

09/26/24

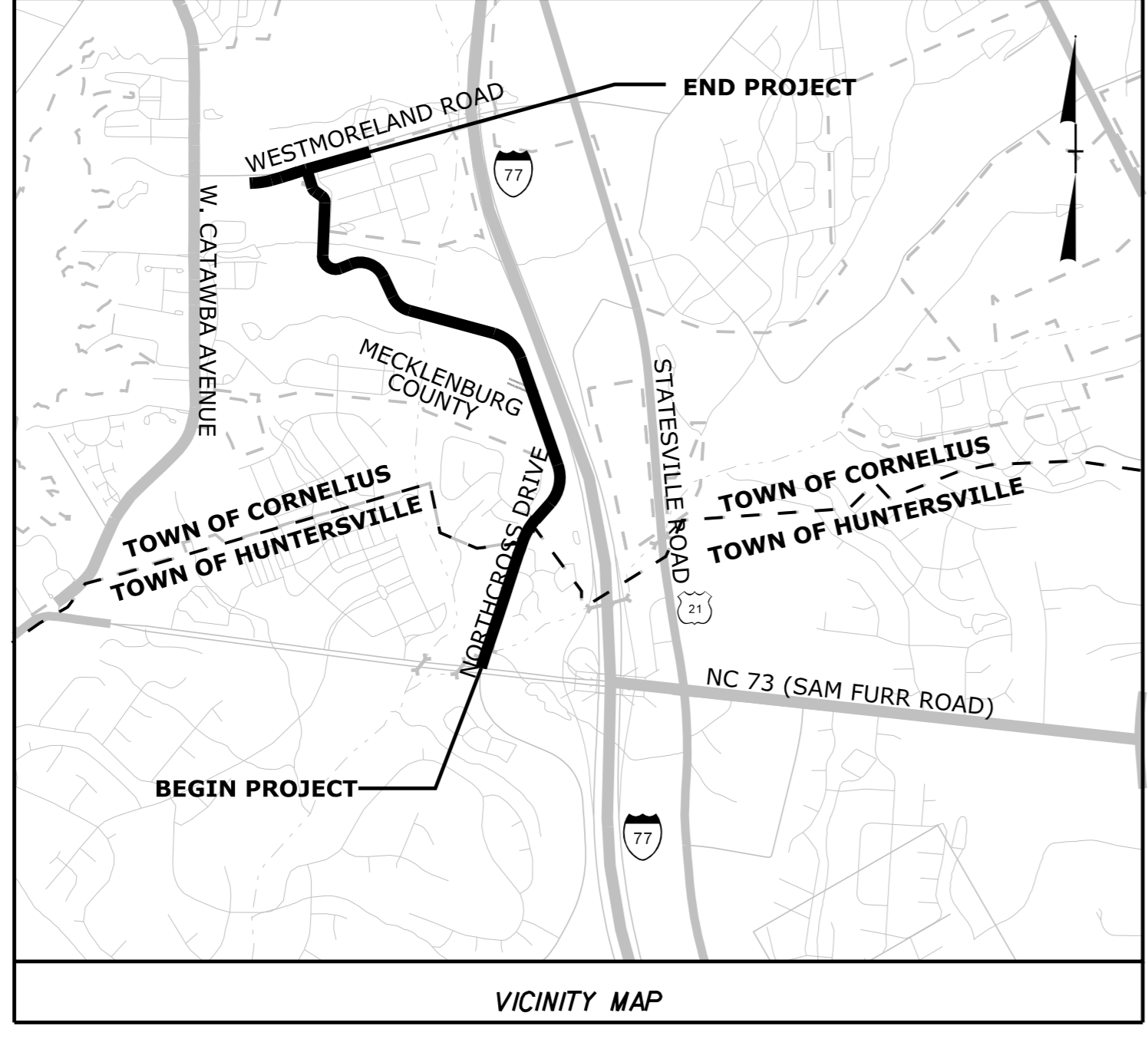
K:\CHL\_PR\01036359 - U-5108 (Northcross)\DS\Roadway\Proj\U-5108\_rdy\_1shdgm

4/12/2024

**TIP PROJECT: U-5108**

**CONTRACT: C204501**

SEE SHEET 1A FOR INDEX OF SHEETS  
SEE SHEET 1B FOR CONVENTIONAL PLAN SHEET SYMBOLS



VICINITY MAP

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

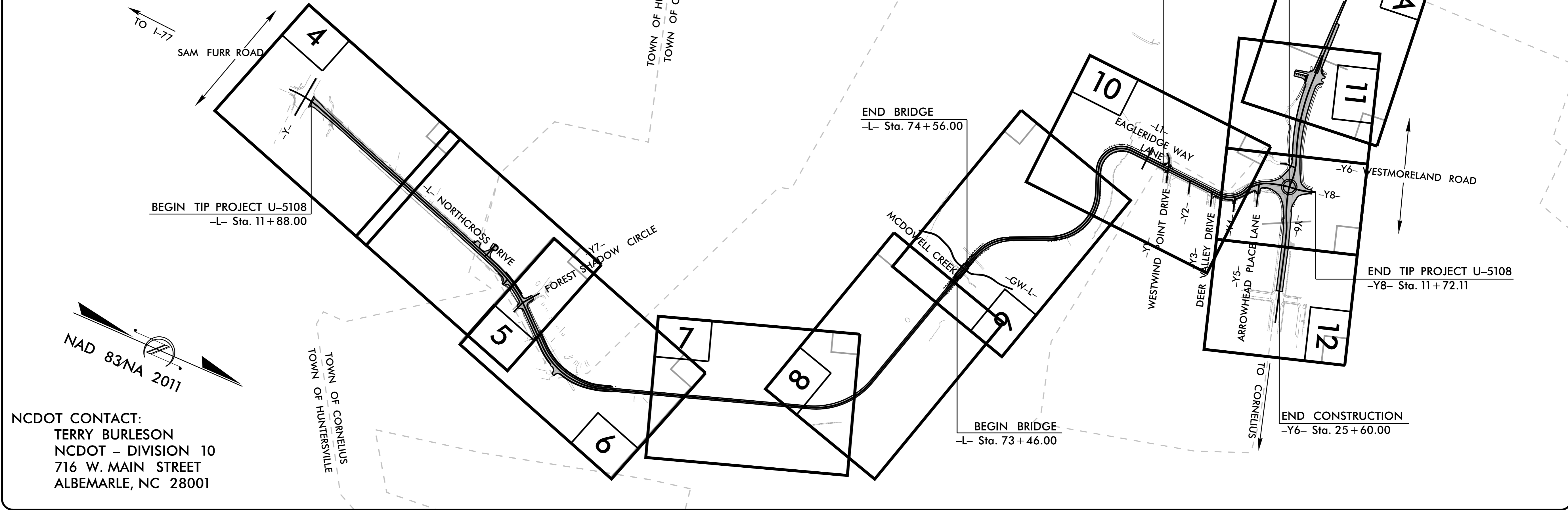
**MECKLENBURG COUNTY**

**LOCATION:** *NORTHCROSS DRIVE EXTENSION PROJECT - SR 2316 (NORTHCROSS DRIVE) FROM JUST NORTH OF NC 73 (SAM FURR ROAD) IN HUNTERSVILLE TO SR 2147 (WESTMORELAND ROAD) IN CORNELIUS*

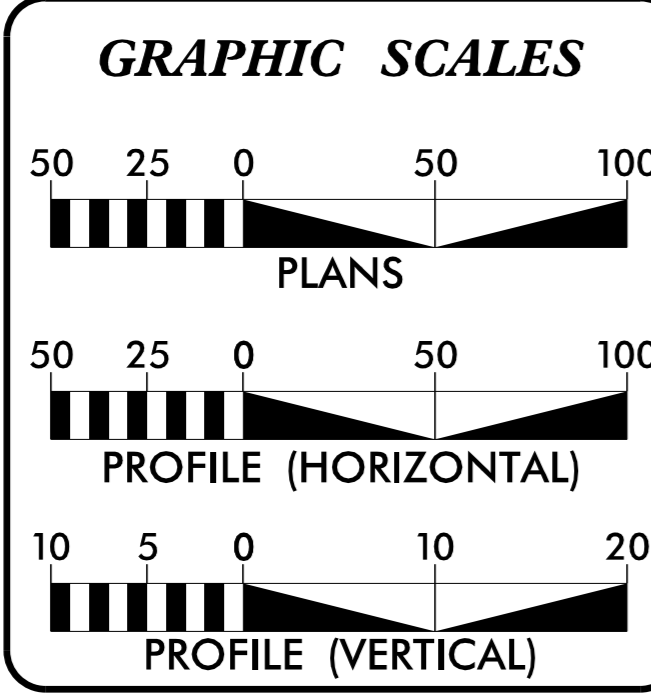
**TYPE OF WORK:** *GRADING, DRAINAGE, PAVING, AND STRUCTURE*

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-5108	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
42370.1.1		PE	
42370.2.2	STBGDA-1001(093)	RW & UTIL.	
42370.3.3	STBGDA-1001(093)	CONST.	

DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED



NCDOT CONTACT:  
TERRY BURLESON  
NCDOT - DIVISION 10  
716 W. MAIN STREET  
ALBEMARLE, NC 28001



**DESIGN DATA**

ADT 2024	=	9900 VPD
ADT 2044	=	16800 VPD
K	=	10%
D	=	70%
T	=	4%*
V	=	25 - 40 MPH

FUNCTIONAL CLASSIFICATION: URBAN MAJOR COLLECTOR

\* 1% TTST 3% DUAL REGIONAL TIER

**PROJECT LENGTH**

LENGTH ROADWAY TIP PROJECT U-5108	=	1.769 MILES
LENGTH STRUCTURE TIP PROJECT U-5108	=	0.021 MILES
TOTAL LENGTH TIP PROJECT U-5108	=	1.790 MILES

PLANS PREPARED FOR THE NCDOT BY:

**Kimley»Horn**  
200 South Tryon, Suite 300  
Charlotte, North Carolina 28202  
NC License #F-0102

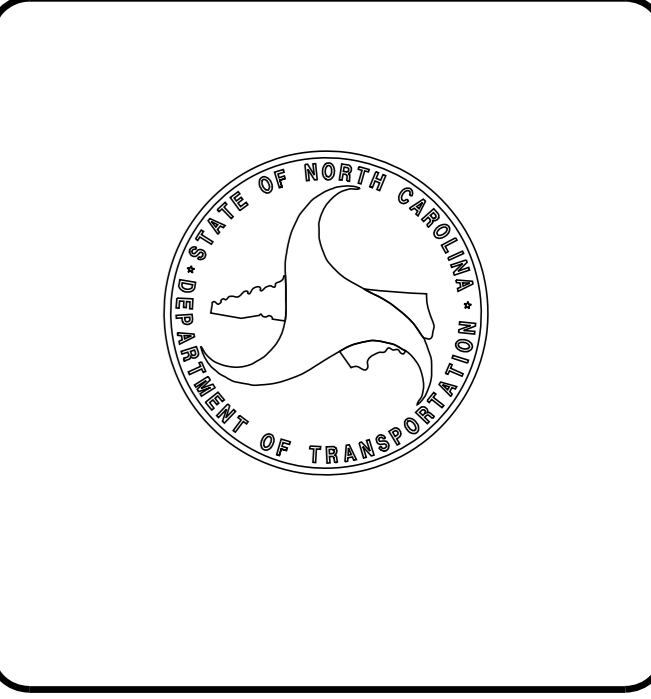
2024 STANDARD SPECIFICATIONS	
RIGHT OF WAY DATE:	TONY SPACEK, P.E. PROJECT ENGINEER
	JUNE 19, 2019
LETTING DATE:	SYDNEY ROSENBLUM, P.E. PROJECT DESIGN ENGINEER
	JUNE 18, 2024

**HYDRAULICS ENGINEER**

Professional Engineer Seal for Jason Lawrence, License #032615, dated 4/12/2024.

**ROADWAY DESIGN ENGINEER**

Professional Engineer Seal for Tony Spacek, License #034207, dated 4/12/2024.



# STATE OF NORTH CAROLINA, DIVISION OF HIGHWAYS

PROJECT REFERENCE NO.	SHEET NO.
U-5108	1A

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 111.

SUPERELEVATION:

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

SHOULDER CONSTRUCTION:

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

SIDE ROADS:

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

SUBSURFACE DRAINS:

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

DRIVEWAYS:

DRIVEWAYS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STD. 848.03 AT LOCATIONS SHOWN ON PLANS OR AS DIRECTED BY THE ENGINEER.

STREET TURNOUT:

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

GUARDRAIL:

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

UTILITIES:

UTILITY OWNERS ON THIS PROJECT ARE ENERGY UNITED, PIEDMONT NATURAL GAS, CHARTER/SPECTRUM, AT&T, SEGRA, TDS TELECOM, VERIZON

RIGHT-OF-WAY MARKERS:

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

CURB RAMPS

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

EFF. 01-16-2024  
REV.

2024 ROADWAY ENGLISH STANDARD DRAWINGS

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

STD.NO.	TITLE
DIVISION 2 - EARTHWORK	
200.03	Method of Clearing - Method 111
225.02	Guide for Grading Subgrade - Secondary and Local
225.04	Method of Obtaining Superelevation - Two Lane Pavement
225.05	Method of Obtaining Superelevation - Divided Highways
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 4 - MAJOR STRUCTURES	
423.01	Bridge Approach Fills - Type 1 Approach Fill for Bridge Abutment
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	
815.02	Subsurface Drain
838.01	Concrete Endwall for Single and Double Pipe Culverts - 15" thru 48" 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
840.22	Frames and Wide Slot Sag Grates
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
840.31	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
840.52	Precast Manhole - 4', 5' and 6' Diameter 12" thru 48" Pipe
840.54	Manhole Frame and Cover
840.66	Drainage Structure Steps
840.71	Concrete and Brick Pipe Plug
846.01	Concrete Curb, Gutter and Curb & Gutter
848.01	Concrete Sidewalk
848.03	Driveway Turnout - Drop Curb Type
848.04	Street Turnout
848.06	Curb Ramp
848.07	Concrete Sidepath / Shared Use Path / Greenway Construction
850.01	Concrete Paved Ditches
852.01	Concrete Islands
852.02	Concrete Mountable Median - for Use with Rigid or Flexible Pavement
852.05	Median Curb for Catch Basin - for Use with 1'-6" Curb and Gutter
852.06	Method for Placement of Drop Inlets in Concrete Islands
852.10	Median Construction - with Curb and Gutter
857.01	Precast Reinforced Concrete Barrier - 41" Single Faced
862.01	Guardrail Placement
862.02	Guardrail Installation
862.03	Structure Anchor Units
866.02	Woven Wire Fence - with Wood Post
876.01	Rip Rap in Channels and Ditches
876.02	Guide for Rip Rap at Pipe Outlets
876.03	Drainage Ditches with Class 'A' Rip Rap
876.04	Drainage Ditches with Class 'B' Rip Rap

U-5108  
MECKLENBURG COUNTY

SHEET NUMBER	SHEET	INDEX OF SHEETS
I	TITLE SHEET	
IA	INDEX OF SHEETS, GENERAL NOTES, LIST OF ROADWAY STANDARD DRAWINGS	
IB	CONVENTIONAL SYMBOLS SHEET	
2A-1 THRU 2A-11	PAVEMENT SCHEDULE, TYPICAL SECTIONS, AND MISCELLANEOUS DETAILS	
2B-1	ROUNDBOUT GEOMETRY SHEET	
2B-2	BIKE RAMP DEPARTURE DETAIL	
2B-3	MONOLITHIC CONCRETE ISLAND WITH RECESSED PEDESTRIAN REFUGE DETAIL	
2C-1	DETAIL OF PIPE HANDRAIL MOUNTED ON A WALL	
2C-2	DETAIL TO CONVERT DROP INLET OR JB TO CATCH BASIN	
2D-1	DITCH DETAILS	
2N-1	MSE RETAINING WALL, PLAN, AND PROFILE	
3B-1 THRU 3B-2	SUMMARY OF EARTHWORK	
3B-3	SUMMARIES OF GUARDRAIL, ASPHALT REMOVAL, CONCRETE REMOVAL, SHOULDER BERM GUTTER, WOOD POST FENCE, AND CHAIN LINK FENCE	
3D-1 THRU 3D-4	SUMMARY OF DRAINAGE QUANTITIES	
3G-1	GEOTECHNICAL SUMMARIES	
3P-1	PARCEL INDEX SHEET	
4 THRU 12	PLAN SHEETS	
13 THRU 22	PROFILE SHEETS	
RW-01 THRU RW-12	RIGHT OF WAY PLANS	
TMP-1 THRU TMP-26	TRANSPORTATION MANGEMENT PLANS	
PMP-1 THRU PMP-10	PAVEMENT MARKING PLANS	
EC-1 THRU EC-21	EROSION CONTROL PLANS	
SIGN-1 THRU SIGN-18	SIGNING PLANS	
UC-1 THRU UC-17	UTILITY CONSTRUCTION PLANS	
UO-1 THRU UO-10	UTILITY BY OTHERS PLANS	
X-1	CROSS-SECTION INDEX	
X-1A THRU X-1C	CROSS-SECTION SUMMARY SHEETS	
X-1 THRU X-79	CROSS-SECTIONS	
W-1 THRU W-2	RETAINING WALL DETAILS	
S-1 THRU S-33	STRUCTURE PLANS	
SN	STANDARD NOTES	

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4/12/2024

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

Note: Not to Scale

## BOUNDARIES AND PROPERTY:

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

## BUILDINGS AND OTHER CULTURE:

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

## HYDROLOGY:

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

## RAILROADS:

Standard Gauge	
RR Signal Milepost	
Switch	
RR Abandoned	
RR Dismantled	

## RIGHT OF WAY & PROJECT CONTROL:

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

## ROADS AND RELATED FEATURES:

Existing Edge of Pavement	
Existing Curb	
Proposed Slope Stakes Cut	
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	
Hedge	

Woods Line	
Orchard	
Vineyard	

## EXISTING STRUCTURES:

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

## UTILITIES:

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

### POWER:

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

### TELEPHONE:

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

## WATER:

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

## TV:

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

## GAS:

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

## SANITARY SEWER:

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

## MISCELLANEOUS:

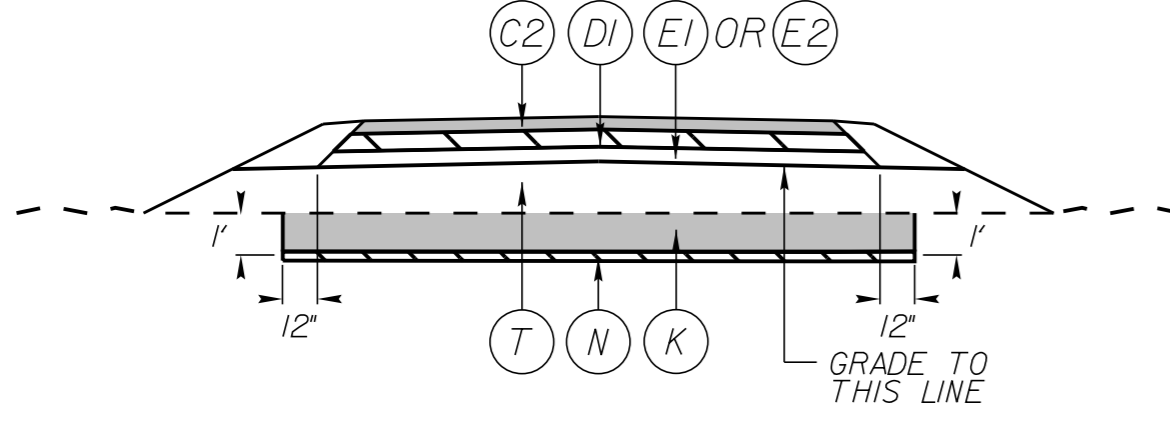
Utility Pole	
Utility Pole with Base	
Utility Located Object	
Utility Traffic Signal Box	
Utility Unknown U/G Line (SUE - LOS B)*	
U/G Tank; Water, Gas, Oil	
Underground Storage Tank, Approx. Loc.	
A/G Tank; Water, Gas, Oil	
Geoenvironmental Boring	
Abandoned According to Utility Records	
End of Information	

09/10/2021  
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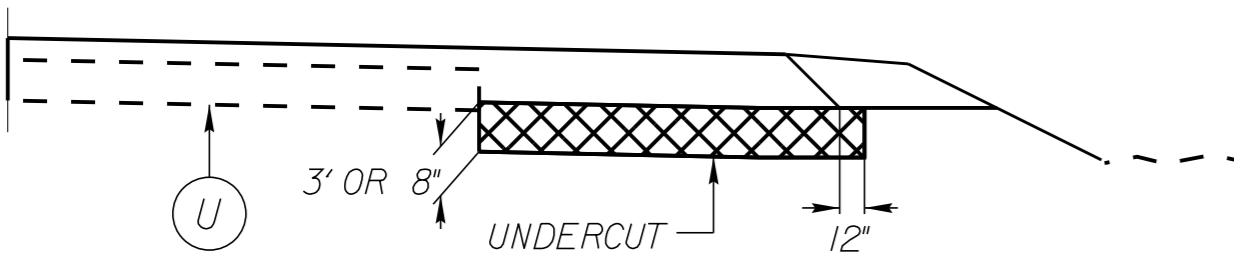
**NOTES:**  
 1. PAVEMENT EDGE SLOPES ARE 1:1 UNLESS OTHERWISE NOTED.  
 2. SEE PLANS FOR TAPER LOCATIONS.  
 3. SEE PLANS FOR CURB AND GUTTER LOCATIONS.  
 4. USE WEDGING AS NECESSARY (SEE DETAIL ON SHEET 2A-2).  
 5. REMOVE EXISTING PAVEMENT -L- STA. 27+65.00 TO 34+50.00.

**USE ALONG:**  
 -L- STA 27+75 TO 36+25      -RABA- STA 10+25 TO 11+35  
 -L- STA 47+25 TO 48+25\*      -RABB- STA 10+00 TO 11+10  
 -LI- STA 10+00 TO 10+25      -RABC- STA 10+00 TO 10+85  
 -LI- STA 10+75 TO 18+50      -RABD- STA 10+00 TO 10+85  
 -Y6- STA 13+75 TO 16+00



\*BETWEEN 46+50 TO 48+00 UTILIZE AGGREGATE SUBGRADE STABILIZATION IN LIEU OF FULL-DEPTH UNDERCUT DUE TO TRANSCO GAS PIPELINES.

**SHALLOW UNDERCUT**

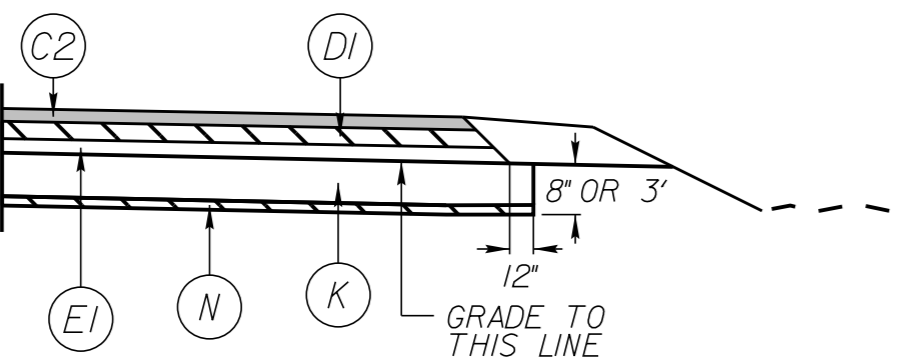


USE DETAIL FOR UNDERCUT EXCAVATION AS FOLLOWS:

**USE 3':**  
 -L- STA 38+75 TO 43+25  
 -L- STA 48+00 TO 54+25  
 -L- STA 55+75 TO 71+75  
 -L- STA 76+25 TO 82+25  
 -L- STA 93+75 TO 94+55  
 -RABA- STA 10+00 TO 10+25  
 -RABB- STA 11+10 TO 11+47.75  
 -RABC- STA 10+85 TO 12+41.61  
 -RABD- STA 10+85 TO 12+10  
 -Y6- STA 24+75 TO 25+25

**USE 8':**  
 -L- STA 72+50 TO 76+25  
 -L- STA 82+00 TO 86+50  
 -L- STA 90+50 TO 93+50

**UNDERCUT EXCAVATION**

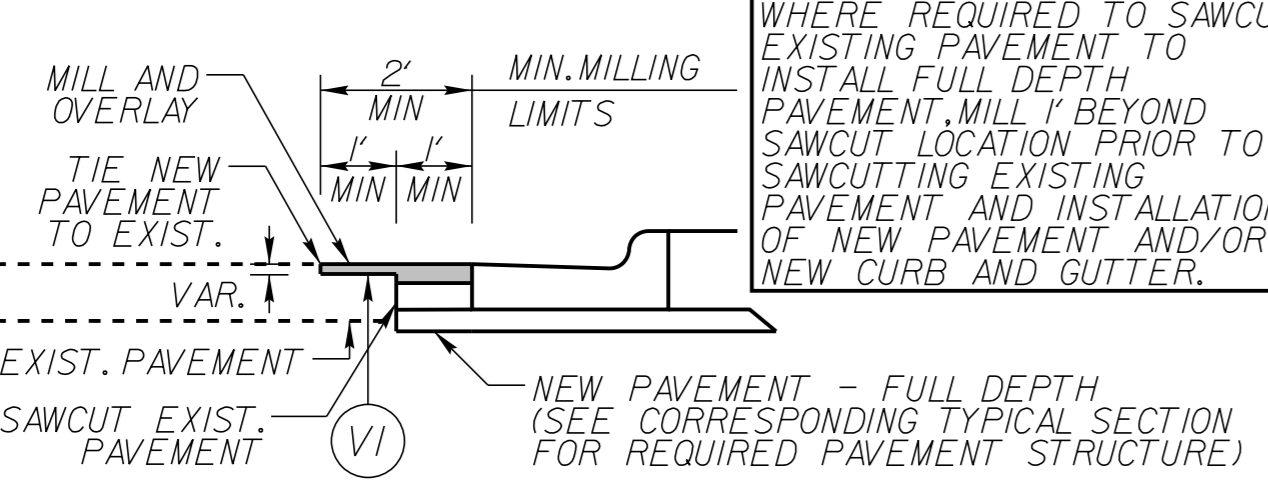


USE DETAIL FOR SUBGRADE STABILIZATION WITH PAVED SHOULDER SECTION AS FOLLOWS:

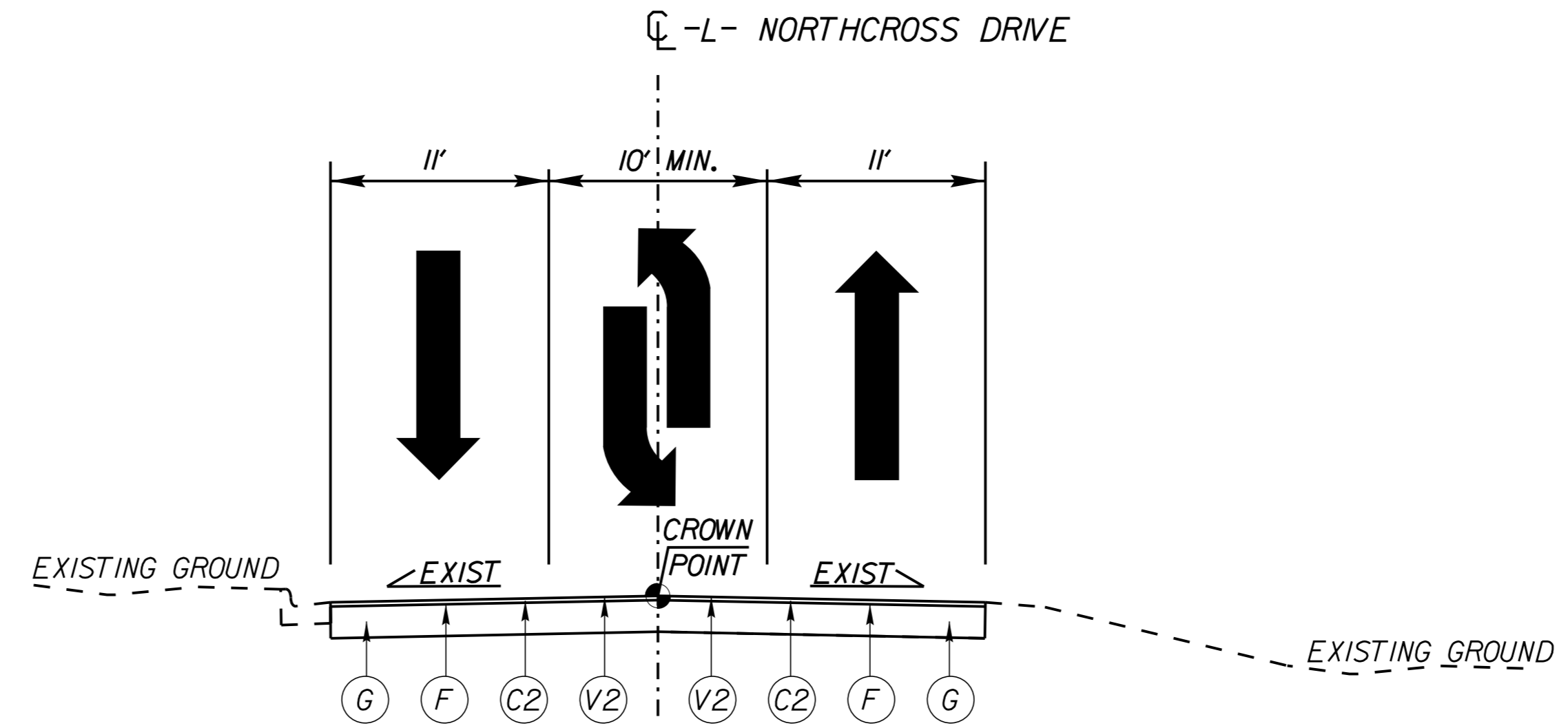
**USE 3':**  
 -L- STA 38+75 TO 43+25  
 -L- STA 48+00 TO 54+25  
 -L- STA 55+75 TO 71+75  
 -L- STA 76+25 TO 82+25  
 -L- STA 93+75 TO 94+55  
 -RABA- STA 10+00 TO 10+25  
 -RABB- STA 11+10 TO 11+47.75  
 -RABC- STA 10+85 TO 12+41.61  
 -RABD- STA 10+85 TO 12+10  
 -Y6- STA 24+75 TO 25+25

**USE 8':**  
 -L- STA 72+50 TO 76+25  
 -L- STA 82+00 TO 86+50  
 -L- STA 90+50 TO 93+50

**SUBGRADE STABILIZATION**

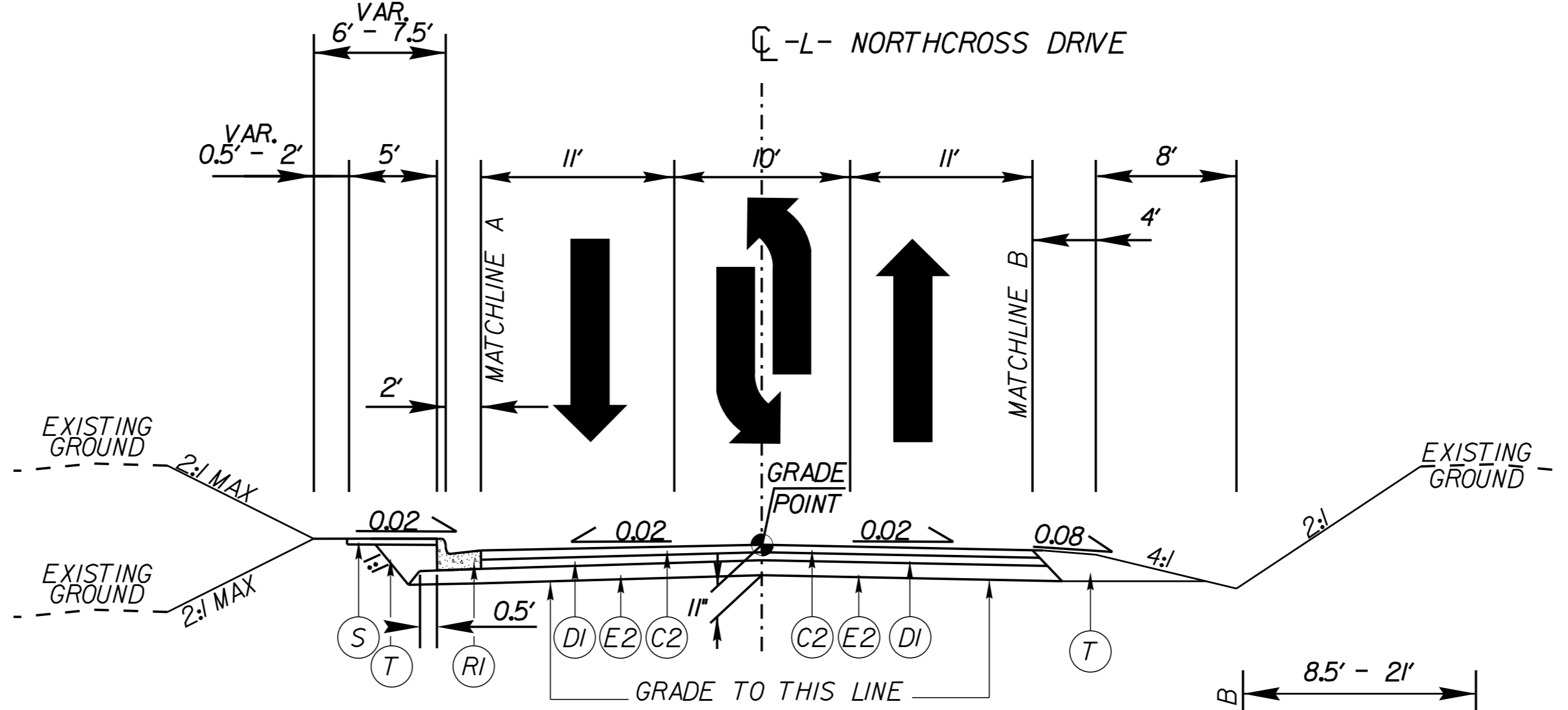


**MILLING AND SAWCUT DIMENSIONS**



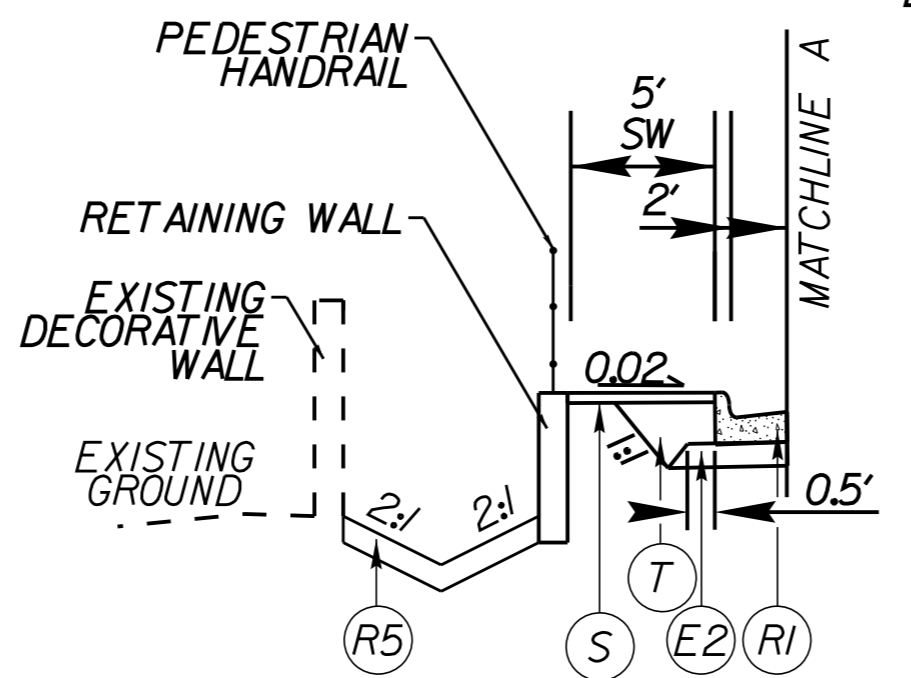
**TYPICAL SECTION NO. 1**

-L- STA 11+88.00 TO 27+65.00



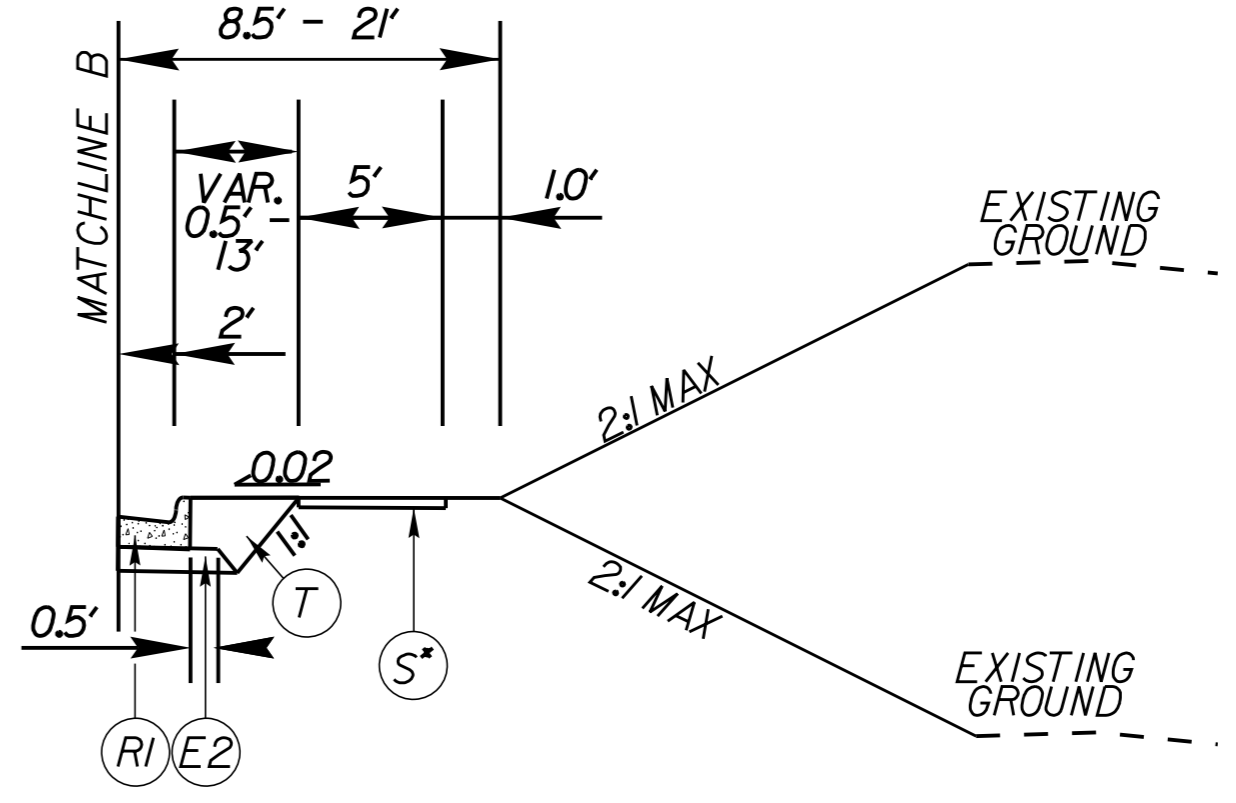
**TYPICAL SECTION NO. 2**

-L- STA 27+65.00 TO 33+58.57  
 \*SEE NOTE 5



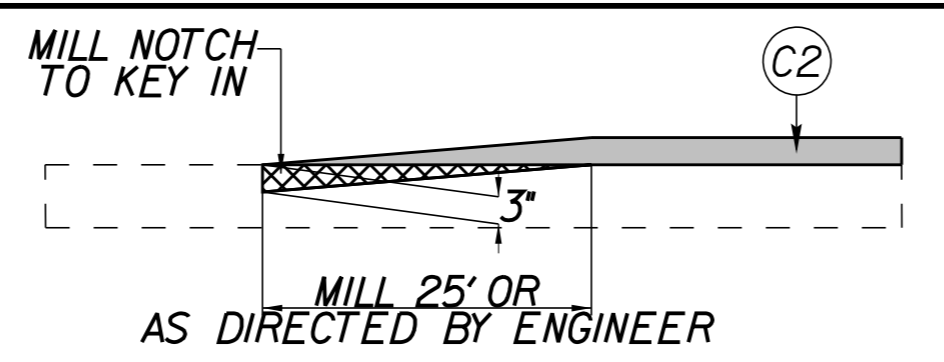
**TYPICAL SECTION NO. 2A**

-L- STA 31+00.00 TO 33+03.00

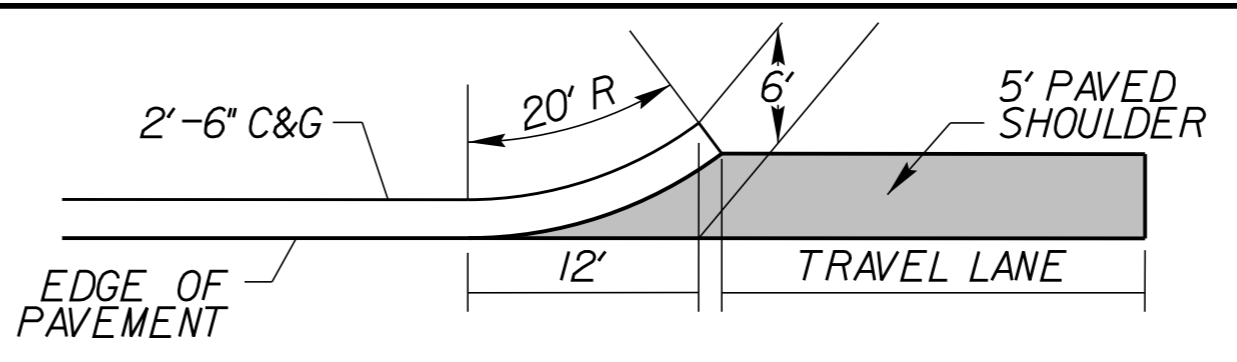


**TYPICAL SECTION NO. 2B**

\* -L- STA 30+50.73 TO 33+58.57  
 \* SW -L- STA 30+72.62 TO 31+38.98  
 \* SW -L- STA 31+78.45 TO 33+58.57



**INCIDENTAL MILLING DETAIL**



**CURB & GUTTER FLARE**

**Kimley Horn**  
 NC LICENSE #F-0102  
 200 SOUTH TRYON, SUITE 200  
 CHARLOTTE, N.C. 28202

PROJECT REFERENCE NO. U-5108	SHEET NO. 2A-1
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER
<b>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</b>	

PAVEMENT SCHEDULE	
A1	12" TRUCK MOUNTABLE CONCRETE ISLAND (CLASS AA)
A2	6" CONCRETE DRIVEWAY
C1	PROP. APPROX. 1.5" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YARD
C2	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YARD IN EACH OF TWO LAYERS
C3	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YARD PER 1" DEPTH TO BE PLACED IN LAYERS NOT TO EXCEED 1.5" IN DEPTH
D1	PROP. APPROX. 4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I9.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YARD
D2	PROP. VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I9.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YARD PER 1" DEPTH TO BE PLACED IN LAYERS NOT LESS THAN 2 1/2" OR GREATER THAN 4" IN DEPTH
E1	PROP. APPROX. 3" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 342 LBS. PER SQ. YARD
E2	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YARD
E3	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 GREATER THAN 5.5" IN DEPTH OR LESS THAN 3" IN DEPTH
E4	PROP. APPROX. 5.5" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 627 LBS. PER SQ. YARD
F	ASPHALT SURFACE TREATMENT, DOUBLE SEAL
G	PROP. 12" SOIL CEMENT BASE (FULL DEPTH RECLAMATION)
J1	PROP. 6" AGGREGATE BASE COURSE
J2	PROP. 8" AGGREGATE BASE COURSE
K	CLASS IV SUBGRADE STABILIZATION
N	GEOTEXTILE FOR SUBGRADE STABILIZATION
R1	2'-6" CONCRETE CURB AND GUTTER
R2	1'-6" CONCRETE CURB AND GUTTER
R3	PROP. SHOULDER BERM GUTTER
R4	5' MONOLITHIC CONCRETE ISLAND (SURFACE MOUNTED)
R5	4" CONCRETE PAVED DITCH
R6	8" x 18" CONCRETE CURB
R7	SINGLE FACED CONCRETE BARRIER
S	4" CONCRETE SIDEWALK / SHARED USE PATH
T	EARTH MATERIAL
U	EXISTING PAVEMENT
V1	MILLING (1.5')
V2	MILLING (1.5')
W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE WEDGING DETAIL SHEET 2A-2)

K:\CHL\_PRA\01036359 - U-5108 (Northcross)\DS\Roadway\Proj\U-5108\_rdy.txd

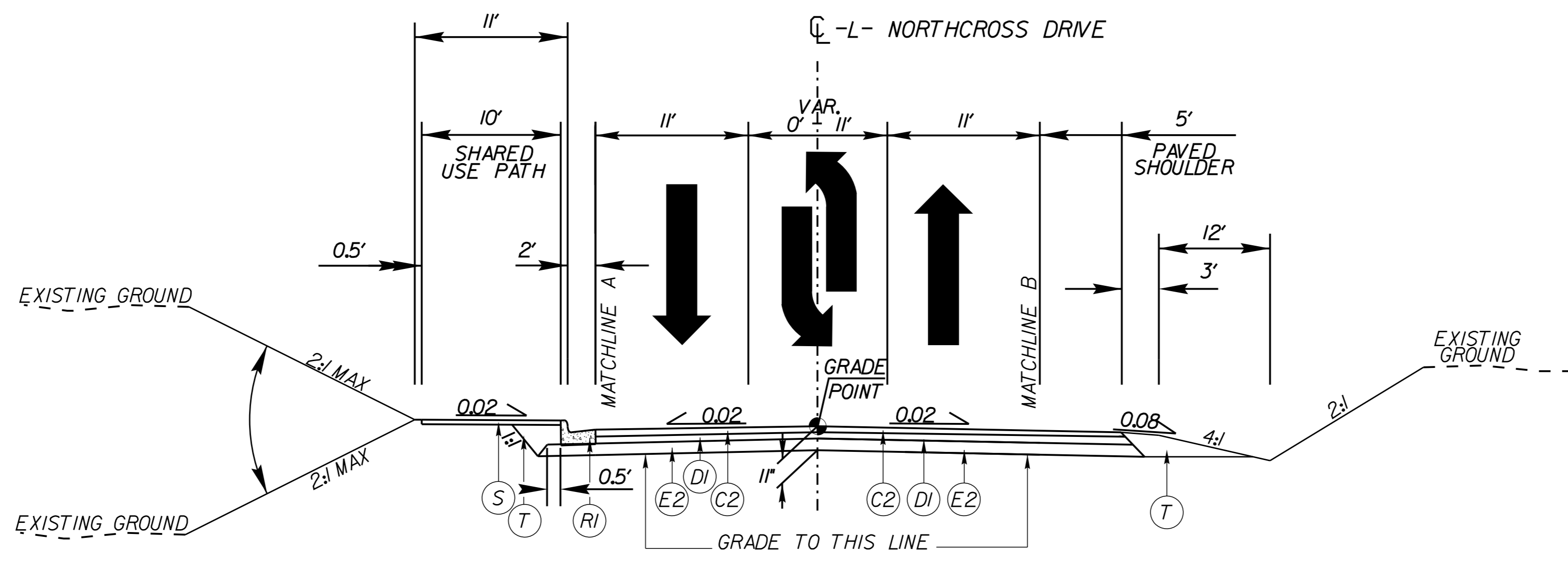
5/3/2024

5/14/24

- NOTES:  
 1. PAVEMENT EDGE SLOPES ARE 1:1 UNLESS OTHERWISE NOTED.  
 2. SEE PLANS FOR TAPER LOCATIONS.  
 3. SEE PLANS FOR CURB AND GUTTER LOCATIONS.  
 4. USE WEDGING AS NECESSARY (SEE DETAIL ON SHEET 2A-1).  
 5. REMOVE EXISTING PAVEMENT -L- STA. 27+65.00 TO 34+50.00.

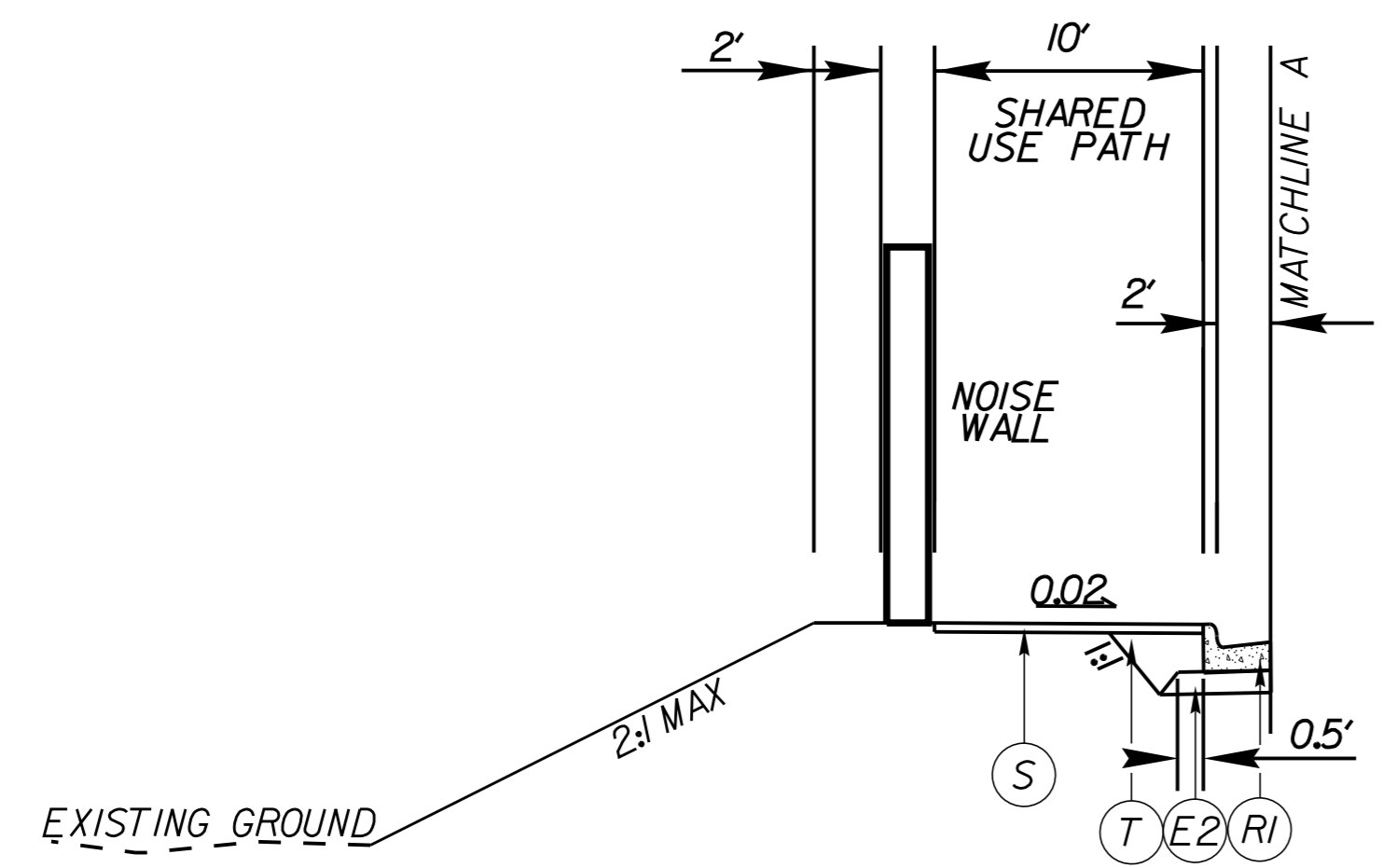
**Kimley Horn**  
 NC LICENSE #F-0102  
 200 SOUTH TRYON, SUITE 200  
 CHARLOTTE, N.C. 28202

PROJECT REFERENCE NO. U-5108	SHEET NO. 2A-2
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER
<b>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</b>	

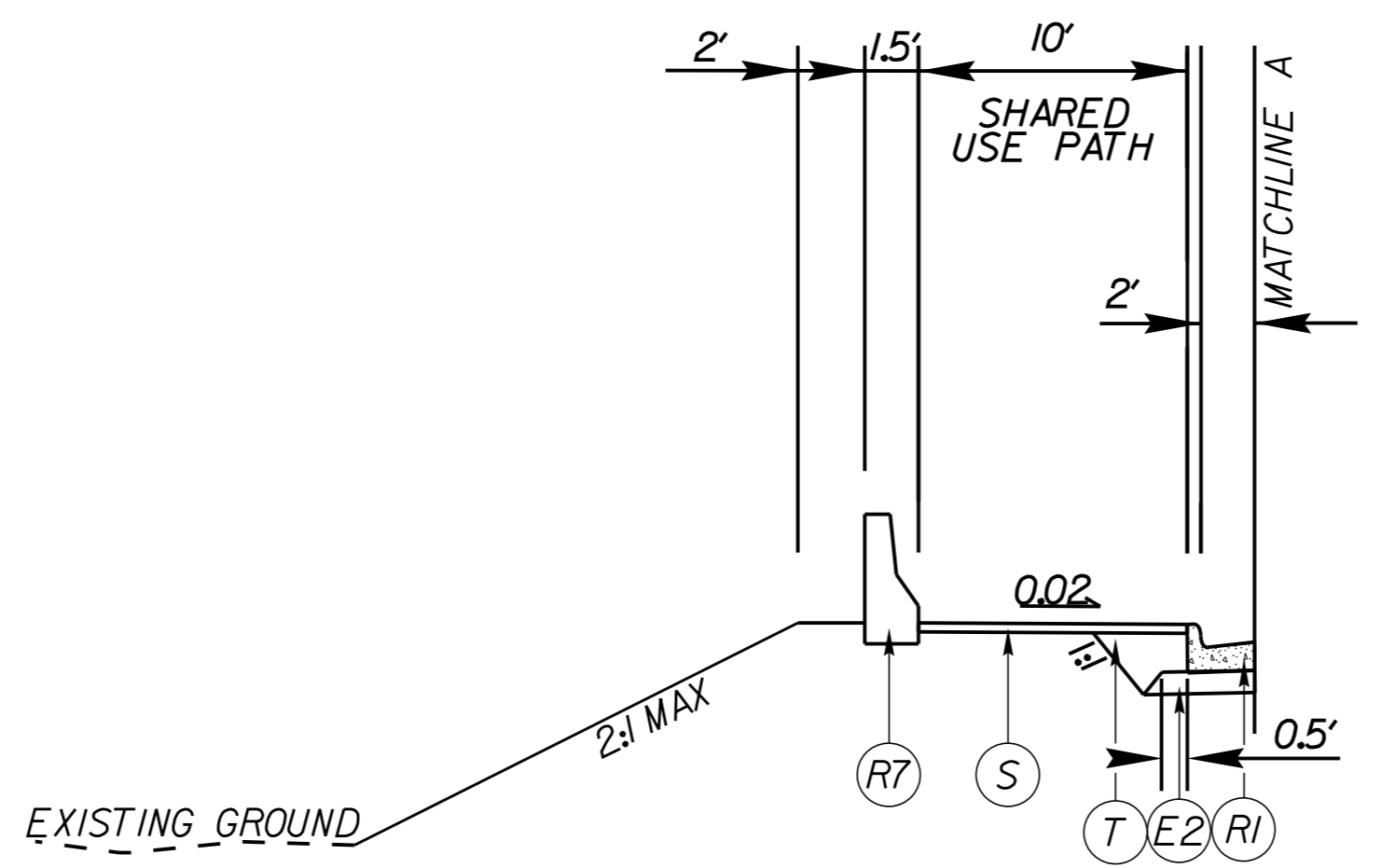


**TYPICAL SECTION NO. 3**  
 -L- STA 33+58.57 TO 43+60.00  
 \*SEE NOTE 5  
 \*SEE SUBGRADE STABILIZATION DETAIL SHEET 2A-1

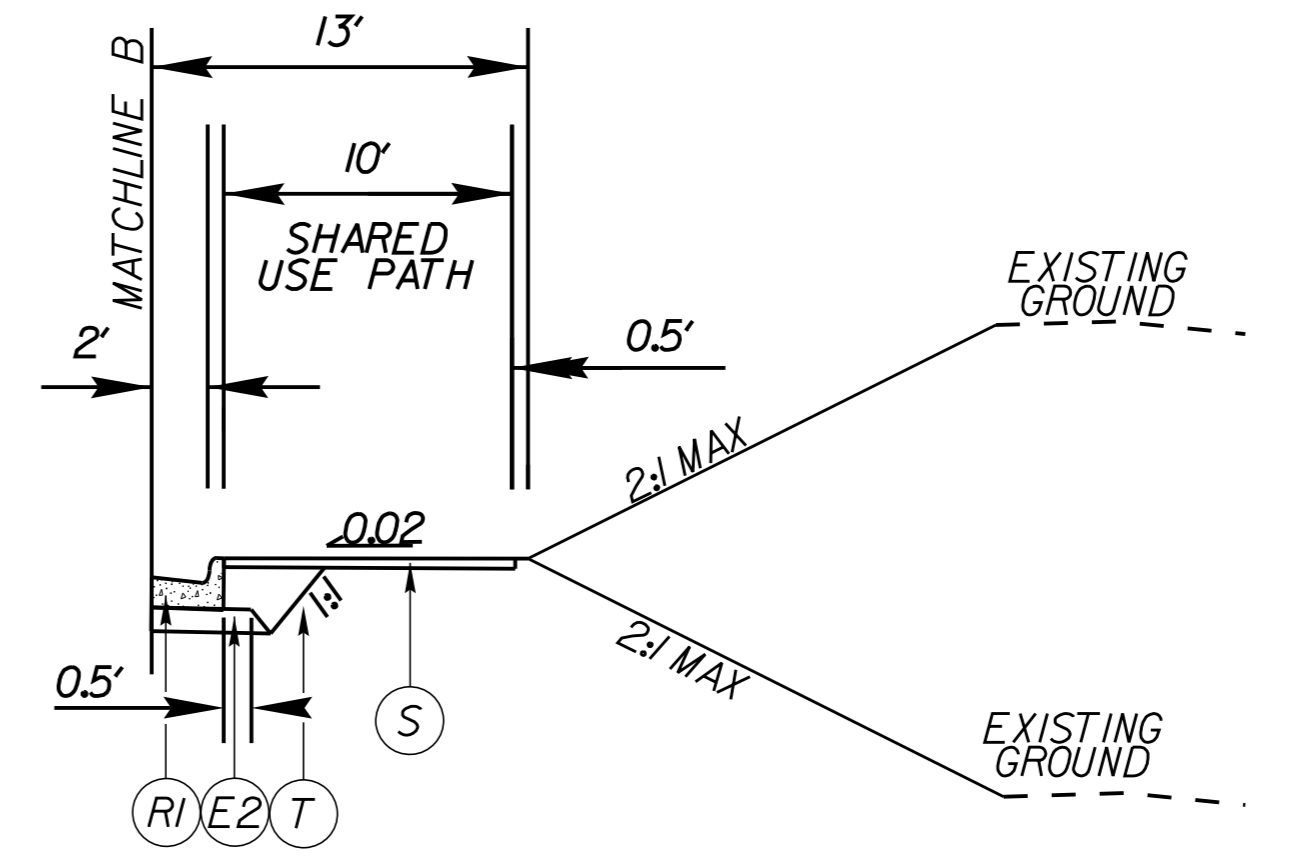
PAVEMENT SCHEDULE	
A1	12" TRUCK MOUNTABLE CONCRETE ISLAND (CLASS AA)
A2	6" CONCRETE DRIVEWAY
C1	1.5" S9.5B
C2	3" S9.5B
C3	VAR. S9.5B
D1	4" I19.0C
D2	VAR. I19.0C
E1	3" B25.0C
E2	4" B25.0C
E3	VAR. B25.0C
E4	5.5" B25.0C
F	ASPHALT SURFACE TREATMENT
G	12" SOIL CEMENT BASE (FULL DEPTH RECLAMATION)
J1	6" ABC
J2	8" ABC
K	CLASS IV SUBGRADE STABILIZATION
N	GEOTEXTILE FOR SUBGRADE STABILIZATION
R1	2'-6" CONCRETE CURB AND GUTTER
R2	1'-6" CONCRETE CURB AND GUTTER
R3	PROPOSED SHOULDER BERM GUTTER
R4	5" MONOLITHIC CONCRETE ISLAND (SURFACE MOUNTED)
R5	4" CONCRETE PAVED DITCH
R6	8" x 18" CONCRETE CURB
R7	SINGLE FACED CONCRETE BARRIER
S	4" CONCRETE SIDEWALK / SHARED USE PATH
T	EARTH MATERIAL
U	EXISTING PAVEMENT
V1	MILLING (1.5")
V2	MILLING (3.5")
W	WEDGING



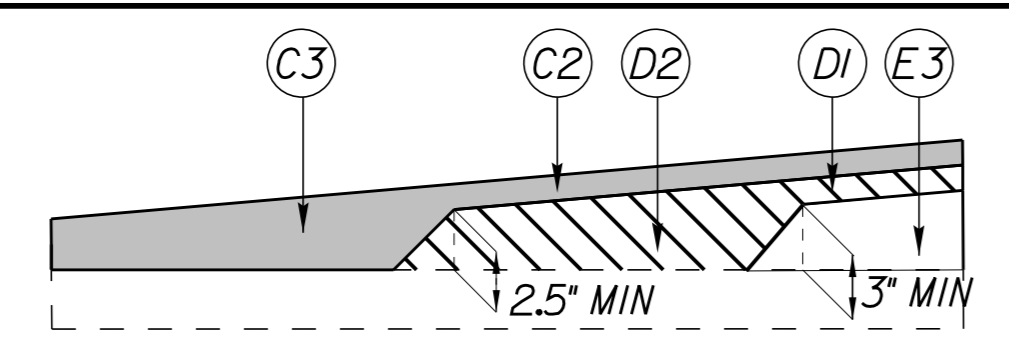
**TYPICAL SECTION NO. 3A**  
 -L- STA 36+00.00 TO 43+50.00



**TYPICAL SECTION NO. 3B**  
 -L- STA 43+50.00 TO 43+60.00



**TYPICAL SECTION NO. 3C**  
 -L- STA 33+58.57 TO 36+33.06



**WEDGING DETAIL FOR RESURFACING**

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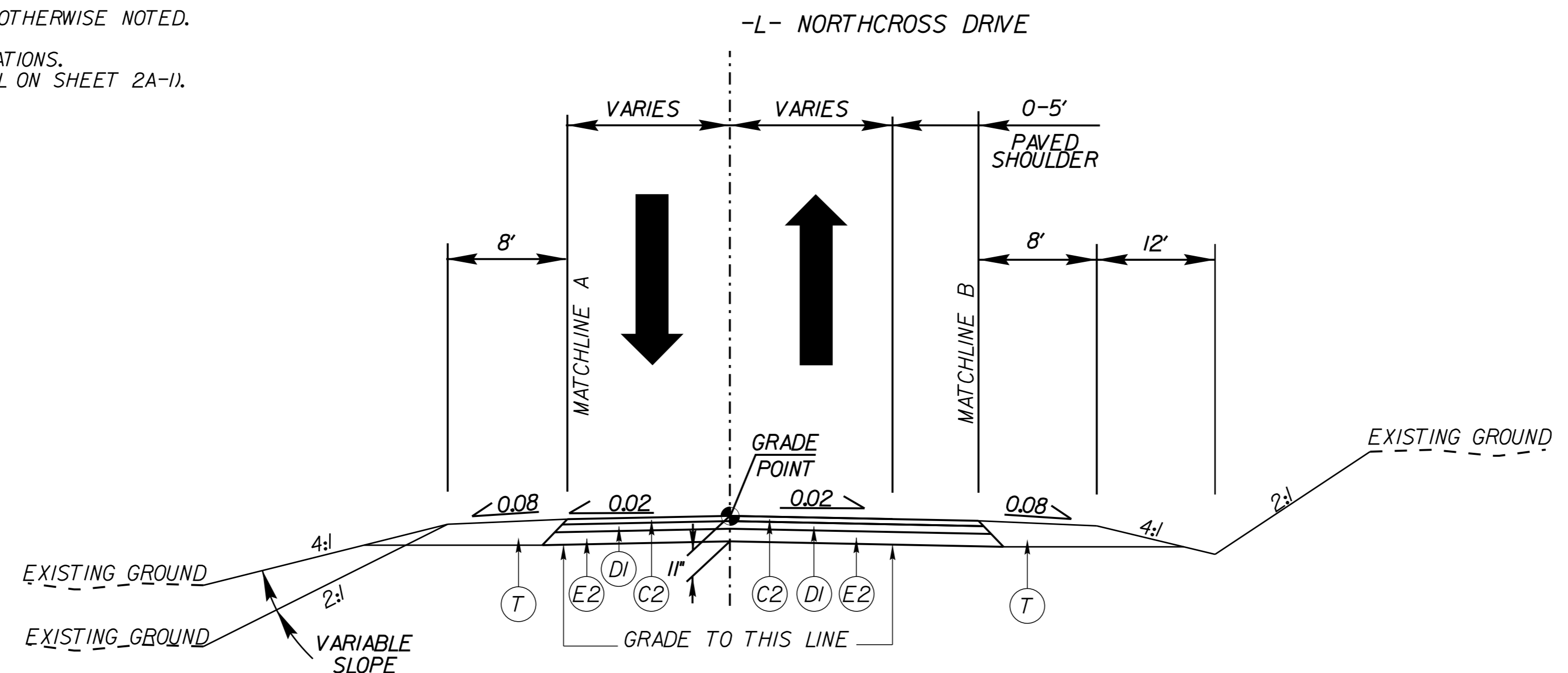
5/3/2024

5/14/24

NOTES:  
 1. PAVEMENT EDGE SLOPES ARE 1:1 UNLESS OTHERWISE NOTED.  
 2. SEE PLANS FOR TAPER LOCATIONS.  
 3. SEE PLANS FOR CURB AND GUTTER LOCATIONS.  
 4. USE WEDGING AS NECESSARY (SEE DETAIL ON SHEET 2A-1).

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 CHARLOTTE, N.C. 28202

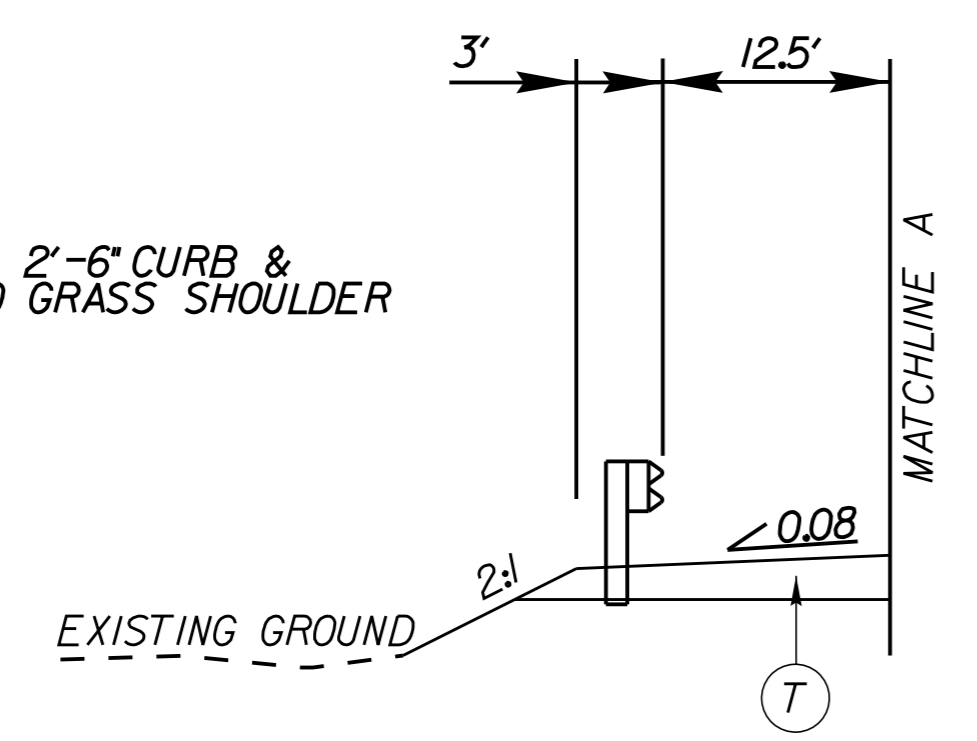
PROJECT REFERENCE NO. U-5108	SHEET NO. 2A-3
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER
<b>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</b>	



**TYPICAL SECTION NO. 4**

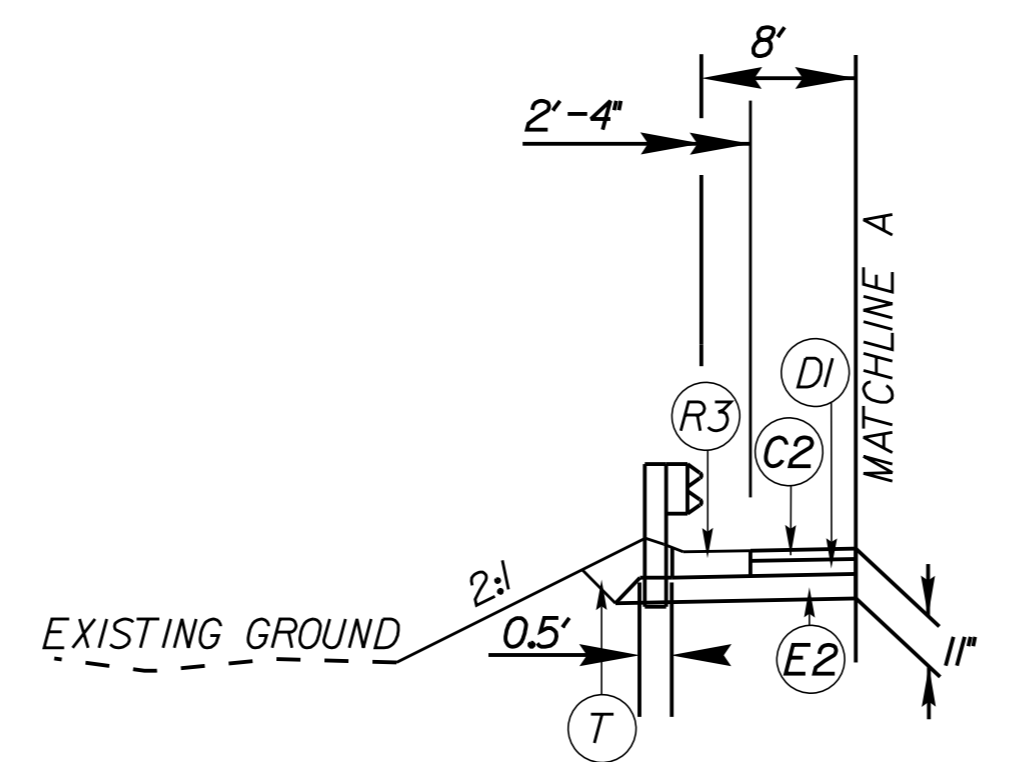
-L- STA 43+60.00 TO 73+46.00 (BEGIN BRIDGE)  
 \* SEE SUBGRADE STABILIZATION DETAIL SHEET 2A-1

\* TRANSITION 2'-6" CURB & GUTTER TO GRASS SHOULDER



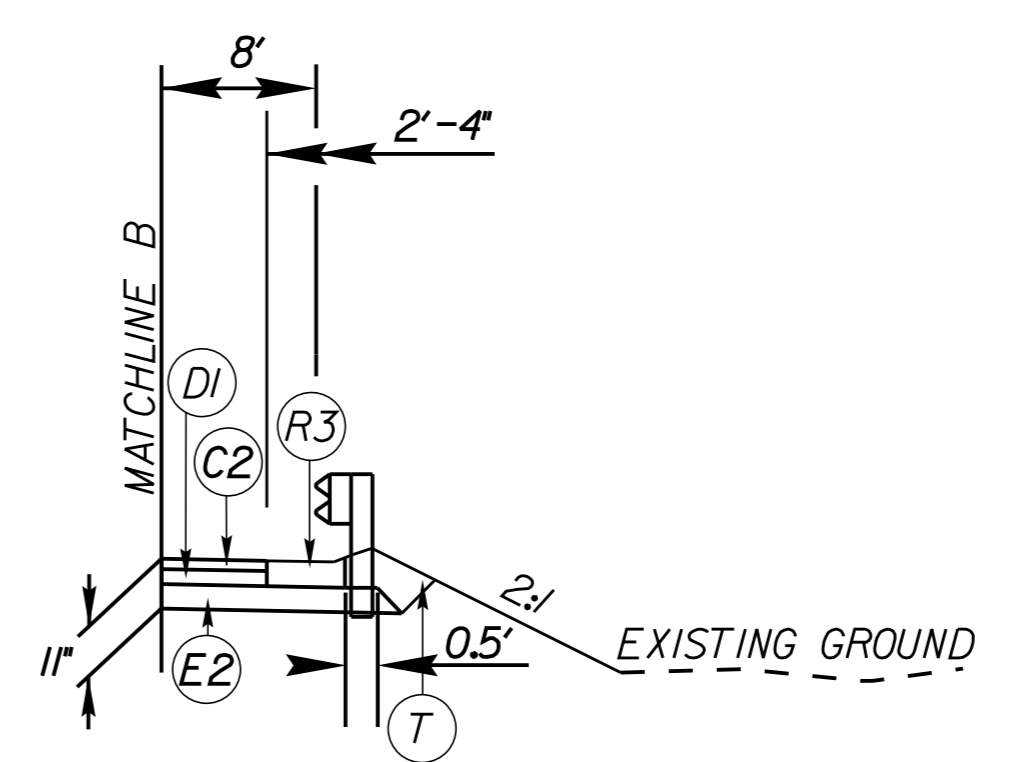
**TYPICAL SECTION NO. 4A**

\* -L- STA 43+60.00 TO 43+70.00 LT  
 -L- STA 43+70.00 TO 44+41.25 LT  
 -L- STA 71+64.75 TO 73+00.00 LT  
 -L- STA 71+52.25 TO 72+02.25 RT  
 -L- STA 73+21.83 TO 73+46.00 LT  
 -L- STA 73+21.83 TO 73+46.00 RT



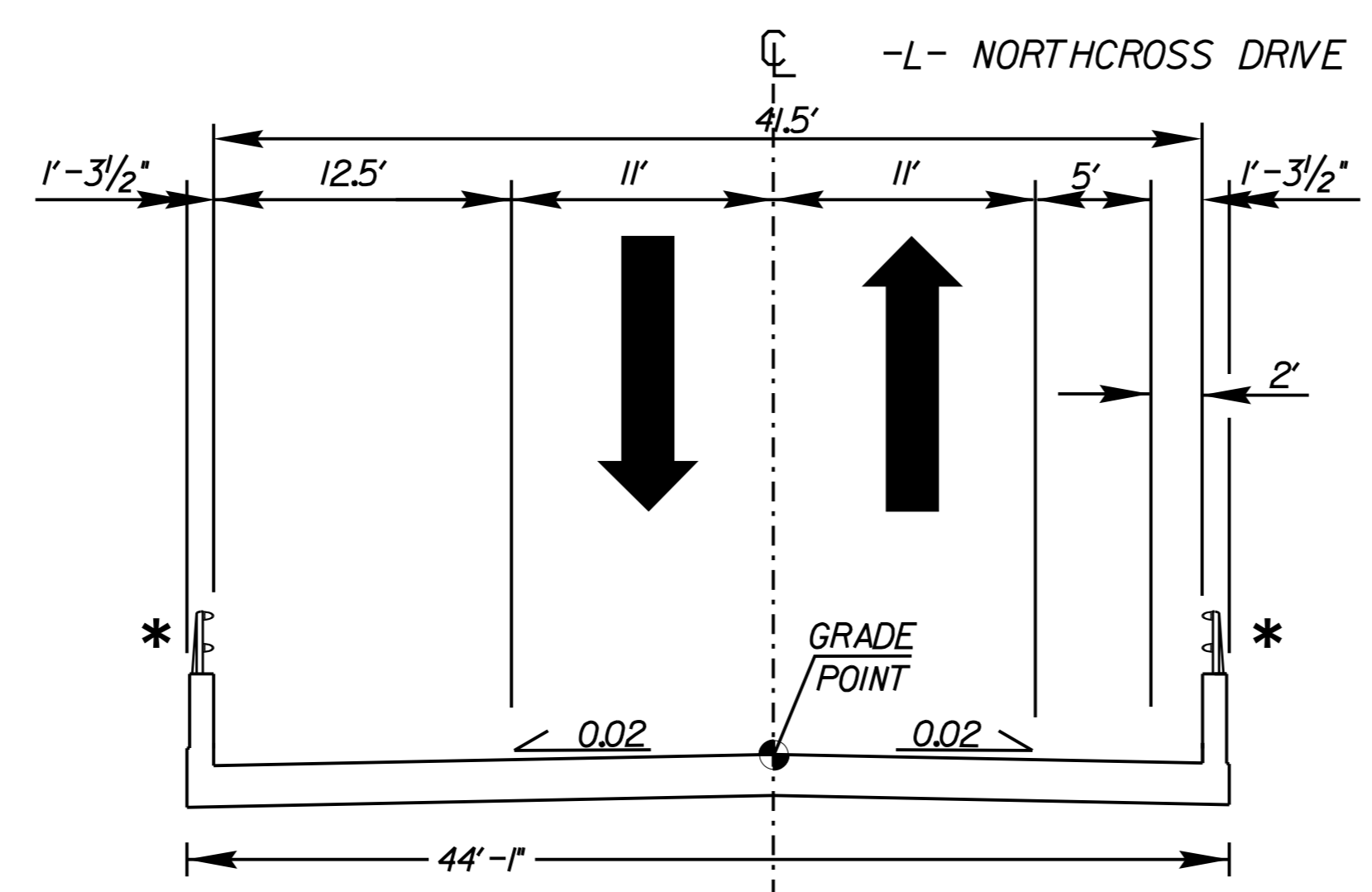
**TYPICAL SECTION NO. 4B**

-L- STA 73+00.00 TO 73+21.83 LT



**TYPICAL SECTION NO. 4C**

-L- STA 72+02.25 TO 73+21.83



**TYPICAL SECTION NO. 5**

-L- STA 73+46.00 TO 74+56.00  
 \* 2 BAR METAL RAIL (SEE STRUCTURE PLANS)

PAVEMENT SCHEDULE	
A1	12" TRUCK MOUNTABLE CONCRETE ISLAND (CLASS AA)
A2	6" CONCRETE DRIVEWAY
C1	1.5' S9.5B
C2	3' S9.5B
C3	VAR. S9.5B
D1	4" I19.0C
D2	VAR. I19.0C
E1	3" B25.0C
E2	4" B25.0C
E3	VAR. B25.0C
E4	5.5' B25.0C
F	ASPHALT SURFACE TREATMENT
G	12" SOIL CEMENT BASE (FULL DEPTH RECLAMATION)
J1	6" ABC
J2	8" ABC
K	CLASS IV SUBGRADE STABILIZATION
N	GEOTEXTILE FOR SUBGRADE STABILIZATION
R1	2'-6" CONCRETE CURB AND GUTTER
R2	1'-6" CONCRETE CURB AND GUTTER
R3	PROPOSED SHOULDER BERM GUTTER
R4	5' MONOLITHIC CONCRETE ISLAND (SURFACE MOUNTED)
R5	4" CONCRETE PAVED DITCH
R6	8' x 18" CONCRETE CURB
R7	SINGLE FACED CONCRETE BARRIER
S	4" CONCRETE SIDEWALK / SHARED USE PATH
T	EARTH MATERIAL
U	EXISTING PAVEMENT
V1	MILLING (1.5')
V2	MILLING (3.5')
W	WEDGING

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5/3/2024

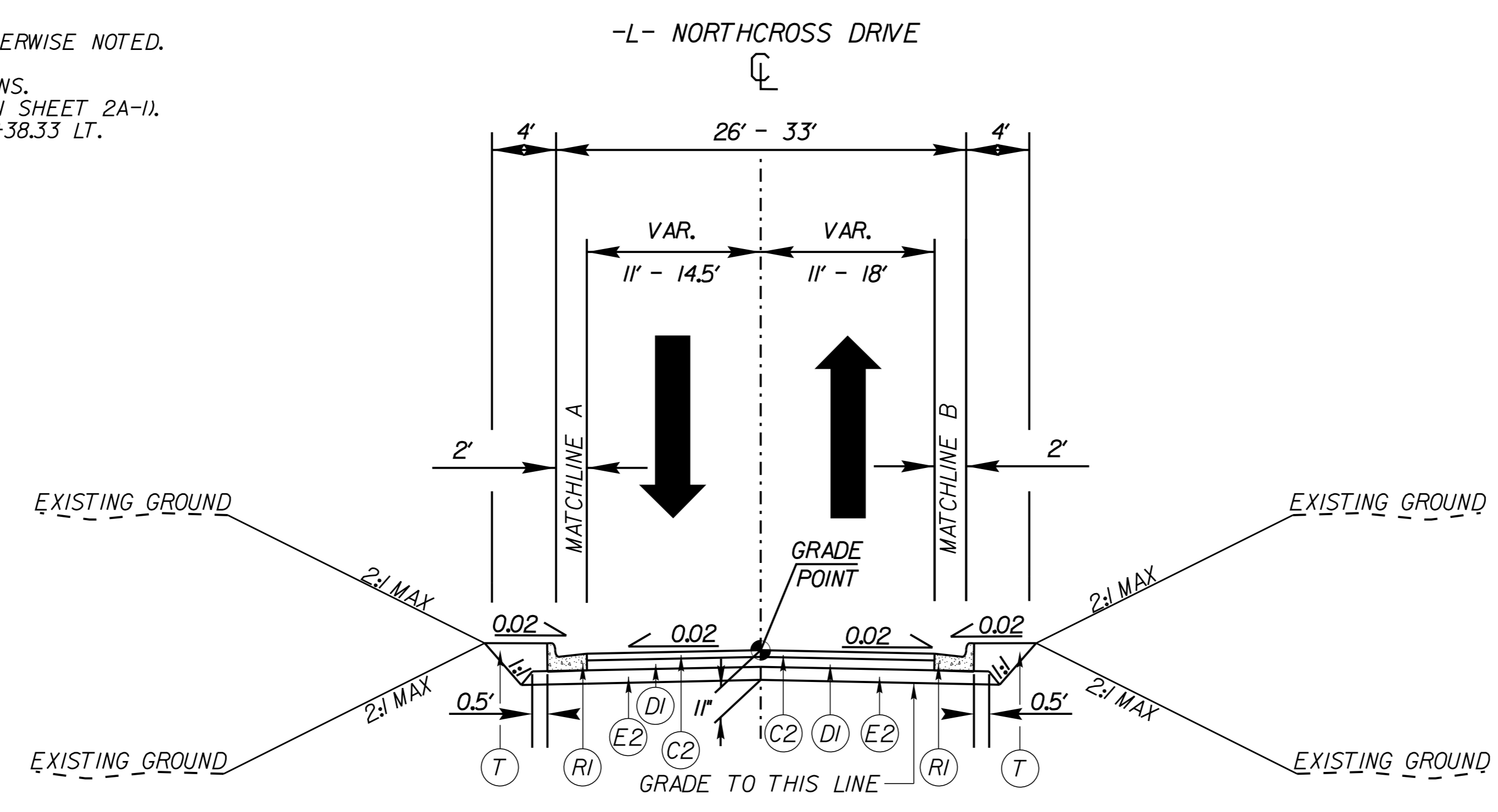
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5/3/2024

**NOTES:**  
 1. PAVEMENT EDGE SLOPES ARE 1:1 UNLESS OTHERWISE NOTED.  
 2. SEE PLANS FOR TAPER LOCATIONS.  
 3. SEE PLANS FOR CURB AND GUTTER LOCATIONS.  
 4. USE WEDGING AS NECESSARY (SEE DETAIL ON SHEET 2A-1).  
 5. TIE TO EXISTING SHARED USE PATH STA.10+38.33 LT.

**Kimley Horn**  
 NC LICENSE #F-0102  
 200 SOUTH TRYON, SUITE 200  
 CHARLOTTE, N.C. 28202  
 RIGHT-OF-WAY REV.  
 CONST. REV.

PROJECT REFERENCE NO. U-5108	SHEET NO. 2A-4
ROADWAY DESIGN ENGINEER ANTHONY J. SPACER 5/3/2024	PAVEMENT DESIGN ENGINEER JOSH HOLLAND 5/9/2024

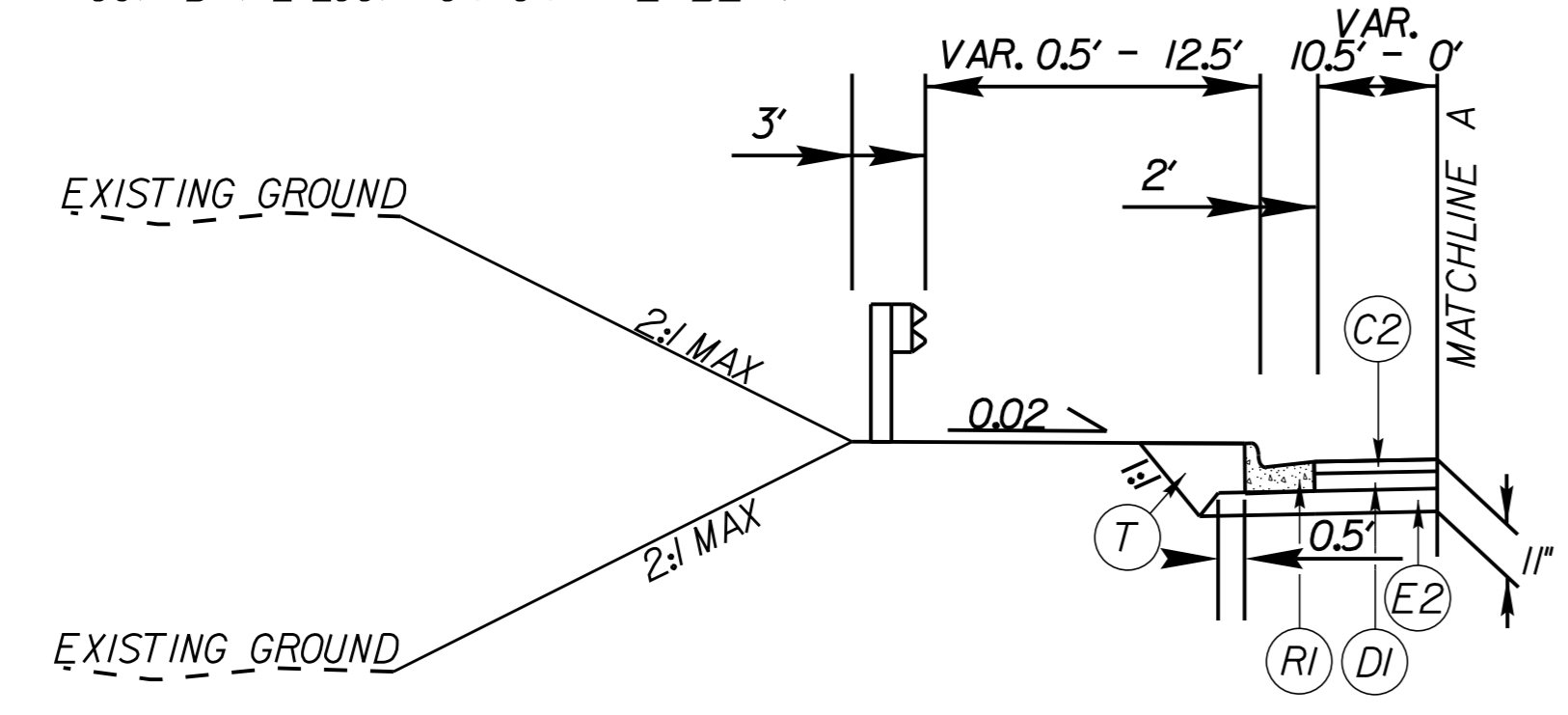
**DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED**



**TYPICAL SECTION NO. 6**

-L- STA 74+56.00 (END BRIDGE) TO 94+55.00  
 \* SEE SUBGRADE STABILIZATION DETAIL SHEET 2A-1

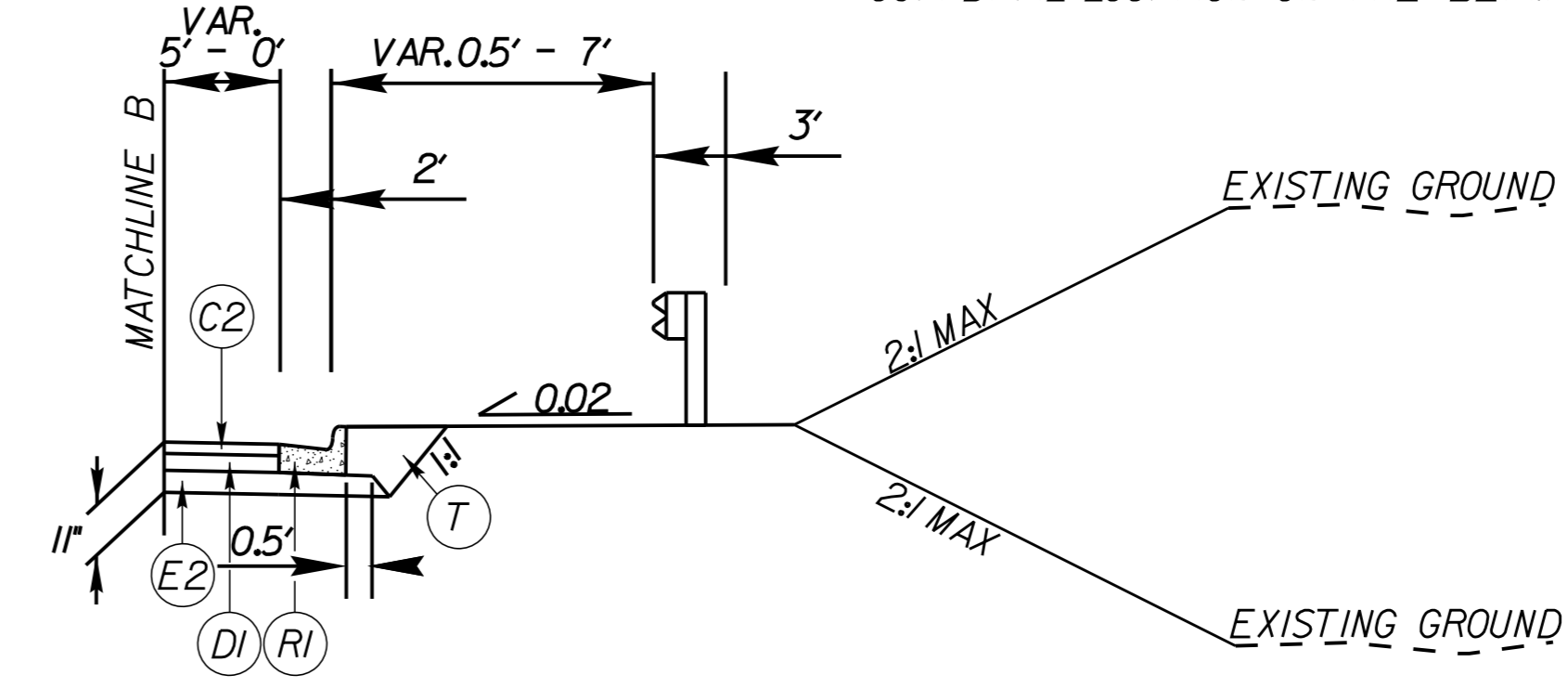
\* SEE CROSS SECTIONS FOR EXACT GUARDRAIL LOCATION ON THE BERM



**TYPICAL SECTION NO. 6C**

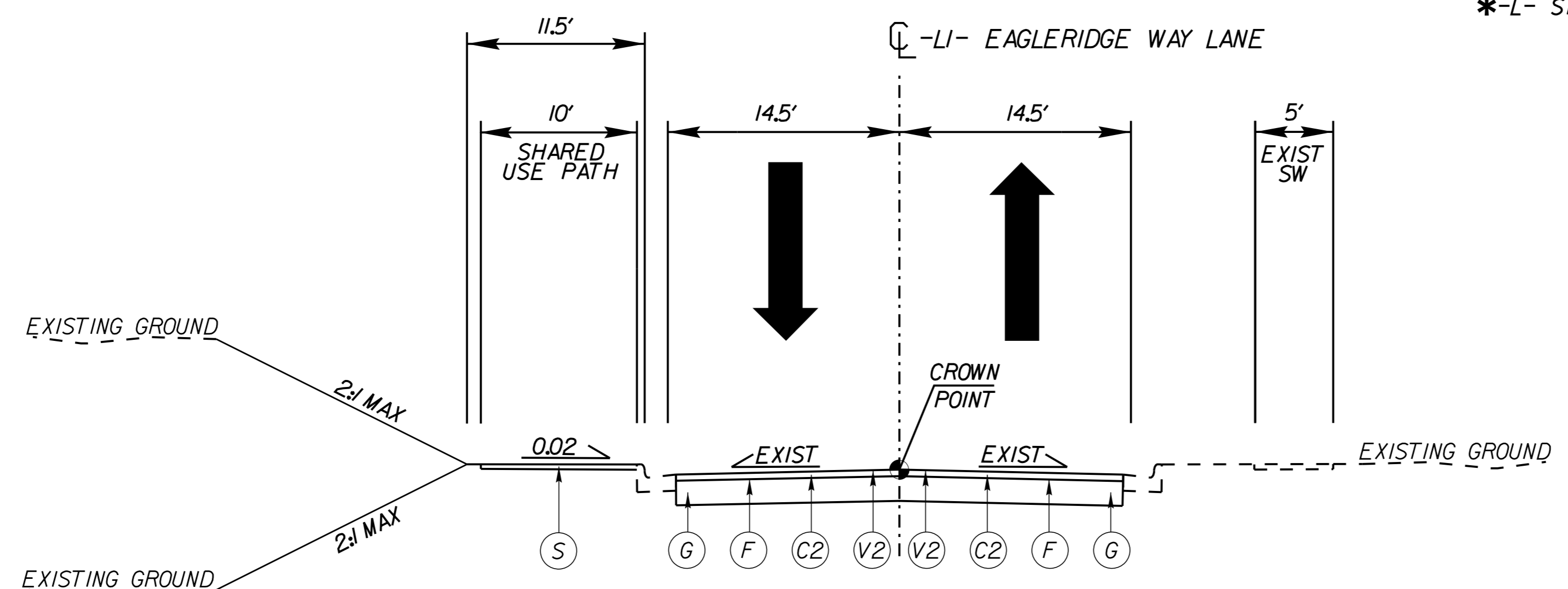
\*-L- STA 74+56.00 TO 76+99.75 LT  
 -L- STA 89+73.00 TO 92+85.50

\* SEE CROSS SECTIONS FOR EXACT GUARDRAIL LOCATION ON THE BERM



**TYPICAL SECTION NO. 6D**

\*-L- STA 74+56.00 TO 77+24.75  
 \*-L- STA 80+70.00 TO 92+95.00



**TYPICAL SECTION NO. 7**

-LI- STA 10+00.00 TO 14+50.00  
 \*\* SEE NOTE 5

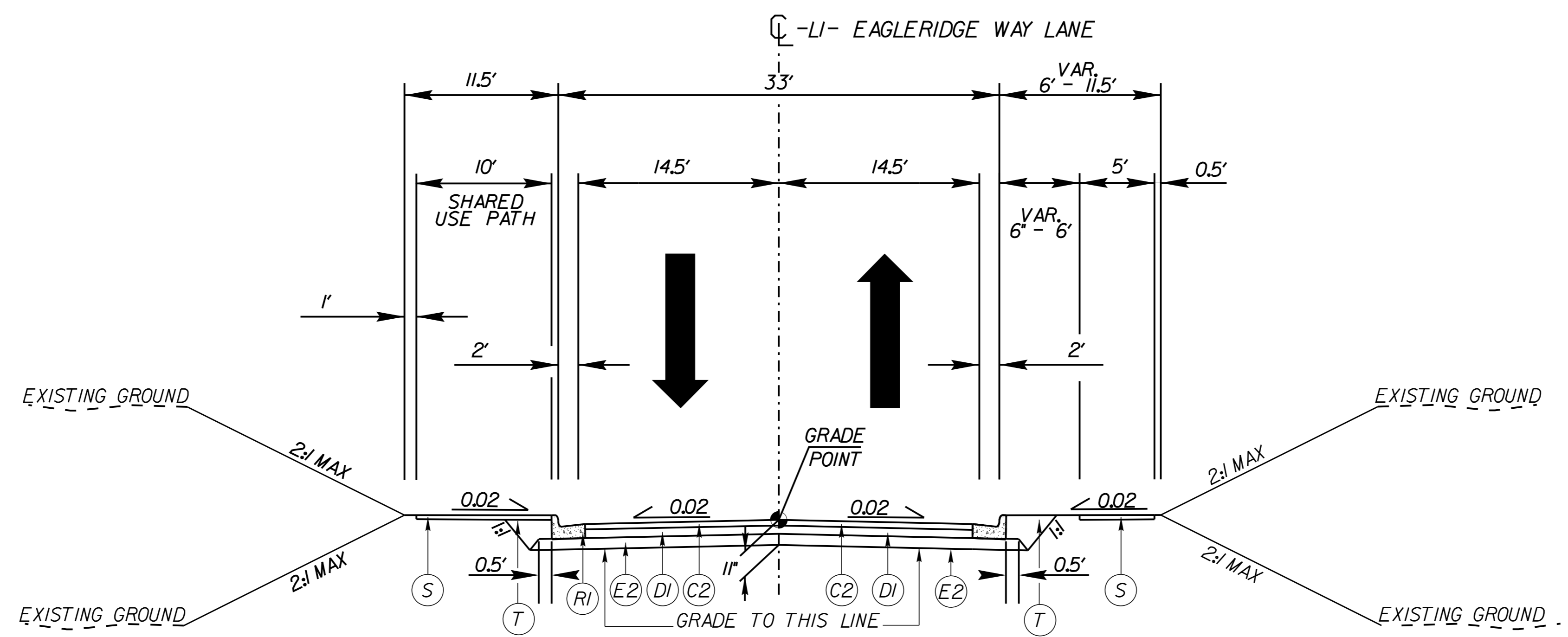
PAVEMENT SCHEDULE	
A1	12" TRUCK MOUNTABLE CONCRETE ISLAND (CLASS AA)
A2	6" CONCRETE DRIVEWAY
C1	1.5' S9.5B
C2	3' S9.5B
C3	VAR. S9.5B
D1	4" I19.0C
D2	VAR. I19.0C
E1	3' B25.0C
E2	4' B25.0C
E3	VAR. B25.0C
E4	5.5' B25.0C
F	ASPHALT SURFACE TREATMENT
G	12" SOIL CEMENT BASE (FULL DEPTH RECLAMATION)
J1	6" ABC
J2	8" ABC
K	CLASS IV SUBGRADE STABILIZATION
N	GEOTEXTILE FOR SUBGRADE STABILIZATION
RI	2'-6" CONCRETE CURB AND GUTTER
R2	1'-6" CONCRETE CURB AND GUTTER
R3	PROPOSED SHOULDER BERM GUTTER
R4	5' MONOLITHIC CONCRETE ISLAND (SURFACE MOUNTED)
R5	4' CONCRETE PAVED DITCH
R6	8' x 18" CONCRETE CURB
R7	SINGLE FACED CONCRETE BARRIER
S	4' CONCRETE SIDEWALK / SHARED USE PATH
T	EARTH MATERIAL
U	EXISTING PAVEMENT
V1	MILLING (1.5')
V2	MILLING (3.5')
W	WEDGING

5/14/24

- NOTES:  
 1. PAVEMENT EDGE SLOPES ARE 1:1 UNLESS OTHERWISE NOTED.  
 2. SEE PLANS FOR TAPER LOCATIONS.  
 3. SEE PLANS FOR CURB AND GUTTER LOCATIONS.  
 4. USE WEDGING AS NECESSARY (SEE DETAIL ON SHEET 2A-1).  
 5. REMOVE EXISTING PAVEMENT -LI- STA. 14+50.00 TO 19+36.57.

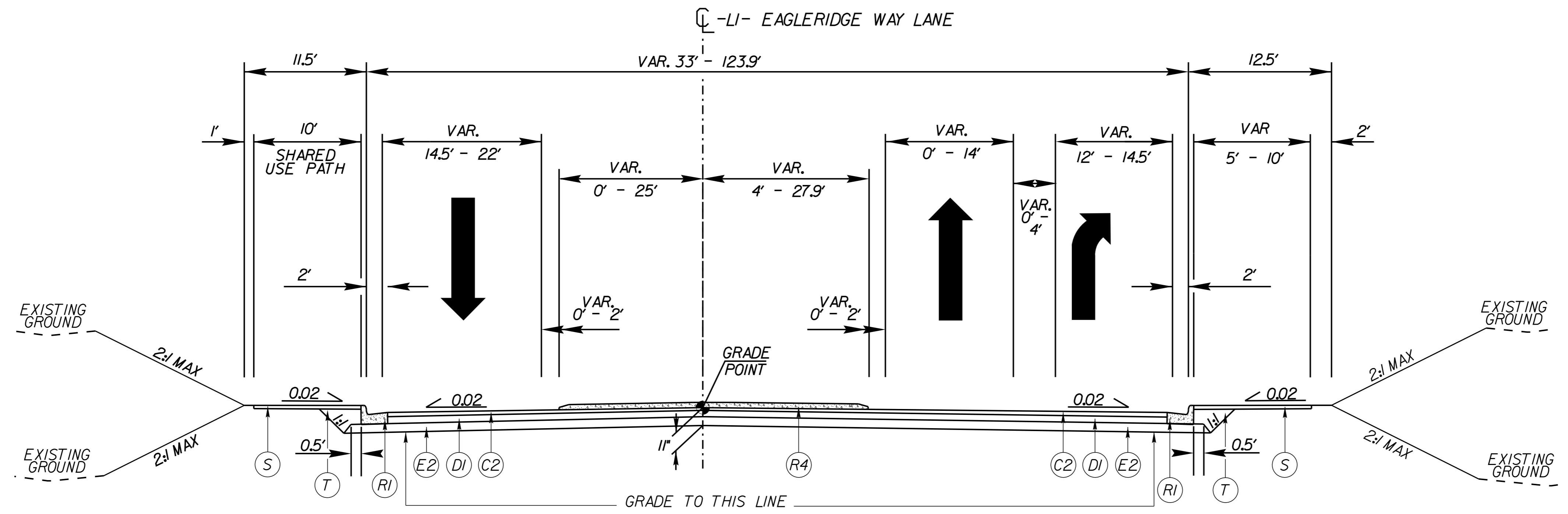
**Kimley Horn**  
 NC LICENSE #F-0102  
 200 SOUTH TRYON, SUITE 200  
 CHARLOTTE, N.C. 28202

PROJECT REFERENCE NO. U-5108	SHEET NO. 2A-5
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER
<b>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</b>	



**TYPICAL SECTION NO. 8**

-LI- STA 14+50.00 TO 16+15.44  
 \*SEE NOTE 5



**TYPICAL SECTION NO. 9**

-LI- STA 16+15.44 TO 19+36.57 (BEGIN ROUNDABOUT)  
 \*SEE NOTE 5

PAVEMENT SCHEDULE	
A1	12" TRUCK MOUNTABLE CONCRETE ISLAND (CLASS AA)
A2	6" CONCRETE DRIVEWAY
C1	1.5" S9.5B
C2	3" S9.5B
C3	VAR. S9.5B
D1	4" I19.0C
D2	VAR. I19.0C
E1	3" B25.0C
E2	4" B25.0C
E3	VAR. B25.0C
E4	5.5" B25.0C
F	ASPHALT SURFACE TREATMENT
G	12" SOIL CEMENT BASE (FULL DEPTH RECLAMATION)
J1	6" ABC
J2	8" ABC
K	CLASS IV SUBGRADE STABILIZATION
N	GEOTEXTILE FOR SUBGRADE STABILIZATION
R1	2'-6" CONCRETE CURB AND GUTTER
R2	1'-6" CONCRETE CURB AND GUTTER
R3	PROPOSED SHOULDER BERM GUTTER
R4	5" MONOLITHIC CONCRETE ISLAND (SURFACE MOUNTED)
R5	4" CONCRETE PAVED DITCH
R6	8" x 18" CONCRETE CURB
R7	SINGLE FACED CONCRETE BARRIER
S	4" CONCRETE SIDEWALK / SHARED USE PATH
T	EARTH MATERIAL
U	EXISTING PAVEMENT
V1	MILLING (1.5')
V2	MILLING (3.5')
W	WEDGING

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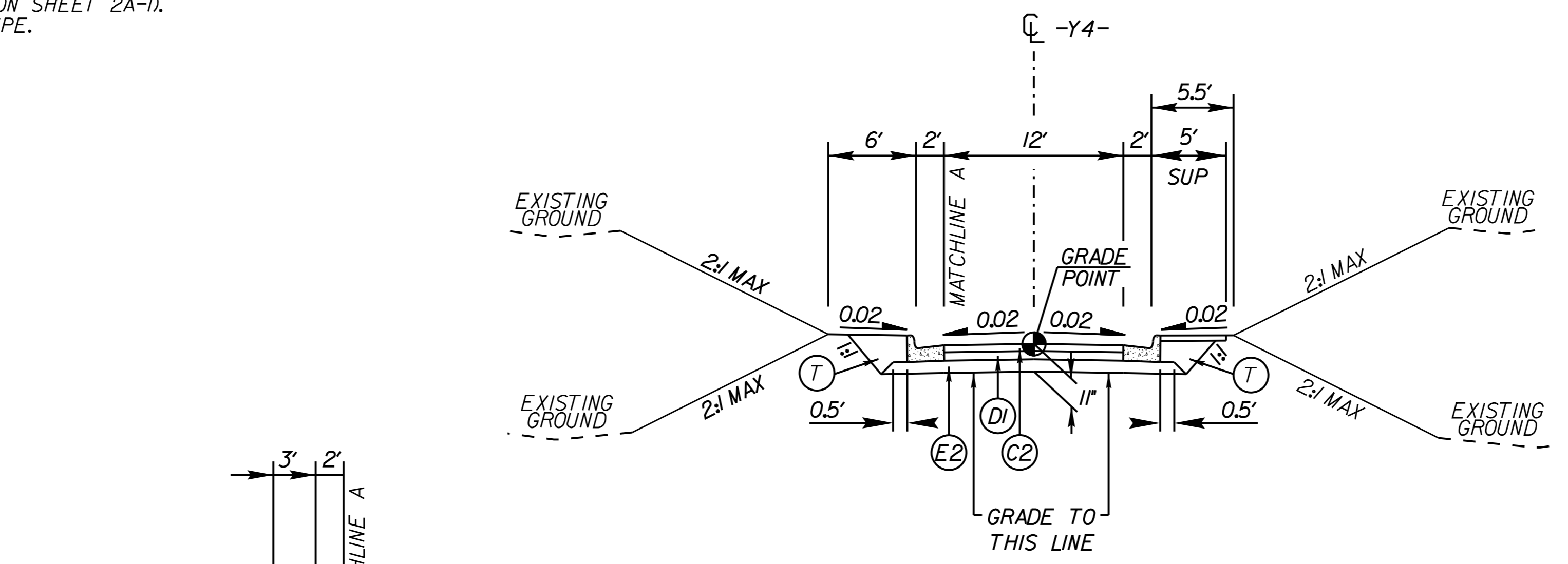


5/14/24

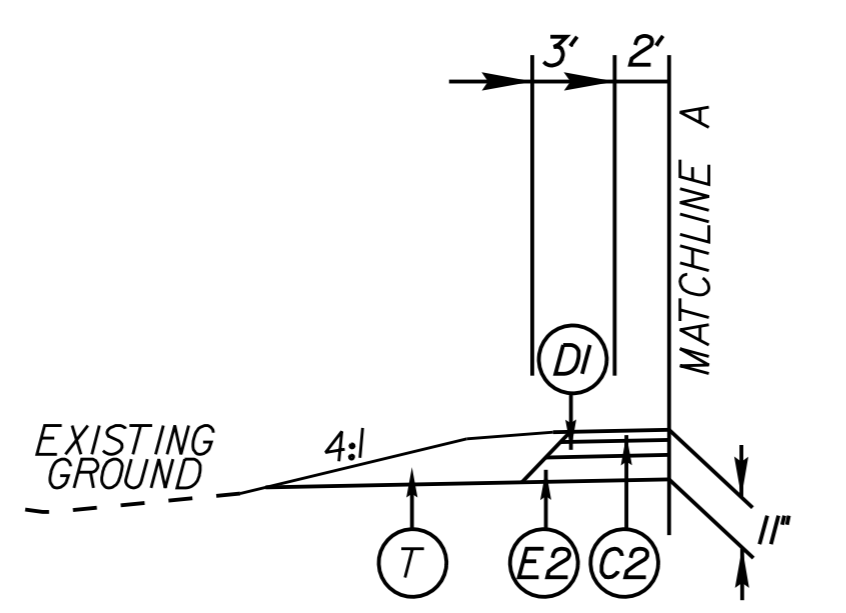
- NOTES:  
 1. PAVEMENT EDGE SLOPES ARE 1:1 UNLESS OTHERWISE NOTED.  
 2. SEE PLANS FOR TAPER LOCATIONS.  
 3. SEE PLANS FOR CURB AND GUTTER LOCATIONS.  
 4. USE WEDGING AS NECESSARY (SEE DETAIL ON SHEET 2A-1).  
 5. SEE PLANS FOR MEDIAN LOCATIONS AND TYPE.

**Kimley Horn**  
 NC LICENSE #F-0102  
 200 SOUTH TRYON, SUITE 200  
 CHARLOTTE, N.C. 28202

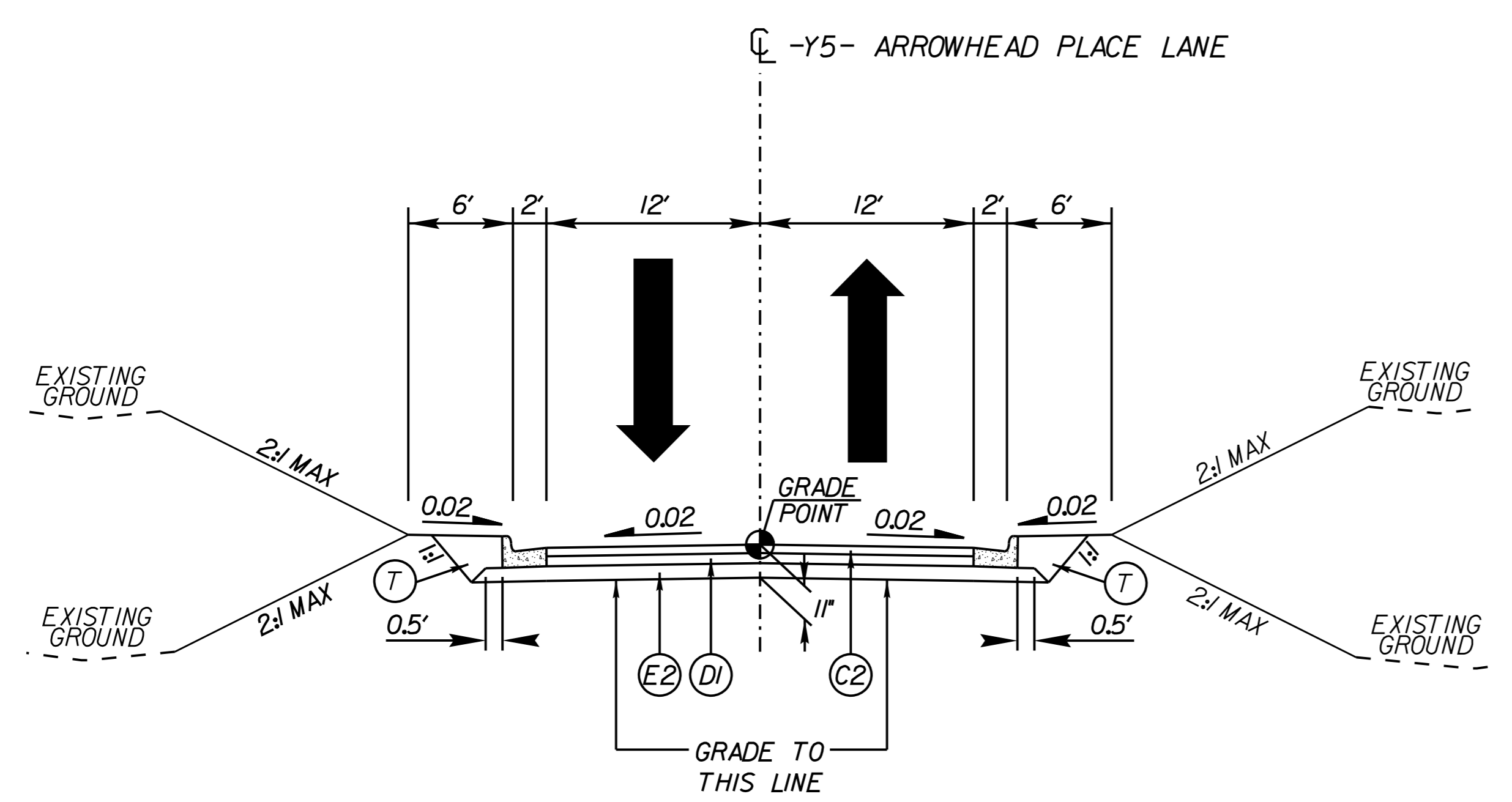
PROJECT REFERENCE NO. U-5108	SHEET NO. 2A-6
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER
<b>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</b>	



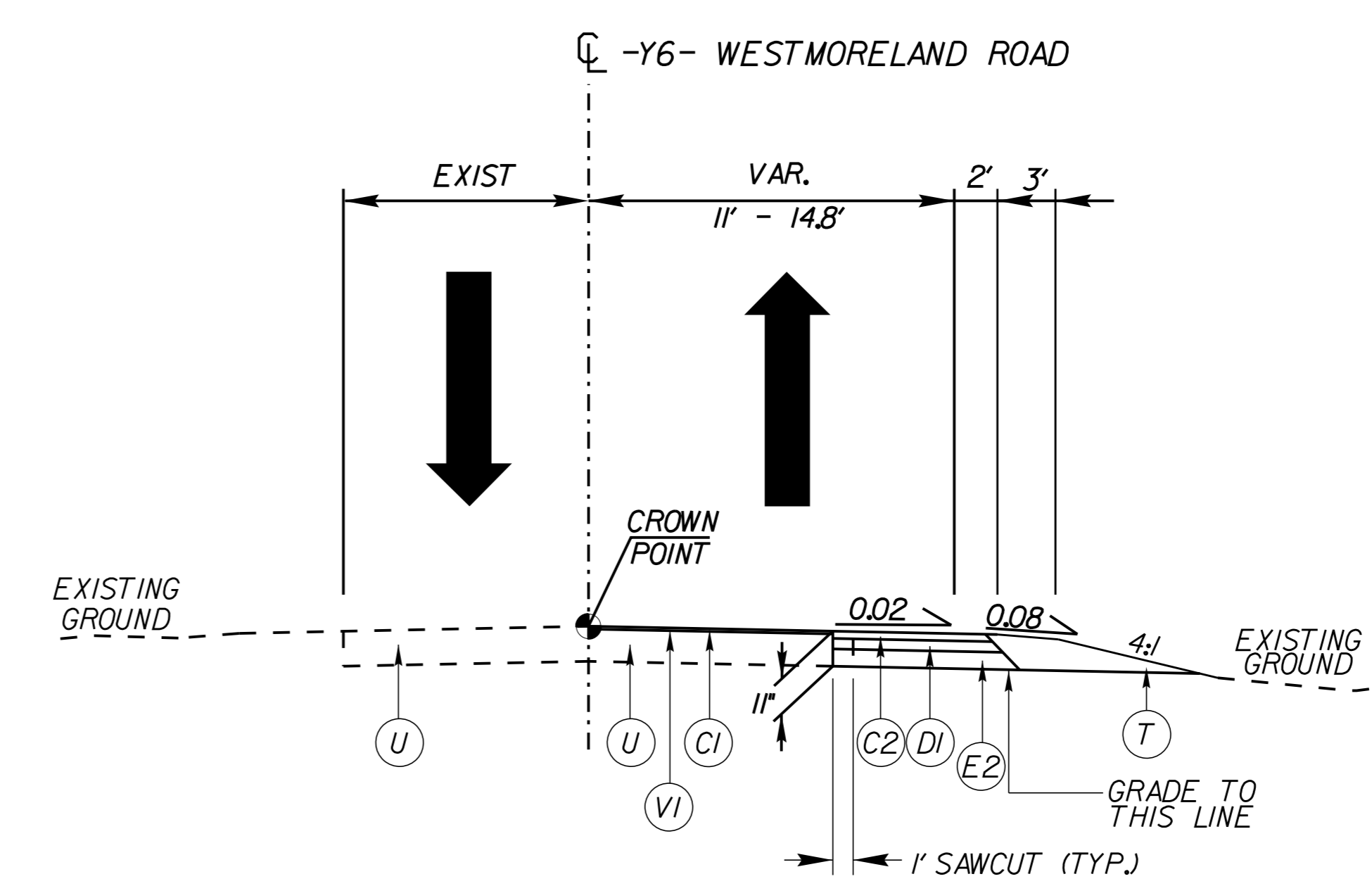
**TYPICAL SECTION NO. 10**  
 -Y4- STA 10+14.50 TO 10+50.00



**TYPICAL SECTION NO. 10A**  
 -Y4- STA 10+24.71 TO 10+50.00



**TYPICAL SECTION NO. 11**  
 -Y5- STA 10+12.00 TO 10+70.00



**TYPICAL SECTION NO. 12**  
 -Y6- STA 3+39.00 TO 5+12.87

PAVEMENT SCHEDULE	
A1	12" TRUCK MOUNTABLE CONCRETE ISLAND (CLASS AA)
A2	6" CONCRETE DRIVEWAY
C1	1.5" S9.5B
C2	3" S9.5B
C3	VAR. S9.5B
DI	4" I19.0C
D2	VAR. I19.0C
E1	3" B25.0C
E2	4" B25.0C
E3	VAR. B25.0C
E4	5.5" B25.0C
F	ASPHALT SURFACE TREATMENT
G	12" SOIL CEMENT BASE (FULL DEPTH RECLAMATION)
J1	6" ABC
J2	8" ABC
K	CLASS IV SUBGRADE STABILIZATION
N	GEOTEXTILE FOR SUBGRADE STABILIZATION
R1	2'-6" CONCRETE CURB AND GUTTER
R2	1'-6" CONCRETE CURB AND GUTTER
R3	PROPOSED SHOULDER BERM GUTTER
R4	5" MONOLITHIC CONCRETE ISLAND (SURFACE MOUNTED)
R5	4" CONCRETE PAVED DITCH
R6	8" x 18" CONCRETE CURB
R7	SINGLE FACED CONCRETE BARRIER
S	4" CONCRETE SIDEWALK / SHARED USE PATH
T	EARTH MATERIAL
U	EXISTING PAVEMENT
VI	MILLING (1.5')
V2	MILLING (3.5')
W	WEDGING

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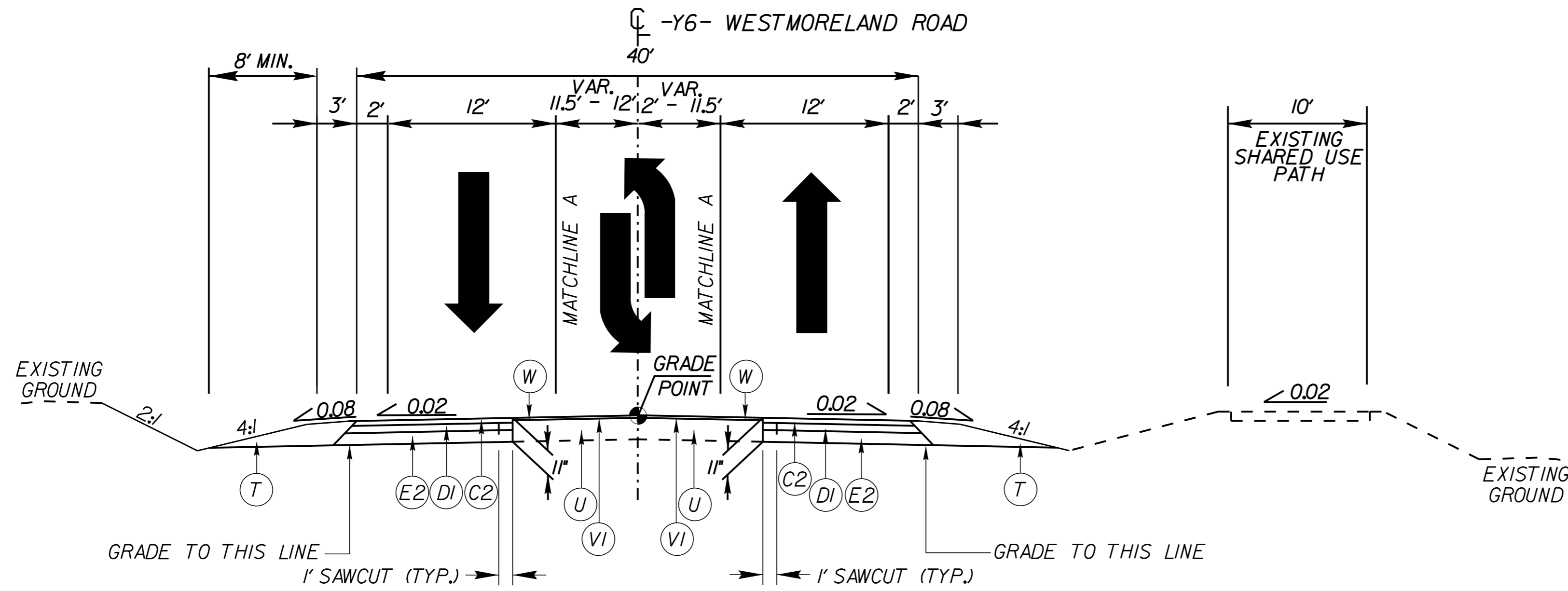
5/3/2024

5/14/24

- NOTES:  
 1. PAVEMENT EDGE SLOPES ARE 1:1 UNLESS OTHERWISE NOTED.  
 2. SEE PLANS FOR TAPER LOCATIONS.  
 3. SEE PLANS FOR CURB AND GUTTER LOCATIONS.  
 4. USE WEDGING AS NECESSARY (SEE DETAIL ON SHEET 2A-1).  
 5. TIE TO EXISTING 10' SHARED USE PATH AT -Y6- STA 8+77.00 RT.  
 SEE PLANS FOR EXACT SHARED USE PATH LOCATION.  
 6. TIE TO EXISTING 10' SHARED USE PATH AT -Y6- STA 11+38.00 RT.  
 SEE PLANS FOR EXACT SHARED USE PATH LOCATION.  
 7. SEE PLANS FOR MEDIAN LOCATIONS AND TYPE.

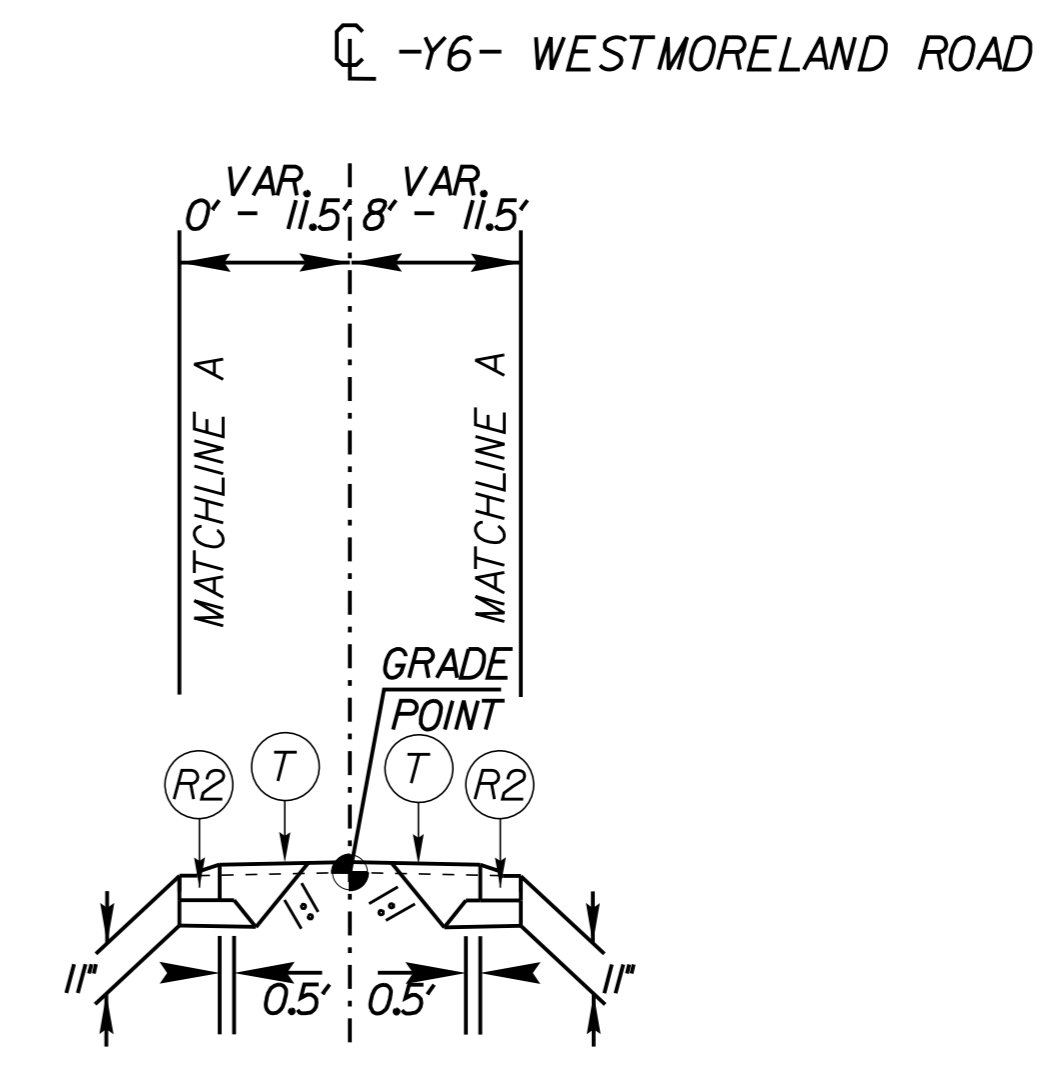
**Kimley Horn**  
 NC LICENSE #F-0102  
 200 SOUTH TRYON, SUITE 200  
 CHARLOTTE, N.C. 28202  
 RIGHT-OF-WAY REV.  
 CONST. REV.

PROJECT REFERENCE NO. U-5108	SHEET NO. 2A-7
ROADWAY DESIGN ENGINEER NORTH CAROLINA PROFESSIONAL SEAL 034207 ANTHONY J. SPACEY	PAVEMENT DESIGN ENGINEER NORTH CAROLINA PROFESSIONAL SEAL 024964 JOSH HOLLAND
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



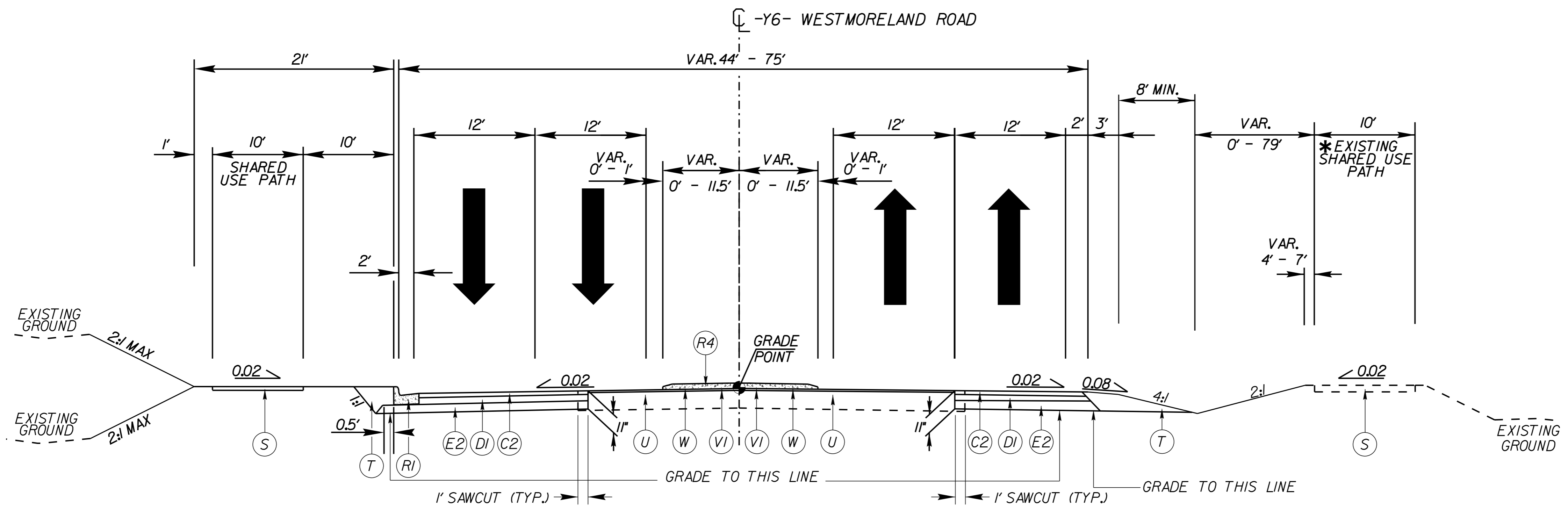
**TYPICAL SECTION NO. 13**

-Y6- STA 5+12.87 TO 8+73.58



**TYPICAL SECTION NO. 13A**

-Y6- STA 7+71.81 TO 8+73.58



**TYPICAL SECTION NO. 14**

-Y6- STA 8+73.58 TO 15+76.07  
 \*SEE NOTE 5&6

**PAVEMENT SCHEDULE**

<b>A1</b>	12" TRUCK MOUNTABLE CONCRETE ISLAND (CLASS AA)
<b>A2</b>	6" CONCRETE DRIVEWAY
<b>C1</b>	1.5" S9.5B
<b>C2</b>	3" S9.5B
<b>C3</b>	VAR. S9.5B
<b>D1</b>	4" 119.0C
<b>D2</b>	VAR. 119.0C
<b>E1</b>	3" B25.0C
<b>E2</b>	4" B25.0C
<b>E3</b>	VAR. B25.0C
<b>E4</b>	5.5" B25.0C
<b>F</b>	ASPHALT SURFACE TREATMENT
<b>G</b>	12" SOIL CEMENT BASE (FULL DEPTH RECLAMATION)
<b>J1</b>	6" ABC
<b>J2</b>	8" ABC
<b>K</b>	CLASS IV SUBGRADE STABILIZATION
<b>N</b>	GEOTEXTILE FOR SUBGRADE STABILIZATION
<b>R1</b>	2'-6" CONCRETE CURB AND GUTTER
<b>R2</b>	1'-6" CONCRETE CURB AND GUTTER
<b>R3</b>	PROPOSED SHOULDER BERM GUTTER
<b>R4</b>	5" MONOLITHIC CONCRETE ISLAND (SURFACE MOUNTED)
<b>R5</b>	4" CONCRETE PAVED DITCH
<b>R6</b>	8" x 18" CONCRETE CURB
<b>R7</b>	SINGLE FACED CONCRETE BARRIER
<b>S</b>	4" CONCRETE SIDEWALK / SHARED USE PATH
<b>T</b>	EARTH MATERIAL
<b>U</b>	EXISTING PAVEMENT
<b>V1</b>	MILLING (1.5')
<b>V2</b>	MILLING (3.5')
<b>W</b>	WEDGING

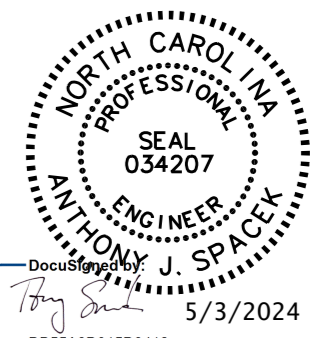
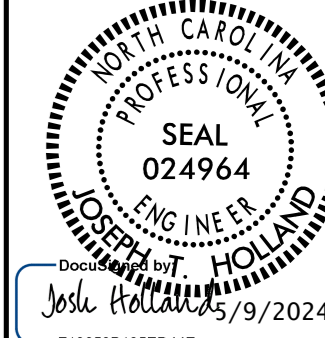
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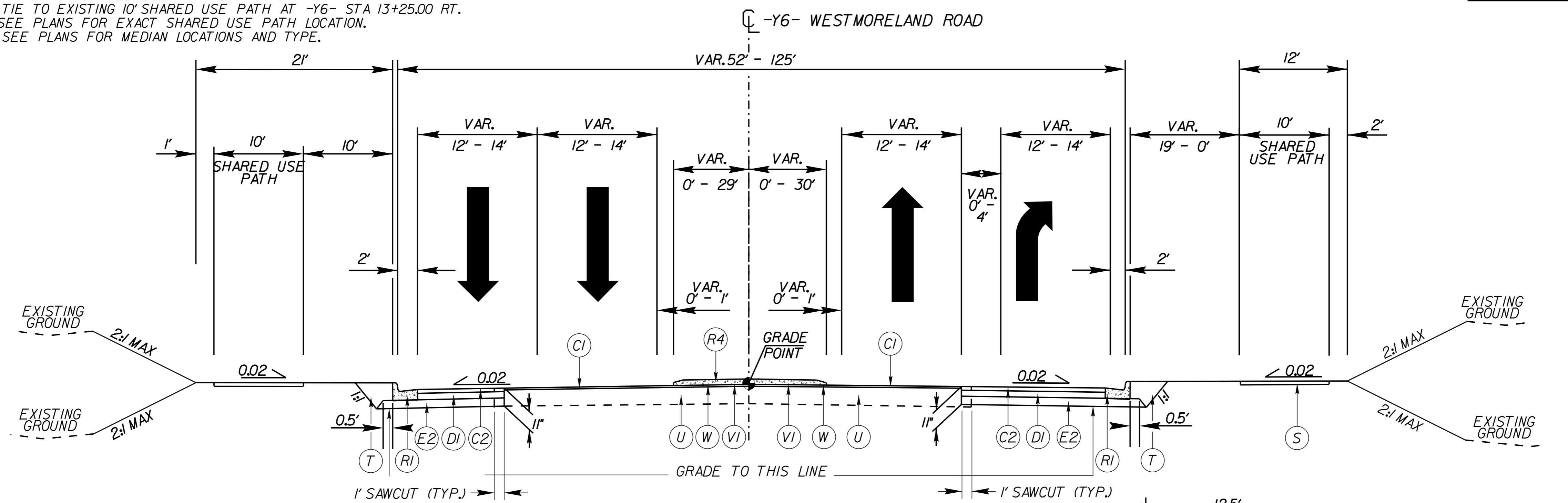
5/3/2024

5/14/2024  
K:\CHL\_PRA\101036359 - U-5108 (Northcross)\DS\Roadway\Proj\U-5108\_rdy\_tlp.dgn  
5/3/2024

- NOTES:**
1. PAVEMENT EDGE SLOPES ARE 1:1 UNLESS OTHERWISE NOTED.
  2. SEE PLANS FOR TAPER LOCATIONS.
  3. SEE PLANS FOR CURB AND GUTTER LOCATIONS.
  4. USE WEDGING AS NECESSARY (SEE DETAIL ON SHEET 2A-1).
  5. SHARED USE PATH EXTENDS ALONG ROUNDABOUT AND TIES TO EXISTING SHARED USE PATH AT -Y6- STA 21+50.00 RT. SEE PLANS FOR EXACT SHARED USE PATH LOCATION.
  6. TIE TO EXISTING 10' SHARED USE PATH AT -Y6- STA 13+25.00 RT. SEE PLANS FOR EXACT SHARED USE PATH LOCATION.
  7. SEE PLANS FOR MEDIAN LOCATIONS AND TYPE.

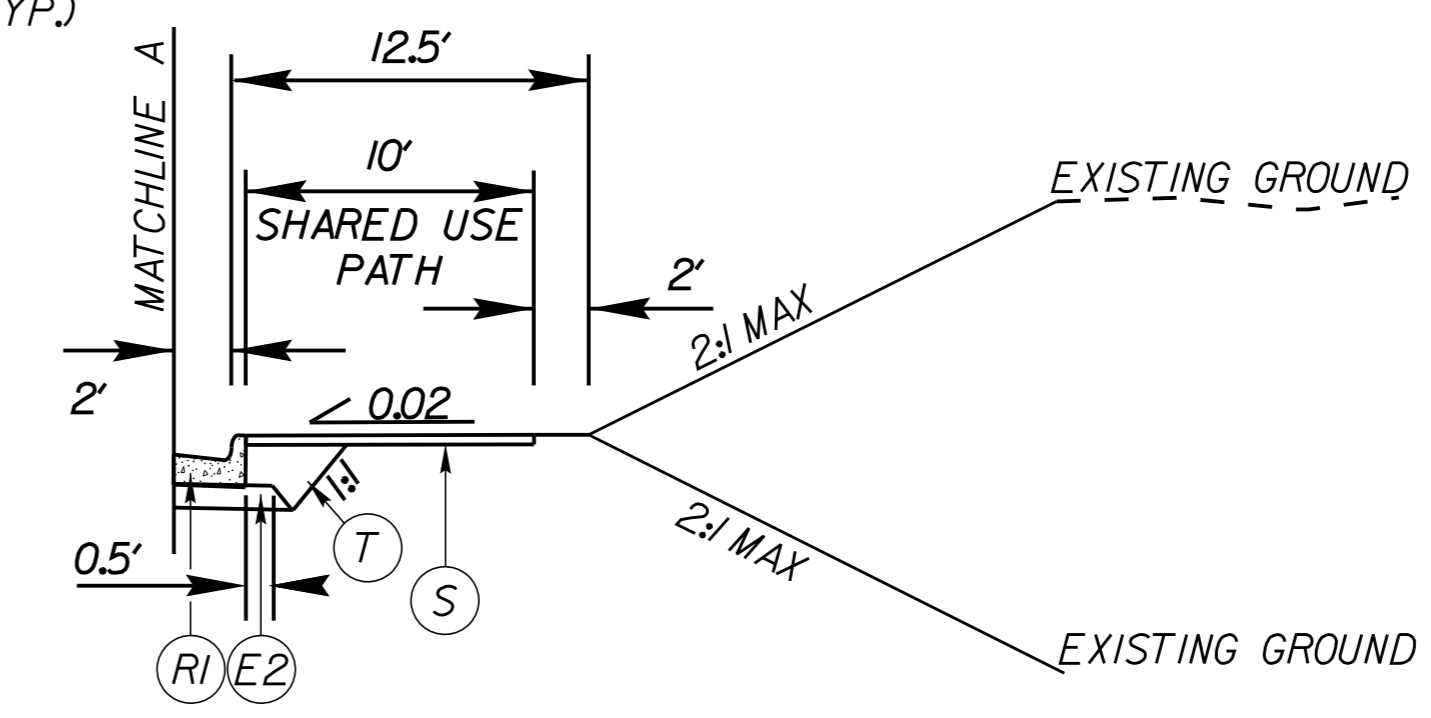
**Kimley Horn**  
 NC LICENSE #F-0102  
 200 SOUTH TRYON, SUITE 200  
 CHARLOTTE, N.C. 28202  
 RIGHT-OF-WAY REV.  
 CONST. REV.

PROJECT REFERENCE NO. U-5108	SHEET NO. 2A-8
ROADWAY DESIGN ENGINEER 	PAVEMENT DESIGN ENGINEER 
<b>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</b>	



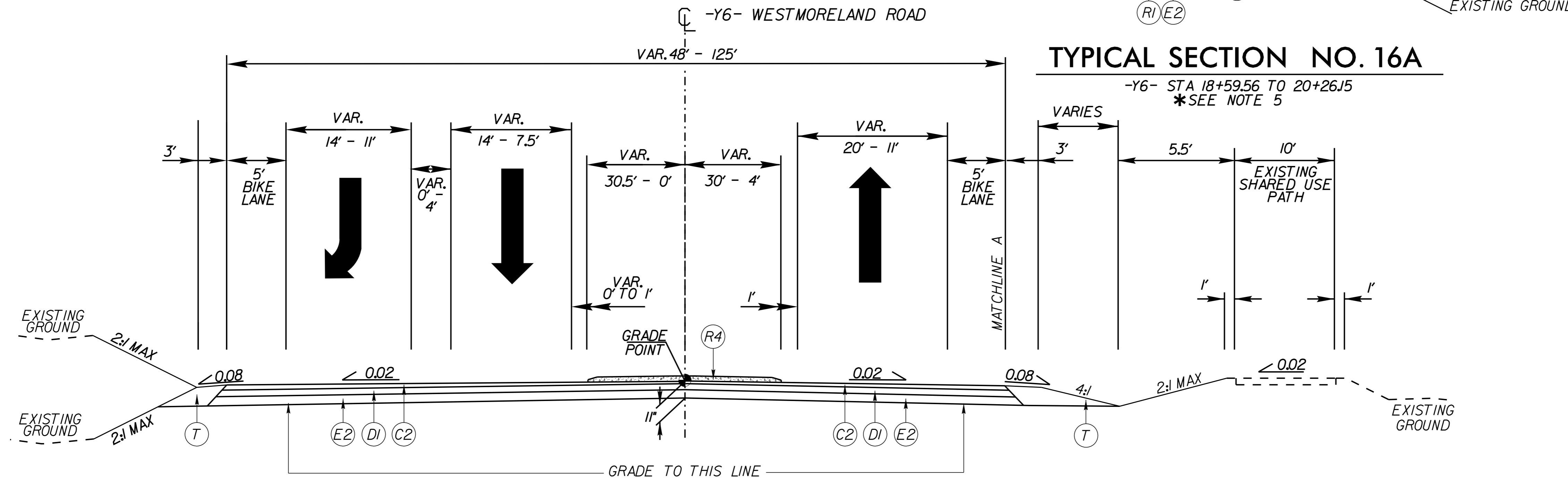
**TYPICAL SECTION NO. 15**

-Y6- STA 15+76.07 TO 17+07.46 (BEGIN ROUNDABOUT)  
 \*SEE NOTE 6



**TYPICAL SECTION NO. 16A**

-Y6- STA 18+59.56 TO 20+26J5  
 \*SEE NOTE 5



**TYPICAL SECTION NO. 16**

-Y6- STA 18+73.57 (END ROUNDABOUT) TO 20+50.00

**PAVEMENT SCHEDULE**

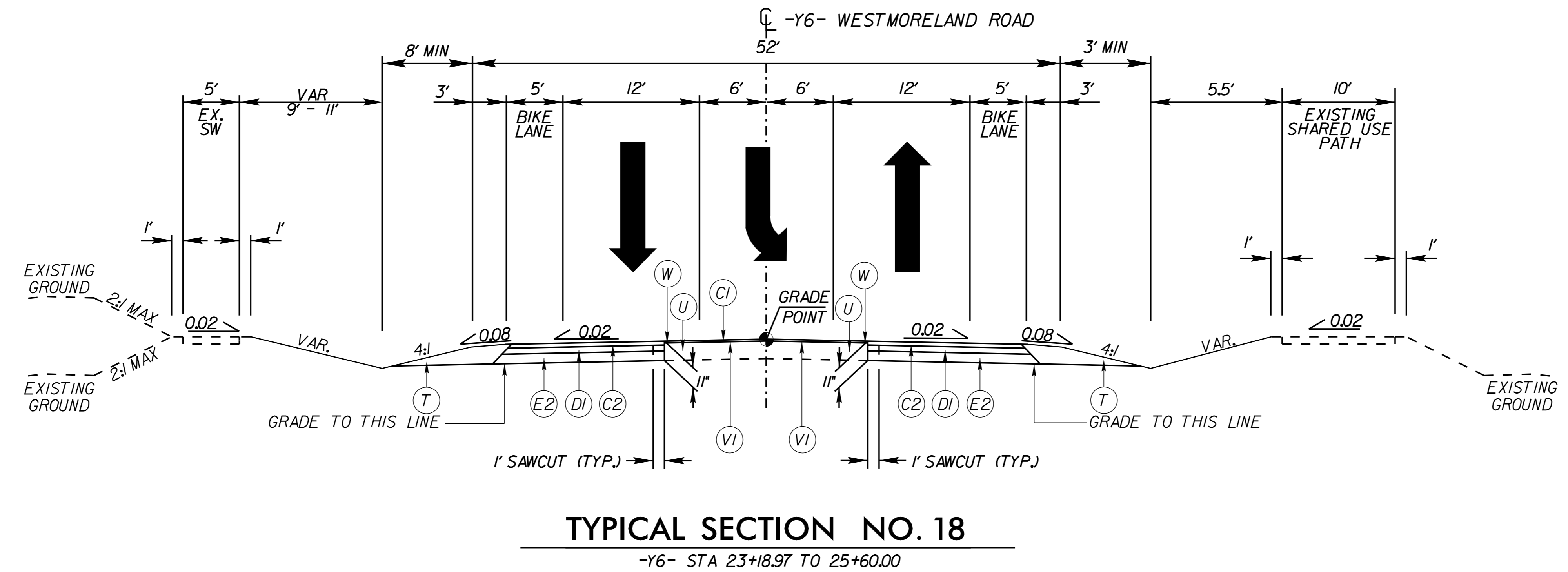
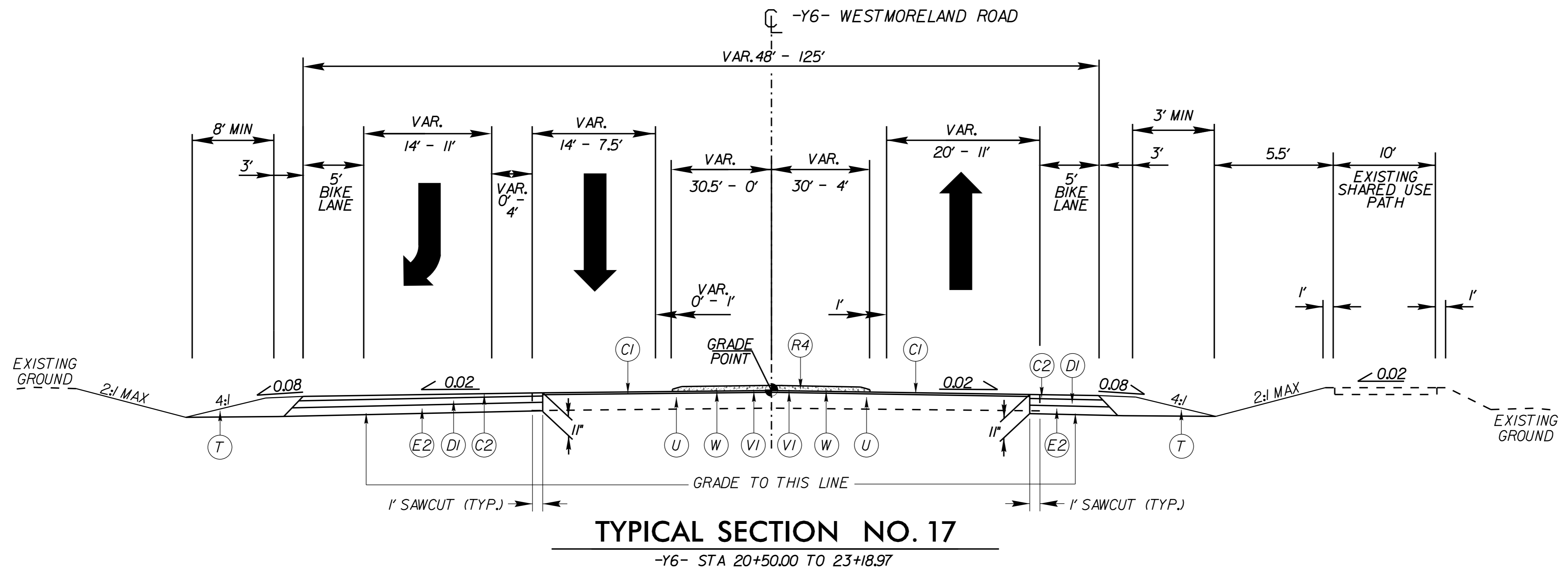
<b>A1</b>	12" TRUCK MOUNTABLE CONCRETE ISLAND (CLASS AA)
<b>A2</b>	6" CONCRETE DRIVEWAY
<b>C1</b>	1.5" S9.5B
<b>C2</b>	3" S9.5B
<b>C3</b>	VAR. S9.5B
<b>D1</b>	4" I19.0C
<b>D2</b>	VAR. I19.0C
<b>E1</b>	3" B25.0C
<b>E2</b>	4" B25.0C
<b>E3</b>	VAR. B25.0C
<b>E4</b>	5.5" B25.0C
<b>F</b>	ASPHALT SURFACE TREATMENT
<b>G</b>	12" SOIL CEMENT BASE (FULL DEPTH RECLAMATION)
<b>J1</b>	6" ABC
<b>J2</b>	8" ABC
<b>K</b>	CLASS IV SUBGRADE STABILIZATION
<b>N</b>	GEOTEXTILE FOR SUBGRADE STABILIZATION
<b>R1</b>	2'-6" CONCRETE CURB AND GUTTER
<b>R2</b>	1'-6" CONCRETE CURB AND GUTTER
<b>R3</b>	PROPOSED SHOULDER BERM GUTTER
<b>R4</b>	5" MONOLITHIC CONCRETE ISLAND (SURFACE MOUNTED)
<b>R5</b>	4" CONCRETE PAVED DITCH
<b>R6</b>	8" x 18" CONCRETE CURB
<b>R7</b>	SINGLE FACED CONCRETE BARRIER
<b>S</b>	4" CONCRETE SIDEWALK / SHARED USE PATH
<b>T</b>	EARTH MATERIAL
<b>U</b>	EXISTING PAVEMENT
<b>V1</b>	MILLING (1.5')
<b>V2</b>	MILLING (3.5')
<b>W</b>	WEDGING

5/14/24

NOTES:  
 1. PAVEMENT EDGE SLOPES ARE 1:1 UNLESS OTHERWISE NOTED.  
 2. SEE PLANS FOR TAPER LOCATIONS.  
 3. SEE PLANS FOR CURB AND GUTTER LOCATIONS.  
 4. USE WEDGING AS NECESSARY (SEE DETAIL ON SHEET 2A-1).

**Kimley Horn**  
 NC LICENSE #F-0102  
 200 SOUTH TRYON, SUITE 200  
 CHARLOTTE, N.C. 28202

PROJECT REFERENCE NO. U-5108	SHEET NO. 2A-9
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



A1	12" TRUCK MOUNTABLE CONCRETE ISLAND (CLASS AA)
A2	6" CONCRETE DRIVEWAY
C1	1.5" S9.5B
C2	3" S9.5B
C3	VAR. S9.5B
D1	4" B25.0C
D2	VAR. B25.0C
E1	3" B25.0C
E2	4" B25.0C
E3	VAR. B25.0C
E4	5.5" B25.0C
F	ASPHALT SURFACE TREATMENT
G	12" SOIL CEMENT BASE (FULL DEPTH RECLAMATION)
J1	6" ABC
J2	8" ABC
K	CLASS IV SUBGRADE STABILIZATION
N	GEOTEXTILE FOR SUBGRADE STABILIZATION
R1	2'-6" CONCRETE CURB AND GUTTER
R2	1'-6" CONCRETE CURB AND GUTTER
R3	PROPOSED SHOULDER BERM GUTTER
R4	5" MONOLITHIC CONCRETE ISLAND (SURFACE MOUNTED)
R5	4" CONCRETE PAVED DITCH
R6	8" x 18" CONCRETE CURB
R7	SINGLE FACED CONCRETE BARRIER
S	4" CONCRETE SIDEWALK / SHARED USE PATH
T	EARTH MATERIAL
U	EXISTING PAVEMENT
V1	MILLING (1.5')
V2	MILLING (3.5')
W	WEDGING

K:\CHL\_PRA\01036359 - U-5108 (Northcross)\DS\Roadway\Proj\U-5108\_rdy\_tlp.dgn

5/3/2024

5/14/24

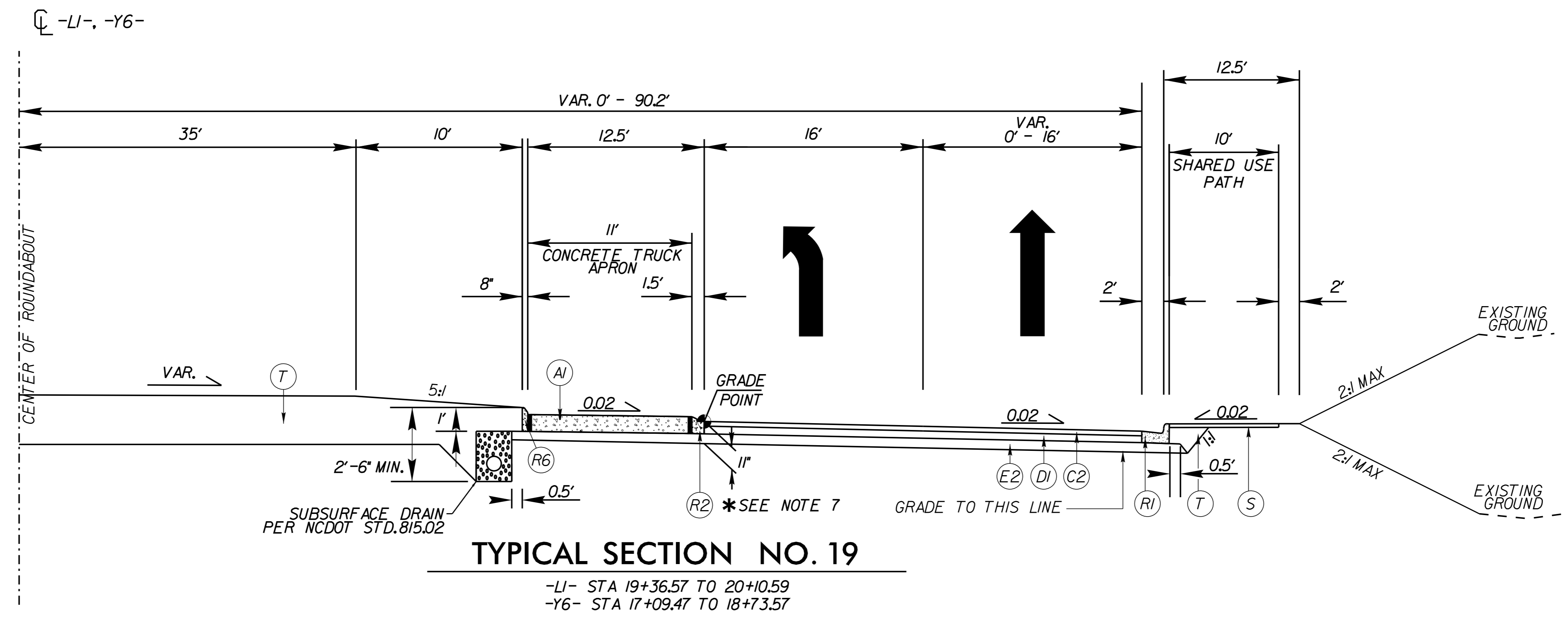
- NOTES:**
1. PAVEMENT EDGE SLOPES ARE 1:1 UNLESS OTHERWISE NOTED.
  2. SEE PLANS FOR TAPER LOCATIONS.
  3. SEE PLANS FOR CURB AND GUTTER LOCATIONS.
  4. USE WEDGING AS NECESSARY (SEE DETAIL ON SHEET 2A-1).
  5. UTILIZE 15' RADIAL JOINT SPACING FOR THE ROUNDABOUT TRUCK APRON.
  6. UTILIZE WELDED WIRE MESH (6X6 W5XW5).
  7. 1'-6" CONCRETE CURB AND GUTTER WITHIN ROUNDABOUT SHALL BE CONSTRUCTED WITH CLASS AA CONCRETE.

**Kimley Horn**

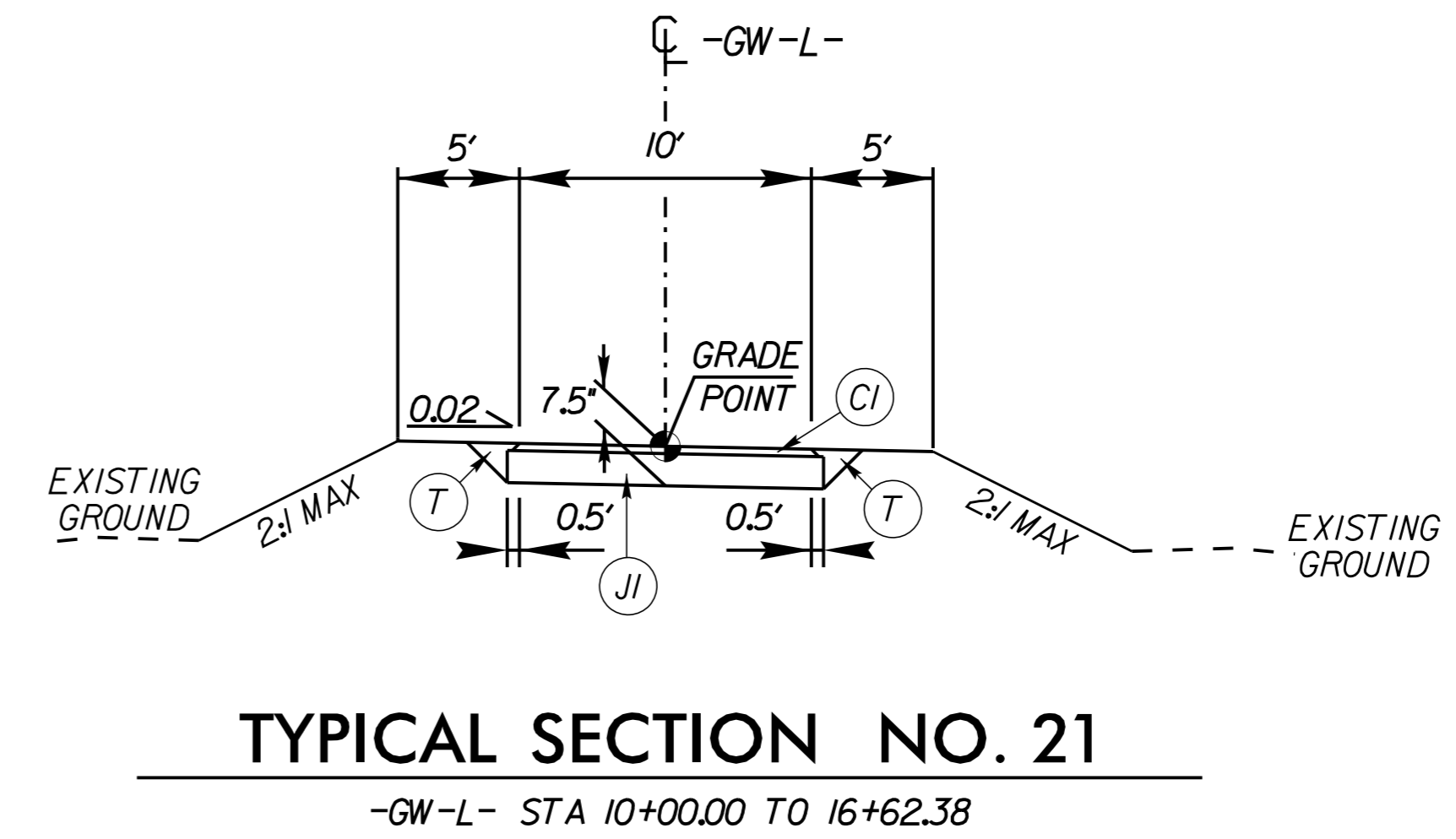
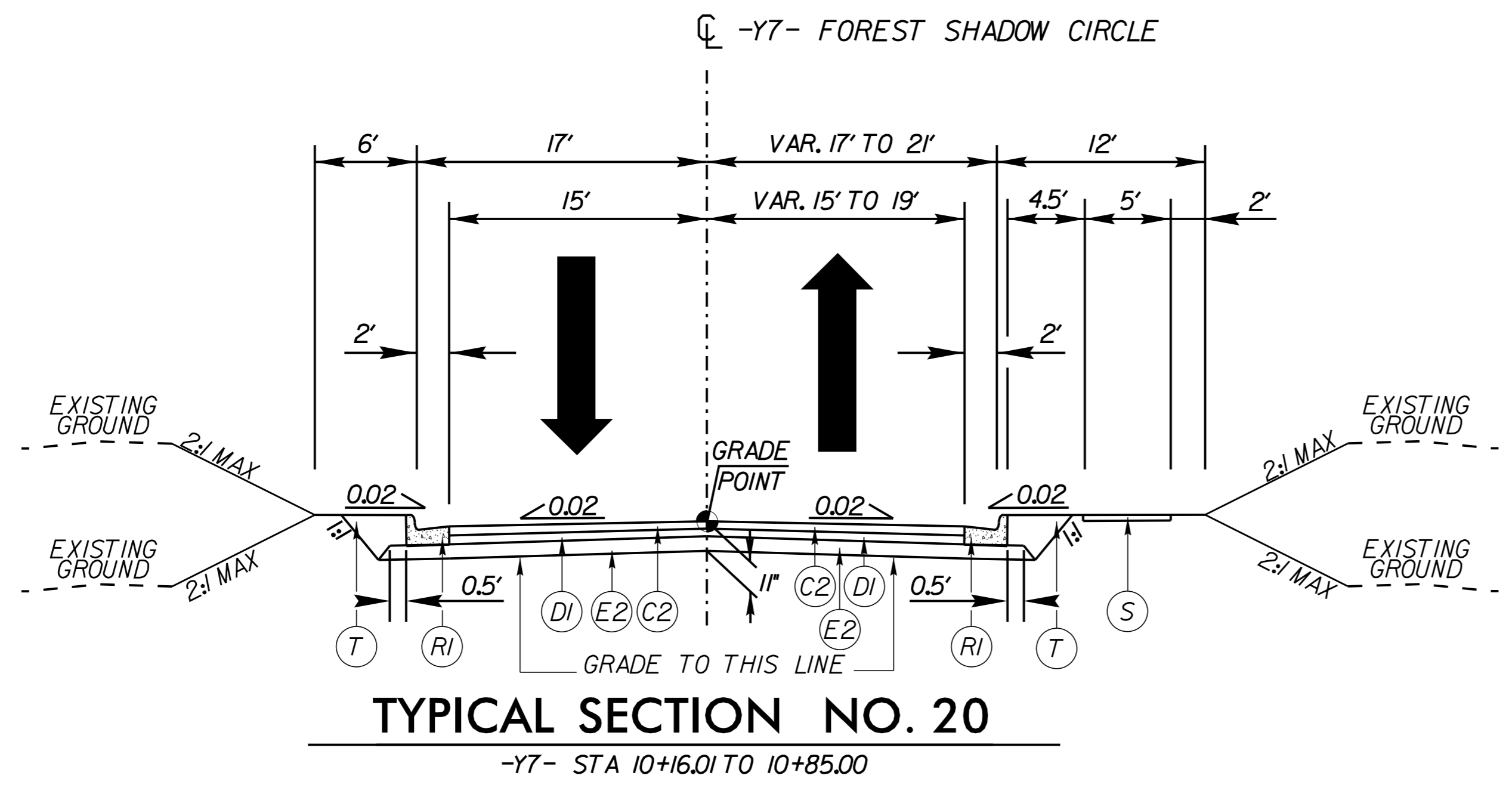
NC LICENSE #F-0102  
200 SOUTH TRYON, SUITE 200  
CHARLOTTE, N.C. 28202

RIGHT-OF-WAY REV.  
CONST. REV.

PROJECT REFERENCE NO. U-5108	SHEET NO. 2A-10
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER
<p><b>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</b></p>	



PAVEMENT SCHEDULE	
A1	12" TRUCK MOUNTABLE CONCRETE ISLAND (CLASS AA)
A2	6" CONCRETE DRIVEWAY
C1	1.5' S9.5B
C2	3' S9.5B
C3	VAR. S9.5B
D1	4" I19.0C
D2	VAR. I19.0C
E1	3" B25.0C
E2	4" B25.0C
E3	VAR. B25.0C
E4	5.5" B25.0C
F	ASPHALT SURFACE TREATMENT
G	12" SOIL CEMENT BASE (FULL DEPTH RECLAMATION)
J1	6" ABC
J2	8" ABC
K	CLASS IV SUBGRADE STABILIZATION
N	GEOTEXTILE FOR SUBGRADE STABILIZATION
R1	2'-6" CONCRETE CURB AND GUTTER
R2	1'-6" CONCRETE CURB AND GUTTER
R3	PROPOSED SHOULDER BERM GUTTER
R4	5" MONOLITHIC CONCRETE ISLAND (SURFACE MOUNTED)
R5	4" CONCRETE PAVED DITCH
R6	8" x 18" CONCRETE CURB
R7	SINGLE FACED CONCRETE BARRIER
S	4" CONCRETE SIDEWALK / SHARED USE PATH
T	EARTH MATERIAL
U	EXISTING PAVEMENT
V1	MILLING (1.5')
V2	MILLING (3.5')
W	WEDGING



K:\CHL\_PRA\1036359 - U-5108 (Northcross)\DS\Roadway\Proj\U-5108\_rdy\_tpad.dgn

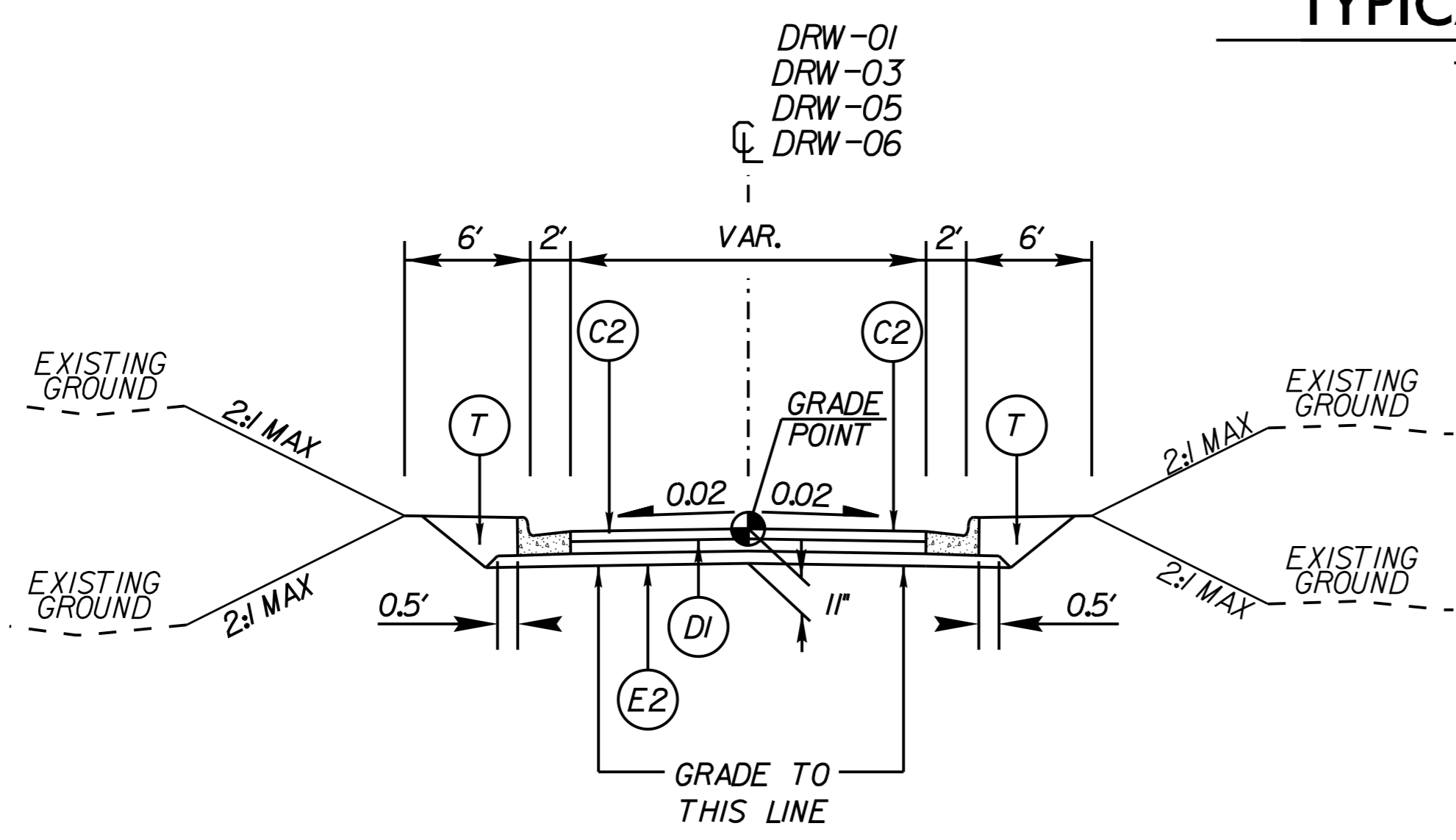
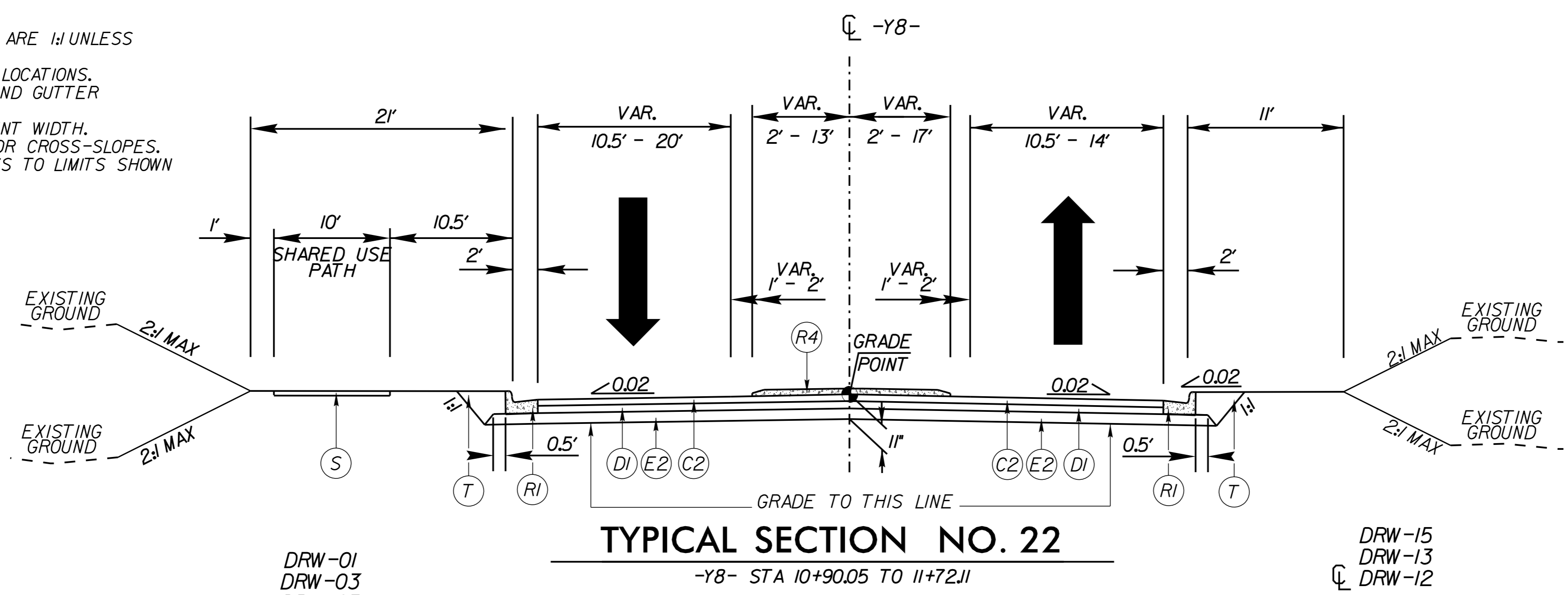
5/3/2024

5/14/24

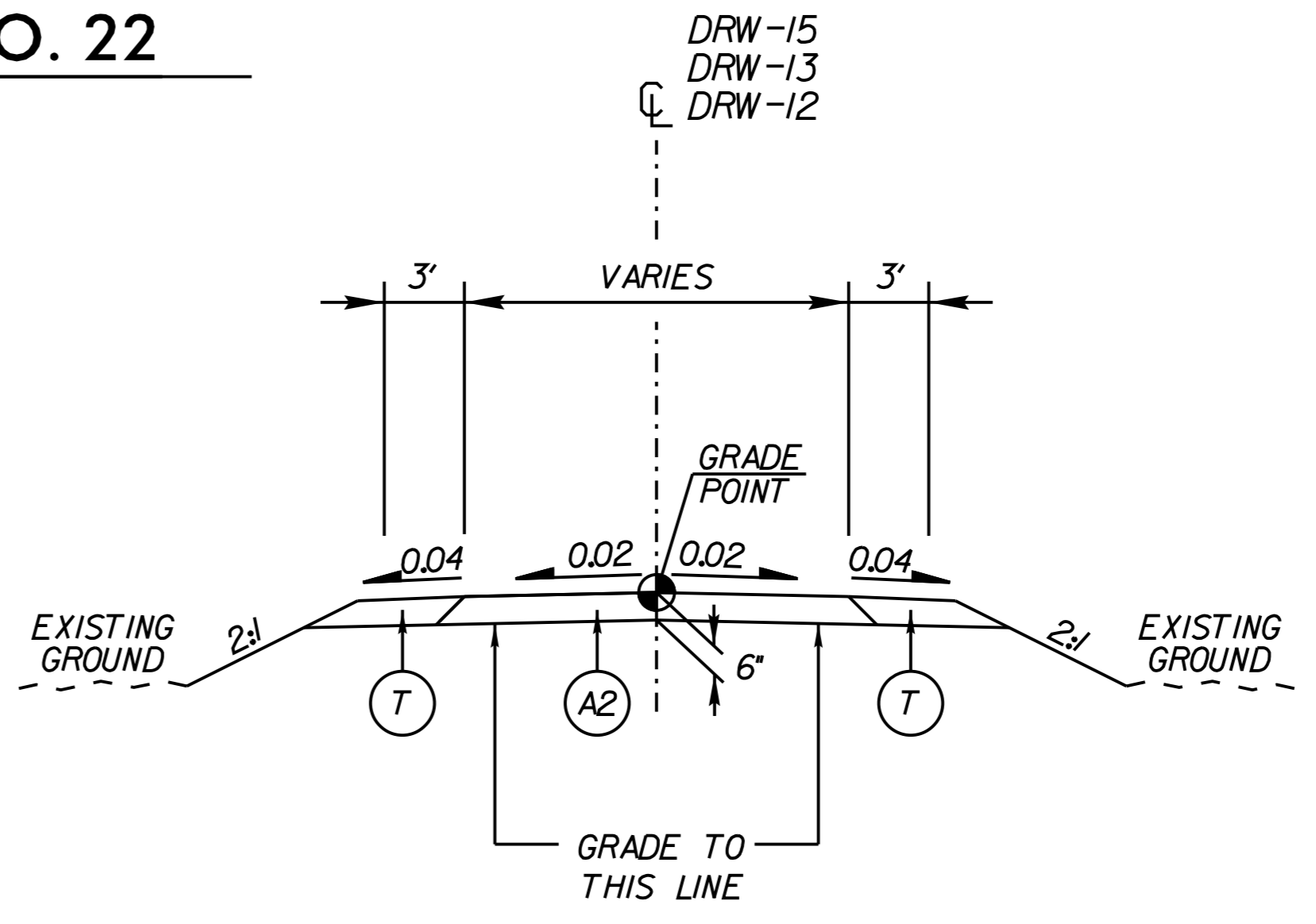
NOTES:  
 1. PAVEMENT EDGE SLOPES ARE 1:1 UNLESS OTHERWISE NOTED.  
 2. SEE PLANS FOR TAPER LOCATIONS.  
 3. SEE PLANS FOR CURB AND GUTTER LOCATIONS.  
 4. SEE PLANS FOR PAVEMENT WIDTH.  
 5. SEE CROSS-SECTIONS FOR CROSS-SLOPES.  
 6. CONSTRUCT ALL DRIVEWAYS TO LIMITS SHOWN ON PLANS.

**Kimley Horn**  
 NC LICENSE #F-0102  
 200 SOUTH TRYON, SUITE 200  
 CHARLOTTE, N.C. 28202  
 RIGHT-OF-WAY REV.  
 CONST. REV.

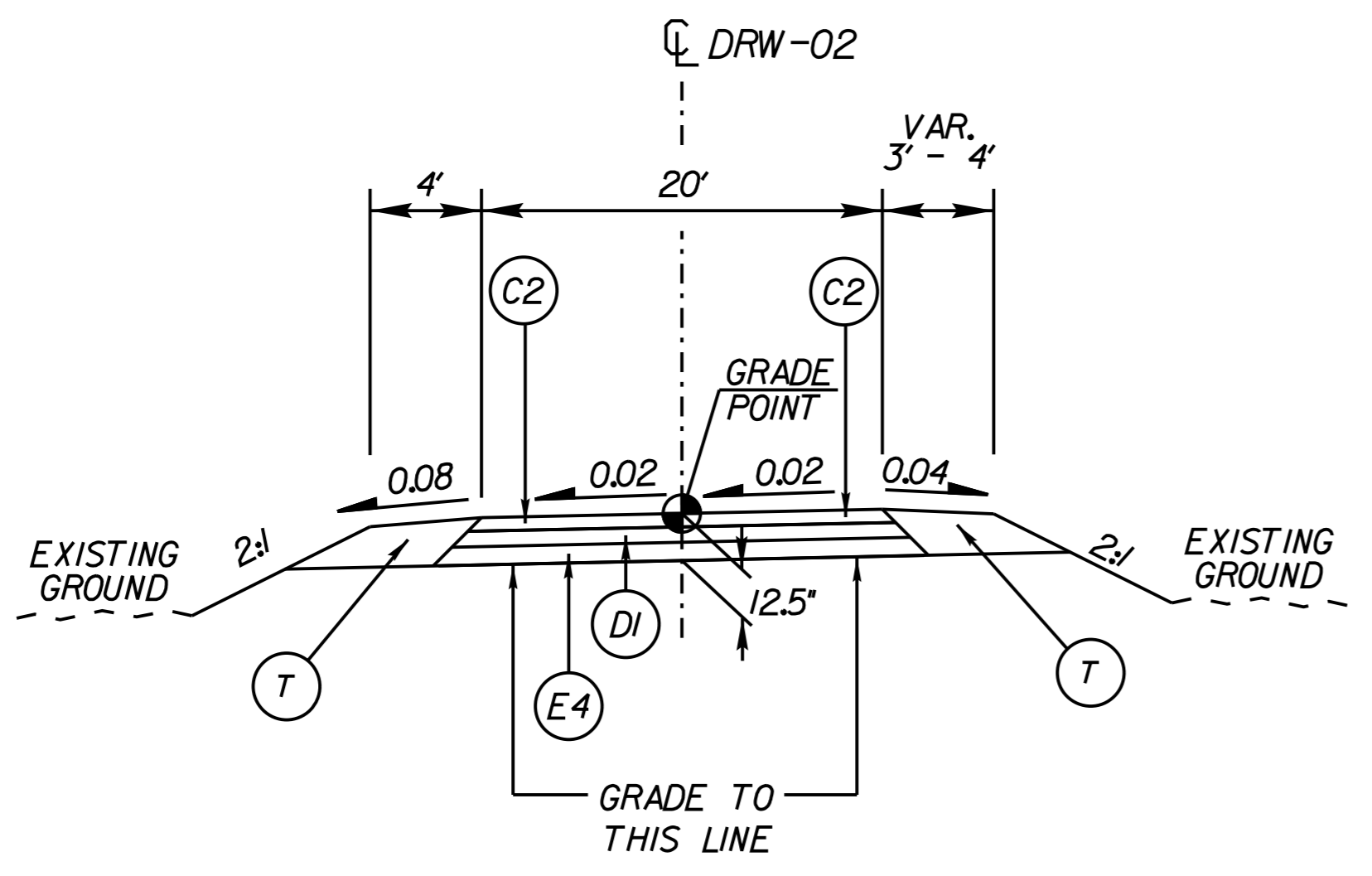
PROJECT REFERENCE NO. U-5108	SHEET NO. 2A-11
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER
<b>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</b>	



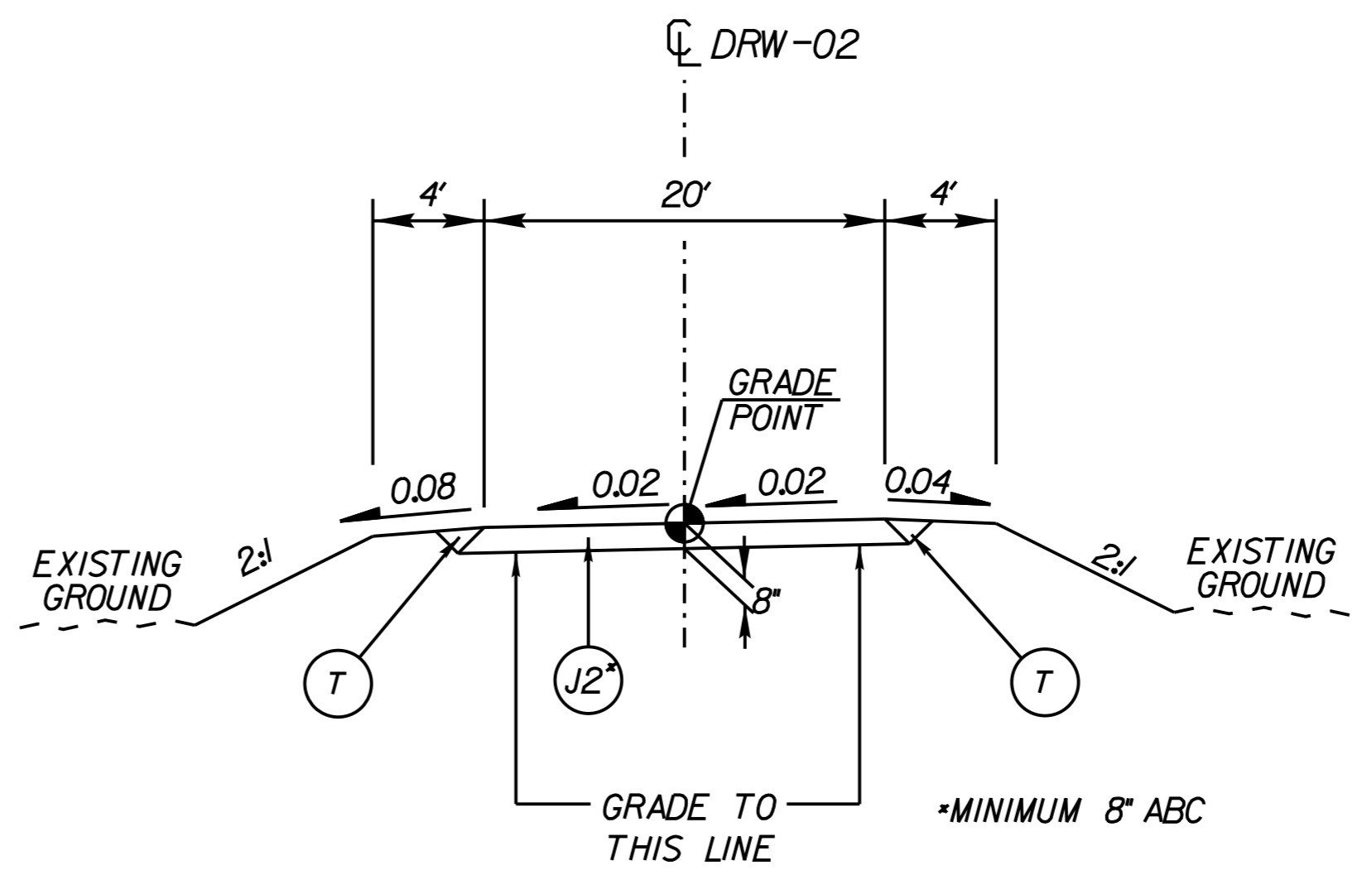
-DRW01- STA 10+16.00 TO 10+50.63  
 -DRW03- STA 10+16.00 TO 10+33.70  
 -DRW05- STA 10+16.00 TO 10+47.14  
 -DRW06- STA 10+16.00 TO 10+50.63



-DRW12- STA 10+10.00 TO 10+78.43  
 -DRW13- STA 10+17.00 TO 10+78.43  
 -DRW15- STA 10+00.00 TO 10+67.53



-DRW02- STA 10+16.00 TO 10+80.04



-DRW02- STA 10+80.04 TO 11+15.00

PAVEMENT SCHEDULE	
A1	12" TRUCK MOUNTABLE CONCRETE ISLAND (CLASS AA)
A2	6" CONCRETE DRIVEWAY
C1	1.5" S9.5B
C2	3" S9.5B
C3	VAR. S9.5B
DI	4" 119.0C
D2	VAR. 119.0C
E1	3" B25.0C
E2	4" B25.0C
E3	VAR. B25.0C
E4	5.5" B25.0C
F	ASPHALT SURFACE TREATMENT
G	12" SOIL CEMENT BASE (FULL DEPTH RECLAMATION)
J1	6" ABC
J2	8" ABC
K	CLASS IV SUBGRADE STABILIZATION
N	GEOTEXTILE FOR SUBGRADE STABILIZATION
RI	2'-6" CONCRETE CURB AND GUTTER
R2	1'-6" CONCRETE CURB AND GUTTER
R3	PROPOSED SHOULDER BERM GUTTER
R4	5" MONOLITHIC CONCRETE ISLAND (SURFACE MOUNTED)
R5	4" CONCRETE PAVED DITCH
R6	8" x 18" CONCRETE CURB
R7	SINGLE FACED CONCRETE BARRIER
S	4" CONCRETE SIDEWALK / SHARED USE PATH
T	EARTH MATERIAL
U	EXISTING PAVEMENT
VI	MILLING (1.5')
V2	MILLING (3.5')
W	WEDGING

K:\CHL\_PRA\101036359 - U-5108 (Northcross)\DS\Roadway\Proj\U-5108\_rdy\_tlp.dgn

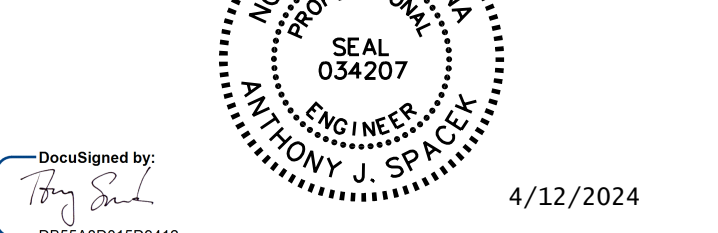
5/3/2024

# ROUNDBABOUT GEOMETRY SHEET

## Kimley»Horn

NC LICENSE #F-0102  
200 SOUTH TRYON, SUITE 200  
CHARLOTTE, N.C. 28202

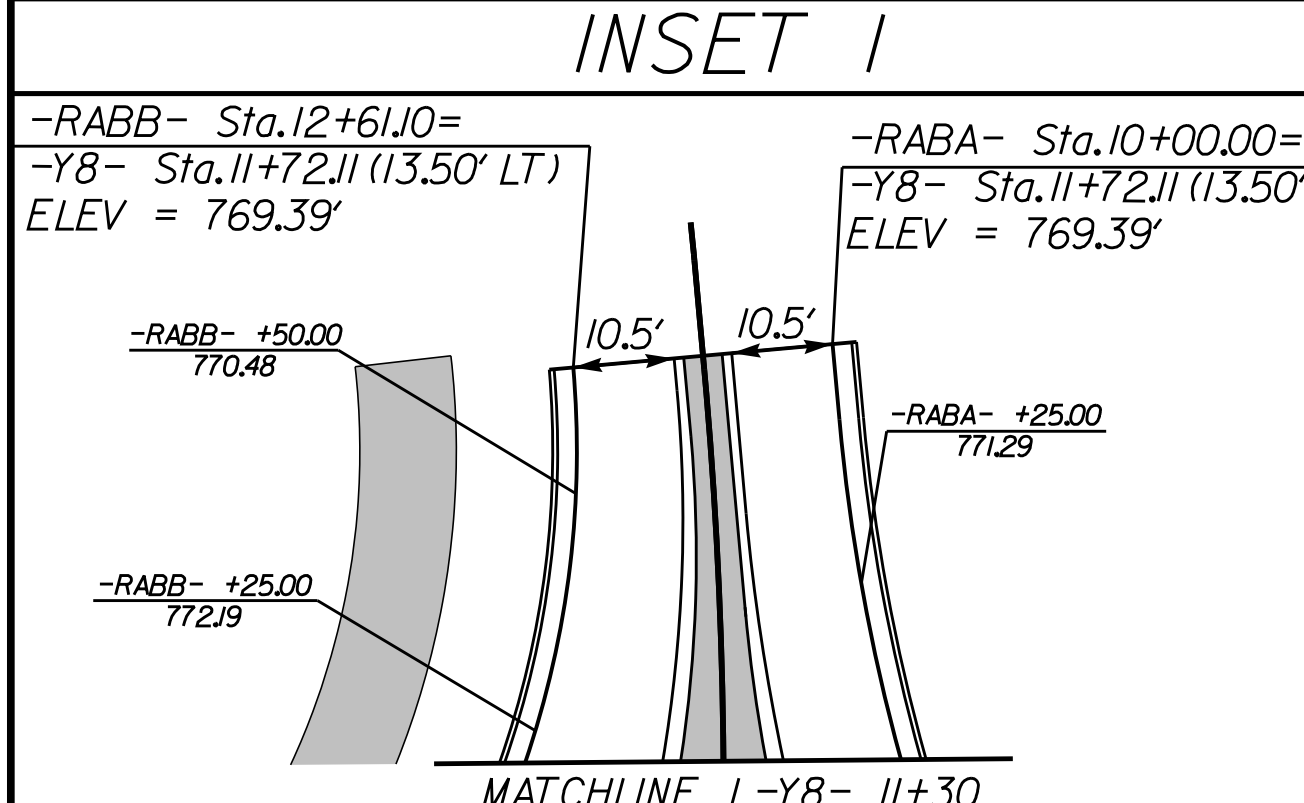
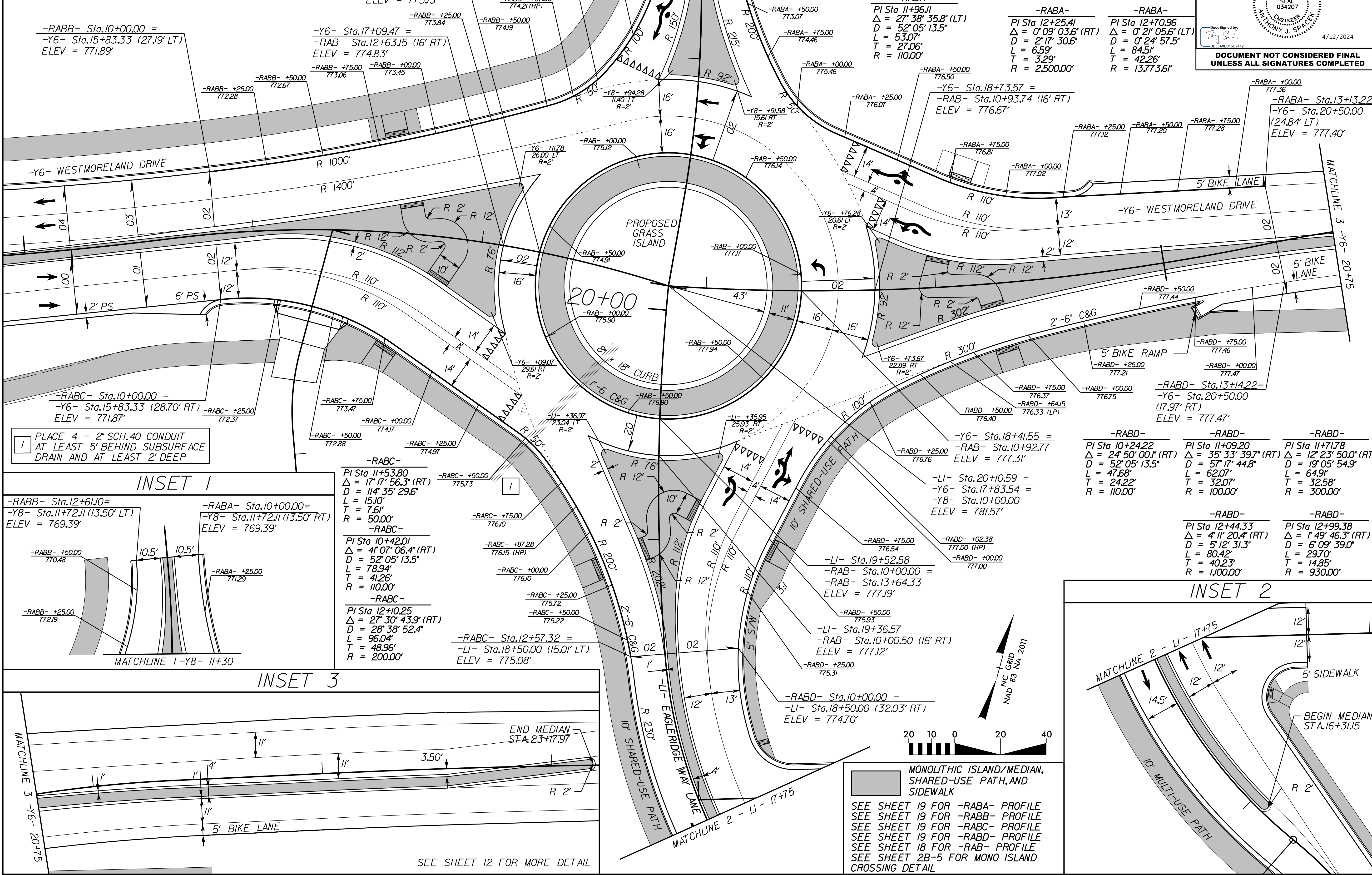
PROJECT REFERENCE NO.	SHEET NO.
U-5108	2B-1
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	



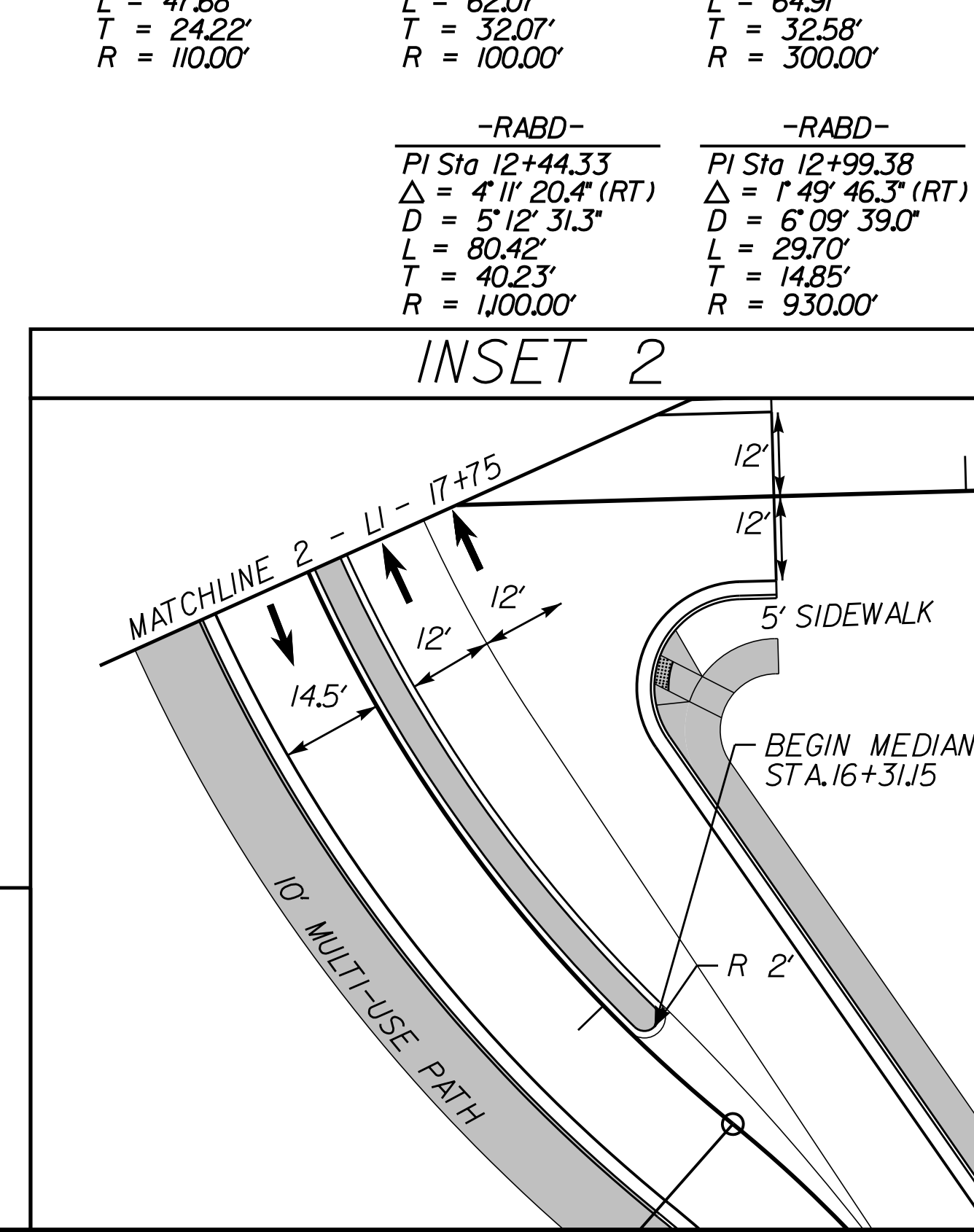
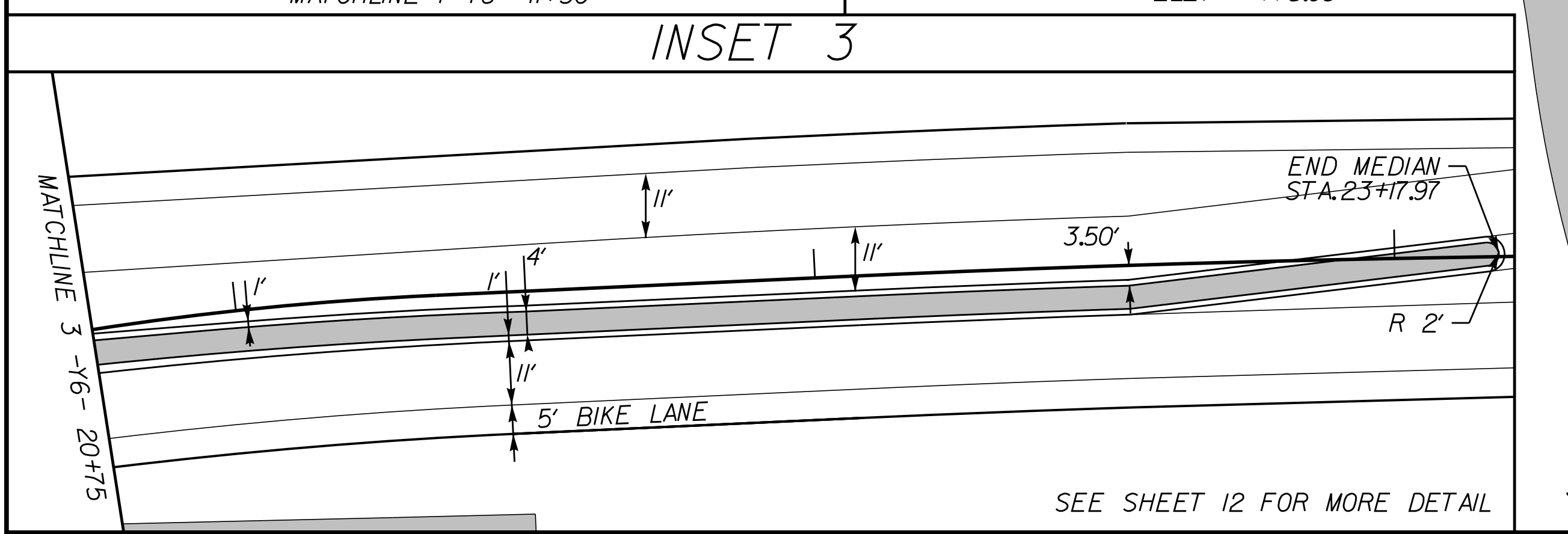
**DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED**

-RABB-	-RABB-	-RABB-
PI Sta 10+76J2 Δ = 8° 42' 21.2" (LT) D = 5' 43' 46.5" L = 151.95' T = 76.12' R = 1,000.00'	PI Sta 11+66J2 Δ = 3° 39' 24.5" (LT) D = 11' 35' 29.6" L = 27.63' T = 14.18' R = 50.00'	PI Sta 12+23.95 Δ = 47° 51' 37.4" (LT) D = 57' 17' 44.8" L = 83.53' T = 44.38' R = 100.00'

-RABA-	-RABA-
PI Sta 10+47.96 Δ = 22° 39' 42.4" (LT) D = 28' 38' 52.4" L = 79.10' T = 40.08' R = 200.00'	PI Sta 11+04.57 Δ = 38° 44' 45.5" (LT) D = 11' 35' 29.6" L = 33.81' T = 17.58' R = 50.00'



-RABC-	-RABC-	-RABC-
PI Sta 11+53.80 Δ = 17° 17' 56.3" (RT) D = 11' 43' 29.6" L = 15.10' T = 7.61' R = 50.00'	PI Sta 10+42.01 Δ = 41° 07' 06.4" (RT) D = 52° 05' 13.5" L = 78.94' T = 41.26' R = 110.00'	PI Sta 12+10.25 Δ = 27° 30' 43.9" (RT) D = 28' 38' 52.4" L = 96.04' T = 48.96' R = 200.00'



**MONOLITHIC ISLAND/MEDIAN, SHARED-USE PATH, AND SIDEWALK**

SEE SHEET 19 FOR -RABA- PROFILE  
SEE SHEET 19 FOR -RABB- PROFILE  
SEE SHEET 19 FOR -RABC- PROFILE  
SEE SHEET 19 FOR -RABD- PROFILE  
SEE SHEET 18 FOR -RAB- PROFILE  
SEE SHEET 2B-5 FOR MONO ISLAND CROSSING DETAIL

4/12/2024 K:\CHL\PR\101036359 - U-5108 (Northcross)\DSM\Roadway\Proj\U-5108\_rdy\_psh\_2B-1.dgn


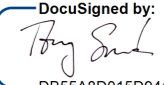
5/14/99

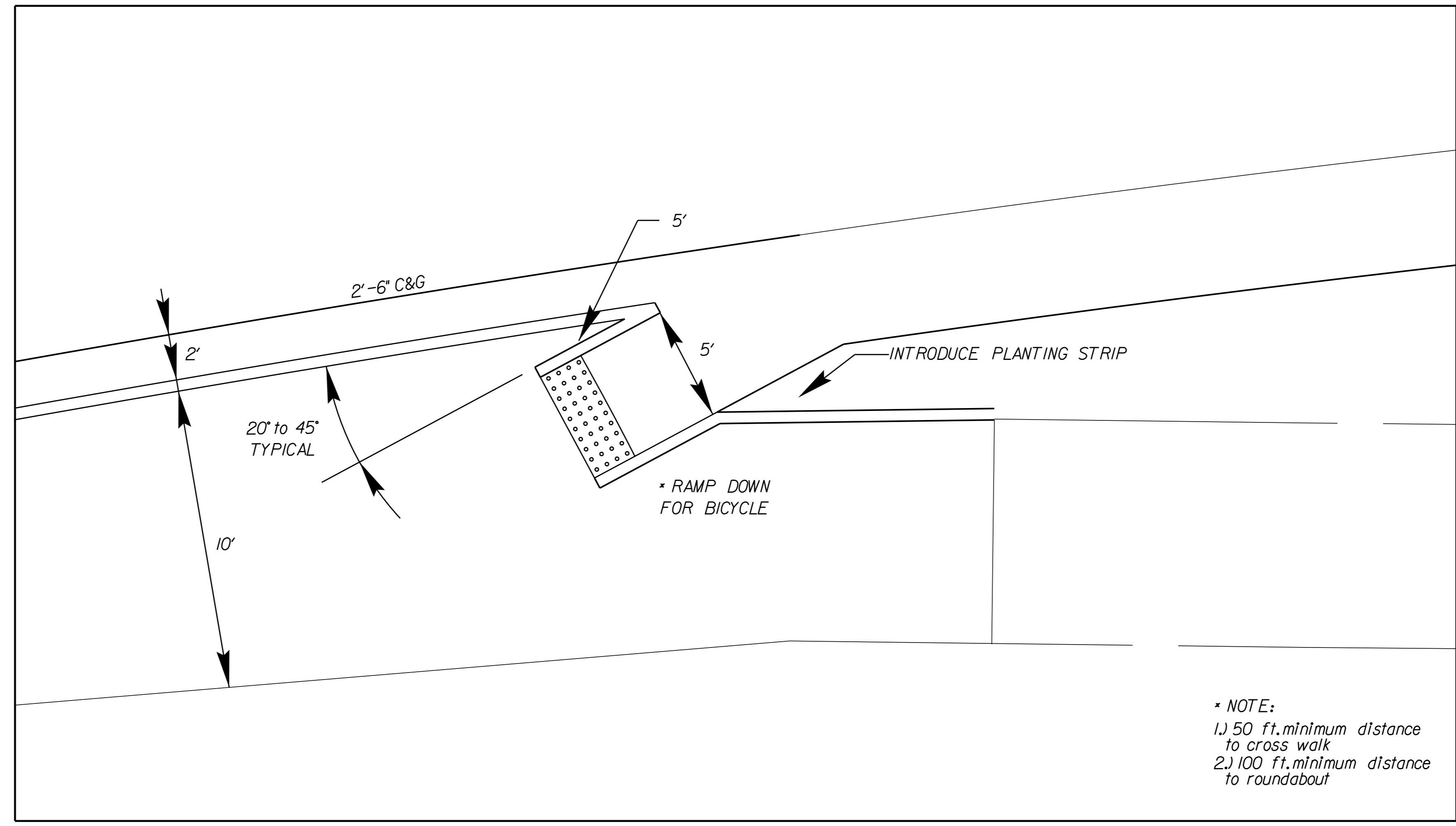
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4/12/2024

**Kimley » Horn**  
 NC LICENSE #F-0102  
 200 SOUTH TRYON, SUITE 200  
 CHARLOTTE, N.C. 28202

RIGHT-OF-WAY REV.  
 CONST. REV.

PROJECT REFERENCE NO. U-5108	SHEET NO. 2B-2
ROADWAY DESIGN ENGINEER	
	
DocuSigned by: 	4/12/2024
<b>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</b>	



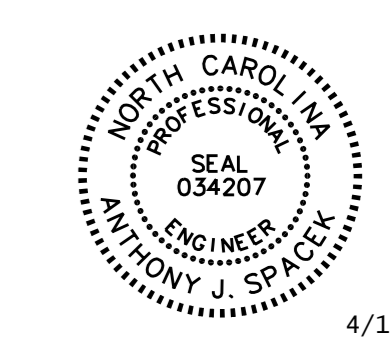
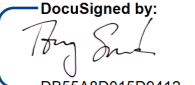
BIKE RAMP  
DEPARTURE DETAIL

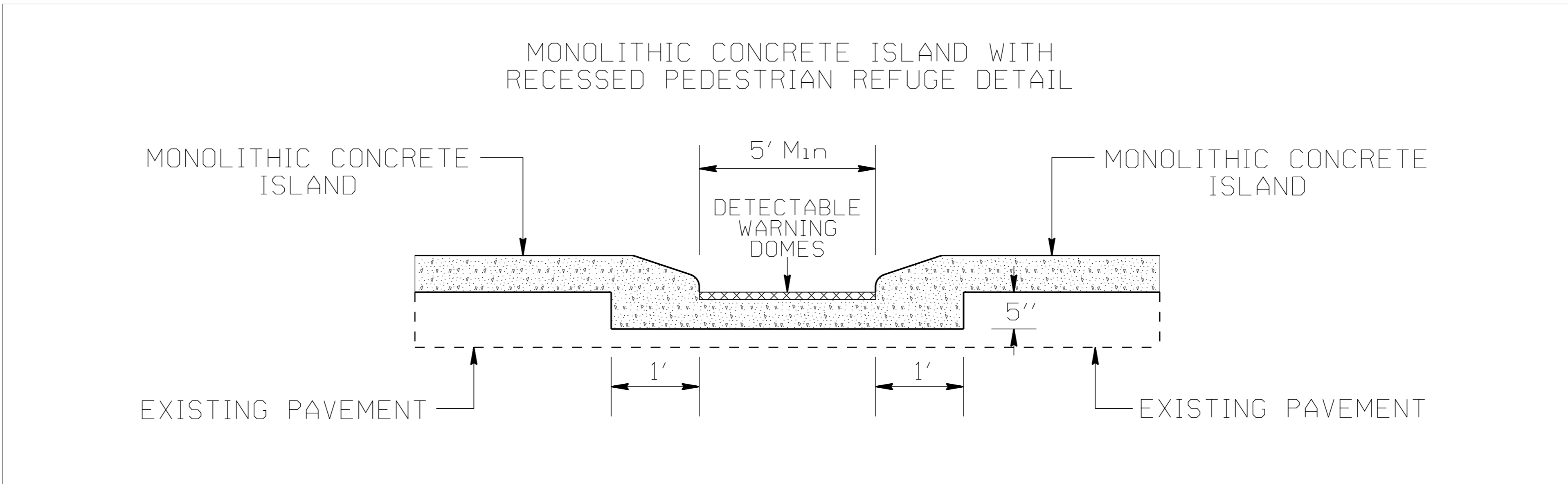


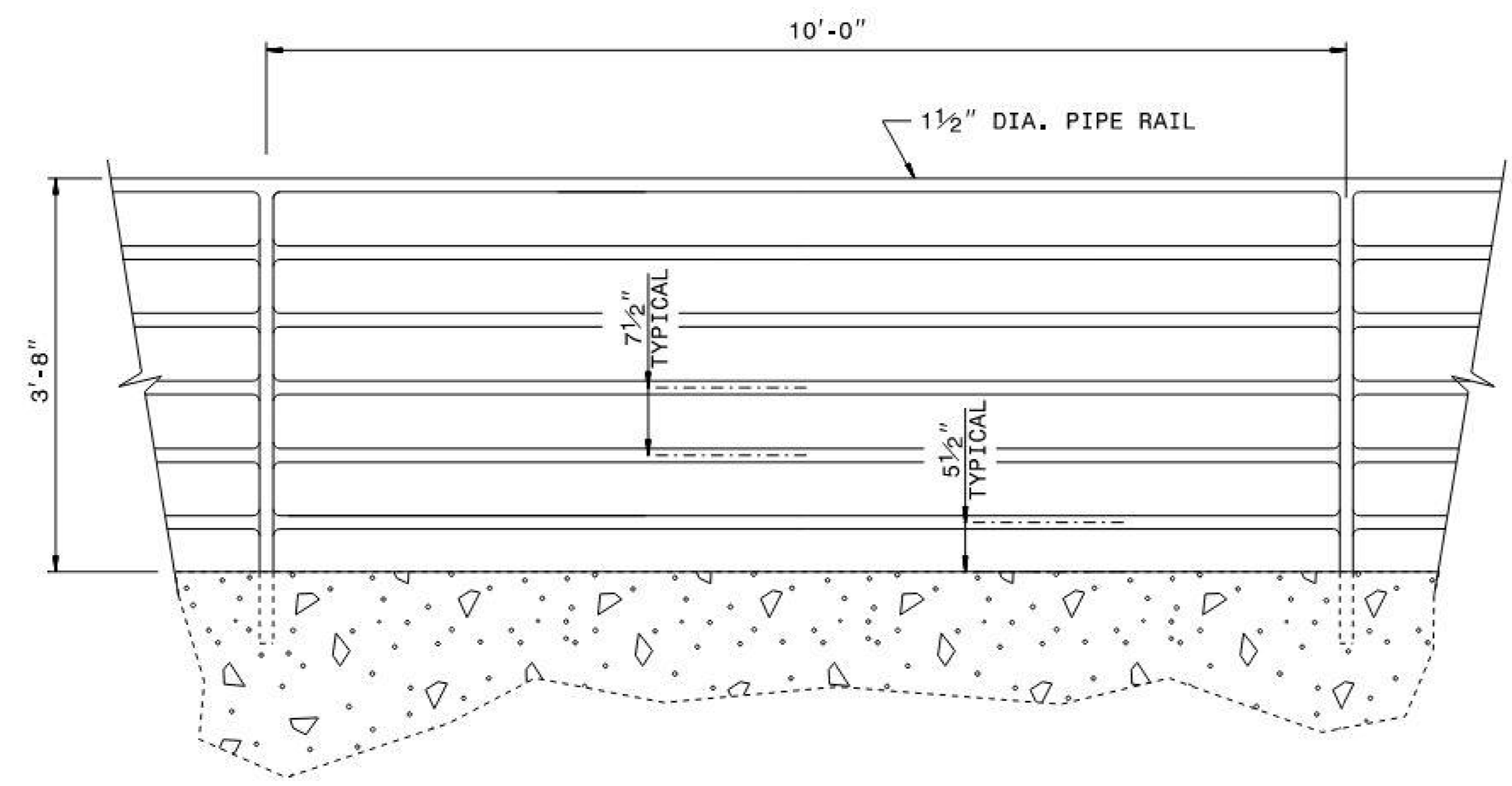
5/14/99

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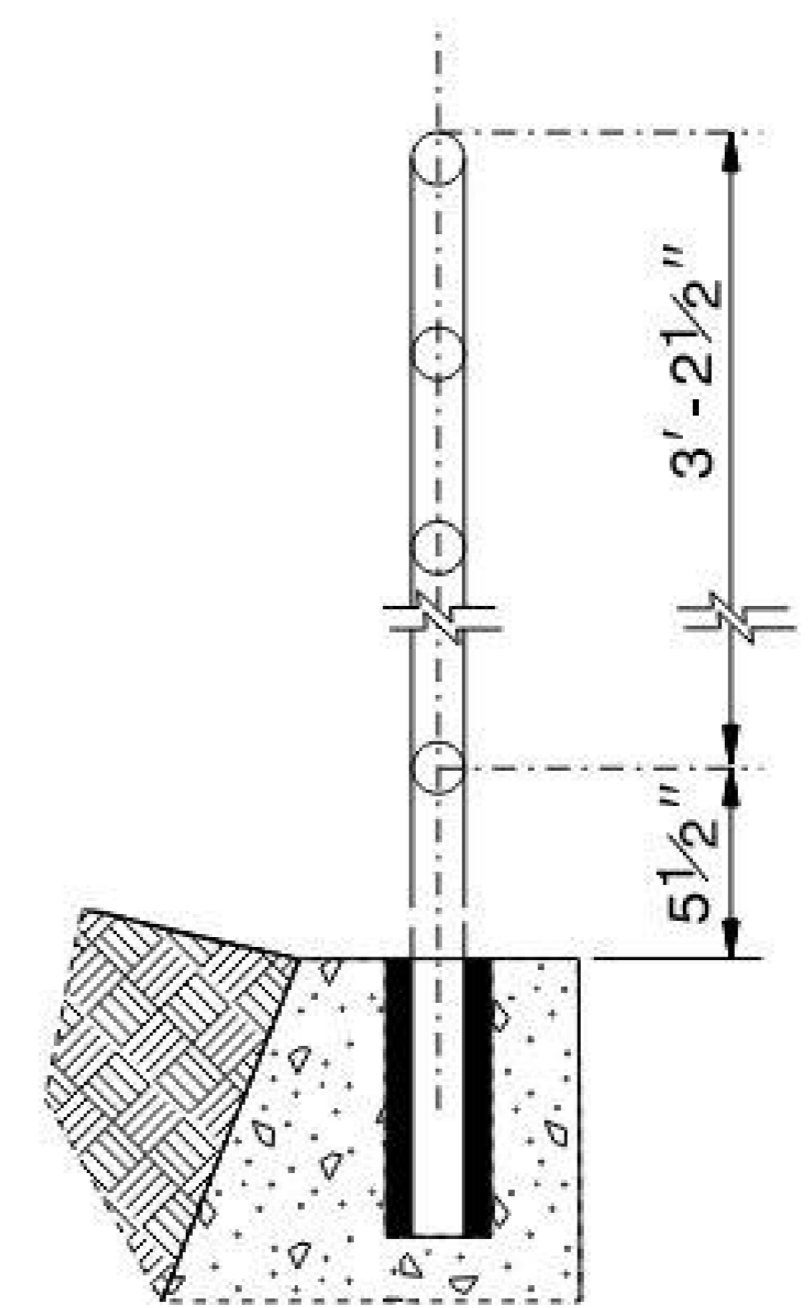
4/12/2024

PROJECT REFERENCE NO. U-5108	SHEET NO. 2B-3
ROADWAY DESIGN ENGINEER	
	
DocuSigned by: 	4/12/2024
<b>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</b>	

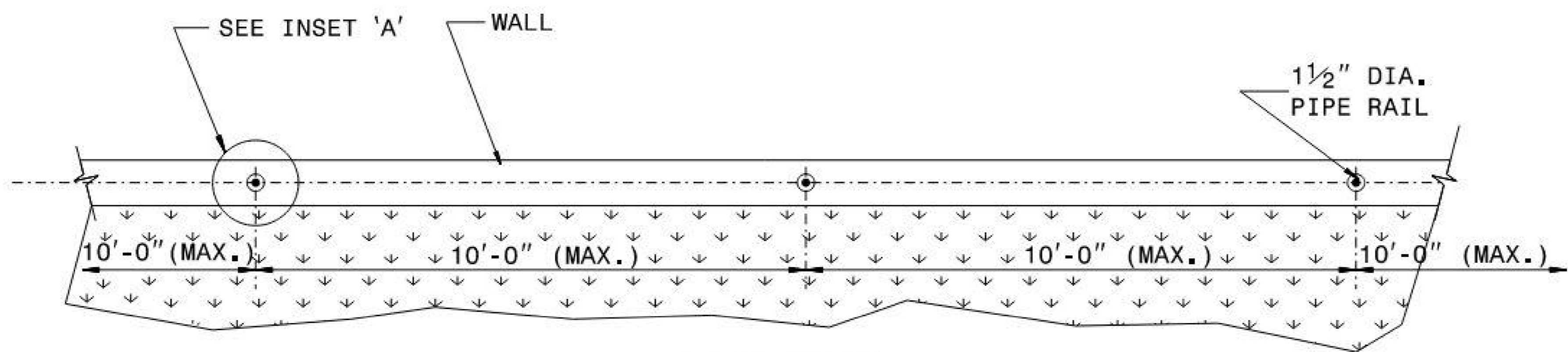




**ELEVATION OF HANDRAIL**



**INSET 'A'**



**PLAN VIEW**

**NOTES:**

CONSTRUCT PROPOSED STEEL PIPE RAIL 1 1/2" DIAMETER SCHEDULE 40 PLAIN END GALVANIZED STEEL PIPE MEETING THE REQUIREMENTS OF ASTM A53.

PAINT, IF REQUIRED BY THE ENGINEER, IN ACCORDANCE WITH SECTION 1080 OF THE STANDARD SPECIFICATIONS.

WELD IN ACCORDANCE WITH ARTICLE 1072-18 OF THE STANDARD SPECIFICATIONS.

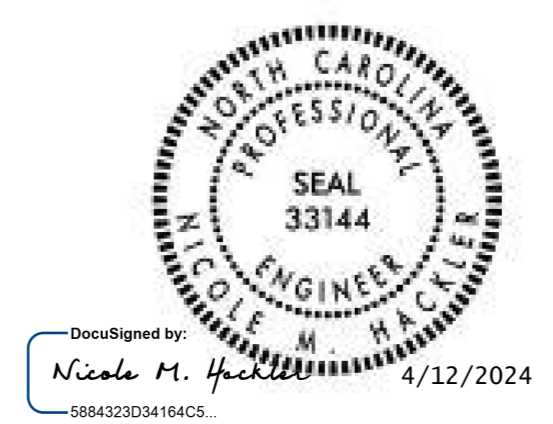
SUBMIT THE ATTACHMENT OF THE HANDRAIL TO THE RETAINING WALL TO THE CONTRACTS AND STANDARDS OFFICE FOR APPROVAL.

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

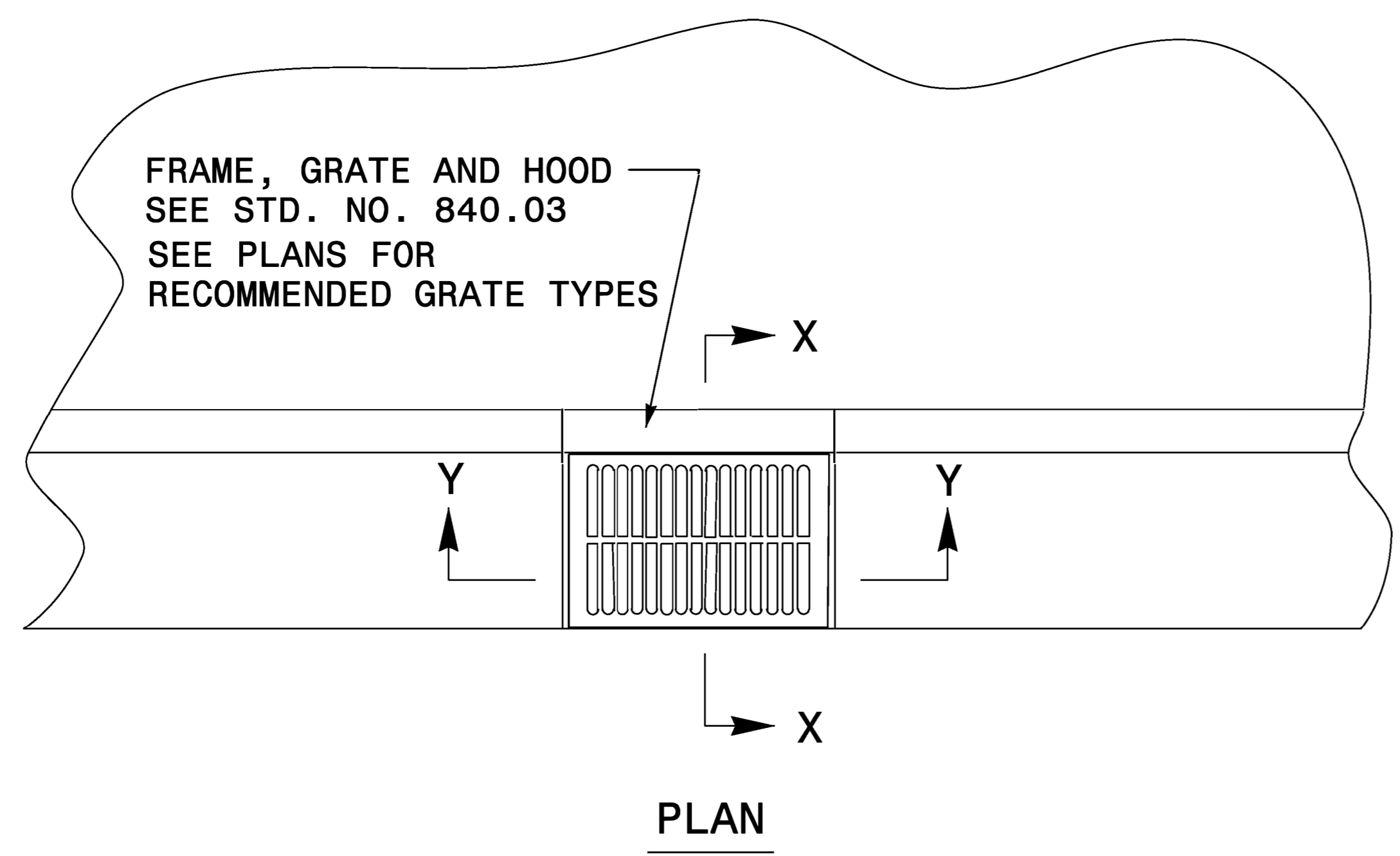
**CONTRACT STANDARDS AND DEVELOPMENT UNIT**  
Office 919-707-6950 FAX 919-250-4119

**DETAIL OF PIPE HANDRAIL MOUNTED ON A WALL**

ORIGINAL BY: E.E. WARD	DATE: 12-99
MODIFIED BY:	DATE:
CHECKED BY:	DATE:
FILE SPEC.: howerton/handrail on retaining wall.dgn	

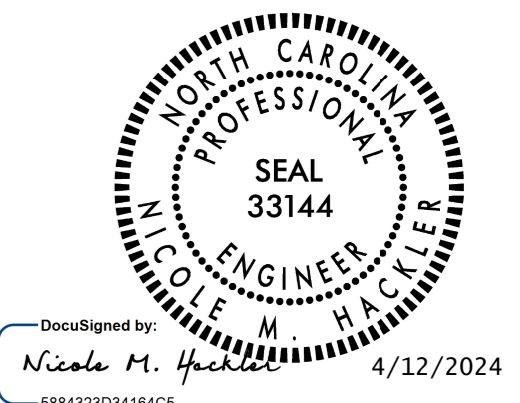
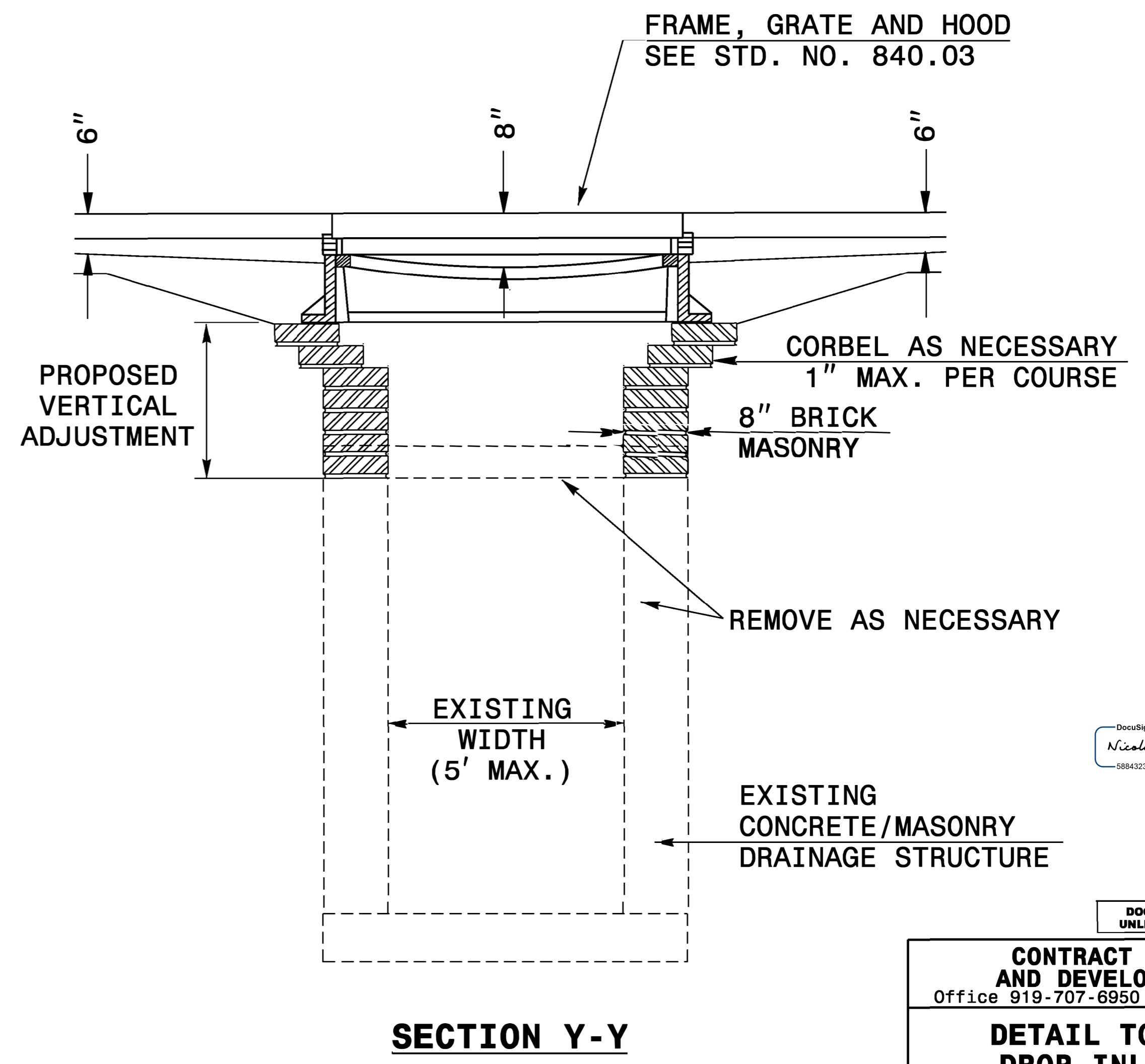
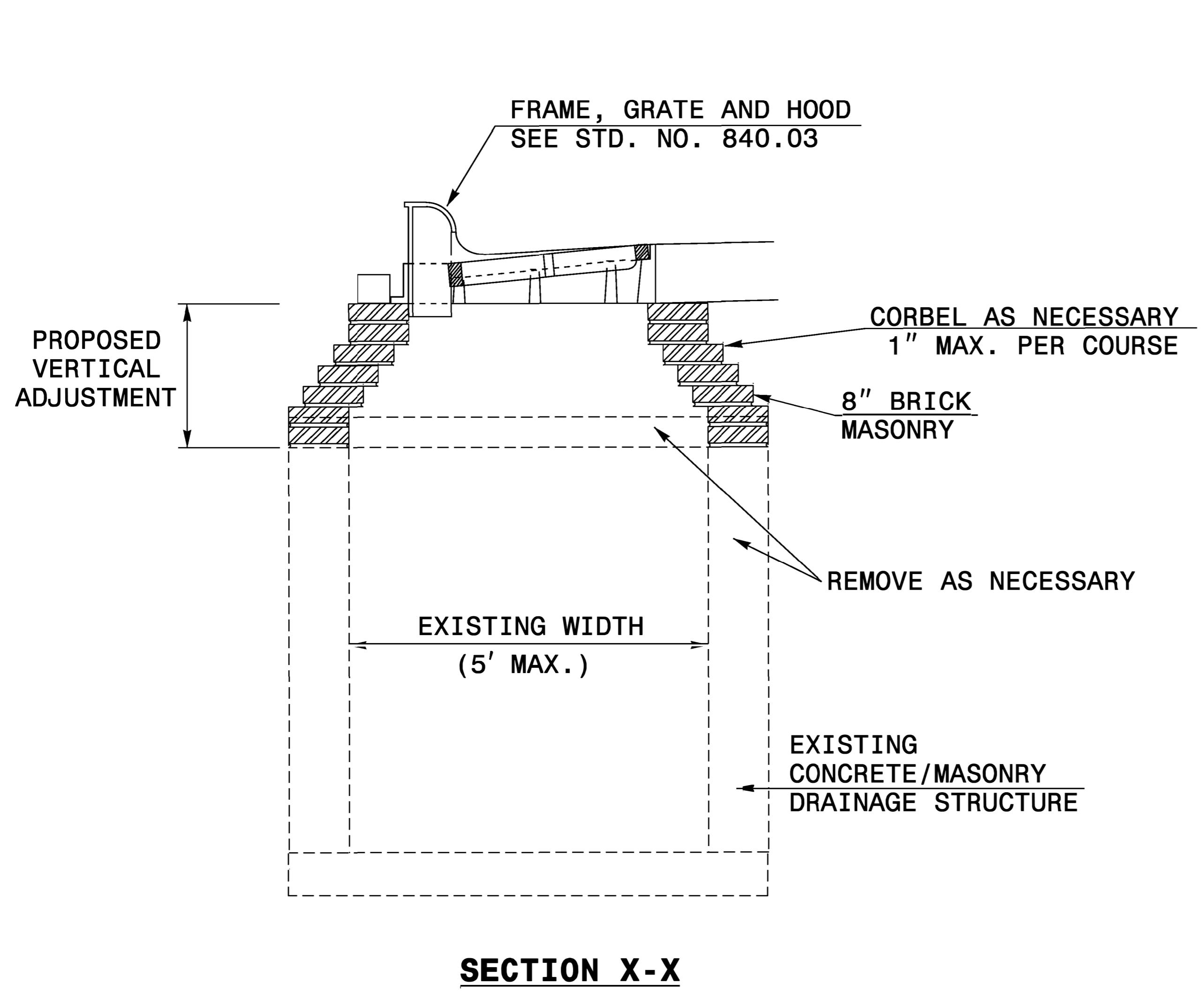


5/14/99 K:\CHL\_PRA\01036359 - U-5108 (Northcross)\DS\Roadway\Proj\U-5108\_rdy\_psh\_2B-2,2B-3,2C-1,2C-2.dgn 4/12/2024



**GENERAL NOTES:**

- THE ROADWAY PLANS INDICATE STRUCTURES TO BE CONVERTED.
- AFTER REMOVAL, STORE GRATES AND FRAMES AS DIRECTED BY THE ENGINEER.
- 4" SOLID CLAY BRICK, JUMBO BRICK, CONCRETE, OR 4" SOLID CONCRETE BLOCK MAY BE USED FOR VERTICAL ADJUSTMENT OF THE STRUCTURE.
- CONVERT IN ACCORDANCE WITH SECTION 859 OF THE STANDARD SPECIFICATIONS.



DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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

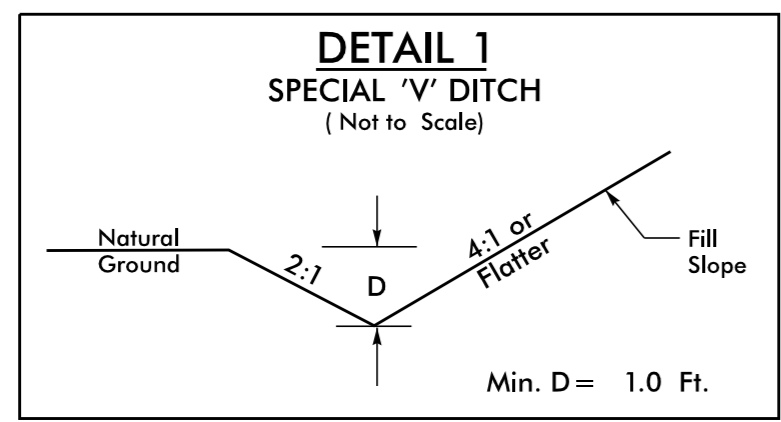
**DETAIL TO CONVERT DROP INLET OR JB TO CATCH BASIN**

ORIGINAL BY: E.E. WARD DATE: 11-97  
 MODIFIED BY: \_\_\_\_\_ DATE: \_\_\_\_\_  
 CHECKED BY: \_\_\_\_\_ DATE: \_\_\_\_\_  
 FILE SPEC.: D337:usr\details\stand\jbtocb.dgn

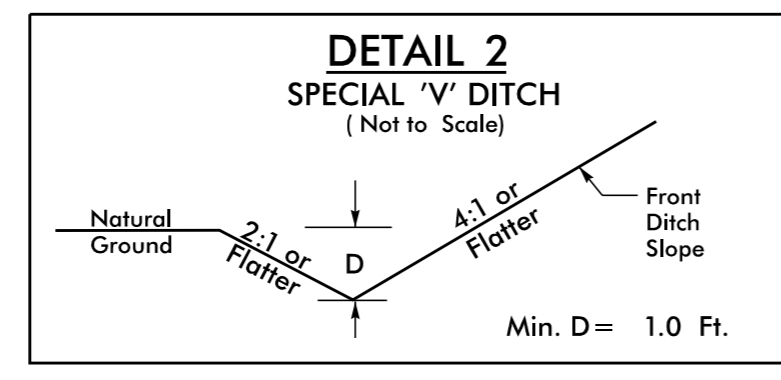
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K:\CHL\_PRA\01036359 - U-5108 (Northcross)\DS\Roadway\Proj\U-5108\_rdy\_psh\_2B-2,2B-3,2C-1,2C-2.dgn  
4/12/2024

**Kimley Horn**  
 NC LICENSE #F-0102  
 200 SOUTH TRYON, SUITE 200  
 CHARLOTTE, N.C. 28202  
 RIGHT-OF-WAY REV.  
 CONST. REV.

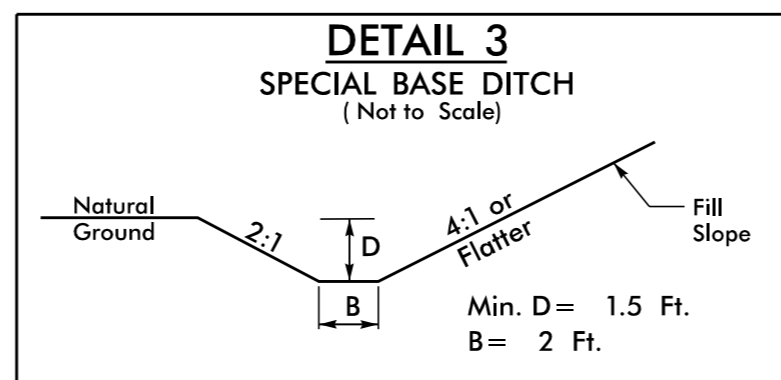
PROJECT REFERENCE NO. U-5108	SHEET NO. 2D-1
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
DocuSign 4/12/2024	DocuSign 4/12/2024
<b>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</b>	



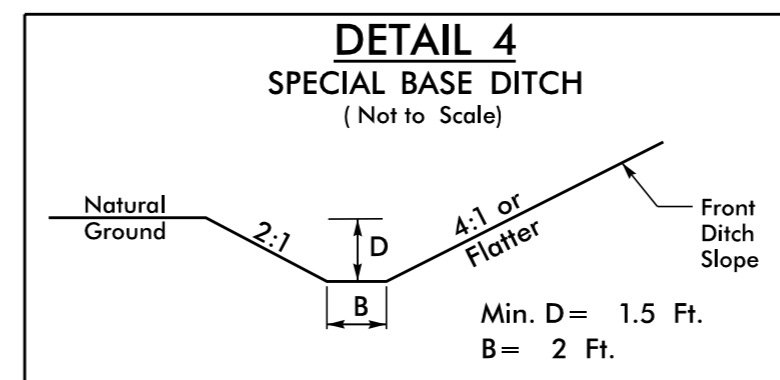
FROM STA. 30+00 TO STA. 30+25 -L- (RT)  
 FROM STA. 39+50 TO STA. 45+66 -L- (RT)  
 FROM STA. 45+66 TO STA. 48+50 -L- (RT)  
 FROM STA. 55+00 TO STA. 56+50 -L- (RT)  
 FROM STA. 61+00 TO STA. 63+50 -L- (LT)  
 FROM STA. 76+50 TO STA. 80+50 -L- (LT)  
 FROM STA. 81+00 TO STA. 82+70 -L- (LT)  
 FROM STA. 82+70 TO STA. 83+50 -L- (LT)  
 FROM STA. 83+50 TO STA. 85+16 -L- (LT)  
 FROM STA. 85+16 TO STA. 90+00 -L- (LT)  
 FROM STA. 18+00 TO STA. 19+12 -L- (RT)  
 FROM STA. 6+00 TO STA. 8+46 -Y6- (LT)  
 FROM STA. 7+00 TO STA. 8+65 -Y6- (RT)  
 FROM STA. 13+50 TO STA. 14+75 -Y6- (RT)



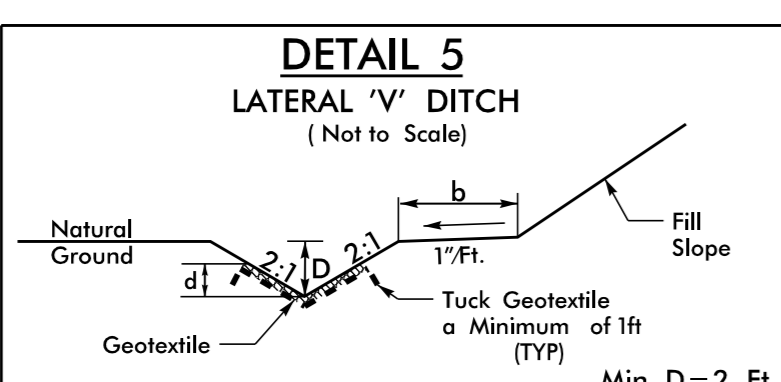
FROM STA. 26+27 TO STA. 28+00 -L- (RT)  
 FROM STA. 56+50 TO STA. 58+50 -L- (RT)  
 FROM STA. 59+50 TO STA. 61+00 -L- (LT)  
 FROM STA. 63+50 TO STA. 66+00 -L- (LT)  
 FROM STA. 67+50 TO STA. 71+50 -L- (RT)



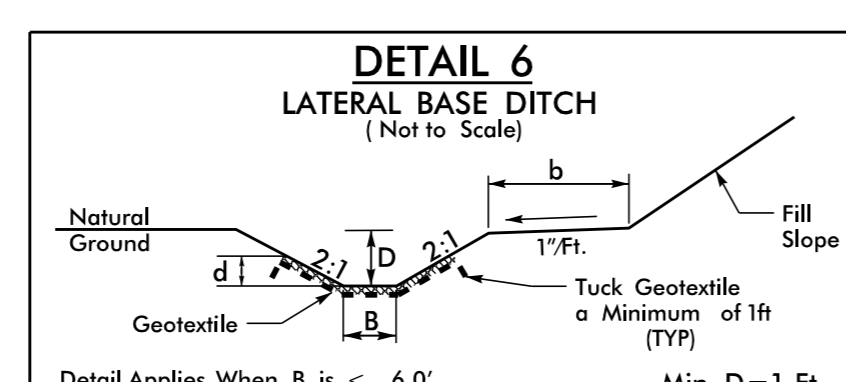
FROM STA. 66+00 TO STA. 70+00 -L- (LT)



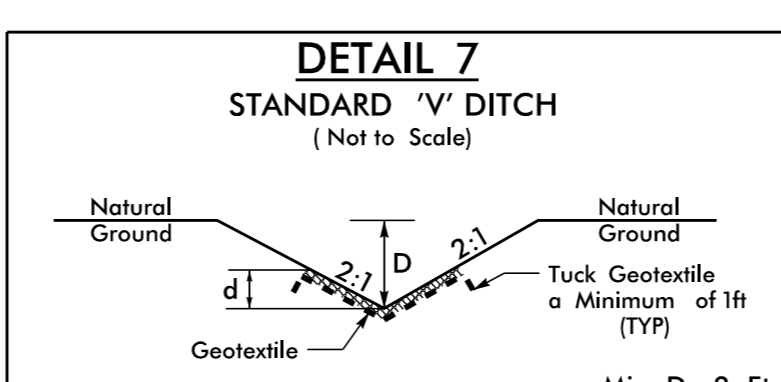
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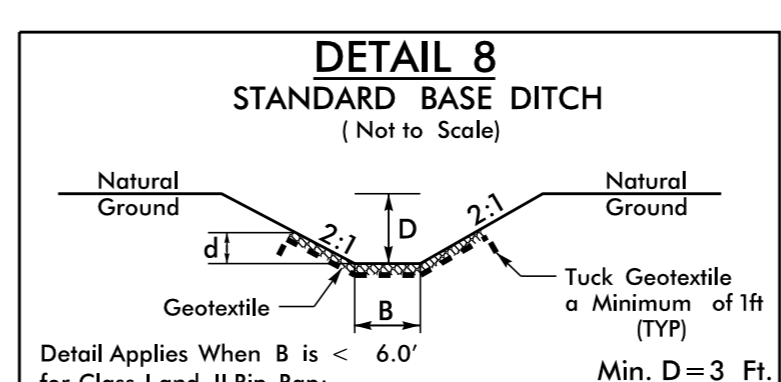
FROM STA. 71+50 TO STA. 73+46 -L- (RT)



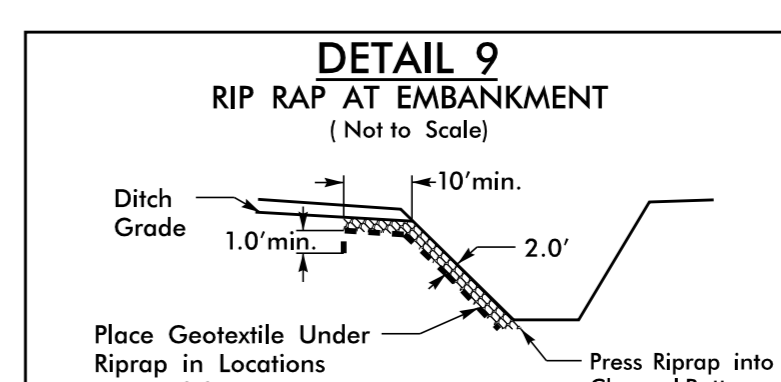
FROM STA. 71+65 TO STA. 73+46 -L- (LT)



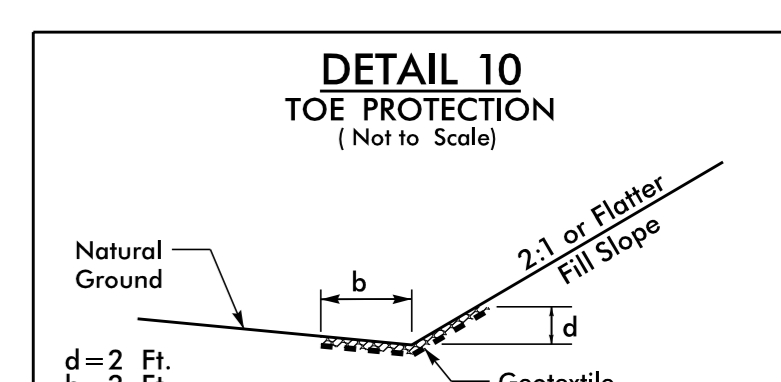
FROM STA. 73+46 TO STA. 73+75 -L- (RT)



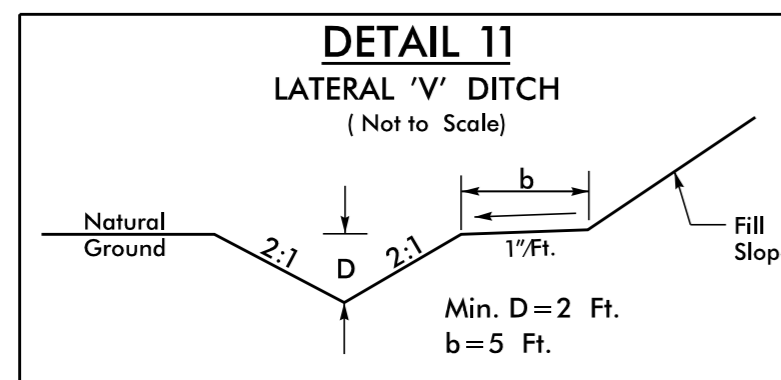
FROM STA. 73+46 TO STA. 73+90 -L- (LT)



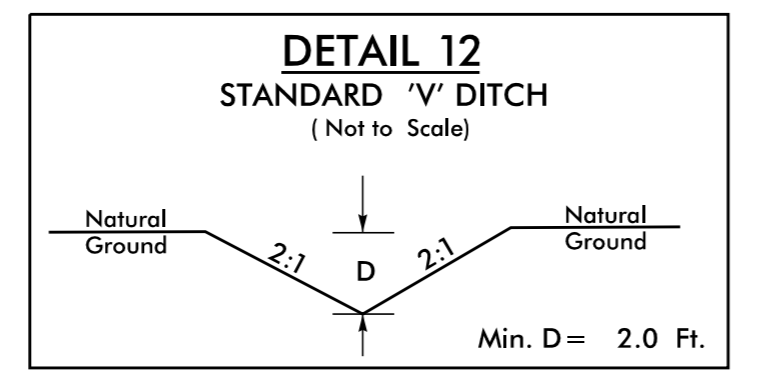
FROM STA. 73+81 -L- (RT)  
 FROM STA. 73+93 -L- (LT)  
 FROM STA. 74+16 -L- (LT)



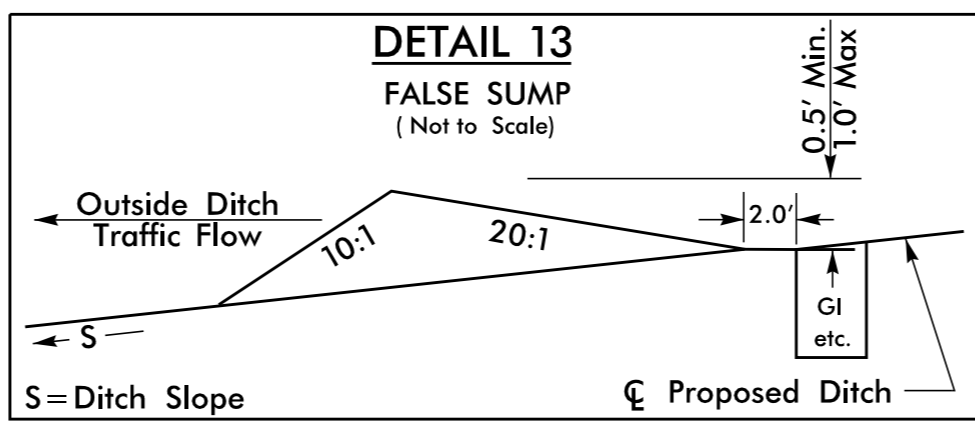
FROM STA. 90+00 TO STA. 91+50 -L- (LT)



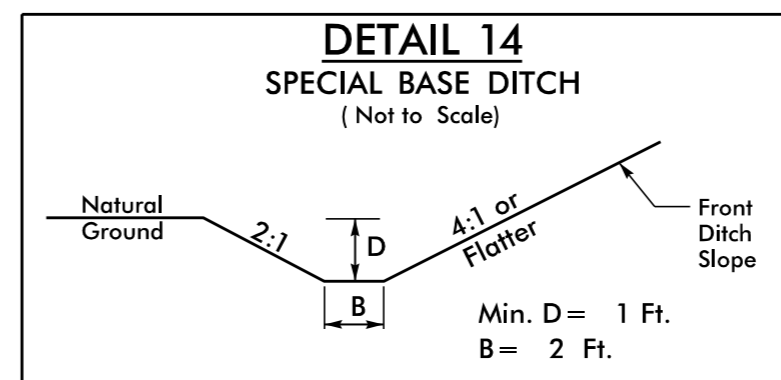
FROM STA. 75+00 TO STA. 75+50 -L- (LT)



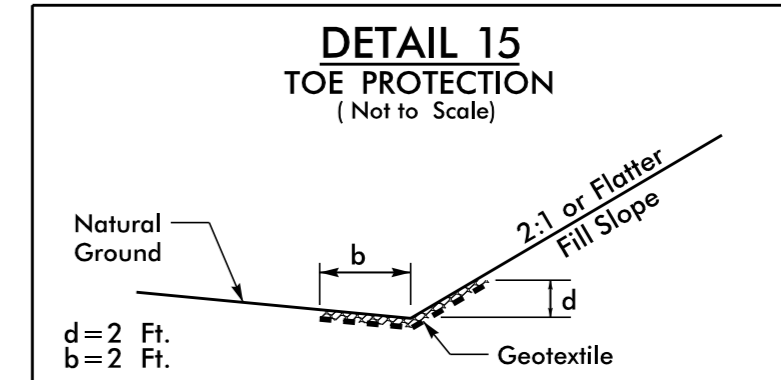
FROM STA. 74+50 TO STA. 75+00 -L- (LT)



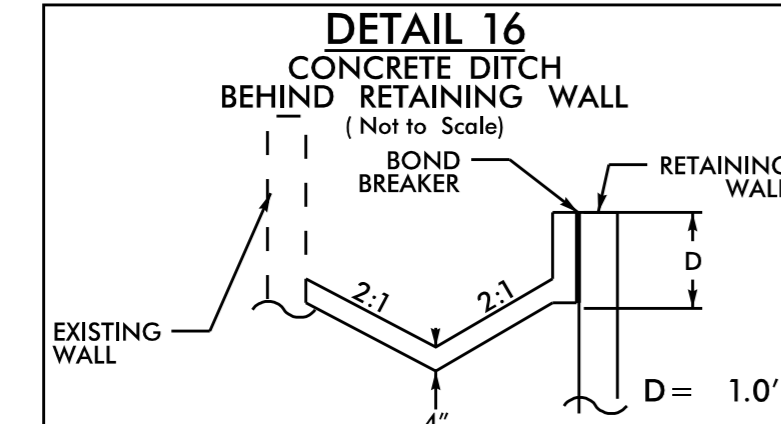
FROM STA. 76+37 -L- (LT)



FROM STA. 12+00 TO STA. 12+50 -Y6- (RT)



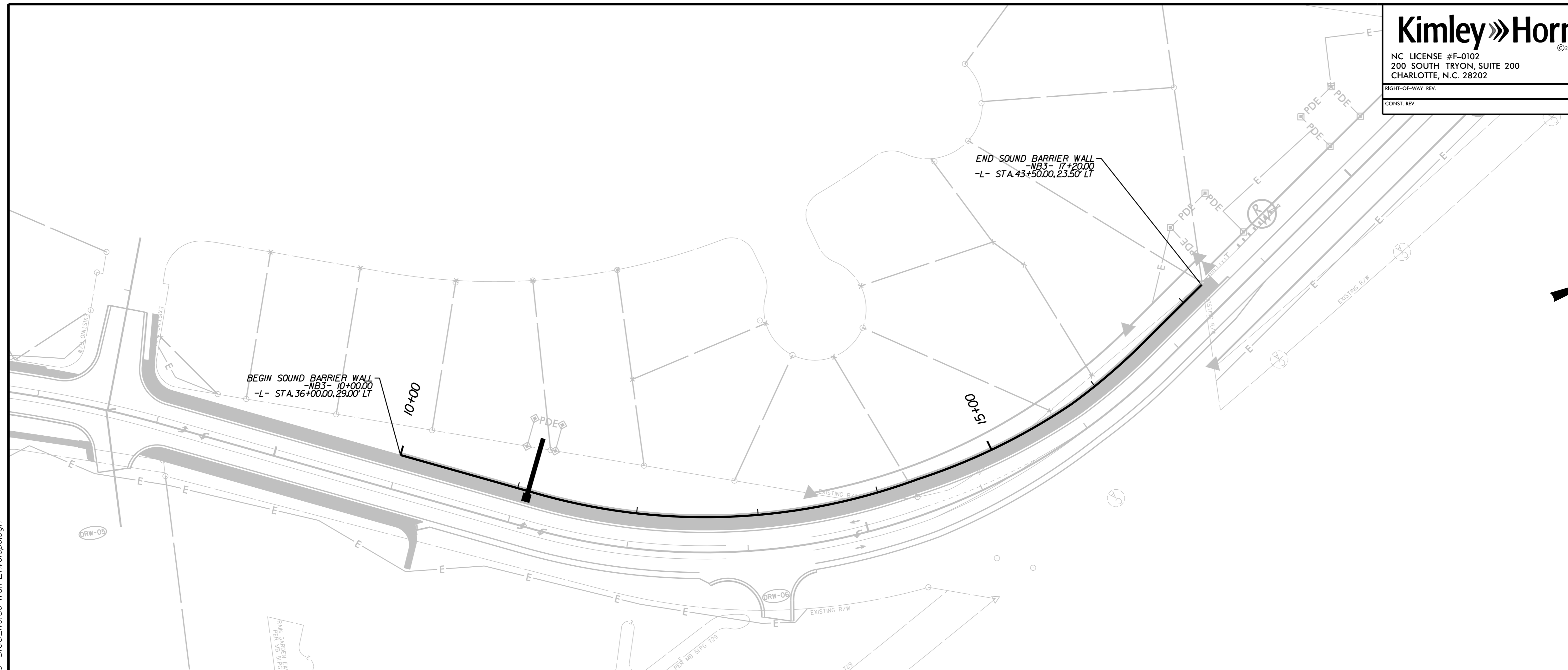
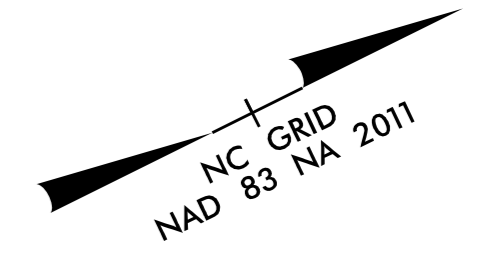
FROM STA. 58+26 TO STA. 58+75 -L- (LT)  
 FROM STA. 17+25 TO STA. 17+75 -L- (LT)



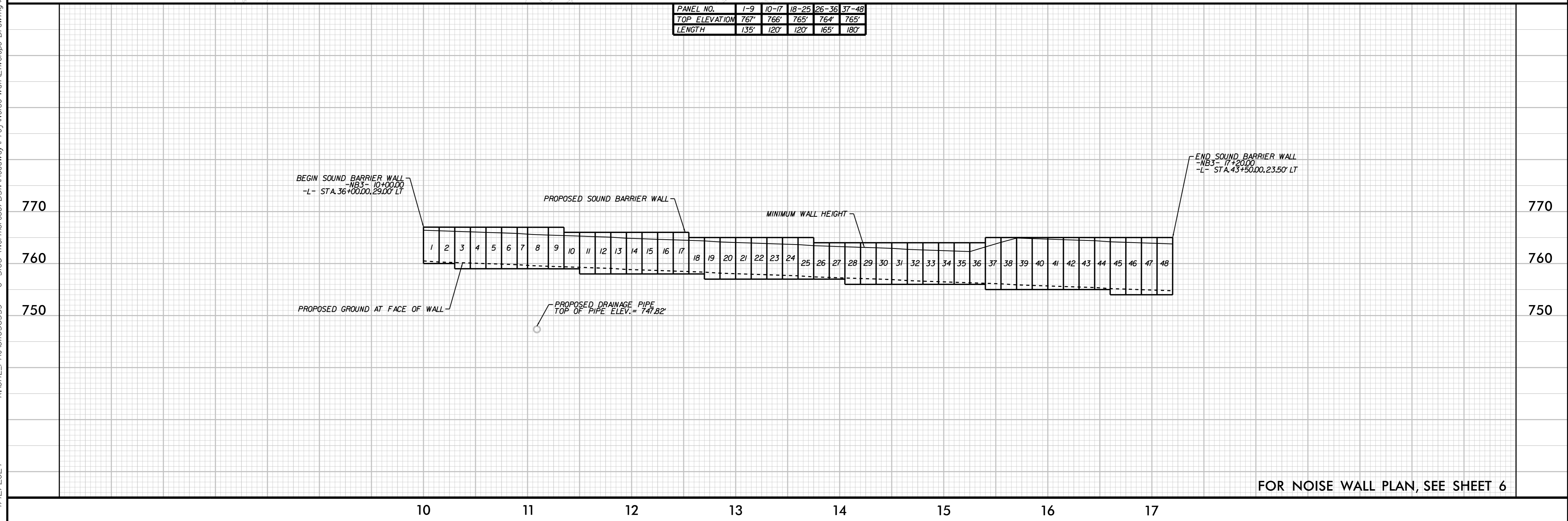
FROM STA. 31+00 TO STA. 33+03 -L- (LT)

**Kimley»Horn**  
 NC LICENSE #F-0102  
 200 SOUTH TRYON, SUITE 200  
 CHARLOTTE, N.C. 28202  
 RIGHT-OF-WAY REV.  
 CONST. REV.

PROJECT REFERENCE NO.	SHEET NO.
U-5108	2N-1
R/W SHEET NO.	
50 25 0 50 100	PLANS
50 25 0 50 100	PROFILE (HORIZONTAL)
10 5 0 10 20	PROFILE (VERTICAL)



PANEL NO.	1-9	10-17	18-25	26-36	37-48
TOP ELEVATION	767'	766'	765'	764'	765'
LENGTH	135'	120'	120'	165'	180'



FOR NOISE WALL PLAN, SEE SHEET 6

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**DOCUMENT NOT CONSIDERED FINAL  
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STATE OF NORTH CAROLINA  
 DIVISION OF HIGHWAYS

**SUMMARY OF EARTHWORK  
 IN CUBIC YARDS**

LOCATION	UNCLASSIFIED EXCAVATION	UNDERCUT EXCAVATION	EMBANKMENT + %	BORROW	TOTAL WASTE
<b>SUMMARY 1 (PHASE 1)</b>					
-L- 39+50.00 TO 56+50.00	2210	2832	7688	5490	2839
-L- 56+50.00 TO 73+46.00	4142	2617	6439	2495	2815
-L- 74+56.00 TO 94+14.81	1165	3233	47890	46727	3235
-GW-L- 10+00.00 TO 16+62.38	127	0	66	0	61
DRW-12 10+00.00 TO 10+50.00	0	0	276	276	0
DRW-13 10+00.00 TO 10+50.00	0	0	271	271	0
<b>SUBTOTAL (PHASE 1)</b>	<b>7644</b>	<b>8682</b>	<b>62630</b>	<b>55259</b>	<b>8950</b>
<b>SUMMARY 2 (PHASE 2)</b>					
-L- (RT) 26+27.00 TO 39+30.36	570	48	1849	1344	62
DRW-03 10+18.80 TO 10+50.00	8	0	1	0	7
DRW-05 10+19.55 TO 10+50.00	5	0	2	0	3
-L- 94+14.81 TO 94+55.00	58	86	1	0	143
-L1- 10+00.00 TO 18+50.00	1242	0	209	0	1033
-Y4- 10+13.00 TO 10+50.00	16	0	0	0	16
DRW15 10+00.00 TO 10+50.00	8	0	0	0	8
-Y5- 10+32.30 TO 10+70.00	19	0	2	0	17
-Y6- (RT) 3+39.00 TO 16+00.00	313	0	1390	1077	0
-RABC- 10+25.00 TO 12+50.00	976	119	16	0	1079
-Y6- RAB (RT) 17+00.00 TO 18+50.00	361	0	0	0	361
-RABD- 10+00.00 TO 13+00.00	1097	402	5	0	1494
-Y6- (RT) 20+50.00 TO 25+60.00	133	0	41	0	92
<b>SUBTOTAL (PHASE 2)</b>	<b>4806</b>	<b>655</b>	<b>3516</b>	<b>2421</b>	<b>4315</b>
<b>SUMMARY 3 (PHASE 3)</b>					
-L- (LT) 27+67.05 TO 39+52.70	66	48	4145	4081	50
DRW-02 10+16.00 TO 11+15.00	65	0	36	0	29
-Y6- (LT) 5+50.00 TO 16+00.00	199	0	2654	2455	0
-Y6- (LT) 20+50.00 TO 25+50.00	72	0	130	58	0
-Y7- 10+00.00 TO 10+85.00	0	0	186	186	0
-RABA- 10+00.00 TO 12+25.00	205	50	136	0	119
-RABB- 10+00.00 TO 12+50.00	33	38	2102	2069	38
-Y6- RAB (LT) 17+00.00 TO 20+50.00	214	0	82	0	132
<b>SUBTOTAL (PHASE 3)</b>	<b>854</b>	<b>136</b>	<b>9470</b>	<b>8849</b>	<b>369</b>
<b>SUMMARY 4 (PHASE 4)</b>					
-Y6- RAB 17+50.00 TO 18+00.00	0	0	530	530	0
<b>SUBTOTAL (PHASE 4)</b>	<b>0</b>	<b>0</b>	<b>530</b>	<b>530</b>	<b>0</b>
<b>SUBTOTAL (PHASES 1 TO 4)</b>	<b>13304</b>	<b>9473</b>	<b>76147</b>	<b>67060</b>	<b>13634</b>

NOTE: EARTHWORK QUANTITIES ARE CALCULATED BY THE ROADWAY DESIGN UNIT. THESE EARTHWORK QUANTITIES ARE BASED IN PART ON SUBSURFACE DATA PROVIDED BY THE GEOTECHNICAL ENGINEERING UNIT.  
 NOTE: APPROXIMATE QUANTITIES ONLY. UNCLASSIFIED EXCAVATION, FINE GRADING, CLEARING AND GRUBBING, AND REMOVAL OF EXISTING PAVEMENT WILL BE PAID FOR AT THE CONTRACT LUMP SUM PRICE FOR "GRADING."

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STATE OF NORTH CAROLINA  
 DIVISION OF HIGHWAYS

**SUMMARY OF EARTHWORK  
 IN CUBIC YARDS**

LOCATION	UNCLASSIFIED EXCAVATION	UNDERCUT EXCAVATION	EMBANKMENT +%	BORROW	TOTAL WASTE
SUBTOTAL (PHASES 1 TO 4)	13304	9473	76147	67060	13634
TOTAL	13304	9473	76147	67060	13634
MATERIAL FOR SHOULDER CONSTRUCTION	0	0	420	420	0
LOSS DUE TO CLEARING & GRUBBING	-1200	0	0	1200	0
UNCLASSIFIED EXCAVATION - UNSUITABLE WASTE	2100	0	2520	2520	2100
ADDITIONAL UNDERCUT	0	2750	3300	3300	2750
ROCK WASTE TO REPLACE BORROW	0	0	0	0	0
ADJUST FOR ROCK WASTE	0	0	0	0	0
WASTE IN LIEU OF BORROW	0	0	0	-3938	-3938
PROJECT TOTAL	14204	12223	82387	70562	14546
EST. 5% TO REPLACE TOP SOIL ON BORROW PIT	0	0	0	3528	0
GRAND TOTAL	14204	12223	82387	74090	14546
SAY	15000	13000		75000	
* UNCLASSIFIED EXCAVATION - ACCEPTABLE, BUT NOT TO BE USED IN TOP 3' OF EMBANKMENT OR BACKFILL (9,130 CY):					
-L- 26+50.00 TO -L- 30+35.00 (210 CY)					
-L- 39+25.00 TO -L- 43+75.00 (310 CY)					
-L- 47+25.00 TO -L- 52+75.00 (1840 CY)					
-L- 55+25.00 TO -L- 72+25.00 (3380 CY)					
-L- 76+25.00 TO -L- 82+85.00 (270 CY)					
-L- 94+25.00 TO -L- 94+55.00 (40 CY)					
-L1- 14+50.00 TO -L1- 18+50.00 (310 CY)					
-RABA- 10+15.00 TO -RABA- 11+35.00 (90 CY)					
-RABC- 10+60.00 TO -RABC- 12+41.61 (860 CY)					
-RABD- 10+00.00 TO -RABD- 12+10.00 (820 CY)					
CONTINGENCY, AS DIRECTED BY THE ENGINEER (1000 CY)					
EST SELECT GRANULAR MATERIAL	500 CY	(CONTINGENCY, AS DIRECTED BY THE ENGINEER)			
EST SELECT GRANULAR MATERIAL, CLASS III	200 CY	(CONTINGENCY, AS DIRECTED BY THE ENGINEER)			
EST SHALLOW UNDERCUT EXCAVATION	200 CY	(CONTINGENCY, AS DIRECTED BY THE ENGINEER)			
EST SHALLOW UNDERCUT EXCAVATION BY STATION	1450 CY				

EST GEOTEXTILE FOR SOIL STABILIZATION	400 SY	(CONTINGENCY, AS DIRECTED BY THE ENGINEER)
EST GEOTEXTILE FOR SOIL STABILIZATION	300 SY	(TOTAL FROM EROSION CONTROL PLANS)
EST GEOTEXTILE FOR SUBGRADE STABILIZATION	9400 SY	
EST STABILIZER AGGREGATE	75 TONS	(CONTINGENCY, AS DIRECTED BY THE ENGINEER)
EST CLASS IV SUBGRADE STABILIZATION	5250 TONS	

NOTE: EARTHWORK QUANTITIES ARE CALCULATED BY THE ROADWAY DESIGN UNIT. THESE EARTHWORK QUANTITIES ARE BASED IN PART ON SUBSURFACE DATA PROVIDED BY THE GEOTECHNICAL ENGINEERING UNIT.  
 NOTE: APPROXIMATE QUANTITIES ONLY. UNCLASSIFIED EXCAVATION, FINE GRADING, CLEARING AND GRUBBING, AND REMOVAL OF EXISTING PAVEMENT WILL BE PAID FOR AT THE CONTRACT LUMP SUM PRICE FOR "GRADING."

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STATE OF NORTH CAROLINA  
 DIVISION OF HIGHWAYS

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

**SUMMARY OF GUARDRAIL**

"N" = DISTANCE FROM EDGE OF LANE TO FACE OF GUARDRAIL  
 TOTAL SHOULDER WIDTH = DISTANCE FROM EDGE OF TRAVEL LANE TO SHOULDER BREAK POINT.  
 FLARE LENGTH = DISTANCE FROM LAST SECTION OF PARALLEL GUARDRAIL TO END OF GUARDRAIL.  
 W = TOTAL WIDTH OF FLARE FROM BEGINNING OF TAPER TO END OF GUARDRAIL.

G = GATING IMPACT ATTENUATOR TL-3 OR TL-2  
 NG = NON-GATING IMPACT ATTENUATOR TL-3 OR TL-2

SURVEY LINE	BEG. STA.	END STA.	LOCATION	LENGTH			WARRANT POINT		"N" DIST. FROM E.O.L.	TOTAL SHOULDER WIDTH	FLARE LENGTH		W		ANCHORS								IMPACT ATTENUATOR		SINGLE FACED CONCRETE BARRIER	REMOVE EXISTING GUARDRAIL	REMOVE AND STOCKPILE EXISTING GUARDRAIL	REMARKS
				STRAIGHT	SHOP CURVED	DOUBLE FACED	APPROACH END	TRAILING END			APPROACH END	TRAILING END	APPROACH END	TRAILING END	TYPE III	B-77	GREU, TL-3	GREU, TL-2	CAT-1	AT-1	TYPE III SC	B-77 SC	G	NG				
-L-	43+60.00	44+41.25	LT	81.25			43+60.00		12.5'	14.5'	50		1	1														
-L-	71+52.75	73+46.00	RT	193.25			73+46.00		7'	11'	50		1															
-L-	71+64.75	73+46.00	LT	181.25				73+46.00	12.5'	14.5'	50		1	1														
-L-	74+56.00	76+99.75	LT	243.75			74+56.00		12.5'	14.5'	50		1	1														
-L-	74+56.00	77+24.75	RT	268.75				74+56.00	7'	11'	50		1															
-L-	80+70.00	92+95.00	RT	1225.00			81+70.00		2.5'	5'	50	50	1	1														
-L-	89+73.00	92+91.75	LT	318.75				91+90.00	14.5'	16.5'	50		1															
-L-	40+89.29	41+04.57	RT																								26	
-L-	94+14.32	94+14.67	LVRT																								28	
SUBTOTAL				2512.00											4	1			8	1						54		
LESS ANCHOR DEDUCTIONS																												
			GREU TL-2	8 @ 50'	=	400.00																						
			TYPE B-77	1 @ 18.75'	=	18.75																						
			TYPE III	4 @ 18.75'	=	75.00																						
			CAT-1	1 @ 6.25'	=	6.25'																						
TOTAL				2012.00											4	1			8	1						54		
SAY				2050																								

ADDITIONAL GUARDRAIL POSTS = 10 EA

**SUMMARY OF ASPHALT PAVEMENT REMOVAL**

SURVEY LINE	STATION	STATION	LOCATION LT/RT/CL	YD <sup>2</sup>
L	27+65	40+96	LVRT	3737.55
LI	14+50	20+11	LVRT	2376.71
Y6-TMP PH. 4	17+20	18+47	LVRT	661.32
Y6-TMP PH. 5	7+73	9+14	LVRT	241.06
TOTAL:				7016.64
SAY:				7020

**SUMMARY OF CONCRETE PAVEMENT REMOVAL**

SURVEY LINE	STATION	STATION	LOCATION LT/RT/CL	YD <sup>2</sup>
GW-L	10+46	16+44	LVRT	621.42
TOTAL:				621.42
SAY:				630

**SUMMARY OF SHOULDER BERM GUTTER**

SURVEY LINE	STATION	STATION	LOCATION LT/RT/CL	LENGTH LF
L	72+02.25	73+21.83	RT	119.6
L	73+00	73+21.83	LT	21.8
TOTAL (IN LF):				141.4
SAY (IN TONS):				142

**RELOCATE WOOD POST FENCE**

SURVEY LINE	STATION	STATION	LENGTH LF
L	40+56	41+25	112.72
L	41+76	42+95	125.17
L	43+47	43+61	31.79
TOTAL (IN LF):			269.68
SAY (IN LF):			270

**RESET CHAIN LINK FENCE**

SURVEY LINE	STATION	STATION	LENGTH LF
L	28+93	29+42	60.00
TOTAL (IN LF):			60.00
SAY (IN LF):			60











COMPUTED BY: Paul Weaver DATE: 11/08/2023  
 CHECKED BY: Michael Ulmer DATE: 03/14/2024

# STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

PROJECT REFERENCE NO. <i>U-5108</i>	SHEET NO. <i>36-1</i>
<b>DOCUMENT NOT CONSIDERED FINAL          UNLESS ALL SIGNATURES COMPLETED</b>	

## GEOTECHNICAL SUMMARY

### SUMMARY OF SUBSURFACE DRAINAGE

LINE	Station	Station	Location LT/RT	Drain Type* UD/BD/SD	LF
-L-	76 + 25	77 + 75	RT	SD	200
CONTINGENCY					200
TOTAL LF					400
SAY					400

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

### SUMMARY OF AGGREGATE SUBGRADE / STABILIZATION

LINE	Station	Station	Aggregate Type* ASU / 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
-L-	27 + 75	36 + 25	ASU	12	450	900	1350		
-L-	47 + 25	48 + 25	ASU	12	90	180	270		
-L1-	10 + 00	18 + 50	ASU	12	350	700	1075		
-Y6-	13 + 75	16 + 00	ASU	12	105	210	315		
-RABB-	10 + 00	11 + 10	ASU	12	100	200	300		
-RABA-	10 + 25	11 + 35	ASU	12	110	220	330		
-RABD-	10 + 00	10 + 85	ASU	12	140	280	420		
-RABC-	10 + 00	10 + 85	ASU	12	105	210	315		
CONTINGENCY					200	400	600		
-L-	72 + 50	76 + 50	ASU	8		540	1241		
-L-	82 + 00	86 + 50	ASU	8		819	1882		
-L-	90 + 50	93 + 50	ASU	8		553	1271		
CONTINGENCY								75	
TOTAL CY/TONSSY					1650	5212**	9369**	75	0
SAY					1650	5250**	9400**	75	0

\*ASU = Aggregate Subgrade  
 \*AST = Aggregate Stabilization

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

### SUMMARY OF BRIDGE WAITING PERIODS

Bridge Description	End Bent/Bent No.	Months
U-5108	End Bent 2	1

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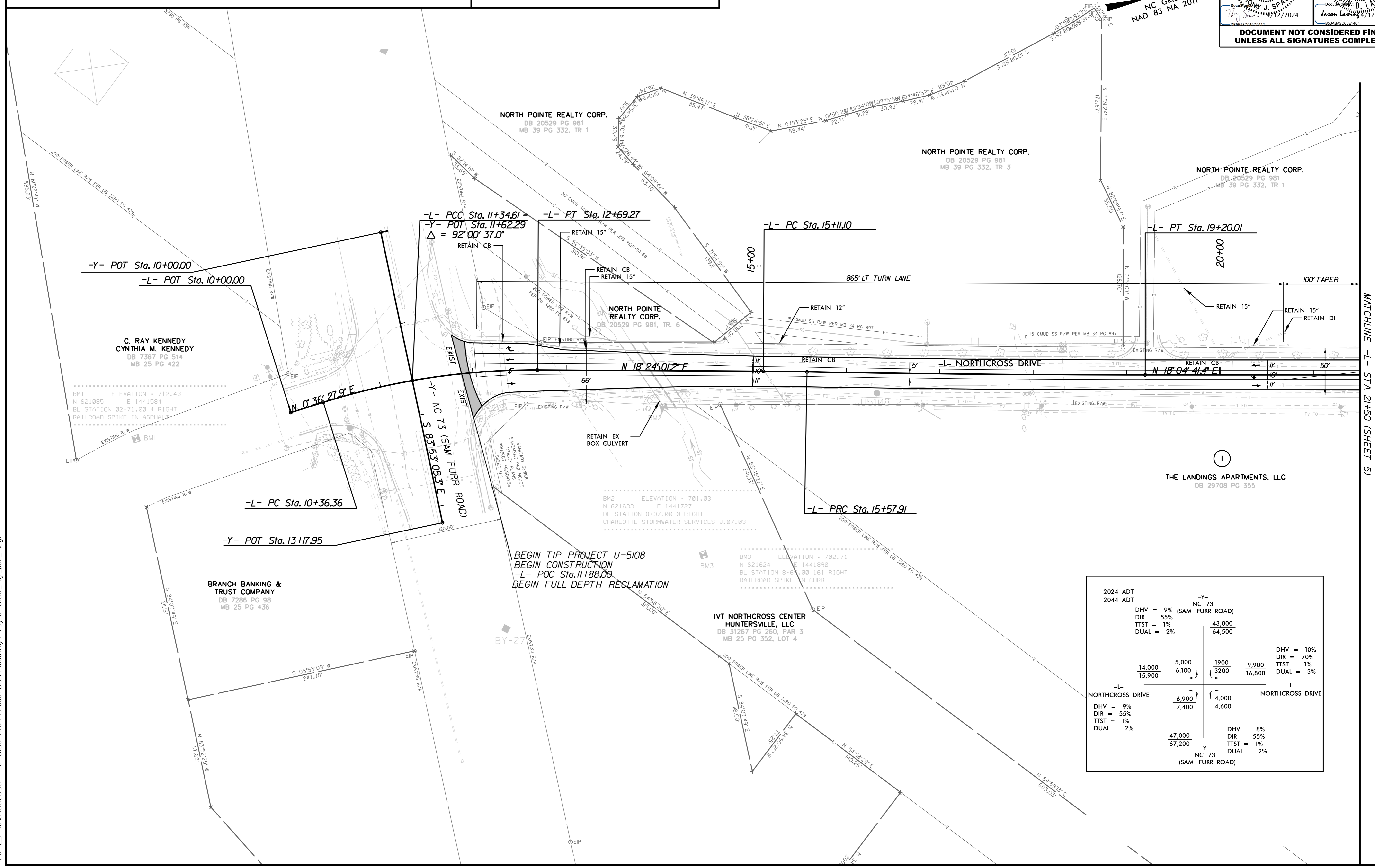


-L-			
PI Sta 10+85.56	PI Sta 12+02.12	PI Sta 15+34.50	PI Sta 17+38.96
$\Delta = 7' 30'' 20.3'' (RT)$	$\Delta = 10' 17'' 12.9'' (RT)$	$\Delta = 0' 42'' 54.7'' (RT)$	$\Delta = 1' 02'' 14.5'' (LT)$
$D = 7' 38'' 22.0''$	$D = 7' 38'' 22.0''$	$D = 1' 31'' 40.4''$	$D = 0' 17'' 11.3''$
$L = 98.25'$	$L = 134.66'$	$L = 46.81'$	$L = 362.10'$
$T = 49.19'$	$T = 67.51'$	$T = 23.40'$	$T = 181.06'$
$R = 750.00'$	$R = 750.00'$	$R = 3750.00'$	$R = 20,000.00'$
SE = EXISTING	SE = EXISTING	SE = EXISTING	SE = EXISTING
RO = EXISTING	RO = EXISTING	RO = EXISTING	RO = EXISTING

FOR -L- PROFILE, SEE SHEET 13

**Kimley Horn**  
 NC LICENSE #F-0102  
 200 SOUTH TRYON, SUITE 200  
 CHARLOTTE, N.C. 28202  
 RIGHT-OF-WAY REV.  
 CONST. REV.

PROJECT REFERENCE NO. U-5108	SHEET NO. 4
R/W SHEET NO.	HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER	SEAL 032615
Doc No. 24/0000000000	Doc No. 24/0000000000
Doc Date 04/12/2024	Doc Date 04/12/2024
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



2024 ADT		2044 ADT		NC 73 (SAM FURR ROAD)	
DHV = 9%	DIR = 55%	TTST = 1%	DUAL = 2%	DHV = 10%	DIR = 70%
14,000	5,000	1,900	9,900	43,000	32,000
15,900	6,100	3,200	16,800	64,500	43,000
NORTH CROSS DRIVE		NORTH CROSS DRIVE		NORTH CROSS DRIVE	
DHV = 9%	DIR = 55%	TTST = 1%	DUAL = 2%	DHV = 8%	DIR = 55%
6,900	7,400	4,000	4,600	47,000	67,200
NORTH CROSS DRIVE		NORTH CROSS DRIVE		NORTH CROSS DRIVE	
DHV = 9%	DIR = 55%	TTST = 1%	DUAL = 2%	DHV = 8%	DIR = 55%
6,900	7,400	4,000	4,600	47,000	67,200

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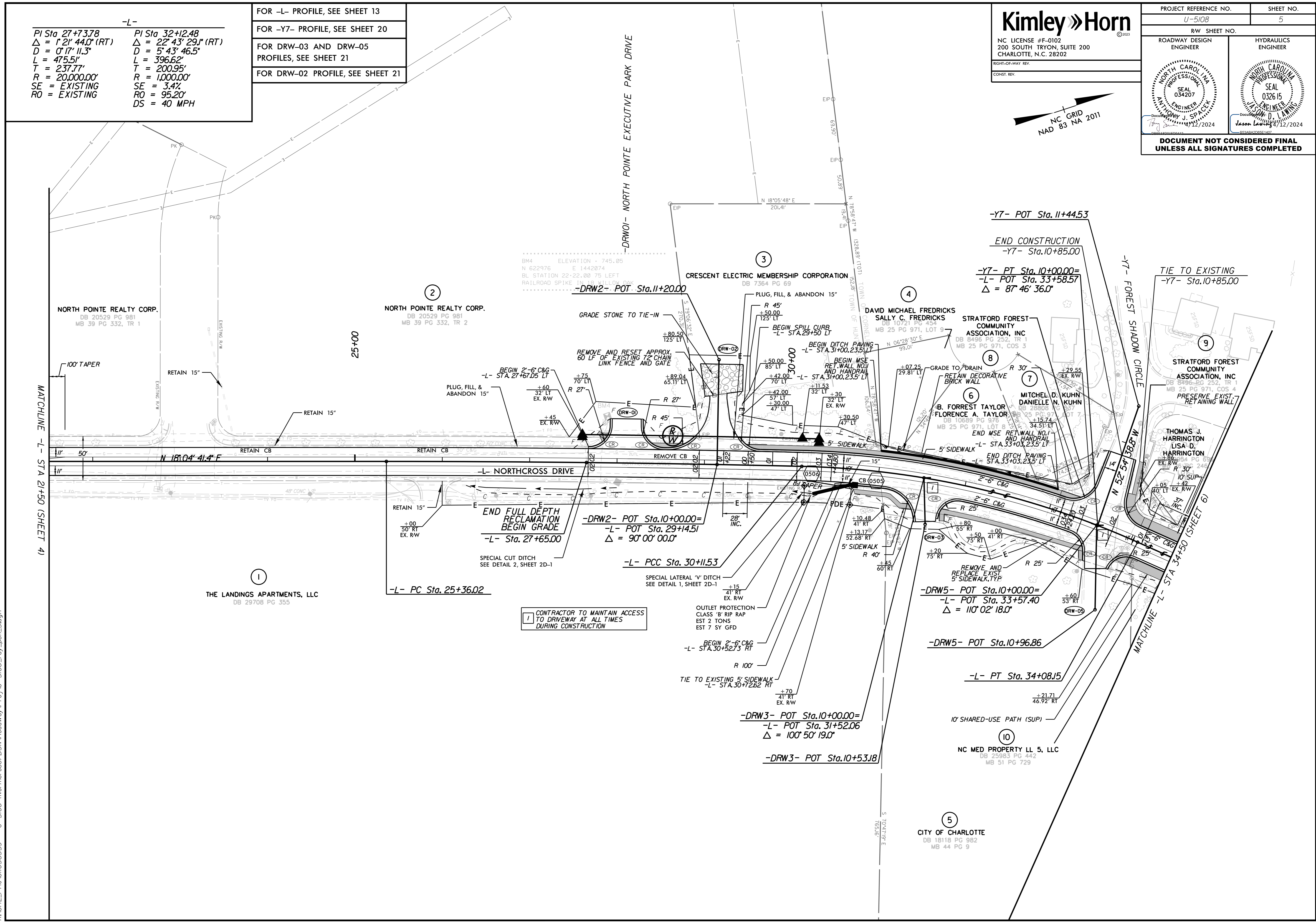
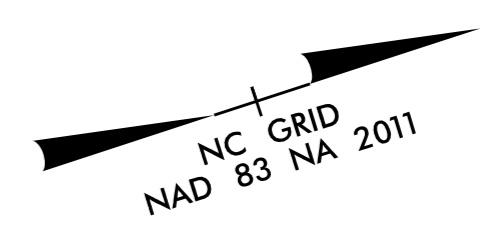
MATCHLINE -L- STA 21+50 (SHEET 5)

-L-	
PI Sta 27+73.78	PI Sta 32+12.48
$\Delta = 1' 21' 44.0''$ (RT)	$\Delta = 22' 43' 29.1''$ (RT)
D = 0' 17' 11.3"	D = 5' 43' 46.5"
L = 475.51'	L = 396.62'
T = 237.77'	T = 200.95'
R = 20,000.00'	R = 1,000.00'
SE = EXISTING	SE = 3.4%
RO = EXISTING	RO = 95.20'
	DS = 40 MPH

FOR -L- PROFILE, SEE SHEET 13  
 FOR -Y7- PROFILE, SEE SHEET 20  
 FOR DRW-03 AND DRW-05  
 PROFILES, SEE SHEET 21  
 FOR DRW-02 PROFILE, SEE SHEET 21

**Kimley Horn**  
 NC LICENSE #F-0102  
 200 SOUTH TRYON, SUITE 200  
 CHARLOTTE, N.C. 28202

PROJECT REFERENCE NO. U-5108	SHEET NO. 5
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



1 CONTRACTOR TO MAINTAIN ACCESS TO DRIVEWAY AT ALL TIMES DURING CONSTRUCTION

MATCHLINE -L- STA 21+50 (SHEET 4)

MATCHLINE -L- STA 34+50 (SHEET 6)



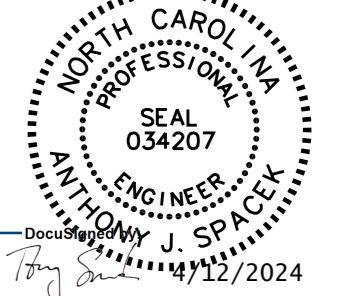
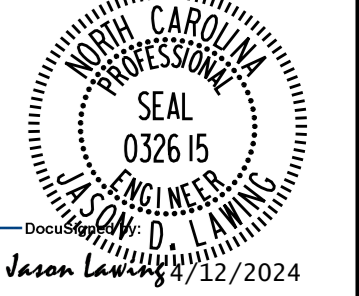
-L-  
 FOR -L- PROFILE, SEE SHEET 14

$PI\ Sta\ 40+28.98$   
 $\Delta = 60^\circ 35' 59.4" (LT)$   
 $D = 10' 44' 58.8"$   
 $L = 563.74'$   
 $T = 311.46'$   
 $R = 533.00'$   
 $SE = 4\%$   
 $RO = SEE\ PLANS$   
 $DS = 40\ MPH$

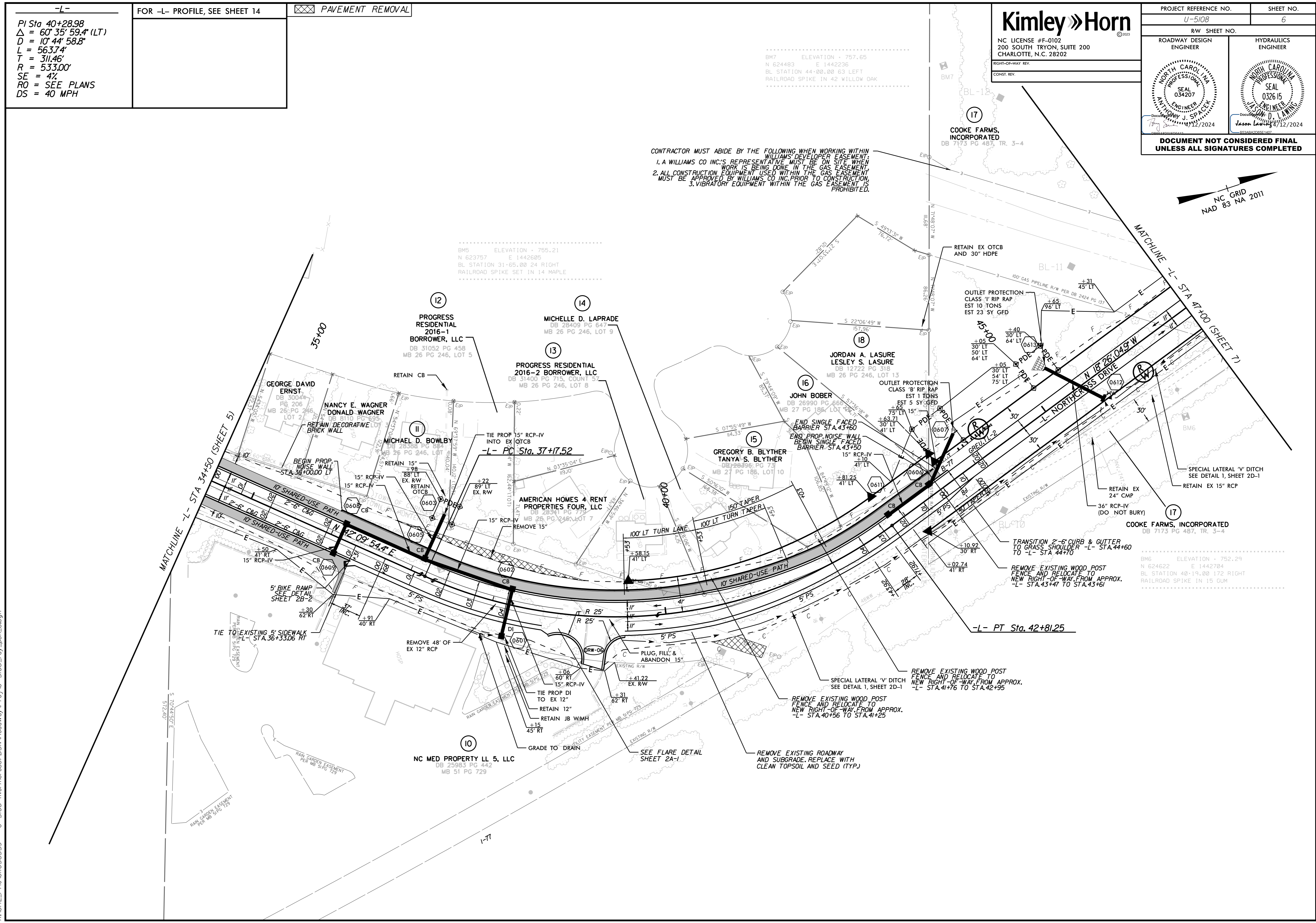
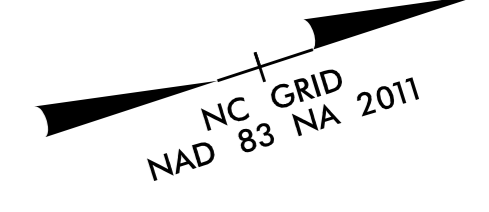
PAVEMENT REMOVAL

**Kimley Horn**

NC LICENSE #F-0102  
 200 SOUTH TRYON, SUITE 200  
 CHARLOTTE, N.C. 28202

PROJECT REFERENCE NO. U-5108	SHEET NO. 6
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
 ANTHONY J. SPIVEY 4/12/2024	 JASON LEWIS 4/12/2024
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

CONTRACTOR MUST ABIDE BY THE FOLLOWING WHEN WORKING WITHIN WILLIAMS DEVELOPER EASEMENT:  
 1. A WILLIAMS CO INC.'S REPRESENTATIVE MUST BE ON SITE WHEN WORK IS BEING DONE IN THE GAS EASEMENT  
 2. ALL CONSTRUCTION EQUIPMENT USED WITHIN THE GAS EASEMENT MUST BE APPROVED BY WILLIAMS CO INC. PRIOR TO CONSTRUCTION.  
 3. VIBRATORY EQUIPMENT WITHIN THE GAS EASEMENT IS PROHIBITED.

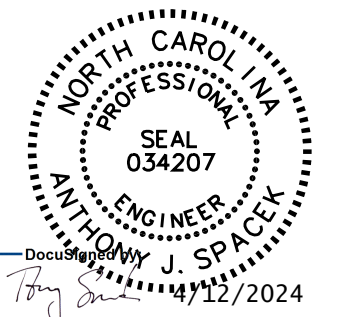
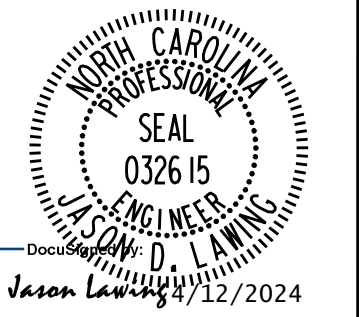


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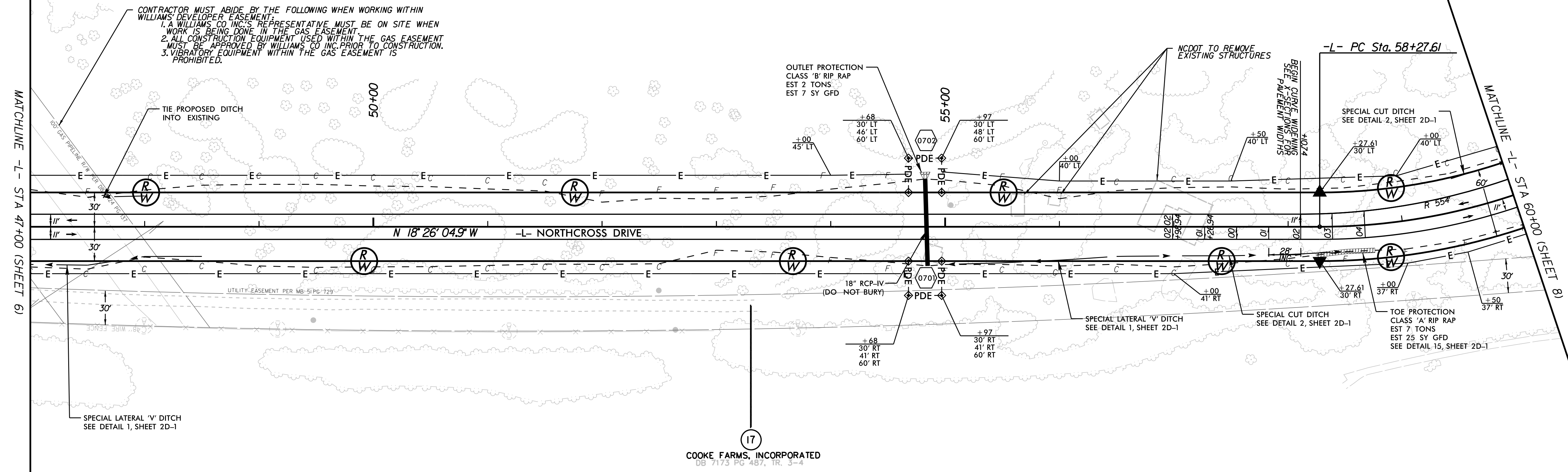
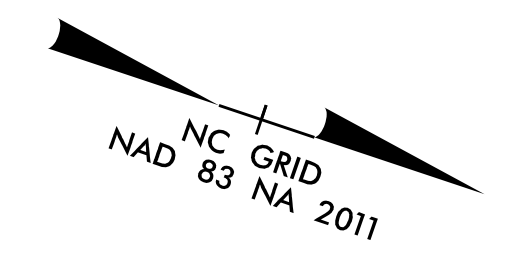
-L-  
 PI Sta 61+08.65  
 $\Delta = 55^\circ 36' 10.2" (LT)$   
 $D = 10^\circ 44' 58.8"$   
 $L = 517.25'$   
 $T = 281.04'$   
 $R = 533.00'$   
 $SE = 4\%$   
 $RO = 112'$   
 $DS = 40 \text{ MPH}$

FOR -L- PROFILE, SEE SHEET 14

**Kimley Horn**  
 NC LICENSE #F-0102  
 200 SOUTH TRYON, SUITE 200  
 CHARLOTTE, N.C. 28202  
 RIGHT-OF-WAY REV.  
 CONST. REV.

PROJECT REFERENCE NO. U-5108	SHEET NO. 7
ROADWAY DESIGN ENGINEER ALAN J. SPENCE	HYDRAULICS ENGINEER JASON LEWIS
 ALAN J. SPENCE SEAL 034207 N.C. PROFESSIONAL ENGINEER DOCUMENT NO. 20240412/2024 DATE 04/12/2024	 JASON LEWIS SEAL 032615 N.C. PROFESSIONAL ENGINEER DOCUMENT NO. 20240412/2024 DATE 04/12/2024
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

(17)  
 COOKE FARMS, INCORPORATED  
 DB 7173 PG 487, TR. 3-4



CONTRACTOR MUST ABIDE BY THE FOLLOWING WHEN WORKING WITHIN WILLIAMS' DEVELOPER EASEMENT:  
 1. A WILLIAMS CO. INC.'S REPRESENTATIVE MUST BE ON SITE WHEN WORK IS BEING DONE IN THE GAS EASEMENT.  
 2. ALL CONSTRUCTION EQUIPMENT USED WITHIN THE GAS EASEMENT MUST BE APPROVED BY WILLIAMS CO. INC. PRIOR TO CONSTRUCTION.  
 3. VIBRATORY EQUIPMENT WITHIN THE GAS EASEMENT IS PROHIBITED.

TIE PROPOSED DITCH INTO EXISTING

OUTLET PROTECTION  
 CLASS 'B' RIP RAP  
 EST 2 TONS  
 EST 7 SY GFD

NCDOT TO REMOVE EXISTING STRUCTURES

-L- PC Sta. 58+27.61

BEGIN CURVE WIDENING FOR PAVEMENT WIDTHS  
 SEE X-SECTIONS FOR PAVEMENT WIDTHS

SPECIAL CUT DITCH  
 SEE DETAIL 2, SHEET 2D-1

SPECIAL LATERAL 'V' DITCH  
 SEE DETAIL 1, SHEET 2D-1

SPECIAL CUT DITCH  
 SEE DETAIL 2, SHEET 2D-1

TOE PROTECTION  
 CLASS 'A' RIP RAP  
 EST 7 TONS  
 EST 25 SY GFD  
 SEE DETAIL 15, SHEET 2D-1

MATCHLINE -L- STA 47+00 (SHEET 6)

MATCHLINE -L- STA 60+00 (SHEET 8)

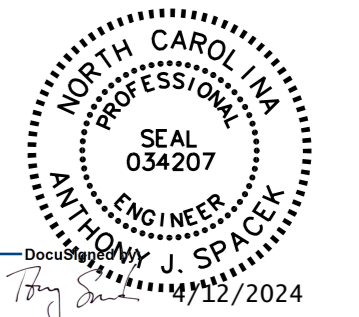
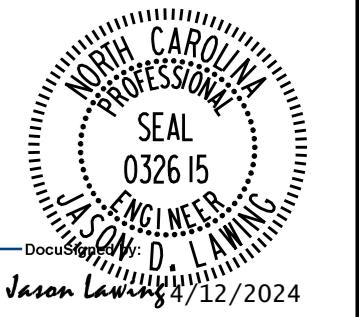
-L-  
 PI Sta 61+08.65  
 $\Delta = 55^\circ 36' 10.2" (LT)$   
 $D = 10' 44' 58.8"$   
 $L = 517.25'$   
 $T = 281.04'$   
 $R = 533.00'$   
 $SE = 4\%$   
 $RO = 112'$   
 $DS = 40 MPH$

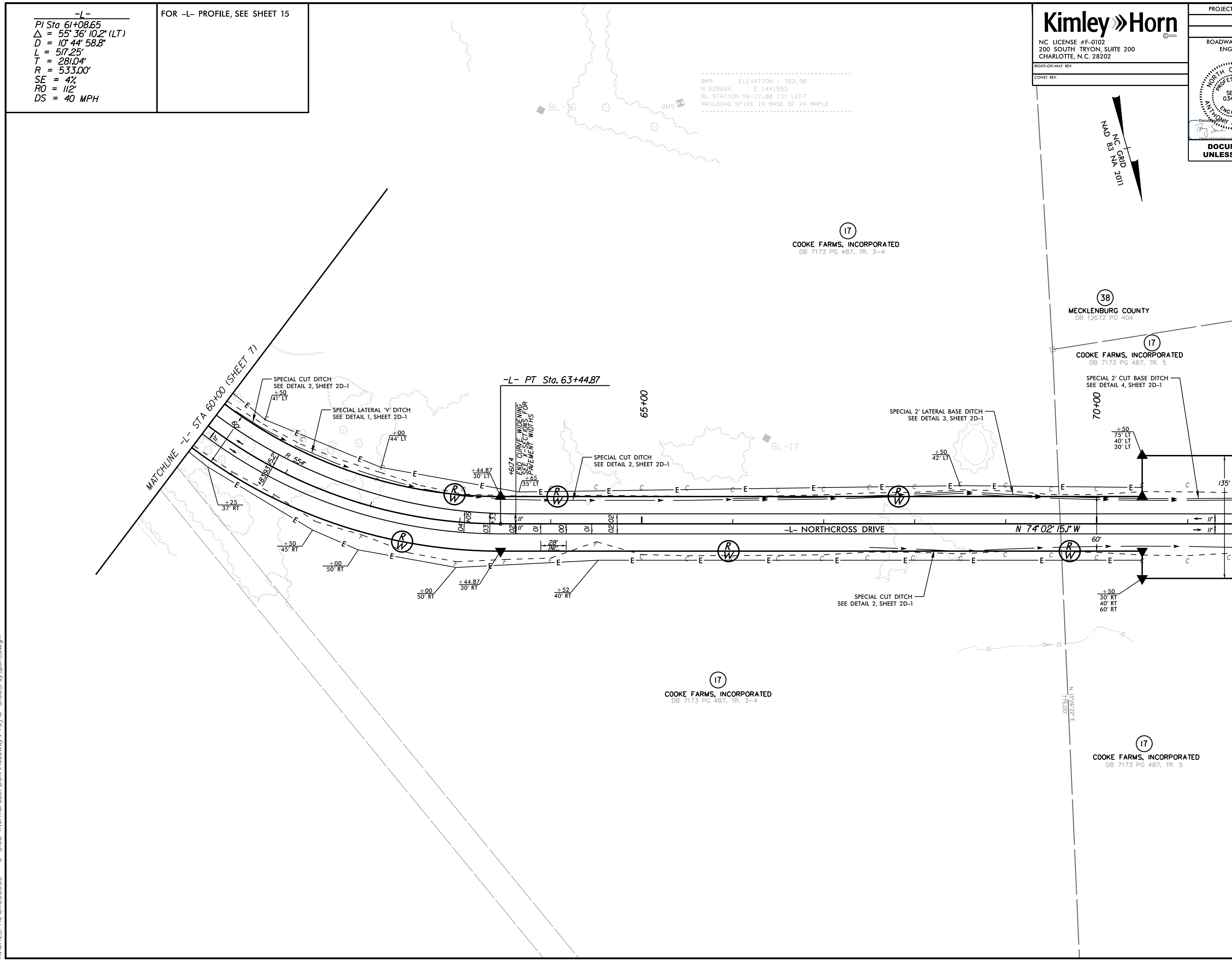
FOR -L- PROFILE, SEE SHEET 15

# Kimley»Horn

NC LICENSE #F-0102  
 200 SOUTH TRYON, SUITE 200  
 CHARLOTTE, N.C. 28202

RIGHT-OF-WAY REV.  
 CONST. REV.

PROJECT REFERENCE NO. U-5108	SHEET NO. 8
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
	
<b>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</b>	



4/12/2024  
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GREENWAY REMOVAL

BEGIN CONSTRUCTION  
-GW-L- POT Sta.10+00.00  
-GW-L- PC Sta.10+40.82

-GW-L- PT Sta.11+27.84  
-GW-L- PC Sta.11+96.69

RIP RAP EMBANKMENT PROTECTION  
CLASS II RIP RAP  
EST 8 TONS  
EST 15 SY GFD  
SEE DETAIL 9, SHEET 2D-1

RIP RAP EMBANKMENT PROTECTION  
CLASS II RIP RAP  
EST 12 TONS  
EST 17 SY GFD  
SEE DETAIL 9, SHEET 2D-1

STANDARD 2' BASE DITCH  
W/CLASS 'B' RIP RAP  
EST 15 TONS  
EST 30 SY GFD  
EST 30 CY DDE  
SEE DETAIL 8, SHEET 2D-1

STANDARD 2' BASE DITCH  
W/CLASS 'B' RIP RAP  
EST 15 TONS  
EST 30 SY GFD  
EST 30 CY DDE  
SEE DETAIL 8, SHEET 2D-1

LATERAL 2' BASE DITCH  
W/CLASS 'B' RIP RAP  
EST 55 TONS  
EST 120 SY GFD  
EST 200 CY DDE  
SEE DETAIL 6, SHEET 2D-1

LATERAL 2' BASE DITCH  
W/CLASS 'B' RIP RAP  
EST 55 TONS  
EST 120 SY GFD  
EST 200 CY DDE  
SEE DETAIL 6, SHEET 2D-1

LATERAL 2' BASE DITCH  
W/CLASS 'B' RIP RAP  
EST 55 TONS  
EST 120 SY GFD  
EST 200 CY DDE  
SEE DETAIL 6, SHEET 2D-1

LATERAL 2' BASE DITCH  
W/CLASS 'B' RIP RAP  
EST 55 TONS  
EST 120 SY GFD  
EST 200 CY DDE  
SEE DETAIL 6, SHEET 2D-1

LATERAL 2' BASE DITCH  
W/CLASS 'B' RIP RAP  
EST 55 TONS  
EST 120 SY GFD  
EST 200 CY DDE  
SEE DETAIL 6, SHEET 2D-1

LATERAL 2' BASE DITCH  
W/CLASS 'B' RIP RAP  
EST 55 TONS  
EST 120 SY GFD  
EST 200 CY DDE  
SEE DETAIL 6, SHEET 2D-1

LATERAL 2' BASE DITCH  
W/CLASS 'B' RIP RAP  
EST 55 TONS  
EST 120 SY GFD  
EST 200 CY DDE  
SEE DETAIL 6, SHEET 2D-1

LATERAL 2' BASE DITCH  
W/CLASS 'B' RIP RAP  
EST 55 TONS  
EST 120 SY GFD  
EST 200 CY DDE  
SEE DETAIL 6, SHEET 2D-1

LATERAL 2' BASE DITCH  
W/CLASS 'B' RIP RAP  
EST 55 TONS  
EST 120 SY GFD  
EST 200 CY DDE  
SEE DETAIL 6, SHEET 2D-1

LATERAL 2' BASE DITCH  
W/CLASS 'B' RIP RAP  
EST 55 TONS  
EST 120 SY GFD  
EST 200 CY DDE  
SEE DETAIL 6, SHEET 2D-1

LATERAL 2' BASE DITCH  
W/CLASS 'B' RIP RAP  
EST 55 TONS  
EST 120 SY GFD  
EST 200 CY DDE  
SEE DETAIL 6, SHEET 2D-1

LATERAL 2' BASE DITCH  
W/CLASS 'B' RIP RAP  
EST 55 TONS  
EST 120 SY GFD  
EST 200 CY DDE  
SEE DETAIL 6, SHEET 2D-1

END CONSTRUCTION  
-GW-L- PRC Sta.16+62.38

-GW-L- PT Sta.17+41.70

-GW-L- POT Sta.18+13.62

-GW-L- PC Sta.11+96.69

-GW-L- PT Sta.12+58.12

-GW-L- PC Sta.12+84.80

-GW-L- PT Sta.13+63.32

-GW-L- PC Sta.14+53.17

-GW-L- PT Sta.15+01.41

-GW-L- PC Sta.15+34.63

-GW-L- POT Sta.14+15.52  
 $\Delta = 90^{\circ}00'00.0"$

-GW-L- PT Sta.15+01.41  
CLASS II RIP RAP TO ELEV. 714.8  
(STRUCTURES PAY ITEM, TYP.)

-GW-L- POT Sta.14+15.52  
 $\Delta = 90^{\circ}00'00.0"$

-GW-L- PT Sta.15+01.41  
CLASS II RIP RAP TO ELEV. 714.8  
(STRUCTURES PAY ITEM, TYP.)

-GW-L- POT Sta.14+15.52  
 $\Delta = 90^{\circ}00'00.0"$

-GW-L- PT Sta.15+01.41  
CLASS II RIP RAP TO ELEV. 714.8  
(STRUCTURES PAY ITEM, TYP.)

-GW-L- POT Sta.14+15.52  
 $\Delta = 90^{\circ}00'00.0"$

-GW-L- PT Sta.15+01.41  
CLASS II RIP RAP TO ELEV. 714.8  
(STRUCTURES PAY ITEM, TYP.)

-GW-L- POT Sta.14+15.52  
 $\Delta = 90^{\circ}00'00.0"$

-GW-L- PT Sta.15+01.41  
CLASS II RIP RAP TO ELEV. 714.8  
(STRUCTURES PAY ITEM, TYP.)

MECKLENBURG COUNTY  
DB 12672 PG 404

MECKLENBURG COUNTY  
DB 23232 PG 739

MECKLENBURG COUNTY  
MB 49 PG 595-597, LOTS E, G, M, O

CRESCENT ELECTRIC  
MEMBERSHIP CORPORATION  
DB 9437 PG 110  
MB 49 PG 597

MECKLENBURG COUNTY  
DB 23232 PG 739

MECKLENBURG COUNTY  
DB 12672 PG 404

MECKLENBURG COUNTY  
DB 23232 PG 739

MECKLENBURG COUNTY  
DB 12672 PG 404

PI Sta 77+10.59  
 $\Delta = 49^{\circ}48'21.7" (RT)$   
 $D = 16^{\circ}22'12.8"$   
 $L = 304.25'$   
 $T = 162.49'$   
 $R = 350.00'$   
 $SE = 2%$   
 $RO = 56'$   
 $DS = 30 MPH$

FOR -L- PROFILE, SEE SHEET 15 AND 16  
FOR GW-L- PROFILE, SEE SHEET 18  
FOR STRUCTURE PLANS SEE S-1 THRU S-30

PI Sta 84+87.20  
 $\Delta = 87^{\circ}27'55.6" (LT)$   
 $D = 16^{\circ}22'12.8"$   
 $L = 534.30'$   
 $T = 334.85'$   
 $R = 350.00'$   
 $SE = 2%$   
 $RO = 56'$   
 $DS = 30 MPH$

PI Sta 10+85.59  
 $\Delta = 33^{\circ}14'24.9" (RT)$   
 $D = 38^{\circ}11'49.9"$   
 $L = 87.02'$   
 $T = 44.77'$   
 $R = 150.00'$

PI Sta 12+27.84  
 $\Delta = 23^{\circ}27'58.5" (RT)$   
 $D = 38^{\circ}11'49.9"$   
 $L = 61.43'$   
 $T = 31.15'$   
 $R = 150.00'$

PI Sta 13+24.98  
 $\Delta = 29^{\circ}59'33.4" (LT)$   
 $D = 38^{\circ}11'49.9"$   
 $L = 78.52'$   
 $T = 40.18'$   
 $R = 150.00'$

PI Sta 14+78.16  
 $\Delta = 36^{\circ}51'21.8" (LT)$   
 $D = 76^{\circ}23'39.7"$   
 $L = 48.24'$   
 $T = 24.99'$   
 $R = 75.00'$

PI Sta 16+00.77  
 $\Delta = 36^{\circ}35'43.0" (RT)$   
 $D = 28^{\circ}38'52.4"$   
 $L = 127.74'$   
 $T = 66.13'$   
 $R = 200.00'$

PI Sta 17+02.38  
 $\Delta = 18^{\circ}10'50.5" (LT)$   
 $D = 22^{\circ}55'05.9"$   
 $L = 79.33'$   
 $T = 40.00'$   
 $R = 250.00'$

Kimley Horn

NC LICENSE #F-0102  
200 SOUTH TRYON, SUITE 200  
CHARLOTTE, N.C. 28202

PROJECT REFERENCE NO. U-5108  
SHEET NO. 9  
RW SHEET NO.  
ROADWAY DESIGN ENGINEER  
HYDRAULICS ENGINEER  
NORTH CAROLINA PROFESSIONAL SEAL 034207  
NORTH CAROLINA PROFESSIONAL SEAL 032615  
JASON LEWIS  
4/12/2024

DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED

PI Sta 10+85.59  
 $\Delta = 33^{\circ}14'24.9" (RT)$   
 $D = 38^{\circ}11'49.9"$   
 $L = 87.02'$   
 $T = 44.77'$   
 $R = 150.00'$

PI Sta 12+27.84  
 $\Delta = 23^{\circ}27'58.5" (RT)$   
 $D = 38^{\circ}11'49.9"$   
 $L = 61.43'$   
 $T = 31.15'$   
 $R = 150.00'$

PI Sta 13+24.98  
 $\Delta = 29^{\circ}59'33.4" (LT)$   
 $D = 38^{\circ}11'49.9"$   
 $L = 78.52'$   
 $T = 40.18'$   
 $R = 150.00'$

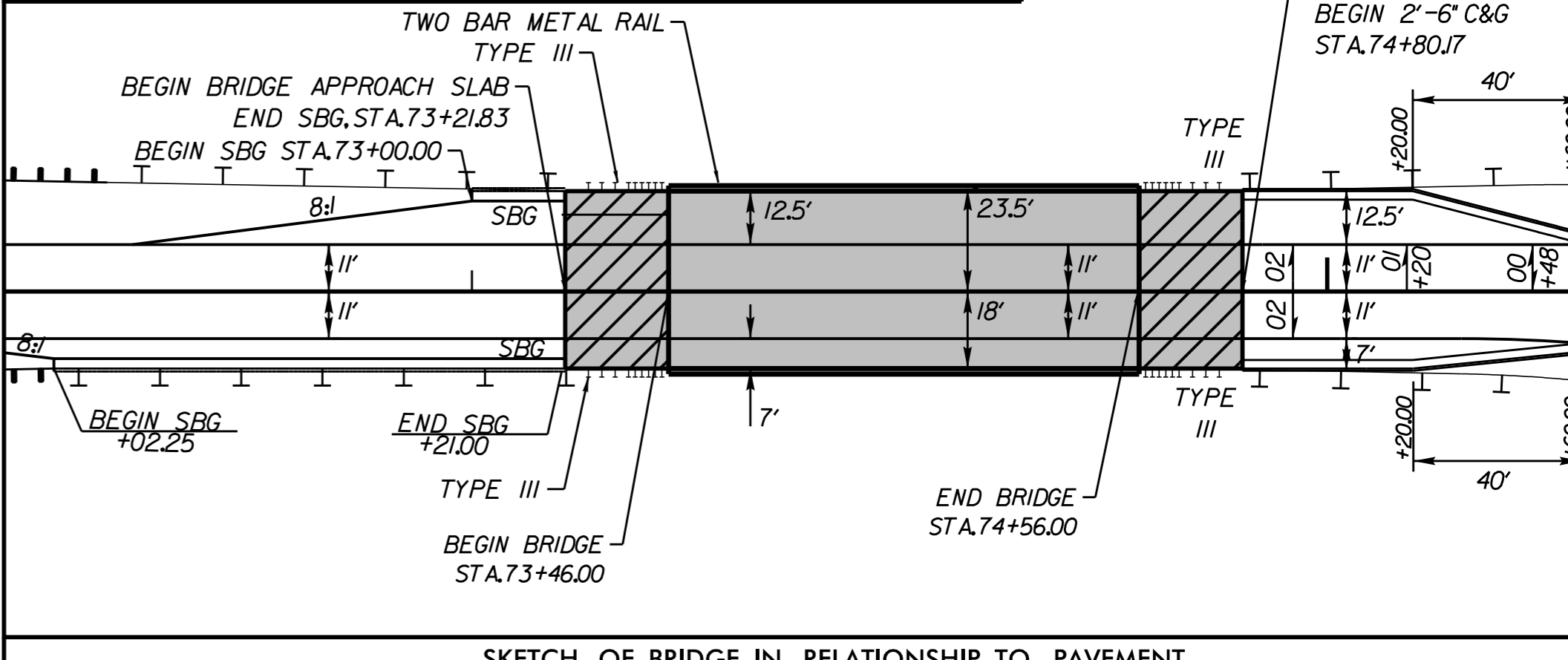
PI Sta 14+78.16  
 $\Delta = 36^{\circ}51'21.8" (LT)$   
 $D = 76^{\circ}23'39.7"$   
 $L = 48.24'$   
 $T = 24.99'$   
 $R = 75.00'$

PI Sta 16+00.77  
 $\Delta = 36^{\circ}35'43.0" (RT)$   
 $D = 28^{\circ}38'52.4"$   
 $L = 127.74'$   
 $T = 66.13'$   
 $R = 200.00'$

PI Sta 17+02.38  
 $\Delta = 18^{\circ}10'50.5" (LT)$   
 $D = 22^{\circ}55'05.9"$   
 $L = 79.33'$   
 $T = 40.00'$   
 $R = 250.00'$

PI Sta 10+85.59  
 $\Delta = 33^{\circ}14'24.9" (RT)$   
 $D = 38^{\circ}11'49.9"$   
 $L = 87.02'$   
 $T = 44.77'$   
 $R = 150.00'$

PI Sta 12+27.84  
 $\Delta = 23^{\circ}27'58.5" (RT)$   
 $D = 38^{\circ}11'49.9"$   
 $L = 61.43'$   
 $T = 31.15'$   
 $R = 150.00'$



SKETCH OF BRIDGE IN RELATIONSHIP TO PAVEMENT

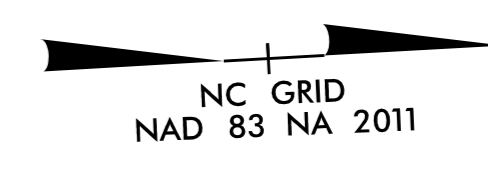
4/12/2024  
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-L-	-LI-	-YI-	-YI-
PI Sta 91+15.66	PI Sta 15+81.77	PI Sta 10+16.68	PI Sta 10+46.56
$\Delta = 114^{\circ} 56' 03.7" (RT)$	$\Delta = 69^{\circ} 12' 48.7" (LT)$	$\Delta = 8^{\circ} 28' 49.9" (RT)$	$\Delta = 27^{\circ} 05' 58.4" (RT)$
D = 33' 42" 12.2"	D = 31' 49" 51.6"	D = 25' 27" 53.2"	D = 104' 10" 26.9"
L = 341.02'	L = 217.44'	L = 33.30'	L = 26.01'
T = 266.51'	T = 124.21'	T = 16.68'	T = 13.25'
R = 170.00'	R = 180.00'	R = 225.00'	R = 55.00'
SE = 4%	SE = NC	SE = EXIST	SE = EXIST
RO = 100'	RO = NONE	RO = EXIST	RO = EXIST
DS = 25 MPH	DS = 20 MPH		

FOR -L- PROFILE, SEE SHEET 16  
 FOR -LI- PROFILE, SEE SHEET 16

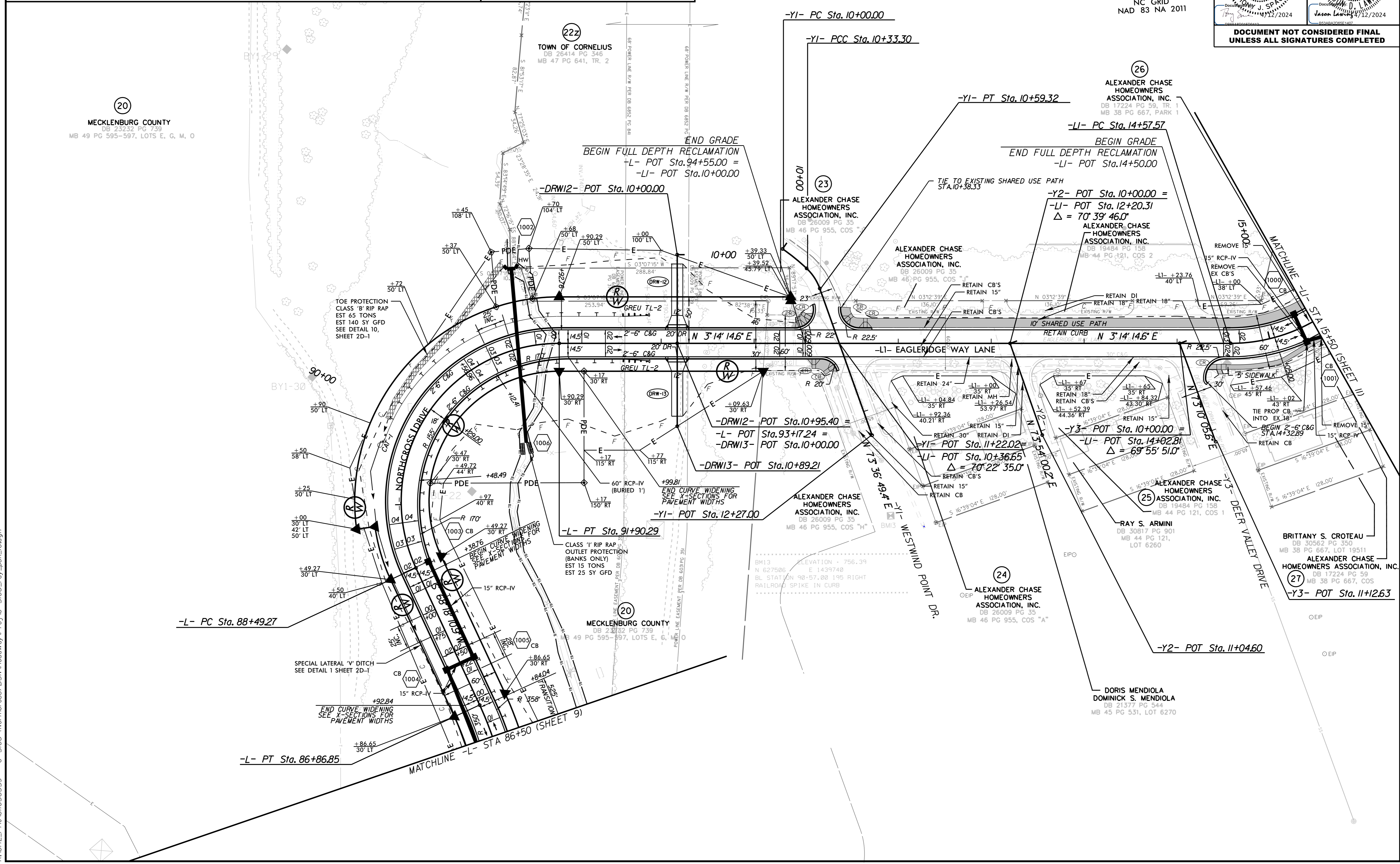
**Kimley Horn**  
 NC LICENSE #F-0102  
 200 SOUTH TRYON, SUITE 200  
 CHARLOTTE, N.C. 28202

PROJECT REFERENCE NO.	SHEET NO.
U-5108	10
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



Professional Engineer Seal for Jason J. Spivey, License No. 034207, State of North Carolina. Seal for Jason Lewis, License No. 032615, State of North Carolina.

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



20  
 MECKLENBURG COUNTY  
 DB 23232 PG 739  
 MB 49 PG 595-597, LOTS E, G, M, O

22  
 TOWN OF CORNELIUS  
 DB 26414 PG 346  
 MB 47 PG 641, TR. 2

23  
 ALEXANDER CHASE HOMEOWNERS ASSOCIATION, INC.  
 DB 26009 PG 35  
 MB 46 PG 955, COS "H"

26  
 ALEXANDER CHASE HOMEOWNERS ASSOCIATION, INC.  
 DB 19484 PG 158  
 MB 44 PG 121, COS 2

ALEXANDER CHASE HOMEOWNERS ASSOCIATION, INC.  
 DB 26009 PG 35  
 MB 46 PG 955, COS "H"

ALEXANDER CHASE HOMEOWNERS ASSOCIATION, INC.  
 DB 19484 PG 158  
 MB 44 PG 121, COS 2

ALEXANDER CHASE HOMEOWNERS ASSOCIATION, INC.  
 DB 26009 PG 35  
 MB 46 PG 955, COS "H"

24  
 ALEXANDER CHASE HOMEOWNERS ASSOCIATION, INC.  
 DB 26009 PG 35  
 MB 46 PG 955, COS "A"

25  
 ALEXANDER CHASE HOMEOWNERS ASSOCIATION, INC.  
 DB 19484 PG 158  
 MB 44 PG 121, COS 1

BRITTANY S. CROTEAU  
 DB 30562 PG 350  
 MB 38 PG 667, LOT 19511  
 ALEXANDER CHASE HOMEOWNERS ASSOCIATION, INC.  
 DB 17224 PG 59  
 MB 38 PG 667, COS 2  
 27  
 POT Sta. 11+12.63

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-Y6-

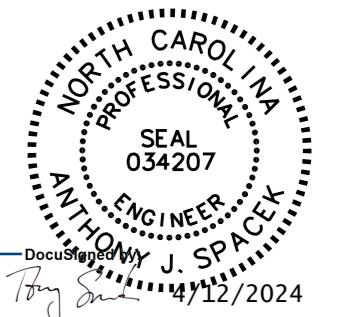
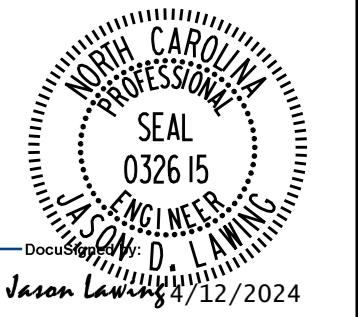
PI Sta 4+95.84    PI Sta 12+80.24  
 $\Delta = 0^\circ 46' 51.0" (LT)$      $\Delta = 20^\circ 58' 15.1" (LT)$   
 $D = 2' 17.306'$      $D = 3' 39' 12.9"$   
 $L = 34.07'$      $L = 573.98'$   
 $T = 17.04'$      $T = 290.24'$   
 $R = 2,500.00'$      $R = 1,568.21'$   
 SE = MATCH EXIST.    SE = 6%  
 RO = MATCH EXIST.    RO = 300  
 DS = 50 MPH    DS = 50 MPH

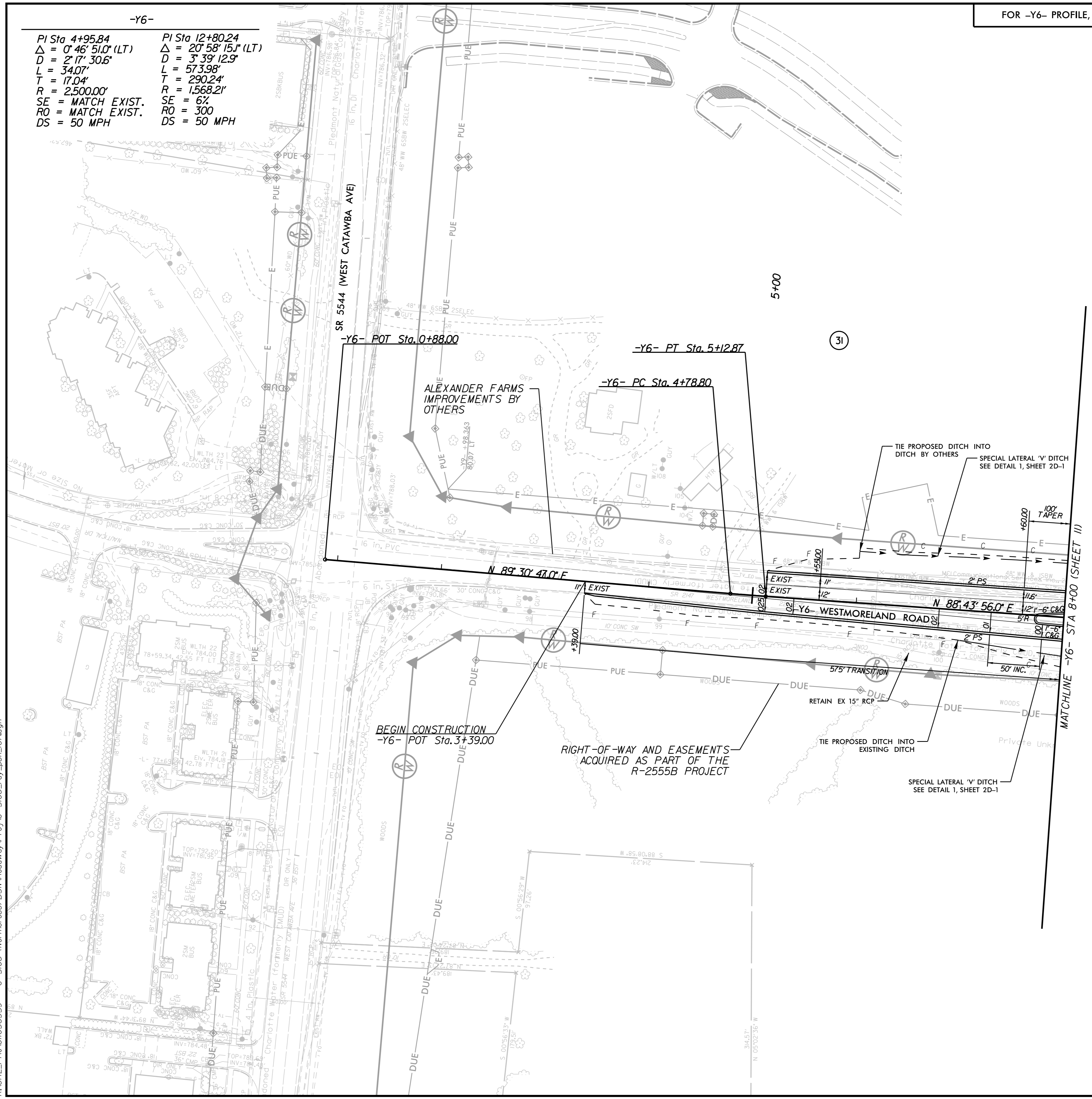
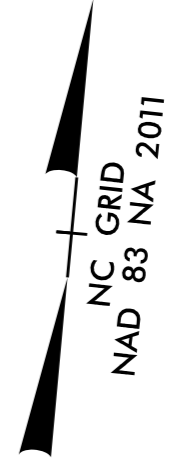
FOR -Y6- PROFILE, SEE SHEET 17

# Kimley Horn

NC LICENSE #F-0102  
 200 SOUTH TRYON, SUITE 200  
 CHARLOTTE, N.C. 28202

RIGHT-OF-WAY REV.  
CONST. REV.

PROJECT REFERENCE NO. U-5108	SHEET NO. 10A
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
	
<b>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</b>	



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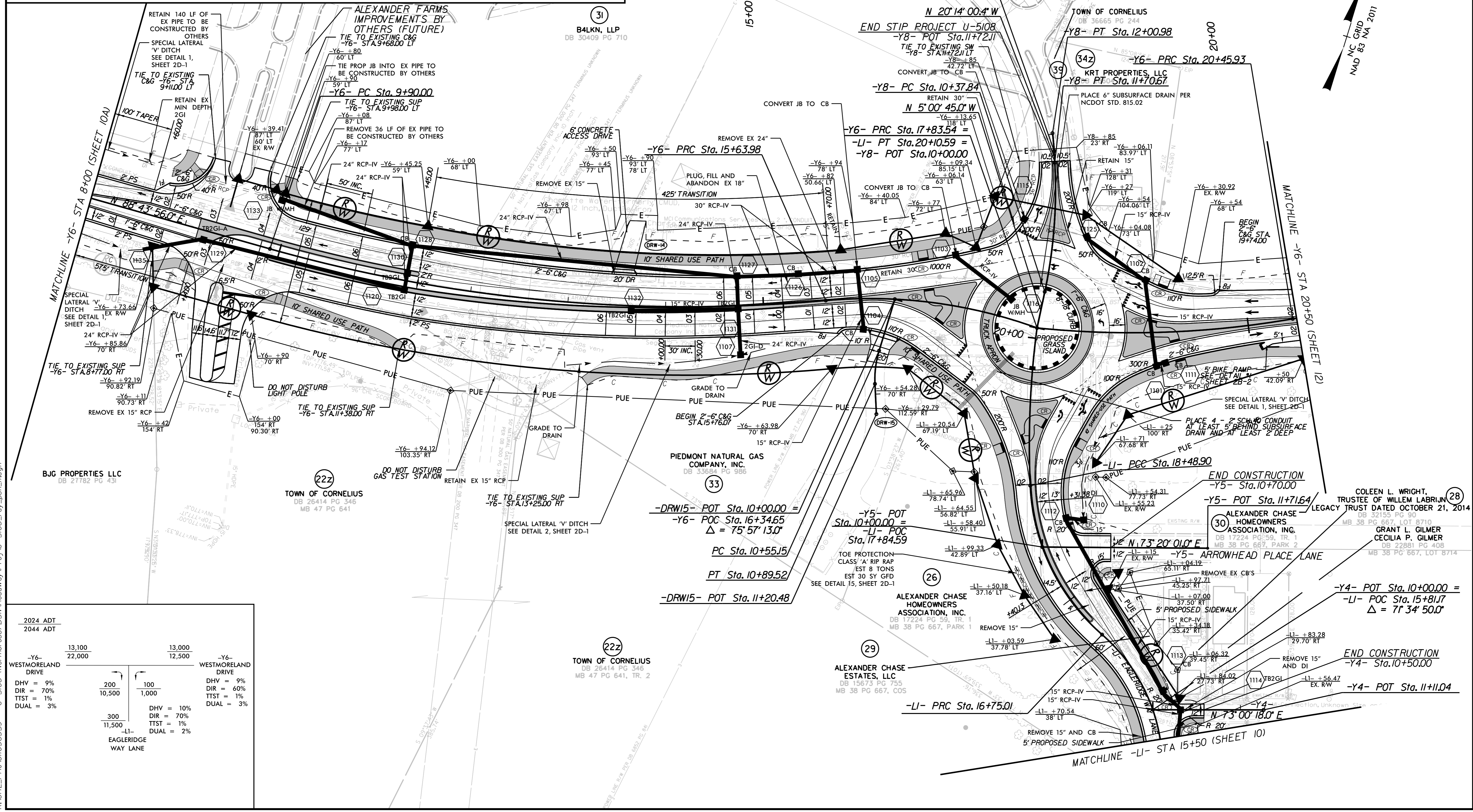
-LI-			-Y8-		
PI Sta 15+81.77 Δ = 69° 12' 48.7" (LT) D = 31' 49" 51.6" L = 217.44' T = 124.21' R = 180.00' SE = NC RO = NONE DS = 20 MPH	PI Sta 17+67.02 Δ = 46° 20' 24.1" (RT) D = 26' 38" 57.1" L = 173.89' T = 92.02' R = 215.00' SE = NC RO = NONE DS = 20 MPH	PI Sta 19+29.95 Δ = 10° 04' 12.5" (RT) D = 6' 13" 40.1" L = 161.70' T = 81.06' R = 920.00' SE = NC RO = NONE DS = 20 MPH	PI Sta 11+04.65 Δ = 15° 13' 15.4" (LT) D = 11' 27" 33.0" L = 132.83' T = 66.81' R = 500.00' SE = NC RO = NONE DS = 20 MPH	PI Sta 11+91.84 Δ = 4° 11' 37.2" (LT) D = 22' 55" 05.9" L = 18.30' T = 9.15' R = 250.00' SE = MATCH EXIST. RO = MATCH EXIST.	

-Y6-				
PI Sta 12+80.24 Δ = 20° 58' 15.1" (LT) D = 3' 39" 12.9" L = 573.98' T = 290.24' R = 1568.21' SE = 6% RO = 180° DS = 50 MPH	PI Sta 16+75.56 Δ = 25° 09' 33.4" (RT) D = 11' 27" 33.0" L = 219.56' T = 111.58' R = 560.00' SE = NC RO = NONE DS = 20 MPH	PI Sta 19+15.56 Δ = 15° 39' 38.4" (LT) D = 5' 58" 05.9" L = 262.40' T = 132.02' R = 960.00' SE = NC RO = NONE DS = 20 MPH	PI Sta 20+90.33 Δ = 9° 13' 51.5" (RT) D = 10' 25" 02.7" L = 88.61' T = 44.40' R = 550.00' SE = NC RO = NONE DS = 20 MPH	PI Sta 22+56.01 Δ = 1° 35' 37.7" (RT) D = 1' 38" 13.3" L = 97.36' T = 48.68' R = 3500.00' SE = MATCH EXIST. RO = MATCH EXIST.

FOR -Y4- PROFILE, SEE SHEET 20	ROUNDBOUT DETAIL, SEE SHEET 2B-1
FOR -Y5- PROFILE, SEE SHEET 20	FOR DRW-15 PROFILE, SEE SHEET 21
FOR -Y6- PROFILE, SEE SHEET 17	
FOR -Y8- PROFILE, SEE SHEET 21	

**Kimley Horn**  
 NC LICENSE #F-0102  
 200 SOUTH TRYON, SUITE 200  
 CHARLOTTE, N.C. 28202  
 RIGHT-OF-WAY REV.  
 CONST. REV.

PROJECT REFERENCE NO. U-5108	SHEET NO. 11
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



2024 ADT 2044 ADT	13,100 22,000	13,000 12,500	-Y6- WESTMORELAND DRIVE
DHV = 9%	200	100	DHV = 9%
DIR = 70%	10,500	1,000	DIR = 60%
TTST = 1%			TTST = 1%
DUAL = 3%			DUAL = 3%
	300		DHV = 10%
	11,500		DIR = 70%
			TTST = 1%
			DUAL = 2%

LI-  
EAGLERIDGE WAY LANE

6/4/2024 K:\CHL\_PRA\01036359 - U-5108 (Northcross) DSN\Roadway\Proj\U-5108\_rdy\_psh.lldgn

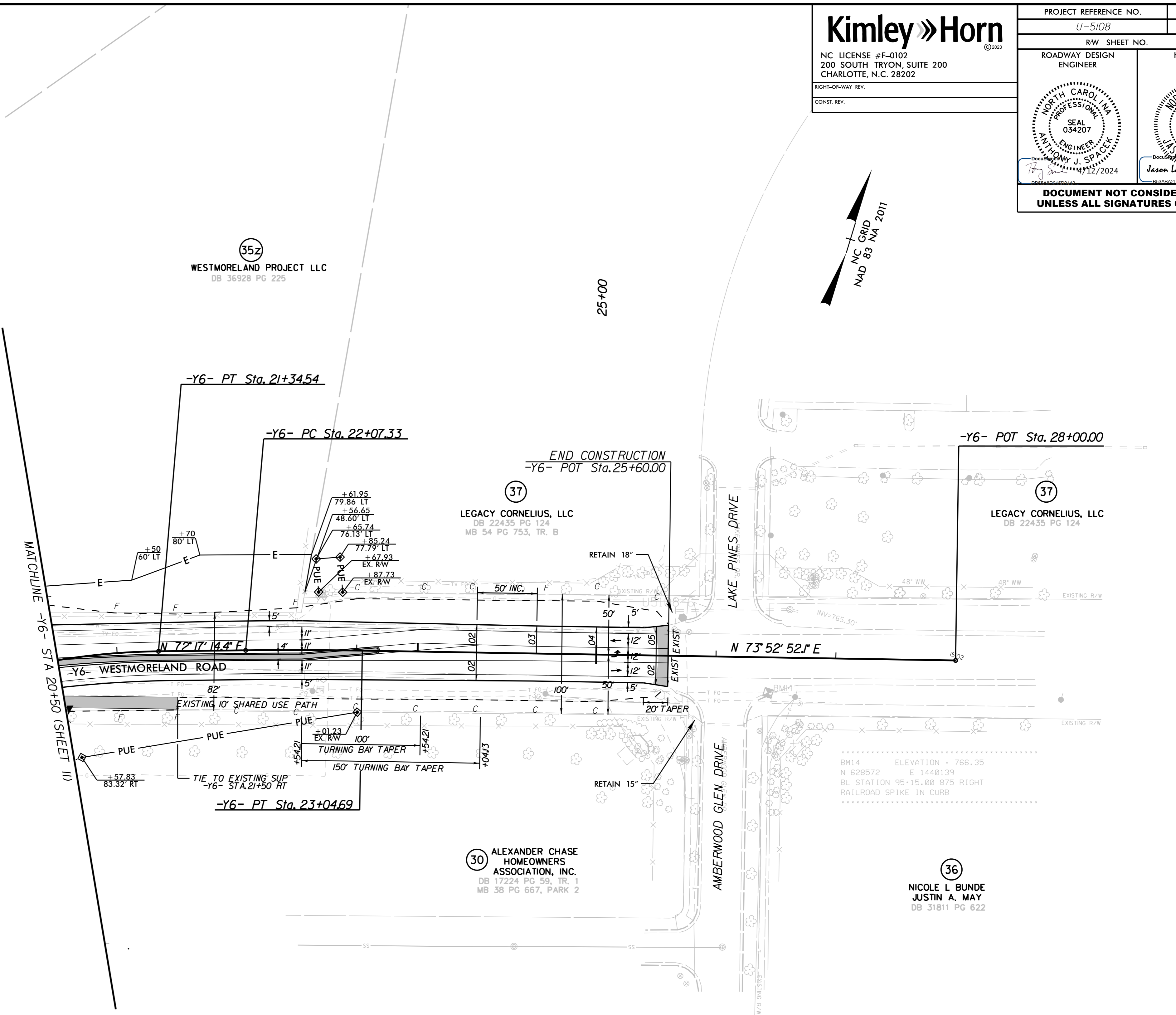
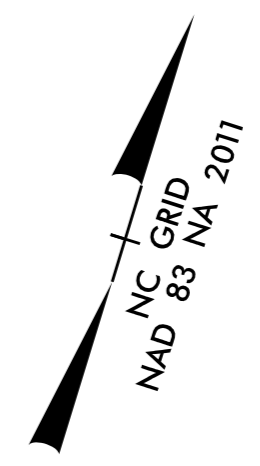
-Y6-  
 PI Sta 22+56.01  
 $\Delta = 1' 35' 37.7'' (RT)$   
 $D = 1' 38' 13.3''$   
 $L = 97.36'$   
 $T = 48.68'$   
 $R = 3,500.00'$   
 SE = MATCH EXIST.  
 RO = MATCH EXIST.

FOR -Y6- PROFILE, SEE SHEET 17

**Kimley»Horn**  
 NC LICENSE #F-0102  
 200 SOUTH TRYON, SUITE 200  
 CHARLOTTE, N.C. 28202

RIGHT-OF-WAY REV.  
 CONST. REV.

PROJECT REFERENCE NO. U-5108	SHEET NO. 12
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</b>	



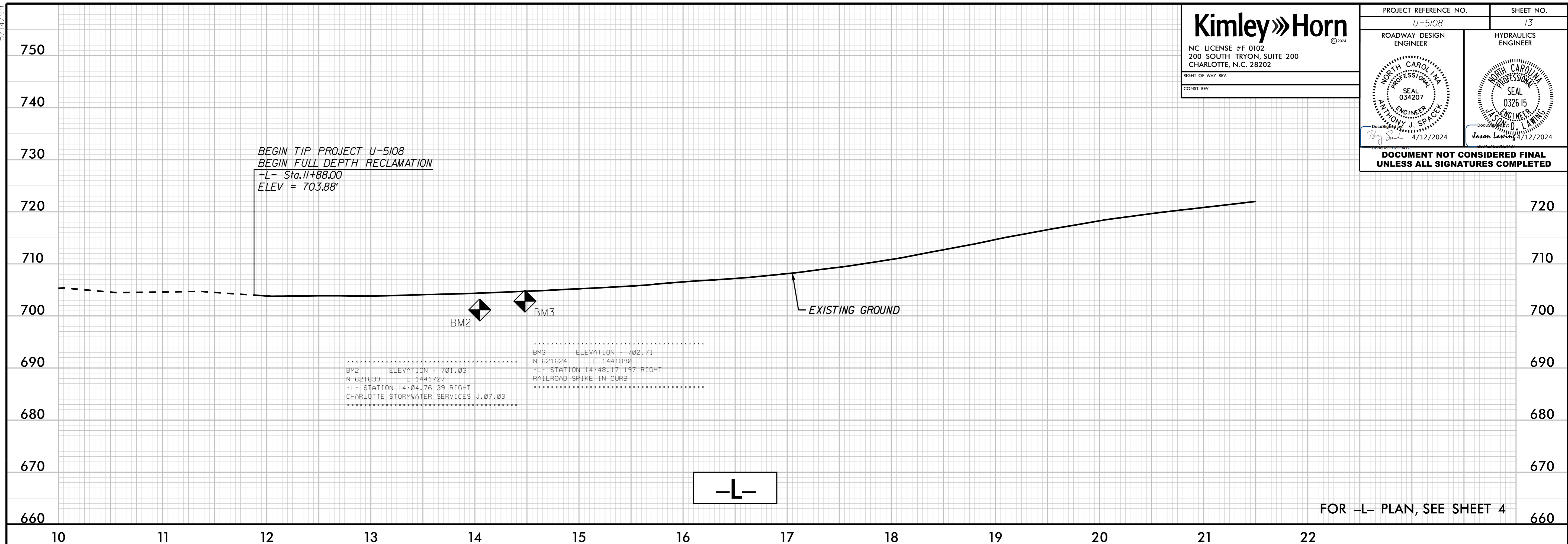
4/12/2024  
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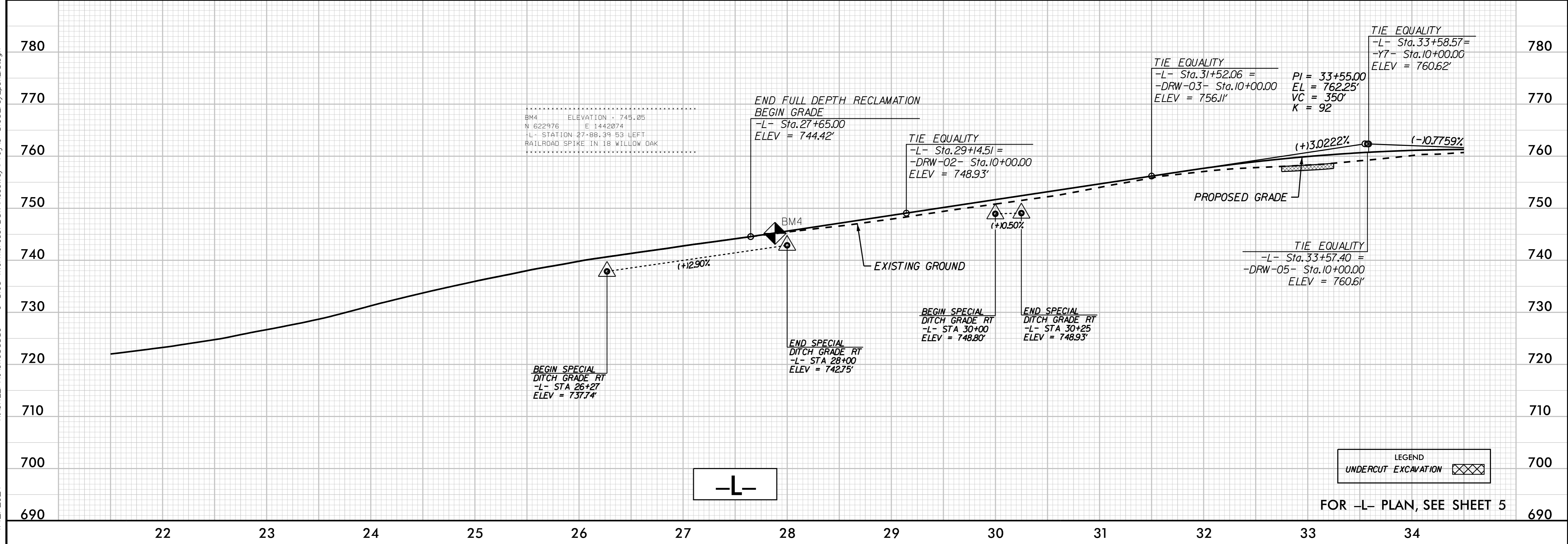
5/14/99

**Kimley»Horn**  
 NC LICENSE #F-0102  
 200 SOUTH TRYON, SUITE 200  
 CHARLOTTE, N.C. 28202

PROJECT REFERENCE NO. U-5108	SHEET NO. 13
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
4/12/2024	4/12/2024
<b>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</b>	



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4/12/2024

5/14/2024

# Kimley Horn

NC LICENSE #F-0102  
200 SOUTH TRYON, SUITE 200  
CHARLOTTE, N.C. 28202

RIGHT-OF-WAY REV.  
CONST. REV.

BM7 ELEVATION = 757.65  
N 624483 E 1442236  
L- STATION 46+41.73 388 LEFT  
RAILROAD SPIKE IN 42 WILLOW OAK

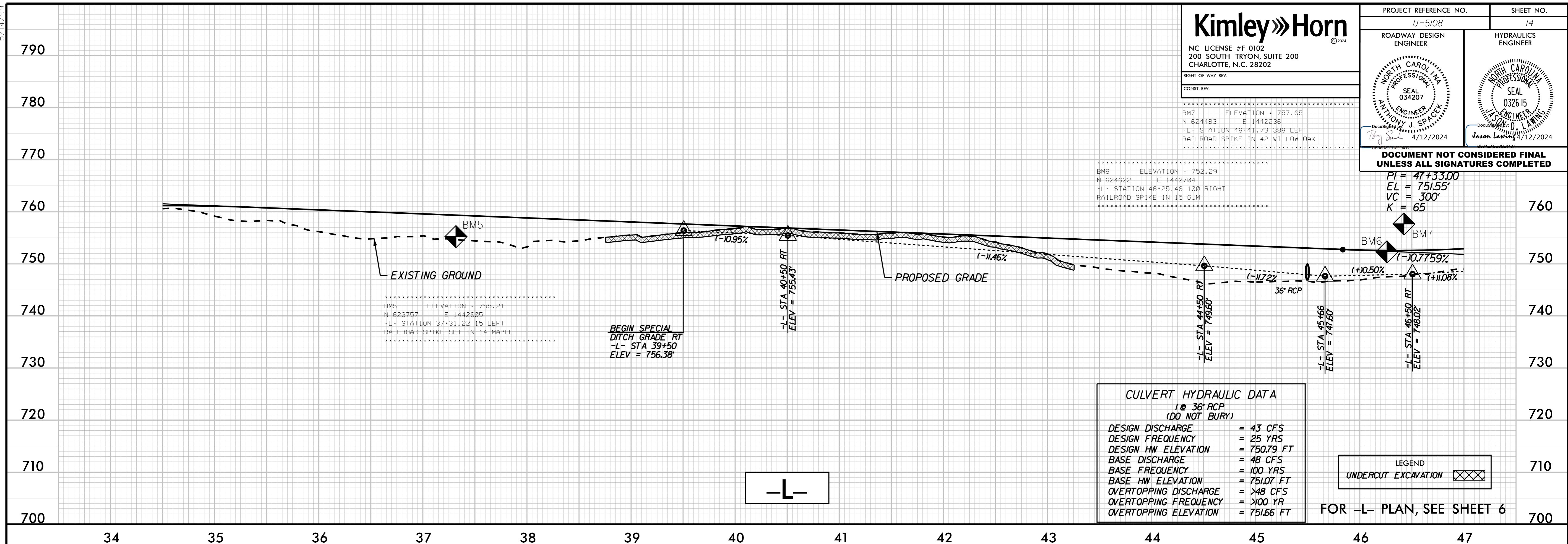
BM6 ELEVATION = 752.29  
N 624622 E 1442704  
L- STATION 46+25.46 100 RIGHT  
RAILROAD SPIKE IN 15 GUM

PROJECT REFERENCE NO. U-5108 SHEET NO. 14

ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
DocuSign 4/12/2024	DocuSign 4/12/2024

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

PI = 47+33.00  
EL = 751.55'  
VC = 300'  
K = 65



**CULVERT HYDRAULIC DATA**  
1 @ 36" RCP  
(DO NOT BURY)

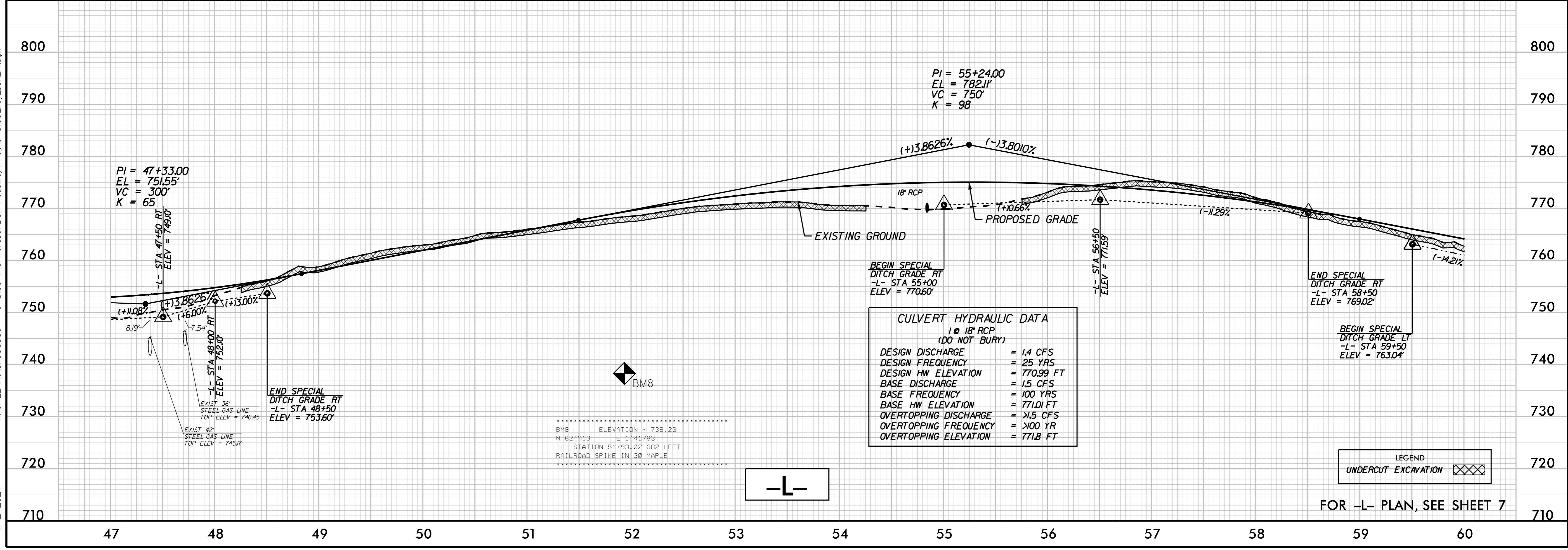
DESIGN DISCHARGE	= 43 CFS
DESIGN FREQUENCY	= 25 YRS
DESIGN HW ELEVATION	= 750.79 FT
BASE DISCHARGE	= 48 CFS
BASE FREQUENCY	= 100 YRS
BASE HW ELEVATION	= 751.07 FT
OVERTOPPING DISCHARGE	= >48 CFS
OVERTOPPING FREQUENCY	= >100 YR
OVERTOPPING ELEVATION	= 751.66 FT

**LEGEND**  
UNDERCUT EXCAVATION

FOR -L- PLAN, SEE SHEET 6

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4/12/2024



**CULVERT HYDRAULIC DATA**  
1 @ 18" RCP  
(DO NOT BURY)

DESIGN DISCHARGE	= 1.4 CFS
DESIGN FREQUENCY	= 25 YRS
DESIGN HW ELEVATION	= 770.99 FT
BASE DISCHARGE	= 15 CFS
BASE FREQUENCY	= 100 YRS
BASE HW ELEVATION	= 771.01 FT
OVERTOPPING DISCHARGE	= >15 CFS
OVERTOPPING FREQUENCY	= >100 YR
OVERTOPPING ELEVATION	= 771.8 FT

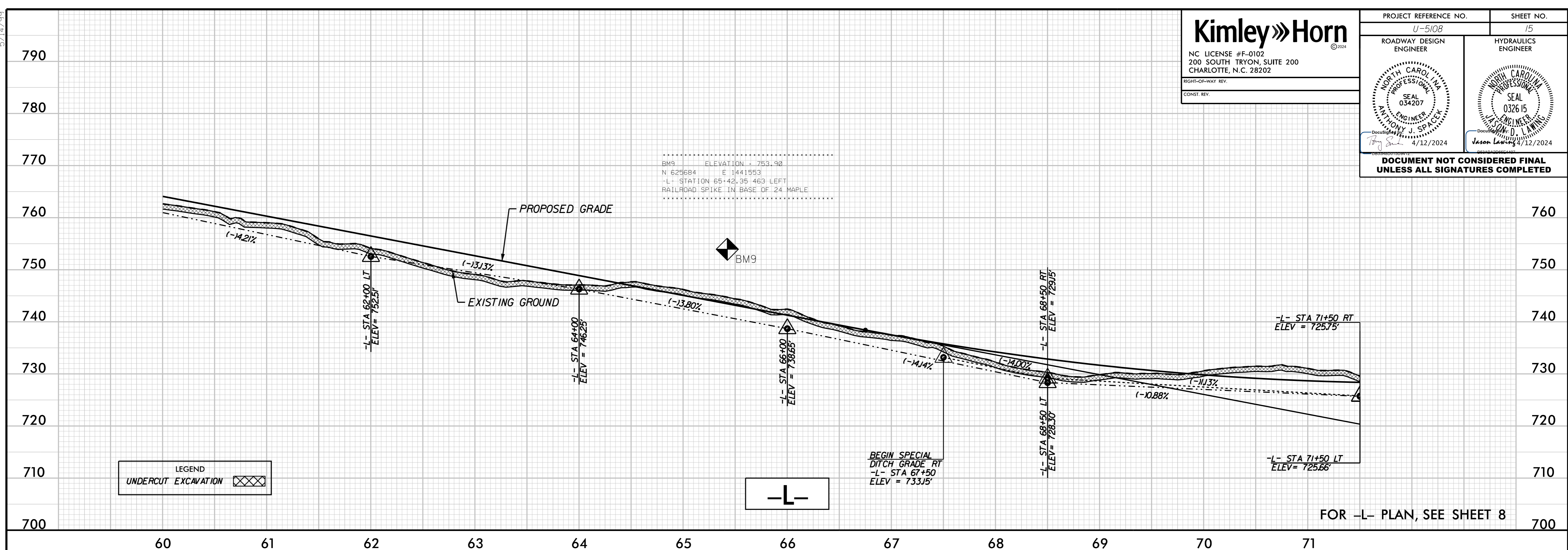
**LEGEND**  
UNDERCUT EXCAVATION

FOR -L- PLAN, SEE SHEET 7

5/14/99

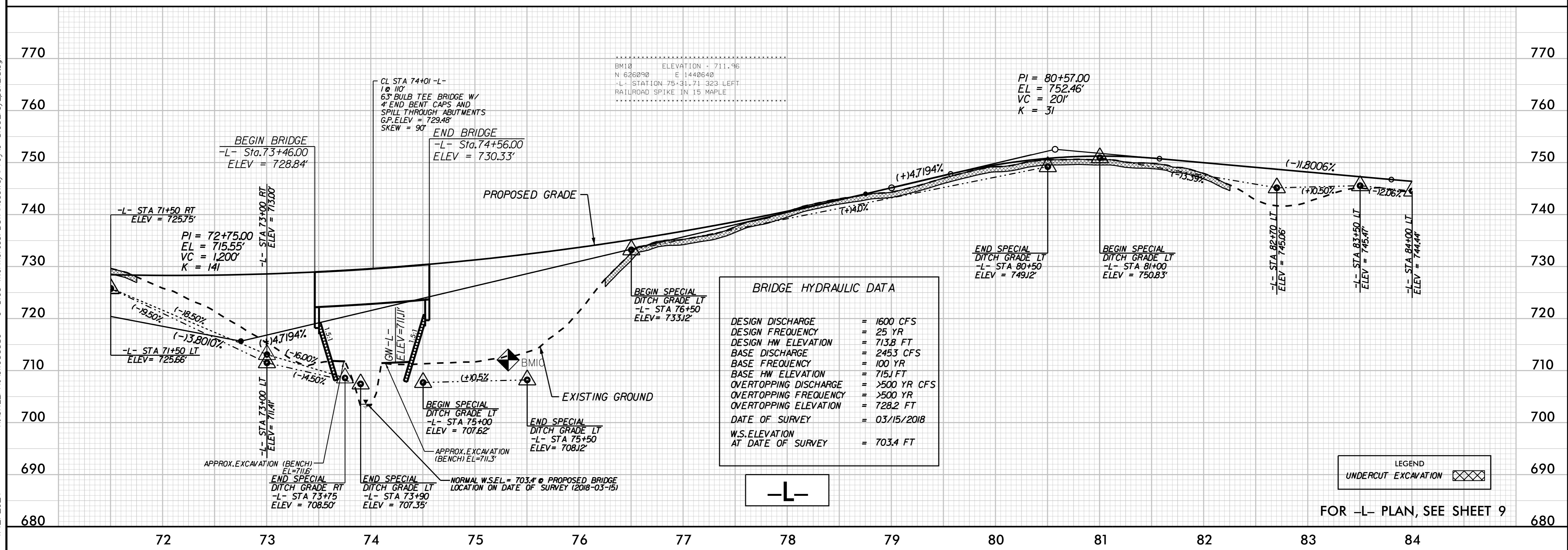
**Kimley»Horn**  
 NC LICENSE #F-0102  
 200 SOUTH TRYON, SUITE 200  
 CHARLOTTE, N.C. 28202

PROJECT REFERENCE NO. U-5108	SHEET NO. 15
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</b>	



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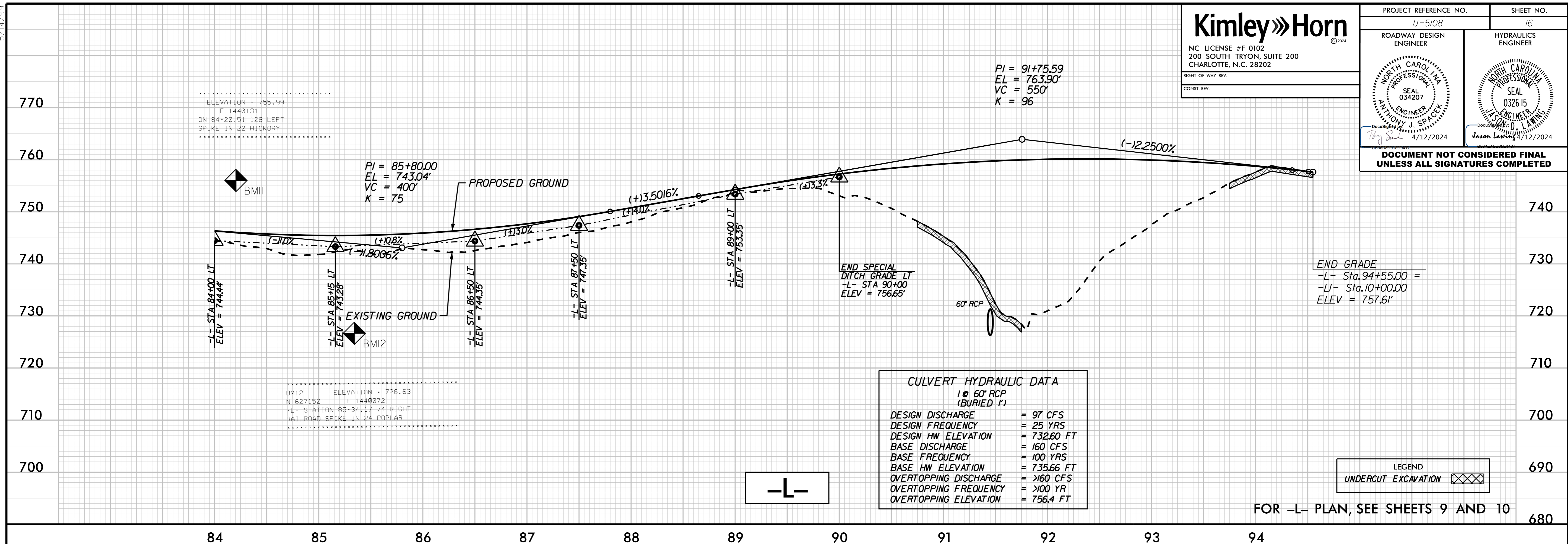
4/12/2024



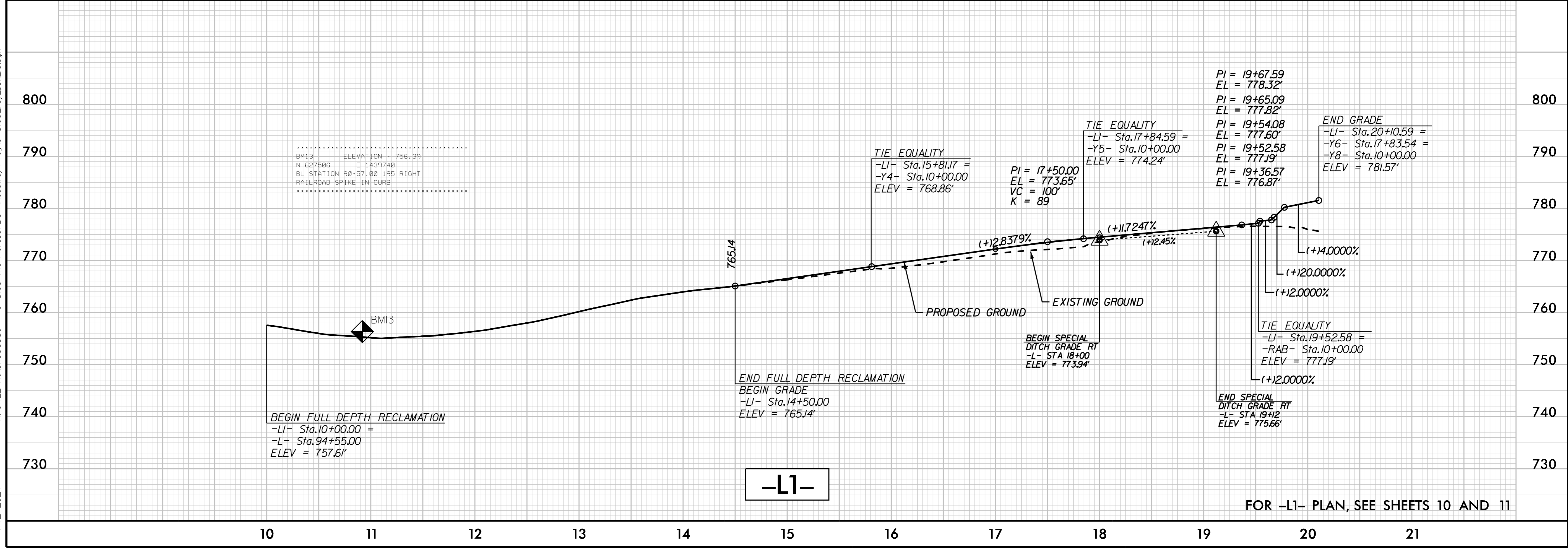
5/14/24

**Kimley»Horn**  
 NC LICENSE #F-0102  
 200 SOUTH TRYON, SUITE 200  
 CHARLOTTE, N.C. 28202

PROJECT REFERENCE NO. U-5108	SHEET NO. 16
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</b>	



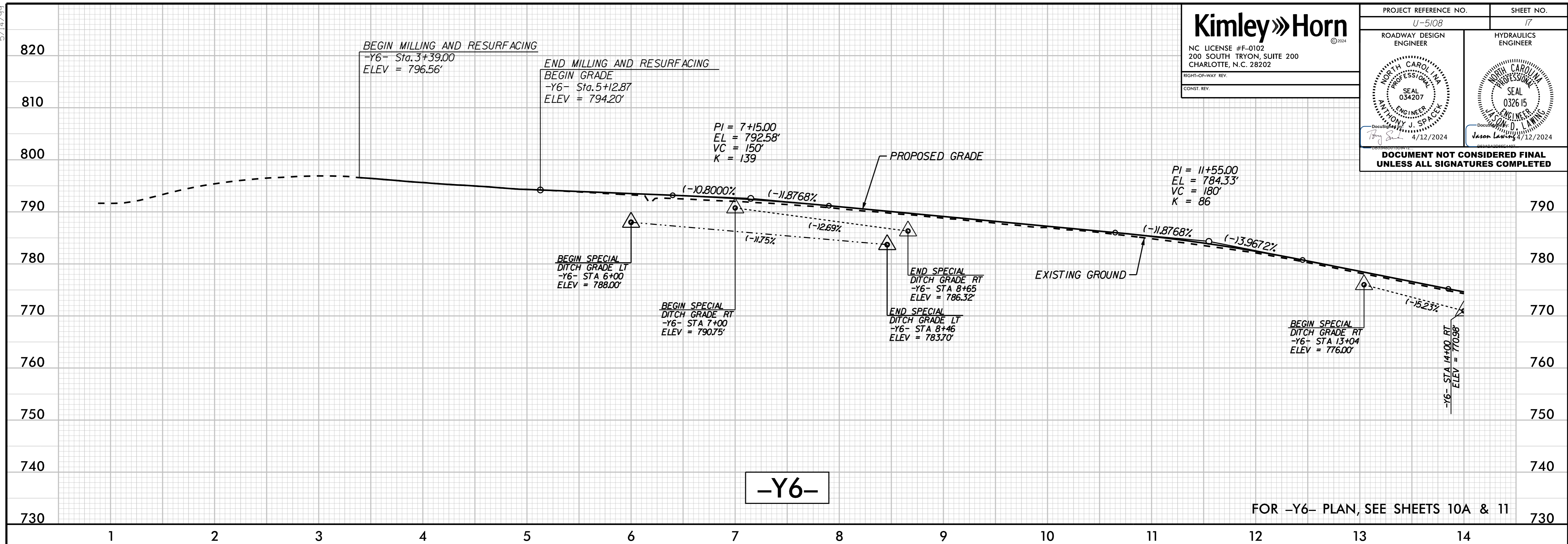
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5/14/2024

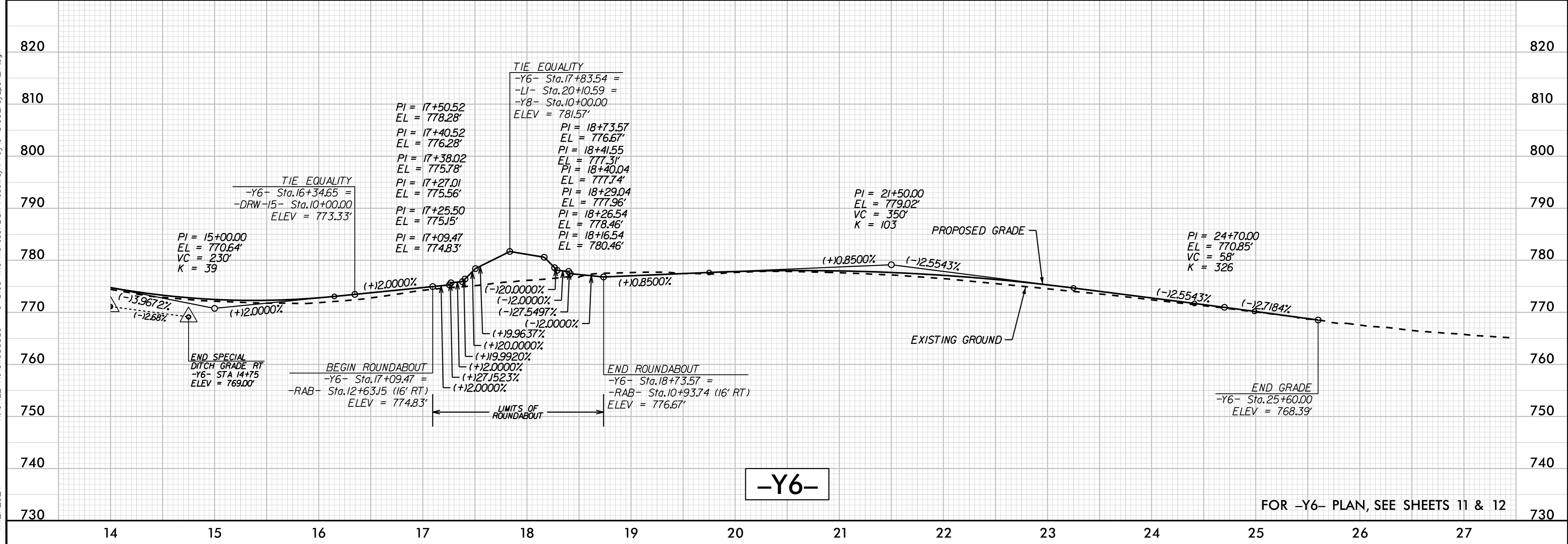
**Kimley»Horn**  
 NC LICENSE #F-0102  
 200 SOUTH TRYON, SUITE 200  
 CHARLOTTE, N.C. 28202  
 RIGHT-OF-WAY REV.  
 CONST. REV.

PROJECT REFERENCE NO. U-5108	SHEET NO. 17
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</b>	



FOR -Y6- PLAN, SEE SHEETS 10A & 11

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FOR -Y6- PLAN, SEE SHEETS 11 & 12

5/14/24

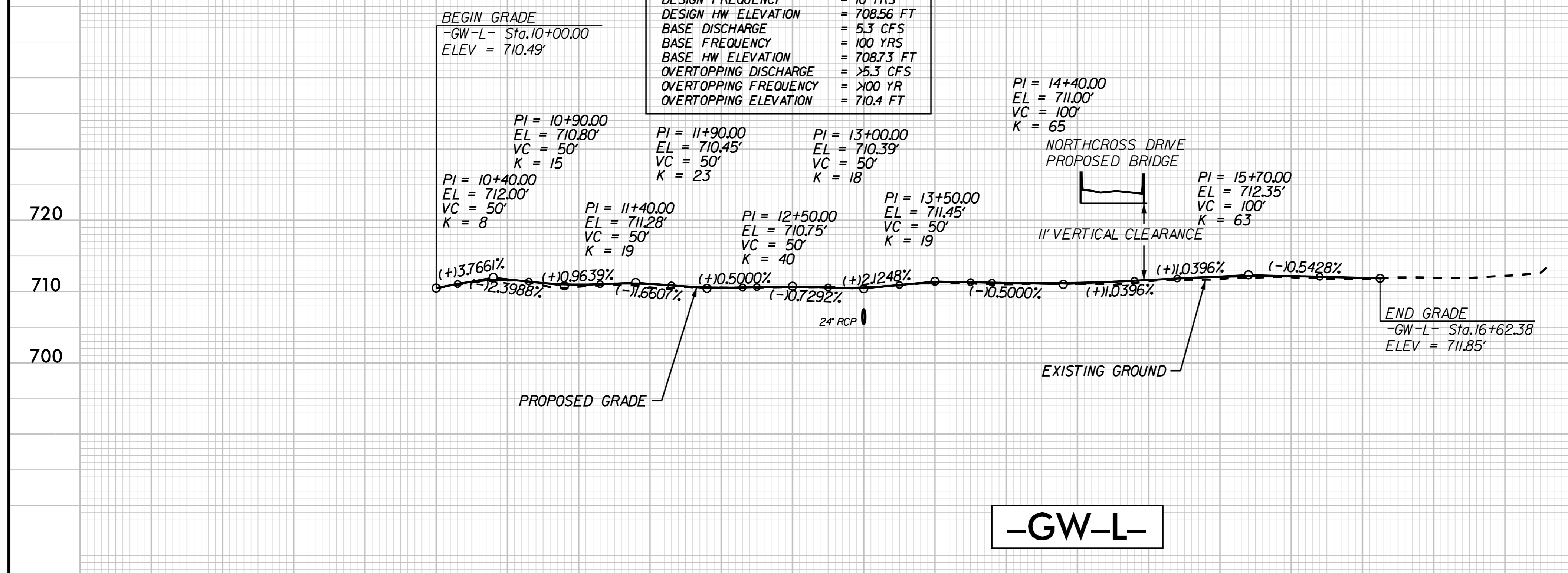
**Kimley»Horn**  
 NC LICENSE #F-0102  
 200 SOUTH TRYON, SUITE 200  
 CHARLOTTE, N.C. 28202  
 RIGHT-OF-WAY REV.  
 CONST. REV.

PROJECT REFERENCE NO. U-5108	SHEET NO. 18
ROADWAY DESIGN ENGINEER ANTHONY J. SPALEY SEAL 034207 4/12/2024	HYDRAULICS ENGINEER JASON LEWIS SEAL 032615 4/12/2024

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

**CULVERT HYDRAULIC DATA**  
 1 @ 24" RCP  
 (DO NOT BURY)

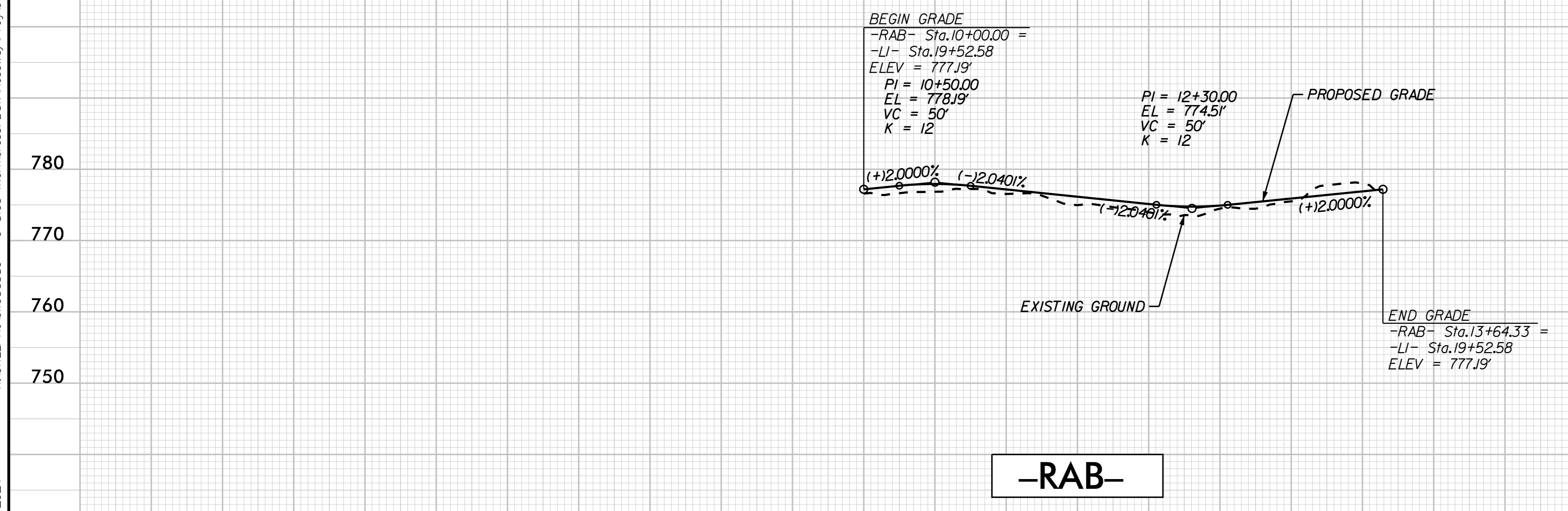
DESIGN DISCHARGE	= 4.0 CFS
DESIGN FREQUENCY	= 10 YRS
DESIGN HW ELEVATION	= 708.56 FT
BASE DISCHARGE	= 5.3 CFS
BASE FREQUENCY	= 100 YRS
BASE HW ELEVATION	= 708.73 FT
OVERTOPPING DISCHARGE	= >5.3 CFS
OVERTOPPING FREQUENCY	= >100 YR
OVERTOPPING ELEVATION	= 710.4 FT



10 11 12 13 14 15 16

FOR -GW-L- PLAN, SEE SHEET 9

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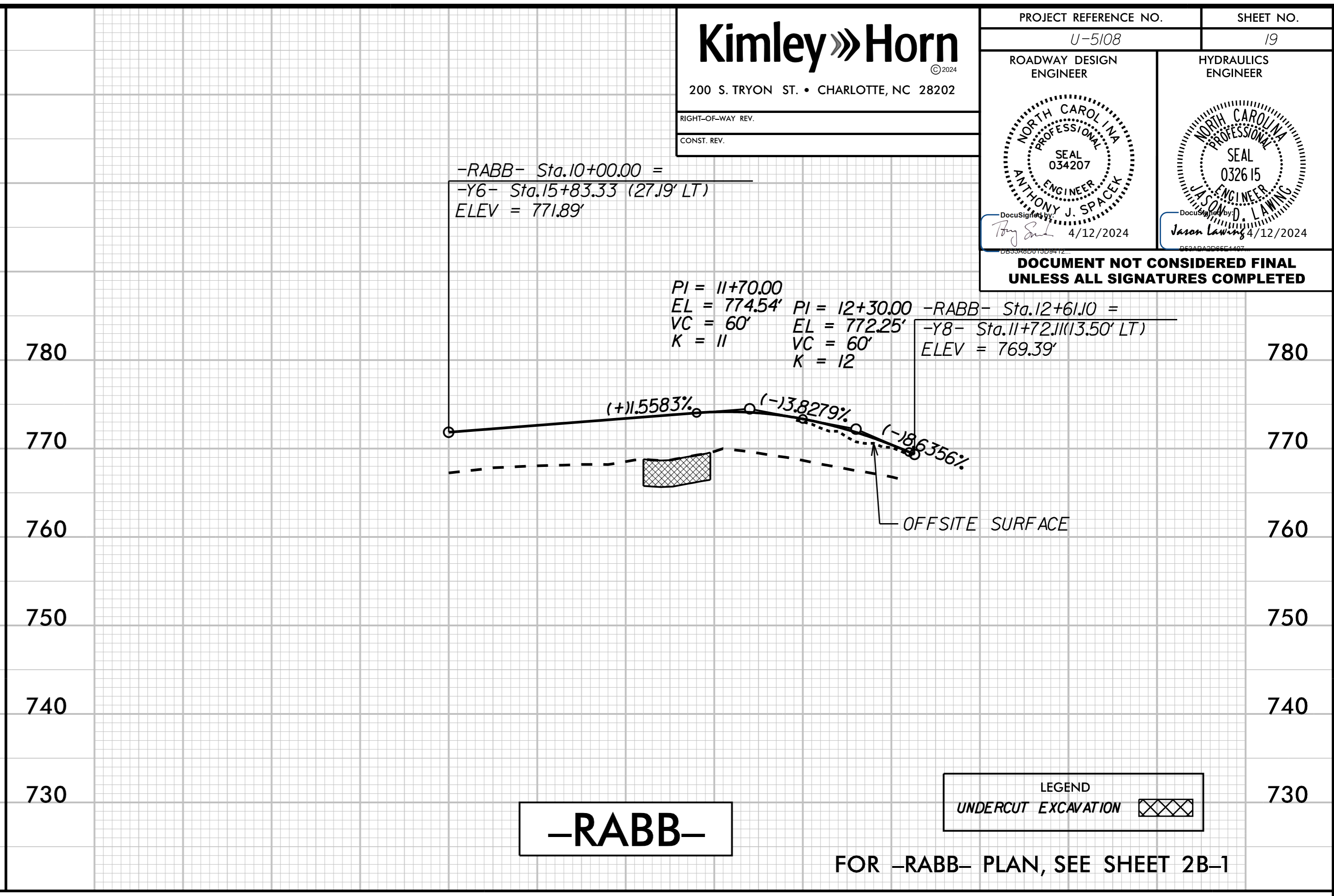
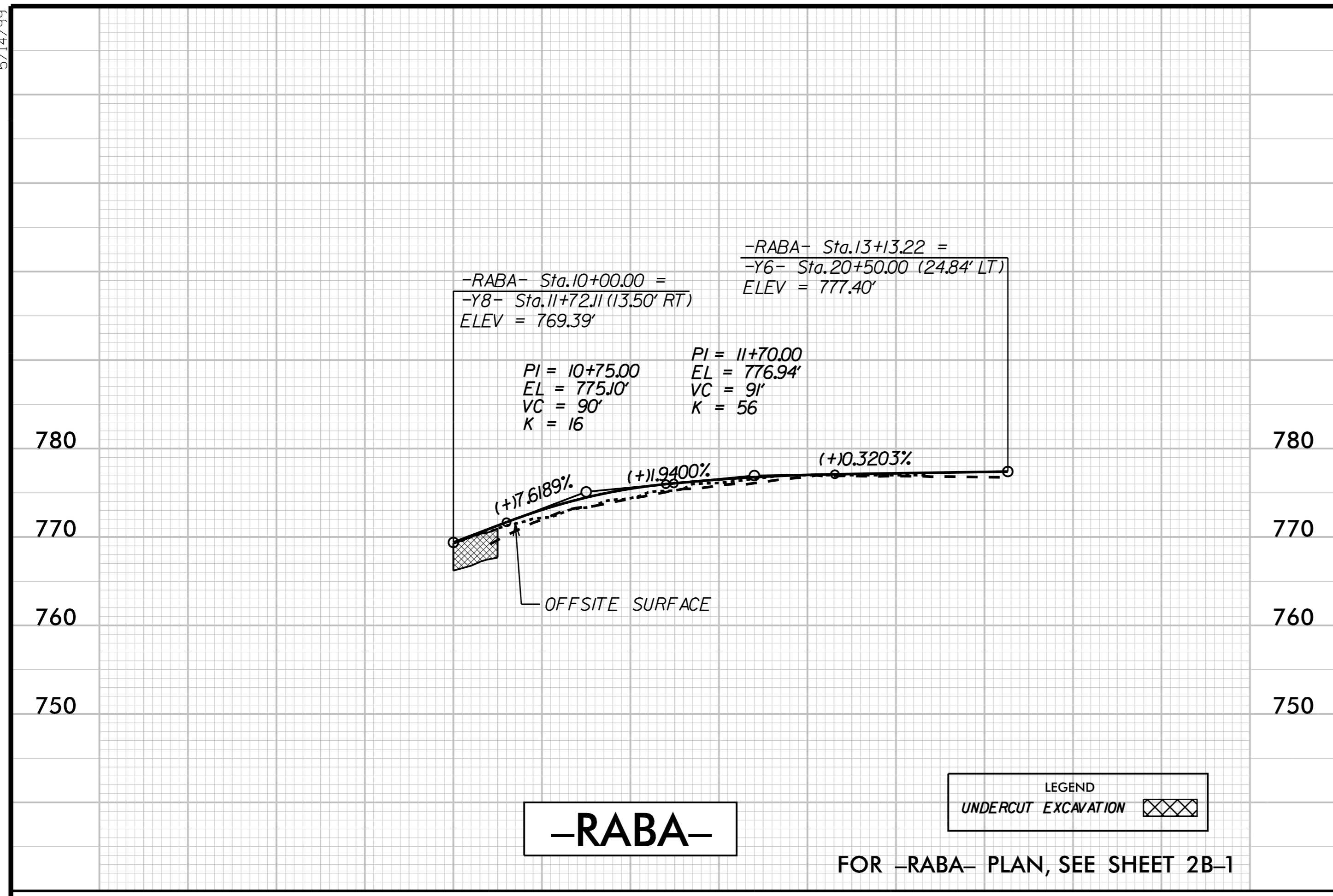
10 11 12 13

FOR -RAB- PLAN, SEE SHEET 2B-1

4/12/2024

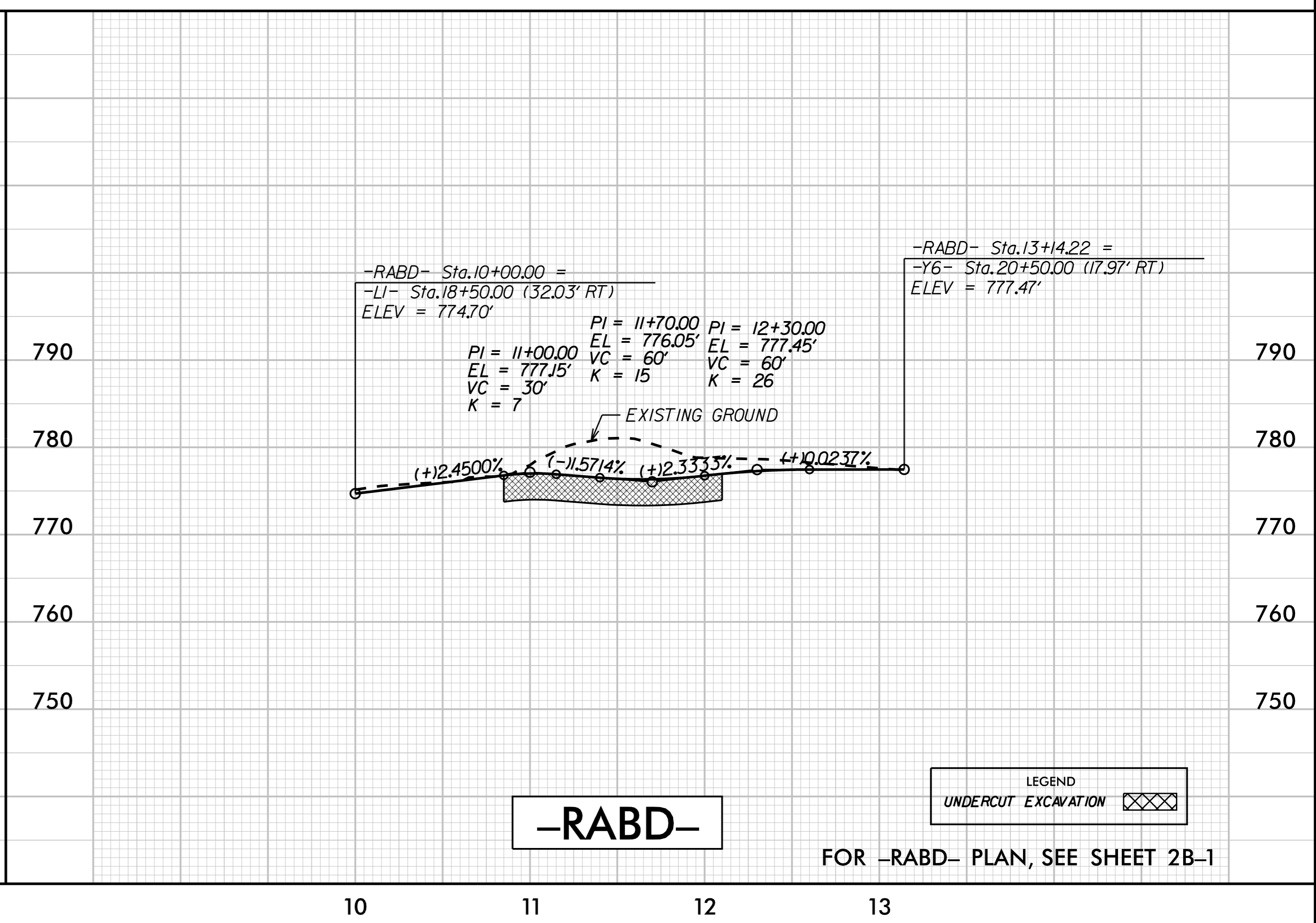
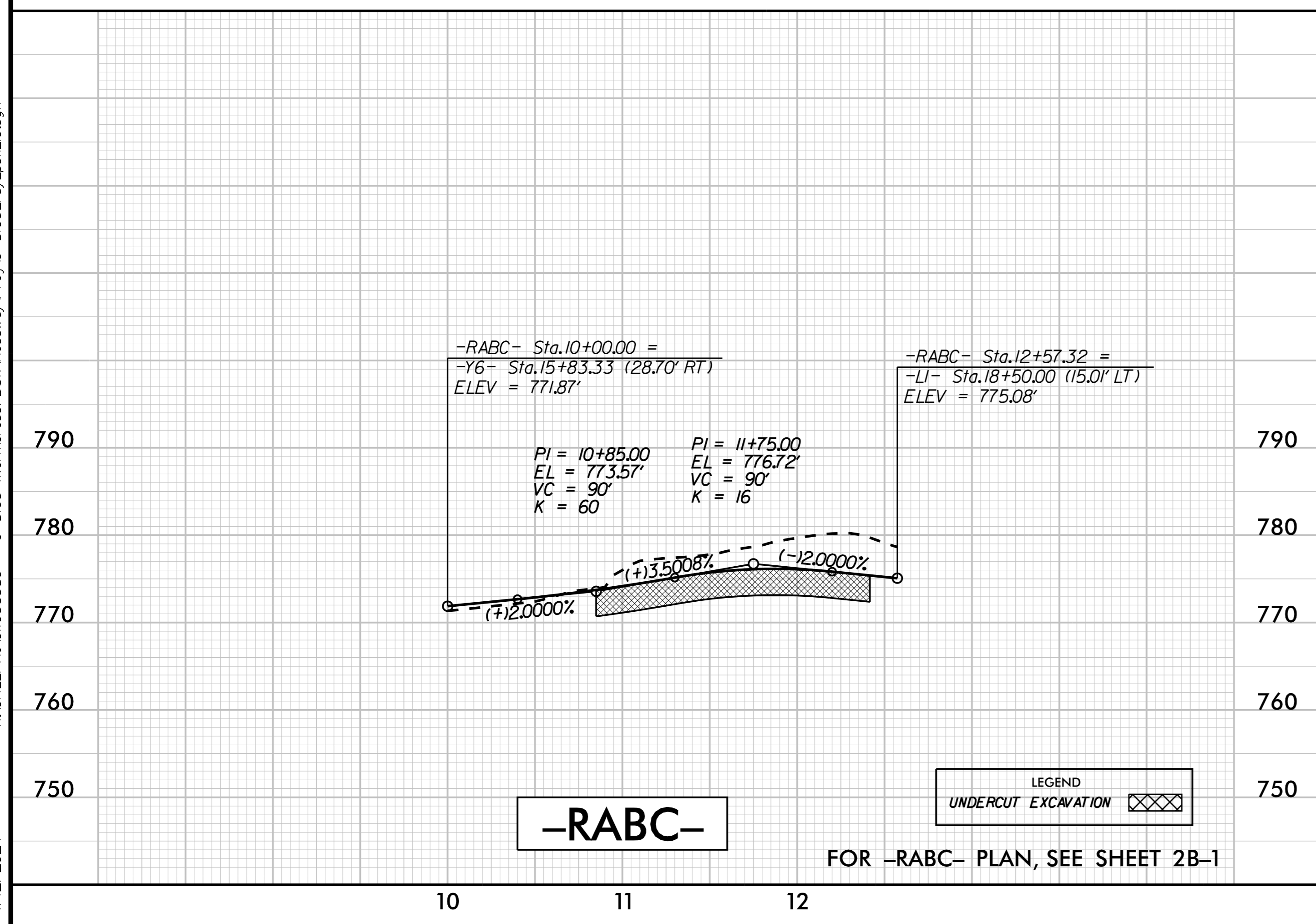
5/14/2024

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



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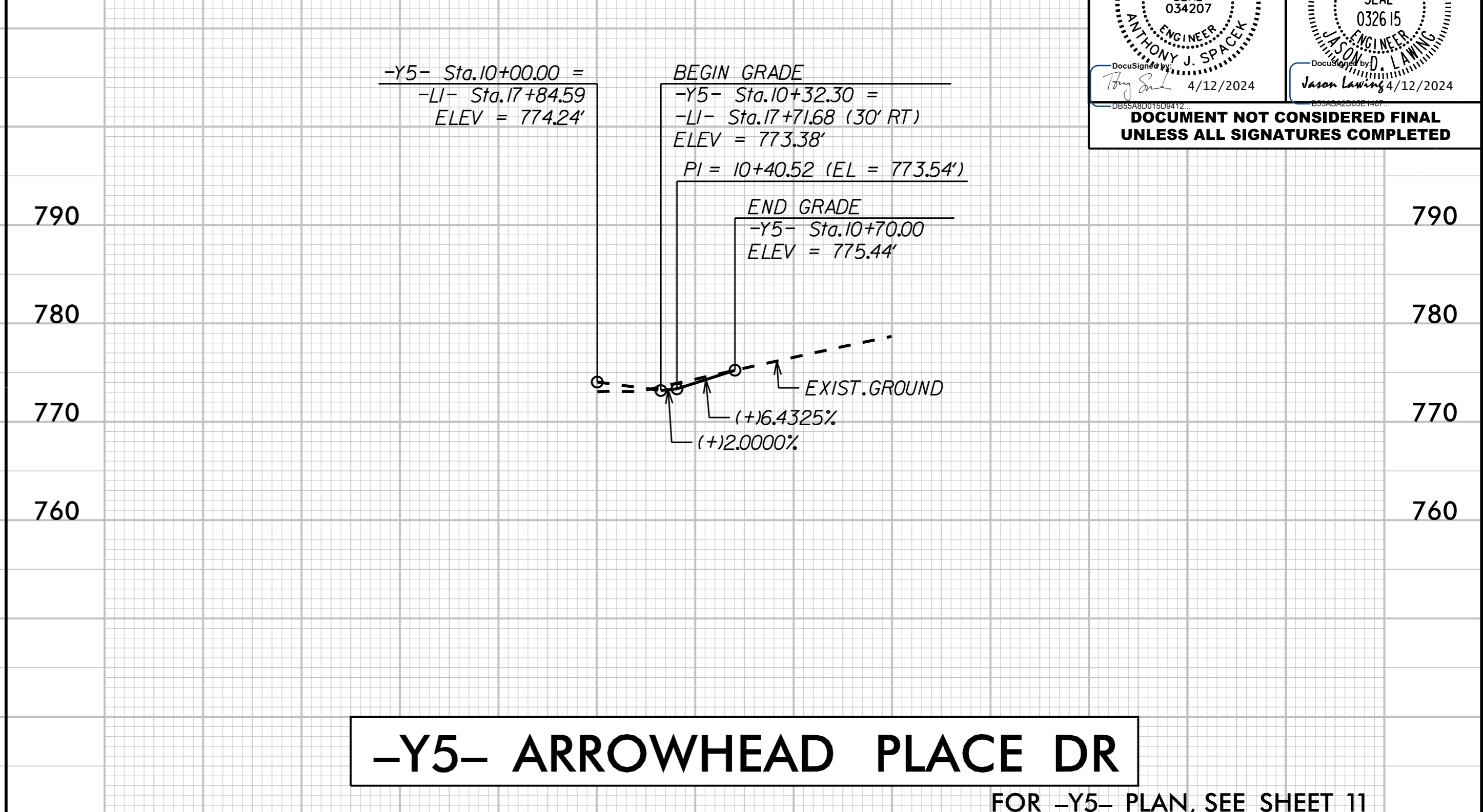
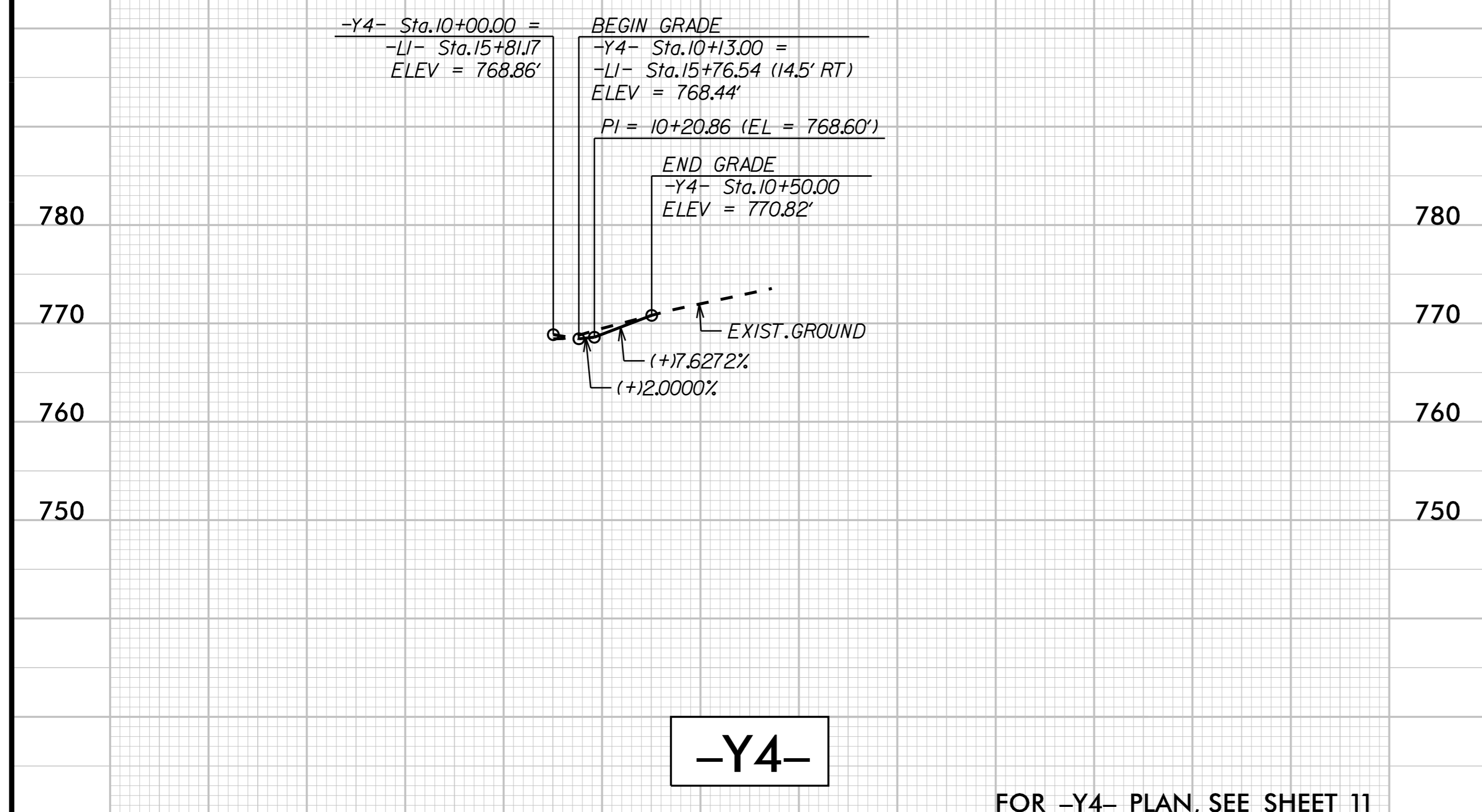
4/12/2024



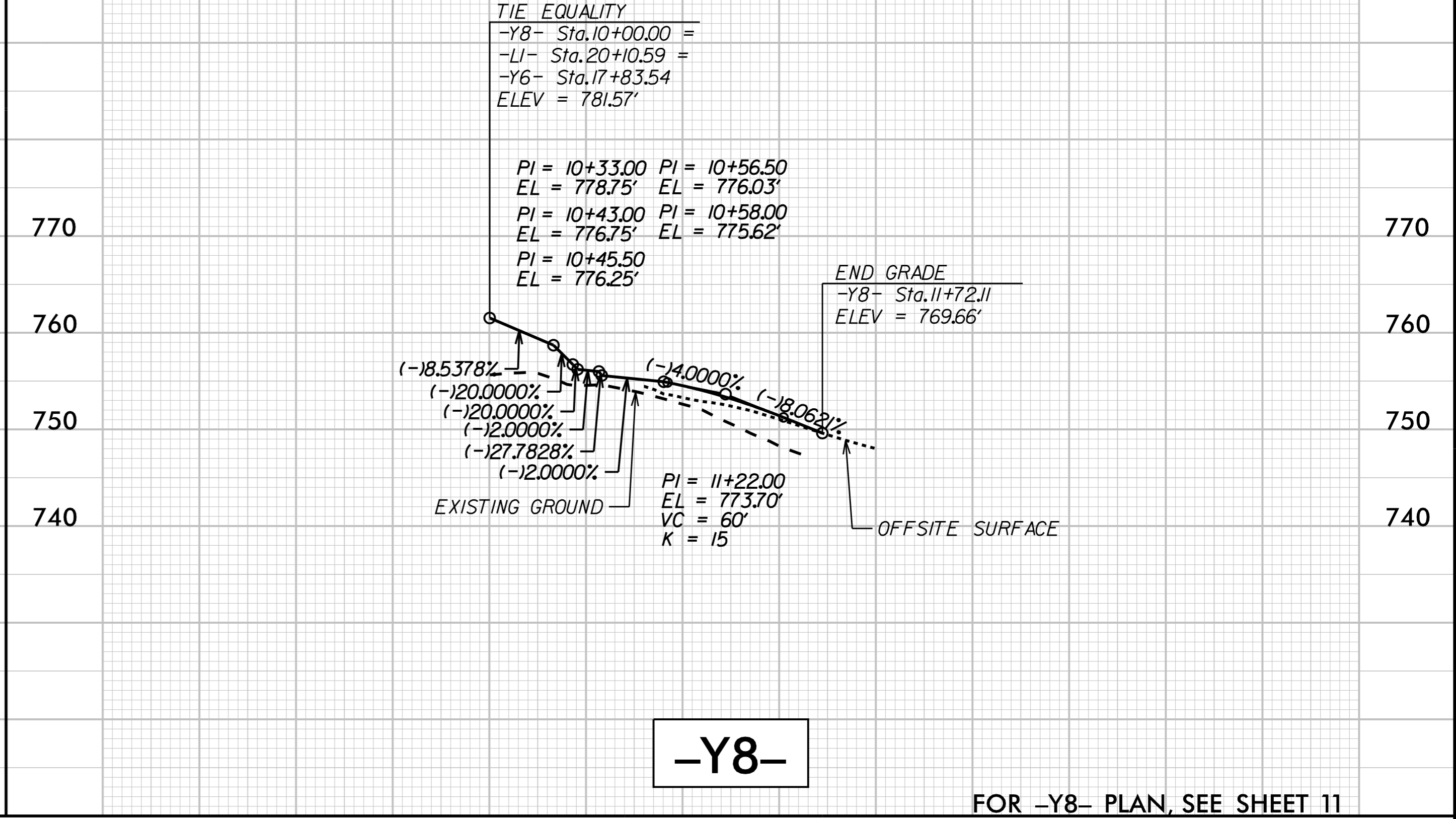
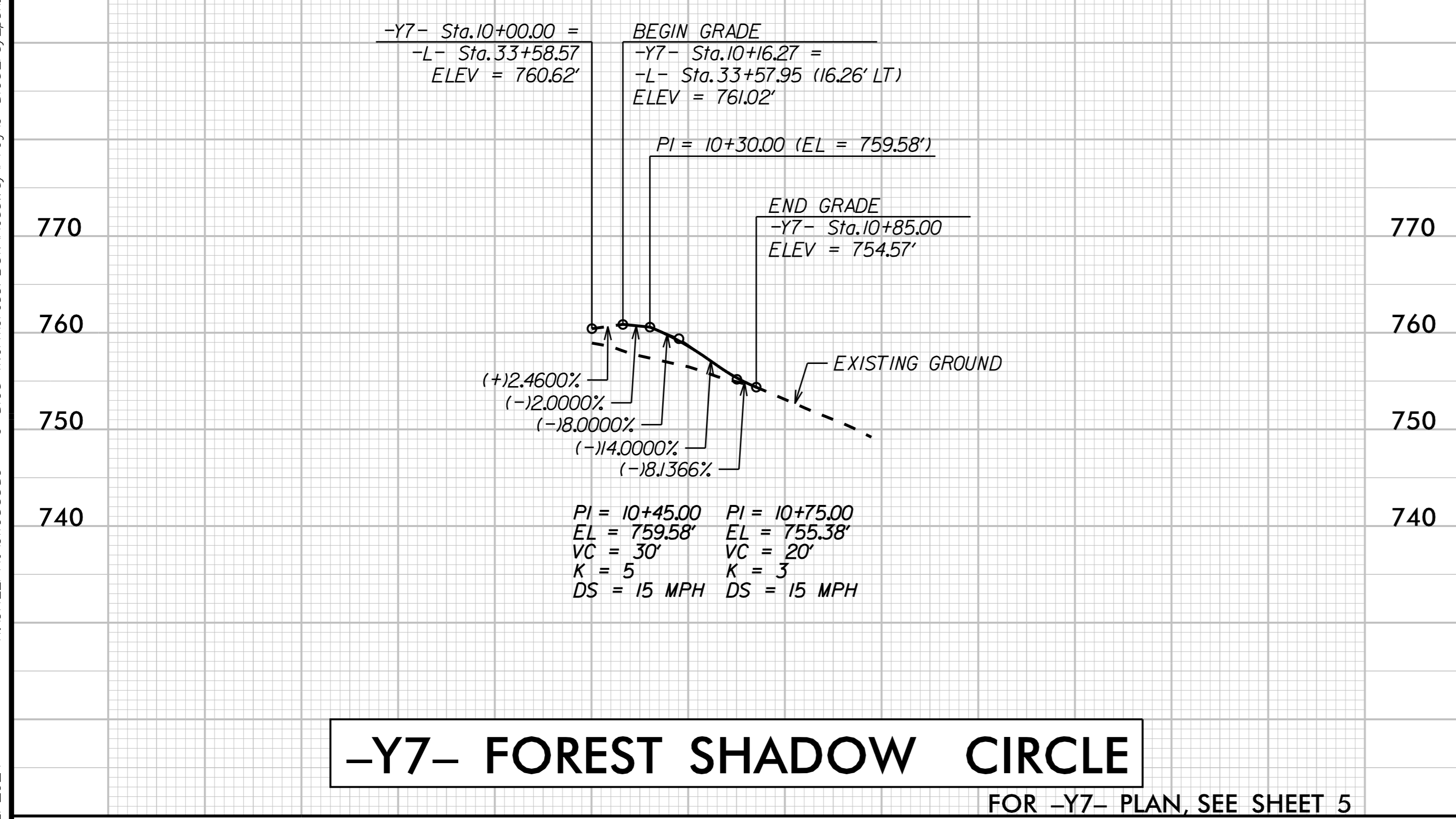
5/14/2024

**Kimley Horn**  
 200 S. TRYON ST. • CHARLOTTE, NC 28202  
 RIGHT-OF-WAY REV.  
 CONST. REV.

PROJECT REFERENCE NO. U-5108	SHEET NO. 20
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</b>	



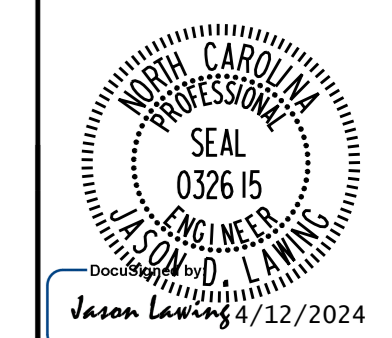
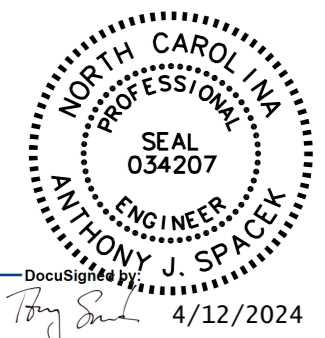
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4/12/2024



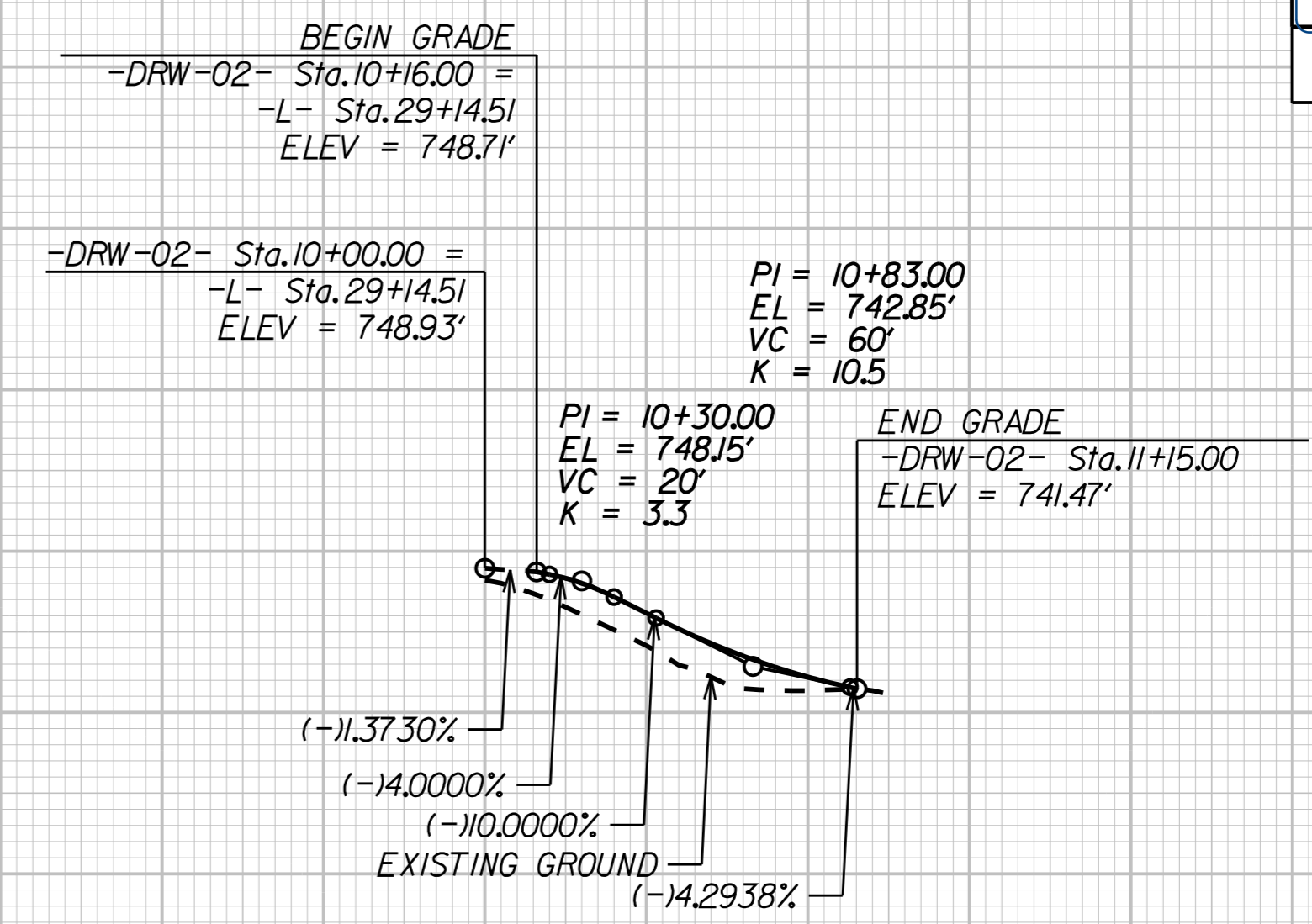
5/14/2024



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

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770  
760  
750  
740



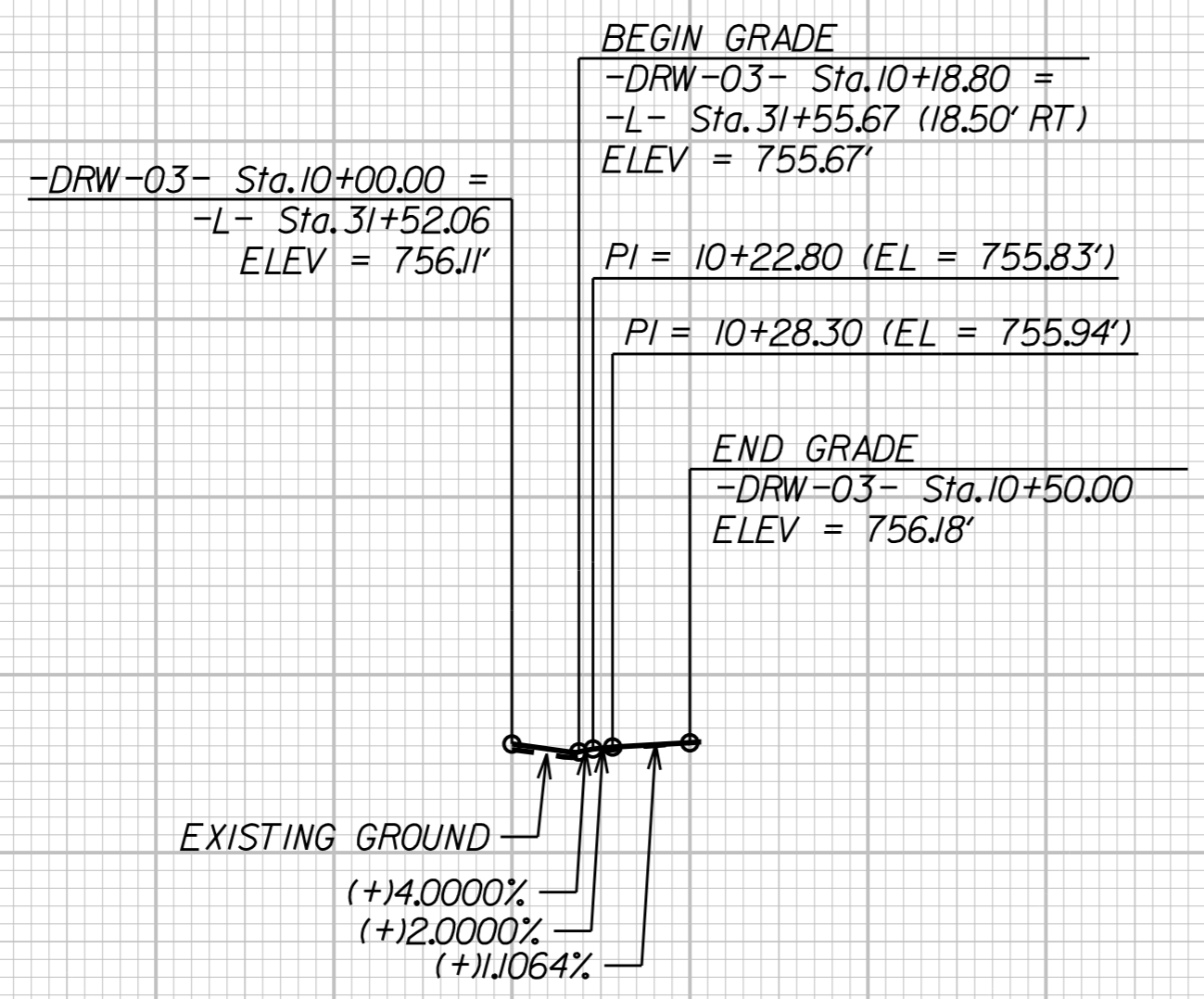
**DRW-02-**

FOR -DRW-02- PLAN, SEE SHEET 5

10 11

K:\CHL\_PRJ\01036359 - U-5108 (Northcross) DSN\Roadway\Pro\U-5108\_rdy\_psh\_21.dgn

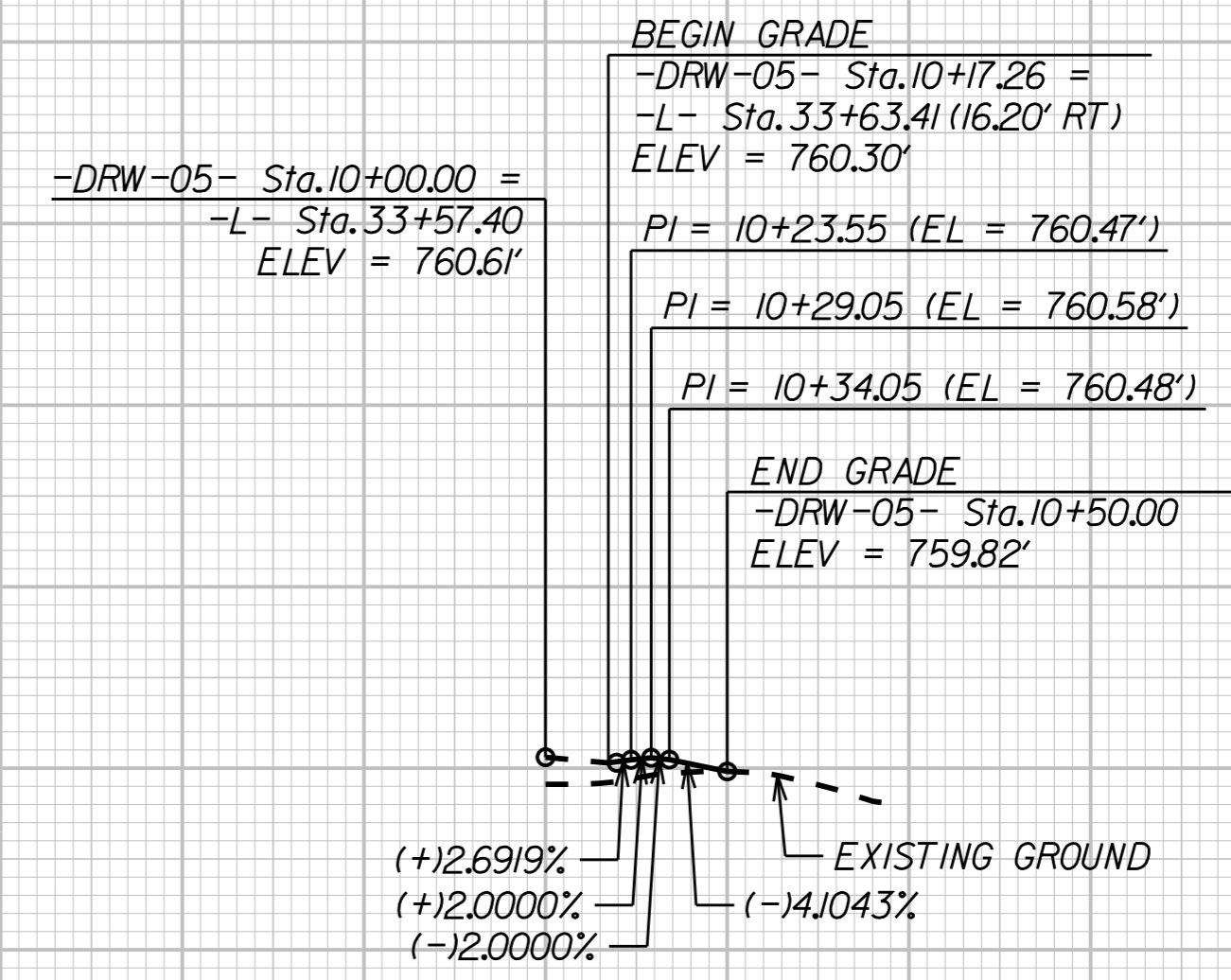
4/12/2024



**DRW-03-**

FOR -DRW-03- PLAN, SEE SHEET 5

770 770  
760 760  
750 750  
740 740



**DRW-05-**

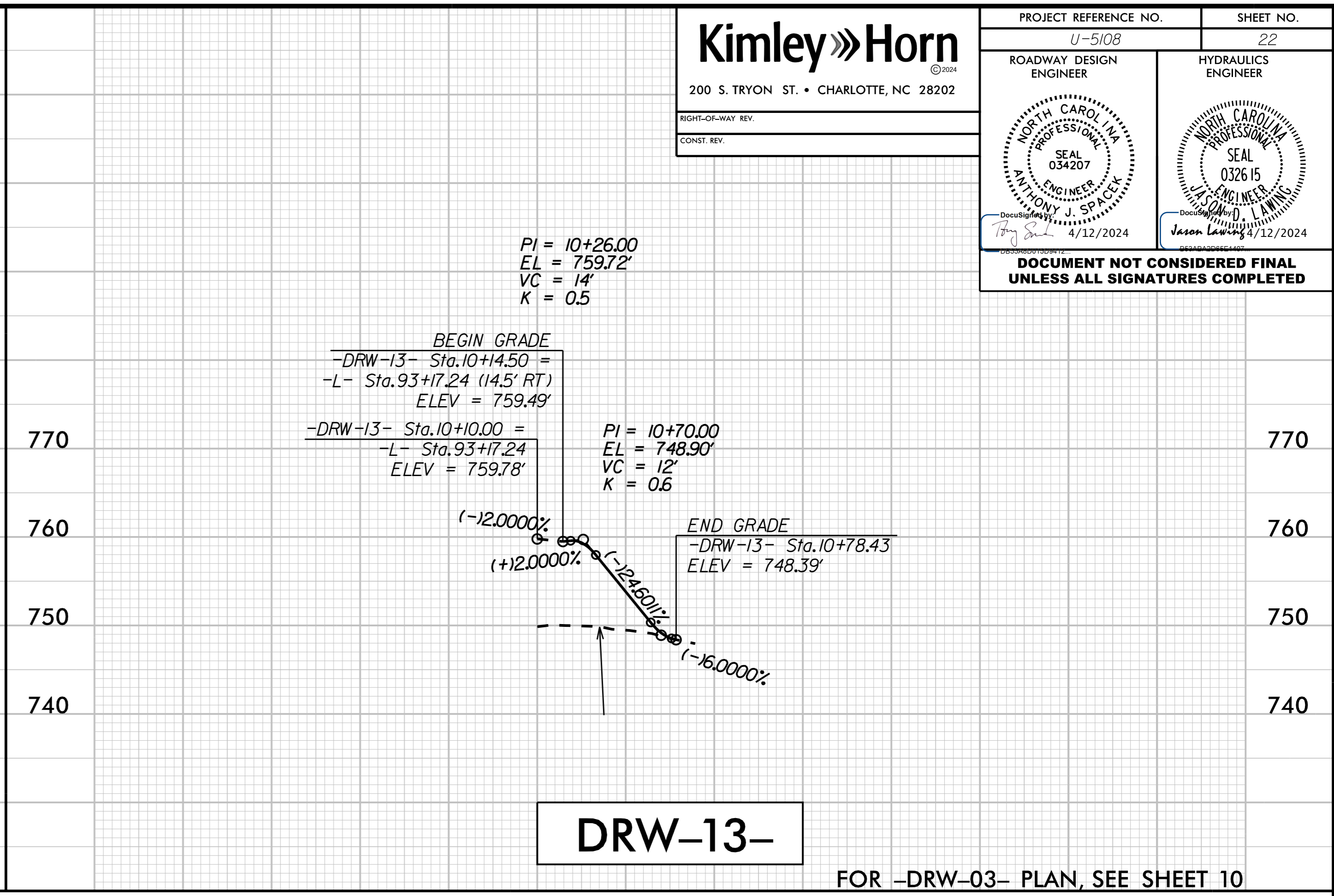
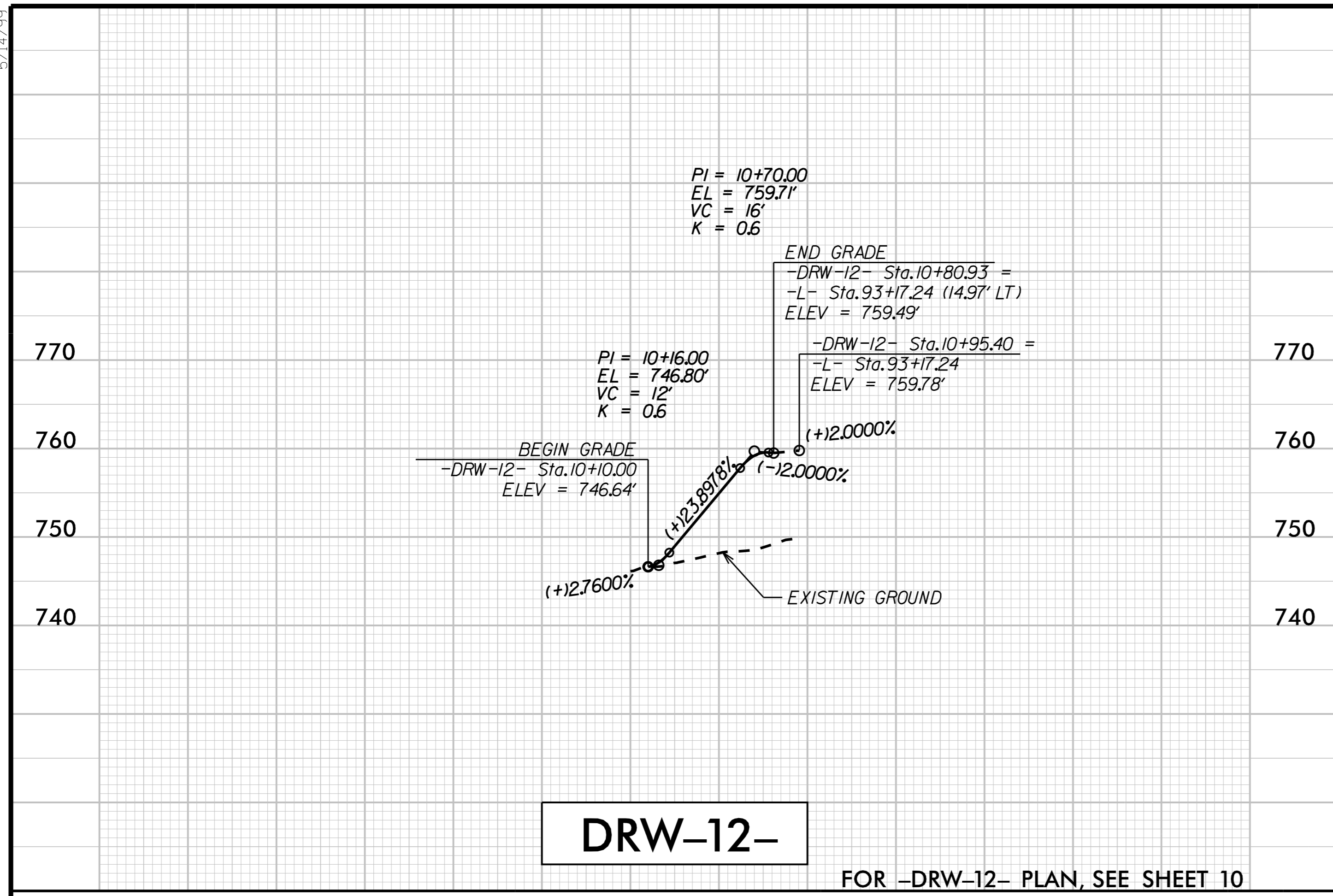
FOR -DRW-05- PLAN, SEE SHEET 5

10 11

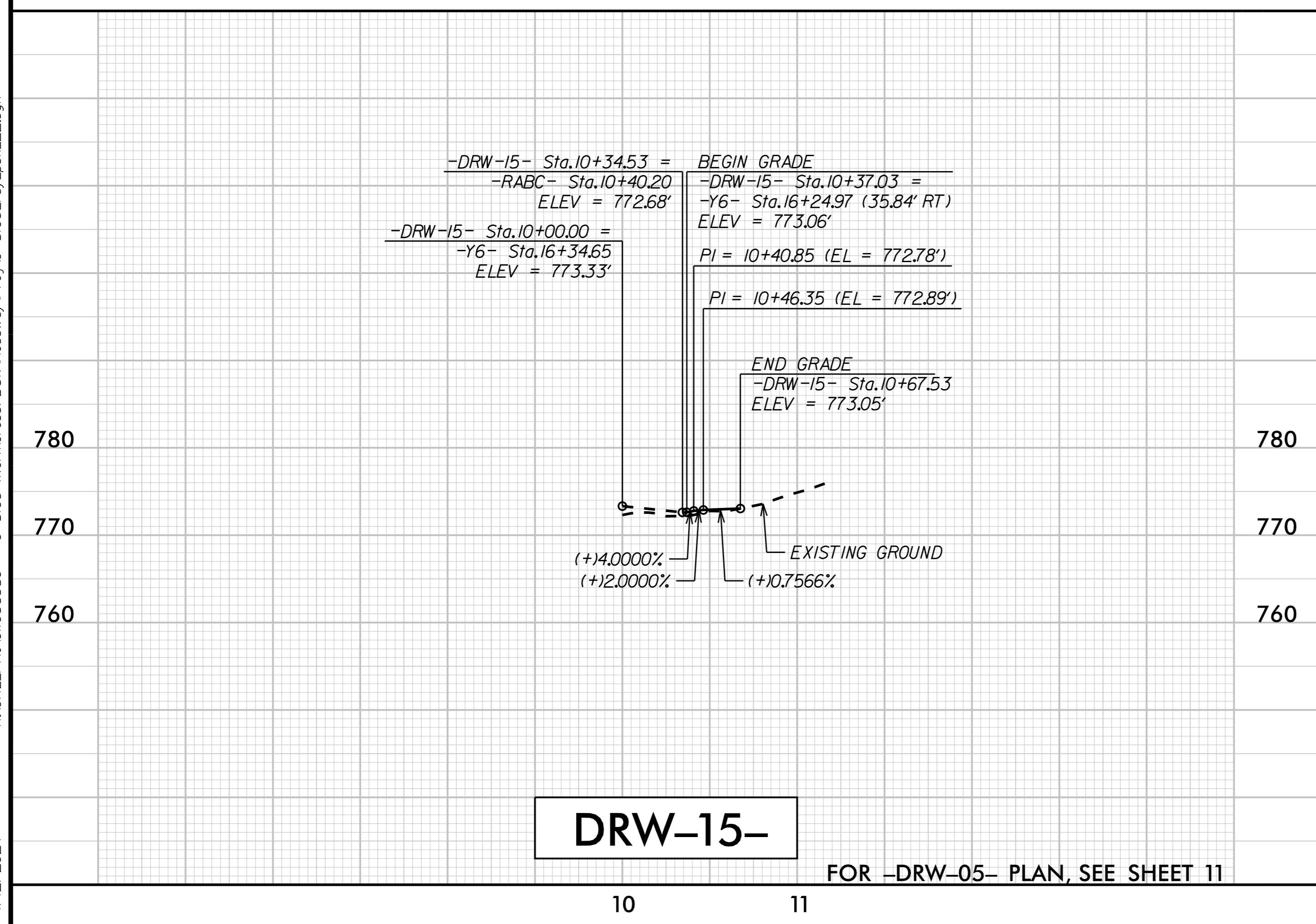
5/14/2024

**Kimley»Horn**  
 200 S. TRYON ST. • CHARLOTTE, NC 28202  
 RIGHT-OF-WAY REV.  
 CONST. REV.

PROJECT REFERENCE NO. U-5108	SHEET NO. 22
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</b>	



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4/12/2024