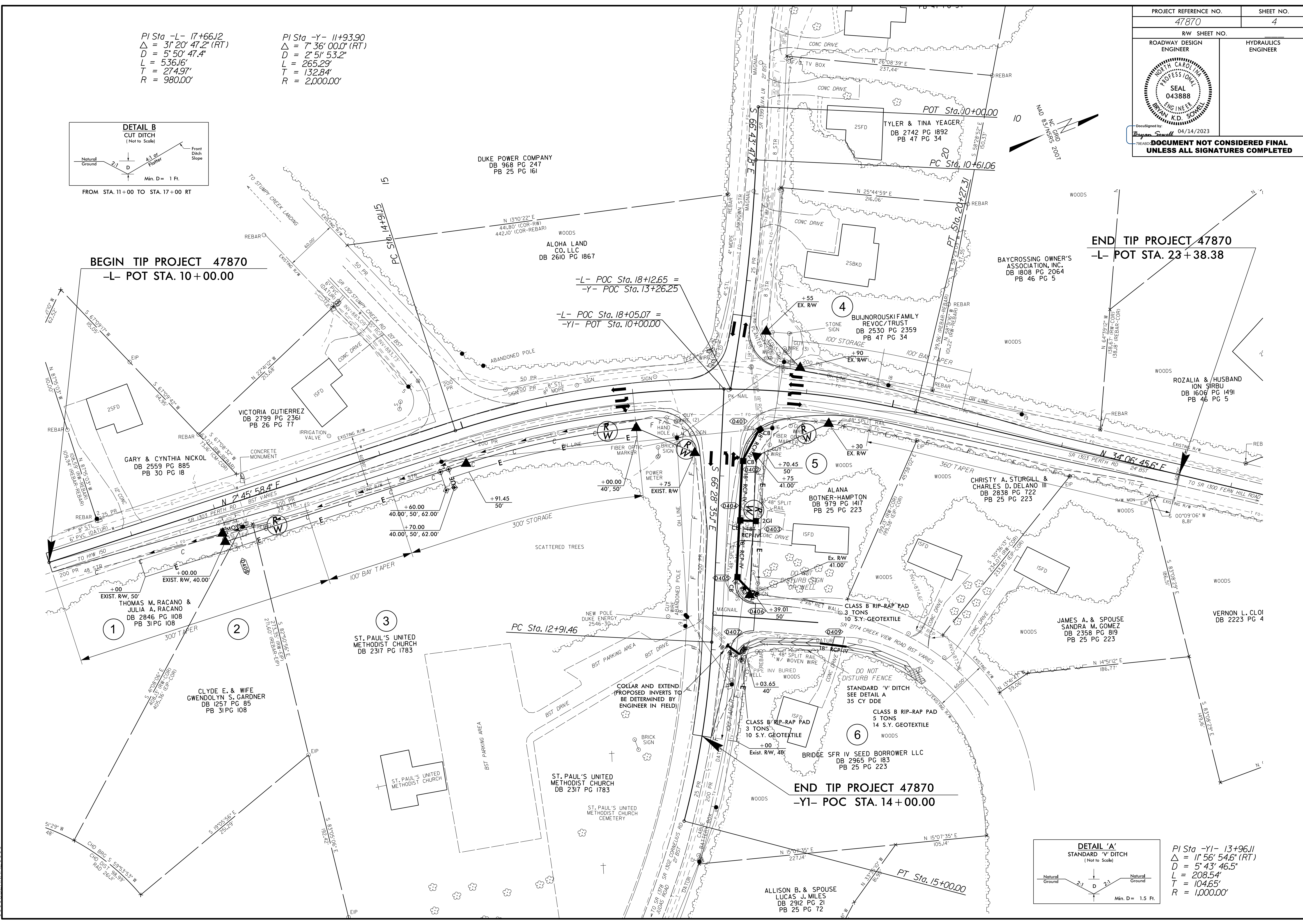
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**-L- POT STA. 23+38.38**

**END TIP PROJECT 47870**  
**-YI- POC STA. 14+00.00**




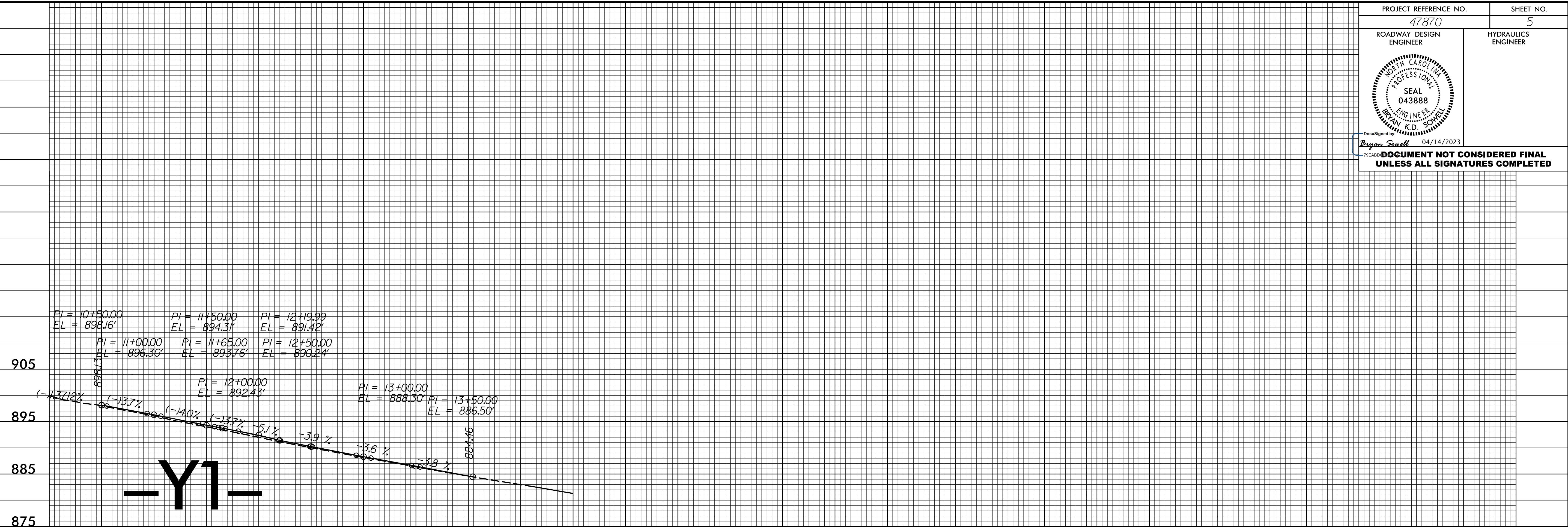
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 $R = 1,000.00'$

8/17/99  
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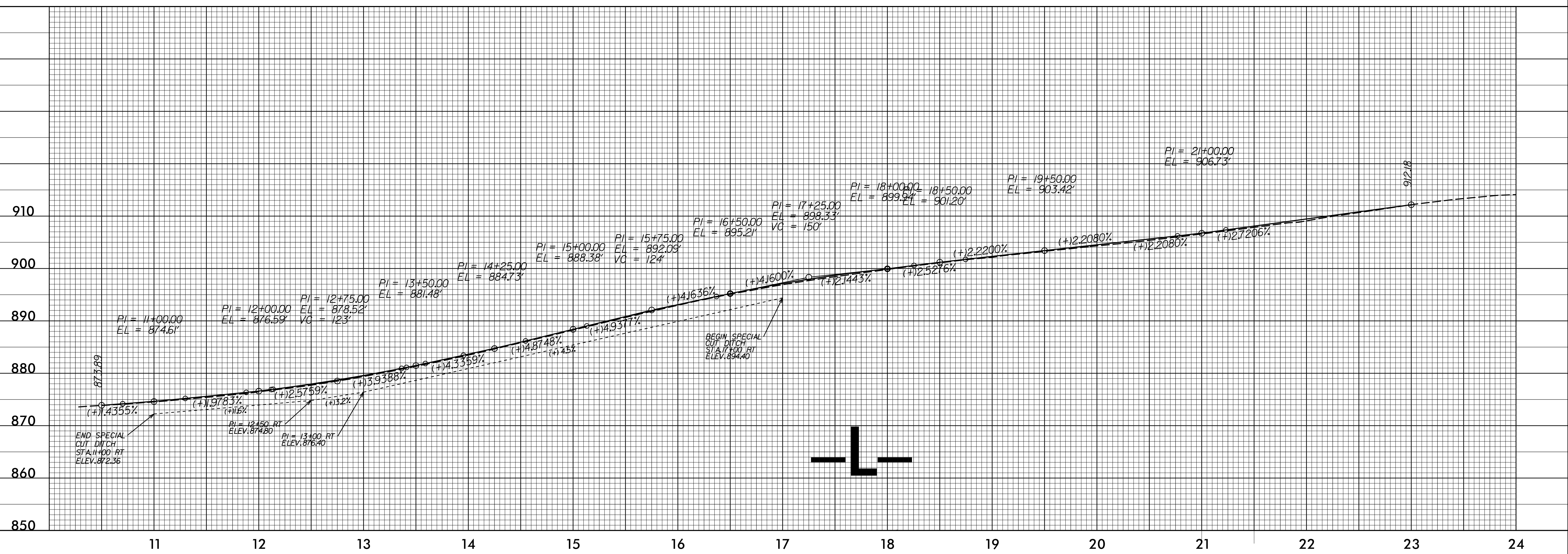


5/28/99

PROJECT REFERENCE NO. 47870	SHEET NO. 5
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
	
DocuSigned by: <b>Bryan Sowell</b> 04/14/2023 <b>DOCUMENT NOT CONSIDERED FINAL          UNLESS ALL SIGNATURES COMPLETED</b>	



-Y1-



-L-

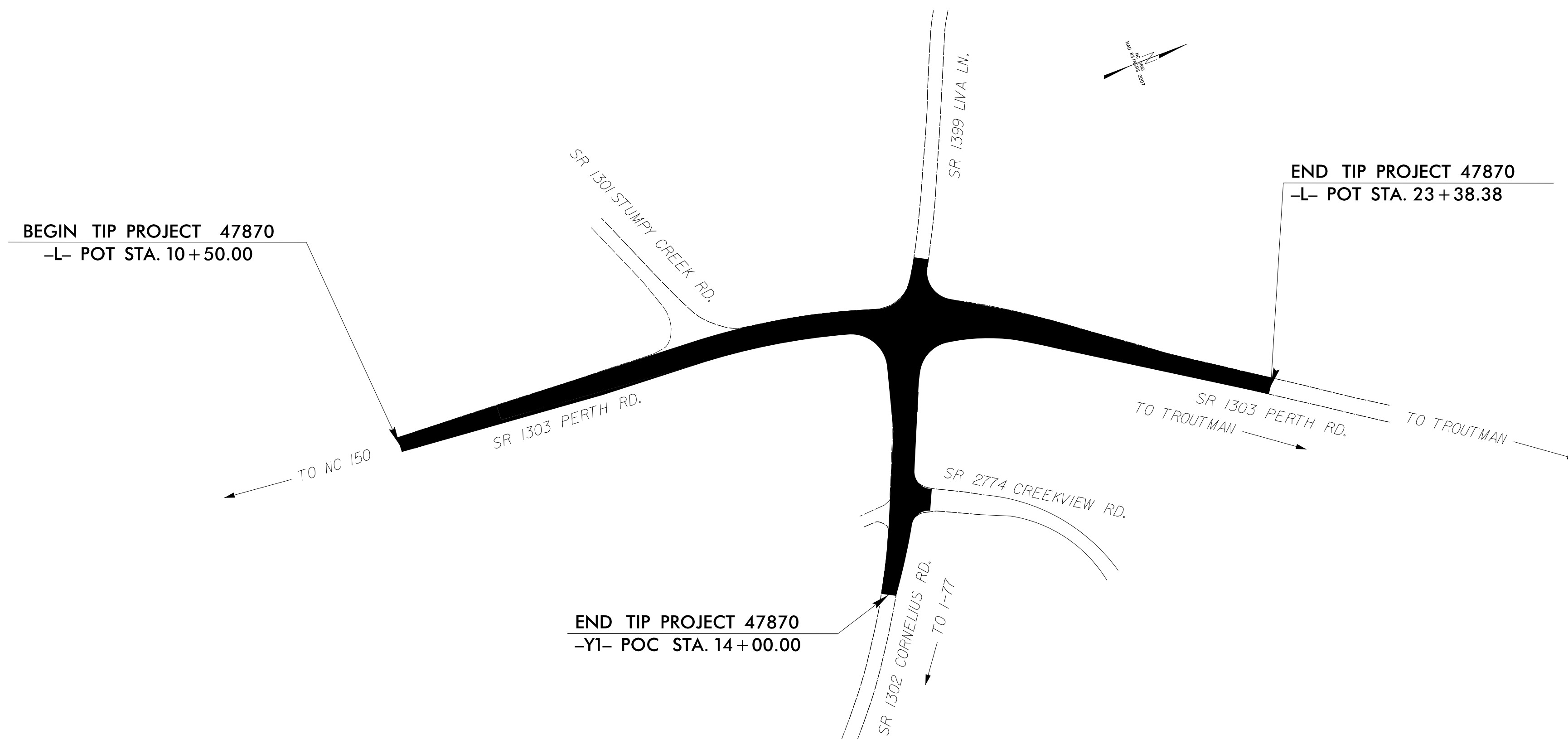
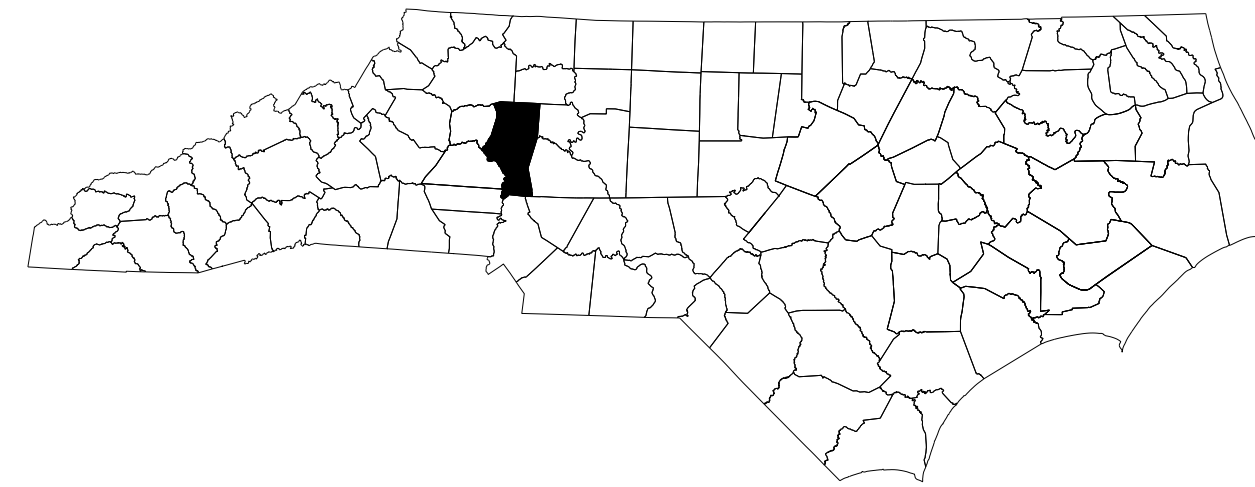
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STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

**TRANSPORTATION MANAGEMENT PLAN**

**IREDELL COUNTY**



**ROADWAY STANDARD DRAWINGS**

THE FOLLOWING ROADWAY STANDARDS AS SHOWN IN "ROADWAY STANDARD DRAWINGS" - 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:

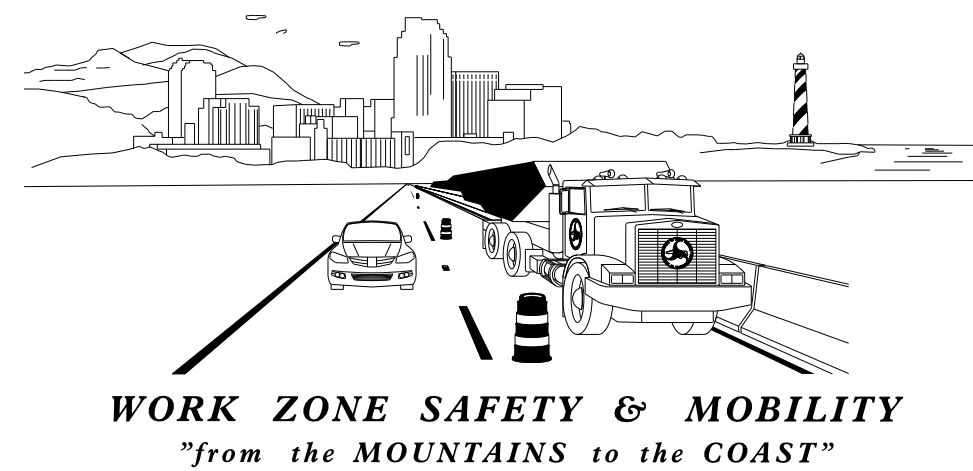
STD. NO.	TITLE
1101.01	WORK ZONE WARNING SIGNS
1101.02	TEMPORARY LANE CLOSURES
1101.04	TEMPORARY SHOULDER CLOSURES
1101.05	WORK ZONE VEHICLE ACCESSES
1101.06	WARNING SIGNS FOR BLASTING ZONES
1101.11	TRAFFIC CONTROL DESIGN TABLES
1110.01	STATIONARY WORK ZONE SIGNS
1110.02	PORTABLE WORK ZONE SIGNS
1115.01	FLASHING ARROW BOARDS
1130.01	DRUMS
1135.01	CONES
1150.01	FLAGGING DEVICES
1180.01	SKINNY - DRUMS
1205.01	PAVEMENT MARKINGS - LINE TYPES AND OFFSETS
1205.02	PAVEMENT MARKINGS - TWO LANE AND MULTILANE ROADWAYS
1205.04	PAVEMENT MARKINGS - INTERSECTIONS
1205.05	PAVEMENT MARKINGS - TURN LANES
1205.06	PAVEMENT MARKINGS - LANE DROPS
1205.08	PAVEMENT MARKINGS - SYMBOLS AND WORD MESSAGES
1205.09	PAVEMENT MARKINGS - PAINTED ISLANDS
1250.01	RAISED PAVEMENT MARKERS - INSTALLATION SPACING
1251.01	RAISED PAVEMENT MARKERS - (PERMANENT AND TEMPORARY)

SHEET NO.  
TMP-1

47870

TIP PROJECT:

I:\APR-2023\16+29  
R:\Roadway\Proj\Rescoped for Signal\47870.TC\_TMP\_1.dgn  
\$\$\$\$\$USERNAME\$\$\$\$\$



PLANS PREPARED BY:  
DIVISION 12 DDC

NCDOT CONTACTS:  
COLE G. GURLEY, PE  
PROJECT ENGINEER  
BRYAN K. SOWELL, PE  
PROJECT DESIGN ENGINEER

# STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

## PAVEMENT MARKING PLANS IREDELL COUNTY

**LOCATION: SR 1303 (PERTH RD.) AT INTERSECTION OF  
SR 1302 (CORNELIEUS RD.) AND SR 1399 (LIVA LN.)**

**TIP PROJECT: 47870**

**CONTRACT: DL00299**

### ROADWAY STANDARD DRAWING

THE FOLLOWING ROADWAY STANDARDS AS APPEAR IN "ROADWAY STANDARD DRAWINGS" - PROJECT SERVICES UNIT - N.C. DEPARTMENT OF TRANSPORTATION - RALEIGH, N.C., DATED JANUARY 2018 ARE APPLICABLE TO THIS PROJECT AND BY REFERENCE HEREBY ARE CONSIDERED A PART OF THESE PLANS:

STD. NO.	TITLE
1205.01	PAVEMENT MARKINGS - LINES TYPES AND OFFSETS
1205.02	PAVEMENT MARKINGS - TWO-LANE AND MULTILANE ROADWAYS
1205.04	PAVEMENT MARKINGS - INTERSECTIONS
1250.01	RAISED PAVEMENT MARKERS - INSTALLATION SPACING
1251.01	RAISED PAVEMENT MARKERS - PERMANENT AND TEMPORARY

### PAVEMENT MARKING 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 | PERMANENT |
- B) TIE PROPOSED PAVEMENT MARKING LINE TO EXISTING PAVEMENT MARKING LINES.
- C) REMOVE/REPLACE ANY CONFLICTING/DAMAGED PAVEMENT MARKINGS AND MARKERS.
- D) STOP BAR LOCATION AT NON-SIGNALIZED INTERSECTIONS MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER.

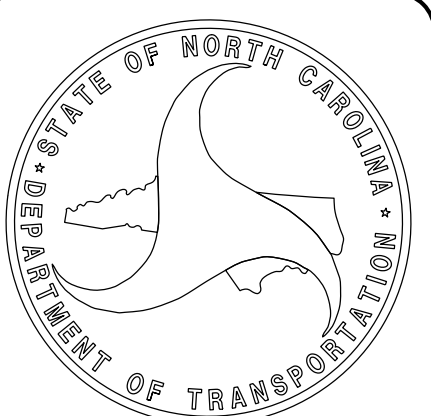
### PAVEMENT MARKING SCHEDULE

SYMBOL	DESCRIPTION
<b>THERMOPLASTIC (4", 90 MILS)</b>	
TA	WHITE EDGELINE
TD	3 FT. - 9 FT./SP WHITE MINISKIP
TE	WHITE SOLID LANE LINE
TI	YELLOW DOUBLE CENTER
T8	2 FT. - 6 FT./SP WHITE SKIP
<b>THERMOPLASTIC (8", 90 MILS)</b>	
TP	YELLOW DIAGONAL
<b>THERMOPLASTIC (24", 90 MILS)</b>	
T2	WHITE STOPBAR
<b>THERMOPLASTIC SYMBOLS (90 MILS)</b>	
UA	LEFT TURN ARROW
UB	RIGHT TURN ARROW
UC	STRAIGHT ARROW
UE	COMBO STRAIGHT/RIGHT ARROW
<b>SNOWPLOWABLE PAVEMENT MARKERS</b>	
ME	YELLOW & YELLOW
MF	YELLOW & RED

### INDEX

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

Prepared in the Office of:  
**DIVISION 12 DDC**  
1710 E. MARION ST., SHELBY, NC 28150



**PAVEMENT MARKING SCHEDULE**  
**FINAL PAVEMENT MARKINGS**

**THEROMPLASTIC (4", 90 MILS)**  
**HIGHLY REFLECTIVE ELEMENTS**

- (TA) \_\_\_\_\_ WHITE EDGELINE
- (TD) \_\_\_\_\_ 3 FT. - 9 FT./SP WHITE MINISKIP
- (TE) \_\_\_\_\_ WHITE SOLID LANE LINE
- (TI) \_\_\_\_\_ YELLOW DOUBLE CENTER
- (TB) \_\_\_\_\_ 2 FT. - 6 FT./SP WHITE SKIP

**THEROMPLASTIC (8", 90 MILS)**  
**HIGHLY REFLECTIVE ELEMENTS**

- (TP) \_\_\_\_\_ YELLOW DIAGONAL

**THEROMPLASTIC (24", 90 MILS)**  
**HIGHLY REFLECTIVE ELEMENTS**

- (TZ) \_\_\_\_\_ WHITE STOPBAR

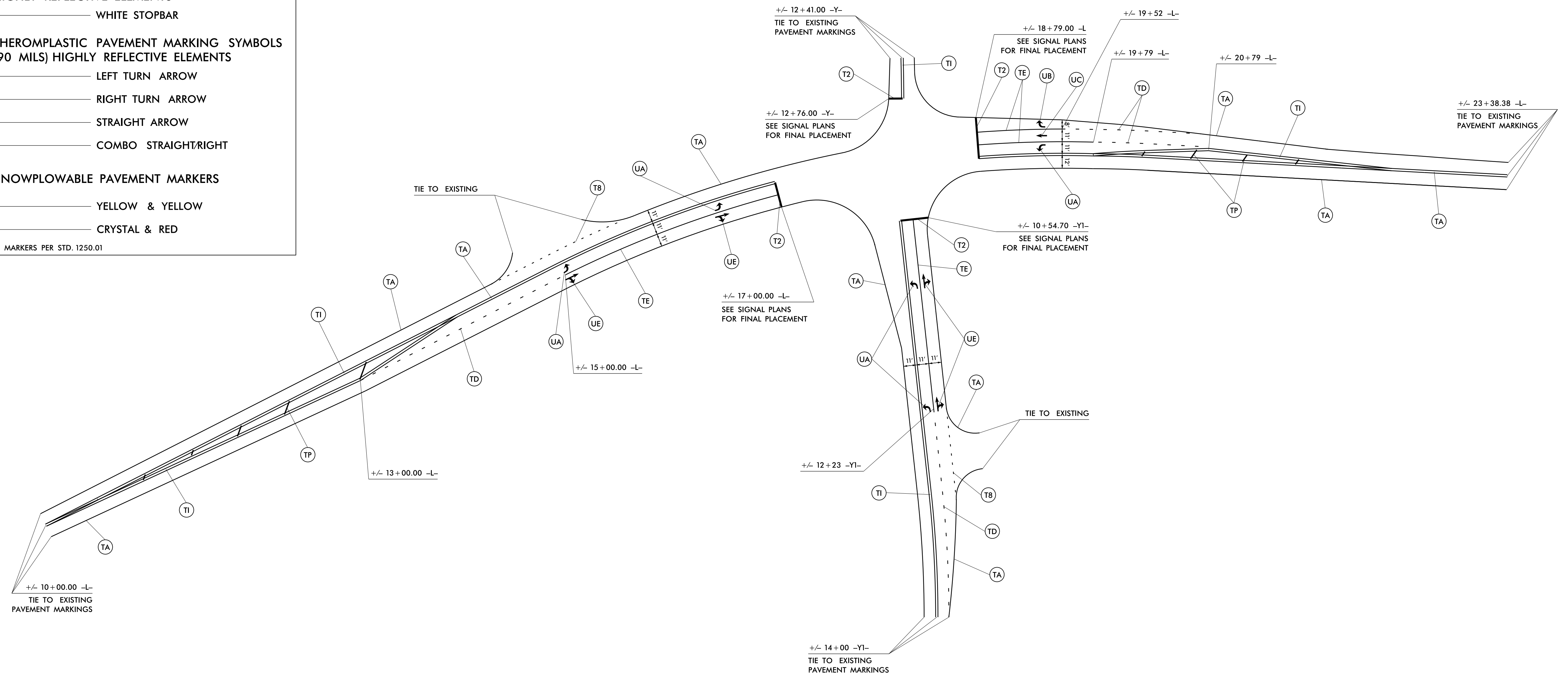
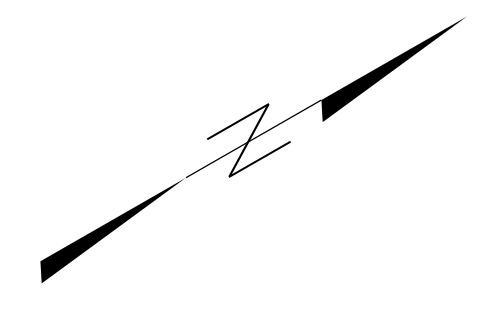
**THEROMPLASTIC PAVEMENT MARKING SYMBOLS**  
**(90 MILS) HIGHLY REFLECTIVE ELEMENTS**

- (UA) \_\_\_\_\_ LEFT TURN ARROW
- (UB) \_\_\_\_\_ RIGHT TURN ARROW
- (UC) \_\_\_\_\_ STRAIGHT ARROW
- (UE) \_\_\_\_\_ COMBO STRAIGHT/RIGHT

**SNOWPLOWABLE PAVEMENT MARKERS**

- (ME) \_\_\_\_\_ YELLOW & YELLOW
- (MF) \_\_\_\_\_ CRYSTAL & RED

\* PLACE MARKERS PER STD. 1250.01

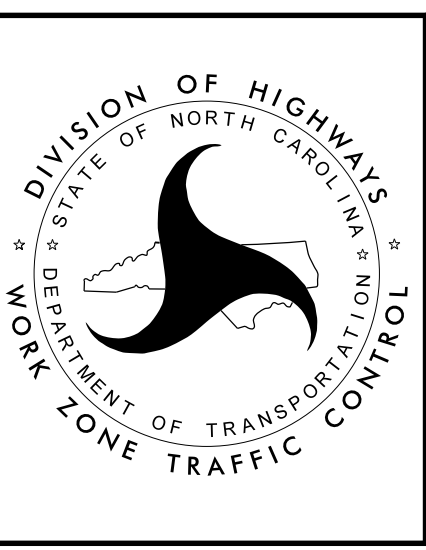


I4-APR-2023 08:23  
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 \$\$\$USERNAME\$\$\$

APPROVED: *Bryan Sowell*  
DocuSigned by: Bryan Sowell  
 DATE: 04/14/2023

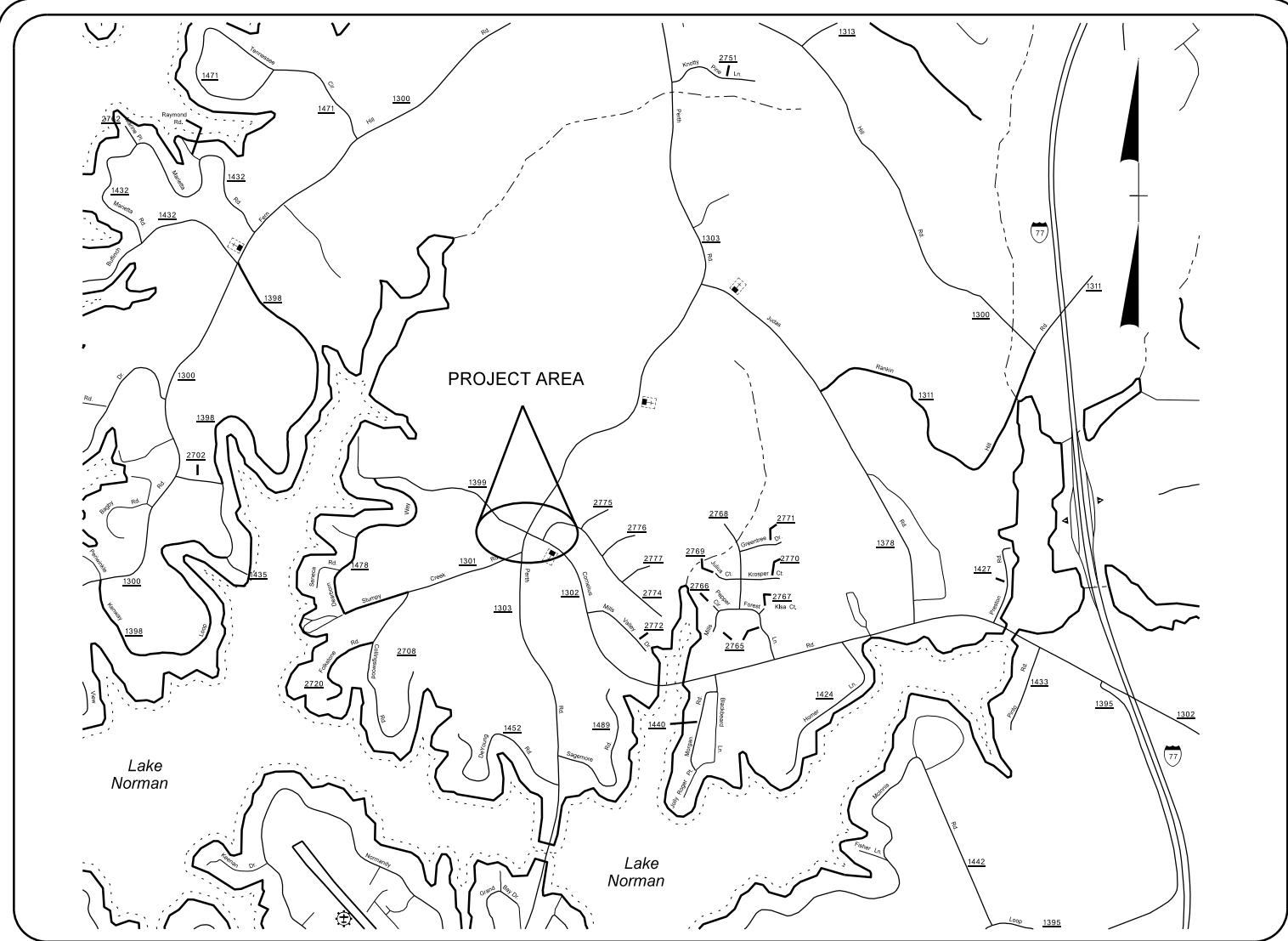
SEAL

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



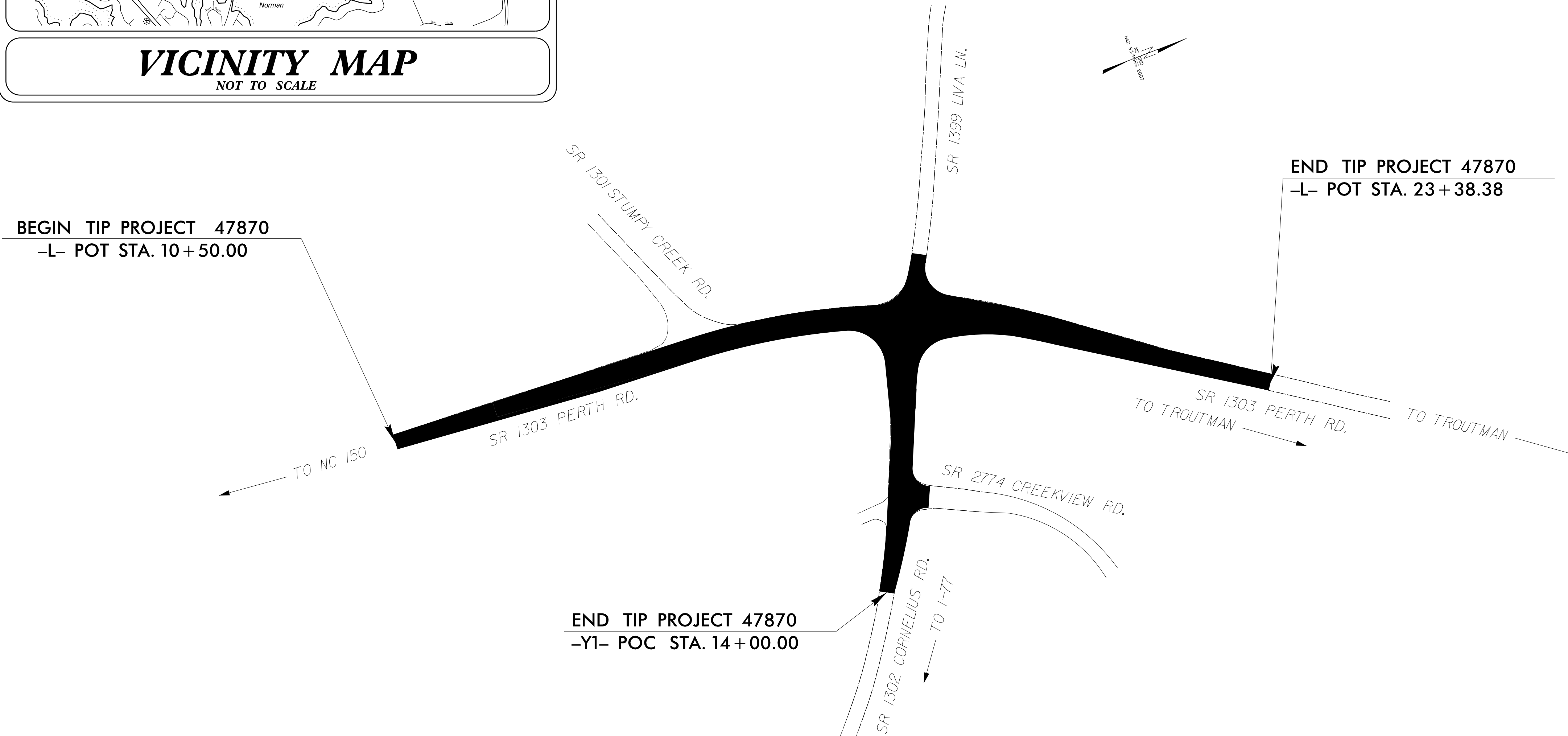
**PAVEMENT MARKING  
DETAIL**

**TIP PROJECT: 47870**



**VICINITY MAP**  
NOT TO SCALE

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

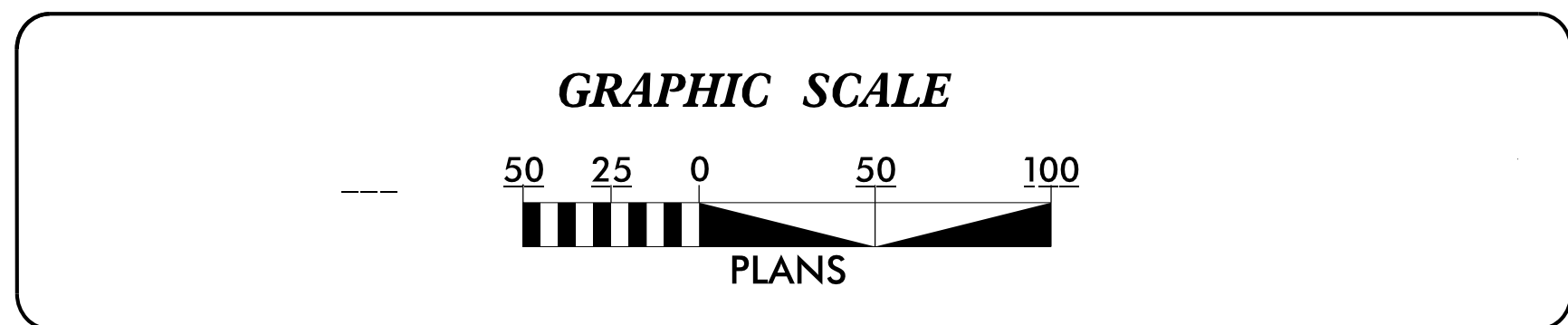


STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	47870	EC-1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	

**EROSION AND SEDIMENT CONTROL MEASURES**

Std. #	Description	Symbol
1630.03	Temporary Silt Ditch	TD
1630.05	Temporary Diversion	TD
1605.01	Temporary Silt Fence	III III III
1606.01	Special Sediment Control Fence	X X X X X X
1622.01	Temporary Berms and Slope Drains	— — — — —
1650.02	Silt Basin Type B	▨
1633.01	Temporary Rock Silt Check Type-A	▩
	Temporary Rock Silt Check Type-A with Matting and Polyacrylamide (PAM)	▩
1633.02	Temporary Rock Silt Check Type-B	▩
	Wattle/Coir Fiber Wattle	— — — — —
	Wattle/Coir Fiber Wattle with Polyacrylamide (PAM)	— — — — —
1634.01	Temporary Rock Sediment Dam Type-A	▩
1634.02	Temporary Rock Sediment Dam Type-B	▩
1635.01	Rock Pipe Inlet Sediment Trap Type-A	⊓
1635.02	Rock Pipe Inlet Sediment Trap Type-B	⊓
1630.04	Stilling Basin	▭
1630.06	Special Stilling Basin	▭
	Rock Inlet Sediment Trap:	
1632.01	Type A	A
1632.02	Type B	B
1632.03	Type C	C
	Skimmer Basin	▭
	Tiered Skimmer Basin	▭
	Infiltration Basin	▭

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



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

Prepared in the Office of:  
**DIVISION 12 DDC**  
1710 E. MARION ST.  
SHELBY, NC 28151

Designed by:  
**BRYAN K. SOWELL** 3907  
NAME LEVEL III CERTIFICATION NO.

Roadway Standard Drawings

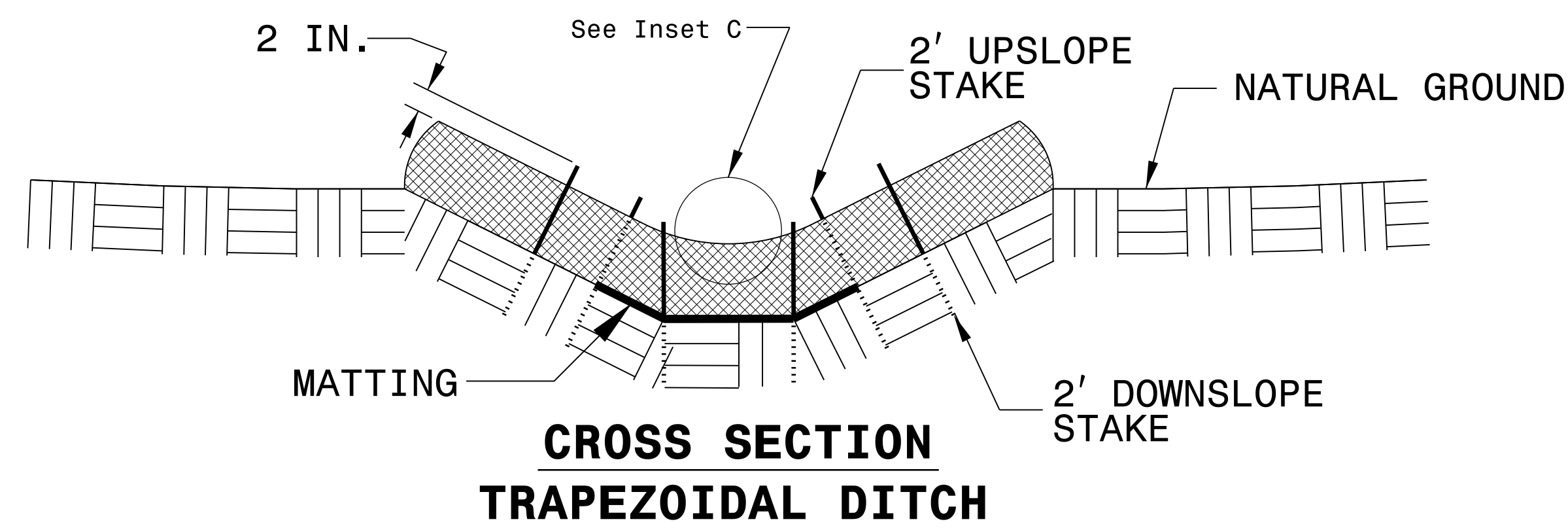
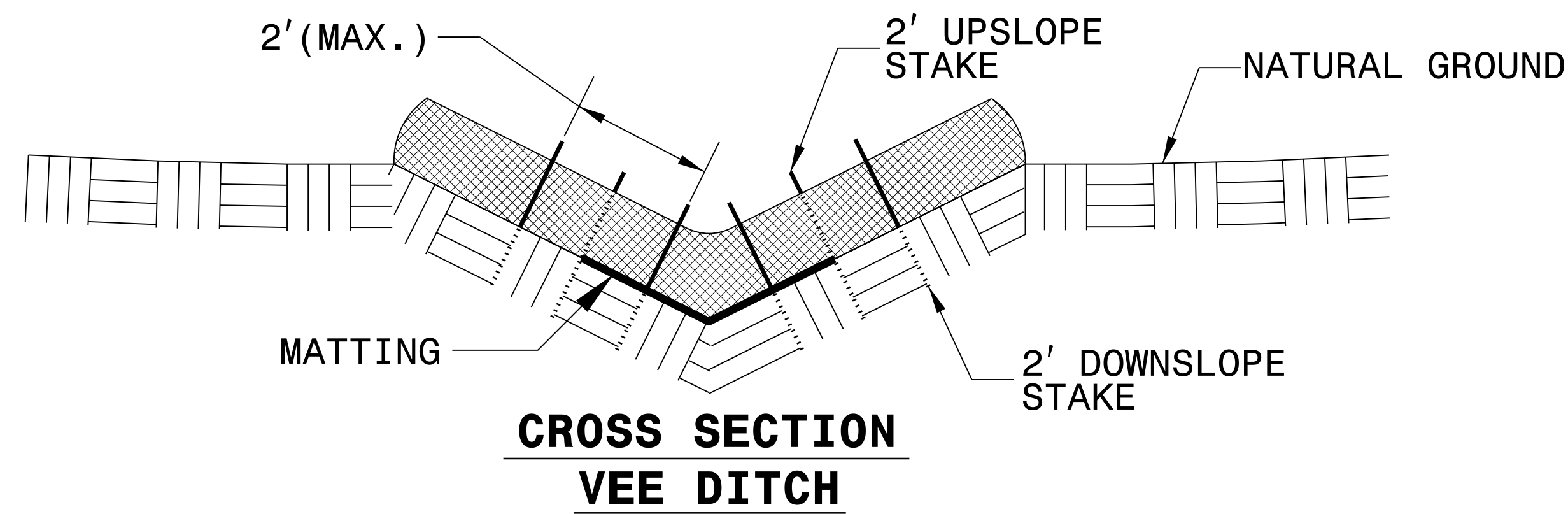
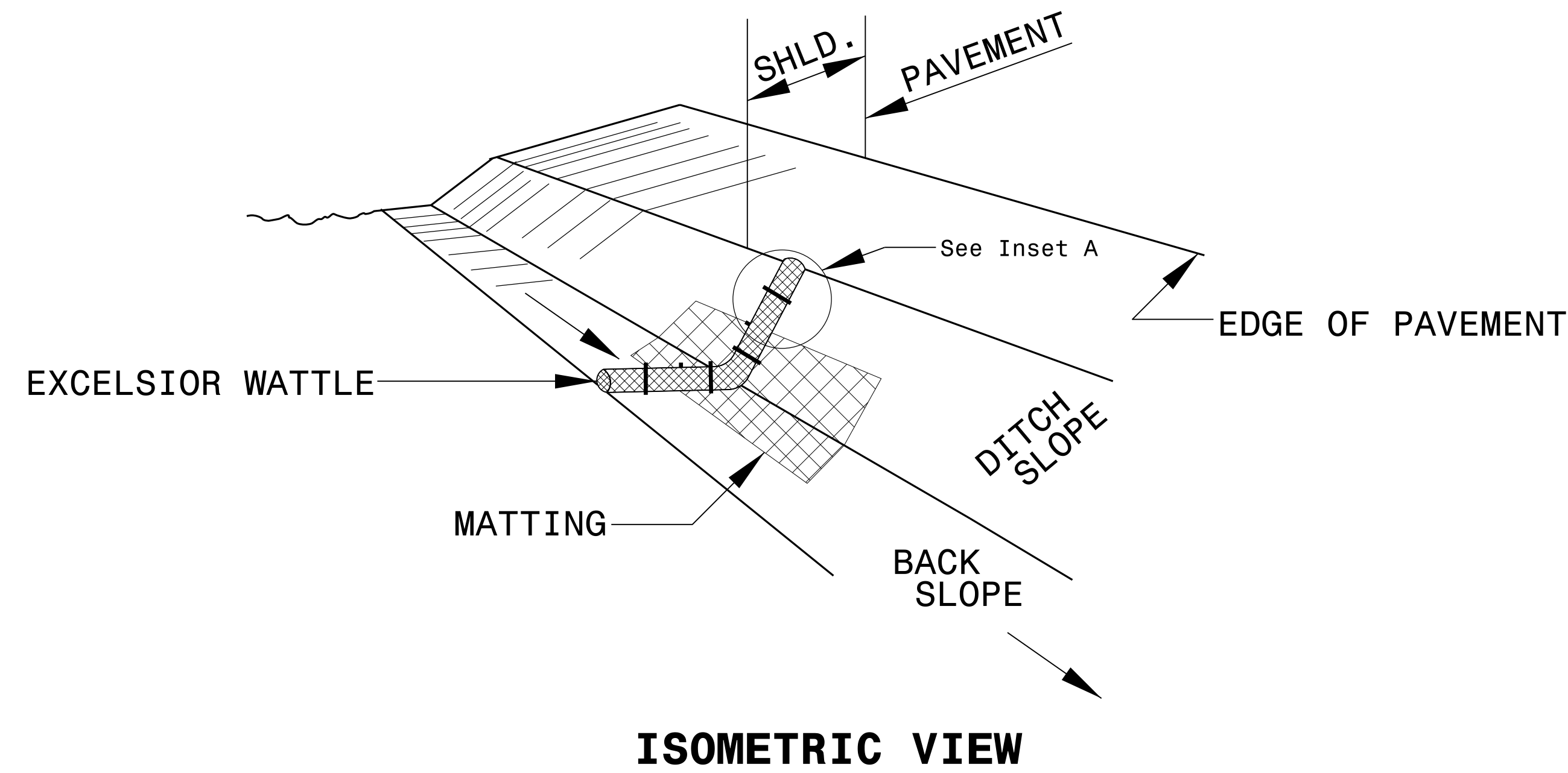
The following roadway english standards as appear in "Roadway Standard Drawings"- Roadway Design Unit - N. C. Department of Transportation - Raleigh, N. C., dated January 2018 and the latest revision thereto are applicable to this project and by reference hereby are considered a part of these plans.

1604.01 Railroad Erosion Control Detail	1632.01 Rock Inlet Sediment Trap Type A
1605.01 Temporary Silt Fence	1632.02 Rock Inlet Sediment Trap Type B
1606.01 Special Sediment Control Fence	1632.03 Rock Inlet Sediment Trap Type C
1607.01 Gravel Construction Entrance	1633.01 Temporary Rock Silt Check Type A
1622.01 Temporary Berms and Slope Drains	1633.02 Temporary Rock Silt Check Type B
1630.01 Riser Basin	1633.03 Temporary Rock Silt Check Type C
1630.02 Silt Basin Type A	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	1640.01 Coir Fiber Wattle
1631.01 Matting Installation	1645.01 Temporary Stream Crossing

14-100-2022-0848  
R:\ENR\PROJECTS\2022\0848\0848\DWG\14-100-2022-0848-01.DWG

PROJECT REFERENCE NO. 47870	SHEET NO. EC-2
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

# WATTLE WITH POLYACRYLAMIDE (PAM) DETAIL



**NOTES:**

USE MINIMUM 12 IN. DIAMETER EXCELSIOR 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.

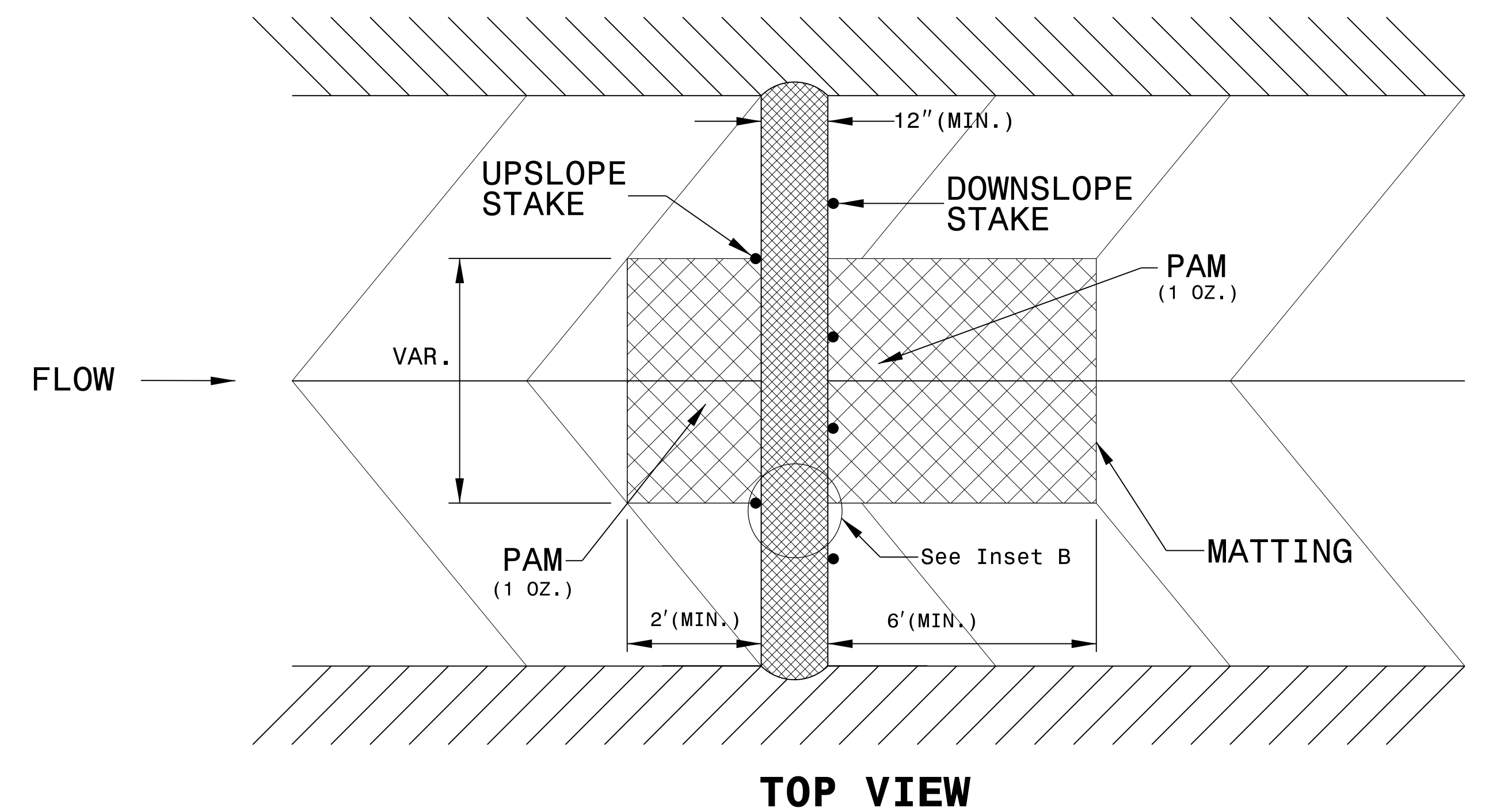
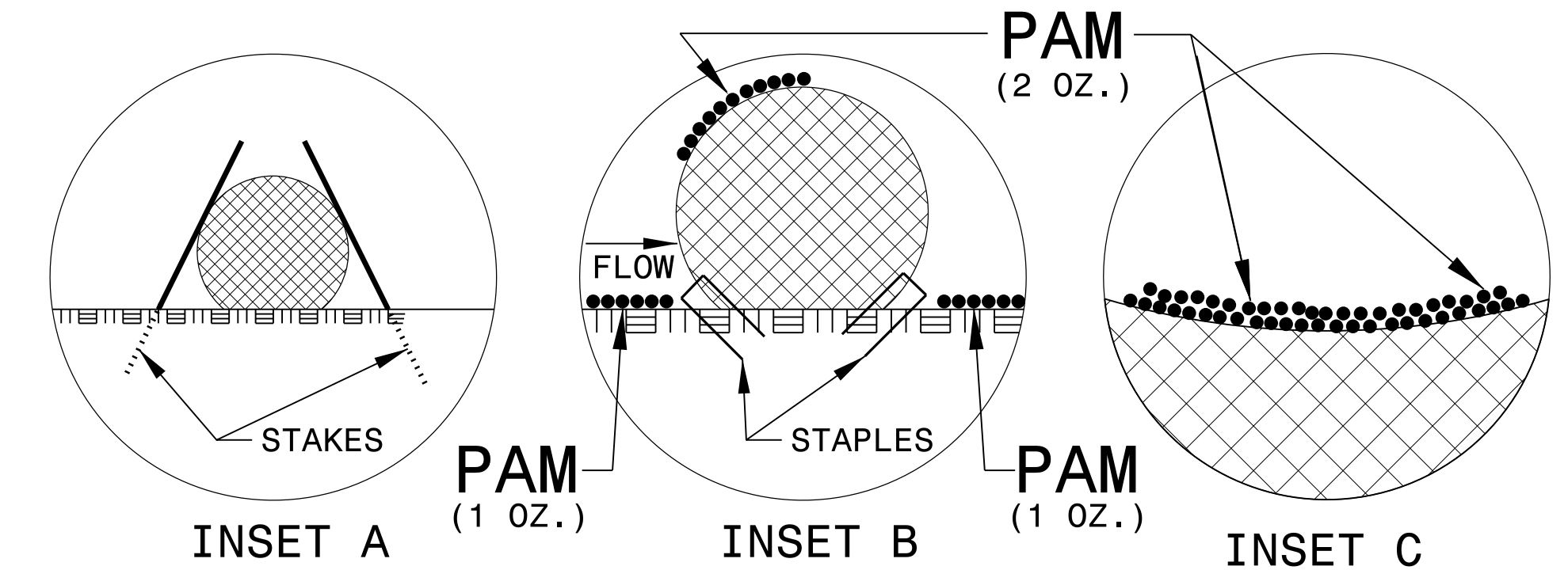
PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12" IN LENGTH.

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.





DIVISION OF HIGHWAYS  
STATE OF NORTH CAROLINA

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PROJECT REFERENCE NO. 47870	SHEET NO. EC-3B
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

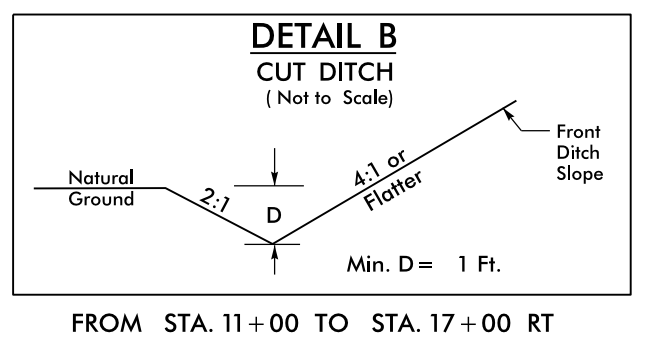
# SOIL STABILIZATION TIMEFRAMES

<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.

PI Sta -L- 17+66.12  
 $\Delta = 31' 20" 47.2" (RT)$   
 $D = 5' 50" 47.4"$   
 $L = 536.16'$   
 $T = 274.97'$   
 $R = 980.00'$

PI Sta -Y- 11+93.90  
 $\Delta = 7' 36" 00.0" (RT)$   
 $D = 2' 51" 53.2"$   
 $L = 265.29'$   
 $T = 132.84'$   
 $R = 2,000.00'$

NOTE: PERIMETER EROSION CONTROL MEASURES SHALL BE INSTALLED DURING CLEARING AND GRUBBING PHASE.

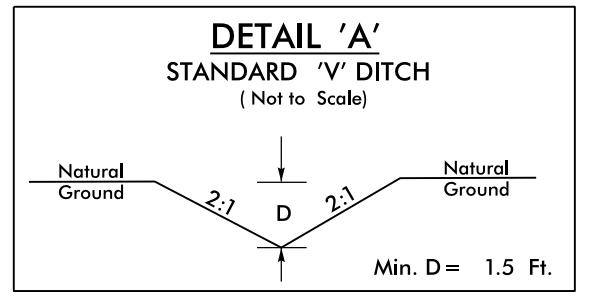


BEGIN TIP PROJECT 47870  
-L- POT STA. 10+00.00

END TIP PROJECT 47870  
-L- POT STA. 23+38.38

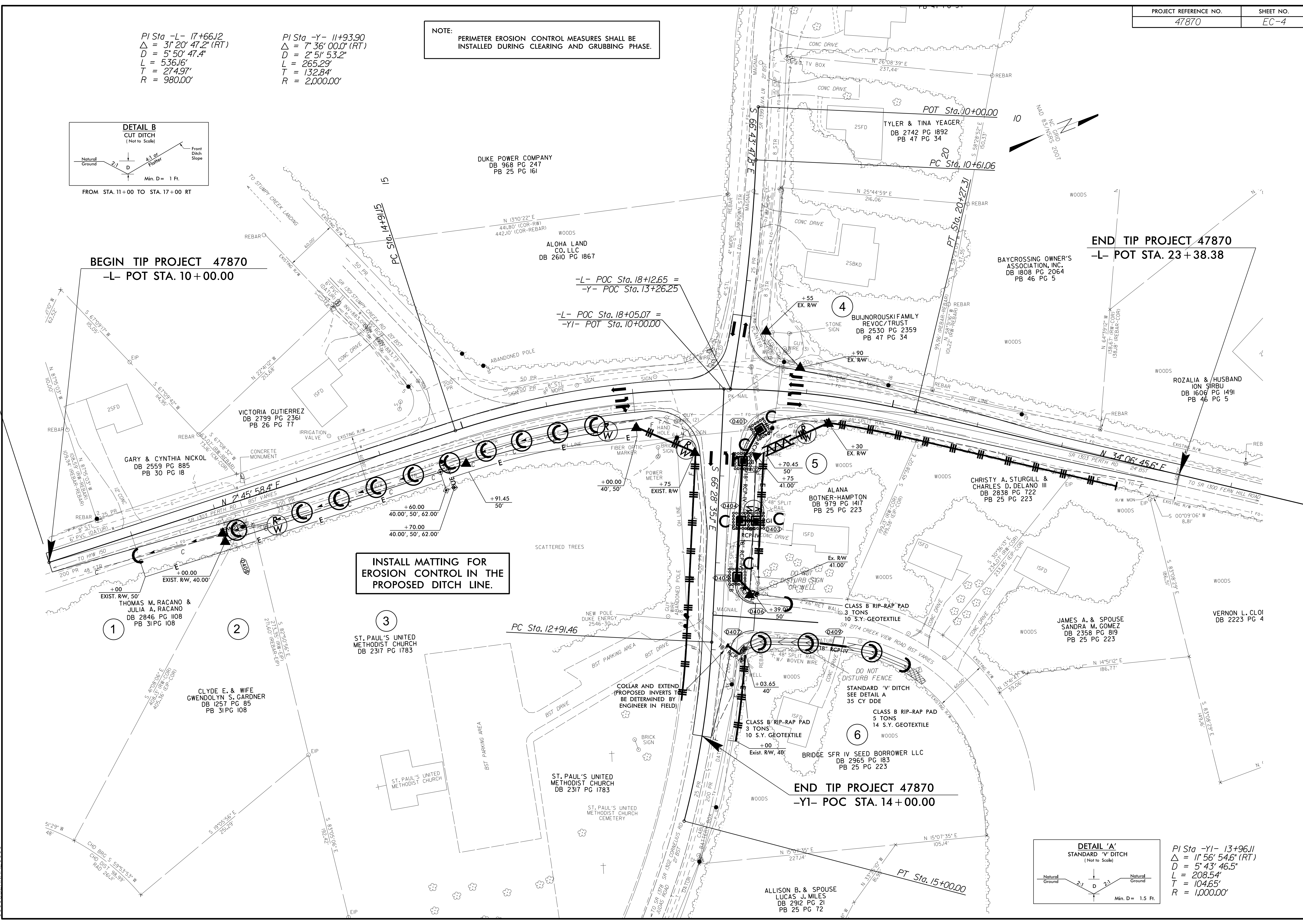
INSTALL MATTING FOR EROSION CONTROL IN THE PROPOSED DITCH LINE.

END TIP PROJECT 47870  
-YI- POC STA. 14+00.00



PI Sta -YI- 13+96.11  
 $\Delta = 11' 56" 54.6" (RT)$   
 $D = 5' 43" 46.5"$   
 $L = 208.54'$   
 $T = 104.65'$   
 $R = 1,000.00'$

8/17/99  
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**STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION**

**SIGNING PLAN  
IREDELL COUNTY**

**LOCATION: INTERSECTION OF SR 1303 (PERTH RD.) AND SR 1302 (CORNELIUS RD.) / SR 1399 (LIVA LN.)**

<b>TIP NO.</b> 47870	<b>SHEET NO.</b> SIGN-1
<small>DocuSigned by:</small>  <small>77EAB0C0D0E4M1...</small>	
<b>APPROVED:</b>	
<b>DATE:</b> 04/14/2023	
<b>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</b>	

**CONTRACT NO.: DL00299 T.I.P.: 47870**

**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 2018 ARE APPLICABLE TO THIS PROJECT AND BY REFERENCE HEREBY ARE CONSIDERED A PART OF THESE PLANS:

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

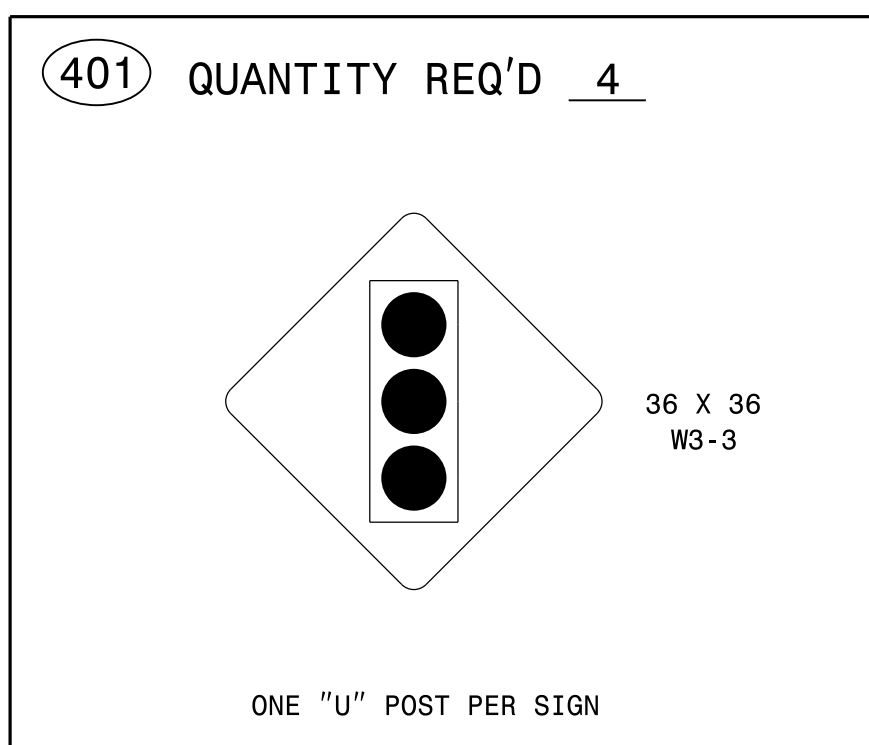
**SUMMARY OF QUANTITIES**

ITEM NO.		ITEM DESCRIPTION	QUANTITY	UNIT
DESC. NO.	SECT. NO.			
4025000000	901	CONTRACTOR FURNISHED TYPE E SIGN.....	36	SF
4072000000	903	SUPPORTS, 3-LB STEEL U-CHANNEL.....	65	LF
4102000000	904	SIGN ERECTION, TYPE E.....	4	EA
4116100000	904	SIGN ERECTION, RELOCATE TYPE E.....	1	EA
4155000000	907	DISPOSAL OF SIGN SYSTEM, U-CHANNEL.....	6	EA

**GENERAL NOTES**

- . SIGNS FURNISHED BY CONTRACTOR.
- . IF REMOVAL OR RELOCATION OF SIGNS ON PRIVATE STREET (NON-STATE MAINTAINED) IS REQUIRED DUE TO CONSTRUCTION, THE CONTRACTOR SHALL INFORM THE ENGINEER. THE WORK WILL BE COMPLETED BY OTHERS.
- . WHEN NOT STATIONED OR DIMENSIONED ON PLANS, ALL 'E' AND 'F' SIGNS SHALL BE FIELD LOCATED BY THE ENGINEER.
- . ALL EXISTING SIGNS ON "U" CHANNEL POST WITHIN THE PROJECT LIMITS SHALL BE REMOVED AND DISPOSED OF UNLESS OTHERWISE NOTED ON PLANS.
- . 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.

**TYPE "E" SIGNS**

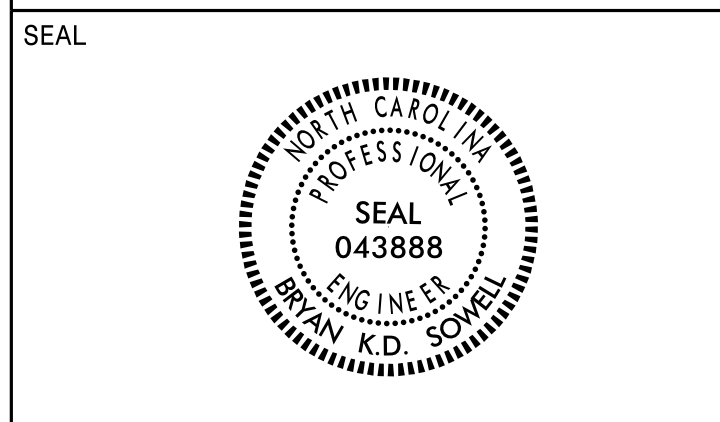


**PLAN PREPARED BY:**

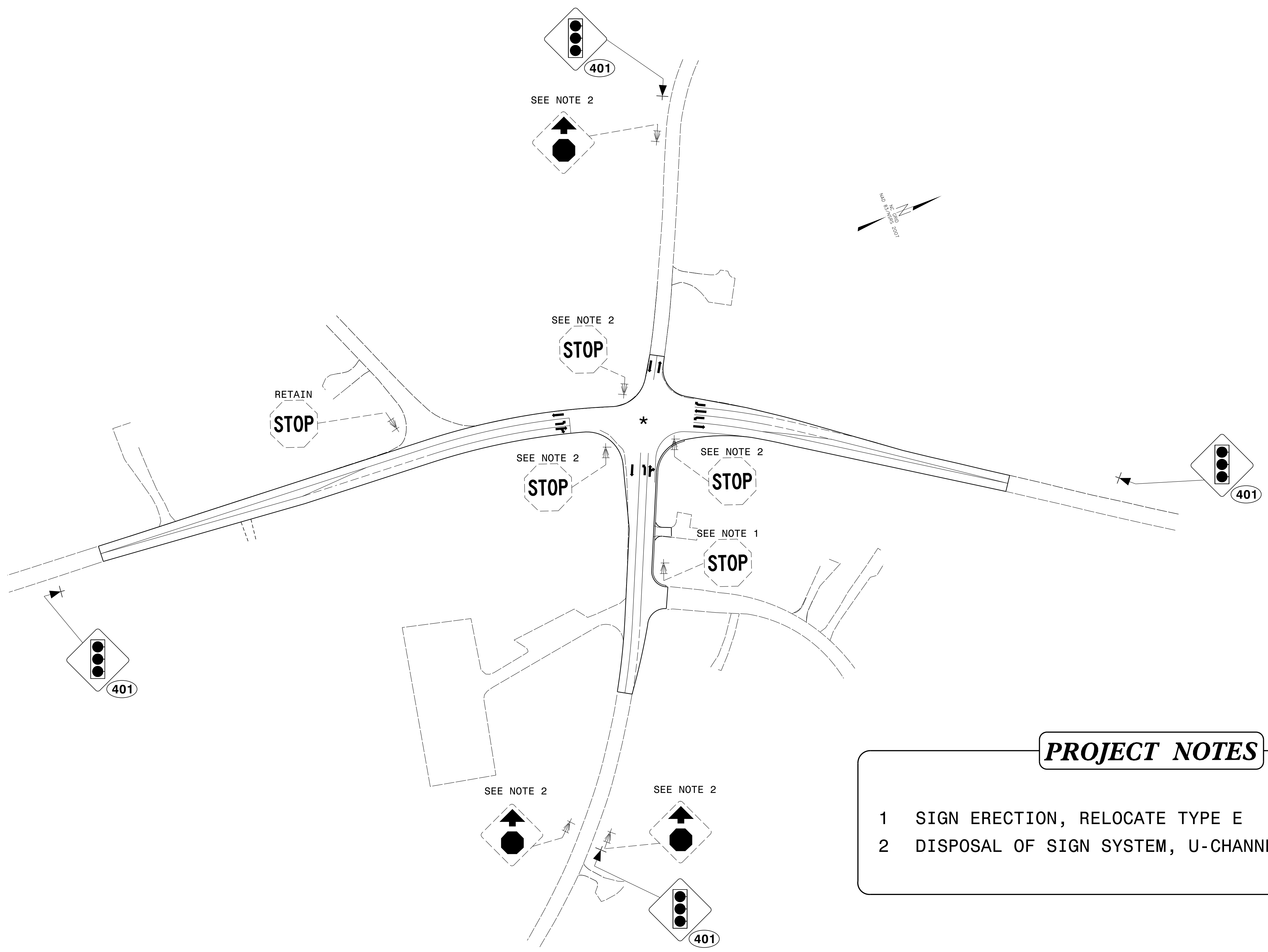
<b>BRYAN SOWELL, P.E.</b> PROJECT ENGINEER	
TRANSPORTATION DESIGNER	

**INDEX**

<u>SHEET NO.</u>	<u>DESCRIPTION</u>
SIGN-1	TITLE SHEET
SIGN-2	SIGNING PLAN SHEET



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



**PROJECT NOTES**

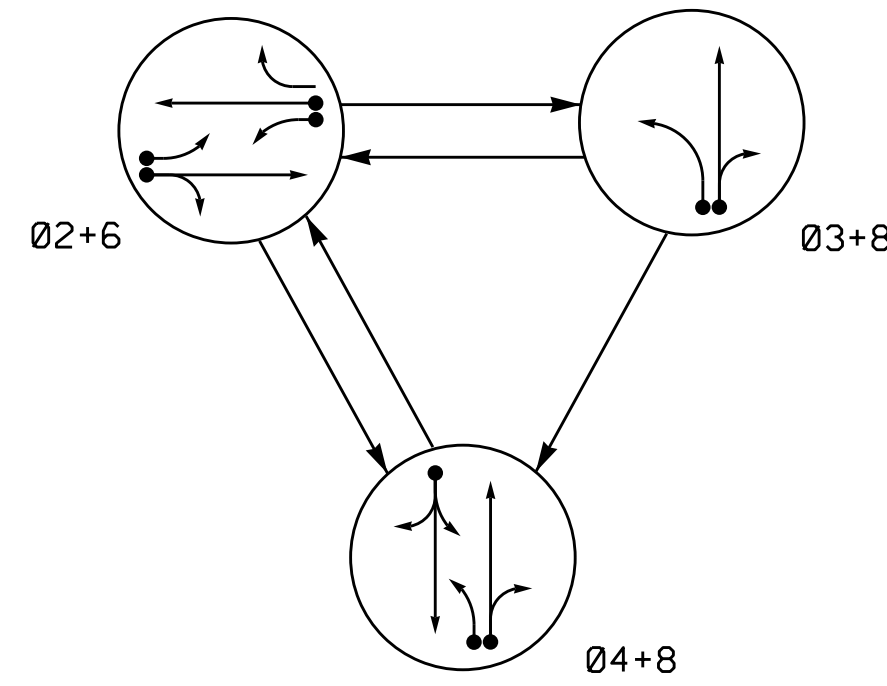
1 SIGN ERECTION, RELOCATE TYPE E  
 2 DISPOSAL OF SIGN SYSTEM, U-CHANNEL

\*SIGNALIZED

**EXISTING & PROPOSED  
 SIGNS**

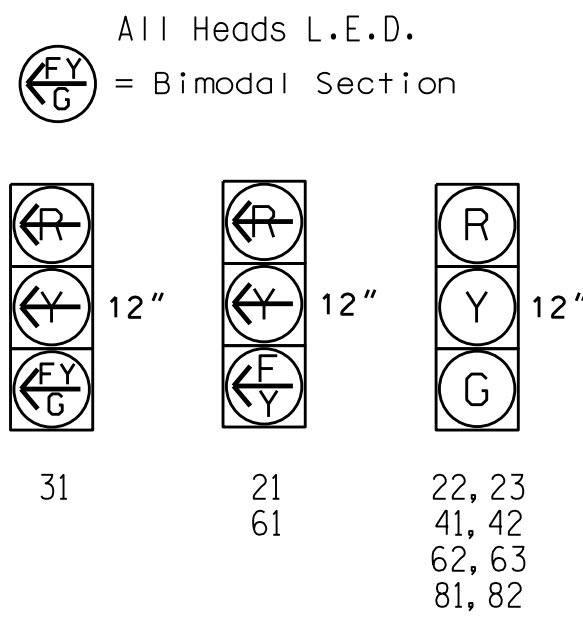
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 \$\$\$SUBDRAWING\$\$\$

PHASING DIAGRAM



SIGNAL FACE	PHASE			
	02+6	03+8	04+8	04+8
21	F	R	R	Y
22, 23	G	R	R	Y
31	F	R	R	Y
41, 42	R	R	G	R
61	F	R	R	Y
62, 63	G	R	R	Y
81, 82	R	G	G	R

SIGNAL FACE I.D.



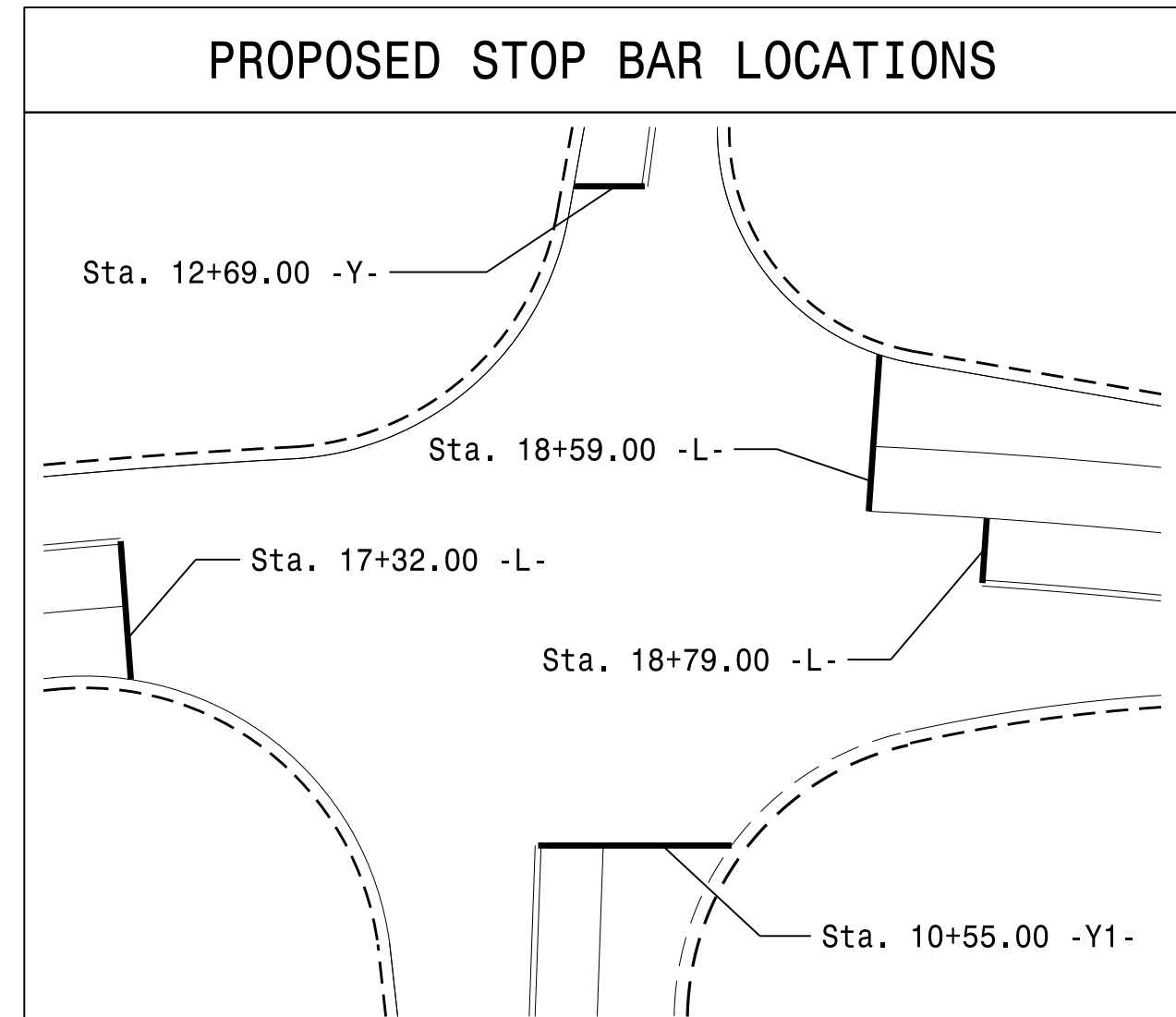
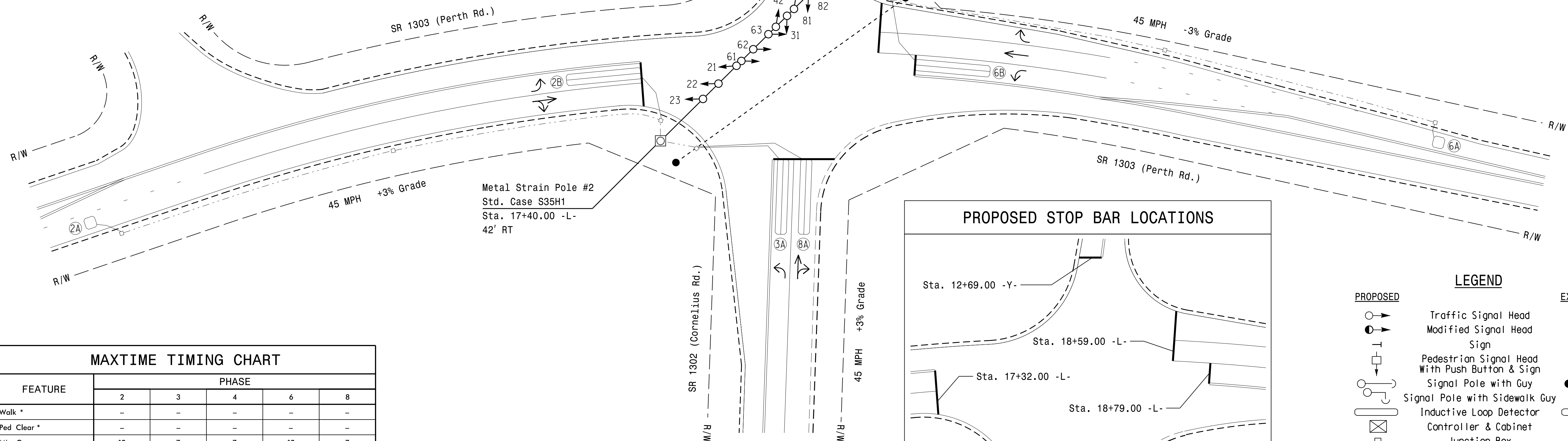
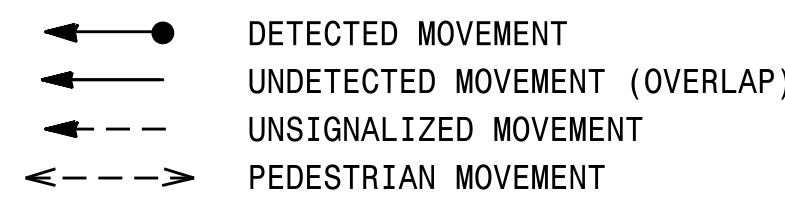
MAXTIME DETECTOR INSTALLATION CHART													
DETECTOR				PROGRAMMING									
LOOP	SIZE (FT)	DISTANCE FROM STOPBAR (FT)	TURNS	NEW LOOP	CALL PHASE	DELAY TIME	EXTEND TIME	EXTEND	ADDED INITIAL	QUEUE	PASSAGE 2	SYSTEM LOOP	NEW CARD
2A	6X6	300	5	X	2	-	-	X	X	-	-	-	X
2B	6X40	0	2-4-2	X	2	-	-	X	-	-	X	X	-
3A	6X40	0	2-4-2	X	3	15	-	X	-	-	X	-	X
					8	3	-	X	-	-	X	-	X
4A	6X40	0	2-4-2	X	4	5	-	X	-	-	X	-	X
6A	6X6	300	4	X	6	-	-	X	X	-	X	-	X
6B	6X40	0	2-4-2	X	6	-	-	X	-	-	X	X	-
8A	6X40	0	2-4-2	X	8	10	-	X	-	-	X	-	X

3 Phase Fully Actuated Isolated

NOTES

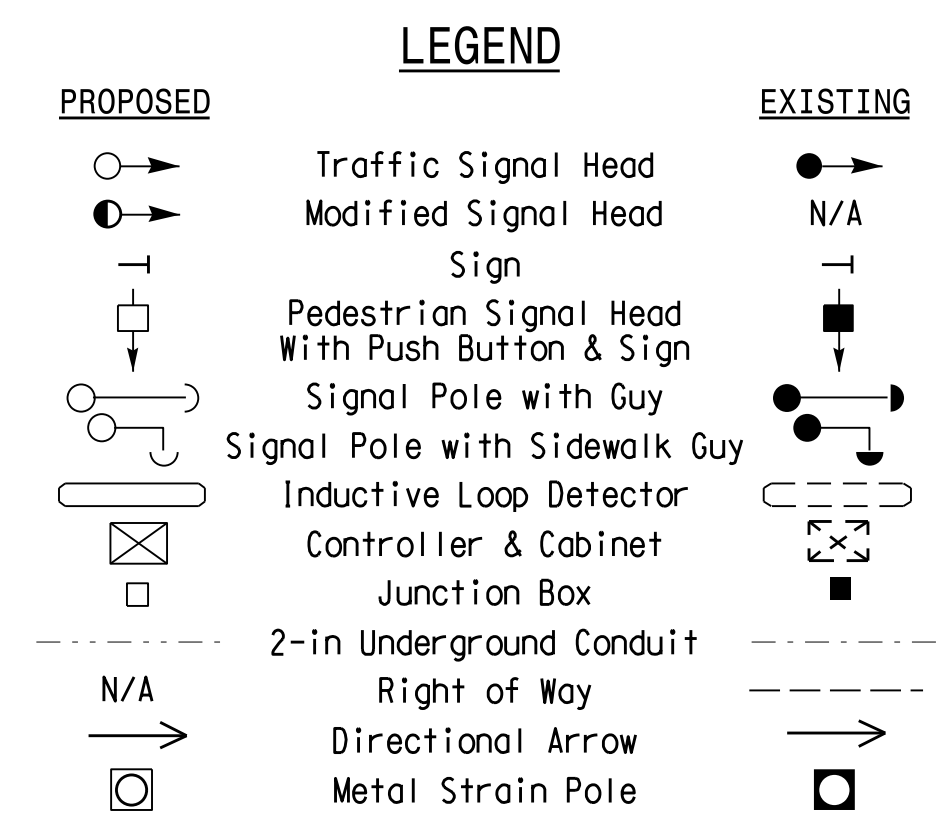
- Refer to "Roadway Standard Drawings NCDOT" dated January 2018 and "Standard Specifications for Roads and Structures" dated January 2018.
- Do not program signal for late night flashing operation unless otherwise directed by the Engineer.
- Omit phase 3 during phase 4 on.
- Set all detector units to presence mode.
- Locate new cabinet so as not to obstruct sight distance of vehicles turning right on red.

PHASING DIAGRAM DETECTION LEGEND



FEATURE	PHASE				
	2	3	4	6	8
Walk *	-	-	-	-	-
Ped Clear *	-	-	-	-	-
Min Green	12	7	7	12	7
Passage *	6.0	2.0	2.0	6.0	2.0
Passage 2 *	3.0	-	-	3.0	-
Max 1 *	90	15	25	90	25
Yellow Change	4.8	3.0	5.3	4.8	5.3
Red Clear	1.5	2.1	1.1	1.5	1.1
Added Initial *	2.5	-	-	2.5	-
Maximum Initial *	34	-	-	34	-
Time Before Reduction *	15	-	-	15	-
Time To Reduce *	30	-	-	30	-
Minimum Gap	3.0	-	-	3.0	-
Advance Walk	-	-	-	-	-
Non Lock Detector	-	X	X	-	X
Vehicle Recall	MIN RECALL	-	-	MIN RECALL	-
Dual Entry	-	-	X	-	X

\* These values may be field adjusted. Do not adjust Min Green and Extension times for phases 2 and 6 lower than what is shown. Min Green for all other phases should not be lower than 4 seconds.



This plan supersedes the one signed and sealed on 12/21/2022.

New Installation

Prepared in the Offices of:  
 Transportation Mobility and Safety Solutions  
 NORTH CAROLINA PROFESSIONAL ENGINEERS  
 RICHARD N. ZINSER

SR 1303 (Perth Rd.)  
 at  
 SR 1399 (Liva Ln.)/  
 SR 1302 (Cornelius Rd.)  
 Division 12 Iredell County Mooresville

PLAN DATE: January 2023 REVIEWED BY: T.J. Williams  
 PREPARED BY: R.N. Zinser REVIEWED BY:

750 N. Greenfield Pkwy, Garner, NC 27529

SCALE: 1" = 30'

REVISIONS: INIT. DATE

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SEAL  
 RICHARD N. ZINSER  
 PROFESSIONAL ENGINEER  
 No. 043914  
 DATE: 01/11/2023  
 S.I.G. INVENTORY NO. 12-1905

11-JAN-2023 1:56:05  
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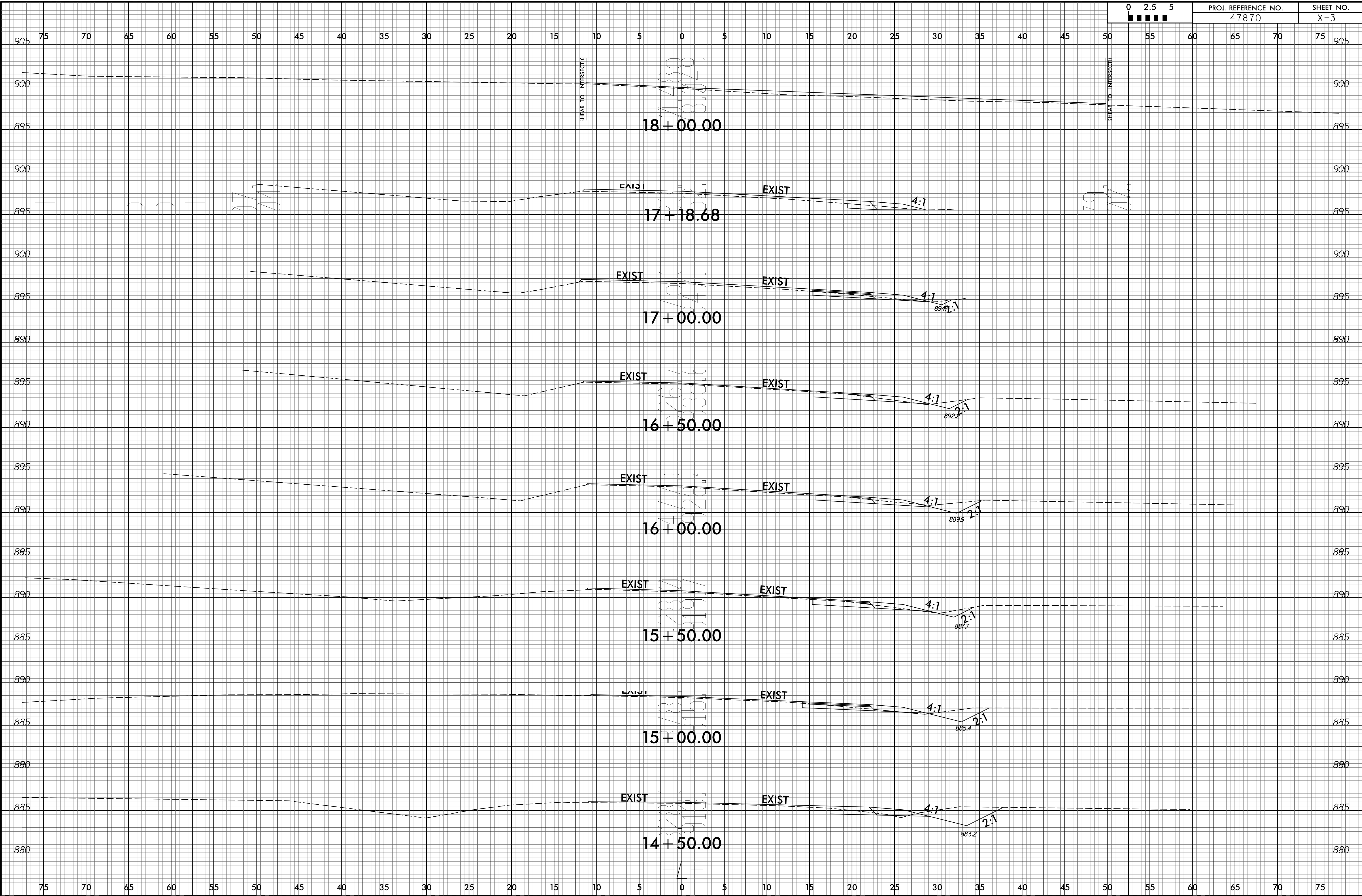




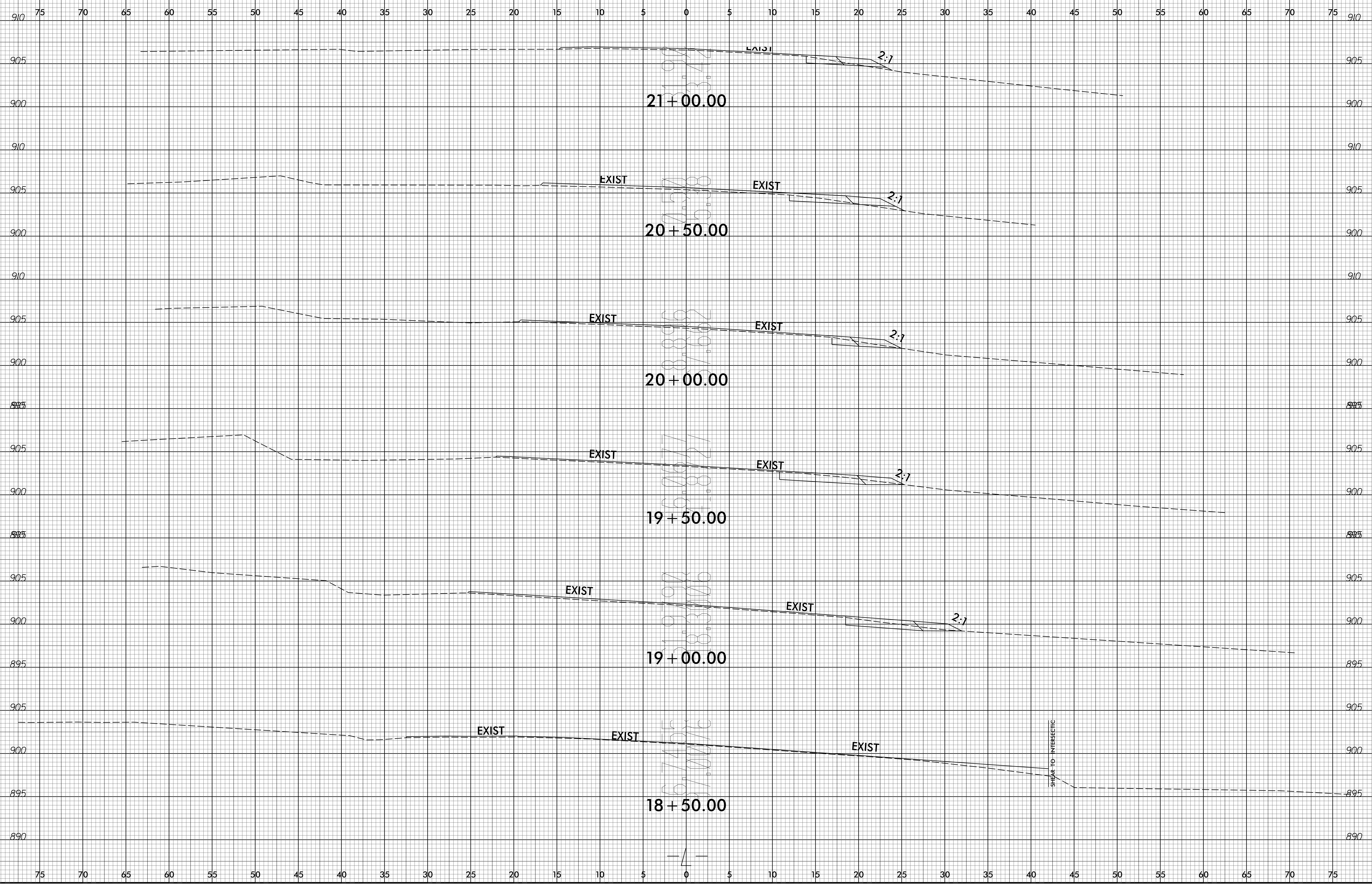
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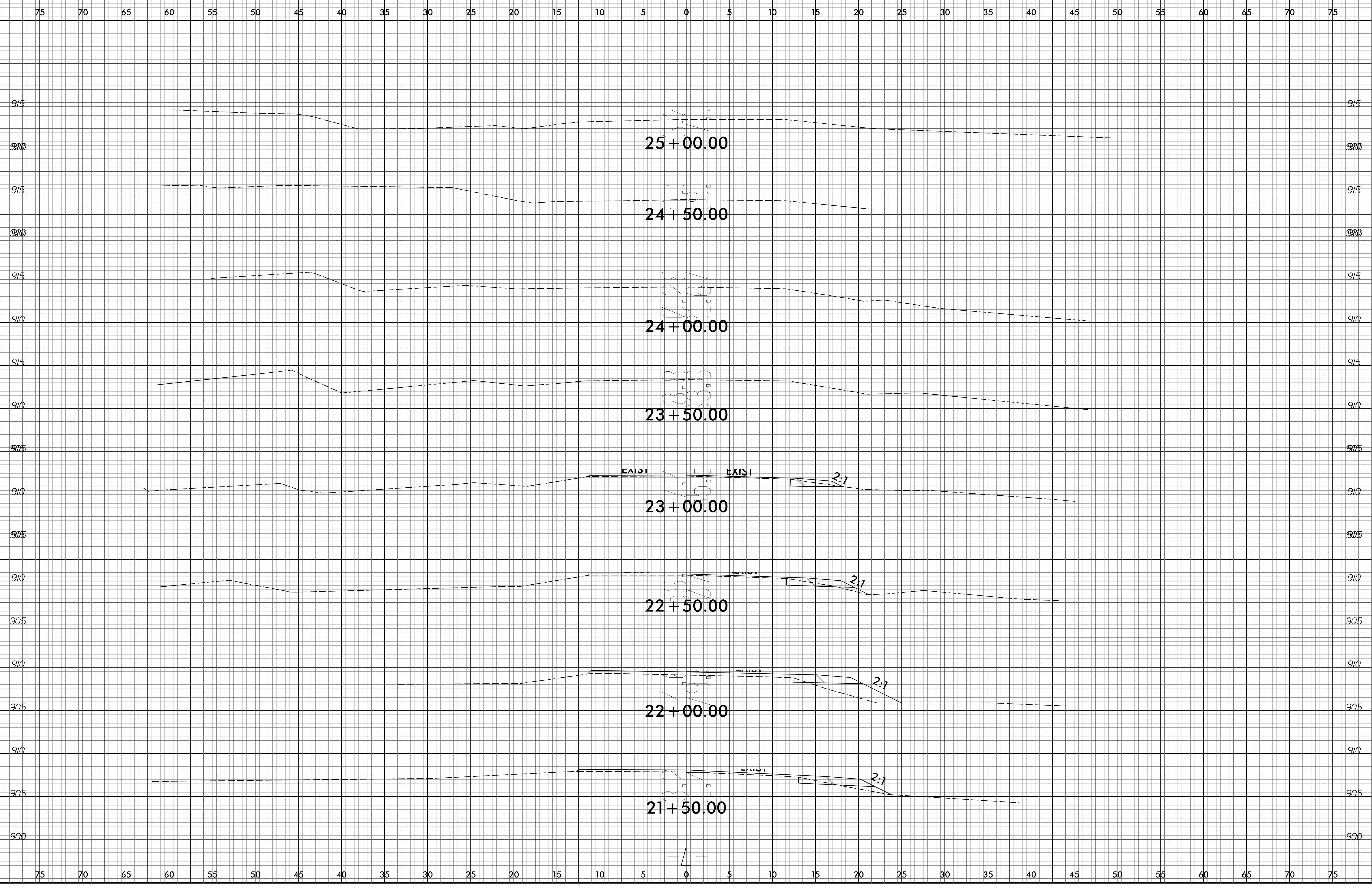
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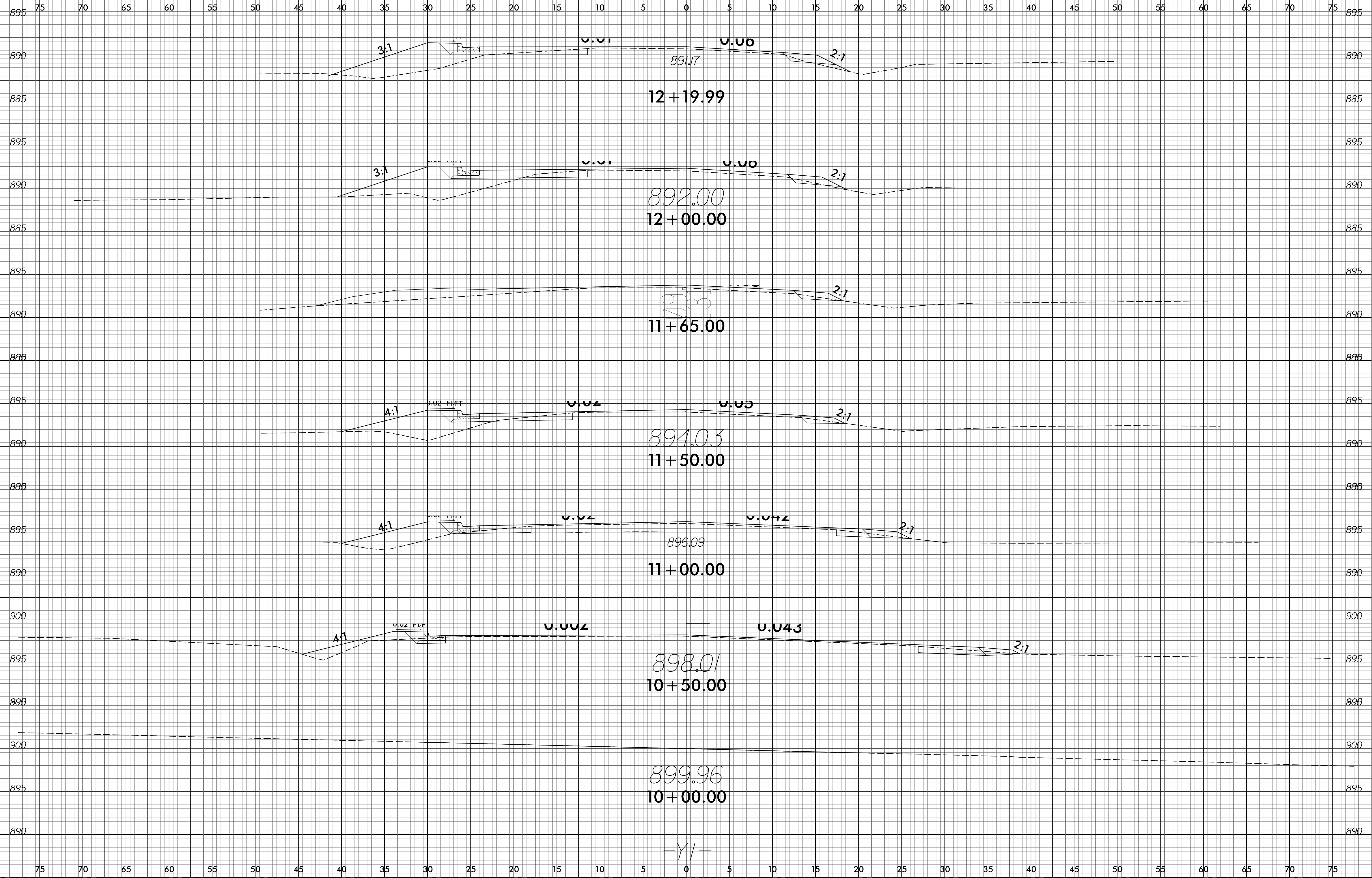


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