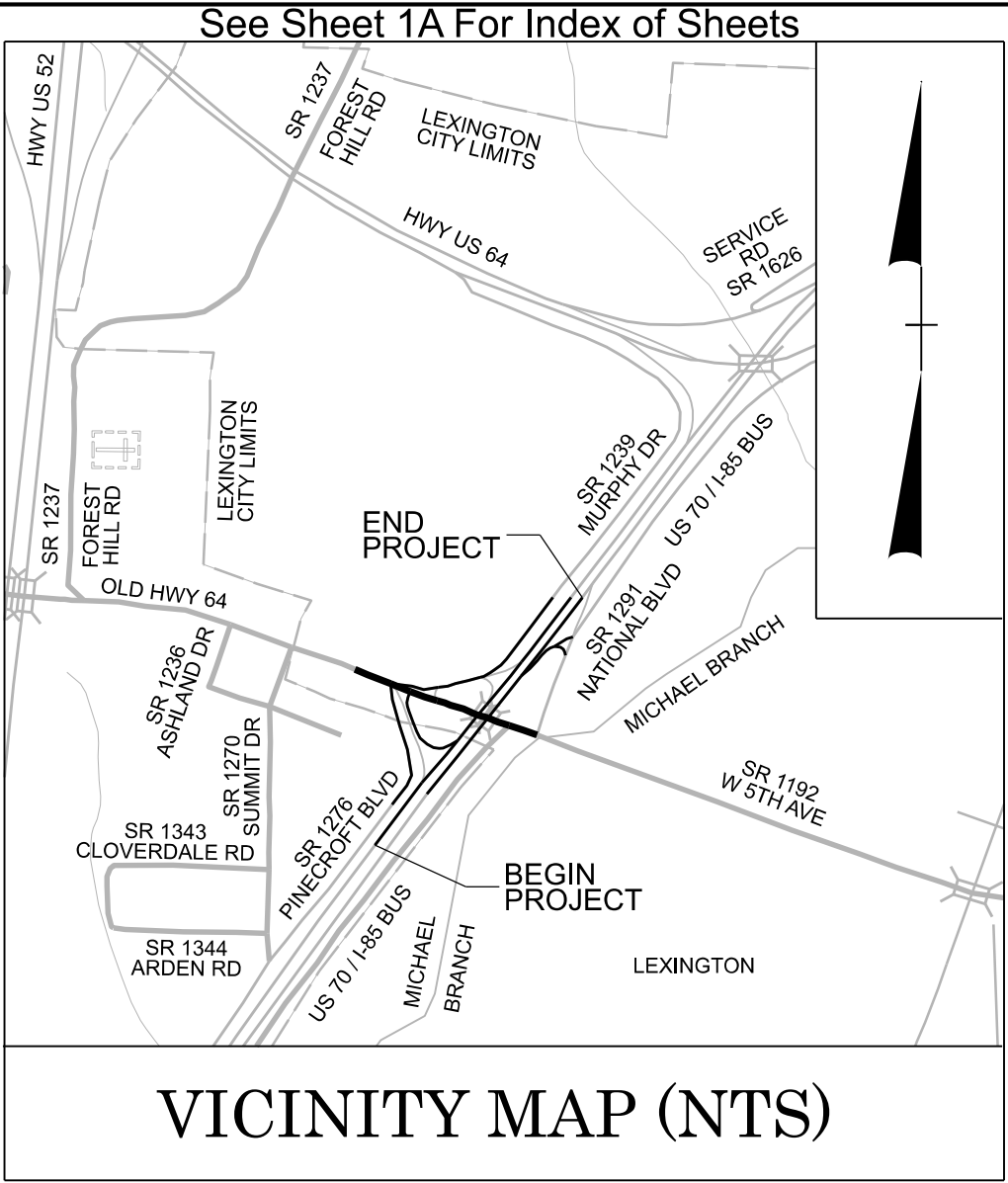


PROJECT: BR-0015

CONTRACT: C205037



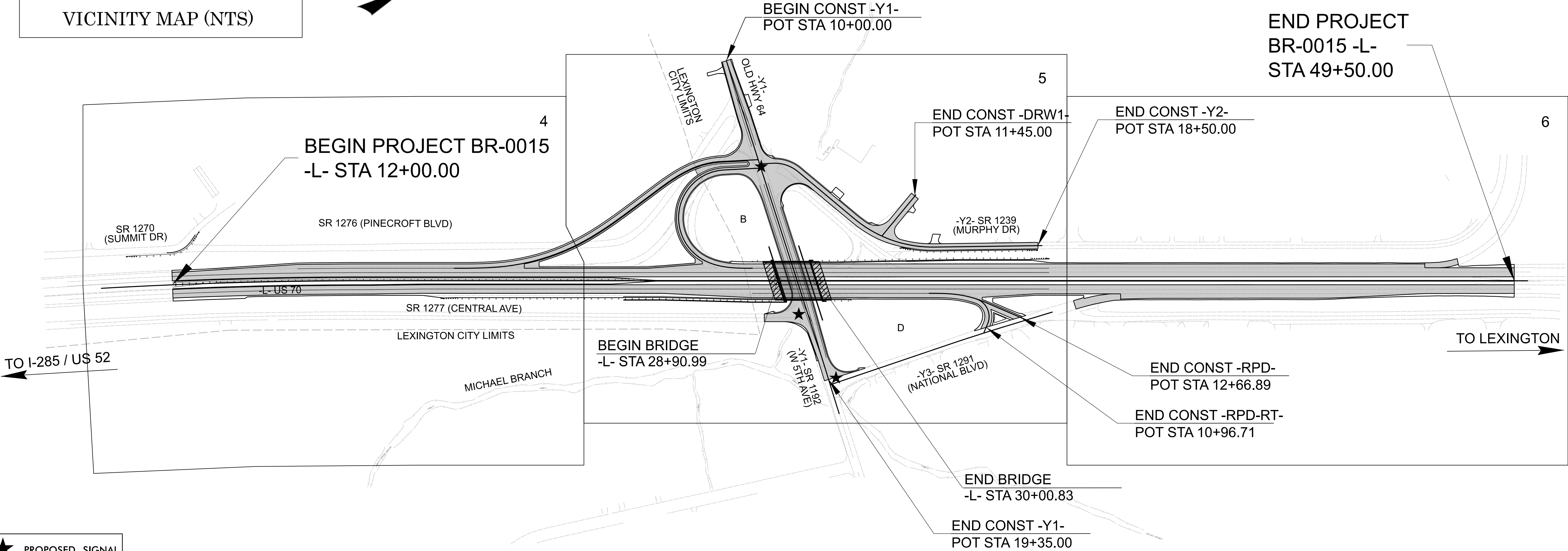
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

DAVIDSON COUNTY

LOCATION: *BRIDGE 280067 AND 280068 ON
US 29/US 70 OVER SR 1192*

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

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	BR-0015	11	
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION	
67015.1.1		PE	
67015.2.1		R/W, UTIL	
67015.3.1		CONST	



★ PROPOSED SIGNAL

THIS IS A CONTROL OF ACCESS PROJECT WITH ACCESS BEING LIMITED TO INTERCHANGES.

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

GRAPHIC SCALES

50 25 0 50 100
PLANS

50 25 0 50 100
PROFILE (HORIZONTAL)

10 5 0 10 20
PROFILE (VERTICAL)

DESIGN DATA

ADT 2025 = 15150
ADT 2045 = 18700

K = 8 %
D = 55 %
T = 9 % *
V = 60 MPH

* TTST = 5% DUAL 4%
FUNC CLASS =
PRINCIPAL ARTERIAL
STATEWIDE TIER

PROJECT LENGTH

LENGTH OF ROADWAY PROJECT BR-0015 = 0.689 MILES
LENGTH OF STRUCTURE PROJECT BR-0015 = 0.021 MILES
TOTAL LENGTH OF PROJECT BR-0015 = 0.710 MILES

Prepared in the Office of:

KCA
KISINGER CAMPO & ASSOCIATES

NC FIRM LICENSE No: C-1506
301 Fayetteville St.,
Suite 1500
Raleigh, NC 27601
(919) 882-7839

2024 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
04/17/2024

LETTING DATE:
06/17/2025

LAURA M. SUTTON, P.E.
PROJECT ENGINEER

ANDREA B. GORDON, P.E.
PROJECT DESIGN ENGINEER

GEORGE M. BOULES, P.E.
NCDOT CONTACT

HYDRAULICS ENGINEER

4/2/2025

DocuSigned by:
W. Nelson King
06318BD816964FD...

SIGNATURE:

ROADWAY DESIGN ENGINEER

4/2/2025

Signed by:
Andrea B. Gordon
3A7A838647154C1...

SIGNATURE:

WILLIAM N. KING
NORTH CAROLINA PROFESSIONAL ENGINEER
SEAL 055550

ANDREA B. GORDON
NORTH CAROLINA PROFESSIONAL ENGINEER
SEAL 056183

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

INDEX OF SHEETS	
SHEET NUMBER	SHEET
1	TITLE SHEET
1A	INDEX OF SHEETS, GENERAL NOTES, AND STANDARD DRAWINGS
1B	CONVENTIONAL SYMBOLS
2A-1 THRU 2A-7	PAVEMENT SCHEDULE AND TYPICAL SECTIONS
2A-8	SHEAR POINT DIAGRAM
2B-1 THRU 2B-7	ROADWAY DETAILS
2C-1 THRU 2C-9	SPECIAL DETAILS
2D-1 THRU 2D-2	DRAINAGE DETAILS
2G-1 THRU 2G-4	GEOTECHNICAL DETAILS
3B-1 THRU 3B-2	ROADWAY SUMMARIES
3D-1 THRU 3D-5	DRAINAGE SUMMARIES
3G-1	GEOTECHNICAL SUMMARIES
3P-1	PARCEL INDEX SHEET
4 THRU 6	PLAN SHEETS
7 THRU 10	PROFILE SHEETS
RW02C-1 THRU RW05	SURVEY CONTROL SHEETS
TMP-1 THRU TMP-44	TRANSPORTATION MANAGEMENT PLANS
PMP-1 THRU PMP-9	PAVEMENT MARKING PLANS
EC-1 THRU EC-9	EROSION CONTROL PLANS
SIGN-1 THRU SIGN-9	SIGNING PLANS
SIG-1 THRU SIG-8.3	SIGNAL PLANS
UC-1 THRU UC-9	UTILITIES CONSTRUCTION PLANS
UO-1 THRU UO-4	UTILITIES BY OTHERS PLANS
X-1	CROSS-SECTION INDEX
X-1A THRU X-1B	CROSS-SECTION SUMMARY
X-002 THRU X-103	CROSS-SECTIONS
S-1 THRU S-32	STRUCTURE PLANS
W-1 THRU W-7	WALL PLANS

PROJECT NOTES:

1. THE MAJORITY OF THE FINAL SURVEY WAS COMPLETED IN 2018, WITH ADDITIONAL SURVEY INFORMATION COLLECTED IN 2022. AT THE TIME OF THE 2022 SURVEY, THE SURVEYORS OBSERVED "THE PAVEMENT ON US 70 WB/US 29 SB/I-85 BUS HAD BEEN MILLED AND RESURFACED. IT WAS REVEALED THAT THE SHOULDERS WERE WIDENED DURING THE RESURFACING...THE ELEVATIONS HAD STAYED RELATIVELY CLOSE, SO IT WAS DECIDED TO LOCATE THE EDGE OF PAVEMENT IN THIS AREA AND ADD IT TO THE FS AND DTM FILES." THERE MAY BE SLIGHT DISCREPANCIES IN THE EXISTING PAVEMENT ELEVATIONS BETWEEN THE 2018 AND 2022 SURVEY INFORMATION AS A RESULT OF THE RECENT MILLING & RESURFACING.
2. THE HISTORIC PROPERTY BOUNDARY SHOWN ON THE PLANS CONTAINS THE EXISTING NCDOT R/W FOR THE US 29/US 70 CORRIDOR (INCLUDING THE EXISTING US 29/US 70 AND W. 5TH AVE INTERCHANGE AND EXISTING BRIDGES). CONSTRUCTION IS PERMITTED WITHIN THIS AREA. PHOTODOCUMENTATION OF THE EXISTING STRUCTURES HAS BEEN COMPLETED. REFER TO THE PROJECT MOA FOR DETAILS.

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

GRADING AND SURFACING OR RESURFACING AND WIDENING:

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

CLEARING:

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

SUPERELEVATION:

ALL CURVES ON THIS PROJECT SHALL BE SUPERELEVATED IN ACCORDANCE WITH STD. NO. 225.04 AND 225.05 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 AND 560.02

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. 848.02 USING 3 FOOT RADII OR RADII AS SHOWN ON THE PLANS. LOCATIONS OF DRIVES WILL BE AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER.

STREET TURNOUT:

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

GUARDRAIL:

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

TEMPORARY SHORING:

SHORING REQUIRED FOR THE MAINTENANCE OF TRAFFIC NOT SHOWN ON THE PLANS WILL BE PAID FOR AT THE CONTRACT PRICE FOR "TEMPORARY SHORING".

END BENTS:

THE ENGINEER SHALL CHECK THE STRUCTURE END BENT PLANS, DETAILS, AND CROSS-SECTION PRIOR TO SETTING OF THE SLOPE STAKES FOR THE EMBANKMENT OR EXCAVATION APPROACHING A BRIDGE.

UTILITIES:

UTILITY OWNERS ON THIS PROJECT ARE

Lexington Electricities, Lexington Utilities (gas / water / sewer)

Windstream Telecom, TWC / Charter Communications (Charter is not in conflict)

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

RIGHT-OF-WAY MARKERS:

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

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:

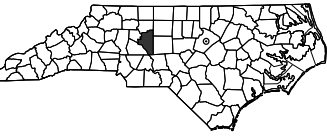
STD.NO.	TITLE
DIVISION 2 - EARTHWORK	
200.03	Method of Clearing - Method III
225.01	Guide for Grading Subgrade - Interstate and Freeway
225.02	Guide for Grading Subgrade - Secondary and Local
225.03	Deceleration and Acceleration Lanes
225.04	Method of Obtaining Superelevation - Two Lane Pavement
225.05	Method of Obtaining Superelevation - Divided Highways
DIVISION 3 - PIPE CULVERTS	
300.01	Method of Pipe Installation (Use Details in Lieu of Standards for Sheets 1 and 2 of 2)
310.02	Parallel Pipe End Section - Precast Concrete Section for 15" to 24" Pipe
310.10	Driveway Pipe Construction
DIVISION 4 - MAJOR STRUCTURES	
423.01	Bridge Approach Fills - Type 1 Approach Fill for Bridge Abutment
423.02	Bridge Approach Fills - Type 1A Alternate Approach Fill for Integral Bridge Abutment
423.03	Bridge Approach Fills - Type 2 Approach Fill for Bridge Abutment with MSE Wall
423.04	Bridge Approach Fills - Type 2A Alternate Approach Fill for Integral Bridge Abutment with MSE Wall
DIVISION 5 - SUBGRADE, BASES AND SHOULDERS	
560.01	Method of Shoulder Construction - High Side of Superelevated Curve - Method I
560.02	Method of Shoulder Construction - High Side of Superelevated Curve - Method II
DIVISION 6 - ASPHALT BASES AND PAVEMENTS	
654.01	Pavement Repairs
DIVISION 8 - INCIDENTALS	
806.01	Concrete Right-of-Way Marker
806.02	Granite Right-of-Way Marker
806.03	Concrete Contol of Access Marker
815.02	Subsurface Drain
838.21	Reinforced Concrete Endwall - for Single 54" Pipe 90 Skew
838.51	Reinforced Brick Endwall - for Single 54" 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
840.04	Concrete Open Throat Catch Basin - 12" thru 48" Pipe
840.05	Brick Open Throat Catch Basin - 12" thru 48" Pipe
840.18	Concrete Grated Drop Inlet Type 'B' - 12" thru 36" Pipe
840.20	Frames and Wide Slot Flat Grates
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
840.29	Frames and Narrow Slot Flat Grates
840.31	Concrete Junction Box - 12" thru 66" Pipe
840.32	Brick Junction Box - 12" thru 66" Pipe
840.34	Traffic Bearing Junction Box - for Use with Pipes 42" and Under
840.35	Traffic Bearing Grated Drop Inlet - for Cast Iron Double Frame and Grates
840.37	Steel Grate and Frame
840.45	Precast Drainage Structure
840.51	Brick Manhole - 12" thru 36" Pipe
840.53	Precast Manhole with Masonry Base - 12" thru 42" Pipe
840.54	Manhole Frame and Cover
840.55	Manhole Frame and Cover (Flush with Slab for Open Throat Catch Basin)
840.66	Drainage Structure Steps
840.72	Pipe Collar
846.01	Concrete Curb, Gutter and Curb & Gutter
846.02	Drop Inlet Installation in Expressway Gutter
846.04	Drop Inlet Installation in Shoulder Berm Gutter
848.02	Driveway Turnout - Radius Type
848.04	Street Turnout
852.01	Concrete Islands
852.06	Method for Placement of Drop Inlets in Concrete Islands
854.01	Double Faced Concrete Barrier - Types I, II, III and IV
862.01	Guardrail Placement (Use Details in Lieu of Standards for Sheets 4, 6, 12, and 14 of 15)
862.02	Guardrail Installation
862.03	Structure Anchor Units (Use Detail in Lieu of Standard for Sheet 8 of 9)
862.04	Anchoring End of Guardrail - for B-77 and B-83 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
876.04	Drainage Ditches with Class 'B' Rip Rap

BR-0015

FINAL

1A

NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
DAVISON COUNTY



HIGHWAY DIVISION 9

ROADWAY DESIGN
ENGINEER

4/9/2025

NORTH CAROLINA

PROFESSIONAL

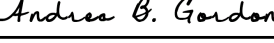
SEAL

056183

ENGINEER

ANDREA B. GORDON

Signed



DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

PREPARED BY


KISINGER CAMPO
& ASSOCIATES
NC FIRM LICENSE No: C-1506
301 Fayetteville Street,
Suite 1500
Raleigh, NC 27601
(919) 882-7839

REVISIONS

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	

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

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	

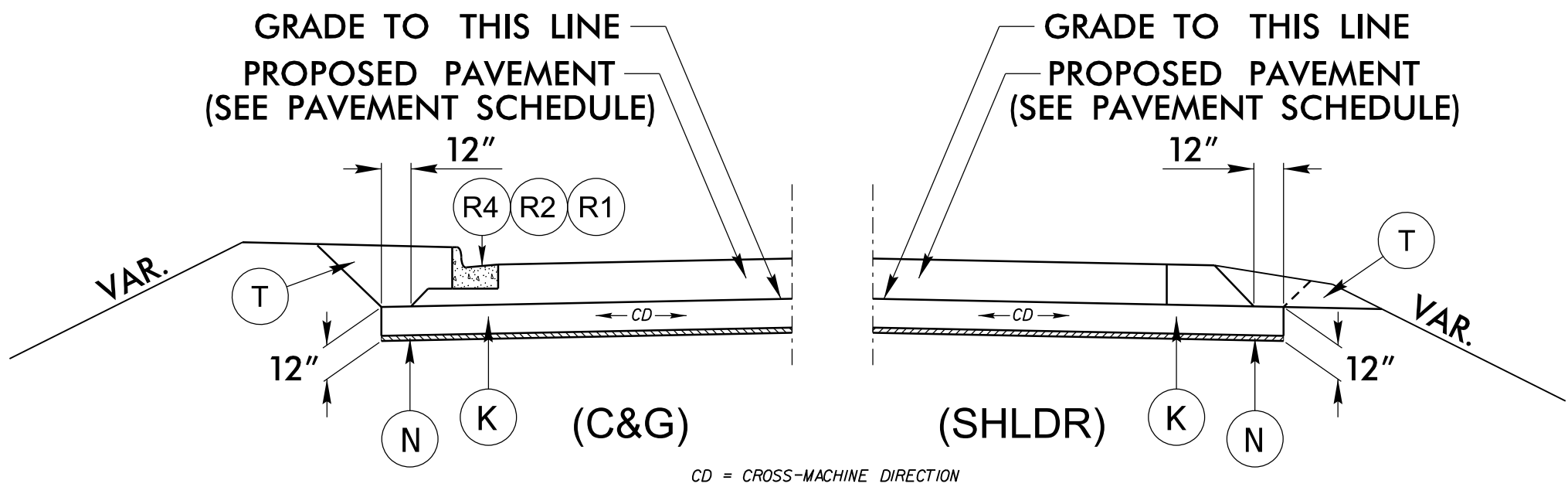
TV:	
TV Pedestal	
TV Tower	
U/G TV Cable Hand Hole	
U/G TV Test Hole (SUE - LOS A)*	
U/G TV Cable (SUE - LOS B)*	
U/G TV Cable (SUE - LOS C)*	
U/G TV Cable (SUE - LOS D)*	
U/G Fiber Optic Cable (SUE - LOS B)*	
U/G Fiber Optic Cable (SUE - LOS C)*	
U/G Fiber Optic Cable (SUE - LOS D)*	

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)*	

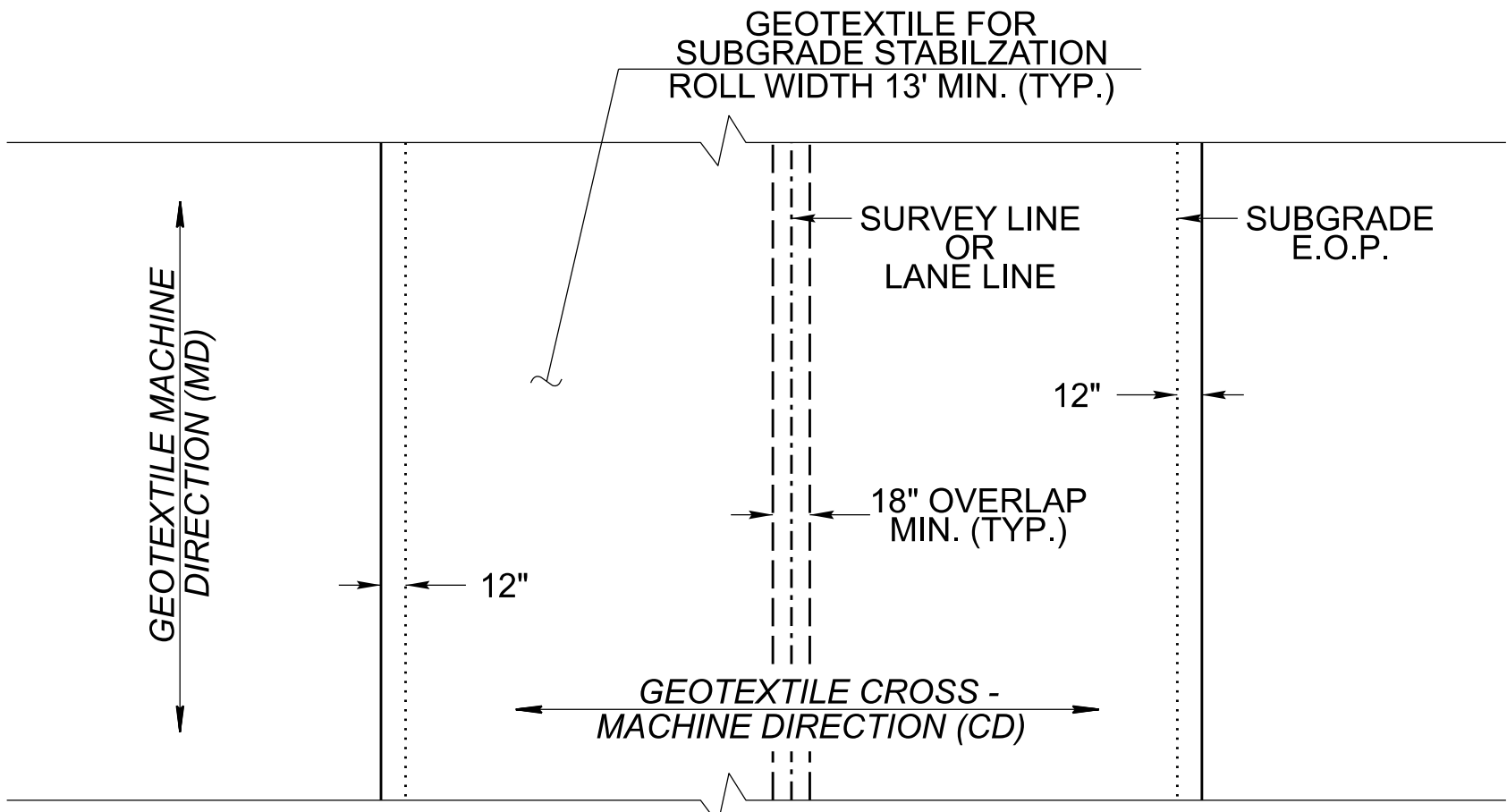
MISCELLANEOUS:	
Utility Pole	
Utility Pole with Base	
Utility Located Object	
Utility Traffic Signal Box	
Utility Unknown U/G Line (SUE - LOS B)*	
U/G Tank; Water, Gas, Oil	
Underground Storage Tank, Approx. Loc.	
A/G Tank; Water, Gas, Oil	
Geoenvironmental Boring	
Abandoned According to Utility Records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

FINAL PAVEMENT SCHEDULE					
C1	PROP. APPROX. 1½" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD.	D3	PROP. VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 2½" IN DEPTH OR GREATER THAN 4" IN DEPTH.	R2	SHOULDER BERM GUTTER
C2	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.	E1	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.	R3	CONCRETE MEDIAN BARRIER (TYPE IV).
C3	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT TO EXCEED 1½" IN DEPTH.	E2	PROP. APPROX. 5.5" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 627 LBS. PER SQ. YD.	R4	EXPRESSWAY GUTTER.
C4	PROP. APPROX. 1½" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.	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 LESS THAN 3" IN DEPTH OR GREATER THAN 5½" IN DEPTH.	T	EARTH MATERIAL.
C5	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.	J1	PROP. 6" AGGREGATE BASE COURSE	U	EXISTING PAVEMENT.
		J2	PROP. 8" AGGREGATE BASE COURSE		
C6	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT TO EXCEED 2" IN DEPTH.	K	PROP. 12" CLASS IV SUBGRADE STABILIZATION.	V	INCIDENTAL MILLING (SEE MILLING DETAIL).
D1	PROP. APPROX. 2.5" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 285 LBS. PER SQ. YD.	N	GEOTEXTILE FOR SUBGRADE STABILIZATION.	V1	MILLING ASPHALT PAVEMENT, 1.5" DEPTH.
D2	PROP. APPROX. 4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.	R1	2'-6" CONCRETE CURB AND GUTTER.	W	WEDGING (SEE WEDGING DETAIL).

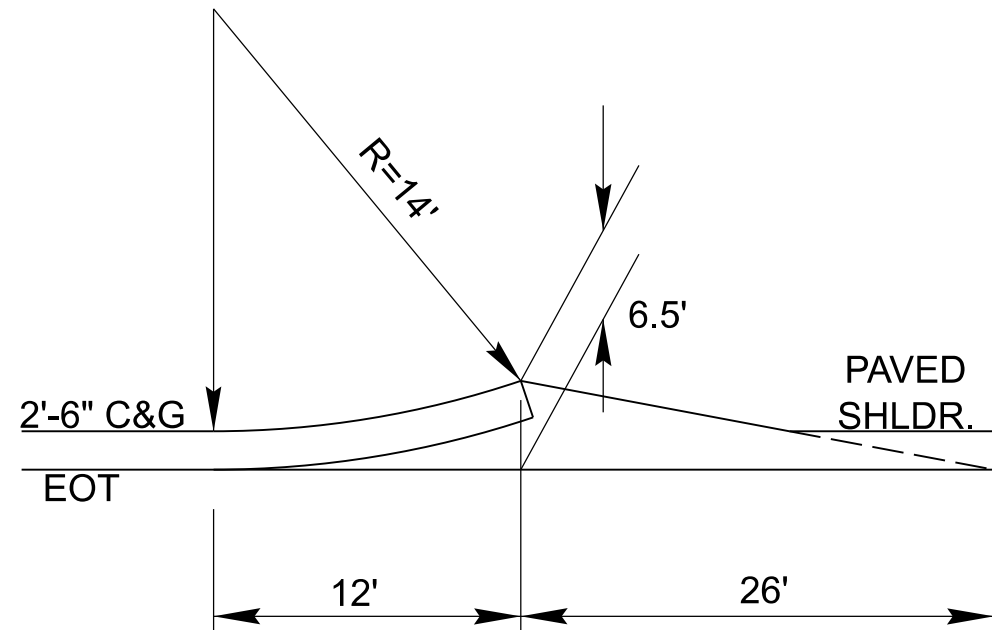


Details For Shallow Undercut and Geotextile

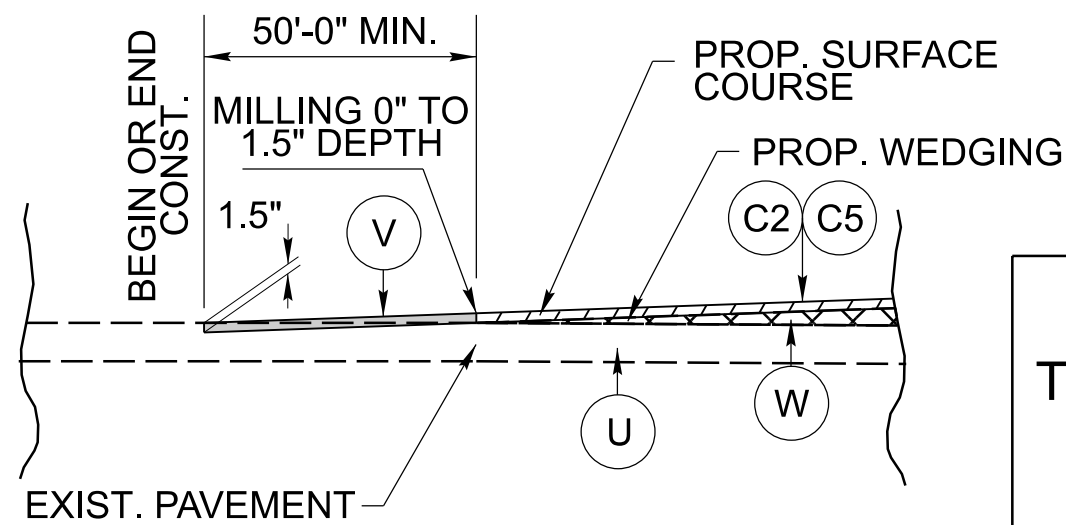
- L- STA. 12+00.00 TO STA. 28+67.00
- L- STA. 30+25.00 TO STA. 49+50.00
- LPB- STA. 10+00.00 TO STA. 15+74.00
- RPB- STA. 10+00.00 TO STA. 19+14.00



GEOTEXTILE FOR SUBGRADE STABILIZATION PLACEMENT (PLAN VIEW)
(100% COVERAGE REQUIRED)



Detail For Curb and Gutter Flare

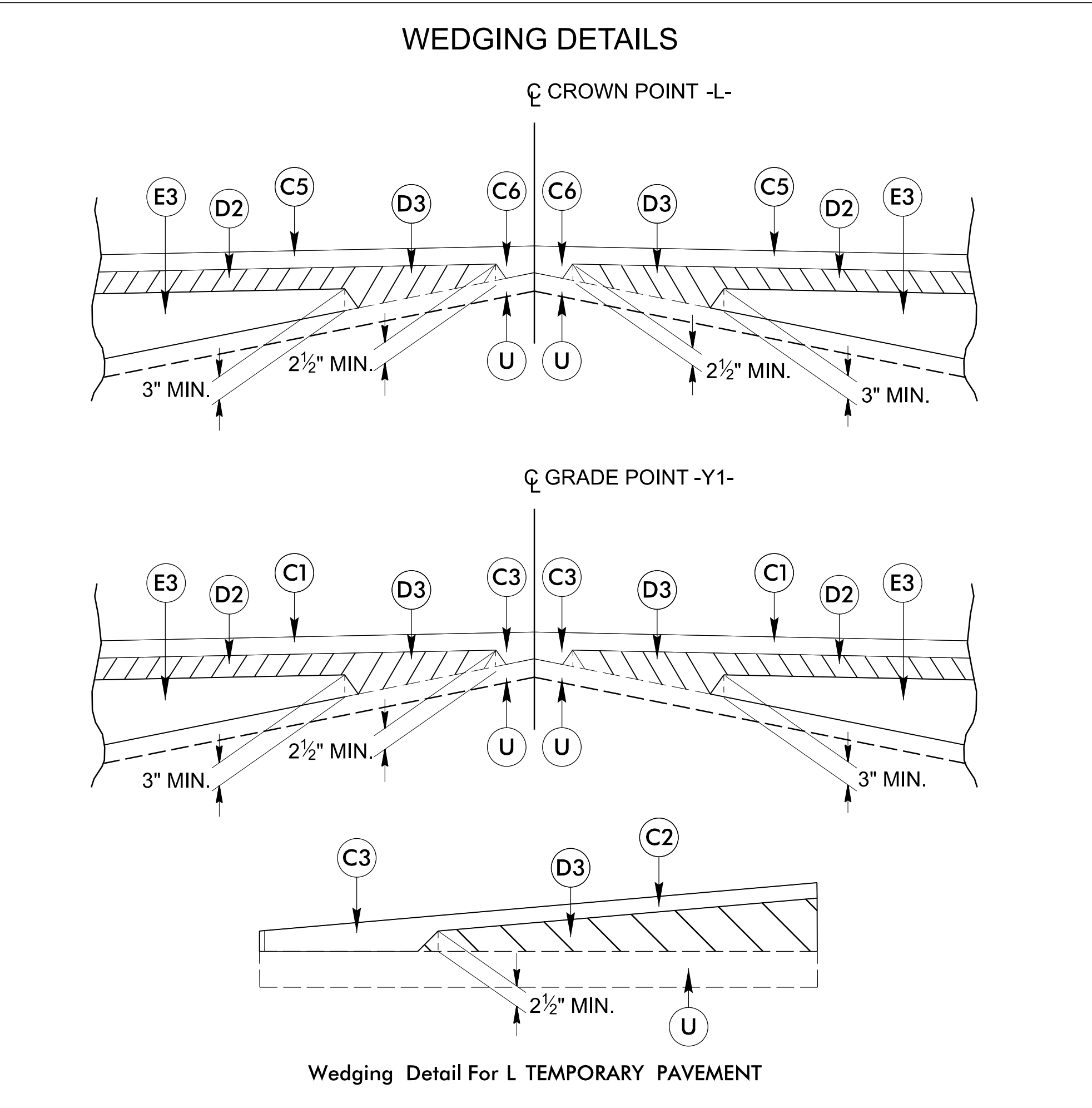


INCIDENTAL MILLING

- L- STA. 12+00.00 TO STA. 12+50.00
- L- STA. 49+00.00 TO STA. 49+50.00
- Y1- STA. 10+00.00 TO STA. 10+50.00
- Y1- STA. 18+25.00 TO STA. 18+75.00
- Y2- STA. 16+50.00 TO STA. 17+00.00

NOTE: SEE SHEETS 2B-4 THRU 2B-7 FOR MILLING AND RESURFACING DETAILS OUTSIDE PROJECT LIMITS

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



REVISIONS

BR-0015

FINAL2A-1

NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
DAVIDSON COUNTY

HIGHWAY DIVISION 9

ROADWAY DESIGN
ENGINEER

4/9/2025

SIGNED
Andrew B. Gordon

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

PAVEMENT DESIGN
ENGINEER

4/7/2025

SIGNED
Andrew D. Wargo

20250409 PREPARED BY

KISINGER CAMPO & ASSOCIATES
NC FIRM LICENSE No: C-1506
301 Fayetteville Street,
Suite 1500
Raleigh, NC 27601
(919) 882-7839



-L- STA. 12+00.00 TO STA. 19+00.00



(** SEE DETAIL INSET D)

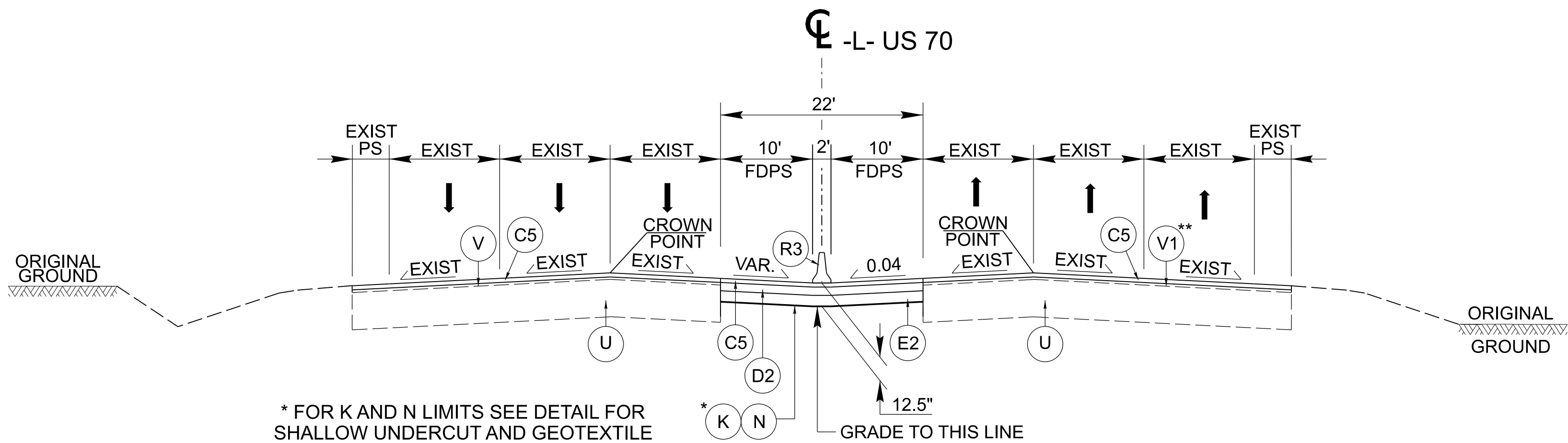
-L- STA. 35+00.00 TO STA. 37+00.00 (RT)
-Y2- STA. 17+00.00 TO STA. 18+50.00

REVISIONS



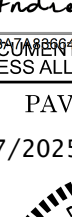
-L- STA. 25+00.00 TO STA. 28+90.99 (BEGIN BRIDGE)
-L- STA. 30+00.83 (END BRIDGE) TO STA. 32+75.00

-L-
STA. 30+08.46 TO STA. 32+00.00 (LT)
STA. 30+41.10 TO STA. 30+85.00 (RT) (MIRROR)
NOTE: TRANSITION SBG TO EXPRESSWAY
GUTTER STA. 32+00.00 TO STA. 32+50.00 (LT).
SEE SHEET 2C-1.

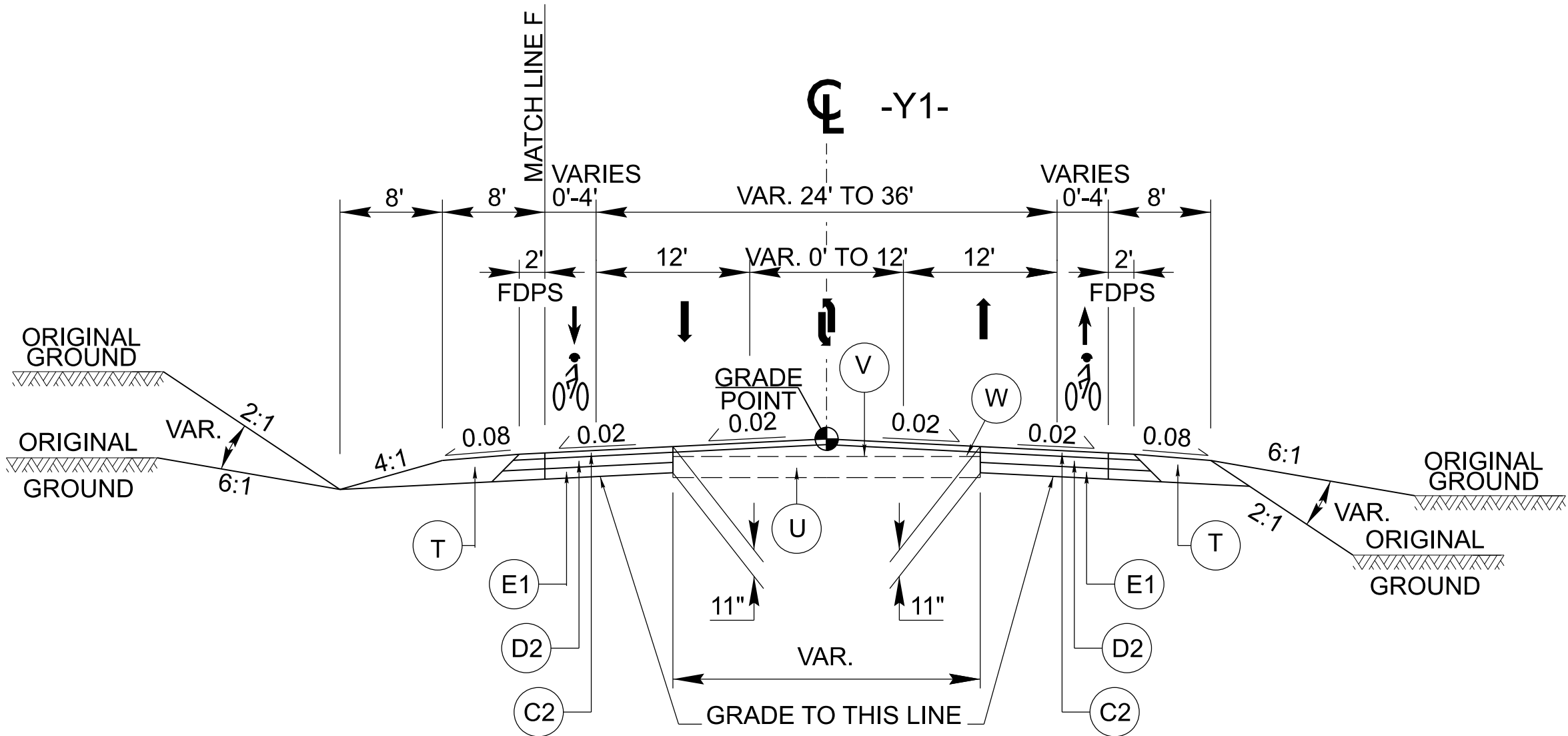


-L- STA. 36+50.00 TO STA. 49+50.00
-L- STA. 36+50.00 TO STA. 37+00.00

(** SEE DETAIL INSET D)

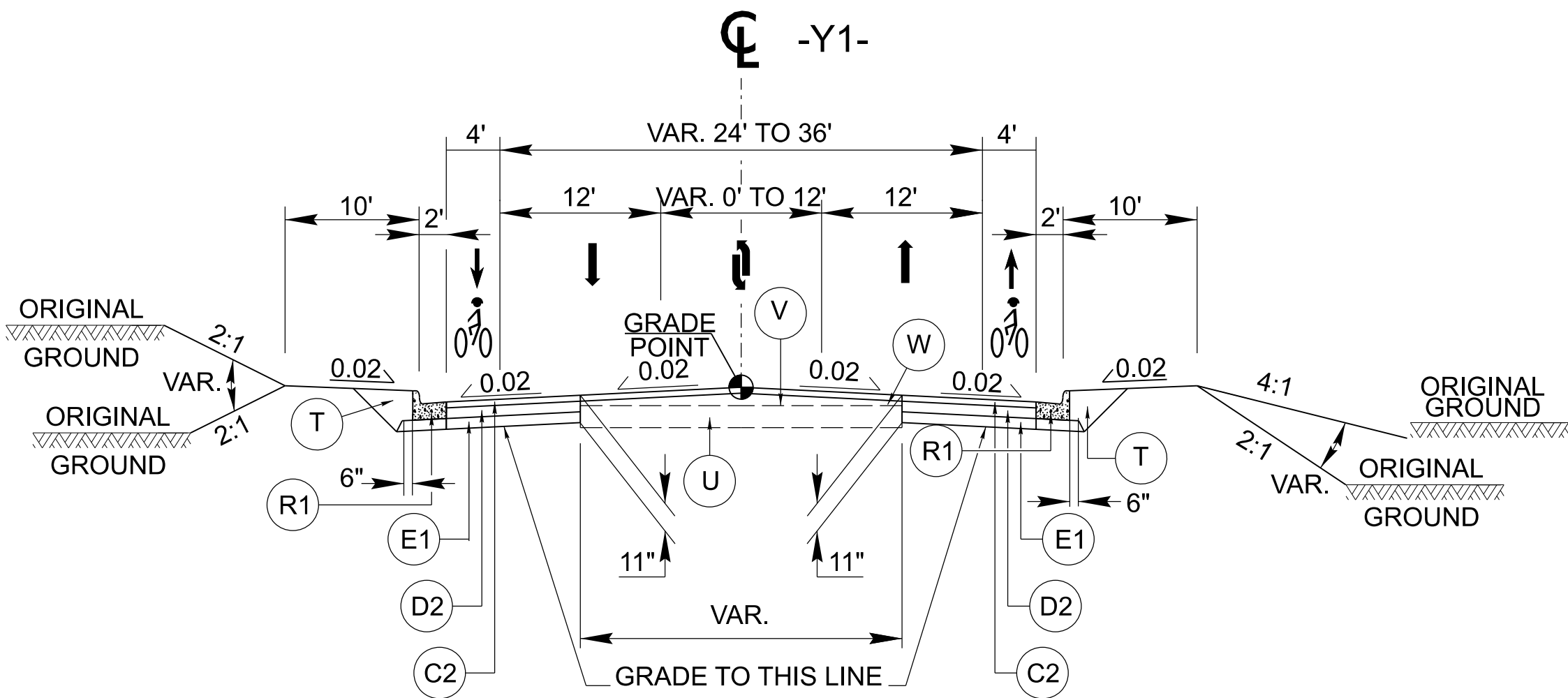
BR-0015	
FINAL	2A-3
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION DAVIDSON COUNTY	
	
HIGHWAY DIVISION 9	
ROADWAY DESIGN ENGINEER	
4/9/2025	
	
Signed _____ <i>Andrew B. Gordon</i>	
NOT PREPARED OR CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
PAVEMENT DESIGN ENGINEER	
4/7/2025	
	
Drawn by _____ <i>Andrew Wargo</i>	
PREPARED BY	
	
NC FIRM LICENSE NO. - C-1506 301 Fayetteville Street, Raleigh, NC 27601 (919) 882-7839	

REVISIONS



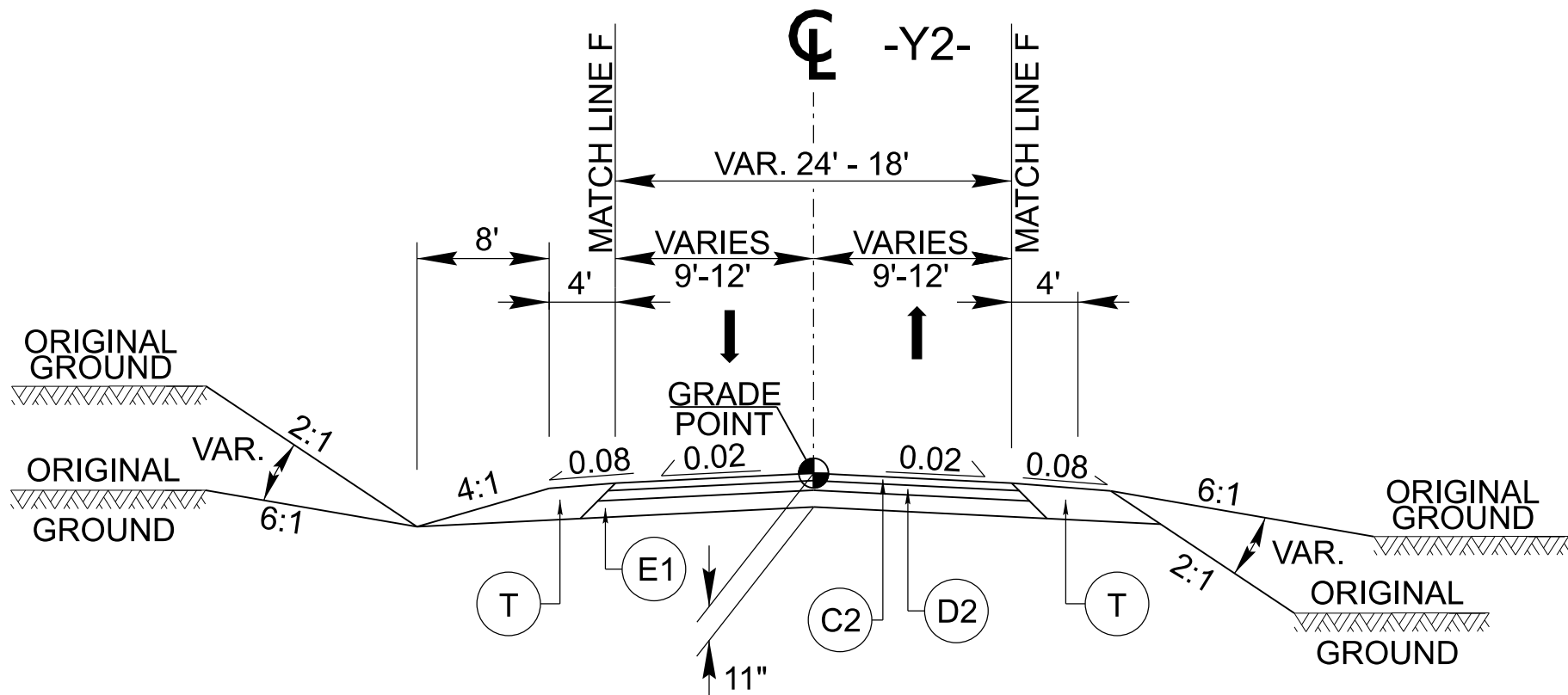
TYPICAL SECTION NO. 5

-Y1- STA. 10+00.00 TO STA. 13+60.00
-Y1- STA. 17+12.02 TO STA. 19+35.00



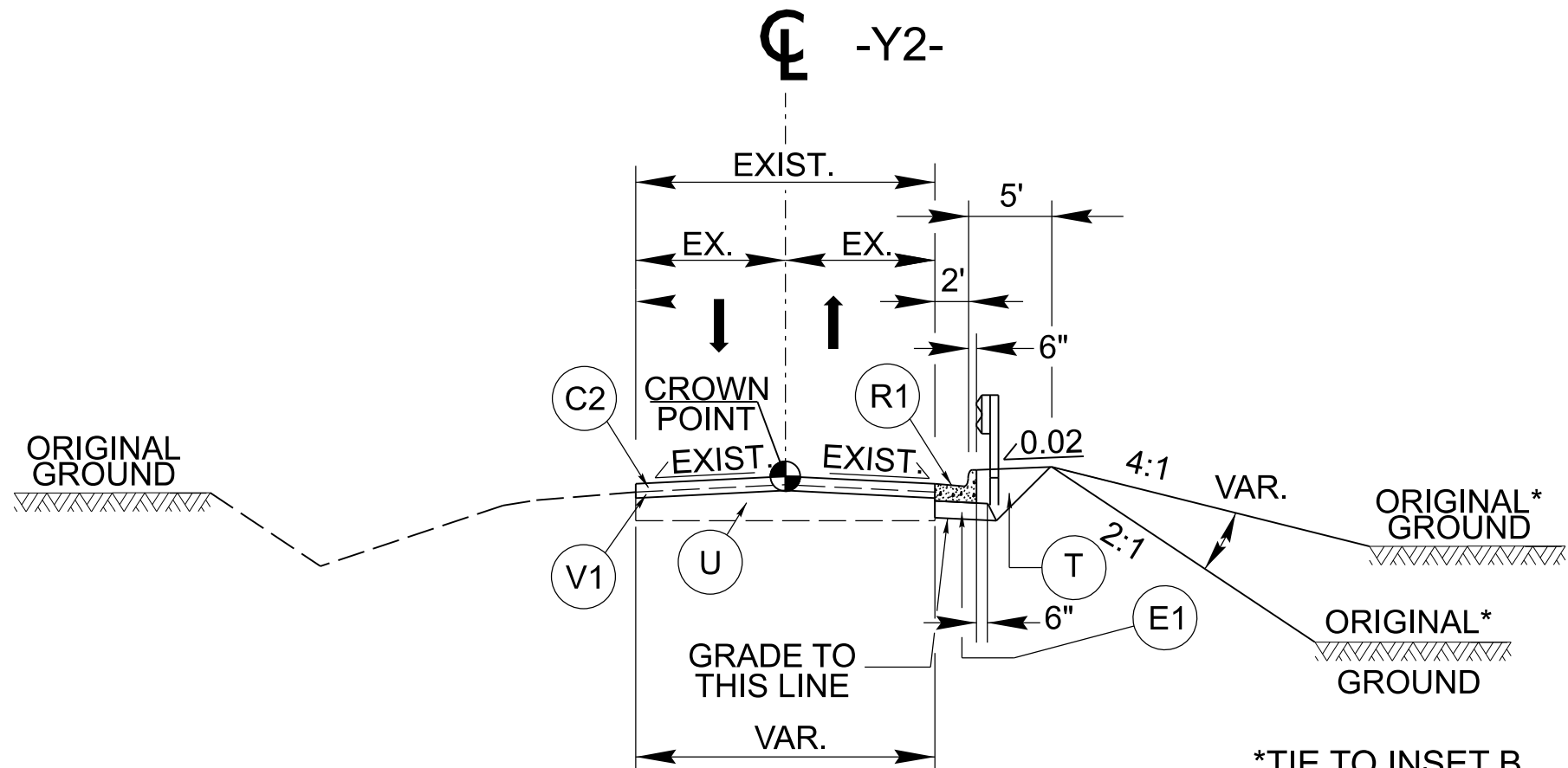
TYPICAL SECTION NO. 6

-Y1- STA. 13+60.00 TO STA. 17+12.02



TYPICAL SECTION NO. 7

-Y2- STA. 10+24.85 TO STA. 17+00.00

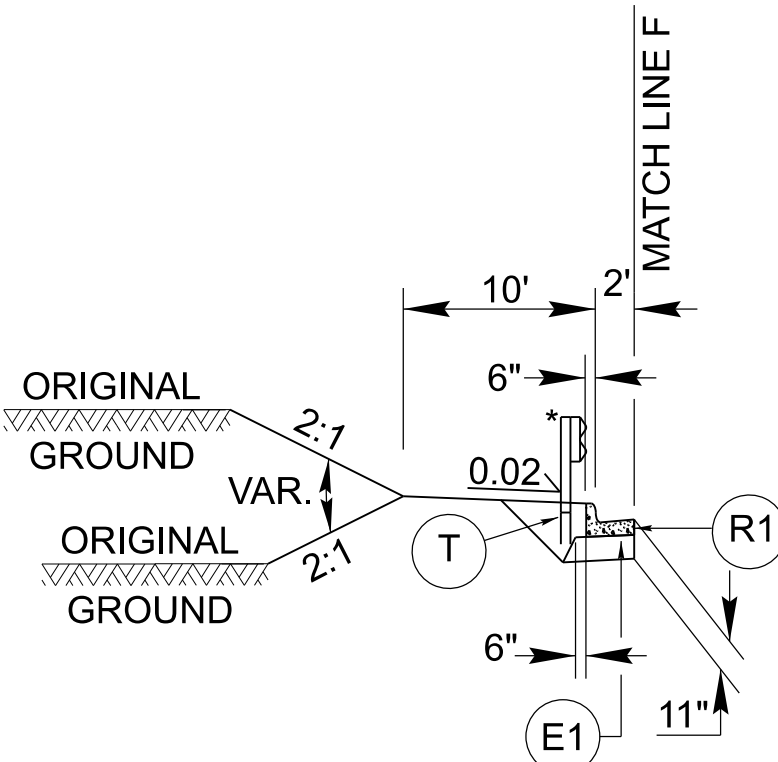


TYPICAL SECTION NO. 8

** -Y2- STA. 17+00.00 TO STA. 18+50.00
(** SEE DETAIL INSET D)

INSET F

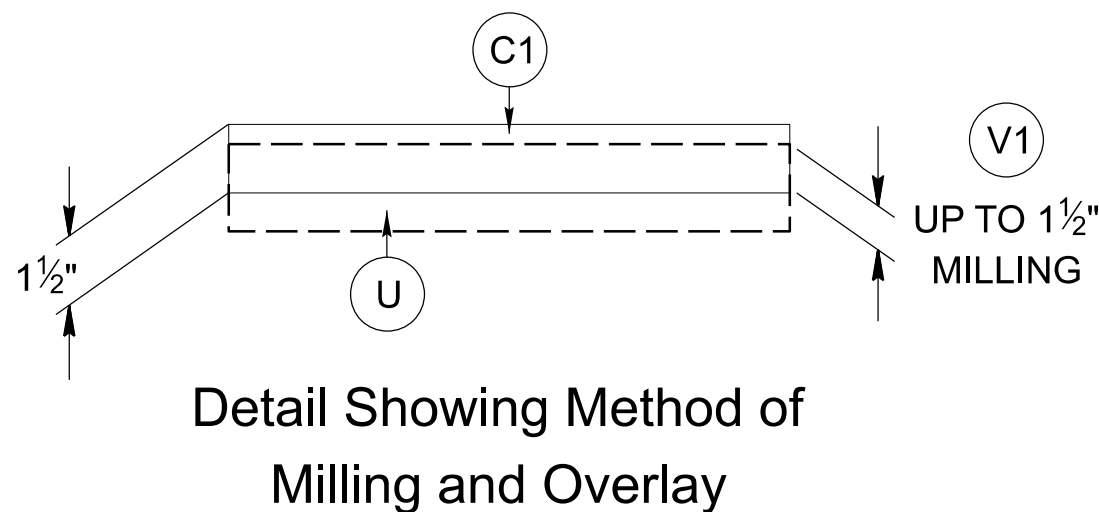
USE INSET F IN CONJUNCTION
WITH TYPICAL SECTION NO. 5 & 7



-Y1- STA. 17+12.02 TO STA. 19+35.00
-Y2- STA. 10+36.66 TO STA. 13+66.00
*Y2 STA. 14+20.00 TO STA. 17+00.00 (RT) (MIRROR)

INSET G

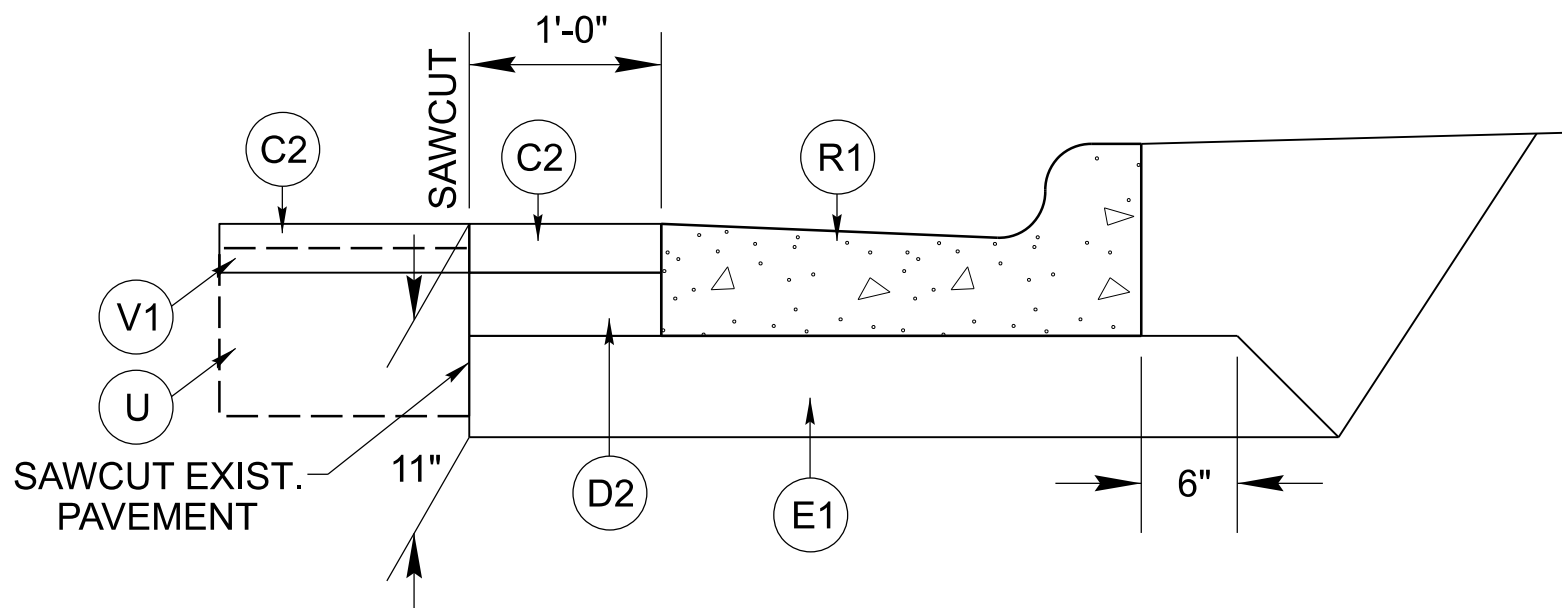
USE INSET G IN CONJUNCTION
WITH TYPICAL SECTION NO. 5 & 6



-Y1- STA. 10+50.00 TO STA. 12+00.00 (RT)
-Y1- STA. 16+50.00 TO STA. 18+25.00 (LT)

INSET H

USE INSET H IN CONJUNCTION
WITH TYPICAL SECTION NO. 8



-Y2- STA. 17+00.00 TO STA. 18+50.00 (RT)

PAVEMENT SCHEDULE	
C1	1 1/2" S9.5B
C2	3" S9.5B
C3	VAR. S9.5B
C4	1 1/2" S9.5C
C5	3" S9.5C
C6	VAR. S9.5C
D1	2 1/2" I19.0C
D2	4" I19.0C
D3	VAR. I19.0C
E1	4" B25.0C
E2	5 1/2" B25.0C
E3	VAR. B25.0C
K	SUBGRADE STABILIZATION
N	GEOTEXTILE
R1	2' - 6" C&G
R2	SBG
R3	MEDIAN BARRIER
R4	EXPRESSWAY GUTTER
T	EARTH MATERIAL
U	EXIST. PAVT.
V	INCIDENTAL MILLING
V1	1.5" MILLING
W	WEDGING

BR-0015

FINAL2A-4

NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
DAVIDSON COUNTY

HIGHWAY DIVISION 9

ROADWAY DESIGN
ENGINEER
4/9/2025

NORTH CAROLINA
PROFESSIONAL
ENGINEER
SEAL
056183
ANDREA B. GORDON

Document Not Considered Final
Unless All Signatures Completed

PAVEMENT DESIGN
ENGINEER
4/7/2025

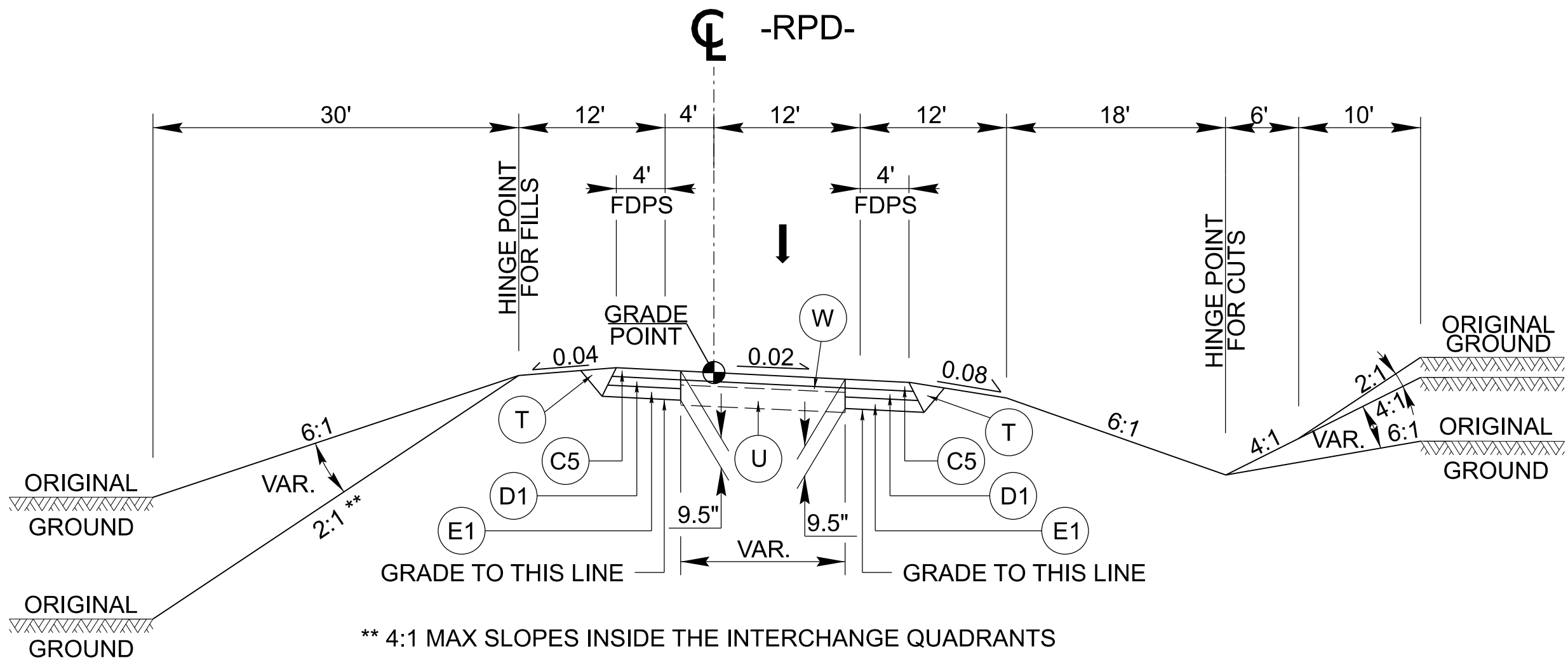
NORTH CAROLINA
PROFESSIONAL
ENGINEER
SEAL
044590
ANDREW D. WARGO

Document Not Considered Final
Unless All Signatures Completed

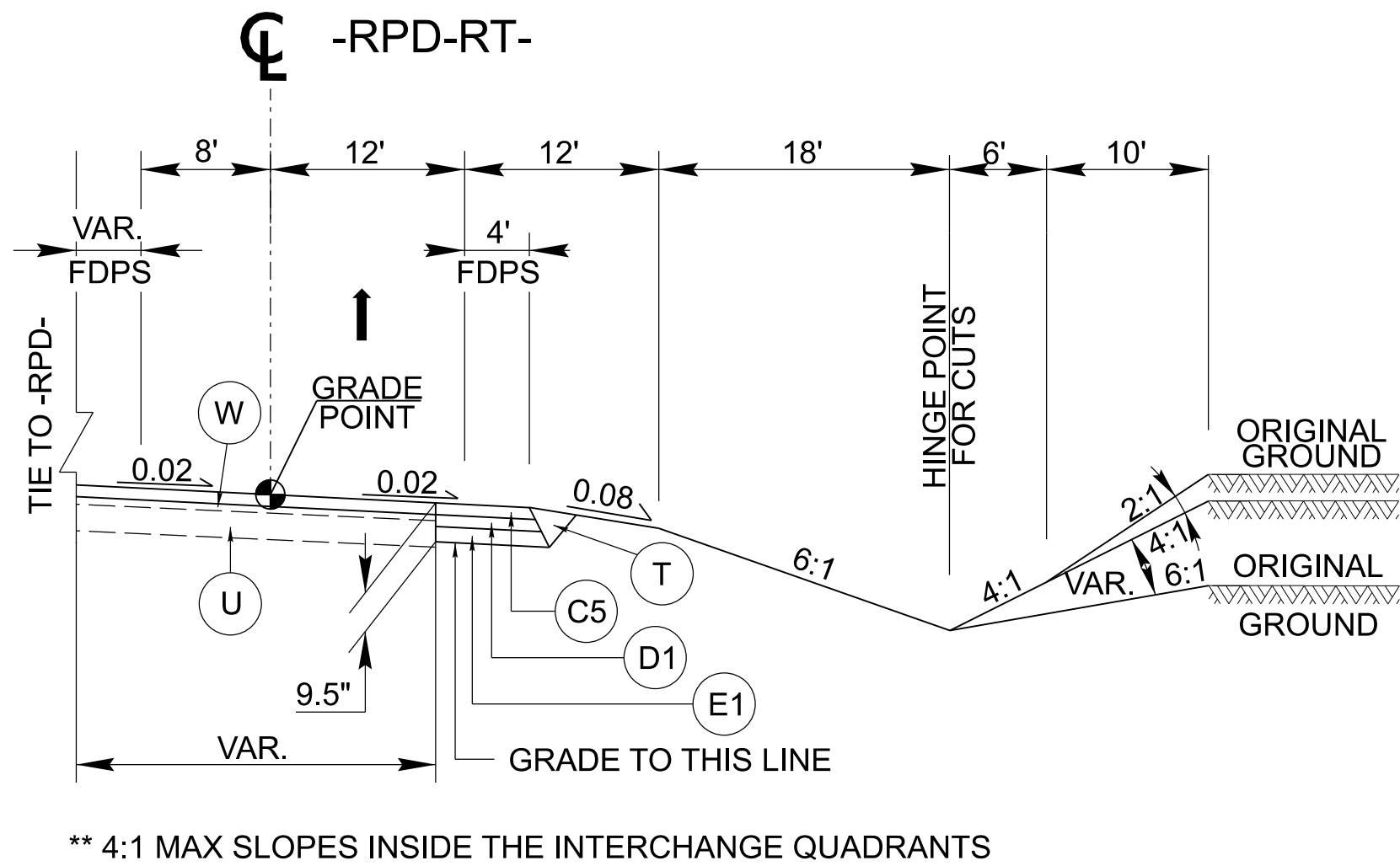
PREPARED BY

KCA
KISINGER CAMPO
& ASSOCIATES
NC FIRM LICENSE No: C-1506
301 Fayetteville Street,
Suite 1500
Raleigh, NC 27601
(919) 882-7839

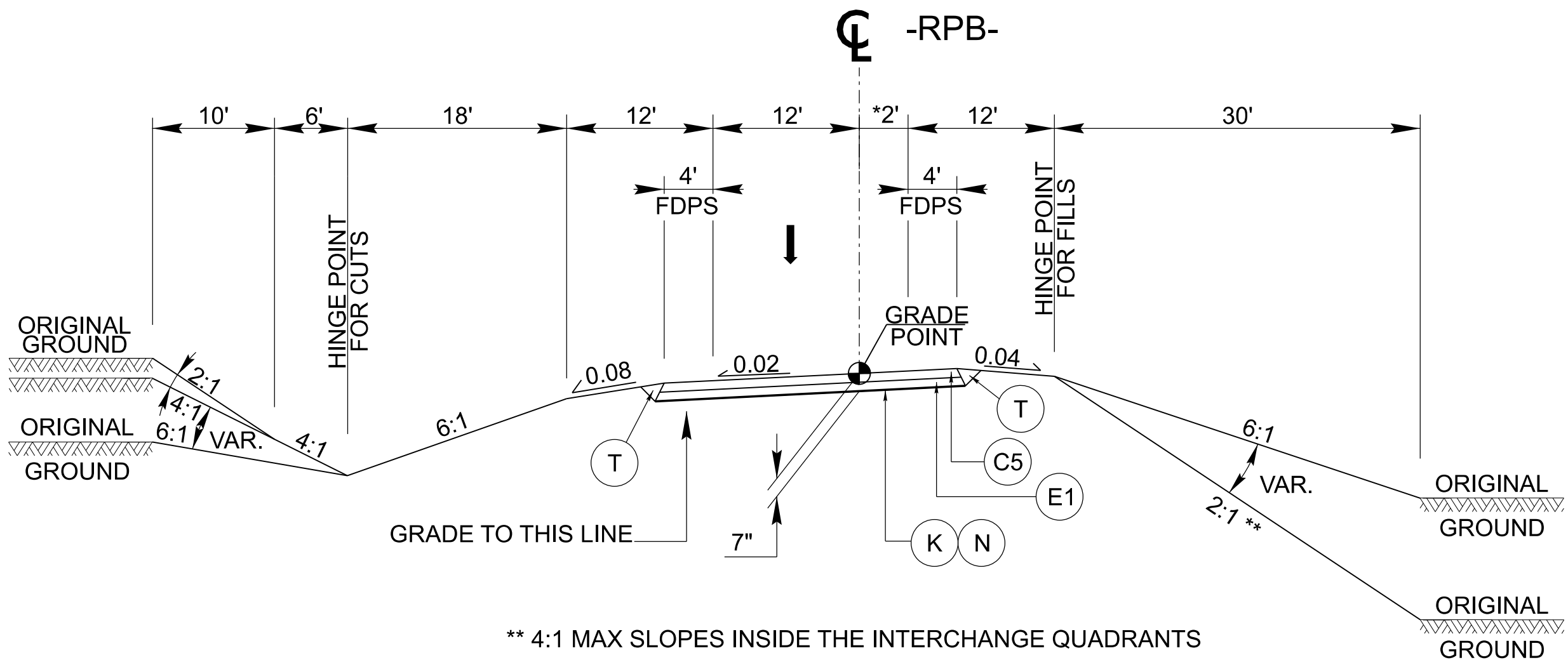
REVISIONS



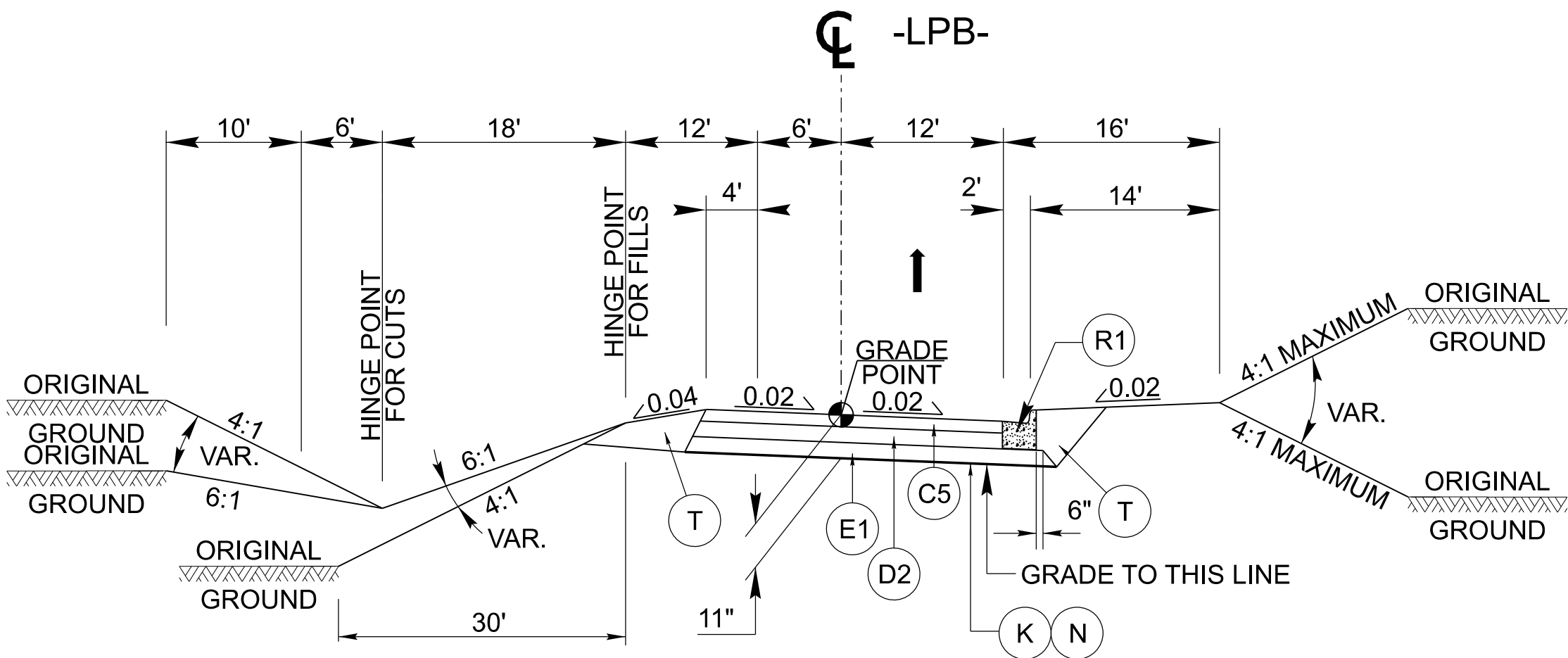
TYPICAL SECTION NO. 9
-RPD- STA. 10+00.00 TO STA. 12+66.89



TYPICAL SECTION NO. 10
-RPD-RT- STA. 10+00.00 TO STA. 10+96.71



TYPICAL SECTION NO. 11
-RPB- STA. 10+00.00 TO STA. 19+05.58



TYPICAL SECTION NO. 12
-LPB- STA. 10+00.00 TO STA. 15+68.33

PAVEMENT SCHEDULE	
C1	1½" S9.5B
C2	3" S9.5B
C3	VAR. S9.5B
C4	1½" S9.5C
C5	3" S9.5C
C6	VAR. S9.5C
D1	2½" I19.0C
D2	4" I19.0C
D3	VAR. I19.0C
E1	4" B25.0C
E2	5½" B25.0C
E3	VAR. B25.0C
K	SUBGRADE STABILIZATION
N	GEOTEXTILE
R1	2'-6" C&G
R2	SBG
R3	MEDIAN BARRIER
R4	EXPRESSWAY GUTTER
T	EARTH MATERIAL
U	EXIST. PAVT.
V	INCIDENTAL MILLING
V1	1.5" MILLING
W	WEDGING

BR-0015

FINAL2A-5

NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
DAVIDSON COUNTY

HIGHWAY DIVISION 9

ROADWAY DESIGN
ENGINEER
4/9/2025

Signed
Andrew B. Gordon

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

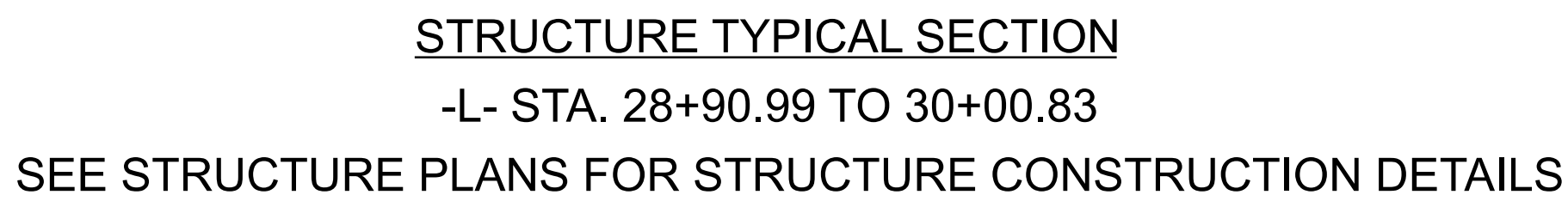
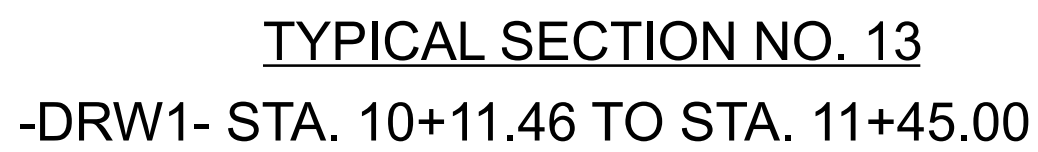
PAVEMENT DESIGN
ENGINEER
4/7/2025

Signed
Andrew D. Wargo

PREPARED BY

KC
KISINGER CAMPO
& ASSOCIATES
NC FIRM LICENSE No: C-1506
301 Fayetteville Street,
Suite 1500
Raleigh, NC 27601
(919) 882-7839

REVISIONS



PAVEMENT SCHEDULE	
C1	1½" S9.5B
C2	3" S9.5B
C3	VAR. S9.5B
C4	1½" S9.5C
C5	3" S9.5C
C6	VAR. S9.5C
D1	2½" I19.0C
D2	4" I19.0C
D3	VAR. I19.0C
E1	4" B25.0C
E2	5½" B25.0C
E3	VAR. B25.0C
K	SUBGRADE STABILIZATION
N	GEOTEXTILE
R1	2' - 6" C&G
R2	SBG
R3	MEDIAN BARRIER
R4	EXPRESSWAY GUTTER
T	EARTH MATERIAL
U	EXIST. PAVT.
V	INCIDENTAL MILLING
V1	1.5" MILLING
W	WEDGING



*MATCH ADJACENT CROSS SLOPE



EXIST. 22' +/-

11' +/-

11' +/-

6'

2'

4'

FSDPS

MATCHLINE L

MATCHLINE R

0.02 0.04 6:1 0.04

13.5'

C5

D1

J2

T

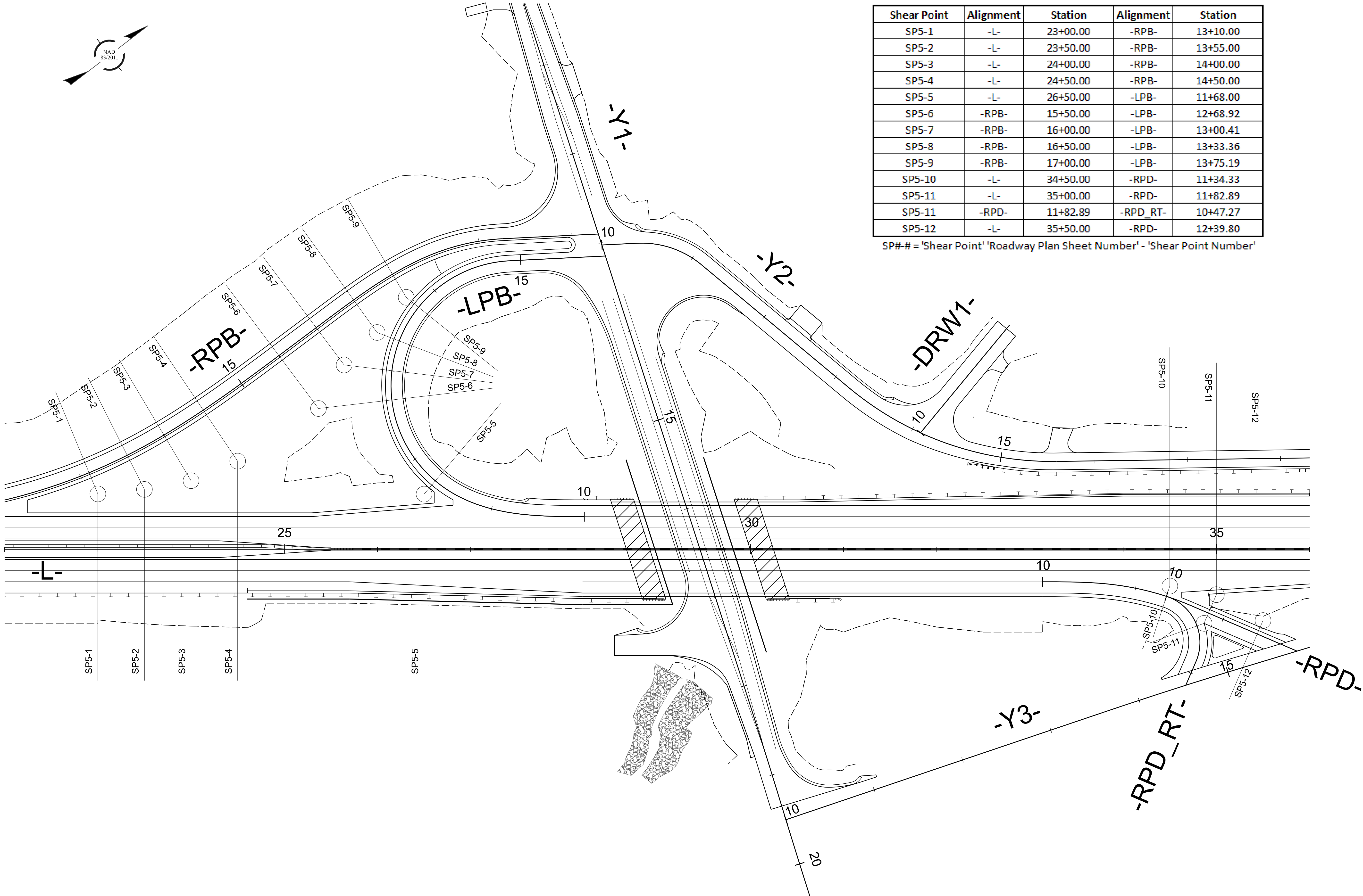
6"

6"

GRADE TO THIS LINE

**NOTE: SEE SHEETS 2B-1
THRU 2B-2 AND TRAFFIC
MANAGEMENT PLANS
FOR TEMPORARY
DETOUR DETAILS.**

REVISIONS



Shear Point	Alignment	Station	Alignment	Station
SP5-1	-L-	23+00.00	-RPB-	13+10.00
SP5-2	-L-	23+50.00	-RPB-	13+55.00
SP5-3	-L-	24+00.00	-RPB-	14+00.00
SP5-4	-L-	24+50.00	-RPB-	14+50.00
SP5-5	-L-	26+50.00	-LPB-	11+68.00
SP5-6	-RPB-	15+50.00	-LPB-	12+68.92
SP5-7	-RPB-	16+00.00	-LPB-	13+00.41
SP5-8	-RPB-	16+50.00	-LPB-	13+33.36
SP5-9	-RPB-	17+00.00	-LPB-	13+75.19
SP5-10	-L-	34+50.00	-RPD-	11+34.33
SP5-11	-L-	35+00.00	-RPD-	11+82.89
SP5-11	-RPD-	11+82.89	-RPD_RT-	10+47.27
SP5-12	-L-	35+50.00	-RPD-	12+39.80

SP#-# = 'Shear Point' 'Roadway Plan Sheet Number' - 'Shear Point Number'

BR-0015

FINAL2A-8

NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
DAVISON COUNTY

HIGHWAY DIVISION 9

ROADWAY DESIGN
ENGINEER
3/4/2025

North Carolina Professional Engineer
Seal
056183
Engineer
ANDREA B. GORDON

Signed by
Andrea B. Gordon

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

3/4/2025

North Carolina Professional Engineer
Seal
055550
Engineer
WILLIAM N. KING

DocuSign
W. Nelson King

HYDRAULICS
ENGINEER
3/4/2025

PREPARED BY

KCA

KISINGER CAMPO
& ASSOCIATES

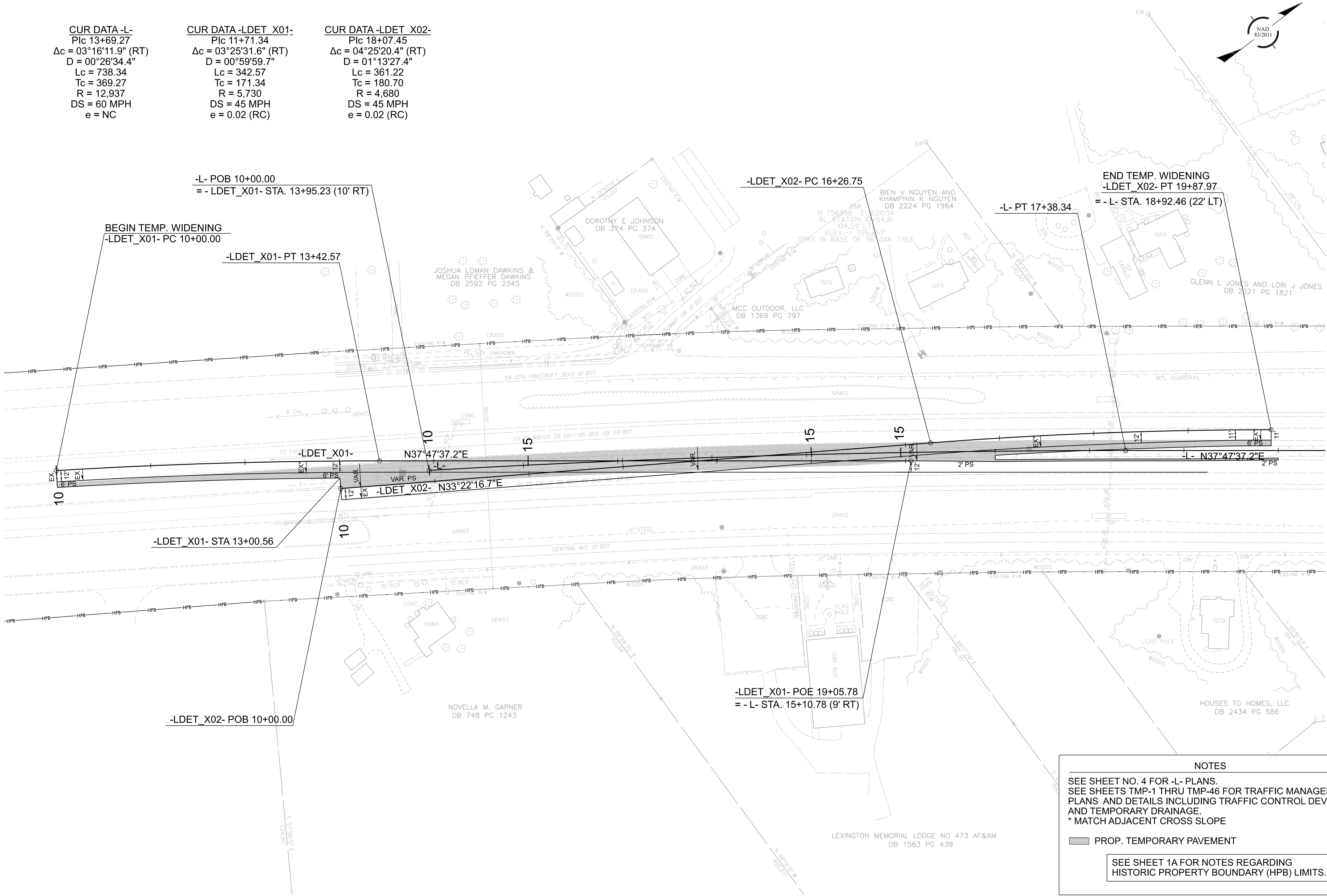
NC FIRM LICENSE No: C-1506
301 Fayetteville Street,
Suite 1500
Raleigh, NC 27601
(919) 882-7839

REVISIONS

CUR DATA -L-
Plc 13+69.27
 $\Delta c = 03^{\circ}16'11.9''$ (RT)
D = 00°26'34.4"
Lc = 738.34
Tc = 369.27
R = 12,937
DS = 60 MPH
e = NC

CUR DATA -LDET_X01-
Plc 11+71.34
 $\Delta c = 03^{\circ}25'31.6''$ (RT)
D = 00°59'59.7"
Lc = 342.57
Tc = 171.34
R = 5,730
DS = 45 MPH
e = 0.02 (RC)

CUR DATA -LDET_X02-
Plc 18+07.45
 $\Delta c = 04^{\circ}25'20.4''$ (RT)
D = 01°13'27.4"
Lc = 361.22
Tc = 180.70
R = 4,680
DS = 45 MPH
e = 0.02 (RC)



NOTES

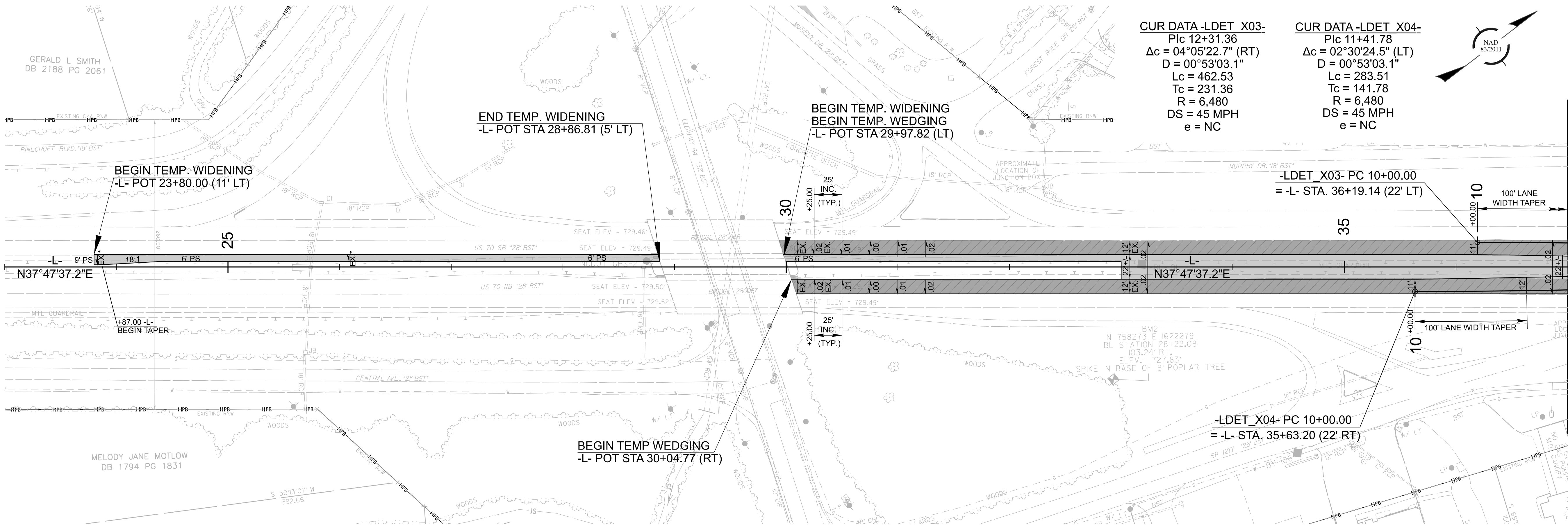
SEE SHEET NO. 4 FOR -L- PLANS.
SEE SHEETS TMP-1 THRU TMP-46 FOR TRAFFIC MANAGEMENT
PLANS AND DETAILS INCLUDING TRAFFIC CONTROL DEVICES
AND TEMPORARY DRAINAGE.
* MATCH ADJACENT CROSS SLOPE

PROP. TEMPORARY PAVEMENT

SEE SHEET 1A FOR NOTES REGARDING
HISTORIC PROPERTY BOUNDARY (HPB) LIMITS.

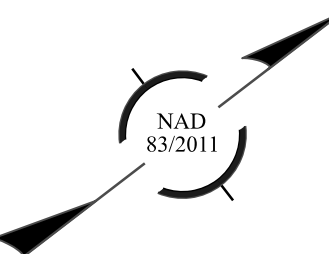
BR-0015
FINAL 2B-1
NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
DAVIDSON COUNTY
HIGHWAY DIVISION 9
ROADWAY DESIGN
ENGINEER
3/4/2025
NORTH CAROLINA
PROFESSIONAL
ENGINEER
SEAL
056183
ANDREA B. GORDON
SIGNED BY
ANDREA B. GORDON
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UNLESS ALL SIGNATURES COMPLETED
HYDRAULICS
ENGINEER
3/4/2025
NORTH CAROLINA
PROFESSIONAL
ENGINEER
SEAL
055550
WILLIAM N. KING
SIGNED BY
W. Nelson King
PREPARED BY
KCA
KISINGER CAMPO
& ASSOCIATES
NC FIRM LICENSE No: C-1506
301 Fayetteville Street,
Suite 1500
Raleigh, NC 27601
(919) 882-7839

REVISIONS

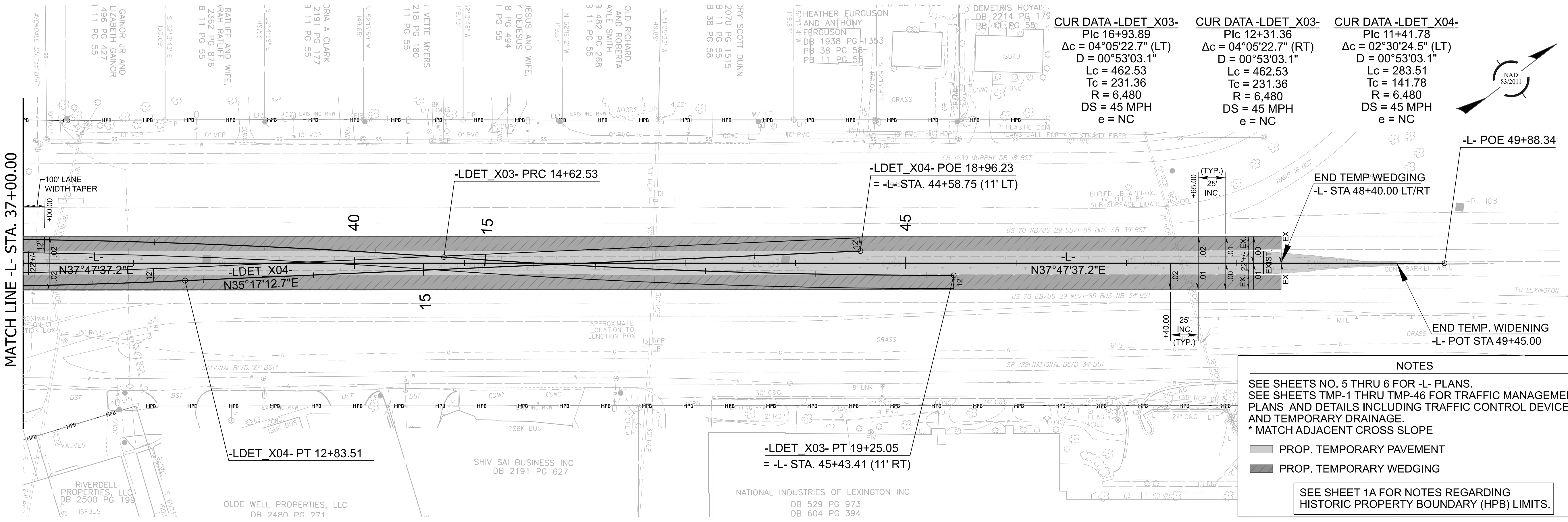


CUR DATA -LDET X03-
Plc 12+31.36
 $\Delta c = 04^{\circ}05'22.7''$ (RT)
 $D = 00^{\circ}53'03.1''$
 $Lc = 462.53$
 $Tc = 231.36$
 $R = 6,480$
 $DS = 45$ MPH
 $e = NC$

CUR DATA -LDET X04-
Plc 11+41.78
 $\Delta c = 02^{\circ}30'24.5''$ (LT)
 $D = 00^{\circ}53'03.1''$
 $Lc = 283.51$
 $Tc = 141.78$
 $R = 6,480$
 $DS = 45$ MPH
 $e = NC$



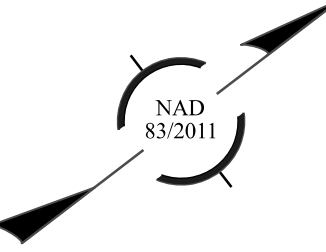
MATCH LINE -L- STA. 37+00.00



CUR DATA -LDET X03-
Plc 16+93.89
 $\Delta c = 04^{\circ}05'22.7''$ (LT)
 $D = 00^{\circ}53'03.1''$
 $Lc = 462.53$
 $Tc = 231.36$
 $R = 6,480$
 $DS = 45$ MPH
 $e = NC$

CUR DATA -LDET X03-
Plc 12+31.36
 $\Delta c = 04^{\circ}05'22.7''$ (RT)
 $D = 00^{\circ}53'03.1''$
 $Lc = 462.53$
 $Tc = 231.36$
 $R = 6,480$
 $DS = 45$ MPH
 $e = NC$

CUR DATA -LDET X04-
Plc 11+41.78
 $\Delta c = 02^{\circ}30'24.5''$ (LT)
 $D = 00^{\circ}53'03.1''$
 $Lc = 283.51$
 $Tc = 141.78$
 $R = 6,480$
 $DS = 45$ MPH
 $e = NC$



NOTES

SEE SHEETS NO. 5 THRU 6 FOR -L- PLANS.
SEE SHEETS TMP-1 THRU TMP-46 FOR TRAFFIC MANAGEMENT PLANS AND DETAILS INCLUDING TRAFFIC CONTROL DEVICES AND TEMPORARY DRAINAGE.
* MATCH ADJACENT CROSS SLOPE

PROP. TEMPORARY PAVEMENT
PROP. TEMPORARY WEDGING

SEE SHEET 1A FOR NOTES REGARDING HISTORIC PROPERTY BOUNDARY (HPB) LIMITS.

BR-0015

FINAL 2B-2

NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
DAVIDSON COUNTY

HIGHWAY DIVISION 9

ROADWAY DESIGN
ENGINEER

3/4/2025

ANDREA B. GORDON
SEAL 056183
ENGINEER

Signed by
ANDREA B. GORDON

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UNLESS ALL SIGNATURES COMPLETED

HYDRAULICS
ENGINEER

3/4/2025

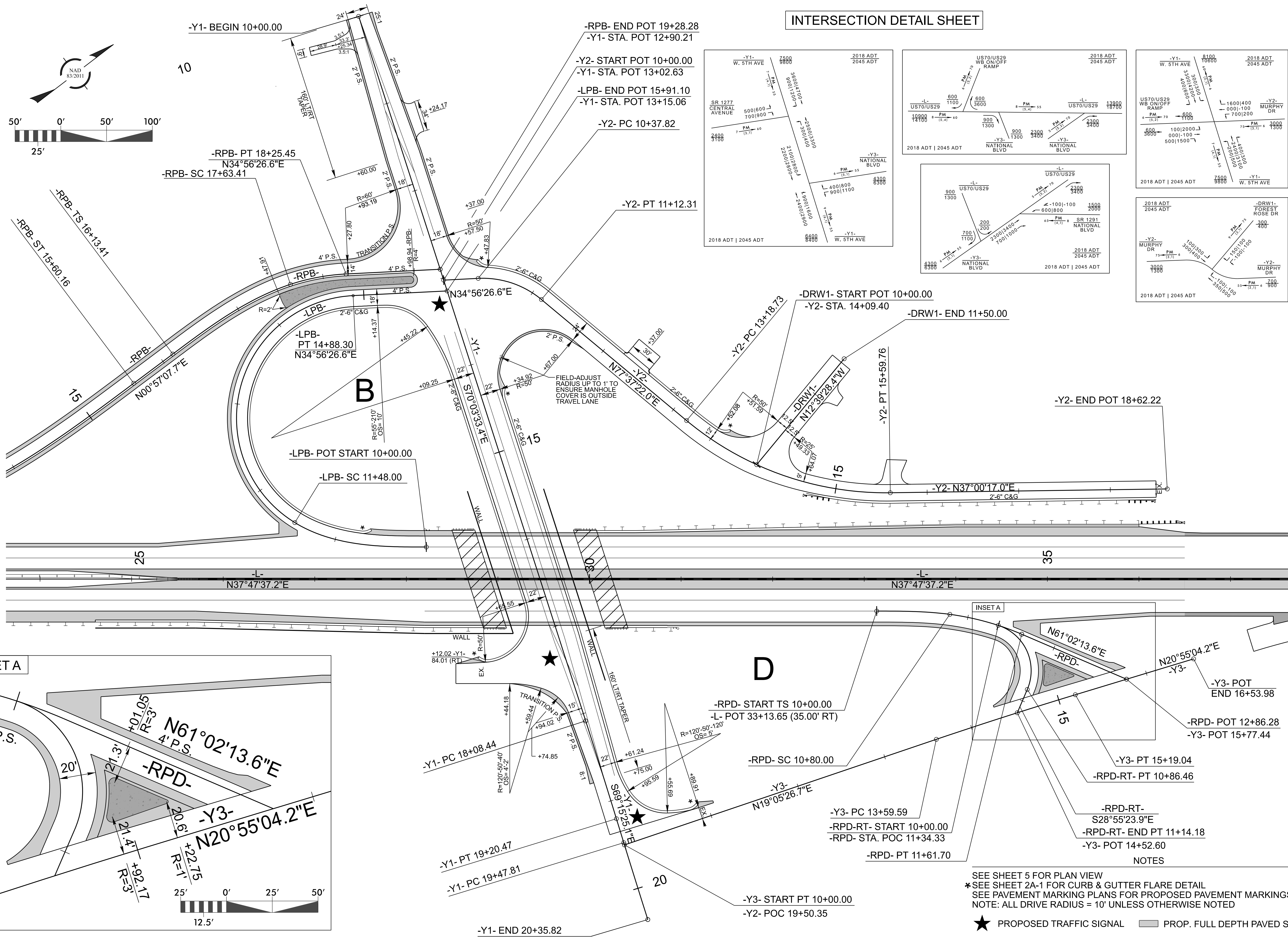
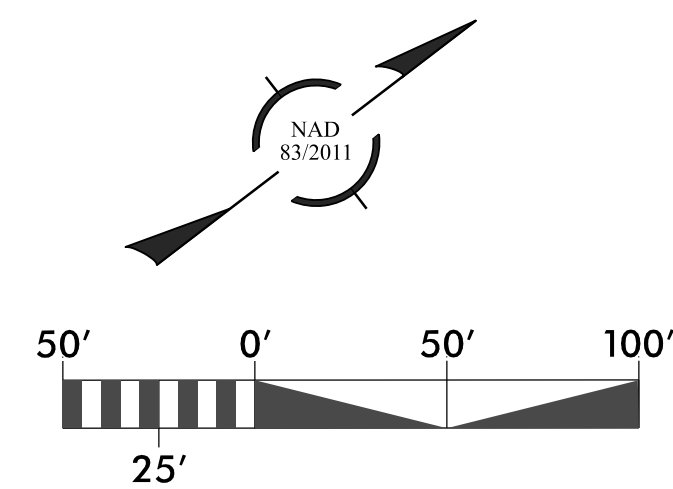
WILLIAM N. KING
SEAL 055550
ENGINEER

Signed by
W. Nelson King

PREPARED BY

KCA
KISINGER CAMPO & ASSOCIATES
NC FIRM LICENSE No: C-1506
301 Fayetteville Street,
Suite 1500
Raleigh, NC 27601
(919) 882-7839

REVISIONS



SEE SHEET 5 FOR PLAN VIEW
SEE SHEET 2A-1 FOR CURB & GUTTER FLARE DETAIL
SEE PAVEMENT MARKING PLANS FOR PROPOSED PAVEMENT MARKINGS
NOTE: ALL DRIVE RADIUS = 10' UNLESS OTHERWISE NOTED

 PROPOSED TRAFFIC SIGNAL  PROP. FULL DEPTH PAVED SHOULDER
 REMOVAL OF PAVEMENT  OVERLAY EXISTING PAVED SHOULDER

REVISIONS

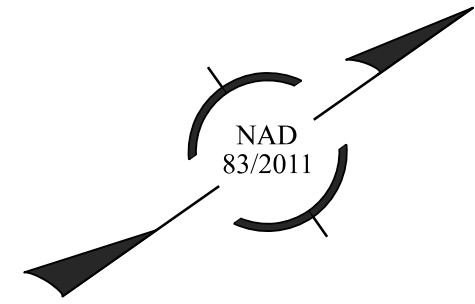
BR-0015	
FINAL	2B-3
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION DAVIDSON COUNTY	
	
HIGHWAY DIVISION 9	
ROADWAY DESIGN ENGINEER	
3/4/2025	
	
Signed by <u>Andrew B. Gordon</u>	
THIS DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES ARE COMPLETED	

PREPARED BY

KCA
KISINGER CAMPO
& ASSOCIATES

NC FIRM LICENSE No: C-1506
301 Fayetteville Street,
Suite 1500
Raleigh, NC 27601
(919)882-7839

RESURFACING DETAIL SHEET



± 2180' FROM -L- STA. 12+00
BEGIN MILL & RESURFACE
NB LANES

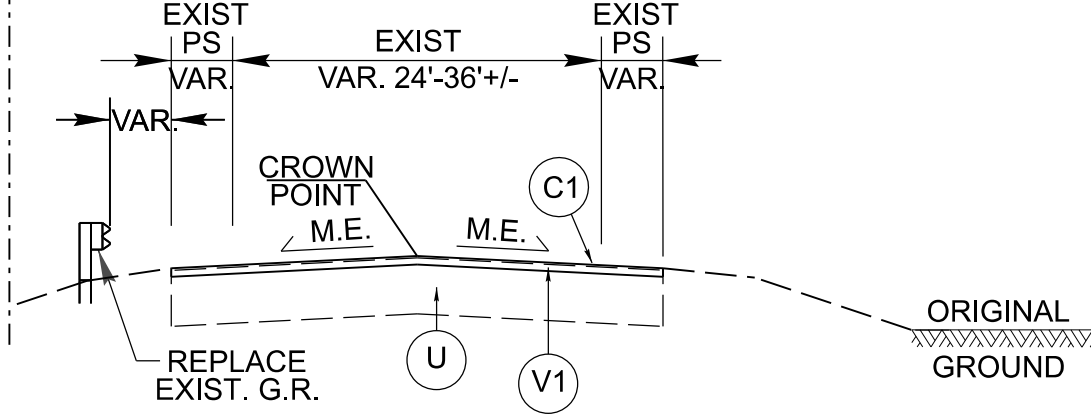
-L- US-29/70 SB

-L- US-29/70 NB

CENTRAL AVE

MATCHLINE ±1546 FROM -L- STA. 12+00

☒ -L- US 70

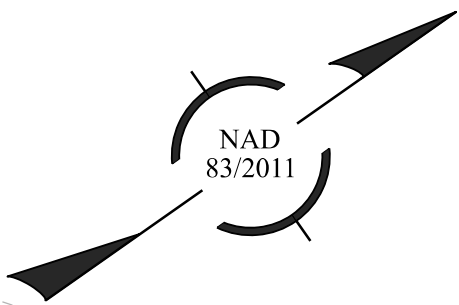


PAVEMENT SCHEDULE

C1	1.5" S9.5C
U	EXIST. PAVT.
V1	1.5" MILLING

MILLING & RESURFACING DETAIL

1. MILL AND RESURFACE ENTIRE WIDTH OF ROADWAY AND SHOULDERS, AS DIRECTED BY THE ENGINEER.
2. DETAIL SHOWN FOR ONE DIRECTION OF TRAVEL - MIRROR TYPICAL AS NEEDED.
3. REPLACE EXISTING GUARDRAIL PER STD. 862.01. SEE PLAN VIEW FOR LOCATIONS.



± 925' FROM -L- STA. 12+00
BEGIN MILL & RESURFACE
SB LANES

-L- US-29/70 SB

BEGIN REPLACEMENT OF
EXISTING GUARDRAIL LT/RT
446'+/- PRIOR TO -L- 10+00.00
TIE TO EXIST. G.R.

-L- US-29/70 NB

SR 1277 (CENTRAL AVE)

SR 1276 (PINECROFT BLVD)

-L- US-29/70 SB 10

-L- US-29/70 NB

SR 1277 (CENTRAL AVE)

MATCHLINE ±1546 FROM -L- STA. 12+00

MATCHLINE -L- STA. 10+50, SEE 2B-5

NOTES

- MILLING AND RESURFACING
- SEE PMP-2 THRU PMP-3 FOR PAVEMENT MARKINGS.
- SEE SHEET 4 FOR ROADWAY DESIGN.

BR-0015

FINAL28-4

NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
DAVIDSON COUNTY

HIGHWAY DIVISION 9

ROADWAY DESIGN
ENGINEER

4/9/2025

NORTH CAROLINA

PROFESSIONAL

SEAL

056183

ENGINEER

ANDREA B. GORDON

Signed
Andrea B. Gordon

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

PAVEMENT DESIGN
ENGINEER

4/7/2025

NORTH CAROLINA

PROFESSIONAL

SEAL

044590

ENGINEER

ANDREW D. WARGO

Signed
Andrew D. Wargo

DOCUMENT PREPARED BY

KCA

KISINGER CAMPO
& ASSOCIATES

NC FIRM LICENSE No: C-1506
301 Fayetteville Street,
Suite 1500
Raleigh, NC 27601
(919) 882-7839

REVISIONS

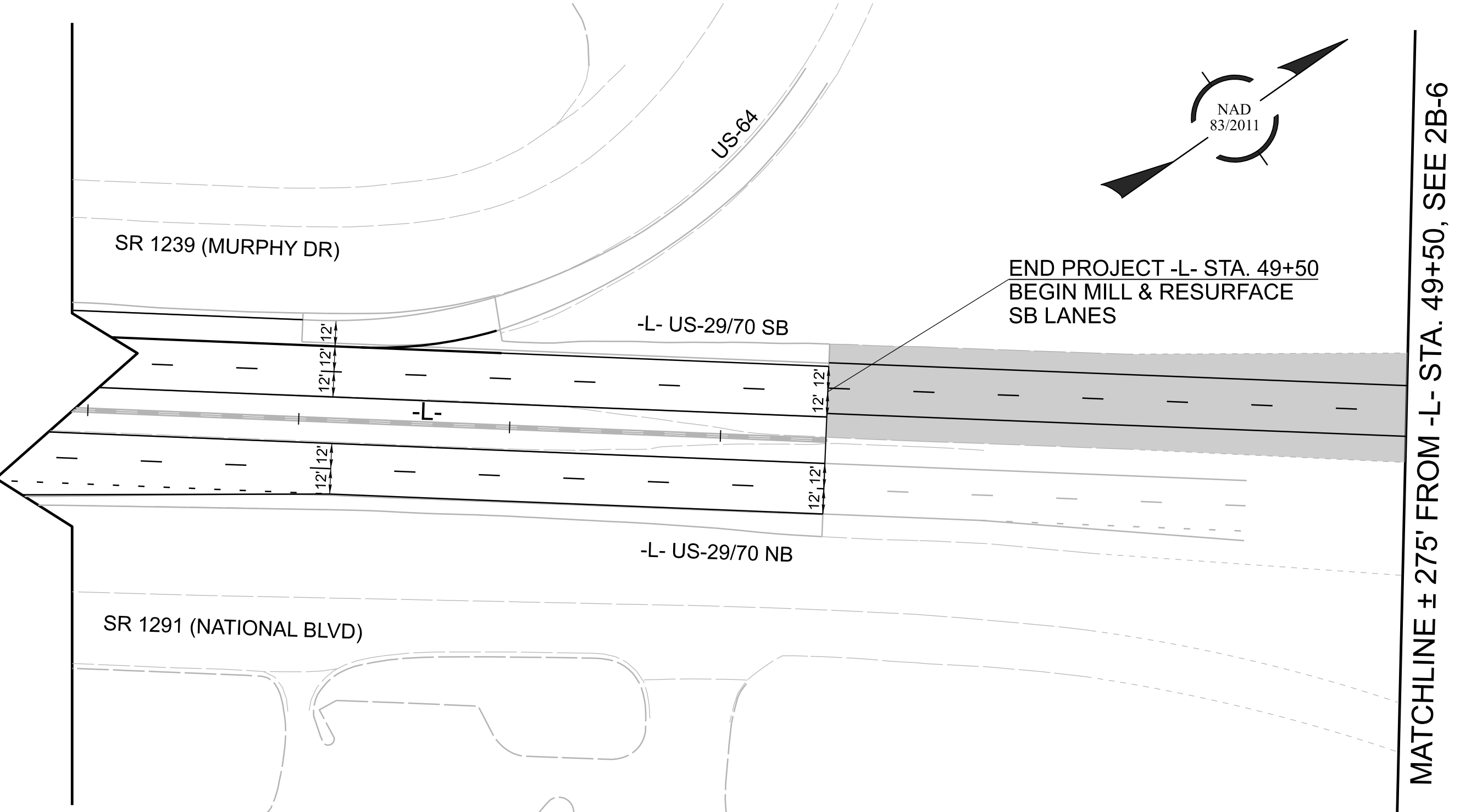
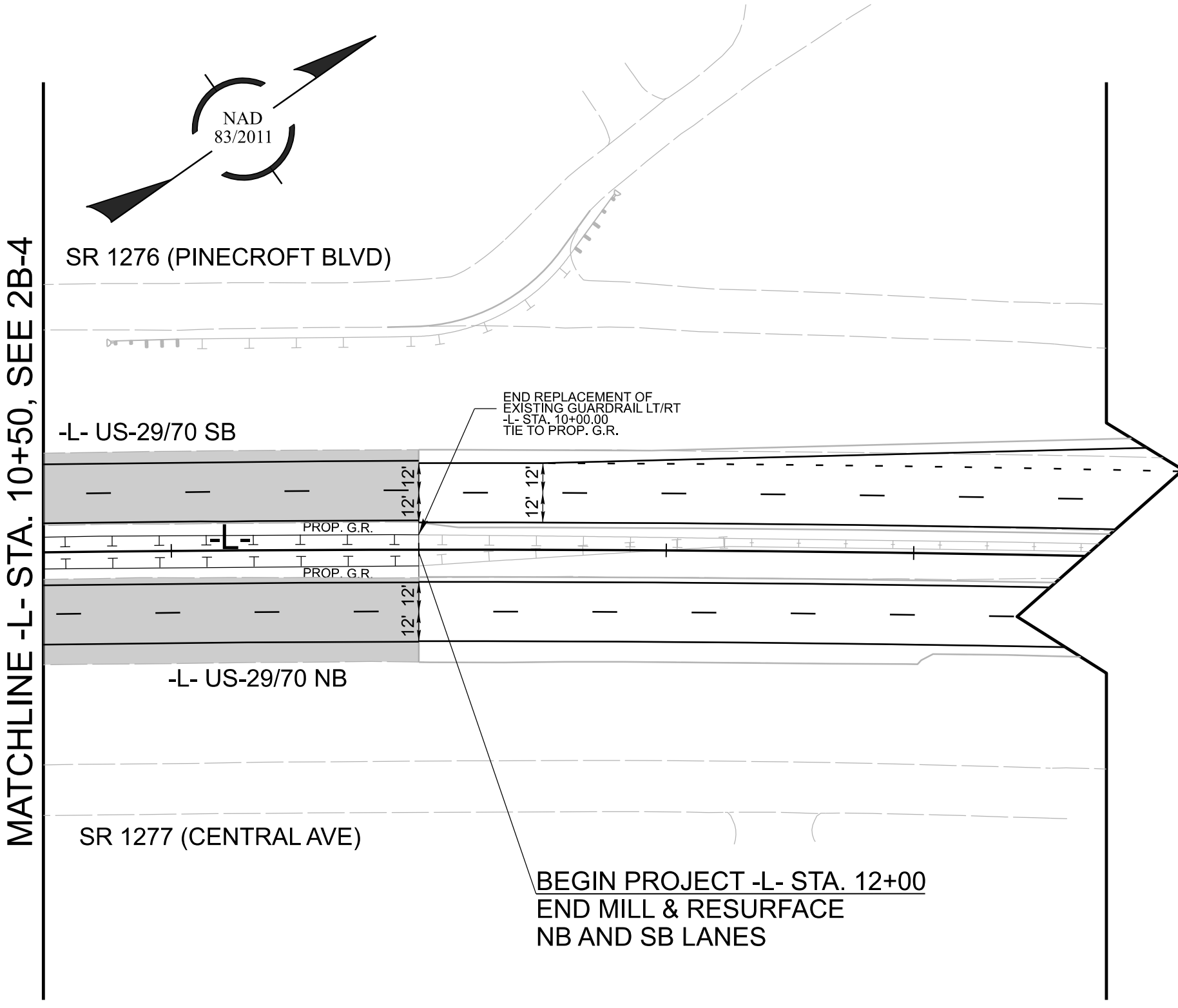
RESURFACING DETAIL SHEET

℄ -L- US 70

PAVEMENT SCHEDULE	
C1	1.5" S9.5C
U	EXIST. PAVT.
V1	1.5" MILLING

MILLING & RESURFACING DETAIL

- MILL AND RESURFACE ENTIRE WIDTH OF ROADWAY AND SHOULDERS, AS DIRECTED BY THE ENGINEER.
- DETAIL SHOWN FOR ONE DIRECTION OF TRAVEL - MIRROR TYPICAL AS NEEDED.
- REPLACE EXISTING GUARDRAIL PER STD. 862.01. SEE PLAN VIEW FOR LOCATIONS.



NOTES

MILLING AND RESURFACING

SEE PMP-4 AND PMP-6 FOR PAVEMENT MARKINGS.

SEE SHEET 4 AND 6 FOR ROADWAY DESIGN.

BR-0015

FINAL 2B-5

NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
DAVIDSON COUNTY

HIGHWAY DIVISION 9

ROADWAY DESIGN
ENGINEER

4/9/2025

NORTH CAROLINA
PROFESSIONAL
SEAL
056183
ENGINEER
ANDREA B. GORDON

Signed
Andrea B. Gordon

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PAVEMENT DESIGN
ENGINEER

4/7/2025

NORTH CAROLINA
PROFESSIONAL
SEAL
044590
ENGINEER
ANDREW D. WARGO

Signed
Andrew D. Wargo

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RESURFACING DETAIL SHEET



MATCHLINE ± 1688 FROM -L- STA. 49+50, SEE 2B-6

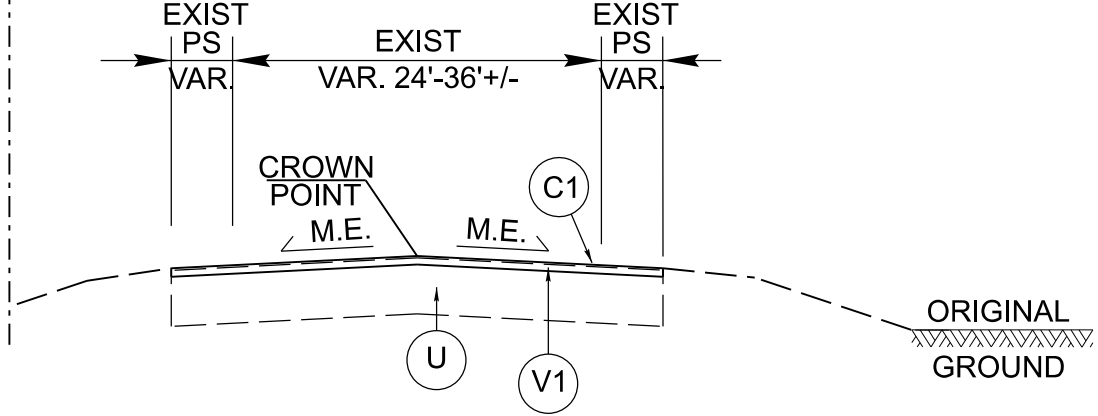
SMOKEHOUSE LANE

± 2000' FROM -L- STA. 49+50
END RESURFACING SB LANES
AT STRUCTURE 280076

12' 12" 12'

-L- US-29/70 SB

CL -L- US 70



PAVEMENT SCHEDULE

C1	1.5" S9.5C
U	EXIST. PAVT.
V1	1.5" MILLING

MILLING & RESURFACING DETAIL

1. MILL AND RESURFACE ENTIRE WIDTH OF ROADWAY AND SHOULDERS, AS DIRECTED BY THE ENGINEER.
2. DETAIL SHOWN FOR ONE DIRECTION OF TRAVEL - MIRROR TYPICAL AS NEEDED.

NOTES

MILLING AND RESURFACING

SEE PMP-8 FOR PAVEMENT MARKINGS.

BR-0015

FINAL28-7

NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
DAVIDSON COUNTY

HIGHWAY DIVISION 9

ROADWAY DESIGN
ENGINEER

4/9/2025

Signed
Andrea B. Gordon

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PAVEMENT DESIGN
ENGINEER

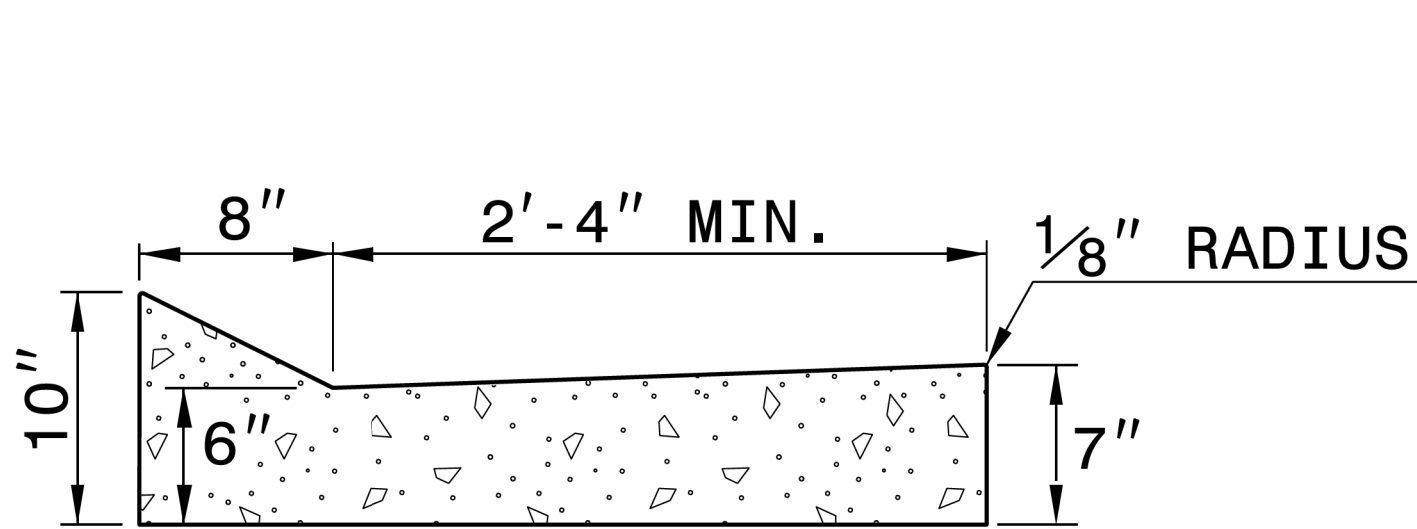
4/7/2025

Drawn By
Andrew D. Wargo

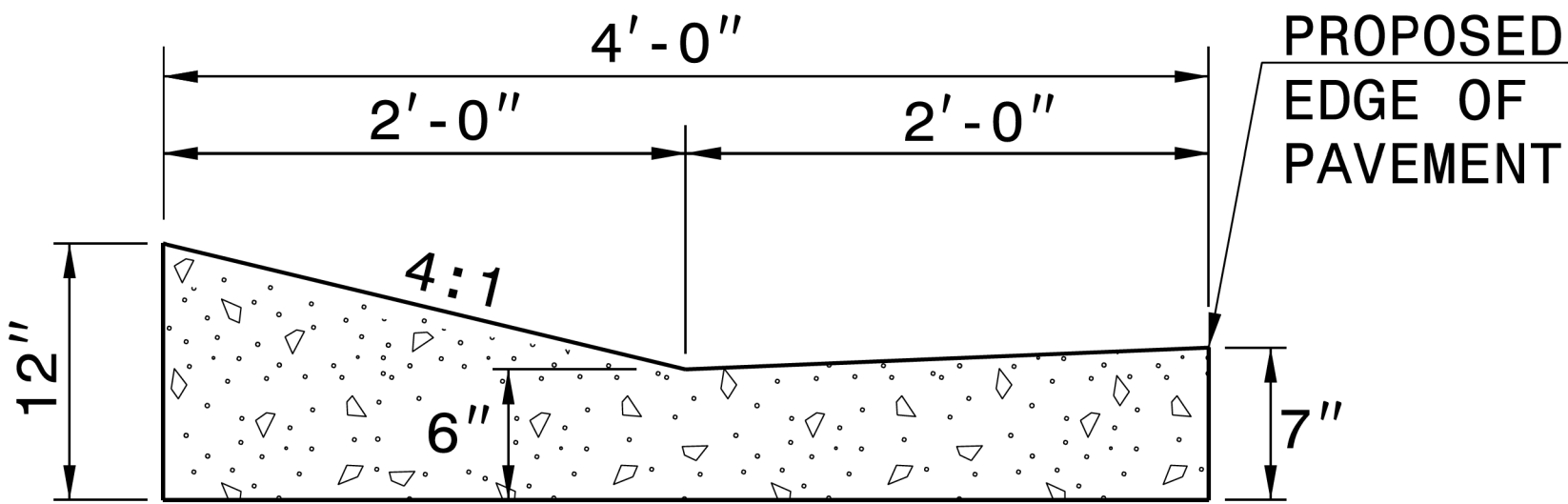
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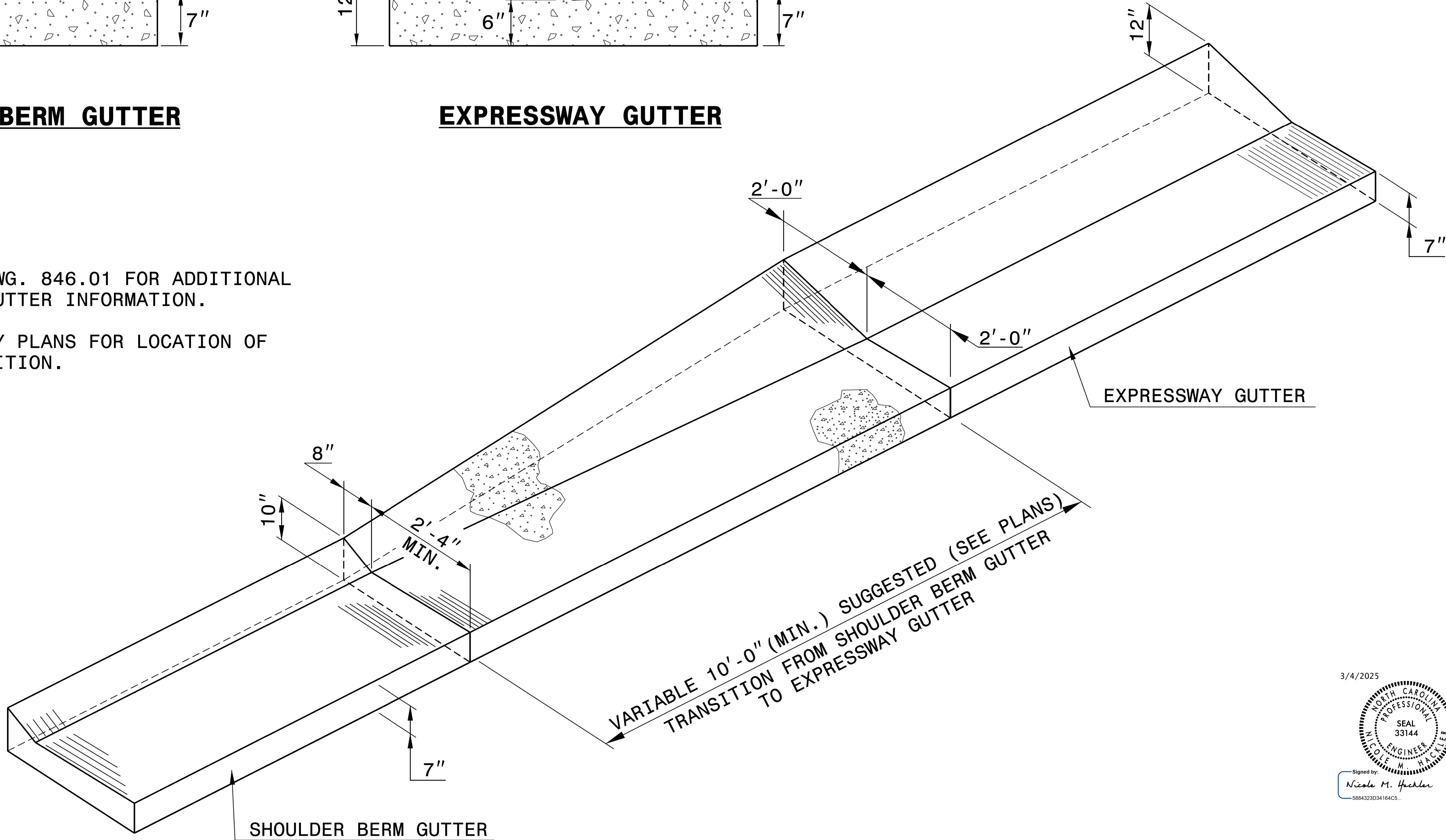
SHOULDER BERM GUTTER



EXPRESSWAY GUTTER

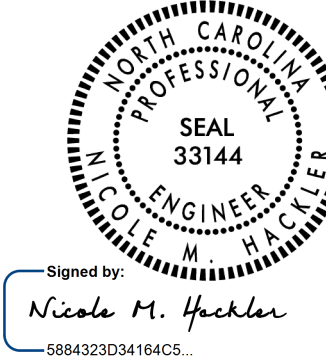
NOTE: SEE STD. DWG. 846.01 FOR ADDITIONAL CURB AND GUTTER INFORMATION.

SEE ROADWAY PLANS FOR LOCATION OF CURB TRANSITION.



ISOMETRIC VIEW OF TRANSITION

3/4/2025



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UNLESS ALL SIGNATURES COMPLETED

CONTRACT STANDARDS AND DEVELOPMENT UNIT	
Office 919-707-6950	FAX 919-250-4119
DETAIL OF SHOULDER BERM GUTTER TO EXPRESSWAY GUTTER TRANSITION SECTION	
ORIGINAL BY: T.S.Spell	DATE: 8-13-02
MODIFIED BY:	DATE:
CHECKED BY:	DATE:
FILE SPEC.: w:\usr\details\stand\c>ransit.dgn	

REVISIONS

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FINAL2C-1

NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
DAVIDSON COUNTY

HIGHWAY DIVISION 9

PREPARED BY

KCA
KISINGER CAMPO & ASSOCIATES
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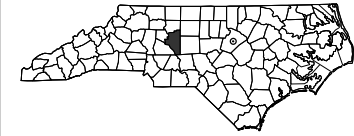
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PROJECT REFERENCE NO.	SHEET NO.

BR-0015

FINAL2C-2

NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
DAVIDSON COUNTY



HIGHWAY DIVISION 9

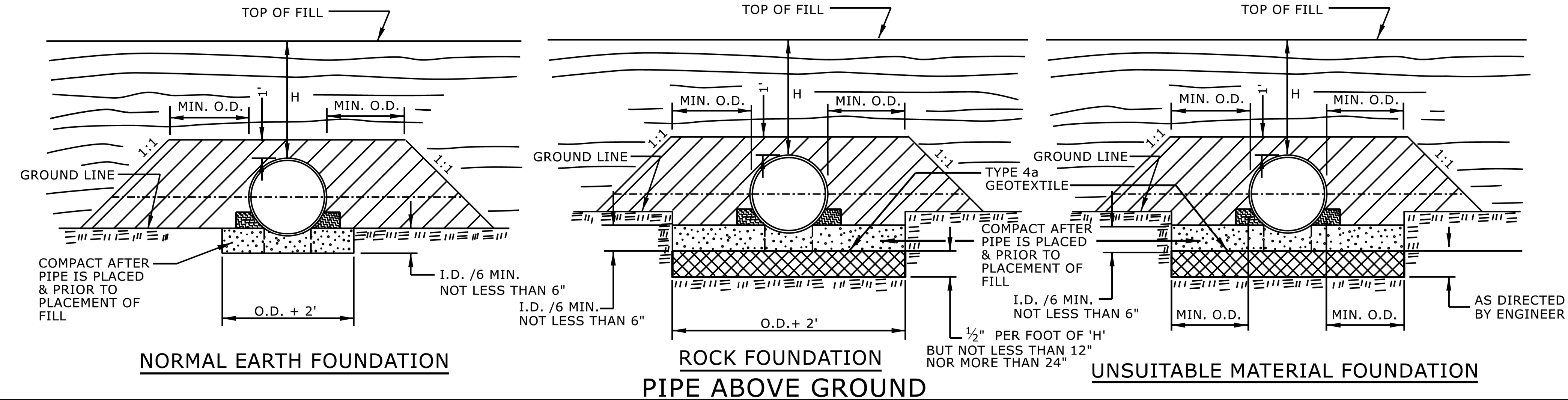
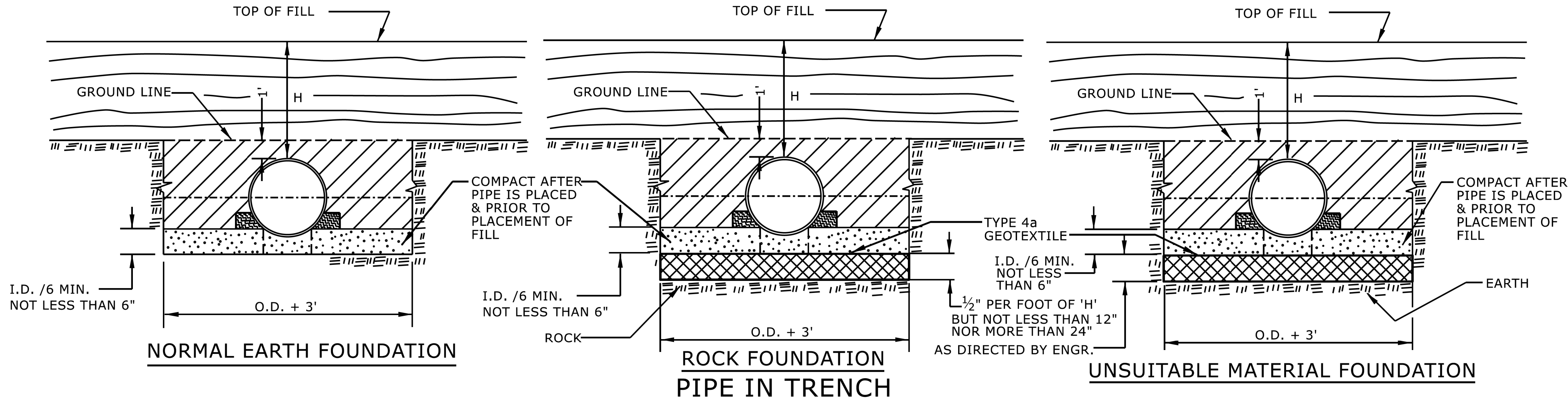
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& ASSOCIATES

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GENERAL NOTES:

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

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

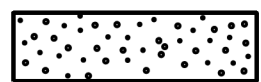
H = THE FILL HEIGHT MEASURED VERTICALLY AT ANY POINT ALONG THE PIPE FROM THE TOP OF THE PIPE TO THE TOP OF THE EMBANKMENT AT THAT POINT.



APPROVED SUITABLE LOCAL MATERIAL.



TAKE CARE TO FULLY COMPACT HAUNCH ZONE OF PIPE BACKFILL.



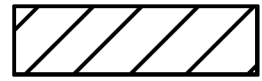
LOOSELY PLACED SELECT MATERIAL CLASS III OR CLASS II, TYPE 1 FOR PIPE BEDDING. LEAVE SECTION DIRECTLY BENEATH PIPE UNCOMPACTED AS PIPE SEATING AND BACKFILL WILL ACCOMPLISH COMPACTION.

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

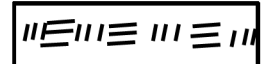
REFER TO NCDOT PIPE MATERIAL SELECTION GUIDE AND STANDARD SPECIFICATIONS FOR ALLOWABLE PIPE FILL HEIGHTS AND PIPE SPECIFICATIONS.



SPRINGLINE OF PIPE



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



UNDISTURBED EARTH MATERIAL



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

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

ROADWAY DETAIL DRAWING FOR
METHOD OF PIPE INSTALLATION
FLEXIBLE PIPE

SHEET 1 OF 2
300.01

3/4/2025



Signed by:
Nicole M. Hackler
5884323034164C5

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CONTRACTS STANDARDS
AND DEVELOPMENT UNIT

Office 919-707-6950

FAX 919-250-4119

SEE TITLE BLOCK

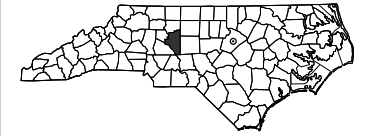
ORIGINAL BY: S.CALHOUN DATE: 7-25-2024
MODIFIED BY: DATE:
CHECKED BY: DATE:
FILE SPEC.: DATE:

PROJECT REFERENCE NO.	SHEET NO.

BR-0015

FINAL20-3

NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
DAVIDSON COUNTY



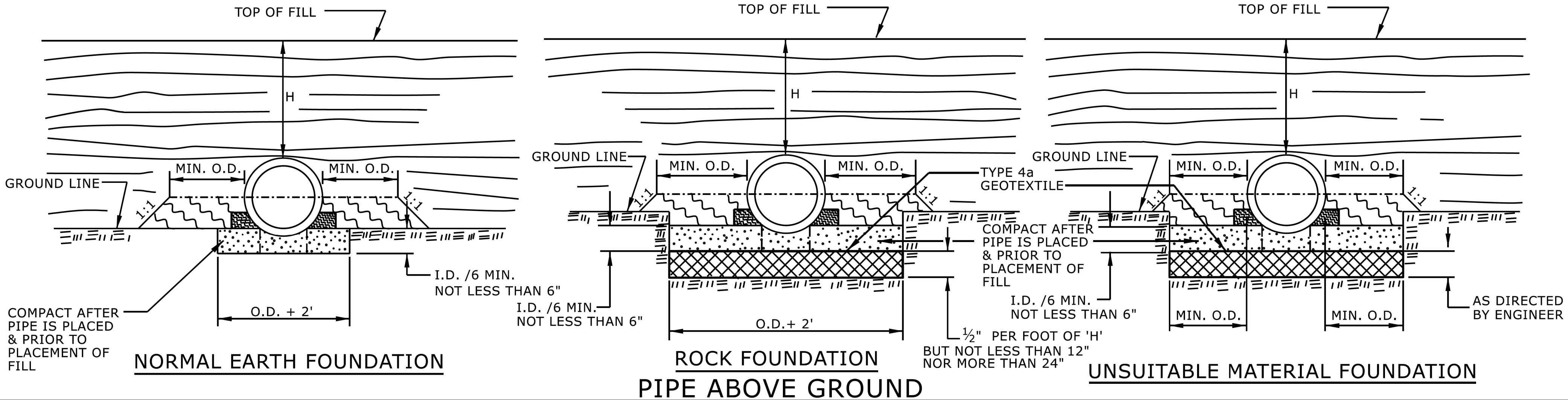
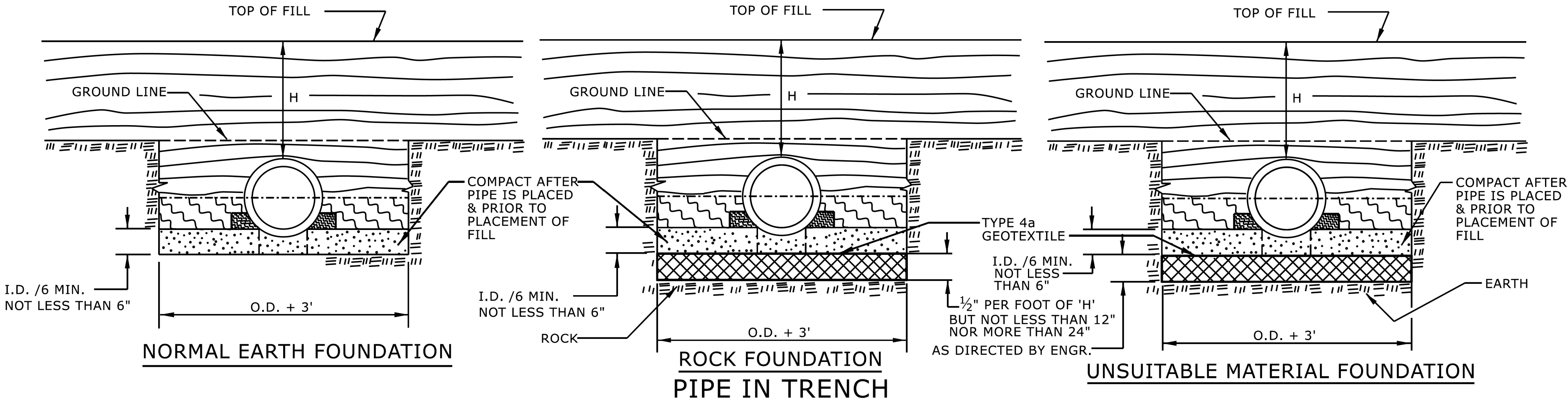
HIGHWAY DIVISION 9

PREPARED BY

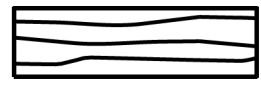
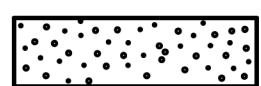
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KISINGER CAMPO
& ASSOCIATES
NC FIRM LICENSE No: C-1506
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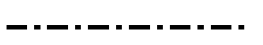
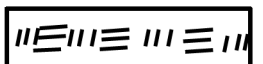


GENERAL NOTES:
I.D. = THE MAXIMUM HORIZONTAL INSIDE DIAMETER DIMENSION.
O.D. = THE MAXIMUM HORIZONTAL OUTSIDE DIAMETER DIMENSION.
H = THE FILL HEIGHT MEASURED VERTICALLY AT ANY POINT ALONG THE PIPE FROM THE TOP OF THE PIPE TO THE TOP OF THE EMBANKMENT AT THAT POINT.

-  APPROVED SUITABLE LOCAL MATERIAL.
-  TAKE CARE TO FULLY COMPACT HAUNCH ZONE OF PIPE BACKFILL.
-  LOOSELY PLACED SELECT MATERIAL CLASS III OR CLASS II, TYPE 1 FOR PIPE BEDDING. LEAVE SECTION DIRECTLY BENEATH PIPE UNCOMPACTED AS PIPE SEATING AND BACKFILL WILL ACCOMPLISH COMPACTION.

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

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

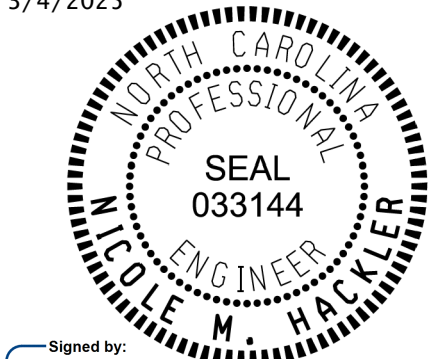
-  SPRINGLINE OF PIPE
-  SELECT BACKFILL MATERIAL CLASS III OR CLASS II, BELOW SPRINGLINE.
-  UNDISTURBED EARTH MATERIAL
-  SELECT MATERIAL CLASS V OR VI FOR FOUNDATION CONDITIONING. ENCAPSULATE WITH TYPE IV GEOTEXTILE AS DIRECTED BY THE ENGINEER.

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

ROADWAY DETAIL DRAWING FOR
METHOD OF PIPE INSTALLATION
RIGID PIPE

SHEET 2 OF 2
300.01

3/4/2025



Signed by:
Nicole M. Hackler
588432303416405...

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CONTRACTS STANDARDS
AND DEVELOPMENT UNIT

Office 919-707-6950

FAX 919-250-4119

SEE TITLE BLOCK

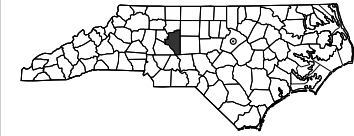
ORIGINAL BY: S.CALHOUN DATE: 7-25-2024
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FILE SPEC.: DATE:

PROJECT REFERENCE NO.	SHEET NO.

BR-0015

FINAL2C-4

NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
DAVIDSON COUNTY



HIGHWAY DIVISION 9

PREPARED BY

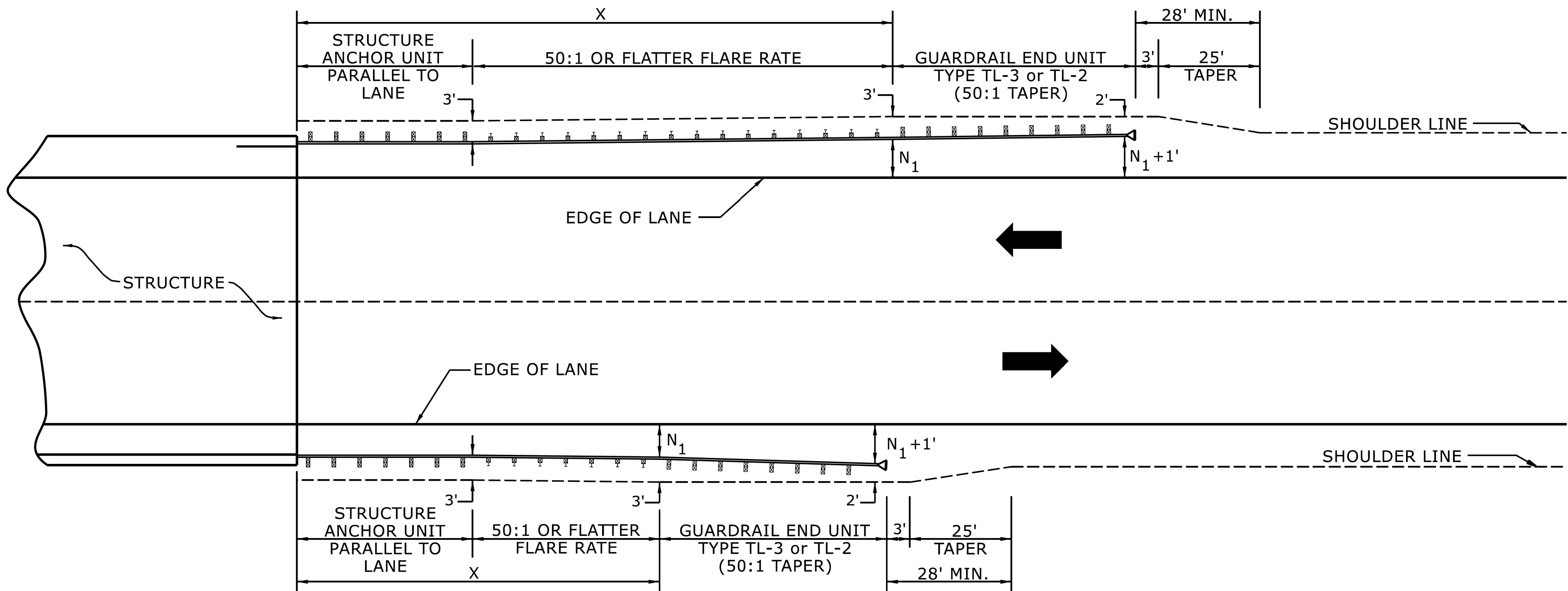
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& ASSOCIATES

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USE FLARE RATE AS THE CONTROL IF THE "N₁" DISTANCE IS NOT OBTAINED.
("N₁" IS BASED ON SHOULDER WIDTHS IN THE ROADWAY DESIGN MANUAL)

SEE STD. 862.03 FOR STRUCTURE ANCHOR UNITS

FOR POSTED SPEEDS ≥ 45MPH USE GREU TYPE TL-3
FOR POSTED SPEEDS < 45MPH USE GREU TYPE TL-2

GUARDRAIL LENGTH OF NEED (X) IS CALCULATED BASED ON THE AASHTO ROADSIDE DESIGN GUIDE.

LENGTHS AND OFFSETS FOR PROPOSED GUARDRAIL AT TWO LANE - TWO WAY LOCATIONS

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

ROADWAY DETAIL DRAWING FOR
GUARDRAIL PLACEMENT

SHEET 4 OF 15
862D01

3/4/2025



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Nicole M. Hacker
5884323034164CS

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DATE:

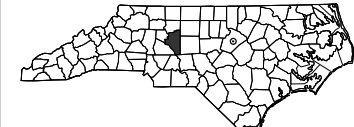
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BR-0015

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DAVIDSON COUNTY



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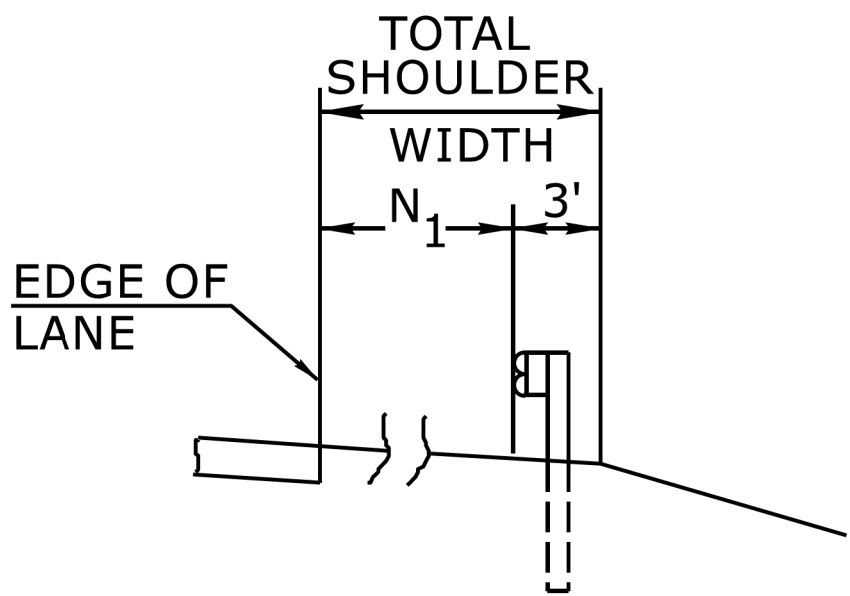
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& ASSOCIATES

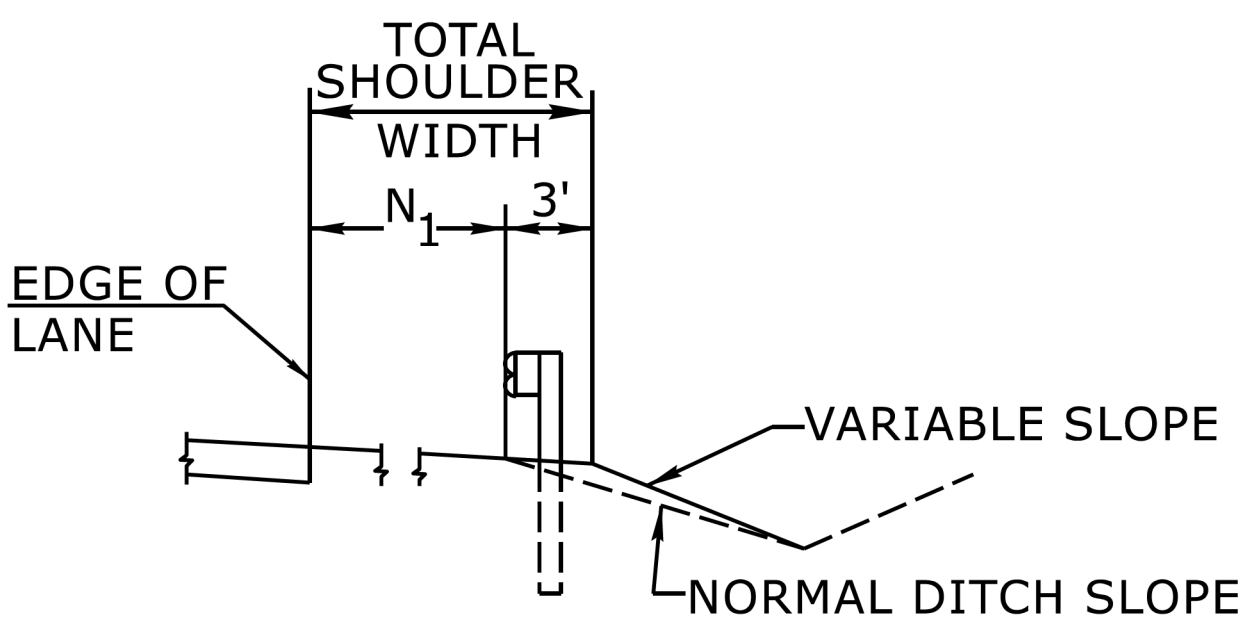
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Raleigh, NC 27601
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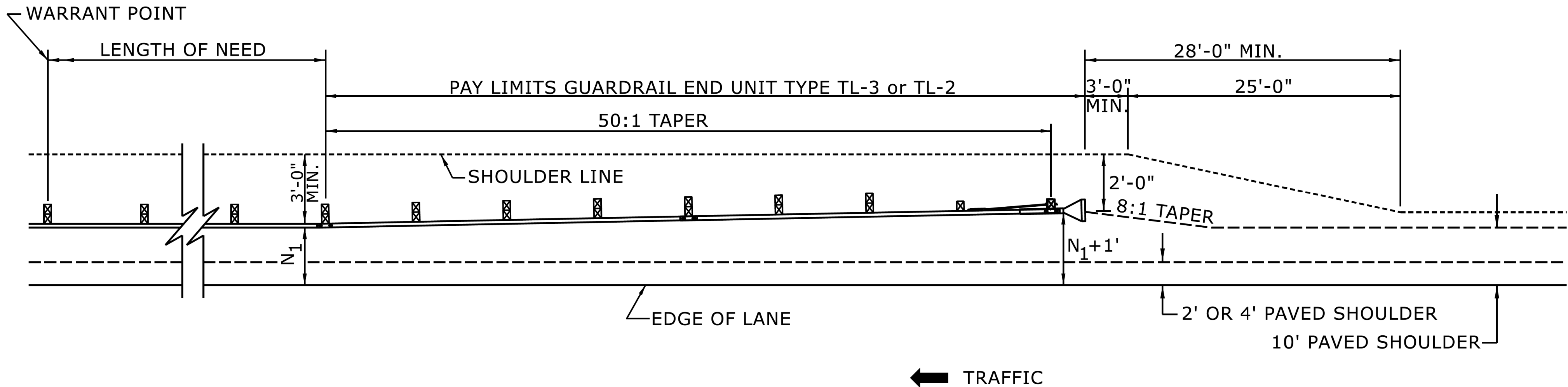


FILL SECTION



CUT SECTION

"N₁" = DISTANCE FROM EDGE OF LANE TO FACE OF GUARDRAIL WHERE GUARDRAIL IS PARALLEL TO LANE.



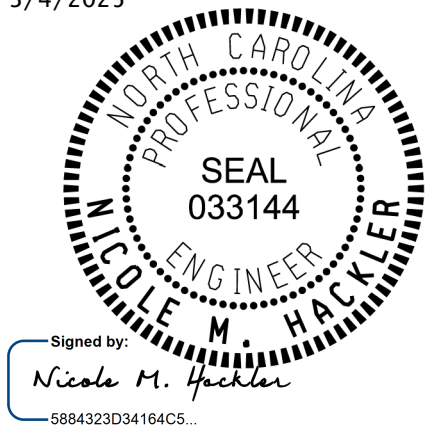
FOR POSTED SPEEDS ≥ 45mph USE GREU TYPE TL-3
FOR POSTED SPEEDS < 45mph USE GREU TYPE TL-2

DETAIL OF BEGINNING OF GUARDRAIL IN CUT OR FILL SECTION

ROADWAY DETAIL DRAWING FOR
GUARDRAIL PLACEMENT

SHEET 6 OF 15
862D01

3/4/2025



Signed by:
Nicole M. Hacker
588432034164CS

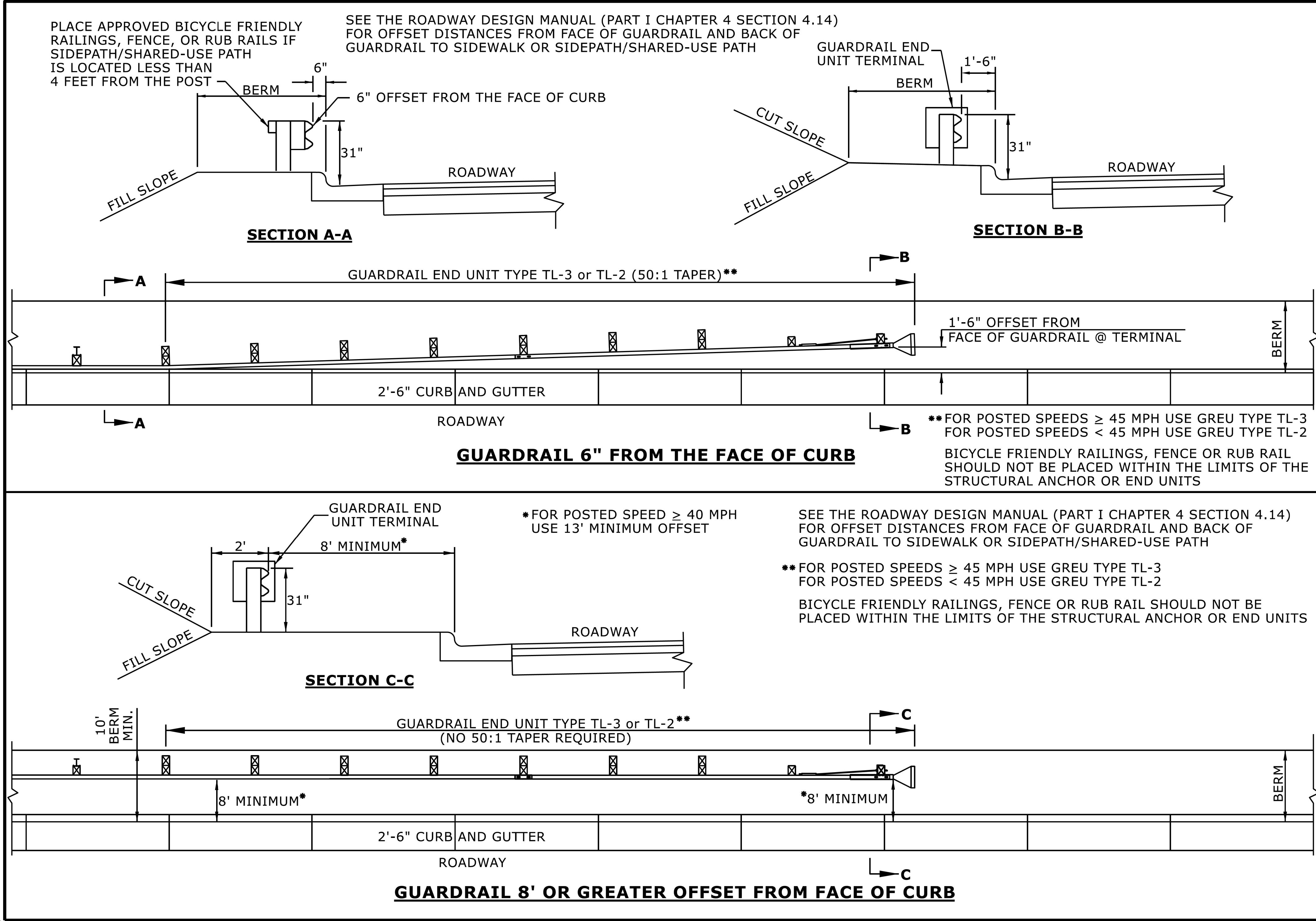
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ORIGINAL BY: S.CALHOUN DATE: 7-25-2024
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PROJECT REFERENCE NO.	SHEET NO.



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

ROADWAY DETAIL DRAWING FOR
GUARDRAIL PLACEMENT
GUARDRAIL TREATMENT AT CURB AND GUTTER

SHEET 12 OF 15
862D01

3/4/2025



Signed by:
Nicole M. Hacker
5884323D34164C5...

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Office 919-707-6950		FAX 919-250-4119	
SEE TITLE BLOCK			
ORIGINAL BY:	<u>S.CALHOUN</u>	DATE:	<u>7-25-2024</u>
MODIFIED BY:	<u> </u>	DATE:	<u> </u>
CHECKED BY:	<u> </u>	DATE:	<u> </u>
FILE SPEC.:	<u> </u>		<u> </u>

BR-0015
FINAL 2C-6

NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
DAVIDSON COUNTY

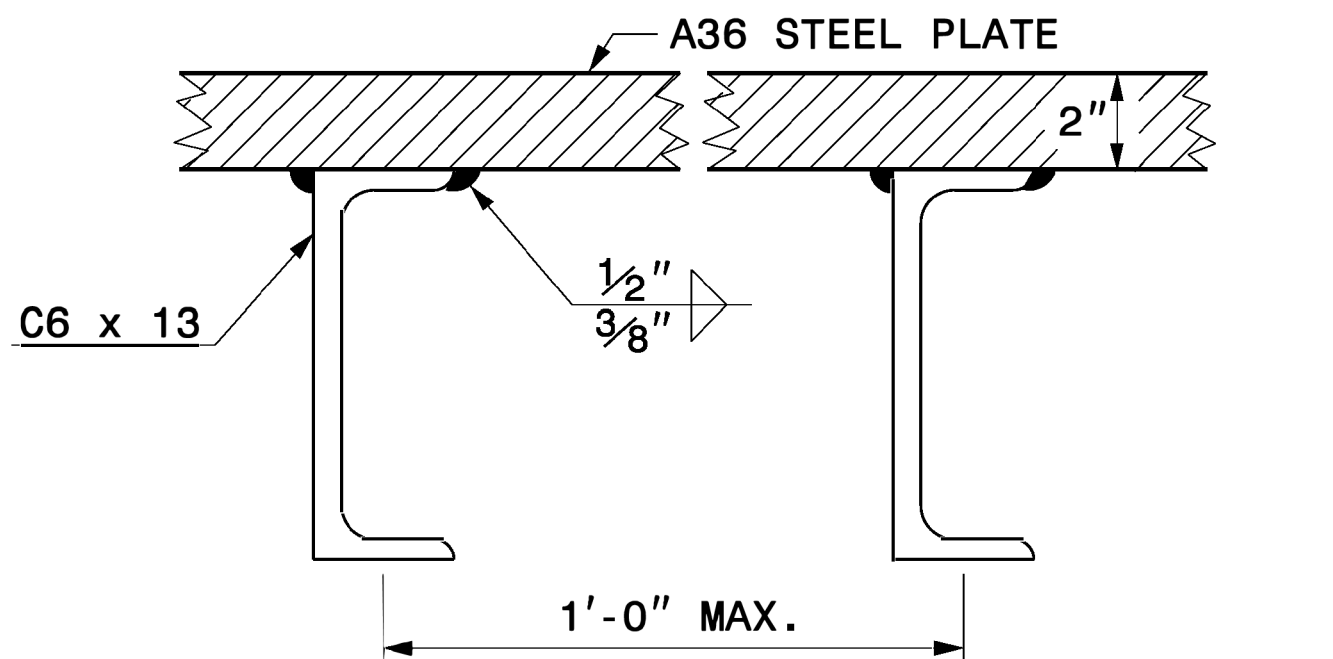
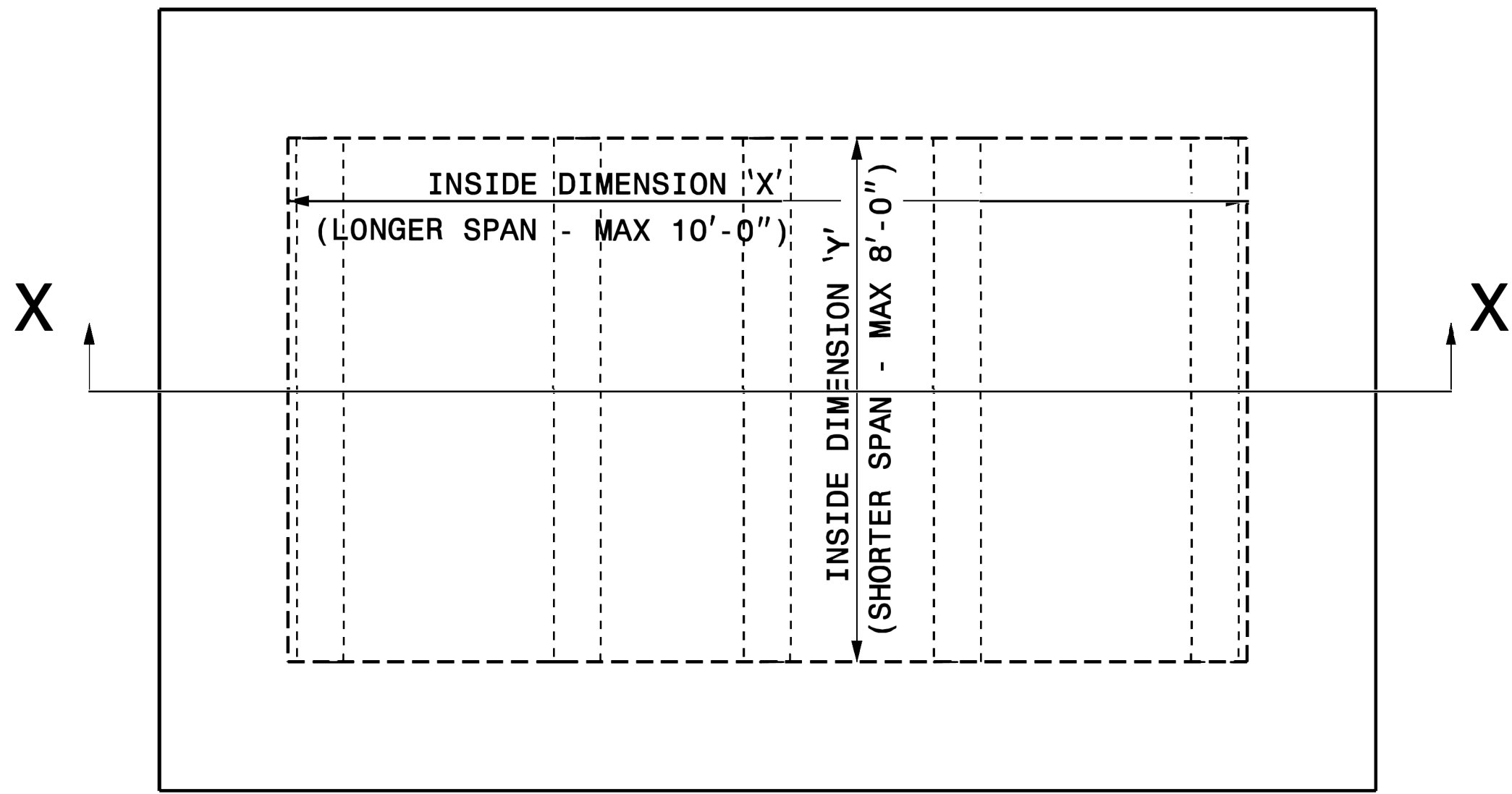
HIGHWAY DIVISION 9

PREPARED BY

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KISINGER CAMPO
& ASSOCIATES
NC FIRM LICENSE No: C-1506
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Raleigh, NC 27601
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SECTION VIEW OF STEEL TOP PLATE

WELDS SHALL BE AS SPECIFIED BY AWS

GENERAL NOTES:

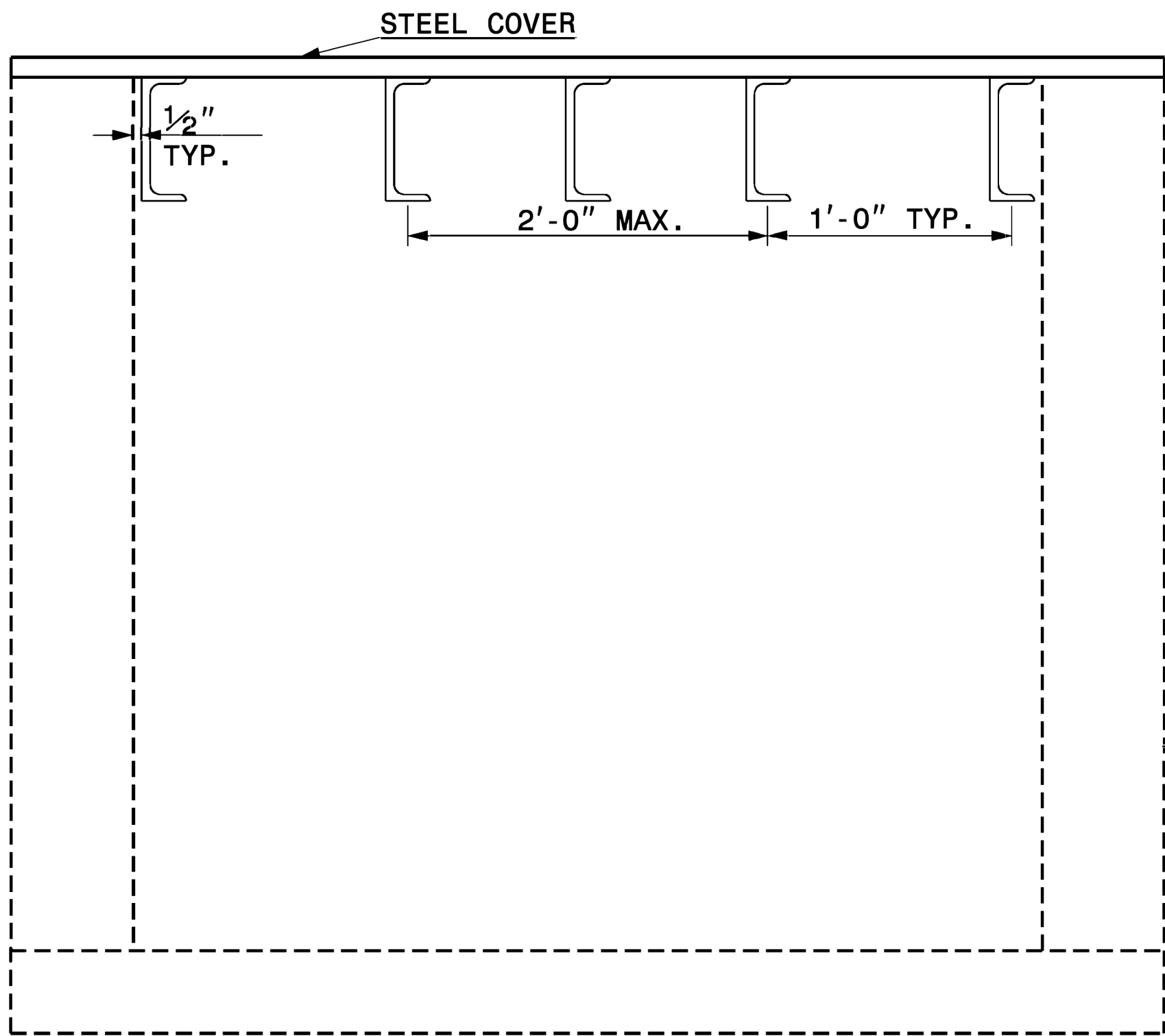
THE DIMENSIONS FOR THE EXISTING BOXES ARE APPROXIMATE AND MAY VARY SLIGHTLY.

ORIENT C CHANNELS TO RUN PERPENDICULAR TO TRAFFIC

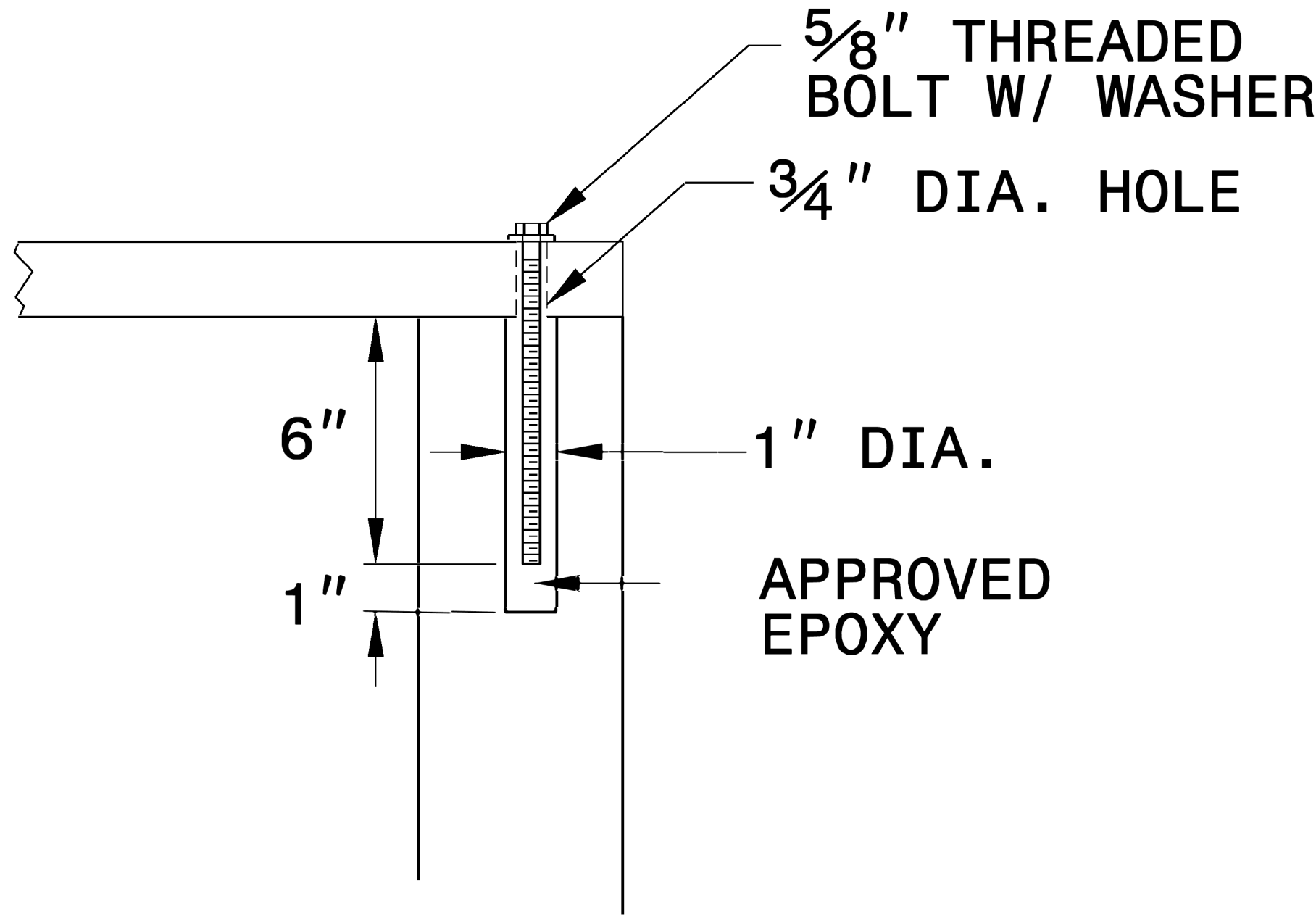
PLACE ANCHOR BOLTS IN ALL 4 CORNERS OF THE DRAINAGE STRUCTURE

ADD ANCHOR BOLTS IN THE MIDDLE OF WALLS AS DIRECTED BY THE ENGINEER

GALVANIZE STEEL PLATE, C CHANNELS AND ANCHOR BOLTS IN ACCORDANCE WITH SEC. 1076 OF THE STANDARD SPECS.



SECTION X-X



4/7/2025



Signed by:
Nicole M. Hecker
5884323034164CS

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

**DETAIL TO CONVERT EXISTING
DROP INLET OR CATCH BASIN
TO TBJB WITH STEEL PLATE**

ORIGINAL BY: _____ DATE: _____
MODIFIED BY: _____ DATE: _____
CHECKED BY: _____ DATE: _____
FILE SPEC.: _____

REVISIONS

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FINAL20-7

NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
DAVIDSON COUNTY

HIGHWAY DIVISION 9

PREPARED BY

KCA

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& ASSOCIATES

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Raleigh, NC 27601
(919) 882-7839

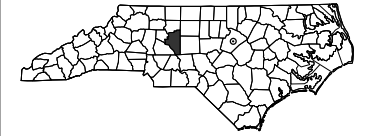
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PROJECT REFERENCE NO.	SHEET NO.

BR-0015

FINAL20-8

NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
DAVIDSON COUNTY



HIGHWAY DIVISION 9

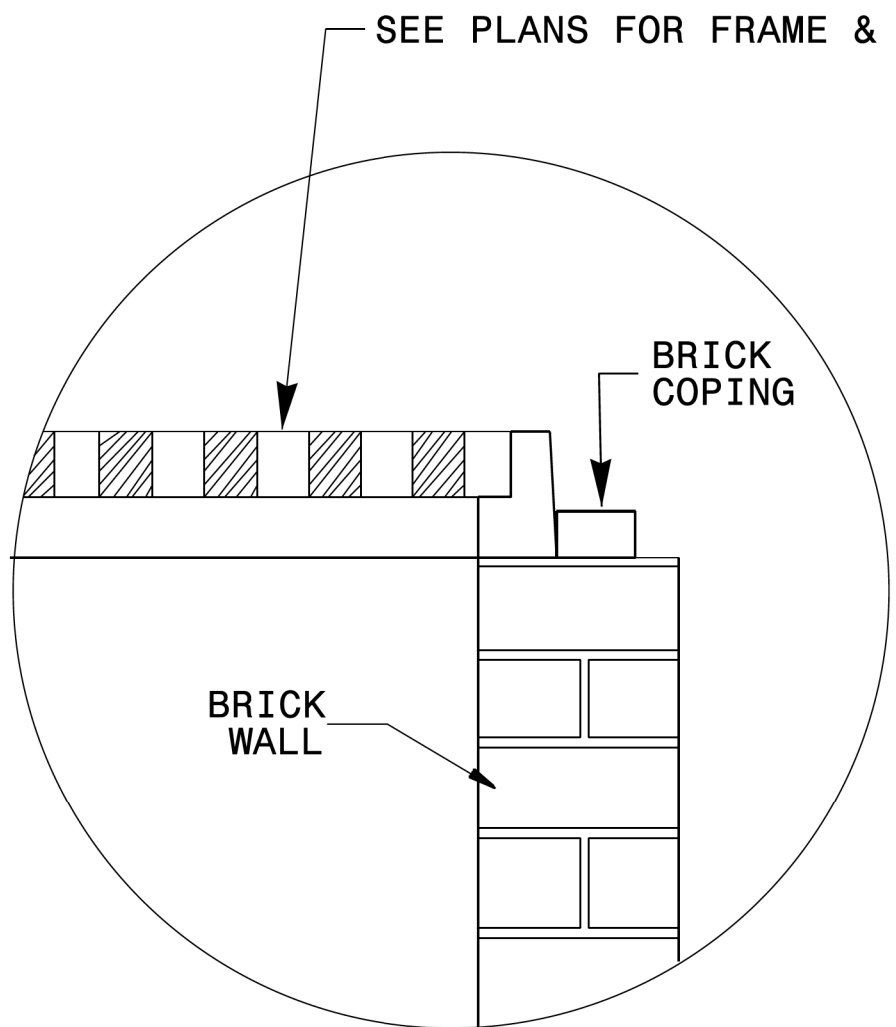
PREPARED BY

KCA

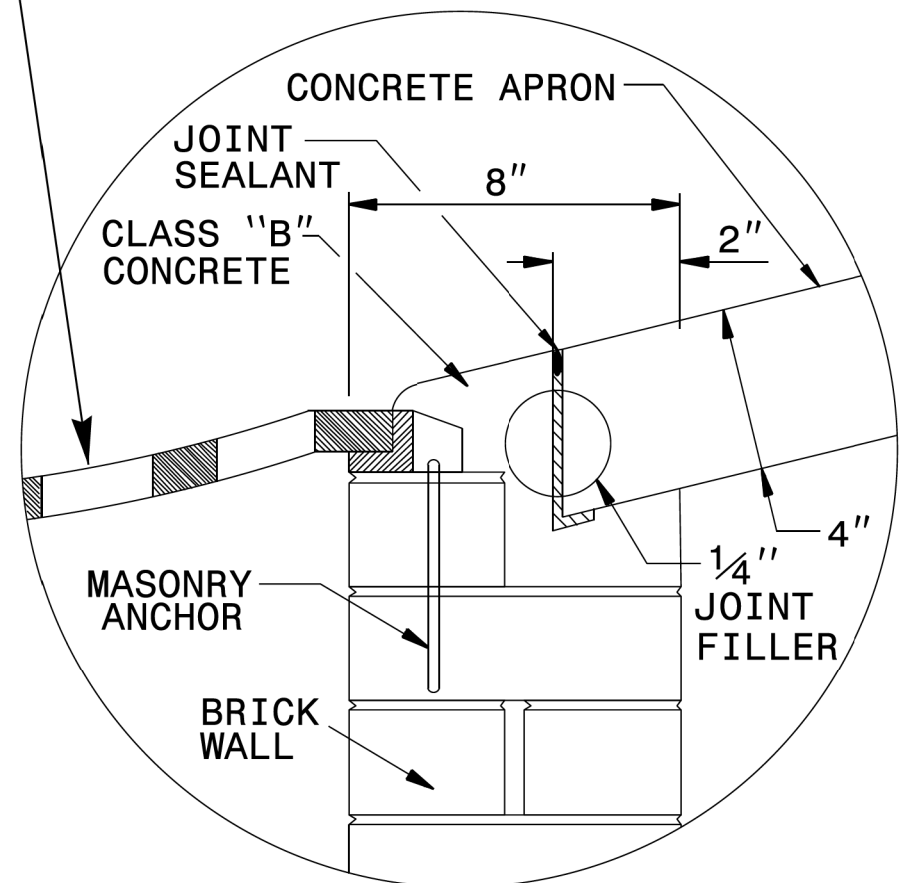
KISINGER CAMPO
& ASSOCIATES

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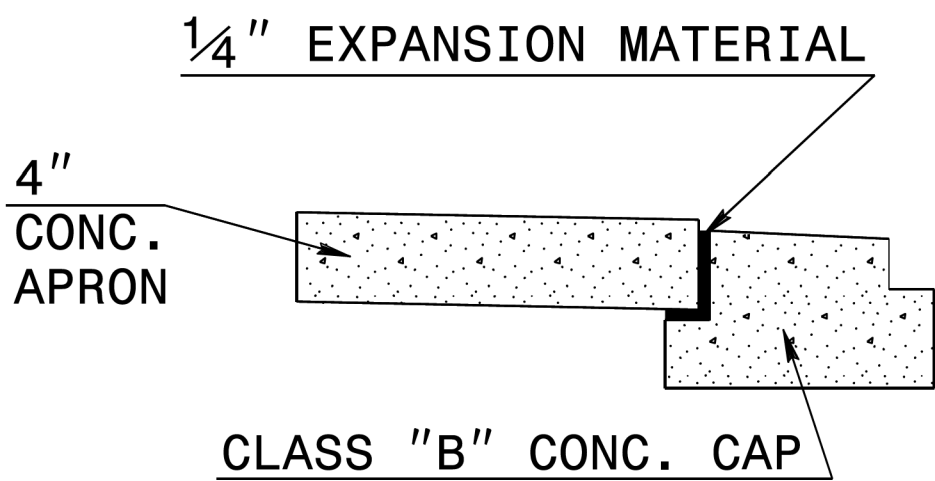
GRATE PLACEMENT DETAIL
FOR DROP INLETS



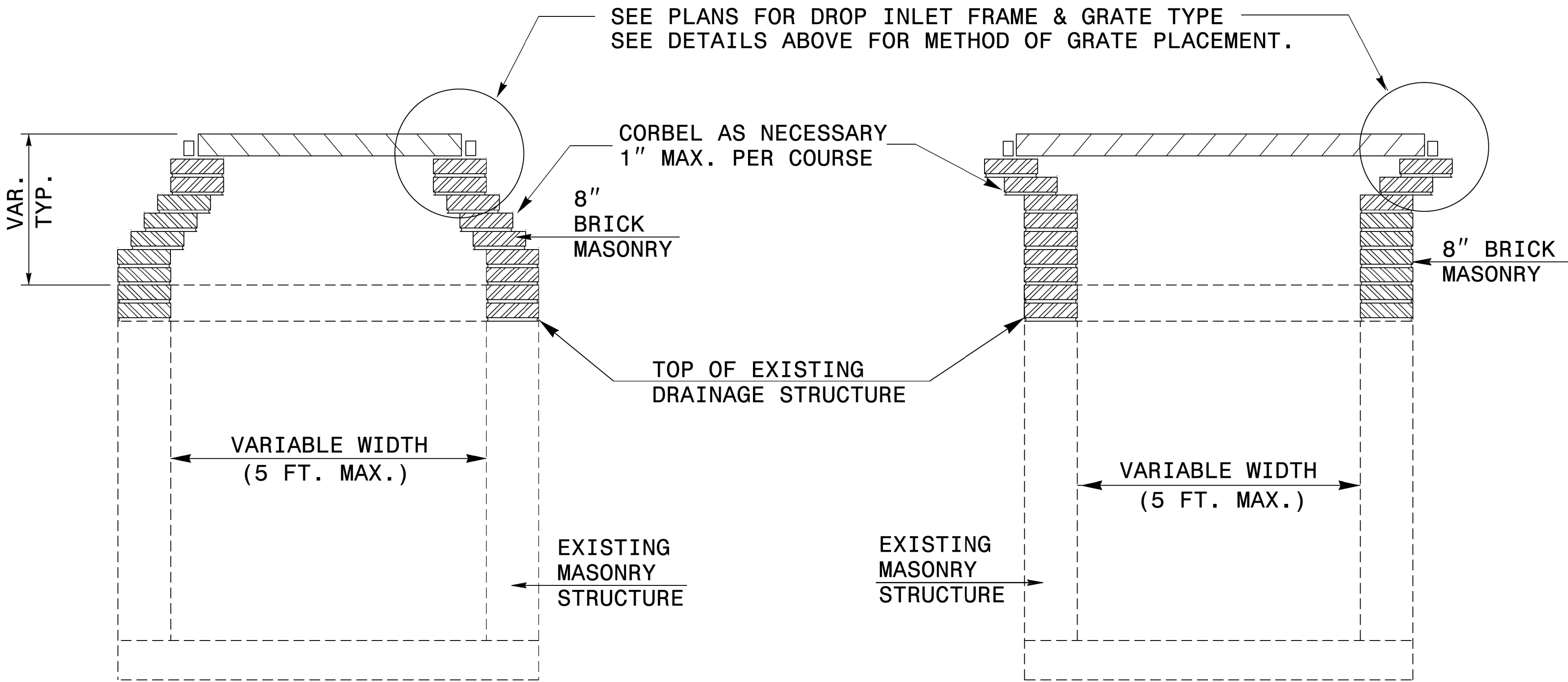
GRATE PLACEMENT DETAIL
FOR GRATED DROP INLETS

GENERAL NOTES:

- CONSTRUCT IN ACCORDANCE WITH SECTION 859 OF THE STANDARD SPECIFICATIONS.
- USE CLASS B CONCRETE.
- THE DIMENSIONS FOR THE EXISTING BOXES ARE APPROXIMATE AND MAY VARY SLIGHTLY.
- JUMBO CONCRETE BRICK WILL BE PERMITTED. 4" CONCRETE BRICK OR 8" SOLID CONCRETE BLOCK ARE REQUIRED FOR DRAINAGE STRUCTURE.
- INCLUDE 18" CONCRETE APRON IN UNIT PRICE BID PER EACH, CONVERT EXISTING CATCH BASIN TO DROP INLET.
- SPECIAL DESIGN IS REQUIRED FOR USE UNDER PAVEMENT.
- CONFIRM DIMENSIONS ON EACH INDIVIDUAL FRAME & GRATE PROPOSAL.
- SEE STD. DRAWING 840.25 FOR MASONRY ANCHORAGE.



EXPANSION JOINT DETAIL



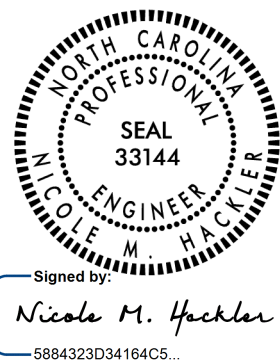
TYPICAL SECTION

EXISTING
MASONRY
STRUCTURE

VARIABLE WIDTH
(5 FT. MAX.)

TYPICAL SECTION

4/7/2025



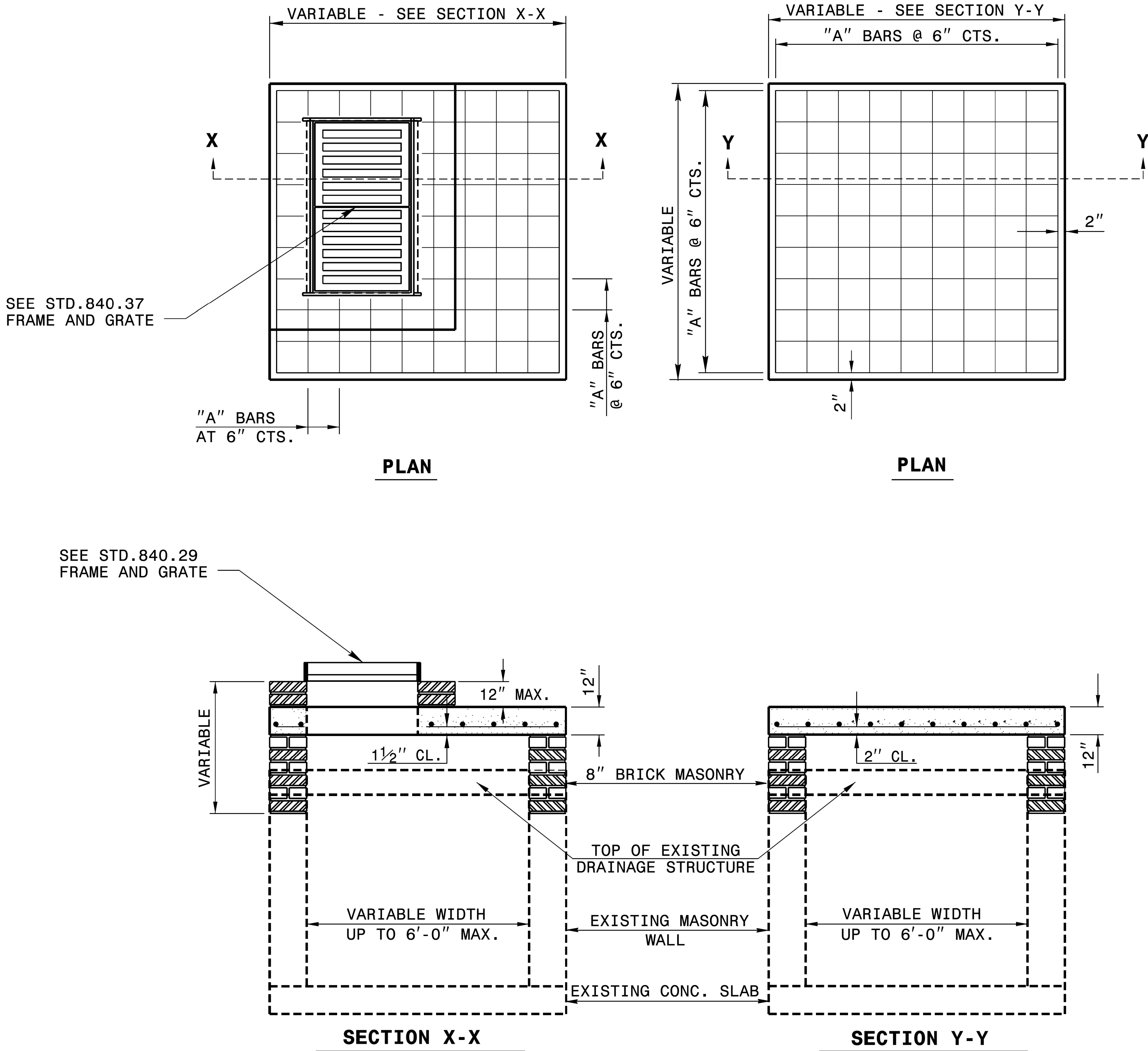
**CONTRACT STANDARDS
AND DEVELOPMENT UNIT**
Office 919-707-6950 FAX 919-250-4119

**DETAIL TO CONVERT
EXISTING CATCH BASIN OR
JUNCTION BOX TO DI OR 2-GI**

ORIGINAL BY: T.S.S. DATE: NOV. 1997
MODIFIED BY: T.S.S. DATE: FEB. 2000
CHECKED BY: DATE:
FILE SPEC.: s:\usr\details\stand\cbtod102.dgn

REVISIONS

Q5-DEC-2018 15:01
S:\Contracts\Special Details\rnbritt\english\hydro\Convert CB or JB to D1.dgn
Jhowerton AT CSU-292595



GENERAL NOTES:

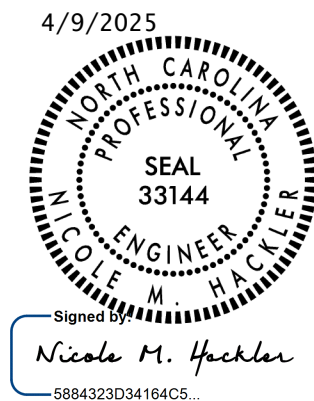
CONSTRUCT IN ACCORDANCE WITH SECTION 859
OF THE STANDARD SPECIFICATIONS.

FIELD VERIFY THE DIMENSIONS FOR THE
EXISTING BOXES

DETAIL INTENDED FOR TRAFFIC
BEARING DRAINAGE STRUCTURES.

BILL OF MATERIALS				
REINFORCING STEEL				
CODE	SIZE	QTY.	LENGTH	REINF. STEEL LBS.
A	#4	20	4'-6"	60.12
B	#4	8	1'-1"	5.79
TOTAL				65.91 *
MASONRY				CU YDS
TOP SLAB CONCRETE CLASS "B"				.433 *
BRICK MASONRY PER FT HT (MIN)				.4111

* NOTE:
QUANTITIES BASED ON 3'-6" X 3'-6"
DRAINAGE STRUCTURE. ADJUST QUANTITIES
FOR LARGER STRUCTURES AND MANHOLE
CONSTRUCTION.



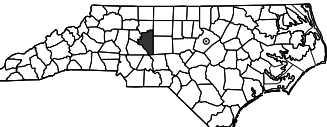
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UNLESS ALL SIGNATURES COMPLETED

CONTRACT STANDARDS AND DEVELOPMENT UNIT	
Office 919-707-6950	FAX 919-250-4119
DETAIL TO CONVERT EXISTING DRAINAGE STRUCTURE TO TRAFFIC BEARING 2-GI	
ORIGINAL BY: _____	DATE: _____
MODIFIED BY: _____	DATE: _____
CHECKED BY: _____	DATE: _____
FILE SPEC.: details/rnbritt/english/hydro/convjbto2gi.dgn	

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FINAL20-9

NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
DAVIDSON COUNTY



HIGHWAY DIVISION 9

PREPARED BY

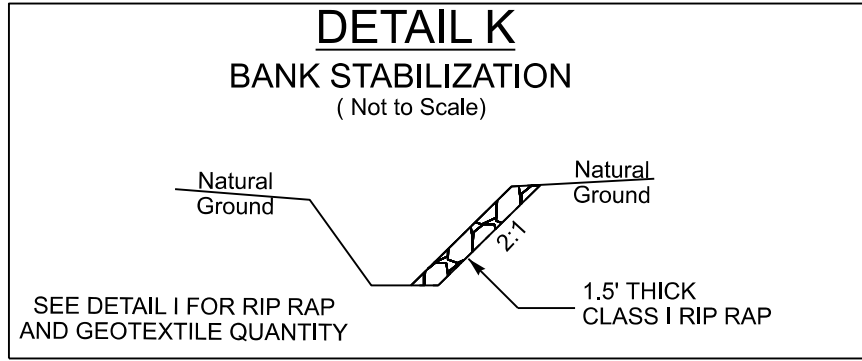
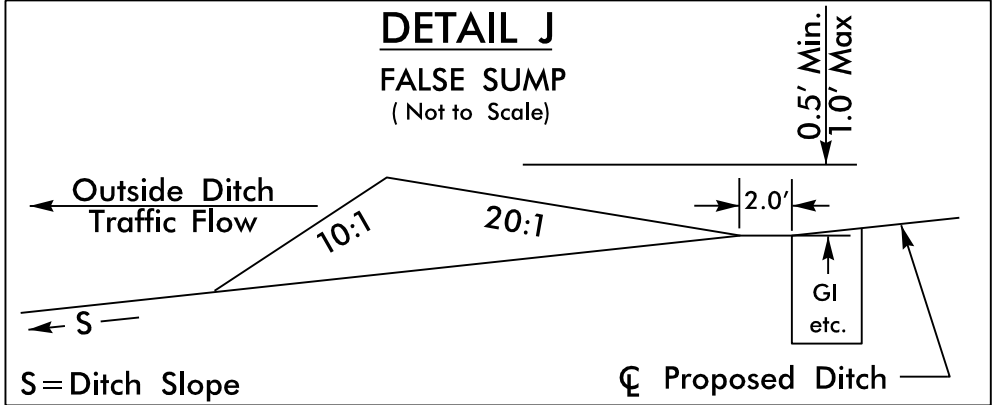
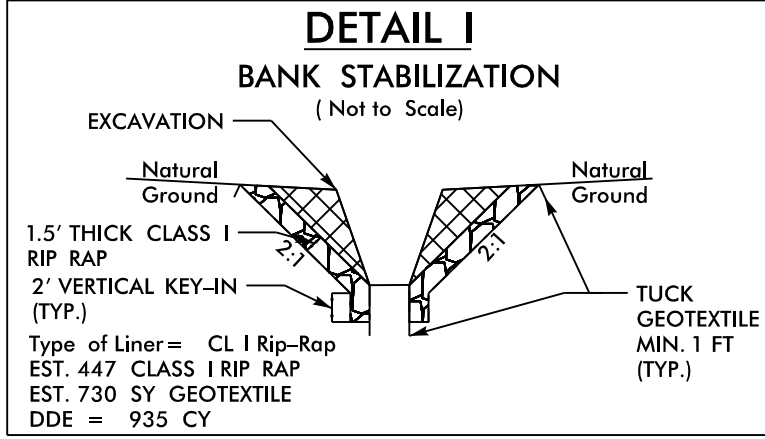
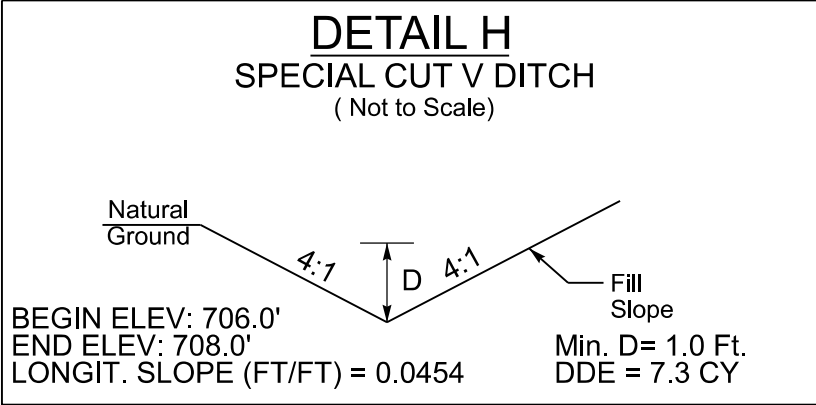
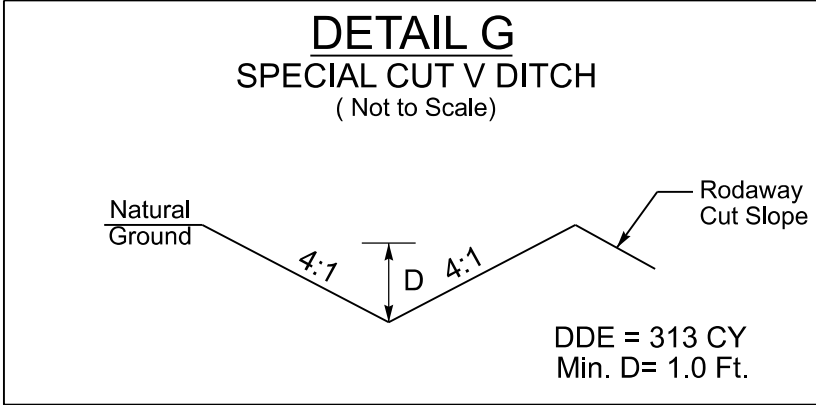
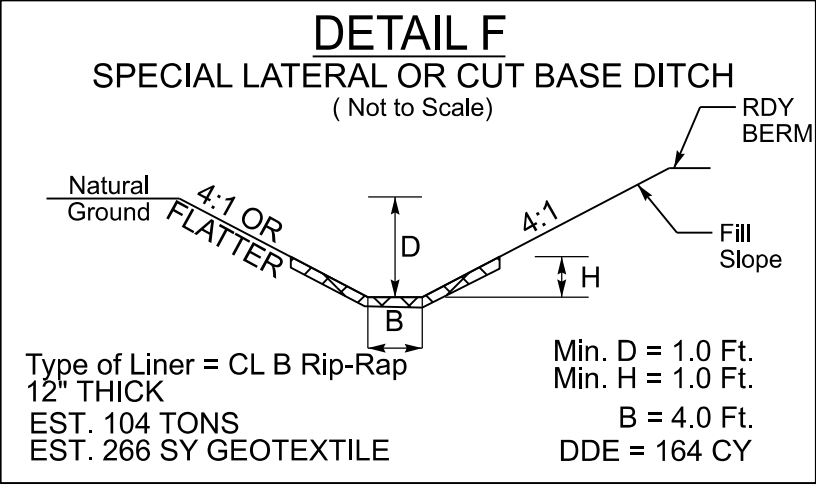
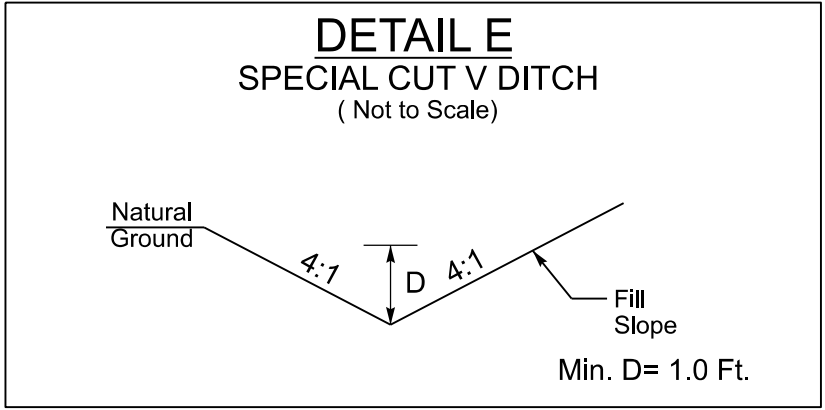
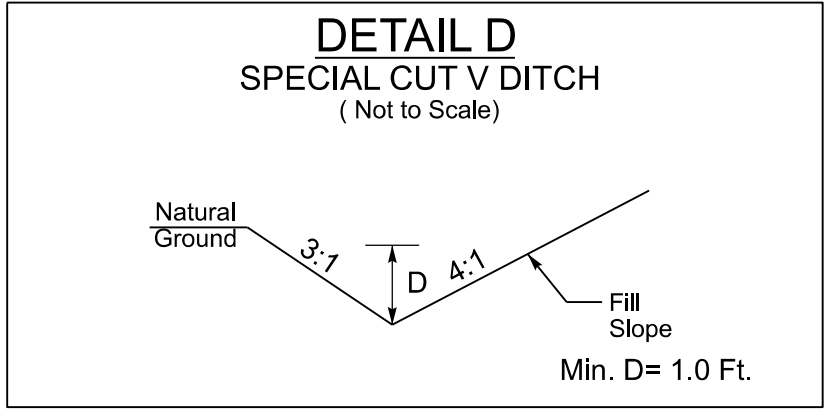
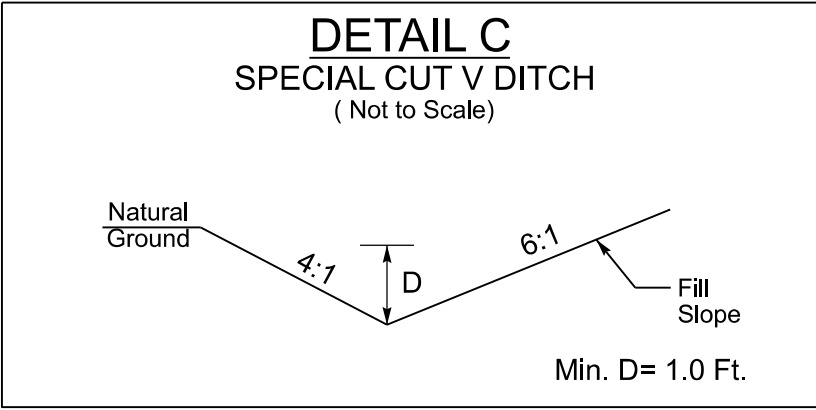
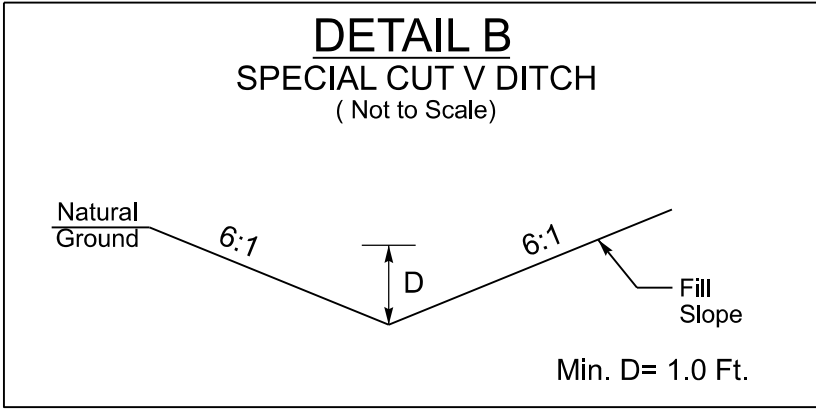
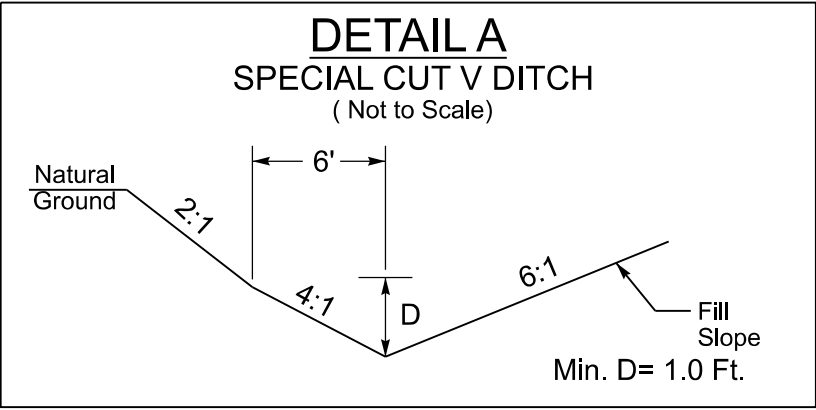
KCA

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REVISIONS



STA.
-Y1- 17+47 TO 18+65 RT.

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FINAL2D-1

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DEPARTMENT OF TRANSPORTATION
DAVIDSON COUNTY

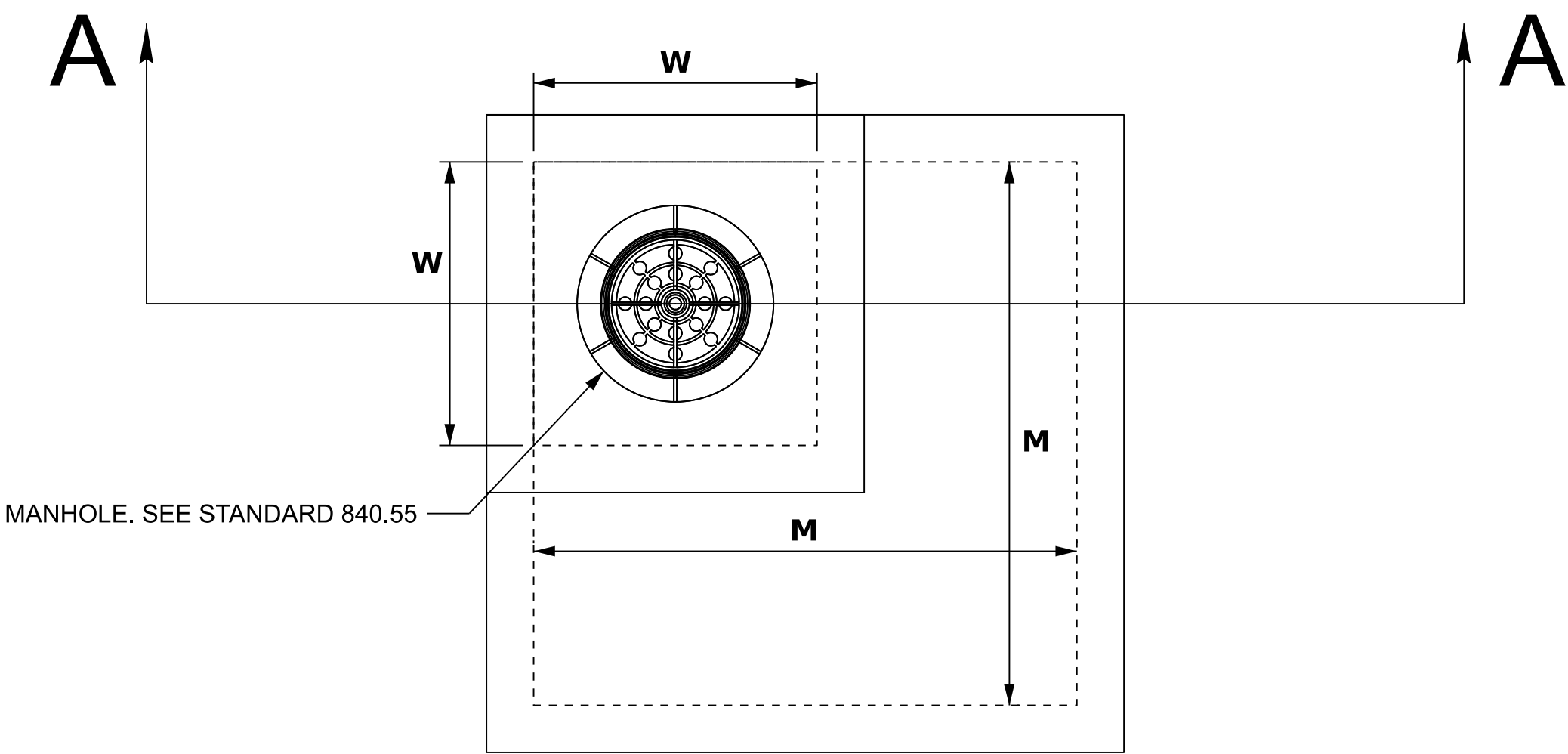
HIGHWAY DIVISION 9

4/7/2025

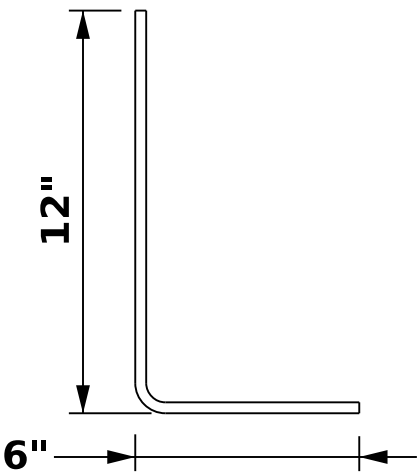
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NC FIRM LICENSE No: C-1508
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REVISIONS

SPECIAL DETAIL FOR OTCB WITH 54" PIPE



PLAN



DOWEL - A

NOTES: USE CLASS "B" CONCRETE THROUGHOUT.

PROVIDE ALL CATCH BASINS OVER 3'-6" IN DEPTH WITH STEPS 12" ON CENTER. USE STEPS WHICH COMPLY WITH STD. DRAWING 840.66.

USE #4 BAR DOWELS AT 12" CENTERS.

USE FORMS FOR THE CONSTRUCTION OF THE BOTTOM SLAB.

IF REINFORCED CONCRETE PIPE IS SET IN BOTTOM SLAB OF BOX, ADD TO SLAB AS SHOWN ON STD. NO. 840.00.

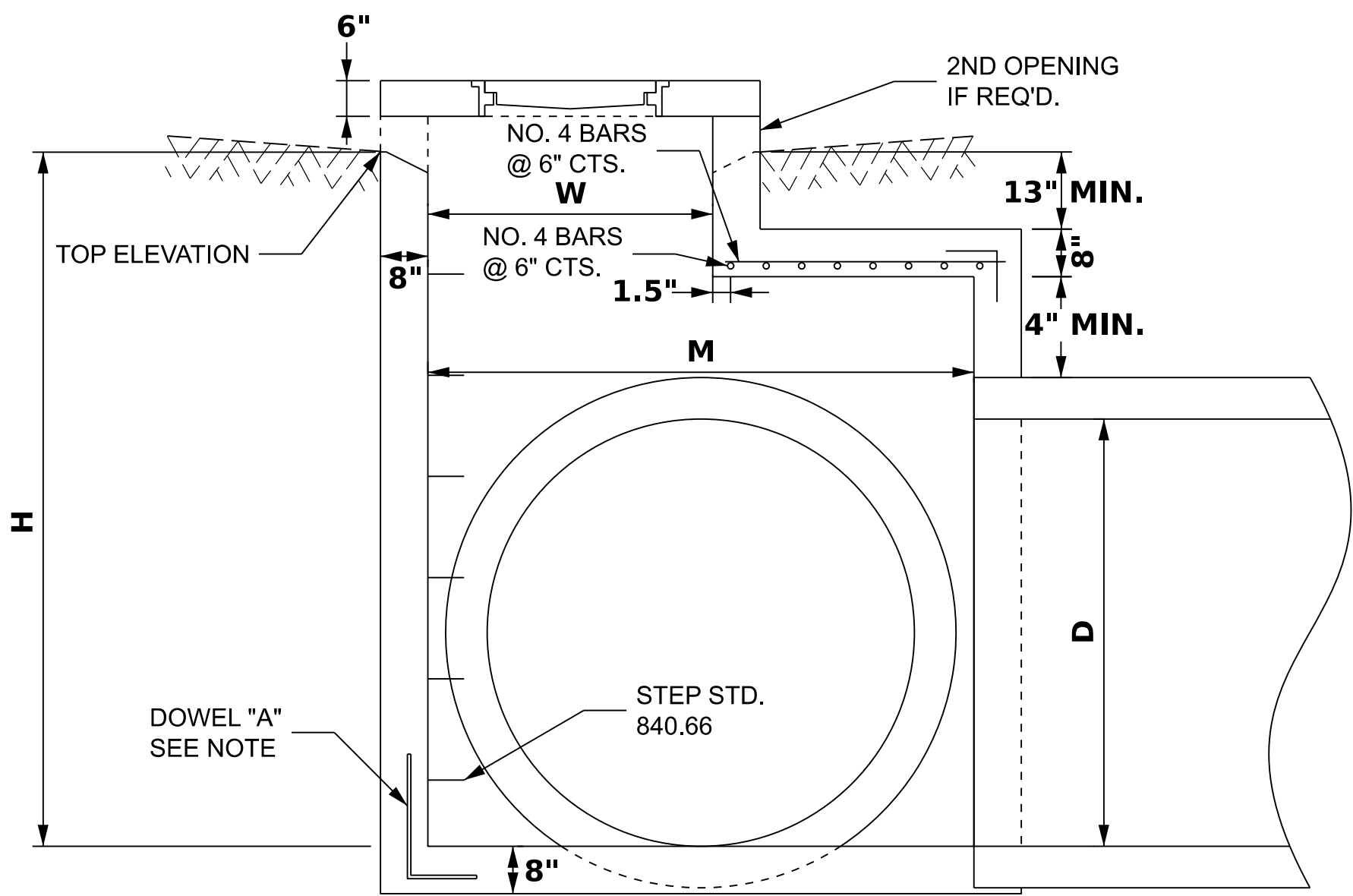
FOR 8'-0" IN HEIGHT OR LESS USE 6" WALLS AND BOTTOM SLAB. OVER 8'-0" TO 16'-0" IN HEIGHT USE 8" WALLS AND BOTTOM SLAB. ADJUST QUANTITIES ACCORDINGLY.

MAX. DEPTH OF THIS STRUCTURE FROM TOP OF BOTTOM SLAB TO TOP ELEVATION IS 16'-0. STD. DWG. 840.45 OR 840.46 CONTROLS MAX. DEPTH IF PRECAST BOX IS USED.

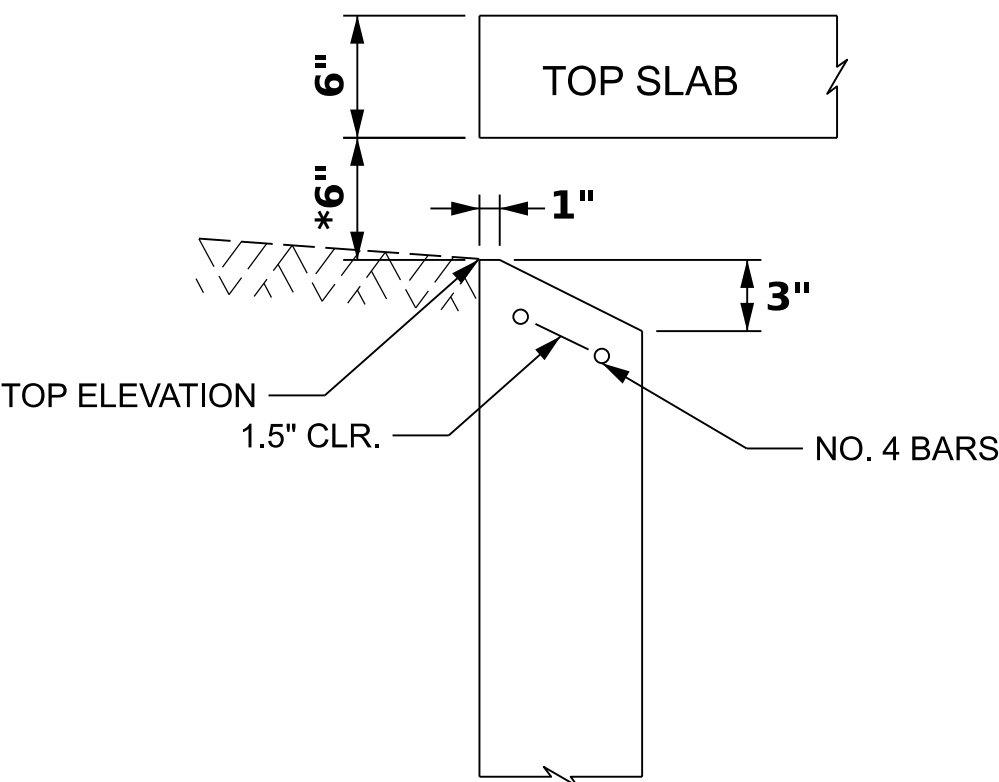
CHAMFER ALL EXPOSED CORNERS 1".

DRAWING NOT TO SCALE.

*INCREASE THE SIZE OF THE 6" OPENING TO 8" MAX., AS DIRECTED BY THE ENGINEER BY ADDING 2" TO THE WALL HIEGHT ABOVE THE TOP ELEVATION. ADJUST QUANTITIES ACCORDINGLY.



SECTION A-A



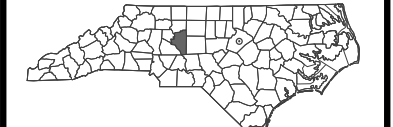
OPEN THROAT SECTION

MINIMUM DIMENSIONS			
STRUCTURE NUMBER	DIMENSIONS OF BOX		
	WIDTH	WIDTH	HEIGHT
	W	M	H
0520	4'	6'	13.5'

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FINAL20-2

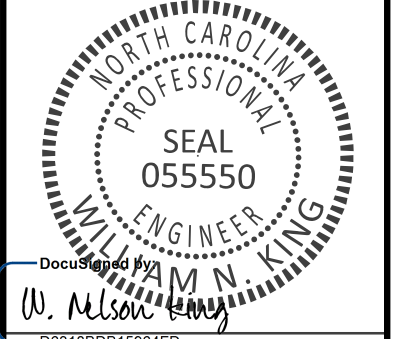
NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
DAVIDSON COUNTY



HIGHWAY DIVISION 9

HYDRAULICS
ENGINEER

4/7/2025



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W. N. Kisinger

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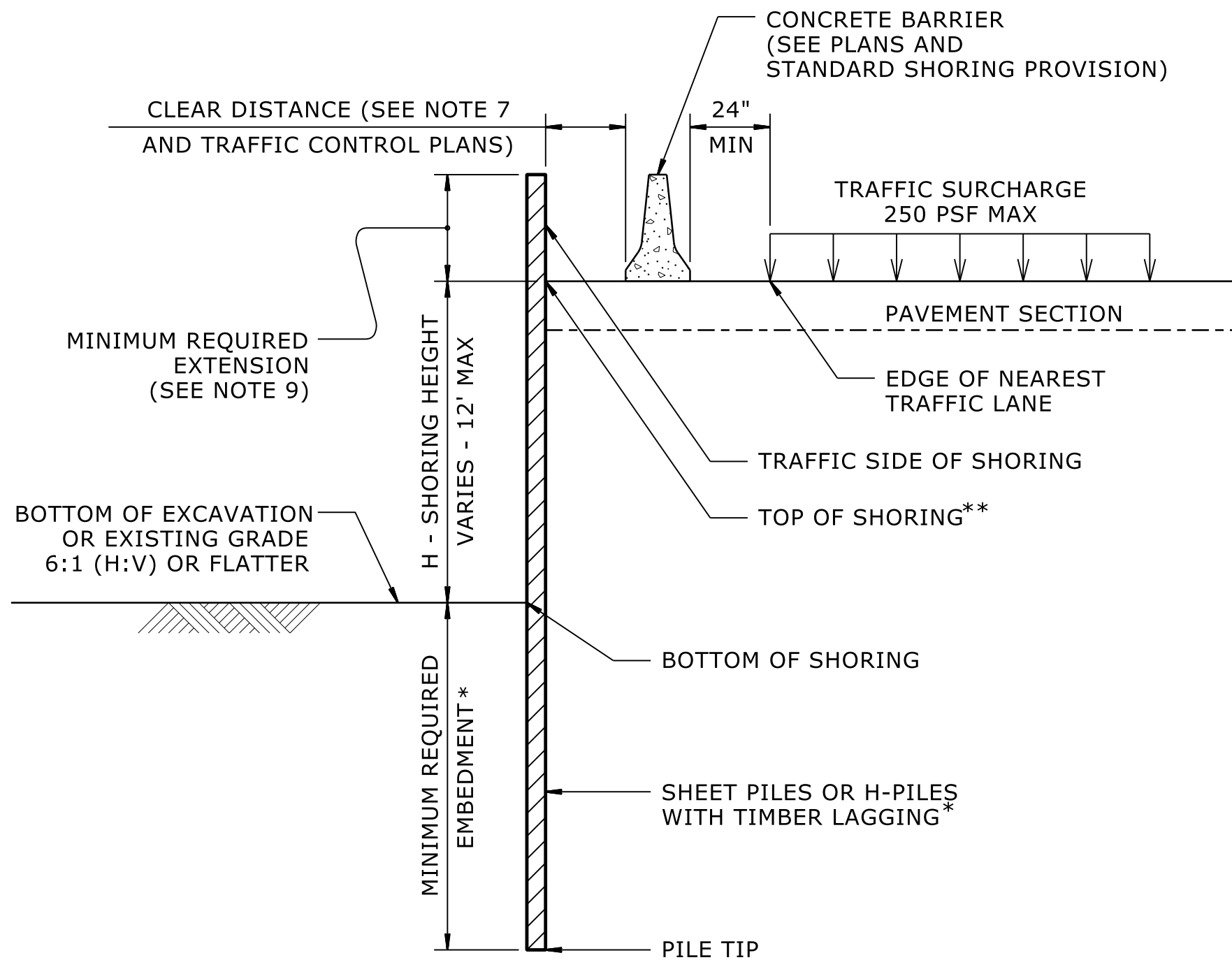
GROUNDWATER CONDITION (SEE NOTE 6)	H SHORING HEIGHT (FT)	SLOPE OR SURCHARGE CASE WITH NO TRAFFIC IMPACT					SURCHARGE CASE WITH TRAFFIC IMPACT				
		SHEET PILES		H-PILES WITH TIMBER LAGGING			SHEET PILES		H-PILES WITH TIMBER LAGGING		
		MINIMUM REQUIRED EMBEDMENT (FT)	MINIMUM REQUIRED SECTION MODULUS (IN ⁴ /FT)	MINIMUM REQUIRED EMBEDMENT * (FT) (SEE NOTE 10)			MINIMUM REQUIRED EMBEDMENT (FT)	MINIMUM REQUIRED SECTION MODULUS (IN ⁴ /FT)	MINIMUM REQUIRED EMBEDMENT * (FT) (SEE NOTE 10)		
GROUNDWATER ELEVATION BETWEEN BOTTOM OF SHORING AND PILE TIP	< 6	11.5	4.5	11.5	11.5	11.5	16.0	12.0	13.0	13.0	13.0
	7	13.0	7.0	13.0	13.0	13.0	17.0	14.5	14.5	14.5	14.5
	8	15.0	10.0	--	15.0	15.0	18.0	17.0	--	15.5	15.5
	9	17.0	14.0	--	17.0	17.0	19.0	20.0	--	17.0	17.0
	10	18.5	19.5	--	--	18.5	20.0	23.5	--	--	18.5
	11	20.5	26.0	--	--	--	21.0	28.0	--	--	20.0
	12	22.5	33.0	--	--	--	22.0	33.0	--	--	21.5
GROUNDWATER ELEVATION BELOW PILE TIP	< 6	7.5	3.0	8.0	8.0	8.0	11.0	10.0	9.5	9.5	9.5
	7	8.5	4.5	9.5	9.5	9.5	12.0	12.0	10.5	10.5	10.5
	8	10.0	6.5	10.5	10.5	10.5	12.5	14.0	11.5	11.5	11.5
	9	11.0	9.5	--	12.0	12.0	13.5	16.5	--	12.5	12.5
	10	12.5	13.0	--	--	13.5	14.0	19.5	--	13.5	13.5
	11	13.5	17.0	--	--	14.5	15.0	22.5	--	--	14.5
	12	15.0	21.5	--	--	16.0	16.0	25.5	--	--	15.5

MINIMUM REQUIRED EMBEDMENT AND SECTION MODULUS

*DO NOT USE H-PILES WITH TIMBER LAGGING FOR GROUNDWATER CONDITION, SHORING HEIGHT AND H-PILE SIZE SHOWN IF MINIMUM REQUIRED EMBEDMENT IS "---".

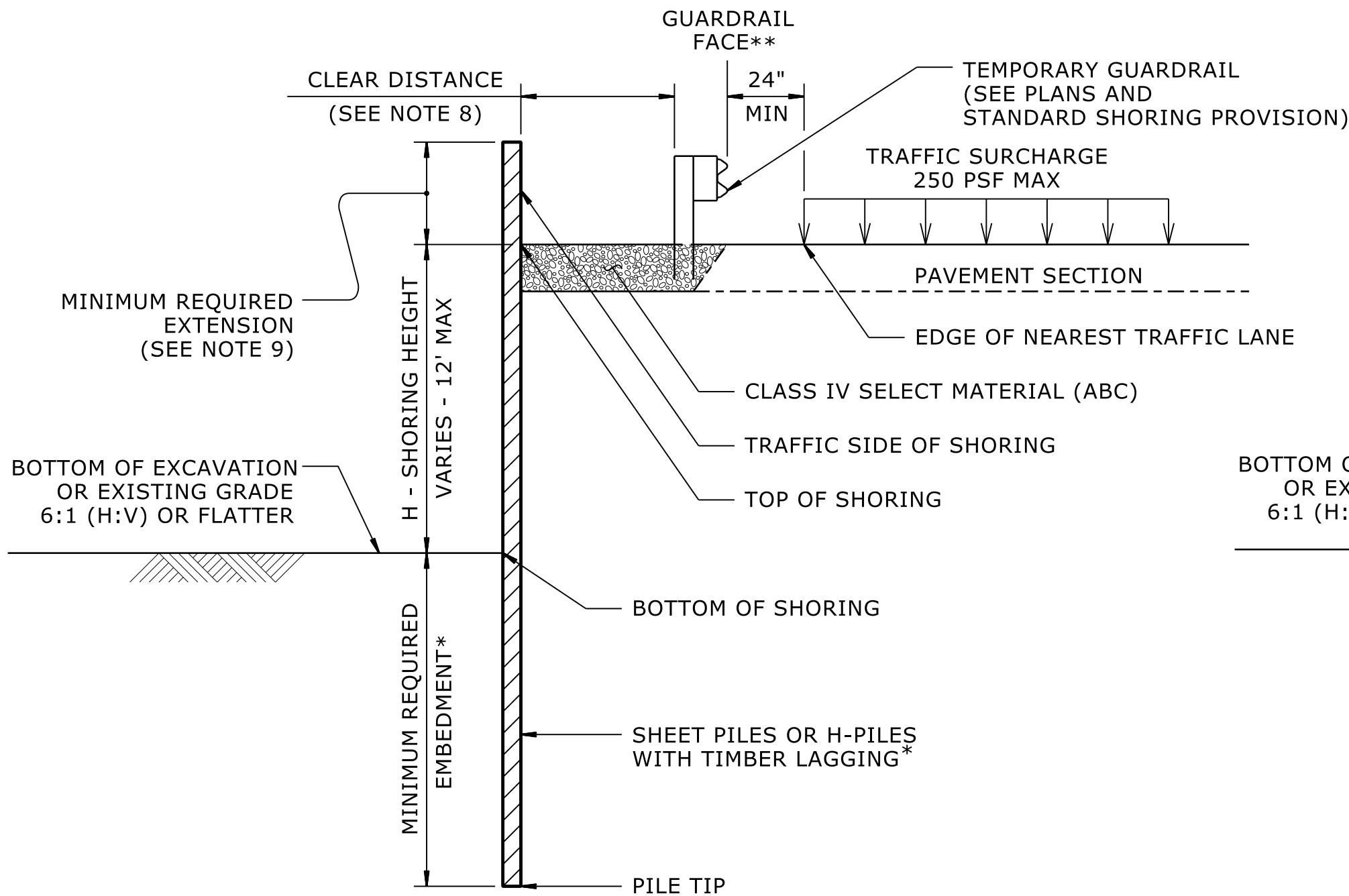
NOTES:

1. AT THE CONTRACTOR'S OPTION, USE STANDARD TEMPORARY SHORING AS NOTED IN THE PLANS.
2. FOR STANDARD TEMPORARY SHORING, SEE STANDARD SHORING PROVISION.
3. STANDARD TEMPORARY SHORING IS BASED ON THE FOLLOWING IN-SITU ASSUMED SOIL PARAMETERS:
UNIT WEIGHT, γ = 120 PCF
FRICTION ANGLE, ϕ = 30 DEGREES
COHESION, c = 0 PSF
4. DO NOT USE STANDARD TEMPORARY SHORING IF ASSUMED SOIL PARAMETERS ARE NOT APPLICABLE.
5. DO NOT USE STANDARD TEMPORARY SHORING WHEN VERY LOOSE OR SOFT SOIL OR MUCK IS WITHIN THE EMBEDMENT DEPTH.
6. USE GROUNDWATER ELEVATION NOTED IN THE PLANS. IF NO GROUNDWATER ELEVATION IS SHOWN IN THE PLANS, USE "GROUNDWATER ELEVATION BETWEEN BOTTOM OF SHORING AND PILE TIP" FOR GROUNDWATER CONDITION. DO NOT USE STANDARD TEMPORARY SHORING IF GROUNDWATER IS ABOVE BOTTOM OF SHORING.
7. AT THE CONTRACTOR'S OPTION OR IF AVAILABLE CLEAR DISTANCE IS LESS THAN THE MINIMUM REQUIRED FOR CONCRETE BARRIER, SET BARRIER NEXT TO AND UP AGAINST TRAFFIC SIDE OF PILES AND USE "SURCHARGE CASE WITH TRAFFIC IMPACT".
8. AT THE CONTRACTOR'S OPTION OR IF AVAILABLE CLEAR DISTANCE IS LESS THAN 4' FOR TEMPORARY GUARDRAIL, ATTACH GUARDRAIL TO TRAFFIC SIDE OF PILES AS SHOWN IN THE PLANS AND USE "SURCHARGE CASE WITH TRAFFIC IMPACT".
9. MINIMUM REQUIRED EXTENSION IS 6" FOR "SLOPE OR SURCHARGE CASE WITH NO TRAFFIC IMPACT" AND 32" FOR "SURCHARGE CASE WITH TRAFFIC IMPACT".
10. MINIMUM REQUIRED EMBEDMENT FOR H-PILES WITH TIMBER LAGGING IS BASED ON DRIVEN H-PILES AT MAXIMUM 6' SPACING. AT THE CONTRACTOR'S OPTION, EMBEDMENT DEPTHS MAY BE REDUCED BY 25% FOR DRILLED-IN H-PILES.
11. SUBMIT A "STANDARD TEMPORARY SHORING SELECTION FORM" AT LEAST 7 DAYS BEFORE STARTING TEMPORARY SHORING CONSTRUCTION. UP TO 3 SHORING LOCATIONS MAY BE INCLUDED ON EACH FORM. STANDARD SHORING SELECTION FORMS ARE AVAILABLE FROM:
connect.ncdot.gov/resources/Geological/Pages/Geotech_Forms_Details.aspx
12. CONTACT THE ENGINEER IF PILES DO NOT ATTAIN THE MINIMUM REQUIRED EMBEDMENT.



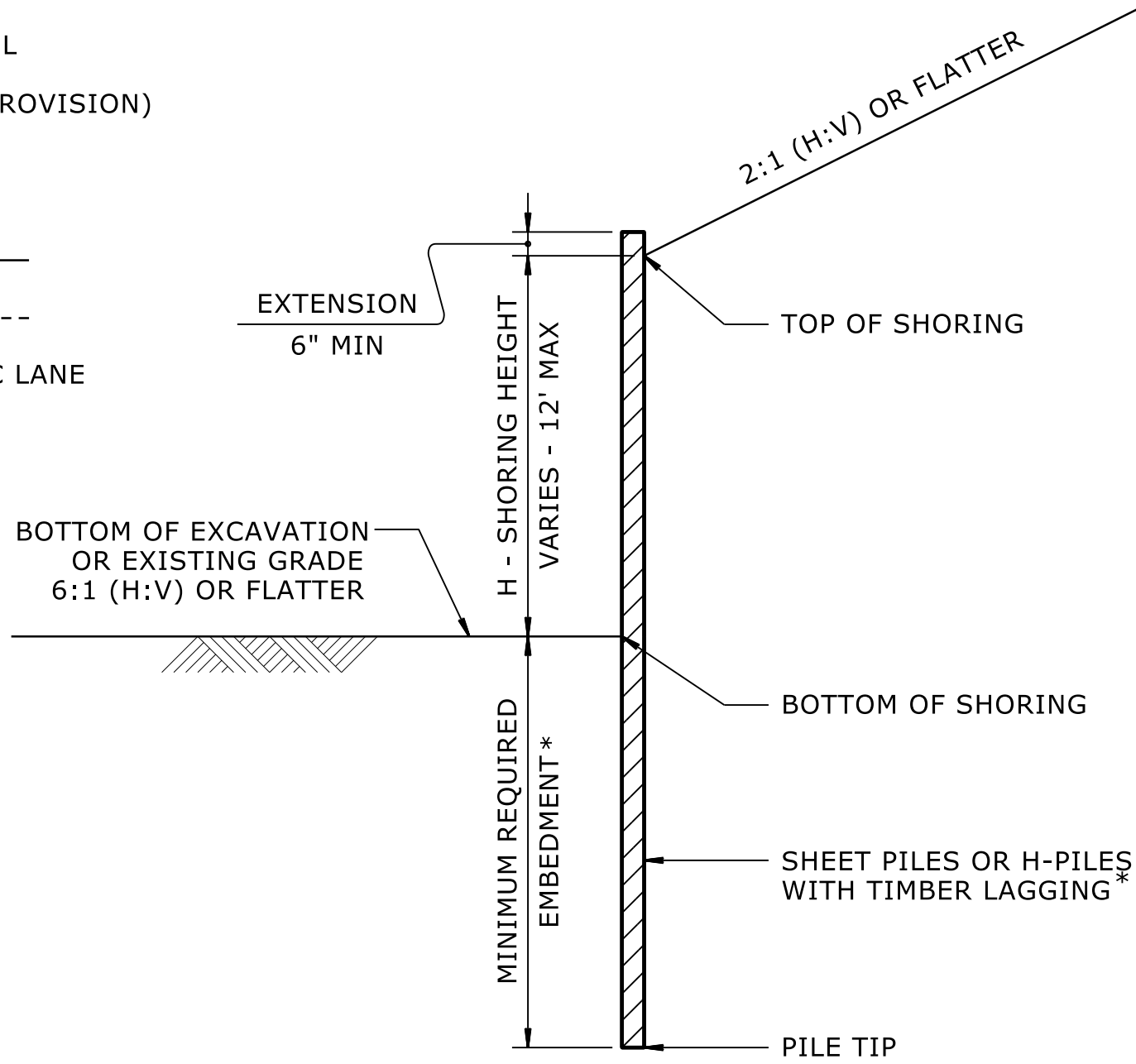
CONCRETE BARRIER

**TOP OF SHORING =
EDGE OF PAVEMENT



TEMPORARY GUARDRAIL

**GUARDRAIL FACE =
EDGE OF PAVEMENT



STANDARD TEMPORARY SHORING

(SLOPE CASE)
*SEE TABLE ABOVE.

STANDARD TEMPORARY SHORING

(SURCHARGE CASE)
*SEE TABLE ABOVE.

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2G-1 -

NORTH CAROLINA
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OF TRANSPORTATION



GEOTECHNICAL
ENGINEERING UNIT

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ENGINEER

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STANDARD
DETAIL NO. 1801.01

GEOTECHNICAL STANDARD DETAIL FOR
TEMPORARY SHORING