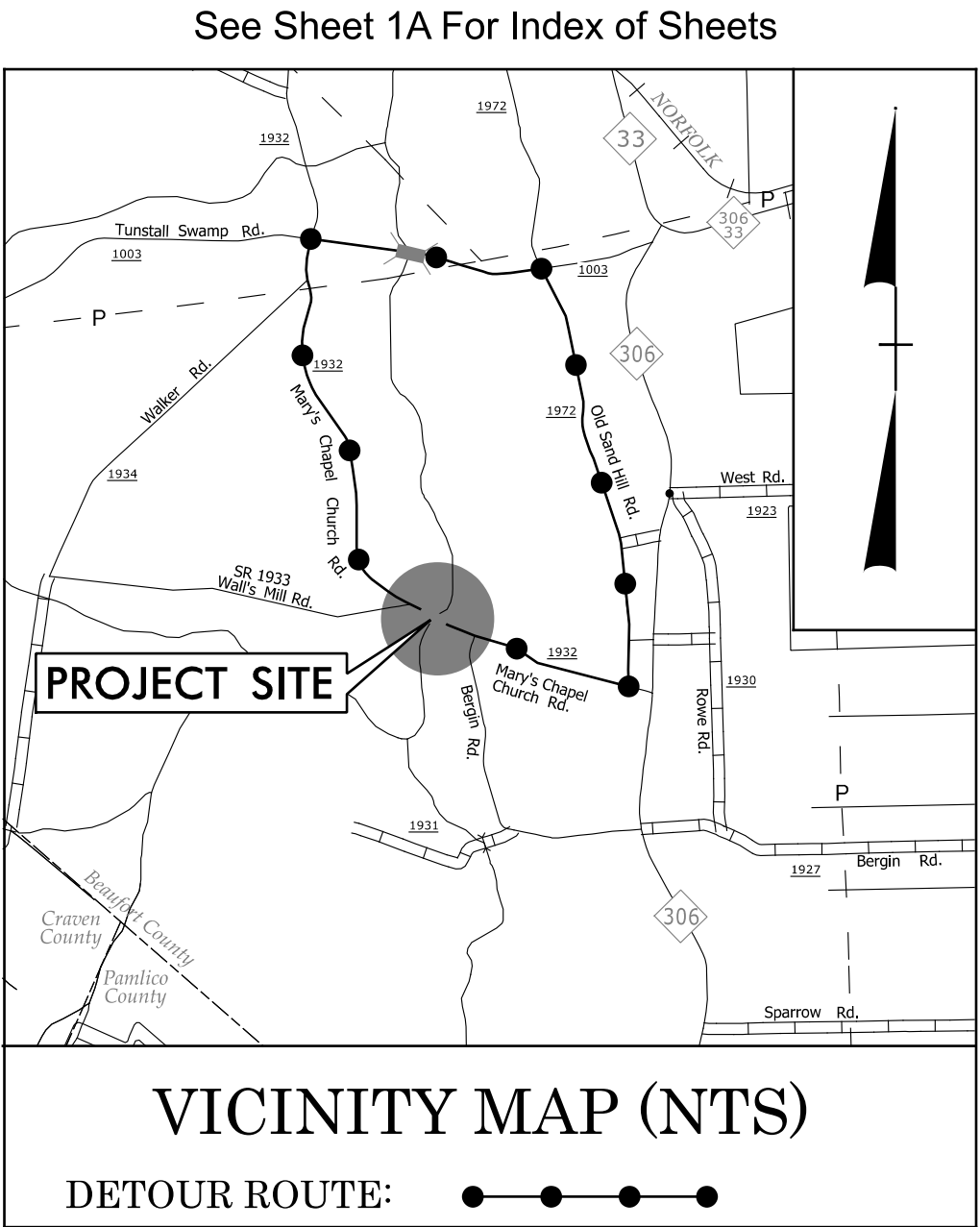


TIP PROJECT: BP2-R028

CONTRACT: DB00644

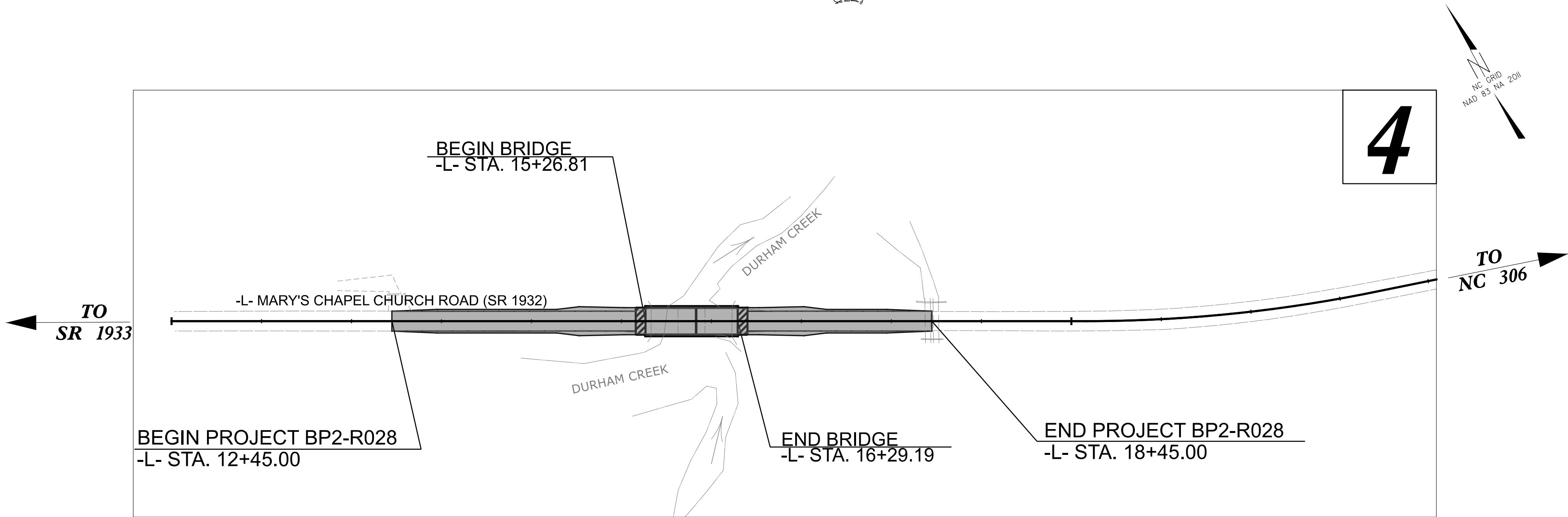
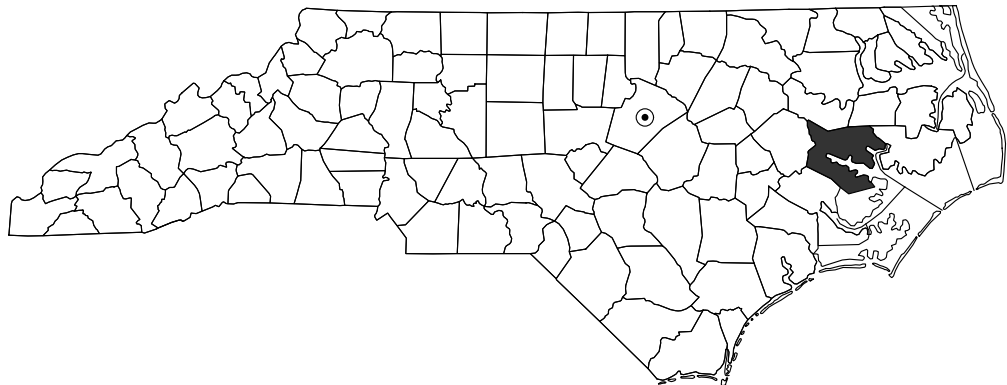


STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

BEAUFORT COUNTY

LOCATION: *REPLACE BRIDGE #57 OVER DURHAM CREEK
ON SR 1932 (MARY'S CHAPEL CHURCH ROAD)*

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



NCDOT CONTACT:
CASEY WHITLEY, PE, PLS
CKWHITLEY@NCDOT.GOV
(252) 439-2811

THIS PROJECT IS NOT WITHIN ANY MUNICIPAL LIMITS

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

GRAPHIC SCALES

50 25 0 50 100

PLANS

50 25 0 50 100

PROFILE (HORIZONTAL)

10 5 0 10 20

PROFILE (VERTICAL)

DESIGN DATA

ADT 2024 = 300

K = N/A

D = N/A

T = 6 % *

V = 60 MPH

* TTST =N/A DUAL N/A

FUNC CLASS = RURAL LOCAL SUB-REGIONAL TIER

PROJECT LENGTH

LENGTH OF ROADWAY TIP PROJECT BP2-R028 = 0.095 MILES

LENGTH OF STRUCTURE TIP PROJECT BP2-R028 = 0.019 MILES

TOTAL LENGTH TIP PROJECT BP2-R028 = 0.114 MILES

NCDOT CONTACT: CASEY WHITLEY PE, PLS

PREPARED IN THE OFFICE OF: **AMERICAN Engineering** **SUNGATE DESIGN GROUP**

2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: January 30, 2026

LETTING DATE: September 9, 2026

ALLISON C. JOHNSON, P.E.
PROJECT ENGINEER

BENJAMIN C. PICKERING II, P.E.
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

8/14/2026

ROADWAY DESIGN ENGINEER

8/14/2026

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
3D-1	DRAINAGE SUMMARIES
3G-1	GEOTECHNICAL SUMMARIES
4	PLAN AND PROFILE SHEET
RW01	RIGHT OF WAY TITLE SHEET
RW02C-1 THRU RW02C-2	SURVEY CONTROL SHEETS
RW02D-1	PROPOSED ALIGNMENT CONTROL SHEET
RW03E-1	RIGHT OF WAY CONTROL SHEET
RW04 THRU RW05	RIGHT OF WAY SHEETS
TMP-1 THRU TMP-2	TRAFFIC MANAGEMENT PLANS
EC-1 THRU EC-05	EROSION CONTROL PLANS
RF-1	REFORESTATION PLANS
UC-1 THROUGH UC-4	UTILITIES CONSTRUCTION PLANS
UO-1 THROUGH UO-2	UTILITIES BY OTHERS PLANS
X-1 THRU X-5	CROSS-SECTIONS
S-1 THRU S-22	STRUCTURE PLANS

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, 12, and 14 of 15)
862.02	Guardrail Installation (Use Detail in Lieu of Standard for Sheet 5 of 9)
862.03	Structure Anchor Units (Use Detail in Lieu of Standards for Sheets 6 and 8 of 9)
876.02	Guide for Rip Rap at Pipe Outlets

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

GRADING AND SURFACING OR RESURFACING AND WIDENING:

THE GRADE LINES SHOWN DENOTE THE FINISHED ELEVATION OF THE PROPOSED SURFACING AT GRADE POINTS SHOWN ON THE TYPICAL SECTIONS. WHERE NO GRADE LINES ARE SHOWN, THE PROFILES SHOWN DENOTE THE TOP ELEVATION OF THE EXISTING PAVEMENT ALONG THE CENTER LINE OF SURVEY ON WHICH THE PROPOSED RESURFACING WILL BE PLACED. GRADE LINES MAY BE ADJUSTED BY THE ENGINEER IN ORDER TO SECURE A PROPER TIE-IN.

CLEARING:

CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD 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.

END BENTS:

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

UTILITIES:

UTILITY OWNERS ON THIS PROJECT ARE BEAUFORT COUNTY WATER DEPARTMENT, BRIGHTSPEED, AND TIDELAND.

RIGHT-OF-WAY MARKERS:

ALL RIGHT-OF-WAY MARKERS ON THIS PROJECT SHALL BE PLACED BY OTHERS AND BY CONTRACT IN ACCORDANCE WITH THE DESIGNATED SYMBOLS.

Note: Not to Scale

BOUNDARIES AND PROPERTY:

State Line	
County Line	
Township Line	
City Line	
Reservation Line	
Property Line	
Existing Iron Pin (EIP)	
Computed Property Corner	
Existing Concrete Monument (ECM)	
Parcel / Sequence Number	
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	
<i>BUILDINGS AND OTHER CULTURE:</i>	
Gas Pump Vent or U/G Tank Cap	
Sign	
Well	
Small Mine	
Foundation	
Area Outline	
Cemetery	
Building	
School	
Church	
Dam	
<i>HYDROLOGY:</i>	
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	
<i>VEGETATION:</i>	
Single Tree	
Single Shrub	
Hedge	

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

Woods Line	
Orchard	
Vineyard	

EXISTING STRUCTURES:

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

UTILITIES:

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

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

TELEPHONE:

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

WATER:

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

TV:

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

GAS:

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

SANITARY SEWER:

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

MISCELLANEOUS:

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



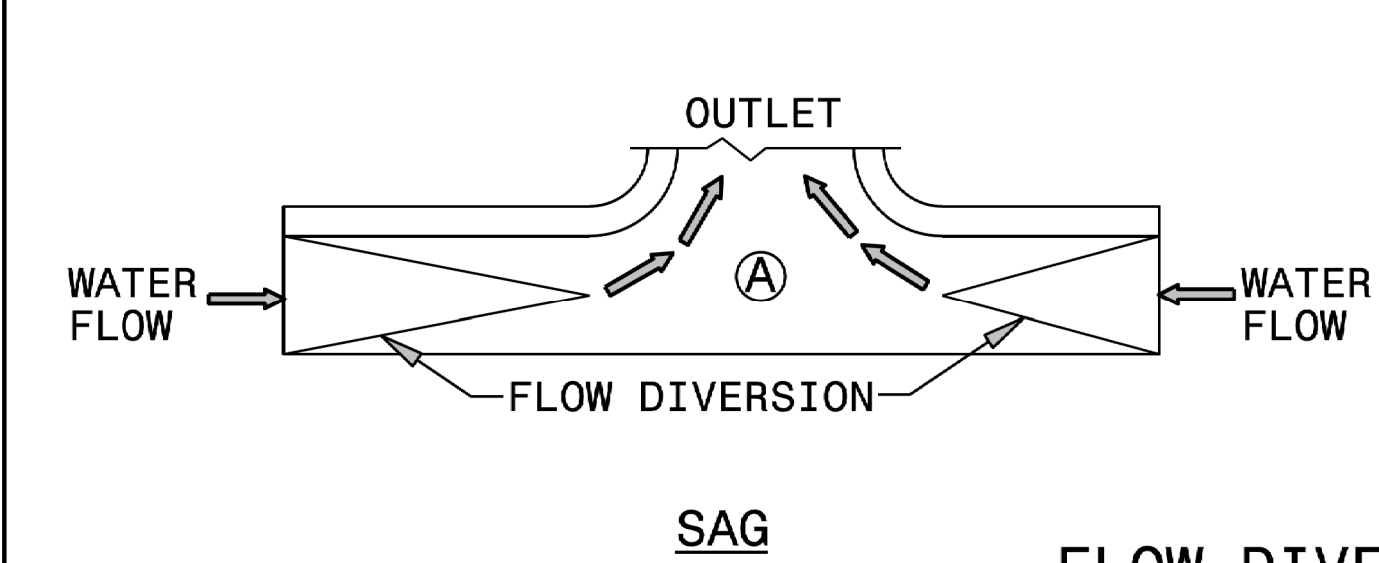
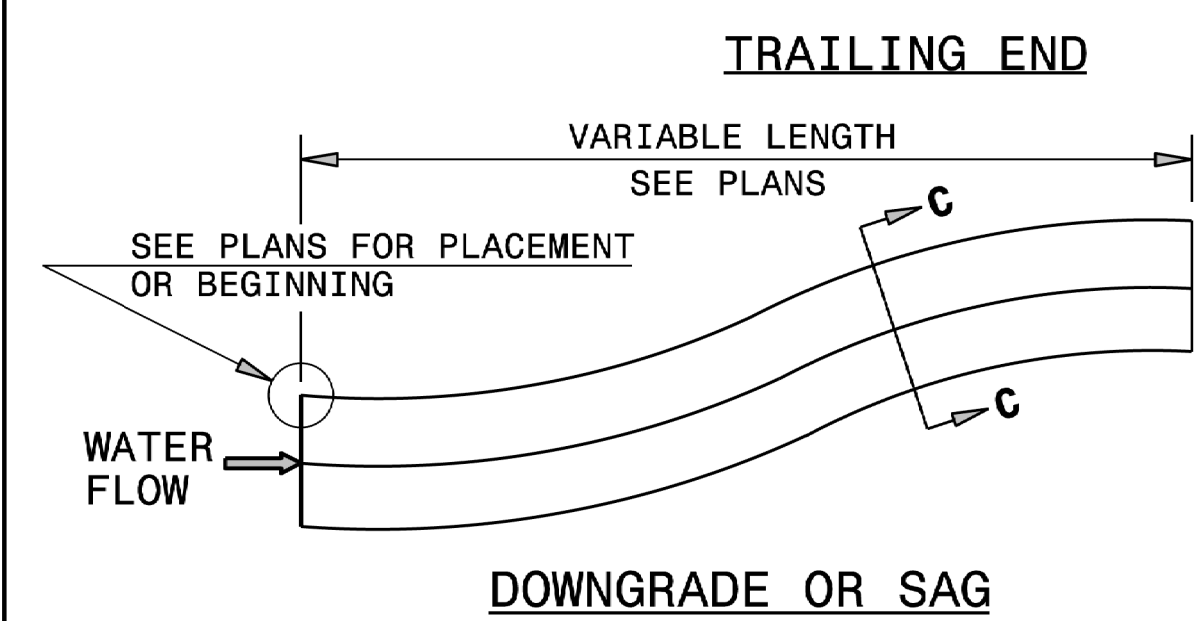
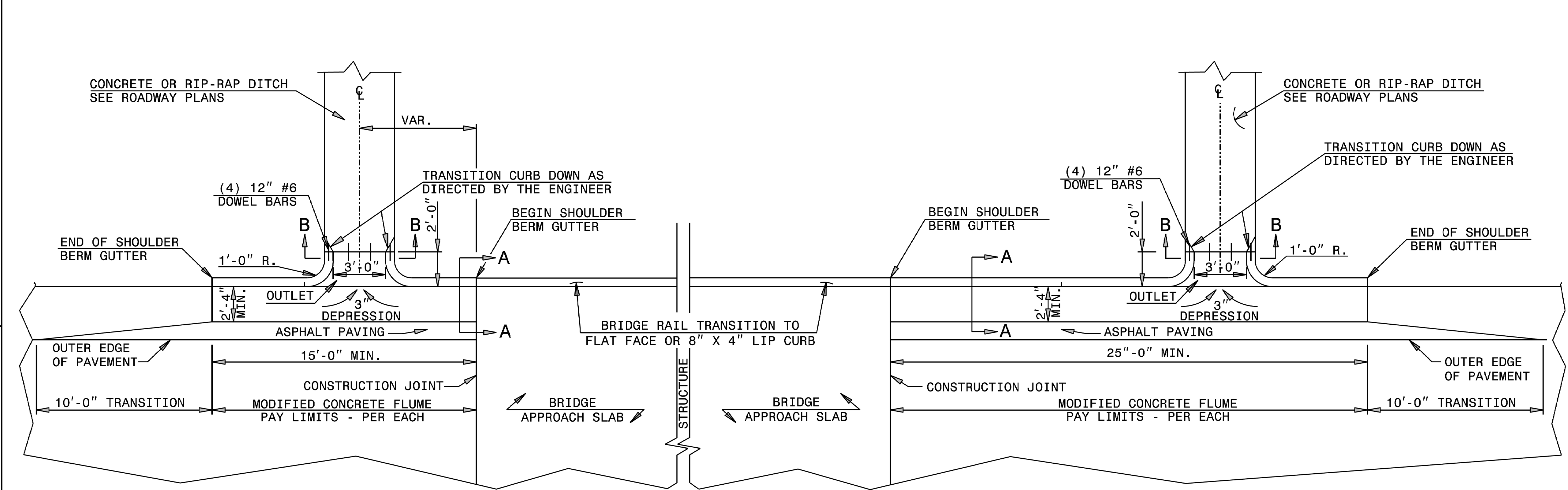
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-L- STA. 18+07.50 TO -L- STA. 18+45.00

REVISIONS

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

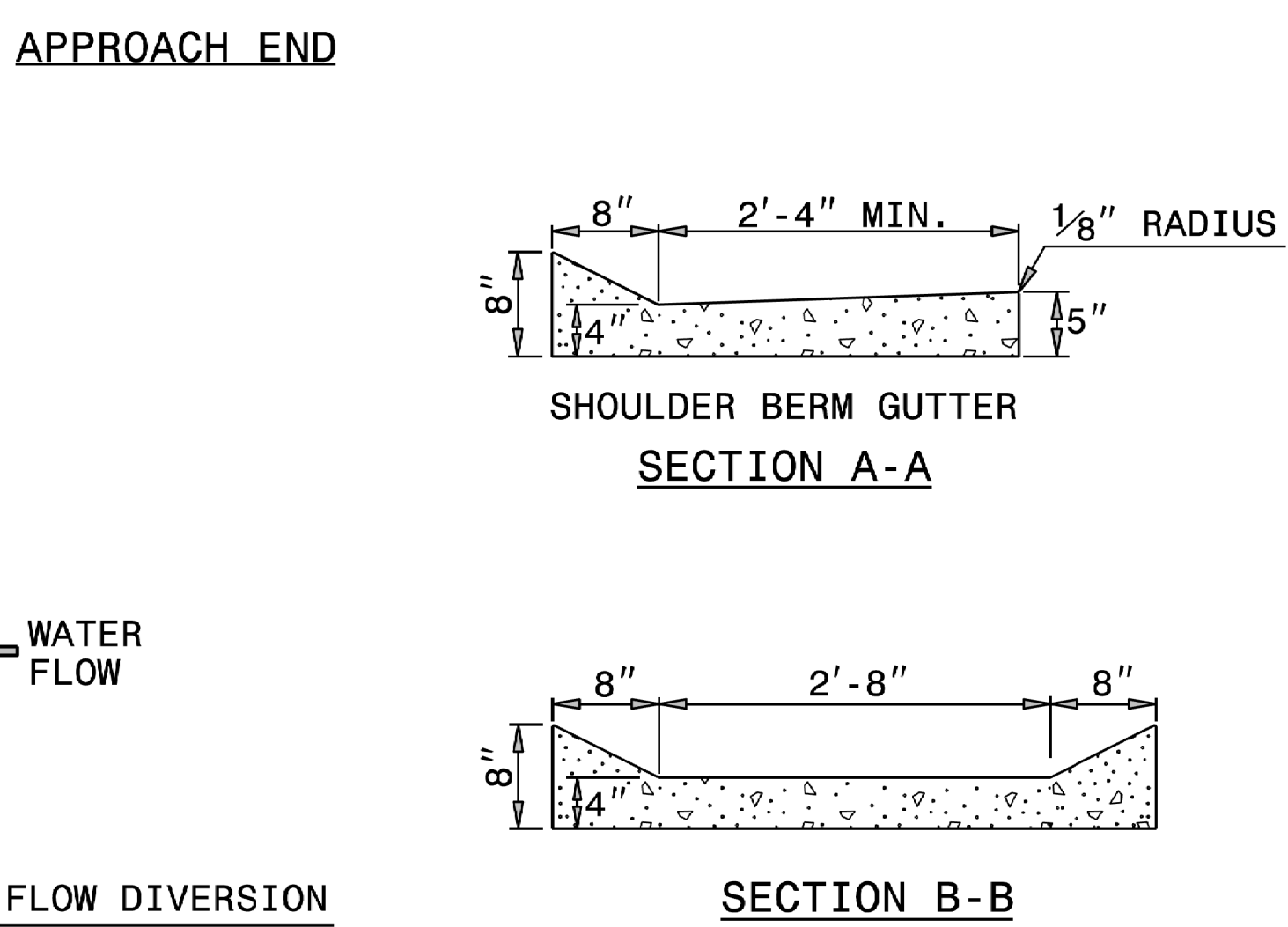
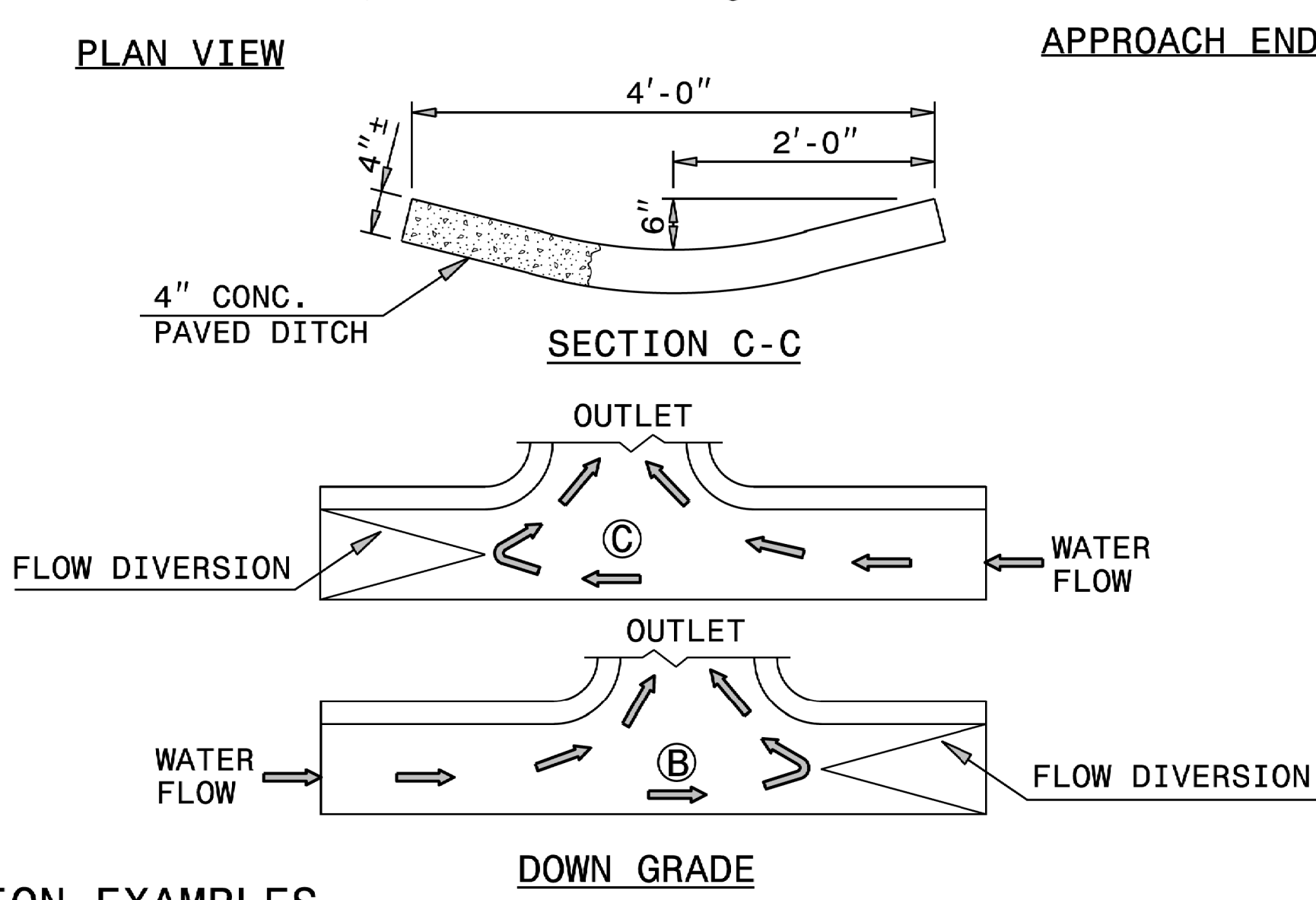
ENGLISH DETAIL DRAWING FOR
MODIFIED CONCRETE FLUME
WITH CONCRETE OR RIP-RAP DITCH

SHEET 1 OF 1
MODFLMDTCH



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

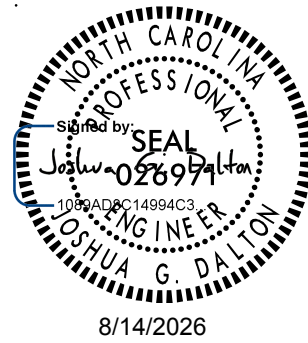
FLOW DIVERSION EXAMPLES



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

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

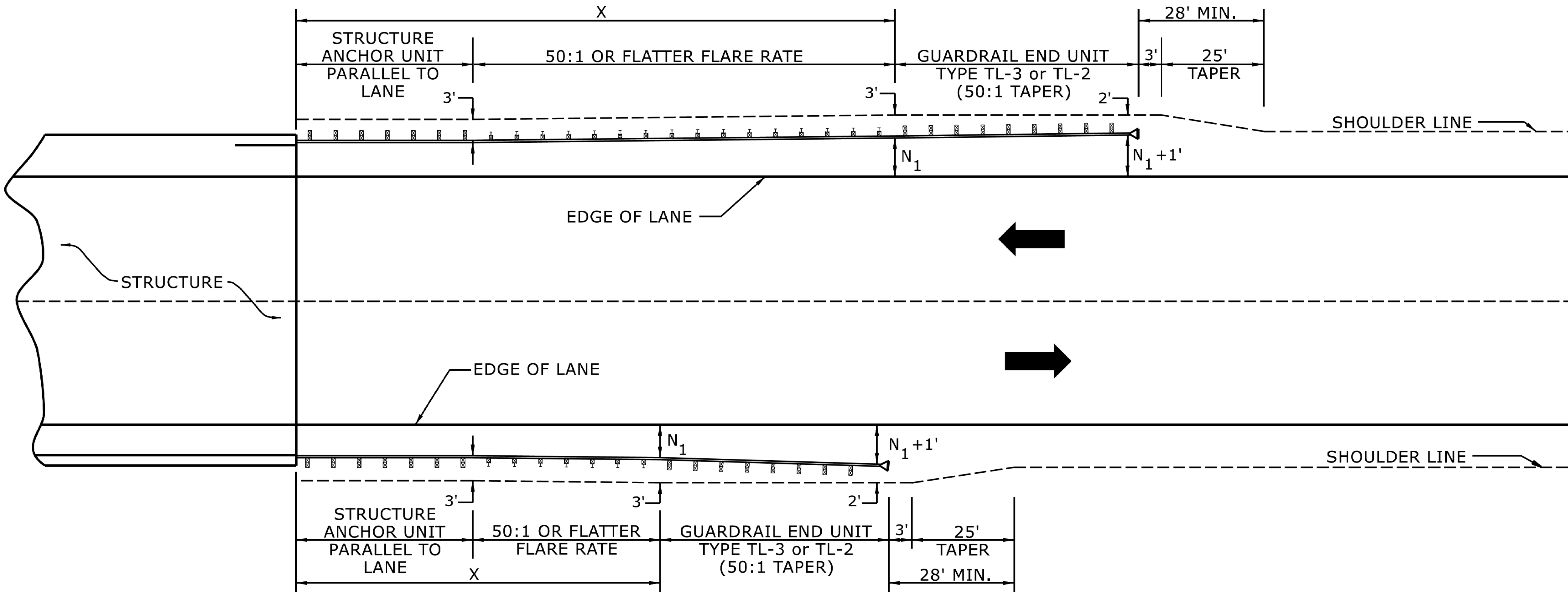
SHEET 1 OF 1
MODFLMDTCH



DESIGN SERVICES UNIT
STANDARDS AND SPECIAL DESIGN
Office 919-250-4128 FAX 919-250-4119

SEE PLATE FOR TITLE

ORIGINAL BY: T.S.Spell	DATE: Aug. 2001
MODIFIED BY: E.E. Ward	DATE: Apr. 2002
CHECKED BY:	DATE:
FILE SPEC.: w:\details\stand\modifiedflume.dgn	



USE FLARE RATE AS THE CONTROL IF THE " N_1 " DISTANCE IS NOT OBTAINED.
(" N_1 " IS BASED ON SHOULDER WIDTHS IN THE ROADWAY DESIGN MANUAL)

SEE STD. 862.03 FOR STRUCTURE ANCHOR UNITS

FOR POSTED SPEEDS $\geq$ 45MPH USE GREU TYPE TL-3
FOR POSTED SPEEDS $<$ 45MPH USE GREU TYPE TL-2

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

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

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

ROADWAY DETAIL DRAWING FOR
GUARDRAIL PLACEMENT

SHEET 4 OF 15

862D01



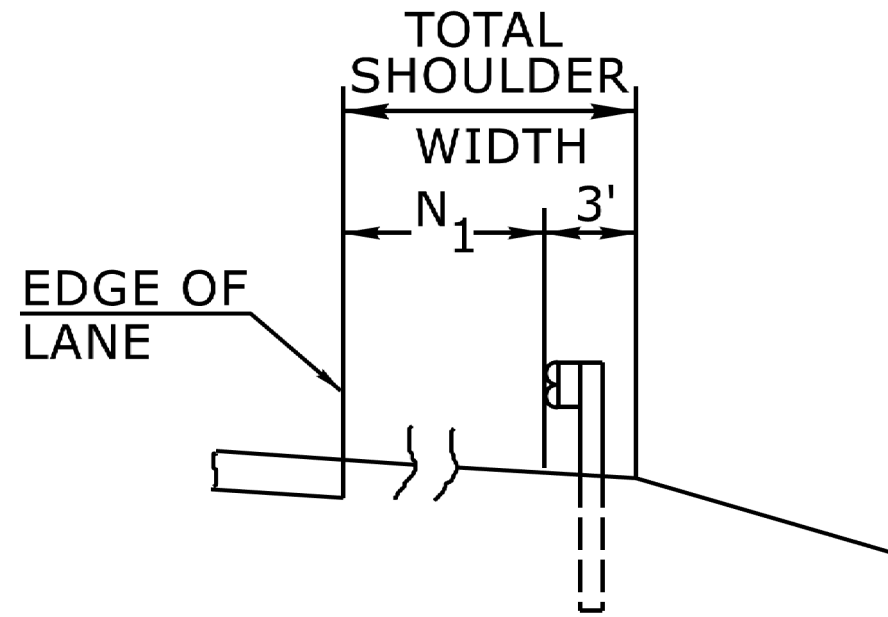
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UNLESS ALL SIGNATURES COMPLETED

**CONTRACTS STANDARDS
AND DEVELOPMENT UNIT**

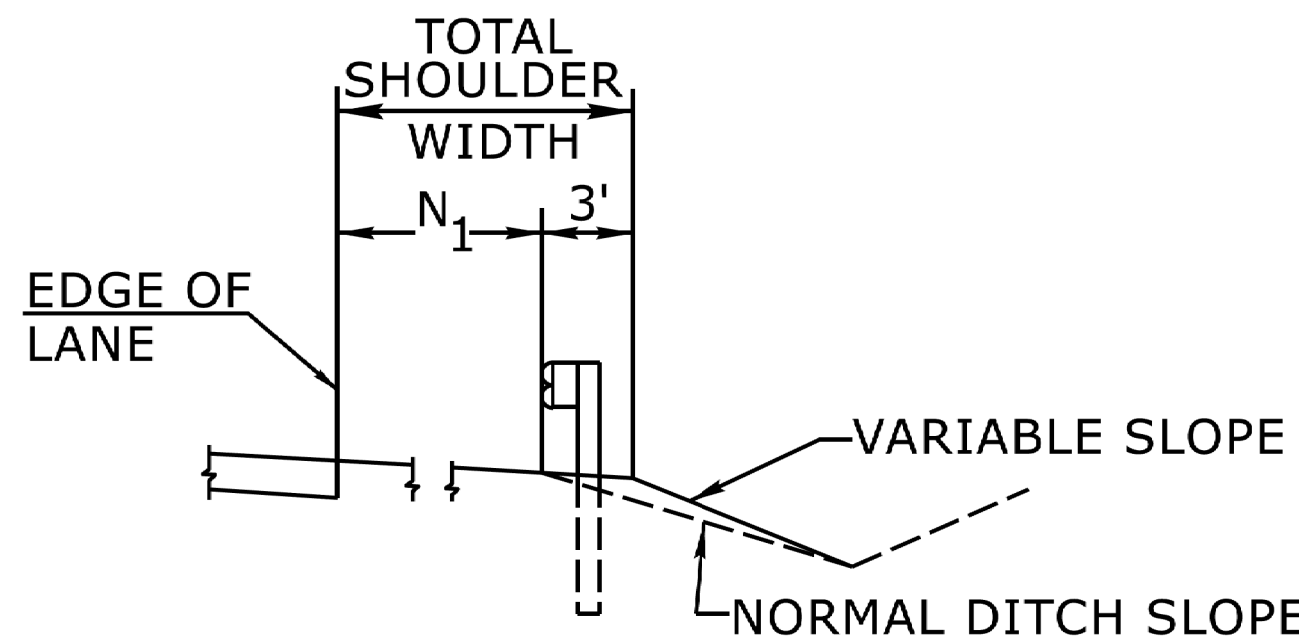
Office 919-707-6950 FAX 919-250-4119

SEE TITLE BLOCK

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MODIFIED BY: _____ DATE: _____
CHECKED BY: _____ DATE: _____
FILE SPEC.: _____

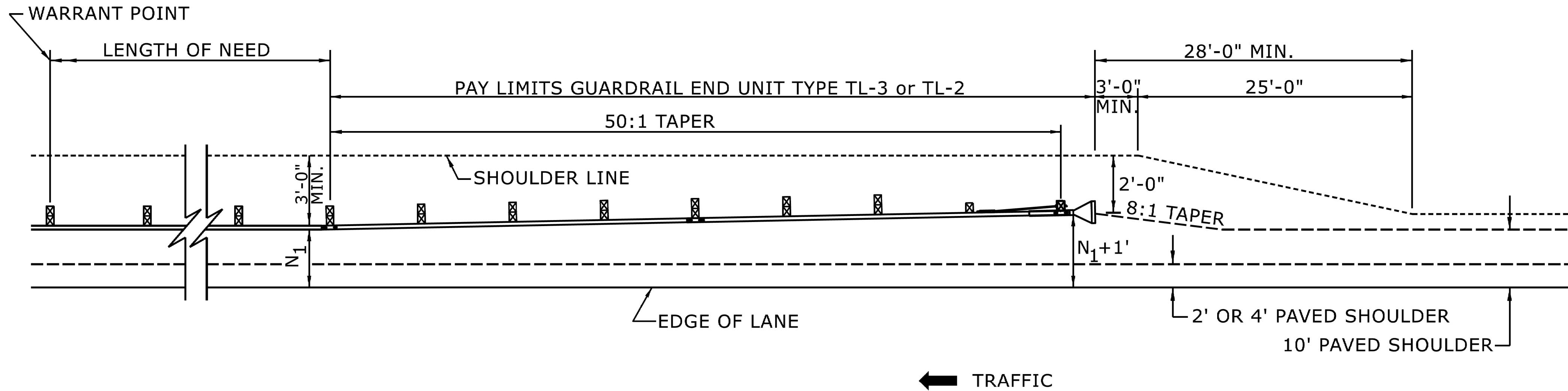


FILL SECTION



CUT SECTION

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



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

DETAIL OF BEGINNING OF GUARDRAIL IN CUT OR FILL SECTION

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

ROADWAY DETAIL DRAWING FOR
GUARDRAIL PLACEMENT



SHEET 6 OF 15

862D01

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**CONTRACTS STANDARDS
AND DEVELOPMENT UNIT**

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

SEE TITLE BLOCK

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

SUMMARY OF SUBSURFACE DRAINAGE

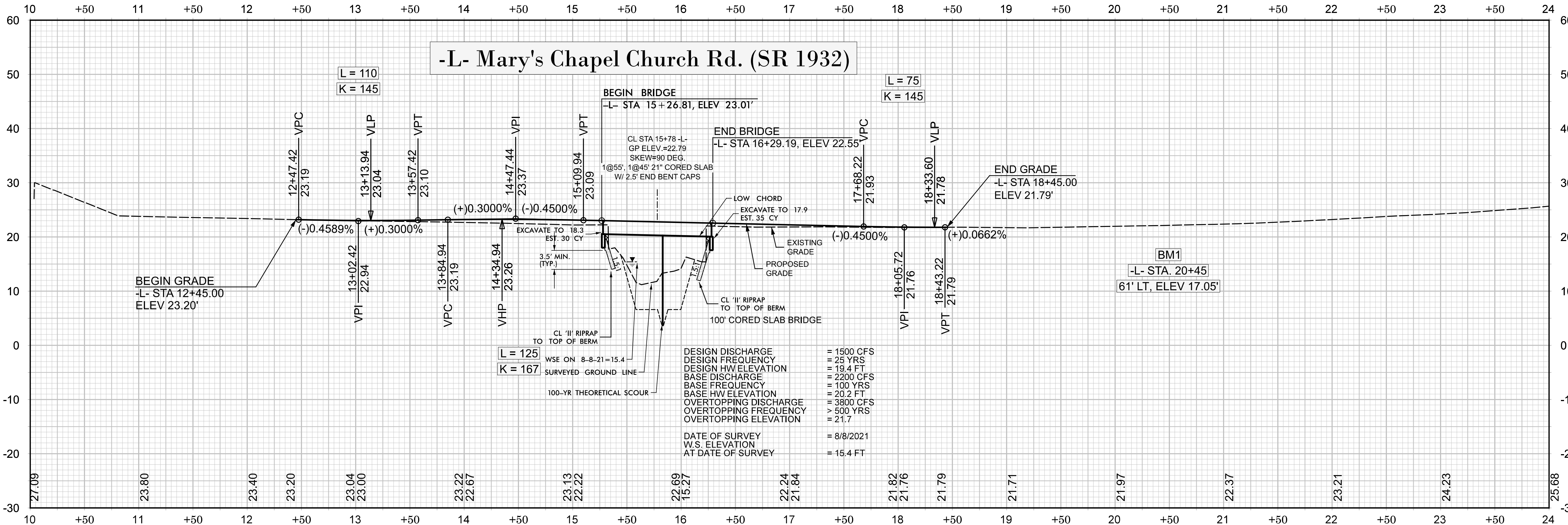
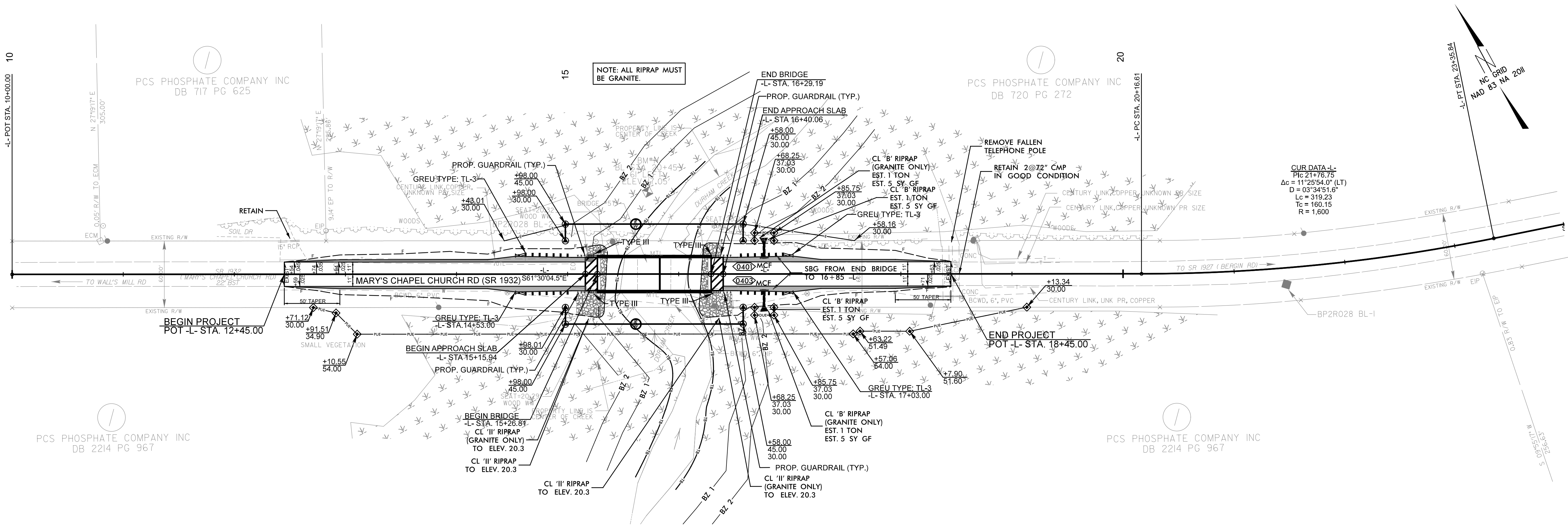
LINE	STATION	STATION	LOCATION LT/RT/CL	DRAIN TYPE UD/BD/SD	LF
	CONTINGENCY			SD	200'
				TOTAL LF:	200'

*UD = UNDERDRAIN
*BD = BLIND DRAIN
*SD = SUBSURFACE DRAIN

SUMMARY OF AGGREGATE SUBGRADE/STABILIZATION

LINE	STATION	STATION	AGGREGATE TYPE* ASU(1/2)/ AST	AGGREGATE THICKNESS INCHES [8" FOR ASU(2)]	SHALLOW UNDERCUT CY	CLASS IV SUBGRADE STABILIZATION TONS	GEOTEXTILE FOR SUBGRADE STABILIZATION TONS	STABILIZER AGGREGATE TONS	CLASS IV AGGREGATE STABILIZATION TONS
	CONTINGENCY		ASU (1)	12	100	200	300		
				TOTAL:	100	200**	300**	0	0

*ASU(1/2) = AGGREGATE SUBGRADE (TYPE 1 OR 2)
*AST = AGGREGATE STABILIZATION
**TOTAL TONS OF "CLASS IV SUBGRADE STABILIZATION" AND TOTAL SQUARE YARDS OF "GEOTEXTILE FOR SUBGRADE STABILIZATION" ARE ONLY THE ESTIMATED QUANTITIES FOR ASU(1/2)/AST AND MAY ONLY REPRESENT A PORTION OF THE SUBGRADE STABILIZATION AND GEOTEXTILE QUANTITIES SHOWN IN THE ITEM SHEETS OF THE PROPOSAL.



BP2-R028

004

NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
BEAUFORT COUNTY

ROADWAY DESIGN UNIT
ROADWAY DESIGN
ENGINEER

NOT A PROFESSIONAL
SEAL
13424
J. S. JOHNSON
ENGINEER
8/14/2026

HYDRAULICS
ENGINEER

NOT A PROFESSIONAL
SEAL
02697
J. S. JOHNSON
ENGINEER
8/14/2026

PREPARED BY

AMERICAN
Engineering

Shaping the Future, Together

11525 N. Community House Road 1 Suite 325
Charlotte, NC 28277 | 704.375.2438

SUNGATE
DESIGN GROUP

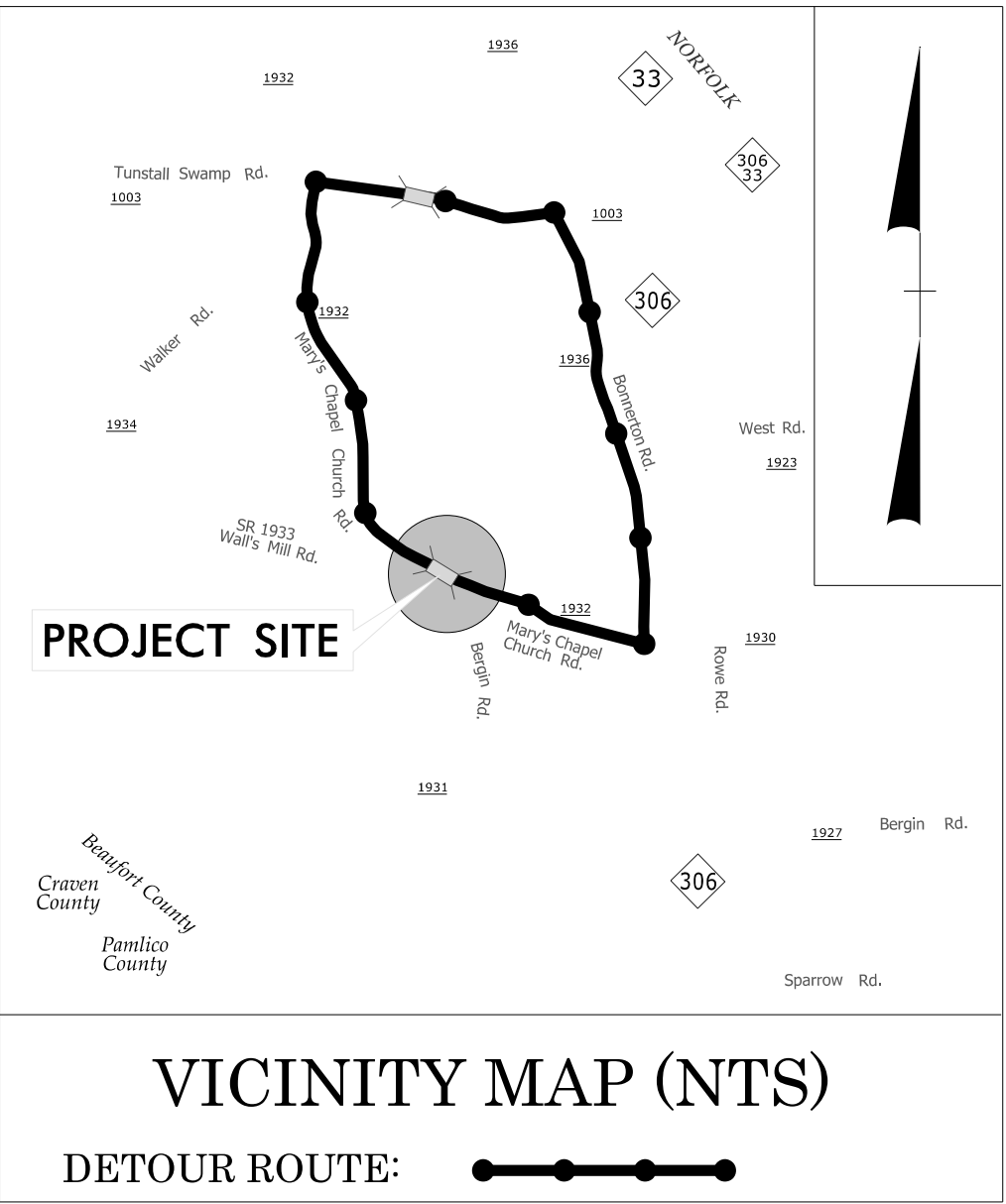
9400 Etna Burien Ct., STE. 100 Raleigh, North Carolina 27609
Phone: 919.859.2243 Fax: 919.859.2438

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REVISIONS

TIP PROJECT: BP2-R028

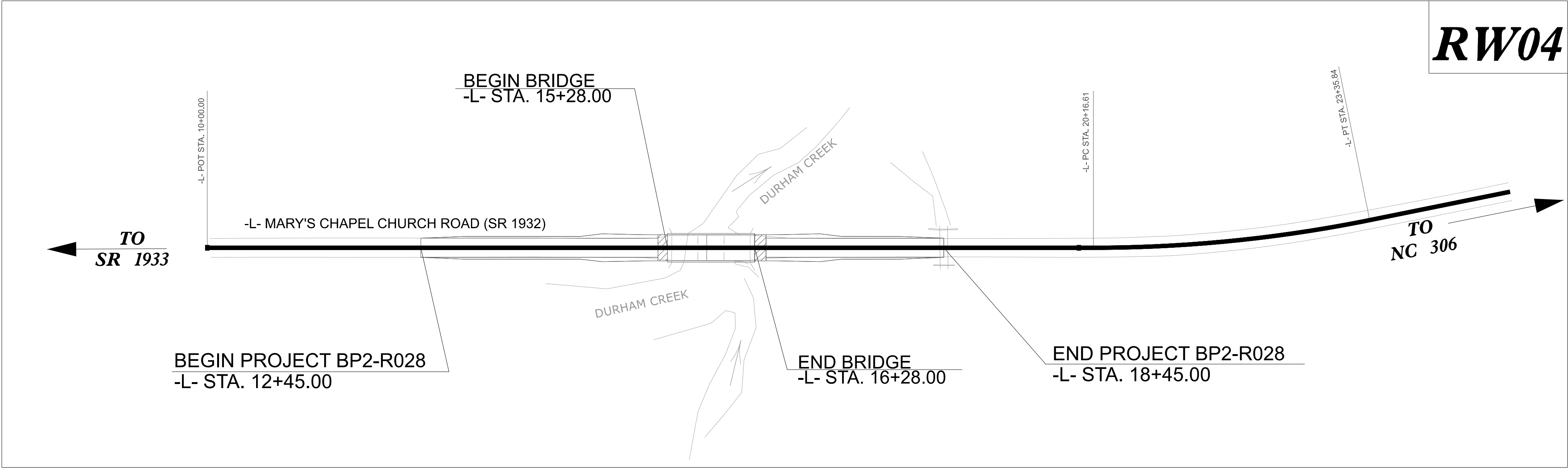
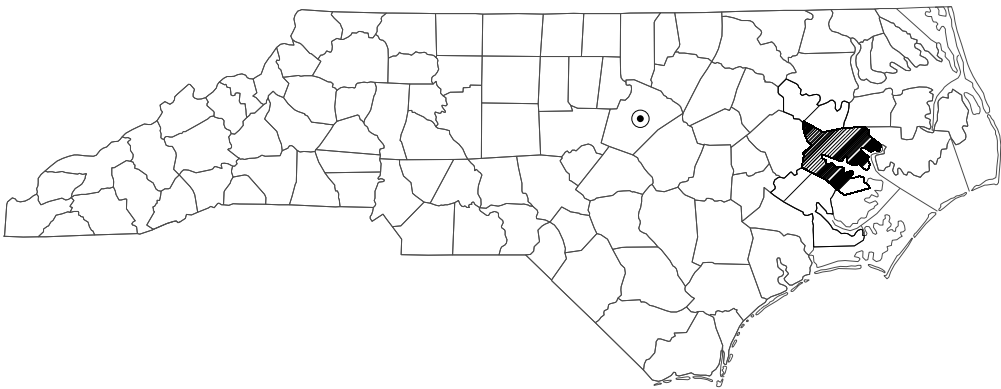
STATE NO.	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	BP2-R028	RW01	07



STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

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

BEAUFORT COUNTY



DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

GRAPHIC SCALES



DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT
IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY
NCDOT FOR MONUMENT BP2-R028-1
WITH NAD 83/ NA 2011 STATE PLANE GRID COORDINATES OF
NORTHING: 561158.6400 EASTING: 2634525.1180
ELEVATION: 26.00'
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT
(GROUND TO GRID) IS: 0.9998772566
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NAVD 88

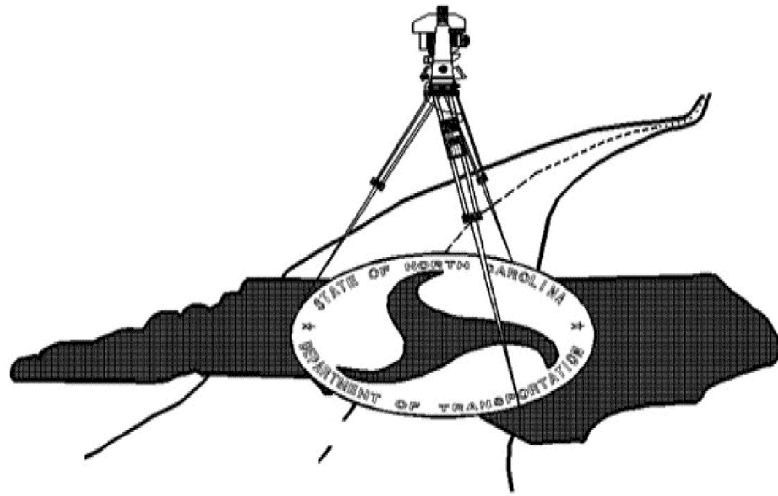
Prepared in the Office of:
GEL Engineering of NC, Inc. DBA
GEL SOLUTIONS
an Affiliate of THE GEL GROUP, INC.
657 POOLE DR
GARNER, NC 27529
(919) 544-1100
WWW.GEL-SOLUTIONS.COM

PROFESSIONAL LAND
SURVEYOR

GEL ENGINEERING
OF NC, INC.
NO. C-1938
STATE OF NORTH CAROLINA
CERTIFICATE OF AUTHORIZATION

NORTH CAROLINA
PROFESSIONAL
SEAL
L-3996
LAND SURVEYOR
PARKS H. IGENHOUR

SIGNATURE: _____ DATE: _____



REVISIONS

02-JUN-2022 09:38
C:\GEL\projects\2022\BP2FLBRIDGES\BP2.R028\fieldwork\FINAL\attestation\bp2.r028.1s.rw02c-1.220413.dgn
Jason Pervatte AT DESKTOP-EPRVSVF

SURVEY CONTROL SHEET
W/ EXISTING CENTERLINE ALIGNMENTS PRIOR TO CONSTRUCTION

PROJECT REFERENCE NO.	SHEET NO.
BP2.R028	RW02C-1
Location and Surveys	
GEL SOLUTIONS an Affiliate of THE GEL GROUP, INC. 2700 SUMNER BLVD. SUITE 106 RALEIGH, NC 27616 (919) 544-1100 WWW.GEL-SOLUTIONS.COM STATE OF NORTH CAROLINA ENGINEERING OF NORTH CAROLINA NO. C-1938 STATE OF NORTH CAROLINA PROFESSIONAL SEAL L-3996 LAND SURVEYING STATE OF NORTH CAROLINA DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

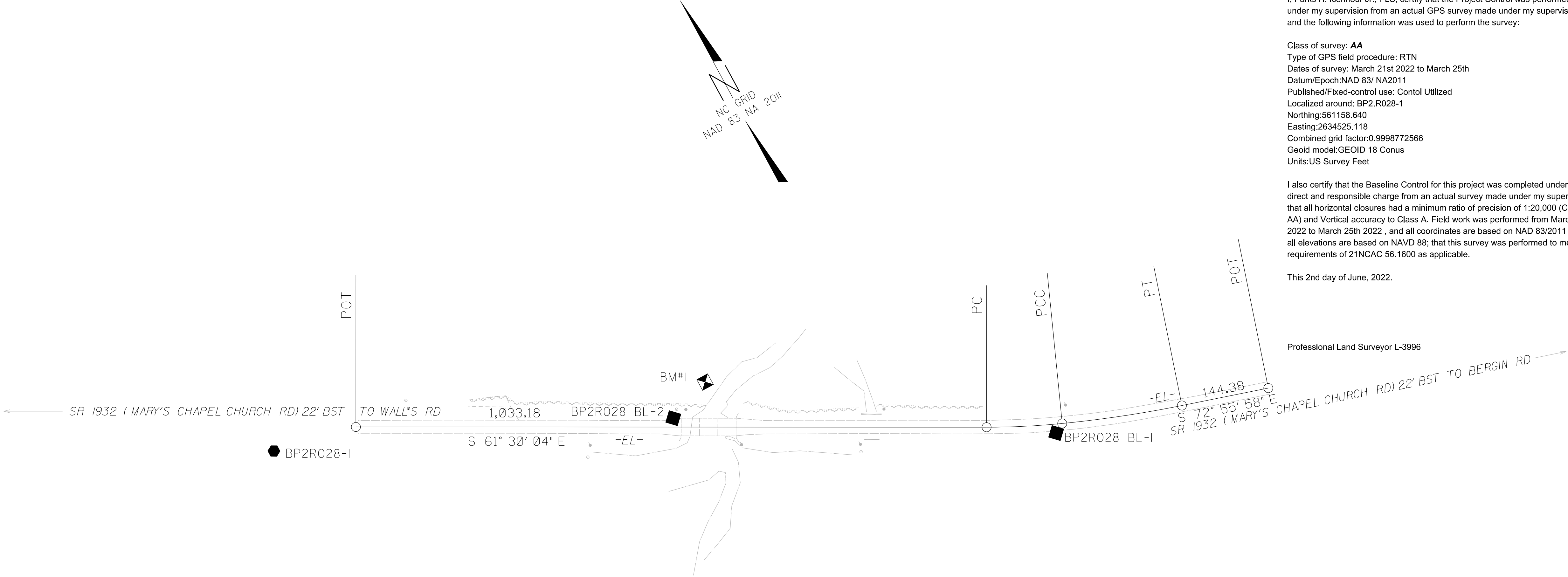
I, Parks H. Icenhour Jr., PLS, certify that the Project Control was performed under my supervision from an actual GPS survey made under my supervision and the following information was used to perform the survey:

Class of survey: **AA**
Type of GPS field procedure: RTN
Dates of survey: March 21st 2022 to March 25th
Datum/Epoch: NAD 83/ NA2011
Published/Fixed-control use: Contol Utilized
Localized around: BP2.R028-1
Northing: 561158.640
Easting: 2634525.118
Combined grid factor: 0.9998772566
Geoid model: GEOID 18 Conus
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 March 21st 2022 to March 25th 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 2nd day of June, 2022.

Professional Land Surveyor L-3996



BP2R028-2

**SEE SHEET RW02C-2 FOR
FURTHER ALIGNMENT DETAILS**

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

02-JUN-2022 09:41
C:\GEL\projects\2022\BP2FLBRIDGES\BP2.R028\fieldwork\FINAL\teststation\bp2.r028.ls.rw02c-2.220413.dgn
Jason Prewitte
AT DESKTOP-EPRVSVF

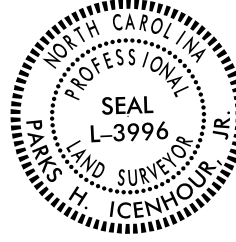
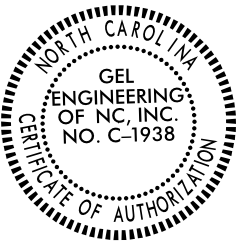
SURVEY CONTROL SHEET
W/ EXISTING CENTERLINE ALIGNMENTS PRIOR TO CONSTRUCTION

PROJECT REFERENCE NO.
BP2.R028

SHEET NO.
RW02C-2

Location and Surveys

 **GEL SOLUTIONS**
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2700 SUMNER BLVD.
SUITE 106
RALEIGH, NC 27616
(919) 544-1100
WWW.GEL-SOLUTIONS.COM



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This 2nd day of June, 2022.

Professional Land Surveyor L-3996

BL	POINT	DESC.	NORTH	EAST	ELEVATION
2		BP2R028-2	560975.8950	2633706.7859	29.83
1		BP2R028-1	561158.6400	2634525.1180	26.00
BL2		BP2R028 BL-2	560893.9500	2635125.7980	21.88
BL1		BP2R028 BL-1	560573.4550	2635665.4500	21.88

BM1 ELEVATION = 17.05'
N 560921 E 2635200
BL STATION 20+45.00 61' LEFT
BENCH NAIL SET IN 15" GUM

EL	POINT	N	E	BEARING	DIST	DELTA	D	L	T	R
	POT	561129.240	2634661.933							
	LINE			S 61°30'04.5" E	1033.18					
	PC	560636.267	2635569.923							
	CURVE			S 64°20'43.4" E	124.05	05°41'17.9"(LT)	04°35'01.2"	124.10	62.10	1250.00
	PCC	560582.561	2635681.743							
	CURVE			S 70°03'40.4" E	198.26	05°44'36.0"(LT)	02°53'44.6"	198.34	99.25	1978.63
	PT	560514.953	2635868.114							
	LINE			S 72°55'58.4" E	144.38					
	POT	560472.578	2636006.139							

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.

PROPOSED ALIGNMENT CONTROL SHEET

I, PARKS H. ICENHOUR JR., 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 11th DAY OF MARCH, 2026.

PROFESSIONAL LAND SURVEYOR L-3996

PROPOSED ALIGNMENT: L												
POINT	STATION	NORTHING	EASTING	BEARING	DIST	DELTA	D	L	T	R	LT	ST
START	10+00.00	561129.2401	2634661.9329	S61°30'04.4"E	1016.6051							
PC	20+16.61	560644.1774	2635555.3534	S67°13'01.4"E	318.7028	11°25'53.9"	03°34'51.5"	319.2320	160.1476	1600.0		
PT	23+35.84	560520.7627	2635849.1905	S72°55'58.4"E	164.1787							
END	25+00.02	560472.5776	2636006.1391									

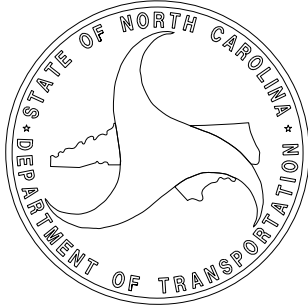
NOTES:

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

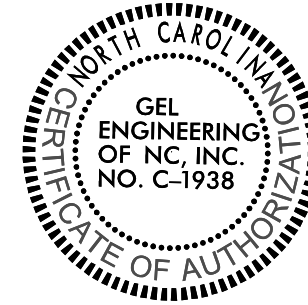
BP2-R028

R/W 020-I

NORTH CAROLINA
DEPARTMENT
OF TRANSPORTATION



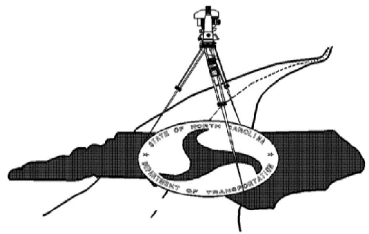
PROFESSIONAL LAND
SURVEYOR



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TIP PROJECT: BP2-R028
County:BEAUFORT

PREPARED FOR



LOCATION AND
SURVEYS UNIT

PREPARED BY

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2700 SUMNER BLVD.
SUITE 108
RALEIGH, NC 27618
(919) 544-1100
WWW.GEL-SOLUTIONS.COM

RIGHT OF WAY CONTROL SHEET

I, PARKS H. ICENHOUR JR., 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 FROM 3/04/2026 TO 3/05/2026, AND ALL COORDINATES ARE BASED ON NAD83/NA 2011; THAT THIS SURVEY WAS PERFORMED TO MEET THE REQUIREMENTS OF 21NCAC 56.1600 AS APPLICABLE.

THIS 9th DAY OF MARCH, 2026.

PROFESSIONAL LAND SURVEYOR L-3996

PERMANENT ROW MARKER IRON PIN AND CAP: L			
STATION	OFFSET	NORTH	EAST
14+98.00	30.00	560865.2624	2635085.2760
14+98.00	45.00	560852.0862	2635078.1190
14+98.00	-45.00	560931.1745	2635121.0620
14+98.00	-30.00	560917.9921	2635113.9050
16+58.00	-30.00	560841.6497	2635254.5170
16+58.00	-45.00	560854.8321	2635261.6740
16+58.00	30.00	560788.9201	2635225.8890
16+58.00	45.00	560775.7376	2635218.7320

PERMANENT EASEMENT MARKER IRON PIN AND CAP: L			
STATION	OFFSET	NORTH	EAST
12+71.12	30.00	560973.5153	2634885.8830
12+91.51	34.9	560959.4762	2634901.4630
13+10.55	54.00	560933.6088	2634909.0850
16+68.25	30.00	560784.0266	2635234.8950
16+68.25	37.03	560777.8494	2635231.5410
16+68.25	-30.00	560836.7563	2635263.5240
16+68.25	-37.03	560842.9336	2635266.8770
16+85.75	30.00	560775.6767	2635250.2750
16+85.75	37.03	560769.4994	2635246.9210
16+85.75	-37.03	560834.5836	2635282.2570
16+85.75	-30.00	560828.4063	2635278.9030
17+57.06	54.00	560720.5609	2635301.4910
17+63.22	51.49	560719.8222	2635308.1060
18+07.90	51.6	560698.4139	2635347.3210
19+13.34	30.00	560667.0846	2635450.2870

NOTES:

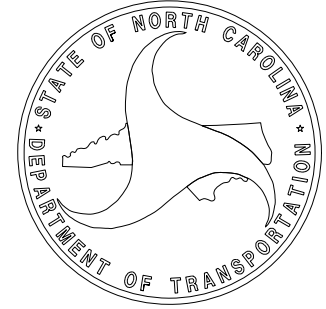
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BP2-R028

R/W

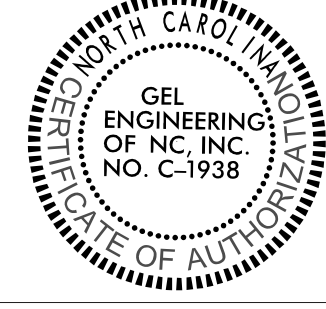
03E-I

NORTH CAROLINA
DEPARTMENT
OF TRANSPORTATION



PROFESSIONAL LAND
SURVEYOR

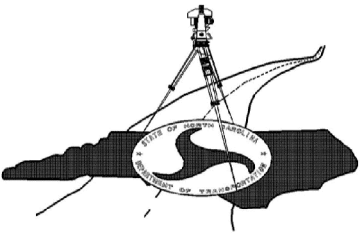




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TIP PROJECT: BP2-R028
County:BEAUFORT

PREPARED FOR



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SUITE 106
RALEIGH, NC 27616
(919) 544-1100
WWW.GEL-SOLUTIONS.COM

WILLIAM WALKER
DB 1821 PG 501

PCS PHOSPHATE COMPANY INC
DB 2214 PG967

PCS PHOSPHATE COMPANY INC
DB 1024 PG 588

PCS PHOSPHATE COMPANY INC
DB 1024 PG 588

PCS PHOSPHATE COMPANY INC
DB 2214 PG967

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PROFESSIONAL LAND SURVEYOR L-3996

CUR DATA -L-
Pc 21+76.75
 $\Delta c = 11^{\circ}25'54.0''$ (LT)
D = 03°34'51.6"
Lc = 319.23
Tc = 160.15
R = 1,600

MATCH LINE - STA 22+00.00 SEE SHEET RW-05



NC GRID
NAD 83 NA 2011

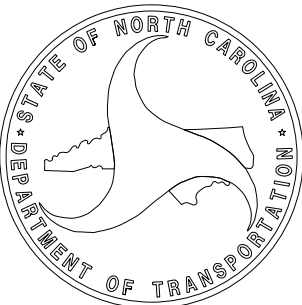
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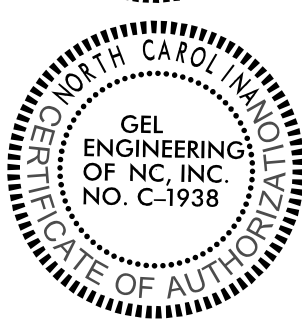
BP2-R028

R/W 04

NORTH CAROLINA
DEPARTMENT
OF TRANSPORTATION



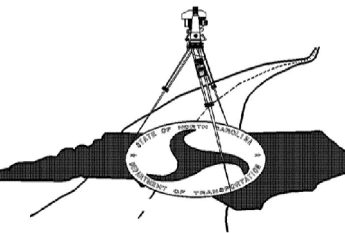
PROFESSIONAL LAND
SURVEYOR



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TIP PROJECT: BP2-R028
County: BEAUFORT

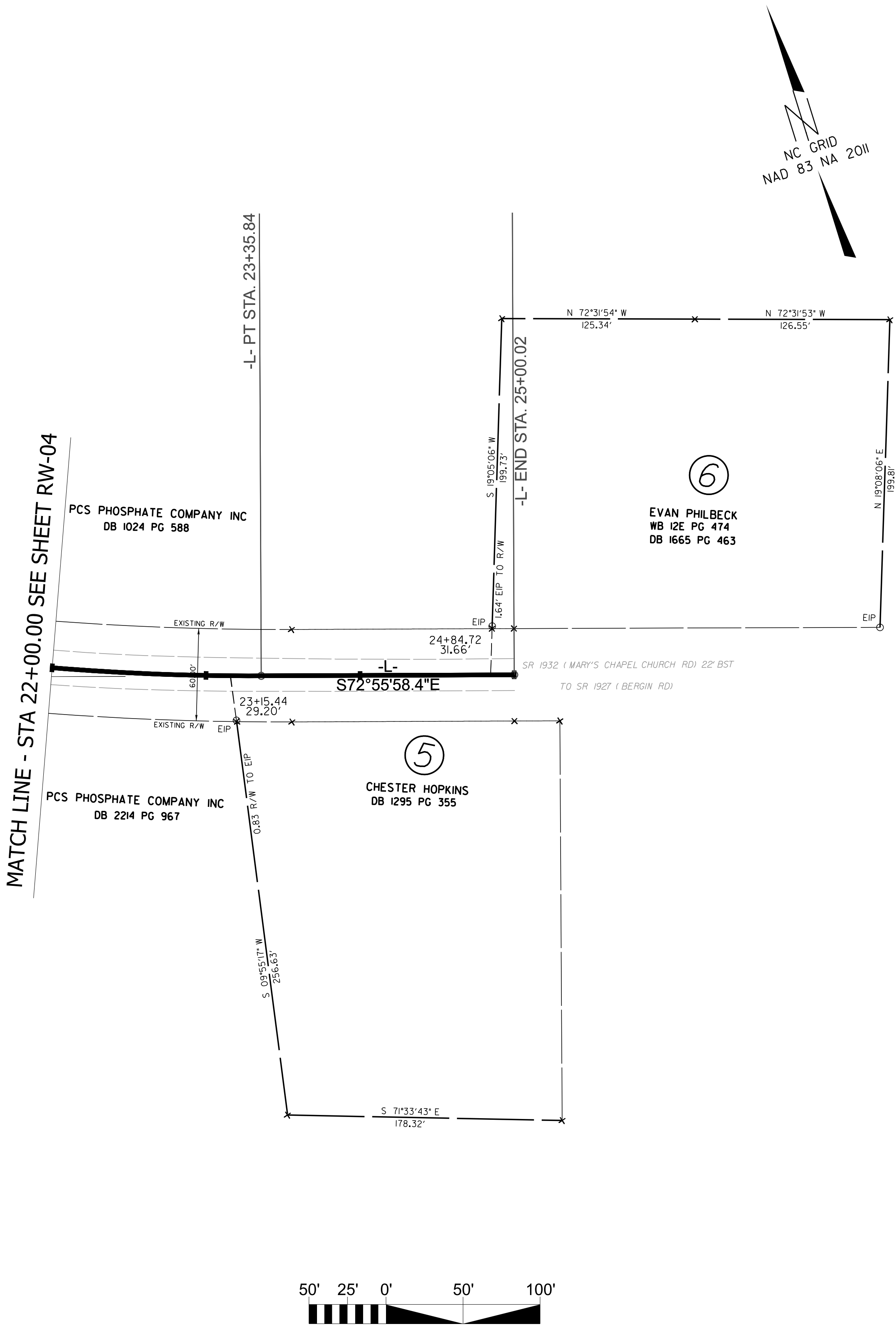
PREPARED FOR



LOCATION AND
SURVEYS UNIT

PREPARED BY

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657 POOLE DR
GARNER, NC 27529
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WWW.GEL-SOLUTIONS.COM



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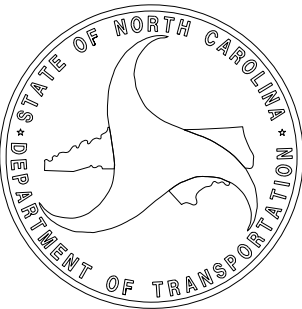
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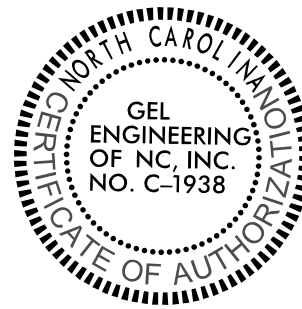
BP2-R028

R/W 05

NORTH CAROLINA
DEPARTMENT
OF TRANSPORTATION



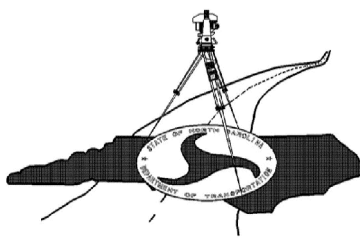
PROFESSIONAL LAND
SURVEYOR



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TIP PROJECT: BP2-R028
County: BEAUFORT

PREPARED FOR



LOCATION AND
SURVEYS UNIT

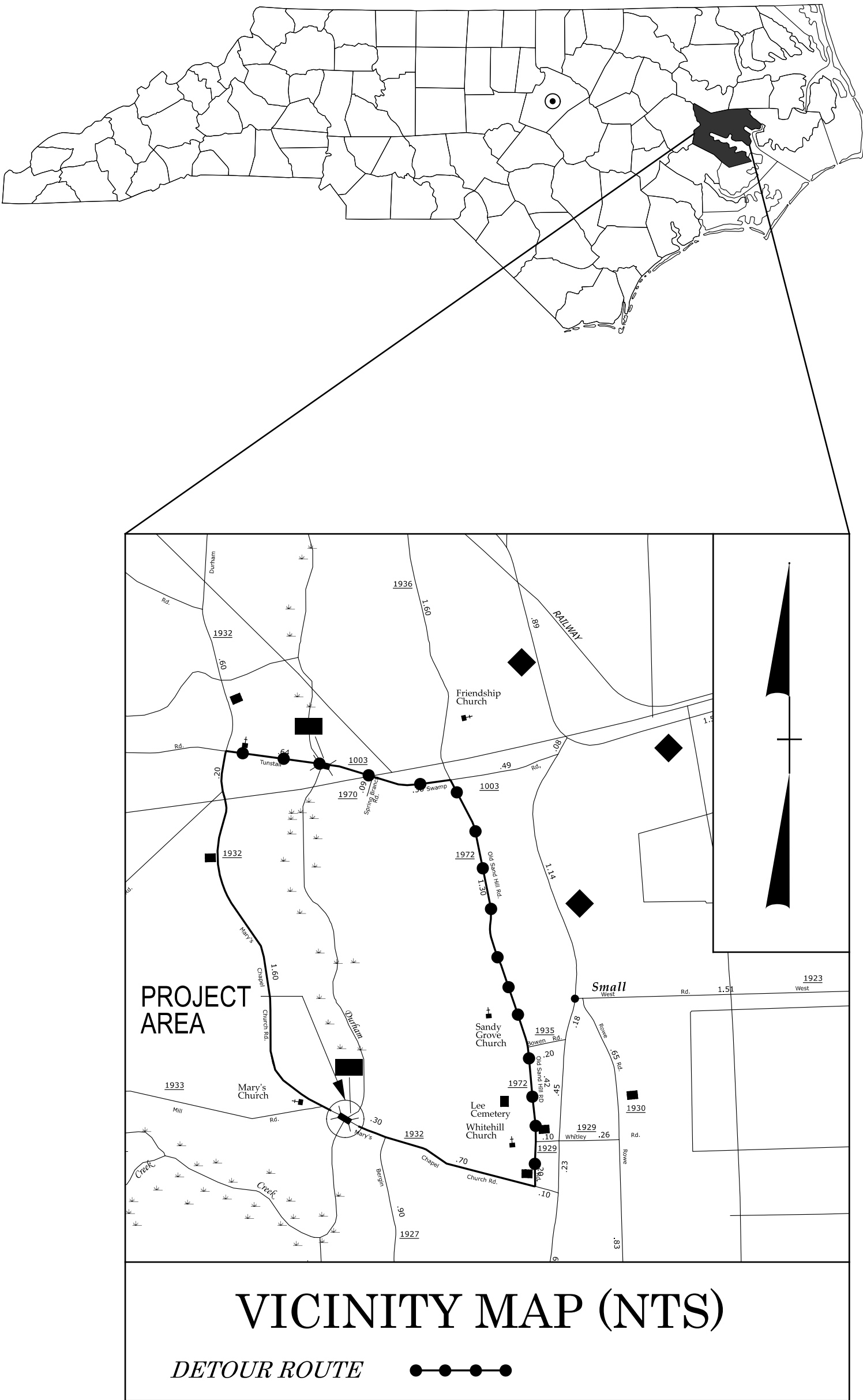
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GARNER, NC 27529
(819) 544-1100
WWW.GEL-SOLUTIONS.COM

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

TRANSPORTATION MANAGEMENT PLAN

BEAUFORT COUNTY



LOCATION: *BRIDGE #057 ON SR 1932 (MARY'S CHAPEL CHURCH RD)
OVER DURHAM CREEK*



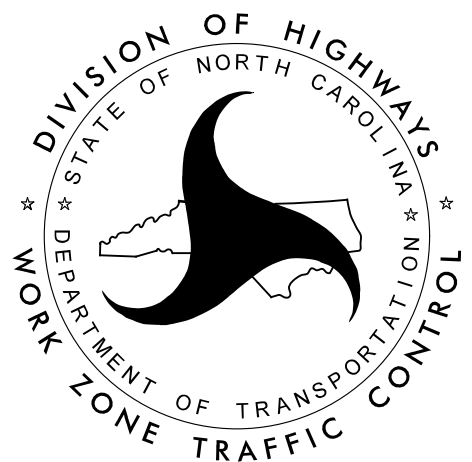
PLANS PREPARED BY:

ALLISON C. JOHNSON, PE

BENJAMIN C. PICKERING, PE

NCDOT CONTACT:

CASEY WHITLEY, PE, PLS
PROJECT 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	PORTABLE CONCRETE BARRIER AT TEMPORARY SHORING LOCATIONS

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

APPROVED: *Allison C. Johnson*

DATE: 8/14/2026

SEAL

15424

SHEET NO.

TMP-1

BP2-R028

TIP PROJECT:

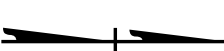
ROADWAY STANDARD DRAWINGS

THE FOLLOWING ROADWAY STANDARDS AS SHOWN IN "ROADWAY STANDARD DRAWINGS" - N.C. DEPARTMENT OF TRANSPORTATION - RALEIGH, N.C., DATED JANUARY 2018 ARE APPLICABLE TO THIS PROJECT AND BY REFERENCE HEREBY ARE CONSIDERED A PART OF THESE PLANS:

STD. NO.	TITLE
1101.01	WORK ZONE ADVANCE WARNING SIGNS
1101.01	WORK ZONE ADVANCE WARNING SIGNS
1101.02	TEMPORARY LANE CLOSURES
1101.03	TEMPORARY ROAD CLOSURES
1101.04	TEMPORARY SHOULDER CLOSURES
1101.05	WORK ZONE VEHICLE ACCESSES
1101.06	WARNING SIGNS FOR BLASTING ZONES
1101.11	TRAFFIC CONTROL DESIGN TABLES
1110.01	STATIONARY WORK ZONE SIGNS
1110.02	PORTABLE WORK ZONE SIGNS
1115.01	FLASHING ARROW BOARDS
1130.01	DRUM
1135.01	CONES
1145.01	BARRICADES
1150.01	FLAGGING DEVICES
1160.01	TEMPORARY CRASH CUSHION
1165.01	WORK VEHICLE LIGHTING SYSTEMS AND TMA DELINEATION
1170.01	POSITIVE PROTECTION
1180.01	SKINNY-DRUM
1205.01	PAVEMENT MARKINGS - LINE TYPES AND OFFSETS
1205.02	PAVEMENT MARKINGS - TWO-LANE AND MULTI-LANE ROADWAYS
1205.03	PAVEMENT MARKINGS - EXITS AND ENTRANCE RAMPs
1205.04	PAVEMENT MARKINGS - INTERSECTIONS
1205.05	PAVEMENT MARKINGS - TURN LANES
1205.06	PAVEMENT MARKINGS - LANE DROPS
1205.07	PAVEMENT MARKINGS - PEDESTRIAN CROSSWALKS
1205.08	PAVEMENT MARKINGS - SYMBOLS AND WORD MESSAGES
1205.09	PAVEMENT MARKINGS - PAINTED ISLANDS
1205.10	PAVEMENT MARKINGS - SCHOOL AREAS
1205.11	PAVEMENT MARKINGS - RAILROAD CROSSINGS
1205.12	PAVEMENT MARKINGS - BRIDGES
1205.13	PAVEMENT MARKINGS - LANE REDUCTIONS
1250.01	RAISED PAVEMENT MARKERS - INSTALLATION SPACING
1251.01	RAISED PAVEMENT MARKERS - PERMANENT AND TEMPORARY
1261.01	GUARDRAIL AND BARRIER DELINEATORS - INSTALLATION SPACING
1261.02	GUARDRAIL AND BARRIER DELINEATORS - TYPES AND MOUNTING
1262.01	GUARDRAIL END DELINEATION
1264.01	OBJECT MARKERS - TYPES
1264.02	OBJECT MARKERS - INSTALLATION

LEGEND

GENERAL

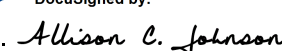
-  DIRECTION OF TRAFFIC FLOW
-  DIRECTION OF PEDESTRIAN TRAFFIC FLOW
-  EXIST. PVMT.
-  NORTH ARROW
-  PROPOSED PVMT.
-  TEMP. SHORING (LOCATION PURPOSES ONLY)
-  WORK AREA

TRAFFIC CONTROL DEVICES

-  BARRICADE (TYPE III)
-  CONE
-  DRUM  SKINNY DRUM  TUBULAR MARKER
-  TEMPORARY CRASH CUSHION
-  FLASHING ARROW BOARD
-  FLAGGER
-  LAW ENFORCEMENT
-  TRUCK MOUNTED ATTENUATOR (TMA)
-  CHANGEABLE MESSAGE SIGN

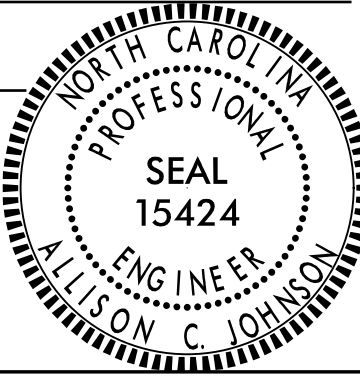
TEMPORARY SIGNING

-  PORTABLE SIGN
-  STATIONARY SIGN
-  STATIONARY OR PORTABLE SIGN

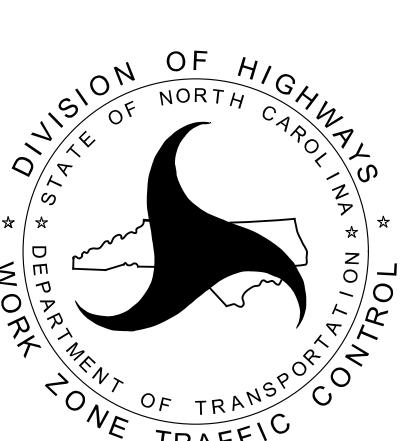
APPROVED: 

DATE: 8/14/2026

SEAL



DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED



ROADWAY STANDARD
DRAWINGS & LEGEND

PROJ. REFERENCE NO.	SHEET NO.
BP2-R028	TMP-1B

GENERAL NOTES / LOCAL 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 UNDESIRED OVERLAPPING OF DEVICES. MODIFICATION MAY INCLUDE: MOVING, SUPPLEMENTING, COVERING, OR REMOVAL OF DEVICES AS DIRECTED BY THE ENGINEER.

THE FOLLOWING GENERAL NOTES APPLY AT 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 WITHIN 5 FT OF AN OPEN TRAVEL LANE ON AN UNDIVIDED FACILITY, CLOSE THE NEAREST OPEN TRAVEL LANE USING ROADWAY STANDARD DRAWING NO. 1101.02 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL.

WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN 10 FT OF AN OPEN TRAVEL LANE ON A DIVIDED FACILITY, 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.

PAVEMENT EDGE DROP OFF REQUIREMENTS

- F) BACKFILL AT A 6:1 SLOPE UP TO THE EDGE AND ELEVATION OF EXISTING PAVEMENT IN AREAS ADJACENT TO AN OPENED TRAVEL LANE THAT HAS AN EDGE OF PAVEMENT DROP-OFF AS FOLLOWS:

BACKFILL DROP-OFFS THAT EXCEED 2 INCHES ON ROADWAYS WITH POSTED SPEED LIMITS OF 45 MPH OR GREATER.

BACKFILL DROP-OFFS THAT EXCEED 3 INCHES ON ROADWAYS WITH POSTED SPEED LIMITS LESS THAN 45 MPH.

BACKFILL WITH SUITABLE COMPACTED MATERIAL, AS APPROVED BY THE ENGINEER, AT NO EXPENSE TO THE DEPARTMENT.

- G) DO NOT EXCEED A DIFFERENCE OF 2 INCHES IN ELEVATION BETWEEN OPEN LANES OF TRAFFIC FOR NOMINAL LIFTS OF 1.5 INCHES. INSTALL ADVANCE WARNING "UNEVEN LANES" SIGNS (W8-11) IN ADVANCE AND A MINIMUM OF EVERY HALF MILE THROUGHOUT THE UNEVEN AREA.

TRAFFIC PATTERN ALTERATIONS

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

SIGNING

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

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

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

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

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

- M) INSTALL BLACK ON ORANGE "DIP" SIGNS (W8-2) AND/OR "BUMP" SIGNS (W8-1) IN ADVANCE OF THE UNEVEN AREA, OR AS DIRECTED BY THE ENGINEER.

TRAFFIC CONTROL DEVICES

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

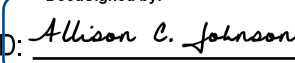
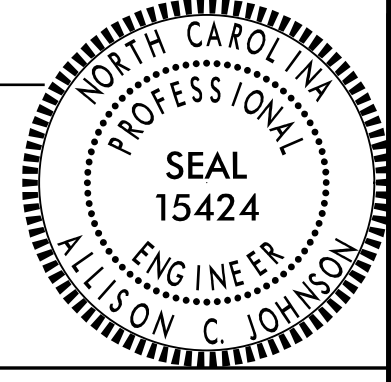
THE FOLLOWING LISTED WORK ZONE STRATEGIES ARE RECOMMENDED FOR INCLUSION WITHIN THIS TRANSPORTATION MANAGEMENT PLAN (TMP).

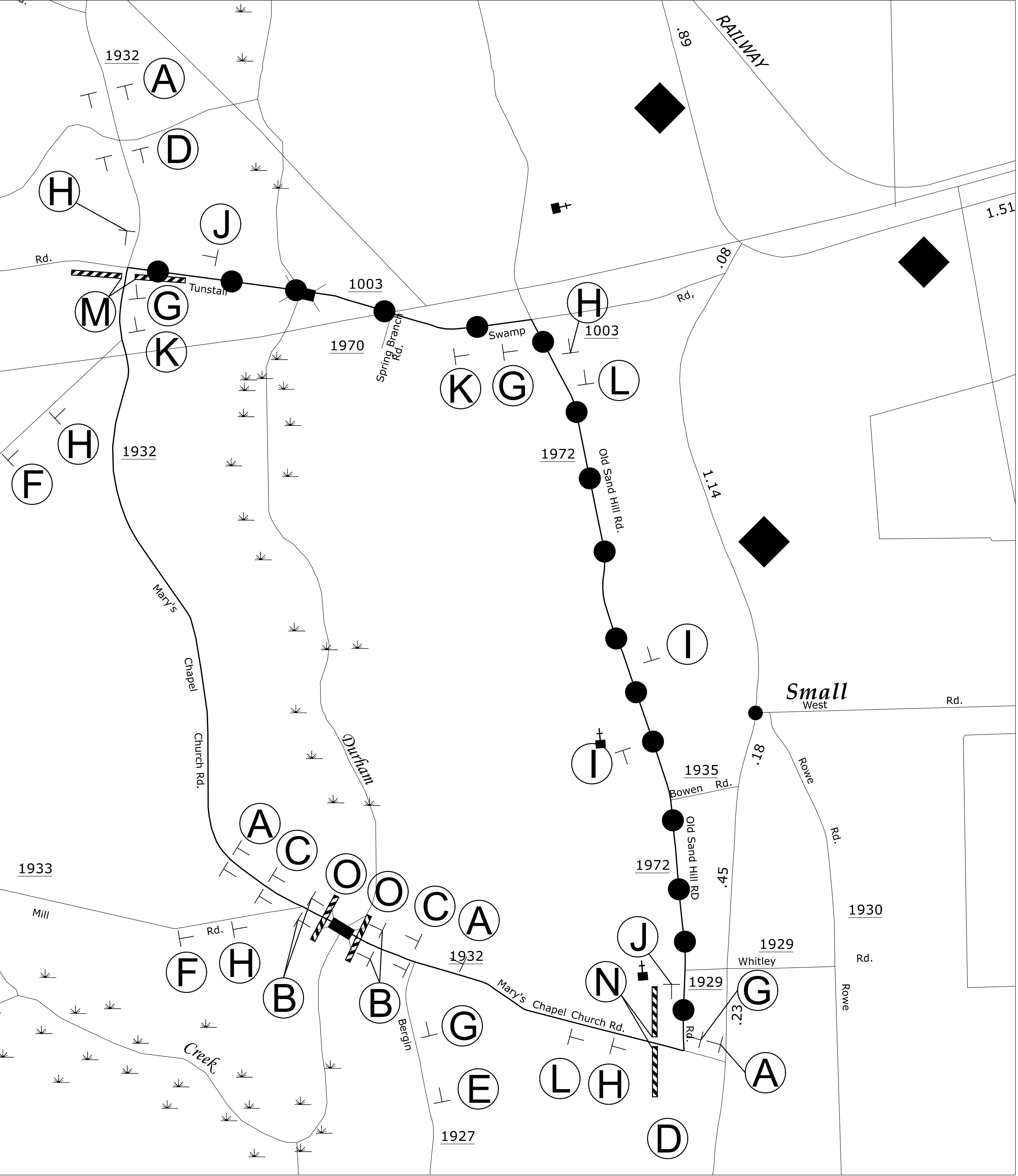
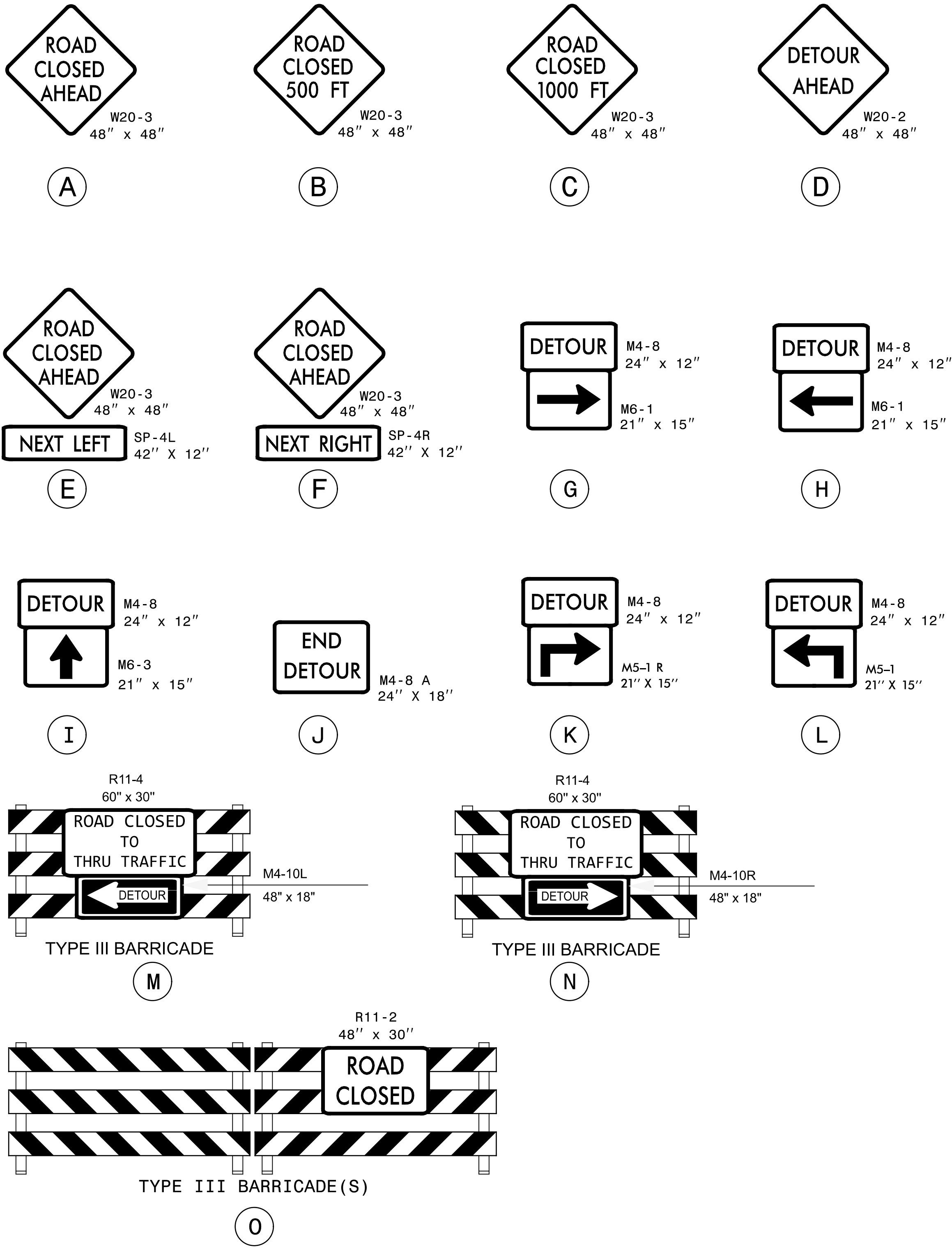
TRAFFIC MANAGEMENT STRATEGIES:

FULL ROADWAY CLOSURES
OFF-SITE DETOURS / USE OF ALTERNATIVE ROUTES

TRAFFIC / INCIDENT MANAGEMENT & SPEED ENFORCEMENT STRATEGIES:

LOCAL DETOUR ROUTES

APPROVED:  DATE: 8/14/2026 SEAL  DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	 DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION WORK ZONE TRAFFIC CONTROL	TRANSPORTATION OPERATIONS PLAN
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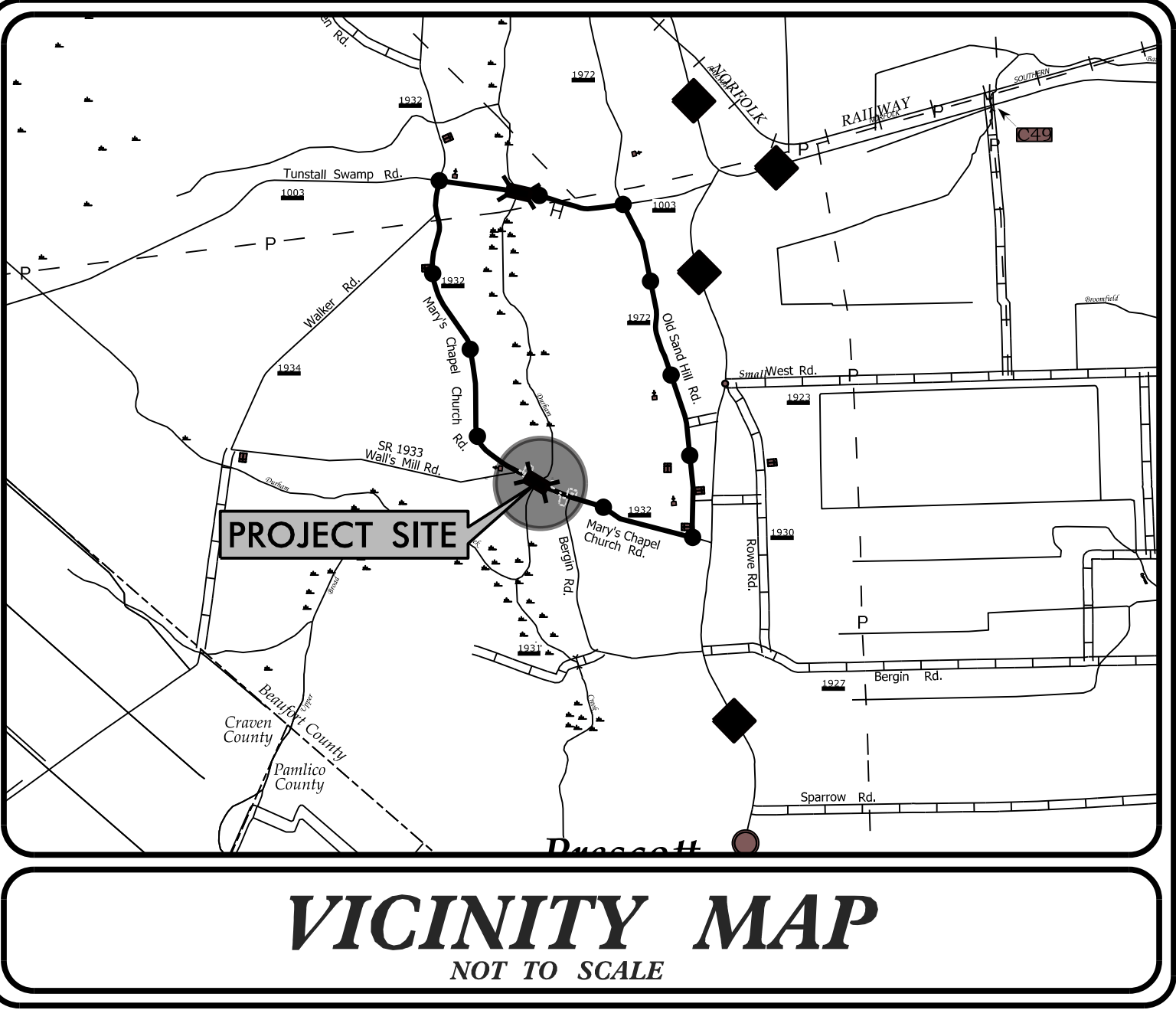
APPROVED: *Allison C. Johnson*
DATE: 8/14/2026
SEAL
NORTH CAROLINA
PROFESSIONAL
SEAL
15424
ENGINEER
ALLISON C. JOHNSON
DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED



OFF-SITE DETOUR
DETAILS

SUNGATE
DESIGN GROUP

TIP PROJECT: BP2-R028



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

LOCATION: *REPLACE BRIDGE #060057 OVER DURHAM CREEK
ON SR 1932 (MARY'S CHAPEL CHURCH ROAD)*

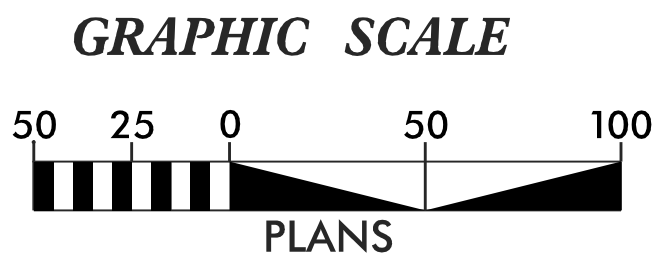
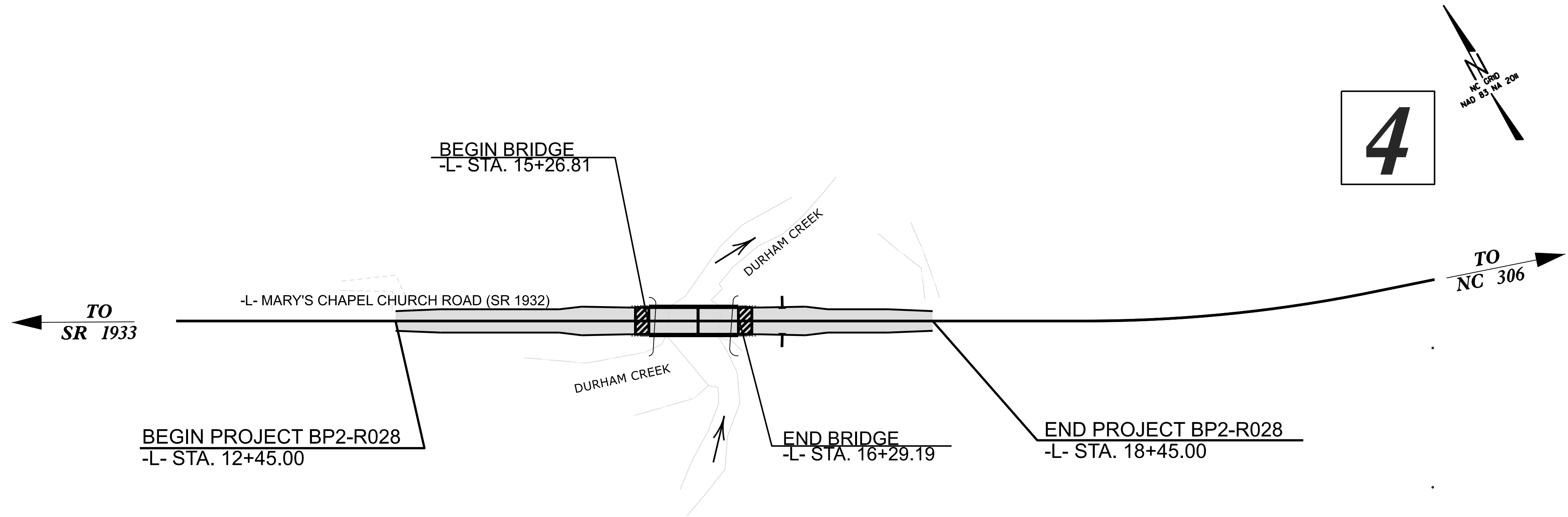
TYPE OF WORK: *GRADING, PAVING, DRAINAGE & STRUCTURE*

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	BP2-R028	EC-1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
BP2.R028.1	N/A	PE	
BP2.R028.2	N/A	UTIL	
BP2.R028.2	N/A	ROW	

THIS PROJECT HAS
BEEN DESIGNED TO
SENSITIVE WATERSHED
STANDARDS.

ENVIRONMENTALLY
SENSITIVE AREA(S) EXIST
ON THIS PROJECT
*Refer To E. C. Special Provisions
for Special Considerations.*

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



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

Prepared in the Office of:

SUNGATE
DESIGN GROUP

5400 Etta Burke Ct., STE. 100 • Raleigh, North Carolina 27606
Phone: (919) 859-2243 • Eng Firm License No. C-890

2024 STANDARD SPECIFICATIONS

Designed by:

MATTHEW C. EDWARDS, PE 3992
NAME LEVEL III CERTIFICATION NO.

Roadway Standard Drawings

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

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

PROJECT REFERENCE NO.	SHEET NO.
BP2-R028	EC-02

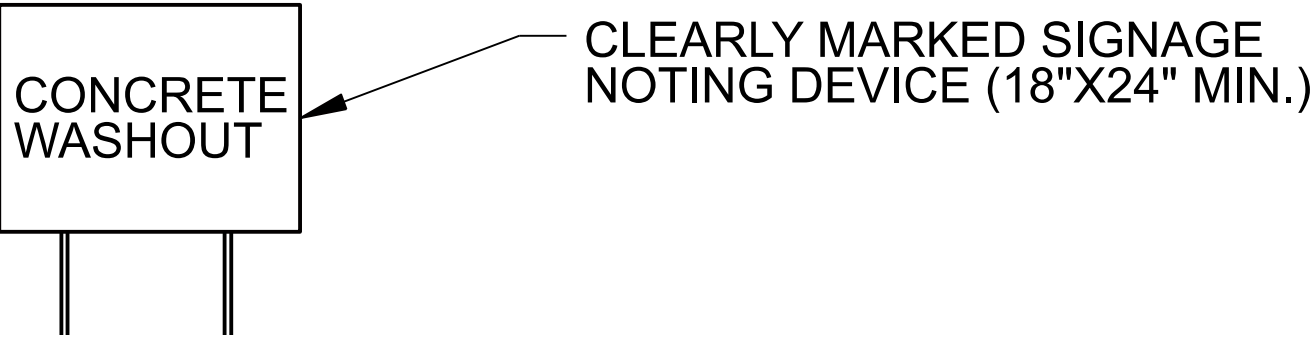
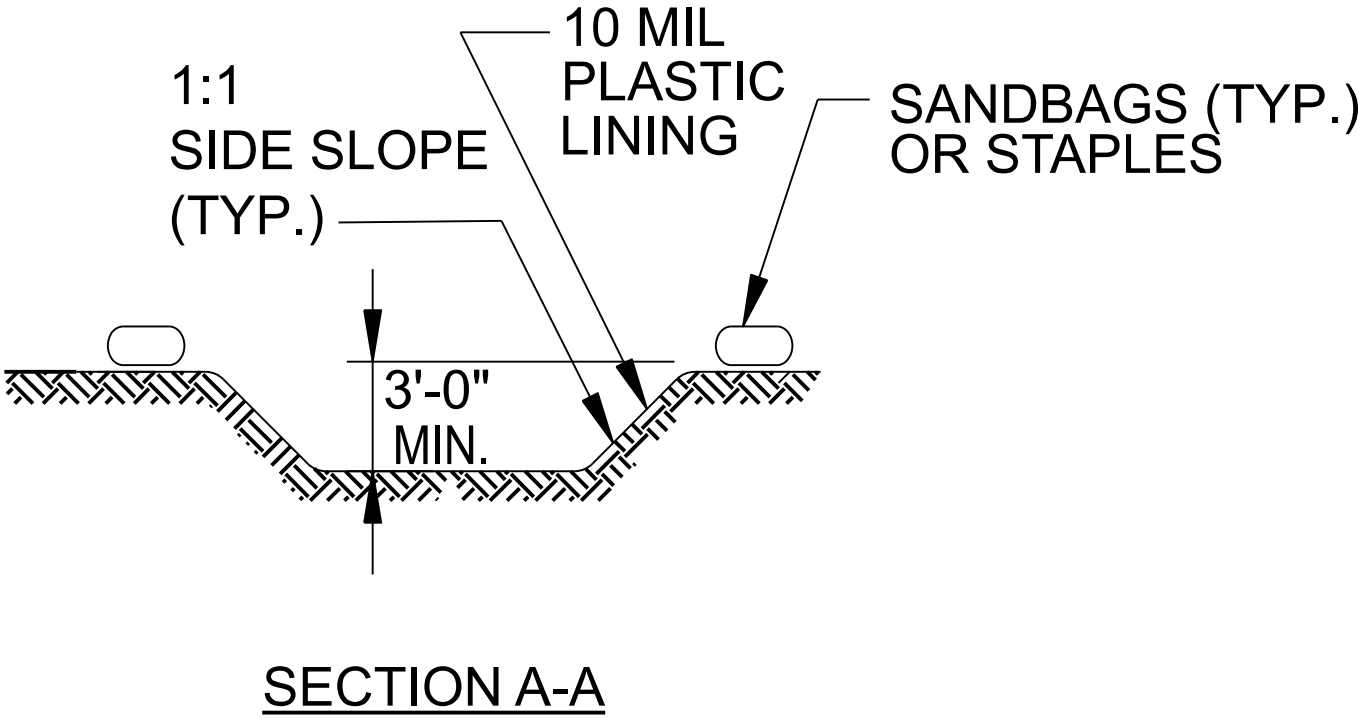
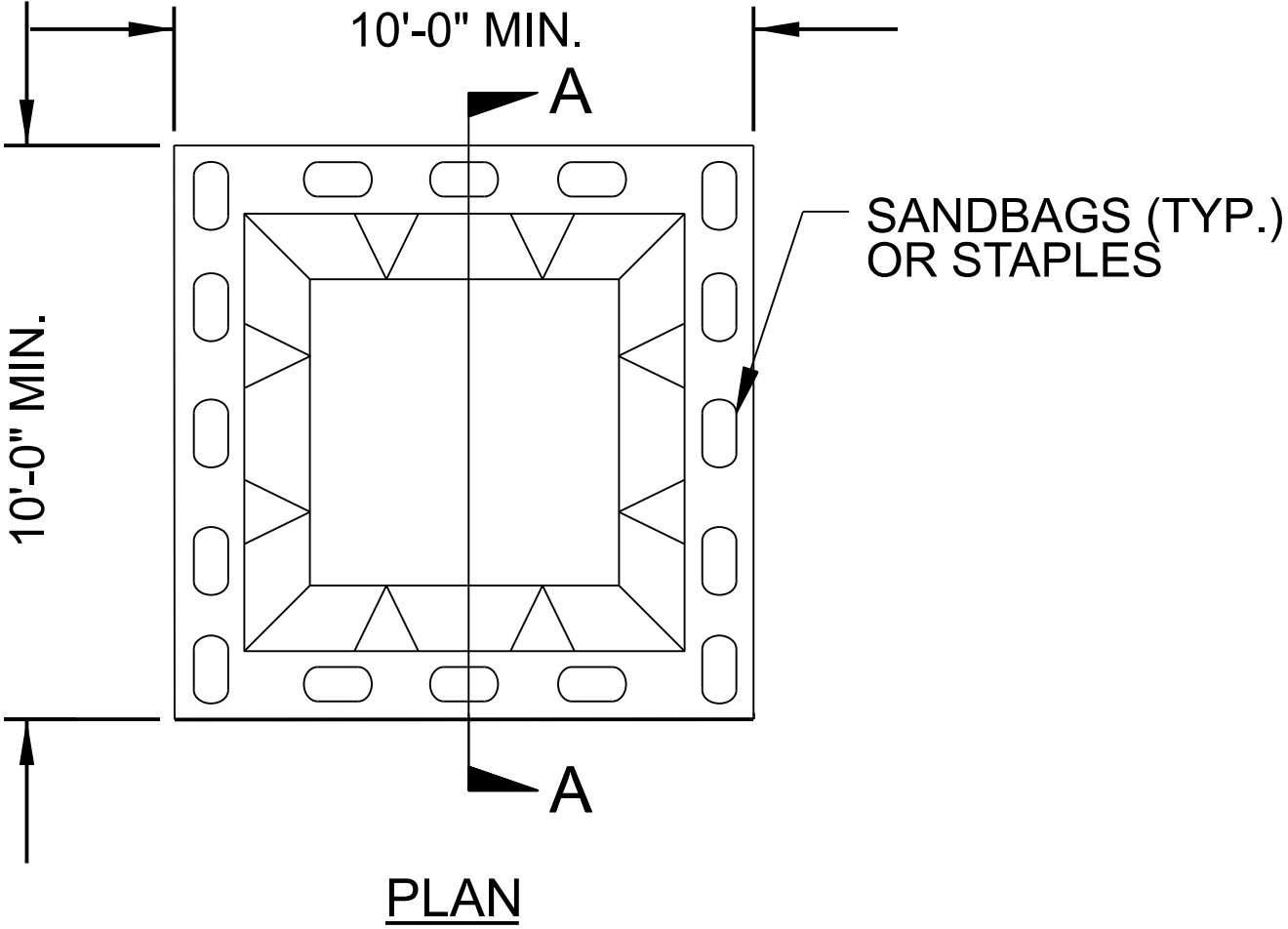
EROSION & SEDIMENT CONTROL LEGEND

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

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

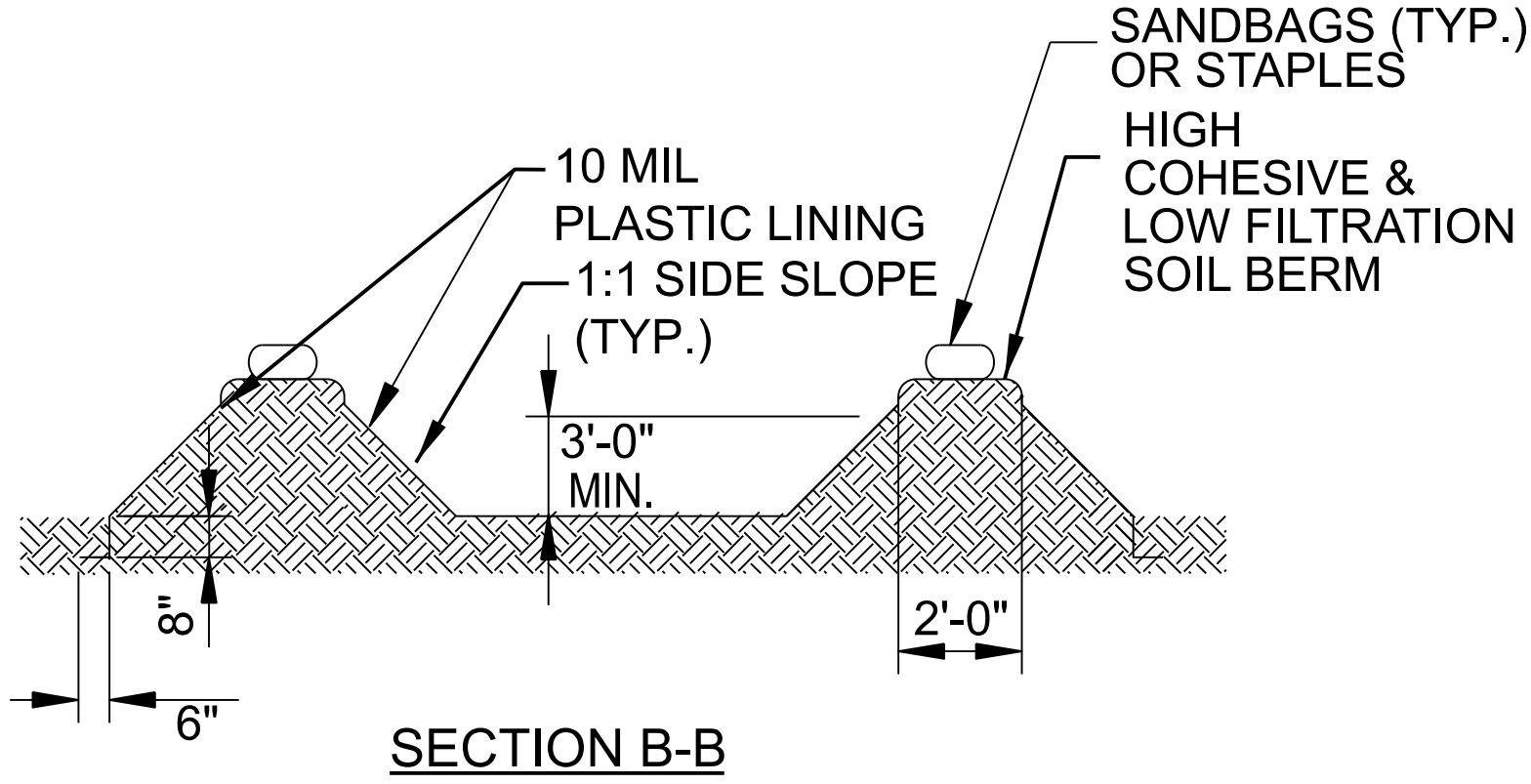
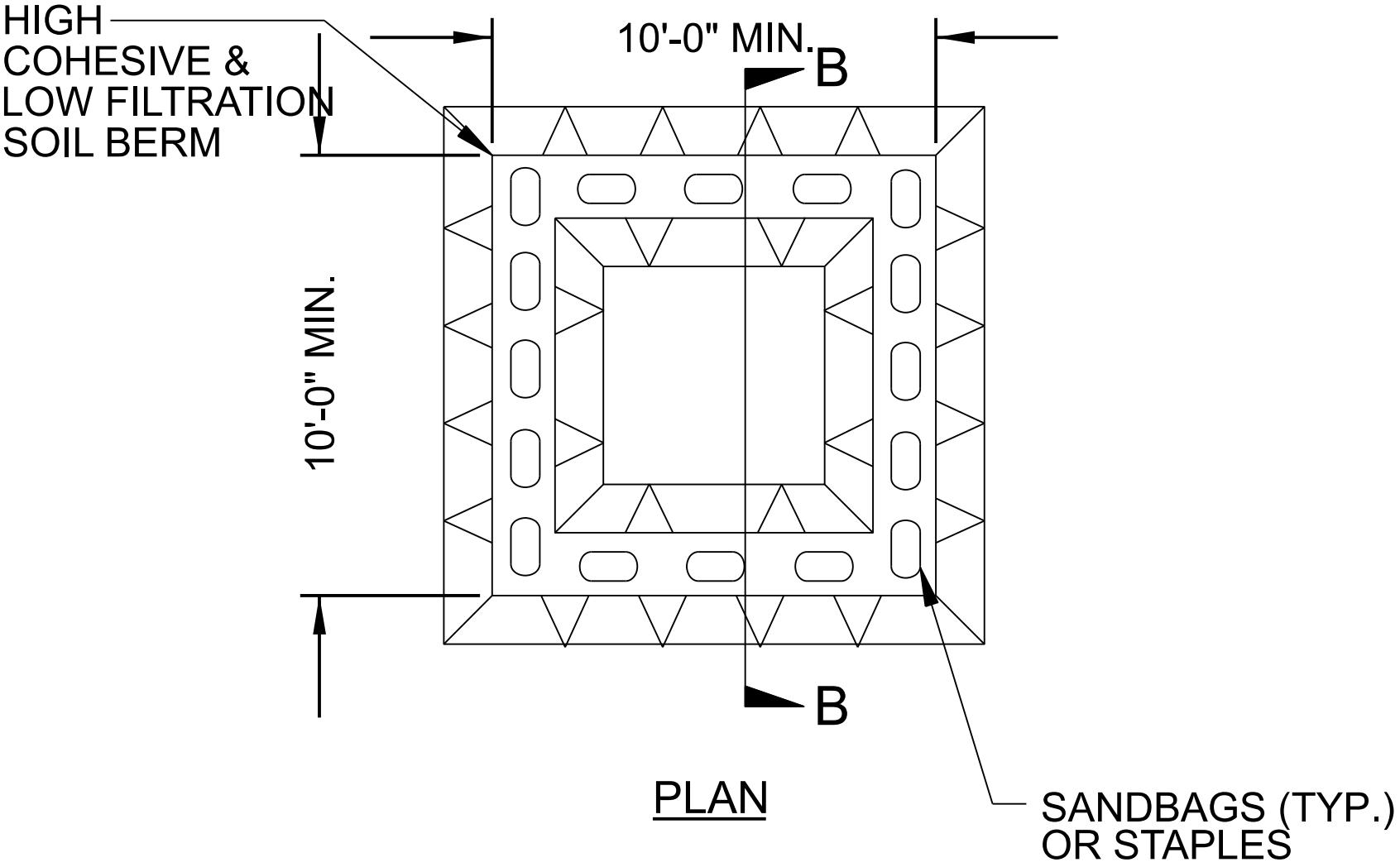
ONSITE CONCRETE WASHOUT STRUCTURE WITH LINER

PROJECT REFERENCE NO.	SHEET NO.
BP2-R028	EC-2A
R/W SHEET NO.	



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.

NOTES:

EXCAVATE A 1 TO 2 INCH TRENCH FOR WATTLE TO BE PLACED.

DO NOT PLACE WATTLE ON TOE OF SLOPE.

USE 2 FT. WOODEN STAKES WITH A 2 IN. BY 2 IN. NOMINAL CROSS SECTION.

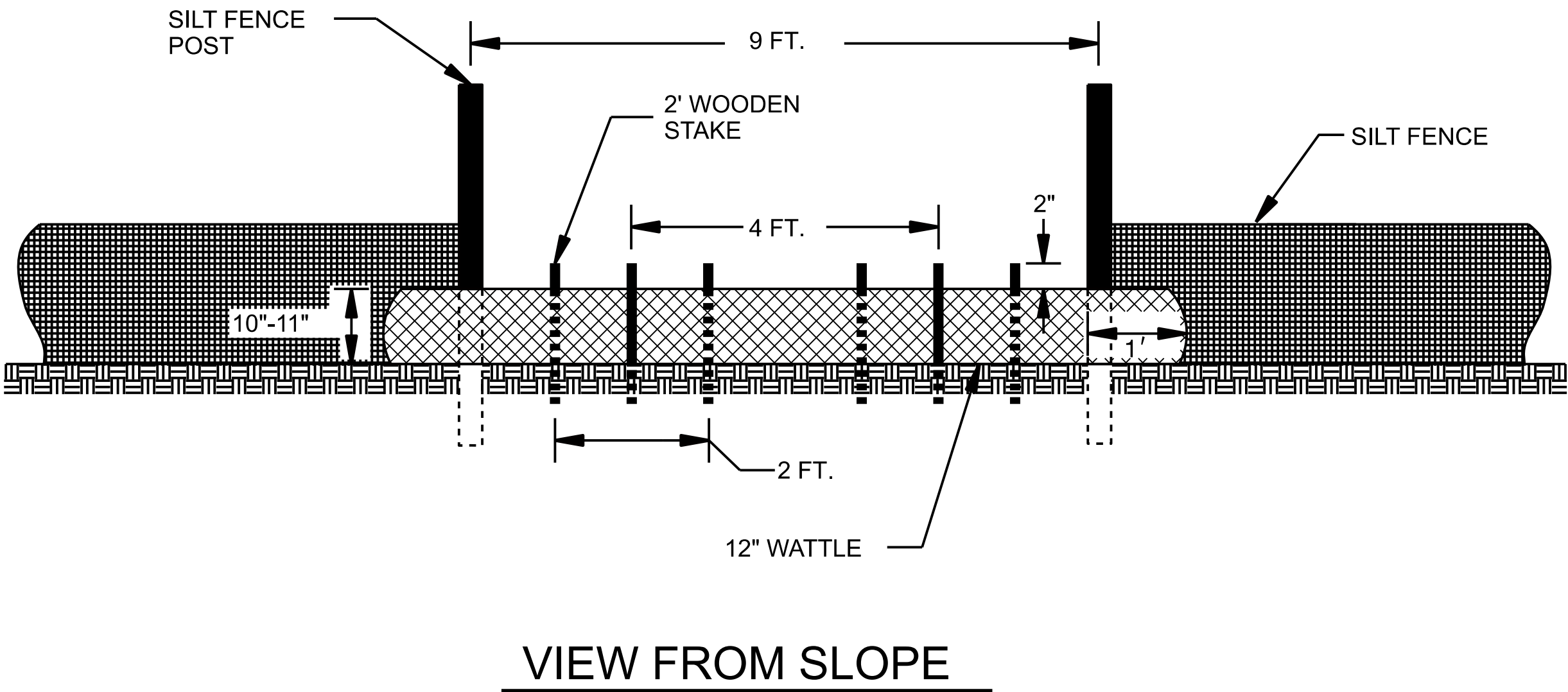
INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO GROUND.

PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12" IN LENGTH.

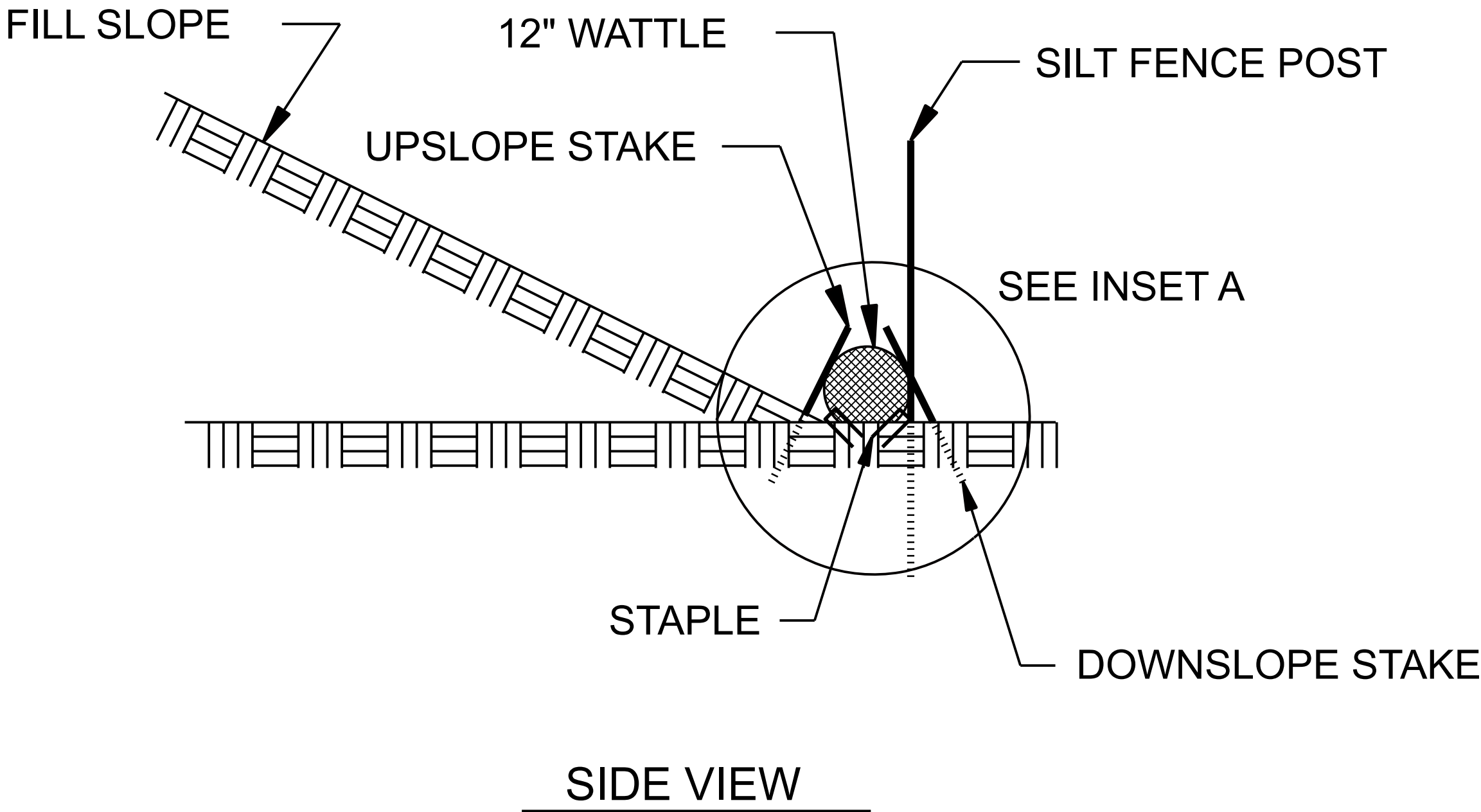
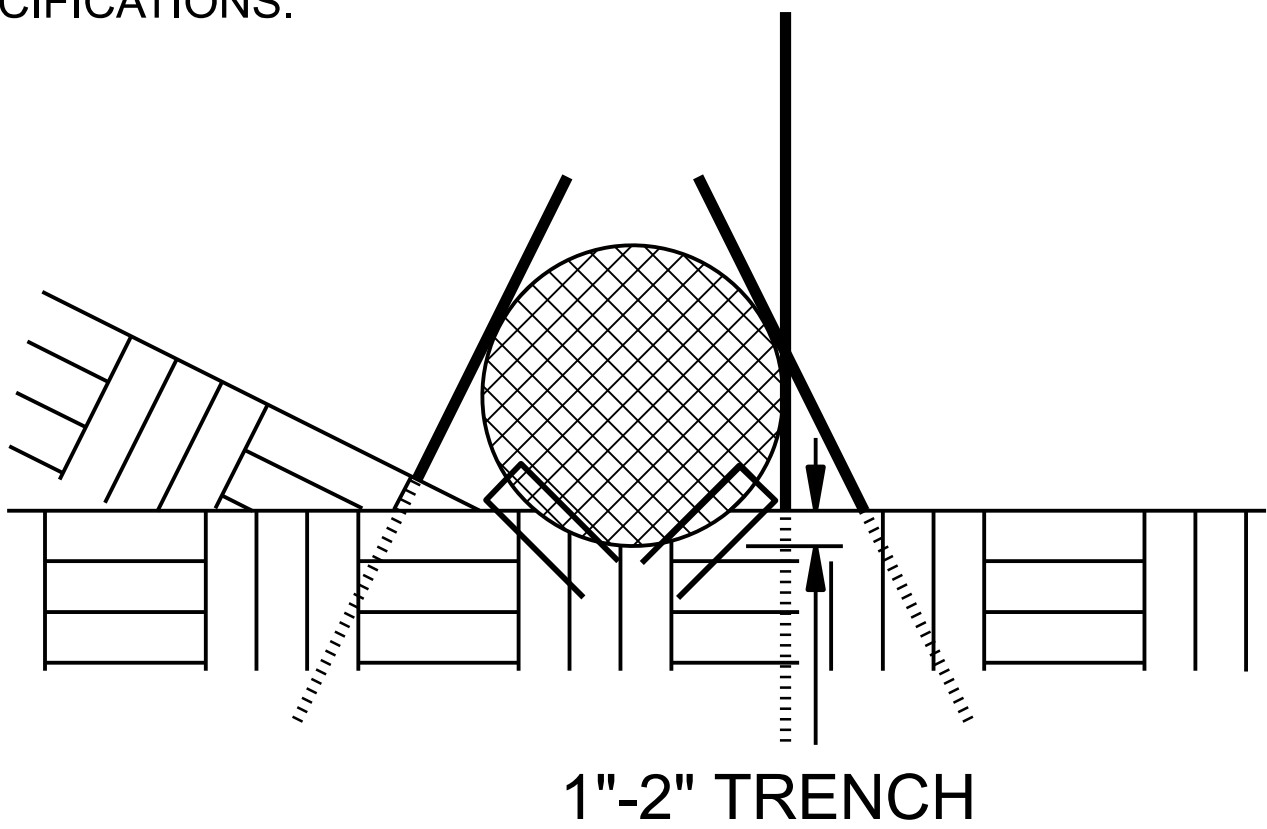
INSTALL STAPLES APPROXIMATELY EVERY 1 LINEAR FOOT ON BOTH SIDES OF WATTLE AND AT EACH END TO SECURE IT TO THE SOIL.

WATTLE INSTALLATION CAN BE ON OUTSIDE OF THE SILT FENCE AS DIRECTED.

INSTALL TEMPORARY SILT FENCE IN ACCORDANCE WITH SECTION 1605 OF THE STANDARD SPECIFICATIONS.



INSET A

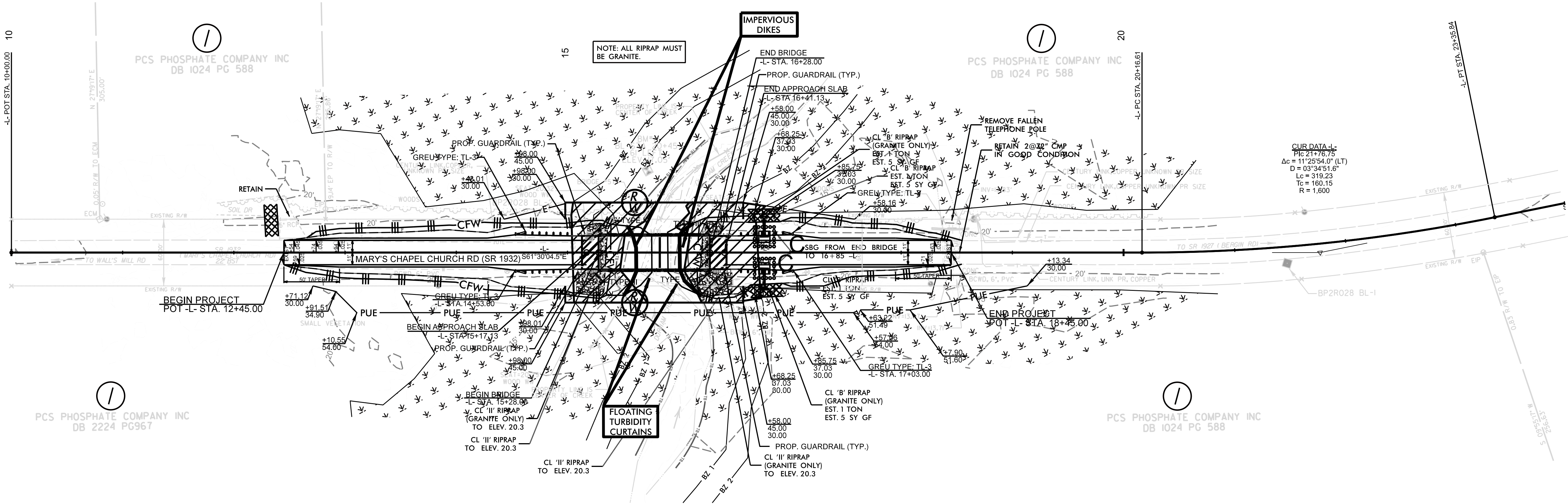


DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

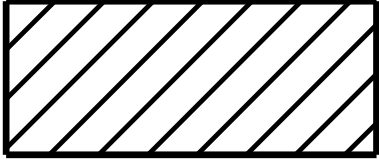
PROJECT REFERENCE NO.	SHEET NO.
BP2-R028	EC-3

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



NOTE:
MATTING WITH NYLON MESH CANNOT BE
USED WITHIN 25 FEET OF THE TOP OF STREAM
BANK OR OPEN WATERS.

 ENVIRONMENTALLY SENSITIVE AREA
SEE PROJECT SPECIAL PROVISIONS

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

CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 04

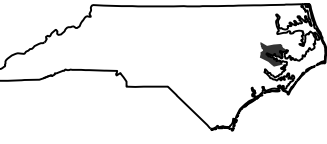
NOTE:
UTILIZE SPECIAL STILLING BASIN(S) AS STILLING BASIN
WHERE APPLICABLE.

NOTE:
UTILIZE COIR FIBER MATTING ADJACENT TO
WETLANDS/JURISDICTIONAL AREAS, AND AS
DIRECTED.

BP2-R028

2RD1 | EC-04

NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
BEAUFORT COUNTY


ROADWAY DESIGN UNIT
ROADWAY DESIGN
ENGINEER

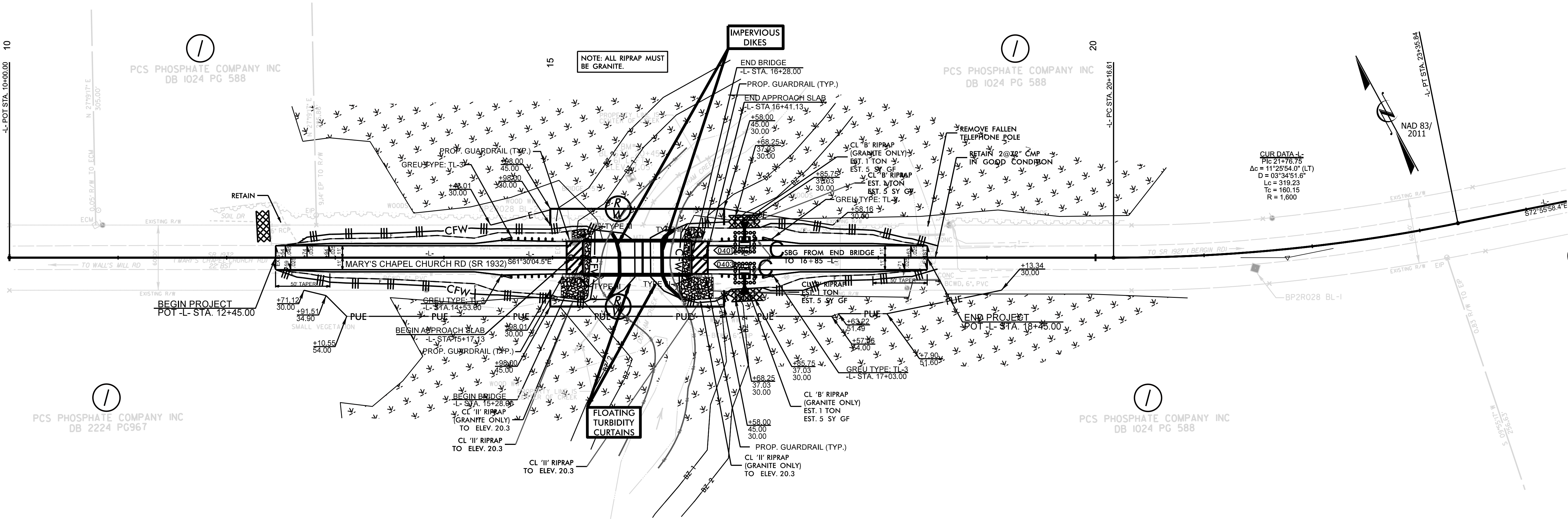
HYDRAULICS
ENGINEER

PREPARED BY


AMERICAN
Engineering
8008 Corporate Center Drive | Suite 110
Charlotte, NC 28226 | 704-375-2438

SUNGATE
DESIGN GROUP
5403 Old Market Ct., Ste. 100, Raleigh, North Carolina 27604
(Phone) (919) 853-2248 • Fax (919) 853-2248

REVISIONS



BP2-R028

2R01EC-05

NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
BEAUFORT COUNTY

ROADWAY DESIGN UNIT

ROADWAY DESIGN
ENGINEER

HYDRAULICS
ENGINEER

PREPARED BY

AMERICAN
Engineering

8008 Corporate Center Drive | Suite 110
Charlotte, NC 28226 | 704-375-2438

DESIGN GROUP

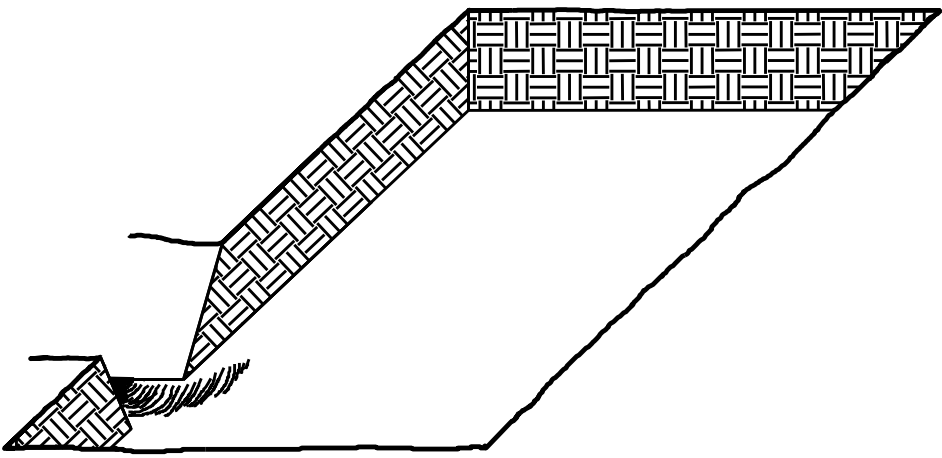
5403 Old Market Ct., Ste. 100 Raleigh, North Carolina 27604
(Phone) (919) 853-1248 • Fax (919) 853-1248

REVISIONS

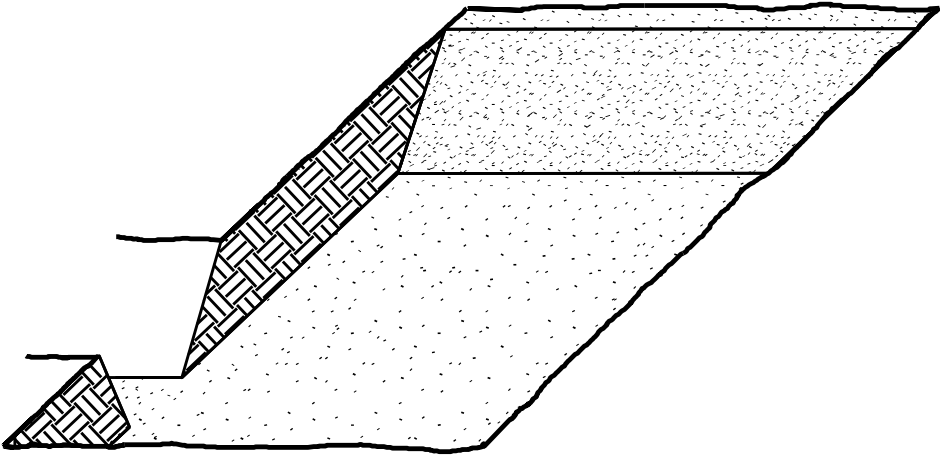
PLANTING DETAILS
SEEDLING / LINER BAREROOT PLANTING DETAIL

HEALING IN

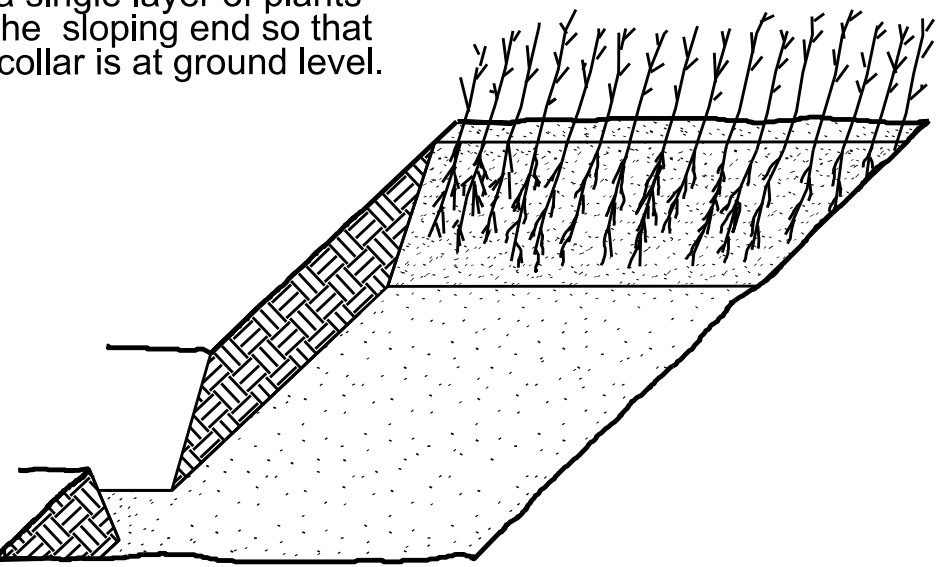
1. Locate a healing-in site in a shady, well protected area.
2. Excavate a flat bottom trench 12 inches deep and provide drainage.



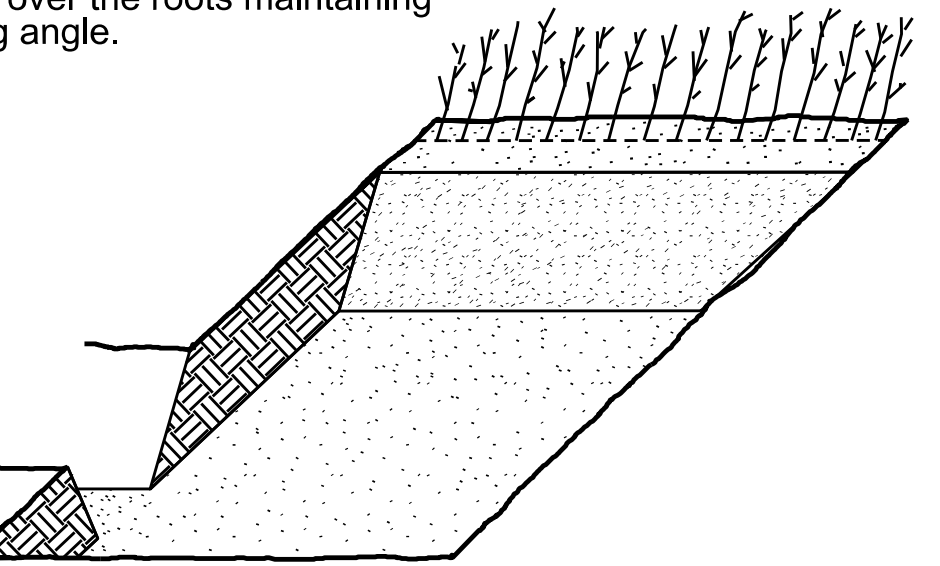
3. Backfill the trench with 2 inches well rotted sawdust. Place a 2 inch layer of well rotted sawdust at a sloping angle at one end of the trench.



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

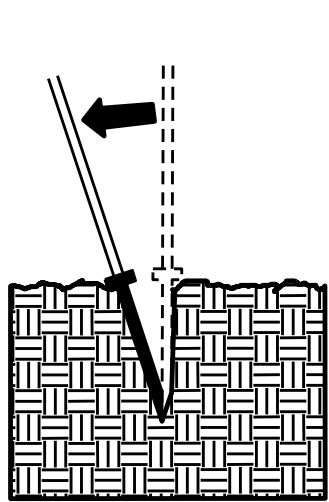


5. Place a 2 inch layer of well rotted sawdust over the roots maintaining a sloping angle.

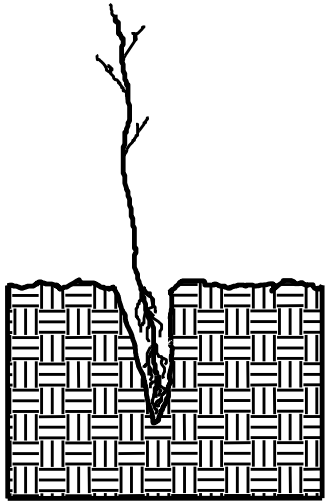


6. Repeat layers of plants and sawdust as necessary and water thoroughly.

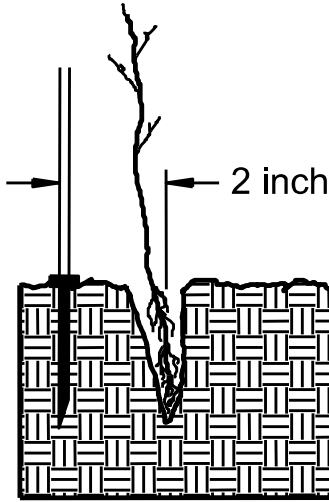
DIBBLE PLANTING METHOD
USING THE KBC PLANTING BAR



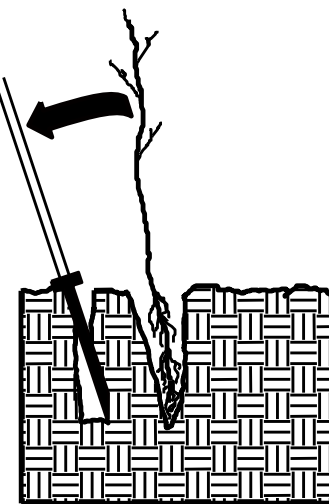
1. Insert planting bar as shown and pull handle toward planter.



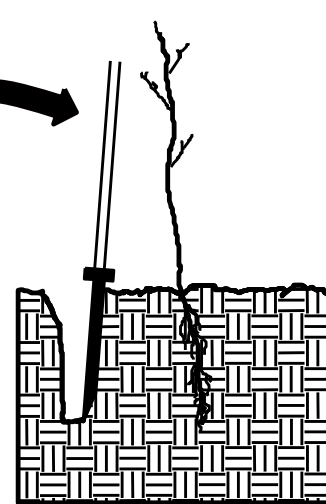
2. Remove planting bar and place seedling at correct depth.



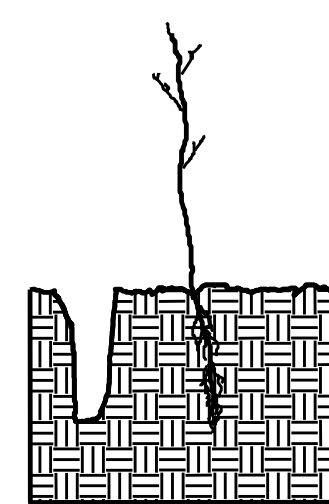
3. Insert planting bar 2 inches toward planter from seedling.



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



5. Push handle forward firming soil at top.



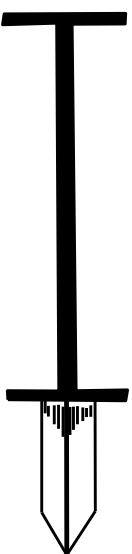
6. Leave compaction hole open. Water thoroughly.

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:

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

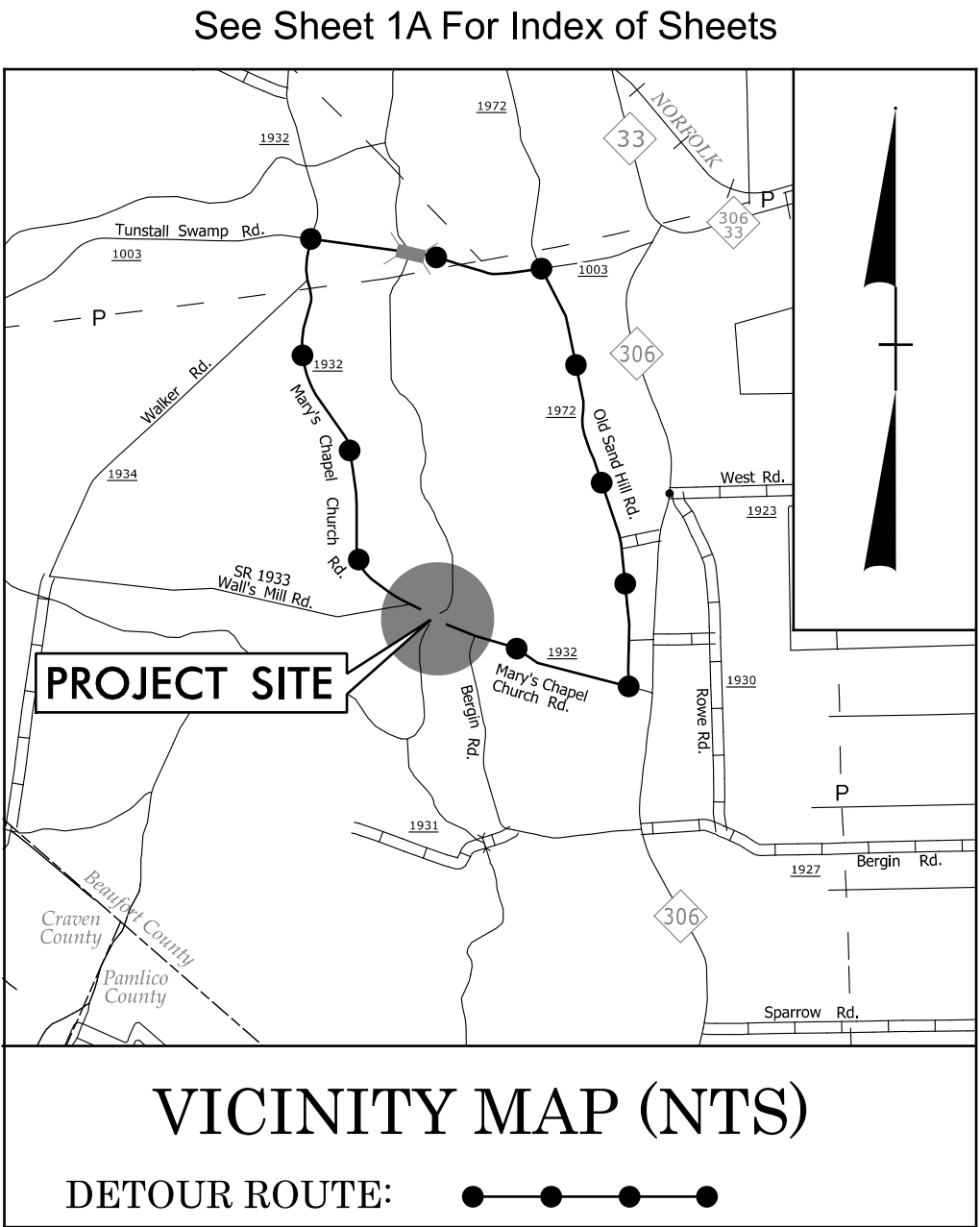
REFORESTATION DETAIL SHEET
N.C.D.O.T. - ROADSIDE ENVIRONMENTAL UNIT

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	BP2-R028	RF-1	
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION	

09/08/99

TIP PROJECT: CP2-R028

CONTRACT:



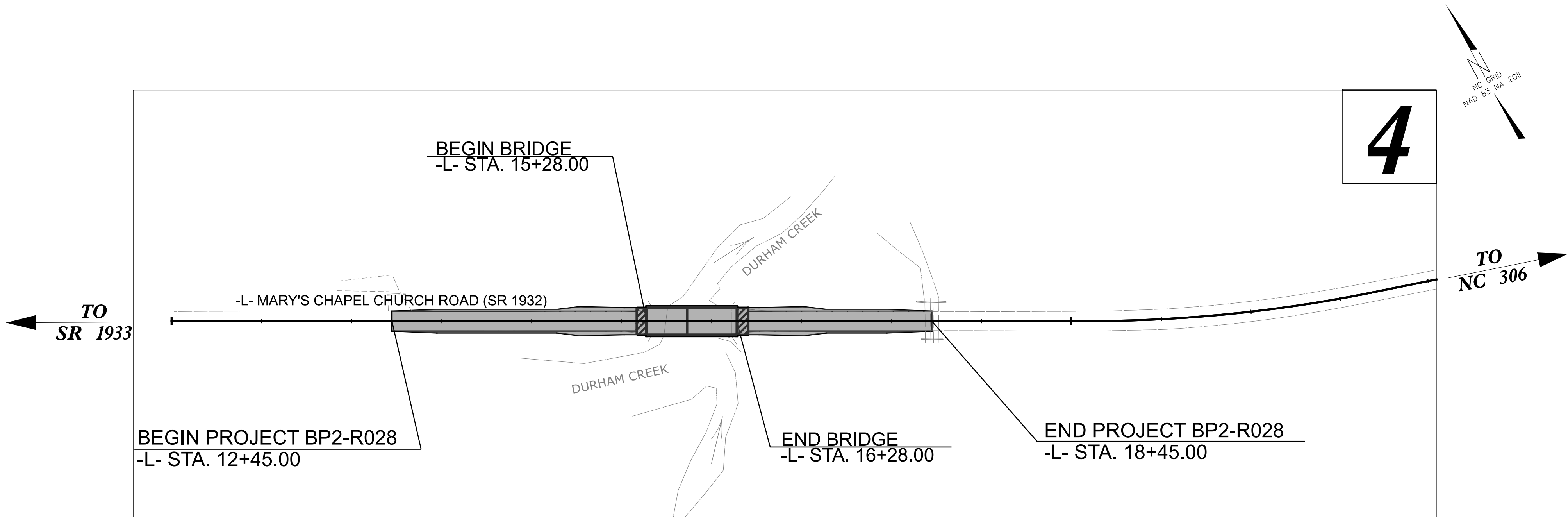
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

UTILITY CONSTRUCTION PLANS
BEAUFORT COUNTY

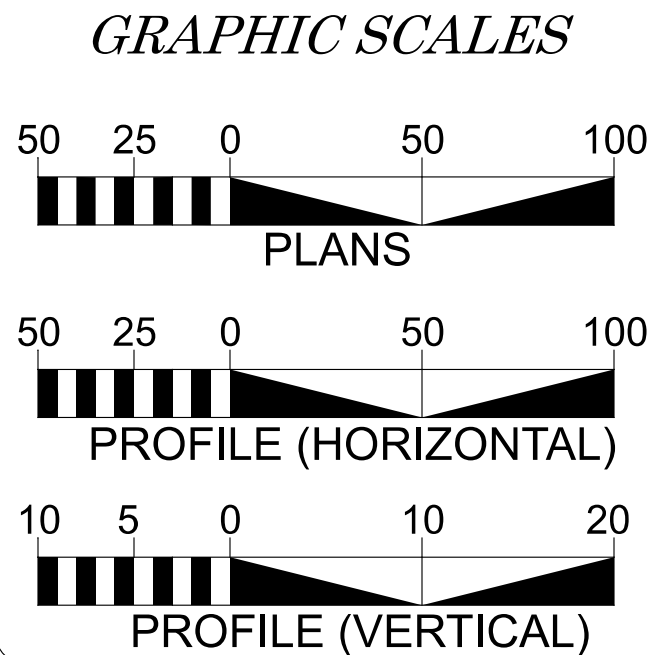
LOCATION: REPLACE BRIDGE #57 OVER
DURHAM CREEK ON SR 1932
(MARY'S CHAPEL CHURCH ROAD)

TYPE OF WORK: WATER LINE CONSTRUCTION

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	BP2-R028	UC-1	
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION	
BP2.R028.1	N/A	PE	
BP2.R028.2	N/A	UTIL	
BP2.R028.3	N/A	ROW	



DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED



<u>SHEET NO.:</u>	<u>DESCRIPTION:</u>
UC-1	TITLE SHEET
UC-2	UTILITY SYMBOLOGY
UC-3	NOTES
UC-3A	DETAILS
UC-4	UTILITY CONSTRUCTION SHEET

WATER OWNER ON PROJECT

(A) BEAUFORT COUNTY WATER DEPARTMENT

SEAL



PREPARED IN THE OFFICE OF

AMERICAN
Engineering

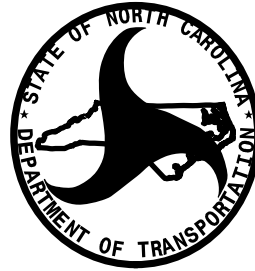
Shaping the Future, Together

11525 N. Community House Road | Suite 325
Charlotte, NC 28277 | 704.375.2438

ALLISON C. JOHNSON, PE CONSULTANT CONTACT #1

BENJAMIN C. PICKERING II, PE CONSULTANT CONTACT #2

CONSULTANT CONTACT #3



DIVISION OF HIGHWAYS
UTILITIES UNIT

1555 MAIL SERVICES CENTER
RALEIGH, NC 27699-1555
PHONE (919) 707-6690
FAX (919) 250-4151

UTILITIES REGIONAL ENGINEER

UTILITIES ENGINEER

UTILITIES AREA COORDINATOR

UTILITIES COORDINATOR

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

UTILITIES PLAN SHEET SYMBOLS

PROPOSED WATER SYMBOLS

Water Line (Sized as Shown)	
11¼ Degree Bend	
22½ Degree Bend	
45 Degree Bend	
90 Degree Bend	
Plug	
Tee	
Cross	
Reducer	
Gate Valve	
Butterfly Valve	
Tapping Valve	
Line Stop	
Line Stop with Bypass	
Blow Off	
Fire Hydrant	
Relocate Fire Hydrant	
Remove Fire Hydrant	
Water Meter	
Relocate Water Meter	
Remove Water Meter	
Water Pump Station	
RPZ Backflow Preventer	
DCV Backflow Preventer	
Relocate RPZ Backflow Preventer	
Relocate DCV Backflow Preventer	

PROPOSED SEWER SYMBOLS

Gravity Sewer Line (Sized as Shown)	
Force Main Sewer Line (Sized as Shown)	
Manhole (Sized per Note)	
Sewer Pump Station	

PROPOSED MISCELLANEOUS UTILITIES SYMBOLS

Power Pole	
Telephone Pole	
Joint Use Pole	
Telephone Pedestal	
Utility Line by Others (Type as Shown)	
Trenchless Installation	
Encasement Method	
Encasement	

Thrust Block	
Air Release Valve	
Utility Vault	
Concrete Pier	
Steel Pier	
Plan Note	
Pay Item Note	

NOTE
PAY ITEM

EXISTING UTILITIES SYMBOLS

Power Pole	
Telephone Pole	
Joint Use Pole	
Utility Pole	
Utility Pole with Base	
H-Frame Pole	
Power Transmission Line Tower	
Water Manhole	
Power Manhole	
Telephone Manhole	
Sanitary Sewer Manhole	
Hand Hole for Cable	
Power Transformer	
Telephone Pedestal	
CATV Pedestal	
Gas Valve	
Gas Meter	
Located Miscellaneous Utility Object	
Abandoned According to Utility Records	
End of Information	

*Underground Power Line	
*Underground Telephone Cable	
*Underground Telephone Conduit	
*Underground Fiber Optics Telephone Cable	
*Underground TV Cable	
*Underground Fiber Optics TV Cable	
*Underground Gas Pipeline	
Aboveground Gas Pipeline	
*Underground Water Line	
Aboveground Water Line	
*Underground Gravity Sanitary Sewer Line	
Aboveground Gravity Sanitary Sewer Line	
*Underground SS Forced Main Line	
Underground Unknown Utility Line	
SUE Test Hole	
Water Meter	
Water Valve	
Fire Hydrant	
Sanitary Sewer Cleanout	

*For Existing Utilities
Utility Line Drawn from Record (Type as Shown)
Designated Utility Line (Type as Shown)

BP2-R028

UC-2

NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
BEAUFORT COUNTY

UTILITY DESIGN UNIT

UTILITY CONSTRUCTION
PLANS ONLY

DESIGNED BY: ACJ/MS

DRAWN BY: MS

CHECKED BY: ACJ/BF

APPROVED BY: ACJ

REVISED:

UTILITIES ENGINEERING SEC.
PHONE:(919)707-6690
FAX:(919)250-4151

PREPARED BY

AMERICAN
Engineering
8808 Corporate Center Drive | Suite 110
Charlotte, NC 28226 | 704.375.2438

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UNLESS ALL SIGNATURES COMPLETED

REVISIONS

GENERAL NOTES:

1. THE PROPOSED UTILITY CONSTRUCTION SHALL MEET THE APPLICABLE REQUIREMENTS OF THE NC DEPARTMENT OF TRANSPORTATION'S STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES DATED JANUARY 2024.

2. THE EXISTING WATER UTILITIES BELONG TO BEAUFORT COUNTY.

CONTACT: ERICK JENNINGS
PHONE: 252-402-6547

EMAIL: ERICK.JENNINGS@CO.BEAUFORT.NC.US

3. ALL WATER LINES TO BE INSTALLED WITHIN COMPLIANCE OF THE RULES AND REGULATIONS OF THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENTAL QUALITY, DIVISION OF WATER RESOURCES, PUBLIC WATER SUPPLY SECTION. ALL SEWER LINES TO BE INSTALLED WITHIN COMPLIANCE OF THE RULES AND REGULATIONS OF THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENTAL QUALITY, DIVISION OF WATER RESOURCES, WATER QUALITY SECTION. PERFORM ALL WORK IN ACCORDANCE WITH THE APPLICABLE PLUMBING CODES.

4. THE UTILITY OWNER OWNS THE EXISTING UTILITY FACILITIES AND WILL OWN THE NEW UTILITY FACILITIES AFTER ACCEPTANCE BY THE DEPARTMENT. THE DEPARTMENT OWNS THE CONSTRUCTION CONTRACT AND HAS ADMINISTRATIVE AUTHORITY. COMMUNICATIONS AND DECISIONS BETWEEN THE CONTRACTOR AND UTILITY OWNER ARE BINDING UPON THE DEPARTMENT OR THIS CONTRACT UNLESS AUTHORIZED BY THE ENGINEER. AGREEMENTS BETWEEN THE UTILITY OWNER AND CONTRACTOR FOR WORK THAT IS NOT PART OF THIS CONTRACT OR IS SECONDARY TO THIS CONTRACT ARE ALLOWED, BUT ARE NOT BINDING UPON THE DEPARTMENT.

5. PROVIDE ACCESS FOR THE DEPARTMENT PERSONNEL AND THE OWNER'S REPRESENTATIVES TO ALL PHASES OF CONSTRUCTION. NOTIFY DEPARTMENT PERSONNEL AND THE UTILITY OWNER TWO WEEKS PRIOR TO COMMENCEMENT OF ANY WORK OR ONE WEEK PRIOR TO SERVICE INTERRUPTION. KEEP UTILITY OWNER'S REPRESENTATIVES INFORMED OF WORK PROGRESS AND PROVIDE OPPORTUNITY FOR INSPECTION OF CONSTRUCTION AND TESTING.

UTILITY CONSTRUCTION

6. THE PLANS DEPICT THE BEST AVAILABLE INFORMATION FOR THE LOCATION, SIZE, AND TYPE OF MATERIAL FOR ALL EXISTING UTILITIES. MAKE INVESTIGATIONS FOR DETERMINING THE EXACT LOCATION, SIZE, AND TYPE MATERIAL OF THE EXISTING FACILITIES AS NECESSARY FOR THE CONSTRUCTION OF THE PROPOSED UTILITIES AND FOR AVOIDING DAMAGE TO EXISTING FACILITIES. REPAIR ANY DAMAGE INCURRED TO EXISTING FACILITIES TO THE ORIGINAL OR BETTER CONDITION AT NO ADDITIONAL COST TO THE DEPARTMENT.

7. MAKE FINAL CONNECTIONS OF THE NEW WORK TO THE EXISTING SYSTEM WHERE INDICATED ON THE PLANS, AS REQUIRED TO FIT THE ACTUAL CONDITIONS, OR AS DIRECTED.

8. MAKE CONNECTIONS BETWEEN EXISTING AND PROPOSED UTILITIES AT TIMES MOST CONVENIENT TO THE PUBLIC, WITHOUT ENDANGERING THE UTILITY SERVICE, AND IN ACCORDANCE WITH THE UTILITY OWNER'S REQUIREMENTS. MAKE CONNECTIONS ON WEEKENDS, AT NIGHT, AND ON HOLIDAYS IF NECESSARY.

9. ALL UTILITY MATERIALS SHALL BE APPROVED PRIOR TO DELIVERY TO THE PROJECT. SEE 1500□7, "SUBMITTALS AND RECORDS" IN SECTION 1500 OF THE STANDARD SPECIFICATIONS.

PROJECT NOTES:

1. CONTRACTOR'S ATTENTION IS DIRECTED TO SECTIONS 102, 107, AND 1550 OF THE STANDARD SPECIFICATIONS CONCERNING TRENCHLESS INSTALLATION. IT IS CONTRACTOR'S RESPONSIBILITY TO HAVE BORING DESIGNED AND SEALED BY A LICENSED NORTH CAROLINA PROFESSIONAL ENGINEER. NO DAMAGE IS ALLOWED TO RIVER, STREAM, CREEK, WETLANDS, OR BUFFER ZONES.

2. TRACER WIRE MUST BE ATTACHED TO ALL NEWLY INSTALLED PIPE AS REQUIRED BY NC GENERAL STATUTES CHAPTER 87-121G. USE # 12 AWG SOLID-COPPER WIRE WITH BLUE INSULATION FOR TRACER WIRE. BEAUFORT COUNTY WILL CONDUCT A CONTINUITY TEST ON ALL TRACER WIRE AFTER INSTALLATION.

3. FUSIBLE PVC PIPE FOR HDD SHALL HAVE TWO (2) TRACER WIRES ATTACHED.

4. BEAUFORT COUNTY WILL COLLECT ALL BACTERIOLOGICAL SAMPLES FOR RELOCATION PROJECTS. A BEAUFORT COUNTY REPRESENTATIVE SHALL BE PRESENT FOR ALL PRESSURE TESTS, CHLORINATION, AND FLUSHING OF ALL NEW WATER LINES.

5. A 2" OR GREATER TEMPORARY BLOW-OFF SHALL BE INSTALLED FOR THE PURPOSE OF DISCHARGING SUPER-CHLORINATED WATER. ALL DISCHARGED WATER SHALL BE DECHLORINATED.

6. BEAUFORT COUNTY SHALL BE PROVIDED WITH TWO COPIES OF SURVEYED AS-BUILTS OF THE INSTALLED UTILITY. THE AS-BUILTS SHALL INCLUDE NOTATIONS OF THE SIZE AND TYPE OF MATERIAL INSTALLED; GPS COORDINATES OF ALL: FITTINGS, UTILITY CONTROLS, AND THE HORIZONTAL AND VERTICAL LOCATIONS OF THE PIPING. PROVIDE BORING LOGS FROM TRENCHLESS INSTALLATIONS. AS-BUILTS WILL BE PROVIDED AS PDF FILES AND AN AUTOCAD (.DWG) FILE, LATEST VERSION OF AUTOCAD.

7. CONTRACTOR SHALL ADHERE TO SECTION 1530 "ABANDON OR REMOVE UTILITIES" FOR ABANDONMENT OF PIPE, UNLESS OTHERWISE SPECIFIED.

8. BEAUFORT COUNTY SHALL OPEN AND CLOSE ALL EXISTING VALVES.

9. PROPOSED WATER LINE FOR OPEN TRENCH CONSTRUCTION SHALL BE 6" DUCTILE IRON PIPE CLASS 350, OR SDR-21 PVC PIPE. PIPE JOINTS REQUIRING JOINT RESTRAINT SHALL BE DONE SO USING RESTRAINED JOINT CONSTRUCTION OR GRIP RINGS THAT PROVIDE FULL CIRCUMFERENTIAL PIPE RESTRAINT.

10. PROPOSED WATER LINE FOR DIRECTIONAL DRILLING SHALL BE 8" HDPE WITH MATERIAL DESIGNATION PE 4710 THAT CONFIRMS TO NSF-61

11. THREE FULL JOINTS OF DI PIPE MUST BE INSTALLED AT EACH END OF THE HDPE PIPE.

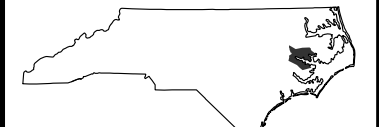
12. ALL PROPOSED WATER LINE FITTINGS (BENDS, TEES, REDUCERS, PLUGS, ECT.) SHALL BE DUCTILE IRON PRESSURE CLASS 350 AND SHALL BE ADEQUATELY RESTRAINED USING RESTRAINED JOINT CONSTRUCTION OR GRIP RINGS THAT PROVIDE FULL CIRCUMFERENTIAL PIPE RESTRAINT.

13. ALL VALVES ON THE WATER LINE SHALL BE GATE VALVES WITH MECHANICAL JOINT ENDS.

BP2-R028

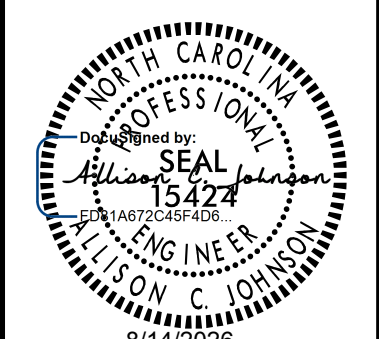
UC-3

NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
BEAUFORT COUNTY



UTILITY DESIGN UNIT

UTILITY CONSTRUCTION
PLANS ONLY



8/14/2026

DESIGNED BY: ACJMS

DRAWN BY: MS

CHECKED BY: ACJ/BF

APPROVED BY: ACJ

REVISED:

UTILITIES ENGINEERING SEC.
PHONE:(919)707-6690
FAX:(919)250-4151

PREPARED BY

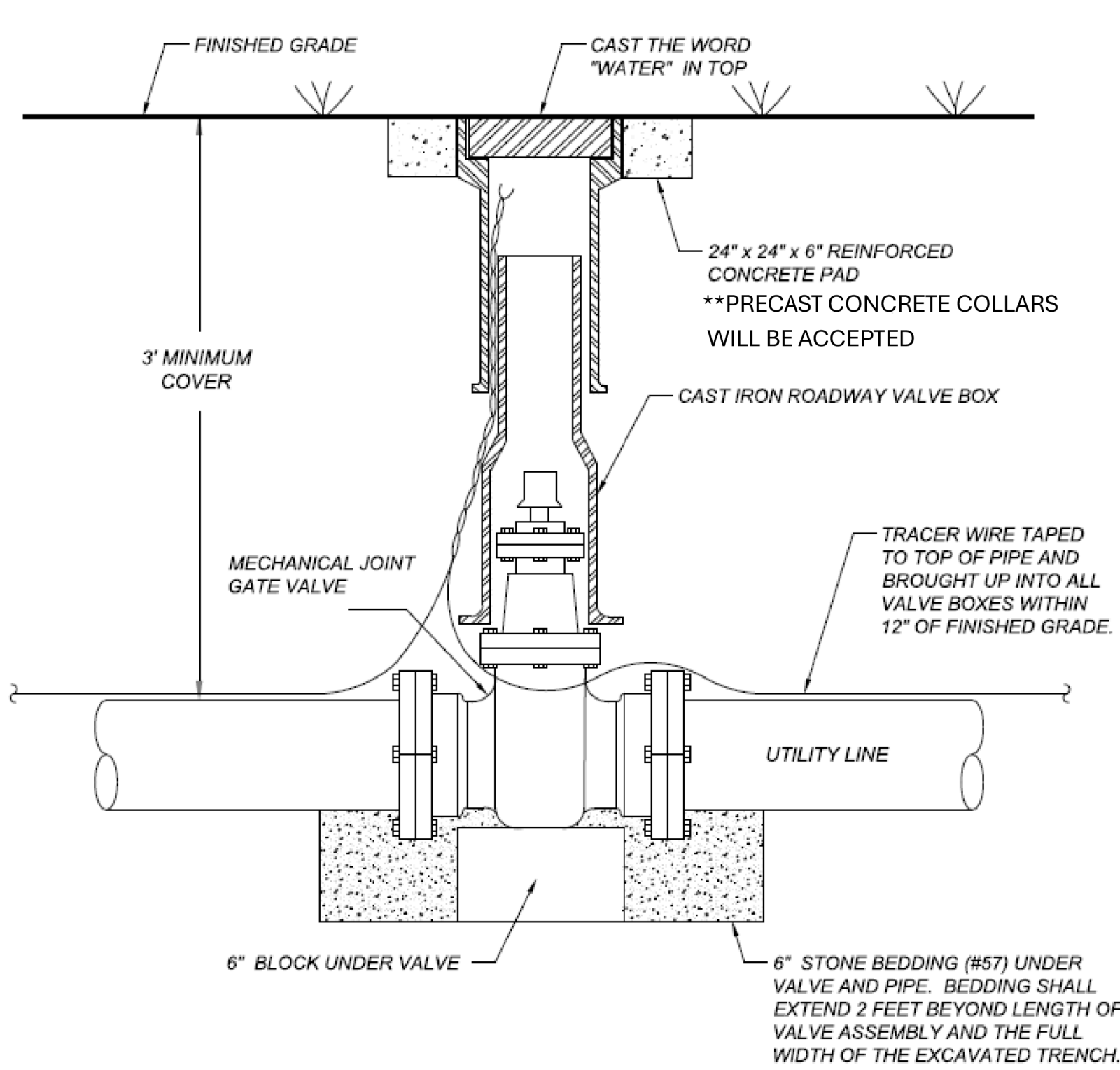


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Charlotte, NC 28277 | 704.375.3456

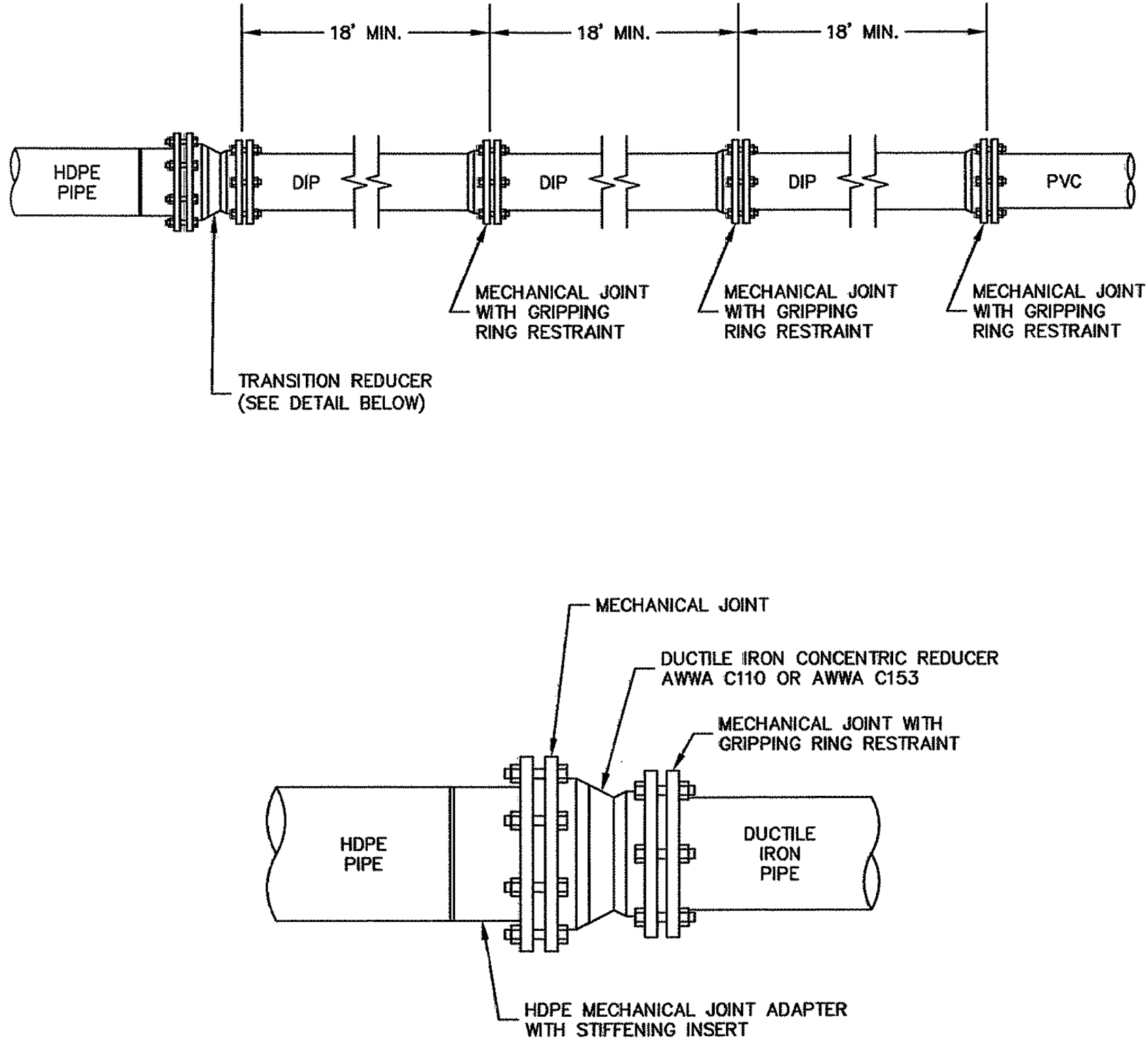
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REVISIONS



GATE VALVE DETAIL

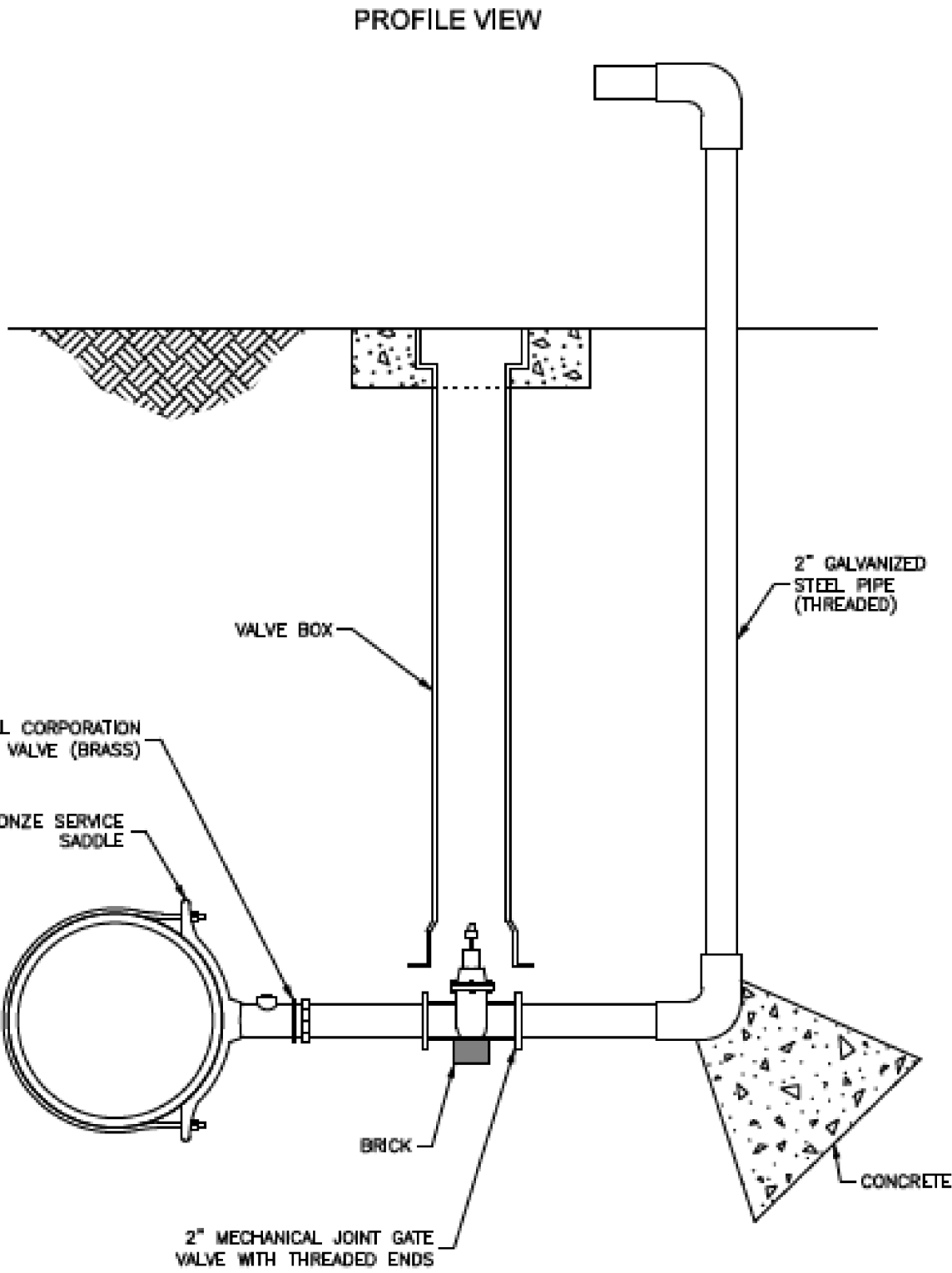
NOT TO SCALE



TRANSITION REDUCER

TRANSITION REDUCER AND JOINT RESTRAINT FOR HDPE FORCE MAIN CROSSING
STORM DRAIN, DITCH, STREAM, CREEK OR RIVER

2" TEMPORARY BLOW OFF DETAIL



NOTES:

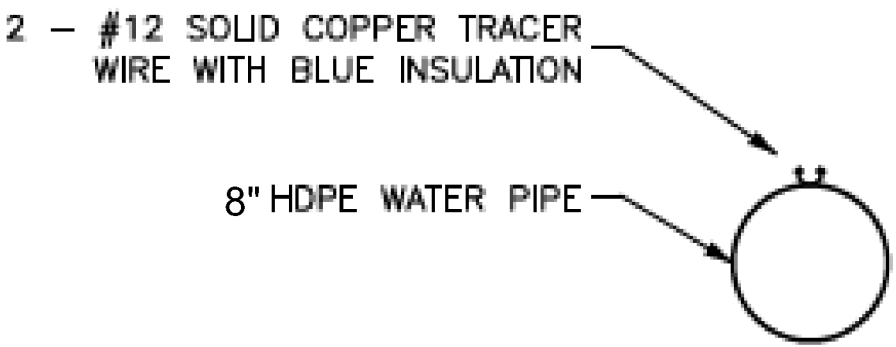
1. CONTRACTOR SHALL REMOVE TEMPORARY BLOW-OFF FOLLOWING FLUSHING AND CHLORINATION OF NEW WATER LINE
2. BALL CORPORATION VALVE IS TO BE PLUGGED OR CAPPED FOLLOWING REMOVAL OF TEMPORARY BLOW-OFF

BORE DETAIL

PROFILE VIEW

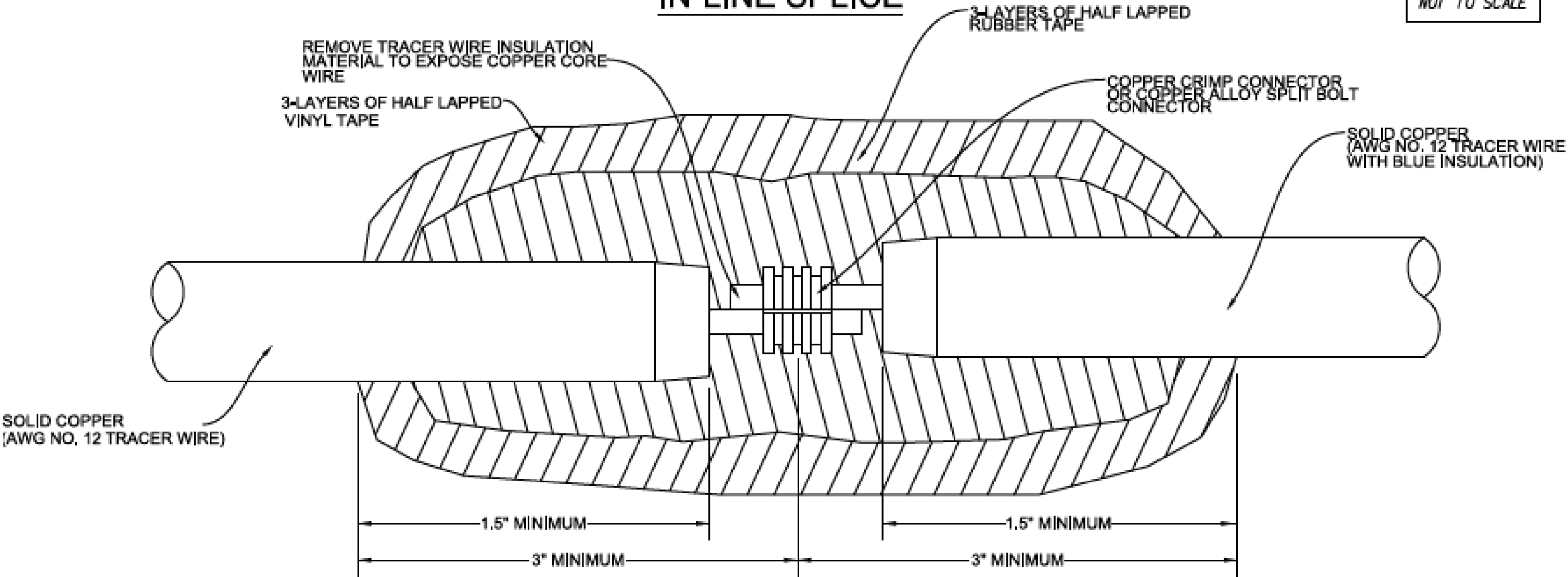


8" HDPE WATER LINE



IN-LINE SPLICE

NOT TO SCALE



NOTES:

1. IN-LINE SPLICES SHALL BE LIMITED TO THE GREATEST EXTENT POSSIBLE. TRACER WIRE SHALL BE AS CONTINUOUS AS POSSIBLE WITHOUT SPLICES
2. IN-LINE SPLICES SHALL INCLUDE 3 FEET OF SLACK WIRE ON EACH SIDE OF EACH SPLICE

REVISIONS

BP2-R028

UC-3A

NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
BEAUFORT COUNTY

UTILITY DESIGN UNIT
UTILITY CONSTRUCTION
PLANS ONLY

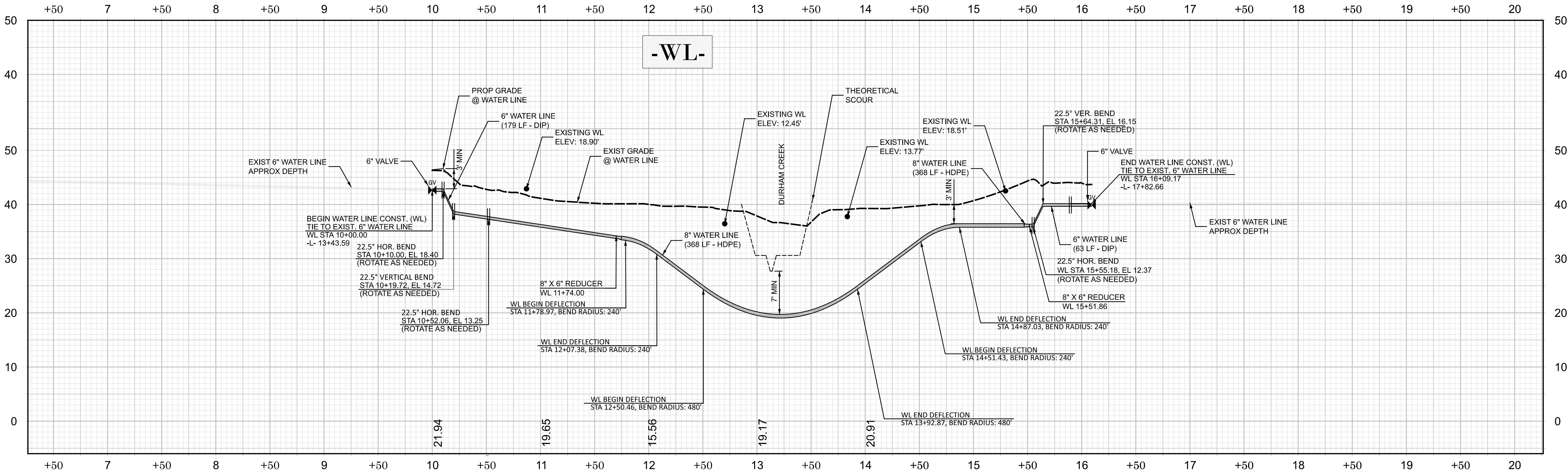
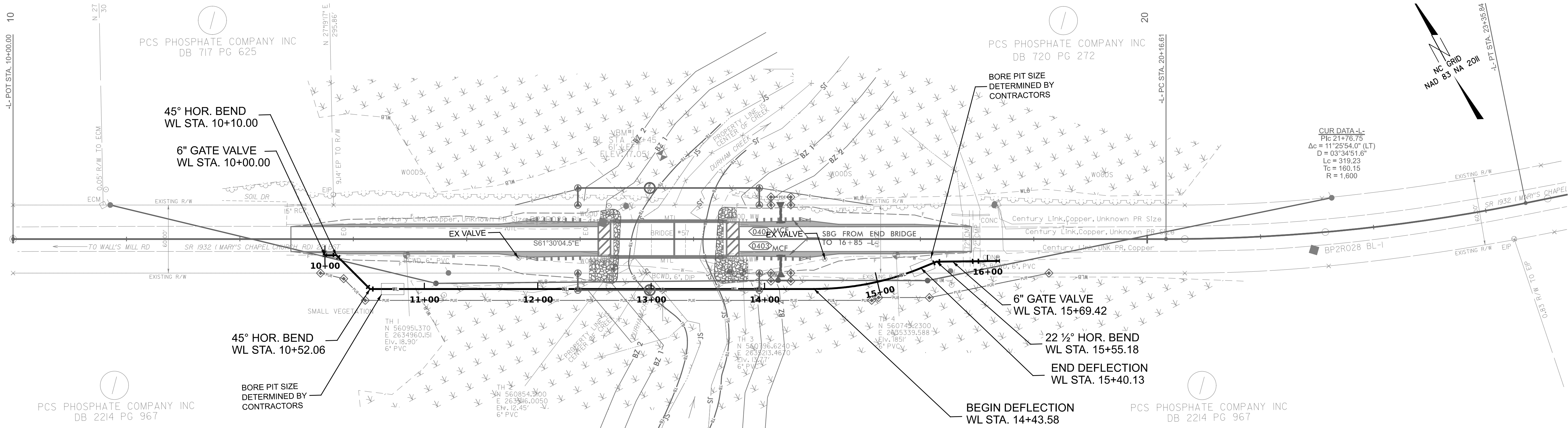
PROFESSIONAL SEAL
NORTH CAROLINA
ENGINEER
15474
WILLSON C. JOHNSON
8/14/2026

DESIGNED BY: ACJ/MS
DRAWN BY: MS
CHECKED BY: ACJ/BF
APPROVED BY: ACJ

REVISED:
UTILITIES ENGINEERING SEC.
PHONE: (919) 707-6690
FAX: (919) 250-4151

PREPARED BY
AMERICAN Engineering
Shaping the Future, Together
11525 N. Community House Road | Suite 325
Charlotte, NC 28227 | 704.375.2458

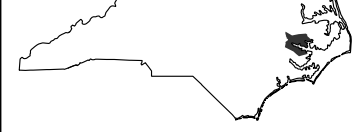
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BP2-R028

UC-4

NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
BEAUFORT COUNTY



UTILITY DESIGN UNIT

UTILITY CONSTRUCTION
PLANS ONLY



DESIGNED BY: ACJ/MS

DRAWN BY: MS

CHECKED BY: ACJ/BF

APPROVED BY: ACJ

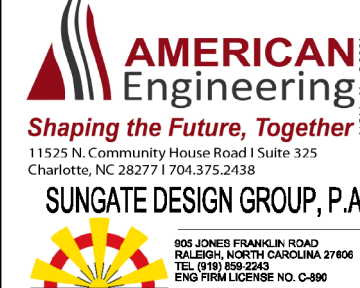
REVISED:

UTILITIES ENGINEERING SEC.

PHONE: (919) 707-6690

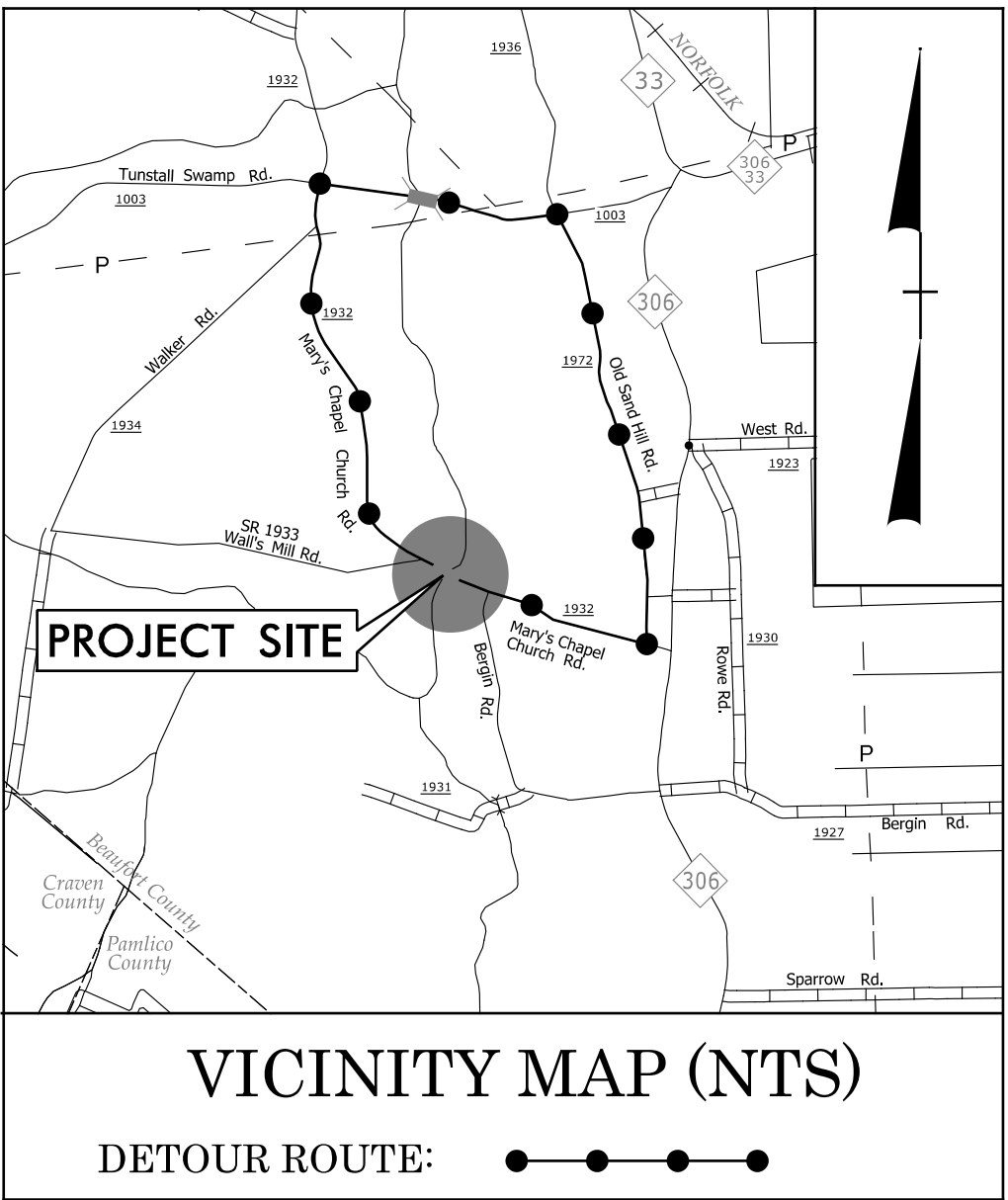
FAX: (919) 250-4151

PREPARED BY



TIP PROJECT: BP2.R028

CONTRACT: -----



STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

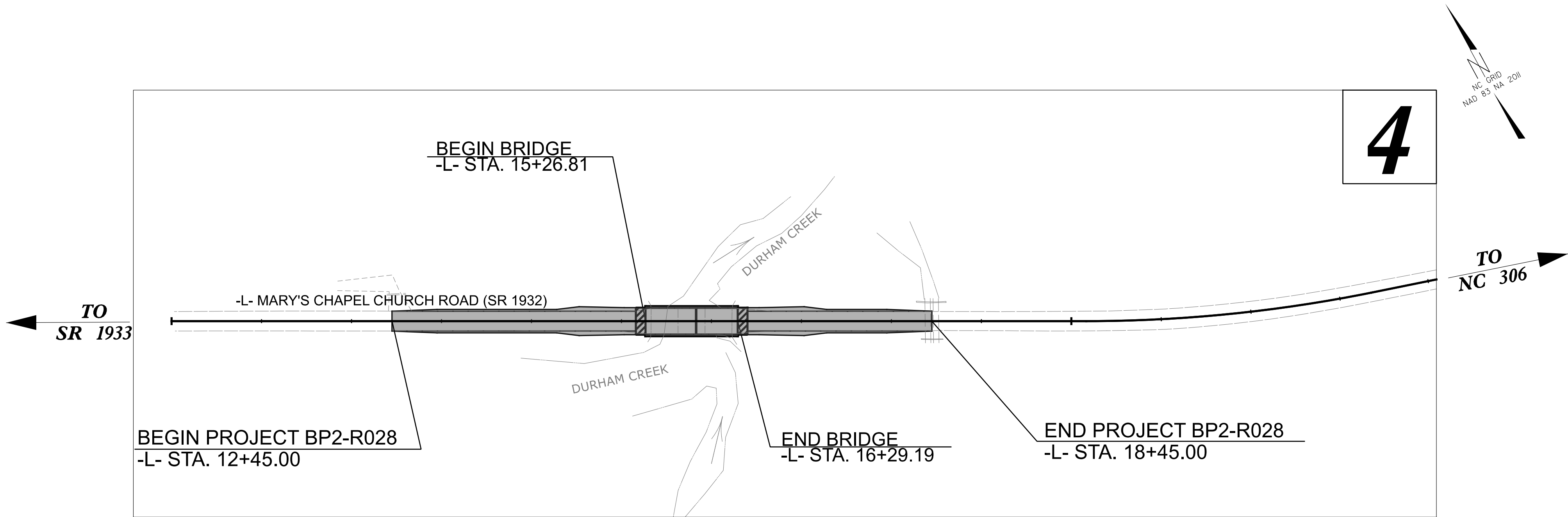
UTILITIES BY OTHERS PLANS
BEAUFORT COUNTY

**LOCATION: BRIDGE 060057 OVER DURHAM CREEK
ON SR 1932 (MARY'S CHAPEL ROAD)**

TYPE OF WORK: UTILITY WORK BY OTHERS RELOCATION

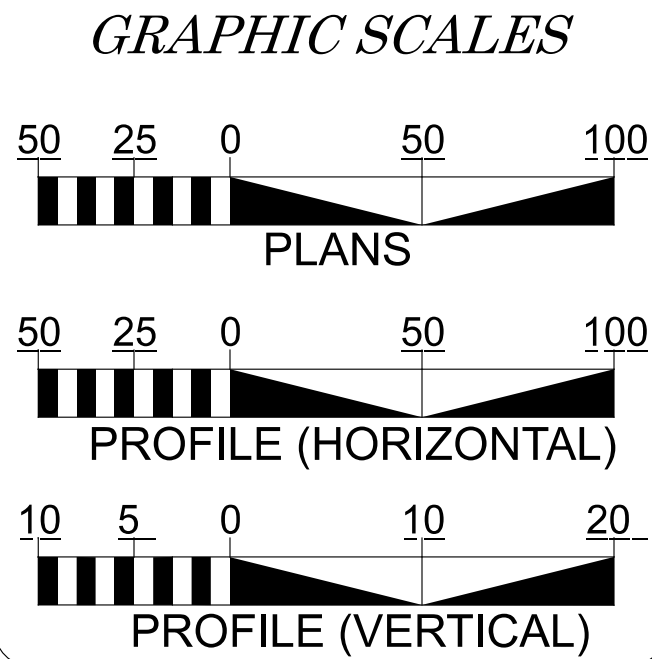
T.I.P. NO.	SHEET NO.
BP2.R028	UO-1

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



INCOMPLETE PLANS
DO NOT USE FOR CONSTRUCTION

DOCUMENT NOT CONSIDERED FINAL
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<u>SHEET NO.:</u>	<u>DESCRIPTION:</u>
UC-1	TITLE SHEET
UC-2	UTILITY CONSTRUCTION SHEETS

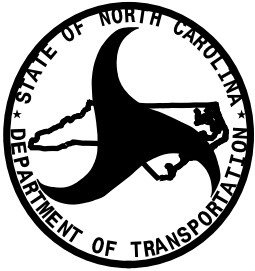
UTILITY OWNERS WITH CONFLICTS

- (A) POWER - BEAUFORT COUNTY
(B) POWER - BRIGHTSPEED

PREPARED IN THE OFFICE OF:

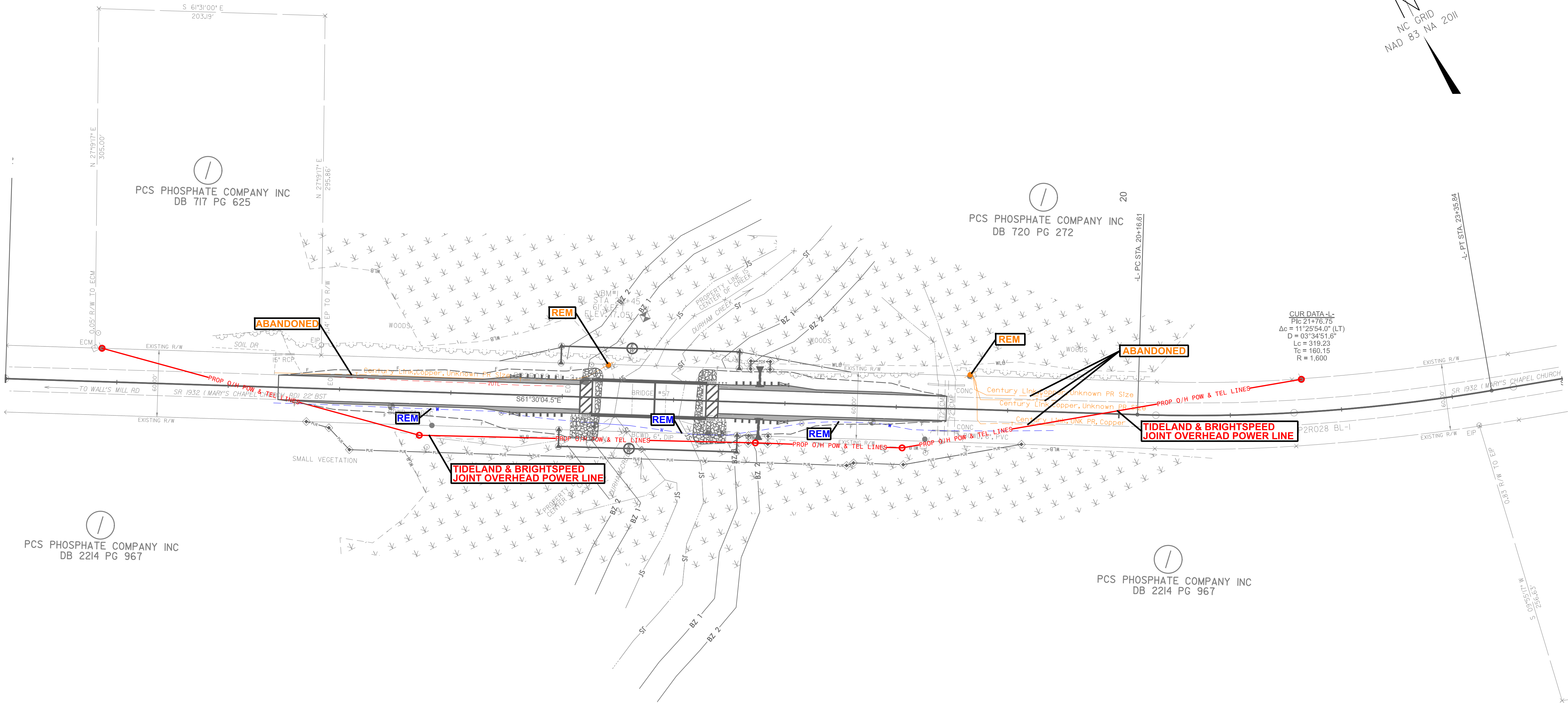


ALLISON C. JOHNSON, PE	CONSULTANT CONTACT #1
BENJAMIN C. PICKERING II, PE	CONSULTANT CONTACT #2
	CONSULTANT CONTACT #3



DIVISION OF HIGHWAYS
UTILITIES UNIT
1555 MAIL SERVICES CENTER
RALEIGH, NC 27699-1555
PHONE (919) 707-6690
FAX (919) 250-4151

	UTILITIES REGIONAL ENGINEER
	UTILITIES ENGINEER
	UTILITIES AREA COORDINATOR
	UTILITIES COORDINATOR



BP2-R028

U0-2

NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
BEAUFORT COUNTY



ROADWAY DESIGN UNIT

ROADWAY DESIGN
ENGINEER

HYDRAULICS
ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PREPARED BY



Shaping the Future, Together

11525 N. Community House Road | Suite 325
Charlotte, NC 28277 | 704.375.2438



400 E. 1st Street, Suite 100 | Raleigh, North Carolina 27601
Phone: 919.858.2245 | Fax: 919.858.2246

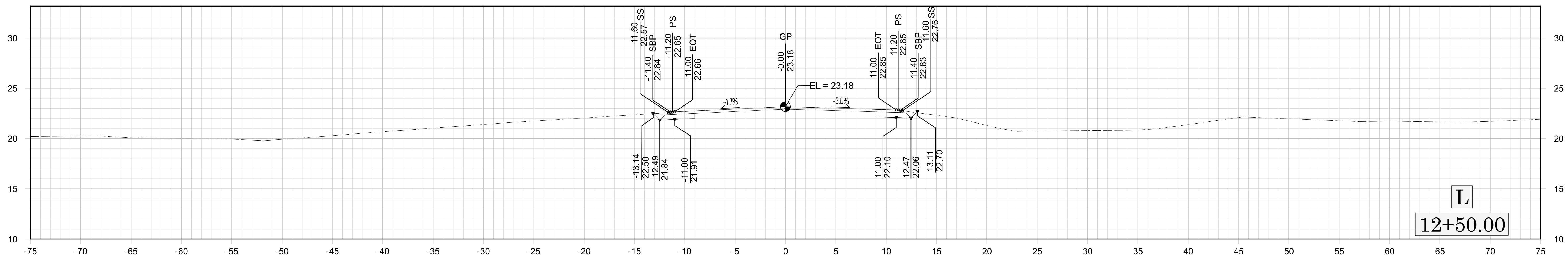
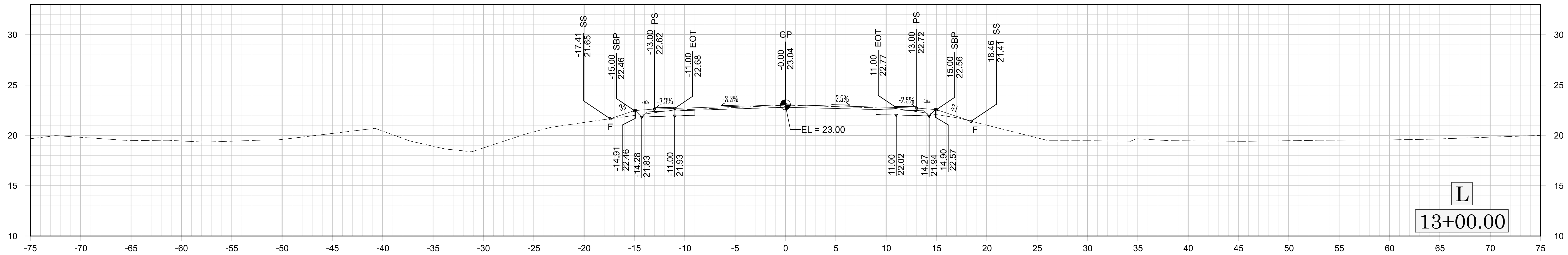
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REVISIONS

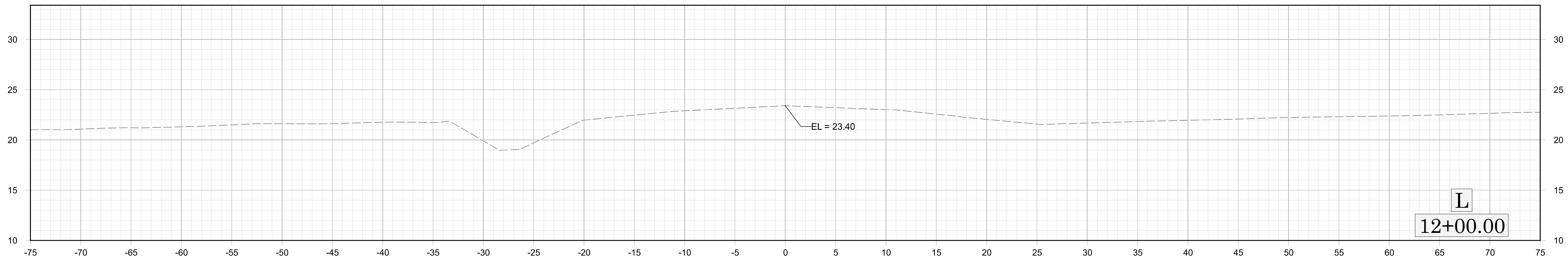
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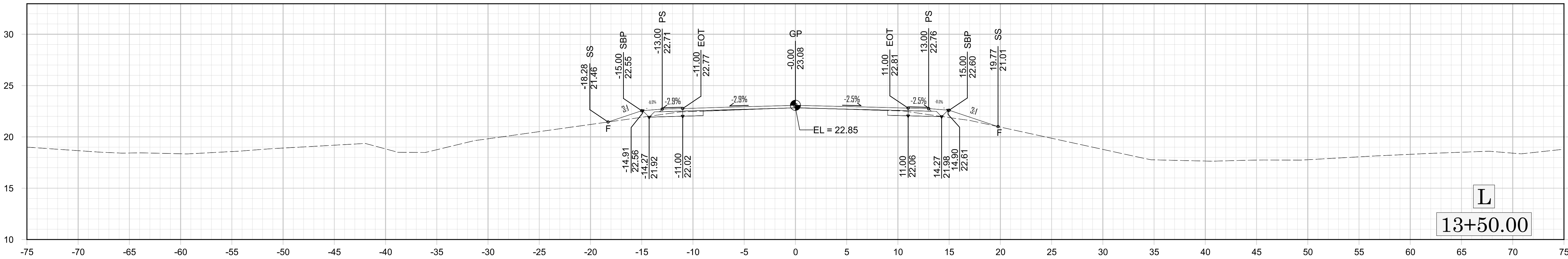
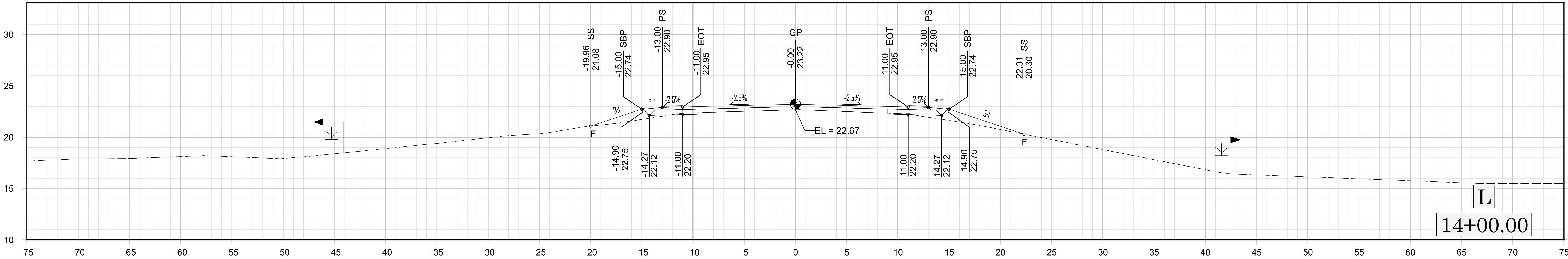
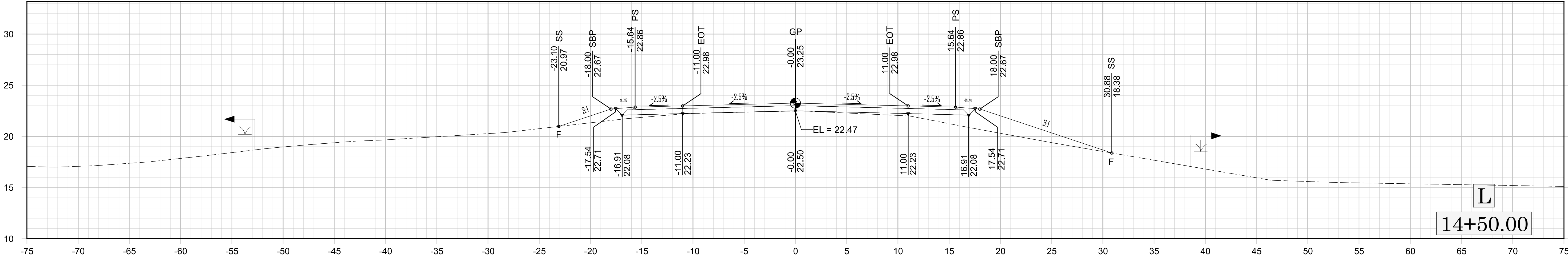
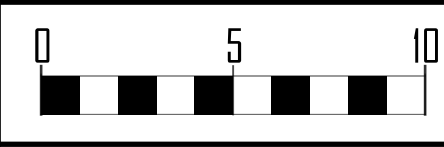
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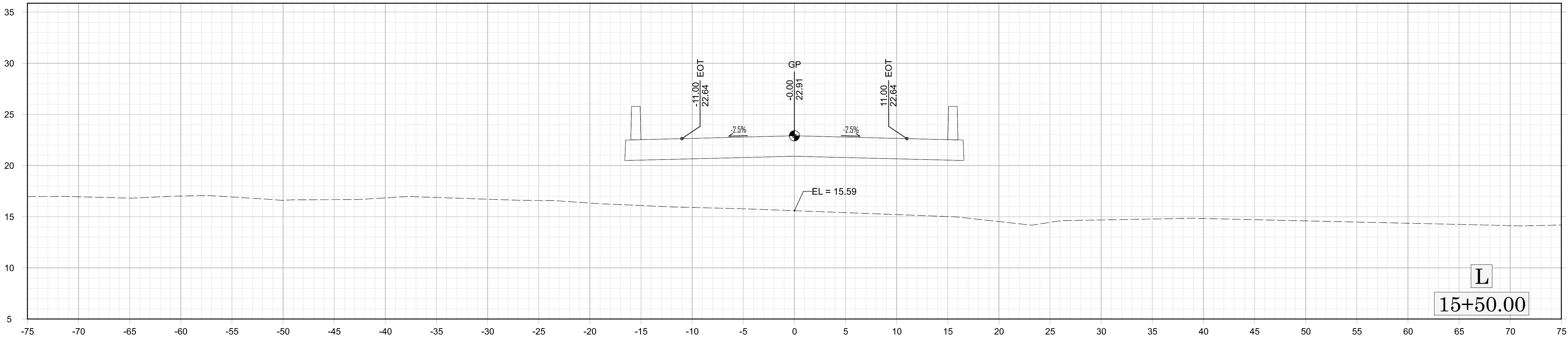
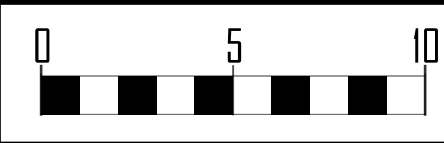
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12+50	17.0	0.8
13+00	10.8	4.6
13+50	3.9	9.2
14+00	0.4	23.2
14+50	0.1	47.6
15+00	0.2	34.3
15+50	0.0	0.0
16+00	2.1	23.2
16+50	3.6	31.3
17+00	5.7	18.2
17+50	12.2	6.5
18+00	15.6	0.6



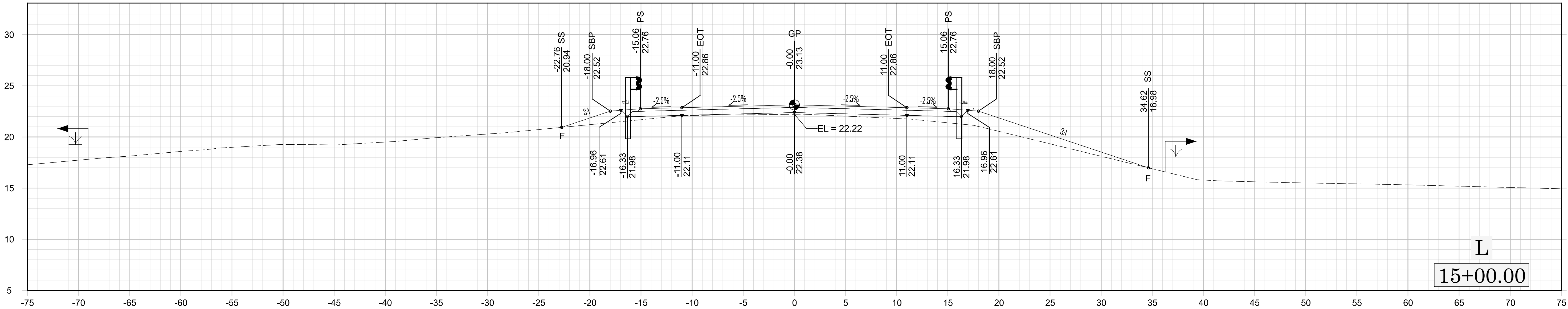
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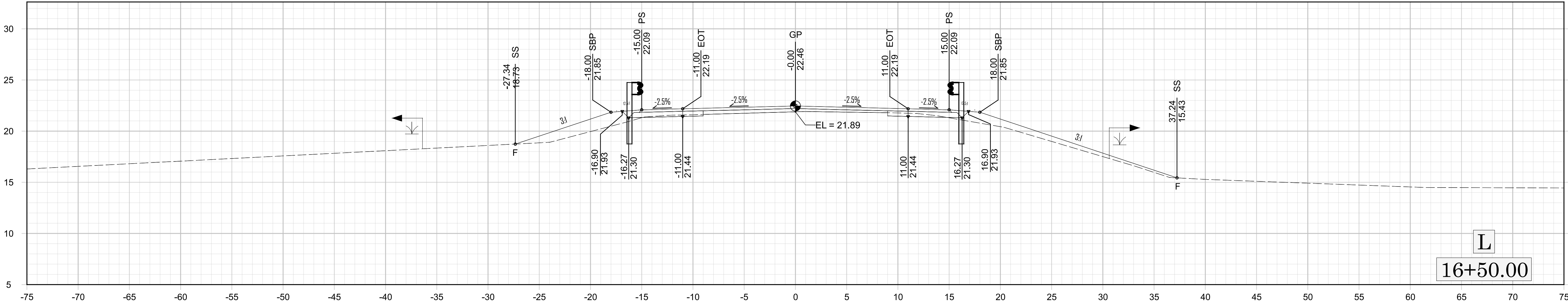
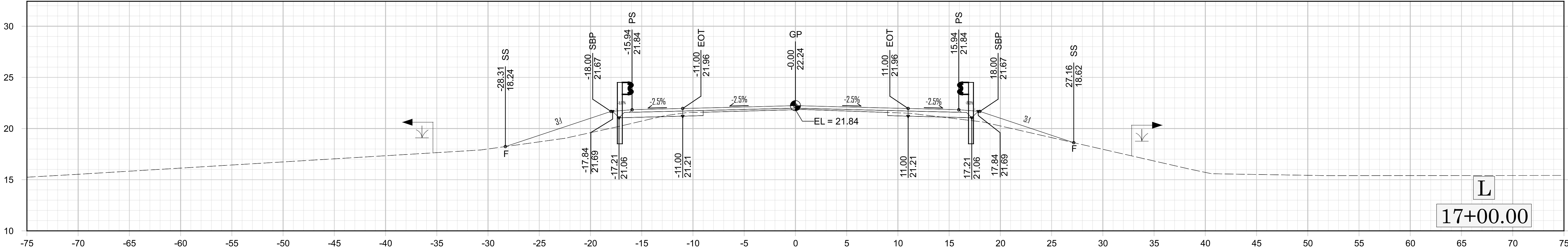
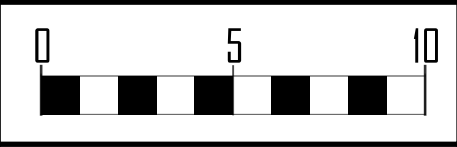




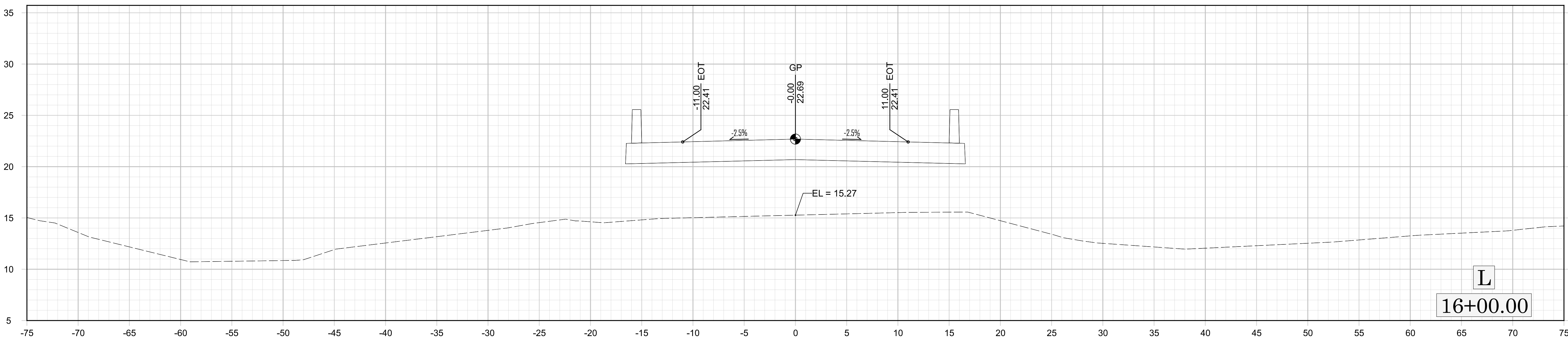


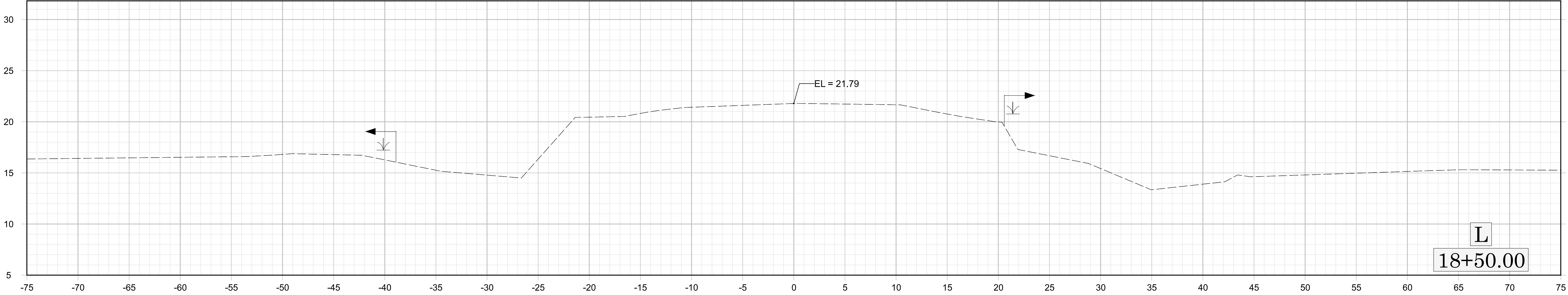
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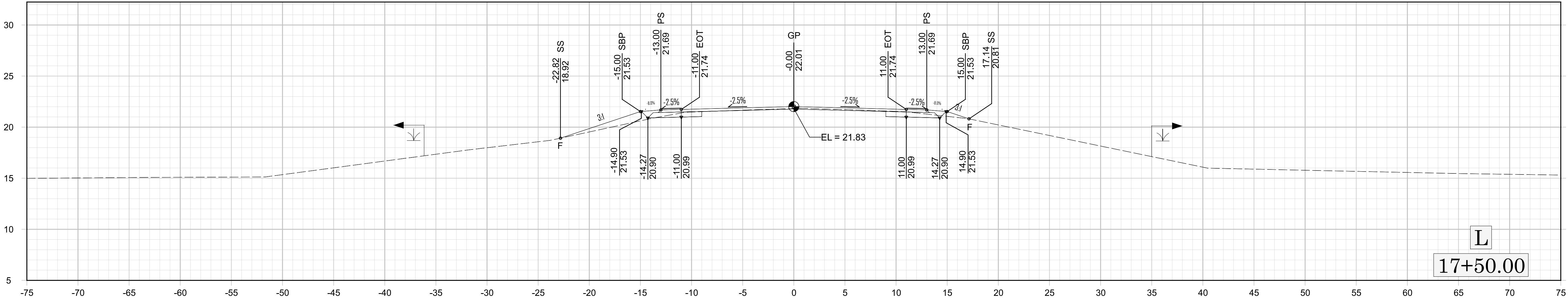
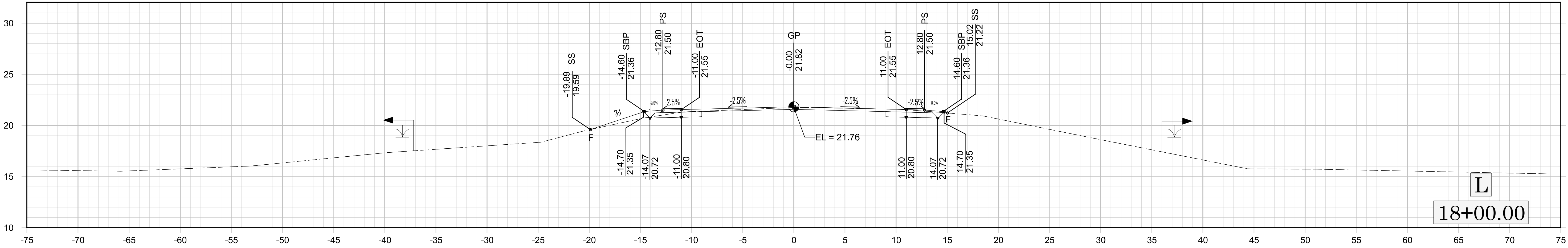


END BRIDGE -L- STA. 16+29±



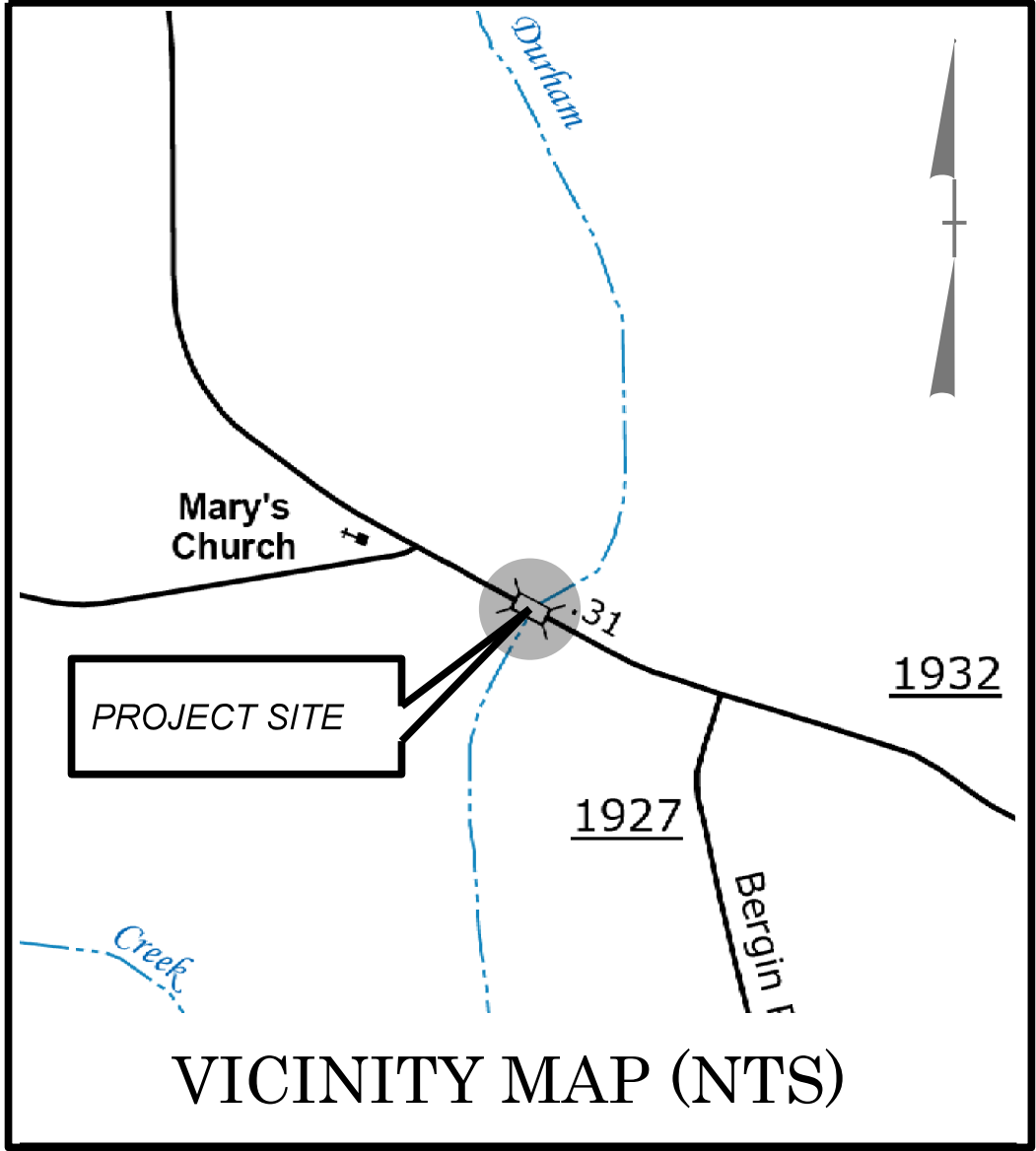


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TIP PROJECT: BP2-R028.1

CONTRACT:



VICINITY MAP (NTS)

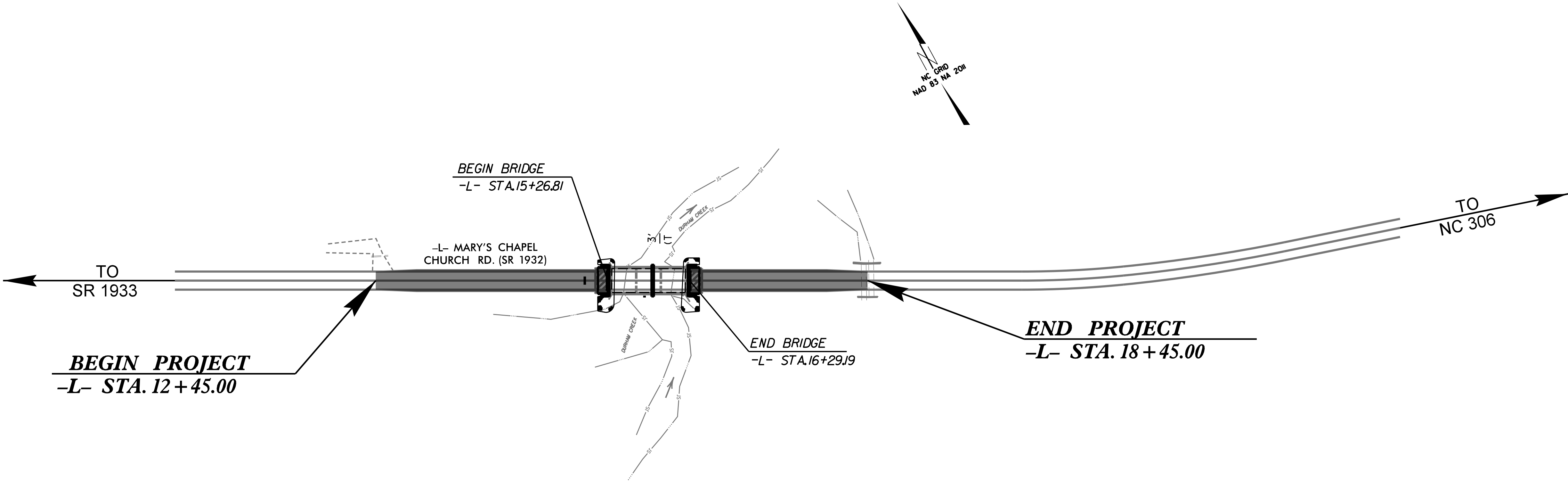
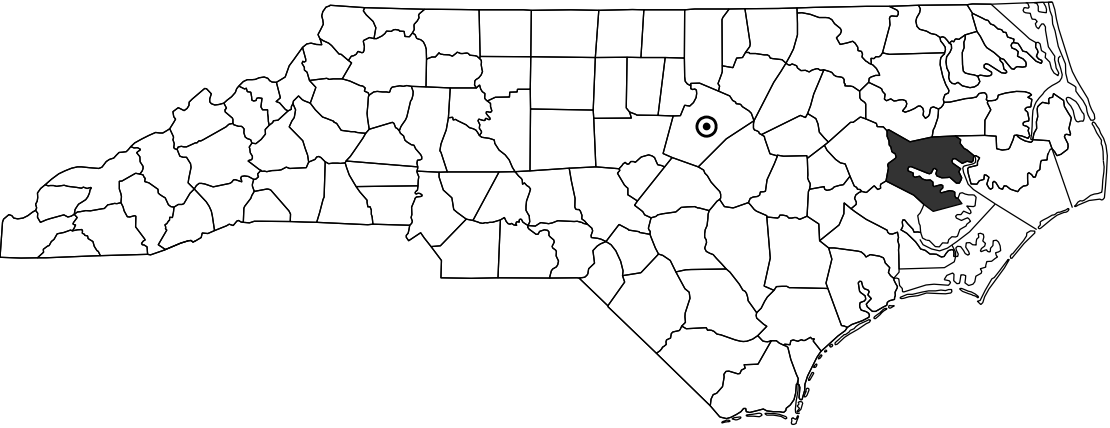
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

BEAUFORT COUNTY

LOCATION: *REPLACE BRIDGE # 060057 OVER DURHAM CREEK
ON SR 1932 (MARY'S CHAPEL CHURCH ROAD)*

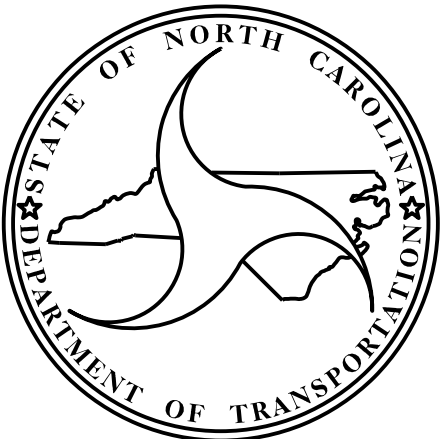
TYPE OF WORK: *GRADING, PAVING, DRAINAGE & STRUCTURE*

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	BP2-R028.1	11	22
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION	
BP2-R028.1	N/A	PE	
BP2-R028.1	N/A	UTIL	
BP2-R028.1	N/A	RW	



STRUCTURE

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION
DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED



DESIGN DATA
ADT 2013 = 760
ADT _____
K = N/A %
D = N/A %
T = 6 % *
V = 60 MPH
* TTST =N/A DUAL N/A
FUNC CLASS =
RUAL LOCAL
SUB-REGIONAL TIER

PROJECT LENGTH

LENGTH OF ROADWAY TIP PROJECT BP2.R028.1 = 0.095 MILES
LENGTH OF STRUCTURE TIP PROJECT BP2.R028.1 = 0.019 MILE
TOTAL LENGTH OF TIP PROJECT BP2.R028.1 = 0.114 MILES

NCDOT CONTACT: CASEY WHITLEY PE, PLS

Prepared for:
DIVISION OF HIGHWAYS
DIVISION TWO
2815 Rouse Road Extension, Kinston, NC, 28504
2024 STANDARD SPECIFICATIONS

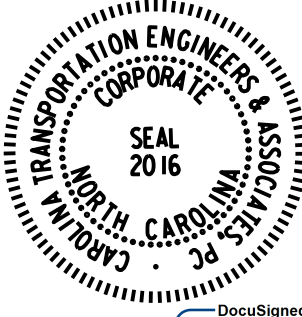
RIGHT OF WAY DATE:
JANUARY 30, 2026

LETTING DATE:
SEPTEMBER 9, 2026

Prepared in the office of:

CarolinaTEA
Carolina Transportation Engineers & Associates, PC

Carolina Transportation Engineers
& Assoc., PC
3700 Arco Corporate Drive
Suite 405
Charlotte, NC 28273
Telephone: (980) 722-6065



DocuSigned by:
sacksone kounbandith

SACKSONE KOUNBANDITH, PE
STRUCTURES DESIGN ENGINEER



8/12/2026

2024 STANDARD SPECIFICATIONS

15+00

16+00

17+00

SPAN A

SPAN B

FIX.

FIX.

APPROXIMATE
NATURAL
GROUND LINE

FILL FACE @ END BENT 1
STA. 15+26.81 -L-
G.P. EL. 23.01

BEGIN FRONT SLOPE
STA 15+20.66 -L-
G.P. EL. 23.05

1'-7" RIP RAP
BERM (TYP.)

EL. 22.0 ±

LOW CHORD @
END BENT 1
EL. 20.71

2'-0" MIN. PILE
EMBED. (TYP.)

HP 12 X 53 STEEL PILES
(TYP. EA. END BENT)

1'-0" MIN. EARTH BERM
(TYP.)

END BENT 1

EL. 14.0 ±

EXCAVATE TO
EL. 18.30

EL. 12.0 ±

20" PRESTRESSED
CONCRETE PILES

EXISTING
SUBSTRUCTURE
(TYP.)

100 YR.
EL. 20.20

N.W.S. ①
EL. 15.00

FIX.

FIX.

1'-6" TO UNCLASSIFIED
EXCAVATION (TYP.)

EL. 22.0 ±

LOW CHORD @
END BENT 2
EL. 20.18

EXCAVATE TO
EL. 17.90

25 YR.
EL. 19.30

EL. 14.0 ±

3'-6" (TYP.)

FILL FACE @ END BENT 2
STA. 16+29.19 -L-
G.P. EL. 22.55

BEGIN FRONT SLOPE
STA 16+35.74 -L-
G.P. EL. 22.52

1'-0" MIN.
(TYP.)

SLOPE 1½:1 (TYP.)

CLASS II RIP RAP
(2'-0" THICK) (TYP.)

END BENT 2

SECTION ALONG -L-

TOTAL BRIDGE LENGTH = 102'-4½" (FILL FACE TO FILL FACE)

56'-2¼"
(SPAN A)

46'-2¼"
(SPAN B)

1'-0" EARTH BERM
EL. 15.53

1'-0" EARTH BERM
EL. 15.10

CLASS II
RIP RAP
(TYP.)

C BRIDGE
STA. 15+78.00 -L-

5'-0"

W.P. #1
STA. 15+26.81 -L-
FILL FACE @ END BENT 1

BEGIN APPROACH SLAB
STA 15+15.94 -L-

TO SR 1933
(WALL'S MILL RD)
S61°30'04.5"E

BEGIN FRONT SLOPE
STA 15+20.66 -L-

EXISTING
STRUCTURE
(TYP.)

DURHAM CREEK

90°00'00" (TYP.)

W.P. #2
STA. 15+83.00 -L-
@ BENT 1

W.P. #3
STA. 16+29.19 -L-
FILL FACE @ END BENT 2

END APPROACH SLAB
STA 16+40.06 -L-

BEGIN FRONT SLOPE
STA 16+35.74 -L-

TO SR 1927
(BERGIN RD)

PLAN

(PILES NOT SHOWN IN PLAN VIEW)

(+) 0.3000% (-) 0.4500%
PVI STA. 14+47.44
EL. = 23.37
VC = 125
(-) 0.4500% (+) 0.0662%
PVI STA. 18+05.72
EL. = 21.76
VC = 75

GRADE DATA -L-

HYDRAULIC DATA:

DESIGN DISCHARGE = 1500 C.F.S.
FREQUENCY OF DESIGN FLOOD = 25 YRS.
DESIGN HIGH WATER ELEVATION = 19.3
DRAINAGE AREA = 19 SQ. MI.
BASE DISCHARGE @ 100 = 2200 C.F.S.
BASE HIGH WATER ELEVATION = 20.2

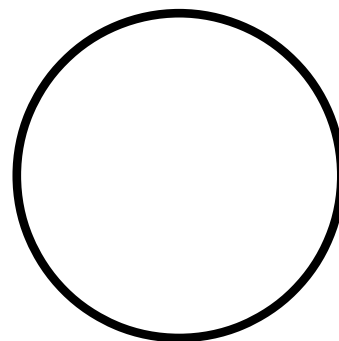
OVERTOPPING FLOOD DATA:

OVERTOPPING DISCHARGE = 3200 C.F.S.
FREQUENCY OF OVERTOPPING FLOOD = 500 + YRS.
OVERTOPPING FLOOD ELEVATION = 21.7*
*OT ROADWAY @ 19+13 -L- (SAG)

WS EL. TAKEN @ RIVER STATION 74894.1

① N.W.S. = NORMAL WATER SURFACE

I HEREBY CERTIFY THESE PLANS
ARE THE AS-BUILT PLANS



PROJECT NO. **BP2-R028.1**

BEAUFORT COUNTY

STATION: **15+78.00 -L-**

SHEET 1 OF 3 REPLACES BRIDGE NO. 060057

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING

FOR BRIDGE ON SR 1932
(MARY CHAPEL CHURCH ROAD)
OVER DURHAM CREEK
BETWEEN SR 1933 AND SR 1927
30'-10" CLEAR ROADWAY - 90°SKEW

REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	
1			3		S-2
2			4		TOTAL SHEETS
					22

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

CarolinaTEA
Carolina Transportation Engineers & Associates, PC

Carolina Transportation Engineers
& Assoc., PC
3700 Arco Corporate Drive
Suite 405
Charlotte, NC 28273
Telephone: (980) 722-6065



DocuSigned by:
s.kounbandith

7/31/2026

DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

DRAWN BY : I. ABDELAZIZ DATE : 8-26
CHECKED BY : S. KOUNBANDITH DATE : 8-26
DESIGN ENGINEER OF RECORD: S. KOUNBANDITH DATE : 8-26

3/9/2026

SUMMARY OF PILE INFORMATION/INSTALLATION														
(BLANK ENTRIES INDICATE ITEM IS NOT APPLICABLE TO STRUCTURE)														
END BENT/ BENT NO., PILE(S) #-# (E.G., BENT 1, PILES 1-5)	NUMBER OF PILES PER LINE	FACTORED RESISTANCE PER PILE (KIPS)	PILE CUT-OFF (TOP OF PILE) ELEVATION (FT.)	ESTIMATED PILE LENGTH PER PILE (FT.)	SCOUR CRITICAL ELEVATION (FT.)	DRIVEN PILES			PREDRILLING FOR PILES**			DRILLED IN PILES		
						MIN. PILE TIP (TOP NO HIGHER THAN) ELEV. (FT.)	REQUIRED DRIVING RESISTANCE (RDR)* PER PILE (KIPS)	TOTAL PILE REDRIVES QUANTITY (EACH)	PREDRILLING LENGTH PER PILE (LIN. FT.)	PREDRILLING ELEVATION (ELEV NOT TO PREDRILL BELOW) (FT.)	MAXIMUM PREDRILLING DIA. (INCHES)	PILE EXCAVATION (BOTTOM OF HOLE) ELEV. (FT.)	PILE EXCAVATION NOT IN SOIL PER PILE (LIN. FT.)	PILE EXCAVATION IN SOIL PER PILE (LIN. FT.)
END BENT 1, PILES (1-7)	7	145	18.53	80			210	4						
BENT 1, PILES (1-7)	7	245	18.84	60	1.8	-15	370	4						
END BENT 2, PILES (1-7)	7	145	18.10	80			210	4						
TOTAL QUANTITY:								12						

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

** PREDRILLING FOR OILES IS REQUIRED FOR END BENTS/BENTS WITH A PREDRILLING LENGTH AND AT THE CONTRACTOR'S OPTION FOR END BENTS/BENTS WITH PREDRILLING INFORMATION BUT NO PREDRILLING LENGTH

PILE DESIGN INFORMATION

(BLANK ENTRIES INDICATE ITEM IS NOT APPLICABLE TO STRUCTURE)

END BENT/ BENT NO., PILE(S) #-# (E.G., BENT 1, PILES 1-5)	FACTORED AXIAL LOAD PER PILE (KIPS)	FACTORED DRAG LOAD PER PILE (KIPS)	FACTORED DEAD LOAD * PER PILE (KIPS)	DYNAMIC RESISTANCE FACTOR	NOMINAL DRAG RESISTANCE PER PILE (KIPS)	NOMINAL SCOUR RESISTANCE PER PILE (KIPS)
END BENT 1, PILES (1-7)	145			0.7		
BENT 1, PILES (1-7)	245		3	0.7		12
END BENT 2, PILES (1-7)	145			0.7		

* FACTORED DEAD LOAD IS FACTORED WEIGHT OF PILE ABOVE 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 (FT.)	DPT TESTING QUANTITY (EACH)
END BENT 1, PILES (1-7)	85	1
BENT 1, PILES (1-7)	65	2
END BENT 2, PILES (1-7)	85	1
TOTAL QUANTITY:		4

PILE ORDER LENGTHS FOR CONCRETE PILES	
END BENT/ BENT NO. (s)	PILE ORDER LENGTH BASIS * (EST OR DPT)
BENT NO.1	DPT

* EST = PILE ORDER LENGTHS FROM ESTIMATED PILE LENGTHS; DPT = PILE ORDER LENGTHS BASED ON DYNAMIC PILE TESTING. FOR GROUPS OF END BENTS/BENTS WITH PILE ORDER LENGTHS BASED ON DPT TESTING, THE FIRST END BENT/BENT NO. LISTED FOR EACH GROUP IS THE REPRESENTATIVE END BENT/BENT WITH THE DPT.

NOTES:

- FOR PILES, SECITON 450 OF THE STANDARD SPECIFICATIONS.
- IT HAS BEEN ESTIMATED THAT A HAMMER WITH AN EQUIVALENT RATED ENERGY IN THE RANGE OF 25,000 - 45,000 FT-LBS PER BLOW WILL BE REQUIRED TO DRIVE PILES AT END BENT NO.1 AND END BENT NO.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.
- IT HAS BEEN ESTIMATED THAT A HAMMER WITH AN EQUIVALENT RATED ENERGY IN THE RANGE OF 40,000 - 70,000 FT-LBS PER BLOW WILL BE REQUIRED TO DRIVE PILES AT END BENT NO.1. 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.
- THE PILE FOUNDATION TABLES ARE BASED ON THE BRIDGE SUBSTRUCTURE DESIGN AND FOUNDATION RECCOMENDATIONS SEALED BY A NORTH CAROLINA PROFESSIONAL ENGINEER (ANDREW DRDA, *060350) ON 06-6-2025
- 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, PIPE PILE PLATES, PERMANENT STEEL CASING, SPTS, TIPs, CSL TESTING, SID INSPECTIONS AND PITs WHEN NECESSARY.

PROJECT NO. **BP2-R028.1**
BEAUFORT COUNTY
STATION: **15+78.00 -L-**

SHEET 2 OF 3

DRAWN BY :	J. BAKER	DATE :	8-26
CHECKED BY :	S. KOUNBANDITH	DATE :	8-26
DESIGN ENGINEER OF RECORD:	S. KOUNBANDITH	DATE :	8-26

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

CarolinaTEA

Carolina Transportation Engineers & Associates, PC

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3700 Arco Corporate Drive
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Charlotte, NC 28273
Telephone: (980) 722-6065

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SIGNATURES COMPLETED

7/31/2026

Seal

Seal

Seal

Seal

Seal

Seal

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING
PILE FOUNDATION TABLES

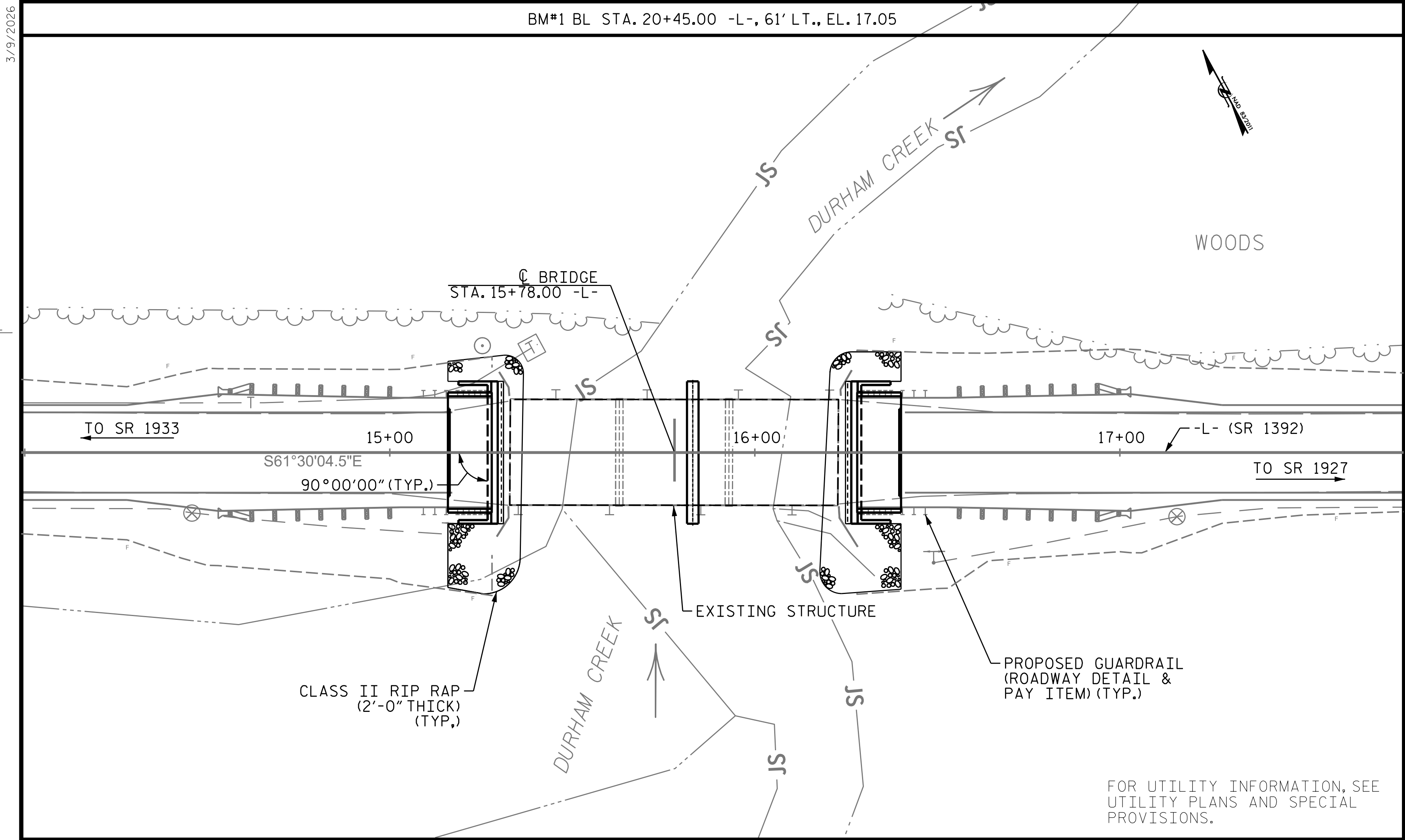
REVISIONS					SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	S-3
1			3			TOTAL SHEETS
2			4			22

3/9/2026

+

+

BM#1 BL STA. 20+45.00 -L-, 61' LT., EL. 17.05



LOCATION SKETCH

NOTES:

ASSUMED LIVE LOAD = HL-93 ALTERNATE LOADING.

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

THE 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 ON SHEET S-2 SHALL BE EXCAVATED FOR A DISTANCE OF 30' AT 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 CONSISTS OF 2 SPAN @ 30.5' AND 1 SPAN @ 30' WITH A CHANNEL BEAM SUPERSTRUCTURE AND A CLEAR ROADWAY WIDTH OF 29'-0" ON A SUBSTRUCTURE CONSISTING OF CONCRETE CAPS ON TIMBER PILES AND LOCATED AT THE PROPOSED STRUCTURE SHALL BE REMOVED. THE EXISTING STRUCTURE IS PRESENTLY POSTED FOR LOAD LIMIT.

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

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.

FOR ASBESTOS ASSESSMENT, SEE SPECIAL PROVISIONS.

THE SUBSTRUCTURE OF THE EXISTING STRUCTURE 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.

AT THE CONTRACTOR'S OPTION, PRESTRESSED CONCRETE END BENTS MAY BE SUBSTITUTED IN PLACE OF THE CAST-IN-PLACE CAPS. THE CONTRACTOR SHALL COORDINATE WITH THE RESIDENT ENGINEER TO RECEIVE REVISED PLANS AND DETAILS FROM THE STRUCTURES MANAGEMENT UNIT. THE REDESIGN AND ANY ADDITIONAL MATERIALS NEEDED WILL BE AT NO ADDITIONAL COST TO THE DEPARTMENT.

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

TOTAL BILL OF MATERIAL

	REMOVAL OF EXISTING STRUCTURE	ASBESTOS ASSESSMENT	UNCLASSIFIED STRUCTURE EXCAVATION	CLASS A CONCRETE	BRIDGE APPROACH SLABS	REINFORCING STEEL	DYNAMIC PILE TESTING	HP 12 X 53 STEEL PILES		20" PRESTRESSED CONCRETE PILES		PILE REDRIVES	VERTICAL CONCRETE BARRIER RAIL	PLAIN RIP RAP CLASS II (2'-0" THICK)	GEOTEXTILE FOR DRAINAGE	ELASTOMERIC BEARINGS	3'-0" X 2'-0" PRESTRESSED CONCRETE CORED SLABS	
	LUMP SUM	LUMP SUM	LUMP SUM	CU. YDS.	LUMP SUM	LBS.	EA.	NO.	LIN.FT.	NO.	LIN.FT.	EA.	LIN.FT.	TON	SQ. YDS.	LUMP SUM	NO.	LIN.FT.
SUPERSTRUCTURE					LUMP SUM								200.5			LUMP SUM	22	1100
END BENT NO. 1				21.6		2636	1	7	560			4		130	110			
BENT NO. 1				11.3		2129	2			7	420	4						
END BENT NO. 2				21.6		2636	1	7	560			4		130	110			
TOTAL	LUMP SUM	LUMP SUM	LUMP SUM	54.5	LUMP SUM	7401	4	14	1120	7	420	12	200.5	260	220	LUMP SUM	22	1100

PROJECT NO. **BP2-R028.1**
BEAUFORT COUNTY
STATION: **15+78.00 -L-**

SHEET 3 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING
FOR BRIDGE ON SR 1932
(MARY CHAPEL CHURCH ROAD)
OVER DURHAM CREEK
BETWEEN SR 1933 AND SR 1927
30'-10" CLEAR ROADWAY - 90°SKEW

REVISIONS					SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	S-4 TOTAL SHEETS 22
1			3			
2			4			

CarolinaTEA
Carolina Transportation Engineers & Associates, PC

Carolina Transportation Engineers & Assoc., PC
3700 Arco Corporate Drive
Suite 405
Charlotte, NC 28273
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7/31/2026

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

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FINAL UNLESS ALL
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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 (γLL)	MOMENT				SHEAR				LIVE-LOAD FACTORS (γLL)	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	1.055	--	1.75	0.275	1.23	55'	EL	27	0.523	1.23	55'	EL	5.4	0.80	0.275	1.05	55'	EL	27	
		HL-93 (OPERATING)	N/A		1.591	--	1.35	0.275	1.59	55'	EL	27	0.523	1.59	55'	EL	5.4	N/A	--	--	--	--	--	
		HS-20 (INVENTORY)	36.000	②	1.322	47.585	1.75	0.275	1.54	55'	EL	27	0.523	1.47	55'	EL	5.4	0.80	0.275	1.32	55'	EL	27	
		HS-20 (OPERATING)	36.000		1.900	68.396	1.35	0.275	1.99	55'	EL	27	0.523	1.90	55'	EL	5.4	N/A	--	--	--	--	--	
LEGAL LOAD	SINGLE VEHICLE (SV)	SNSH	13.500		2.776	37.476	1.4	0.275	4.04	55'	EL	27	0.523	4.17	55'	EL	5.4	0.80	0.275	2.78	55'	EL	27	
		SNGARBS2	20.000		2.155	43.095	1.4	0.275	3.14	55'	EL	27	0.523	3.02	55'	EL	5.4	0.80	0.275	2.15	55'	EL	27	
		SNAGRIS2	22.000		2.079	45.734	1.4	0.275	3.03	55'	EL	27	0.523	2.83	55'	EL	5.4	0.80	0.275	2.08	55'	EL	27	
		SNCOTTS3	27.250		1.384	37.708	1.4	0.275	2.01	55'	EL	27	0.523	2.09	55'	EL	5.4	0.80	0.275	1.38	55'	EL	27	
		SNAGGRS4	34.925		1.189	41.527	1.4	0.275	1.73	55'	EL	27	0.523	1.77	55'	EL	5.4	0.80	0.275	1.19	55'	EL	27	
		SNS5A	35.550		1.160	41.255	1.4	0.275	1.69	55'	EL	27	0.523	1.82	55'	EL	5.4	0.80	0.275	1.16	55'	EL	27	
		SNS6A	39.950		1.079	43.102	1.4	0.275	1.57	55'	EL	27	0.523	1.68	55'	EL	5.4	0.80	0.275	1.08	55'	EL	27	
		SNS7B	42.000		1.028	43.175	1.4	0.275	1.50	55'	EL	27	0.523	1.67	55'	EL	5.4	0.80	0.275	1.03	55'	EL	27	
	TRUCK TRACTOR SEMI-TRAILER (TTST)	TNAGRIT3	33.000		1.320	43.556	1.4	0.275	1.92	55'	EL	27	0.523	1.98	55'	EL	5.4	0.80	0.275	1.32	55'	EL	27	
		TNT4A	33.075		1.330	43.979	1.4	0.275	1.94	55'	EL	27	0.523	1.91	55'	EL	5.4	0.80	0.275	1.33	55'	EL	27	
		TNT6A	41.600		1.101	45.811	1.4	0.275	1.60	55'	EL	27	0.523	1.83	55'	EL	5.4	0.80	0.275	1.10	55'	EL	27	
		TNT7A	42.000		1.114	46.804	1.4	0.275	1.62	55'	EL	27	0.523	1.71	55'	EL	5.4	0.80	0.275	1.11	55'	EL	27	
		TNT7B	42.000		1.163	48.848	1.4	0.275	1.69	55'	EL	27	0.523	1.62	55'	EL	5.4	0.80	0.275	1.16	55'	EL	27	
		TNAGRIT4	43.000		1.101	47.330	1.4	0.275	1.60	55'	EL	27	0.523	1.56	55'	EL	5.4	0.80	0.275	1.10	55'	EL	27	
		TNAGT5A	45.000		1.031	46.405	1.4	0.275	1.50	55'	EL	27	0.523	1.58	55'	EL	5.4	0.80	0.275	1.03	55'	EL	27	
		TNAGT5B	45.000	③	1.013	45.582	1.4	0.275	1.47	55'	EL	27	0.523	1.48	55'	EL	5.4	0.80	0.275	1.01	55'	EL	27	
EMERGENCY VEHICLE (EV)		EV2	28.750		1.617	46.483	1.3	0.275	2.37	55'	EL	27	0.523	2.27	55'	EL	5.4	0.80	0.275	1.62	55'	EL	27	
		EV3	43.000	④	1.049	45.107	1.3	0.275	1.54	55'	EL	27	0.523	1.53	55'	EL	5.4	0.80	0.275	1.05	55'	EL	27	

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)

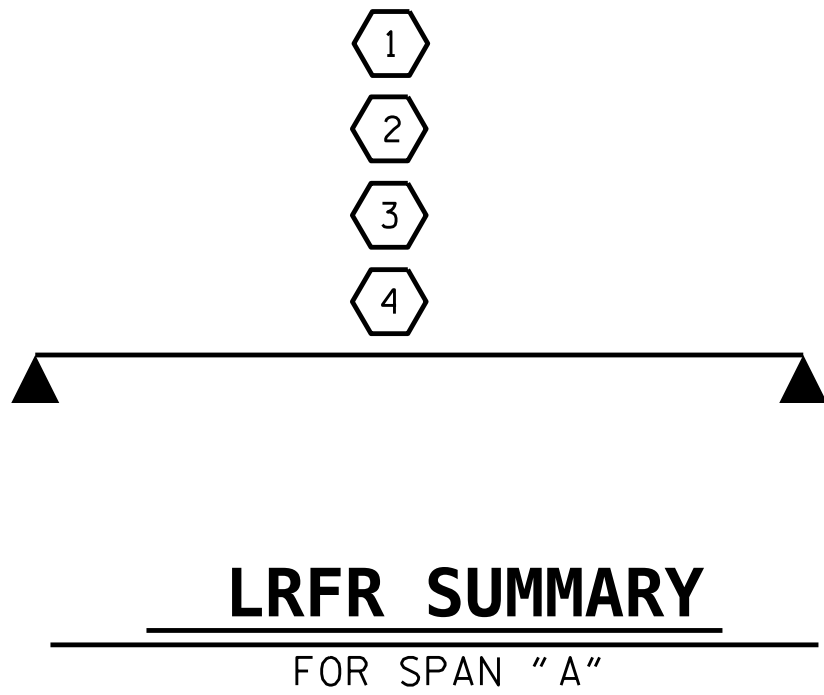
③ LEGAL LOAD RATING **

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. **BP2-R028.1**
BEAUFORT COUNTY
STATION: **15+78.00 -L-**

ASSEMBLED BY: THA	DATE :	8-26
CHECKED BY : SK	DATE :	8-26
DRAWN BY : MAA 1/08	REV. 11/12/08RR	MAA/GM
CHECKED BY : GM/DI 2/08	REV. 10/1/11	MAA/GM
	REV. 04/23	BNB/AAI

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

CarolinaTEA
Carolina Transportation Engineers & Associates, PC

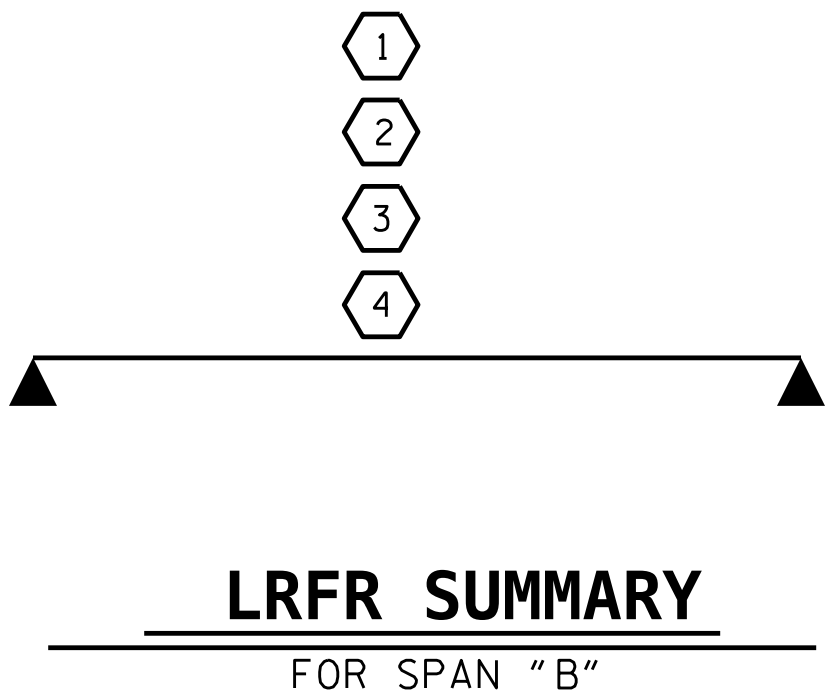
Carolina Transportation Engineers
& Assoc., PC
3700 Arco Corporate Drive
Suite 405
Charlotte, NC 28273
Telephone: (980) 722-6065

DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

7/31/2026

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH						
STANDARD						
LRFR SUMMARY FOR						
55' CORED SLAB UNIT						
90° SKEW						
(NON-INTERSTATE TRAFFIC)						
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-5
1			3			TOTAL SHEETS
2			4			22

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 (γLL)	MOMENT				SHEAR				LIVE-LOAD FACTORS (γLL)	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	1.121	--	1.75	0.274	1.45	45'	EL	22.00	0.543	1.40	45'	EL	2.20	0.80	0.274	1.12	45'	EL	22.00		
	HL-93 (OPERATING)	N/A		1.813	--	1.35	0.274	1.87	45'	EL	22.00	0.543	1.81	45'	EL	2.20	N/A	--	--	--	--	--		
	HS-20 (INVENTORY)	36.000	②	1.377	49.561	1.75	0.274	1.77	45'	EL	22.00	0.543	1.65	45'	EL	2.20	0.80	0.274	1.38	45'	EL	22.00		
	HS-20 (OPERATING)	36.000		2.142	77.130	1.35	0.274	2.30	45'	EL	22.00	0.543	2.14	45'	EL	2.20	N/A	--	--	--	--	--		
LEGAL LOAD	SINGLE VEHICLE (SV)	SNSH	13.500		2.690	36.319	1.40	0.274	4.33	45'	EL	22.00	0.543	4.56	45'	EL	2.20	0.80	0.274	2.69	45'	EL	22.00	
		SNGARBS2	20.000		2.172	43.443	1.40	0.274	3.50	45'	EL	22.00	0.543	3.35	45'	EL	2.20	0.80	0.274	2.17	45'	EL	22.00	
		SNAGRIS2	22.000		2.136	46.991	1.40	0.274	3.39	45'	EL	26.40	0.543	3.15	45'	EL	2.20	0.80	0.274	2.14	45'	EL	22.00	
		SNCOTTS3	27.250		1.343	36.603	1.40	0.274	2.16	45'	EL	22.00	0.543	2.29	45'	EL	2.20	0.80	0.274	1.34	45'	EL	22.00	
		SNAGGRS4	34.925		1.185	41.398	1.40	0.274	1.91	45'	EL	22.00	0.543	1.97	45'	EL	2.20	0.80	0.274	1.18	45'	EL	22.00	
		SNS5A	35.550		1.155	41.048	1.40	0.274	1.86	45'	EL	22.00	0.543	2.04	45'	EL	2.20	0.80	0.274	1.15	45'	EL	22.00	
		SNS6A	39.950		1.088	43.452	1.40	0.274	1.75	45'	EL	22.00	0.543	1.90	45'	EL	2.20	0.80	0.274	1.08	45'	EL	22.00	
		SNS7B	42.000	③	1.037	43.549	1.40	0.274	1.67	45'	EL	22.00	0.543	1.91	45'	EL	2.20	0.80	0.274	1.04	45'	EL	22.00	
	TRUCK TRACTOR SEMI-TRAILER (TTST)	TNAGRIT3	33.000		1.335	44.054	1.40	0.274	2.15	45'	EL	22.00	0.543	2.23	45'	EL	2.20	0.80	0.274	1.33	45'	EL	22.00	
		TNT4A	33.075		1.349	44.617	1.40	0.274	2.17	45'	EL	22.00	0.543	2.14	45'	EL	2.20	0.80	0.274	1.35	45'	EL	22.00	
		TNT6A	41.600		1.132	47.097	1.40	0.274	1.82	45'	EL	22.00	0.543	2.08	45'	EL	2.20	0.80	0.274	1.13	45'	EL	22.00	
		TNT7A	42.000		1.154	48.468	1.40	0.274	1.86	45'	EL	22.00	0.543	1.92	45'	EL	2.20	0.80	0.274	1.15	45'	EL	22.00	
		TNT7B	42.000		1.201	50.459	1.40	0.274	1.94	45'	EL	22.00	0.543	1.83	45'	EL	2.20	0.80	0.274	1.20	45'	EL	22.00	
		TNAGRIT4	43.000		1.144	49.203	1.40	0.274	1.84	45'	EL	22.00	0.543	1.76	45'	EL	2.20	0.80	0.274	1.14	45'	EL	22.00	
		TNACT5A	45.000		1.065	47.914	1.40	0.274	1.72	45'	EL	22.00	0.543	1.80	45'	EL	2.20	0.80	0.274	1.06	45'	EL	22.00	
		TNACT5B	45.000		1.040	46.783	1.40	0.274	1.67	45'	EL	22.00	0.543	1.67	45'	EL	2.20	0.80	0.274	1.04	45'	EL	22.00	
EMERGENCY VEHICLE (EV)	EV2	28.750		1.558	44.784	1.30	0.274	2.69	45'	EL	22.00	0.543	2.54	45'	EL	2.20	0.80	0.274	1.56	45'	EL	22.00		
	EV3	43.000	④	1.001	43.053	1.30	0.274	1.74	45'	EL	22.00	0.543	1.72	45'	EL	2.20	0.80	0.274	1.00	45'	EL	22.00		



LOAD FACTORS:

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

NOTES:

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

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

COMMENTS:

1.
2.
3.
4.

⑥ 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. **BP2-R028.1**

BEAUFORT COUNTY

STATION: **15+78.00 -L-**

ASSEMBLED BY: THA	DATE : 8-26
CHECKED BY : SK	DATE : 8-26
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

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

CarolinaTEA
Carolina Transportation Engineers & Associates, PC

Carolina Transportation Engineers
& Assoc., PC
3700 Arco Corporate Drive
Suite 405
Charlotte, NC 28273
Telephone: (980) 722-6065



DocuSigned by:
sackson kourbanditi
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7/31/2026

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FINAL UNLESS ALL
SIGNATURES COMPLETED

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD
LRFR SUMMARY FOR
45' CORED SLAB UNIT
90° SKEW
(NON-INTERSTATE TRAFFIC)

REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	
①			③		S-6
②			④		TOTAL SHEETS 22



FIXED END



INTERIOR SLAB SECTION
(45' UNIT)

(13 STRANDS REQUIRED)



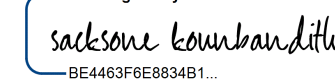
0.6'' Ø LOW
RELAXATION STRAND LAYOUT



**PRELIMINARY PLANS
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& Assoc., PC
3700 Arco Corporate Drive
Suite 405
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Telephone: (980) 722-6065

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- ▲ 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.
- BOND SHALL BE BROKEN ON THESE STRANDS FOR A DISTANCE OF 2'-0" FROM END OF CORED SLAB UNIT. SEE STANDARD SPECIFICATIONS, ARTICLE 1078-7.
- OPTIONAL FULL LENGTH DEBONDED STRANDS. THESE STRANDS ARE NOT REQUIRED. IF THE FABRICATOR CHOOSES TO INCLUDE THESE STRANDS IN THE CORED SLAB UNIT, THE STRANDS SHALL BE DEBONDED FOR THE FULL LENGTH OF THE UNIT AT NO ADDITIONAL COST. SEE STANDARD SPECIFICATIONS, ARTICLE 1078-7.

DEBONDING LEGEND

THREADED INSERT DETAIL

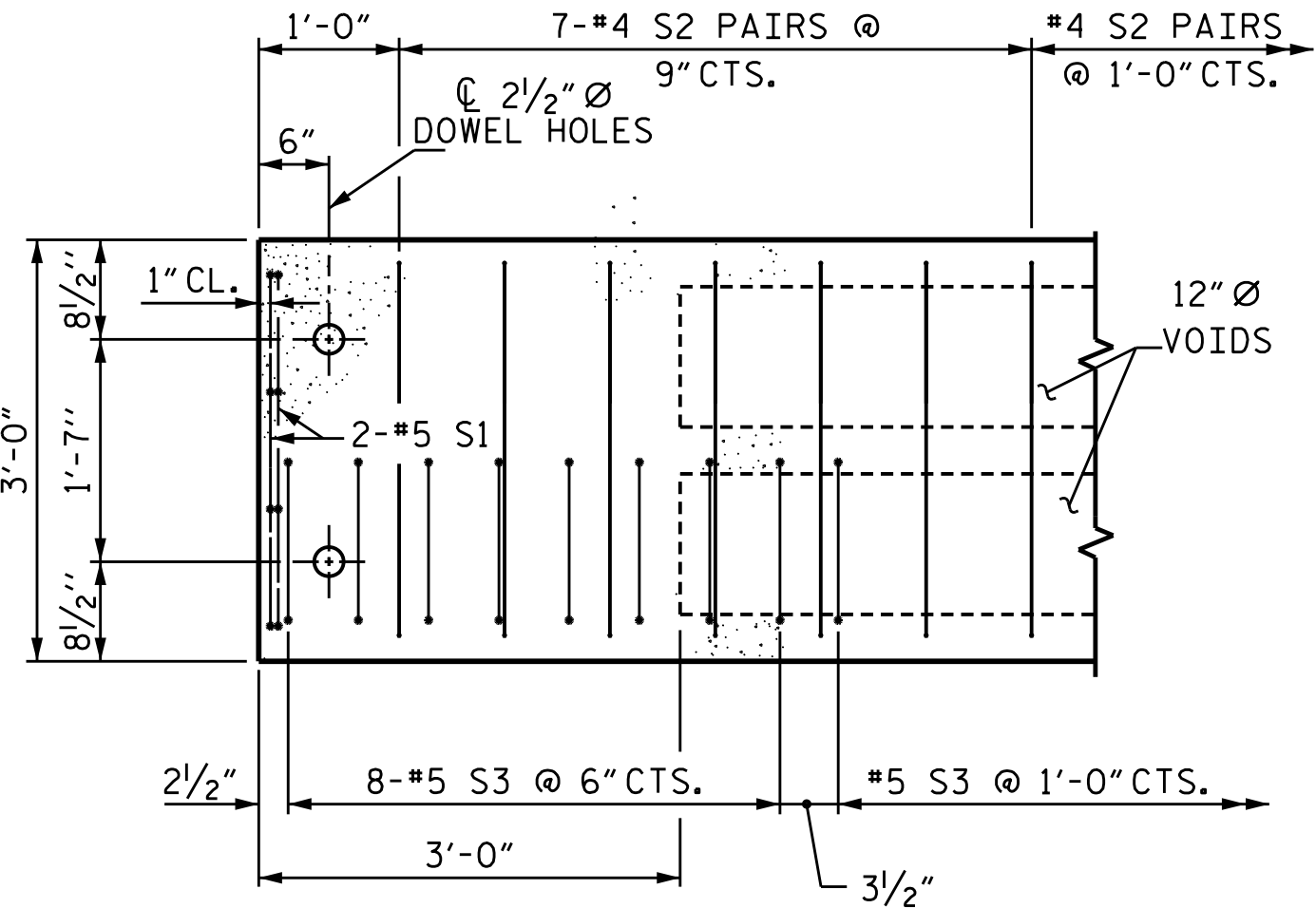
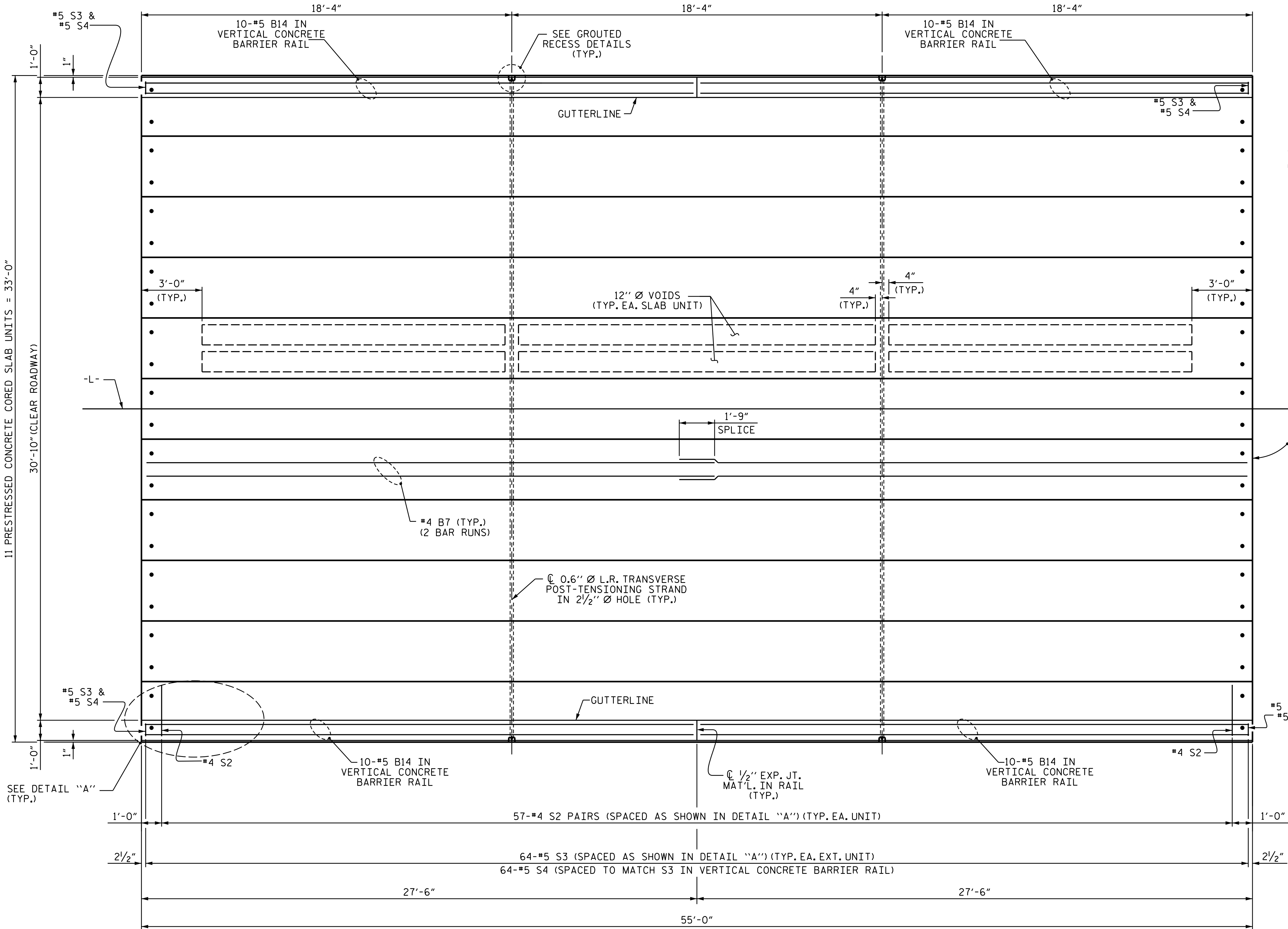
PROJECT NO. **BP2-R028.1**
BEAUFORT COUNTY
STATION: **15+78.00 -L-**

STANDARD

3'-0" X 1'-9"
PRESTRESSED CONCRETE
CORED SLAB UNIT
90° SKEW

REVISIONS						SHEET NO. S-7
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 22
2			4			

STD. NO. 21" PCS2_33_90S



DETAIL "A"

(TYPICAL EACH END OF UNIT)
NOTE: EXTERIOR UNIT SHOWN - INTERIOR
UNIT SIMILAR EXCEPT OMIT #5 S3 BARS.

PLAN OF UNIT

PROJECT NO. **BP2-R028.1**
BEAUFORT COUNTY
STATION: **15+78.00 -L-**

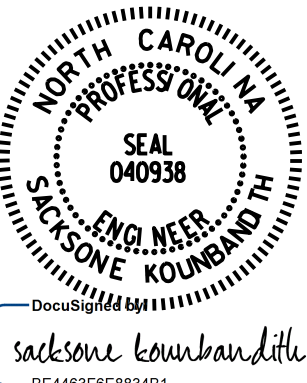
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
PLAN OF 55' UNIT
30'-10" CLEAR ROADWAY
90° SKEW

REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	
1			3		S-8
2			4		
TOTAL SHEETS					22

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

CarolinaTEA
Carolina Transportation Engineers & Associates, PC

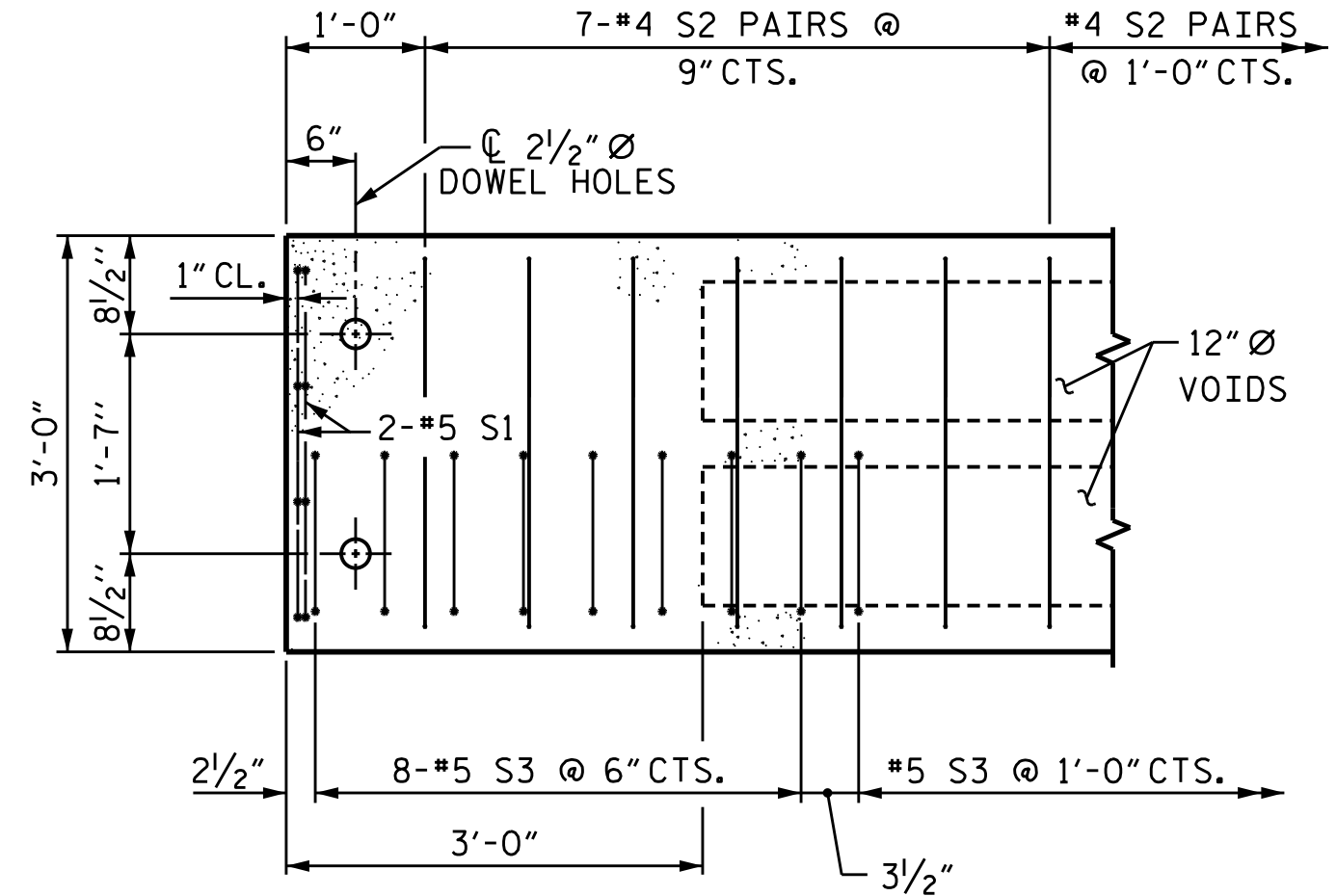
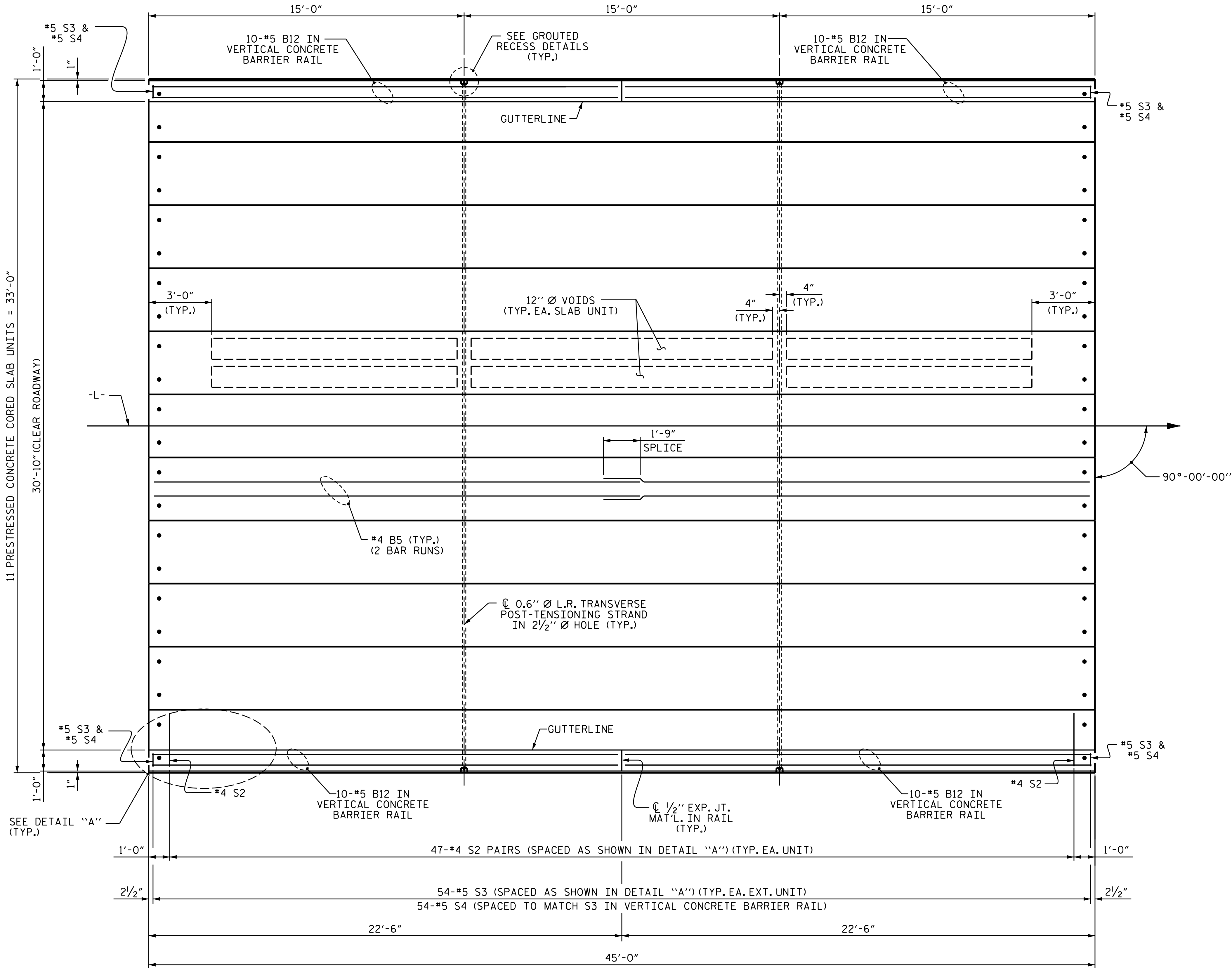
Carolina Transportation Engineers
& Assoc., PC
3700 Arco Corporate Drive
Suite 405
Charlotte, NC 28273
Telephone: (980) 722-6065



DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

7/31/2026

ASSEMBLED BY : THA	DATE : 8-26
CHECKED BY : SK	DATE : 8-26
DRAWN BY : DGE 3/09	REV. 12/5/11 MAA/AAC
CHECKED BY : BCH 3/09	REV. 8/14 MAA/TMG



DETAIL "A"
(TYPICAL EACH END OF UNIT)
NOTE: EXTERIOR UNIT SHOWN - INTERIOR
UNIT SIMILAR EXCEPT OMIT #5 S3 BARS.

PLAN OF UNIT

PROJECT NO. **BP2-R028.1**
BEAUFORT COUNTY
STATION: **15+78.00 -L-**

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

PLAN OF 45' UNIT
30'-10" CLEAR ROADWAY
90° SKEW

REVISIONS					SHEET NO. S-9 TOTAL SHEETS 22
NO.	BY:	DATE:	NO.	BY:	
1			3		
2			4		

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

CarolinaTEA
Carolina Transportation Engineers & Associates, PC
Carolina Transportation Engineers
& Assoc., PC
3700 Arco Corporate Drive
Suite 405
Charlotte, NC 28273
Telephone: (980) 722-6065

SEAL
040938
NORTH CAROLINA
PROFESSIONAL
ENGINEER
SACKSONE KOUNIBANDJI
7/31/2026

DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

ASSEMBLED BY : THA	DATE : 8-26
CHECKED BY : SK	DATE : 8-26
DRAWN BY : DGE 3/09	REV. 12/5/11 MAA/AAC
CHECKED BY : BCH 3/09	REV. 8/14 MAA/TMG

3/9/2026

CORED SLABS REQUIRED			
	NUMBER	LENGTH	TOTAL LENGTH
45' UNIT			
EXTERIOR C.S.	2	45'-0"	90'-0"
INTERIOR C.S.	9	45'-0"	405'-0"
TOTAL	11		495'-0"

CORED SLABS REQUIRED			
	NUMBER	LENGTH	TOTAL LENGTH
55' UNIT			
EXTERIOR C.S.	2	55'-0"	110'-0"
INTERIOR C.S.	9	55'-0"	495'-0"
TOTAL	11		605'-0"

DEAD LOAD DEFLECTION AND CAMBER	
	3'-0" x 1'-9"
45' CORED SLAB UNIT	0.6" Ø L.R. STRAND
CAMBER (SLAB ALONE IN PLACE)	¾" ↑
DEFLECTION DUE TO SUPERIMPOSED DEAD LOAD**	⅛" ↓
FINAL CAMBER	⅝" ↑

** INCLUDES FUTURE WEARING SURFACE

DEAD LOAD DEFLECTION AND CAMBER	
	3'-0" x 1'-9"
55' CORED SLAB UNIT	0.6" Ø L.R. STRAND
CAMBER (SLAB ALONE IN PLACE)	1½" ↑
DEFLECTION DUE TO SUPERIMPOSED DEAD LOAD**	¾" ↓
FINAL CAMBER	1⅞" ↑

** INCLUDES FUTURE WEARING SURFACE

BILL OF MATERIAL FOR VERTICAL CONCRETE BARRIER RAIL						
BAR	BARS PER PAIR OF EXTERIOR UNITS	TOTAL NO.	SIZE	TYPE	LENGTH	WEIGHT
	45' UNIT					
* B12	40	40	*5	STR	22'-1"	921
* S4	108	108	*5	2	7'-2"	807
* EPOXY COATED REINFORCING STEEL						LBS. 1728
CLASS AA CONCRETE						CU.YDS. 11.5
TOTAL VERTICAL CONCRETE BARRIER RAIL						LN.FT. 90.25

BILL OF MATERIAL FOR VERTICAL CONCRETE BARRIER RAIL						
BAR	BARS PER PAIR OF EXTERIOR UNITS	TOTAL NO.	SIZE	TYPE	LENGTH	WEIGHT
	55' UNIT					
* B14	40	40	*5	STR	27'-1"	1130
* S4	128	128	*5	2	7'-2"	957
* EPOXY COATED REINFORCING STEEL						LBS. 2087
CLASS AA CONCRETE						CU.YDS. 14.1
TOTAL VERTICAL CONCRETE BARRIER RAIL						LN.FT. 110.25

GUTTERLINE ASPHALT THICKNESS & RAIL HEIGHT		
	ASPHALT OVERLAY THICKNESS	RAIL HEIGHT
	@ MID-SPAN	@ MID-SPAN
45' UNITS	2"	3'-8"
55' UNITS	1⅝"	3'-7⅝"

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	114	*4	3	5'-4"	406	5'-4"	406
* S3	64	*5	1	5'-7"	373		
REINFORCING STEEL				LBS.	516		516
* EPOXY COATED REINFORCING STEEL				LBS.	373		
6500 P.S.I. CONCRETE				CU. YDS.	7.8		7.8
0.6" Ø L.R. STRANDS				No.	19		19

BILL OF MATERIAL FOR ONE 45' CORED SLAB UNIT							
				EXTERIOR UNIT		INTERIOR UNIT	
BAR	NUMBER	SIZE	TYPE	LENGTH	WEIGHT	LENGTH	WEIGHT
B5	4	*4	STR	23'-3"	62	23'-3"	62
S1	8	*5	3	4'-3"	35	4'-3"	35
S2	94	*4	3	5'-4"	335	5'-4"	335
* S3	54	*5	1	5'-7"	314		
REINFORCING STEEL				LBS.	432		432
* EPOXY COATED REINFORCING STEEL				LBS.	314		
6500 P.S.I. CONCRETE				CU. YDS.	6.5		6.5
0.6" Ø L.R. STRANDS				No.	13		13

PROJECT NO. **BP2-R028.1**
BEAUFORT COUNTY
STATION: **15+78.00 -L-**

ASSEMBLED BY : THA	DATE : 8-26
CHECKED BY : SK	DATE : 8-26
DRAWN BY : DGE 5/09	REV. 5/18 MAA/THC
CHECKED BY : BCH 6/09	REV. 5/23 BNB/AAI

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

CarolinaTEA
Carolina Transportation Engineers & Associates, PC

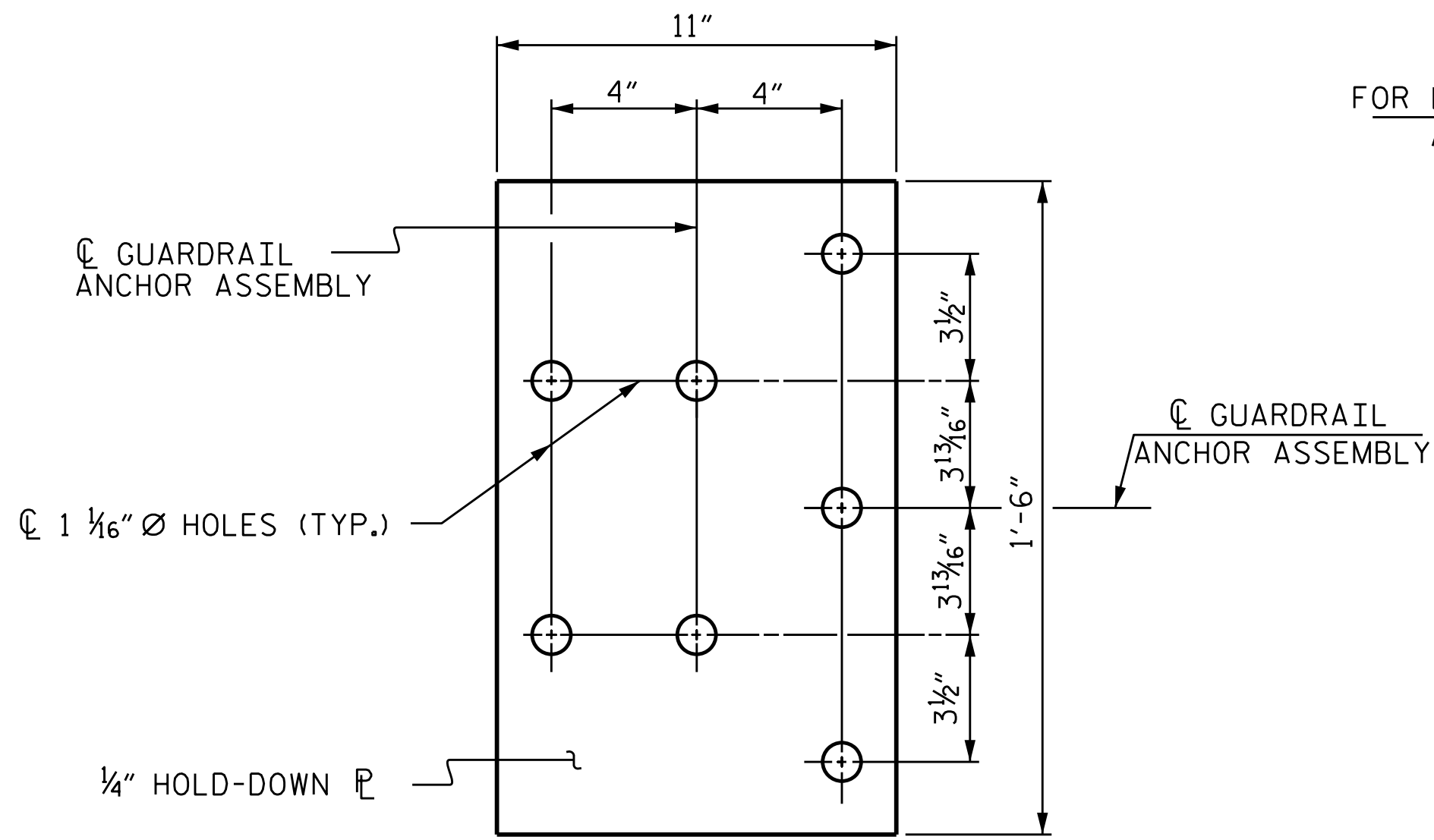
Carolina Transportation Engineers
& Assoc., PC
3700 Arco Corporate Drive
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Telephone: (980) 722-6065

DOCUMENT NOT CONSIDERED
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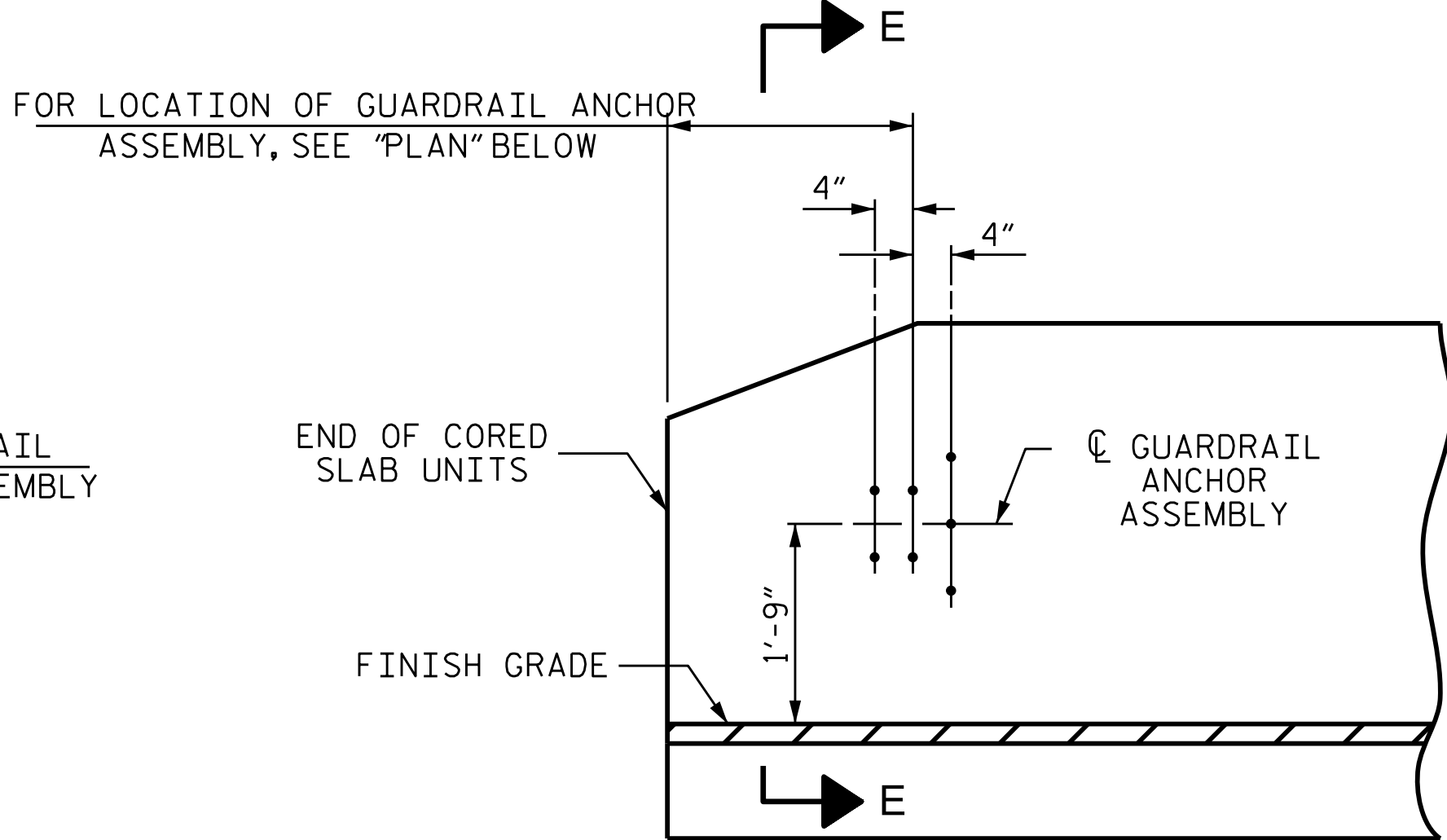


7/31/2026

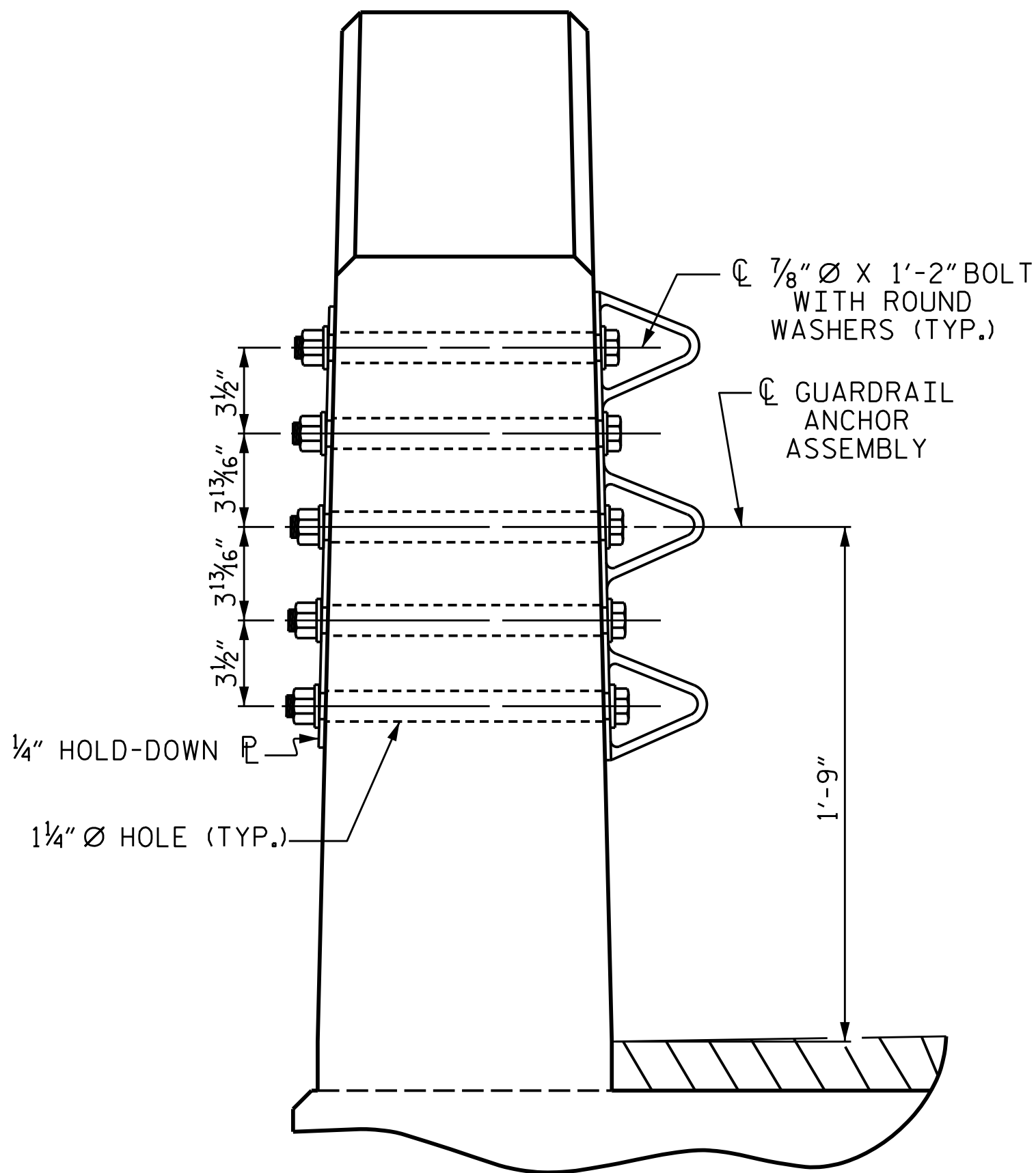
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH			
STANDARD 3'-0" X 1'-9" PRESTRESSED CONCRETE CORED SLAB UNIT 90° SKEW			
REVISIONS			
NO.	BY:	DATE:	NO.
1			3
2			4
SHEET NO. S-11			
TOTAL SHEETS 22			



PLAN

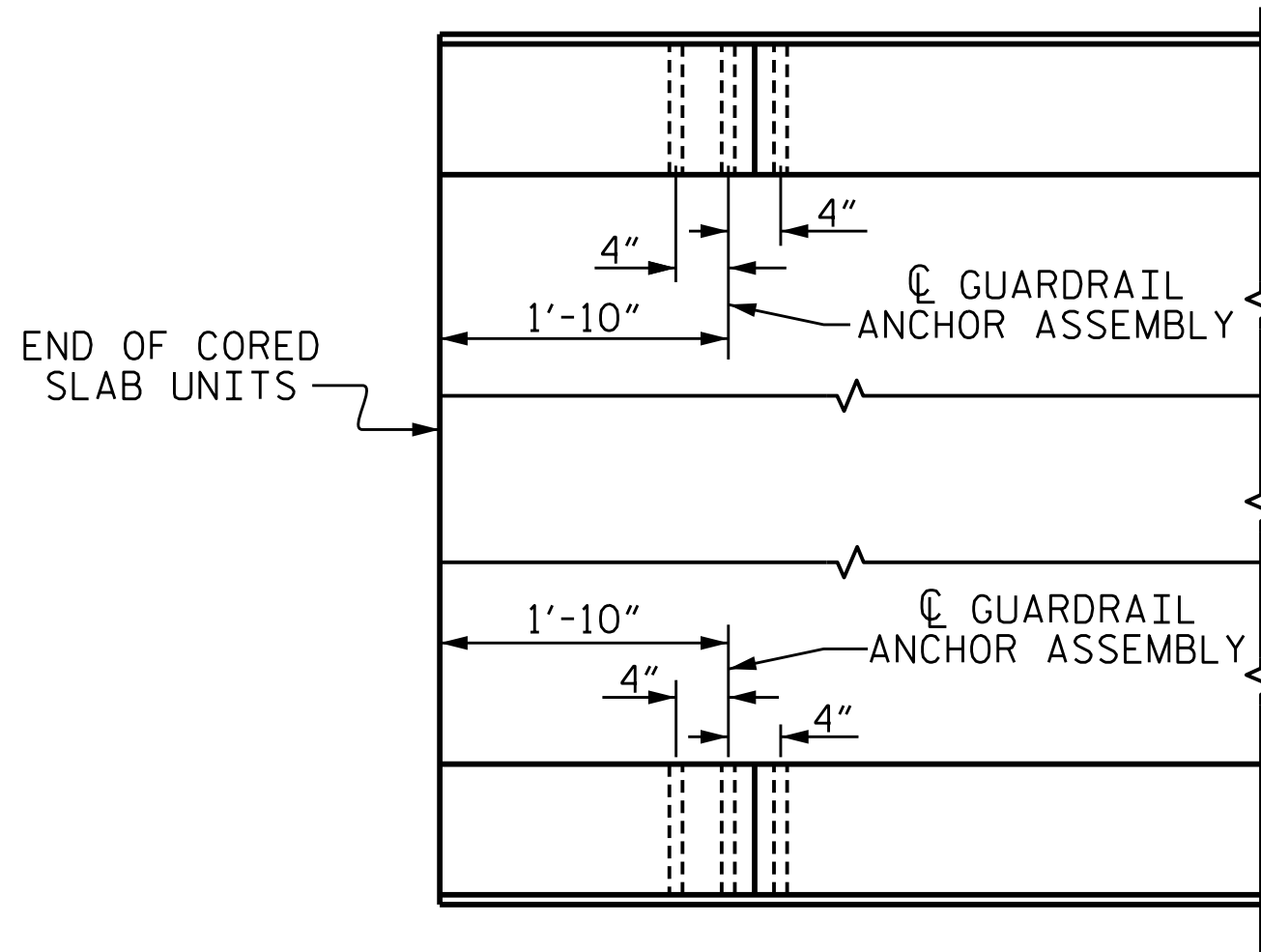


ELEVATION



SECTION E-E

GUARDRAIL ANCHOR ASSEMBLY DETAILS



PLAN

LOCATION OF ANCHORS FOR GUARDRAIL

END BENT #1 SHOWN, END BENT #2 SIMILAR.



SKETCH SHOWING POINTS OF ATTACHMENT

* DENOTES GUARDRAIL ANCHOR ASSEMBLY

NOTES

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

PROJECT NO. **BP2-R028.1**
BEAUFORT COUNTY
STATION: **15+78.00 -L-**

ASSEMBLED BY : THA	DATE : 8-26
CHECKED BY : SK	DATE : 8-26
DRAWN BY : MAA 5/10	REV. 1/15 MAA/TMG
CHECKED BY : CM 5/10	REV. 12/17 MAA/THC
	REV. 5/18 MAA/THC

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Telephone: (980) 722-6065

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7/31/2026

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
STANDARD GUARDRAIL ANCHORAGE DETAILS FOR VERTICAL CONCRETE BARRIER RAIL					
REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
					S-12
					TOTAL SHEETS 22



PLAN



②

③

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⑦

ELEVATION

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

7/30/2026
R:\Public - Projects\NCDOT\2018 Eastern Division On Call\315.1.01.22 Division 2 bridges\BP2.R028.1\7 - Structure\Design\Plans\CAD FILES\Final Plans (BP.R028.1)\013.BPR0281.SMU.EBI.060057.dgn
TarickAbdelaziz

NOTES

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

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

FOR PILE SPLICE DETAILS, SEE SHEET 4 OF 4.

FOR WING DETAILS, SEE SHEET 3 OF 4.

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BEAUFORT COUNTY

STATION: 15+78.00 -L-

SHEET 1 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

END BENT NO. 1

REVISIONS						SHEET NO. S-13 TOTAL SHEETS 22
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			
2			4			

STD. NO. EB_33_90S4



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

FOR PILE SPLICE DETAILS, SEE SHEET 4 OF 4.

FOR WING DETAILS, SEE SHEET 3 OF 4.

PLAN



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

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SHEET 2 OF 4.

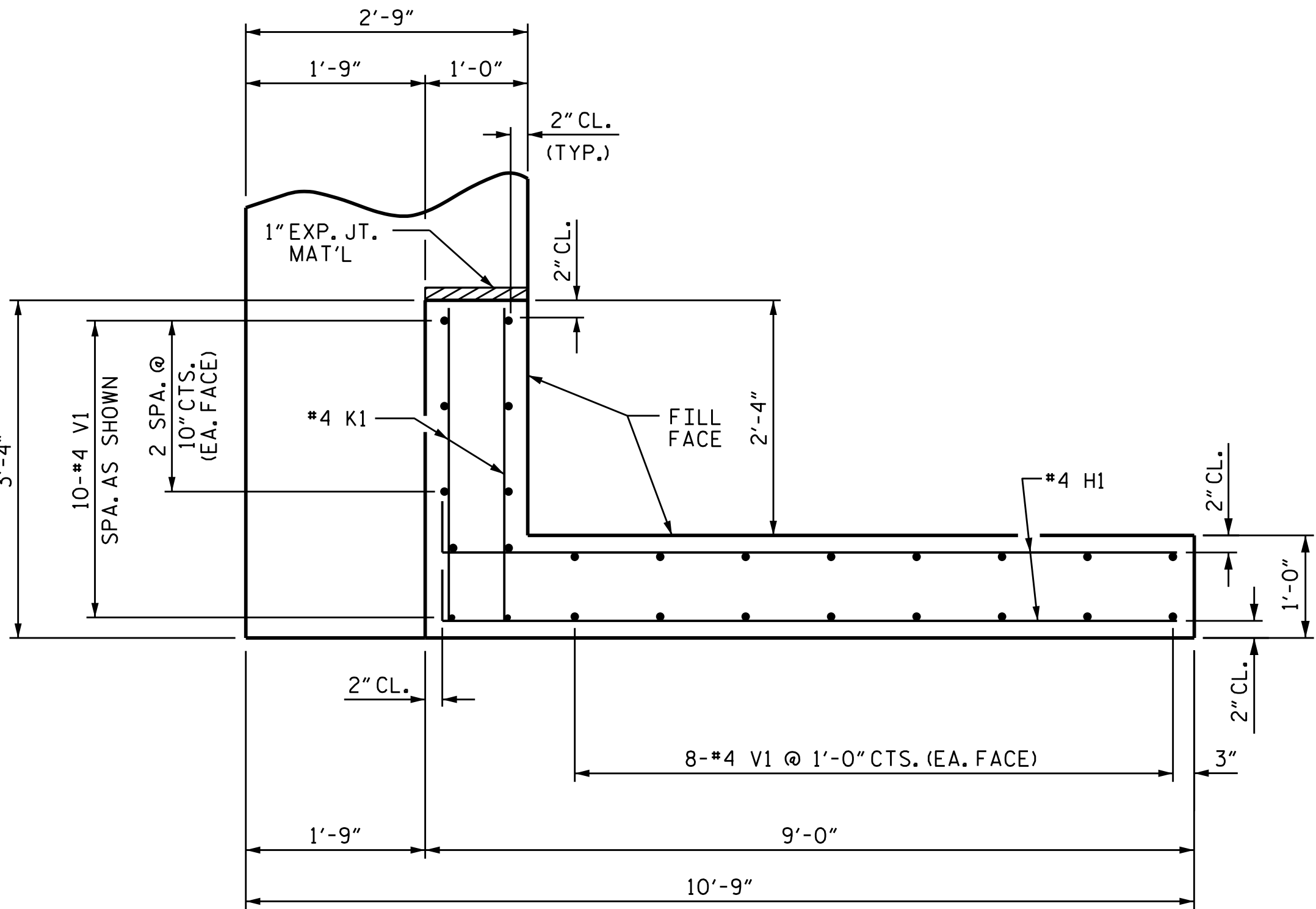
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

END BENT No. 2

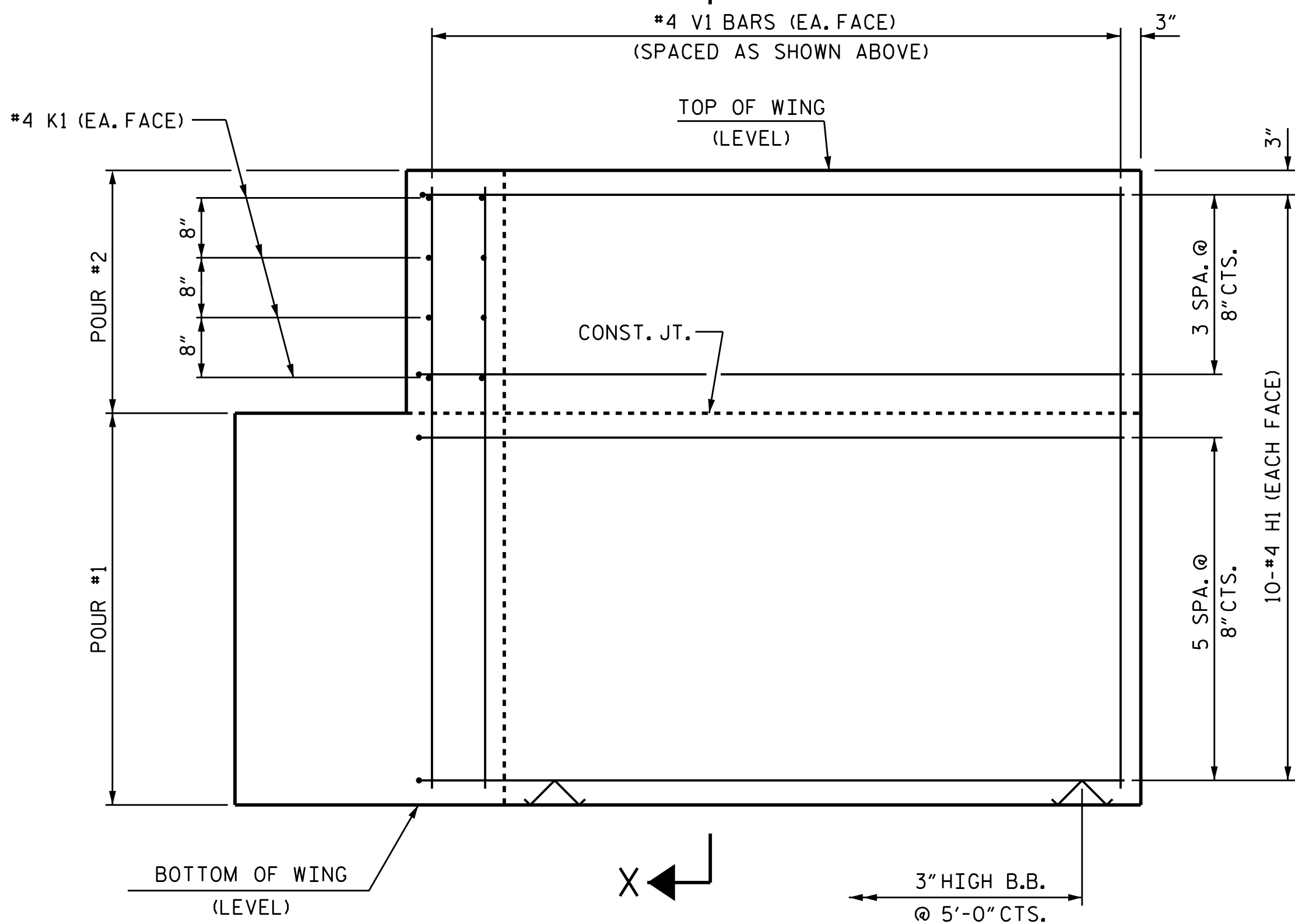
REVISIONS						SHEET NO. S-14 TOTAL SHEETS 22
NO.	BY:	DATE:	NO.	BY:	DATE:	
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2			4			

STD. NO. EB_33_90S4



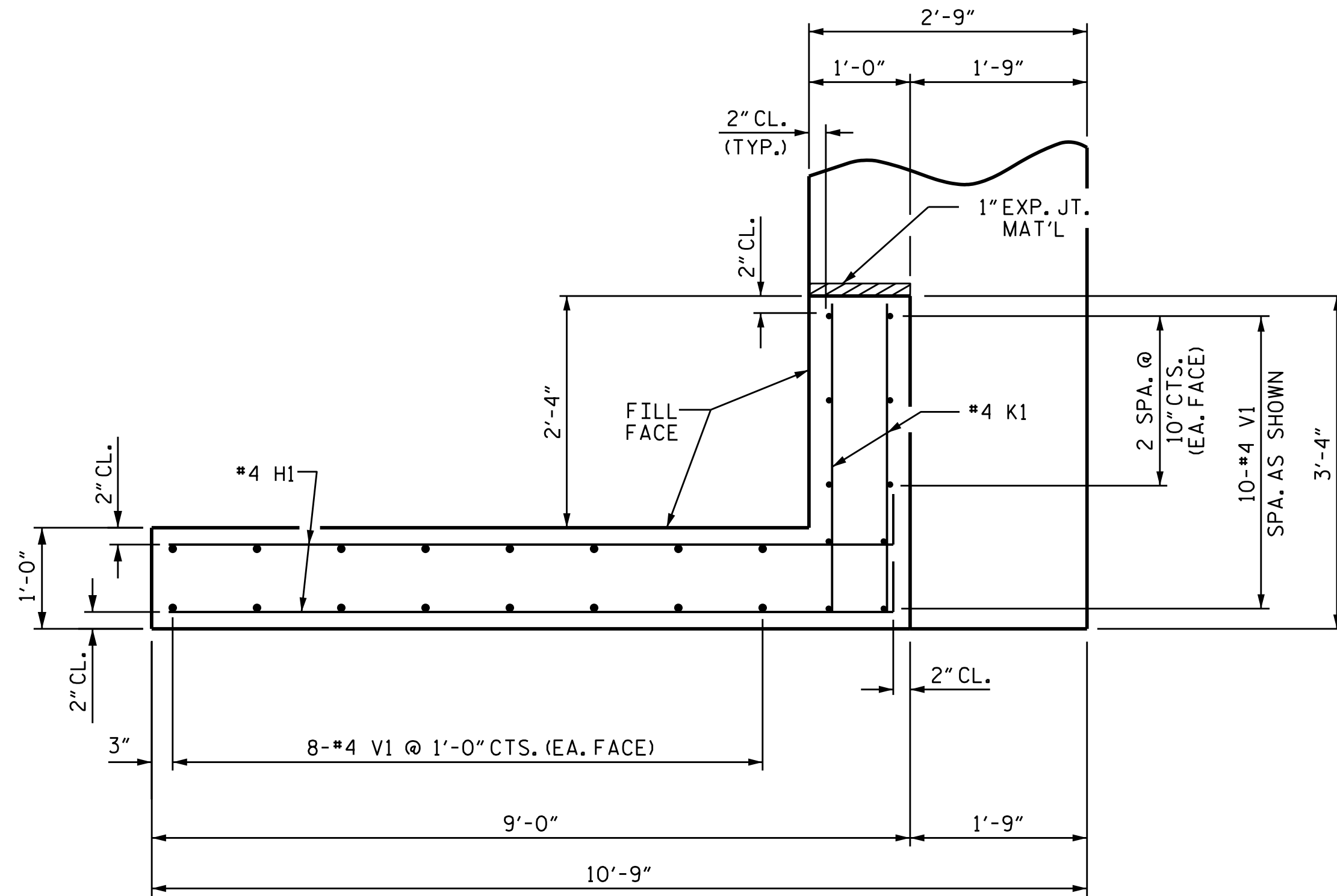
PLAN OF WING (W1)

X ←



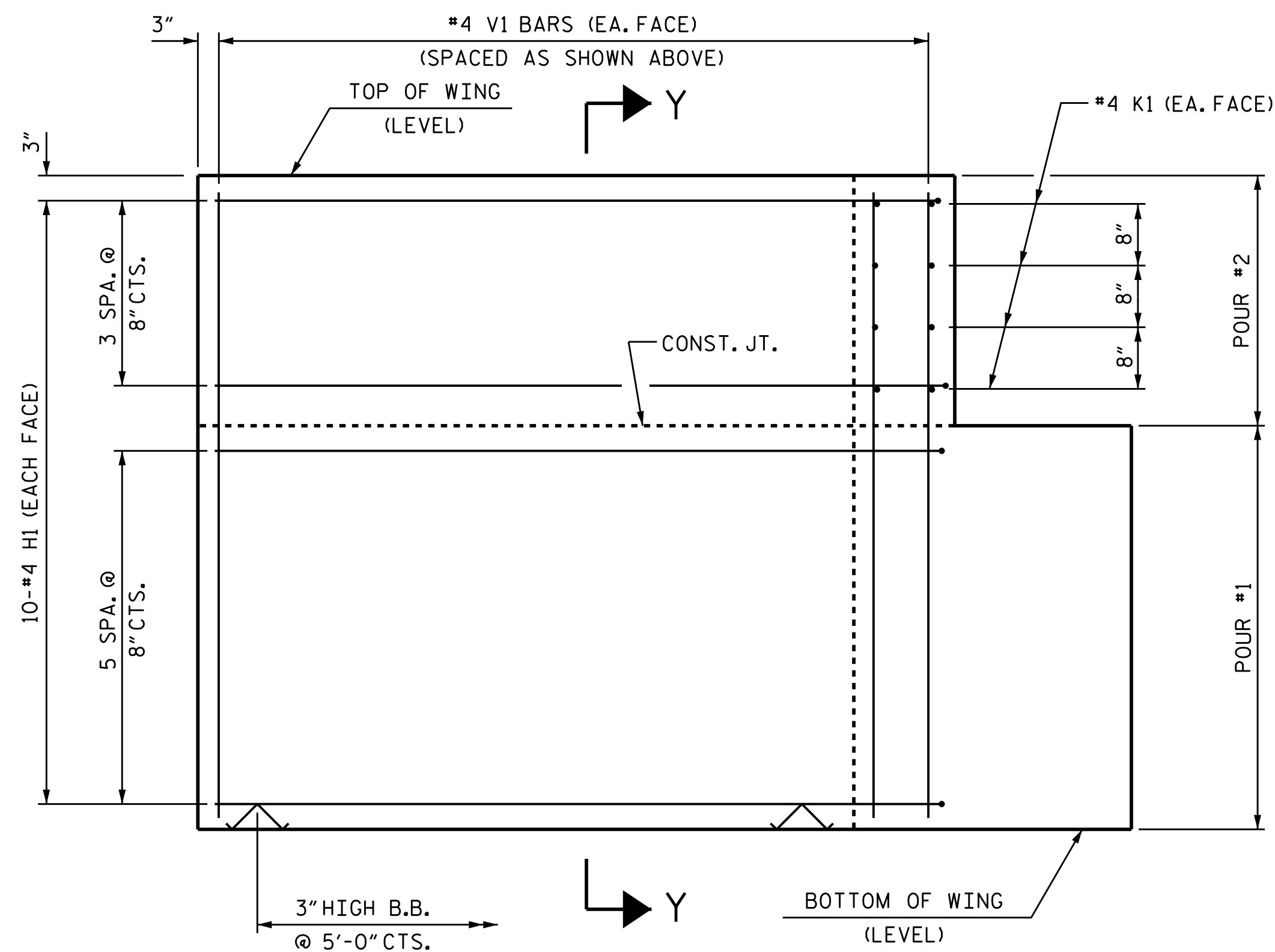
ELEVATION OF WING (W1)

X ←



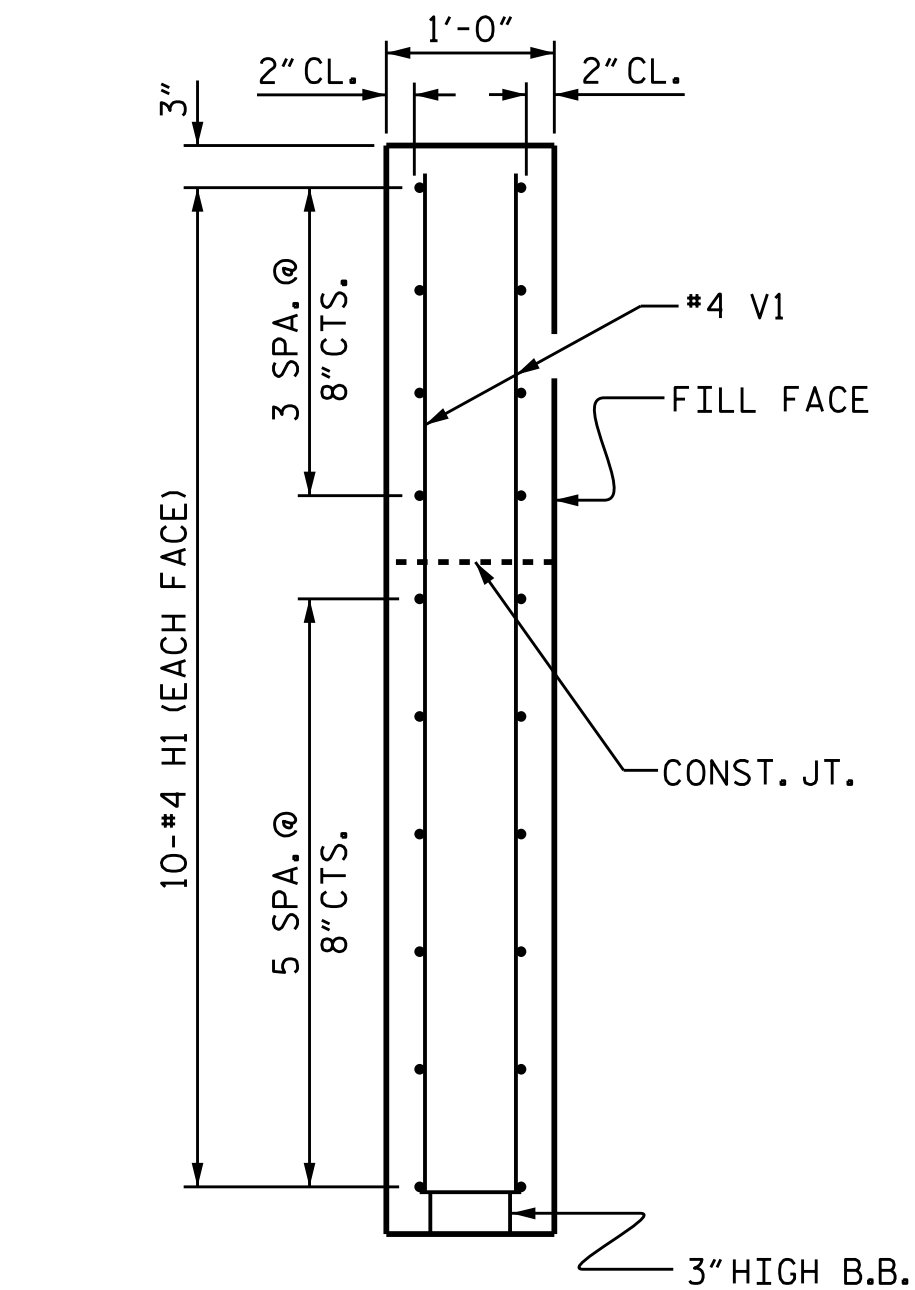
PLAN OF WING (W2)

Y →

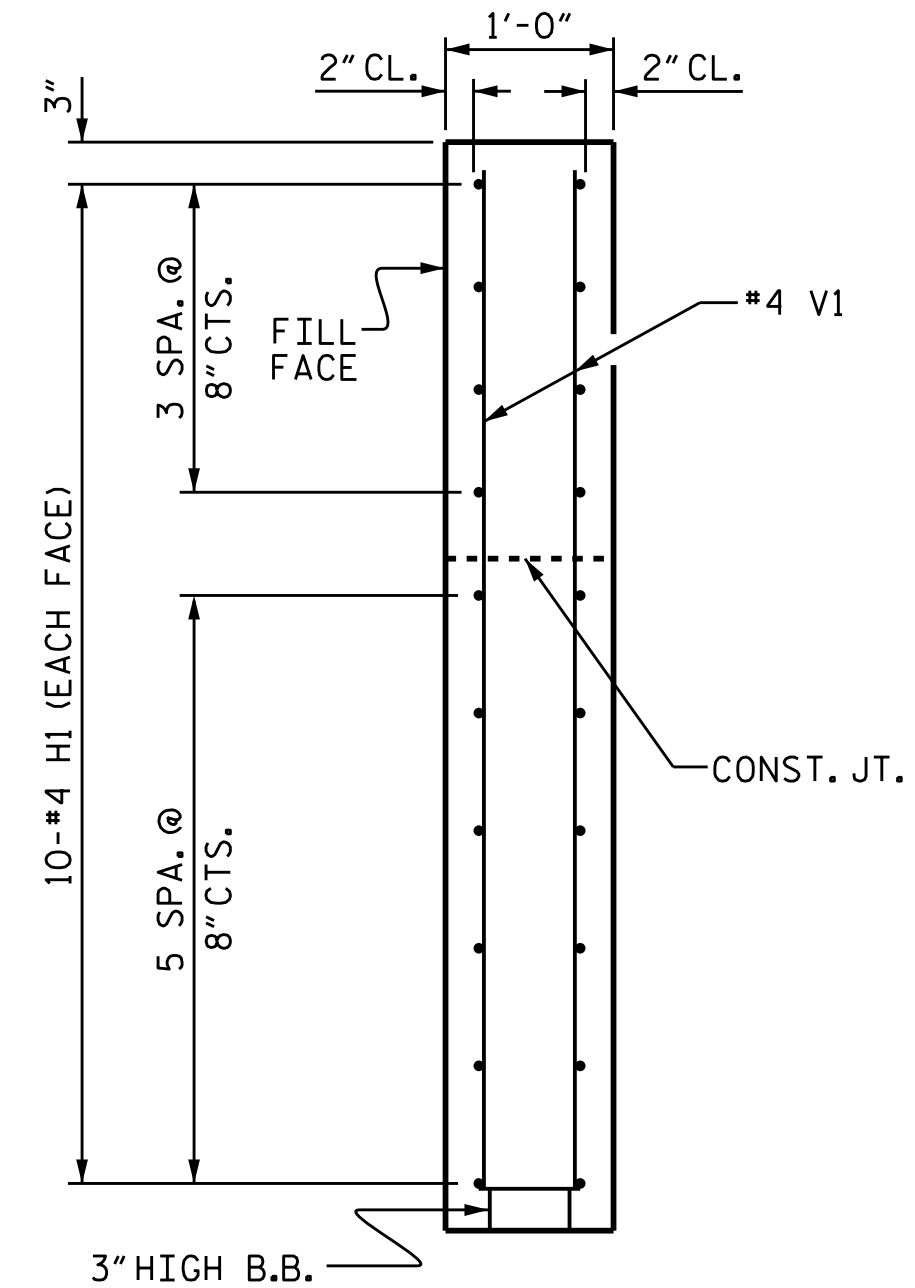


ELEVATION OF WING (W2)

Y →



SECTION X-X



SECTION Y-Y

WING DETAILS

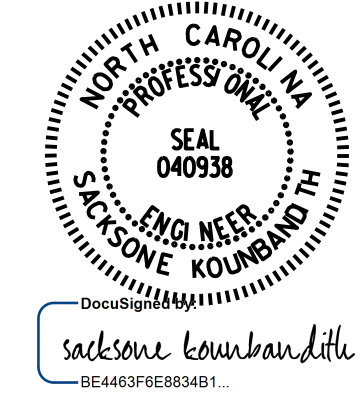
ASSEMBLED BY : THA		DATE : 8-26	
CHECKED BY : SK		DATE : 8-26	
DRAWN BY : WJH	12/II	REV. 4/15	MAA/TMG
CHECKED BY : AAC	12/II		

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BEAUFORT COUNTY
STATION: **15+78.00 -L-**

SHEET 3 OF 4

STATE OF NORTH CAROLINA

DEPARTMENT OF TRANSPORTATION

RALEIGH

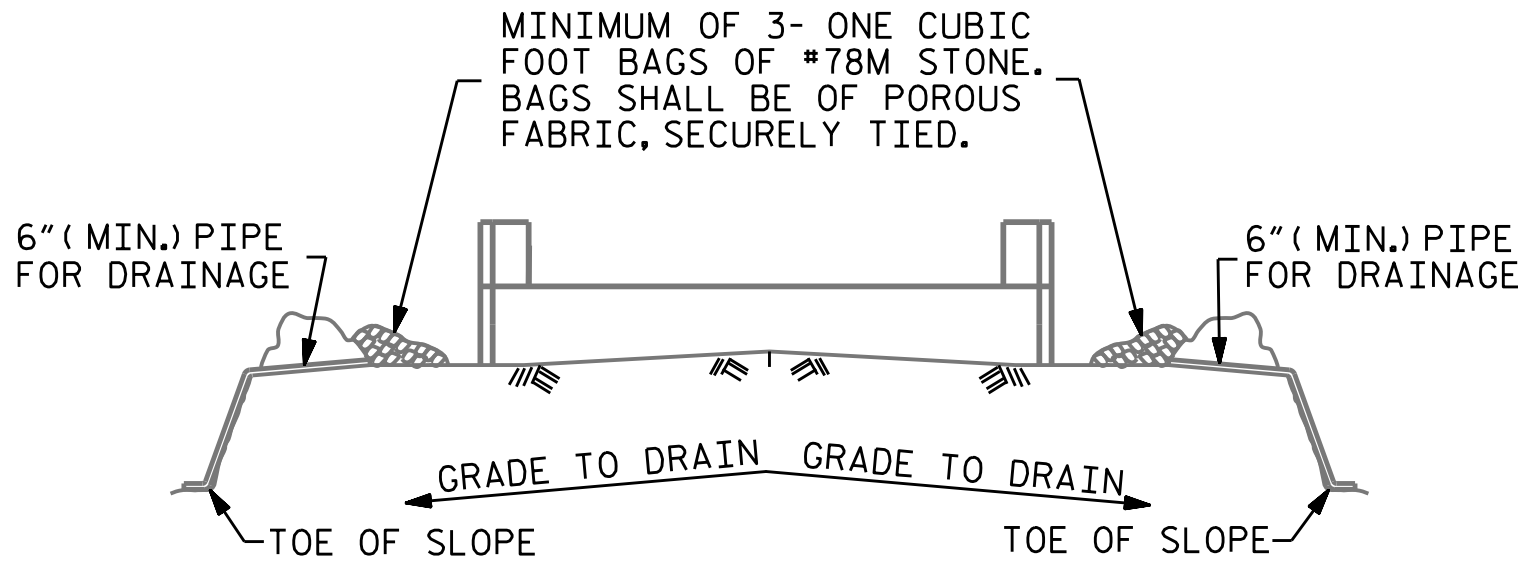
SUBSTRUCTURE

END BENT

WING DETAILS

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-15
1			3			TOTAL SHEETS
2			4			22

3/9/2026

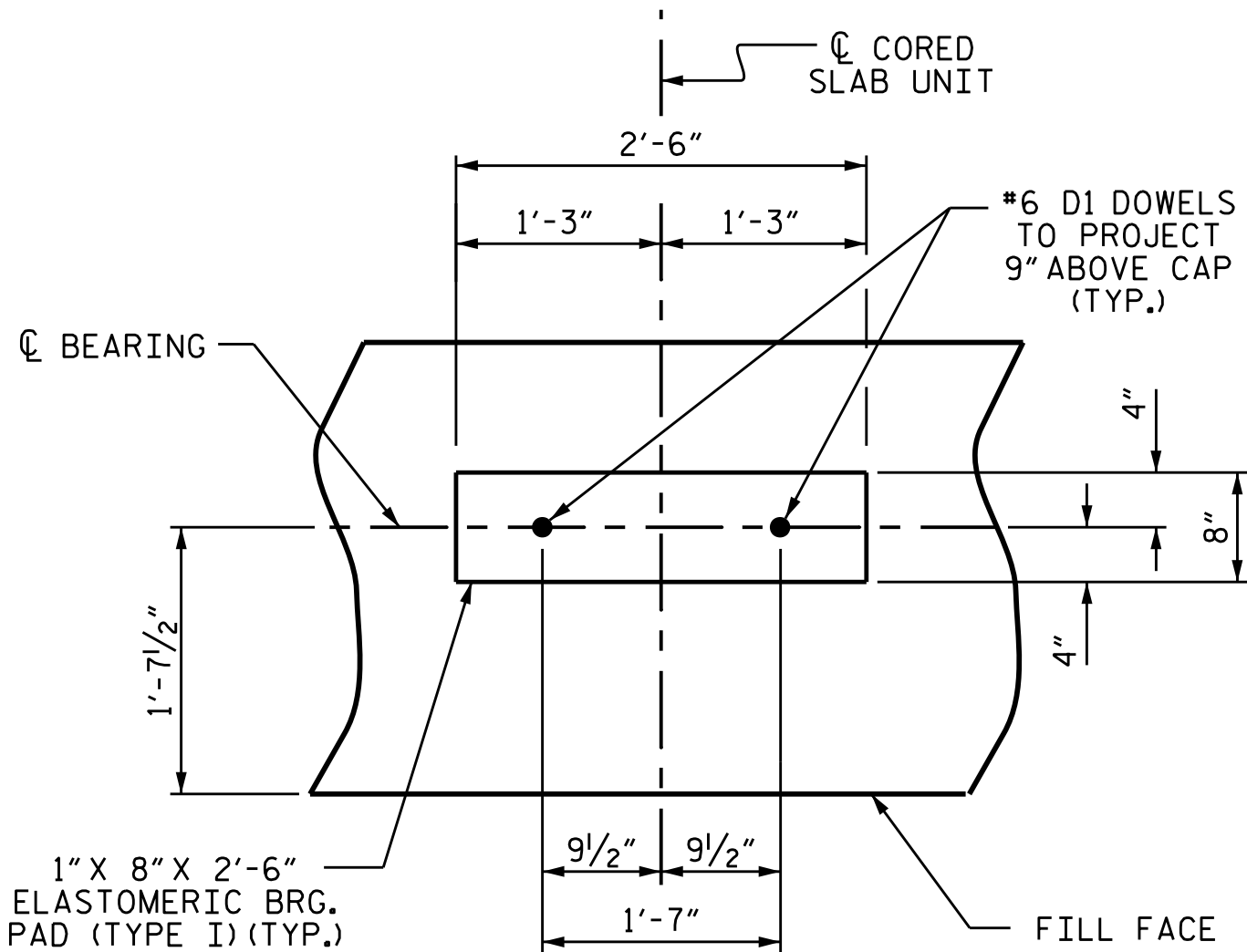


BAGGED STONE AND PIPE SHALL BE PLACED IMMEDIATELY AFTER COMPLETION OF END BENT EXCAVATION. PIPE MAY BE EITHER CONCRETE, CORRUGATED STEEL, CORRUGATED ALUMINUM ALLOY, OR CORRUGATED PLASTIC. PERFORATED PIPE WILL NOT BE ALLOWED.

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

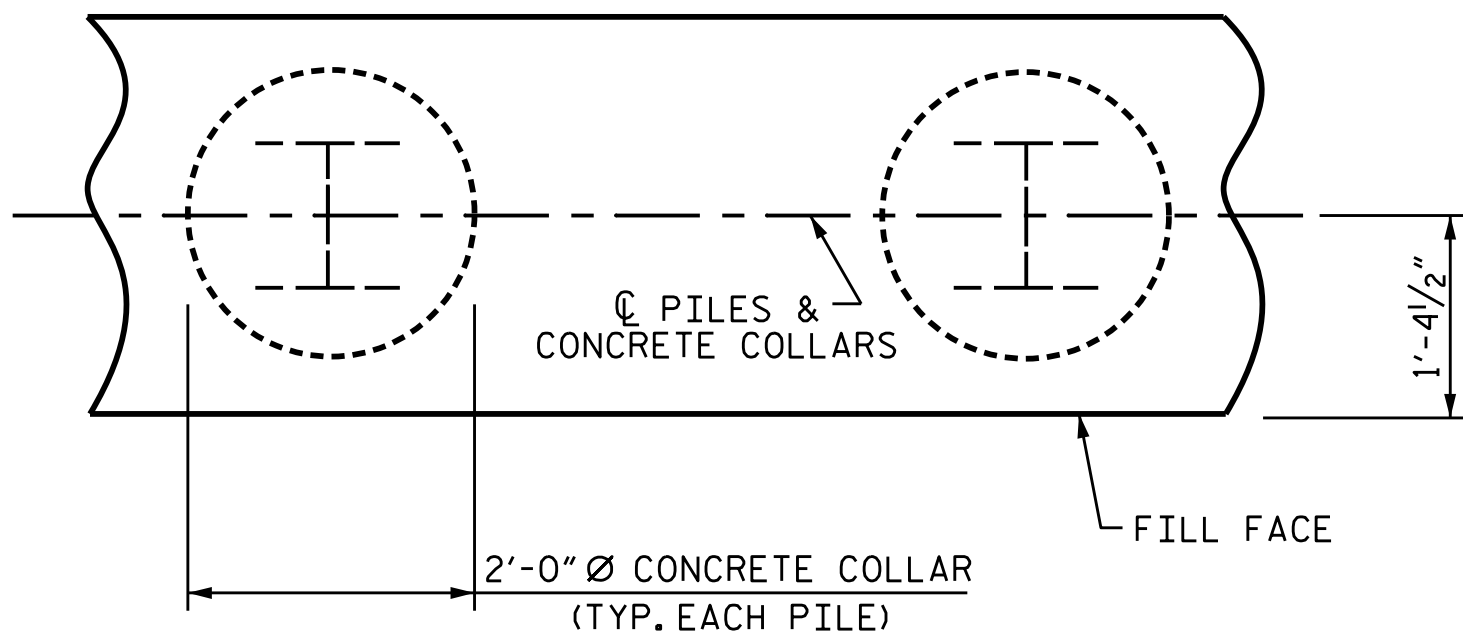
NO SEPARATE PAYMENT WILL BE MADE FOR THIS WORK AND THE ENTIRE COST OF THIS WORK SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR THE SEVERAL PAY ITEMS.

TEMPORARY DRAINAGE AT END BENT



DETAIL "A"

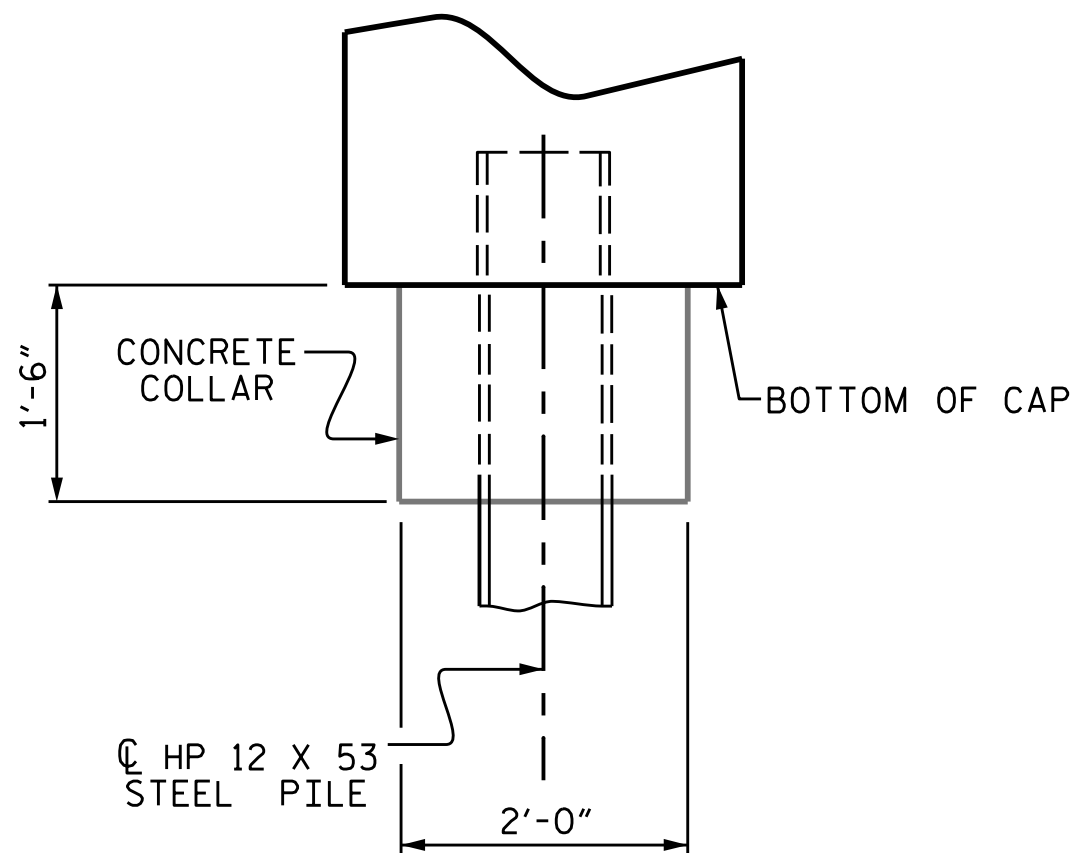
(END BENT No. 1 SHOWN, END BENT No. 2 SIMILAR BY ROTATION)



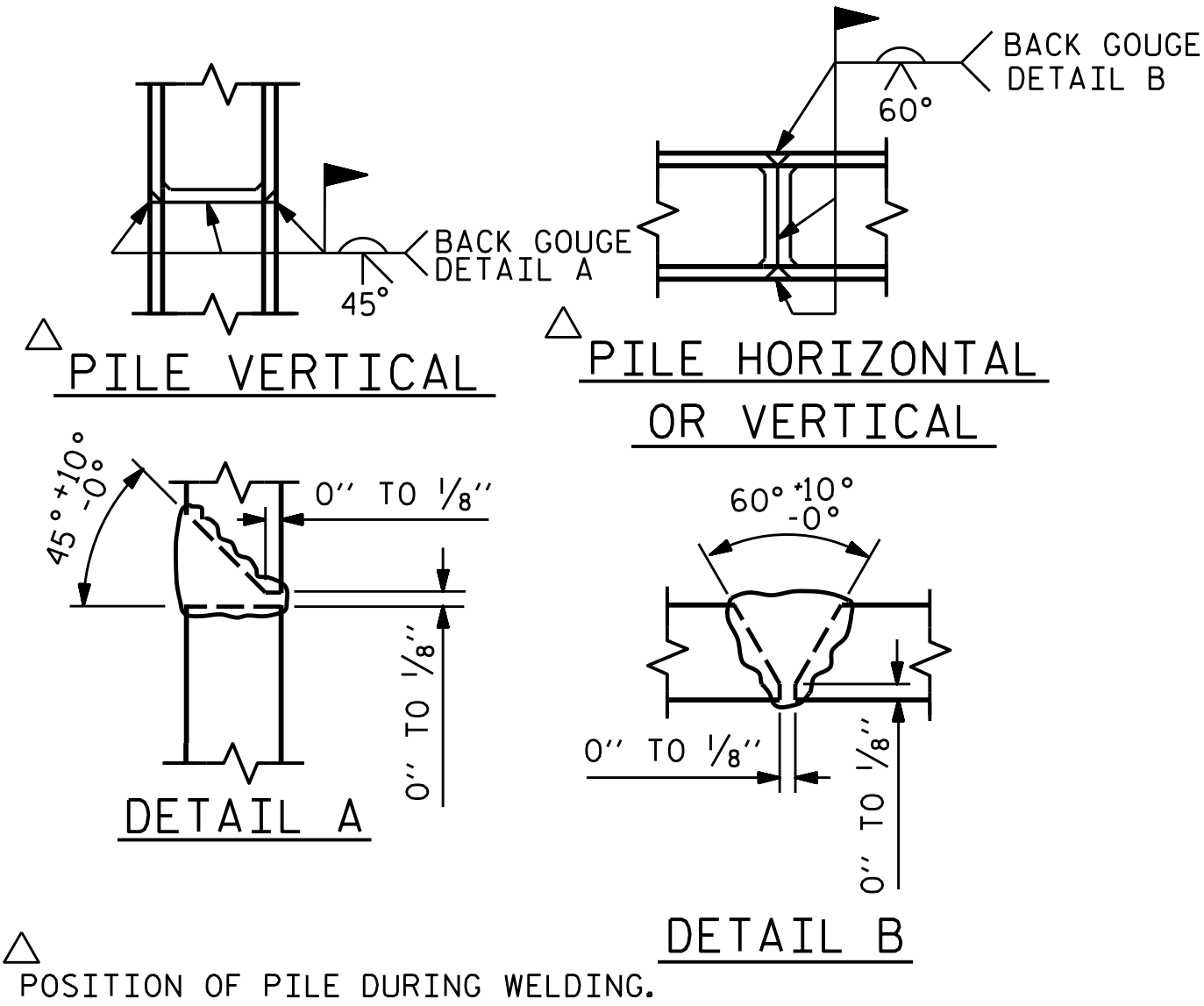
PLAN

CORROSION PROTECTION FOR STEEL PILES DETAIL

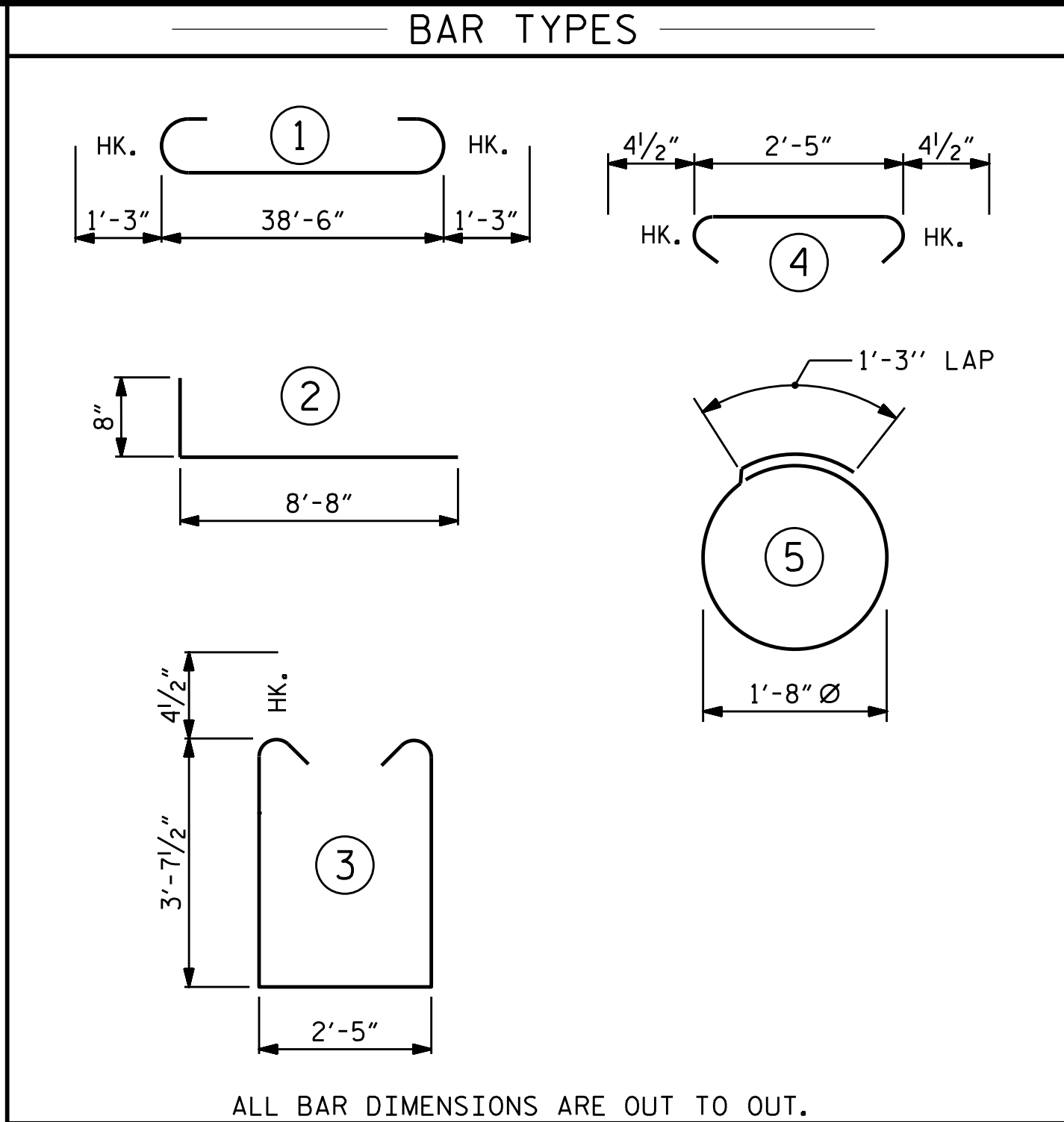
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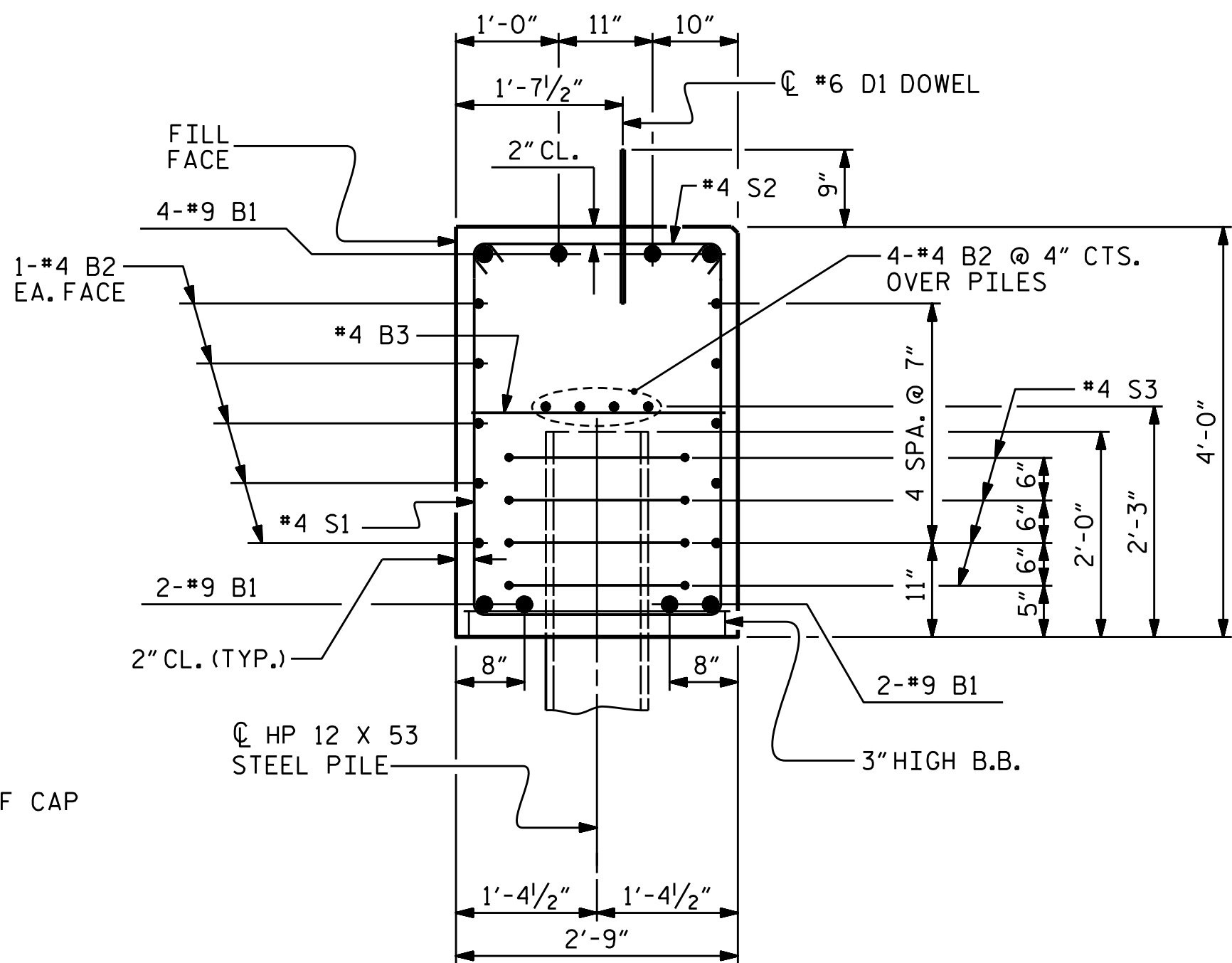
ELEVATION



PILE SPLICE DETAILS



BILL OF MATERIAL FOR ONE END BENT					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	8	#9	1	41'-0"	1115
B2	28	#4	STR	20'-7"	385
B3	10	#4	STR	2'-5"	16
D1	22	#6	STR	1'-6"	50
H1	40	#4	2	9'-4"	249
K1	16	#4	STR	2'-11"	31
S1	50	#4	3	10'-5"	348
S2	50	#4	4	3'-2"	106
S3	28	#4	5	6'-6"	122
V1	52	#4	STR	6'-2"	214
REINFORCING STEEL (FOR ONE END BENT)					2636 LBS.
CLASS A CONCRETE BREAKDOWN (FOR ONE END BENT)					
POUR #1	CAP, LOWER PART OF WINGS & COLLARS				19.5 C.Y.
POUR #2	UPPER PART OF WINGS				2.1 C.Y.
TOTAL CLASS A CONCRETE					21.6 C.Y.



SECTION A-A

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

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BEAUFORT COUNTY

STATION: **15+78.00 -L-**

SHEET 4 OF 4

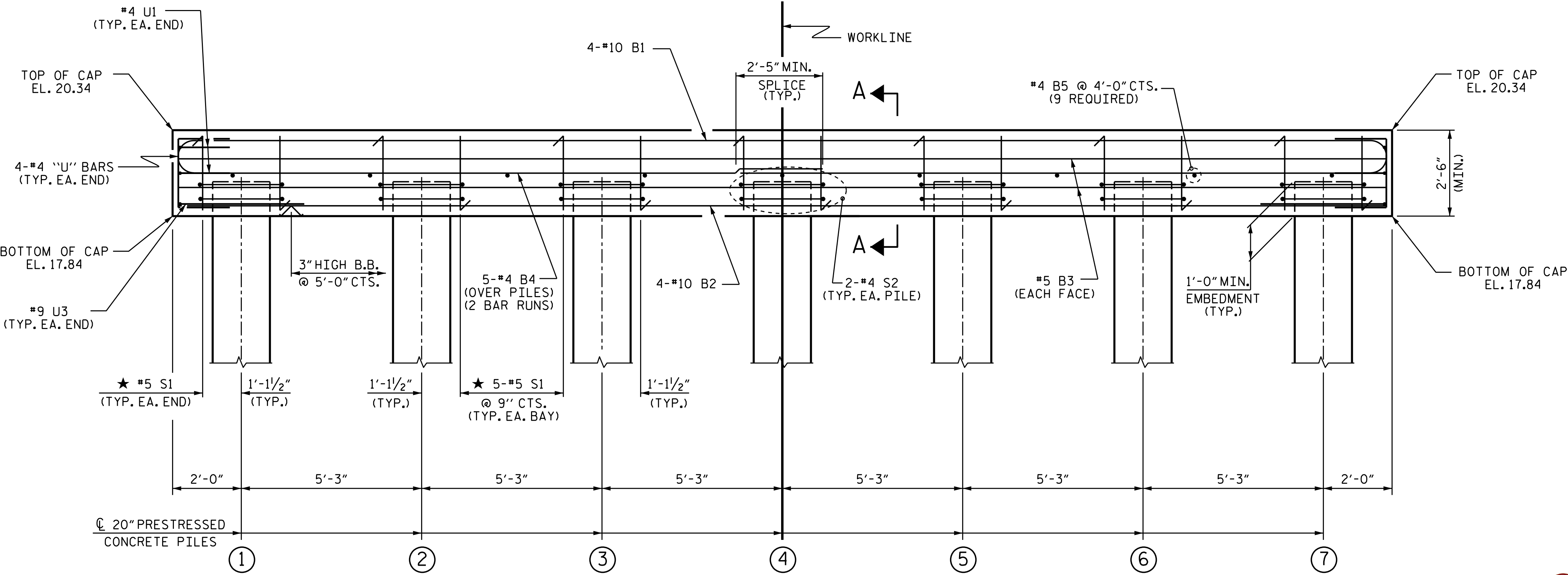
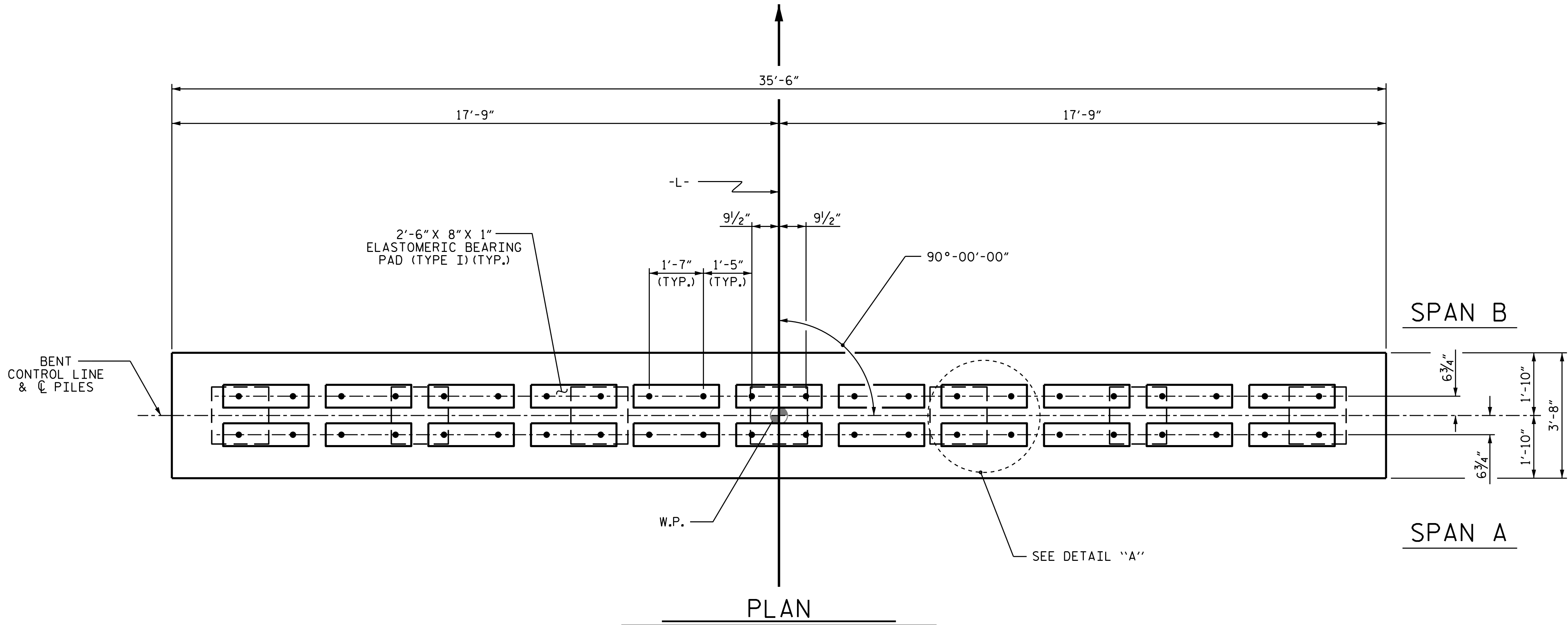
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

END BENT No. 1 & 2
DETAILS

REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	
1			3		S-16
2			4		TOTAL SHEETS 22

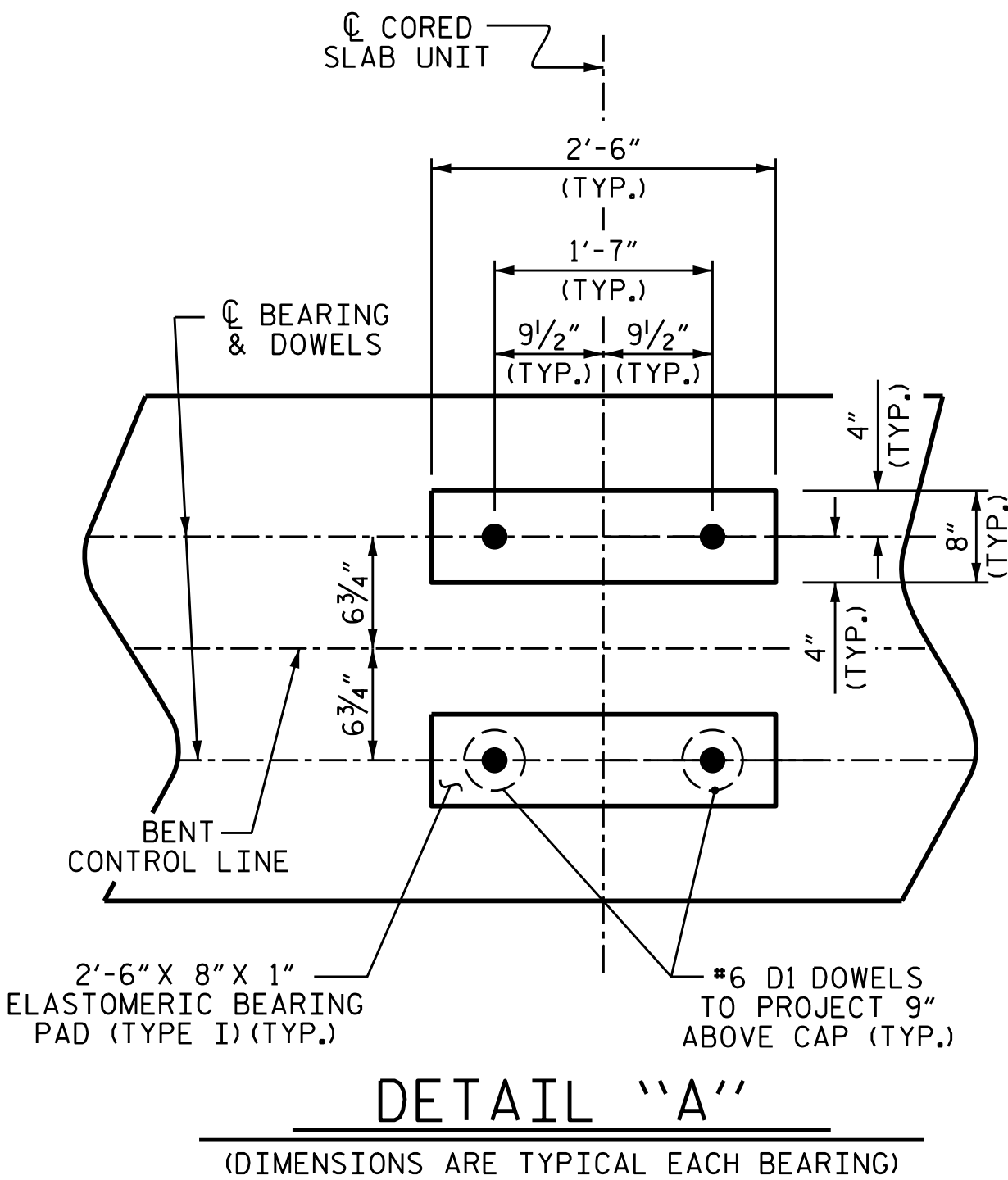
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NOTES

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

★ INVERT ALTERNATE STIRRUPS.



PROJECT NO. **BP2-R028.1**
BEAUFORT COUNTY
STATION: **15+78.00 -L-**

STATE OF NORTH CAROLINA
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RALEIGH

SUBSTRUCTURE
BENT NO. 1

REVISIONS					SHEET NO. S-17
NO.	BY:	DATE:	NO.	BY:	
1			3		TOTAL SHEETS
2			4		22

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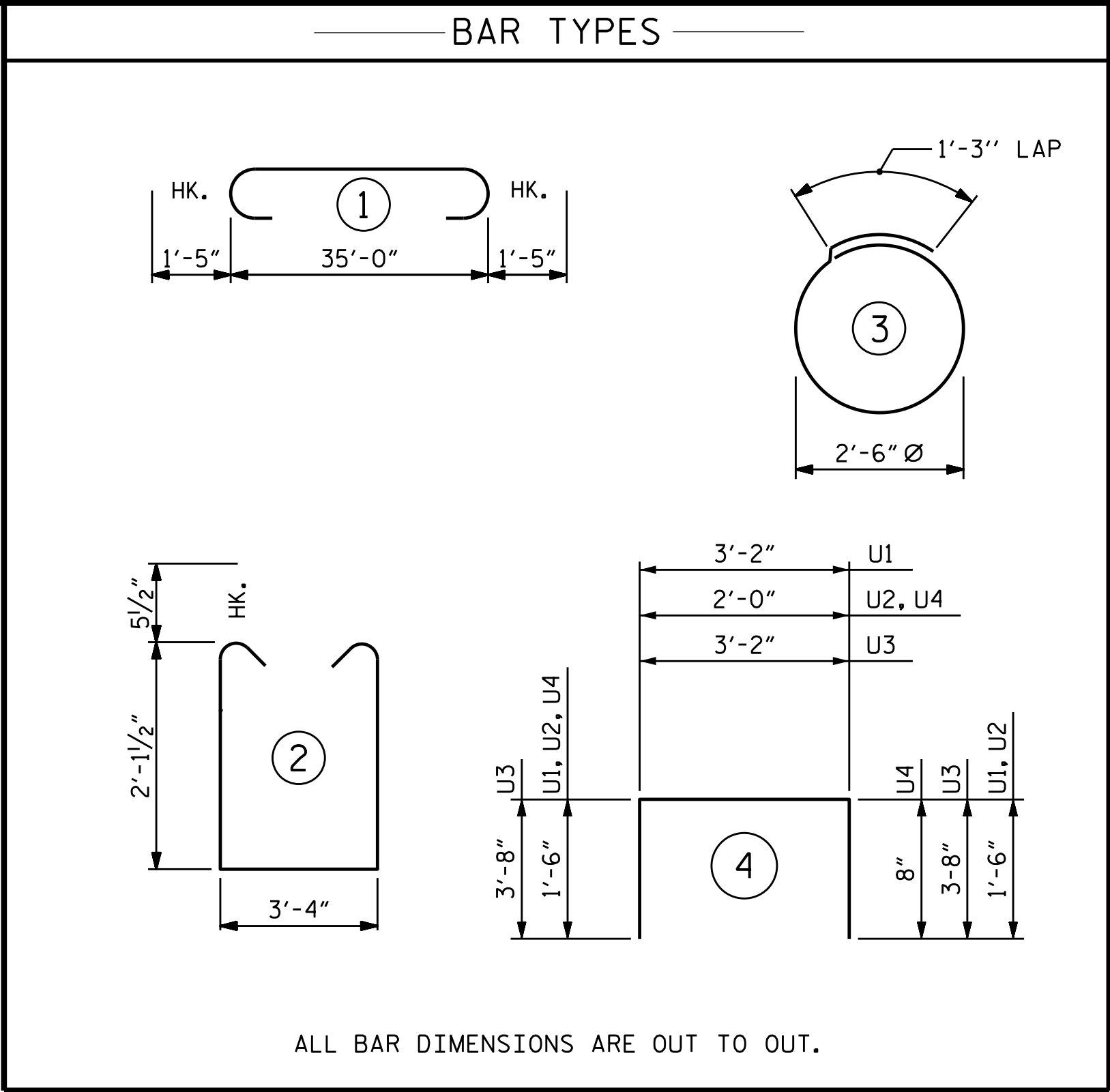
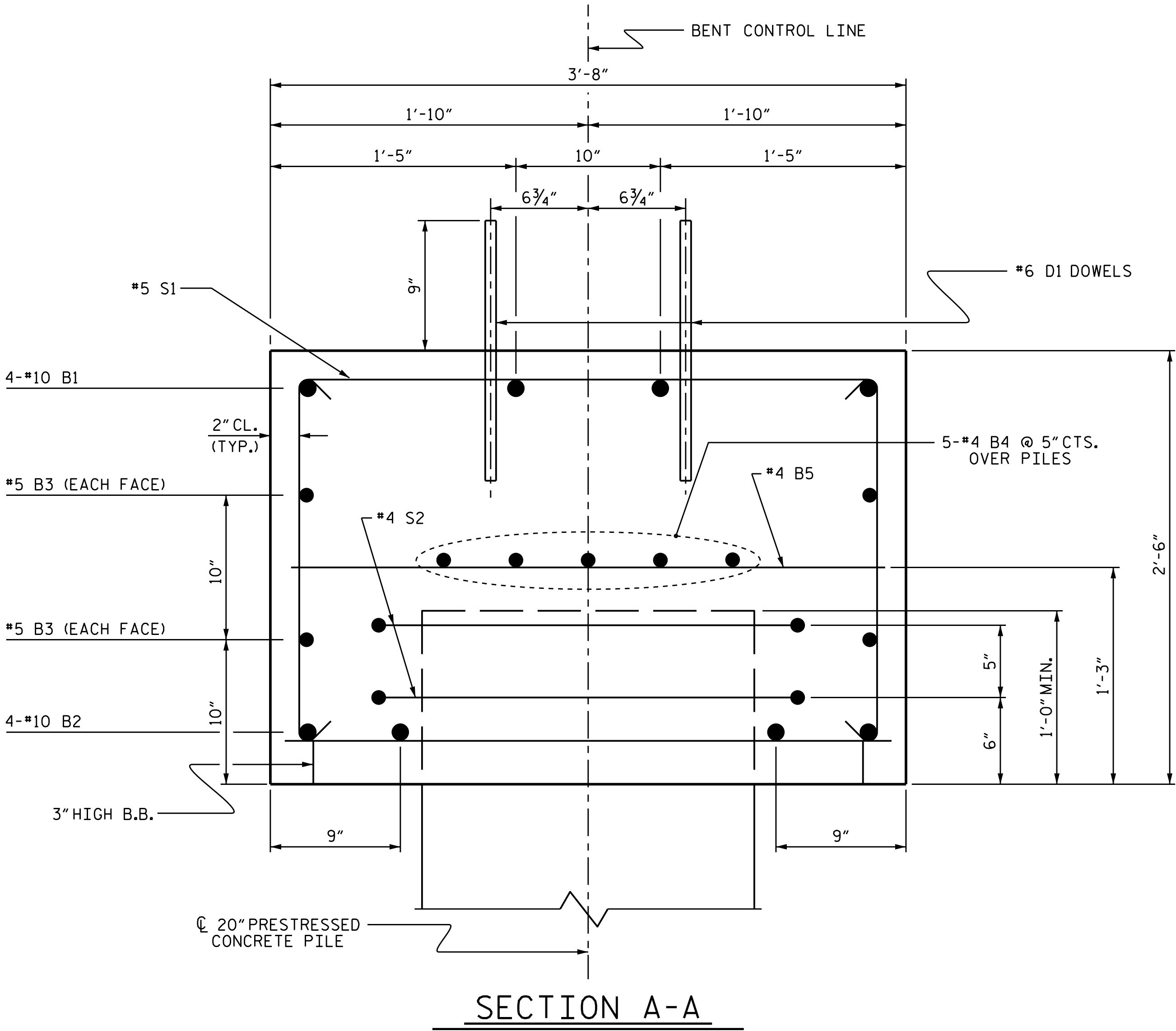
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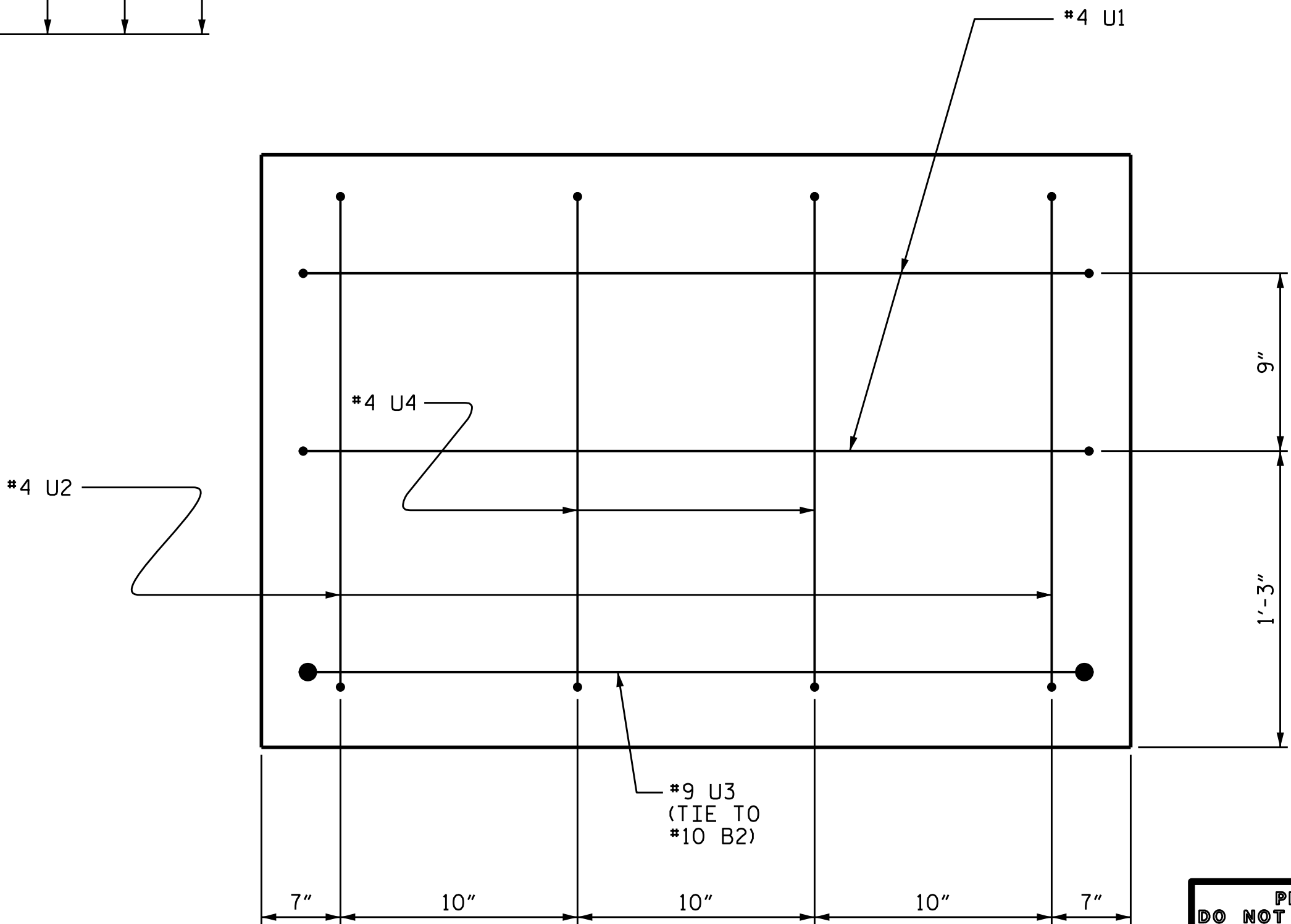
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CHECKED BY : SK	DATE : 8-26
DRAWN BY : DGE 06/10	REV. 6/17
CHECKED BY : MKT 06/10	MAA/THC



BILL OF MATERIAL					
FOR ONE BENT					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	4	#10	1	37'-10"	651
B2	4	#10	STR	35'-2"	605
B3	4	#5	STR	35'-2"	147
B4	10	#4	STR	18'-10"	126
B5	9	#4	STR	3'-4"	20
D1	44	#6	STR	1'-6"	99
S1	32	#5	2	8'-6"	284
S2	14	#4	3	9'-2"	86
U1	4	#4	4	6'-2"	16
U2	4	#4	4	5'-0"	13
U3	2	#9	4	10'-6"	71
U4	4	#4	4	4'-2"	11
REINFORCING STEEL (FOR ONE BENT)					2129 LBS
CLASS A CONCRETE BREAKDOWN (FOR ONE BENT)					
TOTAL CLASS A CONCRETE					▲ 11.3 C.Y.
▲ CONCRETE DISPLACED BY THE 20"PRESTRESSED CONCRETE PILES HAS BEEN DEDUCTED FROM THE CONCRETE QUANTITY.					



PROJECT NO. **BP2-R028.1**
BEAUFORT COUNTY
STATION: **15+78.00 -L-**

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH				
SUBSTRUCTURE BENT NO. 1				
REVISIONS				
NO.	BY:	DATE:	NO.	BY:
1			3	
2			4	
SHEET NO.				S-18
TOTAL SHEETS				22

ASSEMBLED BY : <u>THA</u>	DATE : <u>8-26</u>
CHECKED BY : <u>SK</u>	DATE : <u>8-26</u>
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CHECKED BY : <u>MKT 05/10</u>	MAA/THC

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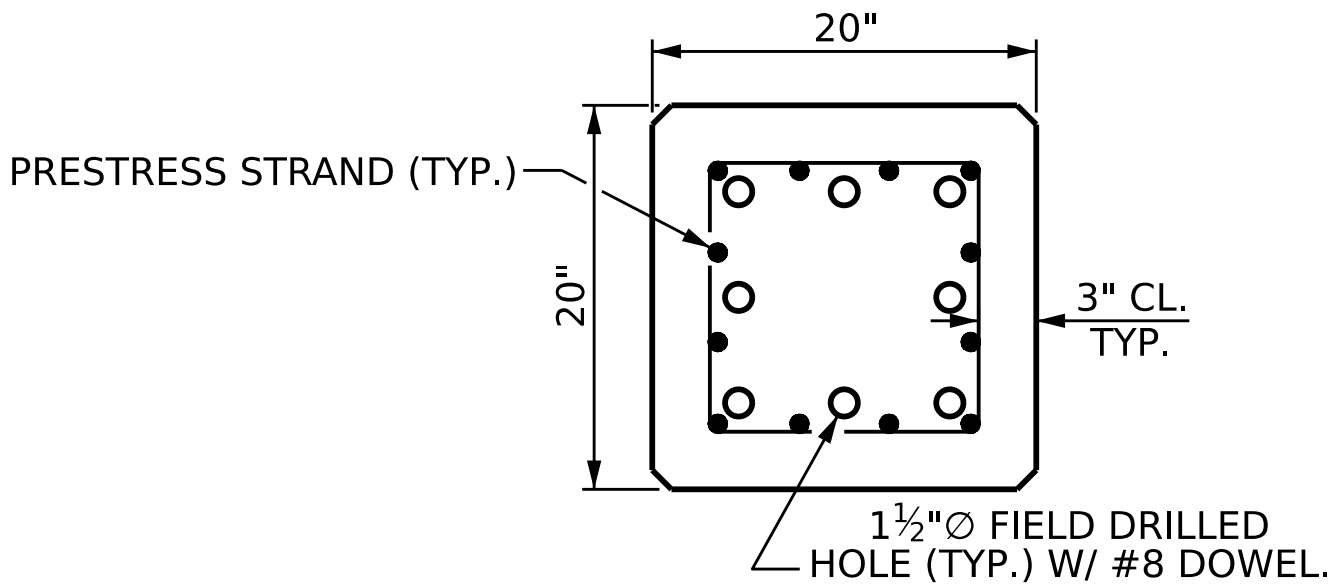
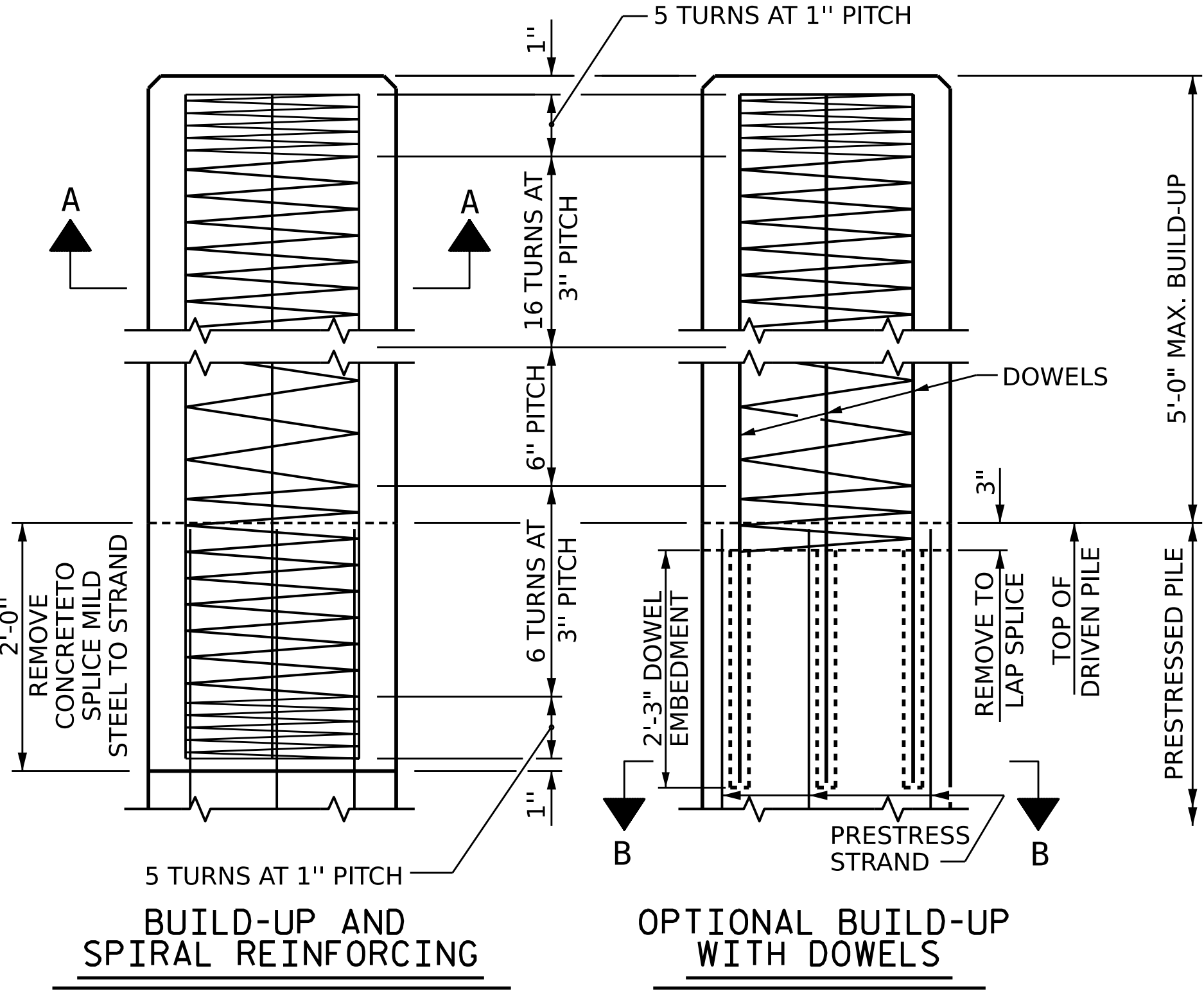
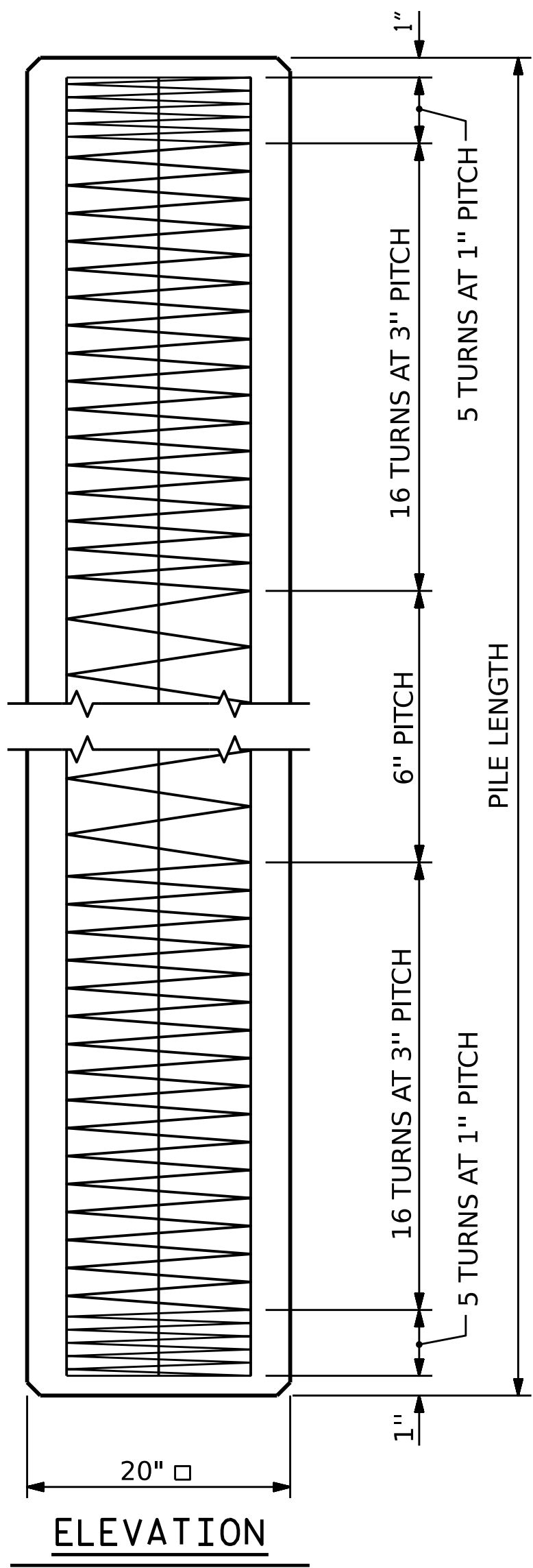
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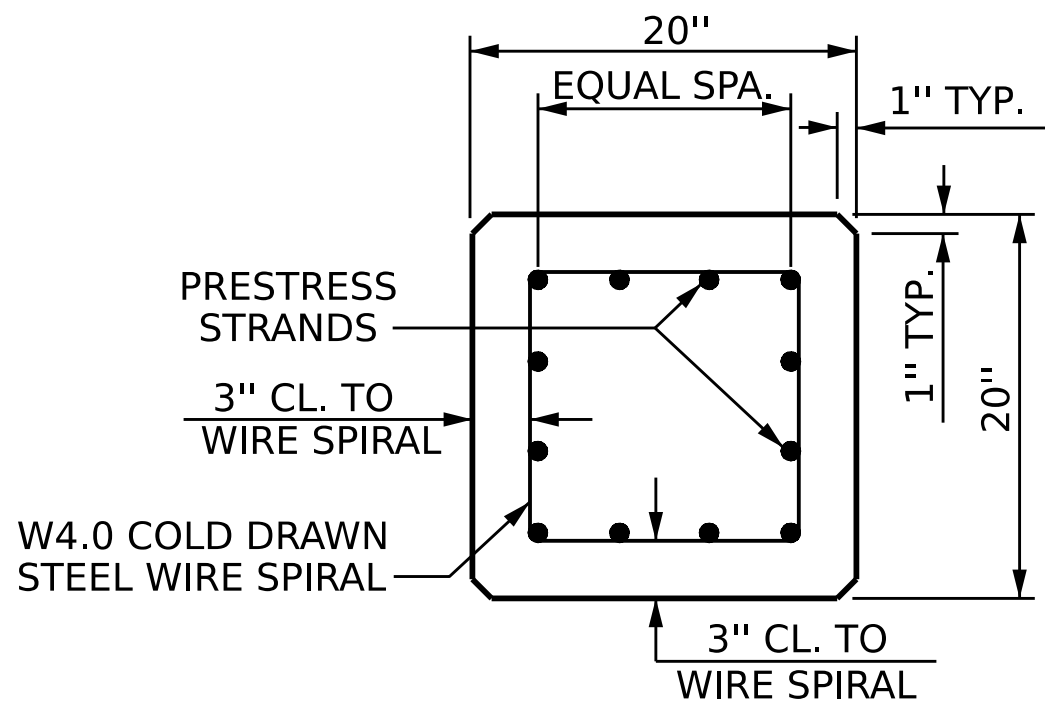
SEAL
040938
NORTH CAROLINA
PROFESSIONAL
ENGINEER
SARASONE KOLMBANDH

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sarasone koulmbandh
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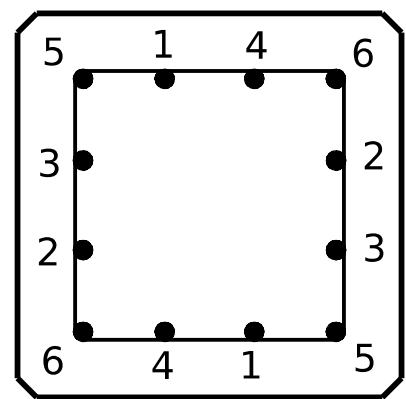


SECTION "B-B"

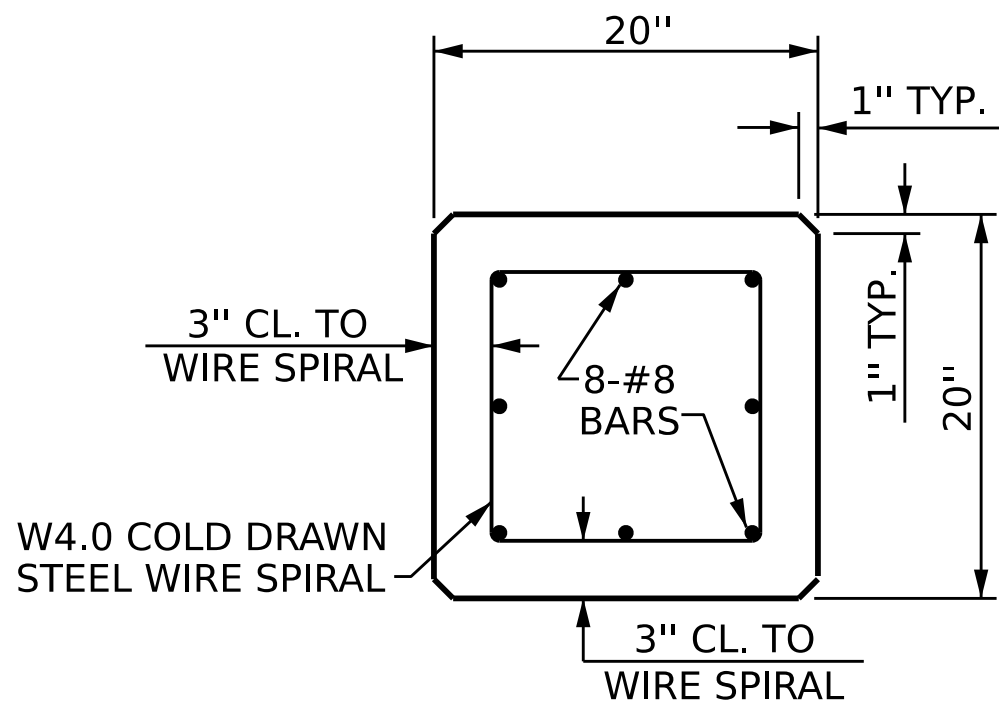
(AT THE CONTRACTOR'S OPTION, PILE BUILD-UP MAY BE CONSTRUCTED WITH DOWELS.)



TYPICAL SECTION

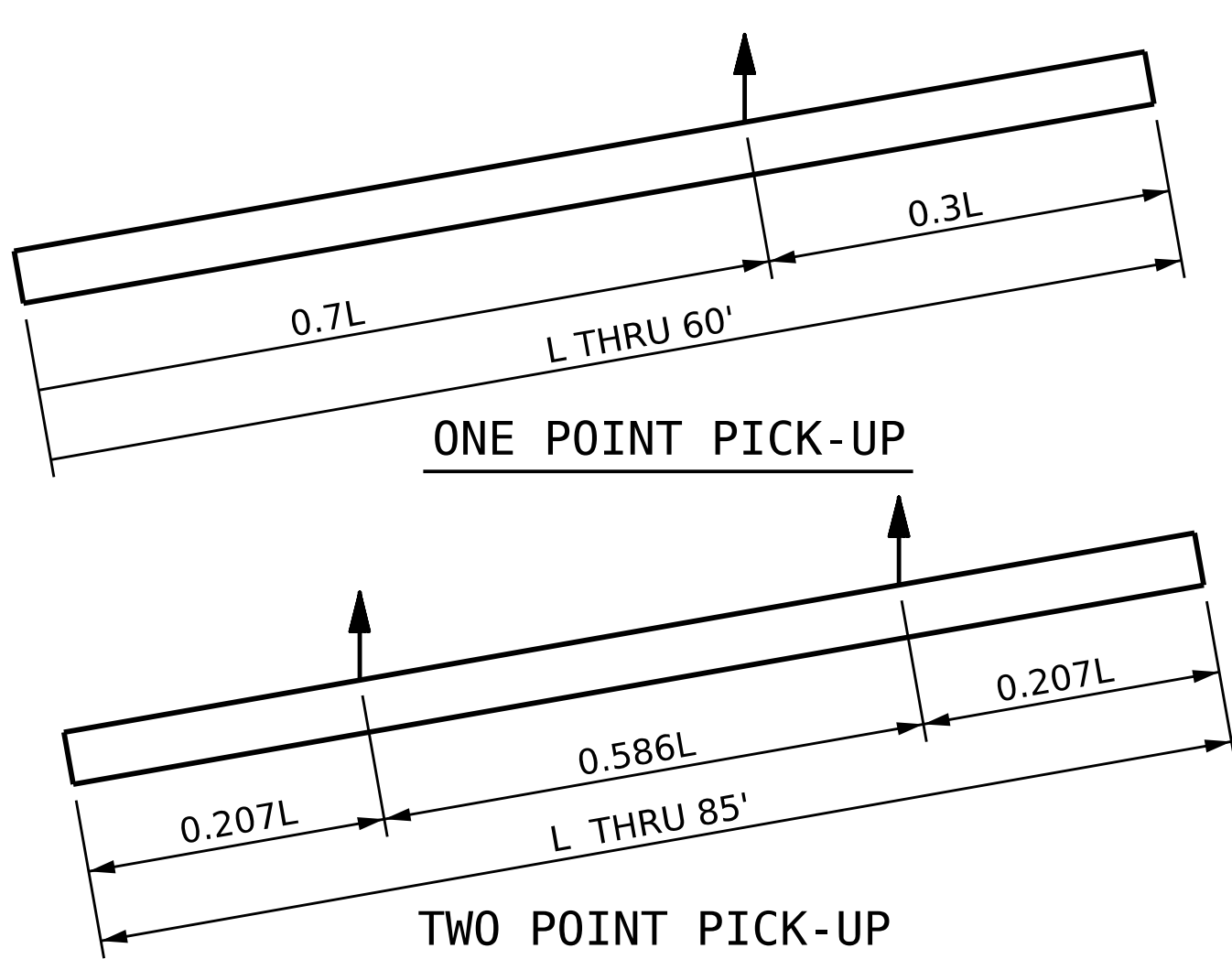


TYPICAL PATTERN FOR BURNING STRANDS



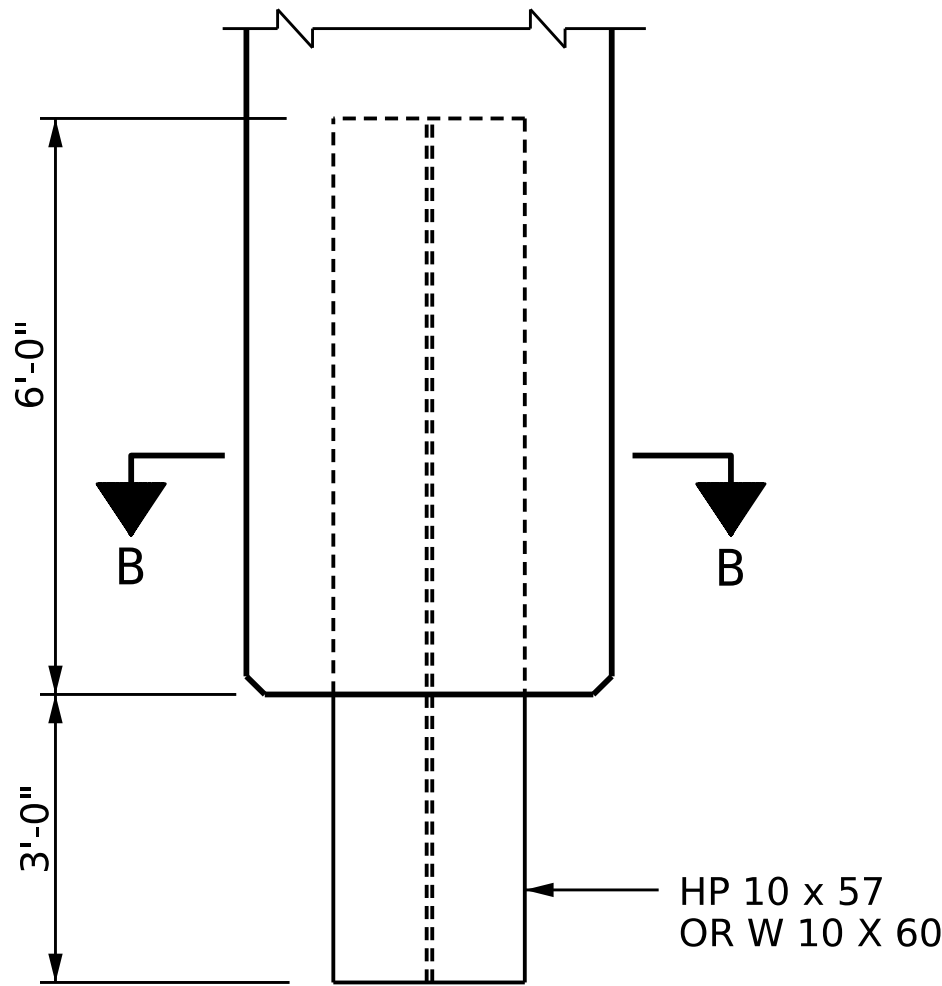
SECTION A-A

0.6"Ø GRADE 270 L.R. PRESTRESS STRANDS

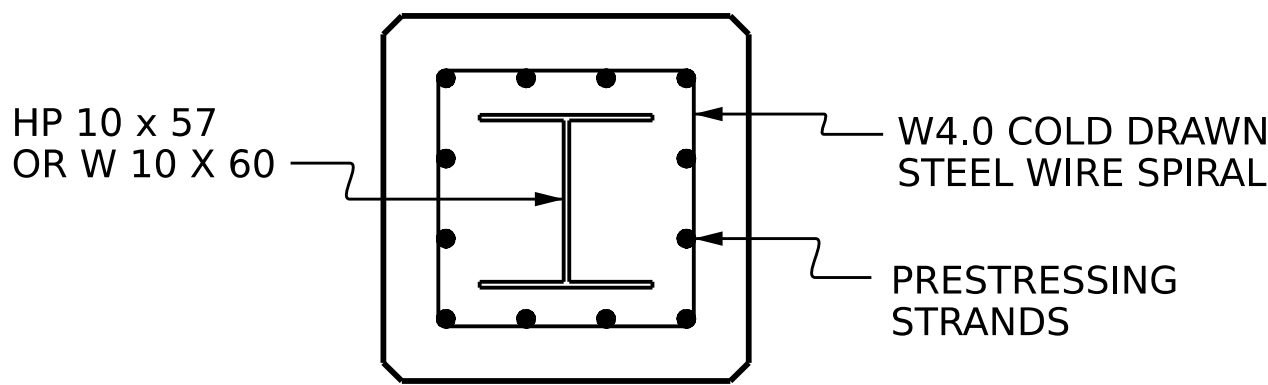


PICK-UP POINTS

QUANTITIES FOR ONE 20" PRESTRESSED PILE						
LENGTH	CONCRETE CU. YDS.	PILE WT. TONS	ONE POINT PICK-UP		TWO POINT PICK-UP	
			0.3L	0.7L	0.207L	0.586L
25'-0"	2.56	5.18	7'-6"	17'-6"		
30'-0"	3.07	6.22	9'-0"	21'-0"		
35'-0"	3.58	7.26	10'-6"	24'-6"		
40'-0"	4.09	8.29	12'-0"	28'-0"		
45'-0"	4.61	9.33	13'-6"	31'-6"		
50'-0"	5.12	10.36	15'-0"	35'-0"		
55'-0"	5.63	11.40	16'-6"	38'-6"		
60'-0"	6.14	12.44	18'-0"	42'-0"		
65'-0"	6.65	13.47			13'-5½"	38'-1"
70'-0"	7.17	14.51			14'-6"	41'-0"
75'-0"	7.68	15.55			15'-6½"	43'-11"
80'-0"	8.19	16.58			16'-6½"	46'-11"
85'-0"	8.70	17.62			17'-7"	49'-10"



ELEVATION



SECTION B-B
PILE TIP DETAILS

FOR 20" SQUARE PRESTRESSED CONCRETE PILE

NOTES

PRESTRESSED CONCRETE STRENGTH : $f'c = 7,500$ PSI

BUILD-UP CONCRETE STRENGTH : $f'c = 7,500$ PSI

STRAND DATA:

SIZE	GRADE	AREA	ULTIMATE STRENGTH	APPLIED PRESTRESS FORCE
0.6"	270 L.R.	0.217	58,600# PER STRAND	43,940# PER STRAND

ALL PRESTRESSING STRANDS SHALL BE 7-WIRE LOW-RELAXATION GRADE 270 STRANDS CONFORMING TO AASHTO M203. STRAND SAMPLING REQUIREMENTS SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

THE SLIP-FORM METHOD OF CASTING PILES WILL NOT BE PERMITTED.

TRANSFER THE LOAD FROM THE ANCHORAGES TO THE PILE AFTER THE CONCRETE HAS ATTAINED A MINIMUM COMPRESSIVE STRENGTH OF 4,000 PSI.

IF STRAND STRESS IS RELIEVED BY BURNING, THE STRANDS SHALL BE BURNED IN OPPOSITE PAIRS AS INDICATED IN THE TYPICAL PATTERN SHOWN. FOR ANY NUMBER OF STRANDS, BURN IN OPPOSITE PAIRS AND SYMMETRICALLY ABOUT BOTH THE VERTICAL AND HORIZONTAL AXES. STRANDS 1-1 SHALL BE BURNED BEFORE 2-2, ETC. NOT MORE THAN 4 STRANDS, SAY 3-3 AND 4-4, MAY BE BURNED AT ANY ONE SECTION BEFORE THESE SAME PAIRS OF STRANDS ARE BURNED AT BOTH ENDS OF THE BED AND BETWEEN EACH PAIR OF PILES IN THE BED.

PROPOSED DEVICES FOR LIFTING PILES, RECESS DETAILS, AND PATCHING MATERIAL SHALL BE DETAILED IN SHOP DRAWINGS. AFTER ATTACHMENTS HAVE BEEN REMOVED, OPENINGS SHALL BE REPAIRED SUCH THAT THE APPEARANCE OF THE PILE IS UNIFORM.

WHERE CAST-IN-PLACE LIFTING DEVICES ARE NOT USED, PICK-UP POINTS ARE TO BE INDICATED WITH A 2" WIDE BLACK MARK.

DRIVE PILES USING A METHOD APPROVED BY THE ENGINEER, WHEREBY THE HEAD OF THE PILE IS NOT DAMAGED.

DRIVING OF THE BUILT-UP PILE WILL NOT BE PERMITTED UNTIL THE CONCRETE HAS REACHED A COMPRESSIVE STRENGTH OF 5,000 PSI AND UNTIL A PERIOD OF SEVEN DAYS HAS ELAPSED SINCE CASTING OF THE BUILD-UP.

DOWEL INSTALLATION FOR OPTIONAL BUILD-UP

GROUT COMPRESSIVE STRENGTH: $f'c = 5,000$ PSI

BEFORE DRILLING DOWEL HOLES, REMOVE THE UPPER 3" OF CONCRETE FROM THE TOP OF THE PILE WITHOUT DAMAGE TO THE REINFORCING STEEL. THE REMOVAL PLANE SHOULD BE NORMAL TO THE EDGE OF THE PILE.

DOWEL HOLES SHALL BE POSITIONED TO MAINTAIN ½" CLEAR TO ALL EXISTING PRESTRESSING STRANDS IN THE CONCRETE PILE.

FIELD DRILLED HOLES SHALL BE CLEAN AND FREE OF ANY OBSTRUCTIONS BEFORE GROUTING OF DOWELS. DOWEL BARS SHALL BE INSTALLED AND GROUTED WITH AN APPROVED NON-SHRINK GROUT.

THE SPIRAL REINFORCING IN ALL BUILD-UPS SHALL BE W4.0 COLD DRAWN WIRE WHICH SHALL BE SECURED TO THE LONGITUDINAL REINFORCEMENT TO MAINTAIN PITCH.

THE SPIRAL REINFORCING IN THE BUILD-UP AND THE PRESTRESSED CONCRETE PILE SHALL BE SPLICED BY OVERLAPPING A MIN. OF ONE TURN.

PROJECT NO. **BP2-R028.1**

BEAUFORT COUNTY

STATION: **15+78.00 -L-**

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
STANDARD

20" PRESTRESSED
CONCRETE PILE

REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	
1			3		S-19
2			4		TOTAL SHEETS 22

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

CarolinaTEA
Carolina Transportation Engineers & Associates, PC

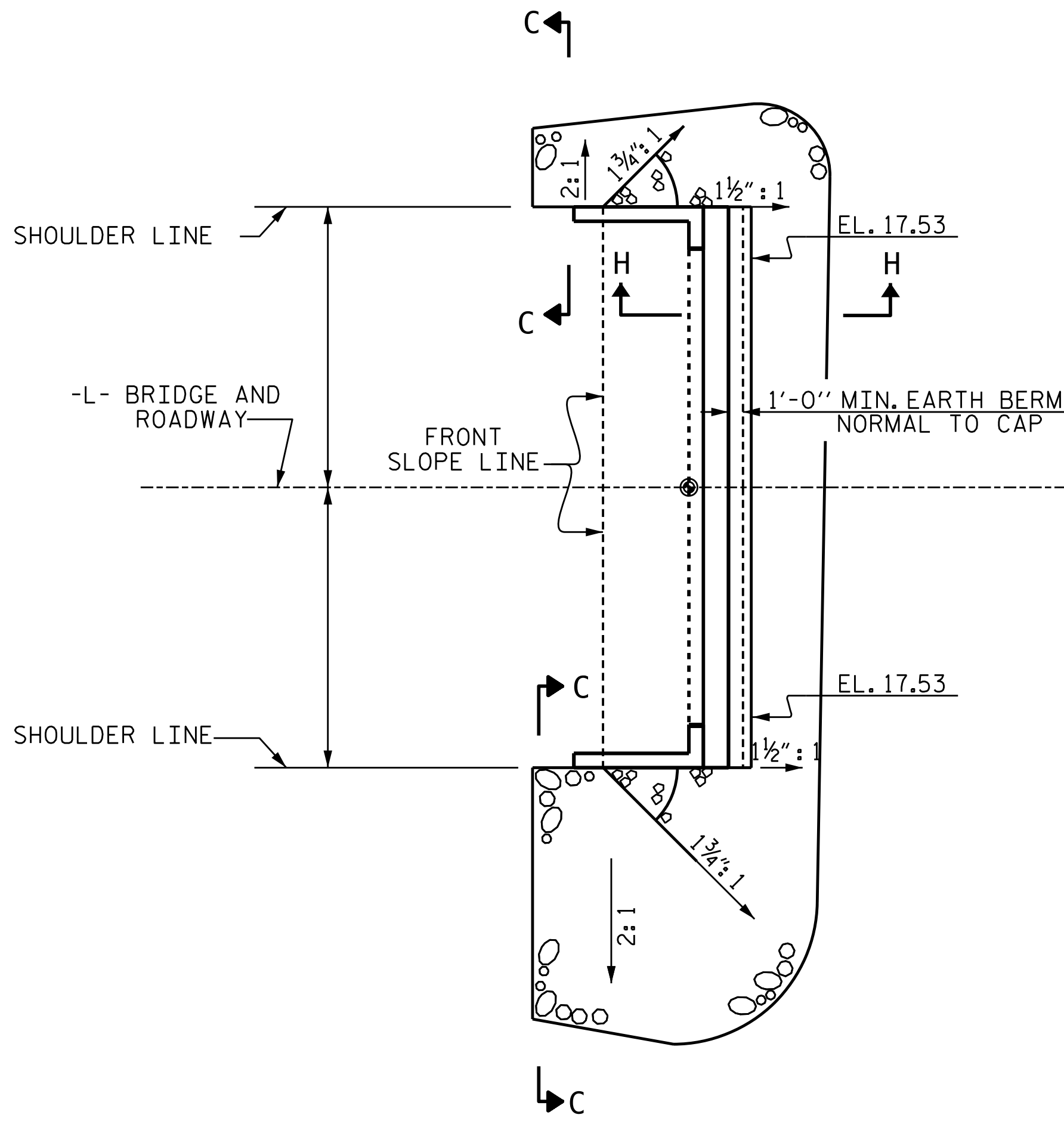
Carolina Transportation Engineers & Assoc., PC
3700 Arco Corporate Drive
Suite 405
Charlotte, NC 28273
Telephone: (980) 722-6065

DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

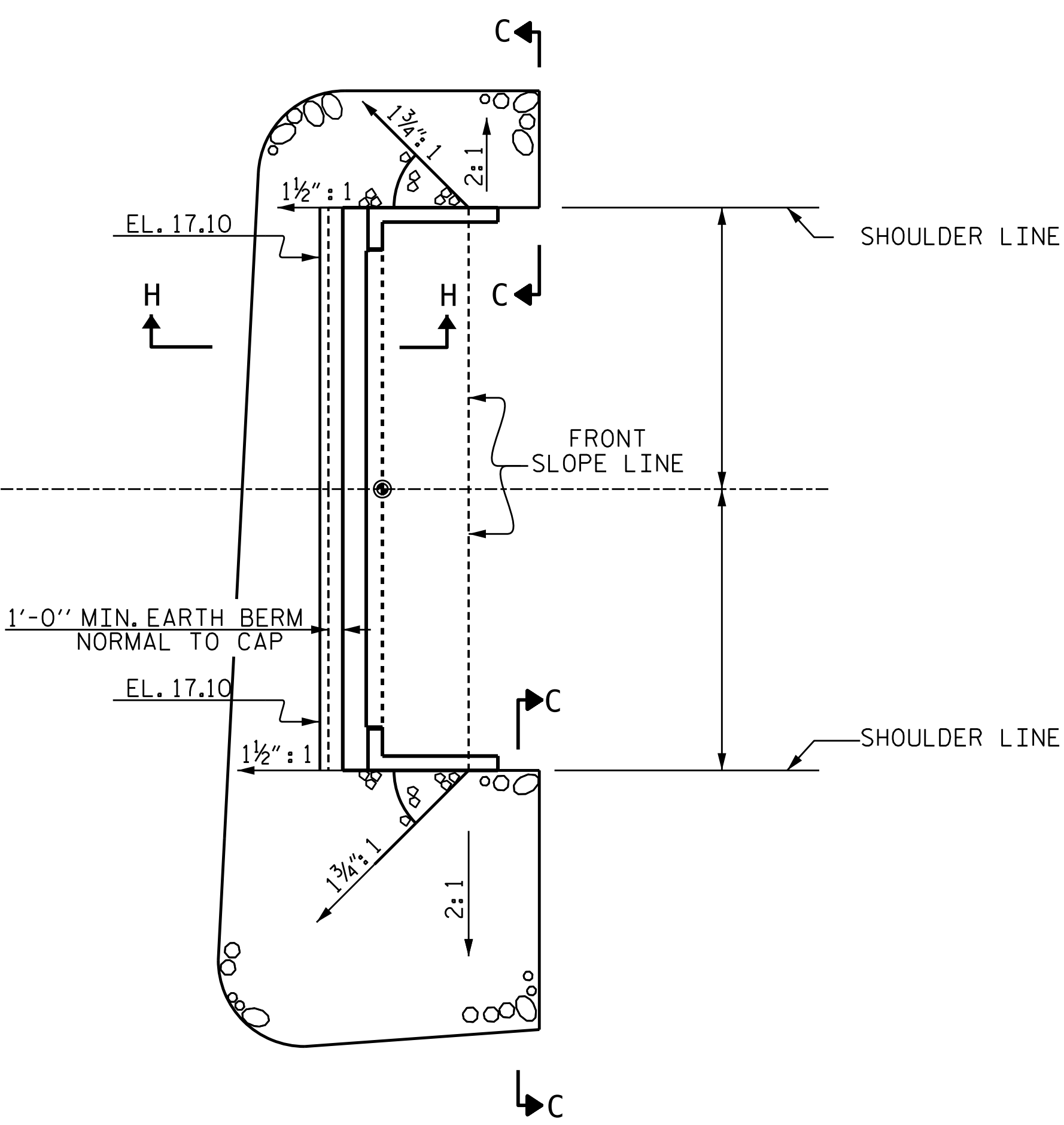


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7/31/2026

NOTES :
FOR BERM WIDTH DIMENSIONS, SEE GENERAL DRAWING.

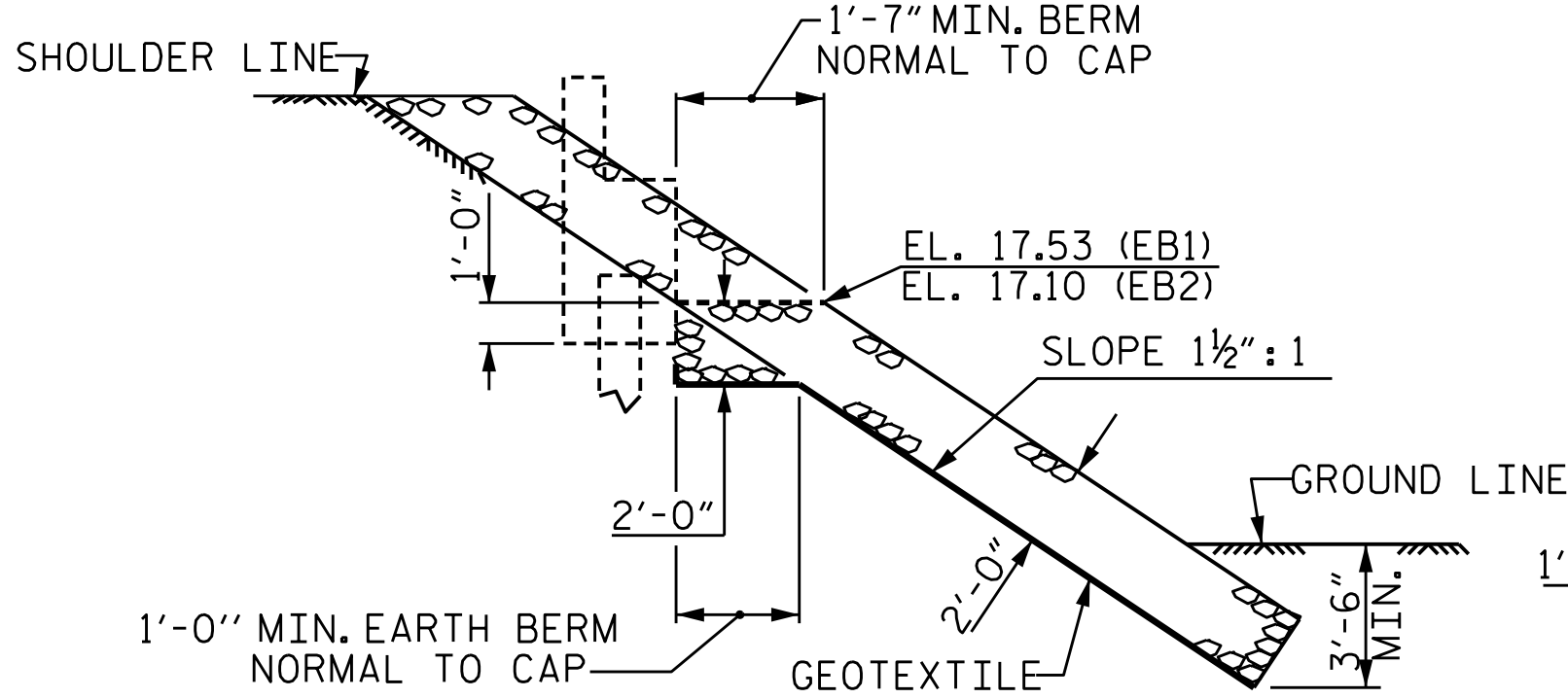


END BENT NO.1 RIP RAP

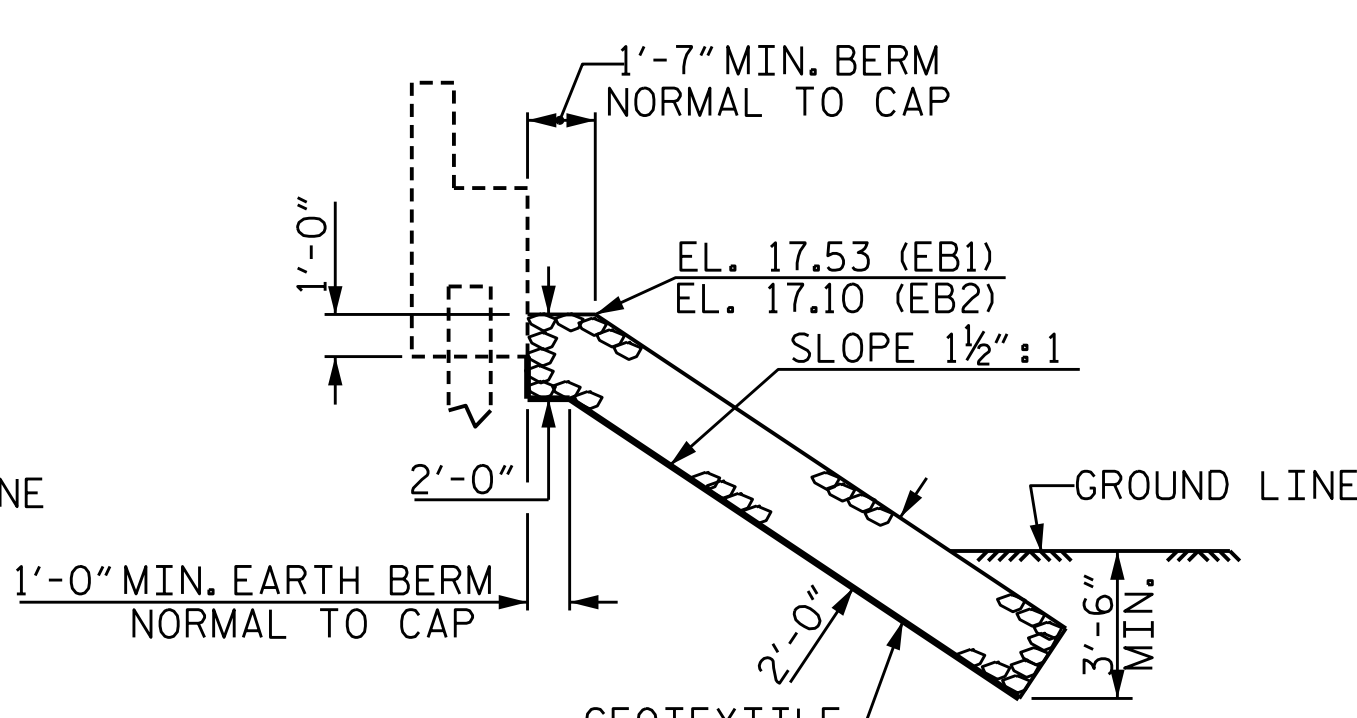


END BENT NO.2 RIP RAP

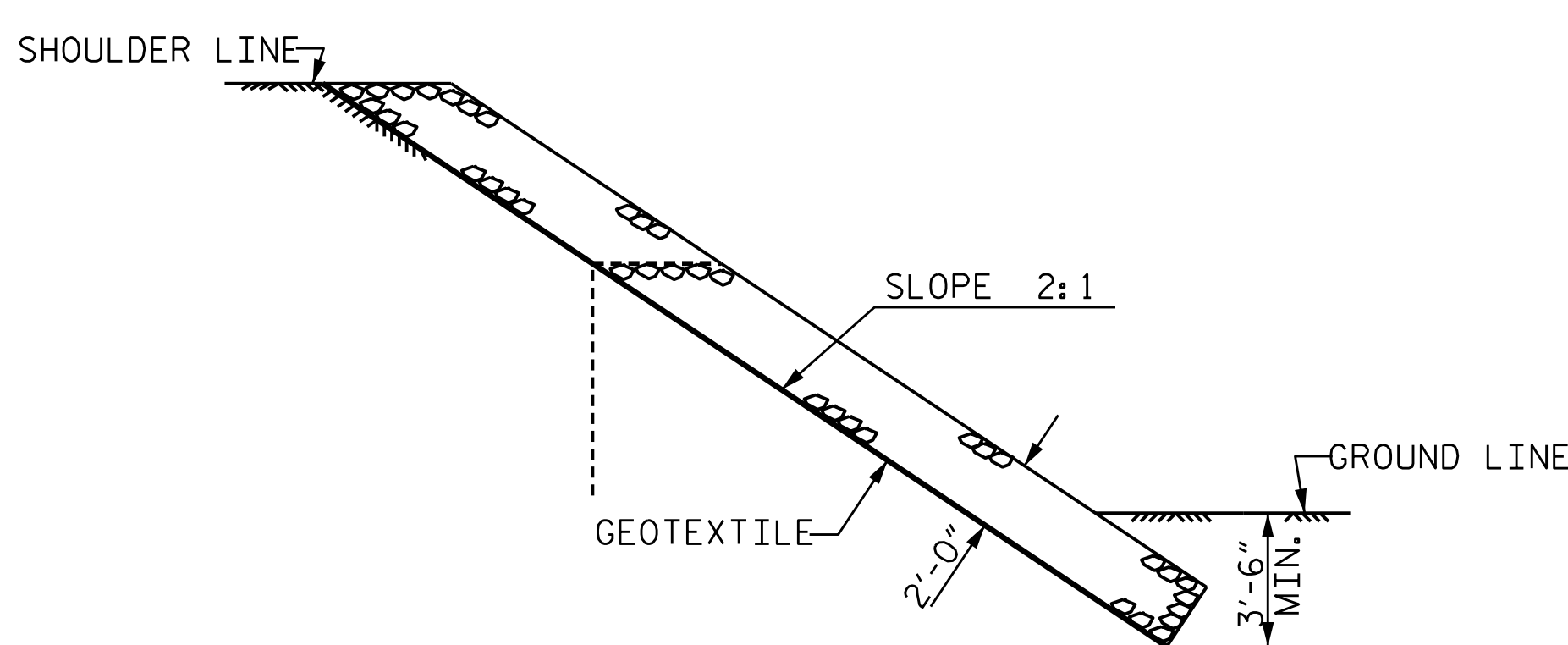
ESTIMATED QUANTITIES		
BRIDGE @ STA. 15+78.00-L-	RIP RAP CLASS II (2'-0" THICK)	GEOTEXTILE FOR DRAINAGE
	TONS	SQUARE YARDS
END BENT 1	130	110
END BENT 2	130	110



SECTION H-H



SECTION C-C
BERM RIP RAPPED



SECTION C-C

PROJECT NO. **BP2-R028.1**
BEAUFORT COUNTY
STATION: **15+78.00 -L-**

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
RIP RAP DETAILS					
REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
TOTAL SHEETS					22

STD. NO. RR1

ASSEMBLED BY : JDB	DATE : 8-26
CHECKED BY : SK	DATE : 8-26
DRAWN BY : REK 1/84	REV. 10/1/II MAA/GM
CHECKED BY : RDU 1/84	REV. 12/21/II MAA/GM
	REV. 12/17 MAA/THC

**PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION**

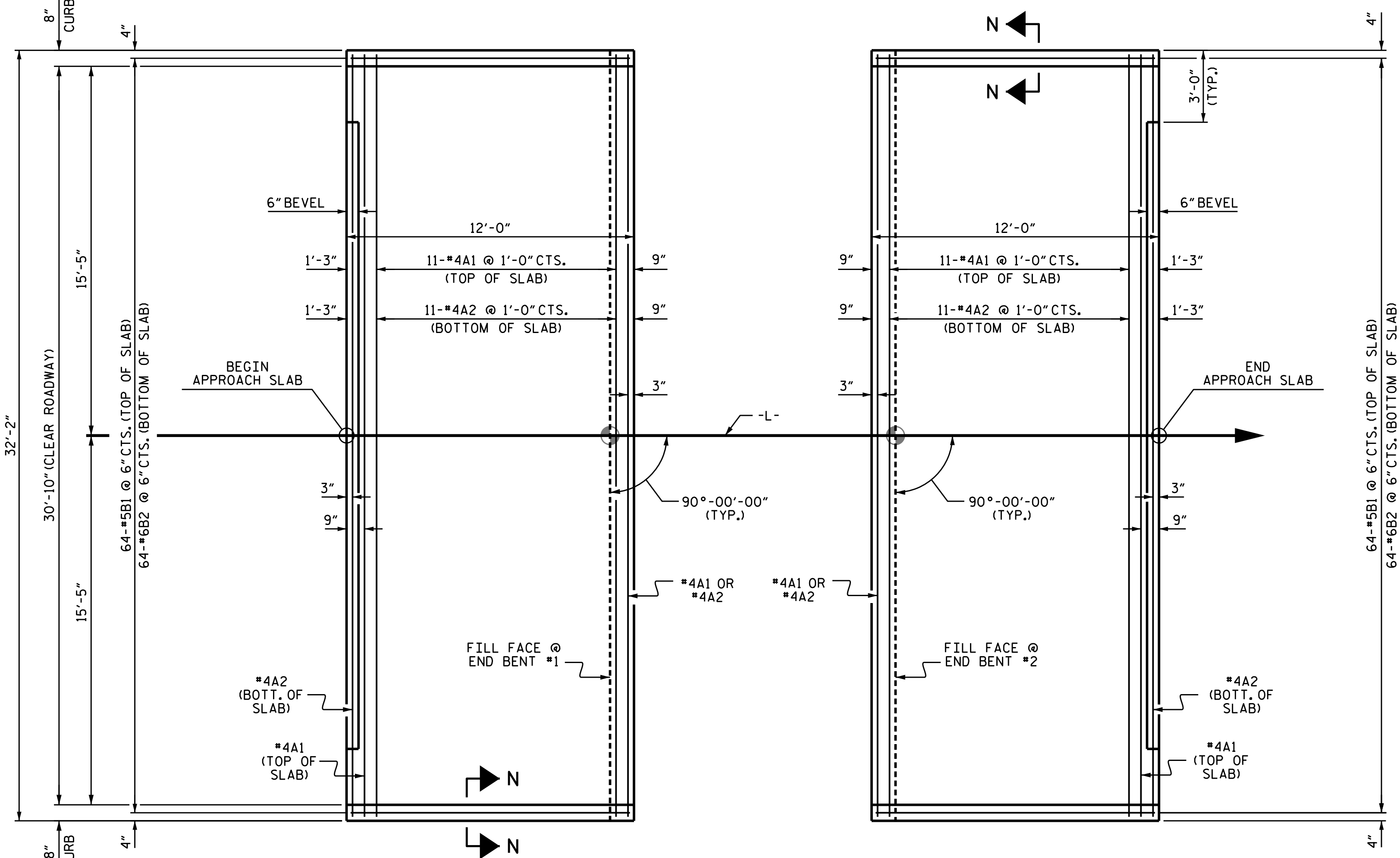
CarolinaTEA
Carolina Transportation Engineers & Associates, PC

Carolina Transportation Engineers
& Assoc., PC
3700 Arco Corporate Drive
Suite 405
Charlotte, NC 28273
Telephone: (980) 722-6065

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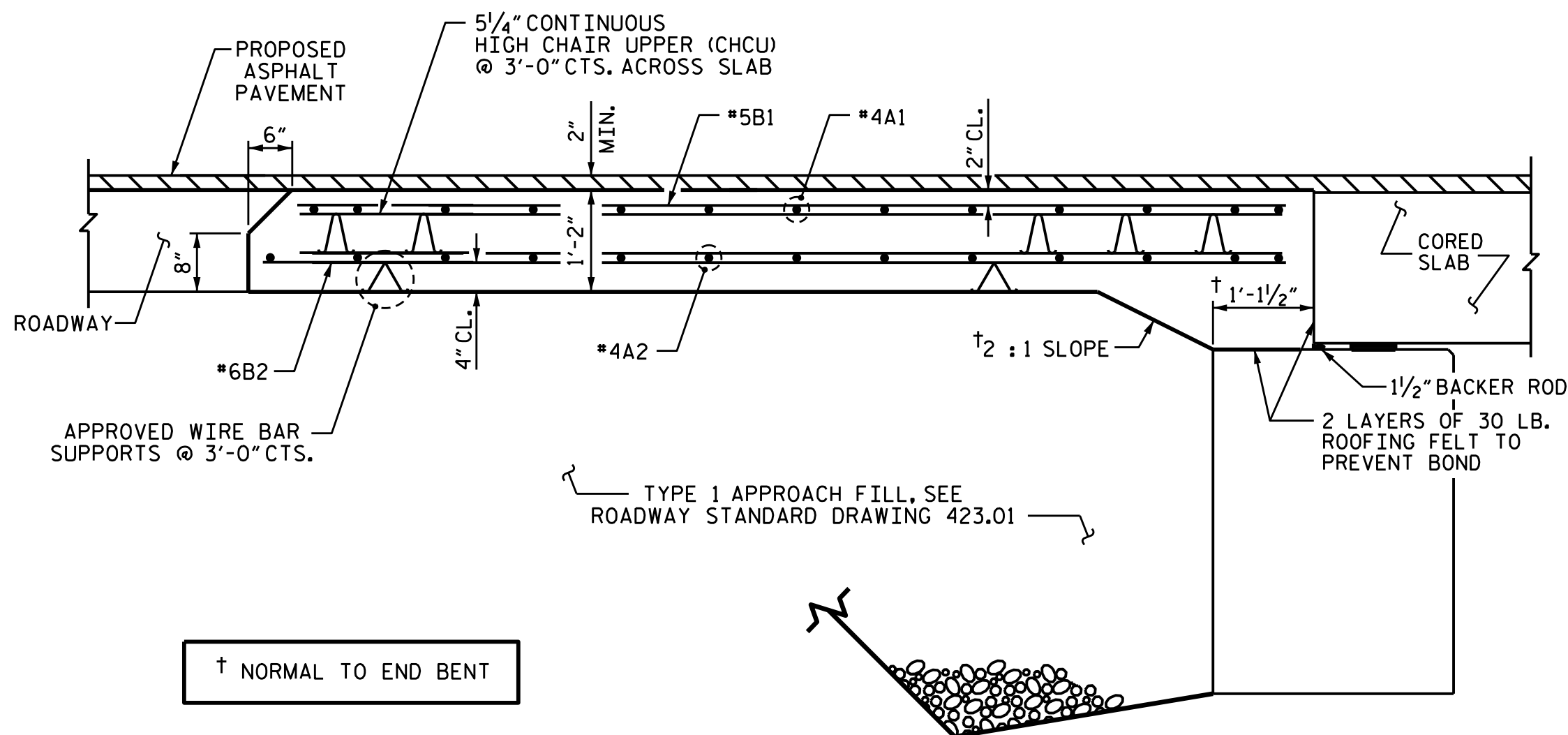
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7/31/2026



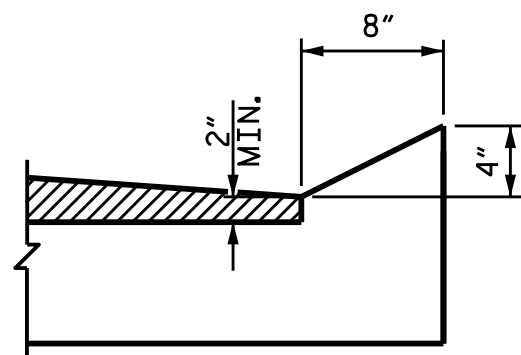
PLAN @ END BENT #1

PLAN @ END BENT #2

DIMENSIONS SHOWN ARE TYPICAL FOR BOTH APPROACH SLABS



SECTION THRU SLAB



SECTION N-N

CURB DETAILS

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

NOTES

FOR BRIDGE APPROACH FILL INCLUDING GEOTEXTILE, 4"Ø DRAINAGE PIPE, AND SELECT MATERIAL BACKFILL, SEE ROADWAY PLANS.

GEOTEXTILE SHALL BE TYPE 1 IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS SECTION 1056.

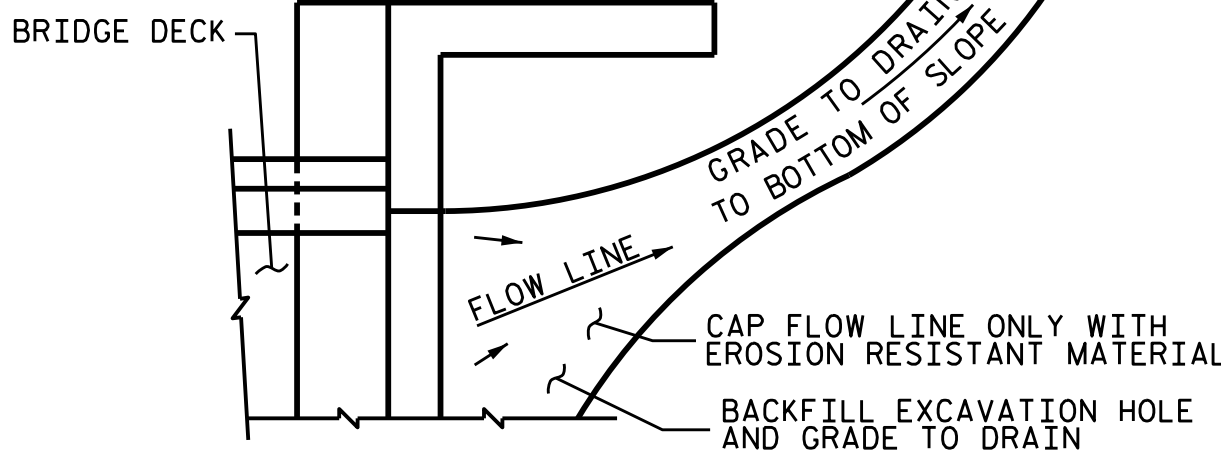
SELECT MATERIAL BACKFILL (CLASS V OR CLASS VI) SHALL BE IN ACCORDANCE WITH STANDARD SPECIFICATIONS SECTION 1016.

SELECT MATERIAL BACKFILL IS TO BE CONTINUOUS ALONG FILL FACE OF BACKWALL FROM OUTSIDE EDGE TO OUTSIDE EDGE OF APPROACH SLAB.

FOR THE 4"Ø DRAINAGE PIPE OUTLET(S), SEE ROADWAY STANDARD DRAWINGS.

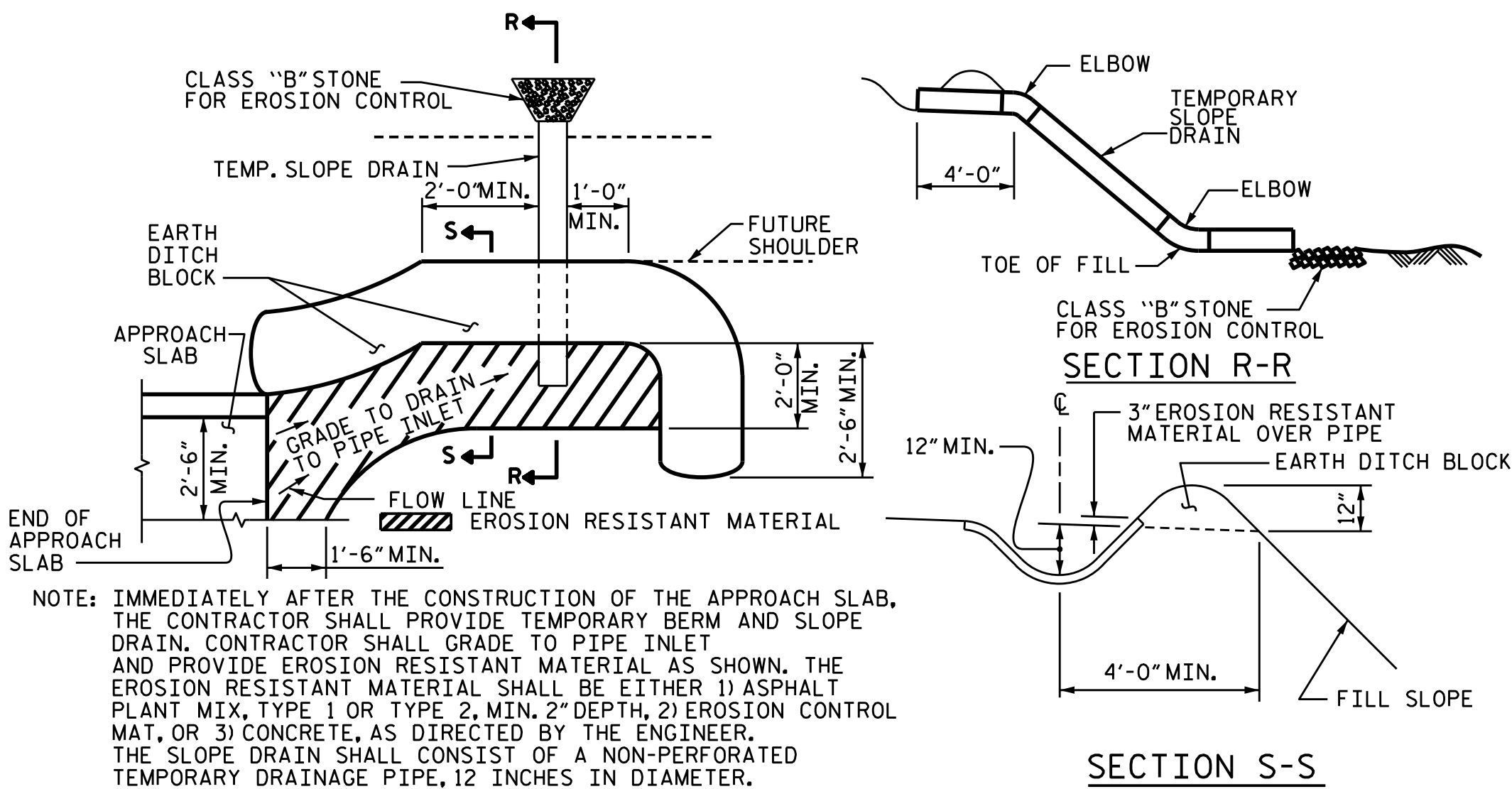
AREA BETWEEN THE WINGWALL AND APPROACH SLAB SHALL BE GRADED TO DRAIN THE WATER AWAY FROM THE FILL FACE OF THE BRIDGE AND SHALL BE PAVED. SEE ROADWAY PLANS.

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



PLAN VIEW

TEMPORARY BERM AND SLOPE DRAIN DETAILS

(TO BE USED WHEN SHOULDER BERM GUTTER IS REQUIRED)

PROJECT NO. **BP2-R028.1**
BEAUFORT COUNTY
STATION: **15+78.00 -L-**

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
STANDARD
BRIDGE APPROACH SLAB
FOR PRESTRESSED CONCRETE
CORED SLAB UNIT
(SUB-REGIONAL TIER)
90° SKEW

REVISIONS				SHEET NO.
NO.	BY:	DATE:	NO.	
1			3	S-21
2			4	TOTAL SHEETS 22

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

CarolinaTEA
Carolina Transportation Engineers & Associates, PC

Carolina Transportation Engineers & Assoc., PC
3700 Arco Corporate Drive
Suite 405
Charlotte, NC 28273
Telephone: (980) 722-6065



DocuSigned by:
Sackone Kourbanadze
BE4403F6E8B84B1
7/31/2026

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FINAL UNLESS ALL
SIGNATURES COMPLETED

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 50W	20,000 LBS.PER SQ. IN.
- AASHTO M270 GRADE 50W	27,000 LBS.PER SQ. IN.
- AASHTO M270 GRADE 50W	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	1,800 LBS.PER SQ. IN.
----- EXTREME FIBER STRESS	
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" * SHEAR STUDS FOR THE ¾" * STUDS SPECIFIED ON THE PLANS. THIS SUBSTITUTION SHALL BE MADE AT THE RATE OF 3 - 7/8" * STUDS FOR 4 - ¾" * STUDS, AND STUD SPACING CHANGES SHALL BE MADE AS NECESSARY TO PROVIDE THE SAME EQUIVALENT NUMBER OF 7/8" * STUDS ALONG THE BEAM AS SHOWN FOR ¾" * STUDS BASED ON THE RATIO OF 3 - 7/8" * STUDS FOR 4 - ¾" * 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.