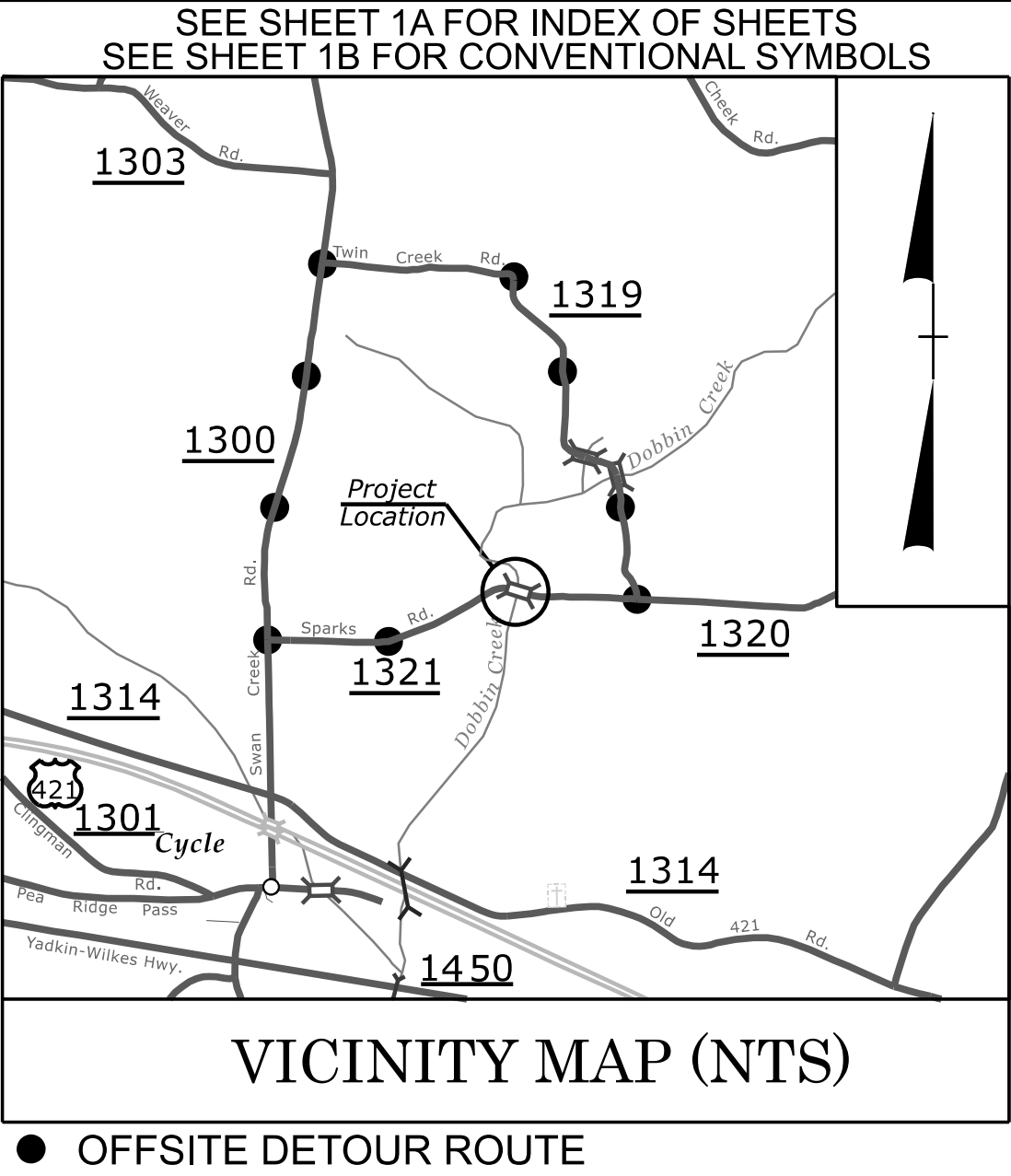


09/08/99

TIP PROJECT: BP11-R050

CONTRACT: DK00479



STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

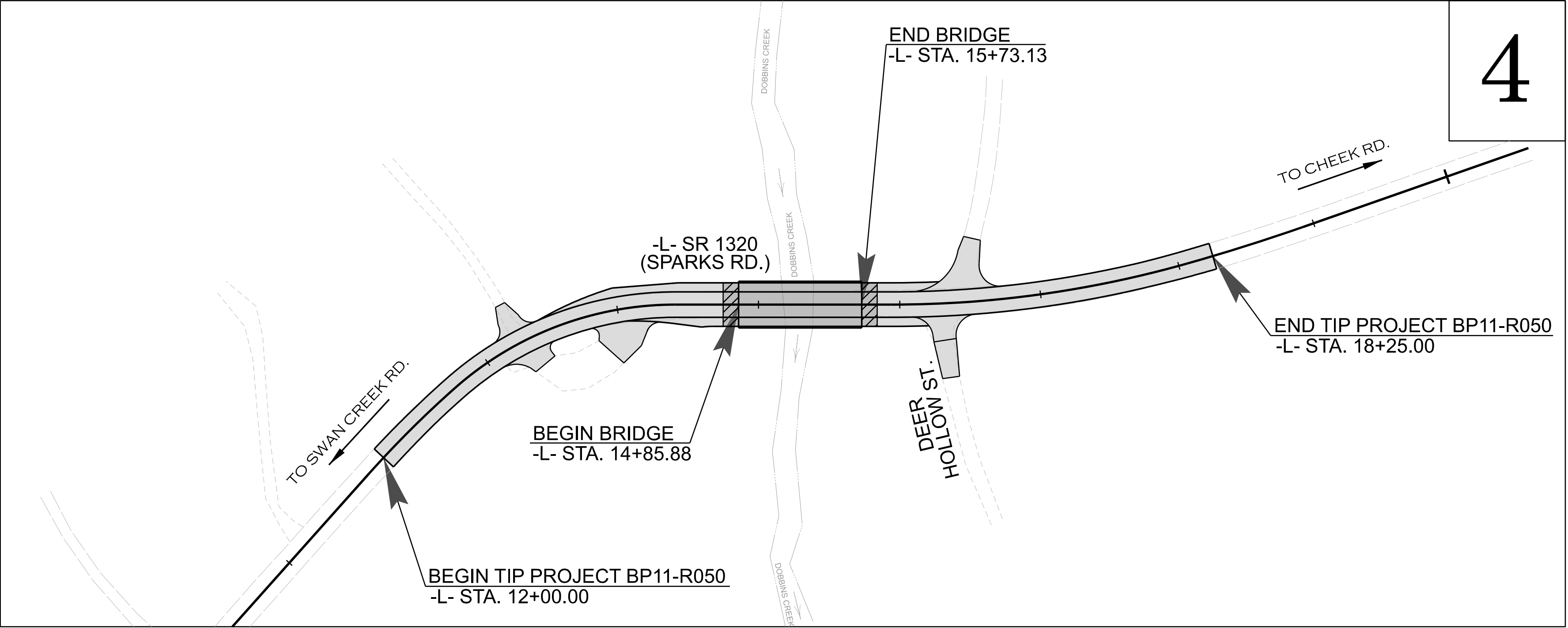
YADKIN COUNTY

LOCATION: *REPLACE BRIDGE #980042 ON SR 1320 (SPARKS RD.)
OVER DOBBINS CREEK*

TYPE OF WORK: *GRADING, DRAINAGE, PAVING, & STRUCTURE*

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	BP11-R050	1	
STATE PROJ. NO.		F. A. PROJ. NO.	DESCRIPTION
BP11.R050.1		N/A	PE
BP11.R050.2		N/A	ROW/UTILITY
BP11.R050.3		N/A	CONST.

100% PLAN SET



THIS IS NOT A CONTROLLED ACCESS PROJECT.
THIS PROJECT DOES NOT FALL WITHIN ANY JURISDICTIONAL LIMITS.
THIS PROJECT DOES NOT REQUIRE A DESIGN EXCEPTION PER AASTHO LOW VOLUME ROADS AND SUBREGIONAL TIER GUIDELINES (SEE APPROVED DESIGN EXCEPTION CHECKLIST).

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

GRAPHIC SCALES

50 25 0 50 100

PLANS

50 25 0 50 100

PROFILE (HORIZONTAL)

10 5 0 10 20

PROFILE (VERTICAL)

DESIGN DATA

ADT 2026 = 90

ADT 2046 = 124

V = 50 MPH

FUNC CLASS = LOCAL

SUBREGIONAL TIER

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT BP11-R050 = 0.101 MILES

LENGTH STRUCTURE TIP PROJECT BP11-R050 = 0.017 MILES

TOTAL LENGTH TIP PROJECT BP11-R050 = 0.118 MILES

NCDOT CONTACT: ROB WEISZ, PE

DIV. 11 BRIDGE PROGRAM MANAGER

PREPARED IN THE OFFICE OF:

SUMMIT

DESIGN AND ENGINEERING SERVICES

2024 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: AUGUST 4, 2025

LETTING DATE: JULY 16, 2026

SPENCER MERRITT, PE

PROJECT ENGINEER

JOSHUA JERNIGAN, PE

PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

DocuSigned by: *Petrick Hestonett* 5/18/2026 P.E.

SIGNATURE

ROADWAY DESIGN ENGINEER

Signed by: *Joshua Jernigan* 5/18/2026 P.E.

SIGNATURE

STATE OF NORTH CAROLINA

DEPARTMENT OF TRANSPORTATION

INDEX OF SHEETS	
SHEET NUMBER	SHEET
1	TITLE SHEET
1A	INDEX OF SHEETS, GENERAL NOTES, AND STANDARD DRAWINGS
1B	CONVENTIONAL SYMBOLS
2A-1	PAVEMENT SCHEDULE AND TYPICAL SECTIONS
2C-1 THRU 2C-3	ROADWAY SPECIAL DETAILS
3B-1	ROADWAY SUMMARIES
3D-1	DRAINAGE SUMMARIES
3G-1	GEOTECHNICAL SUMMARIES
4 THRU 5	PLAN AND PROFILE SHEET
RW-01 THRU RW-04	SURVEY CONTROL, EXISTING CENTERLINES, RIGHT OF WAY, EASEMENT AND PROPERTY TIES
TMP-1 THRU TMP-3	TRAFFIC MANAGEMENT PLANS
PMP-1	PAVEMENT MARKING PLANS
EC-1 THRU EC- 5	EROSION CONTROL PLANS
RF-1	REFORESTATION DETAIL
UO-1 THRU UO-2	UTILITIES BY OTHERS
X-0 THRU X-8	CROSS-SECTIONS
S-1 THRU S-17	STRUCTURE PLANS
SN	STANDARD NOTES

EFF. 01-16-2024
REV.
2024 ROADWAY ENGLISH STANDARD DRAWINGS

The following Roadway Standards as appear in "Roadway Standard Drawings" Contracts Standards and Development Unit - N. C. Department of Transportation - Raleigh, N. C., Dated January 16, 2024 are applicable to this projectand 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
DIVISION 3 - PIPE CULVERTS	
300.01	Method of Pipe Installation (Use Details in Lieu of Standards for Sheets 1 and 2 of 2)
310.10	Driveway Pipe Construction
DIVISION 4 - MAJOR STRUCTURES	
423.01	Bridge Approach Fills - Type 1 Approach Fill for Bridge Abutment
DIVISION 5 - SUBGRADE, BASES AND SHOULDERS	
560.01	Method of Shoulder Construction - High Side of Superelevated Curve - Method I
DIVISION 8 - INCIDENTALS	
840.22	Frames and Wide Slot Sag Grates
840.35	Traffic Bearing Grated Drop Inlet - for Cast Iron Double Frame and Grates
862.01	Guardrail Placement (Use Details in Lieu of Standards for Sheets 4, 6, 12, and 14 of 15)
862.02	Guardrail Installation
862.03	Structure Anchor Units (Use Detail in Lieu of Standard for Sheet 8 of 9)
876.01	Rip Rap in Channels and Ditches
876.02	Guide for Rip Rap at Pipe Outlets
876.04	Drainage Ditches with Class 'B' Rip Rap

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

GRADE LINE:
GRADING AND SURFACING:

THE GRADE LINES SHOWN DENOTE THE FINISHED ELEVATION OF THE PROPOSED 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 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

SUBSURFACE DRAINS:

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

DRIVEWAYS:

DRIVEWAYS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STD. 848.02 USING 3 FOOT RADII OR RADII AS SHOWN ON THE PLANS. LOCATIONS OF DRIVES WILL BE AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER.

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 WILL BE PAID FOR AS "EXTRA WORK" IN ACCORDANCE WITH SECTION 104-7.

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 YADKIN VALLEY TELEPHONE & 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.

BP11-R050

TSH-1A

NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
YADKIN COUNTY

ROADWAY DESIGN
ENGINEER

5/18/2026

5/18/2026

NOT IN CAROLINA

PROFESSIONAL SEAL

053483

ENGINEER

YADKIN COUNTY

Signed by: [Signature]

DO NOT PRINT OR REPRODUCE WITHOUT PERMISSION OF THE ENGINEER
UNLESS ALL SIGNATURES COMPLETED

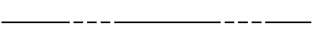
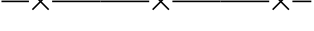
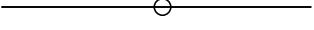
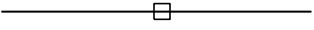
PLANS PREPARED BY:

SUMMIT
DESIGN AND ENGINEERING SERVICES

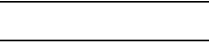
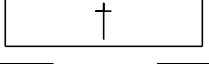
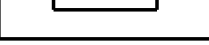
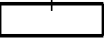
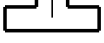
NC FIRM LICENSE No: C-5176
1000 Social St. Suite 800
Raleigh, NC 27609
(919) 732-3853
(919) 732-6676 (FAX)

Note: Not to Scale

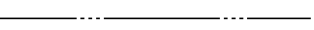
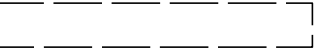
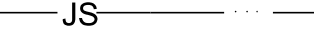
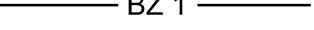
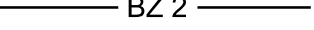
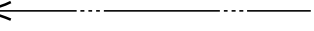
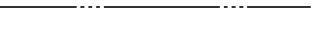
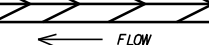
BOUNDARIES AND PROPERTY:

State Line	
County Line	
Township Line	
City Line	
Reservation Line	
Property Line	
Existing Iron Pin (EIP)	
Computed Property Corner	
Existing Concrete Monument (ECM)	
Parcel / Sequence Number	
Existing Fence Line	
Proposed Woven Wire Fence	
Proposed Chain Link Fence	
Proposed Barbed Wire Fence	
Existing Wetland Boundary	
Proposed Wetland Boundary	
Existing Endangered Animal Boundary	
Existing Endangered Plant Boundary	
Existing Historic Property Boundary	
Known Contamination Area: Soil	
Potential Contamination Area: Soil	
Known Contamination Area: Water	
Potential Contamination Area: Water	
Contaminated Site: Known or Potential	

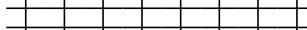
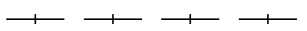
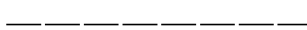
BUILDINGS AND OTHER CULTURE:

Gas Pump Vent or U/G Tank Cap	
Sign	
Well	
Small Mine	
Foundation	
Area Outline	
Cemetery	
Building	
School	
Church	
Dam	

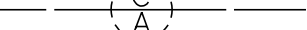
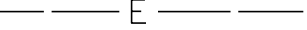
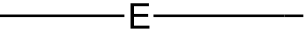
HYDROLOGY:

Stream or Body of Water	
Hydro, Pool or Reservoir	
Jurisdictional Stream	
Buffer Zone 1	
Buffer Zone 2	
Flow Arrow	
Disappearing Stream	
Spring	
Wetland	
Proposed Lateral, Tail, Head Ditch	
False Sump	

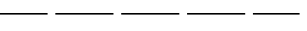
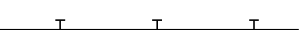
RAILROADS:

Standard Gauge	
RR Signal Milepost	
Switch	
RR Abandoned	
RR Dismantled	

RIGHT OF WAY & PROJECT CONTROL:

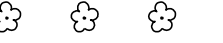
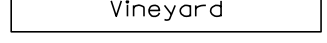
Primary Horiz Control Point	
Primary Horiz and Vert Control Point	
Secondary Horiz and Vert Control Point	
Vertical Benchmark	
Existing Right of Way Monument	
Proposed Right of Way Monument (Rebar and Cap)	
Proposed Right of Way Monument (Concrete)	
Existing Permanent Easement Monument	
Proposed Permanent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

ROADS AND RELATED FEATURES:

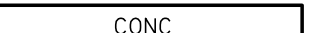
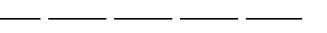
Existing Edge of Pavement	
Existing Curb	
Proposed Slope Stakes Cut	
Proposed Slope Stakes Fill	
Proposed Curb Ramp	
Existing Metal Guardrail	
Proposed Guardrail	
Existing Cable Guiderail	
Proposed Cable Guiderail	
Equality Symbol	
Pavement Removal	
VEGETATION:	
Single Tree	
Single Shrub	
Hedge	

STATE OF NORTH CAROLINA, DIVISION OF HIGHWAYS

CONVENTIONAL PLAN SHEET SYMBOLS

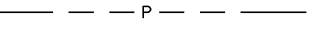
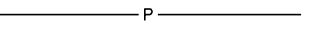
Woods Line	
Orchard	
Vineyard	

EXISTING STRUCTURES:

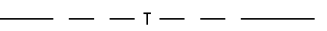
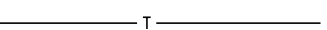
MAJOR:	
Bridge, Tunnel or Box Culvert	
Bridge Wing Wall, Head Wall and End Wall	
MINOR:	
Head and End Wall	
Pipe Culvert	
Footbridge	
Drainage Box: Catch Basin, DI or JB	
Paved Ditch Gutter	
Storm Sewer Manhole	
Storm Sewer	

UTILITIES:

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

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

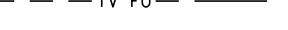
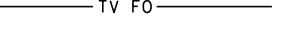
TELEPHONE:

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

WATER:

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

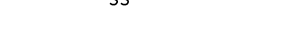
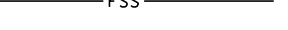
TV:

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

GAS:

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

SANITARY SEWER:

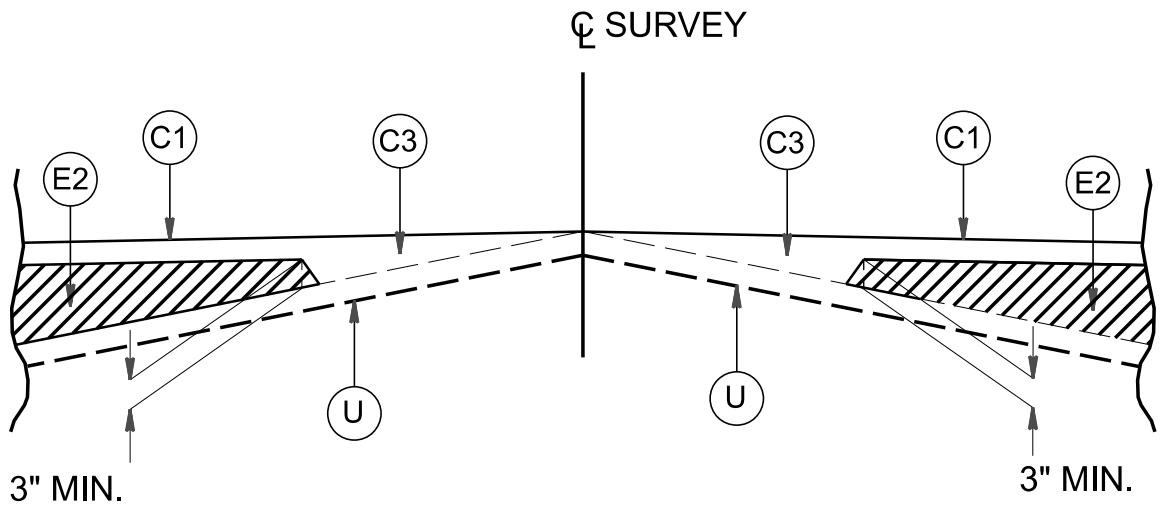
Sanitary Sewer Manhole	
Sanitary Sewer Cleanout	
U/G Sanitary Sewer Line	
Above Ground Sanitary Sewer	
SS Force Main Line Test Hole (SUE - LOS A)*	
SS Force Main Line (SUE - LOS B)*	
SS Force Main Line (SUE - LOS C)*	
SS Force Main Line (SUE - LOS D)*	

MISCELLANEOUS:

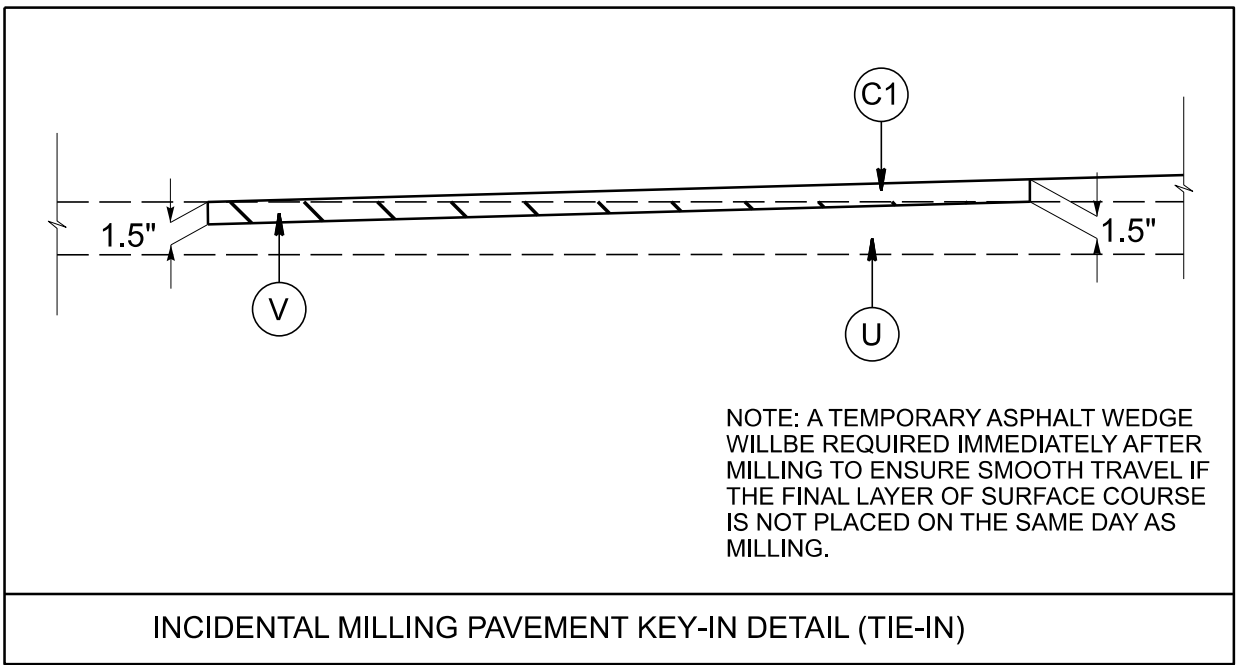
Utility Pole	
Utility Pole with Base	
Utility Located Object	
Utility Traffic Signal Box	
Utility Unknown U/G Line (SUE - LOS B)*	
U/G Tank; Water, Gas, Oil	
Underground Storage Tank, Approx. Loc.	
A/G Tank; Water, Gas, Oil	
Geoenviromental Boring	
Abandoned According to Utility Records	
End of Information	

PAVEMENT SCHEDULE (FINAL PAVEMENT DESIGN)	
C1	PROP. APPROX. 1½" 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 1½" 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 GREATER THAN 5½" IN DEPTH OR LESS THAN 3" IN DEPTH.
R	SHOULDER BERM GUTTER
T	EARTH MATERIAL
U	EXISTING PAVEMENT
V	INCIDENTAL MILLING (VARIABLE DEPTH 0"-1.5").
W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE STANDARD WEDGING DETAIL ON THIS SHEET)

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

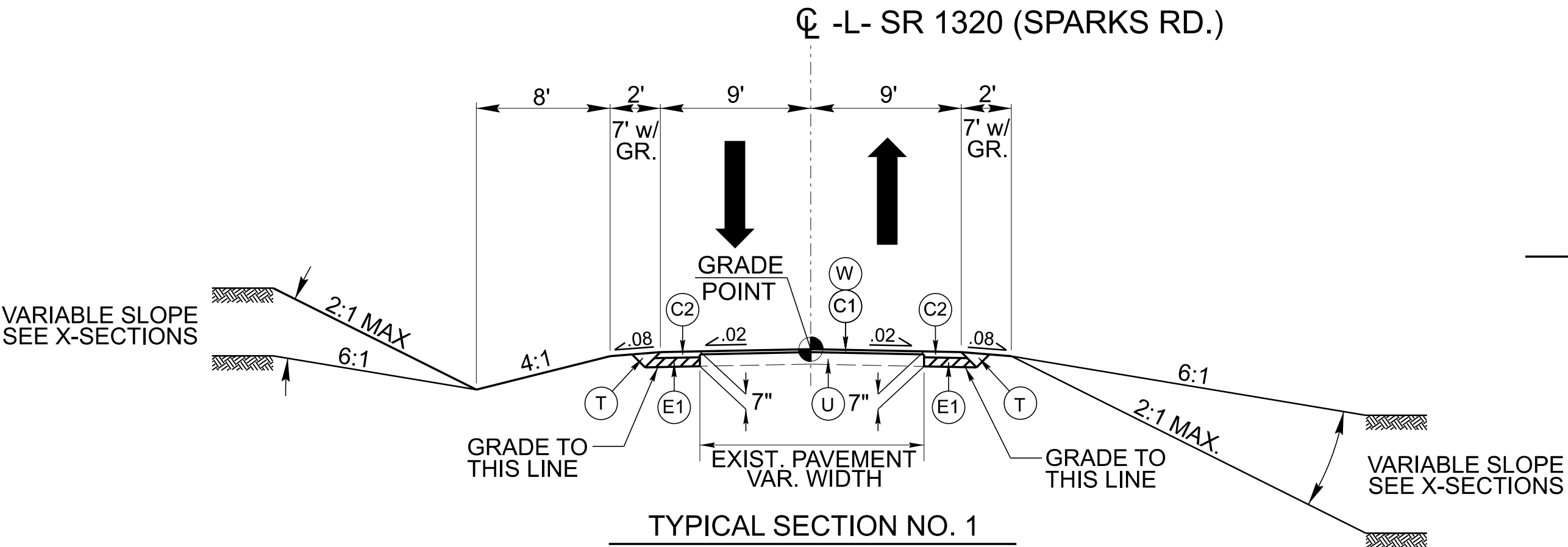


(W) Detail Showing Method of Wedging



-L- Sta. 12+00.00 TO Sta. 12+37.50
-L- Sta. 17+87.50 TO Sta. 18+25.00

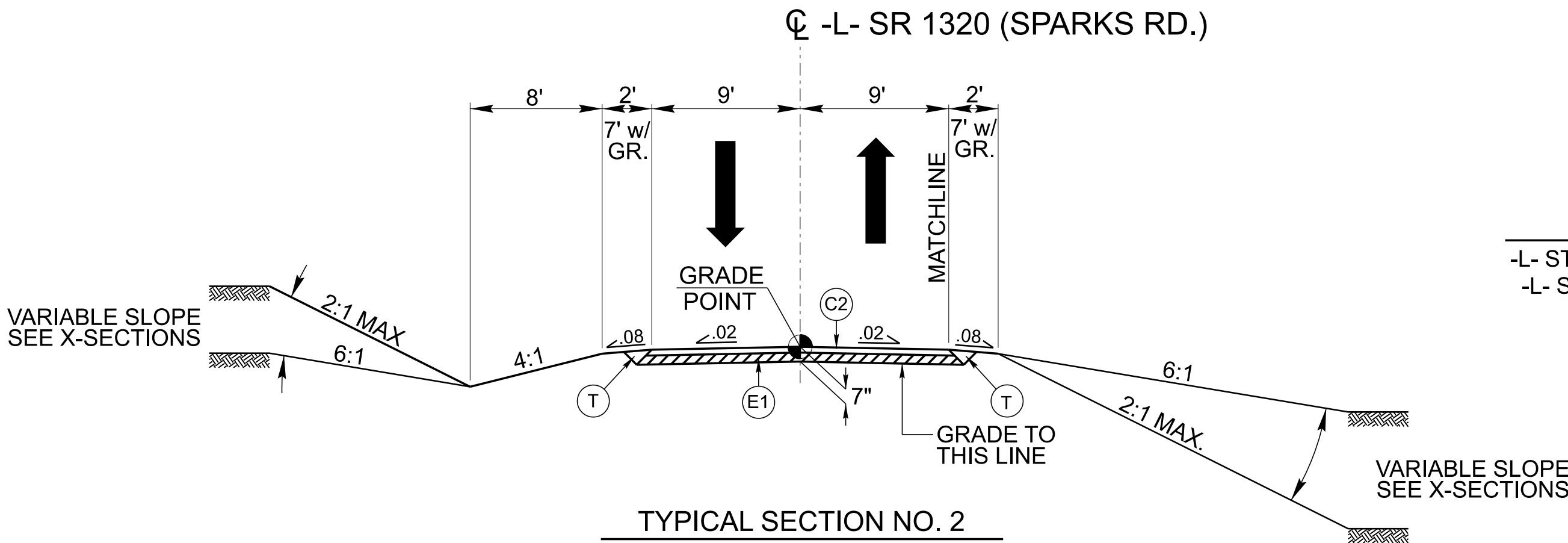
STATION RANGES ARE APPROXIMATE ONLY.
GRADE MAY BE ADJUSTED BY ENGINEER
TO ENSURE A PROPER TIE-IN.



TYPICAL SECTION NO. 1

USE TYPICAL SECTION NO. 1

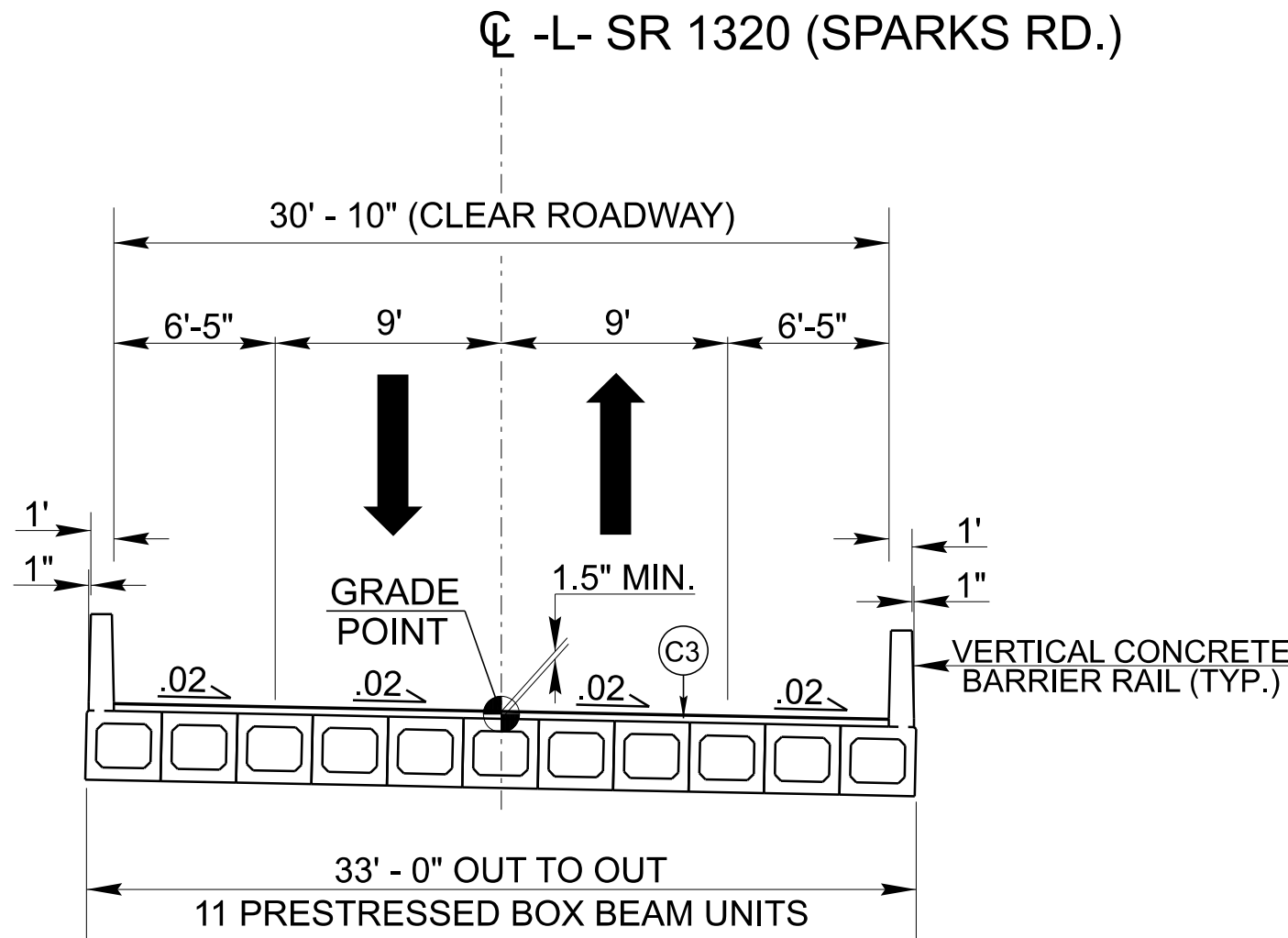
-L- STA. 12+00.00 TO STA. 14+37.00
-L- STA. 16+22.00 TO STA. 18+25.00



TYPICAL SECTION NO. 2

USE TYPICAL SECTION NO. 2

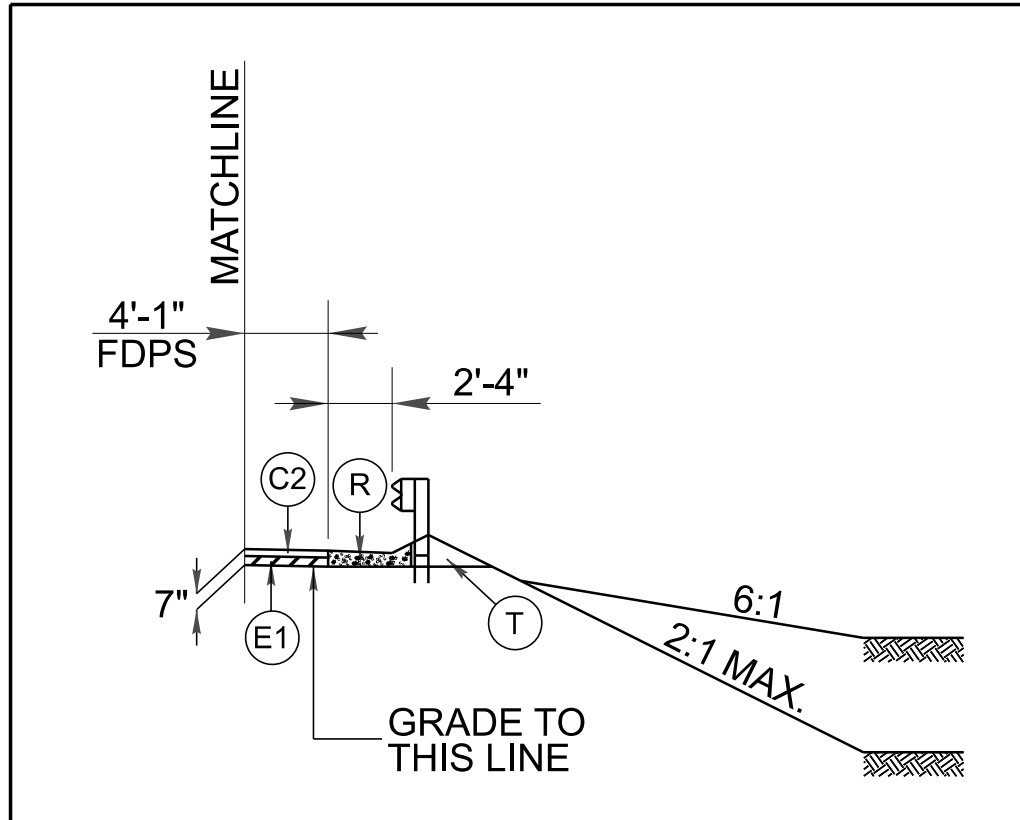
-L- STA. 14+37.00 TO STA. 14+85.88 (BEGIN BRIDGE)
-L- STA. 15+73.13 (END BRIDGE) TO STA. 16+22.00



BRIDGE TYPICAL

SEE STRUCTURE PLANS FOR
STRUCTURE CONSTRUCTION DETAILS.

SHOULDER BERM GUTTER PARTIAL TYPICAL



*USE PARTIAL TYPICAL IN CONJUNCTION WITH TS NO.2
-L- STA. 14+60.00 TO STA. 14+75.00 RT

USE BRIDGE TYPICAL

-L- STA. 14+85.88 TO STA. 15+73.13

NOTE: PLACE FDPS TO FACE OF
GUARDRAIL UNLESS SHOWN
OTHERWISE ON PLAN.

BP11-R050

2A-1

NORTH CAROLINA

DEPARTMENT OF TRANSPORTATION

YADKIN COUNTY

ROADWAY DESIGN

ENGINEER

5/18/2026

5/18/2026

SEAL

053483

ENGINEER

W. MERITT

Signed by:

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

PAVEMENT DESIGN

ENGINEER

5/18/2026

5/18/2026

SEAL

049851

ENGINEER

R. SHAW

Signed by:

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

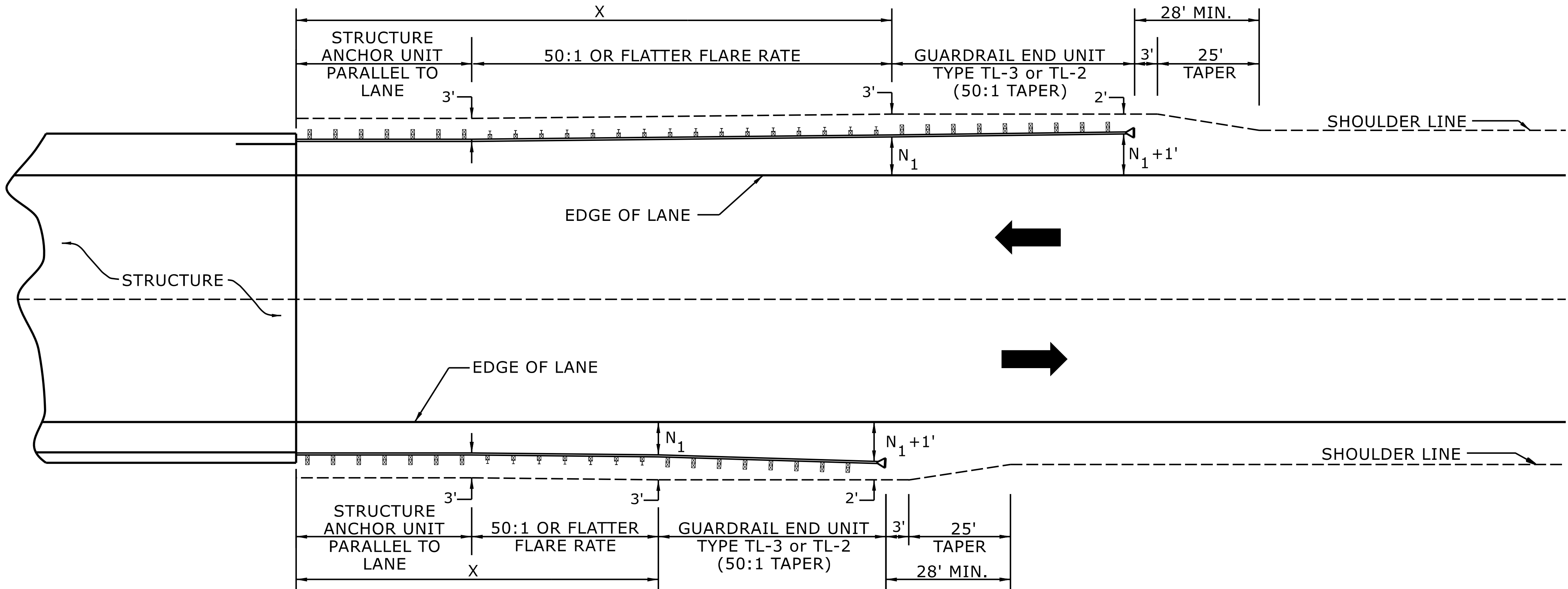
PLANS PREPARED BY:

SUMMIT

DESIGN AND ENGINEERING SERVICES

NC FIRM LICENSE No: C-5176
320 Executive Court
Hillsborough, NC 27278
(919) 732-3883
(919) 732-6676 (FAX)

PROJECT REFERENCE NO.	SHEET NO.
BP11-R050	2C-1



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

SEE STD. 862.03 FOR STRUCTURE ANCHOR UNITS

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

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

ROADWAY DETAIL DRAWING FOR
GUARDRAIL PLACEMENT

SHEET 4 OF 15

862D01



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UNLESS ALL SIGNATURES COMPLETED

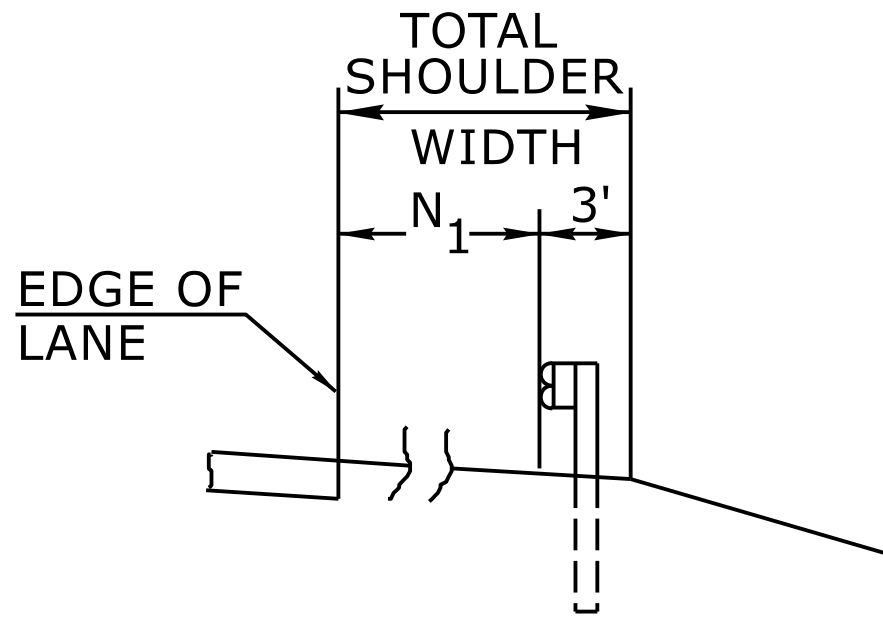
**CONTRACTS STANDARDS
AND DEVELOPMENT UNIT**

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

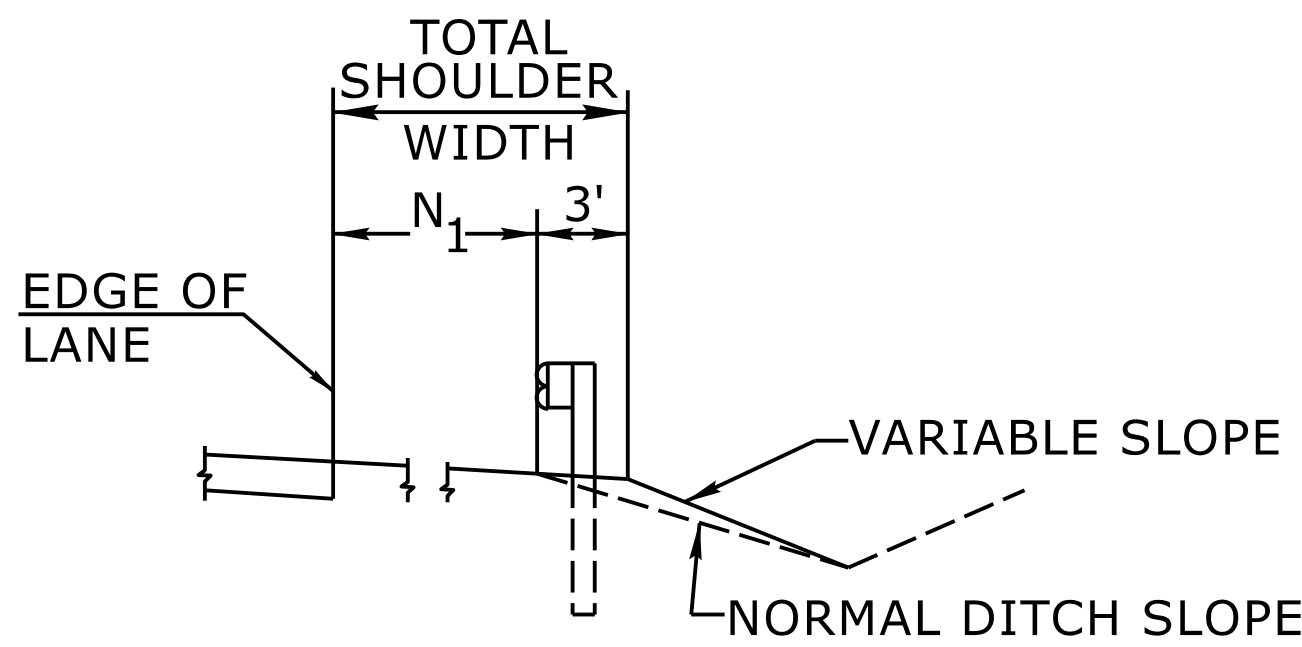
SEE TITLE BLOCK

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

PROJECT REFERENCE NO.	SHEET NO.
BP11-R050	2C-2

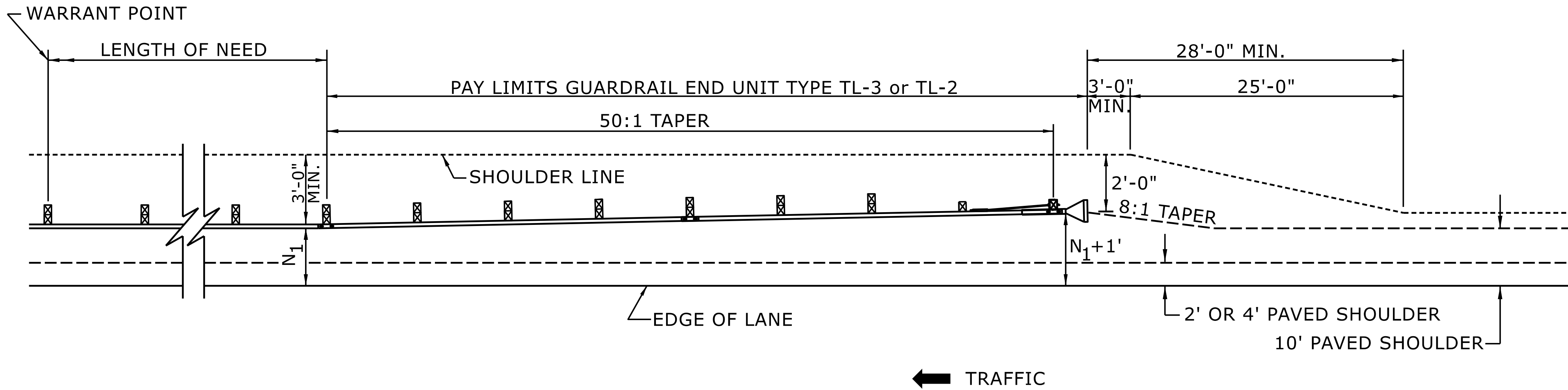


FILL SECTION



CUT SECTION

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



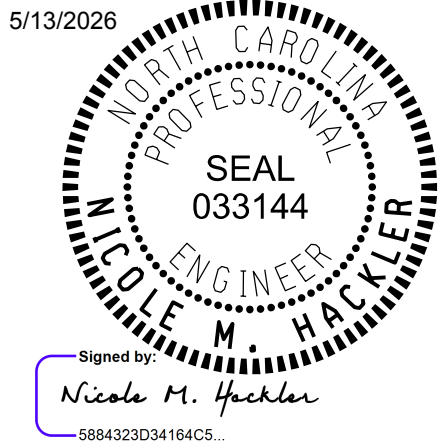
FOR POSTED SPEEDS ≥ 45mph USE GREU TYPE TL-3
FOR POSTED SPEEDS < 45mph USE GREU TYPE TL-2

DETAIL OF BEGINNING OF GUARDRAIL IN CUT OR FILL SECTION

ROADWAY DETAIL DRAWING FOR
GUARDRAIL PLACEMENT

SHEET 6 OF 15
862D01

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



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.: DATE:

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

ROADWAY DETAIL DRAWING FOR
METHOD OF PIPE INSTALLATION
RIGID PIPE

SHEET 2 OF 2
300.01

TOP OF FILL

GROUND LINE

H

I.D. /6 MIN.
NOT LESS THAN 6"

O.D. + 3'

NORMAL EARTH FOUNDATION

TOP OF FILL

GROUND LINE

H

I.D. /6 MIN.
NOT LESS THAN 6"

O.D. + 3'

ROCK FOUNDATION
PIPE IN TRENCH

TOP OF FILL

GROUND LINE

H

I.D. /6 MIN.
NOT LESS THAN 6"

O.D. + 3'

UNSUITABLE MATERIAL FOUNDATION

TOP OF FILL

GROUND LINE

H

MIN. O.D.

O.D. + 2'

NORMAL EARTH FOUNDATION

TOP OF FILL

GROUND LINE

H

MIN. O.D.

O.D. + 2'

ROCK FOUNDATION
PIPE ABOVE GROUND

TOP OF FILL

GROUND LINE

H

MIN. O.D.

O.D. + 2'

UNSUITABLE MATERIAL FOUNDATION

COMPACT AFTER
PIPE IS PLACED
& PRIOR TO
PLACEMENT OF
FILL

TYPE 4a
GEOTEXTILE

I.D. /6 MIN.
NOT LESS
THAN 6"

1/2" PER FOOT OF 'H'
BUT NOT LESS THAN 12"
NOR MORE THAN 24"
AS DIRECTED BY ENGR.

EARTH

COMPACT AFTER
PIPE IS PLACED
& PRIOR TO
PLACEMENT OF
FILL

TYPE 4a
GEOTEXTILE

I.D. /6 MIN.
NOT LESS THAN 6"

1/2" PER FOOT OF 'H'
BUT NOT LESS THAN 12"
NOR MORE THAN 24"
AS DIRECTED BY ENGINEER

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

APPROVED SUITABLE LOCAL MATERIAL.

TAKE CARE TO FULLY COMPACT HAUNCH ZONE OF PIPE BACKFILL.

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

SPRINGLINE OF PIPE

SELECT BACKFILL MATERIAL CLASS III OR CLASS II,
BELOW SPRINGLINE.

UNDISTURBED EARTH MATERIAL

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

5/13/2026

Signed by
Nicole M. Hackler
588432034164C5...

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.:

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

"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

GUARDRAIL SUMMARY

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 GUARDRAIL	REMOVE EXISTING GUARDRAIL	REMOVE AND STOCKPILE EXISTING GUARDRAIL	REMARKS
				STRAIGHT	SHOP CURVED	DOUBLE FACED	APPROACH END	TRAILING END			APPROACH END	TRAILING END	APPROACH END	TRAILING END	XI MOD	XI	GREU TL-3	M-350	GRAU TYPE III	CAT-1	VI MOD	BIC	AT-1	EA	G	NG			
-L-	13+92.13	14+85.88	LT	93.75'				14+85.88	6'-5"	9'-5"		50'		1'			1		1				1						
-L-	14+14.50	14+85.88	RT	18.75'	56.25'		14+85.88		6'-5"	9'-5"									1				1						SHOP CURVE R = 60'
-L-	15+73.13	16+39.34	LT	18.75'	56.25'		15+73.13		6'-5"	9'-5"									1				1						SHOP CURVE R = 50'
-L-	15+73.13	16+25.29	RT	18.75'	56.25'			15+73.13	6'-5"	9'-5"									1				1						SHOP CURVE R = 35'
			SUBTOTAL:	150'	168.75'												1		4				3						
			(-) LESS ANCHOR DEDUCTIONS:																										
			(1) GREU TL-3 @ 50.0' EA.	50'																									
			(4) GRAU TYPE III @ 18.75' EA.	75'																									
			(3) GREU AT-1 @ 6.25' EA.		18.75'																								
			TOTAL:	25'	150'																								
			PROJECT TOTALS:	25'	150'												1		4				3						

SUMMARY OF EARTHWORK

STATION	STATION	UNCL. EXCAV.	UNDERCUT EXCAV.	EMBANK. +%	BORROW	WASTE
-L- 12+00.00	-L- 14+85.88	58		232	174	
-L- 15+73.13	-L- 18+25.00	5		99	94	
	SUBTOTAL:	63		331	268	
	SHEET TOTAL:	63		331	268	
LOSS DUE TO CLEARING AND GRUBBING:						
EARTH WASTE IN LIEU OF BORROW:						
	PROJECT TOTAL:	63		331	268	
	EST. 5% TO REPLACE TOP SOIL:				13	
	GRAND TOTALS:	63			281	
	SAY:	70			290	

NOTE: APPROXIMATE QUANTITIES ONLY. BORROW EXCAVATION, UNCLASSIFIED EXCAVATION, CLEARING AND GRUBBING, FINE GRADING, AND REMOVAL OF EXISTING PAVEMENT WILL BE PAID FOR AT THE LUMP SUM PRICE FOR "GRADING".

SHOULDER BERM GUTTER SUMMARY

SURVEY LINE	STATION	STATION	LOCATION LT/ RT/ CL	LF
-L-	14+60.00	14+75.00	RT	15.0
TOTAL:				15.0
SAY:				15.0

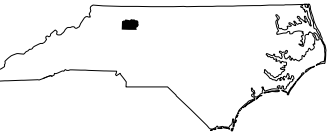
PAVEMENT REMOVAL SUMMARY

SURVEY LINE	STATION	STATION	LOCATION LT/ RT/ CL	YD ³
-L-	14+37.00	14+92.43	CL	114.77
-L-	15+67.31	16+22.00	CL	113.52
TOTAL:				228.28
SAY:				230

BP11-R050

38-1

NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
YADKIN COUNTY



PLANS PREPARED BY:



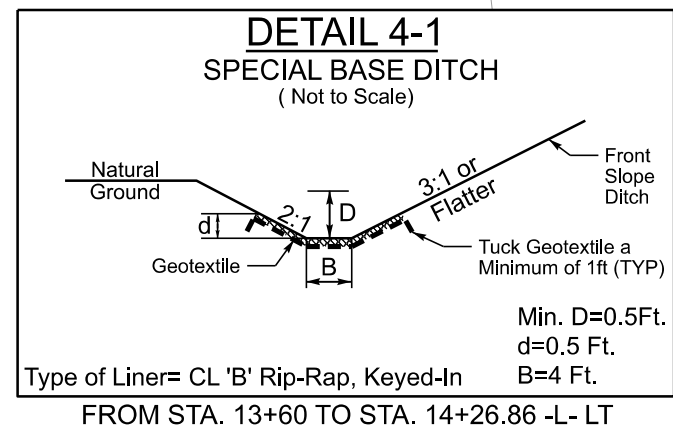
SUMMIT
DESIGN AND ENGINEERING SERVICES

NC FIRM LICENSE No: C-5176

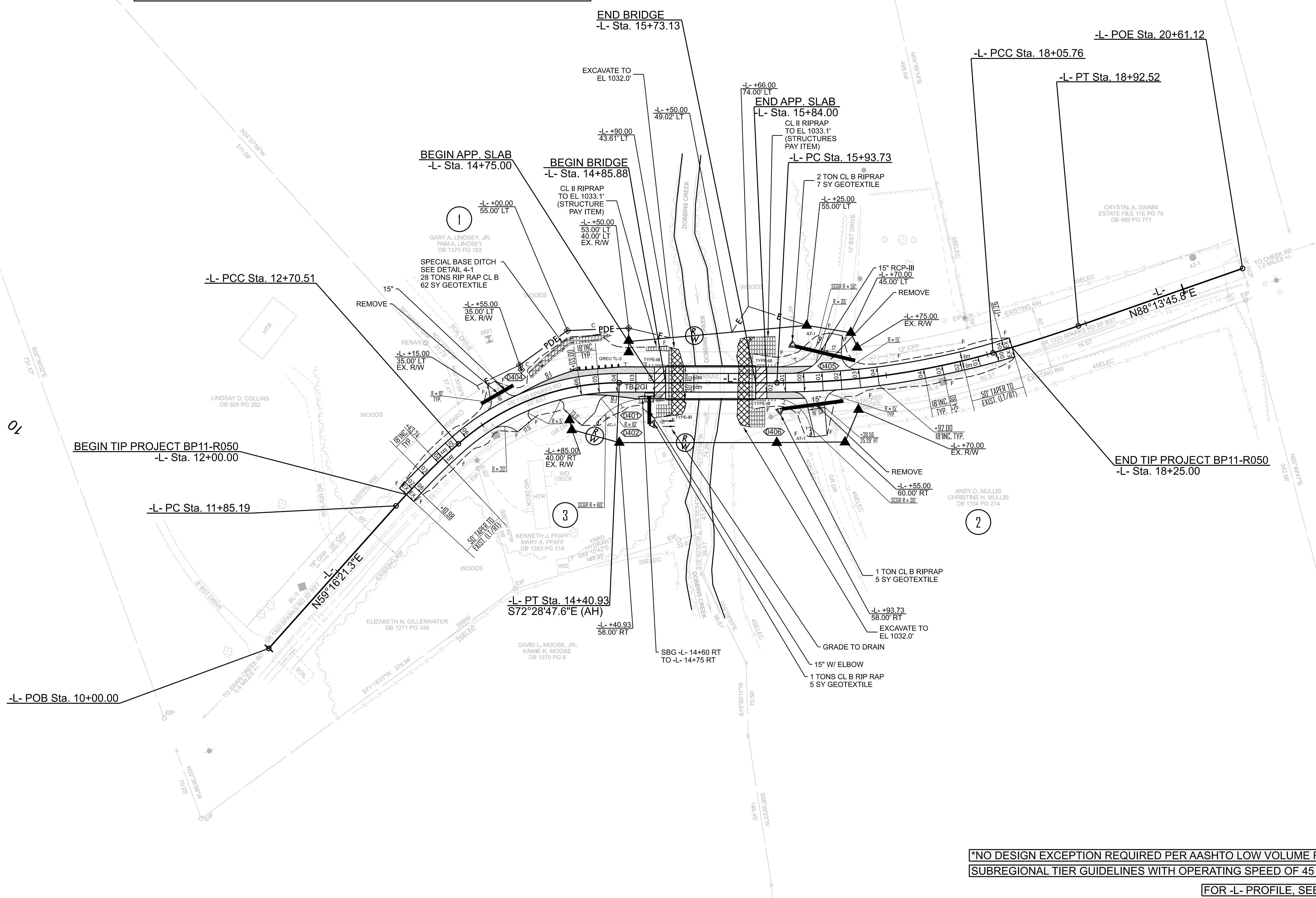
320 Executive Court
Hillsborough, NC 27278
(919) 732-3883
(919) 732-6676 (FAX)

COMPUTED BY: ZA ZWACK DATE: 03/31/2026 CHECKED BY: SW MERRITT DATE: 03/31/2026		(9-17-24)				PROJECT NO. BP11-R050		SHEET NO. 3G-1							
STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS															
SUMMARY OF SUBSURFACE DRAINAGE						SUMMARY OF AGGREGATE SUBGRADE/STABILIZATION									
LINE	Station	Station	Location LT/RT/CL	Drain Type* UD/BD/SD	LF	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
CONTINGENCY				SD	200										
				TOTAL LF:	200				ASU(1)		100	50	50		
									TOTAL CY/TONS/SY:		100	50**	50**	0	0
*UD = Underdrain *BD = Blind Drain *SD = Subsurface Drain						*ASU(1/2) = Aggregate Subgrade (Type 1 or 2) *AST = Aggregate Stabilization **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.									

11/14/23



<u>CUR DATA -L-</u> Plc 12+27.90 $\Delta c = 06^{\circ}41'47.7''$ (RT) $D = 07^{\circ}50'55.5''$ Lc = 85.32 Tc = 42.71 R = 730 SE = 06 RO = 108' DS = 45 MPH	<u>CUR DATA -L-</u> Plc 13+59.67 $\Delta c = 41^{\circ}33'03.5''$ (RT) $D = 24^{\circ}22'52.3''$ Lc = 170.42 Tc = 89.15 *R = 235 SE = 06 RO = 108' *DS = 30 MPH	<u>CUR DATA -L-</u> Plc 17+00.42 $\Delta c = 15^{\circ}46'39.3''$ (LT) $D = 07^{\circ}26'27.6''$ Lc = 212.04 Tc = 106.69 R = 770 SE = 04 RO = 72' *DS = 30 MPH	<u>CUR DATA -L-</u> Plc 18+49.16 $\Delta c = 03^{\circ}30'47.3''$ (LT) $D = 04^{\circ}02'57.0''$ Lc = 86.76 Tc = 43.39 R = 1,415 SE = Exist. RO = N/A
---	--	---	---

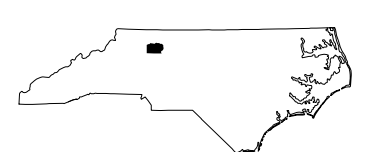


*NO DESIGN EXCEPTION REQUIRED PER AASHTO LOW VOLUME ROADS AND
SUBREGIONAL TIER GUIDELINES WITH OPERATING SPEED OF 45 MPH.

FOR -L- PROFILE, SEE SHEET 005

BP11-R050
RDY 004

NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
YADKIN COUNTY



ROADWAY DESIGN
ENGINEER

5/18/2026



Signed by:

W. MERRITT

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UNLESS ALL SIGNATURES COMPLETED

HYDRAULIC DESIGN
ENGINEER

5/18/2026



DocuSigned by:

P. M. HARTNETT

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PLANS PREPARED BY:



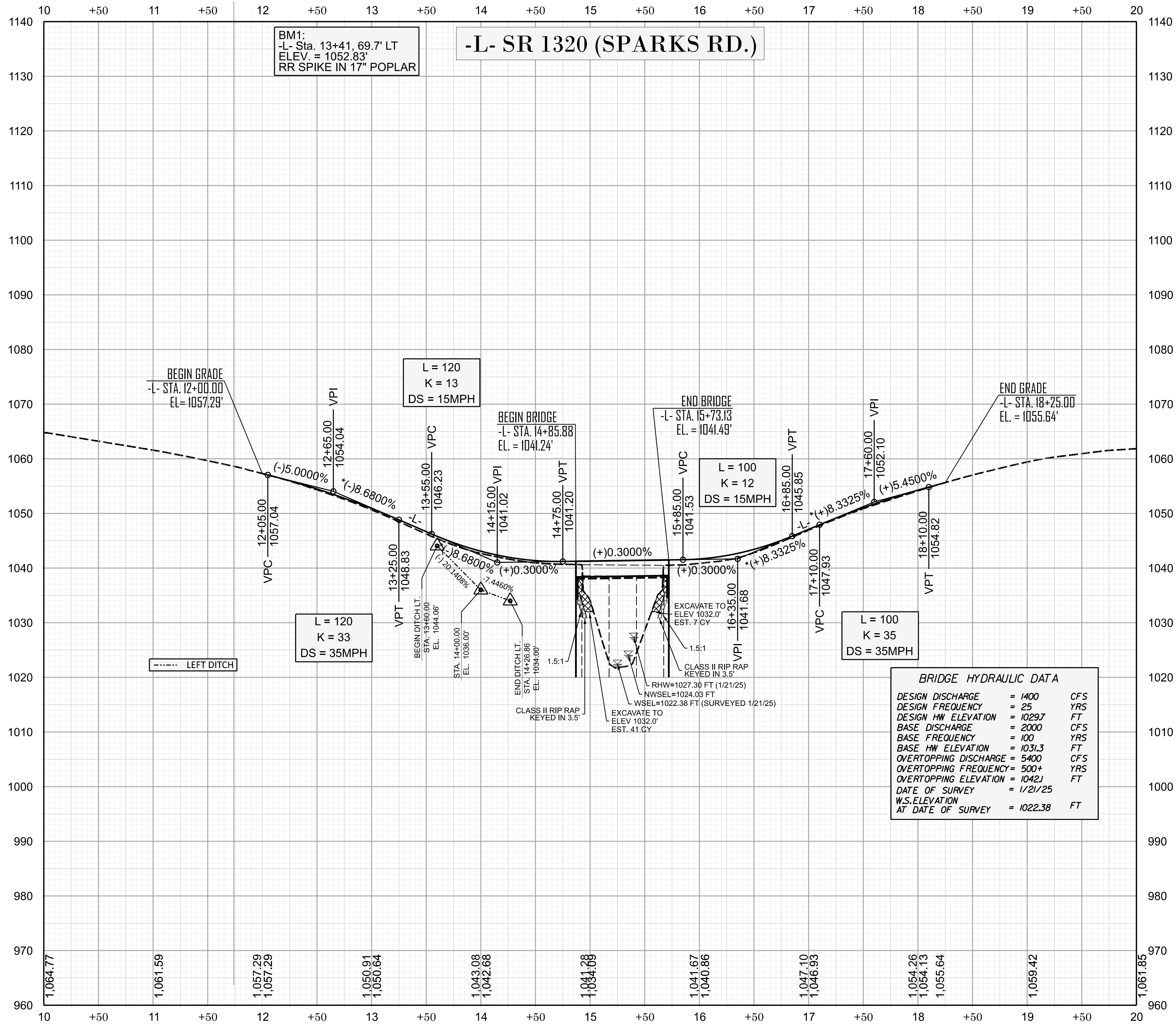
NC FIRM LICENSE No: C-5176

320 Executive Court

Hillsborough, NC 27278

(919) 732-3883

(919) 732-6876 (FAX)



FOR -L- PLAN, SEE SHEET 004

*NO DESIGN EXCEPTION REQUIRED PER AASHTO LOW VOLUME ROADS AND
SUBREGIONAL TIER GUIDELINES WITH OPERATING SPEED OF 45 MPH.

BPM-R050

RDY005

NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
YADKIN COUNTY

ROADWAY DESIGN
ENGINEER

5/18/2026

NORTH CAROLINA
PROFESSIONAL
SEAL
053483
PAUL W. MERRITT

Signed by:

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HYDRAULIC DESIGN
ENGINEER

5/18/2026

NORTH CAROLINA
PROFESSIONAL
SEAL
053755
PATRICK M. HARTNETT

DocuSigned by:

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PLANS PREPARED BY:

NC FIRM LICENSE No: C-5176
320 Executive Court
Hillsborough, NC 27278
(919) 732-3883
(919) 732-6876 (FAX)

SCE/josh.jernigan - 5/1/2026

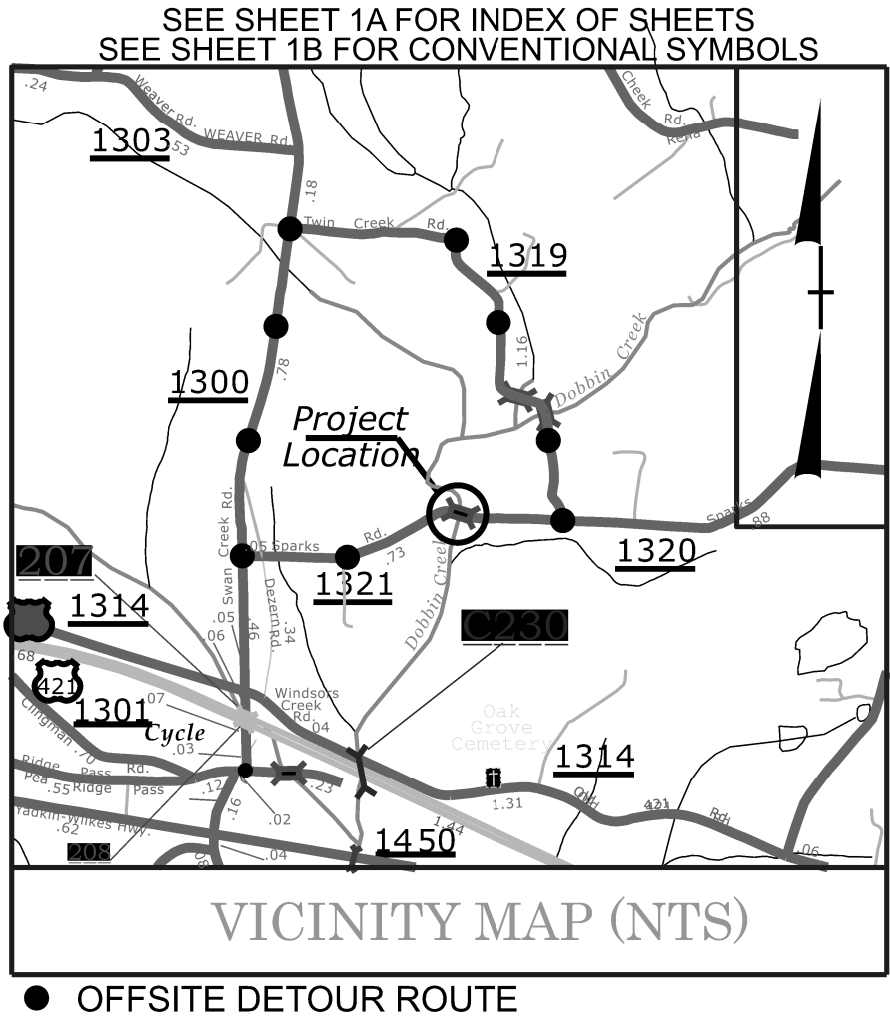
TIP PROJECT: BP11.R050

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

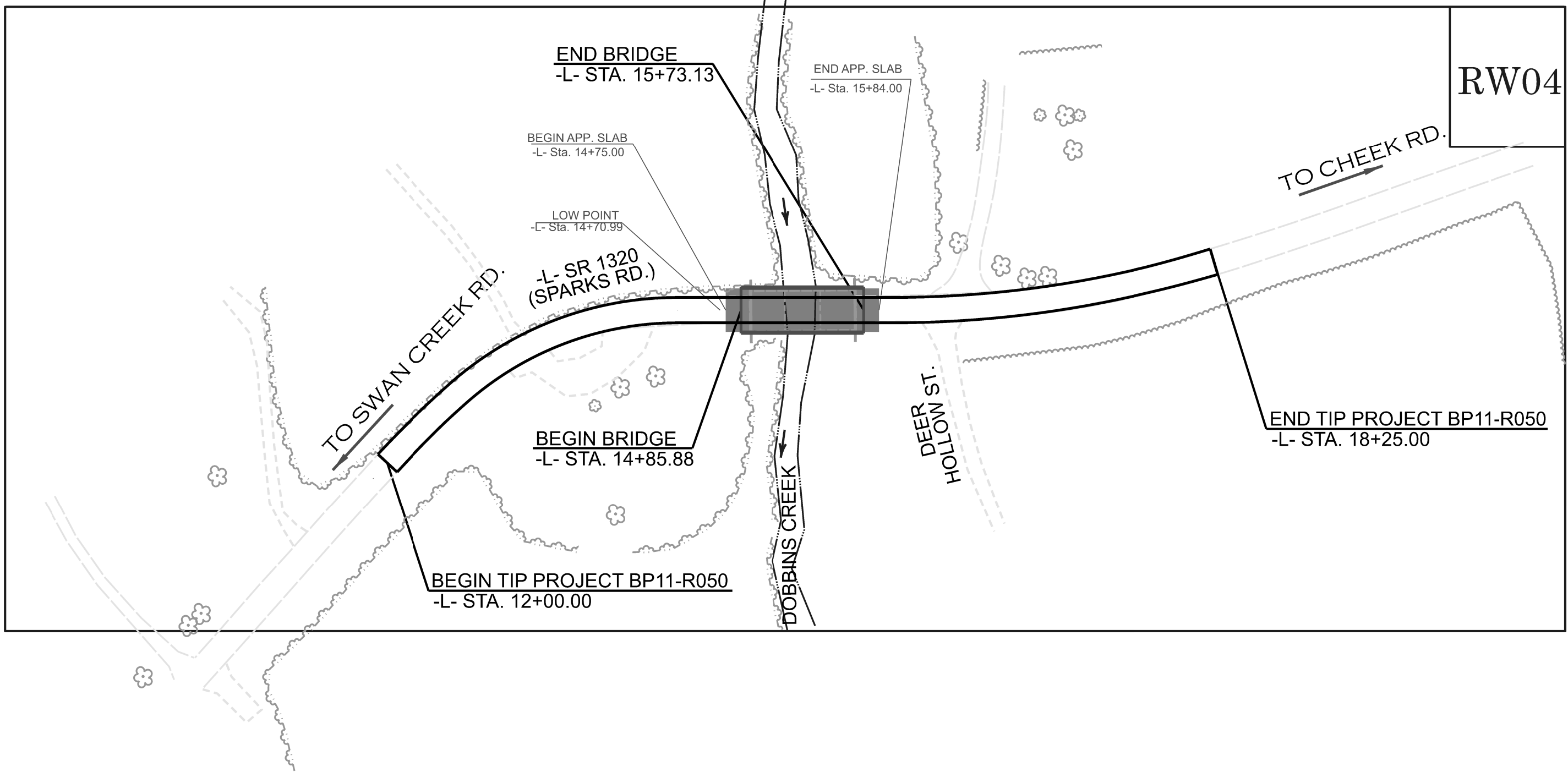
SURVEY CONTROL, EXISTING CENTERLINES,
RIGHT OF WAY, EASEMENTS AND PROPERTY TIES

YADKIN COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	BP11.R050	RW01	5



NA 2011
NAD 83



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UNLESS ALL SIGNATURES COMPLETED

GRAPHIC SCALES



DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT
IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY
NCDOT FOR MONUMENT 42-1
WITH NAD83/2011 STATE PLANE GRID COORDINATES OF
NORTHING: 877138.7650 EASTING: 1452177.4160
ELEVATION: 1063.5400
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT
(GROUND TO GRID) IS: 0.99994864
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NAVD 88

Prepared in the Office of:



GEOSPHERE LAND SURVEYING OF NC
128 TALBERT ROAD
MOORESVILLE NC 28117
FIRM C-5241

2024 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
AUGUST 4, 2025

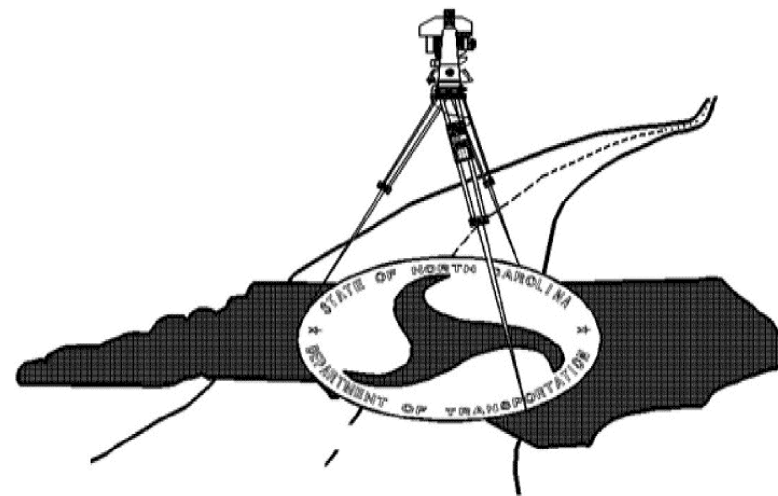
LETTING DATE:
AUGUST 20, 2026

PROFESSIONAL LAND
SURVEYOR



DocuSigned by:
Sarah Vincent
8055417B9A5848A

9/17/2025
DATE:



PROPOSED ALIGNMENT CONTROL SHEET

I, Sarah J Vincent, PLS, CERTIFY THAT THE DATA COMPILED CAME FROM AVAILABLE SURVEYS/MAPPING PERFORMED BY OTHERS AND PROVIDED TO ME BY NCDOT AND DO NOT CERTIFY TO THE ACCURACY OR QUALITY OF THE INDIVIDUAL DATA SOURCES.

THIS 17TH DAY OF SEPTEMBER, 2025.

DocuSigned by:
Sarah Vincent
8055417D8A5B45A

PROFESSIONAL LAND SURVEYOR L-5617

PROPOSED ALIGNMENT: L												
POINT	STATION	NORTHING	EASTING	BEARING	DIST	DELTA	D	L	T	R	LT	ST
START	10+00.00	877046.9355	1451209.4640	N59°16'21.3"E	185.19							
PC	11+85.19	877141.5601	1451368.6564	N62°37'15.1"E	85.27	06°41'47.7"	07°50'55.5"	85.32	42.71	730.00		
PCC	12+70.51	877180.7746	1451444.3764	N86°44'40.7"E	166.71	41°33'03.5"	24°22'52.3"	170.42	89.15	235.00		
PT	14+40.93	877190.2416	1451610.8196	S72°28'47.6"E	152.79							
PC	15+93.73	877144.2453	1451756.5229	S80°22'07.2"E	211.37	15°46'39.3"	07°26'27.6"	212.04	106.69	770.00		
PCC	18+05.76	877108.8821	1451964.9098	N89°59'09.5"E	86.75	03°30'47.3"	04°02'57.0"	86.76	43.39	1415.00		
PT	18+92.52	877108.9033	1452051.6582	N88°13'45.8"E	168.60							
END	20+61.12	877114.1126	1452220.1740									

NOTES:

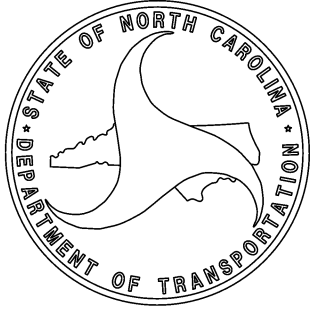
1. THE PROPOSED ALIGNMENT CONTROL DATA FOR THIS PROJECT HAS BEEN COMPILED FROM VARIOUS SOURCES. IF FURTHER INFORMATION REGARDING PROJECT CONTROL IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.

BP11.R050

R/W

02D-I

NORTH CAROLINA
DEPARTMENT
OF TRANSPORTATION



PROFESSIONAL LAND
SURVEYOR

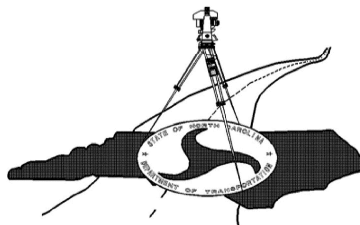


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FINAL UNLESS ALL SIGNATURES
ARE COMPLETED

2024 STANDARD
SPECIFICATIONS

TIP PROJECT: BP11.R050
County: Yadkin

PREPARED FOR



LOCATION AND
SURVEYS UNIT

PREPARED BY



GEOSPHERE LAND SURVEYING OF NC
128 TALBERT ROAD
MOORESVILLE NC 28117
FIRM C-5241

RIGHT OF WAY CONTROL SHEET

I, Sarah J Vincent, PLS, CERTIFY THAT THE RIGHT OF WAY AND PERMANENT EASEMENT MONUMENTATION FOR THIS PROJECT SHOWN HEREIN WAS COMPLETED UNDER MY DIRECT AND RESPONSIBLE CHARGE FROM AN ACTUAL SURVEY MADE UNDER MY SUPERVISION; THAT ALL HORIZONTAL CLOSURES HAD A MINIMUM RATIO OF PRECISION OF 1:10,000 (CLASS A). FIELD WORK WAS PERFORMED ON 9/16/2025. AND ALL COORDINATES ARE BASED ON NAD83/NA 2011; THAT THIS SURVEY WAS PERFORMED TO MEET THE REQUIREMENTS OF 21NCAC 56.1600 AS APPLICABLE.

THIS 17TH DAY OF SEPTEMBER, 2025.

DocuSigned by:
Sarah Vincent
88054178BA5848A
PROFESSIONAL LAND SURVEYOR L-5617

PERMANENT ROW MARKER IRON PIN AND CAP: L			
STATION	OFFSET	NORTH	EAST
13+85.00	40.00	877160.6954	1451553.2789
13+85.00	30.37	877170.3005	1451553.9308
14+40.93	58.00	877134.9321	1451593.3592
14+50.00	-29.72	877215.8567	1451628.4123
14+50.00	-40.00	877225.6570	1451631.5061
15+93.73	58.00	877088.9358	1451739.0625
16+25.00	-55.00	877188.5163	1451800.9433
16+55.00	60.00	877069.6709	1451802.1697
16+70.00	29.84	877095.7200	1451824.1524
16+70.00	-45.00	877168.9626	1451839.5130
16+75.00	-30.11	877153.4214	1451841.1626

NAIL SET IN DRIVEWAY

X CARVED IN STONE

GROUND IMPENETRABLE- NAIL SET

PERMANENT EASEMENT MARKER IRON PIN AND CAP: L			
STATION	OFFSET	NORTH	EAST
13+55.00	-30.23	877230.8957	1451524.1986
13+55.00	-35.00	877235.6588	1451523.9129
14+00.00	-55.00	877253.6356	1451578.1272
14+50.00	-53.00	877238.0539	1451635.4196

GROUND IMPENETRABLE- NAIL SET

NOTES:

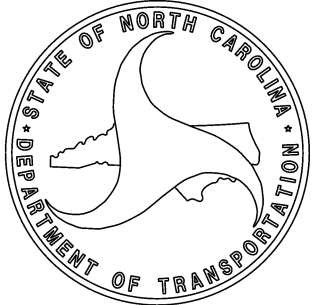
1. IF FURTHER INFORMATION REGARDING PROJECT CONTROL IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.

BP11.R050

R/W

03E-I

NORTH CAROLINA
DEPARTMENT
OF TRANSPORTATION



PROFESSIONAL LAND
SURVEYOR

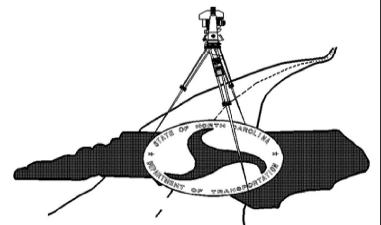


DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL SIGNATURES
ARE COMPLETED

2024 STANDARD
SPECIFICATIONS

TIP PROJECT: BP11.R050
County: Yadkin

PREPARED FOR

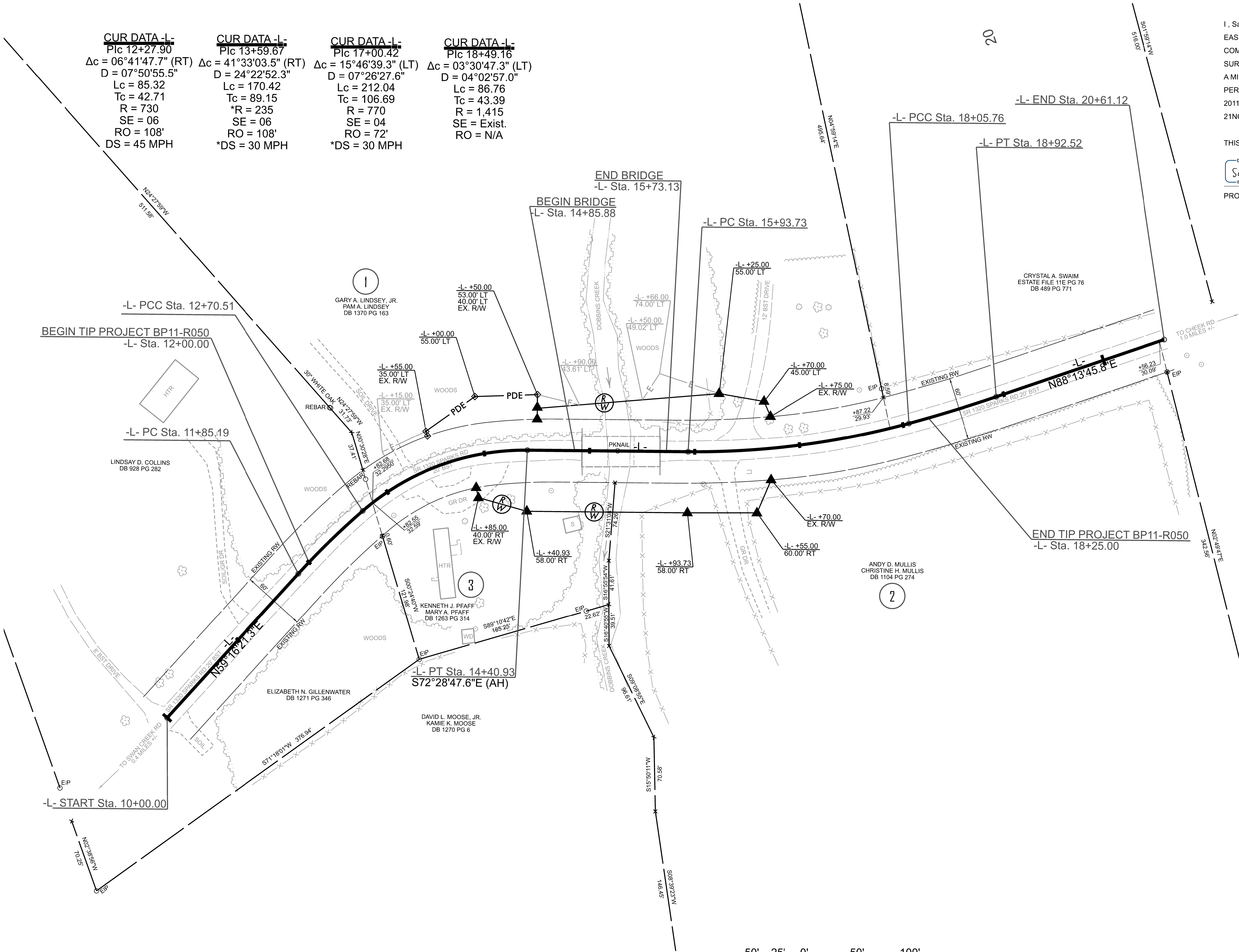


LOCATION AND
SURVEYS UNIT

PREPARED BY



GEOSPHERE LAND SURVEYING OF NC
126 TALBERT ROAD
MOORESVILLE NC 28117
FIRM C-5241



<u>CUR DATA -L-</u>	<u>CUR DATA -L-</u>	<u>CUR DATA -L-</u>	<u>CUR DATA -L-</u>
Plc 12+27.90	Plc 13+59.67	Plc 17+00.42	Plc 18+49.16
$\Delta c = 06^{\circ}41'47.7''$ (RT)	$\Delta c = 41^{\circ}33'03.5''$ (RT)	$\Delta c = 15^{\circ}46'39.3''$ (LT)	$\Delta c = 03^{\circ}30'47.3''$ (LT)
D = 07°50'55.5"	D = 24°22'52.3"	D = 07°26'27.6"	D = 04°02'57.0"
Lc = 85.32	Lc = 170.42	Lc = 212.04	Lc = 86.76
Tc = 42.71	Tc = 89.15	Tc = 106.69	Tc = 43.39
R = 730	*R = 235	R = 770	R = 1,415
SE = 06	SE = 06	SE = 04	SE = Exist.
RO = 108'	RO = 108'	RO = 72'	RO = N/A
DS = 45 MPH	*DS = 30 MPH	*DS = 30 MPH	

I, Sarah J Vincent, PLS, CERTIFY THAT THE RIGHT OF WAY AND PERMANENT EASEMENT MONUMENTATION FOR THIS PROJECT SHOWN HEREIN WAS COMPLETED UNDER MY DIRECT AND RESPONSIBLE CHARGE FROM AN ACTUAL SURVEY MADE UNDER MY SUPERVISION; THAT ALL HORIZONTAL CLOSURES HAD A MINIMUM RATIO OF PRECISION OF 1:10,000 (CLASS A). FIELD WORK WAS PERFORMED ON 9/16/2025, AND ALL COORDINATES ARE BASED ON NAD83/NA 2011; THAT THIS SURVEY WAS PERFORMED TO MEET THE REQUIREMENTS OF 21NCAC 56.1600 AS APPLICABLE.

THIS 17TH DAY OF SEPTEMBER, 2025.

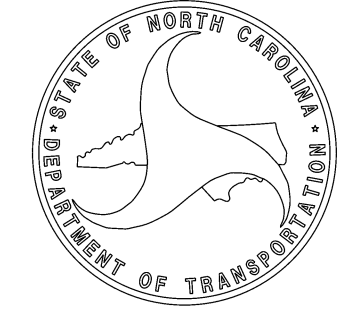
DocuSigned by:
Sarah Vincent
890541178645949A.

PROFESSIONAL LAND SURVEYOR L-5617

BP11.R050

R/W | RWD4

NORTH CAROLINA
DEPARTMENT
OF TRANSPORTATION



PROFESSIONAL LAND
SURVEYOR

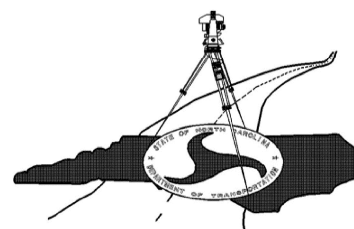


DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL SIGNATURES
ARE COMPLETED

2024 STANDARD
SPECIFICATIONS

TIP PROJECT: BP11.R050
County: Yadkin

PREPARED FOR



LOCATION AND
SURVEYS UNIT

PREPARED BY



GEOSPHERE LAND SURVEYING OF NC
128 TALBERT ROAD
MOORESVILLE NC 28117
FIRM C-5241

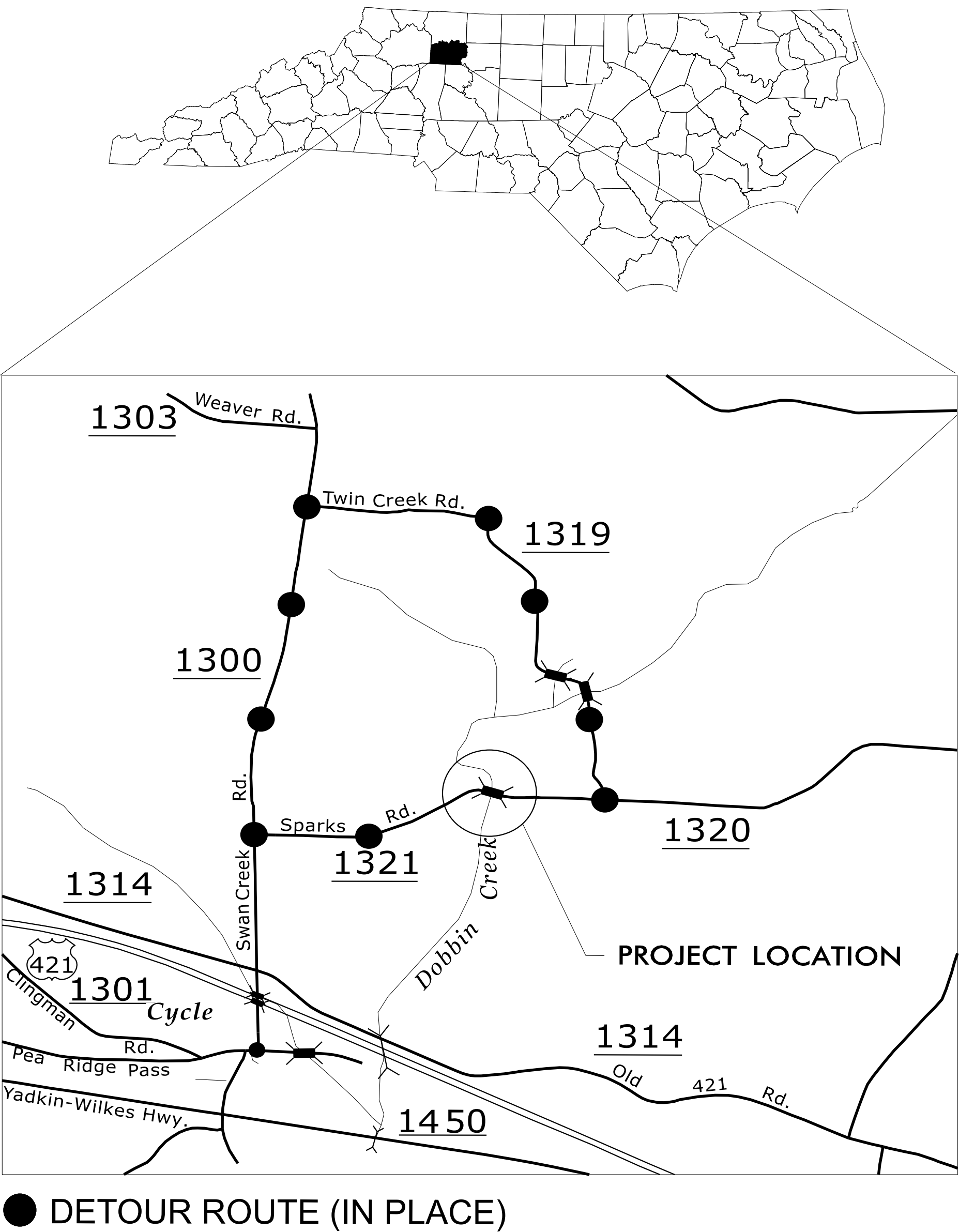
NOTES:

1. IF FURTHER INFORMATION REGARDING PROJECT CONTROL IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

TRANSPORTATION MANAGEMENT PLAN

YADKIN COUNTY



SHEET NO.	TITLE
TMP-1	TITLE SHEET, VICINITY MAP, AND INDEX OF SHEETS
TMP-1A	LIST OF APPLICABLE ROADWAY STANDARD DRAWINGS, AND LEGEND
TMP-1B	TRANSPORTATION OPERATIONS PLAN: (MANAGEMENT STRATEGIES, PHASING, AND GENERAL NOTES)
TMP-2	SPECIAL SIGN DESIGN(S)
TMP-3	TEMPORARY DETOUR DETAIL

SHEET NO.
TMP-1

TIP PROJECT: BP11-R050

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED



PLANS PREPARED BY:

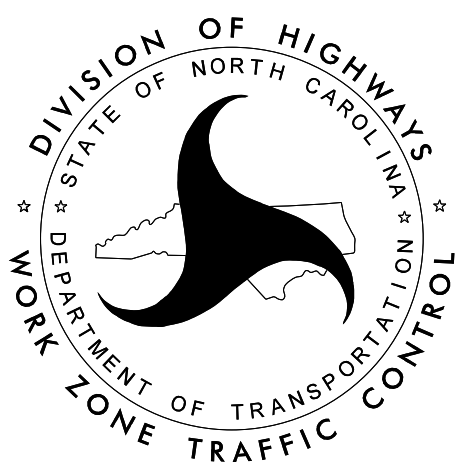
SPENCER MERRITT, PE
TRAFFIC CONTROL DESIGN ENGINEER

ZOE ZWACK
TRAFFIC CONTROL DESIGNER

NCDOT CONTACTS:

ROB WEISZ, PE
PROJECT MANAGER - DIVISION 11

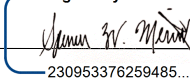
IVAN DISHMAN, PE
DIVISION CONSTRUCTION ENGINEER



PREPARED IN THE OFFICE OF:

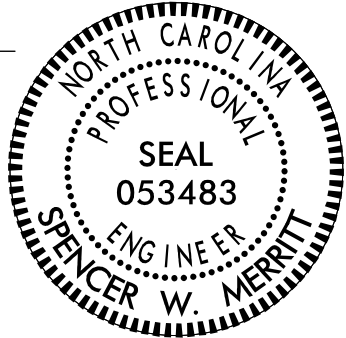


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Raleigh, NC 27609
Voice: (919) 732-3883
Fax: (919) 732-9779
www.summitde.com

APPROVED: 

DATE: 5/18/2026

SEAL



ROADWAY STANDARD DRAWINGS

THE FOLLOWING ROADWAY STANDARDS AS SHOWN IN "ROADWAY STANDARD DRAWINGS" - 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
1101.01	WORK ZONE ADVANCE WARNING SIGNS
1101.02	TEMPORARY LANE CLOSURES
1101.03	TEMPORARY ROAD CLOSURES
1101.04	TEMPORARY SHOULDER CLOSURES
1101.05	WORK ZONE VEHICLE ACCESSES
1101.06	WARNING SIGNS FOR BLASTING ZONES
1101.11	TRAFFIC CONTROL DESIGN TABLES
1110.01	STATIONARY WORK ZONE SIGNS
1145.01	BARRICADES
1165.01	WORK VEHICLE LIGHTING SYSTEMS AND TMA DELINEATION
1170.01	POSITIVE PROTECTION
1205.01	PAVEMENT MARKINGS - LINE TYPES AND OFFSETS
1205.02	PAVEMENT MARKINGS - TWO-LANE AND MULTI-LANE ROADWAYS
1205.12	PAVEMENT MARKINGS - BRIDGES
1250.01	RAISED PAVEMENT MARKERS - INSTALLATION SPACING
1251.01	RAISED PAVEMENT MARKERS - PERMANENT AND TEMPORARY
1261.01	GUARDRAIL AND BARRIER DELINEATORS - INSTALLATION SPACING
1261.02	GUARDRAIL AND BARRIER DELINEATORS - TYPES AND MOUNTING
1262.01	GUARDRAIL END DELINEATION
1264.01	OBJECT MARKERS - TYPES
1264.02	OBJECT MARKERS - INSTALLATION

LEGEND

GENERAL

DIRECTION OF TRAFFIC FLOW

DIRECTION OF PEDESTRIAN TRAFFIC FLOW

EXIST. PVMT.

NORTH ARROW

PROPOSED PVMT.

TEMP. SHORING (LOCATION PURPOSES ONLY)

WORK AREA

REMOVAL

SIGNALS

EXISTING

PROPOSED

TEMPORARY

PAVEMENT MARKINGS

EXISTING LINES

TEMPORARY LINES

TRAFFIC CONTROL DEVICES

BARRICADE (TYPE III)

CONE

DRUM SKINNY DRUM TUBULAR MARKER

TEMPORARY CRASH CUSHION

FLASHING ARROW BOARD

FLAGGER

LAW ENFORCEMENT

TRUCK MOUNTED ATTENUATOR (TMA)

CHANGEABLE MESSAGE SIGN

TEMPORARY SIGNING

PORTABLE SIGN

STATIONARY SIGN

STATIONARY OR PORTABLE SIGN

PAVEMENT MARKERS

CRYSTAL/CRYSTAL

CRYSTAL/RED

YELLOW/YELLOW

PAVEMENT MARKING SYMBOLS

PAVEMENT MARKING SYMBOLS

5/18/2026
N:\2024\24-0190\00\NnInfrastructure Design\Work Zone Traffic Control\BP11R050_TMP_1A.dgn
User:zoe.zwack

APPROVED: 230955376229485

DATE: 5/18/2026

SEAL

ROADWAY STANDARD
DRAWINGS & LEGEND

PROJ. REFERENCE NO.	SHEET NO.
BP11 - R050	TMP - 1B

MANAGEMENT STRATEGIES

BRIDGE #980042 ON SR 1320 (SPARKS ROAD) REPLACEMENT TO BE PERFORMED UNDER ROAD CLOSURE.

LOCAL ACCESS TO ALL RESIDENCES AND BUSINESSES WILL BE MAINTAINED BETWEEN CLOSURE POINTS AT ALL TIMES DURING CONSTRUCTION.

PHASING

STEP 1:

IMPLEMENT OFF-SITE DETOUR AND ROAD CLOSURE FOR SR 1320 AT BRIDGE #980042 AS SHOWN ON SHEET TMP-3 AND IN ACCORDANCE WITH THE GENERAL NOTES. COVER ALL ADVANCE WARNING SIGNS AND DETOUR SIGNS PRIOR TO ROAD CLOSURE.

STEP 2:

WITH SR 1320 CLOSED TO TRAFFIC PERFORM ALL BRIDGE REPLACEMENT OPERATIONS. PRIOR TO OPENING THE ROADWAY TO TRAFFIC, PLACE FINAL PAVEMENT MARKINGS.

STEP 3:

UPON COMPLETION OF BRIDGE WORK REMOVE THE ROAD CLOSURE AND DETOUR SIGNS AND OPEN SR 1320 TO TRAFFIC.

GENERAL NOTES

CHANGES MAY BE REQUIRED WHEN PHYSICAL DIMENSION IN THE DETAIL DRAWINGS, STANDARD DETAILS AND ROADWAY DETAILS ARE NOT ATTAINABLE TO MEET FIELD CONDITIONS, OR RESULT IN DUPLICATE OR UNDESIRED OVERLAPPING OF DEVICES. MODIFICATION MAY INCLUDE: MOVING, SUPPLEMENTING, COVERING OR REMOVAL OF DEVICES, AS DIRECTED BY THE ENGINEER.

THE FOLLOWING GENERAL NOTES APPLY AT AL TIMES FOR THE DURATION OF THE CONSTRUCTION PROJECT, EXCEPT WHEN OTHERWISE NOTED IN THE PLAN, OR DIRECTED BY THE ENGINEER.

TRAFFIC PATTERN ALTERATIONS

A) NOTIFY THE ENGINEER THIRTY (30) CALENDAR DAYS PRIOR TO ANY TRAFFIC PATTERN ALTERATION.

SIGNING

B) PROVIDE SIGNING AND DEVICES REQUIRED TO CLOSE THE ROAD ACCORDING TO THE ROADWAY STANDARD DRAWINGS AND TRAFFIC CONTROL PLANS.

C) PROVIDE SIGNING REQUIRED FOR THE OFF-SITE DETOUR ROUTE AS SHOWN IN THE TRAFFIC CONTROL PLANS.

D) COVER OR REMOVE SIGNS AND DEVICES REQUIRED TO CLOSE THE ROAD WHEN ROAD CLOSURE IS NOT IN OPERATION.
AND
COVER OR REMOVE SIGNS AND DEVICES REQUIRED FOR THE OFF-SITE DETOUR WHEN DETOUR IS NOT IN OPERATION.

E) ENSURE ALL NECESSARY SIGNING IS IN PLACE PRIOR TO ALTERING ANY TRAFFIC PATTERN.

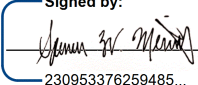
TRAFFIC CONTROL DEVICES

F) PLACE TYPE III BARRICADES, WITH "ROAD CLOSED" SIGN R11-2 ATTACHED, OF SUFFICIENT LENGTH TO CLOSE ENTIRE ROADWAY.

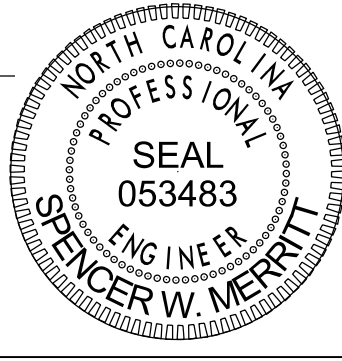
PAVEMENT MARKINGS AND MARKERS

G) INSTALL PAVEMENT MARKINGS AND PAVEMENT MARKERS ON THE FINAL SURFACE, AS SHOWN IN THE PAVEMENT MARKING PLAN.

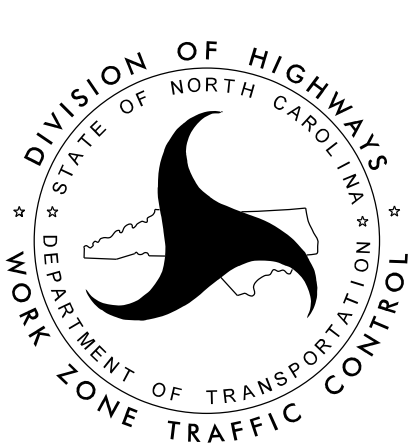
H) THE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING LINES.

APPROVED: 
DATE: 5/18/2026

SEAL



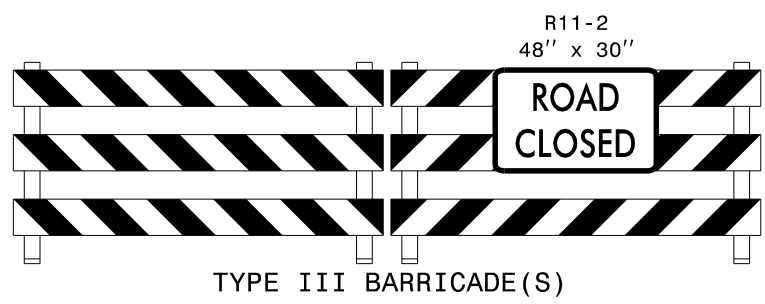
**DOCUMENT NOT CONSIDERED FINAL
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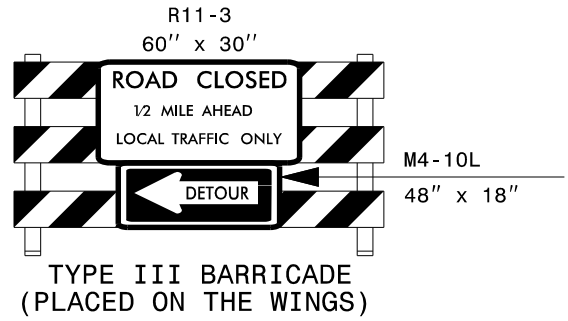
TRANSPORTATION
OPERATIONS
PLAN

Signed by: _____ APPROVED: <u><i>James G. Merritt</i></u> 230953376259485. DATE: 6/22/2026 SEAL			SPECIAL SIGN DESIGN
---	---	---	---------------------

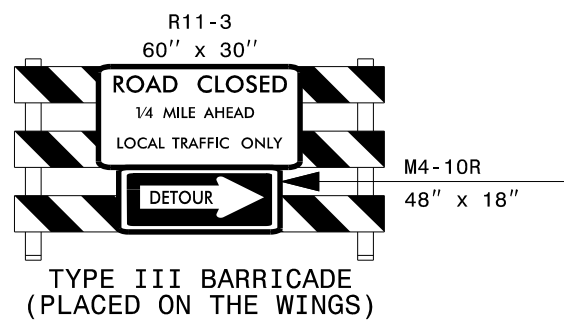
PROJ. REFERENCE NO.	SHEET NO.
BP11-R050	TMP-3



(A)



(B)



(C)



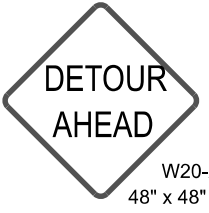
(D)



(E)



(F)



(G)



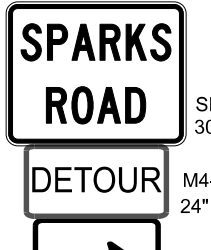
(H)



(I)



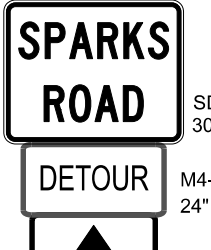
(J)



(K)



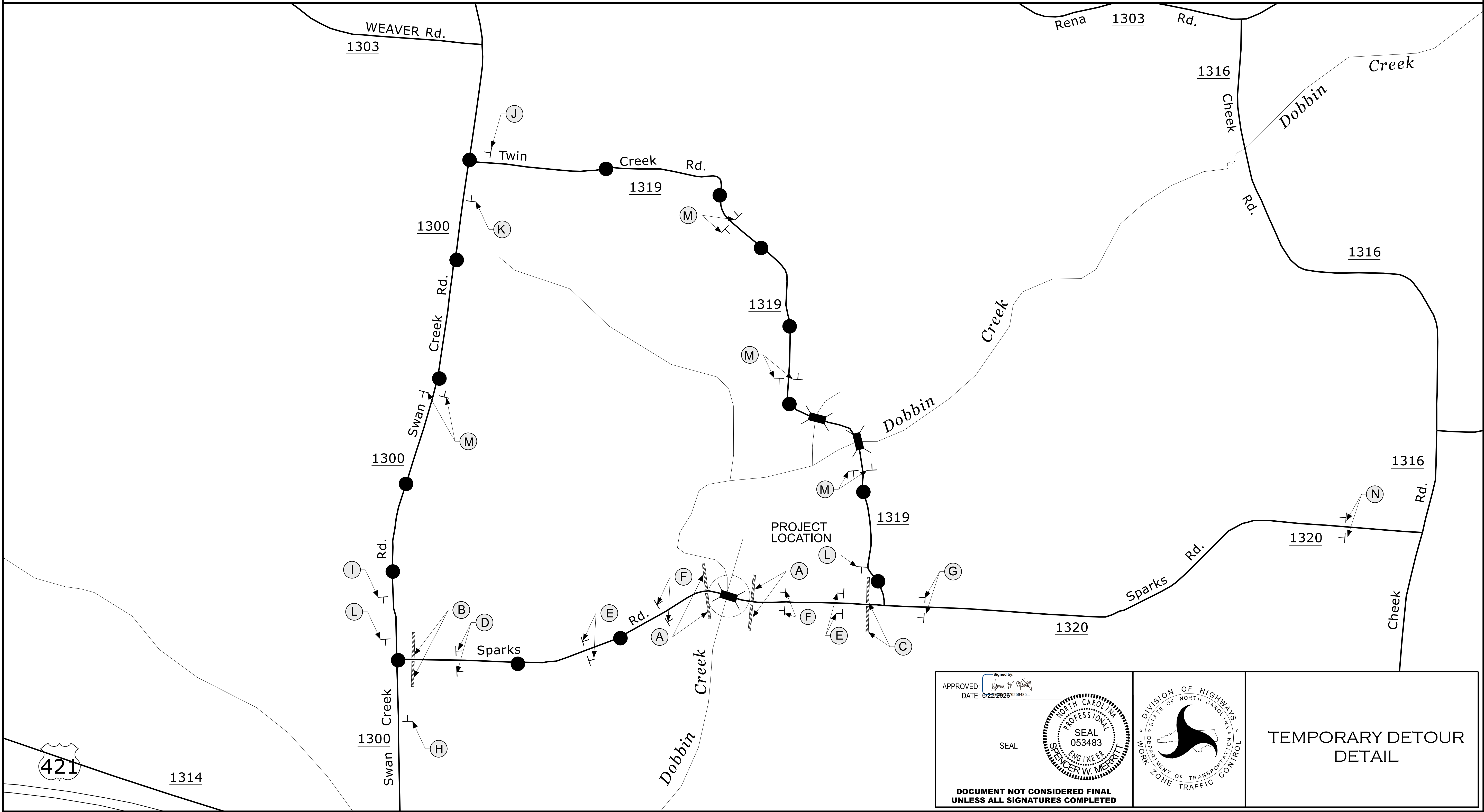
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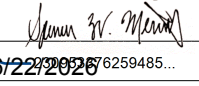


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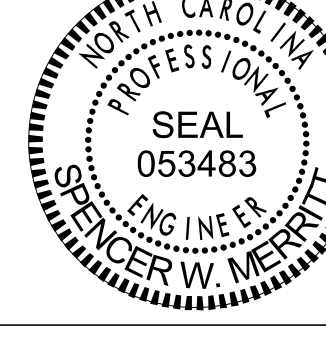


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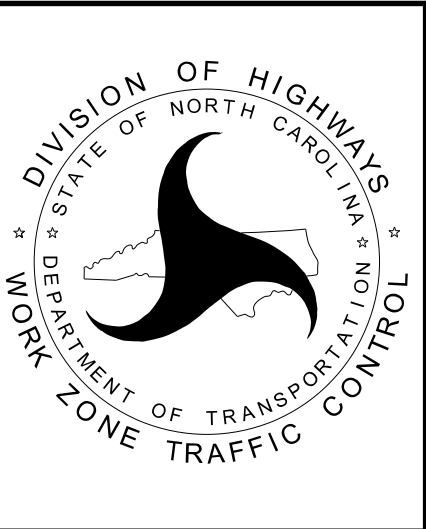


APPROVED: 
DATE: 8/22/2025

SEAL



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



TEMPORARY DETOUR
DETAIL

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

YADKIN COUNTY

LOCATION: *REPLACE BRIDGE #42 ON SR 1320 (SPARKS ROAD) OVER DOBBINS CREEK*

TYPE OF WORK: *GRADING, DRAINAGE, PAVING & STRUCTURE*

GENERAL NOTES

THE FOLLOWING GENERAL NOTES APPLY AT ALL TIMES FOR THE DURATION OF THE CONSTRUCTION PROJECT, EXCEPT WHEN OTHERWISE NOTED IN THE PLAN OR DIRECTED BY THE ENGINEER.

- A) INSTALL PAVEMENT MARKINGS AND PAVEMENT MARKERS ON THE FINAL SURFACE AS FOLLOWS:

ROAD NAME	MARKING	MARKER
-L- (SR 1320)	PAINT	NONE

- B) TIE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING LINES.

- C) REMOVE/REPLACE ANY CONFLICTING/DAMAGED PAVEMENT MARKINGS AND MARKERS.

- D) PASSING ZONES WILL BE DETERMINED IN THE FIELD AND MUST BE APPROVED BY THE ENGINEER.

ROADWAY STANDARD DRAWING

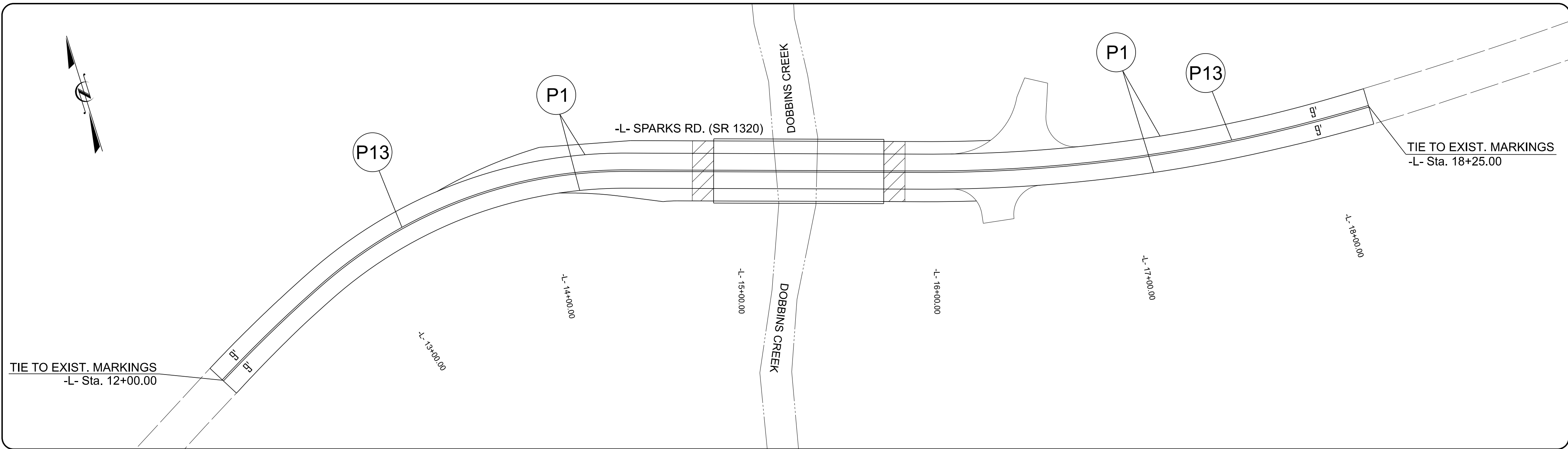
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- A) INSTALL PAVEMENT MARKINGS AND PAVEMENT MARKERS ON THE FINAL SURFACE AS FOLLOWS:

STD. NO.	TITLE
1205.01	PAVEMENT MARKINGS - LINE TYPES AND OFFSETS
1205.02	PAVEMENT MARKINGS - TWO-LANE AND MULTILANE ROADWAYS
1205.12	PAVEMENT MARKINGS - BRIDGES
1261.02	GUARDRAIL AND BARRIER DECLINATION
1262.01	GUARDRAIL END DELINEATION

PROJECT BP11.R050 FINAL
PAVEMENT MARKING SCHEDULE

SYMBOL	DESCRIPTION
PAINT (4")	
P1	WHITE EDGE
P13	YELLOW DOUBLE CENTER LINE



PLANS PREPARED BY:

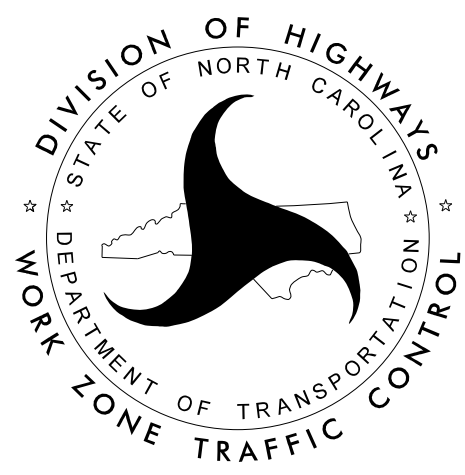
SPENCER MERRITT, PE
TRAFFIC CONTROL DESIGN ENGINEER

ZOË ZWACK
TRAFFIC CONTROL DESIGNER

NCDOT CONTACTS:

ROB WEISZ, PE
PROJECT MANAGER - DIVISION 11

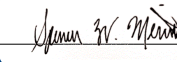
IVAN DISHMAN, PE
DIVISION CONSTRUCTION ENGINEER

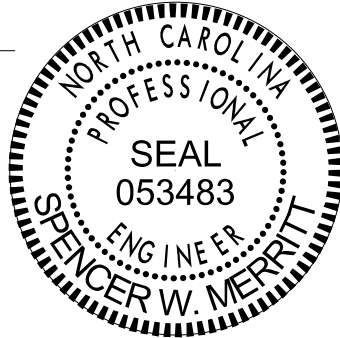


PREPARED IN THE OFFICE OF:



320 Executive Ct.
Hillsborough, NC 27278-8551
Voice: (919) 732-3803
Fax: (919) 732-8776
www.summitde.com

APPROVED: 
DATE: 5/18/2026



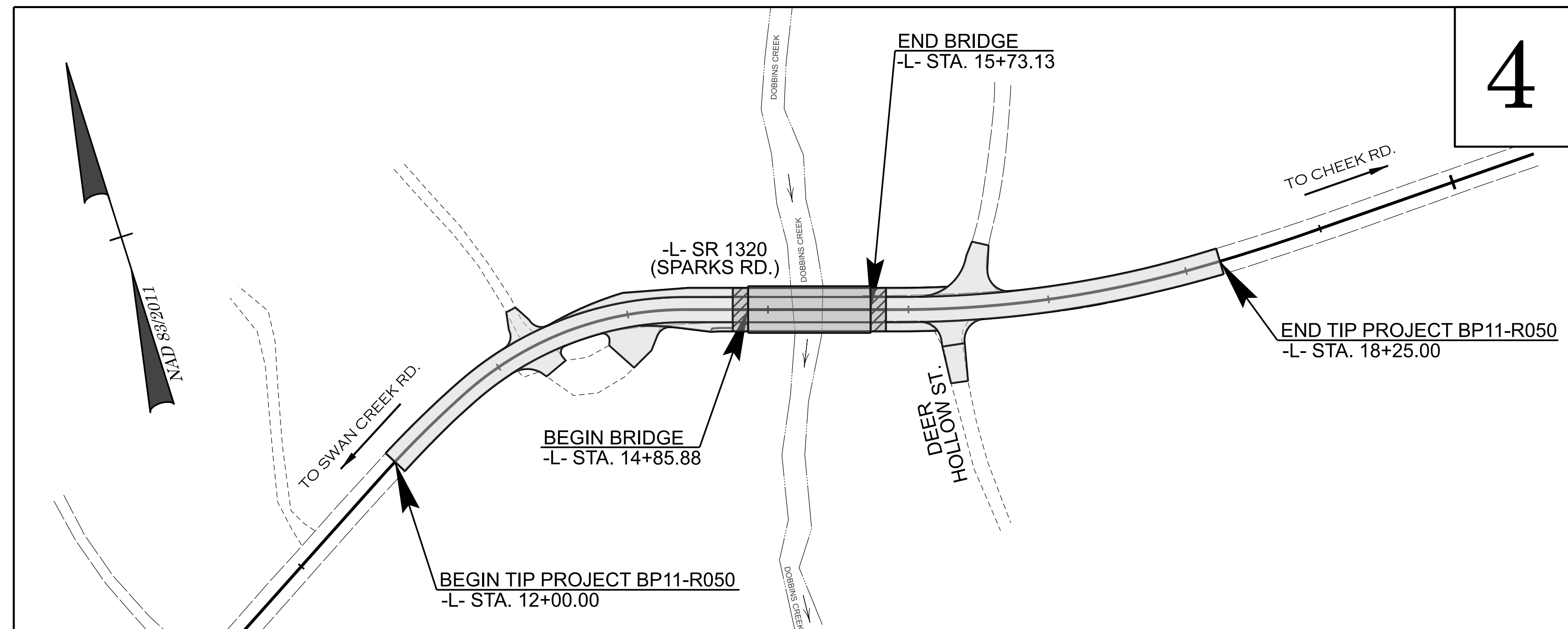
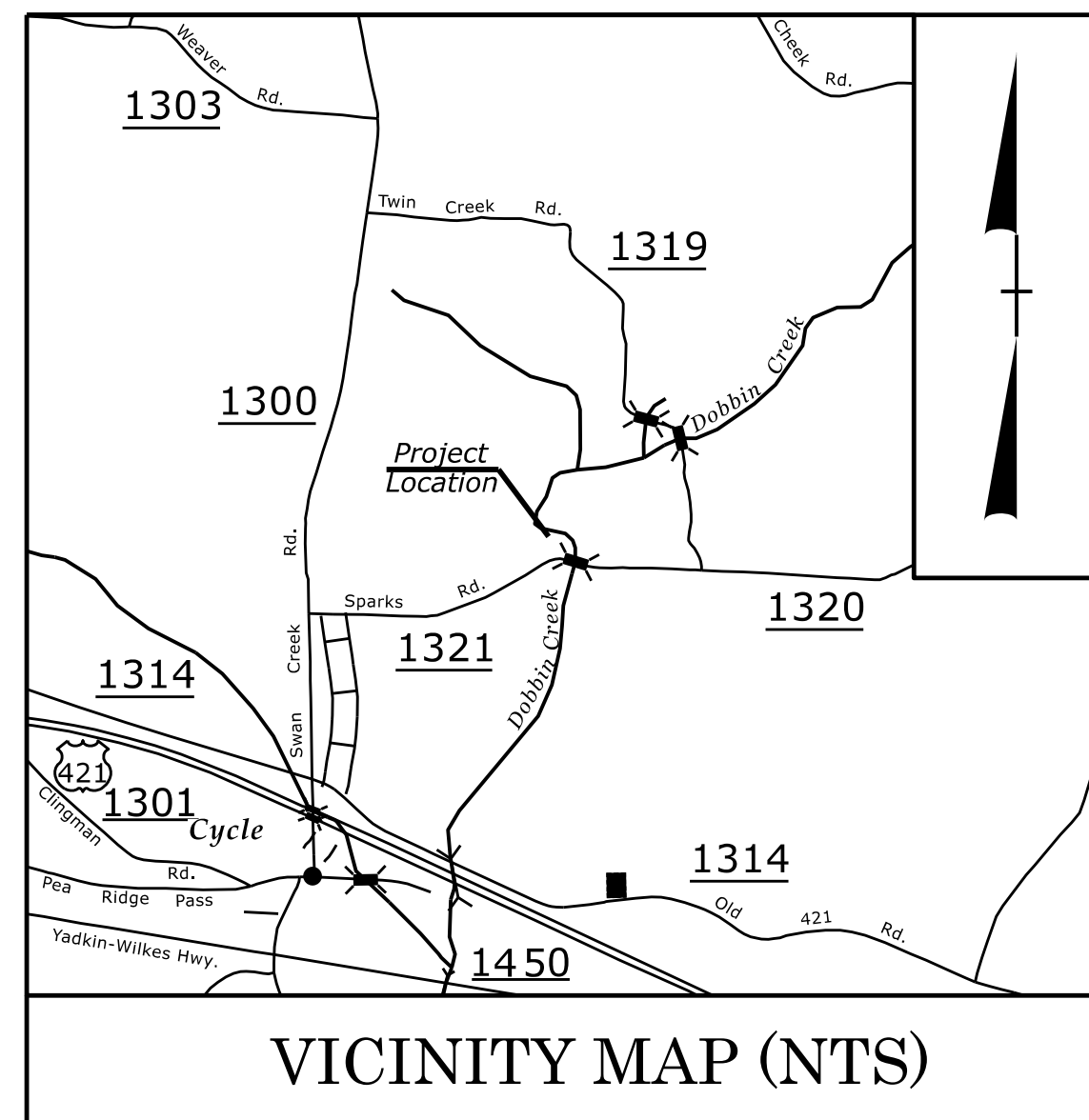
TIP PROJECT:

SHEET NO.
PMP-1
BP11-R050

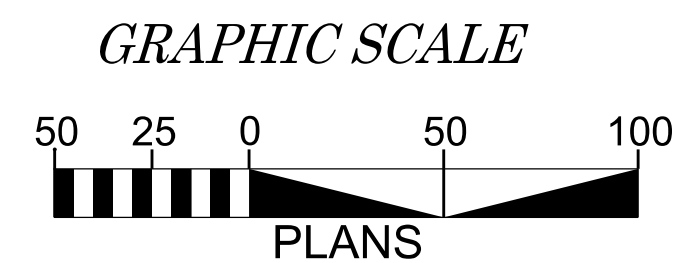
TIP PROJECT: BP11-R050

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
PLAN FOR PROPOSED
HIGHWAY EROSION CONTROL
YADKIN COUNTY

LOCATION: REPLACE BRIDGE #980042 ON SR 1320 (SPARKS RD.)
OVER DOBBINS CREEK
TYPE OF WORK: GRADING, DRAINAGE, PAVING, & STRUCTURE



THIS PROJECT CONTAINS
EROSION CONTROL PLANS
FOR CLEARING AND
GRUBBING PHASE OF
CONSTRUCTION.



THESE EROSION AND SEDIMENT CONTROL PLANS COMPLY
WITH THE REGULATIONS SET FORTH BY THE
NCG-010000 GENERAL STORMWATER CONSTRUCTION PERMIT
ISSUED BY THE NORTH CAROLINA DEPARTMENT OF
ENVIRONMENTAL QUALITY DIVISION OF ENERGY,
MINERAL, AND LAND RESOURCES.



Prepared in the Office of:
**Summit Design
And Engineering Services**
320 Executive Ct.
Hillsborough, NC 27278-8551

Voice: (919) 732-3883
Fax: (919) 732-6776
www.summitde.net

Designed by:

DEVON HOYLE, EI **4545**
NAME LEVEL III CERTIFICATION NO.

Roadway Standard Drawings

The "Roadway Standard Drawings"- Roadway Design Unit - N. C.
Department of Transportation - Raleigh, N. C., dated January 2024
and the latest revision thereto are applicable to this project and by
reference hereby are considered a part of these plans.

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

EROSION & SEDIMENT CONTROL LEGEND

Std. #	Description	Symbol
1605.01	Temporary Silt Fence	
1606.01	Special Sediment Control Fence	
1622.01	Temporary Berms and Slope Drains	
1630.02	Silt Basin Type B	
1630.03	Temporary Silt Ditch	
1630.04	Stilling Basin	
1630.05	Temporary Diversion	
1630.06	Special Stilling Basin	
1630.07	Skimmer Basin	
1630.08	Tiered Skimmer Basin	
1630.09	Earthen Dam with Skimmer	
	Infiltration Basin	
	Rock Inlet Sediment Trap:	
1632.01	Type A	
1632.02	Type B	
1632.03	Type C	

Std. #	Description	Symbol
1633.01	Temporary Rock Silt Check Type A	
1633.02	Temporary Rock Silt Check Type B	
1633.03	Temporary Rock Silt Check Type A with Excelsior Matting and Flocculant	
1634.01	Temporary Rock Sediment Dam Type A	
1634.02	Temporary Rock Sediment Dam Type B	
1635.01	Rock Pipe Inlet Sediment Trap Type A	
1635.02	Rock Pipe Inlet Sediment Trap Type B	
1636.01	Excelsior Wattle Check	
1636.01	Excelsior Wattle Check with Flocculant	
1636.01	Coir Fiber Wattle Check	
1636.01	Coir Fiber Wattle Check with Flocculant	
1636.02	Silt Fence Excelsior Wattle Break	
	Silt Fence Coir Fiber Wattle Break	
1636.03	Excelsior Wattle Barrier	
1636.03	Coir Fiber Wattle Barrier	

BP11-R050

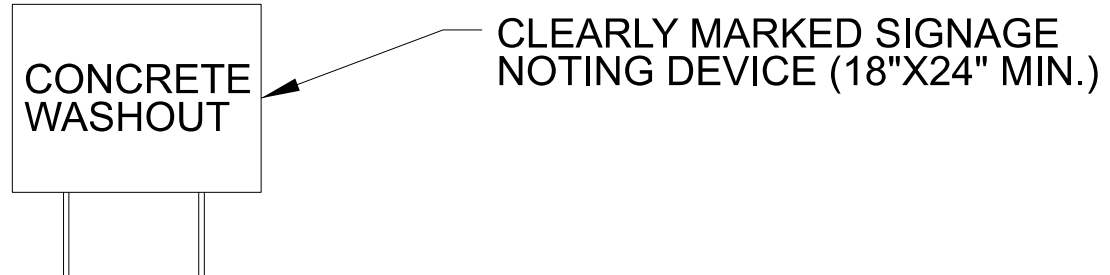
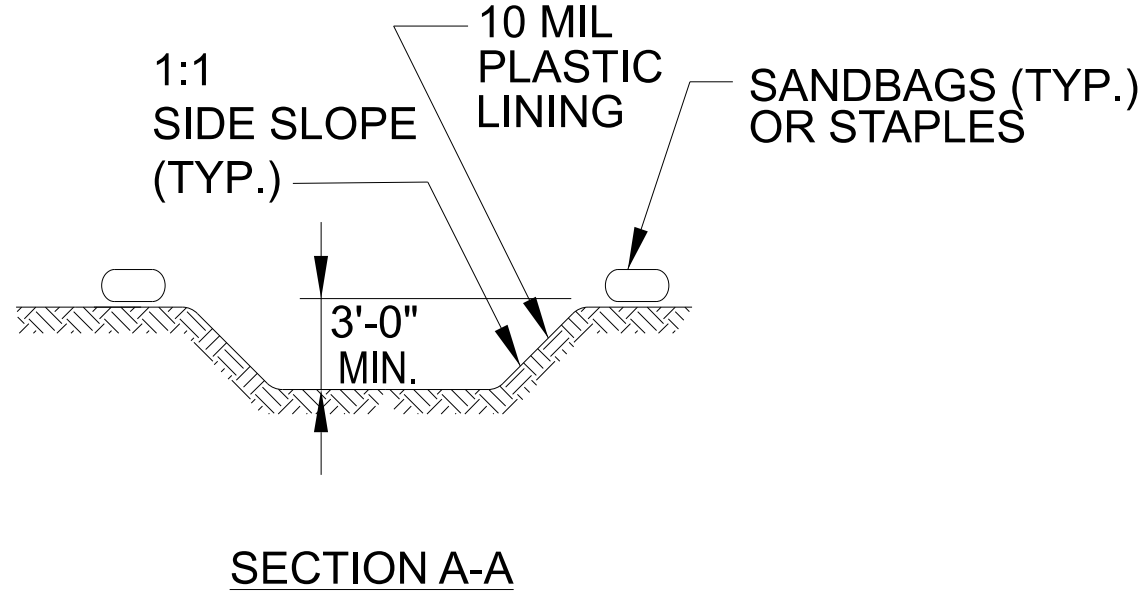
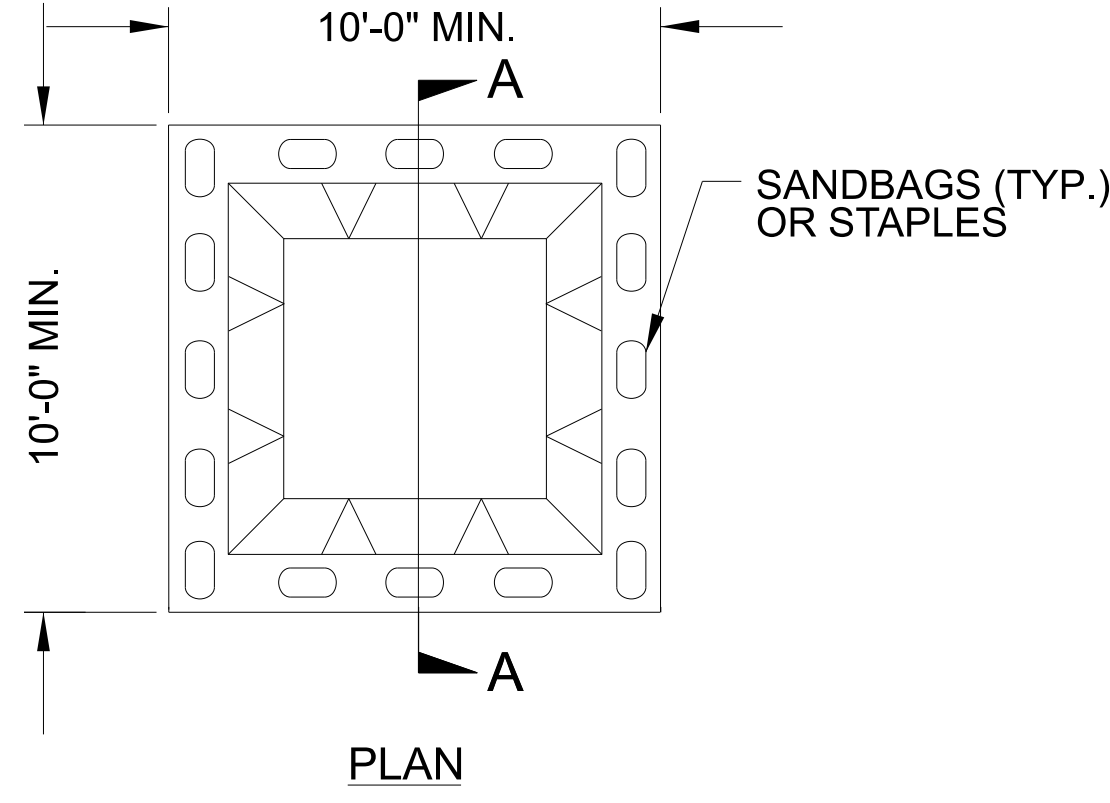
EC-2

NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
ROCKINGHAM COUNTY

PLANS PREPARED BY:

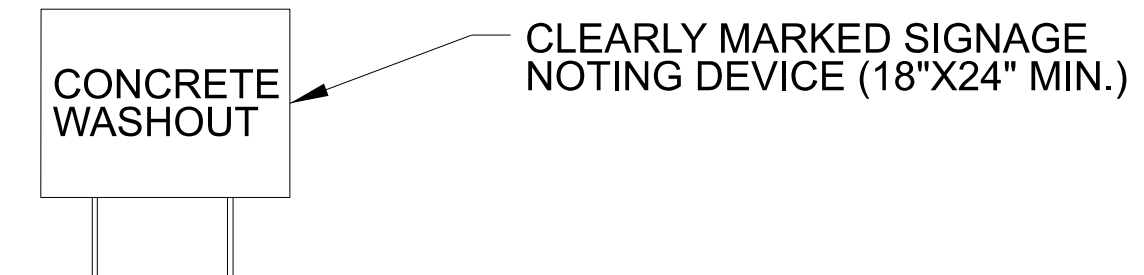
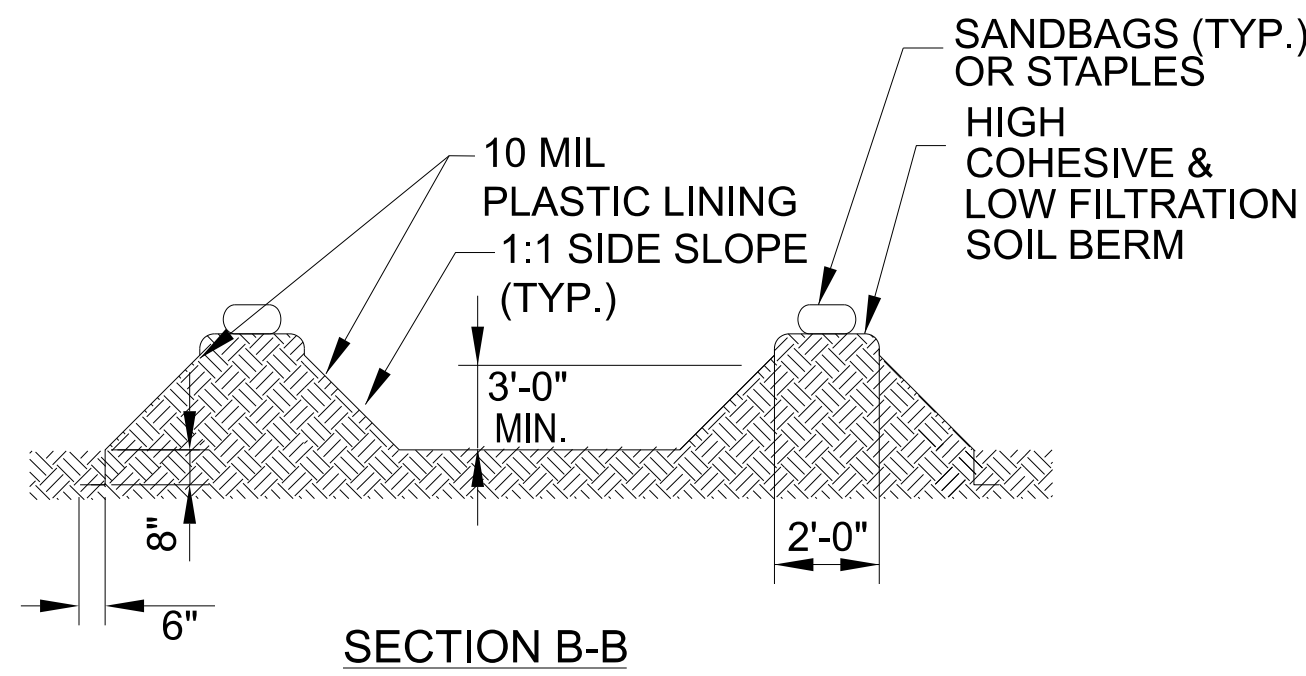
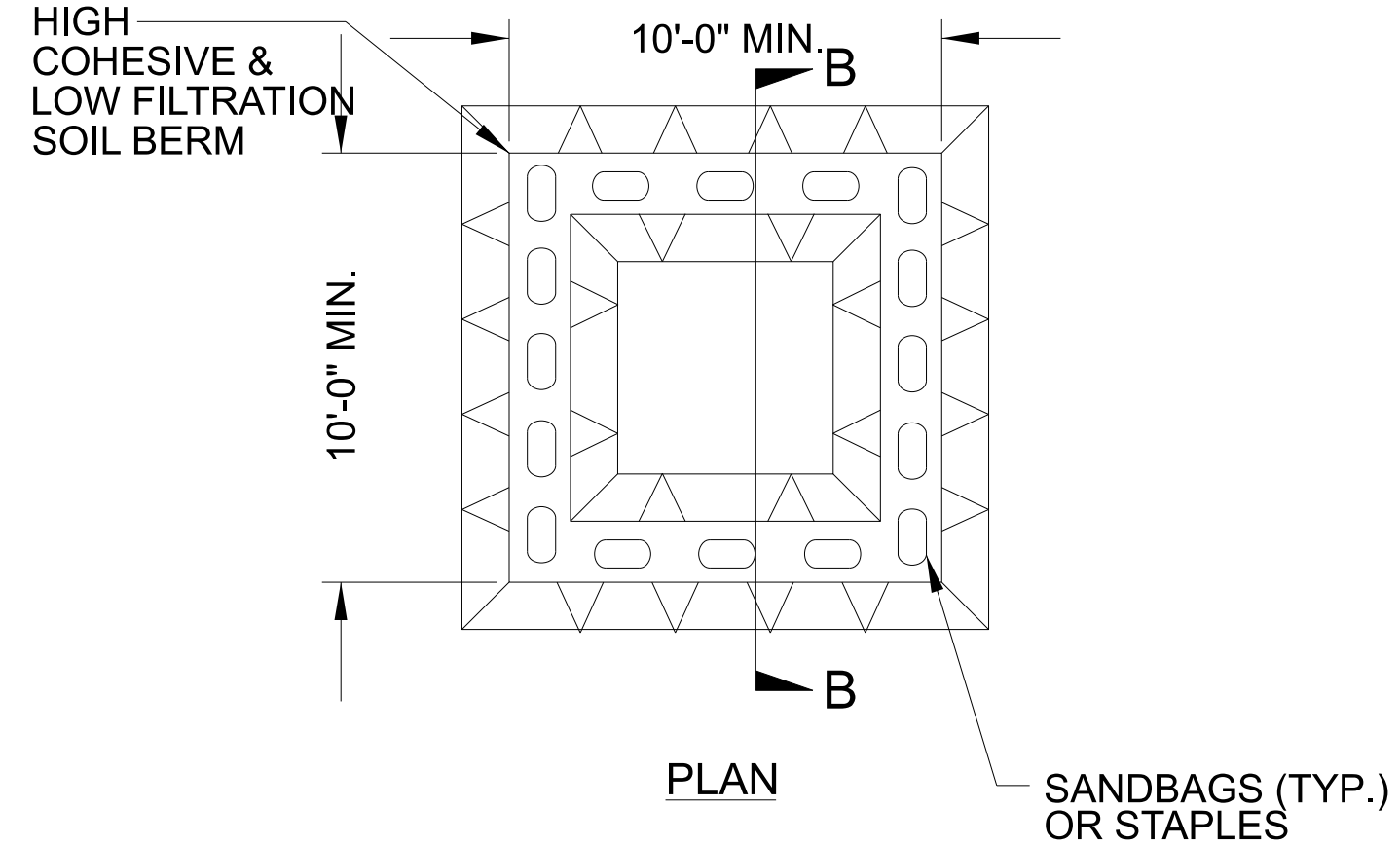
NC FIRM LICENSE No: P-0339
320 Executive Court
Hillsborough, NC 27278
(919) 732-3883
(919) 732-6676 (FAX)

ONSITE CONCRETE WASHOUT STRUCTURE WITH LINER



BELOW GRADE WASHOUT STRUCTURE
NOT TO SCALE

- NOTES:
1. ACTUAL LOCATION DETERMINED IN FIELD
 2. THE CONCRETE WASHOUT STRUCTURES SHALL BE MAINTAINED WHEN THE LIQUID AND/OR SOLID REACHES 75% OF THE STRUCTURES CAPACITY TO PROVIDE ADEQUATE HOLDING CAPACITY WITH A MINIMUM 12 INCHES OF FREEBOARD.
 3. CONCRETE WASHOUT STRUCTURE NEEDS TO BE CLEARLY MARKED WITH SIGNAGE NOTING DEVICE.



ABOVE GRADE WASHOUT STRUCTURE

- NOTES:
1. ACTUAL LOCATION DETERMINED IN FIELD
 2. THE CONCRETE WASHOUT STRUCTURES SHALL BE MAINTAINED WHEN THE LIQUID AND/OR SOLID REACHES 75% OF THE STRUCTURES CAPACITY TO PROVIDE ADEQUATE HOLDING CAPACITY WITH A MINIMUM 12 INCHES OF FREEBOARD.
 3. CONCRETE WASHOUT STRUCTURE NEEDS TO BE CLEARLY MARKED WITH SIGNAGE NOTING DEVICE.

BP11-R050
EC-2A
NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
YADKIN COUNTY

PLANS PREPARED BY:
SUMMIT
DESIGN AND ENGINEERING SERVICES

NC FIRM LICENSE No: P-0339
320 Executive Court
Hillsborough, NC 27278
(919) 732-2583
(919) 732-6676 (FAX)

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

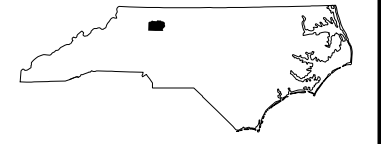
SOIL STABILIZATION TIMEFRAMES

SITE DESCRIPTION	STABILIZATION TIME	TIMEFRAME EXCEPTIONS
PERIMETER DIKES, SWALES, DITCHES AND SLOPES	7 DAYS	NONE
HIGH QUALITY WATER (Hqw) ZONES	7 DAYS	NONE
SLOPES STEEPER THAN 3:1	7 DAYS	IF SLOPES ARE 10' OR LESS IN LENGTH AND ARE NOT STEEPER THAN 2:1, 14 DAYS ARE ALLOWED.
SLOPES 3:1 TO 4:1	14 DAYS	7 DAYS FOR SLOPES GREATER THAN 50' IN LENGTH WITH SLOPES STEEPER THAN 4:1. 7 DAYS FOR PERIMETER DIKES, SWALES, DITCHES PERIMETER SLOPES, AND Hqw ZONES
ALL OTHER AREAS WITH SLOPES FLATTER THAN 4:1	14 DAYS	7 DAYS FOR PERIMETER DIKES, SWALES, DITCHES PERIMETER SLOPES, AND Hqw ZONES

BP11-R050

EC-3

NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
YADKIN COUNTY



PLANS PREPARED BY:

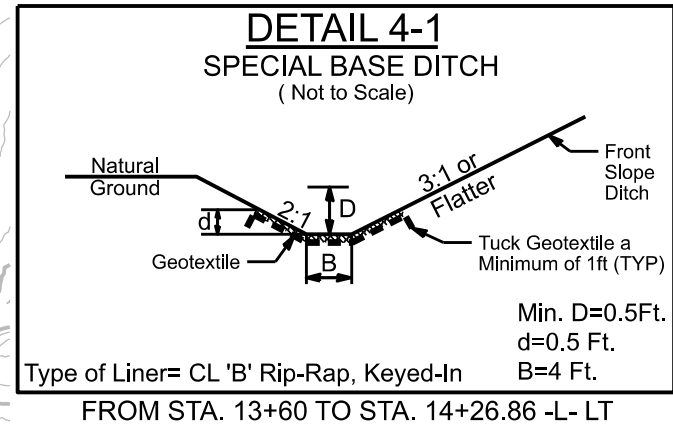
SUMMIT

DESIGN AND ENGINEERING SERVICES

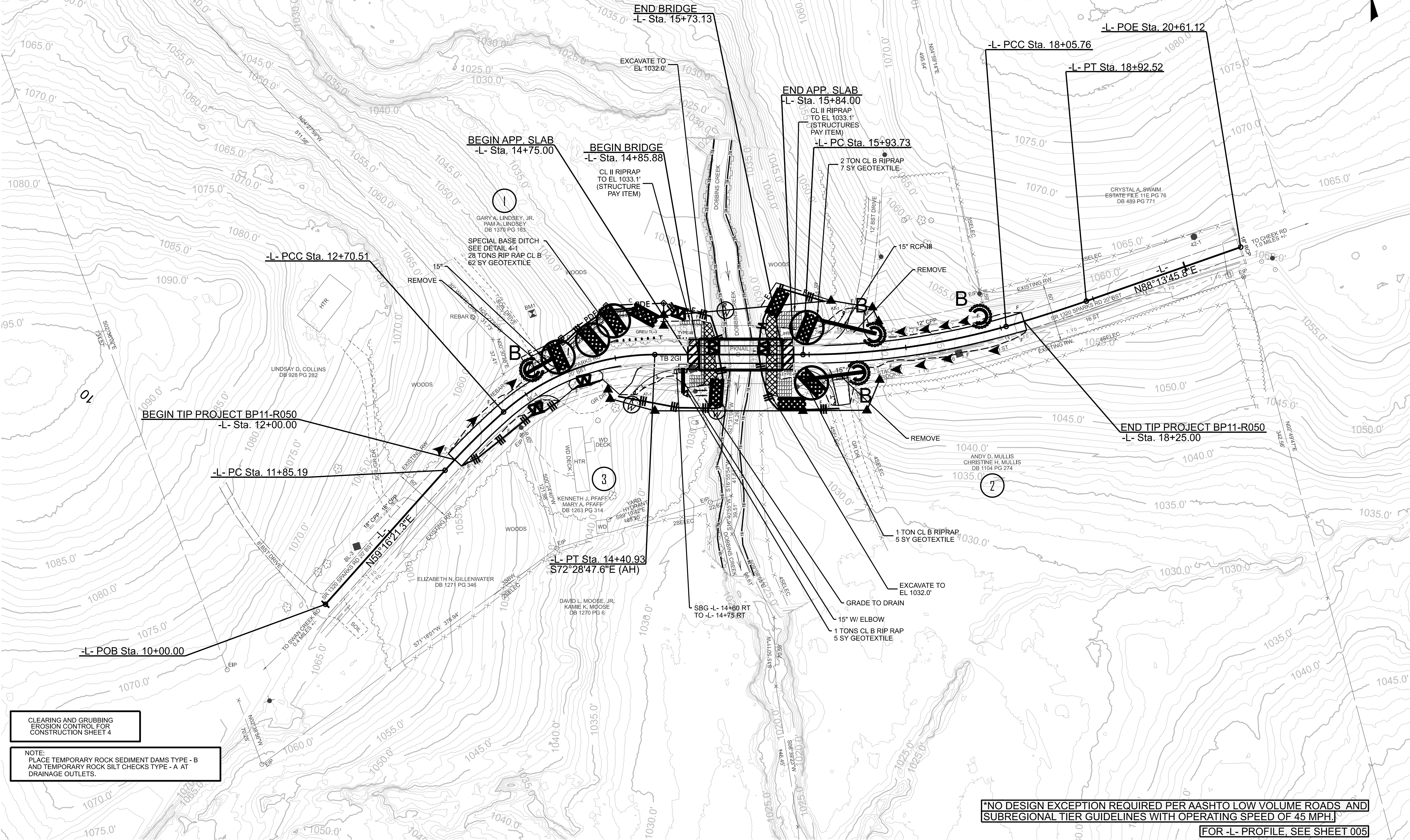
NC FIRM LICENSE No: P-0339
320 Executive Court
Hillsborough, NC 27278
(919) 732-3883
(919) 732-6676 (FAX)

MATting FOR EROSION CONTROL

[illegible]



CUR DATA -L-	CUR DATA -L-	CUR DATA -L-	CUR DATA -L-
Plc 12+27.90	Plc 13+59.67	Plc 17+00.42	Plc 18+49.16
$\Delta c = 06^{\circ}41'47.7"$ (RT)	$\Delta c = 41^{\circ}33'03.5"$ (RT)	$\Delta c = 15^{\circ}46'39.3"$ (LT)	$\Delta c = 03^{\circ}30'47.3"$ (LT)
D = $07^{\circ}50'55.5"$	D = $24^{\circ}22'52.3"$	D = $07^{\circ}26'27.6"$	D = $04^{\circ}02'57.0"$
Lc = 85.32	Lc = 170.42	Lc = 212.04	Lc = 86.76
Tc = 42.71	Tc = 89.15	Tc = 106.69	Tc = 43.39
R = 730	*R = 235	R = 770	R = 1,415
SE = 06	SE = 06	SE = 04	SE = Exist.
RO = 108'	RO = 108'	RO = 72'	RO = N/A
DS = 45 MPH	*DS = 30 MPH	*DS = 30 MPH	



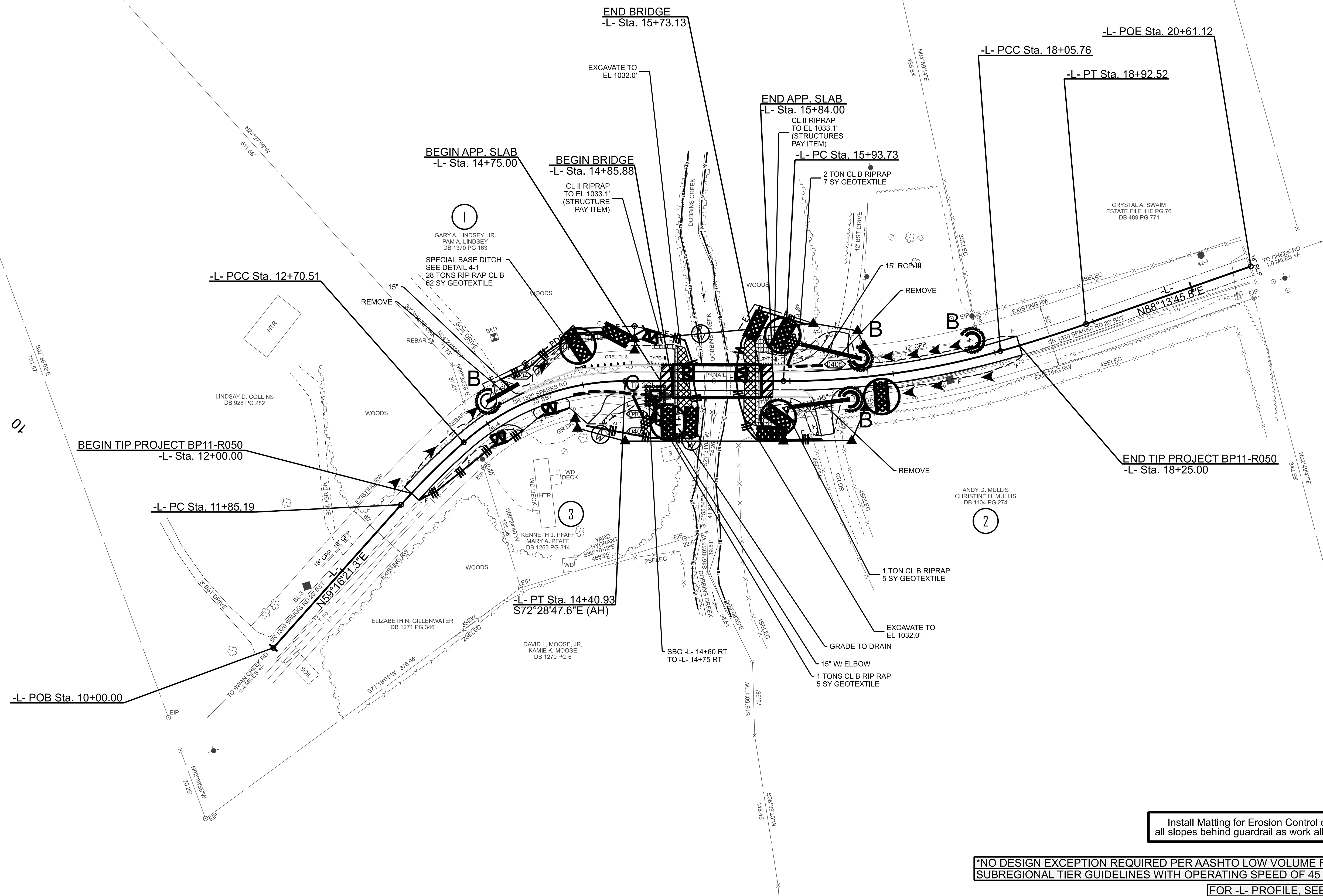
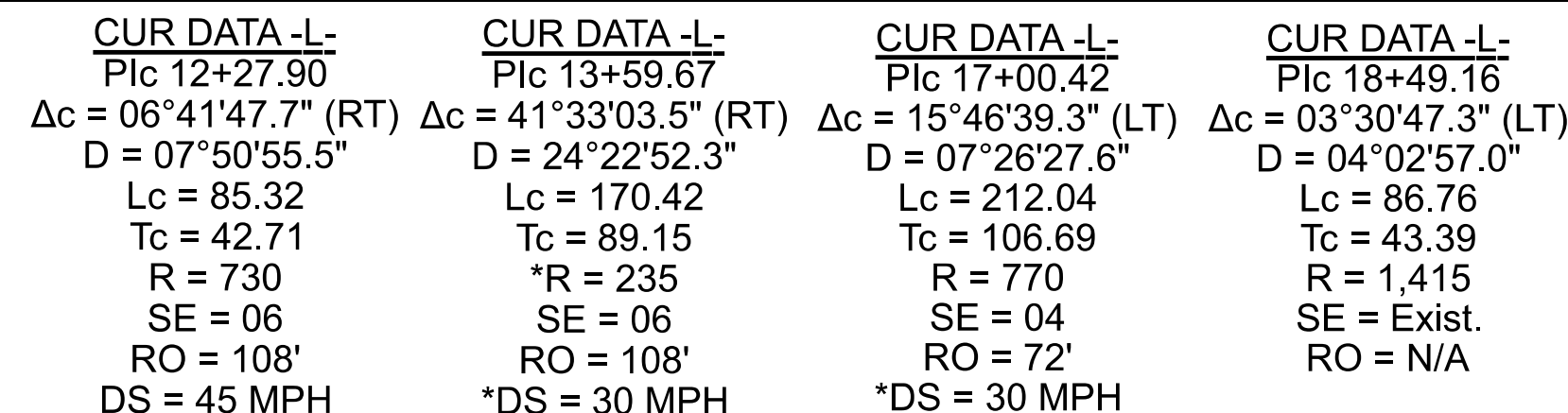
CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 4

NOTE:
PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE - B
AND TEMPORARY ROCK SILT CHECKS TYPE - A AT
DRAINAGE OUTLETS.

*NO DESIGN EXCEPTION REQUIRED PER AASHTO LOW VOLUME ROADS AND
SUBREGIONAL TIER GUIDELINES WITH OPERATING SPEED OF 45 MPH.
FOR -L- PROFILE, SEE SHEET 005

BP11-R050
EC/CONST. 004/004
NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
YADKIN COUNTY

SUMMIT
DESIGN AND ENGINEERING SERVICES
NC FIRM LICENSE No: P-0339
320 Executive Court
Hillsborough, NC 27278
(919) 732-3883
(919) 732-6676 (FAX)



Install Matting for Erosion Control on all slopes behind guardrail as work allows.

***NO DESIGN EXCEPTION REQUIRED PER AASHTO LOW VOLUME ROADS AND SUBREGIONAL TIER GUIDELINES WITH OPERATING SPEED OF 45 MPH.**

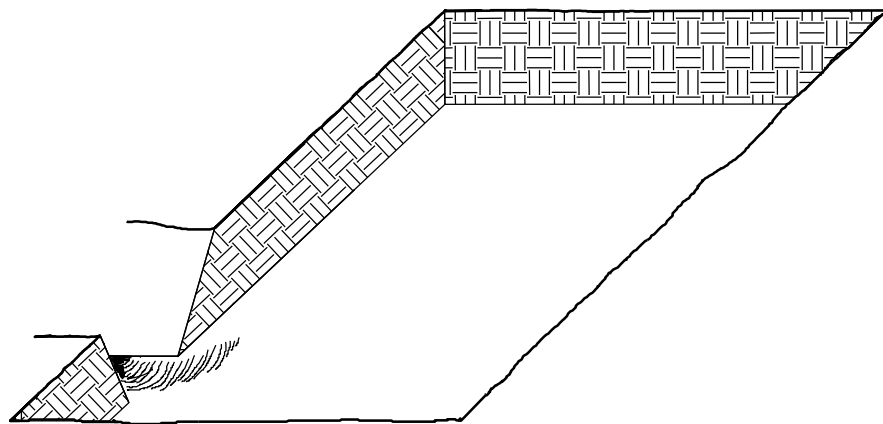
FOR -L- PROFILE, SEE SHEET 005

PLANTING DETAILS

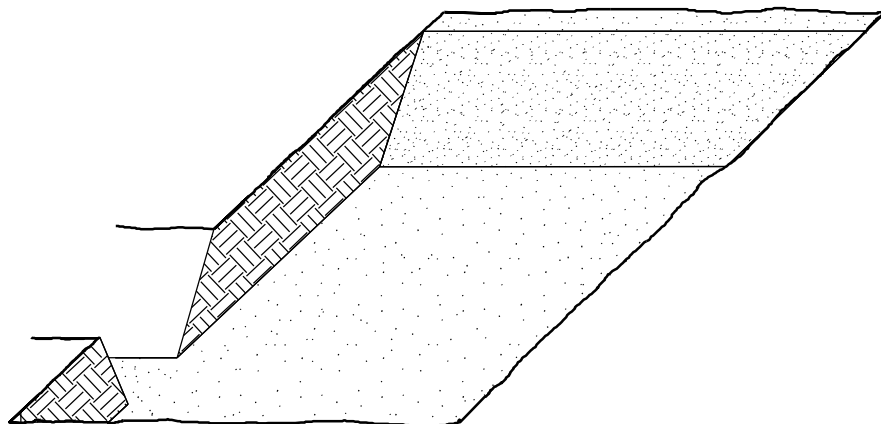
SEEDLING / LINER BARERROOT PLANTING DETAIL

HEALING IN

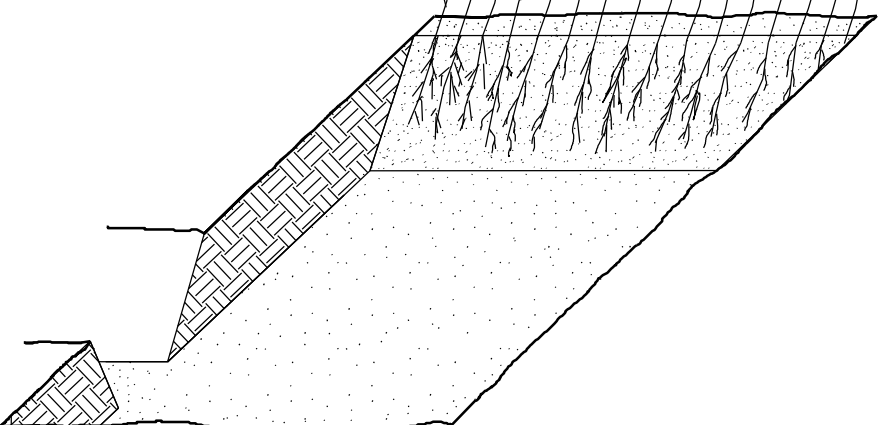
1. Locate a healing-in site in a shady, well protected area.
2. Excavate a flat bottom trench 12 inches deep and provide drainage.



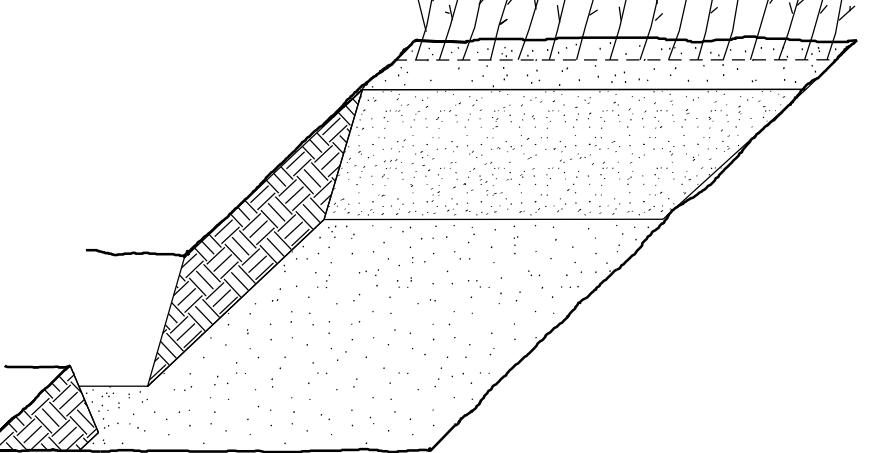
3. Backfill the trench with 2 inches well rotted sawdust. Place a 2 inch layer of well rotted sawdust at a sloping angle at one end of the trench.



4. Place a single layer of plants against the sloping end so that the root collar is at ground level.

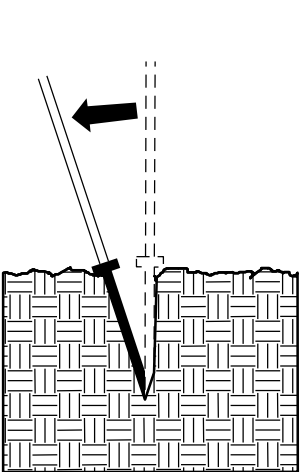


5. Place a 2 inch layer of well rotted sawdust over the roots maintaining a sloping angle.

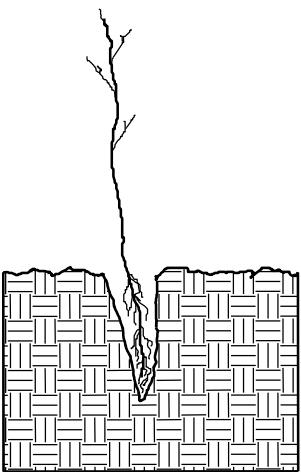


6. Repeat layers of plants and sawdust as necessary and water thoroughly.

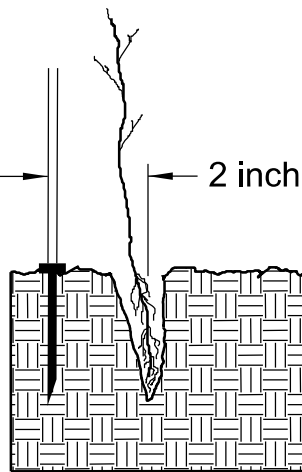
DIBBLE PLANTING METHOD
USING THE KBC PLANTING BAR



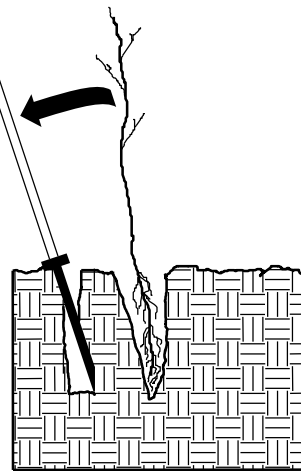
1. Insert planting bar as shown and pull handle toward planter.



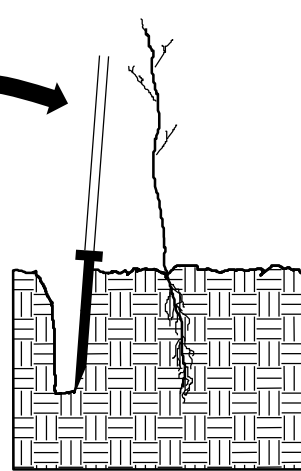
2. Remove planting bar and place seedling at correct depth.



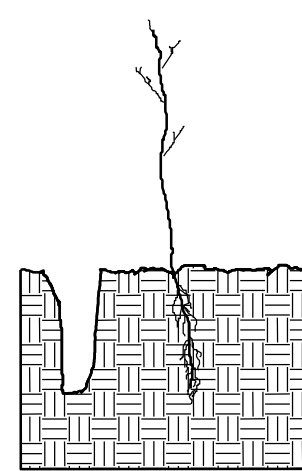
3. Insert planting bar 2 inches toward planter from seedling.



4. Pull handle of bar toward planter, firming soil at bottom.



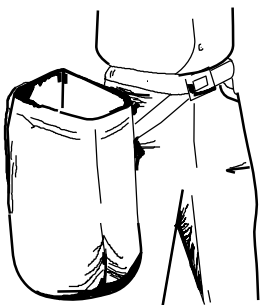
5. Push handle forward firming soil at top.



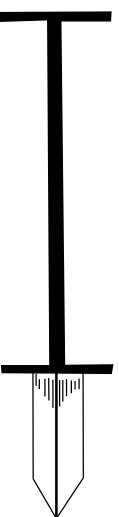
6. Leave compaction hole open. Water thoroughly.

PLANTING NOTES:

PLANTING BAG
During planting, seedlings shall be kept in a moist canvas bag or similar container to prevent the root systems from drying.



KBC PLANTING BAR
Planting bar shall have a blade with a triangular cross section, and shall be 12 inches long, 4 inches wide and 1 inch thick at center.



ROOT PRUNING
All seedlings shall be root pruned, if necessary, so that no roots extend more than 10 inches below the root collar.

REFORESTATION

- TREE REFORESTATION SHALL BE PLANTED 6 FT. TO 10 FT. ON CENTER, RANDOM SPACING, AVERAGING 8 FT. ON CENTER, APPROXIMATELY 680 PLANTS PER ACRE.

REFORESTATION

MIXTURE, TYPE, SIZE, AND FURNISH SHALL CONFORM TO THE FOLLOWING:

34% LIRIODENDRON TULIPIFERA	TULIP POPLAR	12 in - 18 in BR
33% PLATANUS OCCIDENTALIS	AMERICAN SYCAMORE	12 in - 18 in BR
33% BETULA NIGRA	RIVER BIRCH	12 in - 18 in BR

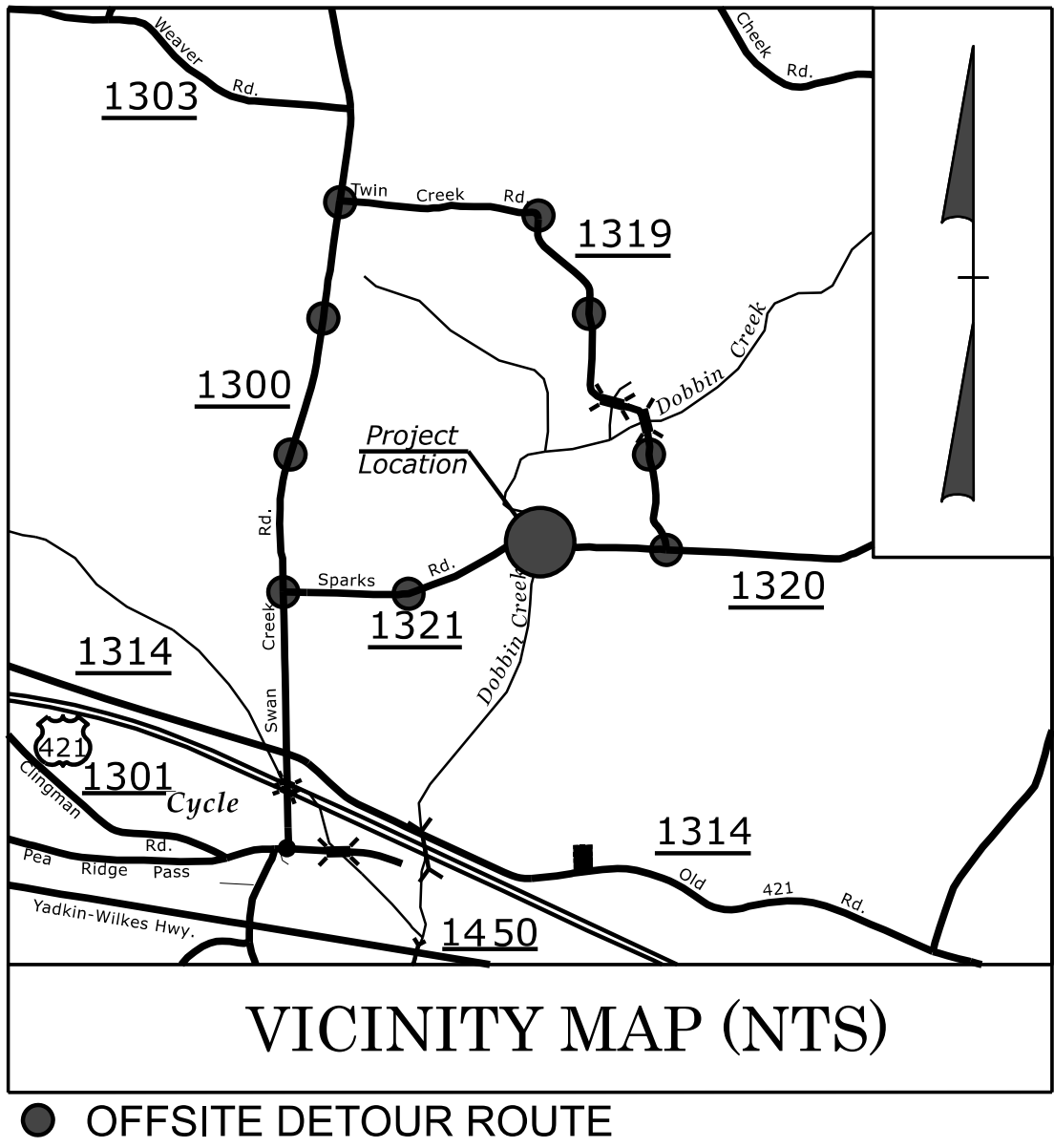
REFORESTATION DETAIL SHEET

N.C.D.O.T. - ROADSIDE ENVIRONMENTAL UNIT

09/08/99

TIP PROJECT: BP11-R050

CONTRACT:



STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

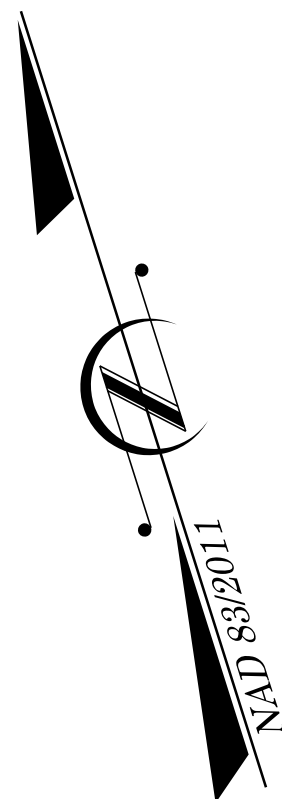
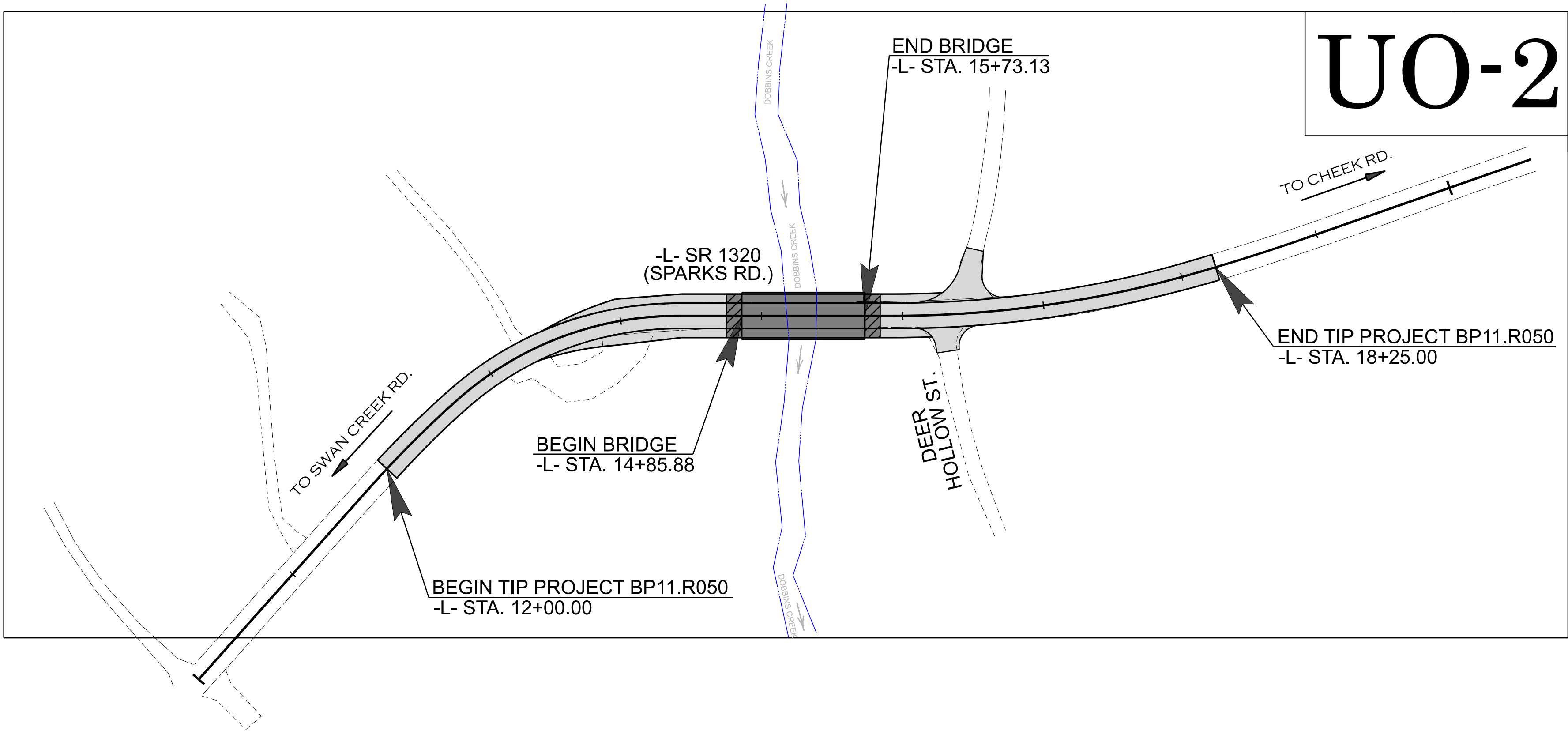
UTILITIES BY OTHERS PLANS
YADKIN COUNTY

LOCATION: REPLACE BRIDGE #980042 OVER DOBBINS CREEK
ON SR 1320 (SPARKS RD)

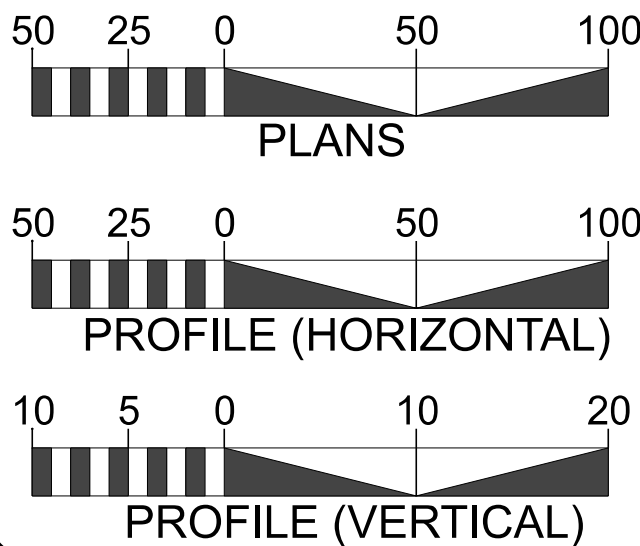
TYPE OF WORK: COMMUNICATIONS

T.I.P. NO.	SHEET NO.
BP11-R050	UO-1

NOTE:
ALL UTILITY WORK SHOWN ON THIS SHEET WILL BE DONE BY OTHERS.
NO PAYMENT WILL BE MADE TO THE CONTRACTOR FOR UTILITY WORK SHOWN ON THIS SHEET.



GRAPHIC SCALES



INDEX OF SHEETS

SHEET NO.:	DESCRIPTION:
UO-1	TITLE SHEET
UO-2	UBO PLAN SHEET

UTILITY OWNERS WITH CONFLICTS

- (A) COMMUNICATIONS - YADKIN VALLEY TELEPHONE
(B) COMMUNICATIONS - SPECTRUM

PREPARED IN THE OFFICE OF



TELICS

119 BROOKSTOWN AVE.
SUITE 305
WINSTON SALEM, NC 27101
(336) 705 - 8844

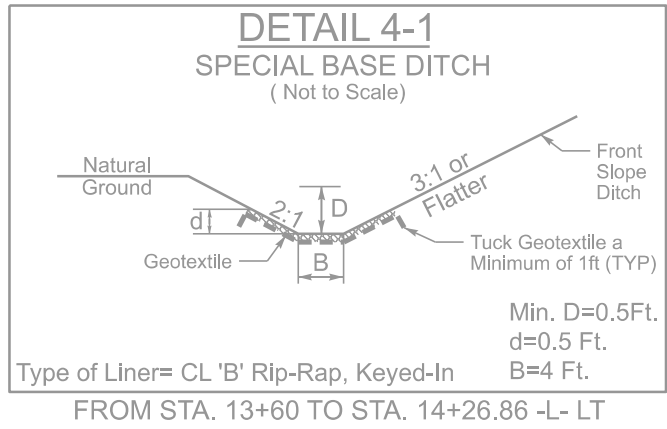
CORY WOOD UTILITY PROJECT MANAGER
CORY WOOD UTILITY COORDINATOR



DIVISION OF HIGHWAYS
DIVISION II
801 STATESVILLE RD.
NORTH WILKESBORO NC 28659
PHONE (336) 903-9101
FAX (336) 667-4549

BRANDON GREER DIVISION UTILITIES ENGINEER

02/02/22



CUR DATA -L-	CUR DATA -L-	CUR DATA -L-	CUR DATA -L-
Plc 12+27.90	Plc 13+59.67	Plc 17+00.42	Plc 18+49.16
$\Delta c = 06^{\circ}41'47.7''$ (RT)	$\Delta c = 41^{\circ}33'03.5''$ (RT)	$\Delta c = 15^{\circ}46'39.3''$ (LT)	$\Delta c = 03^{\circ}30'47.3''$ (LT)
D = 07°50'55.5"	D = 24°22'52.3"	D = 07°26'27.6"	D = 04°02'57.0"
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R = 730	*R = 235	R = 770	R = 1,415
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RO = 108'	RO = 108'	RO = 72'	RO = N/A
DS = 45 MPH	*DS = 30 MPH	*DS = 30 MPH	

UTILITIES BY OTHERS

BP11-R050

UO-2

NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
YADKIN COUNTY



UTILITY DESIGN UNIT
UTILITY CONSTRUCTION
PLANS ONLY

ALL PROPOSED UTILITY
WORK SHOWN ON THIS
SHEET WILL BE DONE
BY OTHERS. NO PAYMENT
WILL BE MADE TO THE
CONTRACTOR FOR
UTILITY WORK SHOWN ON
THIS SHEET.

DESIGNED BY:
DRAWN BY:
CHECKED BY:
APPROVED BY:

REVISED:
TECHNICAL
119 BROOKSTOWN AVE.
SUITE 305
WINSTON SALEM, NC 27101
PHONE (336)705-8844



02

-L- POB Sta. 10+00.00

BEGIN TIP PROJECT BP11.R050
-L- Sta. 12+00.00

-L- PC Sta. 11+85.19

-L- PCC Sta. 12+70.51

-L- PT Sta. 14+40.93
S72°28'47.6"E (AH)

BEGIN BRIDGE
-L- Sta. 14+85.88

END BRIDGE
-L- Sta. 15+73.13

-L- PC Sta. 15+93.73

-L- PCC Sta. 18+05.76

-L- POE Sta. 20+61.12

-L- PT Sta. 18+92.52

END TIP PROJECT BP11.R050
-L- Sta. 18+25.00

AERIAL
SPECTRUM
AND YADTEL
REMOVED

YADTEL POLE
REMOVED

YADTEL POLE
TO REMAIN

PROPOSED
BURIED
YADTEL

PROPOSED
BURIED
SPECTRUM

PROPOSED
YADTEL POLE

PROPOSED
SPECTRUM
HAND HOLE

PROPOSED
BURIED
SPECTRUM

PROPOSED
BURIED
YADTEL

PROPOSED
YADTEL POLE

AERIAL YADTEL
AND SPECTRUM

REVISIONS

STATE OF NORTH CAROLINA	PROJ. REFERENCE NO.	SHEET NO.
	BP11-R050	X-0

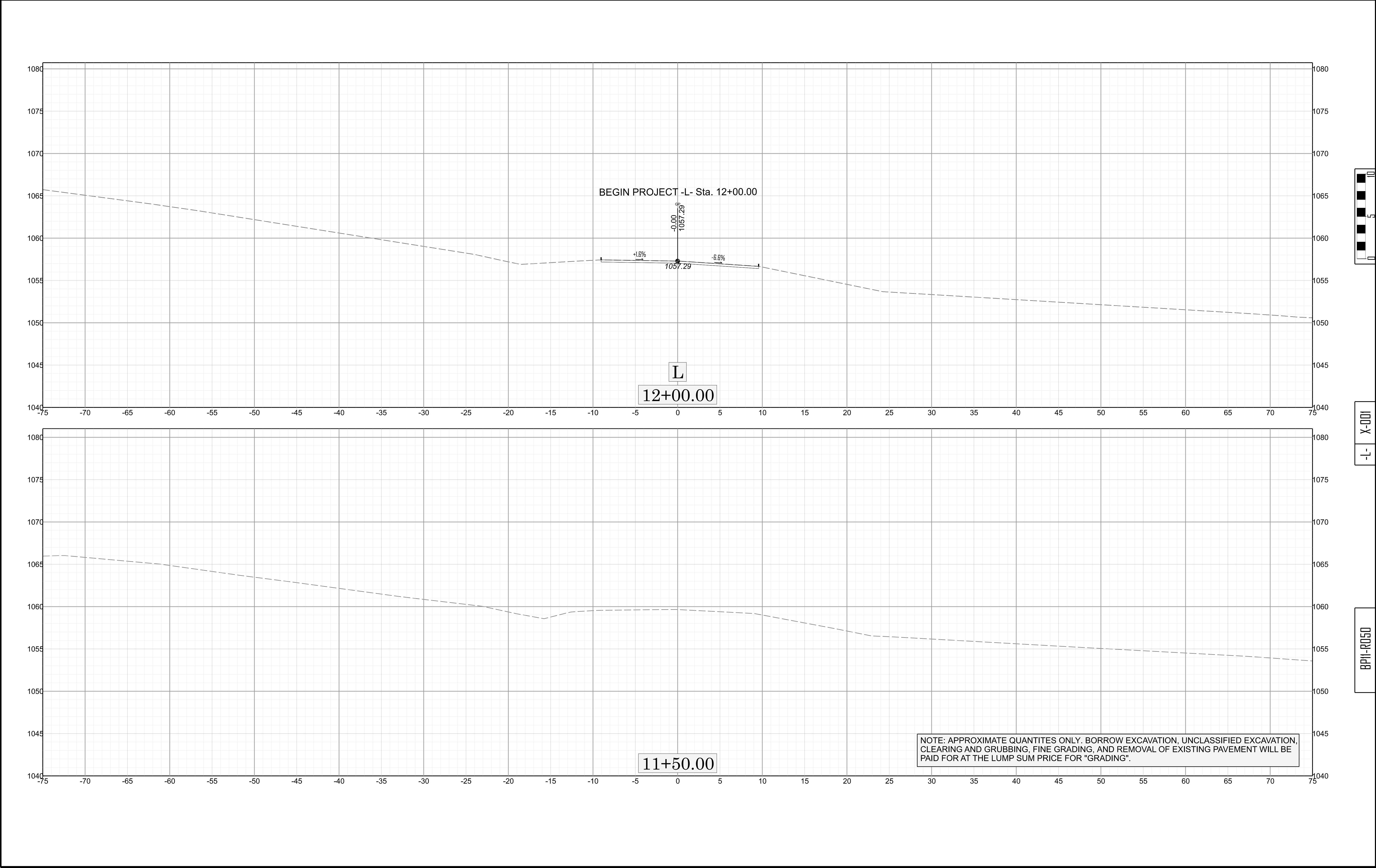
SHEET NO.

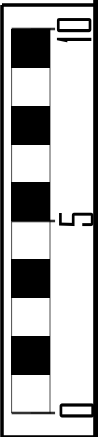
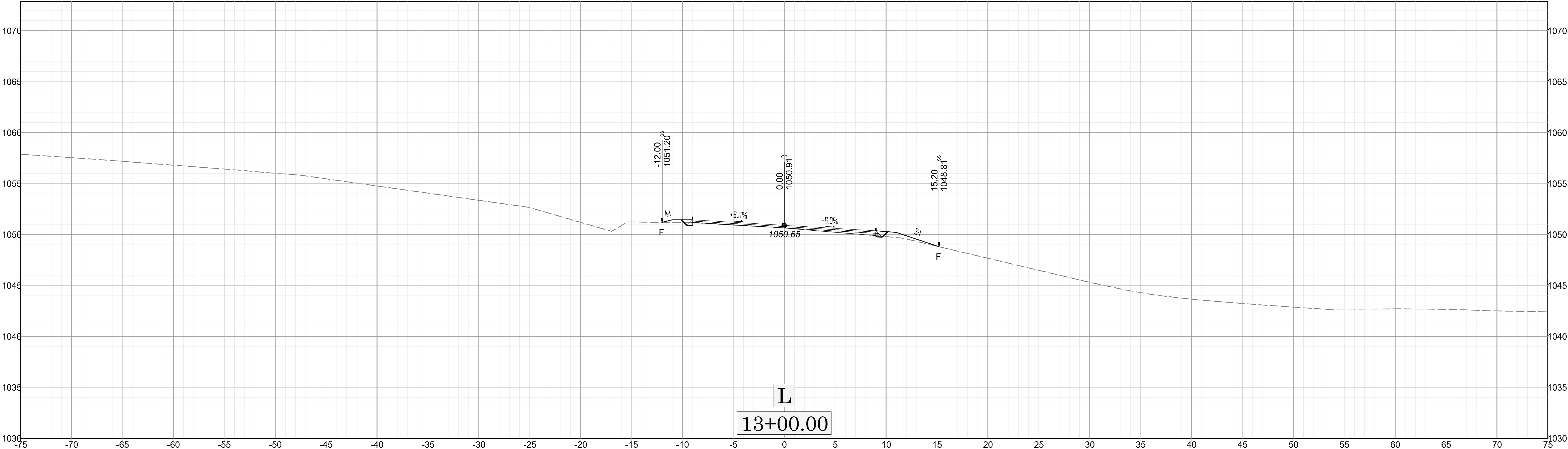
X-0

NOTE: EMBANKMENT COLUMN INCLUDES BACKFILL FOR UNDERCUT

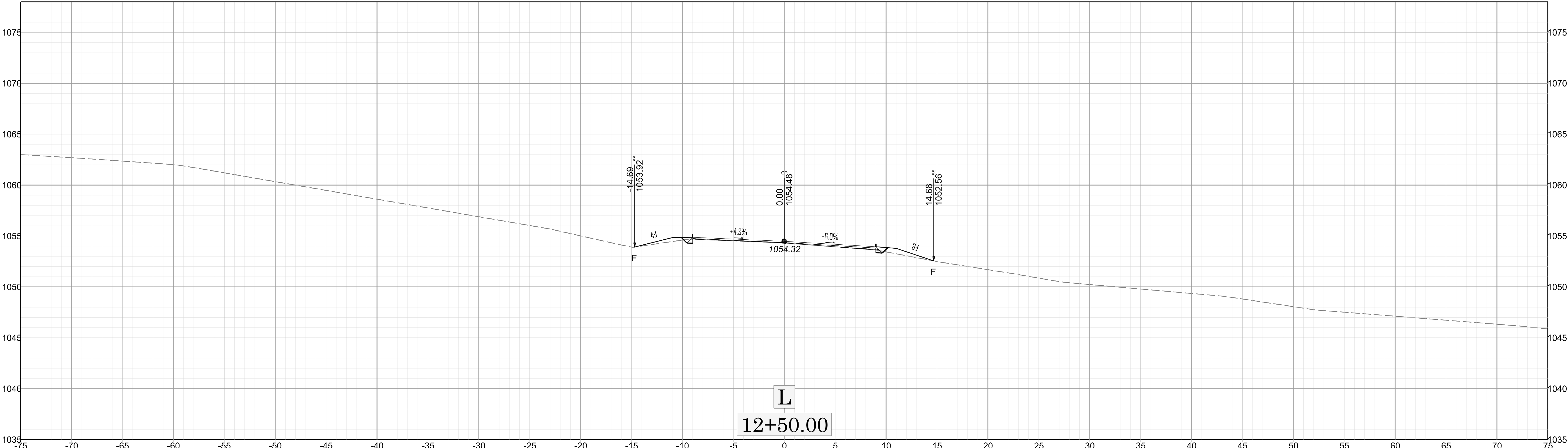
NOTE: EMBANKMENT COLUMN INCLUDES BACKFILL FOR UNDERCUT
CROSS-SECTION SUMMARY

Station	Uncl. Exc.	Embt
L	(cu. yd.)	(cu. yd.)
12+50.00	4	2
13+00.00	1	4
13+50.00	0	4
14+00.00	4	9
14+50.00	4	57
15+00.00	2	110
Station	Uncl. Exc.	Embt
L	(cu. yd.)	(cu. yd.)
15+50.00	0	0
16+00.00	0	26
16+50.00	1	37
17+00.00	1	5
17+50.00	1	3
18+00.00	1	3
18+50.00	1	0
19+00.00	0	0

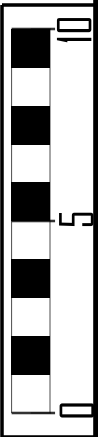
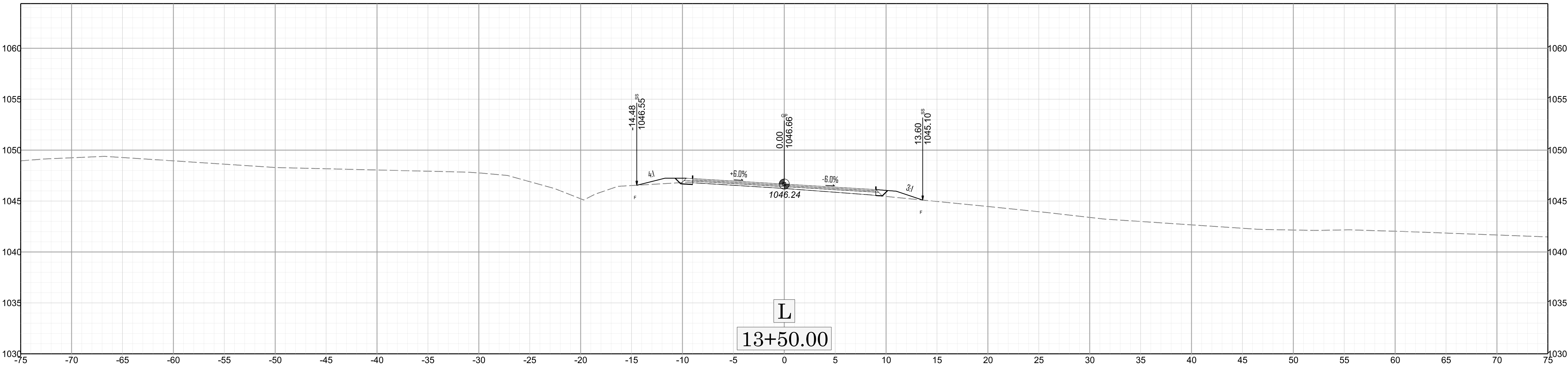
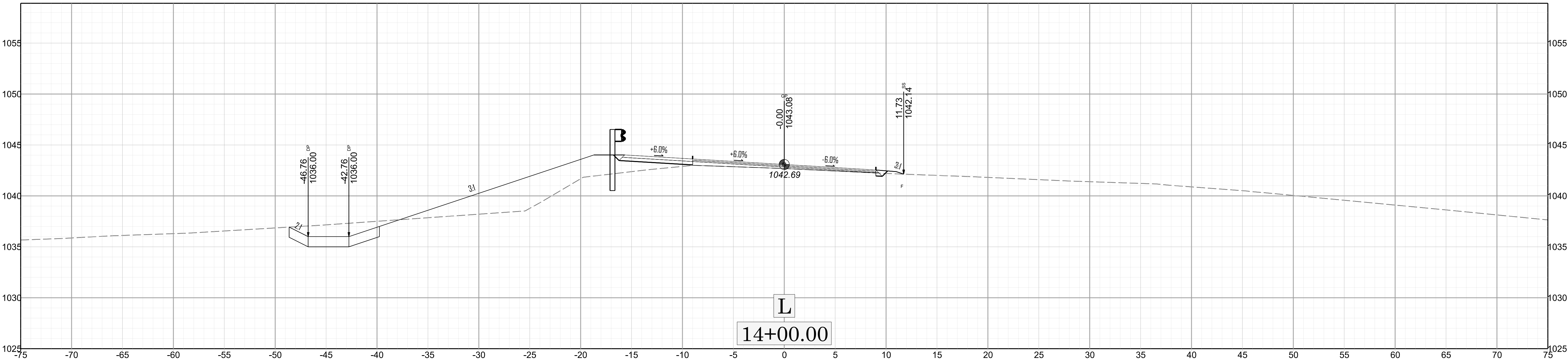




-L- X-002

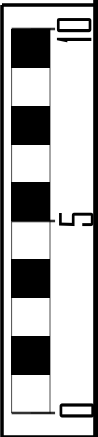
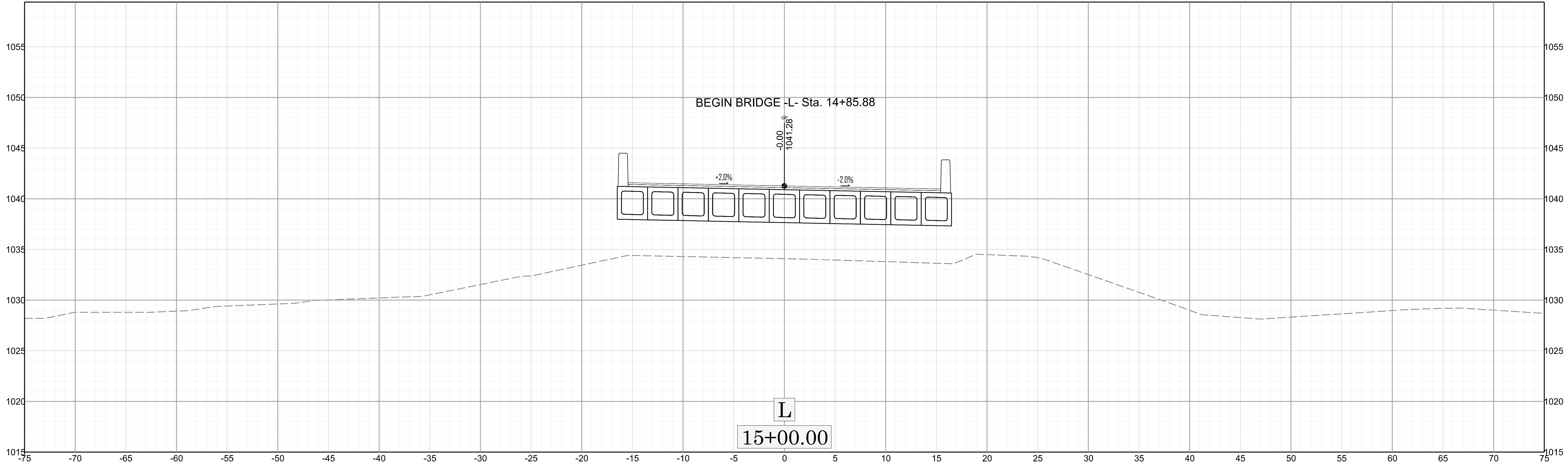


BPI-R050

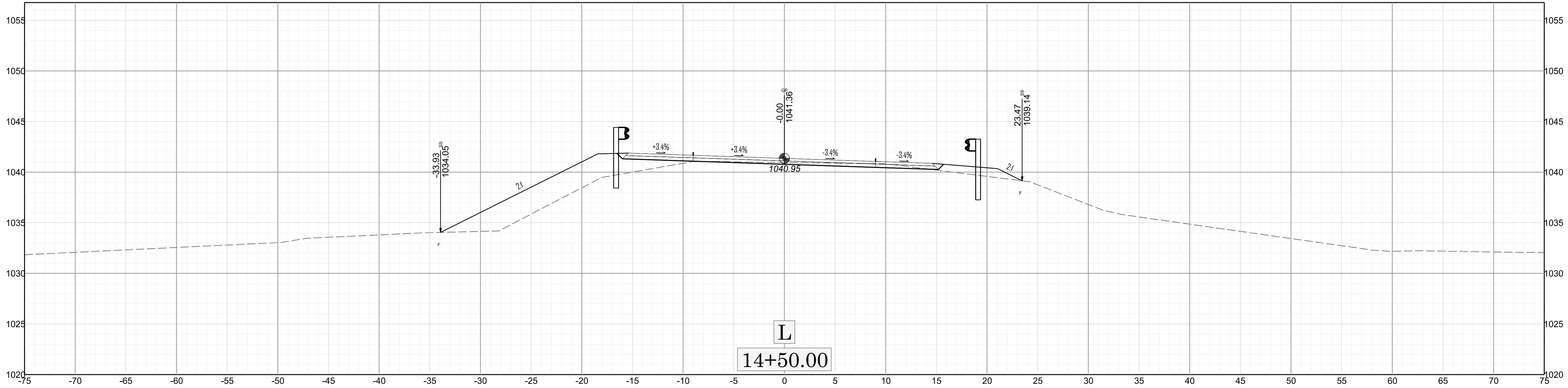


-L- X-003

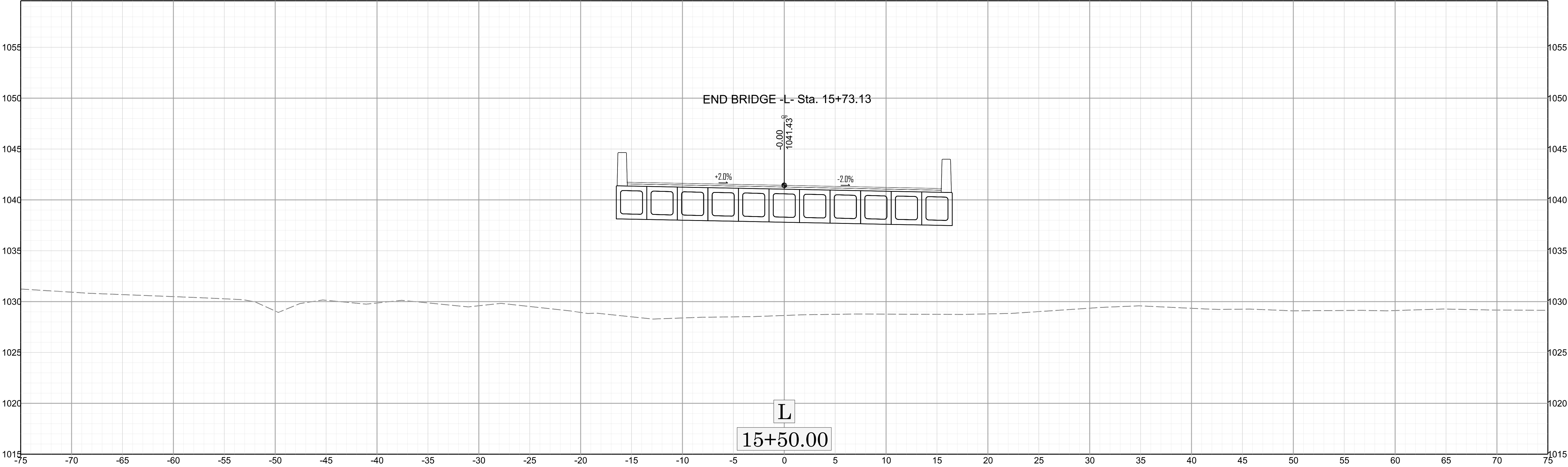
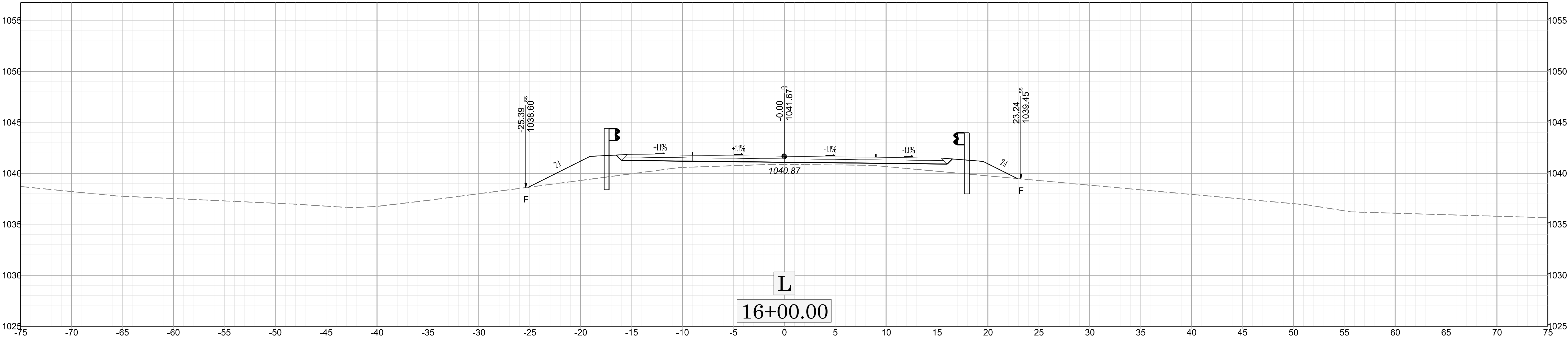
BPM-0050

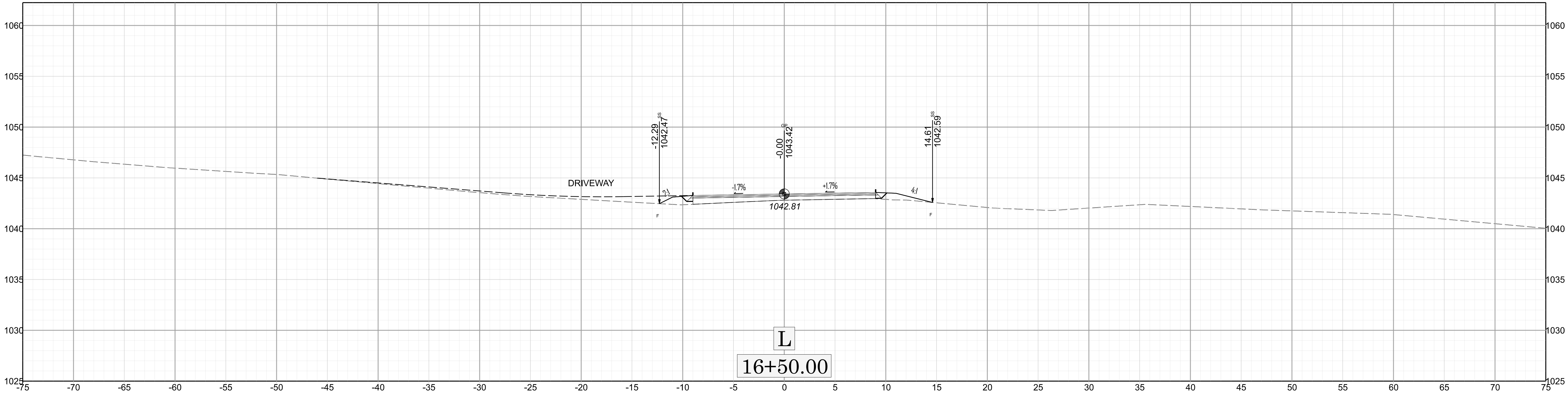
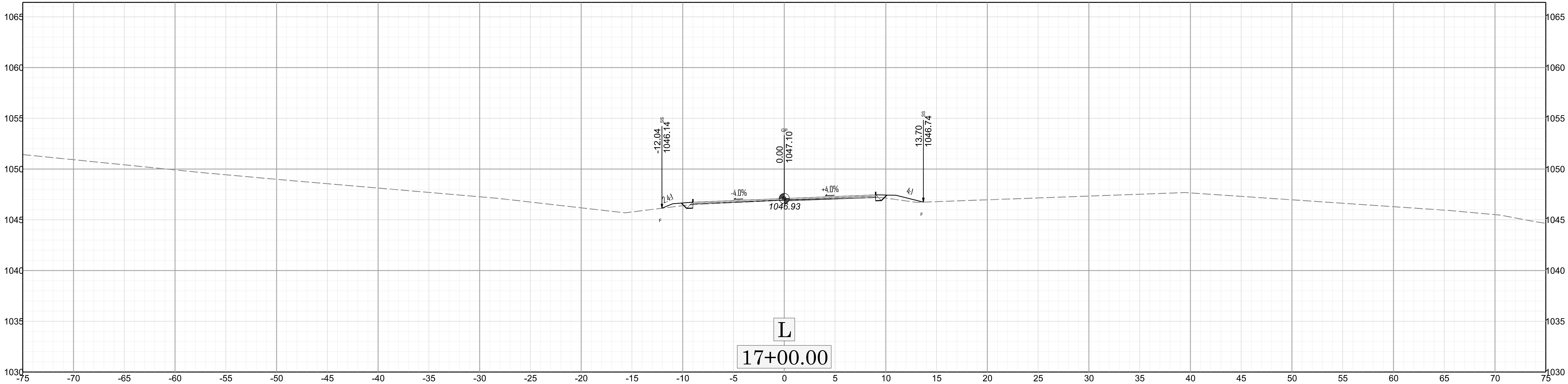


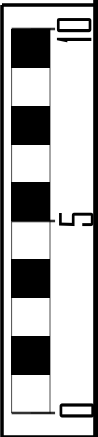
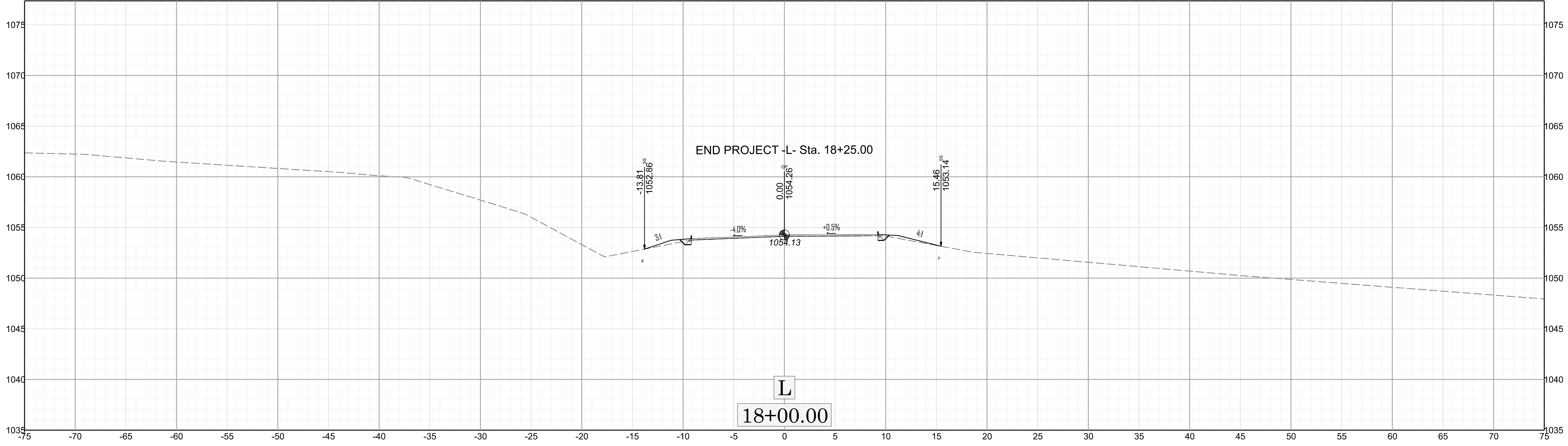
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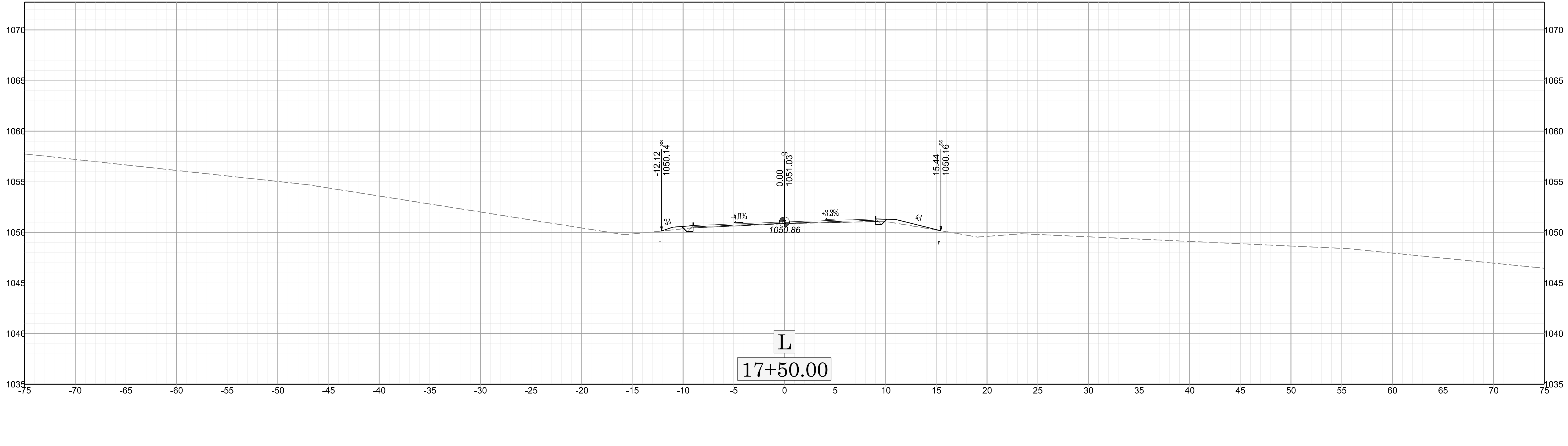
BPII-R050



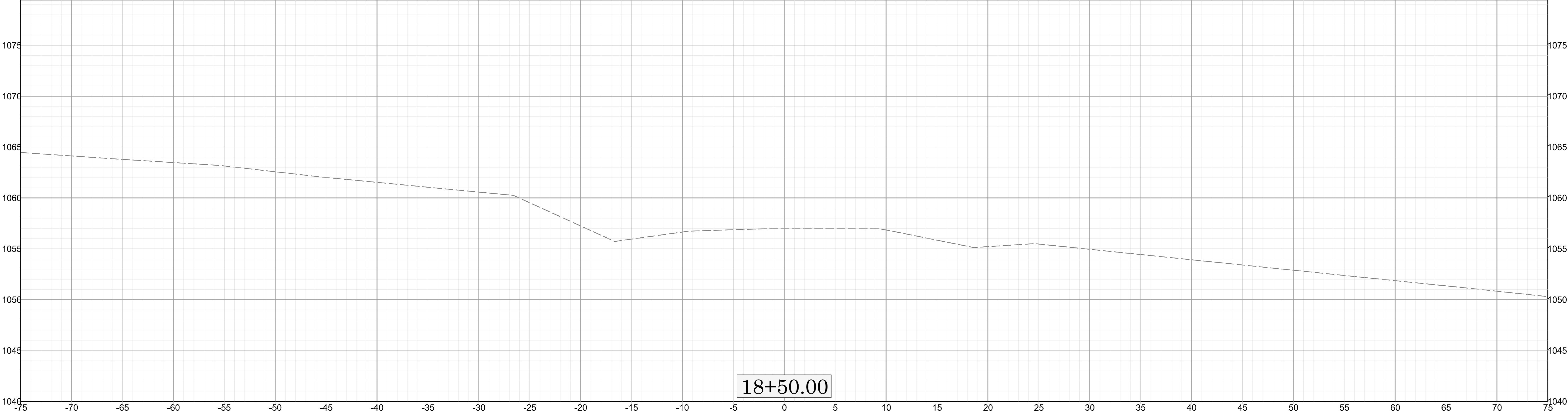




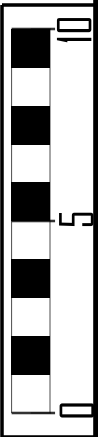
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BPII-R050

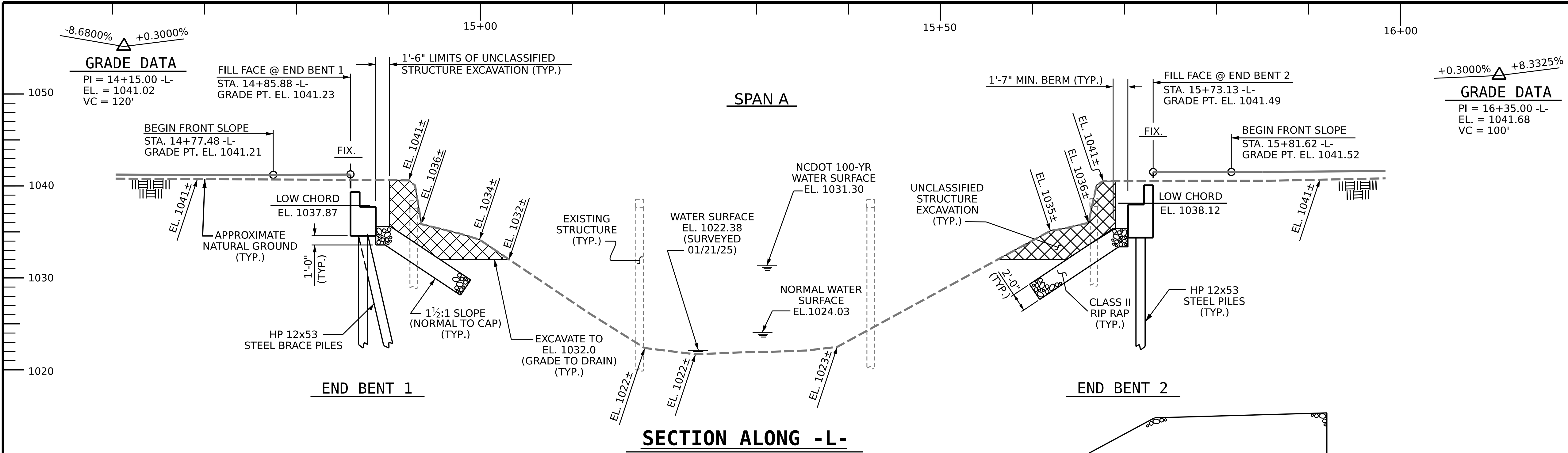


18+50.00

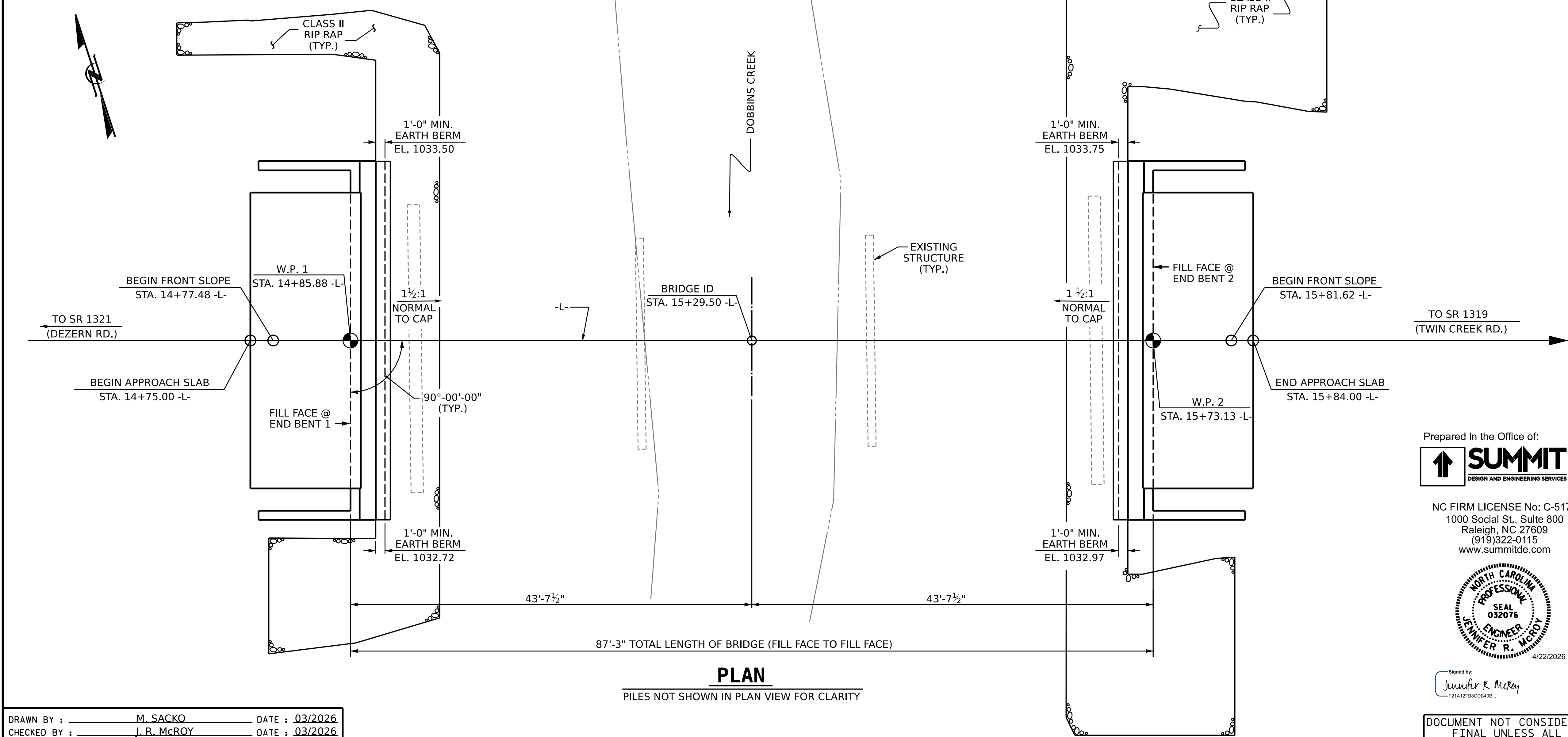


800-X
-1-

800-050



I HEREBY CERTIFY THESE PLANS
ARE THE AS-BUILT PLANS



DRAWN BY : M. SACKO DATE : 03/2026
CHECKED BY : J. R. McROY DATE : 03/2026
DESIGN ENGINEER OF RECORD: J. R. McROY DATE : 03/2026

Prepared in the Office of:
SUMMIT
DESIGN AND ENGINEERING SERVICES
NC FIRM LICENSE No: C-5176
1000 Social St., Suite 800
Raleigh, NC 27609
(919)322-0115
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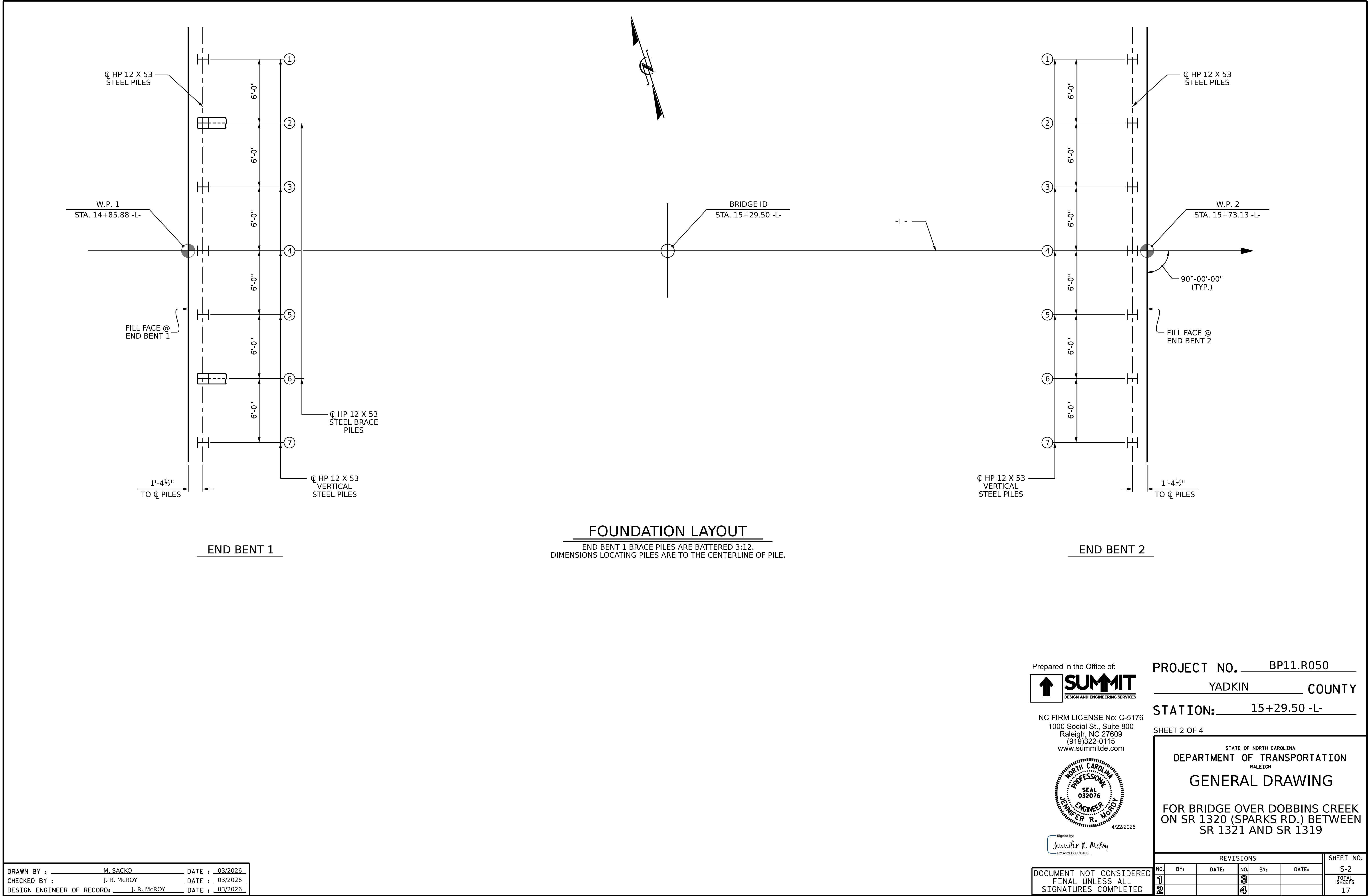
Signed by:
Jennifer R. McRoy
F21A12FB8CDB40B...

DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

PROJECT NO. BP11.R050
YADKIN COUNTY
STATION: 15+29.50 -L-

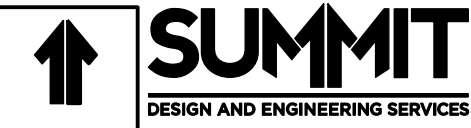
SHEET 1 OF 4 REPLACES BRIDGE NO. 980042

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-1
1			3			TOTAL SHEETS
2			4			17



DRAWN BY :	M. SACKO	DATE :	03/2026
CHECKED BY :	J. R. McROY	DATE :	03/2026
DESIGN ENGINEER OF RECORD:	J. R. McROY	DATE :	03/2026

Prepared in the Office of:



NC FIRM LICENSE No: C-5176
1000 Social St., Suite 800
Raleigh, NC 27609
(919)322-0115
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Signed by:
Jennifer R. McRoy
F21A12FB8CDE40B...

PROJECT NO. BP11.R050
YADKIN COUNTY
STATION: 15+29.50 -L-

SHEET 2 OF 4

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH GENERAL DRAWING FOR BRIDGE OVER DOBBINS CREEK ON SR 1320 (SPARKS RD.) BETWEEN SR 1321 AND SR 1319					
REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED					S-2 TOTAL SHEETS 17

SUMMARY OF PILE INFORMATION/INSTALLATION

(Blank entries indicate item is not applicable to structure)

[illegible]

$$* \text{ RDR} = \frac{\text{Factored Resistance} + \text{Factored Drag Load} + \text{Factored Dead Load}}{\text{Dynamic Resistance Factor}} + \text{Nominal Drag Load Resistance} + \text{Nominal Resistance from Scourable Material}$$

** Predrilling for Piles is required for end bents/bents with a predrilling length and at the Contractor's option for end bents/bents with predrilling information but no predrilling length.

PILE DESIGN INFORMATION

(Blank entries indicate item is not applicable to structure)

End Bent / Bent No, Pile(s) #(#) (e.g., "Bent 1, Piles 1-5")	Factored Axial Load per Pile KIPS	Factored Drag Load per Pile KIPS	Factored Dead Load * per Pile KIPS	Dynamic Resistance Factor	Nominal Drag Resistance per Pile KIPS	Nominal Scour Resistance per Pile KIPS
End Bent No. 1, Piles 1-7	208			0.60		
End Bent No. 2, Piles 1-7	208			0.60		

* Factored Dead Load is factored weight of pile above the ground line.

SUMMARY OF PILE ACCESSORIES

(Blank entries indicate item is not applicable to structure)

End Bent / Bent No, Pile(s) #(-#) (e.g., "Bent 1, Piles 1-5")	Pipe Pile Plates EACH	Steel Pile Points		
		Pipe Pile Cutting Shoes EACH	Pipe Pile Conical Points EACH	H-Pile Points EACH
End Bent No. 1, Piles 1-7				7
End Bent No. 2, Piles 1-7				7
TOTAL QUANTITY:				14

PROJECT NO. BP11.R050

YADKIN COUNTY

STATION: 15+29.5 -L-

SHEET 3 OF 4

NOTES:

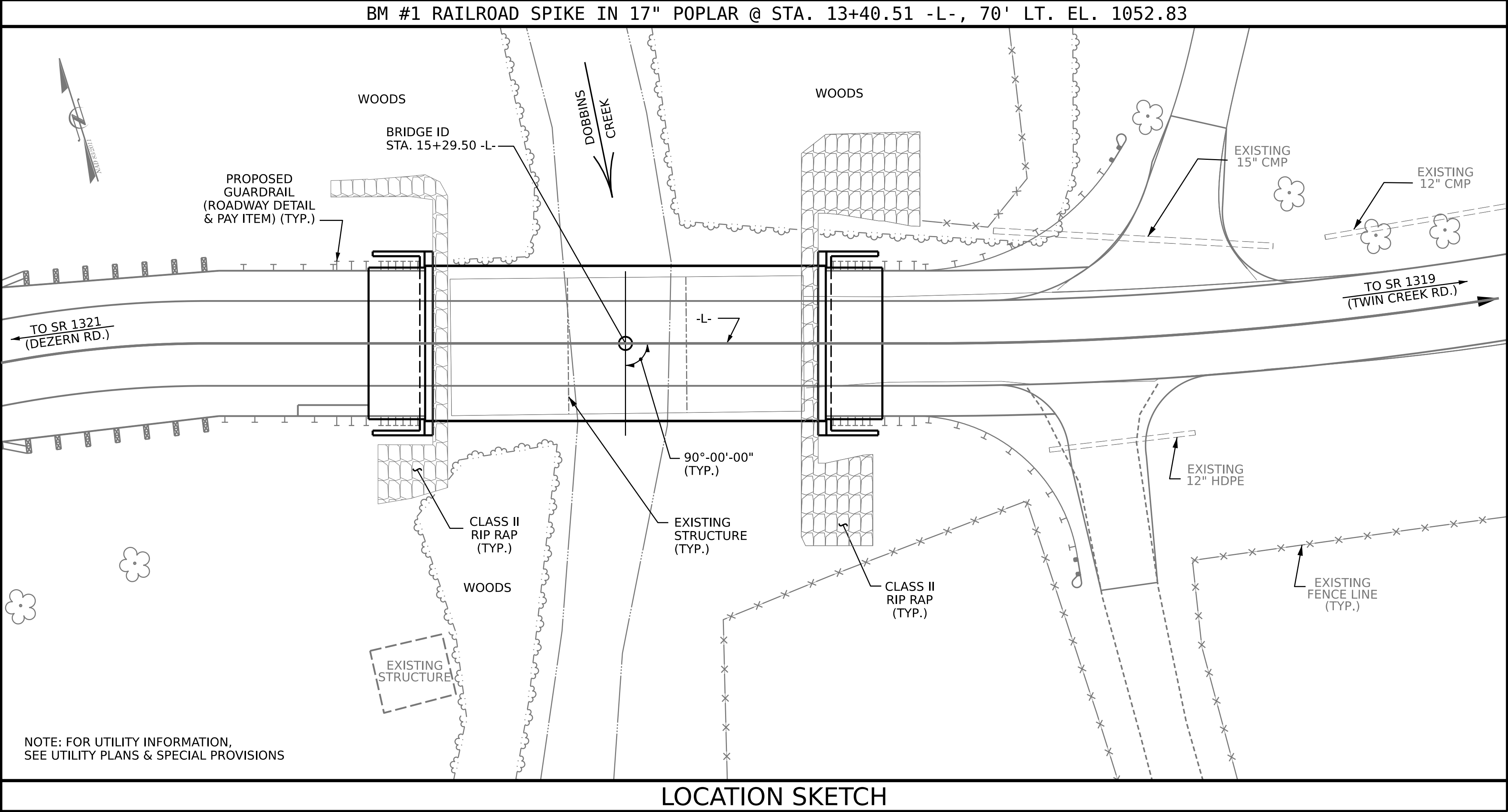
1. The Pile Foundation Tables are based on the bridge substructure design and foundation recommendations sealed by a North Carolina Professional Engineer (Robert D. Botzenmayer, #044443) on 03-18-2026.
2. Total Pile Driving Equipment Setup quantity (not shown in Pile Foundation Tables) equals the number of driven piles, i.e., the number of piles with a Required Driving Resistance.
3. The Engineer may adjust the quantity for DPT Testing and Pipe Pile Plates when necessary.
4. Pile Driving Criteria provided at End Bent No. 2 if driving required for seating.

FOUNDATION NOTES ON PLANS:

1. For piles, see Section 450 of the Standard Specifications.
2. Fill holes for pile excavation at End Bent No. 2 with concrete.

DRAWN BY: M. SACKO DATE: 03/2026
 CHECKED BY: J. R. MCROY DATE: 03/2026
 DESIGN ENGINEER OF RECORD: J. R. MCROY DATE: 03/2026

	STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH PILE FOUNDATION TABLES																		
Signed by: <i>Jennifer R. McCoy</i> F21A12F8BCDB469... SIGNATURE	4/22/2026 DATE																		
REVISIONS <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 10%;">NO.</th> <th style="width: 15%;">BY:</th> <th style="width: 20%;">DATE:</th> <th style="width: 10%;">NO.</th> <th style="width: 15%;">BY:</th> <th style="width: 20%;">DATE:</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">1</td> <td></td> <td></td> <td style="text-align: center;">3</td> <td></td> <td></td> </tr> <tr> <td style="text-align: center;">2</td> <td></td> <td></td> <td style="text-align: center;">4</td> <td></td> <td></td> </tr> </tbody> </table>		NO.	BY:	DATE:	NO.	BY:	DATE:	1			3			2			4		
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<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; text-align: center; vertical-align: middle;"> SHEET NO. S-3 </td> <td style="width: 50%; text-align: center; vertical-align: middle;"> TOTAL SHEETS 17 </td> </tr> </table>		SHEET NO. S-3	TOTAL SHEETS 17																
SHEET NO. S-3	TOTAL SHEETS 17																		



NOTES

ASSUMED LIVE LOAD = HI-93 OR ALTERNATE LOADING,

THIS BRIDGE IS LOCATED IN SEISMIC ZONE 1.

FOR OTHER DESIGN DATA AND GENERAL NOTES, SEE SHEET SN.

FOR EROSION CONTROL MEASURES SEE EROSION CONTROL PLANS.

THIS BRIDGE HAS BEEN DESIGNED IN ACCORDANCE WITH THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS.

THE EXISTING STRUCTURE CONSISTING OF 3 SPANS (1 @ 25'-2", 1 @ 25'-0", 1 @ 25'-2") WITH A CLEAR ROADWAY WIDTH OF 29'-0" AND 3.5" ASPHALT WEARING SURFACE ON 12 LINES OF PRESTRESSED CONCRETE CHANNELS (2.5' WIDE) AND REINFORCED CONCRETE CAP ON STEEL PILES SHALL BE REMOVED. THE EXISTING BRIDGE IS PRESENTLY POSTED BELOW THE LEGAL LOAD LIMIT. SHOULD THE STRUCTURAL INTEGRITY OF THE BRIDGE FURTHER DETERIORATE, THIS LOAD LIMITATION MAY BE REDUCED AS FOUND NECESSARY DURING THE LIFE OF THE PROJECT.

REMOVAL OF THE EXISTING BRIDGE SHALL BE PERFORMED SO AS NOT TO ALLOW DEBRIS TO FALL INTO THE WATER. THE CONTRACTOR SHALL REMOVE THE BRIDGE AND SUBMIT PLANS FOR DEMOLITION IN ACCORDANCE WITH ARTICLE 402-2 OF THE STANDARD SPECIFICATIONS.

THE MATERIAL SHOWN IN THE CROSS-HATCHED AREA ON SHEET 1 OF 3 SHALL BE EXCAVATED FOR A DISTANCE OF 35 FT ± ON BOTH SIDES OF END BENT 1 AND 45 FT± ON BOTH SIDES OF END BENT 2, FROM THE CENTERLINE ROADWAY AS DIRECTED BY THE ENGINEER. THIS WORK WILL BE PAID FOR AT THE CONTRACT LUMP SUM PRICE FOR UNCLASSIFIED STRUCTURE EXCAVATION. SEE SECTION 412 OF THE STANDARD SPECIFICATIONS.

THIS STRUCTURE HAS BEEN DESIGNED IN ACCORDANCE WITH "HEC 18 - EVALUATING SCOUR AT BRIDGES"

INASMUCH AS THE PAINT SYSTEM ON THE EXISTING STRUCTURAL STEEL CONTAINS LEAD, THE CONTRACTOR'S ATTENTION IS DIRECTED TO ARTICLE 107-1 OF THE STANDARD SPECIFICATIONS. ANY COSTS RESULTING FROM COMPLIANCE WITH APPLICABLE STATE OR FEDERAL REGULATIONS PERTAINING TO HANDLING OF MATERIALS CONTAINING LEAD BASED PAINT SHALL BE INCLUDED IN THE BID PRICE FOR "REMOVAL OF EXISTING STRUCTURE AT STATION 15+29.50 -L-"

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

FOR ASBESTOS ASSESSMENT FOR BRIDGE DEMOLITION AND RENOVATION ACTIVITIES, SEE SPECIAL PROVISIONS.

THE SUBSTRUCTURE OF THE EXISTING BRIDGE INDICATED ON THE PLANS IS FROM THE BEST INFORMATION AVAILABLE SINCE THIS INFORMATION IS SHOWN FOR THE CONVENIENCE OF THE CONTRACTOR, THE CONTRACTOR SHALL HAVE NO CLAIM WHATSOEVER AGAINST THE DEPARTMENT OF TRANSPORTATION FOR ANY DELAYS OR ADDITIONAL COST INCURRED BASED ON DIFFERENCES BETWEEN THE EXISTING BRIDGE SUBSTRUCTURE SHOWN ON THE PLANS AND THE ACTUAL CONDITIONS AT THE PROJECT SITE.

ASPHALT WEARING SURFACE IS INCLUDED IN ROADWAY QUANTITY ON ROADWAY PLANS.

FOR CORED SLAB AND BOX BEAM POST TENSIONING, SEE SPECIAL PROVISIONS.

HYDRAULIC DATA

DESIGN DISCHARGE	= 1400 C.F.S.
FREQUENCY OF DESIGN FLOOD	= 25 YR.
DESIGN HIGH WATER ELEVATION	= 1029.7 FT.
DRAINAGE AREA	= 5.24 SQ.MI.
BASE DISCHARGE (Q100)	= 2000 C.F.S.
BASE HIGH WATER ELEVATION	= 1031.3 FT.

OVERTOPPING FLOOD DATA

OVERTOPPING DISCHARGE	= 5400 C.F.S.
FREQUENCY OF OVERTOPPING FLOOD	= 500+ YR.
OVERTOPPING FLOOD ELEVATION	= 1042.1 FT.

WS. EL. TAKEN AT RIVER STATION 11346

TOTAL BILL OF MATERIAL

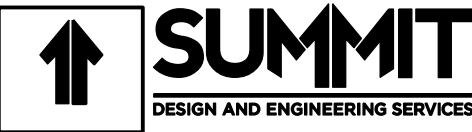
	REMOVAL OF EXISTING STRUCTURE AT STA. 15+29.50 -L-	ASBESTOS ASSESSMENT	PILE EXCAVATION IN SOIL	PILE EXCAVATION NOT IN SOIL	UNCLASSIFIED STRUCTURE EXCAVATION AT STA. 15+29.50 -L-	CLASS A CONCRETE	BRIDGE APPROACH SLABS	REINFORCING STEEL
	LUMP SUM	LUMP SUM	LIN. FT.	LIN. FT.	LUMP SUM	CU. YDS.	LUMP SUM	LBS.
SUPERSTRUCTURE	LUMP SUM	LUMP SUM			LUMP SUM		LUMP SUM	
END BENT #1						25.5		3576
END BENT #2			35	49		25.5		3576
TOTAL	LUMP SUM	LUMP SUM	35	49	LUMP SUM	51.0	LUMP SUM	7152

TOTAL BILL OF MATERIAL

	PILE DRIVING EQUIPMENT SETUP FOR HP 12 x 53 STEEL PILES.	HP 12x53 STEEL PILES		STEEL PILE POINTS	VERTICAL CONCRETE BARRIER RAIL	RIP RAP CLASS II (2'-0" THICK)	GEOTEXTILE FOR DRAINAGE	ELASTOMERIC BEARINGS	3'-0" X 2'-9" PRESTRESSED CONCRETE BOX BEAMS	
	EACH	NO.	LIN. FT.	EACH	LIN. FT.	TONS	SQ. YDS.	LUMP SUM	NO.	LIN. FT.
SUPERSTRUCTURE					170.0			LUMP SUM	11	935.0
END BENT 1	7	7	105	7		110	120			
END BENT 2	7	7	98	7		115	130			
TOTAL	14	14	203	14	170.0	225	250	LUMP SUM	11	935.0

DRAWN BY : M. SACKO DATE : 03/2026
CHECKED BY : J. R. McROY DATE : 03/2026
DESIGN ENGINEER OF RECORD: J. R. McROY DATE : 03/2026

Prepared in the Office of:



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Raleigh, NC 27609
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Signed by:
Jennifer R. McRoy
F21A12FB8CD840B...

4/22/2026

PROJECT NO. BP11.R050

YADKIN COUNTY

STATION: 15+29.50 -L-

SHEET 4 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING

FOR BRIDGE OVER DOBBINS CREEK
ON SR 1320 (SPARKS RD.) BETWEEN
SR 1321 & SR 1319

DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-4
1			3			TOTAL SHEETS
2			4			17

LOAD AND RESISTANCE FACTOR RATING (LRFR) SUMMARY FOR PRESTRESSED CONCRETE GIRDERS																								
LOAD TYPE	VEHICLE	WEIGHT (W) (TONS)	CONTROLLING LOAD RATING Ⓢ	MINIMUM RATING FACTORS (RF)	TONS = W x RF	STRENGTH I LIMIT STATE										SERVICE III LIMIT STATE						COMMENT NUMBER		
						LIVE-LOAD FACTORS (γ LL)	MOMENT				SHEAR				LIVE-LOAD FACTORS (γ LL)	MOMENT								
							DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN		GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION		DISTANCE FROM LEFT END OF SPAN (ft)	
DESIGN LOAD	HL-93 (INVENTORY)	N/A	Ⓢ1	1.401	--	1.75	0.273	1.73	85'	EL	41.750	0.497	1.54	85'	EL	8.35	0.80	0.273	1.40	85'	EL	41.750		
	HL-93 (OPERATING)	N/A		1.994	--	1.35	0.273	2.25	85'	EL	41.750	0.497	1.99	85'	EL	8.35	N/A	--	--	--	--	--		
	HS-20 (INVENTORY)	36.000	Ⓢ2	1.882	67.762	1.75	0.273	2.33	85'	EL	41.750	0.497	1.99	85'	EL	8.35	0.80	0.273	1.88	85'	EL	41.750		
	HS-20 (OPERATING)	36.000		2.584	93.027	1.35	0.273	3.02	85'	EL	41.750	0.497	2.58	85'	EL	8.35	N/A	--	--	--	--	--		
LEGAL LOAD	SINGLE VEHICLE (SV)	SNSH	13.500		4.355	58.789	1.4	0.273	6.74	85'	EL	41.750	0.497	6.03	85'	EL	8.35	0.80	0.273	4.35	85'	EL	41.750	
		SNGARBS2	20.000		3.199	63.989	1.4	0.273	4.95	85'	EL	41.750	0.497	4.26	85'	EL	8.35	0.80	0.273	3.20	85'	EL	41.750	
		SNAGRIS2	22.000		3.011	66.245	1.4	0.273	4.66	85'	EL	41.750	0.497	3.94	85'	EL	8.35	0.80	0.273	3.01	85'	EL	41.750	
		SNCOTTS3	27.250		2.166	59.016	1.4	0.273	3.35	85'	EL	41.750	0.497	3.01	85'	EL	8.35	0.80	0.273	2.17	85'	EL	41.750	
		SNAGGRS4	34.925		1.792	62.595	1.4	0.273	2.77	85'	EL	41.750	0.497	2.47	85'	EL	8.35	0.80	0.273	1.79	85'	EL	41.750	
		SNS5A	35.550		1.754	62.349	1.4	0.273	2.71	85'	EL	41.750	0.497	2.49	85'	EL	8.35	0.80	0.273	1.75	85'	EL	41.750	
		SNS6A	39.950		1.602	63.995	1.4	0.273	2.48	85'	EL	41.750	0.497	2.27	85'	EL	8.35	0.80	0.273	1.60	85'	EL	41.750	
		SNS7B	42.000		1.525	64.059	1.4	0.273	2.36	85'	EL	41.750	0.497	2.22	85'	EL	8.35	0.80	0.273	1.53	85'	EL	41.750	
	TRUCK TRACTOR SEMI-TRAILER (TTST)	TNAGRIT3	33.000		1.951	64.392	1.4	0.273	3.02	85'	EL	41.750	0.497	2.70	85'	EL	8.35	0.80	0.273	1.95	85'	EL	41.750	
		TNT4A	33.075		1.958	64.758	1.4	0.273	3.03	85'	EL	41.750	0.497	2.64	85'	EL	8.35	0.80	0.273	1.96	85'	EL	41.750	
		TNT6A	41.600		1.594	66.309	1.4	0.273	2.47	85'	EL	41.750	0.497	2.34	85'	EL	8.35	0.80	0.273	1.59	85'	EL	41.750	
		TNT7A	42.000		1.598	67.128	1.4	0.273	2.47	85'	EL	41.750	0.497	2.30	85'	EL	8.35	0.80	0.273	1.60	85'	EL	41.750	
		TNT7B	42.000		1.645	69.070	1.4	0.273	2.54	85'	EL	41.750	0.497	2.17	85'	EL	8.35	0.80	0.273	1.64	85'	EL	41.750	
		TNAGRIT4	43.000		1.571	67.556	1.4	0.273	2.43	85'	EL	41.750	0.497	2.11	85'	EL	8.35	0.80	0.273	1.57	85'	EL	41.750	
EMERGENCY VEHICLE (EV)	TNAGT5A	45.000		1.484	66.800	1.4	0.273	2.30	85'	EL	41.750	0.497	2.08	85'	EL	8.35	0.80	0.273	1.48	85'	EL	41.750		
	TNAGT5B	45.000	Ⓢ3	1.469	66.118	1.4	0.273	2.27	85'	EL	41.750	0.497	2.00	85'	EL	8.35	0.80	0.273	1.47	85'	EL	41.750		
	EV2	28.750		2.786	80.099	1.3	0.273	3.78	85'	EL	41.750	0.497	3.12	85'	EL	8.35	0.80	0.273	2.79	85'	EL	41.750		
EV3	43.000	Ⓢ4	1.830	78.696	1.3	0.273	2.48	85'	EL	41.750	0.497	2.10	85'	EL	8.35	0.80	0.273	1.83	85'	EL	41.750			

LOAD FACTORS:

DESIGN LOAD RATING FACTORS	LIMIT STATE	γ DC	γ DW
	STRENGTH I	1.25	1.50
	SERVICE III	1.00	1.00

NOTES:

MINIMUM RATING FACTORS ARE BASED ON THE STRENGTH I AND SERVICE III LIMIT STATES.

ALLOWABLE STRESSES FOR SERVICE III LIMIT STATE ARE AS REQUIRED FOR DESIGN.

COMMENTS:

1.
2.
3.
4.

⬡

CONTROLLING LOAD RATING

⬡1

DESIGN LOAD RATING (HL-93)

⬡2

DESIGN LOAD RATING (HS-20)

⬡3

LEGAL LOAD RATING * *

⬡4

EMERGENCY VEHICLE LOAD RATING * *

* *

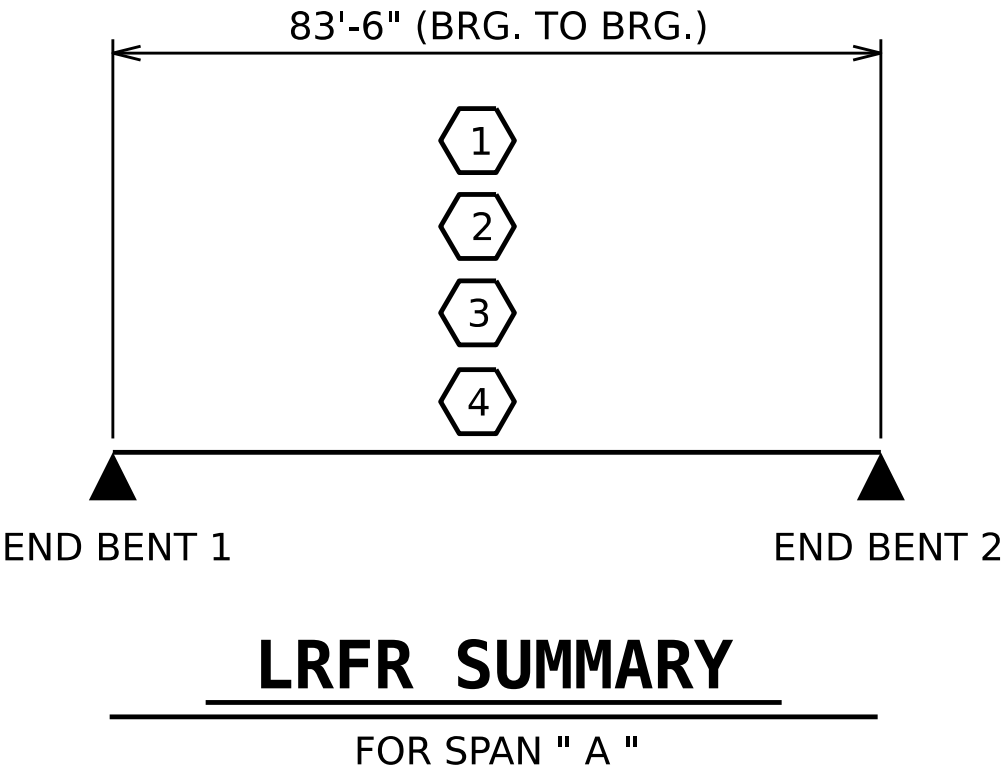
SEE CHART FOR VEHICLE TYPE

GIRDER LOCATION

I - INTERIOR GIRDER

EL - EXTERIOR LEFT GIRDER

ER - EXTERIOR RIGHT GIRDER



ASSEMBLED BY: M. SACKO	DATE : 03/2026
CHECKED BY : J. R. McROY	DATE : 03/2026
DRAWN BY : TMG II/II	REV. 06/23
CHECKED BY : AAC II/II	AKP/AAI

Prepared in the Office of:

↑

SUMMIT

DESIGN AND ENGINEERING SERVICES

NC FIRM LICENSE No: C-5176
1000 Social St., Suite 800
Raleigh, NC 27609
(919)322-0115
www.summitde.com

Seal of Jennifer R. McRoy, Professional Engineer, No. 032076, State of North Carolina, dated 4/22/2026.

Signed by: Jennifer R. McRoy

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PROJECT NO. BP11.R050

YADKIN COUNTY

STATION: 15+29.50 -L-

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD
LRFR SUMMARY FOR
85' BOX BEAM UNIT
90° SKEW
(NON-INTERSTATE TRAFFIC)

REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		

DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

TOTAL SHEETS
17

NOTES

ALL PRESTRESSING STRANDS SHALL BE 7-WIRE LOW RELAXATION GRADE 270 STRANDS AND SHALL CONFORM TO AASHTO M203 EXCEPT FOR SAMPLING REQUIREMENTS WHICH SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

ALL REINFORCING STEEL CAST WITH THE BOX BEAM SECTIONS SHALL BE GRADE 60 AND SHALL BE INCLUDED IN THE UNIT PRICE BID FOR PRESTRESSED CONCRETE BOX BEAMS.

FLAME CUTTING OF THE TRANSVERSE POST-TENSIONING STRAND IS NOT ALLOWED.

RECESSES FOR TRANSVERSE STRANDS SHALL BE GROUTED AFTER THE TENSIONING OF THE STRANDS.

THE 2 1/2" Ø DOWEL HOLES AT FIXED ENDS OF BOX BEAM SECTIONS SHALL BE FILLED WITH NON-SHRINK GROUT.

THE BACKER RODS SHALL CONFORM TO THE REQUIREMENTS OF TYPE M BOND BREAKER, SEE SECTION 1028 OF THE STANDARD SPECIFICATIONS.

THE TRANSFER OF LOAD FROM THE ANCHORAGES TO THE BOX BEAM UNIT SHALL BE DONE WHEN THE CONCRETE HAS REACHED A COMPRESSIVE STRENGTH OF NOT LESS THAN 6000 PSI.

ALL REINFORCING STEEL IN VERTICAL CONCRETE BARRIER RAILS SHALL BE EPOXY COATED.

PRESTRESSING STRANDS SHALL BE CUT FLUSH WITH THE BOX BEAM UNIT ENDS.

APPLY EPOXY PROTECTIVE COATING TO BOX BEAM UNIT ENDS.

VERTICAL GROOVED CONTRACTION JOINTS, 1/2" IN DEPTH, SHALL BE TOOLED IN ALL EXPOSED FACES OF THE BARRIER RAIL AND IN ACCORDANCE WITH ARTICLE 825-10(B) OF THE STANDARD SPECIFICATIONS. A VERTICAL CONTRACTION JOINT SHALL BE LOCATED AT EACH THIRD POINT BETWEEN BARRIER RAIL EXPANSION JOINTS. ONLY ONE CONTRACTION JOINT IS REQUIRED AT MIDPOINT OF BARRIER RAIL SEGMENTS LESS THAN 20 FEET IN LENGTH AND NO CONTRACTION JOINTS ARE REQUIRED FOR THOSE SEGMENTS LESS THAN 10 FEET IN LENGTH.

THE LOCATION OF THE VOID DRAINS MAY BE SHIFTED SLIGHTLY WHERE NECESSARY TO CLEAR PRESTRESSING STRANDS OR TRANSVERSE REINFORCING STEEL.

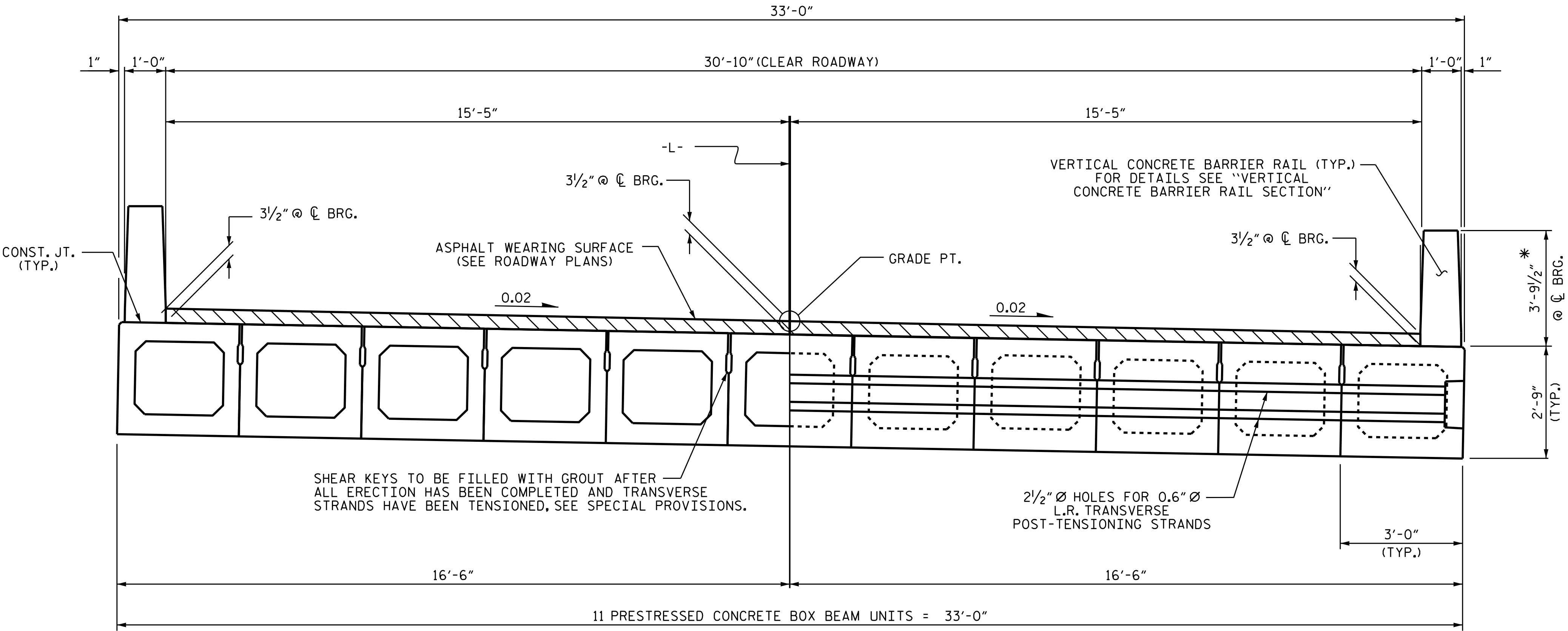
FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

THE PERMITTED THREADED INSERTS ARE DETAILED AS AN OPTION FOR THE CONTRACTOR TO ATTACH FALSEWORK AND FORMWORK DURING CONSTRUCTION.

THE PERMITTED THREADED INSERTS IN THE EXTERIOR UNITS SHALL BE SIZED BY THE CONTRACTOR, SPACED AT 4'-0" CENTERS AND GALVANIZED IN ACCORDANCE WITH SECTION 1076 OF THE STANDARD SPECIFICATIONS. STAINLESS STEEL THREADED INSERTS MAY BE USED AS AN ALTERNATE.

THE PERMITTED THREADED INSERTS SHALL BE GROUTED BY THE CONTRACTOR IMMEDIATELY FOLLOWING REMOVAL OF THE FALSEWORK.

THE COST OF THE PERMITTED THREADED INSERTS SHALL BE INCLUDED IN THE PRICE BID FOR THE PRECAST UNITS.



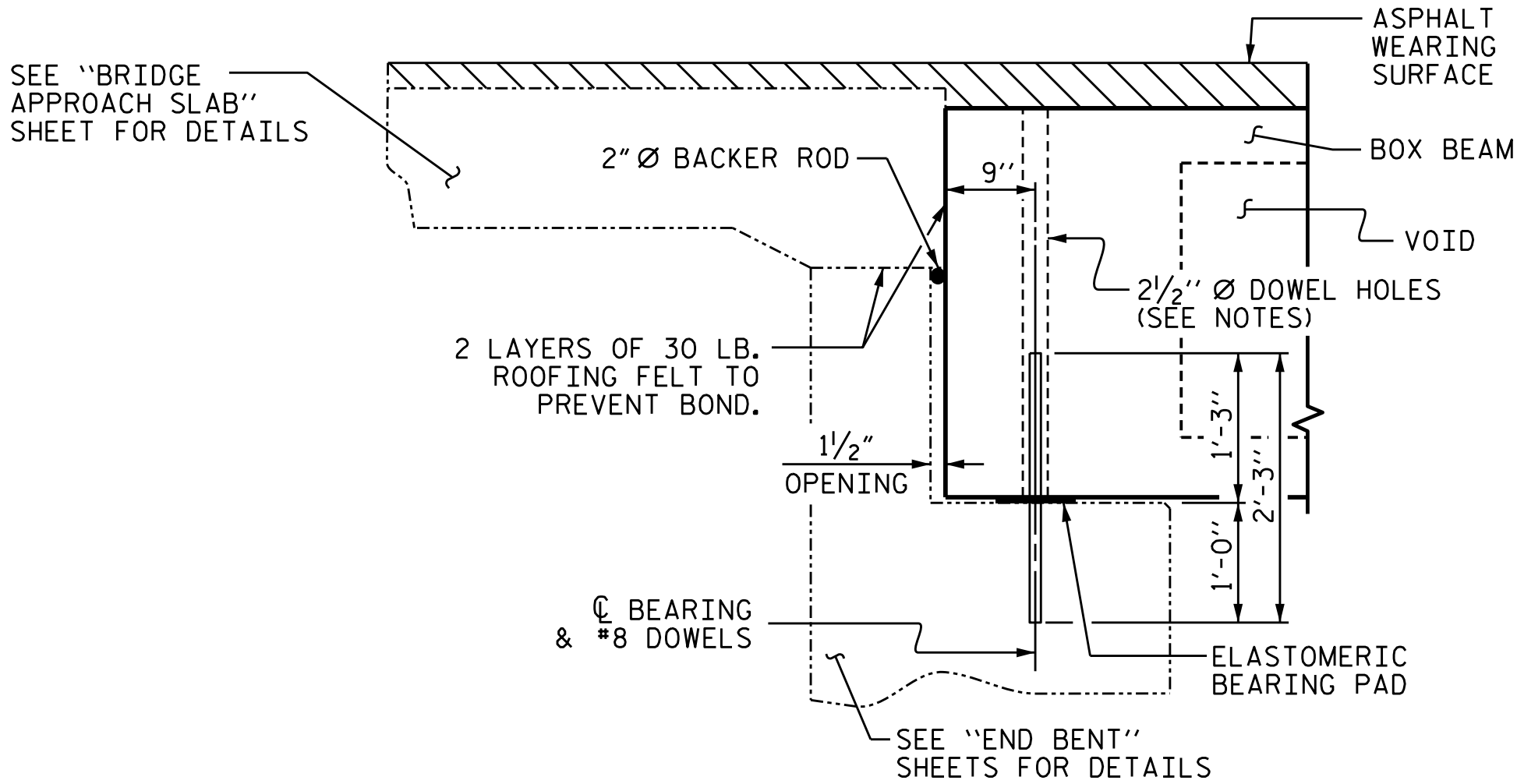
HALF SECTION
THROUGH VOIDS

HALF SECTION
AT INTERMEDIATE DIAPHRAGMS

TYPICAL SECTION

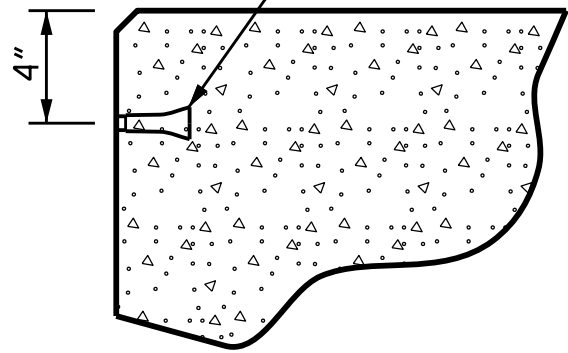
*THE MAXIMUM BARRIER RAIL HEIGHT AND ASPHALT THICKNESS IS SHOWN. THE HEIGHT OF THE BARRIER RAIL AND ASPHALT THICKNESS VARIES WHILE THE TOP OF THE BARRIER RAIL FOLLOWS THE PROFILE OF THE GUTTERLINE. FOR RAIL HEIGHT DETAILS AND ASPHALT THICKNESS, SEE THE "VERTICAL CONCRETE BARRIER RAIL SECTION" DETAIL.

FIXED END



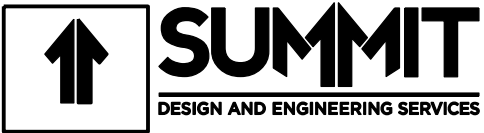
SECTION AT END BENT

PERMITTED THREADED INSERT
CAST IN OUTSIDE FACE OF
EXTERIOR UNIT AND
RECESSED 3/8". SIZE TO BE
DETERMINED
BY CONTRACTOR.



THREADED INSERT DETAIL

Prepared in the Office of:



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Raleigh, NC 27609
(919)322-0115
www.summitde.com



4/22/2026

Signed by:
Jennifer R. McRoy

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PROJECT NO. BP11.R050

YADKIN COUNTY

STATION: 15+29.50 -L-

SHEET 1 OF 5

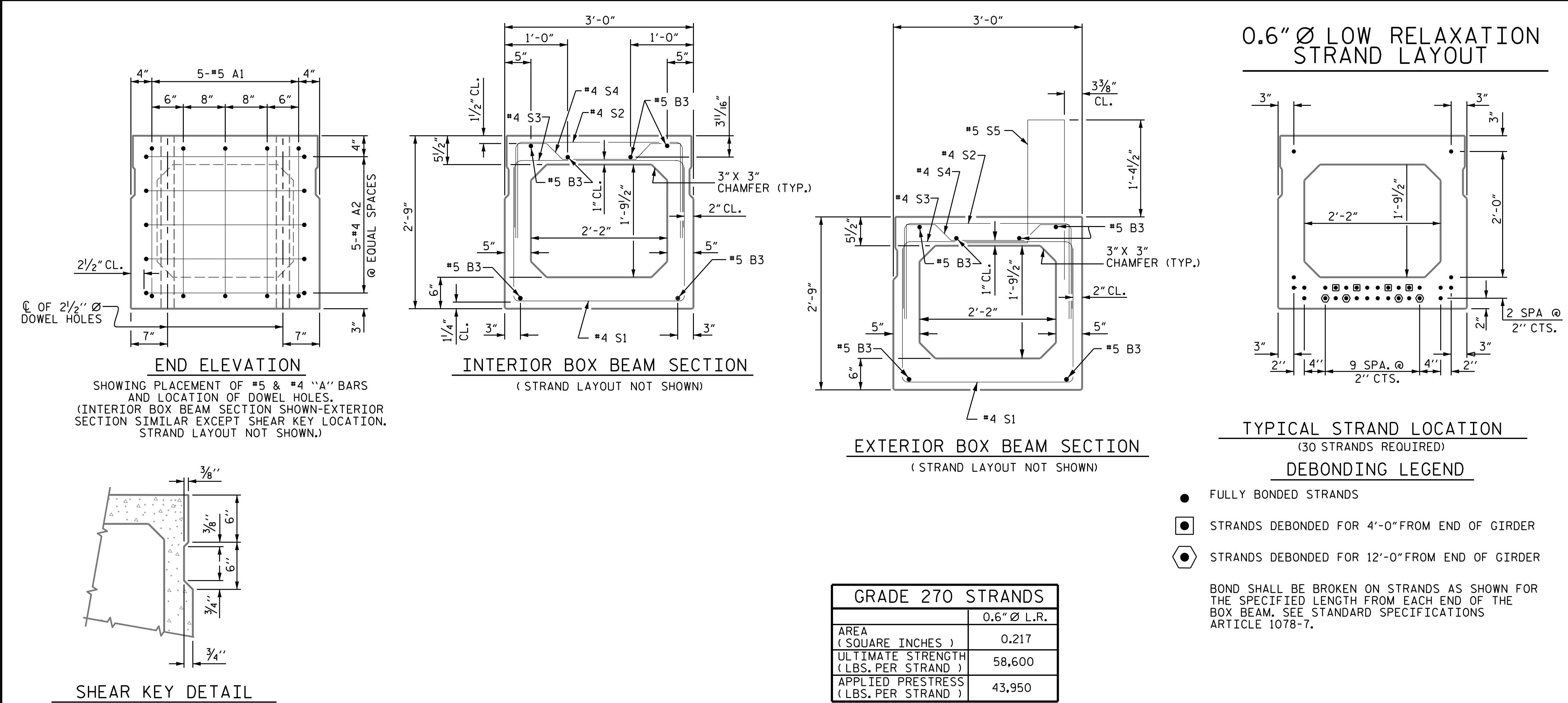
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
STANDARD
3'-0" X 2'-9"
PRESTRESSED CONCRETE
BOX BEAM UNIT

REVISIONS

NO.	BY:	DATE:	NO.	BY:	DATE:	SHEET NO.
1			3			S-6
2			4			TOTAL SHEETS 17

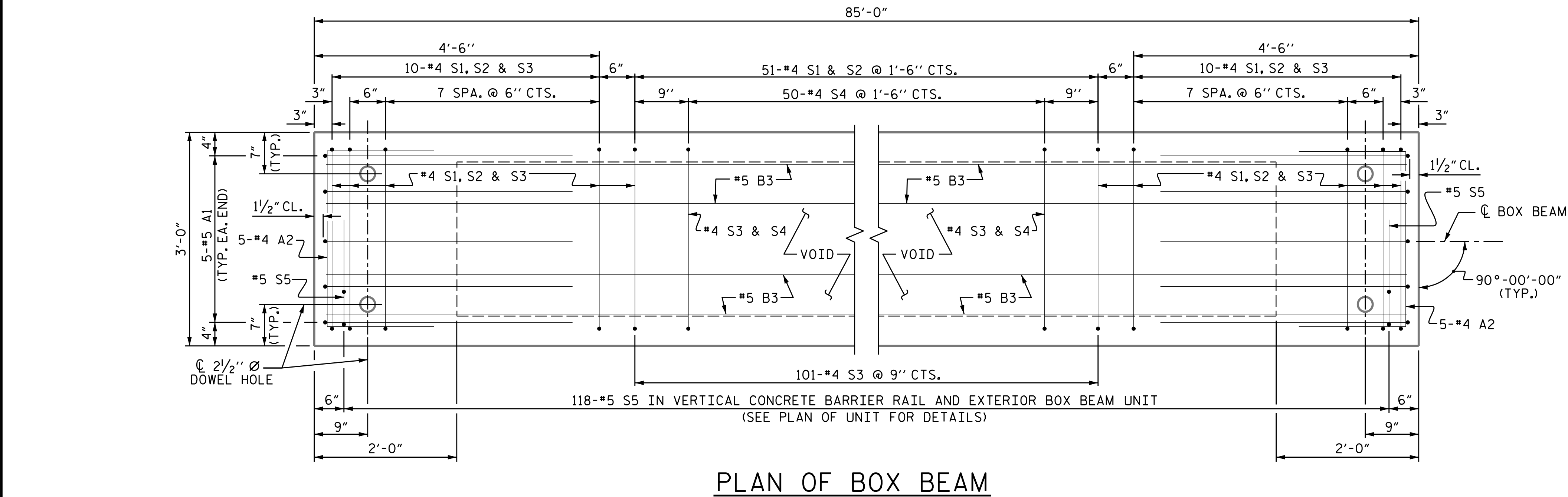
STD. NO. STD.33PCBB_33_90S

ASSEMBLED BY : M. SACKO	DATE : 03/2026
CHECKED BY : J. R. McROY	DATE : 03/2026
DRAWN BY : DCE 8/II	REV. 9/14
CHECKED BY : TMG II/II	MAA/TMG



GRADE 270 STRANDS	
AREA (SQUARE INCHES)	0.6" Ø L.R.
ULTIMATE STRENGTH (LBS. PER STRAND)	58,600
APPLIED PRESTRESS (LBS. PER STRAND)	43,950

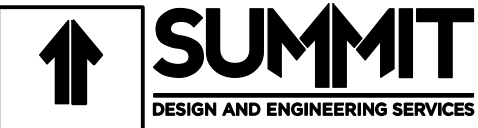
BAR TYPES							
ALL BAR DIMENSIONS ARE OUT TO OUT							
BILL OF MATERIAL FOR ONE BOX BEAM SECTION							
BAR	NUMBER	SIZE	TYPE	EXTERIOR UNIT		INTERIOR UNIT	
A1	10	#5	1	6'-8"	70	6'-8"	70
A2	34	#4	2	5'-7"	127	5'-7"	127
B3	12	#5	STR	43'-5"	543	43'-5"	543
K1	12	#4	6	6'-2"	49	6'-2"	49
K2	8	#4	STR	2'-7"	14	2'-7"	14
S1	71	#4	3	7'-6"	356	7'-6"	356
S2	71	#4	3	5'-8"	269	5'-8"	269
S3	121	#4	3	4'-10"	391	4'-10"	391
S4	50	#4	4	5'-10"	195	5'-10"	195
* S5	118	#5	5	5'-10"	718	--	--
REINFORCING STEEL				2014 LBS.		2014 LBS.	
* EPOXY COATED REINF. STEEL				718 LBS.			
8000 P.S.I. CONCRETE				15.1 CU. YDS.		15.0 CU. YDS.	
0.6" Ø L.R. STRANDS				No. 30		No. 30	



ASSEMBLED BY : M. SACKO	DATE : 03/2026
CHECKED BY : J. R. McROY	DATE : 03/2026
DRAWN BY : DGE 10/11	REV. 9/14
CHECKED BY : TMG 11/11	MAA/TMG

EXTERIOR UNIT SHOWN, INTERIOR UNIT SIMILAR EXCEPT OMIT #5 S5 BARS.
FOR LOCATION OF DIAPHRAGMS, SEE "PLAN OF UNIT".
FOR THREADED INSERTS, SEE "THREADED INSERT DETAIL".
FOR REINFORCING STEEL IN DIAPHRAGMS, SEE "DOUBLE DIAPHRAGM DETAILS".

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4/22/2026

Signed by:
Jennifer R. McRoy
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PROJECT NO. BP11.R050

YADKIN COUNTY

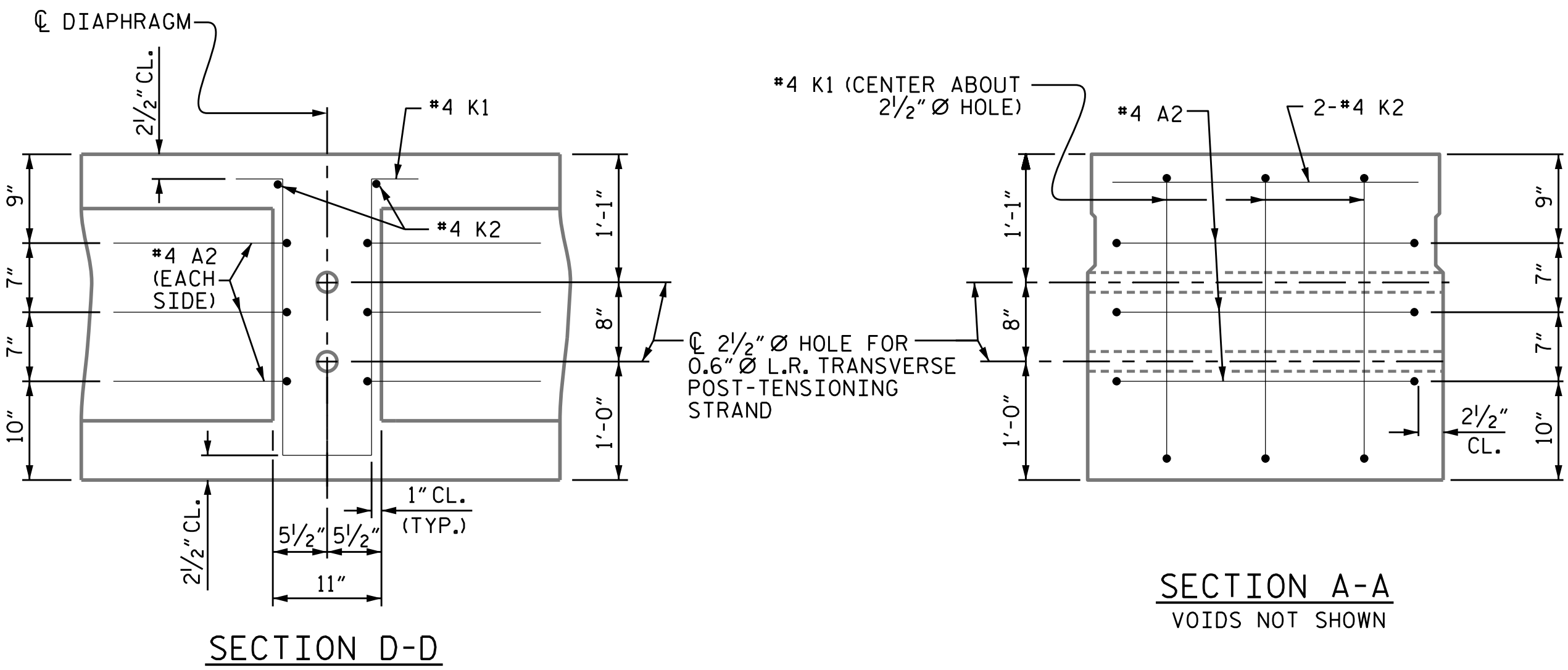
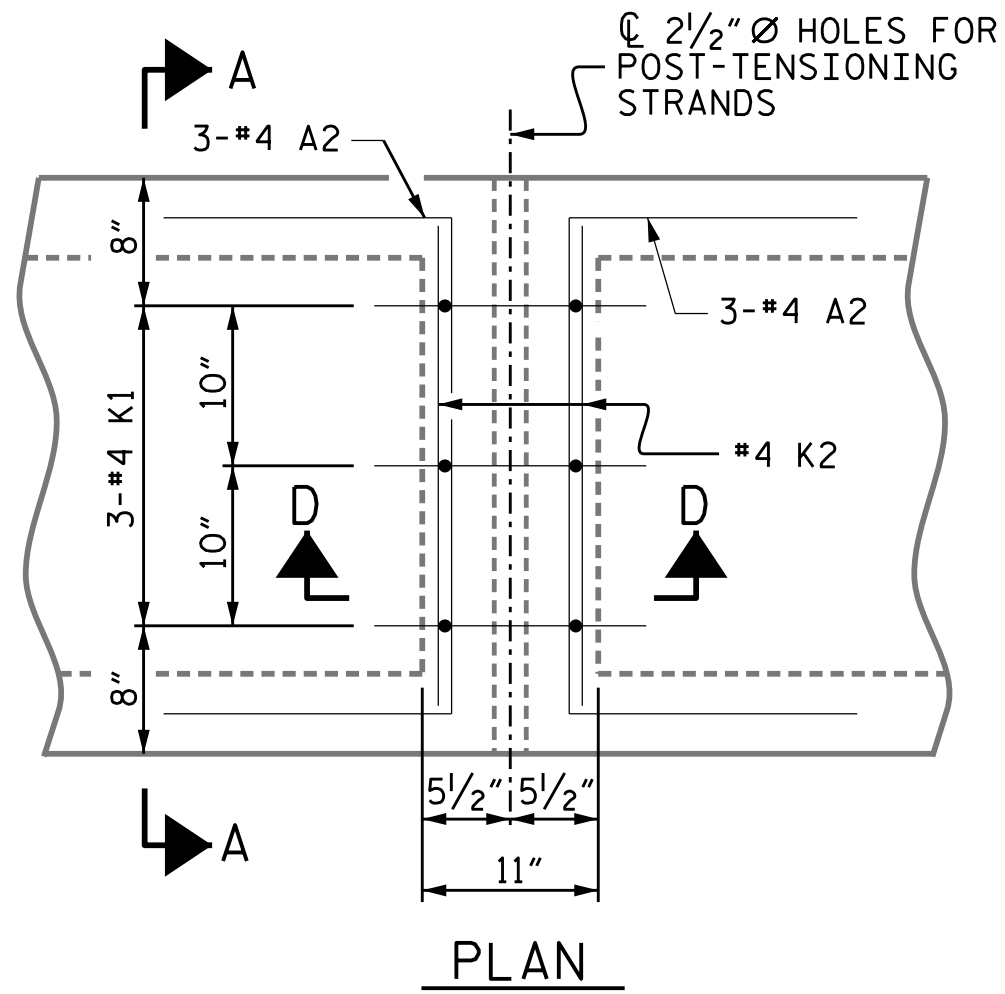
STATION: 15+29.50 -L-

SHEET 3 OF 5

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
STANDARD
3'-0" X 2'-9"
PRESTRESSED CONCRETE
BOX BEAM UNIT

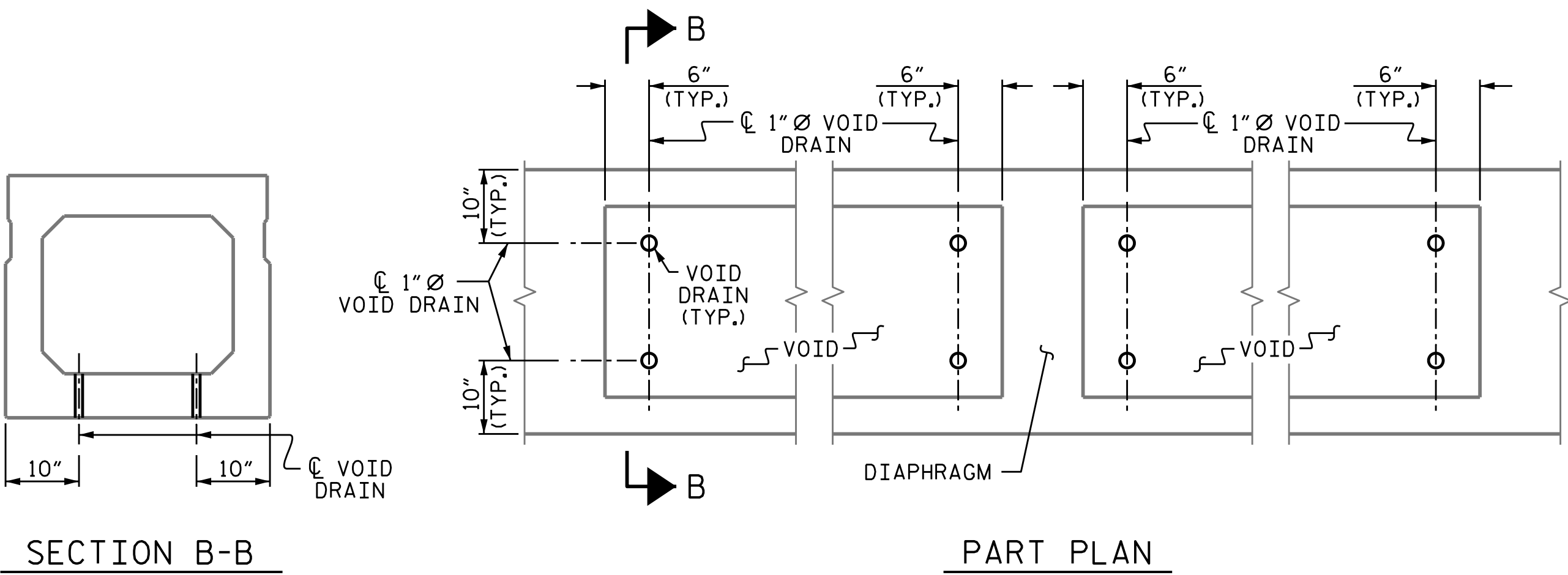
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S-8 TOTAL SHEETS 17
2			4			

STD. NO. 33PCBB4.90S.85L



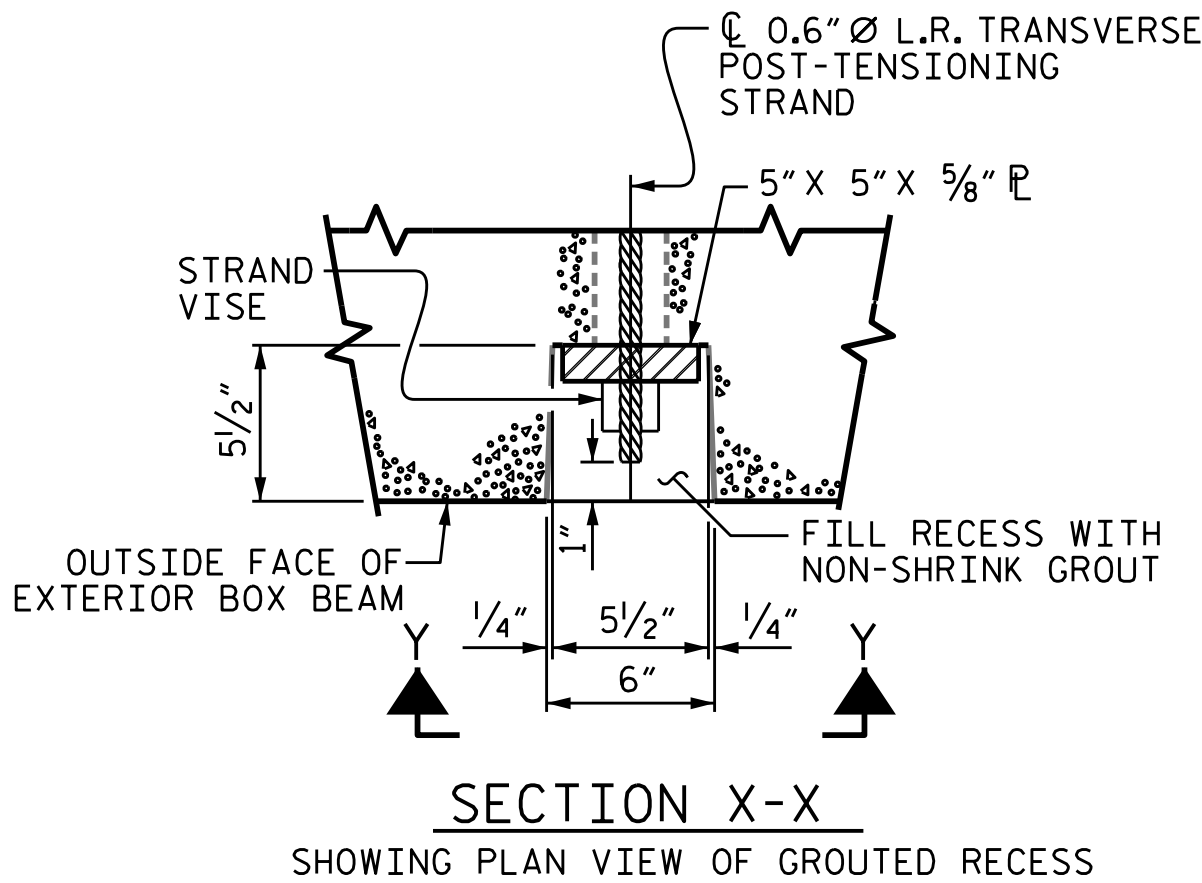
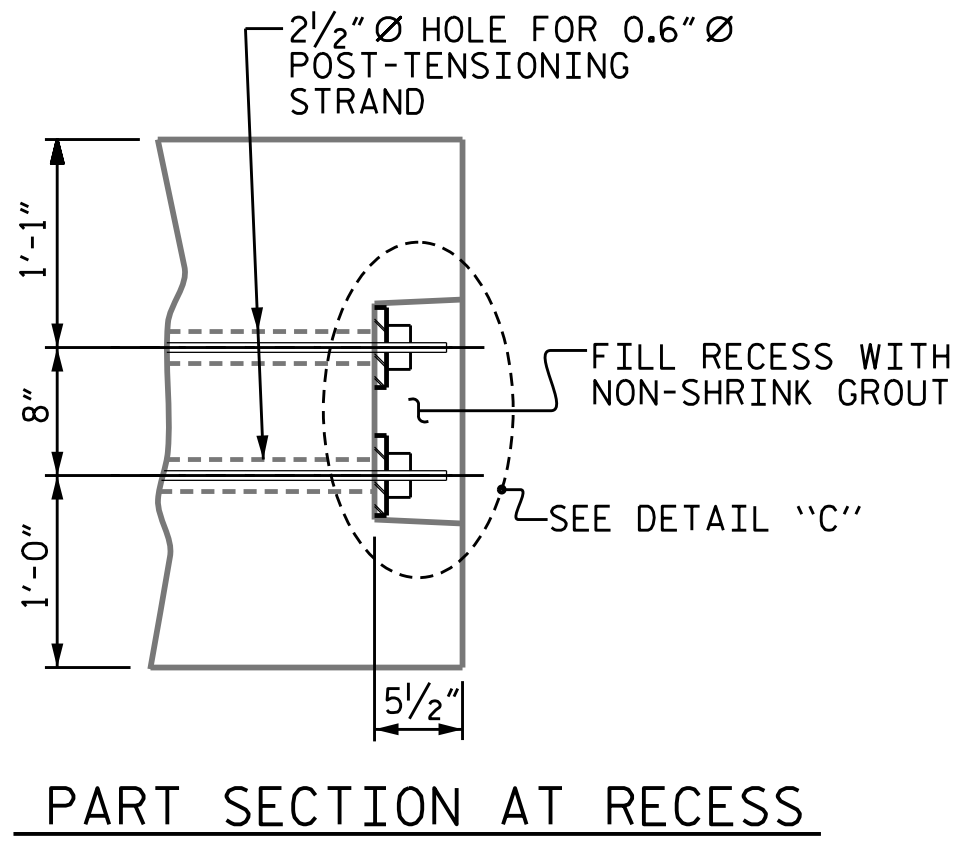
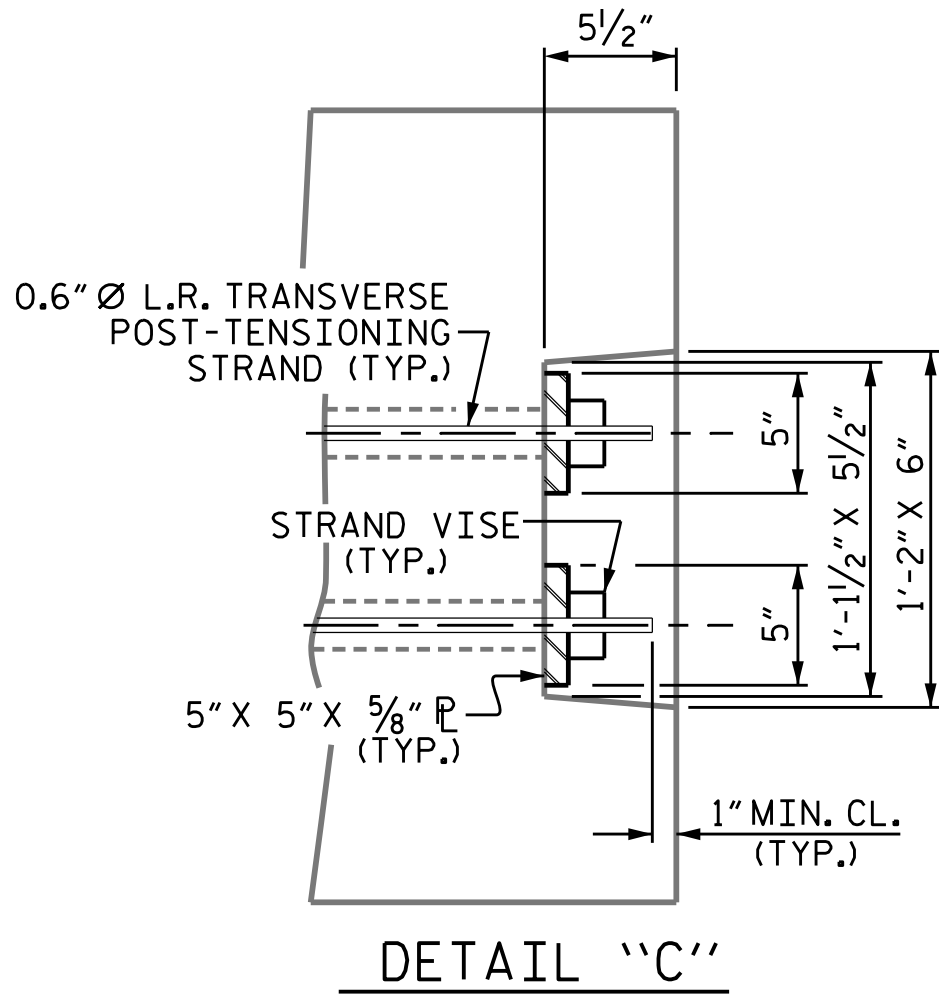
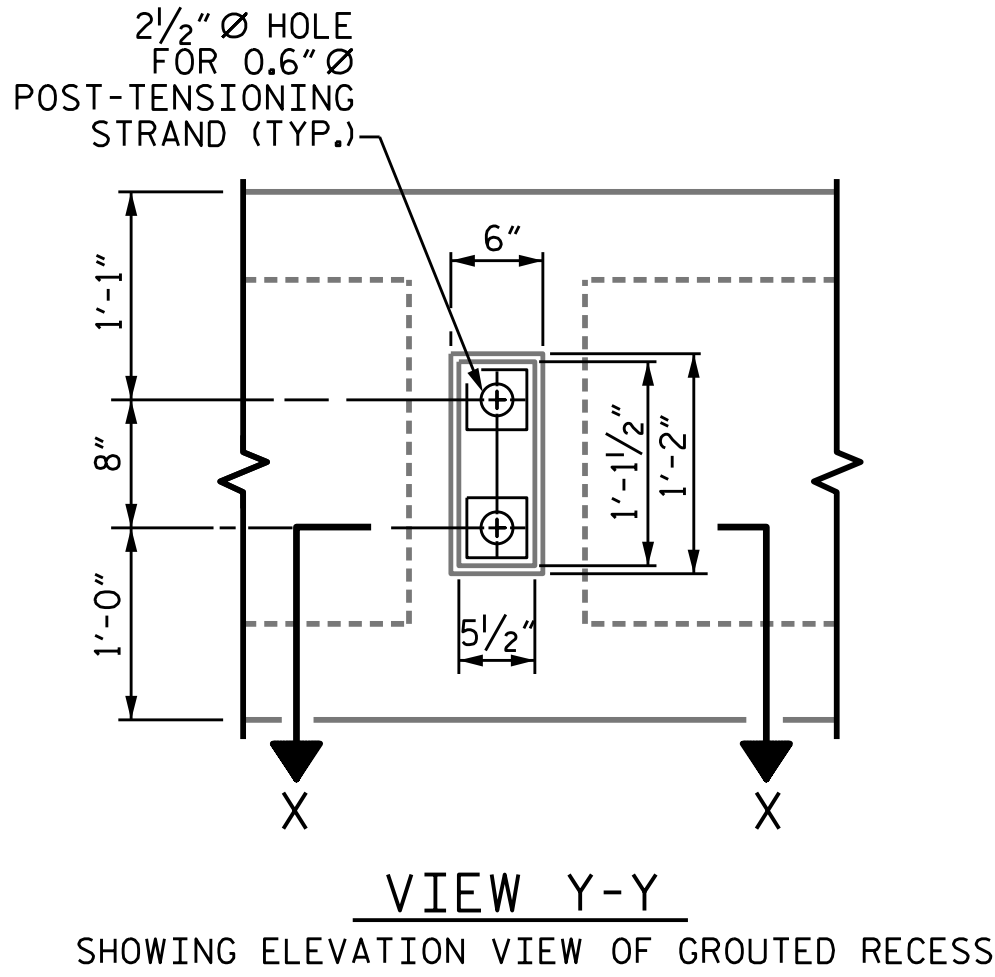
DOUBLE DIAPHRAGM DETAILS

#4 "S" BARS NOT SHOWN. #4 "S" BARS MAY BE SHIFTED SLIGHTLY TO CLEAR 2 1/2" Ø HOLE.



VOID DRAIN DETAILS

(DIMENSIONS SHOWN ARE TYPICAL FOR EACH VOID)

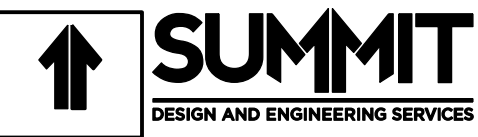


GROUTED RECESS DETAIL AT
END OF POST-TENSIONED STRANDS
OF EXTERIOR BOX BEAM

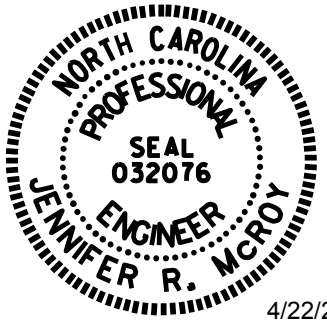
DEAD LOAD DEFLECTION AND CAMBER	
85' BOX BEAM UNIT (NC & SE)	3'-0" x 2'-9"
CAMBER (SLAB ALONE IN PLACE)	0.6" Ø L.R. STRAND 2 3/4" ↑
DEFLECTION DUE TO SUPERIMPOSED DEAD LOAD**	3/4" ↓
FINAL CAMBER	2" ↑

** INCLUDES FUTURE WEARING SURFACE

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PROJECT NO. BP11.R050

YADKIN COUNTY

STATION: 15+29.50 -L-

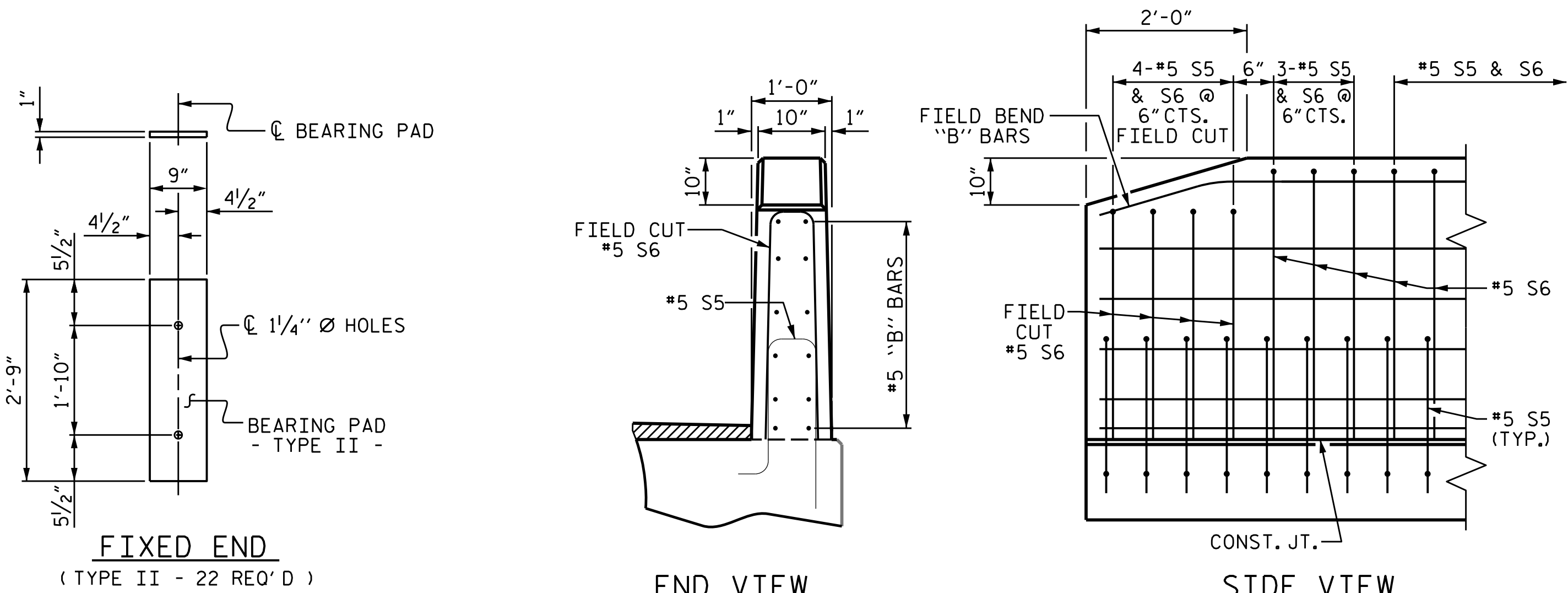
SHEET 4 OF 5

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
STANDARD
3'-0" X 2'-9"
PRESTRESSED CONCRETE
BOX BEAM UNIT

ASSEMBLED BY : M. SACKO	DATE : 03/2026
CHECKED BY : J. R. McROY	DATE : 03/2026
DRAWN BY : DGE 10/11	REV. 8/14
CHECKED BY : TMG 11/11	MAA/TMG

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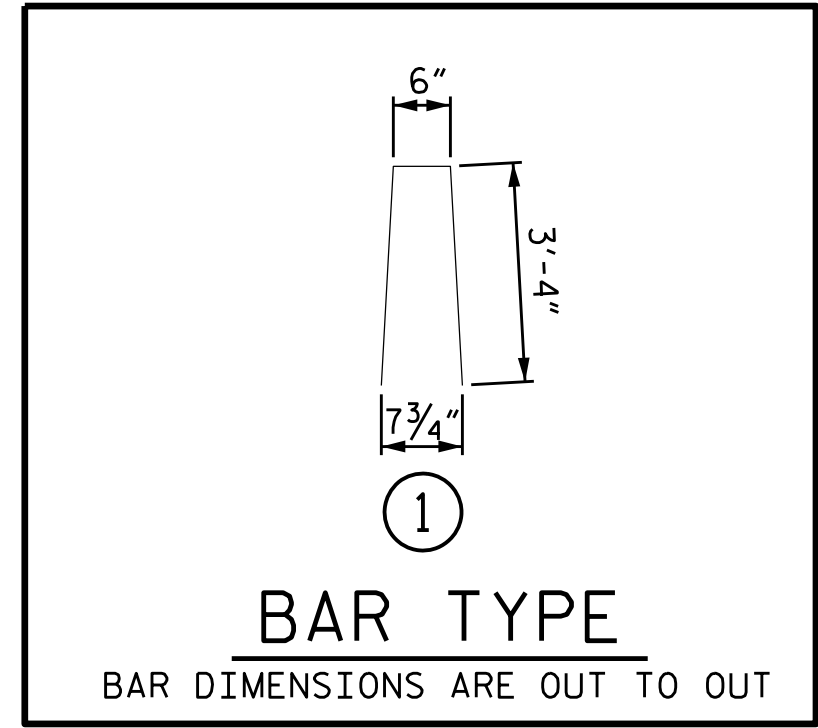
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-9
1			3			TOTAL SHEETS
2			4			17



ELASTOMERIC BEARING DETAILS

ELASTOMER IN ALL BEARINGS SHALL BE 60 DUROMETER HARDNESS.

END OF RAIL DETAILS



BILL OF MATERIAL FOR VERTICAL CONCRETE BARRIER RAIL

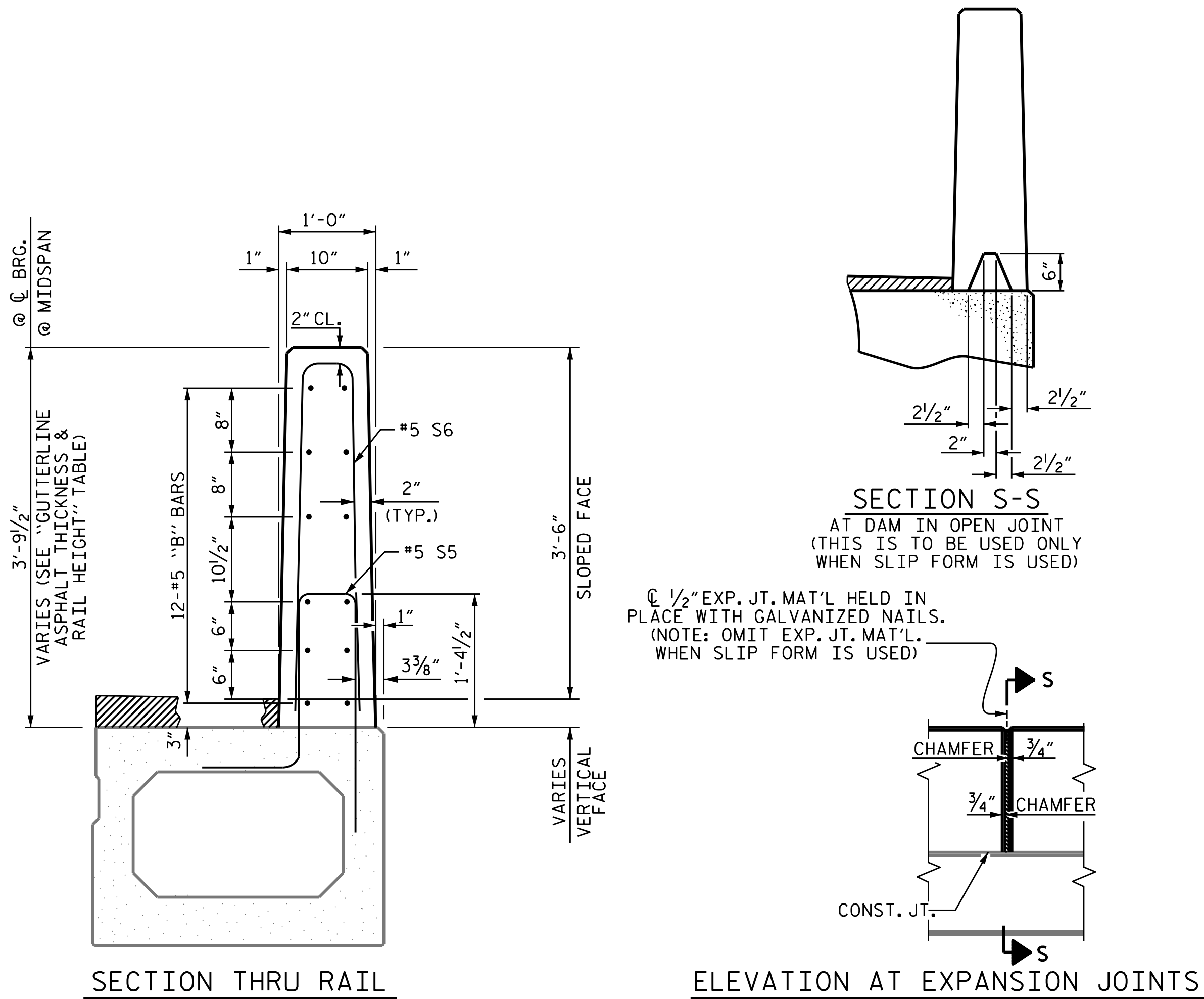
BAR	BARS PER PAIR OF EXTERIOR UNITS	SIZE	TYPE	LENGTH	WEIGHT
85' UNIT					
* B9	72	#5	STR	27'-11"	2096
* S6	236	#5	1	7'-2"	1764
* EPOXY COATED REINFORCING STEEL				LBS.	3860
CLASS AA CONCRETE				CU.YDS.	22.0
TOTAL VERTICAL CONCRETE BARRIER RAIL				LN. FT.	170.0

BOX BEAM UNITS REQUIRED

	NUMBER	LENGTH	TOTAL LENGTH
EXTERIOR B.B.	2	85'-0"	170'-0"
INTERIOR B.B.	9	85'-0"	765'-0"
TOTAL	11	—	935'-0"

GUTTERLINE ASPHALT THICKNESS & RAIL HEIGHT

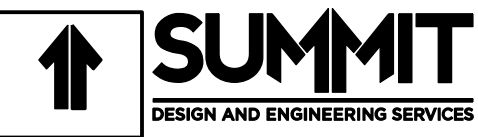
	ASPHALT OVERLAY THICKNESS @ MID-SPAN	RAIL HEIGHT @ MID-SPAN
85' UNIT	1 1/2"	3'-7 1/2"



VERTICAL CONCRETE BARRIER RAIL DETAILS

ASSEMBLED BY :	M. SACKO	DATE :	03/2026
CHECKED BY :	J. R. McROY	DATE :	03/2026
DRAWN BY :	DCE 10/11	REV. 5/18	MAA/THC
CHECKED BY :	TMG 11/11		

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Signed by:
Jennifer R. McRoy

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PROJECT NO. BP11.R050

YADKIN COUNTY

STATION: 15+29.50 -L-

SHEET 5 OF 5

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD
3'-0" X 2'-9"
PRESTRESSED CONCRETE
BOX BEAM UNIT

REVISIONS

NO.	BY:	DATE:	NO.	BY:	DATE:	SHEET NO.
1			3			S-10
2			4			TOTAL SHEETS 17

STD. NO. 33PCBB8-90S

NOTES

THE GUARDRAIL ANCHOR ASSEMBLY SHALL CONSIST OF A ¼" HOLD DOWN PLATE AND 7 - ⅞" Ø BOLTS WITH NUTS AND WASHERS.

THE HOLD-DOWN PLATE SHALL CONFORM TO AASHTO M270 GRADE 36. AFTER FABRICATION, THE HOLD-DOWN PLATE SHALL BE HOT-DIP GALVANIZED IN ACCORDANCE WITH AASHTO M111.

BOLTS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A307 AND NUTS SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M291. BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED. (AT THE CONTRACTOR'S OPTION, STAINLESS STEEL BOLTS, NUTS AND WASHERS MAY BE USED AS AN ALTERNATE FOR THE ⅞" Ø GALVANIZED BOLTS, NUTS AND WASHERS. THEY SHALL CONFORM TO OR EXCEED THE MECHANICAL REQUIREMENTS OF ASTM A307. THE USE OF THIS ALTERNATE SHALL BE APPROVED BY THE ENGINEER.)

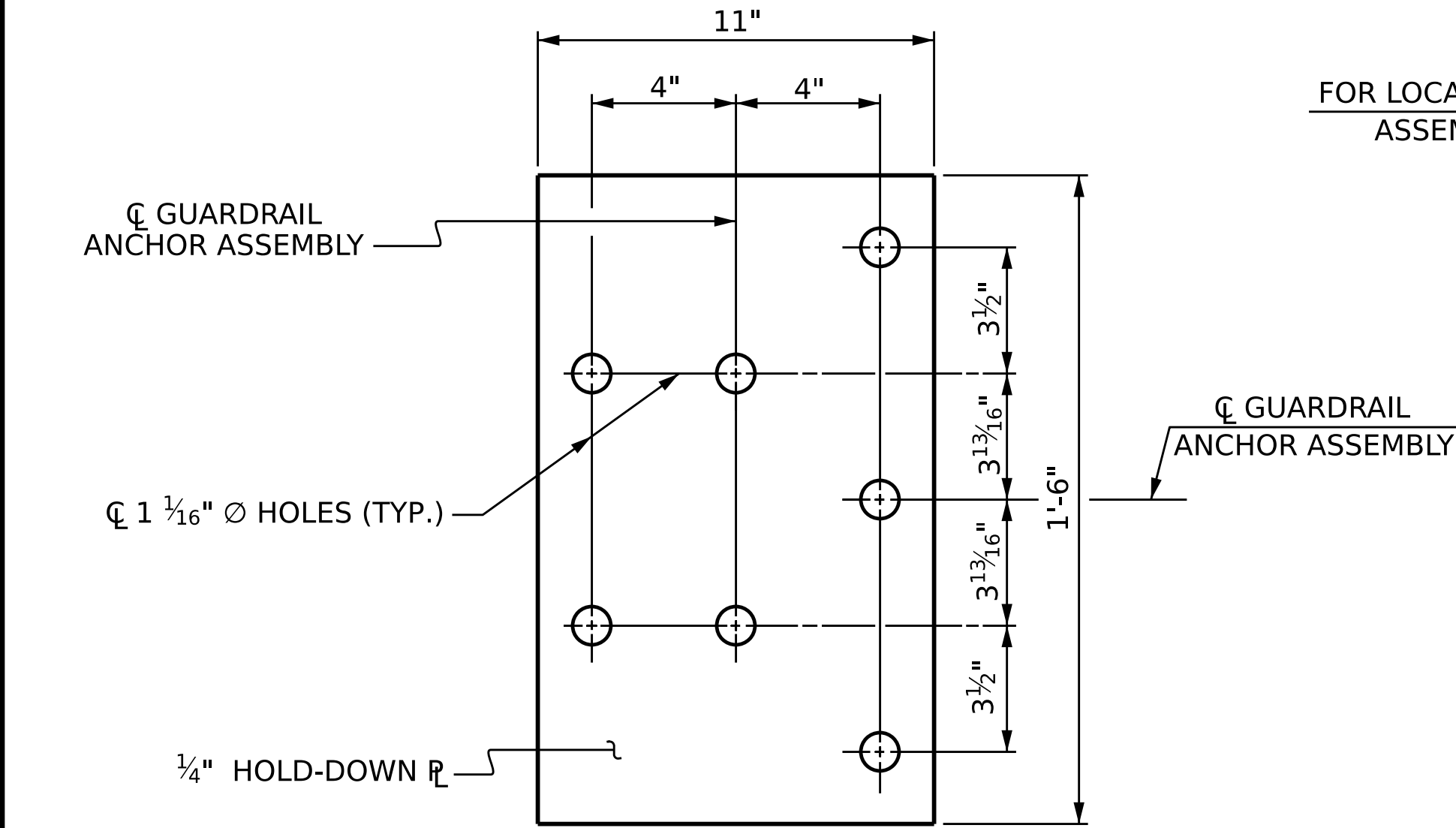
THE GUARDRAIL ANCHOR ASSEMBLY IS REQUIRED AT ALL POINTS WHERE APPROACH GUARDRAIL IS TO BE ATTACHED TO THE END OF BARRIER RAIL. FOR POINTS OF ATTACHMENT, SEE SKETCH.

AFTER INSTALLATION, THE EXPOSED THREAD OF THE BOLT SHALL BE BURRED WITH A SHARP POINTED TOOL.

THE COST OF THE GUARDRAIL ANCHOR ASSEMBLY SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR VERTICAL CONCRETE BARRIER RAIL.

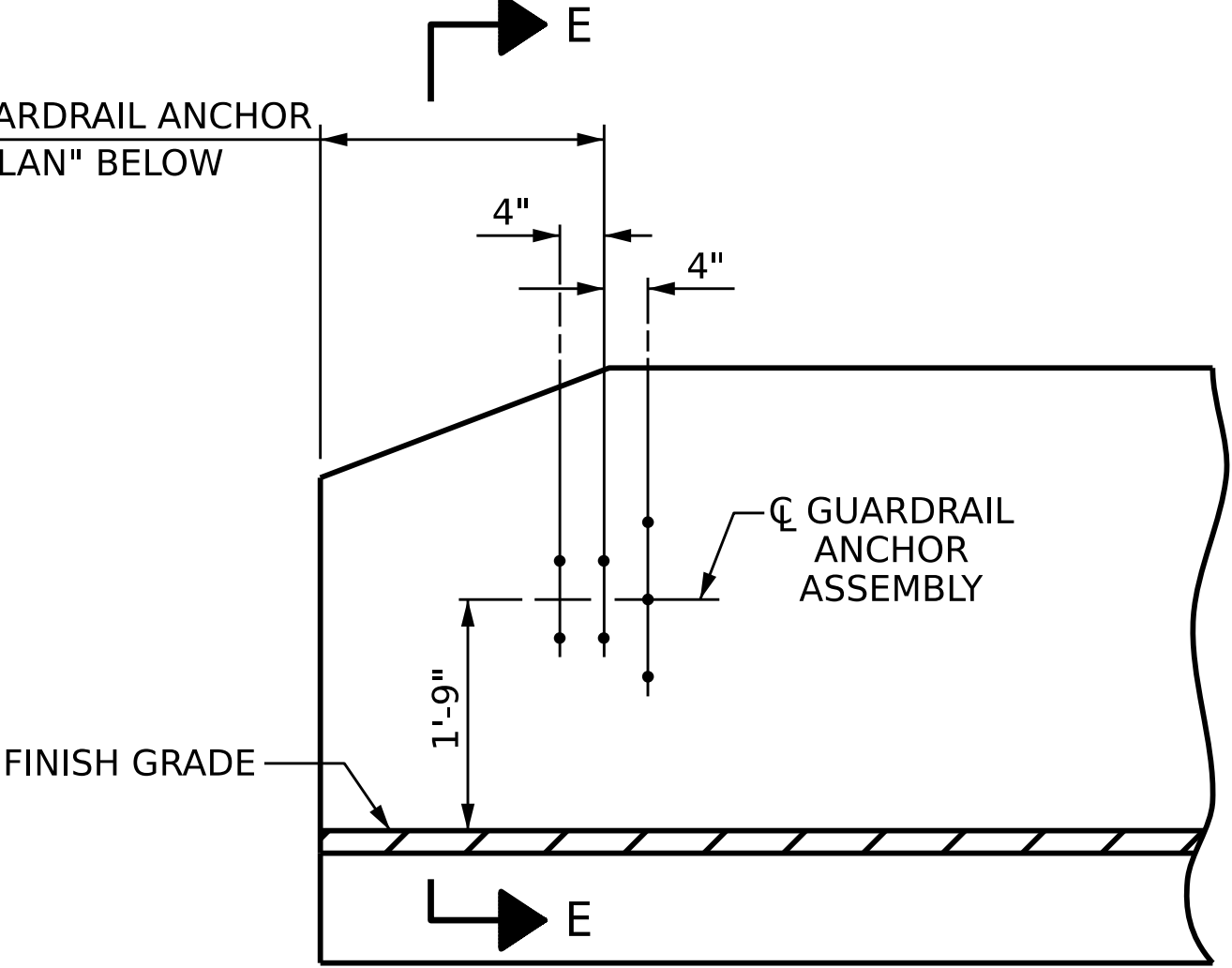
THE VERTICAL REINFORCING BARS MAY BE SHIFTED SLIGHTLY IN THE VERTICAL CONCRETE BARRIER RAIL TO CLEAR ASSEMBLY BOLTS.

THE 1 ¼" Ø HOLES SHALL BE FORMED OR DRILLED WITH A CORE BIT. IMPACT TOOLS WILL NOT BE PERMITTED. ANY CONCRETE DAMAGED BY THIS WORK SHALL BE REPAIRED TO THE SATISFACTION OF THE ENGINEER.

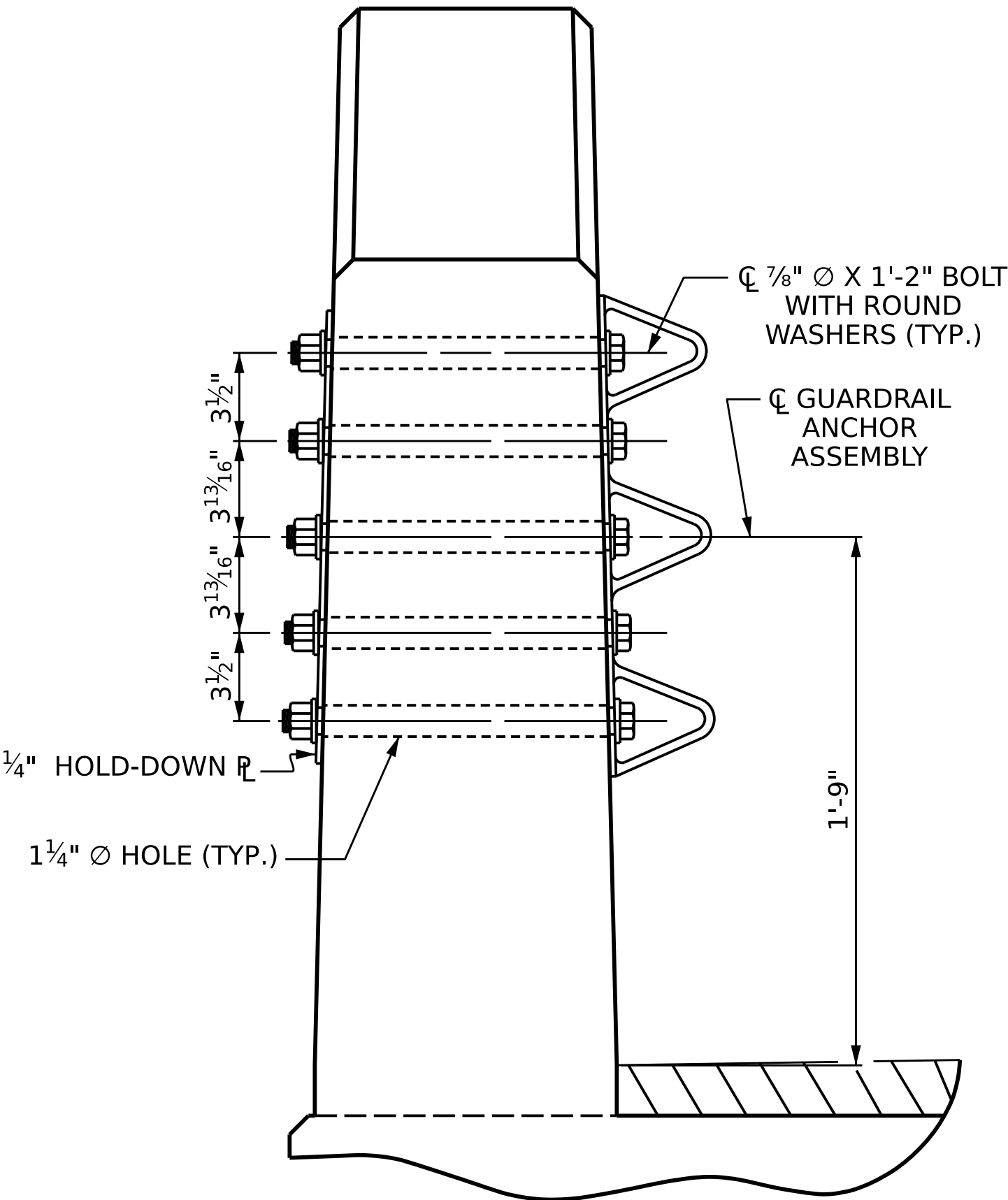


PLAN

FOR LOCATION OF GUARDRAIL ANCHOR ASSEMBLY, SEE "PLAN" BELOW

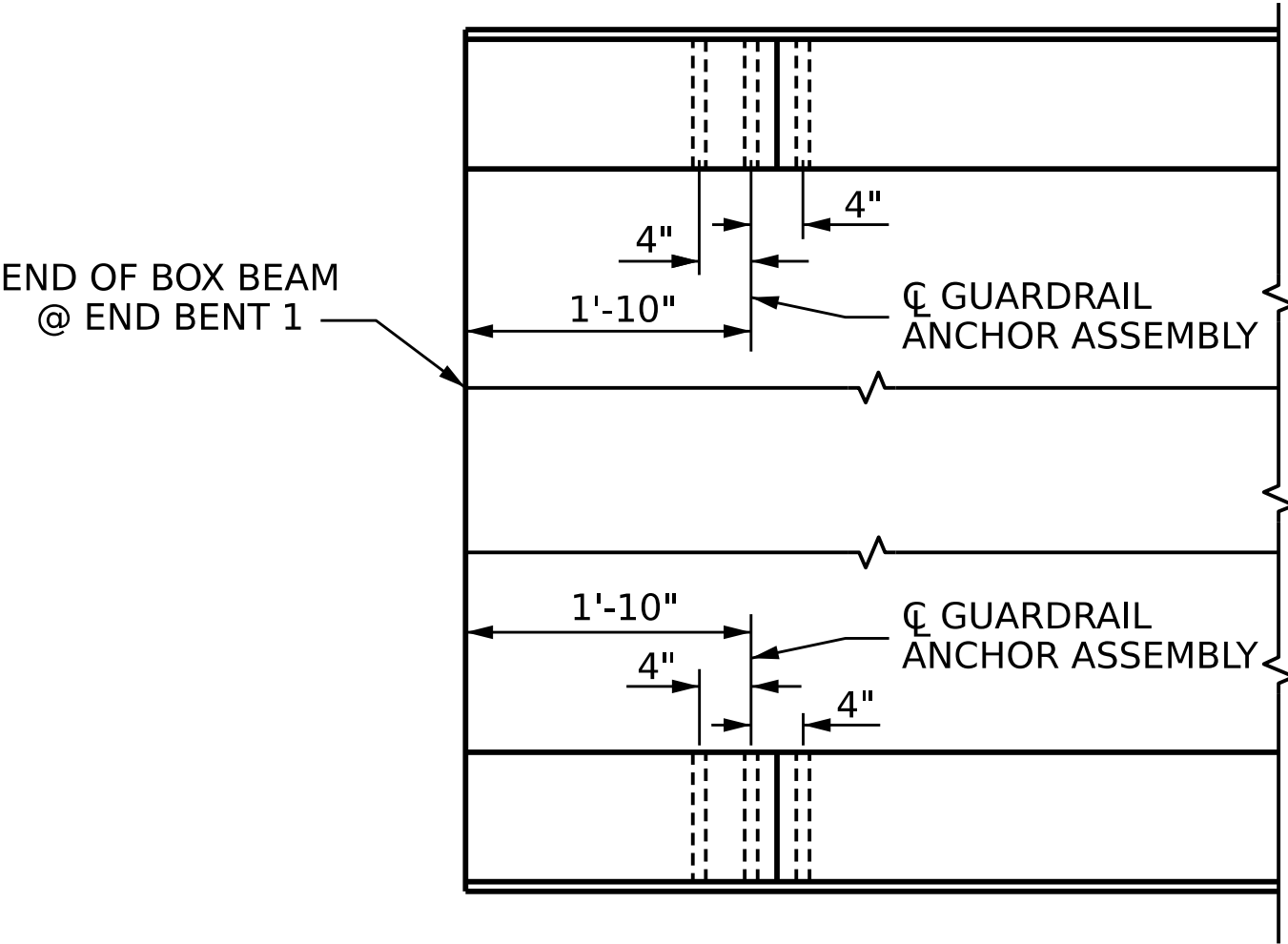


ELEVATION



SECTION E-E

GUARDRAIL ANCHOR ASSEMBLY DETAILS



LOCATION OF ANCHORS FOR GUARDRAIL

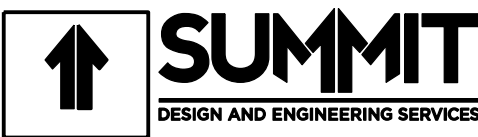
(END BENT 1 SHOWN, END BENT 2 SIMILAR)



SKETCH SHOWING POINTS OF ATTACHMENT

* DENOTES GUARDRAIL ANCHOR ASSEMBLY

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Signed by:
Jennifer R. McRoy

4/22/2026

PROJECT NO. BP11.R050
YADKIN COUNTY
STATION: 15+29.50 -L-

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
STANDARD
GUARDRAIL ANCHORAGE
DETAILS
FOR VERTICAL CONCRETE
BARRIER RAIL

ASSEMBLED BY :	M. SACKO	DATE :	03/2026
CHECKED BY :	J. R. McROY	DATE :	03/2026
DRAWN BY :	MAA 5/10	REV. 1/15	MAA/TMG
CHECKED BY :	GM 5/10	REV. 12/17	MAA/THC
		REV. 5/18	MAA/THC

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SIGNATURES COMPLETED

REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		

SHEET NO.
S-11
TOTAL SHEETS
17

NOTES

STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR DOWELS.

THE CONCRETE IN THE SHADED AREA OF THE WING SHALL BE POURED AFTER THE VERTICAL CONCRETE BARRIER RAIL IS CAST IF SLIP FORMING IS USED.

FOR PILE SPlice DETAILS, SEE SHEET 4 OF 4.

FOR WING DETAILS, SEE SHEET 3 OF 4.

TOP OF PILE ELEVATIONS

①	EL. 1036.48
②	EL. 1036.36
③	EL. 1036.24
④	EL. 1036.12
⑤	EL. 1036.00
⑥	EL. 1035.88
⑦	EL. 1035.76

0.02 SLOPE

PROJECT NO. BP11.R050

YADKIN COUNTY

STATION: 15+29.50 -L-

SHEET 1 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUBSTRUCTURE

END BENT No. 1

REVISIONS

NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		

SHEET NO.

S-12

TOTAL

SHEETS

17

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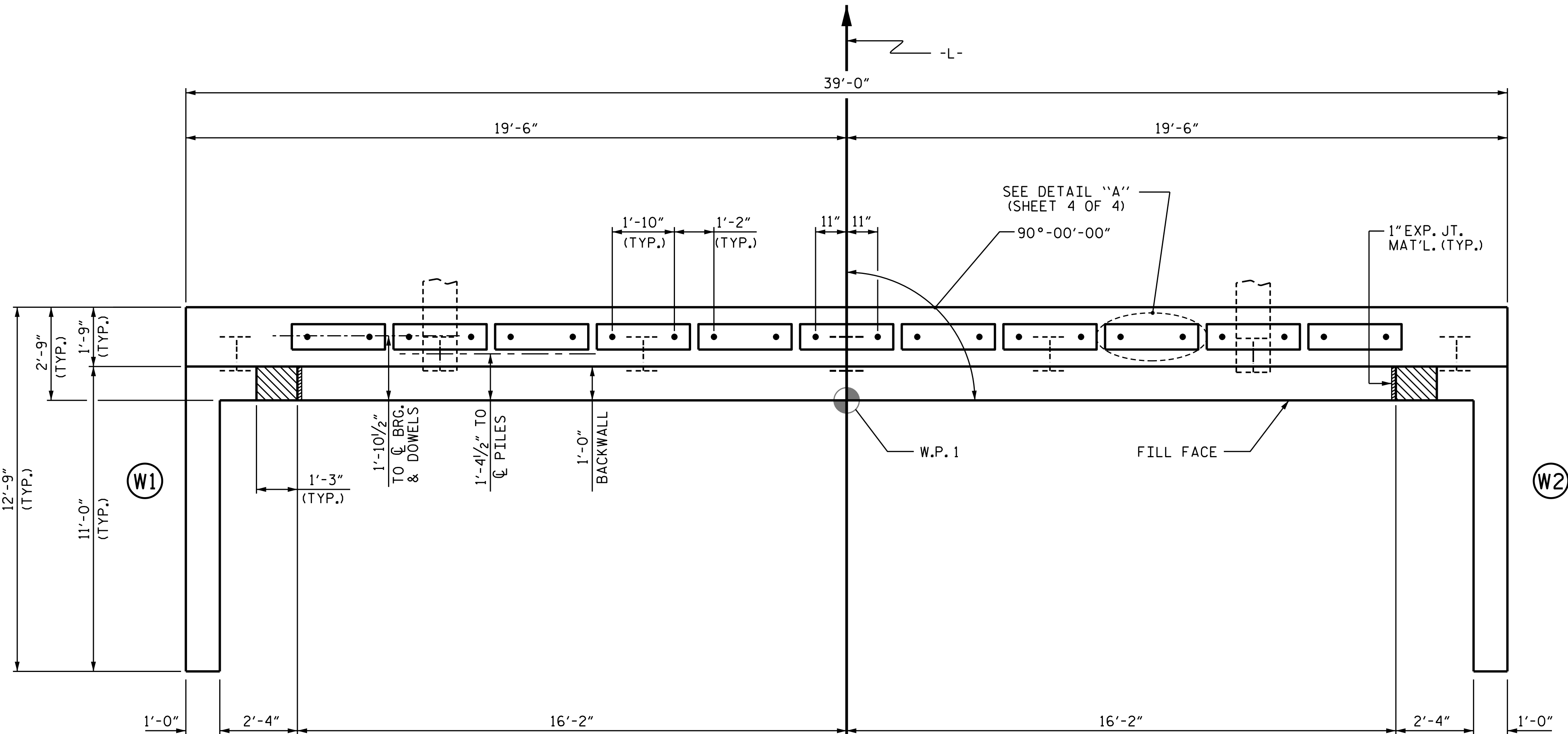
Signed by:

Jennifer R. McRoy

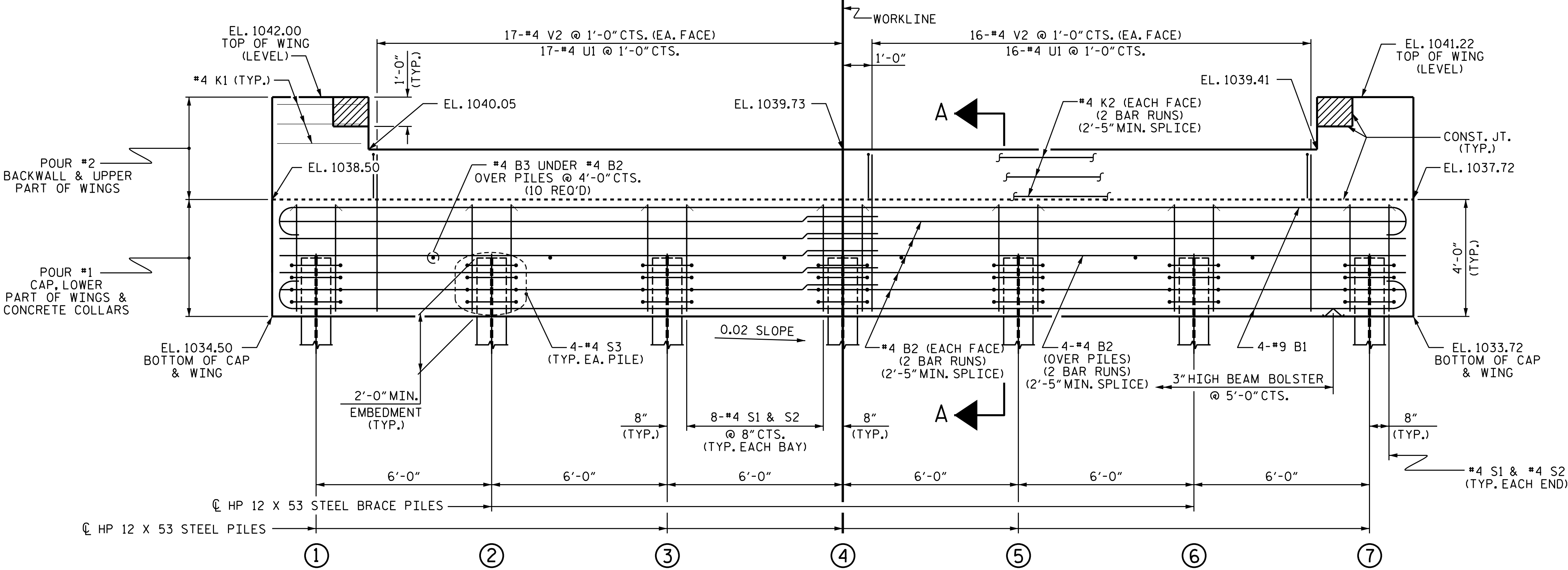
4/22/2026

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STD. NO. EB_33_90S4_33BB



PLAN



ELEVATION

WINGS NOT SHOWN FOR CLARITY.
FOR SECTION A-A, SEE SHEET 4 OF 4.
CONCRETE COLLARS FOR STEEL PILES NOT SHOWN IN PLAN AND ELEVATION VIEWS FOR CLARITY.
SEE "CORROSION PROTECTION FOR STEEL PILES DETAIL", SHEET 4 OF 4.

ASSEMBLED BY :	M. SACKO	DATE :	03/2026
CHECKED BY :	J. R. MCROY	DATE :	03/2026
DRAWN BY :	WJH 12/II	REV. 4/15	MAA/TMG
CHECKED BY :	AAC 12/II		

NOTES

STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR DOWELS.

THE CONCRETE IN THE SHADED AREA OF THE WING SHALL BE POURED AFTER THE VERTICAL CONCRETE BARRIER RAIL IS CAST IF SLIP FORMING IS USED.

FOR PILE SPlice DETAILS, SEE SHEET 4 OF 4.

FOR WING DETAILS, SEE SHEET 3 OF 4.

TOP OF PILE ELEVATIONS

①	EL. 1036.73
②	EL. 1036.61
③	EL. 1036.49
④	EL. 1036.37
⑤	EL. 1036.25
⑥	EL. 1036.13
⑦	EL. 1036.01

PROJECT NO. BP11.R050

YADKIN COUNTY

STATION: 15+29.50 -L-

SHEET 2 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

END BENT No. 2

REVISIONS

NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		

SHEET NO.

S-13

TOTAL SHEETS

17

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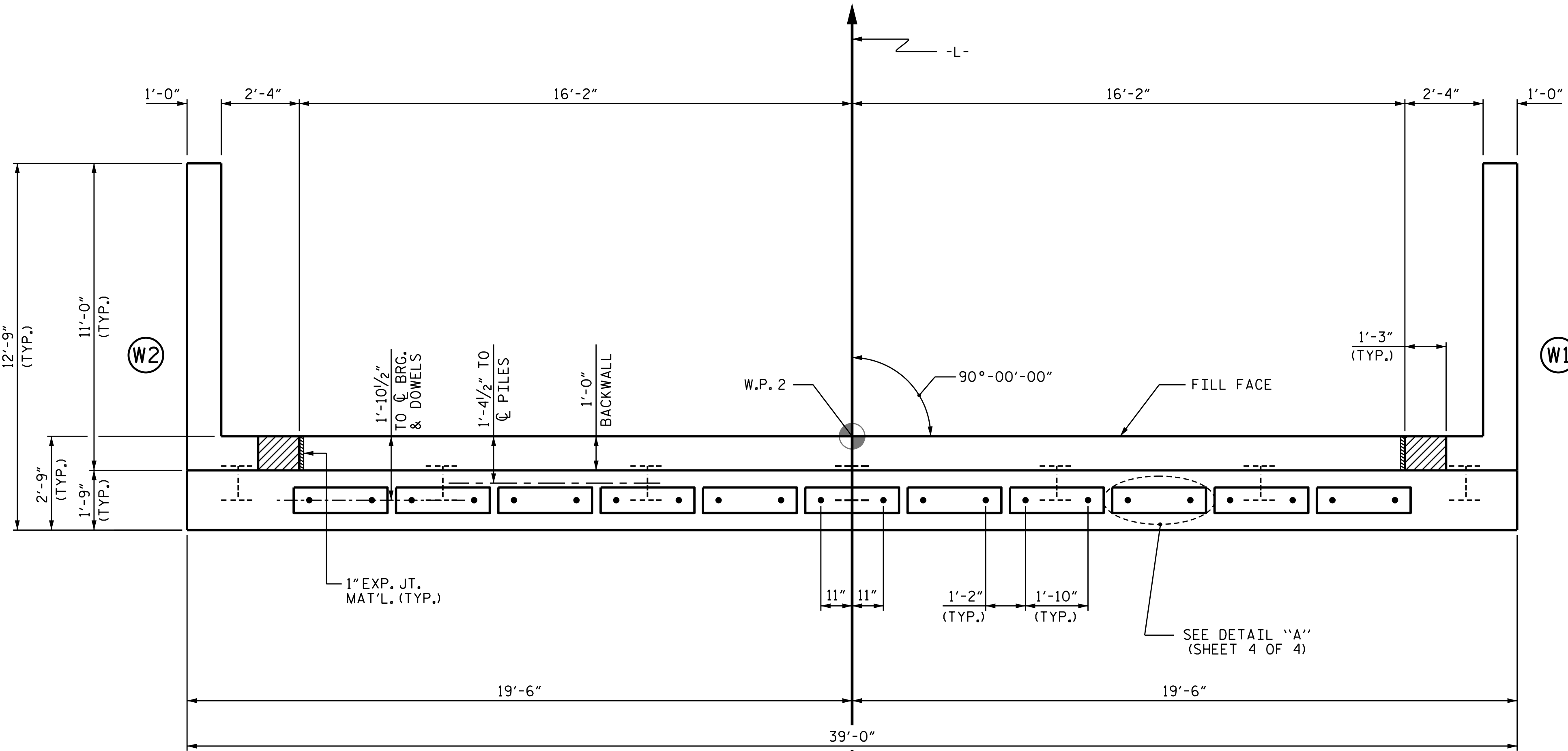


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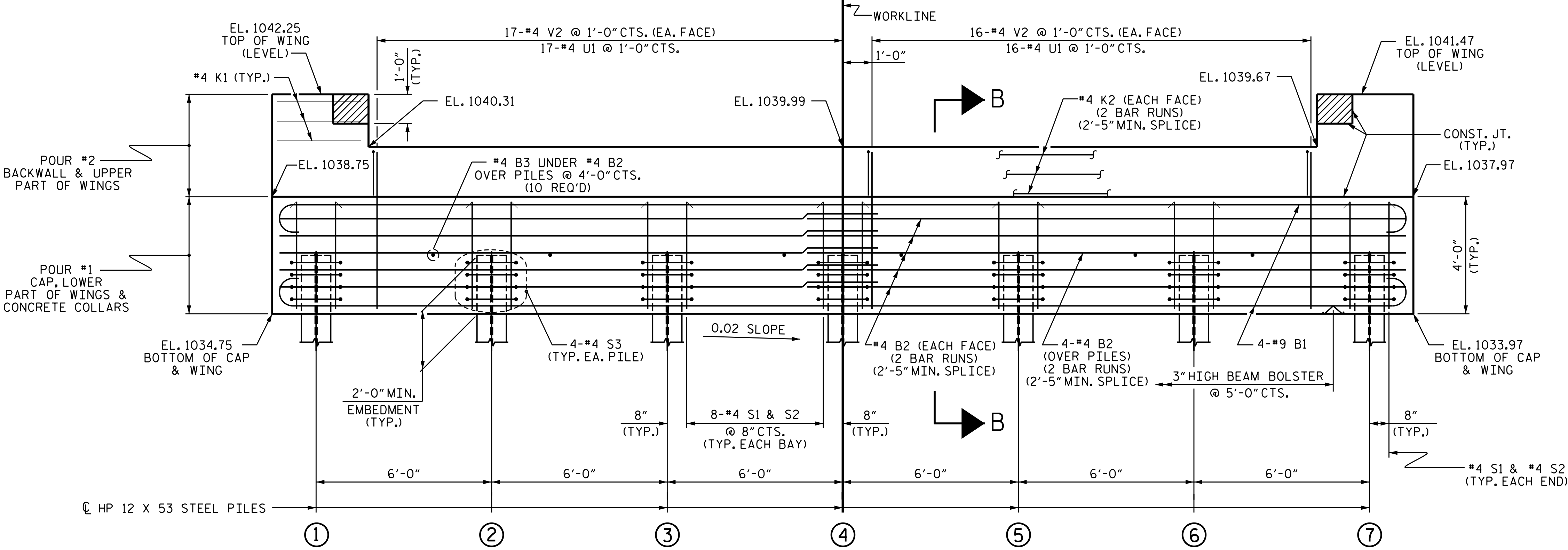


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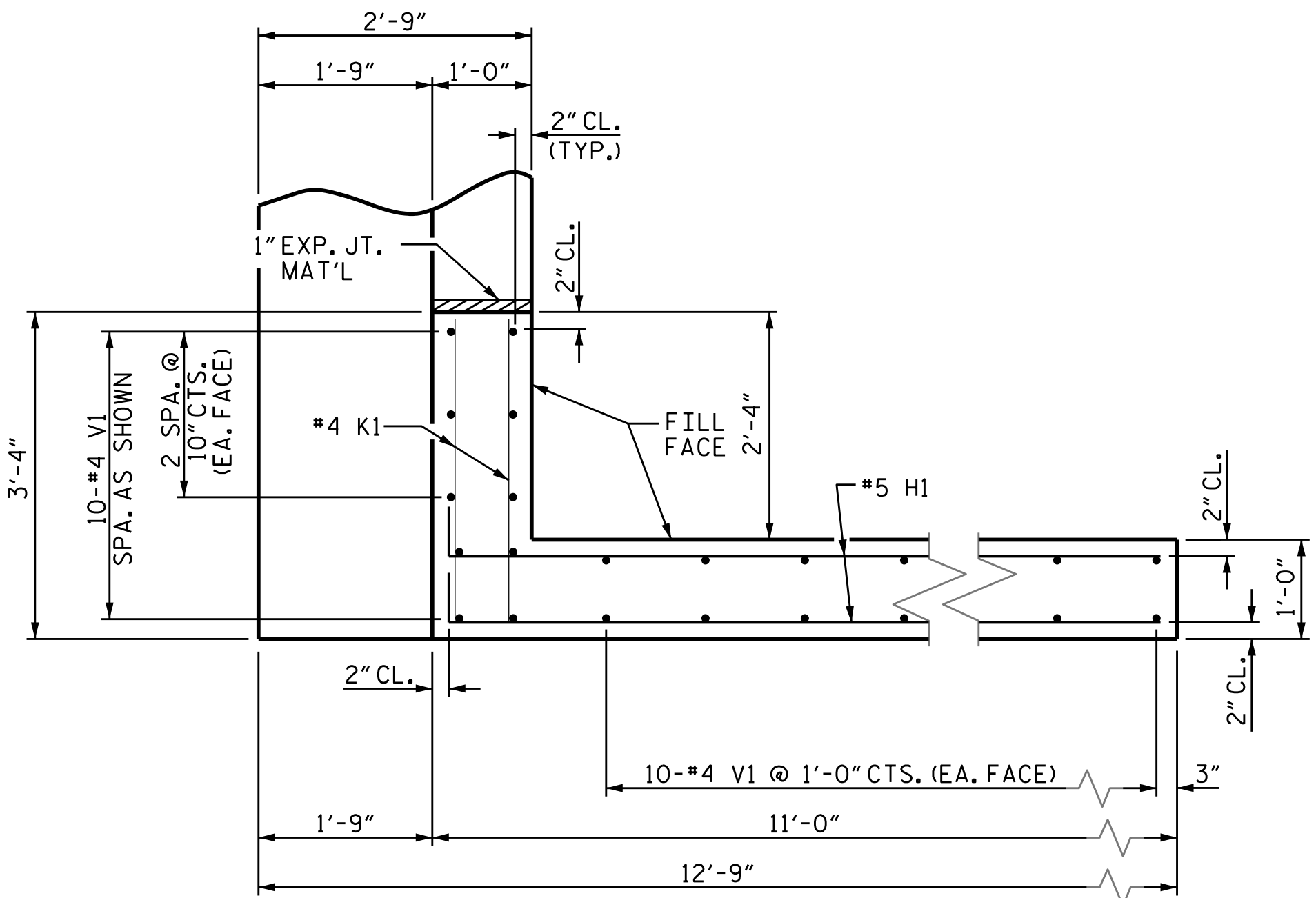
PLAN



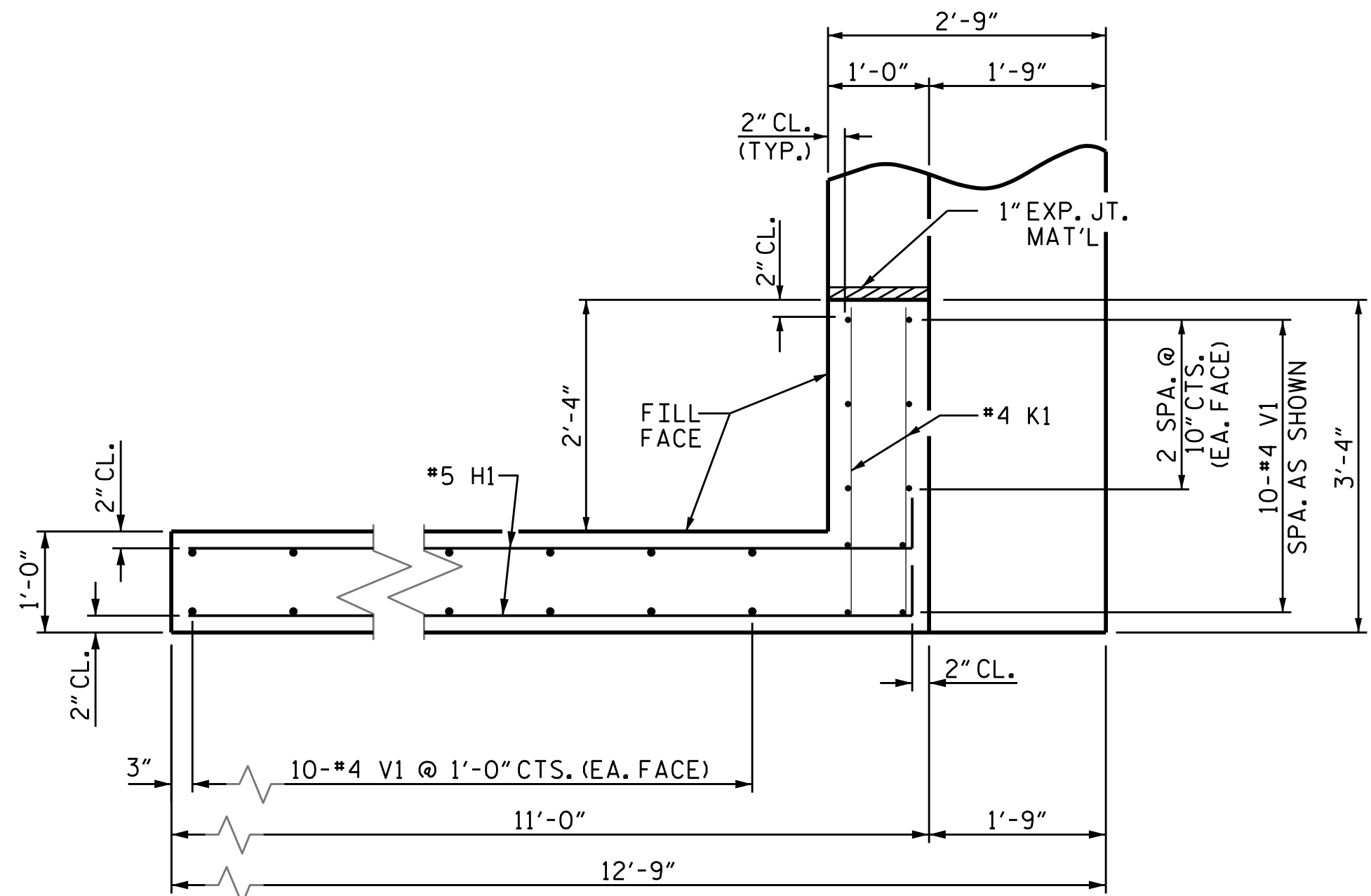
ELEVATION

WINGS NOT SHOWN FOR CLARITY.
FOR SECTION B-B, SEE SHEET 4 OF 4.
CONCRETE COLLARS FOR STEEL PILES NOT SHOWN IN PLAN AND ELEVATION VIEWS FOR CLARITY.
SEE "CORROSION PROTECTION FOR STEEL PILES DETAIL", SHEET 4 OF 4.

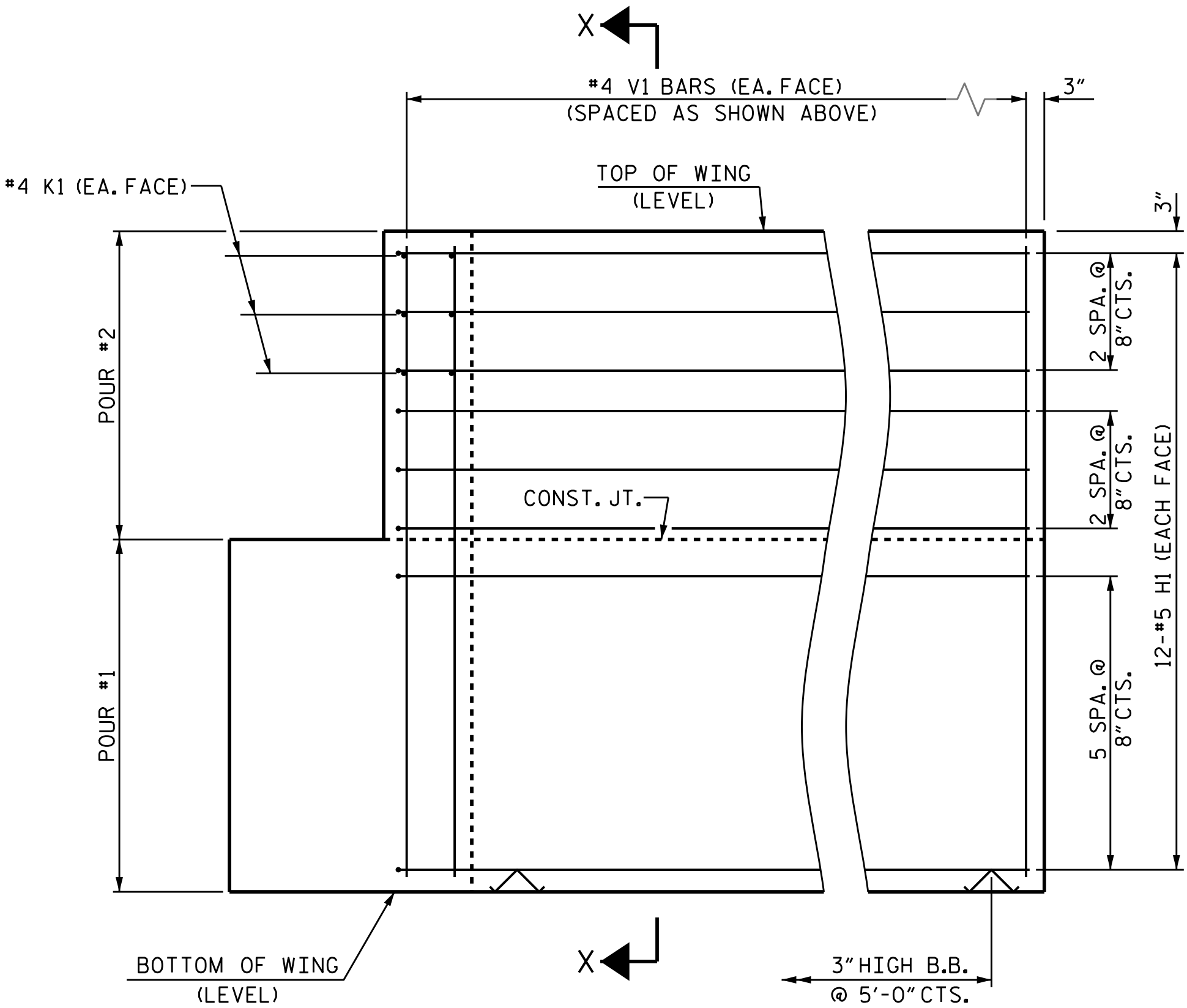
DRAWN BY : M. SACKO DATE : 03/2026
CHECKED BY : J. R. McROY DATE : 03/2026
DESIGN ENGINEER OF RECORD: J. R. McROY DATE : 03/2026



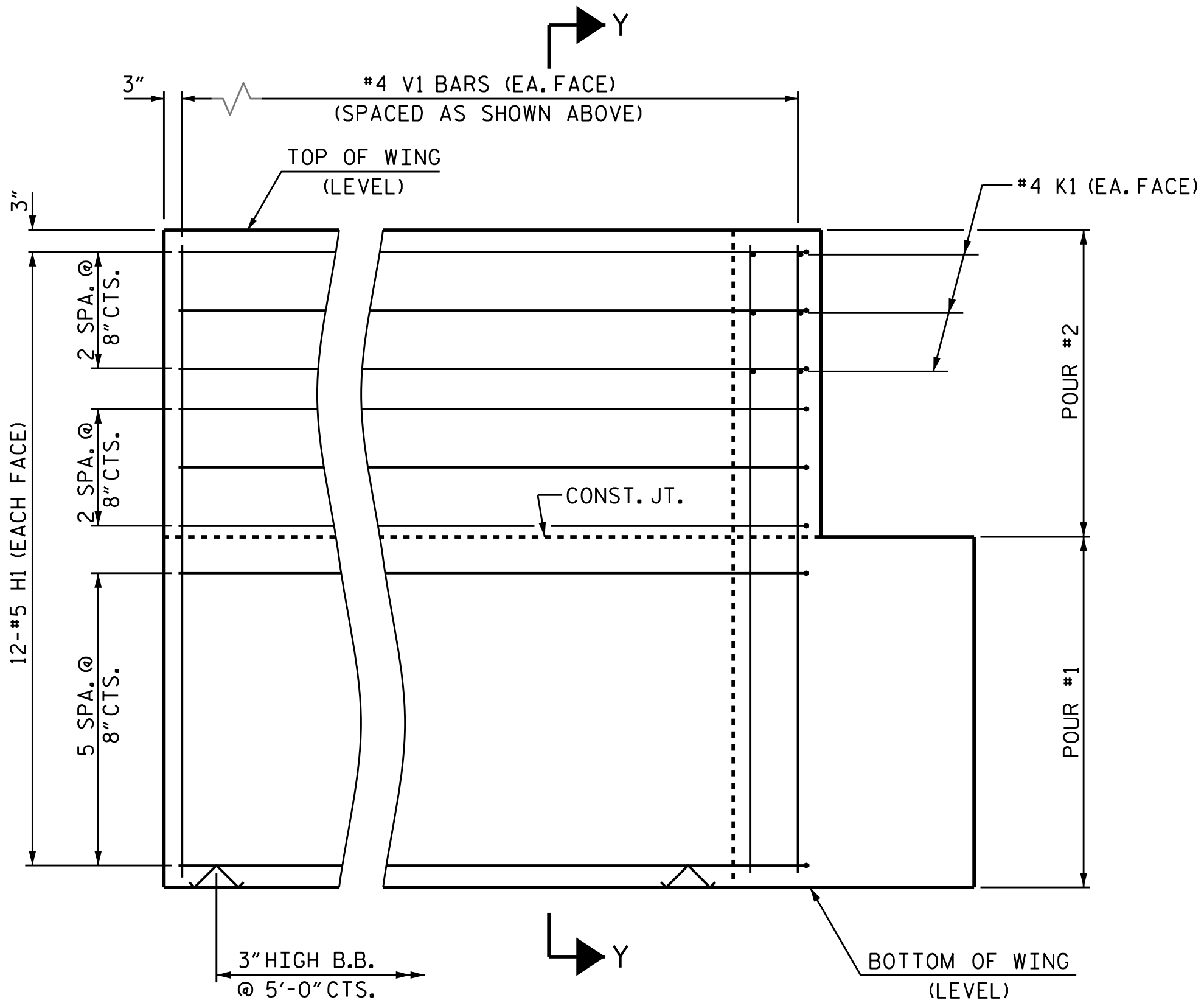
PLAN OF WING (W1)



PLAN OF WING (W2)

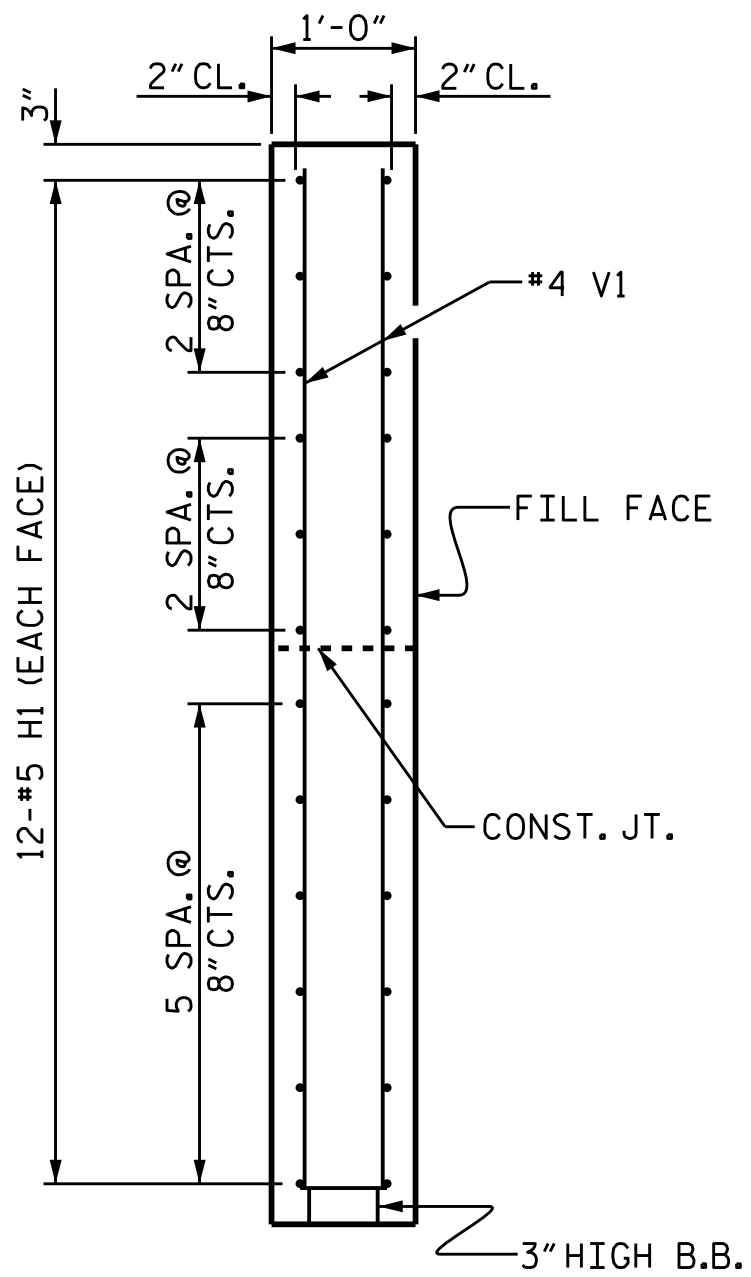


ELEVATION OF WING (W1)

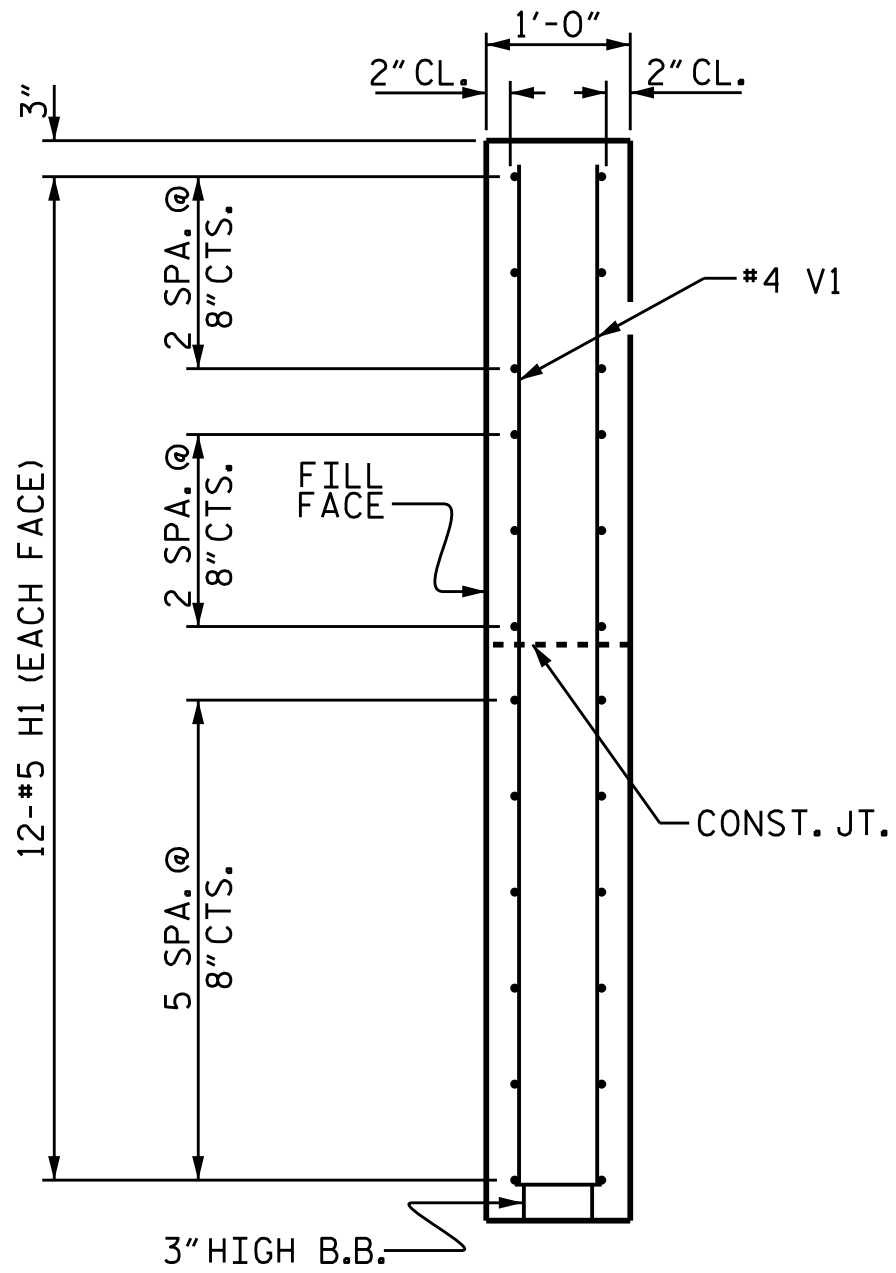


ELEVATION OF WING (W2)

WING DETAILS

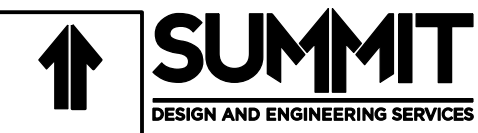


SECTION X-X



SECTION Y-Y

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PROJECT NO. BP11.R050
YADKIN COUNTY
STATION: 15+29.50 -L-

SHEET 3 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUBSTRUCTURE

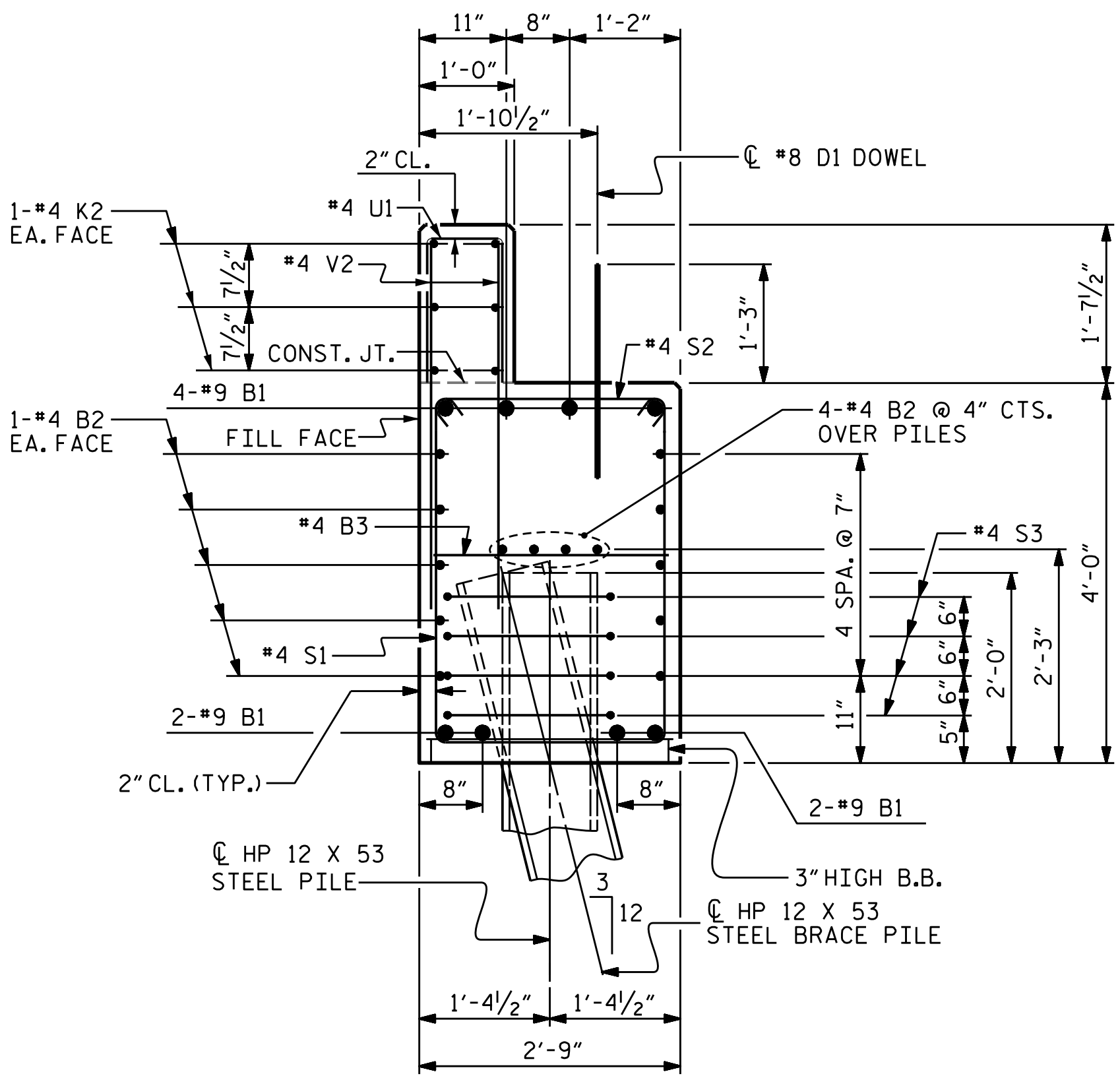
END BENT
WING DETAILS

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-14
1			3			TOTAL SHEETS
2			4			17

DOCUMENT NOT CONSIDERED
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SIGNATURES COMPLETED

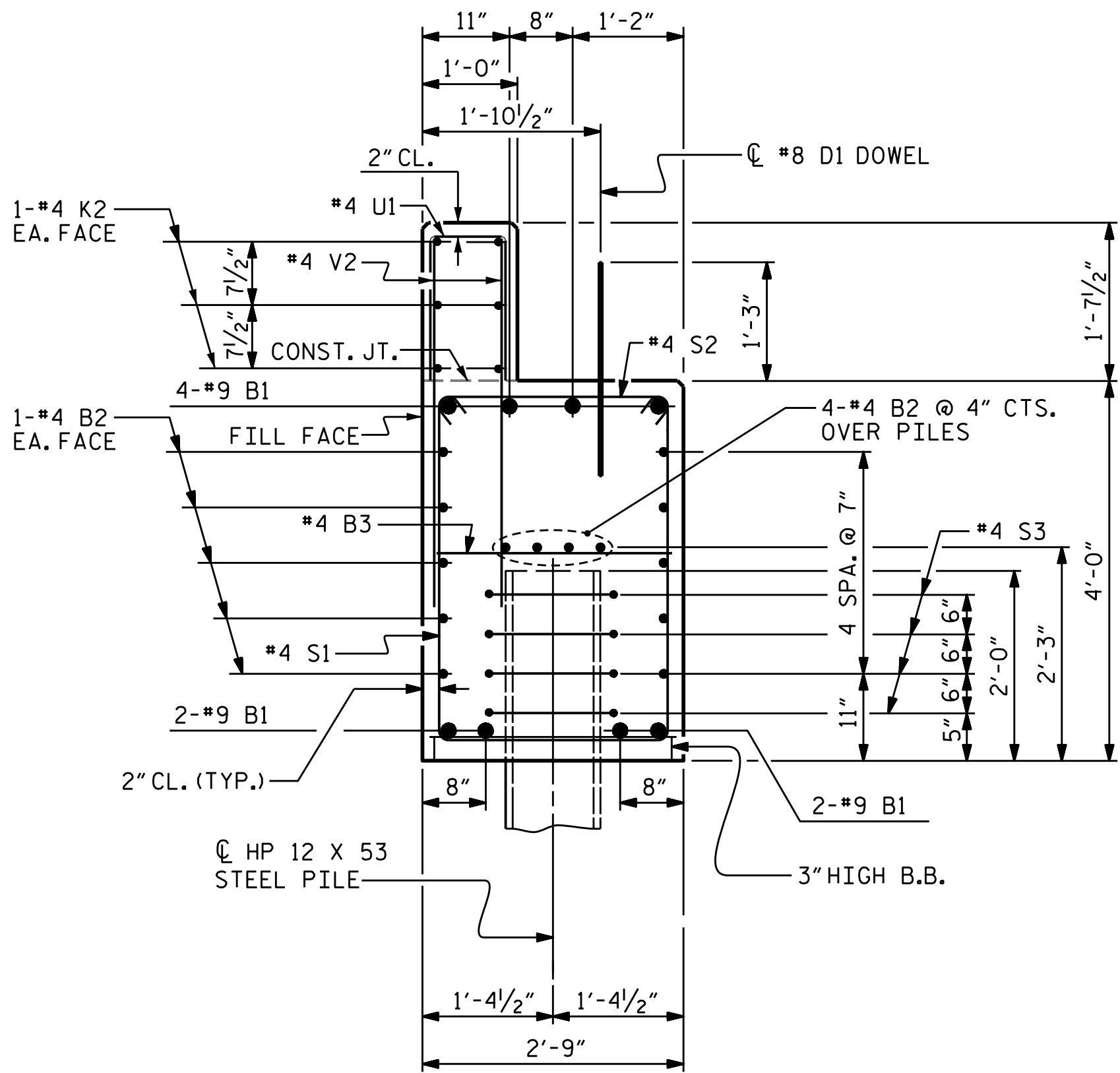
ASSEMBLED BY :	M. SACKO	DATE :	03/2026
CHECKED BY :	J. R. McROY	DATE :	03/2026
DRAWN BY :	WJH 12/11	REV. 4/15	MAA/TMG
CHECKED BY :	AAC 12/11		

STD. NO. EB_33_90S4_33BB



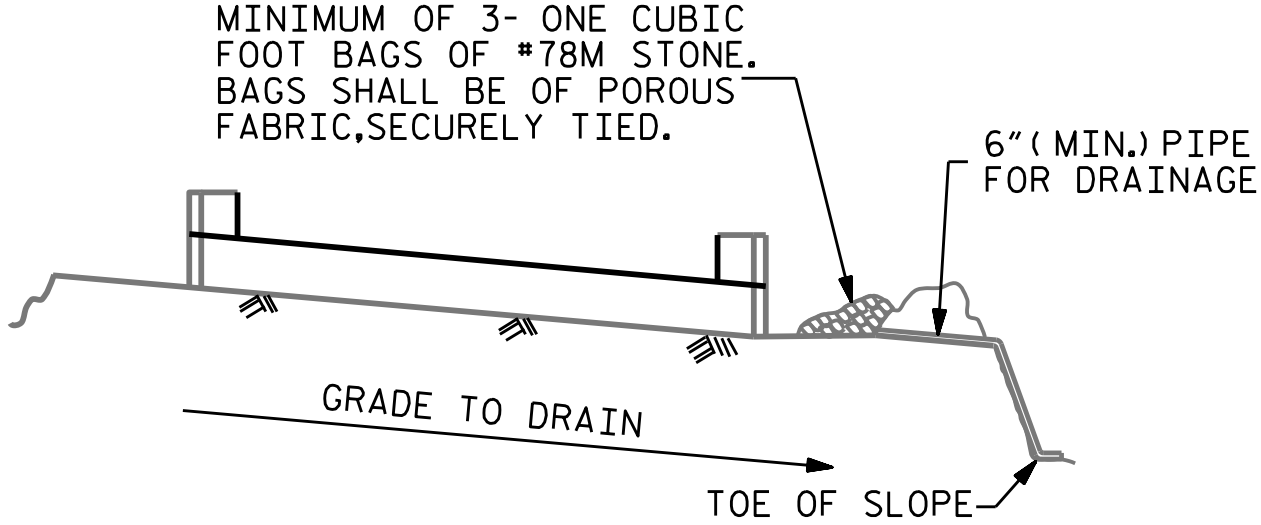
SECTION A-A

(CONCRETE COLLAR NOT SHOWN FOR CLARITY.
SEE "CORROSION PROTECTION FOR STEEL PILES DETAIL.")



SECTION B-B

(CONCRETE COLLAR NOT SHOWN FOR CLARITY.
SEE "CORROSION PROTECTION FOR STEEL PILES DETAIL.")

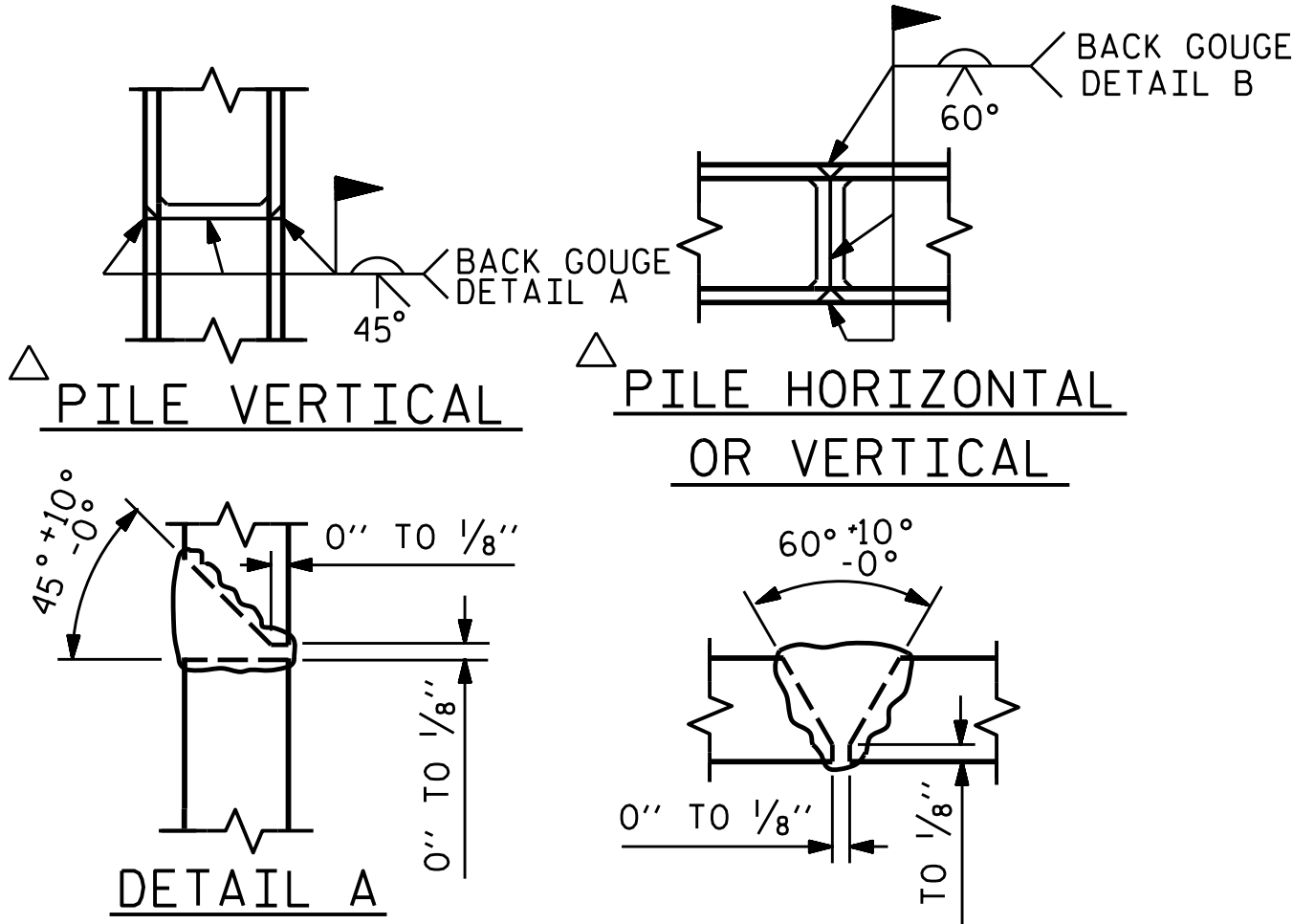


BAGGED STONE AND PIPE SHALL BE PLACED IMMEDIATELY AFTER COMPLETION OF END BENT EXCAVATION. PIPE MAY BE EITHER CONCRETE, CORRUGATED STEEL, CORRUGATED ALUMINUM ALLOY, OR CORRUGATED PLASTIC. PERFORATED PIPE WILL NOT BE ALLOWED.

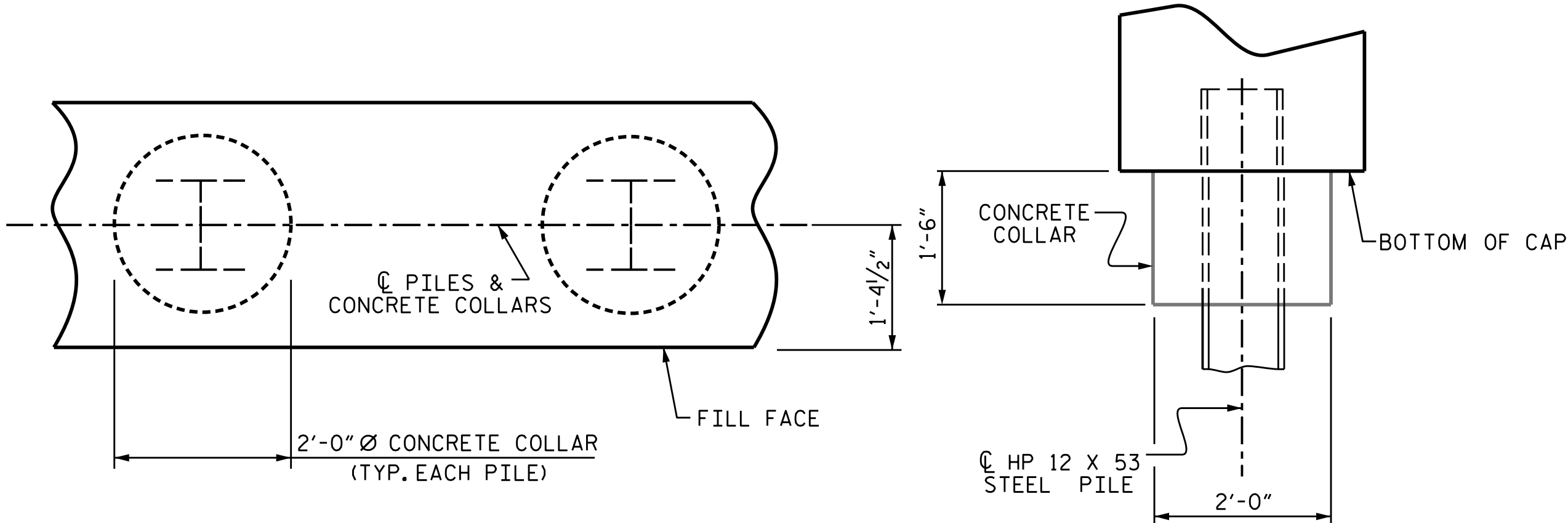
BAGGED STONE SHALL REMAIN IN PLACE UNTIL THE ENGINEER DIRECTS THAT IT BE REMOVED. THE CONTRACTOR SHALL REMOVE AND DISPOSE OF SILT ACCUMULATIONS AT BAGGED STONE WHEN SO DIRECTED BY THE ENGINEER. BAGS SHALL BE REMOVED AND REPLACED WHENEVER THE ENGINEER DETERMINES THAT THEY HAVE DETERIORATED AND LOST THEIR EFFECTIVENESS.

NO SEPARATE PAYMENT WILL BE MADE FOR THIS WORK AND THE ENTIRE COST OF THIS WORK SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR THE SEVERAL PAY ITEMS.

TEMPORARY DRAINAGE AT END BENT



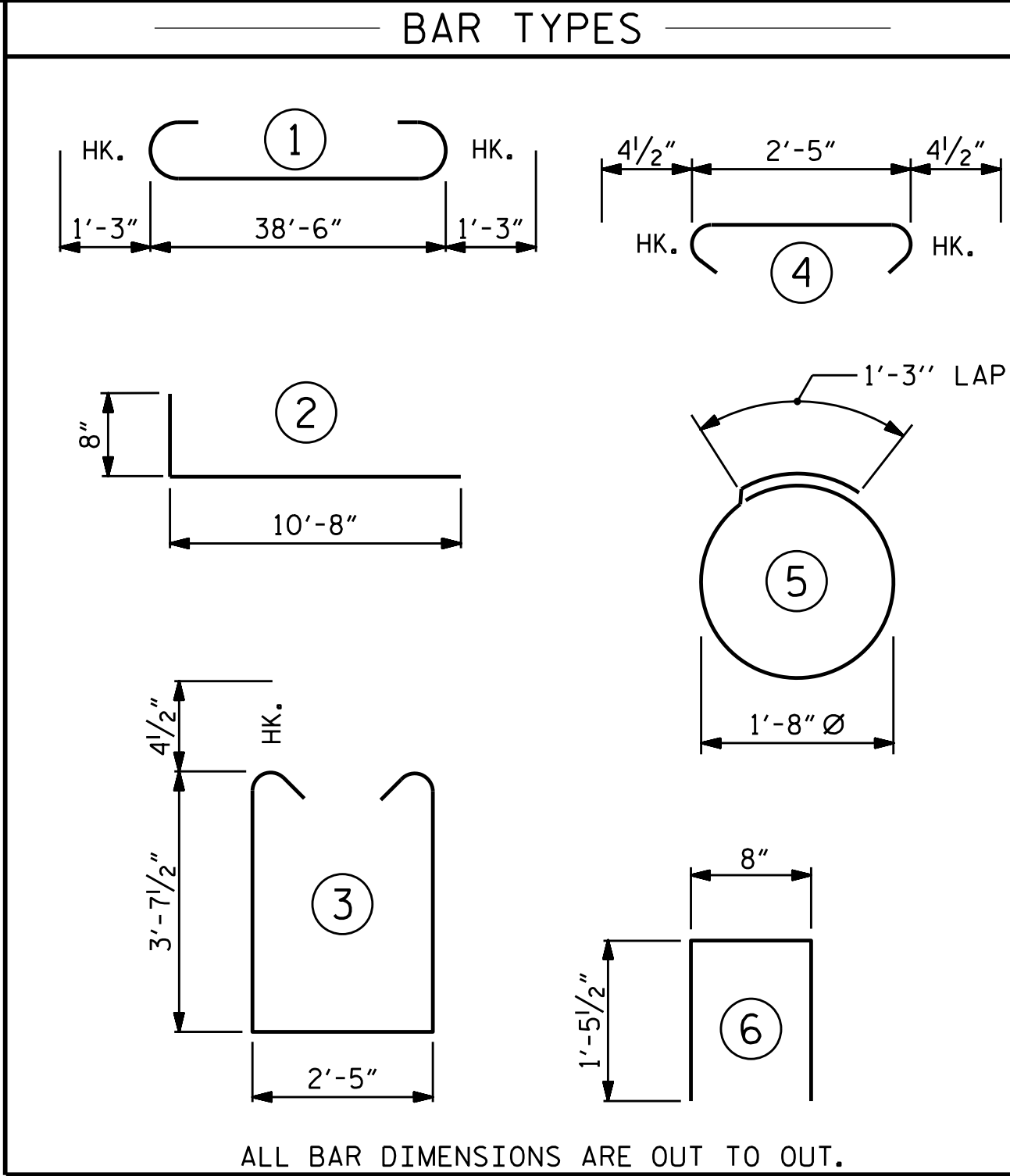
PILE SPLICE DETAILS



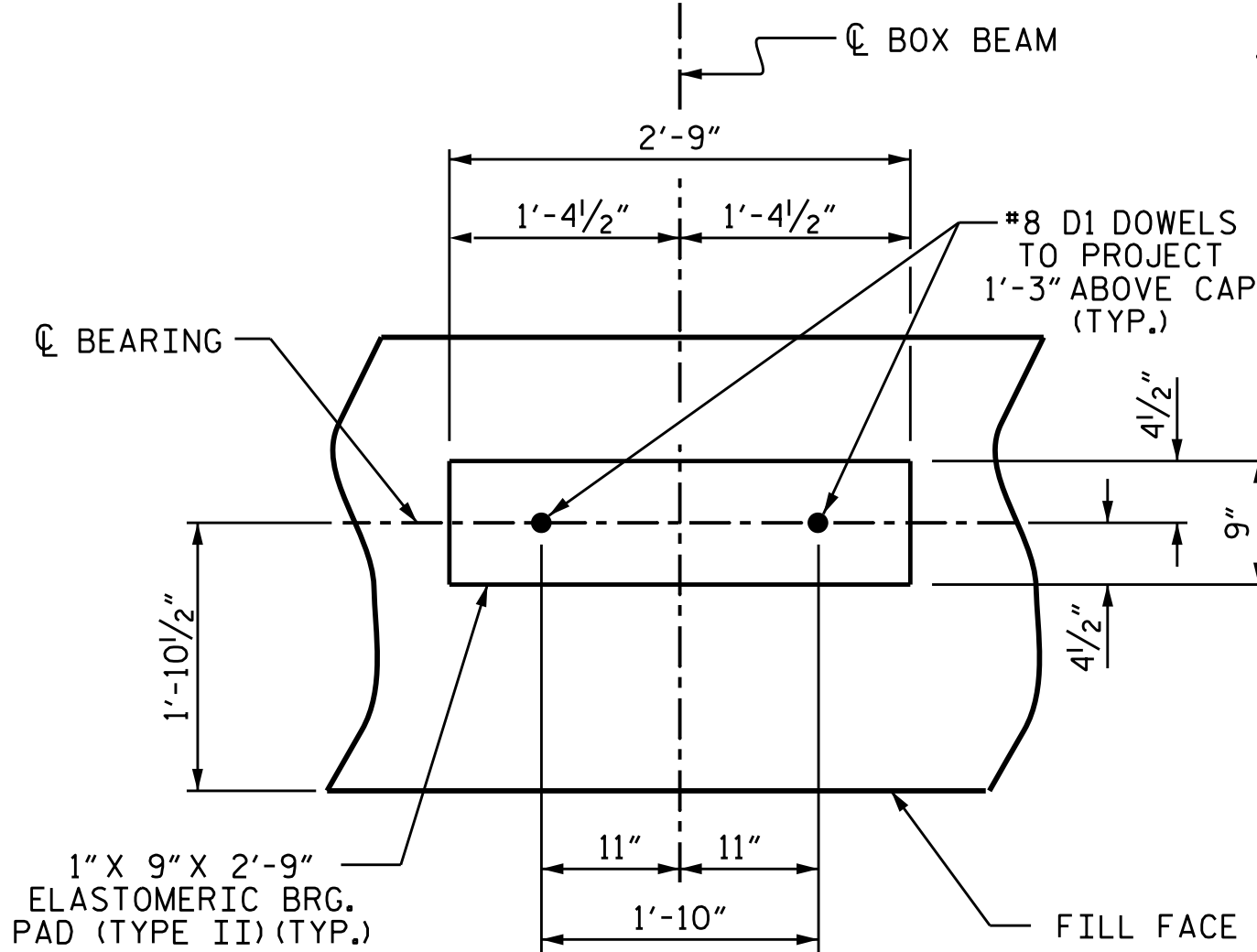
PLAN

CORROSION PROTECTION FOR STEEL PILES DETAIL

(END BENT No. 1 SHOWN, END BENT No. 2 SIMILAR BY ROTATION)



ALL BAR DIMENSIONS ARE OUT TO OUT.



DETAIL "A"

(END BENT No. 1 SHOWN, END BENT No. 2 SIMILAR BY ROTATION)

BILL OF MATERIAL

FOR ONE END BENT

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	8	#9	1	41'-0"	1115
B2	28	#4	STR	20'-7"	385
B3	10	#4	STR	2'-5"	16
D1	22	#8	STR	2'-3"	132
H1	48	#5	2	11'-4"	567
K1	12	#4	STR	2'-11"	23
K2	12	#4	STR	20'-7"	165
S1	50	#4	3	10'-5"	348
S2	50	#4	4	3'-2"	106
S3	28	#4	5	6'-6"	122
U1	33	#4	6	3'-7"	79
V1	60	#4	STR	7'-2"	287
V2	66	#4	STR	5'-3"	231

REINFORCING STEEL (FOR ONE END BENT) 3576 LBS.

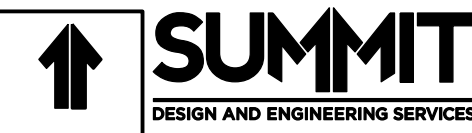
CLASS A CONCRETE BREAKDOWN (FOR ONE END BENT)

POUR #1	CAP, LOWER PART OF WINGS & COLLARS	20.1 C.Y.
POUR #2	BACKWALL & UPPER PART OF WINGS	5.4 C.Y.

TOTAL CLASS A CONCRETE 25.5 C.Y.

DRAWN BY : M. SACKO DATE : 03/2026
CHECKED BY : J. R. MCROY DATE : 03/2026
DESIGN ENGINEER OF RECORD: J. R. MCROY DATE : 03/2026

Prepared in the Office of:



NC FIRM LICENSE No: C-5176
1000 Social St., Suite 800
Raleigh, NC 27609
(919)322-0115
www.summitde.com



Signed by:
Jennifer R. McRoy
F21A13P/BBCDB408

4/22/2026

PROJECT NO. BP11.R050

YADKIN COUNTY

STATION: 15+29.50 -L-

SHEET 4 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

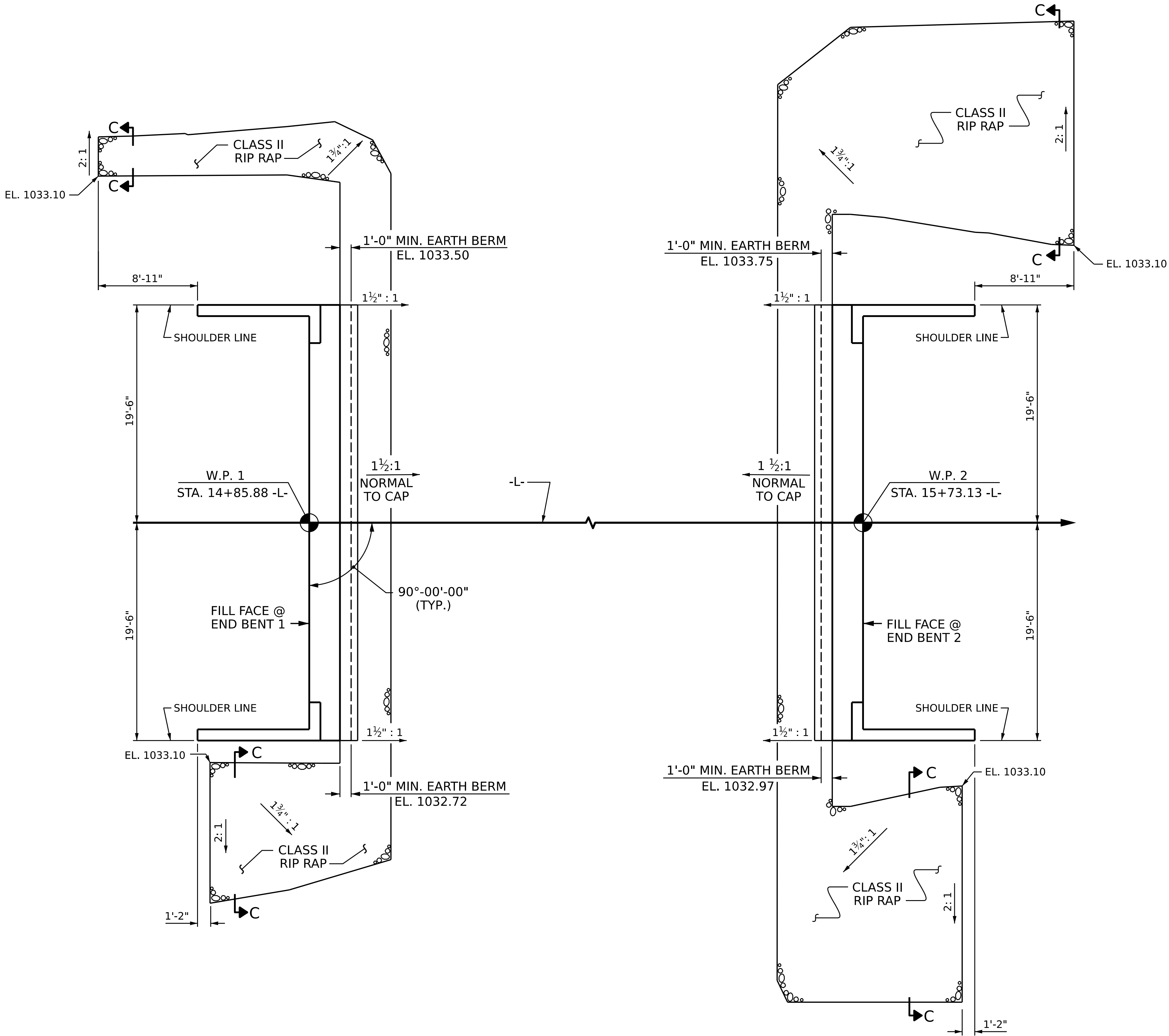
SUBSTRUCTURE

END BENT No. 1 & 2
DETAILS

REVISIONS

NO.	BY:	DATE:	NO.	BY:	DATE:	SHEET NO.
1			3			S-15
2			4			TOTAL SHEETS 17

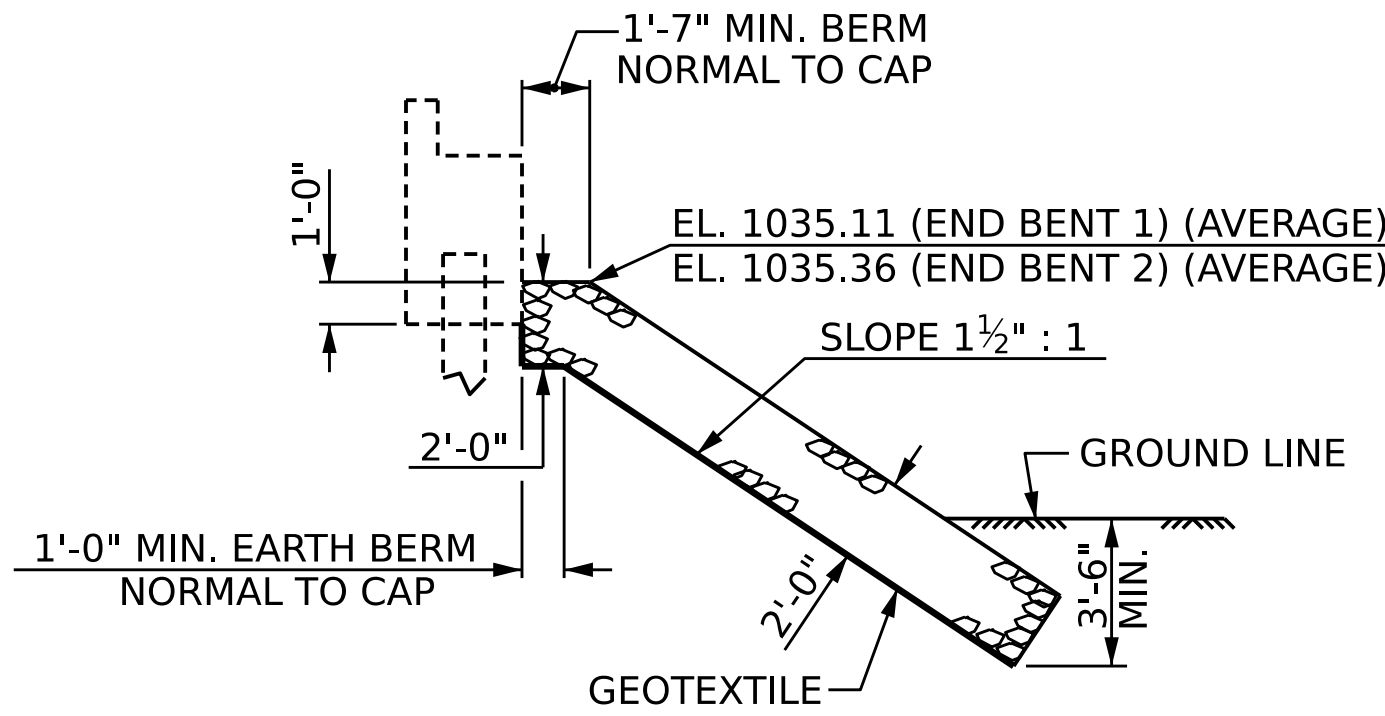
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END BENT 1

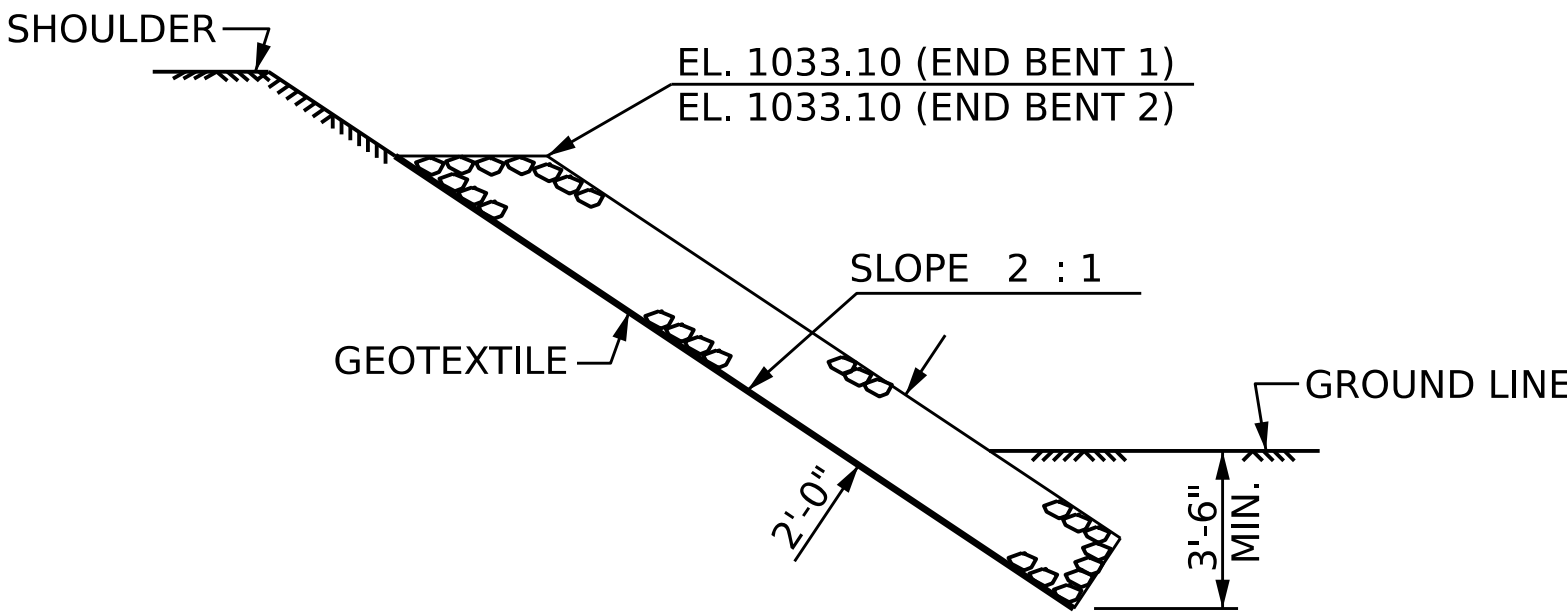
PLAN OF RIP RAP

END BENT 2



Q-Q SECTION

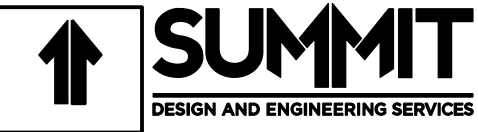
BERM RIP RAPPED



SECTION C-C

ESTIMATED QUANTITIES		
BRIDGE @ STA. 15+29.50 -L-	RIP RAP CLASS II (2'-0" THICK)	GEOTEXTILE FOR DRAINAGE
	TONS	SQUARE YARDS
END BENT 1	110	120
END BENT 2	115	130

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Signed by:
Jennifer R. McRoy
F21A12FB8CD840B...

4/22/2026

PROJECT NO. BP11.R050
YADKIN COUNTY
STATION: 15+29.50 -L-

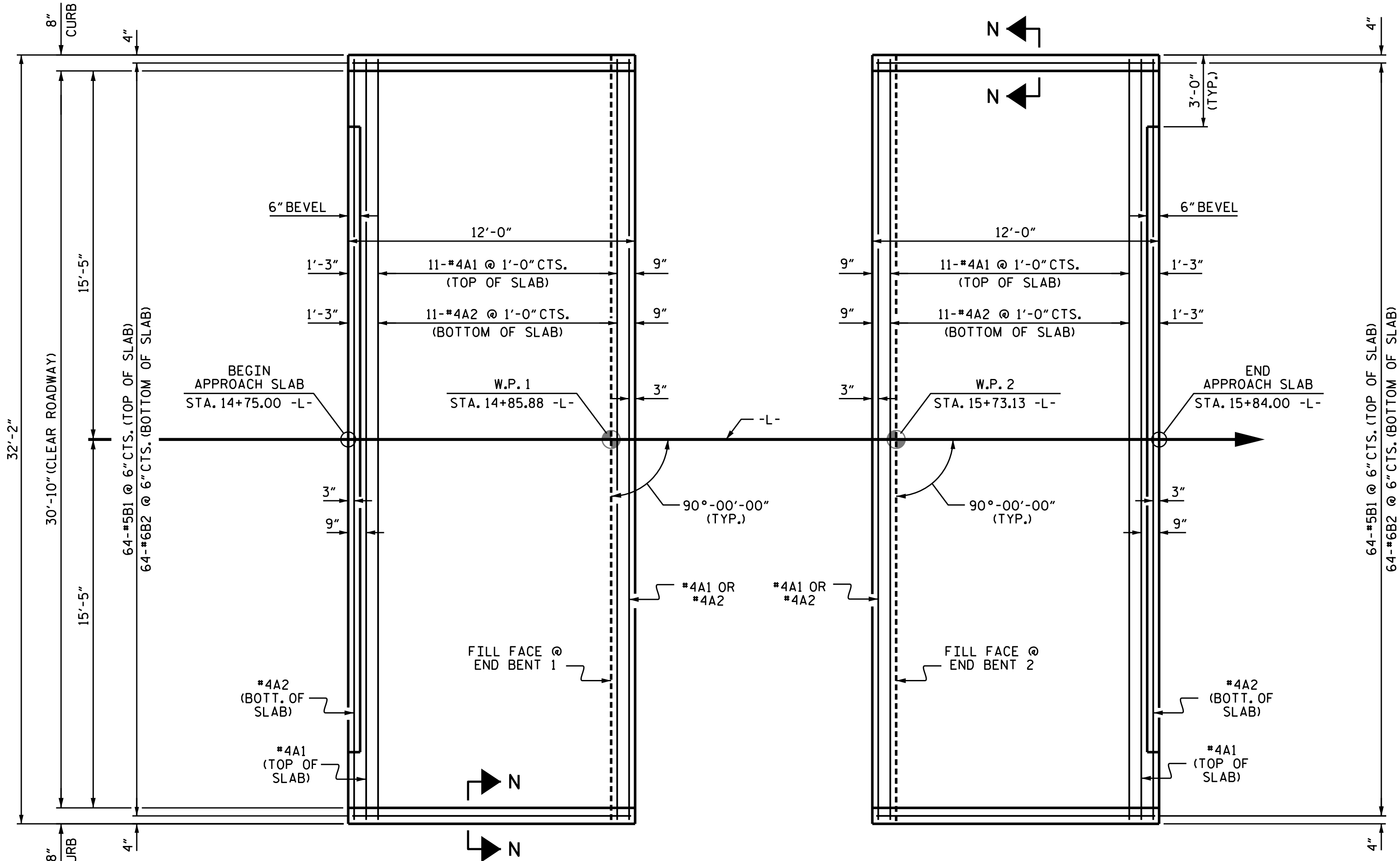
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

RIP RAP DETAILS

DRAWN BY : M. SACKO DATE : 03/2026
CHECKED BY : J. R. McROY DATE : 03/2026
DESIGN ENGINEER OF RECORD: J. R. McROY DATE : 03/2026

DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

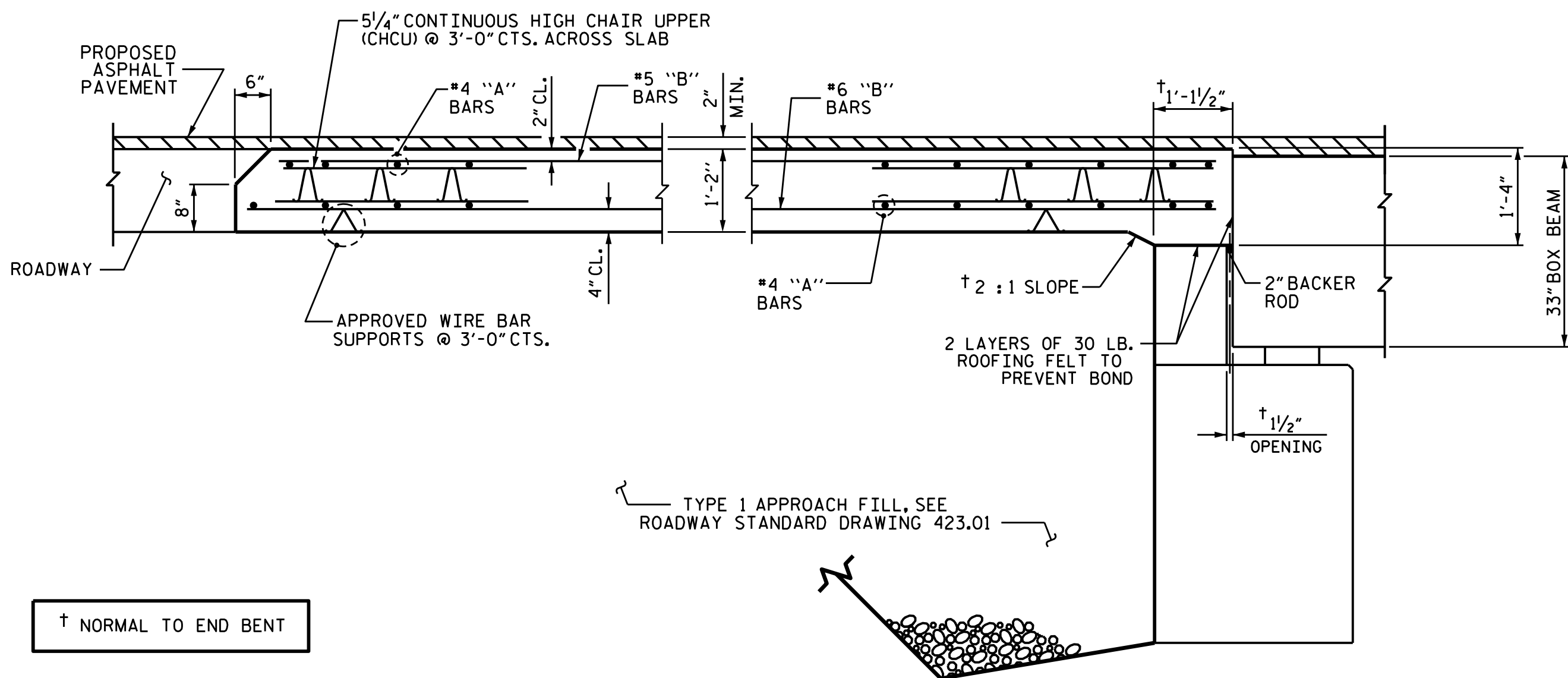
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S-16
2			4			TOTAL SHEETS 17



PLAN @ END BENT #1

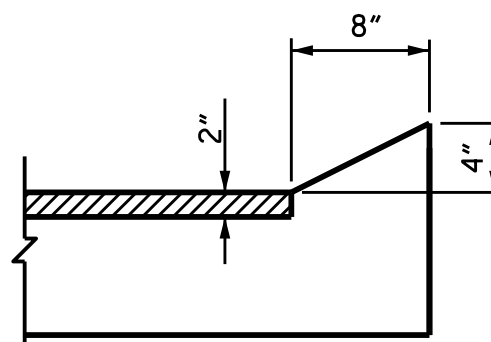
PLAN @ END BENT #2

DIMENSIONS SHOWN ARE TYPICAL FOR BOTH APPROACH SLABS



SECTION THRU SLAB

† NORMAL TO END BENT



SECTION N-N

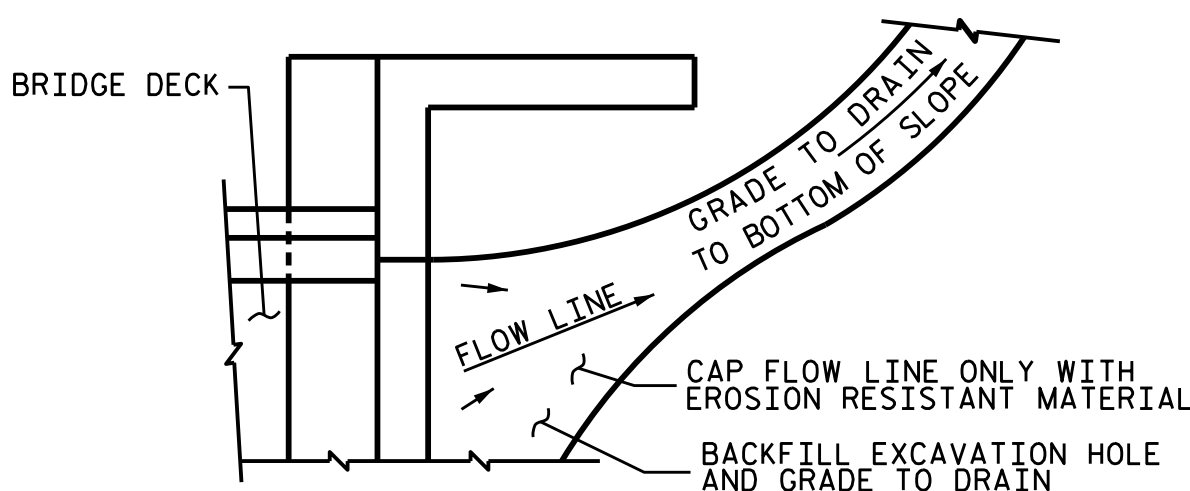
CURB DETAILS

NOTES

FOR BRIDGE APPROACH FILL, SEE ROADWAY PLANS.

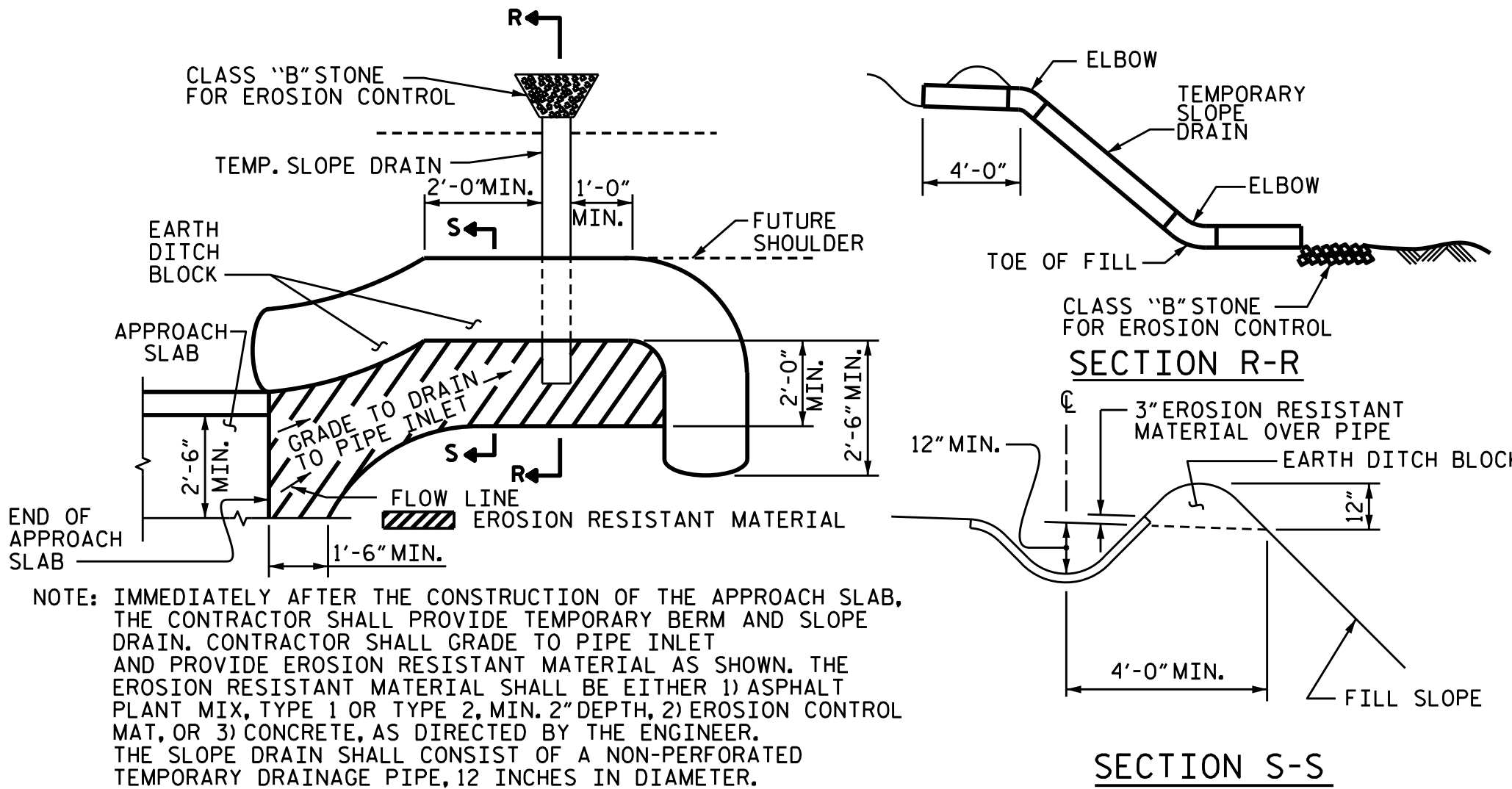
AREA BETWEEN THE WINGWALL AND APPROACH SLAB SHALL BE GRADED TO DRAIN THE WATER AWAY FROM THE FILL FACE OF THE BRIDGE AND SHALL BE PAVED. SEE ROADWAY PLANS.

APPROACH SLAB GROOVING IS NOT REQUIRED.



NOTE: IF THE APPROACH SLAB IS NOT CONSTRUCTED IMMEDIATELY AFTER THE BACKFILLING OF THE END BENT EXCAVATION, GRADE TO DRAIN TO THE BOTTOM OF THE SLOPE AND PROVIDE EROSION RESISTANT MATERIAL, SUCH AS FIBERGLASS ROVING OR AS DIRECTED BY THE ENGINEER TO PREVENT SOIL EROSION AND TO PROTECT THE AREA ADJACENT TO THE STRUCTURE. THE CONTRACTOR WILL BE REQUIRED TO REMOVE THESE MATERIALS PRIOR TO CONSTRUCTION OF THE APPROACH SLAB.

TEMPORARY DRAINAGE DETAIL



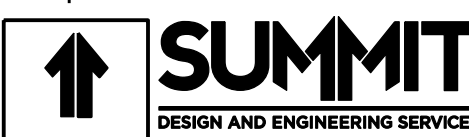
NOTE: IMMEDIATELY AFTER THE CONSTRUCTION OF THE APPROACH SLAB, THE CONTRACTOR SHALL PROVIDE TEMPORARY BERM AND SLOPE DRAIN. CONTRACTOR SHALL GRADE TO PIPE INLET AND PROVIDE EROSION RESISTANT MATERIAL AS SHOWN. THE EROSION RESISTANT MATERIAL SHALL BE EITHER 1) ASPHALT PLANT MIX, TYPE 1 OR TYPE 2, MIN. 2" DEPTH, 2) EROSION CONTROL MAT, OR 3) CONCRETE, AS DIRECTED BY THE ENGINEER. THE SLOPE DRAIN SHALL CONSIST OF A NON-PERFORATED TEMPORARY DRAINAGE PIPE, 12 INCHES IN DIAMETER.

PLAN VIEW

TEMPORARY BERM AND SLOPE DRAIN DETAILS

(TO BE USED WHEN SHOULDER BERM GUTTER IS REQUIRED)

Prepared in the Office of:



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Raleigh, NC 27609
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4/22/2026

Signed by:
Jennifer R. McRoy
F21A13FB8CD840B

DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
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PROJECT NO. BP11.R050

YADKIN COUNTY

STATION: 15+29.50 -L-

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BRIDGE APPROACH SLAB
FOR PRESTRESSED CONCRETE
BOX BEAM UNIT
(SUB-REGIONAL TIER)

REVISIONS

NO.	BY:	DATE:	NO.	BY:	DATE:	SHEET NO.
1			3			S-17
2			4			TOTAL SHEETS 17

ASSEMBLED BY :	M. SACKO	DATE :	03/2026
CHECKED BY :	J. R. McROY	DATE :	03/2026
DRAWN BY :	MAA	11/11	REV. 08-19 BNB/THC
CHECKED BY :	AAC	11/11	REV. 01-25 HRS

STANDARD NOTES

DESIGN DATA:	
SPECIFICATIONS	AASHTO (CURRENT)
LIVE LOAD	SEE PLANS
IMPACT ALLOWANCE	SEE AASHTO
STRESS IN EXTREME FIBER OF STRUCTURAL STEEL - AASHTO M270 GRADE 36	20,000 LBS. PER SQ. IN.
- AASHTO M270 GRADE 50W	27,000 LBS. PER SQ. IN.
- AASHTO M270 GRADE 50	27,000 LBS. PER SQ. IN.
REINFORCING STEEL IN TENSION - GRADE 60	24,000 LBS. PER SQ. IN.
CONCRETE IN COMPRESSION	1,200 LBS. PER SQ. IN.
CONCRETE IN SHEAR	SEE AASHTO
STRUCTURAL TIMBER - TREATED OR UNTREATED EXTREME FIBER STRESS	1,800 LBS. PER SQ. IN.
COMPRESSION PERPENDICULAR TO GRAIN OF TIMBER	375 LBS. PER SQ. IN.
EQUIVALENT FLUID PRESSURE OF EARTH	30 LBS. PER CU. FT. (MINIMUM)

MATERIAL AND WORKMANSHIP:

EXCEPT AS MAY OTHERWISE BE SPECIFIED ON PLANS OR IN THE SPECIAL PROVISIONS, ALL MATERIAL AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE 2024 "STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES" OF THE N. C. DEPARTMENT OF TRANSPORTATION.

STEEL SHEET PILING FOR PERMANENT OR TEMPORARY APPLICATIONS SHALL BE HOT ROLLED.

CONCRETE:

UNLESS OTHERWISE REQUIRED ON PLANS, CLASS A CONCRETE SHALL BE USED FOR ALL PORTIONS OF ALL STRUCTURES WITH THE EXCEPTION THAT: CLASS AA CONCRETE SHALL BE USED IN BRIDGE SUPERSTRUCTURES, ABUTMENT BACKWALLS, AND APPROACH SLABS; AND CLASS B CONCRETE SHALL BE USED FOR SLOPE PROTECTION AND RIP RAP.

CONCRETE CHAMFERS:

UNLESS OTHERWISE NOTED ON THE PLANS, ALL EXPOSED CORNERS ON STRUCTURES SHALL BE CHAMFERED ¾" WITH THE FOLLOWING EXCEPTIONS: TOP CORNERS OF CURBS MAY BE ROUNDED TO 1½" RADIUS WHICH IS BUILT INTO CURB FORMS; CORNERS OF TRANSVERSE FLOOR EXPANSION JOINTS SHALL BE ROUNDED WITH A ¼" FINISHING TOOL UNLESS OTHERWISE REQUIRED ON PLANS; AND CORNERS OF EXPANSION JOINTS IN THE ROADWAY FACES AND TOPS OF CURBS AND SIDEWALKS SHALL BE ROUNDED TO A ¼" RADIUS WITH A FINISHING STONE OR TOOL UNLESS OTHERWISE REQUIRED ON PLANS.

DOWELS:

DOWELS WHEN INDICATED ON PLANS AS FOR CULVERT EXTENSIONS, SHALL BE EMBEDDED AT LEAST 12" INTO THE OLD CONCRETE AND GROUTED INTO PLACE WITH 1:2 CEMENT MORTAR.

ALLOWANCE FOR DEAD LOAD DEFLECTION, SETTLEMENT, ETC. IN CASTING SUPERSTRUCTURES:

BRIDGES SHALL BE BUILT ON THE GRADE OR VERTICAL CURVE SHOWN ON PLANS. SLABS, CURBS AND PARAPETS SHALL CONFORM TO THE GRADE OR CURVE.

ALL DIMENSIONS WHICH ARE GIVEN IN SECTION AND ARE AFFECTED BY DEAD LOAD DEFLECTIONS ARE DIMENSIONS AT CENTER LINE OF BEARING UNLESS OTHERWISE NOTED ON PLANS. IN SETTING FORMS FOR STEEL BEAM BRIDGES AND PRESTRESSED CONCRETE GIRDER BRIDGES, ADJUSTMENTS SHALL BE MADE DUE TO THE DEAD LOAD DEFLECTIONS FOR THE ELEVATIONS SHOWN. WHERE BLOCKS ARE SHOWN OVER BEAMS FOR BUILDING UP TO THE SLAB, THE VERTICAL DIMENSIONS OF THE BLOCKS SHALL BE ADJUSTED BETWEEN BEARINGS TO COMPENSATE FOR DEAD LOAD DEFLECTIONS, VERTICAL CURVE ORDINATE, AND ACTUAL BEAM CAMBER. WHERE BOTTOM OF SLAB IS IN LINE WITH BOTTOM OF TOP FLANGES, DEPTH OF SLAB BETWEEN BEARINGS SHALL BE ADJUSTED TO COMPENSATE FOR DEAD LOAD DEFLECTION, VERTICAL CURVE ORDINATE, AND ACTUAL BEAM CAMBER.

IN SETTING FALSEWORK AND FORMS FOR REINFORCED CONCRETE SPANS, AN ALLOWANCE SHALL BE MADE FOR DEAD LOAD DEFLECTIONS, SETTLEMENT OF FALSEWORK, AND PERMANENT CAMBER WHICH SHALL BE PROVIDED FOR IN ADDITION TO THE ELEVATIONS SHOWN. AFTER REMOVAL OF THE FALSEWORK, THE FINISHED STRUCTURES SHALL CONFORM TO THE PROFILE AND ELEVATIONS SHOWN ON THE PLANS AND CONSTRUCTION ELEVATIONS FURNISHED BY THE ENGINEER.

DETAILED DRAWINGS FOR FALSEWORK OR FORMS FOR BRIDGE SUPERSTRUCTURE AND ANY STRUCTURE OR PARTS OF A STRUCTURE AS NOTED ON THE PLANS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL BEFORE CONSTRUCTION OF THE FALSEWORK OR FORMS IS STARTED.

REINFORCING STEEL:

ALL REINFORCING STEEL SHALL BE DEFORMED. DIMENSIONS RELATIVE TO PLACEMENT OF REINFORCING ARE TO CENTERS OF BARS UNLESS OTHERWISE INDICATED IN THE PLANS. DIMENSIONS ON BAR DETAILS ARE TO CENTERS OF BARS OR ARE OUT TO OUT AS INDICATED ON PLANS.

WIRE BAR SUPPORTS SHALL BE PROVIDED FOR REINFORCING STEEL WHERE INDICATED ON THE PLANS. WHEN BAR SUPPORT PIECES ARE PLACED IN CONTINUOUS LINES, THEY SHALL BE SO PLACED THAT THE ENDS OF THE SUPPORTING WIRES SHALL BE LAPPED TO LOCK LEGS ON ADJOINING PIECES.

STRUCTURAL STEEL:

AT THE CONTRACTOR'S OPTION, HE MAY SUBSTITUTE 7⁄8" Ø SHEAR STUDS FOR THE ¾" Ø STUDS SPECIFIED ON THE PLANS. THIS SUBSTITUTION SHALL BE MADE AT THE RATE OF 3 - 7⁄8" Ø STUDS FOR 4 - ¾" Ø STUDS, AND STUD SPACING CHANGES SHALL BE MADE AS NECESSARY TO PROVIDE THE SAME EQUIVALENT NUMBER OF 7⁄8" Ø STUDS ALONG THE BEAM AS SHOWN FOR ¾" Ø STUDS BASED ON THE RATIO OF 3 - 7⁄8"Ø STUDS FOR 4 - ¾" Ø STUDS. STUDS OF THE LENGTH SPECIFIED ON THE PLANS MUST BE PROVIDED. THE MAXIMUM SPACING SHALL BE 2'-0".

EXCEPT AT THE INTERIOR SUPPORTS OF CONTINUOUS BEAMS WHERE THE COVER PLATE IS IN CONTACT WITH BEARING PLATE, THE CONTRACTOR MAY, AT HIS OPTION, SUBSTITUTE FOR THE COVER PLATES DESIGNATED ON THE PLANS COVER PLATES OF THE EQUIVALENT AREA PROVIDED THESE PLATES ARE AT LEAST 5⁄16" IN THICKNESS AND DO NOT EXCEED A WIDTH EQUAL TO THE FLANGE WIDTH LESS 2" OR A THICKNESS EQUAL TO 2 TIMES THE FLANGE THICKNESS. THE SIZE OF FILLET WELDS SHALL CONFORM TO THE REQUIREMENTS OF THE CURRENT ANSI/AASHTO/AWS "BRIDGE WELDING CODE". ELECTROSLAG WELDING WILL NOT BE PERMITTED.

WITH THE SOLE EXCEPTION OF EDGES AT SURFACES WHICH BEAR ON OTHER SURFACES, ALL SHARP EDGES AND ENDS OF SHAPES AND PLATES SHALL BE SLIGHTLY ROUNDED BY SUITABLE MEANS TO A RADIUS OF APPROXIMATELY 1⁄16" OR EQUIVALENT FLAT SURFACE AT A SUITABLE ANGLE PRIOR TO PAINTING, GALVANIZING, OR METALLIZING.

HANDRAILS AND POSTS:

METAL STANDARDS AND FACES OF THE CONCRETE END POSTS FOR THE METAL RAIL SHALL BE SET NORMAL TO THE GRADE OF THE CURB, UNLESS OTHERWISE SHOWN ON PLANS. THE METAL RAIL AND TOPS OF CONCRETE POSTS USED WITH THE ALUMINUM RAIL SHALL BE BUILT PARALLEL TO THE GRADE OF THE CURB.

METAL HANDRAILS SHALL BE IN ACCORDANCE WITH THE PLANS. RAILS SHALL BE AS MANUFACTURED FOR BRIDGE RAILING. CASTINGS SHALL BE OF A UNIFORM APPEARANCE. FINIS AND OTHER DEFORMATIONS RESULTING FROM CASTING OR OTHERWISE SHALL BE REMOVED IN A MANNER SO THAT A UNIFORM COLORING OF THE COMPLETED CASTING SHALL BE OBTAINED. CASTINGS WITH DISCOLORATIONS OR OF NON-UNIFORM COLORING WILL NOT BE ACCEPTED. CERTIFIED MILL REPORTS ARE REQUIRED FOR METAL RAILS AND POSTS.

SPECIAL NOTES:

GENERALLY, IN CASE OF DISCREPANCY, THIS STANDARD SHEET OF NOTES SHALL GOVERN OVER THE SPECIFICATIONS, BUT THE REMAINDER OF THE PLANS SHALL GOVERN OVER NOTES HEREON, AND SPECIAL PROVISIONS SHALL GOVERN OVER ALL. SEE SPECIFICATIONS ARTICLE 105-4.