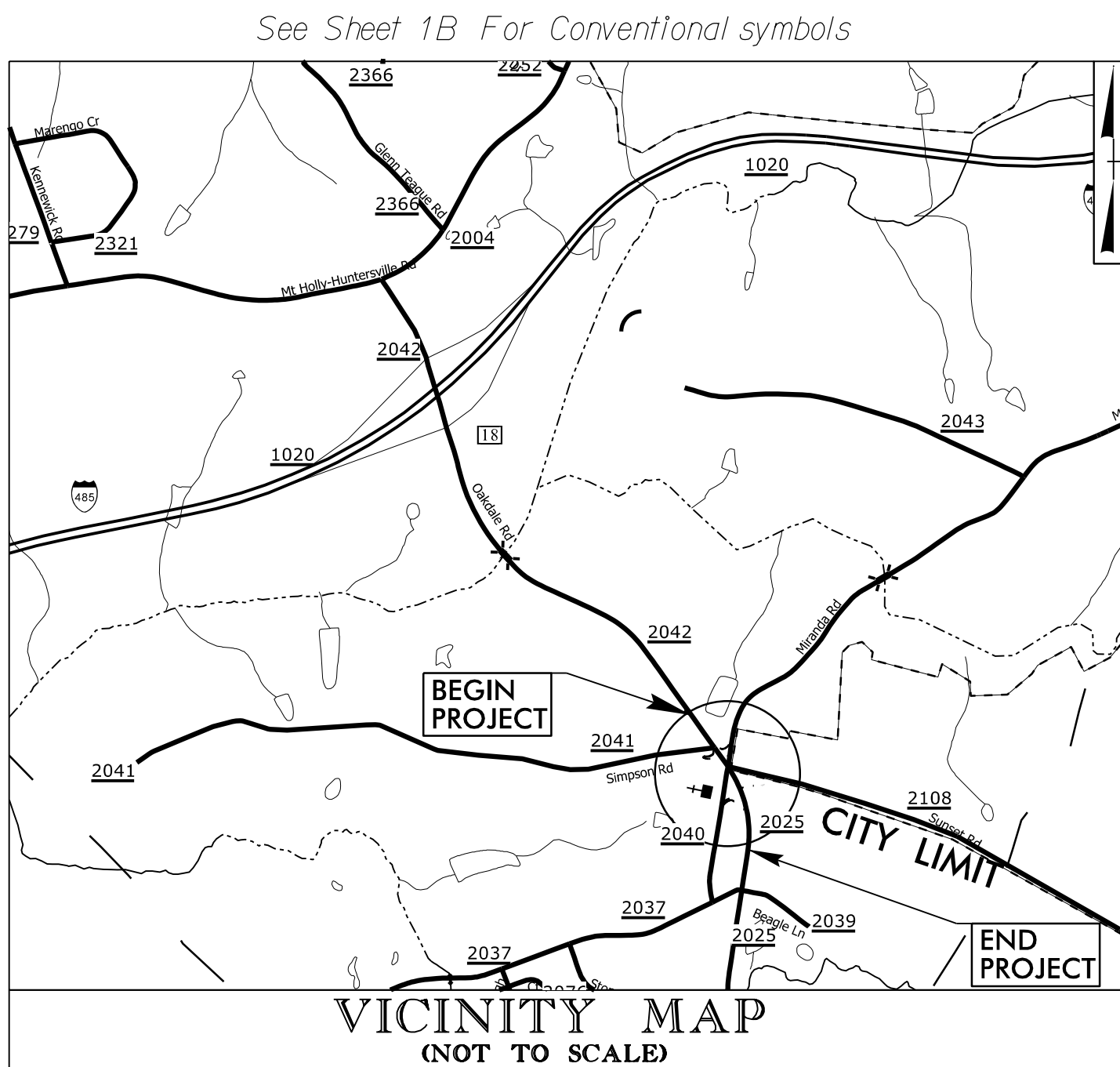


TIP PROJECT: W-5710X

CONTRACT: C205118

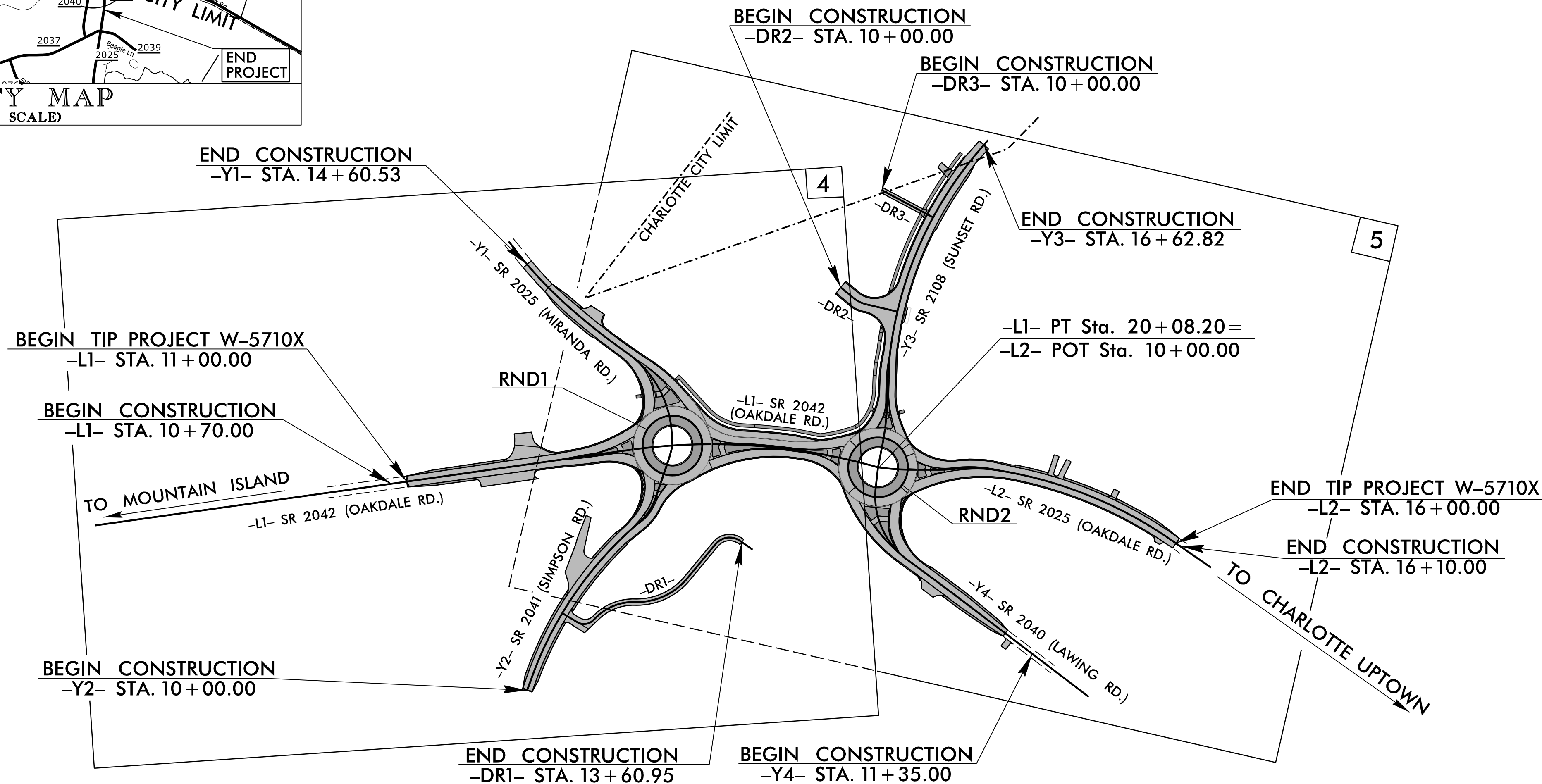
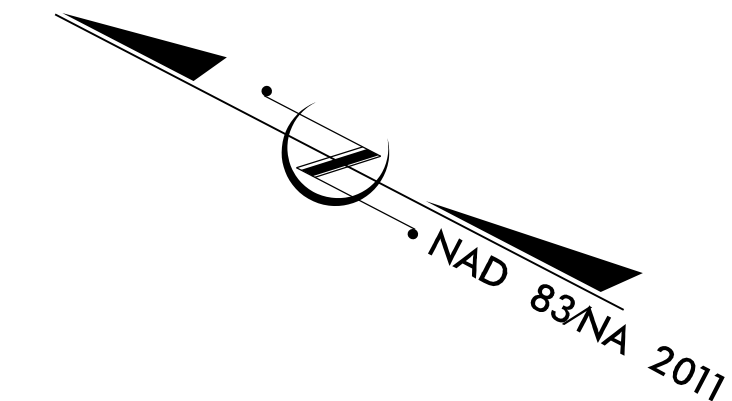
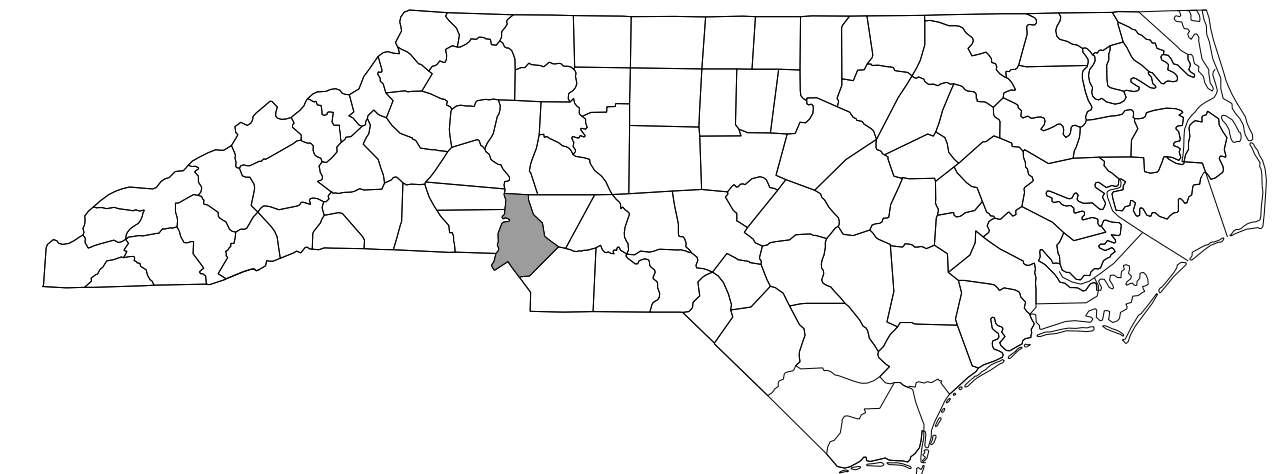


STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

MECKLENBURG COUNTY

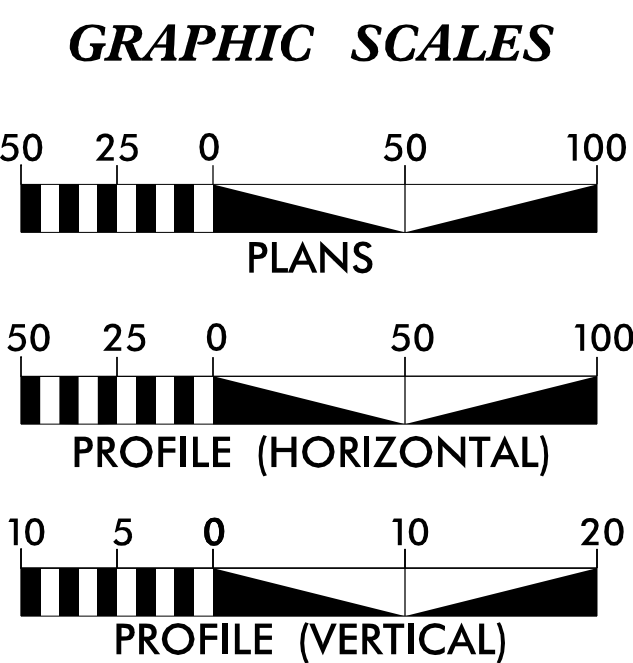
LOCATION: SR 2042 (OAKDALE ROAD), SR 2108 (SUNSET ROAD),
SR 2025 (MIRANDA ROAD) AND SR 2040 (LAWING ROAD)
NEAR CHARLOTTE. CONSTRUCT SAFETY IMPROVEMENTS.
TYPE OF WORK: GRADING, DRAINAGE, AND PAVING

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	W-5710X	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
44856.1.24	HSIP-2042(002)	PE	
44856.2.24	HSIP-2042(002)	ROW/UTILITY	
44856.3.24	HSIP-2042(002)	CONST	



THIS PROJECT IS PARTIALLY WITHIN THE MUNICIPAL BOUNDARIES OF CHARLOTTE.

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED



DESIGN DATA

ADT 2025	=	9315
ADT 2035	=	13000
K	=	*
D	=	*
T	=	*
V	=	50 MPH
RND V	=	30 MPH
TTST	=	*
DUAL	=	2%
FUNC CLASS	=	MAJOR COLLECTOR

* = DESIGN DATA UNAVAILABLE

PROJECT LENGTH

TOTAL LENGTH TIP PROJECT W-5710X = 0.286 MILES

Plans Prepared For NCDOT By:

TRANSYSTEMS

2024 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
JULY 1, 2021

LETTING DATE:
NOVEMBER 18, 2025

RAJIT RAMKUMAR, PE, LEED, AP
PROJECT ENGINEER

WILLIAM POPE, PE
PROJECT DESIGN ENGINEER

DUSTIN SIMPSON
NCDOT CONTACT

HYDRAULICS ENGINEER

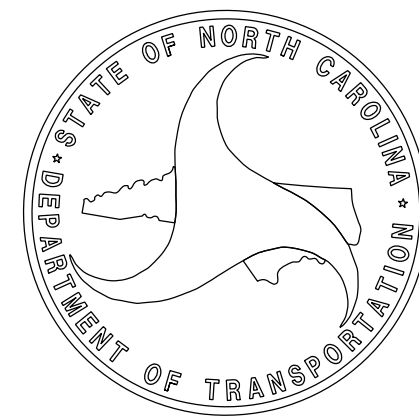
10/9/2025

Signed by: [Signature]
SIGNATURE

ROADWAY DESIGN ENGINEER

10/7/2025

DocuSigned by: William A. Pope
SIGNATURE





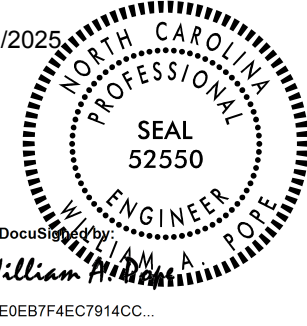
1 Glenwood Avenue
Raleigh, NC 27603
Tel: 919.789.9977
Fax: 919.789.9991
License: F-0453

PROJECT REFERENCE NO.
W-5710X

SHEET NO.
1A

ROADWAY DESIGN
ENGINEER

10/7/2025



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DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

INDEX OF SHEETS	
SHEET NUMBER	SHEET
1	TITLE SHEET
1A	INDEX OF SHEETS, GENERAL NOTES, AND LIST OF STANDARD DRAWINGS
1B	CONVENTIONAL PLAN SHEET SYMBOLS
2A-1 THRU 2A-5	PAVEMENT SCHEDULE, WEDGING DETAIL, AND TYPICAL SECTIONS
2B-1 THRU 2B-4	ROUNDBOUT & GRADING DETAILS
2C-1	CURB RAMP DETAIL
2C-2	CONCRETE SIDEWALK DETAIL
2C-3	METHOD OF PIPE INSTALLATION - FLEXIBLE PIPE DETAIL
2C-4	METHOD OF PIPE INSTALLATION - RIGID PIPE DETAIL
2C-5	SPECIAL CURB & GUTTER 2'-6"
2D-1	DRAINAGE DITCH DETAILS
3B-1	SUMMARY OF EARTHWORK, RIGHT OF WAY SUMMARY, & ASPHALT PAVEMENT REMOVAL SUMMARY
3B-2	PAVEMENT AREA REMOVAL DETAIL
3D-1 THRU 3D-3	DRAINAGE SUMMARIES
3G-1	GEOTECHNICAL SUMMARIES
3P-1	PARCEL INDEX SHEET
4 THRU 5A	PLAN SHEETS
6 THRU 9	PROFILE SHEETS
RW-1 THRU RW-5	SURVEY CONTROL, EXISTING CENTERLINE, RIGHT OF WAY, EASEMENT AND PROPERTY TIES
TMP-1 THRU TMP-12	TRAFFIC MANAGEMENT PLANS
PMP-1 THRU PMP-3	PAVEMENT MARKING PLANS
EC-1 THRU EC-7	EROSION CONTROL PLANS
SIGN-1 THRU SIGN-5	SIGNING PLANS
UC-1 THRU UC-7	UTILITIES CONSTRUCTION PLANS
UO-1 THRU UO-3	UTILITIES BY OTHERS PLANS
X-1	CROSS-SECTION INDEX SHEET
X-1A	CROSS-SECTION SUMMARY SHEET
X-2 THRU X-37	CROSS-SECTIONS

GENERAL NOTES: 2024 SPECIFICATIONS
EFFECTIVE: 01-16-2024
REVISED:

GRADING AND SURFACING OR RESURFACING AND WIDENING:

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

CLEARING:

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

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

SUBSURFACE DRAINS:

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

DRIVEWAYS:

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

STREET TURNOUT:

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

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-City of Charlotte, Sewer-City of Charlotte, Power-Duke Energy

Natural Gas-Piedmont Natural Gas, Telecommunications-AT&T, Telecommunications-Charter

Telecommunications-MCI

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.

CURB RAMPS

CURB RAMPS ARE SHOWN ON THE PLANS AT APPROXIMATE LOCATIONS. CONSTRUCT ALL CURB RAMPS ACCORDANCE WITH STD 848.06.

2024 ROADWAY ENGLISH STANDARD DRAWINGS
EFF. 01-16-2024
REV.

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

STD.NO.	TITLE
DIVISION 2 - EARTHWORK	
200.02	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	
310.02	Parallel Pipe End Section - Precast Concrete Section for 15" to 24" Pipe
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 6 - ASPHALT BASES AND PAVEMENTS	
654.01	Pavement Repairs
DIVISION 8 - INCIDENTALS	
806.01	Concrete Right-of-Way Marker
806.02	Granite Right-of-Way Marker
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
838.80	Precast Endwalls - 12" thru 72" Pipe 90 Skew
840.00	Concrete Base Pad for Drainage Structures
840.01	Brick Catch Basin - 12" thru 54" Pipe
840.02	Concrete Catch Basin - 12" thru 54" Pipe
840.03	Frame, Grates and Hood - for Use on Standard Catch Basin
840.14	Concrete Drop Inlet - 12" thru 30" Pipe
840.15	Brick Drop Inlet - 12" thru 30" Pipe
840.16	Drop Inlet Frame and Grates - for Use with Std. Dwg 840.14 and 840.15
840.18	Concrete Grated Drop Inlet Type 'B' - 12" thru 36" Pipe
840.19	Concrete Grated Drop Inlet Type 'D' - 12" thru 36" Pipe
840.24	Frames and Narrow Slot Sag Grates
840.25	Anchorage for Frames - Brick or Concrete or Precast
840.27	Brick Grated Drop Inlet Type 'B' - 12" thru 36" Pipe
840.28	Brick Grated Drop Inlet Type 'D' - 12" thru 36" Pipe
840.29	Frames and Narrow Slot Flat Grates
840.30	Driveway Drop Inlet
840.31	Concrete Junction Box - 12" thru 66" Pipe
840.32	Brick Junction Box - 12" thru 66" Pipe
840.35	Traffic Bearing Grated Drop Inlet - for Cast Iron Double Frame and Grates
840.45	Precast Drainage Structure
840.46	Traffic Bearing Precast Drainage Structure
840.54	Manhole Frame and Cover
840.66	Drainage Structure Steps
840.72	Pipe Collar
846.01	Concrete Curb, Gutter and Curb & Gutter
848.01	Concrete Sidewalk (Use Detail in Lieu of Standard for Sheet 1 of 1)
848.02	Driveway Turnout - Radius Type
848.04	Street Turnout
848.06	Curb Ramp (Use Details in Lieu of Standards for Sheets 9 and 10 of 13)
852.01	Concrete Islands
852.04	Method for Placement of Drop Inlets in Grassed Median - Using 1'-6" Curb and Gutter
852.06	Method for Placement of Drop Inlets in Concrete Islands
876.02	Guide for Rip Rap at Pipe Outlets
876.04	Drainage Ditches with Class 'B' Rip Rap

STATE OF NORTH CAROLINA, DIVISION OF HIGHWAYS
CONVENTIONAL PLAN SHEET SYMBOLS

PROJECT REFERENCE NO.	SHEET NO.
W-5710X	1B

TRANSYSTEMS

1 Glenwood Avenue
Raleigh, NC 27603
Tel: 919.789.9977
Fax: 919.789.9591
License: F-0453

BOUNDARIES AND PROPERTY:

State Line	-----
County Line	-----
Township Line	-----
City Line	-----
Reservation Line	-----
Property Line	-----
Existing Iron Pin	○ EIP
Computed Property Corner	-----x
Property Monument	□ EDM
Parcel/Sequence Number	(23)
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	↓
Proposed Lateral, Tail, Head Ditch	-----
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 Easment 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	-----
New Right of Way Line with Pin and Cap	-----
New Right of Way Line with Concrete or Granite R/W Marker	-----
New Control of Access Line with Concrete C/A Marker	-----
Existing Control of Access	-----
New Control of Access	-----
Existing Easement Line	-----
New Temporary Construction Easement	-----
New Temporary Drainage Easement	-----
New Permanent Drainage Easement	-----
New Permanent Drainage /Utility Easement	-----
New Permanent Utility Easement	-----
New Temporary Utility Easement	-----
New Aerial Utility Easement	-----

ROADS AND RELATED FEATURES:

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

VEGETATION:

Single Tree	○
Single Shrub	○

*S.U.E. = Subsurface Utility Engineering

Hedge	-----
Woods Line	-----
Orchard	-----
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.*)	-----
U/G Power Line LOS C (S.U.E.*)	-----
U/G Power Line LOS D (S.U.E.*)	-----

TELEPHONE:

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

WATER:

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

TV:

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

GAS:

Gas Valve	◇
Gas Meter	◇
U/G Gas Line LOS B (S.U.E.*)	-----
U/G Gas Line LOS C (S.U.E.*)	-----
U/G Gas Line LOS D (S.U.E.*)	-----
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.*)	-----
SS Forced Main Line LOS C (S.U.E.*)	-----
SS Forced Main Line LOS D (S.U.E.*)	-----

MISCELLANEOUS:

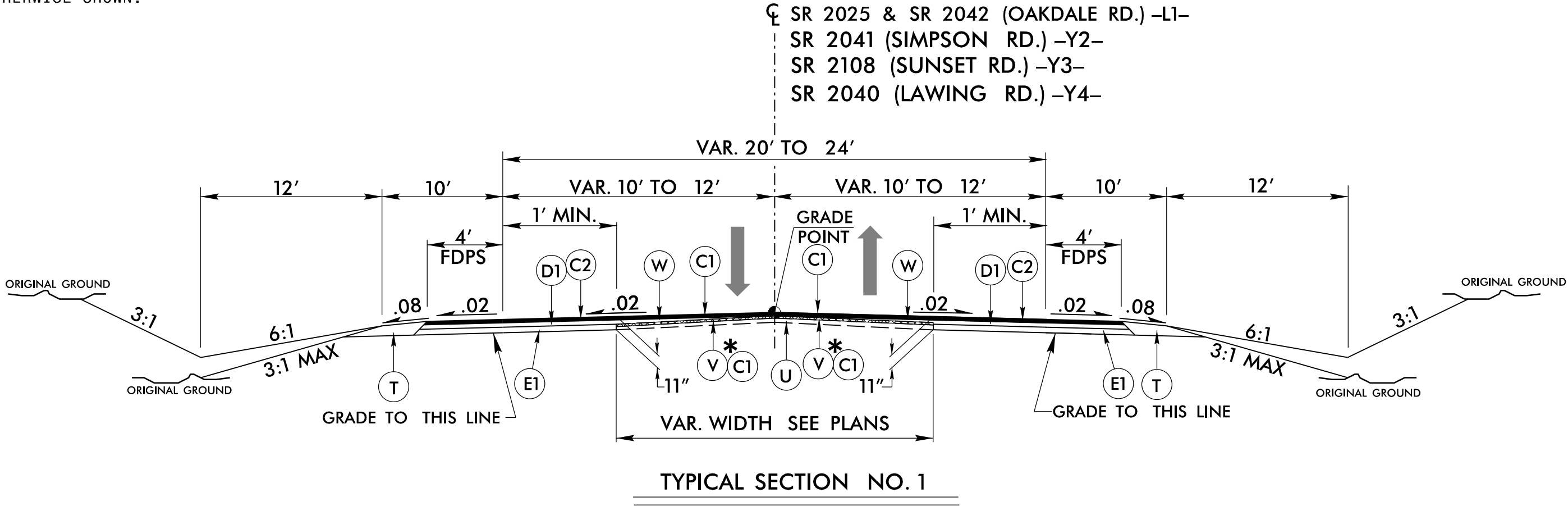
Utility Pole	●
Utility Pole with Base	□
Utility Located Object	○
Utility Traffic Signal Box	□ S
Utility Unknown U/G Line LOS B (S.U.E.*)	-----
U/G Tank; Water, Gas, Oil	-----
Underground Storage Tank, Approx. Loc.	UST
A/G Tank; Water, Gas, Oil	-----
Geoenvironmental Boring	⬮
U/G Test Hole LOS A (S.U.E.*)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

6/2/99

10/8/2025 15613L_RdJ_tup.dgn
USER:Wade

FINAL PAVEMENT SCHEDULE					
A1	12" JOINTED CONCRETE TRUCK APRON	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" OR GREATER THAN 5½" IN DEPTH.	R4	SPILL CURB (SEE DETAIL SHEET 2C-5)
C1	PROP. APPROX. 1.5" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.	J1	6" AGGREGATE BASE COURSE	S	4" CONCRETE SIDEWALK
C2	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.	J2	8" AGGREGATE BASE COURSE	T	EARTH MATERIAL
C3	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1" DEPTH TO BE PLACED IN LAYERS NOT TO EXCEED 2" IN DEPTH.	P	PRIME COAT AT THE RATE OF 0.35 GAL. PER SQ. YARD.	U	EXISTING PAVEMENT
D1	PROP. APPROX. 4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.	R1	1'-6" CLASS AA CONCRETE CURB AND GUTTER	V	MILLING EXISTING ASPHALT PAVEMENT, 1.5" DEPTH
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" OR GREATER THAN 4" IN DEPTH.	R2	2'-6" CONCRETE CURB AND GUTTER	V1	INCIDENTAL MILLING
E1	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.	R3	5" MONOLITHIC CONCRETE ISLAND (KEYED IN)	W	VAR. DEPTH WEDGING

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



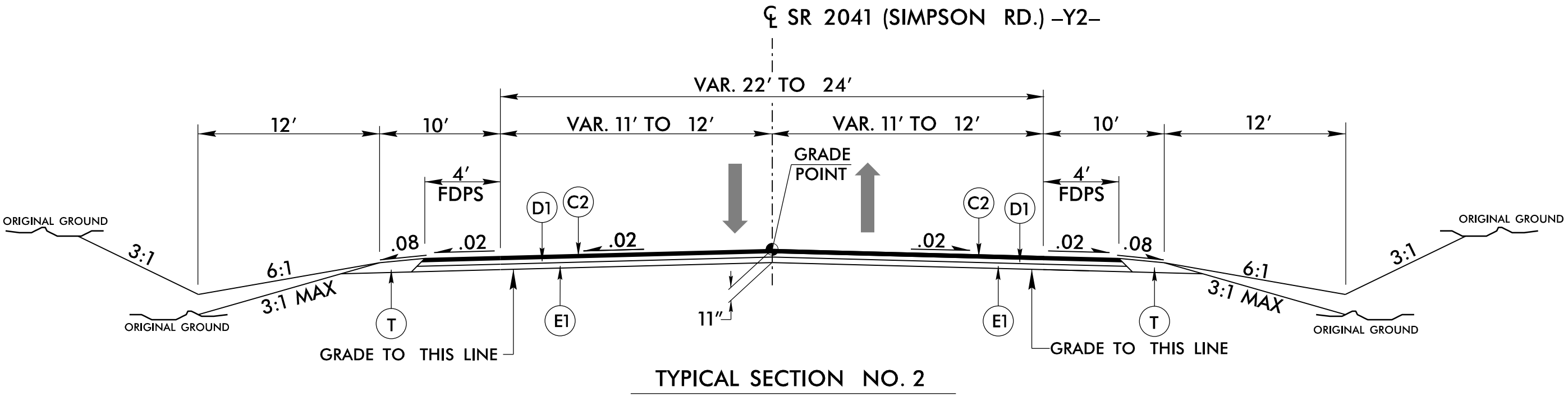
INDEX OF TYPICAL SECTION SHEETS

SHEET NO.	ROADWAY ALIGNMENT
2A-2	 -L1-, L2-, -Y1-
2A-3	 -L2-, -Y1-, -Y2-, -Y3-, -Y4-
2A-4	 -Y2-, -Y3-, -Y4-, -RND1-, -RND2-, -DR1-, -DR2-, AND -DR3-
2A-5	 MILLING AND WEDGING DETAILS

USE TYPICAL SECTION NO. 1 AS FOLLOWS

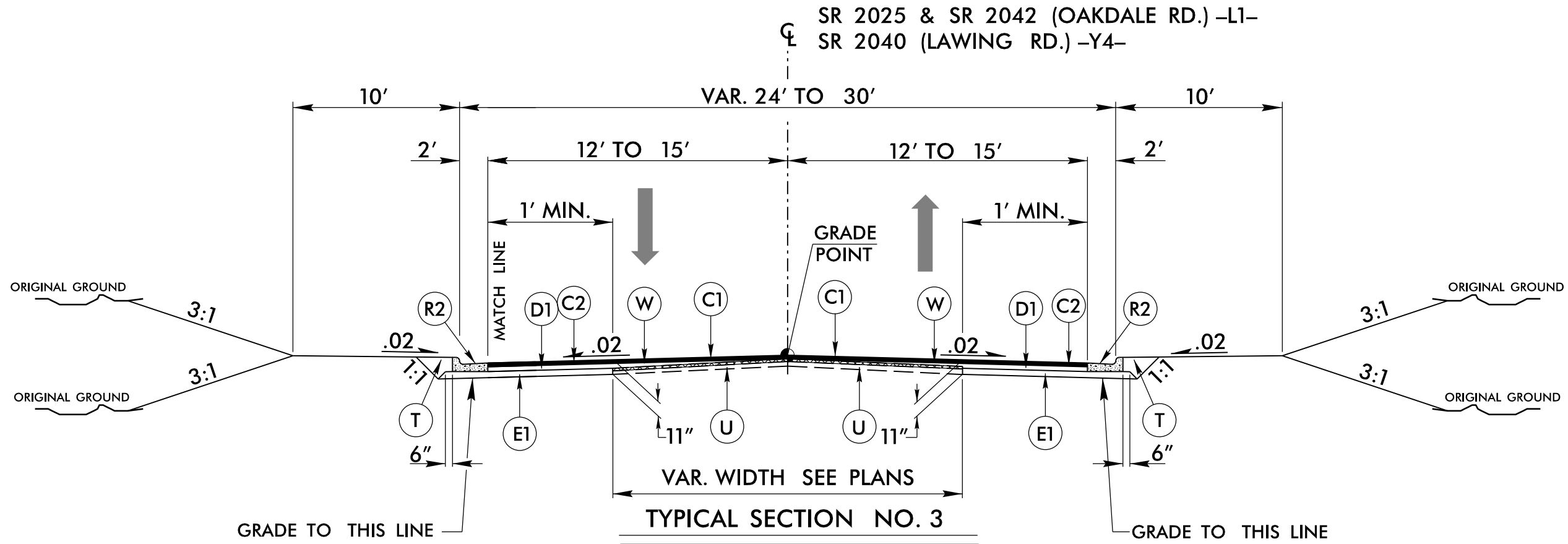
- L1- STA. 11+00.00 TO STA. 13+44.43. NO MILLING REQUIRED
- * -Y2- STA. 10+00.00 TO STA. 11+98.95
- * -Y3- STA. 16+20.00 TO STA. 16+23.77
- Y4- STA. 12+00.00 TO STA. 13+89.88. NO MILLING REQUIRED

NOTE: MILL AND OVERLAY ONLY FROM
-Y3- STA. 16+23.22 TO STA. 16+62.50



USE TYPICAL SECTION NO. 2 AS FOLLOWS

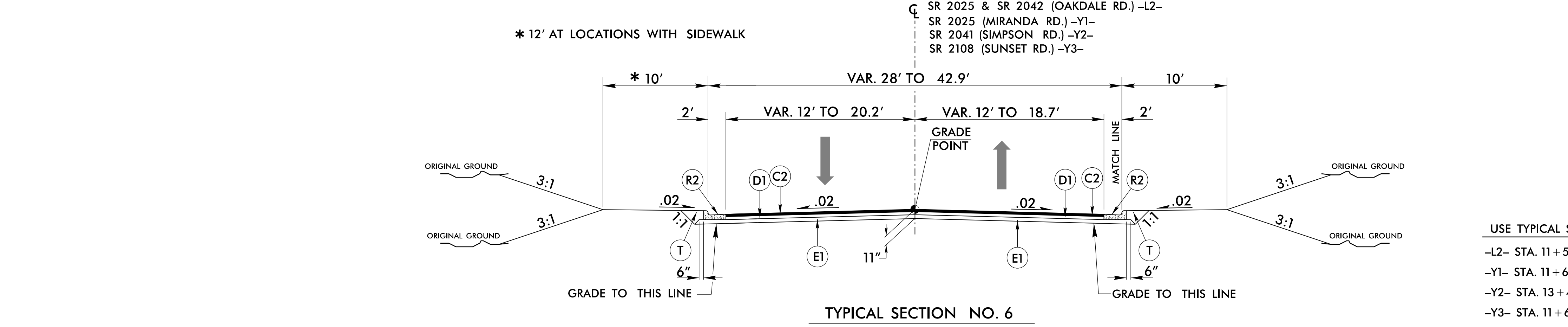
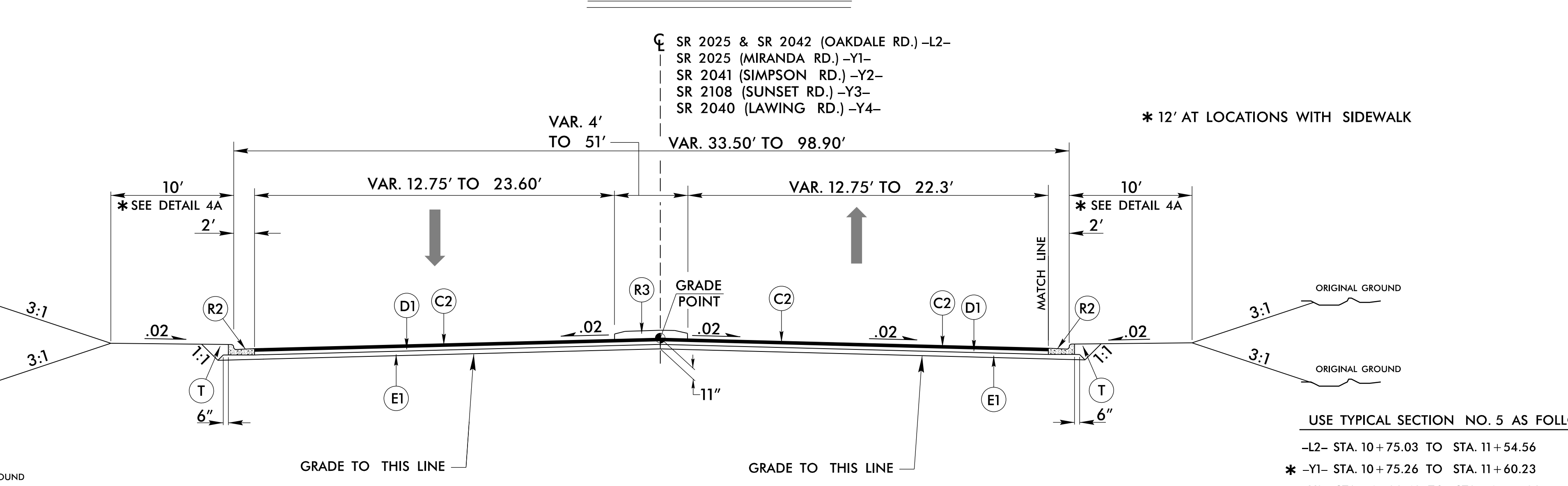
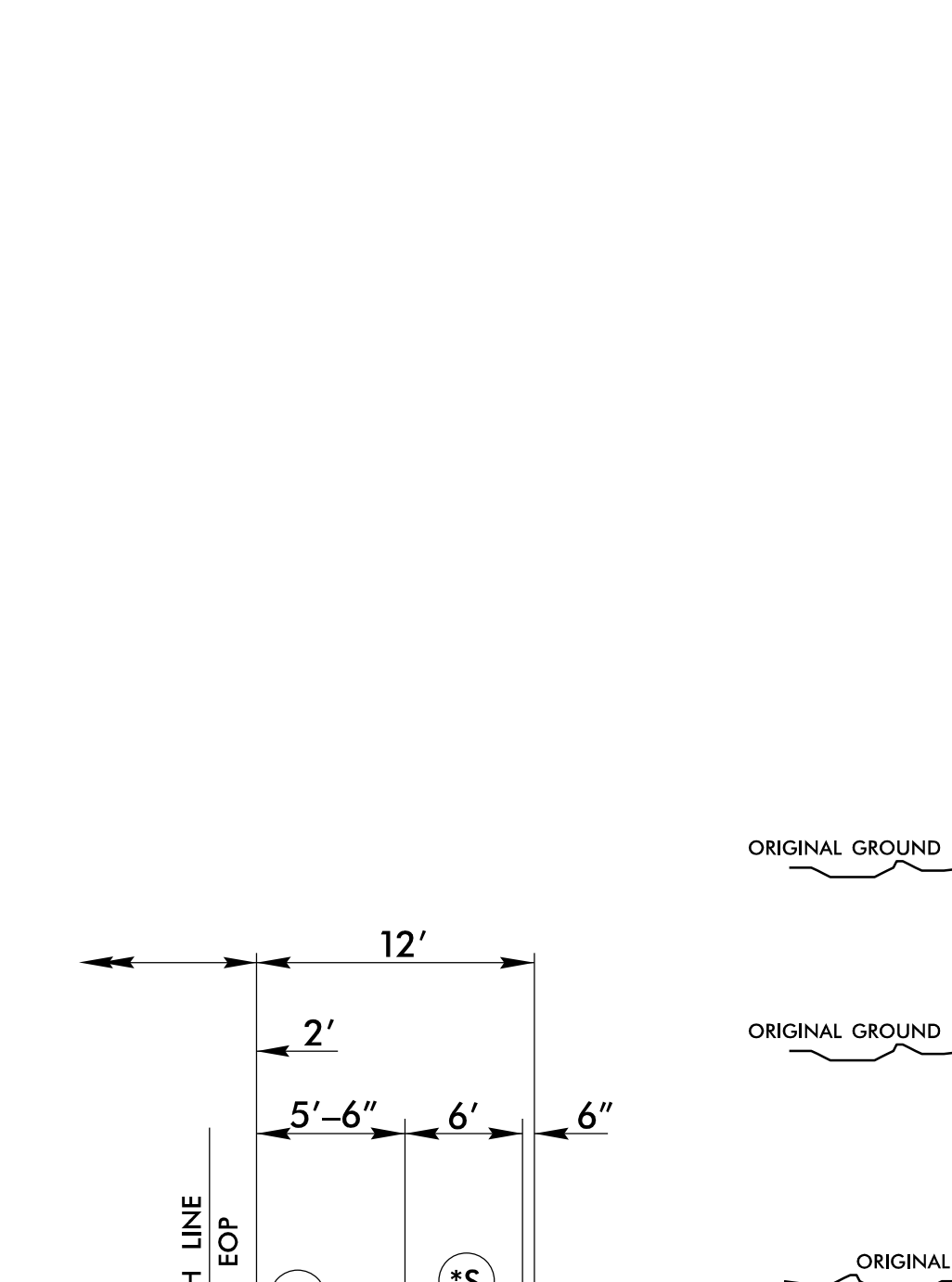
- Y2- STA. 11+98.95 TO STA. 13+45.00

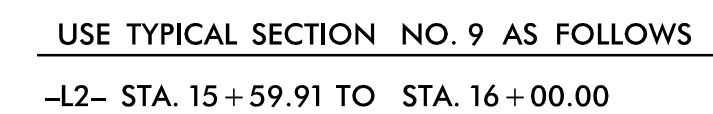
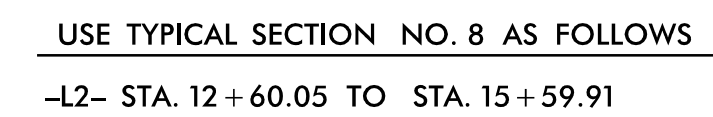
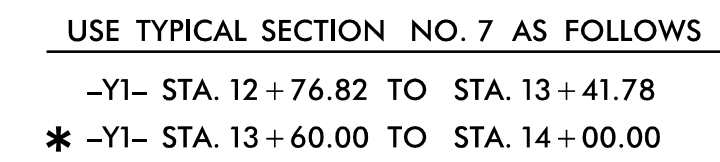


USE TYPICAL SECTION NO. 3 AS FOLLOWS

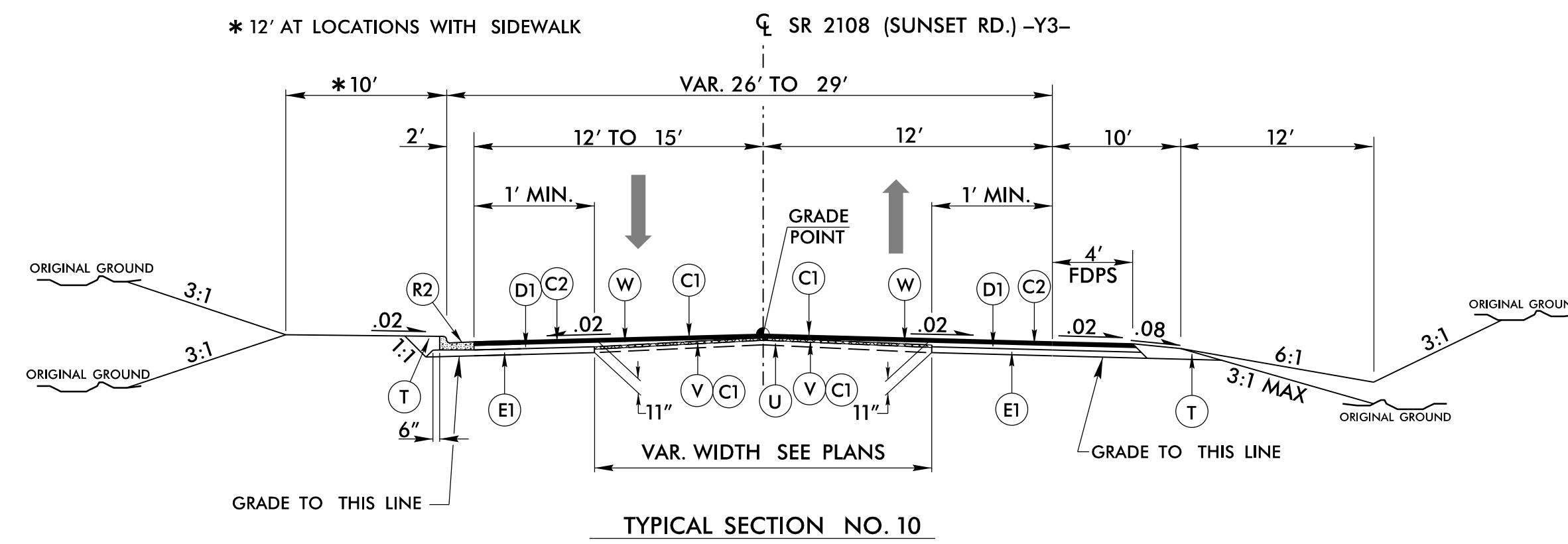
- L1- STA. 13+44.43 TO STA. 14+42.77 RT. SIDE
- L1- STA. 13+63.65 TO STA. 14+42.77 LT. SIDE
- Y4- STA. 13+89.88 TO STA. 14+71.37

PROJECT REFERENCE NO. <i>W-5710X</i>	SHEET NO. <i>2A-1</i>
ROADWAY DESIGN ENGINEER 10/9/2025 <i>William H. Wade</i> SEAL 52550 NORTH CAROLINA PROFESSIONAL ENGINEER E068174EC7914CC	PAVEMENT DESIGN ENGINEER 10/9/2025 <i>Andrew D. Wargo</i> SEAL 044590 NORTH CAROLINA PROFESSIONAL ENGINEER 202C09R0CB0A8E
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
TRANSYSTEMS 1 Glenwood Avenue Raleigh, NC 27603 Tel: 919.789.9977 Fax: 919.789.9591 License: F-0453	

WS

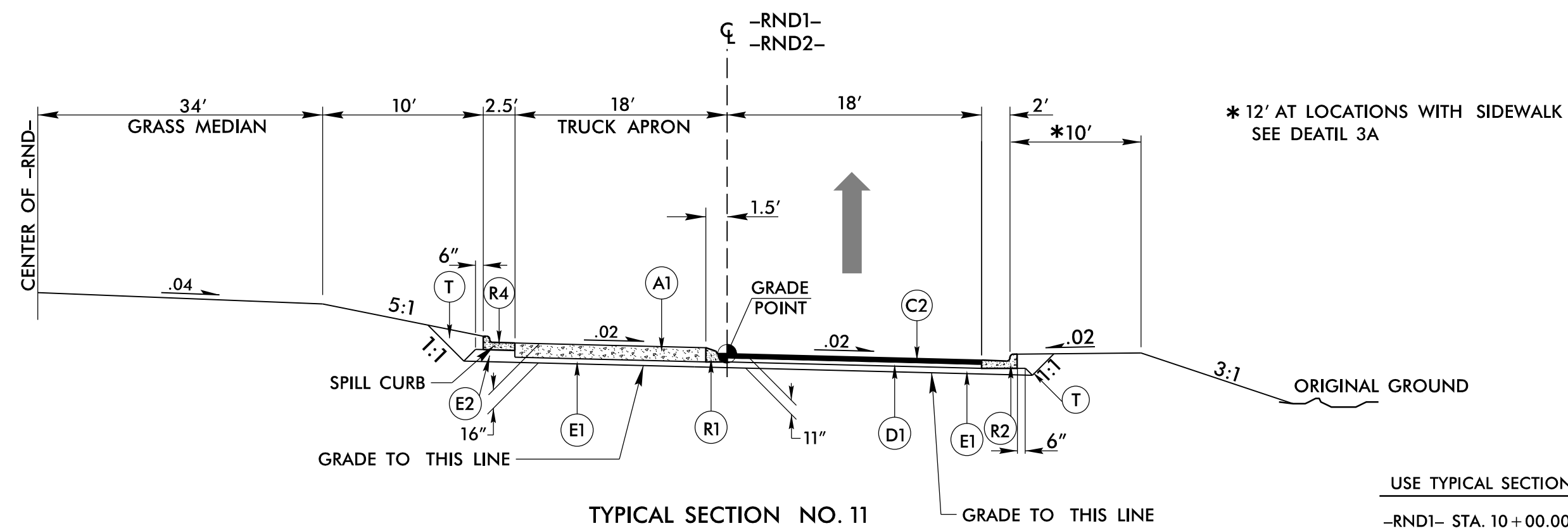


FINAL PAVEMENT SCHEDULE	
A1	12" CONC. TRUCK APRON
C1	1.5" S9.5C
C2	3" S9.5C
C3	VAR. DEPTH S9.5C
D1	4" I19.0C
D2	VAR. DEPTH I19.0C
E1	4" B25.0C
E2	VAR. DEPTH B25.0C
J1	6" ABC
J2	8" ABC
P	PRIME COAT
R1	1'-6" C & G
R2	2'-6" C & G
R3	5" MONO. ISLAND
R4	SPILL CURB
S	SIDEWALK
T	EARTH MATERIAL
U	EXISTING PAVEMENT
V	MILLING 1.5"
V1	INCIDENTAL MILLING
W	VAR. DEPTH WEDGING



USE TYPICAL SECTION NO. 10 AS FOLLOWS

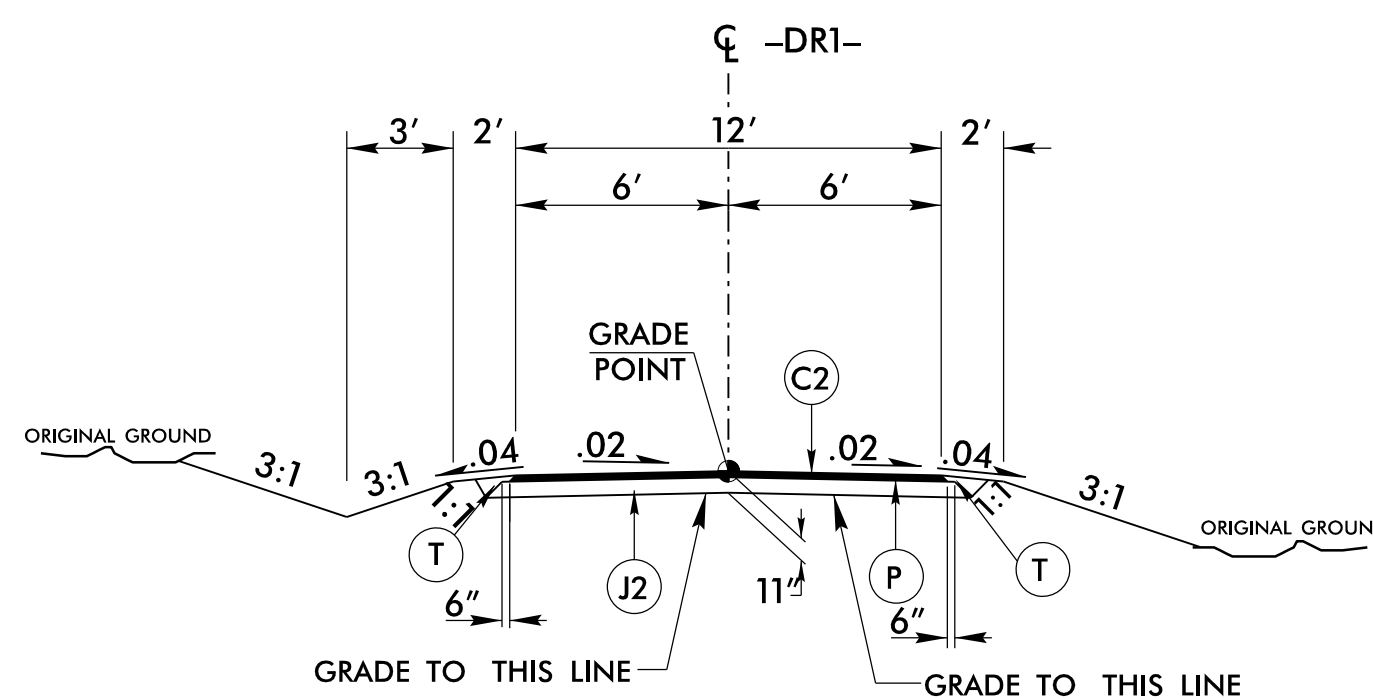
-Y3- STA. 14+75.00 TO STA. 16+23.22



USE TYPICAL SECTION NO. 11 AS FOLLOWS

-RND1- STA. 10+00.00 TO STA. 13+58.14

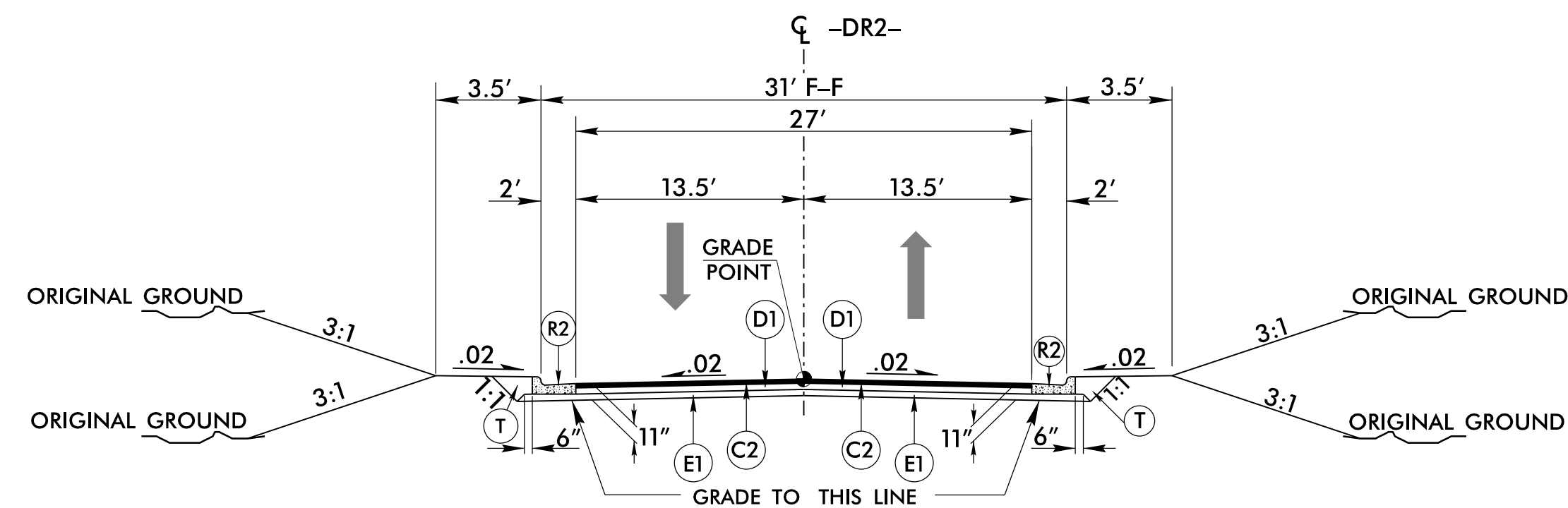
-RND2- STA. 10+00.00 TO STA. 13+58.14



TYPICAL SECTION NO. 12

USE TYPICAL SECTION NO. 12 AS FOLLOWS

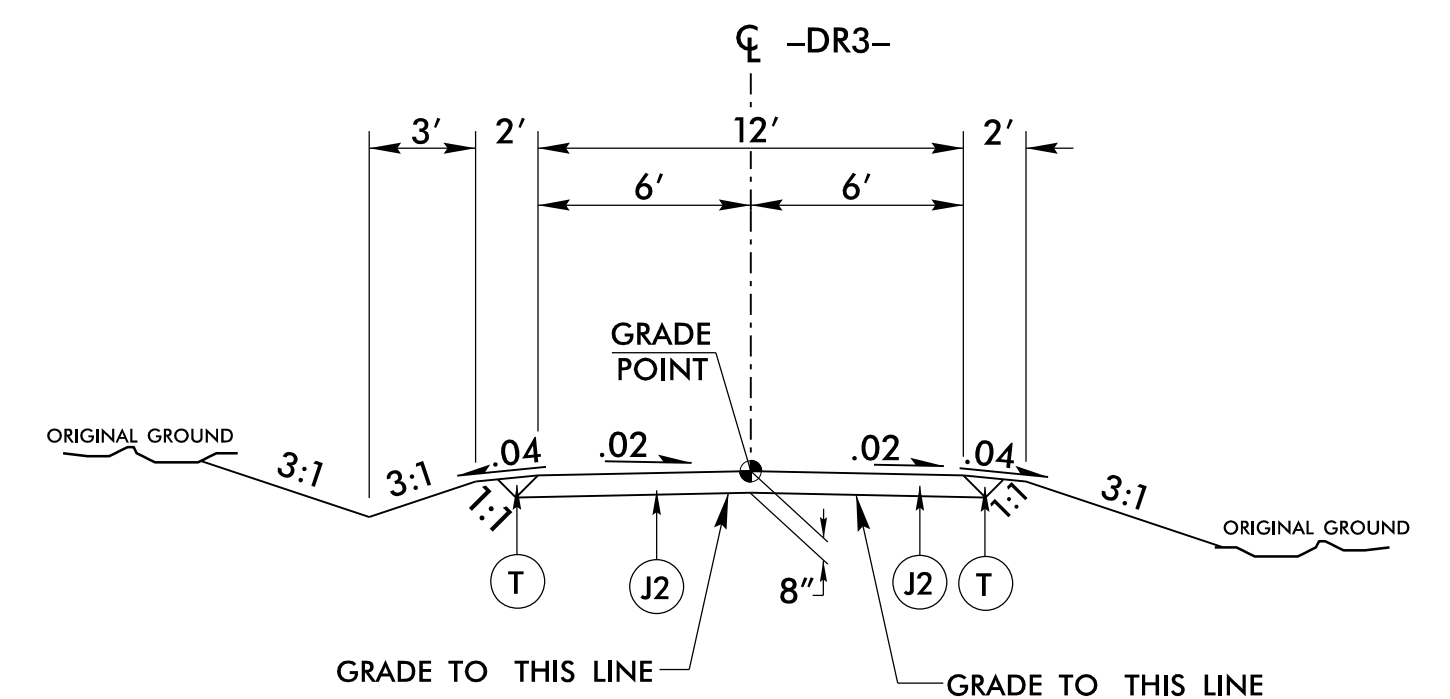
-DR1- STA. 9+61.70 TO STA. 13+60.95



TYPICAL SECTION NO. 13

USE TYPICAL SECTION NO. 13 AS FOLLOWS

-DR2- STA. 10+00.00 TO STA. 11+08.00



TYPICAL SECTION NO. 14

USE TYPICAL SECTION NO. 14 AS FOLLOWS

-DR3- STA. 10+00.00 TO STA. 10+96.82

PROJECT REFERENCE NO.		SHEET NO.	
W-5710X		2A-4	
ROADWAY DESIGN ENGINEER		PAVEMENT DESIGN ENGINEER	
10/9/2020		10/9/2020	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			
1 Glenwood Avenue Raleigh, NC 27603 Tel: 919.789.9977 Fax: 919.789.9591 License: F-0453			

PROJECT REFERENCE NO.
W-5710X

SHEET NO.
2A-5

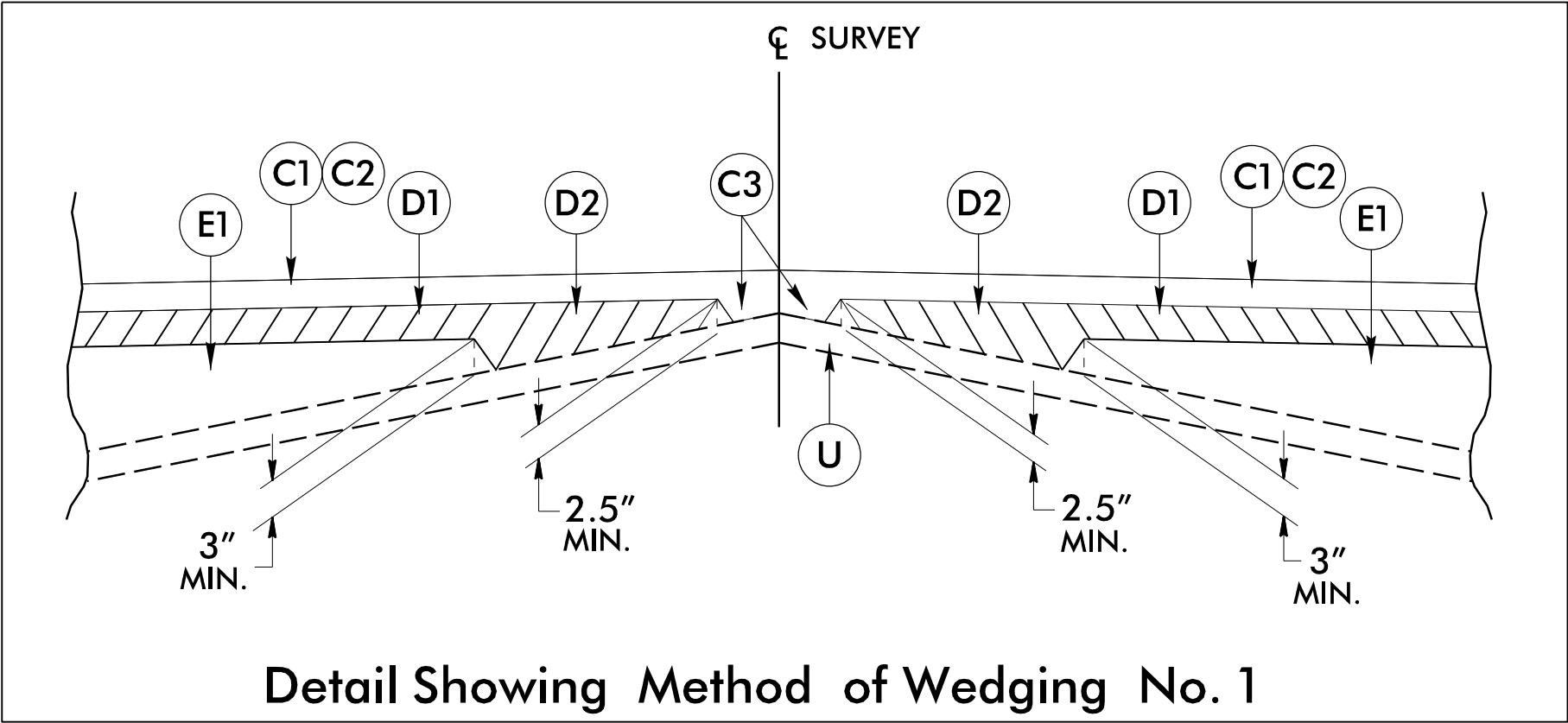
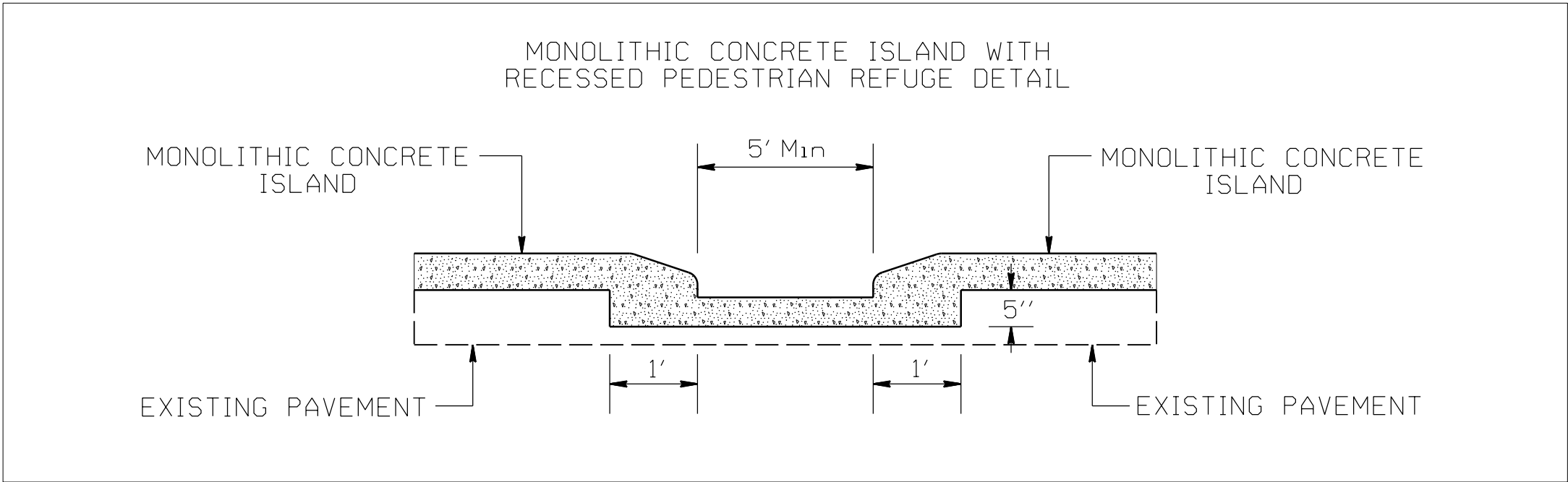
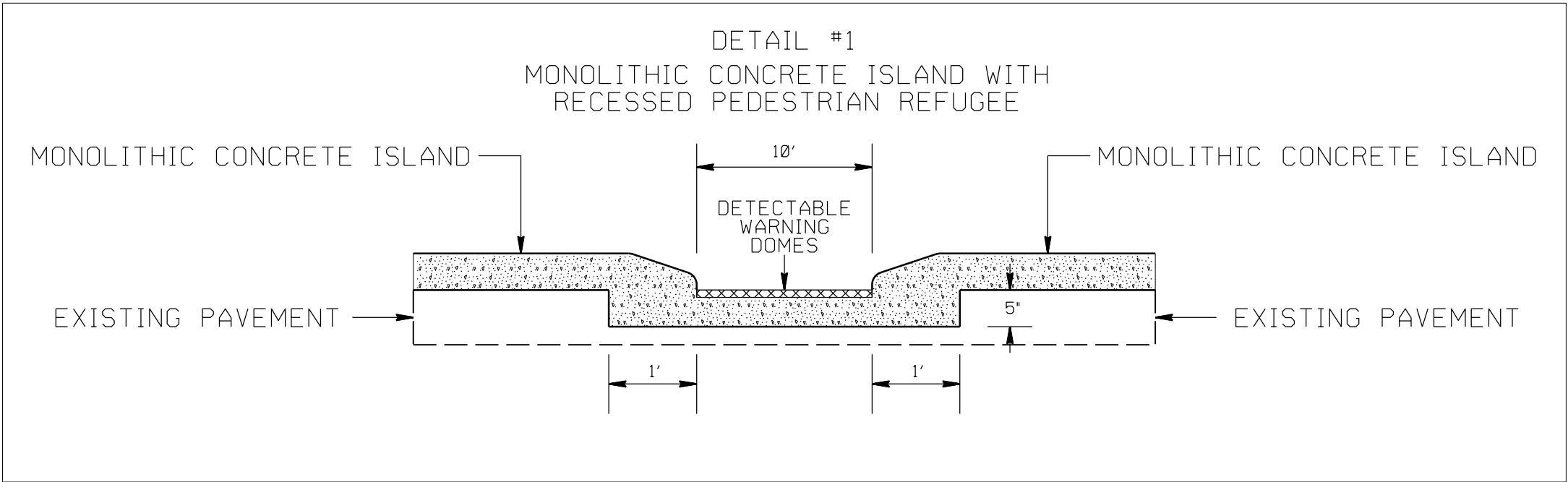
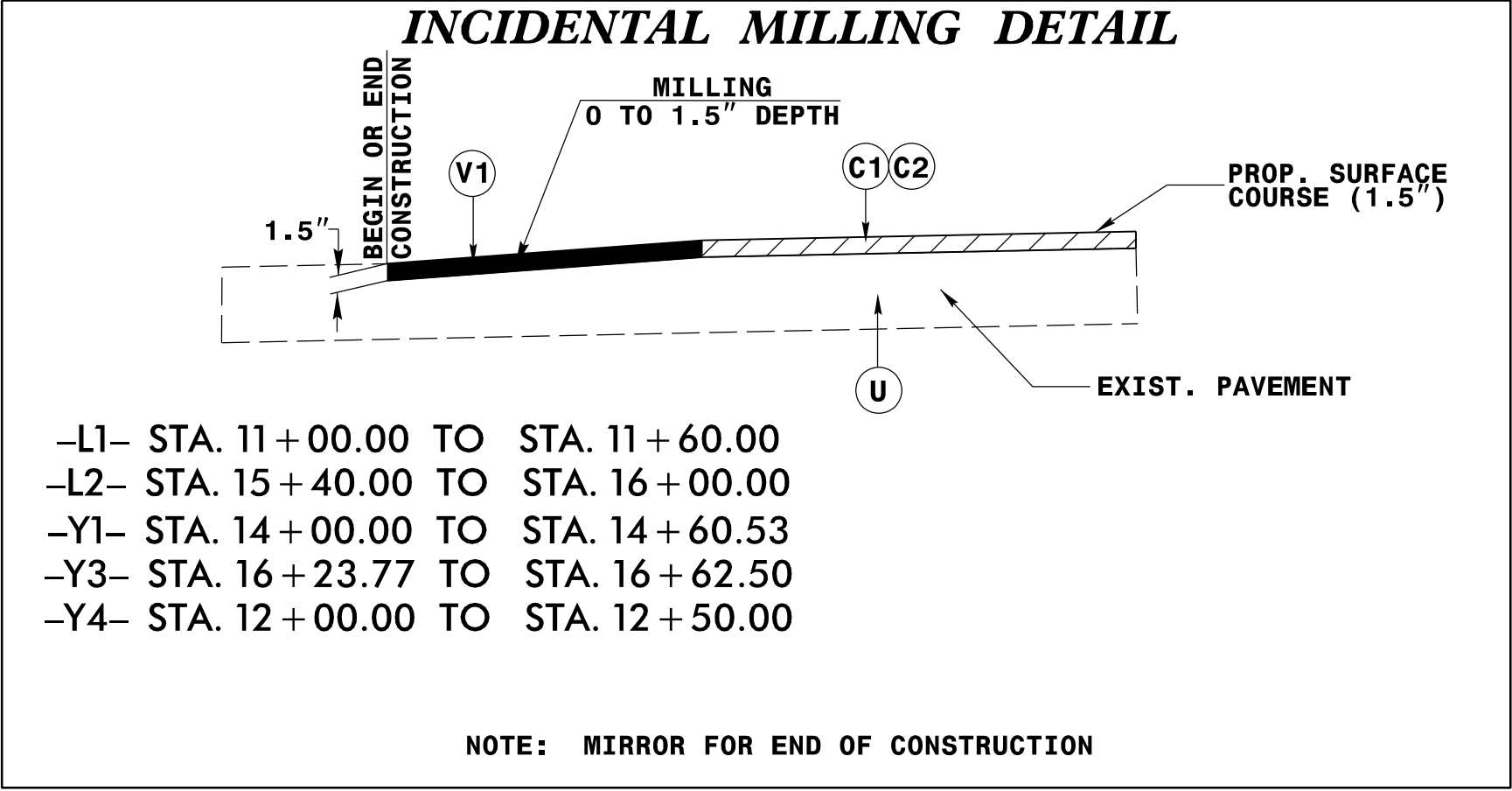
ROADWAY DESIGN ENGINEER
10/9/2025
NORTH CAROLINA PROFESSIONAL SEAL 52550
WILLIAM D. WACO
20220980C8C9A4E

PAVEMENT DESIGN ENGINEER
10/9/2025
NORTH CAROLINA PROFESSIONAL SEAL 044590
WILLIAM D. WACO
20220980C8C9A4E

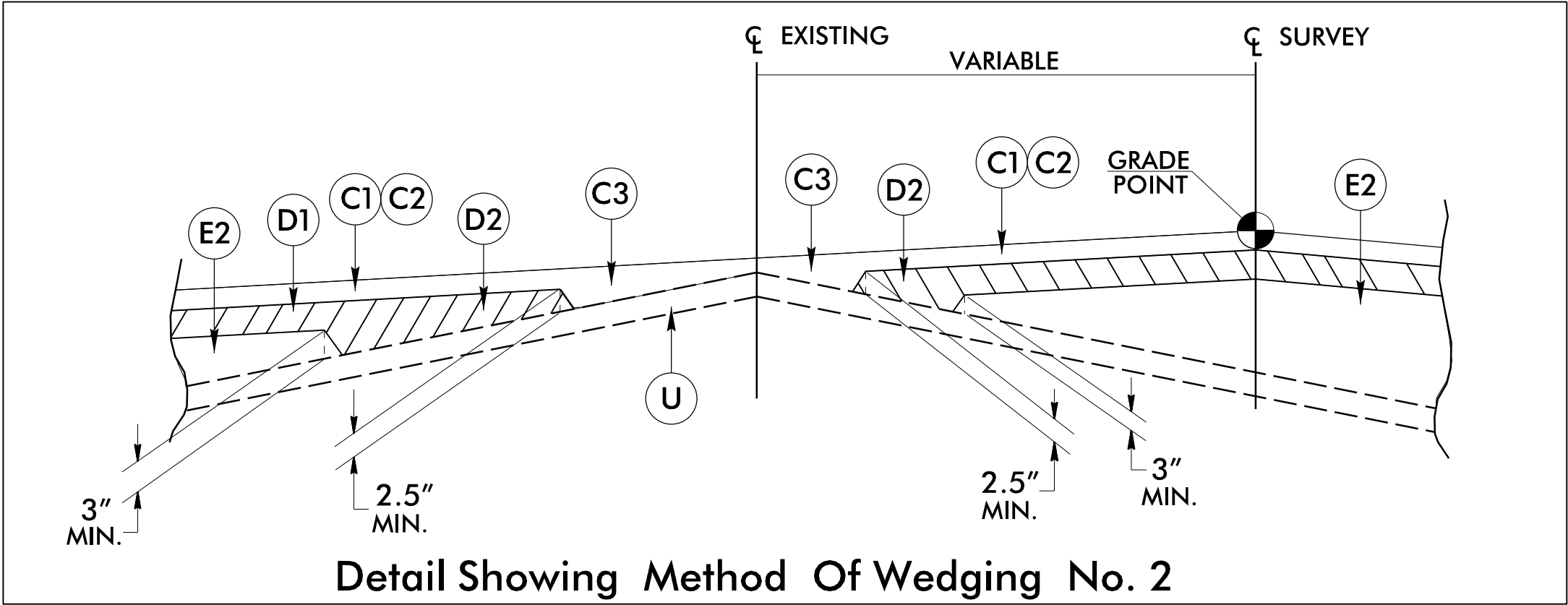
DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

TRANSYSTEMS

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Raleigh, NC 27603
Tel:919.789.9977
Fax:919.789.9591
License: F-0453



USE METHOD 1 AS FOLLOWS:
-L1- STA. 10+60.00 TO 15+36.71
-L2- STA. 15+89.48 TO 16+08.36
-Y2- STA. 10+00.00 TO 11+04.00
-Y3- STA. 16+53.55 TO 16+62.82
-Y4- STA. 12+00.00 TO 14+33.60



USE METHOD 2 AS FOLLOWS:
-L1- STA. 16+86.74 TO 18+40.11
-L2- STA. 12+55.16 TO 15+89.48
-Y1- STA. 10+75.26 TO 12+04.72
-Y2- STA. 11+04.00 TO 11+99.01
-Y3- STA. 14+66.65 TO 16+53.55
-Y4- STA. 14+33.60 TO 14+81.82

FINAL PAVEMENT SCHEDULE	
A1	12" CONC. TRUCK APRON
C1	1.5" S9.5C
C2	3" S9.5C
C3	VAR. DEPTH S9.5C
D1	4" I19.0C
D2	VAR. DEPTH I19.0C
E1	4" B25.0C
E2	VAR. DEPTH B25.0C
J1	6" ABC
J2	8" ABC
P	PRIME COAT
R1	1'-6" C & G
R2	2'-6" C & G
R3	5" MONO. ISLAND
R4	SPILL CURB
S	SIDEWALK
T	EARTH MATERIAL
U	EXISTING PAVEMENT
V	MILLING 1.5"
V1	INCIDENTAL MILLING
W	VAR. DEPTH WEDGING

8/7/2025
...\\Proj\C5613L-Rdy-psh-2B-1.dgn

Plan view of a road intersection and a circular driveway. The central feature is a circular driveway with a 150' DIA. and a 75' RAD. The driveway is surrounded by a 15' wide area. The driveway is connected to a road by a 10' wide path. The road has a 12' wide section. The intersection is with Simpson Road (SR 2041). The plan shows various curves with radii (R=110', R=60', R=300', R=40', R=90', R=103', R=115') and elevations (+14.66, +63.79, +98.84, +38.72, +24.00, +66.03, +42.47, +72.19, +66.00, +45.00, +69.88). It also shows 6' x 6' level landings, 1'-6" C & G, and 1'-6" RT. sections. The plan includes a north arrow and a scale bar.

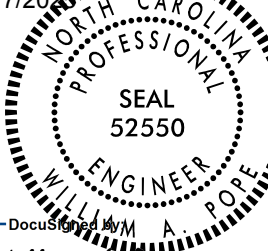
Plan view of the proposed island detail. The diagram shows a curved road layout with several key points and dimensions:

- Top left: Elevation $+88.36$, offset $9.34'$, radius $R=1'$.
- Top center: Elevation $+02.30$, offset $4.44'$, radius $R=1'$. A curved arrow indicates a right turn.
- Top right: Elevation $+14.11$, offset $2.00'$, radius $R=1'$.
- Center: A label $-L1-$ with a straight arrow pointing left.
- Bottom left: A label $-RND1-$ with a curved arrow indicating a right turn.
- Bottom center: Elevation $+90.57$, offset $21.55'$, radius $R=3'$. A thick black arrow points right.
- Bottom right: Elevation $+15.18$, offset $16.08'$, radius $R=1'$.
- Far bottom right: Elevation $+03.48$, offset $19.48'$, radius $R=1'$.

Figure 10.10: A plan view diagram of a road intersection showing the layout of a roundabout. The diagram includes a central island labeled "RND1-" and four approach lanes. Each approach lane has a centerline and a shoulder. The diagram shows the placement of centerline and shoulder markers, including their stationing and offset from the centerline. A north arrow is located in the center of the roundabout. The diagram is labeled "Figure 10.10" and "Figure 10.10".

SEE SHEET 4 FOR PLAN VIEW /

TRANSYSTEMS

PROJECT REFERENCE NO.		SHEET NO.	
W-5710X		2B-1	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER 10/7/2016  10/7/2019 William A. Pope EDEB74EC7914CC		HYDRAULICS ENGINEER 10/9/2016  10/9/2019 William A. Pope E2D9MEBFF5CF8F	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			

SHEET NO.

2B-1

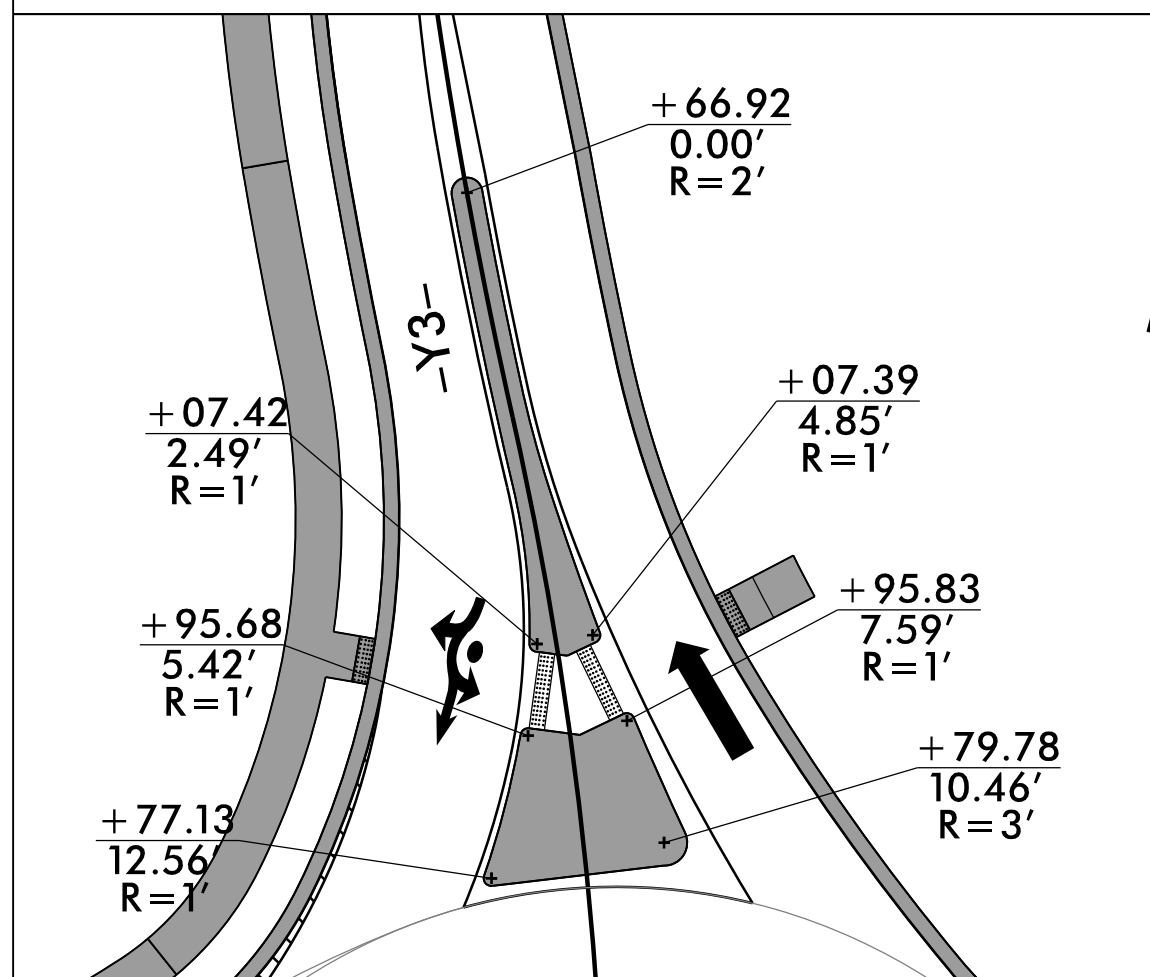
HYDRAULICS ENGINEER

CAROLINA
 SIONAL
 AL
 860
 NEER
 YOUNG

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

ROUNDAABOUT DETAIL

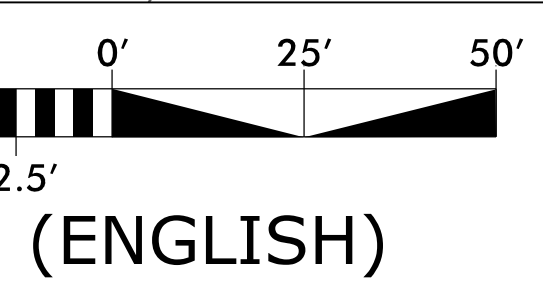
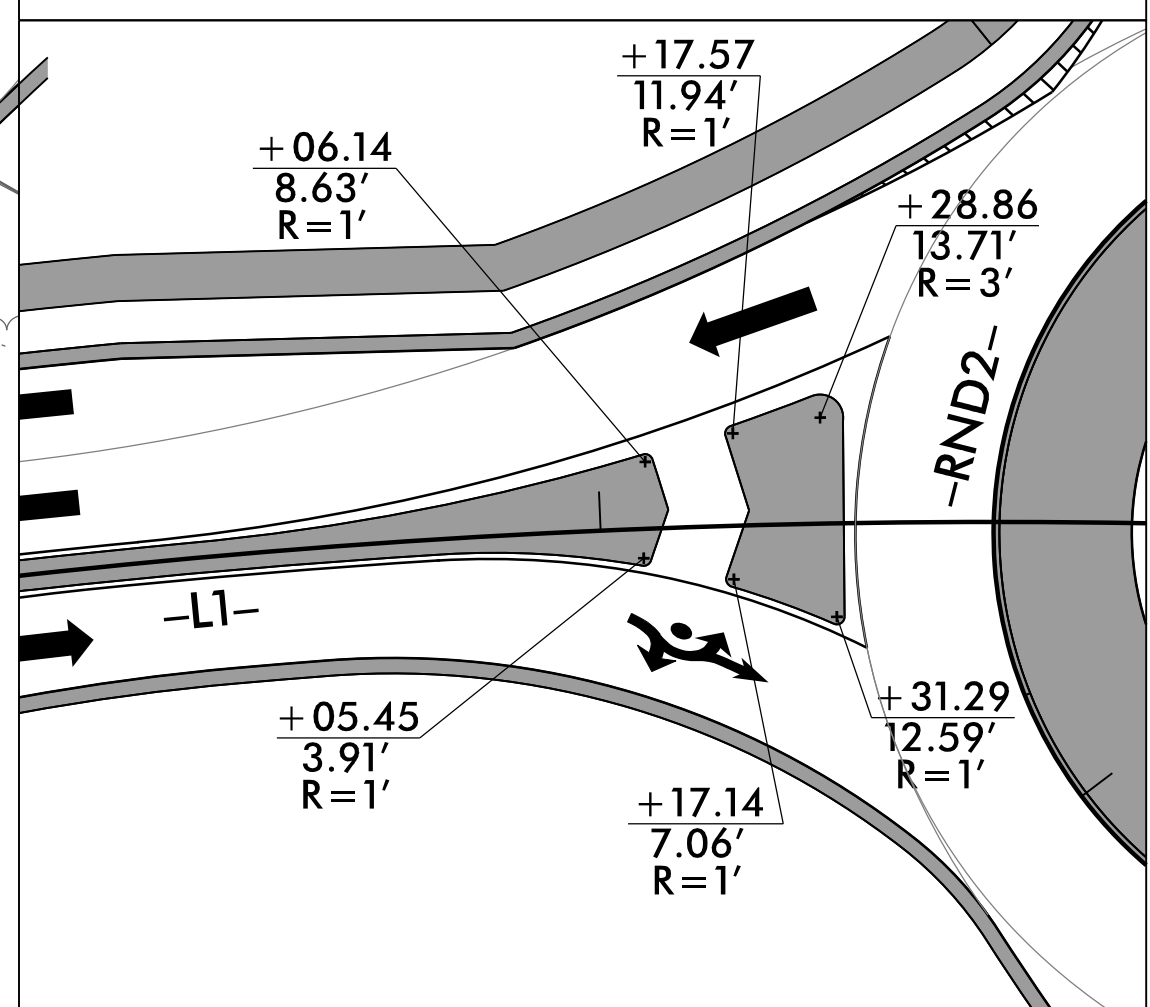
-Y3- ISLAND DETAIL



-RND1-

-L1- SR 2042 (OAKDALE RD.)

-L1- ISLAND DETAIL



SEE SHEET 5 FOR PLAN VIEW

R=250'
R=262'
+73.44 -Y3-
2.75' LT.
+49.42 -Y3-
14.75' LT. R=80'
R=110'
6' X 6' LEVEL
LANDING
+67.73 -Y3-
R=50'
-RND2-

+50.41 -L1-
2'-6" C & G
R=300'

+90.00 -L1-

+63.43 -L1-

R=110'

+40.20 -L1-

R=50'

+86.93 -Y4-

1'-6" C & G

R=300'

-Y4- SR 2040 (LAWING RD.)

+43.02 -Y4-
12.50' LT.

+18.92 -Y3-
0.00' LT. +68.92 -Y3-
2.75' RT.
-Y3- SR 2108 (SUNSET RD.)
+41.56 -Y3-
14.75' RT. R=300'
6' X 6' LEVEL
LANDING
+99.28 -Y3-
23.15' RT. R=300'
1'-6" C & G
+61.11 -Y3-
R=50' +70.02 -L2-
R=110'

+52.68 -L2-
14.75' LT. R=250'

+13.17 -L2-
14.75' LT. R=250'

+62.73 -L2-
12.00' RT. R=300'

+40.52 -L2-
0.00' RT. R=300'

-L2- SR 2025 (OAKDALE RD.)

+42.27 -L2-
2.44' LT. R=300'

+70.17 -L2-
2'-6" C & G R=50'

+43.65 -Y4-
R=100'

+08.04 -Y4-
12.00' RT. R=100'

+51.72 26.14' R=1'

+31.24 18.46' R=1'

+18.96 14.10' R=1'

+54.75 19.13' R=3'

+32.98 13.18' R=1'

+22.24 9.91' R=1'

+73.30 0.52' RT. R=2'

-RND2-

-Y4-

-Y4-

-Y4-

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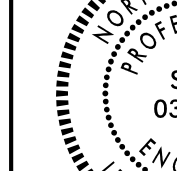
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RND1 GRADING PLAN

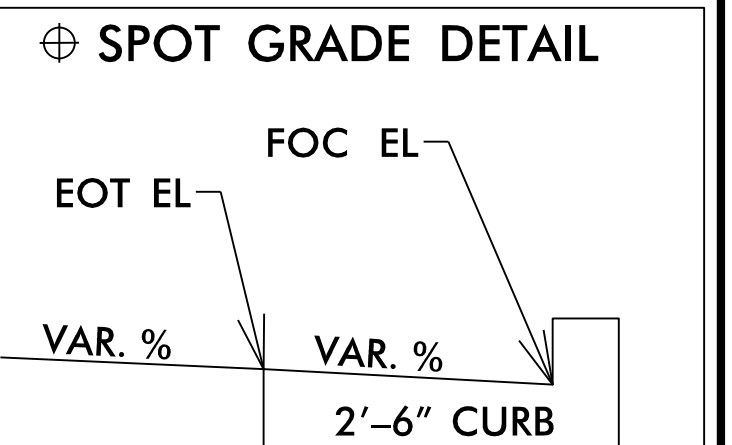
NAD 83 NA 2011

TRANSYSTEMS

1 Glenwood Avenue
Raleigh, NC 27603
Tel: 919.789.9977
Fax: 919.789.9591
License: F-0453

PROJECT REFERENCE NO.		SHEET NO.	
W-5710X		2B-3	
RW SHEET NO.		HYDRAULICS ENGINEER	
ROADWAY DESIGN ENGINEER		10/9/2025	
10/7/2025		10/9/2025	
			
Doc# 000			

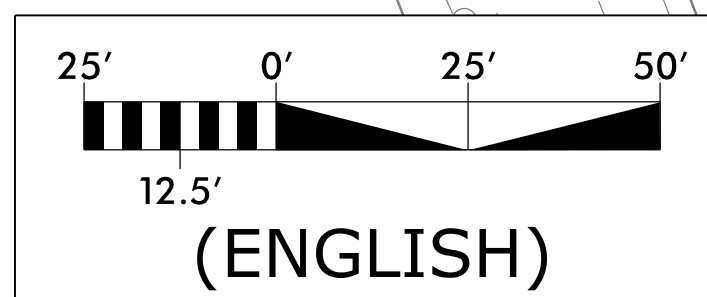
X.XX%
COMPUTED CURB LONGITUDINAL GRADE
BETWEEN SPOT GRADE POINTS



EOT = EDGE OF TRAVEL
FOC = FACE OF CURB /
FLOW LINE
*STR XXXX RIM EL = RIM
ELEVATION AS REPORTED
ON DRAINAGE SUMMARY
SHEET

*STRUCTURE RIM ELEV.
LOWER THAN FOC ELEV.
TO ACCOUNT FOR 2"
LOCAL DEPRESSION AT
CATCH BASIN. SEE STD.
DETAILS 840.01/840.02
& 840.03.

NOTE:
FOR ROADWAY SECTIONS
OUTSIDE OF LIMITS OF
SPOT GRADE POINTS,
CONSTRUCT CURB ACCORD.
TO ROADWAY STANDARD
DETAIL 846.01



SEE SHEET 04 FOR PLAN VIEW

RND2 GRADING PLAN

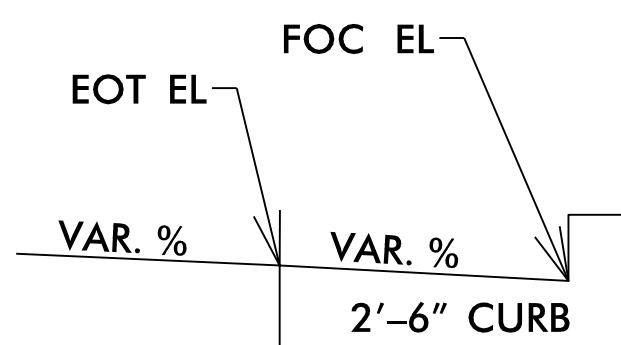
NAD 83/NA 2011

TRANSYSTEMS

1 Glenwood Avenue
Raleigh, NC 27603
Tel: 919.789.9977
Fax: 919.789.9591
License: F-0453

PROJECT REFERENCE NO.		SHEET NO.	
W-5710X		2B-4	
R/W SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
10/7/2025		10/9/2025	
			
Drawn by: <u>William A. Pope</u>		Signed: _____	
E06B7FAC79140C...		E52B8A8EBFF034F8...	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			

SPOT GRADE DETAIL



EOT=EDGE OF TRAVEL

FOC=FACE OF CURB /
FLOW LINE

*STR XXXX RIM EL= RIM
ELEVATION AS REPORTED
ON DRAINAGE SUMMARY
SHEET

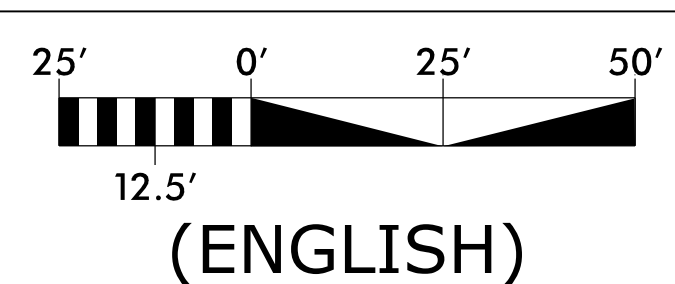
*STRUCTURE RIM ELEV.
LOWER THAN FOC ELEV.
TO ACCOUNT FOR 2\"/>

X.XX%

COMPUTED CURB LONGITUDINAL GRADE
BETWEEN SPOT GRADE POINTS

NOTE:

FOR ROADWAY SECTIONS
OUTSIDE OF LIMITS OF
SPOT GRADE POINTS,
CONSTRUCT CURB ACCORD.
TO ROADWAY STANDARD
DETAIL 846.01



CONSTRUCT CURB PER STD. DET. 846.01
FROM +97.5 -Y3- TO +04.2 -Y3-

+50 -Y3-
EOT EL=736.95
FOC EL=736.8

+04.2 -Y3-
EOT EL=736.68
FOC EL=736.5

STR 0514

RIM EL=736.3

CURB SAG

CONSTRUCT CURB PER STD. DET. 846.01

FROM +97.5 -Y3- TO +04.2 -Y3-

+97.5 -Y3-
EOT EL=737.95
FOC EL=737.8

+75 -Y3-
EOT EL=738.54
FOC EL=738.4

+15 -RND2-
EOT EL=738.66
FOC EL=738.6

CURB HI PT.

+25.3 -L1-
EOT EL=738.4
FOC EL=738.3

STR 0505

RIM EL=738.1

CURB SAG

+30 -L1-
EOT EL=738.3
FOC EL=738.2

STR 0507

RIM EL=738.0

CURB SAG

+00.1 -RND2-
EOT EL=738.42
FOC EL=738.3

CURB HI PT.

+12.5 -RND2-
EOT EL=738.33
FOC EL=738.2

+25 -RND2-
EOT EL=738.17
FOC EL=738.1

+75 -Y3-
EOT EL=738.44
FOC EL=738.3

+41 -RND2-
EOT EL=738.52
FOC EL=738.4

+32 -RND2-
EOT EL=738.66
FOC EL=738.5

CURB HI PT.

+75 -L2-
EOT EL=738.32
FOC EL=738.2

STR 0527

RIM EL=738.0

CURB SAG

+00 -L2-
EOT EL=738.4
FOC EL=738.3

+76 -L2-
EOT EL=737.94
FOC EL=737.8

STR 0528

RIM EL=737.6

CURB SAG

+18 -RND2-
EOT EL=738.12
FOC EL=738.0

+12.3 -RND2-
EOT EL=738.25
FOC EL=738.1

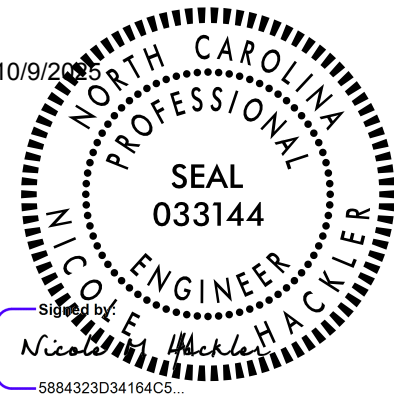
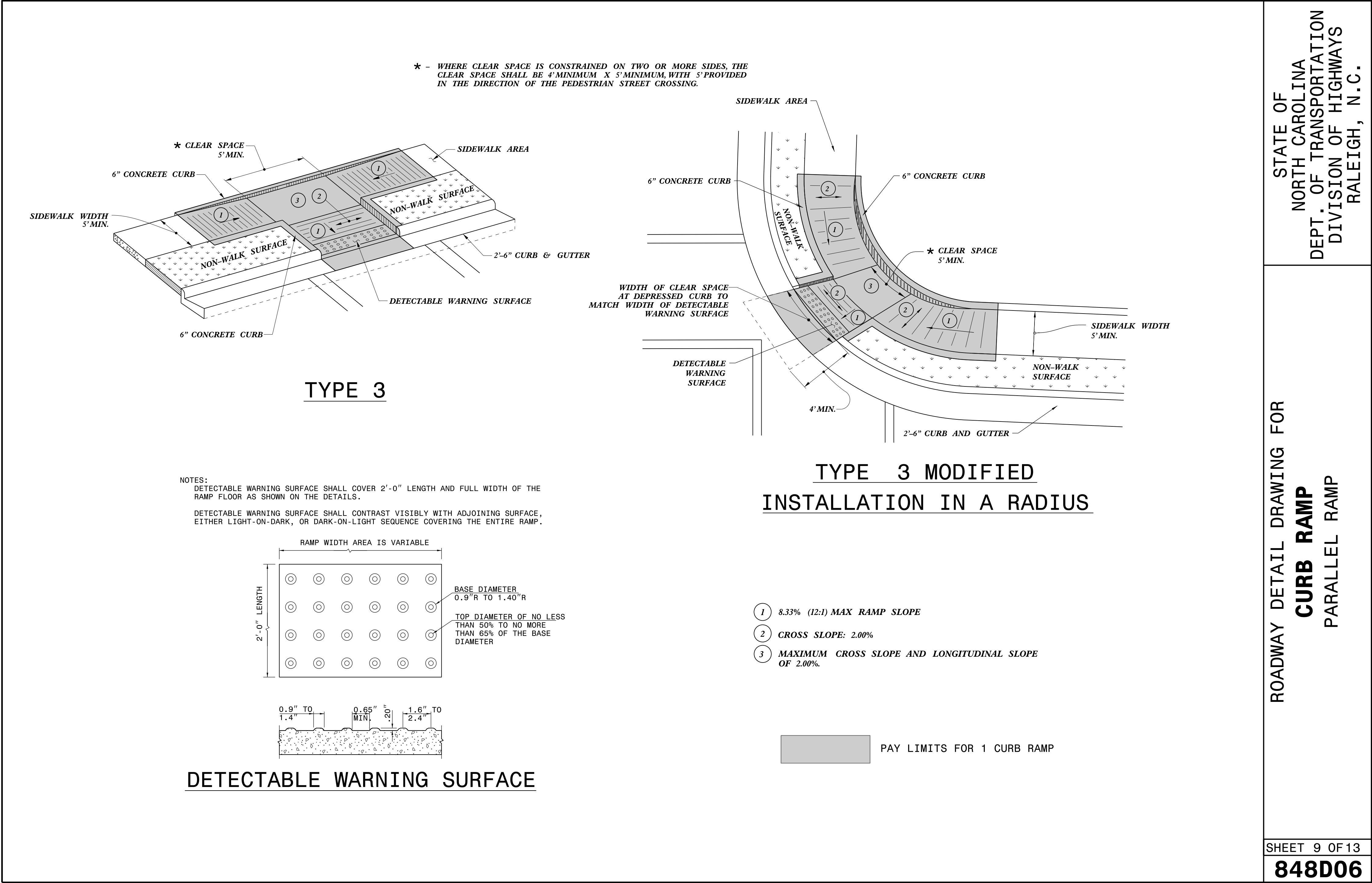
CURB HI PT.

+06 -RND2-
EOT EL=738.15
FOC EL=738.0

+50 -Y4-
EOT EL=737.9
FOC EL=737.8

+25 -Y4-
EOT EL=737.04
FOC EL=736.9

SEE SHEET 05 FOR PLAN VIEW



DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

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

SEE TITLE BLOCK

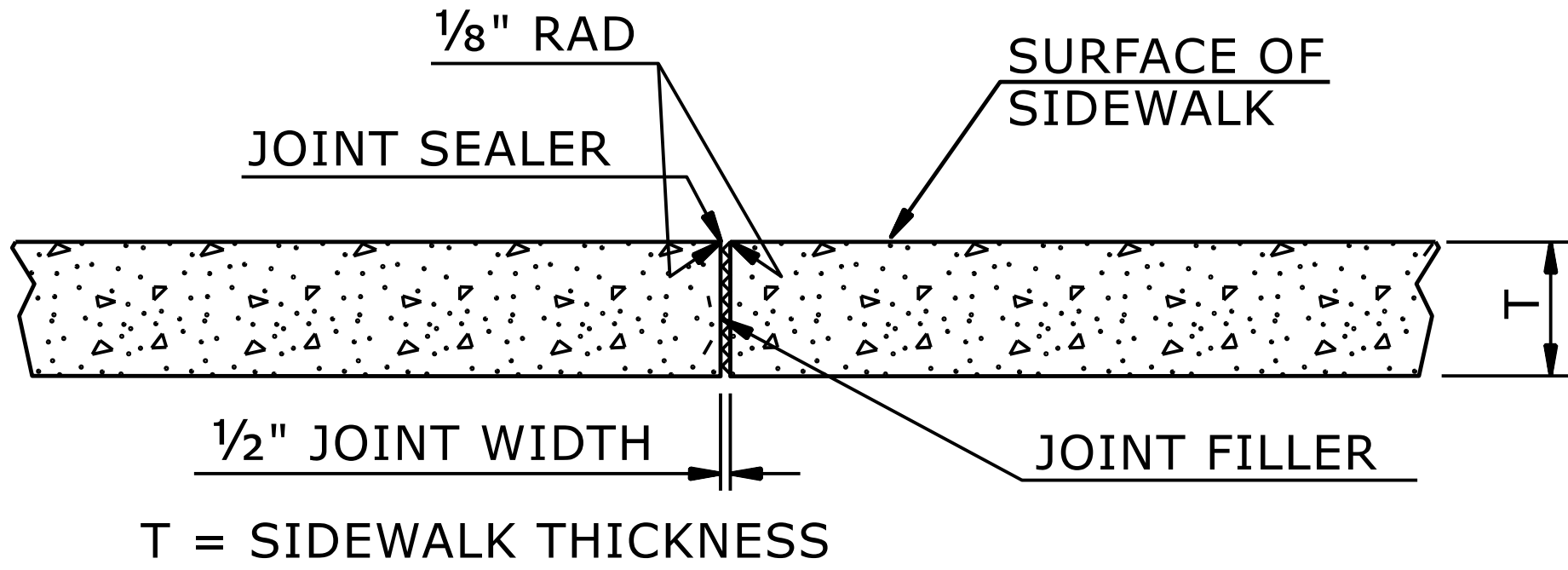
ORIGINAL BY: S.CALHOUN DATE: 12-22-2023
MODIFIED BY: DATE:
CHECKED BY: DATE:
FILE SPEC.: special_details\nmhackler\0609.dgn

NOTES:

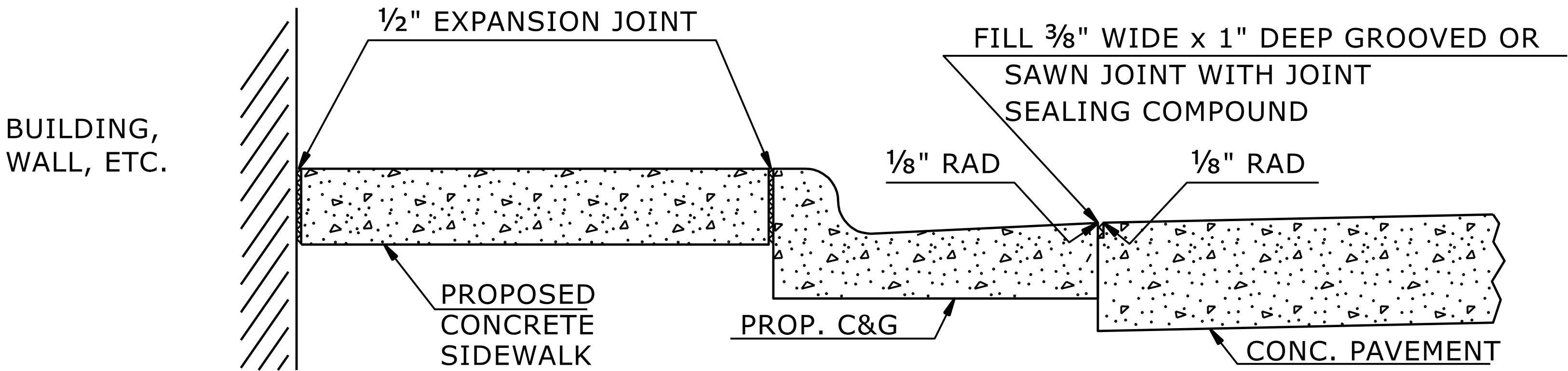
CONSTRUCT STANDARD SIDEWALK 5' WIDE AND 4" THICK UNLESS OTHERWISE DENOTED ON PLANS.

PLACE A GROOVE JOINT 1" DEEP WITH 1/8" RADII IN THE CONCRETE SIDEWALK AT 5' INTERVALS. ONE 1/2" EXPANSION JOINT WILL BE REQUIRED AT 50' INTERVALS. A 1/2" EXPANSION JOINT WILL BE REQUIRED WHERE THE SIDEWALK JOINS ANY RIGID STRUCTURE.

SEE STD. DWG. 848.06 FOR CURB RAMP LOCATION REQUIREMENTS AND CONSTRUCTION GUIDELINES.



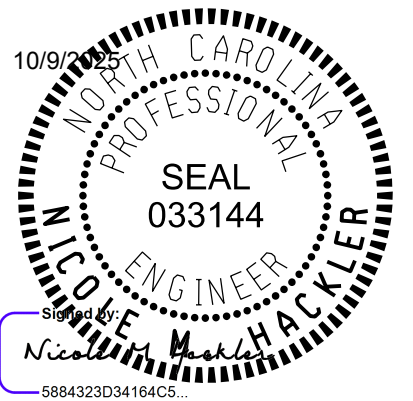
TRANSVERSE EXPANSION JOINT
IN SIDEWALK



DETAILS SHOWING JOINTS IN CONCRETE SIDEWALK

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

ROADWAY DETAIL DRAWING FOR
CONCRETE SIDEWALK



SHEET 1 OF 1
848D01

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

**CONTRACTS STANDARDS
AND DEVELOPMENT UNIT**

Office 919-707-6950 FAX 919-250-4119

SEE TITLE BLOCK

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

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

ROADWAY DETAIL DRAWING FOR
METHOD OF PIPE INSTALLATION
FLEXIBLE PIPE

SHEET 1 OF 2
300.01

Diagram showing a pipe in a trench with normal earth foundation. The pipe is surrounded by compacted backfill. Labels include: TOP OF FILL, GROUND LINE, H (fill height), I.D. /6 MIN. NOT LESS THAN 6", O.D. + 3', and COMPACT AFTER PIPE IS PLACED & PRIOR TO PLACEMENT OF FILL.

NORMAL EARTH FOUNDATION

Diagram showing a pipe in a trench with rock foundation. The pipe is surrounded by compacted backfill. Labels include: TOP OF FILL, GROUND LINE, H, I.D. /6 MIN. NOT LESS THAN 6", O.D. + 3', ROCK, and COMPACT AFTER PIPE IS PLACED & PRIOR TO PLACEMENT OF FILL.

**ROCK FOUNDATION
PIPE IN TRENCH**

Diagram showing a pipe in a trench with unsuitable material foundation. The pipe is surrounded by compacted backfill. Labels include: TOP OF FILL, GROUND LINE, H, I.D. /6 MIN. NOT LESS THAN 6", O.D. + 3', TYPE 4a GEOTEXTILE, 1/2" PER FOOT OF 'H' BUT NOT LESS THAN 12" NOR MORE THAN 24" AS DIRECTED BY ENGR., and COMPACT AFTER PIPE IS PLACED & PRIOR TO PLACEMENT OF FILL.

UNSUITABLE MATERIAL FOUNDATION

Diagram showing a pipe above ground with normal earth foundation. The pipe is surrounded by compacted backfill. Labels include: TOP OF FILL, GROUND LINE, H, MIN. O.D., 1:1, COMPACT AFTER PIPE IS PLACED & PRIOR TO PLACEMENT OF FILL, I.D. /6 MIN. NOT LESS THAN 6", O.D. + 2', and I.D. /6 MIN. NOT LESS THAN 6".

NORMAL EARTH FOUNDATION

Diagram showing a pipe above ground with rock foundation. The pipe is surrounded by compacted backfill. Labels include: TOP OF FILL, GROUND LINE, H, MIN. O.D., 1:1, TYPE 4a GEOTEXTILE, COMPACT AFTER PIPE IS PLACED & PRIOR TO PLACEMENT OF FILL, I.D. /6 MIN. NOT LESS THAN 6", O.D. + 2', 1/2" PER FOOT OF 'H' BUT NOT LESS THAN 12" NOR MORE THAN 24", and I.D. /6 MIN. NOT LESS THAN 6".

**ROCK FOUNDATION
PIPE ABOVE GROUND**

Diagram showing a pipe above ground with unsuitable material foundation. The pipe is surrounded by compacted backfill. Labels include: TOP OF FILL, GROUND LINE, H, MIN. O.D., 1:1, TYPE 4a GEOTEXTILE, COMPACT AFTER PIPE IS PLACED & PRIOR TO PLACEMENT OF FILL, I.D. /6 MIN. NOT LESS THAN 6", O.D. + 2', 1/2" PER FOOT OF 'H' BUT NOT LESS THAN 12" NOR MORE THAN 24", MIN. O.D., and AS DIRECTED BY ENGINEER.

UNSUITABLE MATERIAL FOUNDATION

GENERAL NOTES:

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

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

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

APPROVED SUITABLE LOCAL MATERIAL.

TAKE CARE TO FULLY COMPACT HAUNCH ZONE OF PIPE BACKFILL.

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

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

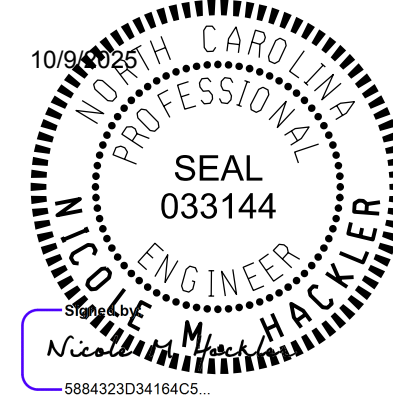
REFER TO NCDOT PIPE MATERIAL SELECTION GUIDE AND STANDARD SPECIFICATIONS FOR ALLOWABLE PIPE FILL HEIGHTS AND PIPE SPECIFICATIONS.

SPRINGLINE OF PIPE

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

UNDISTURBED EARTH MATERIAL

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



DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

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

SEE TITLE BLOCK

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

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

ROADWAY DETAIL DRAWING FOR
METHOD OF PIPE INSTALLATION
RIGID PIPE

SHEET 2 OF 2
300.01

NORMAL EARTH FOUNDATION

**ROCK FOUNDATION
PIPE IN TRENCH**

UNSUITABLE MATERIAL FOUNDATION

NORMAL EARTH FOUNDATION

**ROCK FOUNDATION
PIPE ABOVE GROUND**

UNSUITABLE MATERIAL FOUNDATION

GENERAL NOTES:

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APPROVED SUITABLE LOCAL MATERIAL.

TAKE CARE TO FULLY COMPACT HAUNCH ZONE OF PIPE BACKFILL.

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

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

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

SPRINGLINE OF PIPE

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

UNDISTURBED EARTH MATERIAL

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

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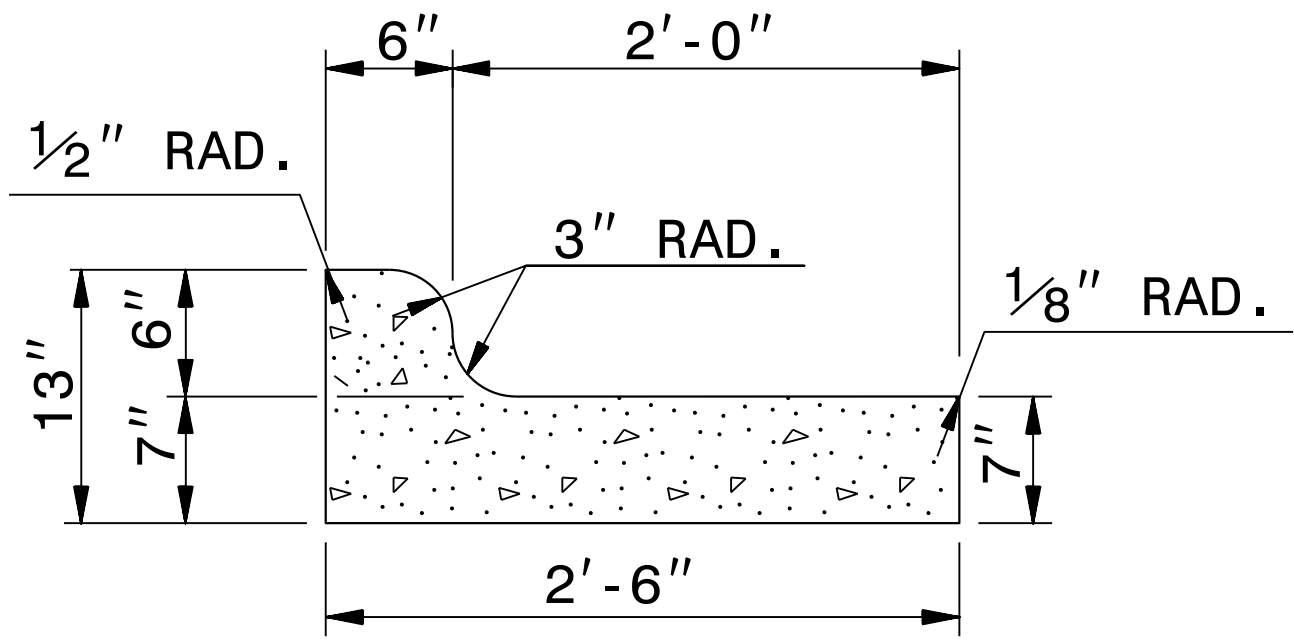
CONTRACTS STANDARDS
AND DEVELOPMENT UNIT
Office 919-707-6950 FAX 919-250-4119

SEE TITLE BLOCK

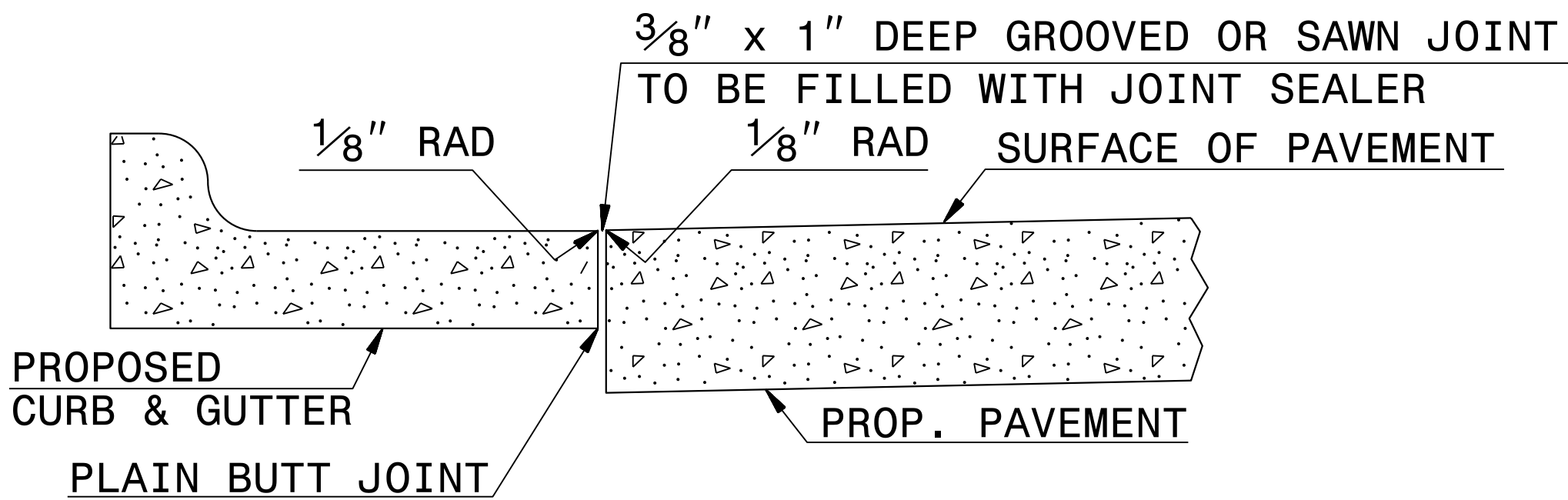
ORIGINAL BY:	S.CALHOUN	DATE:	7-25-2024
MODIFIED BY:		DATE:	
CHECKED BY:		DATE:	
FILE SPEC:			

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.	ENGLISH DETAIL DRAWING FOR SPECIAL CURB & GUTTER 2'-6" (SPILL CURB)
SHEET 1 OF 1	846d01

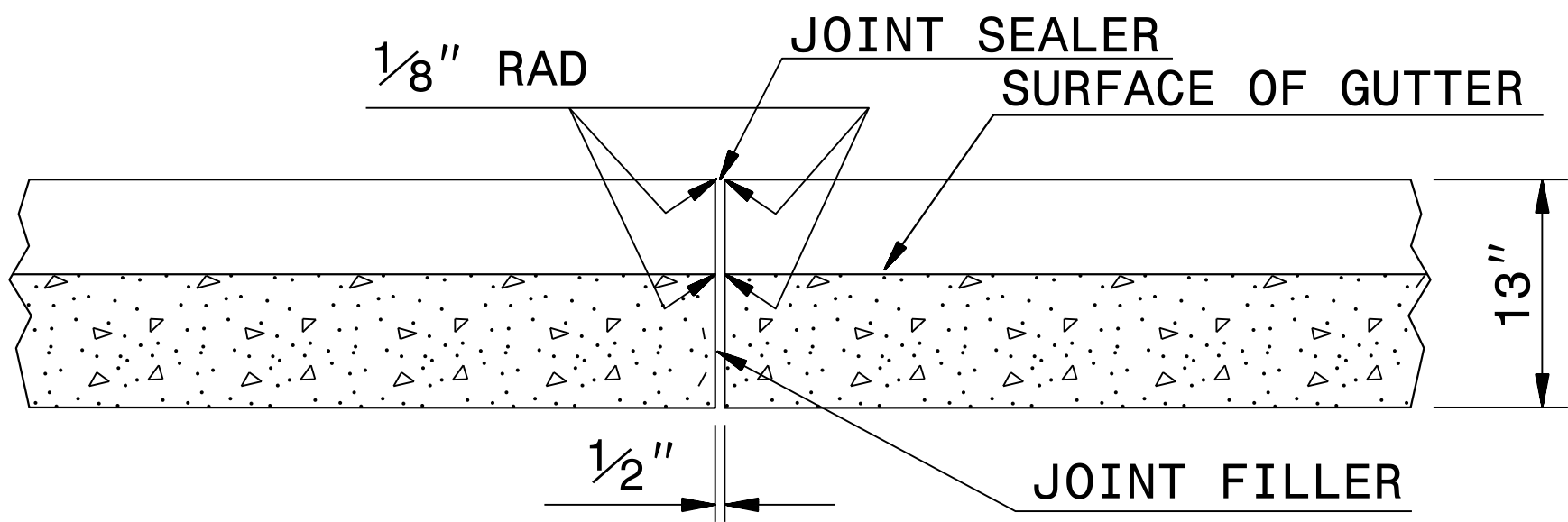
STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.	ENGLISH DETAIL DRAWING FOR SPECIAL CURB & GUTTER 2'-6" (SPILL CURB)
SHEET 1 OF 1	846d01



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

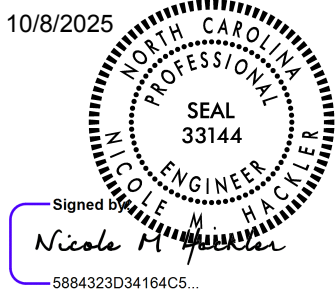


LONGITUDINAL PLAIN BUTT JOINT



TRANSVERSE EXPANSION JOINT
IN CURB AND GUTTER

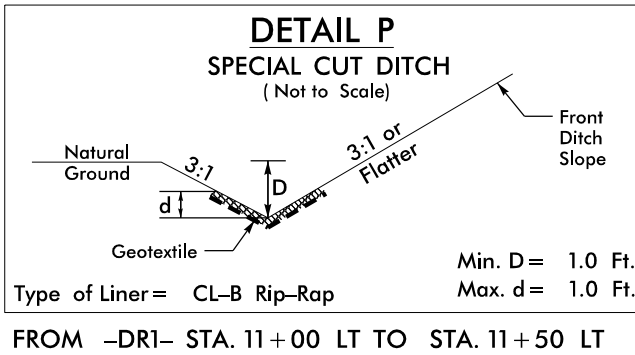
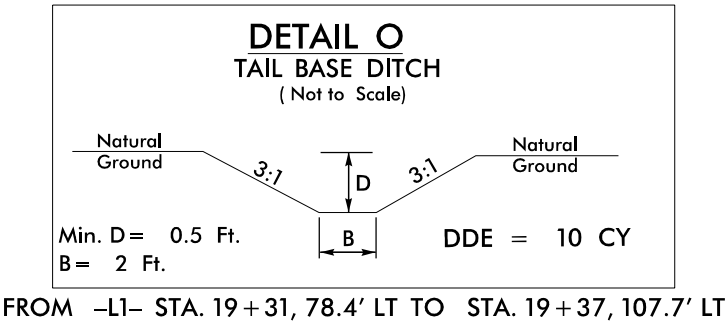
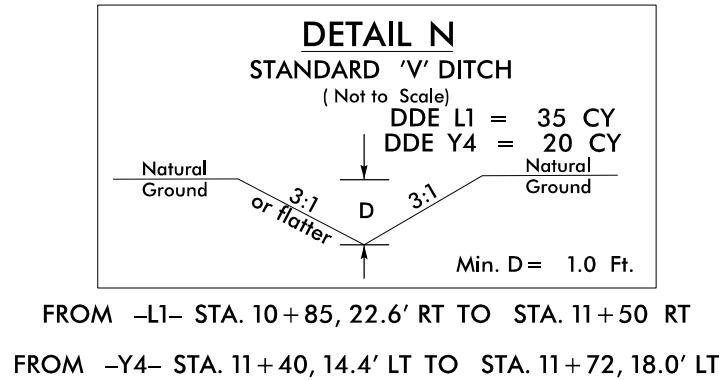
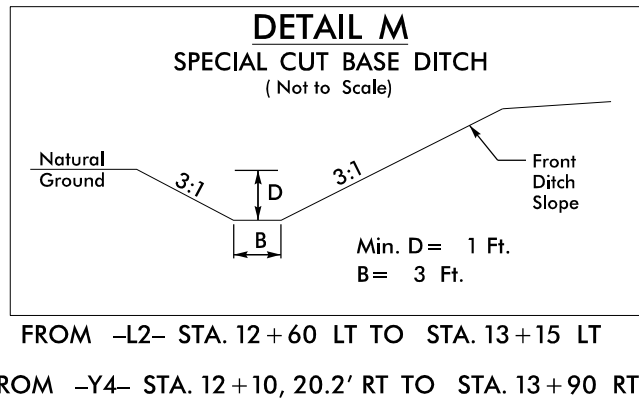
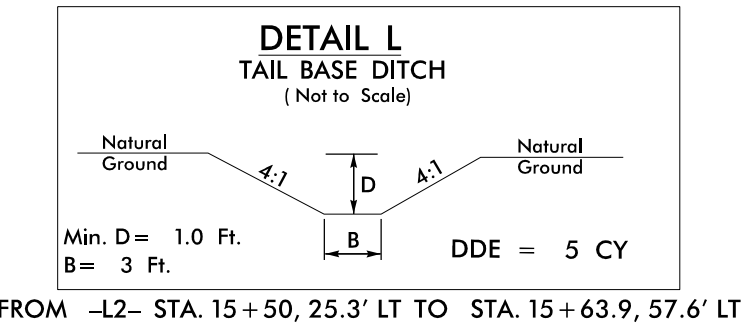
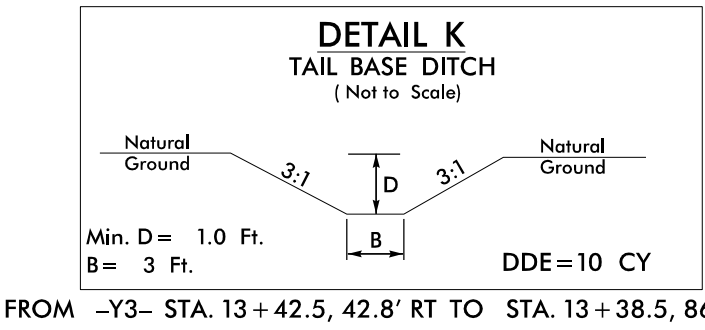
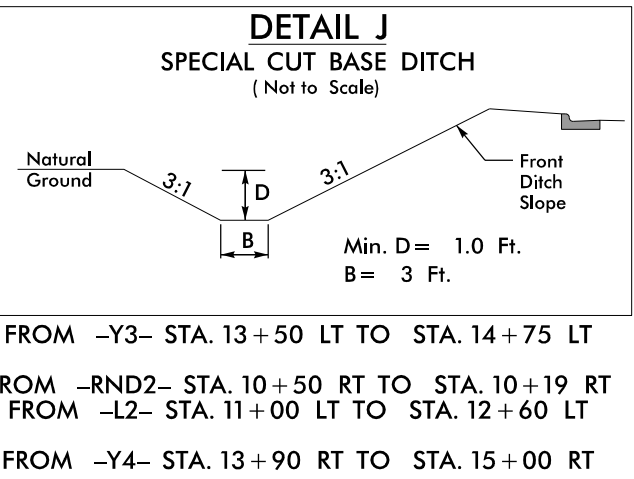
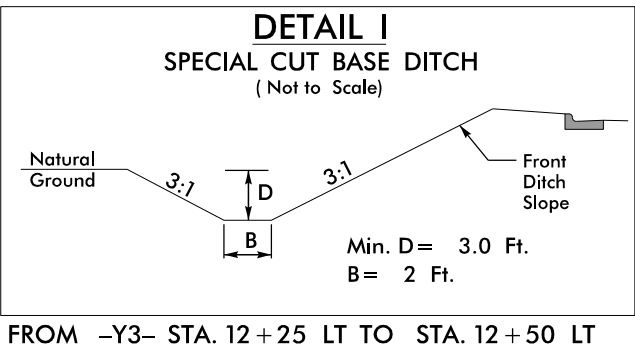
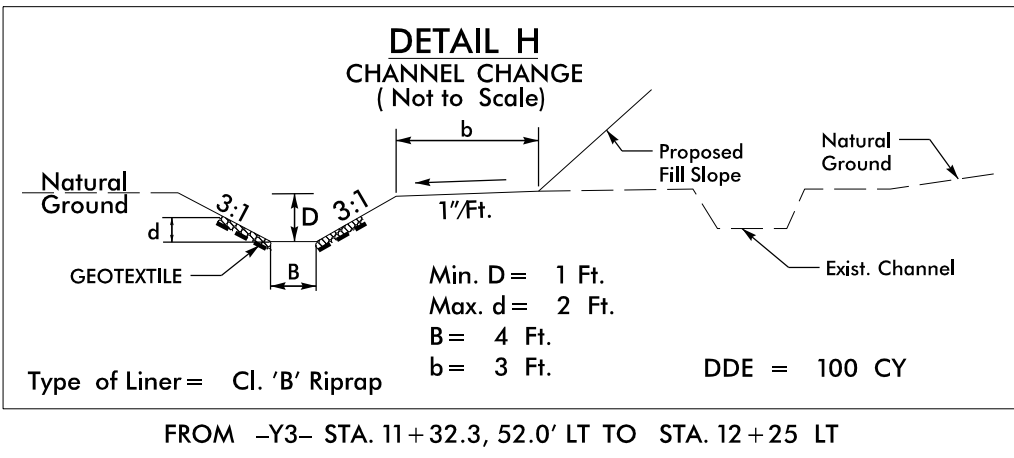
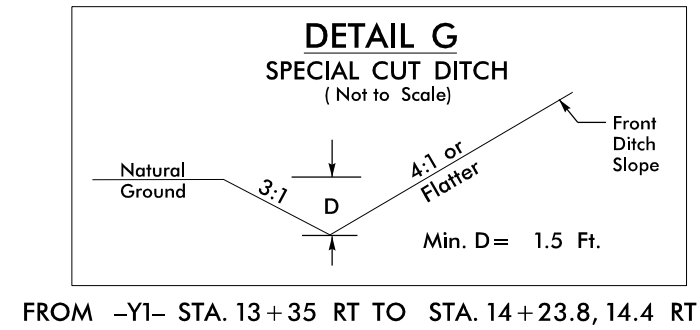
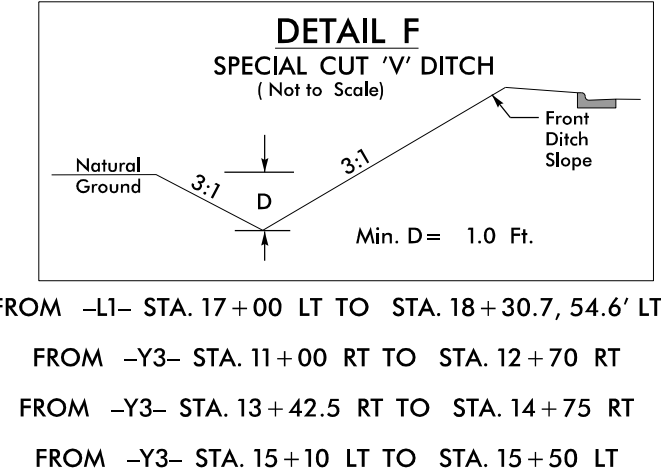
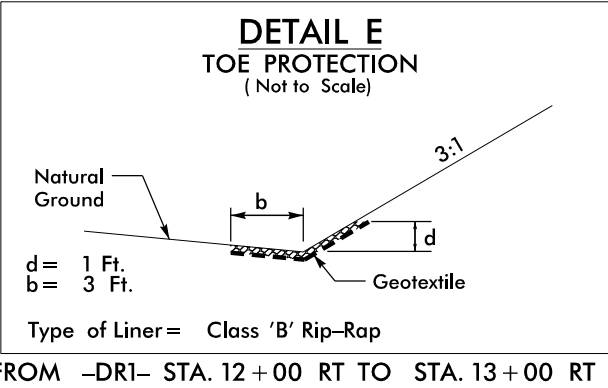
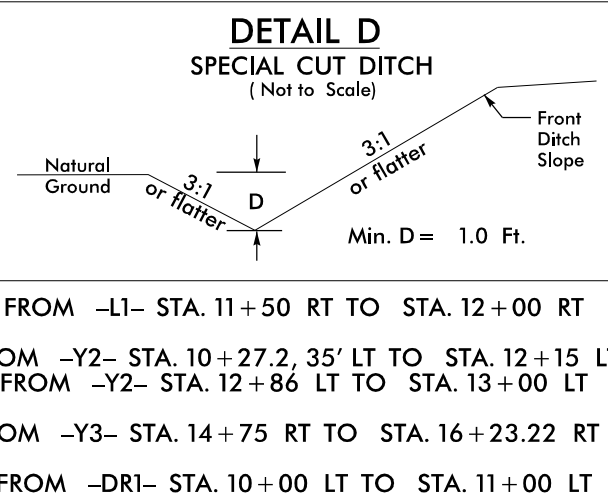
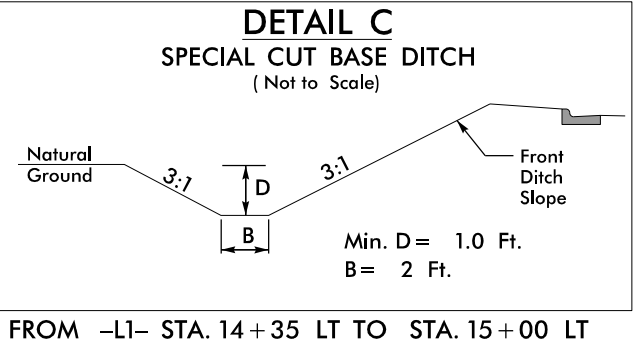
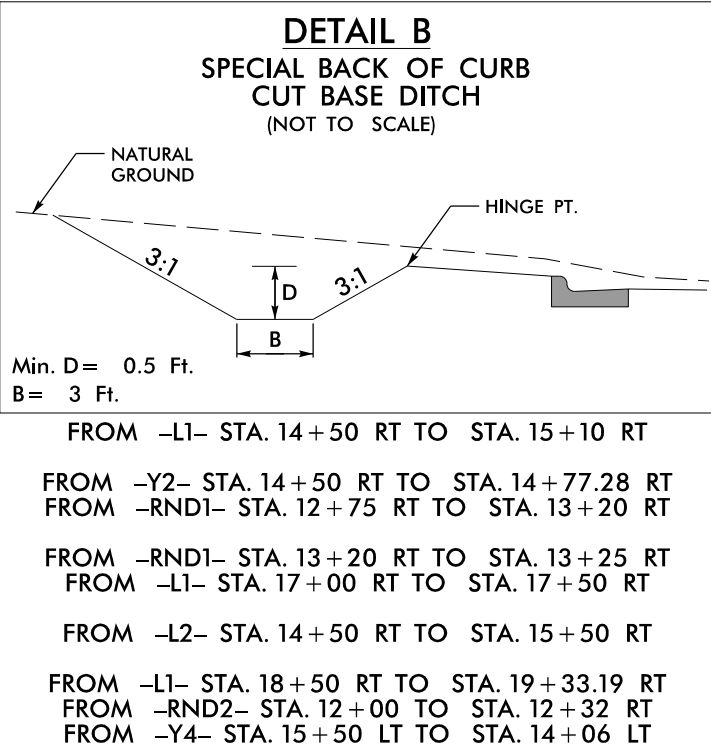
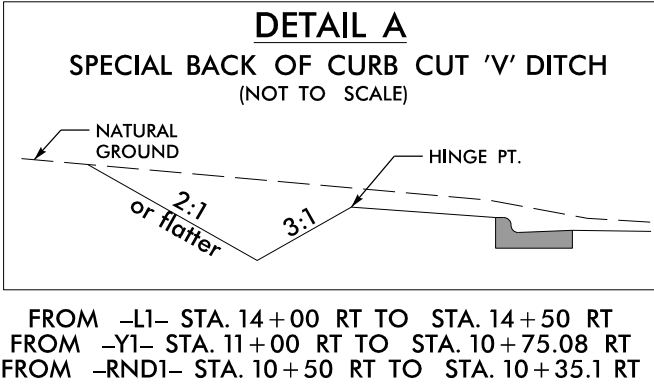
- GENERAL NOTES:
- PLACE CONTRACTION JOINTS AT 10' INTERVALS, EXCEPT THAT A 15' SPACING MAY BE USED WHEN A MACHINE IS USED OR WHEN SATISFACTORY SUPPORT FOR THE FACE FORM CAN BE OBTAINED WITHOUT THE USE OF TEMPLATES AT 10' INTERVALS.
 - JOINT SPACING MAY BE ALTERED IF REQUIRED BY THE ENGINEER.
 - CONTRACTION JOINTS MAY BE INSTALLED WITH THE USE OF TEMPLATES OR FORMED BY OTHER APPROVED METHODS. CONSTRUCT NON-TEMPLATE FORMED JOINTS A MIN. OF 1½" DEEP.
 - FILL ALL CONSTRUCTION JOINTS, WITH JOINT FILLER AND SEALER.
 - SPACE EXPANSION JOINTS AT 90' INTERVALS AND ADJACENT TO ALL RIGID OBJECTS.



DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

CONTRACT STANDARDS AND DEVELOPMENT UNIT Office 919-707-6950 FAX 919-250-4119	
SEE PLATE FOR TITLE	
ORIGINAL BY: E.E. WARD	DATE: MAY 1997
MODIFIED BY: K.A. KEMPF	DATE: MAR 2015
CHECKED BY:	DATE:
FILE SPEC.: kkempf\english\B5121_846d01.dgn	

DRAINAGE DITCH DETAILS



RD223184

COMPUTED BY: IY DATE: 08/1/2025
CHECKED BY: WP DATE: 9/8/2025

PROJECT NO.	SHEET NO.
W-5710X	3B-1

STATE OF NORTH CAROLINA

DIVISION OF HIGHWAYS

SUMMARY OF EARTHWORK

LINE	STATION	STATION	Uncl. Exc. CU. YDS.	Undercut CU. YDS.	Embank. +%	Borrow CU. YDS.	Waste CU. YDS.
-SUMMARY NO. 1-							
-L1-	11+00.00	15+36.71	128		383	255	
-L1-	16+86.74	19+33.19	377		531	154	
-RND1-	10+00.00	13+50.00	341		3,095	2,754	
-Y1-	10+75.26	14+00.00	1,174	1,700	1,901	1,627	2,600
-Y2-	10+00.00	14+77.27	1,362		572		790
-DR1-	9+75.00	13+60.95	77		538	461	
-SUMMARY NO. 1 TOTAL-			3,459	1,700	7,020	5,251	3,390
-SUMMARY NO. 2-							
-L2-	10+75.07	16+00.00	882		190		692
-RND2-	10+00.00	13+50.00	135		3,854	3,719	
-Y3-	11+00.00	16+23.22	500		3,215	2,715	
-Y4-	12+00.00	15+50.00	525		340		185
-DR2-	10+00.00	11+00.00	36		223	187	
--DR3--	10+00.00	10+75.00	6		33	27	
-SUMMARY NO. 2 TOTAL-			2,084		7,855	6,648	877
PROJECT SUMMARY TOTALS			5,543	1,700	14,875	11,899	4,267
MATERIAL FOR SHOULDER CONSTRUCTION					456	456	
ADDITIONAL UNDERCUT				450	518		450
WASTE IN LIEU OF BORROW						-1,667	-1,667
PROJECT TOTALS			5,543	2,150	15,849	11,206	3,050
Est 5% To Replace Topsoil at Borrow Pit						560	
GRAND TOTALS			5,543	2,150		11,766	
SAY			5,750	2,150		12,000	

EST. SHALLOW UNDERCUT = 100 CY
SELECT GRANULAR MATERIAL = 2100 CY
EST. DRAINAGE DITCH EXCAVATION = 180 CY

APPROXIMATE QUANTITIES ONLY. UNCLASSIFIED EXCAVATION, BORROW EXCAVATION, FINE GRADING, CLEARING AND GRUBBING AND REMOVAL OF EXISTING ASPHALT PAVEMENT WILL BE PAID FOR AT THE LUMP SUM PRICE FOR "GRADING".

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

SUMMARY OF ASPHALT PAVEMENT REMOVAL

[illegible]

PAVEMENT AREA REMOVAL DETAIL

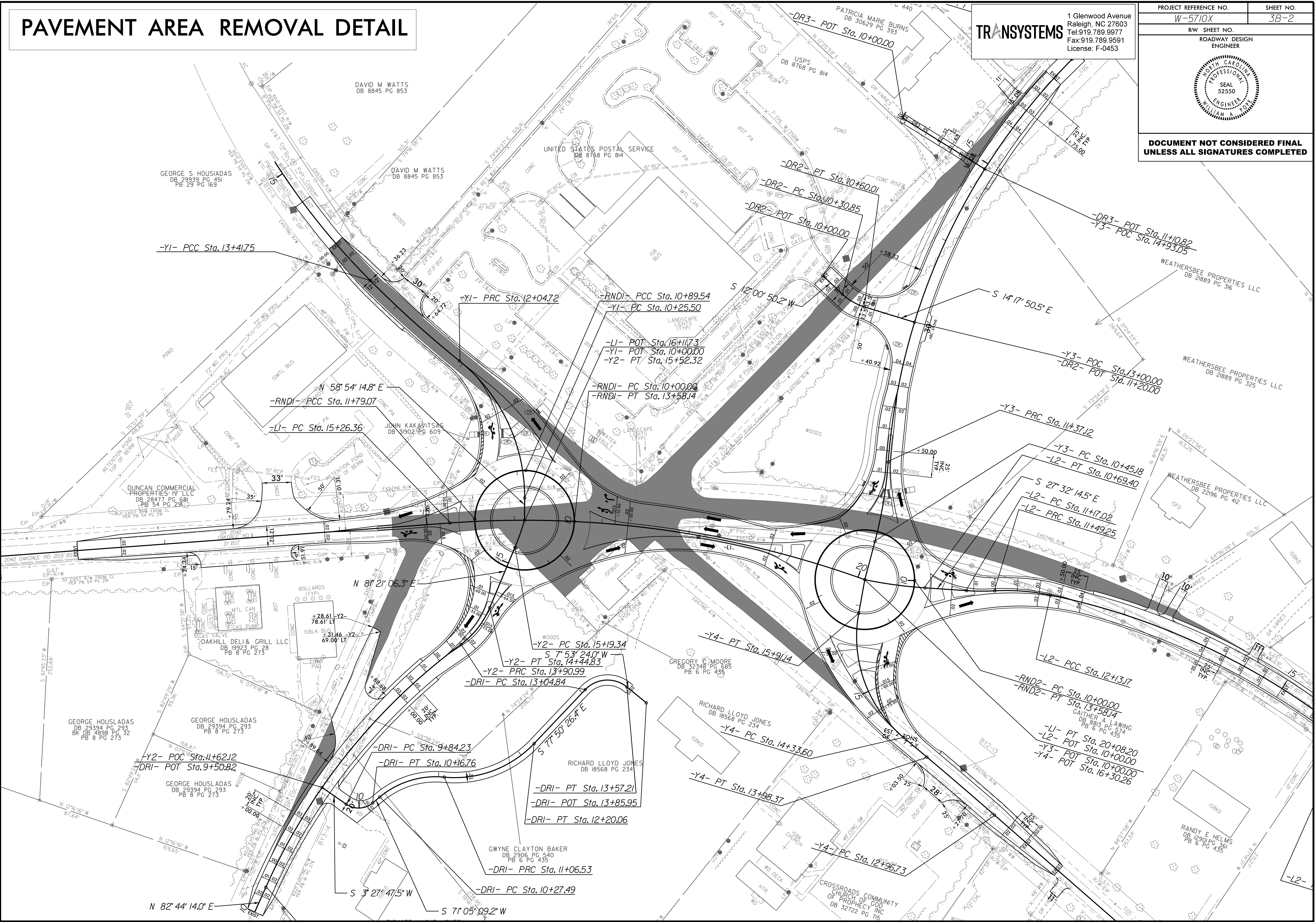
TRANSYSTEMS

1 Glenwood Avenue
Raleigh, NC 27603
Tel: 919.789.9977
Fax: 919.789.9591
License: F-0453

PROJECT REFERENCE NO.	SHEET NO.
W-5710X	3B-2
RW SHEET NO.	

A circular professional engineer seal for the State of North Carolina. The outer ring contains the text "NORTH CAROLINA" at the top and "WILLIAM A. POIRIER" at the bottom. The inner ring contains the text "PROFESSIONAL" at the top and "ENGINEER" at the bottom. In the center, the text "SEAL" and "52550" are displayed.

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



STATE OF NORTH CAROLINA

DIVISION OF HIGHWAYS

SUMMARY OF QUANTITIES

SUMMARY OF AGGREGATE SUBGRADE/STABILIZATION

LINE	STATION	STATION	AGGREGATE TYPE* ASU(1/2)/AST	AGGREGATE THICKNESS INCHES	SHALLOW UNDERCUT CY	CLASS IV SUBGRADE STABILIZATION TONS	GEOTEXTILE FOR SUBGRADE STABILIZATION SY	STABILIZER AGGREGATE TONS	CLASS IV AGGREGATE STABILIZATION TONS
	CONTINGENCY		ASU (1)	12	100	200	300		
			TOTAL CY/TONS/SY:		100	200**	300**		
				SAY:	100	200**	300**		

*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.

SUMMARY OF SUBSURFACE DRAINAGE

LINE	STATION	STATION	LOCATION LT/RT/C/L	DRAIN TYPE* UD/BD/SD	LF
-RND1-	10 + 00.00	10 + 72.11	LT	SD	48.08
-RND1-	11 + 61.65	13 + 58.14	LT	SD	140.00
-RND2-	10 + 00.00	10 + 43.06	LT	SD	28.71
-RND2-	11 + 32.60	13 + 58.14	LT	SD	158.36
	CONTINGENCY			UD	200
	CONTINGENCY			SD	200
			SUBTOTAL (SD):		575.15
			SUBTOTAL (UD):		200
			TOTAL LF (SD):		580
			TOTAL LF (UD):		200

*UD = UNDERDRAIN
*BD = BLIND DRAIN
*SD = SUBSURFACE DRAIN

STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

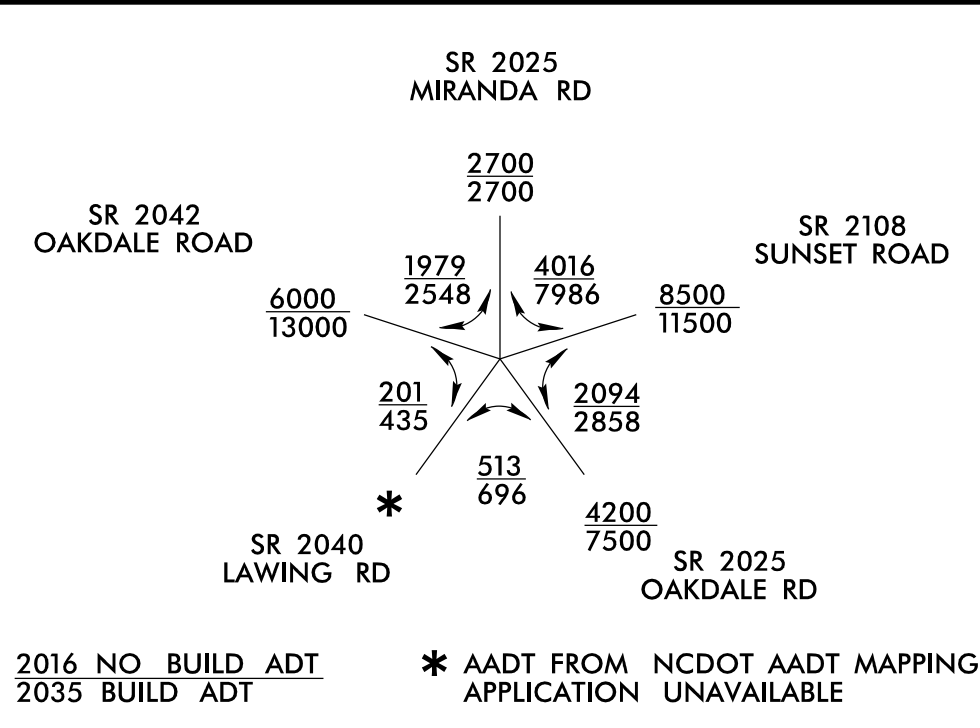
PARCEL INDEX SHEET

PROJ. REFERENCE NO.	SHEET NO.
U-5875	3P-1

PARCEL No.	SHEET No.	PROPERTY OWNER NAME
1	4	NANNIE SUE FIELDS
2	4	JOHN F. MOYE
3	4,16	NANNIE SUE FIELDS
5	4	RED OAK CHRISTIAN CHURCH DISCIPLES OF CHRIST, INC.
6	4	RED OAK CHRISTIAN CHURCH
7	4	MARGARET CASE, WILLIAM AARON CASE
8	4	J.T. MANNING ENTERPRISES, LLC.
9	4,15	NANCY A. BEARDSWORTH
10	4,15	DTF, LLC.
11	4	NORTH CAROLINA, STATE HIGHWAY COMMISSION
12	4	MARGARET C. SULLIVAN
13	4,16	MARGARET C. SULLIVAN
14	4,5	MC DONALDS REAL ESTATE COMPANY
15	4,5	KERMIT ALLEN LYLE
16	5	TRADE LAND COMPANY, LLC.
17	5,16	BETTIE T. FORREST, JOY T. CLARK
18	5	NANNIE SUE CRAWFORD BEST FIELDS
19	5	CHARLOTTE TYSON CRAWFORD
20	5,6	DVML, LLC.
21	5	ELVY K. FORREST JR.
22	5	LEON R. HARDEE, LINDA I. HARDEE
23	5,6	JOSEPH BENJAMIN TYSON
24	6	LEON R. HARDEE, KAREN S. HARDEE
25	6	LINDA S. JAMES
26	6	ANTHONY MICHAEL HOPKINS
27	6	MICHAEL HOPKINS
28	6,7,8	LEON R. HARDEE, LINDA I. HARDEE
29	6,7	HODGE & MORRIS, LLC.
30	7	HODGE & MORRIS, LCC
31	7	JOHNNY R. TYSON, BRENDA G. TYSON
32	7	CIRE DEVELOPMENT, LLC.
33	7	ERIC TODD REIFSCHNEIDER
34	7	HARDEE FAMILY HOLDINGS, LLC.
35	7,8	HARDEE FAMILY HOLDINGS, LLC.
36	8	BENT CREEK FARMS, LLC.
37	8	NORTH CAROLINA, DEPARTMENT OF TRANSPORTATION
38	8	HERBERT S. COREY
39	8	ROBERT LEE O'NEAL JR
40	8	CHRISTINA LOUVENIA, SPAIN O'NEAL HEIRS
41	8,9	THOMAS J. ANDREWS, NORMA S. HARRELL
42	8,9	BRADLEY LEE HARRELL
43	8	JOSEPH R. EVERETT
44	8	ERNIE GENE ASTON
45	9	ABC FAMLY, LLC.
46	9	B.T. WALSTON, DEBRA S. WALSTON
47	9	LILA A. BULLOCK
48	9	ROCKY RUSSELL, DEVELOPMENT, LLC.
49	9	JOHN MOYE JR.
50	9	ROCKY RUSSELL, DEVELOPMENT, LLC.
51	9	SYDNEY W. BOWEN, SHIRLEY HOUSE BOWEN
52	9	TINA FARMER
53	10	HAPPY TRAIL FARMS, LLC.
53A	9,10	TBD2, LLC., FORMERLY HAPPY TRAIL FARMS, LLC.
54	10	DANIEL JOSEPH LIMA, HEATHER LYNN LIMA
55	9,10	EDMONSON PROPERTIES, LLC
57	10	TIMOTHY V. DAUGHTRY, JO LYNN H. DAUGHTRY
58	10	BOBBY GENE HARDEE, ANNE ALLEN HARDEE
59	10	WELLS CHAPEL CHURCH OF GOD IN CHRIST, INC.
60	10	CHARLES DONALD SOUTHERLAND, JEFFREY S. ALDRIDGE, MICHAEL L. ALDRIDGE, JERRY J. WHITHEURST
61	10,11	BYPASS PROPERTIES III, LLC.

[illegible]

8/17/99



NOTE:
PIPES LABELED TO BE REMOVED MAY BE FILLED W/FLOWABLE FILL AND ABANDONED AT THE NCDOT FIELD ENGINEER'S DISCRETION.

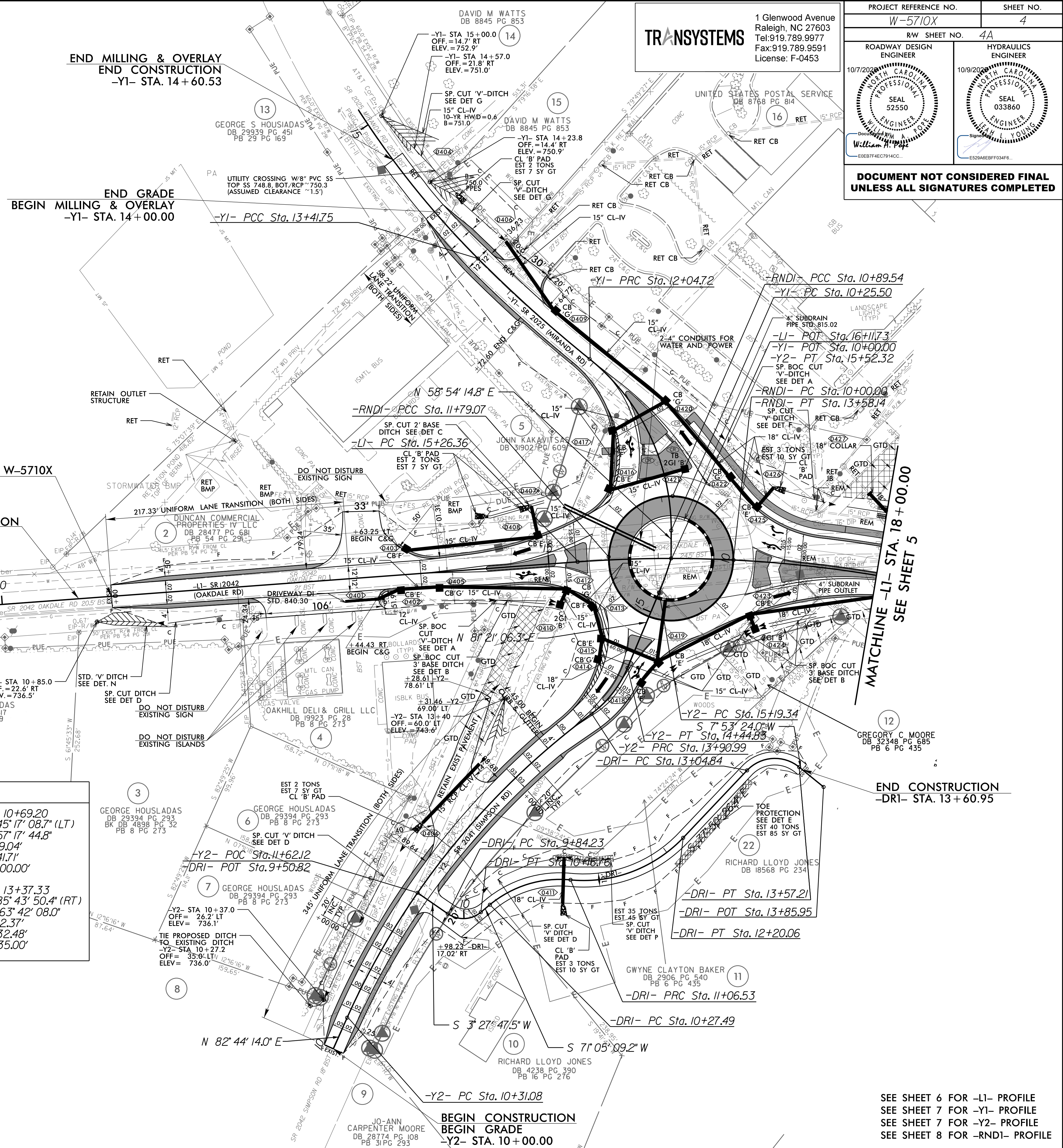
NOTE:
IN SYSTEMS TO BE PLUGGED AND FILLED W/FLOWABLE FILL, REMOVE STRUCTURES. ALTERNATELY, REMOVE TOPS OF STRUCTURES TO ELEV. OF BOTTOM OF AGGREGATE ROADWAY BASE, AND FILL W/COMPACTED ABC OR FLOWABLE FILL AT NCDOT FIELD ENGINEER'S DISCRETION.

NOTE:
SEE SHEET 2B-3 FOR -RND1- PAVEMENT & CURB SPOT GRADING PLAN.

SEE SHEET 2B-1 FOR ROUNDABOUT & CHANNELIZATION DETAIL

SEE SHEET 2D-1 FOR DRAINAGE DITCH DETAILS

SEE SHEET 4A FOR PROPOSED RIGHT OF WAY/EASEMENTS INFORMATION



-LI-	-YI-	-DRI-
$PI\ Sta\ 17+71.05$ $\Delta = 24^{\circ} 01' 26.5'' (RT)$ $D = 4^{\circ} 58' 56.1''$ $L = 482.19'$ $T = 244.69'$ $R = 1,150.00'$	$PI\ Sta\ 11+216.3$ $\Delta = 51^{\circ} 20' 31.3'' (LT)$ $D = 28^{\circ} 38' 52.4''$ $L = 179.22'$ $T = 96.13'$ $R = 200.00'$ $PI\ Sta\ 12+73.31$ $\Delta = 6^{\circ} 16' 52.3'' (RT)$ $D = 4^{\circ} 35' 01.2''$ $L = 137.03'$ $T = 68.59'$ $R = 1,250.00'$	$PI\ Sta\ 10+03.26$ $\Delta = 74^{\circ} 32' 56.7'' (LT)$ $D = 229^{\circ} 10' 59.2''$ $L = 32.53'$ $T = 19.03'$ $R = 25.00'$ $PI\ Sta\ 11+67.55$ $\Delta = 52^{\circ} 02' 25.9'' (RT)$ $D = 45^{\circ} 50' 11.8''$ $L = 113.53'$ $T = 61.02'$ $R = 125.00'$ $PI\ Sta\ 10+69.20$ $\Delta = 45^{\circ} 17' 08.7'' (LT)$ $D = 57^{\circ} 17' 44.8''$ $L = 79.04'$ $T = 41.71'$ $R = 100.00'$ $PI\ Sta\ 13+37.33$ $\Delta = 85^{\circ} 43' 50.4'' (RT)$ $D = 163^{\circ} 42' 08.0''$ $L = 52.37'$ $T = 32.48'$ $R = 35.00'$
-Y2-	-RND1-	
$PI\ Sta\ 12+15.11$ $\Delta = 29^{\circ} 27' 32.6'' (RT)$ $D = 8^{\circ} 11' 06.4''$ $L = 359.91'$ $T = 184.03'$ $R = 700.00'$ $PI\ Sta\ 15+35.84$ $\Delta = 6^{\circ} 17' 54.1'' (LT)$ $D = 19^{\circ} 05' 54.9''$ $L = 32.98'$ $T = 16.51'$ $R = 300.00'$	$PI\ Sta\ 14+18.58$ $\Delta = 30^{\circ} 50' 40.3'' (LT)$ $D = 57^{\circ} 17' 30.4''$ $L = 53.84'$ $T = 27.59'$ $R = 100.01'$ $PI\ Sta\ 11+46.54$ $\Delta = 90^{\circ} 00' 00.0'' (LT)$ $D = 100^{\circ} 31' 08.1''$ $L = 89.54'$ $T = 57.00'$ $R = 57.00'$ $PI\ Sta\ 13+25.61$ $\Delta = 90^{\circ} 00' 00.0'' (LT)$ $D = 100^{\circ} 31' 08.1''$ $L = 89.54'$ $T = 57.00'$ $R = 57.00'$	$PI\ Sta\ 10+57.00$ $\Delta = 90^{\circ} 00' 00.0'' (LT)$ $D = 100^{\circ} 31' 08.1''$ $L = 89.54'$ $T = 57.00'$ $R = 57.00'$ $PI\ Sta\ 12+36.07$ $\Delta = 90^{\circ} 00' 00.0'' (LT)$ $D = 100^{\circ} 31' 08.1''$ $L = 89.54'$ $T = 57.00'$ $R = 57.00'$

PROJECT REFERENCE NO.
W-5710X

SHEET NO.
4

ROADWAY DESIGN ENGINEER
10/7/2025
SEAL 52550
WILLIAM A. POPE

HYDRAULICS ENGINEER
10/9/2025
SEAL 033860
WILLIAM A. POPE

1 Glenwood Avenue
Raleigh, NC 27603
Tel: 919.789.9977
Fax: 919.789.9591
License: F-0453

TRANSSYSTEMS

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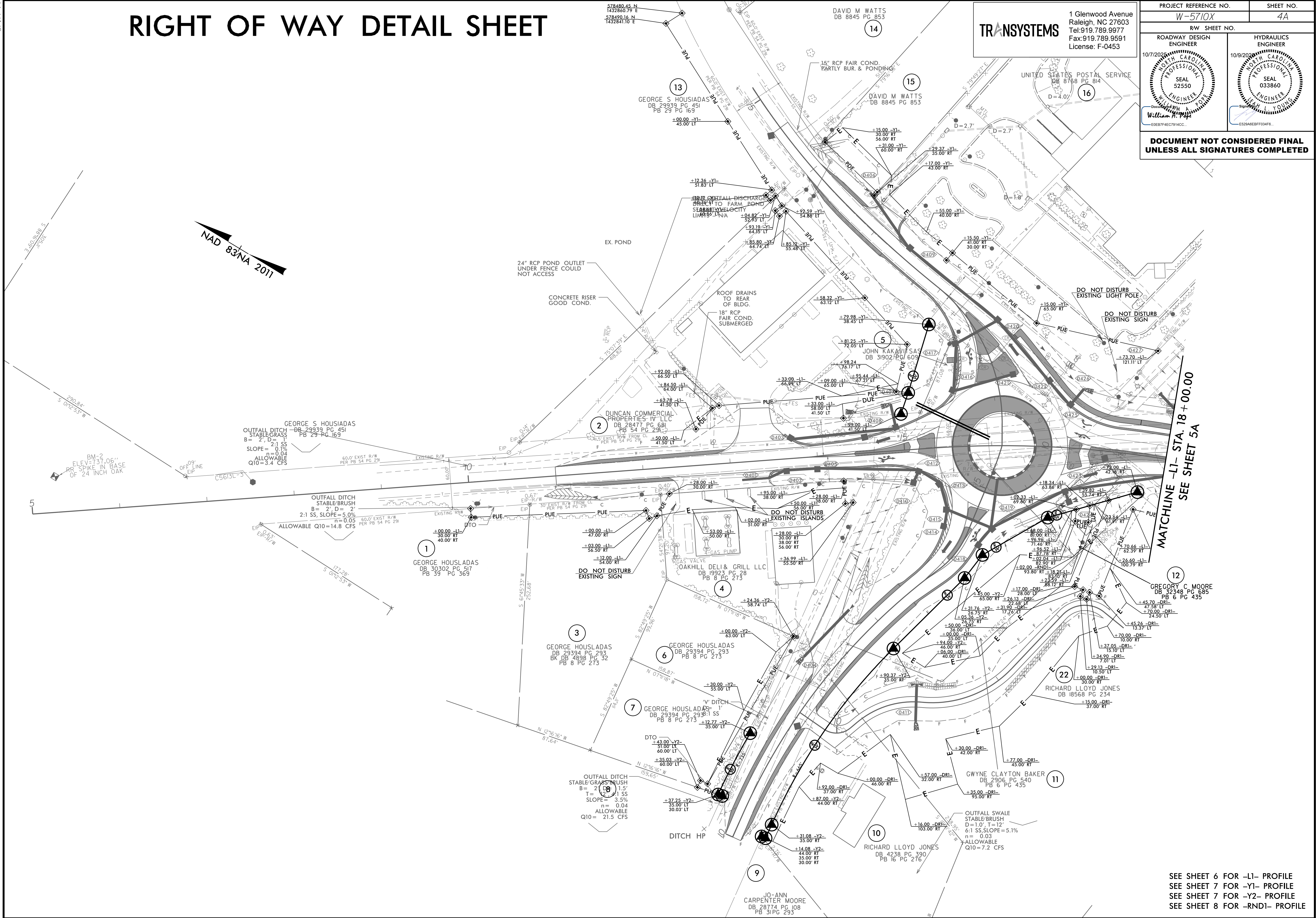
RIGHT OF WAY DETAIL SHEET

8/17/99

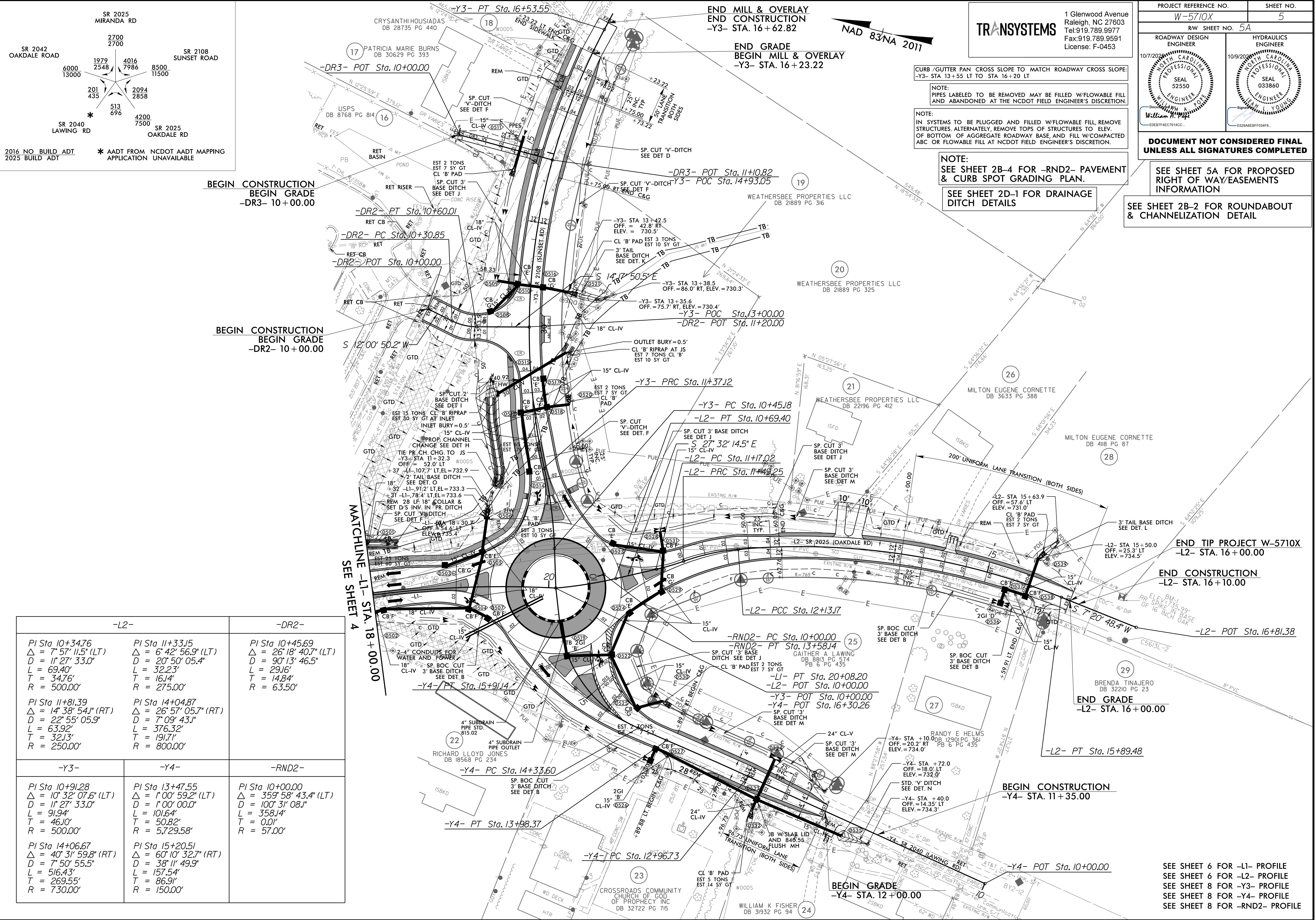
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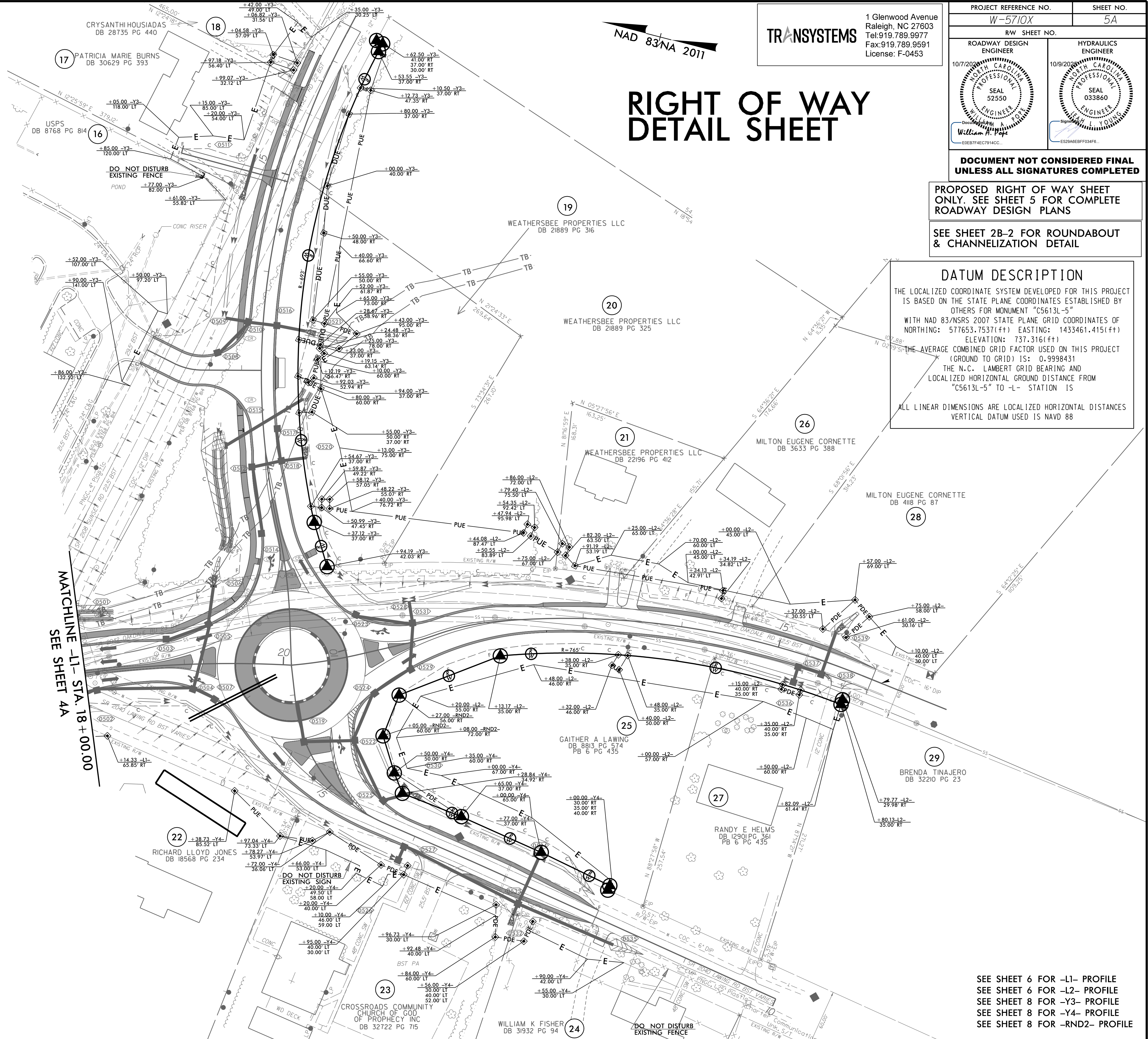
1 Glenwood Avenue
Raleigh, NC 27603
Tel: 919.789.9977
Fax: 919.789.9591
License: F-0453

PROJECT REFERENCE NO.		SHEET NO.
W-5710X		4A
RW SHEET NO.		HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER		10/9/2025
10/7/2025		10/9/2025
NORTH CAROLINA PROFESSIONAL SEAL 52550		NORTH CAROLINA PROFESSIONAL SEAL 033860
William A. Pope		ES20A6E6F7034F6
DOCUMENT NOT CONSIDERED FINAL		UNLESS ALL SIGNATURES COMPLETED



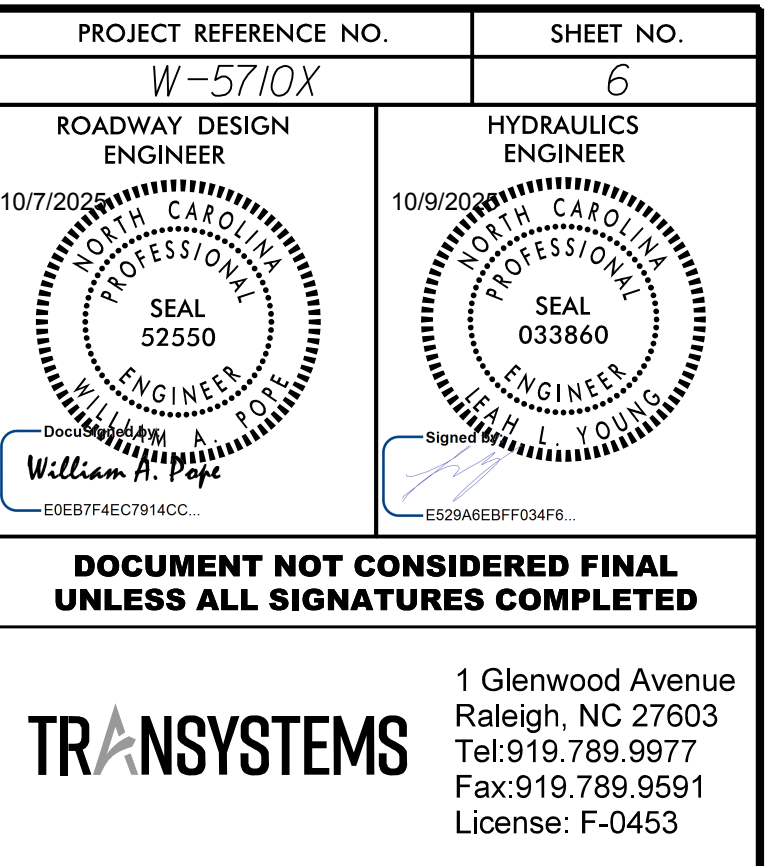
SEE SHEET 6 FOR -L1- PROFILE
SEE SHEET 7 FOR -Y1- PROFILE
SEE SHEET 7 FOR -Y2- PROFILE
SEE SHEET 8 FOR -RND1- PROFILE

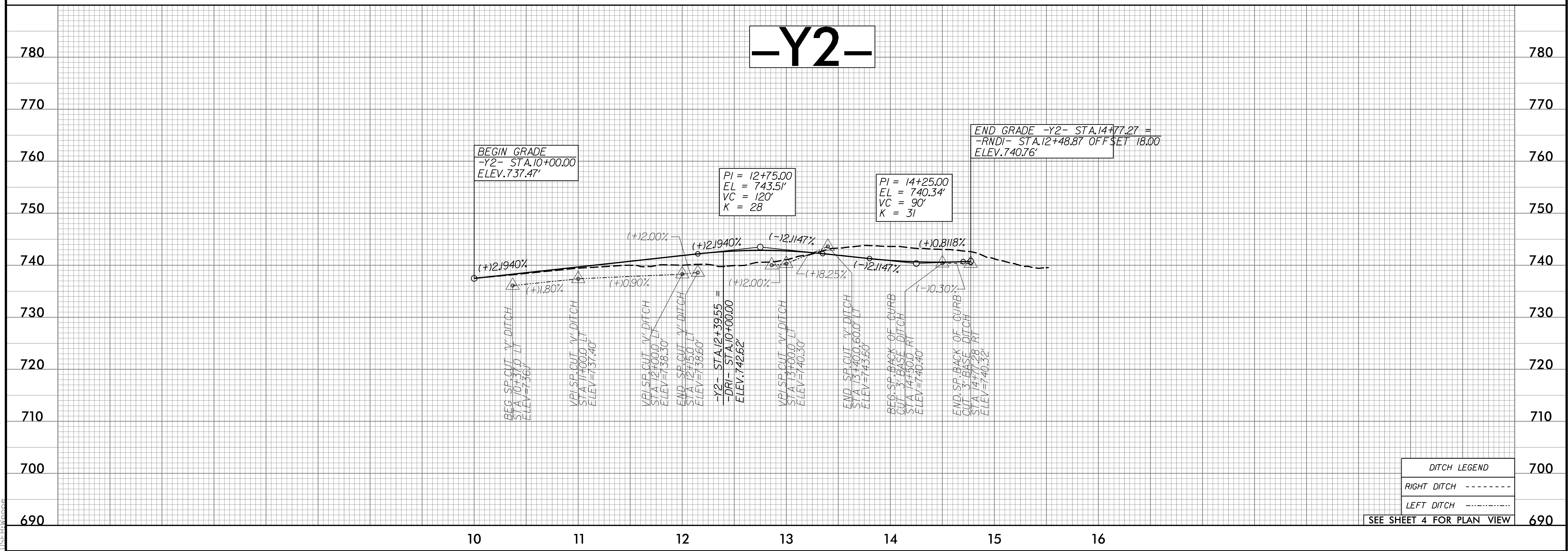
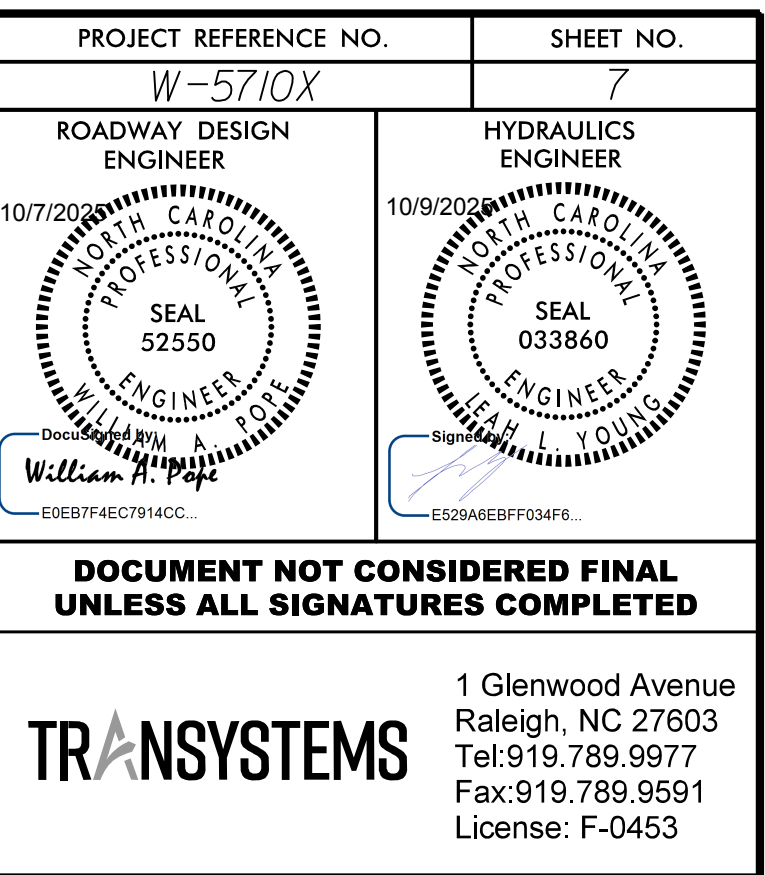


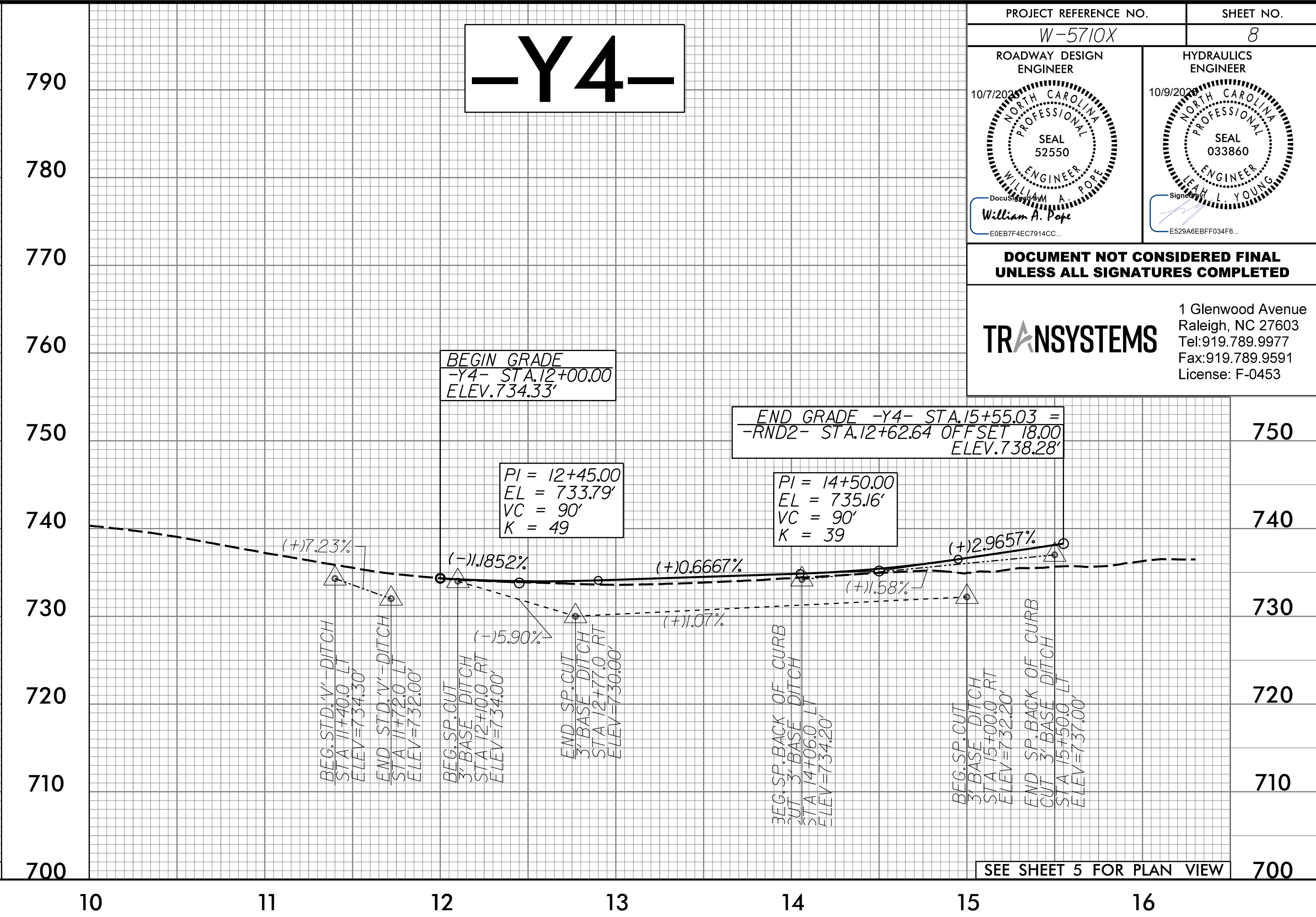
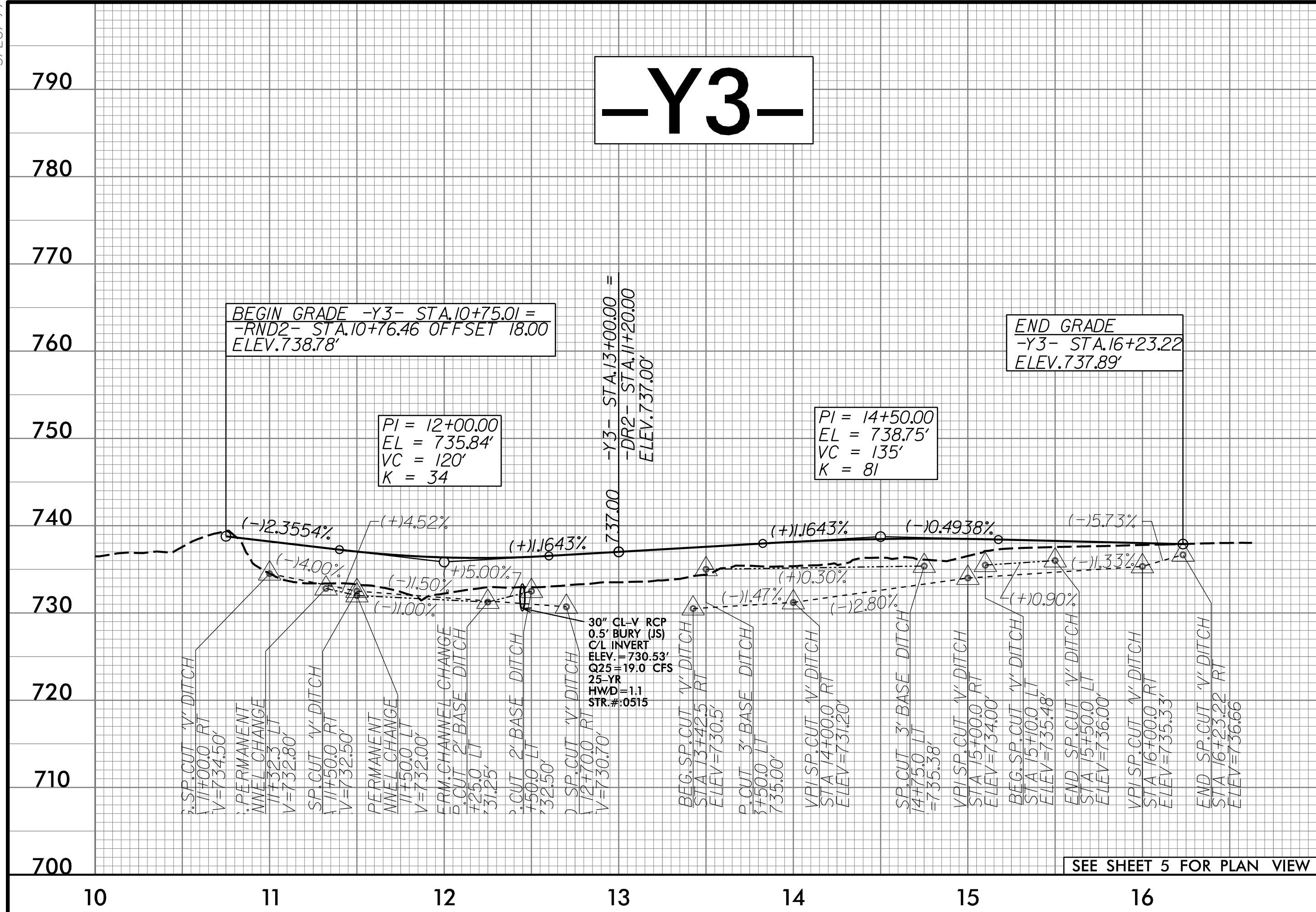


SEE SHEET 6 FOR -L1- PROFILE
SEE SHEET 6 FOR -L2- PROFILE
SEE SHEET 8 FOR -Y3- PROFILE
SEE SHEET 8 FOR -Y4- PROFILE
SEE SHEET 8 FOR -RND2- PROFILE

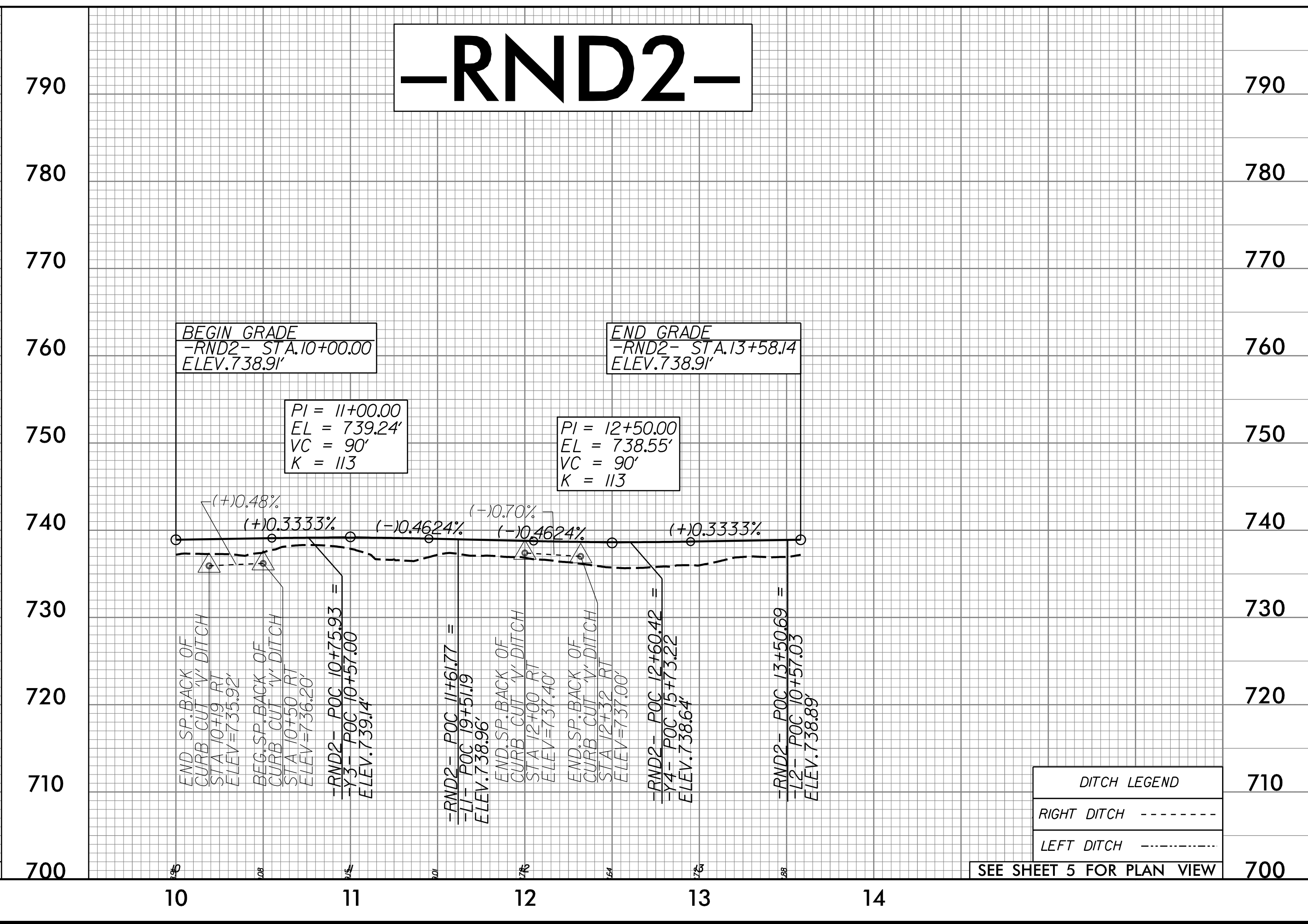
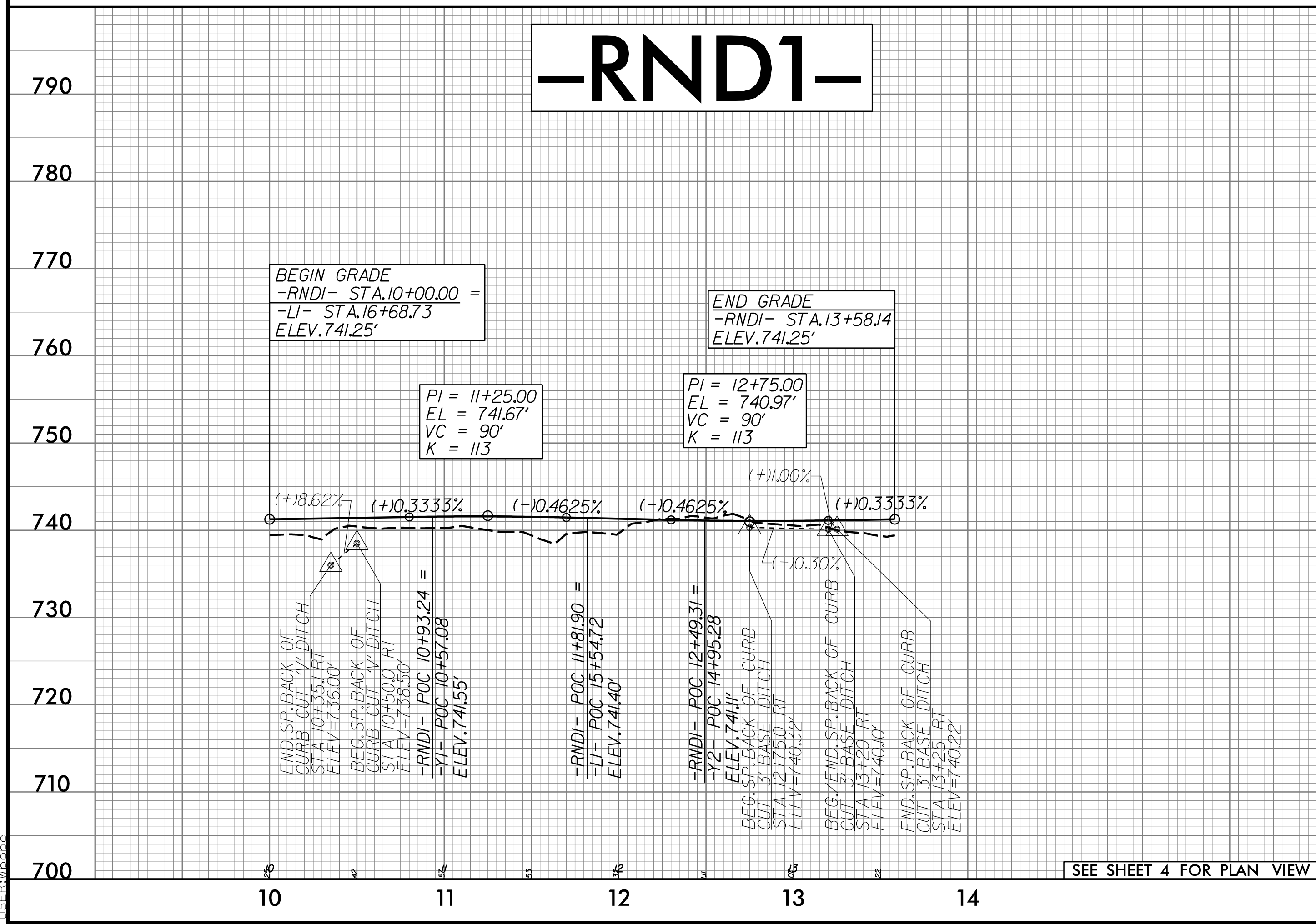
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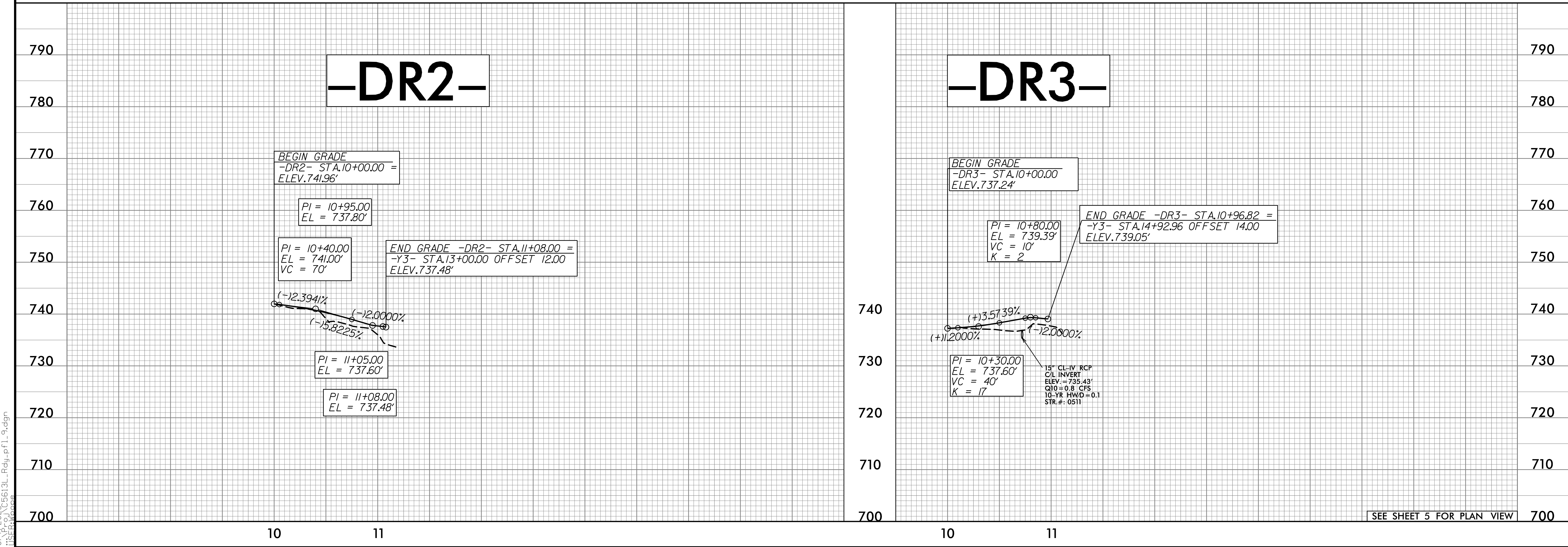
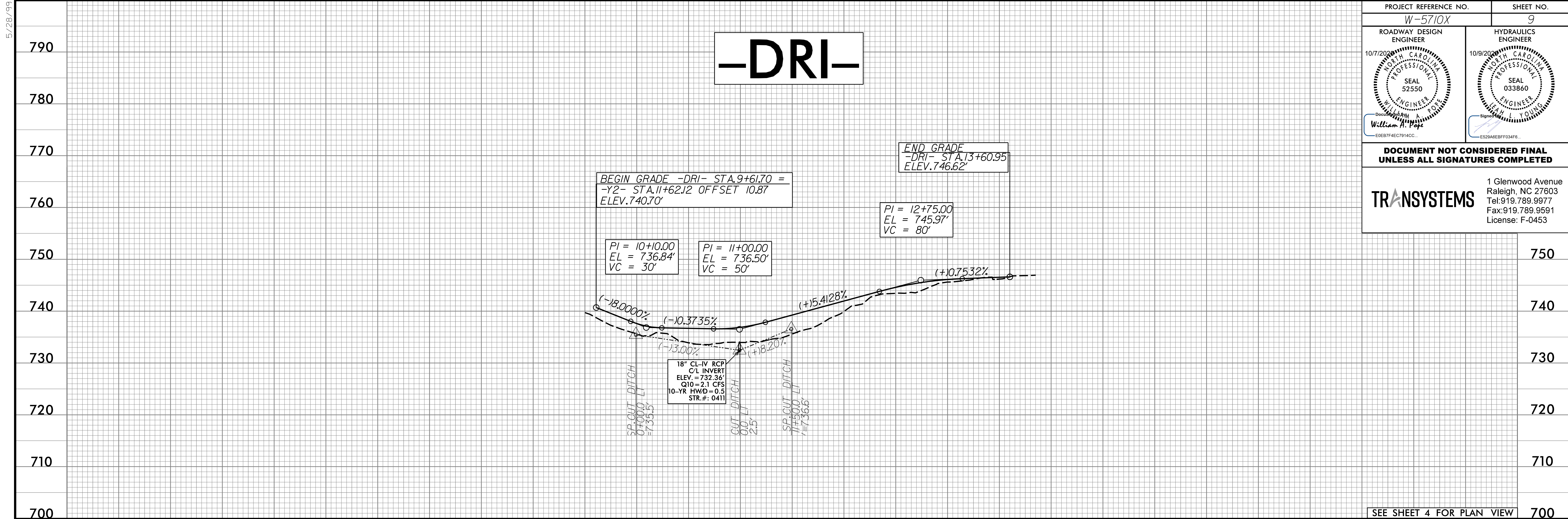


PROJECT REFERENCE NO. W-5710X		SHEET NO. 8
ROADWAY DESIGN ENGINEER 10/7/2025 NORTH CAROLINA PROFESSIONAL SEAL 52550 William H. Pope		HYDRAULICS ENGINEER 10/9/2025 NORTH CAROLINA PROFESSIONAL SEAL 033860 William L. Young
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED		
TRANSYSTEMS		1 Glenwood Avenue Raleigh, NC 27603 Tel: 919.789.9977 Fax: 919.789.9591 License: F-0453



5/28/99

8/7/2025
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PROJECT REFERENCE NO. W-5710X		SHEET NO. 9
ROADWAY DESIGN ENGINEER 10/7/2025 NORTH CAROLINA PROFESSIONAL SEAL 52550 WILLIAM H. HOPE Dec 10/14/2025 E018174EC7914DC	HYDRAULICS ENGINEER 10/9/2025 NORTH CAROLINA PROFESSIONAL SEAL 033860 WILLIAM L. YOUNG Signed 10/14/2025 E520A6EBFF03AF6	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED		
TRANSYSTEMS		1 Glenwood Avenue Raleigh, NC 27603 Tel: 919.789.9977 Fax: 919.789.9951 License: F-0453