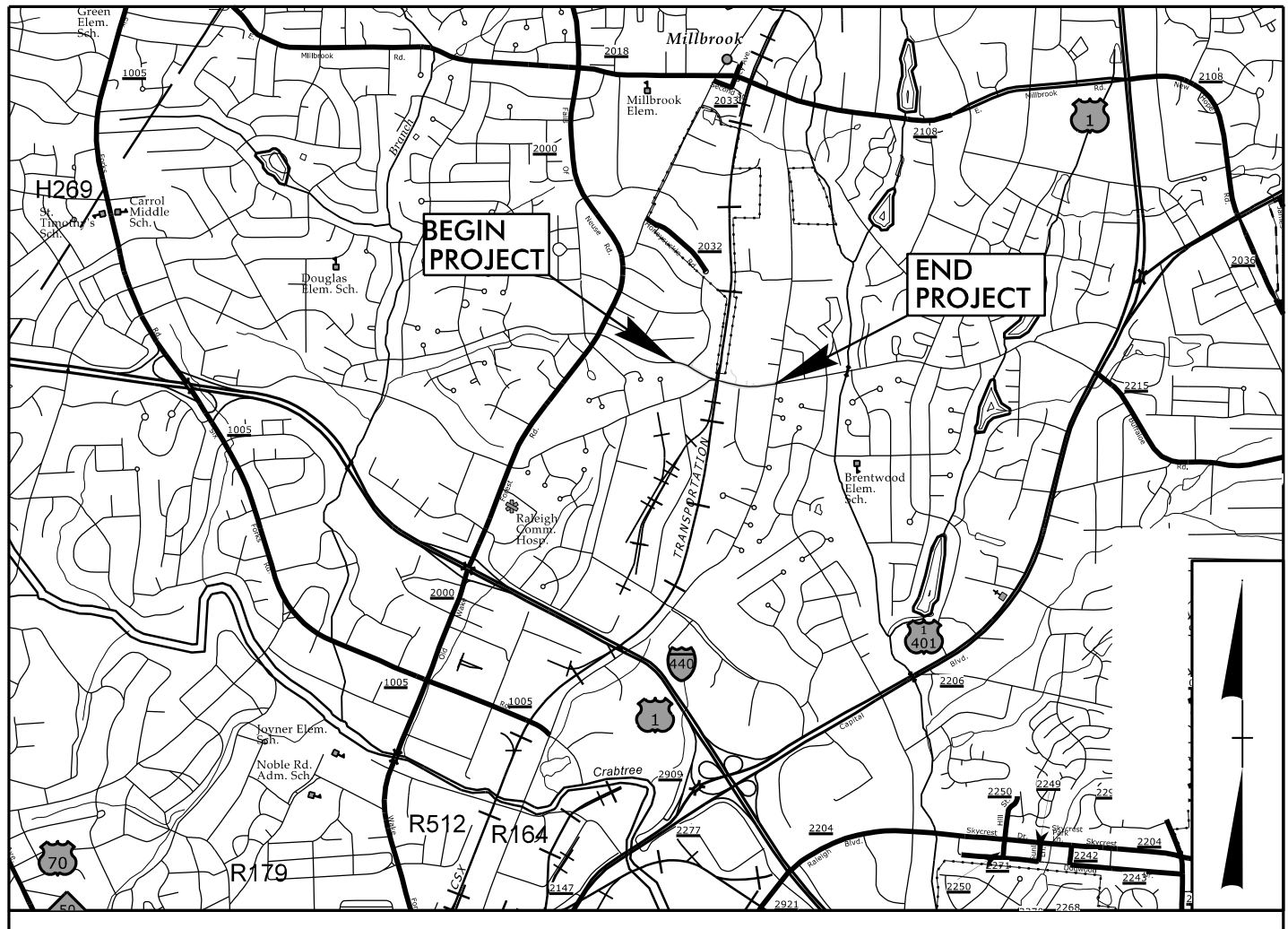


09.08/2019

See Sheet 1A for Index of Sheets
See Sheet 1B for Conventional Symbols



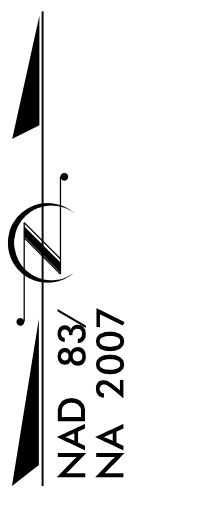
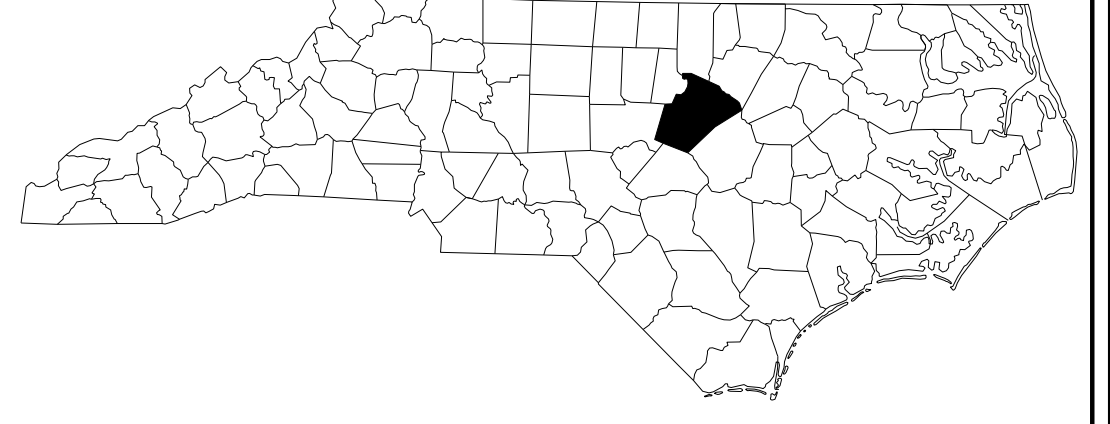
VICINITY MAP

STATE OF NORTH CAROLINA
RAIL DIVISION

WAKE COUNTY

**LOCATION: NEW HOPE CHURCH ROAD GRADE SEPARATION OVER
CSX RAILROAD(CROSSING NO. 630607N AT MILEPOST S 152.32)**
**TYPE OF WORK: DRAINAGE, GRADING, PAVING, RETAINING WALLS,
SIGNALS, STRUCTURE, AND WIDENING**

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	P-5715	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
46927.1.1	N/A	P.E.	
46927.2.1	N/A	ROW, UTIL.	
46927.3.1	N/A	CONSTR.	



TIP PROJECT: P-5715

CONTRACT: C204339

BEGIN TIP PROJECT P-5715
-L- POT STA. 11+10.00

TO WAKE FOREST ROAD

BEG. CONSTRUCTION
-L- POT STA. 10+66.83

BEGIN CONSTRUCTION
-VI- STA. 13+50.00

-Y1- CRAFTSMAN DR

4

END CONSTRUCTION
-DRWY1- STA. 13+15.00

5

END CONSTRUCTION
-DRWY2- STA. 11+43.15

END CONSTRUCTION
-DRWY3- STA. 10+65.00

END CONSTRUCTION
-L- POT STA. 32+70.00

6

TO CAPITAL BLVD.

END TIP PROJECT P-5715
-L- STA. 31+55.00

BEGIN PAVING
-Y2- STA. 14+25.00

-Y2- ST. ALBANS DR

BEGIN BRIDGE
-L- STA. 20+48.37

END BRIDGE
-L- STA. 21+72.12

END CONSTRUCTION
-DRWY5- STA. 10+78.00

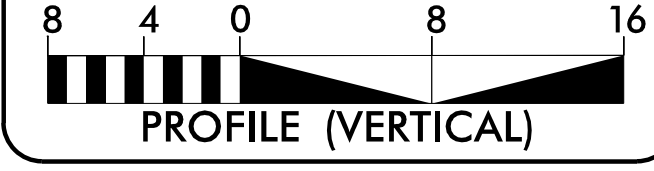
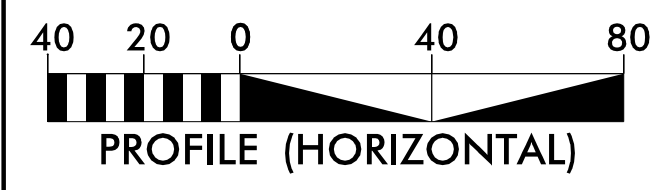
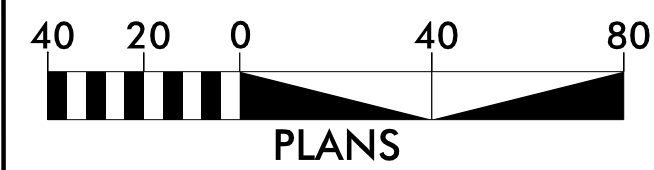
BEGIN CONSTRUCTION
-Y2- STA. 13+50.00

BEGIN CONSTRUCTION
-DRWY4- STA. 10+00.00

★ TRAFFIC SIGNAL MODIFICATION

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

GRAPHIC SCALES



DESIGN DATA

ADT 2024 = 24,547
ADT 2042 = 29,331
K = 8%
D = 65%
T = 3%*
V = 35 MPH
*TTST 1% DUAL 2%

FUNC CLASS =
MINOR ARTERIAL
SUBREGIONAL TIER

PROJECT LENGTH

LENGTH OF ROADWAY TIP PROJECT P-5715 = 0.364 MILES
LENGTH OF STRUCTURE TIP PROJECT P-5715 = 0.023 MILES
TOTAL LENGTH OF TIP PROJECT P-5715 = 0.387 MILES

Prepared In The Offices of:

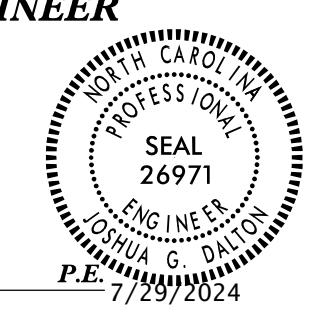
Stantec
Stantec Consulting Services Inc.
801 Jones Franklin Road
Suite 300
Raleigh, NC 27606
Tel: (919) 851-4266 Fax: (919) 851-7024
www.stantec.com License No. F-0672

SUNGATE DESIGN GROUP, P.A.
805 JONES FRANKLIN ROAD
RALEIGH, NORTH CAROLINA 27606
TEL (919) 855-2243
ENG FIRM LICENSE NO. C-890

for the North Carolina Department of Transportation	
2024 STANDARD SPECIFICATIONS	STANTEC CONTACT
RIGHT OF WAY DATE: JUNE 28, 2018	STEVE SMALLWOOD, PE PROJECT ENGINEER
LETTING DATE: OCTOBER 15, 2024	NC DOT RAIL DIVISION COORDINATION MANAGER: BRIAN GACKSTETTER, EI

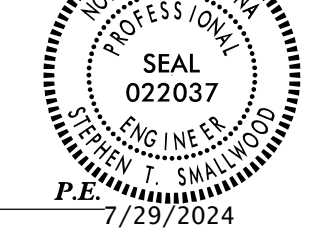
HYDRAULICS ENGINEER

DocuSigned by:
Jesha G Dalton
SIGNATURE: [Signature]

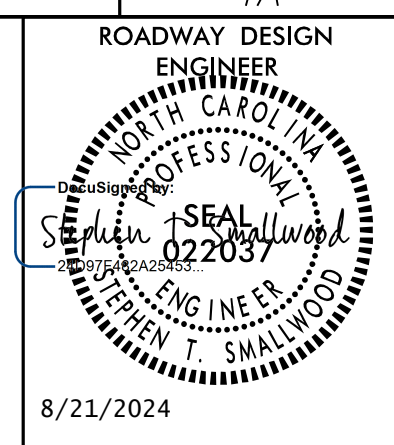


ROADWAY DESIGN ENGINEER

DocuSigned by:
Stephen T. Smallwood
SIGNATURE: [Signature]



NC DEPARTMENT OF
TRANSPORTATION
RAIL DIVISION
ENGINEERING COORDINATION
AND SAFETY



INDEX OF SHEETS

SHEET NUMBER	SHEET
1	TITLE SHEET
1A	INDEX OF SHEETS, GENERAL NOTES, AND LIST OF STANDARD DRAWINGS
1B	CONVENTIONAL SYMBOLS
2A-1 THRU 2A-8	PAVEMENT SCHEDULE, WEDGING DETAILS AND TYPICAL SECTIONS
2B-1	TEMPORARY DRIVE DETOUR PLAN AND PROFILE SHEET
2B-2	CROSSING CLOSURE DETAIL
2B-3	TRAFFIC DIAGRAMS AND INTERSECTION ISLAND DIMENSIONS DETAIL
2B-4	TEMPORARY DRAINAGE DETAIL
2B-5	BUS PAD DETAIL
2C-1	DETAIL OF MODIFIED FLUME
2C-2	DETAIL OF MINIMUM DEPTH CONCRETE CB
2C-3	DETAIL OF 2'-6" C&G TRANSITION TO 2' PAVED SHOULDER
2C-4	DETAIL OF PEDESTRIAN SAFETY RAIL
2C-5	DETAIL OF CONVERT CB OR JB TO D1 OR 2G1
2C-6	DETAIL OF CONVERT CB D1 OTCB OR 2G1 TO JB - NMH
2C-7	DETAIL OF PARALLEL CURB RAMP
2C-8	DETAIL OF CONCRETE SIDEWALK 848D01
2C-9	DETAIL OF GUARDRAIL PLACEMENT 862D01
2C-10	DETAIL OF GUARDRAIL PLACEMENT 862D01
2C-11	DETAIL OF GUARDRAIL PLACEMENT 862D01
2C-12	DETAIL OF INDEX SHEET 8
2C-13	DETAIL OF INDEX SHEET 9
2D-1	DRAINAGE DITCH DETAILS
3B-1	SUMMARY OF EARTHWORK, ASPHALT PAVEMENT REMOVAL SUMMARY AND GUARDRAIL SUMMARY
3B-2	BREAKING OF EXISTING PAVEMENT SUMMARY AND BLACK VINYL COATED CHAIN LINK FENCE SUMMARY
3D-1 THRU 3D-3	DRAINAGE SUMMARIES
3G-1	GEOTECHNICAL SUMMARIES
3P-1	PARCEL INDEX SHEETS
4 THRU 6	PLAN SHEETS
7 THRU 9	PROFILE SHEETS
RW01 THRU RW06	RIGHT OF WAY SHEETS
TMP-1 THRU TMP-16	TRANSPORTATION MANAGEMENT PLANS
PMP-1 THRU PMP-4	PAVEMENT MARKING PLANS
SL-01 THRU SL-04	STREET LIGHTING PLANS
EC-1 THRU EC-10	EROSION CONTROL PLANS
SIGN-1 THRU SIGN 7	SIGNING PLANS
SIG-1.0 THRU SIG-4.2	SIGNAL PLANS
SCP-1 THRU SCP-3	CABLE ROUTING PLAN
UC-1 THRU UC-9	UTILITY CONSTRUCTION PLANS
UO-1 THRU UO-4	UTILITIES BY OTHERS PLANS
X-1	CROSS-SECTION INDEX
X-1A	CROSS-SECTION SUMMARY
X-2 THRU X-24	CROSS-SECTIONS
S-1 THRU S-46	STRUCTURE PLANS
W-1 THRU W-5	RETAINING WALL PLANS

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 USING THE RATE OF SUPERELEVATION AND RUNOFF SHOWN ON THE PLANS. SUPERELEVATION IS TO BE REVOLVED ABOUT THE GRADE POINTS SHOWN ON THE TYPICAL SECTIONS.

SHOULDER CONSTRUCTION:

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

SIDE ROADS:

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

DRIVEWAYS:

DRIVEWAYS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STD. 848.02 USING 3 FOOT RADIUS OR RADIUS 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 RADIUS NOTED ON PLANS.

GUARDRAIL:

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

TEMPORARY SHORING:

THE 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 AT&T, Duke Energy Progress, PSNC, Windstream, Charter, City of Raleigh, NCDOT, Level 3 Communications, Lightower Fiber Network, Spirit Fiber

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

RIGHT-OF-WAY MARKERS:

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

CURB RAMPS

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

2024 ROADWAY ENGLISH STANDARD DRAWINGS

The following Roadway Standards as appear in "Roadway Standard Drawings" Highway Design Branch - N. C. Department of Transportation - Raleigh, N. C., Dated January, 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
225.02	Guide for Grading Subgrade - Secondary and Local
225.04	Method of Obtaining Superelevation - Two Lane Pavement
225.06	Method of Grading Sight Distance at Intersections
DIVISION 3 - PIPE CULVERTS	
300.01	Method of Pipe Installation
DIVISION 4 - MAJOR STRUCTURES	
423.02	Bridge Approach Fills - Type 1A Approach Fill
423.04	Bridge Approach Fills - Type 2A Approach Fill
DIVISION 5 - SUBGRADE, BASES AND SHOULDERS	
560.01	Method of Shoulder Construction - High Side of Superelevated Curve - Method I
DIVISION 6	
654.01	Pavement Repairs
DIVISION 8 - INCIDENTALS	
806.01	Concrete Right-of-Way Marker
806.02	Granite Right-of-Way Marker
838.01	Concrete Endwall for Single and Double Pipe Culverts - 15" thru 48" Pipe 90 Skew
838.11	Brick Endwall for Single and Double Pipe Culverts - 15" thru 48" Pipe 90 Skew
840.00	Concrete Base Pad for Drainage Structures
840.01	Brick Catch Basin - 12" thru 54" Pipe
840.02	Concrete Catch Basin - 12" thru 54" Pipe
840.03	Frame, Grates and Hood - for Use on Standard Catch Basin
840.14	Concrete Drop Inlet - 12" thru 30" Pipe
840.15	Brick Drop Inlet - 12" thru 30" Pipe
840.16	Drop Inlet Frame and Grates - for use with Std. Dwg 840.14 and 840.15
840.18	Concrete Grated Drop Inlet Type 'B' - 12" thru 36" Pipe
840.22	Frames and Wide Slot Sag Grates
840.24	Frames and Narrow Slot Sag Grates
840.25	Anchorage for Frames
840.27	Brick Grated Drop Inlet Type 'B' - 12" thru 36" Pipe
840.31	Concrete Junction Box - 12" thru 66" Pipe
840.32	Brick Junction Box - 12" thru 66" Pipe
840.45	Precast Drainage Structure
840.54	Manhole Frame and Cover
840.66	Drainage Structure Steps
846.01	Concrete Curb, Gutter and Curb & Gutter
848.01	Concrete Sidewalk
848.02	Driveway Turnout - Radius Type
848.04	Street Turnout
848.06	Curb Ramp - Proposed Curb & Gutter
852.01	Concrete Islands
852.06	Method for Placement of Drop Inlets in Concrete Islands
862.01	Guardrail Placement
862.02	Guardrail Installation
862.03	Structure Anchor Units
866.01	Chain Link Fence - 4', 5' and 6' High Fence
876.01	Rip Rap in Channels
876.02	Guide for Rip Rap at Pipe Outlets
876.04	Drainage Ditches with Class 'B' Rip Rap

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

EFF. 01-16-2024
 REV.

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

Note: Not to Scale

BOUNDARIES AND PROPERTY:

State Line	-----
County Line	-----
Township Line	-----
City Line	-----
Reservation Line	-----
Property Line	-----
Existing Iron Pin (EIP)	○
Computed Property Corner	×
Existing Concrete Monument (ECM)	□
Parcel/Sequence Number	(123)
Existing Fence Line	-x-x-x-
Proposed Woven Wire Fence	○
Proposed Chain Link Fence	□
Proposed Barbed Wire Fence	◇
Existing Wetland Boundary	WLB
Proposed Wetland Boundary	WLB
Existing Endangered Animal Boundary	EAB
Existing Endangered Plant Boundary	EPB
Existing Historic Property Boundary	HPB
Known Contamination Area: Soil	☒
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	JS
Buffer Zone 1	BZ 1
Buffer Zone 2	BZ 2
Flow Arrow	←
Disappearing Stream	→
Spring	○
Wetland	WLB
Proposed Lateral, Tail, Head Ditch	-----
False Sump	▽

RAILROADS:

Standard Gauge	-----
RR Signal Milepost	○
Switch	□
RR Abandoned	-----
RR Dismantled	-----

RIGHT OF WAY & PROJECT CONTROL:

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

ROADS AND RELATED FEATURES:

Existing Edge of Pavement	-----
Existing Curb	-----
Proposed Slope Stakes Cut	-----
Proposed Slope Stakes Fill	-----
Proposed Curb Ramp	-----
Existing Metal Guardrail	-----
Proposed Guardrail	-----
Existing Cable Guiderail	-----
Proposed Cable Guiderail	-----
Equality Symbol	⊕
Pavement Removal	-----
VEGETATION:	
Single Tree	○
Single Shrub	○
Hedge	-----

Woods Line	-----
Orchard	-----
Vineyard	-----

EXISTING STRUCTURES:

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

UTILITIES:

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

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

TELEPHONE:

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

WATER:

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

TV:

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

GAS:

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

SANITARY SEWER:

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

MISCELLANEOUS:

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

6/2/2024

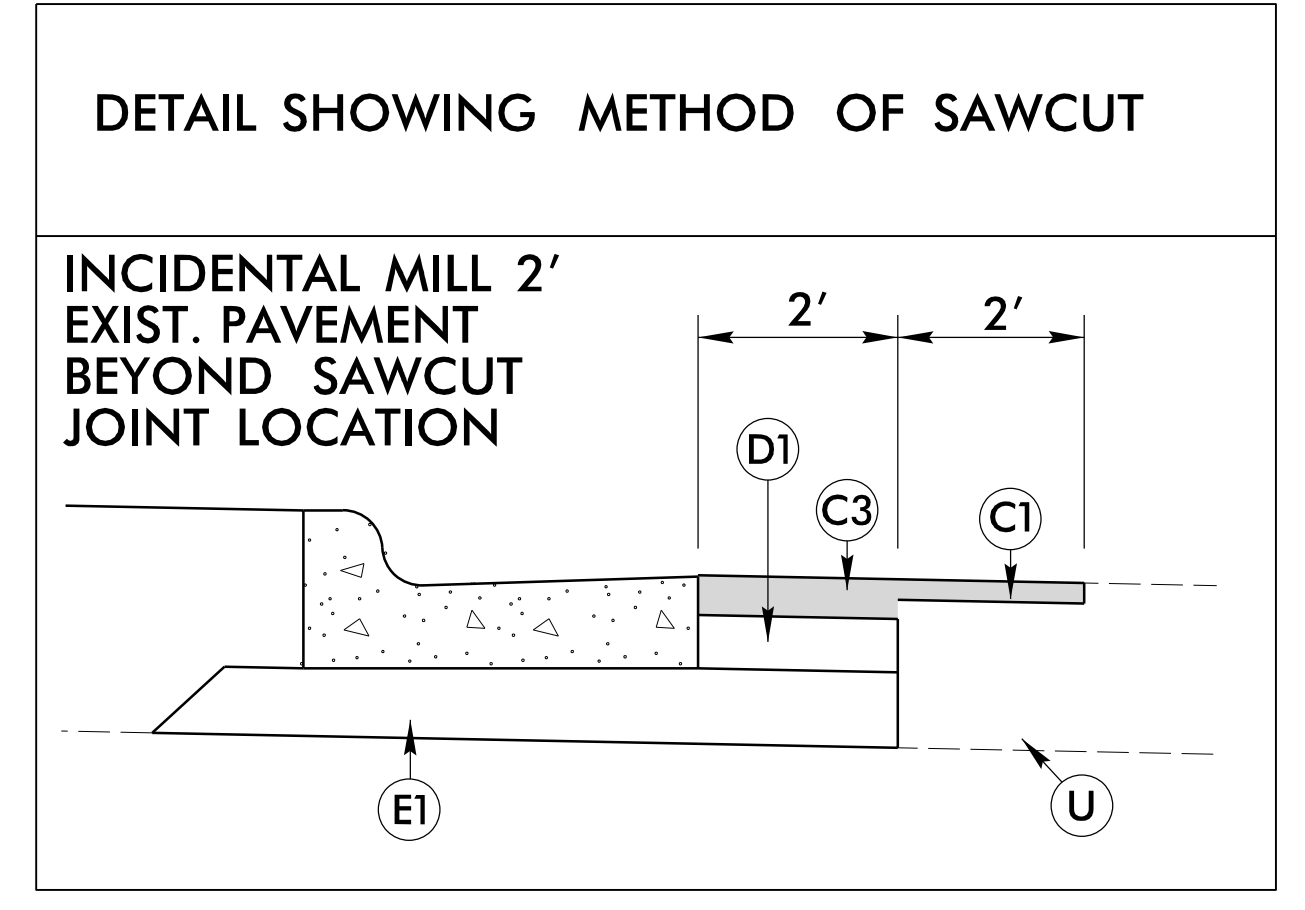
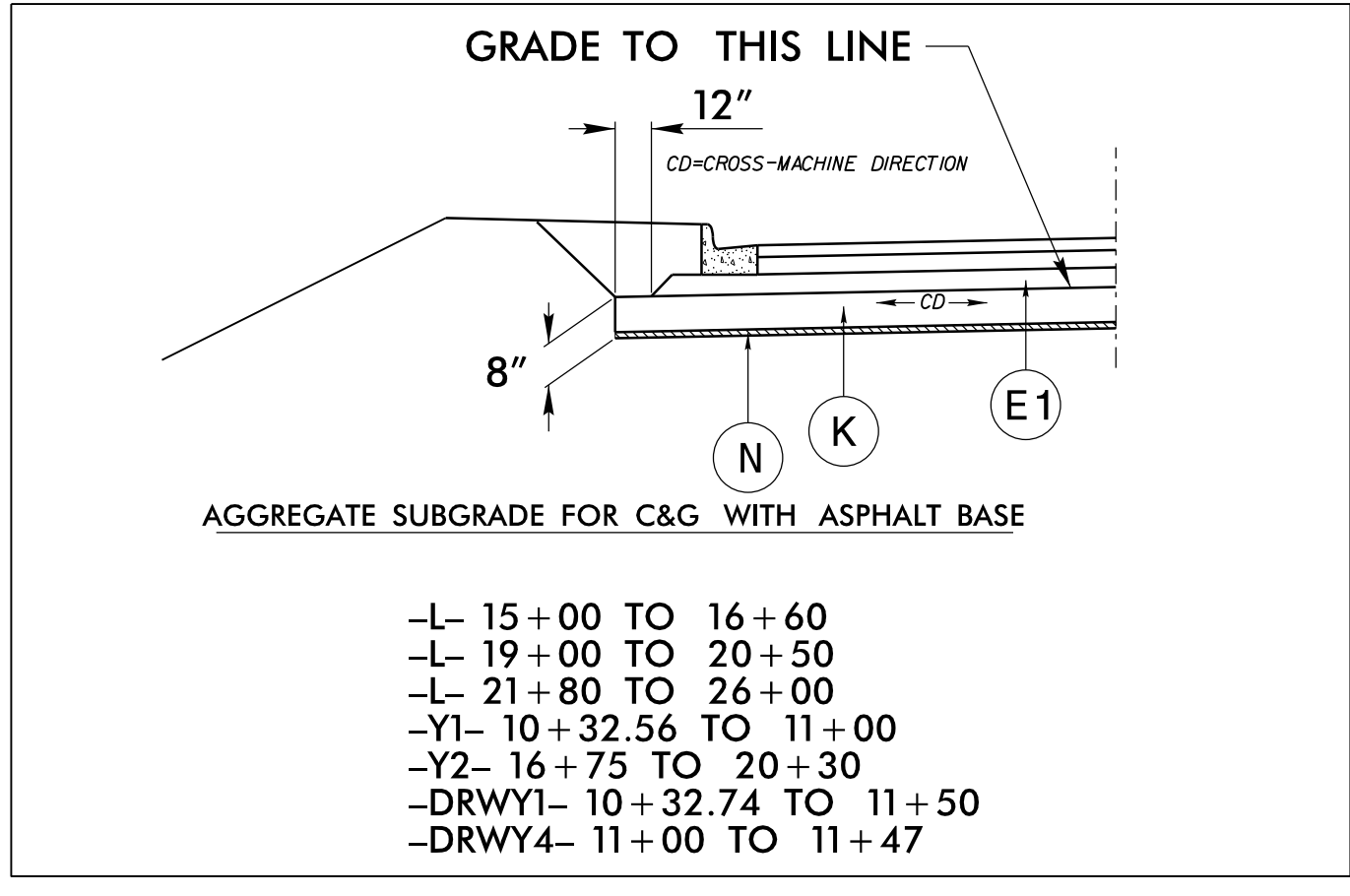
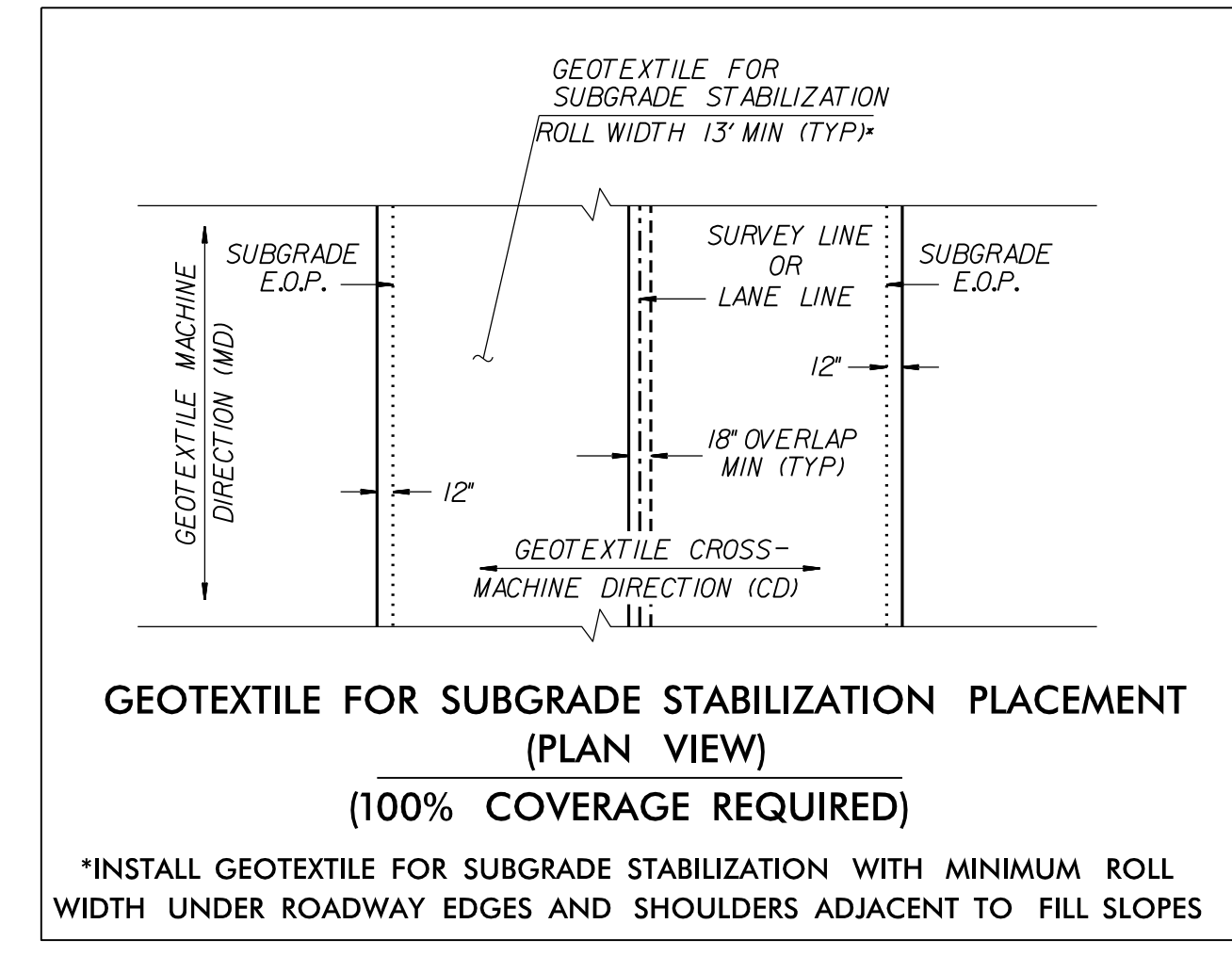
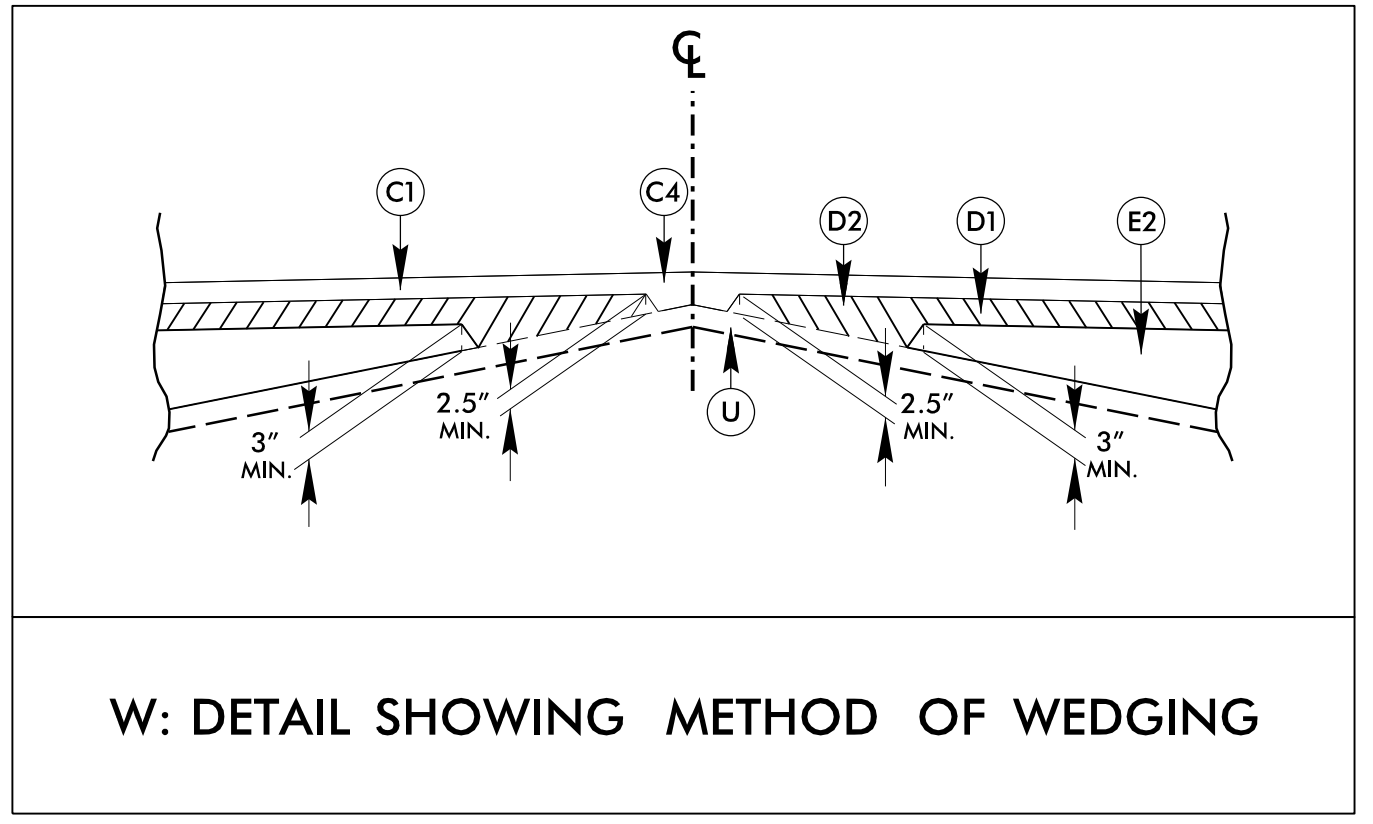
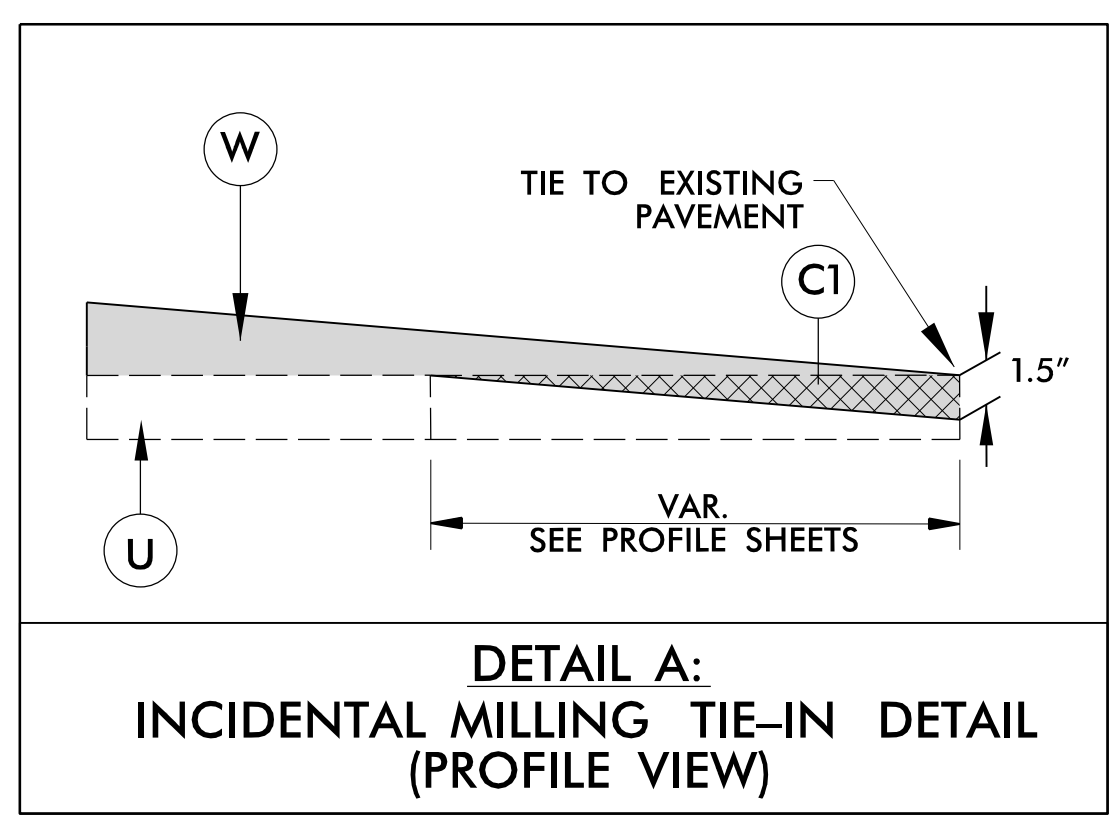
PAVEMENT SCHEDULE

C1	PROP. APPROX. 1.5" ASPHALT CONCRETE SURFACE COURSE TYPE S9.5B, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD.	K	8" CLASS IV SUBGRADE STABILIZATION.
C2	PROP. APPROX. 2" ASPHALT CONCRETE SURFACE COURSE TYPE S9.5B, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.	N	GEOTEXTILE FOR SUBGRADE STABILIZATION.
C3	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.	P	PRIME COAT
C4	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 1 1/2" IN DEPTH.	R1	2'-6" CONCRETE CURB AND GUTTER.
D1	PROP. APPROX. 4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.	R2	5" MONOLITHIC CONCRETE ISLAND (KEYED-IN).
D2	PROP. VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 2 1/2" IN DEPTH OR GREATER THAN 4" IN DEPTH.	S	4" CONCRETE SIDEWALK.
E1	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.	T	EARTH MATERIAL.
E2	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 3" IN DEPTH OR GREATER THAN 5 1/2" IN DEPTH.	U	EXISTING PAVEMENT.
J1	PROP. 6" AGGREGATE BASE COURSE	V	MILLING OF EXISTING PAVEMENT 1.5" DEPTH
J2	PROP. 4" AGGREGATE BASE COURSE (M) SHOULDER CONSTRUCTION. SEE SPECIAL PROVISION.	W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE METHOD OF WEDGING).

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

PROJECT REFERENCE NO. <i>P-5715</i>	SHEET NO. <i>2A-1</i>
ROADWAY DESIGN ENGINEER <i>Stephen T. Smallwood</i> 10/2/2024	PAVEMENT DESIGN ENGINEER <i>Andrew D. Wake</i> 10/3/2024
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Fax. (919) 851-7024
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License No. F-0672



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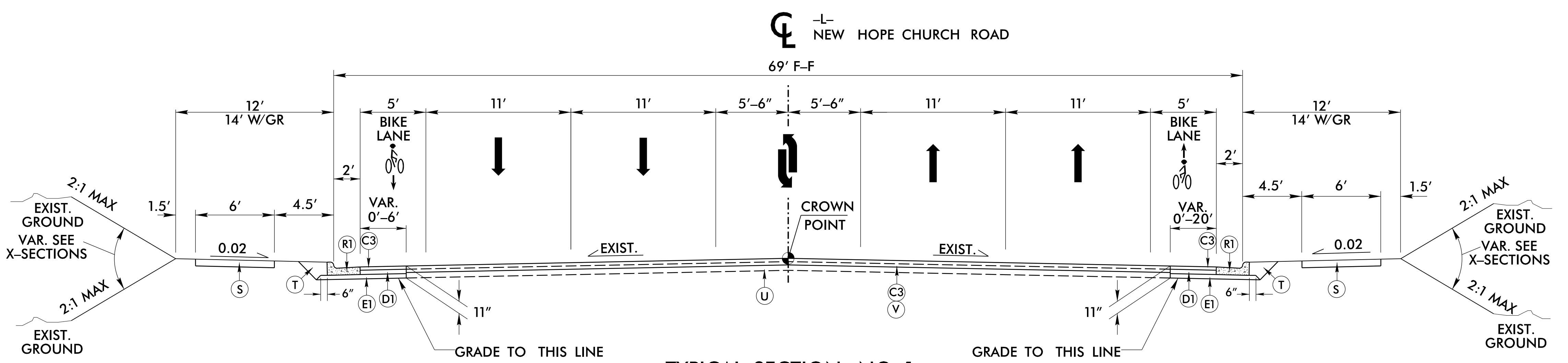
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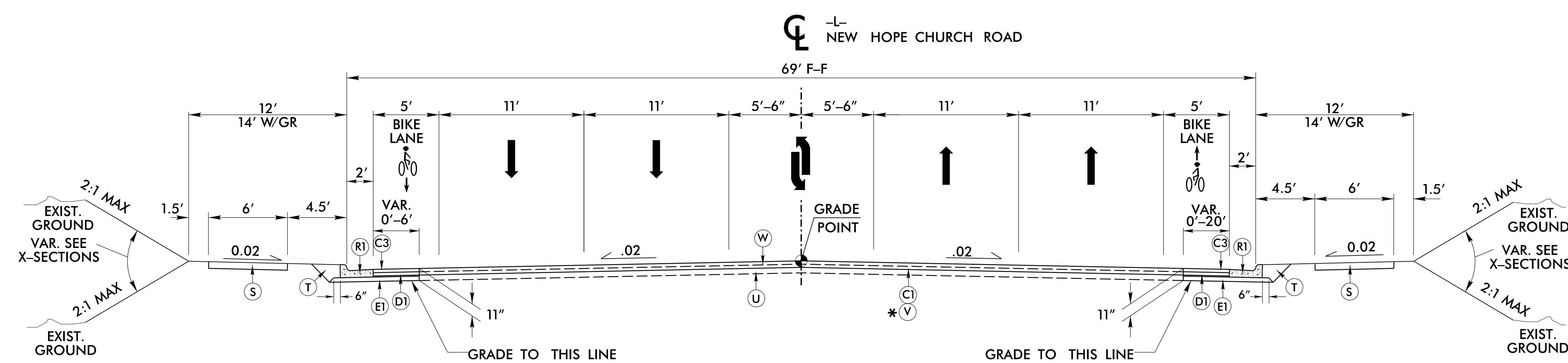
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PROJECT REFERENCE NO. P-5715	SHEET NO. 2A-2
ROADWAY DESIGN ENGINEER SEAL 022037 STEPHEN T. SMALLWOOD	PAVEMENT DESIGN ENGINEER SEAL 044590 ANDREW D. WAGCO
10/2/2024	10/3/2024

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TYPICAL SECTION NO. 1
-L- STA. 11+10.00 TO 12+40.00



TYPICAL SECTION NO. 2
* -L- STA. 12+40.00 TO 13+40.00
-L- STA. 26+75(LT) & 27+15.00(RT) TO 31+55.00

PAVEMENT SCHEDULE	
C1	PROP. APPROX. 1.5", TYPE S9.5B
C2	PROP. APPROX. 2", TYPE S9.5B
C3	PROP. APPROX. 3", TYPE S9.5B
C4	PROP. VAR. DEPTH, TYPE S9.5B
D1	PROP. APPROX. 4", I19.0C
D2	PROP. VAR. DEPTH, TYPE I19.0C
E1	PROP. APPROX. 4", TYPE B25.0C
E2	PROP. VAR. DEPTH, TYPE B25.0C
J1	PROP. 6" AGGREGATE BASE COURSE
J2	PROP. 4" AGGREGATE BASE COURSE (M)
K	CLASS IV SUB. STAB.
N	GEOTEXTILE FOR SUB. STAB.
P	Prime Coat
R1	2'-6" CONCRETE CURB AND GUTTER
R2	5" MONOLITHIC CONCRETE ISLAND
S	4" CONCRETE SIDEWALK
T	EARTH MATERIAL
U	EXISTING PAVEMENT
V	1.5" MILLING
W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE STANDARD WEDGING DETAIL)

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

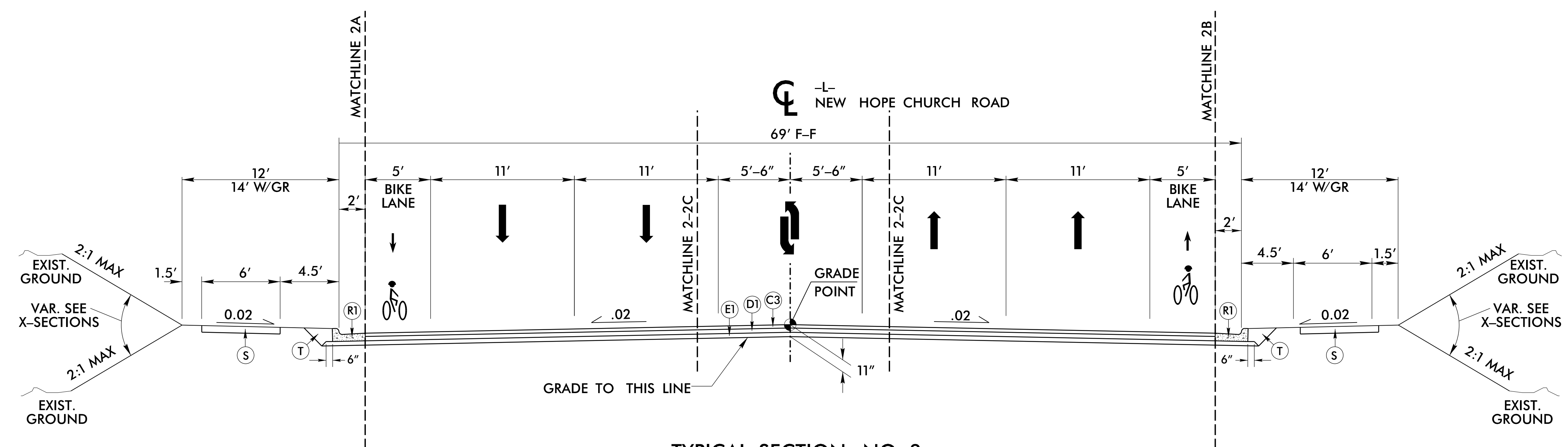
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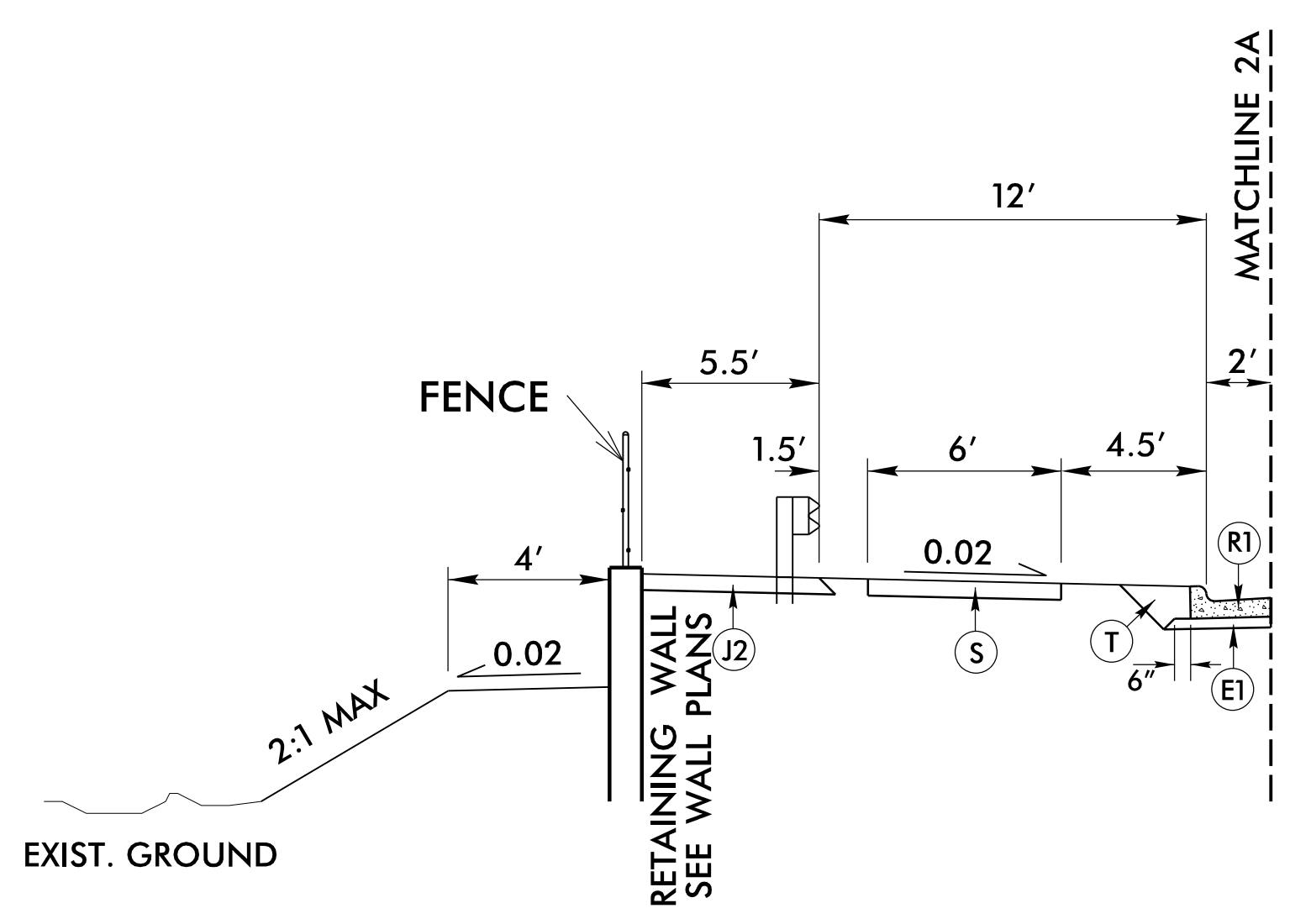
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 Fax. (919) 851-7024
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PROJECT REFERENCE NO. P-5715	SHEET NO. 2A-3
ROADWAY DESIGN ENGINEER SEAL 022037 STEPHEN T. SMALLWOOD	PAVEMENT DESIGN ENGINEER SEAL 044590 ANDREW D. WATCO
10/2/2024	10/3/2024

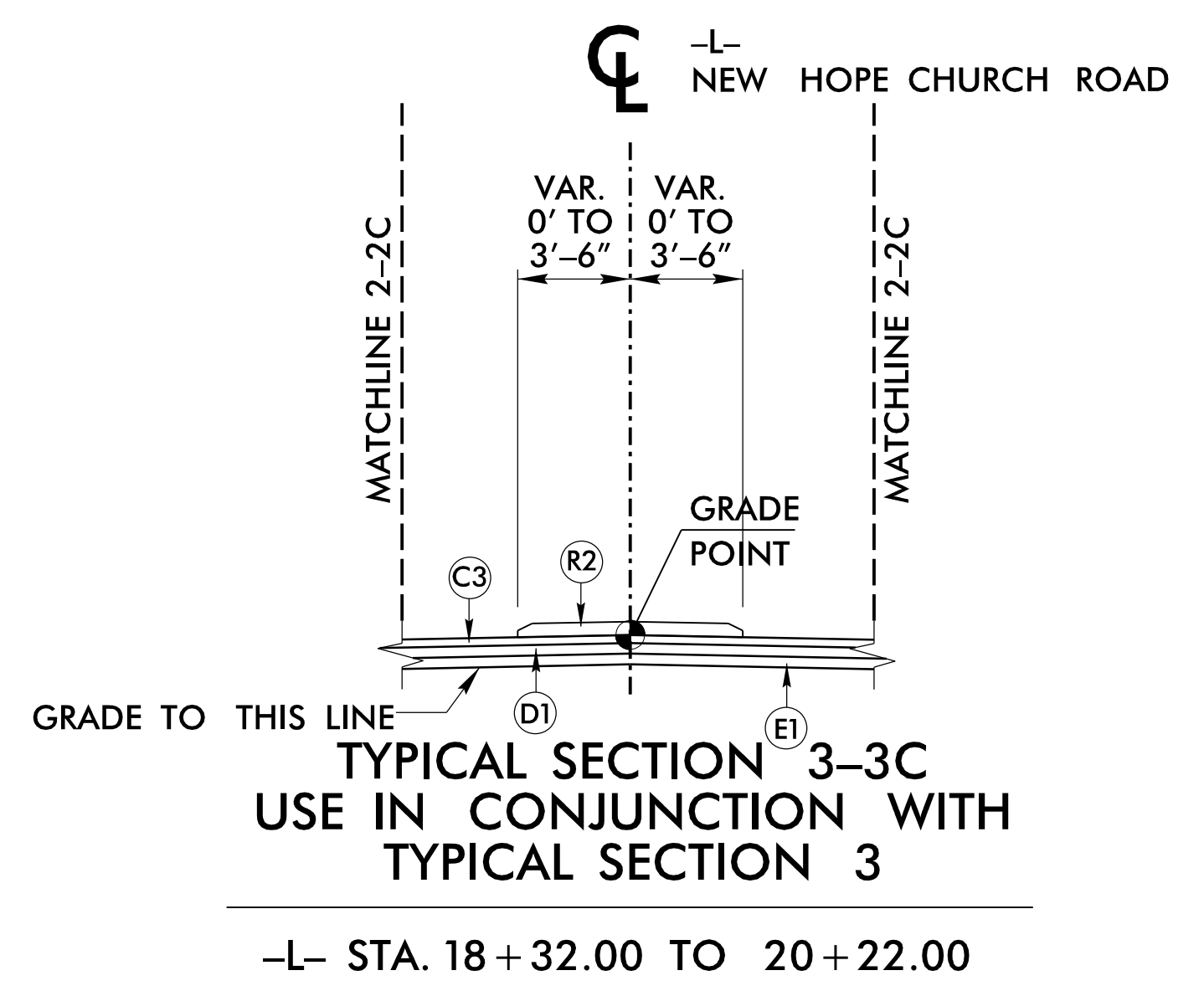
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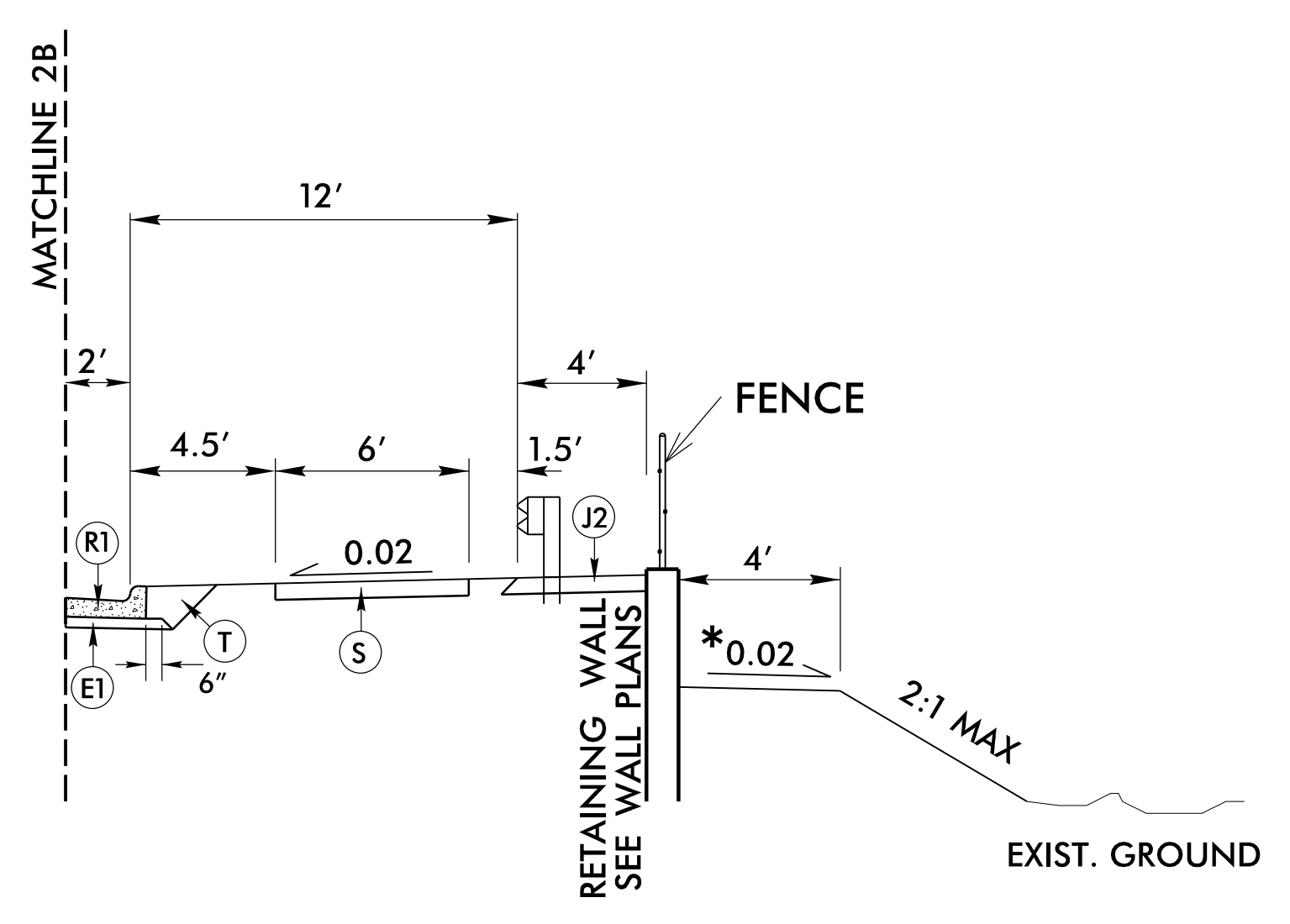
TYPICAL SECTION NO. 3
 -L- STA. 13+40.00 TO 20+48.37 (BEGIN BRIDGE)
 -L- STA. 21+72.12 (END BRIDGE) TO 26+75(LT) & 27+15.00(RT)



TYPICAL SECTION 3-3A
 USE IN CONJUNCTION WITH
 TYPICAL SECTION 3
 -L- STA. 16+60.00 TO 20+64.24 LT



TYPICAL SECTION 3-3C
 USE IN CONJUNCTION WITH
 TYPICAL SECTION 3
 -L- STA. 18+32.00 TO 20+22.00



TYPICAL SECTION 3-3B
 USE IN CONJUNCTION WITH
 TYPICAL SECTION 3
 -L- STA. 15+20.00 TO 18+13 RT
 * USE 10:1 OR FLATTER AT G/R LOCATION
 -L- STA. 16+51.00 TO 17+32.00

UTILIZE 8'-0" POSTS FOR GUARDRAIL
 LOCATIONS ADJACENT TO RETAINING WALL

C1	PROP. APPROX. 1.5", TYPE S9.5B
C2	PROP. APPROX. 2", TYPE S9.5B
C3	PROP. APPROX. 3", TYPE S9.5B
C4	PROP. VAR. DEPTH, TYPE S9.5B
D1	PROP. APPROX. 4", I19.0C
D2	PROP. VAR. DEPTH, TYPE I19.0C
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J1	PROP. 6" AGGREGATE BASE COURSE
J2	PROP. 4" AGGREGATE BASE COURSE (M)
K	CLASS IV SUB. STAB.
N	GEOTEXTILE FOR SUB. STAB.
P	Prime Coat
R1	2'-6" CONCRETE CURB AND GUTTER
R2	5" MONOLITHIC CONCRETE ISLAND
S	4" CONCRETE SIDEWALK
T	EARTH MATERIAL
U	EXISTING PAVEMENT
V	1.5" MILLING
W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE STANDARD WEDGING DETAIL)

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

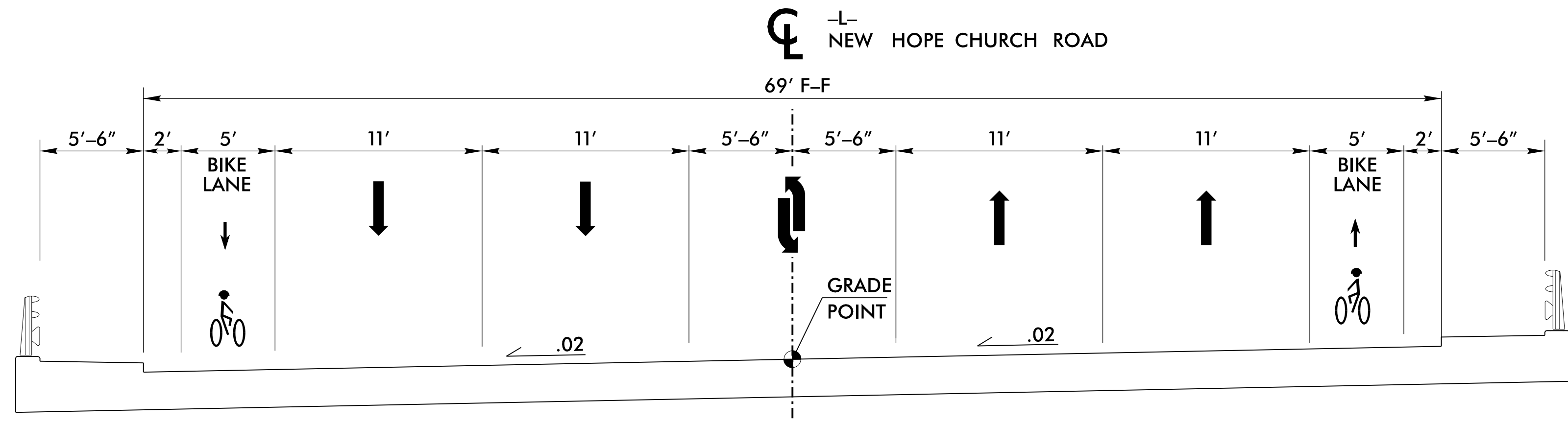
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6/2/2024

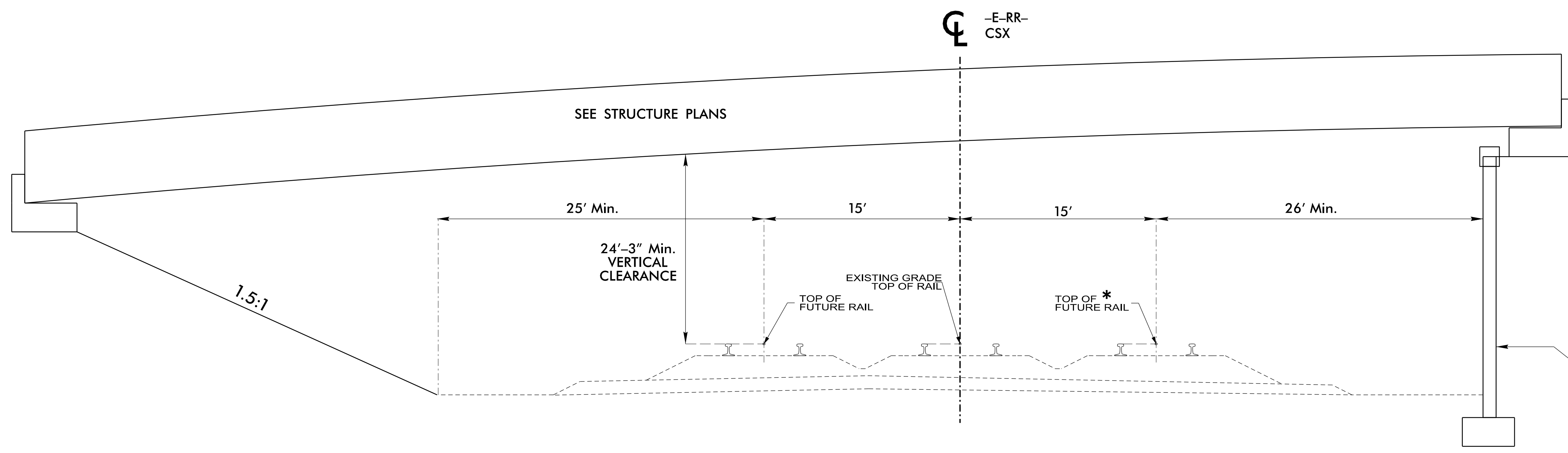
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PROJECT REFERENCE NO. P-5715	SHEET NO. 2A-4
ROADWAY DESIGN ENGINEER SEAL 022037 STEPHEN T. SMALLWOOD	PAVEMENT DESIGN ENGINEER
10/2/2024	

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



TYPICAL SECTION NO. 4
 -L- STA. 20+48.37 (BEGIN BRIDGE) TO 21+72.12 (END BRIDGE)



TYPICAL SECTION NO. 5
 TYPICAL UNDER BRIDGE VIEW IS UPSTATION

C1	PROP. APPROX. 1.5", TYPE S9.5B
C2	PROP. APPROX. 2", TYPE S9.5B
C3	PROP. APPROX. 3", TYPE S9.5B
C4	PROP. VAR. DEPTH, TYPE S9.5B
D1	PROP. APPROX. 4", I19.0C
D2	PROP. VAR. DEPTH, TYPE I19.0C
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P	Prime Coat
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R2	5" MONOLITHIC CONCRETE ISLAND
S	4" CONCRETE SIDEWALK
T	EARTH MATERIAL
U	EXISTING PAVEMENT
V	1.5" MILLING
W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE STANDARD WEDGING DETAIL)

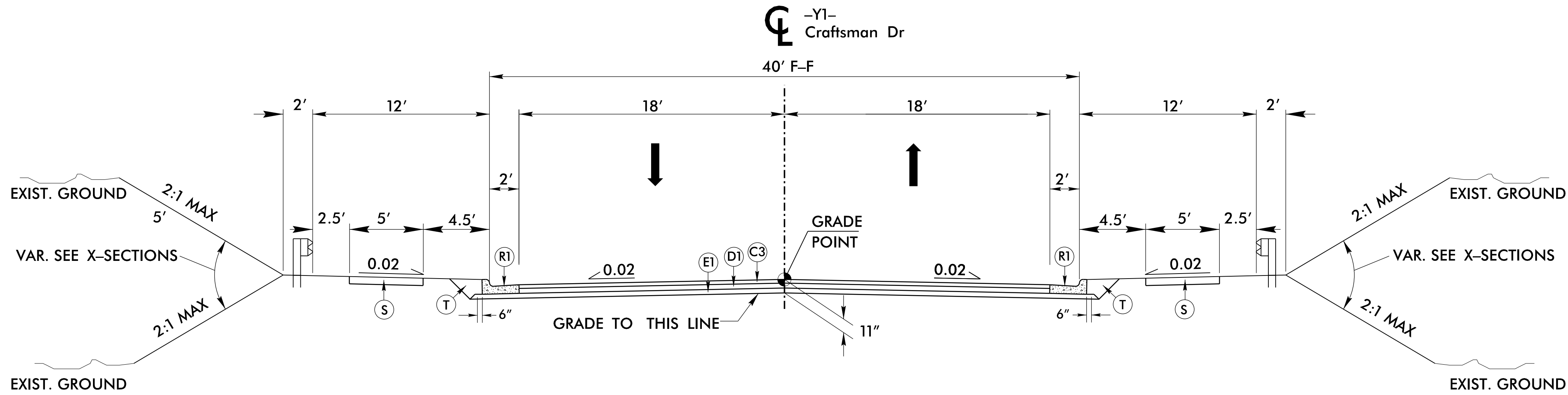
NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.

PROP MSE WALL
 SEE STRUCTURE AND WALL PLANS

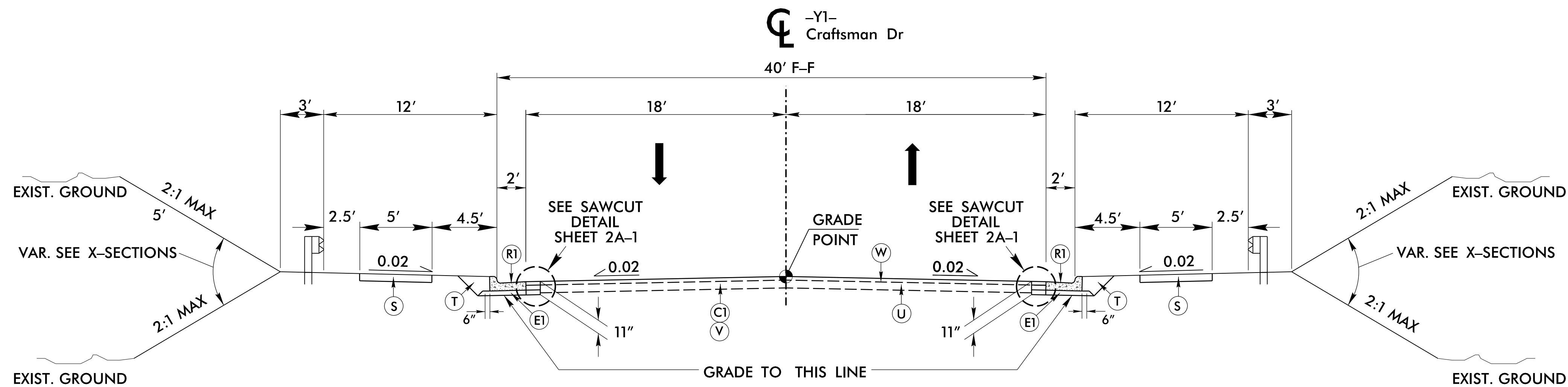
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PROJECT REFERENCE NO. P-5715	SHEET NO. 2A-5
ROADWAY DESIGN ENGINEER STEPHEN T. SMALLWOOD 022037 10/2/2024	PAVEMENT DESIGN ENGINEER ANDREW D. WAKO 044590 10/3/2024

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



TYPICAL SECTION NO. 6
-Y1- STA. 10+43.58 TO 11+93.00



TYPICAL SECTION NO. 7
-Y1- STA. 11+93.00 TO 13+50.00

C1	PROP. APPROX. 1.5", TYPE S9.5B
C2	PROP. APPROX. 2", TYPE S9.5B
C3	PROP. APPROX. 3", TYPE S9.5B
C4	PROP. VAR. DEPTH, TYPE S9.5B
D1	PROP. APPROX. 4", I19.0C
D2	PROP. VAR. DEPTH, TYPE I19.0C
E1	PROP. APPROX. 4", TYPE B25.0C
E2	PROP. VAR. DEPTH, TYPE B25.0C
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P	Prime Coat
R1	2'-6" CONCRETE CURB AND GUTTER
R2	5" MONOLITHIC CONCRETE ISLAND
S	4" CONCRETE SIDEWALK
T	EARTH MATERIAL
U	EXISTING PAVEMENT
V	1.5" MILLING
W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE STANDARD WEDGING DETAIL)

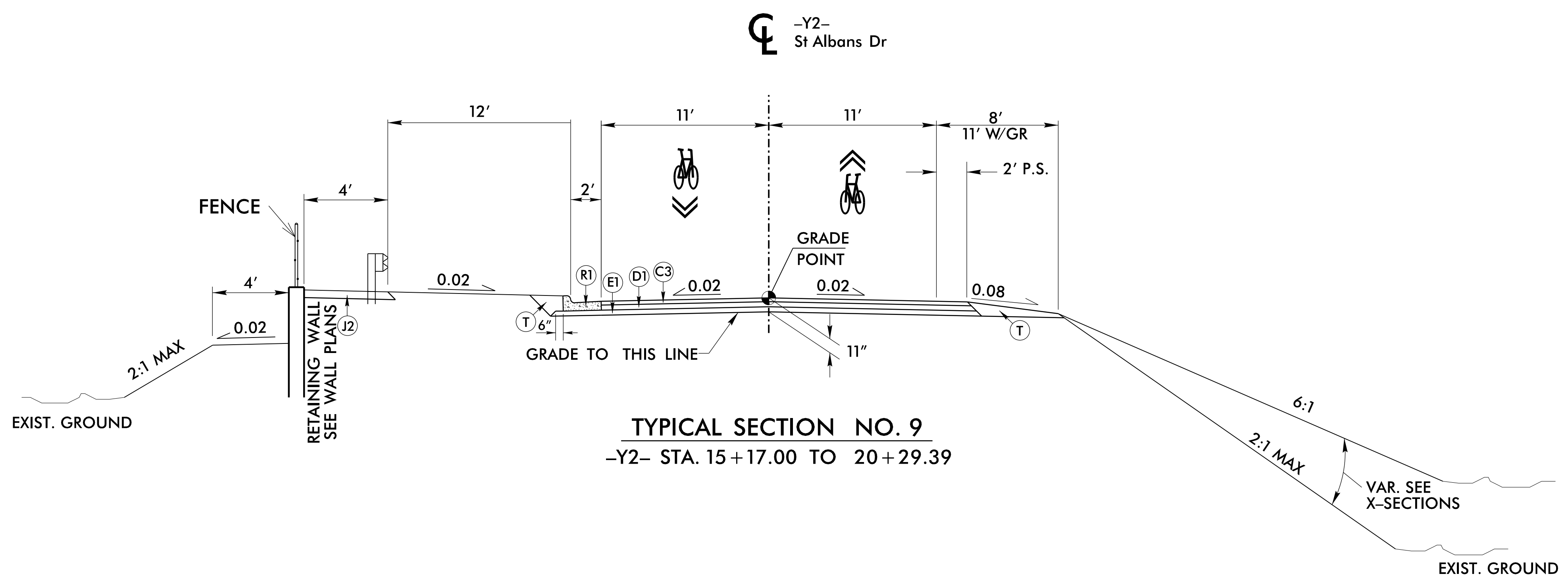
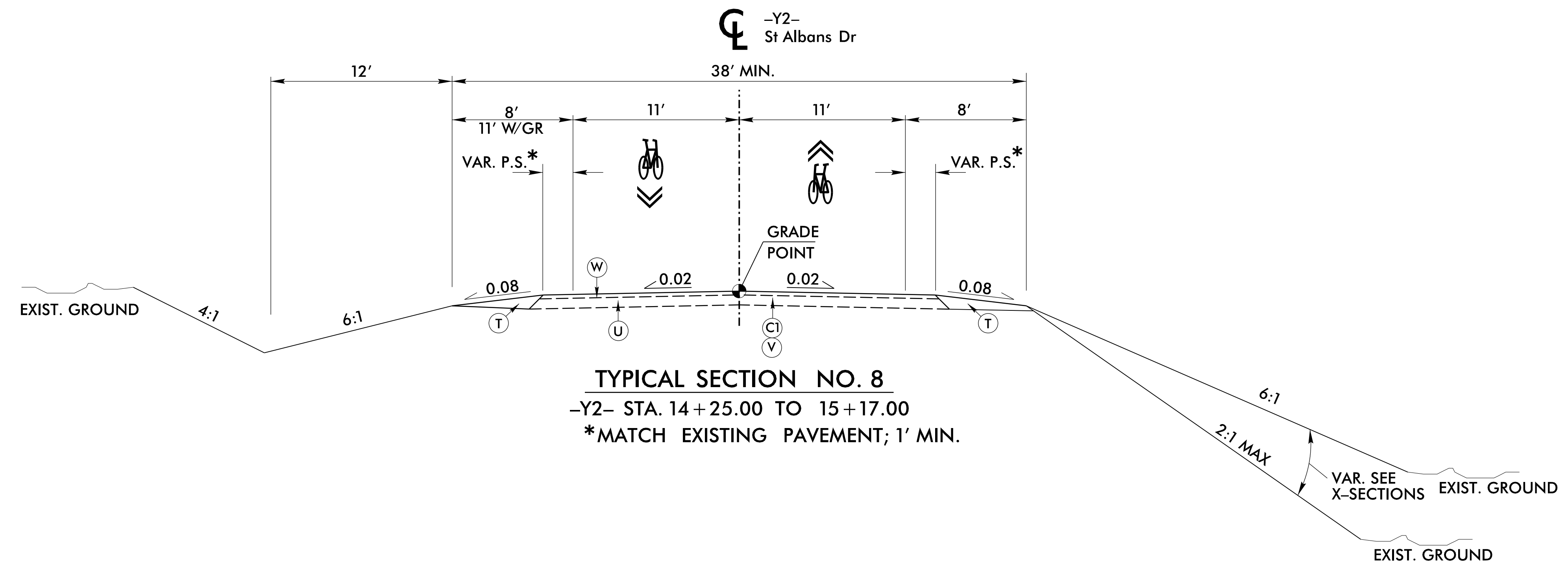
NOTE: PAVEMENT EDGE SLOPES
ARE 1:1 UNLESS SHOWN OTHERWISE.

6/2/2024

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PROJECT REFERENCE NO. P-5715	SHEET NO. 2A-6
ROADWAY DESIGN ENGINEER STEPHEN T. SMALLWOOD 10/2/2024	PAVEMENT DESIGN ENGINEER ANDREW D. WAGG 10/3/2024

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UTILIZE 8'-0" POSTS FOR GUARDRAIL
 LOCATIONS ADJACENT TO RETAINING WALL

C1	PROP. APPROX. 1.5", TYPE S9.5B
C2	PROP. APPROX. 2", TYPE S9.5B
C3	PROP. APPROX. 3", TYPE S9.5B
C4	PROP. VAR. DEPTH, TYPE S9.5B
D1	PROP. APPROX. 4", I19.0C
D2	PROP. VAR. DEPTH, TYPE I19.0C
E1	PROP. APPROX. 4", TYPE B25.0C
E2	PROP. VAR. DEPTH, TYPE B25.0C
J1	PROP. 6" AGGREGATE BASE COURSE
J2	PROP. 4" AGGREGATE BASE COURSE (M)
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S	4" CONCRETE SIDEWALK
T	EARTH MATERIAL
U	EXISTING PAVEMENT
V	1.5" MILLING
W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE STANDARD WEDGING DETAIL)

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

10/2/2024
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6/2/2024

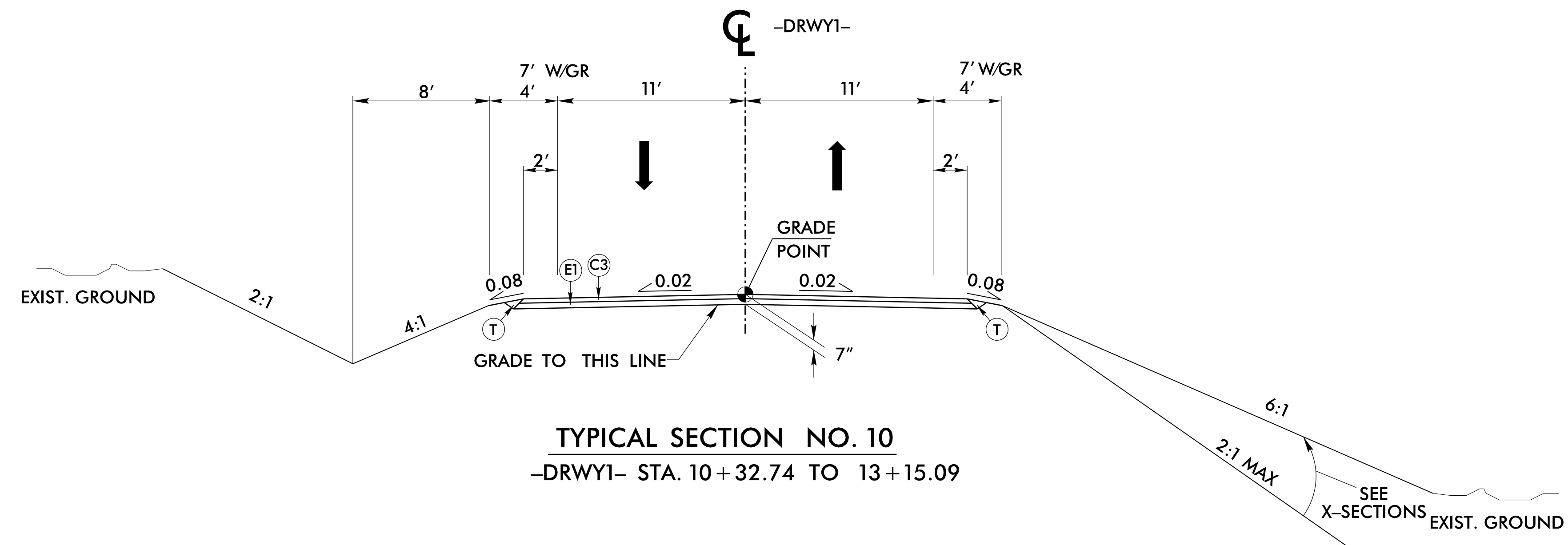


PROJECT REFERENCE NO.	SHEET NO.
P-5715	2A-7
ROADWAY DESIGN ENGINEER STEPHEN T. SMALLWOOD LICENSE NO. 022037 10/2/2024	PAVEMENT DESIGN ENGINEER ANDREW D. WARGO LICENSE NO. 044590 10/3/2024

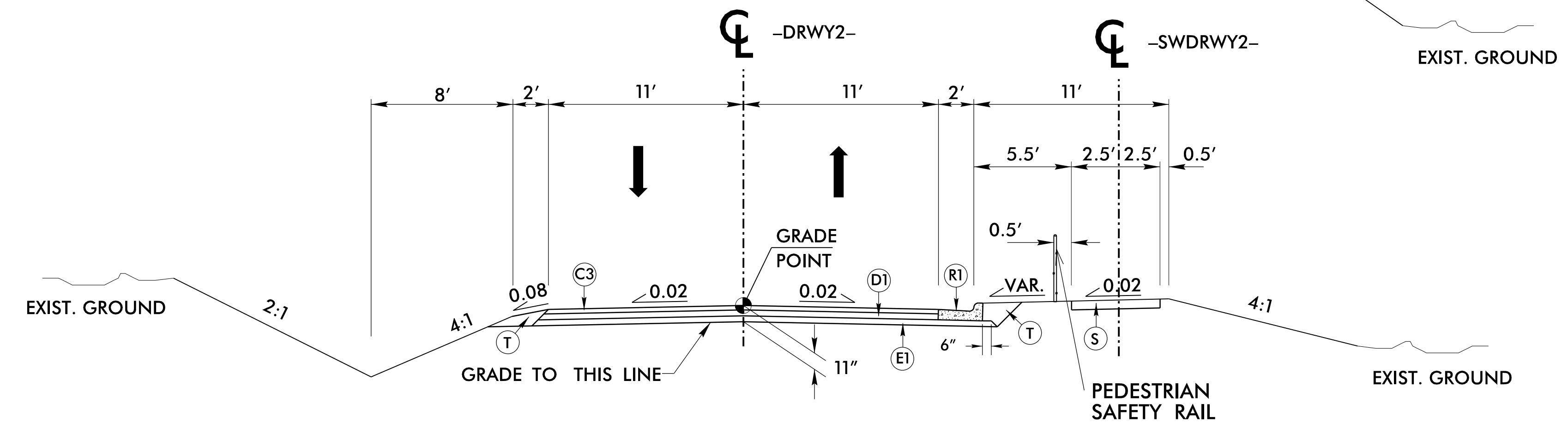
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UNLESS ALL SIGNATURES COMPLETED**

C1	PROP. APPROX. 1.5", TYPE S9.5B
C2	PROP. APPROX. 2", TYPE S9.5B
C3	PROP. APPROX. 3", TYPE S9.5B
C4	PROP. VAR. DEPTH, TYPE S9.5B
D1	PROP. APPROX. 4", I19.0C
D2	PROP. VAR. DEPTH, TYPE I19.0C
E1	PROP. APPROX. 4", TYPE B25.0C
E2	PROP. VAR. DEPTH, TYPE B25.0C
J1	PROP. 6" AGGREGATE BASE COURSE
J2	PROP. 4" AGGREGATE BASE COURSE (M)
K	CLASS IV SUB. STAB.
N	GEOTEXTILE FOR SUB. STAB.
P	Prime Coat
R1	2'-6" CONCRETE CURB AND GUTTER
R2	5" MONOLITHIC CONCRETE ISLAND
S	4" CONCRETE SIDEWALK
T	EARTH MATERIAL
U	EXISTING PAVEMENT
V	1.5" MILLING
W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE STANDARD WEDGING DETAIL)

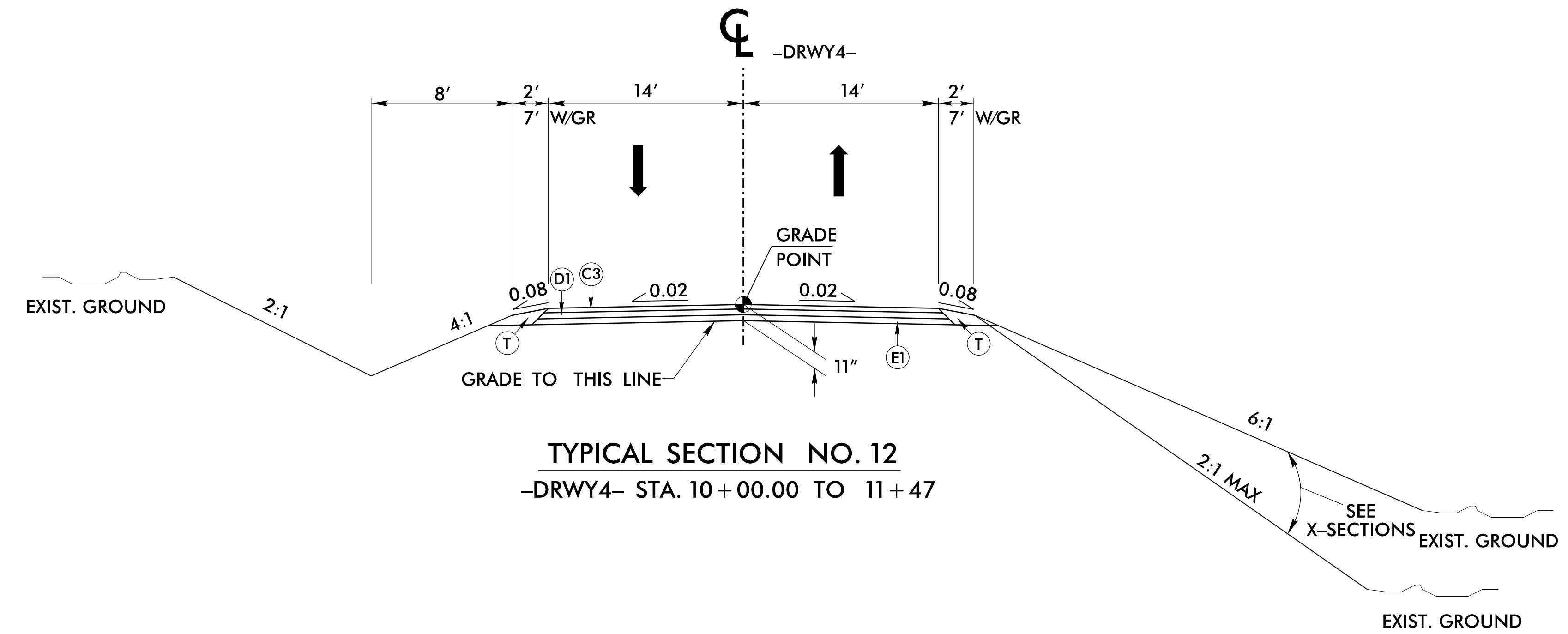
NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.



TYPICAL SECTION NO. 10
-DRWY1- STA. 10+32.74 TO 13+15.09



TYPICAL SECTION NO. 11
-DRWY2- STA. 10+32.50 TO 11+43.15

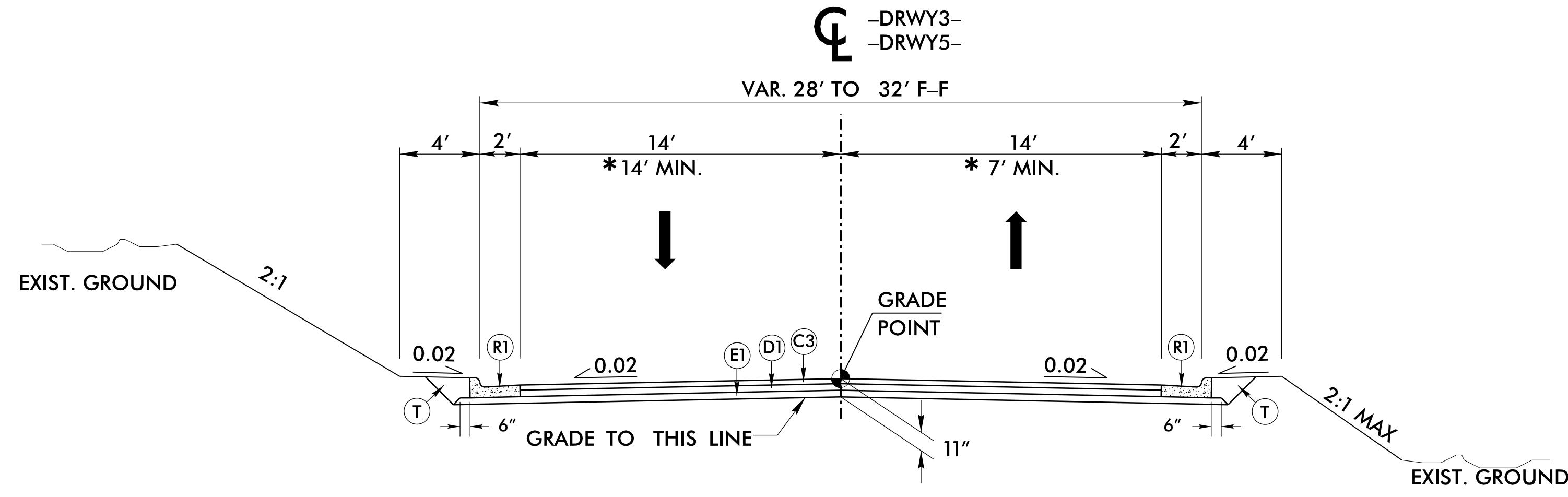


TYPICAL SECTION NO. 12
-DRWY4- STA. 10+00.00 TO 11+47

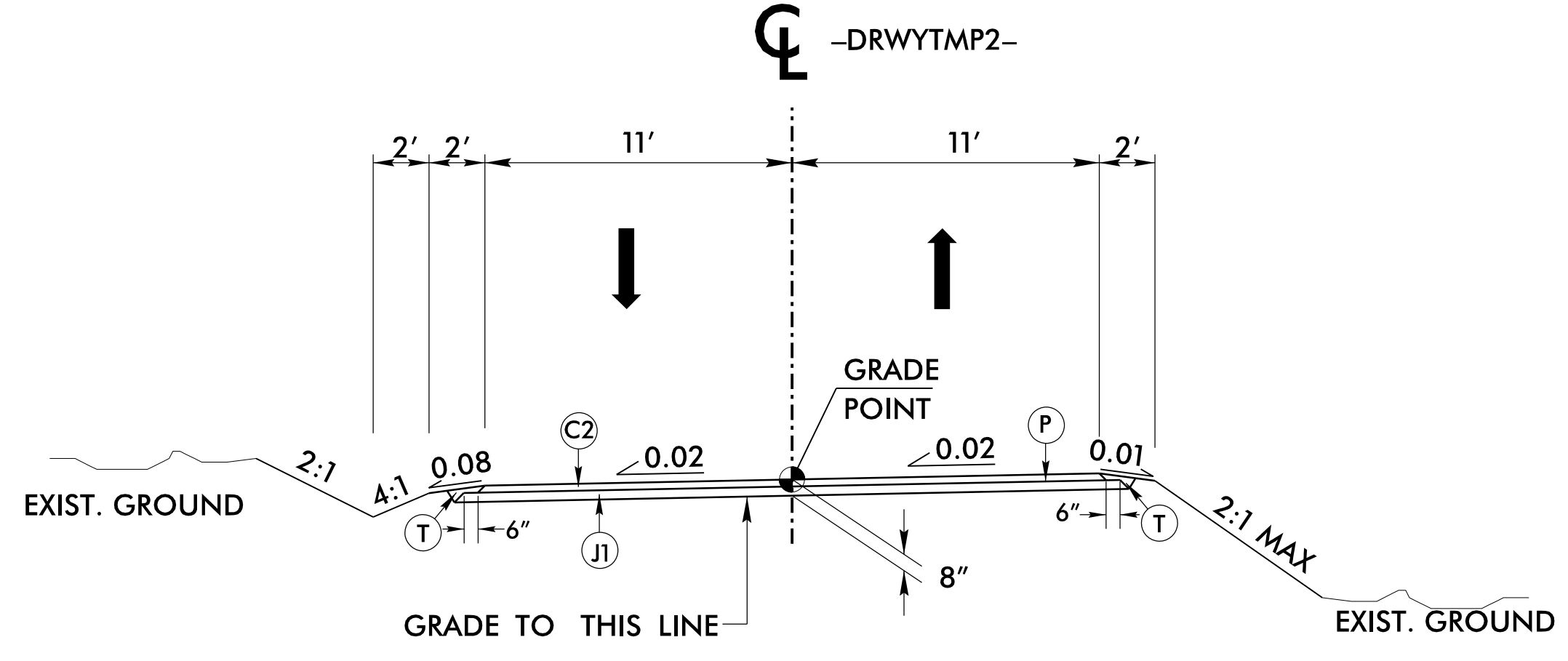
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PROJECT REFERENCE NO. P-5715	SHEET NO. 2A-8
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10/2/2024	10/3/2024

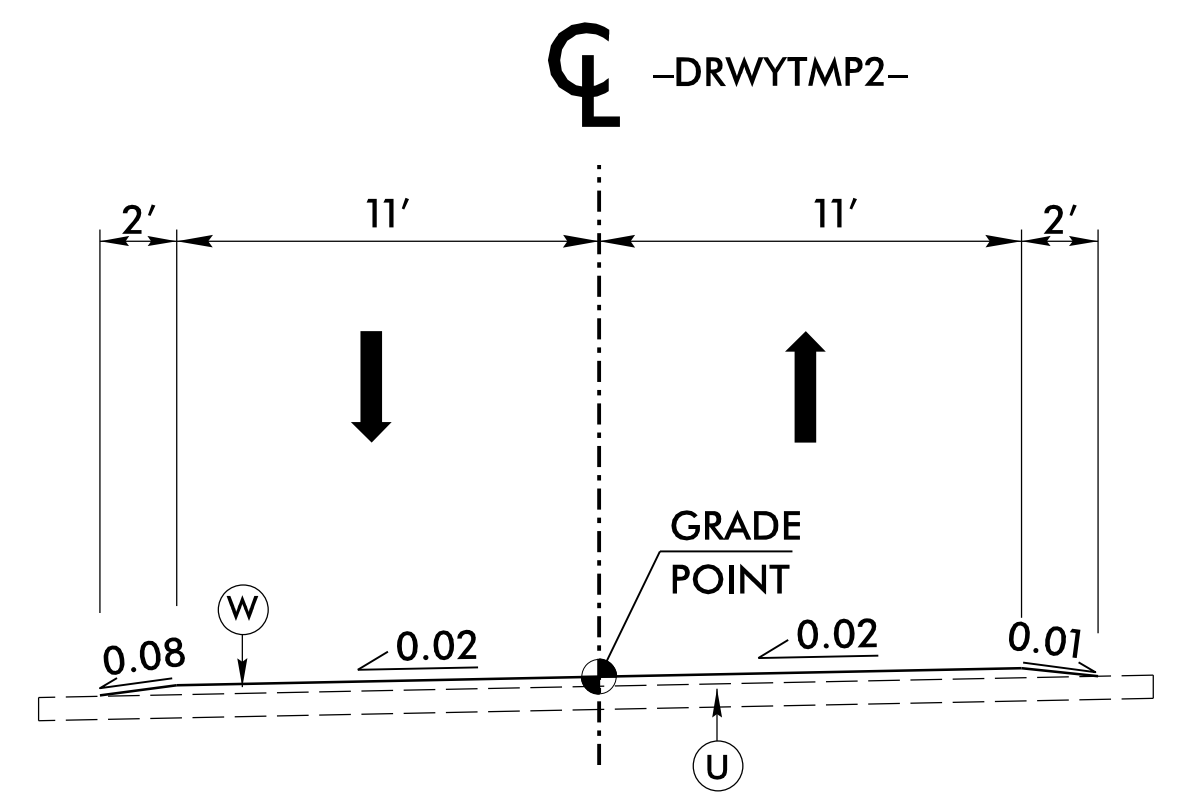
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TYPICAL SECTION NO. 13
 -DRWY3- STA. 10+32.77 TO 10+65.00
 *-DRWY5- STA. 10+11.00 TO 10+78.00



TYPICAL SECTION NO. 14
 -DRWYTMP2- STA. 10+18.00 TO 10+51.23
 -DRWYTMP2- STA. 10+98.35 TO 11+31.17

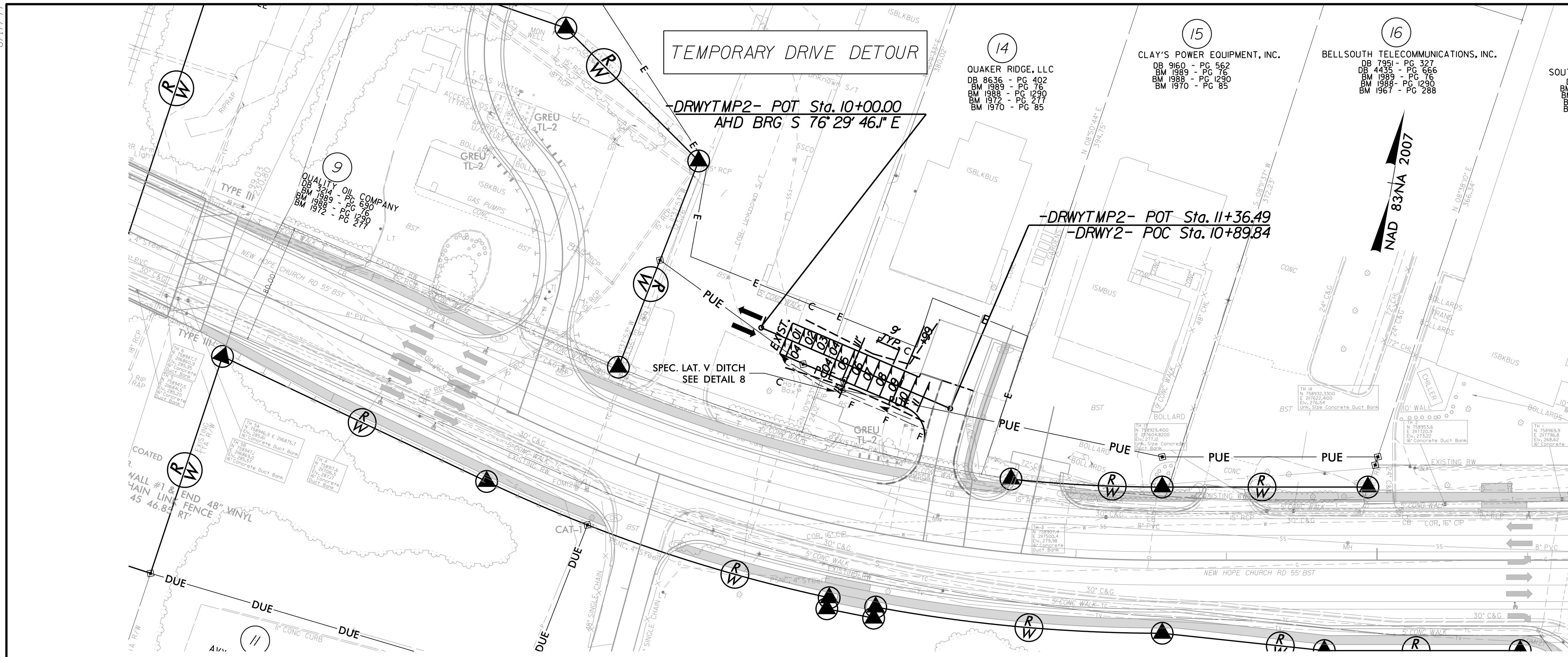


TYPICAL SECTION NO. 15
 -DRWYTMP2- STA. 10+51.23 TO 10+98.35

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C2	PROP. APPROX. 2", TYPE S9.5B
C3	PROP. APPROX. 3", TYPE S9.5B
C4	PROP. VAR. DEPTH, TYPE S9.5B
D1	PROP. APPROX. 4", I19.0C
D2	PROP. VAR. DEPTH, TYPE I19.0C
E1	PROP. APPROX. 4", TYPE B25.0C
E2	PROP. VAR. DEPTH, TYPE B25.0C
J1	PROP. 6" AGGREGATE BASE COURSE
J2	PROP. 4" AGGREGATE BASE COURSE (M)
K	CLASS IV SUB. STAB.
N	GEOTEXTILE FOR SUB. STAB.
P	Prime Coat
R1	2'-6" CONCRETE CURB AND GUTTER
R2	5" MONOLITHIC CONCRETE ISLAND
S	4" CONCRETE SIDEWALK
T	EARTH MATERIAL
U	EXISTING PAVEMENT
V	1.5" MILLING
W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE STANDARD WEDGING DETAIL)

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

8.17.2024

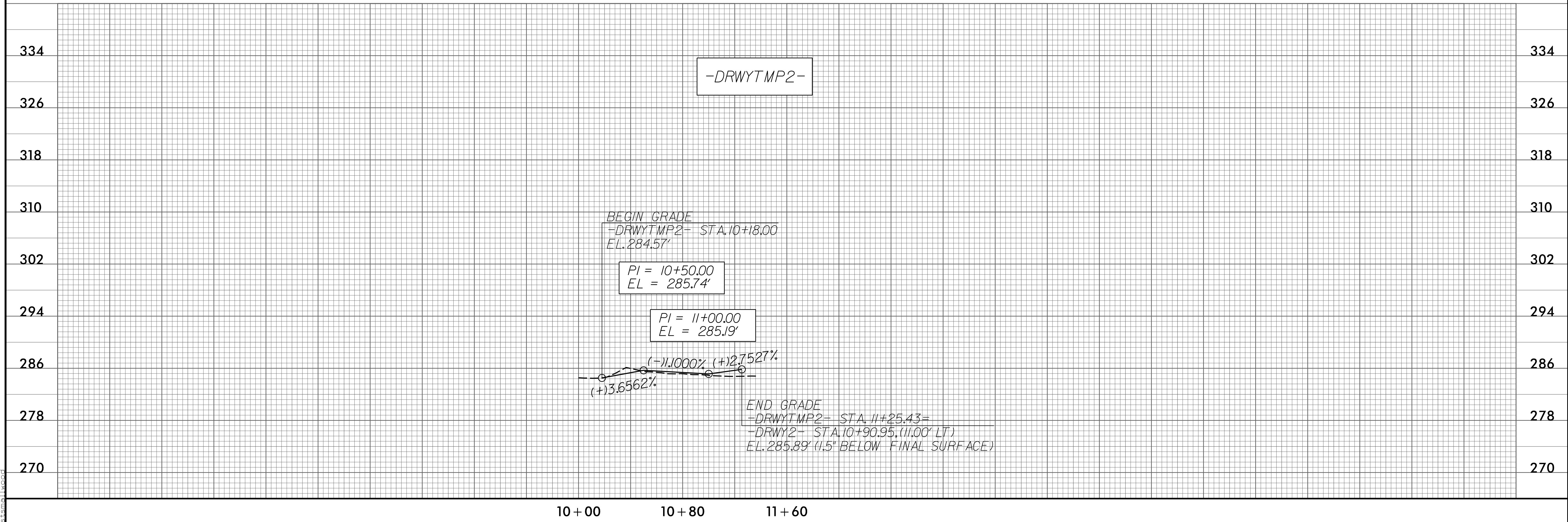
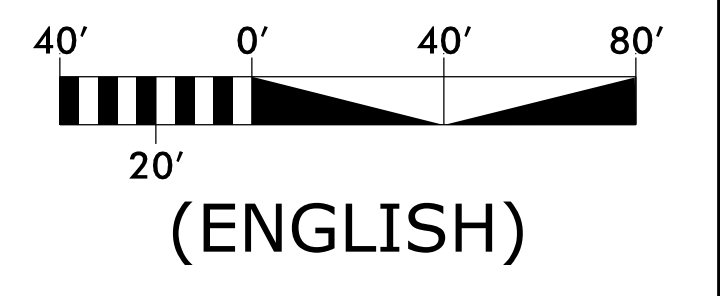


PROJECT REFERENCE NO. P-5715	SHEET NO. 2B-1
ROADWAY DESIGN ENGINEER SEAL 022037 7/30/2024	HYDRAULICS ENGINEER SEAL 26971 7/30/2024
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SEE SHEET 2D-1 FOR DRAINAGE DITCH DETAILS



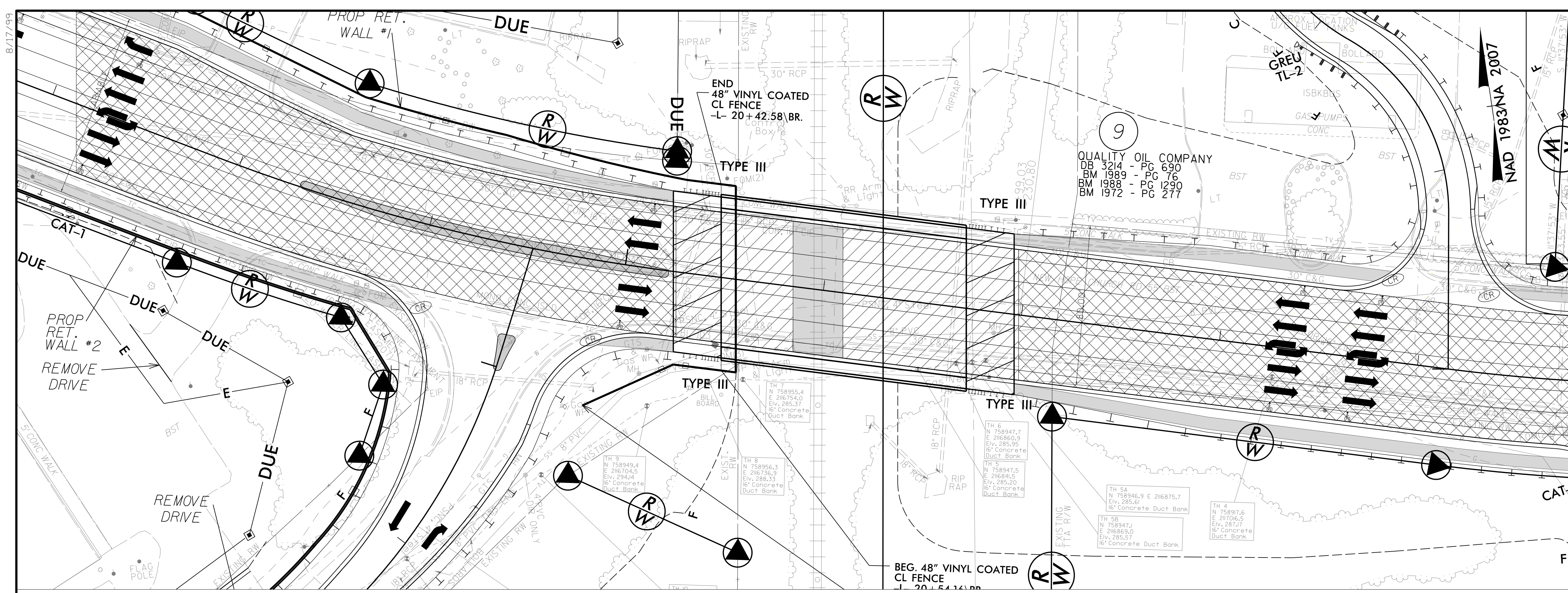
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PROJECT REFERENCE NO. P-5715	SHEET NO. 2B-2
RW SHEET NO.	
ROADWAY DESIGN ENGINEER SEAL 022037 7/29/2024	

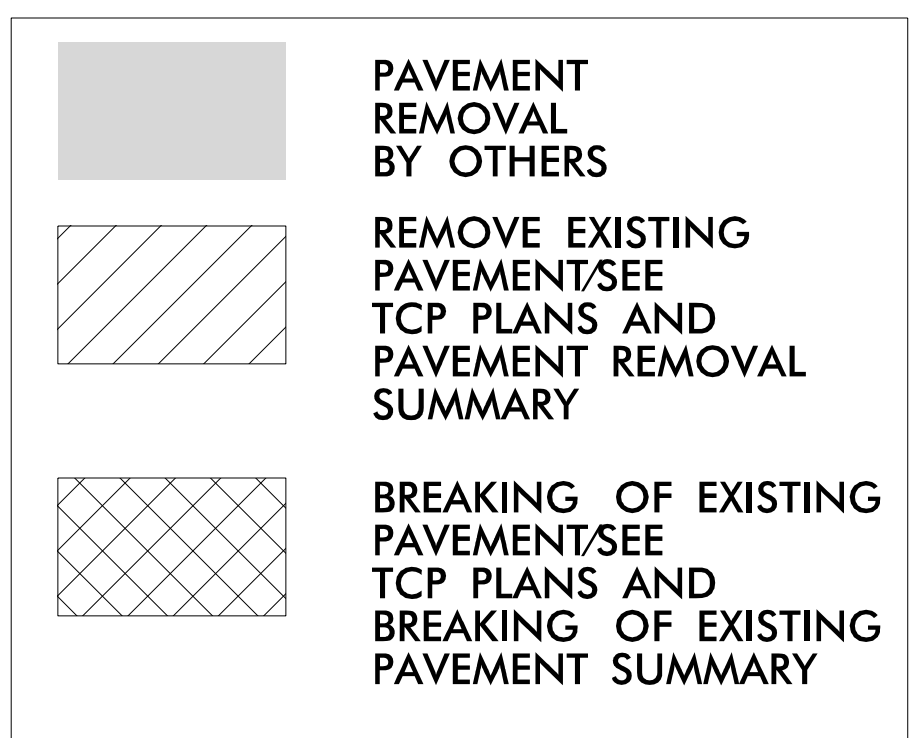
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NOTE: ALL WORK WITHIN CSX CORRIDOR TO BE COORDINATED WITH NCDOT & CSX.

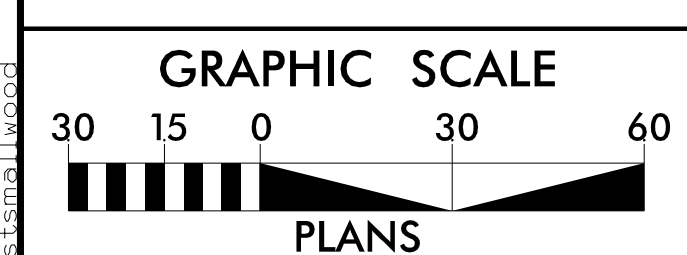


NOTES:

1. CONTACT THE NCDOT RESIDENT ENGINEER TO SCHEDULE THE CLOSURE OF NEW HOPE CHURCH ROAD.
2. CSX FORCES WILL REMOVE CROSSING SURFACE TO APPROXIMATELY 2-FOOT CENTERLINE OF RAIL, EACH SIDE, AND ALL CROSSING WARNING DEVICES. CROSSING WILL BE REMOVED AFTER RECEIPT OF NOTICE FROM NCDOT THAT THE BRIDGE WORK IS COMPLETE.
3. CONTRACTOR SHALL SEED AND MULCH THE DISTURBED AREA OUTSIDE THE RAILROAD BALLAST LINE.
4. CONTRACTOR SHALL CONTACT NORTH CAROLINA 811 TO LOCATE ALL UNDERGROUND UTILITIES IN THE WORK AREA. CONTRACTOR SHALL ALSO CONTACT CSX RAILROAD TO LOCATE ANY UNDERGROUND RAILROAD UTILITIES IN THE WORK AREA PRIOR TO COMMENCEMENT OF WORK WITHIN THE CSX RIGHT-OF-WAY.
5. CONTRACTOR SHALL REMOVE EXISTING HIGHWAY ROADBED AND GRADE AREA TO MATCH ADJACENT TOPOGRAPHY. ANY EXISTING CULVERTS IN THE RAILROAD DITCHES SHALL BE REMOVED AND GRADE EXISTING DITCHES TO DRAIN. CONTRACTOR SHALL COORDINATE WITH THE ENGINEER ON HAULING AWAY ANY ASPHALT LEFT BY THE REMOVAL BY OTHERS. ALL PAVEMENT WITHIN THE CSX RAILROAD RIGHT-OF-WAY CORRIDOR IS TO BE REMOVED PRIOR TO THE CONCLUSION OF THE PROJECT.
6. PROVIDE PERMANENT SIGNING AS SHOWN IN THE P-5715 SIGNING PLANS.
7. PROVIDE SIGNING AND DEVICES REQUIRED TO CLOSE THE ROAD ACCORDING TO THE ROADWAY STANDARD DRAWINGS AND TRAFFIC MANAGEMENT PLANS.
8. ENSURE ALL NECESSARY SIGNING IS IN PLACE PRIOR TO ALTERNATING ANY TRAFFIC PATTERN.

CROSSING CLOSURE DETAIL

NEW HOPE CHURCH ROAD



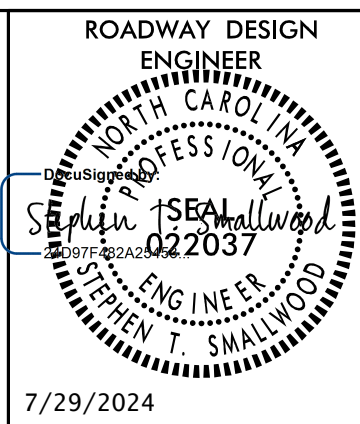
SEE SHEET 5 FOR PLAN VIEW

6/28/2024
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8/17/99

TRAFFIC DIAGRAMS AND INTERSECTION ISLAND DIMENSIONS DETAIL

PROJECT REFERENCE NO. P-5715	SHEET NO. 2B-3
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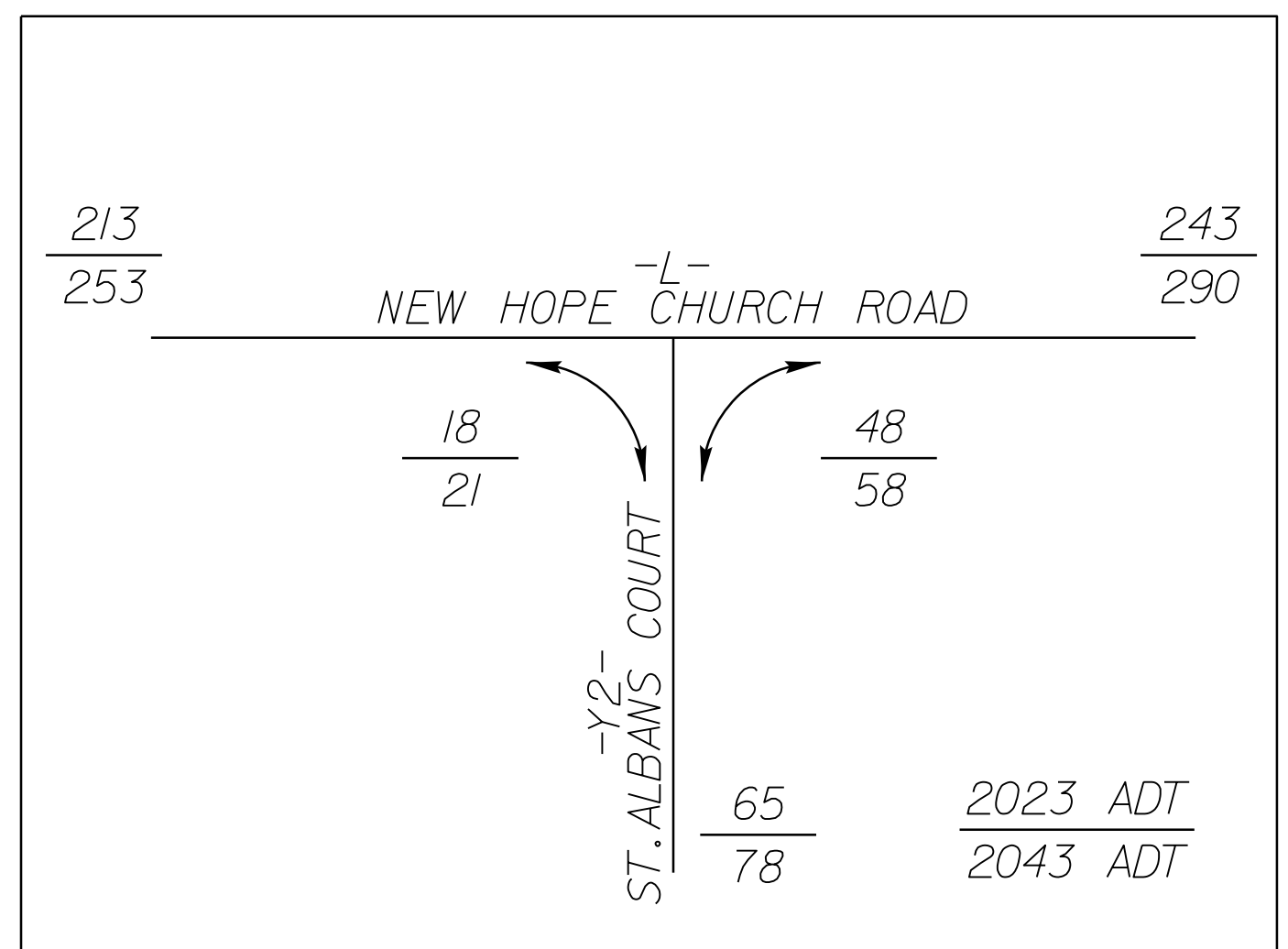
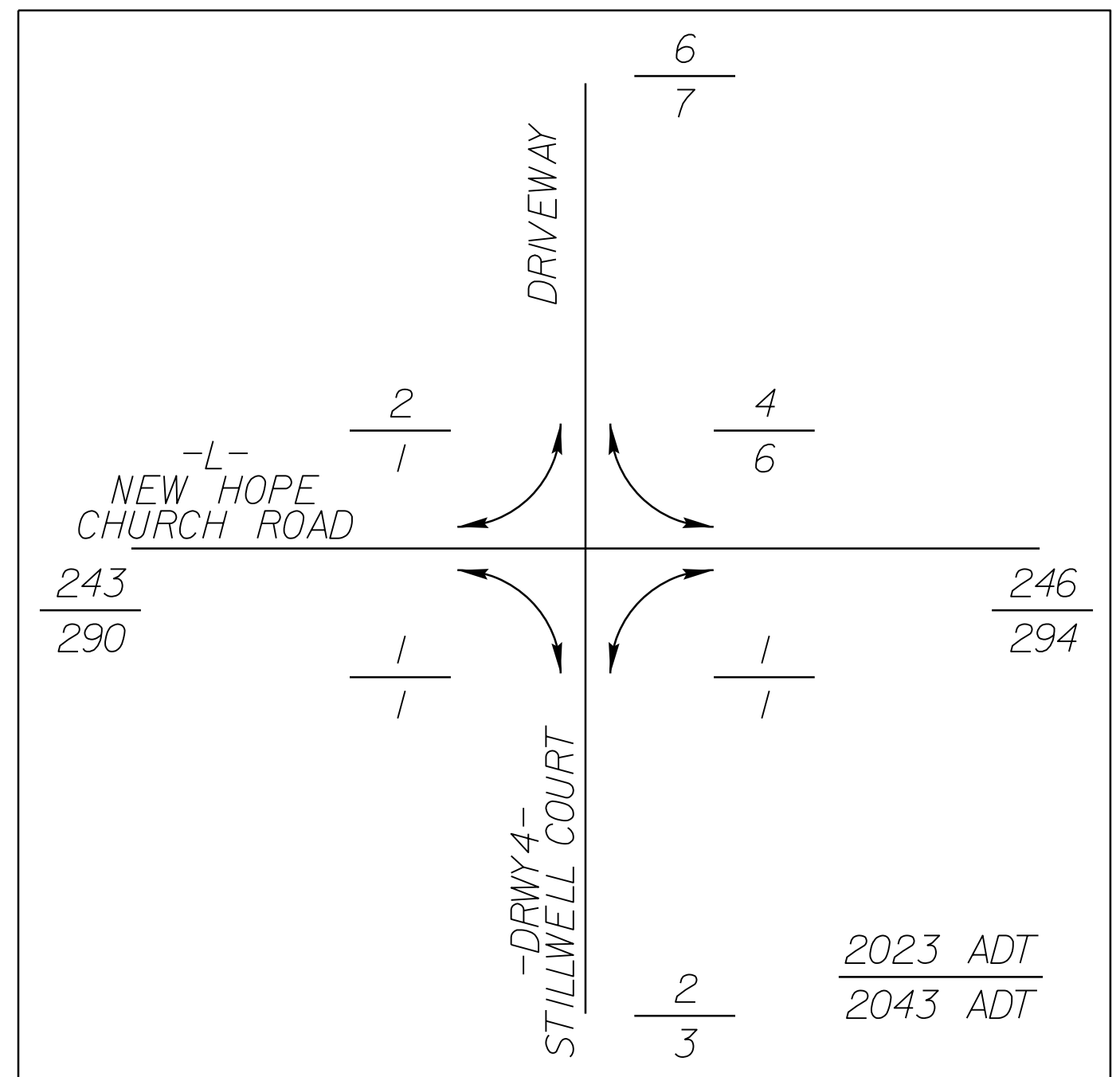
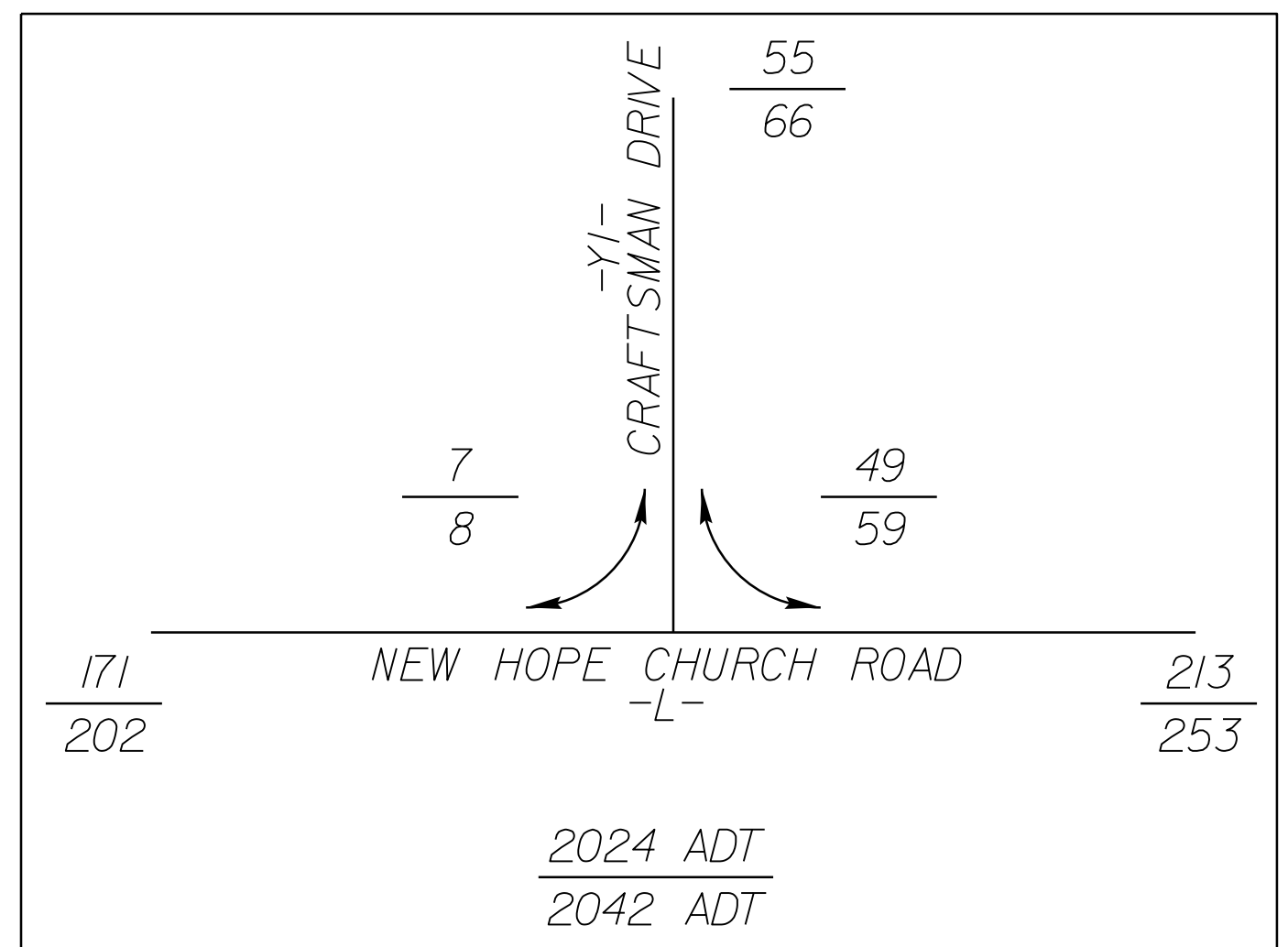


7/29/2024
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

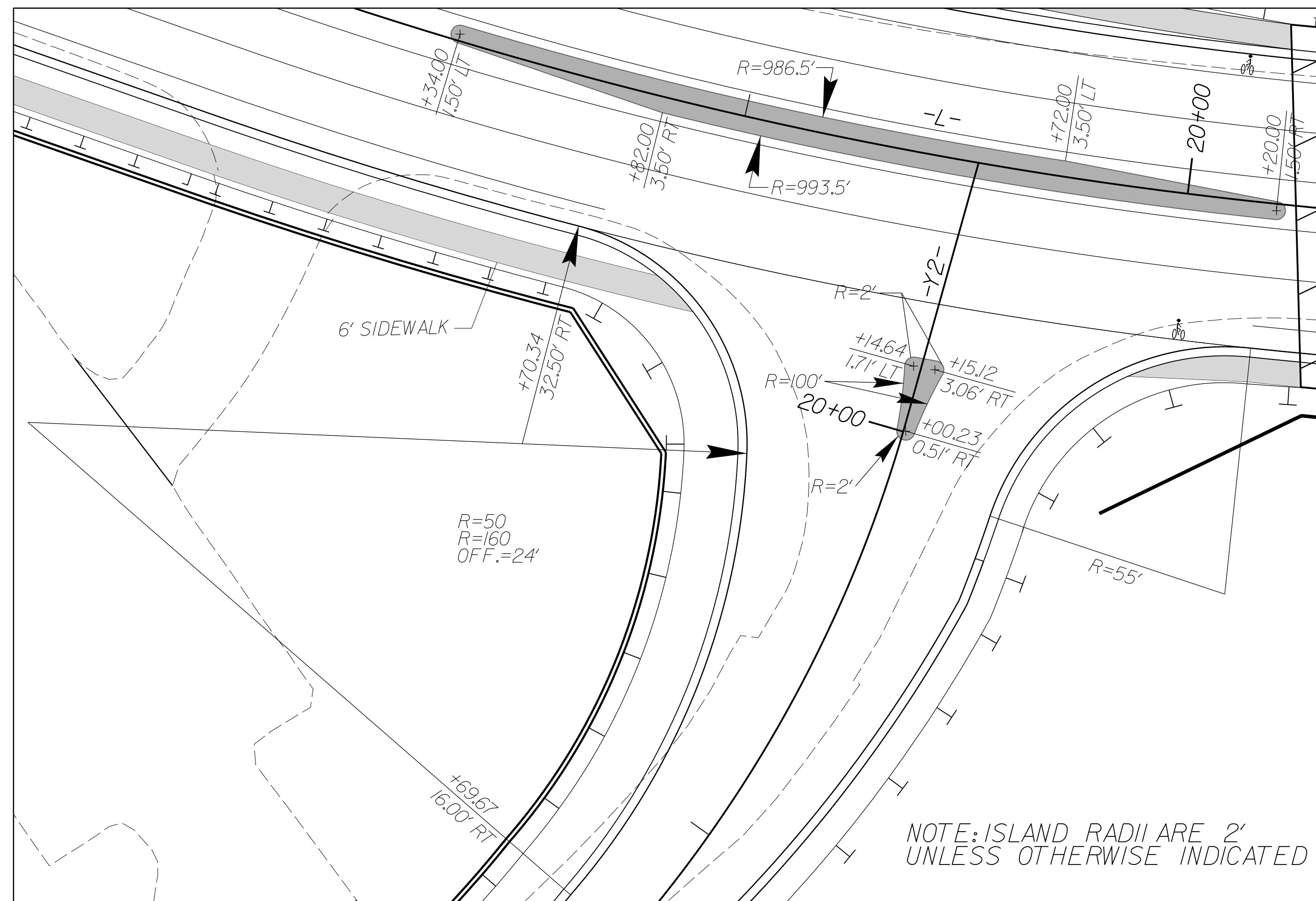
Stantec
 Stantec Consulting Services Inc.
 801 Jones Franklin Road
 Suite 300
 Raleigh, NC 27606
 Tel. (919) 851-6866
 Fax. (919) 851-7024
 www.stantec.com
 License No. F-0672

SIDEWALK

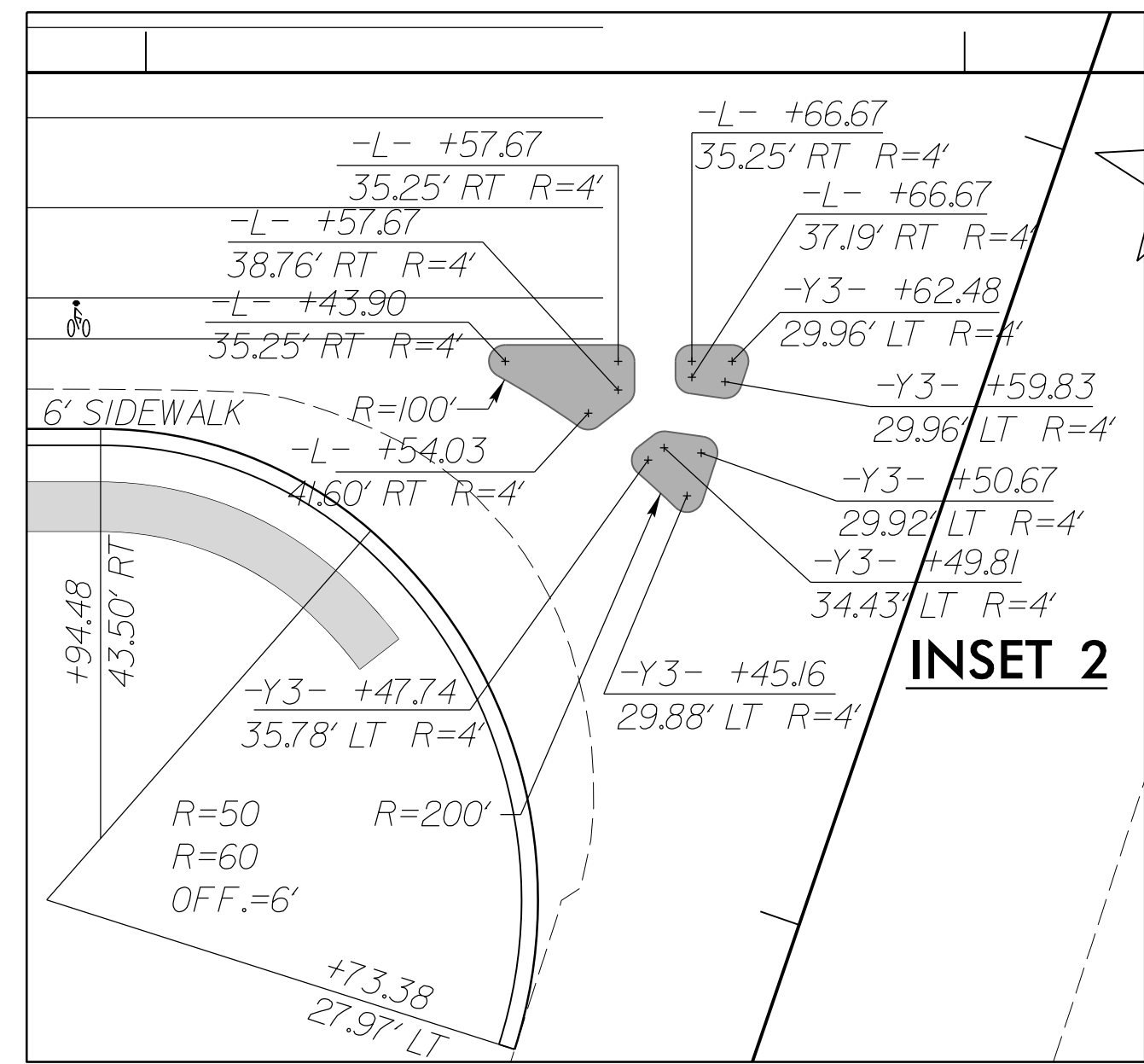
MONOLITHIC ISLANDS (KEYED-IN)



NEW HOPE CHURCH RD. AND ST. ALBANS DR. INTERSECTION



NEW HOPE CHURCH RD. AND ATLANTIC AVE. INTERSECTION



SEE PLAN SHEETS 5 & 6 FOR PLAN VIEW

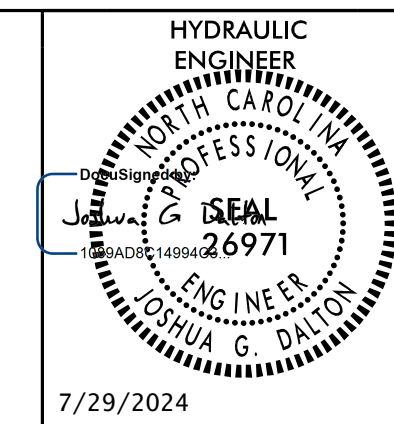
6/29/2024
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8/17/19

TEMPORARY DRAINAGE DETAIL

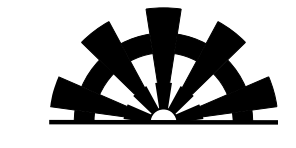
2007 ANNAS 1981 DAM

PROJECT REFERENCE NO.	SHEET NO.
P-5715	2B-4



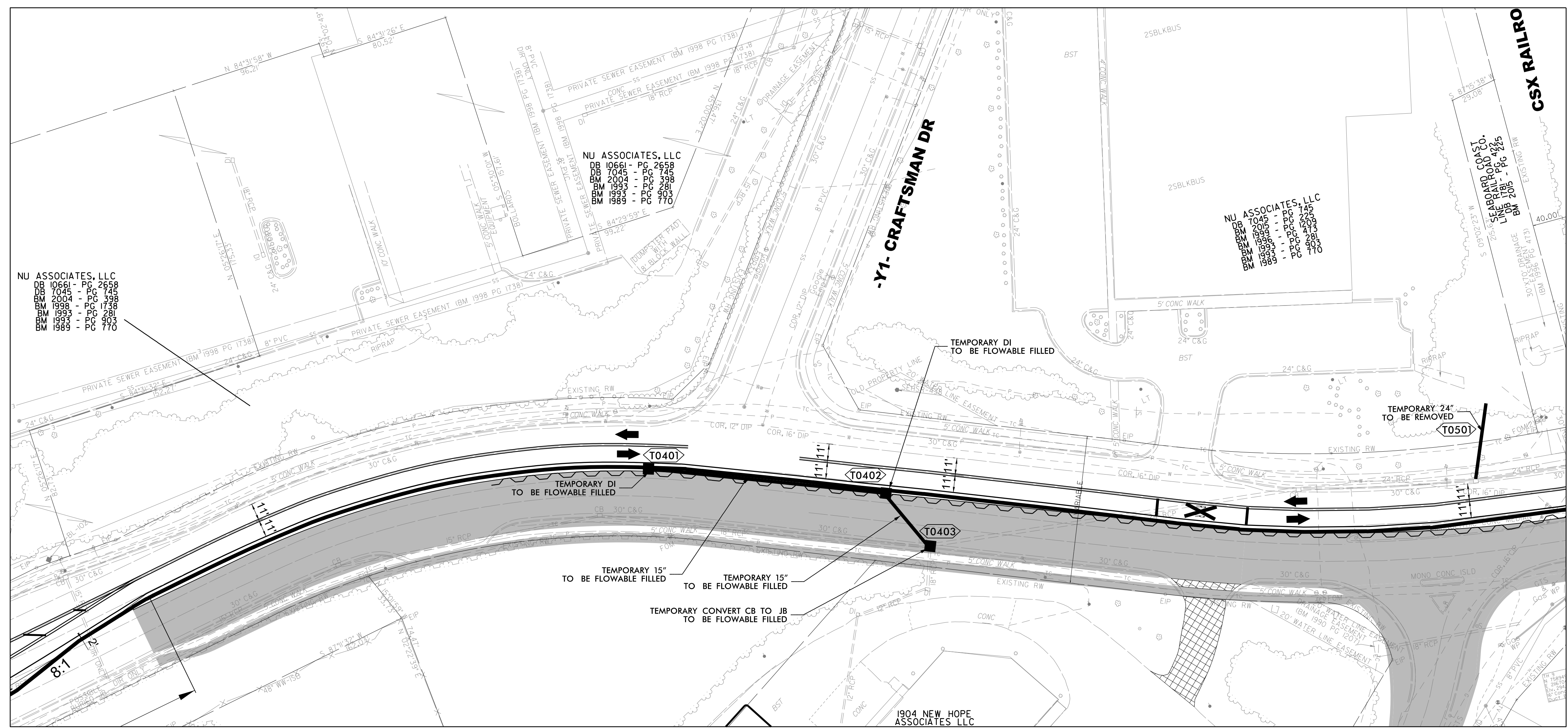
**DOCUMENT NOT CONSIDERED FINAL
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SUNGATE DESIGN GROUP, P.A.



905 JONES FRANKLIN ROAD
RALEIGH, NORTH CAROLINA 27606
TEL (919) 859-2243
ENG FIRM LICENSE NO. C-890

NTS



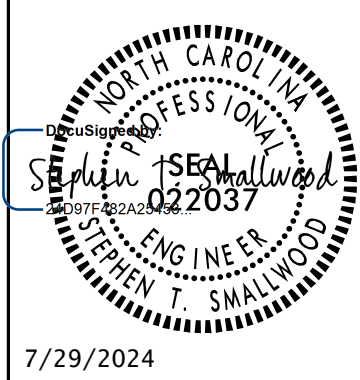
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DB 10661 - PG 2658
DB 7045 - PG 745
BM 2004 - PG 398
BM 1998 - PG 1738
BM 1994 - PG 281
BM 1993 - PG 903
BM 1989 - PG 770

NU ASSOCIATES, LLC
DB 10661 - PG 2658
DB 7045 - PG 745
BM 2004 - PG 398
BM 1998 - PG 1738
BM 1994 - PG 281
BM 1993 - PG 903
BM 1989 - PG 770

NU ASSOCIATES, LLC
DB 10661 - PG 2658
DB 7045 - PG 745
BM 2004 - PG 398
BM 1998 - PG 1738
BM 1994 - PG 281
BM 1993 - PG 903
BM 1989 - PG 770

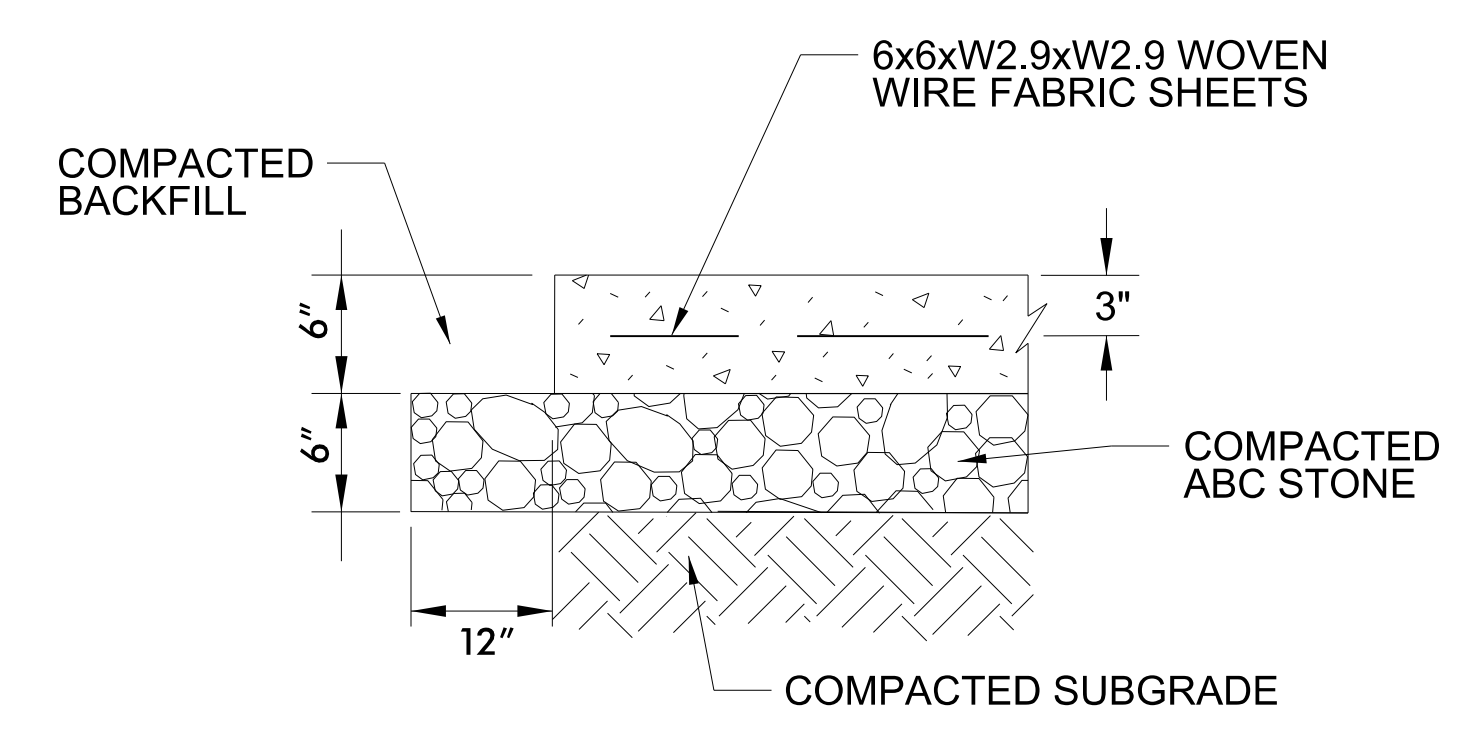
**SEE TMP SHEET 3 FOR STAGING OF
TEMPORARY DRAINAGE**

6/28/2024
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**DOCUMENT NOT CONSIDERED FINAL
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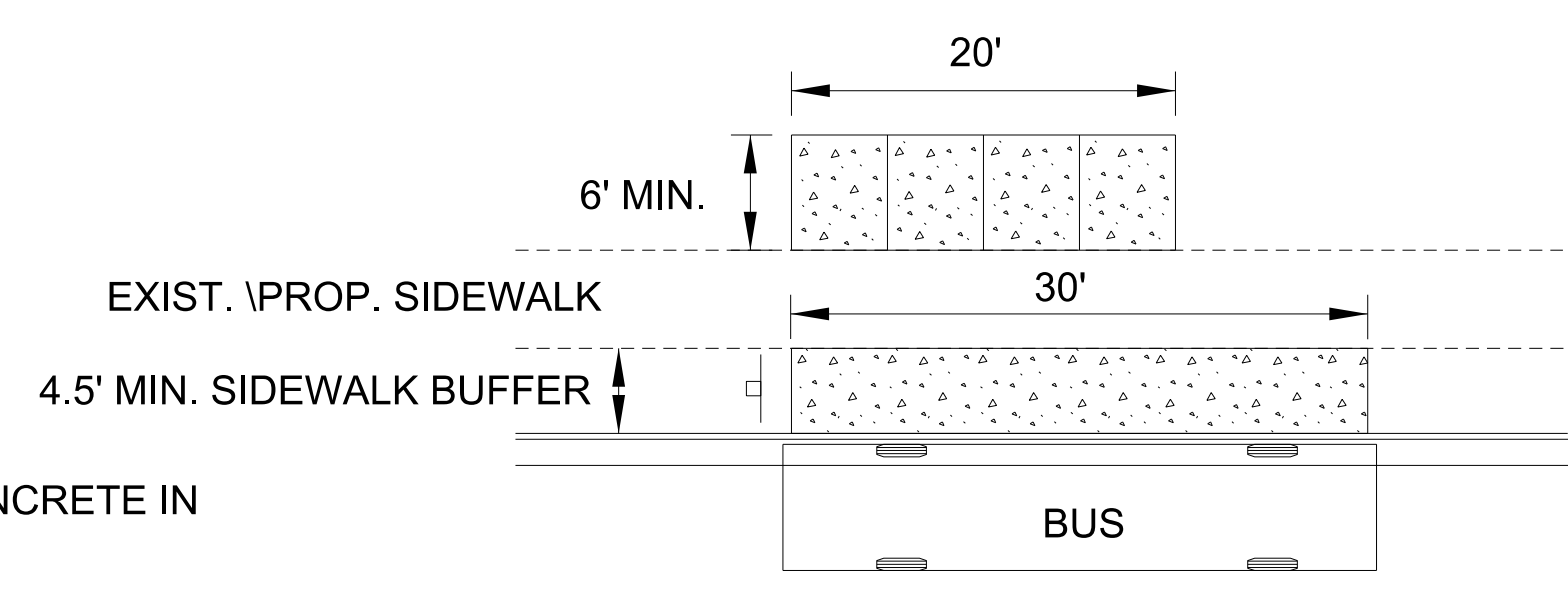
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 Fax. (919) 851-7024
 www.stantec.com
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**CONCRETE PAD
DETAILS**

GENERAL CONCRETE PAD NOTES:

1. CONCRETE PAD WILL CONSIST OF 3,000 PSI CONCRETE IN ACCORDANCE WITH NCDOT STANDARDS.
2. INSTALL AS SHOWN IN DETAIL. WOVEN WIRE FABRIC SHALL HAVE MINIMUM 6" OVERLAPS AND MINIMUM COVER OF 3" ON ALL SIDES.
3. WHERE PROPOSED SHELTER PAD ELEVATION IS ABOVE EXISTING GRADE, PROVIDE A 1' WIDE CONCRETE "BEAM" TO EXTEND A MINIMUM OF 6" BELOW THE EXISTING SURROUNDING GRADE WITH A 45° SECTION TO BRING BACK TO THE STANDARD 6" THICKNESS.
4. CONCRETE PAD WILL HAVE A BROOM FINISH.
5. MAXIMUM CROSS SLOPE SHALL BE 2%.
6. EXTEND ABC 1' BEYOND EDGE OF PAD IN ALL DIRECTIONS EXCEPT WHERE BORDERED BY EXISTING PAVEMENT OR SIDEWALK.
7. EXPANSION JOINTS WILL BE INSTALLED AT ALL RIGID OBJECTS AND ADJACENT TO EXISTING PAVEMENT AND HAVE 1/8" RADIUS TOOLED EDGE AND FILL WITH JOINT SEALER(SEE STD. SECTION 1028). JOINT SEALER TO BE GREY IN COLOR.
8. PLACE CONCRETE IN THREE (3) SECTIONS: THE SIDEWALK BUFFER, THE SIDEWALK SECTION, AND THE SHELTER PAD.
9. SIDEWALK AND CONCRETE IN SIDEWALK BUFFER AT BACK OF CURB WILL BE 4" THICK IN ACCORDANCE WITH THE STANDARD SIDEWALK SECTION.



**MINIMUM BUS STOP
PAD DIMENSIONS**

NOT TO SCALE

BUS PAD DETAIL

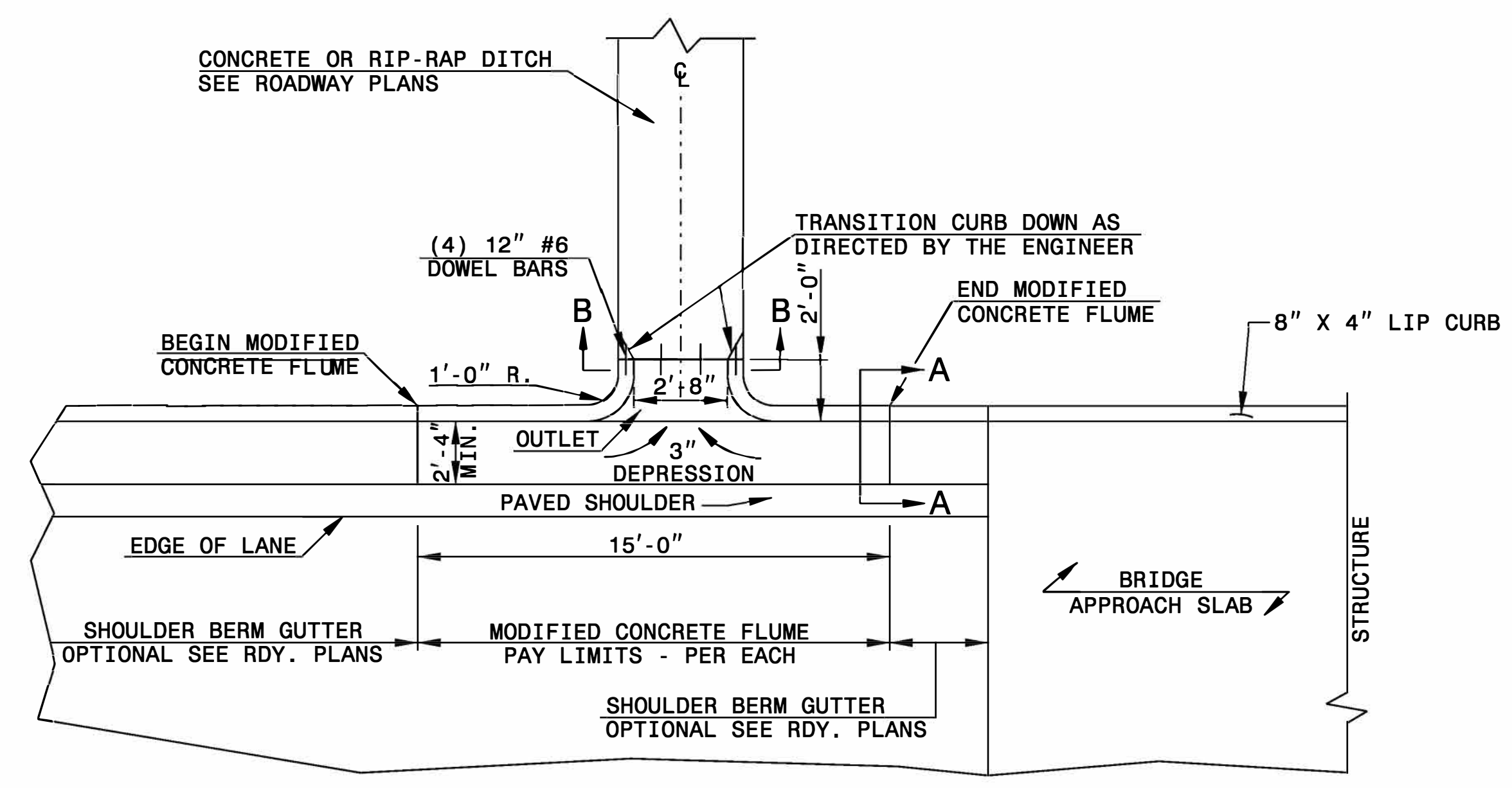
BUS PAD LOCATIONS:
 -L- STA. 26+58 RT
 -L- STA. 30+82 LT

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

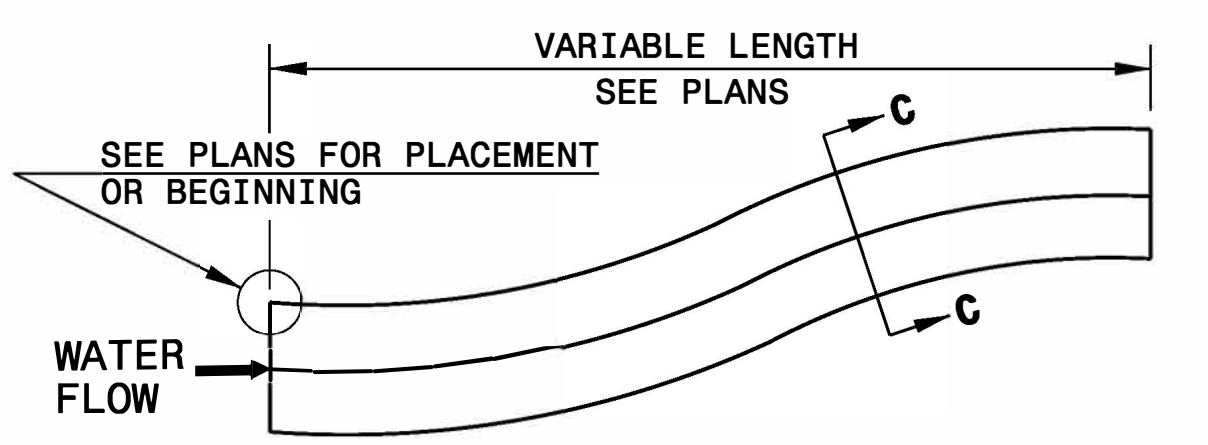
ENGLISH DETAIL DRAWING FOR MODIFIED CONCRETE FLUME WITH CONCRETE OR RIP-RAP DITCH

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

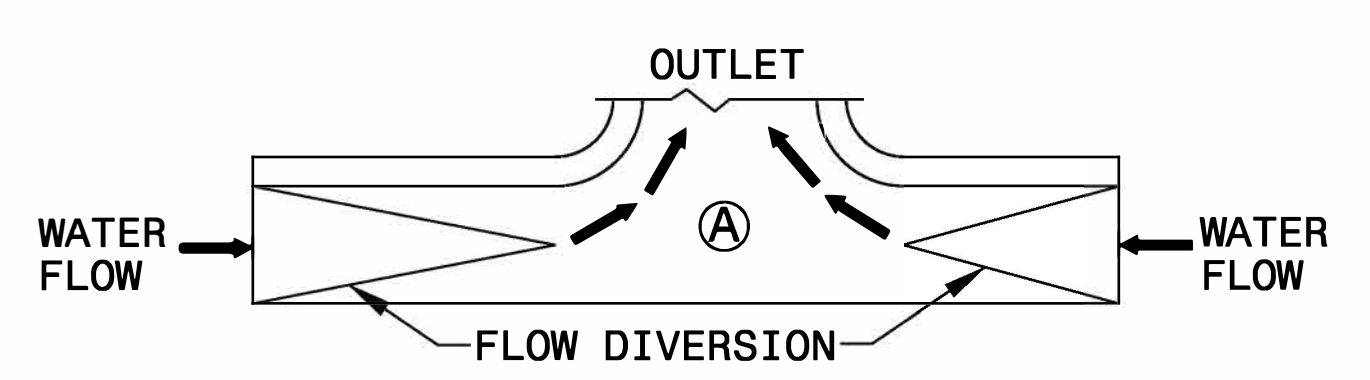
ENGLISH DETAIL DRAWING FOR MODIFIED CONCRETE FLUME WITH CONCRETE OR RIP-RAP DITCH



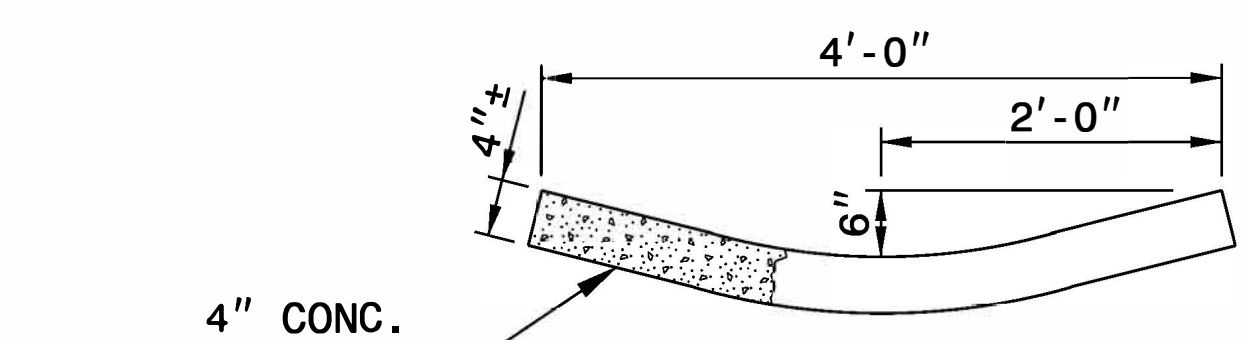
PLAN VIEW



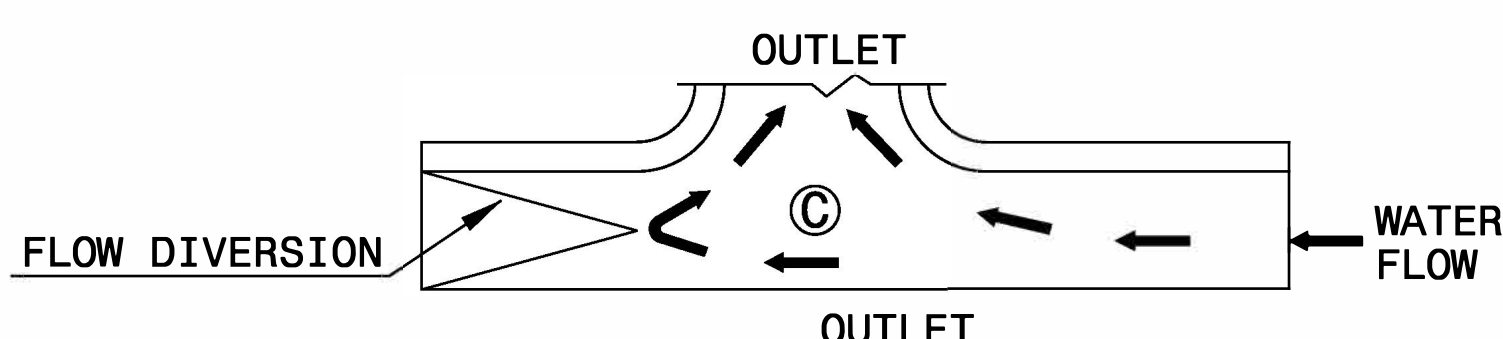
DOWNGRADE OR SAG



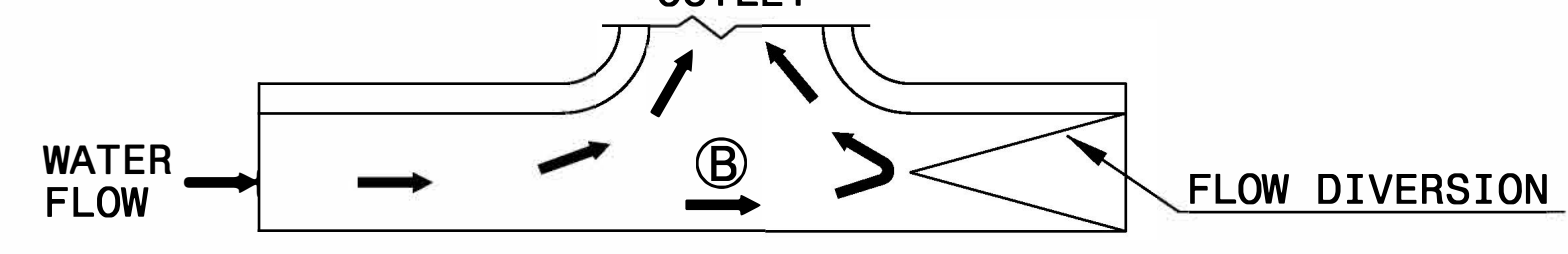
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DOWN GRADE

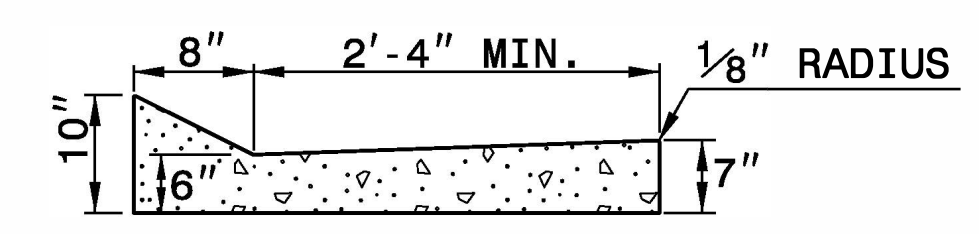


FLOW DIVERSION EXAMPLES

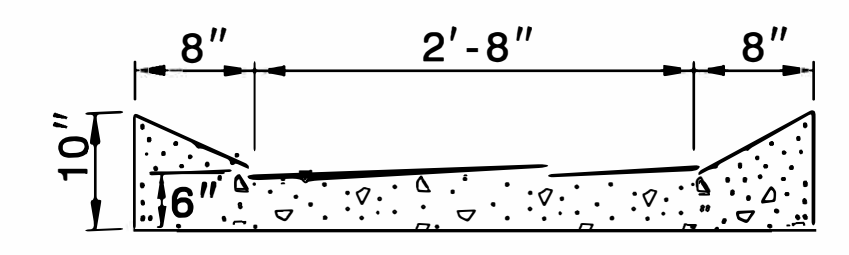


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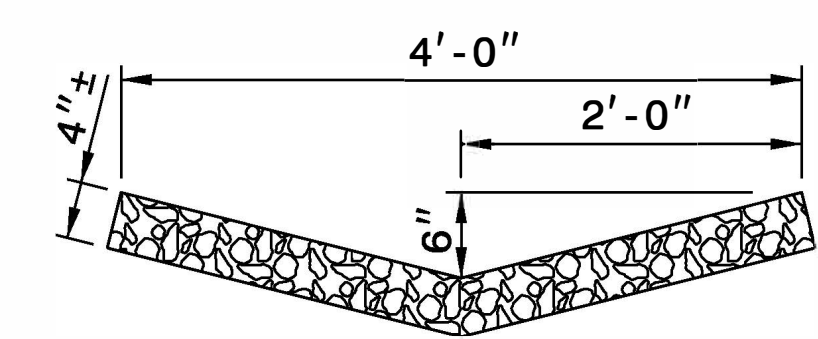
- CONSTRUCT MODIFIED CONCRETE FLUME AND SHOULDER BERM GUTTER IN ACCORDANCE WITH THIS DETAIL.
- CONSTRUCT CONCRETE DITCH IN ACCORDANCE WITH STD. DWG. NO. 850.01.
- CONSTRUCT RIP RAP LINED DITCH IN ACCORDANCE WITH THIS DETAIL, IF CALLED FOR IN PLANS.
- CONCRETE OR RIP RAP LINED DITCH SHALL BE THE TYPE AND LENGTH SPECIFIED BY THE ROADWAY PLANS. THE DITCH SHALL TERMINATE AS SHOWN ON THE PLANS. IF NO TERMINATION IS INDICATED PLACE RIP-RAP AT THE END OF THE DITCH AS INDICATED BY STD. DWG. 876.02 FOR AN 18" PIPE. TRANSITIONS FROM THE DITCH TO TERMINATION SHALL BE AS DIRECTED BY THE ENGINEER.
- MODIFICATIONS SHALL BE AS DICTATED BY SITE CONDITIONS AND DIRECTED BY THE ENGINEER.



SECTION A-A



SECTION B-B



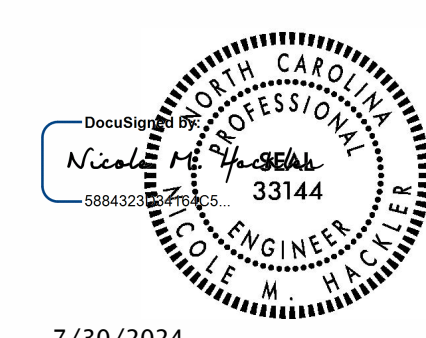
RIP-RAP LINED DITCH

SHEET 1 OF 1 MODFLMDTCH

SHEET 1 OF 1 MODFLMDTCH

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CONTRACT STANDARDS AND DEVELOPMENT UNIT Office 919-707-6950 FAX 919-250-4119 SEE PLATE FOR TITLE ORIGINAL BY: E.E. Ward DATE: Apr. 2002 MODIFIED BY: J.S. Howerton DATE: October 2017 CHECKED BY: DATE: FILE SPEC.: w:\details\stand\modifiedflume.dgn



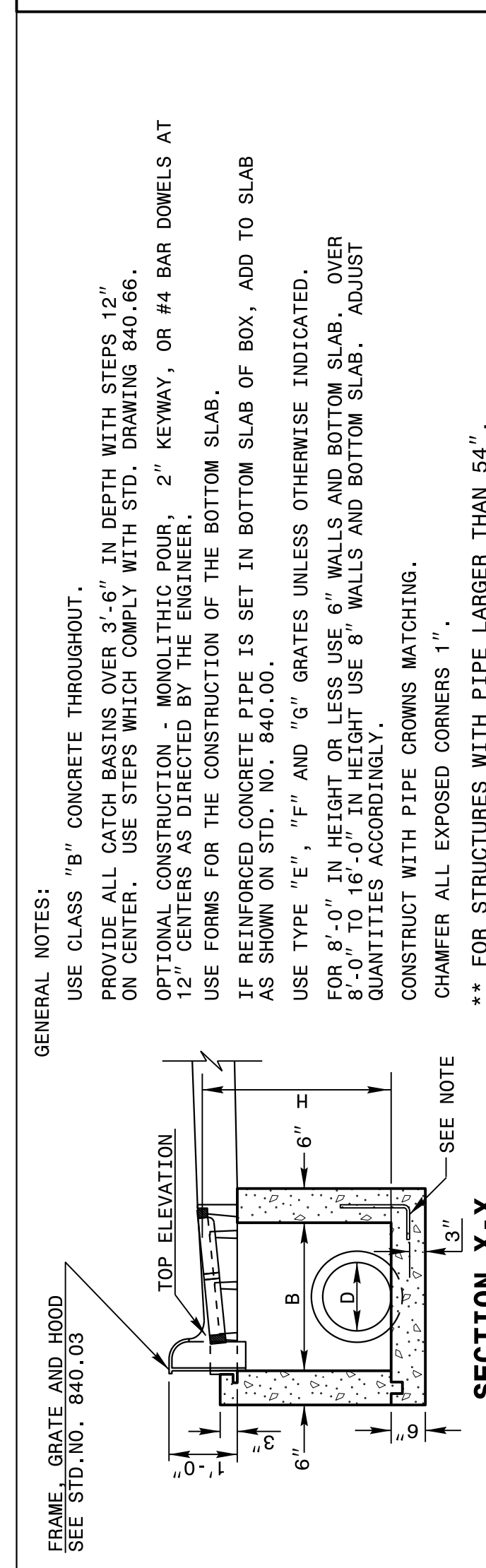
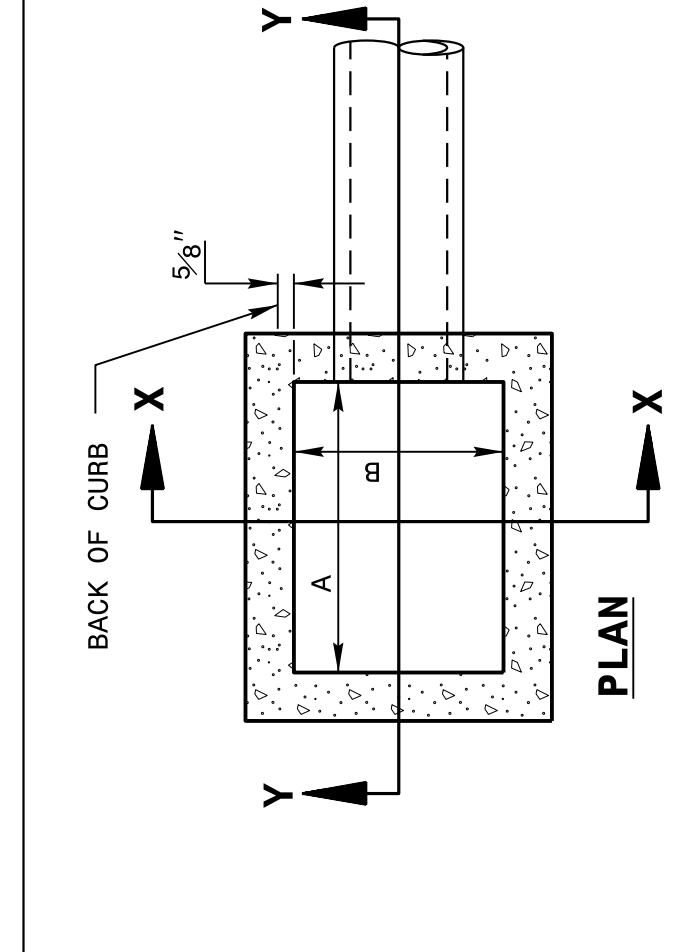
7/30/2024

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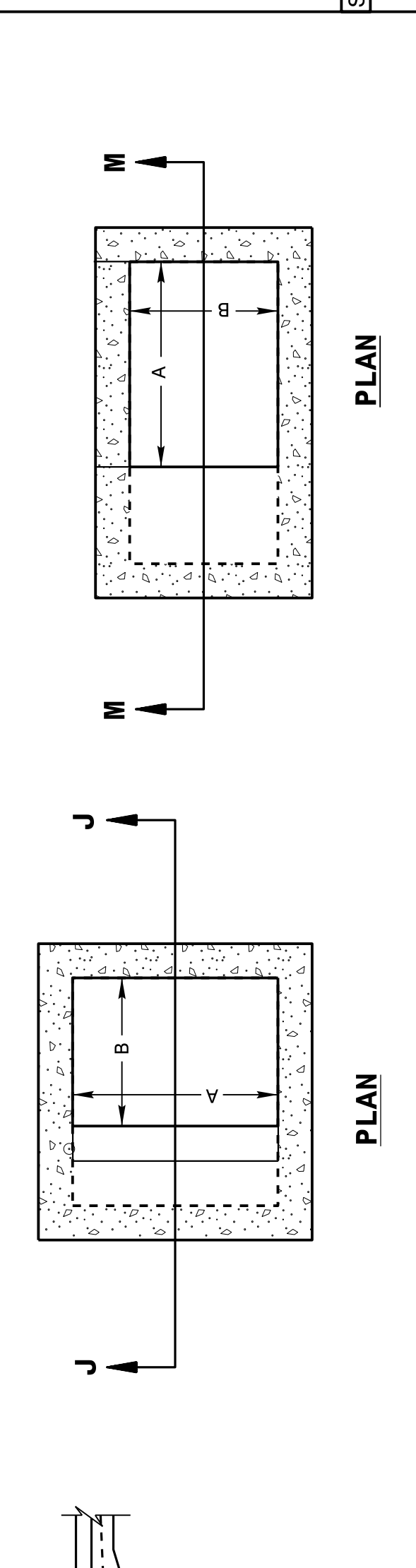
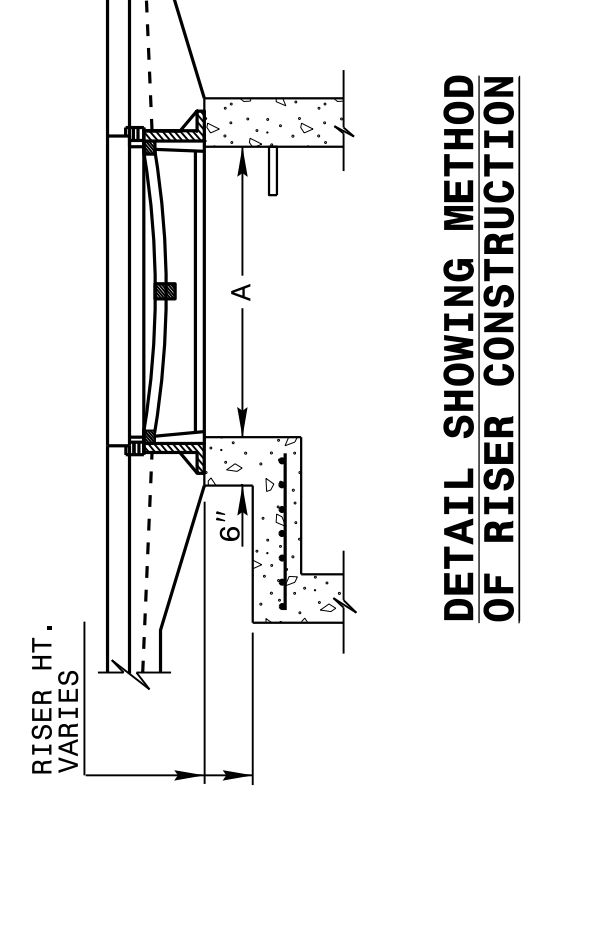
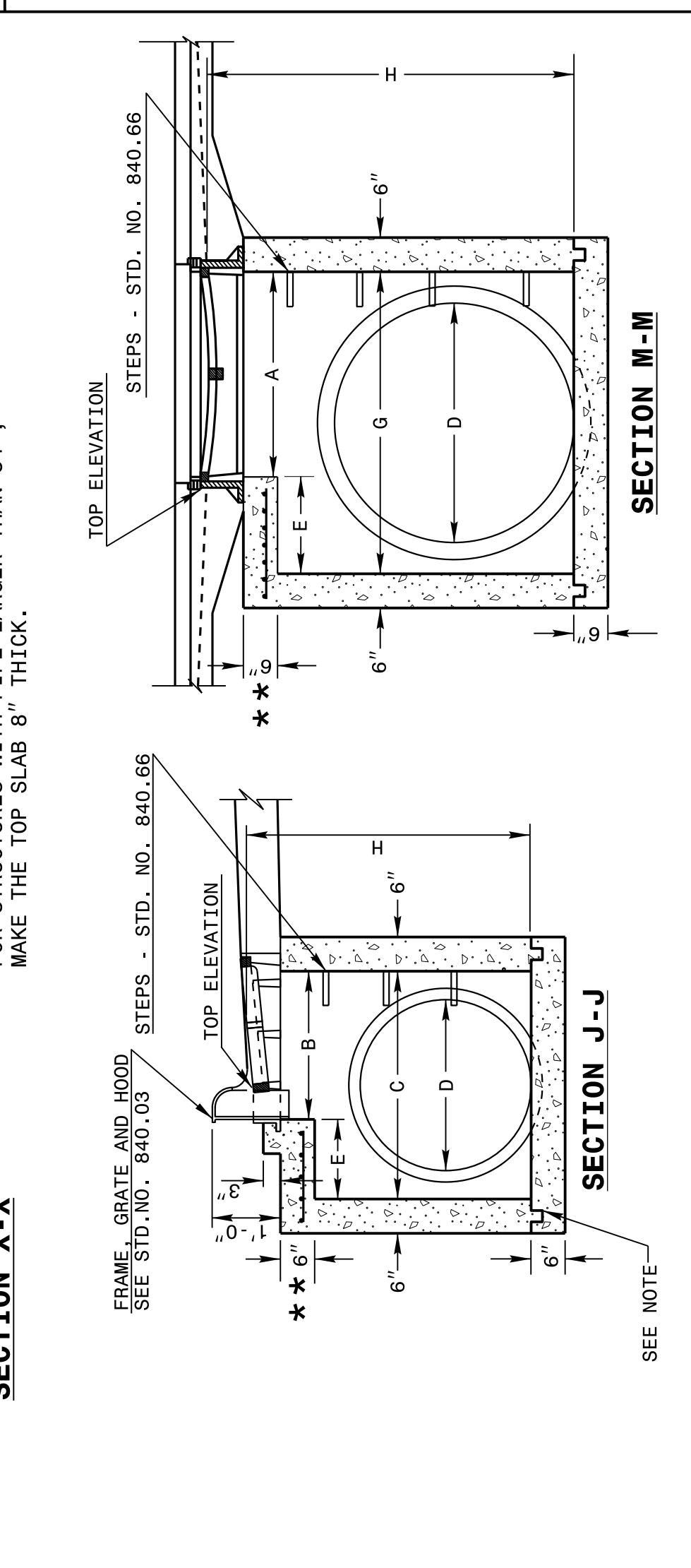
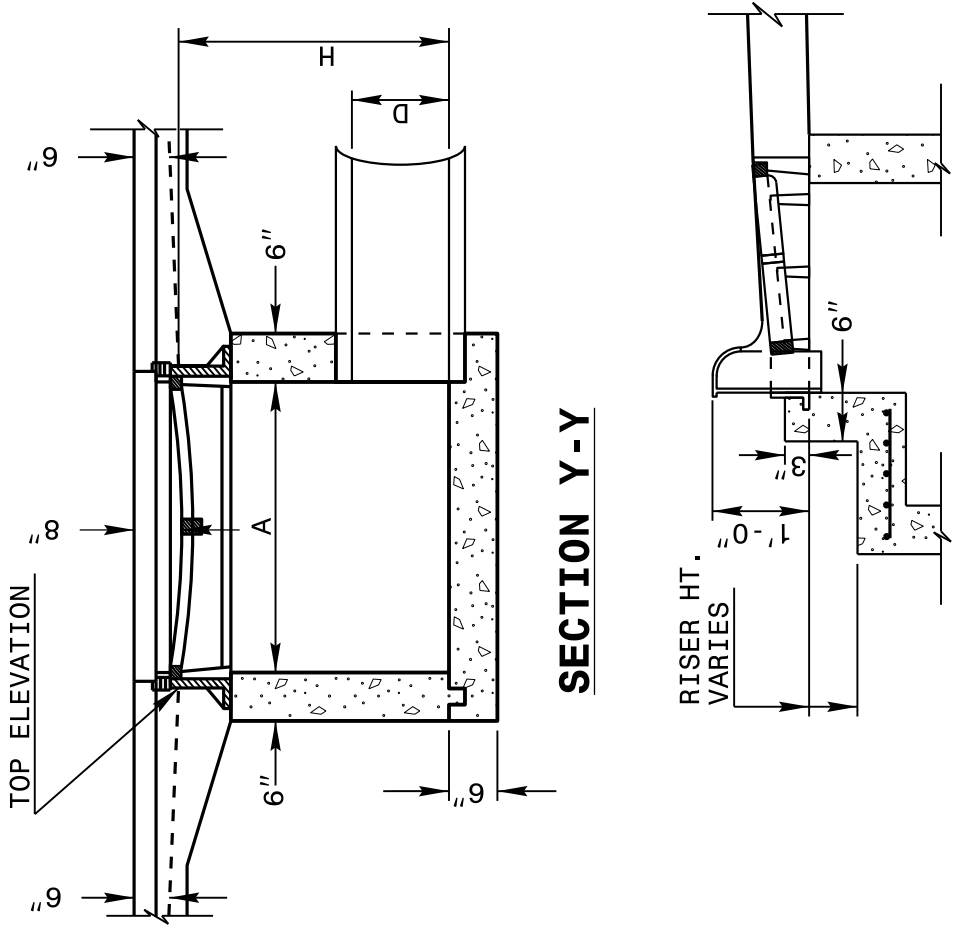
5/14/99

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



STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
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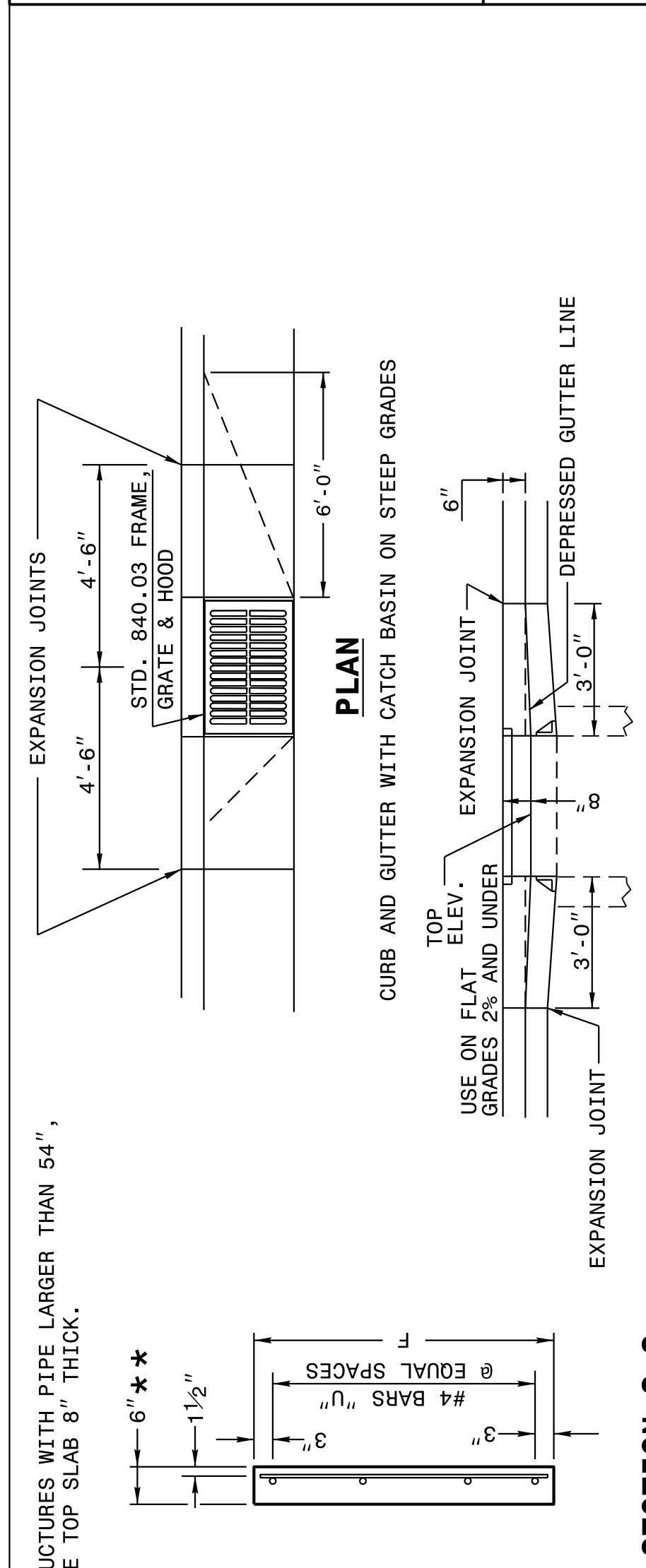
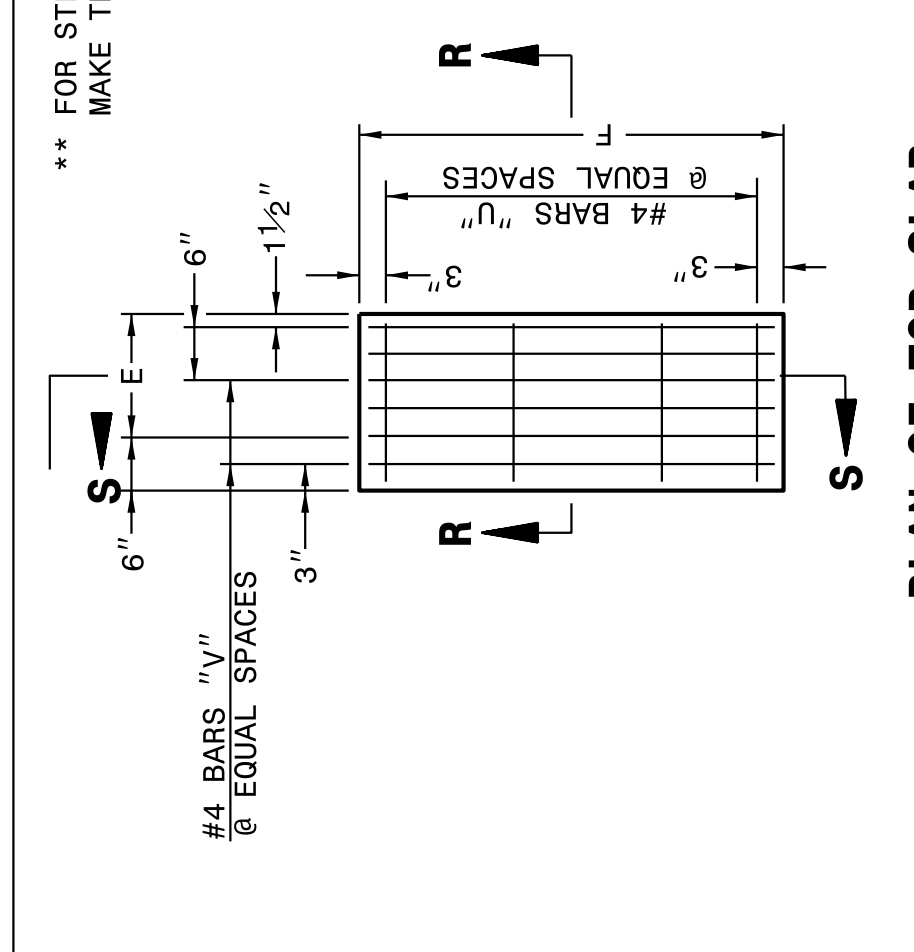
ENGLISH DETAIL DRAWING FOR
**MINIMUM DEPTH
CONCRETE CATCH BASIN**
12" THRU 84" PIPE



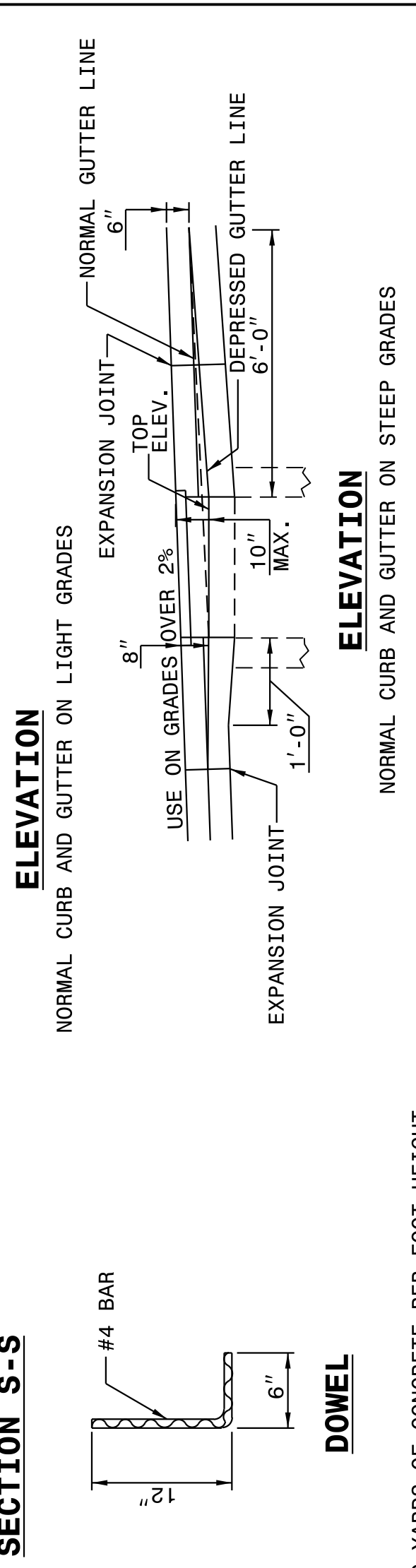
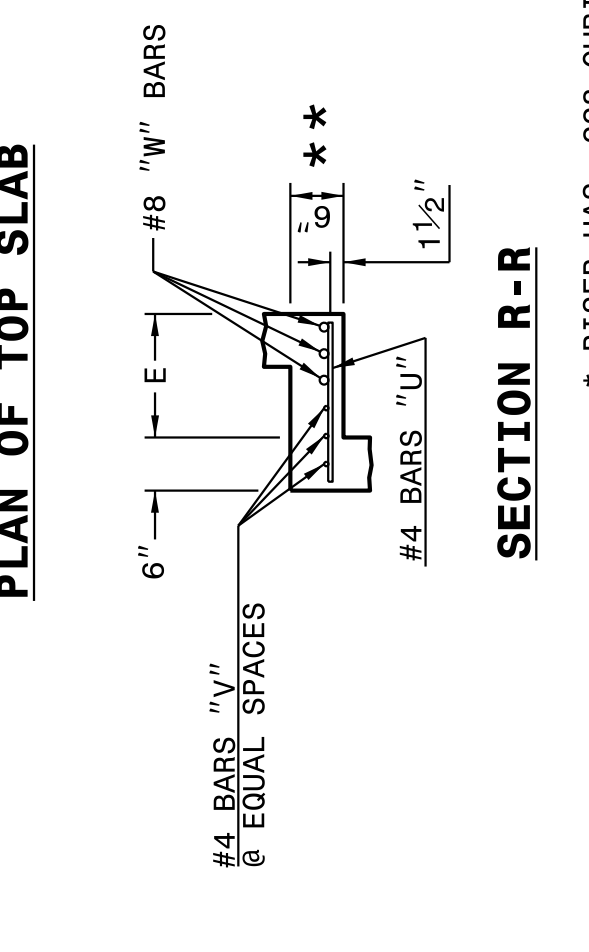
SHEET 1 OF 2
840D02

SHEET 1 OF 2
840D02

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



ENGLISH DETAIL DRAWING FOR
**MINIMUM DEPTH
CONCRETE CATCH BASIN**
12" THRU 84" PIPE



SHEET 2 OF 2
840D02

SHEET 2 OF 2
840D02

* RISER HAS .228 CUBIC YARDS OF CONCRETE PER FOOT HEIGHT

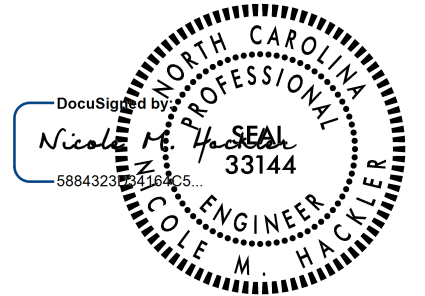
PIPE D.	DIMENSIONS OF BOX AND PIPE		COVER DIMENSION		BARS-U		BARS-V		BARS-W		TOTAL LBS.	DEDUCTIONS				
	SPAN	WIDTH	MIN.	HEIGHT	NO.	LENGTH	NO.	LENGTH	NO.	LENGTH		CU. YDS. CONC.	IN BOX	ONE PIPE		
12"	3'-0"	2'-2"	2'-0"	2'-3"	..	..	..	..	..	..	0.235	0.772	0.015	0.026		
15"	3'-0"	2'-2"	2'-0"	2'-3"	..	..	..	..	..	..	0.235	0.829	0.023	0.036		
18"	3'-0"	2'-2"	2'-0"	2'-3"	..	..	..	..	..	..	0.235	0.887	0.033	0.049		
24"	3'-0"	2'-2"	2'-0"	2'-3"	..	..	..	..	..	..	0.235	1.001	0.059	0.085		
30"	3'-0"	2'-2"	3'-4"	3'-10"	4	1'-5"	2	4'-1"	3	4'-1"	39	0.123	0.347	1.433	0.092	0.127
36"	3'-0"	2'-2"	3'-10"	3'-10"	4	1'-11"	3	4'-7"	3	4'-7"	43	0.161	0.432	1.714	0.132	0.178
42"	3'-0"	2'-2"	4'-5"	4'-5"	5	2'-5"	4	5'-2"	3	5'-2"	47	0.200	0.543	1.738	0.180	0.243
48"	3'-0"	2'-2"	5'-0"	5'-0"	5	3'-1"	4	5'-9"	3	5'-9"	51	0.235	0.667	2.052	0.235	0.317
54"	3'-0"	2'-2"	5'-7"	5'-7"	6	3'-8"	5	6'-4"	3	6'-4"	56	0.269	0.802	2.387	0.297	0.401
60"	3'-0"	2'-2"	6'-3"	6'-3"	6	4'-4"	6	7'-0"	3	7'-0"	61	0.340	0.973	2.722	0.363	0.546
66"	3'-0"	2'-2"	6'-11"	6'-11"	7	5'-0"	7	8'-8"	3	8'-8"	66	0.391	1.160	3.057	0.440	0.655
72"	3'-0"	2'-2"	7'-6"	7'-6"	7	5'-6"	7	9'-3"	3	9'-3"	72	0.442	1.340	3.392	0.524	0.774
78"	3'-0"	2'-2"	8'-1"	8'-1"	8	6'-2"	7	8'-10"	3	8'-10"	78	0.493	1.530	3.727	0.615	0.893
84"	3'-0"	2'-2"	8'-9"	8'-9"	8	6'-10"	7	9'-6"	3	9'-6"	84	0.544	1.760	4.062	0.713	1.010

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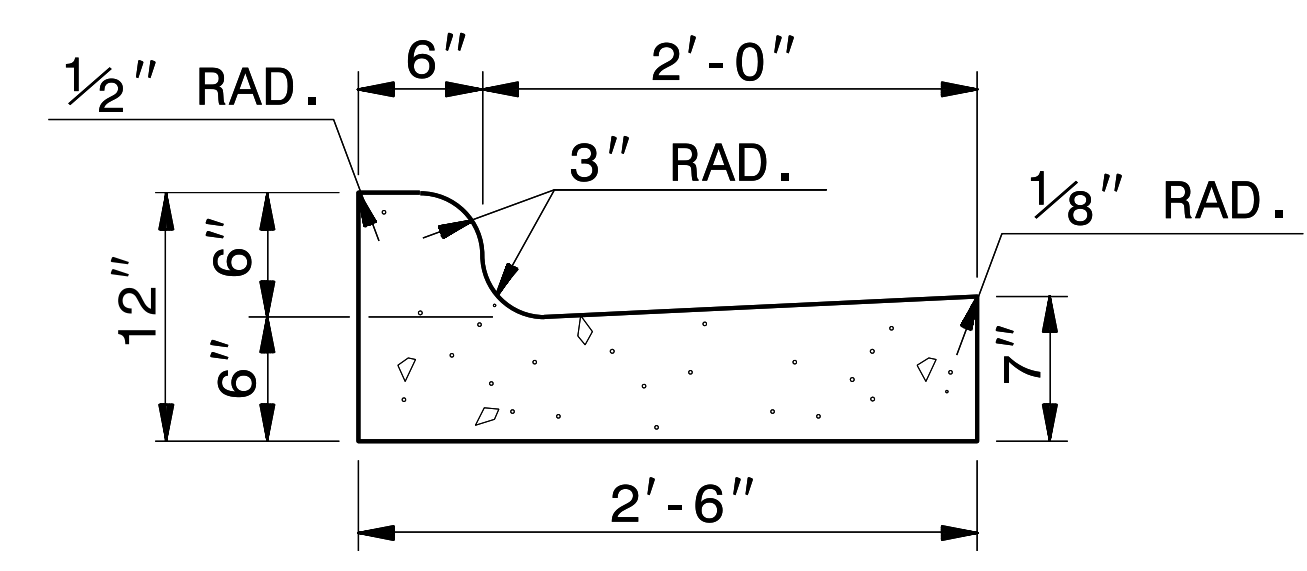
**CONTRACT STANDARDS
AND DEVELOPMENT UNIT**
Office 919-707-6950 FAX 919-250-4119

SEE PLATE FOR TITLE

ORIGINAL BY: 2002 Std.840.01 DATE: _____
 MODIFIED BY: E.E. WARD DATE: 3-1-02
 CHECKED BY: _____ DATE: _____
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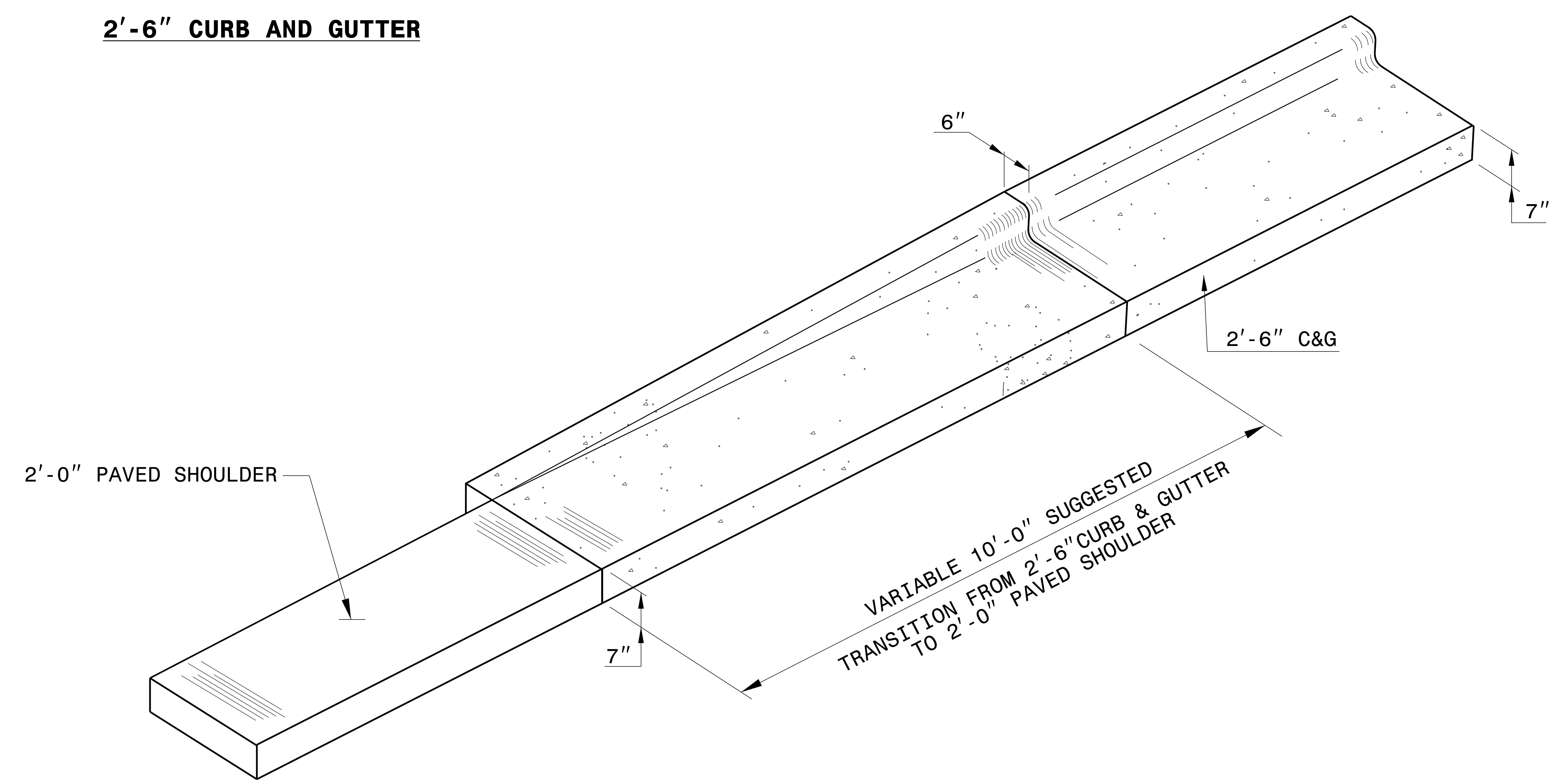


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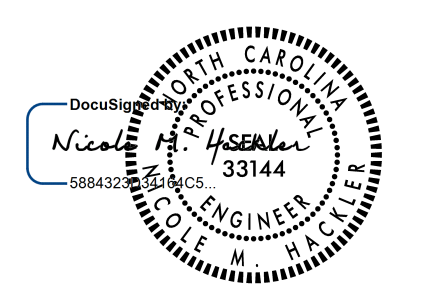


2'-6" CURB AND GUTTER

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



ISOMETRIC VIEW OF TRANSITION



7/30/2024

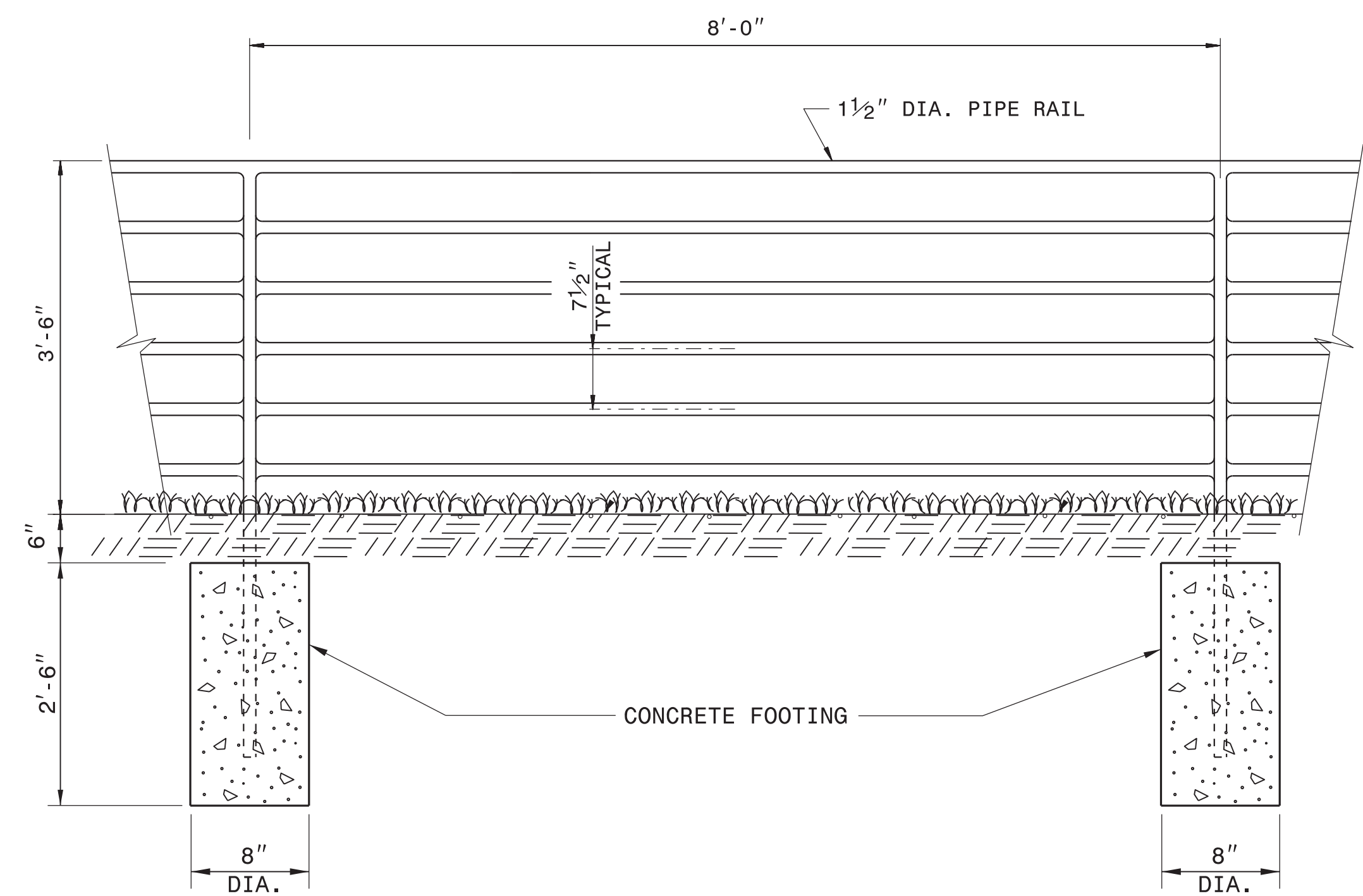
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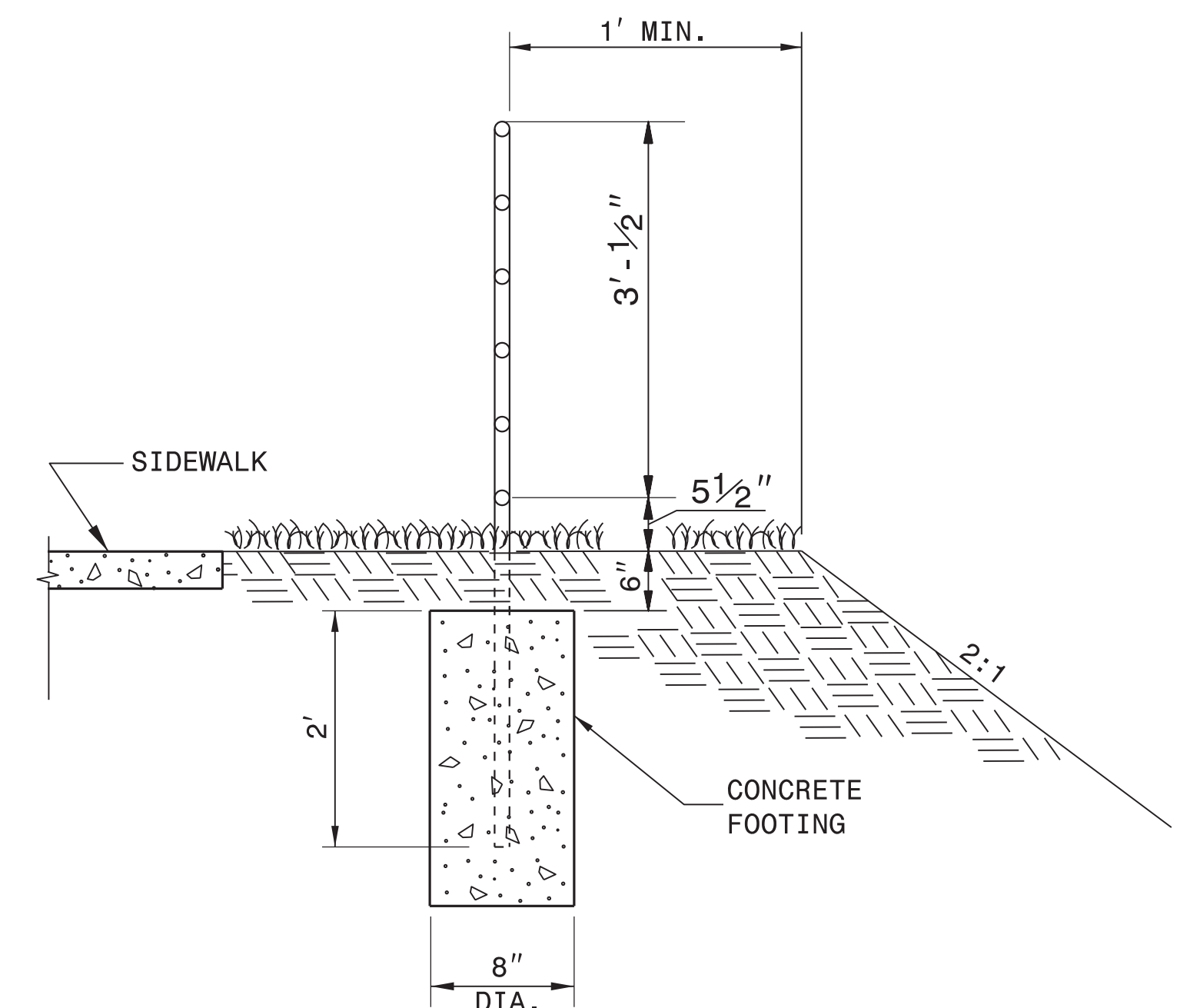
DETAIL OF 10' TRANSITION FROM 2'-6" CURB & GUTTER TO 2'-0" PAVED SHOULDER

ORIGINAL BY: _____ DATE: _____
 MODIFIED BY: rnbritt DATE: 04-13-2016
 CHECKED BY: _____ DATE: _____
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 .jhoverton AT USD-320965

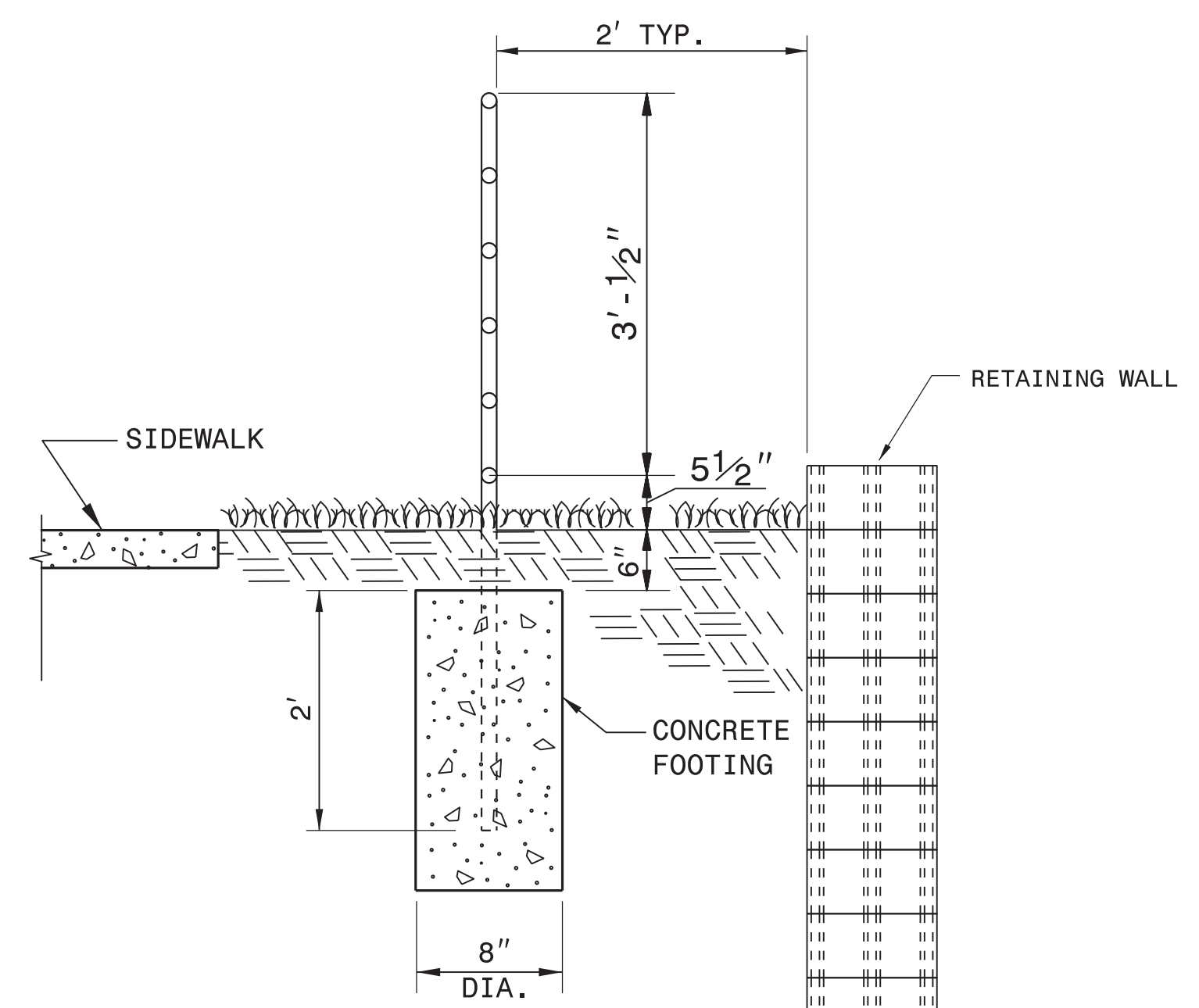


ELEVATION

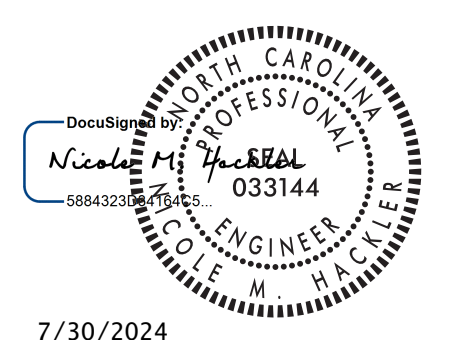


SECTION VIEW

- NOTES:**
- CONSTRUCT PROPOSED STEEL PIPE RAIL OF 1 1/2" DIAMETER SCHEDULE 40 PLAIN END GALVANIZED STEEL PIPE MEETING THE REQUIREMENTS OF ASTM A53.
 - REPAIR GALVANIZING IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS SECTION 1076.
 - PAINT, IF REQUIRED BY THE ENGINEER, IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS SECTION 1080.
 - WELD IN ACCORDANCE WITH ARTICLE 1072-18 OF THE STANDARD SPECIFICATIONS.
 - USE CLASS 'B' CONCRETE FOR HANDRAIL FOOTINGS.
 - PLACEMENT OF HANDRAIL IN RELATION TO RETAINING WALL AND SIDEWALK MAY BE MODIFIED AS DIRECTED BY THE ENGINEER.



**SECTION VIEW
ADJACENT TO
RETAINING WALL**



7/30/2024

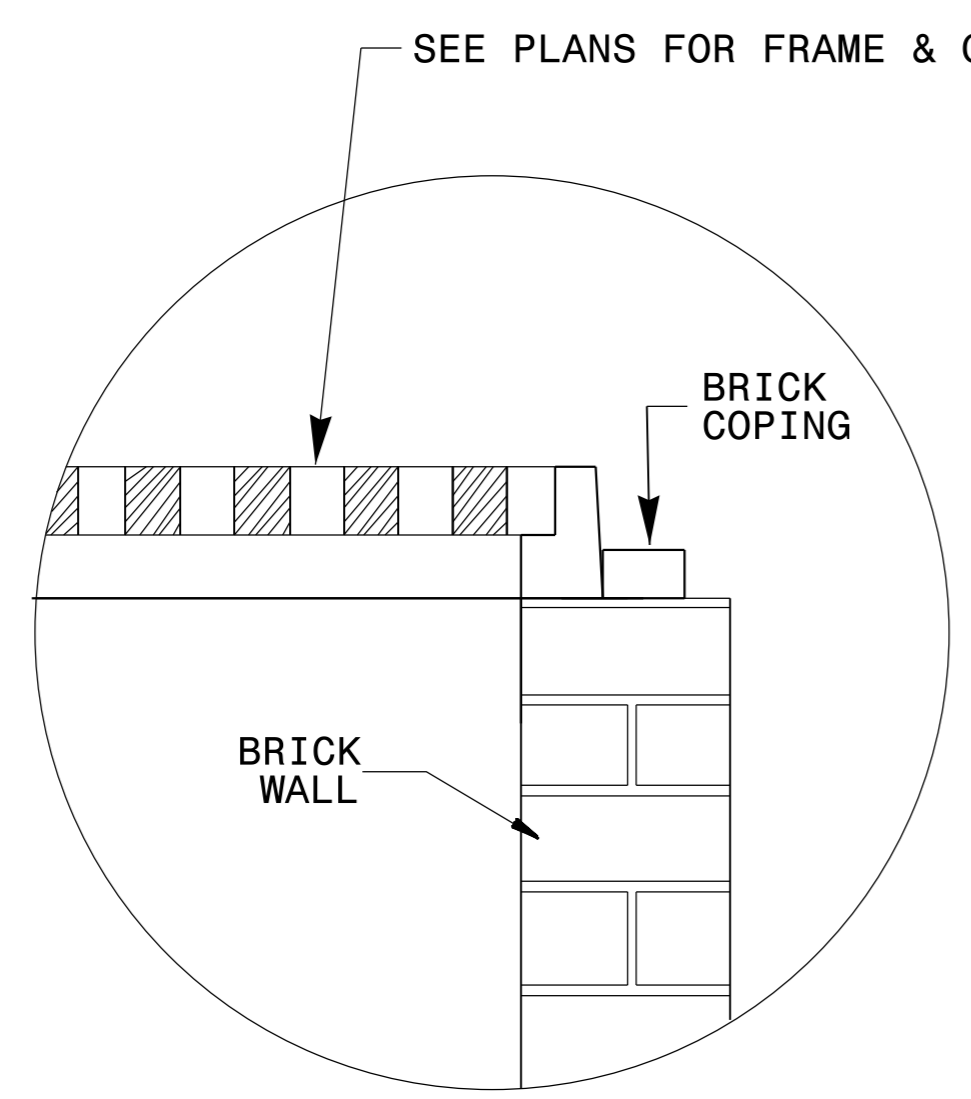
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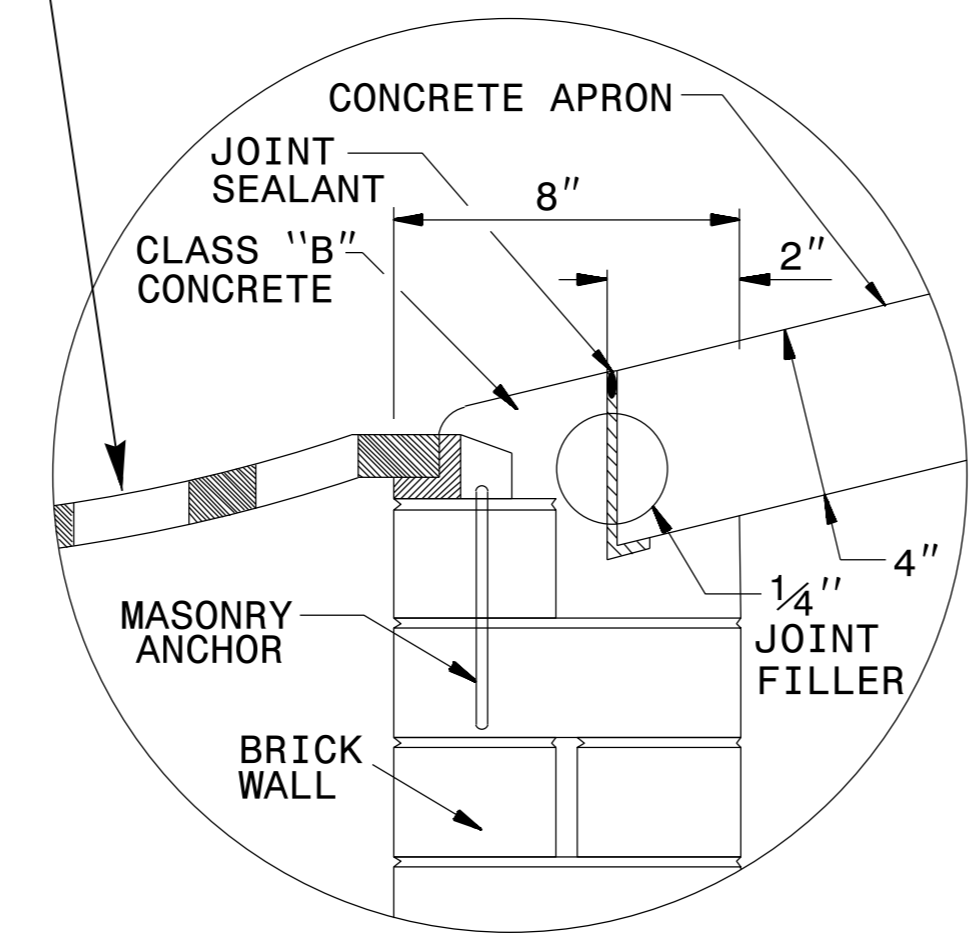
PEDESTRIAN SAFETY RAIL

ORIGINAL BY:	DATE:
MODIFIED BY: K.A. KEMPf	DATE: 7-20-23
CHECKED BY:	DATE:
FILE SPEC.: details/kempf/english/safety_rails_2024.dgn	

20-JUL-2023 12:35
K Kempf AT CSD-320967



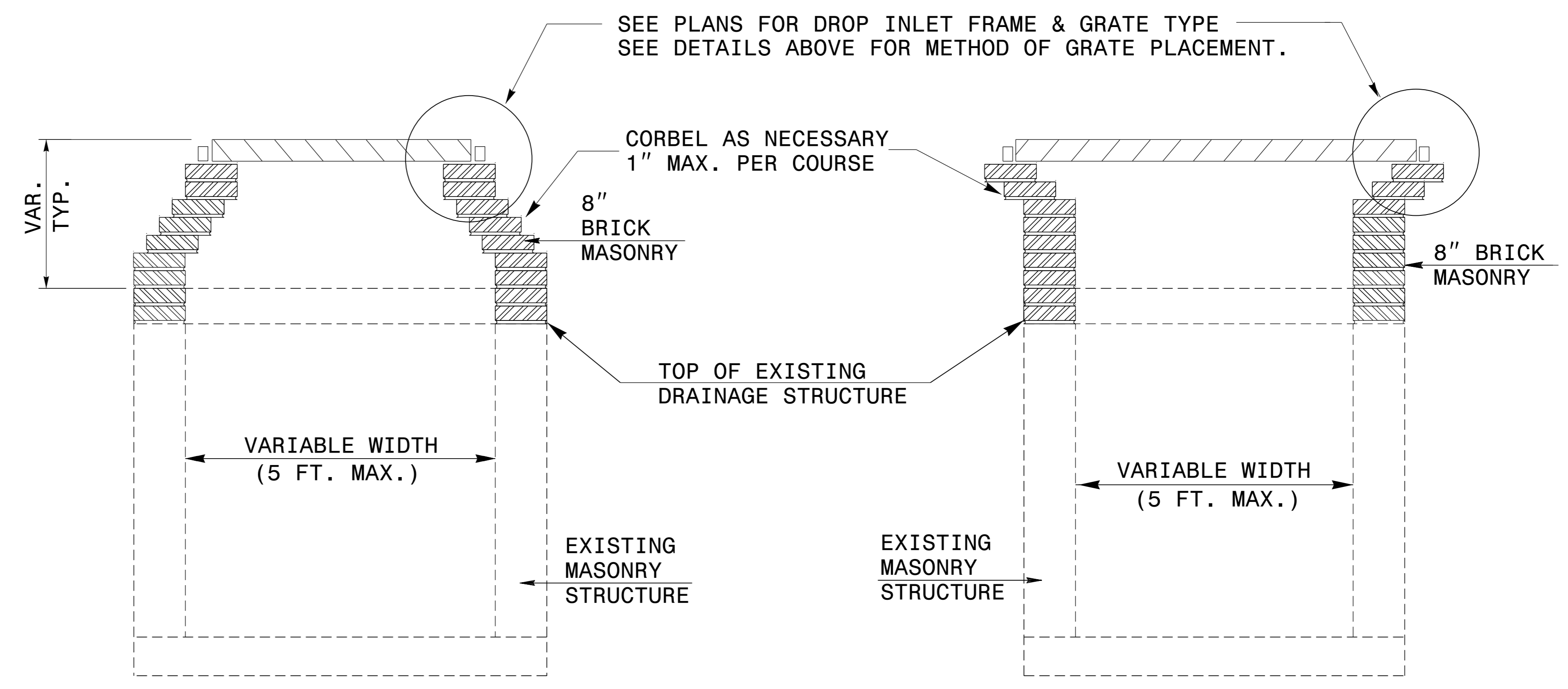
GRATE PLACEMENT DETAIL
FOR DROP INLETS



GRATE PLACEMENT DETAIL
FOR GRATED DROP INLETS

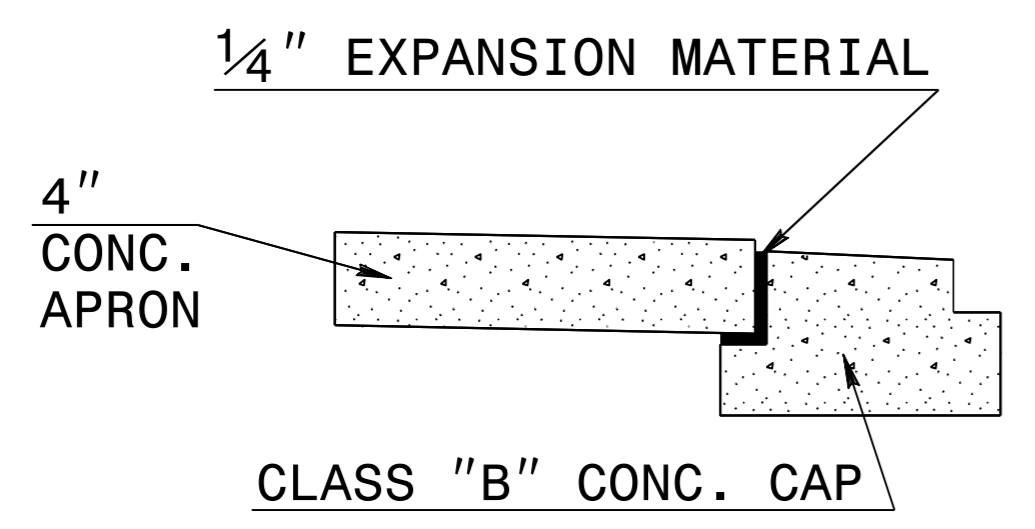
GENERAL NOTES:

- 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.

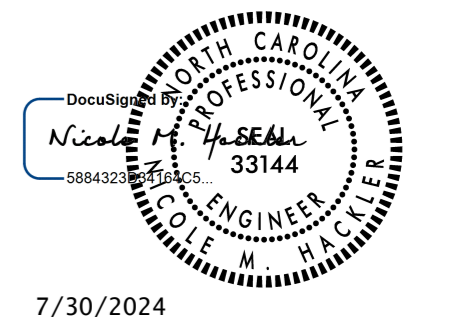


TYPICAL SECTION

TYPICAL SECTION



EXPANSION JOINT DETAIL



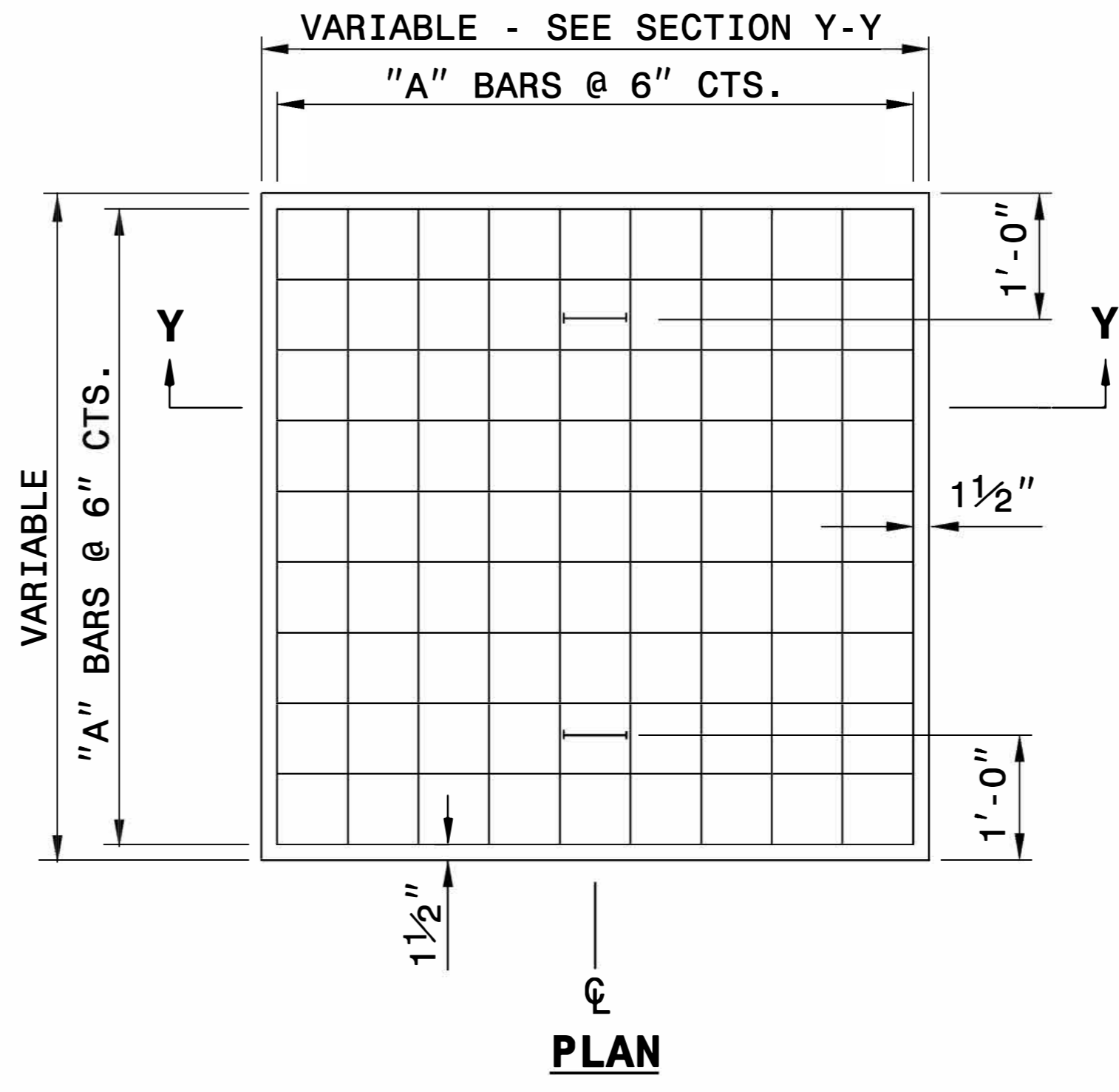
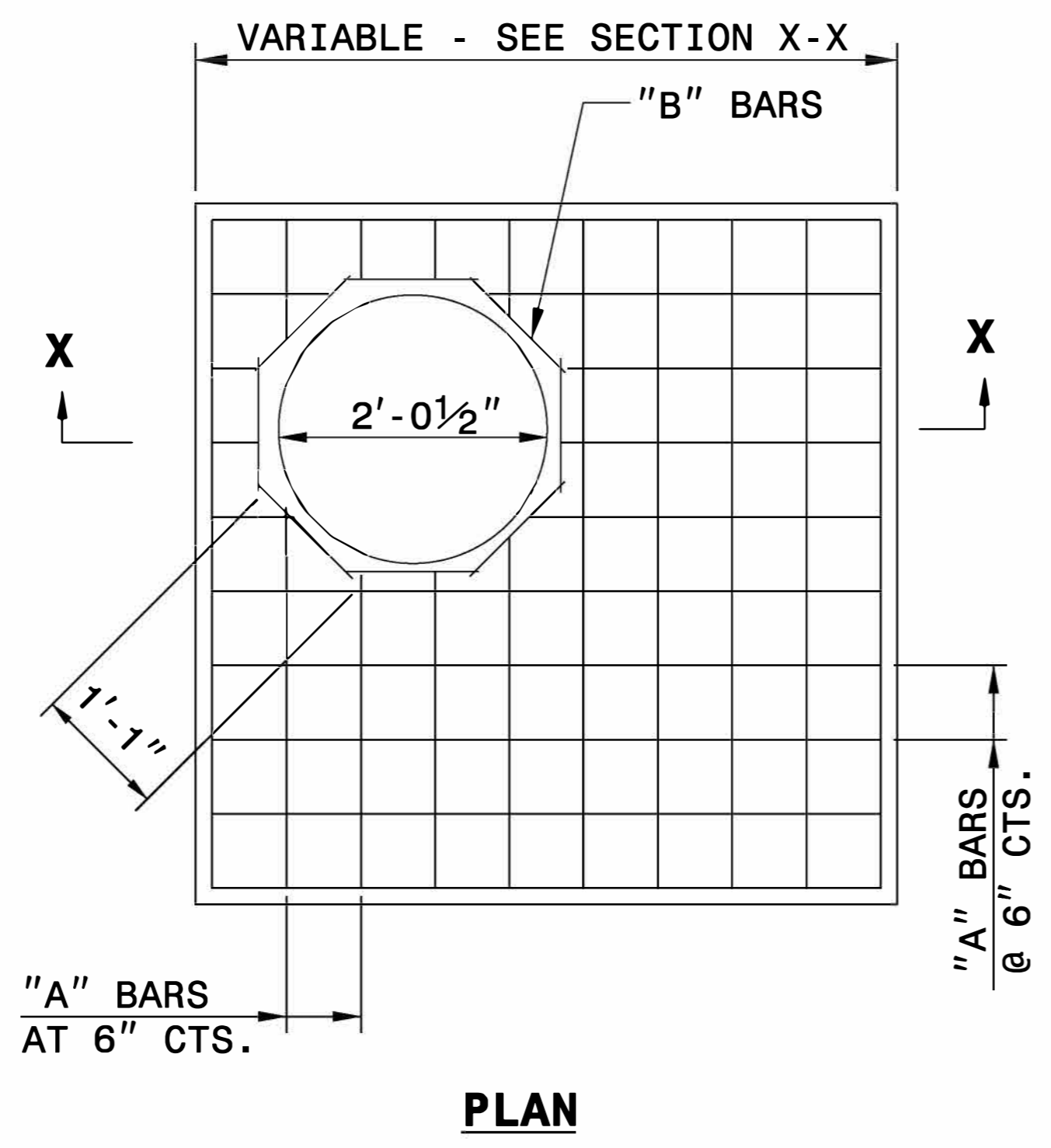
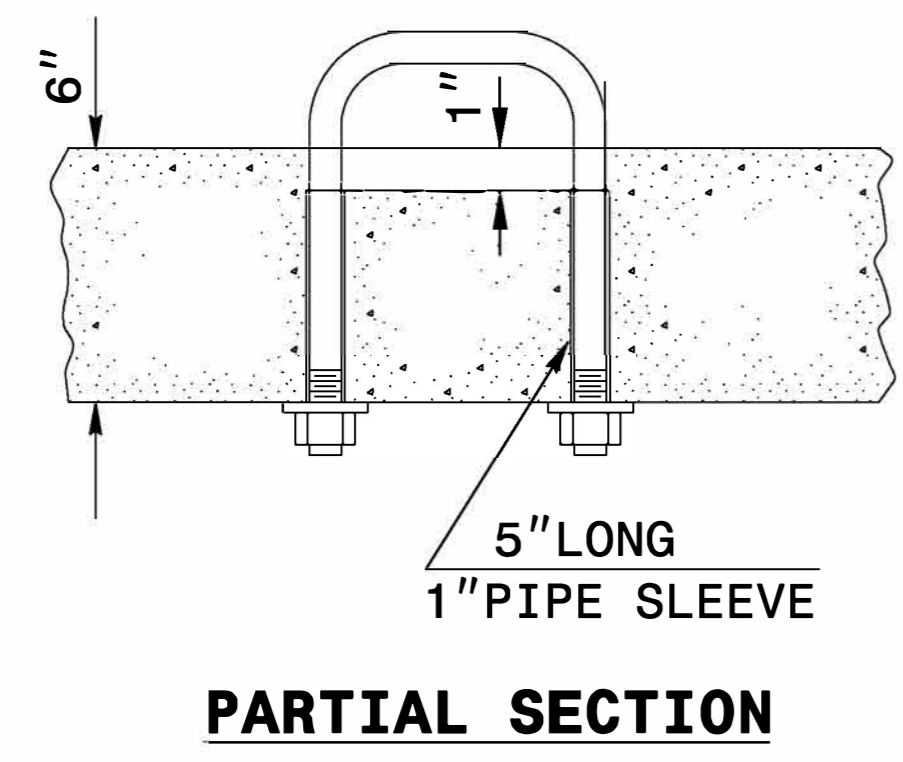
7/30/2024

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/cbtodi02.dgn

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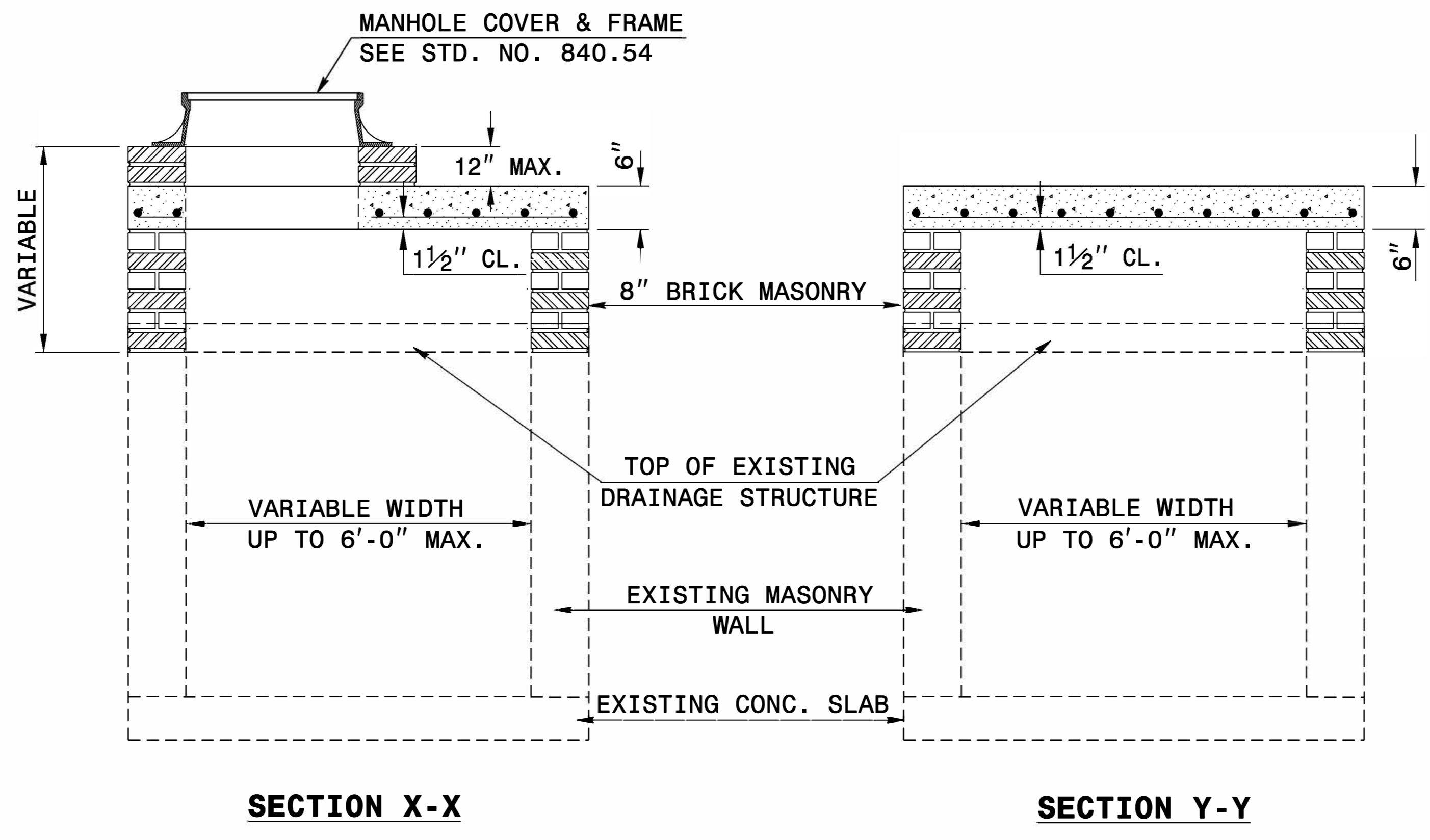
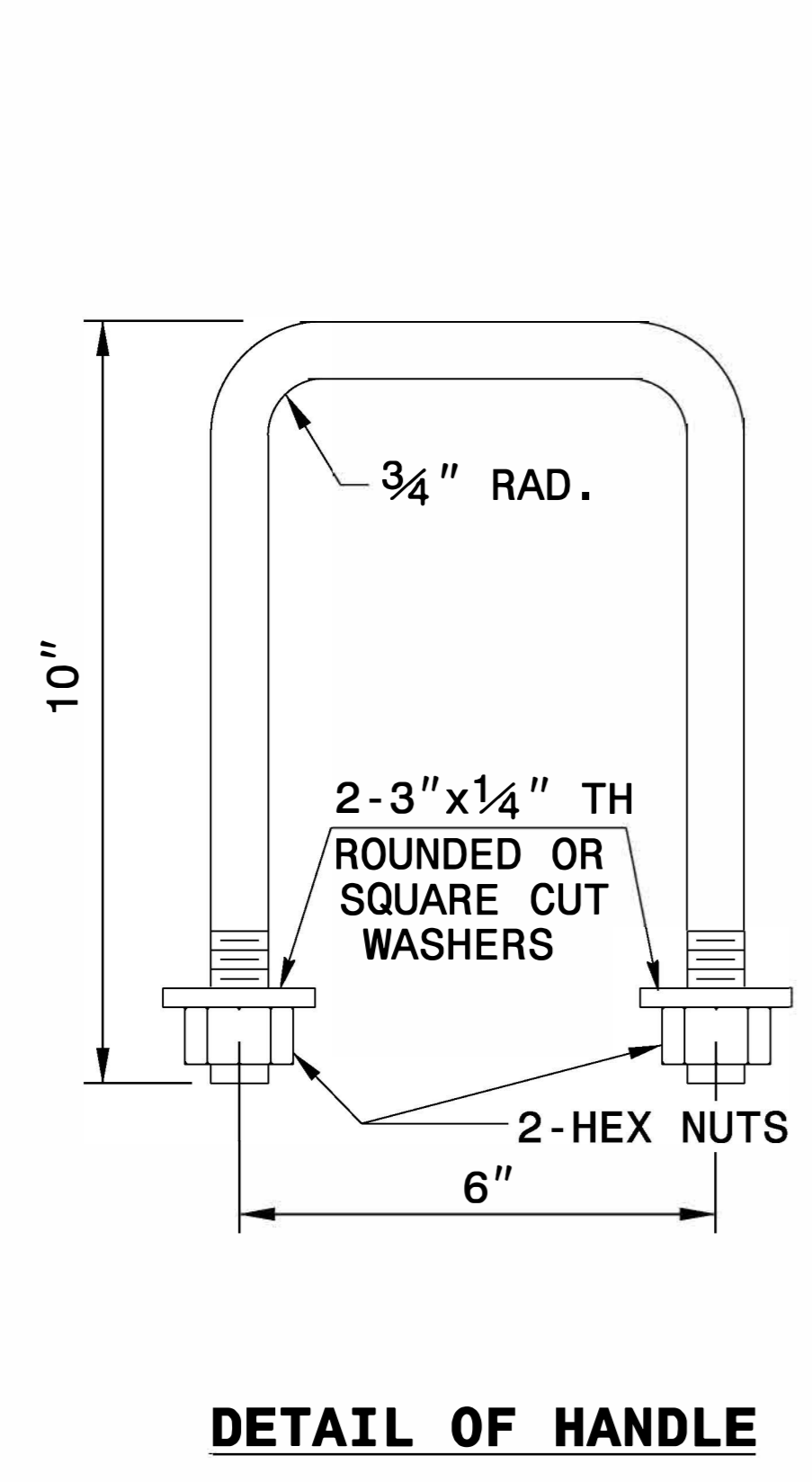


GENERAL NOTES:

CONSTRUCT IN ACCORDANCE WITH SECTION 859 OF THE STANDARD SPECIFICATIONS.

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

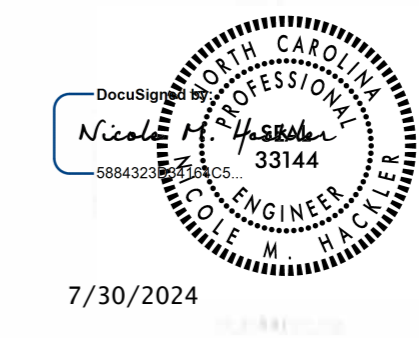
DETAIL INTENDED FOR NON-TRAFFIC BEARING DRAINAGE STRUCTURES.



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.

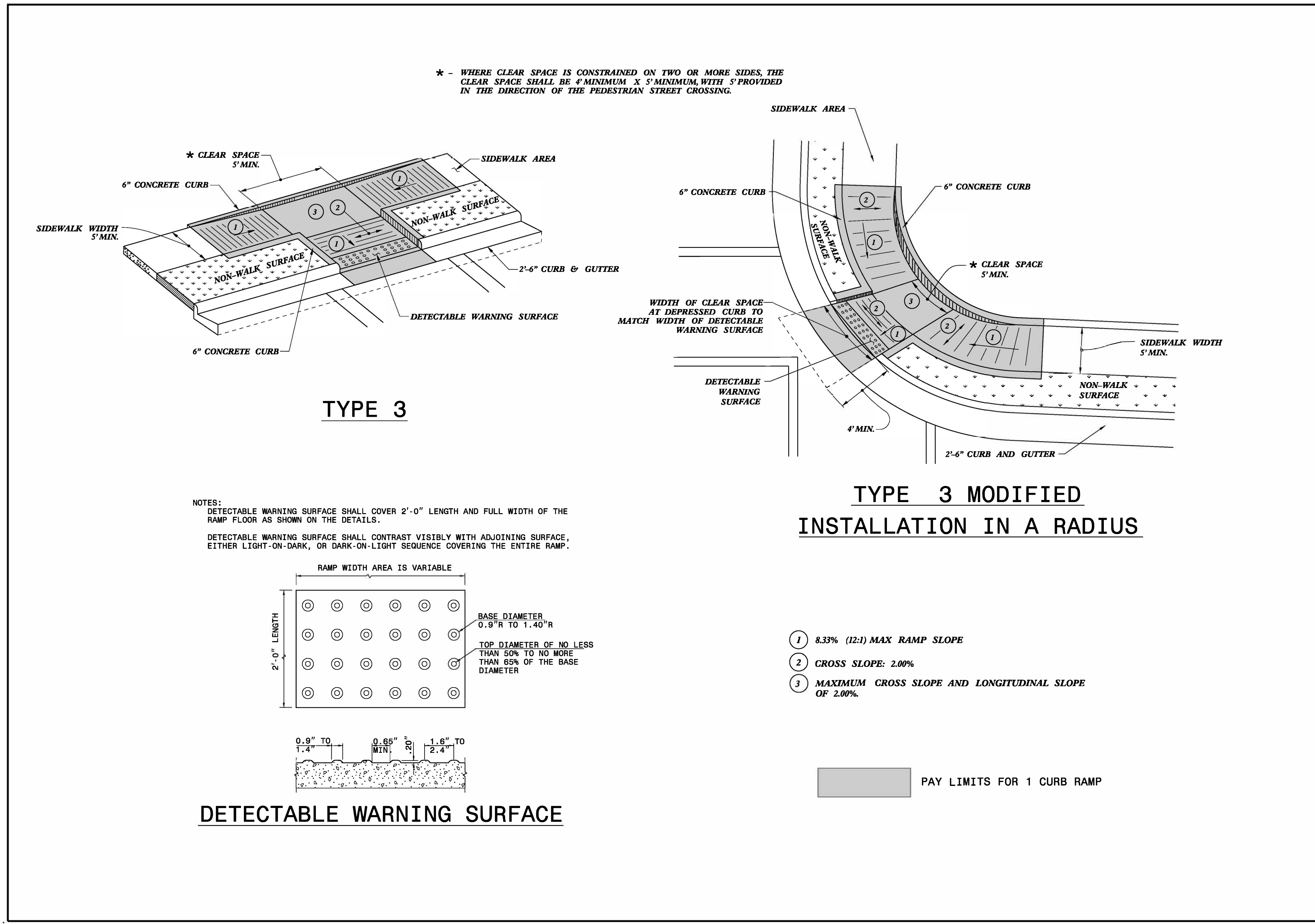


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**CONTRACT STANDARDS
AND DEVELOPMENT UNIT**
Office 919-707-6950 FAX 919-250-4119

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

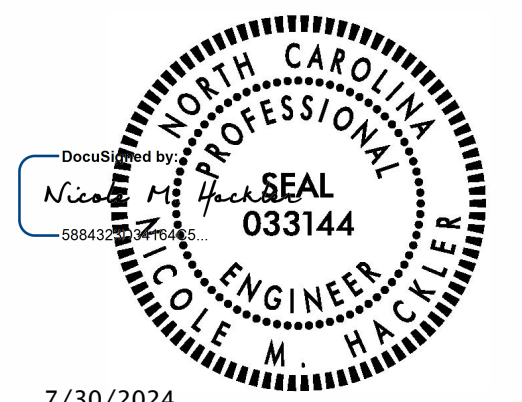
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 FILE SPEC.: ds174:/usr/details/stand/boxtojb.dgn



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

ROADWAY DETAIL DRAWING FOR
CURB RAMP
PARALLEL RAMP

SHEET 9 OF 13
848D06



7/30/2024

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**CONTRACTS STANDARDS
AND DEVELOPMENT UNIT**
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SEE TITLE BLOCK

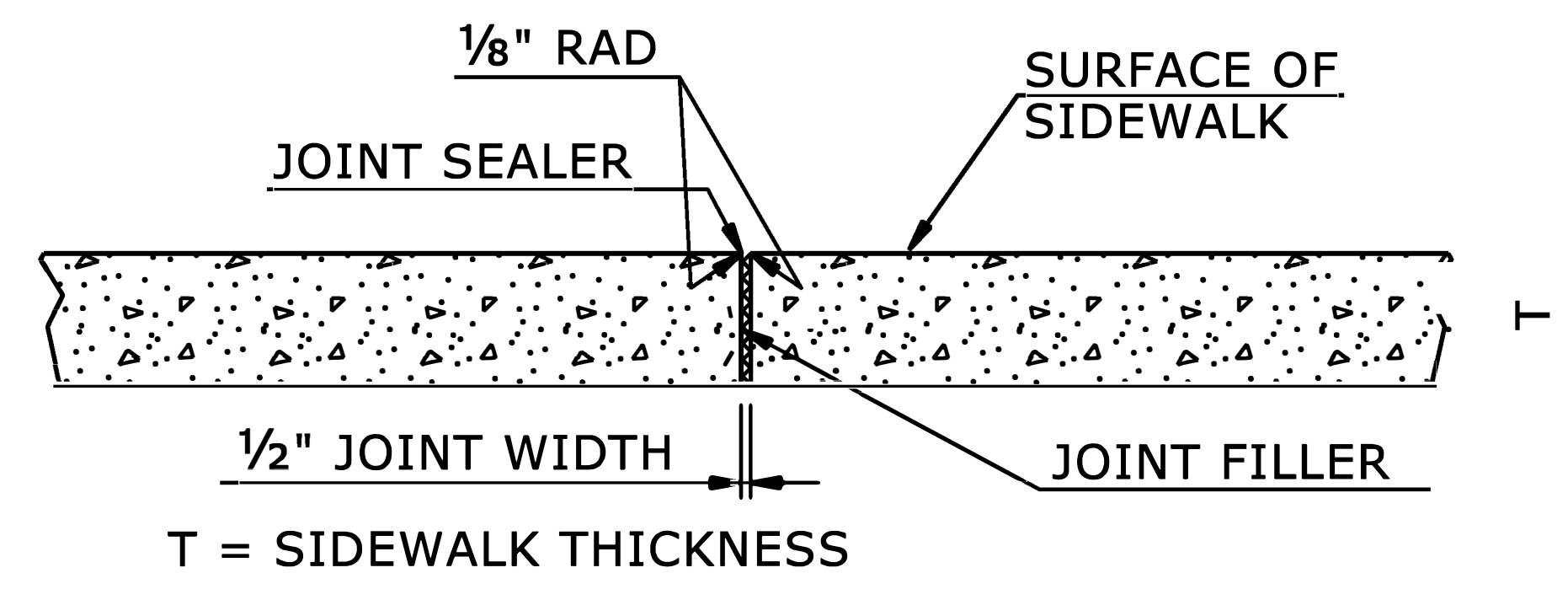
ORIGINAL BY: S. CALHOUN	DATE: 12-22-2023
MODIFIED BY:	DATE:
CHECKED BY:	DATE:
FILE SPEC.: special_details\nmhackler\0609.dgn	

NOTES:

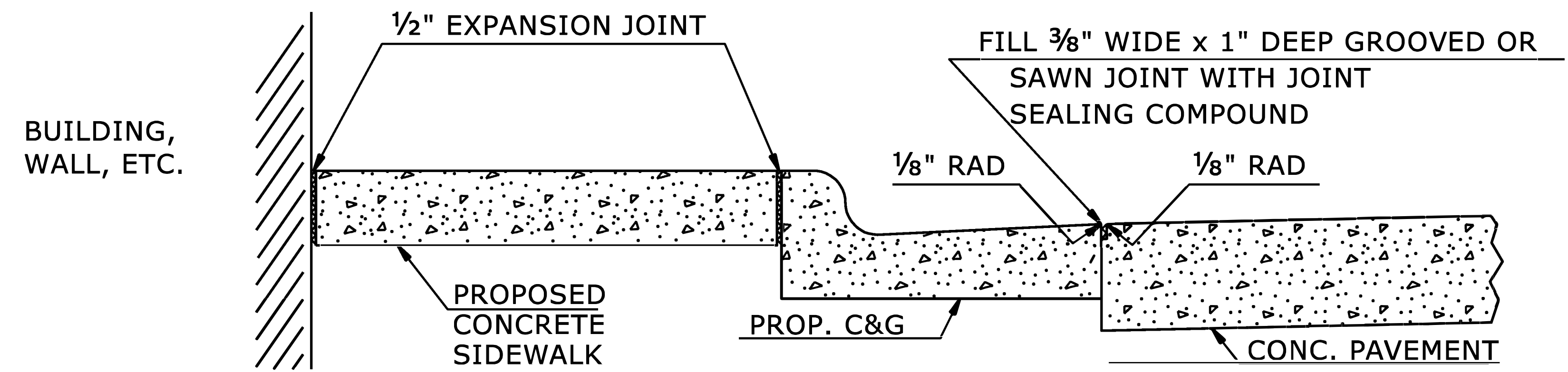
CONSTRUCT STANDARD SIDEWALK 5' WIDE AND 4" THICK UNLESS OTHERWISE DENOTED ON PLANS.

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

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



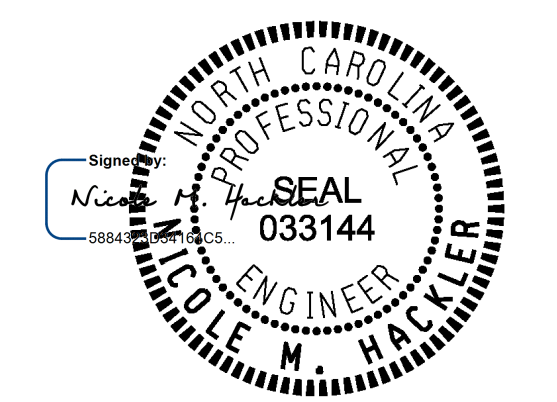
TRANSVERSE EXPANSION JOINT IN SIDEWALK



DETAILS SHOWING JOINTS IN CONCRETE SIDEWALK

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DIVISION OF HIGHWAYS
RALEIGH, N.C.

ROADWAY DETAIL DRAWING FOR
CONCRETE SIDEWALK



8/21/2024

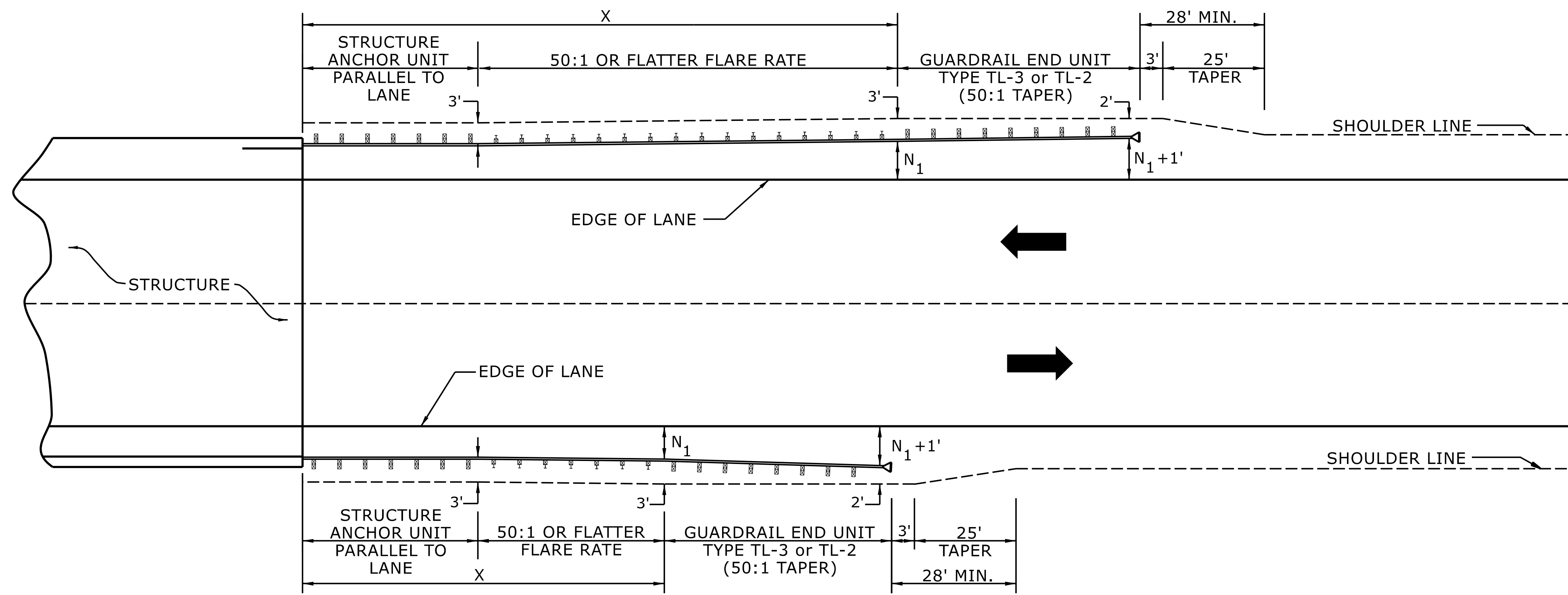
SHEET 1 OF 1
848D01

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.: _____	

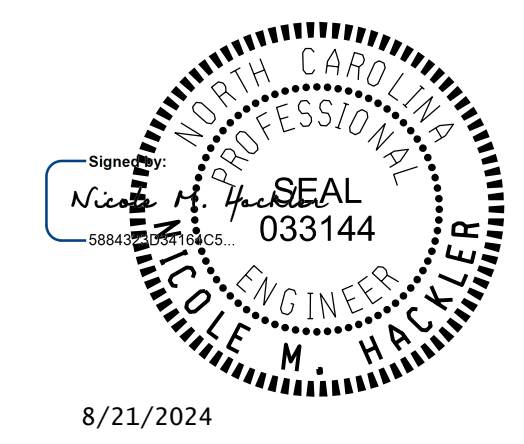


USE FLARE RATE AS THE CONTROL IF THE " N_1 " DISTANCE IS NOT OBTAINED.
 (" N_1 " IS BASED ON SHOULDER WIDTHS IN THE ROADWAY DESIGN MANUAL)
 SEE STD. 862.03 FOR STRUCTURE ANCHOR UNITS
 FOR POSTED SPEEDS \geq 45MPH USE GREU TYPE TL-3
 FOR POSTED SPEEDS $<$ 45MPH USE GREU TYPE TL-2
 GUARDRAIL LENGTH OF NEED (X) IS CALCULATED BASED ON THE AASHTO ROADSIDE DESIGN GUIDE.

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

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 RALEIGH, N.C.

ROADWAY DETAIL DRAWING FOR
GUARDRAIL PLACEMENT



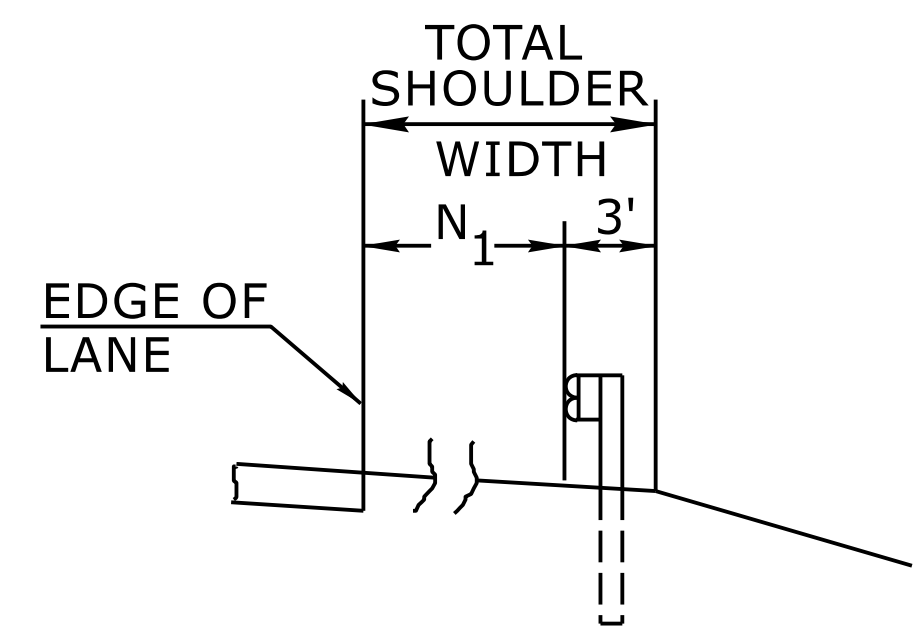
SHEET 4 OF 15
862D01

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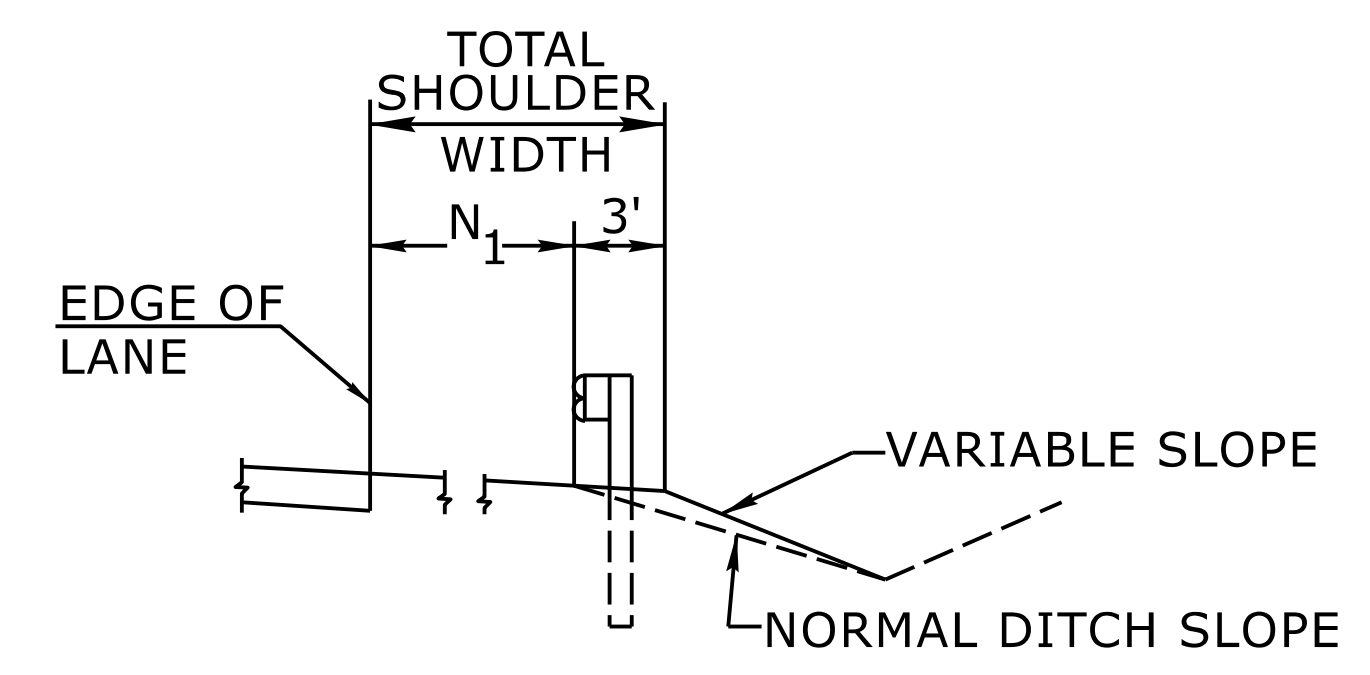
**CONTRACTS STANDARDS
 AND DEVELOPMENT UNIT**
 Office 919-707-6950 FAX 919-250-4119

SEE TITLE BLOCK

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

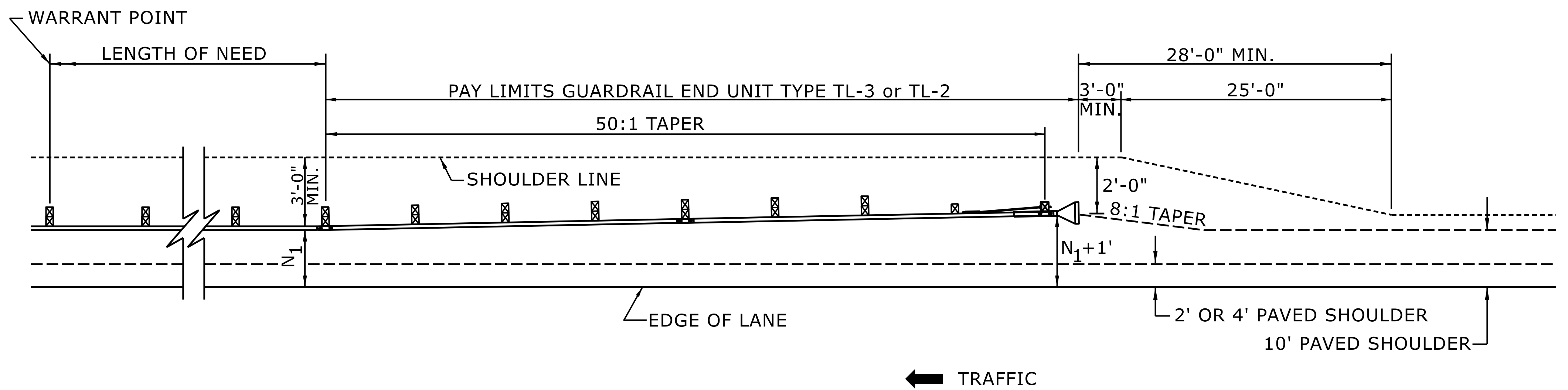


FILL SECTION



CUT SECTION

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

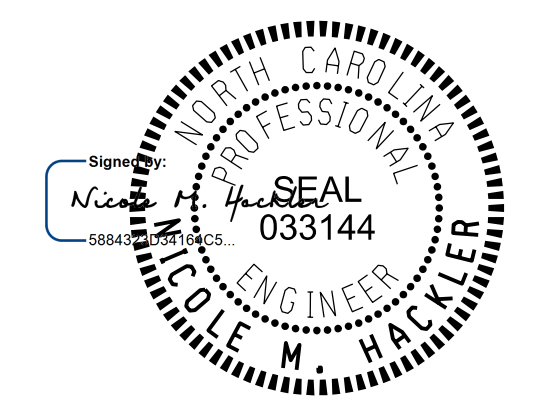


FOR POSTED SPEEDS ≥ 45mph USE GREU TYPE TL-3
FOR POSTED SPEEDS < 45mph USE GREU TYPE TL-2

DETAIL OF BEGINNING OF GUARDRAIL IN CUT OR FILL SECTION

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

ROADWAY DETAIL DRAWING FOR
GUARDRAIL PLACEMENT



8/21/2024

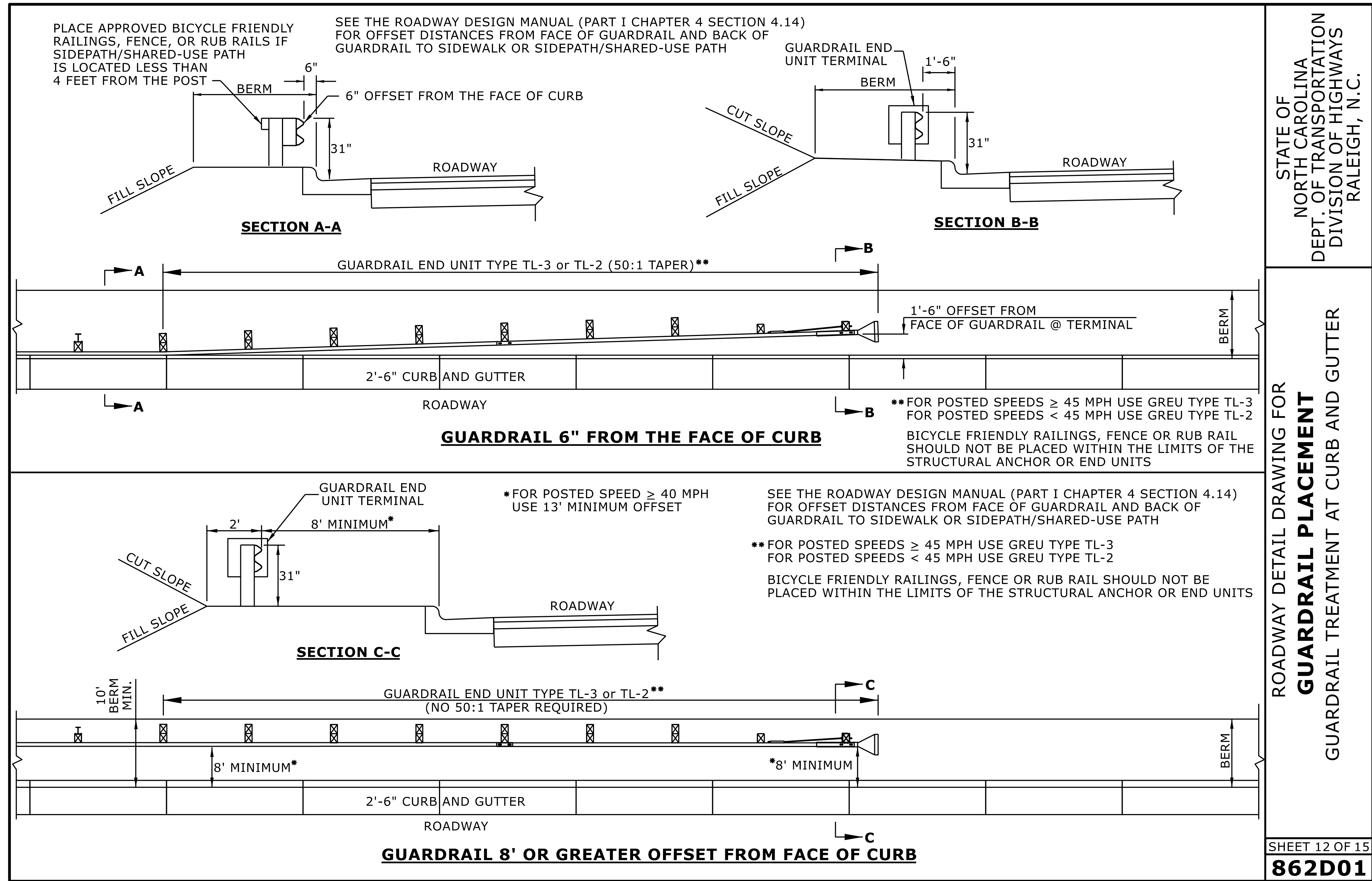
SHEET 6 OF 15
862D01

DOCUMENT NOT CONSIDERED FINAL
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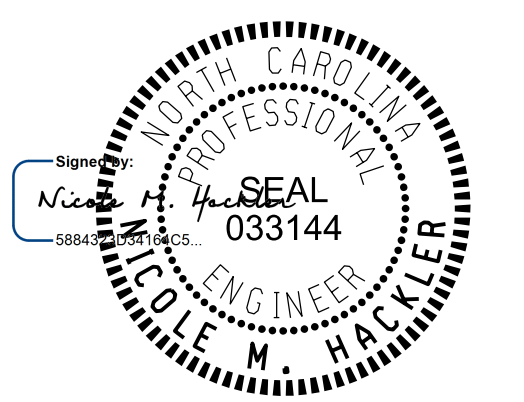
**CONTRACTS STANDARDS
AND DEVELOPMENT UNIT**
Office 919-707-6950 FAX 919-250-4119

SEE TITLE BLOCK

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



STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
RALEIGH, N.C.
ROADWAY DETAIL DRAWING FOR
GUARDRAIL PLACEMENT
GUARDRAIL TREATMENT AT CURB AND GUTTER



8/21/2024

SHEET 12 OF 15
862D01

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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:

STD. NO.	STANDARD DRAWING TITLES
852.01	Concrete Islands
852.02	Monolithic Concrete Mountable Island Median for Use with Rigid or Flexible Pavement
852.04	Method for Placement of Drop Inlets in Grassed Median - Using 1'-6" Curb and Gutter
852.05	Median Curb for Catch Basin for Use with 1'-6" Curb and Gutter
852.06	Method for Placement of Drop Inlets in Concrete Islands
852.07	Median Curb for Traffic Bearing Grated Drop Inlet for Use with 2'-9" Curb and Gutter
852.10	Median Construction - with Curb and Gutter
854.01	Double Faced Concrete Barrier - Types I, II, III and IV
854.02	Double Faced Concrete Barrier - Types T, T1 and T2
854.04	Concrete Median Barrier - Precast Permanent
854.05	Concrete Median Transition Barrier - Location of Overhead Assembly
854.06	Median Hazard Protection
854.07	Single Slope Concrete Barrier
857.01	Precast Reinforced Concrete Barrier - 41" Single Faced
862.01	Guardrail Placement
862.02	Guardrail Installation
862.03	Structure Anchor Units
862.04	Anchoring End of Guardrail - for B-77 and B-83 Anchor Units
865.01	Cable Guiderail
866.01	Chain Link Fence - 4', 5 and 6' High Fence
866.02	Woven Wire Fence - with Wood Post
866.03	Woven Wire Fence - with Steel Post

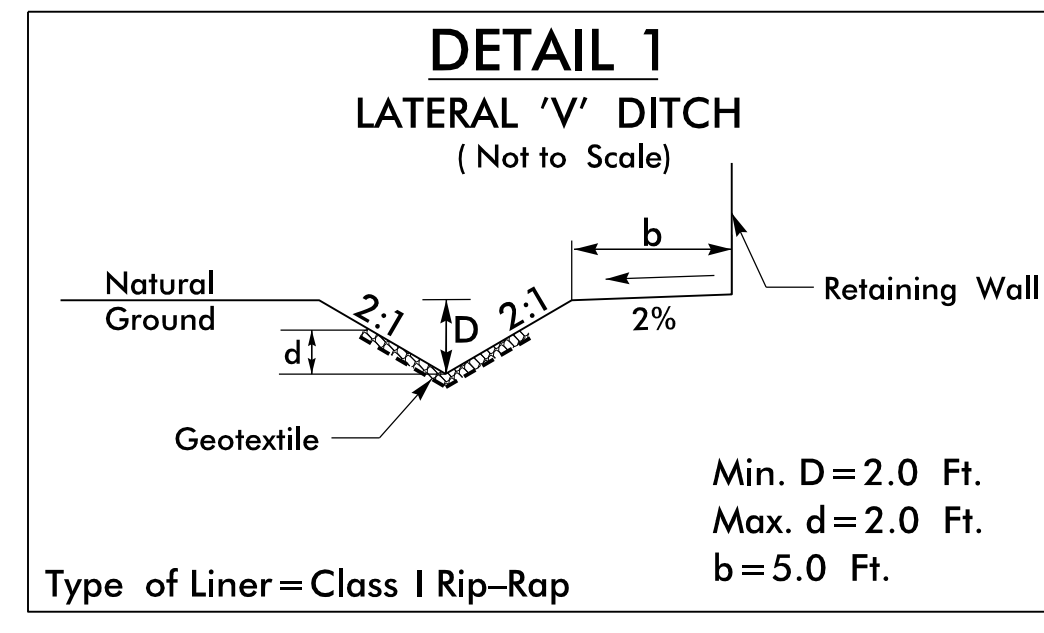
8/17/99
 8/21/2024
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STD. NO.	STANDARD DRAWING TITLES
866.04	Barbed Wire Fence - with Wood Posts
866.05	Glare Screen - Chain Link Fabric/Guardrail Mounted
866.06	Chain Link Fence on Retaining Wall
866.07	Wildlife Fence - with Chain Link
867.01	Steel Pipe Gate
867.02	Steel Bollards
876.01	Rip Rap in Channels and Ditches
876.02	Guide for Rip Rap at Pipe Outlets
876.03	Drainage Ditches with Class 'A' Rip Rap
876.04	Drainage Ditches with Class 'B' Rip Rap
DIVISION 9 - SIGNING	
901.10	Type 'A' Signs - Welded Stud Construction
901.20	Type 'B' Signs - Welded Stud Construction
901.50	Arrows and Shields
901.60	Rivet Spacing for Overlaid Signs
901.70	Sign Stringers and Support Spacing
901.80	Sign Mounting Details - Type A and Type B Signs
901.80	Sign Mounting Details - Type A and Type B Signs
902.10	Foundations for Ground Mounted Signs
903.10	Ground Mounted Sign Supports
903.20	Wood Sign Support
903.30	Barrier Sign Support Assembly

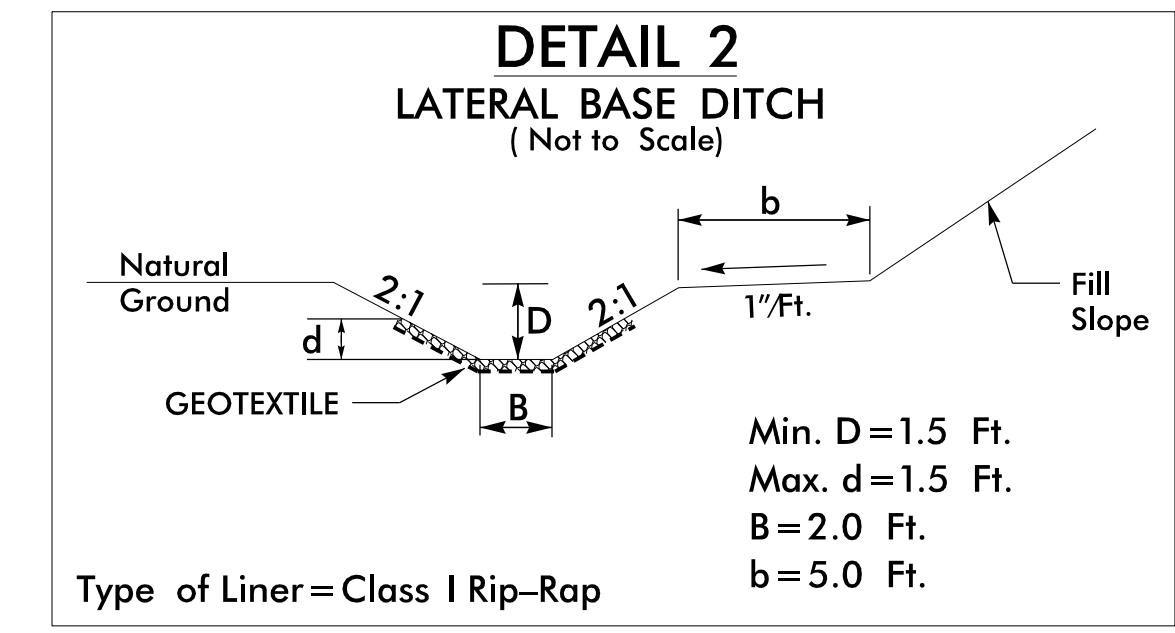
8/17/99
8/21/2024
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DRAINAGE DITCH DETAILS

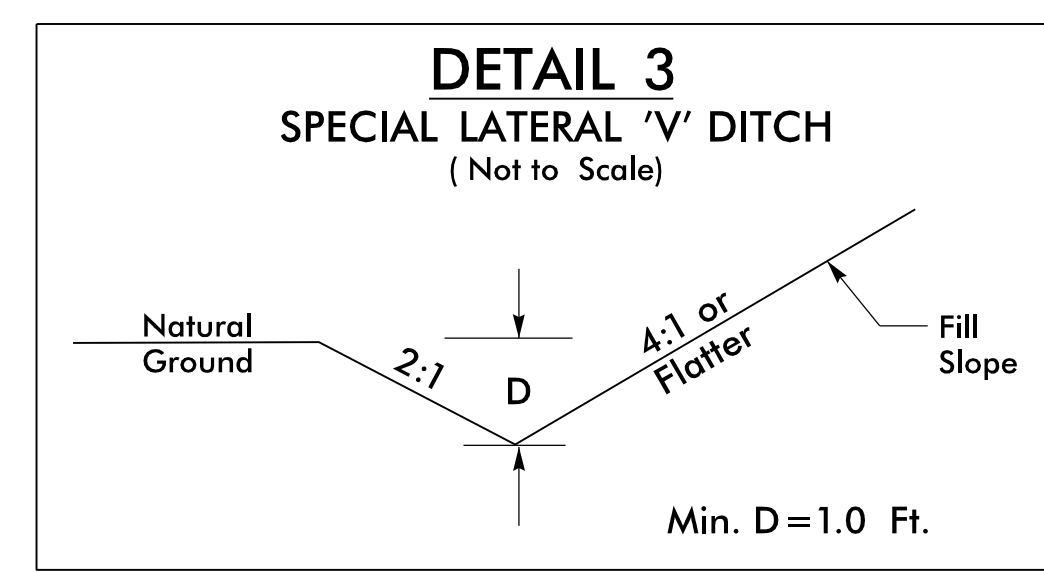
PROJECT REFERENCE NO. P-5715	SHEET NO. 2D-1
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



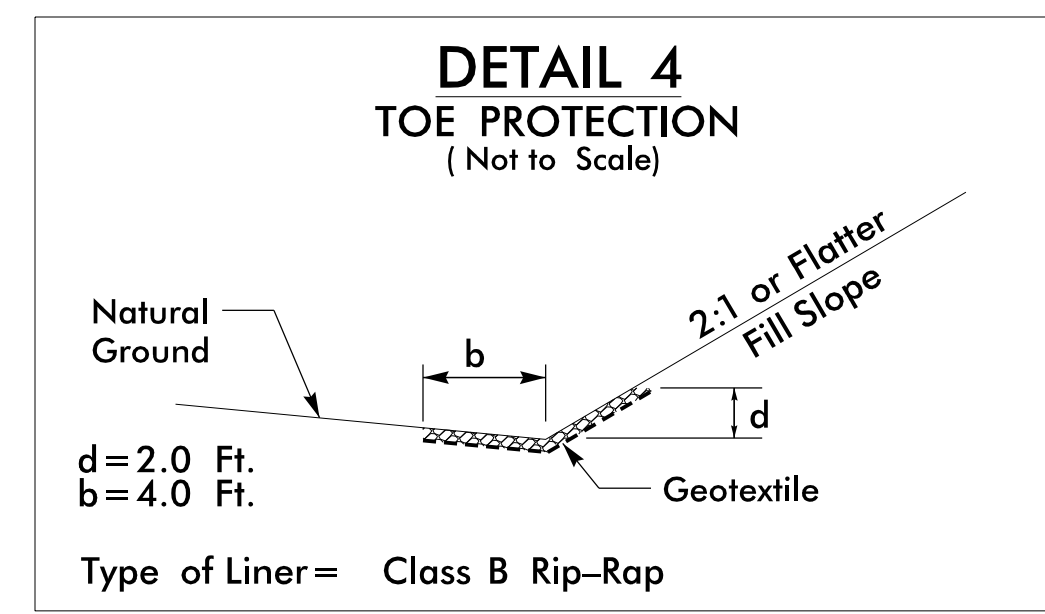
FROM STA. 18+50 TO STA. 20+25 -L- LT
FROM STA. 17+95 TO STA. 18+75 -L- RT
FROM STA. 18+50 TO STA. 19+70 -Y2- LT



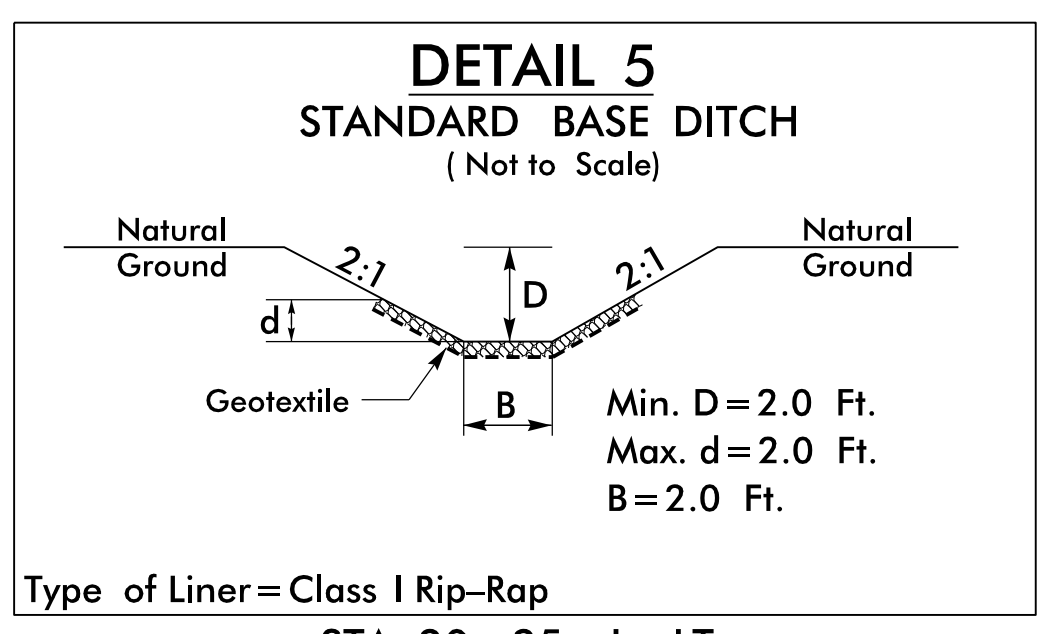
FROM STA. 18+20 TO STA. 19+65 -Y2- RT
FROM STA. 21+70 TO STA. 23+40 -L- LT



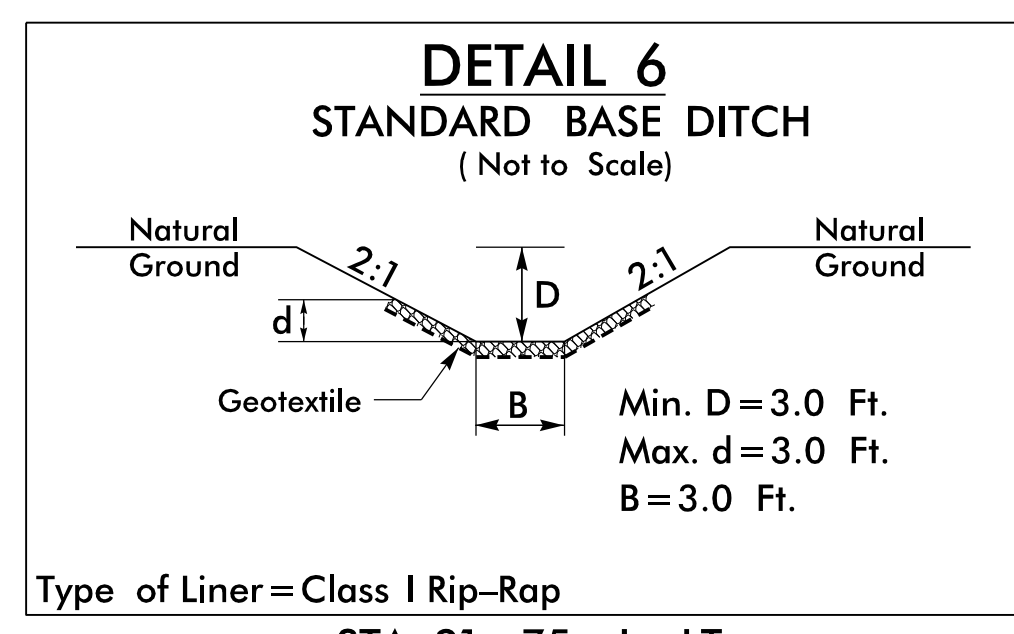
FROM STA. 14+50 TO STA. 15+20 -Y2- RT



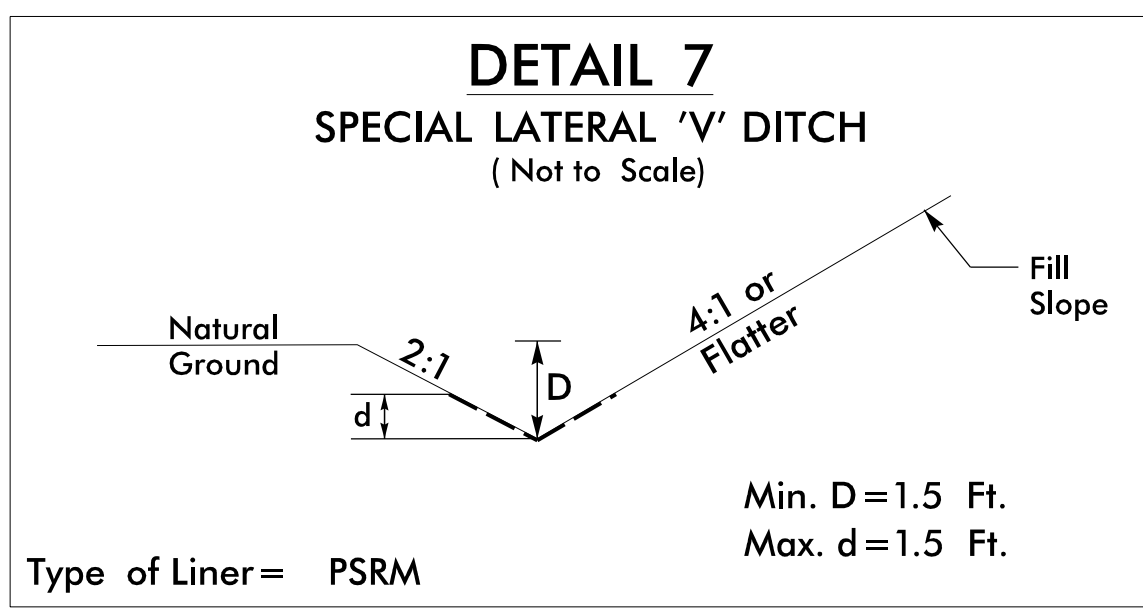
FROM STA. 22+00 TO STA. 24+75 -L- RT



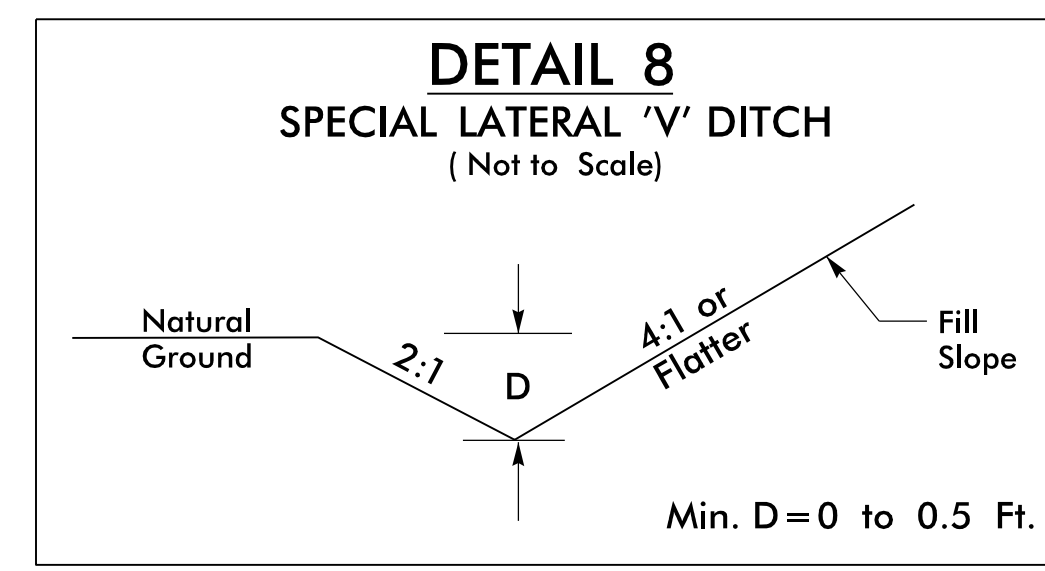
STA. 20+25 -L- LT



STA. 21+75 -L- LT



FROM STA. 13+50 TO STA. 14+48 -Y2- LT



FROM STA. 10+18 TO STA. 11+15 -DRWYTMP2- RT

**PIPE COLLAR
AT DRAINAGE STRUCTURE
DETAIL 9**

ELEVATION

SIDE ELEVATION

INSET
(NOT TO SCALE)

DRILL AND EPOXY #6 BAR AT 12" OC

3" (TYP.)

3" CLEAR (MIN.)

DRAINAGE STRUCTURE

#6 DOWELS

F

DIAMETER D

*E

*E

*E

*E

GENERAL NOTES

PIPE COLLAR USED IN LIEU OF RESILIENT CONNECTOR (SEE INSET) AS SHOWN ON PLANS OR AS DIRECTED BY THE ENGINEER.

CONSTRUCT THE PIPE COLLAR WITH CLASS "B" OR BETTER CONCRETE.

OBSERVE ALL REQUIREMENTS OF SECTION 840 OF THE STANDARD SPECIFICATIONS.

USE 12 INCH DIAMETER VALUES FOR PIPE DIAMETERS LESS THAN 12 INCH.

* USE THE SPECIFIED "E" DIMENSION UNLESS "E" IS WIDER THAN THE WIDTH OF THE BOX, THE COLLAR SHOULD NOT EXCEED THE WIDTH OF THE BOX.

D	E *	F
12"	12"	12"
15"	12"	12"
18"	12"	12"
24"	12"	12"
30"	12"	12"
36"	12"	12"
42"	12"	12"
48"	12"	12"
54"	18"	18"
60"	18"	18"
66"	18"	18"
72"	18"	18"

COMPUTED BY: KSH DATE: 12/22/2017
 CHECKED BY: SS DATE: 5/20/2024

PROJECT NO. P-5715 SHEET NO. 3B-1

**STATE OF NORTH CAROLINA
 DIVISION OF HIGHWAYS**

Summary of Earthwork

Volumes in Cubic Yards

STATION	STATION	TOTAL UNCLASS.	UNDERCUT	EMBANK. +%	BORROW	WASTE
-L- LT11+10.00	13+00.00	216		7		209
-L- LT13+00.00	20+48.37	46		35,057	35,011	
-Y1-10+43.58	13+50.00	33		3,194	3,161	
SUBTOTAL		294		38,258	38,172	209
-L- LT21+71.12	28+00.00	6		23,734	23,727	
-L- LT28+00.00	31+55.00	281		23		258
-DRWY1-10+32.74	13+15.09	452		5,585	5,133	
-DRWY2-10+32.50	11+43.15	29		175	146	
-DRWY3-10+32.77	10+65.00	6		7	1	
-DRWYTMP2-10+18.00	11+25.43	48		1		47
SUBTOTAL		822		29,525	29,007	305
-L- RT11+10.00	13+00.00	244		5		239
-L- RT13+00.00	20+48.37	28		27,490	27,462	
-Y2-14+25.00	20+29.39	48		38,337	38,289	
-DRWY5-10+11.00	10+78.00	9		77	68	
SUBTOTAL		328		65,909	65,819	238
-L- RT21+72.12	28+00.00	6		27,209	27,203	
-L- RT28+00.00	31+55.00	113		609	497	
-DRWY4-10+00.00	11+47.00	4		1,204	1,200	
SUBTOTAL		122		29,021	28,899	
TOTAL		1,566		162,713	161,897	751
MATERIAL FOR SHOULDER CONSTRUCTION				19	19	
LOSS DUE TO CLEARING & GRUBBING		-350			350	
WASTE IN LIEU OF BORROW					-751	-751
PROJECT TOTAL		1,216		162,731	161,514	
EST. 5% TO REPLACE TOP SOIL ON BORROW PIT					8,076	
GRAND TOTAL		1,216		162,731	169,590	
SAY		1,400			175,000	

REMOVAL OF EXISTING ASPHALT PAVEMENT

LINE	STATION	STATION	LOCATION	SQUARE YARDS
-L-	12+80	13+47	RT	42
-L-	13+40	13+83	CL	275
-L-	20+24	20+85	CL	358
-L-	21+10	21+96	CL	527
-Y1-	11+93	13+50	LT	31
-Y1-	12+26	13+50	RT	16
-L-	27+21	27+56	LT	20
TOTAL				1269
SAY				1,280

Note: See Sheet 2B-2 for removal of pavement by others at railroad crossing.

*Note: Quantities are approximate only. The Resident Engineer will use methods including but not limited to recross-sectioning, truck measurements, and aerial surveys to compute final quantities which the contractor will be paid

EST. DDE = 1,474 CY
 EST. UNDERCUT = 1,450 CY
 EST. SHALLOW UNDERCUT = 100 CY
 EST. SELECT GRANULAR MATERIAL = 950 CY

Note: Earthwork quantities are calculated by Stantec. These earthwork quantities are based in part on subsurface data provided by the Falcon Engineering Unit.

GUARDRAIL SUMMARY

G = GATING IMPACT ATTENUATOR TYPE 350
 NG = NON-GATING IMPACT ATTENUATOR TYPE 350

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

SURVEY LINE	BEG. STA.	END STA.	LOCATION	LENGTH			WARRANT POINT		"N" DIST. FROM E.O.L.	TOTAL SHOUL WIDTH	FLARE LENGTH		W		ANCHORS						IMPACT ATTENUATOR TYPE 350	SINGLE FACED CONCRETE BARRIER	REMOVE EXISTING GUARDRAIL	REMOVE & STOCKPILE EXISTING GUARDRAIL	REMARKS				
				STRAIGHT	SHOP CURVED	DOUBLE FACED	APPROACH END	TRAILING END			APPROACH END	TRAILING END	APPROACH END	TRAILING END	XI	GREU TL-3	GREU TL-2	TYPE III	CAT-1	B-77						AT-1	G	NG	
	-Y1- 12+98.46	-L- 14+63.53	LT/LT	281.250	25.00'		-Y1- 11+50.00	N/A	14'	14'	25'	0'	1'	0'						1									
	-L- 14+38.89	-Y2- 15+10.68	RT/LT	787.500	150.00'		-L- 15+20.00	-Y2- 16+00.00	14'	18'	25'	25'	1'	1'						2							8' POSTS ADJACENT TO WALL		
-L-	16+51.00	17+32.00	RT	87.500			16+51.00	17+32.00	22.5'		N/A	N/A	N/A	N/A								2							
	-L- 20+43.35	-Y1- 12+53.71	LT/RT	581.250	62.50'		BRIDGE	-Y1- 12+50.00	14'	14'	N/A	N/A	0'	N/A						1	1						8' POSTS ADJACENT TO WALL		
	-Y2- 16+21.72	-L- 20+53.39	RT	431.250	75.00'		-Y2- 17+50.00	BRIDGE	8'		25'	N/A	0'	N/A						1	1						8' POSTS ADJACENT TO WALL		
	-L- 21+67.10	-DRWY1- 12+02.48	LT	206.250	137.50'		BRIDGE	-DRWY1- 11+25.00	14/4'		N/A	25'	0'	1'						1	1								
-L-	21+77.14	24+91.10	RT	312.500			BRIDGE	24+91.10	14'	14'	N/A	N/A	N/A	N/A								1	1						
	-L- 26+74.86	-DRWY1- 11+94.21	LT/RT	225.000	162.50'		-L- 26+50.00	-DRWY1- 11+25.00	14/4'		25'	25'	1'	1'						2									
SUBTOTAL				2912.500	612.50'																								
LESS DEDUCTIONS FOR ANCHORS																													
				GREU TL-2 8@25' EA=	200.00																								
				CAT-1 3@6.25' EA=	18.75																								
				AT-1 1@6.25' EA=	6.25																								
				TYPE-III 4@18.75' EA=	75.00																								
PROJECT TOTALS:				2612.50																	8	4	3		1				
SAY:				2625.00	625.00'		Additional Posts	10 EA																					
							8' Guardrail Posts	8 EA																					
																													SEE RETAINING WALLS 1 AND 2

COMPUTED BY: KSH DATE: 12/22/2017
 CHECKED BY: CSM DATE: 1/13/2020

PROJECT NO.	SHEET NO.
P-5715	3B-2

**STATE OF NORTH CAROLINA
 DIVISION OF HIGHWAYS**

BREAKING OF EXISTING ASPHALT PAVEMENT

LINE	STATION	STATION	LOCATION	SQUARE YARDS
-L-	13+83	20+24	CL	4,376
-L-	21+96	27+15	CL	3,003
-Y1-	10+38	11+93	CL	488
-Y2-	15+17	20+32	CL	1,545
				9,412
				9,500

BLACK VINYL COATED CHAIN LINK FENCE, 48" FABRIC

STATION TO STATION	LT. OR RT.	A FABRIC L.F.	B END BRACE	C CORNER BRACE	D LINE BRACE	E LINE POSTS	F TERMINAL POSTS
-Y1- 10+90.53 TO -L- 20+50.39	LT.	471.00	2	2	1	39.42	5
-L- 15+20.00 TO -Y2- 16+00.00	RT.	810.00	2	2	2	67.83	6
-L- 19+95.45 -L- 20+60	RT.	79.00	2	1		6.42	3
TOTAL		1360.00				113.67	14
SAY		1360.00				114	14

Note: For fence quantities on bridge see structure estimate.

COMPUTED BY: MCE DATE: 07/02/2024
CHECKED BY: JGD DATE: 07/02/2024

PROJECT NO. SHEET NO.
P-5715 3D-1

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

Note: Invert Elevations indicated are for Bid Purposes only and shall not be used for project construction stakeout.
See "Standard Specifications For Roads and Structures, Section 300-5".

LIST OF PIPES, ENDWALLS, ETC. (FOR PIPES 48 INCHES & UNDER)

Table with columns for LINE & STATION, OFFSET, STRUCTURE NUMBER, INVERT ELEVATION, MINIMUM REQUIRED SLOPE, various pipe types (Drainage Pipe, Polypropylene Pipe, R.C. PIPE CLASS III/IV), QUANTITIES FOR SEALED DRAINAGE STRUCTURES, QUANTITIES FOR DRAINAGE STRUCTURES, FRAME, GRATES, AND HOOD, CONCRETE TRANSITIONAL SECTION, and REMARKS. Includes a SHEET TOTALS row at the bottom.

COMPUTED BY: MCE DATE: 07/02/2024
CHECKED BY: JGD DATE: 07/02/2024

PROJECT NO. SHEET NO.
P-5715 3D-3

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

Note: Invert Elevations indicated are for Bid Purposes only and shall not be used for project construction stakeout.
See "Standard Specifications For Roads and Structures, Section 300-5".

LIST OF PIPES, ENDWALLS, ETC. (FOR PIPES 48 INCHES & UNDER)

Table with columns for Line & Station, Offset, Structure Number, Drainage Pipe, Polypropylene Pipe, R.C. Pipe Class III, R.C. Pipe Class IV, Quantities for Sealed Drainage Structures, Resilient Connector, Endwalls, Quantities for Drainage Structures, Frame, Grates, and Hood, Concrete Transitional Section, Abbreviations, and Remarks.

Summary rows: SHEET TOTALS and PROJECT TOTALS with various numerical values for counts and lengths.

COMPUTED BY: Hamm, J. R. DATE: 5/1/2024
 CHECKED BY: Hunsberger, W. S. DATE: 5/1/2024

(2-3-23)

PROJECT NO.
P-5715

SHEET NO.
3G-1

**STATE OF NORTH CAROLINA
 DIVISION OF HIGHWAYS**

SUMMARY OF AGGREGATE SUBGRADE/STABILIZATION

LINE	Station	Station	Aggregate Type* ASU(1/2)/AST	Aggregate Thickness INCHES [8" for ASU(2)]	Shallow Undercut CY	Class IV Subgrade Stabilization TONS	Geotextile for Subgrade Stabilization SY	Stabilizer Aggregate TONS	Class IV Aggregate Stabilization TONS
-L-	15+00	16+60	ASU(2)	8		410	920		
-L-	19+00	20+50	ASU(2)	8		470	1040		
-L-	21+80	26+00	ASU(2)	8		1330	2960		
-Y1-	Begin	11+00	ASU(2)	8		170	360		
-Y2-	16+75	20+30	ASU(2)	8		570	1250		
-DRWY1-	Begin	11+50	ASU(2)	8		120	260		
-DRWY4-	11+00	End	ASU(2)	8		90	200		
CONTINGENCY			ASU(1)	12	100	200	300		
			TOTAL CY/TONS/SY:		100	3360	7290	0	0

****Total tons of "Class IV Subgrade Stabilization" and total square yards of "Geotextile for Subgrade Stabilization" are only the estimated quantities for ASU(1/2)/AST and may only represent a portion of the subgrade stabilization and geotextile quantities shown in the Item Sheets of the Proposal.**

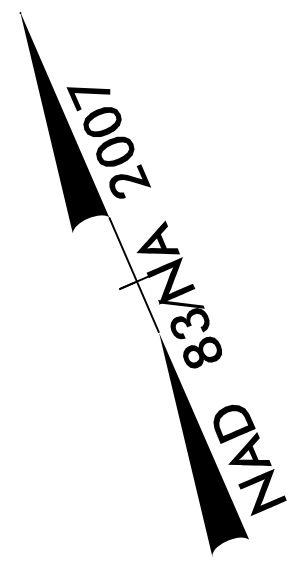
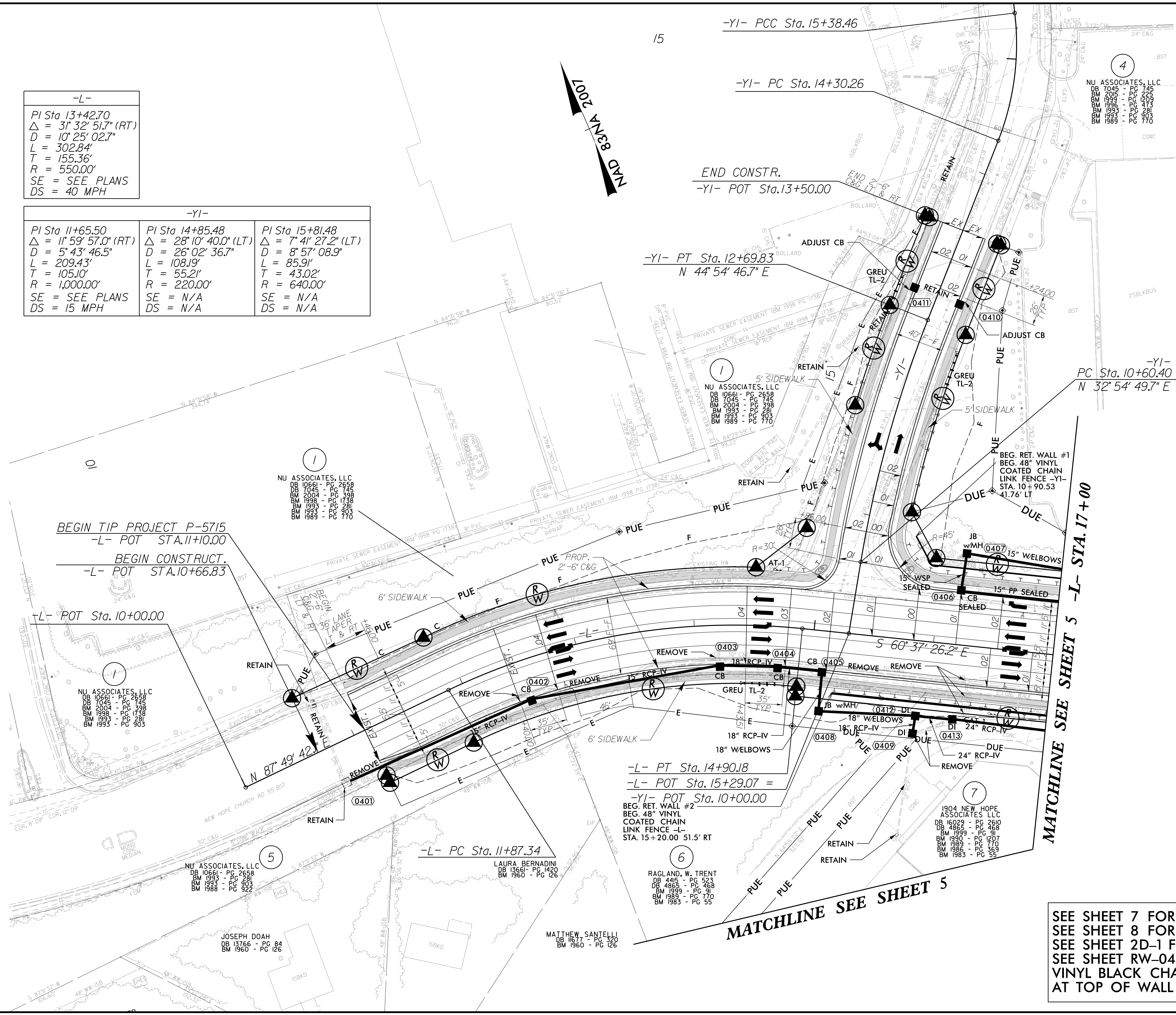
SUMMARY OF BRIDGE WAITING PERIODS

Bridge Description	End Bent/ Bent No.	MONTHS
Bridge No. 1493 on -L- (New Hope Church Rd) over CSX Rail Line	EB1 & EB2	1

8/17/2024
6/29/2024
C:\Roadway\Proj\5715_Rdy_psh_04.dgn

-L-	
PI Sta 13+42.70	
$\Delta = 31^{\circ} 32' 51.7''$ (RT)	
D = 10' 25' 02.7"	
L = 302.84'	
T = 155.36'	
R = 550.00'	
SE = SEE PLANS	
DS = 40 MPH	

-YI-		
PI Sta 11+65.50	PI Sta 14+85.48	PI Sta 15+81.48
$\Delta = 11^{\circ} 59' 57.0''$ (RT)	$\Delta = 28^{\circ} 10' 40.0''$ (LT)	$\Delta = 7^{\circ} 41' 27.2''$ (LT)
D = 5' 43' 46.5"	D = 26' 02' 36.7"	D = 8' 57' 08.9"
L = 209.43'	L = 108.19'	L = 85.91'
T = 105.10'	T = 55.21'	T = 43.02'
R = 1,000.00'	R = 220.00'	R = 640.00'
SE = SEE PLANS	SE = N/A	SE = N/A
DS = 15 MPH	DS = N/A	DS = N/A



PROJECT REFERENCE NO. P-5715	SHEET NO. 4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER SEAL 022037	HYDRAULICS ENGINEER SEAL 26971
7/29/2024	7/29/2024

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BEGIN TIP PROJECT P-5715
-L- POT STA. 11+10.00
BEGIN CONSTRUCT.
-L- POT STA. 10+66.83

-L- POT Sta. 10+00.00

-L- PT Sta. 14+90.18
-L- POT Sta. 15+29.07 =
-YI- POT Sta. 10+00.00
BEG. RET. WALL #2
BEG. 48" VINYL COATED CHAIN LINK FENCE -L- STA. 15+20.00 51.5' RT

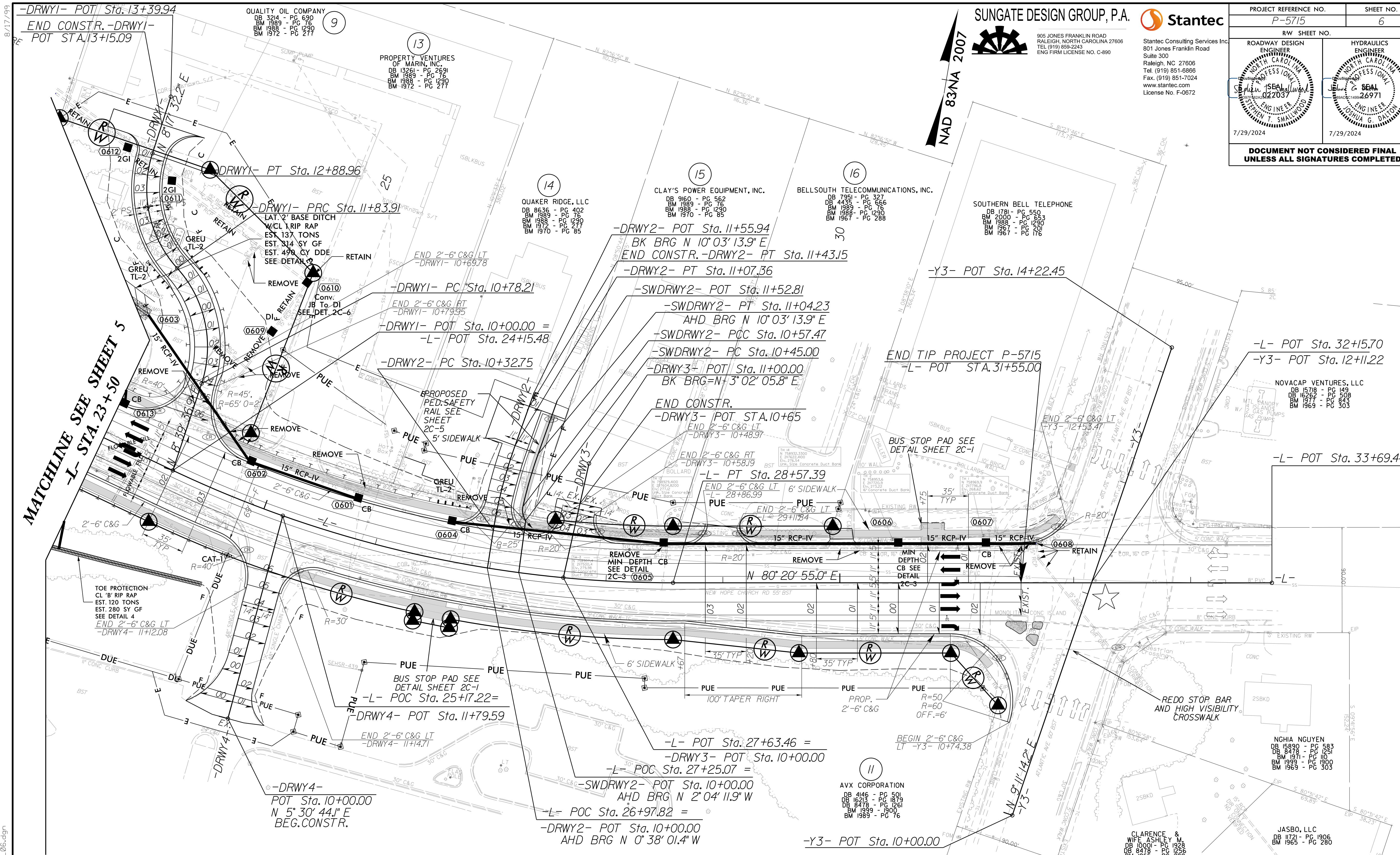
-L- PC Sta. 11+87.34

SEE SHEET 7 FOR -L- PROFILE
SEE SHEET 8 FOR -YI- PROFILE
SEE SHEET 2D-1 FOR DRAINAGE DITCH DETAILS
SEE SHEET RW-04 FOR ROW/EASEMENT OFFSETS
VINYL BLACK CHAIN LINK FENCE REQUIRED AT TOP OF WALL

MATCHLINE SEE SHEET 5 -L- STA. 17+00

MATCHLINE SEE SHEET 5

8/17/2024
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PROJECT REFERENCE NO. P-5715	SHEET NO. 6
ROADWAY DESIGN ENGINEER SEAL 022037	HYDRAULICS ENGINEER SEAL 26971
7/29/2024	7/29/2024
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MATCHLINE SEE SHEET 5
-L- STA. 23+50

-L-	
PI Sta 26+40.10	
Δ = 25° 19' 09.3" (LT)	
D = 5' 43' 46.5"	
L = 441.90'	
T = 224.62'	
R = 1,000.00'	
SE = SEE PLANS	
DS = 35 MPH	

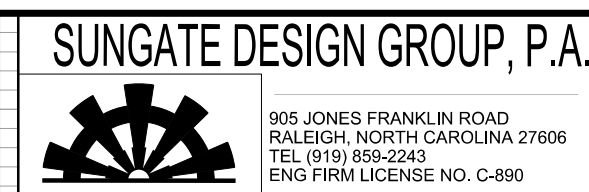
-DRWY1-	
PI Sta 12+41.86	PI Sta 11+36.60
Δ = 60° 11' 24.8" (RT)	Δ = 60° 33' 29.5" (LT)
D = 57' 17' 44.8"	D = 57' 17' 44.8"
L = 105.05'	L = 105.69'
T = 57.96'	T = 57.96'
R = 100.00'	R = 100.00'
SE = SEE PLANS	SE = SEE PLANS
DS = <15 MPH	DS = <15 MPH

-DRWY2-	
PI Sta 10+70.16	PI Sta 10+70.16
Δ = 10° 41' 15.4" (RT)	Δ = 10° 41' 15.4" (RT)
D = 14' 19' 26.2"	D = 14' 19' 26.2"
L = 74.61'	L = 74.61'
T = 37.42'	T = 37.42'
R = 400.00'	R = 400.00'
SE = SEE PLANS	SE = SEE PLANS
DS = <15 MPH	DS = <15 MPH

-SWDRWY2-	
PI Sta 10+80.88	PI Sta 10+51.62
Δ = 7° 04' 07.9" (RT)	Δ = 47° 37' 27.1" (RT)
D = 15' 07' 03.4"	D = 38' 58' 18.7"
L = 46.76'	L = 12.47'
T = 23.41'	T = 6.62'
R = 379.00'	R = 15.00'
SE = SEE PLANS	SE = SEE PLANS
DS = <15 MPH	DS = <15 MPH

SEE SHEET 7 FOR -L- PROFILE
SEE SHEET 9 FOR -DRWY1-, -DRWY2-, -DRWY3-,
-DRWY4- & -SWDRWY2- PROFILE
SEE SHEET 2D-1 FOR DRAINAGE DITCH DETAILS
SEE SHEET 2B-1 FOR -DRWYTMP2- DETOUR
SEE SHEET 2B-3 FOR ISLAND DETAILS
SEE SHEET RW-06 FOR ROWEASEMENT OFFSETS
AT&T CONDUIT TO REMAIN AT EXISTING LOCATION

5/28/24

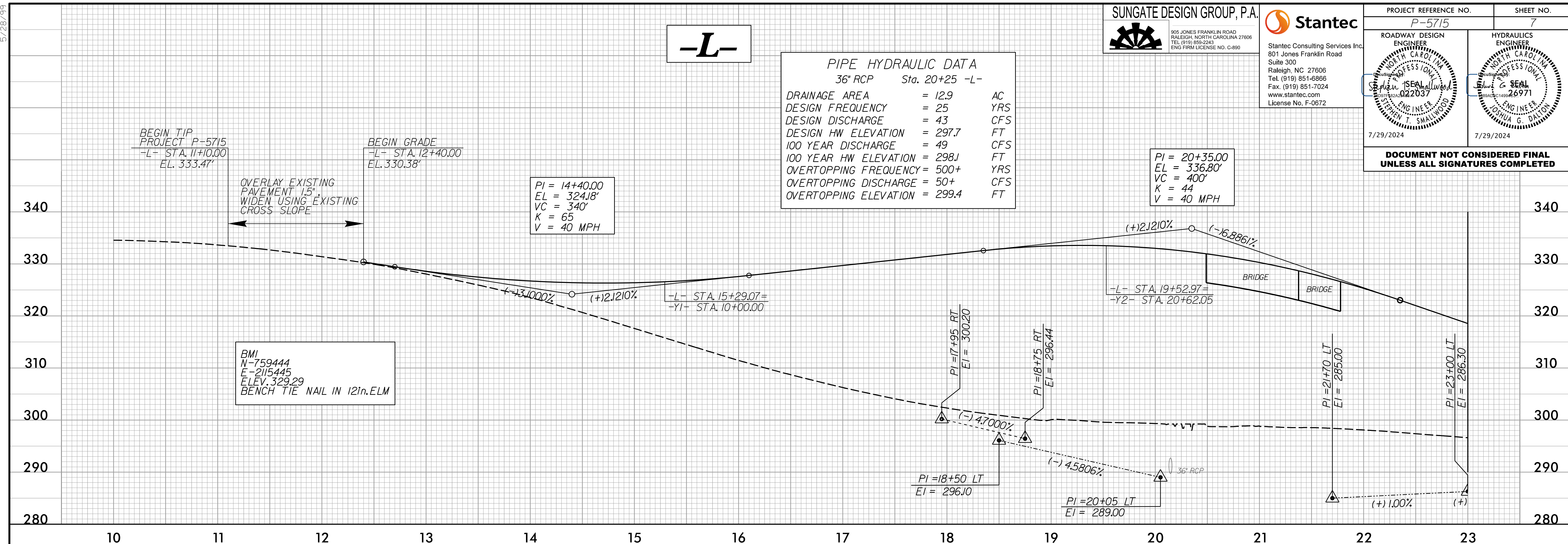


PROJECT REFERENCE NO. P-5715	SHEET NO. 7
ROADWAY DESIGN ENGINEER SEAL 022037 7/29/2024	HYDRAULICS ENGINEER SEAL 26971 7/29/2024

PIPE HYDRAULIC DATA
36" RCP Sta. 20+25 -L-

DRAINAGE AREA	= 12.9	AC
DESIGN FREQUENCY	= 25	YRS
DESIGN DISCHARGE	= 43	CFS
DESIGN HW ELEVATION	= 297.7	FT
100 YEAR DISCHARGE	= 49	CFS
100 YEAR HW ELEVATION	= 298.1	FT
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING DISCHARGE	= 50+	CFS
OVERTOPPING ELEVATION	= 299.4	FT

PI = 20+35.00
EL = 336.80'
VC = 400'
K = 44
V = 40 MPH

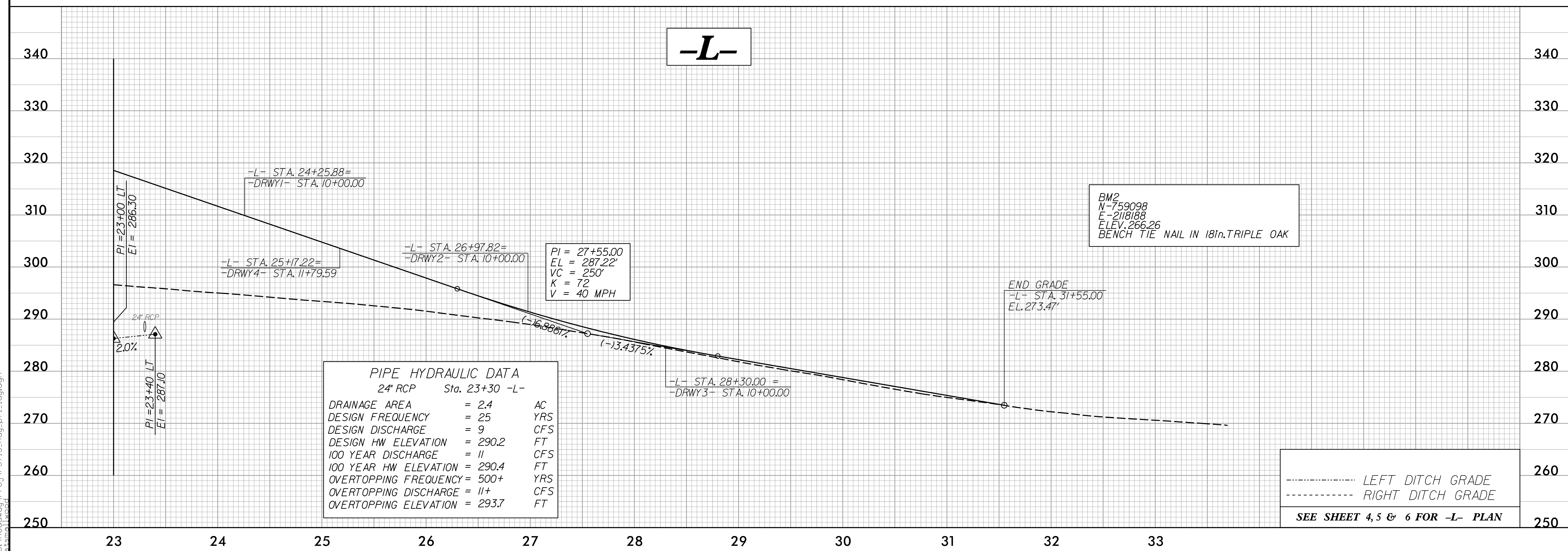


-L-

PIPE HYDRAULIC DATA
24" RCP Sta. 23+30 -L-

DRAINAGE AREA	= 2.4	AC
DESIGN FREQUENCY	= 25	YRS
DESIGN DISCHARGE	= 9	CFS
DESIGN HW ELEVATION	= 290.2	FT
100 YEAR DISCHARGE	= 11	CFS
100 YEAR HW ELEVATION	= 290.4	FT
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING DISCHARGE	= 11+	CFS
OVERTOPPING ELEVATION	= 293.7	FT

BM2
N-759098
E-2118188
ELEV. 266.26
BENCH TIE NAIL IN 18in.TRIPLE OAK

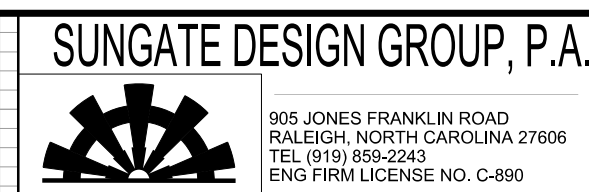


----- LEFT DITCH GRADE
----- RIGHT DITCH GRADE
SEE SHEET 4, 5 & 6 FOR -L- PLAN

6/29/2024
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5/28/24

-Y1-



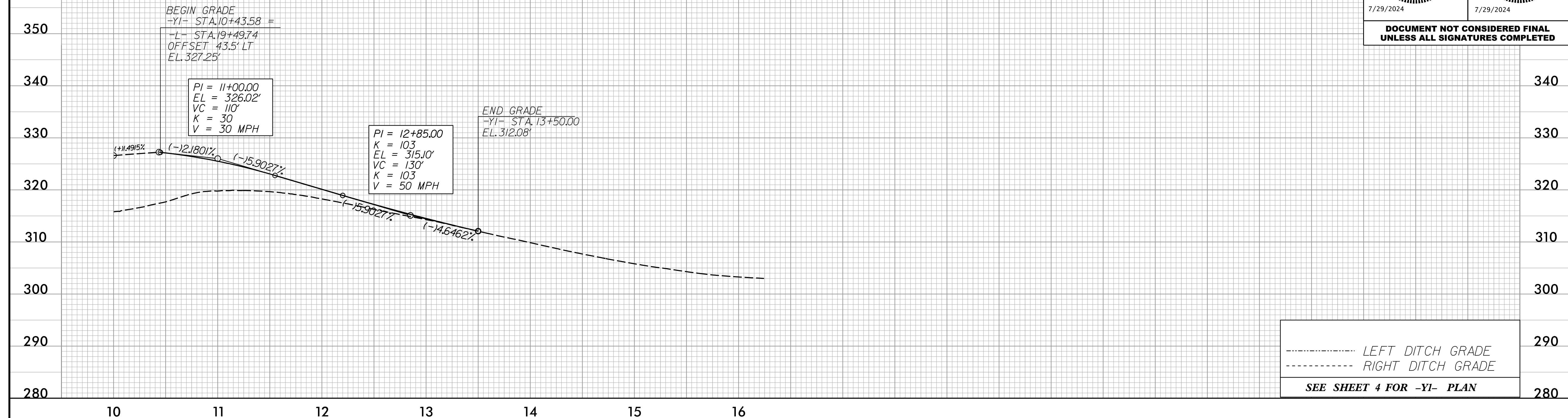
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PROJECT REFERENCE NO. P-5715	SHEET NO. 8
ROADWAY DESIGN ENGINEER SEAL STEPHEN T. SMALWOOD LICENSE NO. 022037 7/29/2024	HYDRAULICS ENGINEER SEAL JOSHUA G. DALTON LICENSE NO. 26971 7/29/2024

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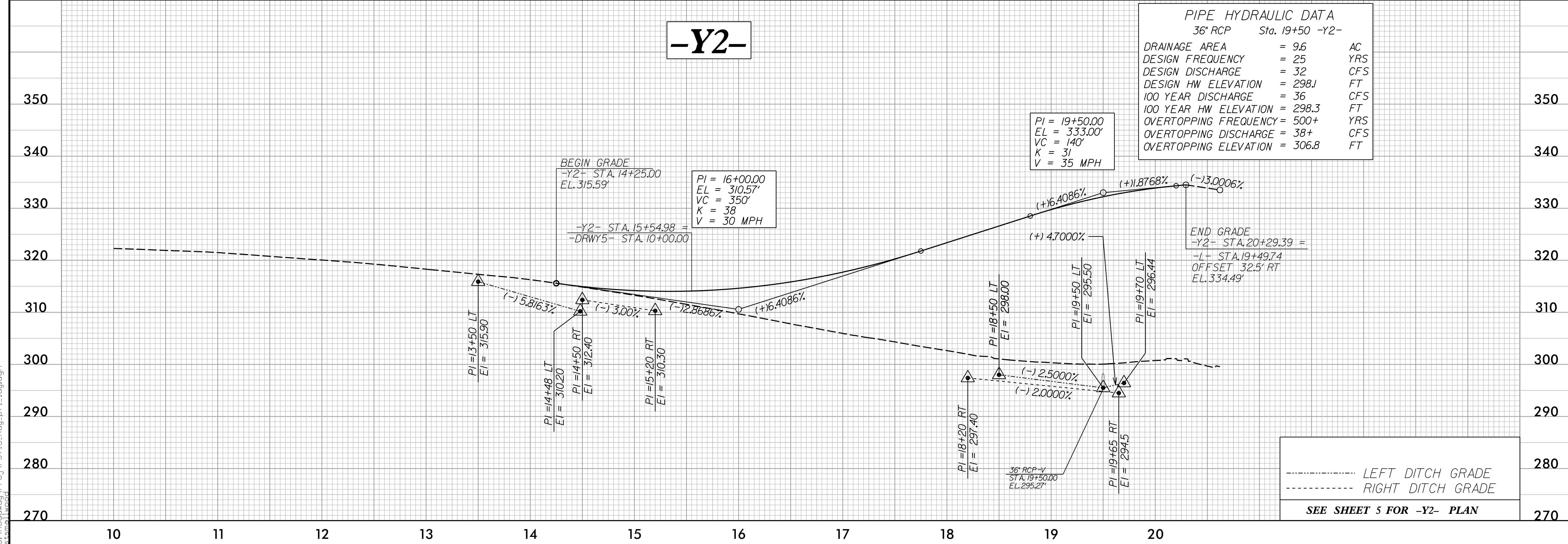


----- LEFT DITCH GRADE
 ----- RIGHT DITCH GRADE
SEE SHEET 4 FOR -Y1- PLAN

-Y2-

PIPE HYDRAULIC DATA
 36" RCP Sta. 19+50 -Y2-

DRAINAGE AREA	= 9.6	AC
DESIGN FREQUENCY	= 25	YRS
DESIGN DISCHARGE	= 32	CFS
DESIGN HW ELEVATION	= 298.1	FT
100 YEAR DISCHARGE	= 36	CFS
100 YEAR HW ELEVATION	= 298.3	FT
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING DISCHARGE	= 38+	CFS
OVERTOPPING ELEVATION	= 306.8	FT

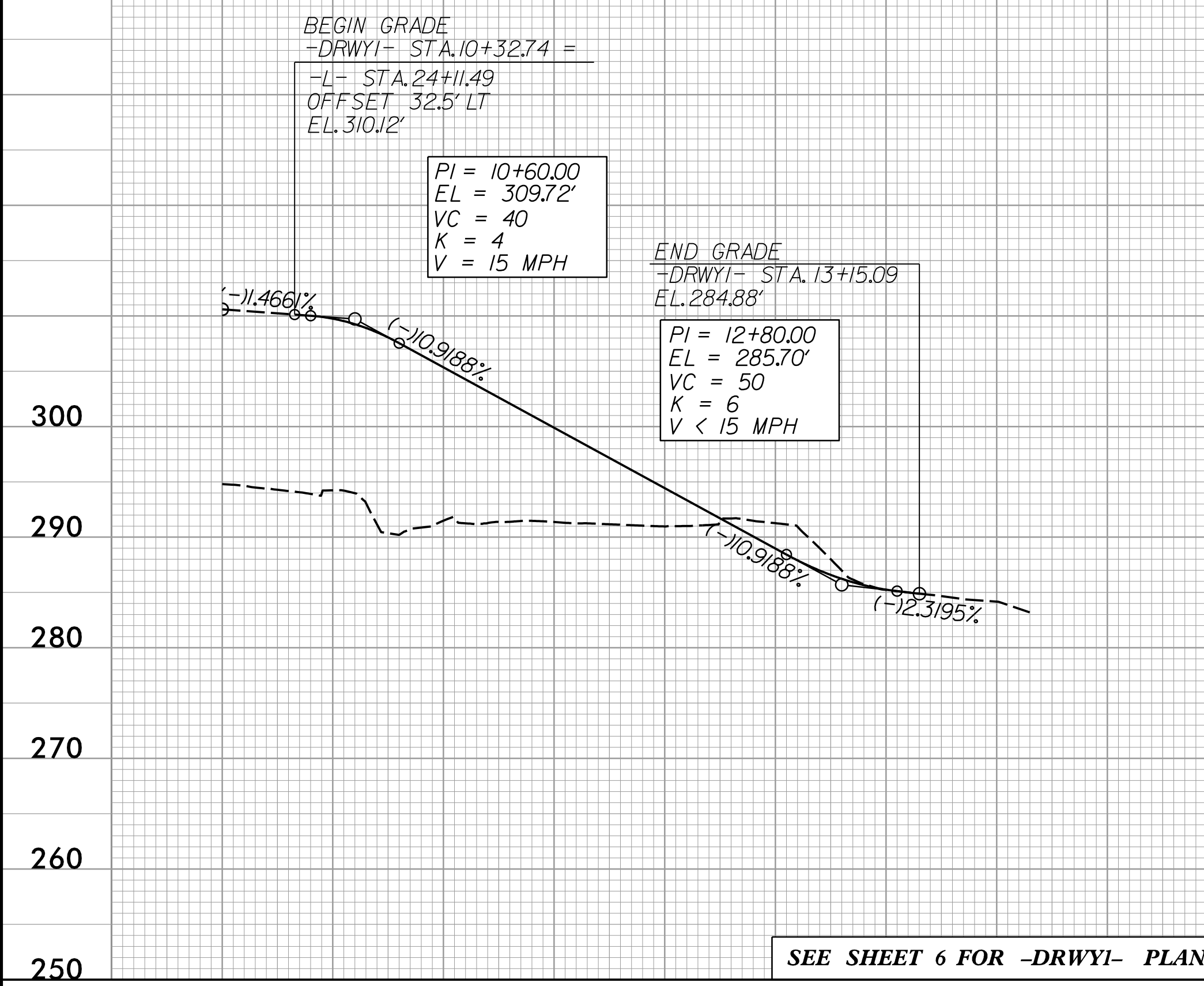


----- LEFT DITCH GRADE
 ----- RIGHT DITCH GRADE
SEE SHEET 5 FOR -Y2- PLAN

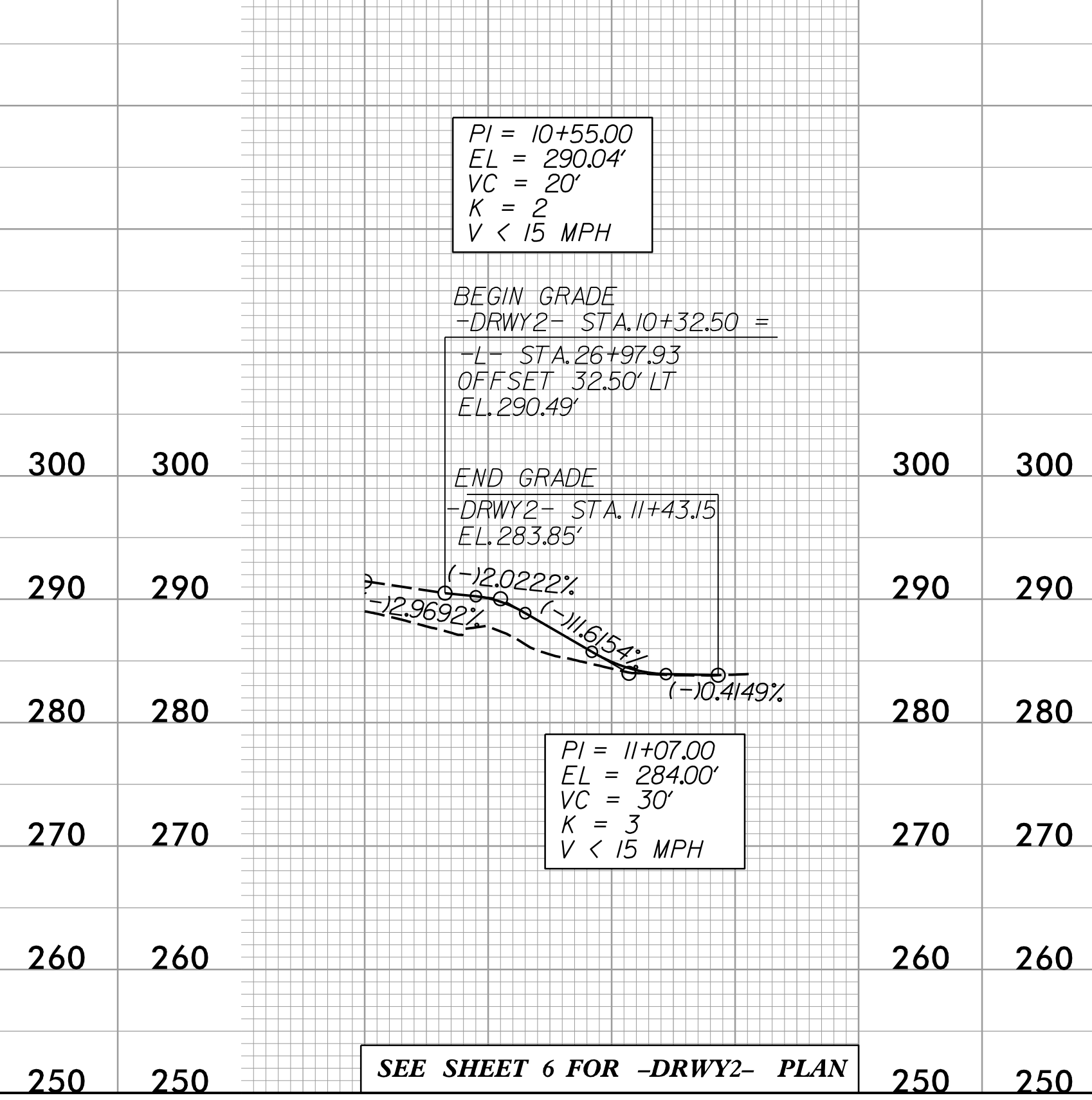
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5/28/24

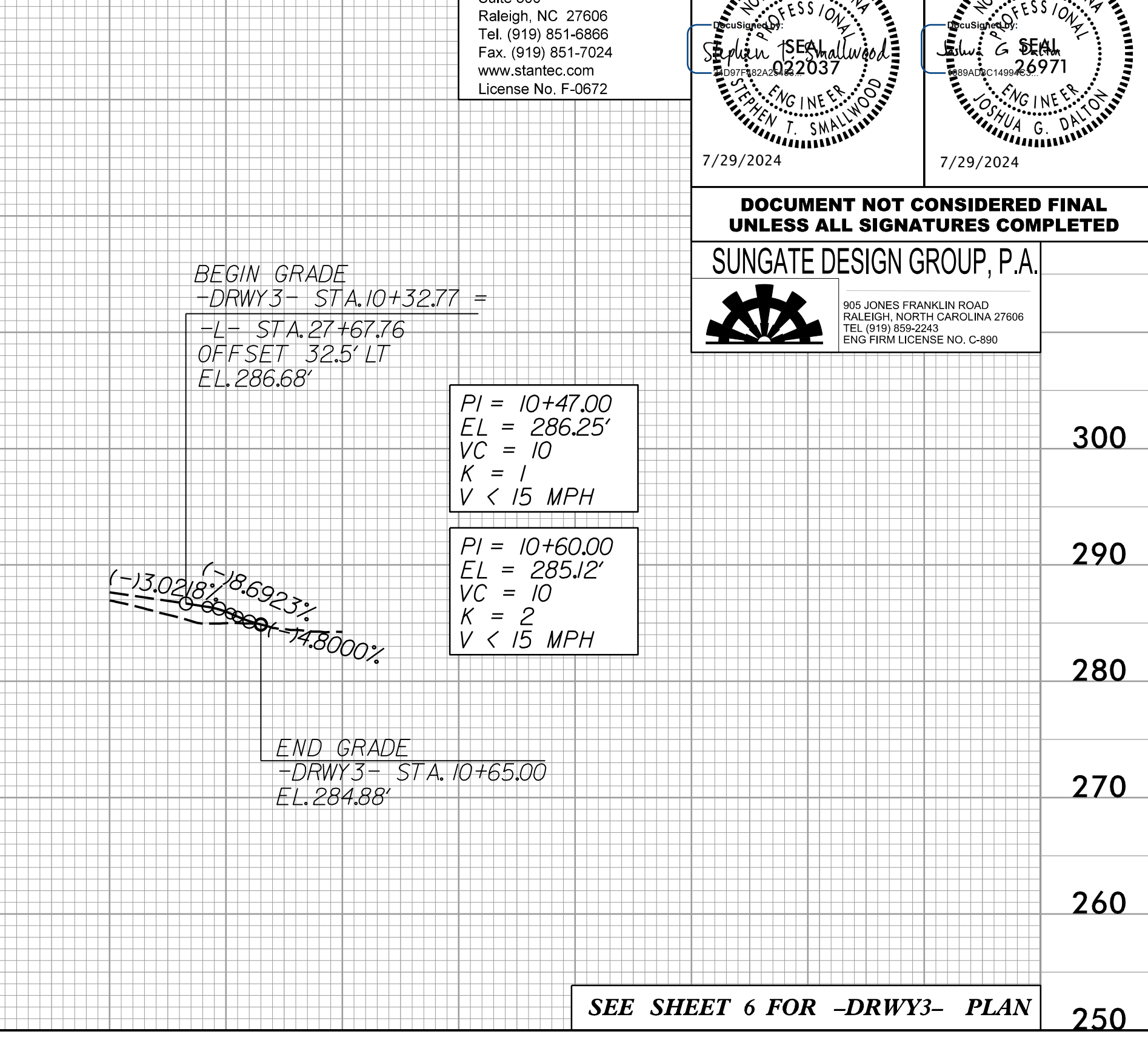
-DRWY1-



-DRWY2-



-DRWY3-



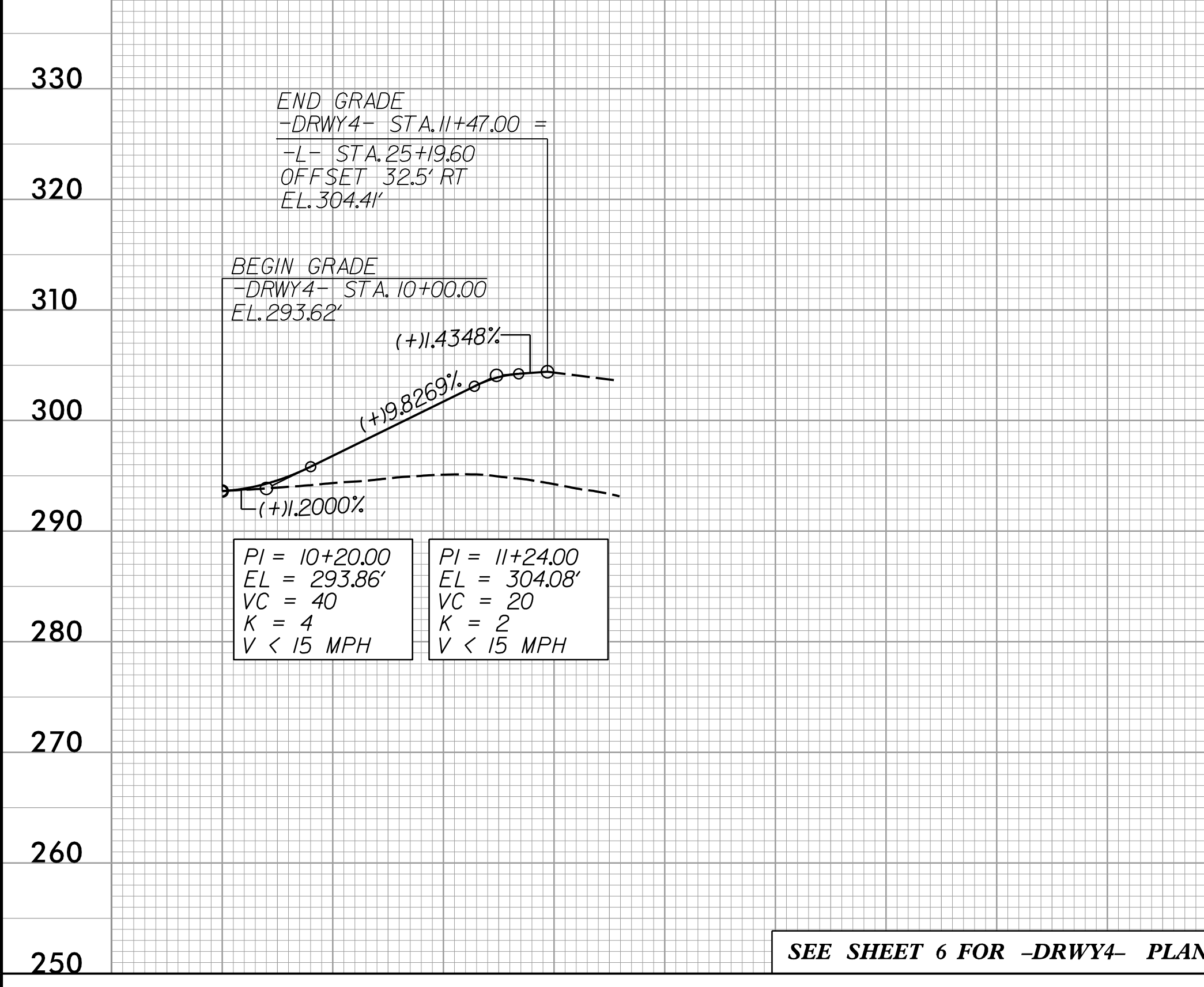
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PROJECT REFERENCE NO. P-5715	SHEET NO. 9
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7/29/2024	7/29/2024

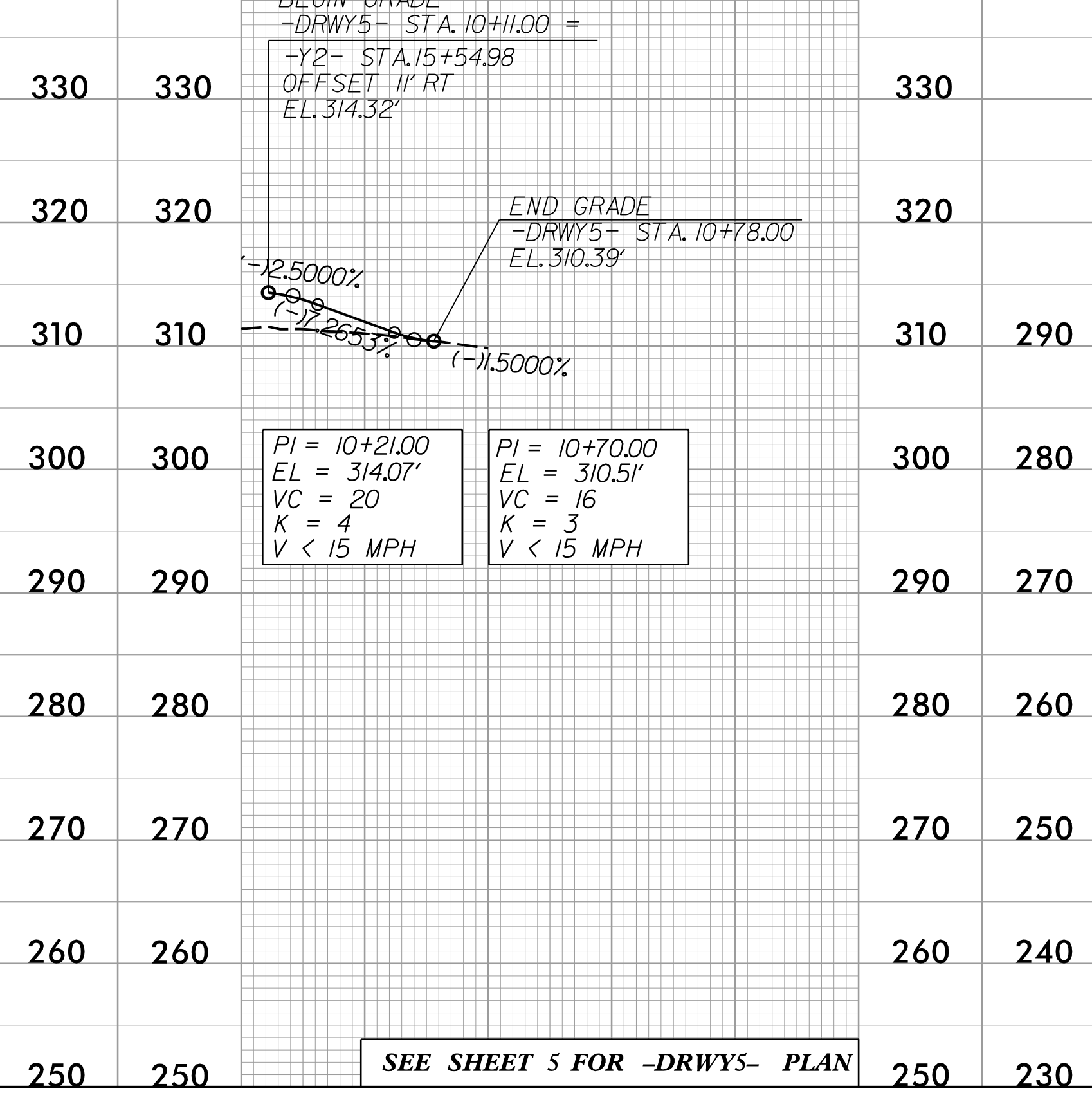
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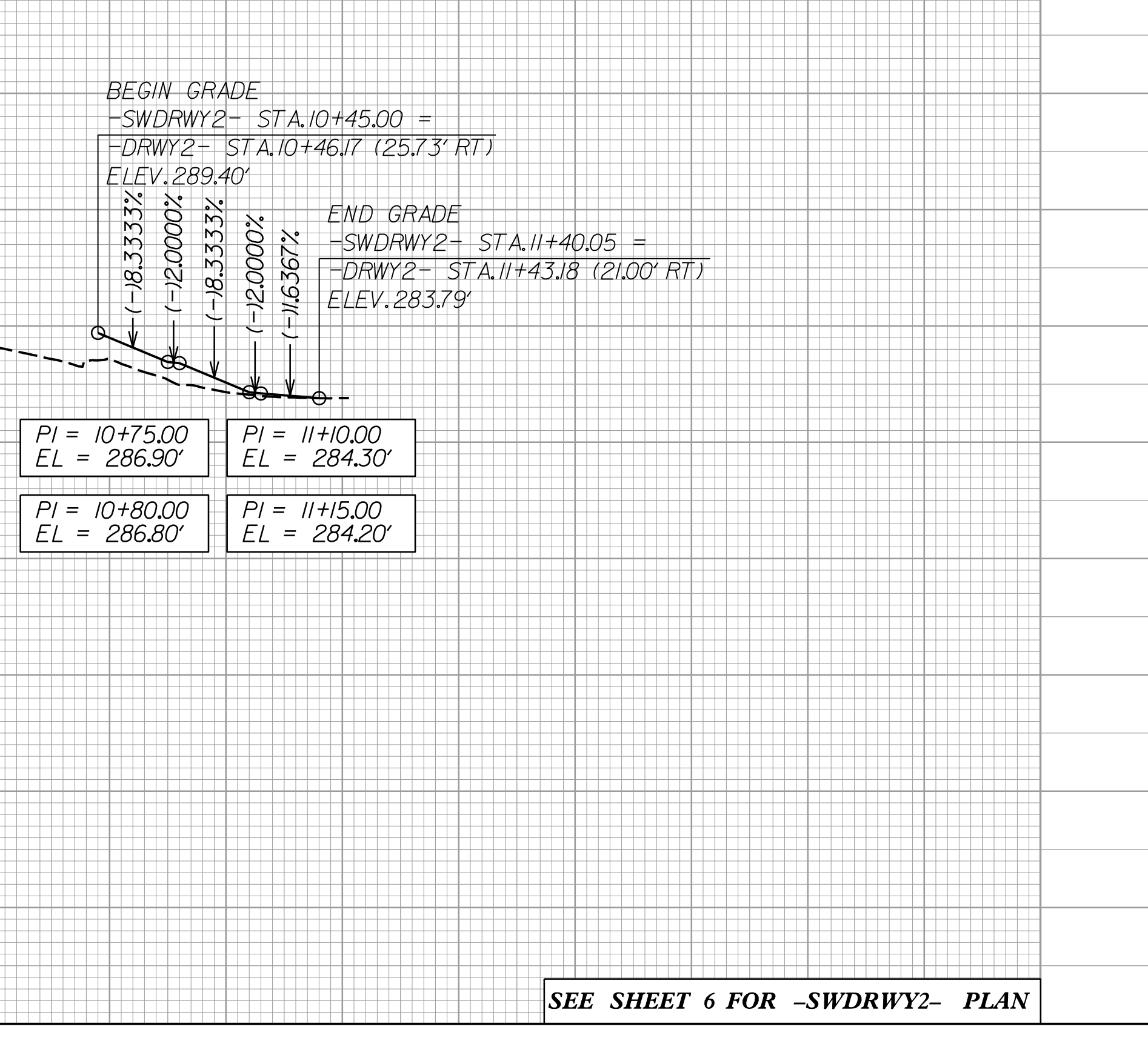
-DRWY4-



-DRWY5-



-SWDRWY2-



6/29/2024
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