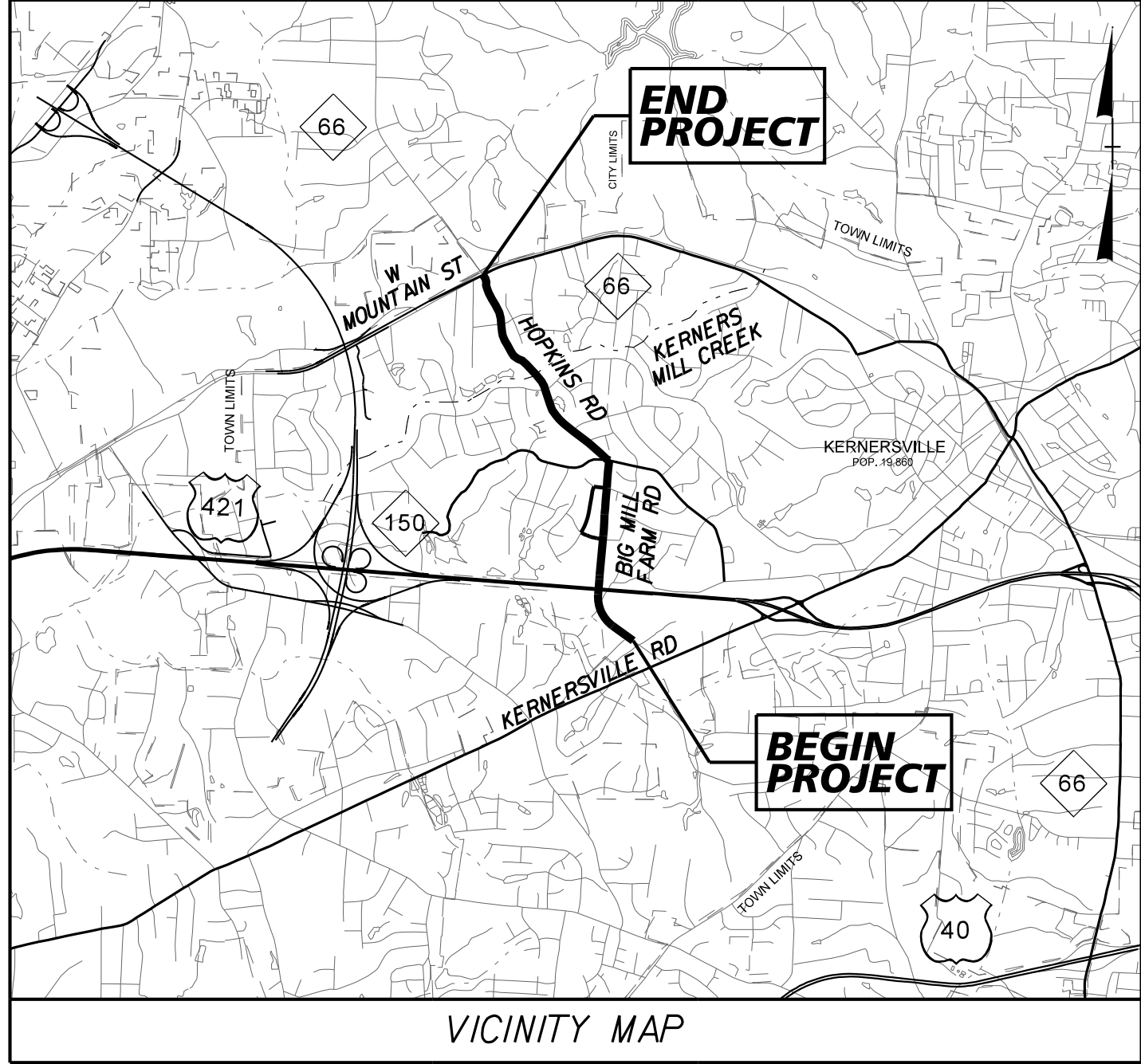


TIP PROJECT: U-5760

CONTRACT: C205012

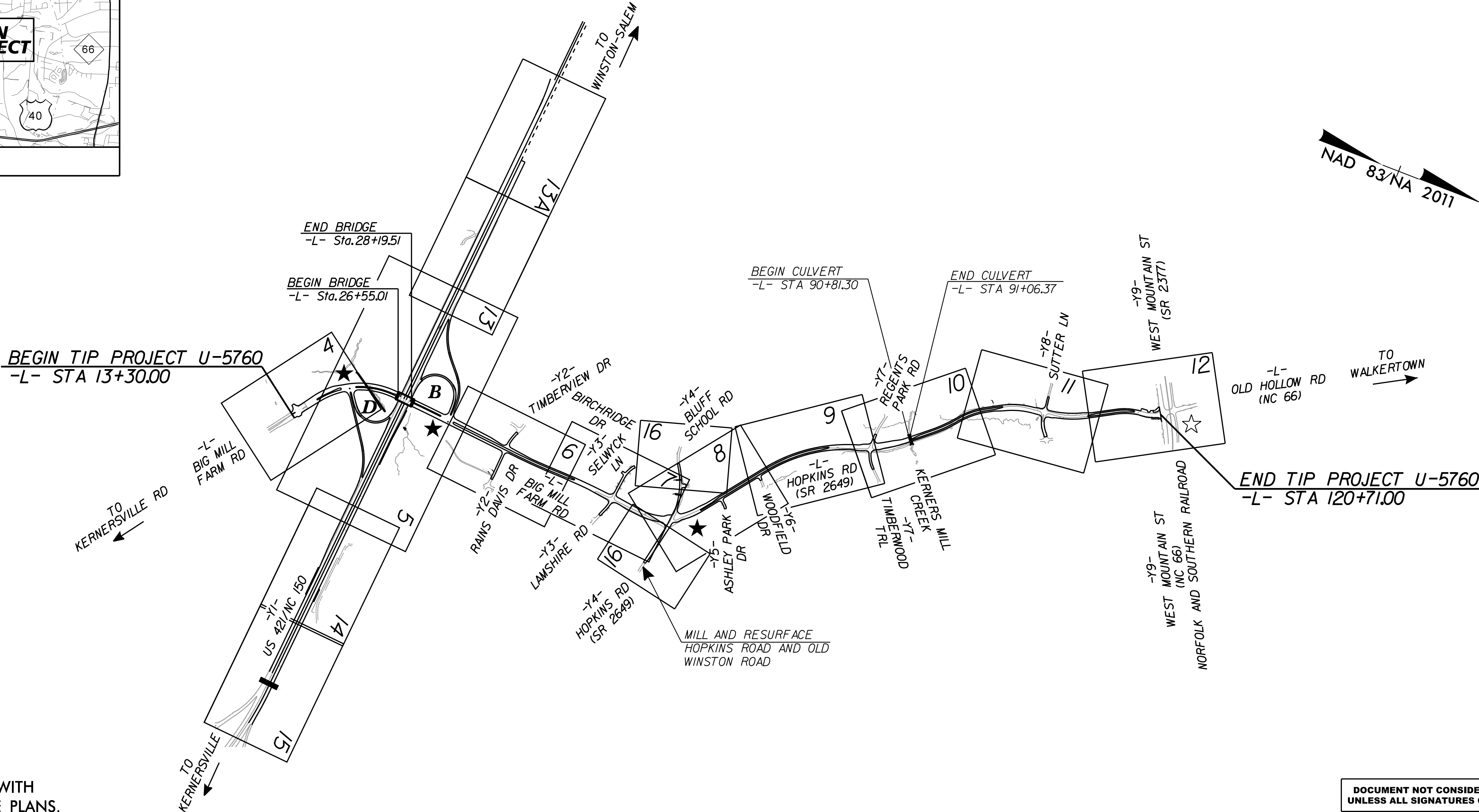
See Sheet 1A For General Notes
See Sheet 1B For Conventional Plan Sheet Symbols



STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

FORSYTH COUNTY

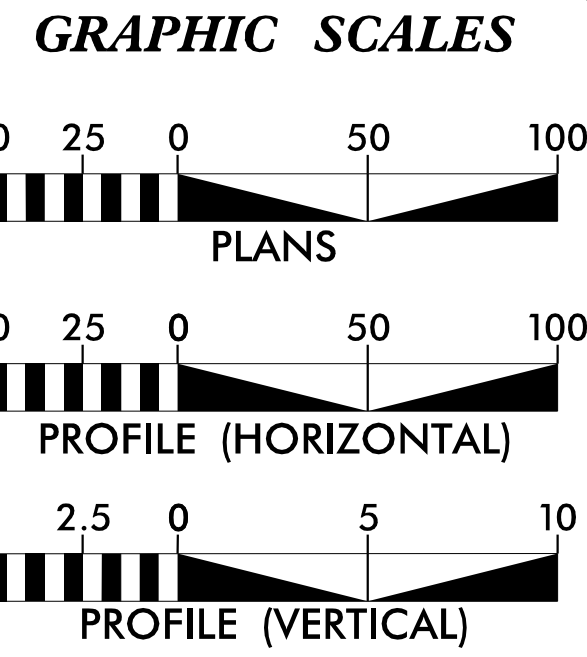
LOCATION: KERNERSVILLE SOUTHERN LOOP, AT US 421 / BUSINESS 40 TO NC 66 (WEST MOUNTAIN STREET) IN KERNERSVILLE. WIDEN BIG MILL FARM ROAD AND SR 2649 (HOPKINS ROAD) AND CONSTRUCT INTERCHANGE AT US 421 / NC 150 / BUSINESS 40
TYPE OF WORK: GRADING, PAVING, DRAINAGE, AND STRUCTURES



- ★ PROPOSED TRAFFIC SIGNAL
- ☆ EXISTING TRAFFIC SIGNAL TO BE MODIFIED

THIS IS A PARTIAL CONTROLLED-ACCESS PROJECT WITH ACCESS LIMITED TO POINTS AS SHOWN ON THE PLANS.

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED



DESIGN DATA	
AADT 2025 =	11,194
AADT 2045 =	16,135
K =	10%
D =	60%
T =	3%*
V =	50 MPH
* (TTST 1% + DUAL 2%)	
FUNCTIONAL CLASSIFICATION:	
URBAN COLLECTOR	
REGIONAL TIER	

PROJECT LENGTH	
LENGTH ROADWAY TIP PROJECT U-5760	= 2.003 MILES
LENGTH STRUCTURES TIP PROJECT U-5760	= 0.031 MILES
TOTAL LENGTH TIP PROJECT U-5760	= 2.034 MILES

PLANS PREPARED FOR
THE NCDOT BY:

Kimley»Horn

Kimley-Horn & Associates, Inc.
401 Fayetteville Street, Suite 400
Raleigh, North Carolina 27601
Phone: (919) 977-0200

2024 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
APRIL 15, 2022

LETTING DATE:
NOVEMBER 18, 2025

EVERETT LOVING, P.E.
PROJECT ENGINEER

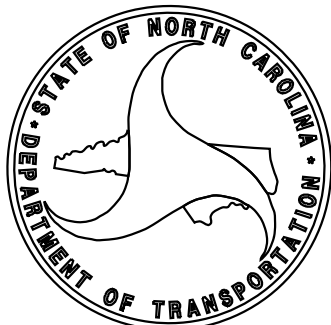
OUSMANE NDIAYE, P.E.
PROJECT DESIGN ENGINEER

W. AL BLANTON, P.E., P.L.S.
TEAM LEAD
NCDOT DIVISION 9

HYDRAULICS ENGINEER

9/11/2025
SIGNATURE: [Signature]
ROADWAY DESIGN ENGINEER

9/11/2025
SIGNATURE: [Signature]



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	
Proposed Shoulder	
Proposed Sidewalk	
Proposed Concrete Island	
Equality Symbol	
Pavement Removal	

VEGETATION:

Single Tree	
Single Shrub	

Woods Line	
Hedge	
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	

NOTES:

1. FOR FILL OR CUT SLOPE HEIGHTS LESS THAN 5', USE 4:1 SLOPES.
2. FOR FILL OR CUT SLOPE HEIGHTS BETWEEN 5' AND 10', USE 3:1 SLOPES.
3. FOR FILL OR CUT SLOPE HEIGHTS GREATER THAN 10', USE 2:1 SLOPES.
2. RETAIN EXIST CONC ISLAND FROM -L- STA 13+30.00 TO 13+66.77.
3. RETAIN EXIST 2'-6" C&G FROM -L- STA 13+30.00 TO 13+80.92 (LT).
4. SEE CROSS-SECTIONS FOR CROSS SLOPES.
5. PAVEMENT EDGE SLOPES 1:1 UNLESS OTHERWISE INDICATED.
6. USE PROPOSED VALLEY GUTTER FROM 13+30.00 TO 13+76.65 RT.
7. SEE STRUCTURES PLANS FOR MORE INFORMATION.
8. DO NOT CONSTRUCT SIDEWALK FROM 13+30.00 TO 14+00.00 LT/RT.
9. USE DETAIL FOR BENCH MILLING ADJACENT TO WIDENING (SEE DETAIL SHEET 2A-2).

5/14/99

REVISIONS

9/22/2025

Kimley»Horn

421 FAYETTEVILLE STREET, SUITE 600
RALEIGH, NC 27601

RIGHT-OF-WAY REV.

CONST. REV.

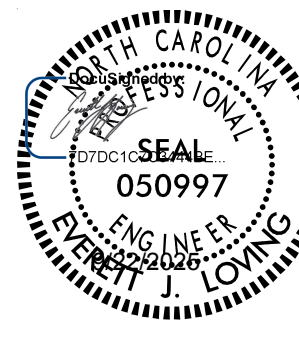
PROJECT REFERENCE NO.

U-5760

SHEET NO.

2A-2

ROADWAY DESIGN
ENGINEER



PAVEMENT DESIGN
ENGINEER

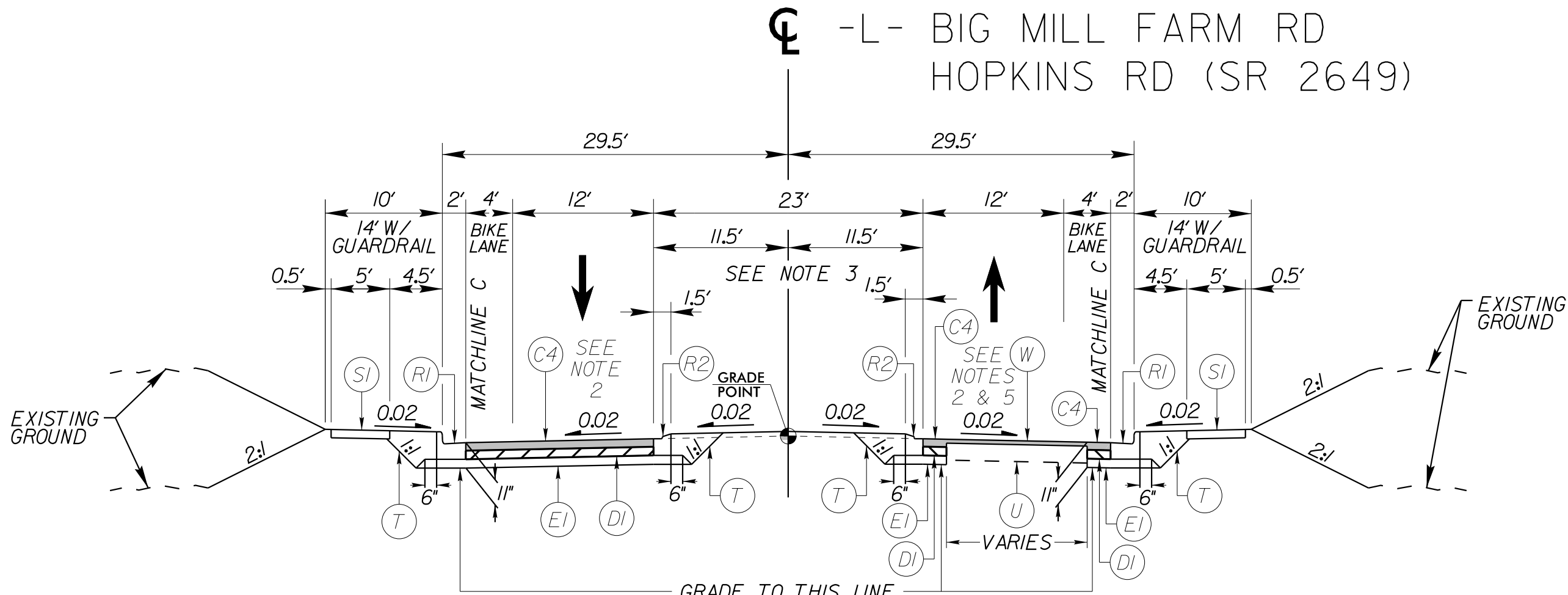


DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

PAVEMENT SCHEDULE

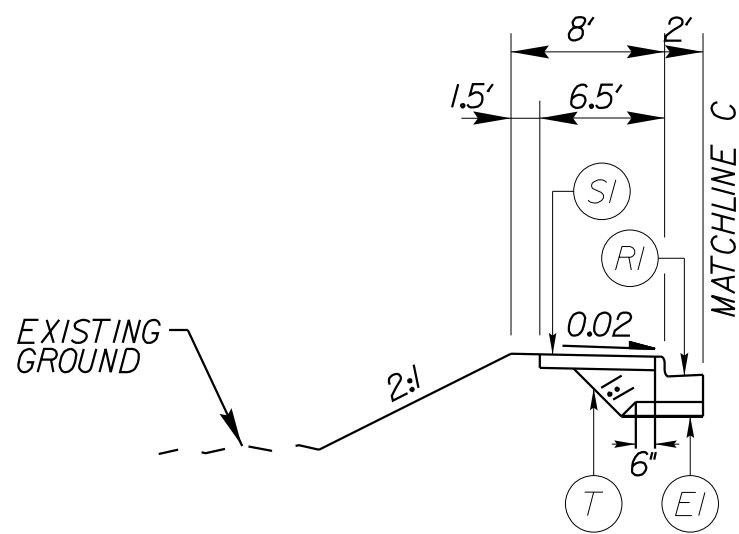
(FINAL PAVEMENT DESIGN)

C1	1.5' S9.5B
C2	1.5' S9.5C
C3	2.5' S9.5B
C4	3' S9.5B
C5	3' S9.5C
C6	VAR. DEPTH S9.5B
C7	VAR. DEPTH S9.5C
D1	4' I19.0C
D2	VAR. DEPTH I19.0C
E1	4' B25.0C
E2	4.5' B25.0C
E3	9.5' B25.0C
E4	VAR. DEPTH B25.0C
J	8' AGGREGATE BASE COURSE
K	12' CLASS IV SUBGRADE STABILIZATION
N	GEOTEXTILE FOR SUBGRADE STABILIZATION
P	PRIME COAT
R1	2'-6" CONCRETE CURB & GUTTER
R2	1'-6" CONCRETE CURB & GUTTER
R3	8' x 12' CURB
R4	SHOULDER BERM GUTTER
R5	EXPRESSWAY GUTTER
R6	VALLEY GUTTER
R7	5' MONOLITHIC CONCRETE ISLAND (KEYED-IN)
R8	SINGLE FACED PRECAST CONCRETE BARRIER
R9	PROPOSED 6' JOINTED CONCRETE WITH WIRE MESH
SI	4' CONCRETE SIDEWALK
S2	SHOULDER RECONSTRUCTION
T	EARTH MATERIAL
U	EXISTING PAVEMENT
VI	MILLING, 1.5' DEPTH
V2	MILLING, 4' DEPTH
W	WEDGING
Y	MILLED RUMBLE STRIPS



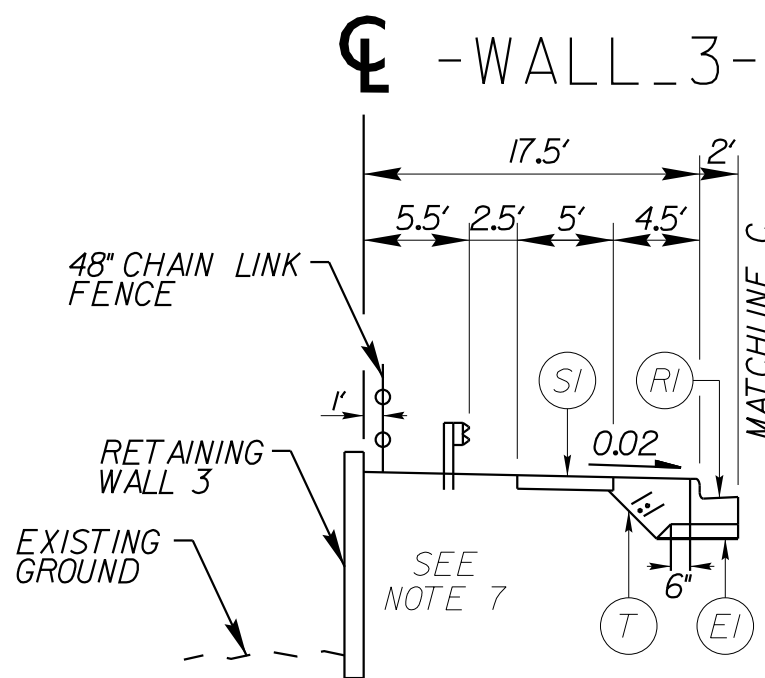
TYPICAL SECTION NO. 3

-L- STA 40+33.74 TO 118+22.00



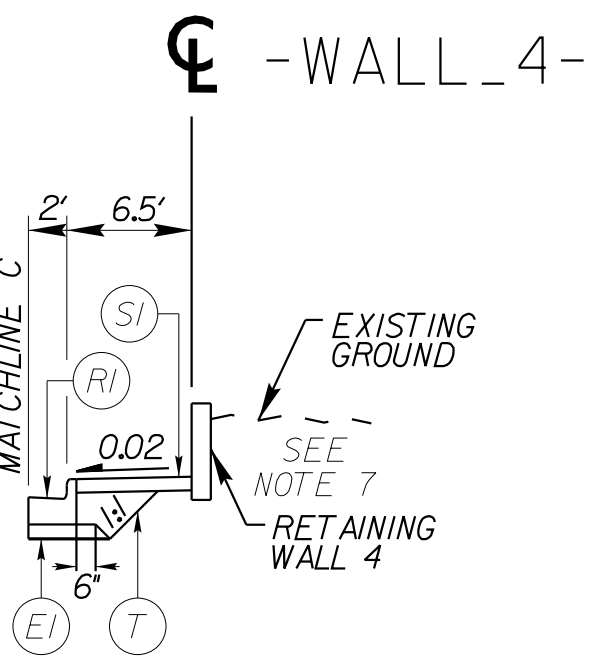
TYPICAL SECTION NO. 3A

-L- STA 40+87.00 TO 43+10.28 (LT)
-L- STA 51+37.43 TO 53+42.63 (RT)
-L- STA 54+32.16 TO 56+42.27 (LT)
-L- STA 84+09.69 TO 85+68.43 (RT)
-L- STA 116+82.00 TO 118+22.00 (LT)
-L- STA 116+82.00 TO 117+25.00 (RT)



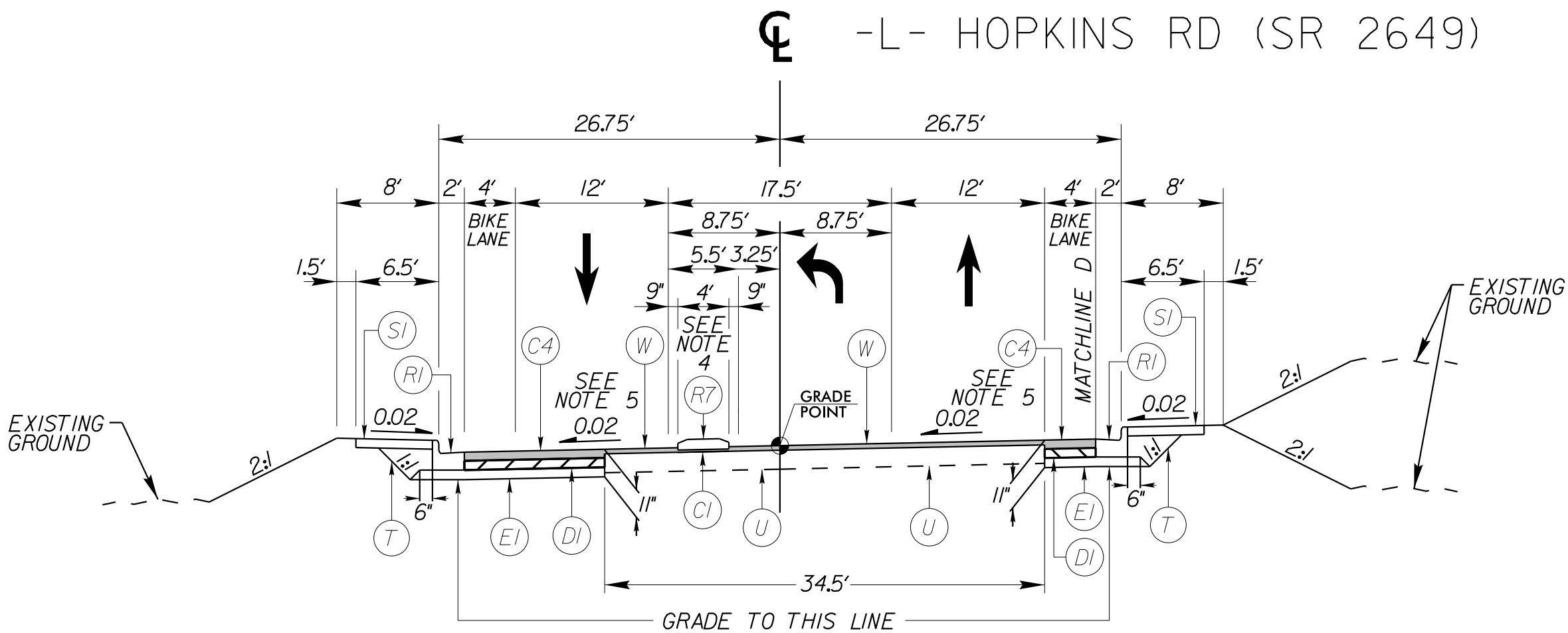
TYPICAL SECTION NO. 3B

-L- STA 52+00.00 TO 53+23.18 (LT)



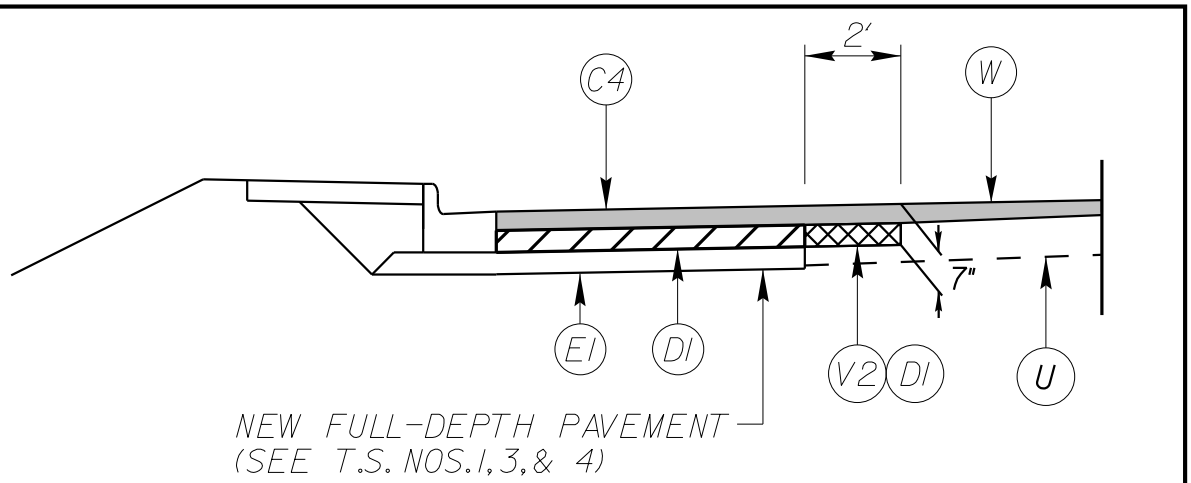
TYPICAL SECTION NO. 3C

-L- STA 117+25.00 TO 118+22.00 (RT)

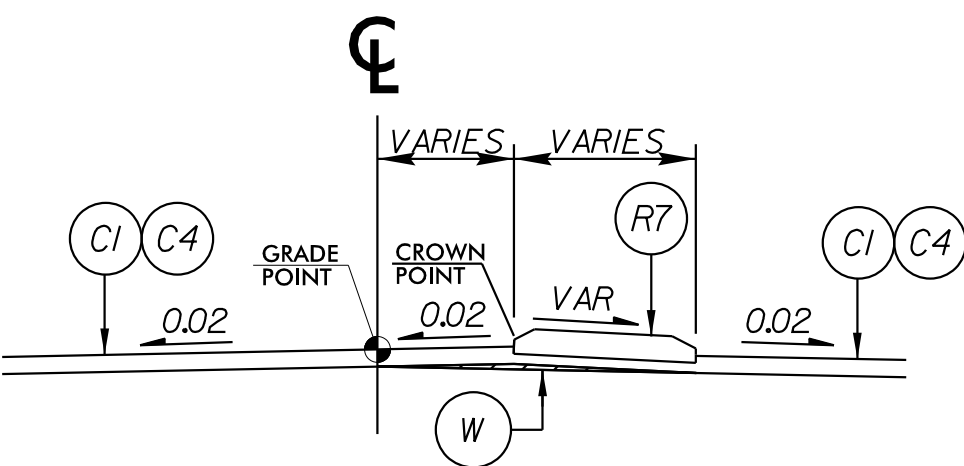


TYPICAL SECTION NO. 4

-L- STA 118+22.00 TO 120+71.00



DETAIL FOR BENCH MILLING (-L-)

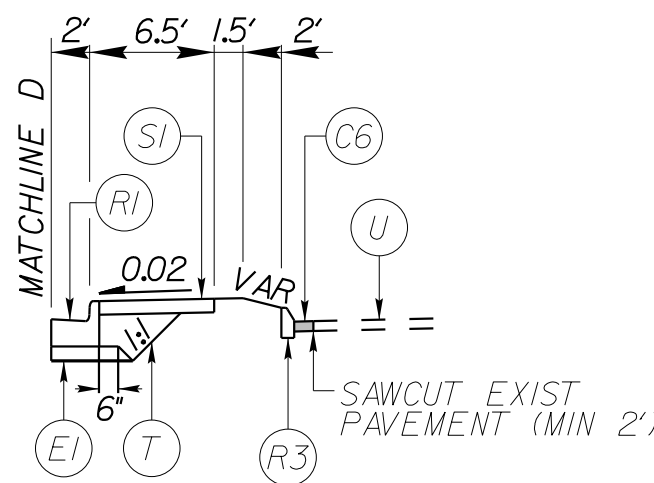


SUPERELEVATION TREATMENT ADJACENT
TO PROPOSED CHANNELIZATION

APPLIES TO -L-

NOTES:

- FOR FILL OR CUT SLOPE HEIGHTS LESS THAN 5', USE 4:1 SLOPES.
FOR FILL OR CUT SLOPE HEIGHTS BETWEEN 5' AND 10', USE 3:1 SLOPES.
FOR FILL OR CUT SLOPE HEIGHTS GREATER THAN 10', USE 2:1 SLOPES.
- RETAIN EXIST PAVEMENT (SEE WEDGING DETAIL, SHEET 2A-1) FROM
-L- STA 55+25.00 TO 59+50.00 (RT), STA 61+50.00 TO 76+25.00 (RT),
STA 80+75.00 TO 85+75.00 (RT), STA 99+25.00 TO 113+00.00 (LT), AND
STA 115+00.00 TO 118+22.00 (LT/RT). SAWCUT EXIST PAVEMENT MINIMUM OF
1' FROM GUTTER EDGE.
- SEE PLANS FOR ROADWAY GEOMETRY AND MONOLITHIC CONCRETE ISLAND (R7) LOCATIONS.
- INSTALL 5' MONOLITHIC CONCRETE ISLAND FROM -L- STA 118+22.00 TO 120+24.00.
- USE DETAIL FOR BENCH MILLING ADJACENT TO WIDENING (SEE DETAIL, THIS SHEET).
- PAVEMENT EDGE SLOPES 1:1 UNLESS OTHERWISE INDICATED.
- SEE STRUCTURES PLANS FOR MORE INFORMATION.



TYPICAL SECTION NO. 4A

-L- STA 119+65.00 TO 120+53.52 (RT)

5/14/99

REVISIONS

9/22/2025

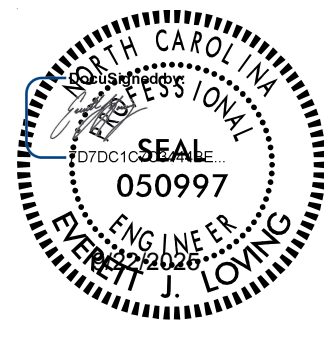
PROJECT REFERENCE NO.

U-5760

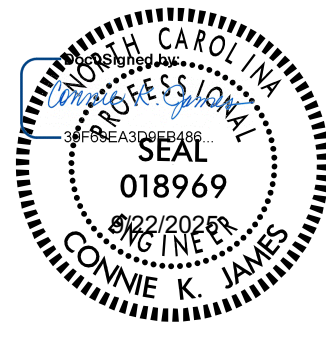
SHEET NO.

2A-4

ROADWAY DESIGN ENGINEER



PAVEMENT DESIGN ENGINEER



Kimley»Horn

421 FAYETTEVILLE STREET, SUITE 600
RALEIGH, NC 27601

RIGHT-OF-WAY REV.

CONST. REV.

DOCUMENT NOT CONSIDERED FINAL
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TYPICAL SECTION NO. 6

-YI- STA 53+35.00 TO 97+22.00 (LT)
-YI- STA 53+35.00 TO 90+85.00 (RT)

TYPICAL SECTION NO. 6A

-YI- STA 54+69.81 TO 56+76.00 (LT)
-YI- STA 54+55.00 TO 56+51.05 (RT)

TYPICAL SECTION NO. 6B

-YI- STA 56+76.00 TO 63+80.00 (LT)
-YI- STA 77+50.00 TO 83+00.00 (RT)
-YI- STA 79+87.50 TO 81+37.50 (LT)

TYPICAL SECTION NO. 7

-YIRPB- STA 10+00.00 TO 13+04.85
-YIRPD- STA 10+00.00 TO 13+04.85

NOTES:

- SEE CROSS-SECTIONS FOR CROSS SLOPES.
- REMOVE AND REPLACE EXIST 4' MEDIAN PAVED SHOULDER WITH 5' FULL-DEPTH PAVED SHOULDER. REMOVE AND REPLACE EXIST GUARDRAIL 1' BEHIND NEW SHOULDER.
- TIE SLOPE TO EXISTING MEDIAN DITCH FROM -YI- STA 90+85.00 TO 97+22.00 (LT).
- RETAIN EXIST MEDIAN GUARDRAIL FROM -YI- STA 90+85.00 TO 97+22.00 (RT).
- USE DETAIL FOR BENCH MILLING ADJACENT TO WIDENING (SEE DETAIL SHEET 2A-3).
- PAVEMENT EDGE SLOPES 1:1 UNLESS OTHERWISE INDICATED.
- SEE STRUCTURES PLANS FOR MORE INFORMATION.
- USE 8' GUARDRAIL POSTS FOR MEDIAN GUARDRAIL

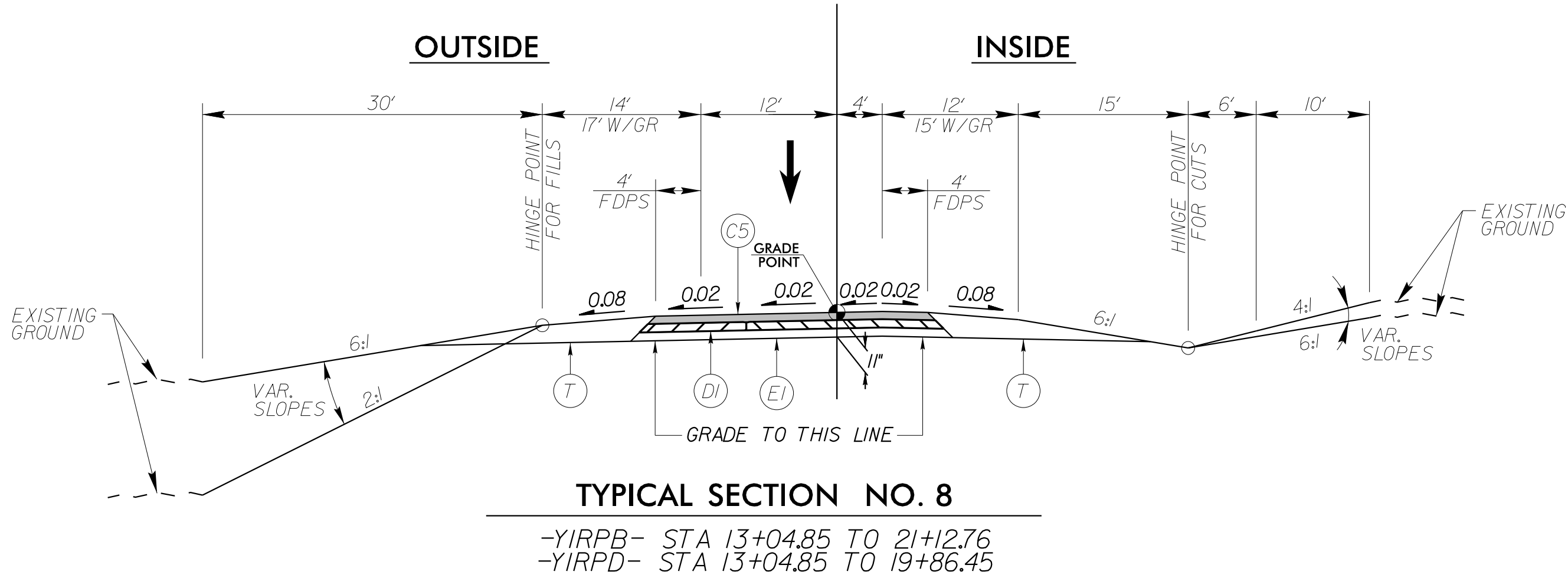
PAVEMENT SCHEDULE (FINAL PAVEMENT DESIGN)	
C1	15' S9.5B
C2	15' S9.5C
C3	2.5' S9.5B
C4	3' S9.5B
C5	3' S9.5C
C6	VAR. DEPTH S9.5B
C7	VAR. DEPTH S9.5C
DI	4' I19.0C
D2	VAR. DEPTH I19.0C
E1	4' B25.0C
E2	4.5' B25.0C
E3	9.5' B25.0C
E4	VAR. DEPTH B25.0C
J	8' AGGREGATE BASE COURSE
K	12' CLASS IV SUBGRADE STABILIZATION
N	GEOTEXTILE FOR SUBGRADE STABILIZATION
P	PRIME COAT
R1	2'-6" CONCRETE CURB & GUTTER
R2	1'-6" CONCRETE CURB & GUTTER
R3	8' x 12" CURB
R4	SHOULDER BERM GUTTER
R5	EXPRESSWAY GUTTER
R6	VALLEY GUTTER
R7	5' MONOLITHIC CONCRETE ISLAND (KEYED-IN)
R8	SINGLE FACED PRECAST CONCRETE BARRIER
R9	PROPOSED 6' JOINTED CONCRETE WITH WIRE MESH
S1	4' CONCRETE SIDEWALK
S2	SHOULDER RECONSTRUCTION
T	EARTH MATERIAL
U	EXISTING PAVEMENT
VI	MILLING, 1.5' DEPTH
V2	MILLING, 4' DEPTH
W	WEDGING
Y	MILLED RUMBLE STRIPS

5/14/99

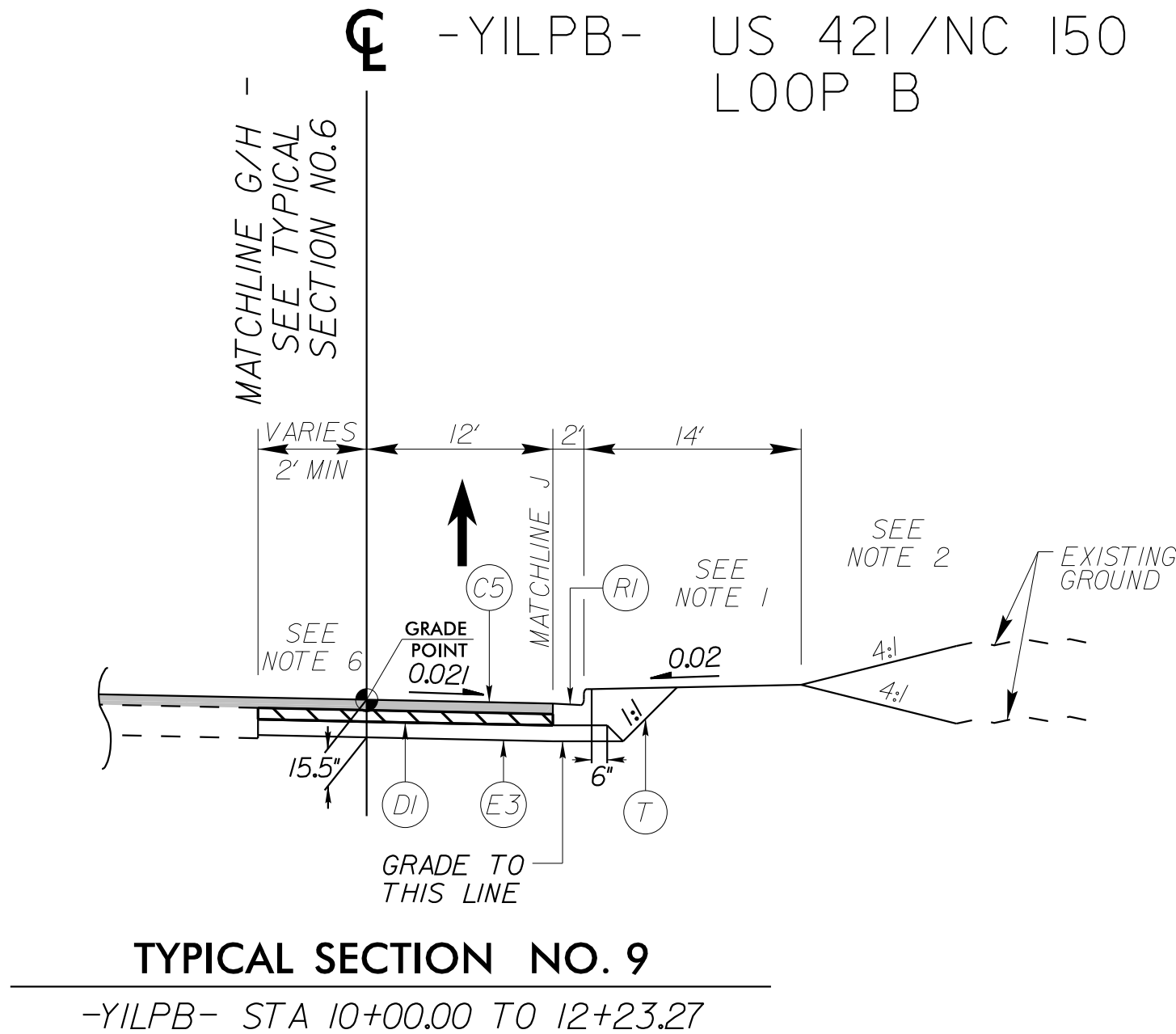
REVISIONS

9/22/2025

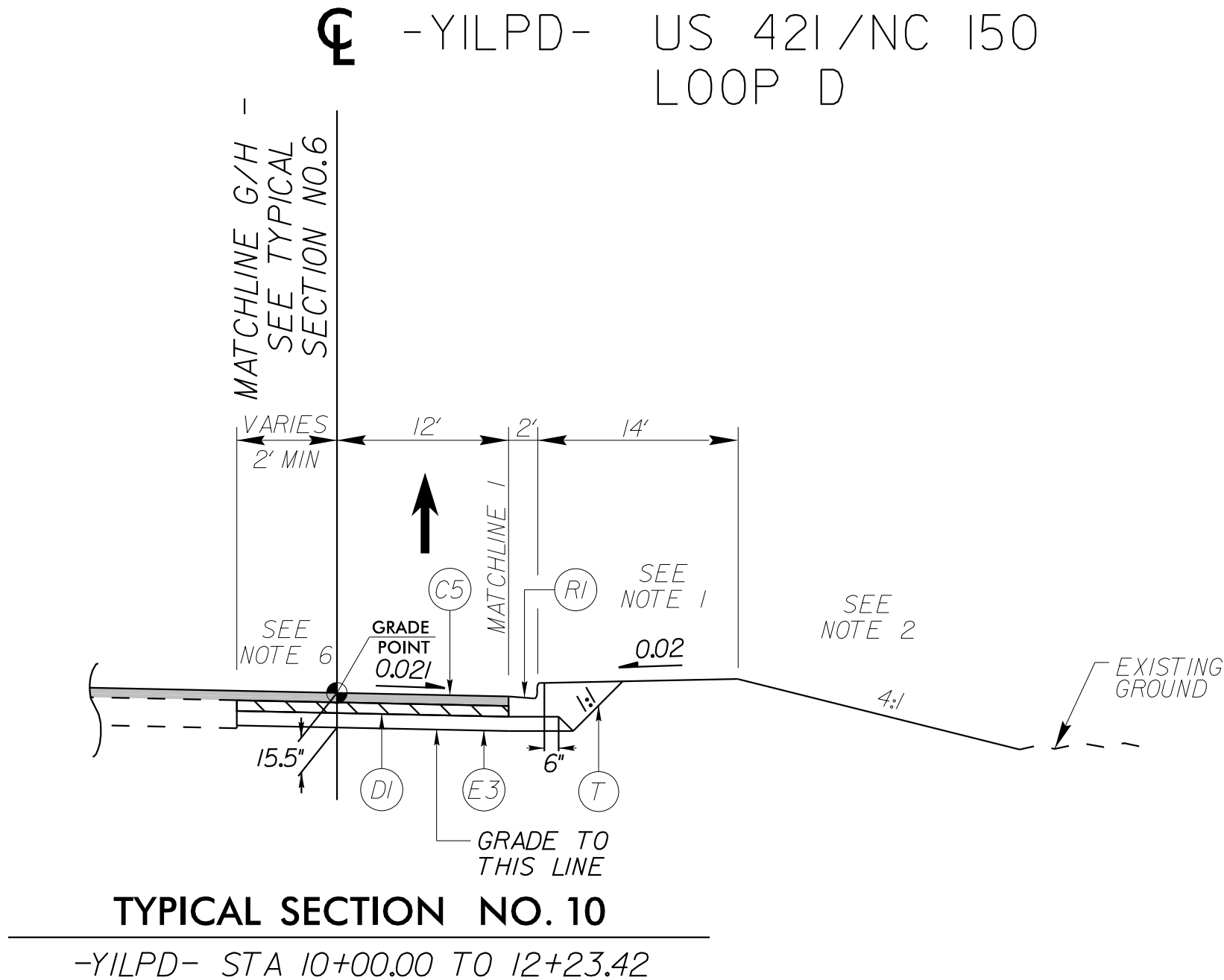
-YIRPB- US 421/NC 150 RAMP B
-YIRPD- US 421/NC 150 RAMP D



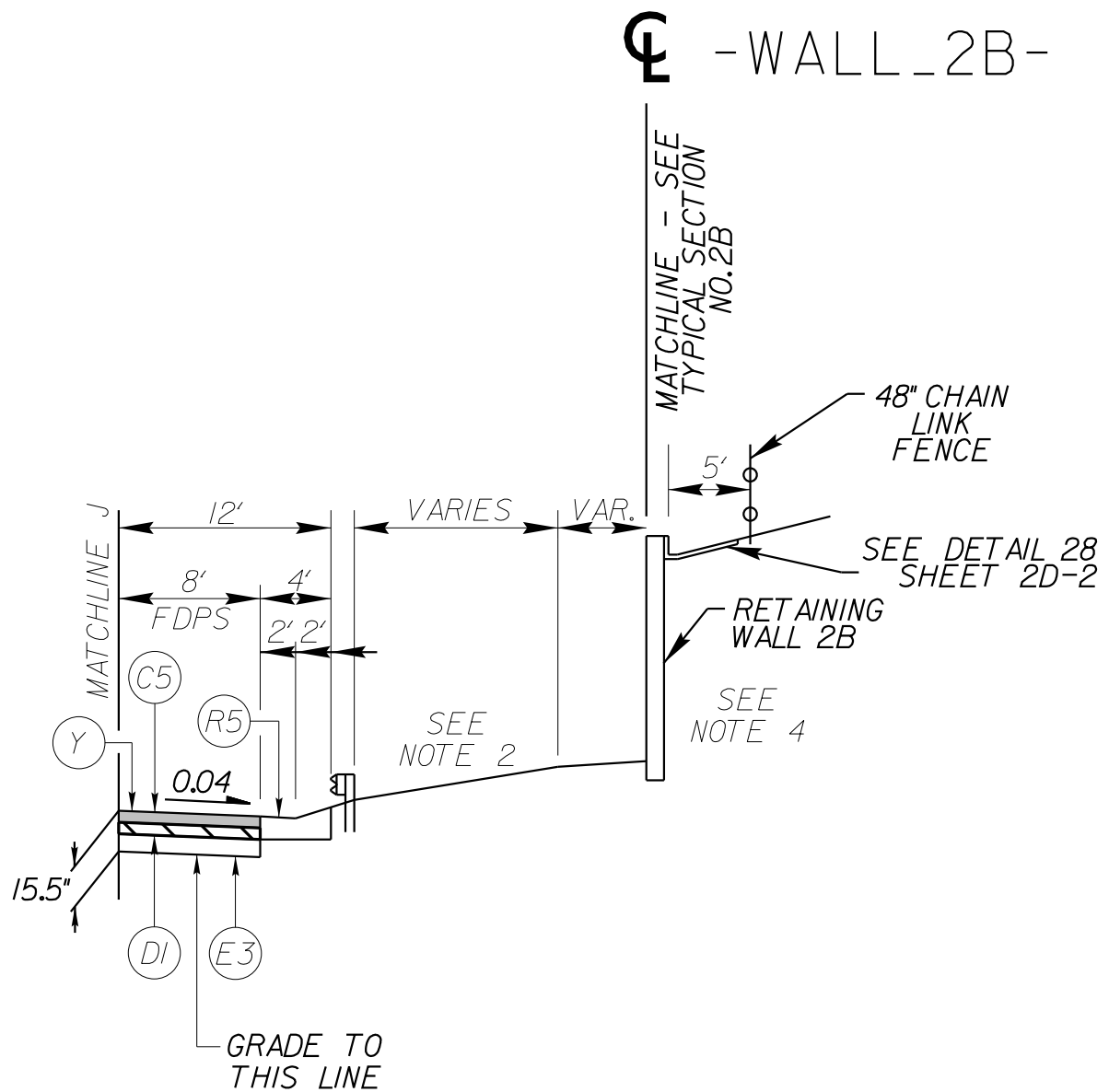
-YILPB- US 421/NC 150
LOOP B



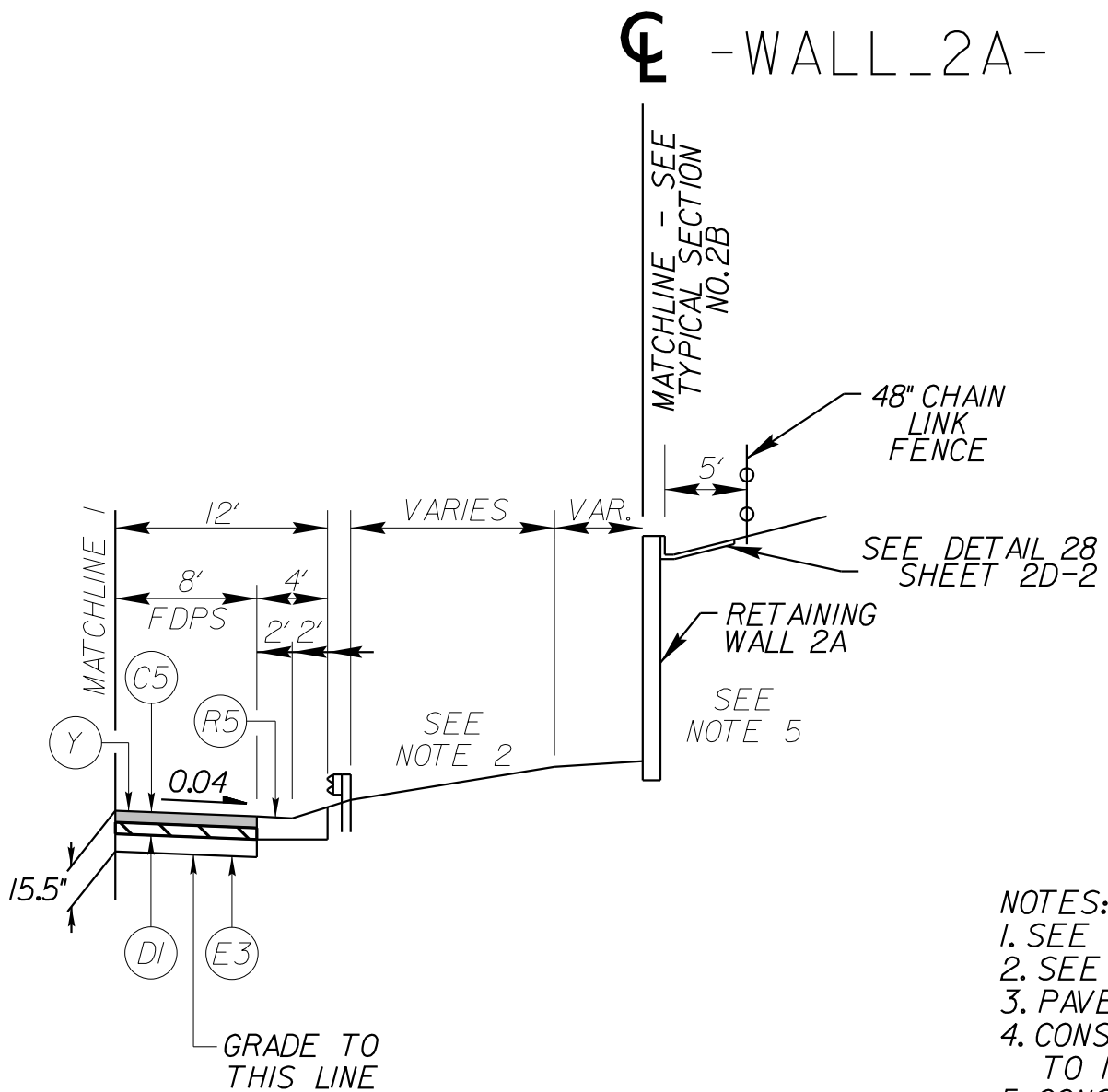
-YILPD- US 421/NC 150
LOOP D



-WALL_2B-



-WALL_2A-



- NOTES:
1. SEE PLANS FOR CURB TRANSITION.
 2. SEE CROSS-SECTIONS FOR CROSS SLOPES.
 3. PAVEMENT EDGE SLOPES 1:1 UNLESS OTHERWISE INDICATED.
 4. CONSTRUCT RETAINING WALL -WALL_2B- FROM -YILPB- STA 10+00.00 TO 10+55.50. SEE STRUCTURES PLANS FOR MORE INFORMATION.
 5. CONSTRUCT RETAINING WALL -WALL_2A- FROM -YILPD- STA 10+00.00 TO 10+32.00. SEE STRUCTURES PLANS FOR MORE INFORMATION.
 6. USE DETAIL FOR BENCH MILLING ADJACENT TO WIDENING (SEE DETAIL SHEET 2A-3).

Kimley»Horn

421 FAYETTEVILLE STREET, SUITE 600
RALEIGH, NC 27601

RIGHT-OF-WAY REV.

CONST. REV.

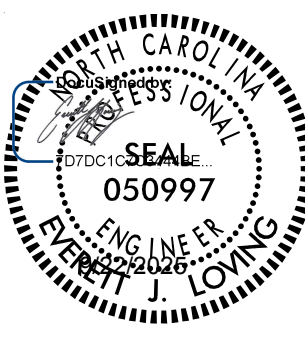
PROJECT REFERENCE NO.

U-5760

SHEET NO.

2A-5

ROADWAY DESIGN
ENGINEER



PAVEMENT DESIGN
ENGINEER



DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

PAVEMENT SCHEDULE

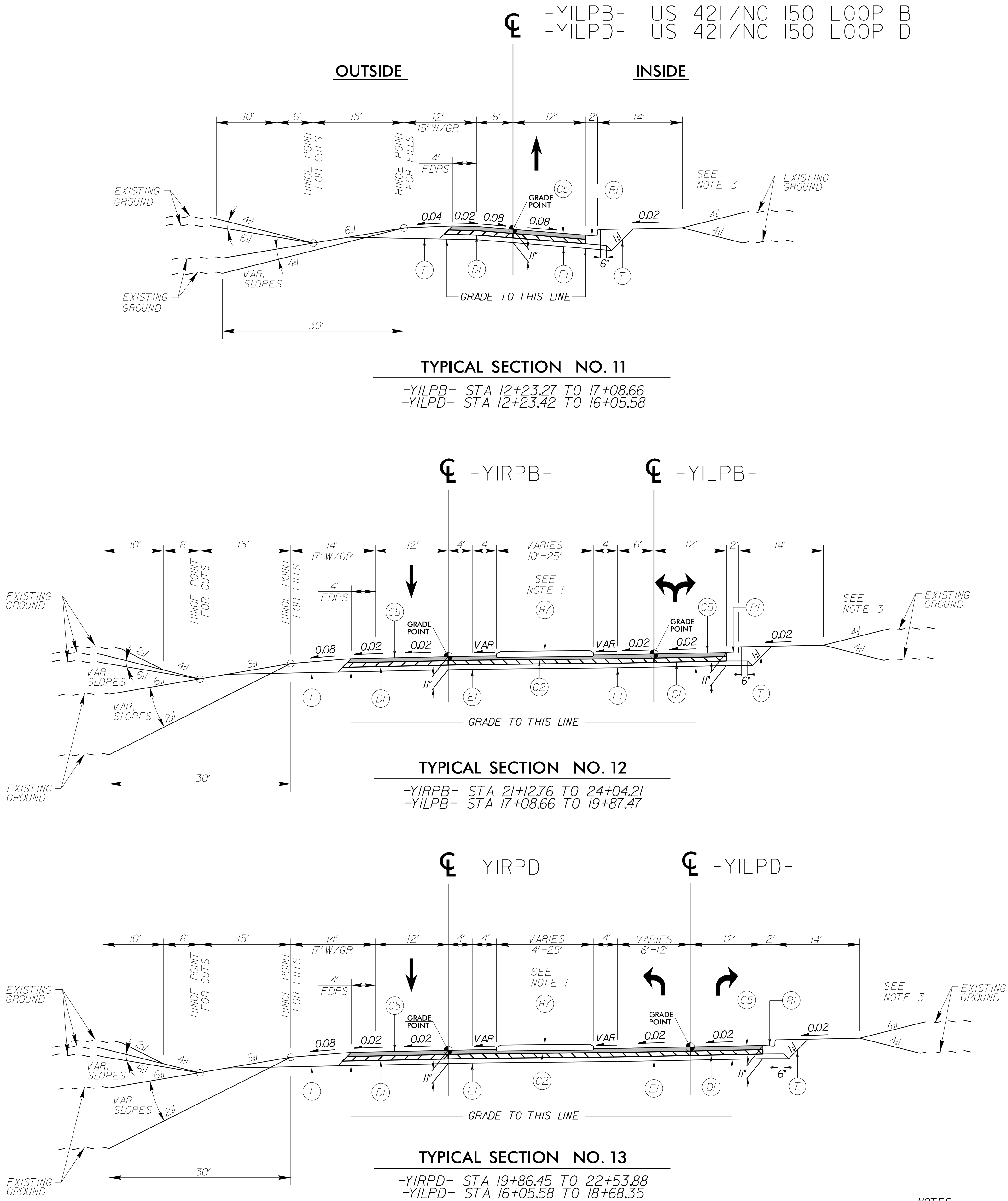
(FINAL PAVEMENT DESIGN)

C1	15' S9.5B
C2	15' S9.5C
C3	2.5' S9.5B
C4	3' S9.5B
C5	3' S9.5C
C6	VAR. DEPTH S9.5B
C7	VAR. DEPTH S9.5C
D1	4' 119.0C
D2	VAR. DEPTH 119.0C
E1	4' B25.0C
E2	4.5' B25.0C
E3	9.5' B25.0C
E4	VAR. DEPTH B25.0C
J	8' AGGREGATE BASE COURSE
K	12' CLASS IV SUBGRADE STABILIZATION
N	GEOTEXTILE FOR SUBGRADE STABILIZATION
P	PRIME COAT
R1	2'-6" CONCRETE CURB & GUTTER
R2	1'-6" CONCRETE CURB & GUTTER
R3	8' x 12' CURB
R4	SHOULDER BERM GUTTER
R5	EXPRESSWAY GUTTER
R6	VALLEY GUTTER
R7	5' MONOLITHIC CONCRETE ISLAND (KEYED-IN)
R8	SINGLE FACED PRECAST CONCRETE BARRIER
R9	PROPOSED 6' JOINTED CONCRETE WITH WIRE MESH
S1	4' CONCRETE SIDEWALK
S2	SHOULDER RECONSTRUCTION
T	EARTH MATERIAL
U	EXISTING PAVEMENT
V1	MILLING, 1.5' DEPTH
V2	MILLING, 4' DEPTH
W	WEDGING
Y	MILLED RUMBLE STRIPS

5/14/99

REVISIONS

9/22/2025



NOTES:
1. SEE PLANS FOR ISLAND (R7) LOCATIONS.
2. PAVEMENT EDGE SLOPES 4:1 UNLESS OTHERWISE INDICATED.
3. SEE CROSS-SECTIONS FOR CROSS SLOPES.

Kimley»Horn

421 FAYETTEVILLE STREET, SUITE 600
RALEIGH, NC 27601

RIGHT-OF-WAY REV.

CONST. REV.

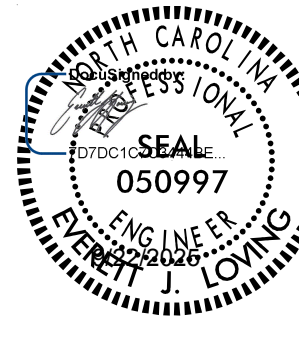
PROJECT REFERENCE NO.

U-5760

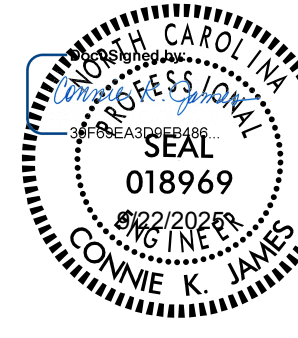
SHEET NO.

2A-6

ROADWAY DESIGN
ENGINEER



PAVEMENT DESIGN
ENGINEER



DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

PAVEMENT SCHEDULE

(FINAL PAVEMENT DESIGN)

C1	1.5' S9.5B
C2	1.5' S9.5C
C3	2.5' S9.5B
C4	3' S9.5B
C5	3' S9.5C
C6	VAR. DEPTH S9.5B
C7	VAR. DEPTH S9.5C
D1	4' 119.0C
D2	VAR. DEPTH 119.0C
E1	4' B25.0C
E2	4.5' B25.0C
E3	9.5' B25.0C
E4	VAR. DEPTH B25.0C
J	8' AGGREGATE BASE COURSE
K	12' CLASS IV SUBGRADE STABILIZATION
N	GEOTEXTILE FOR SUBGRADE STABILIZATION
P	PRIME COAT
R1	2'-6" CONCRETE CURB & GUTTER
R2	1'-6" CONCRETE CURB & GUTTER
R3	8' x 12' CURB
R4	SHOULDER BERM GUTTER
R5	EXPRESSWAY GUTTER
R6	VALLEY GUTTER
R7	5' MONOLITHIC CONCRETE ISLAND (KEYED-IN)
R8	SINGLE FACED PRECAST CONCRETE BARRIER
R9	PROPOSED 6' JOINTED CONCRETE WITH WIRE MESH
S1	4" CONCRETE SIDEWALK
S2	SHOULDER RECONSTRUCTION
T	EARTH MATERIAL
U	EXISTING PAVEMENT
VI	MILLING, 1.5' DEPTH
V2	MILLING, 4' DEPTH
W	WEDGING
Y	MILLED RUMBLE STRIPS

5/14/99

REVISIONS

9/22/2025

Kimley»Horn

421 FAYETTEVILLE STREET, SUITE 600
RALEIGH, NC 27601

RIGHT-OF-WAY REV.

CONST. REV.

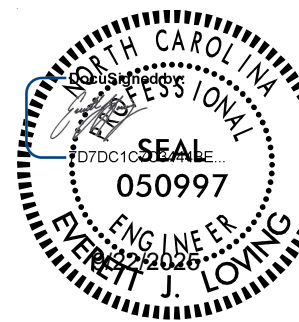
PROJECT REFERENCE NO.

U-5760

SHEET NO.

2A-7

ROADWAY DESIGN
ENGINEER



PAVEMENT DESIGN
ENGINEER

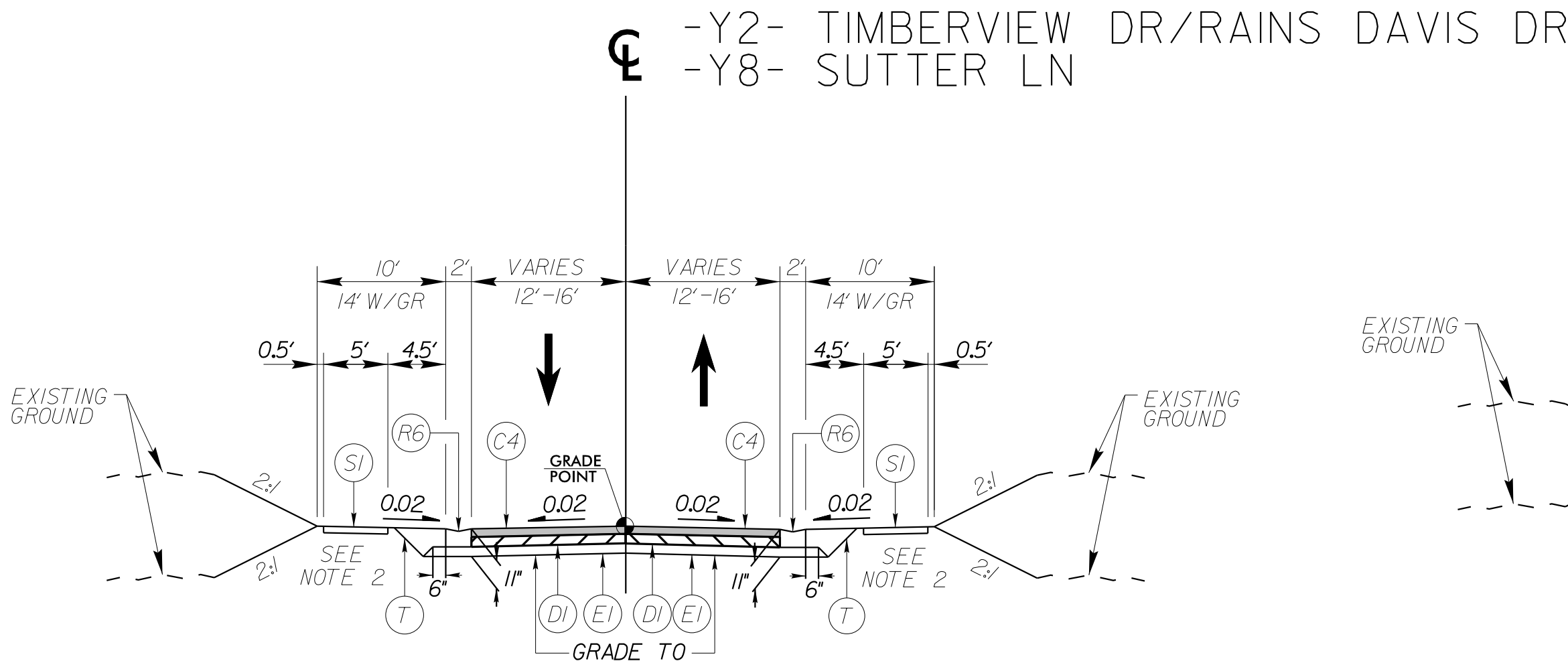


DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

PAVEMENT SCHEDULE

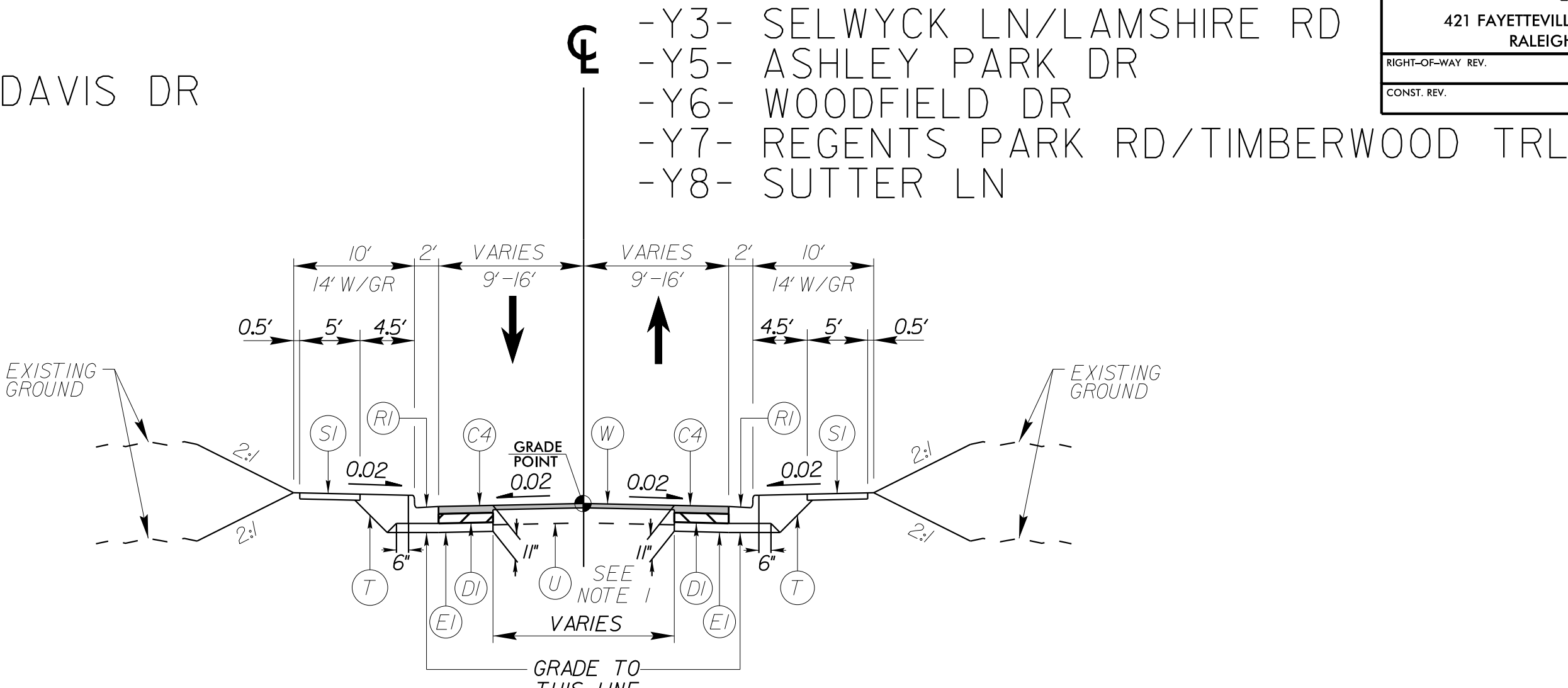
(FINAL PAVEMENT DESIGN)

C1	1.5' S9.5B
C2	1.5' S9.5C
C3	2.5' S9.5B
C4	3' S9.5B
C5	3' S9.5C
C6	VAR. DEPTH S9.5B
C7	VAR. DEPTH S9.5C
DI	4' I19.0C
D2	VAR. DEPTH I19.0C
E1	4' B25.0C
E2	4.5' B25.0C
E3	9.5' B25.0C
E4	VAR. DEPTH B25.0C
J	8' AGGREGATE BASE COURSE
K	12' CLASS N SUBGRADE STABILIZATION
N	GEOTEXTILE FOR SUBGRADE STABILIZATION
P	PRIME COAT
RI	2'-6" CONCRETE CURB & GUTTER
R2	1'-6" CONCRETE CURB & GUTTER
R3	8' x 12' CURB
R4	SHOULDER BERM GUTTER
R5	EXPRESSWAY GUTTER
R6	VALLEY GUTTER
R7	5' MONOLITHIC CONCRETE ISLAND (KEYED-IN)
R8	SINGLE FACED PRECAST CONCRETE BARRIER
R9	PROPOSED 6' JOINTED CONCRETE WITH WIRE MESH
SI	4' CONCRETE SIDEWALK
S2	SHOULDER RECONSTRUCTION
T	EARTH MATERIAL
U	EXISTING PAVEMENT
VI	MILLING, 1.5' DEPTH
V2	MILLING, .4' DEPTH
W	WEDGING
Y	MILLED RUMBLE STRIPS



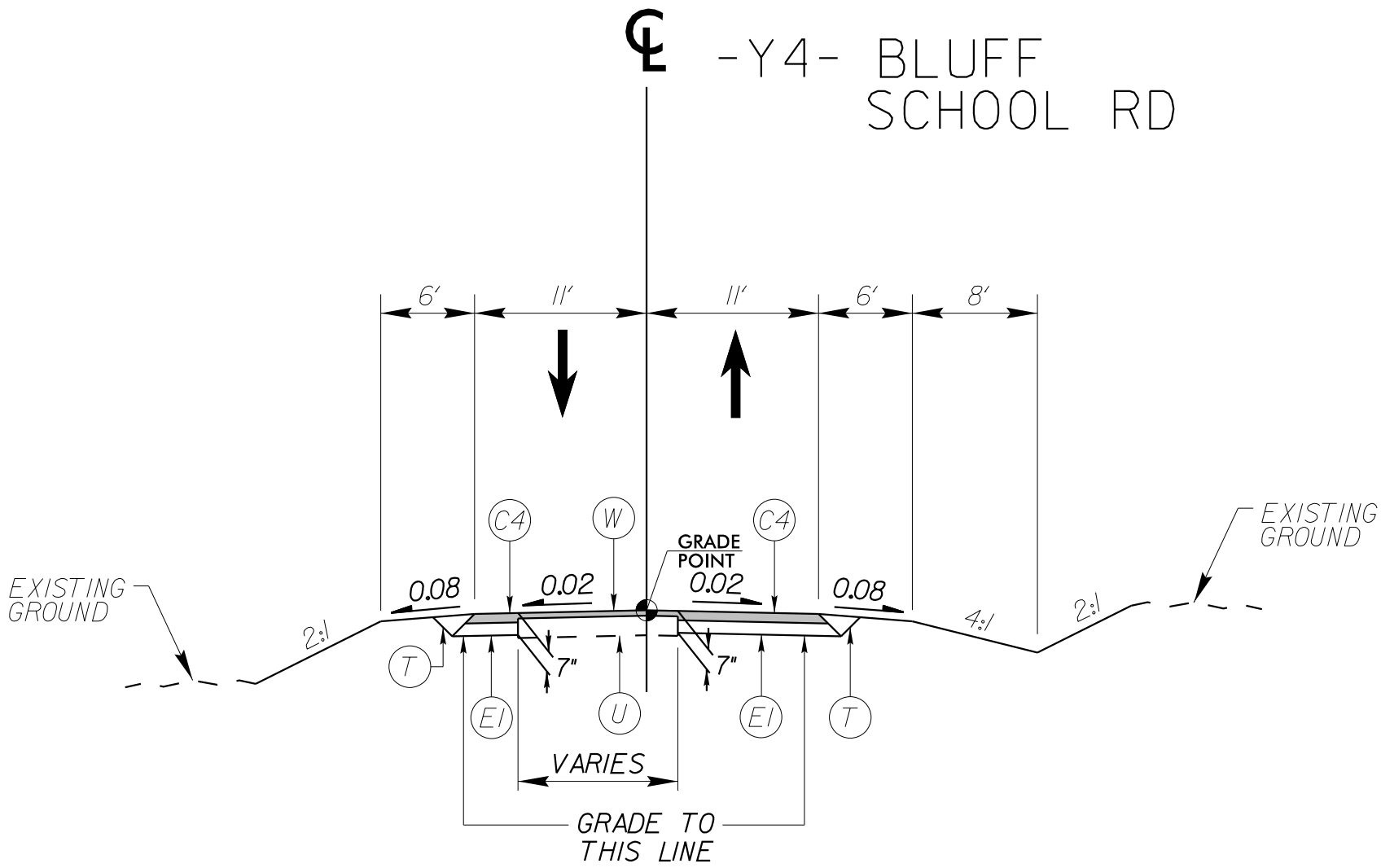
TYPICAL SECTION NO. 14

-Y2- STA 11+22.00 TO 13+28.41
-Y2- STA 13+83.42 TO 17+40.00
-Y3- STA 12+25.00 TO 14+78.61
-Y3- STA 15+33.63 TO 16+75.00
-Y8- STA 14+03.52 TO 15+25.00 (USE RI)



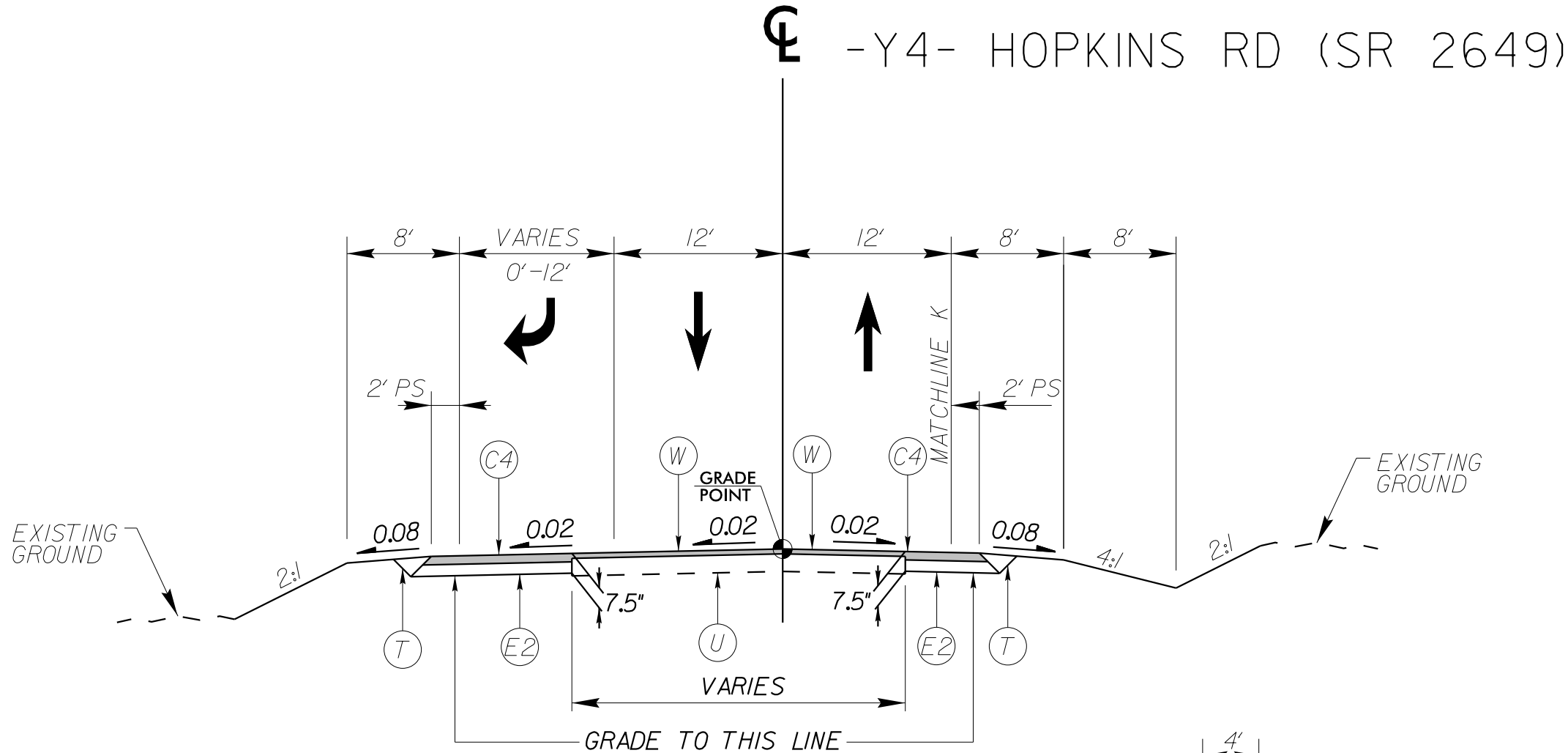
TYPICAL SECTION NO. 15

-Y3- STA 10+50.00 TO 12+25.00 (USE R6)
-Y3- STA 16+75.00 TO 17+50.00 (USE R6)
-Y5- STA 10+27.50 TO 10+58.16
-Y6- STA 10+27.91 TO 10+65.63
-Y7- STA 13+03.16 TO 13+66.27
-Y7- STA 14+47.04 TO 14+90.83
-Y8- STA 12+77.96 TO 13+27.52
-Y8- STA 15+25.00 TO 16+50.00



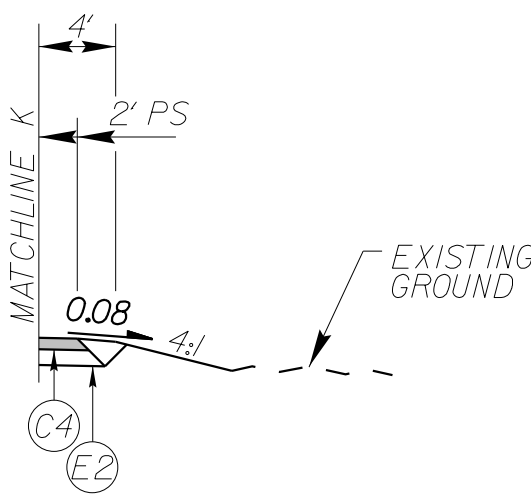
TYPICAL SECTION NO. 16

-Y4- STA 12+00.00 TO 18+03.16



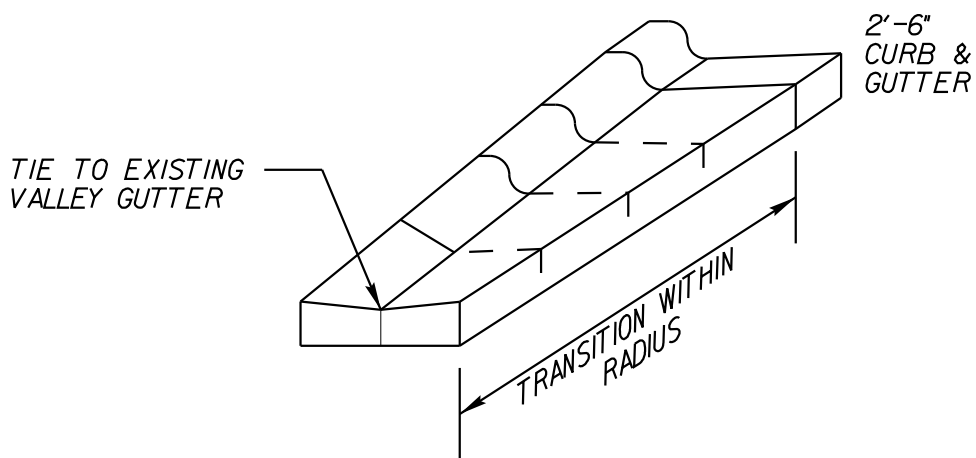
TYPICAL SECTION NO. 17

-Y4- STA 19+04.18 TO 24+55.00



TYPICAL SECTION NO. 17A

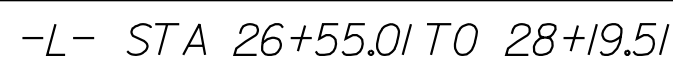
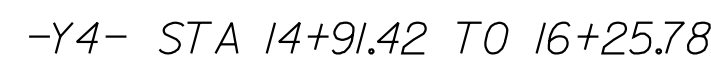
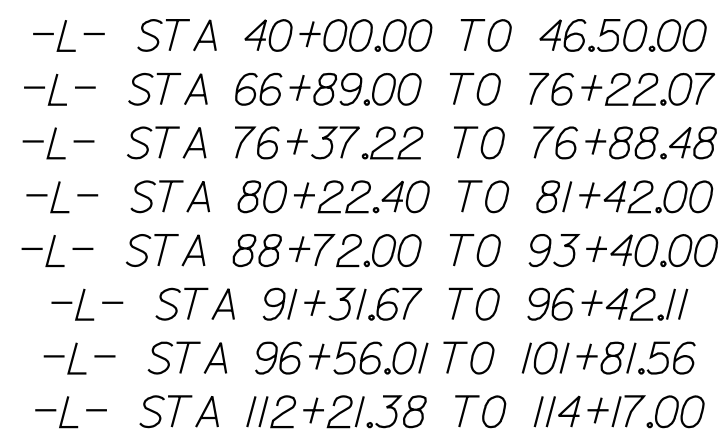
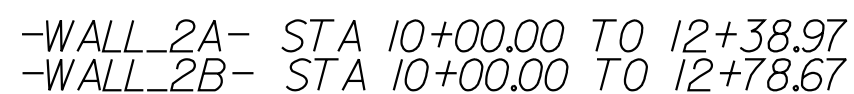
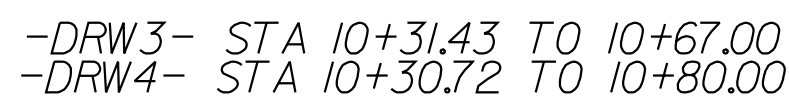
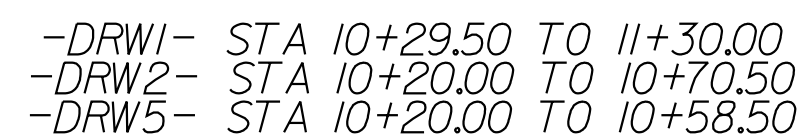
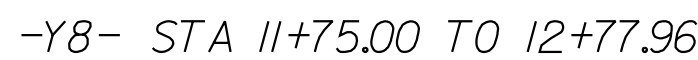
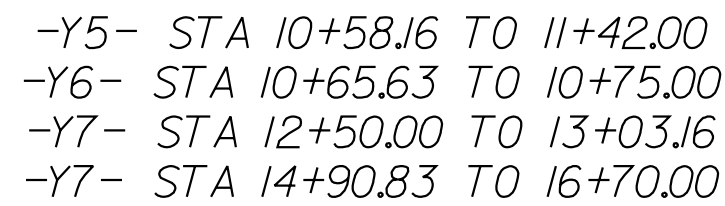
-Y4- STA 23+00.00 TO 24+55.00



DETAIL FOR TRANSITION FROM
2'-6" C&G TO VALLEY GUTTER

APPLIES TO -Y2- AND -Y3-

NOTES:
1. REMOVE AND REPLACE EXIST PAVEMENT FROM -Y7- STA 13+25.00 TO 13+66.27 AND FROM STA 14+47.04 TO 15+50.00.
2. SEE PLANS FOR SIDEWALK LOCATIONS ALONG -Y2- AND -Y8-.
3. PAVEMENT EDGE SLOPES 1:1 UNLESS OTHERWISE INDICATED.



NOTES:

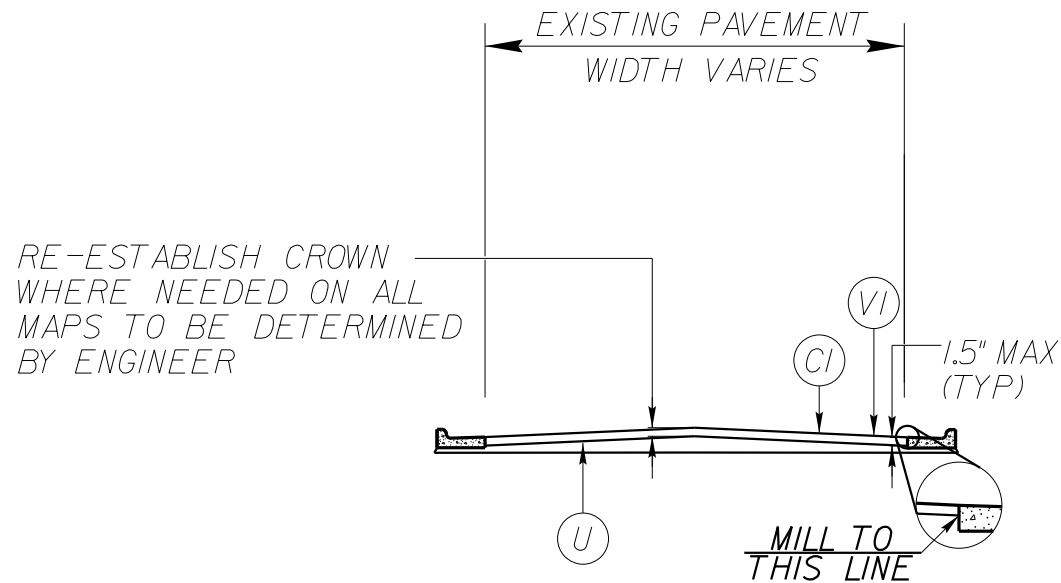
1. REMOVE AND REPLACE EXIST PAVEMENT FROM -Y7- STA 13+25.00 TO 13+66.27 AND FROM STA 14+47.04 TO 15+50.00.
2. SEE PLANS FOR PAVEMENT WIDTH.
3. SEE CROSS-SECTIONS FOR CROSS-SLOPES.
4. SURFACE MOUNTED (STRUCTURE ITEM).
5. PAVEMENT EDGE SLOPES UNLESS OTHERWISE INDICATED.
6. SEE STRUCTURE PLANS FOR MORE INFORMATION.
7. REPLACE EXISTING ASPHALT DRIVEWAYS TO LIMITS SHOWN ON PLANS WITH THE ASPHALT DESIGN SHOWN IN TS NO.20. FOR ASPHALT DRIVEWAYS LESS THAN 7% GRADE, REPLACE THE 8' ABC WITH 6' ABC IN TS NO.20.
8. REPLACE EXISTING GRAVEL DRIVEWAYS TO LIMITS SHOWN ON PLANS WITH 6' ABC. FOR GRAVEL DRIVEWAYS GRATER THAN 10% GRADE, USE THE ASPHALT DESIGN SHOWN IN TS. NO.20.
9. REPLACE EXISTING CONCRETE DRIVEWAYS TO LIMITS SHOWN ON PLANS WITH 6' JOINTED CONCRETE WITH WIRE MESH.

C1	1.5' S9.5B
C2	1.5' S9.5C
C3	2.5' S9.5B
C4	3' S9.5B
C5	3' S9.5C
C6	VAR. DEPTH S9.5B
C7	VAR. DEPTH S9.5C
D1	4' I19.0C
D2	VAR. DEPTH I19.0C
E1	4' B25.0C
E2	4.5' B25.0C
E3	9.5' B25.0C
E4	VAR. DEPTH B25.0C
J	8" AGGREGATE BASE COURSE
K	12' CLASS IV SUBGRADE STABILIZATION
N	GEOTEXTILE FOR SUBGRADE STABILIZATION
P	PRIME COAT
R1	2'-6" CONCRETE CURB & GUTTER
R2	1'-6" CONCRETE CURB & GUTTER
R3	8" X 12" CURB
R4	SHOULDER BERM GUTTER
R5	EXPRESSWAY GUTTER
R6	VALLEY GUTTER
R7	5' MONOLITHIC CONCRETE ISLAND (KEYED-IN)
R8	SINGLE FACED PRECAST CONCRETE BARRIER
R9	PROPOSED 6" JOINTED CONCRETE WITH WIRE MESH
S1	4" CONCRETE SIDEWALK
S2	SHOULDER RECONSTRUCTION
T	EARTH MATERIAL
U	EXISTING PAVEMENT
V1	MILLING, 1.5' DEPTH
V2	MILLING, 4' DEPTH
W	WEDGING
Y	MILLED RUMBLE STRIPS

5/14/99

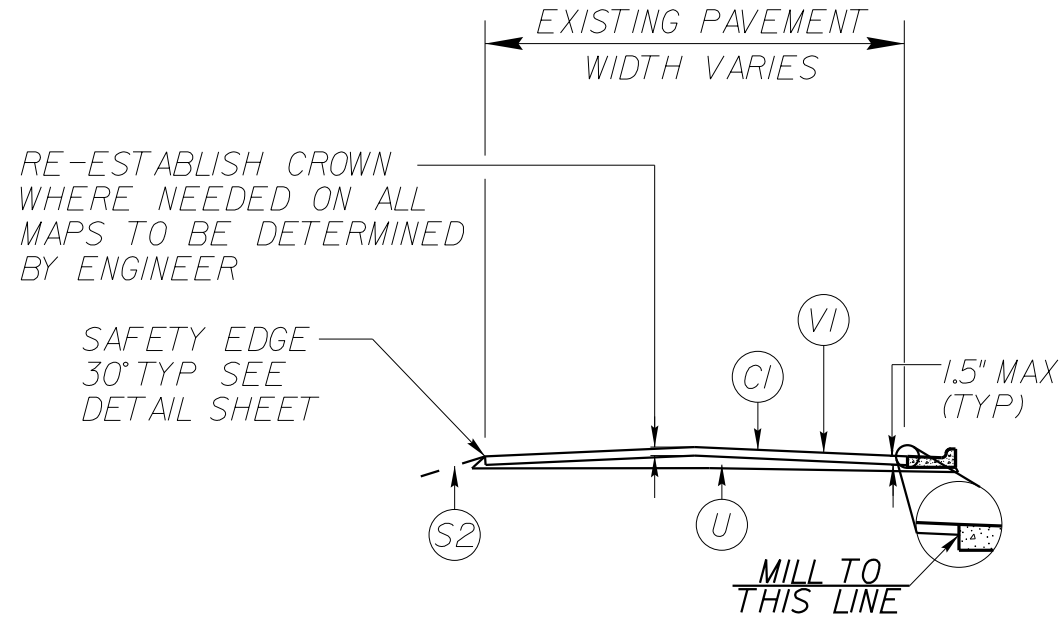
REVISIONS

9/22/2025



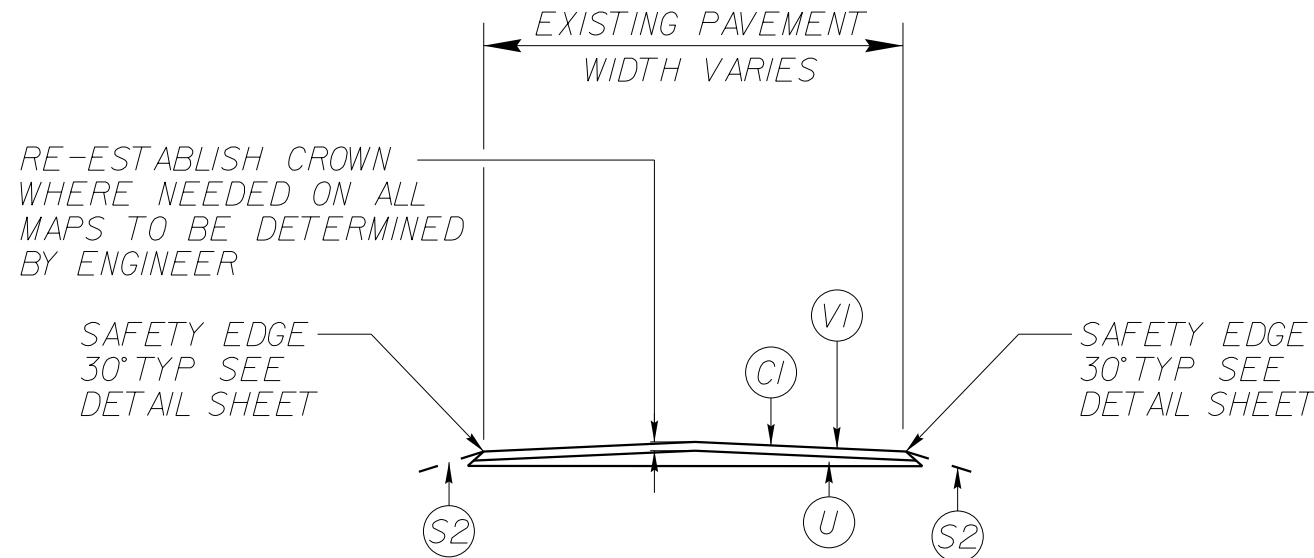
MILLING AND RESURFACING TYPICAL SECTION NO.1

MAP 1 OLD WINSTON RD SR2648
MAP 2 HOPKINS RD SR2649



MILLING AND RESURFACING TYPICAL SECTION NO.2

MAP 2 HOPKINS RD SR2649



MILLING AND RESURFACING TYPICAL SECTION NO.3

MAP 1 OLD WINSTON RD SR 2648
MAP 2 HOPKINS RD SR 2649

Kimley»Horn

421 FAYETTEVILLE STREET, SUITE 600
RALEIGH, NC 27601

NIGHT-OF-WAY REV.

CONST. REV.

PROJECT REFERENCE NO.

U-5760

SHEET NO.

2A-9

PAVEMENT DESIGN
ENGINEER

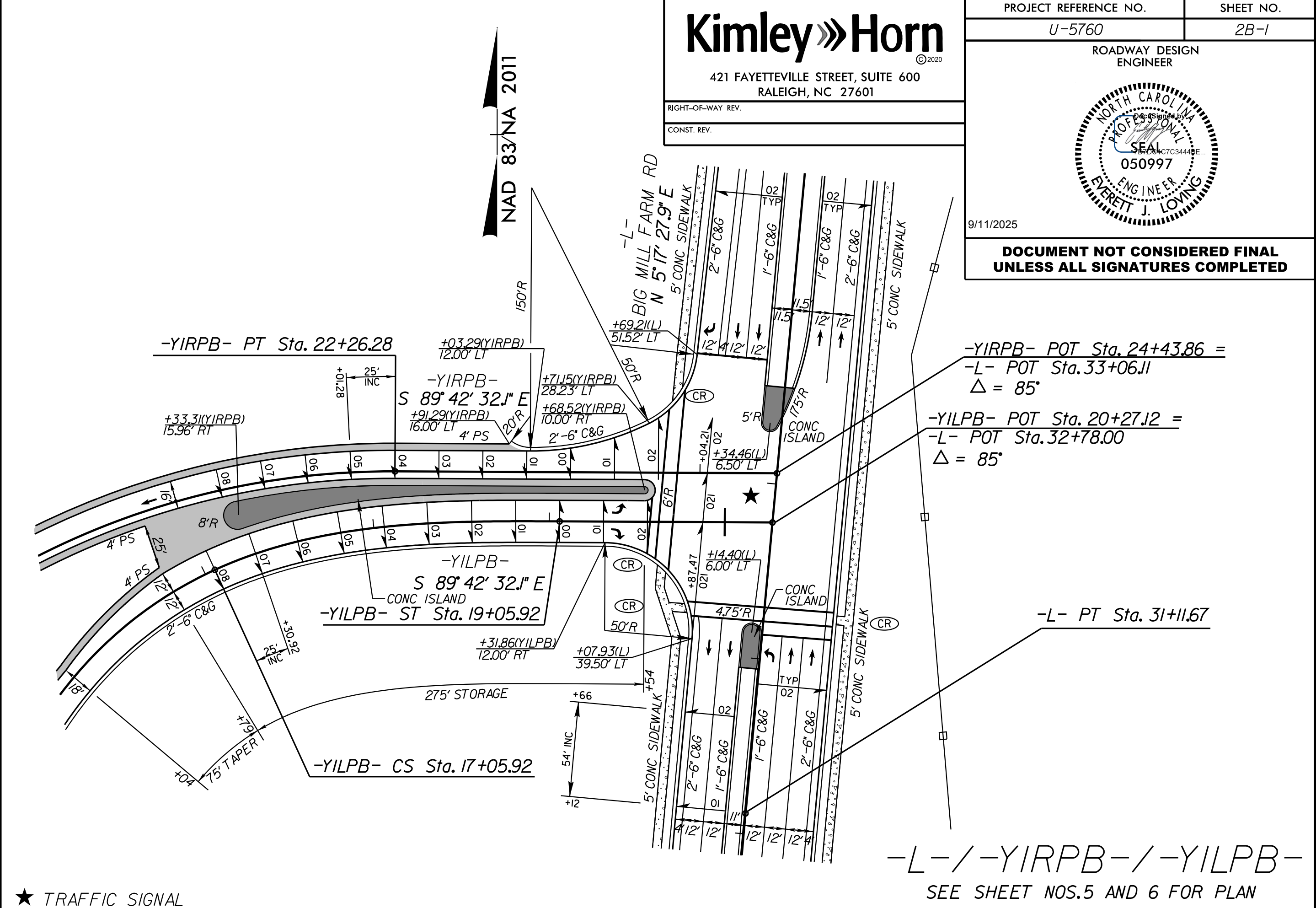
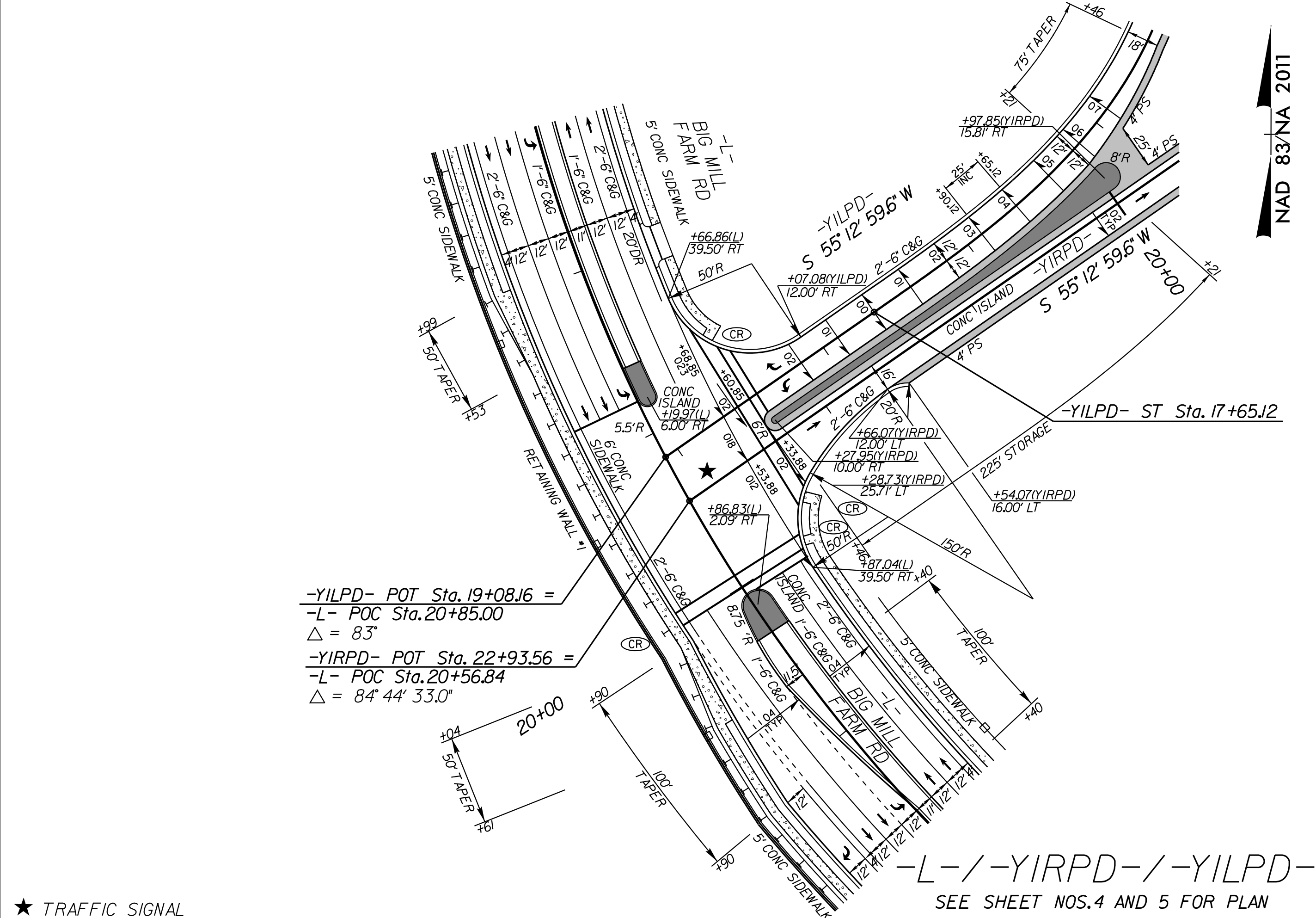


**DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED**

PAVEMENT SCHEDULE
(FINAL PAVEMENT DESIGN)

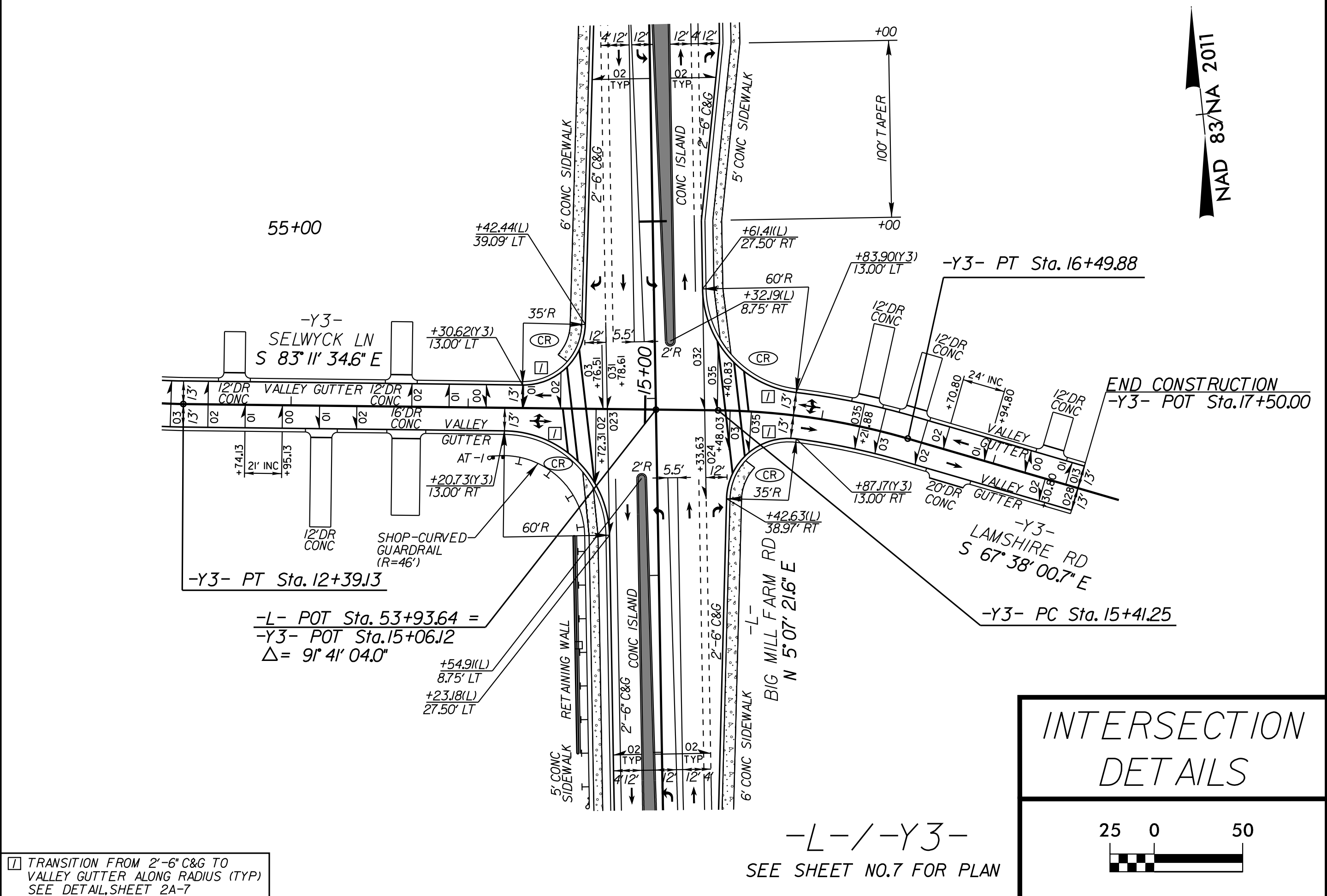
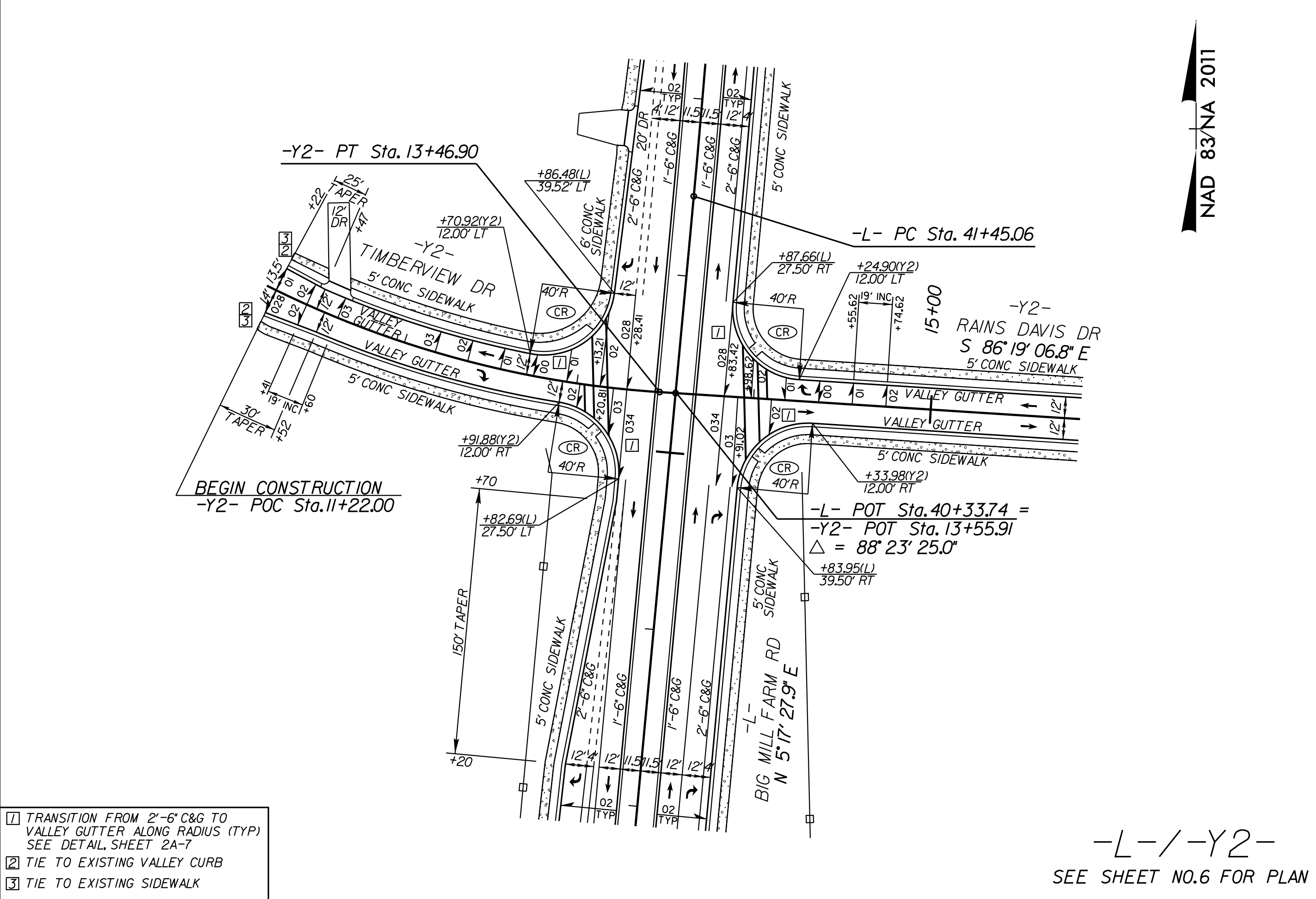
C1	15' S9.5B
C2	15' S9.5C
C3	25' S9.5B
C4	3' S9.5B
C5	3' S9.5C
C6	VAR. DEPTH S9.5B
C7	VAR. DEPTH S9.5C
D1	4' 119.0C
D2	VAR. DEPTH 119.0C
E1	4' B25.0C
E2	4.5' B25.0C
E3	9.5' B25.0C
E4	VAR. DEPTH B25.0C
J	8" AGGREGATE BASE COURSE
K	12" CLASS IV SUBGRADE STABILIZATION
N	GEOTEXTILE FOR SUBGRADE STABILIZATION
P	PRIME COAT
R1	2'-6" CONCRETE CURB & GUTTER
R2	1'-6" CONCRETE CURB & GUTTER
R3	8" X 12" CURB
R4	SHOULDER BERM GUTTER
R5	EXPRESSWAY GUTTER
R6	VALLEY GUTTER
R7	5' MONOLITHIC CONCRETE ISLAND (KEYED-IN)
R8	SINGLE FACED PRECAST CONCRETE BARRIER
R9	PROPOSED 6" JOINTED CONCRETE WITH WIRE MESH
SI	4" CONCRETE SIDEWALK
S2	SHOULDER RECONSTRUCTION
T	EARTH MATERIAL
U	EXISTING PAVEMENT
VI	MILLING, 15' DEPTH
V2	MILLING, 4' DEPTH
W	WEDGING
Y	MILLED RUMBLE STRIPS

5/14/2011



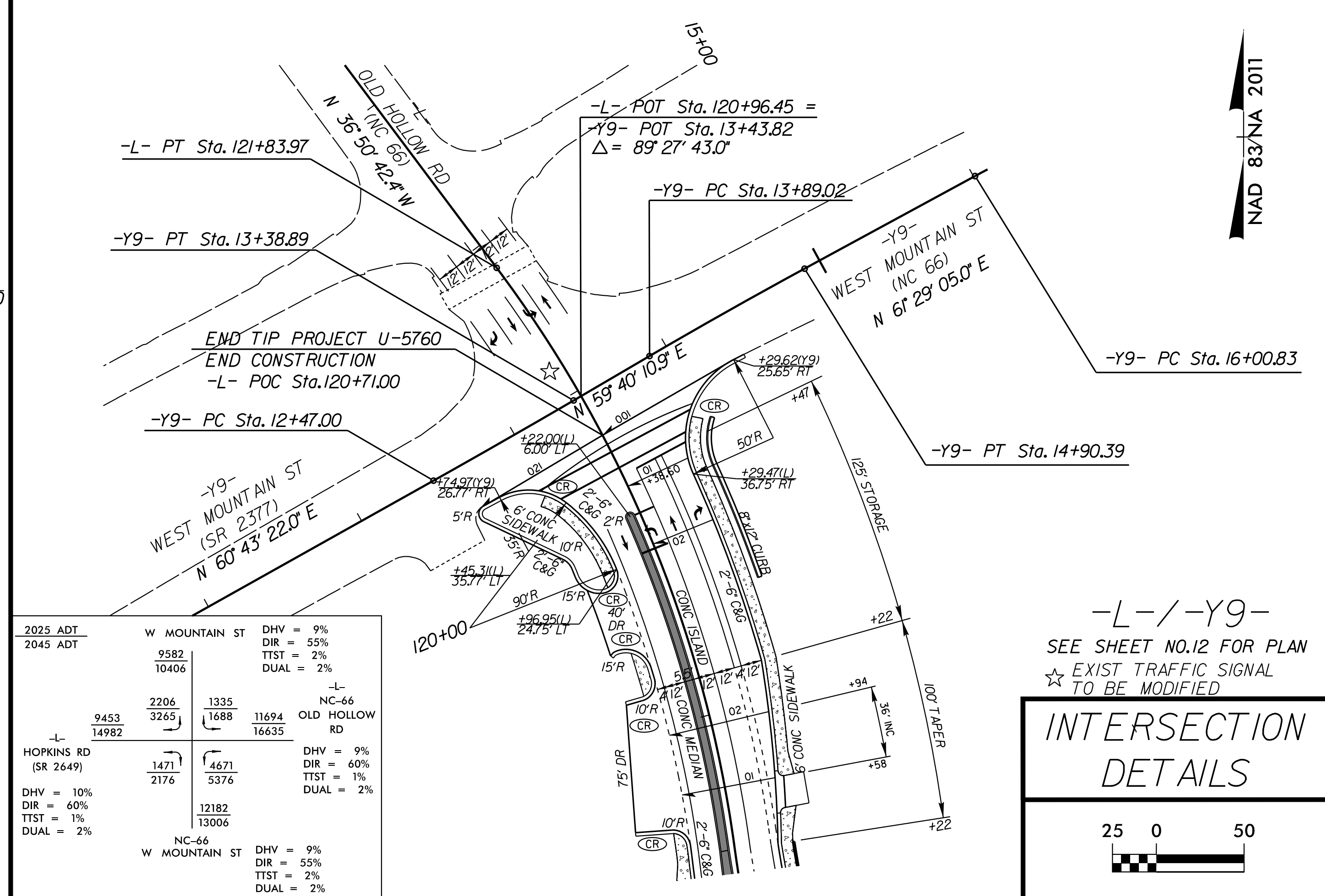
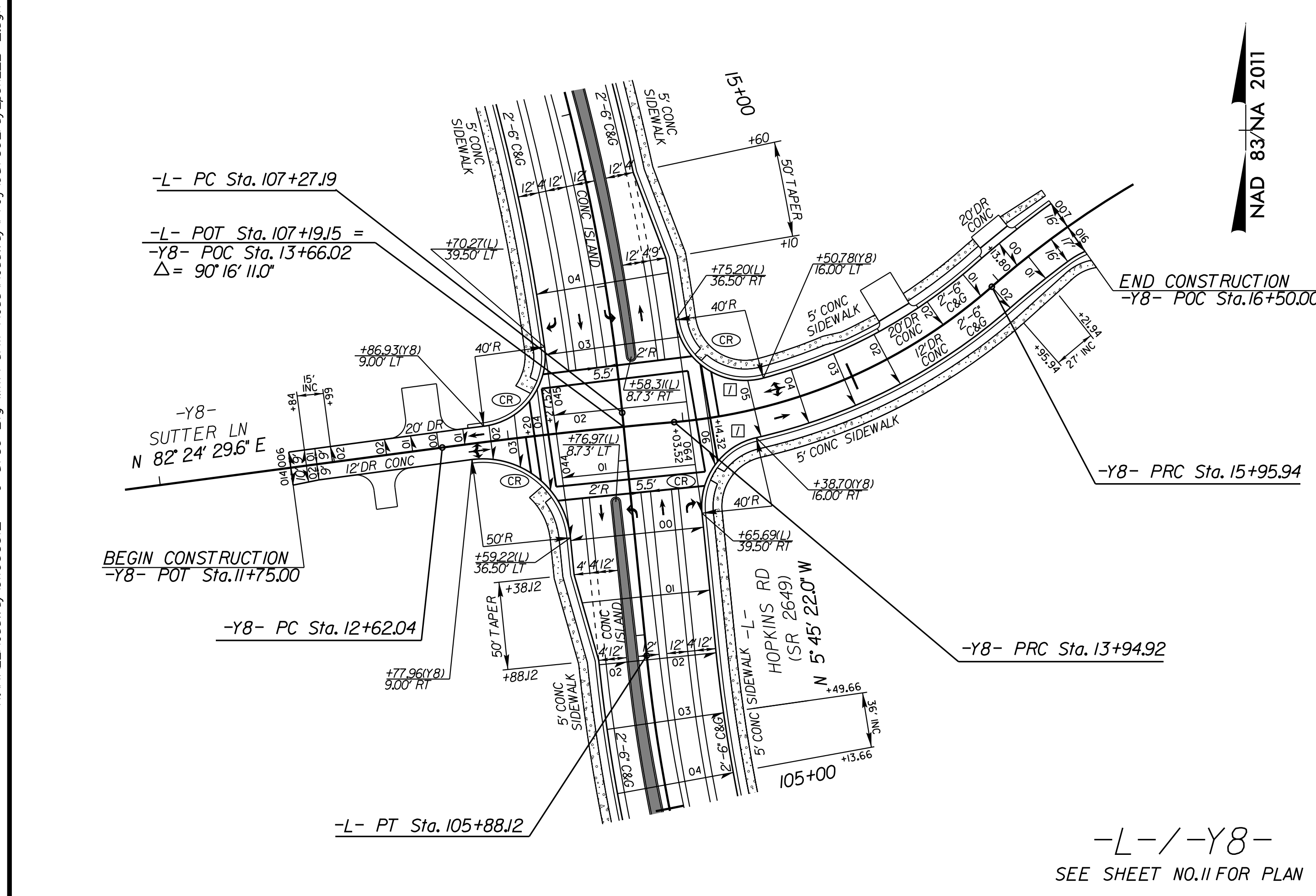
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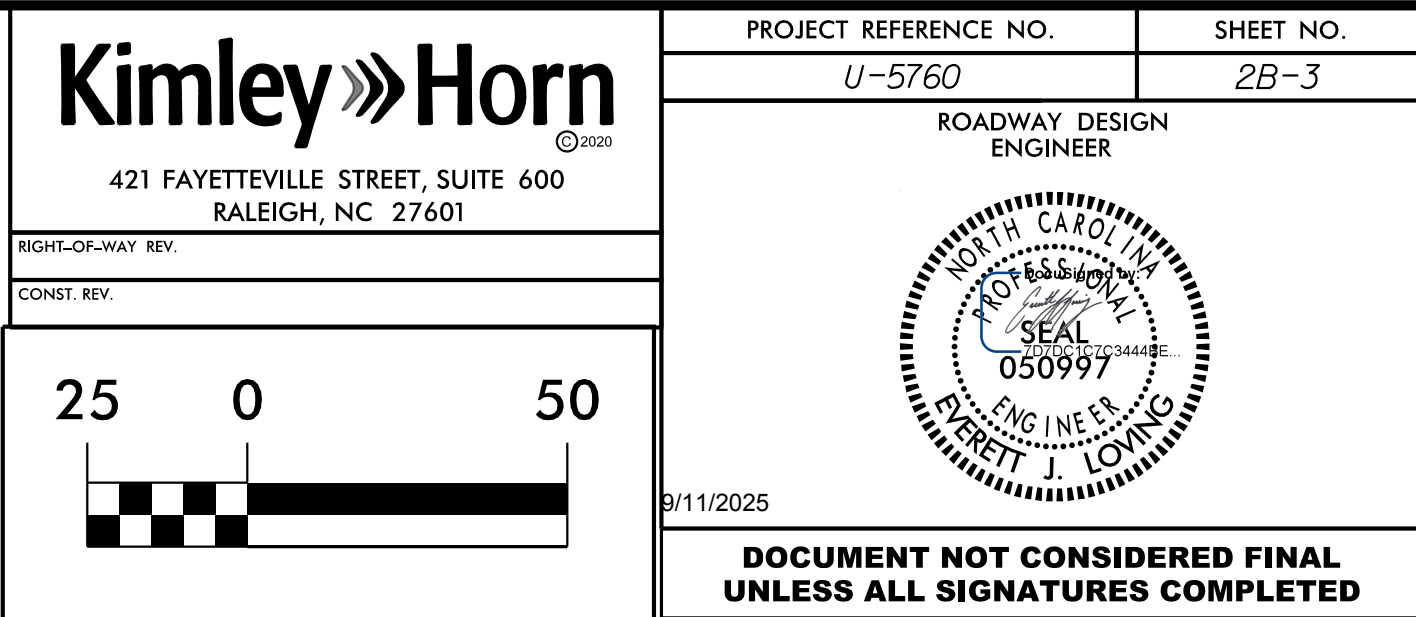
6/26/2025



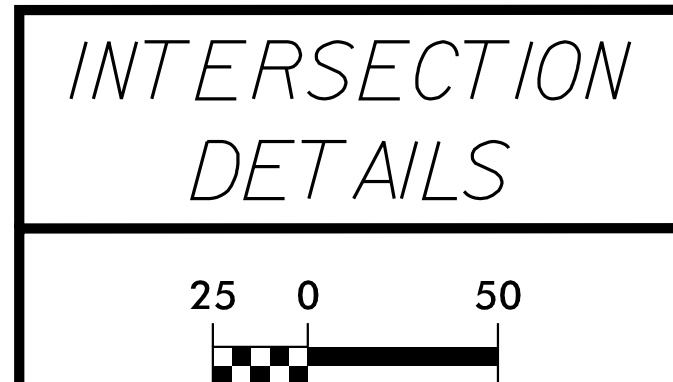
INTERSECTION DETAILS

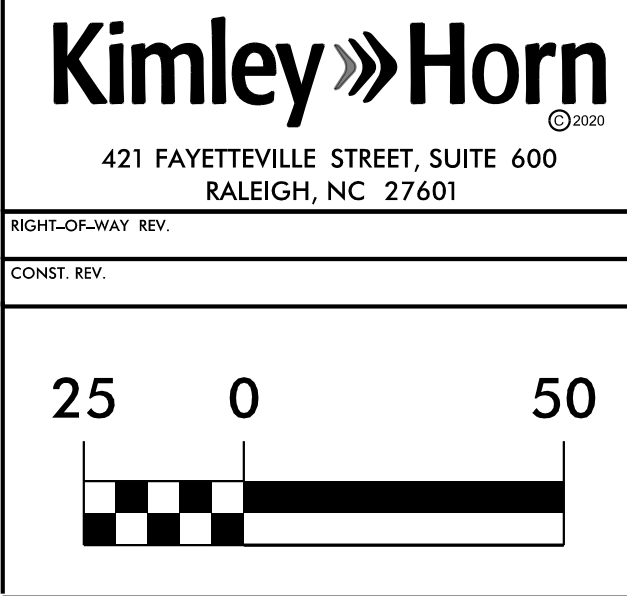
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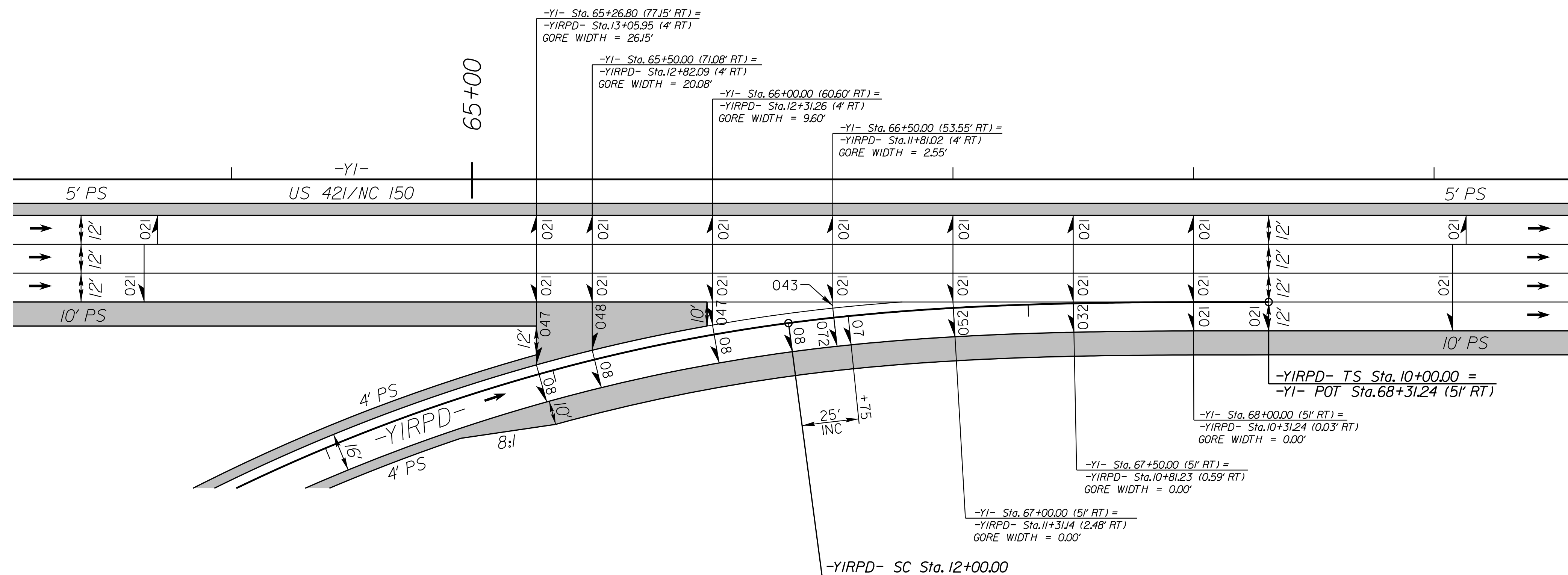


-Y1- AND -Y1RPB- GORE DETAIL
SEE SHEET 5 FOR PLAN





-Y1- AND -Y1RPD- GORE DETAIL
SEE SHEET 5 FOR PLAN



-Y1- AND -Y1RPD- GORE DETAIL
SEE SHEET 5 FOR PLAN

INTERSECTION DETAILS



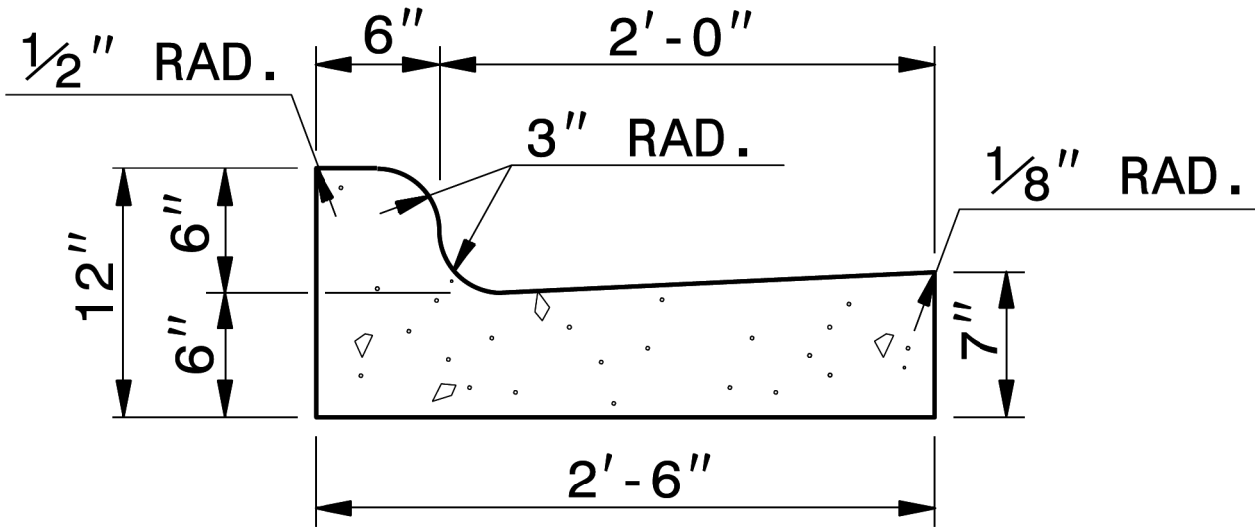


6/26/2025

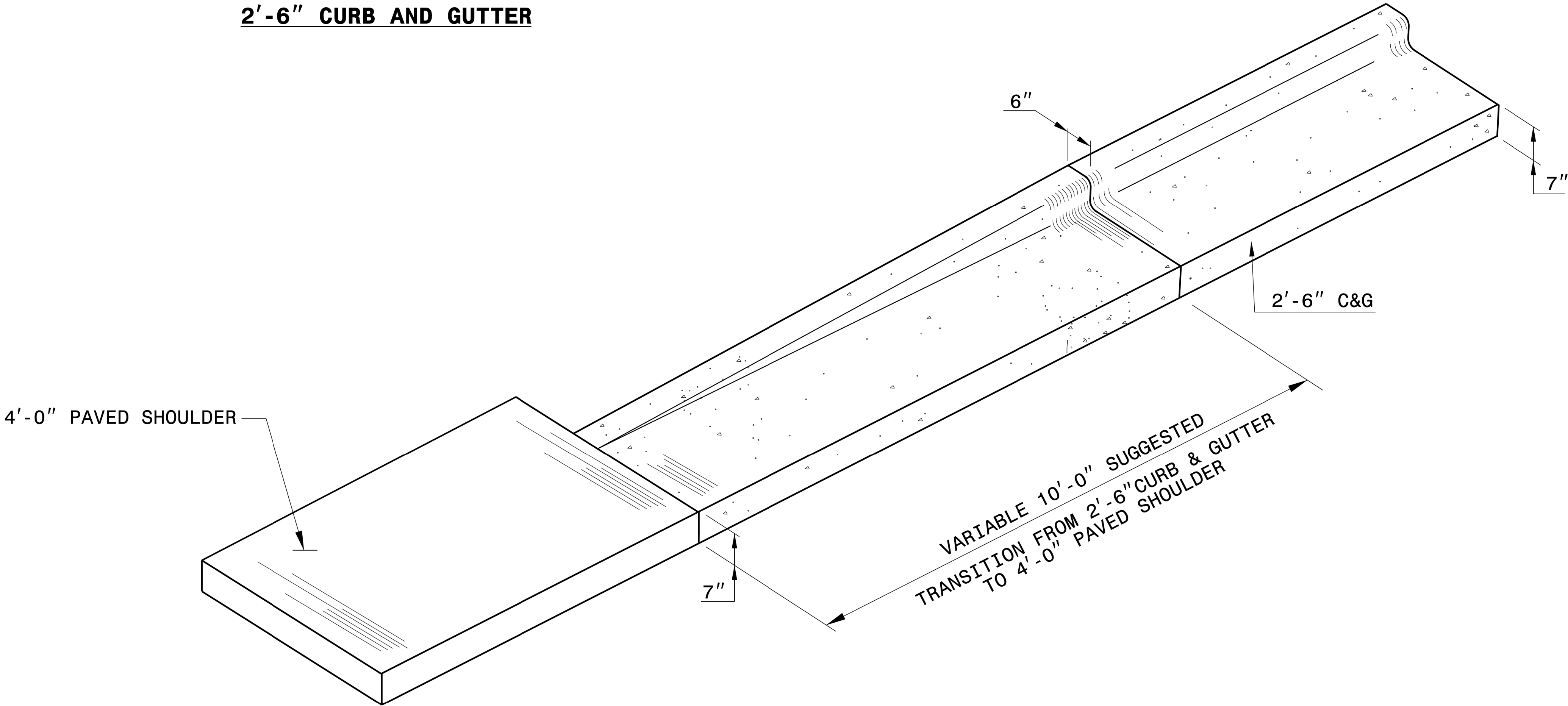
5/14/99

PROJECT REFERENCE NO.	SHEET NO.
U-5760	2C-1

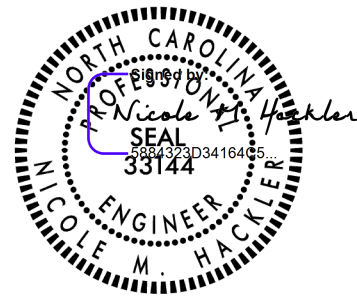
*NOTE: SEE STD. DWG. 846.01
FOR GENERAL NOTES



2'-6" CURB AND GUTTER



ISOMETRIC VIEW OF TRANSITION



9/12/2025

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

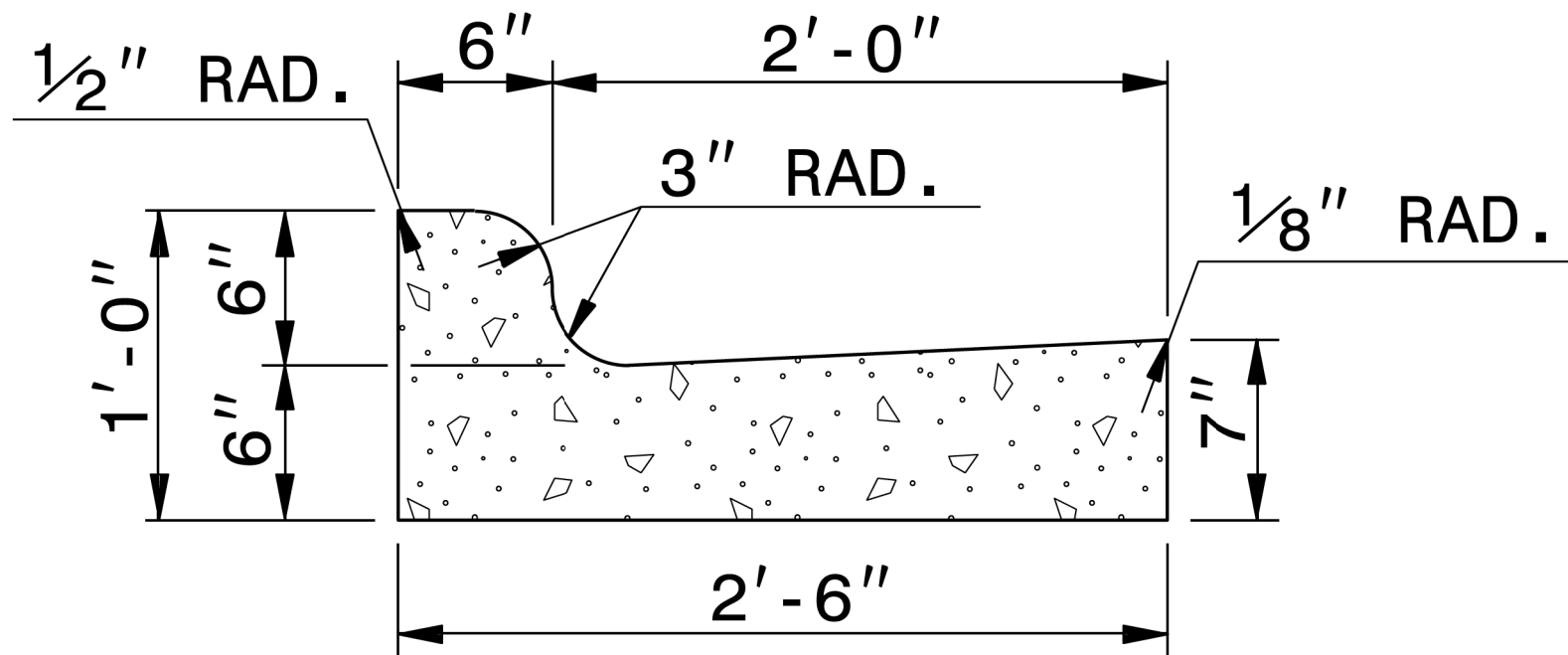
**CONTRACT STANDARDS
AND DEVELOPMENT UNIT**
Office 919-707-6950 FAX 919-250-4119

**DETAIL OF 10' TRANSITION
FROM 2'-6" CURB & GUTTER
TO 4'-0" PAVED SHOULDER**

ORIGINAL BY: _____ DATE: _____
MODIFIED BY: rnbritt DATE: 04-13-2016
CHECKED BY: _____ DATE: _____
FILE SPEC.: details/nbritt/english/misc/c&g transition sections.dgn

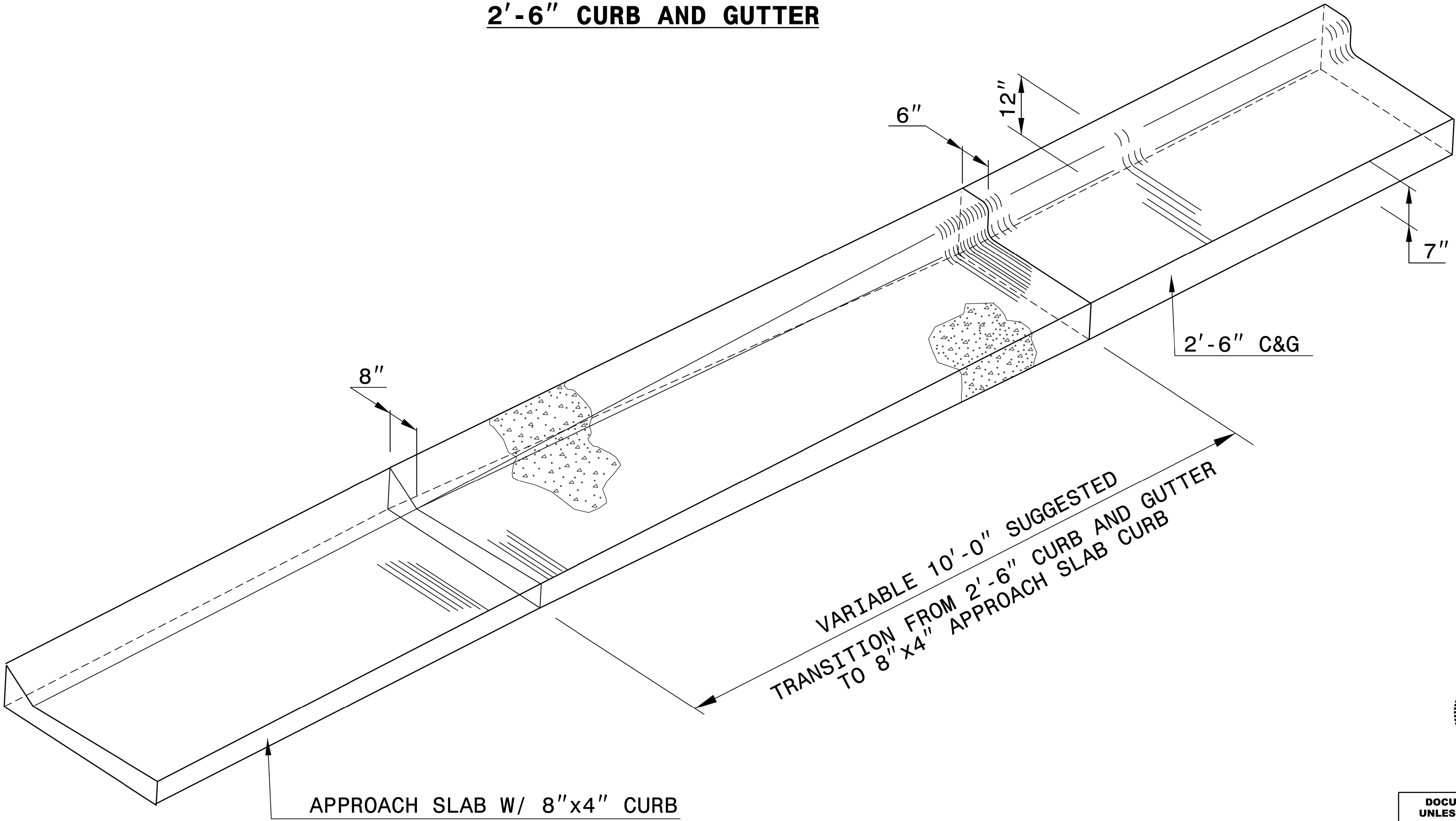
5/14/99

PROJECT REFERENCE NO.	SHEET NO.
U-5760	2C-2

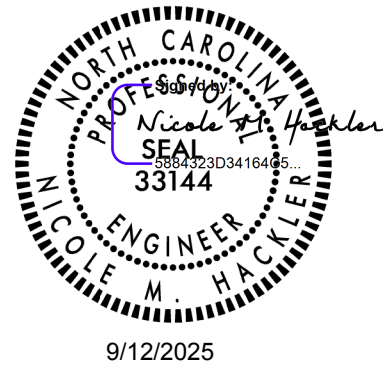


*NOTE: SEE STD. DWG. 846.01
FOR GENERAL NOTES

2'-6" CURB AND GUTTER



ISOMETRIC VIEW OF TRANSITION



9/12/2025

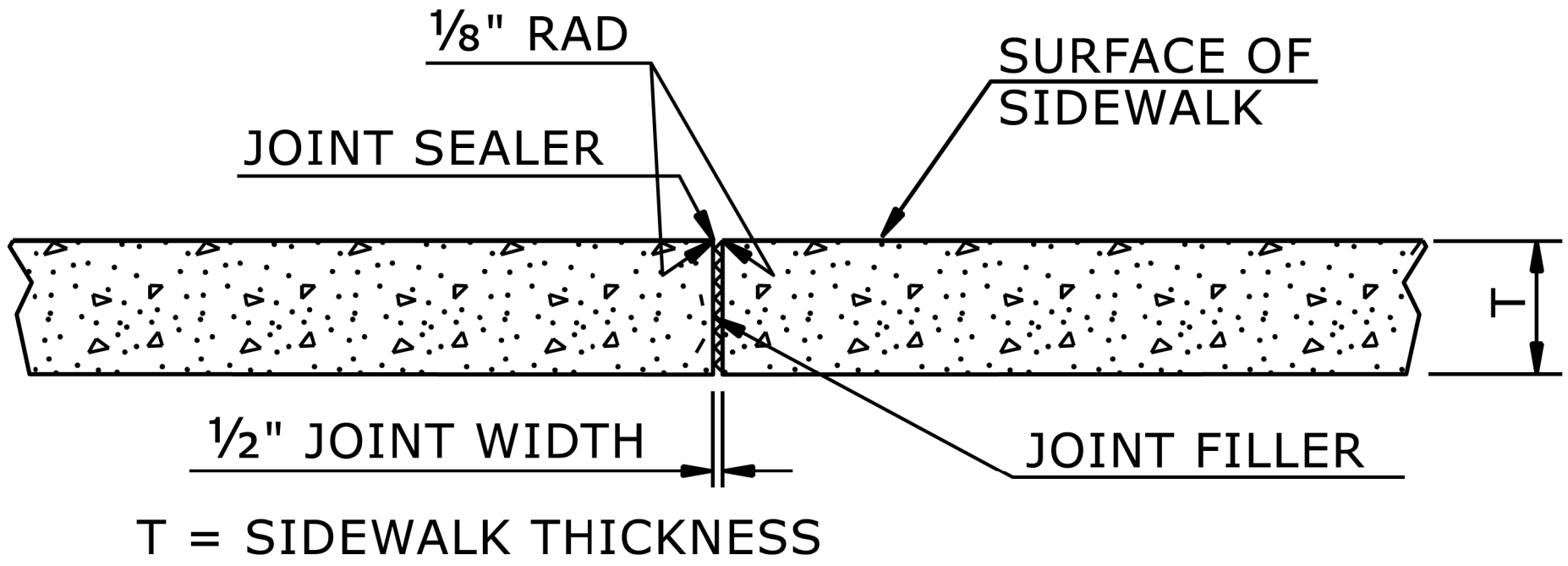
DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

CONTRACT STANDARDS AND DEVELOPMENT UNIT	
Office 919-707-6950	FAX 919-250-4119
DETAIL OF 2'-6" CURB & GUTTER TO 8"x4" APPROACH SLAB CURB TRANSITION SECTION	
ORIGINAL BY: E.E. WARD	DATE: 5-29-02
MODIFIED BY:	DATE:
CHECKED BY:	DATE:
FILE SPEC.: /usr/details/stand/cgtransit.dgn	

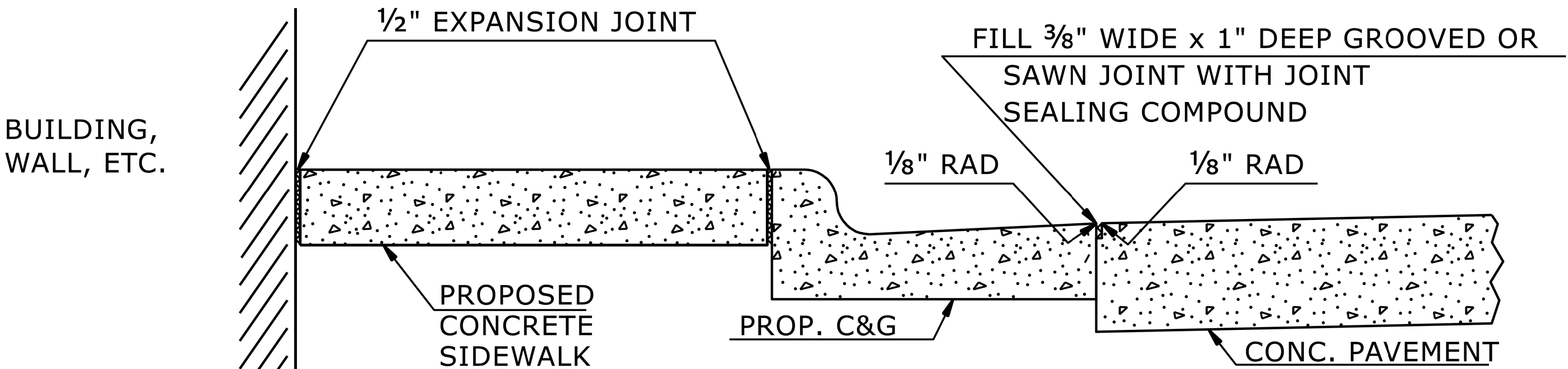
CONSTRUCT STANDARD SIDEWALK 5' WIDE AND
4" THICK UNLESS OTHERWISE DENOTED ON PLANS.

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

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



TRANSVERSE EXPANSION JOINT IN SIDEWALK



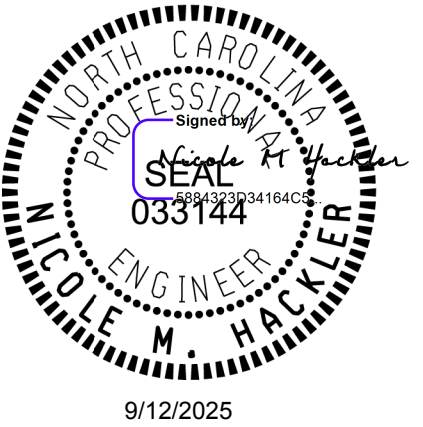
DETAILS SHOWING JOINTS IN CONCRETE SIDEWALK

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

ROADWAY DETAIL DRAWING FOR CONCRETE SIDEWALK

SHEET 1 OF 1

848D01



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

CONTRACTS STANDARDS AND DEVELOPMENT UNIT

Office 919-707-6950

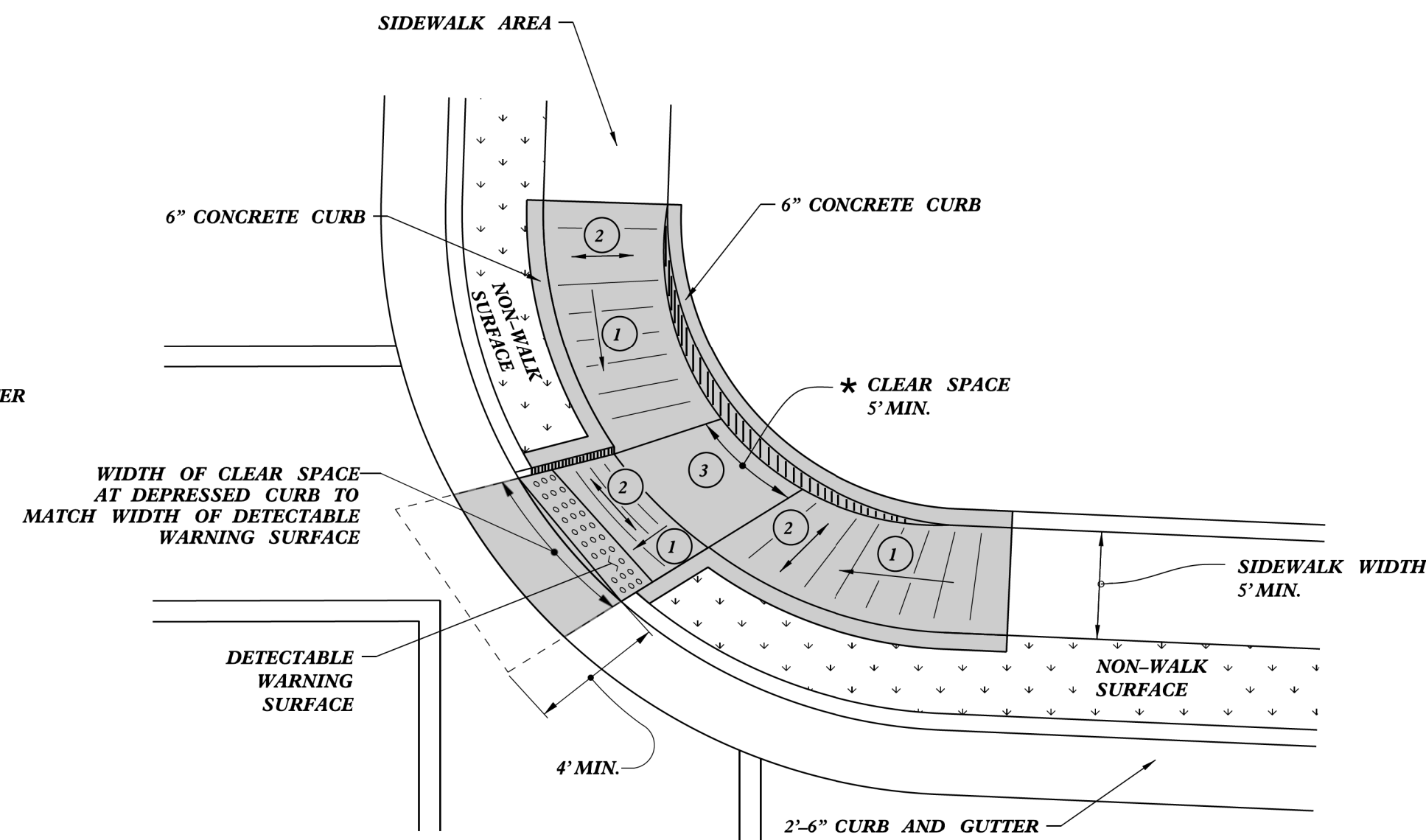
FAX 919-250-4119

SEE TITLE BLOCK

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



DETECTABLE WARNING SURFACE



TYPE 3 MODIFIED
INSTALLATION IN A RADIUS

- 1 8.33% (12:1) MAX RAMP SLOPE
- 2 CROSS SLOPE: 2.00%
- 3 MAXIMUM CROSS SLOPE AND LONGITUDINAL SLOPE OF 2.00%.

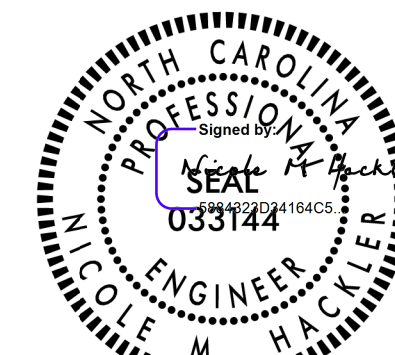
PAY LIMITS FOR 1 CURB RAMP

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

CURB RAMP
PARALLEL RAMP

SHEET 9 OF 13

848D06



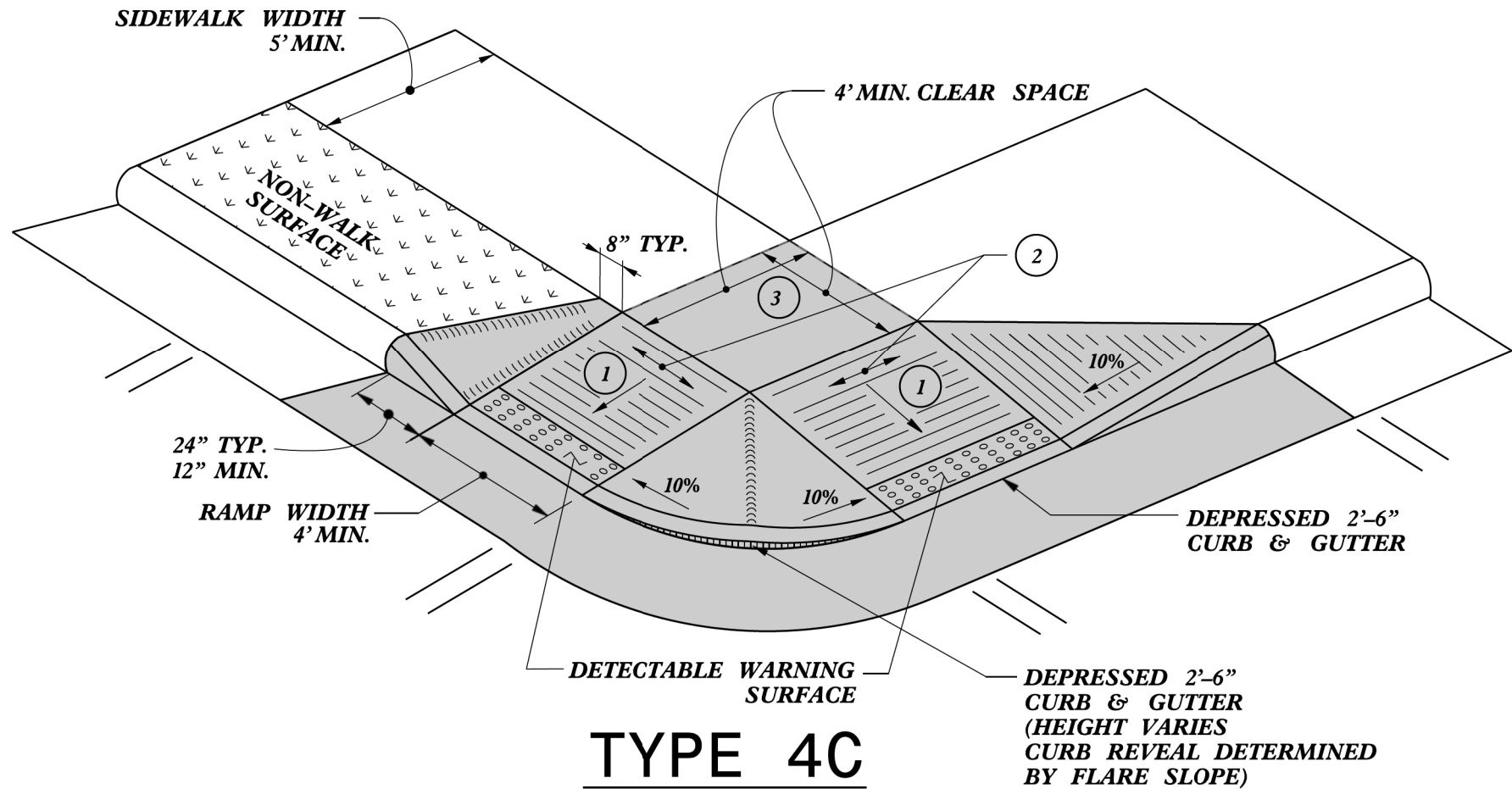
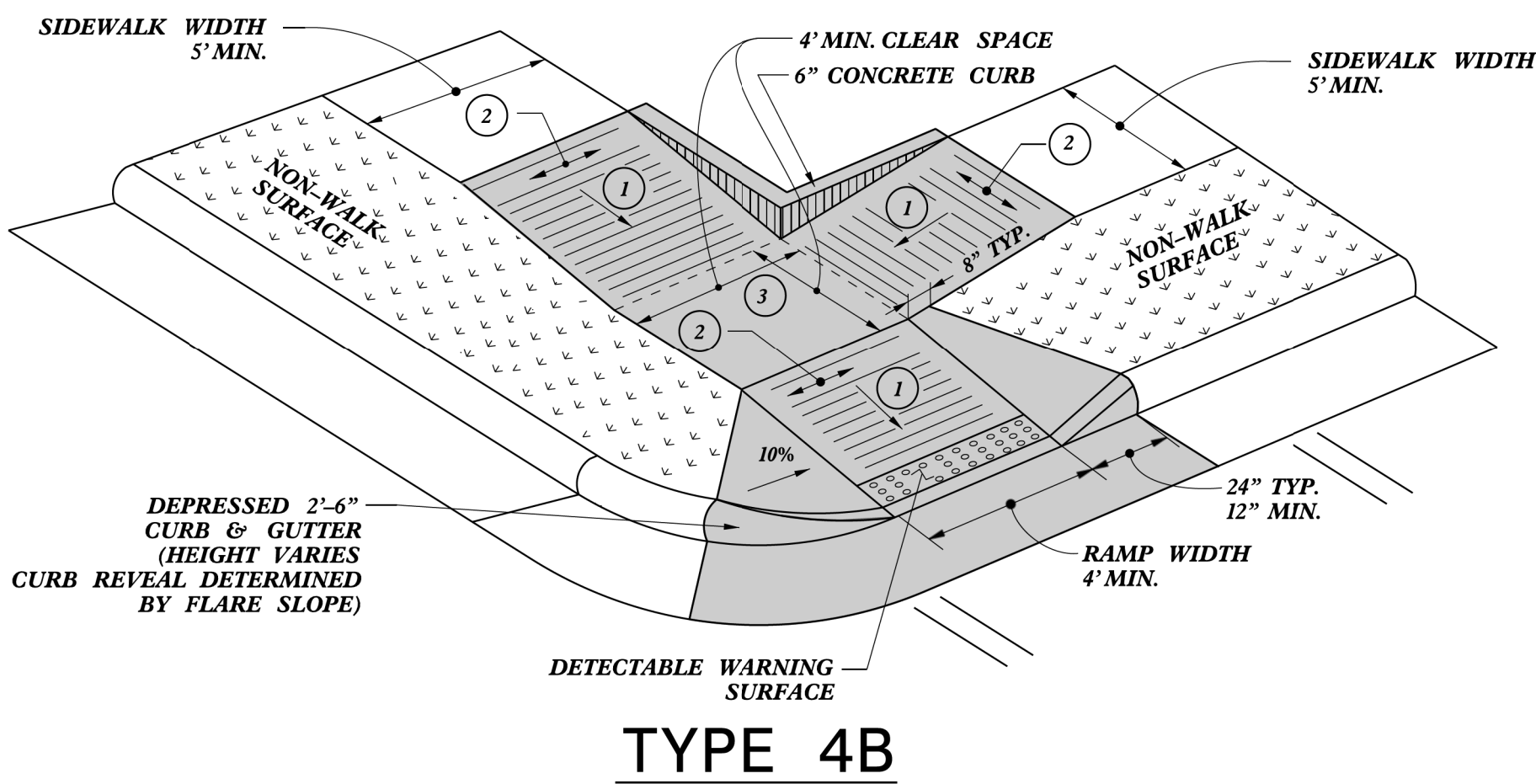
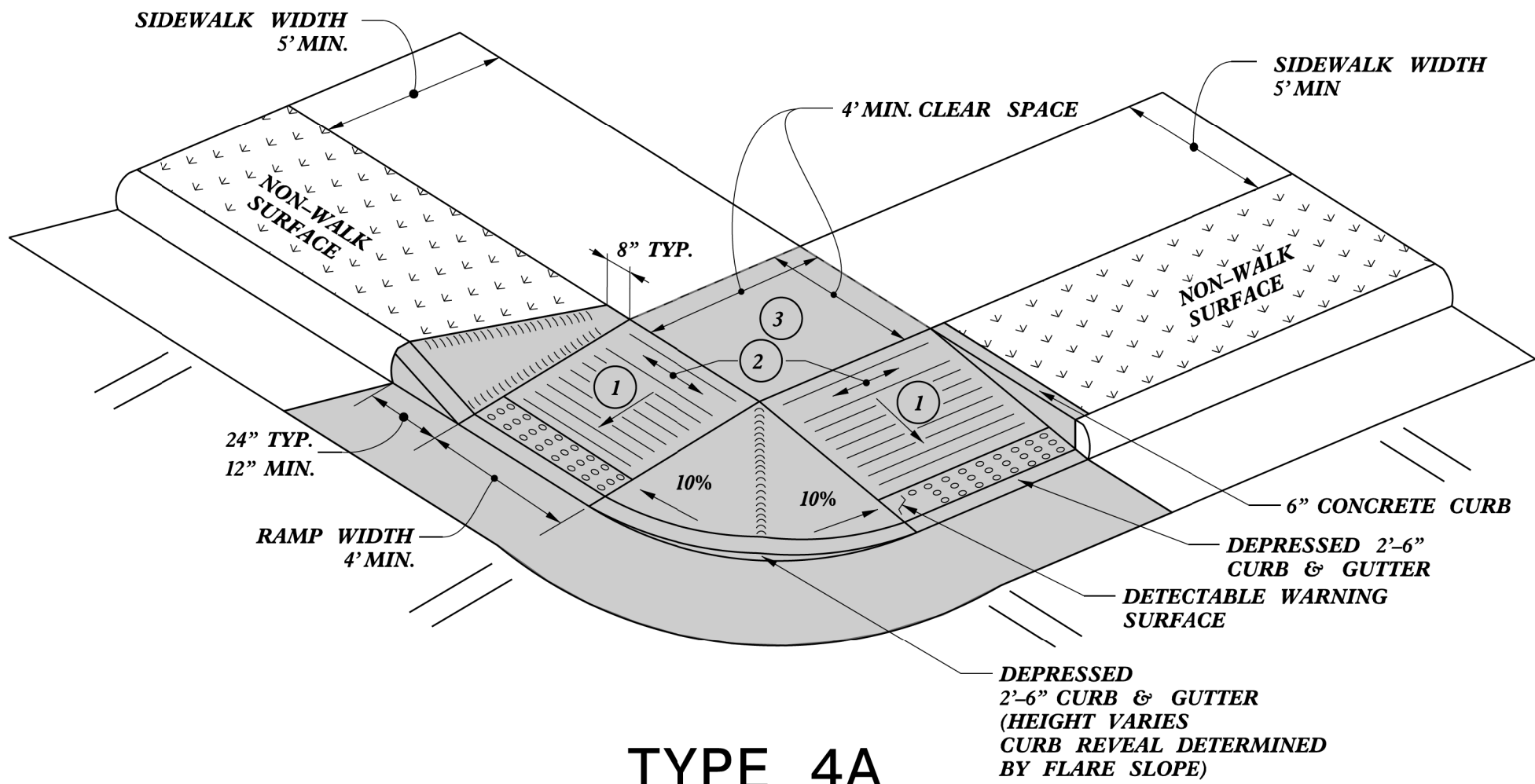
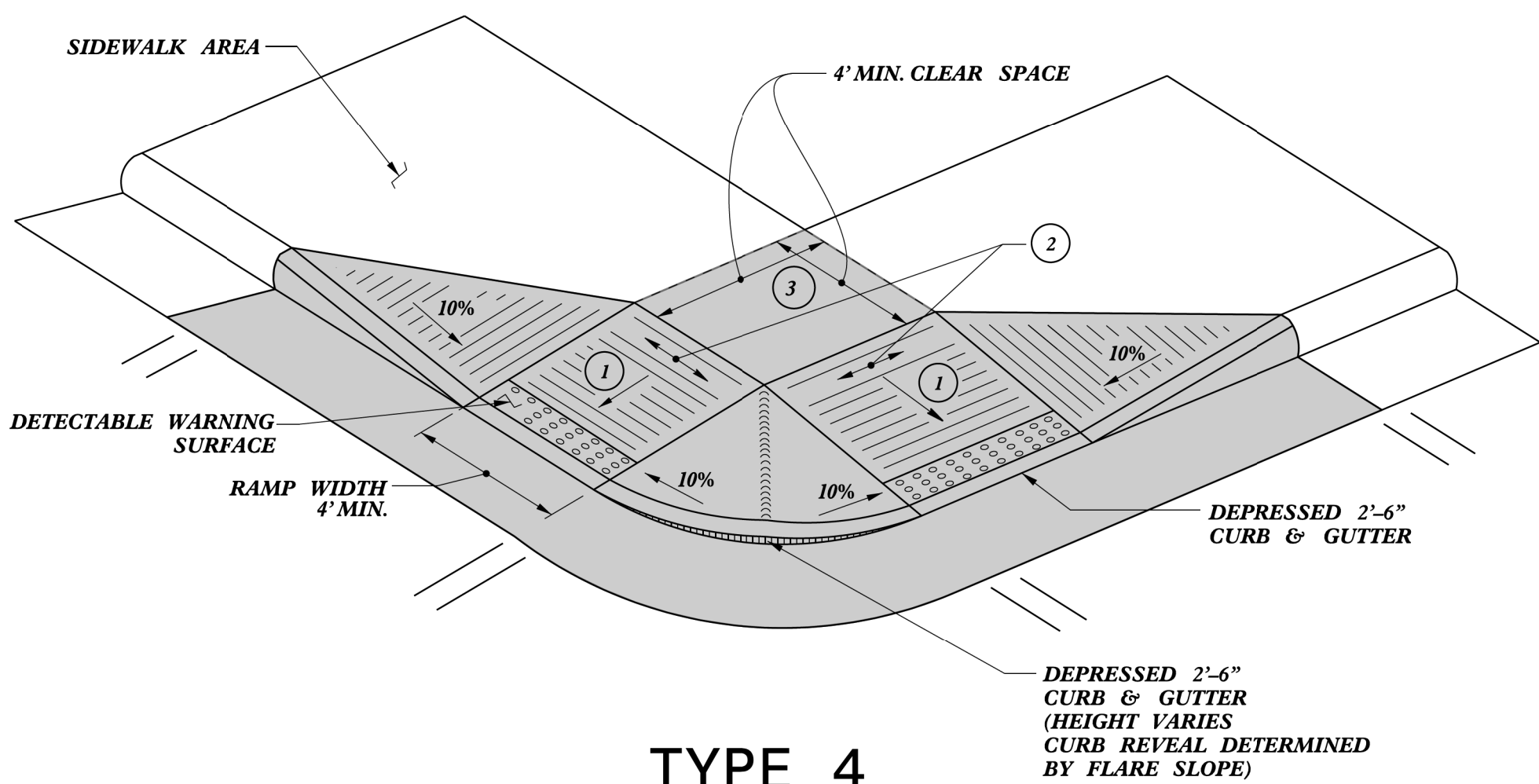
9/12/2025

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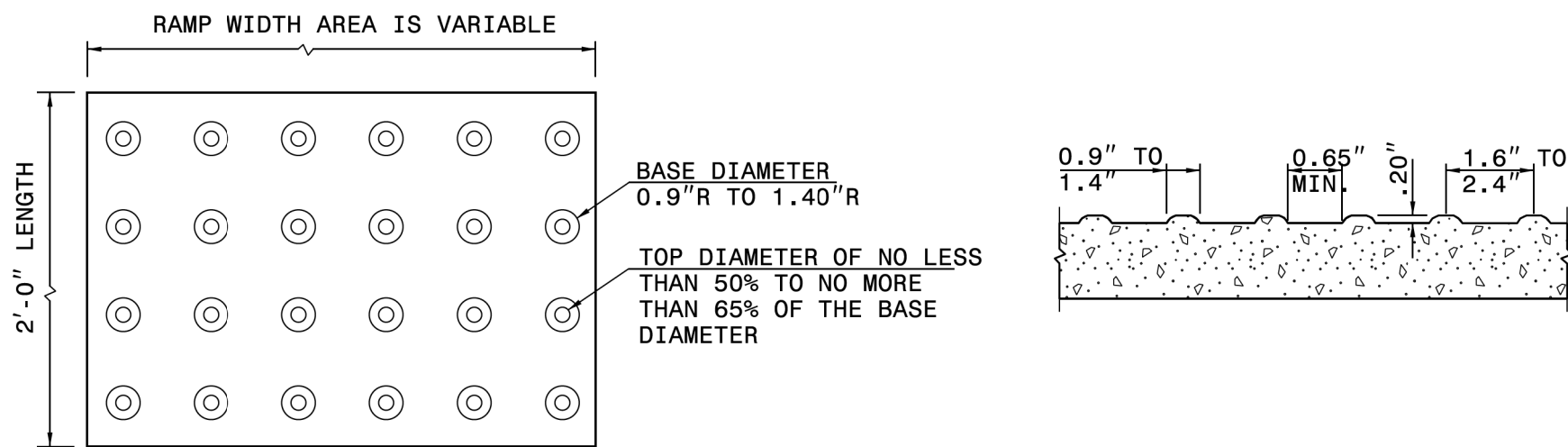
**CONTRACTS STANDARDS
AND DEVELOPMENT UNIT**
Office 919-707-6950 FAX 919-250-4119

SEE TITLE BLOCK

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



NOTES:
DETECTABLE WARNING SURFACE SHALL COVER 2'-0" LENGTH AND FULL WIDTH OF THE RAMP FLOOR AS SHOWN ON THE DETAILS.
DETECTABLE WARNING SURFACE SHALL CONTRAST VISIBLY WITH ADJOINING SURFACE, EITHER LIGHT-ON-DARK, OR DARK-ON-LIGHT SEQUENCE COVERING THE ENTIRE RAMP.

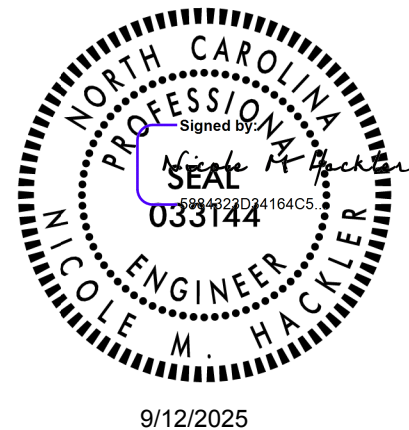


- 1 8.33% (12:1) MAX RAMP SLOPE
- 2 CROSS SLOPE: 2.00%
- 3 MAXIMUM CROSS SLOPE AND LONGITUDINAL SLOPE OF 2.00%.

PAY LIMITS FOR 1 OR 2 CURB RAMPS
(CALCULATE BASED ON NUMBER OF SETS
OF DETECTABLE WARNING SURFACES)

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ROADWAY DETAIL DRAWING FOR
CURB RAMP
SHARED LANDING



SHEET 10 OF 13
848D06

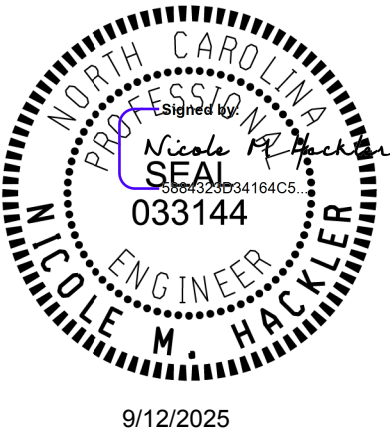
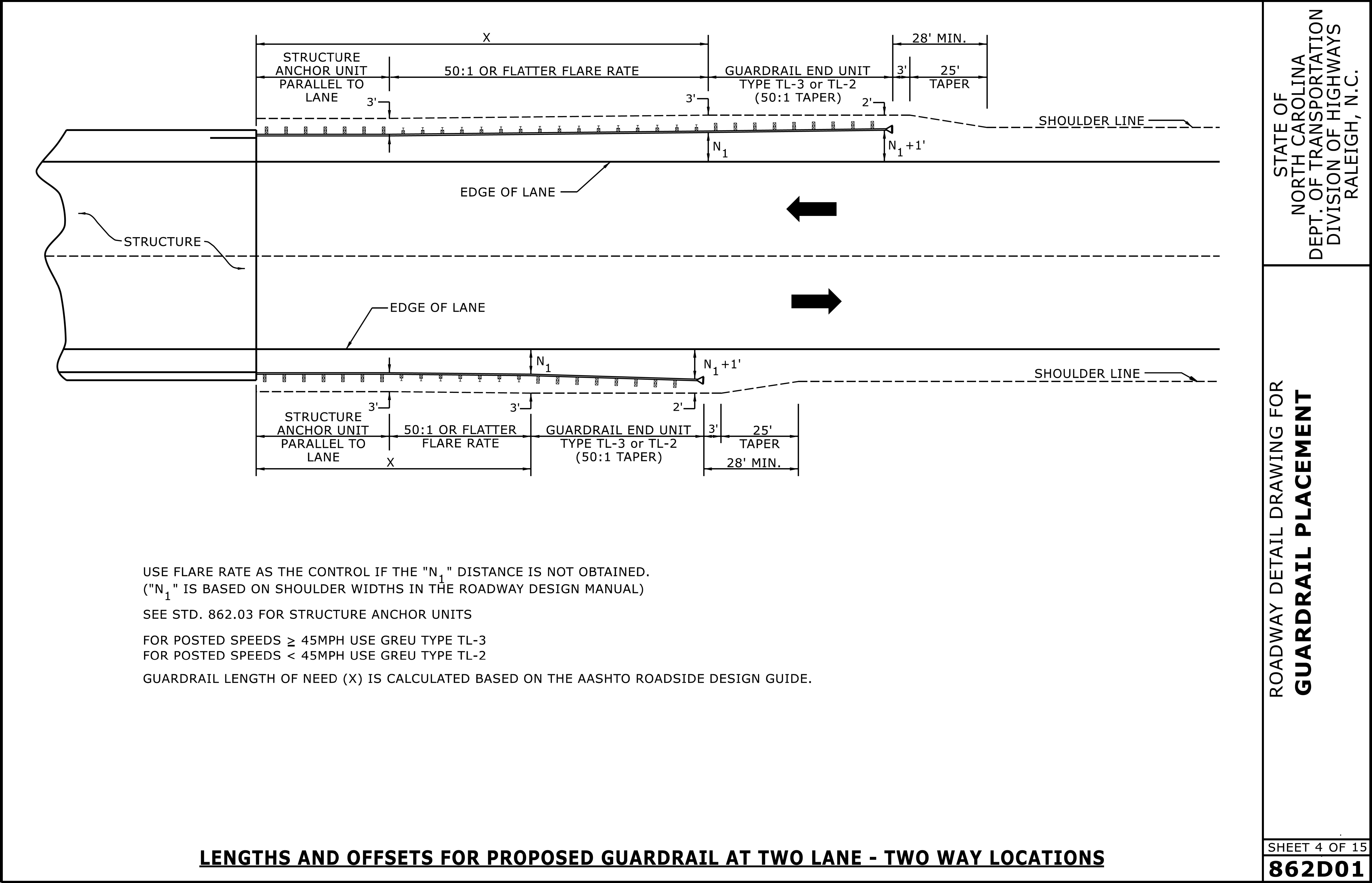
DOCUMENT NOT CONSIDERED FINAL
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ORIGINAL BY: S.CALHOUN DATE: 12-22-2023
MODIFIED BY: DATE:
CHECKED BY: DATE:
FILE SPEC.: special_details\nmhackler\848D0610.dgn

PROJECT REFERENCE NO.	SHEET NO.
U-5760	2C-6



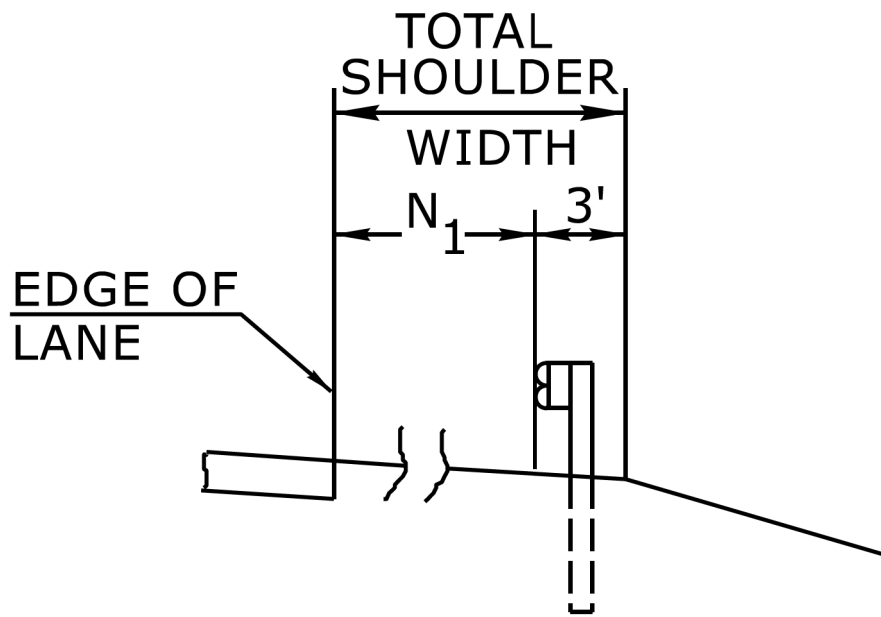
DOCUMENT NOT CONSIDERED FINAL
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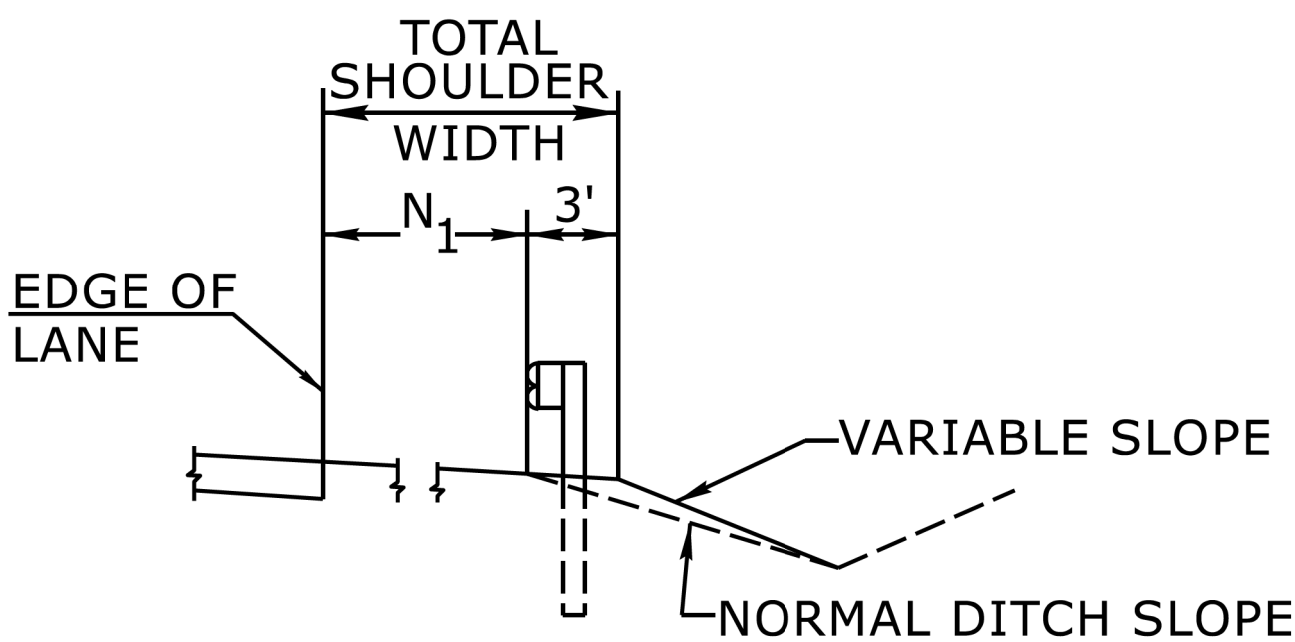
SEE TITLE BLOCK

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

PROJECT REFERENCE NO.	SHEET NO.
U-5760	2C-7

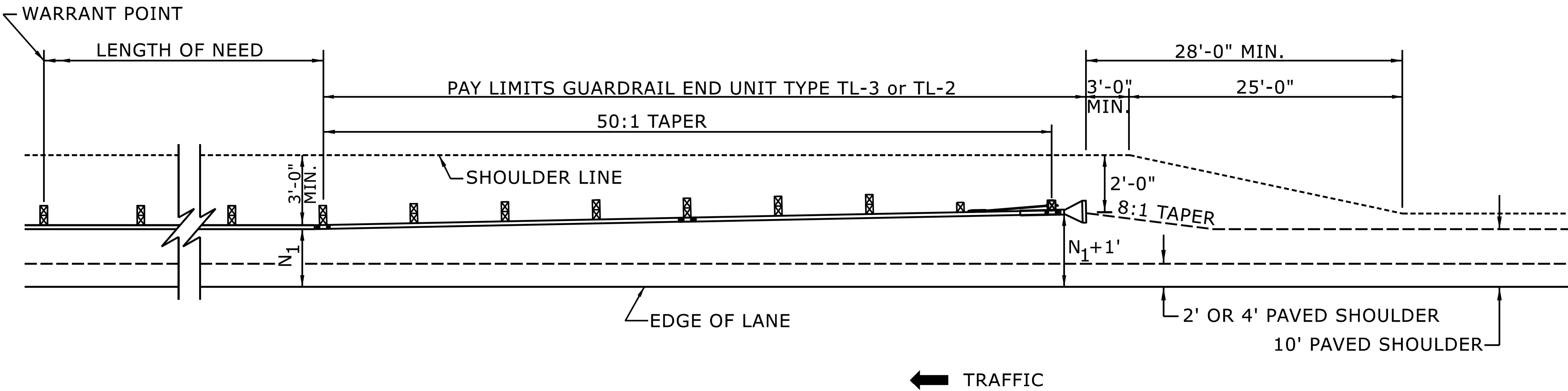


FILL SECTION



CUT SECTION

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



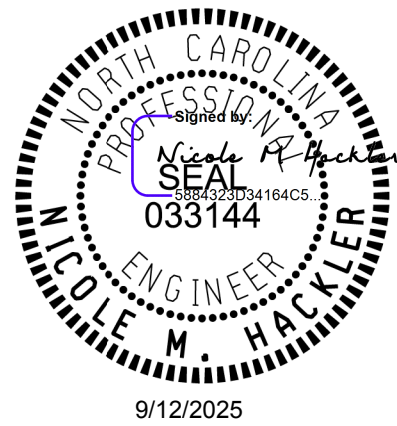
FOR POSTED SPEEDS ≥ 45mph USE GREU TYPE TL-3
FOR POSTED SPEEDS < 45mph USE GREU TYPE TL-2

DETAIL OF BEGINNING OF GUARDRAIL IN CUT OR FILL SECTION

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ROADWAY DETAIL DRAWING FOR
GUARDRAIL PLACEMENT

SHEET 6 OF 15
862D01

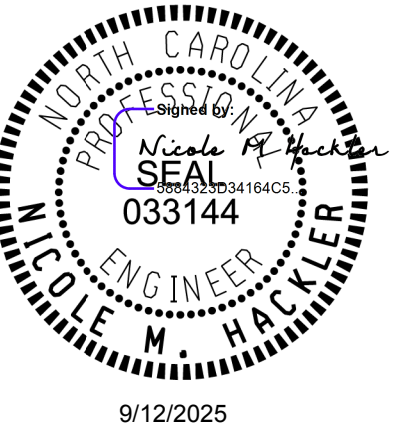
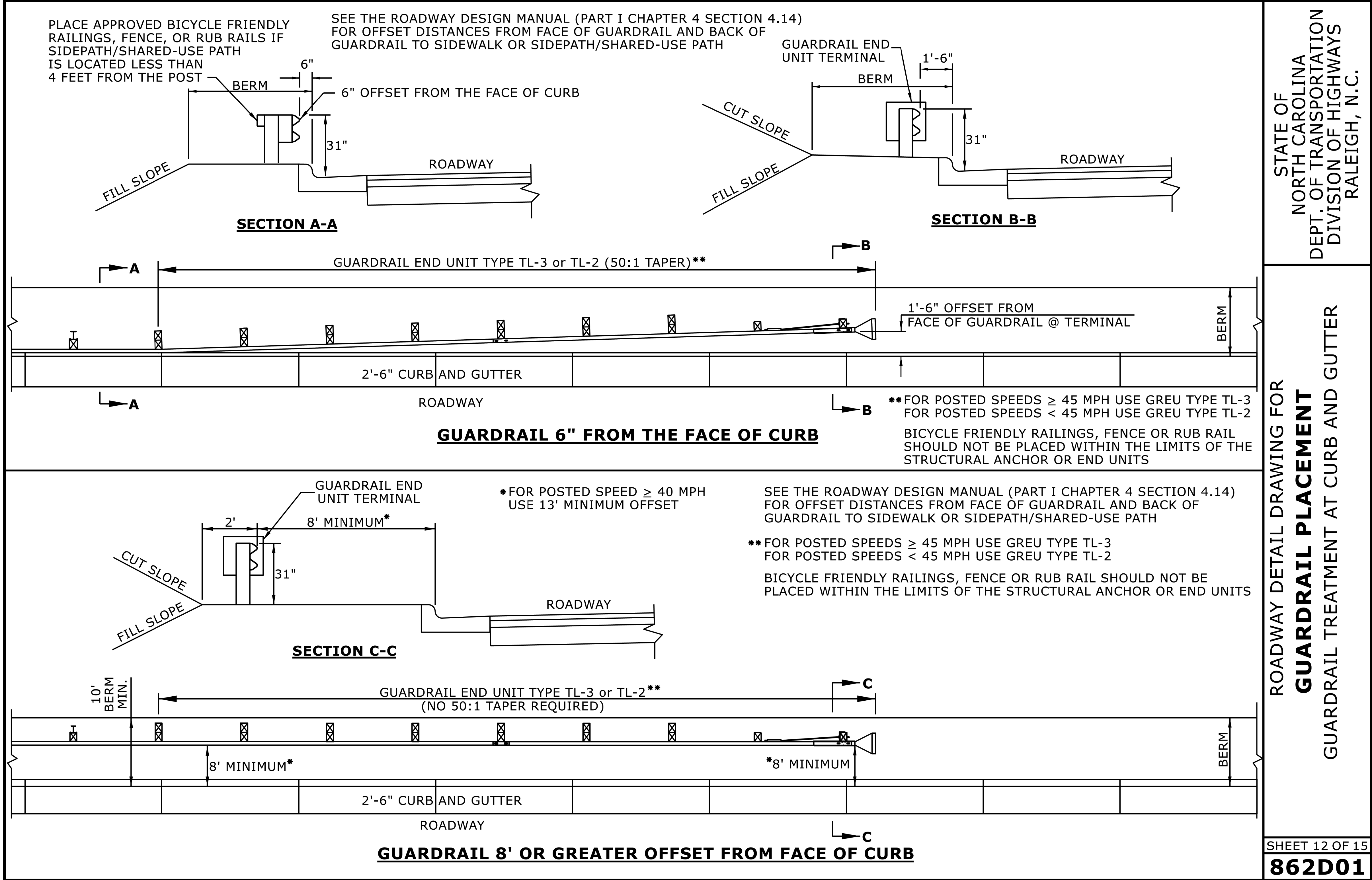


DOCUMENT NOT CONSIDERED FINAL
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ORIGINAL BY: S.CALHOUN DATE: 7-25-2024
MODIFIED BY: DATE:
CHECKED BY: DATE:
FILE SPEC.:



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UNLESS ALL SIGNATURES COMPLETED

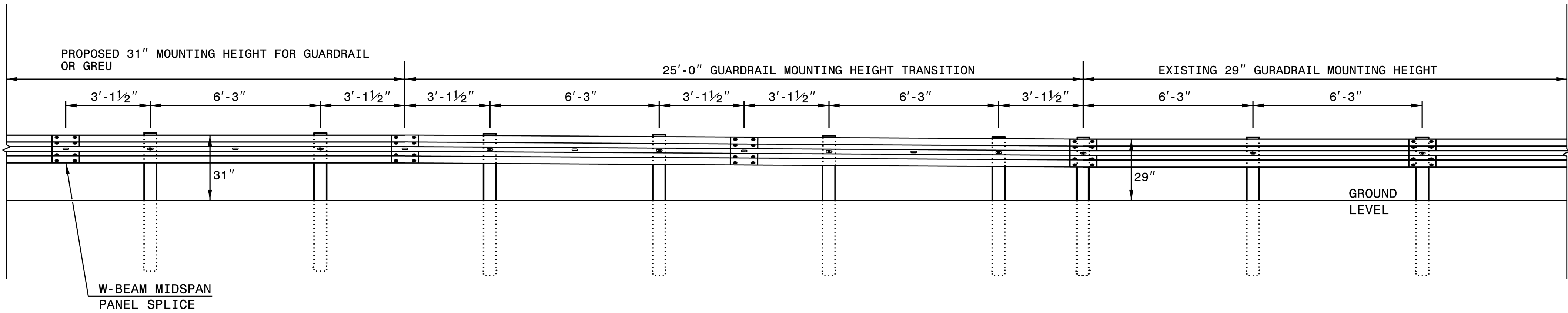
CONTRACTS STANDARDS
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Office 919-707-6950 FAX 919-250-4119

SEE TITLE BLOCK

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

PROJECT REFERENCE NO.	SHEET NO.
U-5760	2C-10

NOTE: IF EXISTING GUARDRAIL IS LOWER THAN 29", USE AN ADDITIONAL 12'-6" LONG SECTION OF GUARDRAIL,
FOR EVERY 1" OF HEIGHT DIFFERENCE, TO TRANSITION FROM EXISTING GUARDRAIL TO PROPOSED 31" GUARDRAIL.



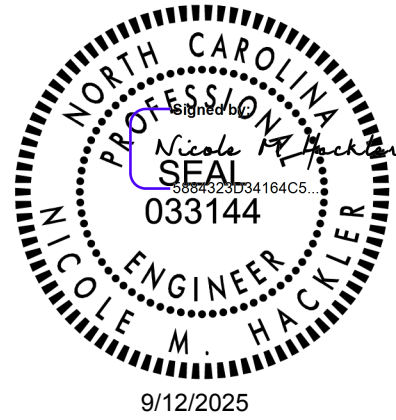
ELEVATION VIEW

TRANSITION FROM 29" TO 31" W-BEAM GUARDRAIL MOUNTING HEIGHT

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RALEIGH, N.C.

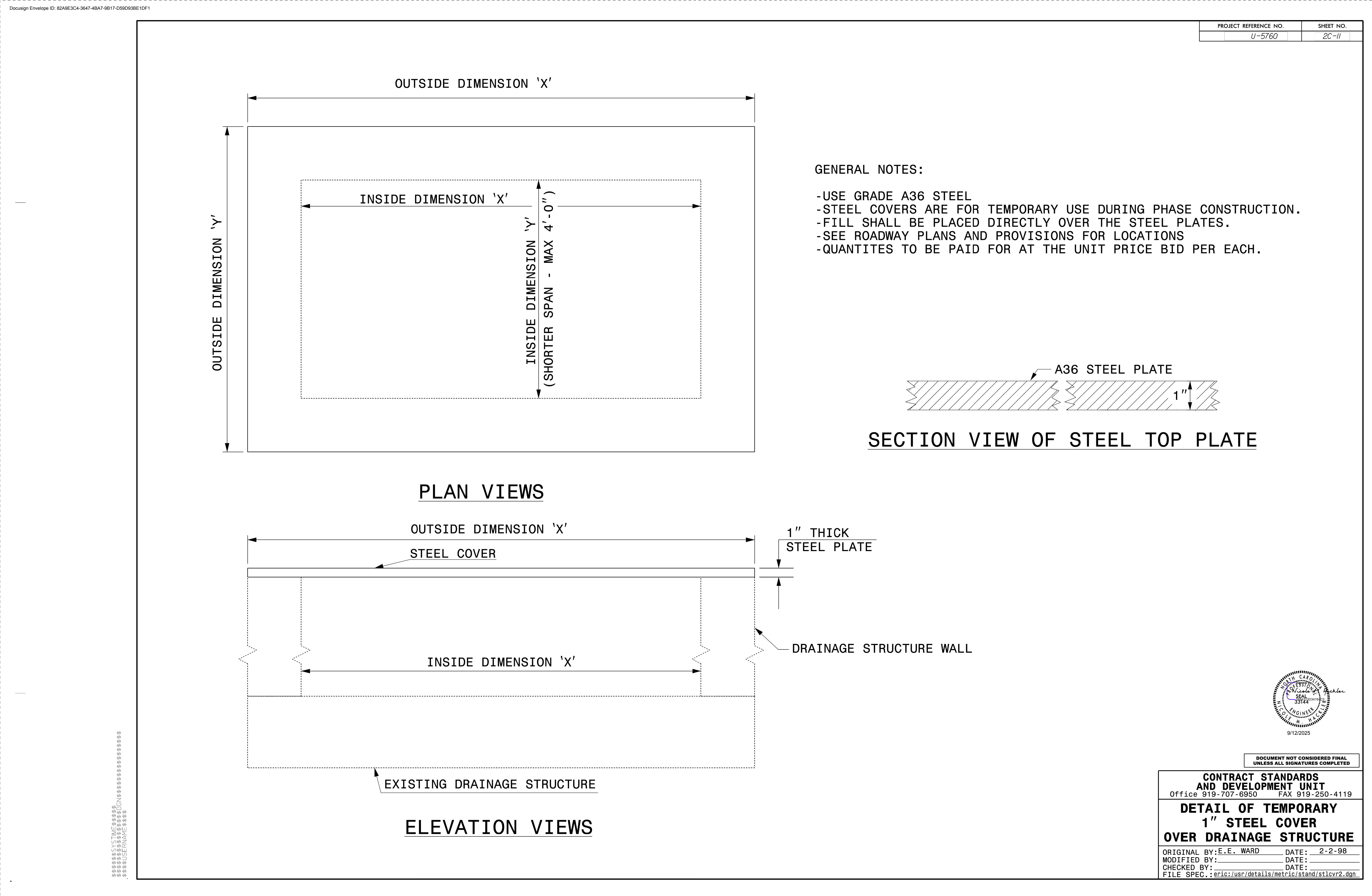
ROADWAY DETAIL DRAWING FOR
GUARDRAIL INSTALLATION

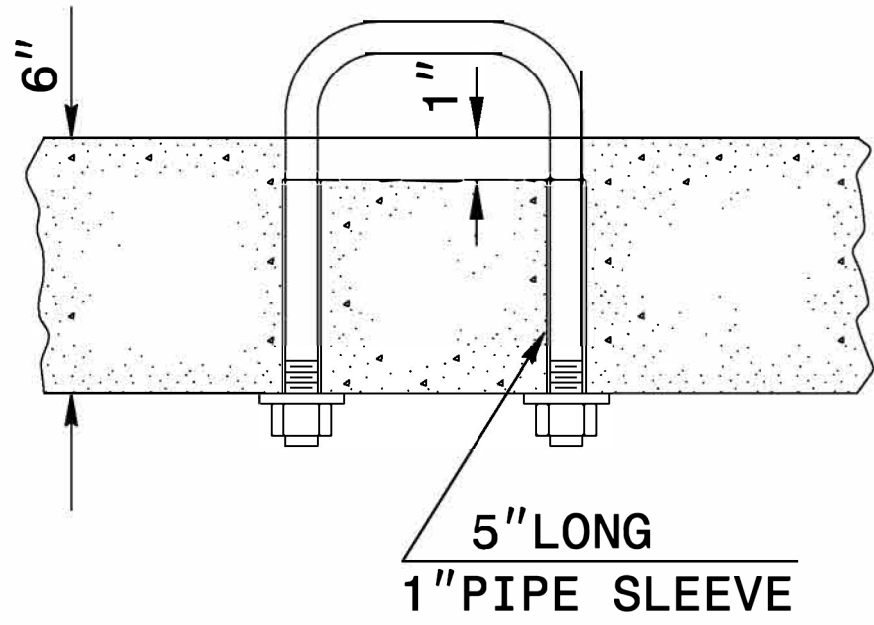
SHEET 5 OF 9
862D02



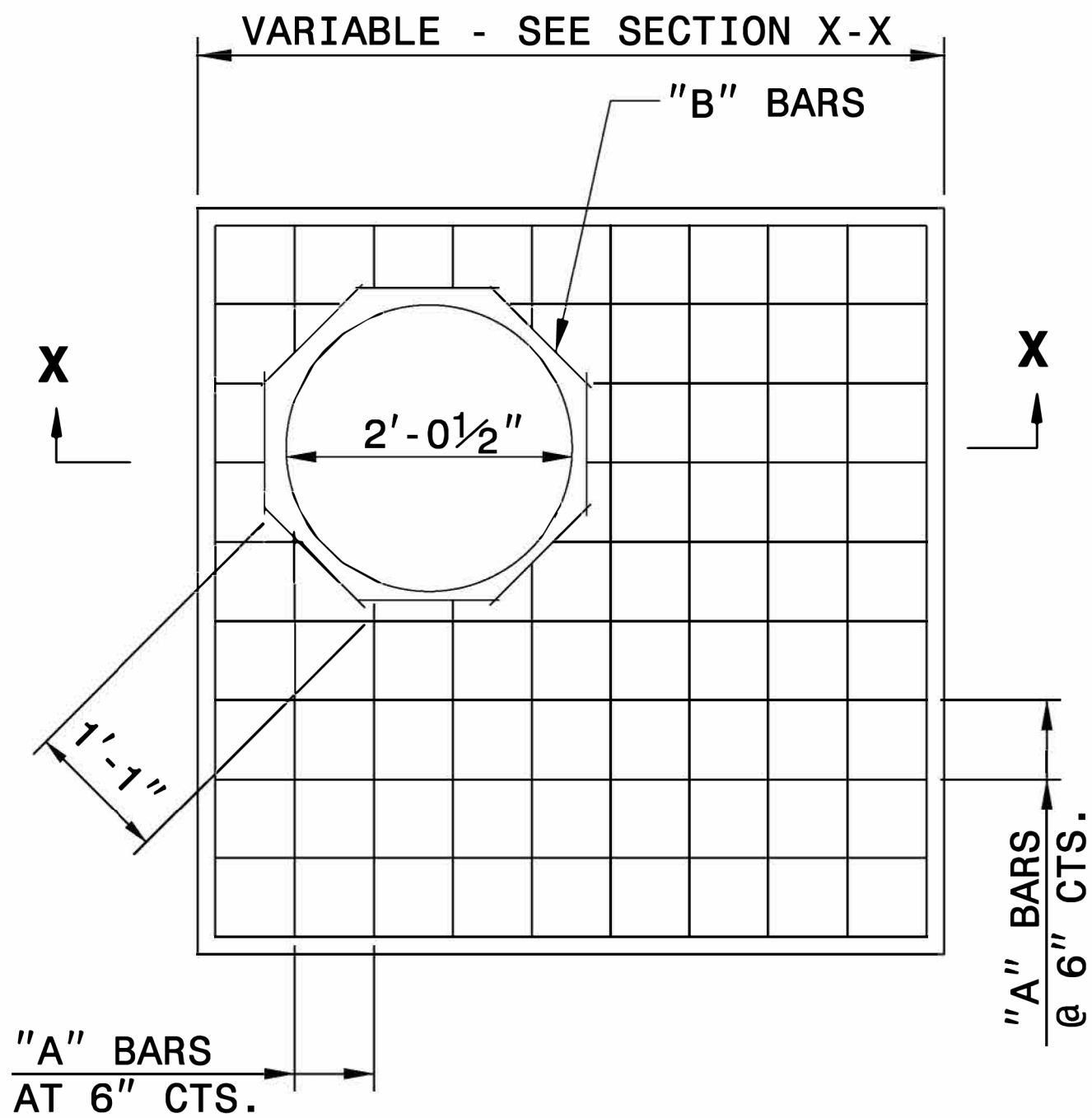
DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

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SEE TITLE BLOCK	
ORIGINAL BY: <u>K. Aldridge</u>	DATE: <u>02-25</u>
MODIFIED BY: _____	DATE: _____
CHECKED BY: _____	DATE: _____
FILE SPEC.: _____	

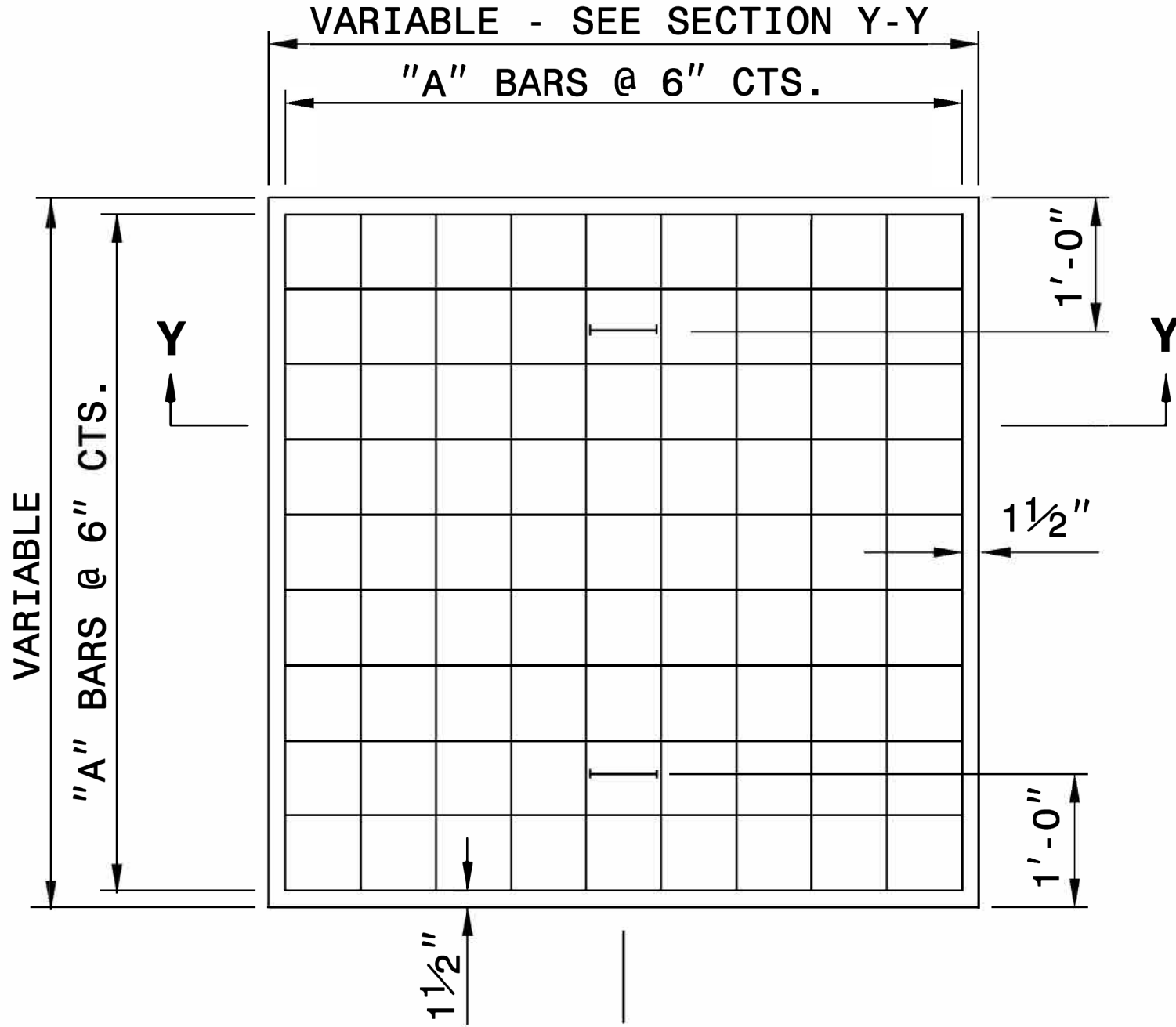




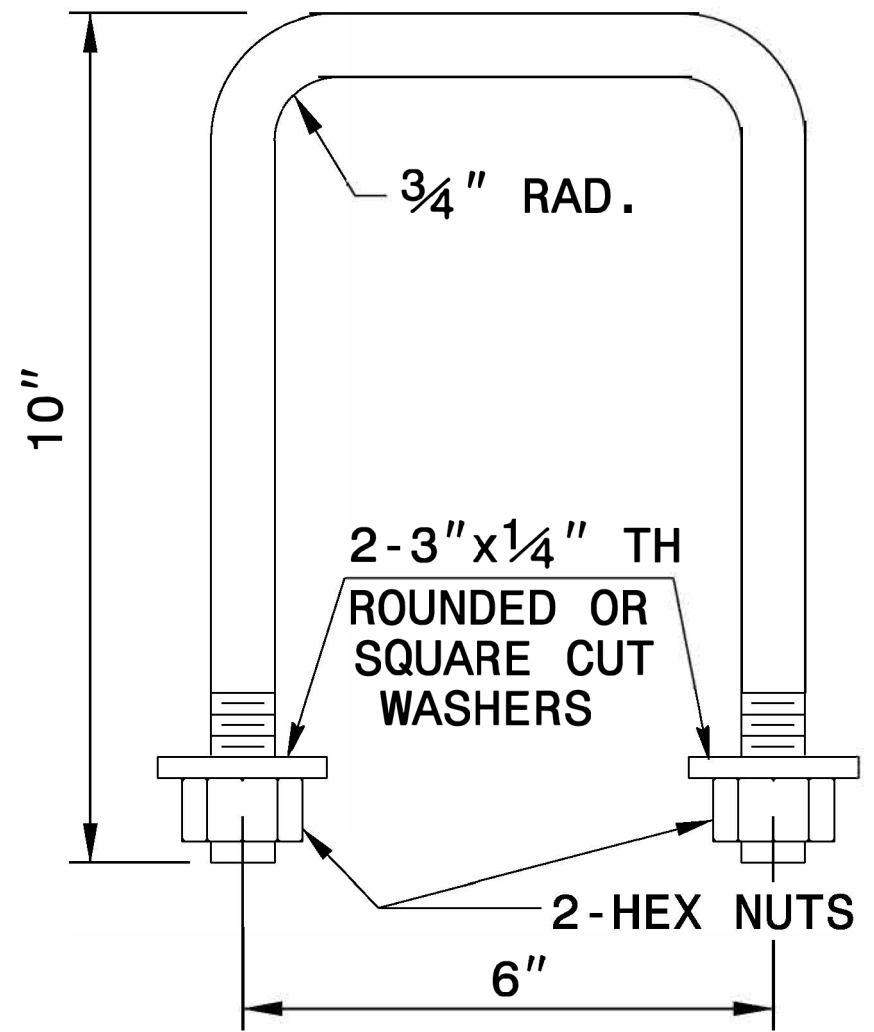
PARTIAL SECTION



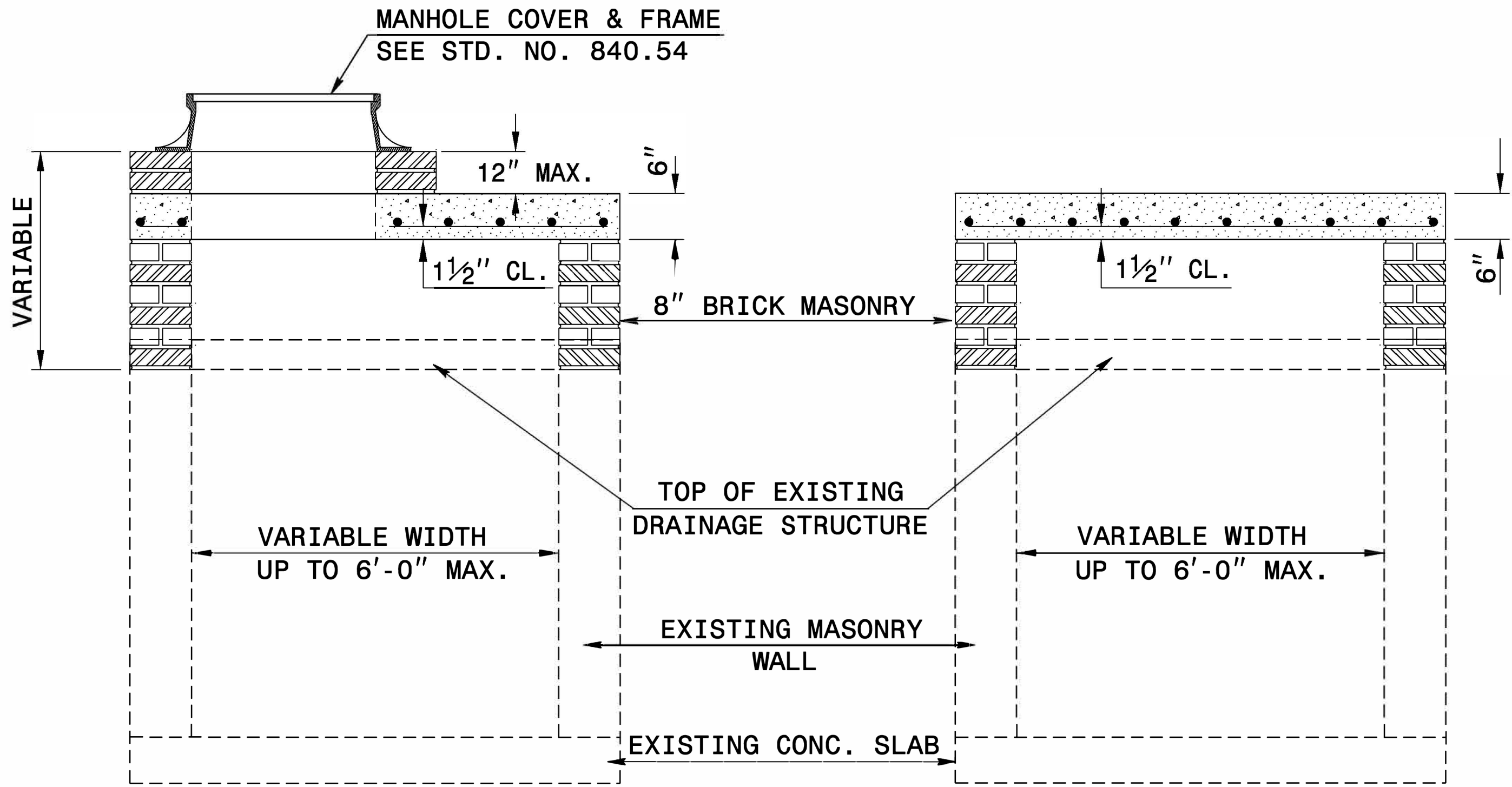
PLAN



PLAN



DETAIL OF HANDLE



SECTION X-X

SECTION Y-Y

GENERAL NOTES:

CONSTRUCT IN ACCORDANCE WITH SECTION 859 OF THE STANDARD SPECIFICATIONS.

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

DETAIL INTENDED FOR NON-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

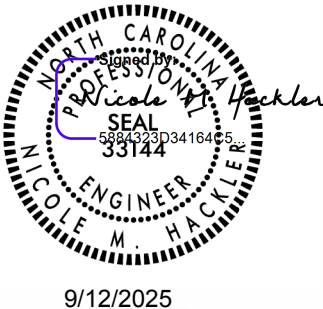
TOP SLAB CONCRETE CLASS "B"

.4326 *

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.

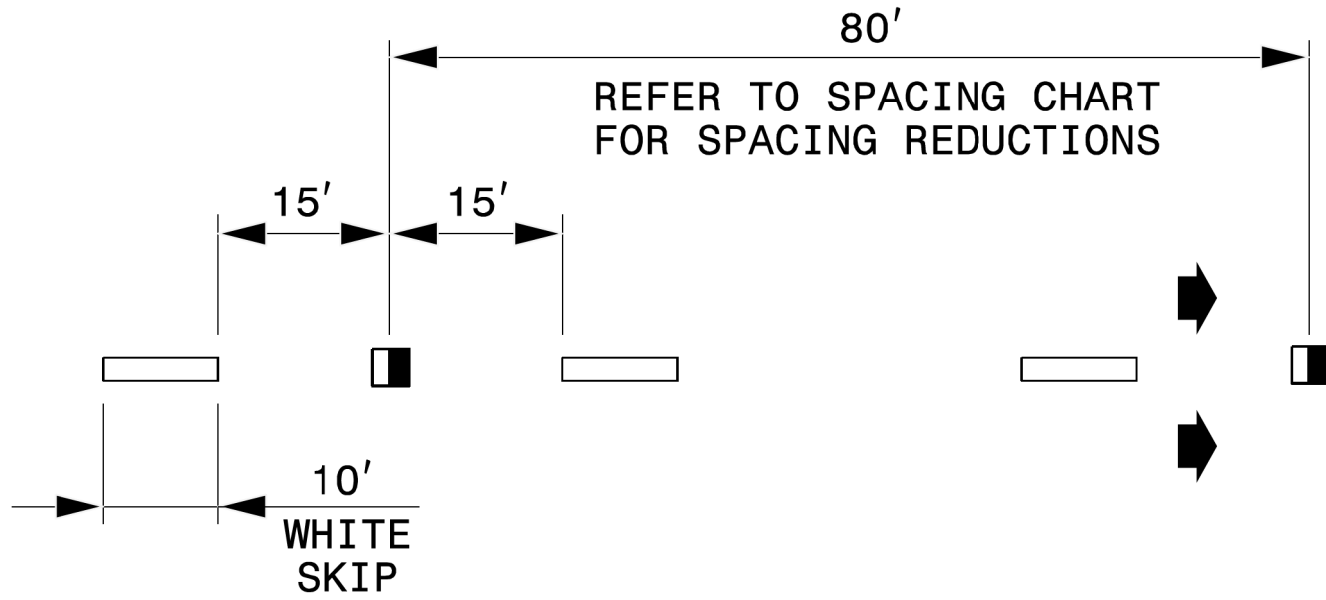


DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

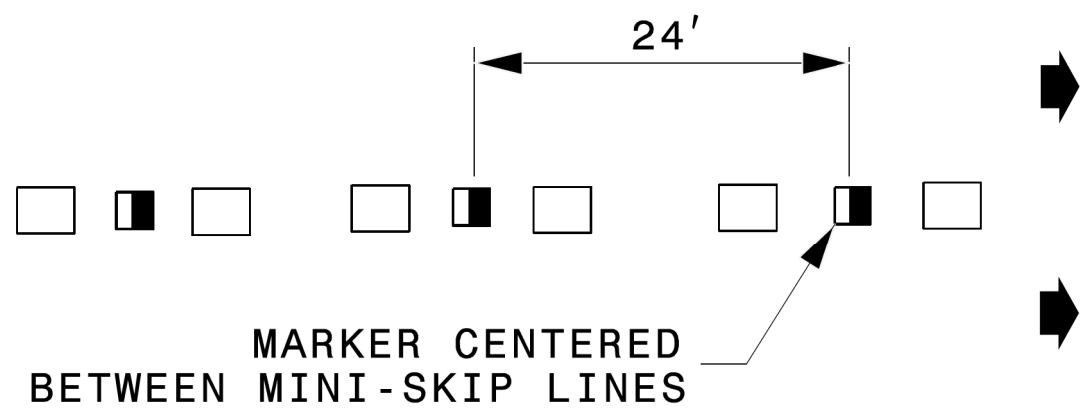
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DETAIL TO CONVERT EXISTING
DI, CB, OTCB or GI
TO JUNCTION BOX
(MANHOLE OPTIONAL)

ORIGINAL BY: T.S.S. DATE: NOV.1997
MODIFIED BY: T.S.S. DATE: FEB.2000
CHECKED BY: DATE:
FILE SPEC.: ds174:/usr/details/stand/boxtojb.dgn

10'-30'/SP SKIP LINE



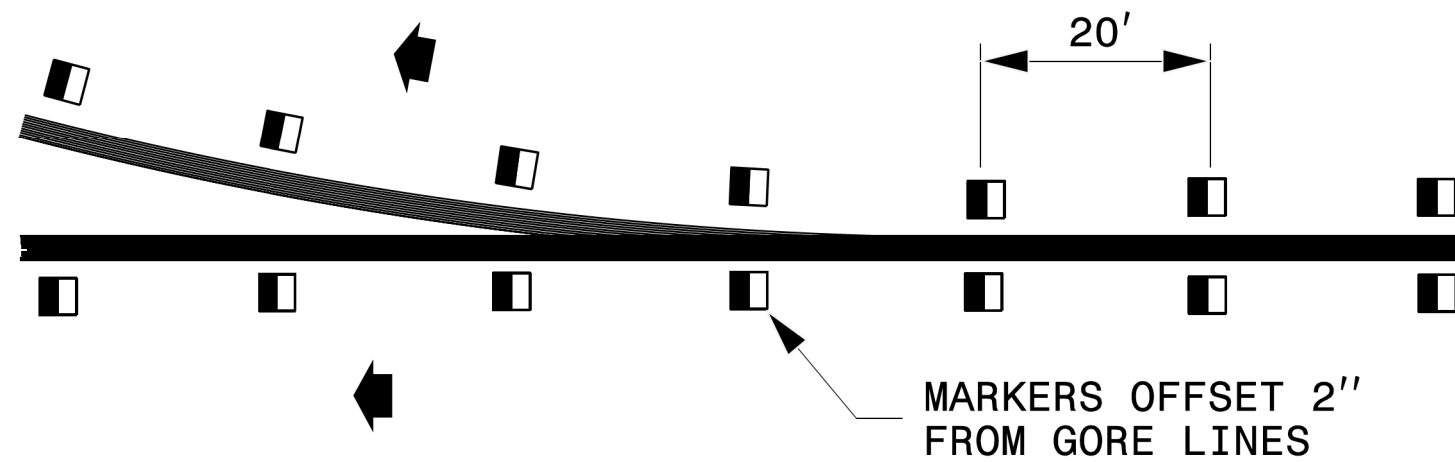
3'-9'/SP MINI-SKIP LINE



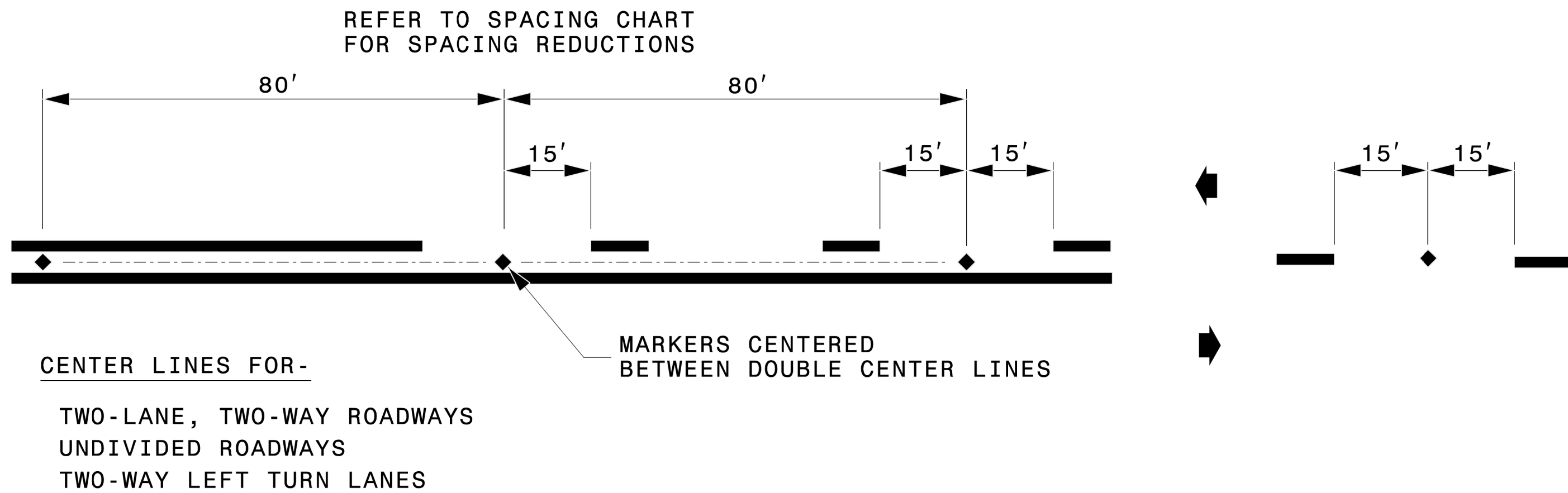
LEGEND

- CRYSTAL/RED PAVEMENT MARKER
- YELLOW/YELLOW PAVEMENT MARKER
- DIRECTION OF TRAFFIC FLOW

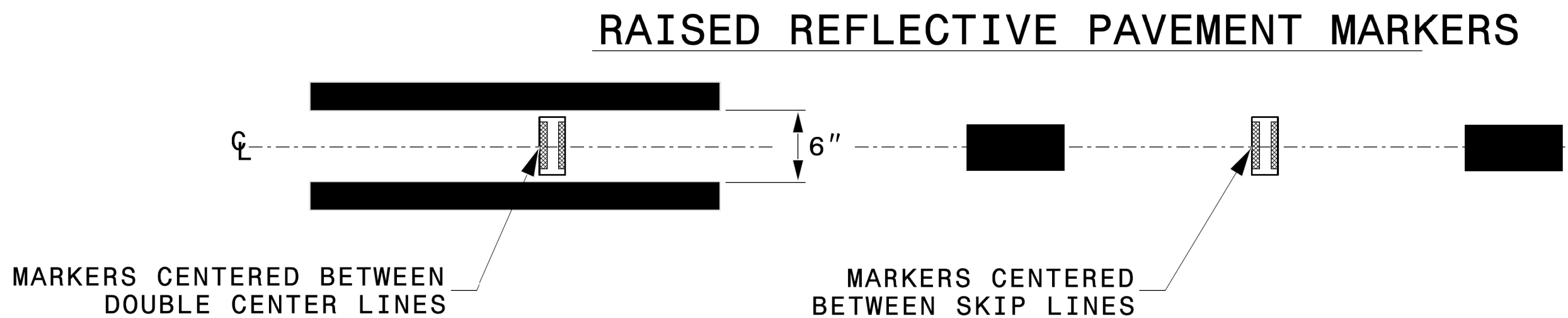
GORE LINES



YELLOW CENTER LINES



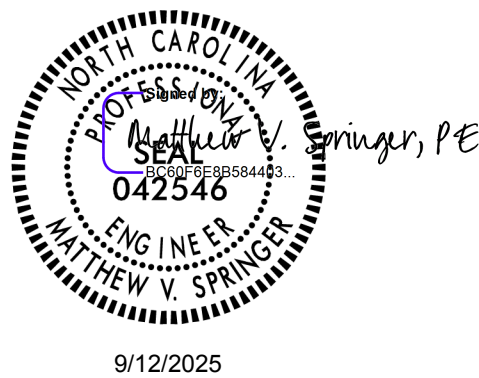
DETAIL OF PAVEMENT MARKER PLACEMENT



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ROADWAY DETAIL DRAWING FOR
RAISED PAVEMENT MARKERS
INSTALLATION SPACING

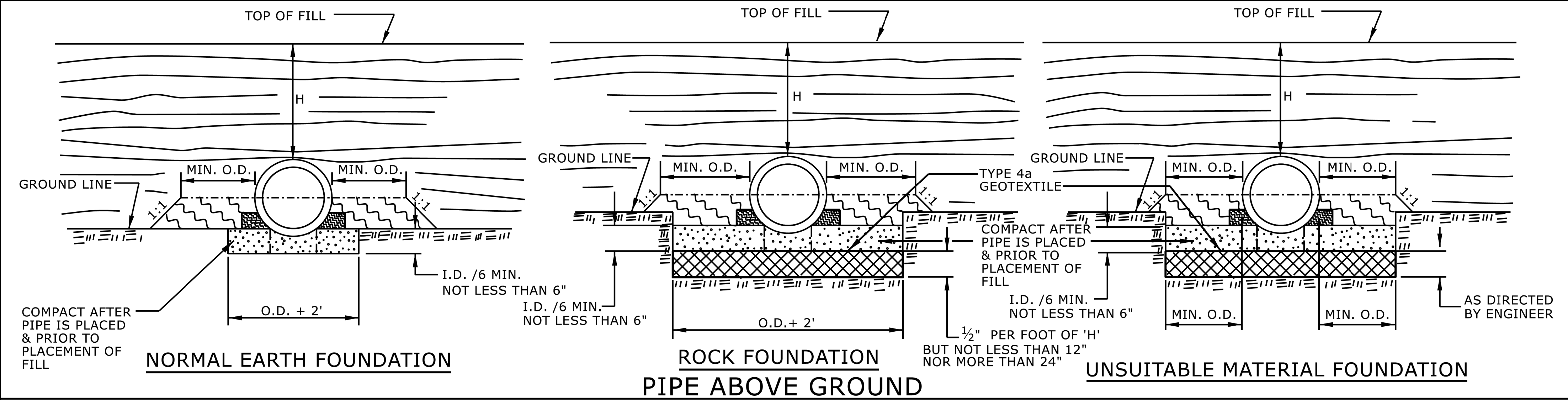
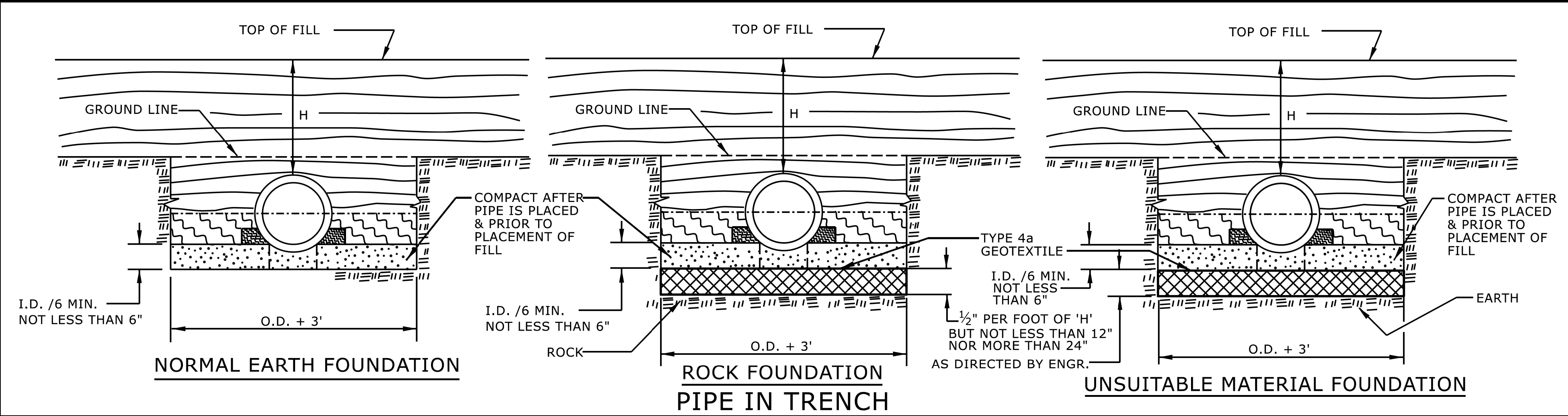
SHEET 2 OF 3
1250D01



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ORIGINAL BY: M.V. SPRINGER DATE: 2-15-24
MODIFIED BY: DATE:
CHECKED BY: DATE:
FILE SPEC.: DATE:



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.

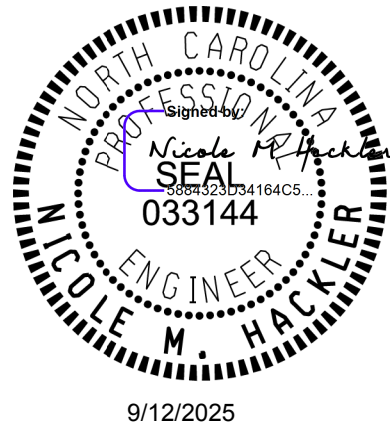
UNDISTURBED EARTH MATERIAL

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

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ROADWAY DETAIL DRAWING FOR
METHOD OF PIPE INSTALLATION
RIGID PIPE

SHEET 2 OF 2
300.01



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

NOTES:

- DESIGN CONFORMS WITH THE SPECIFICATIONS FOR THE DESIGN AND CONSTRUCTION OF STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS - AASHTO.
- USE MATERIALS, FABRICATE AND ERECT SIGNS AND SUPPORTS THAT CONFORM TO THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES.
- USE HIGH STRENGTH BOLTS, NUTS AND WASHERS THAT CONFORM TO ASTM A-325 AND THAT ARE GALVANIZED IN ACCORDANCE WITH ASTM F2329 OR B695 CLASS 55.
- USE BACKING PLATES, SLIP BASE PLATES, FRICTION PLATES, AND HINGE PLATES THAT CONFORM TO ASTM A-36 AND THAT ARE GALVANIZED IN ACCORDANCE WITH ASTM A-123 PRIOR TO GALVANIZING, GRIND SMOOTH ANY METAL PROJECTION BEYOND THE PLATE FACE. KEEPER PLATES SHALL BE MANUFACTURED FROM 28 GAUGE SHEET STEEL THAT CONFORMS TO ASTM A-36 AND IS GALVANIZED IN ACCORDANCE WITH ASTM A-123
- ASSEMBLE HINGE CONNECTIONS IN THE SHOP. THE SHOP SHALL TIGHTEN BOLTS BY USE OF EITHER A CALIBRATED POWER WRENCH OR A MANUAL TORQUE WRENCH. TIGHTEN EACH HINGE CONNECTION BOLT TO 1/3 PAST SNUG.
- BASE PLATES DETAILS ARE FOR INSTALLATIONS ON THE RIGHT SHOULDER AND IN GORE AREAS.
- ASSEMBLE UPPER SUPPORT TO STUB AS SHOWN IN DETAIL. SLIP BASE PLATES SHALL BE FILLET WELDED ONTO SUPPORTS ALL AROUND THE STRUCTURAL SHAPE SO AS TO INSURE NO LOSS OF STRENGTH. ASSEMBLE IN EITHER SHOP OR FIELD. 28 GAUGE KEEPER PLATE IS PLACED BETWEEN SLIP BASE PLATES TO PREVENT BOLT SLIPPING. TIGHTEN BOLTS TO THE FOLLOWING PRESCRIBED TORQUE:

BOLT DIAMETER	TORQUE (LB. FT.)
1½"	9
5⁄8"	22
¾"	37
1"	48

COMPLETELY ASSEMBLE BREAKAWAY SUPPORTS PRIOR TO ERECTION. BREAKAWAY SUPPORT TO BE SET IN ONE PIECE. AFTER SUPPORT HAS BEEN ERECTED AND THE CONCRETE FOOTINGS HAS CURED AT LEAST 48 HOURS, CLEAN CONCRETE FROM BASE CONNECTION BOLTS THEN LOOSEN AND RE TIGHTEN EACH BOLT IN A SYSTEMATIC ORDER TO THE PRESCRIBED TORQUE.DO NOT OVER TIGHTEN. BURR ALL BOLT THREADS OF BASE CONNECTIONS TO PREVENT LOOSENING.

- ELIMINATE HINGE CONNECTION FOR ALL SINGLE SUPPORT SIGNS.
- DETAIL IS FOR ONE DIRECTION BREAKAWAY. WHEN PLANS REQUIRE A TWO DIRECTION BREAKAWAY, TWO FRICTION PLATES SHALL BE USED IN LIEU OF ONE FRICTION PLATE AND ONE HINGE PLATE.

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ROADWAY DETAIL DRAWING FOR
GROUND MOUNTED SIGN SUPPORTS

SHEET 3 OF 3
903D1003



9/12/2025

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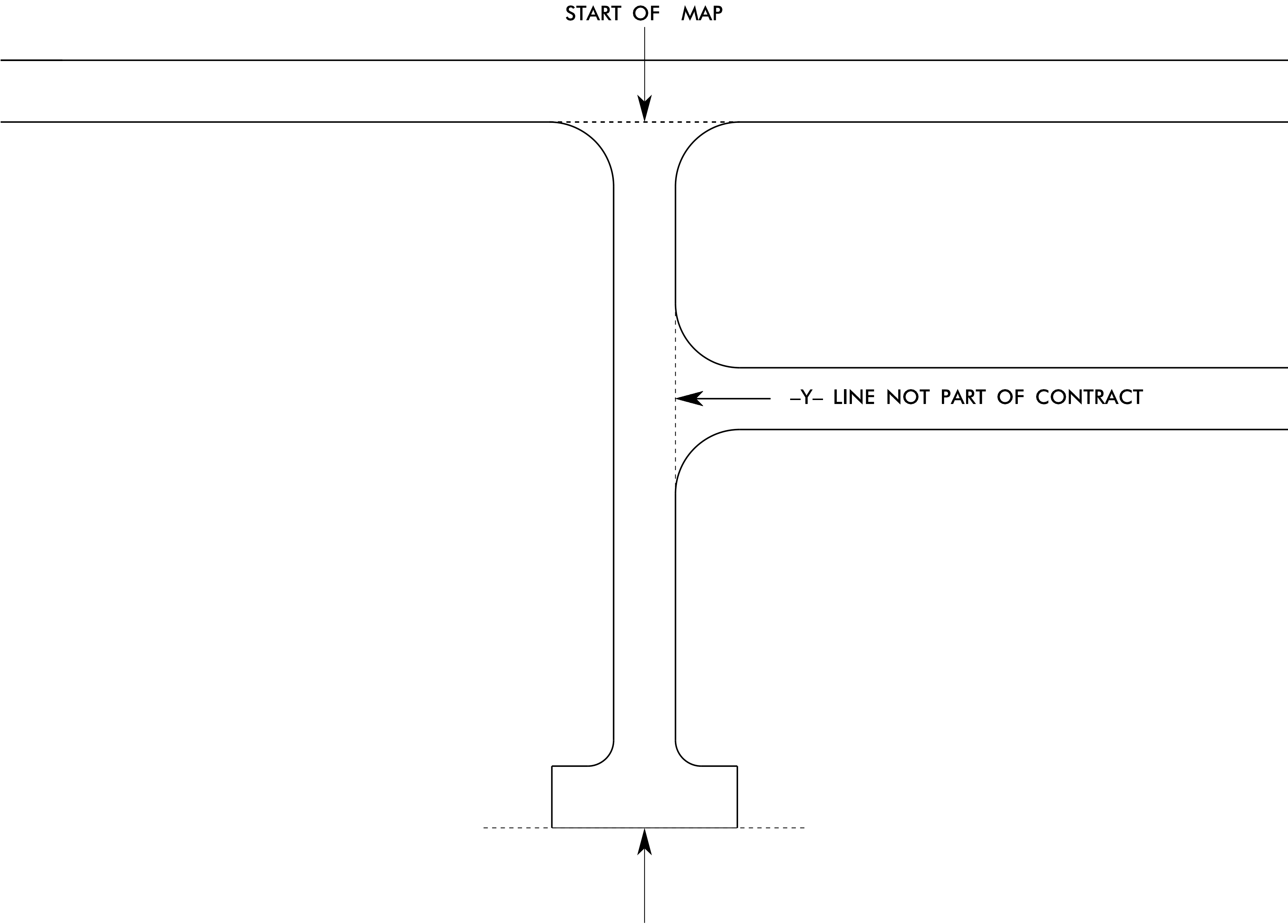
SEE TITLE BLOCK

ORIGINAL BY: **R.S. GALLO** DATE: **05-22-2025**
MODIFIED BY: DATE:
CHECKED BY: DATE:
FILE SPEC.:

PROJECT REFERENCE NO.	SHEET NO.
U-5760	2C-19



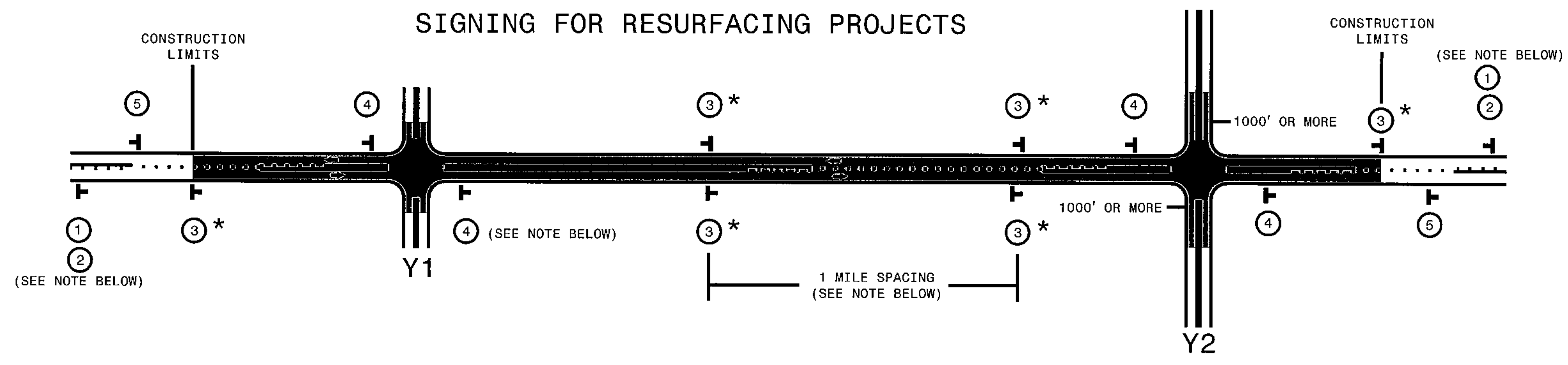
9/17/2025



THE PROJECT PLANS DENOTE ALL ROAD TERMINUS
AS END OF MAINTENANCE: THIS IS INTENDED TO
DESCRIBE ANY TYPE GEOMETRY THAT MAY EXIST,
INCLUDING CUL-DE-SAC, T-TURN, L-TURN,
TRANSITION TO UNPAVED, TRANSITION TO PRIVATE
ROAD, ETC.

DETAIL 1

THIS DETAIL IS FOR RESURFACING AREA. SEE SHEET 16A.



LEGEND

PORTABLE WORK ZONE SIGN (1110.02)

DIRECTION OF TRAFFIC FLOW

MAINLINE (-L-) SIGNING

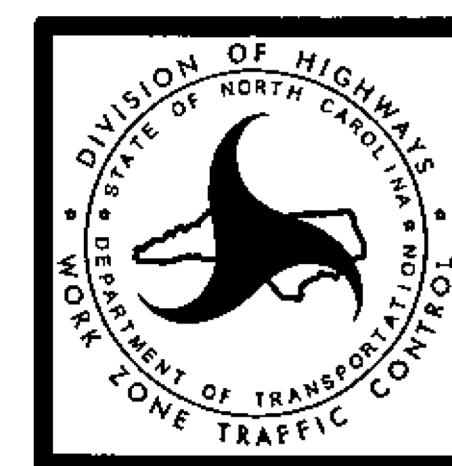
-Y- LINE SIGNING

SIGNING NOTES AND PLACEMENT PER DIRECTION	① W20-1 48" X 48" ② NEXT XX MILES W7-3oP 24" X 18" PLACE 1000' PRIOR TO BEGINNING OF CONSTRUCTION LIMITS. ONLY USED ON -Y- LINES IF RESURFACING LIMITS EXTEND 1000' ALONG -Y- LINE. #2 SIGN ONLY USED WHEN RESURFACING LIMITS ARE 2 OR MORE MILES IN LENGTH. ROUND UP TO NEXT WHOLE NUMBER. (NO FRACTIONAL OR DECIMAL NUMBERS)	NO REQUIRED STATIONARY SIGNING FOR THE FOLLOWING -Y- LINE CONDITIONS: 1) LESS THAN 1000' OF RESURFACING ALONG -Y- LINE 2) SUBDIVISION ROADS 3) DEAD END ROADS WHEN PAVING/CONSTRUCTION ACTIVITIES PROCEED ACROSS AN UNSIGNED -Y- LINE, ADVANCE WARNING PORTABLE SIGNS SHALL BE USED ALONG THE -Y- LINE AS SHOWN BELOW. REMOVE UPON COMPLETION OF WORK. W20-1 48" X 48" W20-7 A 48" X 48" PLACED 500' IN ADVANCE OF FLAGGER. PLACED 250' IN ADVANCE OF FLAGGER.
	③ SP 13107 48" X 48" PLACE INITIALLY AT THE CONSTRUCTION LIMITS AND SPACE 1 MILE APART THEREAFTER. IF NO -Y- LINES EXIST, PLACE 2ND SET 1/2 MILE FROM THE CONSTRUCTION LIMITS AND THEN SPACE 1 MILE THEREAFTER. STANDARD DRAWING 1110.01 STATIONARY WORK ZONE SIGNS	
	④ SP 13106 48" X 48" - THESE ARE FOR -Y- LINES THAT ARE "THROUGH" ROADWAYS. - DEAD END AND SUBDIVISION ROADS ARE NOT "THROUGH" ROADWAYS. - INSTALL 500' +/- FROM EACH -Y- LINE APPROACH AS SHOWN ABOVE. - FOR MULTIPLE -Y- LINES THAT ARE SEPARATED BY 0.25 MILES OR LESS, TREAT AS A SINGLE UNIT AND INSTALL WITHIN 500' OF EACH APPROACH. - A MAXIMUM OF 2 SIGN SETS PER MILE. DO NOT INSTALL WHEN -Y- LINES ARE WITHIN 0.5 MILES FROM "END ROAD WORK" SIGN.	
	⑤ END ROAD WORK C20-2 A 48" X 24" PLACE 500' FOLLOWING THE END OF CONSTRUCTION LIMITS OR AS SHOWN WHEN WORK ENDS AT A 3-WAY TEE INTERSECTION. (OPTIONAL)	

*** SIGNING FOR ASPHALT SURFACE3 TREATMENTS (ONLY)**

SUBSTITUTE LOW/SOFT SHOULDER SIGNS BY ALTERNATING THE FOLLOWING TWO SIGNS:
STARTING WITH "UNMARKED PAVEMENT AHEAD" (SP 06026) FOLLOWED BY "LOOSE GRAVEL" (W8-7)

STANDARD DRAWING 1110.01 STATIONARY WORK ZONE SIGNS



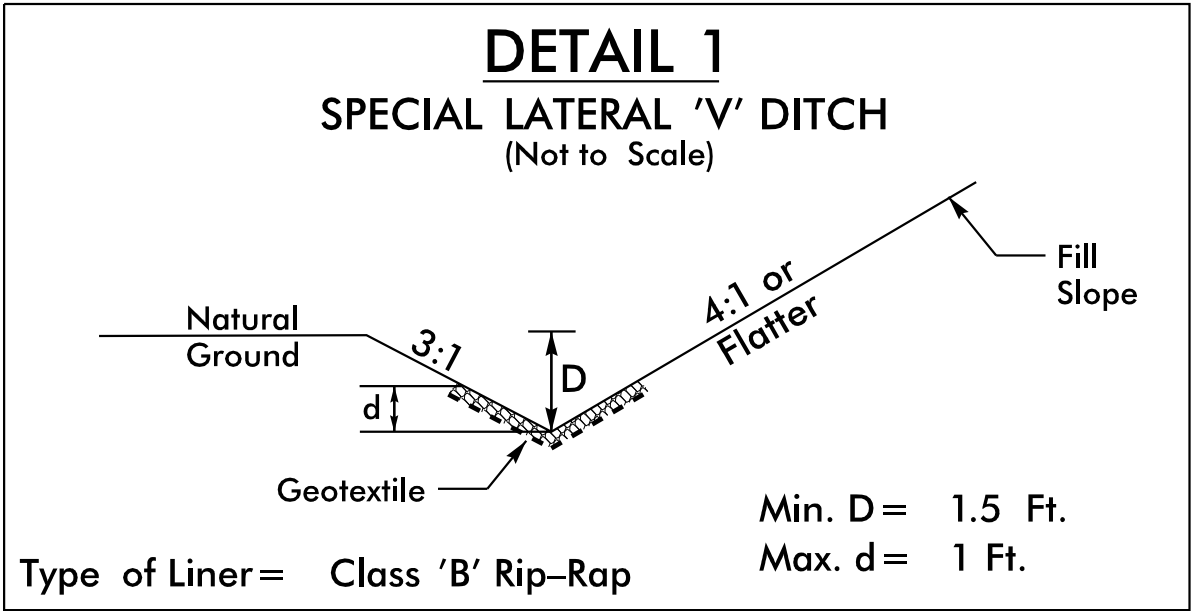
RESURFACING
ADVANCE WARNING SIGNS
FOR
RURAL AND SUBURBAN
2 LANE ROADWAYS

SYSTEMS

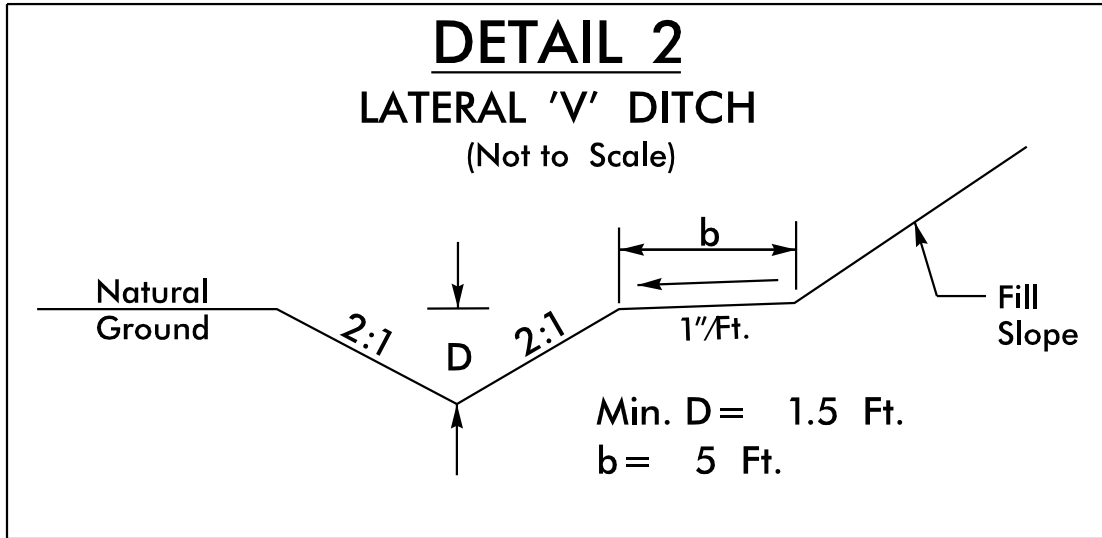
5/14/99

REVISIONS

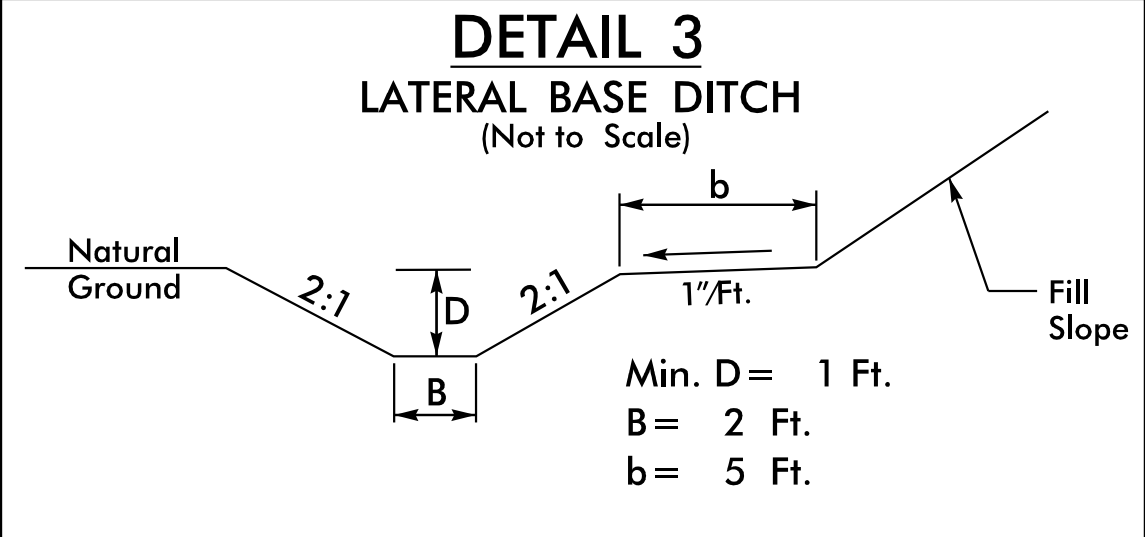
6/26/2025



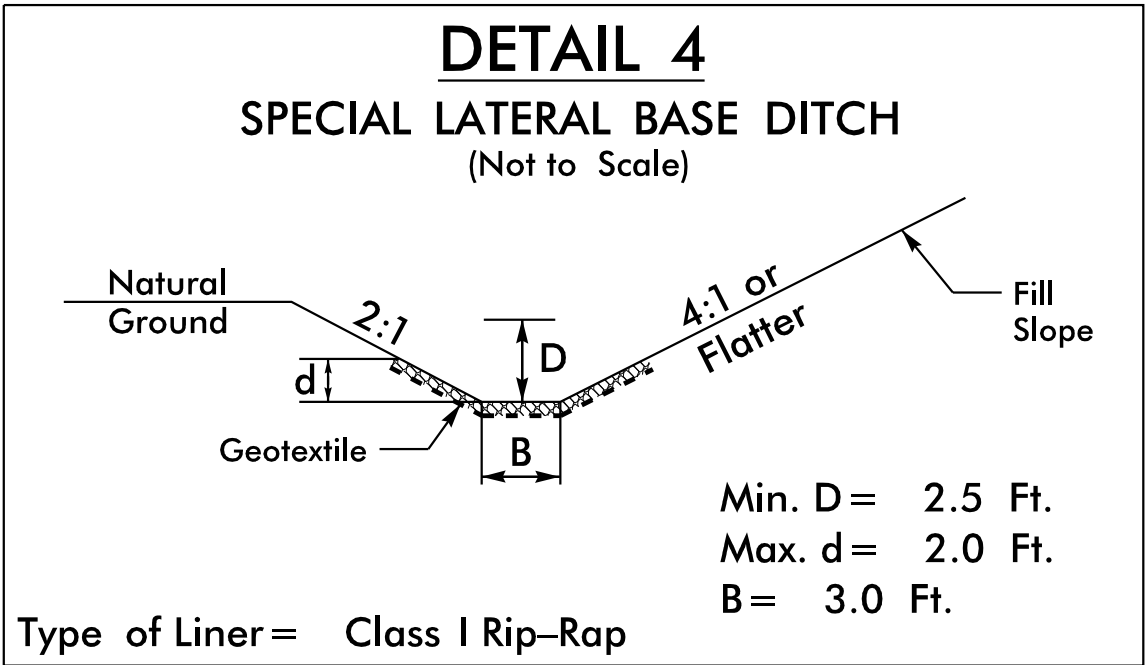
FROM STA. 60+10 TO STA. 61+50 -Y1- (RT)



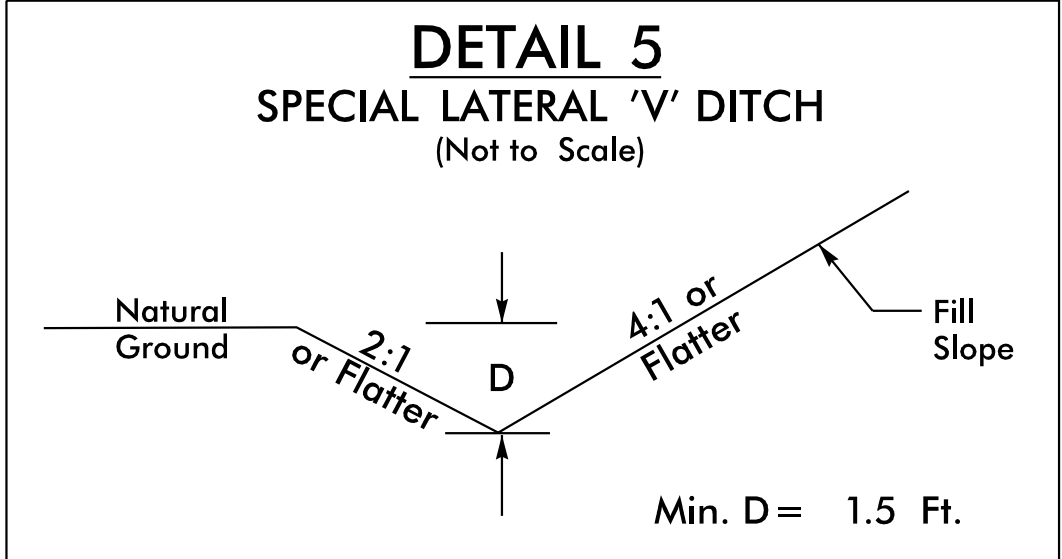
FROM STA. 58+90 TO STA. 59+50 -Y1- (LT)



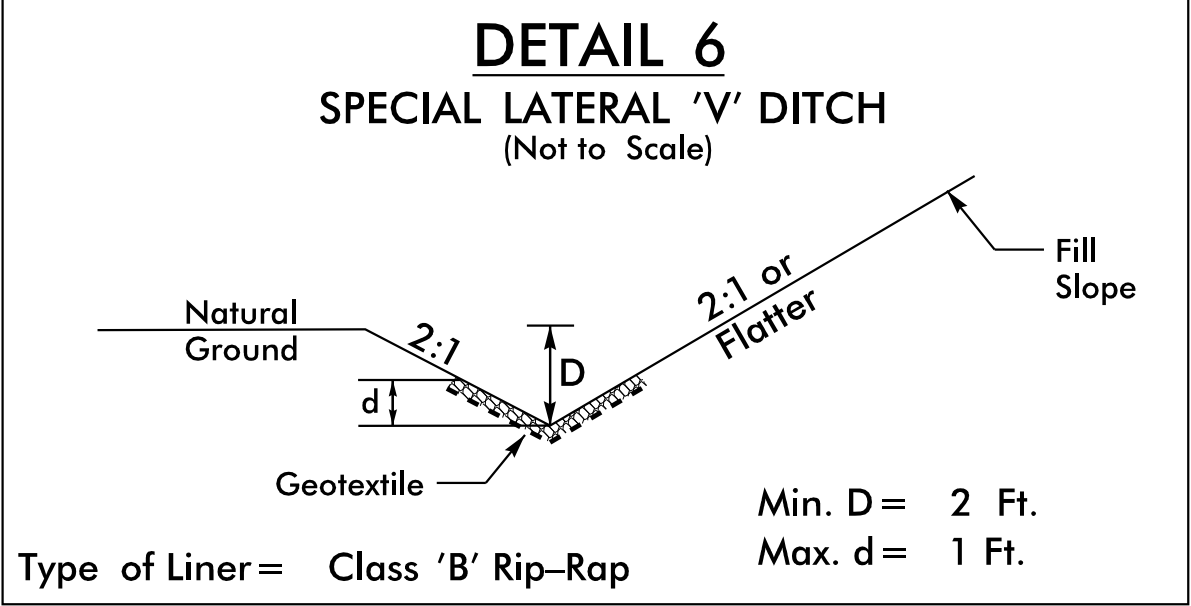
FROM STA. 28+64 TO STA. 29+50 -L- (LT)
FROM STA. 58+30 TO STA. 58+80 -Y1- (LT)



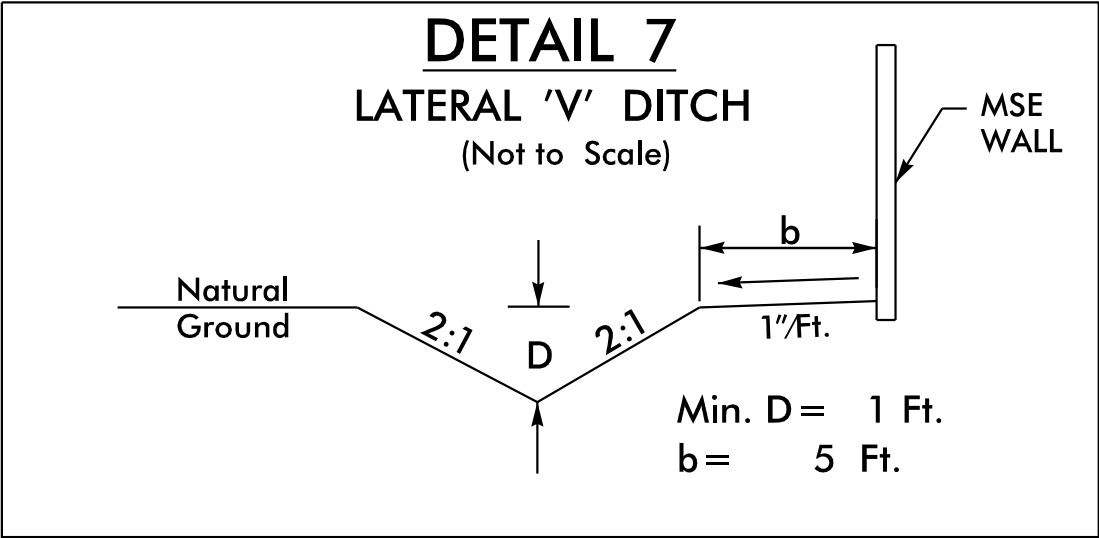
FROM STA. 16+15 TO STA. 17+00 -Y1RPB- (LT)



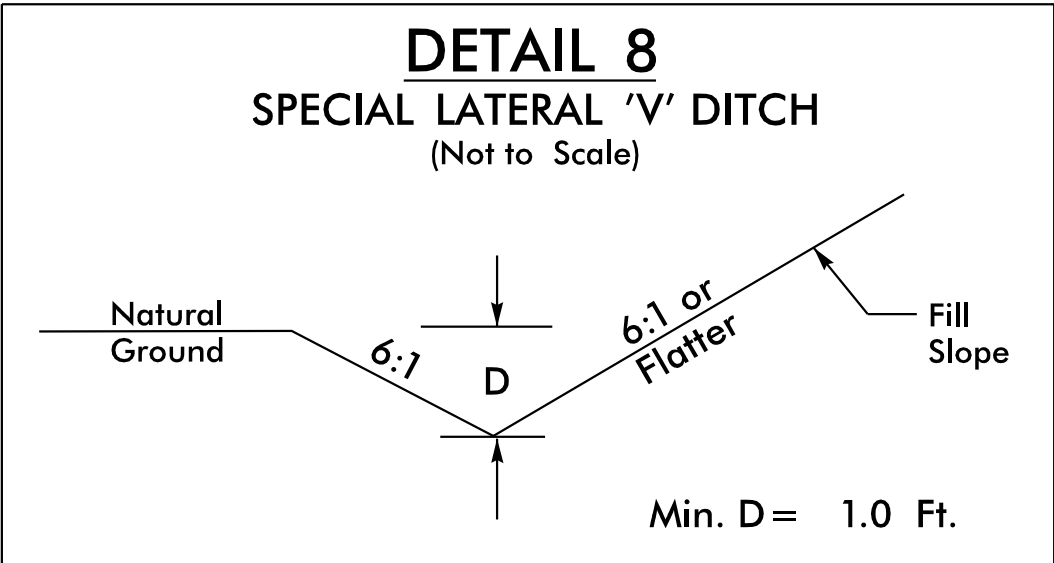
FROM STA. 46+00 TO STA. 47+25 -L- (RT)
FROM STA. 51+50 TO STA. 52+10 -L- (RT)
FROM STA. 103+30 TO STA. 106+00 -L- (LT)
FROM STA. 111+85 TO STA. 116+50 -L- (LT)
FROM STA. 80+50 TO STA. 80+80 -Y1- (LT)
FROM STA. 94+00 TO STA. 97+00 -Y1- (LT)
FROM STA. 14+57 TO STA. 15+85 -Y1RPB- (RT)
FROM STA. 13+35 TO STA. 15+00 -Y1LPD- (LT)



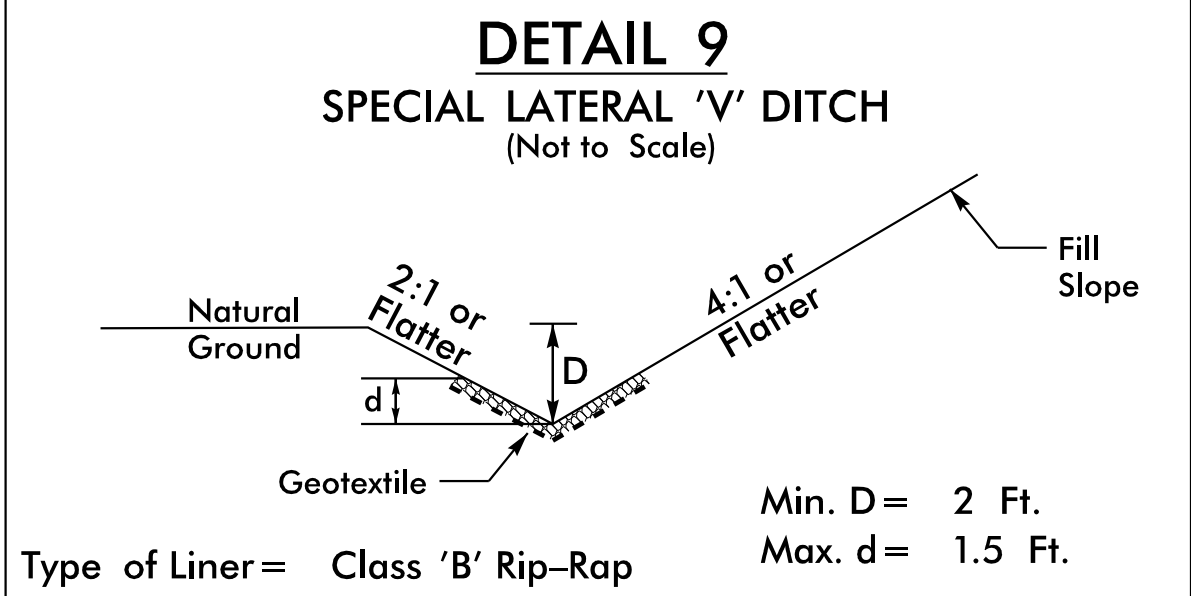
FROM STA. 54+40 TO STA. 55+75 -L- (RT)



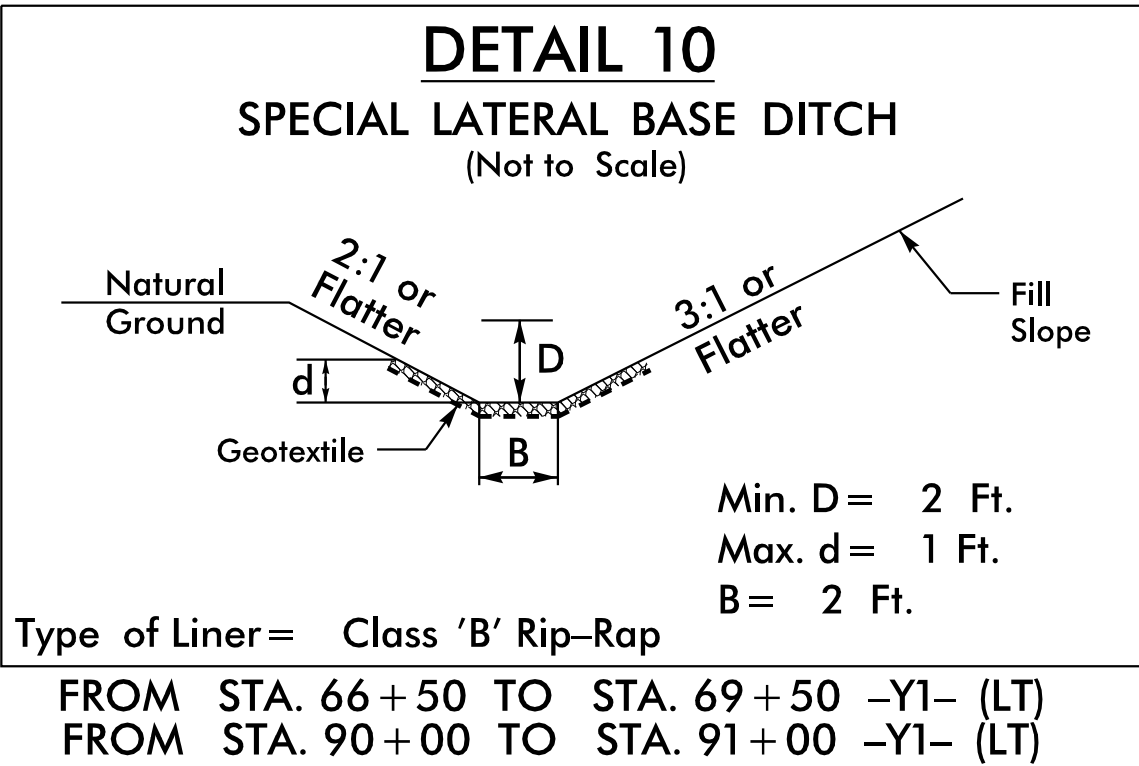
FROM STA. 29+50 TO STA. 32+00 -L- (LT)



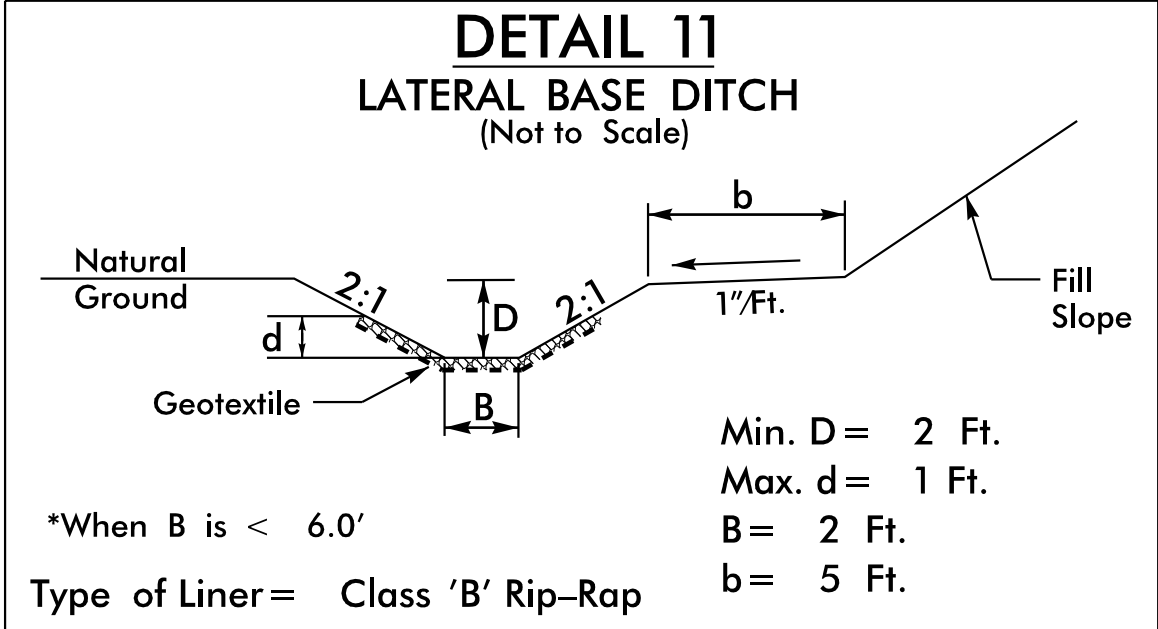
FROM STA. 88+00 TO STA. 89+50 -Y1- (RT)



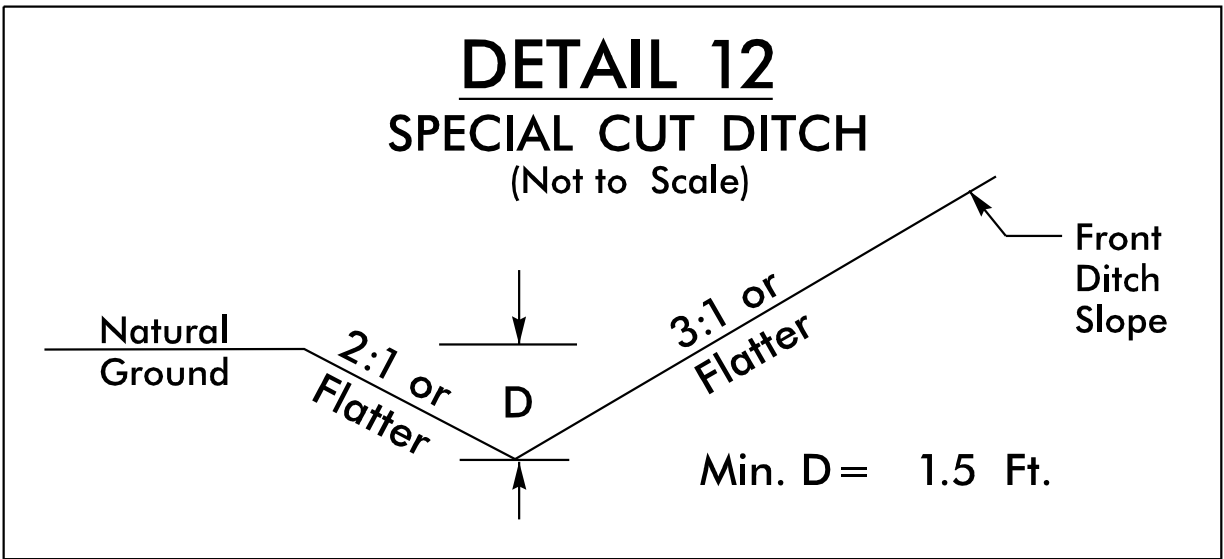
FROM STA. 80+80 TO STA. 82+00 -Y1- (LT)
FROM STA. 89+50 TO STA. 90+00 -Y1- (LT)
FROM STA. 10+31.24 TO STA. 11+00 -Y1RPD- (LT)



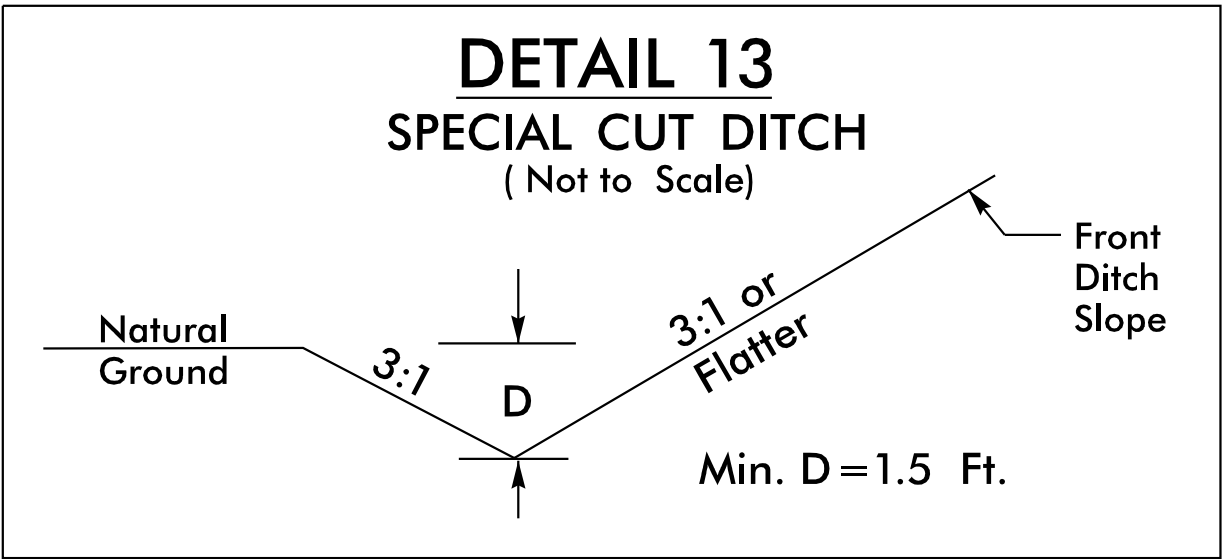
FROM STA. 66+50 TO STA. 69+50 -Y1- (LT)
FROM STA. 90+00 TO STA. 91+00 -Y1- (LT)



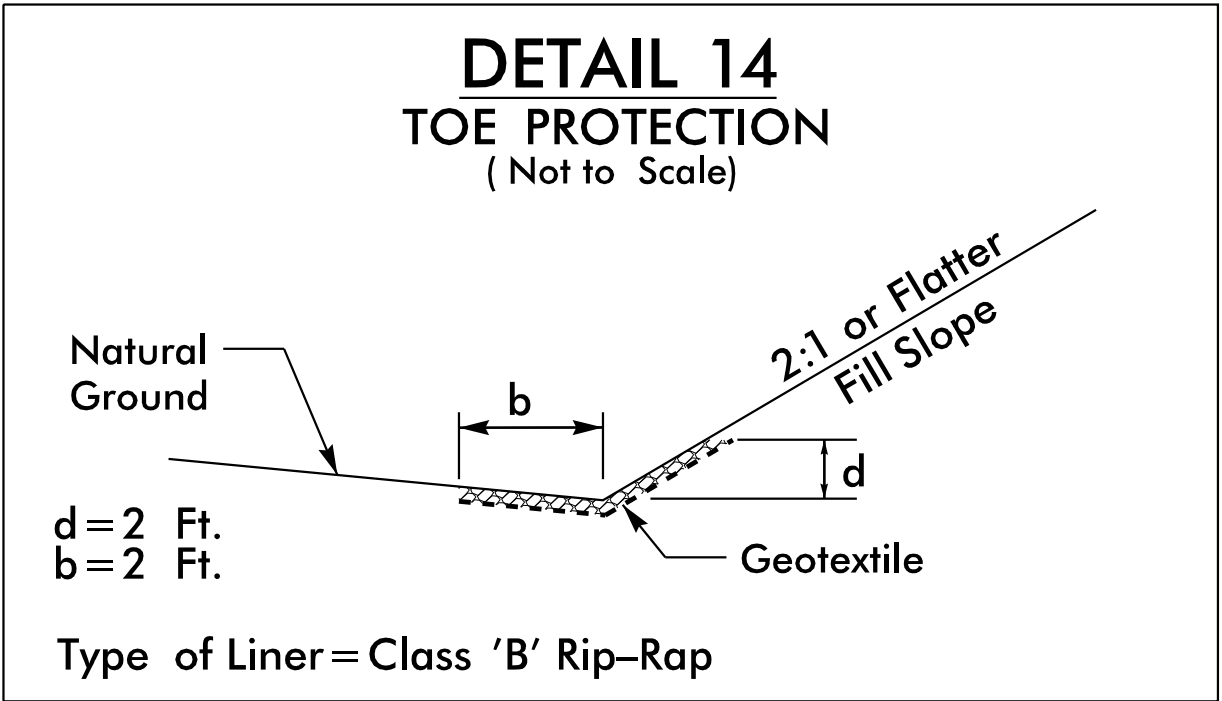
FROM STA. 91+00 TO STA. 91+50 -Y1- (LT)



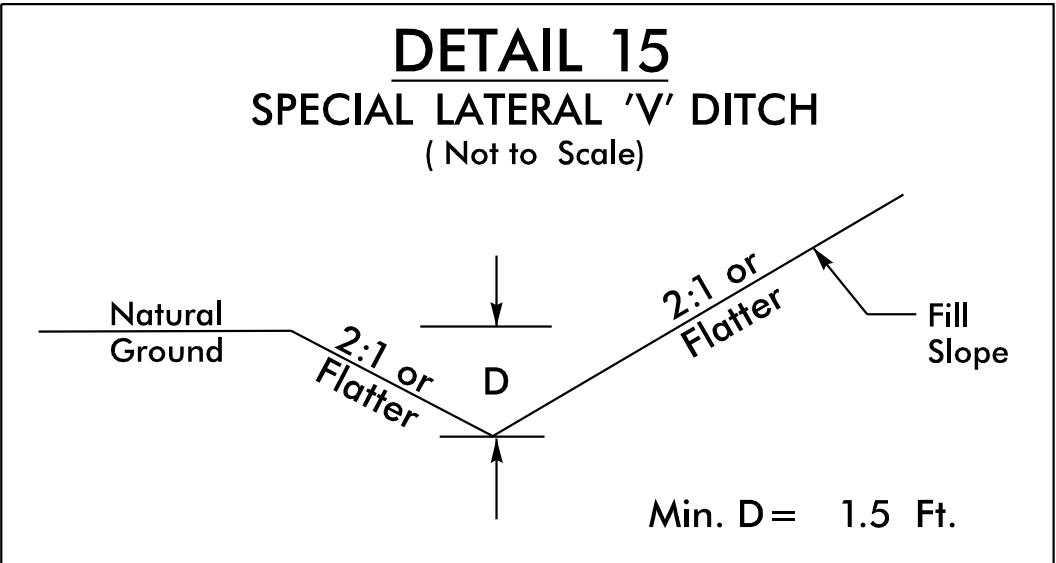
FROM STA. 47+25 TO STA. 48+25 -L- (RT)
FROM STA. 49+00 TO STA. 51+50 -L- (RT)
FROM STA. 55+75 TO STA. 58+00 -L- (RT)
FROM STA. 111+65 TO STA. 114+00 -L- (RT)



FROM STA. 43+00 TO STA. 44+50 -L- (RT)
FROM STA. 44+50 TO STA. 45+50 -L- (RT)
FROM STA. 14+10 TO STA. 15+75 -Y2- (LT)
FROM STA. 15+75 TO STA. 17+00 -Y2- (LT)



FROM STA. 65+00 TO STA. 67+00 -L- (RT)
FROM STA. 109+50 TO STA. 111+50 -L- (RT)
FROM STA. 101+50 TO STA. 101+98 -L- (LT)
FROM STA. 14+00 TO STA. 15+15 -Y8- (LT)
FROM STA. 15+50 TO STA. 15+95 -Y8- (LT)
FROM STA. 19+00 TO STA. 21+00 -Y1RPB- (LT)



FROM STA. 35+00 TO STA. 37+00 -L- (RT)
FROM STA. 37+00 TO STA. 38+50 -L- (RT)
FROM STA. 58+00 TO STA. 60+20 -L- (RT)
FROM STA. 96+00 -L- TO STA. 98+00 -L- (RT)
FROM STA. 13+00 TO STA. 14+00 -Y4- (LT)
FROM STA. 19+85 TO STA. 20+00 -Y4- (RT)
FROM STA. 10+50 TO STA. 11+50 -Y5- (RT)
FROM STA. 12+35 TO STA. 13+50 -Y7- (RT)
FROM STA. 14+87 TO STA. 16+70 -Y7- (RT)

Kimley»Horn

421 FAYETTEVILLE STREET, SUITE 600
RALEIGH, NC 27601

RIGHT-OF-WAY REV.

CONST. REV.

PROJECT REFERENCE NO.

U-5760

SHEET NO.

2D-1

ROADWAY DESIGN
ENGINEER



9/11/2025

HYDRAULIC DESIGN
ENGINEER



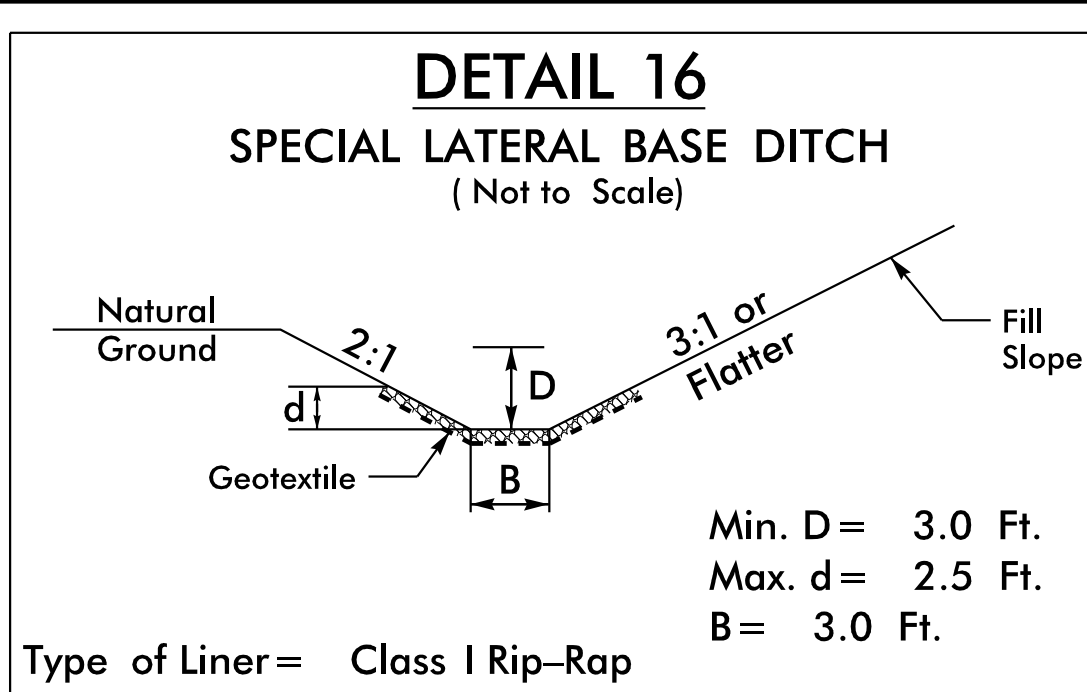
9/11/2025

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UNLESS ALL SIGNATURES COMPLETED**

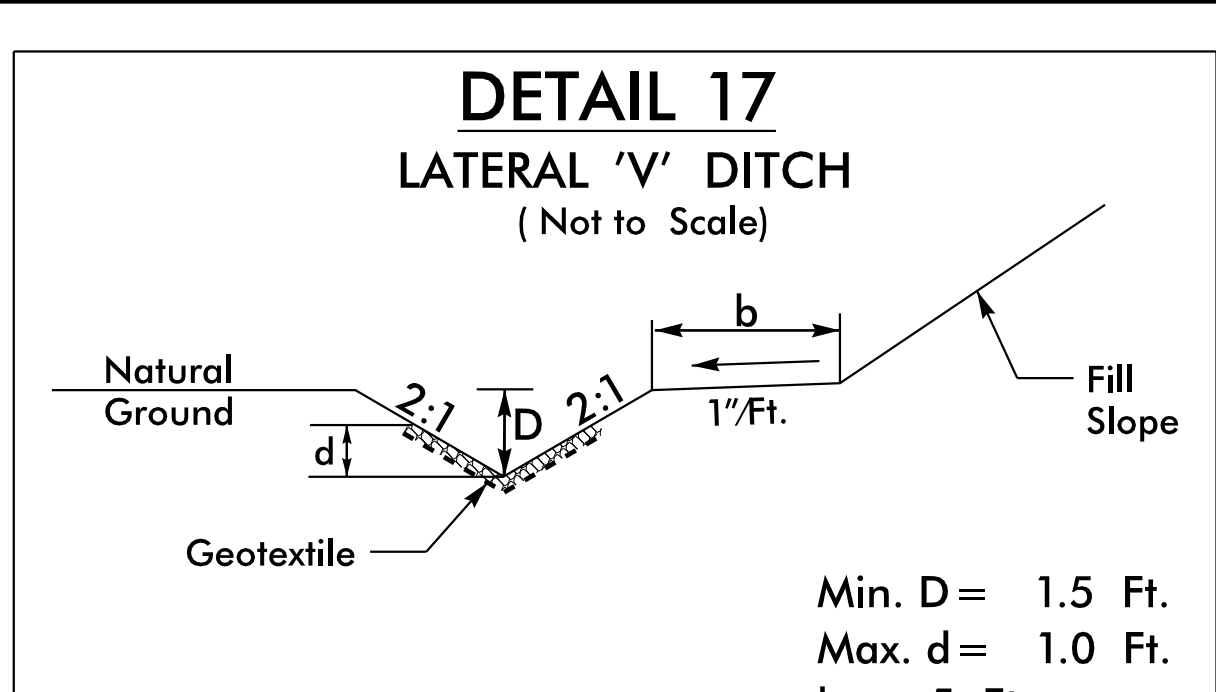
5/14/99

REVISIONS

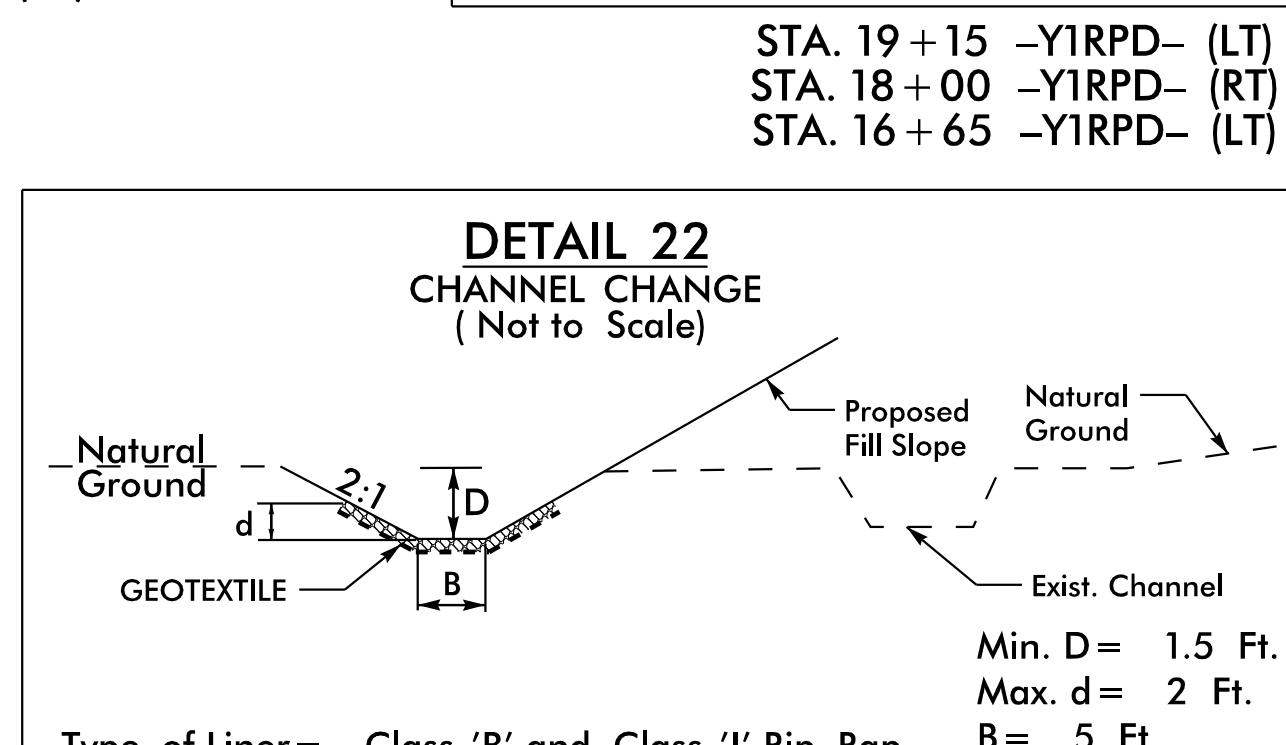
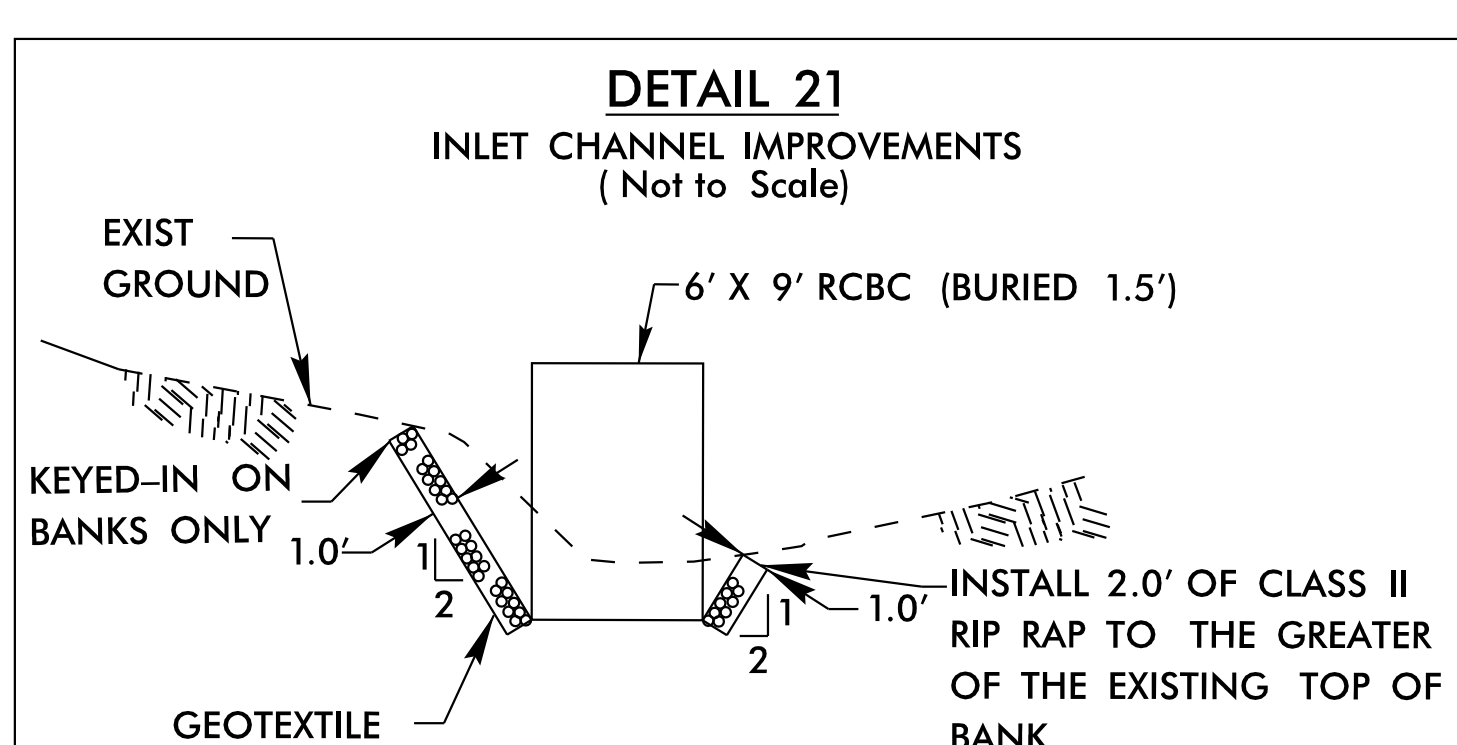
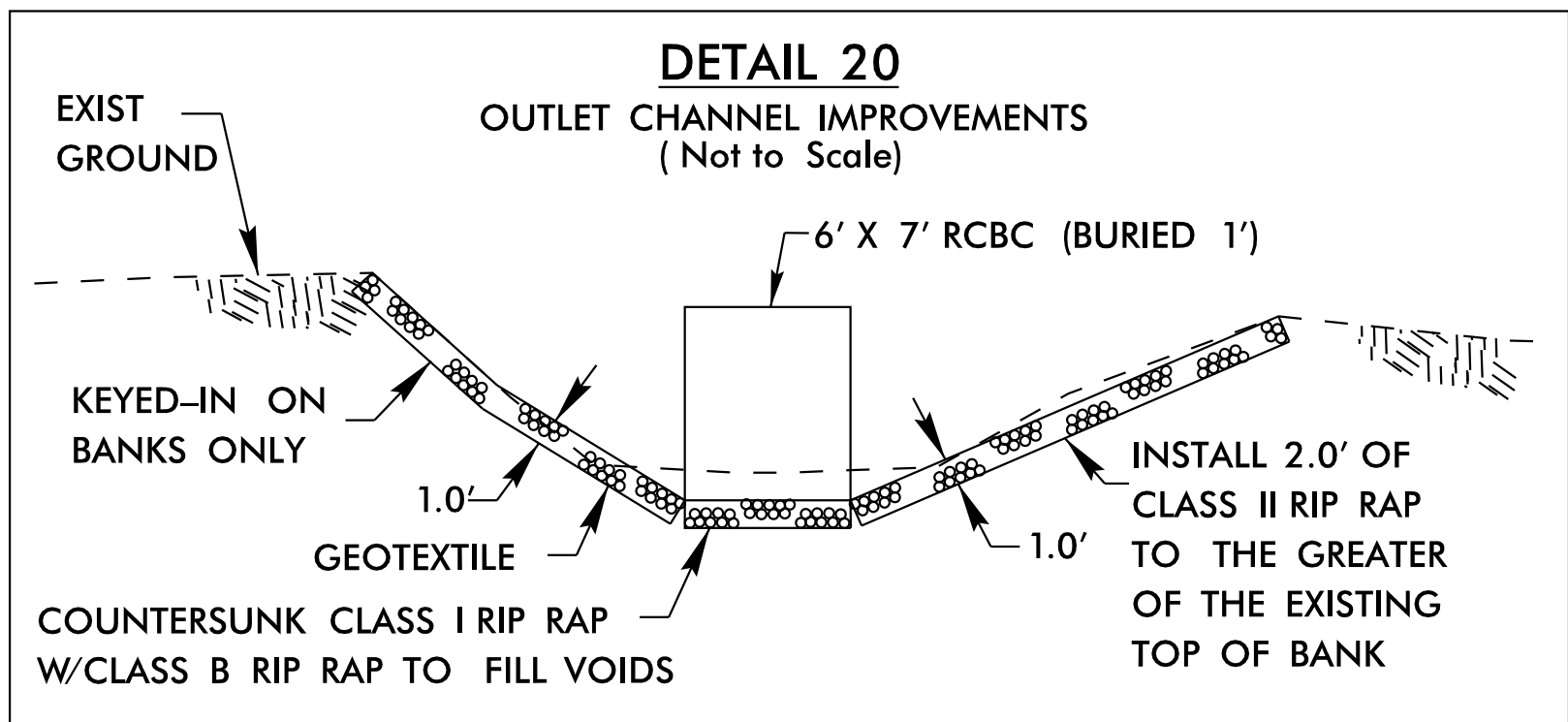
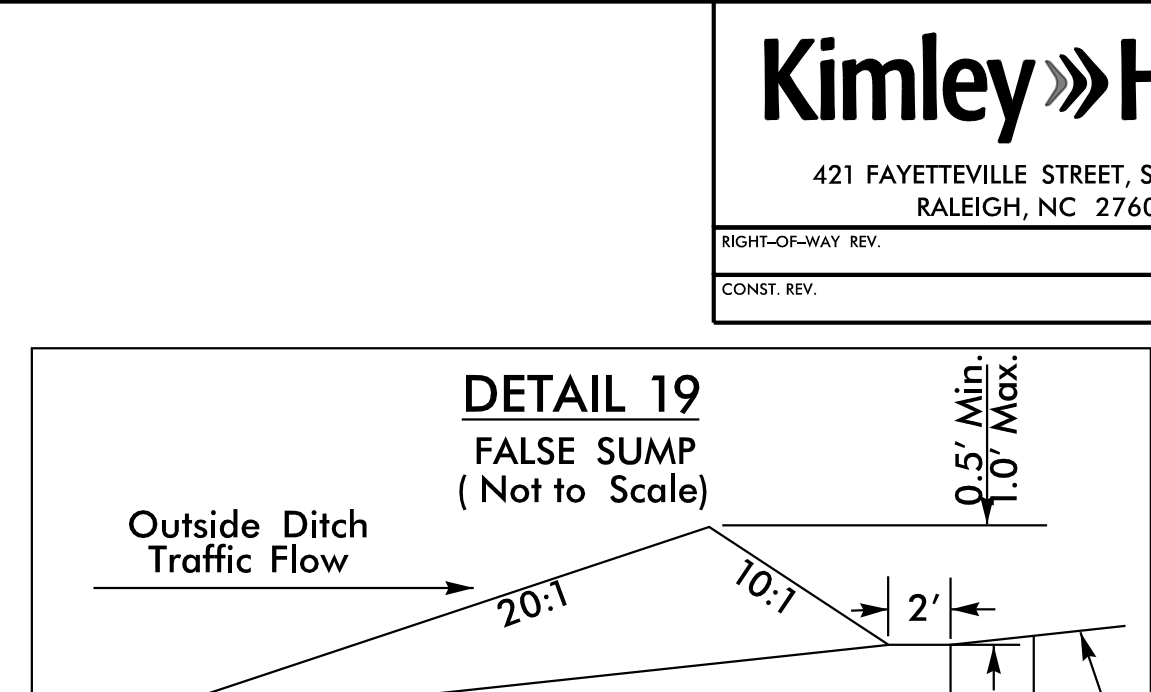
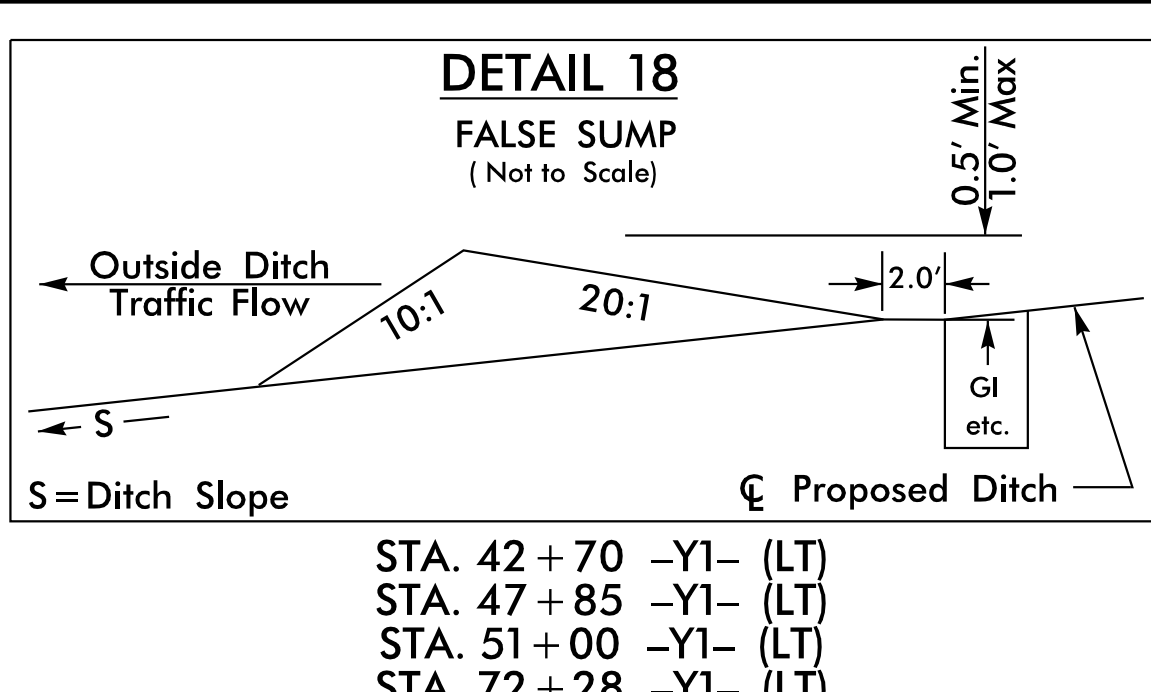
6/26/2025



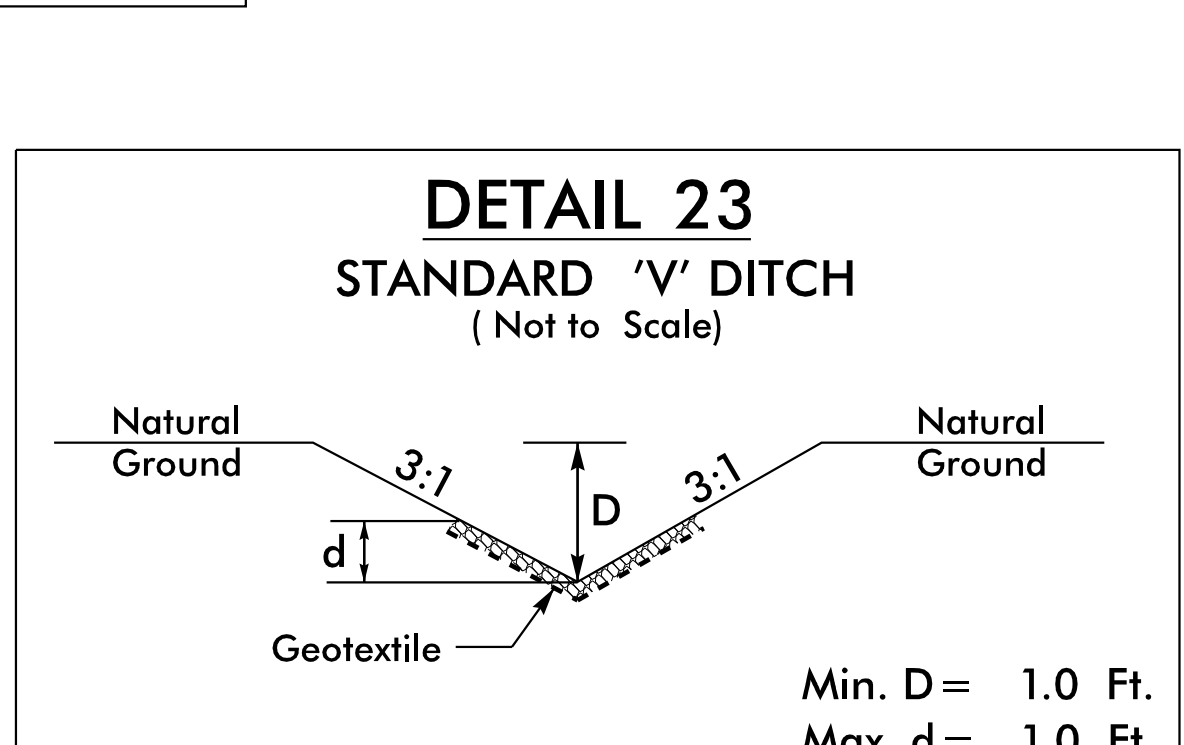
FROM STA. 83+50 TO STA. 85+75 -L- (RT)
FROM STA. 90+00 TO STA. 90+75 -L- (RT)



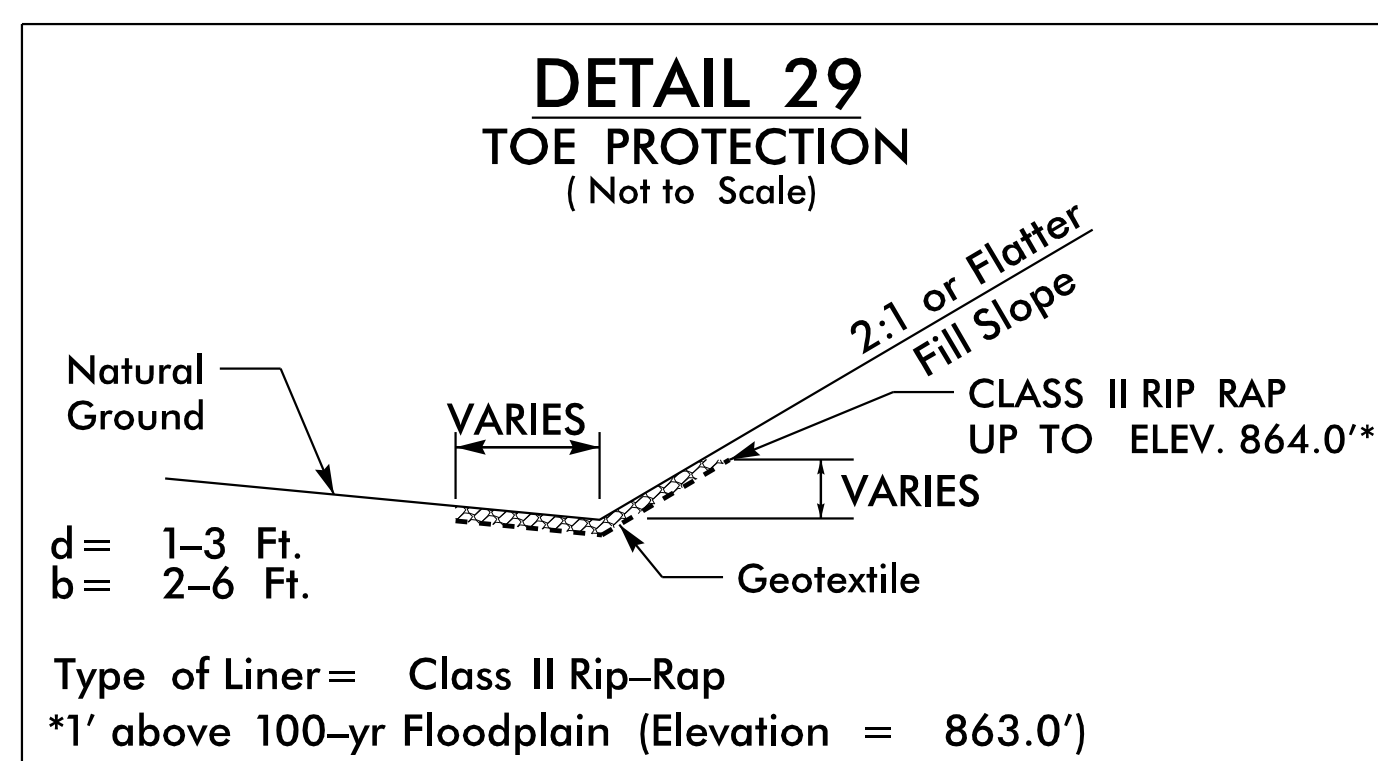
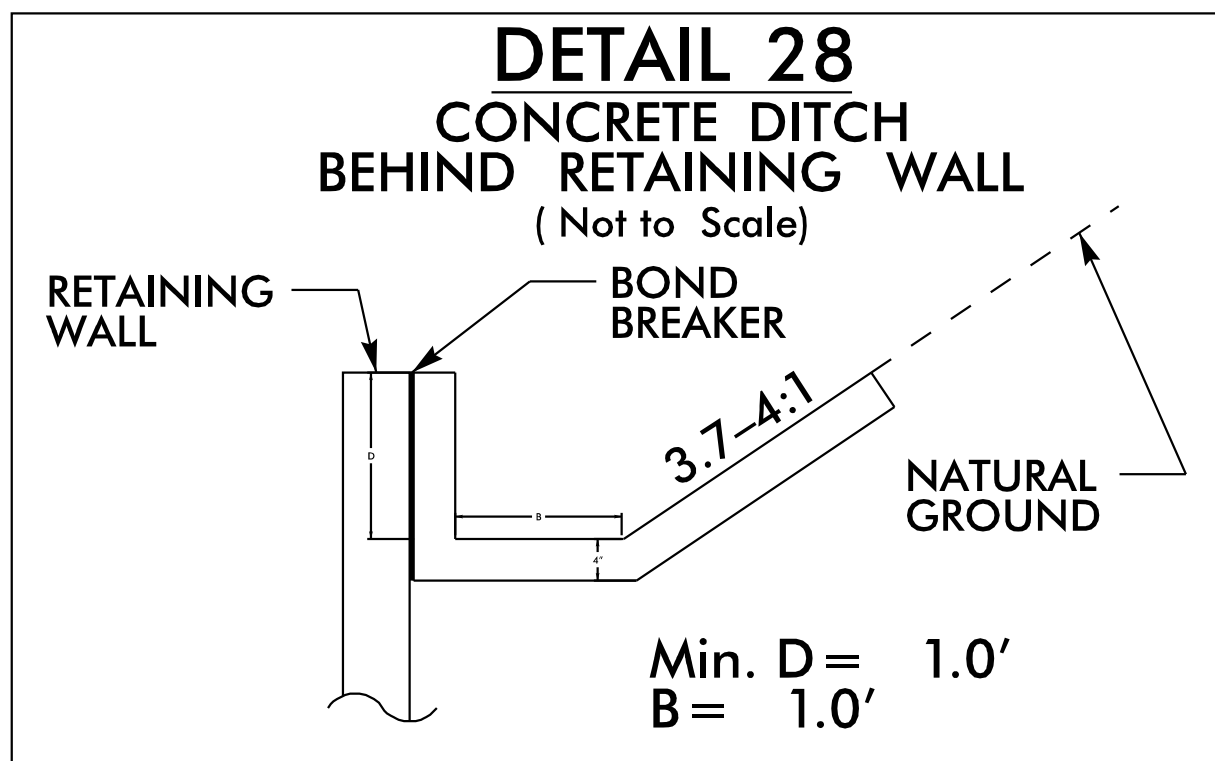
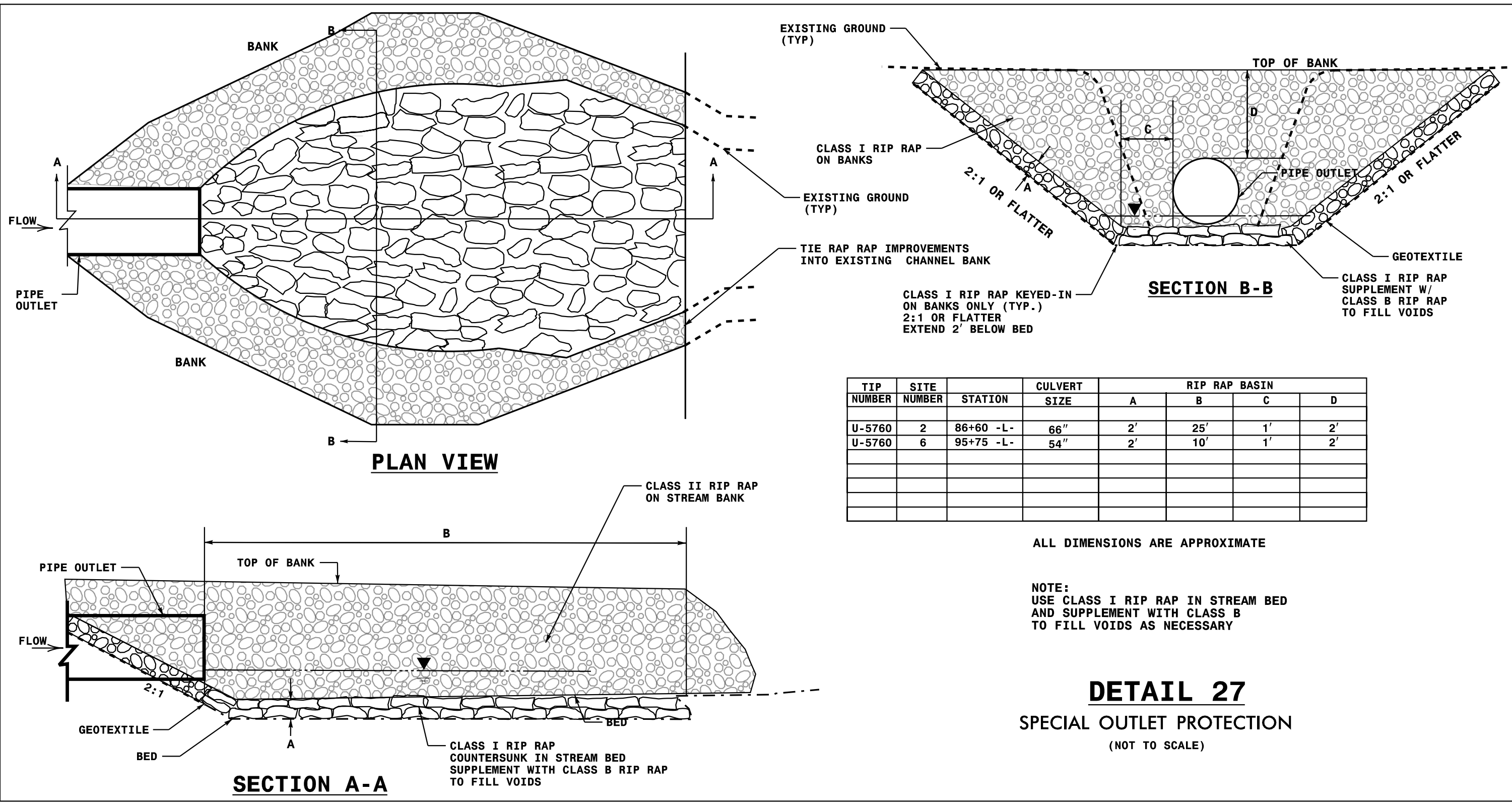
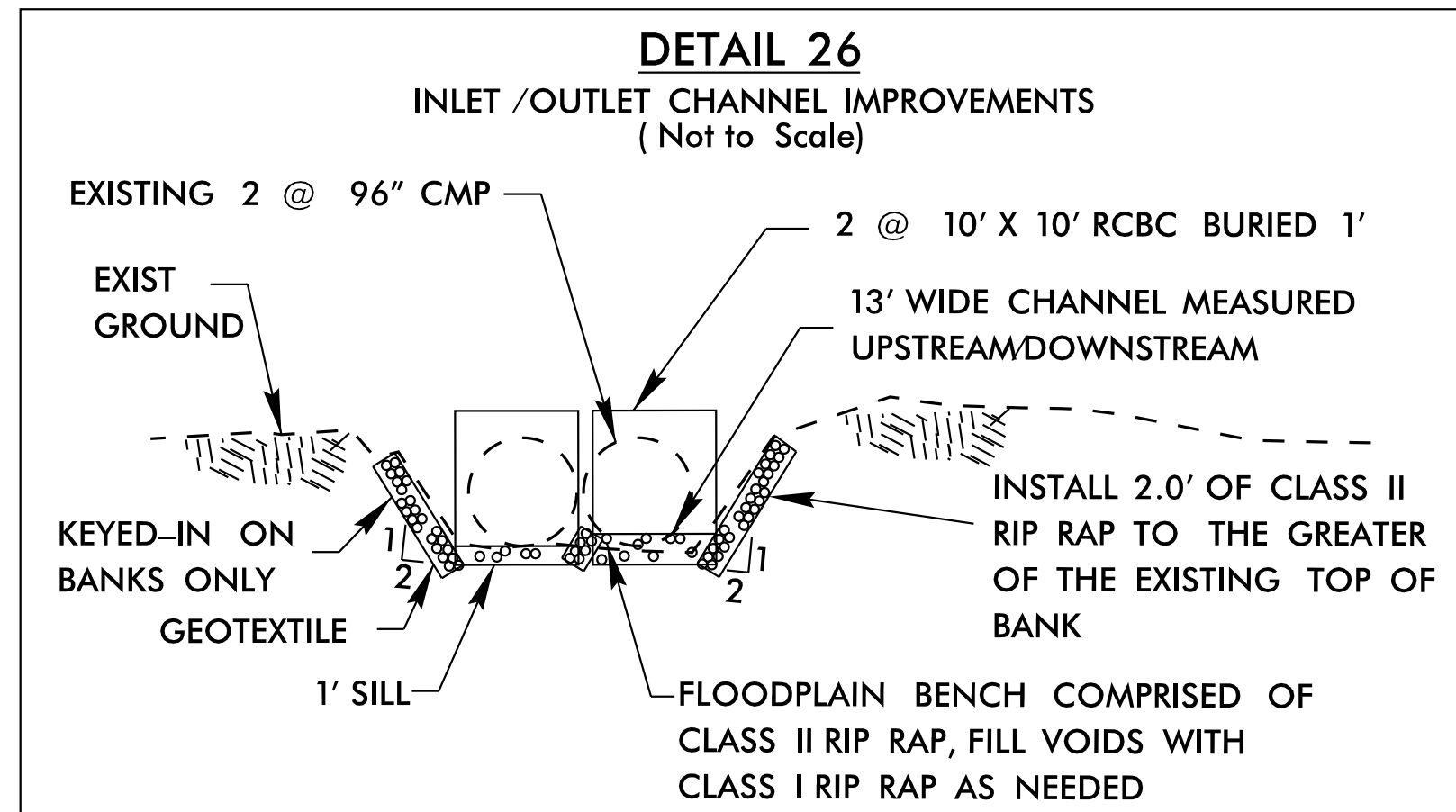
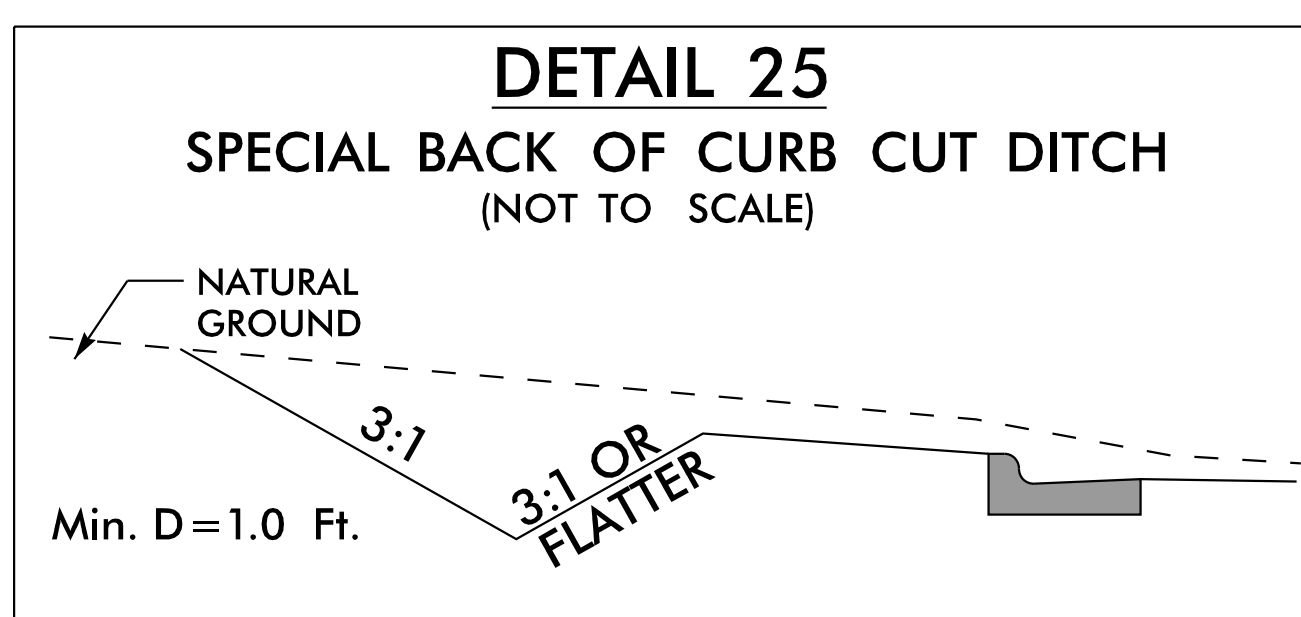
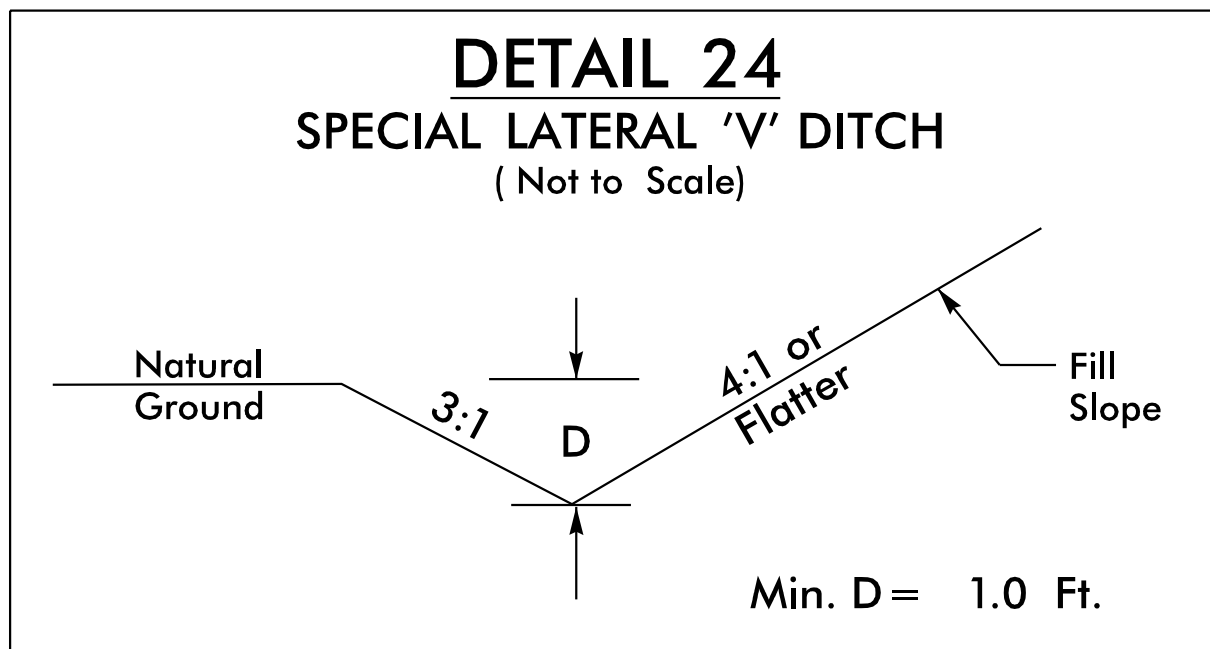
FROM STA. 21+72 TO STA. 26+50 -L- (LT)



FROM STA. 98+00 TO STA. 98+65 -L- (RT)



STA. 22+00 -Y1RPB- (LT)



FROM STA. 19+23 TO STA. 21+55 -L- (LT)
FROM STA. 21+75 TO STA. 22+25 -L- (LT)

Kimley»Horn

421 FAYETTEVILLE STREET, SUITE 600
RALEIGH, NC 27601

RIGHT-OF-WAY REV.
CONST. REV.

PROJECT REFERENCE NO.
U-5760

ROADWAY DESIGN ENGINEER

9/11/2025

SHEET NO.
2D-2

HYDRAULIC DESIGN ENGINEER

9/11/2025

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UNLESS ALL SIGNATURES COMPLETED**

PROJECT REFERENCE NO.
U-5760

ROADWAY DESIGN ENGINEER

9/11/2025

SHEET NO.
2D-2

HYDRAULIC DESIGN ENGINEER

9/11/2025

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PROJECT REFERENCE NO.

U-5760

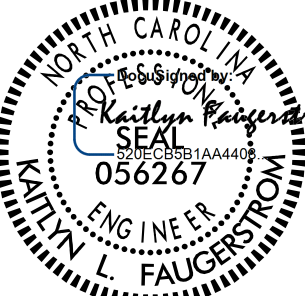
SHEET NO.

2D-3

ROADWAY DESIGN ENGINEER



HYDRAULIC DESIGN ENGINEER



9/11/2025

9/11/2025

DOCUMENT NOT CONSIDERED FINAL

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Kimley»Horn

421 FAYETTEVILLE STREET, SUITE 600

RALEIGH, NC 27601

RIGHT-OF-WAY REV.

CONST. REV.

ELEVATION POINT

TOP OF BANK

FLOW

TOE

HEAD OF RIFFLE

Riffle

TOE OF RIFFLE

#57 STONE

FILTER FABRIC

ROCK CROSS VANE

USE CULVERT SILL AS BOULDER

HEADER ROCK

FOOTER ROCK

PLAN VIEW

HEAD OF RIFFLE

TOP OF BOULDERS TO BE FLUSH WITH TOP OF RIFFLE

18" NOM. THICKNESS WELL GRADED MIX OF (75%) CLASS "A", (10%) CLASS "B", AND (15%) NO. 57 STONE.

GLIDE

RIFFLE

ROCK CROSS VANE

FILTER FABRIC

3' MINIMUM

SECTION A-A

COIR FIBER MATTING (TYP.)

D_{max}

1/3 D_{max}

CENTER BOULDER 2"-4"

SECTION B-B

COIR FIBER MATTING (TYP)

18" NOM. THICKNESS WELL GRADED MIX OF (75%) CLASS "A", (10%) CLASS "B", AND (15%) NO. 57 STONE

1/3 D_{max}

TOE

SECTION C-C

NOTE:
BOULDER SHOULD BE NATIVE STONES OR SHOT ROCK, ANGULAR AND OBLONG, WITH AN AXIS APPROXIMATELY 3 L_x, 2.5 W_x, 2 D

REACH1

Wbkf (ft)24.6

Dmax (ft)2.1

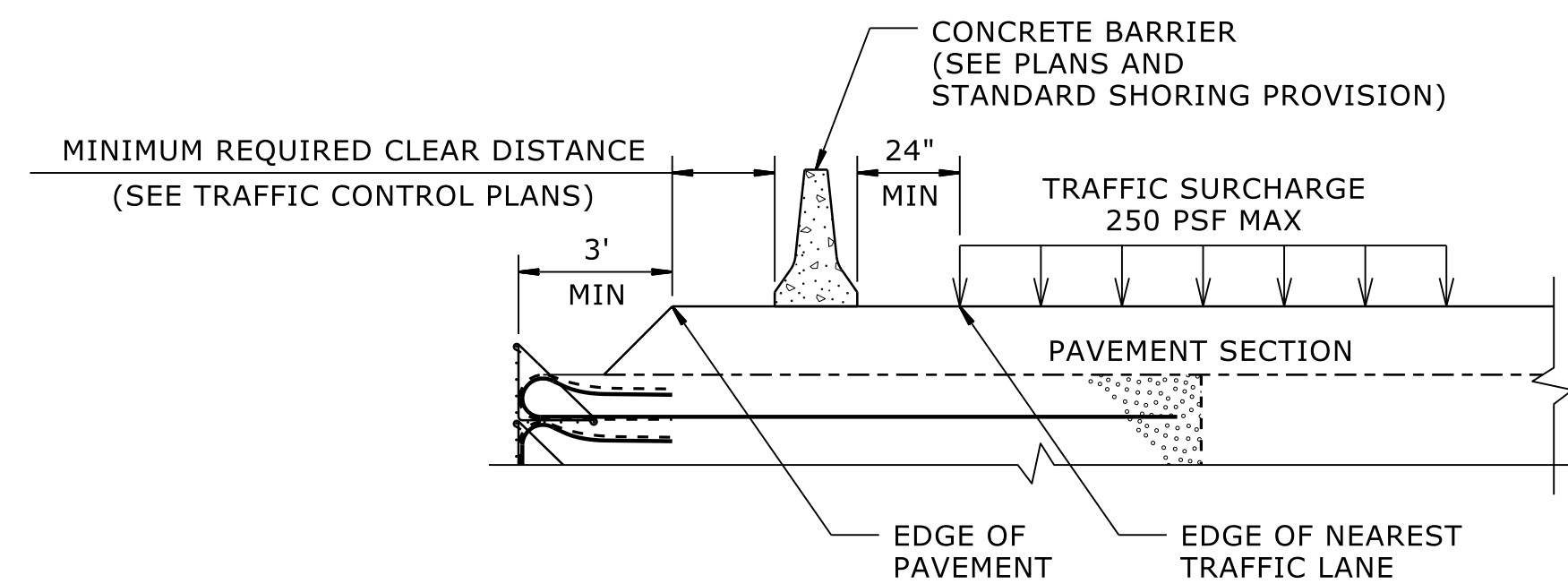
CONSTRUCTED RIFFLE DETAIL

NOT TO SCALE

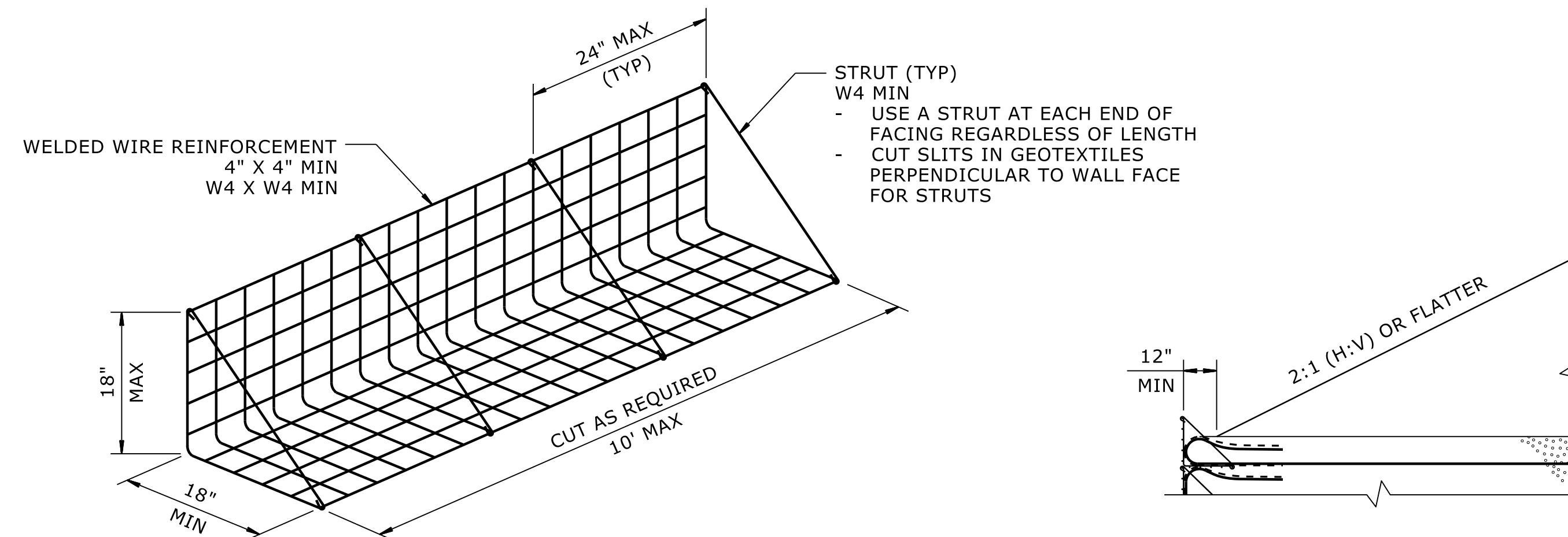
REVISIONS

5/14/99

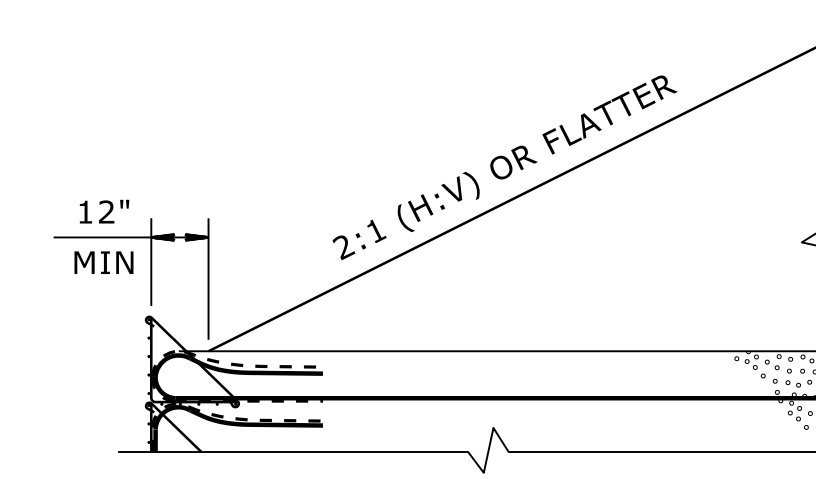
6/26/2025



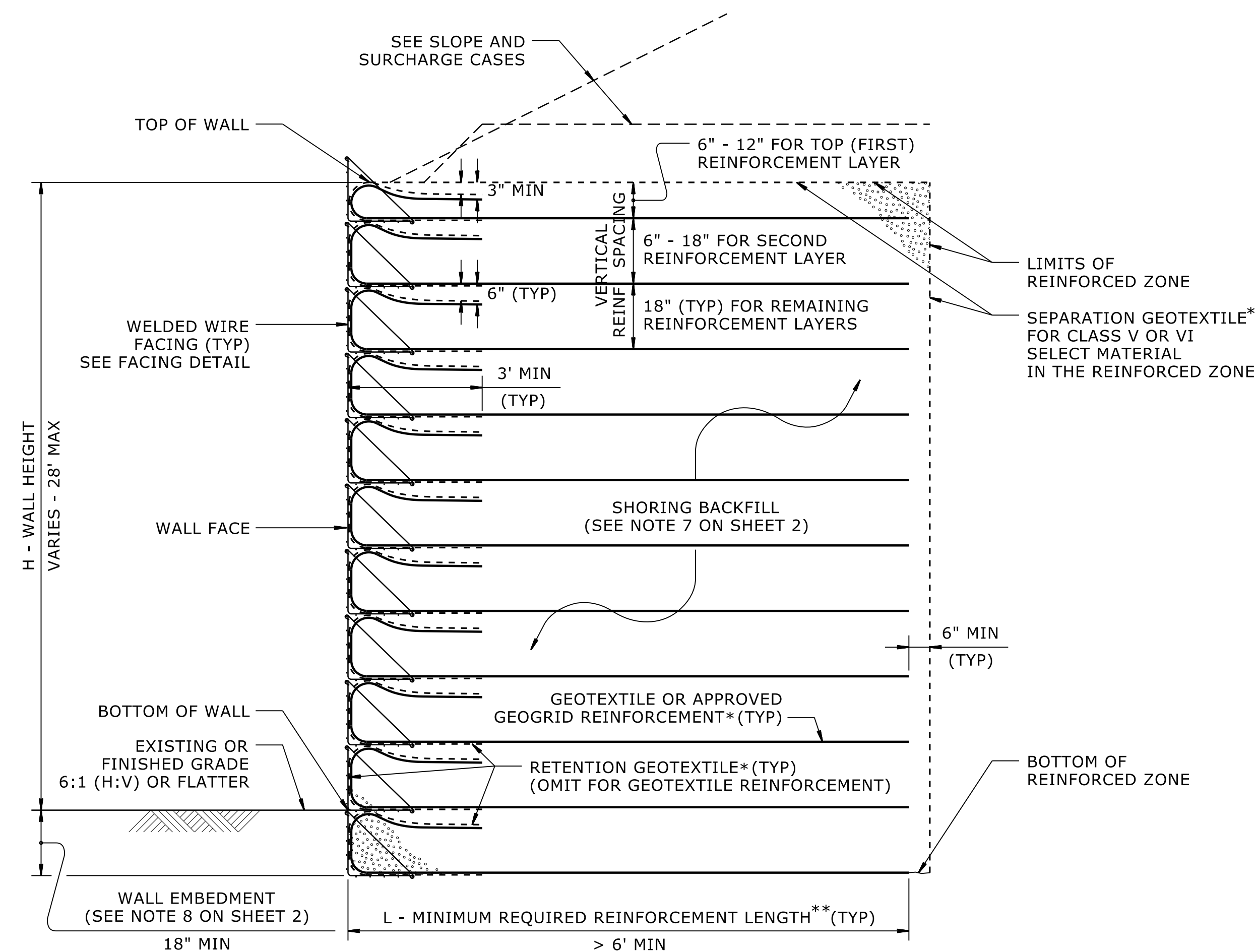
SURCHARGE CASE



FACING DETAIL



SLOPE CASE

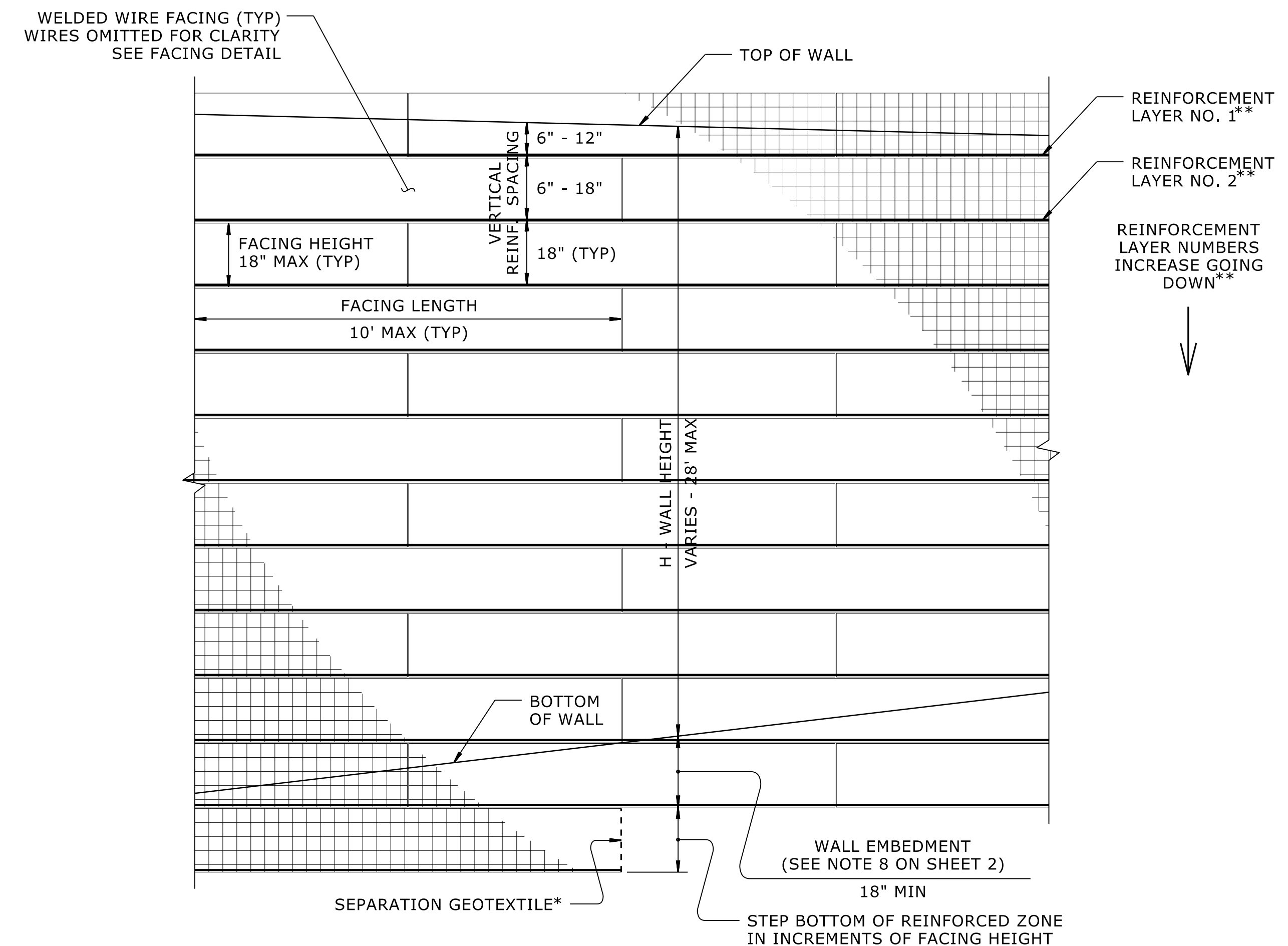


STANDARD TEMPORARY WALL

(FOR STANDARD TEMPORARY WALLS ON STRUCTURES,
SEE TEMPORARY WALL ON STRUCTURE DETAIL ON SHEET 2.)

*SEE GEOSYNTHETIC PLACEMENT DETAILS ON SHEET 2.

**SEE REINFORCEMENT TABLES ON SHEET 3.



STANDARD TEMPORARY WALL - PARTIAL ELEVATION

*SEE GEOSYNTHETIC PLACEMENT DETAILS ON SHEET 2.

**SEE REINFORCEMENT TABLES ON SHEET 3.