

09_08/2019

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	BR-0042	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
49076.1.1		PE	
49076.2.1		RW & UTIL	
49076.3.1		CONST.	

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

ROCKINGHAM COUNTY

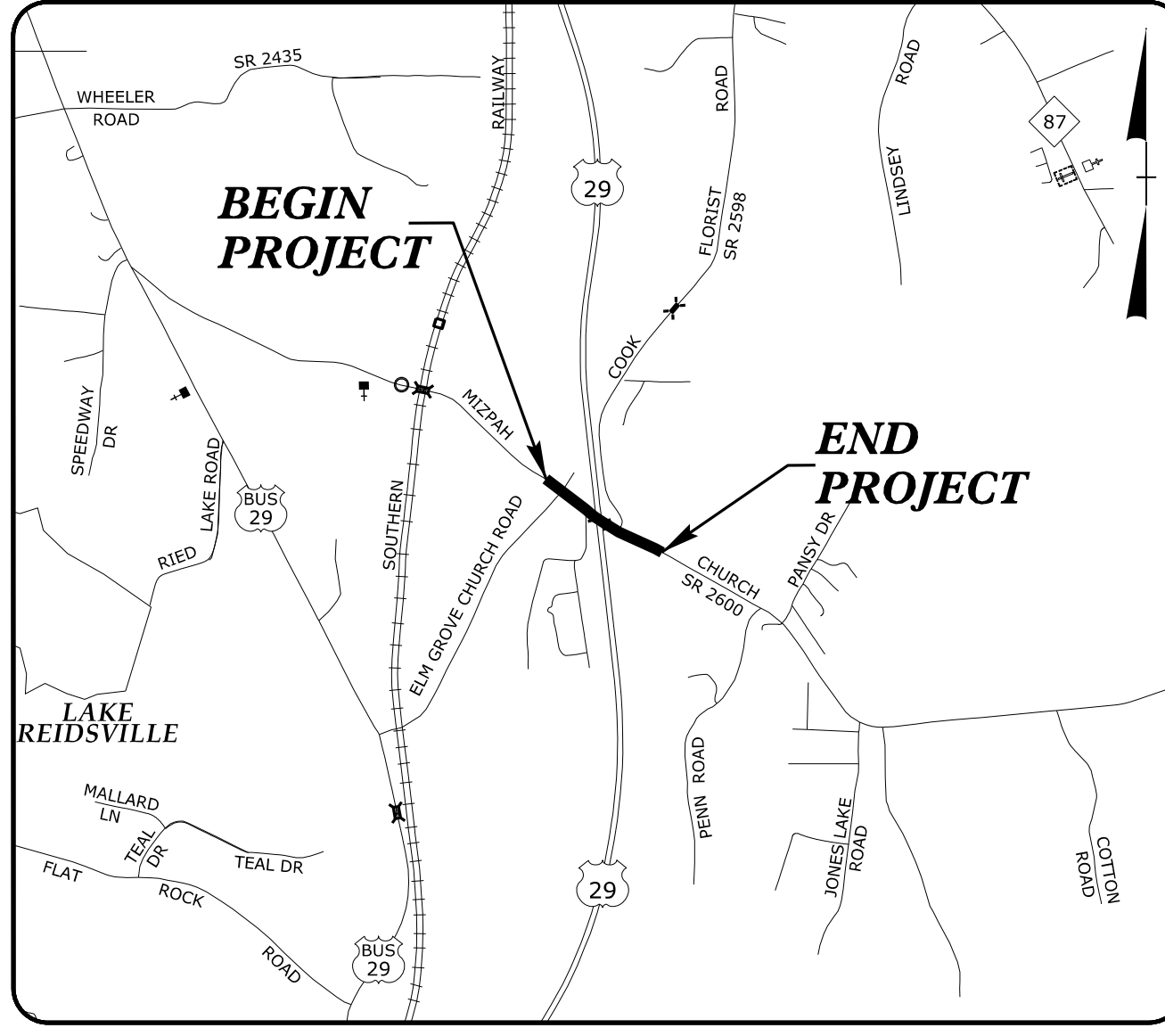
**LOCATION: BRIDGE NO. 780116 ON SR 2600 (MIZPAH CHURCH RD)
OVER US-29**

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

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

TIP PROJECT: BR-0042

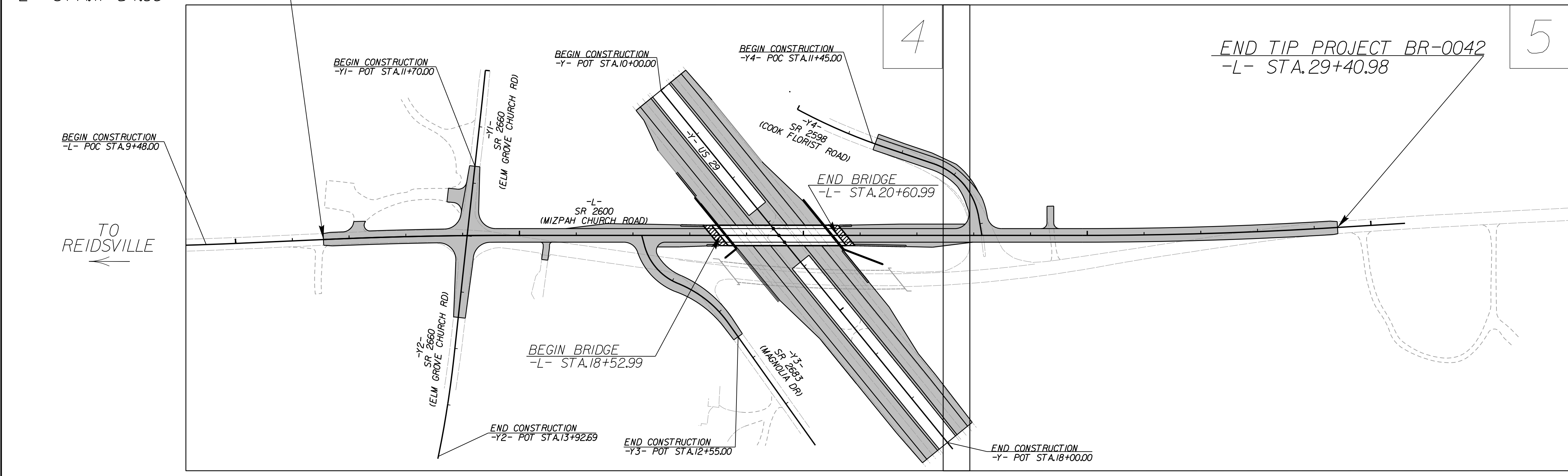
CONTRACT: C204392



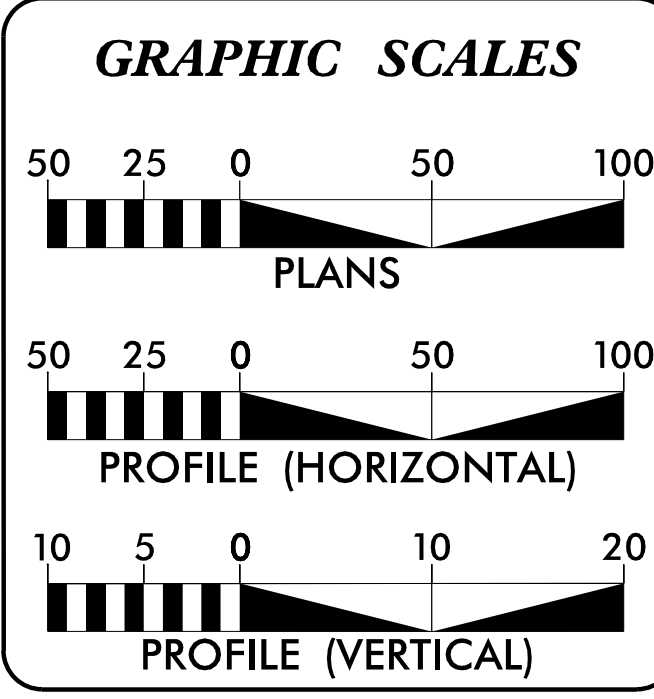
VICINITY MAP

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

BEGIN TIP PROJECT BR-0042
-L- STA.11+54.68



THERE IS NO CONTROL OF ACCESS ON THIS PROJECT.



DESIGN DATA

ADT 2020 =	1,530
ADT 2040 =	1,700
K =	8 %
D =	60 %
T =	4 %
V =	50 MPH
*(TTST = 1% + DUAL 3%)	
FUNC CLASS =	MINOR COLLECTOR
SUB-REGIONAL TIER	

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT BR-0042 =	0.299 MI
LENGTH STRUCTURE TIP PROJECT BR-0042 =	0.039 MI
TOTAL LENGTH TIP PROJECT BR-0042 =	0.338 MI

AECOM
NC FIRM LICENSE No: F-0342
70 Corporate Center Drive, Suite 475
Raleigh, NC 27607
(919) 854-6200 - (919) 854-6259(FAX)

2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
JUNE 17, 2019

LETTING DATE:
MARCH 16, 2021

NEIL J. DEAN, PE
PROJECT ENGINEER

TIMOTHY KLOTZ, PE
PROJECT DESIGN ENGINEER

DAVID STUTTS, PE
NCDOT PROJECT MANAGER

HYDRAULICS ENGINEER

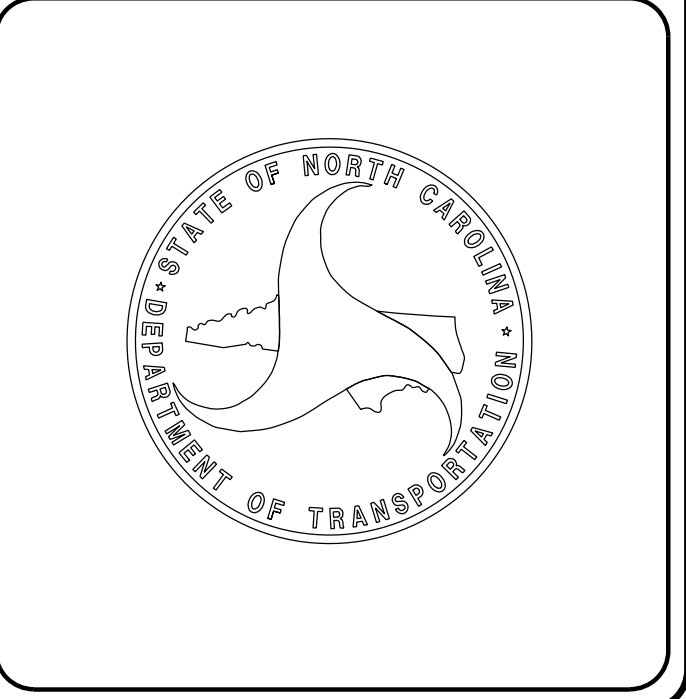
2/9/2021

DocuSigned by:
Dennis K. Hoye
SIGNATURE

ROADWAY DESIGN ENGINEER

2/9/2021

DocuSigned by:
Timothy A. Klotz
SIGNATURE



12/18/2020
E:\Roadway\Proj\BR0042_rdy_tsh.dgn
Tim.Klotz

INDEX OF SHEETS, GENERAL NOTES AND 2018 ROADWAY ENGLISH STANDARD DRAWINGS

EFF. 01-16-2018
REV.

INDEX OF SHEETS

SHEET NUMBER	SHEET
1	TITLE SHEET
1A	INDEX OF SHEETS, GENERAL NOTES, LIST OF STANDARDS
1B	CONVENTIONAL SYMBOLS
2A-1 THRU 2A-4	TYPICAL SECTIONS
2B-1	BRIDGE/PAVEMENT RELATIONSHIP SKETCH
2C-1	GUARDRAIL INSTALLATION
2C-2	STRUCTURE ANCHOR UNITS
2C-3	DETAIL TO CONVERT EXISTING DI, CB, OTCB or GI TO JUNCTION BOX (MANHOLE OPTIONAL)
2C-4	BRIDGE APPROACH FILLS
2G-1	GEOTECHNICAL DETAILS
3B-1	ROADWAY SUMMARIES
3D-1 THRU 3D-2	DRAINAGE SUMMARIES
3G-1	GEOTECHNICAL SUMMARIES
4 THRU 5	PLAN SHEETS
6 THRU 8	PROFILE SHEETS
RW-01 THRU RW-05	RIGHT OF WAY / SURVEY PLANS
TMP-1 THRU TMP-17	TRANSPORTATION MANAGEMENT PLANS
PMP-1 THRU PMP-3	PAVEMENT MARKING PLANS
EC-1 THRU EC-07	EROSION CONTROL PLANS
SIGN-01 THRU SIGN-04	SIGNING PLANS
UD-1 THRU UD-3	UTILITIES BY OTHER PLANS
X-0	CROSS SECTION INDEX
X-1A	CROSS SECTION SUMMARY SHEET
X-1 THRU X-29	CROSS SECTIONS
S-1 THRU S-28	STRUCTURE PLANS

2018 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, 2018 are applicable to this project and by reference hereby are considered a part of these plans:

STD. NO.	TITLE
DIVISION 2 - EARTHWORK	
200.02	Method of Clearing - Method II
225.01	Guide for Grading Subgrade - Interstate and Freeway
225.02	Guide for Grading Subgrade - Secondary and Local
225.04	Method of Obtaining Superelevation - Two Lane Pavement
225.05	Method of Obtaining Superelevation - Divided Highways
DIVISION 3 - PIPE CULVERTS	
300.01	Method of Pipe Installation
310.10	Driveway Pipe Construction
DIVISION 5 - SUBGRADE, BASES AND SHOULDERS	
560.01	Method of Shoulder Construction - High Side of Superelevated Curve - Method I
560.02	Method of Shoulder Construction - High Side of Superelevated Curve - Method II
DIVISION 6 - ASPHALT BASES AND PAVEMENTS	
610.01	Guide for Paving Shoulders Under Bridges - Method I
654.01	Pavement Repairs
665.01	Asphalt Shoulders - Milled Rumble Strips
DIVISION 8 - INCIDENTALS	
815.02	Subsurface Drain
840.00	Concrete Base Pad for Drainage Structures
840.14	Concrete Drop Inlet - 12" thru 30" Pipe
840.15	Brick Drop Inlet - 12" thru 30" Pipe
840.18	Concrete Grated Drop Inlet Type 'B' - 12" thru 36" Pipe
840.19	Concrete Grated Drop Inlet Type 'D' - 12" thru 36" Pipe
840.20	Frames and Wide Slot Flat Grates
840.22	Frames and Wide Slot Sag Grates
840.25	Anchorage for Frames - Brick or Concrete or Precast
840.27	Brick Grated Drop Inlet Type 'B' - 12" thru 36" Pipe
840.28	Brick Grated Drop Inlet Type 'D' - 12" thru 36" Pipe
840.35	Traffic Bearing Grated Drop Inlet - for Cast Iron Double Frame and Grates
840.45	Precast Drainage Structure
840.46	Traffic Bearing Precast Drainage Structure
840.54	Manhole Frame and Cover
840.66	Drainage Structure Steps
840.72	Pipe Collar
846.01	Concrete Curb, Gutter and Curb & Gutter
846.02	Drop Inlet Installation in Expressway Gutter
846.04	Drop Inlet Installation in Shoulder Berm Gutter
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 - B-77 and B-83 Anchor Units
865.01	Cable Guiderail
866.02	Woven Wire Fence - with Wood Post
876.01	Rip Rap in Channels
876.02	Guide for Rip Rap at Pipe Outlets

GENERAL NOTES:

2018 SPECIFICATIONS
EFFECTIVE: 01-16-2018
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.

GRADING:

THE GRADE LINES SHOWN DENOTE THE FINISHED ELEVATION OF THE PROPOSED OR FUTURE SURFACING AT GRADE POINTS SHOWN ON THE TYPICAL SECTIONS. GRADE LINES MAY BE ADJUSTED AT THEIR BEGINNING AND ENDING AND AT STRUCTURES AS DIRECTED 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 II.

SUPERELEVATION:

ALL CURVES ON THIS PROJECT SHALL BE SUPERELEVATED IN ACCORDANCE WITH STD. NO. 225.04 AND STD. NO. 225.05 USING THE RATE OF SUPERELEVATION AND RUNOFF SHOWN ON THE PLANS. SUPERELEVATION IS TO BE REVOLVED ABOUT THE GRADE POINTS SHOWN ON THE TYPICAL SECTIONS.

SHOULDER CONSTRUCTION:

ASPHALT, EARTH, AND CONCRETE SHOULDER CONSTRUCTION ON THE HIGH SIDE OF SUPERELEVATED CURVES SHALL BE IN ACCORDANCE WITH STD. NO. 560.01 AND STD. NO. 560.02

SIDE ROADS:

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

SUBSURFACE DRAINS:

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

GUARDRAIL:

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

TEMPORARY SHORING:

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

END BENTS:

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

UTILITIES:

UTILITY OWNERS ON THIS PROJECT ARE DUKE ENERGY, AT&T, AND CHARTER SPECTRUM
ANY RELOCATION OF EXISTING UTILITIES WILL BE ACCOMPLISHED BY OTHERS.

RIGHT-OF-WAY MARKERS:

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

12/2/2016

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

BOUNDARIES AND PROPERTY:

State Line	-----
County Line	-----
Township Line	-----
City Line	-----
Reservation Line	-----
Property Line	-----
Existing Iron Pin	○ EIP
Computed Property Corner	-----
Property 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	☠-s-☠
Potential Contamination Area: Soil	☠-s-☠
Known Contamination Area: Water	☠-w-☠
Potential Contamination Area: Water	☠-w-☠
Contaminated Site: Known or Potential	☠?

BUILDINGS AND OTHER CULTURE:

Gas Pump Vent or U/G Tank Cap	○
Sign	○ S
Well	○ W
Small Mine	✕
Foundation	□
Area Outline	□
Cemetery	□
Building	□
School	□
Church	□
Dam	▬

HYDROLOGY:

Stream or Body of Water	-----
Hydro, Pool or Reservoir	□
Jurisdictional Stream	---JS---
Buffer Zone 1	---BZ 1---
Buffer Zone 2	---BZ 2---
Flow Arrow	←
Disappearing Stream	→
Spring	○
Wetland	▽
Proposed Lateral, Tail, Head Ditch	▬
False Sump	▽

RAILROADS:

Standard Gauge	-----
RR Signal Milepost	○ MILEPOST 35
Switch	□ SWITCH
RR Abandoned	-----
RR Dismantled	-----

RIGHT OF WAY & PROJECT CONTROL:

Secondary Horiz and Vert Control Point	◆
Primary Horiz Control Point	○
Primary Horiz and Vert Control Point	◆
Exist Permanent Easement Pin and Cap	◇
New Permanent Easement Pin and Cap	◆
Vertical Benchmark	⊠
Existing Right of Way Marker	△
Existing Right of Way Line	-----
New Right of Way Line	○ R W
New Right of Way Line with Pin and Cap	○ R W ◆
New Right of Way Line with Concrete or Granite R/W Marker	○ R W ◆
New Control of Access Line with Concrete C/A Marker	○ C/A
Existing Control of Access	○ C/A
New Control of Access	○ C/A
Existing Easement Line	---E---
New Temporary Construction Easement	---E---
New Temporary Drainage Easement	---TDE---
New Permanent Drainage Easement	---PDE---
New Permanent Drainage / Utility Easement	---DUE---
New Permanent Utility Easement	---PUE---
New Temporary Utility Easement	---TUE---
New Aerial Utility Easement	---AUE---

ROADS AND RELATED FEATURES:

Existing Edge of Pavement	-----
Existing Curb	-----
Proposed Slope Stakes Cut	---C---
Proposed Slope Stakes Fill	---F---
Proposed Curb Ramp	○ CR
Existing Metal Guardrail	---T---
Proposed Guardrail	---T---
Existing Cable Guiderail	---□---
Proposed Cable Guiderail	---□---
Equality Symbol	⊕
Pavement Removal	▨

VEGETATION:

Single Tree	☀
Single Shrub	☁

Note: Not to Scale *S.U.E. = Subsurface Utility Engineering

Hedge	-----
Woods Line	-----
Orchard	☀ ☀ ☀ ☀
Vineyard	□ Vineyard

EXISTING STRUCTURES:

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

UTILITIES:

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

TELEPHONE:

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

WATER:

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

TV:

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

GAS:

Gas Valve	◇
Gas Meter	⊕
U/G Gas Line LOS B (S.U.E.*)	---G---
U/G Gas Line LOS C (S.U.E.*)	---G---
U/G Gas Line LOS D (S.U.E.*)	---G---
Above Ground Gas Line	---A/G Gas---

SANITARY SEWER:

Sanitary Sewer Manhole	⊕
Sanitary Sewer Cleanout	⊕
U/G Sanitary Sewer Line	---SS---
Above Ground Sanitary Sewer	---A/G Sanitary Sewer---
SS Forced Main Line LOS B (S.U.E.*)	---FSS---
SS Forced Main Line LOS C (S.U.E.*)	---FSS---
SS Forced Main Line LOS D (S.U.E.*)	---FSS---

MISCELLANEOUS:

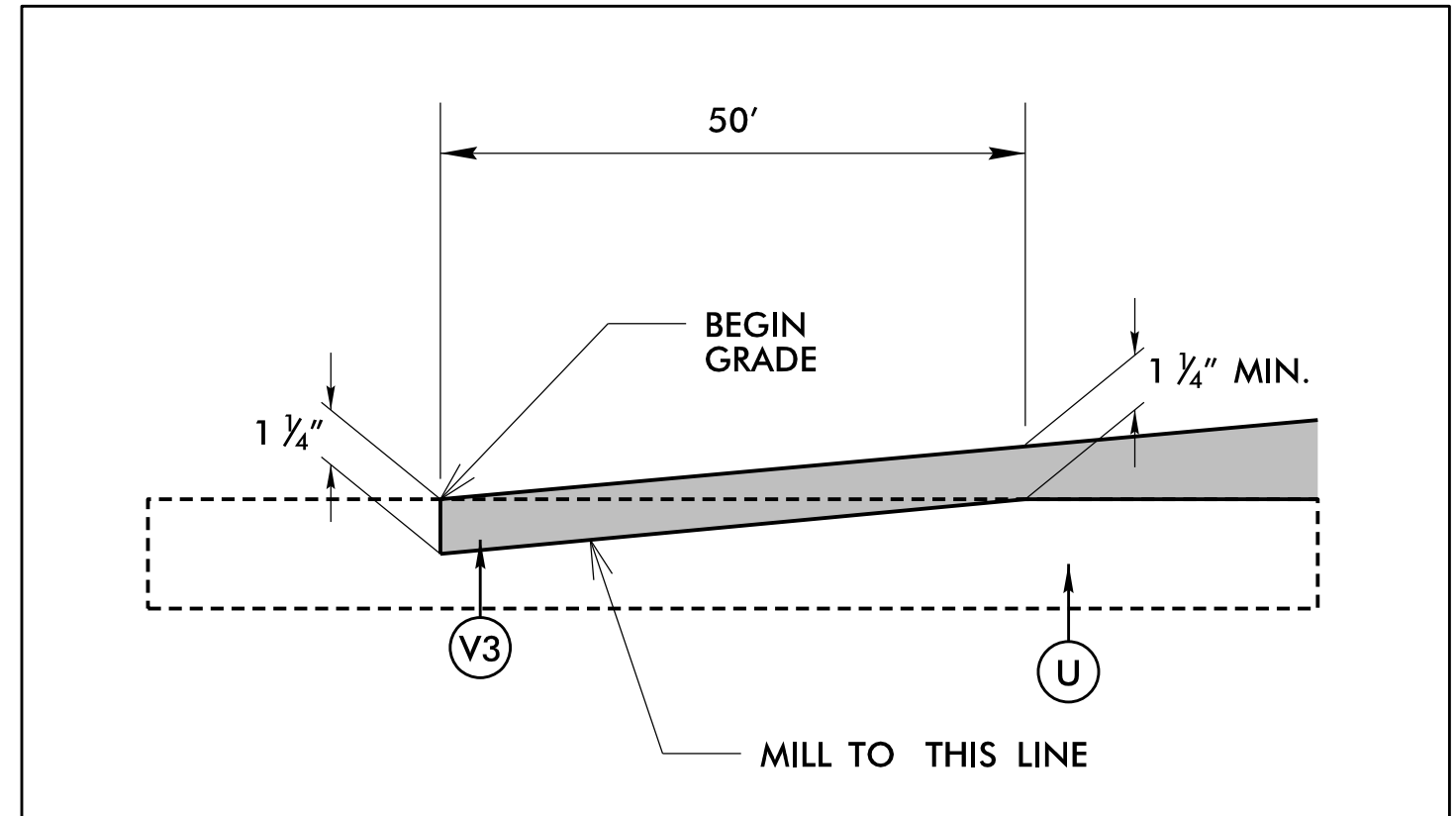
Utility Pole	●
Utility Pole with Base	□
Utility Located Object	○
Utility Traffic Signal Box	⊠
Utility Unknown U/G Line LOS B (S.U.E.*)	---TU/L---
U/G Tank; Water, Gas, Oil	□
Underground Storage Tank, Approx. Loc.	⊕
A/G Tank; Water, Gas, Oil	□
Geoenvironmental Boring	⊕
U/G Test Hole LOS A (S.U.E.*)	●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

6/22/99

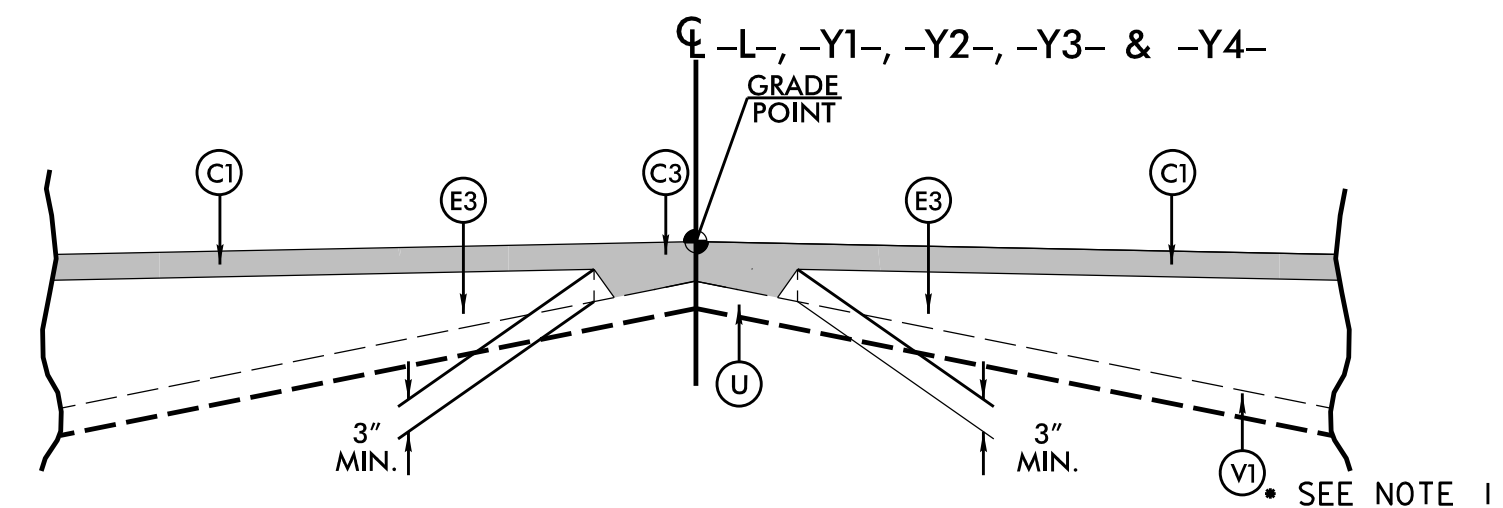
R:\Roadway\Proc\BR0042.rdj_tup.dgn

PAVEMENT SCHEDULE FINAL PAVEMENT DESIGN	
C1	PROP. APPROX. 1 1/4" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 137.5 LBS. PER SQ. YD.
C2	PROP. APPROX. 2 1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 137.5 LBS. PER SQ. YD. IN EACH OF 2 LAYERS
C3	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD. PER 1" DEPTH, TO BE PLACED IN LAYERS NOT TO EXCEED 1 1/2" IN DEPTH
C4	PROP. APPROX. 1 1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
C5	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF 2 LAYERS
C6	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1" DEPTH, TO BE PLACED IN LAYERS NOT TO EXCEED 2" IN DEPTH
D1	PROP. APPROX. 4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
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.
E1	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
E2	PROP. APPROX. 8 1/2" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 484.5 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
E3	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 3" IN DEPTH OR GREATER THAN 5.5" IN DEPTH.
L1	CLASS IV SUBGRADE STABILIZATION
N1	GEOTEXTILE FOR SOIL STABILIZATION
R1	PRECAST CONCRETE BARRIER
R2	EXPRESSWAY GUTTER
R3	SHOULDER BERM GUTTER
T	EARTH MATERIAL
U	EXISTING PAVEMENT
V1	2 1/2" MILLING
V2	MILLED RUMBLE STRIPS
V3	INCIDENTAL MILLING
W1	VARIABLE DEPTH ASPHALT PAVEMENT (SEE DETAIL SHOWING METHOD OF WEDGING NO. 1)
W2	VARIABLE DEPTH ASPHALT PAVEMENT (SEE DETAIL SHOWING METHOD OF WEDGING NO. 2)

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

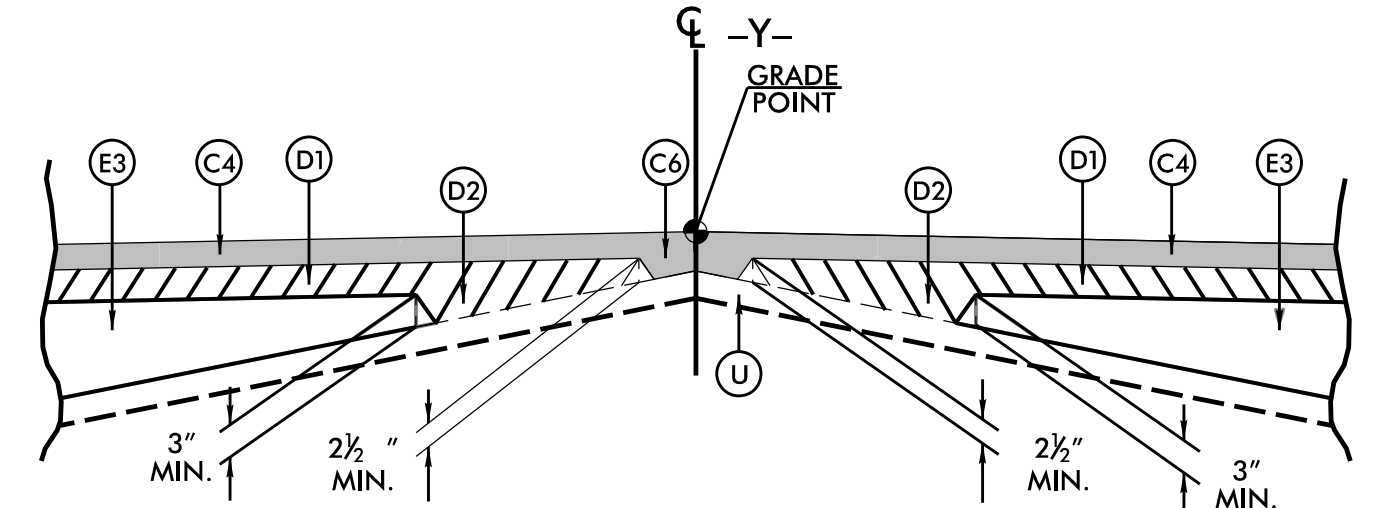


INCIDENTAL MILLING DETAIL



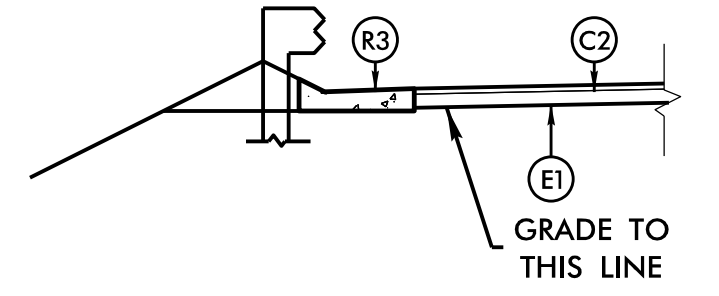
W1: Detail Showing Method of Wedging

USE THIS DETAIL IN CONJUNCTION WITH TYPICAL SECTION NOS. 1 AND 5
* NOTE 1: MILLING ONLY ON Y4

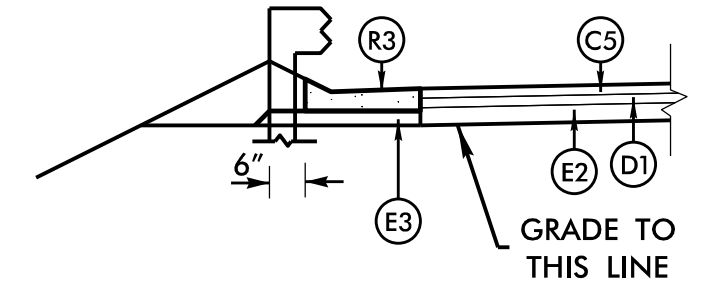


W2: Detail Showing Method of Wedging

USE THIS DETAIL IN CONJUNCTION WITH TYPICAL SECTION NO. 4



-L- STA. 17+84.00 TO STA. 18+25.25 (LT)
-L- STA. 18+30.00 TO STA. 18+50.93 (RT)
-L- STA. 20+63.18 TO STA. 20+85.00 (LT)
-L- STA. 20+88.75 TO STA. 21+81.00 (RT)

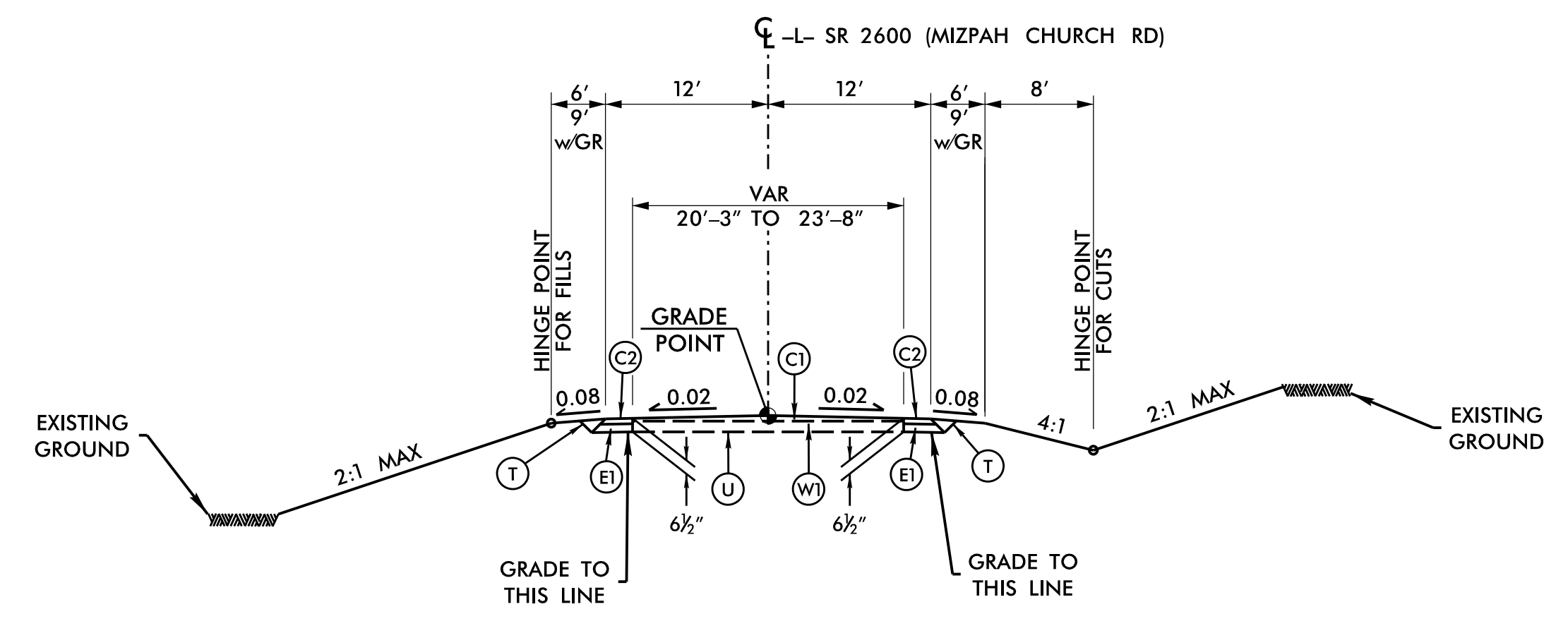


-Y- STA. 14+20.82 TO STA. 14+93.00 (LT)
-Y- STA. 11+30.00 TO STA. 11+84.00 (RT)

Detail Showing Shoulder Berm Gutter

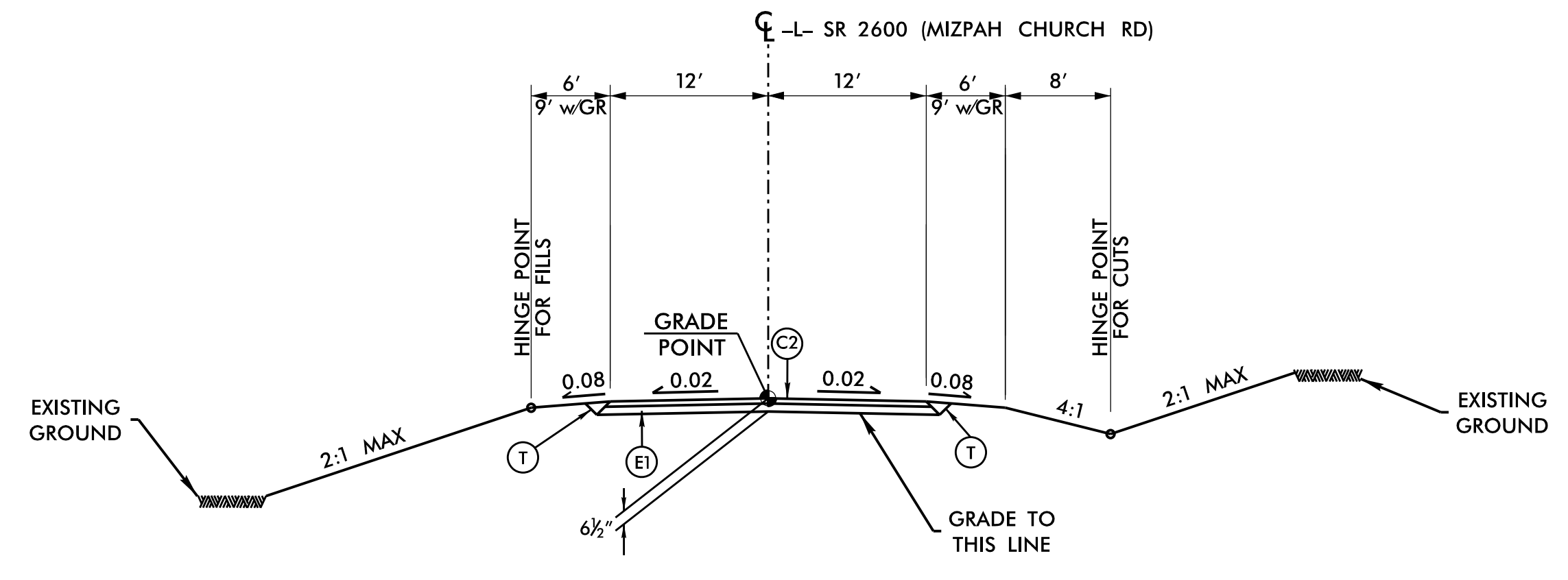
PROJECT REFERENCE NO. BR-0042	SHEET NO. 2A-1
ROADWAY DESIGN ENGINEER 5/29/2020 THOMAS A. KOTZ	PAVEMENT DESIGN ENGINEER 5/29/2020 CLARK S. MORRISON
SEAL 046210 NORTH CAROLINA PROFESSIONAL ENGINEER	SEAL 022896 NORTH CAROLINA PROFESSIONAL ENGINEER
<p>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</p>	

PROJECT REFERENCE NO. BR-0042	SHEET NO. 2A-2
ROADWAY DESIGN ENGINEER 5/29/2020 MOTHY A. KOTY	PAVEMENT DESIGN ENGINEER 5/29/2020 CLARK S. MORRISON
AECOM	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



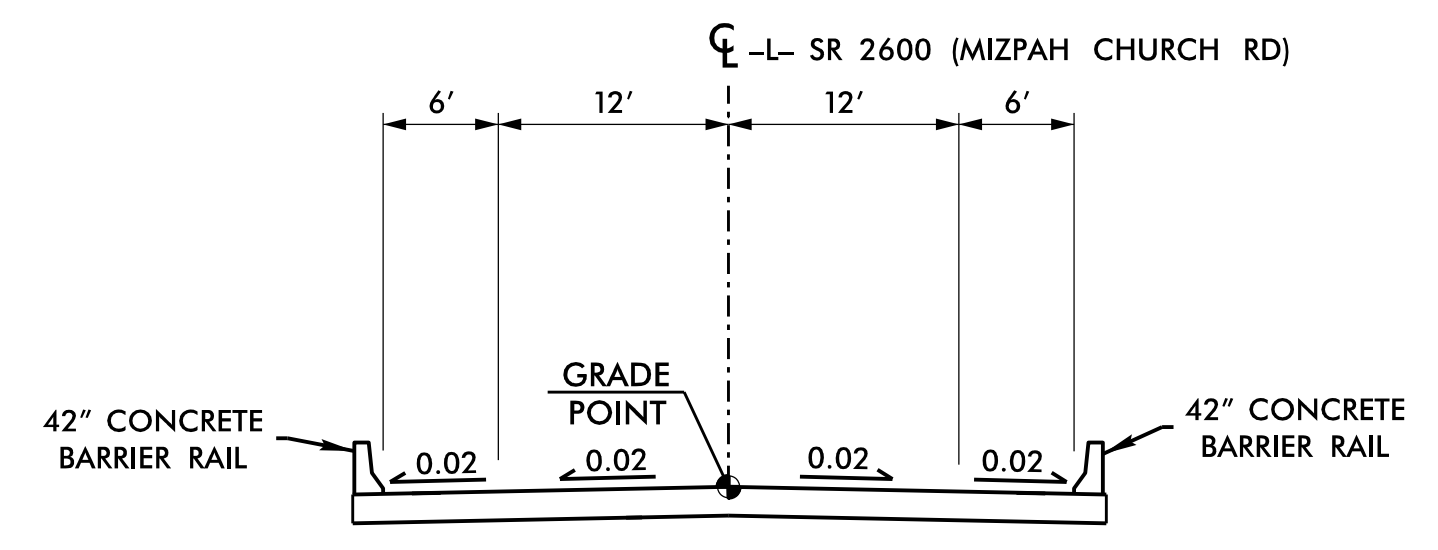
TYPICAL SECTION NO. 1

USE TYPICAL SECTION NO. 1
 -L- STA. 11+54.68 TO -L- STA. 13+50.00
 -L- STA. 27+00.00 TO -L- STA. 29+40.98



TYPICAL SECTION NO. 2

USE TYPICAL SECTION NO. 2
 -L- STA. 13+50.00 TO -L- STA. 18+52.99 (BEGIN BRIDGE)
 -L- STA. 20+60.99 (END BRIDGE) TO -L- STA. 27+00.00

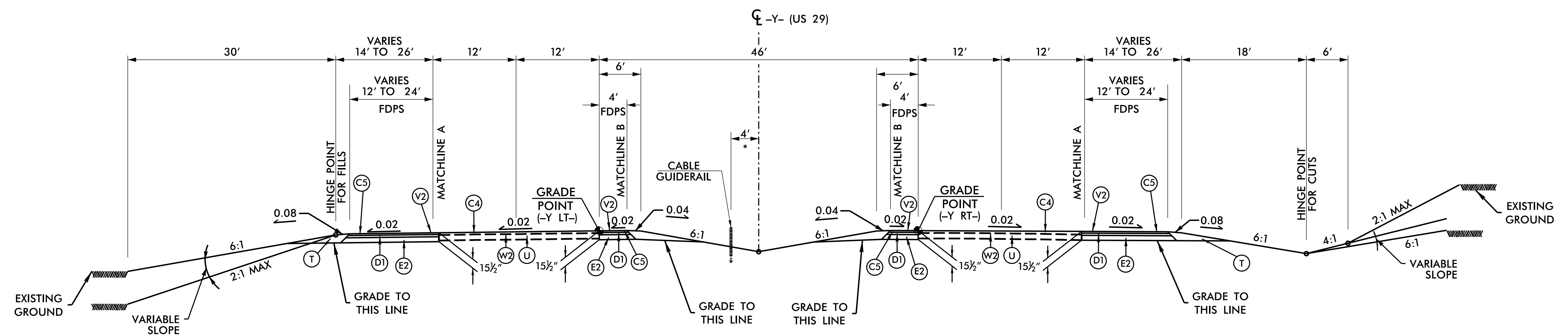


TYPICAL SECTION NO. 3

USE TYPICAL SECTION NO. 3
 -L- STA. 18+52.99 (BEGIN BRIDGE) TO
 -L- STA. 20+60.99 (END BRIDGE)

C1	1 1/4" S9.5B
C2	2 1/2" S9.5B
C3	VAR. S9.5B
C4	1 1/2" S9.5C
C5	3" S9.5C
C6	VAR. S9.5C
D1	4.0" I19.0C
D2	VAR. I19.0C
E1	4.0" B25.0C
E2	8.5" B25.0C
E3	VAR. B25.0C
L1	CLASS IV SUBGRADE STAB.
N1	GEOTEXT. FOR SOIL STAB.
R1	PRECAST CONC. BARRIER
R2	EXPRESSWAY GUTTER
R3	SHOULDER BERM GUTTER
T	EARTH MATERIAL
U	EXISTING PAVEMENT
V1	2.5" ASPHALT MILLING
V2	RUMBLE STRIPS
V3	INCIDENTAL MILLING
W1	WEDGING DET. #1
W2	WEDGING DET. #2

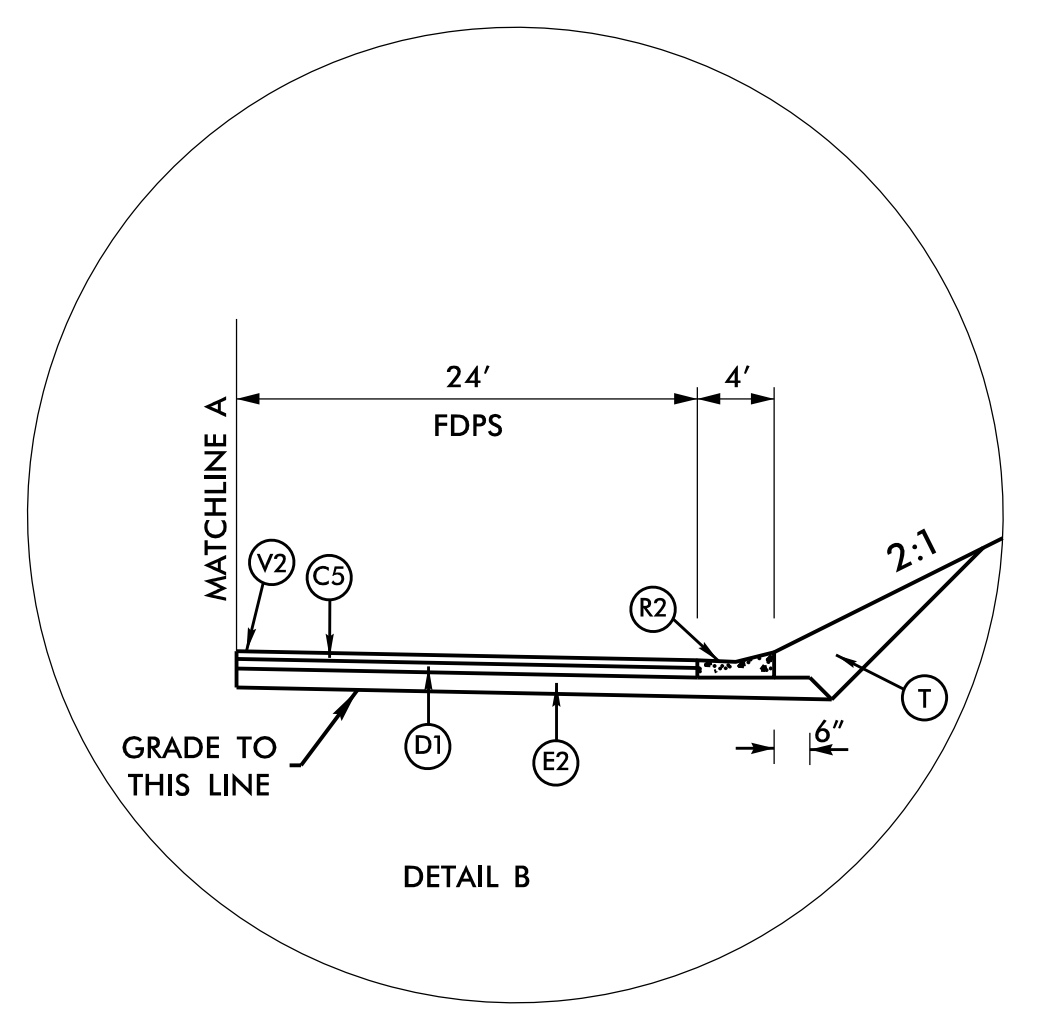
PROJECT REFERENCE NO. BR-0042	SHEET NO. 2A-3
ROADWAY DESIGN ENGINEER 5/29/2020	PAVEMENT DESIGN ENGINEER 5/29/2020
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



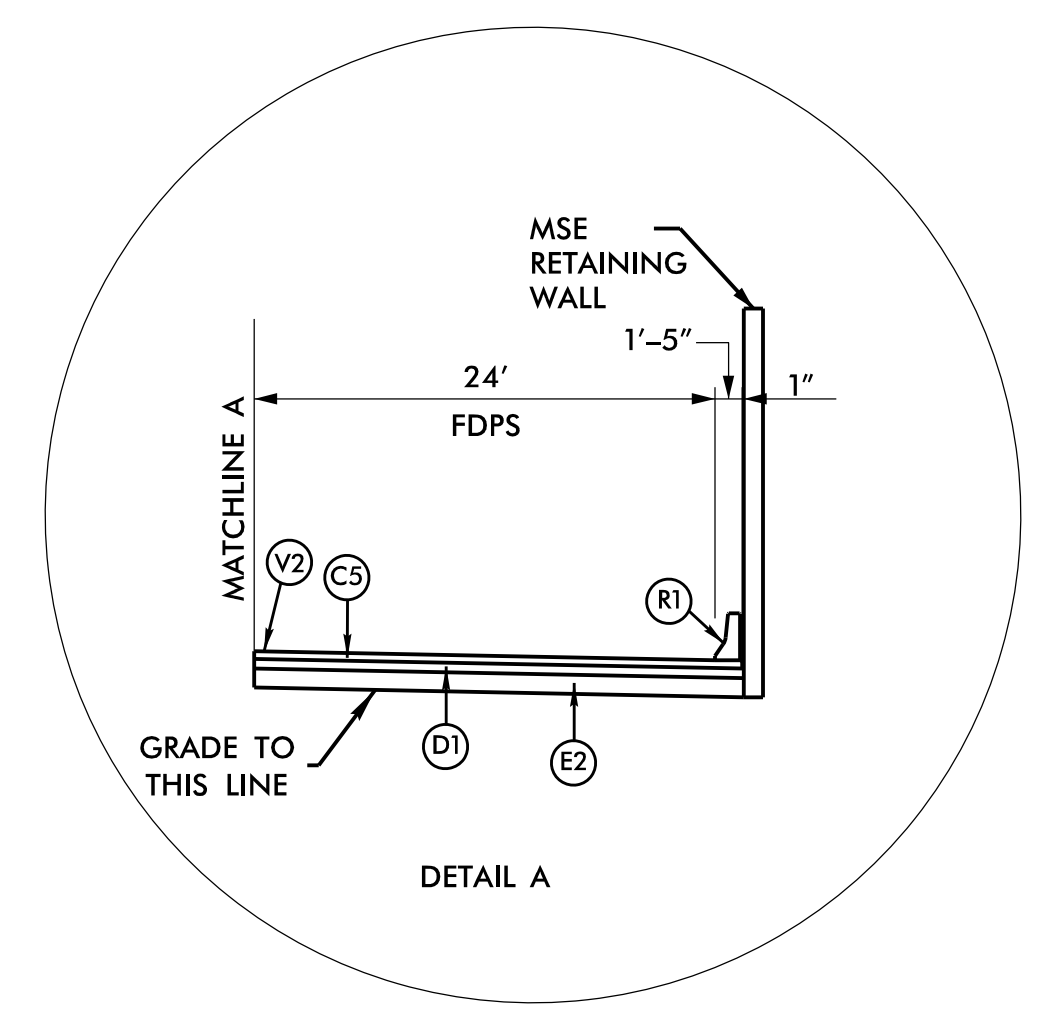
TYPICAL SECTION NO. 4

* SEE PLANS FOR GUIDERAIL LOCATION

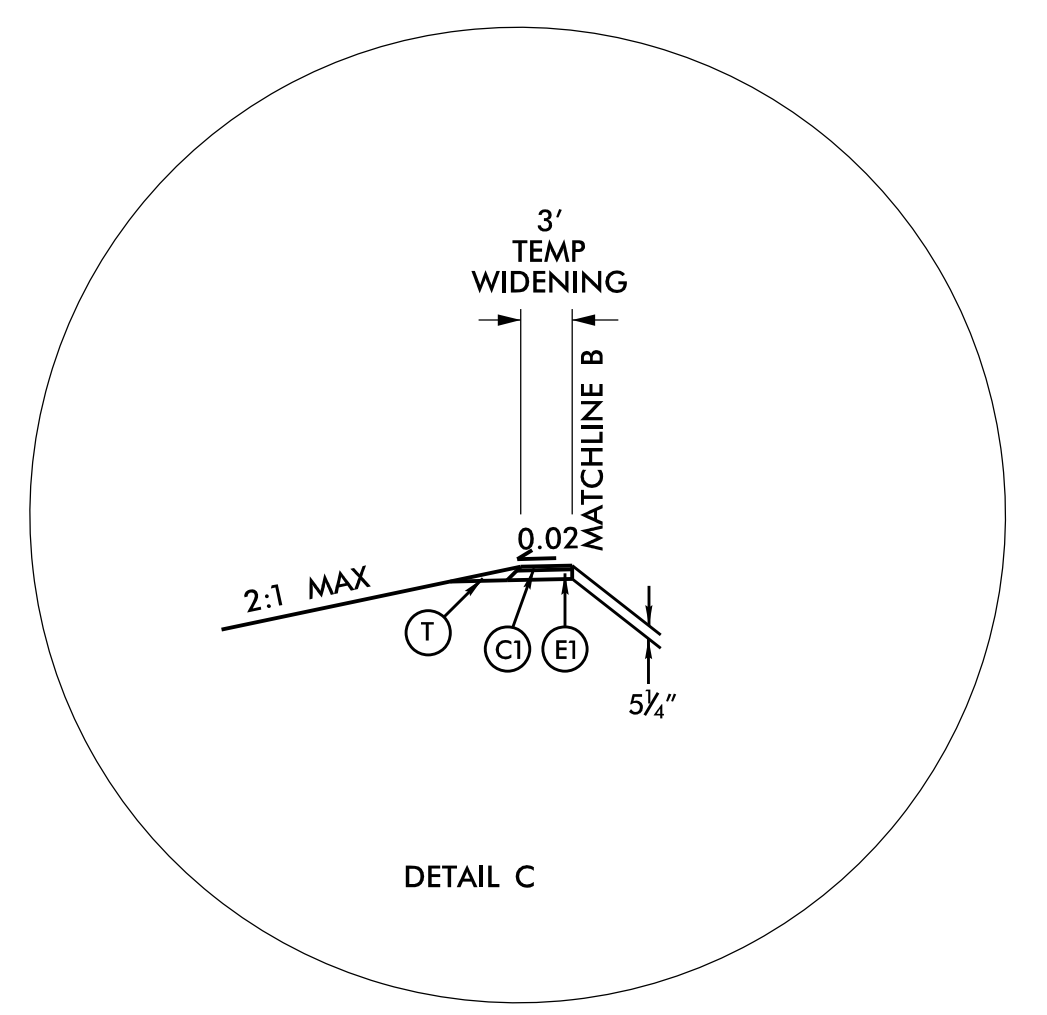
USE TYPICAL SECTION NO. 4
 -Y- STA. 10+00.00 TO -Y- STA. 18+00.00



USE DETAIL B FOR -Y- RT FROM STA. 13+01.02 TO STA. 14+20.00



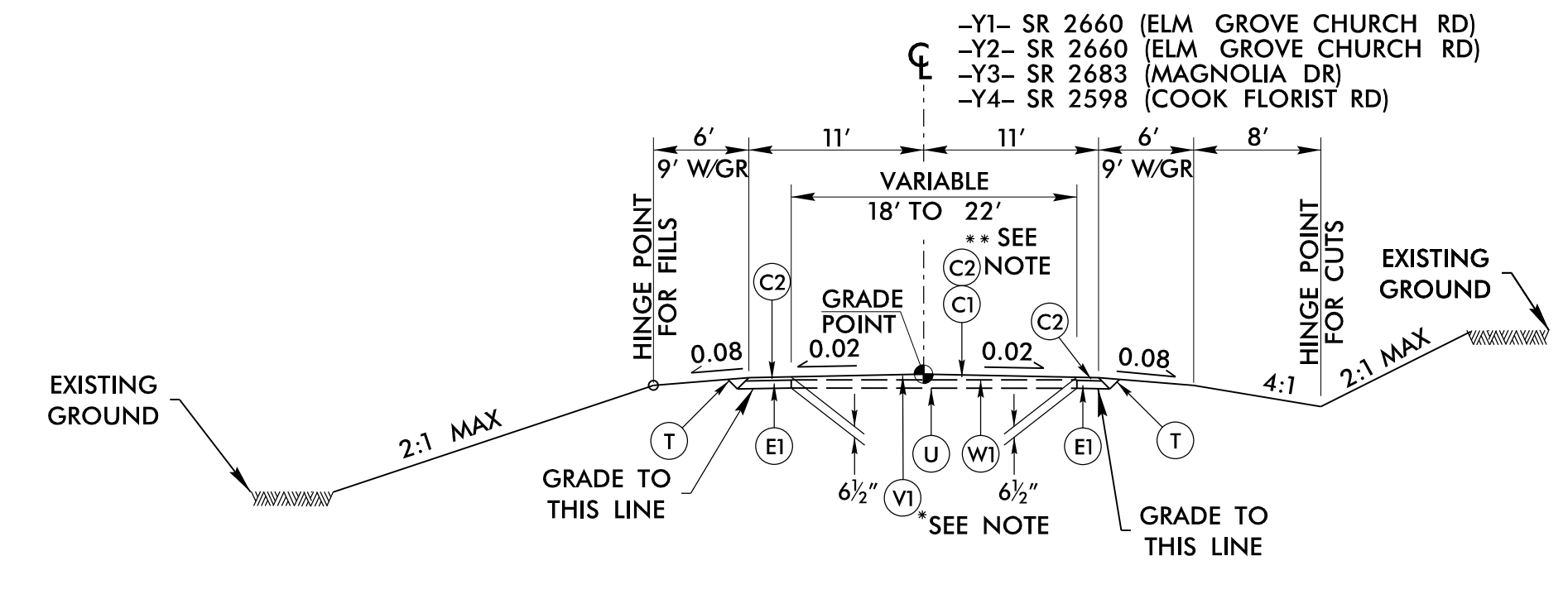
USE DETAIL A FOR -Y- RT FROM STA. 11+84.35 TO STA. 13+01.02
 USE MIRROR OF DETAIL A FOR -Y- LT FROM STA. 13+06.99 TO STA. 14+20.82



USE DETAIL C FOR -Y- RT FROM STA. 10+00.00 TO STA. 12+69.21 AND
 -Y- RT FROM STA. 13+89.96 TO STA. 15+00.00
 USE MIRROR OF DETAIL C FOR -Y- LT FROM STA. 13+89.96 TO STA. 17+50.00

C1	1 1/4" S9.5B
C2	2 1/2" S9.5B
C3	VAR. S9.5B
C4	1 1/2" S9.5C
C5	3" S9.5C
C6	VAR. S9.5C
D1	4.0" I19.0C
D2	VAR. I19.0C
E1	4.0" B25.0C
E2	8.5" B25.0C
E3	VAR. B25.0C
L1	CLASS IV SUBGRADE STAB.
N1	GEOTEXT. FOR SOIL STAB.
R1	PRECAST CONC. BARRIER
R2	EXPRESSWAY GUTTER
R3	SHOULDER BERM GUTTER
T	EARTH MATERIAL
U	EXISTING PAVEMENT
V1	2.5" ASPHALT MILLING
V2	RUMBLE STRIPS
V3	INCIDENTAL MILLING
W1	WEDGING DET. #1
W2	WEDGING DET. #2

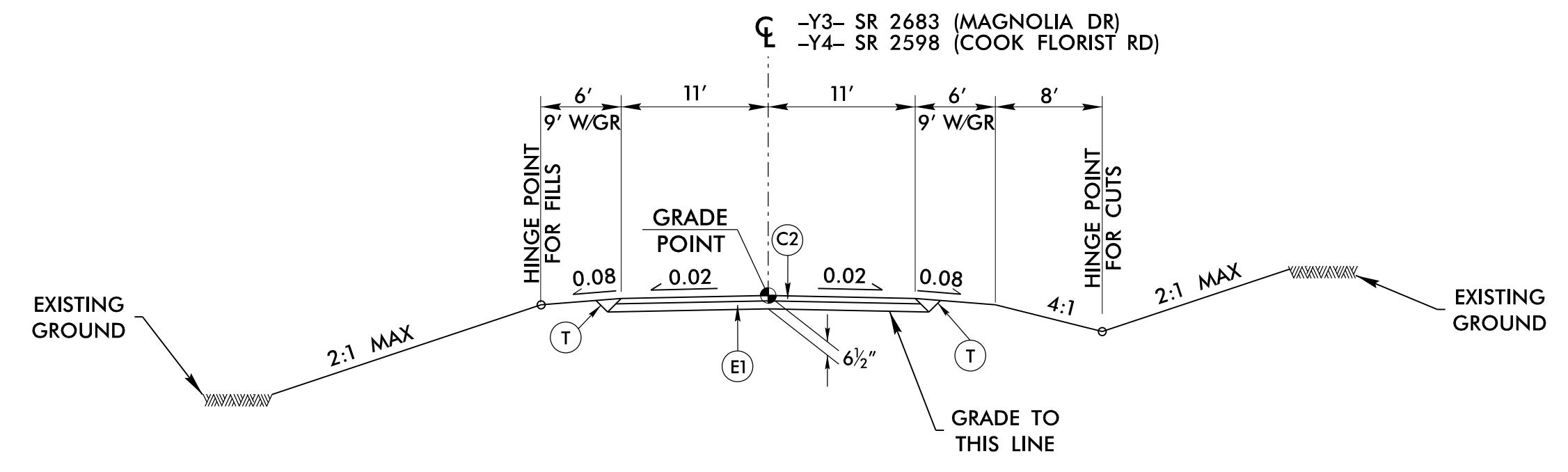
PROJECT REFERENCE NO. <i>BR-0042</i>	SHEET NO. <i>2A-4</i>
ROADWAY DESIGN ENGINEER 5/29/2020	PAVEMENT DESIGN ENGINEER 5/29/2020
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



TYPICAL SECTION NO. 5

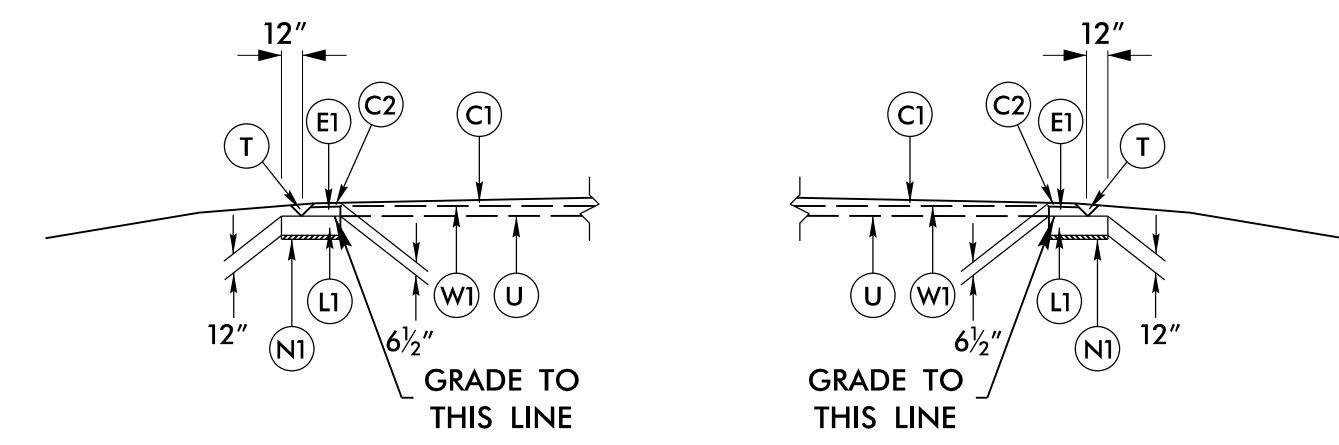
USE TYPICAL SECTION NO. 5
 -Y1- STA. 11+70.00 TO -Y1- STA. 12+80.97
 -Y2- STA. 10+12.08 TO -Y2- STA. 11+45.00
 -Y3- STA. 11+20.23 TO -Y3- STA. 12+55.00
 -Y4- STA. 11+50.00 TO -Y4- STA. 12+68.00

* V1 NOTE: MILLING ONLY ON -Y4-
 ** C2 ON -Y4- ONLY



TYPICAL SECTION NO. 6

USE TYPICAL SECTION NO. 6
 -Y3- STA. 10+18.54 TO -Y3- STA. 11+20.23
 -Y4- STA. 12+68.00 TO -Y4- STA. 14+08.71



AGGREGATE SUBGRADE DETAIL

USE IN CONJUNCTION WITH TYPICAL SECTIONS AS DIRECTED BY THE RESIDENT ENGINEER AND AT STATIONS:
 -Y1- STA. 11+85.00 TO -Y1- STA. 12+81.00
 -Y2- STA. 10+75.00 TO -Y2- STA. 11+25.00

C1	1 1/4" S9.5B
C2	2 1/2" S9.5B
C3	VAR. S9.5B
C4	1 1/2" S9.5C
C5	3" S9.5C
C6	VAR. S9.5C
D1	4.0" I19.0C
D2	VAR. I19.0C
E1	4.0" B25.0C
E2	8.5" B25.0C
E3	VAR. B25.0C
L1	CLASS IV SUBGRADE STAB.
N1	GEOTEXT. FOR SOIL STAB.
R1	PRECAST CONC. BARRIER
R2	EXPRESSWAY GUTTER
R3	SHOULDER BERM GUTTER
T	EARTH MATERIAL
U	EXISTING PAVEMENT
V1	2.5" ASPHALT MILLING
V2	RUMBLE STRIPS
V3	INCIDENTAL MILLING
W1	WEDGING DET. #1
W2	WEDGING DET. #2

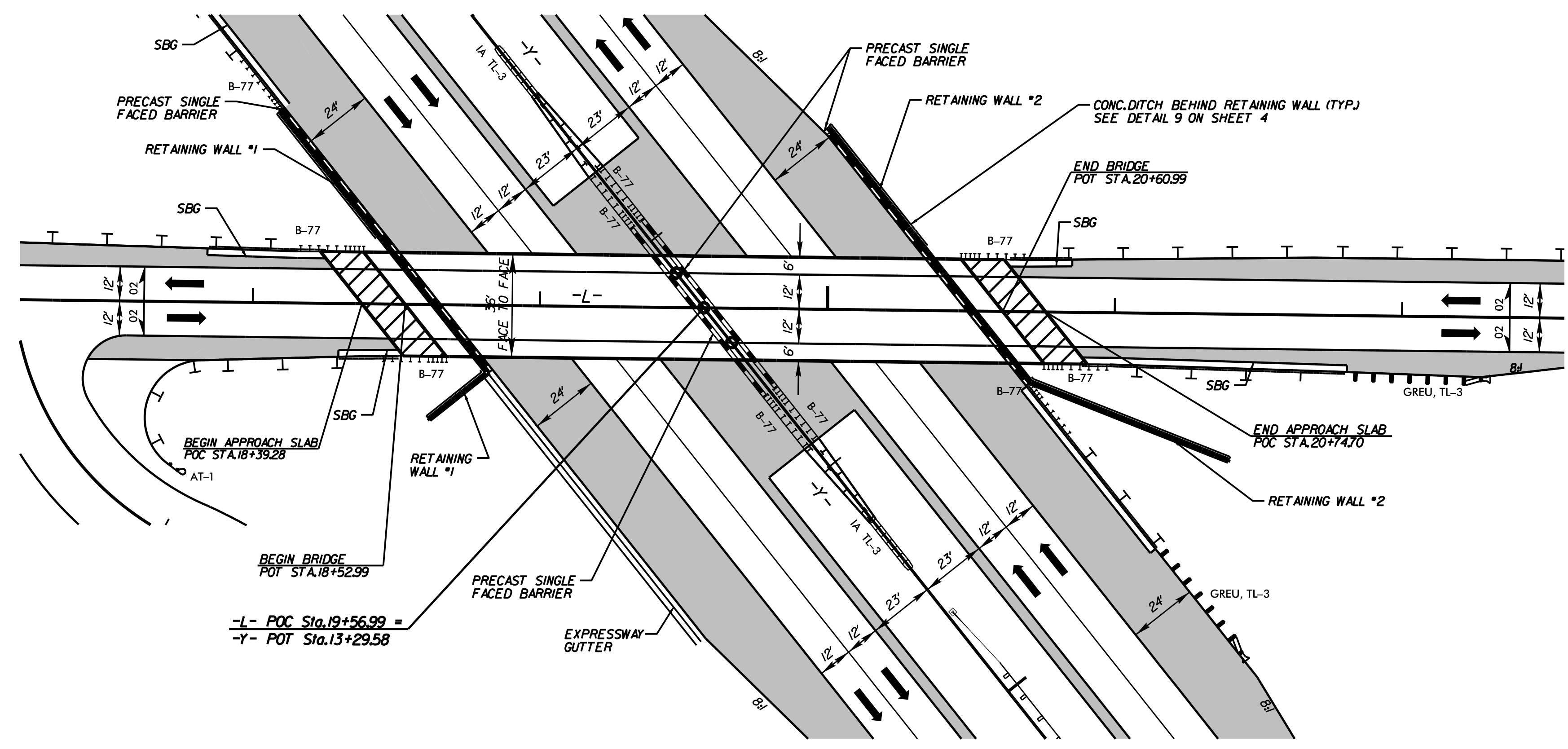
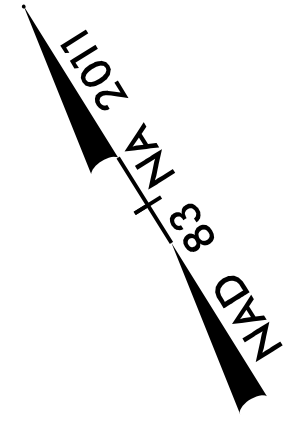
5/14/1999

REVISIONS

5/27/2020 R:\AP\p\2020\BR0042_e--dj_psh02b.dgn

PROJECT REFERENCE NO. BR-0042	SHEET NO. 2B-1
RW SHEET NO.	
ROADWAY DESIGN ENGINEER 2/9/2021	HYDRAULICS ENGINEER 2/9/2021
Prepared in the Office of: AECOM <small>701 Corporate Center Drive, Suite 475 Raleigh, NC 27607 (919) 854-6200 • (919) 854-6259(Fax)</small>	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

**-L- BRIDGE/PAVEMENT RELATIONSHIP SKETCH
(NOT TO SCALE)**



FOR -L- PLAN VIEW SEE SHEET 4
 FOR STRUCTURES SEE SHEETS S-01
 THROUGH S-28
 FOR RETAINING WALL #1 AND WALL #2 SEE
 SHEETS W-1 THROUGH W-4

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

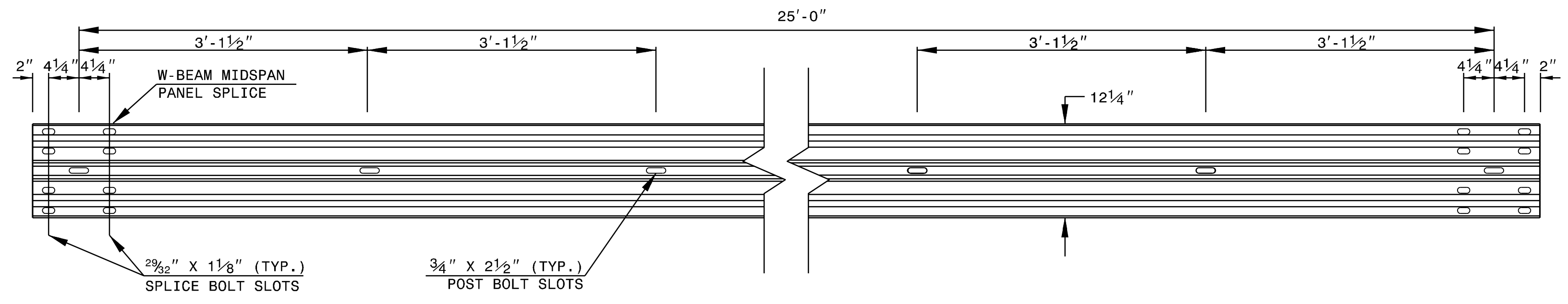
ROADWAY DETAIL DRAWING FOR
GUARDRAIL INSTALLATION

SHEET 6 OF 8
862D02

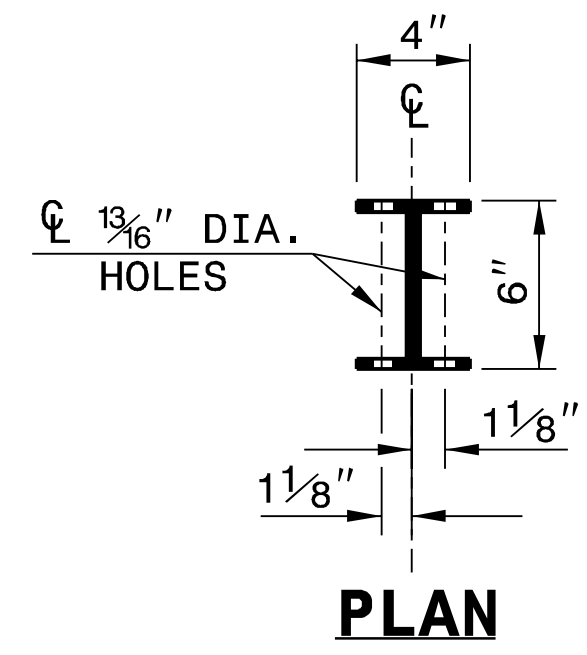
STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ROADWAY DETAIL DRAWING FOR
GUARDRAIL INSTALLATION

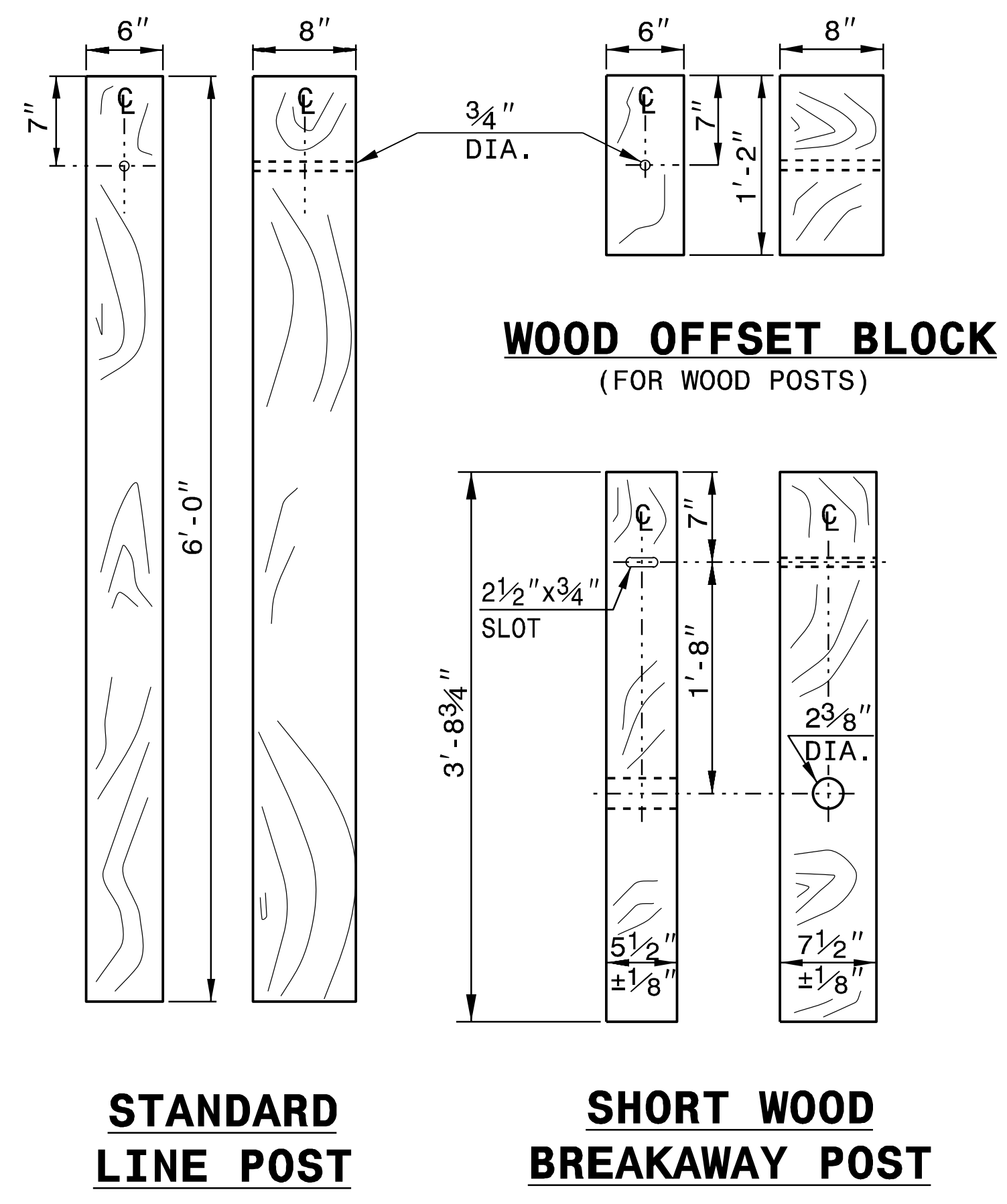
SHEET 6 OF 8
862D02



STANDARD W-BEAM GUARDRAIL



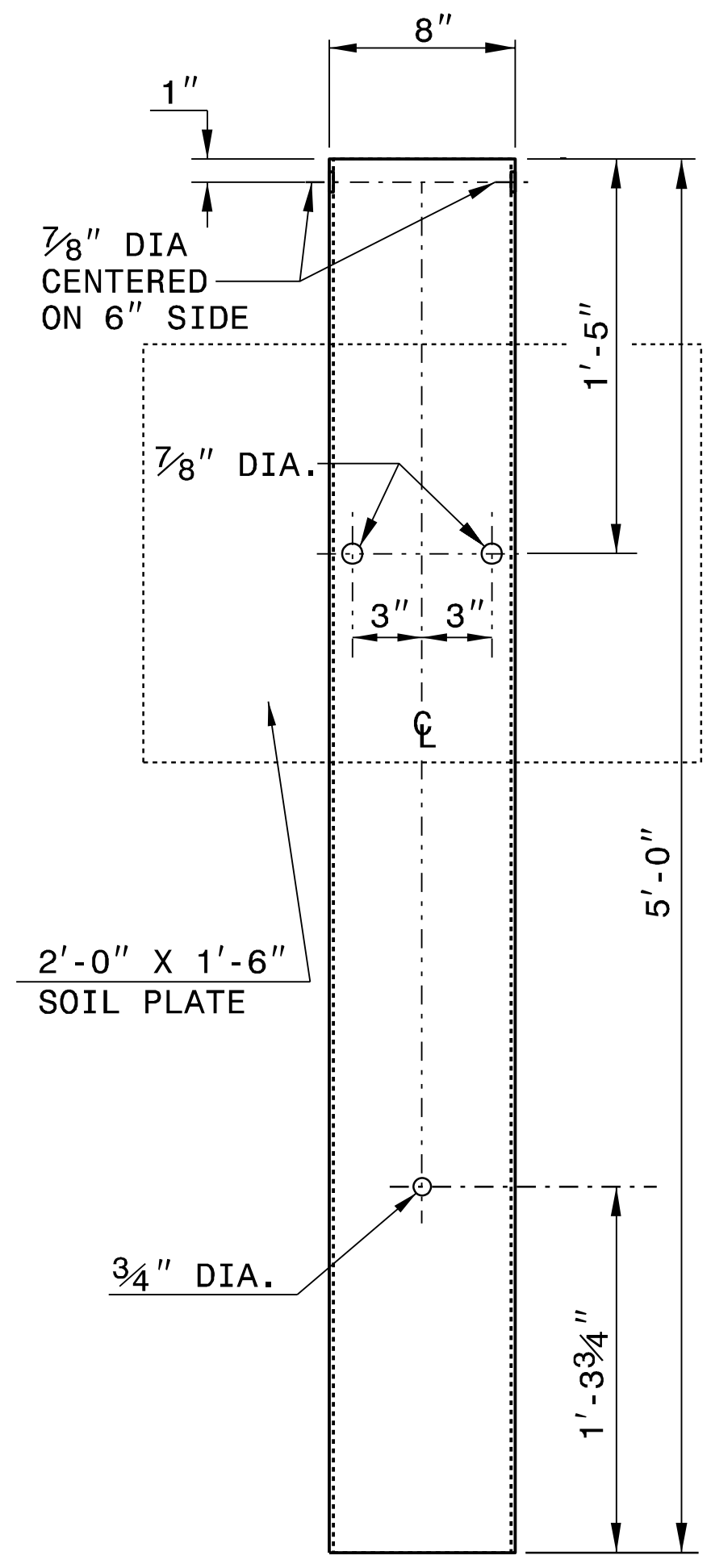
PLAN



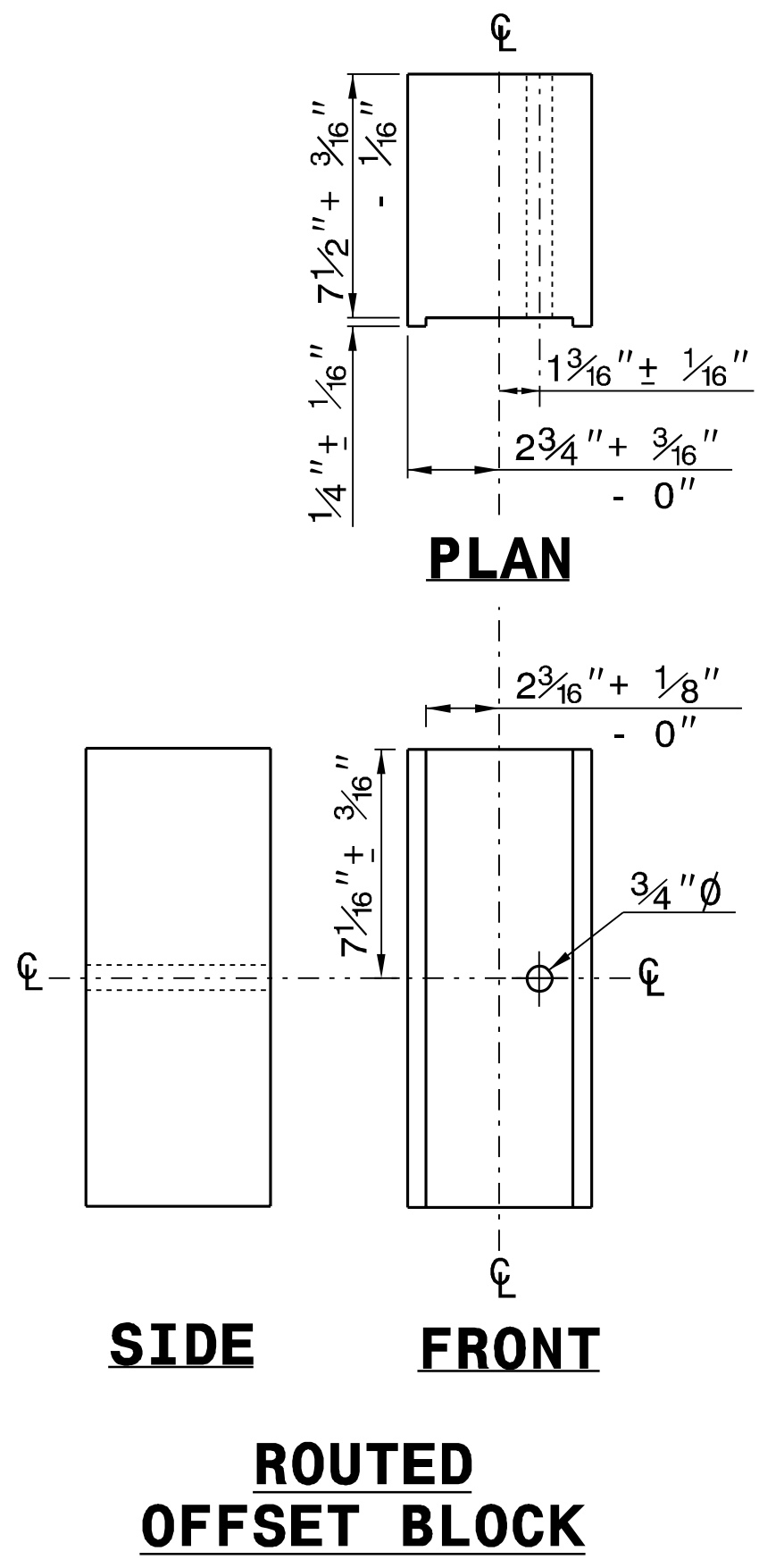
**WOOD OFFSET BLOCK
(FOR WOOD POSTS)**

**STANDARD
LINE POST**

**SHORT WOOD
BREAKAWAY POST**



**STEEL TUBE
TS 6" x 8" x 0.1875"**

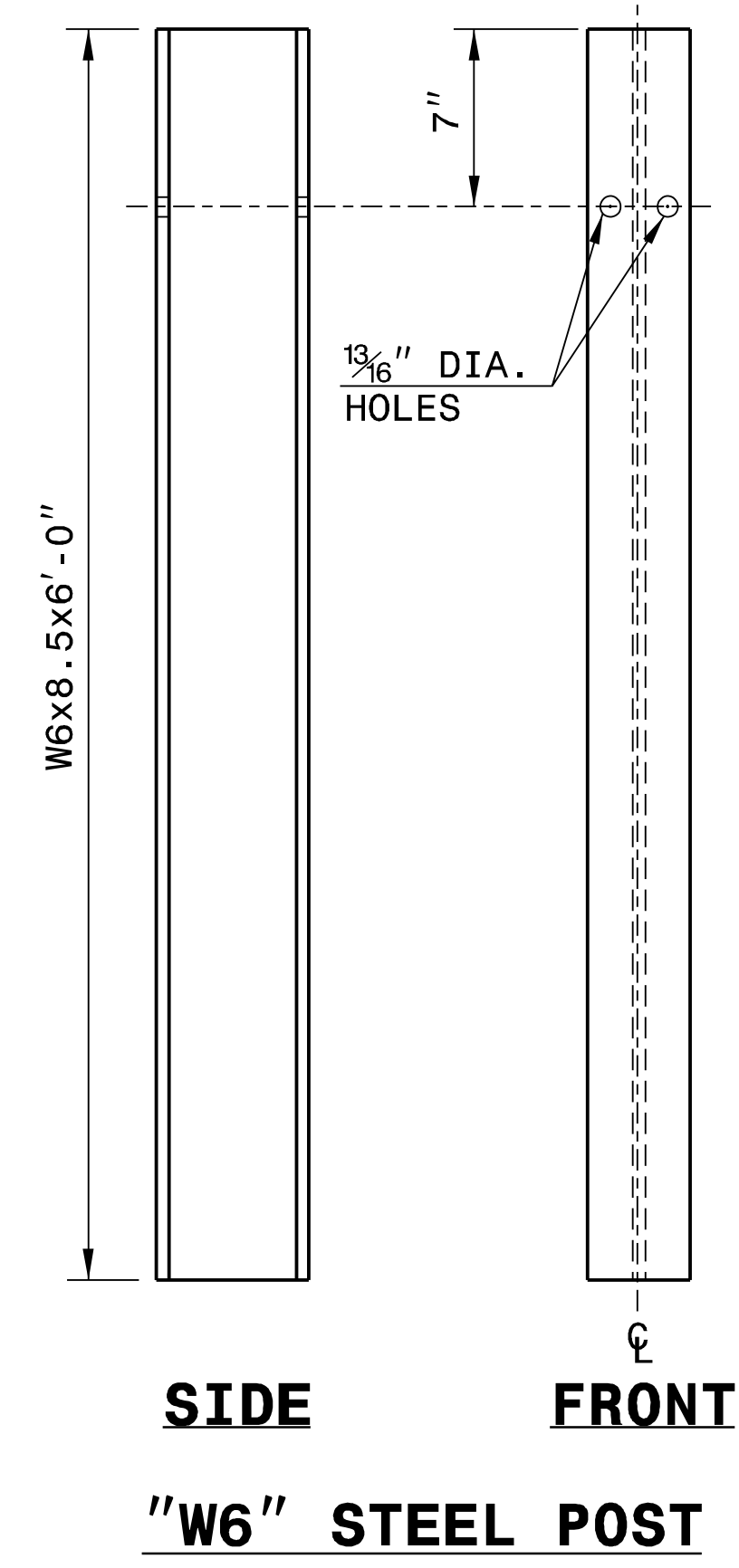


PLAN

SIDE

FRONT

**ROUTED
OFFSET BLOCK**



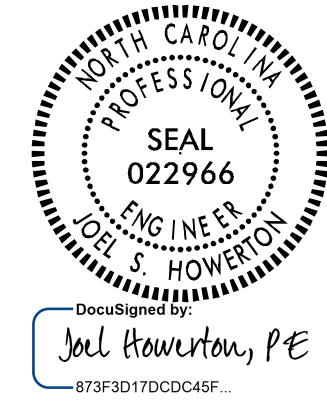
SIDE

FRONT

"W6" STEEL POST

SYSTEM PARTS

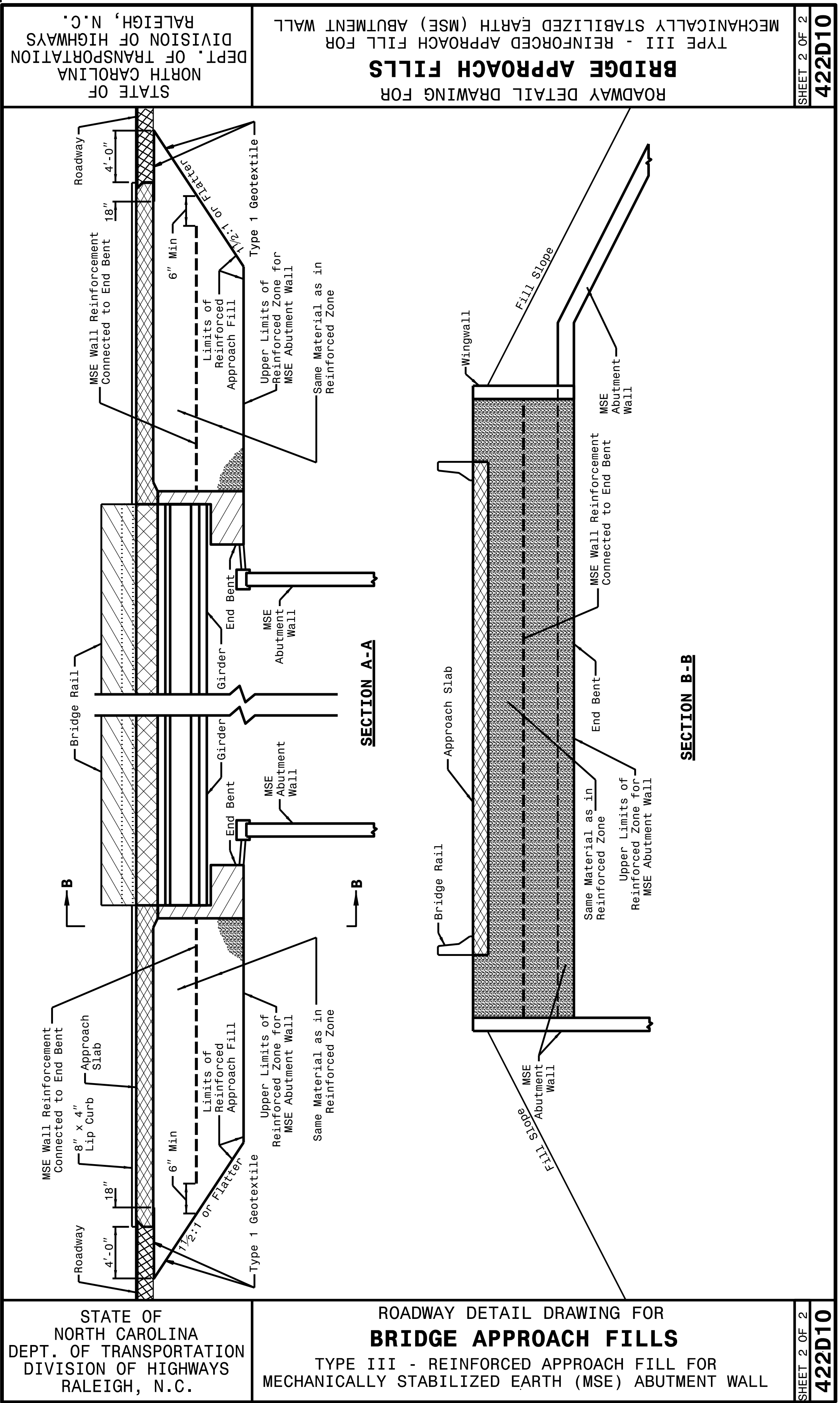
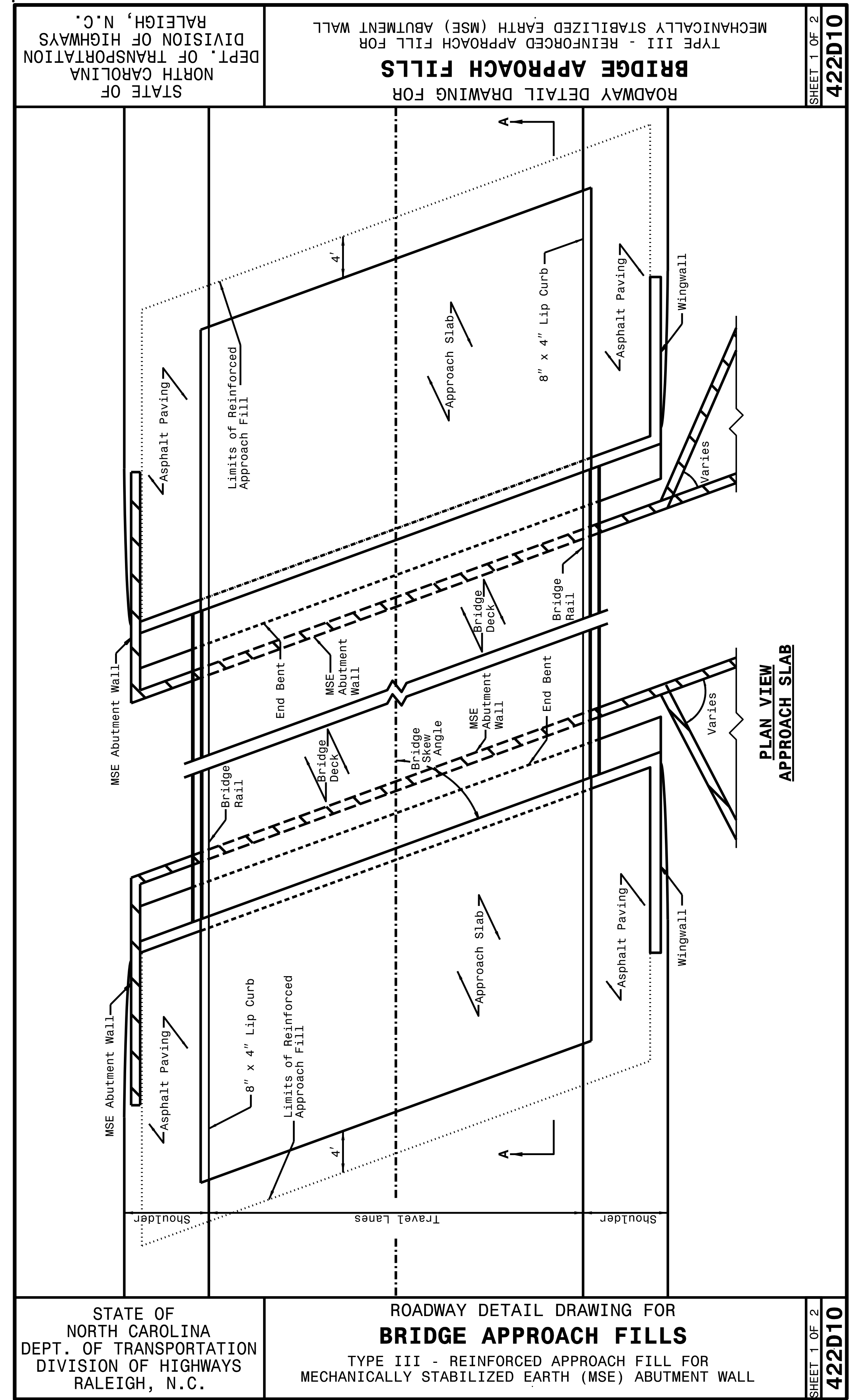
5/29/2020



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

SEE TITLE BLOCK

ORIGINAL BY: J. HOWERTON DATE: 3-7-2018
MODIFIED BY: DATE: _____
CHECKED BY: DATE: _____
FILE SPEC.: _____



2/9/2021



DocuSigned by:
Joel S. Howerton
873F3D11DCCDCAF

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

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

**TYPE III
REINFORCED
APPROACH FILLS**

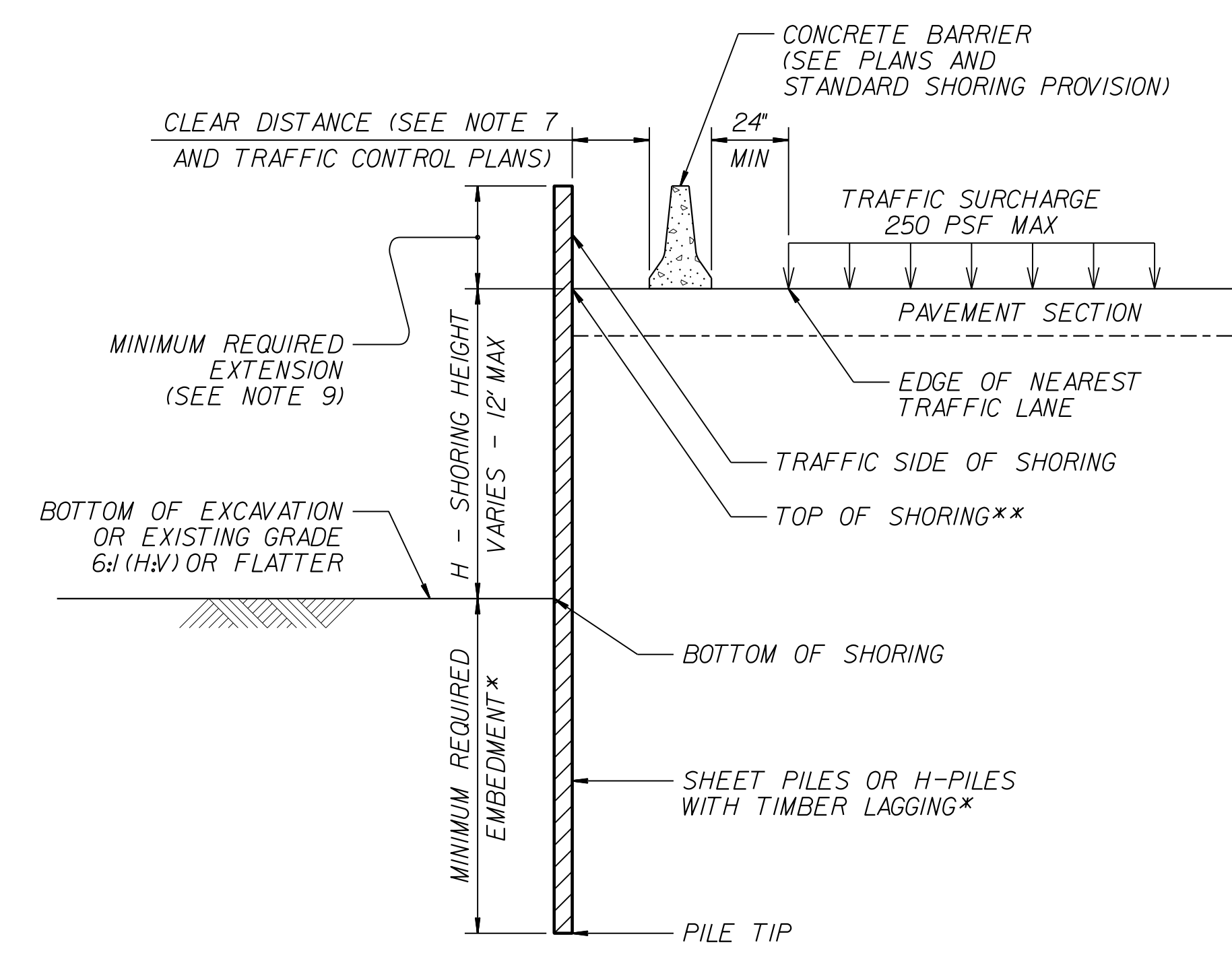
ORIGINAL BY: K. A. KEMPF DATE: JULY 2017
 MODIFIED BY: DATE: _____
 CHECKED BY: DATE: _____
 FILE SPEC.: 2018 standard drawings\division 422d10.dgn

GROUNDWATER CONDITION (SEE NOTE 6)	H SHORING HEIGHT (FT)	SLOPE OR SURCHARGE CASE WITH NO TRAFFIC IMPACT					SURCHARGE CASE WITH TRAFFIC IMPACT				
		SHEET PILES		H-PILES WITH TIMBER LAGGING			SHEET PILES		H-PILES WITH TIMBER LAGGING		
		MINIMUM REQUIRED EMBEDMENT (FT)	MINIMUM REQUIRED SECTION MODULUS (IN ³ /FT)	MINIMUM REQUIRED EMBEDMENT* (FT) (SEE NOTE 10)			MINIMUM REQUIRED EMBEDMENT (FT)	MINIMUM REQUIRED SECTION MODULUS (IN ³ /FT)	MINIMUM REQUIRED EMBEDMENT* (FT) (SEE NOTE 10)		
			HP 10x42	HP 12x53	HP 14x73			HP 10x42	HP 12x53	HP 14x73	
GROUNDWATER ELEVATION BETWEEN BOTTOM OF SHORING AND PILE TIP	< 6	11.5	4.5	11.5	11.5	11.5	16.0	12.0	13.0	13.0	13.0
	7	13.0	7.0	13.0	13.0	13.0	17.0	14.5	14.5	14.5	14.5
	8	15.0	10.0	--	15.0	15.0	18.0	17.0	--	15.5	15.5
	9	17.0	14.0	--	17.0	17.0	19.0	20.0	--	17.0	17.0
	10	18.5	19.5	--	--	18.5	20.0	23.5	--	--	18.5
	11	20.5	26.0	--	--	--	21.0	28.0	--	--	20.0
12	22.5	33.0	--	--	--	22.0	33.0	--	--	21.5	
GROUNDWATER ELEVATION BELOW PILE TIP	< 6	7.5	3.0	8.0	8.0	8.0	11.0	10.0	9.5	9.5	9.5
	7	8.5	4.5	9.5	9.5	9.5	12.0	12.0	10.5	10.5	10.5
	8	10.0	6.5	10.5	10.5	10.5	12.5	14.0	11.5	11.5	11.5
	9	11.0	9.5	--	12.0	12.0	13.5	16.5	--	12.5	12.5
	10	12.5	13.0	--	--	13.5	14.0	19.5	--	13.5	13.5
	11	13.5	17.0	--	--	14.5	15.0	22.5	--	--	14.5
12	15.0	21.5	--	--	16.0	16.0	25.5	--	--	15.5	

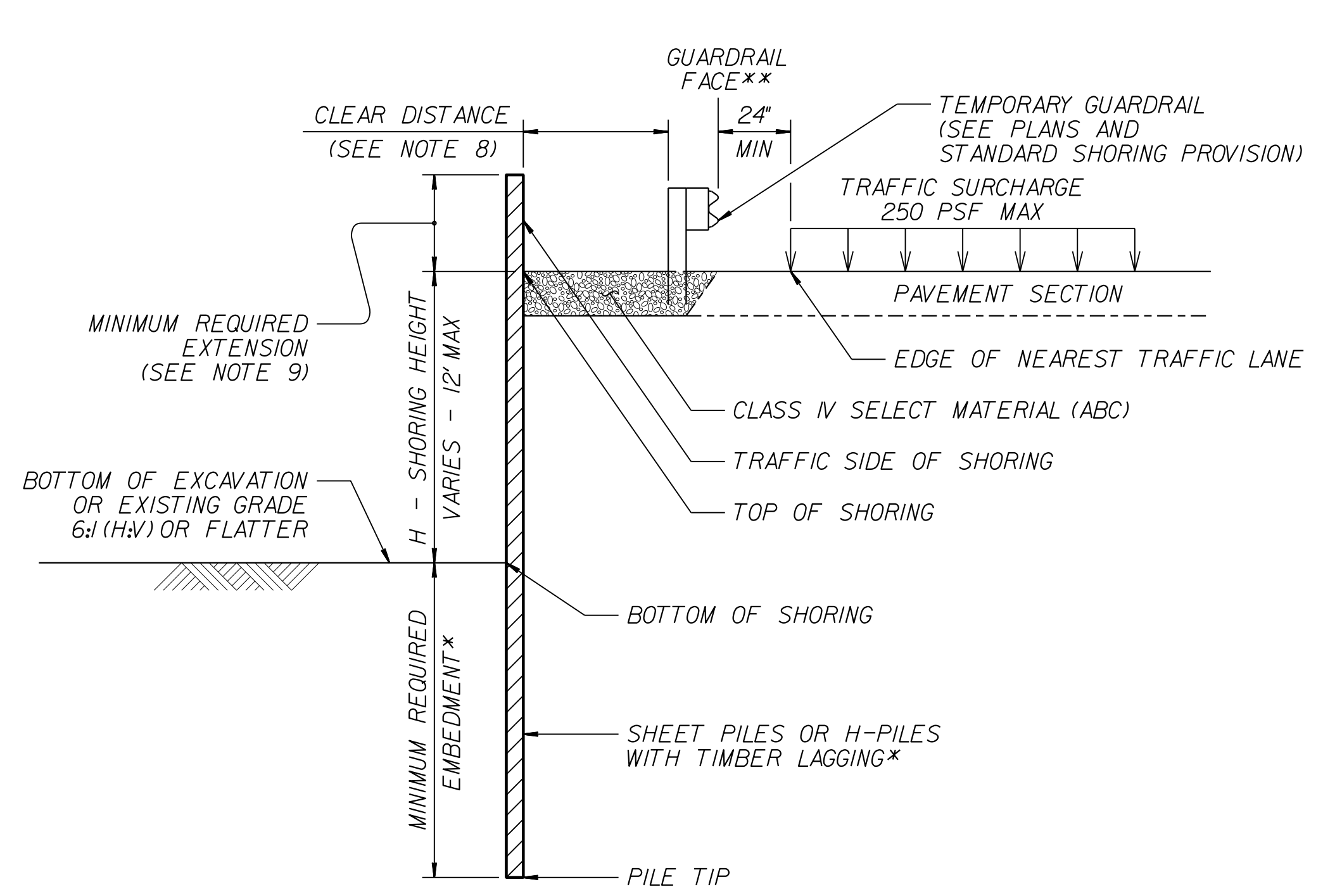
- NOTES:**
- AT THE CONTRACTOR'S OPTION, USE STANDARD TEMPORARY SHORING AS NOTED IN THE PLANS.
 - FOR STANDARD TEMPORARY SHORING, SEE STANDARD SHORING PROVISION.
 - STANDARD TEMPORARY SHORING IS BASED ON THE FOLLOWING IN-SITU ASSUMED SOIL PARAMETERS:
UNIT WEIGHT, $\gamma = 120$ PCF
FRICTION ANGLE, $\phi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

MINIMUM REQUIRED EMBEDMENT AND SECTION MODULUS

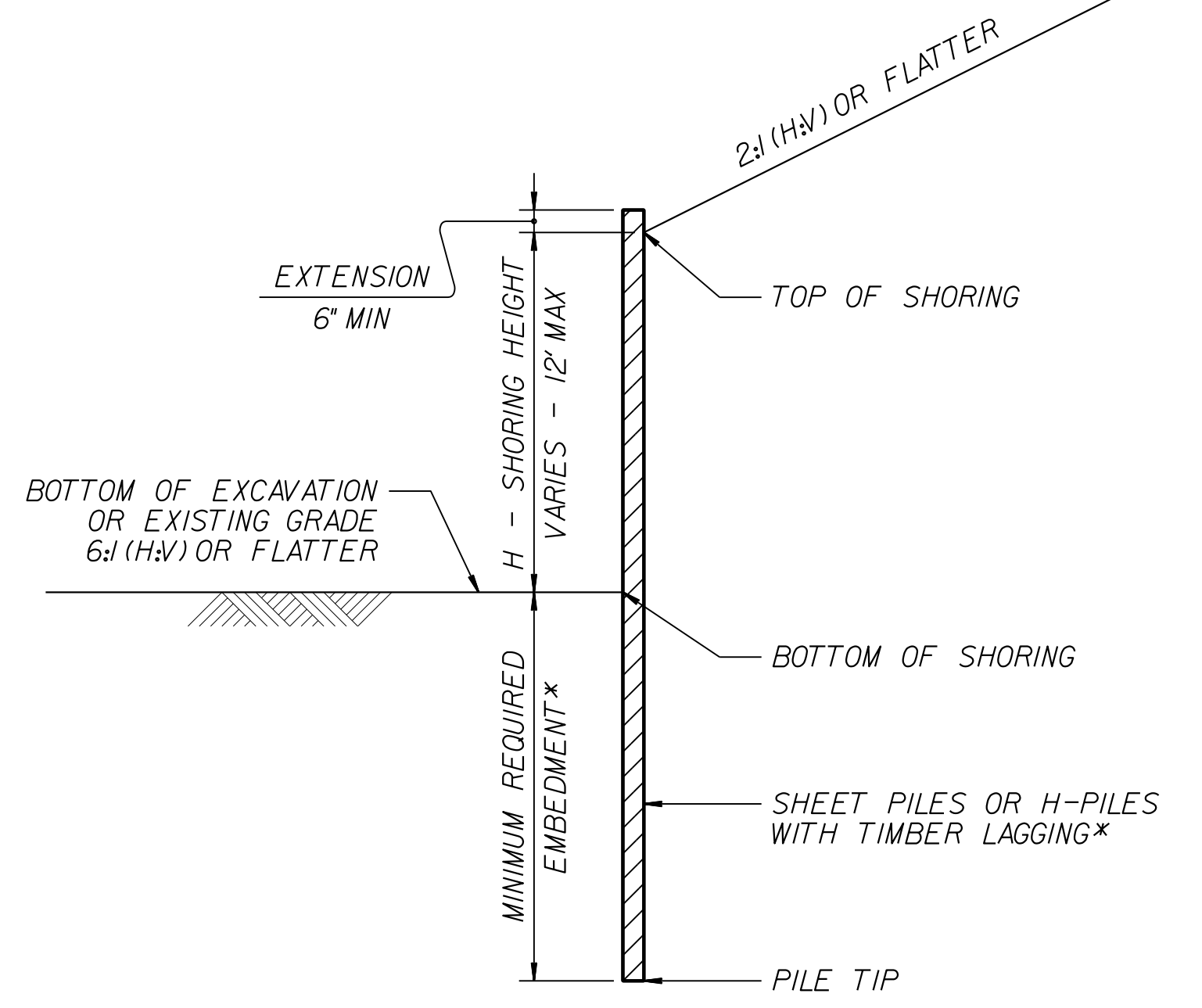
*DO NOT USE H-PILES WITH TIMBER LAGGING FOR GROUNDWATER CONDITION, SHORING HEIGHT AND H-PILE SIZE SHOWN IF MINIMUM REQUIRED EMBEDMENT IS "--".



CONCRETE BARRIER
**TOP OF SHORING = EDGE OF PAVEMENT

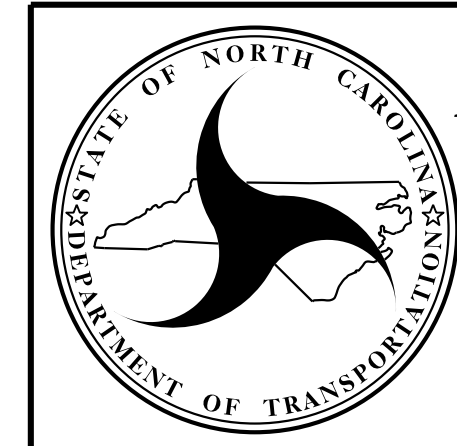


TEMPORARY GUARDRAIL
**GUARDRAIL FACE = EDGE OF PAVEMENT



STANDARD TEMPORARY SHORING (SLOPE CASE)
*SEE TABLE ABOVE.

STANDARD TEMPORARY SHORING (SURCHARGE CASE)
*SEE TABLE ABOVE.

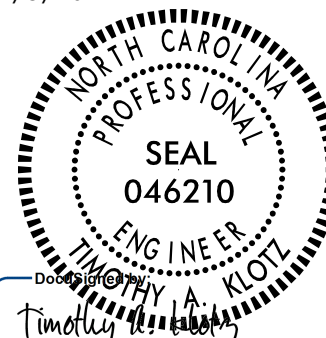
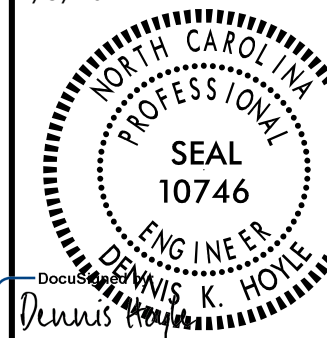


NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

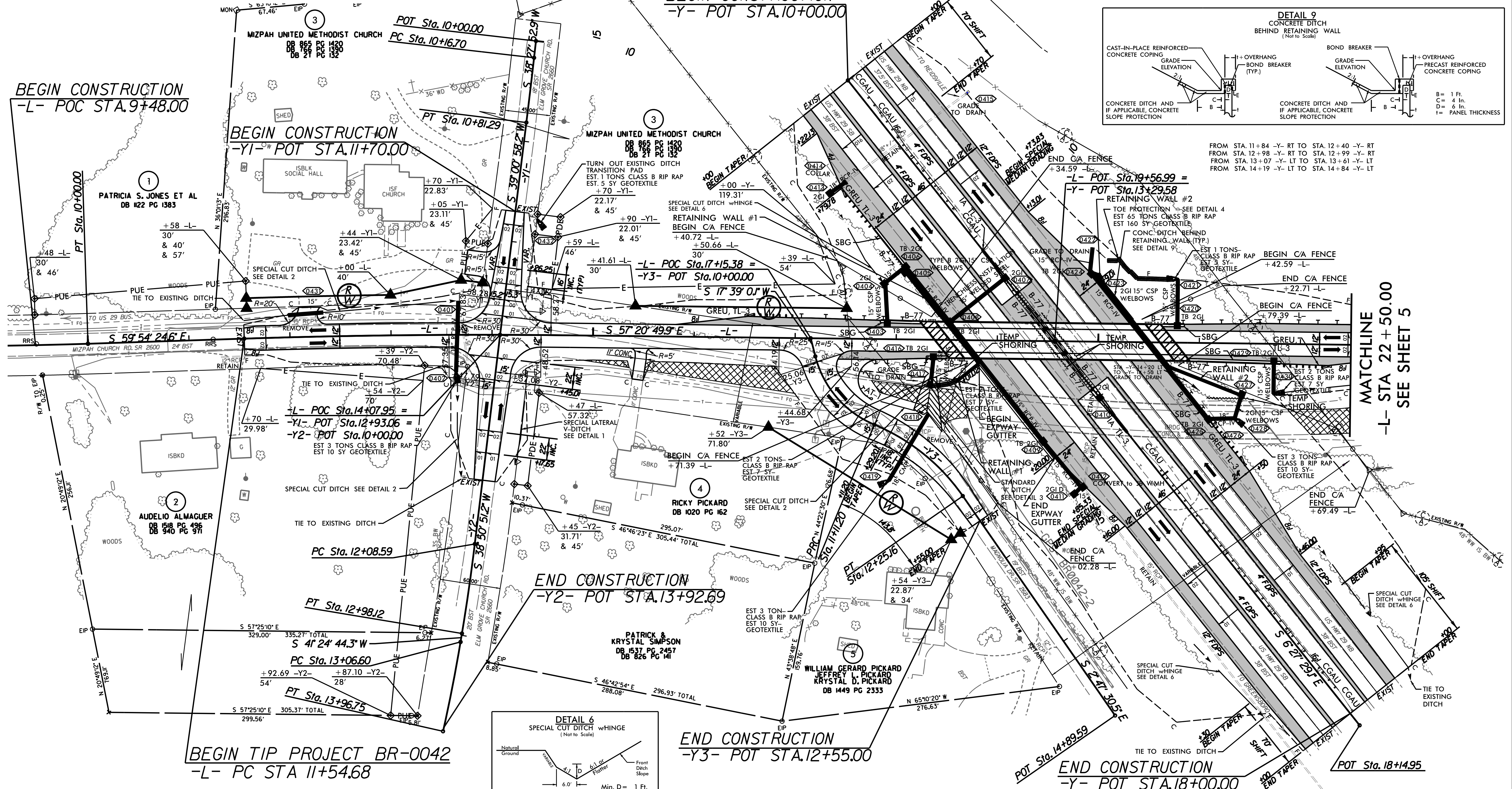
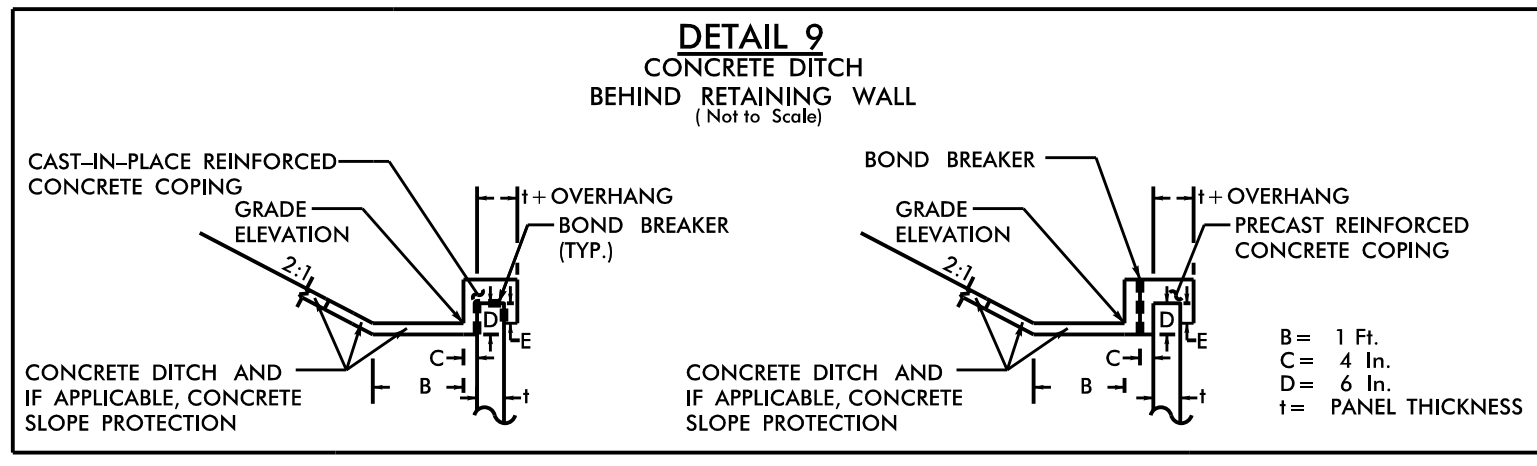
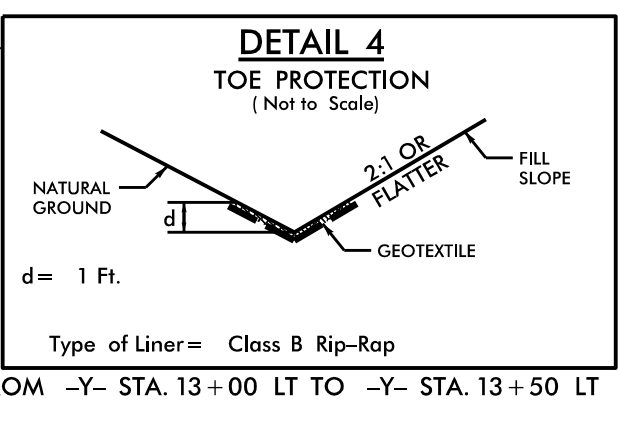
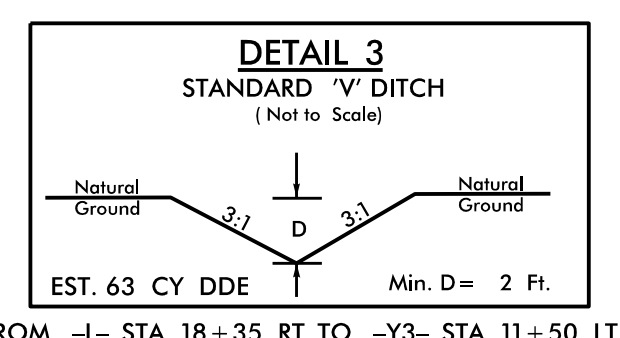
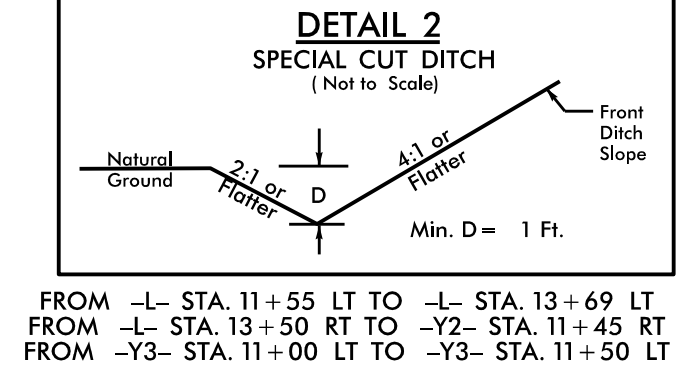
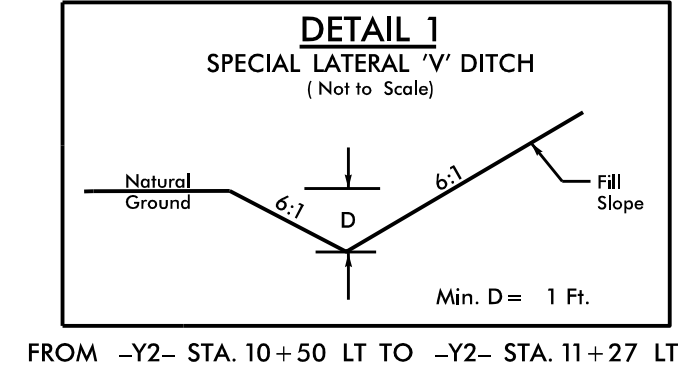
GEOTECHNICAL ENGINEERING UNIT

STANDARD DETAIL NO. 1801.01

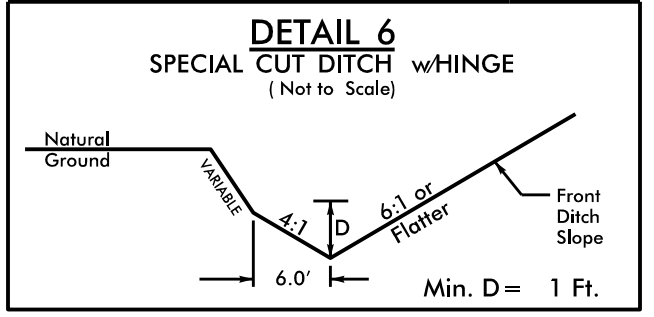
STANDARD TEMPORARY SHORING

PROJECT REFERENCE NO. BR-0042	SHEET NO. 4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER 2/9/2021	HYDRAULICS ENGINEER 2/9/2021
 SEAL 046210 TIMOTHY A. KLOTZ ENGINEER	 SEAL 10746 DENNIS K. HOYE ENGINEER
Prepared in the Office of: AECOM NC FIRM LICENSE No. F-0342 701 Corporate Center Drive, Suite 475 Cary, NC 27513 (919) 854-6200 / (919) 854-6259 (Fax)	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

-L-	-Y1-	-Y2-	-Y3-
PI Sta 9+50.00 $\Delta = 1'16" 50.0"$ (LT) $D = 1'16" 50.0"$ $L = 100.00'$ $T = 50.00'$ $R = 4,474.33'$ $e = N/A$ $R.O. = N/A$	PI Sta 13+51.98 $\Delta = 2'33" 34.7"$ (RT) $D = 0'47" 36.9"$ $L = 322.55'$ $T = 161.30'$ $R = 6,720.00'$ $e = NC$ $R.O. = N/A$	PI Sta 10+49.00 $\Delta = 0'33" 05.3"$ (RT) $D = 0'51" 14.0"$ $L = 64.58'$ $T = 32.29'$ $R = 1,590.00'$ $e = N/A$ $R.O. = N/A$	PI Sta 13+51.69 $\Delta = 3'14" 54.8"$ (RT) $D = 3'36" 12.6"$ $L = 90.15'$ $T = 45.09'$ $R = 1,590.00'$ $e = N/A$ $R.O. = N/A$
PI Sta 12+53.36 $\Delta = 2'33" 53.1"$ (RT) $D = 2'51" 53.2"$ $L = 89.53'$ $T = 44.77'$ $R = 2,000.00'$ $e = N/A$ $R.O. = N/A$	PI Sta 10+68.50 $\Delta = 5'05" 26.7"$ (LT) $D = 57'17" 44.8"$ $L = 92.66'$ $T = 49.96'$ $R = 100.00'$ $e = SEE PLANS$ $R.O. = SEE PLANS$	PI Sta 12+53.36 $\Delta = 2'33" 53.1"$ (RT) $D = 2'51" 53.2"$ $L = 89.53'$ $T = 44.77'$ $R = 2,000.00'$ $e = N/A$ $R.O. = N/A$	PI Sta 11+69.77 $\Delta = 32'38" 46.1"$ (RT) $D = 28'38" 52.4"$ $L = 113.96'$ $T = 58.57'$ $R = 200.00'$ $e = SEE PLANS$ $R.O. = SEE PLANS$



NOTE: SEE SECTIONS AND ROADWAY STANDARD DRAWINGS, STD. NO. 86201, SHEET 1 FOR SPECIAL MEDIAN GRADING



FROM -Y- STA. 11+00 RT TO -Y- STA. 11+80 RT
 FROM -Y- STA. 16+50 RT TO -Y- STA. 17+50 RT
 FROM -Y- STA. 16+50 LT TO -Y- STA. 18+00 LT

FOR TRANSPORTATION MANAGEMENT PLAN AND TEMPORARY SHORING DETAILS SEE SHEETS TMP-1 THROUGH TMP-17

FOR STRUCTURES SEE SHEETS S-01 THROUGH S-28
 FOR RETAINING WALL #1 AND WALL #2 SEE SHEETS W-1 THROUGH W-4

FOR BRIDGE / PAVEMENT RELATIONSHIP SKETCH SEE SHEET 2B-1

FOR -L- PROFILE SEE SHEET 6
 FOR -Y1- & -Y2- PROFILE SEE SHEET 7
 FOR -Y1-, -Y2-, -Y3-, & -Y4- PROFILES SEE SHEET 8

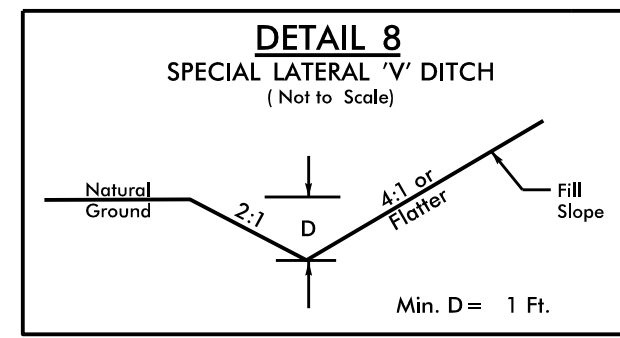
MATCHLINE
 -L- STA 22+50.00
 SEE SHEET 5

REVISIONS

5/7/14/15/19
 5/27/2020
 R:\PROJECTS\BR0042\BR0042-r.dwg-psh04.dgn

PROJECT REFERENCE NO. BR-0042	SHEET NO. 5
RW SHEET NO.	
ROADWAY DESIGN ENGINEER 2/9/2021	HYDRAULICS ENGINEER 2/9/2021
Prepared in the Office of: AECOM NC FIRM LICENSE No. F-0342 701 Corporate Center Drive, Suite 475 Raleigh, NC 27607 (919) 854-6200 • (919) 854-6259(Fax)	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

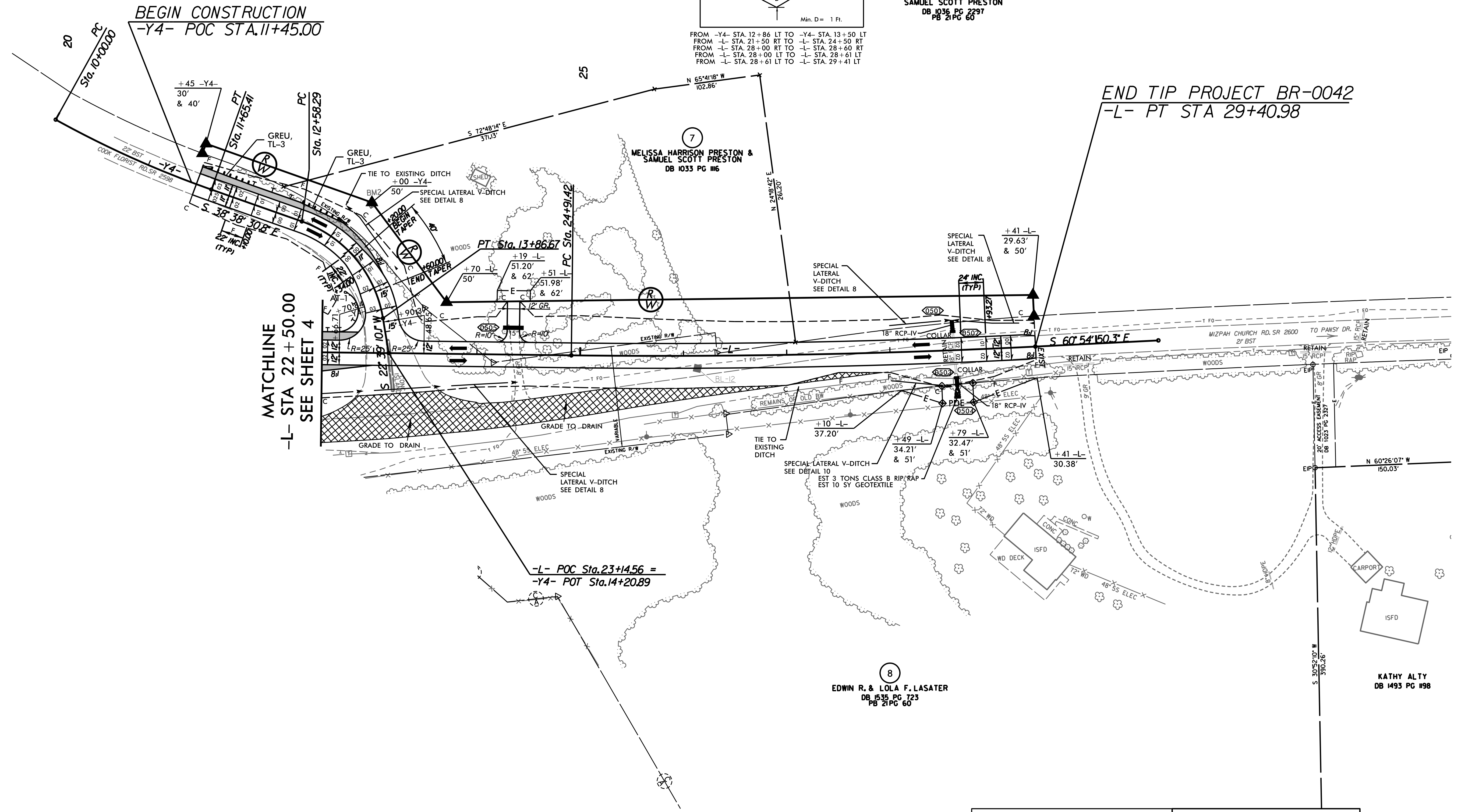
-L-	-Y4-	-Y4-
PI Sta 27+16.22	PI Sta 10+82.90	PI Sta 13+29.39
$\Delta = 3^{\circ} 34' 00.39" (LT)$	$\Delta = 9^{\circ} 35' 31.66" (LT)$	$\Delta = 6^{\circ} 17' 40.9" (RT)$
$D = 0^{\circ} 47' 36.9"$	$D = 5^{\circ} 47' 55.90"$	$D = 47^{\circ} 44' 47.3"$
$L = 449.46'$	$L = 165.41'$	$L = 128.38'$
$T = 224.80'$	$T = 82.90'$	$T = 71.00'$
$R = 7,220.00'$	$R = 988.05'$	$R = 120.00'$
$e = NC$	$e = SEE PLANS$	$e = SEE PLANS$
	$R.O. = SEE PLANS$	$R.O. = SEE PLANS$



FROM -Y4- STA. 12+86 LT TO -Y4- STA. 13+50 LT
 FROM -L- STA. 21+50 RT TO -L- STA. 24+50 RT
 FROM -L- STA. 28+00 RT TO -L- STA. 28+60 RT
 FROM -L- STA. 28+00 LT TO -L- STA. 28+61 LT
 FROM -L- STA. 28+61 LT TO -L- STA. 29+41 LT

6
 MELISSA HARRISON PRESTON & SAMUEL SCOTT PRESTON
 DB 1036 PG 2297
 PB 21 PG 60

END TIP PROJECT BR-0042
 -L- PT STA 29+40.98



7
 MELISSA HARRISON PRESTON & SAMUEL SCOTT PRESTON
 DB 1033 PG 116

8
 EDWIN R. & LOLA F. LASATER
 DB 1535 PG 723
 PB 21 PG 60

KATHY ALTY
 DB 1493 PG 198

FOR TRANSPORTATION MANAGEMENT PLAN AND TEMPORARY SHORING DETAILS SEE SHEETS TMP-1 THROUGH TMP-17

FOR -L- PROFILE SEE SHEET 6
 FOR -Y4- PROFILES SEE SHEET 8

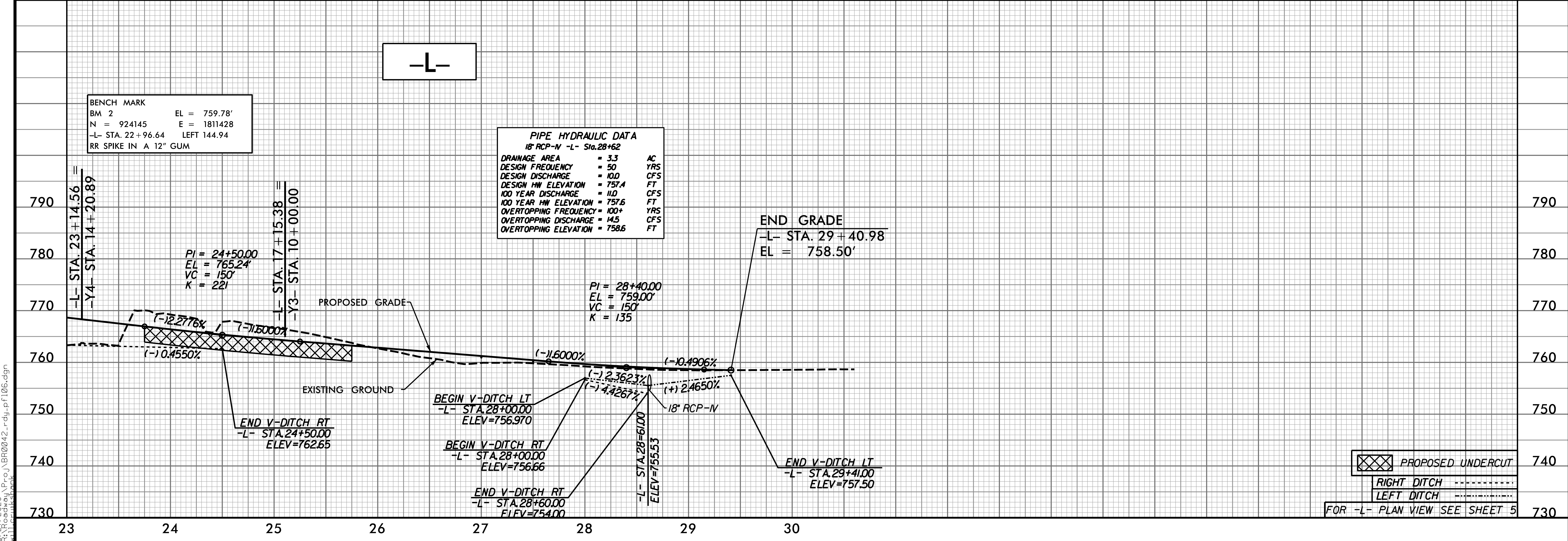
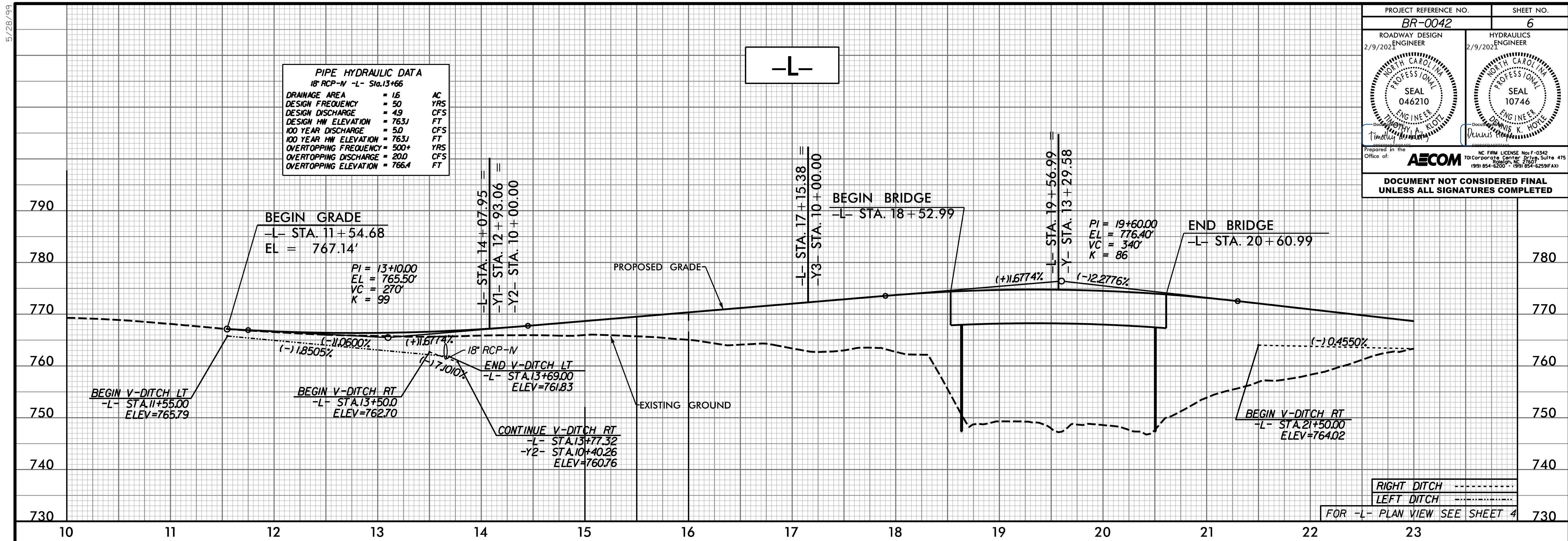
PAVEMENT REMOVAL

REVISIONS

5/14/1999

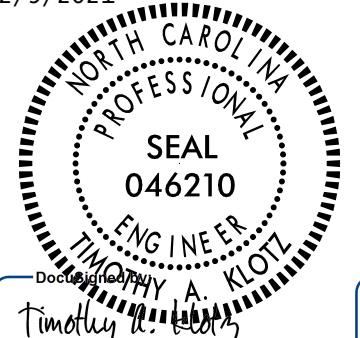
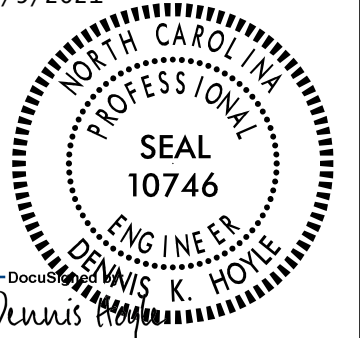

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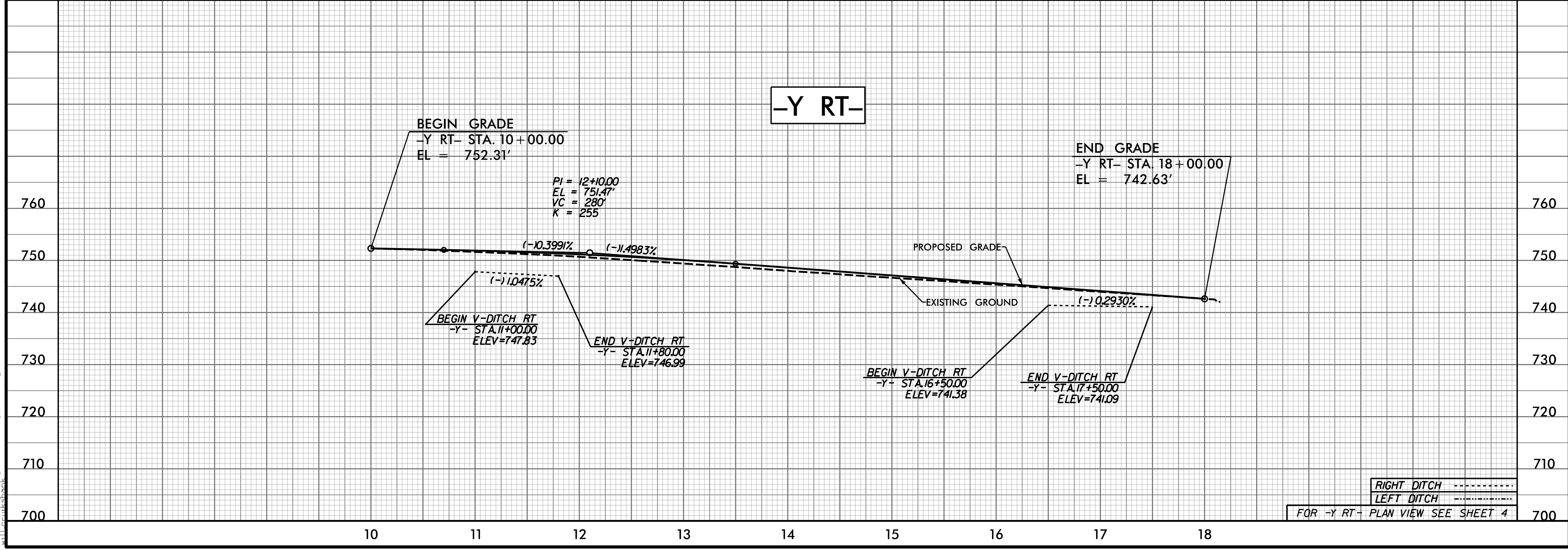
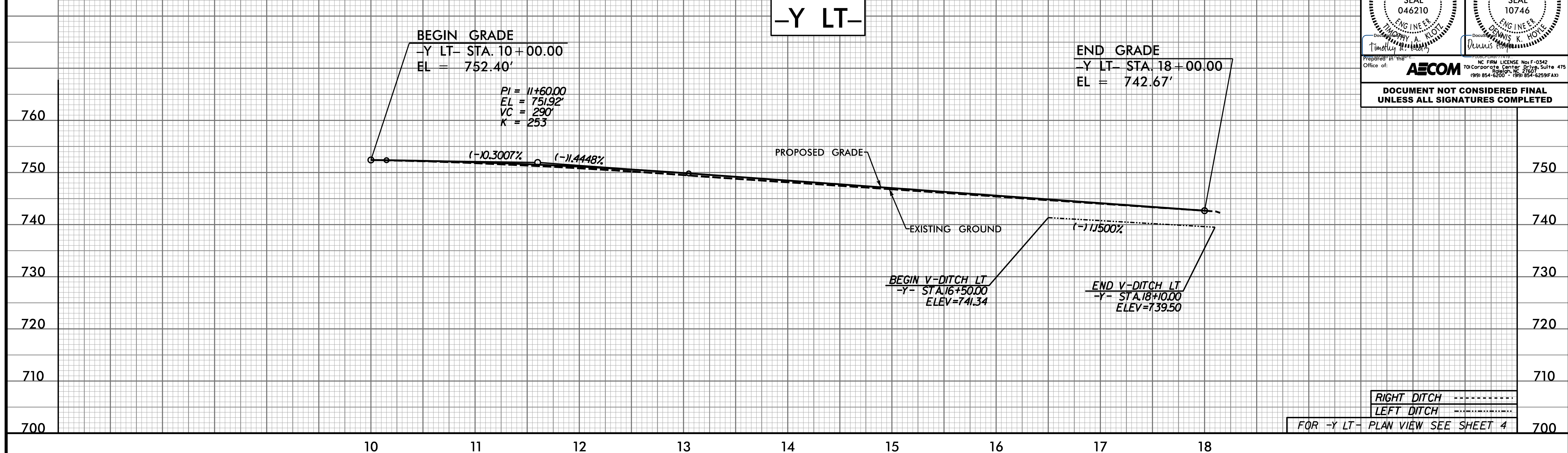
PROJECT REFERENCE NO. BR-0042	SHEET NO. 6
ROADWAY DESIGN 2/9/2021 ENGINEER	HYDRAULICS 2/9/2021 ENGINEER
Prepared in the Office of: 	
NC FIRM LICENSE NO. F-0342 70 Corporate Center Drive, Suite 475 Raleigh, NC 27601 (919) 854-6200 • (919) 854-6259 (FAX)	
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5/28/19
 2/17/2020
 P:\p\o\BR0042_rdy_pf106.dgn
 will@willcount.com

5/28/19

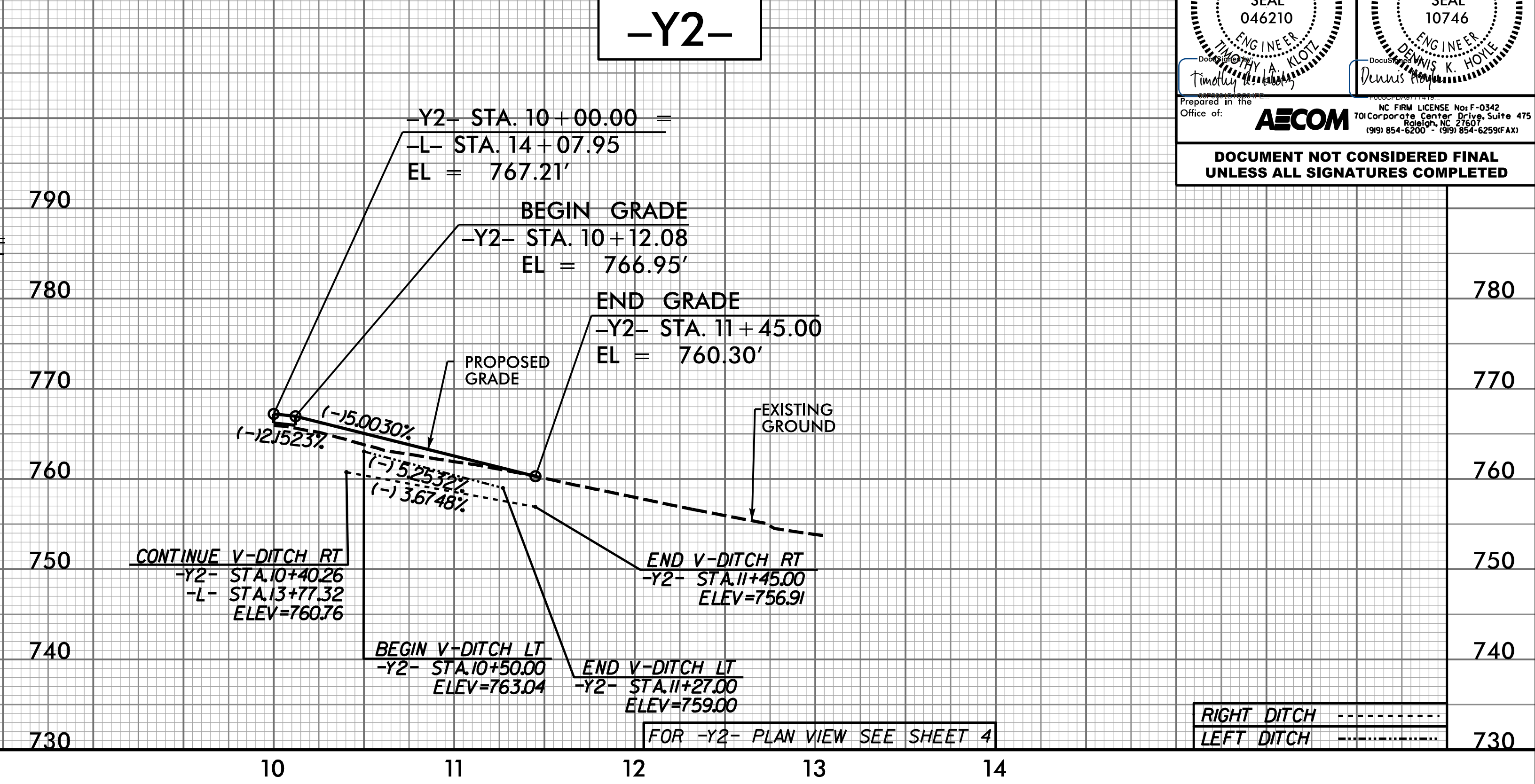
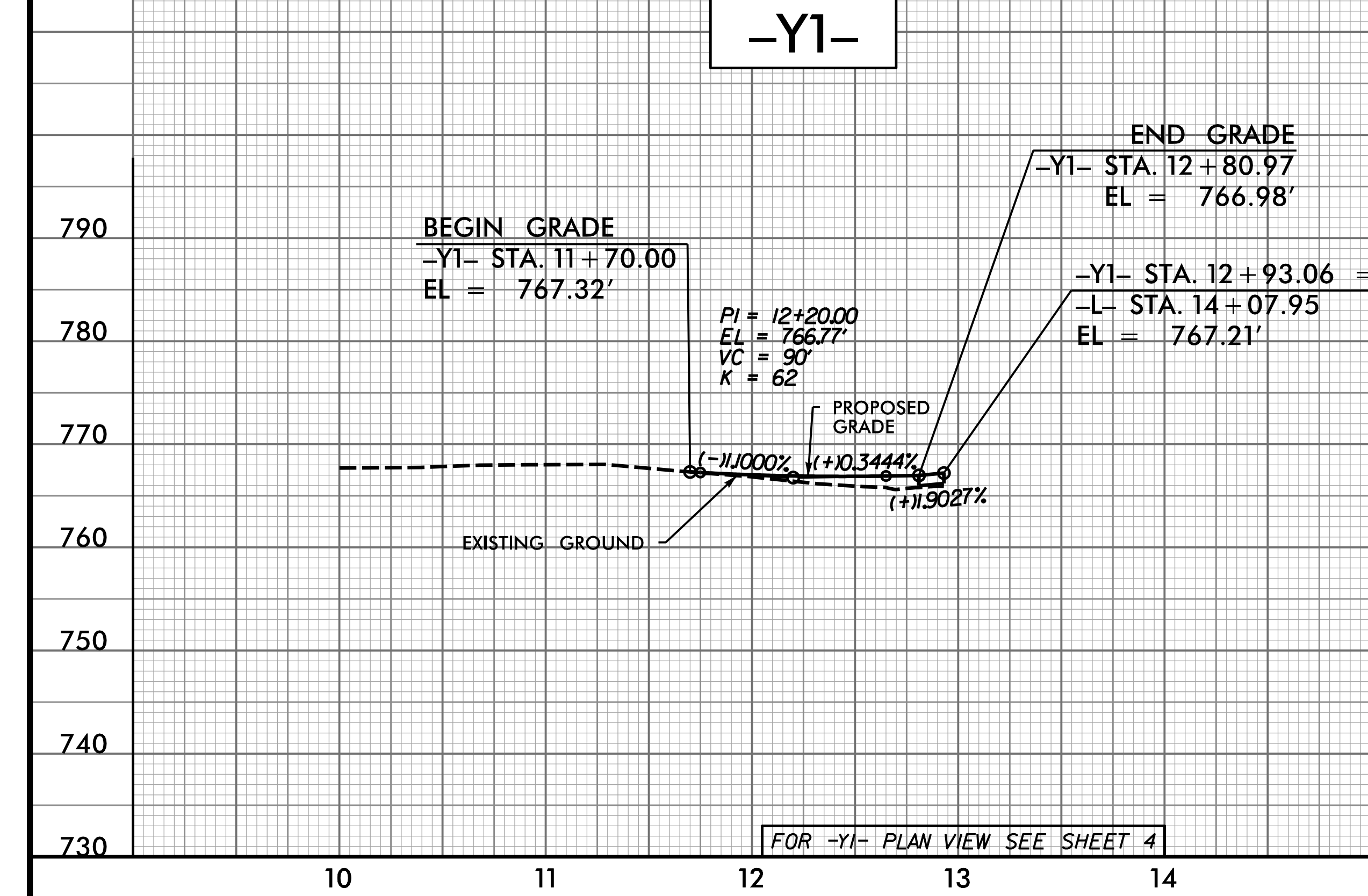
PROJECT REFERENCE NO. BR-0042	SHEET NO. 7
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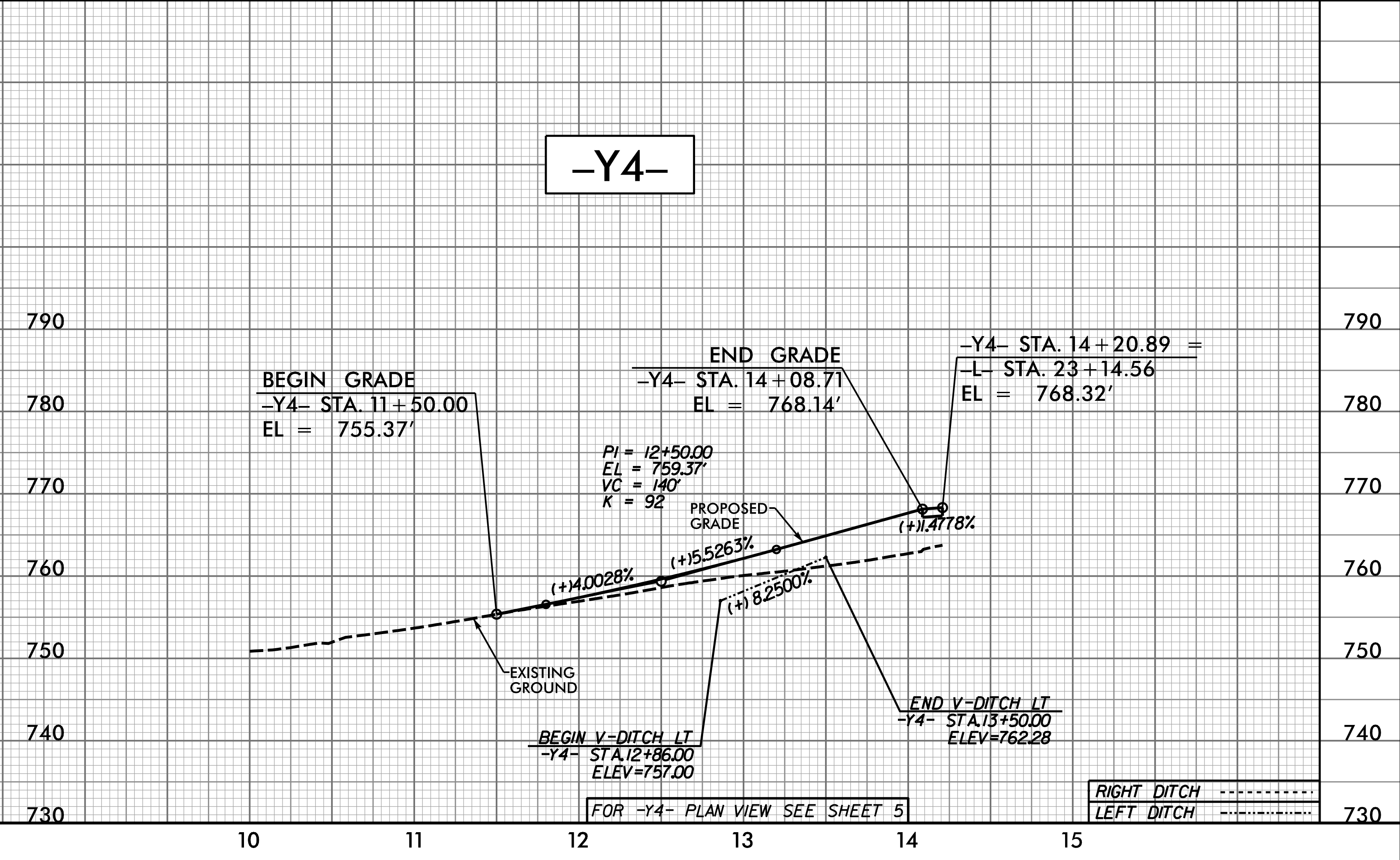
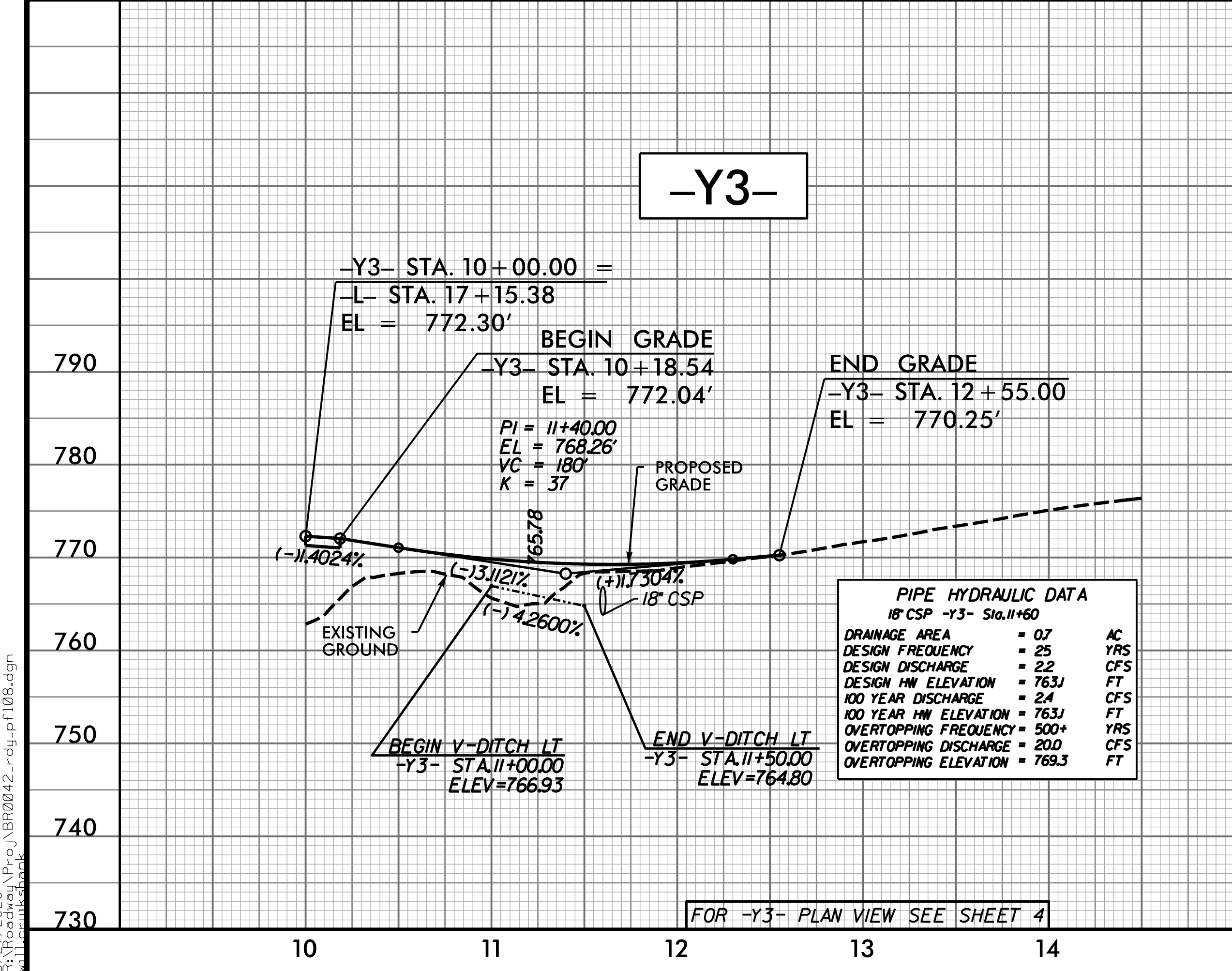
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PROJECT REFERENCE NO. BR-0042	SHEET NO. 8
ROADWAY DESIGN ENGINEER 2/9/2021	HYDRAULICS ENGINEER 2/9/2021
Prepared in the Office of: AECOM	
<small>NC FIRM LICENSE No. F-0342 70 Corporate Center Drive, Suite 475 Raleigh, NC 27607 (919) 854-6200 • (919) 854-6259 FAX</small>	
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5/28/19



RIGHT DITCH -----
LEFT DITCH -----



RIGHT DITCH -----
LEFT DITCH -----

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 2/24/2020 10:00 AM
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