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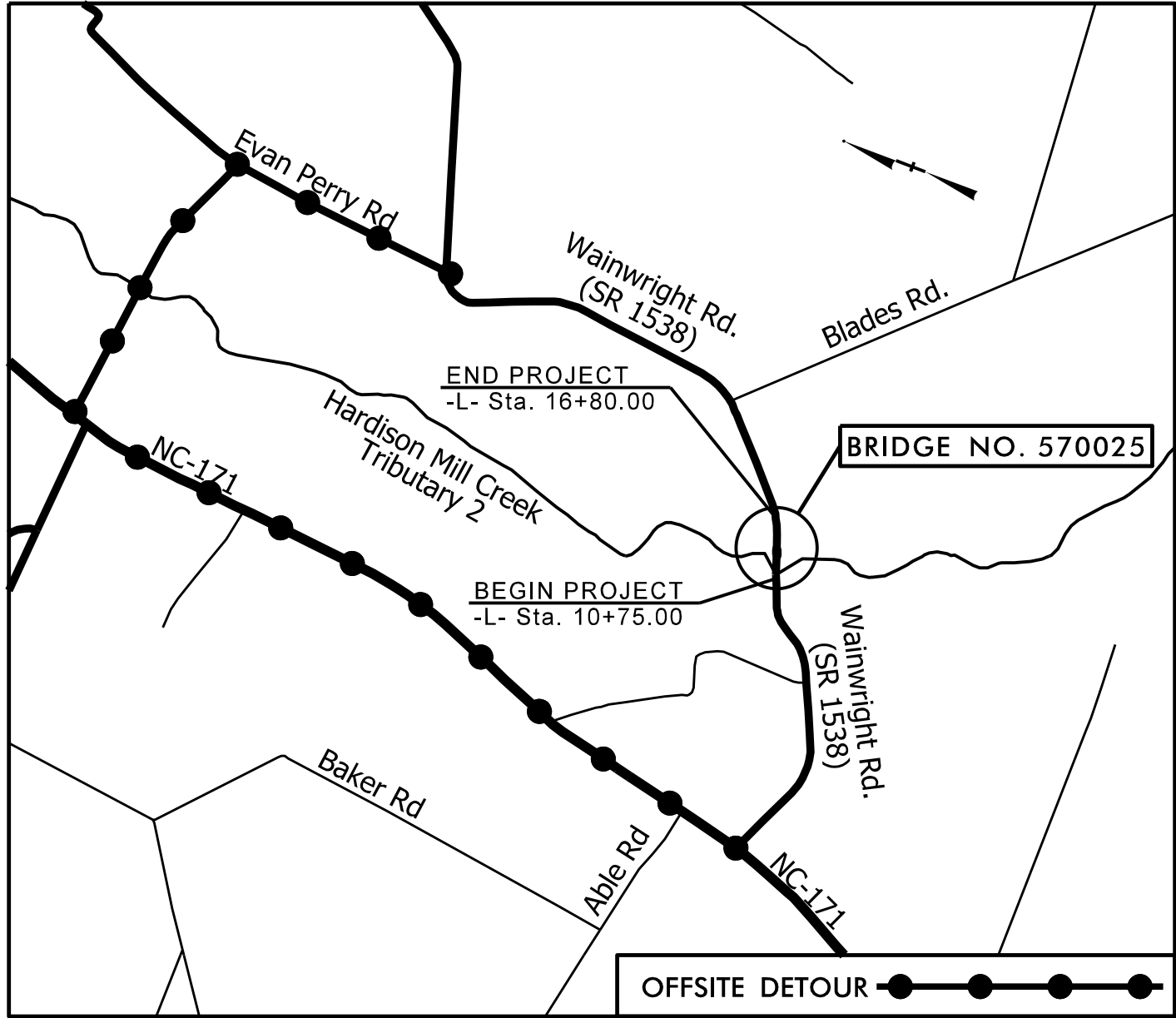
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09/08/2025

TIP PROJECT: BP1.R021.1

CONTRACT:

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



VICINITY MAP

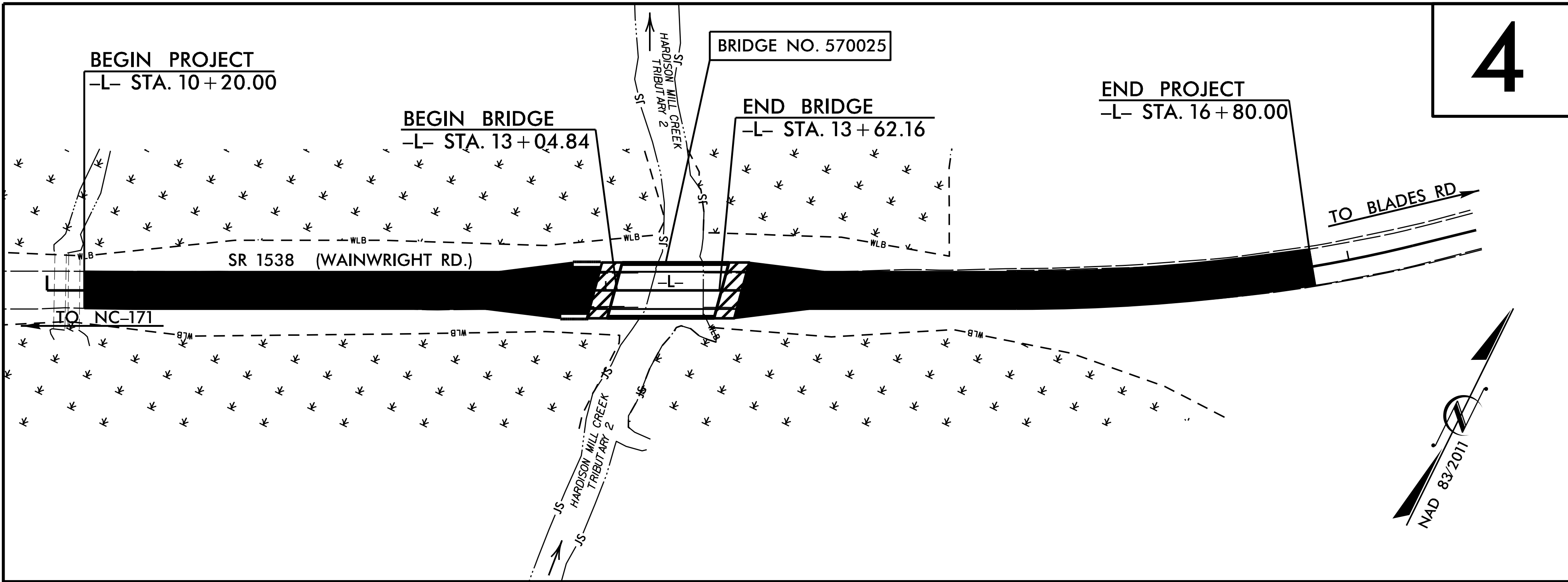
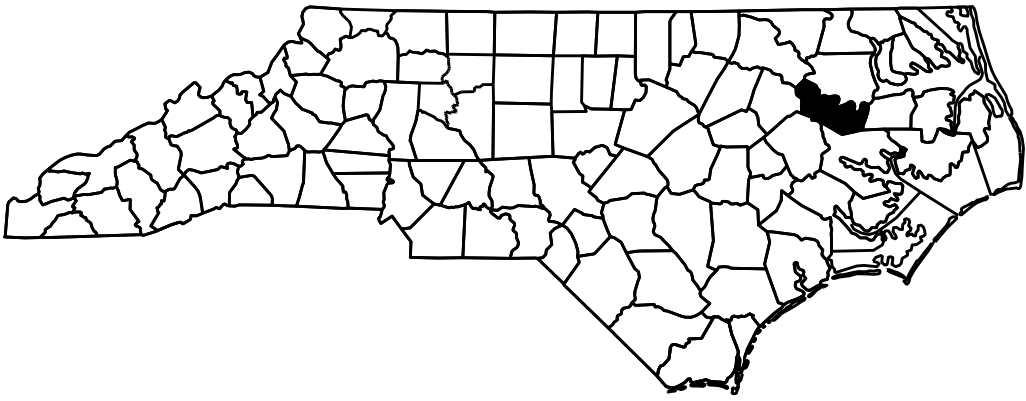
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

MARTIN COUNTY

LOCATION: BRIDGE No. 570025 OVER
HARDISON MILL CREEK TRIBUTARY 2
ON WAINWRIGHT ROAD (SR 1538)

TYPE OF WORK: GRADING, DRAINAGE, PAVING, STRUCTURES,
AND RESURFACING

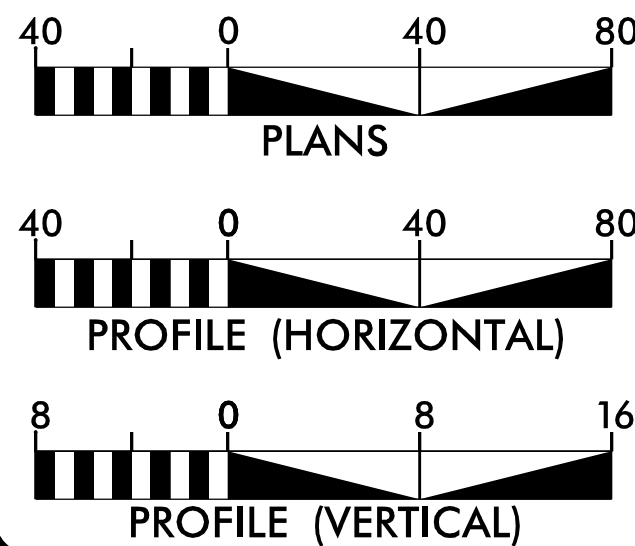
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	BP1.R021.1	1	
STATE PROJ. NO.	P.A. PROJ. NO.	DESCRIPTION	
BP1.R021.1		PE	
BP1.R021.2		ROW, UTIL.	
BP1.R021.3		& CONST.	



4

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UNLESS ALL SIGNATURES COMPLETED

GRAPHIC SCALES



DESIGN DATA

ADT 2021 = 280

K = NA %
D = NA %
T = 6 % *
V = 50 MPH

* TTST = 3% DUAL 3%
FUNC CLASS =
LOCAL, RURAL
SUBREGIONAL TIER

PROJECT LENGTH

LENGTH ROADWAY PROJECT 570025..... 0.114 mi
LENGTH STRUCTURE PROJECT 570025..... 0.011 mi
TOTAL LENGTH PROJECT 570025..... 0.125 mi

RK&K

RUMMEL, KLEPPER & KAHL, LLP
8601 SIX FORKS ROAD, FORUM 1, SUITE 700
RALEIGH, NORTH CAROLINA 27615
NC LICENSE NO. E-0112
919-878-9560

FOR:
NCDOT DIVISION OF HIGHWAYS

RIGHT OF WAY DATE:
FEBRUARY 6, 2026

LETTING DATE:
SEPTEMBER 17, 2026

SCOTT BLEVINS, PE
PROJECT ENGINEER

ANDY HEFLER
PROJECT DESIGN ENGINEER

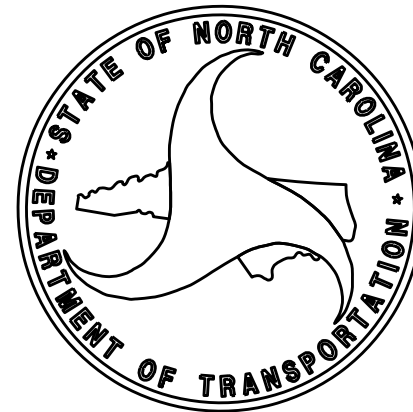
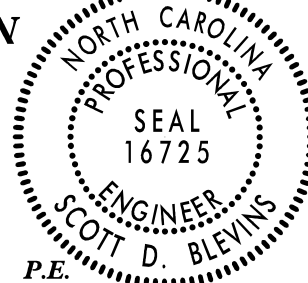
HYDRAULICS ENGINEER

Signed by:
Christopher L. Smith
7/7/2026
SIGNATURE:



ROADWAY DESIGN
ENGINEER

Signed by:
Scott D. Blevins
7/7/2026
SIGNATURE:

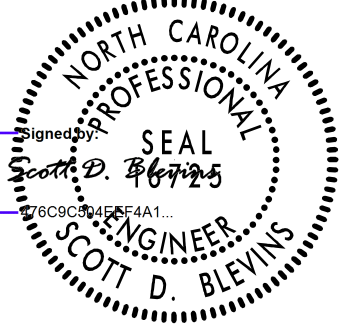


6/2/2025

PROJECT REFERENCE NO.
BPI.R0211

SHEET NO.
1A

ROADWAY DESIGN ENGINEER



7/7/2026

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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	SPECIAL DETAILS
3B-1	ROADWAY SUMMARIES
3G-1	GEOTECHNICAL SUMMARIES
4	PLAN AND PROFILE SHEET
RW02C-1 THRU RW02C-3	SURVEY CONTROL, EXISTING CENTERLINES, RIGHT OF WAY, EASEMENT AND PROPERTY TIES
TMP-1 THRU TMP-3	TRAFFIC MANAGEMENT PLANS
PMP-1 THRU PMP-2	PAVEMENT MARKING PLANS
EC-1 THRU EC-5	EROSION CONTROL PLANS
RF-1	REFORESTATION PLANS
X-1 THRU X-4	CROSS-SECTIONS
S-1 THRU S-16	STRUCTURE PLANS

EFF. 08-11-2025
REV. 11-26-2025
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 project and by reference hereby are considered a part of these plans:

STD.NO.	TITLE
DIVISION 2 - EARTHWORK	
200.02	Method of Clearing - Method II
225.02	Guide for Grading Subgrade - Secondary and Local
225.04	Method of Obtaining Superelevation - Two Lane Pavement
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	
815.02	Subsurface Drain
846.01	Concrete Curb, Gutter and Curb & Gutter
862.01	Guardrail Placement (Use Details in Lieu of Standards for Sheets 4, 6, 11, 12, and 14 of 15)

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.

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.

SUBSURFACE PLANS:

NO SUBSURFACE PLANS ARE AVAILABLE ON THIS PROJECT. THE CONTRACTOR SHOULD MAKE HIS OWN INVESTIGATION AS TO THE SUBSURFACE CONDITIONS.

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.

6/2/2025

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	

Woods Line	
Orchard	
Vineyard	

EXISTING STRUCTURES:

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

UTILITIES:

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

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

TELEPHONE:

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

WATER:

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

TV:

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

GAS:

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

SANITARY SEWER:

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

MISCELLANEOUS:

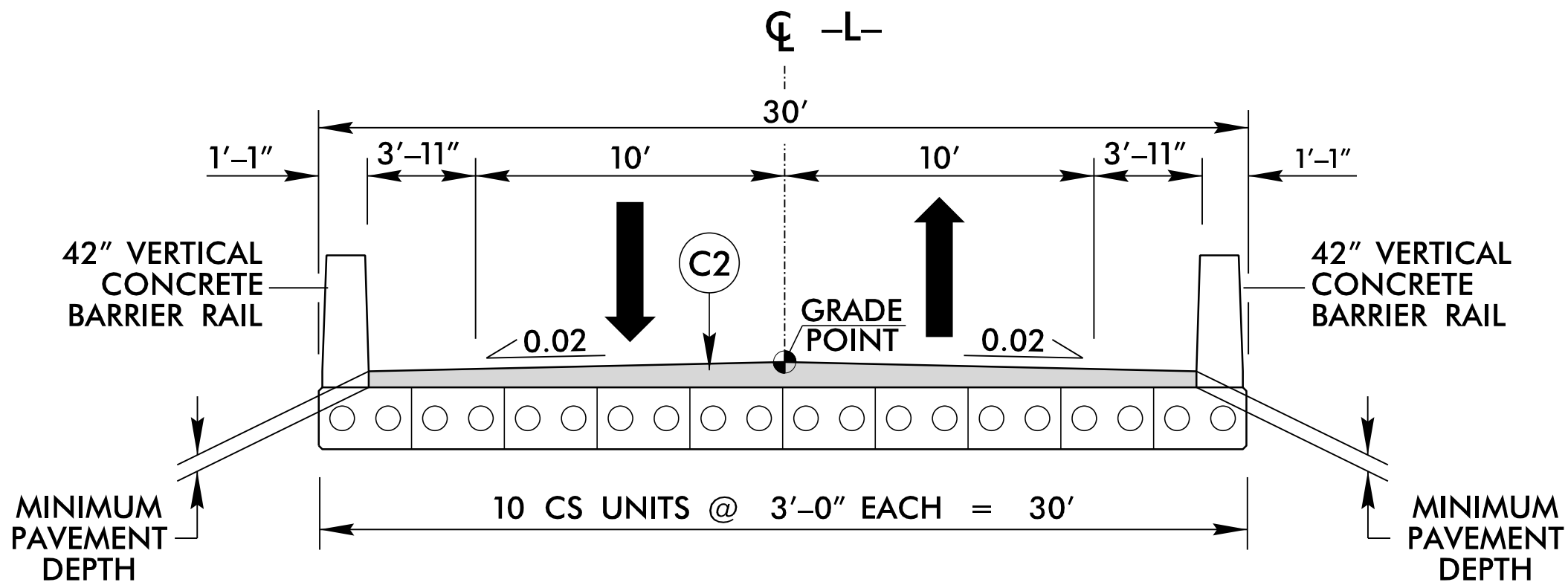
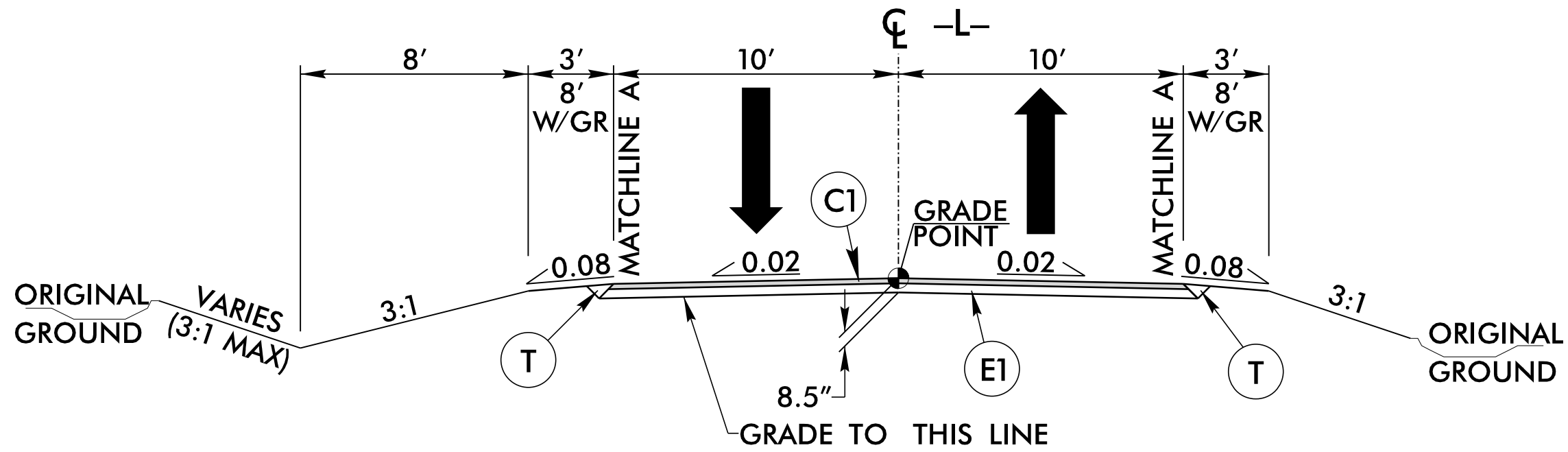
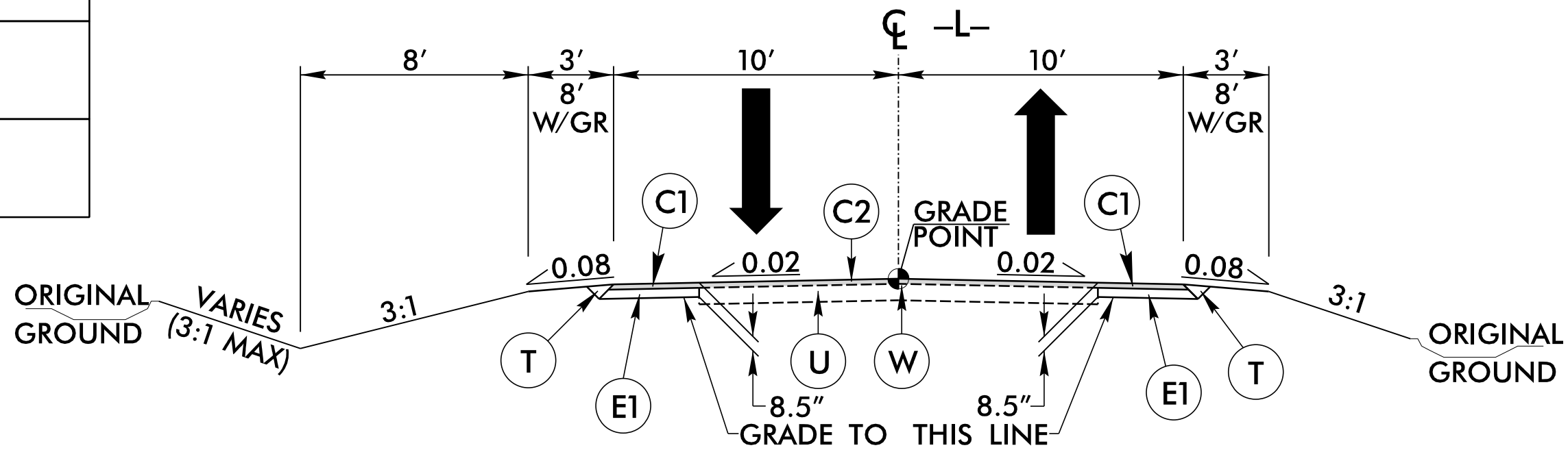
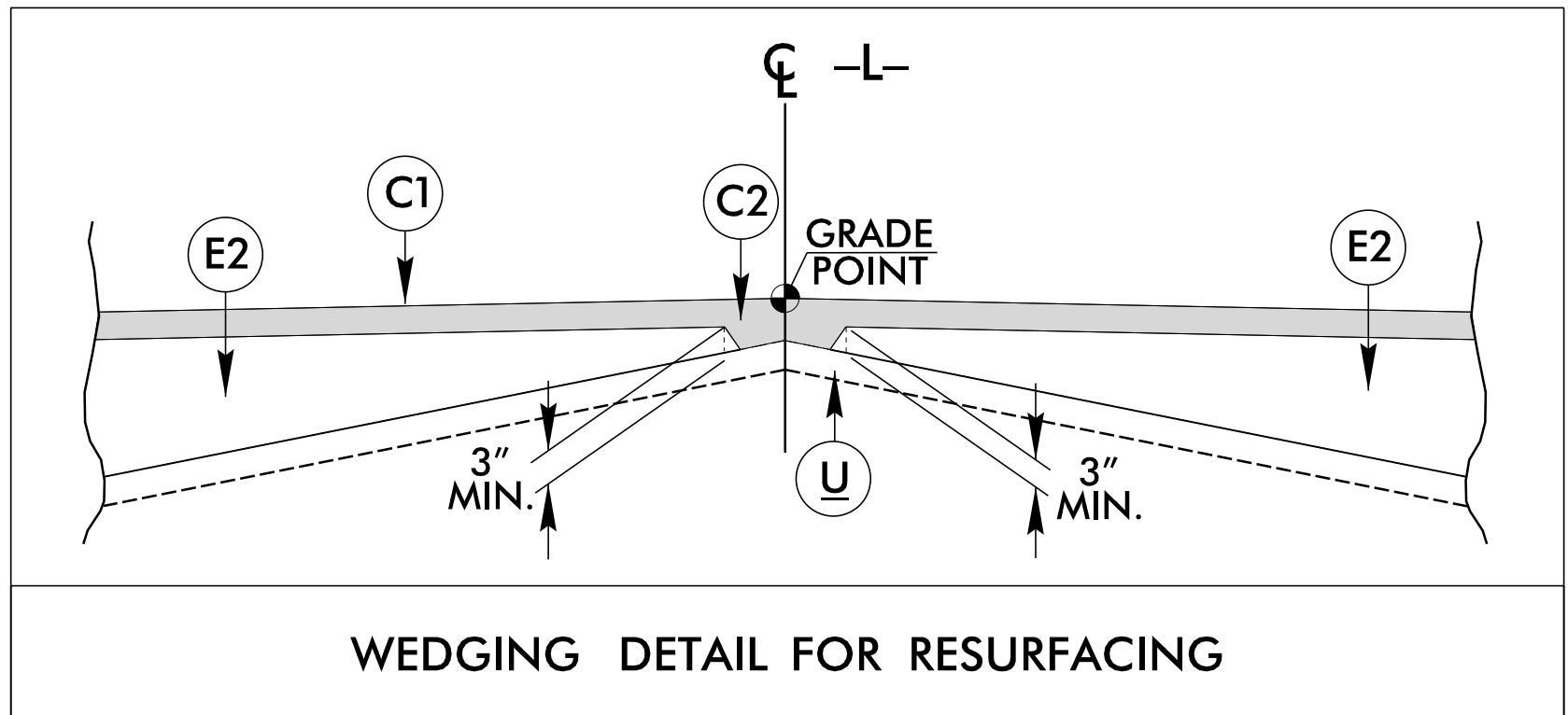
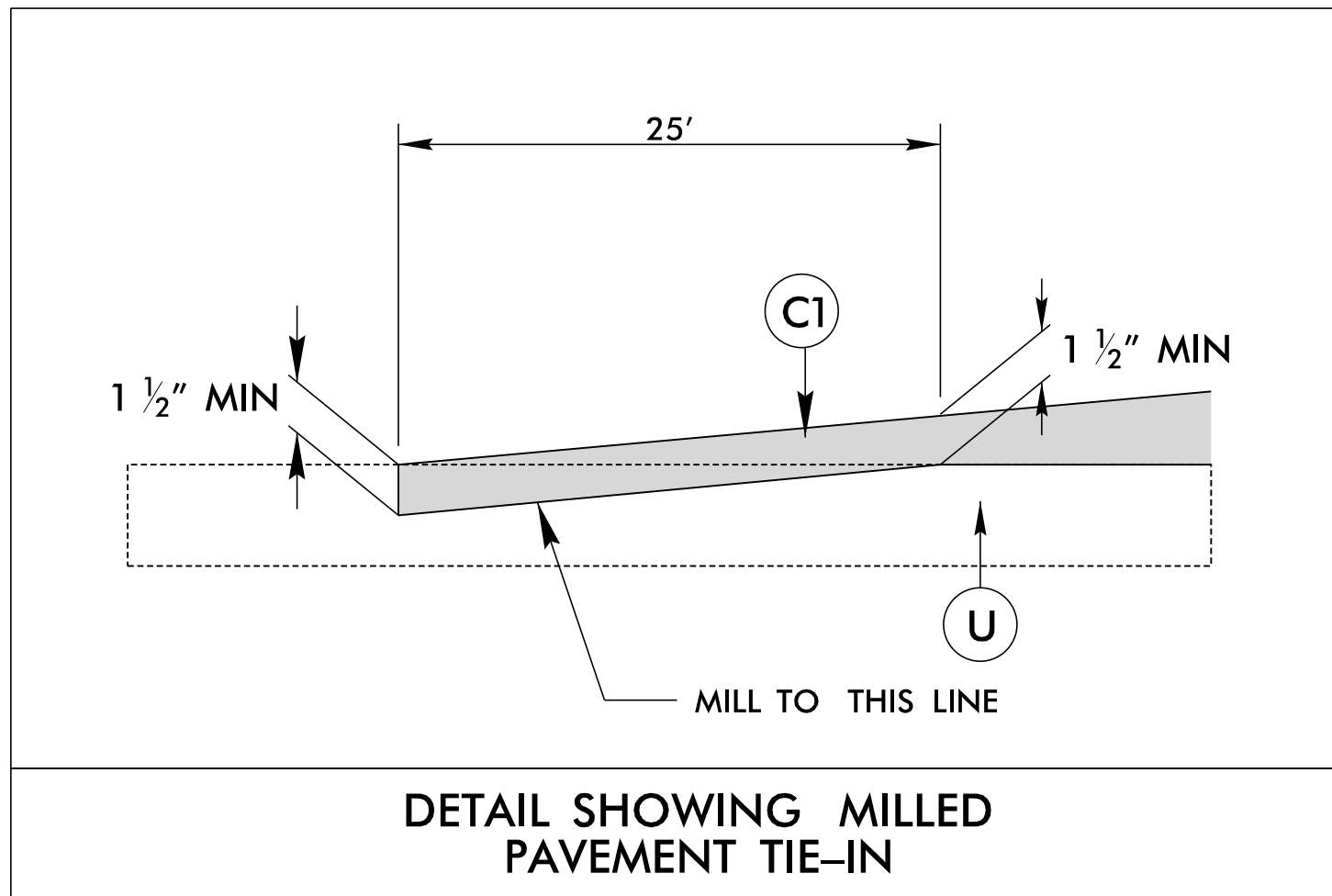
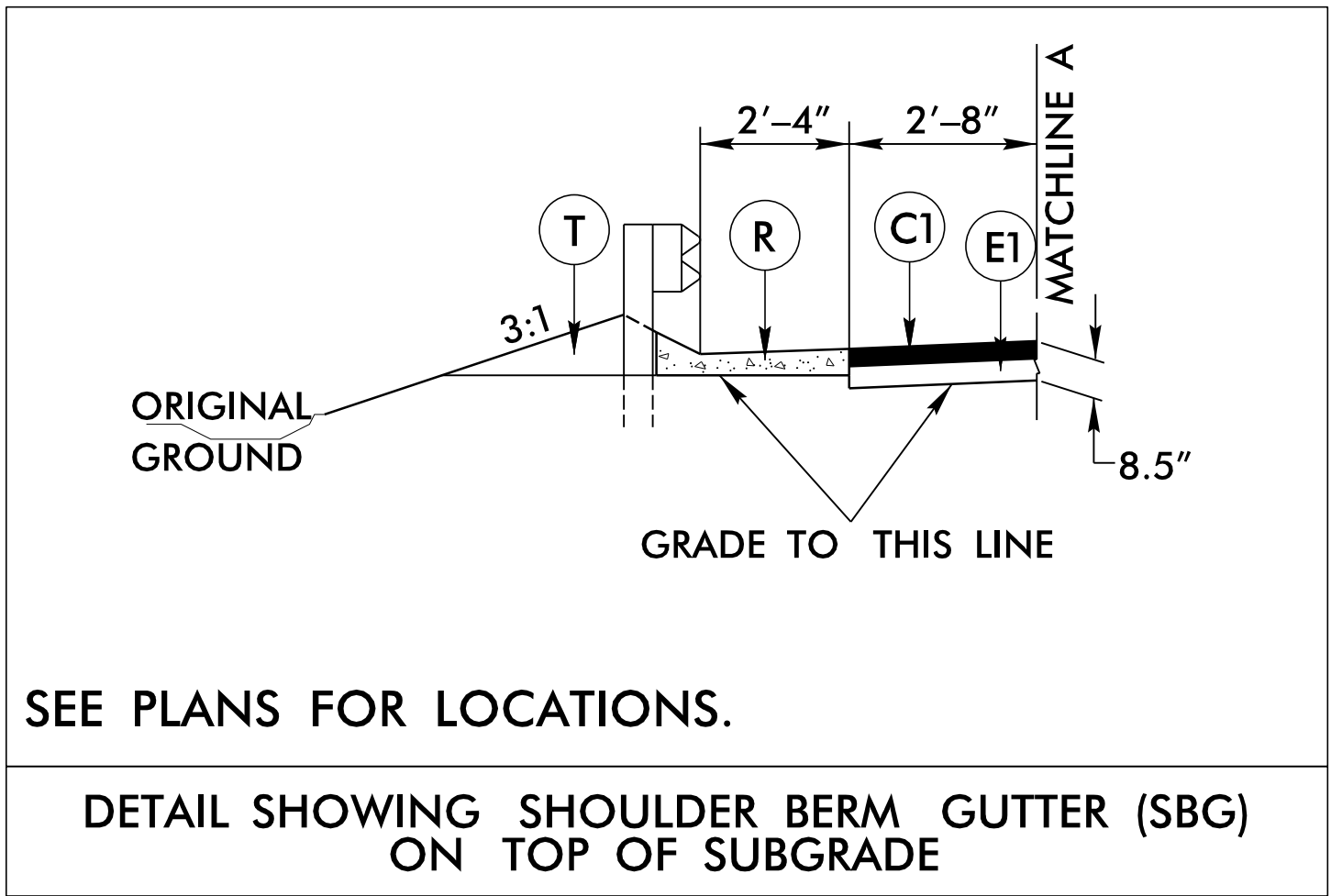
Utility Pole	
Utility Pole with Base	
Utility Located Object	
Utility Traffic Signal Box	
Utility Unknown U/G Line (SUE – LOS B)*	
U/G Tank; Water, Gas, Oil	
Underground Storage Tank, Approx. Loc.	
A/G Tank; Water, Gas, Oil	
Geoenvironmental Boring	
Abandoned According to Utility Records	
End of Information	

6/2/09

FINAL PAVEMENT SCHEDULE

C1	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.	R	SHOULDER BERM GUTTER
C2	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 2" IN DEPTH.	T	EARTH MATERIAL
E1	PROP. APPROX. 5.5" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 627 LBS. PER SQ. YD.	U	EXISTING PAVEMENT
E2	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 3" IN DEPTH OR GREATER THAN 5.5' IN DEPTH.	W	WEDGING

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



PROJECT REFERENCE NO.	SHEET NO.
BPI.R021.I	2A-1
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER
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RK&K

P: (919) 878-9560
8601 Six Forks Road, Forum 1, Suite 700
Raleigh, North Carolina 27615-3960
NC License No. F-0112

Engineers | Construction Managers | Planners | Scientists
www.rkk.com

Responsive People | Creative Solutions

7/8/2026
R:\Roadway\Projects\570025.rdy_tup.dgn
Blevins

Sheet 8 of 16

Sheet 9 of 16

5/28/99

5/28/99

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

SUMMARY OF EARTHWORK
IN CUBIC YARDS

CHAIN	BEGINNING STATION	ENDING STATION	UNCL. EXCA. C.Y.	UNDERCUT C.Y.	EMBANK. +% C.Y.	BORROW C.Y.	WASTE C.Y.
SUMMARY 1							
-L-	10+20.00	13+04.9	2		339	337	
-L-	13+62.17	16+80.00	3		554	551	
SUBTOTAL			5		893	888	
SHEET TOTALS			5		893	888	
PROJECT TOTAL			5		893	888	
EST. 5% TO REPLACE TOP SOIL ON BORROW PIT						44	
GRAND TOTAL			5			932	
SAY			10			940	
Note: Earthwork quantities are calculated by the Roadway Design Unit. These earthwork quantities are based in part on subsurface data provided by the Geotechnical Engineering Unit.							
Note: Approximate quantities only. Unclassified Excavation, Borrow Excavation, Shoulder Borrow, Fine Grading, Clearing and Grubbing, Breaking of Existing Pavement, and Removal of Existing Pavement will be paid for at the contract lump sum price for "Grading."							

SHOULDER BERM GUTTER SUMMARY
IN LINEAR FEET

LOCATION	SIDE	BEG. STA.	END STA.	LENGTH
-L-	LT	12+82.36	12+97.36	15.0
-L-	RT	12+75.58	12+90.58	15.0
TOTAL				30.0
SAY				30

ASPHALT PAVEMENT REMOVAL
IN SQUARE YARDS

LINE	STATION	STATION	LOCATION	LENGTH OR AREA	WIDTH	SQUARE YARDS
-L-	11+75	15+25	LT/RT	6142.39		682.49
TOTAL						682.49
SAY						690

GUARDRAIL SUMMARY
IN LINEAR FEET

ALN.	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		REMOVE EXISTING GR	REMARKS
				STRAIGHT	SHOP CURVED	DOUBLE FACED	APPR. END	TRAIL. END			APPROACH END	TRAILING END	APPR. END	TRAIL. END	TYPE-III	TYPE-III SC	GREU TL-3	GREU TL-2	AT-1	G	NG		
-L-	12+15.11	13+08.86	LT	93.75											1		1						
-L-	12+07.07	13+00.82	RT	93.75											1		1						
-L-	13+66.19	14+59.94	LT	93.75											1		1						
-L-	13+58.15	14+51.90	RT	93.75											1		1						
SUBTOTAL:				375.00											4	0	4	0	0				
ANCHOR UNIT DEDUCTIONS:																							
Type-III @ 18.75' Each				-75.00																			
TL-3 @ 50' Each				-200.00																			
LESS GUARDRAIL DEDUCTIONS:				100.00																			
PROJECT TOTAL:				100.00	0.00																		
SAY:				112.5	0.0										4	0	4	0	0				
"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 BEGIN																							



P: (919) 878-9560
8601 Six Forks Road, Forum 1, Suite 700
Raleigh, North Carolina 27615-3960
NC License No. F-0112

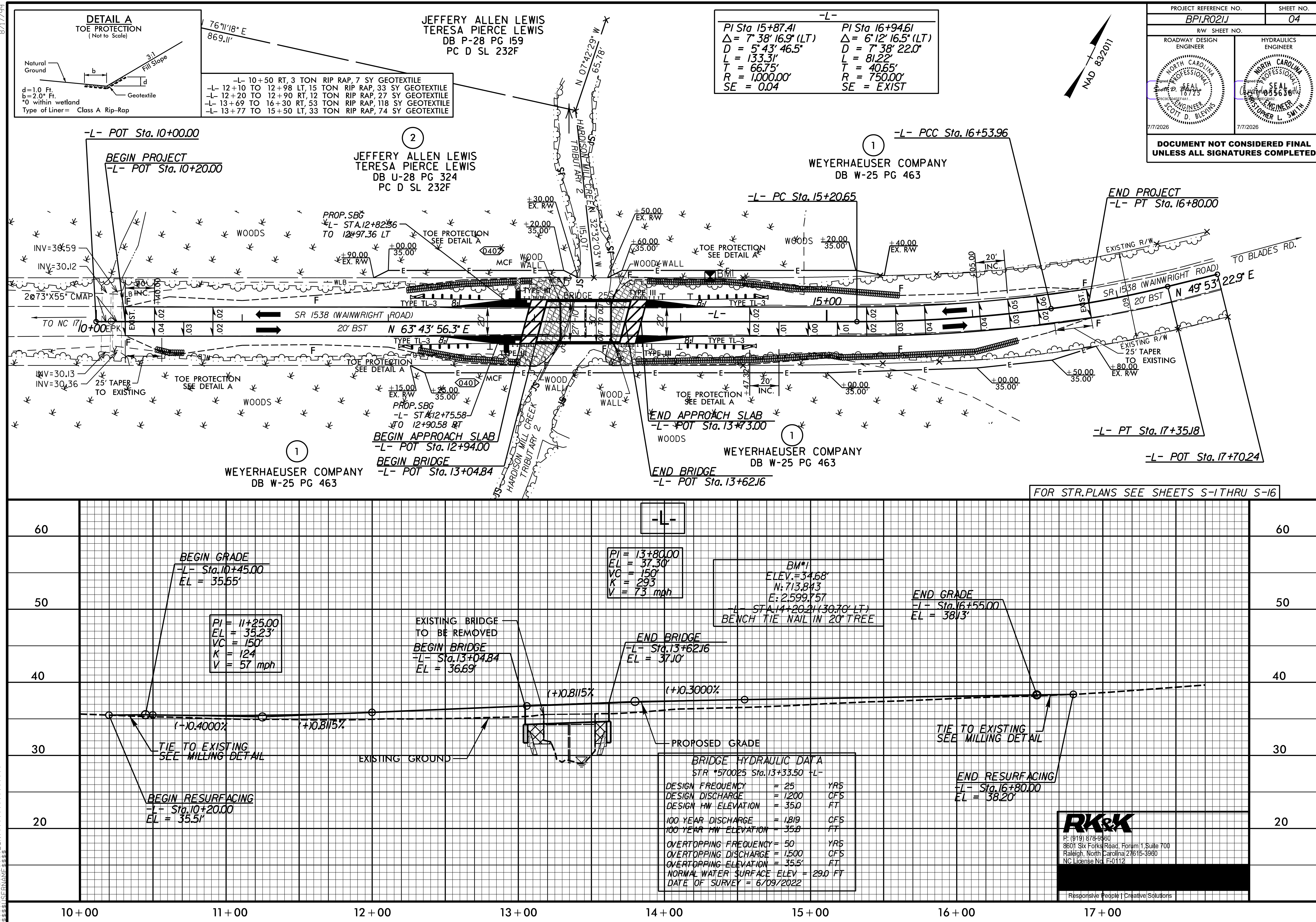
5/28/99

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

SUMMARY OF SUBSURFACE DRAINAGE

LINE	Station	Station	Location LT/RT/CL	Drain Type* UD/BD/SD	LF
CONTINGENCY				SD	200
				TOTAL LF:	200
*UD = Underdrain					
*BD = Blind Drain					
*SD = Subsurface Drain					

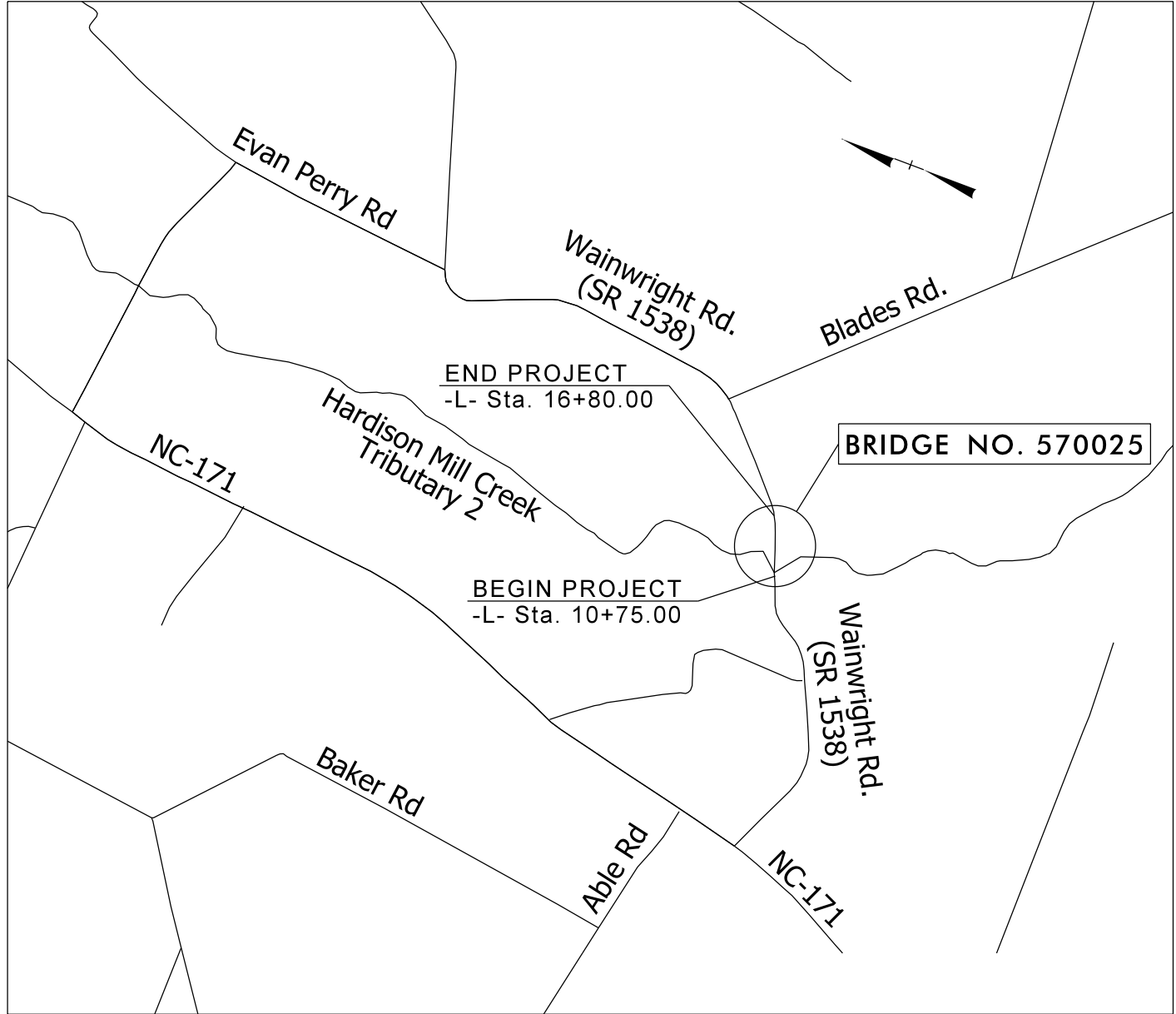
5/28/99



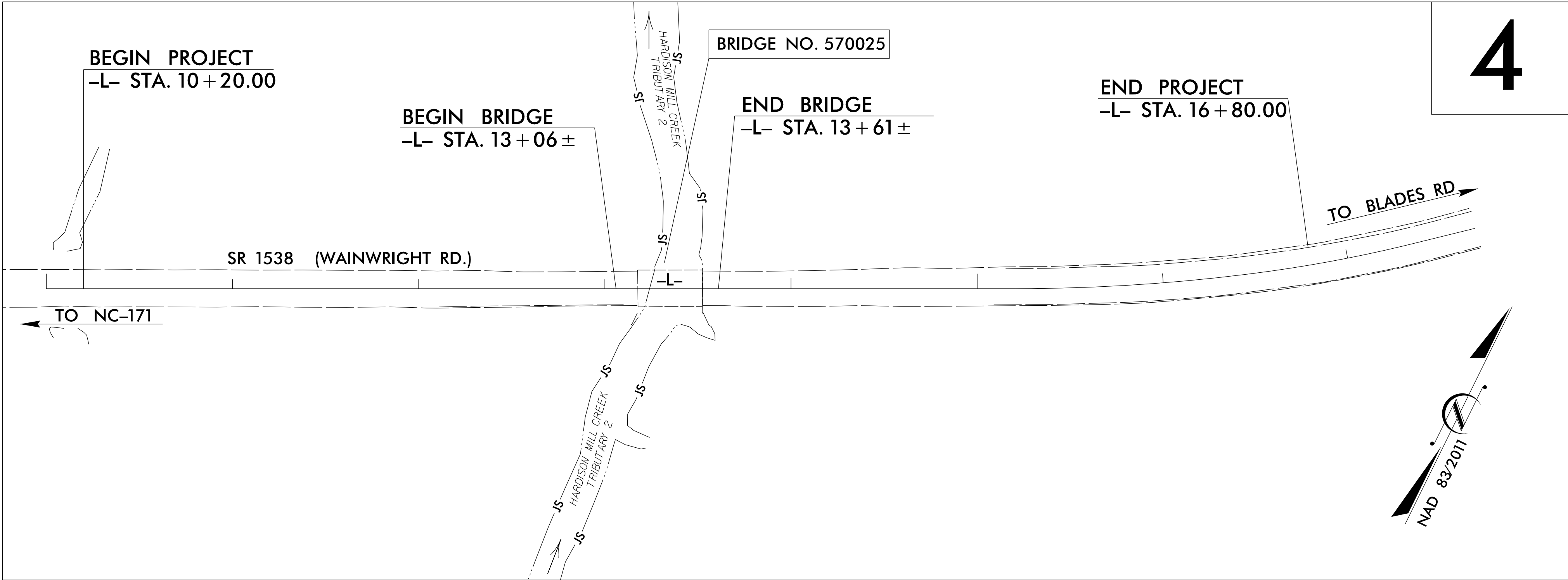
09/08/99

09-APR-2026 07:42
R:\B_Jobs\BplR021\Martin 251\KCI\ControlSheets\RW and Title-Sheets\570025_rdy_+tsh.dgn
Tdowns AT LS-345772L

TIP PROJECT: BP1-R021



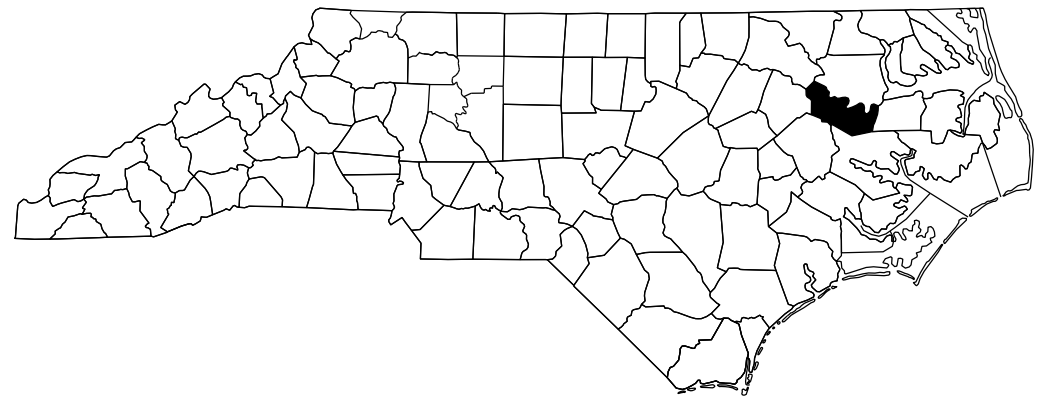
VICINITY MAP



STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

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

MARTIN COUNTY



DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT
IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY
KCI FOR MONUMENT "BP1R021-3"
WITH NAD 83/NA 2011 STATE PLANE GRID COORDINATES OF
NORTHING: 714000.128(ft) EASTING: 2600094.460(ft)
ELEVATION: 38.81(ft)
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT
(GROUND TO GRID) IS: 0.999906334
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NAVD 88

Prepared in the Office of:

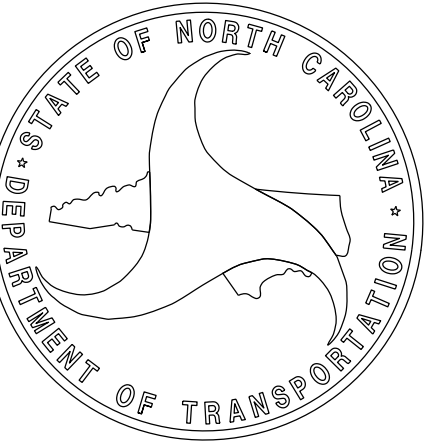
LOCATION & SURVEYS
DIVISION 1
1300 US HWY 64 W
PLYMOUTH, NC 27962

PROFESSIONAL LAND
SURVEYOR



Designed by:
T. Downs III
Signature:

Date:
04/09/2026



REVISIONS

SURVEY CONTROL SHEET

W/ EXISTING CENTERLINE ALIGNMENTS PRIOR TO CONSTRUCTION

PROJECT REFERENCE NO.	SHEET NO.
BP1.R021	RW02C-1
Location and Surveys	
	KCI Associates of N.C., P.A. 4505 Falls of Neuse Rd, Suite 400 Raleigh, NC 27609 Phone (919) 783-9214 http://www.kci.com
PROJECT SURVEYOR 	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

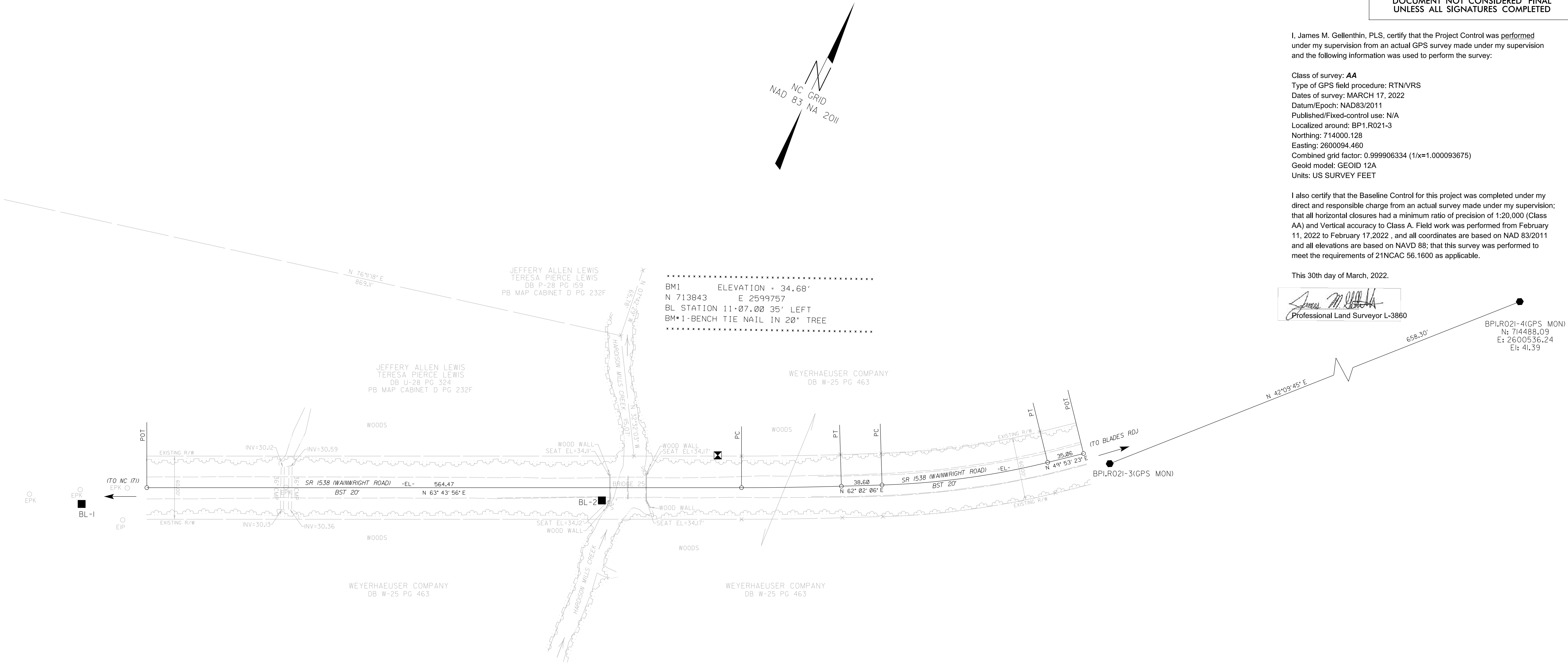
I, James M. Gellenthin, PLS, certify that the Project Control was performed under my supervision from an actual GPS survey made under my supervision and the following information was used to perform the survey:

Class of survey: **AA**
Type of GPS field procedure: RTN/VRS
Dates of survey: MARCH 17, 2022
Datum/Epoch: NAD83/2011
Published/Fixed-control use: N/A
Localized around: BP1.R021-3
Northing: 714000.128
Easting: 2600094.460
Combined grid factor: 0.999906334 (1/x=1.000093675)
Geoid model: GEOID 12A
Units: US SURVEY FEET

I also certify that the Baseline Control for this project 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 1:20,000 (Class AA) and Vertical accuracy to Class A. Field work was performed from February 11, 2022 to February 17, 2022 , and all coordinates are based on NAD 83/2011 and all elevations are based on NAVD 88; that this survey was performed to meet the requirements of 21NCAC 56.1600 as applicable.

This 30th day of March, 2022.


Professional Land Surveyor L-3860



NOTES:

- PROJECT CONTROL WAS ESTABLISHED USING GNSS, THE GLOBAL NAVIGATION SATELLITE SYSTEM.
- THE SURVEY 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.

6/2/99

21-MAR-2022 14:49
K:\2022\352200166 NCDOT Survey\B 4 Bridges Div 1\DRAWINGS\MARTIN 25\bp1-r021.1s-rw02c-2.DGN
matthew.koss AT KCI-D2KL893

REVISIONS

SURVEY CONTROL SHEET

W/ EXISTING CENTERLINE ALIGNMENTS PRIOR TO CONSTRUCTION

PROJECT REFERENCE NO.	SHEET NO.
BP1.R021	RW02C-2
Location and Surveys	
 KCI http://www.kci.com	KCI Associates of N.C., P.A. 4505 Falls of Neuse Rd, Suite 400 Raleigh, NC 27609 Phone (919) 783-9214
PROJECT SURVEYOR 	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

I, James M. Gellenthin, PLS, certify that the Project Control was performed under my supervision from an actual GPS survey made under my supervision and the following information was used to perform the survey:

Class of survey: **AA**
Type of GPS field procedure: RTN/VRS
Dates of survey: MARCH 17, 2022
Datum/Epoch: NAD83/2011
Published/Fixed-control use: N/A
Localized around: BP1.R021-3
Northing: 714000.128
Easting: 2600094.460
Combined grid factor: 0.999906334 (1/x=1.000093675)
Geoid model: GEOID 12A
Units: US SURVEY FEET

I also certify that the Baseline Control for this project 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 1:20,000 (Class AA) and Vertical accuracy to Class A. Field work was performed from February 11, 2022 to February 17, 2022 , and all coordinates are based on NAD 83/2011 and all elevations are based on NAVD 88; that this survey was performed to meet the requirements of 21NCAC 56.1600 as applicable.

This 21st day of March, 2022.


Professional Land Surveyor L-3860

BL	POINT	DESC.	NORTH	EAST	ELEVATION
1		BL -1	713533.9450	2599236.3300	34.18
2		BL -2	713755.4660	2599677.6560	34.61
3		BP1-R021-3(GPS	714000.1280	2600094.4600	38.81
4		BP1-R021-4(GPS	714488.0910	2600536.3350	41.38

BM1 ELEVATION = 34.68
N 713843 E 2599757
BM+1- BENCH TIE NAIL IN 20IN TREE

NOTES:

1. PROJECT CONTROL WAS ESTABLISHED USING GNSS, THE GLOBAL NAVIGATION SATELLITE SYSTEM.
2. THE SURVEY 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.

REVISIONS

I6-MAR-2022 2426 M:\2022\352200166 NCDOT Survey\B 4 Bridges Div 1\DRAWINGS\MARTIN 25\bp1-r021.1s-rw02c-3.DGN
matthew.koss AT KCI-D2KL893

SURVEY CONTROL SHEET
W/ EXISTING CENTERLINE ALIGNMENTS PRIOR TO CONSTRUCTION

EL POINT	N	E	BEARING	DIST	DELTA	D	L	T	R
POT	713575.191	2599284.986							
LINE			N 63°43'56.3" E	564.47					
PC	713825.006	2599791.166							
CURVE			N 62°53'01.2" E	94.79	01°41'50.2"(LT)	01°47'25.8"	94.79	47.40	3200.00
PT	713868.211	2599875.538							
LINE			N 62°02'06.1" E	38.60					
PC	713886.311	2599909.628							
CURVE			N 55°57'44.5" E	158.68	12°08'43.2"(LT)	07°38'22.0"	158.98	79.79	750.00
PT	713975.132	2600041.125							
LINE			N 49°53'22.9" E	35.06					
POT	713997.720	2600067.940							

PROJECT REFERENCE NO.
BP1.R021

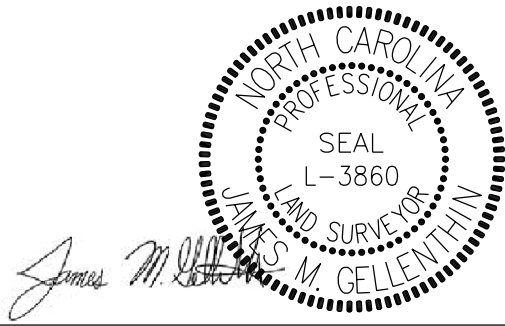
SHEET NO.
RW02C-3

Location and Surveys



KCI Associates of N.C., P.A.
4505 Falls of Neuse Rd, Suite 400
Raleigh, NC 27609
Phone (919) 783-9214
<http://www.kci.com>

PROJECT SURVEYOR



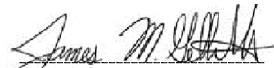
DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

I, James M. Gellenthin, PLS, certify that the Project Control was performed under my supervision from an actual GPS survey made under my supervision and the following information was used to perform the survey:

Class of survey: **AA**
Type of GPS field procedure: RTN/VRS
Dates of survey: MARCH 17, 2022
Datum/Epoch: NAD83/2011
Published/Fixed-control use: N/A
Localized around: BP1.R021-3
Northing: 714000.128
Easting: 2600094.460
Combined grid factor: 0.999906334 (1/x=1.000093675)
Geoid model: GEOID 12A
Units: US SURVEY FEET

I also certify that the Baseline Control for this project 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 1:20,000 (Class AA) and Vertical accuracy to Class A. Field work was performed from February 11, 2022 to February 17, 2022 , and all coordinates are based on NAD 83/2011 and all elevations are based on NAVD 88; that this survey was performed to meet the requirements of 21NCAC 56.1600 as applicable.

This 16th day of March, 2022.


Professional Land Surveyor L-3860

NOTES:

- PROJECT CONTROL WAS ESTABLISHED USING GNSS, THE GLOBAL NAVIGATION SATELLITE SYSTEM.
- THE SURVEY 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.

REVISIONS

PROPOSED ALIGNMENT CONTROL SHEET

PROJECT REFERENCE NO.
BPI-R021

SHEET NO.
RW02D-1

Location and Surveys

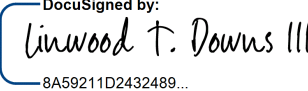
LOCATION & SURVEYS
DIVISION 1
1300 US HWY 64 W
PLYMOUTH, NC 27962

PROJECT SURVEYOR

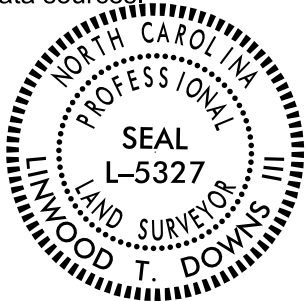

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

I, Linwood T. Downs III, 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 19th day of March, 2026.

DocuSigned by:


Professional Land Surveyor L-5327

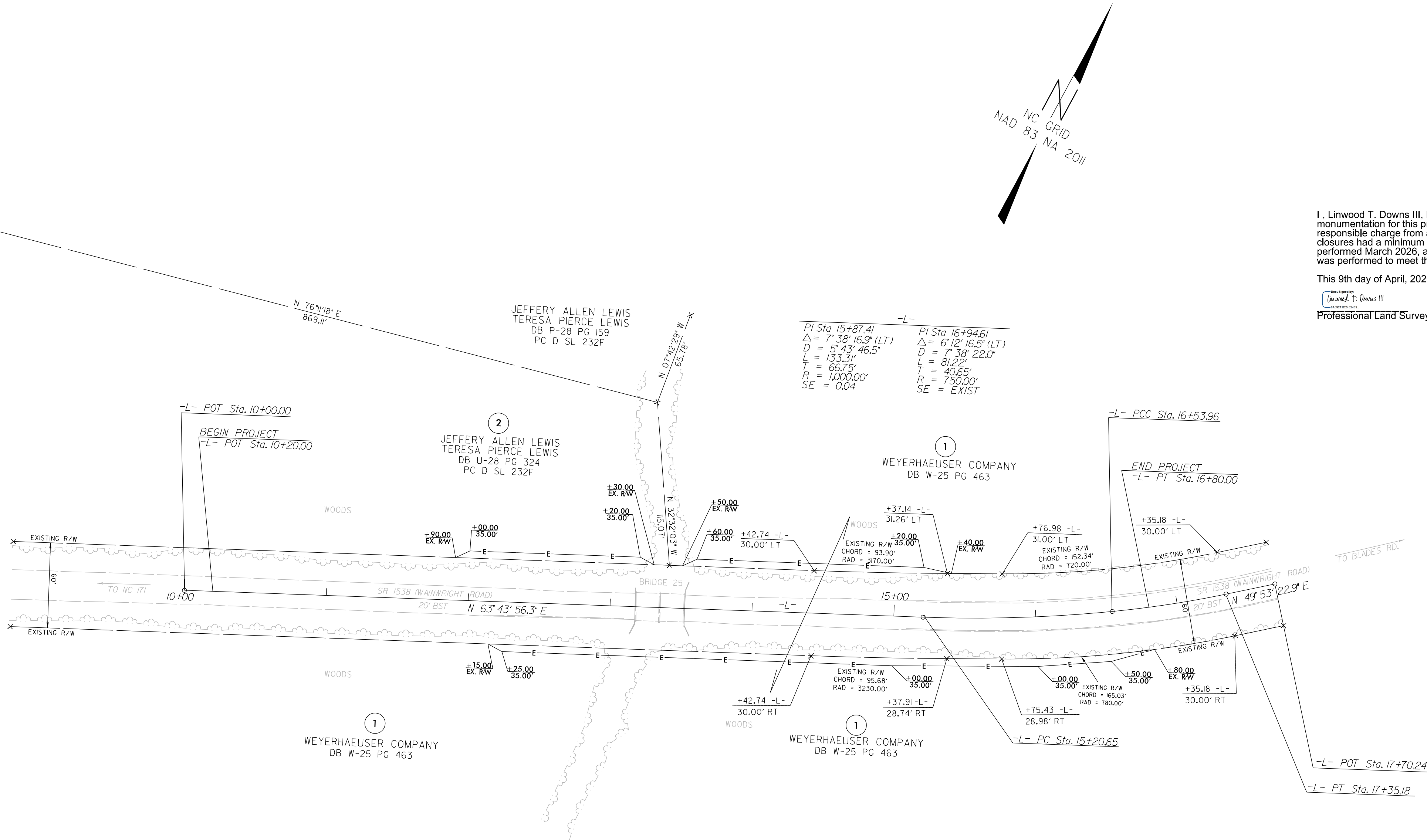
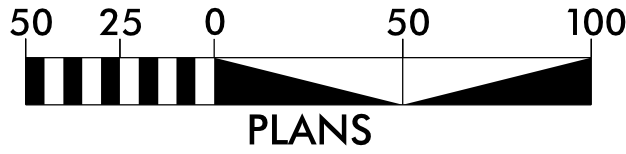


L									
POINT	N	E	BEARING	DIST	DELTA	D	L	T	R
POT	713629.066	2599394.149	N 63°43'56.3" E	520.65					
LINE									
PC	713859.490	2599861.038	N 59°54'47.9" E	133.21	07°38'16.9"(LT)	05°43'46.5"	133.31	66.75	1000.00
CURVE									
PCC	713926.269	2599976.301	N 52°59'31.2" E	81.18	06°12'16.5"(LT)	07°38'22.0"	81.22	40.65	750.00
CURVE									
PT	713975.132	2600041.125	N 49°53'22.9" E	35.06					
LINE									
POT	713997.720	2600067.940							

NOTES:

1. PROJECT CONTROL WAS ESTABLISHED USING GNSS, THE GLOBAL NAVIGATION SATELLITE SYSTEM.
2. 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.

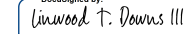
REVISIONS



PROJECT REFERENCE NO.	SHEET NO.
BPI-R021	RW04
Location and Surveys	
LOCATION & SURVEYS DIVISION 1 1300 US HWY 64 W PLYMOUTH, NC 27962	
PROJECT SURVEYOR 	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

I, Linwood T. Downs III, 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 March 2026, and all coordinates are based on NAD83/2011. That this survey was performed to meet the requirements of 21NCAC 56.1600 as applicable.

This 9th day of April, 2026.

 Linwood T. Downs III

Professional Land Surveyor L-5327



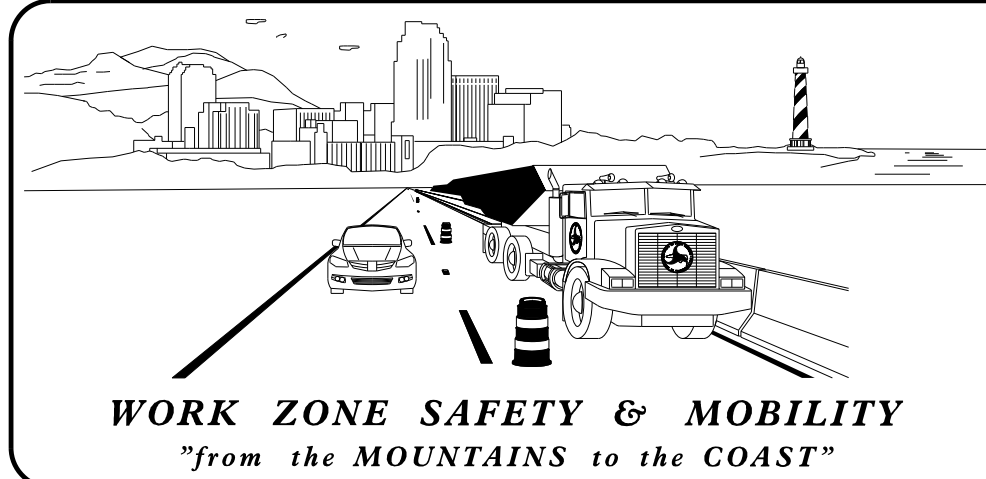
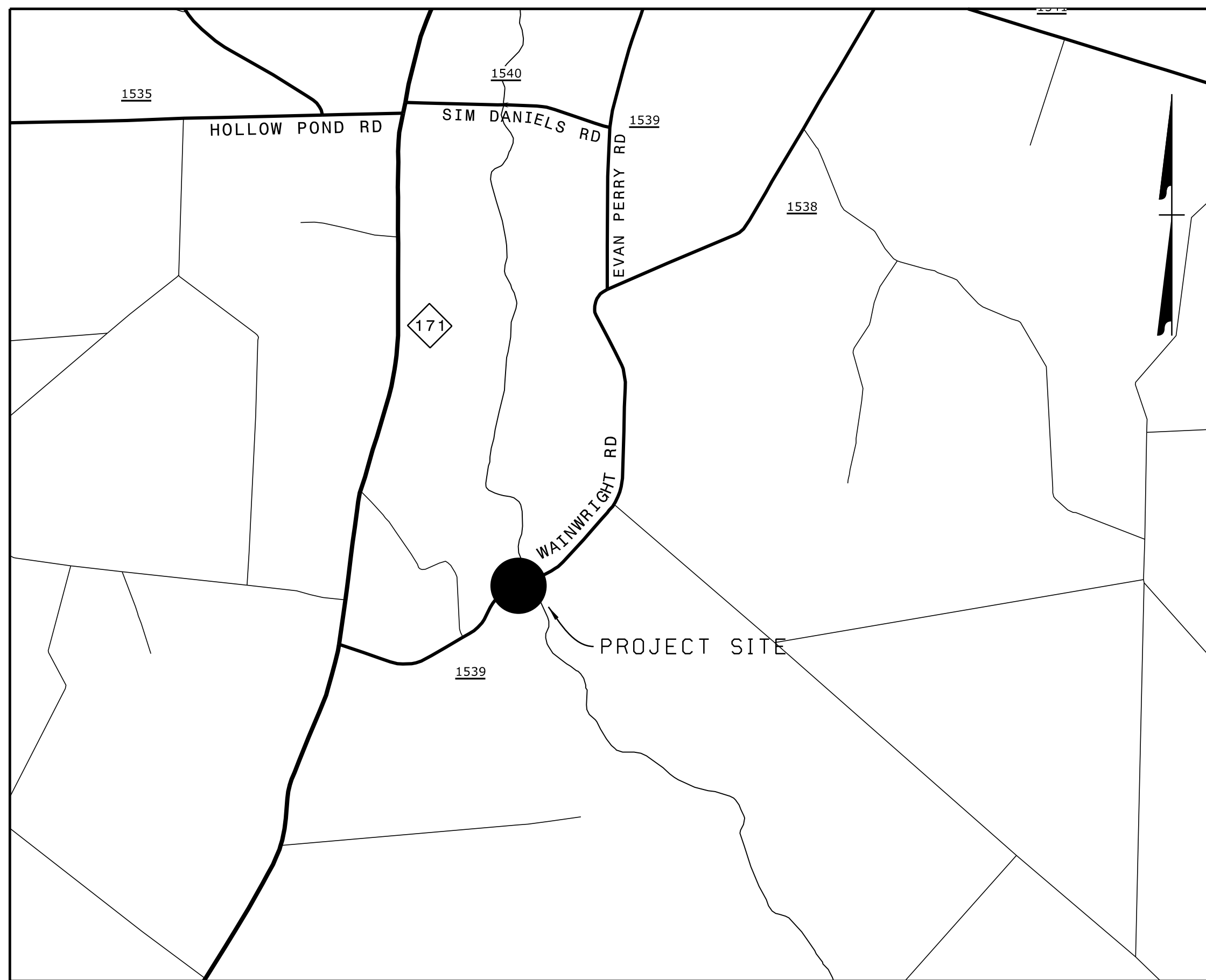
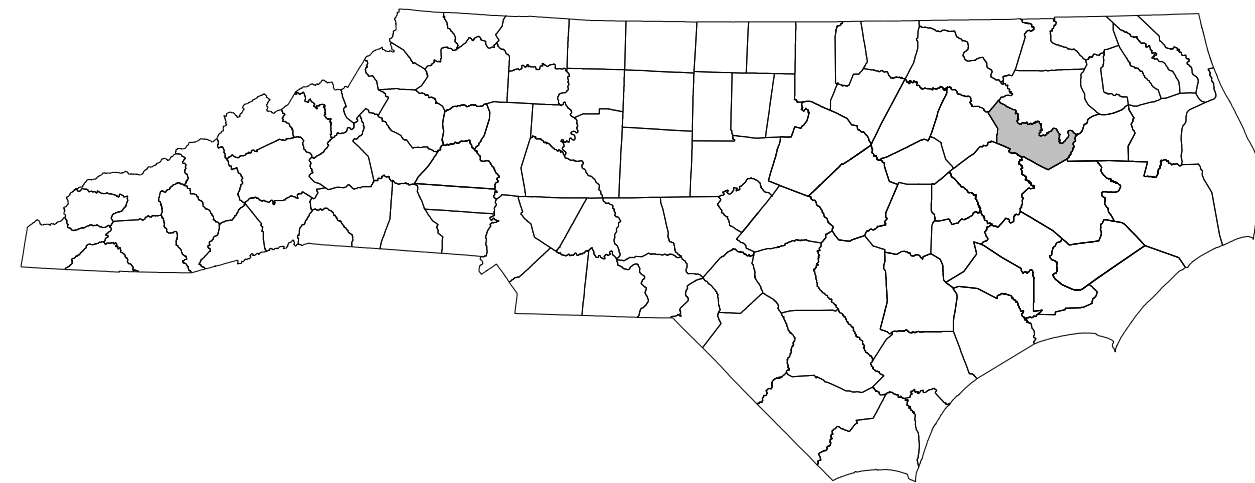
NOTES:

1. IF FURTHER INFORMATION REGARDING PROJECT CONTROL IS NEEDED PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.
2. PROJECT CONTROL WAS ESTABLISHED USING GNSS, THE GLOBAL NAVIGATION SATELLITE SYSTEM.
3. RIGHT OF WAY MONUMENTATION ESTABLISHED MARCH 2026 .

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

TRANSPORTATION MANAGEMENT PLAN

MARTIN COUNTY



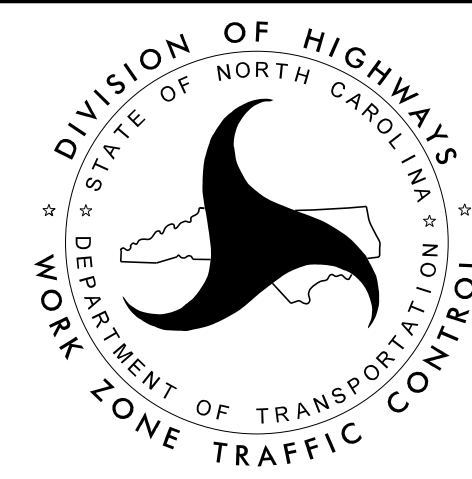
PLANS PREPARED BY:

DAVID SEARS, PE, PTOE
PROJECT MANAGER

BYRON HOLDEN, PE
TECHNICAL MANAGER

NCDOT CONTACTS:

RYAN SHOOK
DIVISION BRIDGE PROGRAM MANAGER



INDEX OF SHEETS

SHEET NO.	TITLE
TMP-1	TITLE SHEET, VICINITY MAP, AND INDEX OF SHEETS
TMP-1A	LIST OF APPLICABLE ROADWAY STANDARD DRAWINGS, AND LEGEND
TMP-2	GENERAL NOTES AND TRAFFIC CONTROL PHASING
TMP-3	OFFSITE DETOUR DETAIL

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

APPROVED: *David T. Sears*
000183F28E5741E...

DATE: 7/9/2026

SEAL



SHEET NO.

TMP-1

BP1.R021.1

PROJECT:

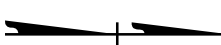
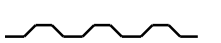
ROADWAY STANDARD DRAWINGS

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.

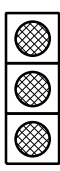
STD. NO.	TITLE
1101.01	WORK ZONE ADVANCE WARNING SIGNS
1101.02	TEMPORARY LANE CLOSURES
1101.03	TEMPORARY ROAD CLOSURES
1101.04	TEMPORARY SHOULDER CLOSURES
1101.05	WORK ZONE VEHICLE ACCESS
1101.11	TRAFFIC CONTROL DESIGN TABLES
1110.01	STATIONARY WORK ZONE SIGNS
1110.02	PORTABLE WORK ZONE SIGNS
1135.01	CONES
1145.01	BARRICADES
1150.01	FLAGGERS

LEGEND

GENERAL

-  DIRECTION OF TRAFFIC FLOW
-  DIRECTION OF PEDESTRIAN TRAFFIC FLOW
-  NORTH ARROW
-  TEMP. SHORING (LOCATION PURPOSES ONLY)
-  WORK AREA
-  REMOVAL

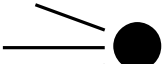
SIGNALS

-  EXISTING
-  PROPOSED
-  TEMPORARY

PAVEMENT MARKINGS

-  EXISTING 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
-  PORTABLE CONCRETE BARRIER
-  PORTABLE CONCRETE BARRIER (EXISTING)
-  PORTABLE CONCRETE BARRIER (SECTION VIEW)
-  DRUM (SECTION VIEW)

TEMPORARY SIGNING

-  PORTABLE SIGN
-  STATIONARY SIGN
-  STATIONARY OR PORTABLE SIGN

PROJ. REFERENCE NO.

BP1.R021.1

SHEET NO.

TMP-1A

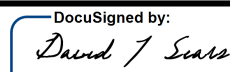


P: (919) 978-9560
8601 Six Forks Road, Forum 1, Suite 700
Raleigh, North Carolina 27615-3960
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APPROVED: 

DATE: 7/9/2026

SEAL



DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED



ROADWAY STANDARD
DRAWINGS & LEGEND

PROJ. REFERENCE NO.	SHEET NO.
BP1.R021.1	TMP-2



GENERAL NOTES

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

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.

LANE AND SHOULDER CLOSURE REQUIREMENTS

- A) REMOVE LANE CLOSURE DEVICES FROM THE LANE WHEN WORK IS NOT BEING PERFORMED BEHIND THE LANE CLOSURE OR WHEN A LANE CLOSURE IS NO LONGER NEEDED OR AS DIRECTED BY THE ENGINEER.
- B) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN 15 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN SHOULDER USING ROADWAY STANDARD DRAWING NO. 1101.04 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL OR A LANE CLOSURE IS INSTALLED.
- C) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING ON THE SHOULDER ADJACENT TO AN UNDIVIDED FACILITY AND WITHIN 5 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN TRAVEL LANE USING ROADWAY STANDARD DRAWING NO. 1101.02 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL.
- D) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN A LANE OF TRAVEL OF AN UNDIVIDED OR DIVIDED FACILITY, CLOSE THE LANE ACCORDING TO THE TRAFFIC CONTROL PLANS, ROADWAY STANDARD DRAWINGS, OR AS DIRECTED BY THE ENGINEER. CONDUCT THE WORK SO THAT ALL PERSONNEL AND/OR EQUIPMENT REMAIN WITHIN THE CLOSED TRAVEL LANE.
- E) DO NOT WORK SIMULTANEOUSLY WITHIN 15 FT ON BOTH SIDES OF AN OPEN TRAVELWAY, RAMP, OR LOOP WITHIN THE SAME LOCATION UNLESS PROTECTED WITH GUARDRAIL OR BARRIER.

TRAFFIC PATTERN ALTERATIONS

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

SIGNING

- G) INSTALL ADVANCE WORK ZONE WARNING SIGNS WHEN WORK IS WITHIN 40 FT FROM THE EDGE OF TRAVEL LANE AND NO MORE THAN THREE (3) DAYS PRIOR TO THE BEGINNING OF CONSTRUCTION.
- H) PROVIDE SIGNING AND DEVICES REQUIRED TO CLOSE THE ROAD ACCORDING TO THE ROADWAY STANDARD DRAWINGS AND TRAFFIC CONTROL PLANS.

STATE FORCES WILL BE RESPONSIBLE FOR PROVIDING SIGNING REQUIRED FOR THE OFF-SITE DETOUR ROUTE AS SHOWN IN THE TRAFFIC CONTROL PLANS.

- I) COVER OR REMOVE ALL SIGNS AND DEVICES REQUIRED TO CLOSE THE ROAD WHEN ROAD CLOSURE IS NOT IN OPERATION.

STATE FORCES WILL COVER OR REMOVE ALL SIGNS REQUIRED FOR THE OFF-SITE DETOUR WHEN THE DETOUR IS NOT IN OPERATION.

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

TRAFFIC CONTROL DEVICES

- K) WHEN LANE CLOSURES ARE NOT IN EFFECT SPACE CHANNELIZING DEVICES IN WORK AREAS NO GREATER IN FEET THAN TWICE THE POSTED SPEED LIMIT (MPH) EXCEPT, 10 FT ON-CENTER IN RADII, AND 3 FT OFF THE EDGE OF AN OPEN TRAVELWAY. REFER TO STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES SECTIONS 1130 (DRUMS), 1135 (CONES) AND 1180 (SKINNY DRUMS) FOR ADDITIONAL REQUIREMENTS.
- L) PLACE TYPE III BARRICADES, WITH "ROAD CLOSED" SIGN R11-2 ATTACHED, OF SUFFICIENT LENGTH TO CLOSE ENTIRE ROADWAY.

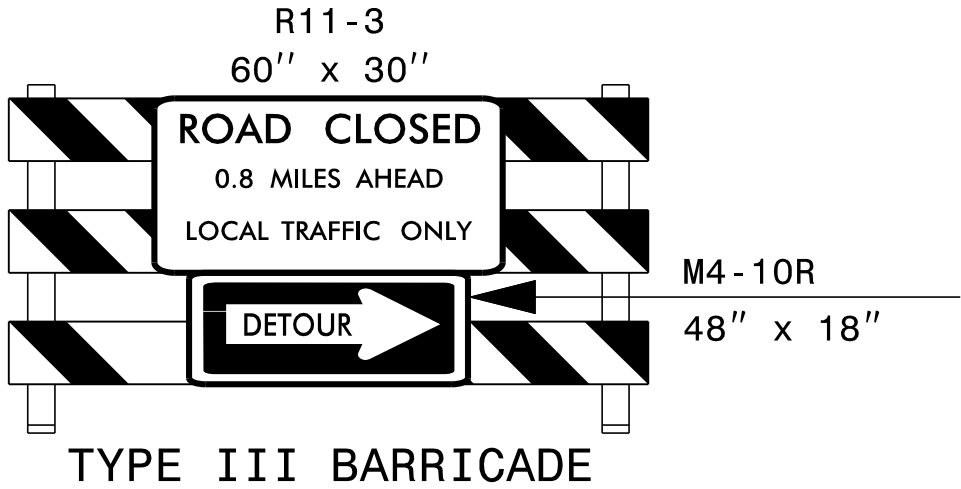
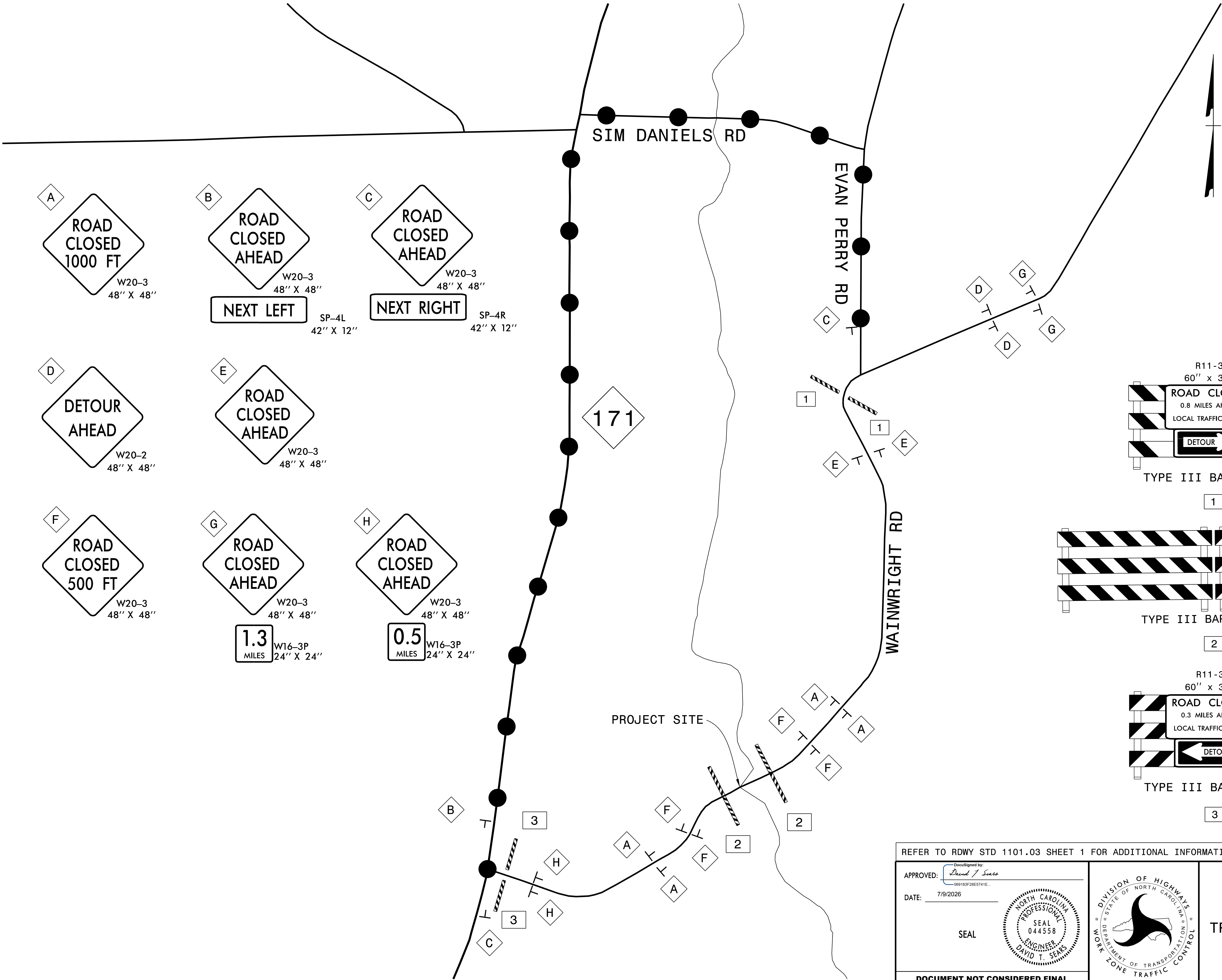
TRAFFIC CONTROL PHASING

STEP 1:
ERECT OFFSITE DETOUR SIGNING AS SHOWN ON TMP-3, AND CLOSE SR 1538 WAINWRIGHT RD TO TRAFFIC.

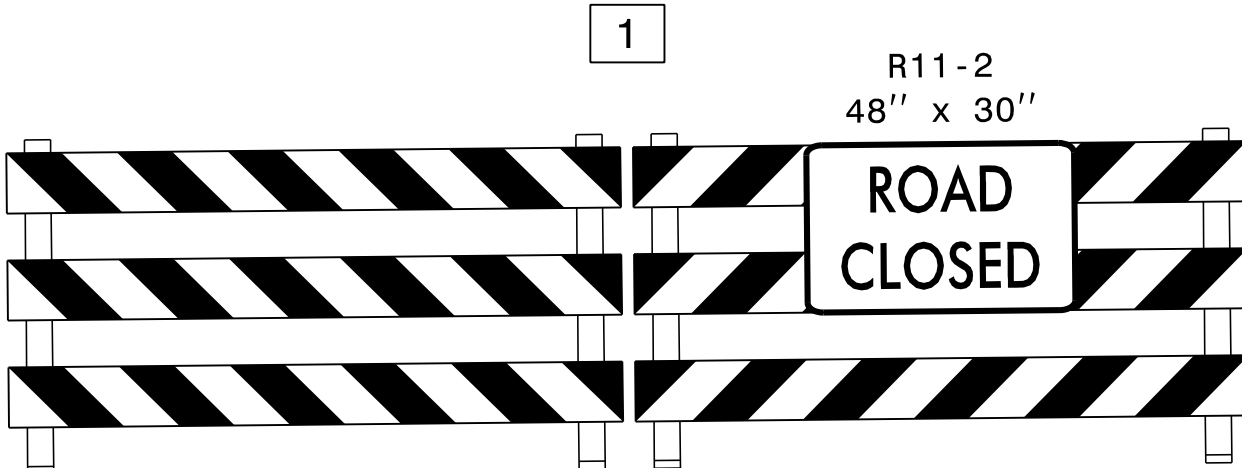
STEP 2:
CONSTRUCT PROPOSED ROADWAY AND BRIDGE THROUGH THE FINAL LAYER OF SURFACE COURSE PER THE ROADWAY
PLAN.

STEP 3:
APPLY FINAL PAVEMENT MARKINGS, REMOVE TRAFFIC CONTROL DEVICES AND OPEN SR 1538 WAINWRIGHT RD TO TRAFFIC. THE CONTRACTOR MAY USE UP TO FIVE DAYS TO COMPLETE PUNCH LIST ITEMS AFTER OPENING THE ROADWAY.

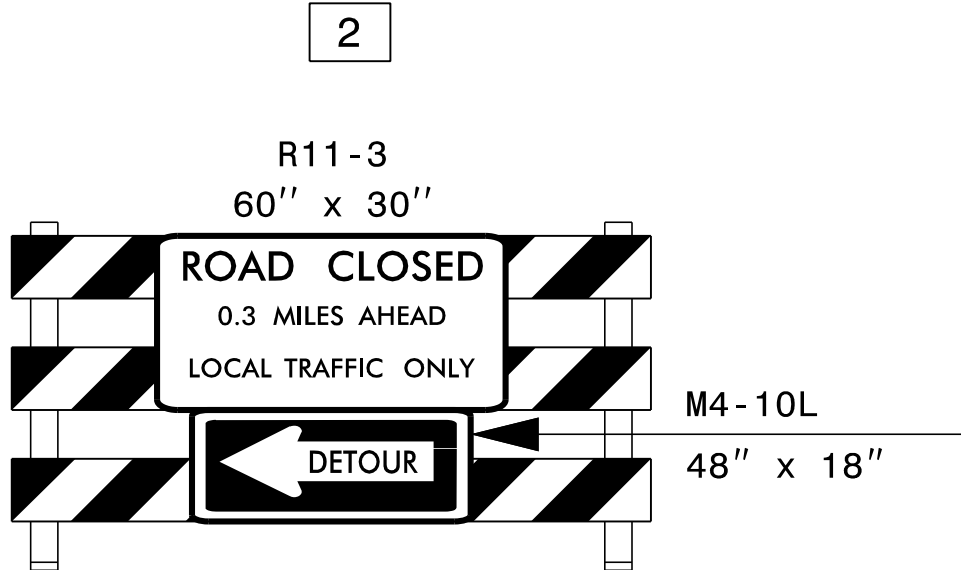
APPROVED: _____ DATE: 7/9/2026 _____ SEAL		GENERAL NOTES AND TRAFFIC CONTROL PHASING
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED		



TYPE III BARRICADE



TYPE III BARRICADE(S)



TYPE III BARRICADE

REFER TO RDWY STD 1101.03 SHEET 1 FOR ADDITIONAL INFORMATION.

APPROVED: *David T. Seaks*

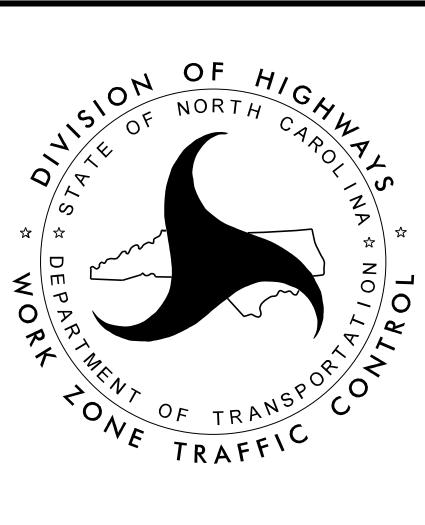
DATE: 7/9/2026

SEAL

DocuSigned by:
069183F28E5741E...

NORTH CAROLINA
PROFESSIONAL
SEAL
044558
ENGINEER
DAVID T. SEAKS

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



TRAFFIC MANAGEMENT PLAN

PROJECT: BP1.R021.1

CONTRACT:

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

PAVEMENT MARKING PLAN
MARTIN COUNTY

LOCATION: BRIDGE NO. 570025 OVER HARDISON MILL CREEK TRIBUTARY 2
ON WAINWRIGHT ROAD (SR 1538)

ROADWAY STANDARD DRAWING

THE FOLLOWING ROADWAY STANDARDS AS APPEAR IN "ROADWAY STANDARD DRAWINGS" -
CONTRACT STANDARDS AND DEVELOPMENT UNIT - 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
1205.01	PAVEMENT MARKINGS - LINE TYPES AND OFFSETS
1205.02	PAVEMENT MARKINGS - TWO-LANE AND MULTILANE ROADWAYS
1205.12	PAVEMENT MARKINGS - BRIDGES
1261.01	GUARDRAIL AND BARRIER DELINEATORS - INSTALLATION SPACING
1261.02	GUARDRAIL AND BARRIER DELINEATORS - TYPES AND MOUNTING
1262.01	GUARDRAIL END DELINEATION

INDEX

SHEET NO.	DESCRIPTION
PMP-1	PAVEMENT MARKING PLAN TITLE AND SCHEDULE SHEET
PMP-2	PAVEMENT MARKING PLAN SHEET

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-	THERMOPLASTIC	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.

PAVEMENT MARKING SCHEDULE

SYMBOL	DESCRIPTION
THERMOPLASTIC	
T1	WHITE EDGE LINE (4", 90 MIL)
T13	YELLOW DOUBLE CENTER (4", 90 MIL)

PROJECT

BP1.R021.1

SHEET NO.

PMP - 1

APPROVED:

DocuSigned by:
David T. Sears

095163f28e5741e...

DATE:

7/9/2026

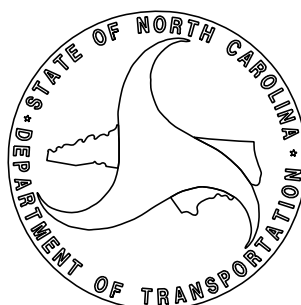
SEAL



DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

PLAN PREPARED FOR: N.C.D.O.T. SIGNING AND DELINEATION UNIT

KEVIN L. JORDAN	STATE SIGNING & DELINEATION ENGINEER
MITCH EATON, PE	SIGNING & DELINEATION REGIONAL ENGINEER

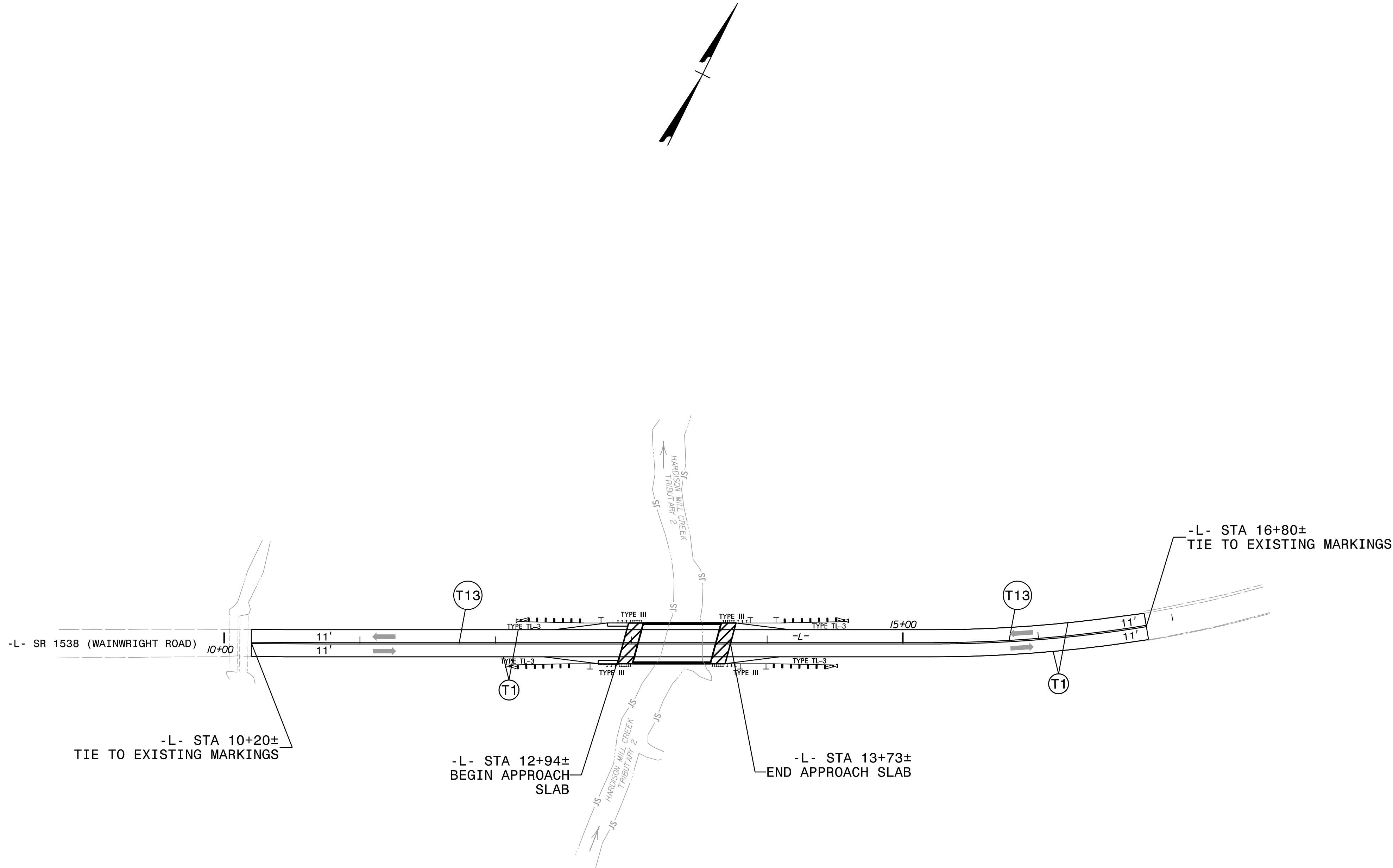


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P: (919) 878-9660
8601 Six Forks Road, Forum 1, Suite 700
Raleigh, North Carolina 27615-3960
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PROJECT	SHEET NO.
BP1.R021.1	PMP-2
APPROVED: DocuSigned by: David T. Sears 099163f28e5741e...	
DATE: 7/9/2026	
SEAL	
North Carolina Professional Seal 044558 Engineer David T. Sears	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

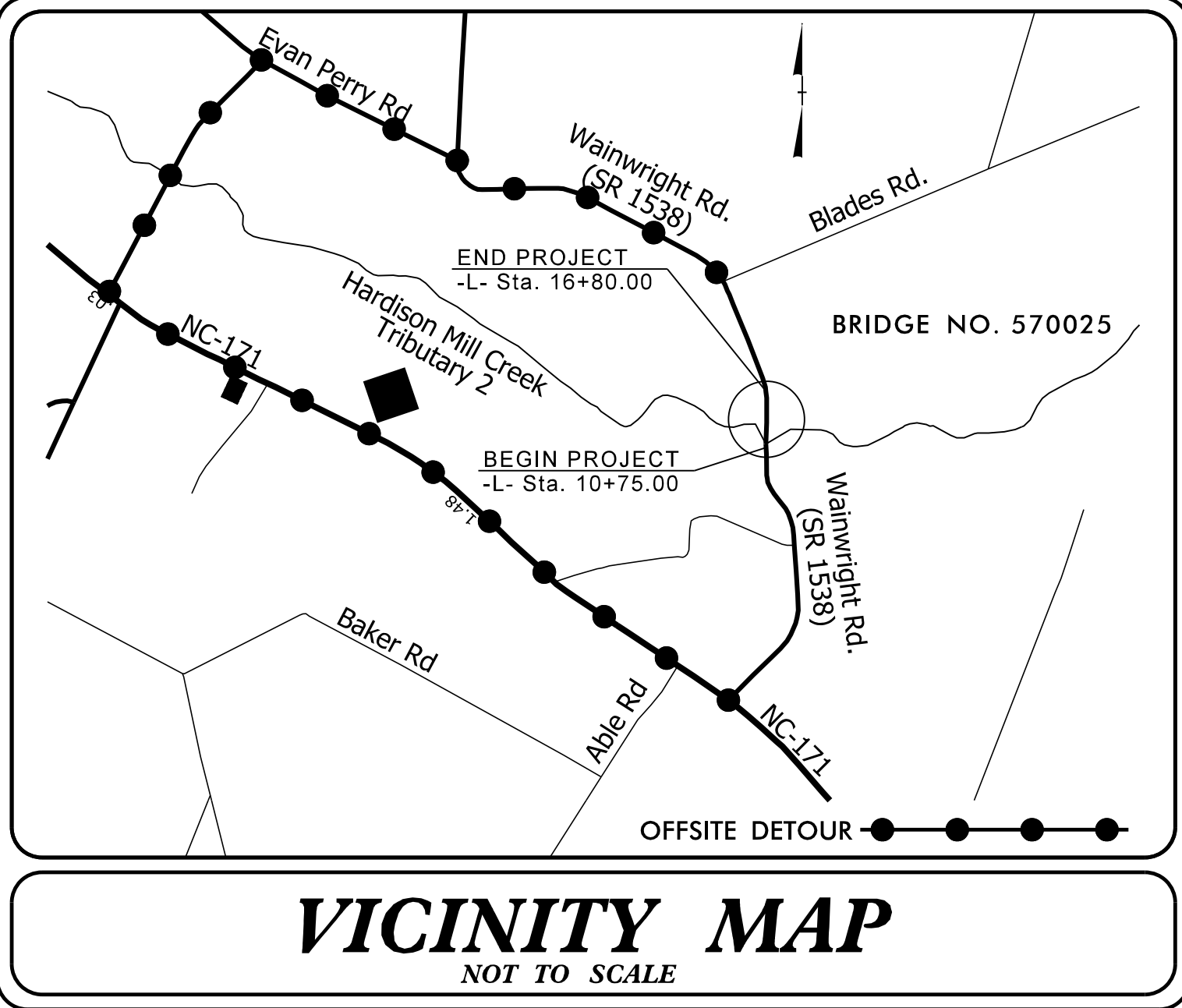


6/16/2026
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PAVEMENT MARKING PLAN SHEET

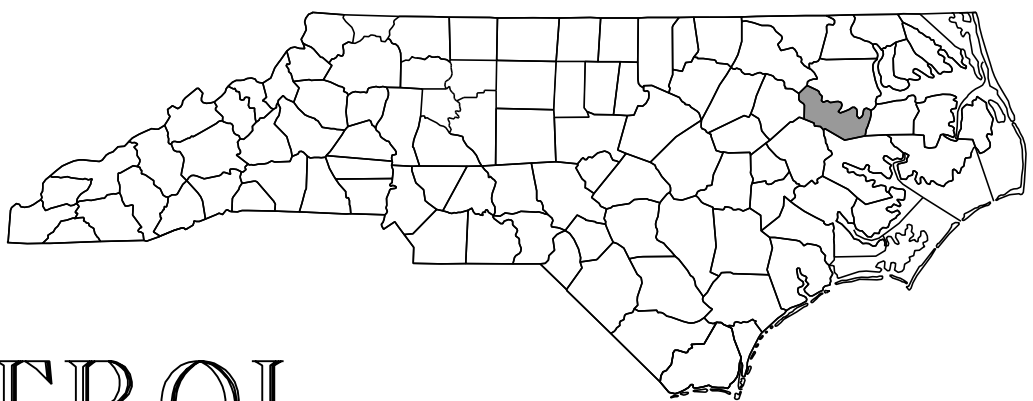
TIP PROJECT: BPI.R021.1



STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PLAN FOR PROPOSED
HIGHWAY EROSION CONTROL

MARTIN COUNTY

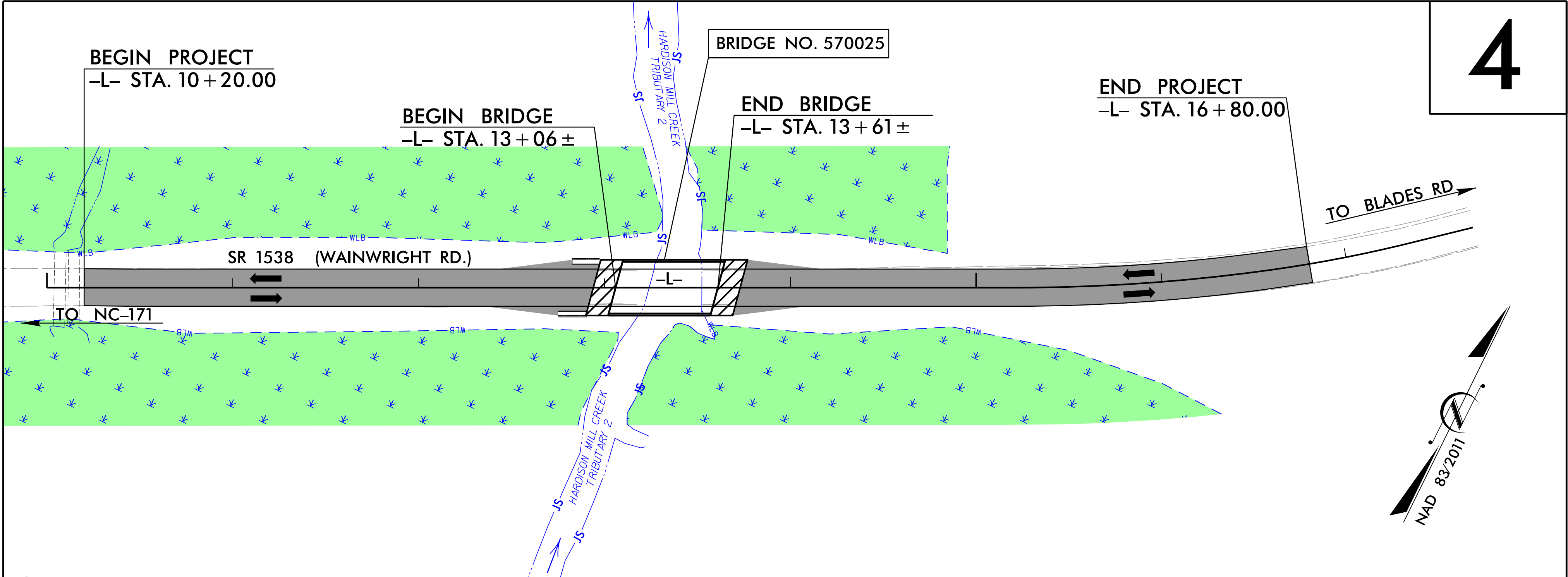


STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	BPI.R021.1	EC-1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	

- Clearing and Grubbing Phase
- Both Phases
- Final Phase

LOCATION: BRIDGE No. 570025 OVER
HARDISON MILL CREEK TRIBUTARY 2
ON WAINWRIGHT ROAD (SR 1538)

TYPE OF WORK: GRADING, DRAINAGE, PAVING, STRUCTURES,
AND RESURFACING



NOTES:
1. CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD II.

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

GRAPHIC SCALE



THESE EROSION AND SEDIMENT CONTROL PLANS COMPLY WITH
THE APPLICABLE REGULATIONS SET FORTH BY THE NCG-010000
GENERAL CONSTRUCTION PERMIT EFFECTIVE APRIL 1, 2019
AND ISSUED BY THE NORTH CAROLINA DEPARTMENT OF
ENVIRONMENTAL QUALITY DIVISION OF WATER RESOURCES.



Prepared in the Office of:
RUMMEL, KLEPPER, & KAHL, LLP
FORUM 1
8601 SIX FORKS ROAD
SUITE 700

Designed by:
SETH JONES, EI 4183
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

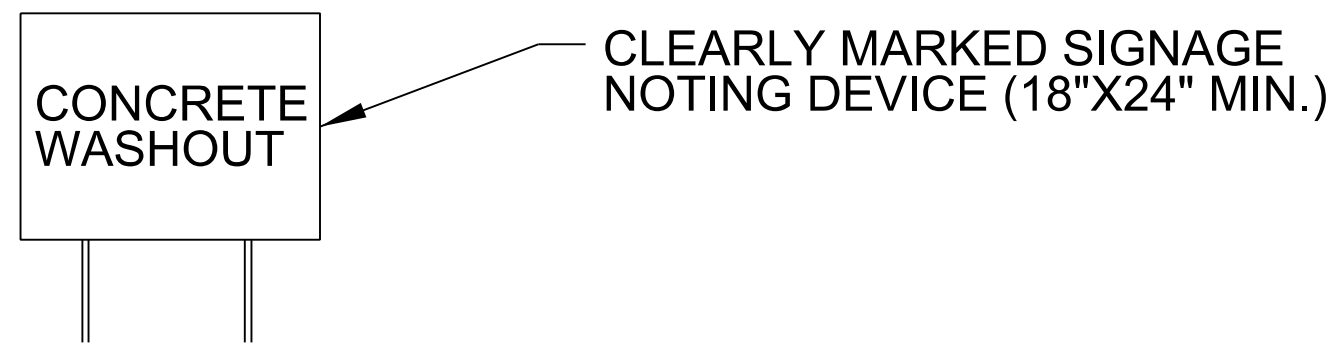
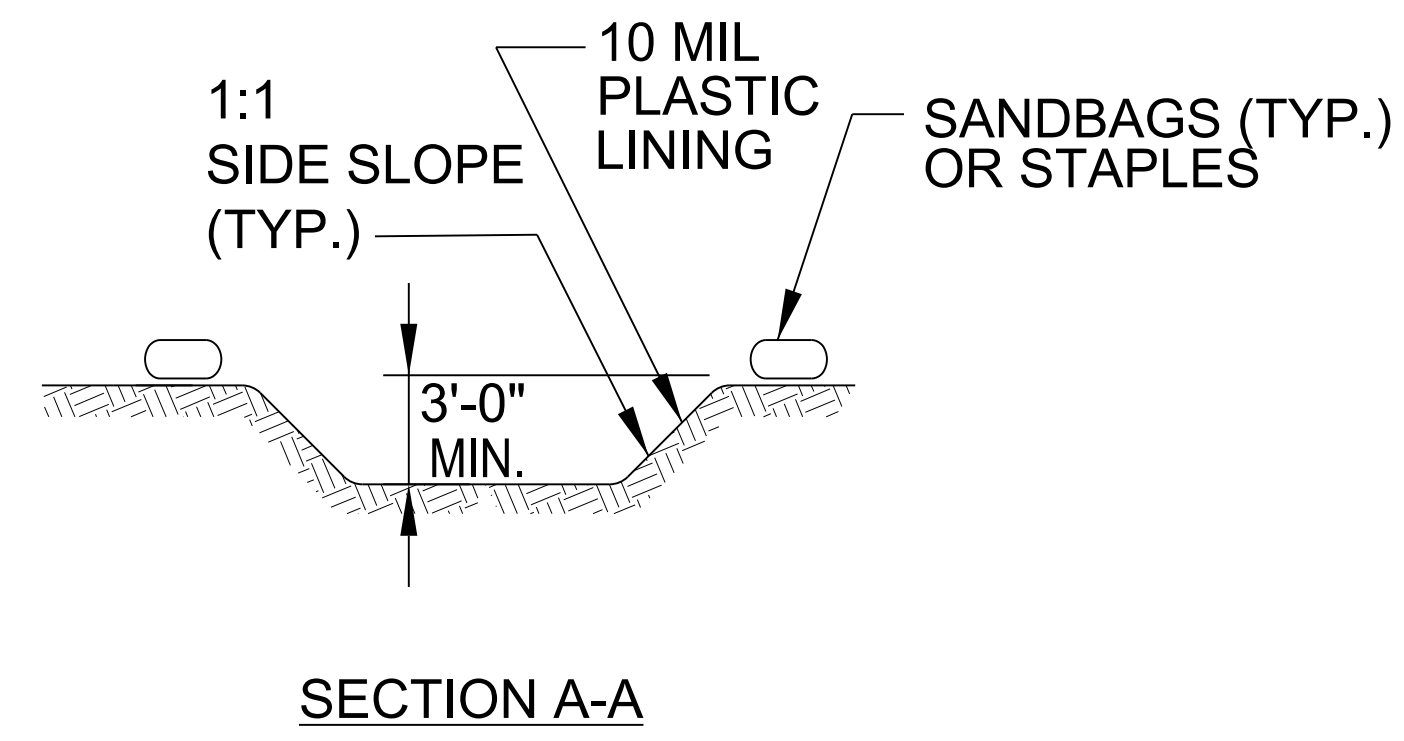
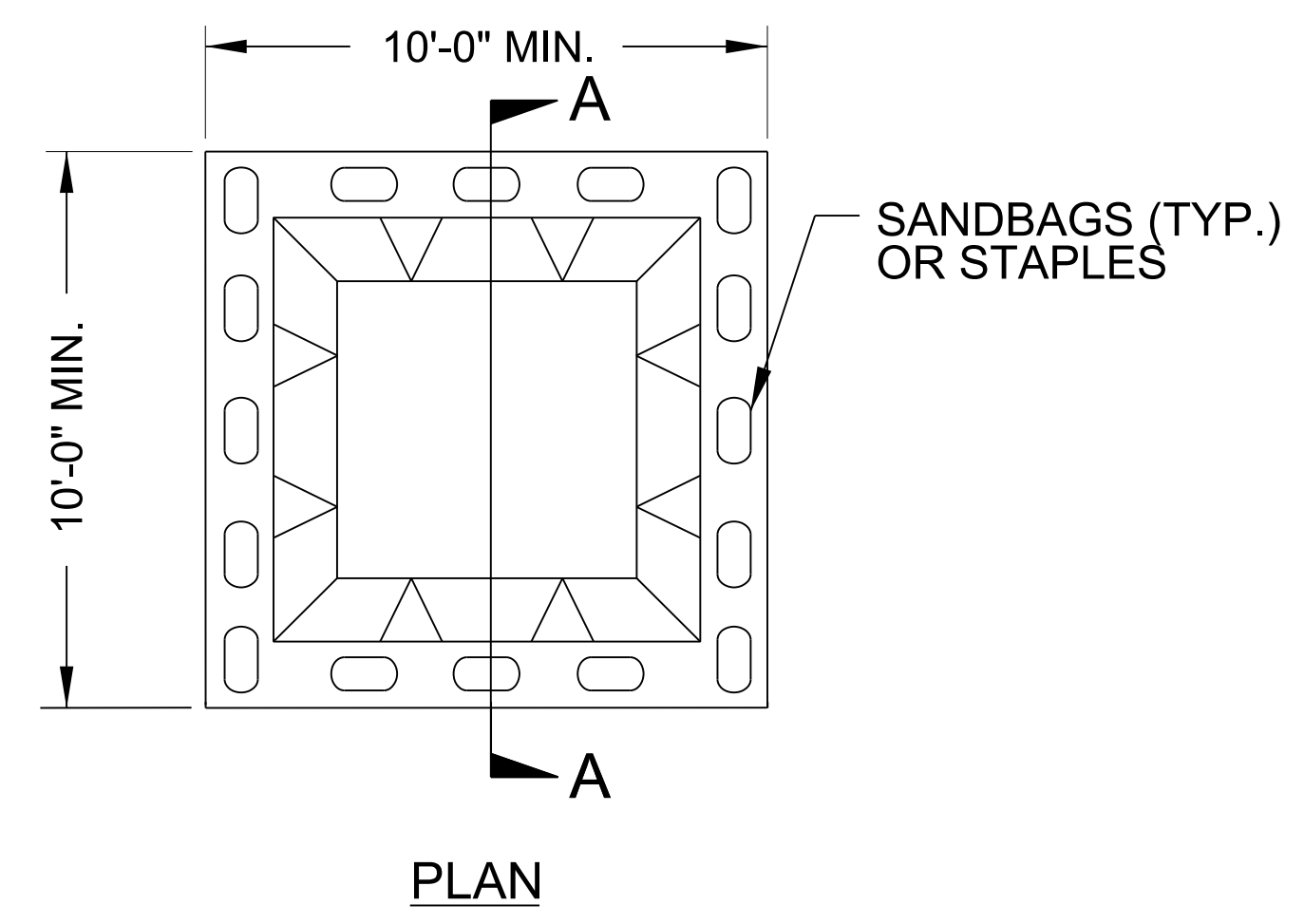
PROJECT REFERENCE NO.		SHEET NO.	
BP1.R021.1		EC-02	
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	

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	

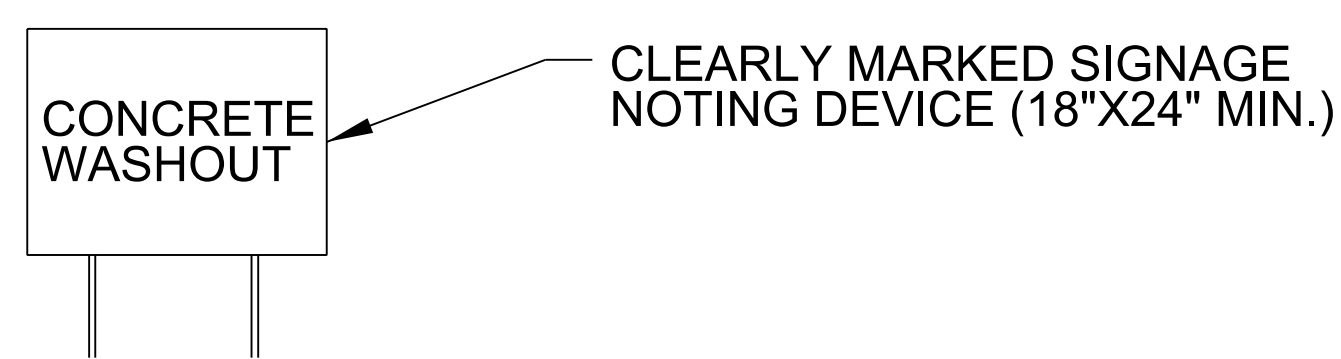
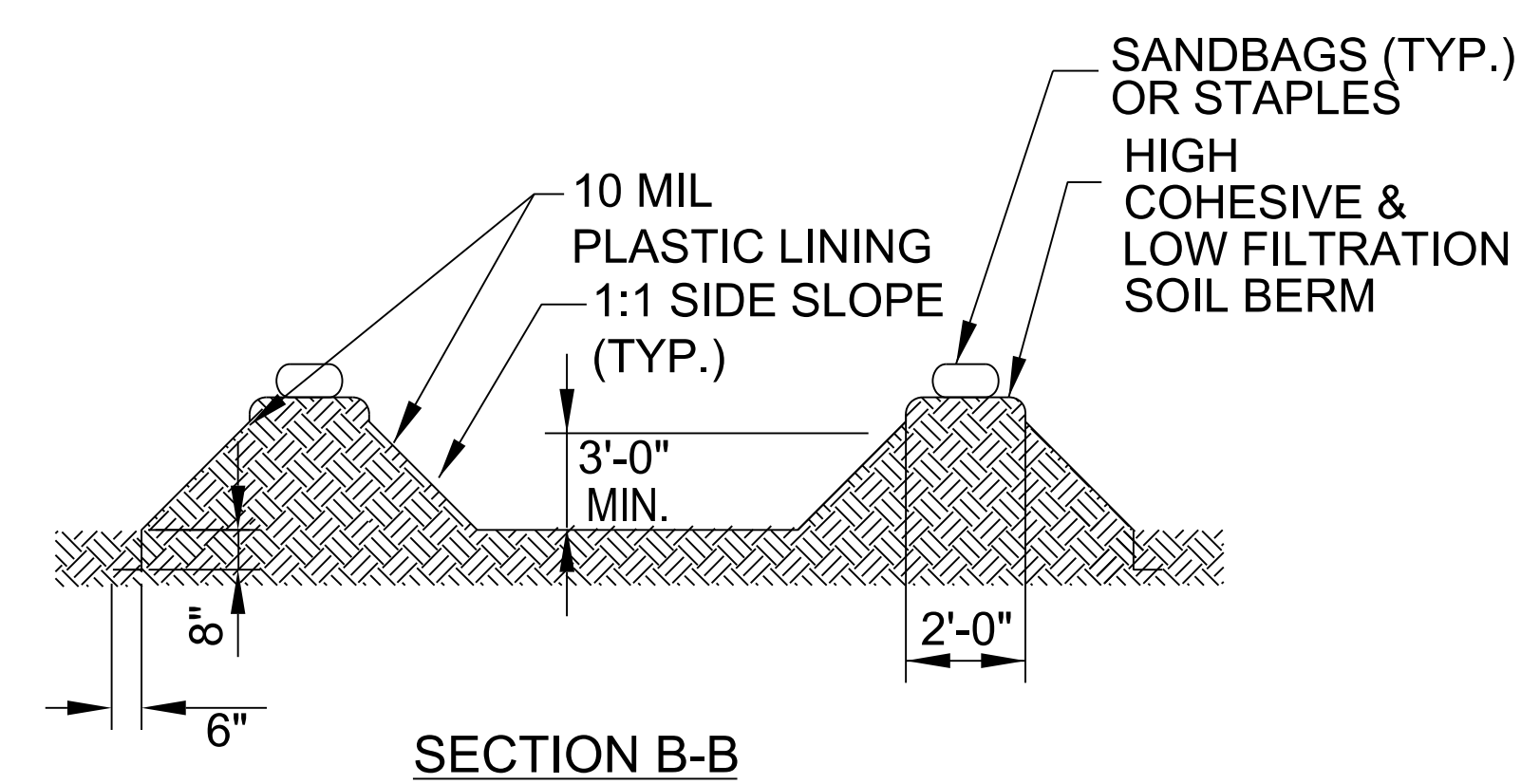
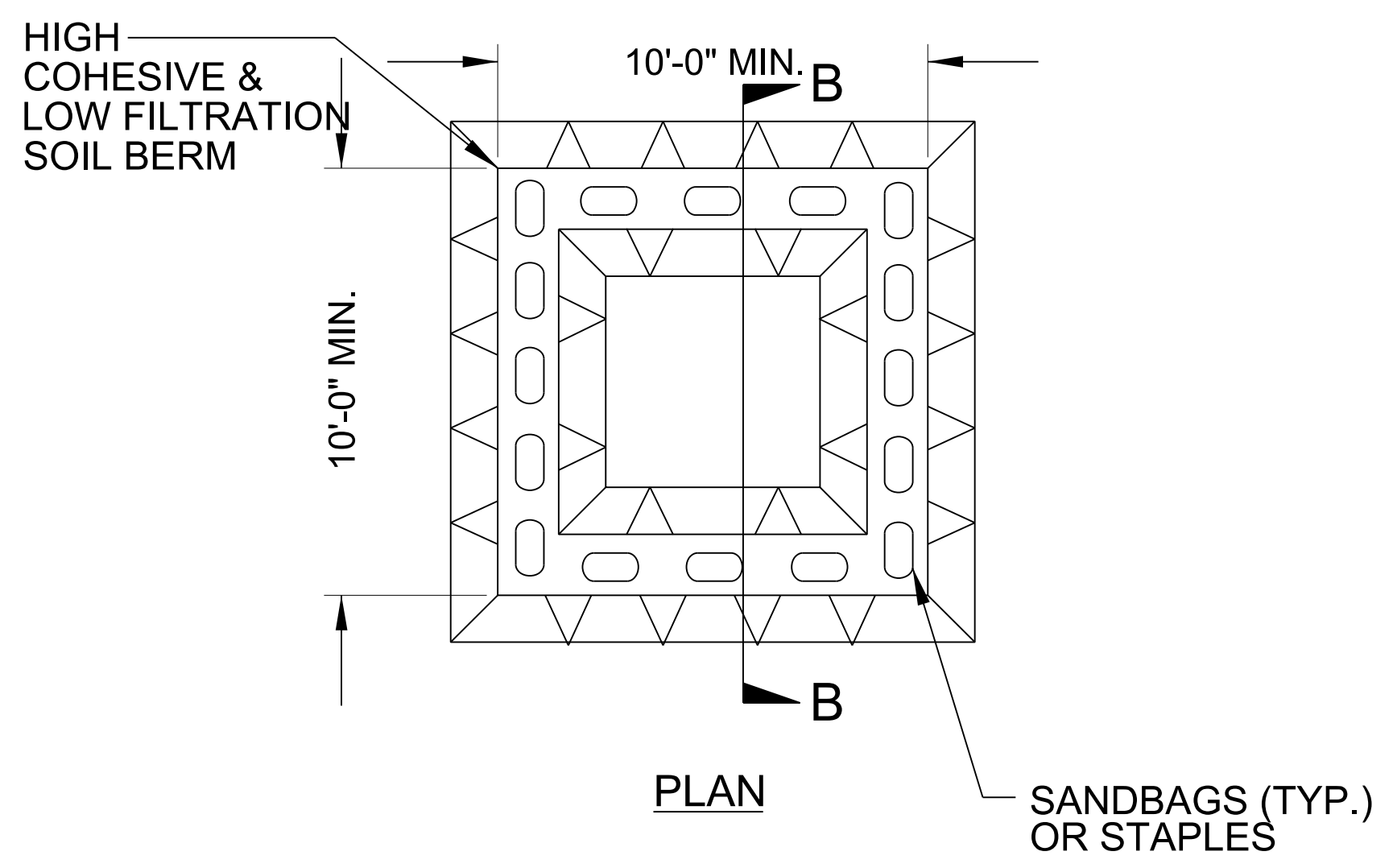
ONSITE CONCRETE WASHOUT STRUCTURE WITH LINER

PROJECT REFERENCE NO.	SHEET NO.
<i>BPI-R0211</i>	<i>EC-02A</i>
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



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
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.

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

PROJECT REFERENCE NO.	SHEET NO.
BPI.R021.I	EC-03
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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

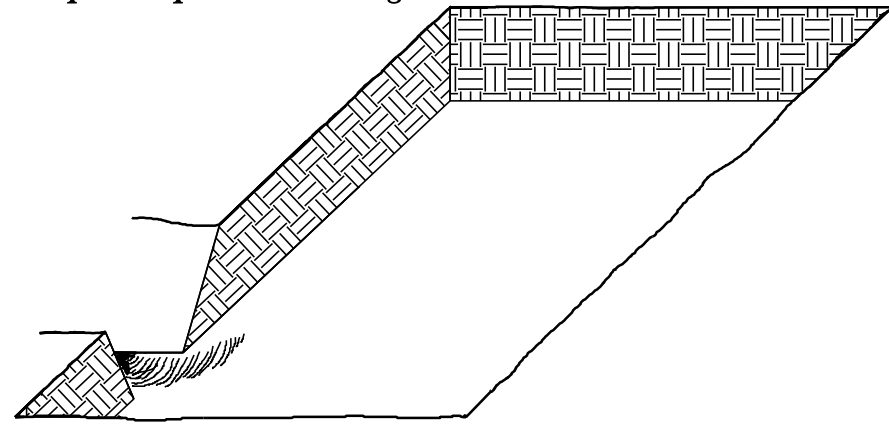
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	BPI.R021.1	RF-1	
STATE PROJ.NO.	F.A.PROJ.NO.	DESCRIPTION	

PLANTING DETAILS

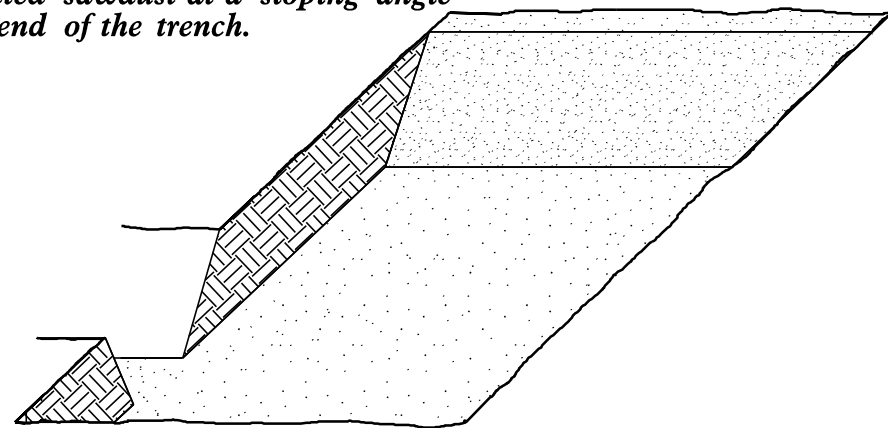
SEEDLING / LINER BAREROOT PLANTING DETAIL

HEALING IN

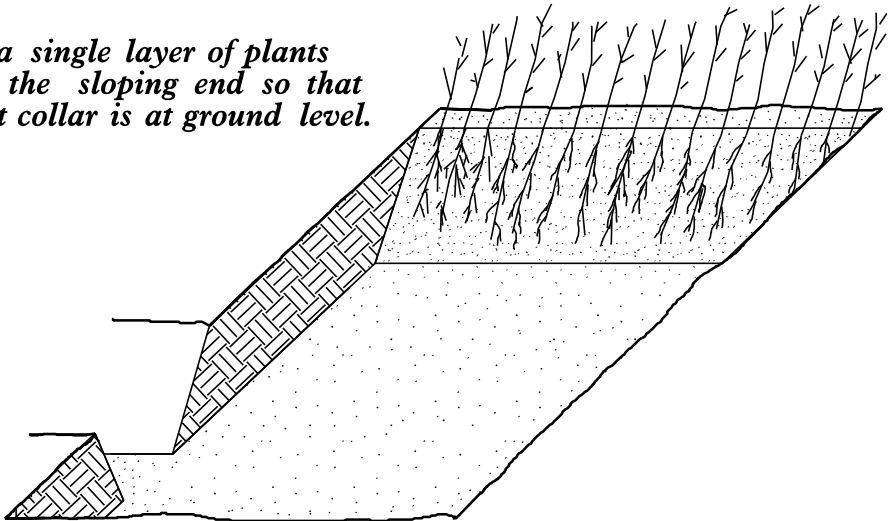
1. Locate a healing-in site in a shady, well protected area.
2. Excavate a flat bottom trench 12 inches deep and provide drainage.



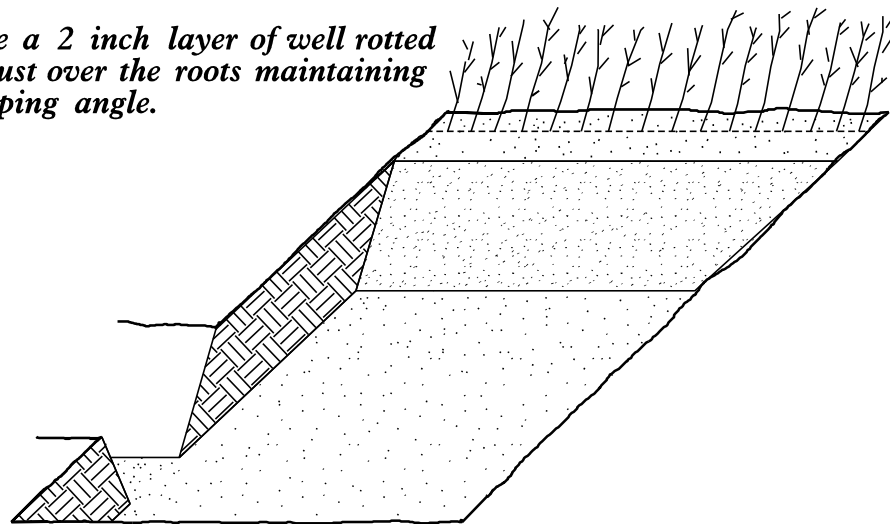
3. Backfill the trench with 2 inches well rotted sawdust. Place a 2 inch layer of well rotted sawdust at a sloping angle at one end of the trench.



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

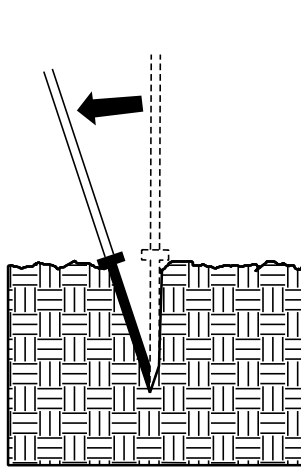


5. Place a 2 inch layer of well rotted sawdust over the roots maintaining a sloping angle.

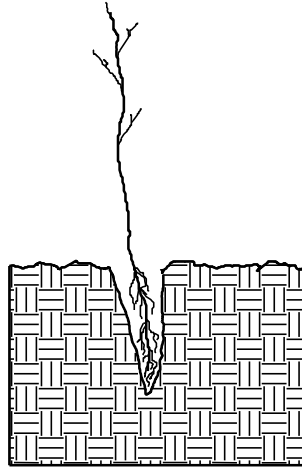


6. Repeat layers of plants and sawdust as necessary and water thoroughly.

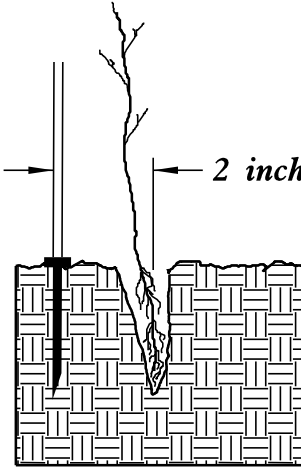
DIBBLE PLANTING METHOD USING THE KBC PLANTING BAR



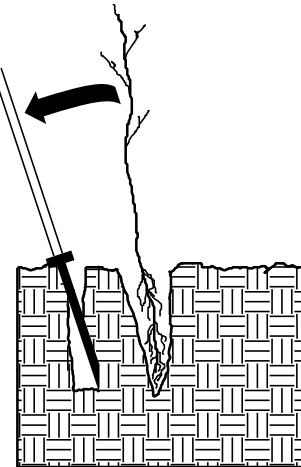
1. Insert planting bar as shown and pull handle toward planter.



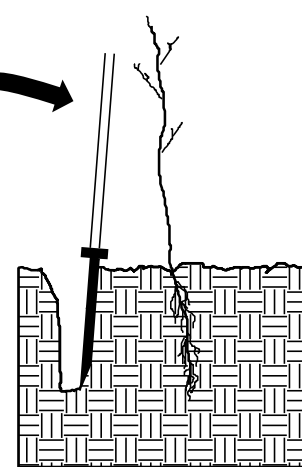
2. Remove planting bar and place seedling at correct depth.



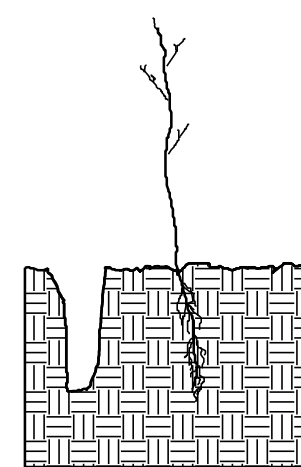
3. Insert planting bar 2 inches toward planter from seedling.



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



5. Push handle forward firming soil at top.



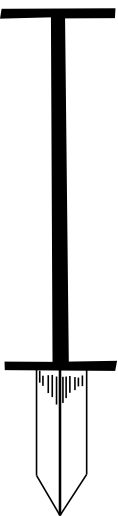
6. Leave compaction hole open. Water thoroughly.

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

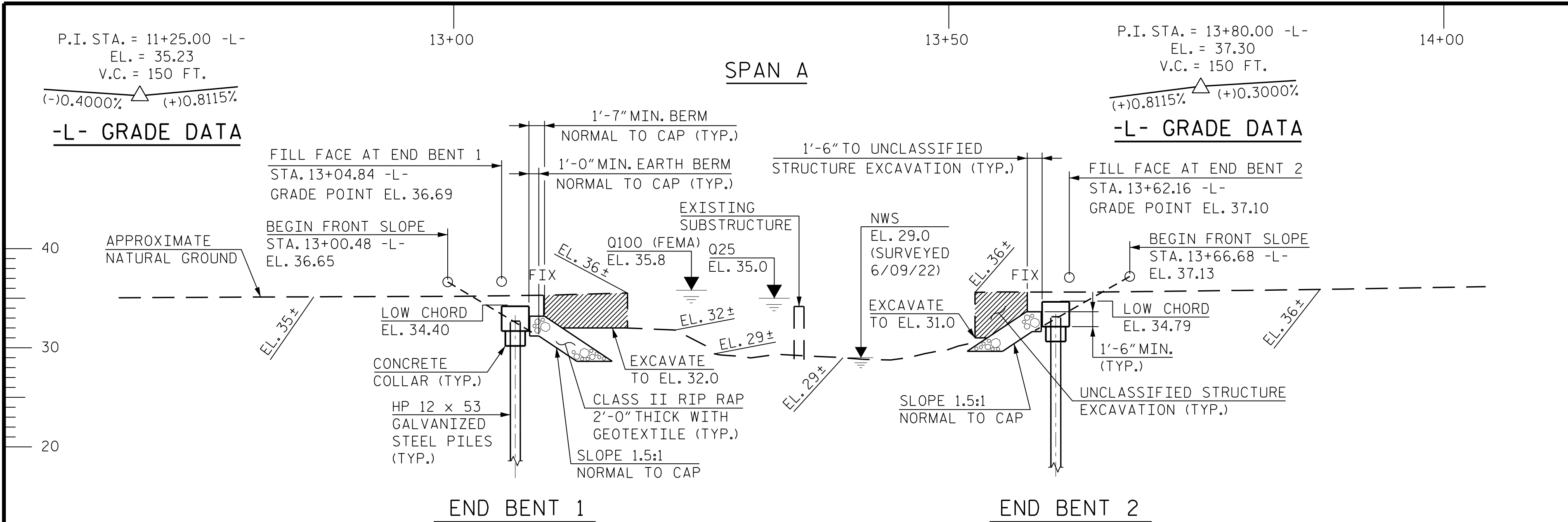
MIXTURE, TYPE, SIZE, AND FURNISH SHALL CONFORM TO THE FOLLOWING:

25%	<i>LIRIODENDRON TULIPIFERA</i>	<i>TULIP POPLAR</i>	12 in – 18 in BR
25%	<i>PLATANUS OCCIDENTALIS</i>	<i>AMERICAN SYCAMORE</i>	12 in – 18 in BR
25%	<i>NYSSA SYLVATICA</i>	<i>BLACK GUM</i>	12 in – 18 in BR
25%	<i>BETULA NIGRA</i>	<i>RIVER BIRCH</i>	12 in – 18 in BR

REFORESTATION DETAIL SHEET

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

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7/6/2026
bgonfa



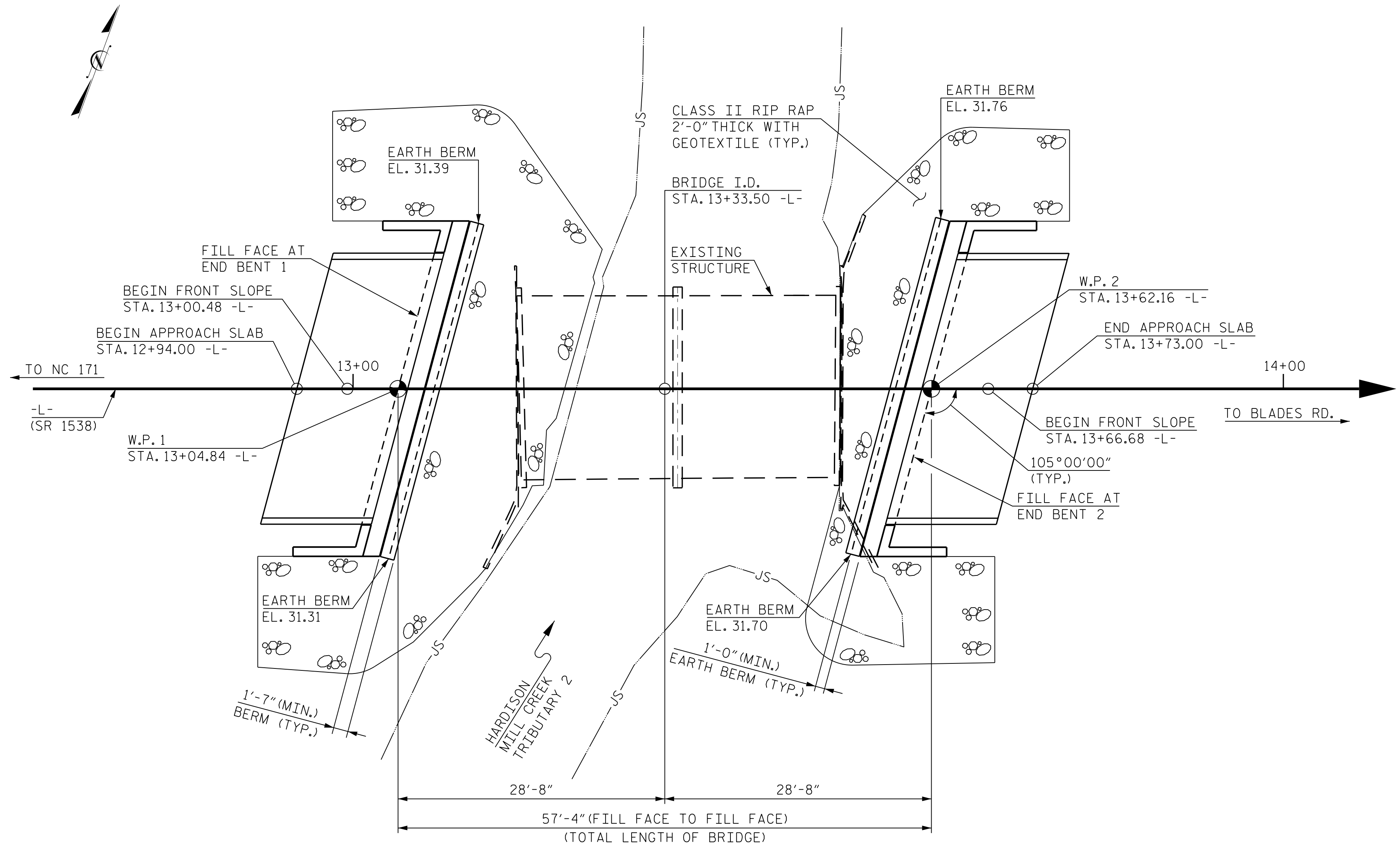
HYDRAULIC DATA

DESIGN DISCHARGE..... 1,200 C.F.S.
FREQUENCY OF DESIGN FLOOD..... 25 YRS.
DESIGN HIGH WATER ELEVATION..... 35.0
DRAINAGE AREA..... 13.5 SQ. MI.
BASE DISCHARGE (Q100)..... 1,819 C.F.S.
BASE HIGH WATER ELEVATION..... 35.80

OVERTOPPING FLOOD DATA

OVERTOPPING DISCHARGE..... 1,500
FREQUENCY OF OVERTOPPING FLOOD..... 50 YR.
OVERTOPPING FLOOD ELEVATION..... 35.5 AT STA. 11+05.00 -L-

WS ELEVATION TAKEN AT RIVER STATION 17712.7



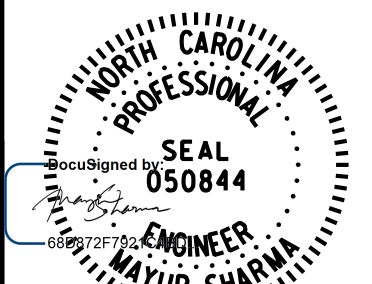
PLAN

(PILES NOT SHOWN IN PLAN VIEW FOR CLARITY)

PROJECT NO. BP1.R021.1
MARTIN COUNTY
STATION: 13+33.50 -L-

SHEET 1 OF 4 REPLACES BRIDGE NO. 570025

BRIDGE NO. 570025



RK&K
P: (919) 878-9560
8601 Six Forks Road, Forum 1 Suite 700
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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING
FOR BRIDGE OVER HARDISON MILL
CREEK (TRIB. 2) ON SR 1538
(WAINRIGHT RD.) BETWEEN NC-171
AND BLADES ROAD

REVISIONS

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

SHEET NO.

S-1
TOTAL
SHEETS
16

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

bgonfa 7/6/2026 R:\Structures\Drawn\Final\BP1.R021.1.SMU_FL1.570025.dgn

SUMMARY OF PILE INFORMATION/INSTALLATION														
(BLANK ENTRIES INDICATE ITEM IS NOT APPLICABLE TO STRUCTURE)														
END BENT/BENT NO. PILE(S) *(#)	NUMBER OF PILES PER LINE	FACTORED RESISTANCE PER PILE	PILE CUT-OFF (TOP OF PILE) ELEVATION	ESTIMATED PILE LENGTH PER PILE	SCOUR CRITICAL ELEVATION	DRIVEN PILES			PREDRILLING FOR PILES *			DRILLED-IN PILES		
						MIN. PILE TIP (TIP NO HIGHER THAN) ELEV.	REQUIRED DRIVING RESISTANCE (RDR) ** PER PILE	PILE REDRIVES QUANTITY	PREDRILLING LENGTH PER PILE	PREDRILLING ELEVATION (ELEV. NOT TO PREDRILL BELOW)	MAXIMUM PREDRILLING DIAMETER	PILE EXCAVATION BOTTOM OF HOLE) ELEV.	PILE EXCAVATION NOT IN SOIL PER PILE	PILE EXCAVATION IN SOIL PER PILE
		KIPS	FT.	FT.	FT.	FT.	KIPS	EA.	LIN.FT.	FT.	INCHES	FT.	LIN.FT.	LIN.FT.
END BENT 1, PILES 1-5	5	170	SEE SHEET S-9	100			245							
END BENT 2, PILES 1-5	5	170	SEE SHEET S-12	100			245							
TOTAL QUANTITY								5						

* 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.

** RDR = $\frac{\text{FACTORED RESISTANCE} + \text{FACTORED DRAG LOAD} + \text{FACTORED DEAD LOAD}}{\text{DYNAMIC RESISTANCE FACTOR}}$ + NOMINAL DRAG LOAD RESISTANCE + NOMINAL RESISTANCE FROM SCOURABLE MATERIAL

PILE DESIGN INFORMATION						
(BLANK ENTRIES INDICATE ITEM IS NOT APPLICABLE TO STRUCTURE)						
END BENT/BENT NO. PILE(S) *(#)	FACTORED AXIAL LOAD PER PILE	FACTORED DOWNDRA G LOAD PER PILE	FACTORED DEAD LOAD * PER PILE	DYNAMIC RESISTANCE FACTOR	NOMINAL DOWNDRA G RESISTANCE PER PILE	NOMINAL SCOUR RESISTANCE PER PILE
	KIPS	KIPS	KIPS		KIPS	KIPS
END BENT 1, PILES 1-5	170			0.7		
END BENT 2, PILES 1-5	170			0.7		

* FACTORED DEAD LOAD IS FACTORED WEIGHT OF PILE ABOVE THE GROUND LINE.

SUMMARY OF DPT/PILE ORDER LENGTHS		
(BLANK ENTRIES INDICATE ITEM IS NOT APPLICABLE TO STRUCTURE)		
DYNAMIC PILE TESTING (DPT)		
END BENT/BENT NO.	DPT TEST PILE LENGTH	TOTAL DPT TESTING QUANTITY
	FT.	EA.
END BENT 1	105	1
END BENT 2	105	1
TOTAL QUANTITY		2

FOUNDATION RECOMMENDATION NOTES

FOR PILES, SEE SECTION 450 OF THE STANDARD SPECIFICATIONS.

IT HAS BEEN ESTIMATED THAT A HAMMER WITH AN EQUIVALENT RATED ENERGY IN THE RANGE OF 22,000-45,000 FT-LBS PER BLOW WILL BE REQUIRED TO DRIVE PILES AT END BENT 1 AND END BENT 2. THIS ESTIMATED ENERGY RANGE DOES NOT RELEASE THE CONTRACTOR FROM PROVIDING DRIVING EQUIPMENT IN ACCORDANCE WITH SUBARTICLE 450-3(D)(2) OF THE STANDARD SPECIFICATIONS.

NOTES:

THE PILE FOUNDATION TABLES ARE BASED ON THE BRIDGE SUBSTRUCTURE DESIGN AND FOUNDATION RECOMMENDATIONS SEALED BY A NORTH CAROLINA PROFESSIONAL ENGINEER (KENNETH BUSSEY JR., PE #038206) ON 04/17/2026.

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.

THE ENGINEER MAY ADJUST THE QUANTITY FOR DPT TESTING WHEN NECESSARY.

PROJECT NO. BP1.R021.1
MARTIN COUNTY
STATION: 13+33.50 -L-

SHEET 2 OF 4

DRAWN BY : <u>B. H. GONFA</u>	DATE : <u>MAR 2026</u>
CHECKED BY : <u>M. SHARMA</u>	DATE : <u>MAR 2026</u>
DESIGN ENGINEER OF RECORD : <u>M. SHARMA</u>	DATE : <u>MAR 2026</u>

RK&K
P: (919) 878-9560
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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BRIDGE NO. 570025

SEAL
050844
ENGINEER
MAYUR SHARMA

7/6/2026

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

7/6/2026 R:\Structures\DCN\Final\BP1.R021.1.SMULLOC_570025.dgn bgonfa

DRAWN BY : B. H. GONFA DATE : MAR 2026
CHECKED BY : M. SHARMA DATE : MAR 2026
DESIGN ENGINEER OF RECORD : M. SHARMA DATE : MAR 2026

TOTAL BILL OF MATERIAL

TOTAL BILL OF MATERIAL																
	REMOVAL OF EXISTING STRUCTURE	UNCLASSIFIED STRUCTURE EXCAVATION AT STA. 13+33.50 -L-	CLASS A CONCRETE	BRIDGE APPROACH SLABS	REINFORCING STEEL	PILE DRIVING EQUIPMENT SETUP FOR 12 X 53 GALVANIZED STEEL PILES	HP 12 x 53 GALVANIZED STEEL PILES		PILE REDRIVES	DYNAMIC PILE TESTING	VERTICAL CONCRETE BARRIER RAIL	RIP RAP CLASS II (2'-0" THICK)	GEOTEXTILE FOR DRAINAGE	ELASTOMERIC BEARINGS	3'-0" X 1'-9" PRESTRESSED CONCRETE CORED SLABS	
	LUMP SUM	LUMP SUM	CU. YDS.	LUMP SUM	LBS.	EACH	NO.	LIN.FT.	EA.	EA.	LIN. FT.	TONS	SQ.YDS.	LUMP SUM	NO.	LIN.FT.
SUPERSTRUCTURE				LUMP SUM							110.25				10	550
END BENT 1			13.4		2018	5	5	500		1		120	140			
END BENT 2			13.4		2018	5	5	500		1		80	90			
TOTAL	LUMP SUM	LUMP SUM	26.8	LUMP SUM	4036	10	10	1,000	5	2	110.25	200	230	LUMP SUM	10	550

NOTES:

ASSUMED LIVE LOAD = HL-93 OR ALTERNATE LOADING.

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

THIS BRIDGE IS LOCATED IN SEISMIC ZONE 1.

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

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.

THE MATERIAL SHOWN IN THE CROSS-HATCHED AREA SHALL BE EXCAVATED FOR A DISTANCE OF 30 FT. (LEFT) AND 30 FT. (RIGHT) RESPECTIVELY EACH SIDE OF 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.

THE EXISTING STRUCTURE CONSISTING OF TWO SPANS (17'-6" EACH) WITH 19'-2" CLEAR ROADWAY ON TIMBER DECK ON TIMBER JOISTS ON TIMBER CAPS ON TIMBER PILES LOCATED AT THE SITE OF THE PROPOSED BRIDGE SHALL BE REMOVED. THE EXISTING BRIDGE IS PRESENTLY POSTED FOR LOAD LIMIT. SHOULD THE STRUCTURAL INTEGRITY OF THE BRIDGE DETERIORATE DURING CONSTRUCTION OF THE PROPOSED BRIDGE, A LOAD LIMIT MAY BE POSTED AND MAY BE REDUCED AS FOUND NECESSARY DURING THE LIFE OF THE PROJECT.

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.

REMOVAL OF THE EXISTING BRIDGE SHALL BE PERFORMED IN A MANNER THAT PREVENTS DEBRIS FROM FALLING INTO THE WATER. THE CONTRACTOR SHALL SUBMIT DEMOLITION PLANS FOR REVIEW AND REMOVE THE BRIDGE IN ACCORDANCE WITH ARTICLE 402-2 OF THE STANDARD SPECIFICATIONS.

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

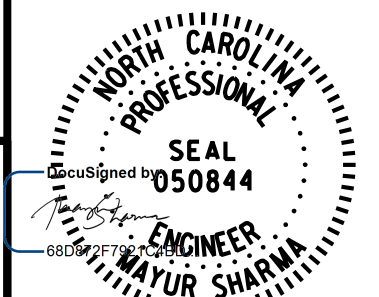
FOR EROSION CONTROL MEASURES, SEE EROSION CONTROL PLANS.

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

PROJECT NO. BP1.R021.1
MARTIN COUNTY
STATION: 13+33.50 -L-

SHEET 3 OF 4

BRIDGE NO. 570025



7/6/2026

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING
LOCATION SKETCH,
GENERAL NOTES AND
TOTAL BILL OF MATERIAL

REVISIONS

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

SHEET NO.

S-3

TOTAL

SHEETS

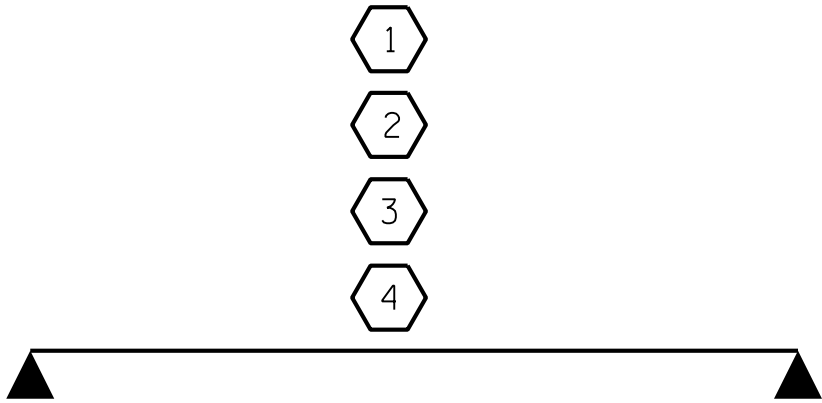
16

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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	1.065	--	1.75	0.270	1.25	55'	EL	26.982	0.616	1.12	55'	EL	5.396	0.80	0.270	1.07	55'	EL	26.982		
	HL-93 (OPERATING)	N/A		1.452	--	1.35	0.270	1.61	55'	EL	26.982	0.616	1.45	55'	EL	5.396	N/A	--	--	--	--	--		
	HS-20 (INVENTORY)	36.000	⬢2	1.335	48.043	1.75	0.270	1.56	55'	EL	26.982	0.616	1.34	55'	EL	5.396	0.80	0.270	1.33	55'	EL	26.982		
	HS-20 (OPERATING)	36.000		1.734	62.425	1.35	0.270	2.02	55'	EL	26.982	0.616	1.73	55'	EL	5.396	N/A	--	--	--	--	--		
LEGAL LOAD	SINGLE VEHICLE (SV)	SNSH	13.500		2.802	37.830	1.4	0.270	4.09	55'	EL	26.982	0.616	3.81	55'	EL	5.396	0.80	0.270	2.80	55'	EL	26.982	
		SNGARBS2	20.000		2.175	43.506	1.4	0.270	3.18	55'	EL	26.982	0.616	2.76	55'	EL	5.396	0.80	0.270	2.18	55'	EL	26.982	
		SNAGRIS2	22.000		2.099	46.173	1.4	0.270	3.07	55'	EL	26.982	0.616	2.58	55'	EL	5.396	0.80	0.270	2.10	55'	EL	26.982	
		SNCOTTS3	27.250		1.397	38.065	1.4	0.270	2.04	55'	EL	26.982	0.616	1.91	55'	EL	5.396	0.80	0.270	1.40	55'	EL	26.982	
		SNAGGRS4	34.925		1.200	41.922	1.4	0.270	1.75	55'	EL	26.982	0.616	1.62	55'	EL	5.396	0.80	0.270	1.20	55'	EL	26.982	
		SNS5A	35.550		1.172	41.648	1.4	0.270	1.71	55'	EL	26.982	0.616	1.66	55'	EL	5.396	0.80	0.270	1.17	55'	EL	26.982	
		SNS6A	39.950		1.089	43.514	1.4	0.270	1.59	55'	EL	26.982	0.616	1.53	55'	EL	5.396	0.80	0.270	1.09	55'	EL	26.982	
		SNS7B	42.000		1.038	43.587	1.4	0.270	1.52	55'	EL	26.982	0.616	1.53	55'	EL	5.396	0.80	0.270	1.04	55'	EL	26.982	
	TRUCK TRACTOR SEMI-TRAILER (TTST)	TNAGRIT3	33.000		1.333	43.973	1.4	0.270	1.95	55'	EL	26.982	0.616	1.81	55'	EL	5.396	0.80	0.270	1.33	55'	EL	26.982	
		TNT4A	33.075		1.342	44.400	1.4	0.270	1.96	55'	EL	26.982	0.616	1.75	55'	EL	5.396	0.80	0.270	1.34	55'	EL	26.982	
		TNT6A	41.600		1.112	46.252	1.4	0.270	1.62	55'	EL	26.982	0.616	1.67	55'	EL	5.396	0.80	0.270	1.11	55'	EL	26.982	
		TNT7A	42.000		1.125	47.255	1.4	0.270	1.64	55'	EL	26.982	0.616	1.56	55'	EL	5.396	0.80	0.270	1.13	55'	EL	26.982	
		TNT7B	42.000		1.174	49.318	1.4	0.270	1.72	55'	EL	26.982	0.616	1.47	55'	EL	5.396	0.80	0.270	1.17	55'	EL	26.982	
		TNAGRIT4	43.000		1.111	47.786	1.4	0.270	1.62	55'	EL	26.982	0.616	1.42	55'	EL	5.396	0.80	0.270	1.11	55'	EL	26.982	
		TNAGT5A	45.000		1.041	46.851	1.4	0.270	1.52	55'	EL	26.982	0.616	1.44	55'	EL	5.396	0.80	0.270	1.04	55'	EL	26.982	
		TNAGT5B	45.000	⬢3	1.023	46.020	1.4	0.270	1.49	55'	EL	26.982	0.616	1.35	55'	EL	5.396	0.80	0.270	1.02	55'	EL	26.982	
EMERGENCY VEHICLE (EV)	EV2	28.750		1.631	46.889	1.3	0.270	2.40	55'	EL	26.982	0.616	2.07	55'	EL	5.396	0.80	0.270	1.63	55'	EL	26.982		
	EV3	43.000	⬢4	1.058	45.500	1.3	0.270	1.56	55'	EL	26.982	0.616	1.40	55'	EL	5.396	0.80	0.270	1.06	55'	EL	26.982		



LRFR SUMMARY
FOR SPAN " A"

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:

-
-
-
-

⬡# 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

PROJECT NO. BP1.R021.1
MARTIN COUNTY
STATION: 13+33.50 -L-

SHEET 4 OF 4

ASSEMBLED BY: B. H. GONFA		DATE: MAR 2026	
CHECKED BY: M. SHARMA		DATE: MAR 2026	
DESIGN ENGINEER OF RECORD: M. SHARMA		DATE: MAR 2026	
DRAWN BY: MAA	1/08	REV. 11/12/08RR	MAA/GM
CHECKED BY: GM/DI	2/08	REV. 10/11/11	MAA/GM
		REV. 04/23	BNB/AAI

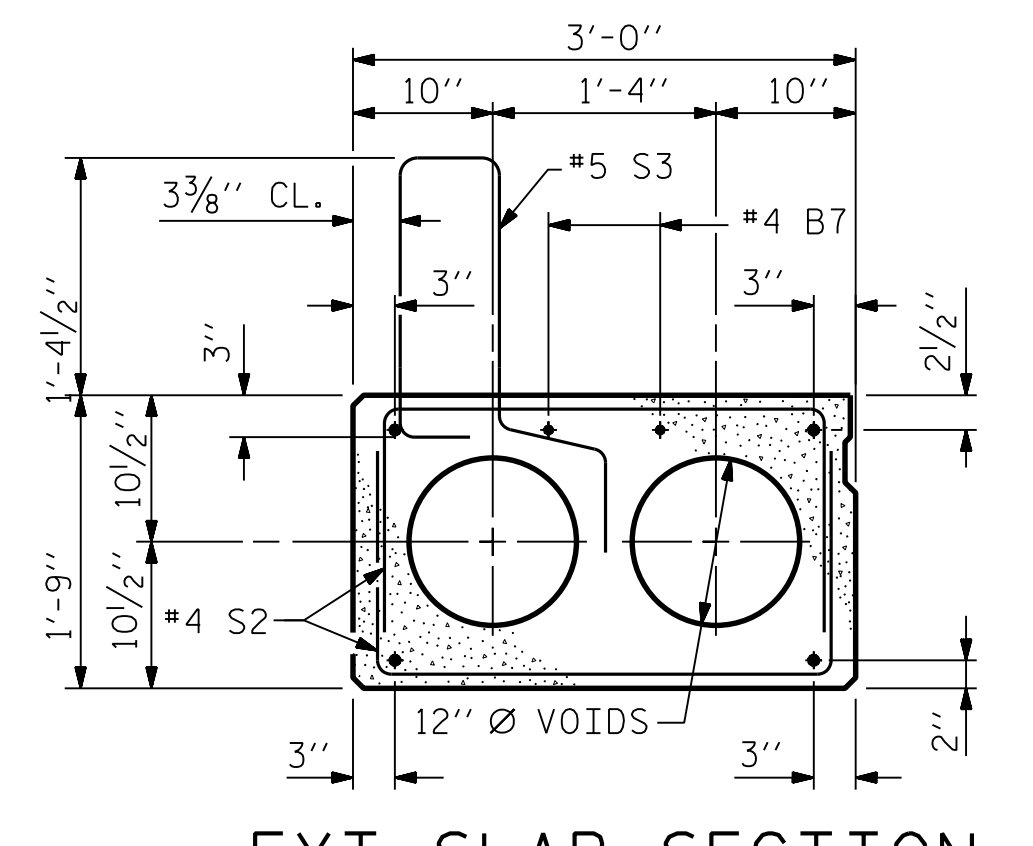
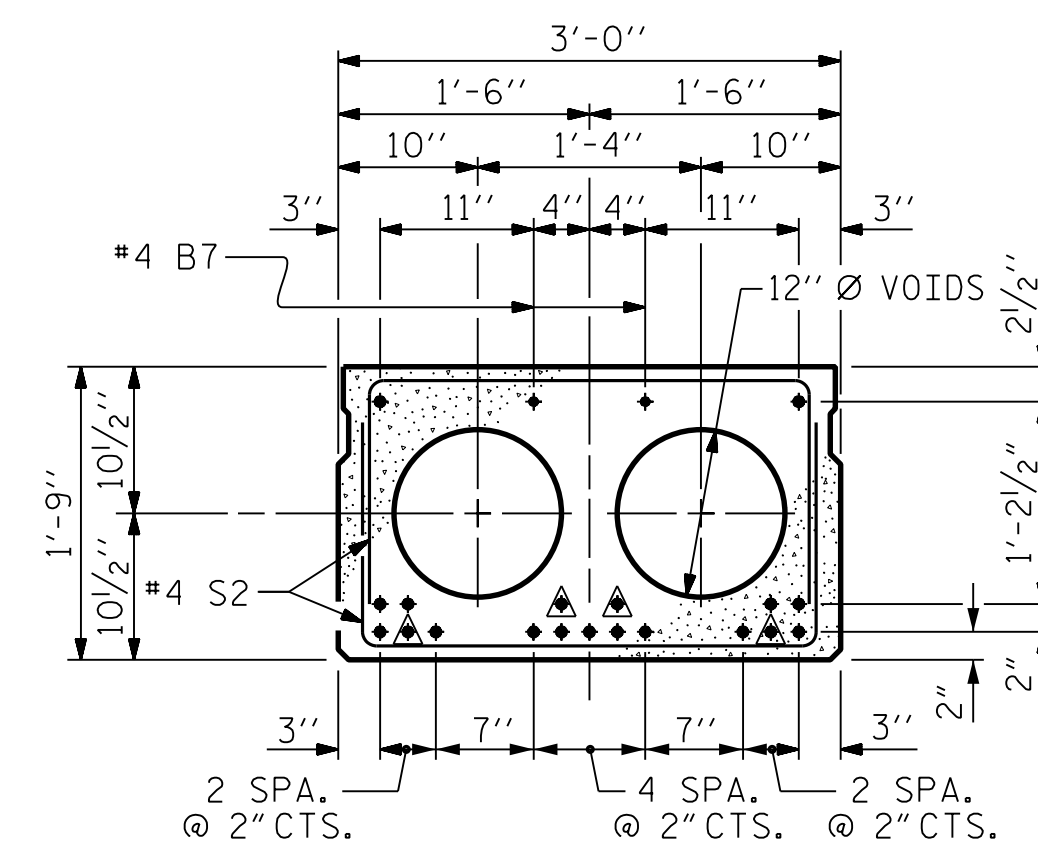
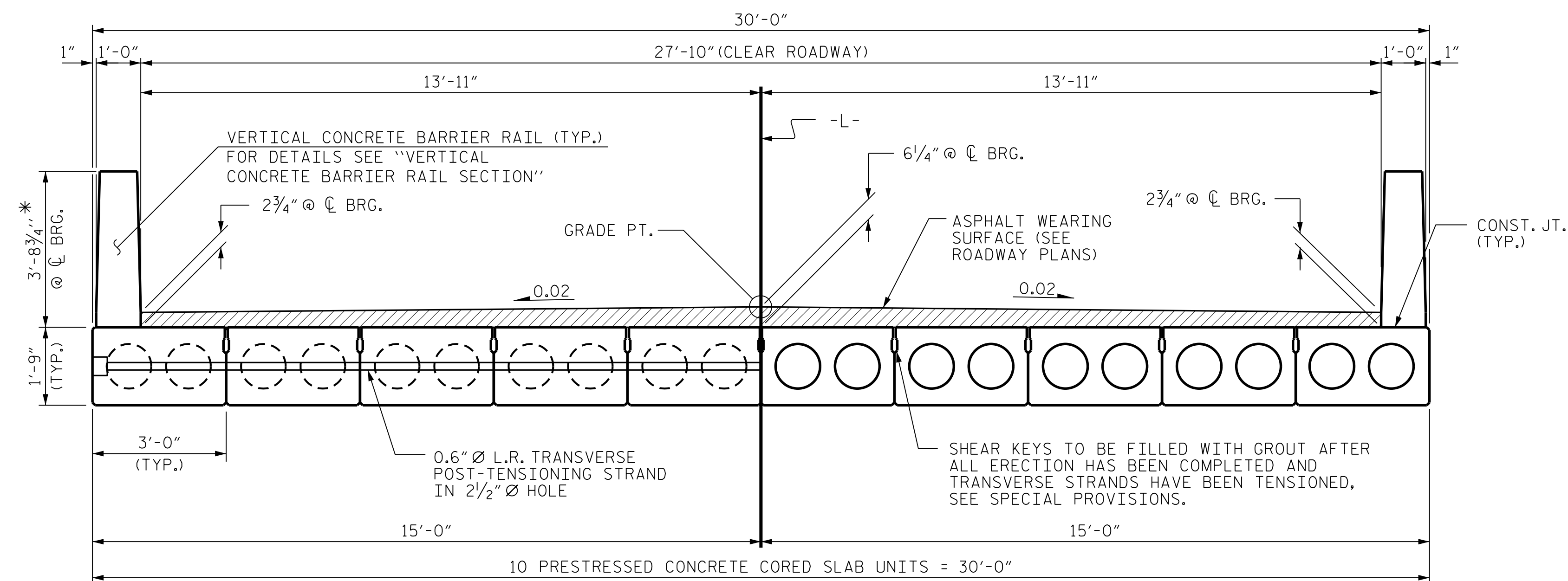
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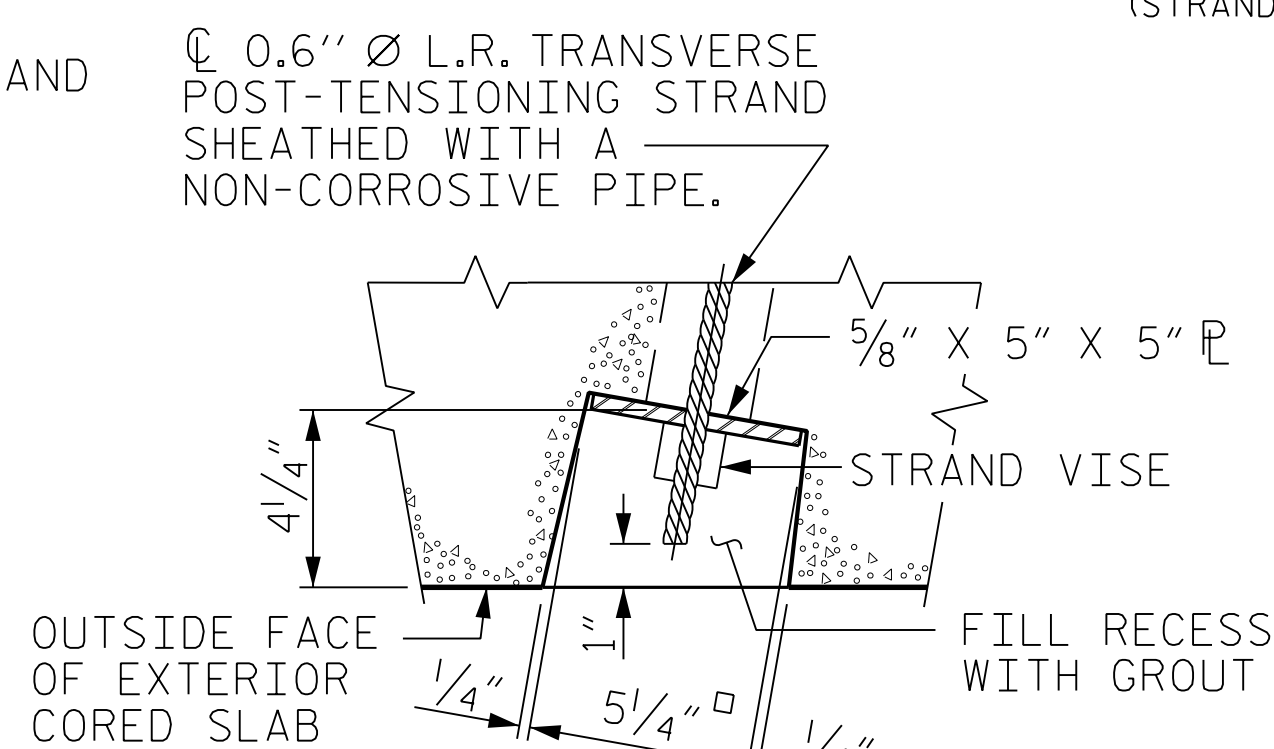
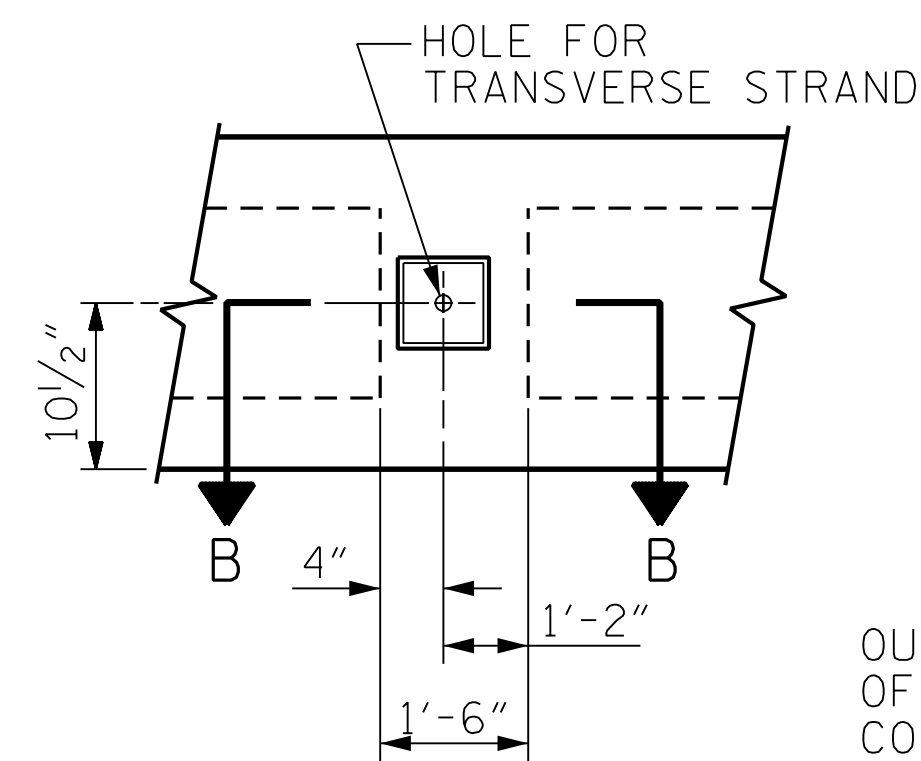
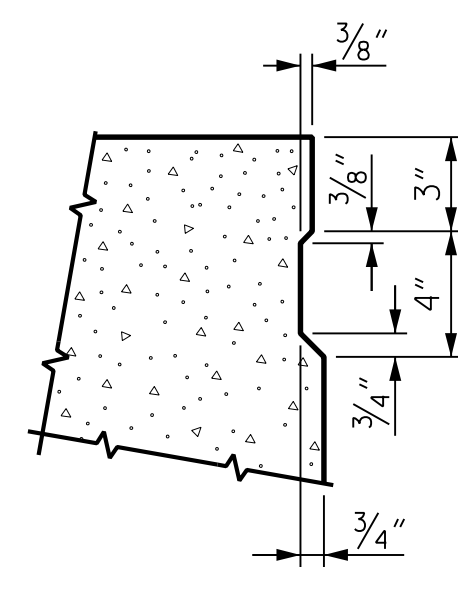
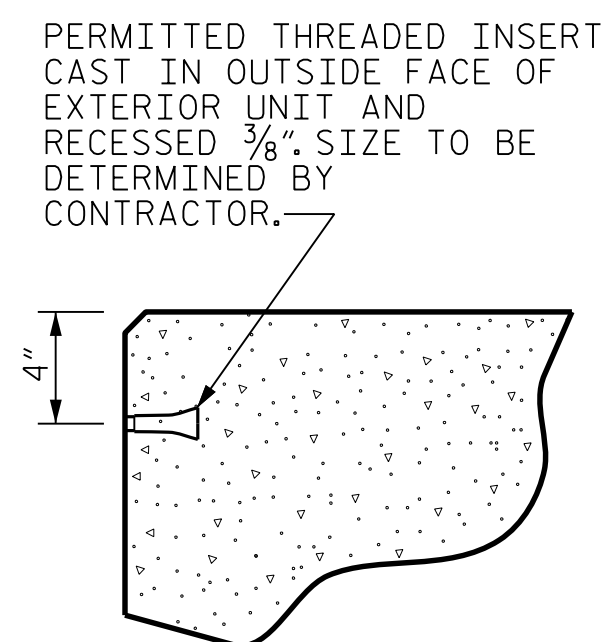
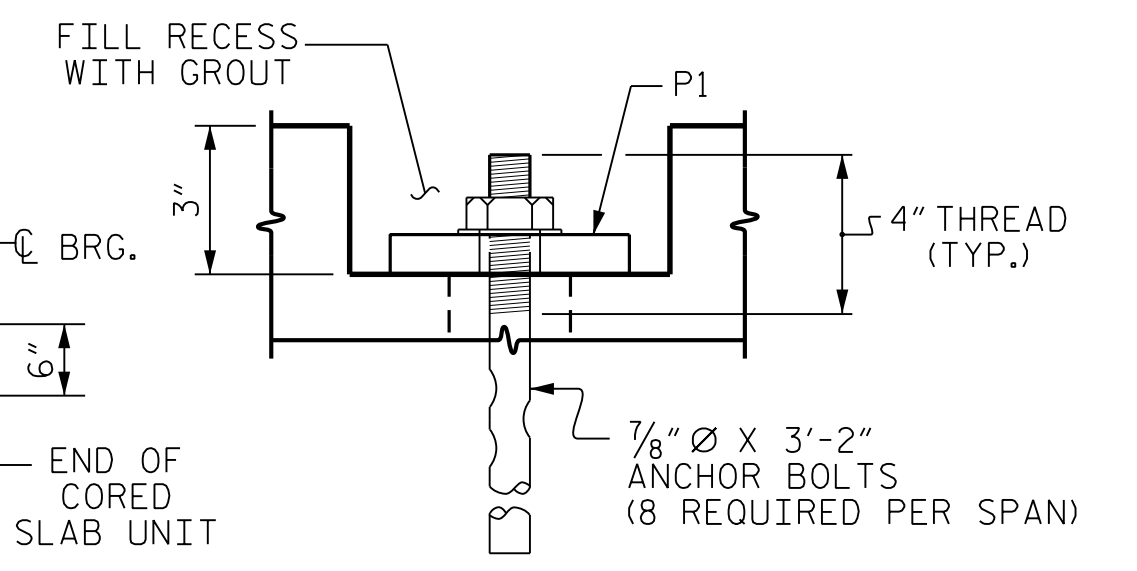
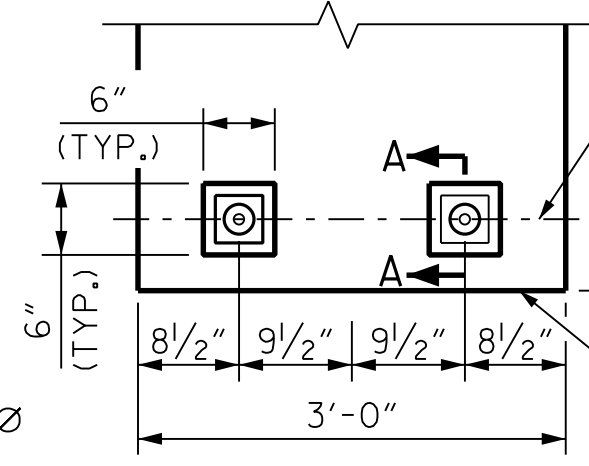
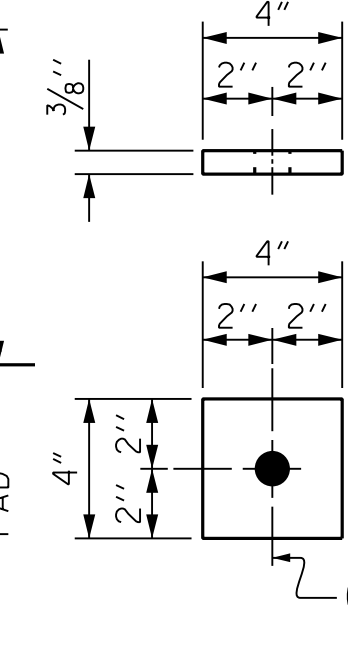
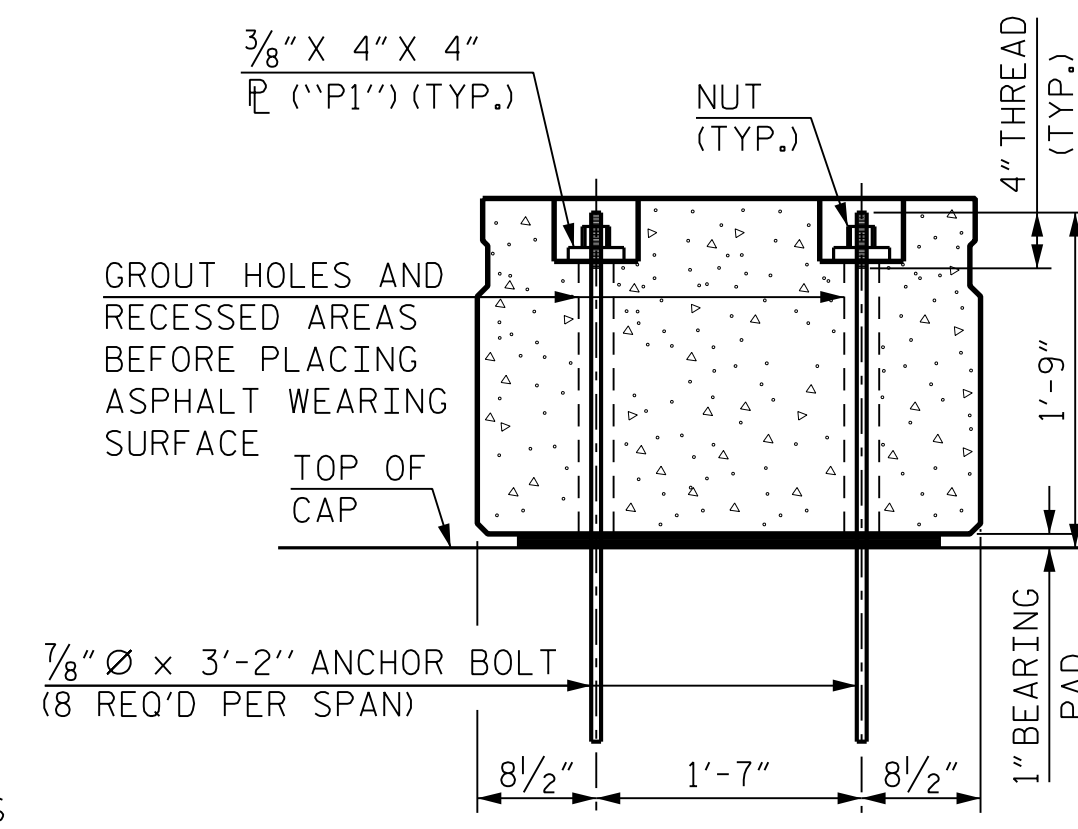
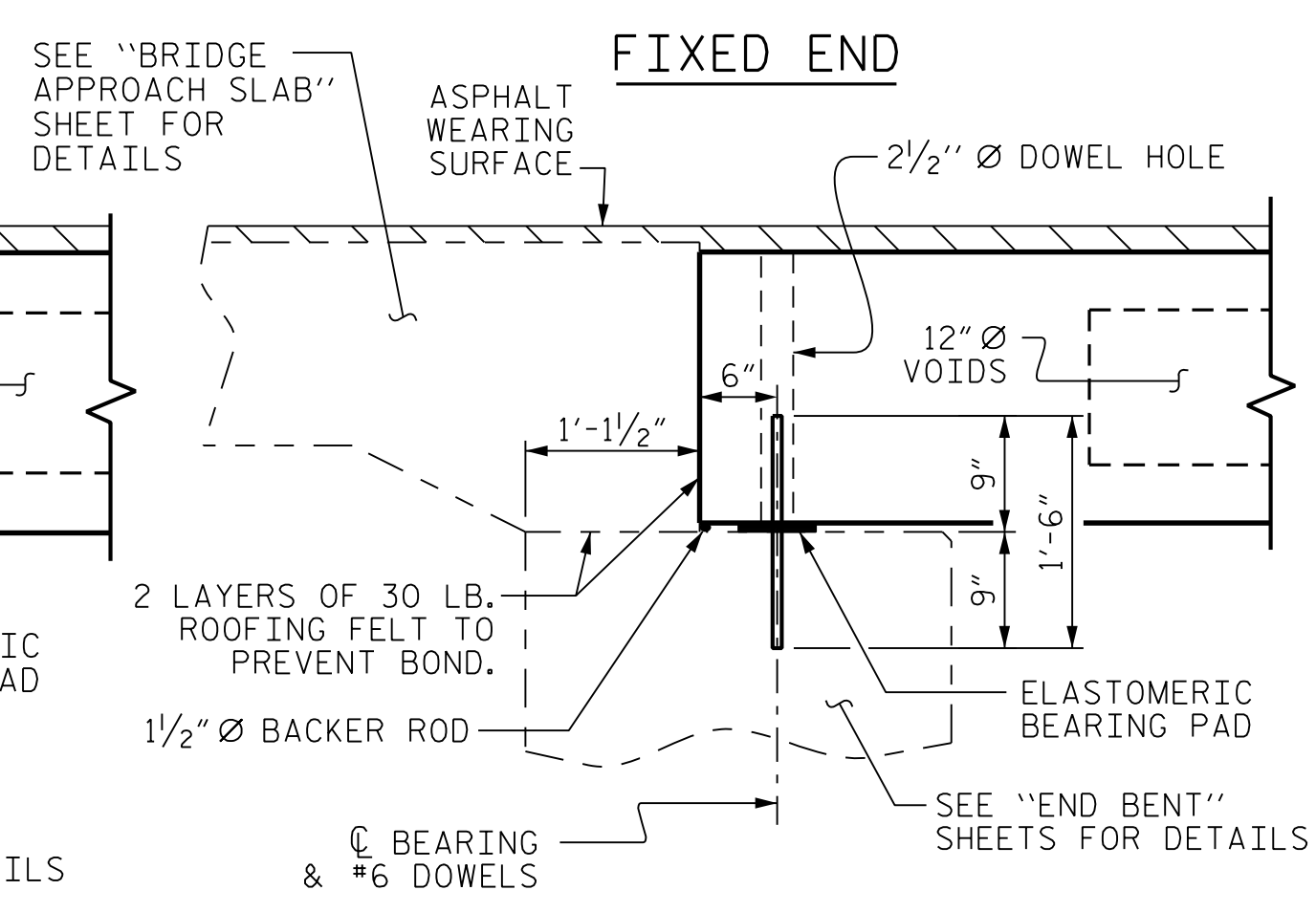
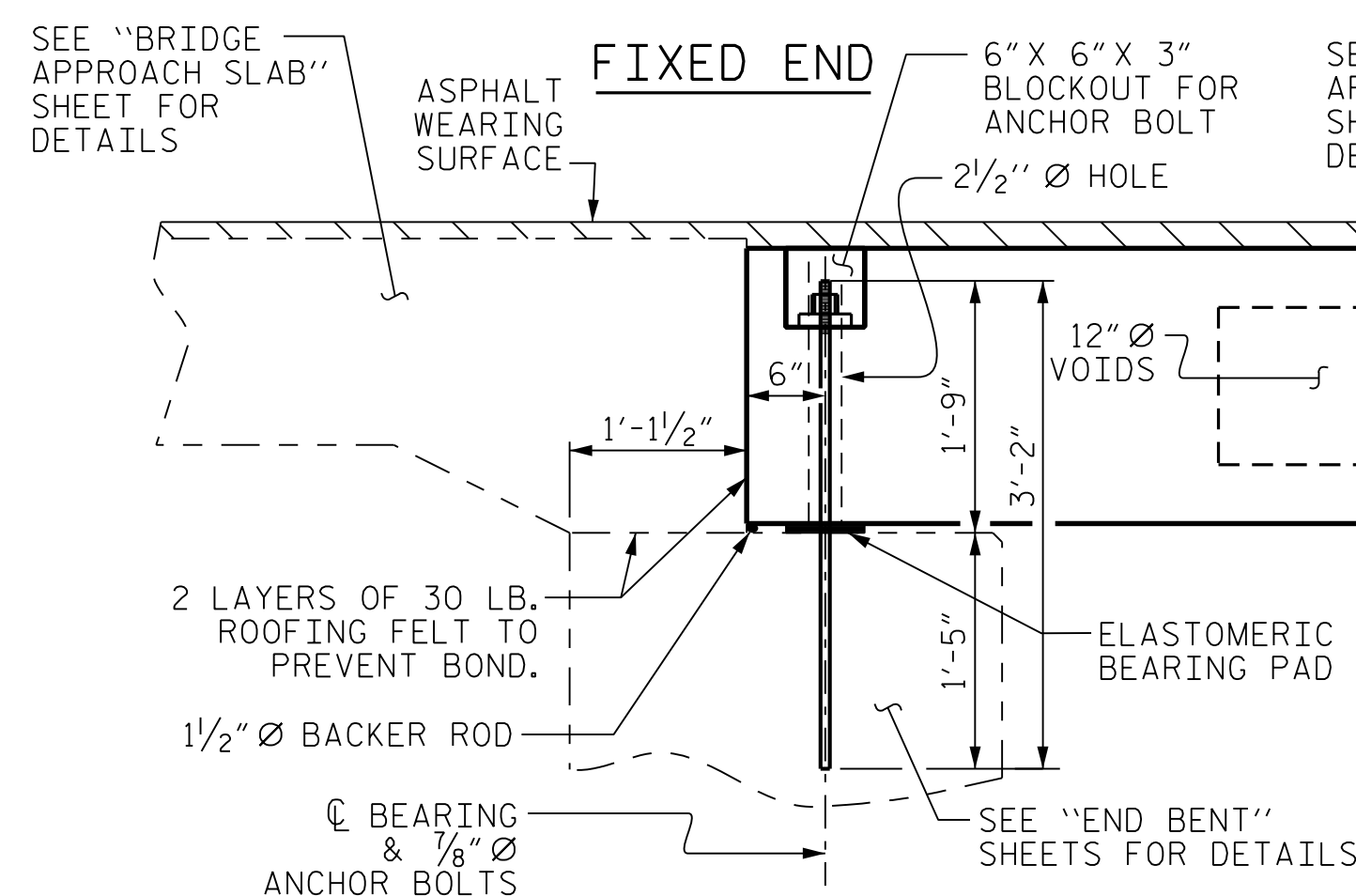
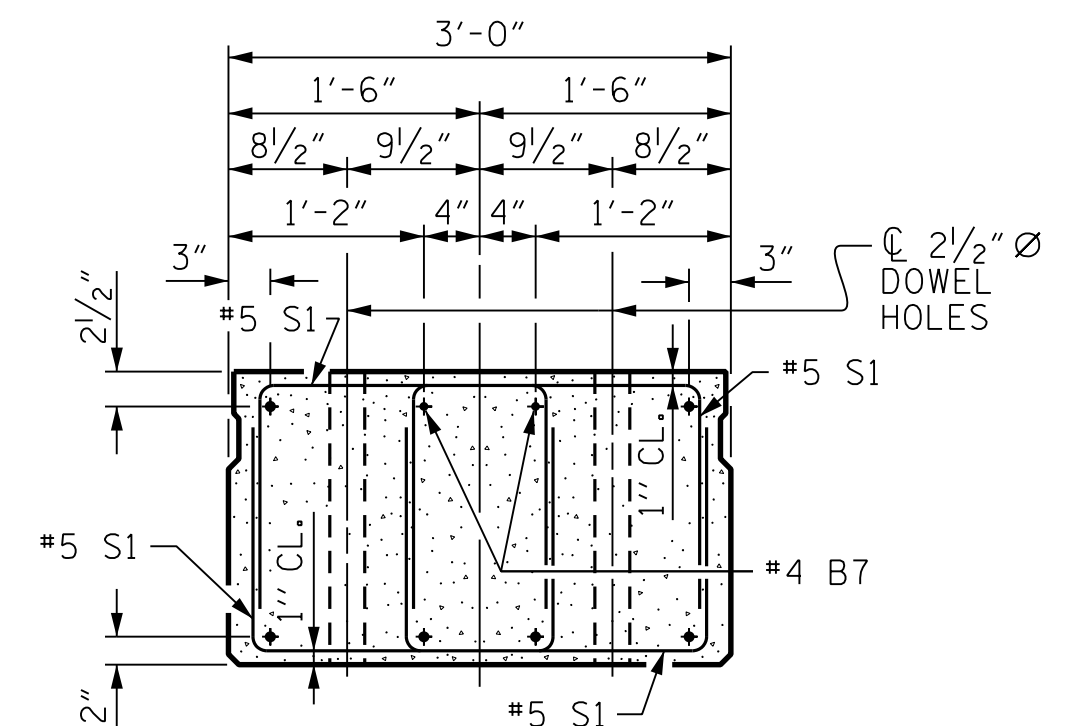
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH						SHEET NO.	
STANDARD LRFR SUMMARY FOR 55' CORED SLAB UNIT 105° SKEW (NON-INTERSTATE TRAFFIC)						S-4	
REVISIONS						TOTAL SHEETS	
NO.	BY:	DATE:	NO.	BY:	DATE:	16	
1			3				
2			4				

STD. NO. 21LRFR1_75&105S_55L



0.6'' Ø LOW
RELAXATION STRAND LAYOUT

 BOND SHALL BE BROKEN ON THESE STRANDS FOR A DISTANCE OF 6'-0" FROM END OF CORED SLAB UNIT. SEE STANDARD SPECIFICATIONS, ARTICLE 1078-7.



GROUTED RECESS AT END OF
POST-TENSIONED STRAND OF CORED SLABS

PROJECT NO. BP1.R021.1
MARTIN COUNTY
 STATION: 13+33.50 -L-

SHEET 1 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
STANDARD
3'-0" X 1'-9"
PRESTRESSED CONCRETE
CORED SLAB UNIT
105° SKEW

ASSEMBLED BY : <u>B. H. GONFA</u>		DATE : <u>MAR 2026</u>	
CHECKED BY : <u>M. SHARMA</u>		DATE : <u>MAR 2026</u>	
DESIGN ENGINEER OF RECORD : <u>M. SHARMA</u>		DATE : <u>MAR 2026</u>	
DRAWN BY : <u>DGE</u>	5/09	REV. 8/14	MAA/TMG
CHECKED BY : <u>BCH</u>	6/09	REV. 5/23	BNB/AAI

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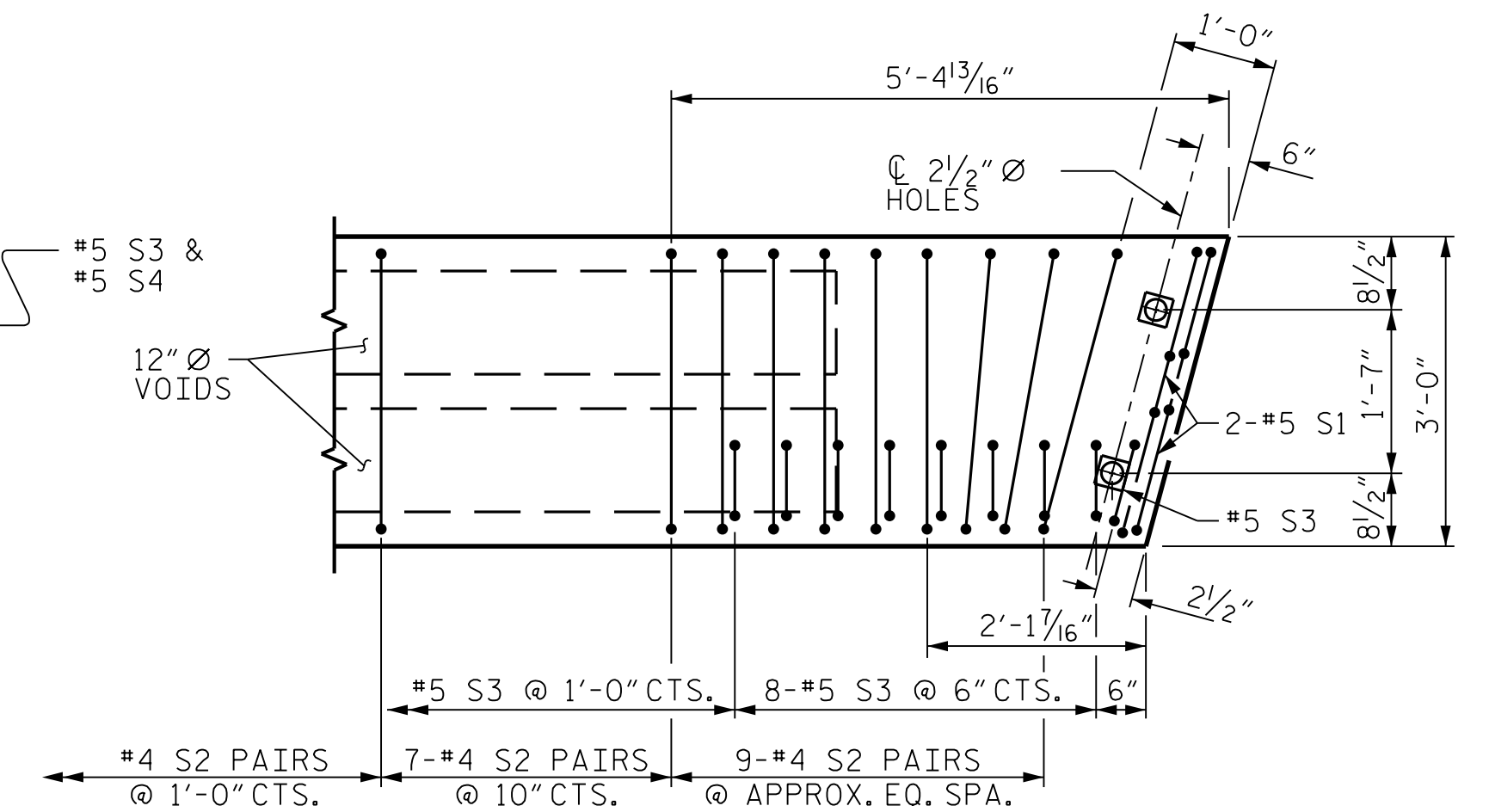
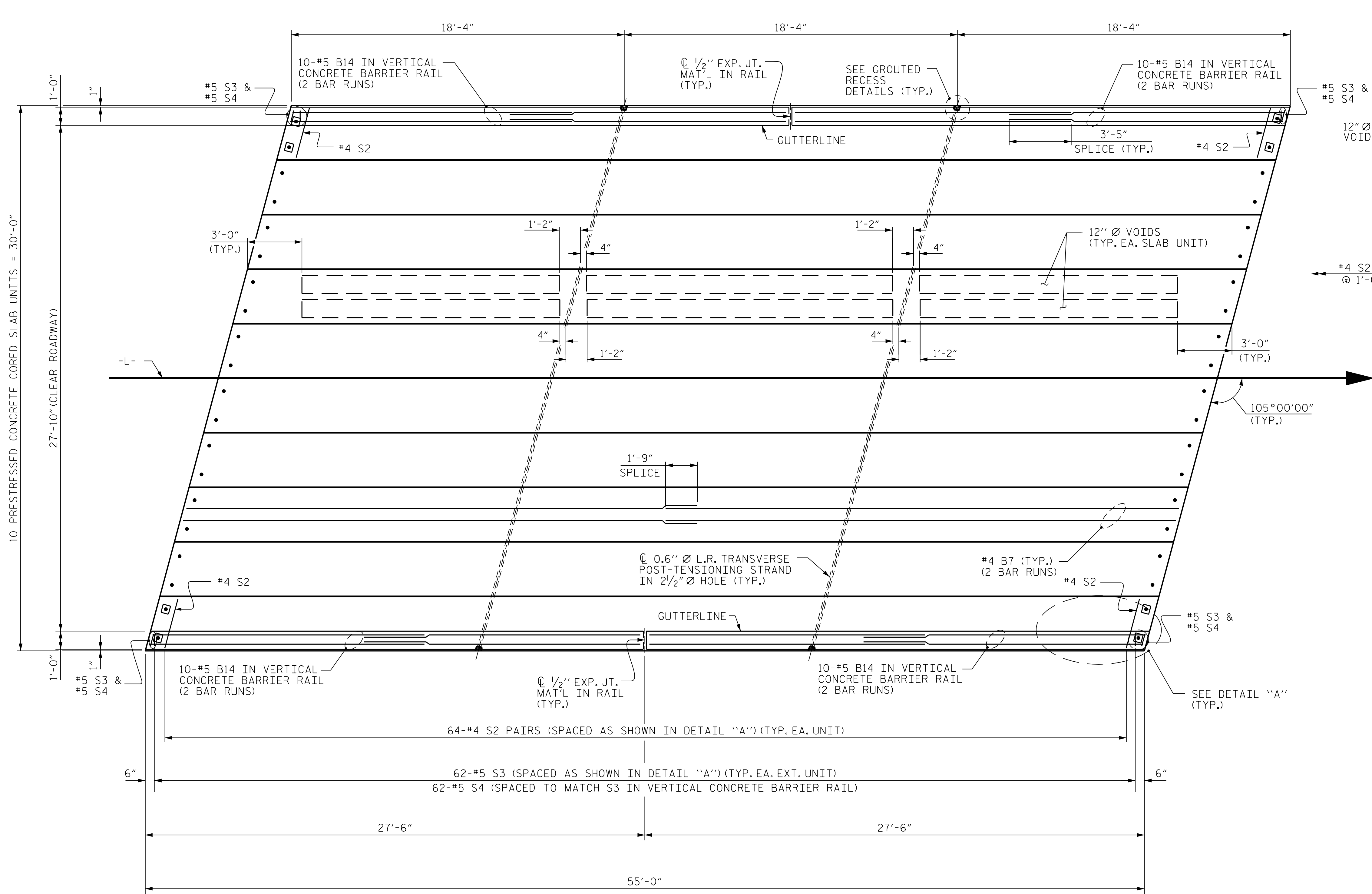


Seal of the State of North Carolina
Professional Engineer
State of Seal 050844
Engineer
JAYUR SHARMA
License No. 880422
Exp. 12/31/2019

7/6/2026

REVISIONS						SHEET NO. S-5
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 16
2			4			

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7/6/2026
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DETAIL "A"
(SIMILAR EACH END OF UNIT)
NOTE: EXTERIOR UNIT SHOWN - INTERIOR
UNIT SIMILAR EXCEPT OMIT #5 S3 BARS
AND BLOCKOUT FOR ANCHOR BOLTS.

PLAN OF UNIT

PROJECT NO. BP1.R021.1
MARTIN COUNTY
STATION: 13+33.50 -L-

SHEET 2 OF 4

ASSEMBLED BY: <u>B. H. GONFA</u>		DATE: <u>MAR 2026</u>	
CHECKED BY: <u>M. SHARMA</u>		DATE: <u>MAR 2026</u>	
DESIGN ENGINEER OF RECORD: <u>M. SHARMA</u>		DATE: <u>MAR 2026</u>	
DRAWN BY: <u>DGE</u>	3/09	REV. <u>12/5/11</u>	MAA/AAC
CHECKED BY: <u>BCH</u>	3/09	REV. <u>8/14</u>	MAA/TMG

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BRIDGE NO. 570025

SEAL
050844
7/6/2026

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH				PLAN OF 55' UNIT 27'-10" CLEAR ROADWAY 105° SKEW			
REVISIONS							
NO.	BY:	DATE:	NO.	BY:	DATE:	SHEET NO. S-6	
1			3			TOTAL SHEETS 16	
2			4				

7/6/2026 bgonfa R:\Structures\DCN\Final\BP1.R021.1.SMU_BOM_570025.dgn

DEAD LOAD DEFLECTION AND CAMBER	
55' CORED SLAB UNIT	3'-0" x 1'-9" 0.6" Ø L.R. STRAND
CAMBER (SLAB ALONE IN PLACE)	1½" ↑
DEFLECTION DUE TO SUPERIMPOSED DEAD LOAD**	¾" ↓
FINAL CAMBER	1⅛" ↑

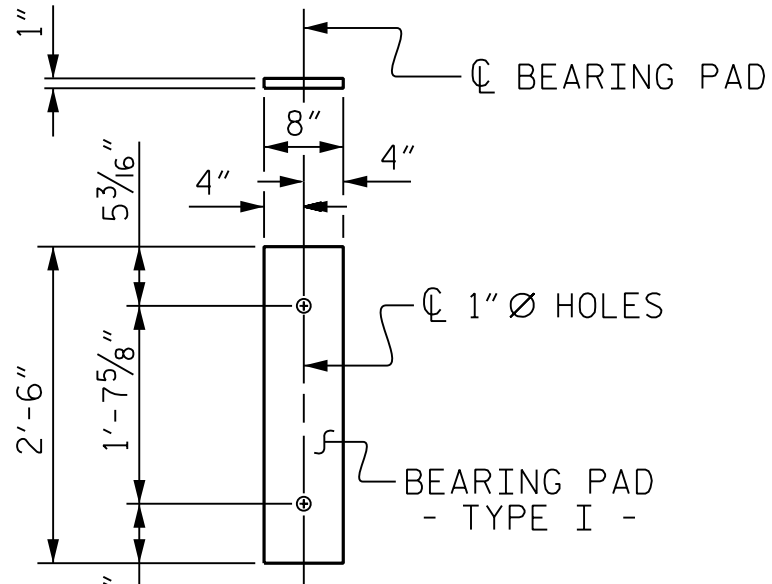
** INCLUDES FUTURE WEARING SURFACE

CONCRETE RELEASE STRENGTH	
UNIT	PSI
55' UNITS	4900

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

BILL OF MATERIAL FOR VERTICAL CONCRETE BARRIER RAIL						
BAR	BARS PER PAIR OF EXTERIOR UNITS	TOTAL NO.	SIZE	TYPE	LENGTH	WEIGHT
55' UNIT						
*B14	80		#5	STR	15'-5"	1286
*S4	128		#5	2	7'-2"	957
*EPOXY COATED REINFORCING STEEL				LBS.		2243
CLASS AA CONCRETE				CU.YDS.		14.1
TOTAL VERTICAL CONCRETE BARRIER RAIL				LN.FT.		110.25

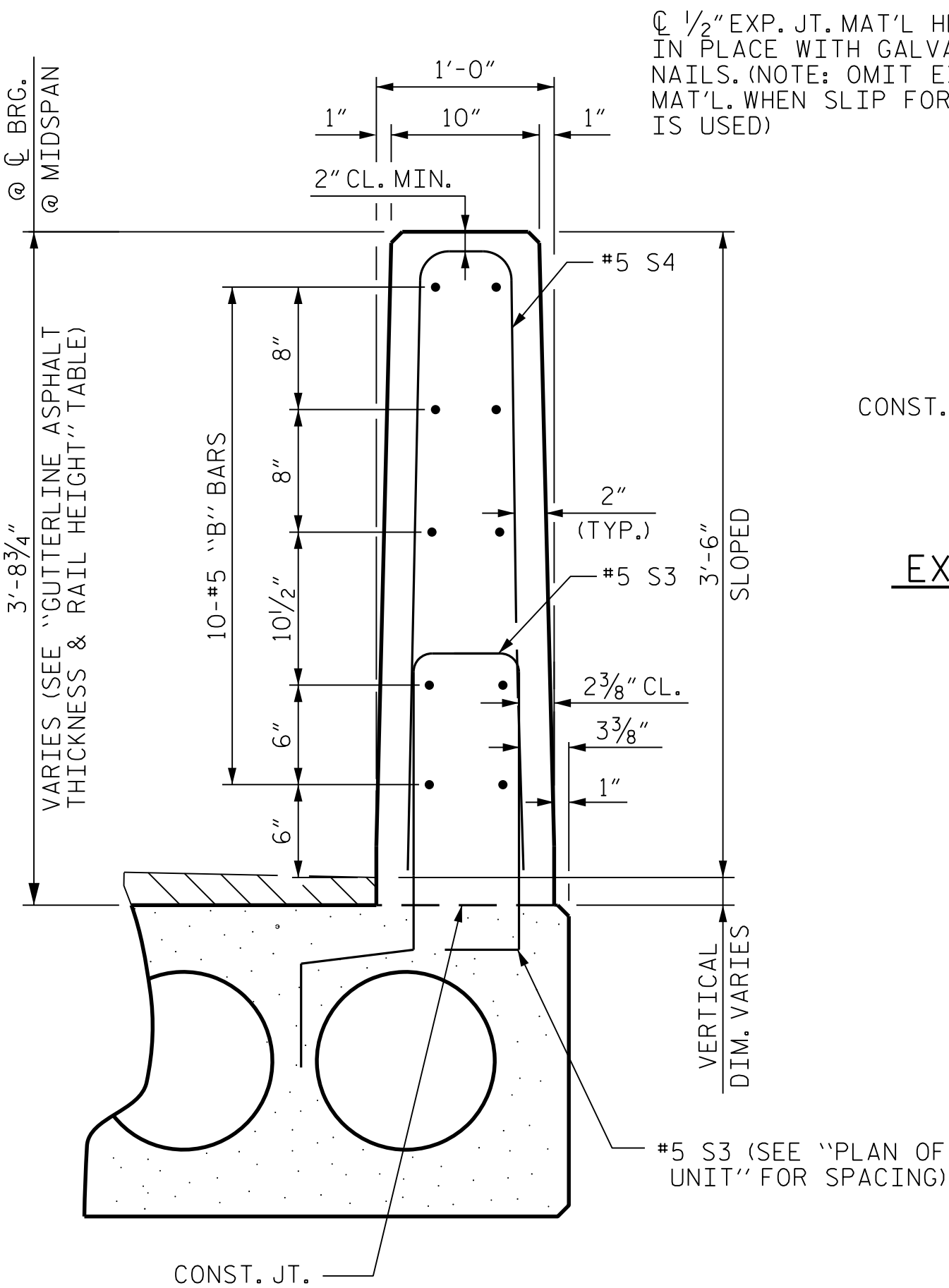
CORED SLABS REQUIRED			
	NUMBER	LENGTH	TOTAL LENGTH
55' UNIT			
EXTERIOR C.S.	2	55'-0"	110'-0"
INTERIOR C.S.	8	55'-0"	440'-0"
TOTAL			550'-0"



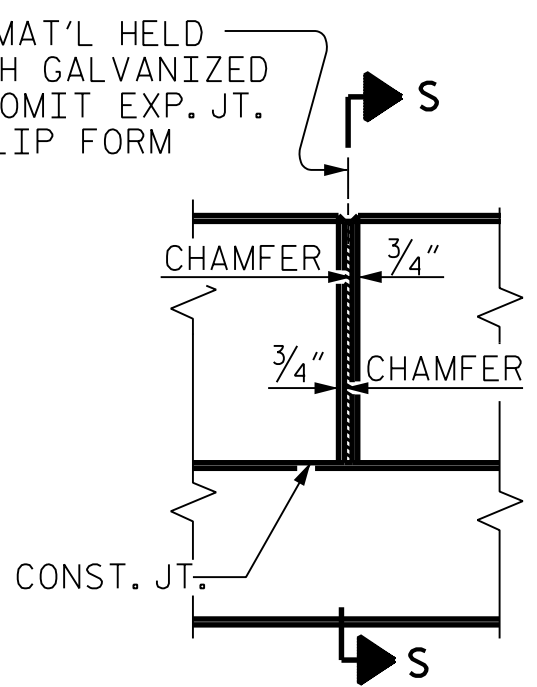
FIXED END
(TYPE I - 20 REQ'D)

ELASTOMERIC BEARING DETAILS

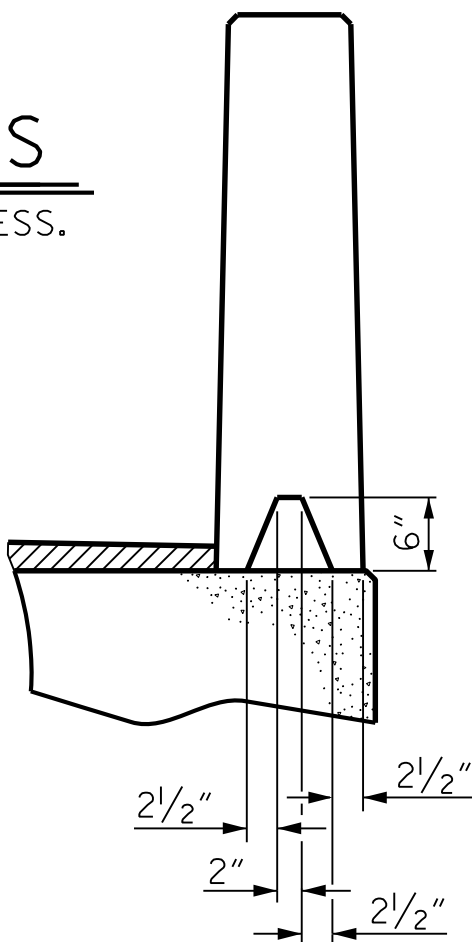
ELASTOMER IN ALL BEARINGS SHALL BE 50 DUROMETER HARDNESS.



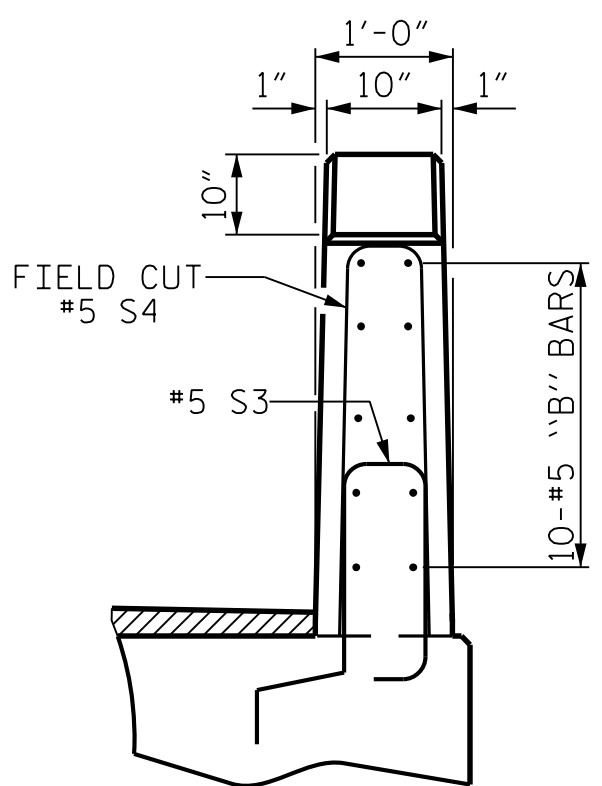
VERTICAL CONCRETE BARRIER RAIL SECTION



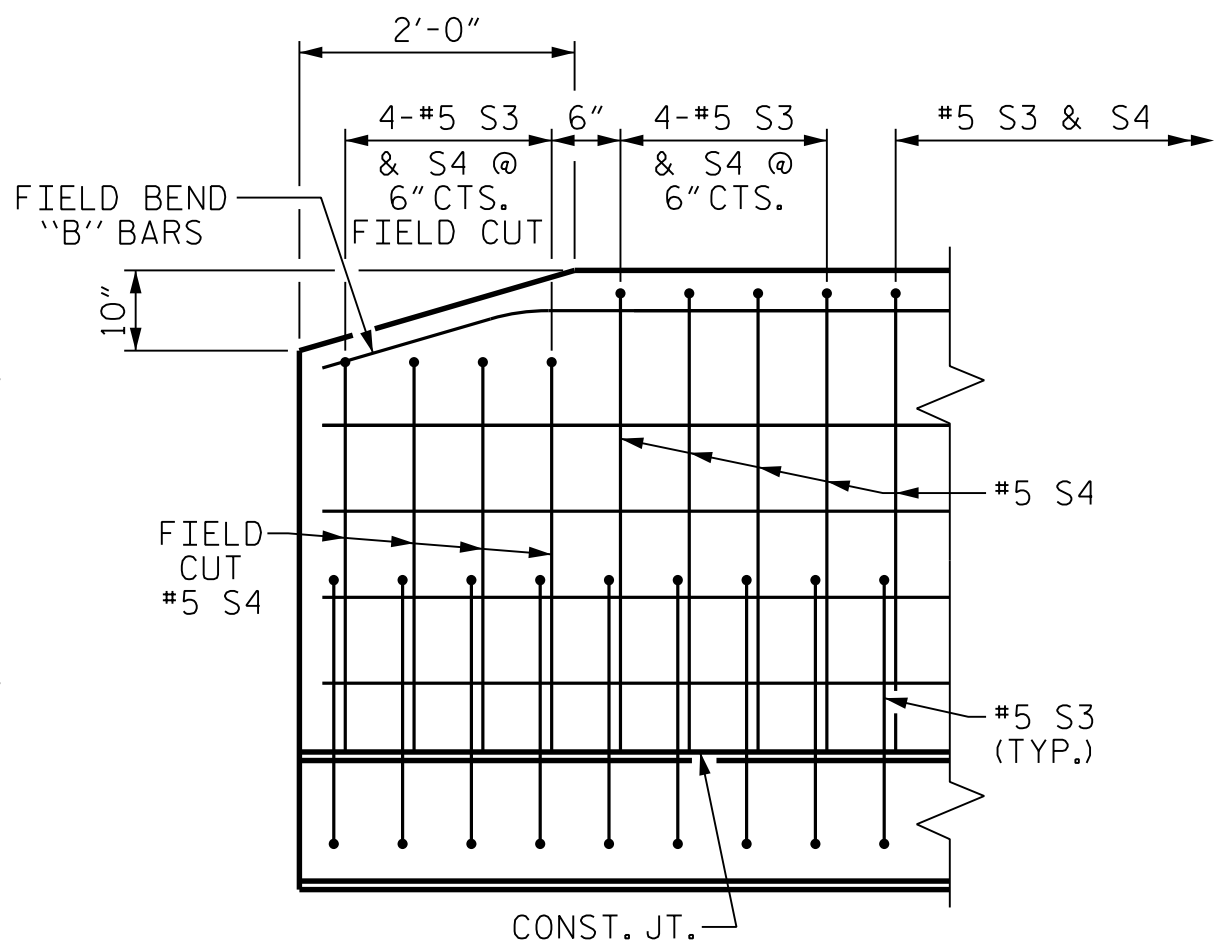
ELEVATION AT
EXPANSION JOINTS



SECTION S-S
AT DAM IN OPEN JOINT
(THIS IS TO BE USED ONLY
WHEN SLIP FORM IS USED)



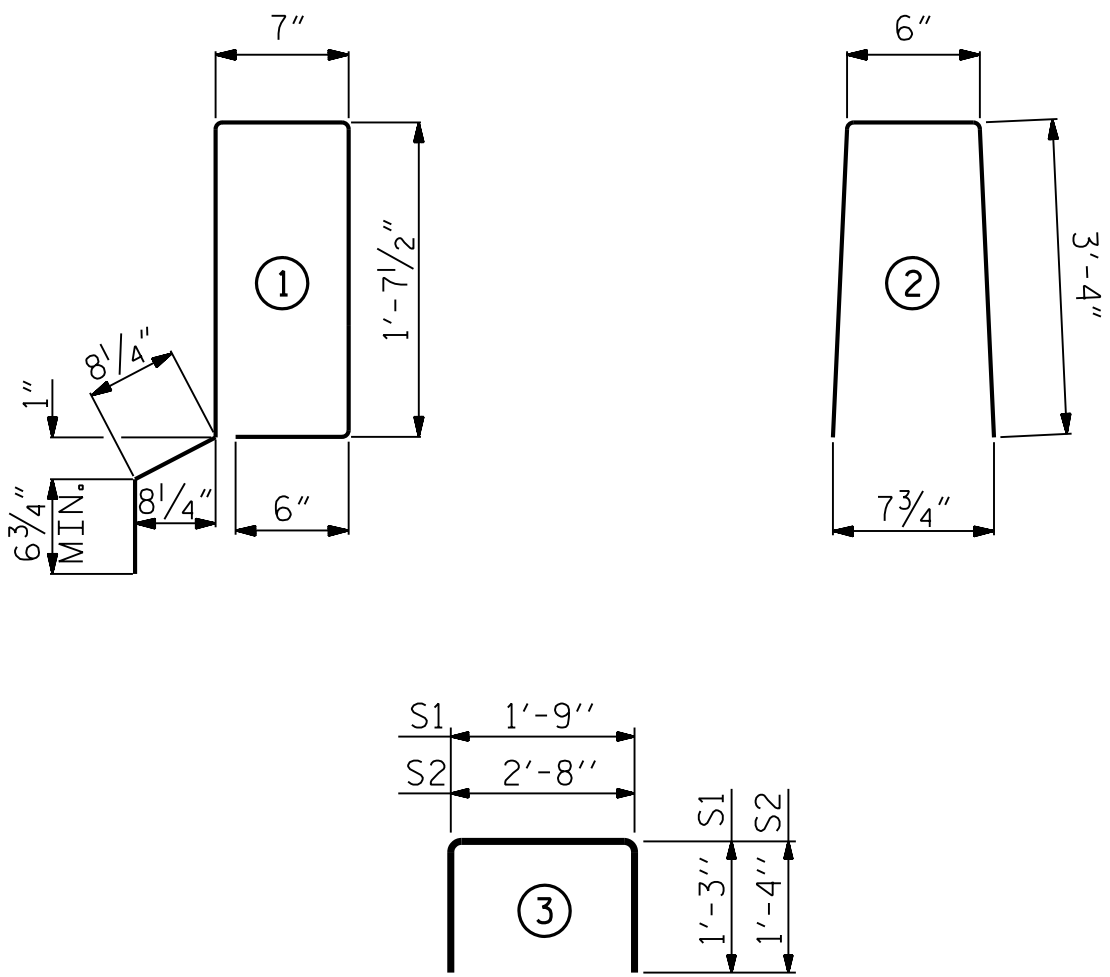
END VIEW



SIDE VIEW

END OF RAIL DETAILS

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT

BILL OF MATERIAL FOR ONE 55' CORED SLAB UNIT

				EXTERIOR UNIT		INTERIOR UNIT	
BAR	NUMBER	SIZE	TYPE	LENGTH	WEIGHT	LENGTH	WEIGHT
B7	4	#4	STR	28'-3"	75	28'-3"	75
S1	8	#5	3	4'-3"	35	4'-3"	35
S2	128	#4	3	5'-4"	456	5'-4"	456
* S3	64	#5	1	5'-7"	373		
REINFORCING STEEL				LBS.	566	566	
* EPOXY COATED REINFORCING STEEL				LBS.	373		
6500 P.S.I. CONCRETE				CU. YDS.	7.9	7.9	
0.6" Ø L.R. STRANDS				No.	19	19	

GUTTERLINE ASPHALT THICKNESS & RAIL HEIGHT

	ASPHALT OVERLAY THICKNESS	RAIL HEIGHT
	@ MID-SPAN	@ MID-SPAN
55' UNITS	1⅝"	3'-7⅝"

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 CORED SLAB SECTIONS SHALL BE GRADE 60 AND SHALL BE INCLUDED IN THE UNIT PRICE BID FOR PRESTRESSED CONCRETE CORED SLABS.

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

THE 2½" Ø DOWEL HOLES AT FIXED ENDS OF SLAB 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.

WHEN CORED SLABS ARE CAST, AN INTERNAL HOLD-DOWN SYSTEM SHALL BE EMPLOYED TO PREVENT VOIDS FROM RISING OR MOVING SIDEWAYS. AT LEAST SIX WEEKS PRIOR TO CASTING CORED SLABS, THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER FOR REVIEW AND COMMENT, DETAILED DRAWINGS OF THE PROPOSED HOLD-DOWN SYSTEM. IN ADDITION TO STRUCTURAL DETAILS, LOCATION AND SPACING OF THE HOLD-DOWNS SHALL BE INDICATED.

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

PRESTRESSING STRANDS SHALL BE CUT FLUSH WITH THE CORED SLAB UNIT ENDS.

APPLY EPOXY PROTECTIVE COATING TO CORED SLAB UNIT ENDS.

GROOVED CONTRACTION JOINTS, ½" 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 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.

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

THE TRANSFER OF LOAD FROM THE ANCHORAGES TO THE CORED SLAB UNIT SHALL BE DONE WHEN THE CONCRETE HAS REACHED A COMPRESSIVE STRENGTH OF NOT LESS THAN THE REQUIRED STRENGTH SHOWN IN THE "CONCRETE RELEASE STRENGTH" TABLE.

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.

AT ALL FIXED ENDS OF EXTERIOR CORED SLAB SECTIONS WITH HOLD-DOWN ANCHOR BOLTS, NUTS FOR ANCHOR BOLTS SHALL BE FINGER-TIGHTENED AND THEN BACKED OFF ½ TURN. THE THREAD OF THE NUT AND BOLT SHALL THEN BE BURIED WITH A SHARP POINTED TOOL.

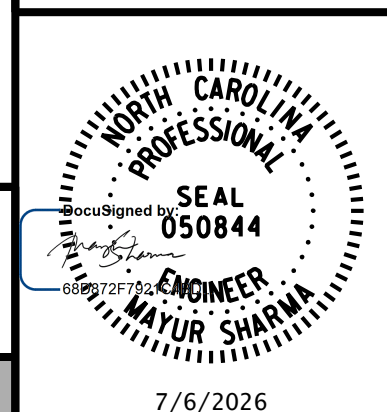
THE 2½" Ø DOWEL HOLES AT FIXED ENDS OF EXTERIOR CORED SLAB SECTIONS WITH HOLD-DOWN ANCHOR BOLTS SHALL BE FILLED WITH NON-SHRINK GROUT TO BOTTOM OF THE ANCHOR BOLT BLOCKOUT PRIOR TO INSTALLING THE ANCHOR PLATES, WASHERS, AND NUTS.

THE ANCHOR BOLT BLOCKOUTS IN EXTERIOR CORED SLAB SECTIONS SHALL BE FILLED WITH NON-SHRINK GROUT PRIOR TO PLACEMENT OF THE WEARING SURFACE.

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SHEET 3 OF 4

BRIDGE NO. 570025

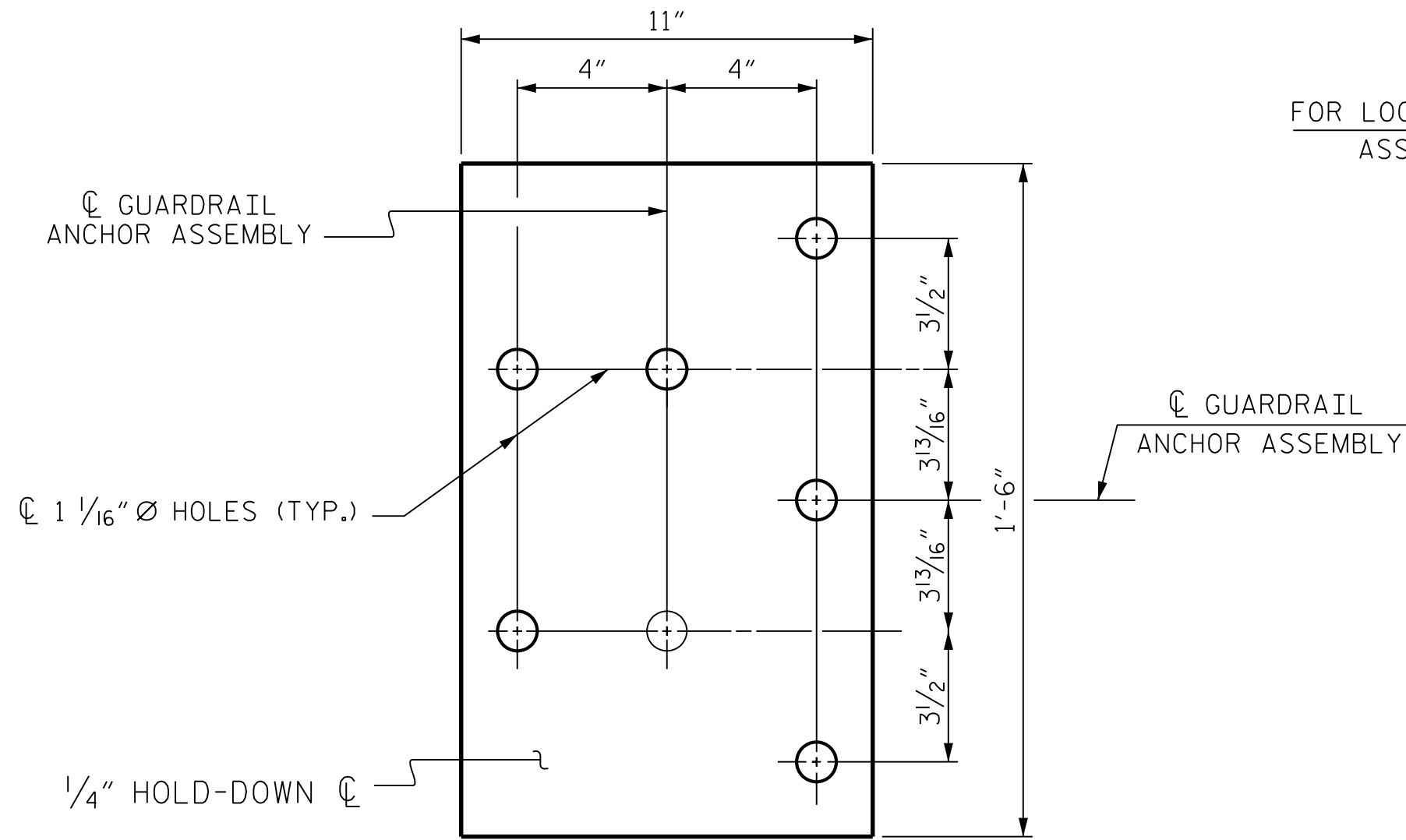


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RALEIGH
STANDARD
3'-0" X 1'-9"
PRESTRESSED CONCRETE
CORED SLAB UNIT
105° SKEW

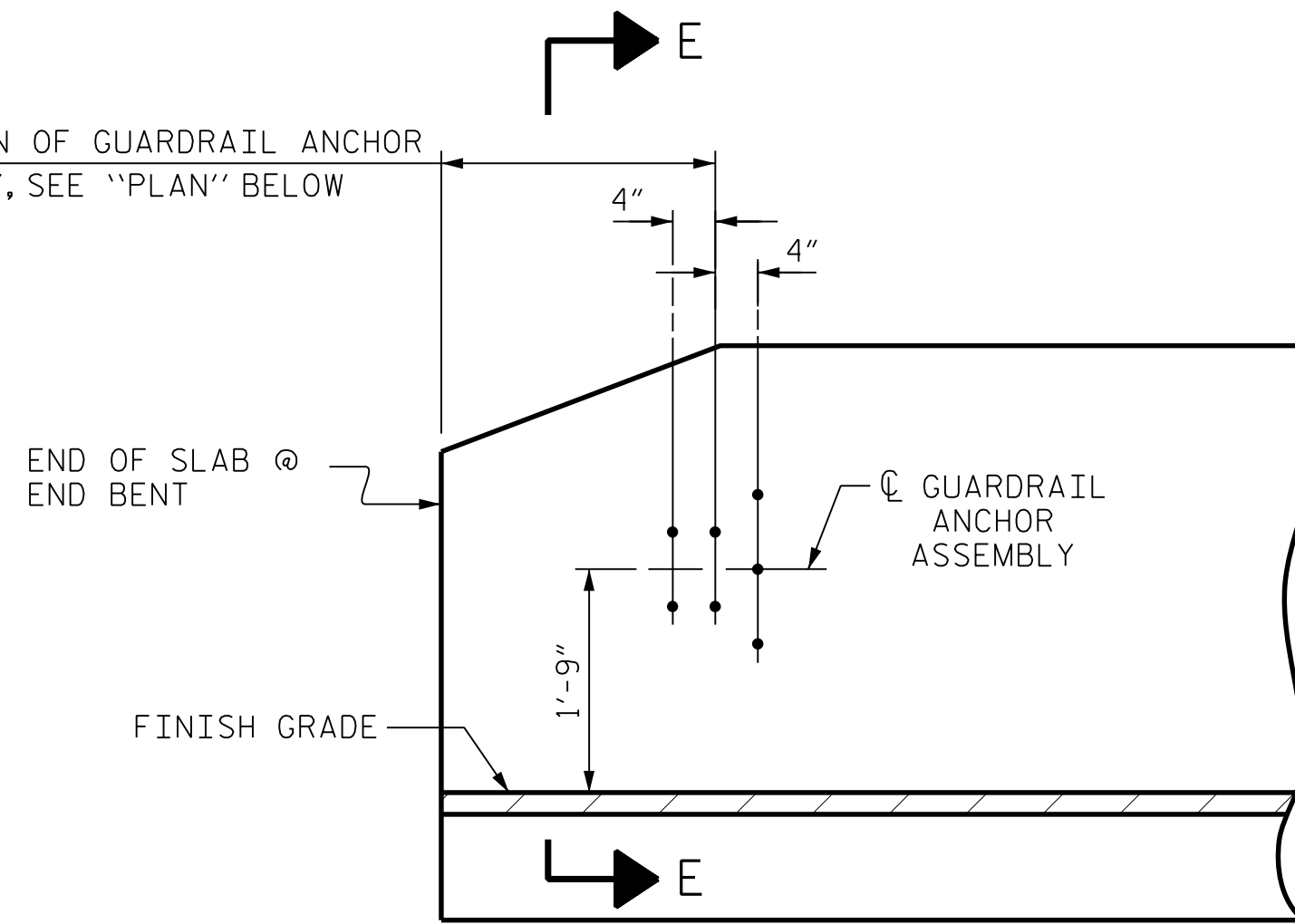
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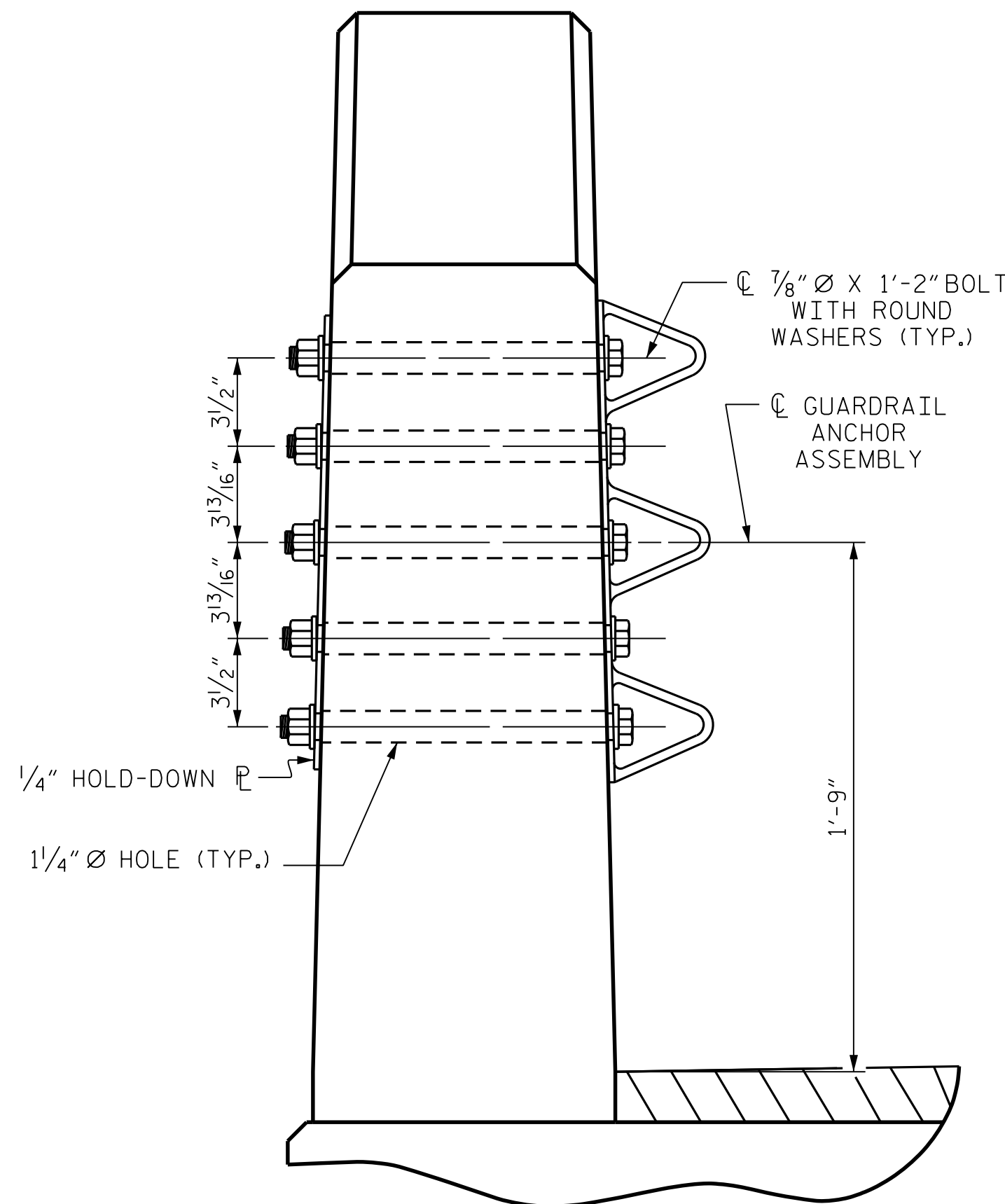


PLAN

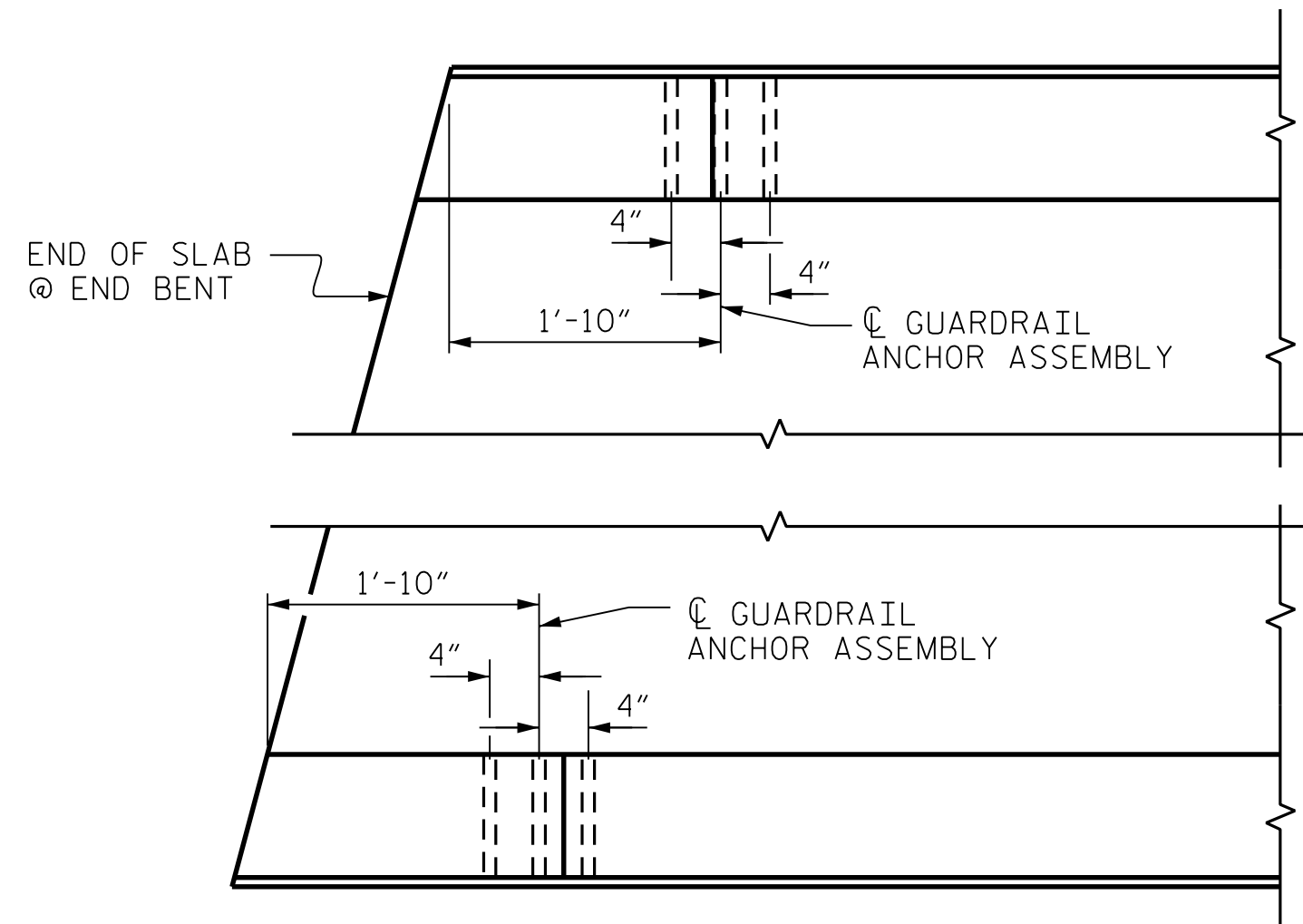
FOR LOCATION OF GUARDRAIL ANCHOR ASSEMBLY, SEE "PLAN" BELOW



ELEVATION



SECTION E-E
GUARDRAIL ANCHOR ASSEMBLY DETAILS



PLAN

LOCATION OF ANCHORS FOR GUARDRAIL

NOTES:

THE GUARDRAIL ANCHOR ASSEMBLY SHALL CONSIST OF A 1/4" HOLD DOWN PLATE AND 7-7/8" 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 7/8" 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 1/4" 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.



SKETCH SHOWING POINTS OF ATTACHMENTS

* DENOTES GUARDRAIL ANCHOR ASSEMBLY

PROJECT NO. BP1.R021.1
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STATION: 13+33.50 -L-

SHEET 4 OF 4

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DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD
GUARDRAIL ANCHORAGE
FOR VERTICAL
BARRIER RAIL

REVISIONS

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2			4		

TOTAL SHEETS
16

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DEPARTMENT OF TRANSPORTATION
RALEIGH

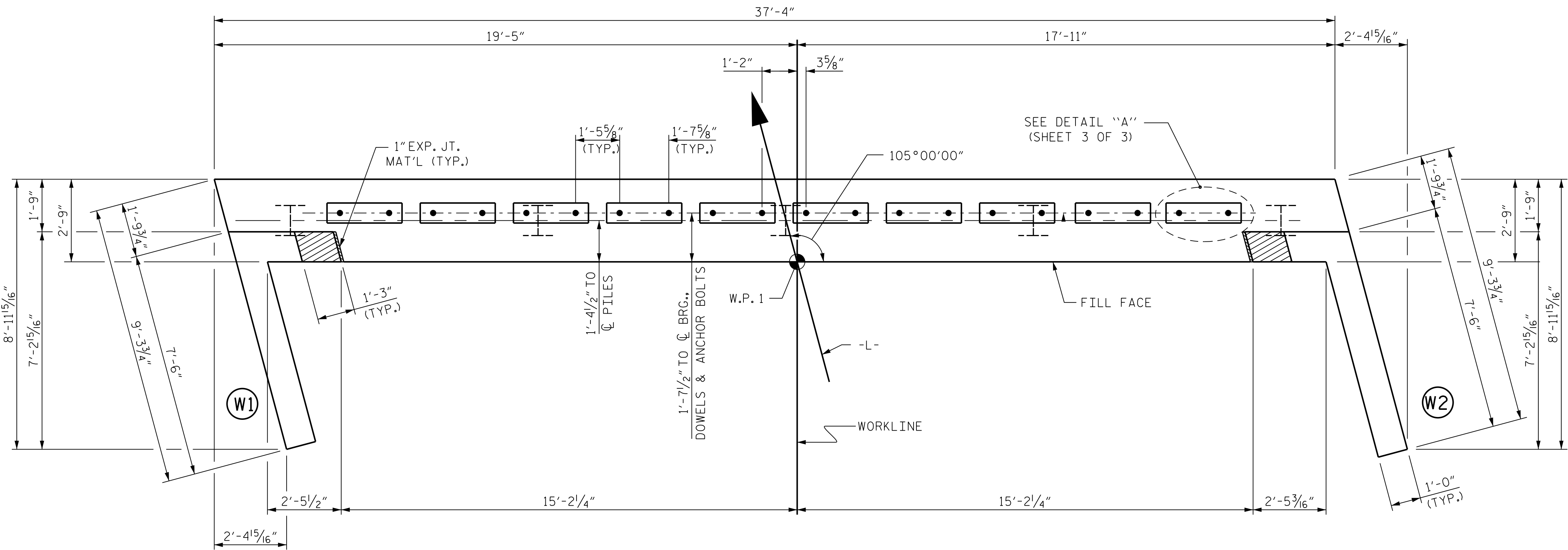
STANDARD
GUARDRAIL ANCHORAGE
FOR VERTICAL
BARRIER RAIL

REVISIONS

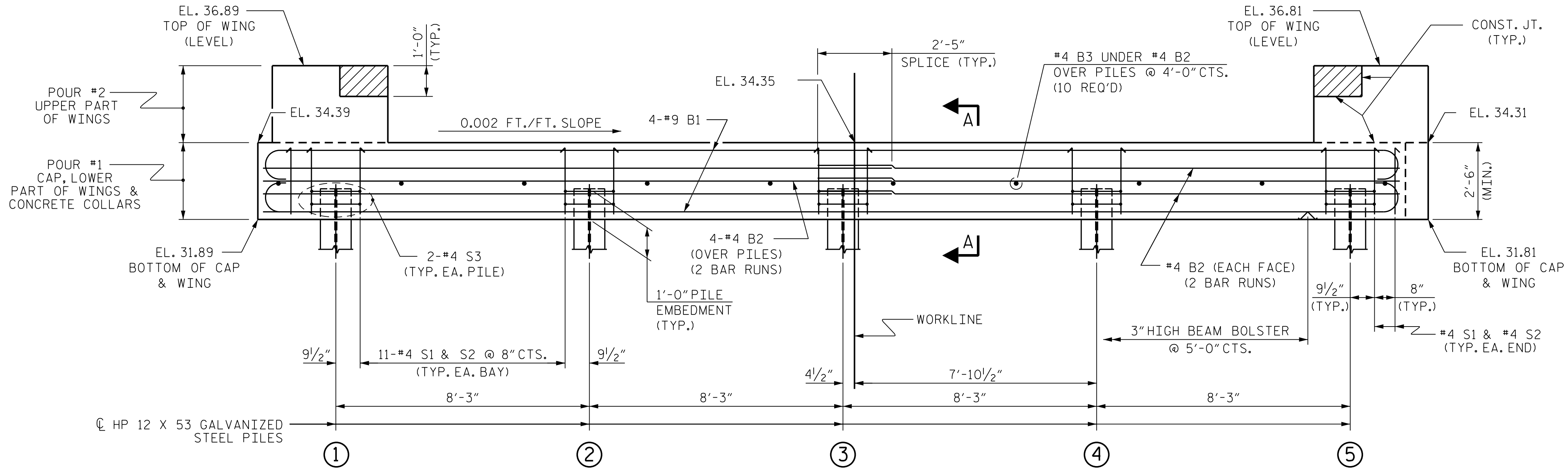
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TOTAL SHEETS
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PLAN



ELEVATION

WINGS NOT SHOWN FOR CLARITY.
FOR SECTION A-A, SEE SHEET 3 OF 3.
CONCRETE COLLARS FOR GALVANIZED STEEL PILES NOT SHOWN IN PLAN AND ELEVATION VIEWS FOR CLARITY.
SEE "CORROSION PROTECTION FOR GALVANIZED STEEL PILES DETAIL", SHEET 3 OF 3.

NOTES:

STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR ANCHOR BOLTS.

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 3 OF 3.

FOR WING DETAILS, SEE SHEET 2 OF 3.

GALVANIZE THE FULL LENGTH OF EACH END BENT PILE IN ACCORDANCE WITH SECTION 1076 OF THE STANDARD SPECIFICATIONS.

THE PLATES "P1", ANCHOR BOLTS, NUTS, AND WASHERS SHALL BE INCLUDED IN THE PAY ITEM FOR PRESTRESSED CONCRETE CORED SLAB UNITS.

ANCHOR BOLTS SHALL MEET THE REQUIREMENTS OF ASTM A449. ANCHOR PLATES, WASHERS, PLATES, AND NUTS SHALL BE GALVANIZED AND MEET THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS.

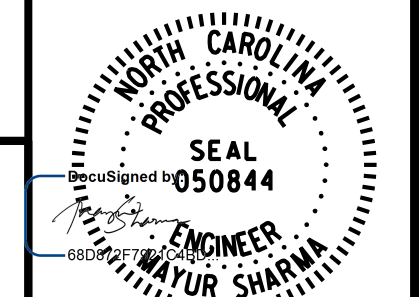
TOP OF PILE ELEVATIONS

①	32.88'
②	32.86'
③	32.85'
④	32.83'
⑤	32.81'

PROJECT NO. BP1.R021.1
MARTIN COUNTY
STATION: 13+33.50 -L-

SHEET 1 OF 3

BRIDGE NO. 570025



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE
END BENT 1

ASSEMBLED BY: B. H. GONFA DATE: MAR 2026
CHECKED BY: M. SHARMA DATE: MAR 2026
DESIGN ENGINEER OF RECORD: M. SHARMA DATE: MAR 2026

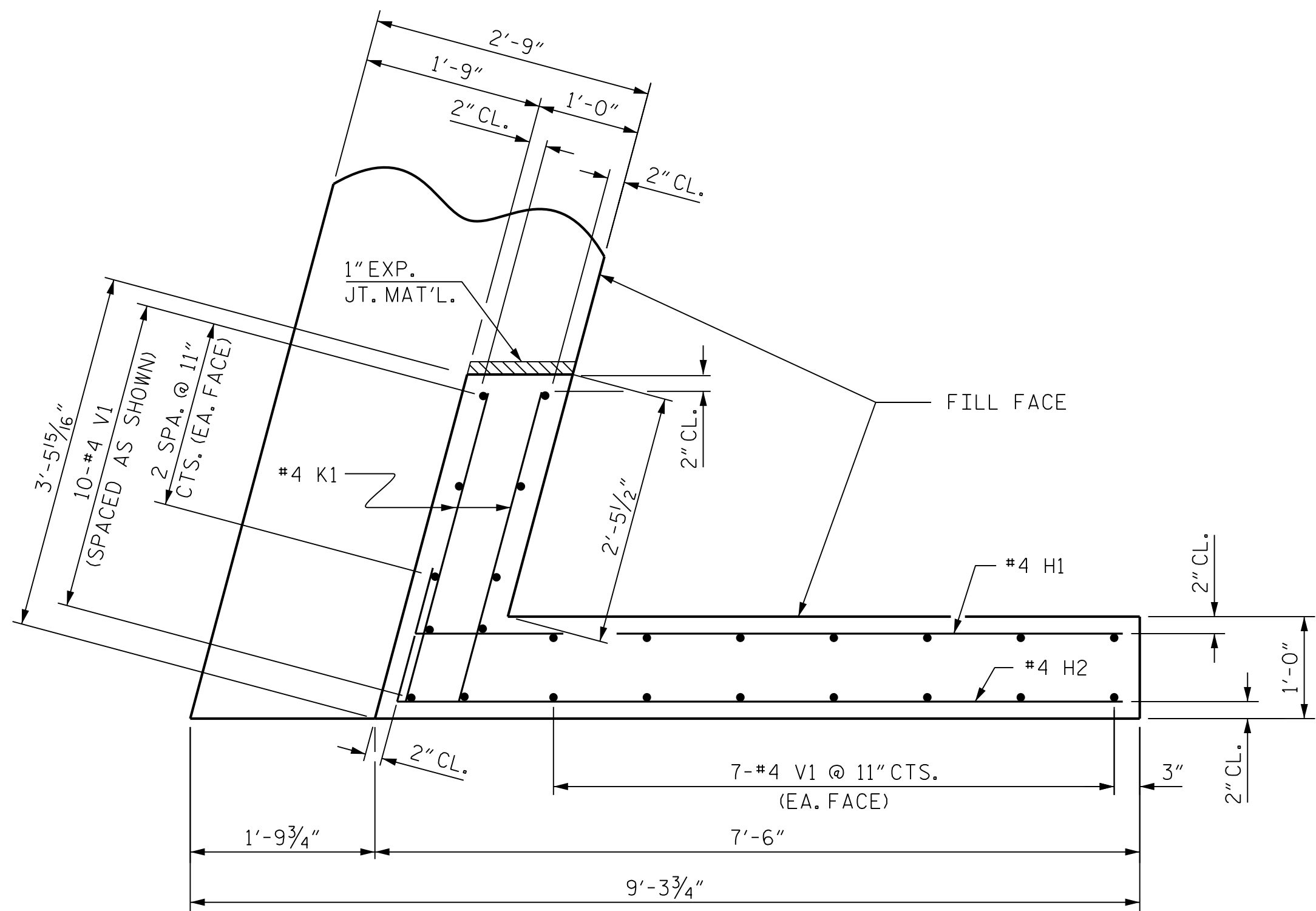
DRAWN BY: DGE 01/10
CHECKED BY: MKT 01/10
REV. 4/15 MAA/TMG

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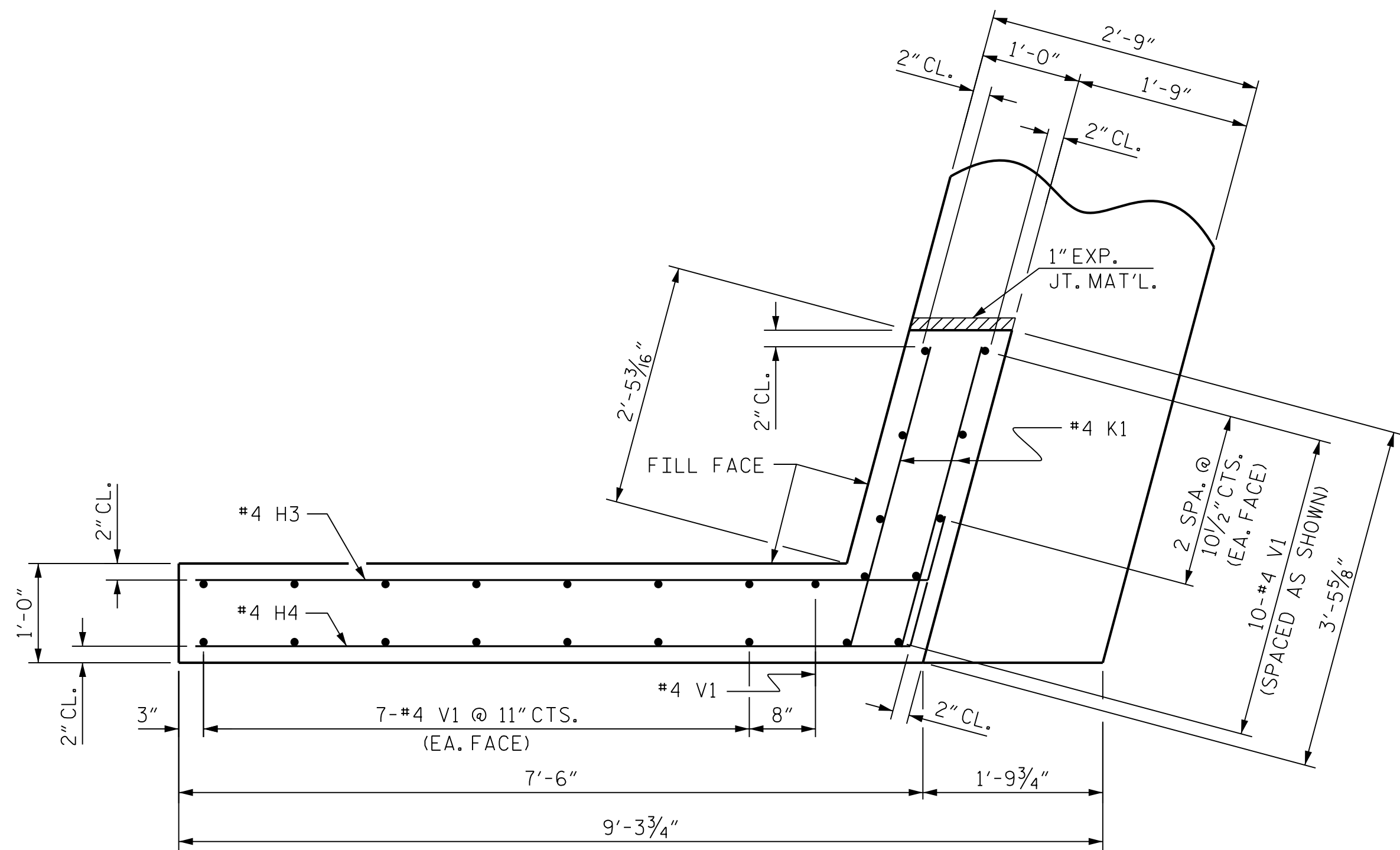
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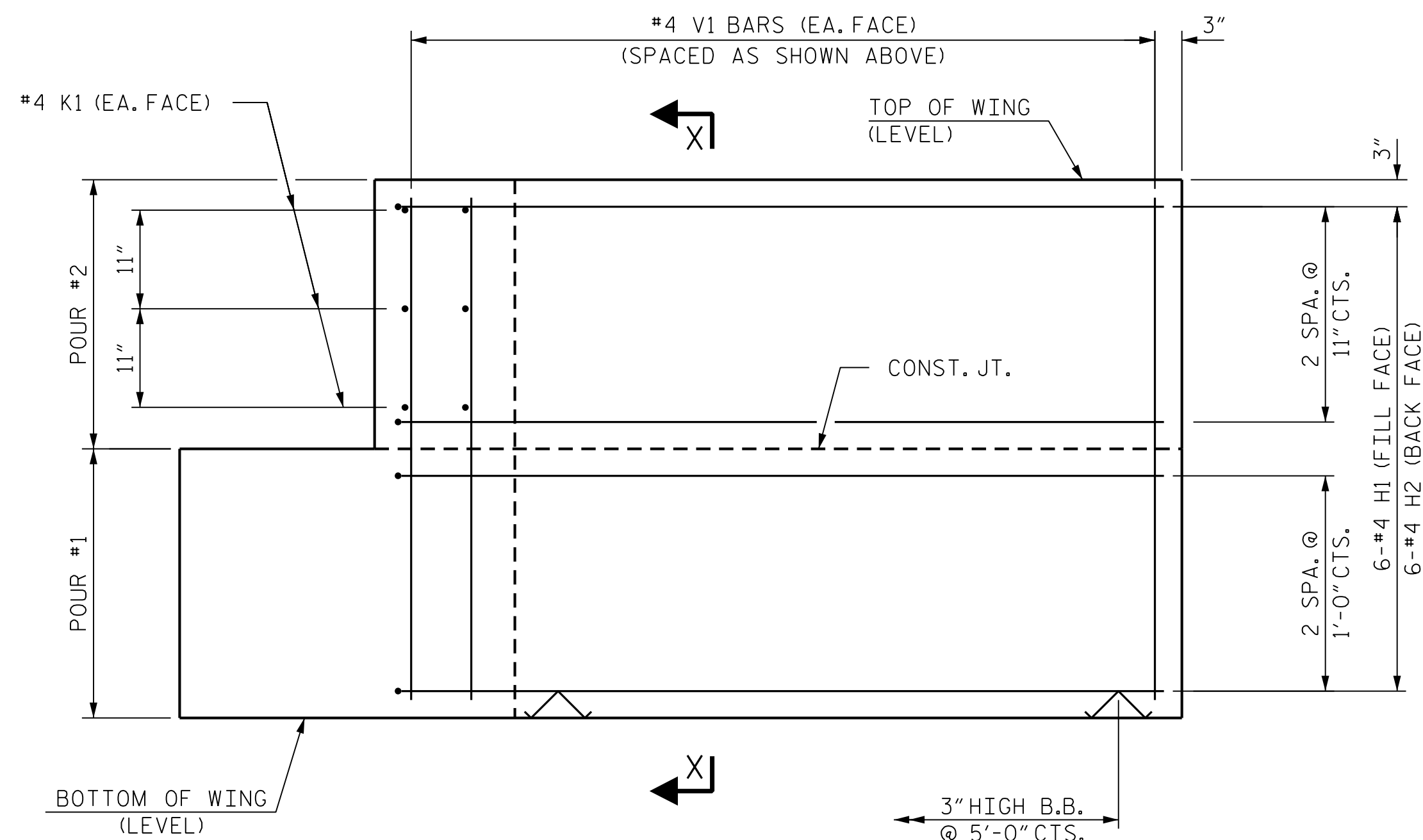
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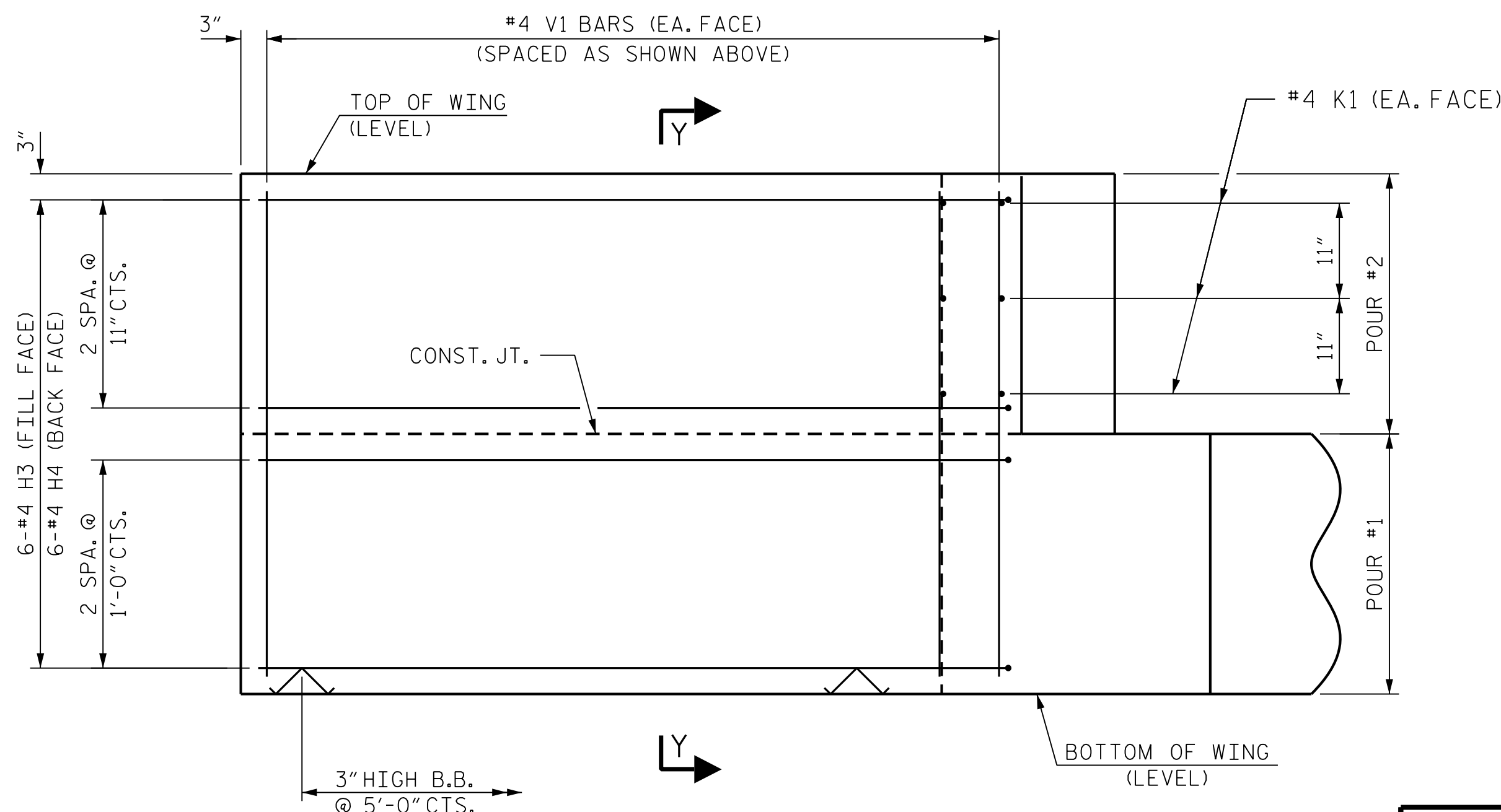
PLAN OF WING (W1)



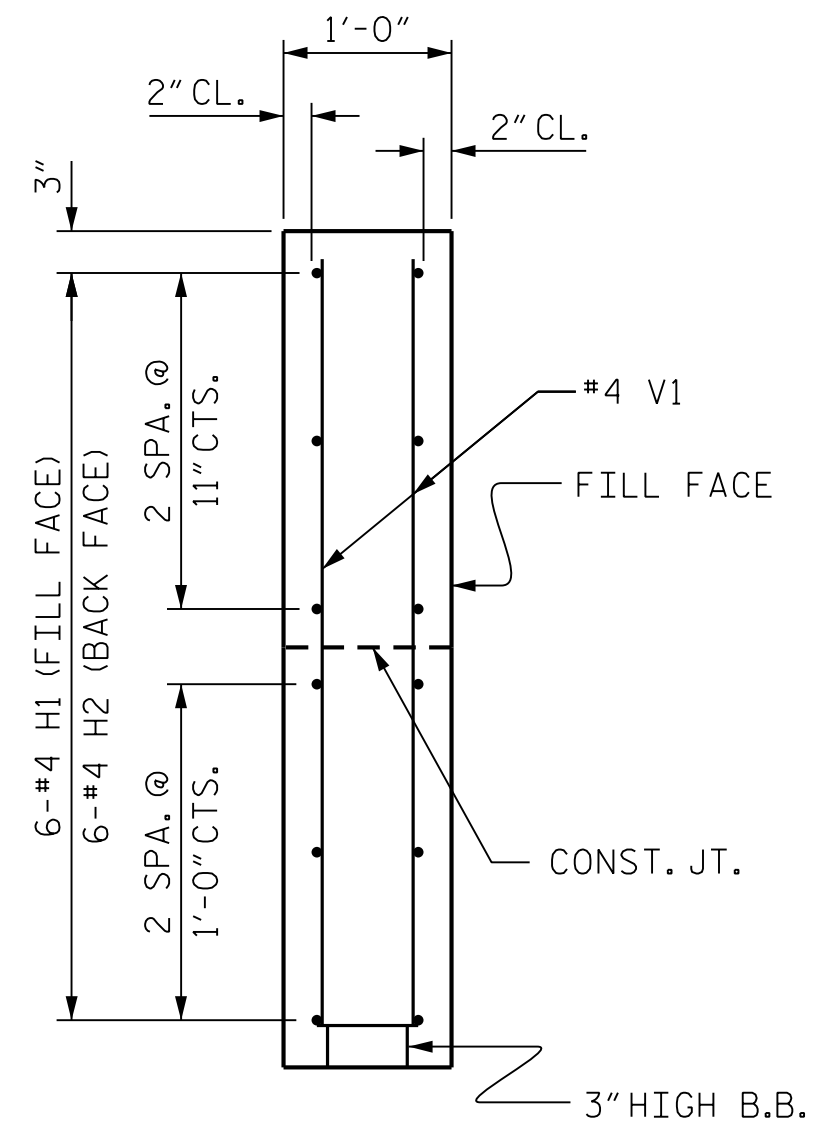
PLAN OF WING (W2)



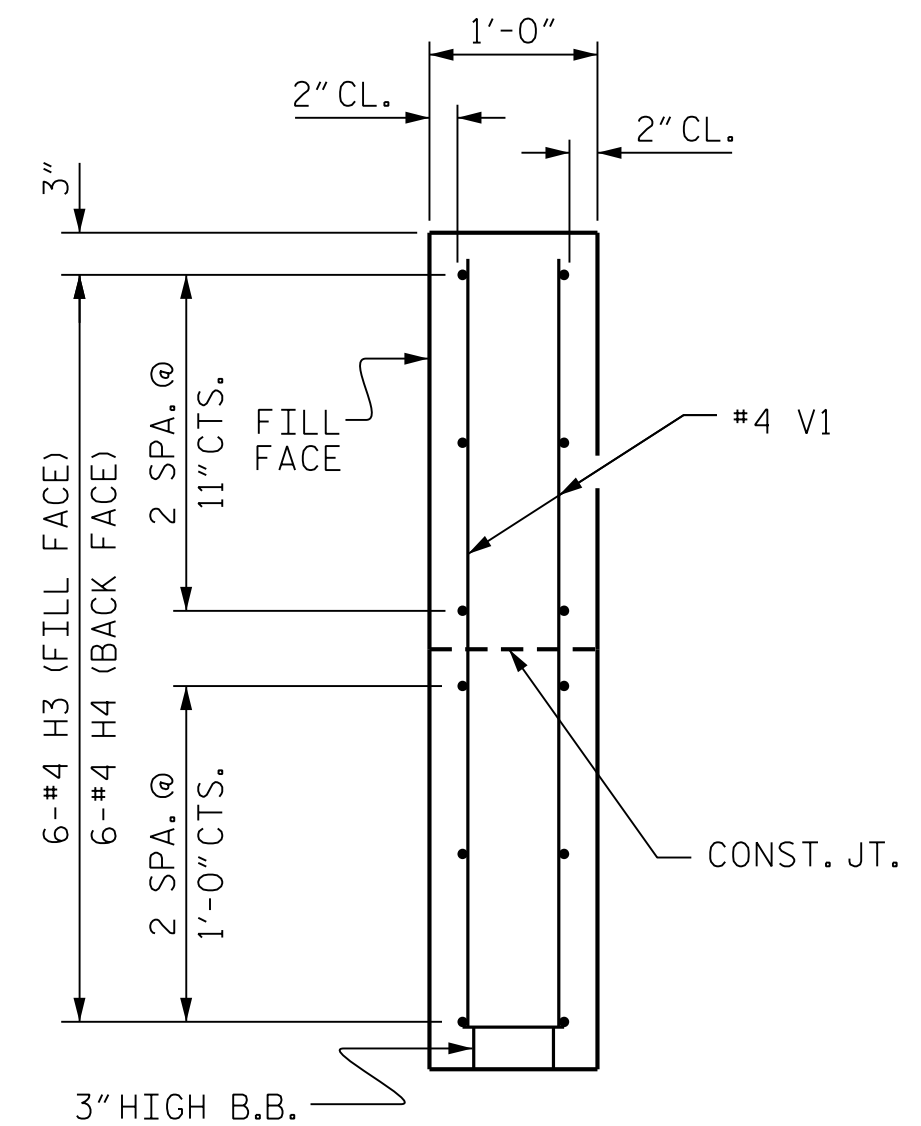
ELEVATION OF WING (W1)



ELEVATION OF WING (W2)



SECTION X-X

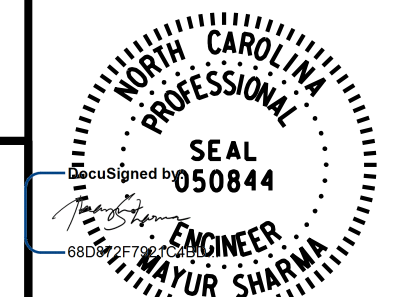


SECTION Y-Y

PROJECT NO. BP1.R021.1
MARTIN COUNTY
STATION: 13+33.50 -L-

SHEET 2 OF 3

BRIDGE NO. 570025



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE
END BENT 1
WING DETAILS

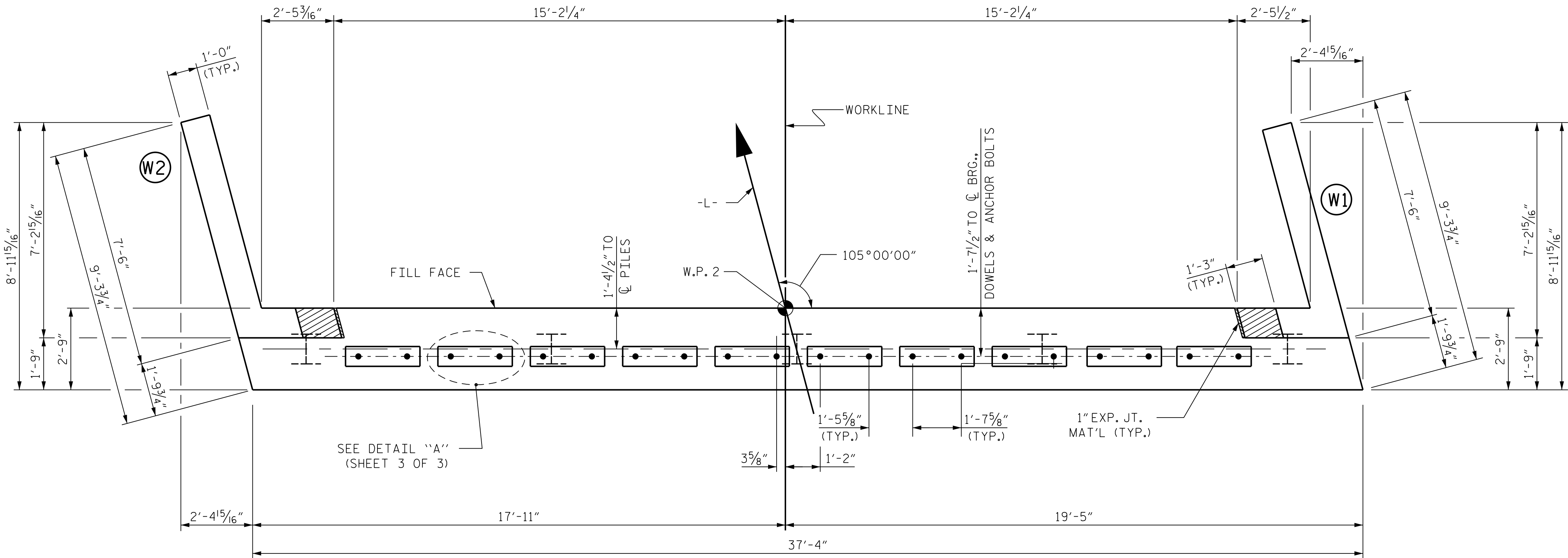
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REV. 4/15	MAA/TMG

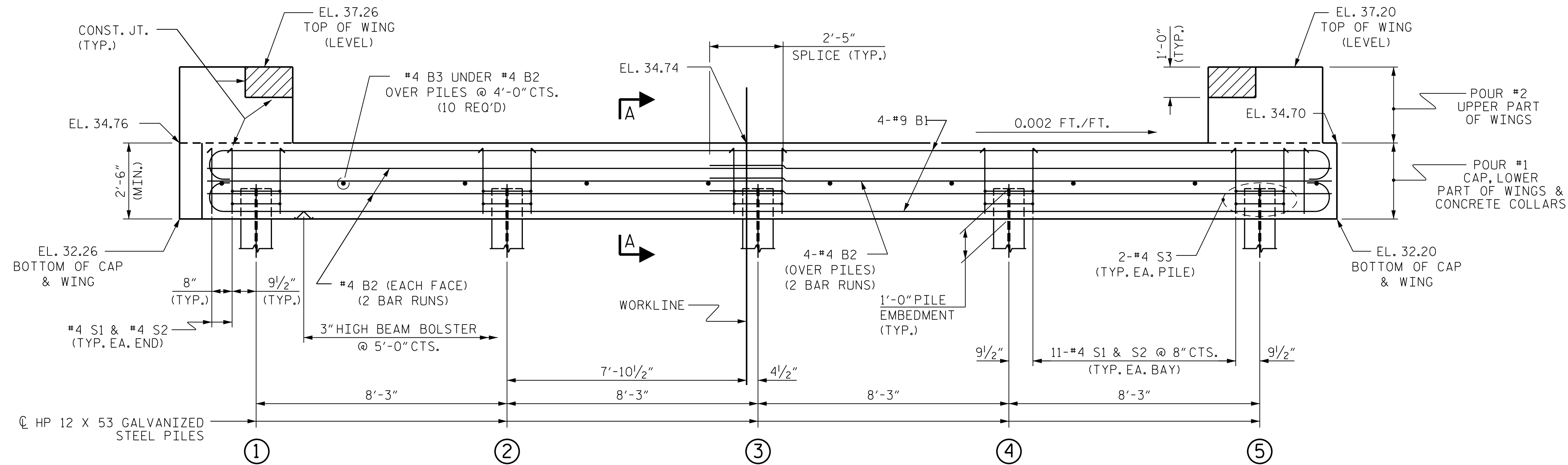
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PLAN



ELEVATION

WINGS NOT SHOWN FOR CLARITY.
FOR SECTION A-A, SEE SHEET 3 OF 3.
CONCRETE COLLARS FOR GALVANIZED STEEL PILES NOT SHOWN IN PLAN AND ELEVATION VIEWS FOR CLARITY.
SEE "CORROSION PROTECTION FOR GALVANIZED STEEL PILES DETAIL", SHEET 3 OF 3.

NOTES:

STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR ANCHOR BOLTS.

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 3 OF 3.

FOR WING DETAILS, SEE SHEET 2 OF 3.

GALVANIZE THE FULL LENGTH OF EACH END BENT PILE IN ACCORDANCE WITH SECTION 1076 OF THE STANDARD SPECIFICATIONS.

THE PLATES "P1", ANCHOR BOLTS, NUTS, AND WASHERS SHALL BE INCLUDED IN THE PAY ITEM FOR PRESTRESSED CONCRETE CORED SLAB UNITS.

ANCHOR BOLTS SHALL MEET THE REQUIREMENTS OF ASTM A449. ANCHOR PLATES, WASHERS, PLATES, AND NUTS SHALL BE GALVANIZED AND MEET THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS.

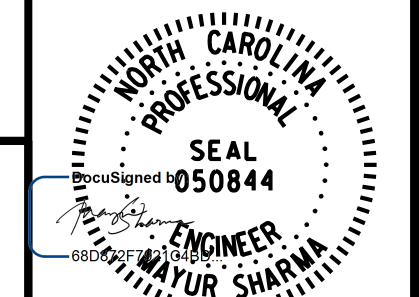
TOP OF PILE ELEVATIONS

①	33.26'
②	33.25'
③	33.24'
④	33.22'
⑤	33.21'

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MARTIN COUNTY
STATION: 13+33.50 -L-

SHEET 1 OF 3

BRIDGE NO. 570025



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DEPARTMENT OF TRANSPORTATION
RALEIGH

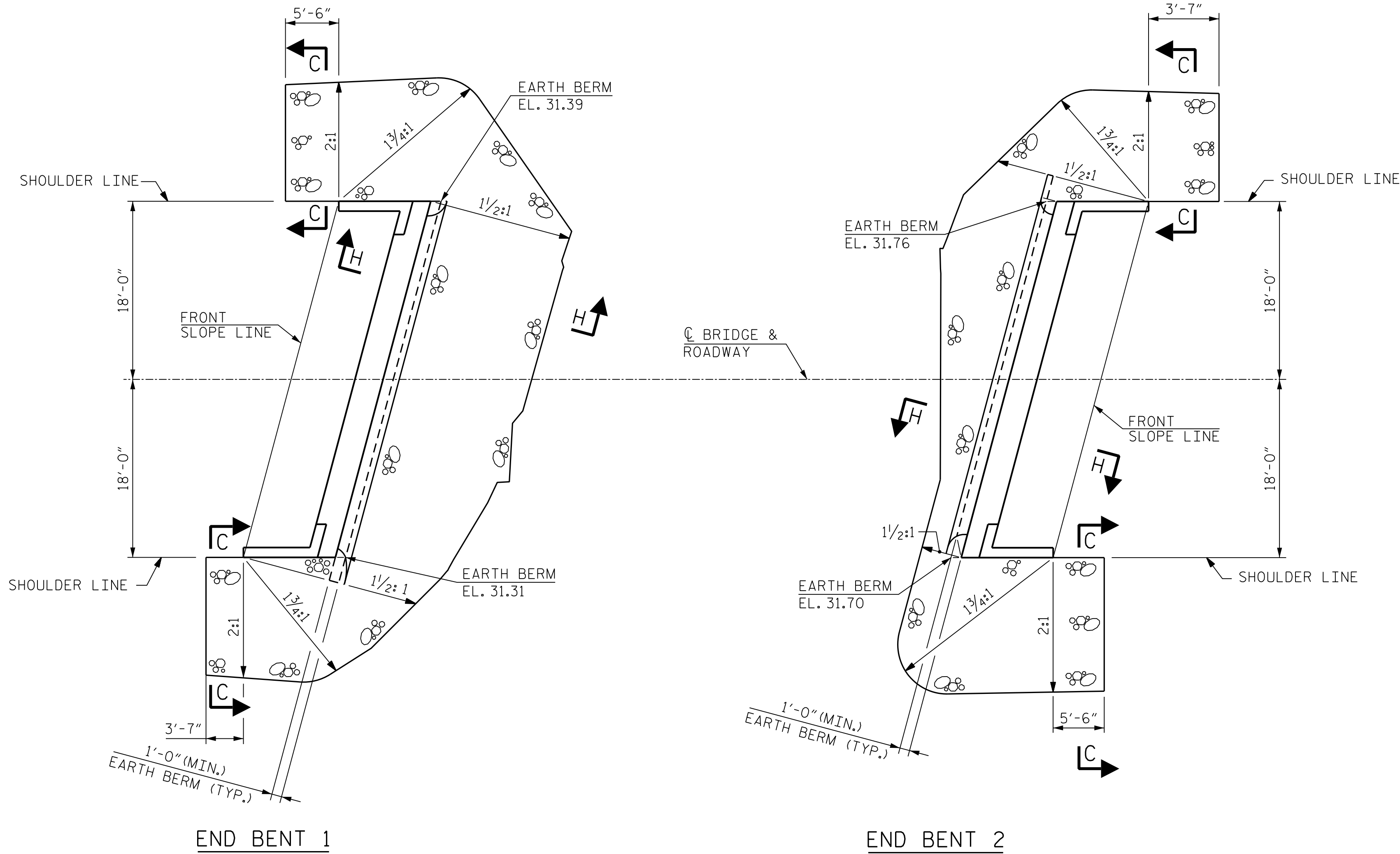
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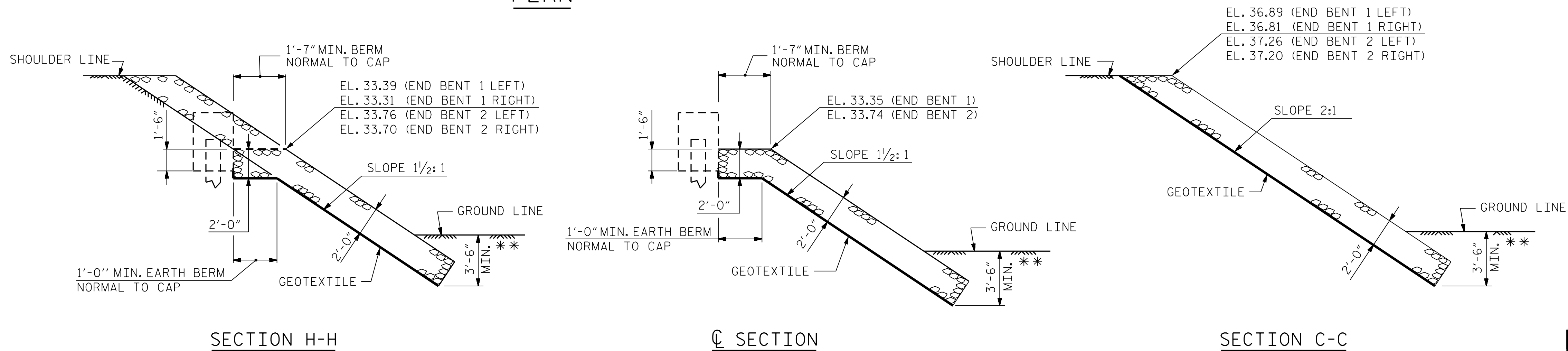
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PLAN



SECTION H-H

SECTION C-C

SECTION C-C

BERM RIP RAPPED

** 3'-6" KEY-IN UNLESS RIPRAP IMPACTING WATERWAY JURISDICTION AREA

ESTIMATED QUANTITIES		
BRIDGE @ STA. 13+33.50 -L-	RIP RAP CLASS II (2'-0" THICK)	GEOTEXTILE FOR DRAINAGE
	TONS	SQUARE YARDS
END BENT 1	120	140
END BENT 2	80	90

PROJECT NO. BP1.R021.1
MARTIN COUNTY
STATION: 13+33.50 -L-

DRAWN BY : B. H. GONFA DATE : MAR 2026
CHECKED BY : M. SHARMA DATE : MAR 2026
DESIGN ENGINEER OF RECORD : M. SHARMA DATE : MAR 2026

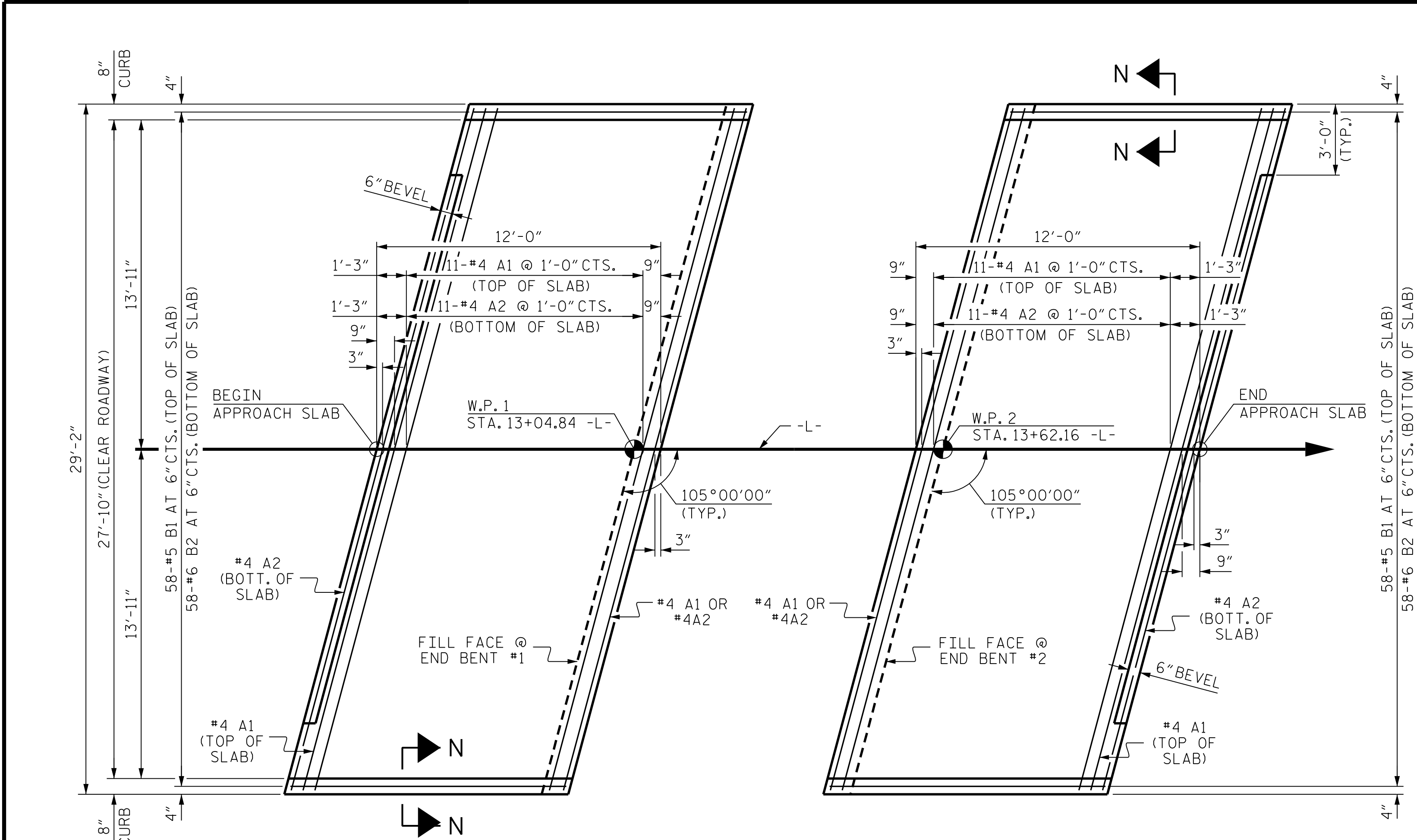
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BRIDGE NO. 570025

SEAL
050844
ENGINEER
WAYUR SHARMA
7/6/2026

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
STANDARD RIP RAP DETAILS					
REVISIONS					
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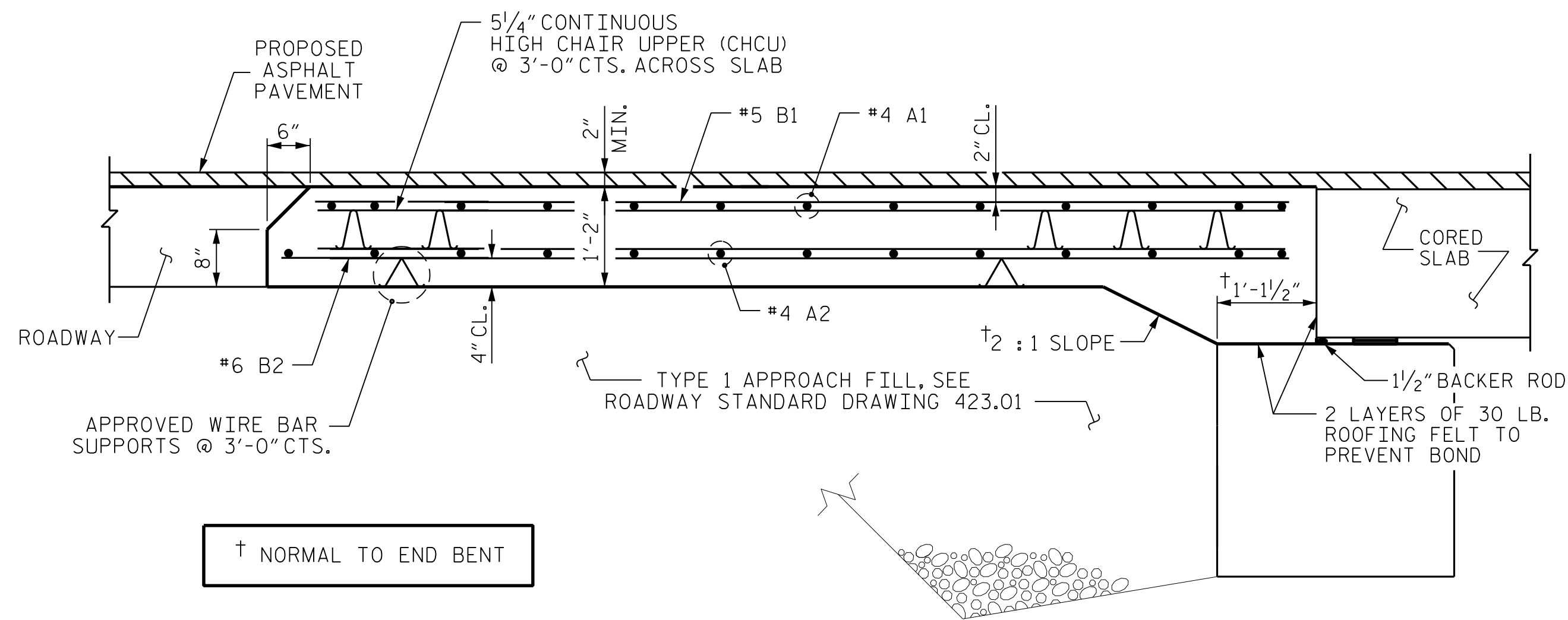
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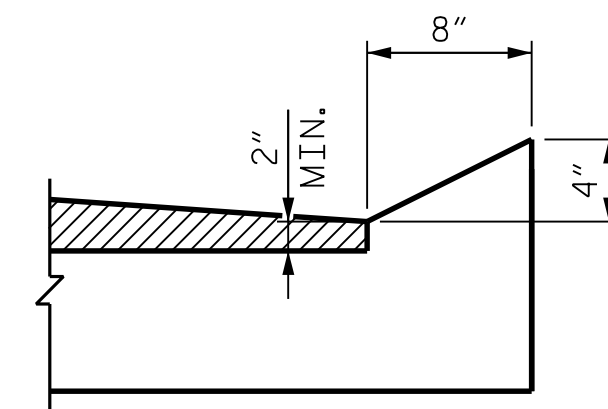
PLAN AT END BENT 1

PLAN AT END BENT 2

DIMENSIONS SHOWN ARE TYPICAL FOR BOTH APPROACH SLABS



SECTION THRU SLAB



SECTION N-N

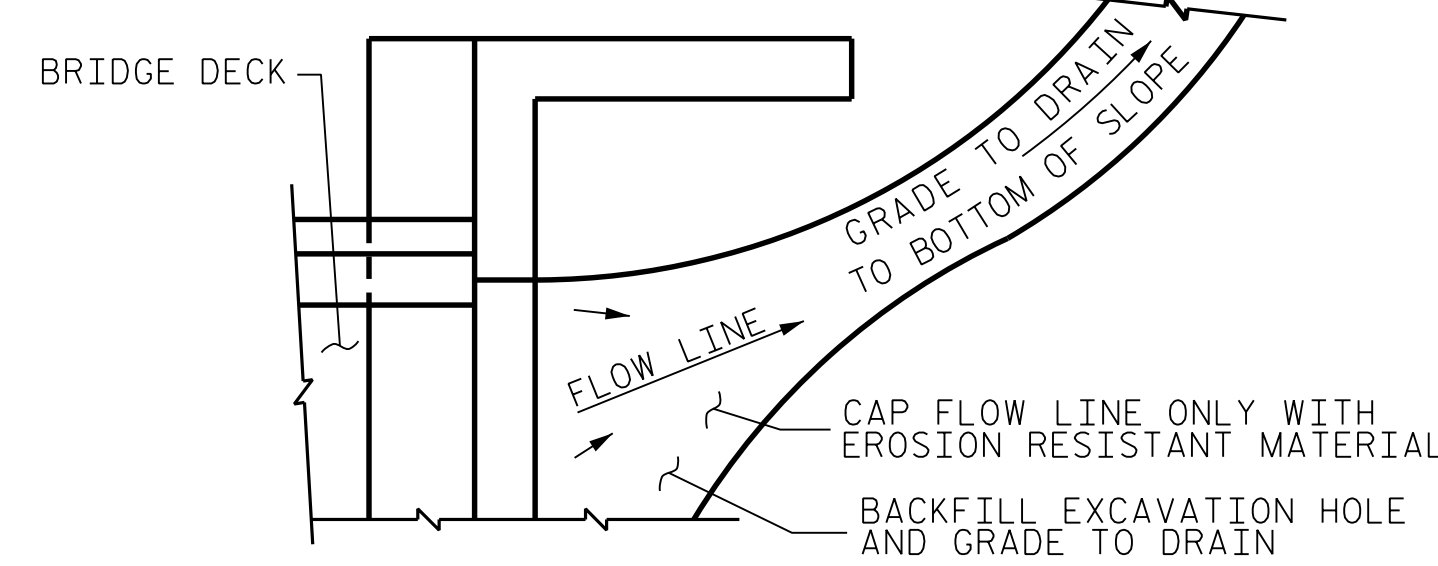
CURB DETAILS

NOTES

FOR BRIDGE APPROACH FILL, SEE ROADWAY PLANS.

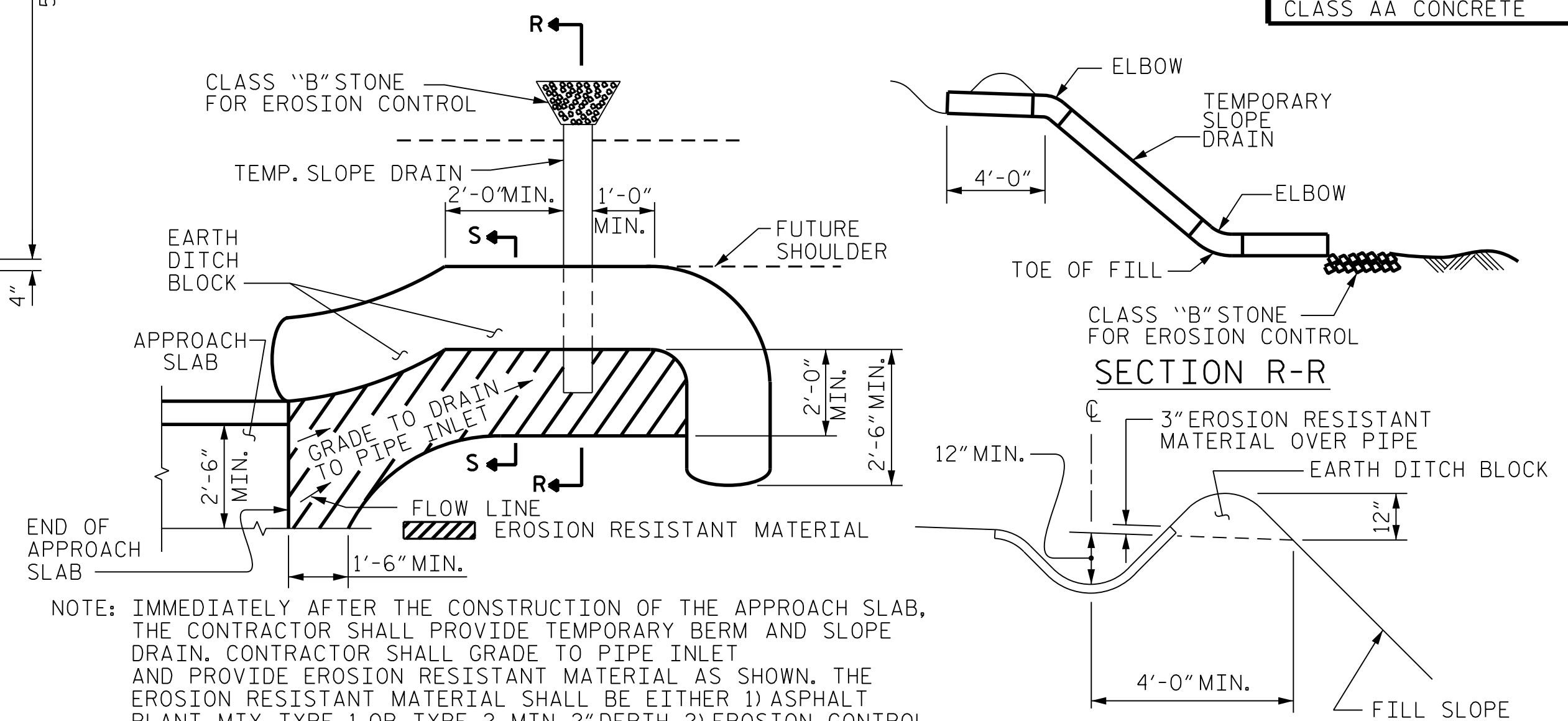
AREA BETWEEN THE WINGWALL AND APPROACH SLAB SHALL BE GRADED TO DRAIN THE WATER AWAY FROM THE FILL FACE OF THE BRIDGE AND SHALL BE PAVED. SEE ROADWAY PLANS.

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)

SPLICE LENGTHS		
BAR SIZE	EPOXY COATED	UNCOATED
#4	1'-11"	1'-7"
#5	2'-5"	2'-0"
#6	3'-7"	2'-5"

BILL OF MATERIAL

APPROACH SLAB AT EB 1

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
* A1	13	#4	STR	29'-10"	259
A2	13	#4	STR	29'-10"	259
* B1	58	#5	STR	11'-1"	670
B2	58	#6	STR	11'-7"	1009

REINFORCING STEEL	LBS.	1268
* EPOXY COATED REINFORCING STEEL	LBS.	929

CLASS AA CONCRETE	C. Y.	16.7
-------------------	-------	------

APPROACH SLAB AT EB 2

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
* A1	13	#4	STR	29'-10"	259
A2	13	#4	STR	29'-10"	259
* B1	58	#5	STR	11'-1"	670
B2	58	#6	STR	11'-7"	1009

REINFORCING STEEL	LBS.	1268
* EPOXY COATED REINFORCING STEEL	LBS.	929

CLASS AA CONCRETE	C. Y.	16.7
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PROJECT NO. BP1.R021.1

MARTIN COUNTY

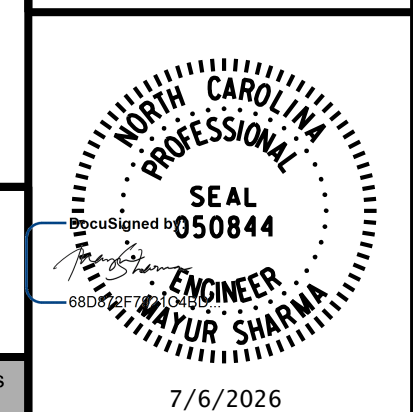
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RALEIGH

STANDARD
BRIDGE APPROACH SLAB
FOR PRESTRESSED CONCRETE
CORED SLAB UNIT
(SUB-REGIONAL TIER)
105° SKEW

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

BRIDGE NO. 570025



DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

STD. NO. BAS_30_105S

8/26/21

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.