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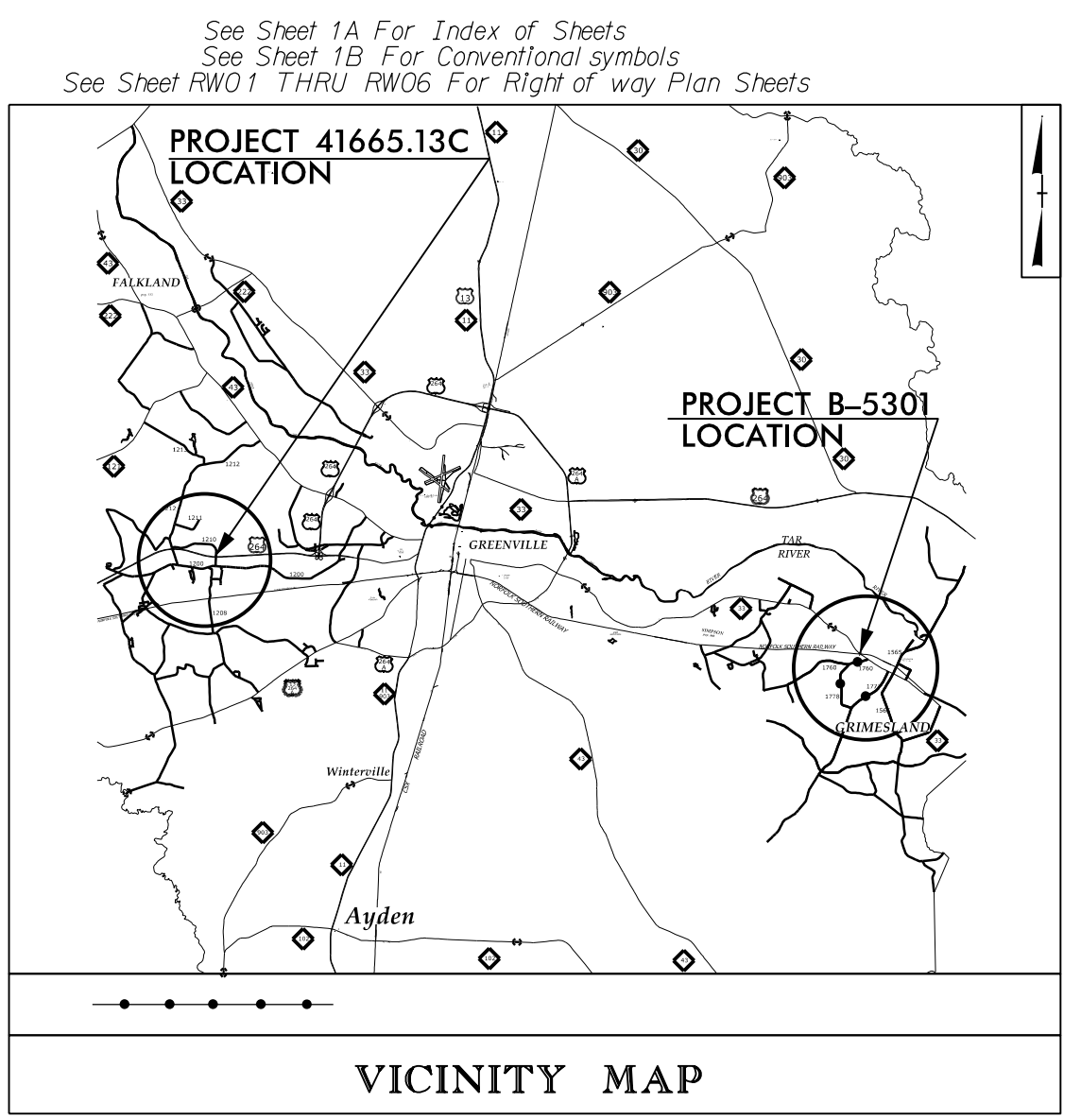
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09.05/2019

TIP PROJECT: B-5301 /41665.13C

CONTRACT: C204414



STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PITT COUNTY

B-5301 LOCATION : BRIDGE NO. 87 OVER NORFOLK SOUTHERN RAILROAD ON NC 33

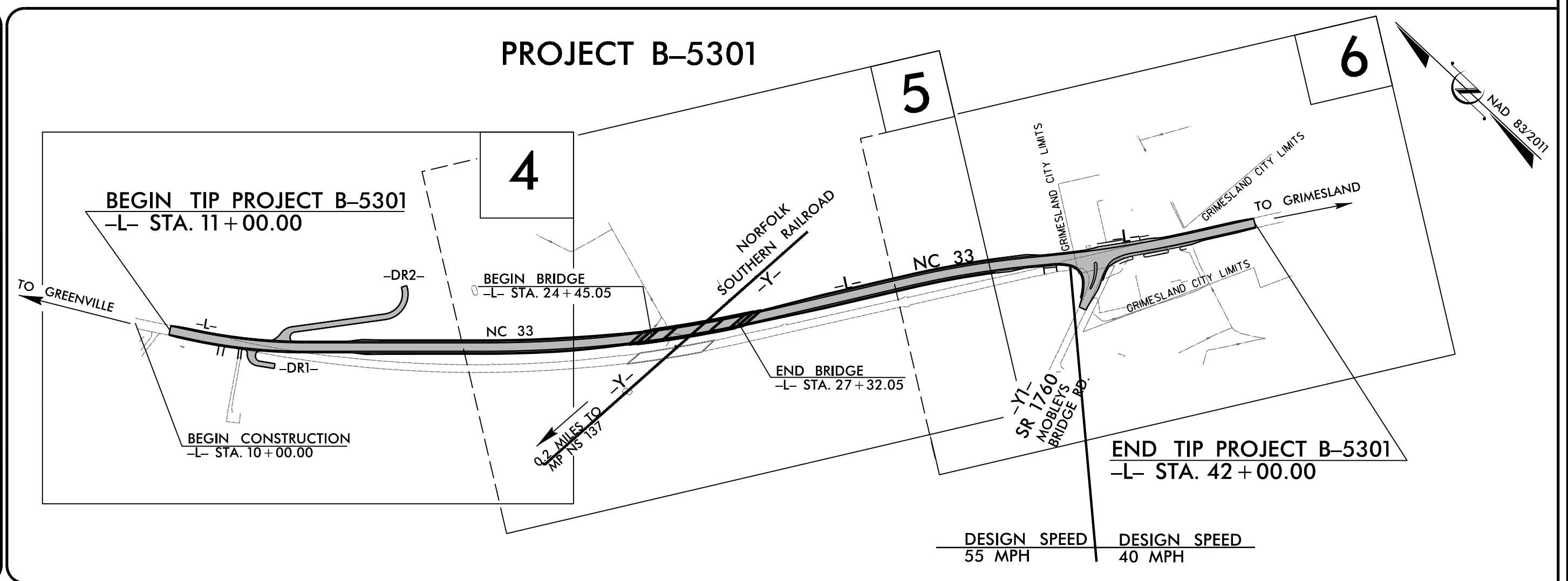
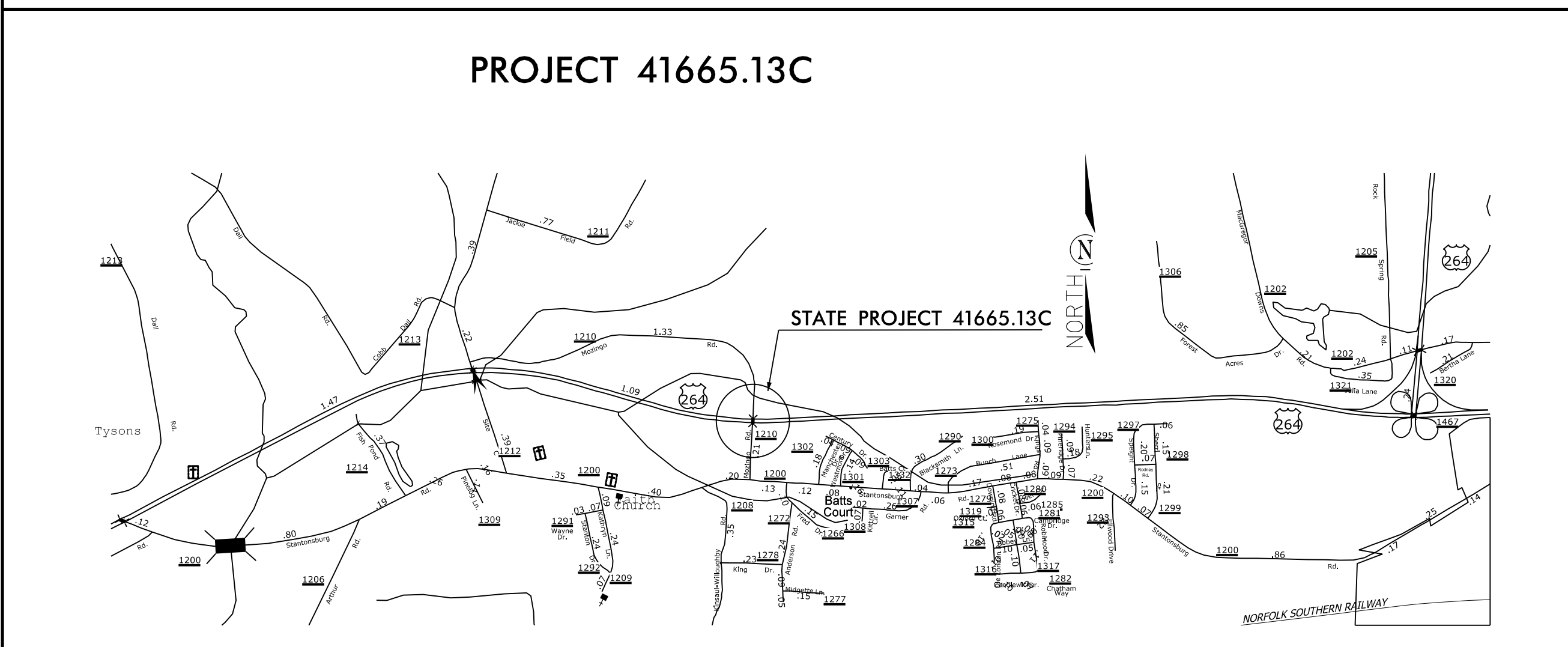
TYPE OF WORK: GRADING, DRAINAGE, STRUCTURE & PAVING

41665.13C LOCATION: BRIDGE 730472 ON MOZINGO ROAD OVER US 264 IN PITT COUNTY

TYPE OF WORK: CONCRETE BRIDGE REPAIR

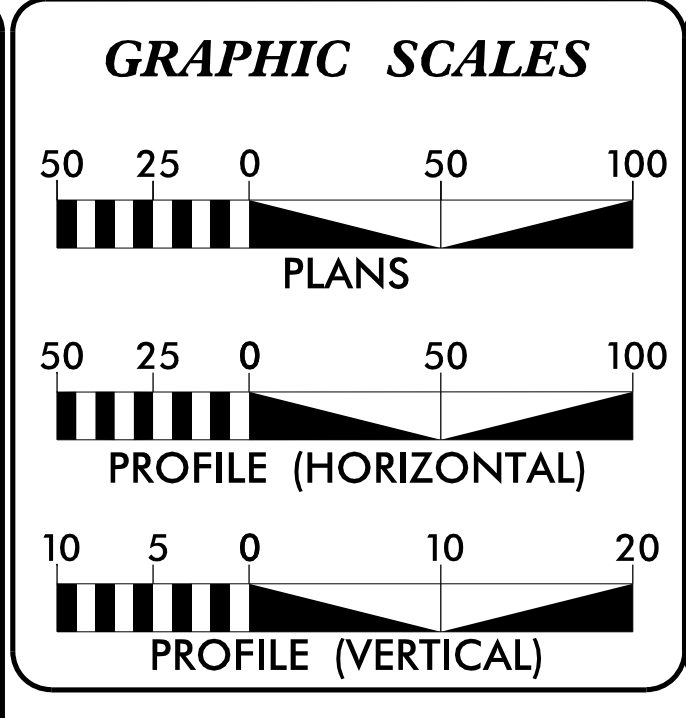
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-5301 /41665.13C	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
46015.1.1	BRSTP-033(13)	PE	
46015.2.1		RW & UTIL.	
46015.3.1		CONST.	
41665.13.C		PE & CONST	

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED



PROJECT 41665.13C LENGTH

STATE STRUCTURE PROJECT 41665.13C
STATE PROJECT LENGTH = 0.019 MILES



DESIGN DATA

ADT 2020 = 9,300
ADT 2040 = 13,200
K = 11%
D = 60%
T = 8% *
* (TTST 3% + DUAL 5%)
V = 40/55 MPH
CLASS = MAJOR COLLECTOR
REGIONAL TIER

PROJECT B-5301 LENGTH

LENGTH ROADWAY TIP PROJECT B-5301 = 0.533 MILES
LENGTH STRUCTURE TIP PROJECT B-5301 = 0.054 MILES
TOTAL LENGTH TIP PROJECT B-5301 = 0.587 MILES

Prepared In the Office of:
DIVISION OF HIGHWAYS
1037 W. H. Smith Blvd., Greenville NC, 27858

2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: N/A

LETTING DATE: JUNE 21, 2022

JEFF CABANNIS
PROJECT ENGINEER

LANG JONES
PROJECT DESIGN ENGINEER

APPROVED: _____

DATE: _____

SEAL

Prepared In the Office of:
SEPI
Engineering & Construction, Inc.

2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: MAY 16, 2019

LETTING DATE: JUNE 21, 2022

BEN CRAWFORD, PE
PROJECT ENGINEER

I. T. YOUNIS
PROJECT DESIGN ENGINEER

DAVID STUTTS, PE
NCDOT CONTACT

HYDRAULICS ENGINEER

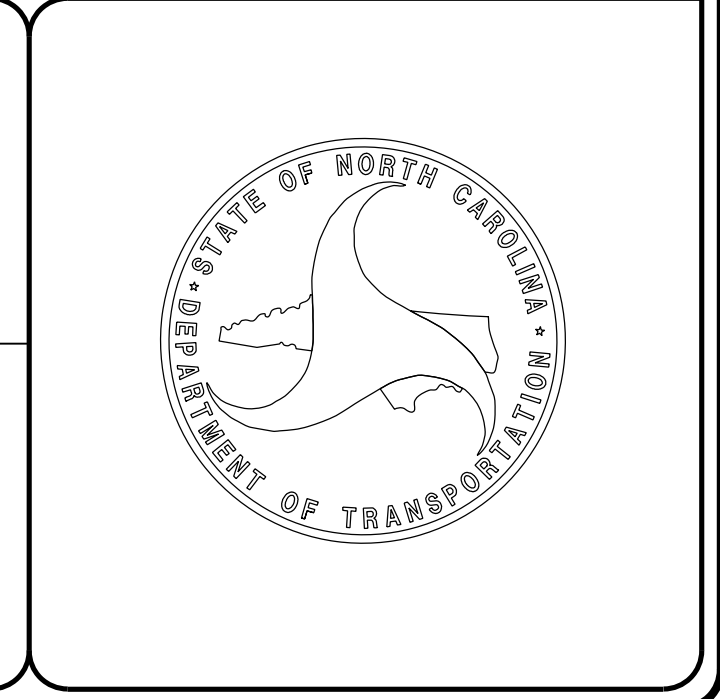
SEAL 35621

SIGNATURE: _____ P.E.

ROADWAY DESIGN ENGINEER

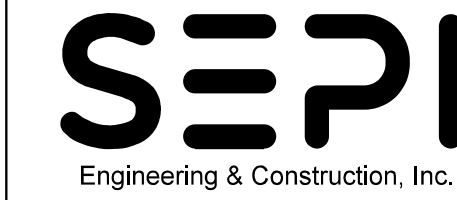
SEAL 32606

SIGNATURE: _____ P.E.



3/31/2022
User: iyounis
Project: B-5301-Rdy -tsh.dgn

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS



1 Glenwood Avenue
Raleigh, NC 27603
Tel: 919.789.9977
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License: C-2197

PROJECT REFERENCE NO. <i>B-5301/41665.13C</i>	SHEET NO. <i>1A</i>
PROJECT B-5301 ROADWAY DESIGN ENGINEER	

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

PART I B-5301 INDEX OF SHEETS

SHEET NUMBER	INDEX OF SHEETS SHEET
1	TITLE SHEET
1A	INDEX OF SHEETS, GENERAL NOTES, AND LIST OF STANDARD DRAWINGS
1B	CONVENTIONAL PLAN SHEET SYMBOLS
2A-1 THRU 2A-2	PAVEMENT SCHEDULE, WEDGING DETAIL, AND TYPICAL SECTIONS
2B-1	ROADWAY INTERSECTION DETAIL
2C-1	STRUCTURE ANCHOR UNITS DETAIL
2C-2	GUARDRAIL INSTALLATION DETAIL
3B-1	SUMMARY OF EARTHWORK, GUARDRAIL SUMMARY AND ASPHALT PAVEMENT REMOVAL SUMMARY
3D-1 THRU 3D-3	DRAINAGE SUMMARIES
3G-1	GEOTECHNICAL SUMMARIES
3P-1	PARCEL INDEX SHEET
4 THRU 6	PLAN SHEETS
7 THRU 8	PROFILE SHEETS
RW01 THRU RW06	RIGHT OF WAY PLAN SHEETS
TMP-1 THRU TMP-13	TRAFFIC MANAGEMENT PLANS
PMP-1 THRU PMP-5	PAVEMENT MARKING PLANS
EC-1 THRU EC-9	EROSION CONTROL PLANS
RF-1	REFORESTATION PLANS
SIGN-1 THRU SIGN-9	SIGNING PLANS
UD-1 THRU UD-4	UTILITIES BY OTHERS PLANS
S-1 THRU S-55	STRUCTURE PLANS
X-1	CROSS-SECTION SUMMARY SHEET
X-1A	CROSS-SECTION INDEX SHEET
X-2 THRU X-22	CROSS-SECTIONS

PART II 41665.13C INDEX OF SHEETS

TMP-1 THRU TMP-2	TRAFFIC MANAGEMENT PLANS
S-1 THRU S-14	STRUCTURE PLANS

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.

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.

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.

SUBSURFACE DRAINS:

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

GUARDRAIL:

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

TEMPORARY SHORING:

SHORING REQUIRED FOR THE MAINTENANCE OF TRAFFIC WILL BE PAID FOR AS "EXTRA WORK" IN ACCORDANCE WITH SECTION 104-7

UTILITIES: UTILITY OWNERS ON THIS PROJECT ARE :
POWER- DUKE ENERGY
COMMUNICATION- CENTURYLINK
WATER- EASTERN PINES
SEWER- TOWN OF GRIMESLAND

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 CONTRACT.

EFF. 01-16-2018
REV.

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	
200.03	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
310.10	Driveway Pipe Construction
DIVISION 4 - MAJOR STRUCTURES	
422.01	Bridge Approach Fills - Type I Standard Approach Fill
DIVISION 5 - SUBGRADE, BASES AND SHOULDERS	
560.01	Method of Shoulder Construction - High Side of Superelevated Curve - Method I
DIVISION 6 - ASPHALT BASES AND PAVEMENTS	
654.01	Pavement Repairs
DIVISION 8 - INCIDENTALS	
806.01	Concrete Right-of-Way Marker
806.02	Granite Right-of-Way Marker
815.02	Subsurface Drain
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
838.39	Reinforced Concrete Endwall - for Single 72" Pipe 90 Skew
838.69	Reinforced Brick Endwall - for Single 72" Pipe 90 Skew
838.75	Notes for Reinforced Brick Endwall - Std. Dwg 838.51 thru 838.70
838.80	Precast Endwalls - 12" thru 72" Pipe 90 Skew
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
840.16	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
840.27	Brick Grated Drop Inlet Type 'B' - 12" thru 36" Pipe
840.29	Frames and Narrow Slot Flat Grates
840.31	Concrete Junction Box - 12" thru 66" Pipe
840.32	Brick Junction Box - 12" thru 66" Pipe
840.35	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
846.01	Concrete Curb, Gutter and Curb & Gutter
846.04	Drop Inlet Installation in Shoulder Berm 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
876.01	Rip Rap in Channels
876.02	Guide for Rip Rap at Pipe Outlets

STATE OF NORTH CAROLINA, DIVISION OF HIGHWAYS

CONVENTIONAL PLAN SHEET SYMBOLS

12/2/2016

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	-----
New Right of Way Line with Pin and Cap	-----
New Right of Way Line with Concrete or Granite R/W Marker	-----
New Control of Access Line with Concrete C/A Marker	-----
Existing Control of Access	-----
New Control of Access	-----
Existing Easement Line	-----
New Temporary Construction Easement	-----
New Temporary Drainage Easement	-----
New Permanent Drainage Easement	-----
New Permanent Drainage / Utility Easement	-----
New Permanent Utility Easement	-----
New Temporary Utility Easement	-----
New Aerial Utility Easement	-----

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	-----
Proposed Guardrail	-----
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	⊙
Storm Sewer	-----

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.*)	-----
U/G Power Line LOS C (S.U.E.*)	-----
U/G Power Line LOS D (S.U.E.*)	-----

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.*)	-----
U/G Telephone Cable LOS C (S.U.E.*)	-----
U/G Telephone Cable LOS D (S.U.E.*)	-----
U/G Telephone Conduit LOS B (S.U.E.*)	-----
U/G Telephone Conduit LOS C (S.U.E.*)	-----
U/G Telephone Conduit LOS D (S.U.E.*)	-----
U/G Fiber Optics Cable LOS B (S.U.E.*)	-----
U/G Fiber Optics Cable LOS C (S.U.E.*)	-----
U/G Fiber Optics Cable LOS D (S.U.E.*)	-----

WATER:

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

TV:

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

GAS:

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

SANITARY SEWER:

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

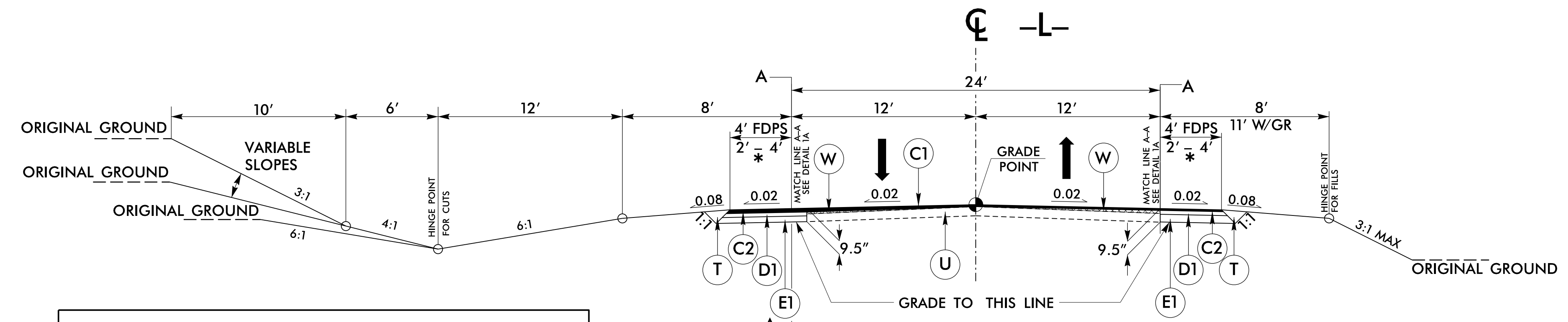
MISCELLANEOUS:

Utility Pole	●
Utility Pole with Base	□
Utility Located Object	○
Utility Traffic Signal Box	⊠
Utility Unknown U/G Line LOS B (S.U.E.*)	-----
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.

6/2/09

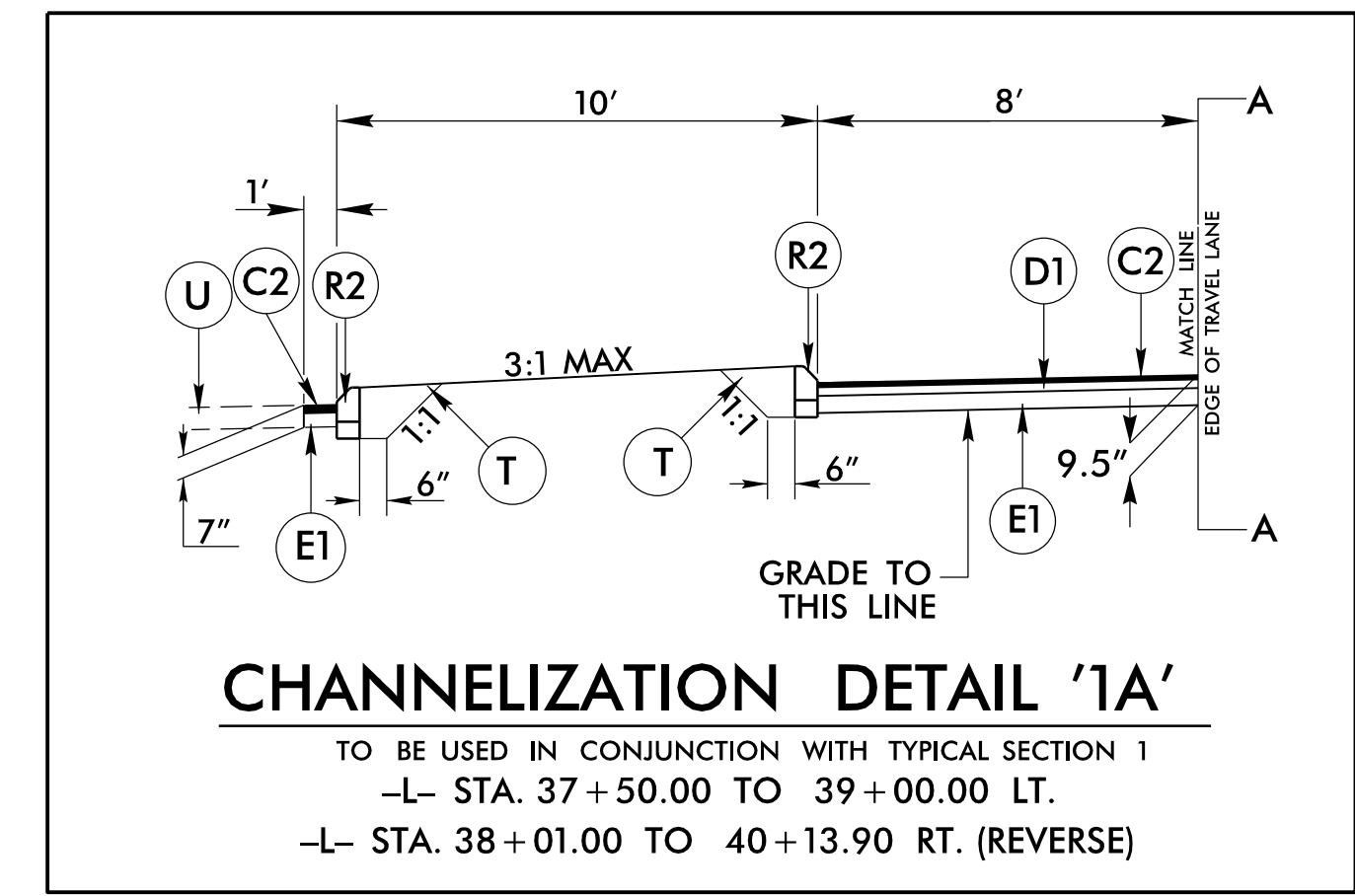
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PROJECT REFERENCE NO. B-5301	SHEET NO. 2A-1
ROADWAY DESIGN ENGINEER 	PAVEMENT DESIGN ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

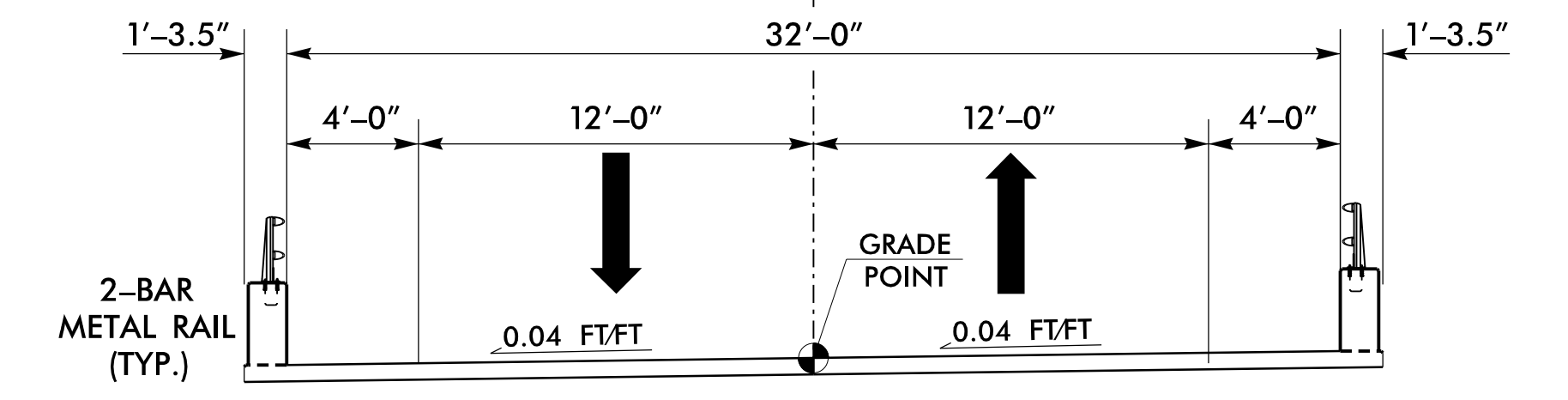


ROADWAY TYPICAL SECTION NO. 1

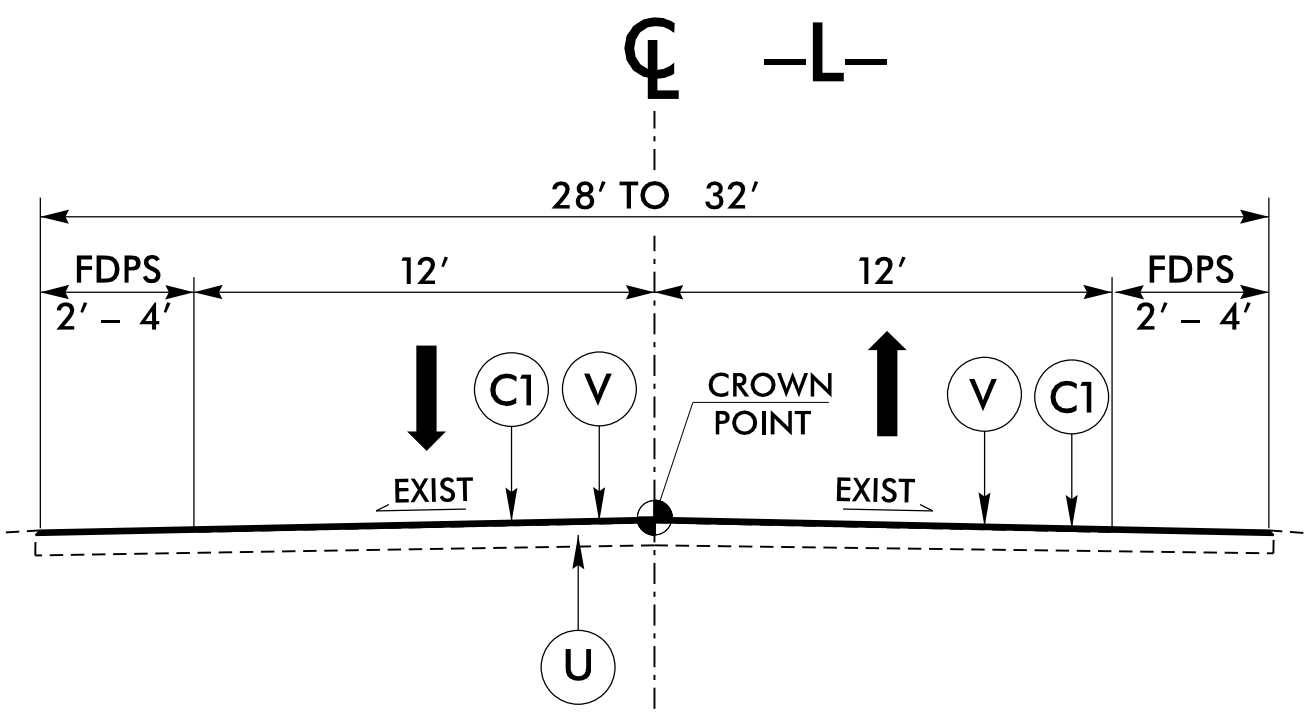
- * -L- STA. 11+00.00 TO -L- STA. 11+50.00
- L- STA. 11+50.00 TO -L- STA. 13+55.52
- L- STA. 36+28.18 TO -L- STA. 41+50.00



CHANNELIZATION DETAIL '1A'
TO BE USED IN CONJUNCTION WITH TYPICAL SECTION 1
-L- STA. 37+50.00 TO 39+00.00 LT.
-L- STA. 38+01.00 TO 40+13.90 RT. (REVERSE)



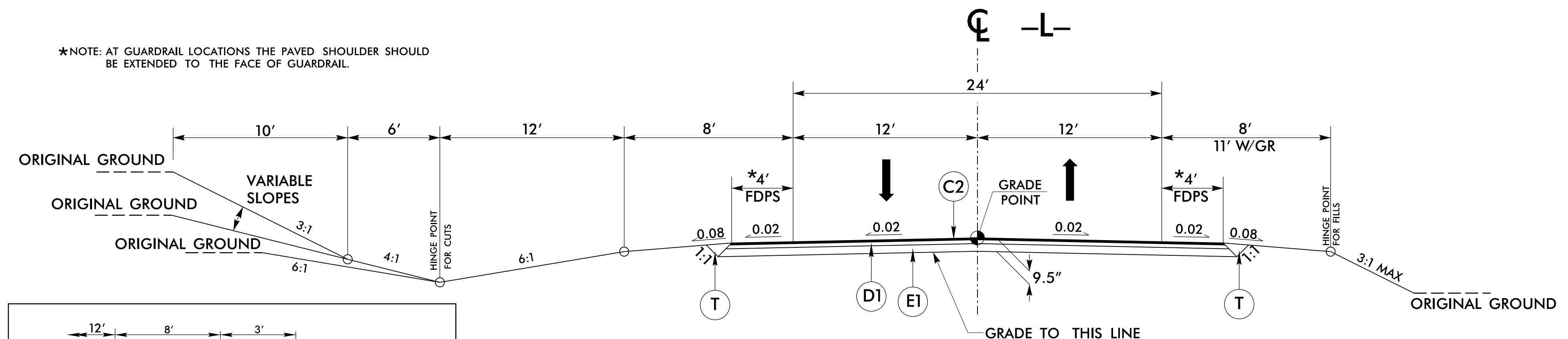
BRIDGE TYPICAL SECTION
USE BRIDGE TYPICAL SECTION
-L- STA. 24+45.05 TO -L- STA. 27+32.05



ROADWAY TYPICAL SECTION NO. 2

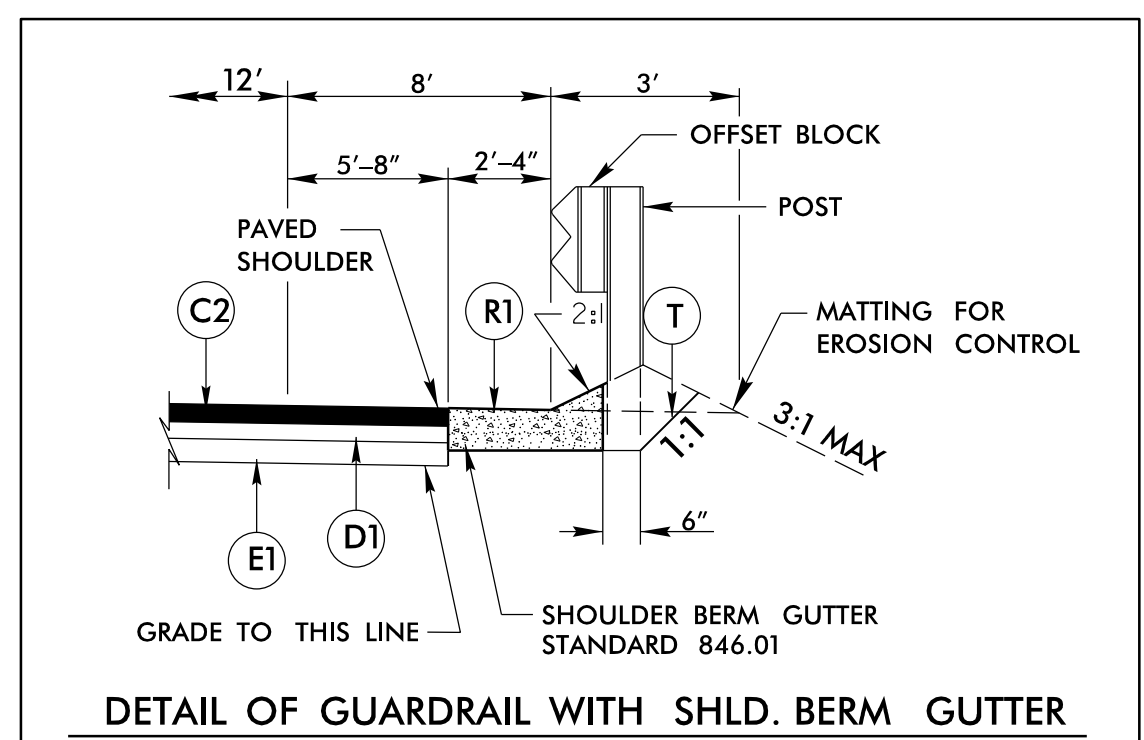
- L- STA. 41+50.00 TO -L- STA. 42+00.00,
- TRANSITION FROM T.S. 1 TO EXISTING

*NOTE: AT GUARDRAIL LOCATIONS THE PAVED SHOULDER SHOULD BE EXTENDED TO THE FACE OF GUARDRAIL.



ROADWAY TYPICAL SECTION NO. 3

- L- STA. 13+55.52 TO -L- STA. 24+45.05 (BEGIN BRIDGE)
- L- STA. 27+32.05 (END BRIDGE) TO -L- STA. 36+28.18



DETAIL OF GUARDRAIL WITH SHLD. BERM GUTTER

- USE WITH TYPICAL SECTION 3
- L- STA. 17+95.00 TO 23+98.00 RT. SIDE
- L- STA. 27+27.00 TO 34+50.00 RT. SIDE
- L- STA. 16+95.00 TO 24+45.00 LT. SIDE
- L- STA. 27+84.00 TO 34+55.00 LT. SIDE

PAVEMENT SCHEDULE (FINAL PAVEMENT DESIGN)	
C1	PROP. APPROX. 1.5" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD.
C2	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
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 1.5" IN DEPTH.
D1	PROP. APPROX. 2.5" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 285 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 2.5" 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. 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 4" IN DEPTH OR GREATER THAN 5.5" IN DEPTH.
J1	6" AGGREGATE BASE COURSE
R1	SHOULDER BERM GUTTER
R2	8"x18" CONCRETE CURB
T	EARTH MATERIAL.
U	EXISTING PAVEMENT.
V	INCIDENTAL MILLING
W	WEDGING (SEE STANDARD WEDGING DETAIL)

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

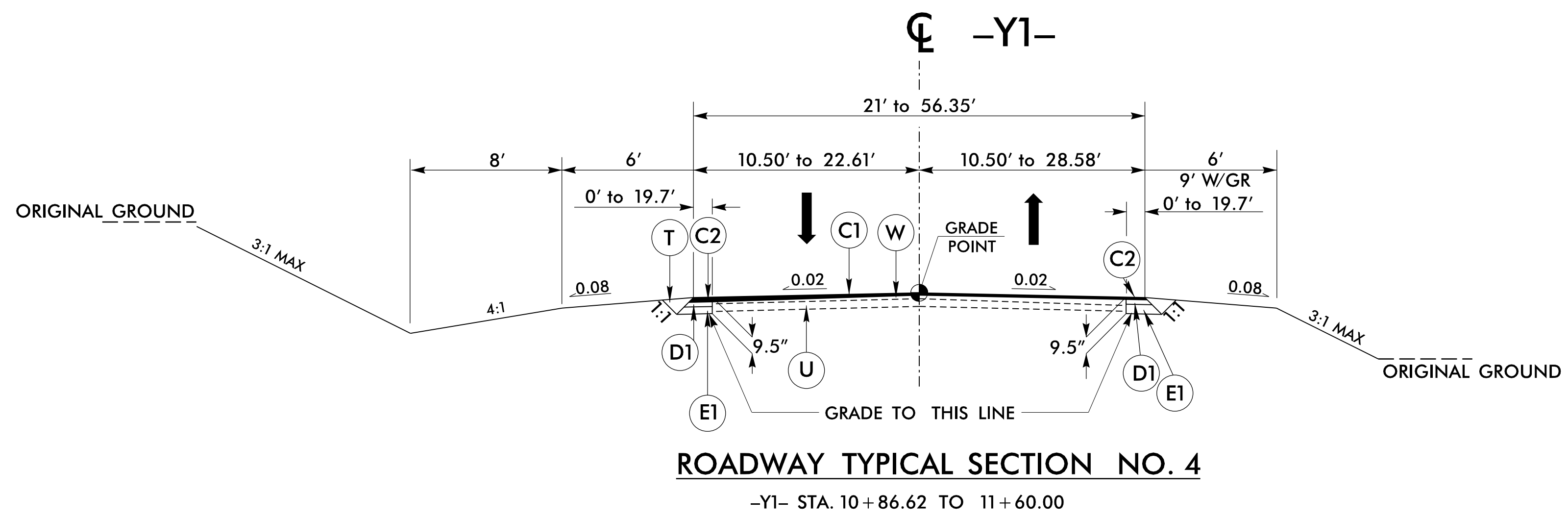
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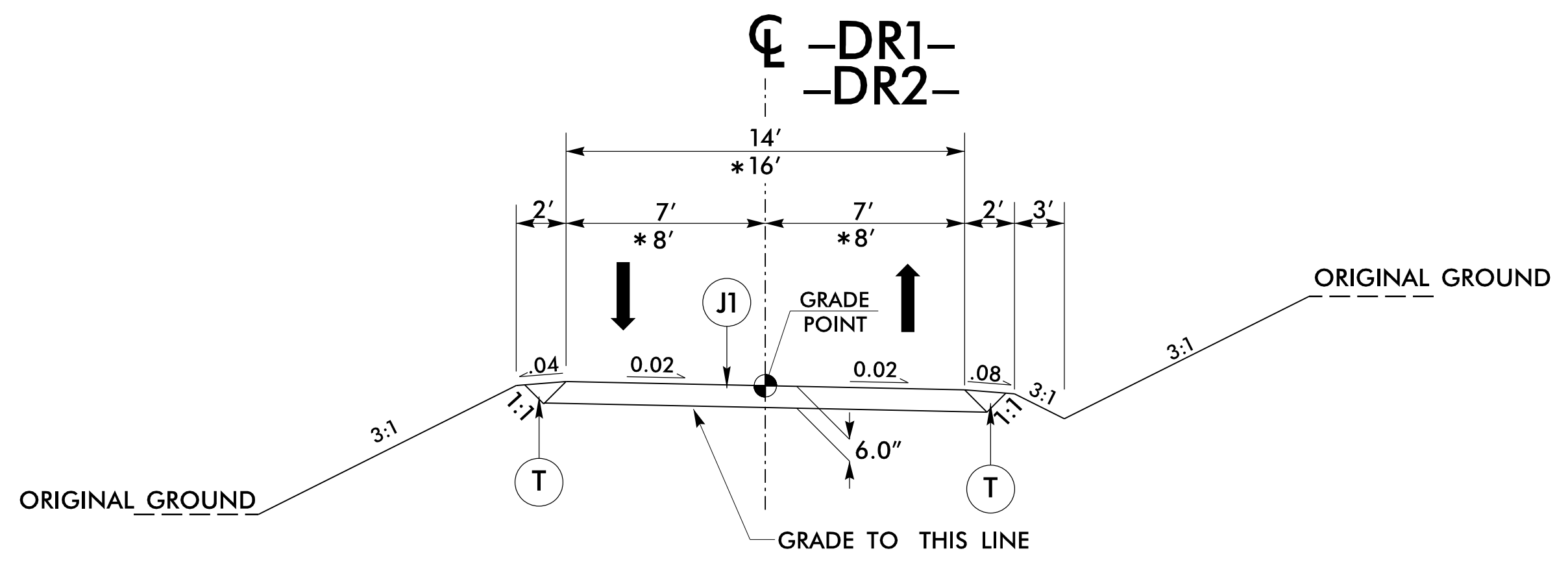
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PROJECT REFERENCE NO. B-5301	SHEET NO. 2A-2
ROADWAY DESIGN ENGINEER 	PAVEMENT DESIGN ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

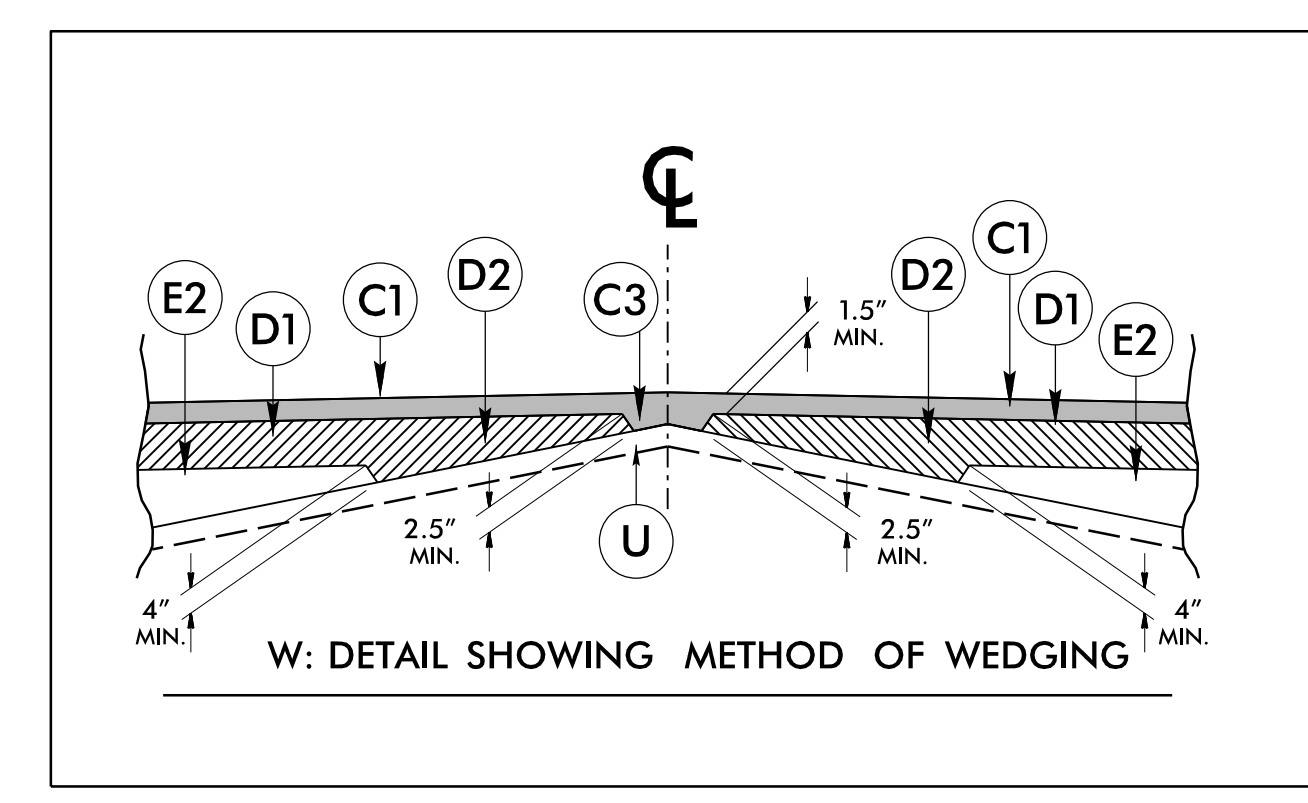
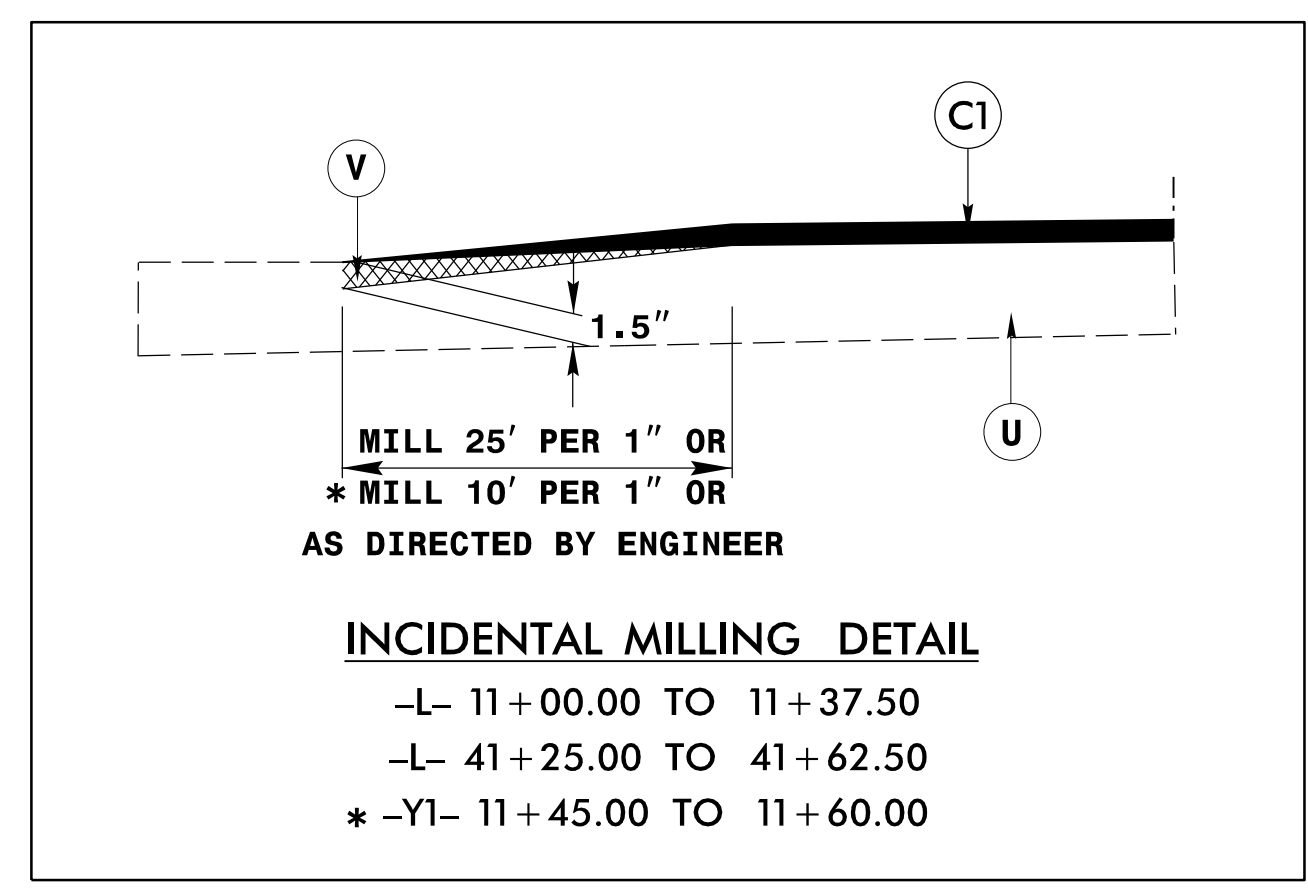


ROADWAY TYPICAL SECTION NO. 4
-Y1- STA. 10+86.62 TO 11+60.00



ROADWAY TYPICAL SECTION NO. 5
-DR1- STA. 10+12.00 TO 11+10.00
* -DR2- STA. 10+25.95 TO 14+53.64

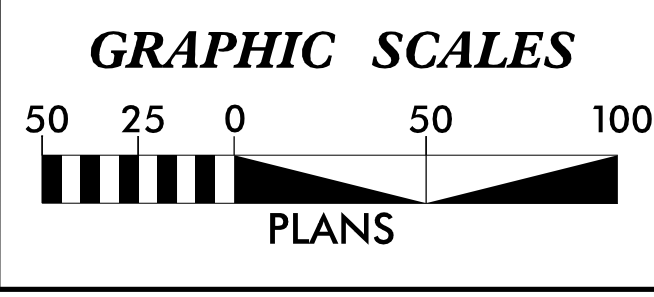
FINAL PAVEMENT DESIGN	
C1	1.5" S9.5B
C2	3" S9.5B
C3	VAR. S9.5B
D1	2.5" I19.0C
D2	VAR. I19.0C
E1	4" B25.0C
E2	VAR. B25.0C
J1	6" ABC
R1	SBG
R2	8" X 18" CURB
T	EARTH MATERIAL
U	EXIST PAVEMENT
V	MILLING
W	WEDGING



3/4/2020 B-5301_Rdy_tup.dgn
USF

8/17/99

-YI- INTERSECTION DETAIL



PROJECT REFERENCE NO. <i>B-5301</i>	SHEET NO. <i>2B-1</i>
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	
1 Glenwood Avenue Raleigh, NC 27603 Tel: 919.789.9977 Fax: 919.789.9591 License: C-2197	

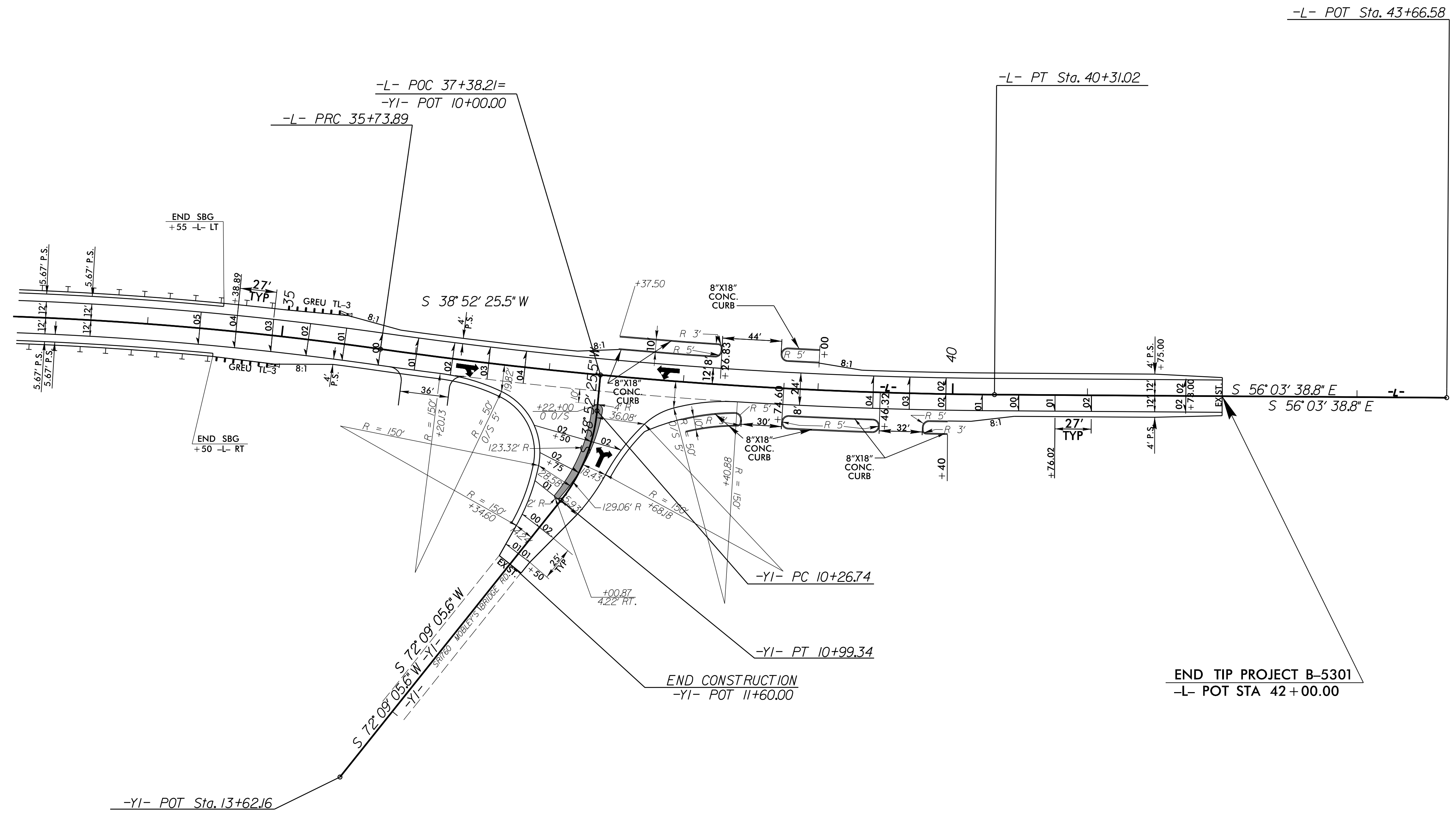
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

FOR PLANS SEE SHEET 6

5" MONOLITHIC CONC. ISLAND

-L- CURVE DATA

PI Sta 33+90.59	PI Sta 38+02.80
$\Delta = 8^{\circ}05'32.4"$ (RT)	$\Delta = 7^{\circ}42'12.7"$ (LT)
D = 2'12'13.3"	D = 1'41'06.6"
L = 367.22'	L = 457.14'
T = 183.91'	T = 228.91'
R = 2,600.00'	R = 3,400.00'
SUPER = 0.05	SUPER = 0.04
RUNOFF = 135'	RUNOFF = 108'



-YI- CURVE DATA

PI Sta 10+64.10
$\Delta = 33^{\circ}16'40.2"$ (RT)
D = 45'50'11.8"
L = 72.60'
T = 37.36'
R = 125.00'
SUPER = SEE PLANS

8,700	NC 33	-L-	9,300
12,300	1050	1,650	13,200
	1400	2300	
	-YI-	SR 1760	
ADT 2020	2,700		
ADT 2040	3,700		

REVISIONS

4/2/2020 RDY_INTERSECTION_2B-1.dgn
11:58:00am

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

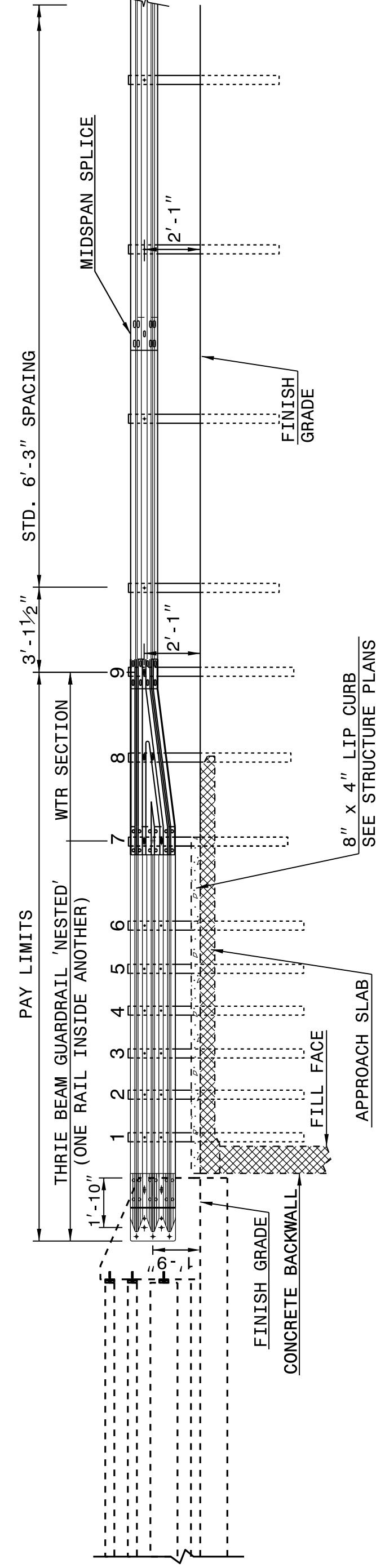
ROADWAY DETAIL DRAWING FOR
STRUCTURE ANCHOR UNITS
 GUARDRAIL ANCHOR UNIT, TYPE III
 FOR ATTACHMENT TO RAIL ON BRIDGE

SHEET 1 OF 7
862D03

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

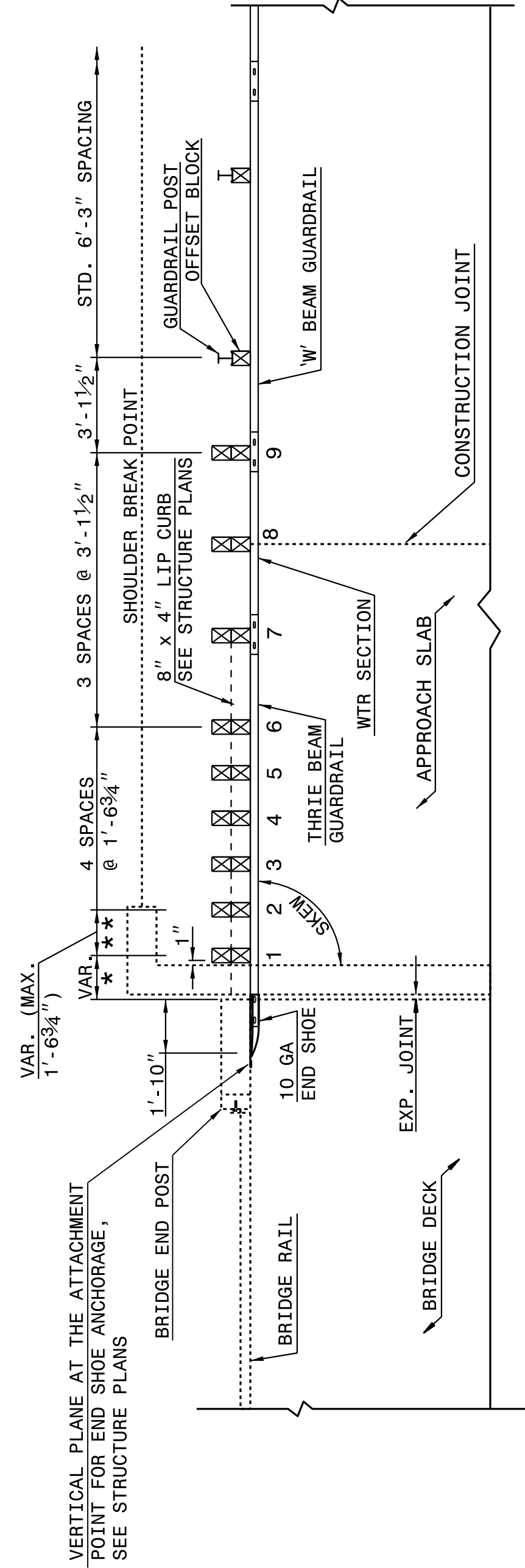
ROADWAY DETAIL DRAWING FOR
STRUCTURE ANCHOR UNITS
 GUARDRAIL ANCHOR UNIT, TYPE III
 FOR ATTACHMENT TO RAIL ON BRIDGE

SHEET 1 OF 7
862D03



ELEVATION

NOTE:
 **POST NOT REQUIRED FOR SKEW ANGLES GREATER THAN 150° OR LESS THAN 30° UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
 *THE DISTANCE FROM END OF BRIDGE RAIL TO CENTER LINE OF THE FIRST POST SHOULD BE 11½" IF CONCRETE BACKWALL IS NOT PRESENT.
 -SHOULDER BERM GUTTER MUST BE INSTALLED TO THE LIMITS 8" x 4" LIP CURB IS SHOWN IF ANCHOR UNIT IS NOT ADJACENT TO AN APPROACH SLAB.
 -MEASURE GUARDRAIL HEIGHT FROM THE TOP OF ADJACENT SURFACE (SHOULDER, BERM, OR GUTTER).
 -LAP JOINTS IN THE DIRECTION OF TRAFFIC FLOW.
 -SEE SHEET 3 FOR POST SECTIONS 1 THRU 9.



PLAN VIEW

**GUARDRAIL ANCHOR UNIT, TYPE III
 FOR ATTACHMENT TO RAIL ON BRIDGE**

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

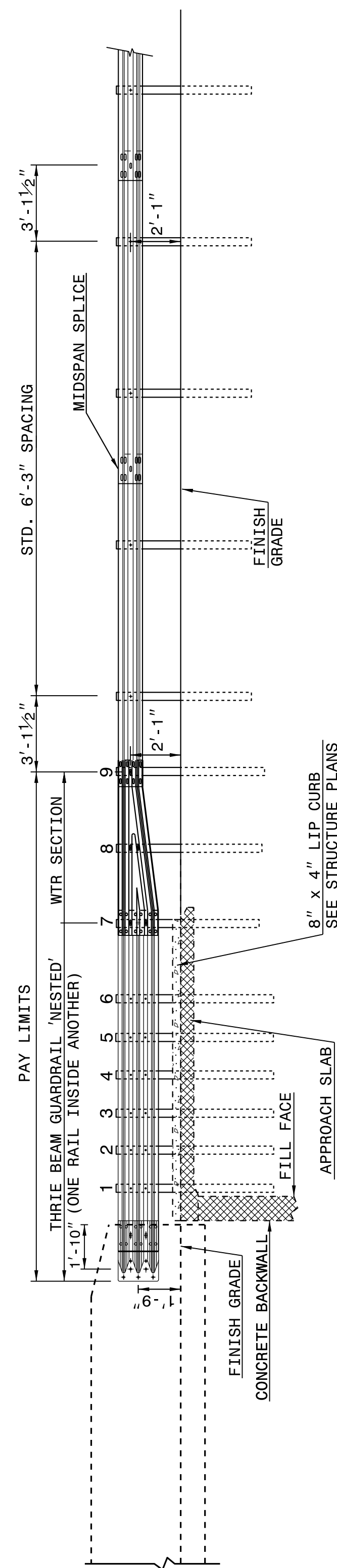
ROADWAY DETAIL DRAWING FOR
STRUCTURE ANCHOR UNITS
 GUARDRAIL ANCHOR UNIT, TYPE III FOR ATTACHMENT TO
 RAIL ON BRIDGE - SUB REGIONAL TIER

SHEET 2 OF 7
862D03

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

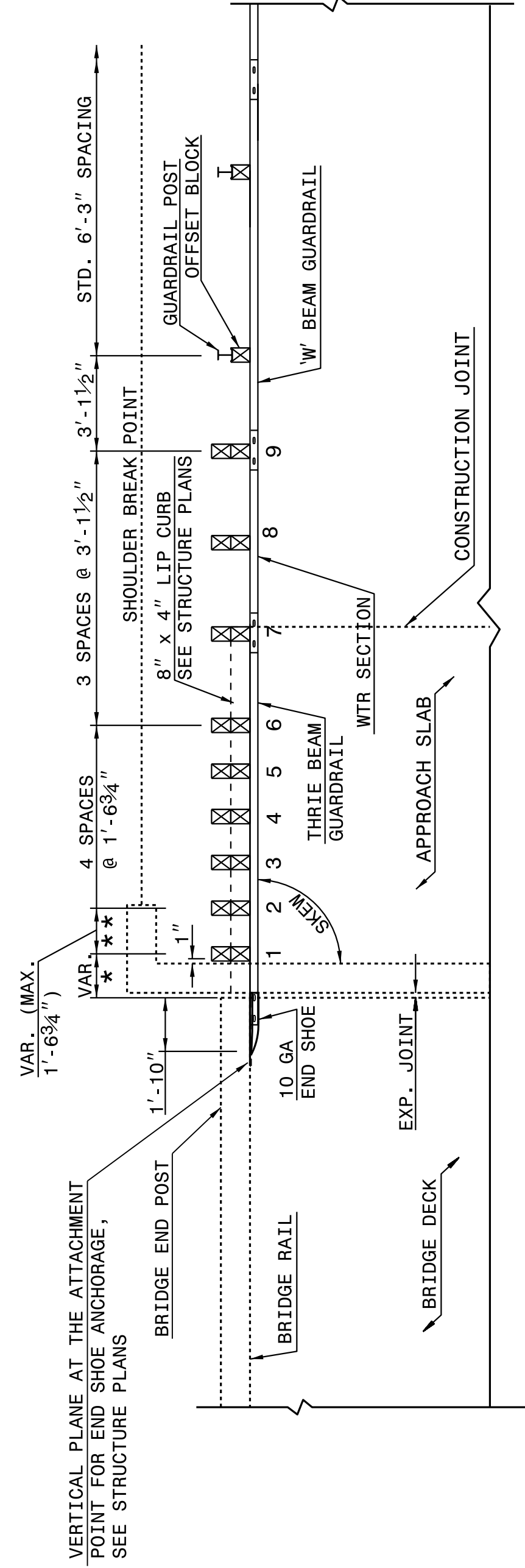
ROADWAY DETAIL DRAWING FOR
STRUCTURE ANCHOR UNITS
 GUARDRAIL ANCHOR UNIT, TYPE III FOR ATTACHMENT TO
 RAIL ON BRIDGE - SUB REGIONAL TIER

SHEET 2 OF 7
862D03



ELEVATION

NOTE:
 **POST NOT REQUIRED FOR SKEW ANGLES GREATER THAN 150° OR LESS THAN 30° UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
 *THE DISTANCE FROM END OF BRIDGE RAIL TO CENTER LINE OF THE FIRST POST SHOULD BE 11½" IF CONCRETE BACKWALL IS NOT PRESENT.
 -SHOULDER BERM GUTTER MUST BE INSTALLED TO THE LIMITS 8" x 4" LIP CURB IS SHOWN IF ANCHOR UNIT IS NOT ADJACENT TO AN APPROACH SLAB.
 -MEASURE GUARDRAIL HEIGHT FROM THE TOP OF ADJACENT SURFACE (SHOULDER, BERM, OR GUTTER).
 -LAP JOINTS IN THE DIRECTION OF TRAFFIC FLOW.
 -SEE SHEET 3 FOR POST SECTIONS 1 THRU 9.



PLAN VIEW

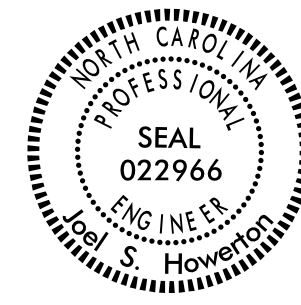
**GUARDRAIL ANCHOR UNIT, TYPE III FOR ATTACHMENT TO
 RAIL ON BRIDGE - SUB REGIONAL TIER**

SEE TITLE BLOCK

ORIGINAL BY: J HOWERTON DATE: 06-22-12
 MODIFIED BY: DATE:
 CHECKED BY: DATE:
 FILE SPEC.:

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

DOCUMENT NOT CONSIDERED FINAL
 UNLESS ALL SIGNATURES COMPLETED



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 DIVISION OF HIGHWAYS
 RALEIGH, N.C.

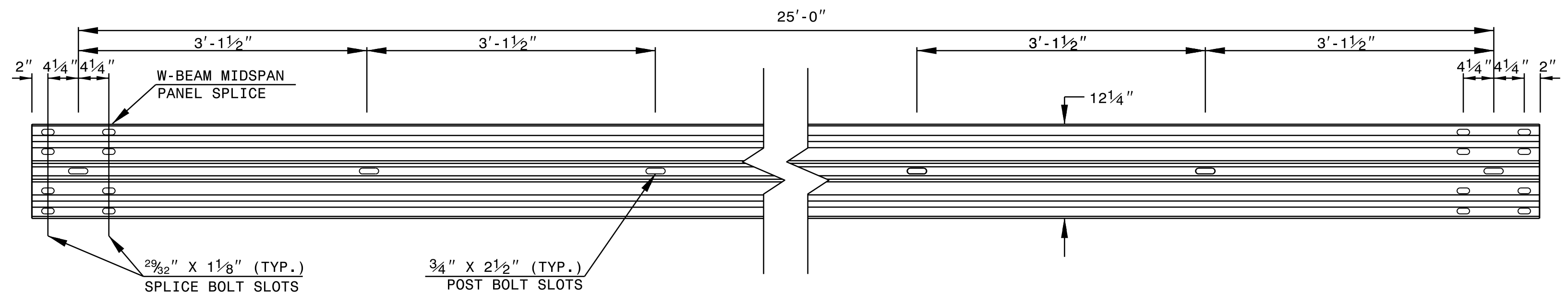
ROADWAY DETAIL DRAWING FOR
GUARDRAIL INSTALLATION

SHEET 6 OF 8
862D02

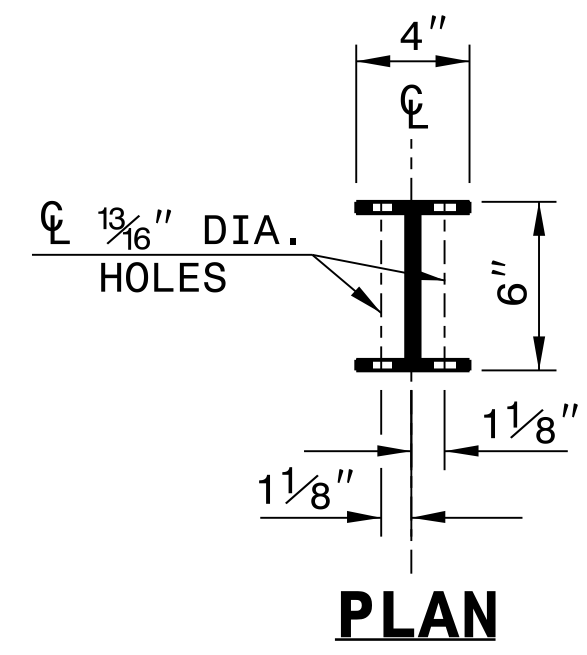
STATE OF NORTH CAROLINA
 DEPT. OF TRANSPORTATION
 DIVISION OF HIGHWAYS
 RALEIGH, N.C.

ROADWAY DETAIL DRAWING FOR
GUARDRAIL INSTALLATION

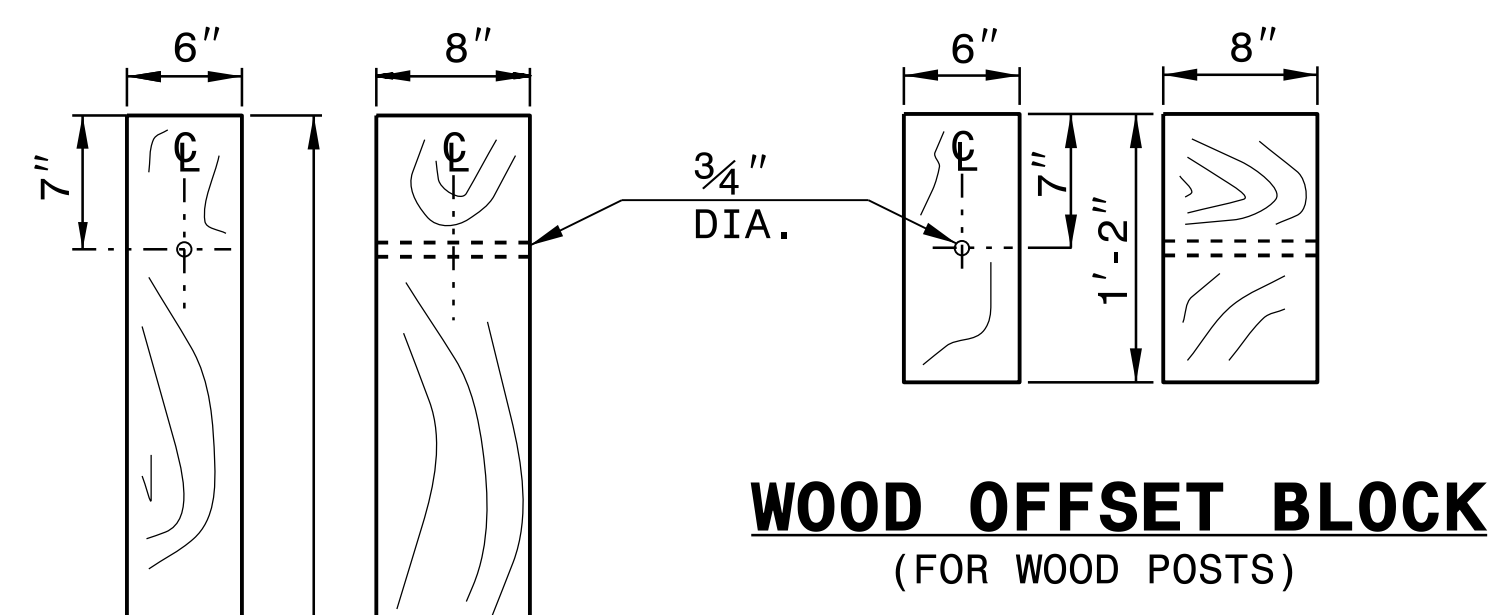
SHEET 6 OF 8
862D02



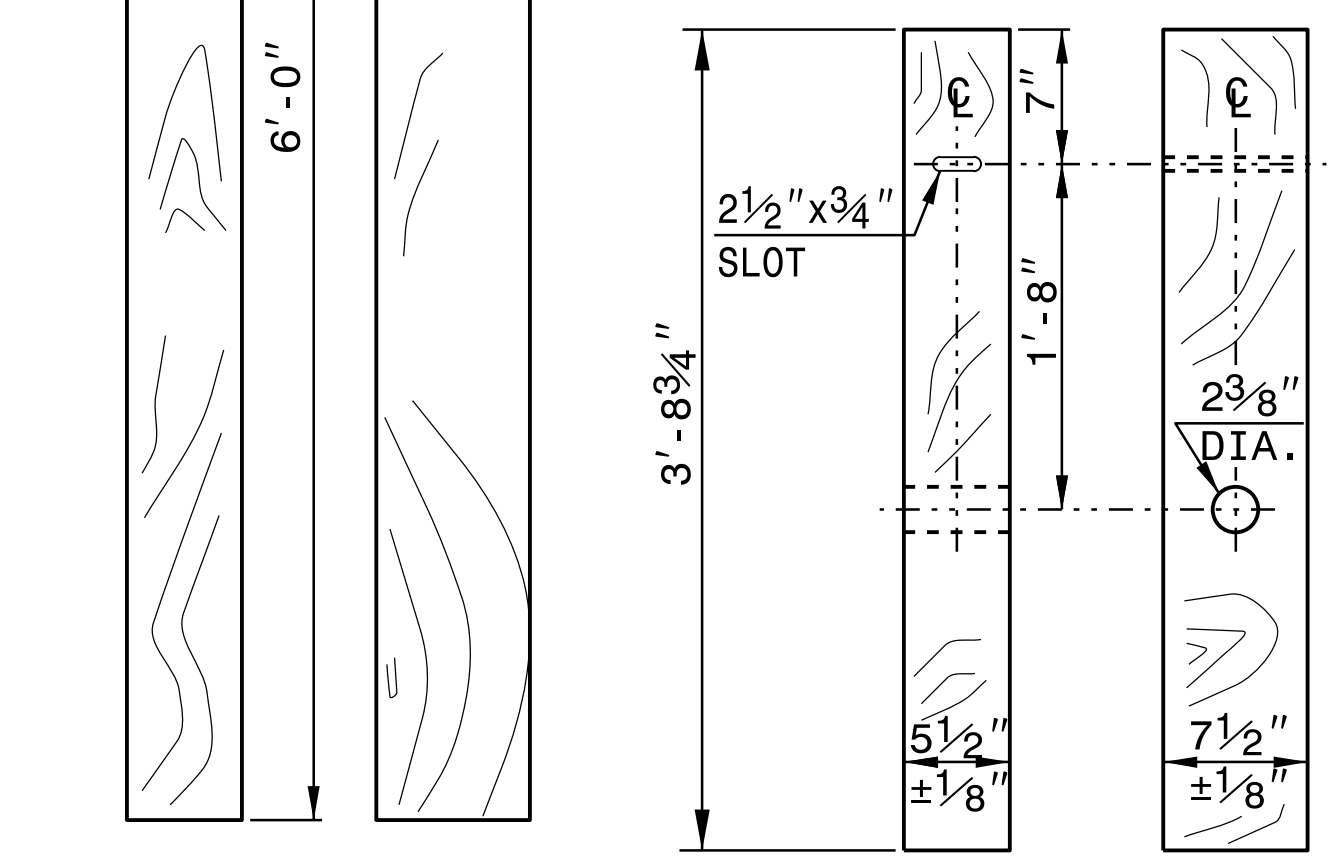
STANDARD W-BEAM GUARDRAIL



PLAN

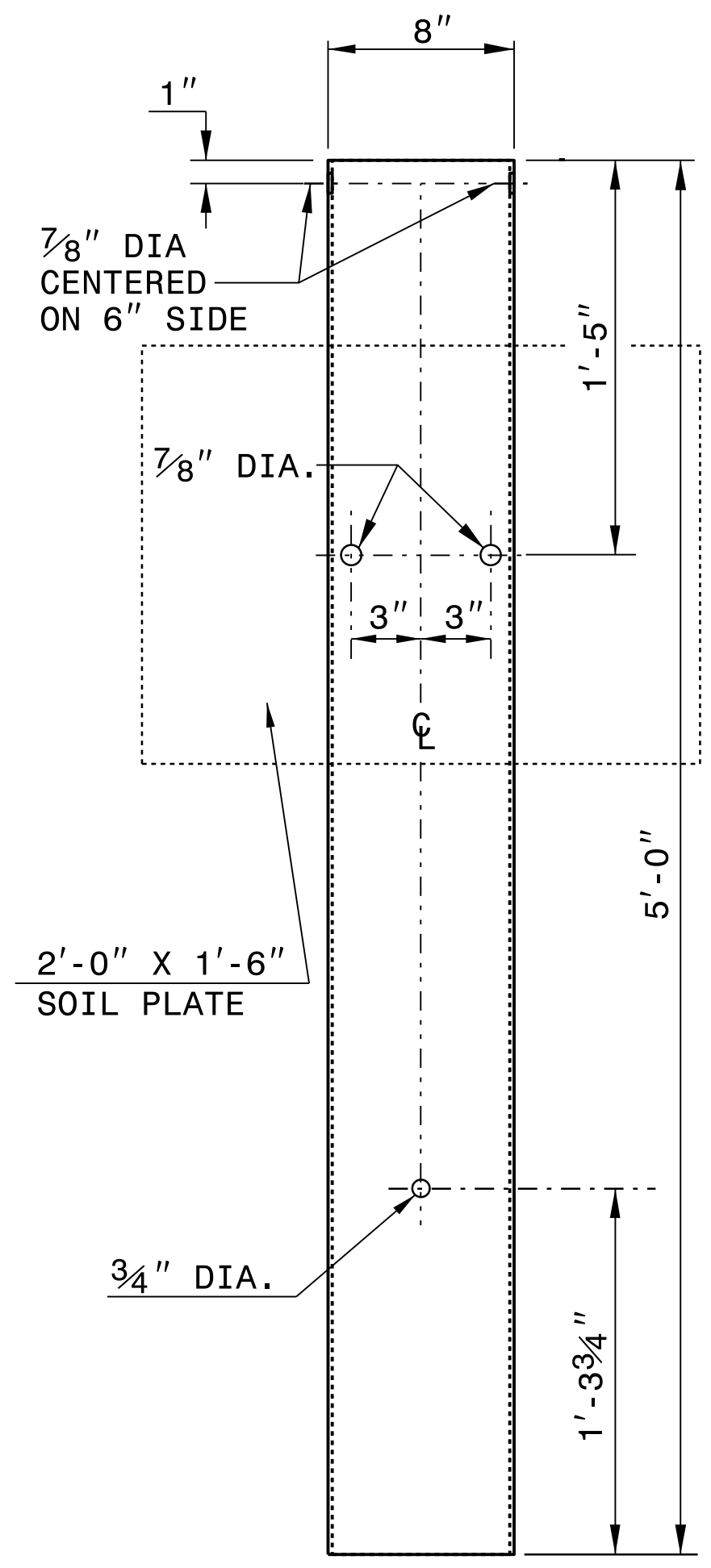


WOOD OFFSET BLOCK (FOR WOOD POSTS)

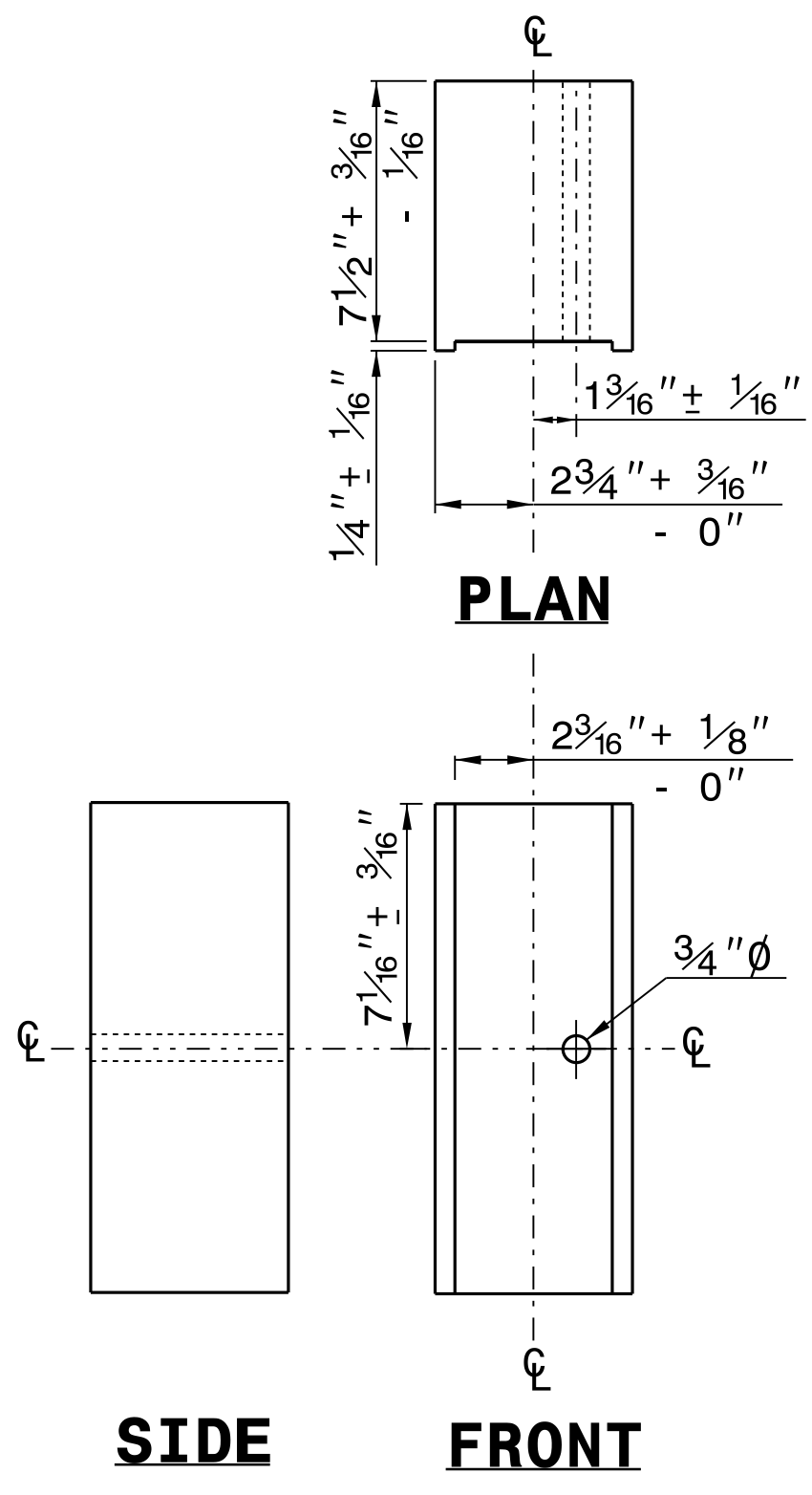


STANDARD LINE POST

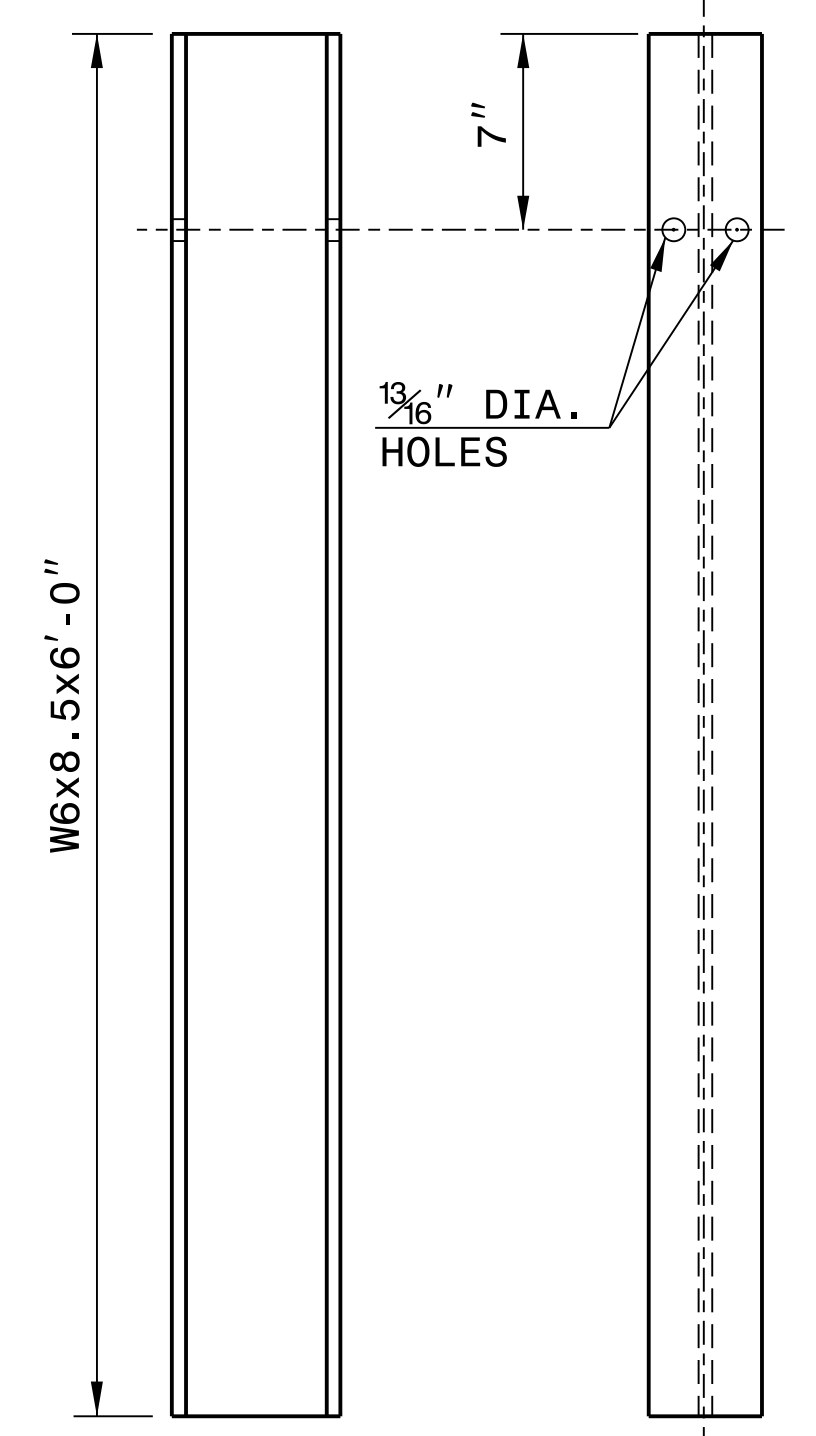
SHORT WOOD BREAKAWAY POST



STEEL TUBE
 TS 6"x8"x0.1875"



ROUTED OFFSET BLOCK



"W6" STEEL POST

SYSTEM PARTS



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.: _____

RD266404

COMPUTED BY: CS 8/8/2019		PROJECT NO.	SHEET NO.
CHECKED BY: IY 3/19/2020		B-5301	3B-1

STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

SUMMARY OF EARTHWORK

CUBIC YARDS

Station to Station	Uncl. Exc. C.Y.	Embank. +% C.Y.	Borrow C.Y.	Waste C.Y.
SUMMARY NO. 1				
PHASE 1				
-L- 10+50.00 TO 24+50.00 LT	511	74,225	73,714	
-L- 27+50.00 TO 42+00.00 LT	564	58,021	57,457	
-DR2- 10+25.95 TO 11+50.00	58	9		49
-DR2- (-L-17+00.00 TO 14+00.00)	193	28		165
SUMMARY NO. 1 TOTALS	1,326	132,283	131,171	215
SUMMARY NO. 2				
PHASE 2				
-L- 11+00.00 TO 24+50.00 RT	16,939	138		16,801
-L- 26+00.00 TO 42+00.00 RT	8,491	711		7,780
-DR1- 10+50.00 TO 11+10.00	26	15		11
-Y1- 10+50.00 TO 11+60.00	126	166	40	
SUMMARY NO. 2 TOTALS	25,582	1,030	40	24,592
PROJECT SUB TOTAL	26,908	133,313	131,212	24,807
WASTE IN LIEU OF BORROW			-215	-215
PROJECT TOTAL	26,908	133,313	130,997	24,592
Est 5% To Replace Topsoil at Borrow Pit			6,550	
GRAND TOTALS	26,908	133,313	137,547	24,592
SAY	27,000		138,000	

EST. DDE = 3849 CU. YDS.
SELECT GRANULAR MATERIAL = 5,400 CU. YDS.
EST. UNDERCUT 1400 CU. YDS.

Approximate quantities only. Unclassified excavation, fine grading, clearing and grubbing and removal of existing pavement will be paid for at the lump sum price for "Grading".

Note: Earthwork quantities are calculated by the SEPI Engineering Company
These earthwork quantities are based in part on subsurface data
Provided by the Geotechnical Engineering Unit.

SUMMARY OF ASPHALT PAVEMENT REMOVAL

LINE	Station to Station	LOC LT/RT/CL	Asphalt Removal SQ. YDS.
-L-	13+55.52 TO 24+24.97	RT	2,582.85
-L-	26+01.45 TO 35+91.39	RT	2,370.94
PROJECT TOTAL			4,953.79
SAY			4,960.00

SUMMARY OF SHOULDER BERM GUTTER

LINE	Station to Station	LOC LT/RT/CL	LENGTH FT
-L-	16+95 TO 24+45	LT	750.00
-L-	27+84 TO 34+55	LT	671.00
-L-	17+95 TO 23+98	RT	603.00
-L-	27+27 TO 34+50	RT	723.00
PROJECT TOTAL			2747.00
SAY			2750.00

SUMMARY OF CONCRETE PAVEMENT REMOVAL

LINE	Station to Station	LOC LT/RT/CL	CONCRETE REMOVAL SQ. YDS.
-L-	36+36.86 TO 36+80.61	RT	55.67
PROJECT TOTAL			55.67
SAY			60.00

GUARDRAIL SUMMARY

"N" = DISTANCE FROM EDGE OF LANE TO FACE OF GUARDRAIL
TOTAL SHOULDER WIDTH = DISTANCE FROM EDGE OF TRAVEL LANE TO SHOULDER BREAK POINT.
FLARE LENGTH = DISTANCE FROM LAST SECTION OF PARALLEL GUARDRAIL TO END OF GUARDRAIL.
W = TOTAL WIDTH OF FLARE FROM BEGINNING OF TAPER TO END OF GUARDRAIL
G = GATING IMPACT ATTENUATOR TYPE 350
NG = NON-GATING IMPACT ATTENUATOR TYPE 350

LINE	BEG. STA.	END STA.	LOC.	LENGTH (FT.)			WARRANT POINT		"N" DIST. FROM E.O.L.	TOTAL SHLDR WIDTH	FLARE LENGTH		W		ANCHORS				IMP. ATTEN. TYPE 350			REMOVE EXISTING GUARDRAIL	REMARKS
				STRAIGHT	SHOP CURVED	DOUBLE FACED	APPR. END	TRAIL. END			APPR. END	TRAIL. END	APPR. END	TRAIL. END	GREU TL-3	TYPE III	AT-1	EA	G	NG			
-L-	16+43.82	24+68.82	LT	825.00			17+75.00	24+68.82	8'	11'	50'	200'	1'	4'	1	1						951'	SEE SHEET 2C-1 FOR TYPE III SPECIAL DETAIL
-L-	16+59.23	24+21.73	RT	762.50			18+00.00	24+42.09	8'	11'	50'	200'	1'	4'	1	1						887'	SEE SHEET 2C-1 FOR TYPE III SPECIAL DETAIL
-L-	27+60.67	35+48.17	LT	787.50'			34+25.00	27+60.67	8'	11'	200'	50'	4'	1'	1	1						765'	SEE SHEET 2C-1 FOR TYPE III SPECIAL DETAIL
-L-	27+04.10	35+04.10	RT	800.00'			27+04.10	33+00.00	8'	11'	200'	50'	4'	1'	1	1						828'	SEE SHEET 2C-1 FOR TYPE III SPECIAL DETAIL
TOTAL				3175.00'											4	4						3431'	TOTAL
DEDUCTION FOR ANCHOR UNITS"																							
GREU TYPE TL-3 (4 AT 50')				-200.0'																			
GREU TYPE III (4 AT 18.75')				-75.0'																			
PROJECT TOTAL				2900.00'											4	4						3431'	PROJECT TOTAL

ADDITIONAL GUARDRAIL POST = 10 EA

STATE OF NORTH CAROLINA
 DIVISION OF HIGHWAYS



NOTE: Invert Elevations 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 54" & OVER)

STATION	STRUCTURE NO.		TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	SLOPE CRITICAL	CLASS IV R.C. PIPE (UNLESS NOTED OTHERWISE) (IN FEET)							C.S. PIPE				STRUCTURAL PLATE PIPE			REINFORCED ENDWALLS		MASONRY DRAINAGE STRUCTURES CUBIC YARDS	C.B. STD. 840.01 OR STD. 840.02	FRAME, GRATES AND HOOD STANDARD 840.03			CONCRETE TRANSITIONAL SECTION		REINFC. CONC. FLARED END SECTIONS NO. & SIZE	CORR. STEEL FLARED END SECTIONS NO. & SIZE	REINF. CONC. ELBOWS NO. & SIZE	CORR. STEEL ELBOWS NO. & SIZE	CONC. COLLARS CL. "B" C.Y. STD. 840.72	PIPE REMOVAL LIN.FT.	ABBREVIATIONS			REMARKS						
	LOCATION (LT, RT, OR CU)						FROM	TO	54"	60"	66"	72"	78"	84"	SHOP ELON-GATED		54"	60"	66"	72"	60"	66"			72"	WITH R.C. - C.Y.	WITH C.S. - C.Y.	TYPE OF GRATE								CATCH BASIN	DROP INLET	E		F	G	ABBREVIATIONS			
	THICKNESS OR GAUGE	THICKNESS OR GAUGE					THICKNESS OR GAUGE	THICKNESS OR GAUGE	THICKNESS OR GAUGE	THICKNESS OR GAUGE	THICKNESS OR GAUGE	THICKNESS OR GAUGE	THICKNESS OR GAUGE	THICKNESS OR GAUGE	THICKNESS OR GAUGE	THICKNESS OR GAUGE	THICKNESS OR GAUGE	THICKNESS OR GAUGE	THICKNESS OR GAUGE	THICKNESS OR GAUGE	THICKNESS OR GAUGE	THICKNESS OR GAUGE			THICKNESS OR GAUGE	THICKNESS OR GAUGE	THICKNESS OR GAUGE	THICKNESS OR GAUGE	THICKNESS OR GAUGE							THICKNESS OR GAUGE	THICKNESS OR GAUGE	THICKNESS OR GAUGE		THICKNESS OR GAUGE	THICKNESS OR GAUGE	THICKNESS OR GAUGE	THICKNESS OR GAUGE	THICKNESS OR GAUGE	THICKNESS OR GAUGE
40+07 -L-	CL	0620		26.2	25.9		68												14.2																				C.B. CATCH BASIN N.D.I. NARROW DROP INLET D.I. DROP INLET G.D.I. GRATED DROP INLET G.D.I. (N.S.) GRATED DROP INLET (NARROW SLOT) J.B. JUNCTION BOX M.H. MANHOLE T.B.D.I. TRAFFIC BEARING DROP INLET T.B.J.B. TRAFFIC BEARING JUNCTION BOX REMOVE EXIST. 42" RCP. INSTALL CAST-IN-PLACE ENDWALL, BOTH ENDS. DO NOT USED PRE-CAST ENDWALLS. INSTALL ENDWALLS PARALLEL TO SHOULDER. FRONT SLOPE ABOVE ENDWALLS SHALL CONFORM TO 4:1. WINGWALLS SHALL CONFORM TO A 3:1 FRONT SLOPE. TRANSITION FRONT SLOPE TO 6:1 AT THE APPROACH SECTIONS ON EITHER SIDE OF CROSSING AS SHOWN IN CROSS SECTION. CONTRACTOR SHALL ENSURE ENDWALLS DO NOT CONFLICT WITH SUBSURFACE UTILITIES.						
PROJ. TOTAL							68													14.2																			PROJ. TOTAL						
SAY																					15																		SAY						

STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

SUMMARY OF SUBSURFACE DRAINAGE

LINE	Station	Station	Location LT/RT/CL	Drain Type* UD/BD/SD	LF
CONTINGENCY				SD	1000
				TOTAL LF:	1000

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

SUMMARY OF EMBANKMENT WAITING PERIODS

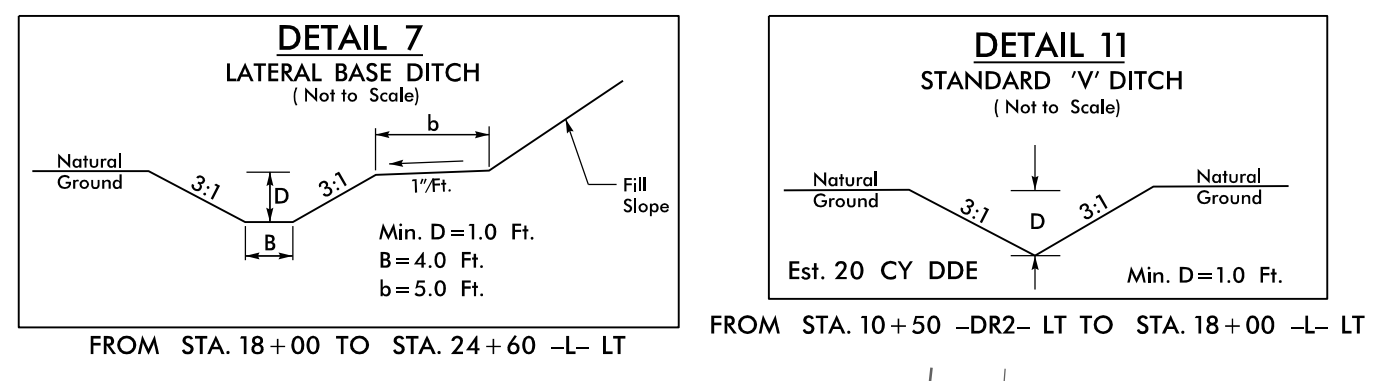
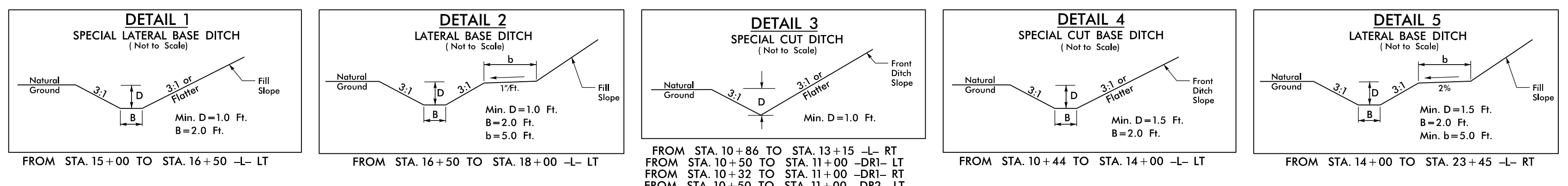
LINE	Station	Station	MONTHS
-L-	18+00	24+50	1
-L-	28+50	35+00	1

SEE PLAN SHEETS 7 & 8 FOR PROFILES



DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NOTE: SEE SHEET 7 & 8 FOR PROFILES



DETAIL 3 SPECIAL CUT DITCH (Not to Scale) FROM STA. 10+86 TO STA. 13+15 -L- RT FROM STA. 10+50 TO STA. 11+00 -DRI- LT FROM STA. 10+32 TO STA. 11+00 -DRI- RT FROM STA. 10+50 TO STA. 11+00 -DR2- LT FROM STA. 11+00 TO STA. 11+25 -DR2- LT FROM STA. 10+50 TO STA. 12+00 -DR2- RT FROM STA. 12+00 TO STA. 14+40 -DR2- RT

DETAIL 4 SPECIAL CUT DITCH (Not to Scale) FROM STA. 10+44 TO STA. 14+00 -L- LT

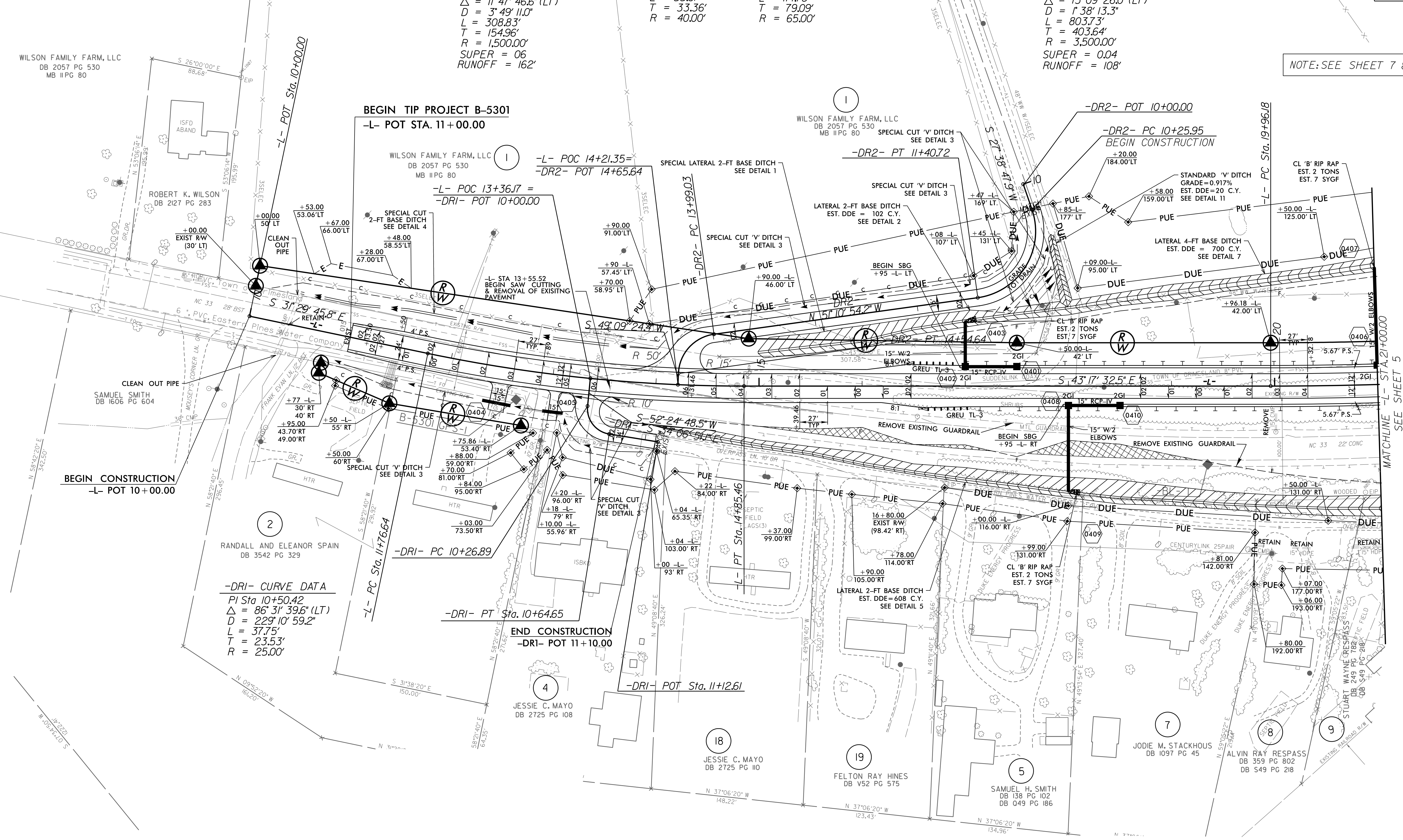
DETAIL 5 LATERAL BASE DITCH (Not to Scale) FROM STA. 14+00 TO STA. 23+45 -L- RT

-L- CURVE DATA PI Sta 13+31.60 Δ = 11° 47' 46.6" (LT) D = 143' 14" 22.0" L = 55.61' T = 33.36' R = 40.00' SUPER = 06 RUNOFF = 162'

-DR2- CURVE DATA PI Sta 14+32.39 Δ = 79° 39' 41.4" (LT) D = 143' 14" 22.0" L = 55.61' T = 33.36' R = 40.00' PI Sta 11+05.04 Δ = 10° 10' 17.9" (RT) D = 88' 08" 50.5" L = 114.78' T = 79.09' R = 65.00'

-L- CURVE DATA PI Sta 23+99.82 Δ = 13° 09' 26.0" (LT) D = 138' 13.3" L = 803.73' T = 403.64' R = 3,500.00' SUPER = 0.04 RUNOFF = 108'

REVISIONS



WILSON FAMILY FARM, LLC DB 2057 PG 530 MB IIPG 80

ROBERT K. WILSON DB 2127 PG 283

SAMUEL SMITH DB 1606 PG 604

RANDALL AND ELEANOR SPAIN DB 3542 PG 329

JESSIE C. MAYO DB 2725 PG 108

JESSIE C. MAYO DB 2725 PG 110

FELTON RAY HINES DB V52 PG 575

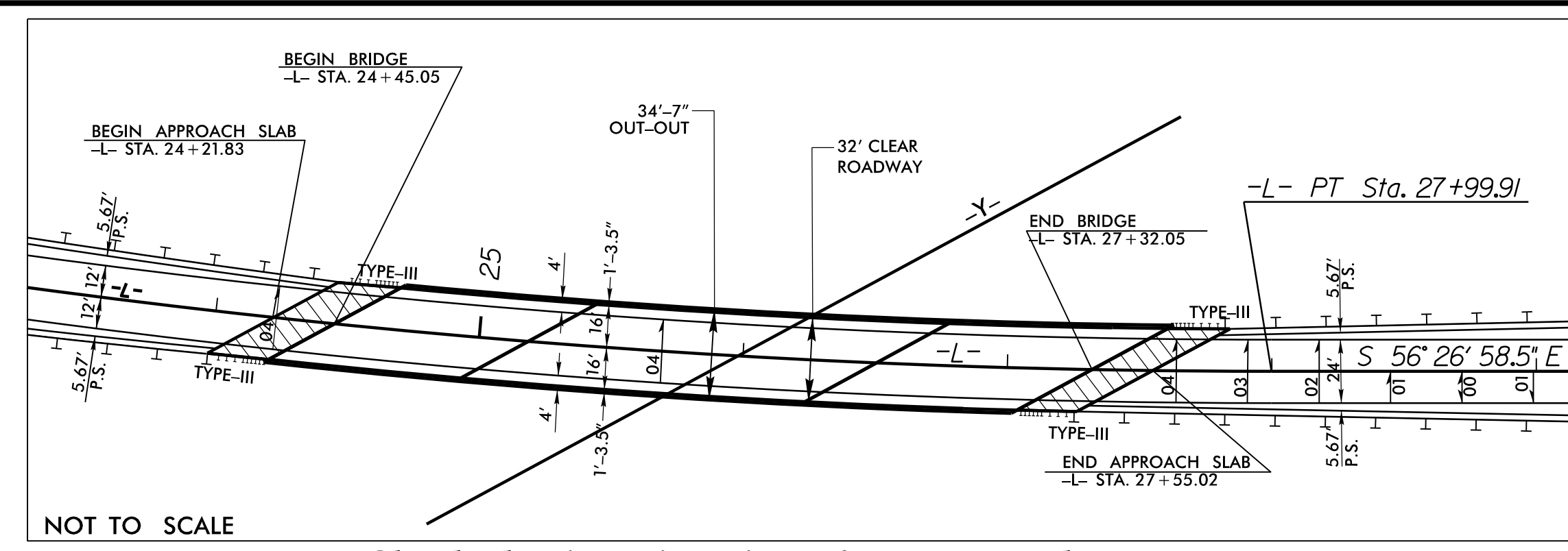
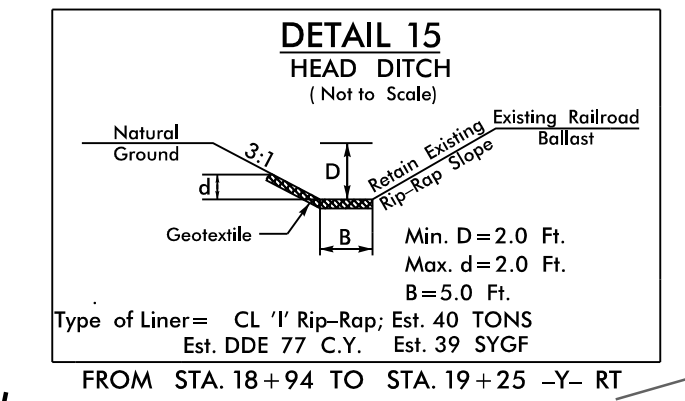
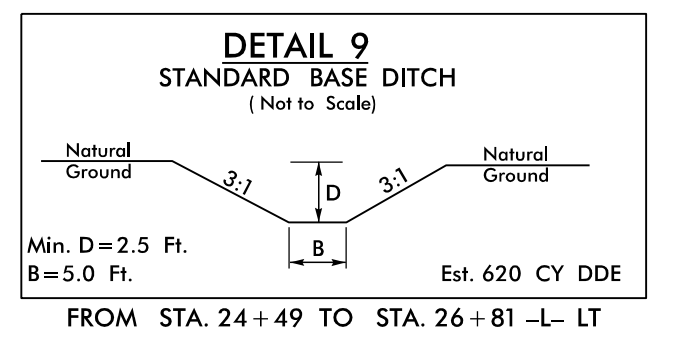
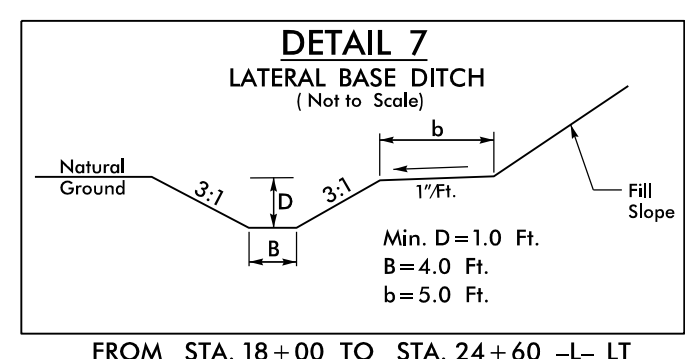
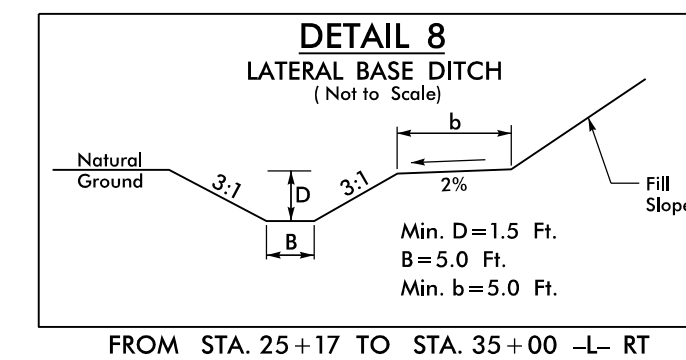
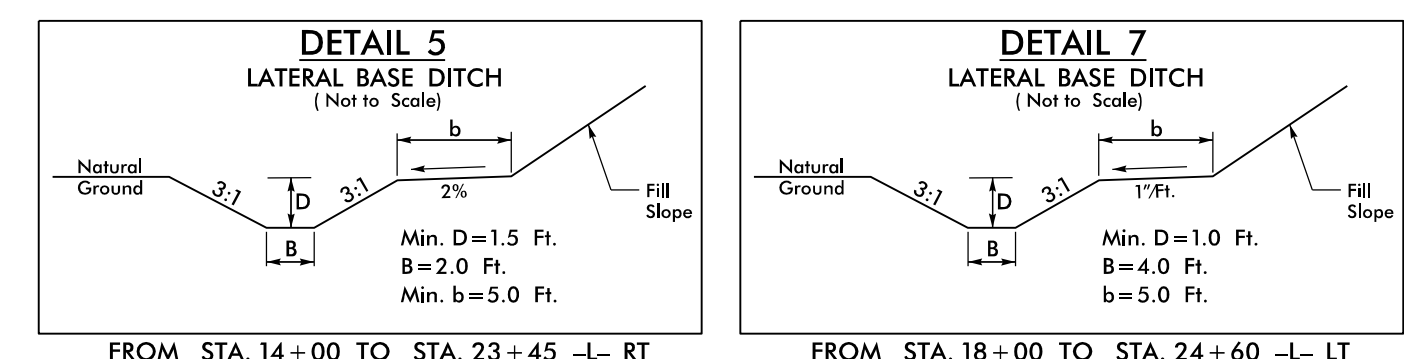
SAMUEL H. SMITH DB 139 PG 102 DB 049 PG 186

JODIE M. STACKHOUS DB 1097 PG 45

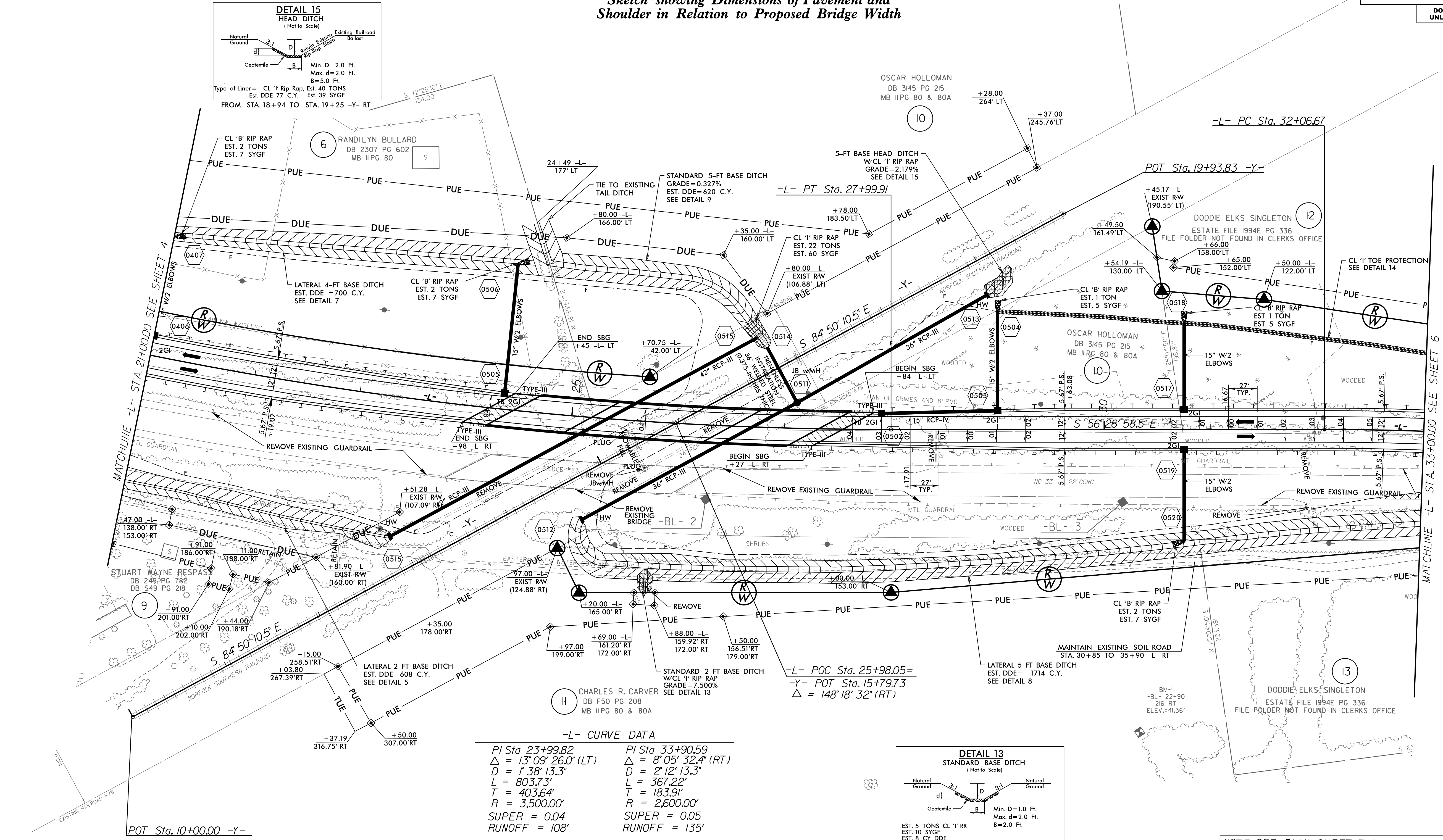
ALVIN RAY RESPASS DB 359 PG 802 DB 549 PG 218

3/24/2009 10:00 AM B-5301.Rdy_psh_4.dgn

MATCHLINE -L- STA. 21+00.00 SEE SHEET 5

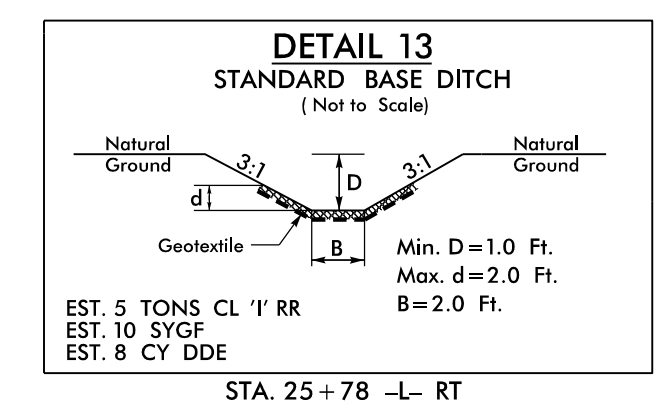


Sketch showing Dimensions of Pavement and Shoulder in Relation to Proposed Bridge Width



-L- CURVE DATA

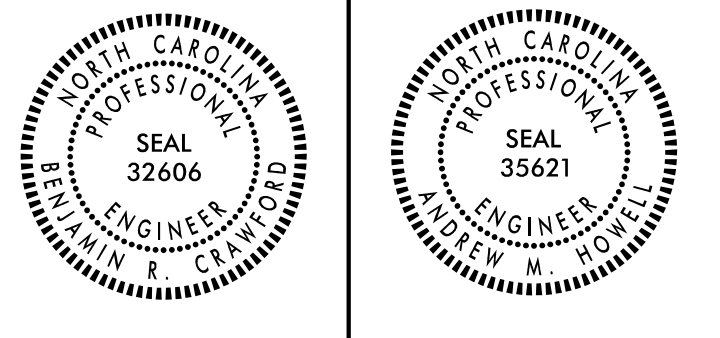
PI Sta 23+99.82	PI Sta 33+90.59
$\Delta = 13^{\circ}09'26.0''$ (LT)	$\Delta = 8^{\circ}05'32.4''$ (RT)
$D = 1^{\circ}38'13.3''$	$D = 2^{\circ}12'13.3''$
$L = 803.73'$	$L = 367.22'$
$T = 403.64'$	$T = 183.91'$
$R = 3,500.00'$	$R = 2,600.00'$
SUPER = 0.04	SUPER = 0.05
RUNOFF = 108'	RUNOFF = 135'



NOTE: SEE PLAN SHEET 7 FOR PROFILE
 NOTE: SEE SHEETS S-1 THRU S-55 FOR STRUCTURE PLANS

REVISIONS

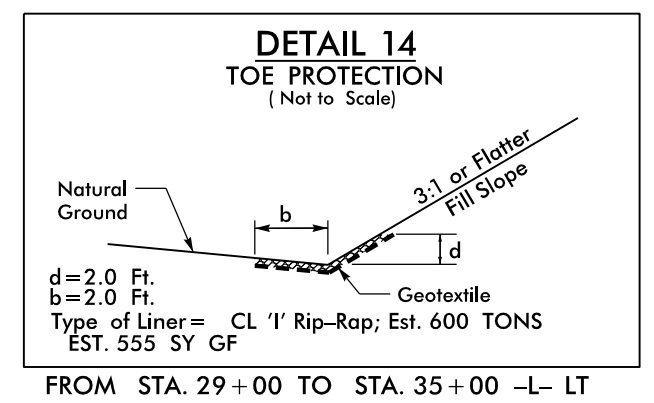
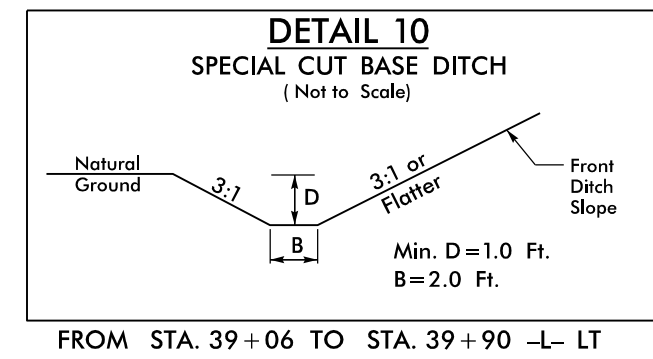
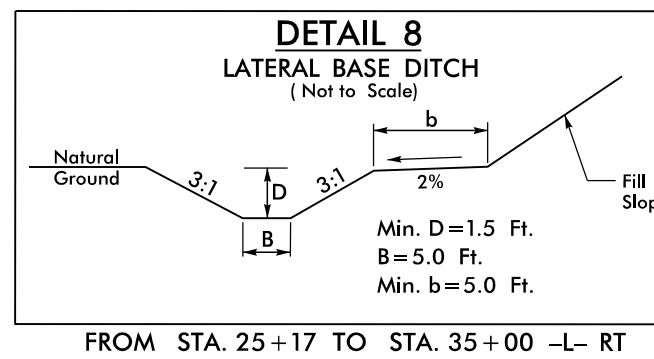
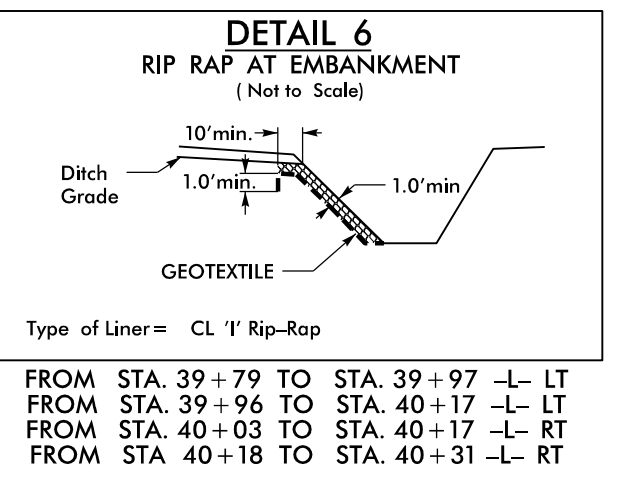
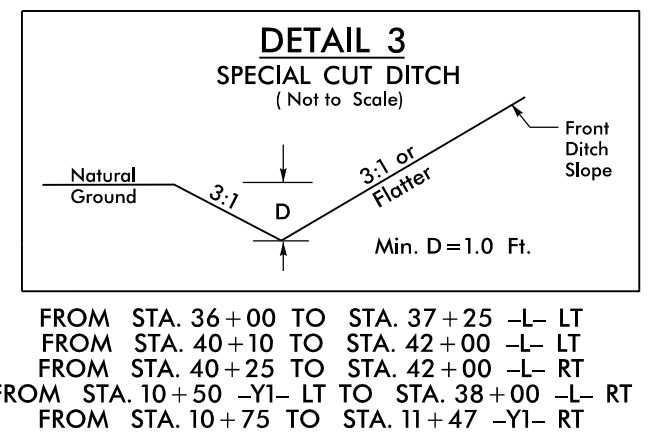
8/17/99
 3/4/2020
 Proj: B-5301_Rdy_psh_5.dgn
 User: jhiggins



DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

CONTRACTOR SHALL ENSURE ENDWALLS DO NOT CONFLICT WITH SUBSURFACE UTILITIES

DO NOT USE PRECAST ENDWALLS FOR 72" CROSSING. FRONT SLOPE ABOVE ENDWALL SHALL CONFORM TO 4:1 FRONT SLOPE. WINGWALLS SHALL CONFORM TO 3:1 FRONT SLOPE. TRANSITION FRONT SLOPE TO 6:1 AT THE APPROACH SECTIONS ON EITHER SIDE OF THE CROSSING AS SHOWN IN CROSS SECTION.



FROM STA. 36+00 TO STA. 37+25 -L- LT
 FROM STA. 40+10 TO STA. 42+00 -L- LT
 FROM STA. 40+25 TO STA. 42+00 -L- RT
 FROM STA. 10+50 -YI- LT TO STA. 38+00 -L- RT
 FROM STA. 10+75 TO STA. 11+47 -YI- RT

Type of Liner = CL 1' Rip-Rap
 FROM STA. 39+79 TO STA. 39+97 -L- LT
 FROM STA. 39+96 TO STA. 40+17 -L- LT
 FROM STA. 40+03 TO STA. 40+17 -L- RT
 FROM STA. 40+18 TO STA. 40+31 -L- RT

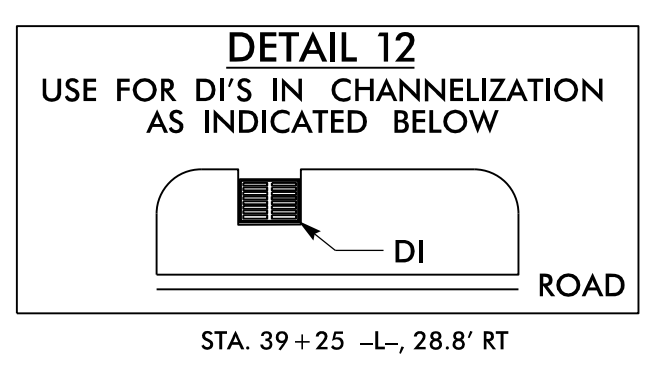
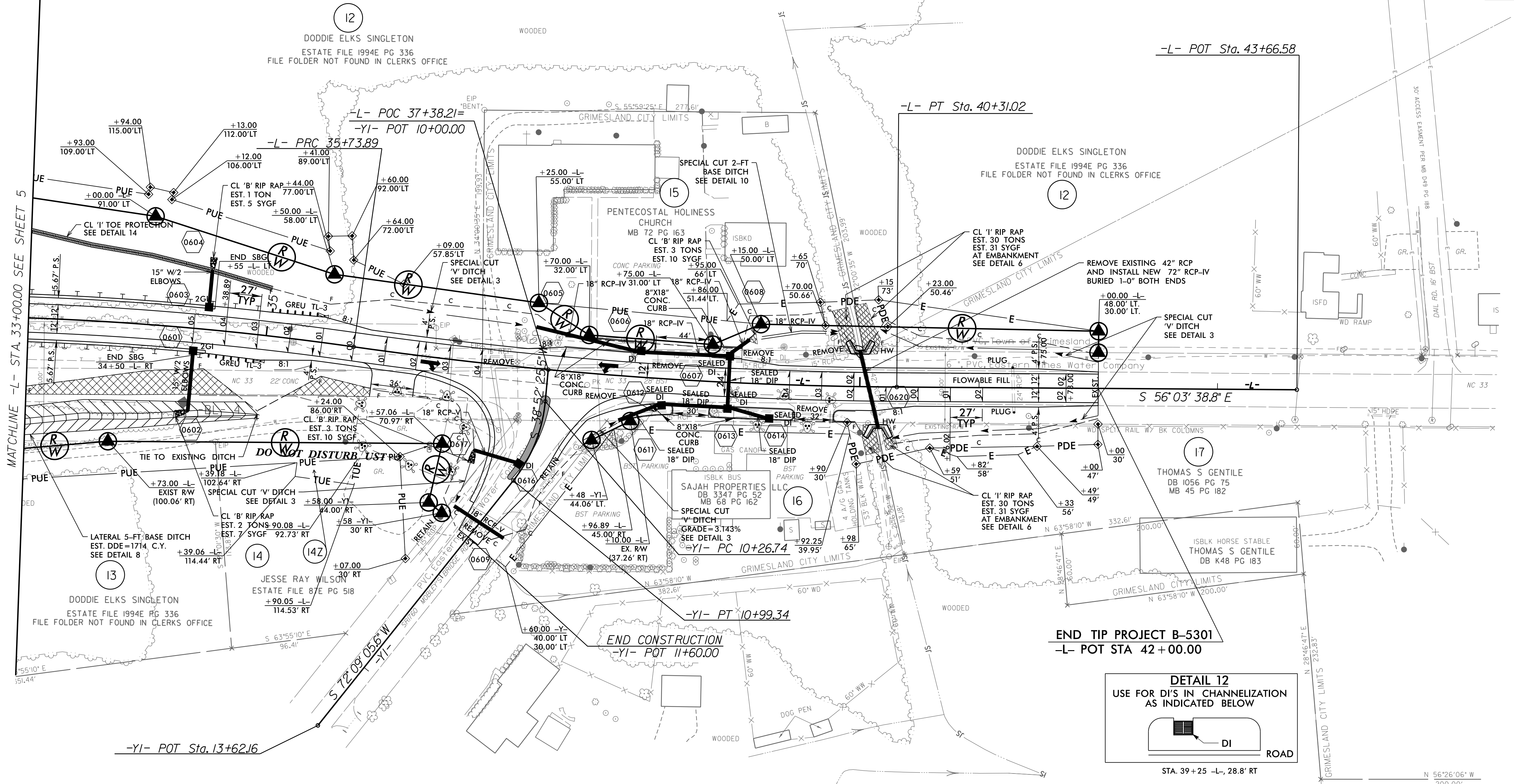
FROM STA. 25+17 TO STA. 35+00 -L- RT

FROM STA. 39+06 TO STA. 39+90 -L- LT

FROM STA. 29+00 TO STA. 35+00 -L- LT

-L- CURVE DATA

PI Sta 33+90.59	PI Sta 38+02.80
$\Delta = 8^{\circ}05'32.4"$ (RT)	$\Delta = 7^{\circ}42'12.7"$ (LT)
D = 2'12'13.3"	D = 1'41'06.6"
L = 367.22'	L = 457.14'
T = 183.91'	T = 228.91'
R = 2,600.00'	R = 3,400.00'
SUPER = 0.05	SUPER = 0.04
RUNOFF = 135'	RUNOFF = 108'



8,700	NC 33	-L-	9,300
12,300	1050	1,650	12,200
	1400	2300	
	-YI-	SR 1760	
ADT 2020	2,700		
ADT 2040	3,700		

-YI- CURVE DATA

PI Sta 10+64.10
 $\Delta = 33^{\circ}16'40.2"$ (RT)
 D = 45'50" 11.8"
 L = 72.60'
 T = 37.36'
 R = 125.00'

5" MONLITHIC CONCRETE ISLAND

SEE SHEET 2B-1 FOR INTERSECTION DETAIL


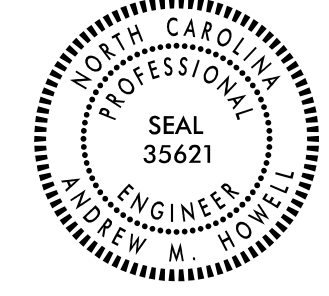

NOTE: SEE SHEET 7 & 8 FOR PROFILES

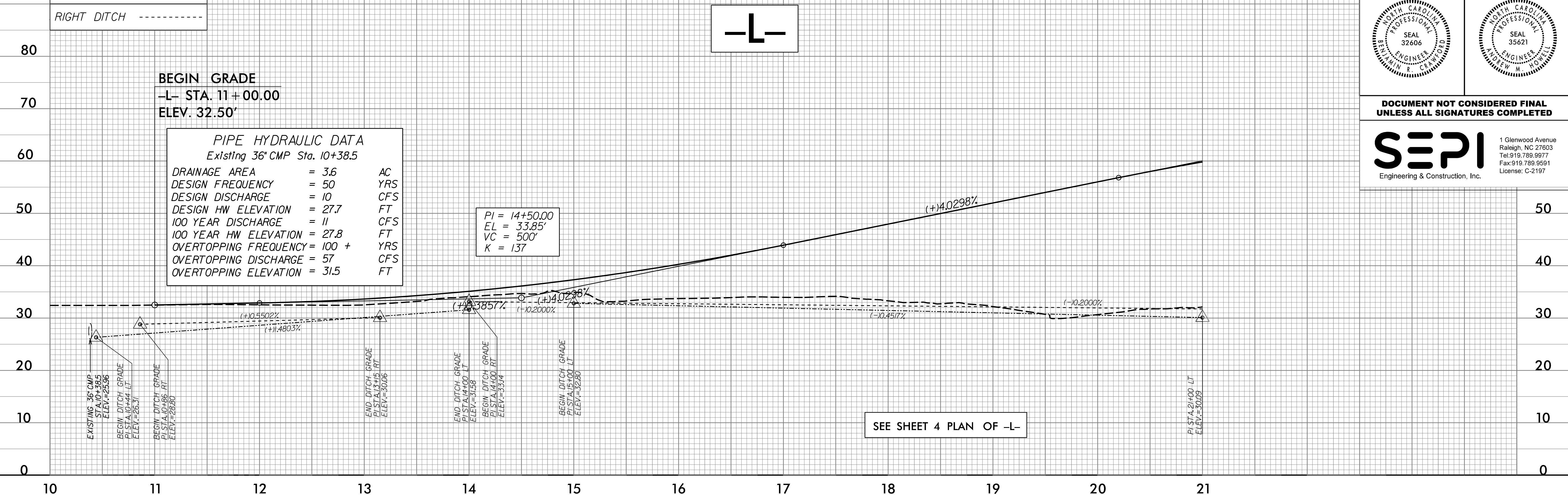
8/17/99
4/26/2022
I:\Projects\B-5301_Rdy_psh_b.dgn
15:58:10

5/28/99

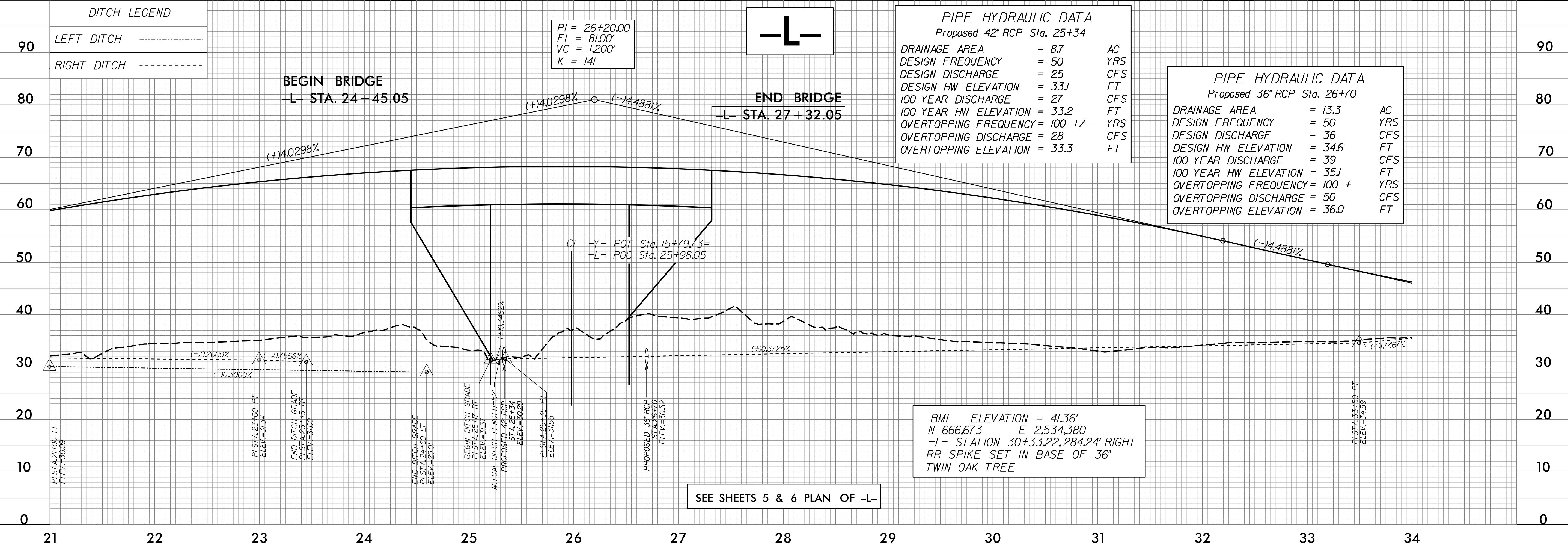
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1155610000

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

PROJECT REFERENCE NO. B-5301	SHEET NO. 7
ROADWAY DESIGN ENGINEER 	HYDRAULICS ENGINEER 
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
	
1 Glenwood Avenue Raleigh, NC 27603 Tel: 919.789.9577 Fax: 919.789.9591 License: C-2197	



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



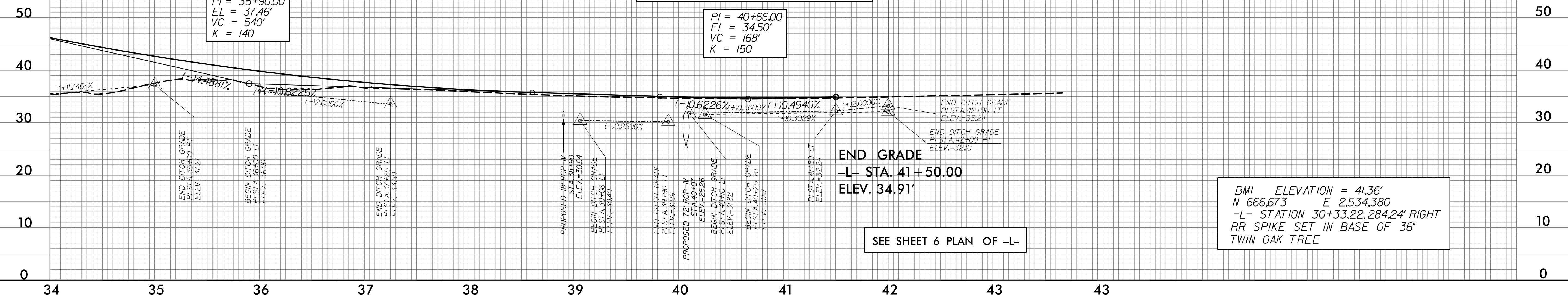
PROJECT REFERENCE NO. B-5301	SHEET NO. 8
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
1 Glenwood Avenue Raleigh, NC 27603 Tel: 919.789.9577 Fax: 919.789.9591 License: C-2197	

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

PIPE HYDRAULIC DATA	
18" RCP-N Sta. 38+90	
DRAINAGE AREA	= 0.5 AC
DESIGN FREQUENCY	= 50 YRS
DESIGN DISCHARGE	= 3.6 CFS
DESIGN HW ELEVATION	= 32.0 FT
100 YEAR DISCHARGE	= 3.9 CFS
100 YEAR HW ELEVATION	= 32.1 FT
OVERTOPPING FREQUENCY	= 100 + YRS
OVERTOPPING DISCHARGE	= 16 CFS
OVERTOPPING ELEVATION	= 35.2 FT

PIPE HYDRAULIC DATA	
72" RCP-N Sta. 40+07	
DRAINAGE AREA	= 121 AC
DESIGN FREQUENCY	= 50 YRS
DESIGN DISCHARGE	= 130 CFS
DESIGN HW ELEVATION	= 32.0 FT
100 YEAR DISCHARGE	= 150 CFS
100 YEAR HW ELEVATION	= 32.5 FT
OVERTOPPING FREQUENCY	= 500 + YRS
OVERTOPPING DISCHARGE	= 235 CFS
OVERTOPPING ELEVATION	= 34.7 FT

END PAVEMENT OVERLAY
-L- STA. 42+00.00



PI = 35+90.00
EL = 37.46'
VC = 540'
K = 140

PI = 40+66.00
EL = 34.50'
VC = 168'
K = 150

BMI ELEVATION = 41.36'
N 666.673 E 2.534.380
-L- STATION 30+33.22, 284.24' RIGHT
RR SPIKE SET IN BASE OF 36"
TWIN OAK TREE

SEE SHEET 6 PLAN OF -L-

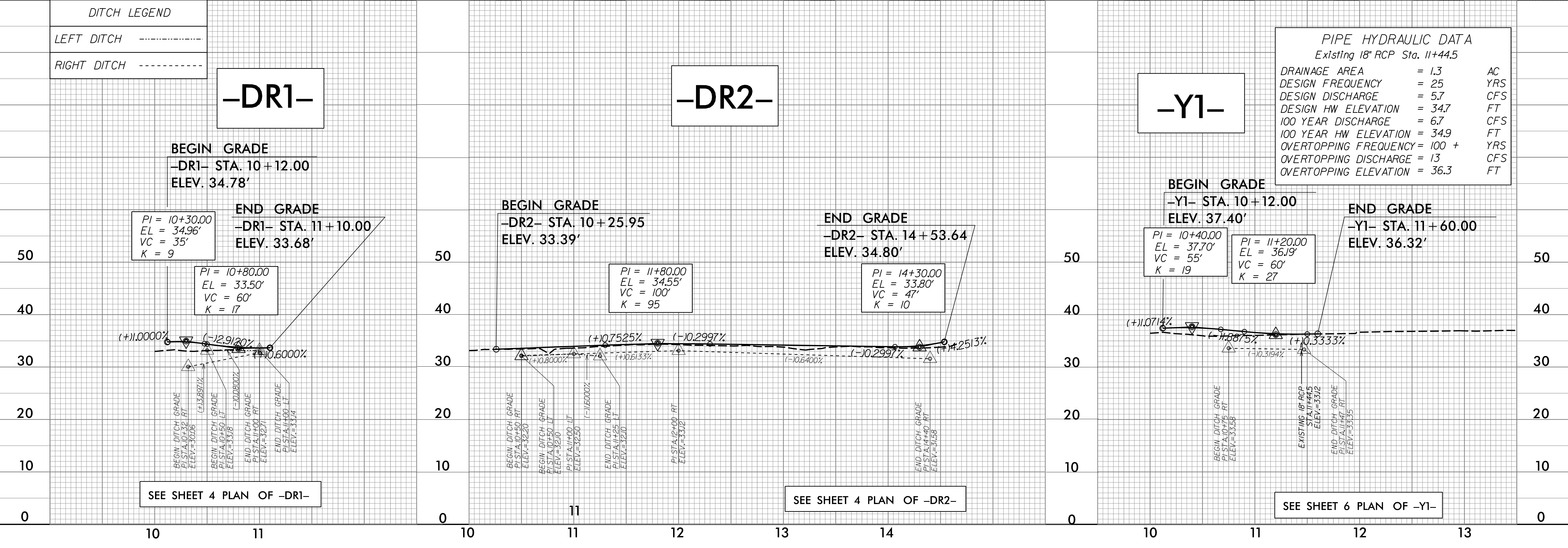
DITCH LEGEND	
LEFT DITCH	-----
RIGHT DITCH	-----

-DR1-

-DR2-

-Y1-

PIPE HYDRAULIC DATA	
Existing 18" RCP Sta. 11+44.5	
DRAINAGE AREA	= 1.3 AC
DESIGN FREQUENCY	= 25 YRS
DESIGN DISCHARGE	= 5.7 CFS
DESIGN HW ELEVATION	= 34.7 FT
100 YEAR DISCHARGE	= 6.7 CFS
100 YEAR HW ELEVATION	= 34.9 FT
OVERTOPPING FREQUENCY	= 100 + YRS
OVERTOPPING DISCHARGE	= 13 CFS
OVERTOPPING ELEVATION	= 36.3 FT



BEGIN GRADE
-DR1- STA. 10+12.00
ELEV. 34.78'

END GRADE
-DR1- STA. 11+10.00
ELEV. 33.68'

BEGIN GRADE
-DR2- STA. 10+25.95
ELEV. 33.39'

END GRADE
-DR2- STA. 14+53.64
ELEV. 34.80'

BEGIN GRADE
-Y1- STA. 10+12.00
ELEV. 37.40'

END GRADE
-Y1- STA. 11+60.00
ELEV. 36.32'

SEE SHEET 4 PLAN OF -DR1-

SEE SHEET 4 PLAN OF -DR2-

SEE SHEET 6 PLAN OF -Y1-