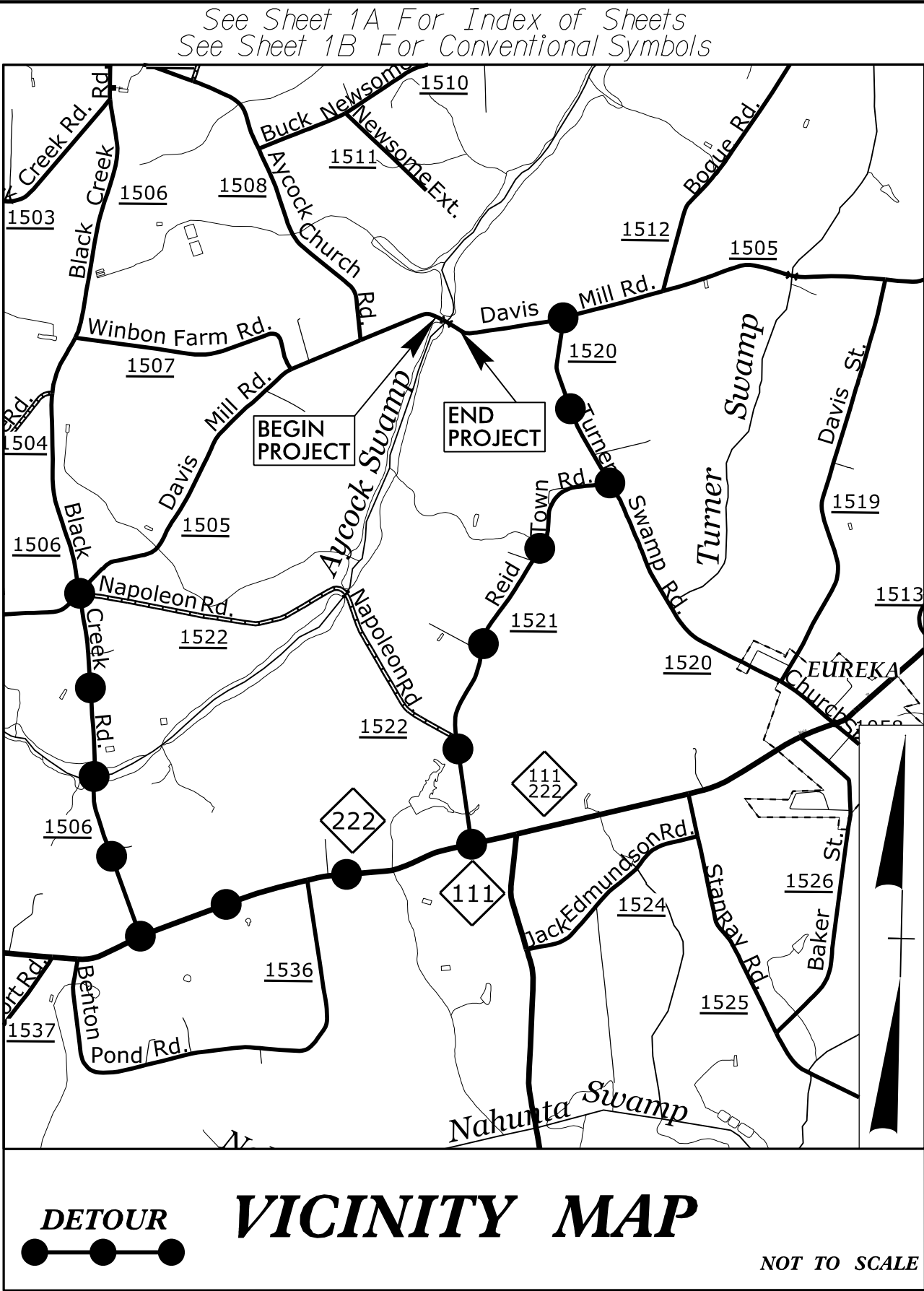


09.08/2019

I:\2\2026
U:\Roadway\Proj\BP4,R027.L\rdy_tsh.dgn
TJJarvis

TIP PROJECT: BP4-R027

CONTRACT: DD000479



BEGIN CONSTRUCTION BP4-R027
-L- POC STA. 11+57.00

4A

TO SR 1506
BLACK CREEK RD

BEGIN PROJECT BP4-R027
-L- POC STA. 13+40.00

BEGIN BRIDGE
-L- STA. 14+63.77

AYCOCK SWAMP

END BRIDGE
-L- STA. 15+66.23

DAVIS MILL RD
SR 1505

4

END CONSTRUCTION BP4-R027
-L- POT STA. 17+70.00
END PROJECT BP4-R027
-L- POT STA. 17+60.00

TO SR 1513
RED HILL RD

THIS PROJECT IS NOT WITHIN A MUNICIPAL BOUNDARY.

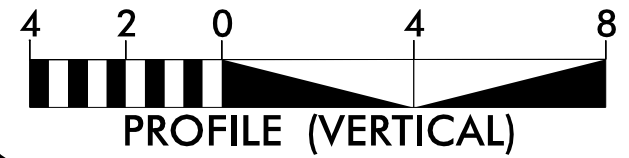
GRAPHIC SCALES



PLANS



PROFILE (HORIZONTAL)



PROFILE (VERTICAL)

DESIGN DATA

ADT 2020 = 300
V = 60 MPH

FUNC CLASS =
RURAL LOCAL
SUBREGIONAL TIER

PROJECT LENGTH

LENGTH OF ROADWAY T.I.P. PROJECT BP4-R027 0.061 MI
LENGTH OF STRUCTURE T.I.P. PROJECT BP4-R027 0.019 MI
TOTAL LENGTH OF T.I.P. PROJECT BP4-R027 0.080 MI

NCDOT CONTACT: RACHEL EVANS, PE
NCDOT DIVISION 4 PROJECT MANAGER



Stantec Consulting Services Inc.
801 Jones Franklin Road
Suite 300
Raleigh, NC 27606
Tel: (919) 851-6868 Fax: (919) 851-7024
www.stantec.com License No. F-0672

Prepared In The Offices of:

SUNGATE DESIGN GROUP, P.A.



905 JONES FRANKLIN ROAD
RALEIGH, NORTH CAROLINA 27606
TEL (919) 855-2243
ENG FIRM LICENSE NO. C-890

for the North Carolina Department of Transportation

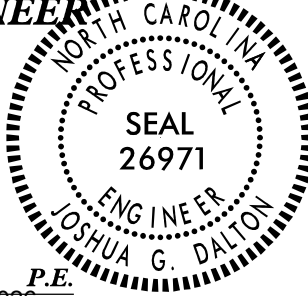
2024 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
3 /31 /23

LETTING DATE:
02 /24 /26

TUCKER JARVIS, PE
PROJECT ENGINEER

HYDRAULICS ENGINEER

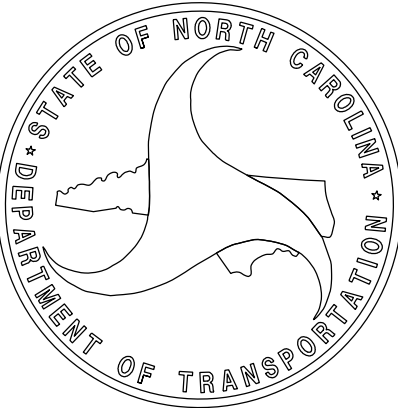


Signed by:
Joshua G. Dalton
SIGNATURE: 1/12/2026

ROADWAY DESIGN
ENGINEER



Signed by:
Tucker Jarvis
SIGNATURE: 1/12/2026



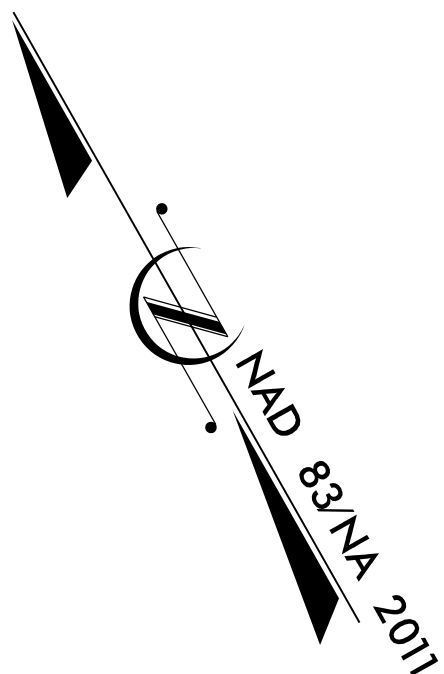
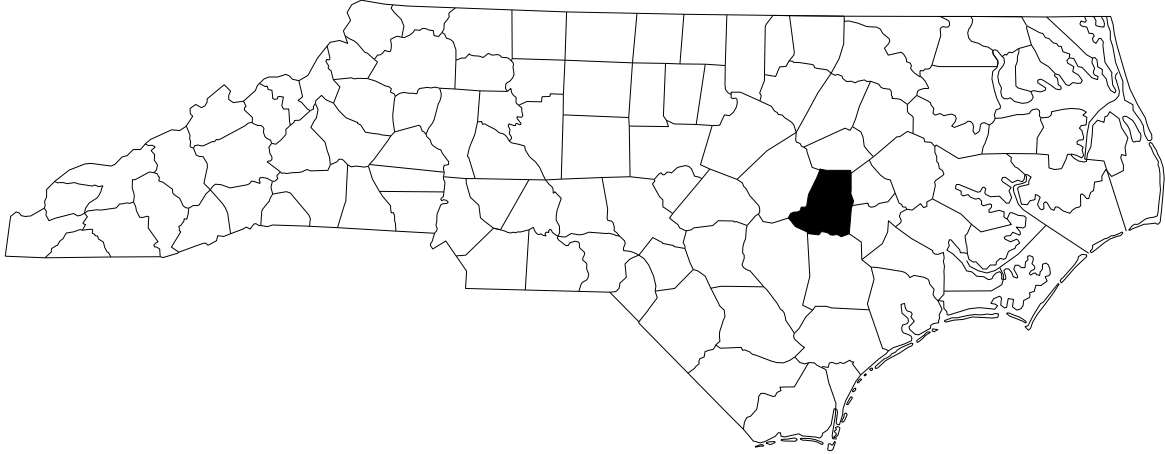
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

WAYNE COUNTY

**LOCATION: REPLACE BRIDGE #950219 ON SR 1505 (DAVIS MILL RD)
OVER AYCOCK SWAMP**

TYPE OF WORK: GRADING, PAVING, DRAINAGE AND STRUCTURE

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	BP4-R027	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
BP4.R027.1	N/A	PE	
BP4.R027.2	N/A	RW & UTIL.	
BP4.R027.3	N/A	CONST.	



8/17/99

I:\2026
L-16-0001\Proj\BP4.R027.1_Rdy.psh\A.dgn
1/1/2026
11:04:15
tjlorris

INDEX OF SHEETS		GENERAL NOTES:		2024 SPECIFICATIONS EFFECTIVE: 01-16-2024 REVISED:		EFF. 01-16-2024 REV.	
SHEET NUMBER	SHEET	GRADE LINE: GRADING AND SURFACING:		2024 ROADWAY ENGLISH STANDARD DRAWINGS			
1	TITLE SHEET	THE GRADE LINES SHOWN DENOTE THE FINISHED ELEVATION OF THE PROPOSED SURFACING AT GRADE POINTS SHOWN ON THE TYPICAL SECTIONS. GRADE LINES MAY BE ADJUSTED AT THEIR BEGINNING AND ENDING AND AT STRUCTURES AS DIRECTED BY THE ENGINEER IN ORDER TO SECURE A PROPER TIE-IN.		The following Roadway Standards as appear in "Roadway Standard Drawings" Contracts N. C. Department of Transportation - Raleigh, N. C., Dated January 16, 2024 are approved and by reference hereby are considered a part of these plans:			
1A	INDEX OF SHEETS, GENERAL NOTES, AND STANDARD DRAWINGS	CLEARING:		STD.NO. TITLE			
1B	CONVENTIONAL SYMBOLS	CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD III.		DIVISION 2 - EARTHWORK			
2A-1	PAVEMENT SCHEDULE AND TYPICAL SECTIONS	SUPERELEVATION:		200.03 Method of Clearing - Method III			
2C-1	MODIFIED CONCRETE FLUME	SHOULDER CONSTRUCTION:		225.02 Guide for Grading Subgrade - Secondary and Local			
2C-2 THRU 2C-3	GUARDRAIL PLACEMENT	SIDE ROADS:		225.04 Method of Obtaining Superelevation - Two Lane Pavement			
2C-4 THRU 2C-5	METHOD OF PIPE INSTALLATION	SUBSURFACE DRAINS:		DIVISION 3 - PIPE CULVERTS			
2D-1	DRAINAGE DETAIL	GUARDRAIL:		300.01 Method of Pipe Installation (Use Details in Lieu of Standards for Sheets			
3B-1	SUMMARY OF EARTHWORK, REMOVAL OF EXISTING PAVEMENT, SUMMARY OF SHOULDER BERM GUTTER, DRAINAGE SUMMARY, GUARDRAIL SUMMARY	TEMPORARY SHORING:		310.10 Driveway Pipe Construction			
3G-1	GEOTECHNICAL SUMMARIES	SUBSURFACE PLANS:		DIVISION 4 - MAJOR STRUCTURES			
4 THRU 4A	PLAN AND PROFILE SHEETS	END BENTS:		423.01 Bridge Approach Fills - Type 1 Approach Fill for Bridge Abutment			
RW01 THRU RW05	RIGHT OF WAY SHEETS	UTILITIES:		DIVISION 5 - SUBGRADE, BASES AND SHOULDERS			
TMP-1 THRU TMP-4	TRAFFIC MANAGEMENT PLANS	RIGHT-OF-WAY MARKERS:		560.01 Method of Shoulder Construction - High Side of Superelevated Curve - Meth			
PMP-1	PAVEMENT MARKING PLANS			DIVISION 8 - INCIDENTALS			
EC-1 THRU EC-7	EROSION CONTROL PLANS			815.02 Subsurface Drain			
RF-1	REFORESTATION PLANS			846.01 Concrete Curb, Gutter and Curb & Gutter			
SIGN-1 THRU SIGN-8	SIGNING PLANS			862.01 Guardrail Placement (Use Details in Lieu of Standards for Sheets 4, 6, 11			
UO-1 THRU UO-3	UTILITIES BY OTHERS PLANS			862.02 Guardrail Installation (Use Detail in Lieu of Standard for Sheet 5 of 9)			
X-1 THRU X-8	CROSS-SECTIONS			862.03 Structure Anchor Units (Use Detail in Lieu of Standards for Sheet 6 and 8			
S-1 THRU S-23	STRUCTURE PLANS			876.01 Rip Rap in Channels and Ditches			
STRUCTURE STANDARD NOTES				876.02 Guide for Rip Rap at Pipe Outlets			
				876.06 Drainage Ditches with Class 'B' Rip Rap			

2024 ROADWAY ENGLISH STANDARD DRAWINGS

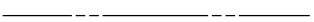
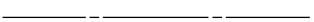
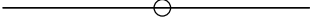
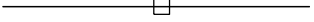
The following Roadway Standards as appear in "Roadway Standard Drawings" Contracts Standards and Development Unit - N. C. Department of Transportation - Raleigh, N. C., Dated January 16, 2024 are applicable to this project and by reference hereby are considered a part of these plans:

STD.NO.	TITLE
DIVISION 2 - EARTHWORK	
200.03	Method of Clearing - Method III
225.02	Guide for Grading Subgrade - Secondary and Local
225.04	Method of Obtaining Superelevation - Two Lane Pavement
DIVISION 3 - PIPE CULVERTS	
300.01	Method of Pipe Installation (Use Details in Lieu of Standards for Sheets 1 and 2 of 2)
310.10	Driveway Pipe Construction
DIVISION 4 - MAJOR STRUCTURES	
423.01	Bridge Approach Fills - Type 1 Approach Fill for Bridge Abutment
DIVISION 5 - SUBGRADE, BASES AND SHOULDERS	
560.01	Method of Shoulder Construction - High Side of Superelevated Curve - Method I
DIVISION 8 - INCIDENTALS	
815.02	Subsurface Drain
846.01	Concrete Curb, Gutter and Curb & Gutter
862.01	Guardrail Placement (Use Details in Lieu of Standards for Sheets 4, 6, 11, 12, and 14 of 15)
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 Sheet 6 and 8 of 9)
876.01	Rip Rap in Channels and Ditches
876.02	Guide for Rip Rap at Pipe Outlets
876.06	Drainage Ditches with Class 'B' Rip Rap

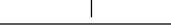
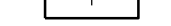
CONVENTIONAL PLAN SHEET SYMBOLS

Note: Not to Scale

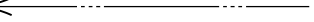
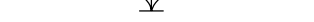
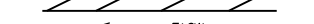
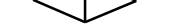
BOUNDARIES AND PROPERTY:

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	

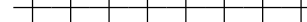
BUILDINGS AND OTHER CULTURE:

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

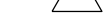
HYDROLOGY:

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

RAILROADS:

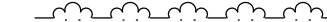
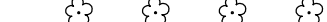
Standard Gauge	
RR Signal Milepost	
Switch	
RR Abandoned	
RR Dismantled	

RIGHT OF WAY & PROJECT CONTROL:

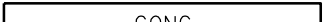
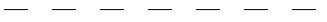
Primary Horiz Control Point	
Primary Horiz and Vert Control Point	
Secondary Horiz and Vert Control Point	
Vertical Benchmark	
Existing Right of Way Monument	
Proposed Right of Way Monument (Rebar and Cap)	
Proposed Right of Way Monument (Concrete)	
Existing Permanent Easement Monument	
Proposed Permanent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

ROADS AND RELATED FEATURES:

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

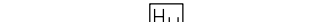
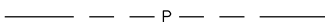
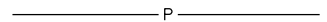
Woods Line	
Orchard	
Vineyard	

EXISTING STRUCTURES:

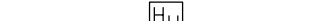
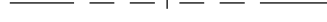
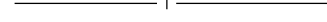
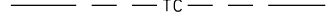
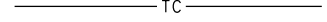
MAJOR:	
Bridge, Tunnel or Box Culvert	
Bridge Wing Wall, Head Wall and End Wall	
MINOR:	
Head and End Wall	
Pipe Culvert	
Footbridge	
Drainage Box: Catch Basin, DI or JB	
Paved Ditch Gutter	
Storm Sewer Manhole	
Storm Sewer	

UTILITIES:

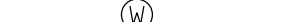
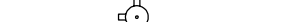
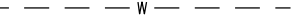
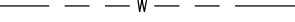
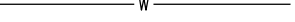
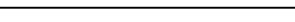
* SUE – Subsurface Utility Engineering
LOS – Level of Service – A,B,C or D (Accuracy)

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

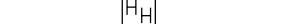
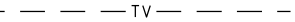
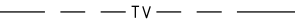
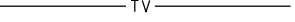
TELEPHONE:

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

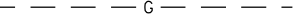
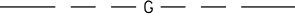
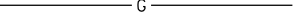
WATER:

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

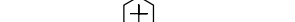
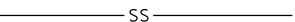
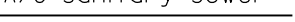
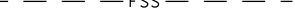
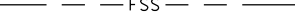
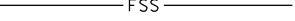
TV:

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

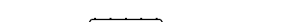
GAS:

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

SANITARY SEWER:

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

MISCELLANEOUS:

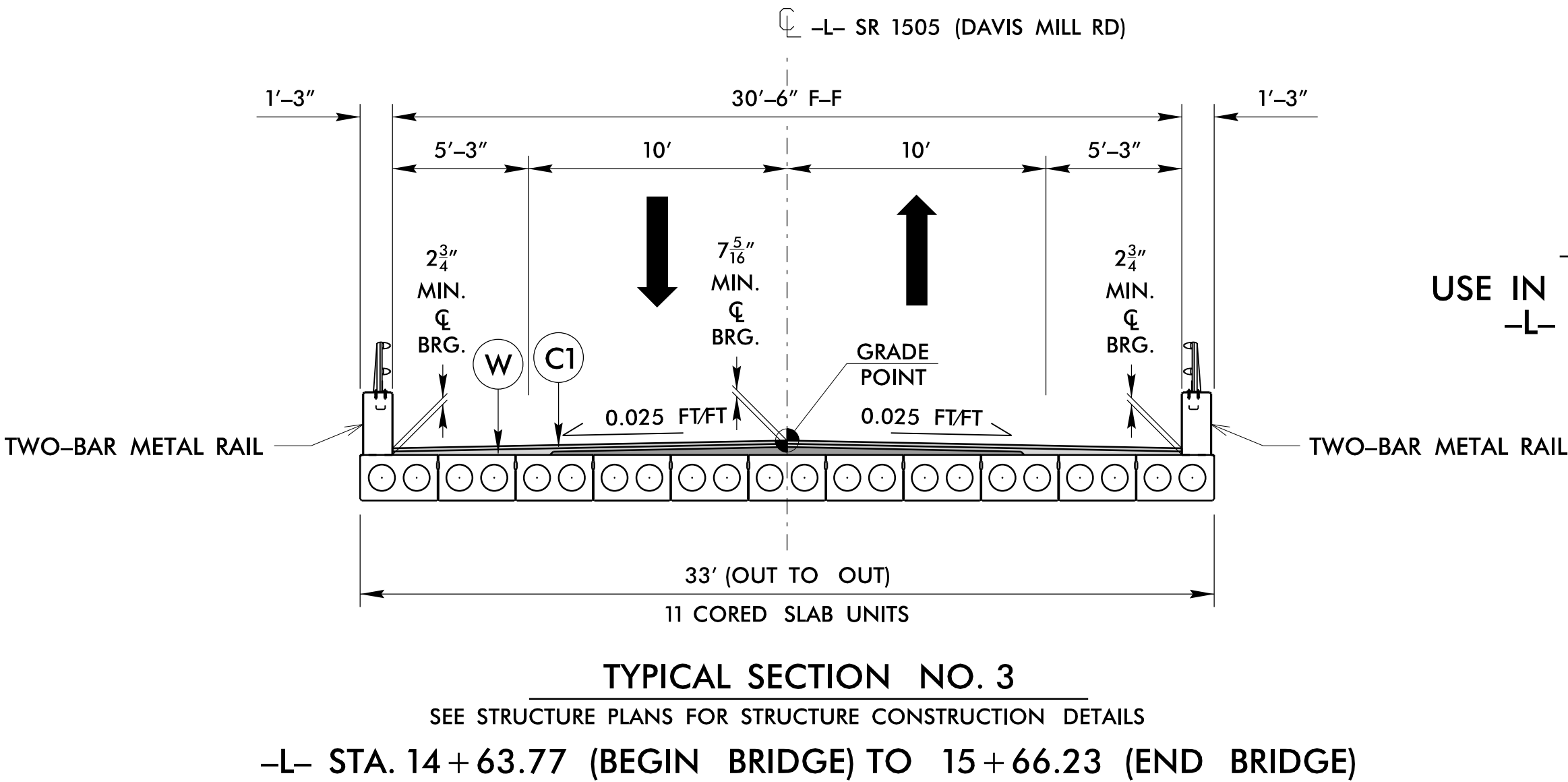
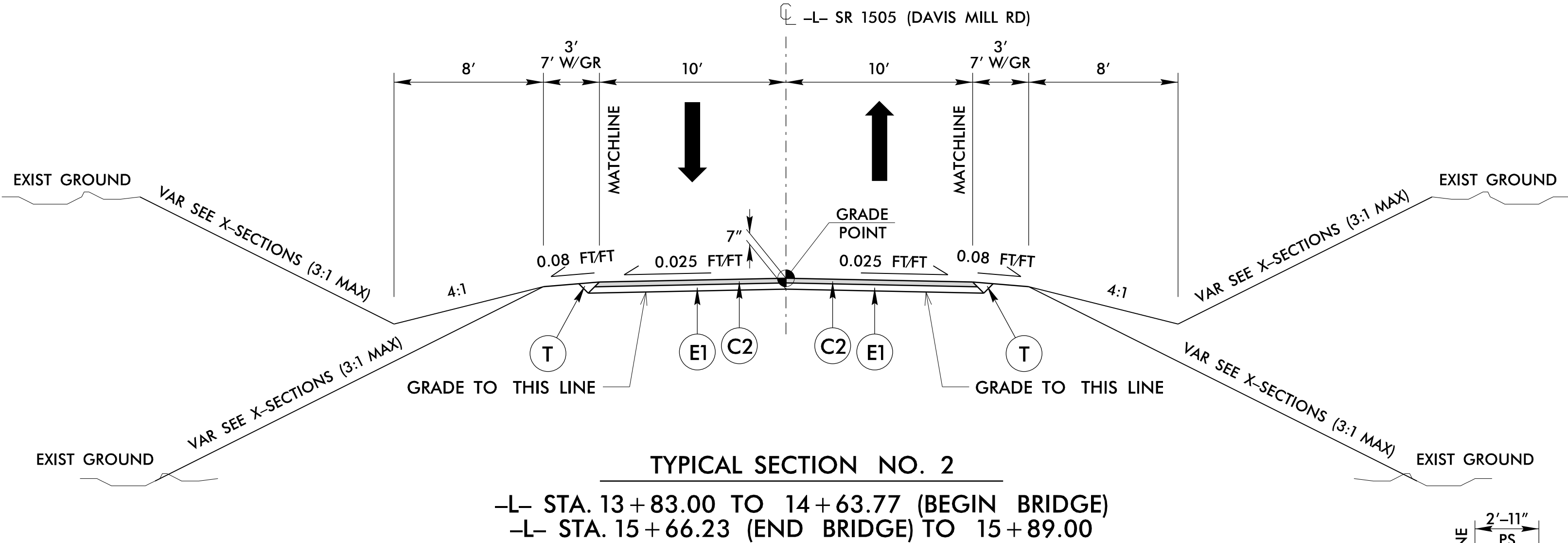
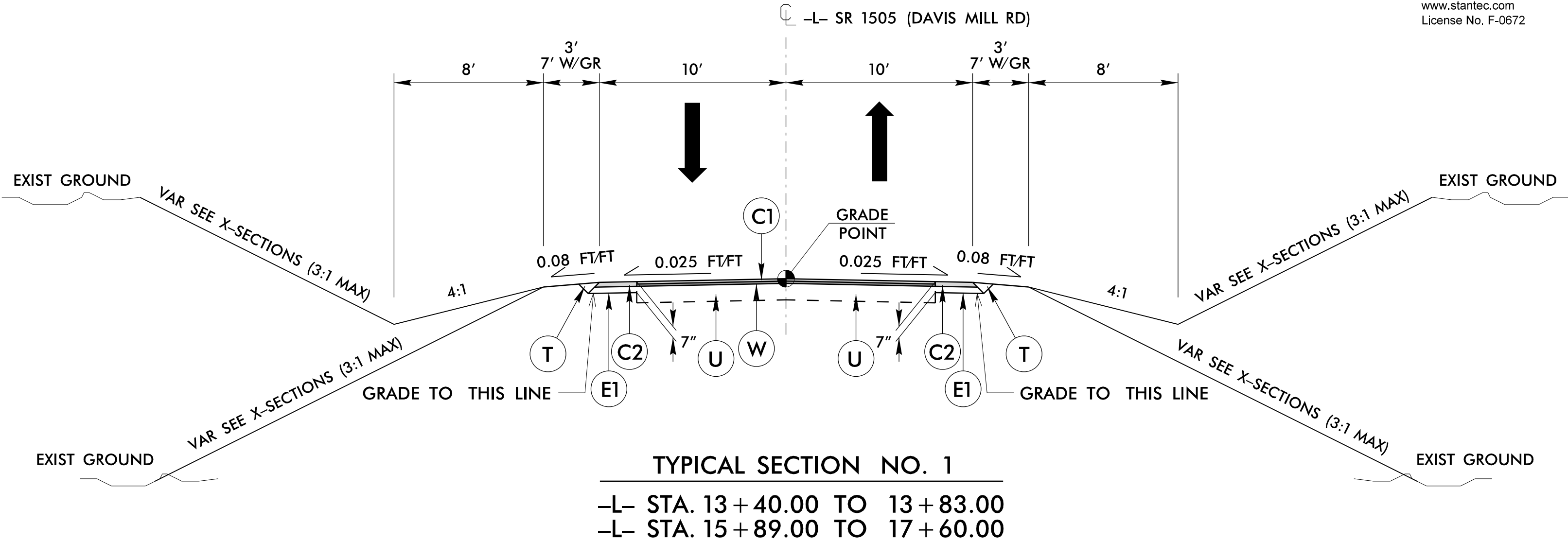
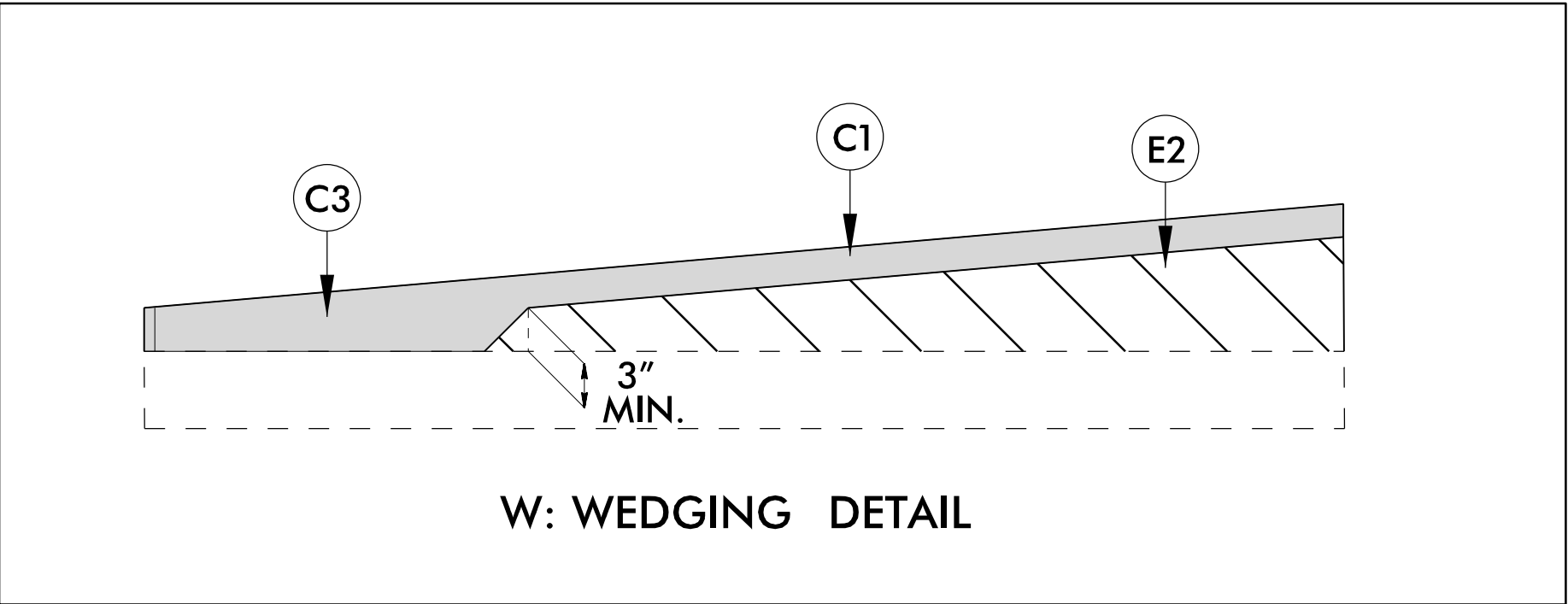
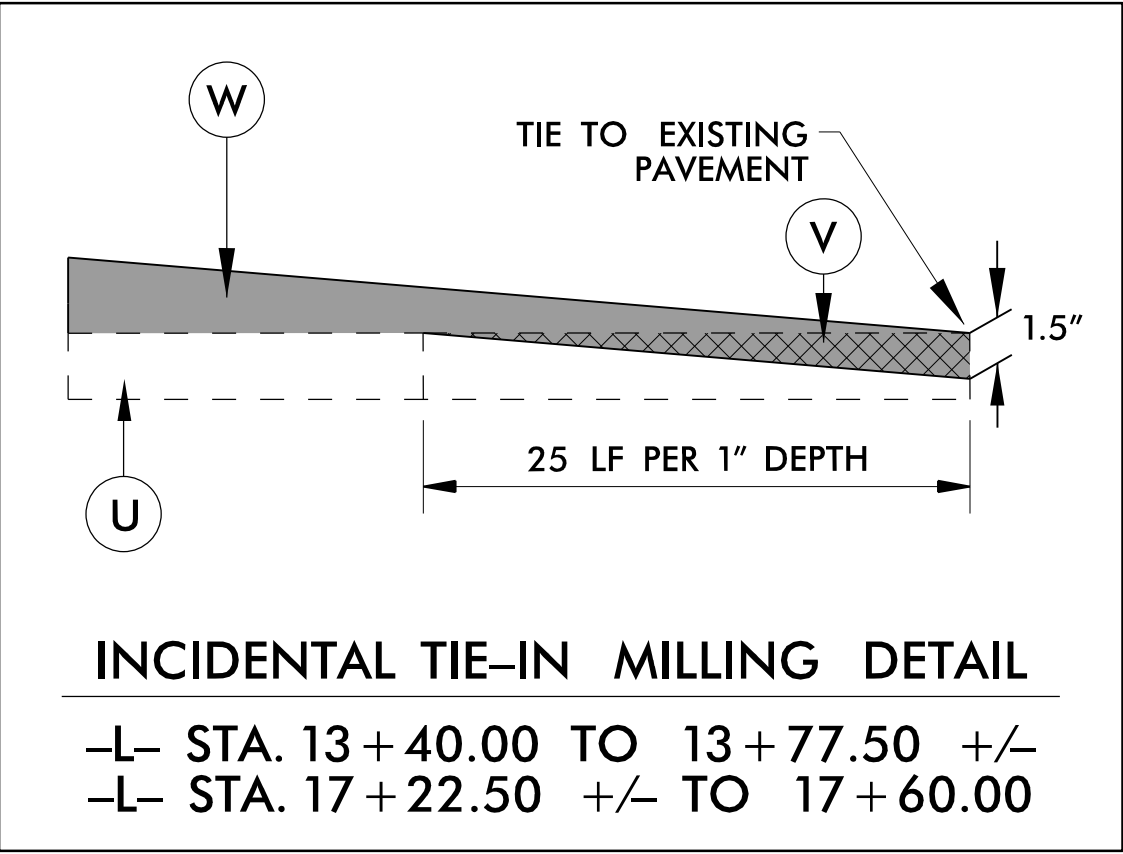
Utility Pole	
Utility Pole with Base	
Utility Located Object	
Utility Traffic Signal Box	
Utility Unknown U/G Line (SUE – LOS B)*	
U/G Tank; Water, Gas, Oil	
Underground Storage Tank, Approx. Loc.	
A/G Tank; Water, Gas, Oil	
Geoenvironmental Boring	
Abandoned According to Utility Records	
End of Information	

6/2/2025

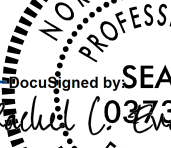
8/15/2025
U:\Projects\ProJ\BP4_R027\1_rdy_tjw.dgn
tjw

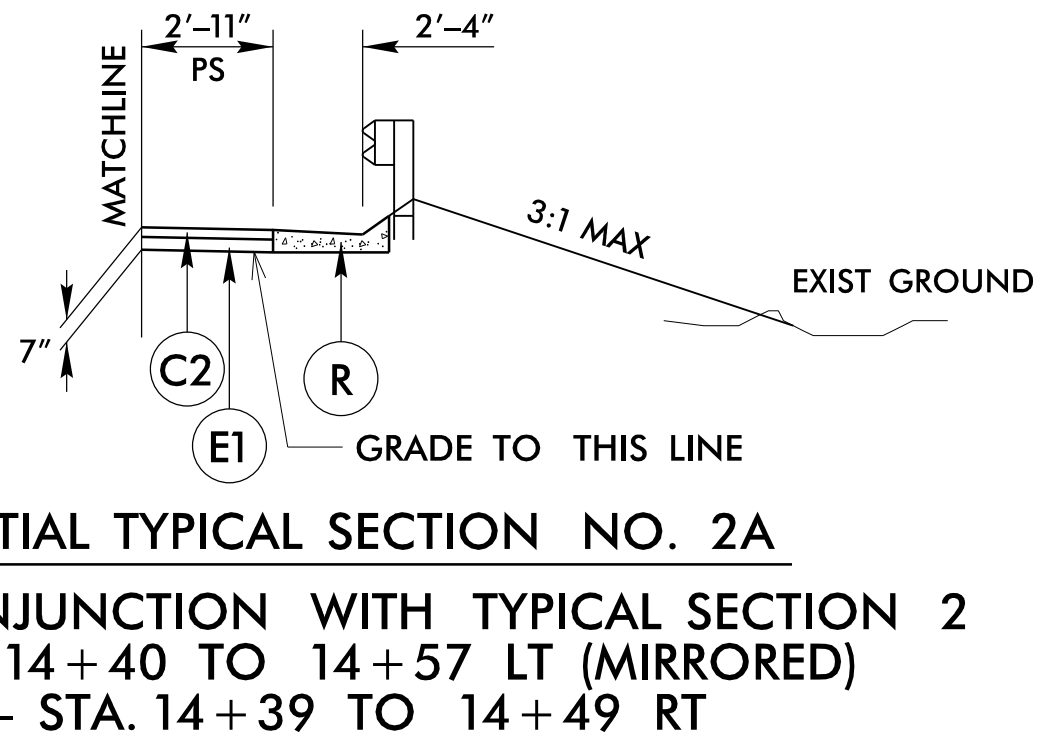
PAVEMENT SCHEDULE	
(FINAL PAVEMENT DESIGN)	
C1	PROP. APPROX. 1½" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD.
C2	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C3	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 1" IN DEPTH OR GREATER THAN 1½" IN DEPTH.
E1	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
E2	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 3" IN DEPTH OR GREATER THAN 5½" IN DEPTH.
R	PROP. SHOULDER BERM GUTTER.
T	EARTH MATERIAL.
U	EXISTING PAVEMENT.
V	INCIDENTAL MILLING BITUMINOUS PAVEMENT.
W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE STANDARD WEDGING DETAIL SHEET No. 2A-1).

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



Stantec
Stantec Consulting Services Inc.
801 Jones Franklin Road
Suite 300
Raleigh, NC 27606
Tel. (919) 851-8866
Fax. (919) 851-7024
www.stantec.com
License No. F-0672

PROJECT REFERENCE NO.		SHEET NO.	
BP4-R027		2A-1	
ROADWAY DESIGN ENGINEER		PAVEMENT DESIGN ENGINEER	
			
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			



PROJECT REFERENCE NO.	SHEET NO.
BP4-R027	2C-1

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

PLAN VIEW

DOWNGRADE OR SAG

SAG

DOWN GRADE

FLOW DIVERSION EXAMPLES

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.

SECTION A-A

SECTION B-B

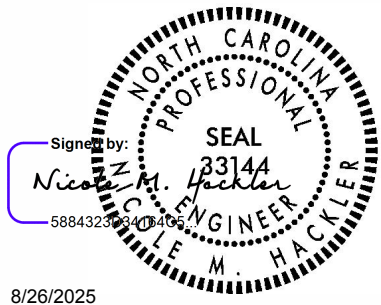
RIP-RAP LINED DITCH

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

I:\QCT-2017\4471\Contract\Stand\Details\stand\modifiedflume.dgn
J:\Contract\Stand\Details\stand\modifiedflume.dgn
J:\Contract\Stand\Details\stand\modifiedflume.dgn

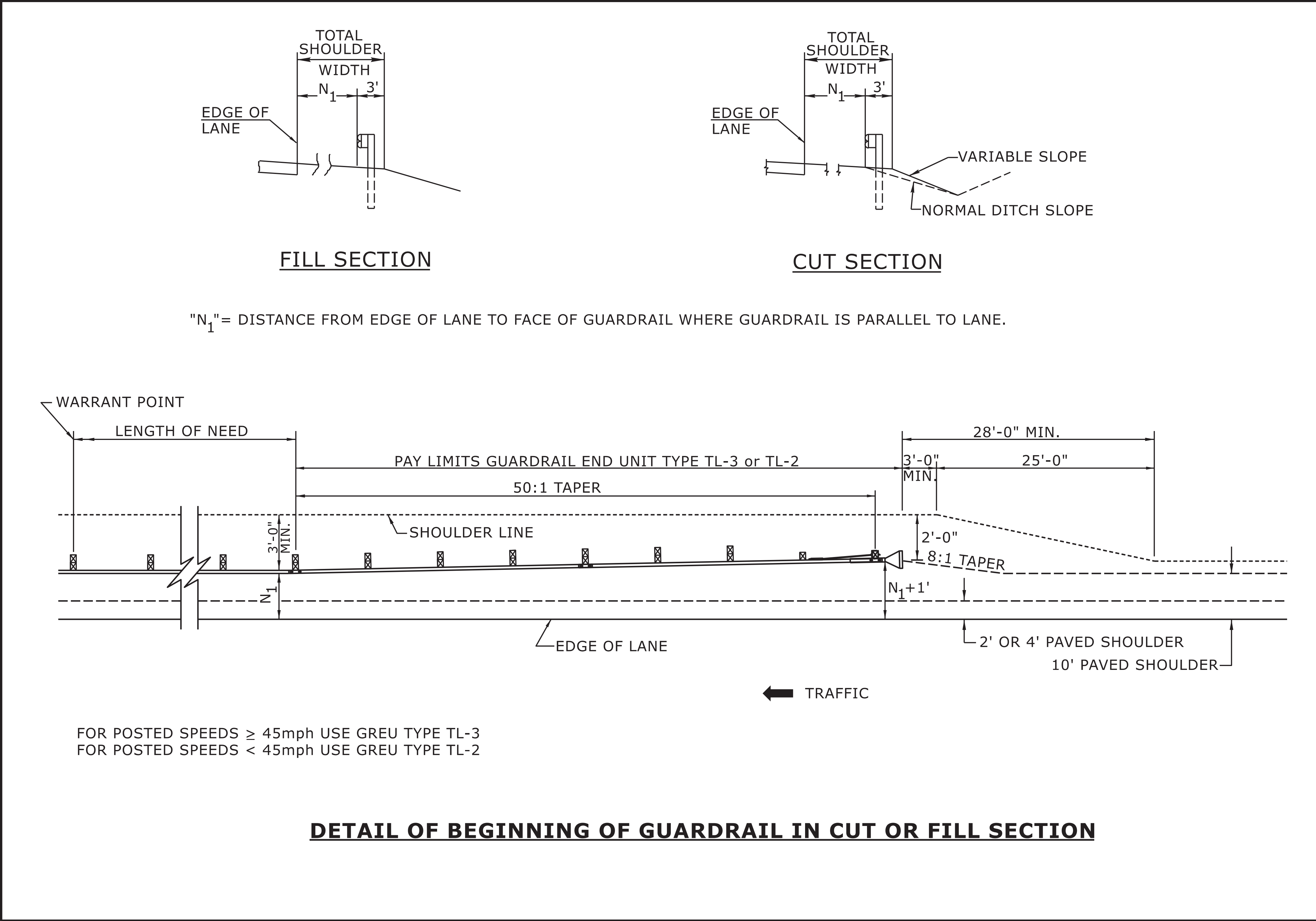


DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

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

SEE PLATE FOR TITLE

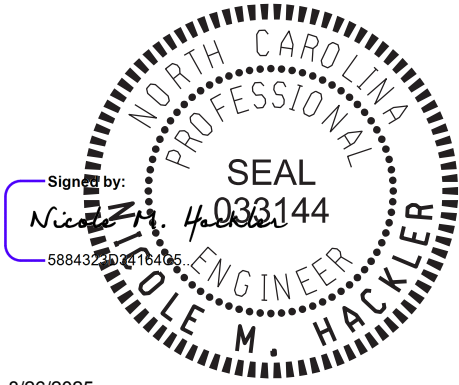
ORIGINAL BY: E.E. Ward DATE: Apr. 2002
MODIFIED BY: J.S. Howerton DATE: October 2017
CHECKED BY: DATE:
FILE SPEC.: w:\details\stand\modifiedflume.dgn



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

ROADWAY DETAIL DRAWING FOR
GUARDRAIL PLACEMENT

SHEET 6 OF 15
862D01

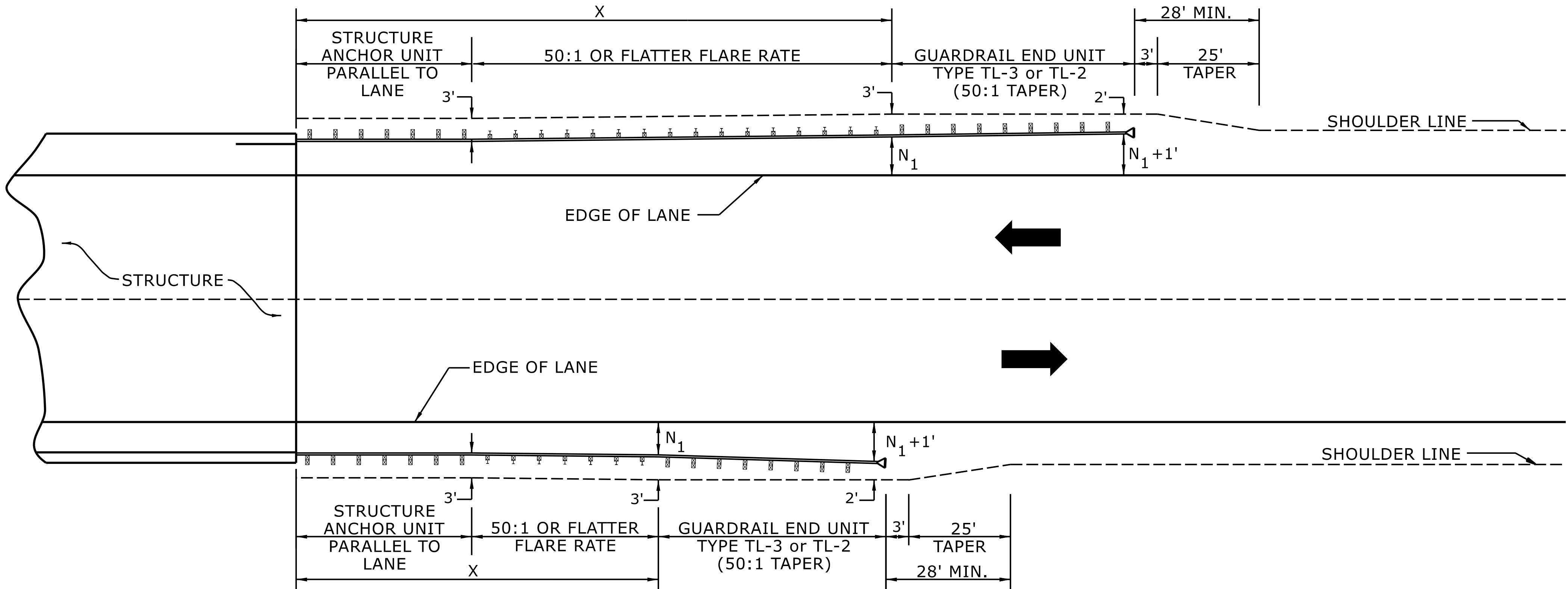


8/26/2025

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

CONTRACTS STANDARDS AND DEVELOPMENT UNIT	
Office 919-707-6950	FAX 919-250-4119
SEE TITLE BLOCK	
ORIGINAL BY: S.CALHOUN	DATE: 7-25-2024
MODIFIED BY:	DATE:
CHECKED BY:	DATE:
FILE SPEC.:	

PROJECT REFERENCE NO.	SHEET NO.
BP4-R027	2C-3



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

SEE STD. 862.03 FOR STRUCTURE ANCHOR UNITS

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

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

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

ROADWAY DETAIL DRAWING FOR
GUARDRAIL PLACEMENT



1/12/2026

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

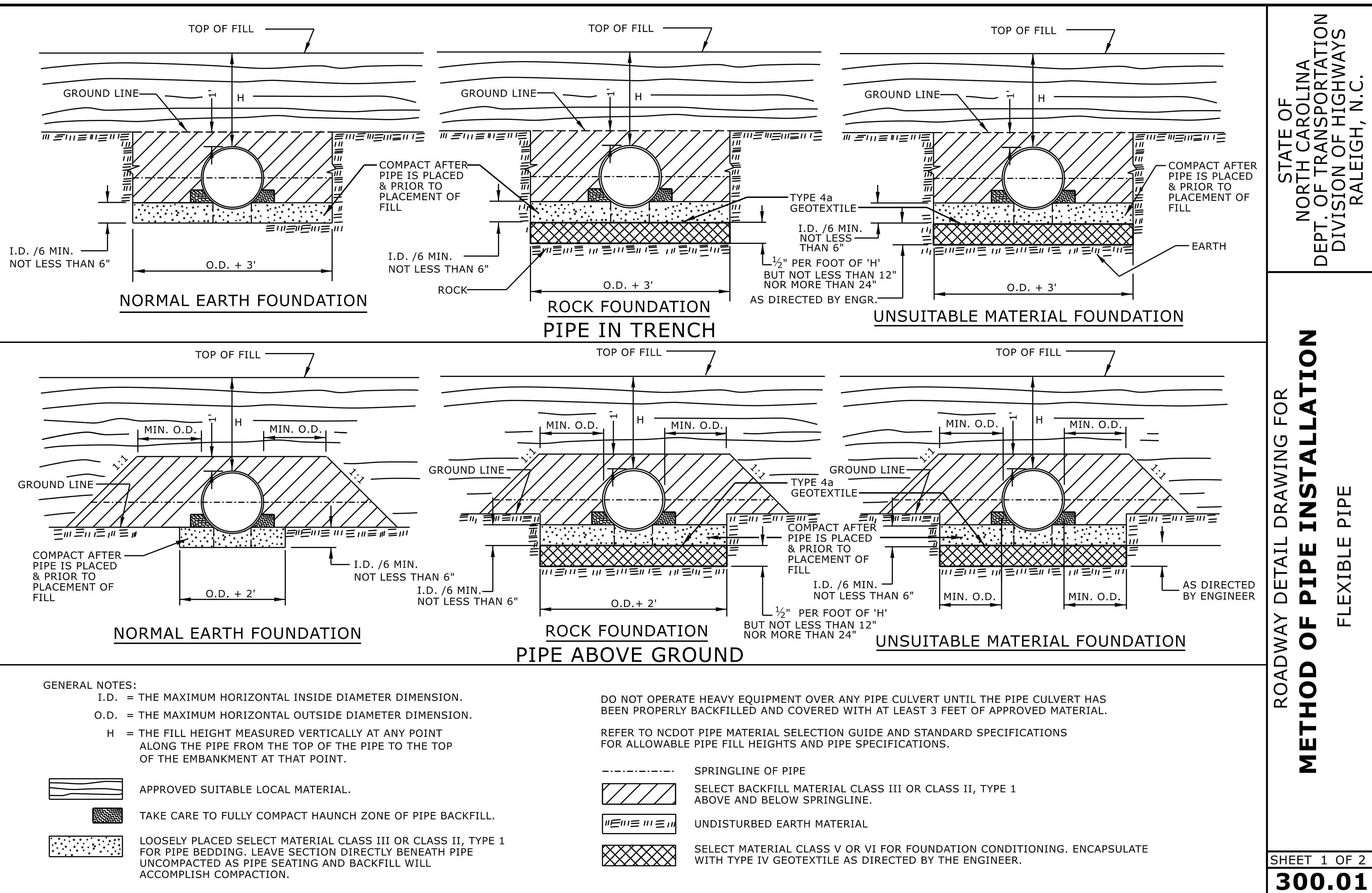
SHEET 4 OF 15
862D01

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

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

SEE TITLE BLOCK

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



Signed by:
 Nicole M. Hackler
 6884323D3418

1/12/2026

SHEET 1 OF 2
300.01

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

**CONTRACTS STANDARDS
AND DEVELOPMENT UNIT**
919-707-6950 FAX 919-250-4

SEE TITLE BLOCK

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

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

ROADWAY DETAIL DRAWING FOR
METHOD OF PIPE INSTALLATION
RIGID PIPE

SHEET 2 OF 2
300.01

TOP OF FILL

NORMAL EARTH FOUNDATION

TOP OF FILL

**ROCK FOUNDATION
PIPE IN TRENCH**

TOP OF FILL

UNSUITABLE MATERIAL FOUNDATION

TOP OF FILL

NORMAL EARTH FOUNDATION

TOP OF FILL

**ROCK FOUNDATION
PIPE ABOVE GROUND**

TOP OF FILL

UNSUITABLE MATERIAL FOUNDATION

GENERAL NOTES:

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

APPROVED SUITABLE LOCAL MATERIAL.

TAKE CARE TO FULLY COMPACT HAUNCH ZONE OF PIPE BACKFILL.

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

DO NOT OPERATE HEAVY EQUIPMENT OVER ANY PIPE CULVERT UNTIL THE PIPE CULVERT HAS BEEN PROPERLY BACKFILLED AND COVERED WITH AT LEAST 3 FEET OF APPROVED MATERIAL.

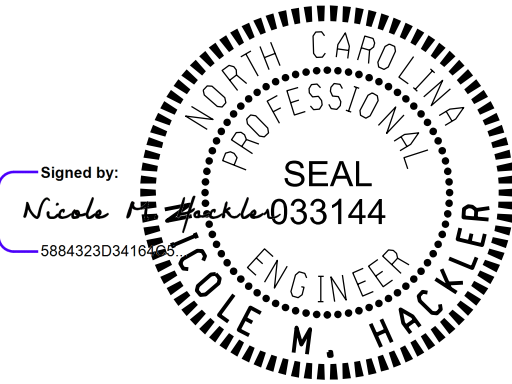
REFER TO NCDOT PIPE MATERIAL SELECTION GUIDE AND STANDARD SPECIFICATIONS FOR ALLOWABLE PIPE FILL HEIGHTS AND PIPE SPECIFICATIONS.

SPRINGLINE OF PIPE

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

UNDISTURBED EARTH MATERIAL

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



1/12/2026

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

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

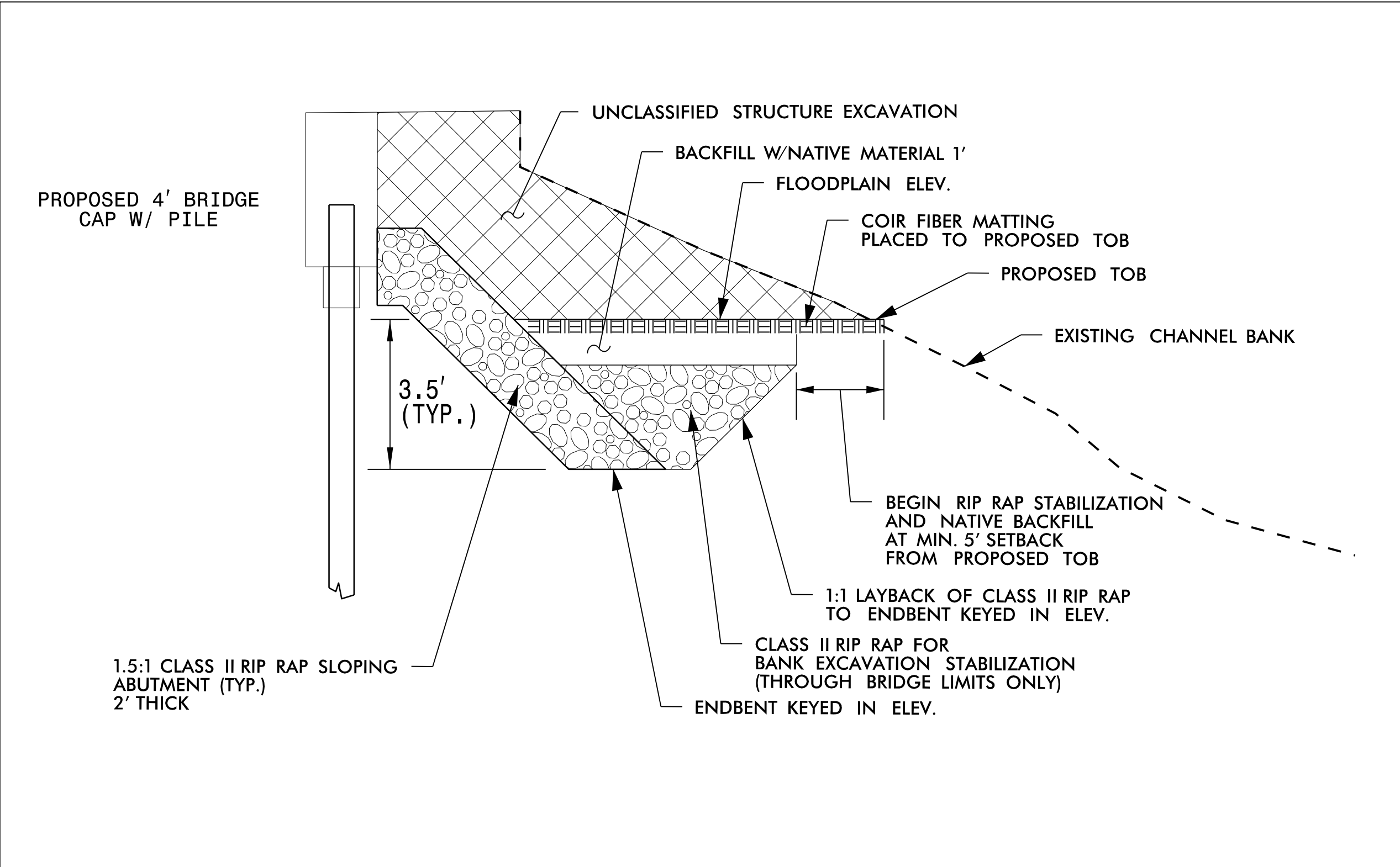
SEE TITLE BLOCK

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

8/17/25

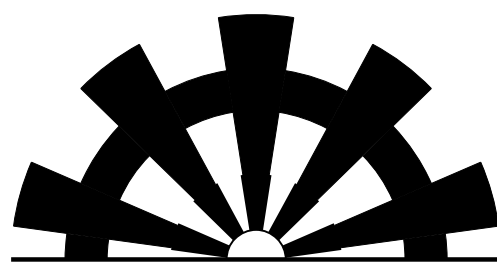
8/15/2025
U:\Projects\ProJ\BP4.R027.1_Rdwy.dtl_20-1.dgn
tjw

BRIDGE FLOODPLAIN EXCAVATION STABILIZATION DETAIL A



DETAIL NOTES:

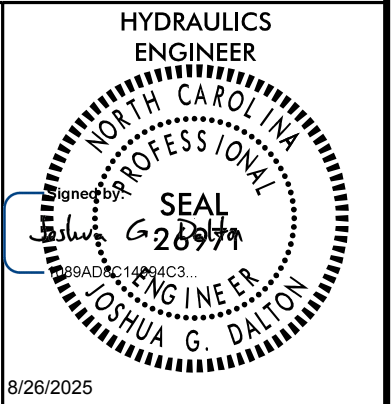
- FOR USE WHERE EXISTING ABUTMENTS AND BULKHEADS ARE TO BE COMPLETELY REMOVED
- EXCAVATE TO FLOODPLAIN ELEVATION AS SPECIFIED ON PRELIMINARY GENERAL DRAWINGS
- FLOODPLAIN STABILIZATION TO BEGIN WITH A 5' MINIMUM SETBACK FROM PROPOSED TOB
- FOR ALL LOCATIONS OF CLASS II RIPRAP, FILL VOIDS WITH CLASS B RIP RAP
- COIR FIBER MATTING TO BE INSTALLED OVER LIMITS OF FLOODPLAIN EXCAVATION AND AREAS BACKFILLED WITH NATIVE MATERIAL



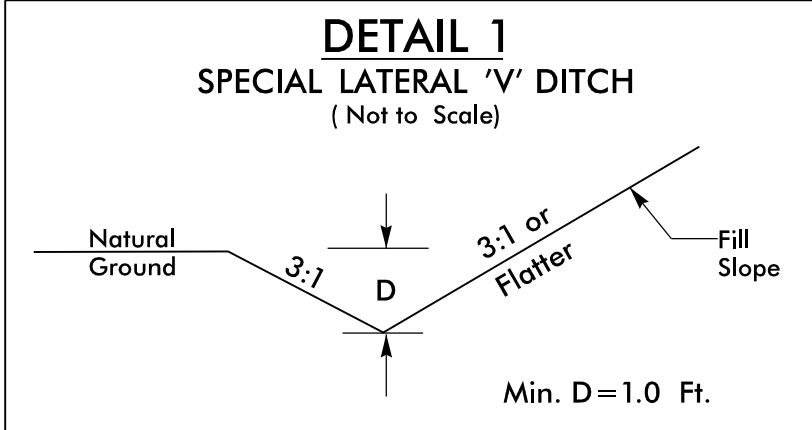
SUNGATE DESIGN GROUP, P.A.

905 JONES FRANKLIN ROAD
RALEIGH, NORTH CAROLINA 27606
TEL (919) 859-2243
ENG FIRM LICENSE NO. C-890

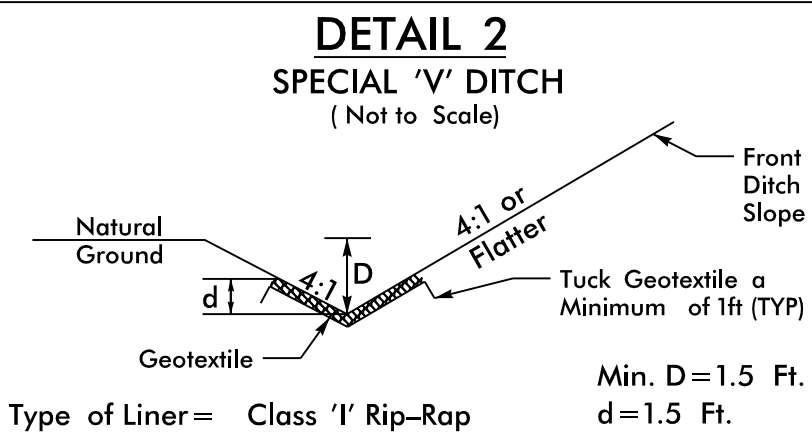
PROJECT REFERENCE NO.	SHEET NO.
BP4-R027	2D-1



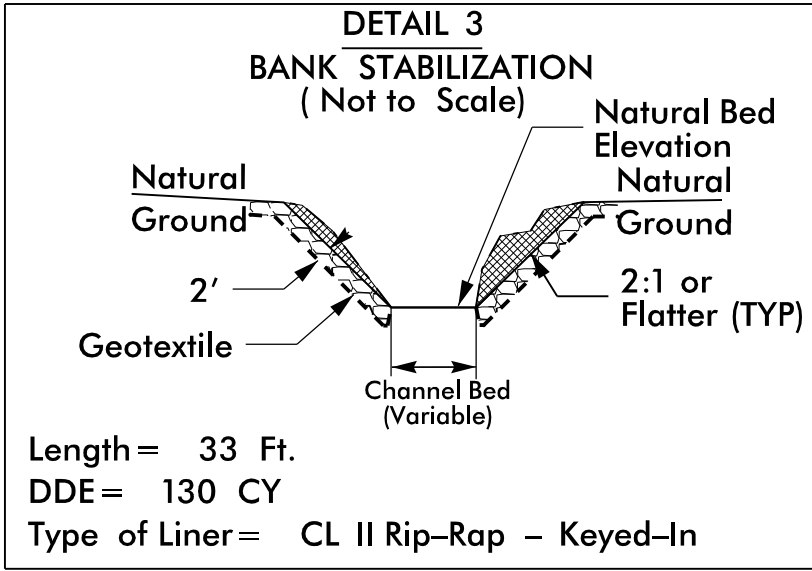
DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED



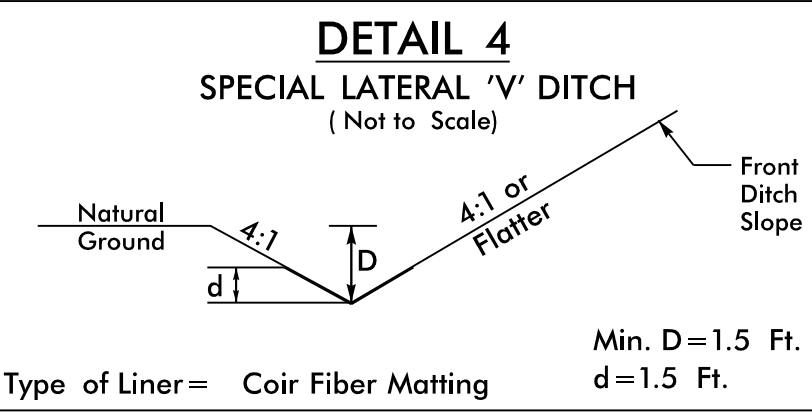
FROM STA. 11+57 TO STA. 14+50 -L- LT
FROM STA. 16+00 TO STA. 17+50 -L- RT



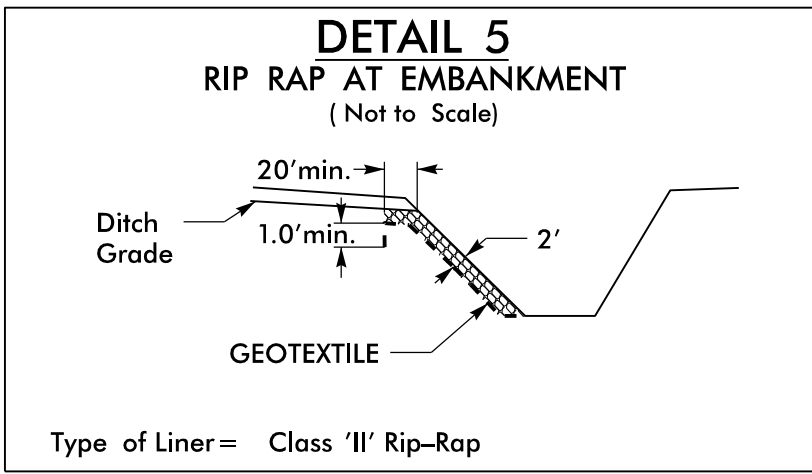
FROM STA. 15+65 TO STA. 16+34 -L- LT



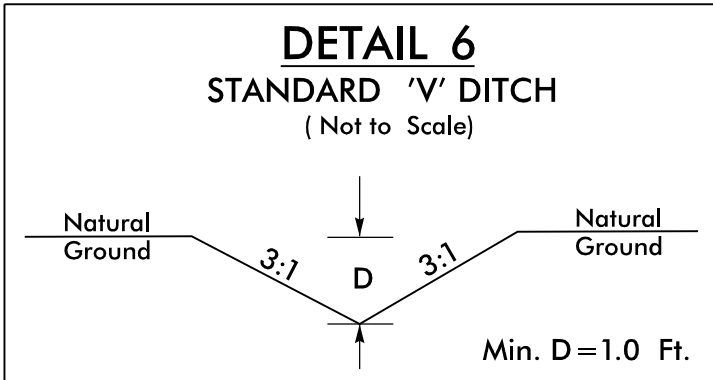
Length = 33 Ft.
DDE = 130 CY
Type of Liner = CL II Rip-Rap - Keyed-In



FROM STA. 16+74 TO STA. 17+50 -L- LT



FROM STA. 15+38 TO STA. 15+65 -L- LT



FROM STA. 14+50 TO STA. 14+82 -L- LT

COMPUTED BY: MBF DATE: 9 /19 /22
CHECKED BY: TSJ DATE: 7 /16 /25

STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

PROJECT REFERENCE NO.	SHEET NO.
BP4-R027	3B-1

EARTHWORK SUMMARY (CY)

LOCATION	UNCLASSIFIED EXCAVATION	EMBT + %	BORROW	WASTE
SUMMARY NO. 1				
-L- STA. 11+75.00 TO STA. 14+63.77 (BEGIN BRIDGE)	276	13		264
SUBTOTAL SUMMARY NO. 1	276	13		264
SUMMARY NO. 2				
-L- STA. 15+66.23 (END BRIDGE) TO STA. 17+60.00	289	79		210
SUBTOTAL SUMMARY NO. 2	289	79		210
PROJECT TOTAL	565	92		474
GRAND TOTAL	565	92		474
SAY	600			

ESTIMATED UNDERCUT = 300 CY
ESTIMATED DDE = 140 CY

Earthwork quantities are calculated by the Roadway Design Unit. These earthwork quantities are based in part on subsurface data provided by the Geotechnical Engineering Unit.

Note: Approximate quantities only. Clearing and Grubbing, Unclassified Excavation, Fine Grading, and Removal of Existing Asphalt Pavement will be paid for at the contract lump sum price for "Grading".

PAVEMENT REMOVAL SUMMARY

SURVEY LINE	STATION	STATION	LOCATION LV/RV/CL	YD ²
-L-	13 + 83	14 + 75	CL	228
-L-	15 + 55	15 + 89	CL	89
TOTAL:				317
SAY:				320

SHOULDER BERM GUTTER SUMMARY (LF)

SURVEY LINE	STATION	STATION	LENGTH
-L- (LT)	14 + 40	14 + 57	17
-R- (RT)	14 + 39	14 + 49	10
TOTAL:			27
SAY:			30

GUARDRAIL SUMMARY

[illegible]

LIST OF PIPES, ENDWALLS, ETC. (FOR PIPES 48" & UNDER)

[illegible]

12/06/07

COMPUTED BY: TYLER C. BOTTOMS	DATE: 8 /19 /22
CHECKED BY: JINYOUNG PARK	DATE: 10 /4 /22

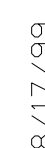
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PROJECT REFERENCE NO.	SHEET NO.
BP4-R027	36-1

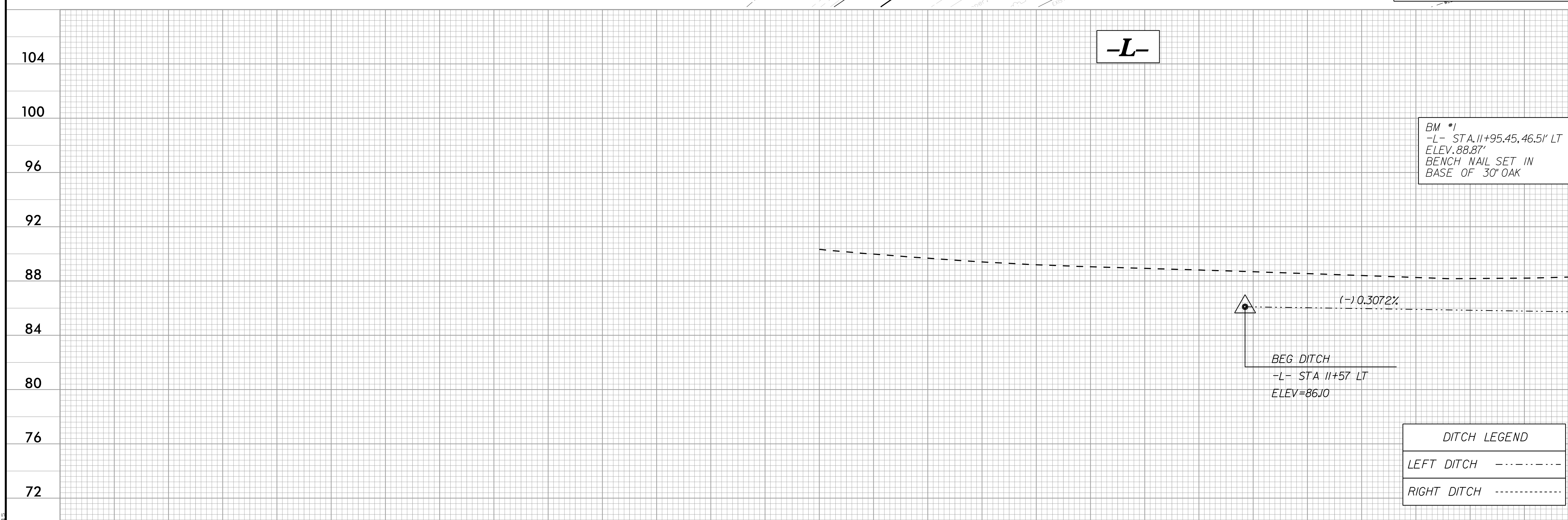
SUMMARY OF SUBSURFACE DRAINAGE

LINE	STATION	STATION	LOCATION L+R/T+CL	DRAIN TYPE* UD/BD/SD	LF
CONTINGENCY				SD	200
				TOTAL LF:	200

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



DITCH LEGEND	76
LEFT DITCH - - - - -	
RIGHT DITCH - - - - -	72



-L-

BM #1
-L- STA. 11+95.45, 46.51' LT
ELEV. 88.87'
BENCH NAIL SET IN
BASE OF 30" OAK

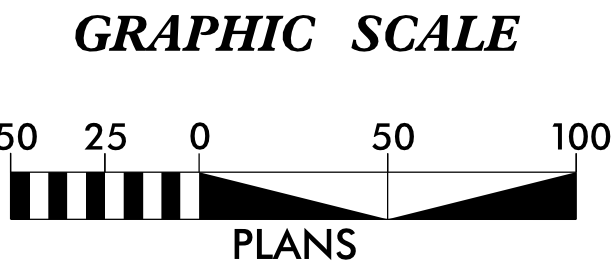
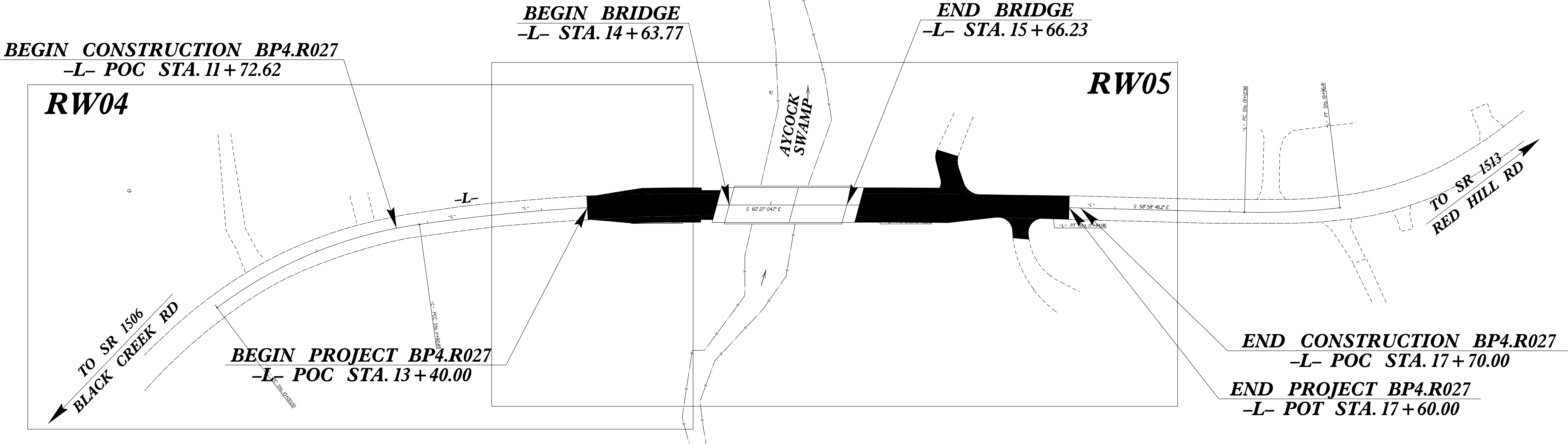
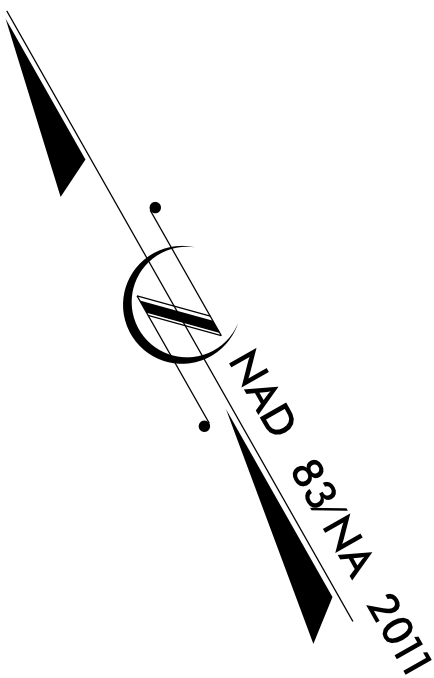
TIP PROJECT: BP4.R027.1

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	BR4.R027	RW01	7

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

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

WAYNE COUNTY



DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT 950219-1 WITH NAD 83/NA 2011 STATE PLANE GRID COORDINATES OF NORTHING: 663141.0000(ft) EASTING: 2323979.5550(ft) ELEVATION: 99.00(ft) THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.9998884671 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM 950219-1 TO -L- STATION 11+72.62 IS N 74°12'45\"/>

Prepared in the Office of:



WSP USA Inc.
128 TALBERT ROAD
SUITE A
MOORESVILLE, NC 28117
TEL: 704.662.0100
WWW.WSP.COM

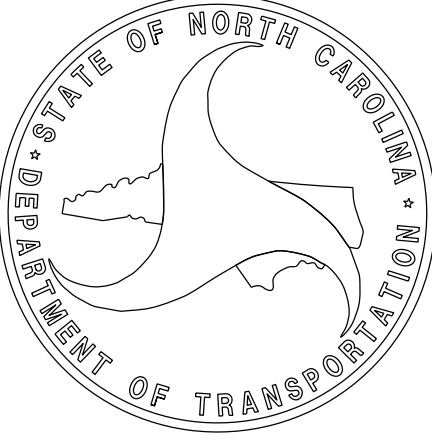
2018 STANDARD SPECIFICATIONS	
RIGHT OF WAY DATE: 3 /31 /23	LETTING DATE: 7 /28 /26

PROFESSIONAL LAND SURVEYOR



DocuSigned by:
Cal R. Schenert
10979393746607485

SIGNATURE: _____ Date: 08/22/2023



6/2/99

REVISIONS

18-AUG-2023 10:05
B:\Users\USL\OneDrive\Projects\BP4\BP4.R027\Is_rw02d-1.dgn
USL0725784 AT 42HHW3

PROPOSED ALIGNMENT CONTROL SHEET

PROJECT REFERENCE NO.
BP4.R027

SHEET NO.
RW02D-1

Location and Surveys



WSP USA Inc.
128 TALBERT ROAD
SUITE A
MOORESVILLE, NC 28117
TEL: 704.662.0100
WWW.WSP.COM

L			
TYPE	STATION	NORTH	EAST
PC	10+00.00	663425.5204	2324755.9787
PCC	11+92.85	663401.6981	2324945.2701
PT	14+25.57	663302.0307	2325155.3407
PC	15+92.12	663219.8915	2325300.2338
PT	17+44.96	663142.8166	2325432.2130
PC	19+12.96	663056.2397	2325576.1846
PT	19+96.41	663018.5660	2325650.5629

NOTES:

1. PROJECT CONTROL WAS ESTABLISHED USING GNSS, THE GLOBAL NAVIGATION SATELLITE SYSTEM.
2. THE PROPOSED ALIGNMENT CONTROL DATA FOR THIS PROJECT HAS BEEN COMPILED FROM VARIOUS SOURCES. IF FURTHER INFORMATION REGARDING PROJECT CONTROL IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.

6/2/99

REVISIONS

19-AUG-2023 15:54
J:\Survey Projects\NCDOT BP4R027\Delivery\BP4R027_1s.rw02e-1.dgn
USV70917 AT JFMFM3

RIGHT OF WAY CONTROL SHEET

PROJECT REFERENCE NO.

BP4.R027

SHEET NO.

RW02E-1

Location and Surveys

wsp

WSP USA Inc.
128 TALBERT ROAD
SUITE A
MOORESVILLE, NC 28117
TEL: 704.662.0100
WWW.WSP.COM

ROW MARKER REBAR AND CAP

ALIGN	STATION	OFFSET	NORTH	EAST
L	14+30.00	45.00	663260.6976	2325137.0044
L	14+30.00	28.10	663275.3981	2325145.3381
L	15+92.12	45.00	663180.7443	2325278.0414
L	16+35.00	29.01	663173.4799	2325322.9697
L	16+40.00	-45.00	663235.0805	2325364.2946
L	15+92.12	-45.00	663259.0386	2325322.4261
L	14+30.00	-45.00	663338.9919	2325181.3891
L	14+30.00	-31.93	663327.6203	2325174.9426
L	16+40.00	-30.92	663222.8878	2325357.2524

ROW MARKER PERMANENT EASEMENT

ALIGN	STATION	OFFSET	NORTH	EAST
L	16+15.00	-60.00	663260.6534	2325349.9036
L	16+15.00	-70.00	663269.3337	2325354.8686
L	16+25.00	-70.00	663264.3029	2325363.6468
L	16+25.00	-60.00	663255.6309	2325358.6672
L	17+67.00	-52.00	663176.0237	2325477.8952
L	17+67.00	-30.00	663157.1701	2325466.5577
L	11+72.62	-50.96	663456.9555	2324942.5951
L	17+60.00	30.00	663109.3585	2325429.6381
L	17+70.00	30.00	663104.2051	2325438.2079
L	17+70.00	50.00	663087.0654	2325427.9010
L	17+60.00	50.00	663092.2188	2325419.3312
L	11+72.62	-30.00	663437.1004	2324935.8878
L	13+65.00	-60.00	663384.1747	2325129.6913
L	13+65.00	-70.00	663393.0545	2325134.2902
L	13+75.00	-70.00	663388.2255	2325143.5434
L	13+75.00	-60.00	663379.3746	2325138.8891

I, Cal R. Scheinert, PLS, a Professional Land Surveyor in the state of North Carolina hereby certify to the best of my knowledge and belief that the following work item(s) (R/W Staking) performed under my responsible charge meet NCDOT Survey Standards as directed in the NCDOT Location & Surveys guidelines and procedures.

I further certify that the right of way and permanent easement points shown herein and outlined in the tables shown hereon (localized coordinates, station/offset) have been checked and are accurate representations of the right of way and permanent easement points depicted on the corresponding highway plans. I also certify that the right of way and permanent easement points shown herein have been field monumented under my supervision from existing survey control provided by others; that the depicted property data shown herein were surveyed by others; and these monuments denote the right of way and easement boundaries at the time of staking which may be subject to change due to right of way revisions (See deeds for final determination).

Witness my original signature, registration number and seal this 22nd day of August, 2023.

Professional Land Surveyor

L-5528
PLS #



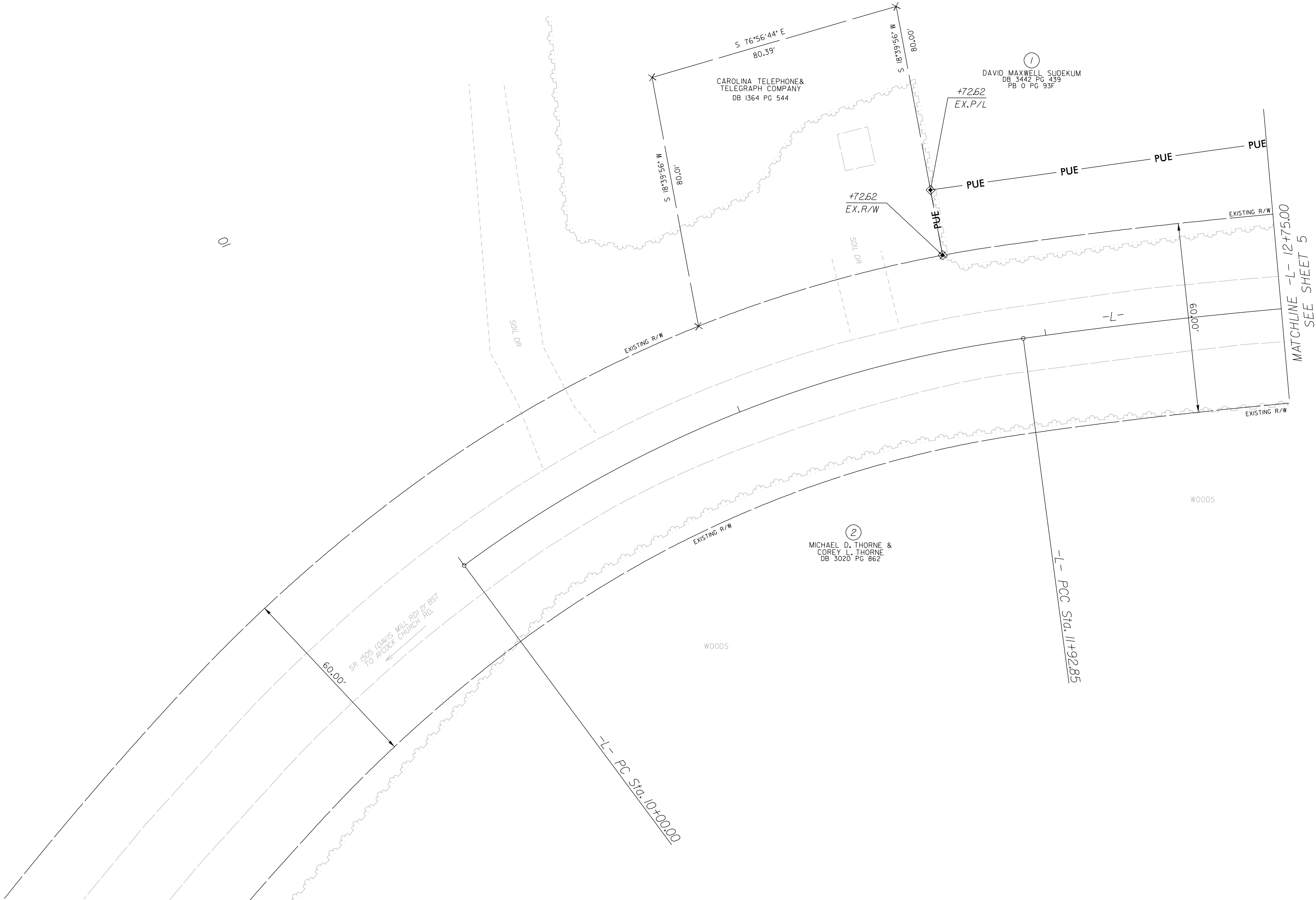
- NOTES:
1. PROJECT CONTROL WAS ESTABLISHED USING GNSS, THE GLOBAL NAVIGATION SATELLITE SYSTEM.

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

24 AUG 2023 12:47
21 Survey Projects_NCDOT BP4R027\Delivery\Corrections\BP4.R027_1s_rw04.dgn
USV70517 AT FME5M3

8/16/2023 9:59

-L-			
PI Sta 10+98.55 Δ = 29° 04' 37.9" (RT) D = 15' 04" 40.2" L = 192.85' T = 98.55' R = 380.00'	PI Sta 13+09.41 Δ = 8° 20' 01.2" (RT) D = 3' 34" 51.6" L = 232.72' T = 116.57' R = 1,600.00'	PI Sta 16+68.55 Δ = 1° 28' 18.4" (RT) D = 0' 57' 46.6" L = 152.84' T = 76.42' R = 5,950.00'	PI Sta 19+54.76 Δ = 8° 18' 54.8" (LT) D = 9' 57' 52.1" L = 83.45' T = 41.80' R = 575.00'



PROJECT REFERENCE NO.
BP4.R027

SHEET NO.
RW04

Location and Surveys

WSP USA Inc.
128 TALBERT ROAD
SUITE A
MOORESVILLE, NC 28117
TEL: 704.662.0100
WWW.WSP.COM

I, Cal R. Scheinert, PLS, a Professional Land Surveyor in the state of North Carolina hereby certify to the best of my knowledge and belief that the following work items (R/W Staking) performed under my responsible charge meet NCDOT Survey Standards as directed in the NCDOT Location & Surveys guidelines and procedures.

I further certify that the right of way and permanent easement points shown herein and outlined in the tables shown hereon (localized coordinates, station/offset) have been checked and are accurate representations of the right of way and permanent easement points depicted on the corresponding highway plans. I also certify that the right of way and permanent easement points shown herein have been field monumented under my supervision from existing survey control provided by others; that the depicted property data shown herein were surveyed by others; and these monuments denote the right of way and easement boundaries at the time of staking which may be subject to change due to right of way revisions (See deeds for final determination).

Witness my original signature, registration number and seal this 24th day of August, 2023.

DocuSigned by:

Professional Land Surveyor

L-5528
PLS *

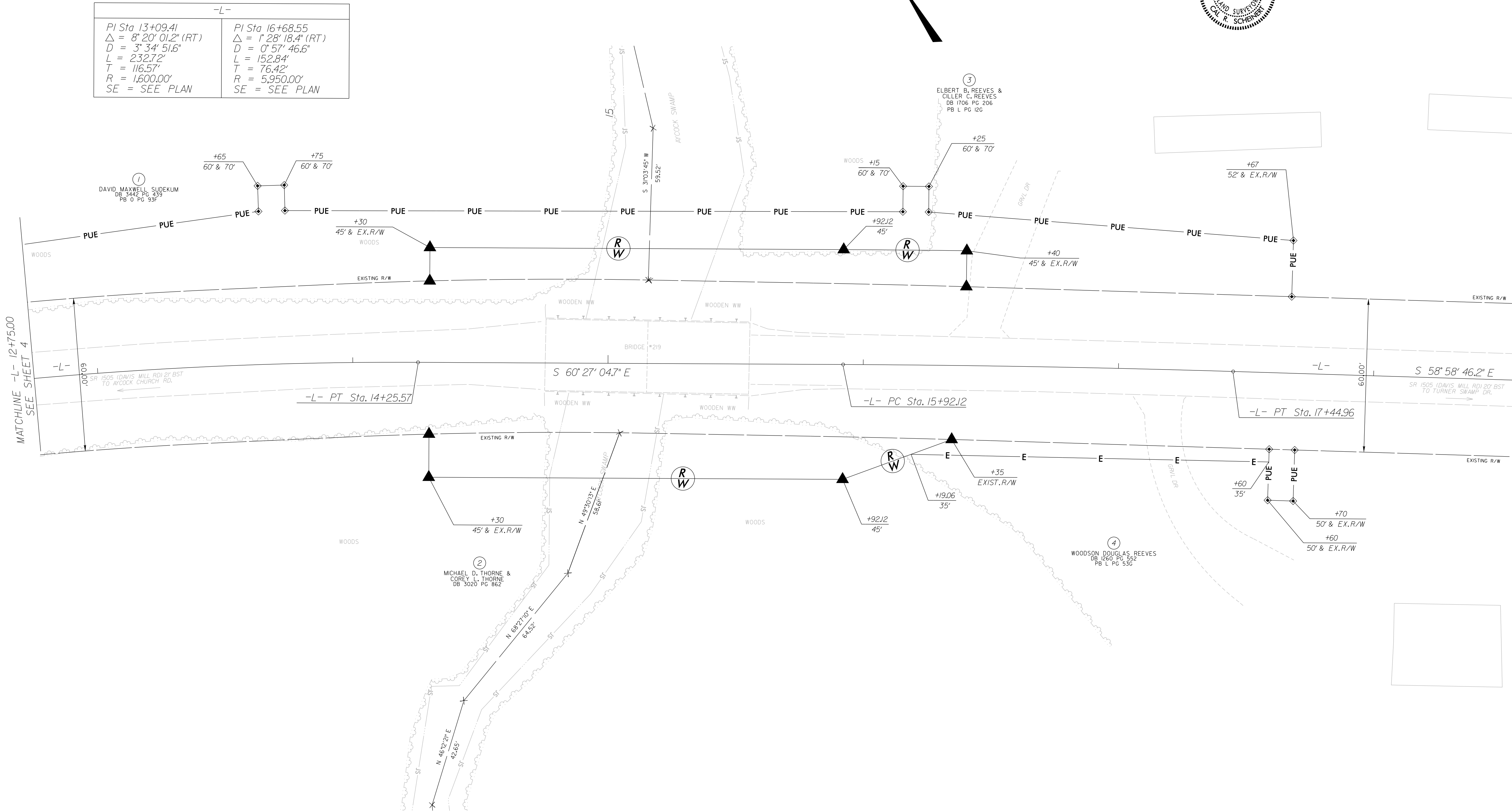
NOTES:

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

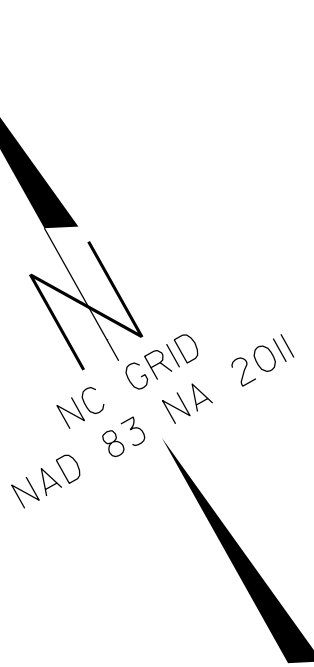
2. PROJECT CONTROL WAS ESTABLISHED USING GNSS, THE GLOBAL NAVIGATION SATELLITE SYSTEM.

8/16/2023 9:09

24-AUG-2023 12:44
US5V70517
AT FME5M3
BP4R027\Delivery\Corrections\BP4.R027_1s-rw05.dgn



-L-	
PI Sta 13+09.41 Δ = 8° 20' 01.2" (RT) D = 3' 34' 51.6" L = 232.72' T = 116.57' R = 1,600.00' SE = SEE PLAN	PI Sta 16+68.55 Δ = 1° 28' 18.4" (RT) D = 0' 57' 46.6" L = 152.84' T = 76.42' R = 5,950.00' SE = SEE PLAN



I, Cal R. Schelner, PLS, a Professional Land Surveyor in the state of North Carolina hereby certify to the best of my knowledge and belief that the following work (item(s) R/W Staking) performed under my responsible charge meet NCDOT Survey Standards as directed in the NCDOT Location & Surveys guidelines and procedures.

I further certify that the right of way and permanent easement points shown herein and outlined in the tables shown herein localized coordinates, station/offsets have been checked and are accurate representations of the right of way and permanent easement points depicted on the corresponding highway plans. I also certify that the right of way and permanent easement points shown herein have been field monumented under my supervision from existing survey control provided by others; that the depicted property data shown herein were surveyed by others; and these monuments denote the right of way and easement boundaries at the time of staking which may be subject to change due to right of way revisions (see deeds for final determination).

Witness my original signature, registration number and seal this 24th day of August, 2023.

DocuSigned by:
Cal R. Schelner
Professional Land Surveyor

L-5528
PLS #

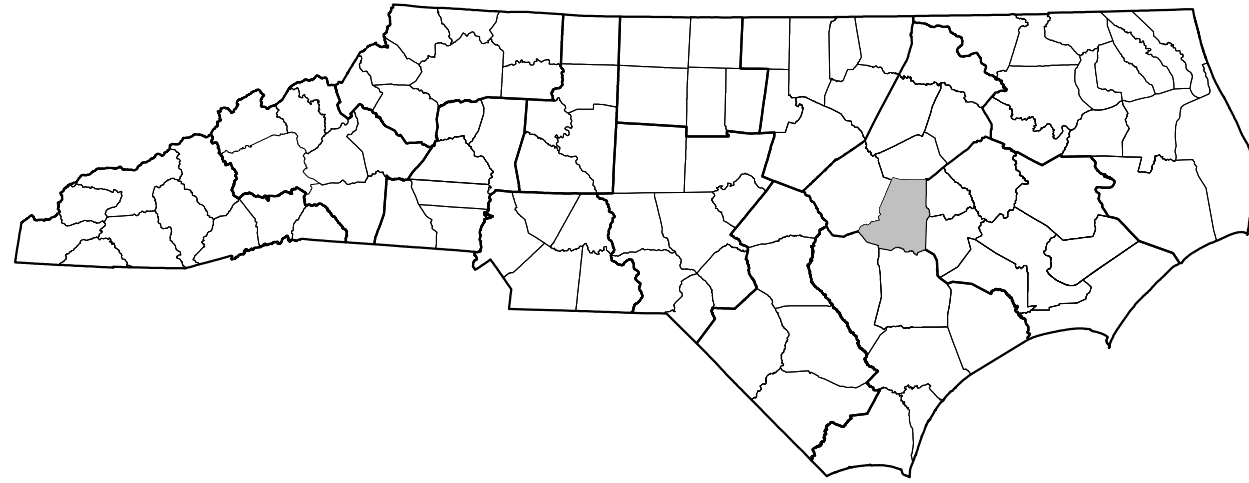


PROJECT REFERENCE NO.	SHEET NO.
BP4.R027	RW05
Location and Surveys	
WSP USA Inc. 128 TALBERT ROAD SUITE A MOORESVILLE, NC 28117 TEL: 704.662.0100 WWW.WSP.COM	

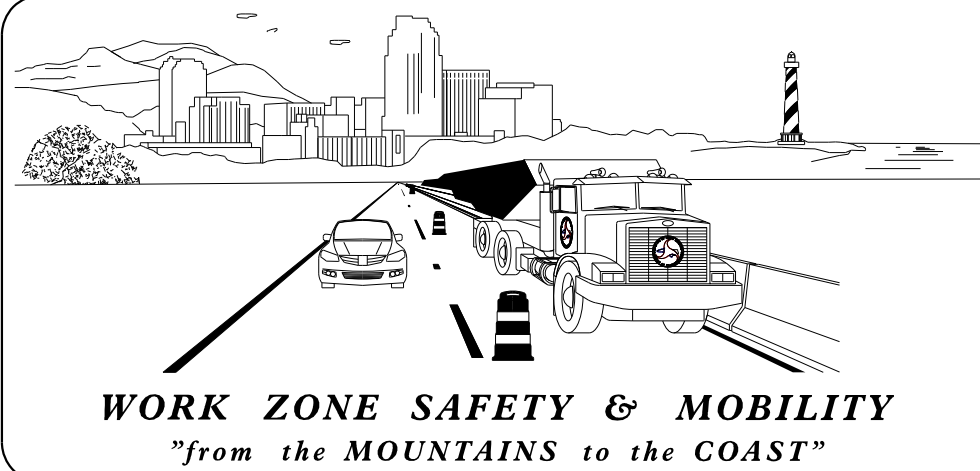
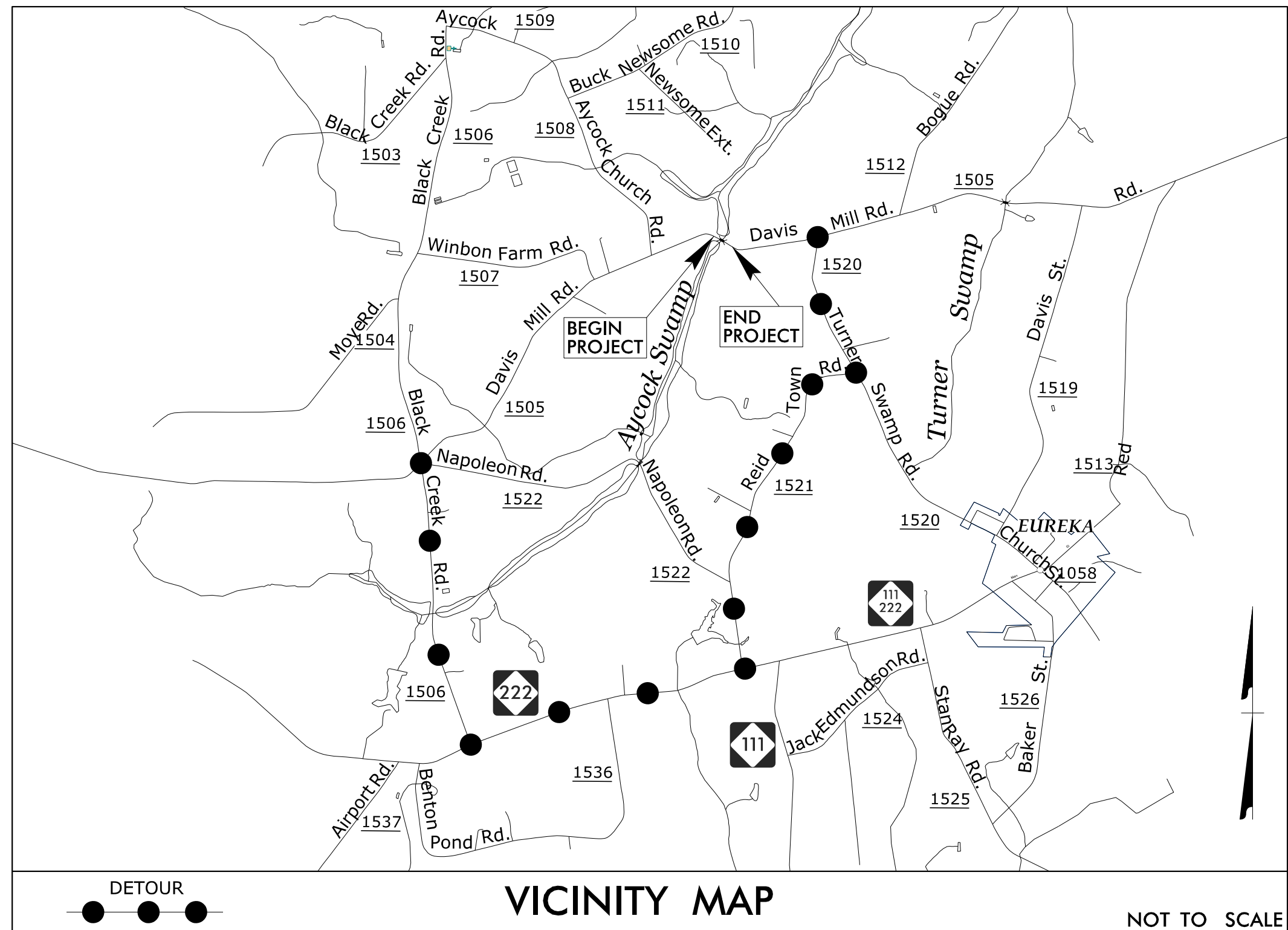
NOTES:

- IF FURTHER INFORMATION REGARDING PROJECT CONTROL IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.
- PROJECT CONTROL WAS ESTABLISHED USING GNSS, THE GLOBAL NAVIGATION SATELLITE SYSTEM.

DIVISION 4

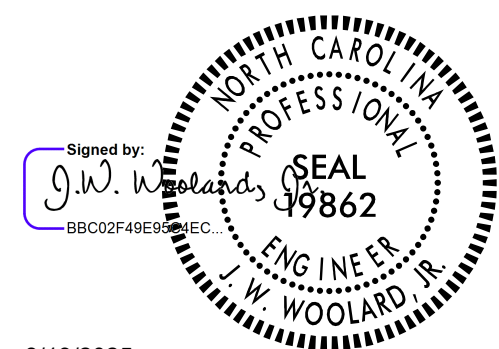


TYPE OF WORK: GRADING, PAVING, DRAINAGE AND STRUCTURE



ANDREW N. GOOD
TRANSPORTATION DESIGNER

DON PARKER, PE
PROJECT DESIGN ENGINEER



8/13/2025

MP-1

TMP-1	TITLE SHEET, VICINITY MAP, AND INDEX OF SHEETS
TMP-1A	LIST OF APPLICABLE ROADWAY STANDARD DRAWINGS, AND LEGEND
TMP-2	GENERAL NOTES, AND TEMPORARY TRAFFIC CONTROL PHASING
TMP-3	SPECIAL SIGN DESIGN
TMP-4	SR 1505 (DAVIS MILL RD) DETOUR ROUTE

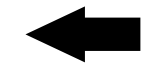
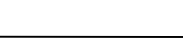
TIP PROJECT: BP4.R027.1

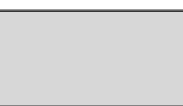
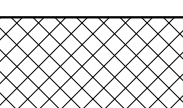
ROADWAY STANDARD DRAWINGS

THE FOLLOWING ROADWAY STANDARDS AS APPEAR IN "ROADWAY STANDARD DRAWINGS" - PROJECT SERVICES UNIT - N.C. DEPARTMENT OF TRANSPORTATION - RALEIGH, N.C., DATED JANUARY 2024 ARE APPLICABLE TO THIS PROJECT AND BY REFERENCE HEREBY ARE CONSIDERED A PART OF THESE PLANS:

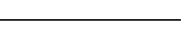
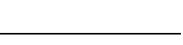
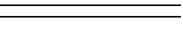
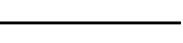
STD. NO.	TITLE
1101.01	WORK ZONE ADVANCE WARNING SIGNS
1101.02	TEMPORARY LANE CLOSURES
1101.03	TEMPORARY ROAD CLOSURES
1101.11	TRAFFIC CONTROL DESIGN TABLES
1110.01	STATIONARY WORK ZONE SIGNS
1145.01	BARRICADES
1150.01	FLAGGERS

GENERAL

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

-  WORK AREA
-  PREVIOUSLY STARTED / CONCURRENT CONSTRUCTION
-  PAVEMENT REMOVAL
-  TEMPORARY PAVEMENT
-  TEMPORARY PAVEMENT ASPHALT PAD
-  TEMPORARY PAVEMENT BREAKDOWN LANE

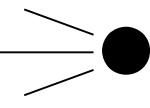
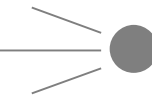
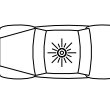
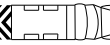
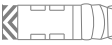
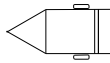
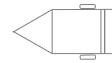
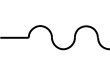
PAVEMENT MARKINGS

-  EXISTING LINES
- | TEMPORARY MARKINGS | PREVIOUSLY PLACED | |
|---|---|---------------------|
|  |  | WHITE EDGE LINE |
|  |  | YELLOW EDGE LINE |
|  |  | BROKEN LANE LINES |
|  |  | MINISKIP LANE LINES |
|  |  | DOUBLE YELLOW LINES |
|  |  | GORELINE |
|  |  | STOP BAR |

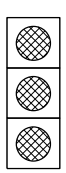
PAVEMENT MARKING SYMBOLS

-  EXISTING PAVEMENT MARKING SYMBOLS (HOLLOW)
- | TEMPORARY SYMBOLS | PREVIOUSLY PLACED | |
|---|---|--|
|    |    | PAVEMENT MARKING SYMBOLS |
|  |  | PAVEMENT MARKING ALPHANUMERIC CHARACTERS |

TRAFFIC CONTROL DEVICES

- | TEMPORARY DEVICES | PREVIOUSLY PLACED | |
|---|---|-----------------------------------|
|  |  | BARRICADE (TYPE III) |
|  |  | CONE |
|  |  | DRUM |
|  |  | FLASHING ARROW BOARD |
|  | | FLAGGER |
|  | | LAW ENFORCEMENT |
|  |  | TRUCK MOUNTED ATTENUATOR (TMA) |
|  |  | CHANGEABLE MESSAGE SIGN |
|  |  | TEMPORARY CRASH CUSHION |
|  |  | TEMPORARY CRASH CUSHION RESET |
|  |  | PORTABLE CONCRETE BARRIER |
|  |  | PORTABLE CONCRETE BARRIER (RESET) |
|  |  | ANCHORED CONCRETE BARRIER |
|  |  | ANCHORED CONCRETE BARRIER (RESET) |

SIGNALS

-  EXISTING
-  PROPOSED
-  TEMPORARY

TEMPORARY SIGNING

- | TEMPORARY SIGNS | PREVIOUSLY PLACED | |
|---|---|-----------------------------|
|  |  | PORTABLE SIGN |
|  |  | STATIONARY SIGN |
|  |  | STATIONARY OR PORTABLE SIGN |

PAVEMENT MARKERS

-  CRYSTAL/CRYSTAL
-  CRYSTAL/RED
-  YELLOW/YELLOW

GENERAL NOTES

CHANGES MAY BE REQUIRED WHEN PHYSICAL DIMENSIONS IN THE DETAIL DRAWINGS, STANDARD DETAILS, AND ROADWAY DETAILS ARE NOT ATTAINABLE TO MEET FIELD CONDITIONS OR RESULT IN DUPLICATE OR UNDESIRE

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 ON THE SHOULDER ADJACENT TO AN UNDIVIDED FACILITY AND WITHIN 5 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN TRAVEL LANE USING ROADWAY STANDARD DRAWING NO. 1101.02 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL.
- C) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN A LANE OF TRAVEL OF AN UNDIVIDED OR DIVIDED FACILITY, CLOSE THE LANE ACCORDING TO THE TRANSPORTATION MANAGEMENT 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.
- D) DO NOT INSTALL MORE THAN (NUMBER) SIMULTANEOUS LANE CLOSURES IN ANY ONE DIRECTION ON (ROAD NAME).

SIGNING

- E) 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.
- F) PROVIDE SIGNING AND DEVICES REQUIRED TO CLOSE THE ROAD ACCORDING TO THE ROADWAY STANDARD DRAWINGS AND TRANSPORTATION MANAGEMENT PLANS.

AND

PROVIDE SIGNING REQUIRED FOR THE OFF-SITE DETOUR ROUTE AS SHOWN IN THE TRANSPORTATION MANAGEMENT PLANS.

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

AND

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

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

TRAFFIC CONTROL DEVICES

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

MISCELLANEOUS

- J) MAINTAIN VEHICULAR ACCESS TO ALL DRIVEWAYS DURING THE LIFE OF THE CONTRACT, UNLESS OTHERWISE NOTED IN THE PHASING OR DIRECTED BY THE ENGINEER. USE INCIDENTAL STONE WHEN NECESSARY.
- K) ALL DIMENSIONS AND STATIONS IN THE TRANSPORTATION MANAGEMENT PLAN AND PHASING ARE APPROXIMATE (+/-); FIELD ADJUST AS NECESSARY OR AS DIRECTED BY THE ENGINEER.
- L) CHANGEABLE MESSAGE SIGN MESSAGES SHOWN ARE EXAMPLES. OTHER MESSAGES MAY BE USED AS CONDITIONS WARRANT. ALL MESSAGES AND LOCATIONS MUST BE APPROVED BY THE ENGINEER PRIOR TO INCORPORATING.

PHASING

PROJ. REFERENCE NO.	SHEET NO.
BP4.R027.1	TMP-2

PHASE 1:

STEP 1:

USING RSD 1101.02 AS NEEDED, INSTALL OFF-SITE DETOUR SIGNING AS SHOWN ON TMP-4 AND COVER AS NECESSARY.

STEP 2:

USING TEMPORARY LANE CLOSURES PER ROADWAY STANDARD DRAWING 1101.03, SHEET 1 PLACE TRAFFIC ON THE DETOUR AS SHOWN ON TMP-4 AND CLOSE -L- (SR-1505 DAVIS MILL RD) TO TRAFFIC.

STEP 3:

REMOVE EXISTING STRUCTURE #950219 AND CONSTRUCT PROPOSED STRUCTURE OVER AYCOCK SWAMP UP TO BUT NOT INCLUDING THE FINAL LAYER OF SURFACE COURSE.

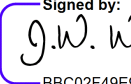
PHASE 2:

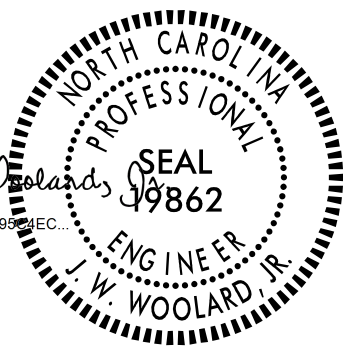
PLACE FINAL LAYER OF SURFACE COURSE AND FINAL PAVEMENT MARKINGS. REMOVE ANY TRAFFIC CONTROL DEVICES AND OPEN -L- (SR-1505 DAVIS MILL RD) TO THE FINAL TRAFFIC PATTERN.

8/13/2025
U:\Traffic\Transportation Management\Plan\TCP\PLAN SHEETS\BP4-R027-TMP-02-GENERALNOTES-PHASING.dgn
angood

**Stantec**

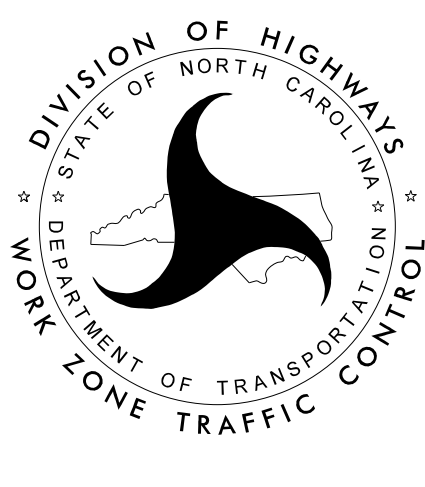
Stantec Consulting Services Inc.
801 Jones Franklin Road
Suite 300
Raleigh, NC 27606
Tel. 919.851.6866
Fax. 919.851.7024
www.stantec.com
License No. F-0672

Signed by:

J.W. WOOLLARD, P.E.
Professional Engineer
BB02024862-REC.



8/13/2025

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED



GENERAL NOTES
PHASING

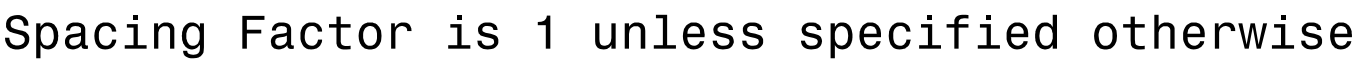
DESIGN BY: RRH CHECKED BY: J. WOOLARD
PROJECT ID: BP4-R027 DIV: 4 DATE: Sep 19, 2022

SIGN WIDTH: 30"
HEIGHT: 18"
TOTAL AREA: 3.8 Sq.Ft.

NO. Z BARS:
LENGTH:

MAT'L: 0.063" (1.6MM) ALUMINUM

1. Legend and border shall be direct applied black non-reflective sheeting.
2. Background shall be NC GRADE B Fluorescent Orange retroreflective sheeting.

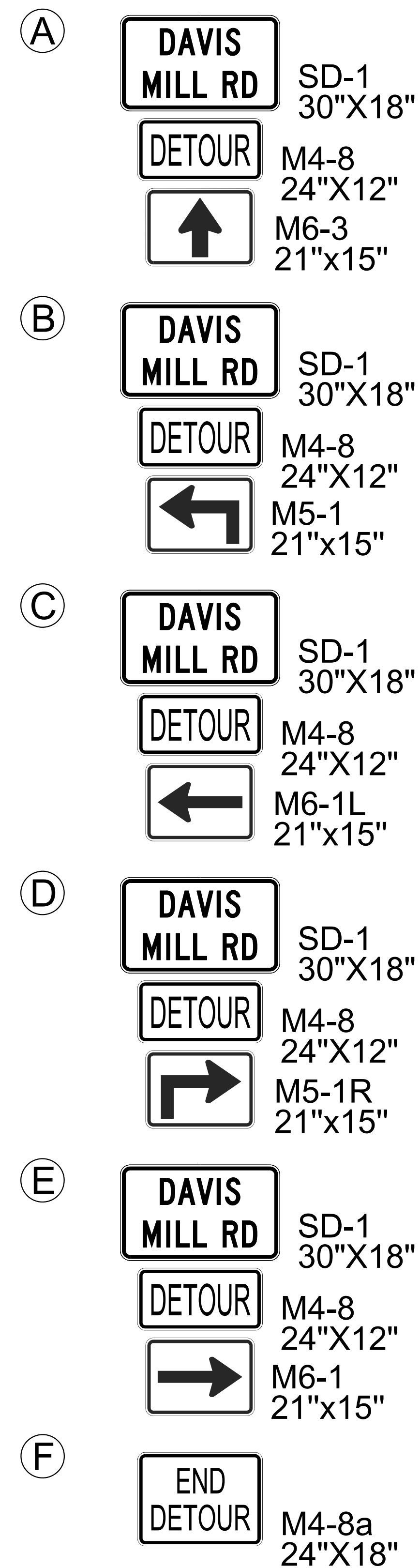


Letter spacings are to start of next letter

Series/Size	Text Length
-------------	-------------

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



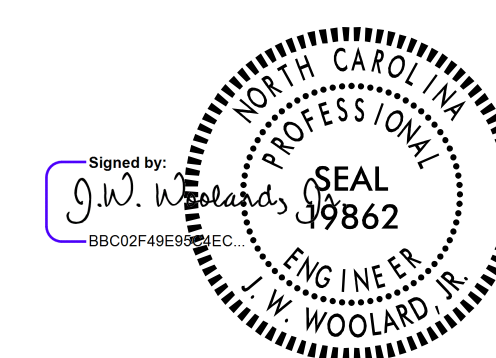


The diagram illustrates three configurations of Type III Barricades, each consisting of three horizontal panels with diagonal black and white stripes. The configurations are labeled X1, X2, and X3.

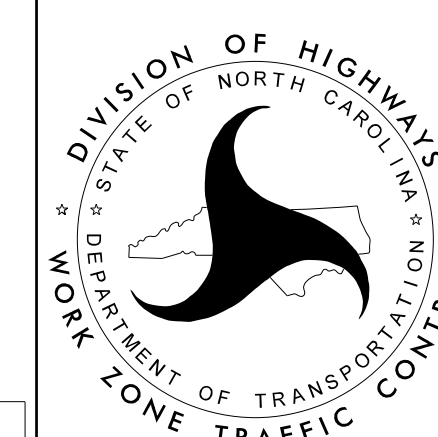
- X1:** The top panel is labeled "R11-2 (48" x 30")". The middle panel contains the text "ROAD CLOSED". The bottom panel is labeled "TYPE III BARRICADE".
- X2:** The top panel is labeled "R11-3 (60" x 30")". The middle panel contains the text "ROAD CLOSED", "0.5 MILES AHEAD", and "LOCAL TRAFFIC ONLY". The bottom panel is labeled "TYPE III BARRICADE".
- X3:** The top panel is labeled "R11-3 (60" x 30")". The middle panel contains the text "ROAD CLOSED", "2 MILES AHEAD", and "LOCAL TRAFFIC ONLY". The bottom panel is labeled "TYPE III BARRICADE".

Each configuration also includes a "DETOUR" sign with a white arrow pointing left or right, positioned between the middle and bottom panels.

SEE TMP-3 FOR
SPECIAL SIGN DESIGN



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



SR 1505 (DAVIS MILL RD)
DETOUR ROUTE

9/22/2025
Us:\Traffic\Signing\CADD\PM\Plan Sheets\BP4-R027_pmp_01.dgn
angood

CONTRACT NO.: DD00479 T.I.P.: BP4-R027

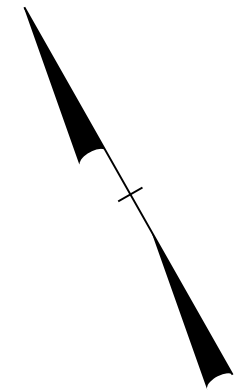
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

PAVEMENT MARKING PLAN
WAYNE COUNTY

LOCATION: REPLACE BRIDGE #950219 ON SR 1505 (DAVIS MILL RD)

OVER AYCOCK SWAMP

TYPE OF WORK: GRADING, DRAINAGE, PAVING, AND STRUCTURE



TIP NO.
BP4-R027

SHEET NO.
PMP - 1

APPROVED BY:

J.W. Woolard, Jr.

DATE:
9/22/2025

SEAL

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

ROADWAY STANDARD DRAWINGS

THE FOLLOWING ROADWAY STANDARDS AS APPEAR IN "ROADWAY STANDARD DRAWINGS" - PROJECT SERVICES UNIT - N.C. DEPARTMENT OF TRANSPORTATION - RALEIGH, N.C., DATED JANUARY 2024 ARE APPLICABLE TO THIS PROJECT AND BY REFERENCE HEREBY ARE CONSIDERED A PART OF THESE PLANS:

STD. NO.	TITLE
1205.01	PAVEMENT MARKINGS - LINE TYPES & OFFSETS
1205.02	PAVEMENT MARKINGS - 2 LANE & MULTILANE ROADWAYS
1205.12	PAVEMENT MARKINGS - BRIDGES
1261.01	GUARDRAIL & BARRIER DELINEATORS - INSTALLATION SPACING
1261.02	GUARDRAIL & BARRIER DELINEATORS - TYPES & MOUNTING
1262.01	GUARDRAIL END DELINEATION

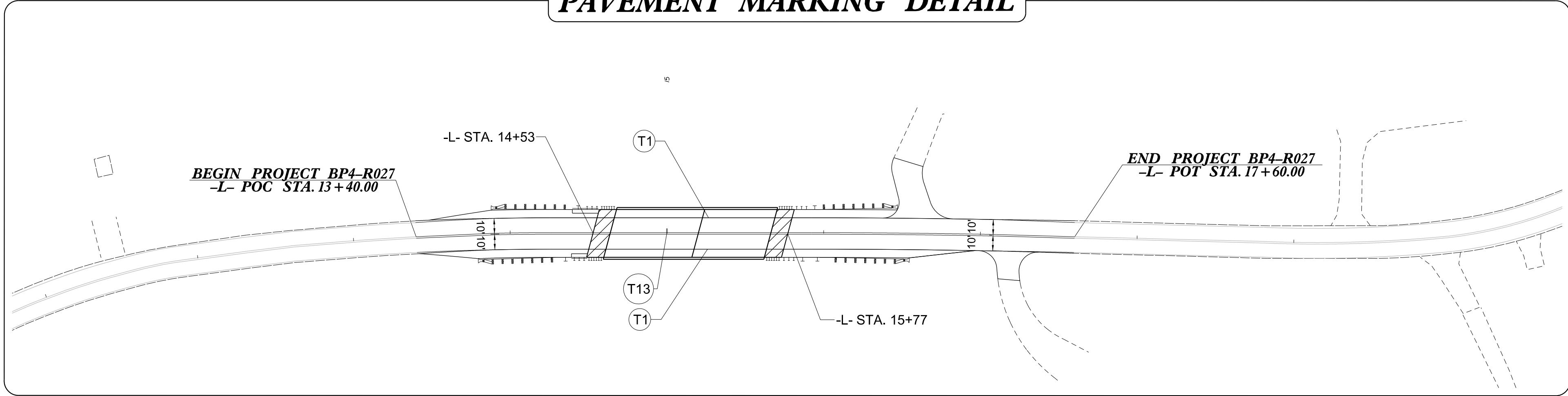
GENERAL NOTES

- THE FOLLOWING GENERAL NOTES APPLY AT ALL TIMES FOR THE DURATION OF THE CONSTRUCTION PROJECT, EXCEPT WHEN OTHERWISE NOTED IN THE PLAN, OR DIRECTED BY THE ENGINEER.
- A) INSTALL PAVEMENT MARKINGS AND PAVEMENT MARKERS ON THE FINAL SURFACE AS FOLLOWS:
- | | | |
|-----------|---------------|--------|
| ROAD NAME | MARKING | MARKER |
| ALL ROADS | THERMOPLASTIC | NONE |
- B) TIE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING LINES.
C) REMOVE/REPLACE ANY CONFLICTING/DAMAGED PAVEMENT MARKINGS AND MARKERS.
D) PASSING ZONES WILL BE DETERMINED IN THE FIELD AND MUST BE APPROVED BY THE ENGINEER.

FINAL PAVEMENT
MARKING SCHEDULE

SYMBOL	DESCRIPTION	PAY ITEM
T1	WHITE EDGELINE (4", 90 MIL)	THERMOPLASTIC
T13	YELLOW DOUBLE CENTER (4", 90 MIL)	THERMOPLASTIC

PAVEMENT MARKING DETAIL



PLAN PREPARED BY:

JAY WOOLARD, P.E. SENIOR TRANSPORTATION ENGINEER
ANDREW N. GOOD TRANSPORTATION DESIGNER

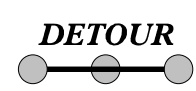
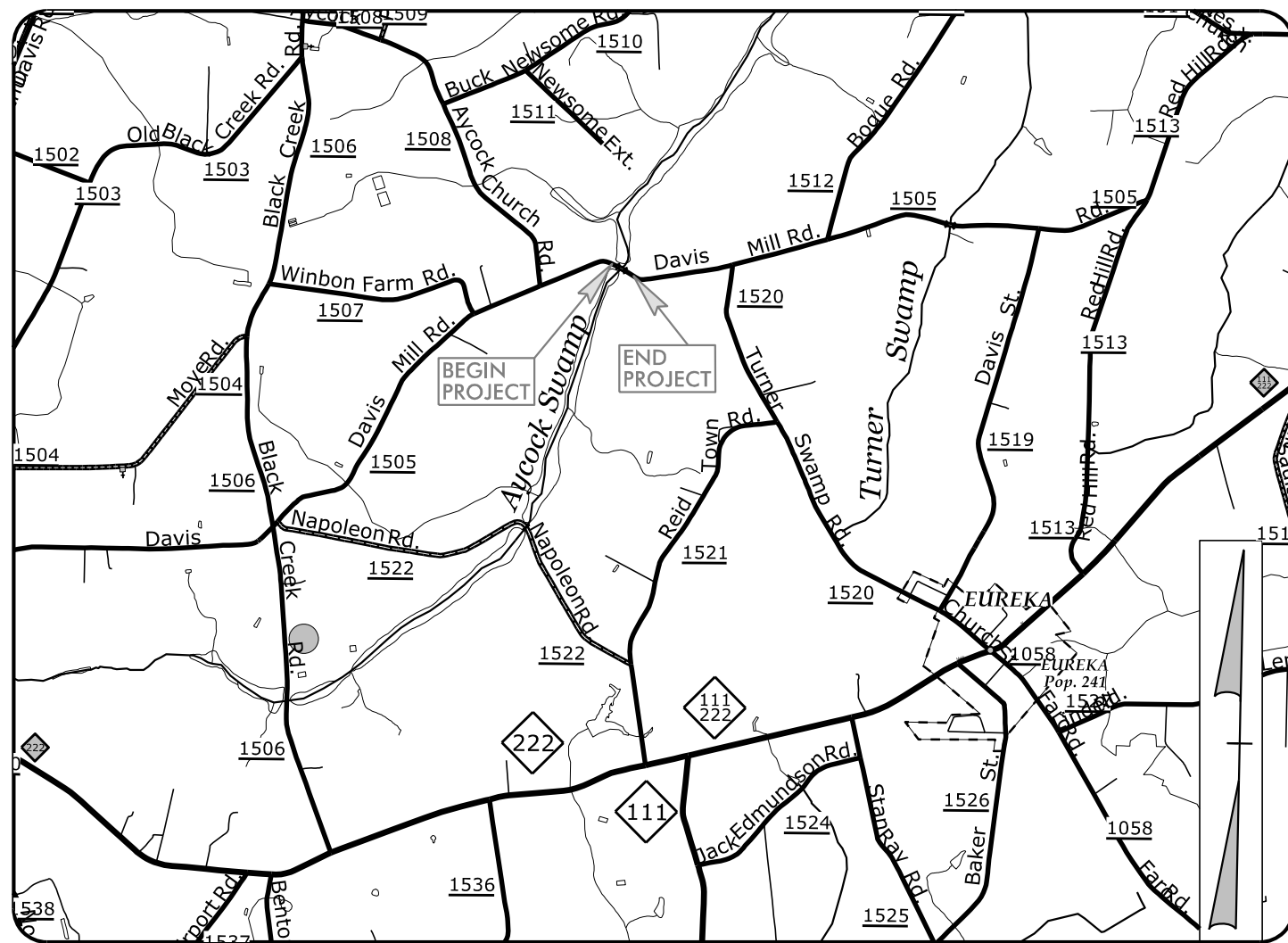


Stantec Consulting Services Inc.
801 Jones Franklin Road
Suite 300
Raleigh, NC 27606
Tel. (919) 851-6866
Fax. (919) 851-7024
www.stantec.com
License No. F-0672

INDEX

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

TIP PROJECT: BP4-R027

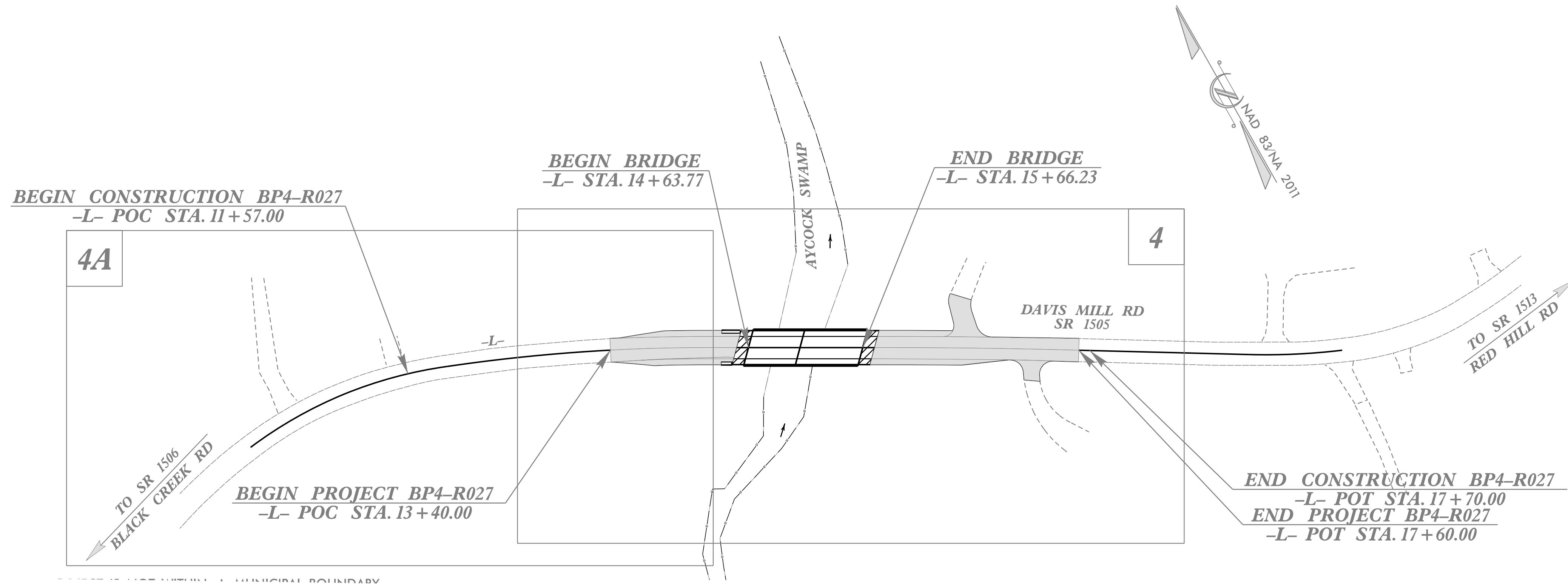


VICINITY MAP
NOT TO SCALE

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

LOCATION: REPLACE BRIDGE #950219 ON SR 1505 (DAVIS MILL RD)
OVER AYCOCK SWAMP

TYPE OF WORK: GRADING, PAVING, DRAINAGE AND STRUCTURE



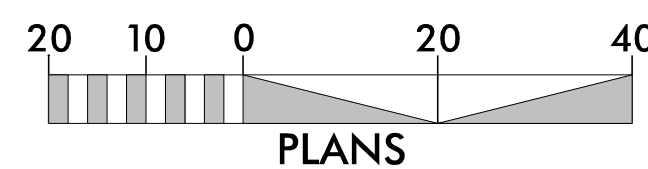
THIS PROJECT CONTAINS
EROSION CONTROL PLANS
FOR CLEARING AND
GRUBBING PHASE OF
CONSTRUCTION.

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.

GRAPHIC SCALE



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, P.A.



905 JONES FRANKLIN ROAD
RALEIGH, NORTH CAROLINA 27606
TEL (919) 859-2243
ENG FIRM LICENSE NO. C-890

Designed by:

JAKE STANOVICH, PE
NAME

4461
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.

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	BP4-R027	EC-1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
BP4.R027.1	N/A	PE	
BP4.R027.2	N/A	R/W & UTIL.	
BP4.R027.3	N/A	CONST.	

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

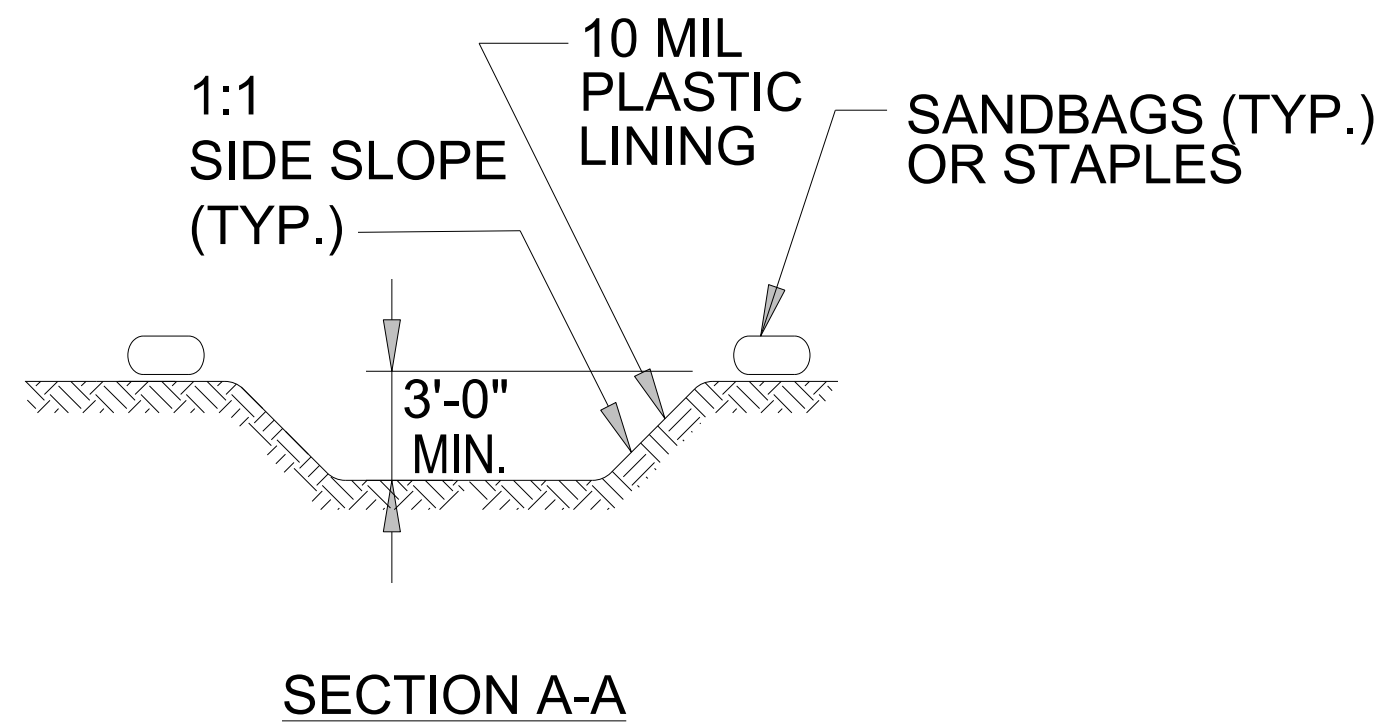
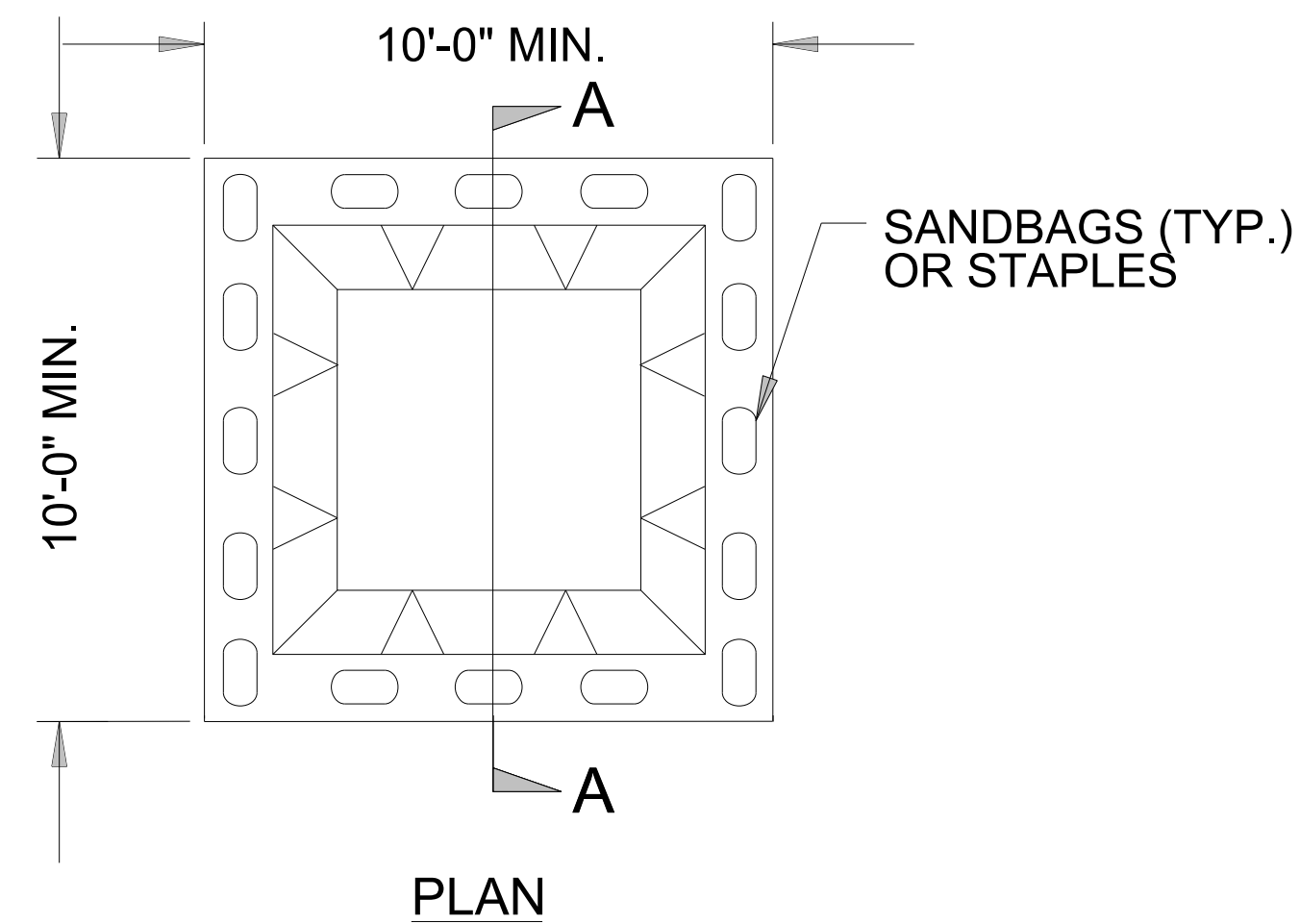
PROJECT REFERENCE NO.	SHEET NO.
BP4-R027	EC-02

EROSION & SEDIMENT CONTROL LEGEND

Std. #	Description	Symbol	Std. #	Description	Symbol
1605.01	Temporary Silt Fence		1633.01	Temporary Rock Silt Check Type A	
1606.01	Special Sediment Control Fence		1633.02	Temporary Rock Silt Check Type B	
1622.01	Temporary Berms and Slope Drains		1633.03	Temporary Rock Silt Check Type A with Excelsior Matting and Flocculant	
1630.02	Silt Basin Type B		1634.01	Temporary Rock Sediment Dam Type A	
1630.03	Temporary Silt Ditch		1634.02	Temporary Rock Sediment Dam Type B	
1630.04	Stilling Basin		1635.01	Rock Pipe Inlet Sediment Trap Type A	
1630.05	Temporary Diversion		1635.02	Rock Pipe Inlet Sediment Trap Type B	
1630.06	Special Stilling Basin		1636.01	Excelsior Wattle Check	
1630.07	Skimmer Basin		1636.01	Excelsior Wattle Check with Flocculant	
1630.08	Tiered Skimmer Basin		1636.01	Coir Fiber Wattle Check	
1630.09	Earthen Dam with Skimmer		1636.01	Coir Fiber Wattle Check with Flocculant	
	Infiltration Basin		1636.02	Silt Fence Excelsior Wattle Break	
	Rock Inlet Sediment Trap:			Silt Fence Coir Fiber Wattle Break	
1632.01	Type A		1636.03	Excelsior Wattle Barrier	
1632.02	Type B		1636.03	Coir Fiber Wattle Barrier	
1632.03	Type C				

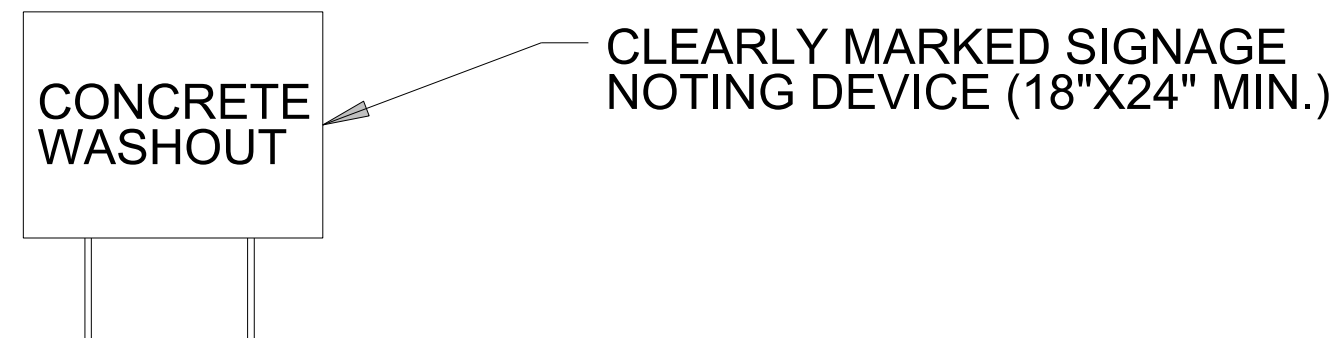
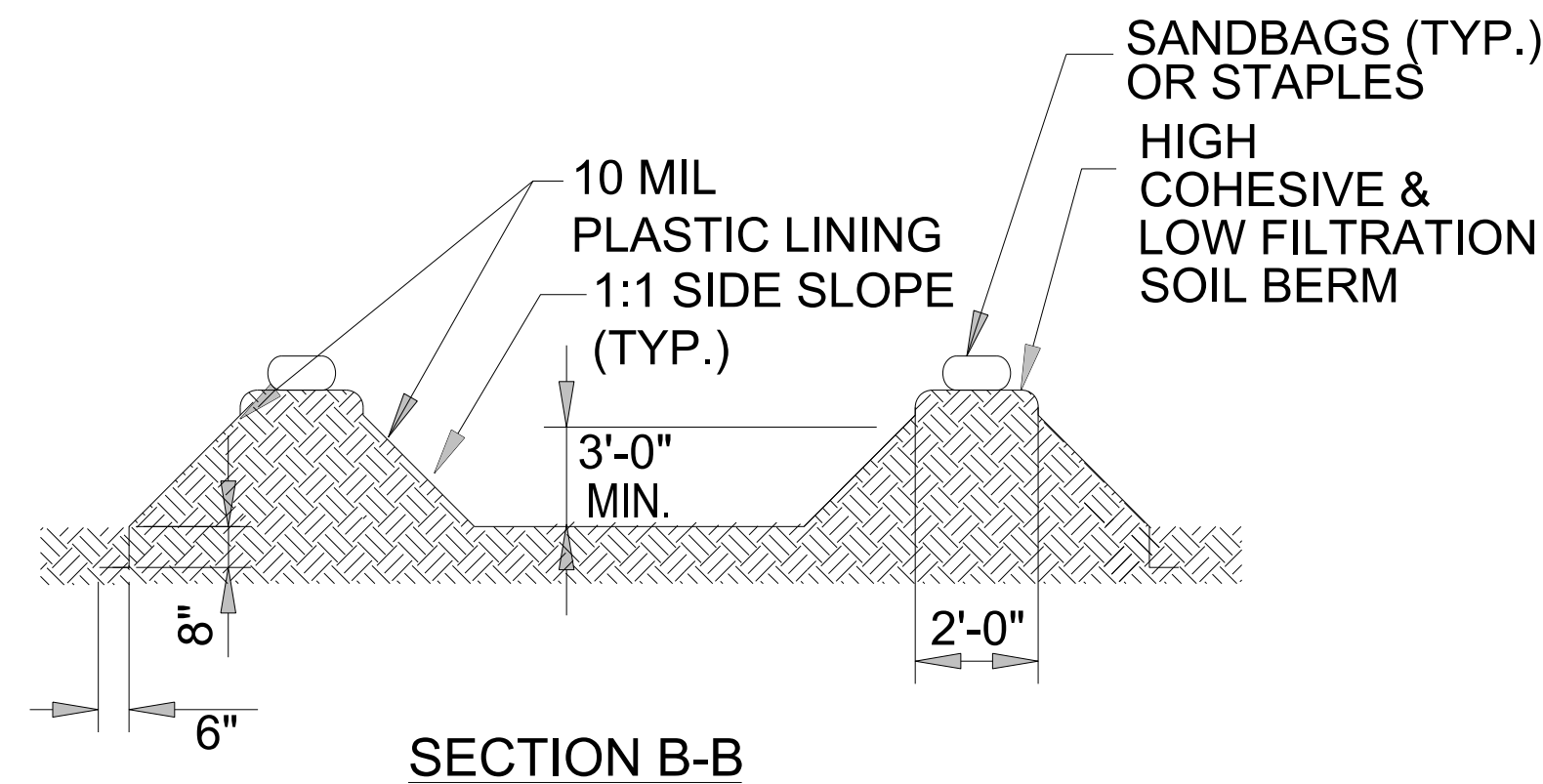
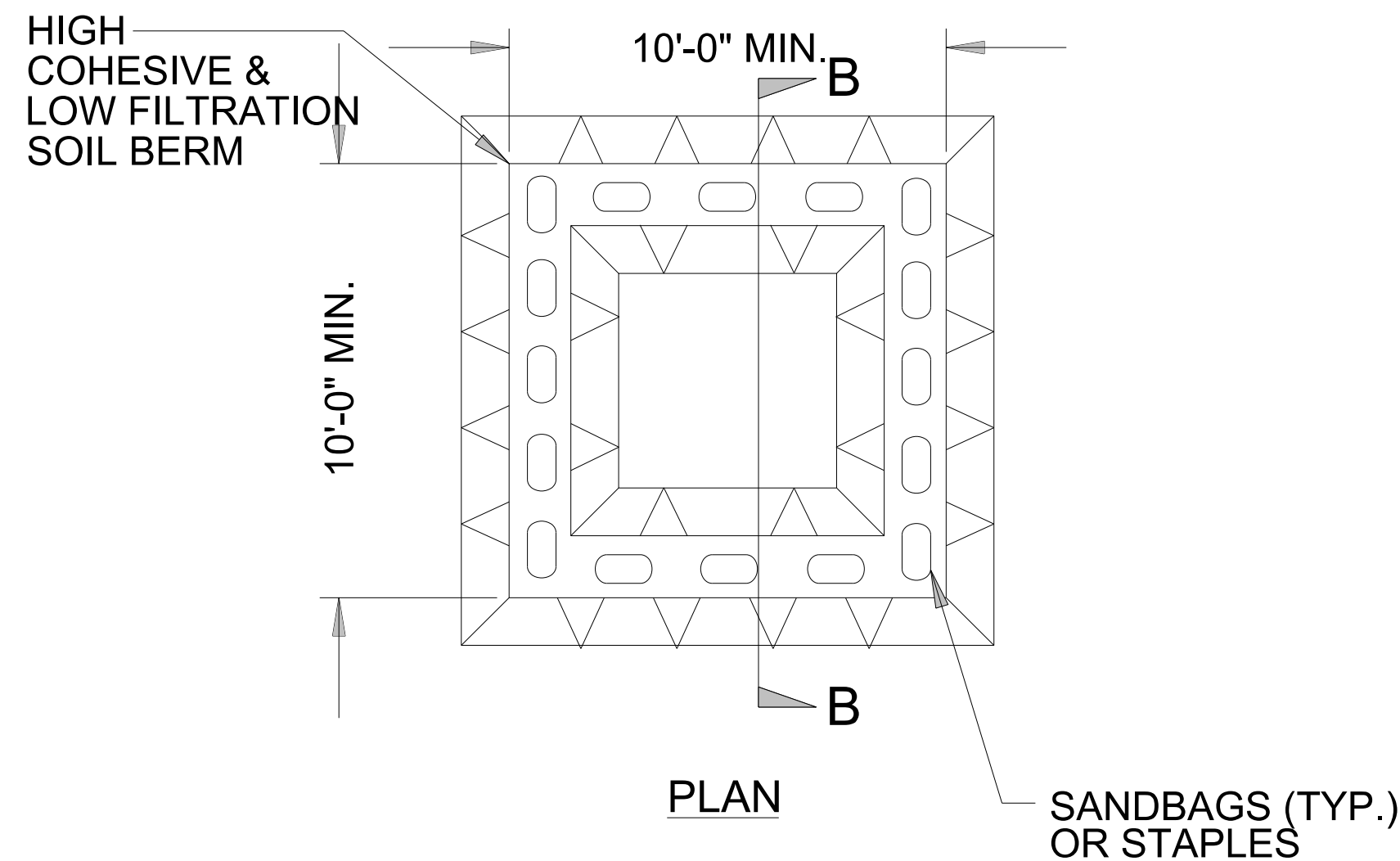
ONSITE CONCRETE WASHOUT STRUCTURE WITH LINER

PROJECT REFERENCE NO.	SHEET NO.
BP4-R027	EC-2A
RW 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.

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

PROJECT REFERENCE NO.	SHEET NO.
BP4-R027	EC-3

SOIL STABILIZATION SUMMARY SHEET

MATTING FOR EROSION CONTROL (STRAW)

[illegible]

MATTING FOR EROSION CONTROL (STRAW)

[illegible]

PROJECT REFERENCE NO.	SHEET NO.
BP4-R027	EC-3A

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

END PROJECT BP4-R027
-L- POT STA. 17+60.00

END CONSTRUCTION BP4-R027
-L- POT STA. 17+70.00

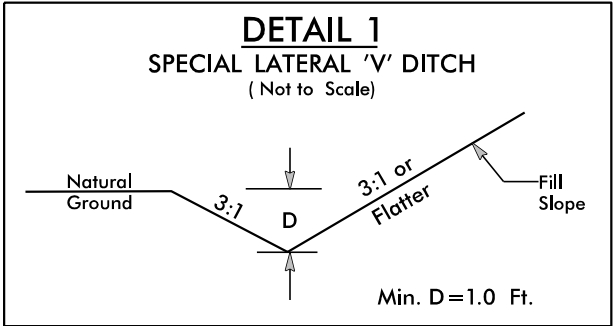


R/W REVISION NO.1 - 11/20/23; REVISE DRAINAGE DITCH ALONG PARCEL 1 AND 3.

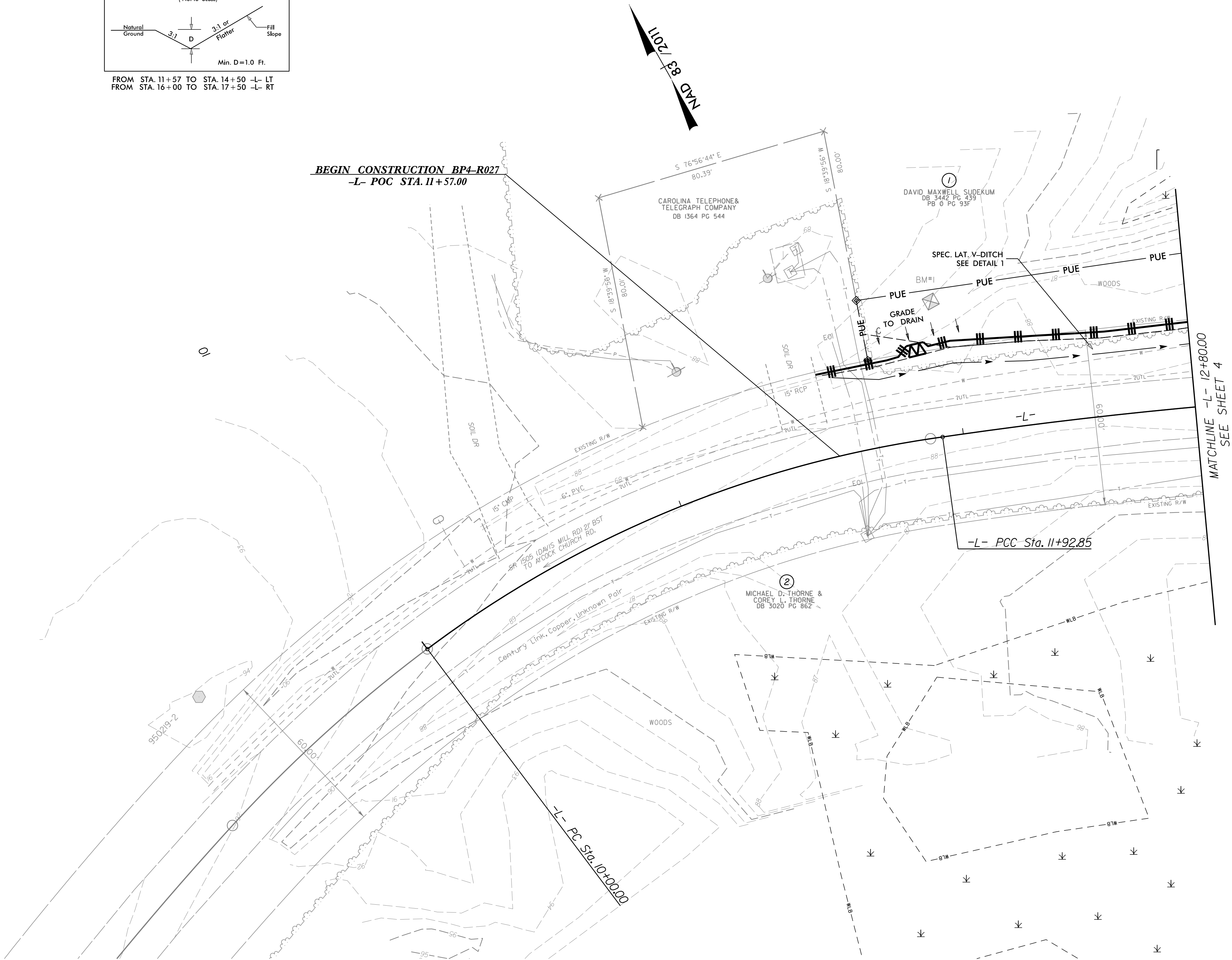
PROJECT REFERENCE NO.	SHEET NO.
BP4-R027	EC-05/CONST.4A
RW SHEET NO.	

CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 4A

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



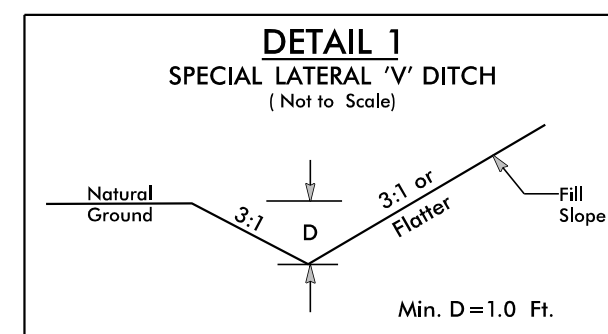
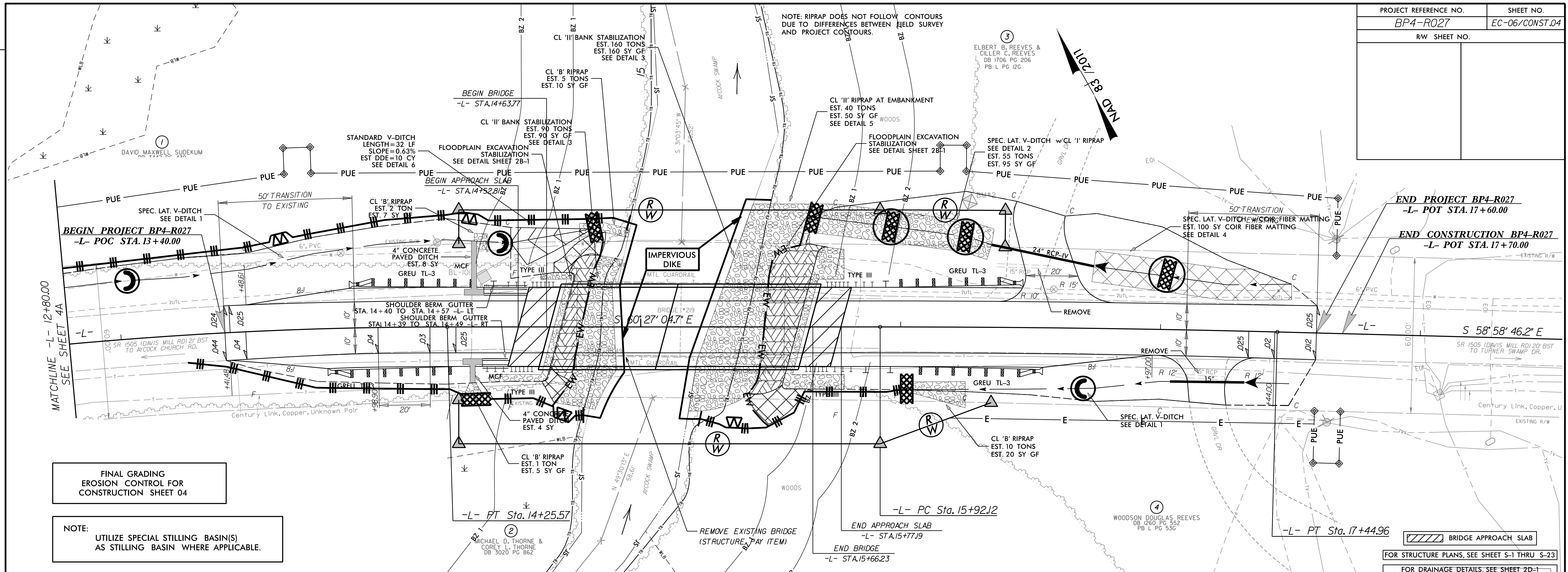
FROM STA. 11+57 TO STA. 14+50 -L- LT
FROM STA. 16+00 TO STA. 17+50 -L- RT



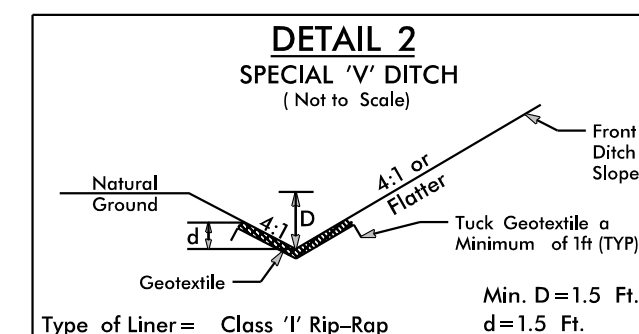
REVISIONS

1/16/2025
BP4-R027
EC-05/CONST.4A
Richards

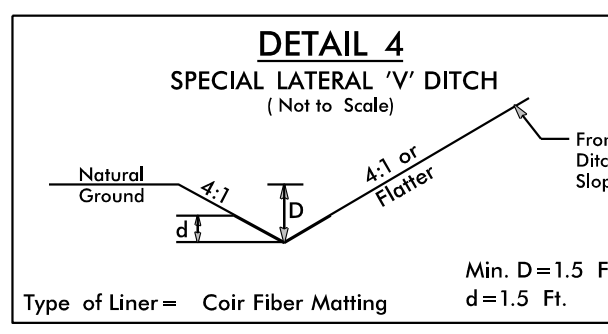
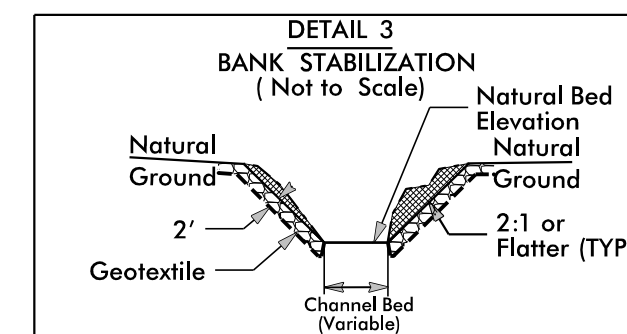
PROJECT REFERENCE NO.	SHEET NO.
BP4-R027	EC-06/CONST.04
R/W SHEET NO.	



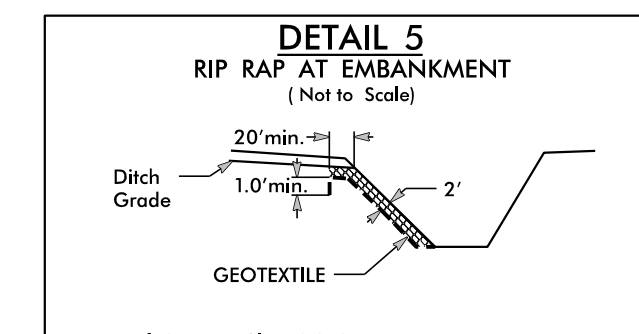
FROM STA. 11+57 TO STA. 14+50 -L- LT
FROM STA. 16+00 TO STA. 17+50 -L- RT



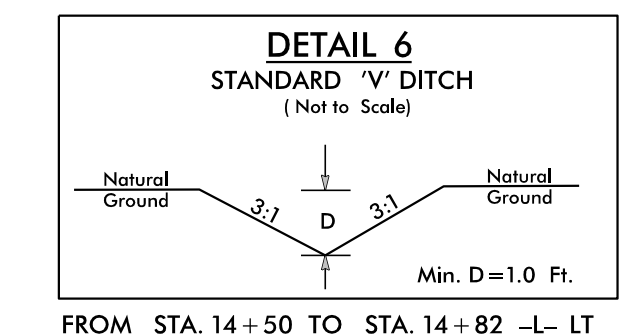
FROM STA. 15+65 TO STA. 16+34 -L- LT



FROM STA. 16+74 TO STA. 17+50 -L- LT



FROM STA. 15+38 TO STA. 15+65 -L- LT



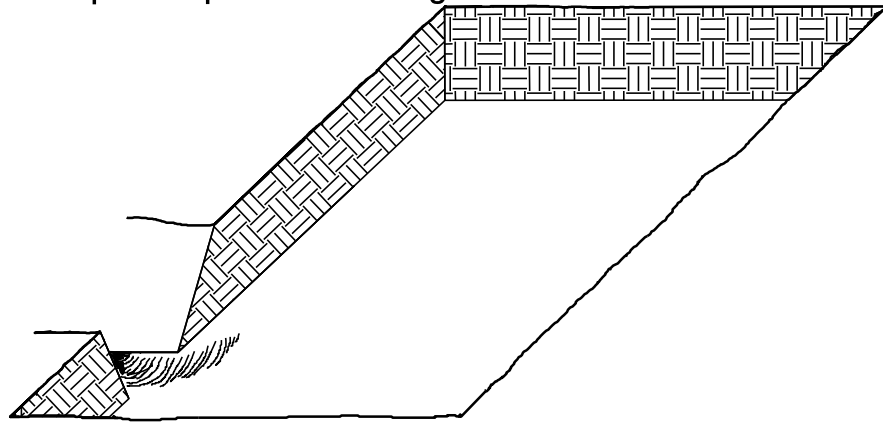
FROM STA. 14+50 TO STA. 14+82 -L- LT

PLANTING DETAILS

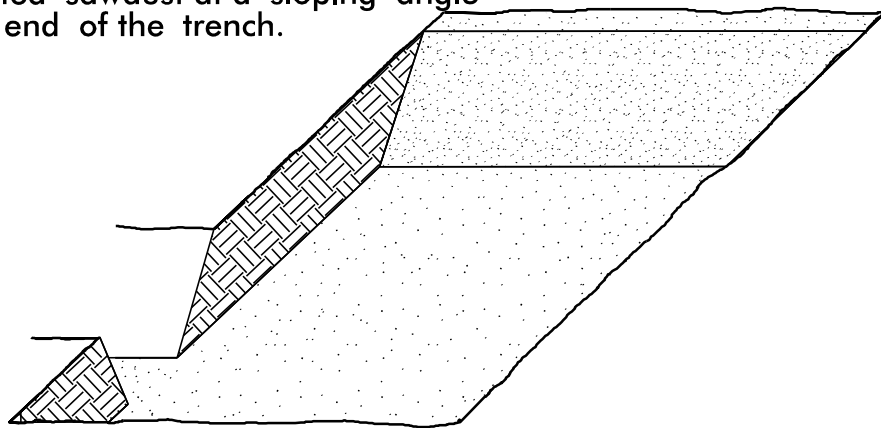
SEEDLING / LINER BAREROOT PLANTING DETAIL

HEALING IN

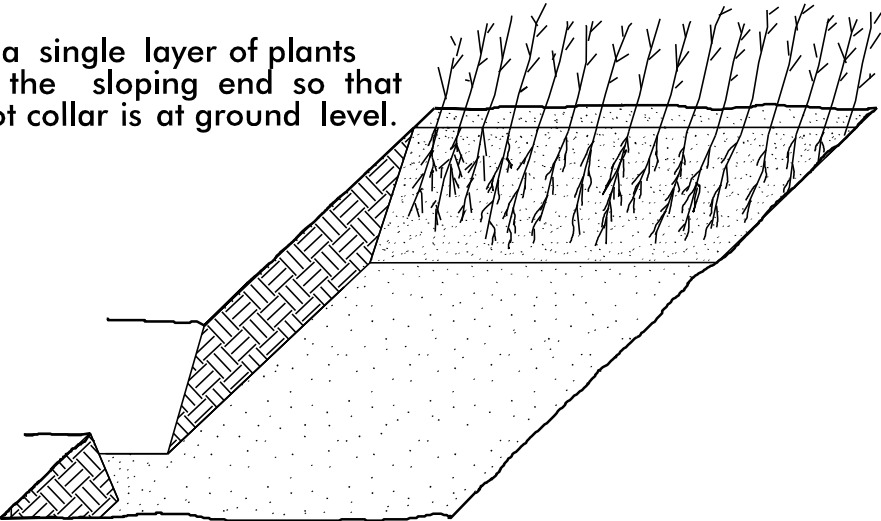
1. Locate a healing-in site in a shady, well protected area.
2. Excavate a flat bottom trench 12 inches deep and provide drainage.



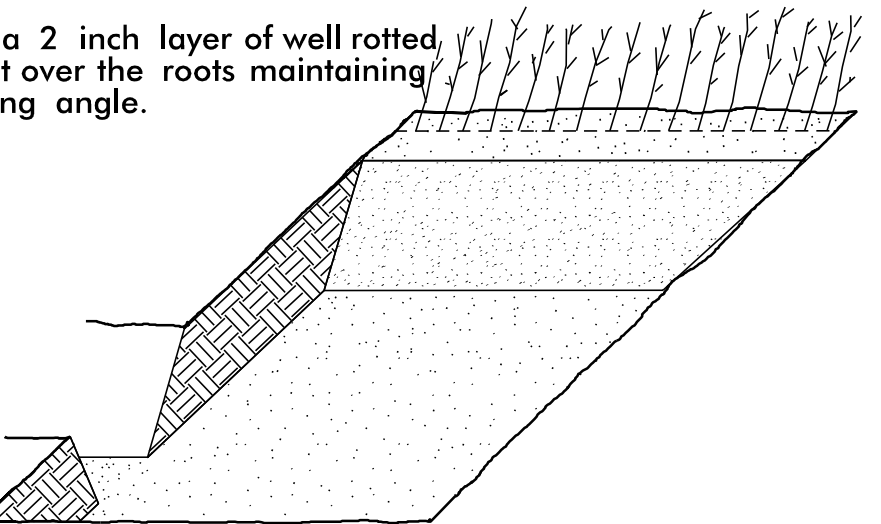
3. Backfill the trench with 2 inches well rotted sawdust. Place a 2 inch layer of well rotted sawdust at a sloping angle at one end of the trench.



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

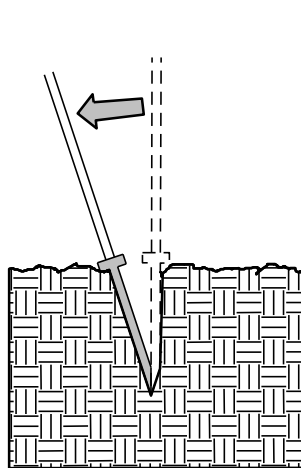


5. Place a 2 inch layer of well rotted sawdust over the roots maintaining a sloping angle.

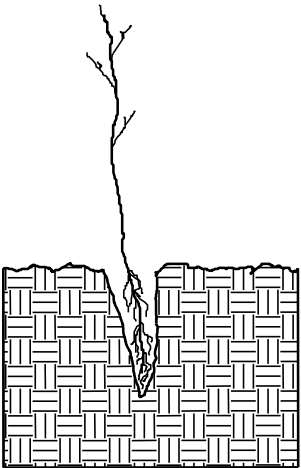


6. Repeat layers of plants and sawdust as necessary and water thoroughly.

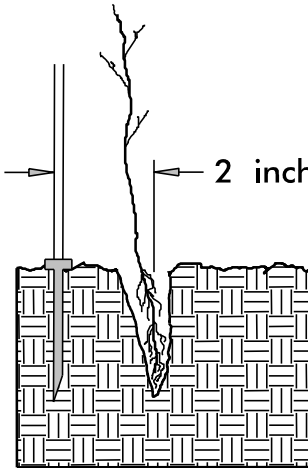
DIBBLE PLANTING METHOD
USING THE KBC PLANTING BAR



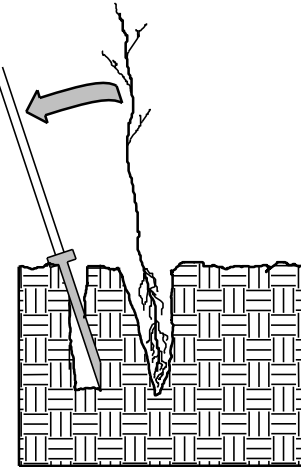
1. Insert planting bar as shown and pull handle toward planter.



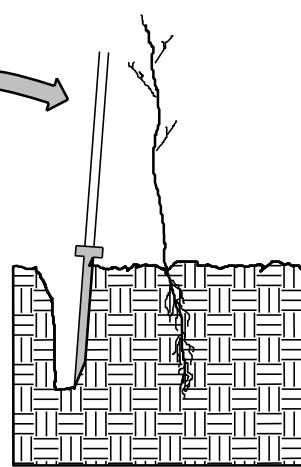
2. Remove planting bar and place seedling at correct depth.



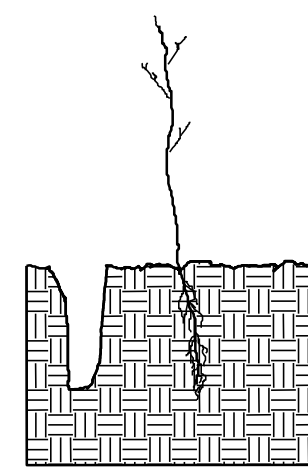
3. Insert planting bar 2 inches toward planter from seedling.



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



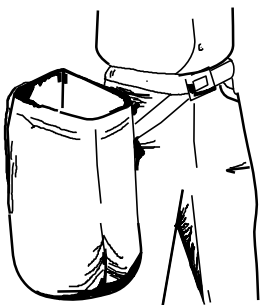
5. Push handle forward firming soil at top.



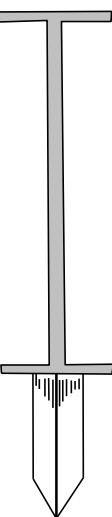
6. Leave compaction hole open. Water thoroughly.

PLANTING NOTES:

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



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



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

REFORESTATION

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

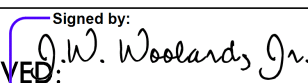
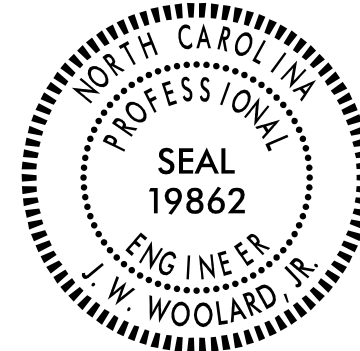
REFORESTATION

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

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

REFORESTATION DETAIL SHEET

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

						PROJECT NAME BP4 . R027 . 1		SHEET NO. SIGN - 2	
						Signed by:  APPROVED 8/13/2025			
						DATE: 8/13/2025			
						SEAL 			
						DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			
						 801 Jones Franklin Road Suite 300 Raleigh, NC 27606 Tel. (919) 851-6866 Fax. (919) 851-7024 License No. F-0672			

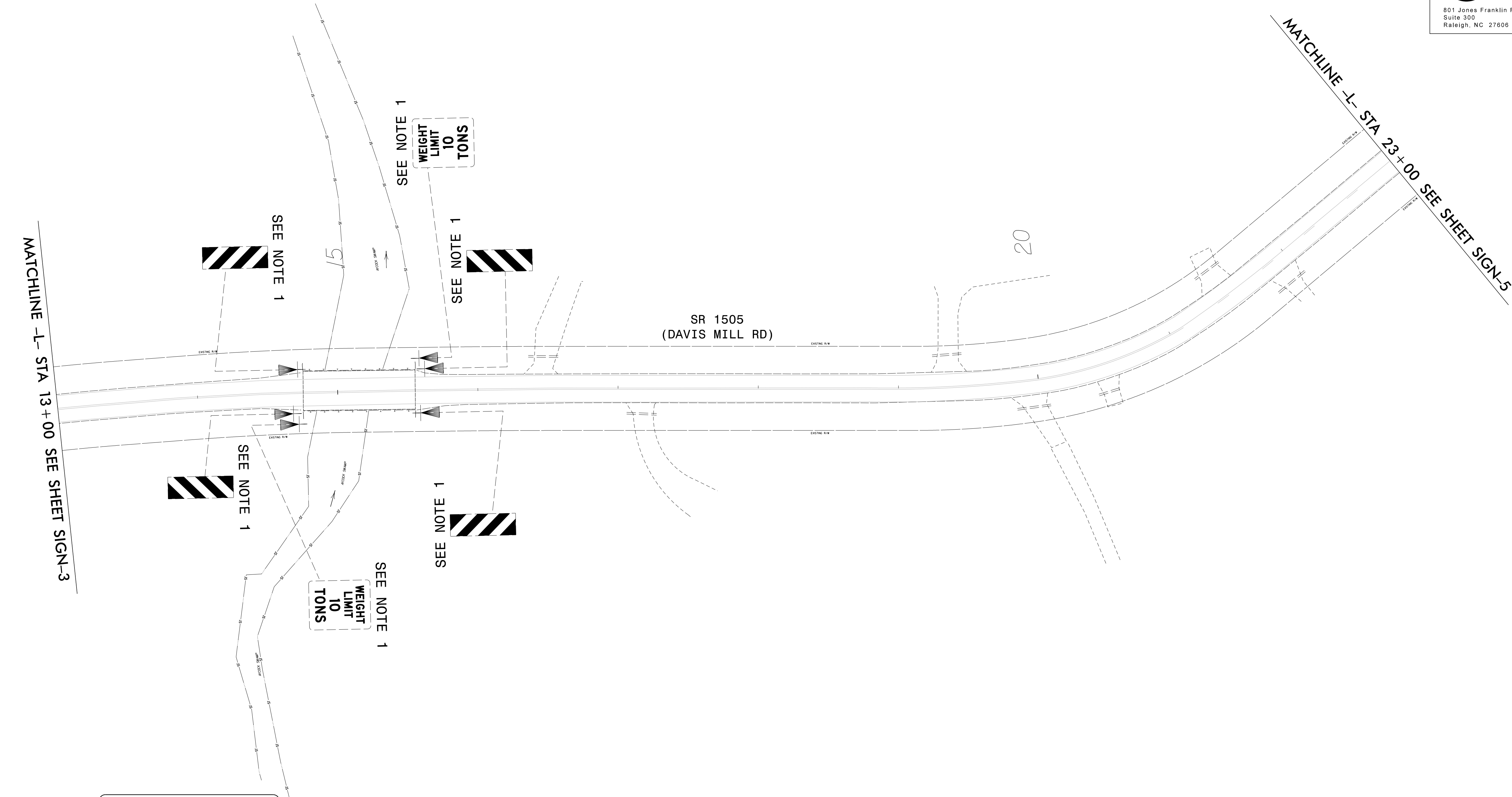


Ω
Γ

1 DISPOSAL OF SIGN SYSTEM, U-CHANNEL

EXISTING SIGNING
SR 1505 (DAVIS MILL RD)
-L- STA 3+00 TO 13+00

PROJECT NAME	SHEET NO.
BP4.R027.1	SIGN-4
APPROVED: <i>J.W. Woolard Jr.</i> 8/13/2025	
DATE: 8/13/2025	
SEAL	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
801 Jones Franklin Road Suite 300 Raleigh, NC 27606	
Tel. (919) 851-6866 Fax. (919) 851-7024 License No. F-0672	



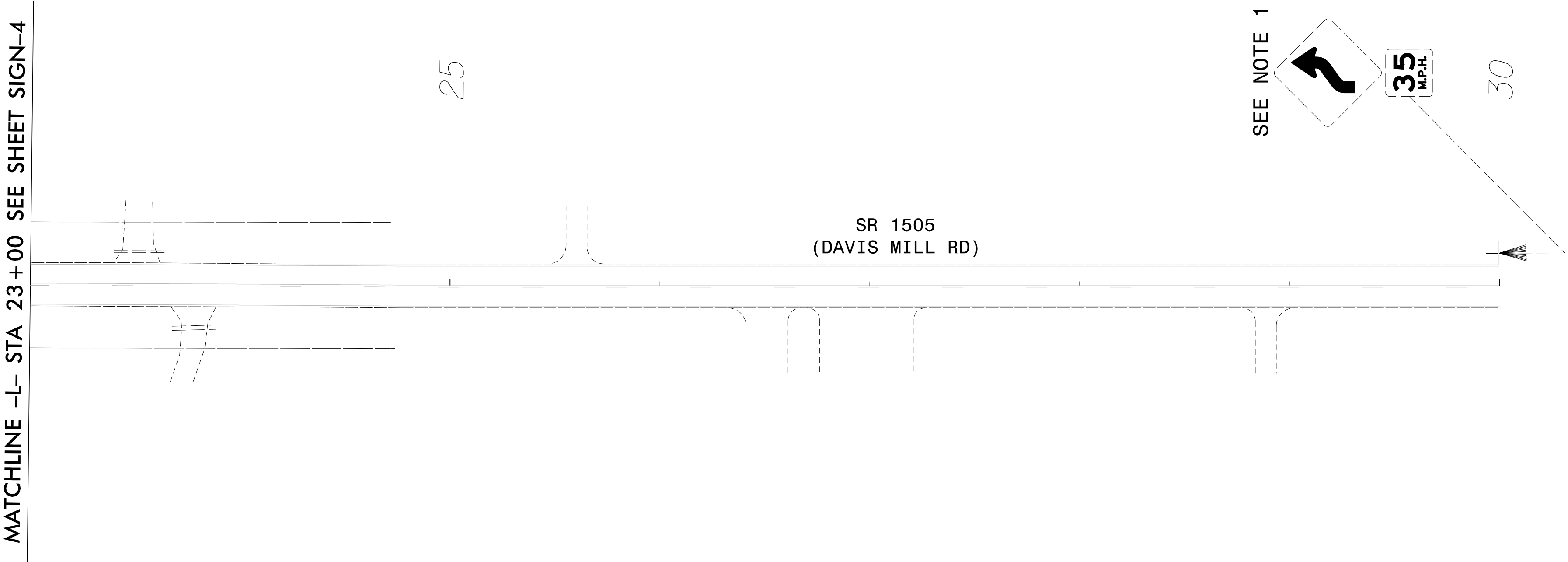
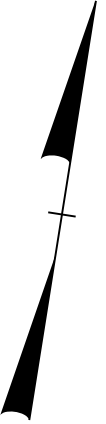
PROJECT NOTE

- 1 DISPOSAL OF SIGN SYSTEM, U-CHANNEL

EXISTING SIGNING
SR 1505 (DAVIS MILL RD)
-L- STA 13+00 TO 23+00

\$\$\$\$\$SYTIME\$\$\$\$\$
\$\$\$\$\$\$\$\$\$\$DGN\$\$\$\$\$
\$\$\$\$\$USERNAME\$\$\$\$\$

PROJECT NAME	SHEET NO.
BP4.R027.1	SIGN-5
APPROVED: <i>J.W. Woolard Jr.</i> Signed by: BBOC02F48E95CAEC	
DATE: 8/13/2025	
SEAL	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
801 Jones Franklin Road Suite 300 Raleigh, NC 27606	
Tel. (919) 851-6866 Fax. (919) 851-7024 License No. F-0672	



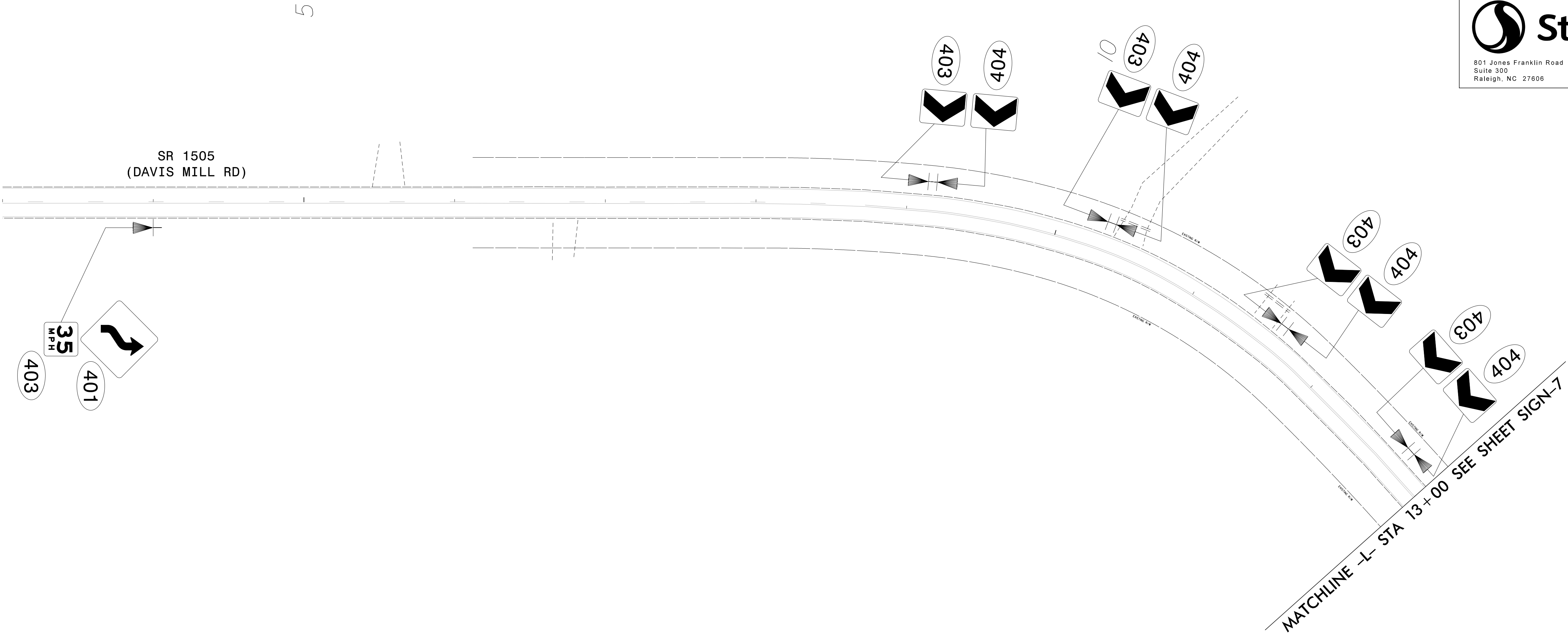
\$\$\$\$\$SYTIME\$\$\$\$\$
\$\$\$\$\$\$\$\$\$\$DGN\$\$\$\$\$
\$\$\$\$\$USERNAME\$\$\$\$\$

PROJECT NOTE

1 DISPOSAL OF SIGN SYSTEM, U-CHANNEL

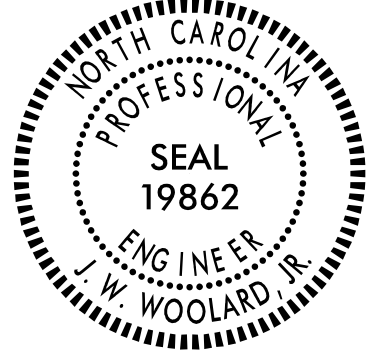
EXISTING SIGNING
SR 1505 (DAVIS MILL RD)
-L- STA 23+00 TO 30+00

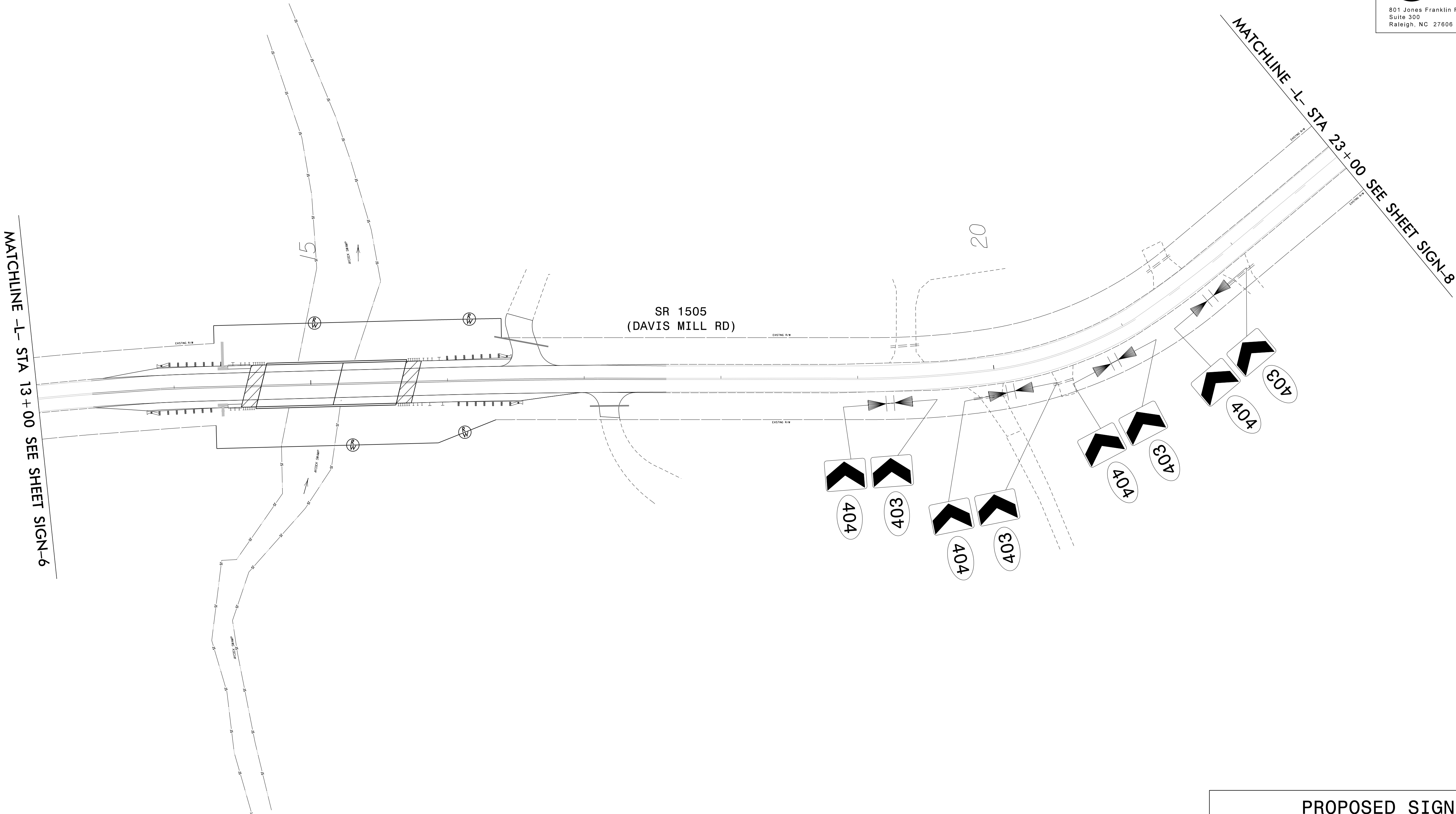
PROJECT NAME	SHEET NO.
BP4.R027.1	SIGN-6
Signed by: J.W. Woolard, Jr.	
APPROVED: BBOC2F48E95C4EC	
DATE: 8/13/2025	
SEAL	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
801 Jones Franklin Road Suite 300 Raleigh, NC 27606	
Tel. (919) 851-6866 Fax. (919) 851-7024 License No. F-0672	



PROPOSED SIGNING
SR 1505 (DAVIS MILL RD)
-L- STA 3+00 TO 13+00

\$\$\$\$\$SYTIME\$\$\$\$\$
\$\$\$\$\$DON\$\$\$\$\$
\$\$\$\$\$USERNAME\$\$\$\$\$

PROJECT NAME	SHEET NO.
BP4.R027.1	SIGN-7
APPROVED: <i>J.W. Woolard Jr.</i> 8/13/2025	
DATE: 8/13/2025	
SEAL	
	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
 Stantec	
801 Jones Franklin Road Suite 300 Raleigh, NC 27606	
Tel. (919) 851-6866 Fax. (919) 851-7024 License No. F-0672	

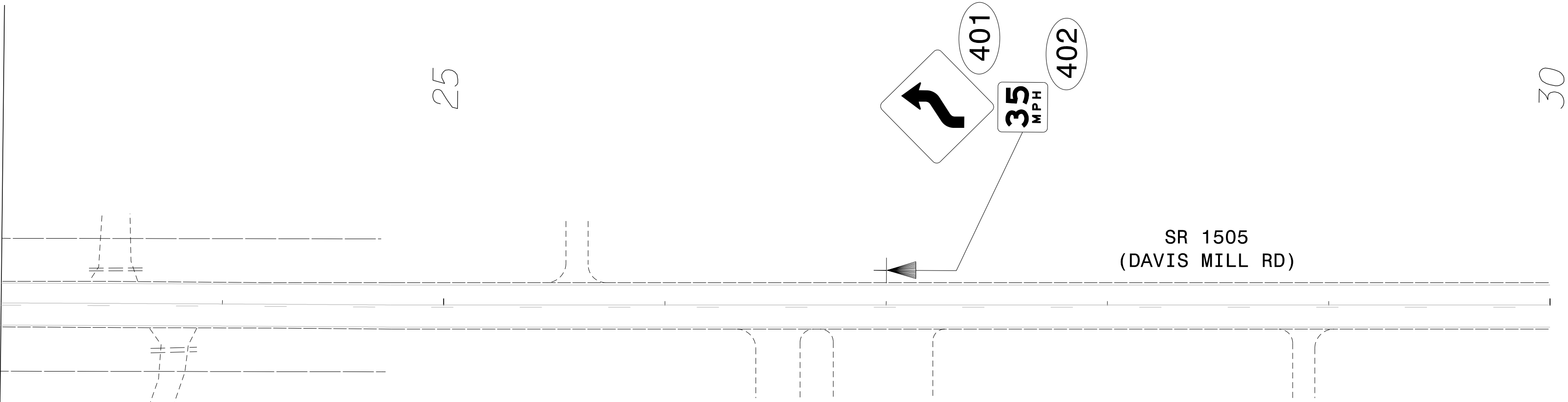


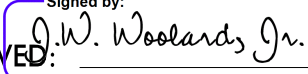
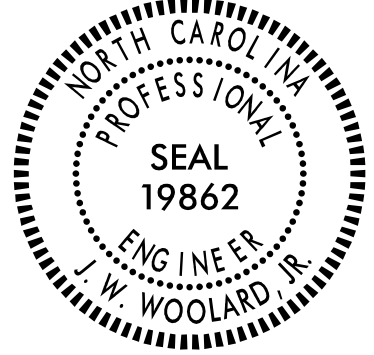
PROPOSED SIGNING
SR 1505 (DAVIS MILL RD)
-L- STA 13+00 TO 23+00

\$\$\$\$\$SYTIME\$\$\$\$\$
\$\$\$\$\$\$\$\$\$\$DGN\$\$\$\$\$
\$\$\$\$\$USERNAME\$\$\$\$\$

\$\$\$\$\$SYTIME\$\$\$\$\$
\$\$\$\$\$\$\$\$\$\$DGN\$\$\$\$\$
\$\$\$\$\$USERNAME\$\$\$\$\$

MATCHLINE -L- STA 23 + 00 SEE SHEET SIGN-7

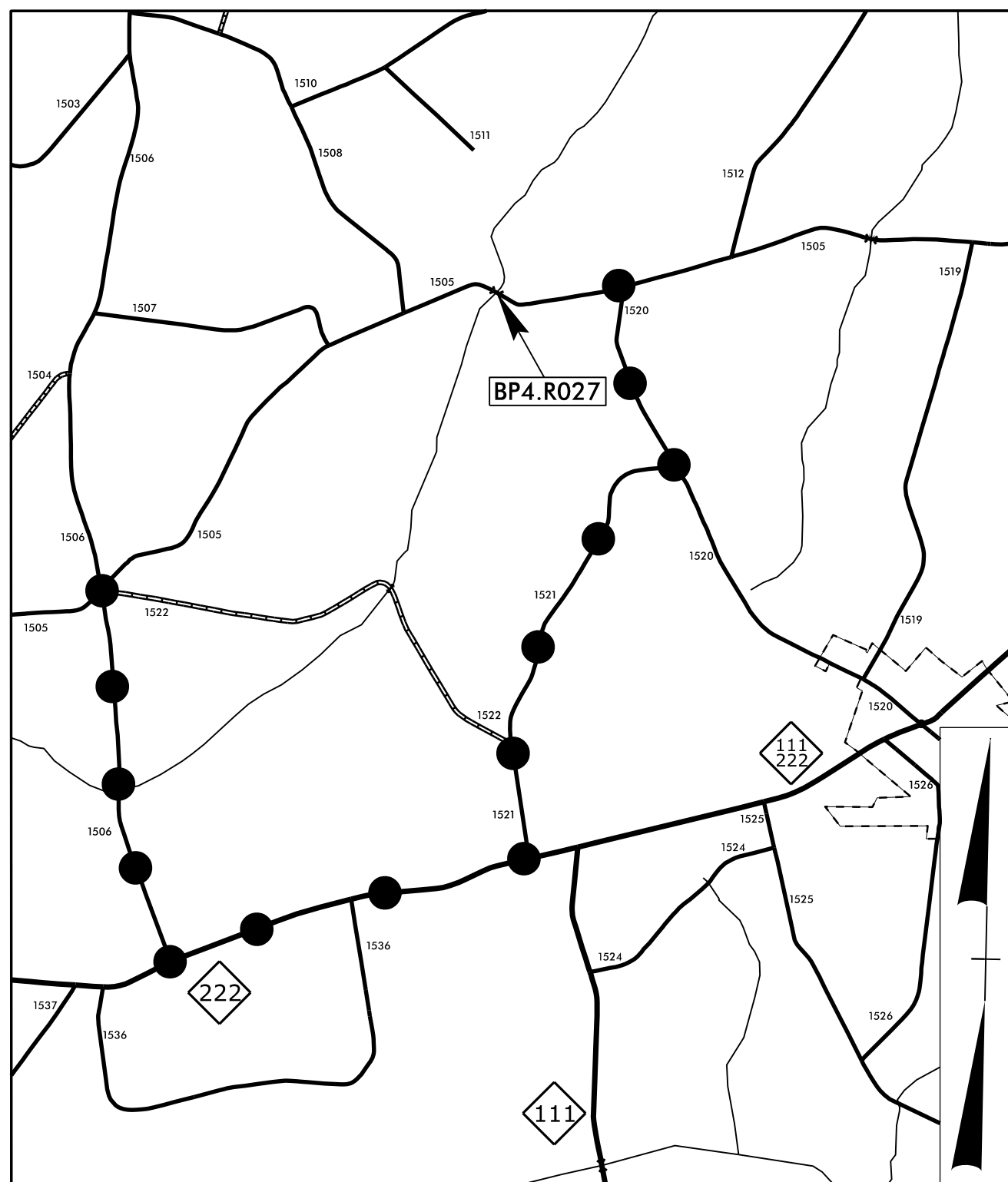


PROJECT NAME	SHEET NO.
BP4.R027.1	SIGN-8
APPROVED:  8/13/2025	
DATE: 8/13/2025	
SEAL	
	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
 801 Jones Franklin Road Suite 300 Raleigh, NC 27606 Tel. (919) 851-6866 Fax. (919) 851-7024 License No. F-0672	

PROPOSED SIGNING
SR 1505 (DAVIS MILL RD)
-L- STA 23+00 TO 30+00

TIP PROJECT: BP4.R027

CONTRACT:



DETOUR VICINITY MAP

BEGIN CONSTRUCTION BP4.R027
-L- POC STA. 11 + 72.62

BEGIN PROJECT BP4.R027
-L- POC STA. 13 + 40.00

BEGIN BRIDGE
-L- STA. 14 + 63.77

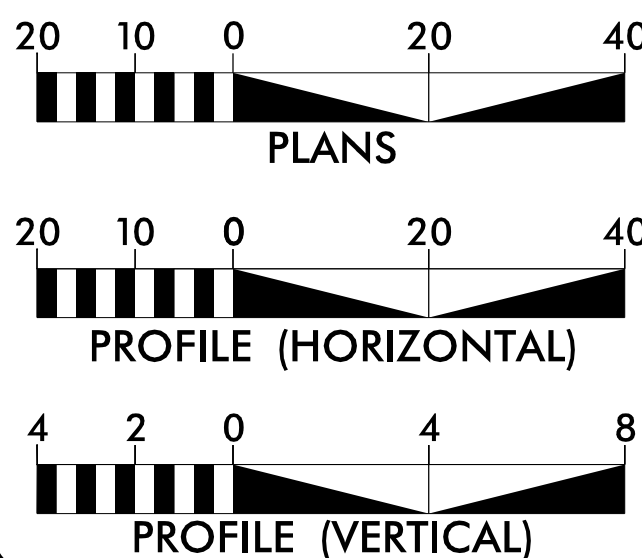
END BRIDGE
-L- STA. 15 + 66.23

END CONSTRUCTION BP4.R027
-L- POC STA. 17 + 70.00

END PROJECT BP4.R027
-L- POT STA. 17 + 60.00

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

GRAPHIC SCALES



INDEX OF SHEETS

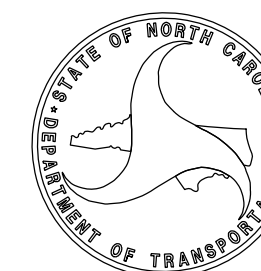
SHEET NO.	DESCRIPTION
UO-1	TITLE SHEET
UO-2	UBO PLAN SHEET
UO-3	UBO PLAN SHEET

UTILITY OWNERS WITH CONFLICTS:

- A. BRIGHTSPEED – TELECOMMUNICATIONS
- B. CHARTER – CATV
- C. TRI-COUNTY – POWER (DISTRIBUTION)
- D. BELFAST-PATETOWN SAINTARY DISTRICT – WATER

Prepared In The Offices of:
DIVISION OF HIGHWAYS
DIVISION 4 DDG
509 Ward Blvd., Wilson NC 27895

KYLE PLEASANT
PROJECT UTILITIES ENGINEER
RACHEL EVANS, PE
NCDOT DIVISION 4 PROJECT MANAGER



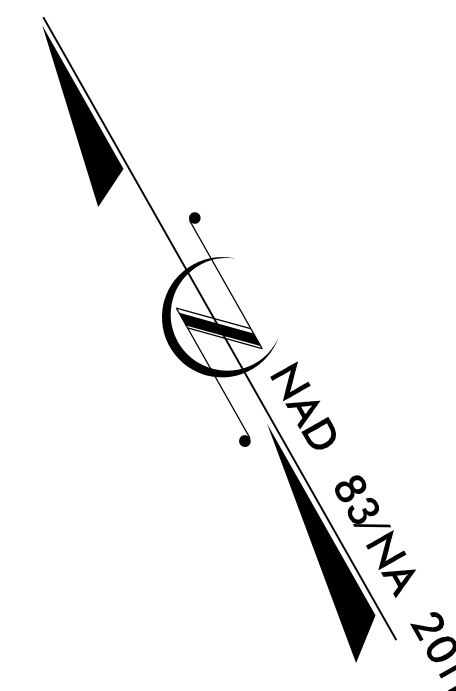
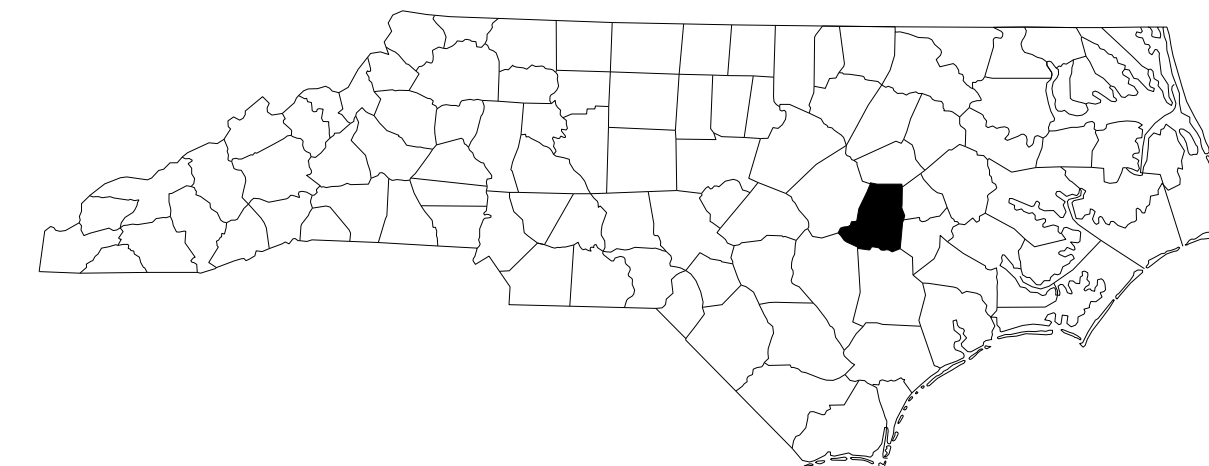
DIVISION OF HIGHWAYS
DIVISION 4
509 Ward Blvd., Wilson NC 27895

ADDISON GAINNEY, PE
DIVISION CONTACT #1

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

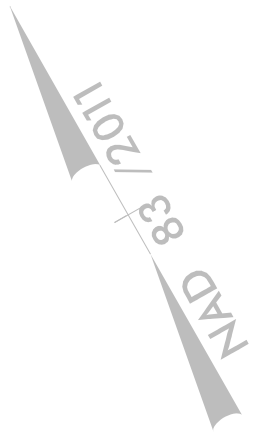
UTILITES BY OTHERS PLANS WAYNE COUNTY

LOCATION: REPLACE BRIDGE #950219 ON SR 1505 (DAVIS MILL RD)
OVER AYCOCK SWAMP
TYPE OF WORK: UTILITIES BY OTHERS



TO SR 1513
RED HILL RD

REVISIONS



BEGIN CONSTRUCTION BP4.R027
-L- POC STA. 11+72.62

TRI-COUNTY
& CHARTER

PROPOSED TEMPORARY
SILT FENCE

+72.62
EX.R/W

+72.62
EX.P/L

BM(*)
BL STA. 15+41
71' LEFT
ELEV. 88.87'
BENCH NAIL SET IN
BASE OF 30" OAK

PROP O/H (FO) COMMUN LINES-
PROP U/G WATER LINE

MATCHLINE -L- 12+75.00
SEE SHEET U0-3

-L- POC Sta. 11+92.85

MICHAEL D. THORNE &
COREY L. THORNE
DB 3020 PG 862

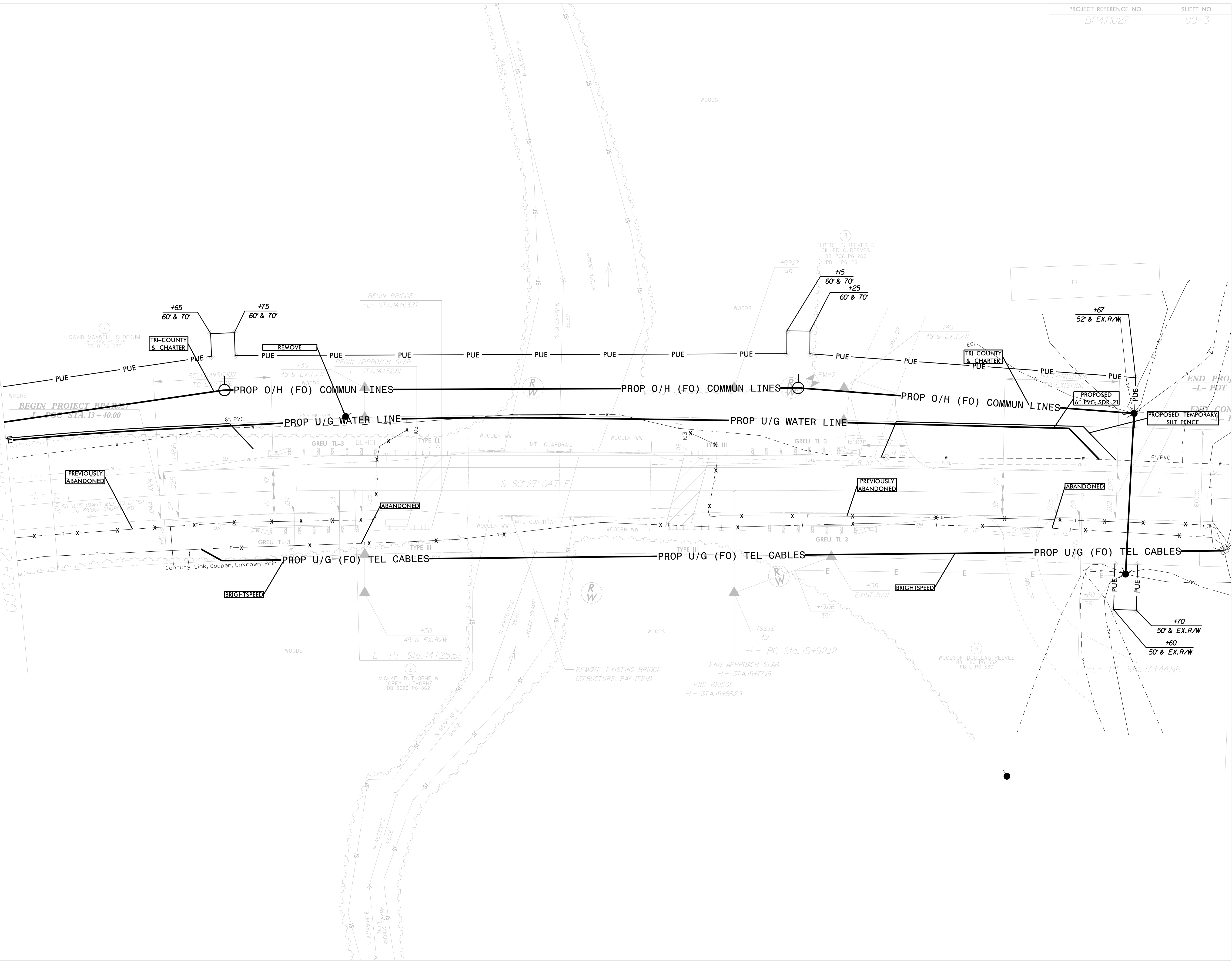
Century Link, Cooper, Unknown Pair

SR 1925 (DN/S)
TO ARDOR CHURCH RD.

-L- PC Sta. 10+00.00

REVISIONS

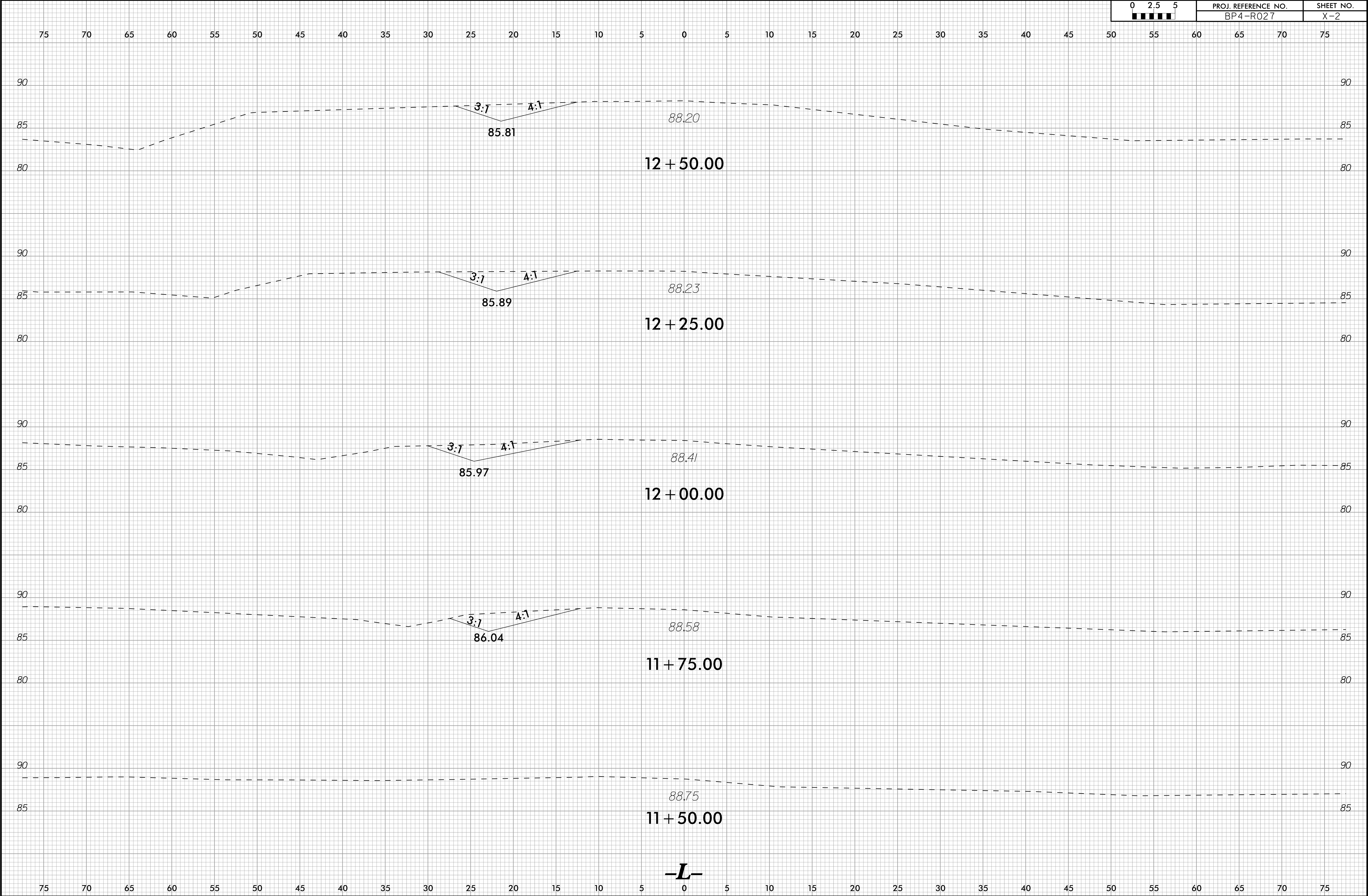
MATCHLINE -L- 12+75.00
SEE SHEET U0-2

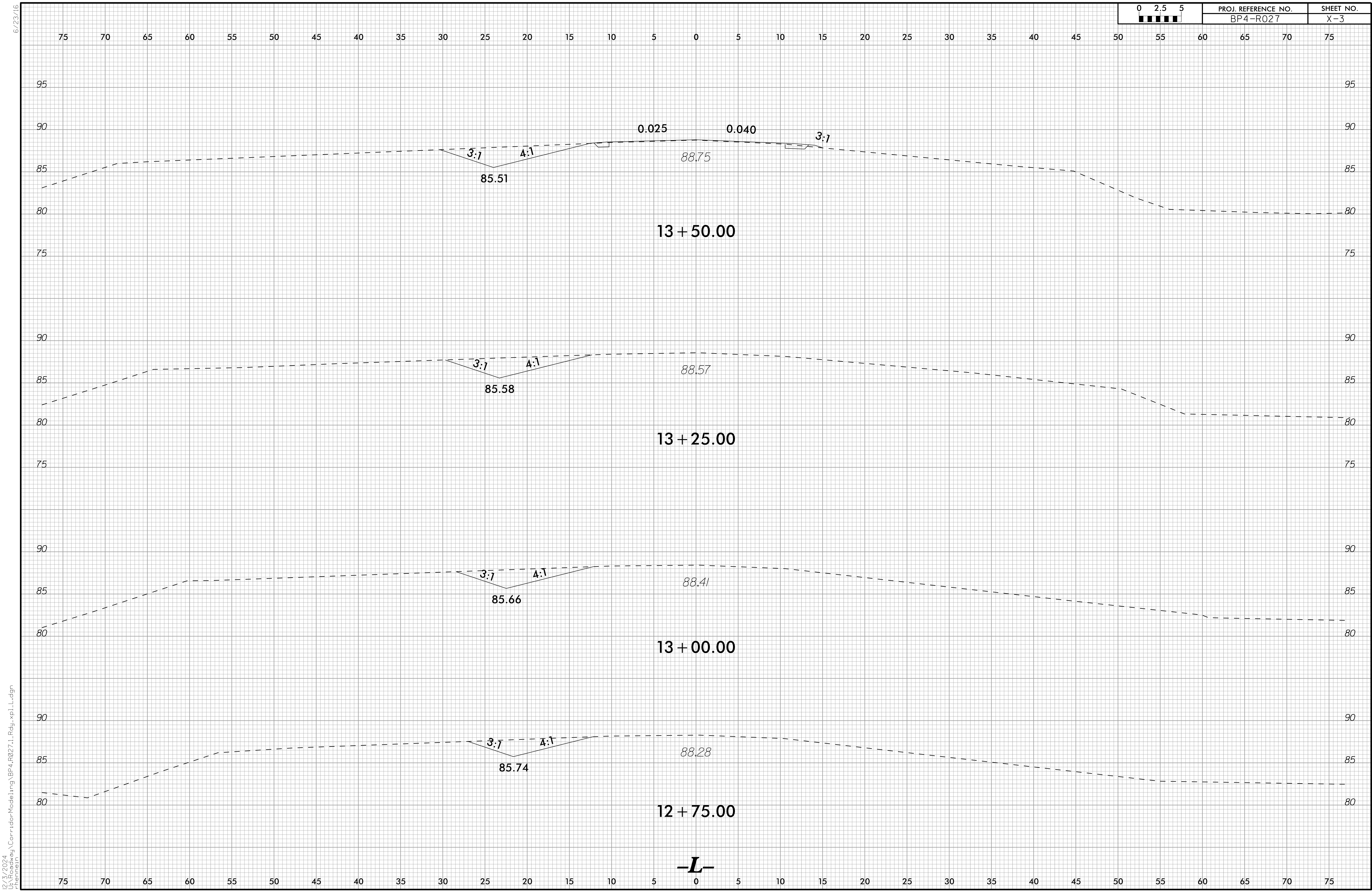


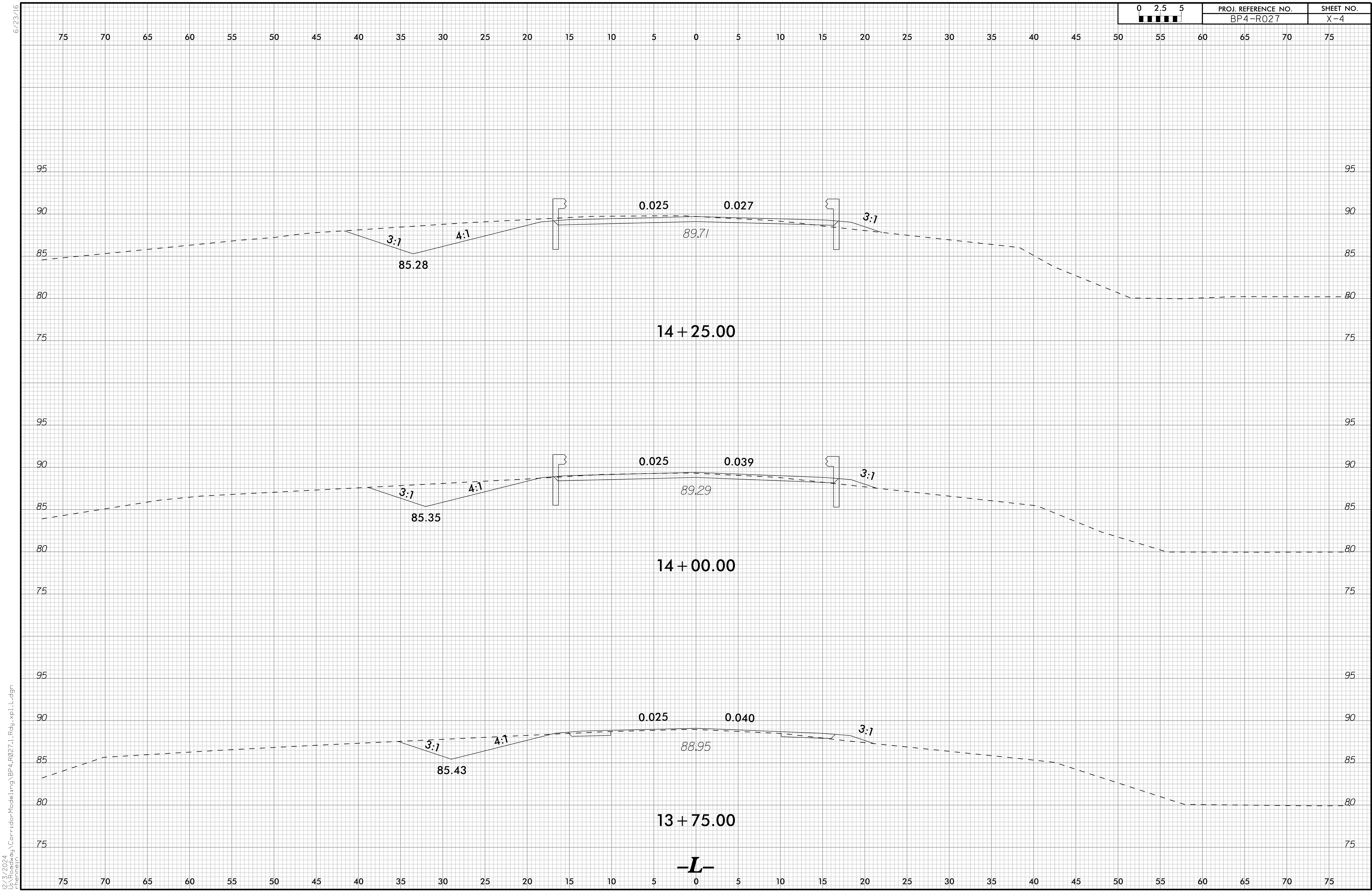
[illegible]

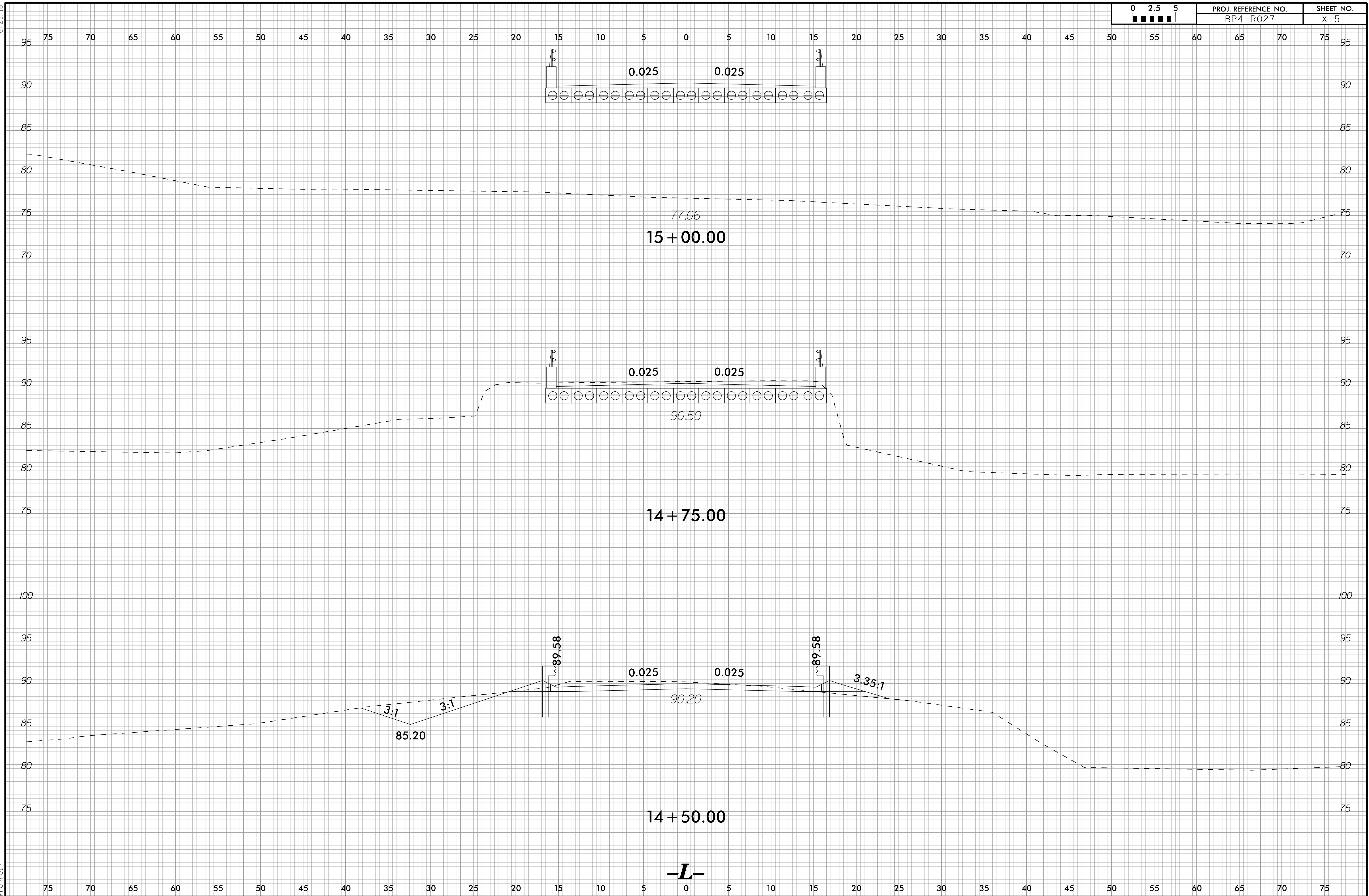
6/23/16

02.55	PROJ. REFERENCE NO.	SHEET NO.
	BP4-R027	X-2





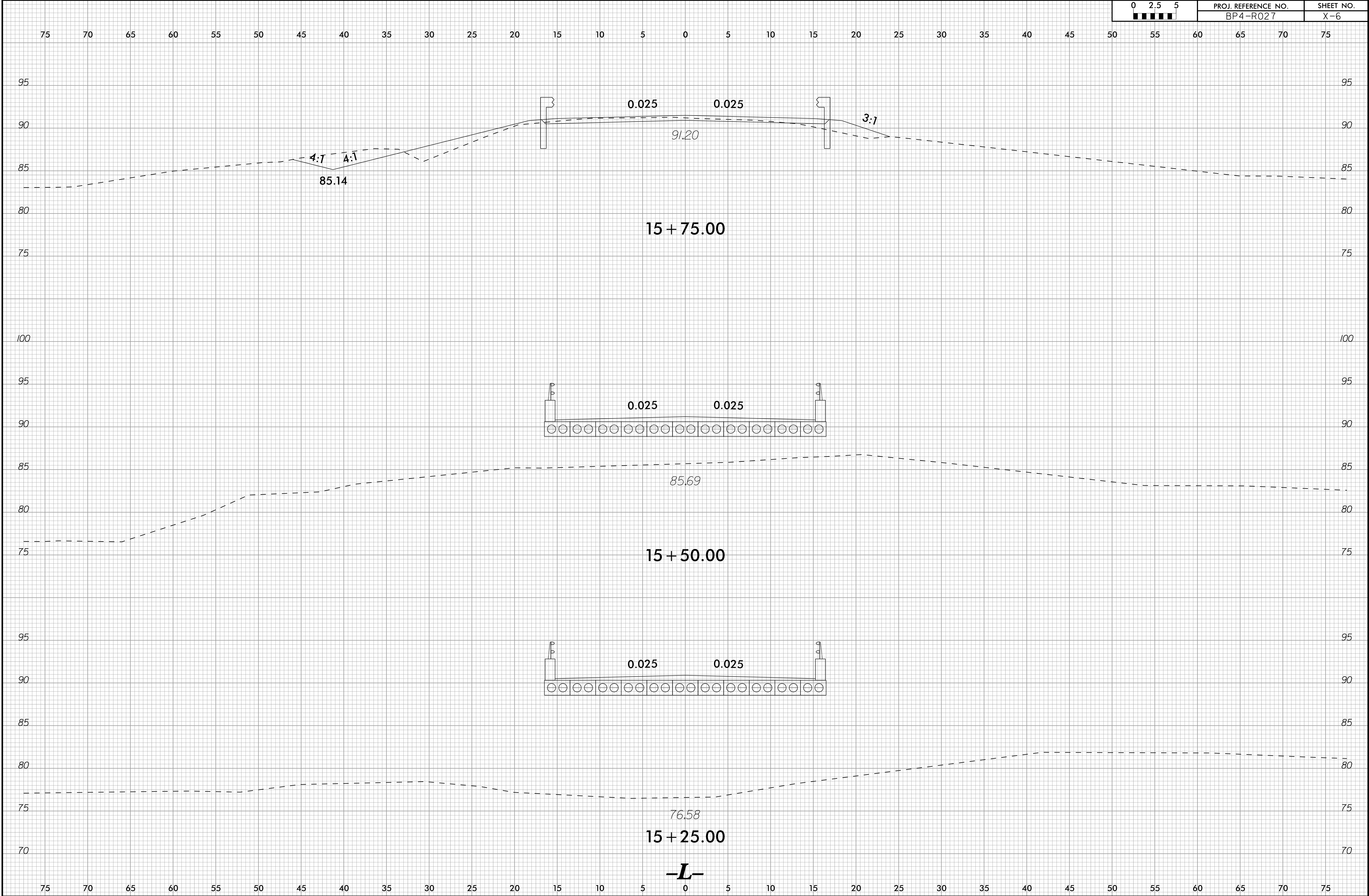


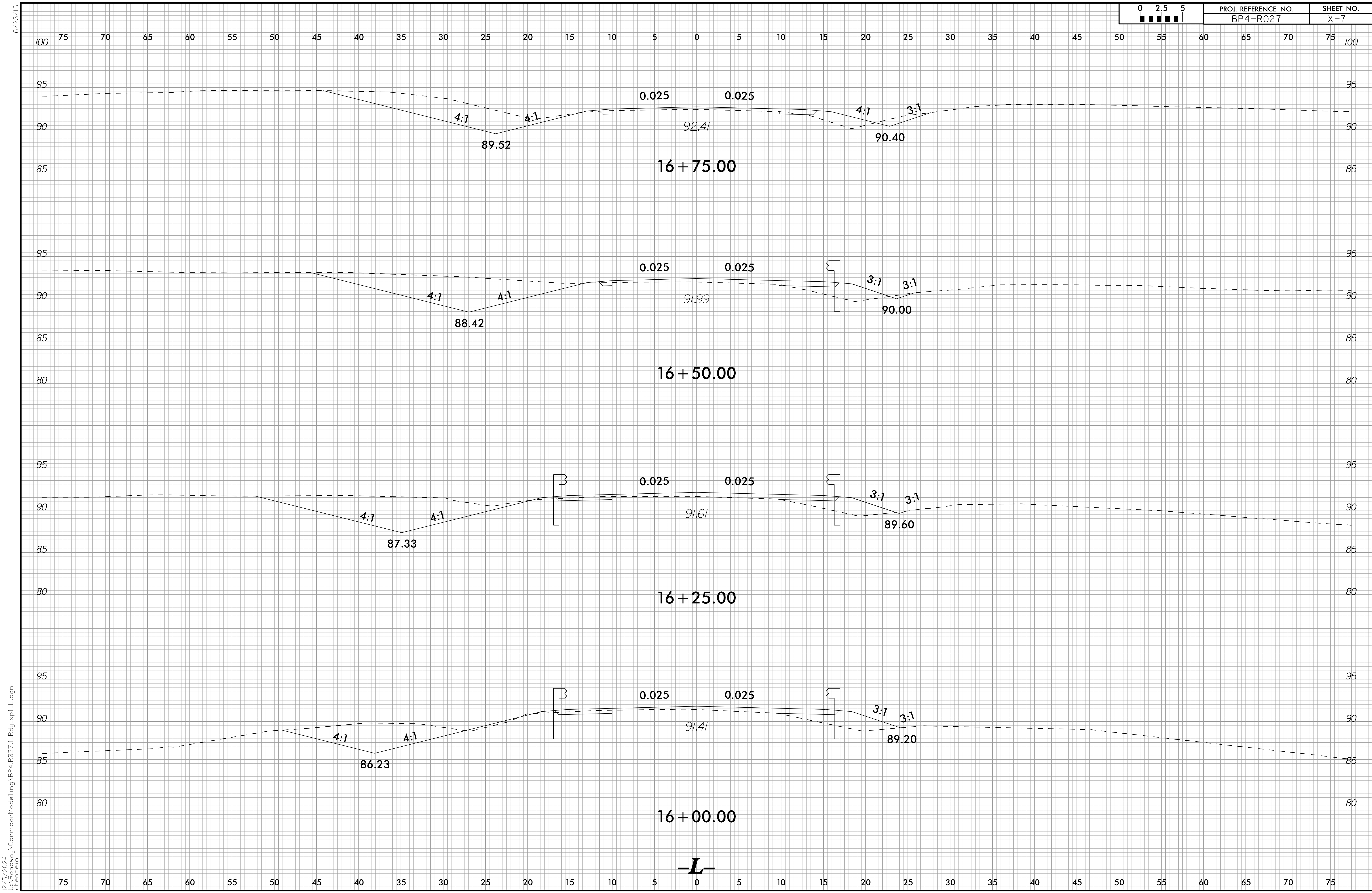


6/23/16

U:\Roadway\CorridorModeling\BP4-R027\1.Rdy.xpl.L.dgn
Therrien

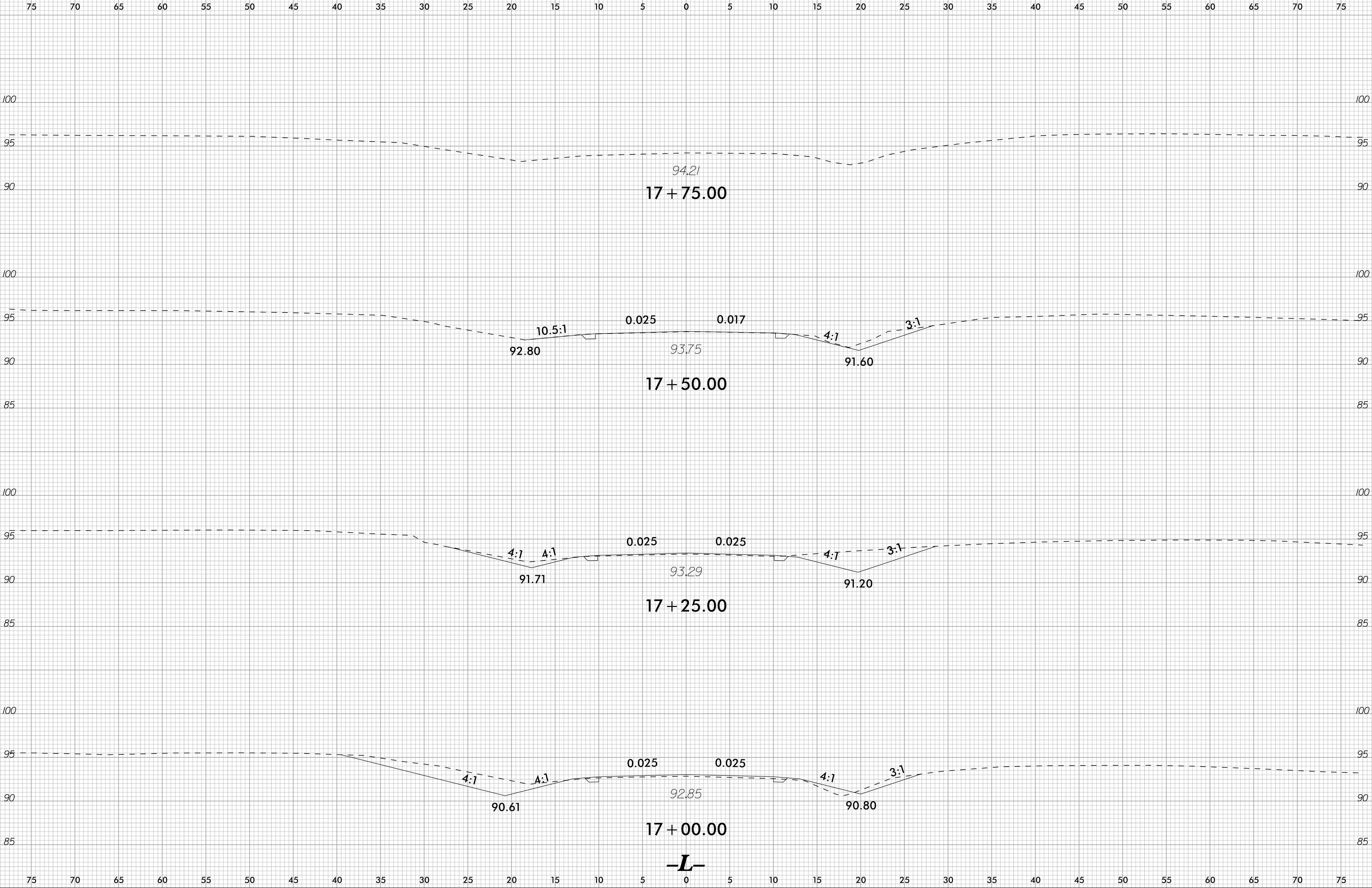
02.55 0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	BP4-R027	X-6

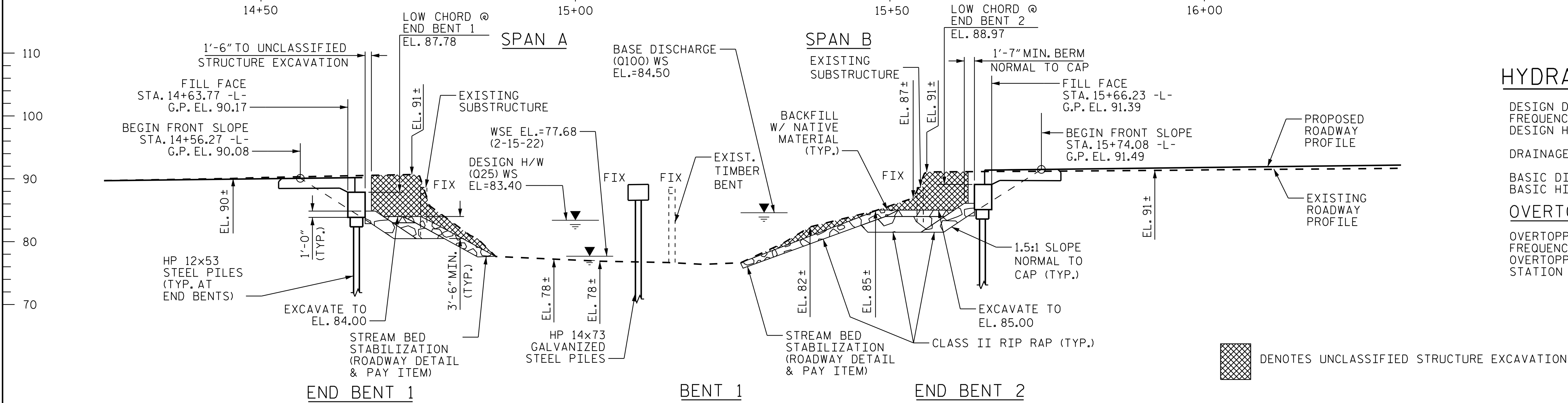




6/23/16

02.55 0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	BP4-R027	X-8





HYDRAULIC DESIGN DATA

DESIGN DISCHARGE 850 CFS.
FREQUENCY 25 YR.
DESIGN HIGH WATER EL. 83.4

DRAINAGE AREA 7.7 SQ. MI.
BASIC DISCHARGE(Q100) 1300 CFS.
BASIC HIGH WATER EL. 84.5

OVERTOPPING FLOOD DATA

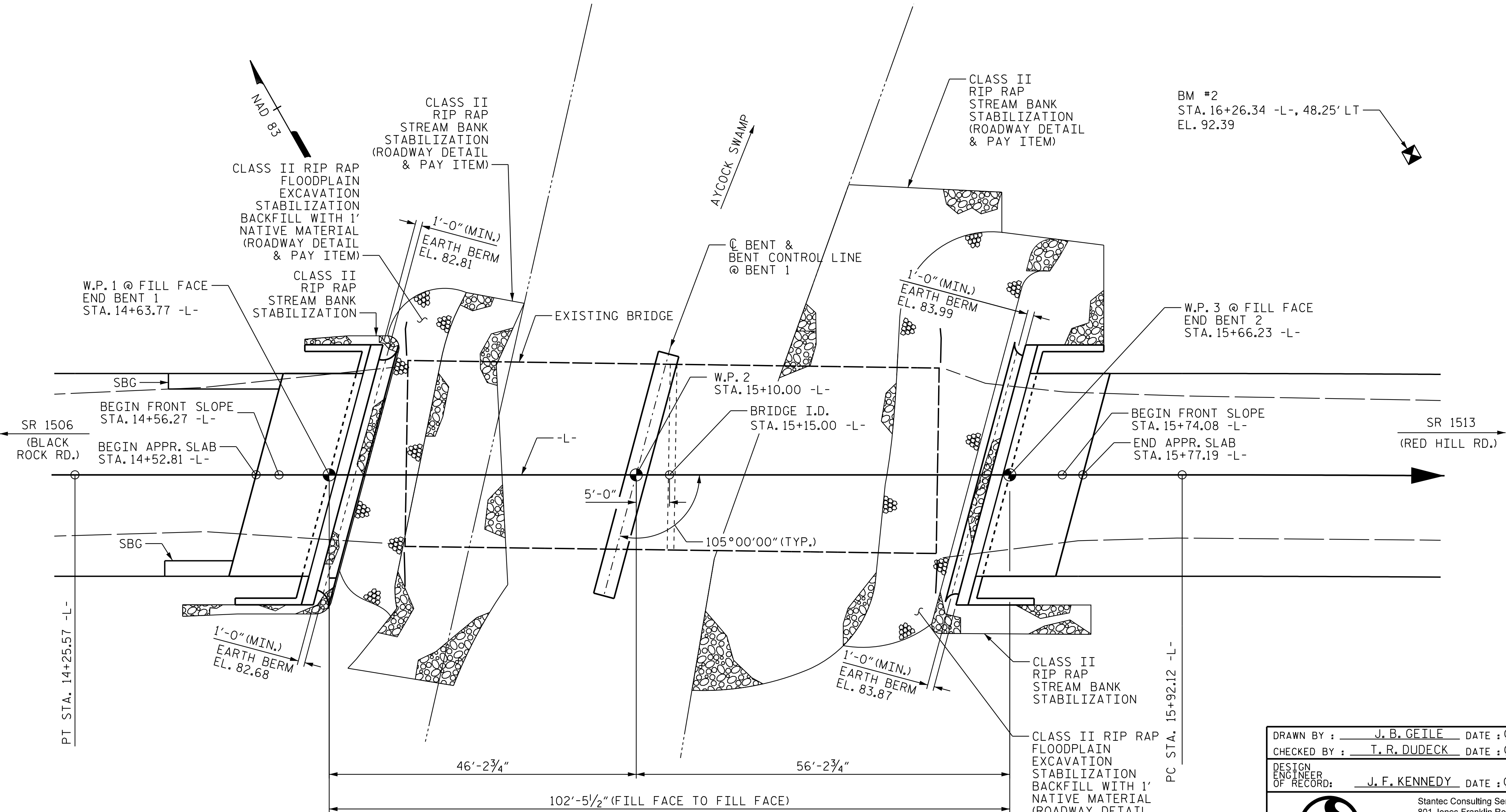
OVERTOPPING DISCHARGE 3460 CFS.
FREQUENCY 500+ YR.
OVERTOPPING EL. 88.20
STATION 12+67 -L-

+1.2000% +1.6400%

PVI = 17+10.00 -L-
EL. = 93.12'
V.C. = 100.00'

GRADE DATA C SURVEY -L-

I HEREBY CERTIFY THESE
PLANS ARE THE AS-BUILT
PLANS



PROJECT NO. BP4-R027
WAYNE COUNTY
STATION: 15+15.00 -L-

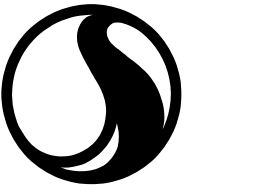
SHEET 1 OF 4 REPLACES BRIDGE NO. 950219

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING

FOR BRIDGE OVER AYCOCK SWAMP
ON SR 1505 (DAVIS MILL RD.)
BETWEEN SR 1506 (BLACK ROCK RD.)
AND SR 1513 (RED HILL RD.)

DRAWN BY : J. B. GEILE DATE : 04/19/22
CHECKED BY : T. R. DUDECK DATE : 09/21/22
DESIGN ENGINEER OF RECORD: J. F. KENNEDY DATE : 01/20/26



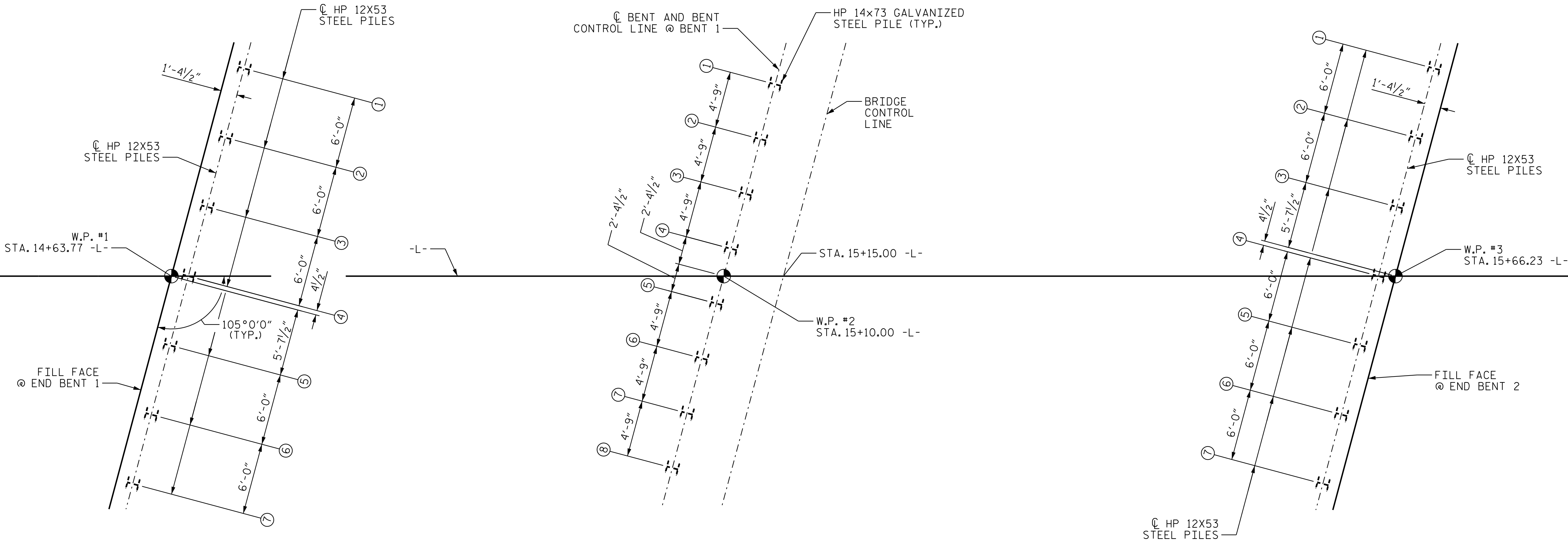
Stantec Consulting Services Inc.
801 Jones Franklin Road
Suite 300
Raleigh, NC 27606
Tel. (919) 851-6866
Fax. (919) 851-7024
www.stantec.com
License No. F-0672



DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

REVISIONS						SHEET NO. S-1
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 23
2			4			

U:\Structures\Drawings\Final\17002523.SMU_FL_950219.dgn 1/20/2026 2:24:58 PM jskennedy



FOUNDATION LAYOUT

DIMENSIONS LOCATING PILES ARE
SHOWN TO CENTERLINE OF PILES

NOTES:

1. FOR PILES, SEE PILES PROVISION AND SECTION 450 OF THE STANDARD SPECIFICATIONS.

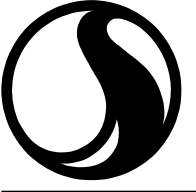
PROJECT NO. BP4-R027
WAYNE COUNTY
STATION: 15+15.00 -L-

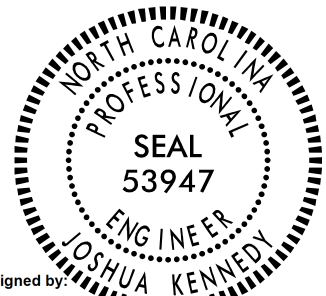
SHEET 2 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING

FOR BRIDGE OVER AYCOCK SWAMP
ON SR 1505 (DAVIS MILL RD.)
BETWEEN SR 1506 (BLACK ROCK RD.)
AND SR 1513 (RED HILL RD.)

DRAWN BY : <u>J. F. KENNEDY</u>	DATE : <u>12/21/22</u>
CHECKED BY : <u>T. R. DUDECK</u>	DATE : <u>05/17/23</u>
DESIGN ENGINEER OF RECORD: <u>J. F. KENNEDY</u>	DATE : <u>01/20/26</u>
	
Stantec Consulting Services Inc. 801 Jones Franklin Road Suite 300 Raleigh, NC 27606 Tel. (919) 851-6866 Fax. (919) 851-7024 www.stantec.com License No. F-0672	


Signed by: <u>Joshua Kennedy</u> 01/20/2026 674425111E1B465
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-2
1			3			TOTAL SHEETS 23
2			4			

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 TONS	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 (TIP NO HIGHER THAN) ELEV FT	REQUIRED DRIVING RESISTANCE (RDR)* PER PILE TONS	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 EXC NOT IN SOIL PER PILE LIN FT	PILE EXC IN SOIL PER PILE LIN FT
END BENT 1, PILES 1-7	7	150	SEE SUBSTRUCTURE PLANS	60	N/A	N/A	200	3						
BENT 1, PILES 1-8	8	240		75	59.0	51.0	325	4						
END BENT 2, PILES 1-7	7	130		55	N/A	N/A	175	3						

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

** RDR= $\frac{\text{FACTORED RESISTANCE} + \text{FACTORED DOWNDRAY LOAD} + \text{FACTORED DEAD LOAD}}{\text{DYNAMIC RESISTANCE FACTOR}}$ + NORMAL DOWNDRAG RESISTANCE + $\frac{\text{NORMAL SCOUR RESISTANCE}}{\text{SCOUR RESISTANCE FACTOR}}$

SUMMARY OF PDA/ PILE ORDER LENGTHS					
(BLANK ENTRIES INDICATE ITEM IS NOT APPLICABLE TO STRUCTURE)					
PILE DRIVING ANALYZER (PDA)				PILE ORDER LENGTHS	
END BENT/ BENT NO.	PDA TESTING REQUIRED? YES OR MAYBE	PDA TEST PILE LENGTH FT	TOTAL PDA TESTING QUANTITY EACH	END BENT/ BENT NO(s)	PILE ORDER LENGTH BASIS* EST OR PDA
EB1	MAYBE	65	1		
B1	YES	80	1		
EB2	MAYBE	60	1		

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

FOUNDATION NOTES:

FOR PILES, SEE PILES PROVISION AND SECTION 450 OF THE STANDARD SPECIFICATIONS.

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 TONS	FACTORED DOWNDRAG LOAD PER PILE FT	FACTORED DEAD LOAD* PER PILE TONS	DYNAMIC RESISTANCE FACTOR	NOMINAL DOWNDRAG RESISTANCE PER PILE TONS	NOMINAL SCOUR RESISTANCE PER PILE TONS	SCOUR RESISTANCE FACTOR (DEFAULT=1.00)
END BENT 1, PILES 1-7	142			0.75			
BENT 1, PILES 1-8	235			0.75		4	1.00
END BENT 2, PILES 1-7	122			0.75			

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

- NOTES:
- THE PILE FOUNDATION TABLES ARE BASED ON THE BRIDGE SUBSTRUCTURE DESIGN AND FOUNDATION RECOMMENDATIONS SEALED BY A NORTH CAROLINA PROFESSIONAL ENGINEER (JINYOUNG PARK, 032171) ON 01-23-2023.
 - 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 WILL DETERMINE NEED FOR PDA TESTING WHEN PDA'S MAY BE REQUIRED.

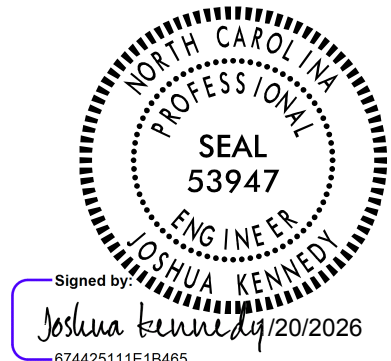
PROJECT NO. BP4-R027

WAYNE COUNTY

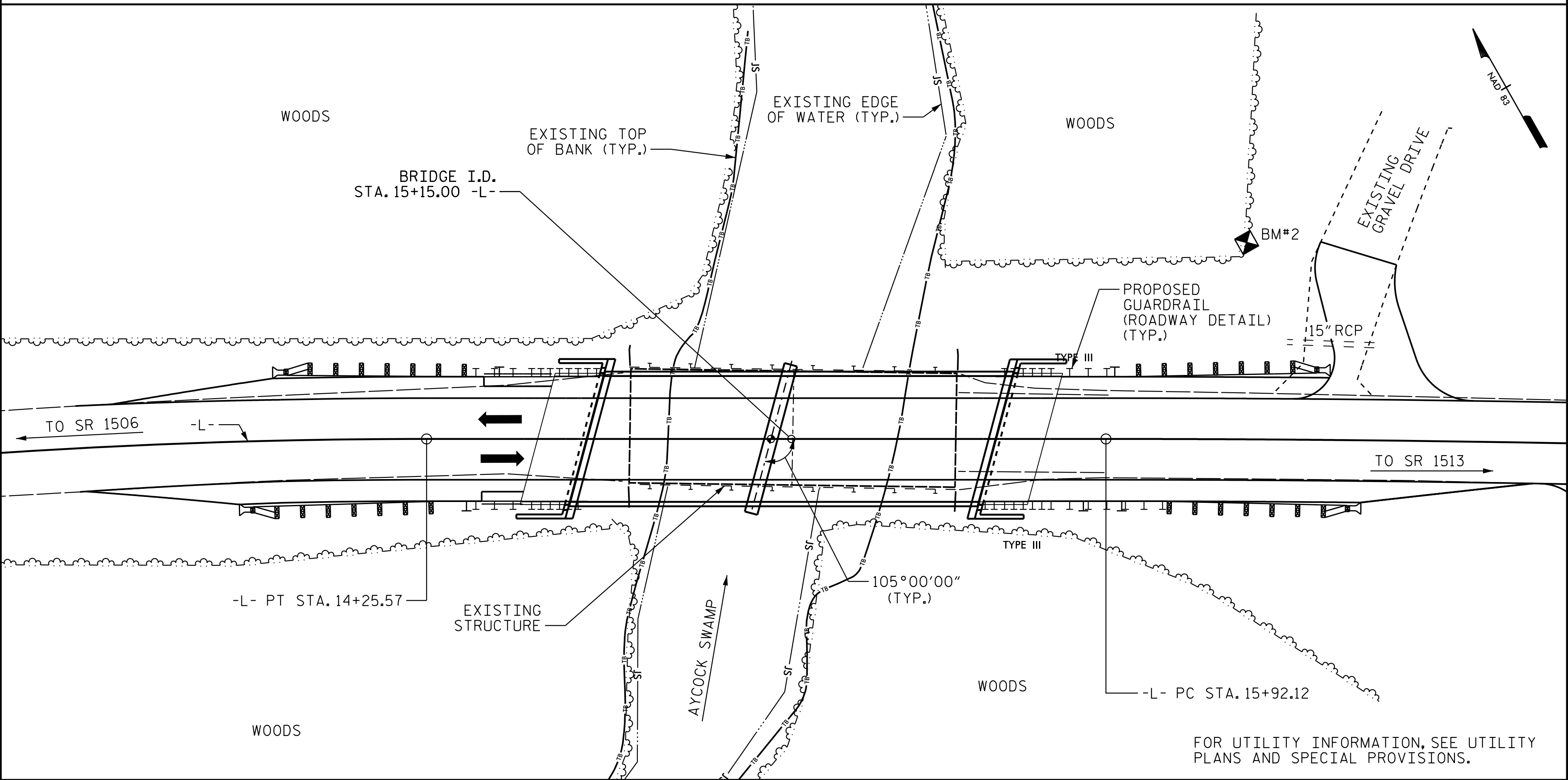
STATION: 15+15.00 -L-

SHEET 3 OF 4

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
FOUNDATION LAYOUT TABLES					
REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
TOTAL SHEETS					23

DRAWN BY : <u>K. A. WOYAHN</u> DATE : <u>06/08/23</u>	
CHECKED BY : <u>T. R. DUDECK</u> DATE : <u>06/08/23</u>	
DESIGN ENGINEER OF RECORD: <u>J. F. KENNEDY</u> DATE : <u>01/20/26</u>	
 Stantec Consulting Services Inc. 801 Jones Franklin Road Suite 300 Raleigh, NC 27606 Tel. (919) 851-6866 Fax. (919) 851-7024 www.stantec.com License No. F-0672	DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

BM#2: BENCH NAIL SET IN BASE OF 24" OAK, STA. 16+26.34 -L-, 48.25' LT. EL. 92.39'



LOCATION SKETCH

NOTES:

ASSUMED LIVE LOAD = HL-93 OR ALTERNATE LOADING

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

THIS BRIDGE IS LOCATED IN SEISMIC ZONE 1.

THE SCOUR CRITICAL ELEVATION FOR BENT NO.1 IS ELEVATION 69.0. SCOUR CRITICAL ELEVATIONS ARE USED TO MONITOR POSSIBLE SCOUR PROBLEMS DURING THE LIFE OF THE STRUCTURE.

FOR EROSION CONTROL MEASURES,SEE EROSION CONTROL PLANS.

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

THE MATERIAL SHOWN IN THE CROSS-HATCHED AREA ON SHEET S1 SHALL BE EXCAVATED FOR A DISTANCE OF 20 FEET EACH SIDE OF THE CENTERLINE ROADWAY AS DIRECTED BY THE ENGINEER.THIS WORK WILL BE PAID FOR AT THE CONTRACT LUMP SUM PRICE FOR UNCLASSIFIED STRUCTURE ELEVATION.SEE SECTION 412 OF THE STANDARD SPECIFICATIONS.

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

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

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.

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

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

INASMUCH AS THE PAINT SYSTEM ON THE EXISTING STRUCTURAL STEEL CONTAINS LEAD,THE CONTRACTORS ATTENTION IS DIRECTED TO ARTICLE 107-1 OFTHE STANDARD SPECIFICATIONS.ANY COSTS RESULTING FROM COPMLIANCE WITH APPLICABLE STATE OR FEDERAL REGULATIONS PERTAINING TO HANDLING OF MATERIALS CONTAINING LEAD BASED PAINT SHALL BE INCLUDED IN THE BID PRICE FOR 'REMOVAL OF EXISTING STRUCTURE AT STATION 15+15.00.'

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

TOTAL BILL OF MATERIAL

	REMOVAL OF EXISTING STRUCTURE AT STATION 15+15.00 -L-	ASBESTOS ASSESSMENT	PDA TESTING	UNCLASSIFIED STRUCTURE EXCAVATION @ STA. 15+15.00 -L-	CLASS A CONCRETE	BRIDGE APPROACH SLABS	REINFORCING STEEL	PILE DRIVE EQUIP. SETUP FOR HP12X53 STEEL PILES	PILE DRIVE EQUIP. SETUP FOR HP14X73 GALVANIZED STEEL PILES	HP12X53 STEEL PILES		HP14X73 GALVANIZED STEEL PILES		PILE REDRIVES	TWO BAR METAL RAIL	1'-2" X 2'-8 3/4" CONCRETE PARAPET	RIP RAP CLASS II (2'-0" THICK)	GEOTEXTILE FOR DRAINAGE	ELASTOMERIC BEARINGS	3'-0" x 1'-9" PRESTRESSED CONC CORED SLABS	
	LUMP SUM	LUMP SUM	EA.	LUMP SUM	C.Y.	LUMP SUM	LBS.	EA.	EA.	NO.	L.F.	NO.	L.F.	EA.	L.F.	L.F.	TON	S. Y.	LUMP SUM	NO.	L.F.
SUPERSTRUCTURE						LUMP SUM									184.6	200			LUMP SUM	22	1100
END BENT 1				LUMP SUM	22.2		2714	7		7	385						126	140			
BENT 1			2		11.3		2226		8			8	600								
END BENT 2				LUMP SUM	22.2		2714	7		7	385						131	146			
TOTAL	LUMP SUM	LUMP SUM	2	LUMP SUM	55.7	LUMP SUM	7654	14	8	14	770	8	600	11	184.6	200	257	286	LUMP SUM	22	1100

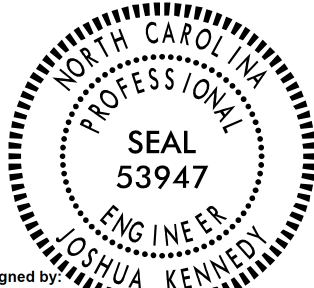
PROJECT NO. BP4-R027
WAYNE COUNTY
STATION: 15+15.00 -L-

SHEET 4 OF 4

DRAWN BY : J. F. KENNEDY DATE : 01/26/23
CHECKED BY : T. R. DUDECK DATE : 05/16/23
DESIGN ENGINEER OF RECORD: J. F. KENNEDY DATE : 01/20/26



Stantec Consulting Services Inc.
801 Jones Franklin Road
Suite 300
Raleigh, NC 27606
Tel. (919) 851-6866
Fax. (919) 851-7024
www.stantec.com
License No. F-0672



DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING

FOR BRIDGE OVER AYCOCK SWAMP
ON SR 1505 (DAVIS MILL RD.)
BETWEEN SR 1506 (BLACK ROCK RD.)
AND SR 1513 (RED HILL RD.)

REVISIONS						SHEET NO. S-4
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 23
2			4			

U:\Structures\Dr-Of-fing\Final\T1002523.SMU - lr-fr_L1950219.dgn 1/20/2026 2:22:01PM Jskennedy

LOAD AND RESISTANCE FACTOR RATING (LRFR) SUMMARY FOR PRESTRESSED CONCRETE GIRDERS																								
LOAD TYPE		VEHICLE	WEIGHT (W) (TONS)	CONTROLLING LOAD RATING ⬡	MINIMUM RATING FACTORS (RF)	TONS = W x RF	STRENGTH I LIMIT STATE										SERVICE III LIMIT STATE						COMMENT NUMBER	
							LIVE-LOAD FACTORS (γ LL)	MOMENT				SHEAR				LIVE-LOAD FACTORS (γ LL)	MOMENT							
								DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN		GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION		DISTANCE FROM LEFT END OF SPAN (ft)
DESIGN LOAD		HL-93 (INVENTORY)	N/A	⬡1	1.143	--	1.75	0.269	1.474	45'	EL	21.98	0.622	1.282	45'	EL	4.48	0.80	0.269	1.14	45'	EL	21.98	
		HL-93 (OPERATING)	N/A	--	1.661	--	1.35	0.269	1.911	45'	EL	21.98	0.622	1.661	45'	EL	4.48	N/A	--	--	--	--	--	
		HS-20 (INVENTORY)	36.000	⬡2	1.403	50.520	1.75	0.269	1.809	45'	EL	21.98	0.622	1.487	45'	EL	4.48	0.80	0.269	1.40	45'	EL	21.98	
		HS-20 (OPERATING)	36.000	--	1.927	69.377	1.35	0.269	2.345	45'	EL	21.98	0.622	1.927	45'	EL	4.48	N/A	--	--	--	--	--	
LEGAL LOAD	SINGLE VEHICLE (SV)	SNSH	13.500	--	2.741	37.009	1.40	0.269	4.417	45'	EL	21.98	0.622	4.050	45'	EL	4.48	0.80	0.269	2.71	45'	EL	21.98	
		SNGARBS2	20.000	--	2.214	44.277	1.40	0.269	3.567	45'	EL	21.98	0.622	2.992	45'	EL	4.48	0.80	0.269	2.19	45'	EL	26.31	
		SNAGRIS2	22.000	--	2.177	47.897	1.40	0.269	3.455	45'	EL	17.59	0.622	2.822	45'	EL	4.48	0.80	0.269	2.15	45'	EL	26.31	
		SNCOTTS3	27.250	--	1.369	37.299	1.40	0.269	2.205	45'	EL	21.98	0.622	2.033	45'	EL	4.48	0.80	0.269	1.35	45'	EL	21.98	
		SNAGGRS4	34.925	--	1.208	42.190	1.40	0.269	1.946	45'	EL	21.98	0.622	1.767	45'	EL	4.48	0.80	0.269	1.20	45'	EL	21.98	
		SNS5A	35.550	--	1.177	41.833	1.40	0.269	1.896	45'	EL	21.98	0.622	1.834	45'	EL	4.48	0.80	0.269	1.16	45'	EL	21.98	
		SNS6A	39.950	--	1.109	44.286	1.40	0.269	1.786	45'	EL	21.98	0.622	1.710	45'	EL	4.48	0.80	0.269	1.10	45'	EL	21.98	
		SNS7B	42.000	⬡3	1.057	44.384	1.40	0.269	1.703	45'	EL	21.98	0.622	1.730	45'	EL	4.48	0.80	0.269	1.06	45'	EL	21.98	
	TRUCK TRACTOR SEMI-TRAILER (TTST)	TNAGRIT3	33.000	--	1.361	44.900	1.40	0.269	2.192	45'	EL	21.98	0.622	2.005	45'	EL	4.48	0.80	0.269	1.35	45'	EL	21.98	
		TNT4A	33.075	--	1.375	45.474	1.40	0.269	2.215	45'	EL	21.98	0.622	1.916	45'	EL	4.48	0.80	0.269	1.36	45'	EL	21.98	
		TNT6A	41.600	--	1.154	48.005	1.40	0.269	1.859	45'	EL	21.98	0.622	1.869	45'	EL	4.48	0.80	0.269	1.14	45'	EL	21.98	
		TNT7A	42.000	--	1.176	49.404	1.40	0.269	1.895	45'	EL	21.98	0.622	1.728	45'	EL	4.48	0.80	0.269	1.16	45'	EL	21.98	
		TNT7B	42.000	--	1.225	51.433	1.40	0.269	1.973	45'	EL	21.98	0.622	1.652	45'	EL	4.48	0.80	0.269	1.21	45'	EL	21.98	
		TNAGRIT4	43.000	--	1.166	50.155	1.40	0.269	1.879	45'	EL	21.98	0.622	1.587	45'	EL	4.48	0.80	0.269	1.15	45'	EL	21.98	
		TNAGT5A	45.000	--	1.085	48.839	1.40	0.269	1.749	45'	EL	21.98	0.622	1.635	45'	EL	4.48	0.80	0.269	1.07	45'	EL	21.98	
		TNAGT5B	45.000	--	1.060	47.685	1.40	0.269	1.707	45'	EL	21.98	0.622	1.503	45'	EL	4.48	0.80	0.269	1.05	45'	EL	21.98	
EMERGENCY VEHICLE (EV)		EV2	28.750	--	1.588	45.645	1.30	0.269	2.742	45'	EL	17.59	0.622	2.274	45'	EL	4.48	0.80	0.269	1.59	45'	EL	21.98	
		EV3	43.000	⬡4	1.020	43.878	1.30	0.269	1.771	45'	EL	21.98	0.622	1.543	45'	EL	4.48	0.80	0.269	1.02	45'	EL	21.98	

LOAD FACTORS:

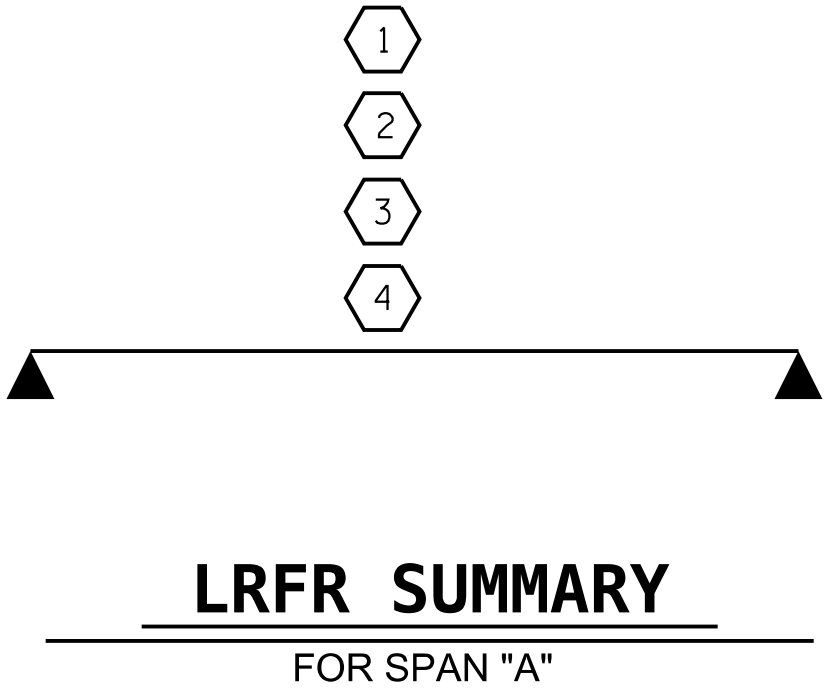
DESIGN LOAD RATING FACTORS	LIMIT STATE	γ DC	γ DW
	STRENGTH I	1.25	1.50
	SERVICE III	1.00	1.00

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.

⬡	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	

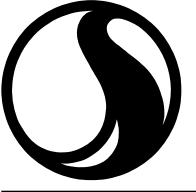


PROJECT NO. _____ BP4-R027
_____ WAYNE _____ COUNTY
STATION: _____ 15+15.00 -L- _____

SHEET 1 OF 2

ASSEMBLED BY : J. F. KENNEDY	DATE :12/20/22
CHECKED BY : T. R. DUDECK	DATE :05/15/23
DRAWN BY : MAA	1/09
CHECKED BY : GM/DI	2/08
REV. 11/2/08RR	MAA/GM
REV. 10/1/11	MAA/GM
REV. 04/23	BNB/AAI

DESIGN
ENGINEER
OF RECORD: J. F. KENNEDY DATE : 01/20/26



Stantec Consulting Services Inc.
801 Jones Franklin Road
Suite 300
Raleigh, NC 27606
Tel. (919) 851-6866
Fax. (919) 851-7024
www.stantec.com
License No. F-0672



Signed by: Joshua Kennedy 12/20/2026

DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
STANDARD
LRFR SUMMARY FOR
45' CORED SLAB UNIT
105° SKEW
(NON-INTERSTATE TRAFFIC)

REVISIONS						SHEET NO. S-5 TOTAL SHEETS 23
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			
2			4			

STD. NO. 21LRFR1_75&105S_45L

\\A:\Structures\Dr-Of-ting\Final\T1002523.SMU - Ir-fr2_950219.dgn 1/20/2026 2:22:02 PM Jskennedy

LOAD AND RESISTANCE FACTOR RATING (LRFR) SUMMARY FOR PRESTRESSED CONCRETE GIRDERS																								
LOAD TYPE		VEHICLE	WEIGHT (W) (TONS)	CONTROLLING LOAD RATING ⬡#	MINIMUM RATING FACTORS (RF)	TONS = W x RF	STRENGTH I LIMIT STATE										SERVICE III LIMIT STATE						COMMENT NUMBER	
							LIVE-LOAD FACTORS (γ LL)	MOMENT					SHEAR					LIVE-LOAD FACTORS (γ LL)	MOMENT					
								DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)		DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION		DISTANCE FROM LEFT END OF SPAN (ft)
DESIGN LOAD		HL-93 (INVENTORY)	N/A	⬡1	1.065	--	1.75	0.270	1.25	55'	EL	26.982	0.616	1.12	55'	EL	5.396	0.80	0.270	1.07	55'	EL	26.982	
		HL-93 (OPERATING)	N/A	--	1.452	--	1.35	0.270	1.61	55'	EL	26.982	0.616	1.45	55'	EL	5.396	N/A	--	--	--	--	--	
		HS-20 (INVENTORY)	36.000	⬡2	1.335	48.043	1.75	0.270	1.56	55'	EL	26.982	0.616	1.34	55'	EL	5.396	0.80	0.270	1.33	55'	EL	26.982	
		HS-20 (OPERATING)	36.000	--	1.734	62.425	1.35	0.270	2.02	55'	EL	26.982	0.616	1.73	55'	EL	5.396	N/A	--	--	--	--	--	
LEGAL LOAD	SINGLE VEHICLE (SV)	SNSH	13.500	--	2.802	37.830	1.4	0.270	4.09	55'	EL	26.982	0.616	3.81	55'	EL	5.396	0.80	0.270	2.80	55'	EL	26.982	
		SNGARBS2	20.000	--	2.175	43.506	1.4	0.270	3.18	55'	EL	26.982	0.616	2.76	55'	EL	5.396	0.80	0.270	2.18	55'	EL	26.982	
		SNAGRIS2	22.000	--	2.099	46.173	1.4	0.270	3.07	55'	EL	26.982	0.616	2.58	55'	EL	5.396	0.80	0.270	2.10	55'	EL	26.982	
		SNCOTTS3	27.250	--	1.397	38.065	1.4	0.270	2.04	55'	EL	26.982	0.616	1.91	55'	EL	5.396	0.80	0.270	1.40	55'	EL	26.982	
		SNAGGRS4	34.925	--	1.200	41.922	1.4	0.270	1.75	55'	EL	26.982	0.616	1.62	55'	EL	5.396	0.80	0.270	1.20	55'	EL	26.982	
		SNS5A	35.550	--	1.172	41.648	1.4	0.270	1.71	55'	EL	26.982	0.616	1.66	55'	EL	5.396	0.80	0.270	1.17	55'	EL	26.982	
		SNS6A	39.950	--	1.089	43.514	1.4	0.270	1.59	55'	EL	26.982	0.616	1.53	55'	EL	5.396	0.80	0.270	1.09	55'	EL	26.982	
		SNS7B	42.000	--	1.038	43.587	1.4	0.270	1.52	55'	EL	26.982	0.616	1.53	55'	EL	5.396	0.80	0.270	1.04	55'	EL	26.982	
	TRUCK TRACTOR SEMI-TRAILER (TTST)	TNAGRIT3	33.000	--	1.333	43.973	1.4	0.270	1.95	55'	EL	26.982	0.616	1.81	55'	EL	5.396	0.80	0.270	1.33	55'	EL	26.982	
		TNT4A	33.075	--	1.342	44.400	1.4	0.270	1.96	55'	EL	26.982	0.616	1.75	55'	EL	5.396	0.80	0.270	1.34	55'	EL	26.982	
		TNT6A	41.600	--	1.112	46.252	1.4	0.270	1.62	55'	EL	26.982	0.616	1.67	55'	EL	5.396	0.80	0.270	1.11	55'	EL	26.982	
		TNT7A	42.000	--	1.125	47.255	1.4	0.270	1.64	55'	EL	26.982	0.616	1.56	55'	EL	5.396	0.80	0.270	1.13	55'	EL	26.982	
		TNT7B	42.000	--	1.174	49.318	1.4	0.270	1.72	55'	EL	26.982	0.616	1.47	55'	EL	5.396	0.80	0.270	1.17	55'	EL	26.982	
		TNAGRIT4	43.000	--	1.111	47.786	1.4	0.270	1.62	55'	EL	26.982	0.616	1.42	55'	EL	5.396	0.80	0.270	1.11	55'	EL	26.982	
		TNAGT5A	45.000	--	1.041	46.851	1.4	0.270	1.52	55'	EL	26.982	0.616	1.44	55'	EL	5.396	0.80	0.270	1.04	55'	EL	26.982	
		TNAGT5B	45.000	⬡3	1.023	46.020	1.4	0.270	1.49	55'	EL	26.982	0.616	1.35	55'	EL	5.396	0.80	0.270	1.02	55'	EL	26.982	
EMERGENCY VEHICLE (EV)		EV2	28.750	--	1.631	46.889	1.3	0.270	2.40	55'	EL	26.982	0.616	2.07	55'	EL	5.396	0.80	0.270	1.63	55'	EL	26.982	
		EV3	43.000	⬡4	1.058	45.500	1.3	0.270	1.56	55'	EL	26.982	0.616	1.40	55'	EL	5.396	0.80	0.270	1.06	55'	EL	26.982	

LOAD FACTORS:

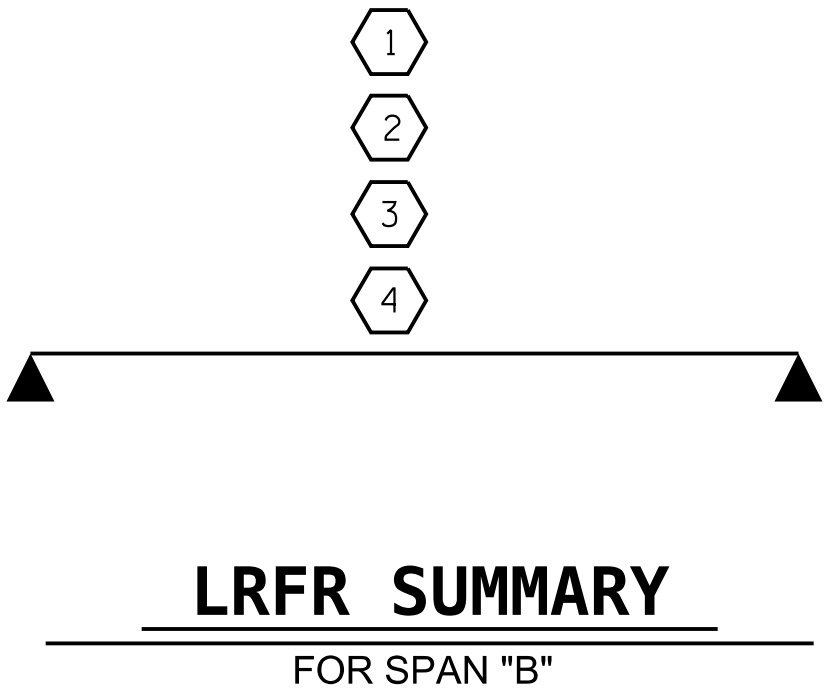
DESIGN LOAD RATING FACTORS	LIMIT STATE	γ DC	γ DW
	STRENGTH I	1.25	1.50
	SERVICE III	1.00	1.00

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.

⬡#	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	

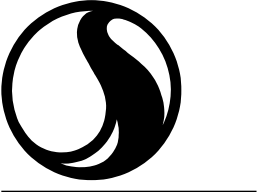


PROJECT NO. _____ BP4-R027
_____ WAYNE _____ COUNTY
STATION: _____ 15+15.00 -L- _____

SHEET 2 OF 2

ASSEMBLED BY : J. F. KENNEDY	DATE :12/20/22
CHECKED BY : T. R. DUDECK	DATE :05/17/23
DRAWN BY : MAA	1/08
CHECKED BY : GM/DI	2/08
REV. 11/12/08RR	MAA/GM
REV. 10/11/11	MAA/GM
REV. 04/23	BNB/AAI

DESIGN
ENGINEER
OF RECORD: J. F. KENNEDY DATE : 01/20/26



Stantec Consulting Services Inc.
801 Jones Franklin Road
Suite 300
Raleigh, NC 27606
Tel. (919) 851-6866
Fax. (919) 851-7024
www.stantec.com
License No. F-0672



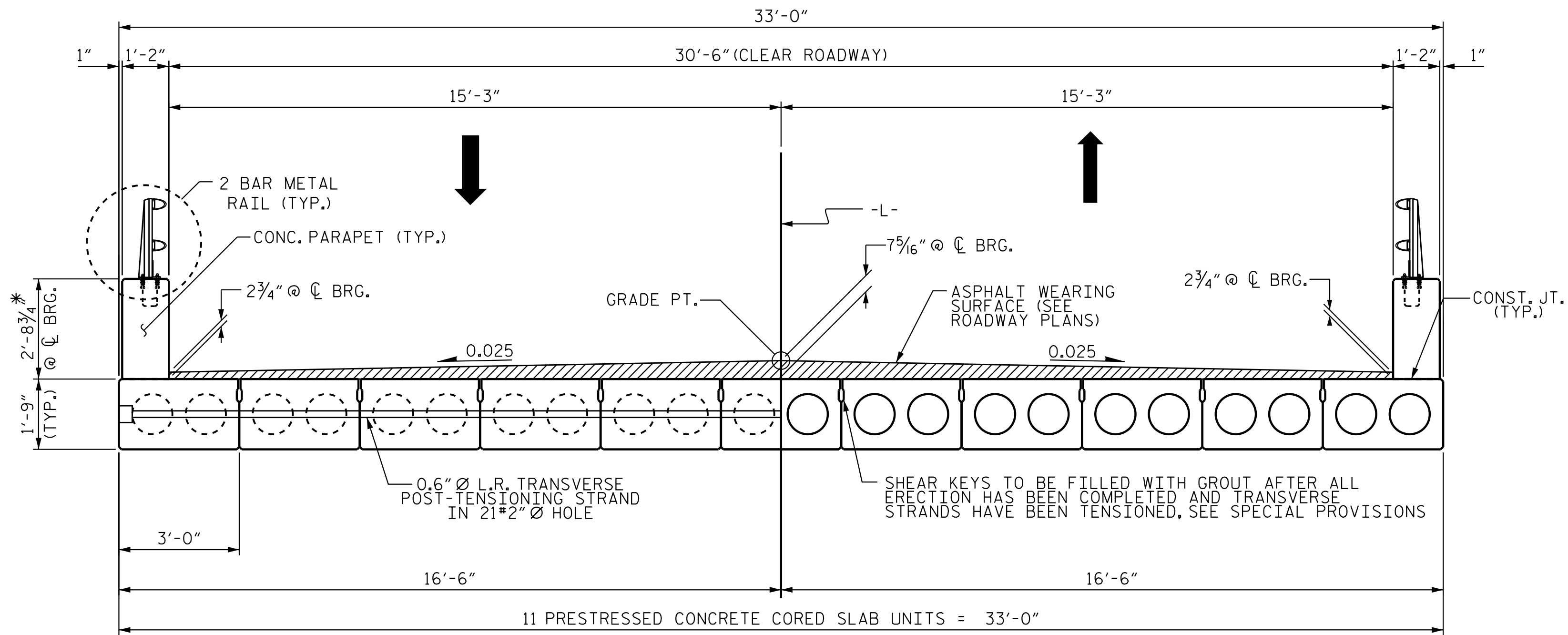
Signed by: Joshua Kennedy
074425111E1B465

DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH STANDARD LRFR SUMMARY FOR 55' CORED SLAB UNIT 105° SKEW (NON-INTERSTATE TRAFFIC)						SHEET NO. S-6 TOTAL SHEETS 23
REVISIONS						
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			
2			4			

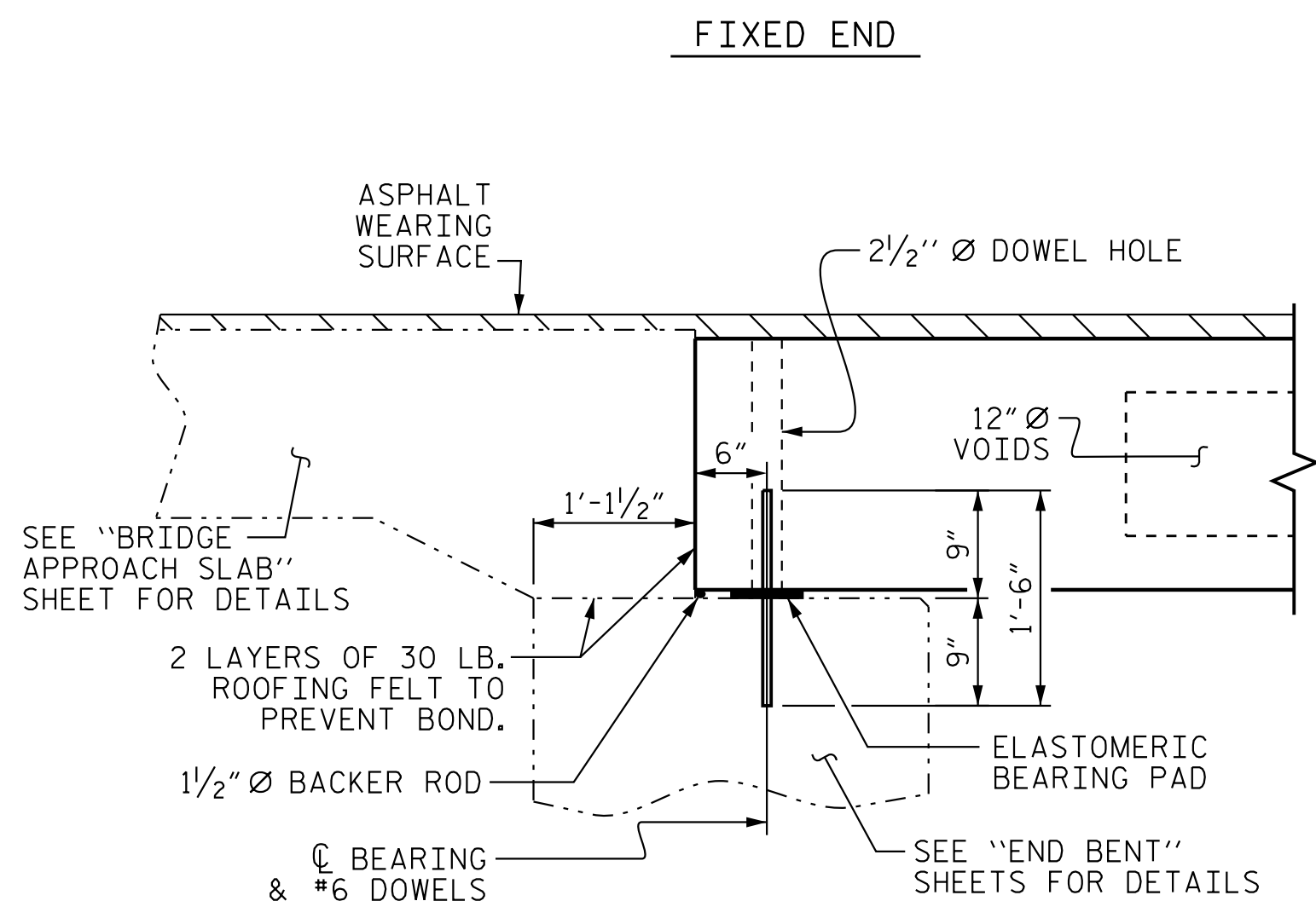
STD. NO. 21LRFR1_75&105S_55L

1/20/2026 2:22:03 PM jskennedy
\\ Structures\Dr-offing\Final\71002523.SMU_CSI_950219.dgn

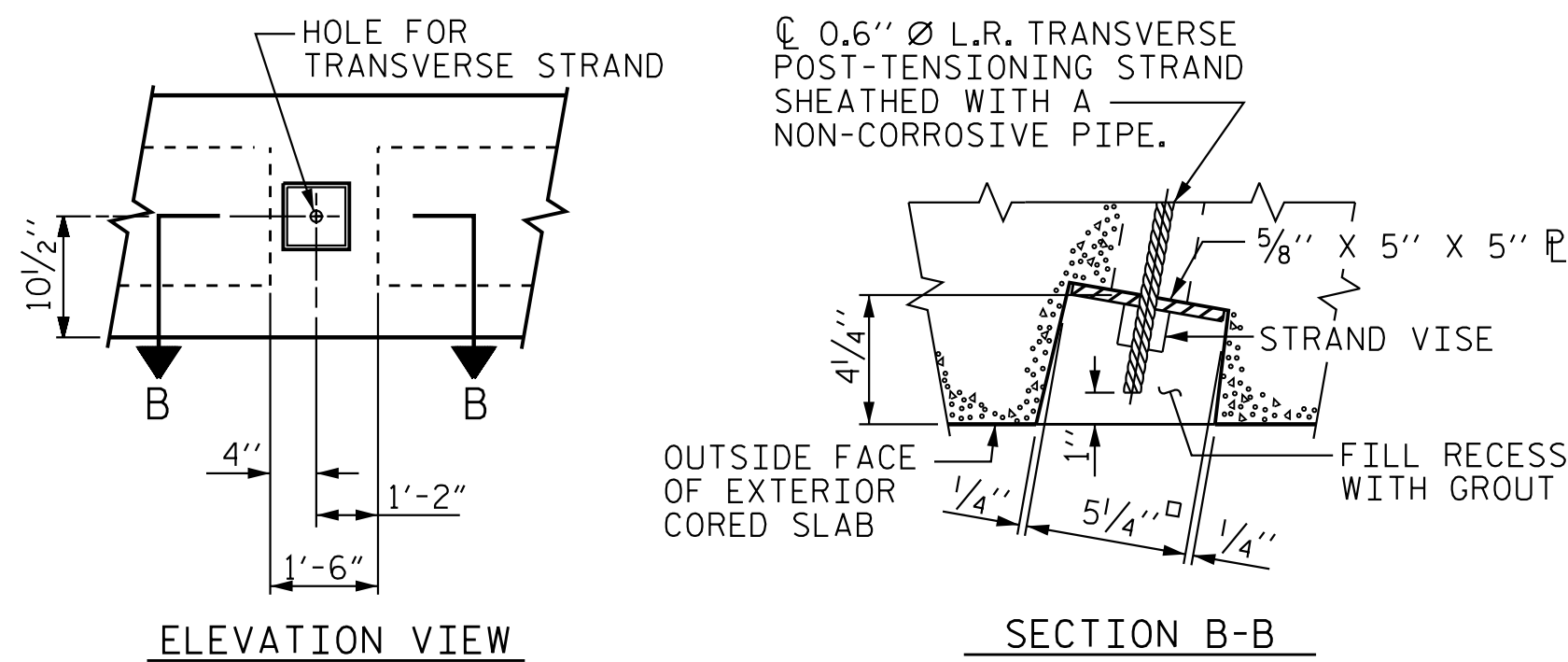


HALF SECTION AT INTERMEDIATE DIAPHRAGMS
TYPICAL SECTION
HALF SECTION THROUGH VOIDS

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



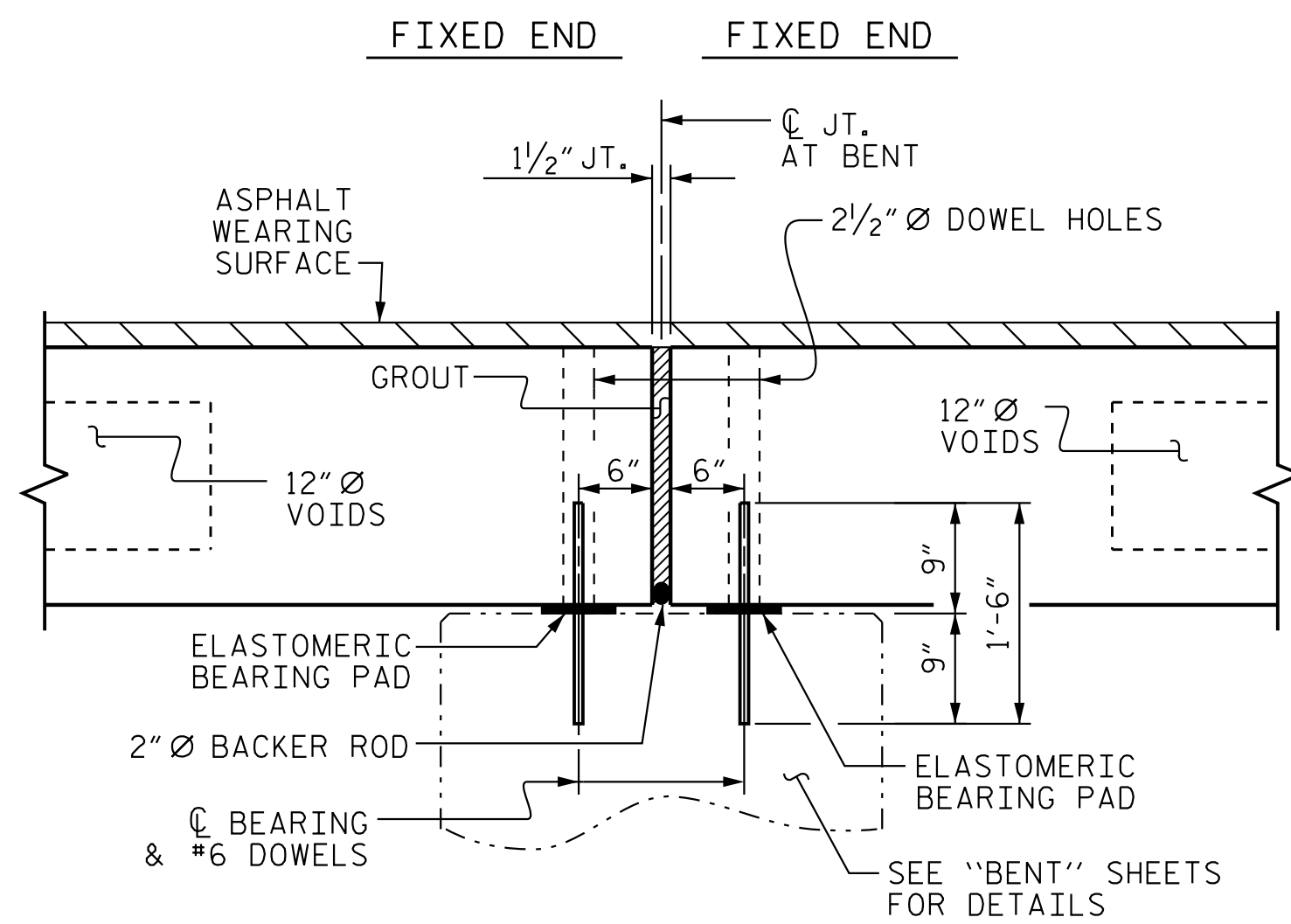
SECTION AT END BENT



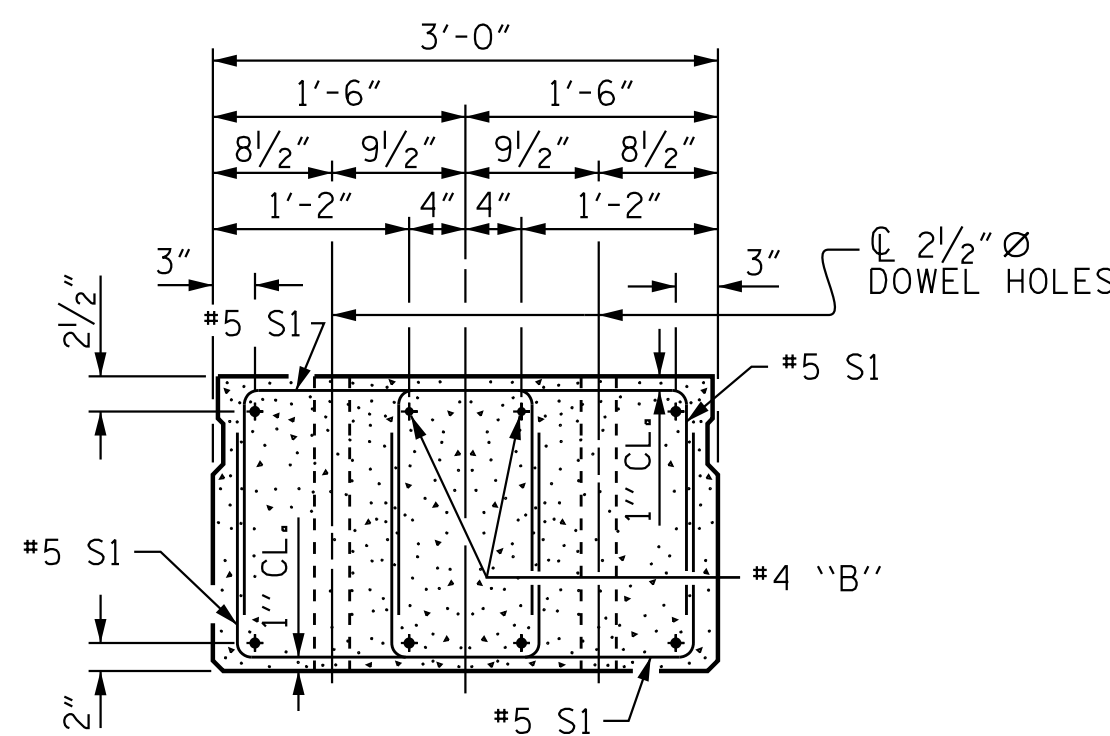
GROUTED RECESS AT END OF POST-TENSIONED STRAND OF CORED SLABS

ASSEMBLED BY : J. F. KENNEDY DATE :01/20/23
CHECKED BY : T. R. DUDECK DATE :05/17/23
DRAWN BY : DGE 5/09
CHECKED BY : BCH 6/09

REV. 8/14
REV. 5/23
MAA/TMG
BNB/AAI

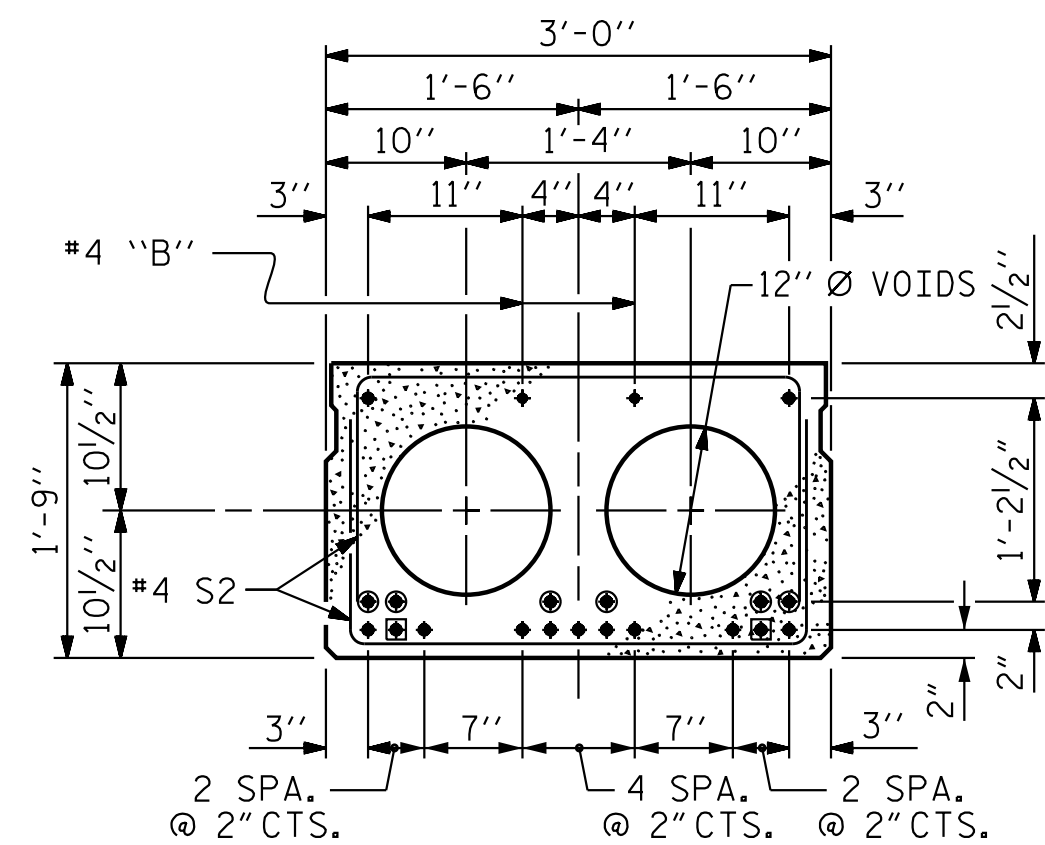


SECTION AT BENT

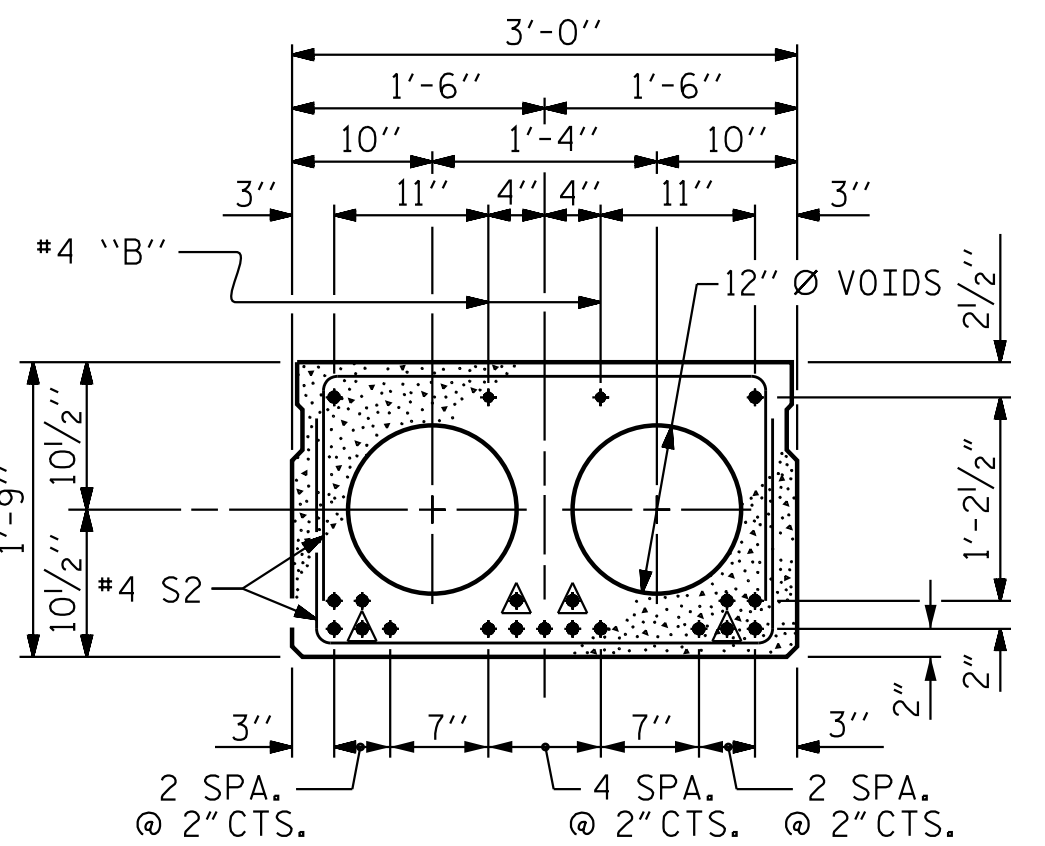


END ELEVATION

SHOWING PLACEMENT OF DOUBLE STIRRUPS AND LOCATION OF DOWEL HOLES.
(STRAND LAYOUT NOT SHOWN.)
INTERIOR SLAB UNIT SHOWN-EXTERIOR SLAB UNIT SIMILAR EXCEPT SHEAR KEY LOCATION.

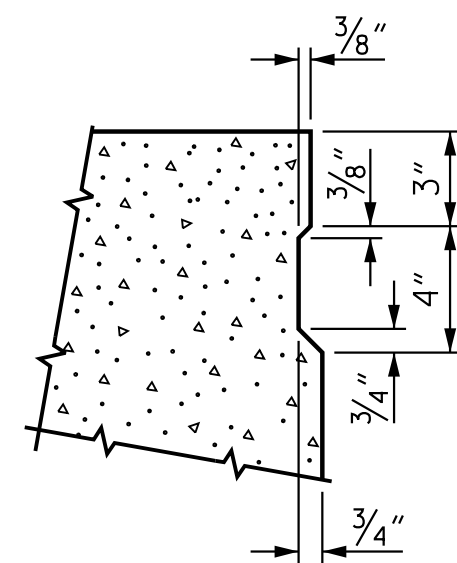


INTERIOR SLAB SECTION (45' UNIT)
(13 STRANDS REQUIRED)



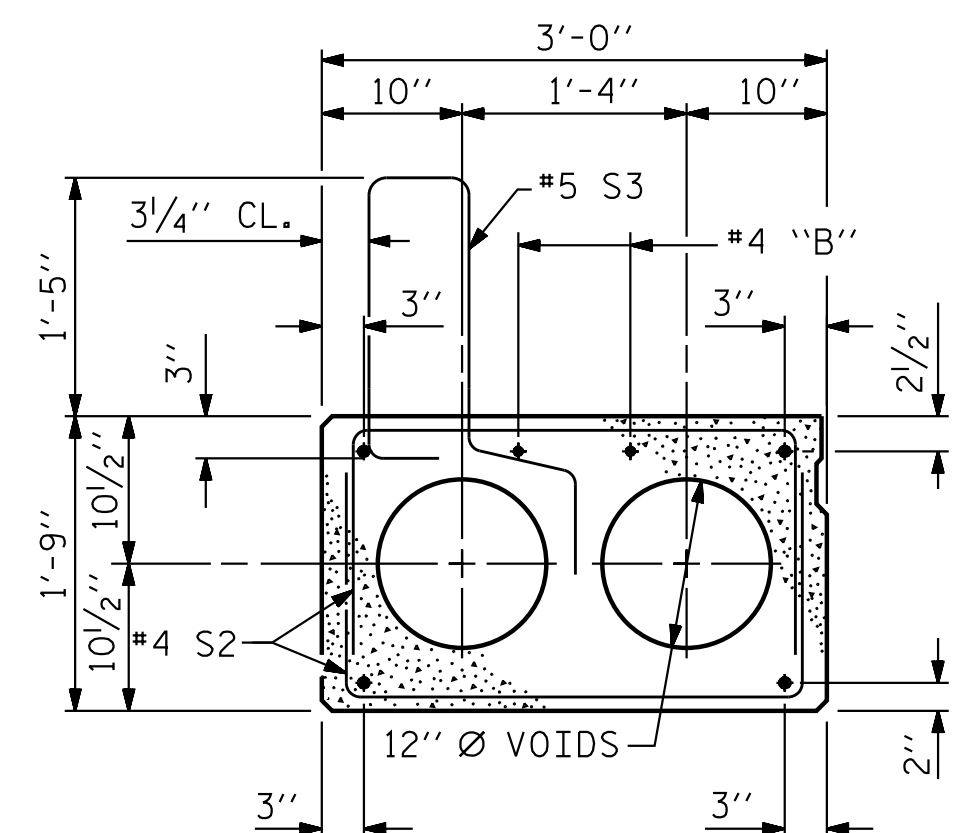
INTERIOR SLAB SECTION (55' UNIT)
(19 STRANDS REQUIRED)

0.6" Ø LOW RELAXATION STRAND LAYOUT



SHEAR KEY DETAIL

NOTE: OMIT SHEAR KEY ON OUTSIDE FACE OF EXTERIOR CORED SLABS.



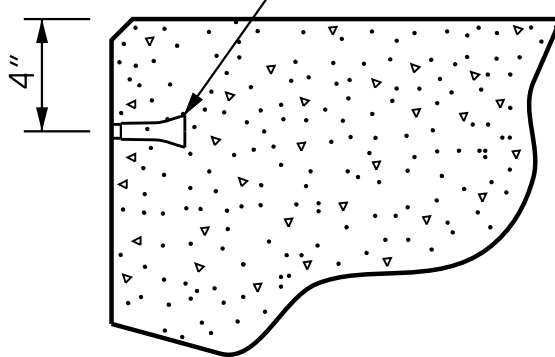
EXT. SLAB SECTION

(FOR PRESTRESSED STRAND LAYOUT, SEE INTERIOR SLAB SECTION.)

- ▲ 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

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



THREADED INSERT DETAIL

PROJECT NO. BP4-R027
WAYNE COUNTY
STATION: 15+15.00 -L-

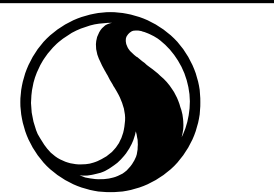
SHEET 1 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

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

REVISIONS						SHEET NO. S-7
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 23
2			4			

DESIGN ENGINEER OF RECORD: J. F. KENNEDY DATE : 01/20/26



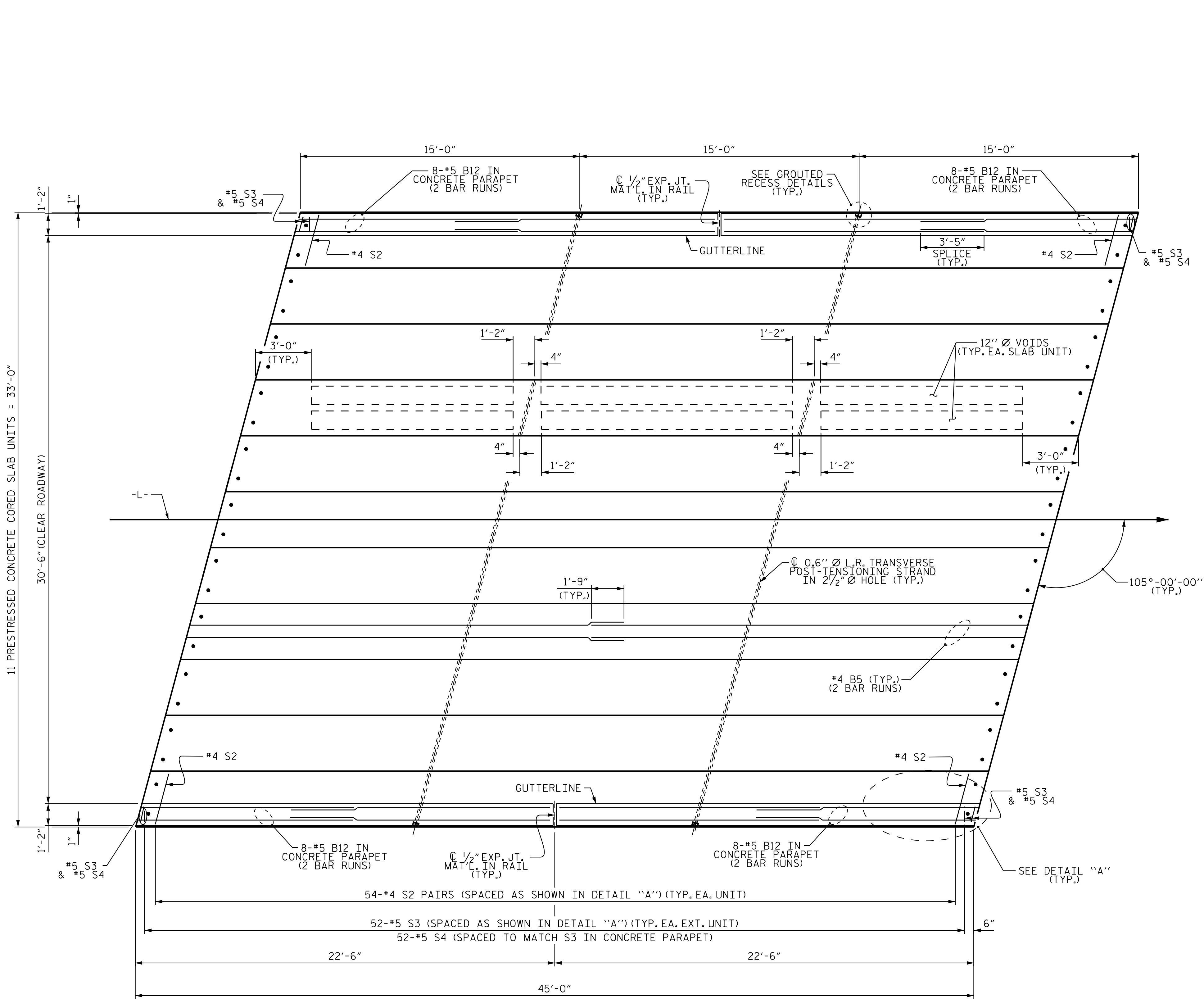
Stantec Consulting Services Inc.
801 Jones Franklin Road
Suite 300
Raleigh, NC 27606
Tel. (919) 851-6866
Fax. (919) 851-7024
www.stantec.com
License No. F-0672



DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

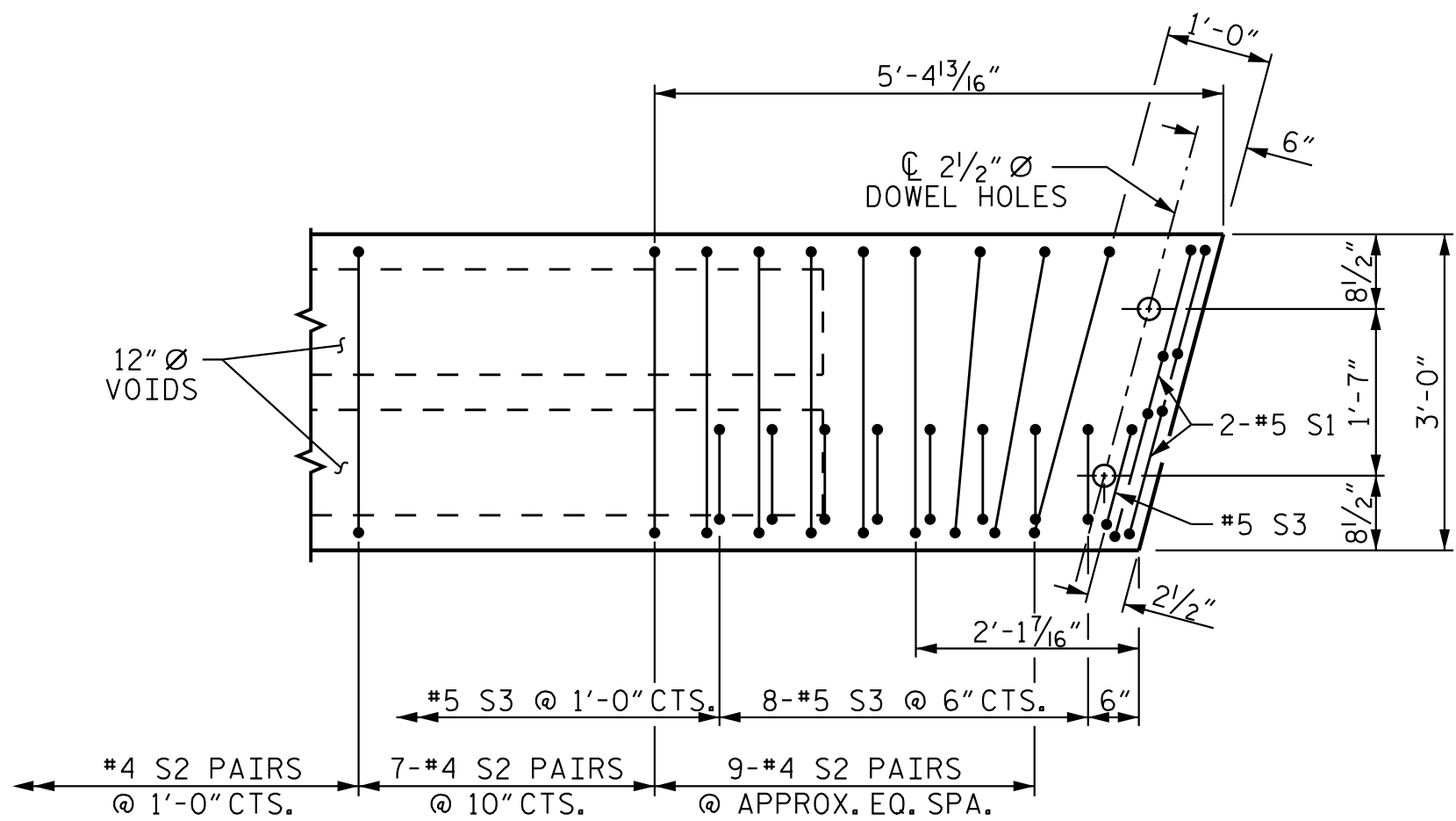
STD. NO. 21" PCS2_33_105S

U:\Structures\Drafting\Final\17002523.SMU_CS2_950219.dgn 1/20/2026 2:22:04 PM jskennedy



PLAN OF UNIT

SPAN 'A'



DETAIL "A"

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

PROJECT NO. BP4-R027
WAYNE COUNTY
STATION: 15+15.00 -L-

SHEET 2 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

PLAN OF 45' UNIT
30'-6" CLEAR ROADWAY
105° SKEW

ASSEMBLED BY :	J. F. KENNEDY	DATE :	12/20/22
CHECKED BY :	T. R. DUDECK	DATE :	05/17/23
DRAWN BY :	DGE 5/09	REV.	12/5/11 MAA/AAC
CHECKED BY :	BCH 6/09	REV.	8/14 MAA/TMG

DESIGN ENGINEER OF RECORD: J. F. KENNEDY DATE : 01/20/26

Stantec Consulting Services Inc.
801 Jones Franklin Road
Suite 300
Raleigh, NC 27606
Tel. (919) 851-6866
Fax. (919) 851-7024
www.stantec.com
License No. F-0672

Seal of North Carolina Professional Engineer Seal 53947

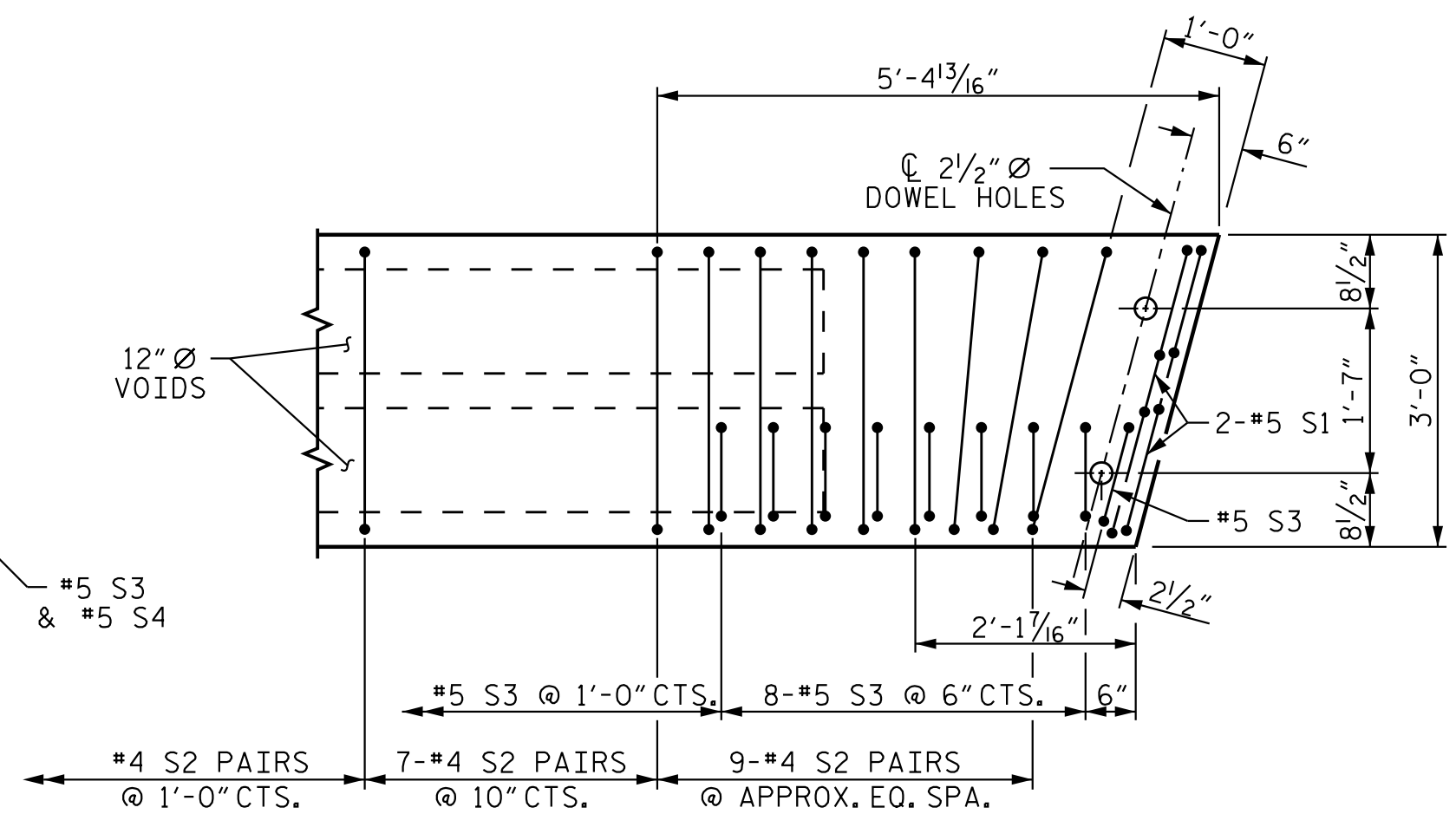
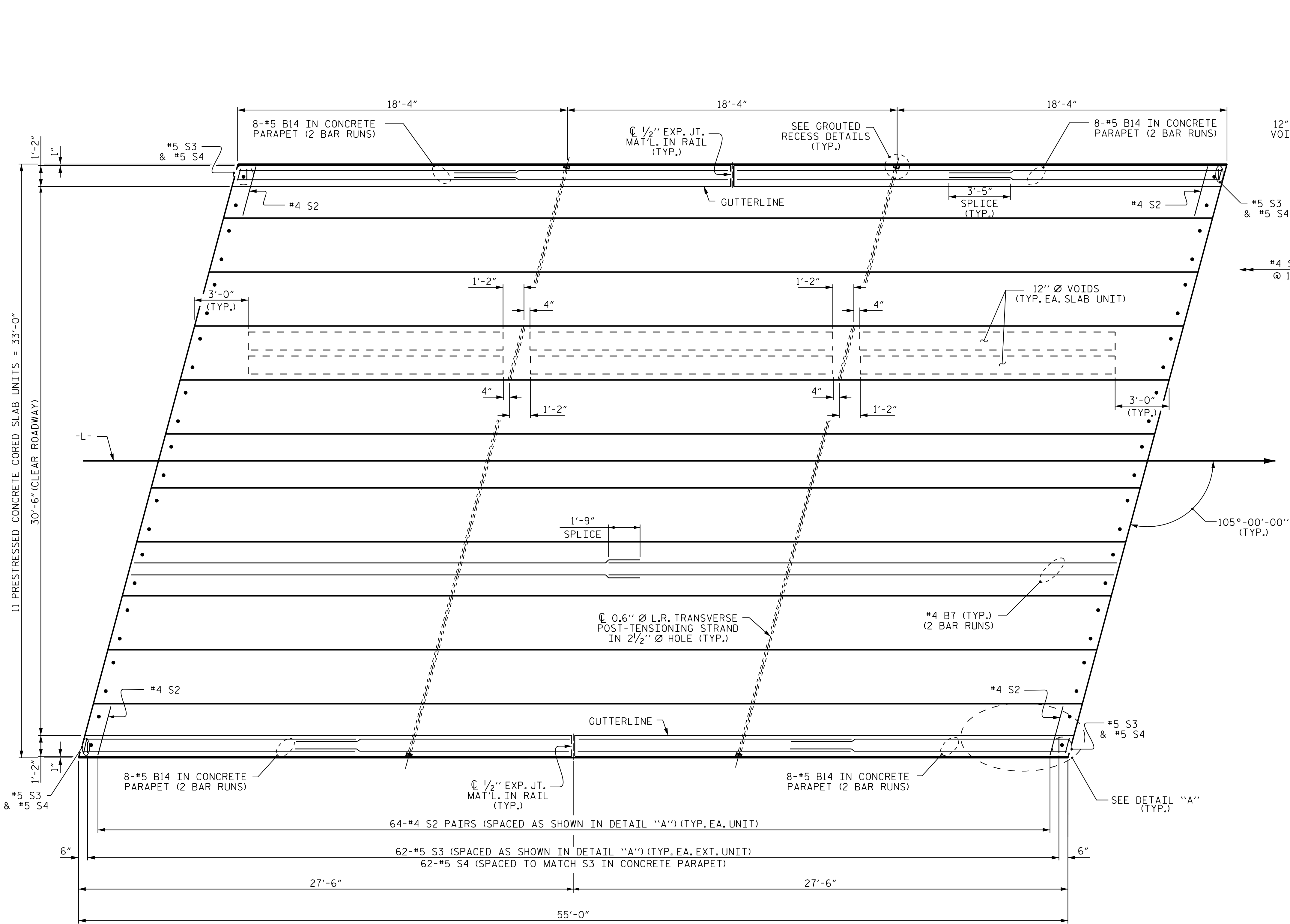
Signed by: Joshua Kennedy 01/20/2026

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S-8
2			4			
TOTAL SHEETS						23

STD. NO. 21" PCS_33_105S_45L

1/20/2026 2:22:05 PM jskennedy
U:\Structures\Dr-Of-Fing\Final\T1002523.SMU_CS3_950219.dgn



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

PLAN OF UNIT
SPAN 'B'

PROJECT NO. BP4-R027
WAYNE COUNTY
STATION: 15+15.00 -L-

SHEET 3 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

PLAN OF 55' UNIT
30'-6" CLEAR ROADWAY
105° SKEW

ASSEMBLED BY :	J. F. KENNEDY	DATE :	12/20/22
CHECKED BY :	T. R. DUDECK	DATE :	05/17/23
DRAWN BY :	DGE 3/09	REV.	12/5/11 MAA/AAC
CHECKED BY :	BCH 3/09	REV.	8/14 MAA/TMG

DESIGN
ENGINEER
OF RECORD: J. F. KENNEDY DATE : 01/20/26

Stantec

Stantec Consulting Services Inc.
801 Jones Franklin Road
Suite 300
Raleigh, NC 27606
Tel. (919) 851-6866
Fax. (919) 851-7024
www.stantec.com
License No. F-0672

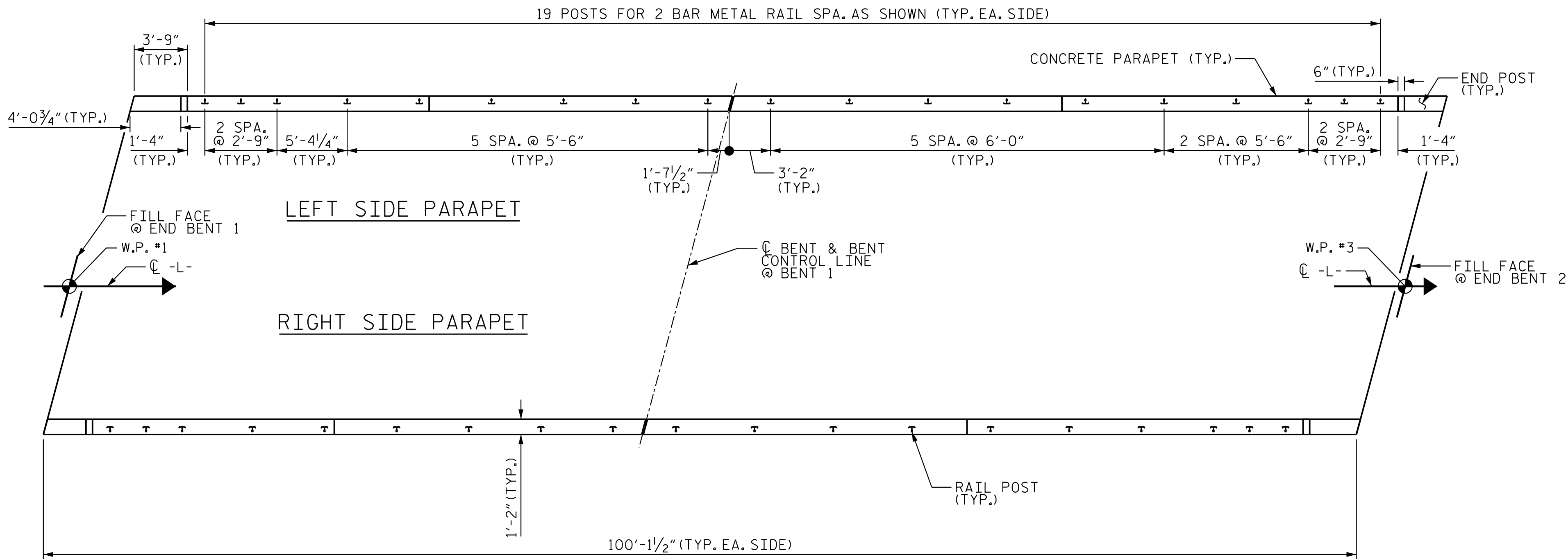
Signed by: Joshua Kennedy 01/20/2026

DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

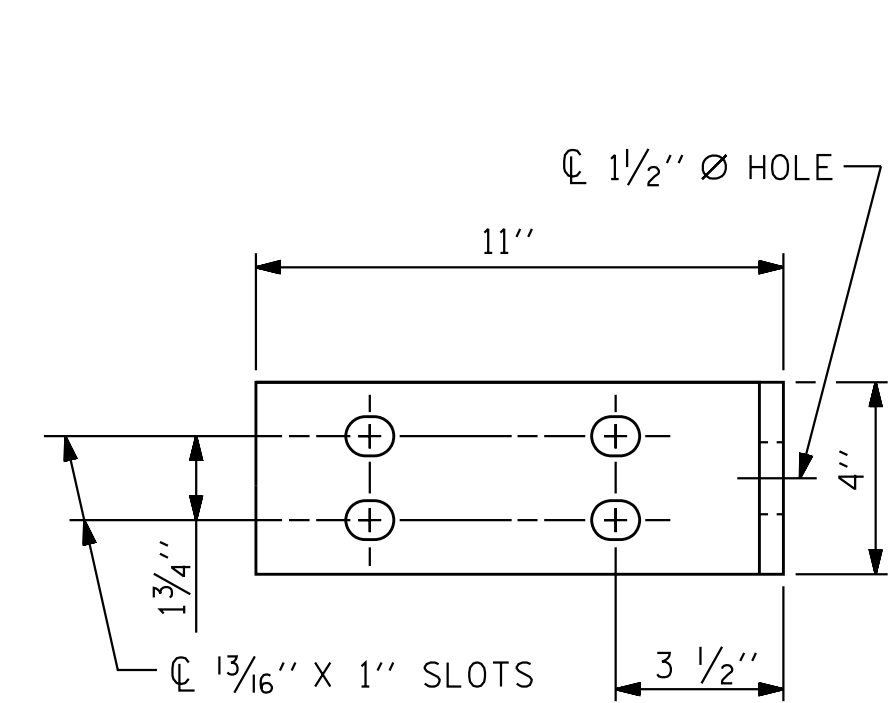
REVISIONS						SHEET NO. S-9
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 23
2			4			

STD. NO. 21" PCS_33_105S_55L

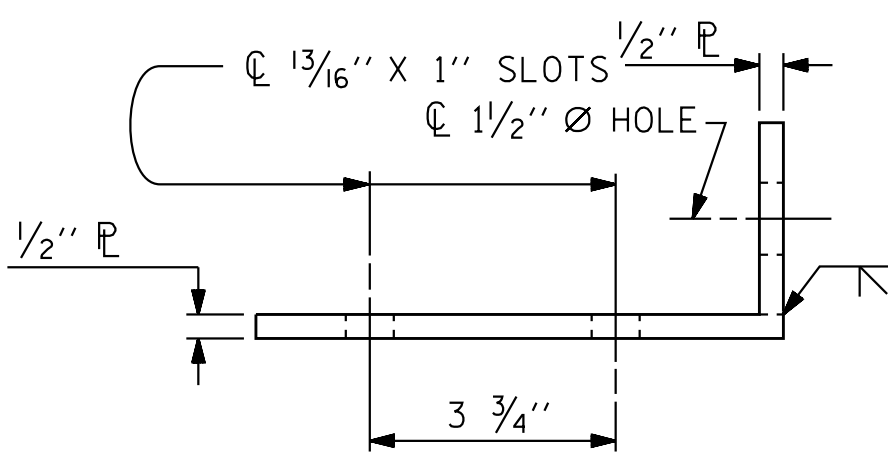
1/20/2026 2:22:07 PM jskennedy
U:\Structures\Dr-Of-ting\Final\T002523.SMU.BMR1.dgn



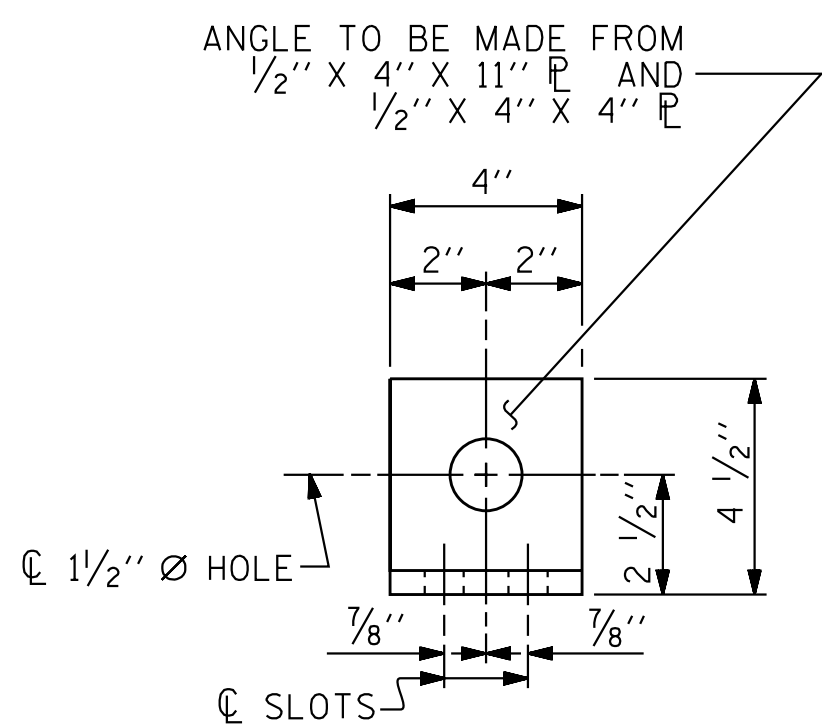
PLAN OF RAIL POST SPACINGS



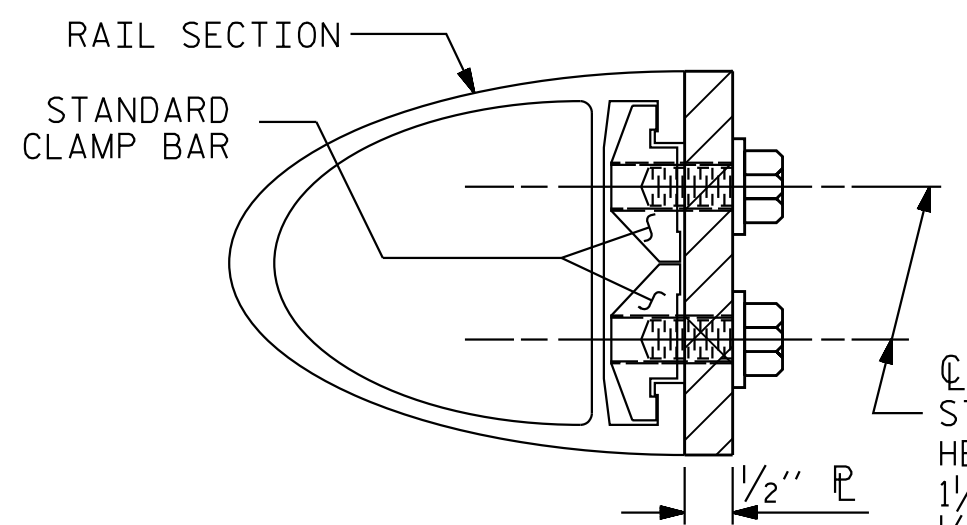
ELEVATION



TOP VIEW

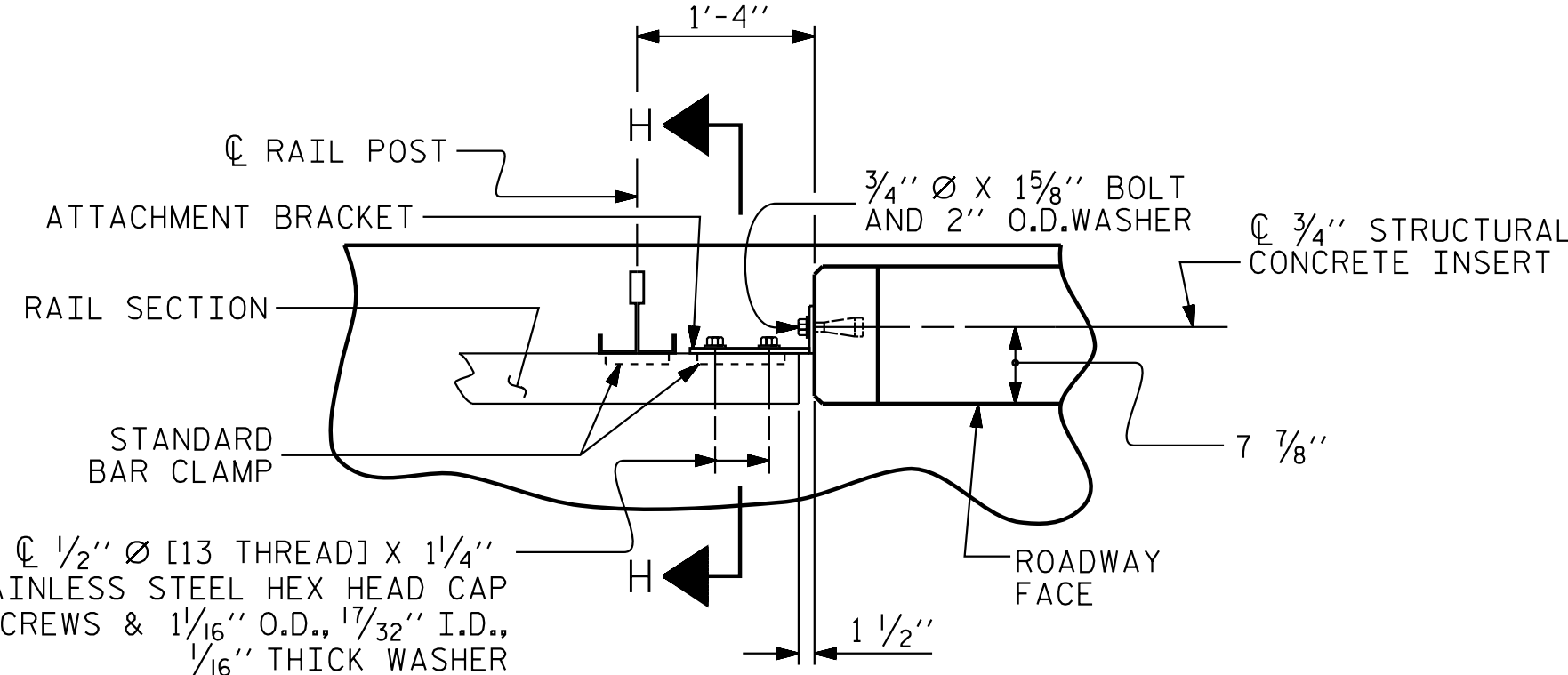


END VIEW (FIX AND EXP.)

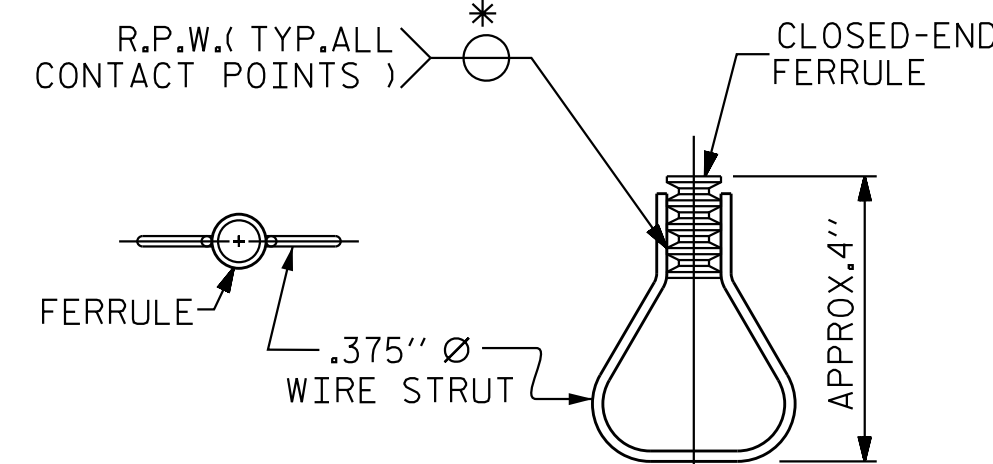


SECTION H-H (FIX)

FIXED



PLAN - RAIL AND END POST



PLAN

ELEVATION

STRUCTURAL CONCRETE INSERT

* EACH WELDED ATTACHMENT OF WIRE TO FERRULE SHALL DEVELOP THE TENSILE STRENGTH OF THE WIRE.

NOTES

STRUCTURAL CONCRETE INSERT

THE STRUCTURAL CONCRETE INSERT ASSEMBLY SHALL CONSIST OF THE FOLLOWING COMPONENTS:

- FERRULES SHALL BE MADE FROM STEEL MEETING THE REQUIREMENTS OF AASHTO M169, GRADE 12L14 AND SHALL HAVE A MINIMUM LENGTH OF THREADS OF 1 1/2".
- 1 - 3/4" Ø X 1 5/8" BOLT WITH WASHER. BOLT SHALL CONFORM TO THE REQUIREMENTS OF ASTM A307. BOLT AND WASHER SHALL BE GALVANIZED. (AT THE CONTRACTOR'S OPTION, STAINLESS STEEL BOLT AND WASHER MAY BE USED AS AN ALTERNATE FOR THE 3/4" Ø X 1 5/8" GALVANIZED BOLT AND WASHER. THEY SHALL CONFORM TO OR EXCEED THE MECHANICAL REQUIREMENTS OF ASTM A307. THE USE OF THIS ALTERNATE SHALL BE APPROVED BY THE ENGINEER.)
- WIRE STRUT SHOWN IN THE CONCRETE INSERT ASSEMBLY DETAIL IS THE MINIMUM ALLOWABLE SIZE AND SHALL HAVE A MINIMUM TENSILE STRENGTH OF 100,000 PSI. AS AN OPTION, A 7/16" Ø WIRE STRUT WITH A MINIMUM TENSILE STRENGTH OF 90,000 PSI IS ACCEPTABLE.

NOTES

METAL RAIL TO END POST CONNECTION

THE METAL RAIL TO END POST CONNECTION SHALL CONSIST OF THE FOLLOWING COMPONENTS:

- 1/2" PLATES SHALL CONFORM TO AASHTO M270 GRADE 36 AND SHALL BE GALVANIZED AFTER FABRICATION.
- 3/4" STRUCTURAL CONCRETE INSERT SHALL HAVE A WORKING LOAD SHEAR CAPACITY OF 4800 LBS. THE FERRULES SHALL ENGAGE A 3/4" Ø X 1 5/8" BOLT WITH 2" O.D. WASHER IN PLACE. THE 3/4" Ø X 1 5/8" BOLT SHALL HAVE N.C. THREADS.
- CAP SCREWS FOR RAIL ATTACHMENT TO ANGLE SHALL CONFORM TO THE REQUIREMENTS OF ASTM F593 ALLOY 305 STAINLESS STEEL. CAP SCREWS TO BE CENTERED IN SLOTS AT 60°F.
- STANDARD CLAMP BARS (SEE METAL RAIL SHEET).
- 1/2" Ø PIPE SLEEVES (IF REQUIRED) TO BE GALVANIZED.

THE COST OF THE STANDARD CLAMP BARS AND CAP SCREWS USED IN THE METAL RAIL TO END POST CONNECTION SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR LINEAR FEET OF 1 OR 2 BAR METAL RAILS.

THE 3/4" STRUCTURAL CONCRETE INSERT WITH BOLT SHALL BE ASSEMBLED IN THE SHOP.

THE COST OF THE 3/4" STRUCTURAL CONCRETE INSERT ASSEMBLY, AND THE 1/2" PLATES COMPLETE IN PLACE SHALL BE INCLUDED IN THE VARIOUS PAY ITEMS.

THE CONTRACTOR, AT HIS OPTION, MAY USE AN ADHESIVE BONDING SYSTEM IN LIEU OF THE STRUCTURAL CONCRETE INSERT EMBEDDED IN THE END POST. IF THE ADHESIVE BONDING SYSTEM IS USED, THE 3/4" Ø X 1 5/8" BOLT WITH WASHER SHALL BE REPLACED WITH A 3/4" Ø X 6 1/2" BOLT AND 2" O.D. WASHER. ALL SPECIFICATIONS THAT APPLY TO THE 3/4" Ø X 1 5/8" BOLT SHALL APPLY TO THE 3/4" Ø X 6 1/2" BOLT. FIELD TESTING OF THE ADHESIVE BONDING SYSTEM IS NOT REQUIRED.

PROJECT NO. BP4-R027
WAYNE COUNTY
STATION: 15+15.00 -L-

SHEET 1 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
STANDARD

RAIL POST SPACINGS
AND
END OF RAIL DETAILS
FOR ONE OR TWO BAR METAL RAILS

REVISIONS						SHEET NO. S- 11
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 23
2			4			

STD. NO. BMR2

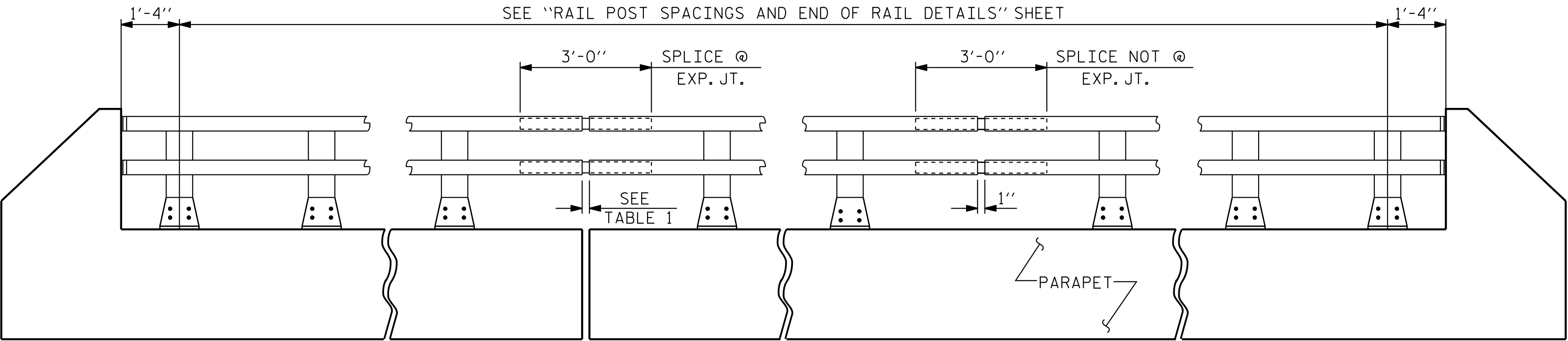
DESIGN ENGINEER OF RECORD: J. F. KENNEDY DATE : 01/20/26

Stantec

Stantec Consulting Services Inc.
801 Jones Franklin Road
Suite 300
Raleigh, NC 27606
Tel. (919) 851-6866
Fax. (919) 851-7024
www.stantec.com
License No. F-0672

NORTH CAROLINA
PROFESSIONAL
SEAL
53947
ENGINEER
JOSHUA KENNEDY
Signed by: Joshua Kennedy 01/20/2026
074425111E1B465

DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED



ELEVATION

NOTE: FOR ATTACHMENT OF METAL RAIL TO END POST, SEE SHEET 11.

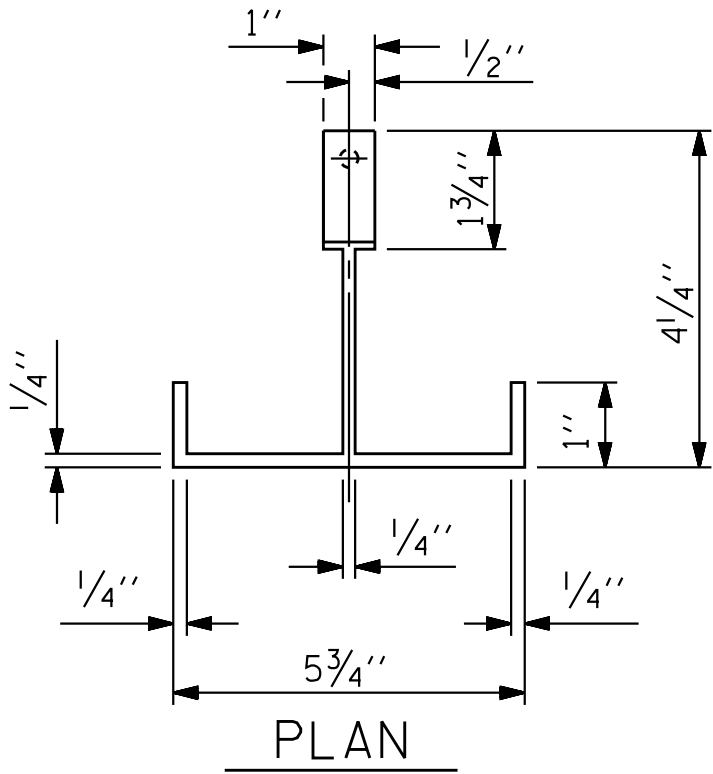
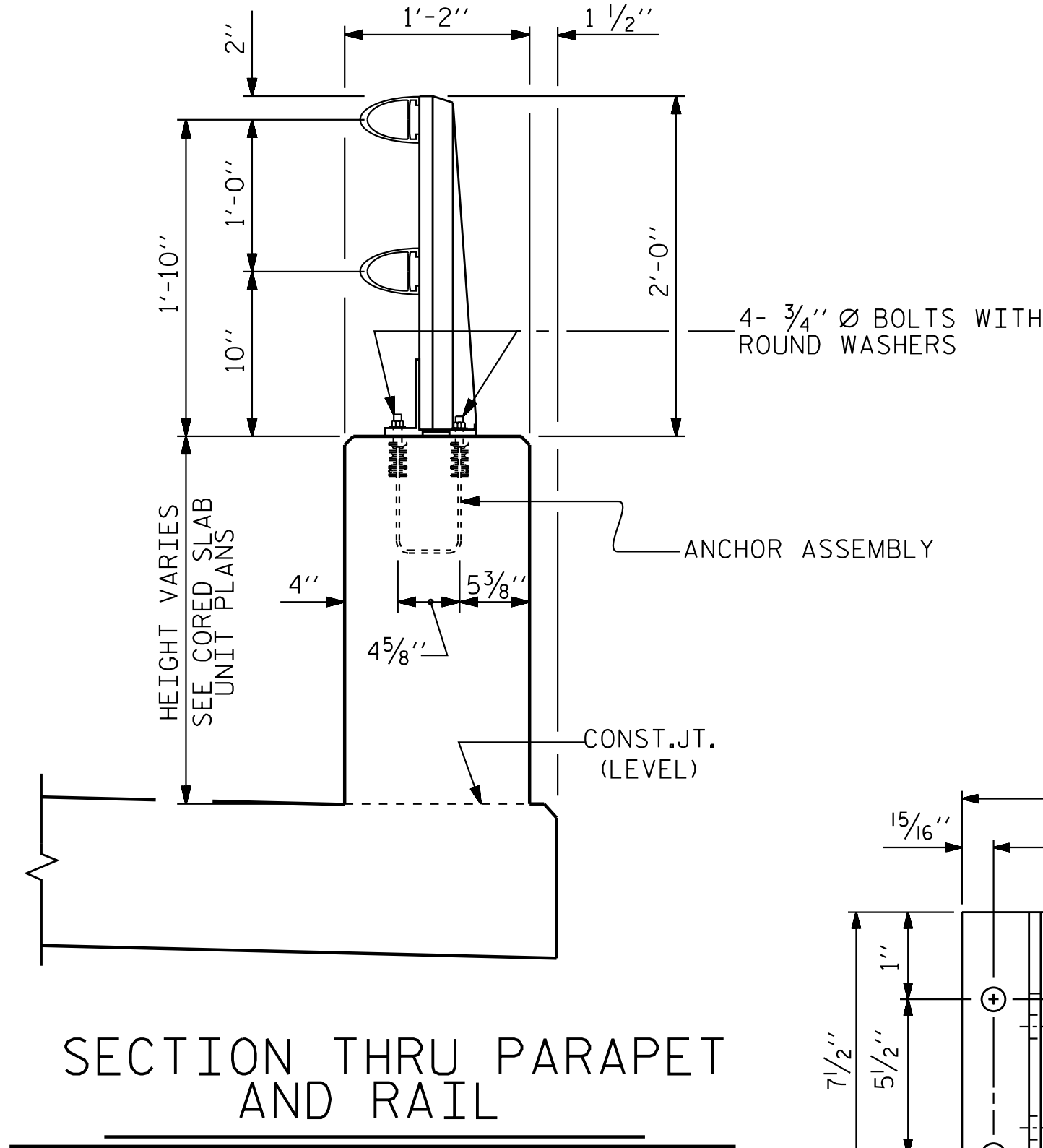
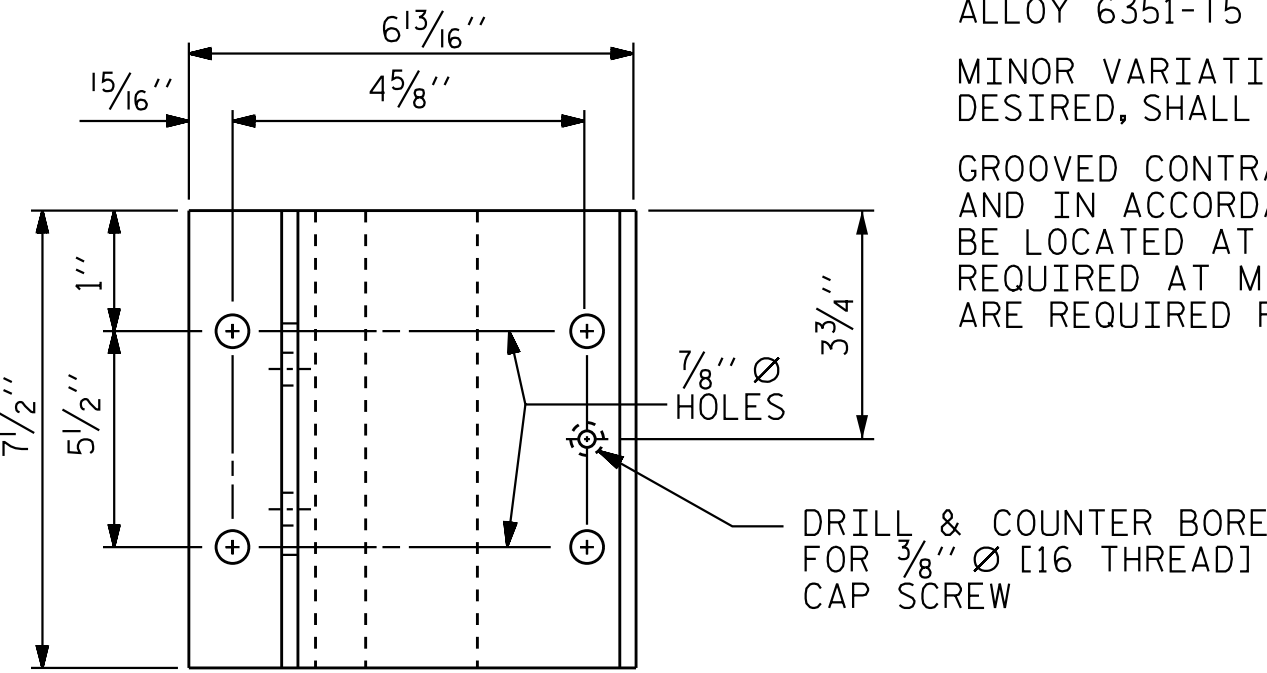
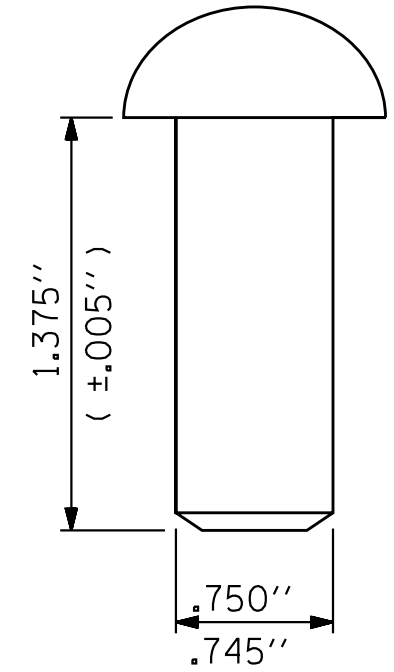


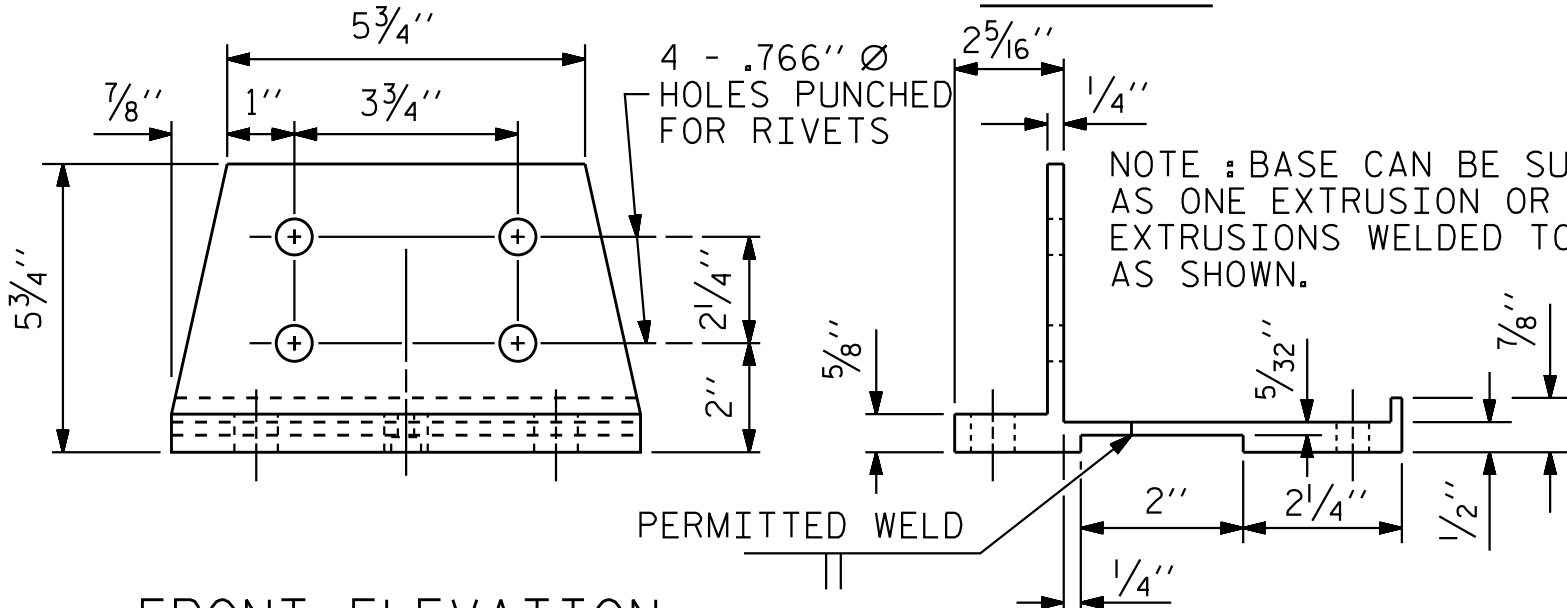
TABLE 1	
EXP. JT. @	RAIL OPENING
BENT 1	1"



RIVET DETAIL



PLAN



FRONT ELEVATION

SIDE ELEVATION

POST BASE DETAILS

NOTES

AT THE CONTRACTOR'S OPTION, METAL RAIL MAY BE EITHER ALUMINUM OR GALVANIZED STEEL IN ACCORDANCE WITH THE REQUIREMENTS OF THE GENERAL NOTES AND THE FOLLOWING SPECIFICATIONS FOR THE ALTERNATE MATERIALS; HOWEVER, THE CONTRACTOR WILL BE REQUIRED TO USE THE SAME RAIL MATERIAL ON ALL STRUCTURES ON THE PROJECT FOR WHICH METAL RAIL IS DESIGNATED.

UNLESS OTHERWISE REQUIRED IN THE CONTRACT DOCUMENTS, THE CONTRACTOR HAS THE OPTION TO USE AN ALTERNATE TO THE 2 BAR METAL RAIL. THE ALTERNATE RAIL SHALL MEET THE REQUIREMENTS OF THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS AND MUST BE LISTED ON THE DEPARTMENT'S APPROVED PRODUCTS LIST (APL) UNDER "2 BAR METAL RAIL ALTERNATE". ADJUSTMENTS TO THE CONCRETE PARAPET WILL NOT BE ALLOWED.

ALUMINUM RAILS

MATERIAL FOR POSTS, BASES AND RAILS, EXPANSION BARS AND CLAMP BARS SHALL BE ASTM B-221 ALLOY 6061-T6.

MATERIAL FOR RIVETS SHALL BE ASTM B316 ALLOY 6061-T6. RIVETS SHALL BE STANDARD BUTTON HEAD AND CONE POINT COLD DRIVEN AS PER DRAWING.

THE BASE OF RAIL POSTS, OR ANY OTHER ALUMINUM SURFACE IN CONTACT WITH CONCRETE SHALL BE THOROUGHLY COATED WITH AN ALUMINUM IMPREGNATED CAULKING COMPOUND OF APPROVED QUALITY.

MATERIAL FOR SHIMS TO BE ASTM B209 ALLOY 6061-T6.

GALVANIZED STEEL RAILS

MATERIAL AND GALVANIZING ARE TO CONFORM TO THE FOLLOWING SPECIFICATIONS:

POST, POST BASES, RAILS, EXPANSION BARS AND CLAMP BARS: AASHTO M270 GRADE 36 STRUCTURAL STEEL - GALVANIZED TO AASHTO M111.

RIVETS: RIVETS SHALL MEET THE REQUIREMENTS OF ASTM A502 FOR GRADE 1 RIVETS.

THE CUT ENDS OF GALVANIZED STEEL RAILING, AFTER GRINDING SMOOTH SHALL BE GIVEN TWO COATS OF ZINC RICH PAINT MEETING THE REQUIREMENTS OF FEDERAL SPECIFICATION MIL-P-26915 USAF TYPE 1, OR OF FEDERAL SPECIFICATIONS TT-P-641.

SHIMS: SHIMS SHALL MEET THE REQUIREMENTS OF ASTM A570 FOR GRADE 33 OR A611 FOR GRADE C AND SHALL BE GALVANIZED IN ACCORDANCE WITH AASHTO M111.

RAIL CAPS: RAIL CAPS SHALL MEET THE REQUIREMENTS OF ASTM A570 FOR GRADE 33 OR A611 FOR GRADE C AND SHALL BE GALVANIZED IN ACCORDANCE WITH AASHTO M111.

GENERAL NOTES

RAILING SHALL BE CONTINUOUS FROM END POST TO END POST OF BRIDGE. EACH JOINT IN RAIL LENGTH SHALL BE SPLICED AS DETAILED. PANEL LENGTHS OF RAIL SHALL BE ATTACHED TO A MINIMUM OF THREE POSTS.

FOR END OF RAIL TO CLEAR FACE OF CONCRETE END POST DIMENSION, SEE STANDARD NO. BMR2.

CAP SCREWS SHALL BE ASTM F593 ALLOY 305 STAINLESS STEEL. WASHERS SHALL MEET THE REQUIREMENTS OF ASTM F844 EXCEPT THEY SHALL BE MADE FROM ALLOY 304 STAINLESS STEEL.

CERTIFIED MILL REPORTS ARE REQUIRED FOR RAILS AND POSTS. SHOP INSPECTION IS NOT REQUIRED.

METAL RAIL POSTS SHALL BE SET NORMAL TO CURB GRADE.

METHOD OF MEASUREMENT FOR METAL RAILS: FOR LENGTH OF METAL RAILS TO BE PAID FOR, SEE THE STANDARD SPECIFICATIONS.

CURVED RAIL USAGE: WHERE RAILS ARE TO BE USED ON BRIDGES ON HORIZONTAL AND/OR VERTICAL CURVATURE THE CONTRACTOR MAY, AT HIS OPTION, HAVE THE REQUIRED CURVATURE IN THE RAIL FORMED IN THE SHOP OR IN THE FIELD. IN EITHER EVENT, THE RAIL SHALL CONFORM WITHOUT BUCKLING OR KINKING TO THE REQUIRED CURVATURE IN A UNIFORM MANNER ACCEPTABLE TO THE ENGINEER.

TO INSURE FUTURE IDENTIFICATION OF THE FABRICATOR, A PERMANENT IDENTIFYING MARK SHALL BE PLACED ON EACH POST. THE METHOD OF MARKING AND LOCATION SHALL BE SUCH THAT IT DOES NOT DETRACT FROM THE APPEARANCE OF THE POST, BUT REMAINS VISIBLE AFTER RAIL PLACEMENT.

SHIMS SHALL BE USED AS NECESSARY FOR POST ALIGNMENT.

ALLOY 6351-T5 MAY BE SUBSTITUTED FOR ALLOY 6061-T6 WHERE APPLICABLE.

MINOR VARIATIONS IN DETAILS OF METAL RAIL WILL BE CONSIDERED. DETAILS OF SUCH VARIATIONS, IF DESIRED, SHALL BE SUBMITTED FOR APPROVAL.

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

PAY LENGTH = 184.6 LIN. FT.

PROJECT NO. BP4-R027

WAYNE COUNTY

STATION: 15+15.00 -L-

SHEET 2 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD

2 BAR METAL RAIL

REVISIONS

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

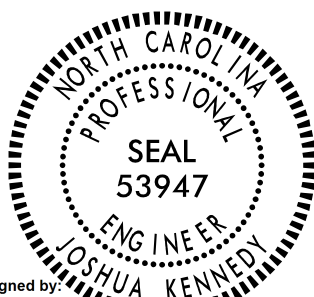
SHEET NO.

S-12

TOTAL SHEETS

23

STD. NO. BMR3



DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

DESIGN ENGINEER OF RECORD: J. F. KENNEDY DATE: 01/20/26

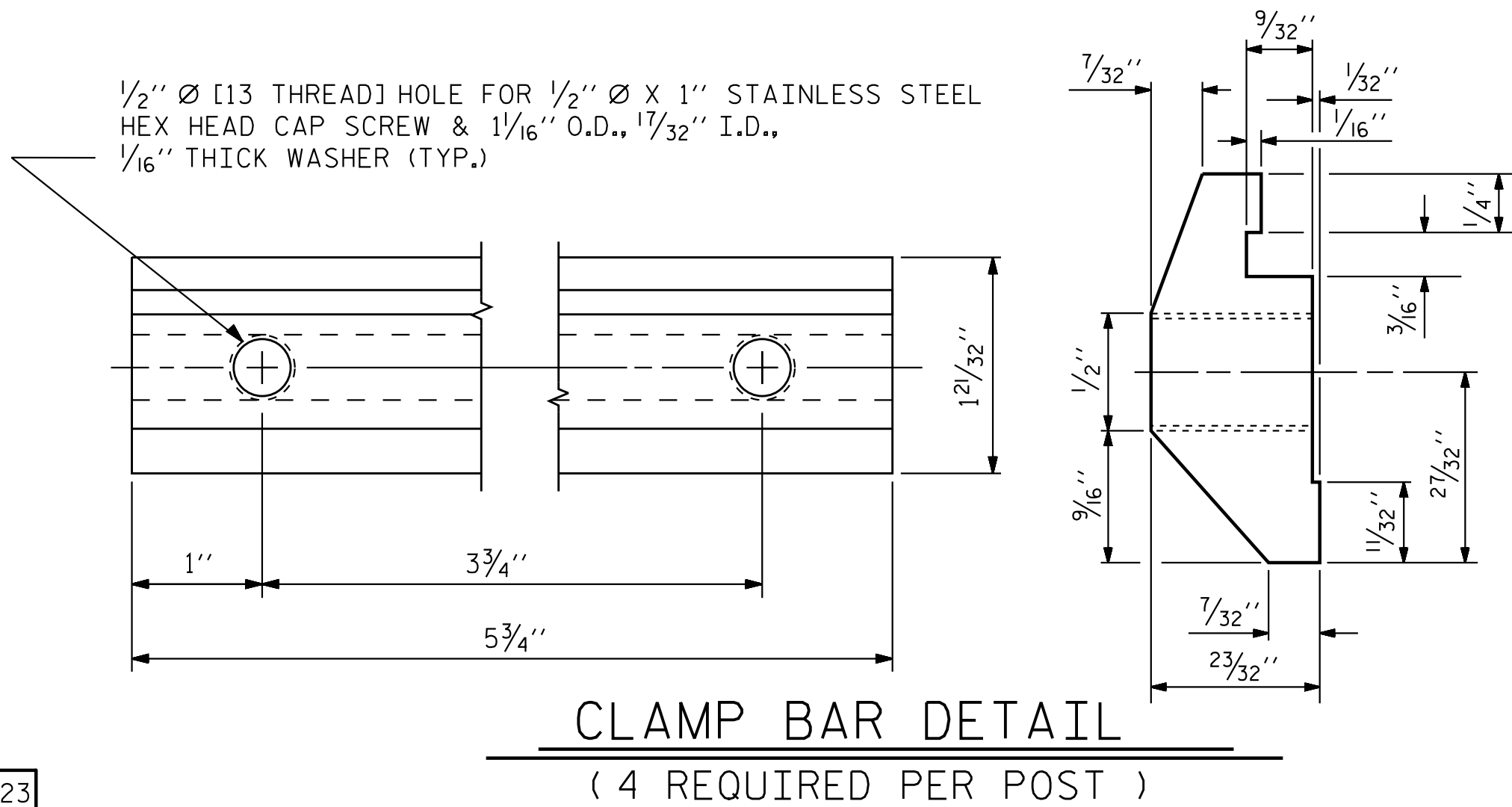
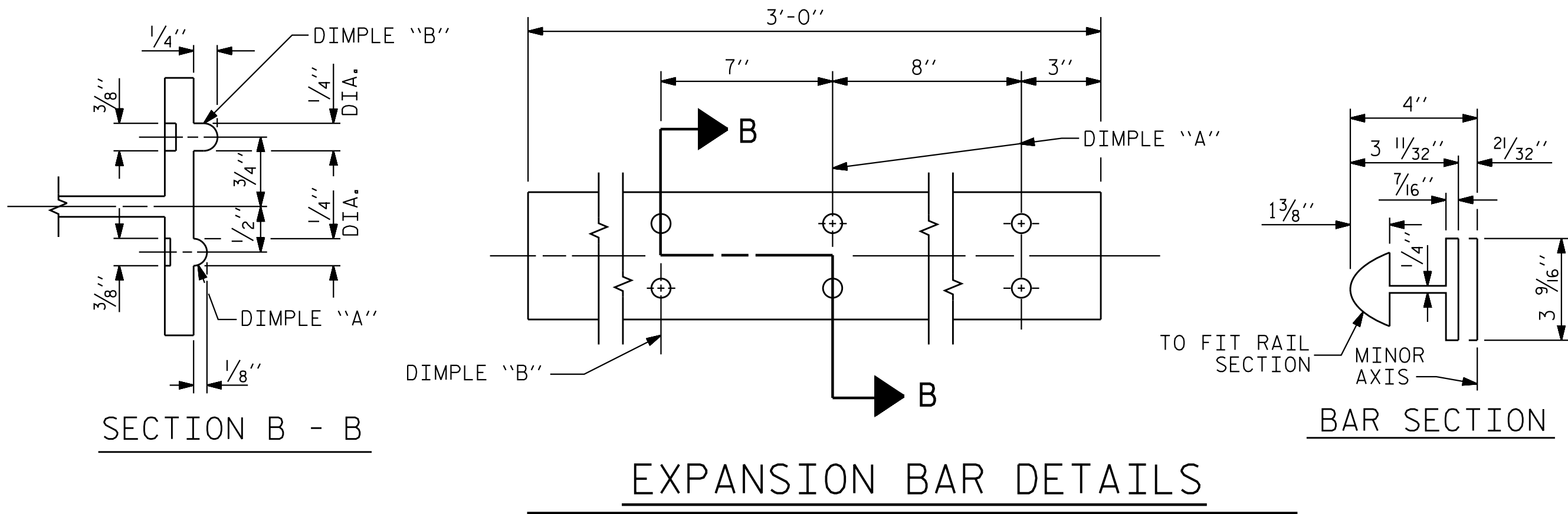


Stantec Consulting Services Inc.
801 Jones Franklin Road
Suite 300
Raleigh, NC 27606
Tel. (919) 851-6866
Fax. (919) 851-7024
www.stantec.com
License No. F-0672

1/20/2026 2:22:09 PM joskennedy

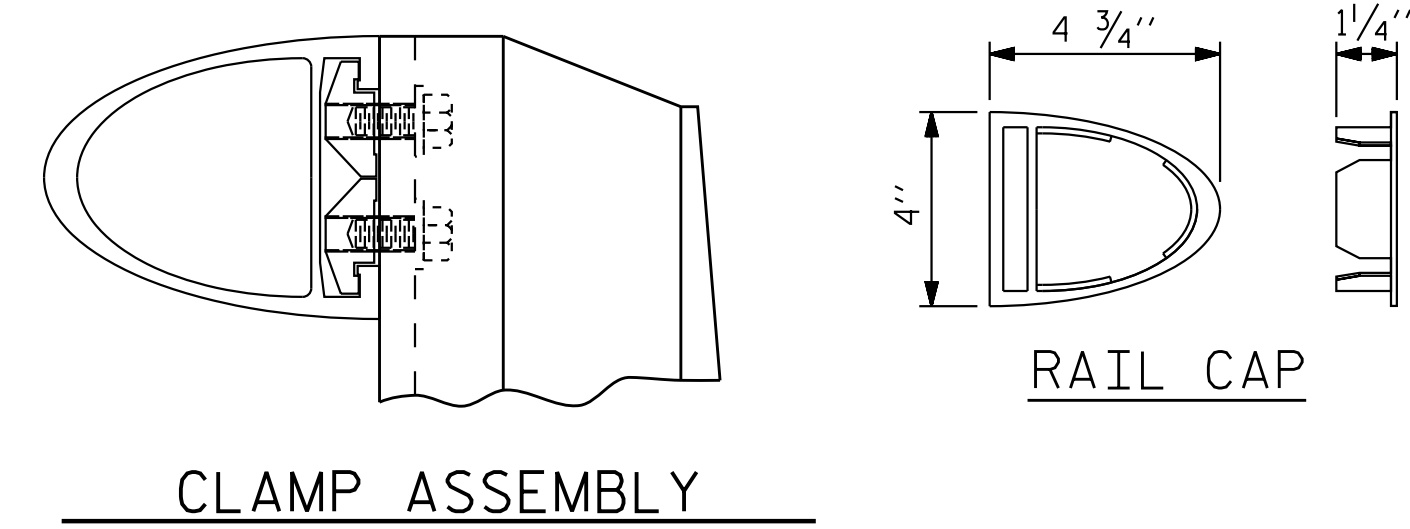
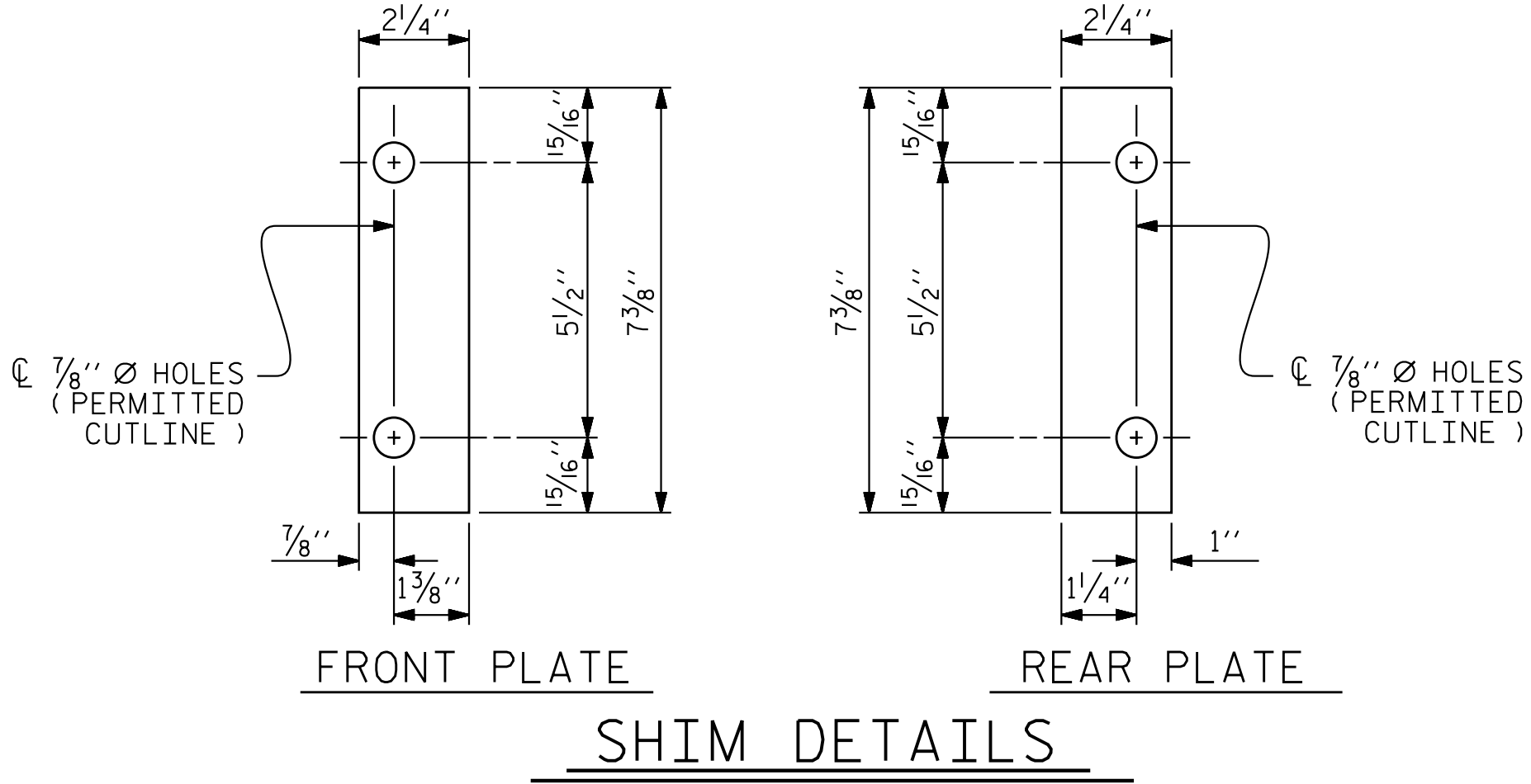
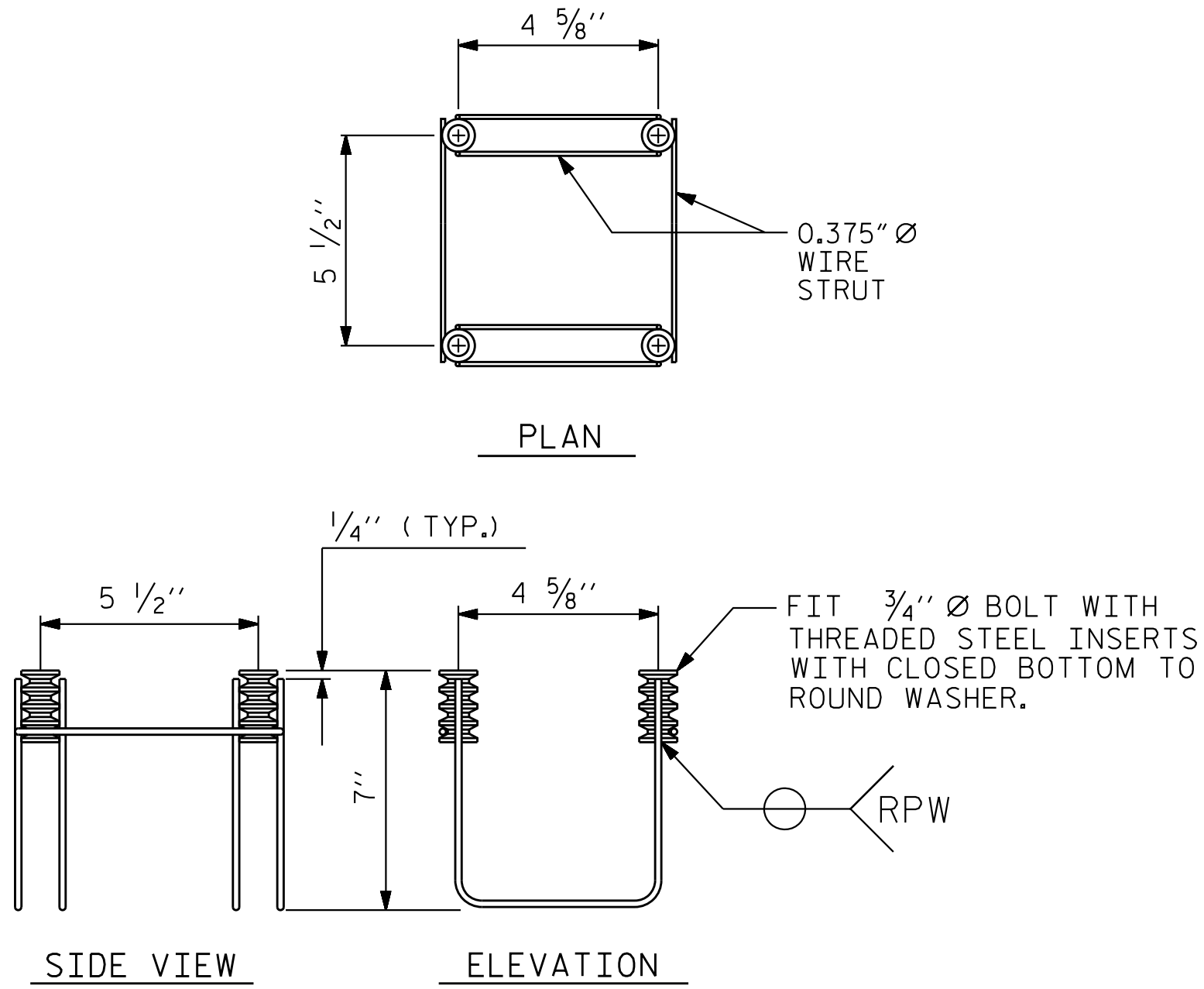
U:\Structures\Dr-offing\Final\71002523.SMU.BMR3.dgn

ASSEMBLED BY : J. F. KENNEDY		DATE :01/25/23	
CHECKED BY : T. R. DUDECK		DATE :05/18/23	
DRAWN BY : EEM		6/94	REV. 5/1/06R KMM/GM
CHECKED BY : RGW		6/94	REV. 10/1/11 MAA/GM
			REV. 12/17 MAA/THC



4-BOLT METAL RAIL ANCHOR ASSEMBLY

(38 ASSEMBLIES REQUIRED)



NOTES

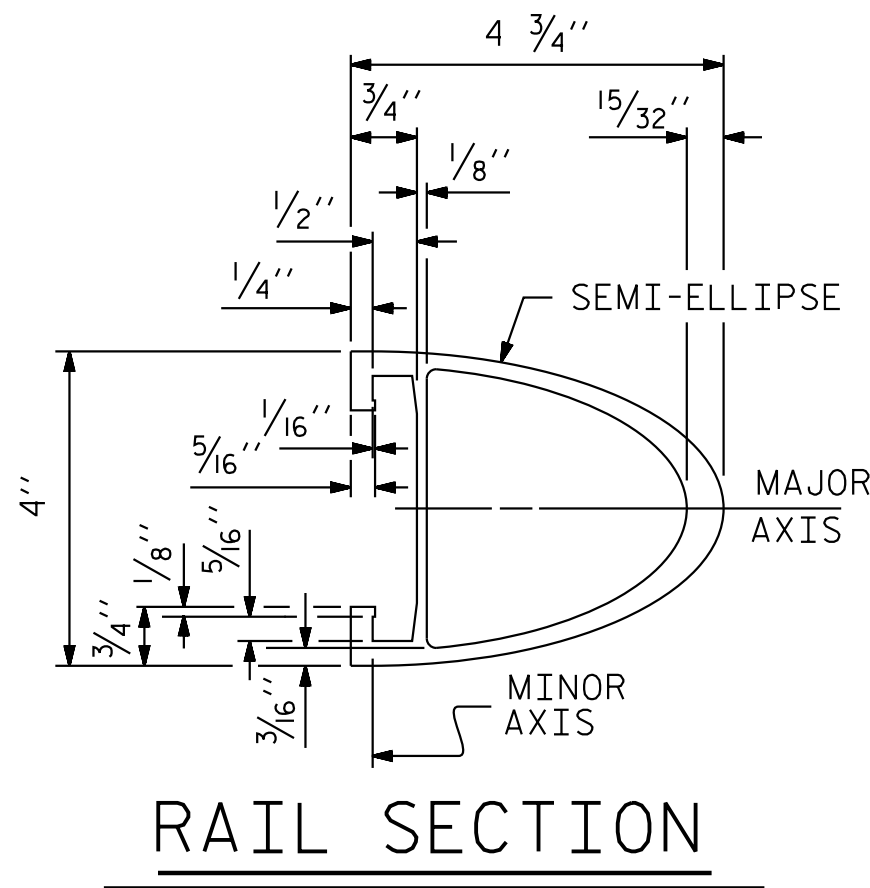
STRUCTURAL CONCRETE ANCHOR ASSEMBLY

THE STRUCTURAL CONCRETE ANCHOR ASSEMBLY SHALL CONSIST OF THE FOLLOWING COMPONENTS :

- FERRULES SHALL BE MADE FROM STEEL MEETING THE REQUIREMENTS OF AASHTO M169, GRADE 12L14 AND SHALL HAVE A MINIMUM LENGTH OF THREADS OF 2" FOR 3/4" FERRULES.
- 4 - 3/4" $\varnothing$ X 2 1/2" BOLTS WITH WASHERS. BOLTS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A307. BOLTS AND WASHERS SHALL BE GALVANIZED. AT THE CONTRACTOR'S OPTION, STAINLESS STEEL BOLTS AND WASHERS MAY BE USED AS AN ALTERNATE FOR THE 3/4" $\varnothing$ X 2 1/2" GALVANIZED BOLTS 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.
- WIRE STRUT SHOWN IN THE CONCRETE ANCHOR ASSEMBLY DETAIL IS THE MINIMUM ALLOWABLE SIZE AND SHALL HAVE A MINIMUM TENSILE STRENGTH OF 100,000 PSI. AS AN OPTION, A 7/16" $\varnothing$ WIRE STRUT WITH A MINIMUM TENSILE STRENGTH OF 90,000 PSI IS ACCEPTABLE.
- THE METAL RAIL ANCHOR ASSEMBLIES TO BE HOT DIPPED GALVANIZED TO CONFORM TO REQUIREMENTS OF AASHTO M111.
- THE COST OF THE METAL RAIL ANCHOR ASSEMBLY WITH BOLTS AND WASHERS COMPLETE IN PLACE SHALL BE INCLUDED IN THE PRICE BID FOR LINEAR FEET OF METAL RAIL.
- BOLTS TO BE TIGHTENED ONE-HALF TURN WITH A WRENCH FROM A FINGER-TIGHT POSITION.

THE CONTRACTOR MAY USE ADHESIVELY ANCHORED ANCHOR BOLTS IN PLACE OF THE METAL RAIL ANCHOR ASSEMBLY. LEVEL ONE FIELD TESTING IS REQUIRED, AND THE YIELD LOAD OF THE 3/4" $\varnothing$ BOLT IS 10 KIPS. FOR ADHESIVELY ANCHORED ANCHOR BOLTS OR DOWELS, SEE THE STANDARD SPECIFICATIONS.

WHEN ADHESIVELY ANCHORED ANCHOR BOLTS ARE USED, BOLTS SHALL MEET THE REQUIREMENTS OF ASTM F593 ALLOY 304 STAINLESS STEEL WITH MINIMUM 75,000 PSI ULTIMATE STRENGTH. NUTS SHALL MEET THE REQUIREMENTS OF ASTM F594 ALLOY 304 STAINLESS STEEL AND WASHERS SHALL MEET THE REQUIREMENTS OF ASTM F844 EXCEPT THEY SHALL BE MADE FROM ALLOY 304 STAINLESS STEEL.



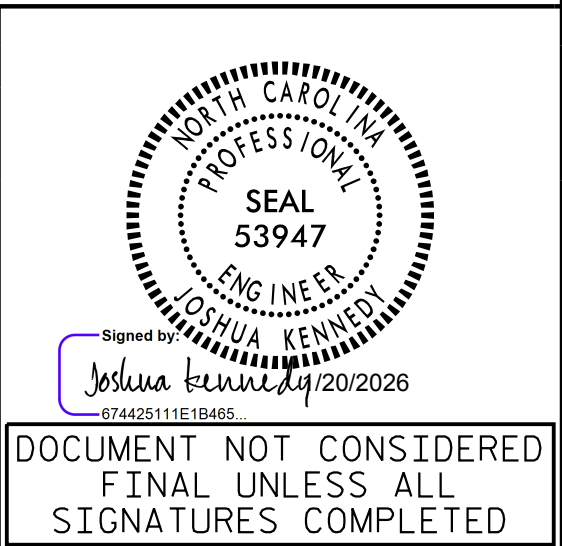
PROJECT NO. BP4-R027
WAYNE COUNTY
STATION: 15+15.00 -L-

SHEET 3 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD
2 BAR METAL RAIL

REVISIONS						SHEET NO. S- 13
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 23
2			4			

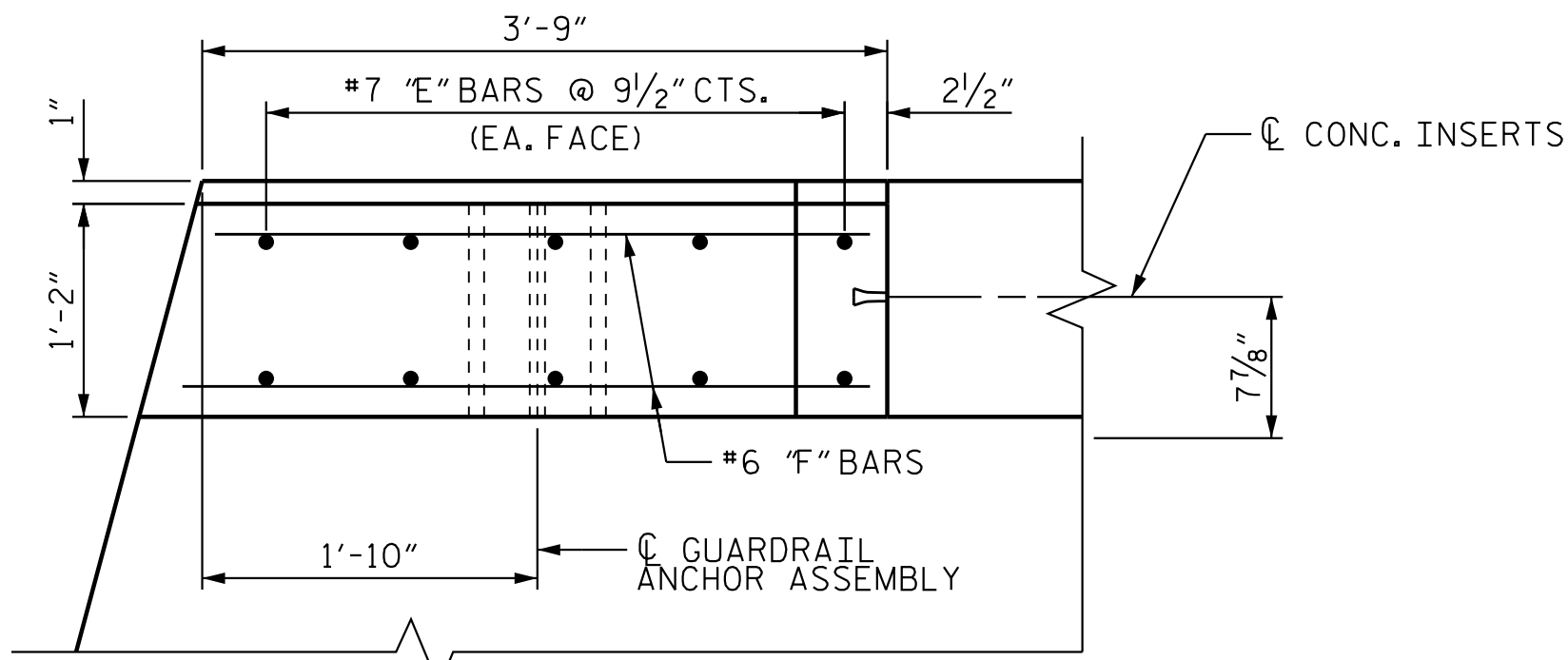


DESIGN
ENGINEER
OF RECORD: J. F. KENNEDY DATE : 01/20/26

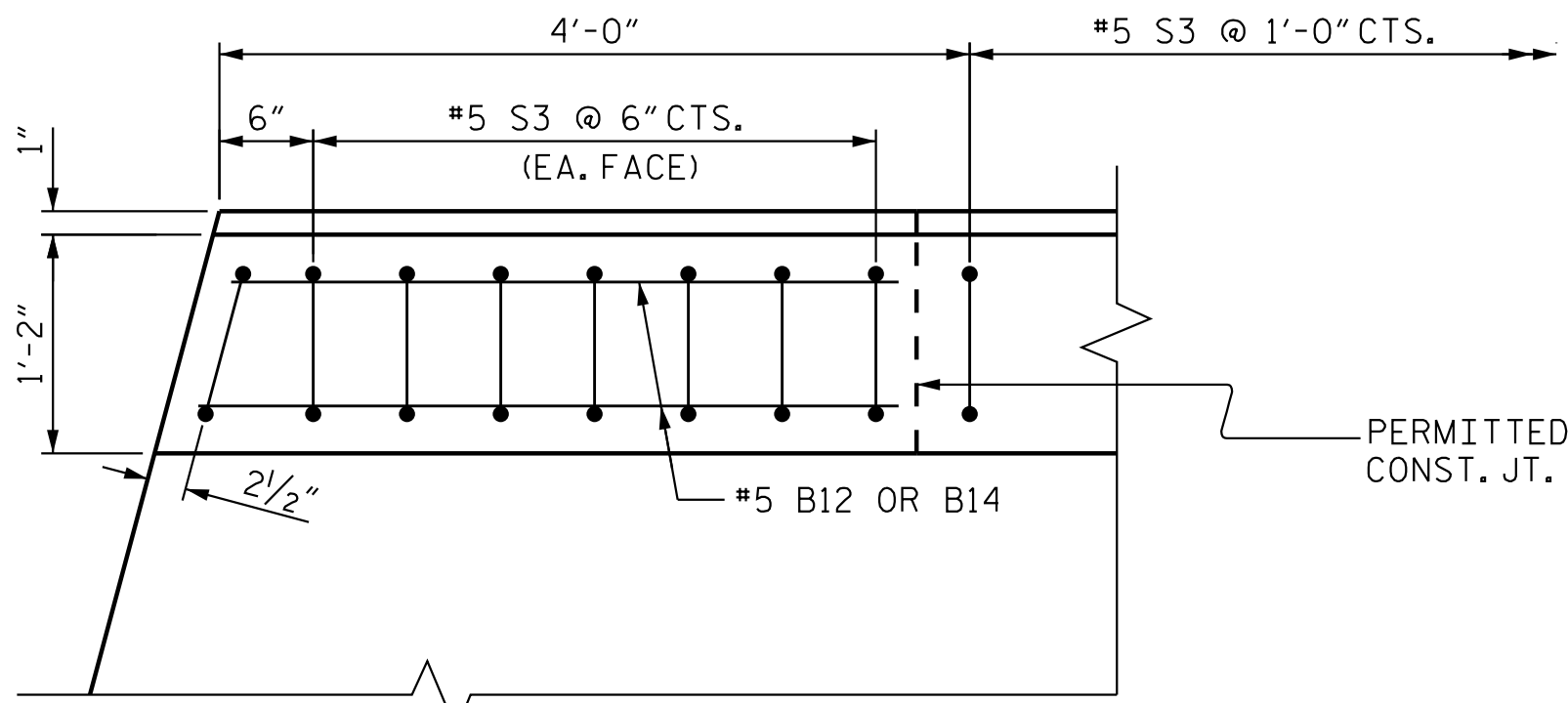
Stantec

Stantec Consulting Services Inc.
801 Jones Franklin Road
Suite 300
Raleigh, NC 27606
Tel. (919) 851-6866
Fax. (919) 851-7024
www.stantec.com
License No. F-0672

STD. NO. BMR4



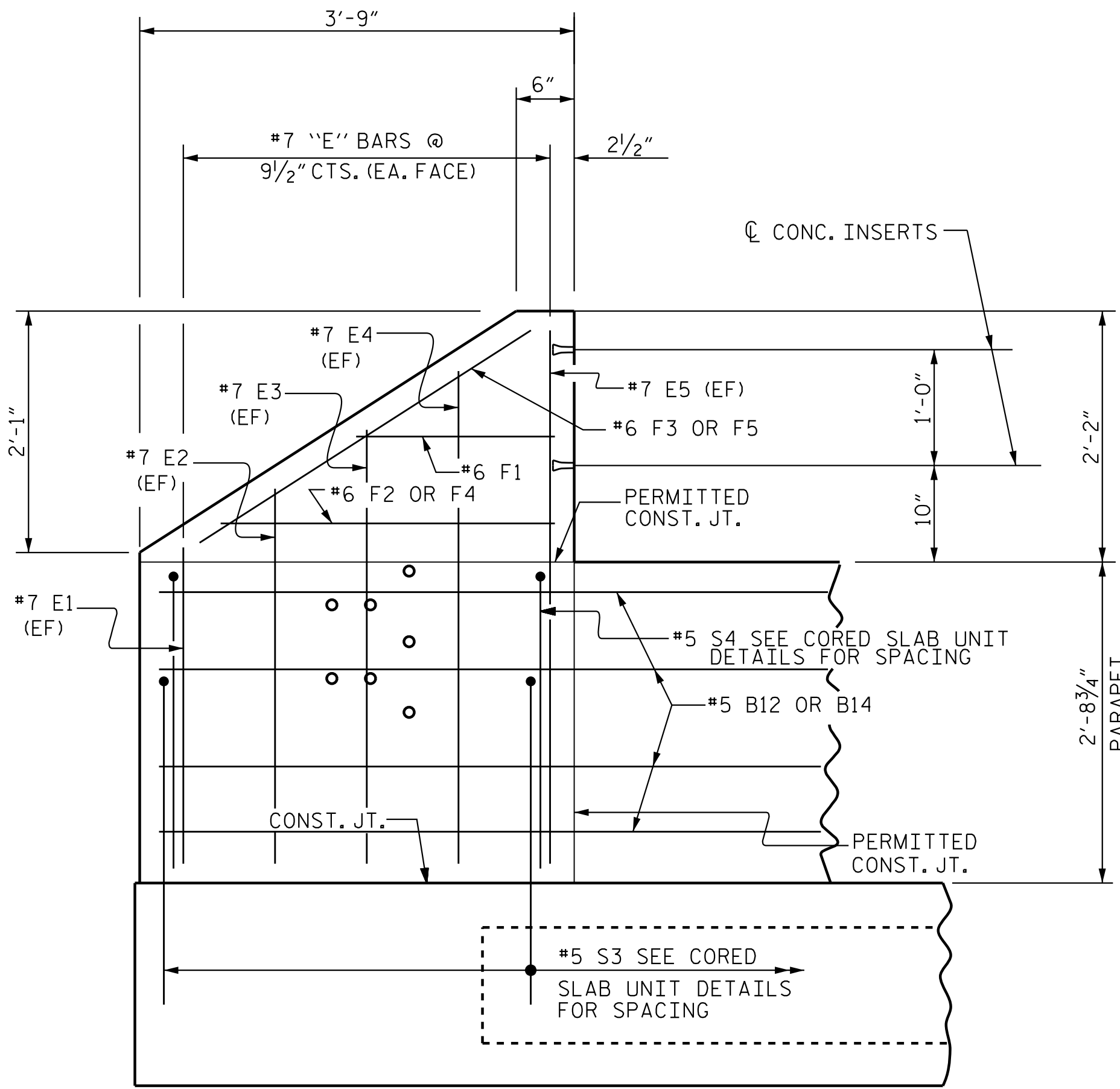
PLAN OF END POST



PLAN OF PARAPET

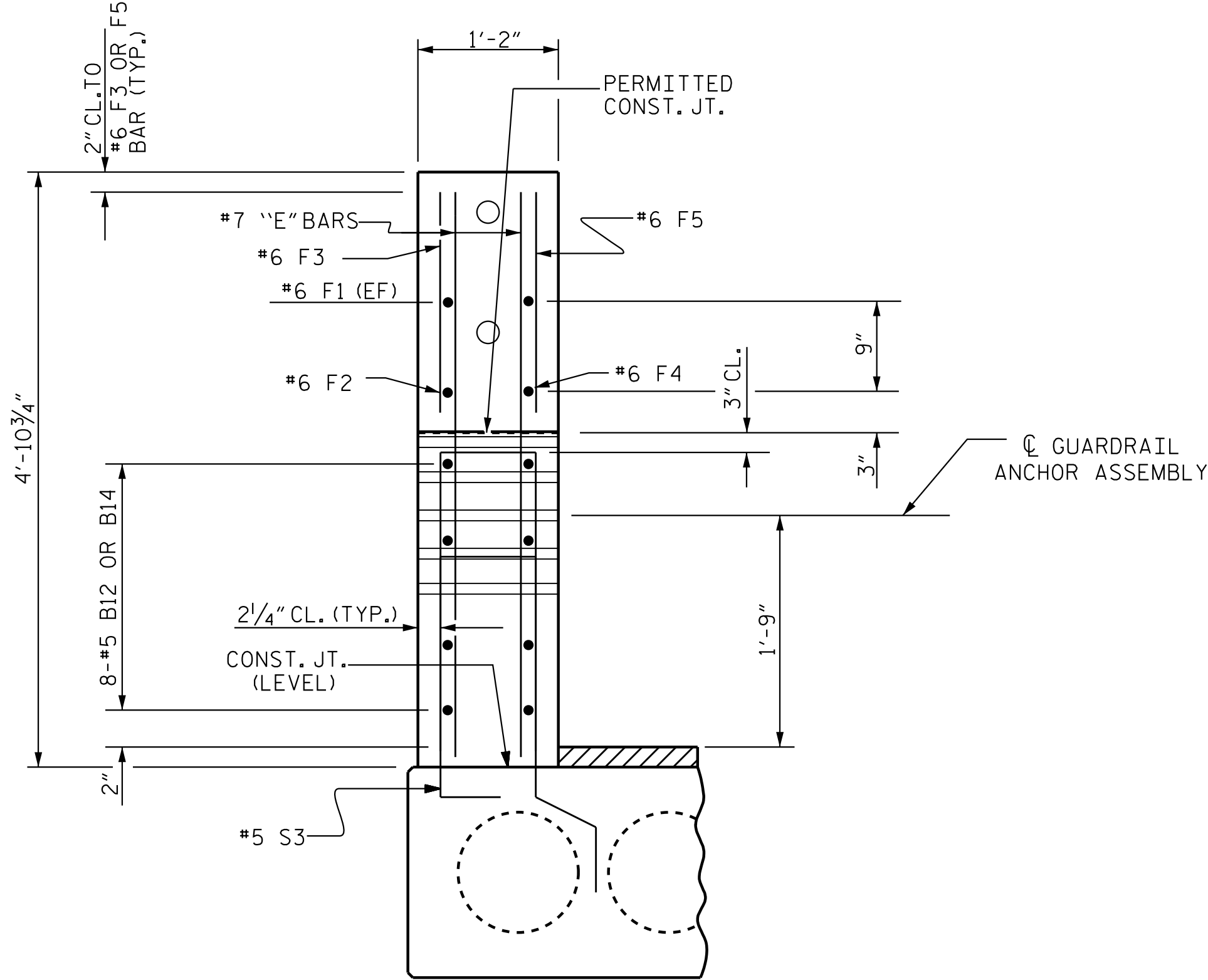
NOTES

ALL REINFORCING STEEL IN PARAPETS AND END POSTS SHALL BE EPOXY COATED.



ELEVATION

(EF) DENOTES BAR IN EA. FACE



END VIEW

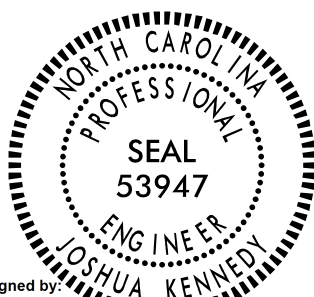
BILL OF MATERIAL					
FOUR END POSTS					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
*E1	8	#7	STR	2'-8"	44
*E2	8	#7	STR	3'-2"	52
*E3	8	#7	STR	3'-8"	60
*E4	8	#7	STR	4'-3"	68
*E5	8	#7	STR	4'-7"	74
*F1	8	#6	STR	1'-8"	20
*F2	4	#6	STR	2'-9"	17
*F3	4	#6	STR	3'-4"	20
*F4	4	#6	STR	3'-0"	18
*F5	4	#6	STR	3'-7"	22
*EPOXY COATED REINFORCING STEEL				LBS.	395
CLASS AA CONCRETE				C. Y.	0.8
*DENOTES EPOXY COATED REINFORCING					

PROJECT NO. BP4-R027
WAYNE COUNTY
STATION: 15+15.00 -L-

DRAWN BY : J. F. KENNEDY DATE : 01/25/23
CHECKED BY : T. R. DUDECK DATE : 05/18/23
DESIGN ENGINEER OF RECORD: J. F. KENNEDY DATE : 01/20/26



Stantec Consulting Services Inc.
801 Jones Franklin Road
Suite 300
Raleigh, NC 27606
Tel. (919) 851-6866
Fax. (919) 851-7024
www.stantec.com
License No. F-0672



DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUPERSTRUCTURE
CONCRETE
PARAPET AND END POST
DETAILS

REVISIONS						SHEET NO. S- 14
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 23
2			4			

NOTES (FOR METAL RAILS)

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

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

BOLTS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A307 AND NUTS SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M291. BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED. AT THE CONTRACTOR'S OPTION, STAINLESS STEEL BOLTS, NUTS AND WASHERS MAY BE USED AS AN ALTERNATE FOR THE 7/8" Ø GALVANIZED BOLTS, NUTS AND WASHERS. THEY SHALL CONFORM TO OR EXCEED THE MECHANICAL REQUIREMENTS OF ASTM A307. THE USE OF THIS ALTERNATE SHALL BE APPROVED BY THE ENGINEER.

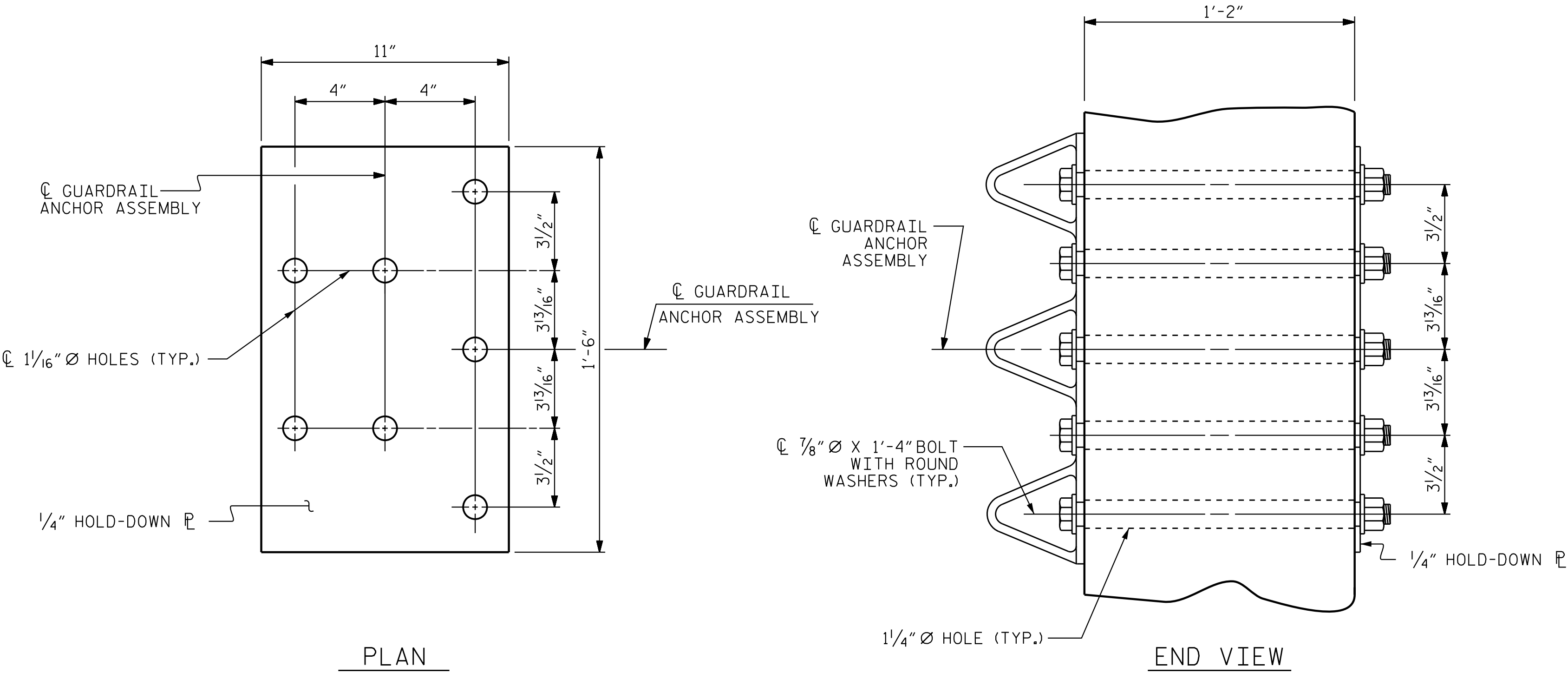
THE GUARDRAIL ANCHOR ASSEMBLY IS REQUIRED AT ALL POINTS WHERE APPROACH GUARDRAIL IS TO BE ATTACHED TO THE END OF THE PARAPET. FOR POINTS OF ATTACHMENT, SEE SKETCH.

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

THE COST OF THE GUARDRAIL ANCHOR ASSEMBLIES WITH BOLTS, NUTS AND WASHERS COMPLETE IN PLACE, SHALL BE INCLUDED IN THE VARIOUS PAY ITEMS.

THE VERTICAL REINFORCING BARS MAY BE SHIFTED SLIGHTLY IN THE END POST 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.

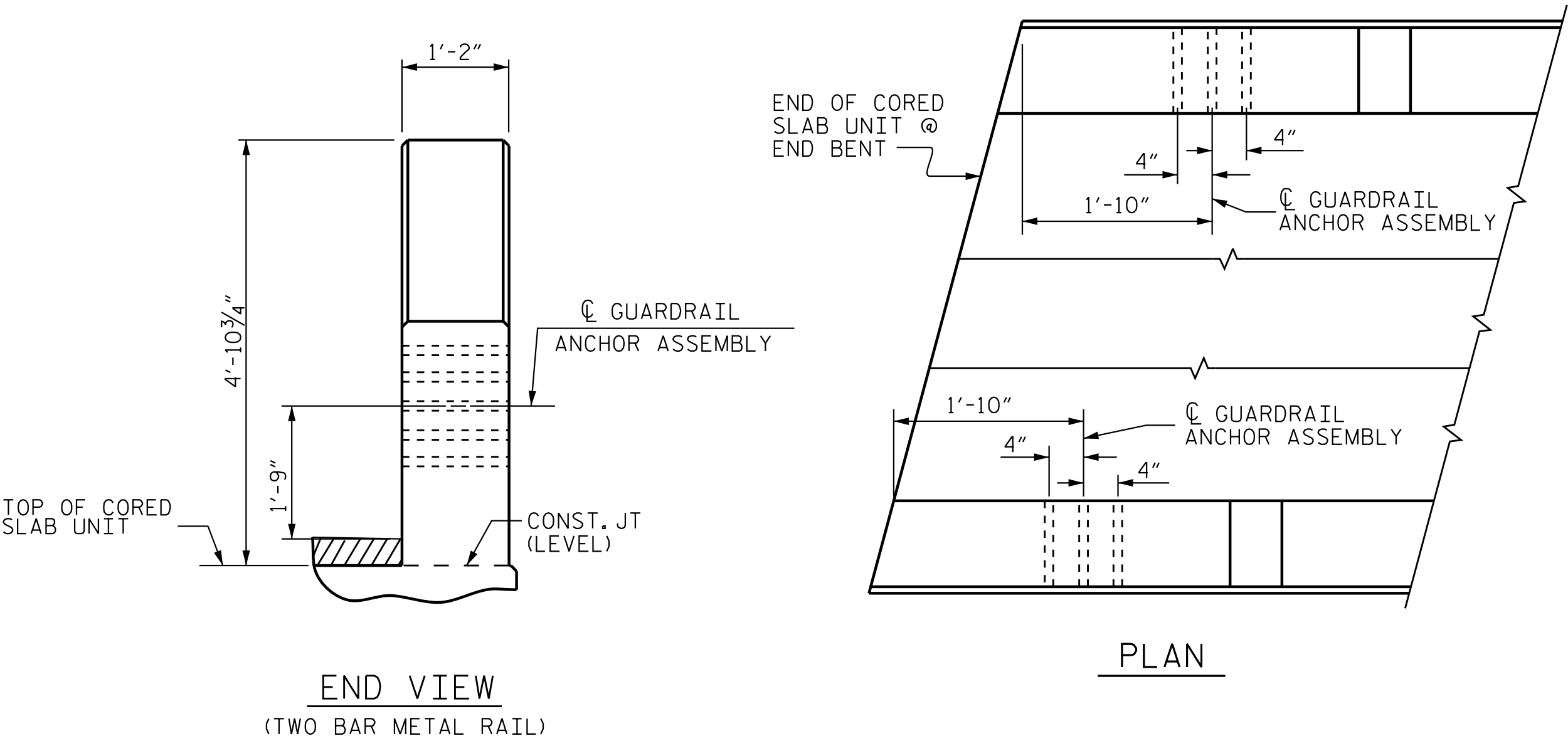


GUARDRAIL ANCHOR ASSEMBLY DETAILS



SKETCH SHOWING POINTS OF ATTACHMENT

* LOCATION OF GUARDRAIL ATTACHMENT



LOCATION OF GUARDRAIL ANCHOR AT END POST

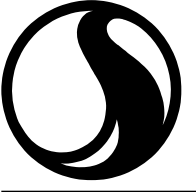
PROJECT NO. BP4-R027
WAYNE COUNTY
STATION: 15+15.00 -L-

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

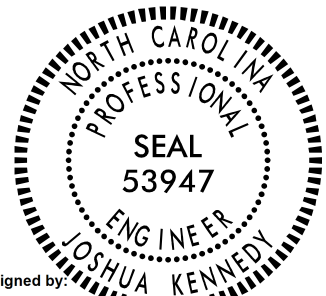
GUARDRAIL ANCHORAGE
DETAILS FOR METAL
RAILS

REVISIONS						SHEET NO. S- 14
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 23
2			4			

DESIGN
ENGINEER
OF RECORD: J. F. KENNEDY DATE : 01/20/26



Stantec Consulting Services Inc.
801 Jones Franklin Road
Suite 300
Raleigh, NC 27606
Tel. (919) 851-6866
Fax. (919) 851-7024
www.stantec.com
License No. F-0672



Signed by: Joshua Kennedy 01/20/2026

DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED



FOR WING DETAILS, SEE SHEET 3 OF 4.



PROJECT NO. BP4-R027
WAYNE COUNTY
 STATION: 15+15.00 -L-

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE
END BENT No. 1

ASSEMBLED BY : J. F. KENNEDY		DATE : 01/20/23	
CHECKED BY : T. R. DUDECK		DATE : 05/18/23	
DRAWN BY : WJH		12/11	
CHECKED BY : AAC		12/11	
		REV. 4/15	MAA/TMG



North Carolina
Professional
SEAL
53947
ENGINEER
JOSHUA KENNEDY

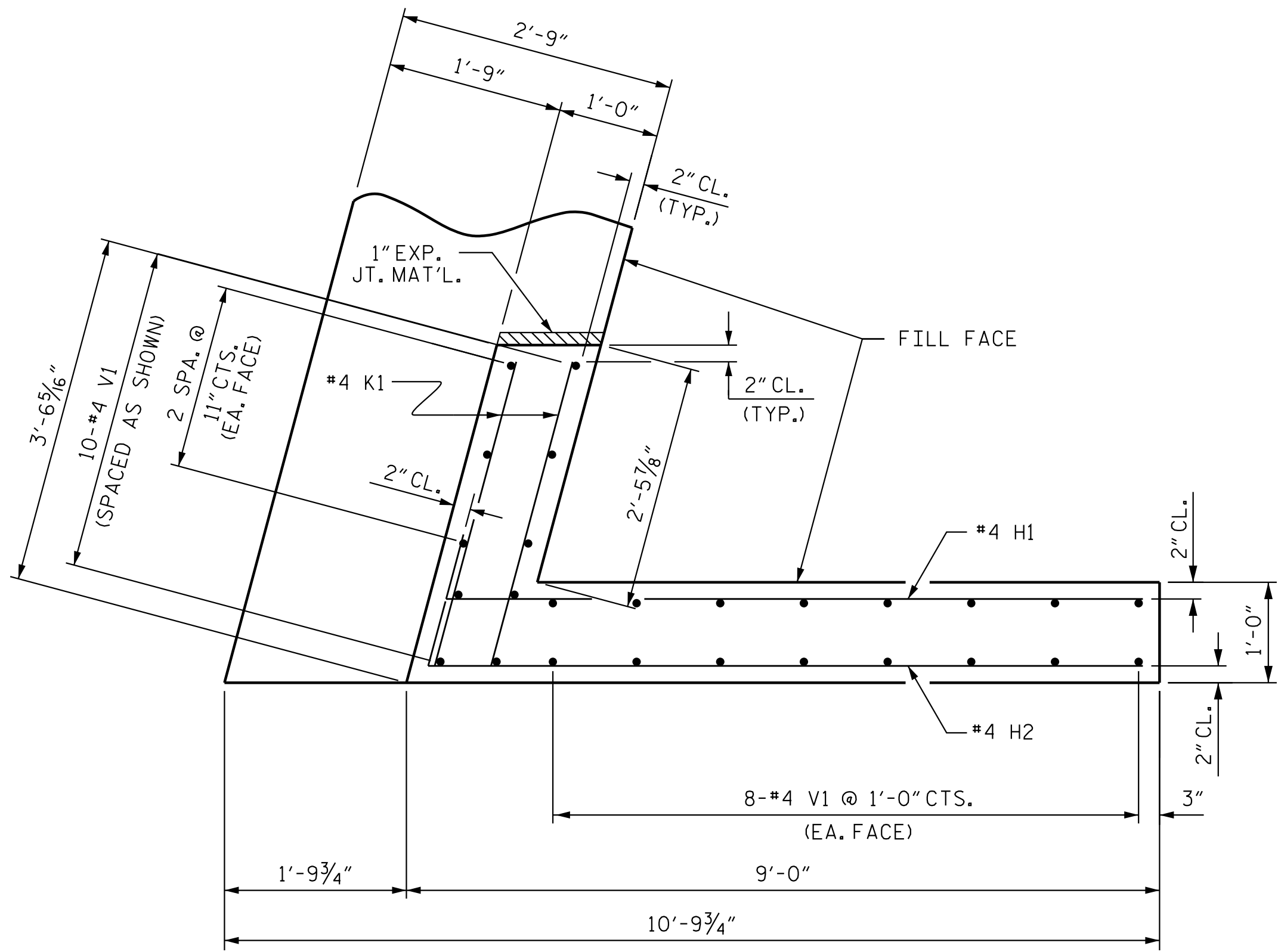
igned by: Joshua Kennedy 2/20/2026
4425111E1B465

DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

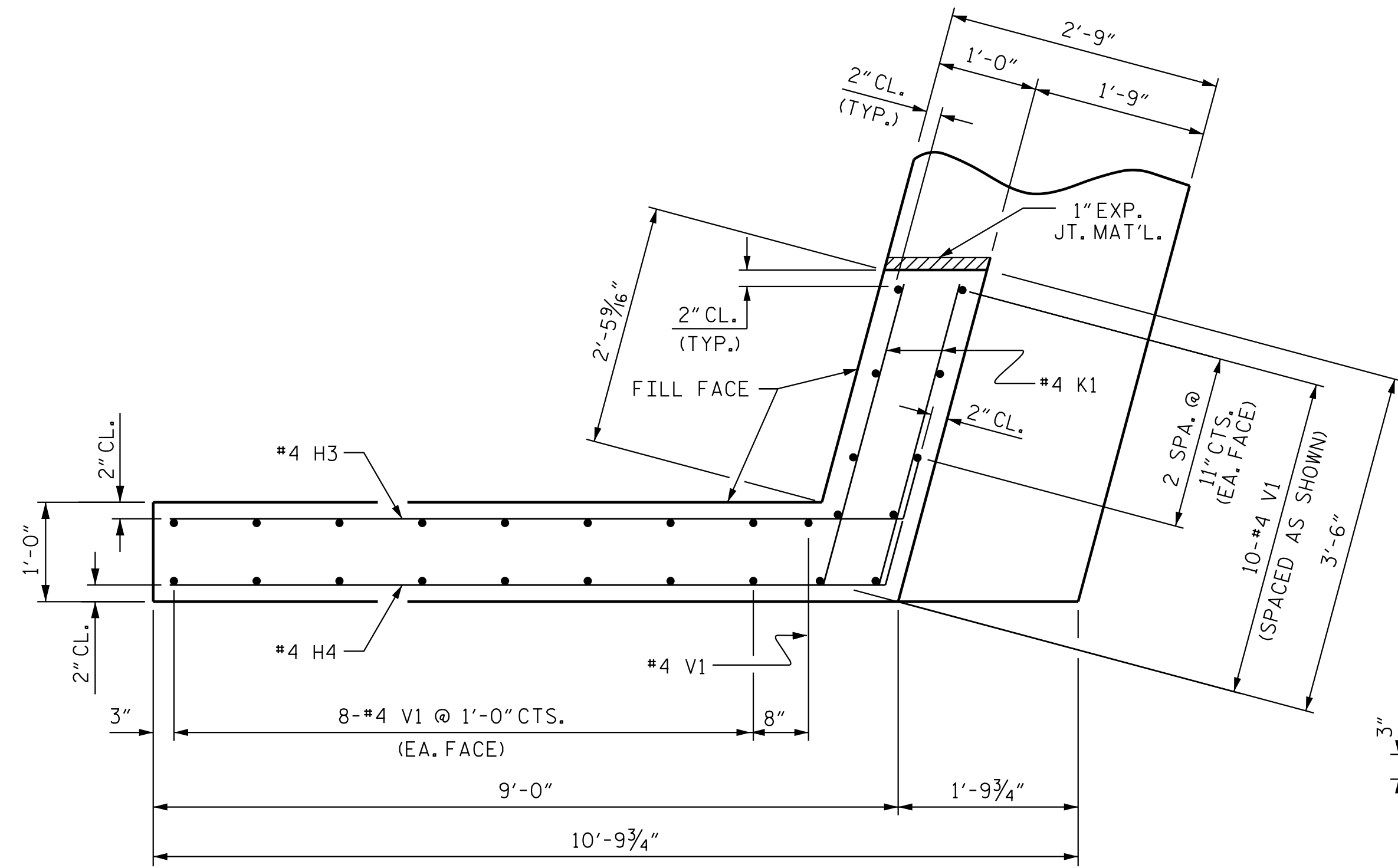


STD. NO. EB_33_105S4

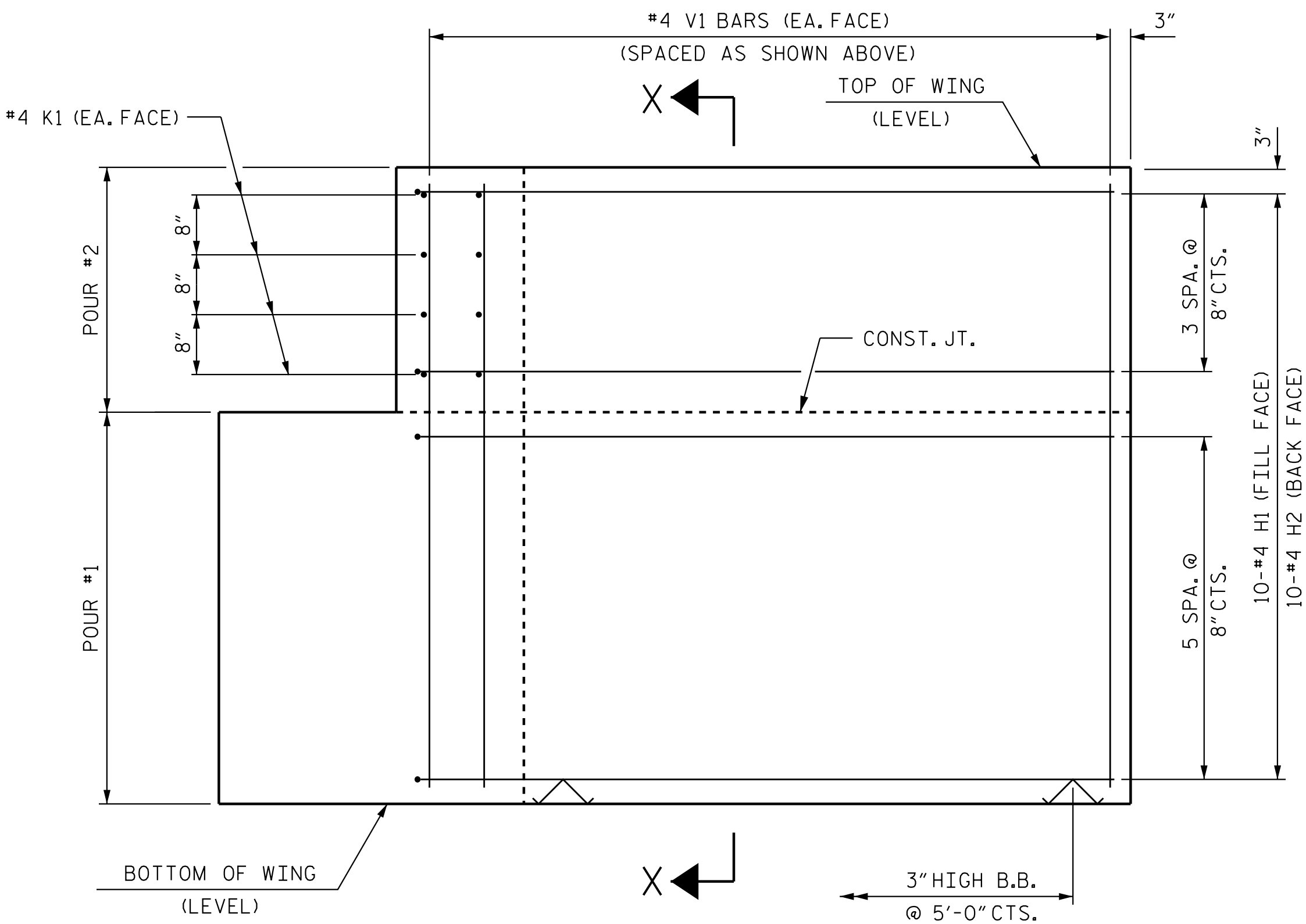
1/20/2026 2:22:43 PM jskennedy
U:\Structures\Dr\offing\Final\T002523.SMU.E3.950219.dgn



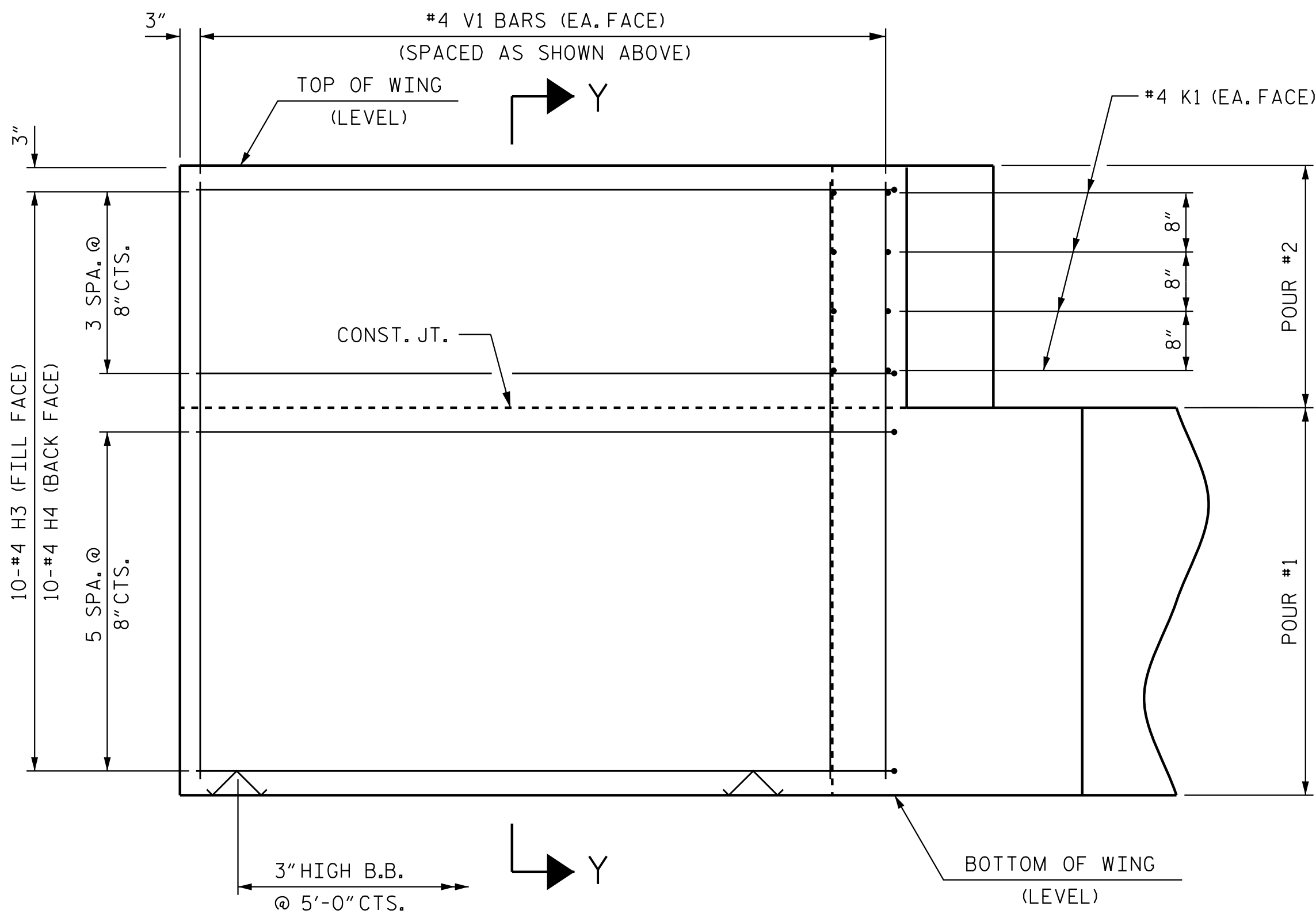
PLAN OF WING (W1)



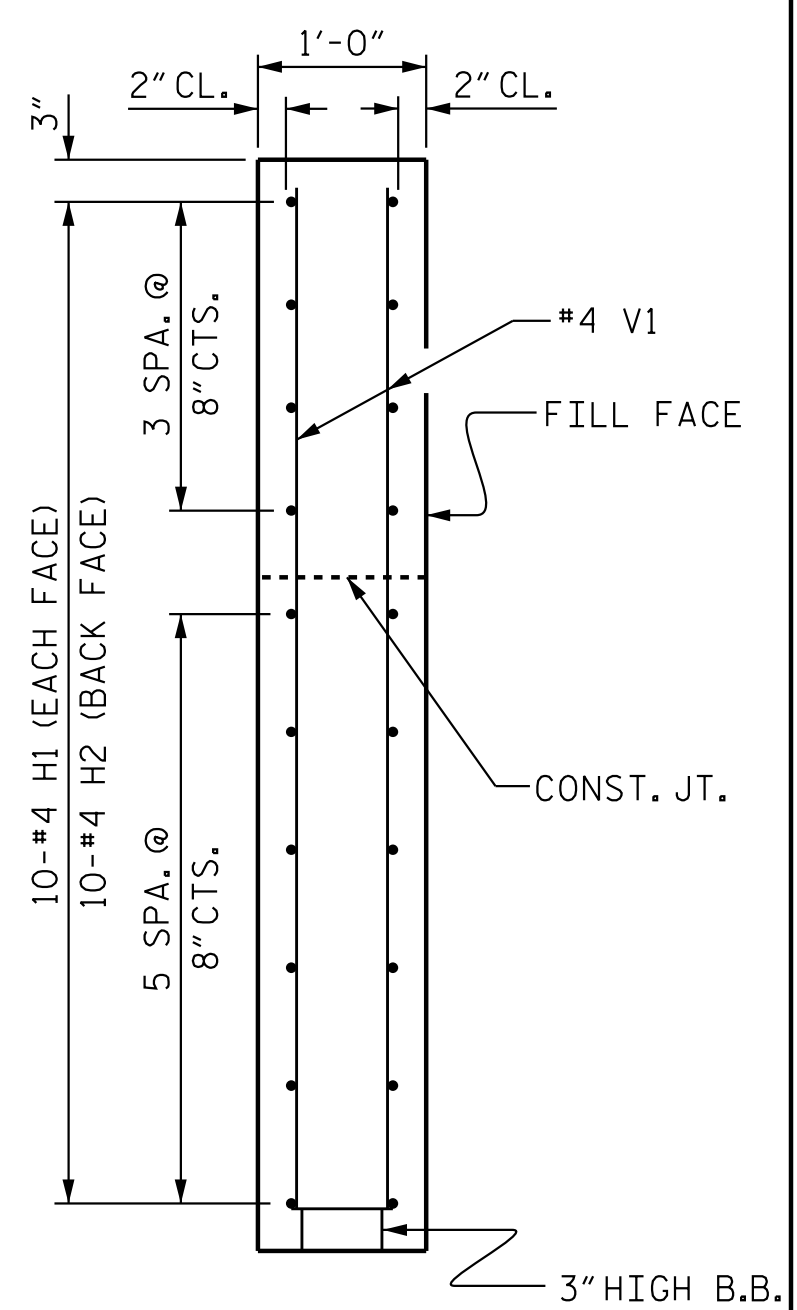
PLAN OF WING (W2)



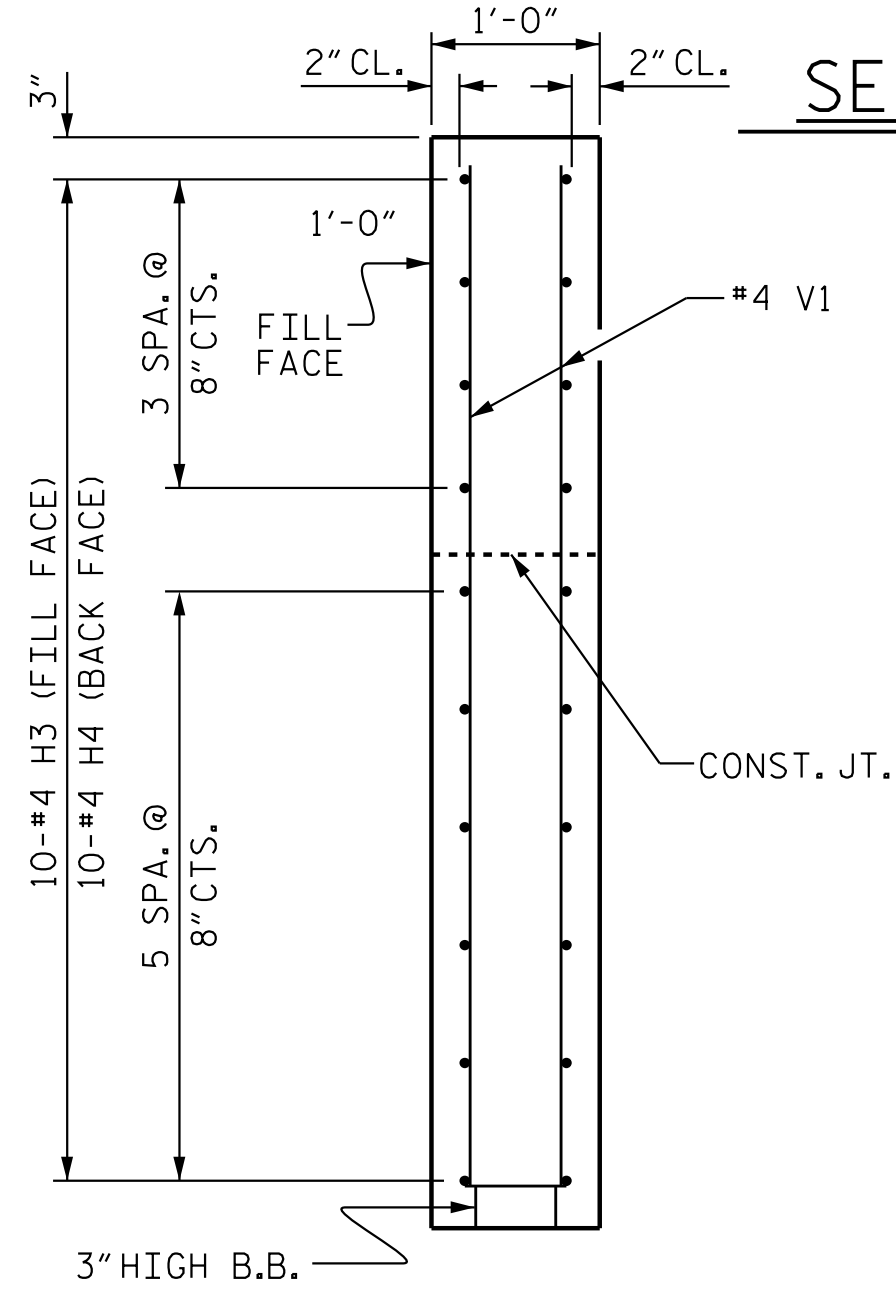
ELEVATION OF WING (W1)



ELEVATION OF WING (W2)



SECTION X-X



SECTION Y-Y

PROJECT NO. BP4-R027
WAYNE COUNTY
STATION: 15+15.00 -L-

SHEET 3 OF 4

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S-18
2			4			TOTAL SHEETS 23

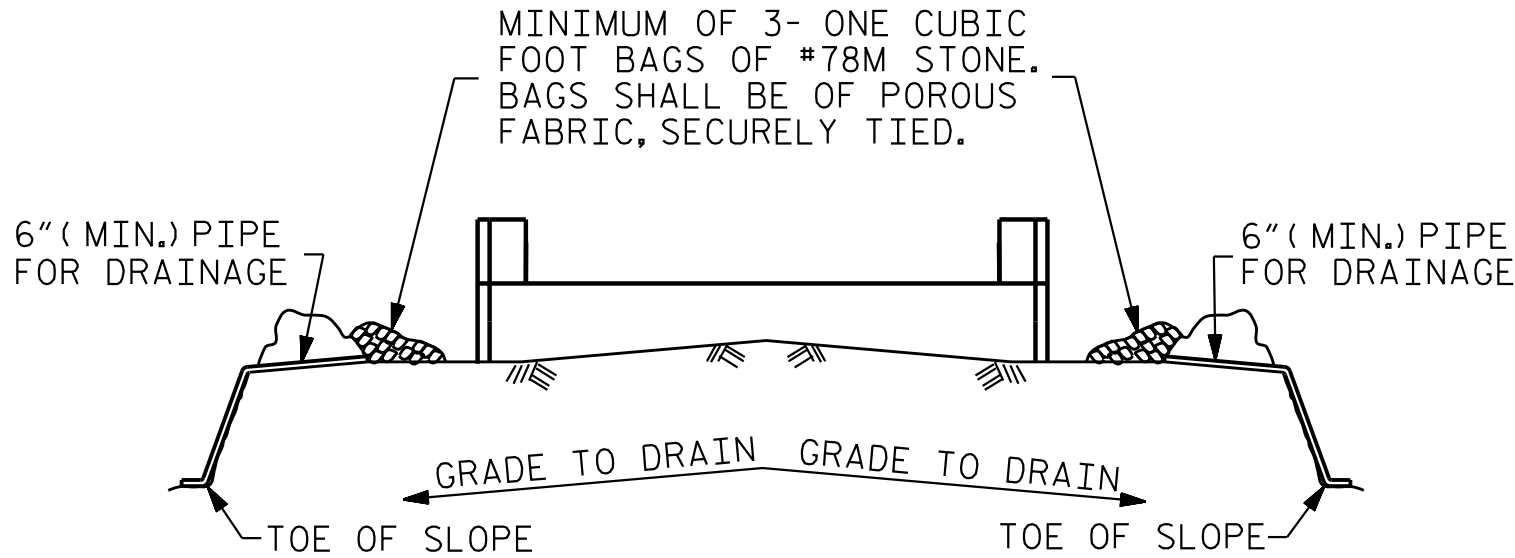
ASSEMBLED BY : J. F. KENNEDY	DATE :12/20/22
CHECKED BY : T. R. DUDECK	DATE :05/18/23
DRAWN BY : WJH	12/11
CHECKED BY : AAC	12/11
REV. 4/15	MAA/TMG

DESIGN ENGINEER OF RECORD: J. F. KENNEDY DATE : 01/20/2026

Stantec Consulting Services Inc.
801 Jones Franklin Road
Suite 300
Raleigh, NC 27606
Tel. (919) 851-6866
Fax. (919) 851-7024
www.stantec.com
License No. F-0672

Seal of J. F. Kennedy, Professional Engineer, State of North Carolina, Seal 53947, dated 01/20/2026.

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

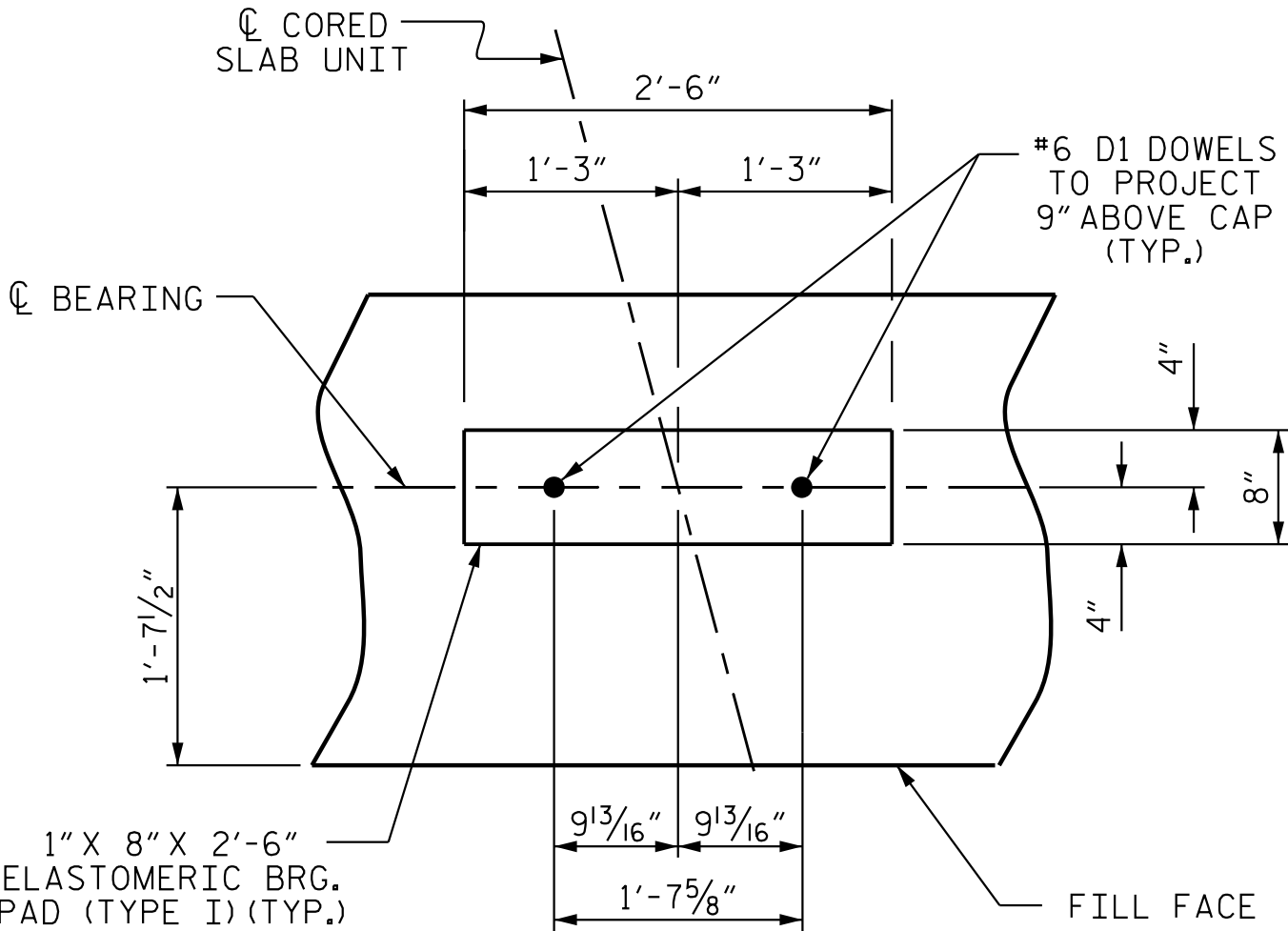


BAGGED STONE AND PIPE SHALL BE PLACED IMMEDIATELY AFTER COMPLETION OF END BENT EXCAVATION. PIPE MAY BE EITHER CONCRETE, CORRUGATED STEEL, CORRUGATED ALUMINUM ALLOY, OR CORRUGATED PLASTIC. PERFORATED PIPE WILL NOT BE ALLOWED.

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.

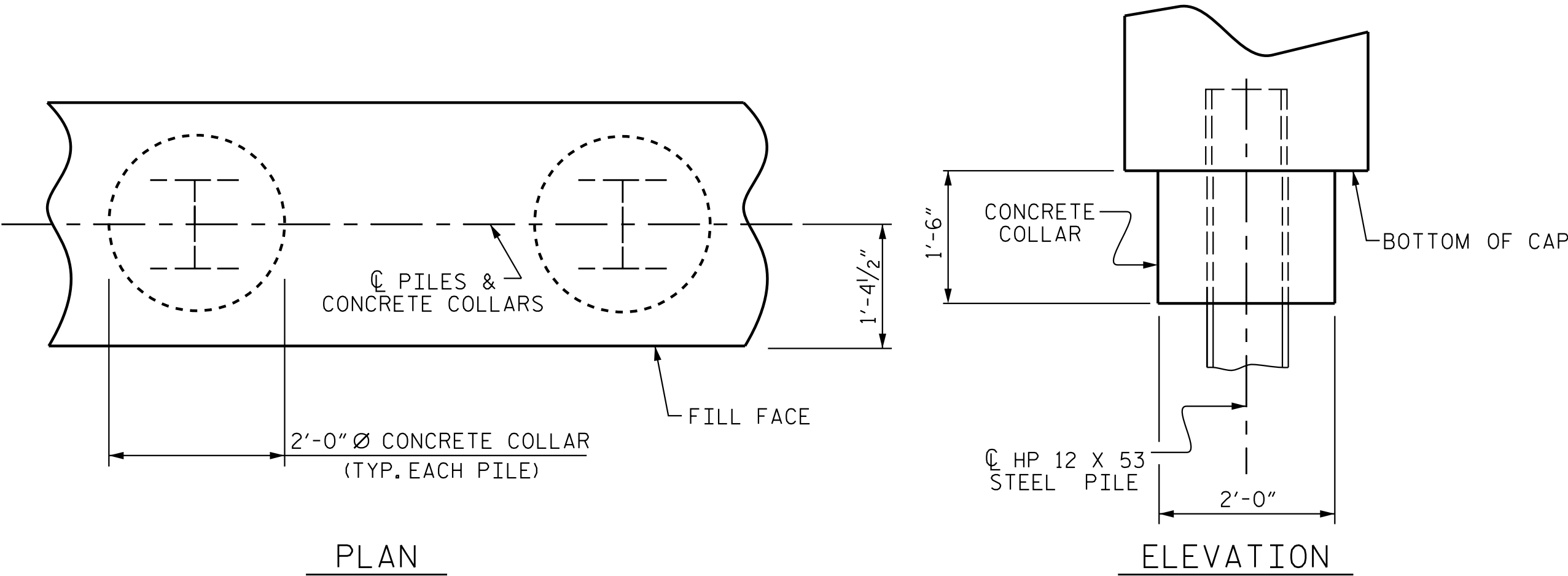
NO SEPARATE PAYMENT WILL BE MADE FOR THIS WORK AND THE ENTIRE COST OF THIS WORK SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR THE SEVERAL PAY ITEMS.

TEMPORARY DRAINAGE AT END BENT



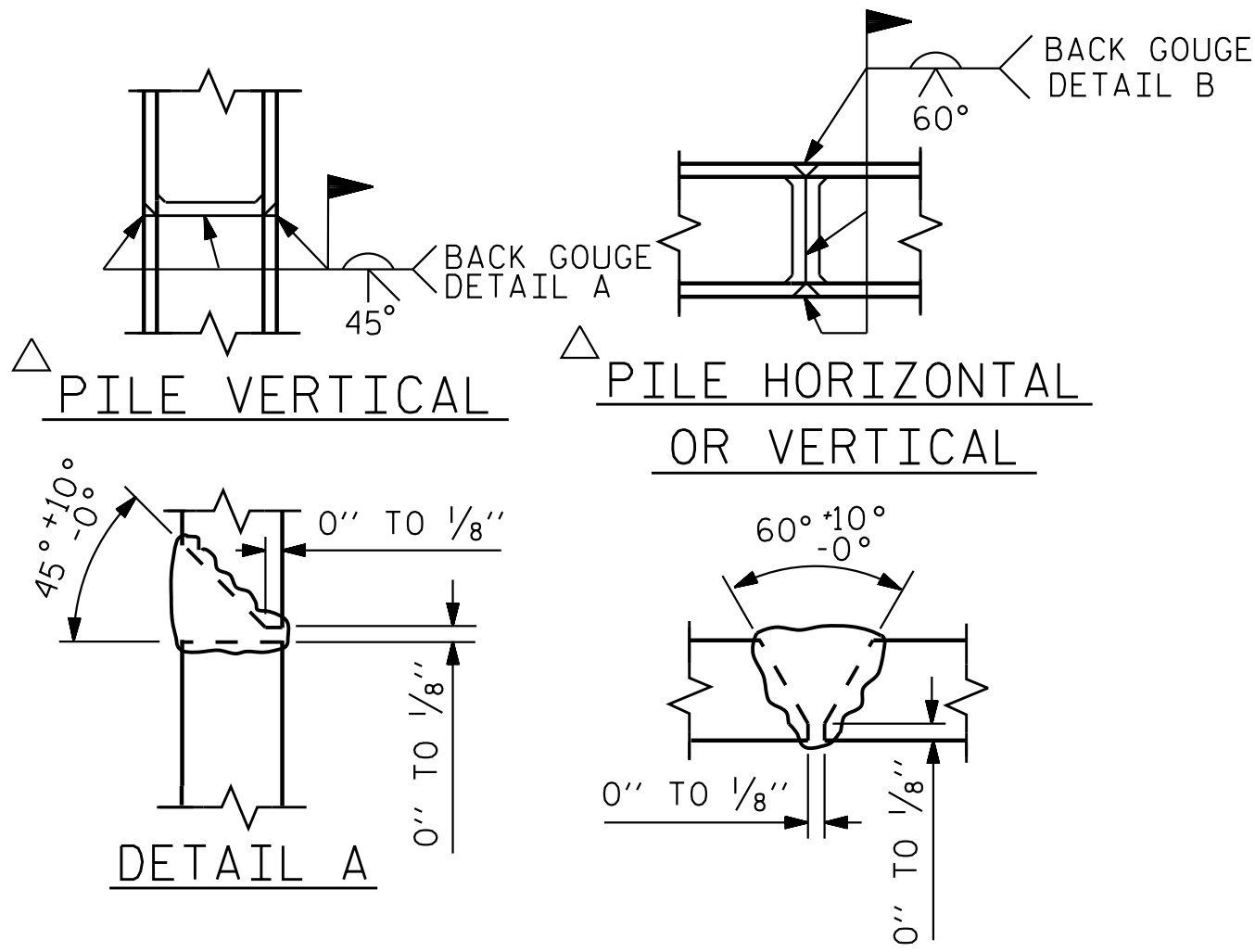
DETAIL "A"

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



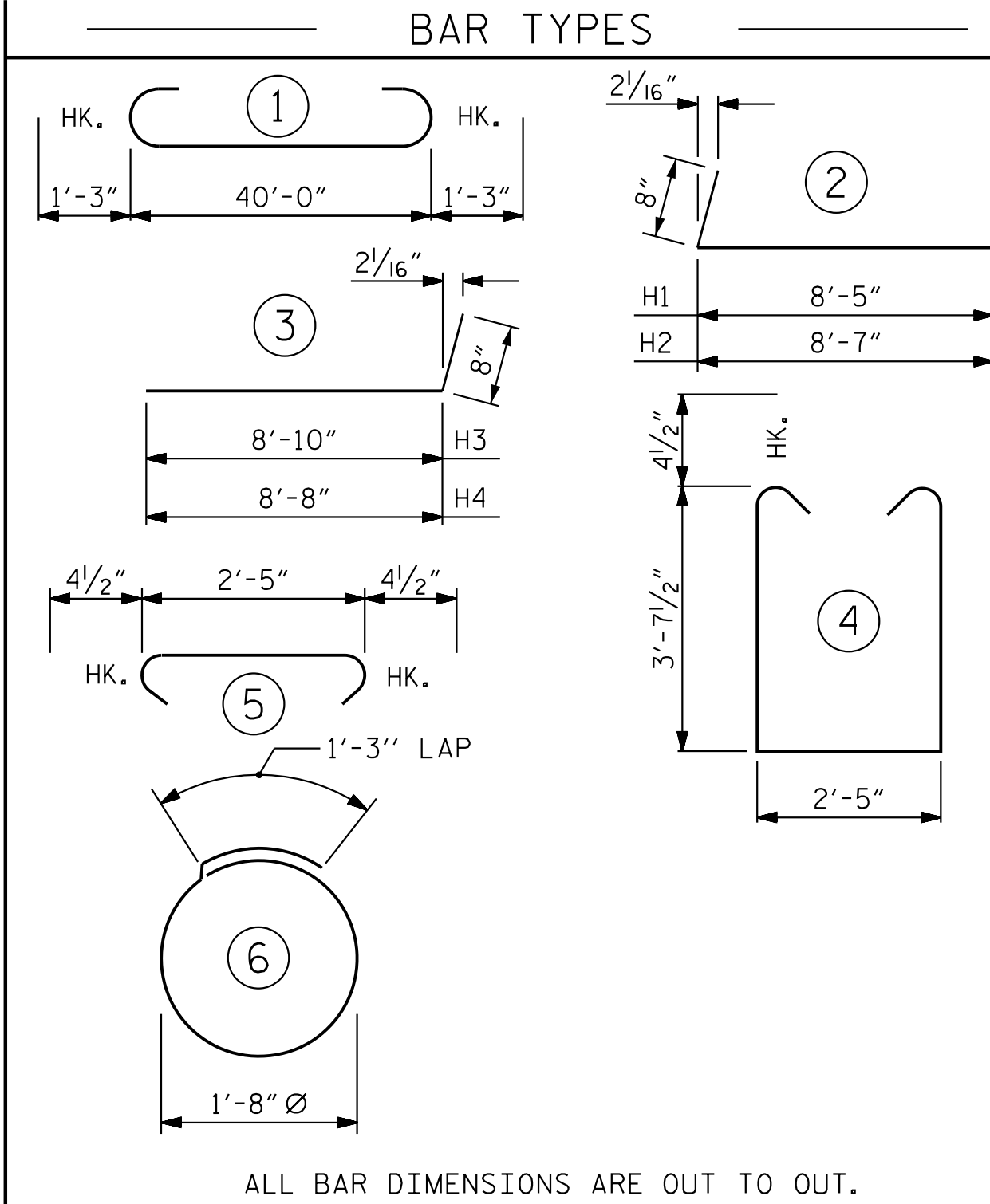
CORROSION PROTECTION FOR STEEL PILES DETAIL

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



POSITION OF PILE DURING WELDING.

PILE SPLICE DETAILS

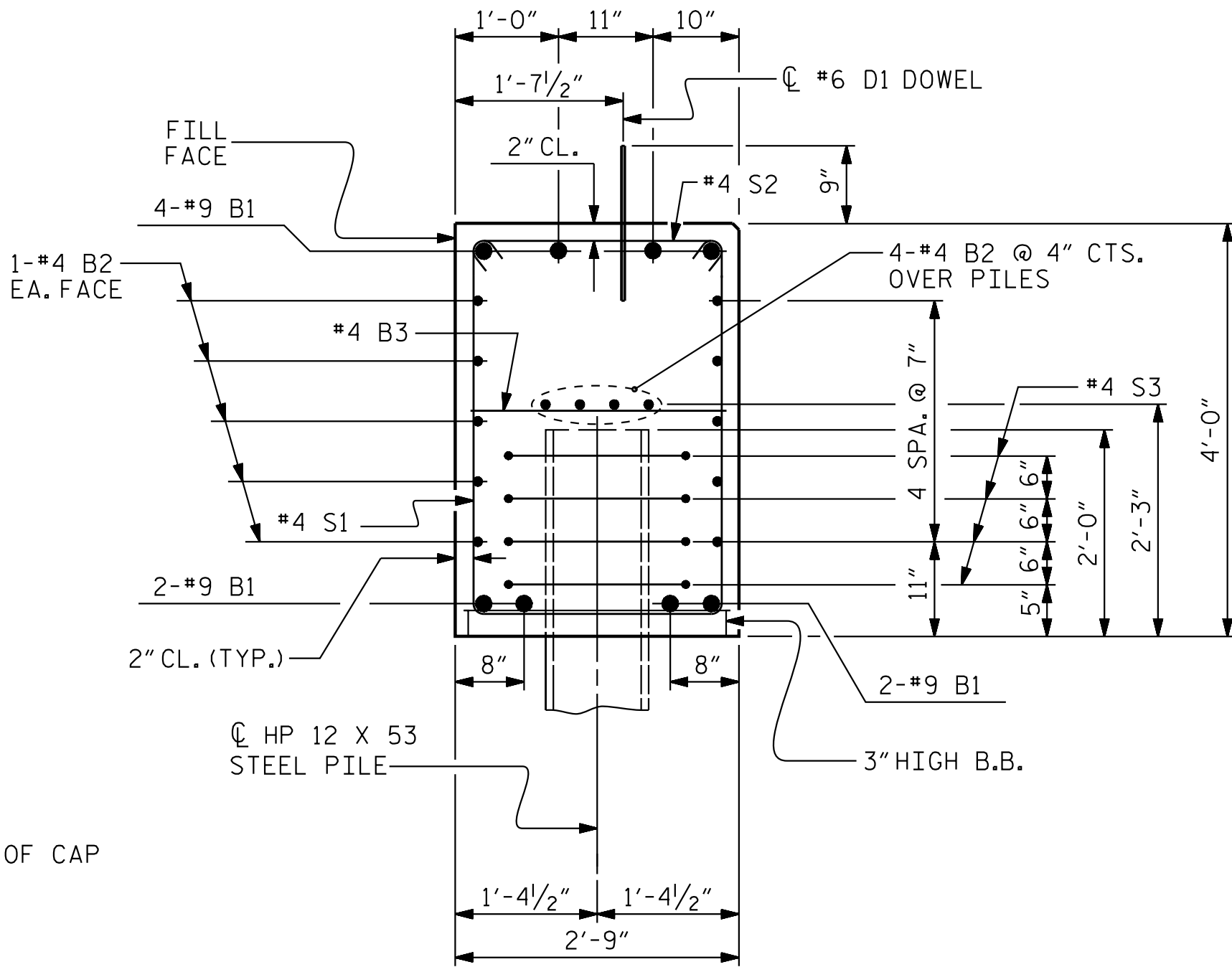


BILL OF MATERIAL

FOR ONE END BENT

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	8	#9		42'-6"	1156
B2	28	#4	STR	21'-4"	399
B3	10	#4	STR	2'-5"	16
D1	22	#6	STR	1'-6"	50
H1	10	#4	2	9'-1"	61
H2	10	#4	2	9'-3"	62
H3	10	#4	3	9'-6"	63
H4	10	#4	3	9'-4"	62
K1	16	#4	STR	3'-1"	33
S1	52	#4	4	10'-5"	362
S2	52	#4	5	3'-2"	110
S3	28	#4	6	6'-6"	122
V1	53	#4	STR	6'-2"	218

REINFORCING STEEL (FOR ONE END BENT)		2714 LBS.
CLASS A CONCRETE BREAKDOWN (FOR ONE END BENT)		
POUR #1	CAP, LOWER PART OF WINGS & COLLARS	20.1 C.Y.
POUR #2	UPPER PART OF WINGS	2.1 C.Y.
TOTAL CLASS A CONCRETE		22.2 C.Y.



SECTION A-A

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

PROJECT NO. BP4-R027

WAYNE COUNTY

STATION: 15+15.00 -L-

SHEET 4 OF 4

STATE OF NORTH CAROLINA

DEPARTMENT OF TRANSPORTATION

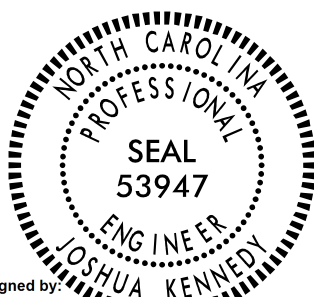
RALEIGH

SUBSTRUCTURE

END BENT No.1 & 2

DETAILS

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S-19
2			4			TOTAL SHEETS 23

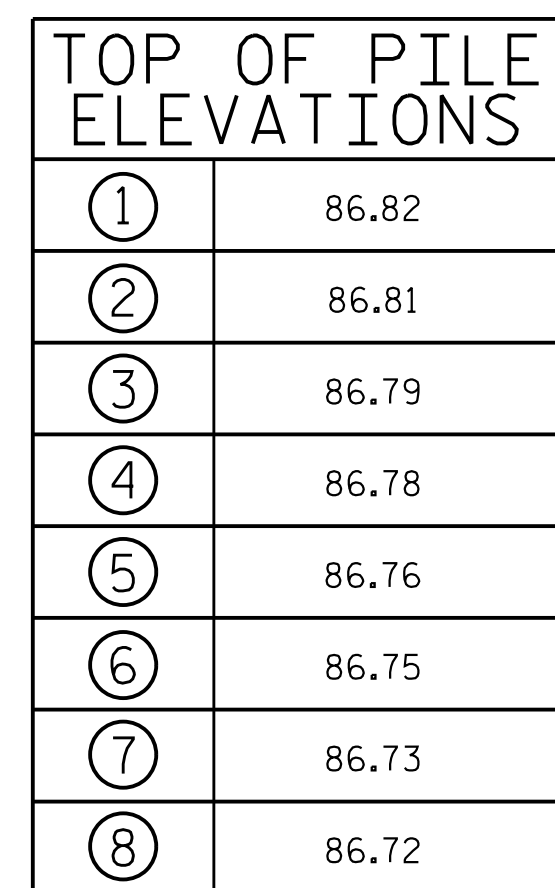
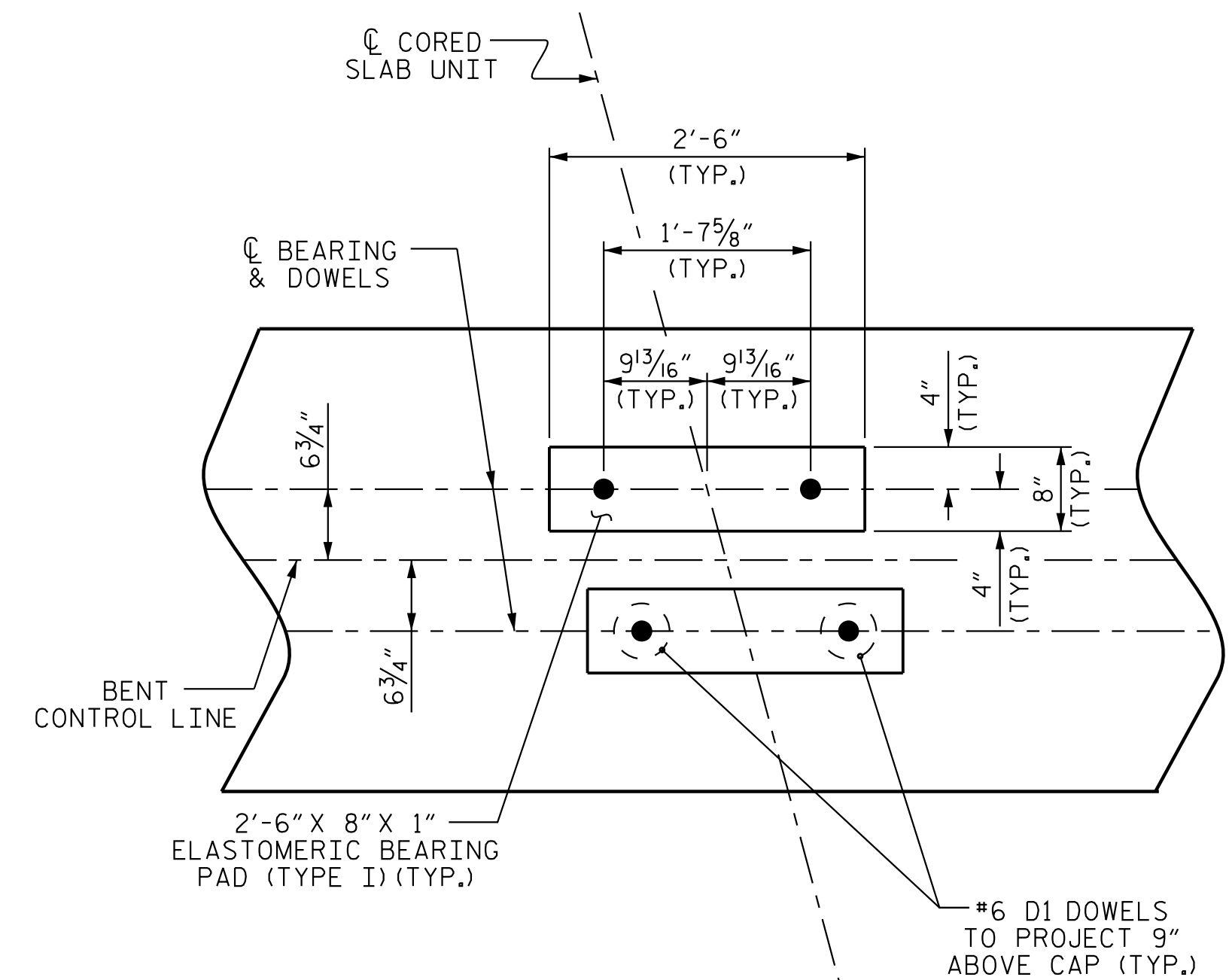


DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

DESIGN ENGINEER OF RECORD: J. F. KENNEDY DATE : 01/20/26

Stantec Consulting Services Inc.
801 Jones Franklin Road
Suite 300
Raleigh, NC 27606
Tel. (919) 851-6866
Fax. (919) 851-7024
www.stantec.com
License No. F-0672

ASSEMBLED BY : J. F. KENNEDY	DATE :12/20/22
CHECKED BY : T. R. DUDECK	DATE :05/18/23
DRAWN BY : WJH	12/11
CHECKED BY : AAC	12/11
REV. 4/17	MAA/THC



PROJECT NO. BP4-R027
WAYNE COUNTY
 STATION: 15+15.00 -L-

SHEET 1 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE
BENT No. 1

REVISIONS						SHEET NO. S-20
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 23
2			4			

STD. NO. 14" HP_BT_33_105S_<60'

NOTES

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

THE TOP SURFACE AREAS OF THE BENT CAPS
SHALL BE CURED IN ACCORDANCE WITH THE
STANDARD SPECIFICATIONS, EXCEPT THE MEMBRANE
CURING COMPOUND METHOD SHALL NOT BE USED.

★ INVERT ALTERNATE STIRRUPS.

GALVANIZE THE TOP OF EACH INTERIOR BENT PILE
A MINIMUM OF 35 FEET. GALVANIZE IN ACCORDANCE
WITH SECTION 1076 OF THE STANDARD
SPECIFICATIONS.

DETAIL "A"

(DIMENSIONS ARE TYPICAL EACH BEARING)

TOP OF PILE
ELEVATIONS

①	86.82
②	86.81
③	86.79
④	86.78
⑤	86.76
⑥	86.75
⑦	86.73
⑧	86.72

PROJECT NO. BP4-R027

WAYNE COUNTY

STATION: 15+15.00 -L-

SHEET 1 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE
BENT No. 1

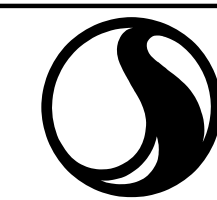
REVISIONS						SHEET NO. S-20
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 23
2			4			

STD. NO. 14" HP_BT_33_105S_<60'

ASSEMBLED BY : J. F. KENNEDY	DATE :12/20/22
CHECKED BY : T. R. DUDECK	DATE :05/18/23

DRAWN BY : DGE 05/10	REV. 6/17	MAA/THC
CHECKED BY : MKT 05/10		

DESIGN
ENGINEER
OF RECORD: J. F. KENNEDY DATE: 01/20/26



Stantec

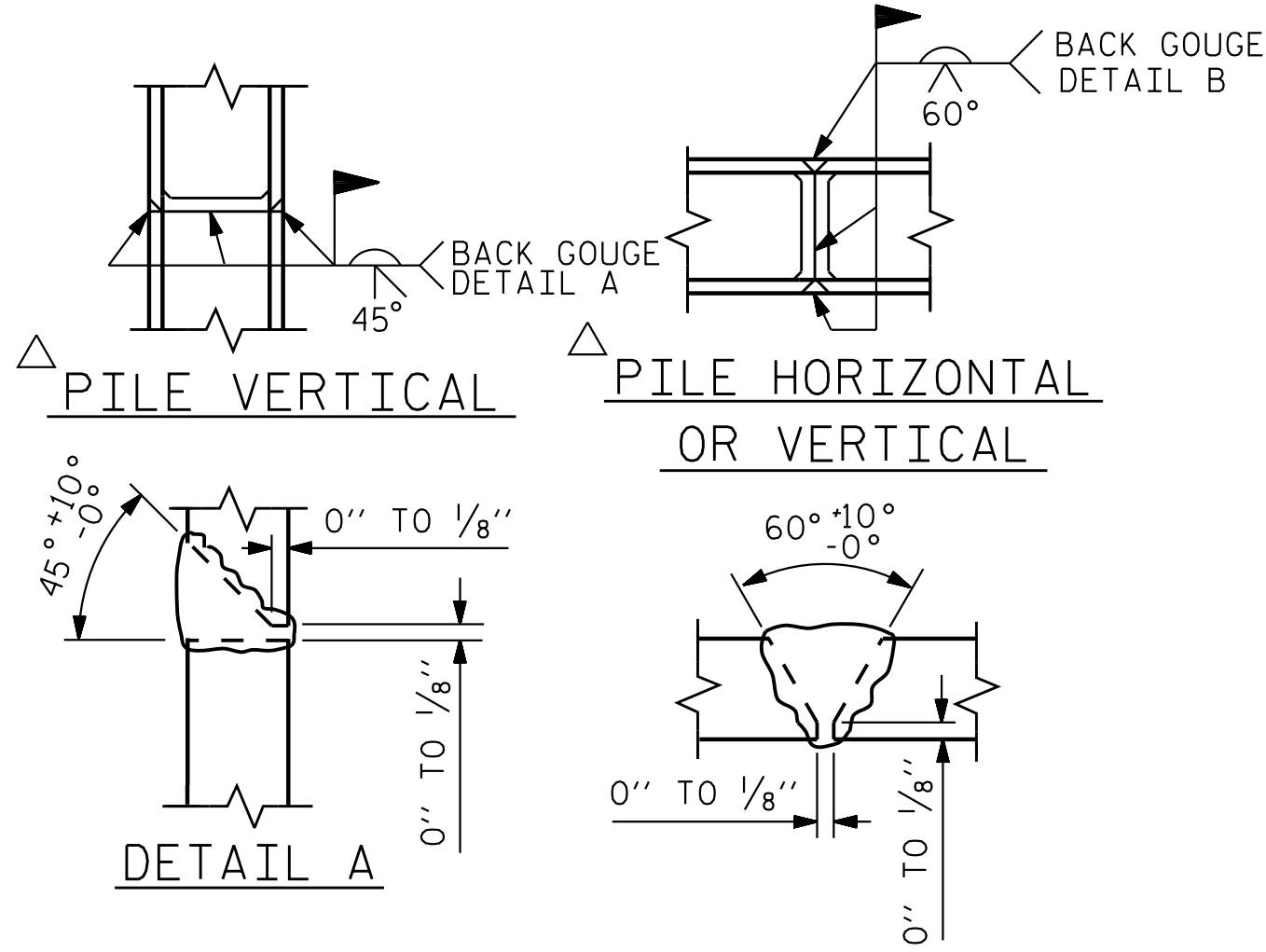
Stantec Consulting Services Inc.
801 Jones Franklin Road
Suite 300
Raleigh, NC 27606
Tel. (919) 851-6866
Fax. (919) 851-7024
www.stantec.com
License No. F-0672



Signed by: Joshua Kennedy 1/20/2026

674425111E1B465

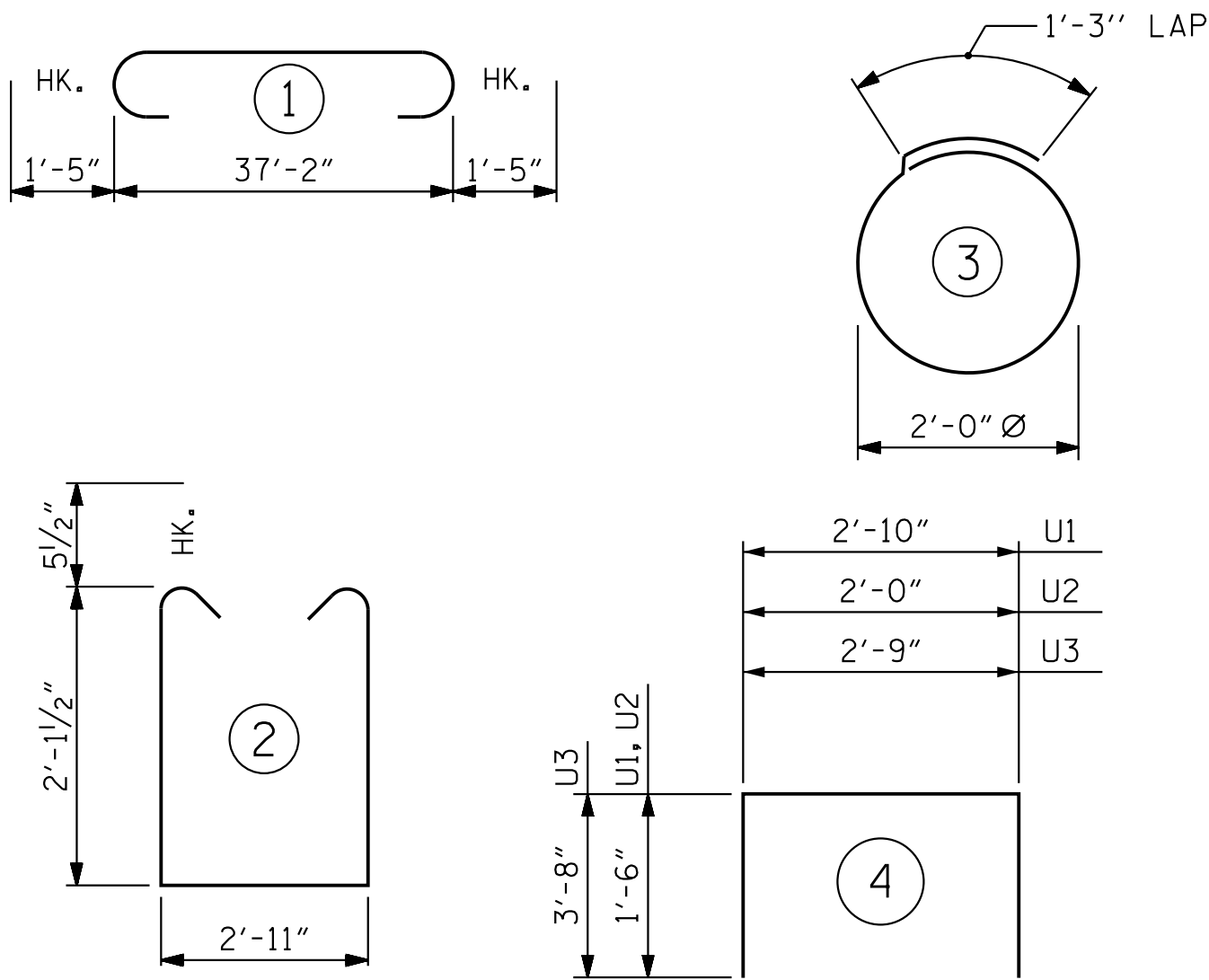
DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED



POSITION OF PILE DURING WELDING.

PILE SPLICE DETAILS

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL

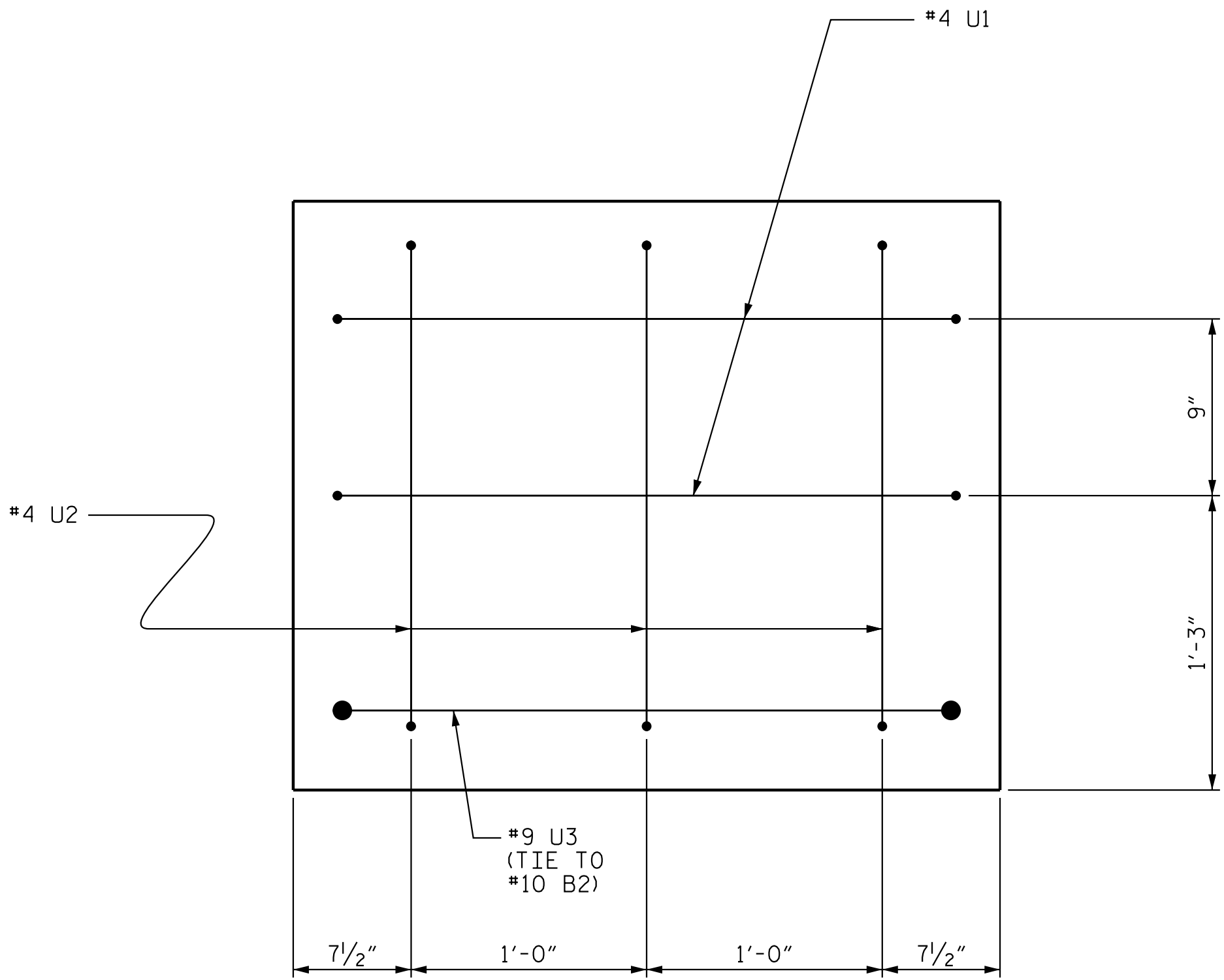
FOR ONE BENT

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	4	#10	1	40'-0"	688
B2	4	#10	STR	37'-4"	643
B3	4	#5	STR	37'-4"	156
B4	8	#4	STR	19'-11"	106
B5	10	#4	STR	2'-11"	19
D1	44	#6	STR	1'-6"	99
S1	39	#5	2	8'-1"	329
S2	16	#4	3	7'-7"	81
U1	4	#4	4	5'-10"	16
U2	6	#4	4	5'-0"	20
U3	2	#9	4	10'-1"	69

REINFORCING STEEL (FOR ONE BENT) 2226 LBS

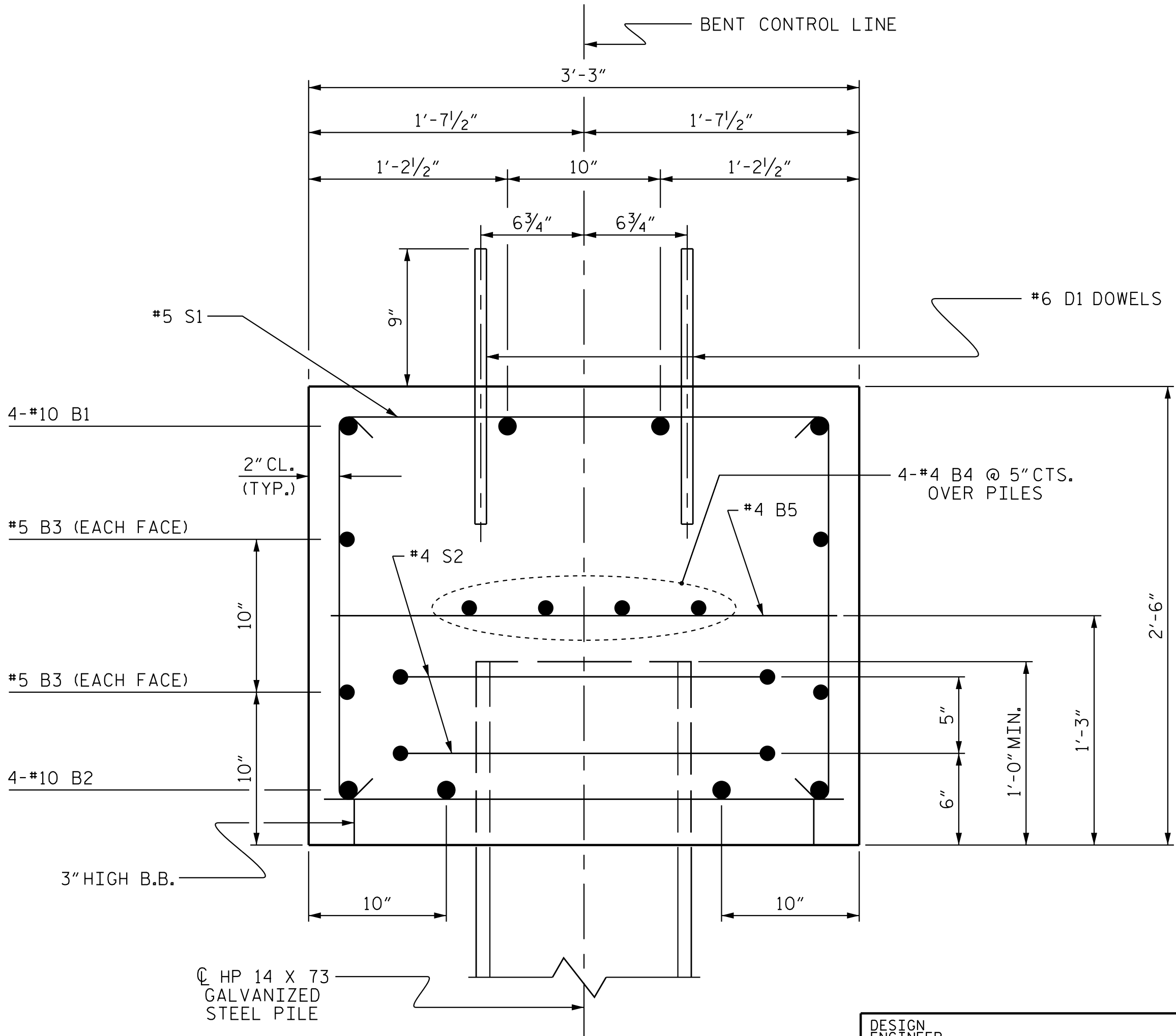
CLASS A CONCRETE BREAKDOWN (FOR ONE BENT)

TOTAL CLASS A CONCRETE 11.3 C.Y.



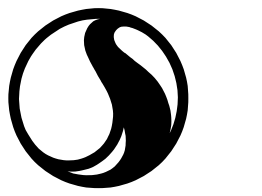
END OF CAP VIEW

(TYPICAL BOTH ENDS)

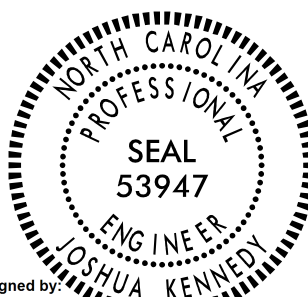


SECTION A-A

DESIGN ENGINEER OF RECORD: J. F. KENNEDY DATE: 01/20/26



Stantec Consulting Services Inc.
801 Jones Franklin Road
Suite 300
Raleigh, NC 27606
Tel. (919) 851-6866
Fax. (919) 851-7024
www.stantec.com
License No. F-0672



DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PROJECT NO. BP4-R027
WAYNE COUNTY
STATION: 15+15.00 -L-

SHEET 2 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

BENT No. 1

REVISIONS						SHEET NO. S- 21
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 23
2			4			

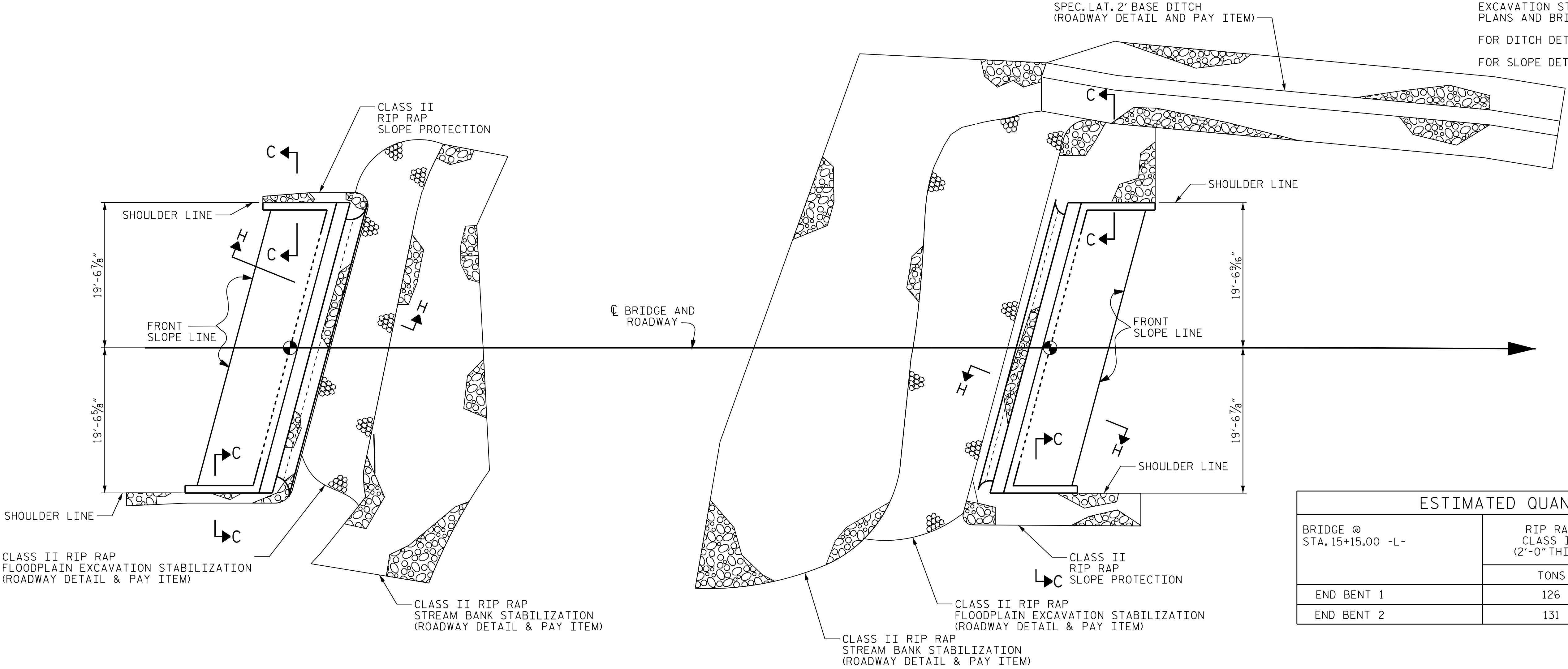
STD. NO. 14" HP_BT_33_75&105S_<60'

NOTES :
FOR BERM WIDTH DIMENSIONS, SEE GENERAL DRAWING.

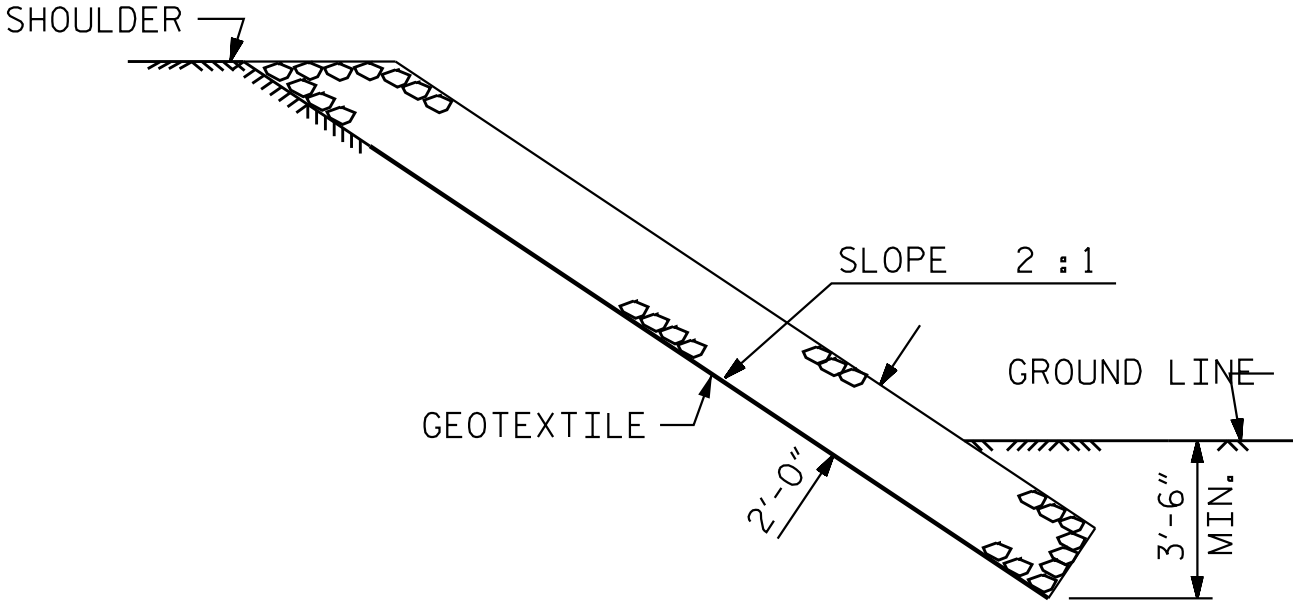
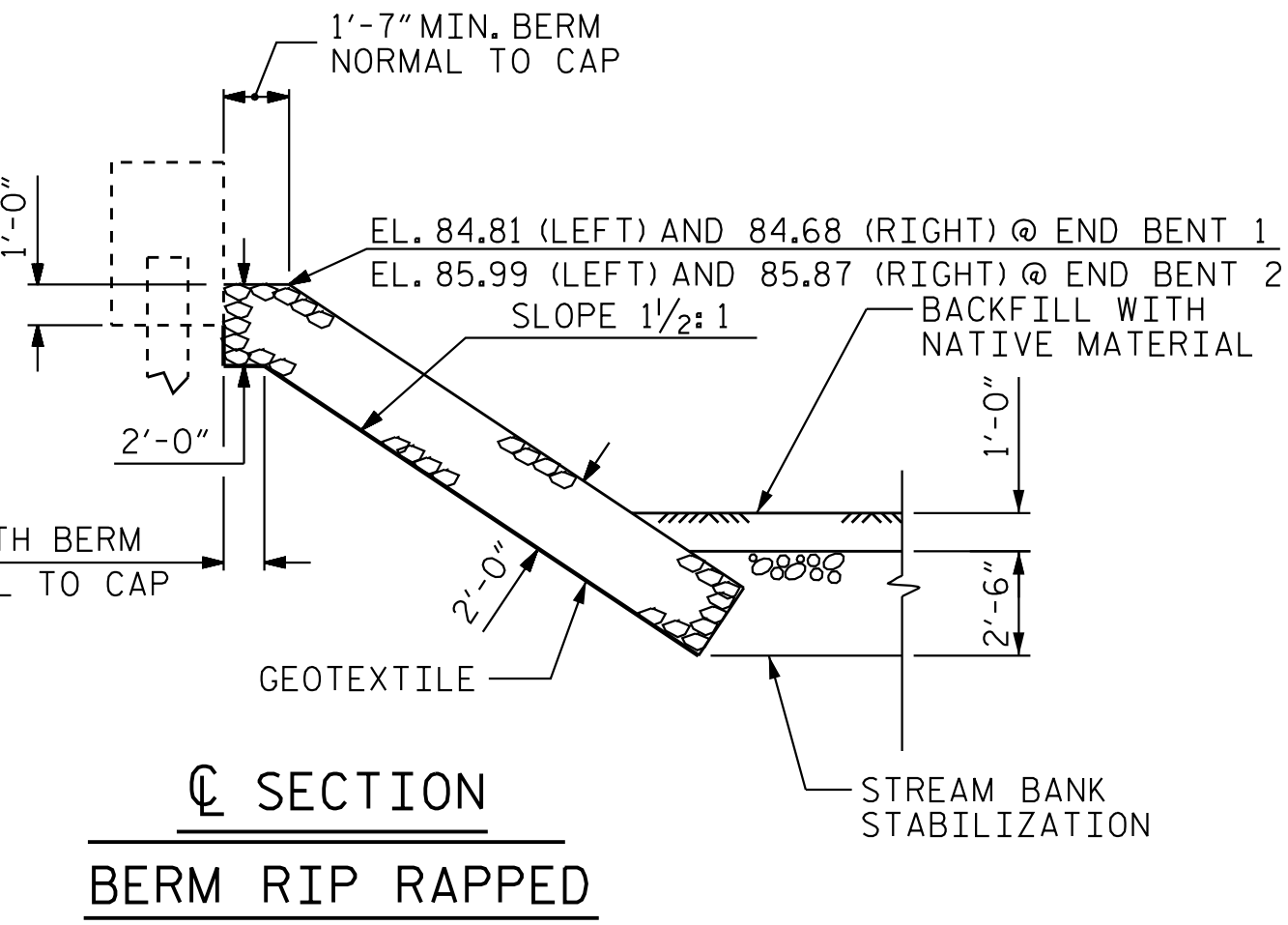
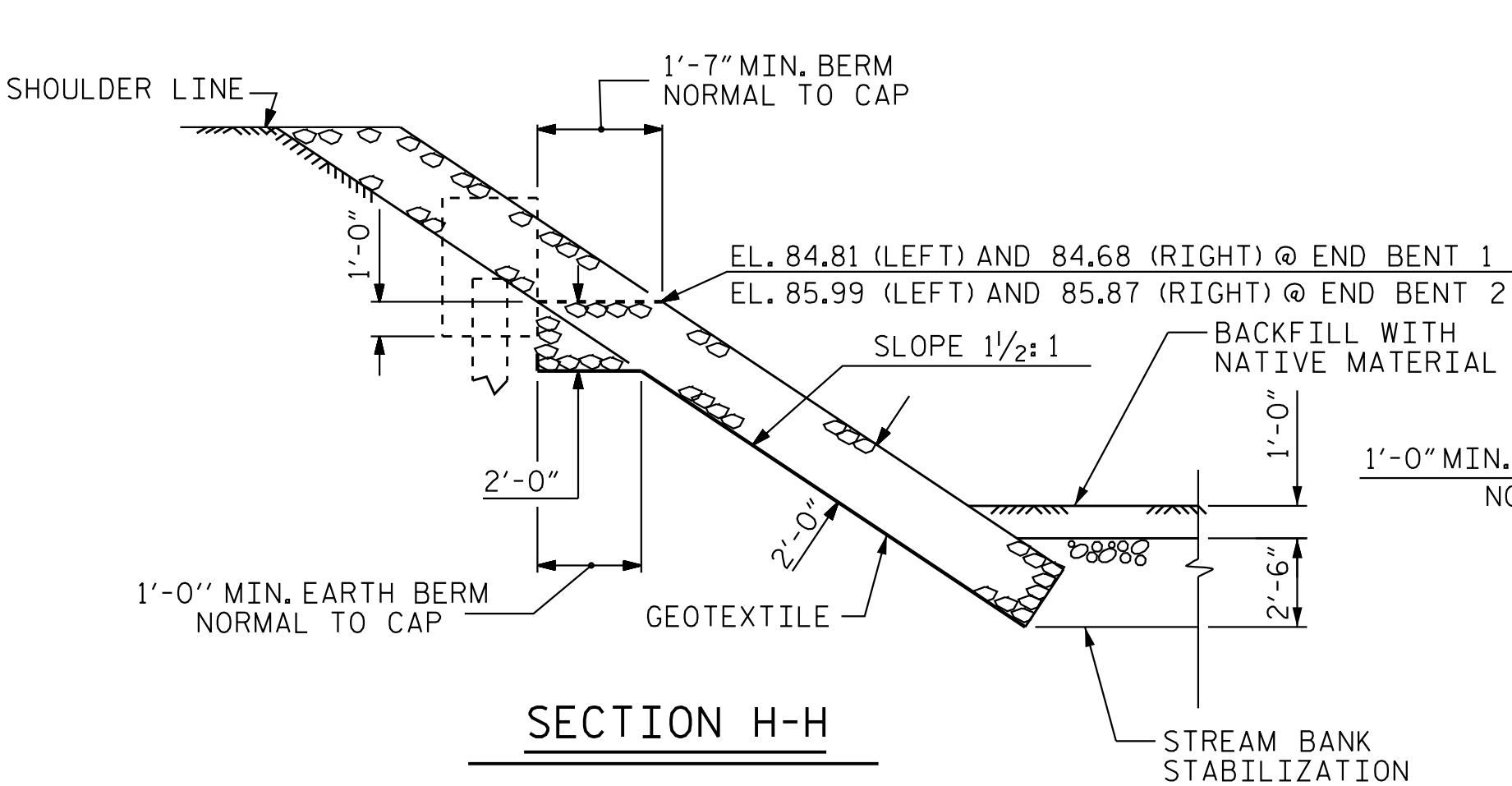
FOR STREAM BANK STABILIZAION AND FLOODPLAIN
EXCAVATION STABILIZATION DETAILS SEE ROADWAY
PLANS AND BRIDGE SURVEY REPORT.

FOR DITCH DETAILS SEE ROADWAY PLANS.

FOR SLOPE DETAILS SEE SECTION H-H AND SECTION C-C.



ESTIMATED QUANTITIES		
BRIDGE @ STA. 15+15.00 -L-	RIP RAP CLASS II (2'-0" THICK)	GEOTEXTILE FOR DRAINAGE
	TONS	SQUARE YARDS
END BENT 1	126	140
END BENT 2	131	146

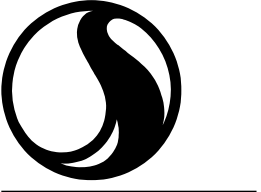


PROJECT NO. BP4-R027
WAYNE COUNTY
STATION: 15+15.00 -L-

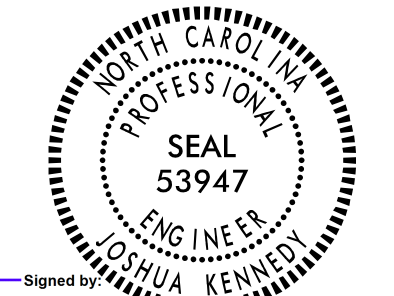
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
STANDARD RIP RAP DETAILS					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
SHEET NO. S-22					TOTAL SHEETS 23

ASSEMBLED BY : J. F. KENNEDY	DATE : 05/19/23
CHECKED BY : T. R. DUDECK	DATE : 05/24/23
DRAWN BY : REK 1/84	REV. 10/1/II MAA/GM
CHECKED BY : RDU 1/84	REV. 12/21/III MAA/GM
	REV. 12/17 MAA/THC

DESIGN
ENGINEER
OF RECORD: J. F. KENNEDY DATE : 01/20/26

**Stantec**

Stantec Consulting Services Inc.
801 Jones Franklin Road
Suite 300
Raleigh, NC 27606
Tel. (919) 851-6866
Fax. (919) 851-7024
www.stantec.com
License No. F-0672

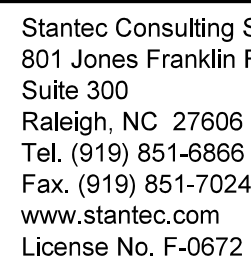


Signed by: Joshua Kennedy 01/20/2026

DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED



DESIGN
ENGINEER
OF RECORD: J. F. KENNEDY DATE : 01/20/26



FOR BRIDGE APPROACH FILL, SEE ROADWAY PLANS.

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

APPROACH SLAB GROOVING IS NOT REQUIRED.

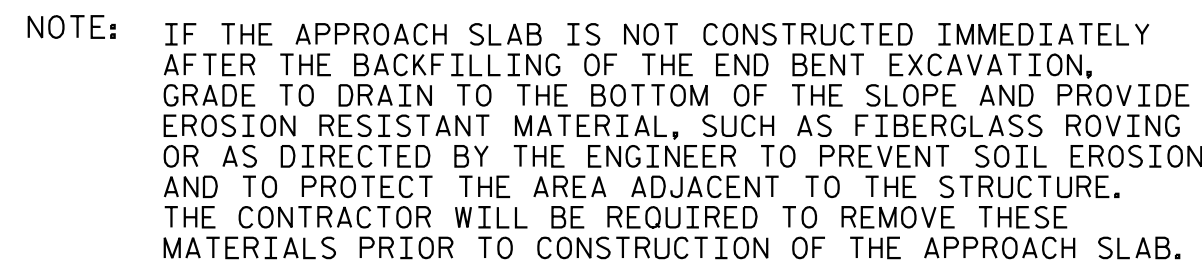


Diagram illustrating a proposed stormwater management structure, showing a cross-section of a ditch and a future shoulder.

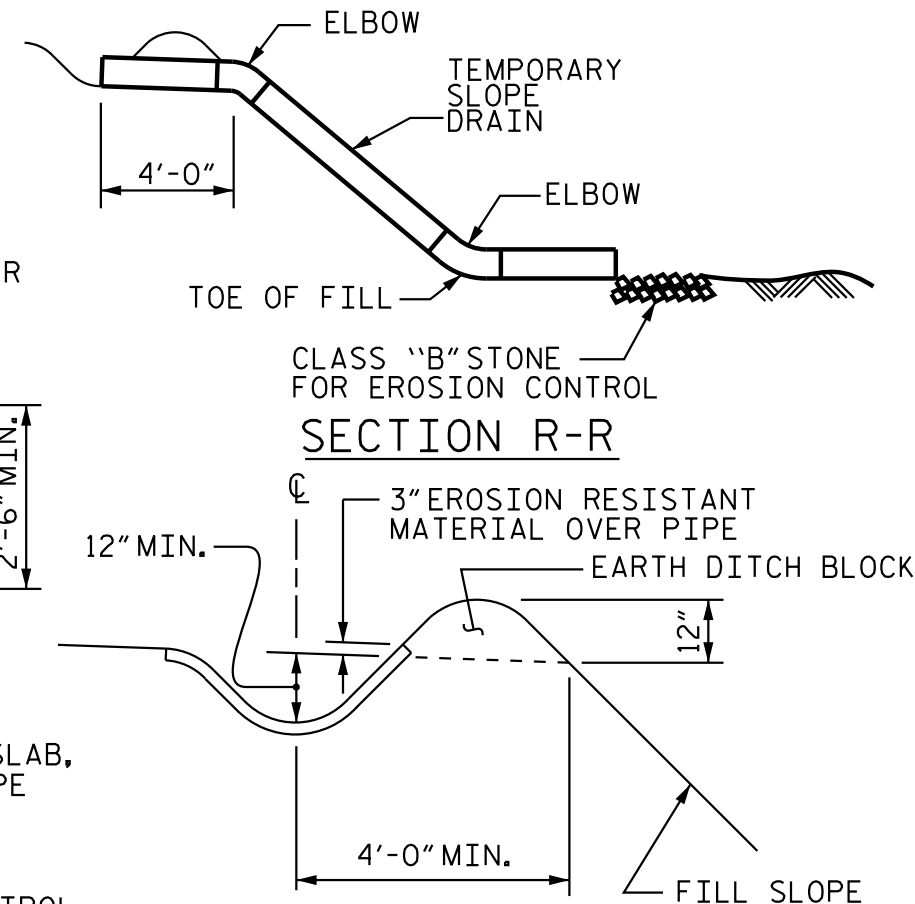
Key components and dimensions:

- CLASS "B" STONE FOR EROSION CONTROL:** Located at the top of the ditch.
- TEMP. SLOPE DRAIN:** A temporary drainage structure with a width of **2'-0" MIN.**
- EARTH DITCH BLOCK:** The main structure of the ditch.
- APPROACH SLAB:** A concrete slab leading to the ditch, with a width of **2'-6" MIN.**
- END OF APPROACH SLAB:** The boundary of the approach slab.
- GRADE TO DRAIN TO PIPE INLET:** The slope leading to the pipe inlet.
- FLOW LINE:** Indicated by a dashed line with an arrow.
- EROSION RESISTANT MATERIAL:** The material lining the ditch.
- FUTURE SHOULDER:** The area to be developed later, with a width of **2'-6" MIN.**
- Dimensions:**
 - 2'-0" MIN.** (Temporary Slope Drain width)
 - 1'-0" MIN.** (Ditch width)
 - 2'-6" MIN.** (Approach Slab width)
 - 1'-6" MIN.** (Ditch bottom width)
 - 2'-6" MIN.** (Future Shoulder width)

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

PLAN VIEW

(TO BE USED WHEN SHOULDER BERM GUTTER IS REQUIRED)



SECTION S-S

PROJECT NO. BP4-R027

WAYNE COUNTY

STATION: 15+15.00 -L-

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

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

REVISIONS						SHEET NO. S-23
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 23
2			4			

STD. NO. BAS3 Sht. 01b

STANDARD NOTES

DESIGN DATA:

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

MATERIAL AND WORKMANSHIP:

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

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

CONCRETE:

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

CONCRETE CHAMFERS:

UNLESS OTHERWISE NOTED ON THE PLANS, ALL EXPOSED CORNERS ON STRUCTURES SHALL BE CHAMFERED 3/4" WITH THE FOLLOWING EXCEPTIONS: TOP CORNERS OF CURBS MAY BE ROUNDED TO 1 1/2" RADIUS WHICH IS BUILT INTO CURB FORMS; CORNERS OF TRANSVERSE FLOOR EXPANSION JOINTS SHALL BE ROUNDED WITH A 1/4" 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 1/4" RADIUS WITH A FINISHING STONE OR TOOL UNLESS OTHERWISE REQUIRED ON PLANS.

DOWELS:

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

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

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

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

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

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

REINFORCING STEEL:

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

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

STRUCTURAL STEEL:

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

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

WITH THE SOLE EXCEPTION OF EDGES AT SURFACES WHICH BEAR ON OTHER SURFACES, ALL SHARP EDGES AND ENDS OF SHAPES AND PLATES SHALL BE SLIGHTLY ROUNDED BY SUITABLE MEANS TO A RADIUS OF APPROXIMATELY 1/16" INCH 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.

ENGLISH

JANUARY, 1990

STD. NO. SN

12:41:58 PM joskenmedy

U:\Structures\Drafting\Final\T002523.SMU.GN.950219.dgn

PROJECT: BP4.R027

REFERENCE: SF-950219

CONTENTS

SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	LEGEND (SOIL & ROCK)
3	SITE PLAN
4	PROFILE
5-7	BORE LOGS

STATE OF NORTH CAROLINA

DEPARTMENT OF TRANSPORTATION

DIVISION OF HIGHWAYS

GEOTECHNICAL ENGINEERING UNIT

STRUCTURE

SUBSURFACE INVESTIGATION

COUNTY WAYNE

PROJECT DESCRIPTION BRIDGE NO. 219 ON -L-
(SR 1505) OVER AYCOCK SWAMP

AT STA: 15+15

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	SF-950219	1	7

CAUTION NOTICE

THE SUBSURFACE INFORMATION AND THE SUBSURFACE INVESTIGATION ON WHICH IT IS BASED WERE MADE FOR THE PURPOSE OF PREPARING THE SCOPE OF WORK TO BE INCLUDED IN THE REQUEST FOR PROPOSAL. THE VARIOUS FIELD BORING LOGS, ROCK CORES AND SOIL TEST DATA AVAILABLE MAY BE REVIEWED OR INSPECTED IN RALEIGH BY CONTACTING THE N.C. DEPARTMENT OF TRANSPORTATION, GEOTECHNICAL ENGINEERING UNIT AT (919) 707-6850. THE SUBSURFACE PLANS AND REPORTS, FIELD BORING LOGS, ROCK CORES AND SOIL TEST DATA ARE NOT PART OF THE CONTRACT.

SOIL AND ROCK BOUNDARIES WITHIN A BOREHOLE ARE BASED ON GEOTECHNICAL INTERPRETATION UNLESS ENCOUNTERED IN A SAMPLE. INTERPRETED BOUNDARIES MAY NOT NECESSARILY REFLECT ACTUAL SUBSURFACE CONDITIONS BETWEEN SAMPLED STRATA AND BOREHOLE. INFORMATION MAY NOT NECESSARILY REFLECT ACTUAL SUBSURFACE CONDITIONS BETWEEN BORINGS. THE LABORATORY SAMPLE DATA AND THE IN SITU (IN-PLACE) TEST DATA CAN BE RELIED ON ONLY TO THE DEGREE OF RELIABILITY INHERENT IN THE STANDARD TEST METHOD. THE OBSERVED WATER LEVELS OR SOIL MOISTURE CONDITIONS INDICATED IN THE SUBSURFACE INVESTIGATIONS ARE AS RECORDED AT THE TIME OF THE INVESTIGATION. THESE WATER LEVELS OR SOIL MOISTURE CONDITIONS MAY VARY CONSIDERABLY WITH TIME ACCORDING TO CLIMATIC CONDITIONS INCLUDING TEMPERATURES, PRECIPITATION AND WIND, AS WELL AS OTHER NON-CLIMATIC FACTORS.

THE BIDDER OR CONTRACTOR IS CAUTIONED THAT DETAILS SHOWN ON THE SUBSURFACE PLANS ARE PRELIMINARY ONLY AND IN MANY CASES THE FINAL DESIGN DETAILS ARE DIFFERENT. FOR BIDDING AND CONSTRUCTION PURPOSES, REFER TO THE CONSTRUCTION PLANS AND DOCUMENTS FOR FINAL DESIGN INFORMATION ON THIS PROJECT. THE DEPARTMENT DOES NOT WARRANT OR GUARANTEE THE SUFFICIENCY OR ACCURACY OF THE INVESTIGATION MADE, NOR THE INTERPRETATIONS MADE, OR OPINION OF THE DEPARTMENT AS TO THE TYPE OF MATERIALS AND CONDITIONS TO BE ENCOUNTERED. THE BIDDER OR CONTRACTOR IS CAUTIONED TO PERFORM INDEPENDENT SUBSURFACE INVESTIGATIONS AND MAKE INTERPRETATIONS AS NECESSARY TO CONFIRM CONDITIONS ENCOUNTERED ON THE PROJECT. THE CONTRACTOR SHALL HAVE NO CLAIM FOR ADDITIONAL COMPENSATION OR FOR AN EXTENSION OF TIME FOR ANY REASON RESULTING FROM THE ACTUAL CONDITIONS ENCOUNTERED AT THE SITE DIFFERING FROM THOSE INDICATED IN THE SUBSURFACE INFORMATION.

- NOTES:
- THE INFORMATION CONTAINED HEREIN IS NOT IMPLIED OR GUARANTEED BY THE N. C. DEPARTMENT OF TRANSPORTATION AS ACCURATE NOR IS IT CONSIDERED PART OF THE PLANS, SPECIFICATIONS OR CONTRACT FOR THE PROJECT.
 - BY HAVING REQUESTED THIS INFORMATION, THE CONTRACTOR SPECIFICALLY WAIVES ANY CLAIMS FOR INCREASED COMPENSATION OR EXTENSION OF TIME BASED ON DIFFERENCES BETWEEN THE CONDITIONS INDICATED HEREIN AND THE ACTUAL CONDITIONS AT THE PROJECT SITE.

PERSONNEL
S.N. ZIMARINO
T.W. MILLER
R.E. SMITH
C.M. WALKER

INVESTIGATED BY T.C. BOTTOMS

DRAWN BY T.W. MILLER

CHECKED BY D.N. ARGENBRIGHT

SUBMITTED BY D.N. ARGENBRIGHT

DATE SEPTEMBER 2022



DocuSigned by:
Tyler Bottoms
#0A2938B806F446

SIGNATURE

01/23/2023

DATE

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

DIVISION OF HIGHWAYS

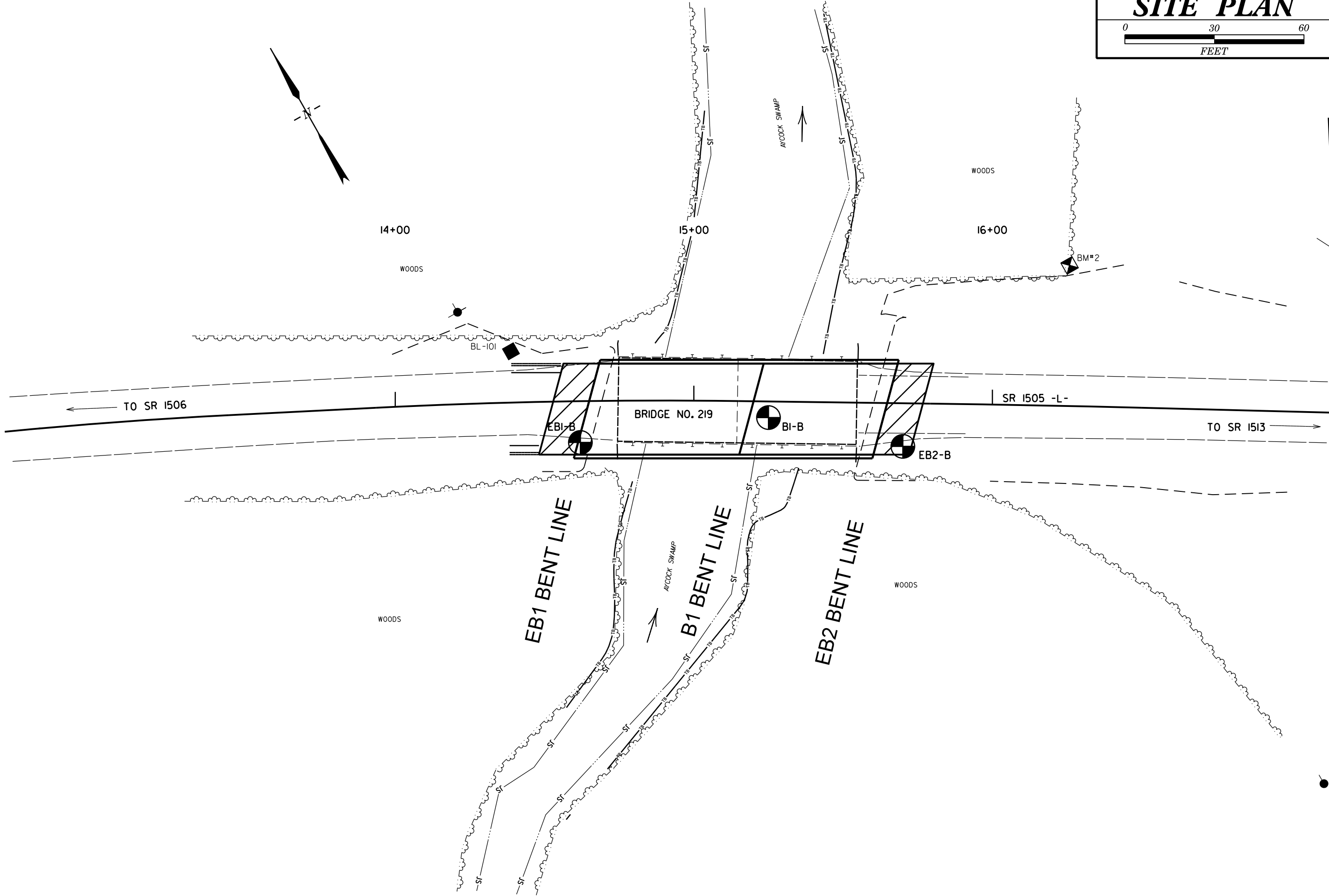
GEOTECHNICAL ENGINEERING UNIT

SUBSURFACE INVESTIGATION

SOIL AND ROCK LEGEND, TERMS, SYMBOLS, AND ABBREVIATIONS

SOIL DESCRIPTION										GRADATION										ROCK DESCRIPTION										TERMS AND DEFINITIONS									
SOIL IS CONSIDERED UNCONSOLIDATED, SEMI-CONSOLIDATED, OR WEATHERED EARTH MATERIALS THAT CAN BE PENETRATED WITH A CONTINUOUS FLIGHT POWER AUGER AND YIELD LESS THAN 100 BLOWS PER FOOT ACCORDING TO THE STANDARD PENETRATION TEST (AASHTO T 206, ASTM D1586). SOIL CLASSIFICATION IS BASED ON THE AASHTO SYSTEM. BASIC DESCRIPTIONS GENERALLY INCLUDE THE FOLLOWING: CONSISTENCY, COLOR, TEXTURE, MOISTURE, AASHTO CLASSIFICATION, AND OTHER PERTINENT FACTORS SUCH AS MINERALOGICAL COMPOSITION, ANGULARITY, STRUCTURE, PLASTICITY, ETC. FOR EXAMPLE, <i>VERY STIFF, GRAY, SILTY CLAY, MOIST WITH INTERBEDDED FINE SAND LAYERS, HIGHLY PLASTIC, A-7-6</i>										WELL GRADED - INDICATES A GOOD REPRESENTATION OF PARTICLE SIZES FROM FINE TO COARSE. UNIFORMLY GRADED - INDICATES THAT SOIL PARTICLES ARE ALL APPROXIMATELY THE SAME SIZE. GAP-GRADED - INDICATES A MIXTURE OF UNIFORM PARTICLE SIZES OF TWO OR MORE SIZES.										HARD ROCK IS NON-COASTAL PLAIN MATERIAL THAT WOULD YIELD SPT REFUSAL IF TESTED. AN INFERRED ROCK LINE INDICATES THE LEVEL AT WHICH NON-COASTAL PLAIN MATERIAL WOULD YIELD SPT REFUSAL. SPT REFUSAL IS PENETRATION BY A SPLIT SPOON SAMPLER EQUAL TO OR LESS THAN 0.1 FOOT PER 60 BLOWS IN NON-COASTAL PLAIN MATERIAL. THE TRANSITION BETWEEN SOIL AND ROCK IS OFTEN REPRESENTED BY A ZONE OF WEATHERED ROCK. ROCK MATERIALS ARE TYPICALLY DIVIDED AS FOLLOWS: WEATHERED ROCK (WR) CRYSTALLINE ROCK (ICR) NON-CRYSTALLINE ROCK (NCR) COASTAL PLAIN SEDIMENTARY ROCK (CPI)										ALLUVIUM (ALLUV.) - SOILS THAT HAVE BEEN TRANSPORTED BY WATER. AQUIFER - A WATER BEARING FORMATION OR STRATA. ARENACEOUS - APPLIED TO ROCKS THAT HAVE BEEN DERIVED FROM SAND OR THAT CONTAIN SAND. ARGILLACEOUS - APPLIED TO ALL ROCKS OR SUBSTANCES COMPOSED OF CLAY MINERALS, OR HAVING A NOTABLE PROPORTION OF CLAY IN THEIR COMPOSITION, SUCH AS SHALE, SLATE, ETC. ARTESIAN - GROUND WATER THAT IS UNDER SUFFICIENT PRESSURE TO RISE ABOVE THE LEVEL AT WHICH IT IS ENCOUNTERED, BUT WHICH DOES NOT NECESSARILY RISE TO OR ABOVE THE GROUND SURFACE. CALCAREOUS (CALC.) - SOILS THAT CONTAIN APPRECIABLE AMOUNTS OF CALCIUM CARBONATE. COLLUVIUM - ROCK FRAGMENTS MIXED WITH SOIL DEPOSITED BY GRAVITY ON SLOPE OR AT BOTTOM OF SLOPE. CORE RECOVERY (REC.) - TOTAL LENGTH OF ALL MATERIAL RECOVERED IN THE CORE BARREL DIVIDED BY TOTAL LENGTH OF CORE RUN AND EXPRESSED AS A PERCENTAGE. DIKE - A TABULAR BODY OF IGNEOUS ROCK THAT CUTS ACROSS THE STRUCTURE OF ADJACENT ROCKS OR CUTS MASSIVE ROCK. DIP - THE ANGLE AT WHICH A STRATUM OR ANY PLANAR FEATURE IS INCLINED FROM THE HORIZONTAL. DIP DIRECTION (DIP AZIMUTH) - THE DIRECTION OR BEARING OF THE HORIZONTAL TRACE OF THE LINE OF DIP, MEASURED CLOCKWISE FROM NORTH. FAULT - A FRACTURE OR FRACTURE ZONE ALONG WHICH THERE HAS BEEN DISPLACEMENT OF THE SIDES RELATIVE TO ONE ANOTHER PARALLEL TO THE FRACTURE. FISSILE - A PROPERTY OF SPLITTING ALONG CLOSELY SPACED PARALLEL PLANES. FLOOD - ROCK FRAGMENTS ON SURFACE NEAR THEIR ORIGINAL POSITION AND DISLOADED FROM PARENT MATERIAL. FLOOD PLAIN (FP) - LAND BORDERING A STREAM, BUILT OF SEDIMENTS DEPOSITED BY THE STREAM. FORMATION (FM) - A MAPPABLE GEOLOGIC UNIT THAT CAN BE RECOGNIZED AND TRACED IN THE FIELD. JOINT - FRACTURE IN ROCK ALONG WHICH NO APPRECIABLE MOVEMENT HAS OCCURRED. LEDGE - A SHELF-LIKE RIDGE OR PROJECTION OF ROCK WHOSE THICKNESS IS SMALL COMPARED TO ITS LATERAL EXTENT. LENS - A BODY OF SOIL OR ROCK THAT THINS OUT IN ONE OR MORE DIRECTIONS. MOTTLED (MOT.) - IRREGULARLY MARKED WITH SPOTS OF DIFFERENT COLORS. MOTTLING IN SOILS USUALLY INDICATES POOR AERATION AND LACK OF GOOD DRAINAGE. PERCHED WATER - WATER MAINTAINED ABOVE THE NORMAL GROUND WATER LEVEL BY THE PRESENCE OF AN INTERVENING IMPERVIOUS STRATUM. RESIDUAL (RES.) SOIL - SOIL FORMED IN PLACE BY THE WEATHERING OF ROCK. ROCK QUALITY DESIGNATION (ROD) - A MEASURE OF ROCK QUALITY DESCRIBED BY TOTAL LENGTH OF ROCK SEGMENTS EQUAL TO OR GREATER THAN 4 INCHES DIVIDED BY THE TOTAL LENGTH OF CORE RUN AND EXPRESSED AS A PERCENTAGE. SAPROLITE (SAP.) - RESIDUAL SOIL THAT RETAINS THE RELIC STRUCTURE OR FABRIC OF THE PARENT ROCK. SILL - AN INTRUSIVE BODY OF IGNEOUS ROCK OF APPROXIMATELY UNIFORM THICKNESS AND RELATIVELY THIN COMPARED WITH ITS LATERAL EXTENT, THAT HAS BEEN EMPLACED PARALLEL TO THE BEDDING OR SCHISTOSITY OF THE INTRUDED ROCKS. SLICKENSIDE - POLISHED AND STRIATED SURFACE THAT RESULTS FROM FRICTION ALONG A FAULT OR SLIP PLANE. STANDARD PENETRATION TEST (PENETRATION RESISTANCE) (SPT) - NUMBER OF BLOWS (N OR BPF) OF A 140 LB. HAMMER FALLING 30 INCHES REQUIRED TO PRODUCE A PENETRATION OF 1 FOOT INTO SOIL WITH A 2 INCH OUTSIDE DIAMETER SPLIT SPOON SAMPLER. SPT REFUSAL IS PENETRATION EQUAL TO OR LESS THAN 0.1 FOOT PER 60 BLOWS. STRATA CORE RECOVERY (SREC.) - TOTAL LENGTH OF STRATA MATERIAL RECOVERED DIVIDED BY TOTAL LENGTH OF STRATUM AND EXPRESSED AS A PERCENTAGE. STRATA ROCK QUALITY DESIGNATION (SROD) - A MEASURE OF ROCK QUALITY DESCRIBED BY TOTAL LENGTH OF ROCK SEGMENTS WITHIN A STRATUM EQUAL TO OR GREATER THAN 4 INCHES DIVIDED BY THE TOTAL LENGTH OF STRATA AND EXPRESSED AS A PERCENTAGE. TOPSOIL (TS.) - SURFACE SOILS USUALLY CONTAINING ORGANIC MATTER.									
SOIL LEGEND AND AASHTO CLASSIFICATION										MINERALOGICAL COMPOSITION										WEATHERING																			
GENERAL CLASS.										MINERAL NAMES SUCH AS QUARTZ, FELDSPAR, MICA, TALC, KAOLIN, ETC. ARE USED IN DESCRIPTIONS WHEN THEY ARE CONSIDERED OF SIGNIFICANCE.										FRESH VERY SLIGHT (V SLI.) SLIGHT (SLI.) MODERATE (MOD.) MODERATELY SEVERE (MOD. SEV.) SEVERE (SEV.) VERY SEVERE (V SEV.) COMPLETE																			
GROUP CLASS.										COMPRESSIBILITY										ROCK FRESH, CRYSTALS BRIGHT, FEW JOINTS MAY SHOW SLIGHT STAINING. ROCK RINGS UNDER HAMMER IF CRYSTALLINE. ROCK GENERALLY FRESH, JOINTS STAINED. SOME JOINTS MAY SHOW THIN CLAY COATINGS IF OPEN. CRYSTALS ON A BROKEN SPECIMEN FACE SHINE BRIGHTLY. ROCK RINGS UNDER HAMMER BLOWS IF OF A CRYSTALLINE NATURE. ROCK GENERALLY FRESH, JOINTS STAINED AND DISCOLORATION EXTENDS INTO ROCK UP TO 1 INCH. OPEN JOINTS MAY CONTAIN CLAY. IN GRANITOID ROCKS SOME OCCASIONAL FELDSPAR CRYSTALS ARE DULL AND DISCOLORED. CRYSTALLINE ROCKS RING UNDER HAMMER BLOWS. SIGNIFICANT PORTIONS OF ROCK SHOW DISCOLORATION AND WEATHERING EFFECTS. IN GRANITOID ROCKS, MOST FELDSPARS ARE DULL AND DISCOLORED, SOME SHOW CLAY. ROCK HAS DULL SOUND UNDER HAMMER BLOWS AND SHOWS SIGNIFICANT LOSS OF STRENGTH AS COMPARED WITH FRESH ROCK. ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED. IN GRANITOID ROCKS, ALL FELDSPARS DULL AND DISCOLORED AND A MAJORITY SHOW KAOLINIZATION. ROCK SHOWS SEVERE LOSS OF STRENGTH AND CAN BE EXCAVATED WITH A GEOLOGIST'S PICK. ROCK GIVES "CLUNK" SOUND WHEN STRUCK. <i>IF TESTED, WOULD YIELD SPT REFUSAL</i> ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED. ROCK FABRIC CLEAR AND EVIDENT BUT REDUCED IN STRENGTH TO STRONG SOIL. IN GRANITOID ROCKS ALL FELDSPARS ARE KAOLINIZED TO SOME EXTENT. SOME FRAGMENTS OF STRONG ROCK USUALLY REMAIN. <i>IF TESTED, WOULD YIELD SPT N VALUES > 100 BPF</i> ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED. ROCK FABRIC ELEMENTS ARE DISCERNIBLE BUT MASS IS EFFECTIVELY REDUCED TO SOIL STATUS, WITH ONLY FRAGMENTS OF STRONG ROCK REMAINING. SAPROLITE IS AN EXAMPLE OF ROCK WEATHERED TO A DEGREE THAT ONLY MINOR VESTIGES OF ORIGINAL ROCK FABRIC REMAIN. <i>IF TESTED, WOULD YIELD SPT N VALUES < 100 BPF</i> ROCK REDUCED TO SOIL. ROCK FABRIC NOT DISCERNIBLE, OR DISCERNIBLE ONLY IN SMALL AND SCATTERED CONCENTRATIONS. QUARTZ MAY BE PRESENT AS DIKES OR STRINGERS. SAPROLITE IS ALSO AN EXAMPLE.																			
SYMBOL										PERCENTAGE OF MATERIAL										GROUND WATER																			
Z PASSING #10 #20 #40										ORGANIC MATERIAL TRACE OF ORGANIC MATTER LITTLE ORGANIC MATTER MODERATELY ORGANIC HIGHLY ORGANIC										WATER LEVEL IN BORE HOLE IMMEDIATELY AFTER DRILLING STATIC WATER LEVEL AFTER 24 HOURS PERCHED WATER, SATURATED ZONE, OR WATER BEARING STRATA SPRING OR SEEP																			
MATERIAL PASSING #40 LL PI										GROUND WATER										MISCELLANEOUS SYMBOLS																			
GROUP INDEX										GROUND WATER										ROADWAY EMBANKMENT (RE) WITH SOIL DESCRIPTION SOIL SYMBOL ARTIFICIAL FILL (AF) OTHER THAN ROADWAY EMBANKMENT INFERRED SOIL BOUNDARY INFERRED ROCK LINE ALLUVIAL SOIL BOUNDARY																			
USUAL TYPES OF MAJOR MATERIALS										GROUND WATER										ROADWAY EMBANKMENT (RE) WITH SOIL DESCRIPTION SOIL SYMBOL ARTIFICIAL FILL (AF) OTHER THAN ROADWAY EMBANKMENT INFERRED SOIL BOUNDARY INFERRED ROCK LINE ALLUVIAL SOIL BOUNDARY																			
GEN. RATING AS SUBGRADE										GROUND WATER										ROADWAY EMBANKMENT (RE) WITH SOIL DESCRIPTION SOIL SYMBOL ARTIFICIAL FILL (AF) OTHER THAN ROADWAY EMBANKMENT INFERRED SOIL BOUNDARY INFERRED ROCK LINE ALLUVIAL SOIL BOUNDARY																			
PI OF A-7-5 SUBGROUP IS ≤ LL - 30; PI OF A-7-6 SUBGROUP IS > LL - 30										GROUND WATER										ROADWAY EMBANKMENT (RE) WITH SOIL DESCRIPTION SOIL SYMBOL ARTIFICIAL FILL (AF) OTHER THAN ROADWAY EMBANKMENT INFERRED SOIL BOUNDARY INFERRED ROCK LINE ALLUVIAL SOIL BOUNDARY																			
CONSISTENCY OR DENSENESS										RECOMMENDATION SYMBOLS										ROCK HARDNESS																			
PRIMARY SOIL TYPE										UNDERCUT SHALLOW UNDERCUT										VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT																			
COMPACTNESS OR CONSISTENCY										UNCLASSIFIED EXCAVATION - UNSUITABLE WASTE UNCLASSIFIED EXCAVATION - ACCEPTABLE DEGRADABLE ROCK										CANNOT BE SCRATCHED BY KNIFE OR SHARP PICK. BREAKING OF HAND SPECIMENS REQUIRES SEVERAL HARD BLOWS OF THE GEOLOGIST'S PICK. CAN BE SCRATCHED BY KNIFE OR PICK ONLY WITH DIFFICULTY. HARD HAMMER BLOWS REQUIRED TO DETACH HAND SPECIMEN. CAN BE SCRATCHED BY KNIFE OR PICK, GOUGES OR GROOVES TO 0.25 INCHES DEEP CAN BE EXCAVATED BY HARD BLOW OF A GEOLOGIST'S PICK. HAND SPECIMENS CAN BE DETACHED BY MODERATE BLOWS. CAN BE GROOVED OR GOUGED 0.05 INCHES DEEP BY FIRM PRESSURE OF KNIFE OR PICK POINT. CAN BE EXCAVATED IN SMALL CHIPS TO PIECES 1 INCH MAXIMUM SIZE BY HARD BLOWS OF THE POINT OF A GEOLOGIST'S PICK. CAN BE GROOVED OR GOUGED READILY BY KNIFE OR PICK. CAN BE EXCAVATED IN FRAGMENTS FROM CHIPS TO SEVERAL INCHES IN SIZE BY MODERATE BLOWS OF A PICK POINT. SMALL, THIN PIECES CAN BE BROKEN BY FINGER PRESSURE. CAN BE CARVED WITH KNIFE. CAN BE EXCAVATED READILY WITH POINT OF PICK. PIECES 1 INCH OR MORE IN THICKNESS CAN BE BROKEN BY FINGER PRESSURE. CAN BE SCRATCHED READILY BY FINGER NAIL.																			
RANGE OF STANDARD PENETRATION RESISTANCE (N-VALUE)										UNCLASSIFIED EXCAVATION - ACCEPTABLE, BUT NOT TO BE USED IN THE TOP 3 FEET OF EMBANKMENT OR BACKFILL										STANDARD PENETRATION TEST (PENETRATION RESISTANCE) (SPT) - NUMBER OF BLOWS (N OR BPF) OF A 140 LB. HAMMER FALLING 30 INCHES REQUIRED TO PRODUCE A PENETRATION OF 1 FOOT INTO SOIL WITH A 2 INCH OUTSIDE DIAMETER SPLIT SPOON SAMPLER. SPT REFUSAL IS PENETRATION EQUAL TO OR LESS THAN 0.1 FOOT PER 60 BLOWS.																			
RANGE OF UNCONFINED COMPRESSIVE STRENGTH (TONS/FT ²)										ABBREVIATIONS										STRATA CORE RECOVERY (SREC.) - TOTAL LENGTH OF STRATA MATERIAL RECOVERED DIVIDED BY TOTAL LENGTH OF STRATUM AND EXPRESSED AS A PERCENTAGE. STRATA ROCK QUALITY DESIGNATION (SROD) - A MEASURE OF ROCK QUALITY DESCRIBED BY TOTAL LENGTH OF ROCK SEGMENTS WITHIN A STRATUM EQUAL TO OR GREATER THAN 4 INCHES DIVIDED BY THE TOTAL LENGTH OF STRATA AND EXPRESSED AS A PERCENTAGE. TOPSOIL (TS.) - SURFACE SOILS USUALLY CONTAINING ORGANIC MATTER.																			
GENERAL										AR - AUGER REFUSAL BT - BORING TERMINATED CL - CLAY CPT - CONE PENETRATION TEST CSE - COARSE DMT - DILATOMETER TEST DPT - DYNAMIC PENETRATION TEST e - VOID RATIO F - FINE FOSS. - FOSSILIFEROUS FRAC. - FRACTURED, FRACTURES FRAGS. - FRAGMENTS HI. - HIGHLY										MED. - MEDIUM MICA. - MICACEOUS MOD. - MODERATELY NP - NON PLASTIC ORG. - ORGANIC PMT - PRESSUREMETER TEST SAP. - SAPROLITIC SD. - SAND, SANDY SL. - SILT, SILTY SLI. - SLIGHTLY TCR - TRICONE REFUSAL w - MOISTURE CONTENT V - VERY										VST - VANE SHEAR TEST WEA. - WEATHERED γ _u - UNIT WEIGHT γ _d - DRY UNIT WEIGHT SAMPLE ABBREVIATIONS S - BULK SS - SPLIT SPOON ST - SHELBY TUBE RS - ROCK RT - RECOMPACTED TRIAXIAL CBR - CALIFORNIA BEARING RATIO									
TEXTURE OR GRAIN SIZE										EQUIPMENT USED ON SUBJECT PROJECT										FRACTURE SPACING																			
U.S. STD. SIEVE SIZE OPENING (MM)										DRILL UNITS: CME-45C CME-55 CME-550 VANE SHEAR TEST PORTABLE HOIST										ADVANCING TOOLS: CLAY BITS 6" CONTINUOUS FLIGHT AUGER 8" HOLLOW AUGERS HARD FACED FINGER BITS TUNG-CARBIDE INSERTS CASING w/ ADVANCER TRICONE 2 15/16" STEEL TEETH TRICONE " TUNG-CARB. CORE BIT										HAMMER TYPE: AUTOMATIC MANUAL CORE SIZE: -B -H -N HAND TOOLS: POST HOLE DIGGER HAND AUGER SOUNDING ROD VANE SHEAR TEST									
BOULDER (BLDR.)										CME-45C										TERM																			
COBBLE (COB.)										CME-55										SPACING																			
GRAVEL (GR.)										CME-550										VERY WIDE																			
COARSE SAND (CSE. SD.)										VANE SHEAR TEST										MORE THAN 10 FEET																			
FINE SAND (F SD.)										PORTABLE HOIST										3 TO 10 FEET																			
SILT (SL.)										CME-45C										1 TO 3 FEET																			
CLAY (CL.)										CME-55										CLOSE																			
										CME-550										0.16 TO 1 FOOT																			
										VANE SHEAR TEST										LESS THAN 0.16 FEET																			
										PORTABLE HOIST																													
										CME-45C																													
										CME-55																													
										CME-550																													
										VANE SHEAR TEST																													
										PORTABLE HOIST																													
										CME-45C																													
										CME-55																													
										CME-550																													
										VANE SHEAR TEST																													
										PORTABLE HOIST																													
										CME-45C																													
										CME-55																													
										CME-550																													
										VANE SHEAR TEST																													
										PORTABLE HOIST																													
										CME-45C																													
										CME-55																													
										CME-550																													
										VANE SHEAR TEST																													
										PORTABLE HOIST																													
										CME-45C																													
										CME-55																													
										CME-550																													
										VANE SHEAR TEST																													
										PORTABLE HOIST																													
										CME-45C																													
										CME-55																													
										CME-550																													
										VANE SHEAR TEST																													
										PORTABLE HOIST																													
										CME-45C																													
										CME-55																													
										CME-550																													
										VANE SHEAR TEST																													
										PORTABLE HOIST																													
										CME-45C																													
										CME-55																													
										CME-550																													
										VANE SHEAR TEST																													
										PORTABLE HOIST																													
										CME-45C																													
										CME-55																													
										CME-550																													
										VANE SHEAR TEST																													
										PORTABLE HOIST																													
										CME-45C																													
										CME-55																													
										CME-550																													
										VANE SHEAR TEST																													
										PORTABLE HOIST																													
										CME-45C																													
										CME-55																													
										CME-550																													
										VANE SHEAR TEST																													
										PORTABLE HOIST																													
										CME-45C																													
										CME-55																													
										CME-550																													
										VANE SHEAR TEST																													
										PORTABLE HOIST																													
										CME-45C																													
										CME-55																													
										CME-550																													
										VANE SHEAR TEST																													
										PORTABLE HOIST																													
										CME-45C																													
										CME-55																													
										CME-550																													
										VANE SHEAR TEST																													
										PORTABLE HOIST																													
										CME-45C																													
										CME-55																													
										CME-550																													
										VANE SHEAR TEST																													
										PORTABLE HOIST																													
										CME-45C																													
										CME-55																													
										CME-550																													
										VANE SHEAR TEST																													
										PORTABLE HOIST																													
										CME-45C																													
										CME-55																													
										CME-550																													
										VANE SHEAR TEST																													
										PORTABLE HOIST																													
										CME-45C																													
										CME-55																													
										CME-550																													
										VANE SHEAR TEST																													
										PORTABLE HOIST																													
										CME-45C																													
										CME-55																													
										CME-550																													
										VANE SHEAR TEST																													
										PORTABLE HOIST																													
										CME-45C																													
										CME-55																													
										CME-550																													
										VANE SHEAR TEST																													
										PORTABLE HOIST																													
										CME-45C																													
										CME-55																													
										CME-550																													
										VANE SHEAR TEST																													
										PORTABLE HOIST																													
										CME-45C																													
										CME-55																													
										CME-550																													
										VANE SHEAR TEST																													
										PORTABLE HOIST																													
										CME-45C																													
										CME-55																													
										CME-550																													
										VANE SHEAR TEST																													
										PORTABLE HOIST																													
										CME-45C																													
										CME-55																													
										CME-550																													
										VANE SHEAR TEST																													
										PORTABLE HOIST																													
										CME-45C																													
										CME-55																													
										CME-550																													
										VANE SHEAR TEST																													
										PORTABLE HOIST																													
										CME-45C																													
										CME-55																													
										CME-550																													
										VANE SHEAR TEST																													
										PORTABLE HOIST																													
										CME-45C																													
										CME-55																													
										CME-550																													
										VANE SHEAR TEST																													
										PORTABLE HOIST																													
										CME-45C																													
										CME-55																													
										CME-550																													
										VANE SHEAR TEST																													
										PORTABLE HOIST																													
										CME-45C																													
										CME-55																													
										CME-550																													
										VANE SHEAR TEST																													
										PORTABLE HOIST																													
										CME-45C																													
										CME-55																													
										CME-550																													
										VANE SHEAR TEST																													
										PORTABLE HOIST																													
										CME-45C																													
										CME-55																													
										CME-550																													
										VANE SHEAR TEST																													
										PORTABLE HOIST																													
										CME-45C																													
										CME-55																													
										CME-550																													
										VANE SHEAR TEST																													
										PORTABLE HOIST																													
										CME-45C																													
										CME-55																													
										CME-550																													
										VANE SHEAR TEST																													
										PORTABLE HOIST																													
										CME-45C																													
										CME-55																													
										CME-550																													
										VANE SHEAR TEST																													
										PORTABLE HOIST																													
										CME-45C																													
										CME-55																													
										CME-550																													
										VANE SHEAR TEST																													
										PORTABLE HOIST																													
										CME-45C																													
										CME-55																													
										CME-550																													
										VANE SHEAR TEST																													
										PORTABLE HOIST																													
										CME-45C																													
										CME-55																													
										CME-550																													
										VANE SHEAR TEST																													
										PORTABLE HOIST																													
										CME-45C																													
										CME-55																													
										CME-550																													
										VANE SHEAR TEST																													
										PORTABLE HOIST																													
										CME-45C																													
										CME-55																													
										CME-550																													
										VANE SHEAR TEST																													
										PORTABLE HOIST																													
										CME-45C																													
										CME-55																													
										CME-550																													
										VANE SHEAR TEST																													
										PORTABLE HOIST																													
										CME-45C																													
										CME-55																													

PROJECT REFERENCE NO.	SHEET NO.
SF-950219	3
SITE PLAN	
03060 FEET	

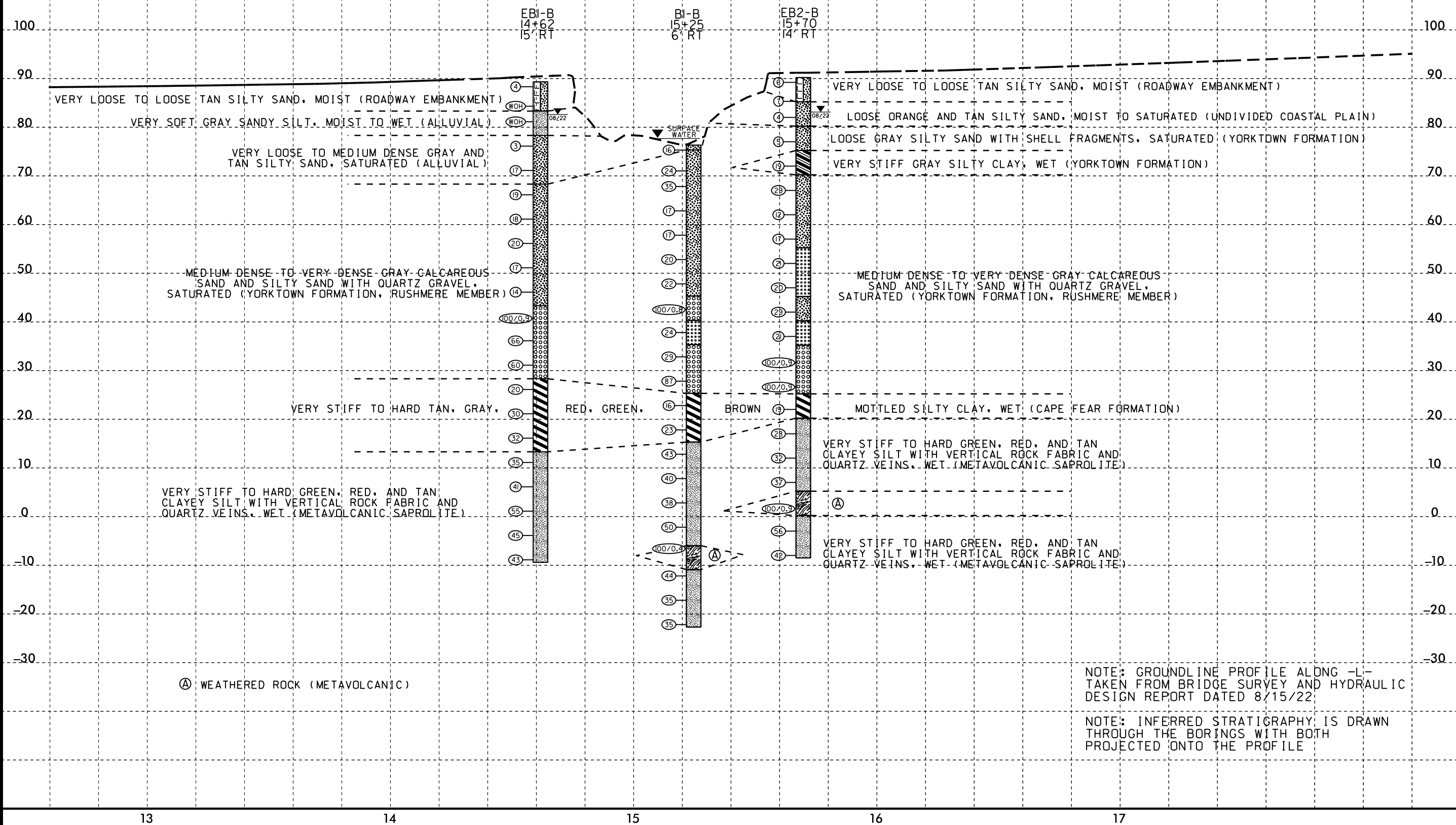


5/14/99

PROJECT REFERENCE NO. SF-950219		SHEET NO. 4	
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION			
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			

PROFILE THROUGH BORINGS PROJECTED ALONG -L-

V.E. = 2



12-SEP-2022 09:23
\\SF-950219\Geo\BROG.PFL.dgn
\$\$\$\$\$

NC DOT BORE DOUBLE SF950219 GEO BRDG.GPJ NC_DOT_GDT 9/12/22

[illegible]

NCDOT BORE DOUBLE SF950219 GEO_BRDG.GPJ NC_DOT.GDT 9/12/22[illegible]

WCDOT BORE DOUBLE SF950219 GEO BRDG.GPJ NC DOT.GDT 9/12/22

WBS BP4.R027.1				TIP SF-950219				COUNTY WAYNE				GEOLOGIST Miller, T. W.					
SITE DESCRIPTION BRIDGE NO. 219 ON -L- (SR 1505) OVER AYCOCK SWAMP												GROUND WTR (ft)					
BORING NO. EB2-B				STATION 15+70				OFFSET 14 ft RT				ALIGNMENT -L-				0 HR. N/A	
COLLAR ELEV. 90.2 ft				TOTAL DEPTH 98.7 ft				NORTHING 663,220				EASTING 2,325,276				24 HR. 7.1	
DRILL RIG/HAMMER EFF./DATE RFC0074 CME-55 92% 08/02/2022								DRILL METHOD Mud Rotary				HAMMER TYPE Automatic					
DRILLER Walker, C. M.				START DATE 08/30/22				COMP. DATE 08/30/22				SURFACE WATER DEPTH N/A					
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION				
			0.5ft	0.5ft	0.5ft	0	25	50	75	100		MOI					
15						Match Line								<			