

CONTRACT: DC00409
TIP PROJECT: 17BP.3.PE.87

8/18/2022
 I:\Roadway\Proj\B5306_RDY_TSH.dgn
 USER:jfroemer

STATE OF NORTH CAROLINA
 DIVISION OF HIGHWAYS

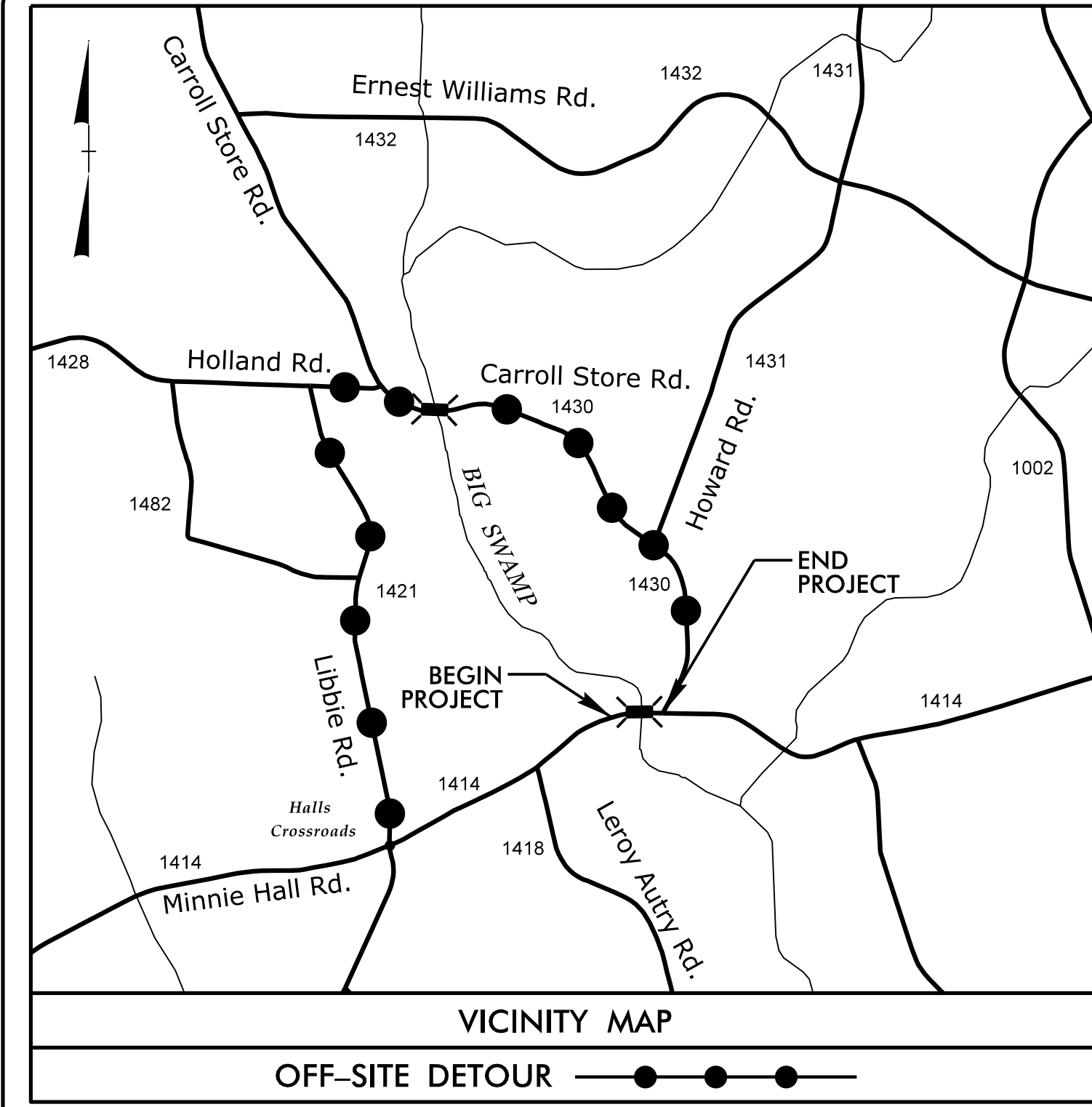
SAMPSON COUNTY

**LOCATION: BRIDGE NO.122 OVER BIG SWAMP
 ON SR 1414 (MINNIE HALL RD.)**

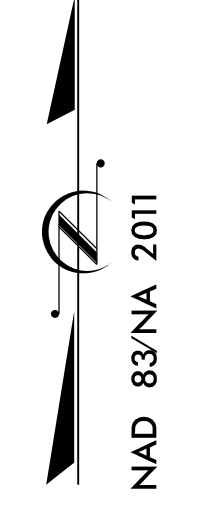
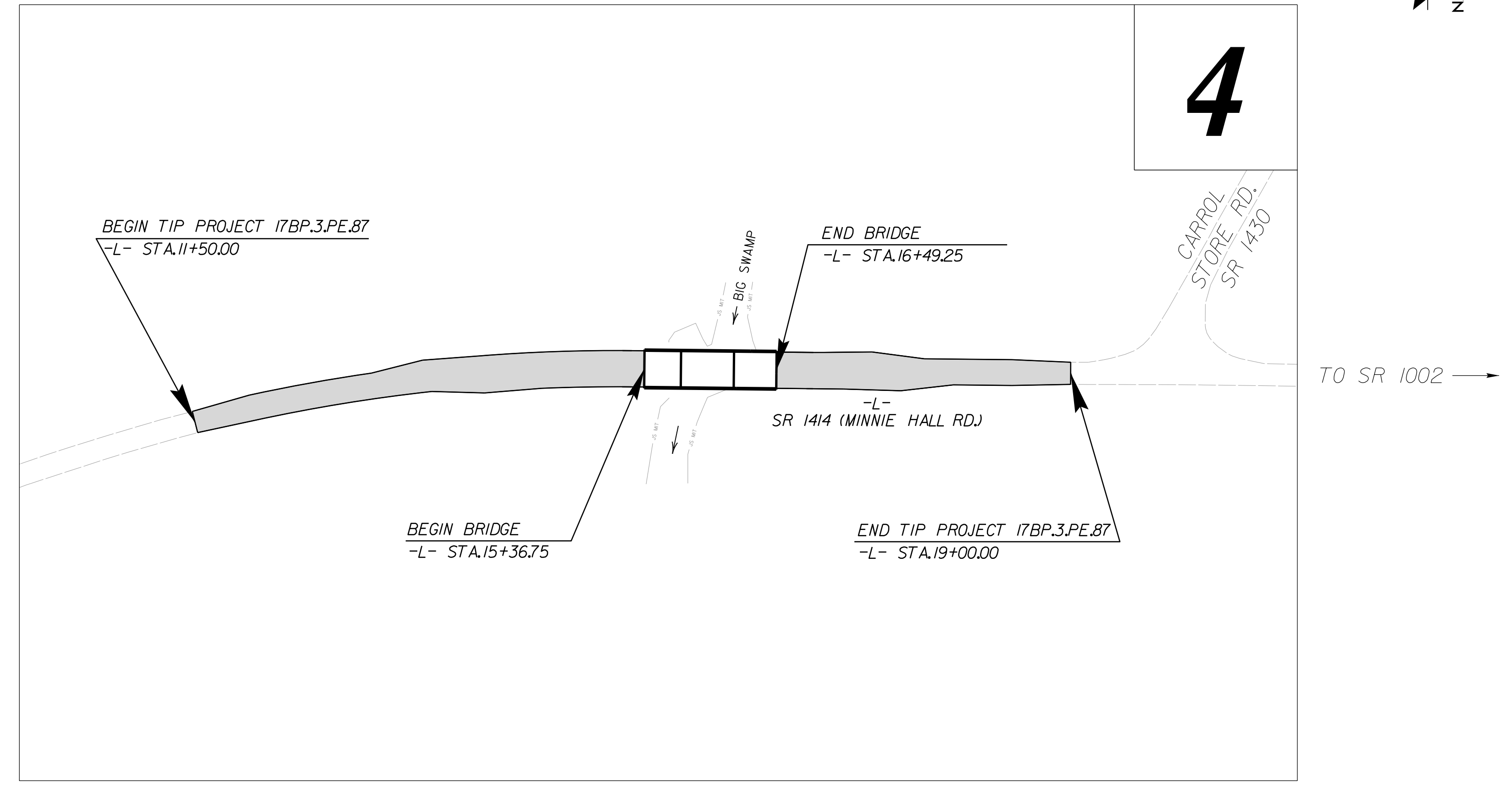
TYPE OF WORK: GRADING, DRAINAGE, PAVING, AND STRUCTURE

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	17BP.3.PE.87	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
17BP.3.PE.87	N/A	PE	
17BP.3.ROW.87	N/A	ROWUTIL.	
17BP.3.R.87	N/A	CONSTRUCTION	

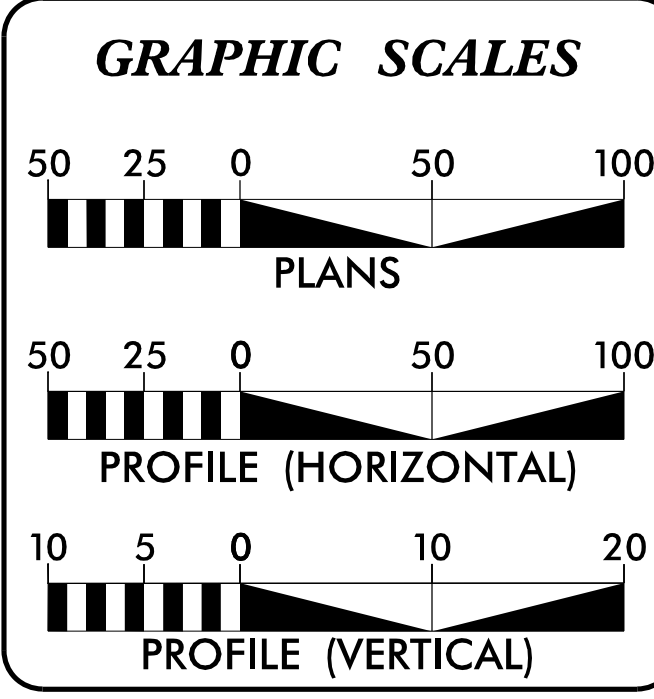
FORMERLY B-5306



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



DOCUMENT NOT CONSIDERED FINAL
 UNLESS ALL SIGNATURES COMPLETED



DESIGN DATA

2022 ADT = 1004 VPD
2042 ADT = 1459 VPD
K = 12%
D = 60%
T = 5% *
V = 60 MPH
* (TTST 2% + DUAL 3%)
FUNC. CLASS. = RURAL LOCAL
SUBREGIONAL TIER

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT 17BP.3.PE.87	=	0.121 mi.
LENGTH STRUCTURES TIP PROJECT 17BP.3.PE.87	=	0.021 mi.
TOTAL LENGTH TIP PROJECT 17BP.3.PE.87	=	0.142 mi.

Prepared in the Offices of:

223 S. WEST ST., STE 1100
 RALEIGH, NC 27603
 T 919.380.8750

VHB Engineering NC, P.C. (C-3705)
 940 Main Campus Drive, Suite 500
 Raleigh, NC 27606

2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
 MARCH 18, 2022

LETTING DATE:
 SEPTEMBER 29, 2022

ANDY YOUNG, PE
 PROJECT ENGINEER

JOSHUA ROEMER, EI
 PROJECT DESIGN ENGINEER

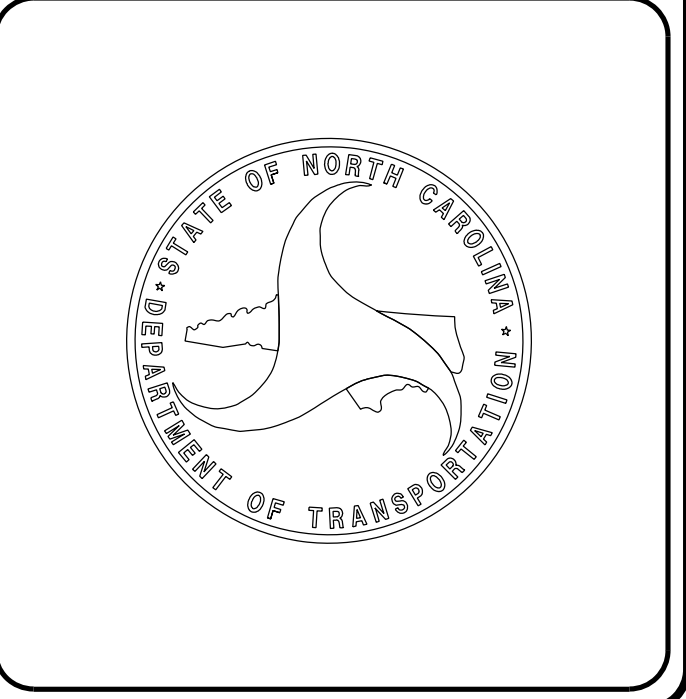
DEREK PIELECH, PE
 NCDOT CONTACT

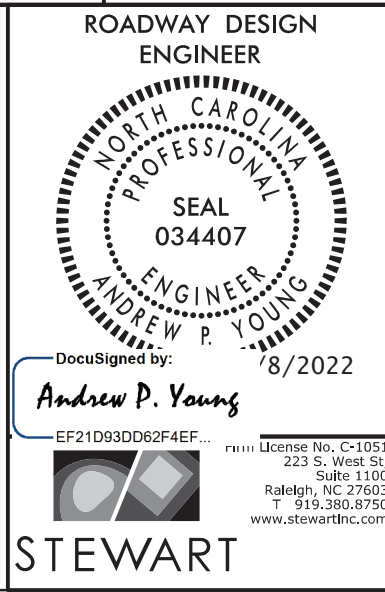
HYDRAULICS ENGINEER

DocuSigned by: *Frank Fleming* 8/28/2022
 SIGNATURE: _____ P.E.

ROADWAY DESIGN ENGINEER

DocuSigned by: *Andrew P. Young* 8/22/2022
 SIGNATURE: _____ P.E.





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

SHEET NUMBER	INDEX OF SHEETS SHEET	2018 ROADWAY ENGLISH STANDARD DRAWINGS	EFF. 01-16-2018 REV.
1	TITLE SHEET	The following Roadway Standards as appear in "Roadway Standard Drawings" Highway Design Branch - N. C. Department of Transportation - Raleigh, N. C., Dated January, 2018 are applicable to this project and by reference hereby are considered a part of these plans:	
1A	INDEX OF SHEETS, GENERAL NOTES, AND STANDARD DRAWINGS		
1B	CONVENTIONAL SYMBOLS	STD.NO. TITLE	
2A-1	PAVEMENT SCHEDULE AND TYPICAL SECTIONS	DIVISION 2 - EARTHWORK	
2C-1	METHOD OF CLEARING DETAIL	225.02 Guide for Grading Subgrade - Secondary and Local	
2C-2	MODIFIED SHOULDER BERM GUTTER DETAIL	225.04 Method of Obtaining Superelevation - Two Lane Pavement	
2C-3	STRUCTURE ANCHOR UNITS DETAIL	DIVISION 3 - PIPE CULVERTS	
2G-1	ROCK PLATING DETAIL	300.01 Method of Pipe Installation	
3B-1	ROADWAY SUMMARIES	DIVISION 5 - SUBGRADE, BASES AND SHOULDERS	
3D-1	DRAINAGE SUMMARY	560.01 Method of Shoulder Construction - High Side of Superelevated Curve - Method 1	
3G-1	GEOTECHNICAL SUMMARIES	DIVISION 6 - ASPHALT BASES AND PAVEMENTS	
4	PLAN SHEET	654.01 Pavement Repairs	
5	PROFILE SHEET	DIVISION 8 - INCIDENTALS	
RWD1 THRU RWD4	SURVEY CONTROL, EXISTING CENTERLINES, RIGHT OF WAY, EASEMENTS AND PROPERTY TIES SHEETS	840.00 Concrete Base Pad for Drainage Structures	
TMP-1 THRU TMP-3	TRANSPORTATION MANAGEMENT PLANS	840.29 Frames and Narrow Slot Flat Grates	
PMP-1 THRU PMP-2	PAVEMENT MARKING PLANS	846.01 Concrete Curb, Gutter and Curb & Gutter	
EC-1 THRU EC-5	EROSION CONTROL PLANS	846.04 Drop Inlet Installation in Shoulder Berm Gutter	
UD-1 THRU UD-2	UTILITIES BY OTHERS PLANS	862.01 Guardrail Placement	
X-1A	CROSS-SECTION INDEX SHEET	862.02 Guardrail Installation (Special Detail in lieu of Sheet 6 of 8)	
X-1B	CROSS-SECTION SUMMARY SHEET	862.03 Structure Anchor Units (Special Detail in lieu of Sheet 1 of 7 and Sheet 2 of 7)	
X-1 THRU X-6	CROSS-SECTIONS	876.02 Guide for Rip Rap at Pipe Outlets	
S-1 THRU S-23	STRUCTURE PLANS		

GENERAL NOTES: 2018 SPECIFICATIONS EFFECTIVE: 01-16-2018 REVISED:

GRADE LINE: GRADING AND SURFACING: THE GRADE LINES SHOWN DENOTE THE FINISHED ELEVATION OF THE PROPOSED SURFACING AT GRADE POINTS SHOWN ON THE TYPICAL SECTIONS. GRADE LINES MAY BE ADJUSTED AT THEIR BEGINNING AND ENDING AND AT STRUCTURES AS DIRECTED BY THE ENGINEER IN ORDER TO SECURE A PROPER TIE-IN.

CLEARING: CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY MODIFIED METHOD 111.

SUPERELEVATION: ALL CURVES ON THIS PROJECT SHALL BE SUPERELEVATED IN ACCORDANCE WITH STD. NO. 225.04 USING THE RATE OF SUPERELEVATION AND RUNOFF SHOWN ON THE PLANS. SUPERELEVATION IS TO BE REVOLVED ABOUT THE GRADE POINTS SHOWN ON THE TYPICAL SECTIONS.

SHOULDER CONSTRUCTION: ASPHALT, EARTH, AND CONCRETE SHOULDER CONSTRUCTION ON THE HIGH SIDE OF SUPERELEVATED CURVES SHALL BE IN ACCORDANCE WITH STD. NO. 560.01

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

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

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

UTILITIES: UTILITY OWNERS ON THIS PROJECT ARE
South River Electric Membership Corporation - Power
Star Telephone Membership Corporation - Telecommunications
ANY RELOCATION OF EXISTING UTILITIES WILL BE ACCOMPLISHED BY OTHERS.



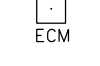


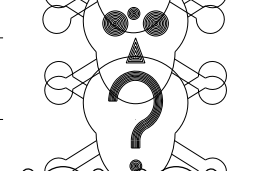
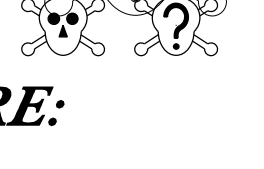
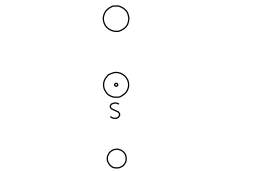
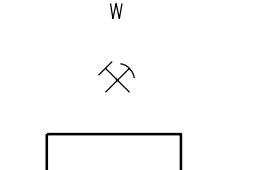
RIGHT-OF-WAY MARKERS: ALL RIGHT-OF-WAY MARKERS ON THIS PROJECT SHALL BE PLACED BY OTHERS.

STATE OF NORTH CAROLINA, DIVISION OF HIGHWAYS



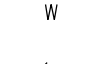
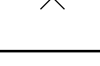
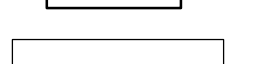
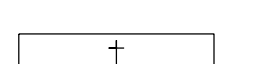

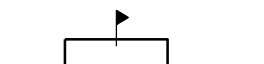
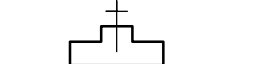
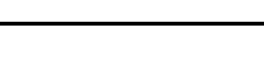

CONVENTIONAL PLAN SHEET SYMBOLS

Note: Not to Scale

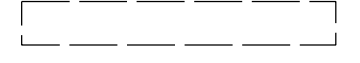
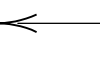


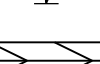

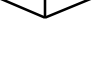
BOUNDARIES AND PROPERTY:

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	-x-x-x-
Proposed Woven Wire Fence	-o-o-o-
Proposed Chain Link Fence	-s-s-s-
Proposed Barbed Wire Fence	->->->-
Existing Wetland Boundary	-----WLB
Proposed Wetland Boundary	-----WLB
Existing Endangered Animal Boundary	-----EAB
Existing Endangered Plant Boundary	-----EPB
Existing Historic Property Boundary	-----HPB
Known Contamination Area: Soil	
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	

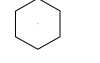











HYDROLOGY:

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


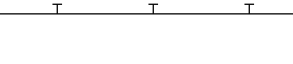
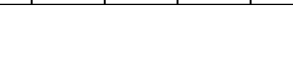
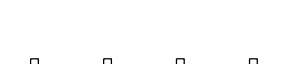






RAILROADS:



Standard Gauge	-----
RR Signal Milepost	
Switch	
RR Abandoned	-----
RR Dismantled	-----

RIGHT OF WAY & PROJECT CONTROL:


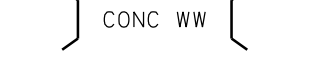

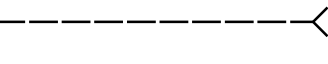
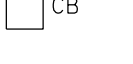

Primary Horiz Control Point	
Primary Horiz and Vert Control Point	
Secondary Horiz and Vert Control Point	
Vertical Benchmark	
Existing Right of Way Monument	
Proposed Right of Way Monument (Rebar and Cap)	
Proposed Right of Way Monument (Concrete)	
Existing Permanent Easement Monument	
Proposed Permanent 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	-----E
Proposed Temporary Construction Easement	-----E
Proposed Temporary Drainage Easement	-----TDE
Proposed Permanent Drainage Easement	-----PDE
Proposed Permanent Drainage/Utility Easement	-----DUE
Proposed Permanent Utility Easement	-----PUE
Proposed Temporary Utility Easement	-----TUE
Proposed Aerial Utility Easement	-----AUE

ROADS AND RELATED FEATURES:

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







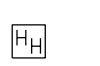
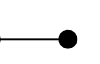

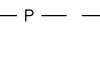

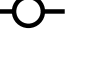

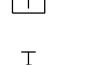
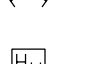

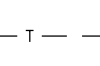
Woods Line	-----
Orchard	
Vineyard	

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	-----S

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)*	-----P
U/G Power Line (SUE - LOS C)*	-----P
U/G Power Line (SUE - LOS D)*	-----P
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)*	-----T
U/G Telephone Cable (SUE - LOS C)*	-----T
U/G Telephone Cable (SUE - LOS D)*	-----T
U/G Telephone Conduit (SUE - LOS B)*	-----TC
U/G Telephone Conduit (SUE - LOS C)*	-----TC
U/G Telephone Conduit (SUE - LOS D)*	-----TC
U/G Fiber Optics Cable (SUE - LOS B)*	-----T FO
U/G Fiber Optics Cable (SUE - LOS C)*	-----T FO
U/G Fiber Optics Cable (SUE - LOS D)*	-----T FO




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)*	-----W
U/G Water Line (SUE - LOS C)*	-----W
U/G Water Line (SUE - LOS D)*	-----W
Above Ground Water Line	-----A/G Water
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)*	-----TV
U/G TV Cable (SUE - LOS C)*	-----TV
U/G TV Cable (SUE - LOS D)*	-----TV
U/G Fiber Optic Cable (SUE - LOS B)*	-----TV FO
U/G Fiber Optic Cable (SUE - LOS C)*	-----TV FO
U/G Fiber Optic Cable (SUE - LOS D)*	-----TV FO







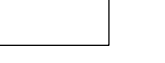



GAS:

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

SANITARY SEWER:

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

MISCELLANEOUS:

Utility Pole	
Utility Pole with Base	
Utility Located Object	
Utility Traffic Signal Box	
Utility Unknown U/G Line (SUE - LOS B)*	-----TUL
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	

9/10/2021

8/17/99

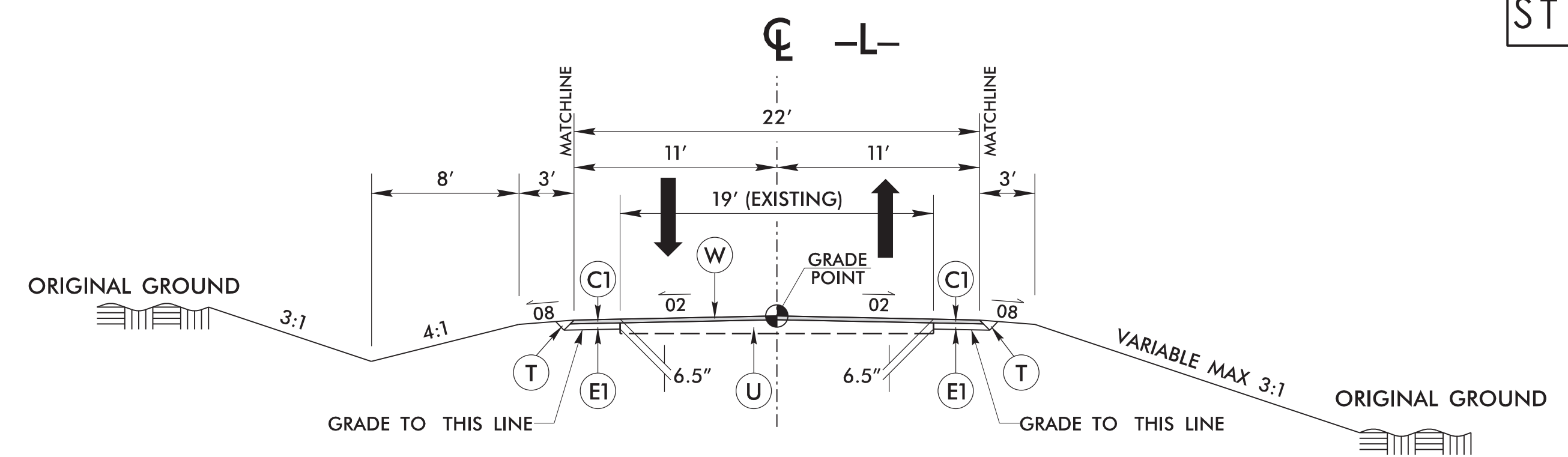


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T 919.380.8750
www.stewartinc.com

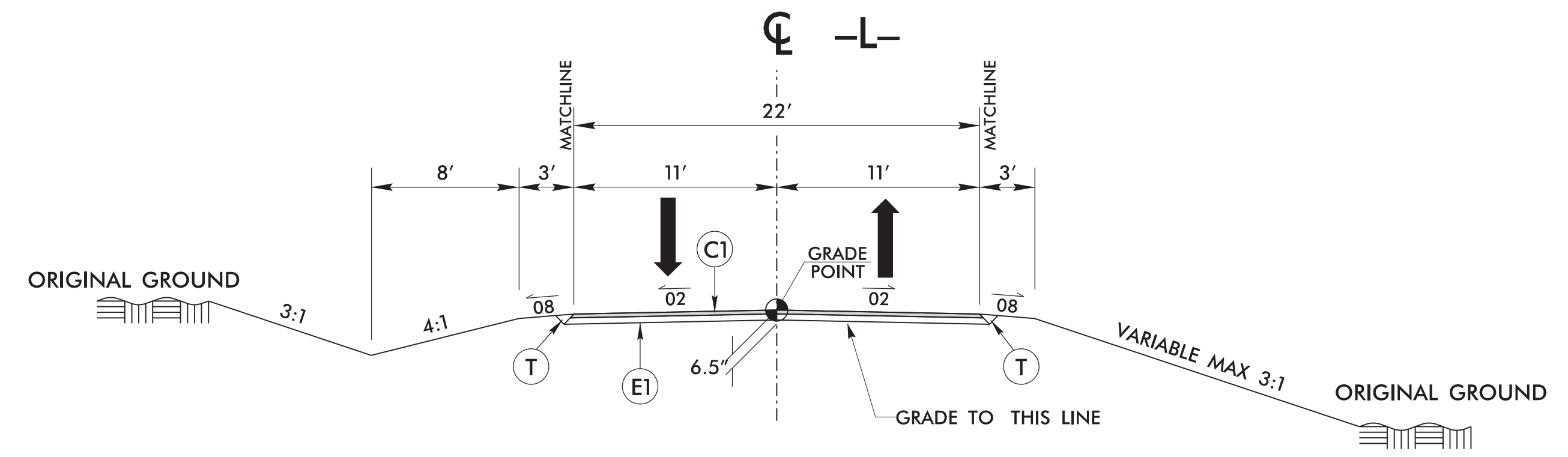
PROJECT REFERENCE NO. 17BP.3.PE.87	SHEET NO. 2A-1
ROADWAY DESIGN ENGINEER ANDREW P. YOUNG SEAL 034407 DocuSigned by: Andrew P. Young 8/2/2022	PAVEMENT DESIGN ENGINEER CLARK S. MORRISON SEAL 022896 DocuSigned by: Clark S. Morrison 8/2/2022
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

PAVEMENT SCHEDULE <i>(FINAL PAVEMENT DESIGN)</i>	
C1	PROP. APPROX. 2 1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 137.5 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C2	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT TO EXCEED 1 1/2" 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 5 1/2" IN DEPTH.
R1	MODIFIED SHOULDER BERM GUTTER (SEE DETAIL SHEET 2C-2)
T	EARTH MATERIAL
U	EXISTING PAVEMENT
W	ASPHALT WEDGING (SEE DETAIL)

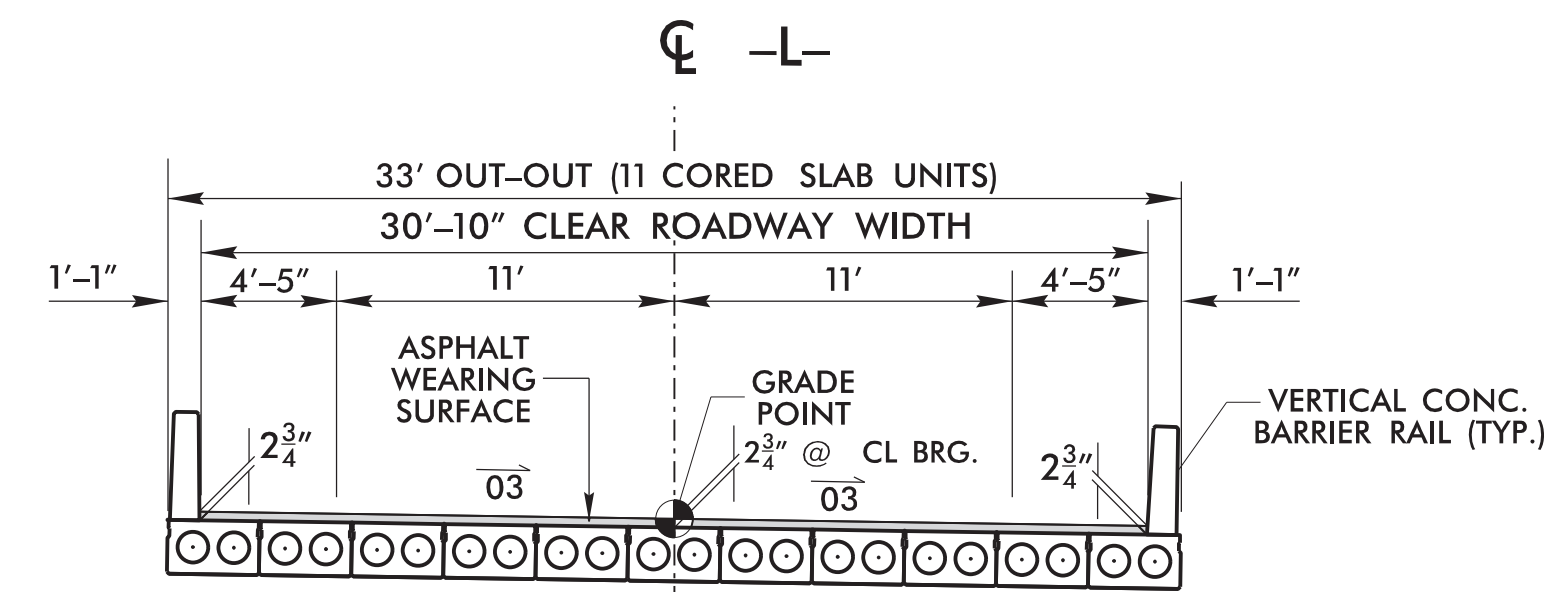
NOTE: PAVEMENT EDGE SLOPES ARE 1:1, UNLESS SHOWN OTHERWISE



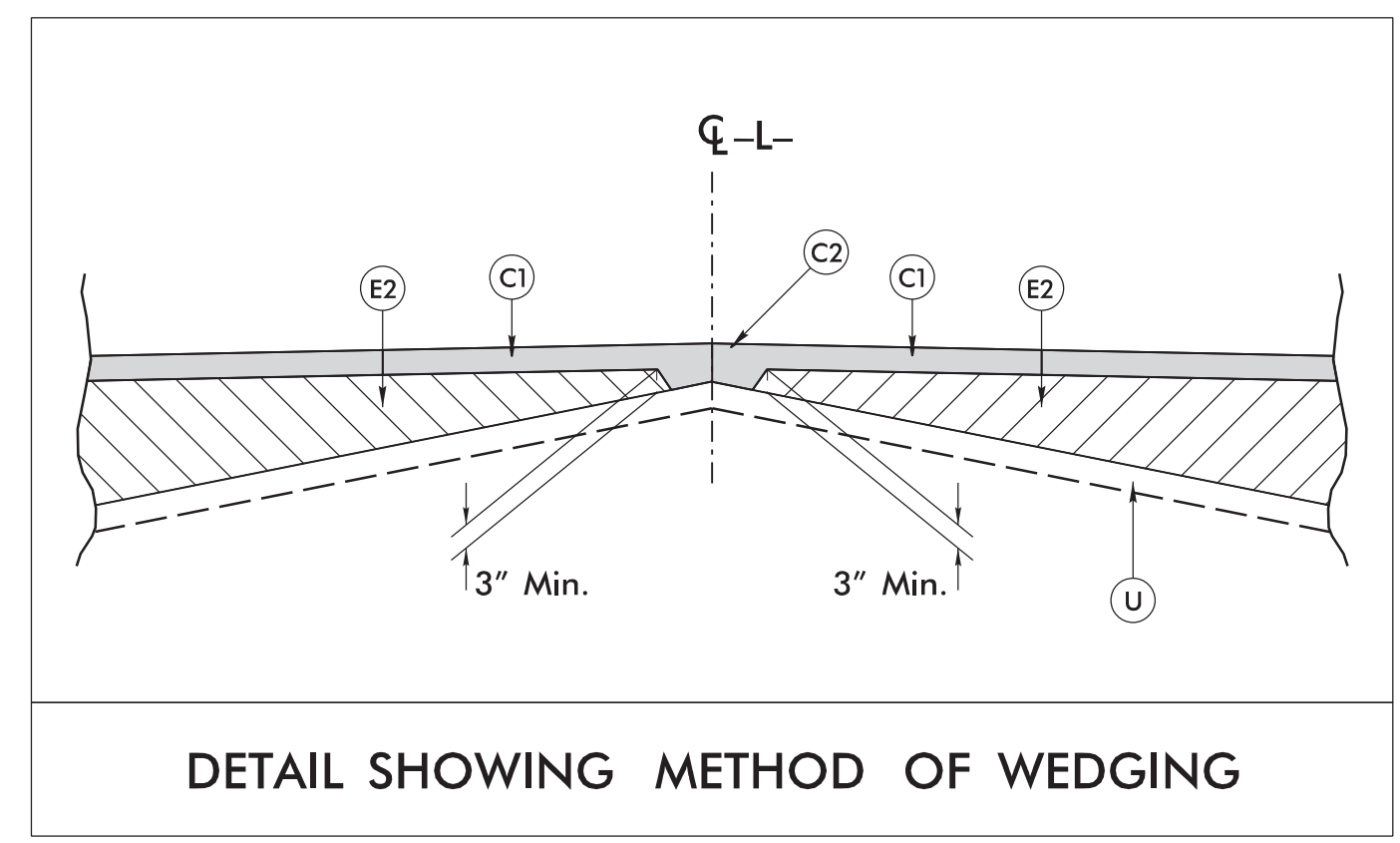
TYPICAL SECTION NO. 1
 -L- STA. 11+50.00 TO -L- STA. 13+00.00
 -L- STA. 17+00.00 TO -L- STA. 19+00.00



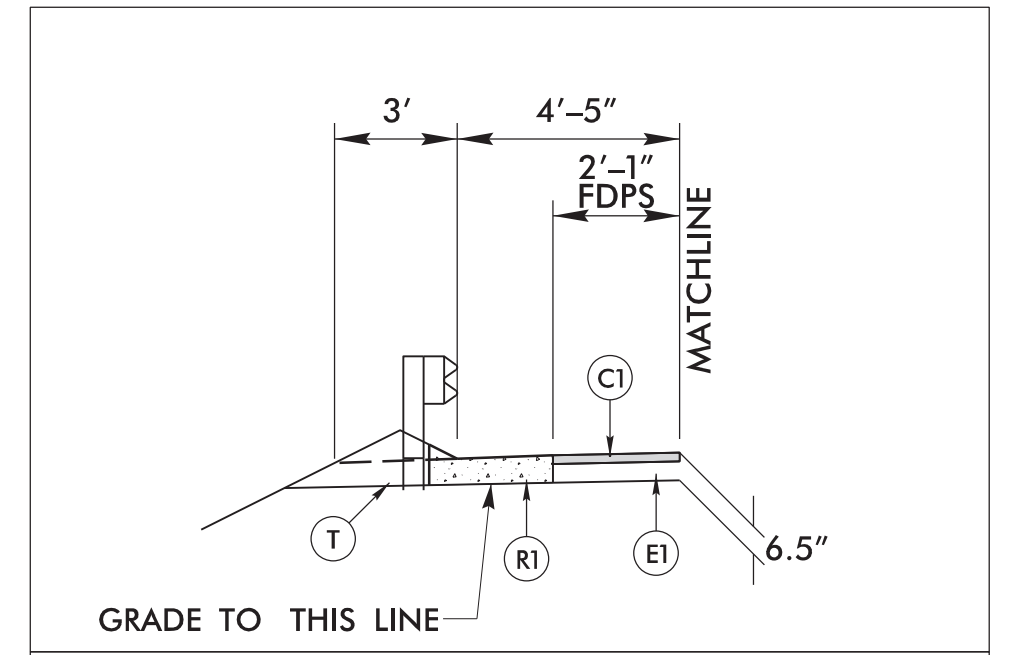
TYPICAL SECTION NO. 2
 -L- STA. 13+00.00 TO -L- STA. 15+36.75 (BEGIN BRIDGE)
 -L- STA. 16+49.25 (END BRIDGE) TO -L- STA. 17+00.00



TYPICAL SECTION NO. 3
 -L- STA. 15+36.75 (BEGIN BRIDGE) TO -L- STA. 16+49.25 (END BRIDGE)

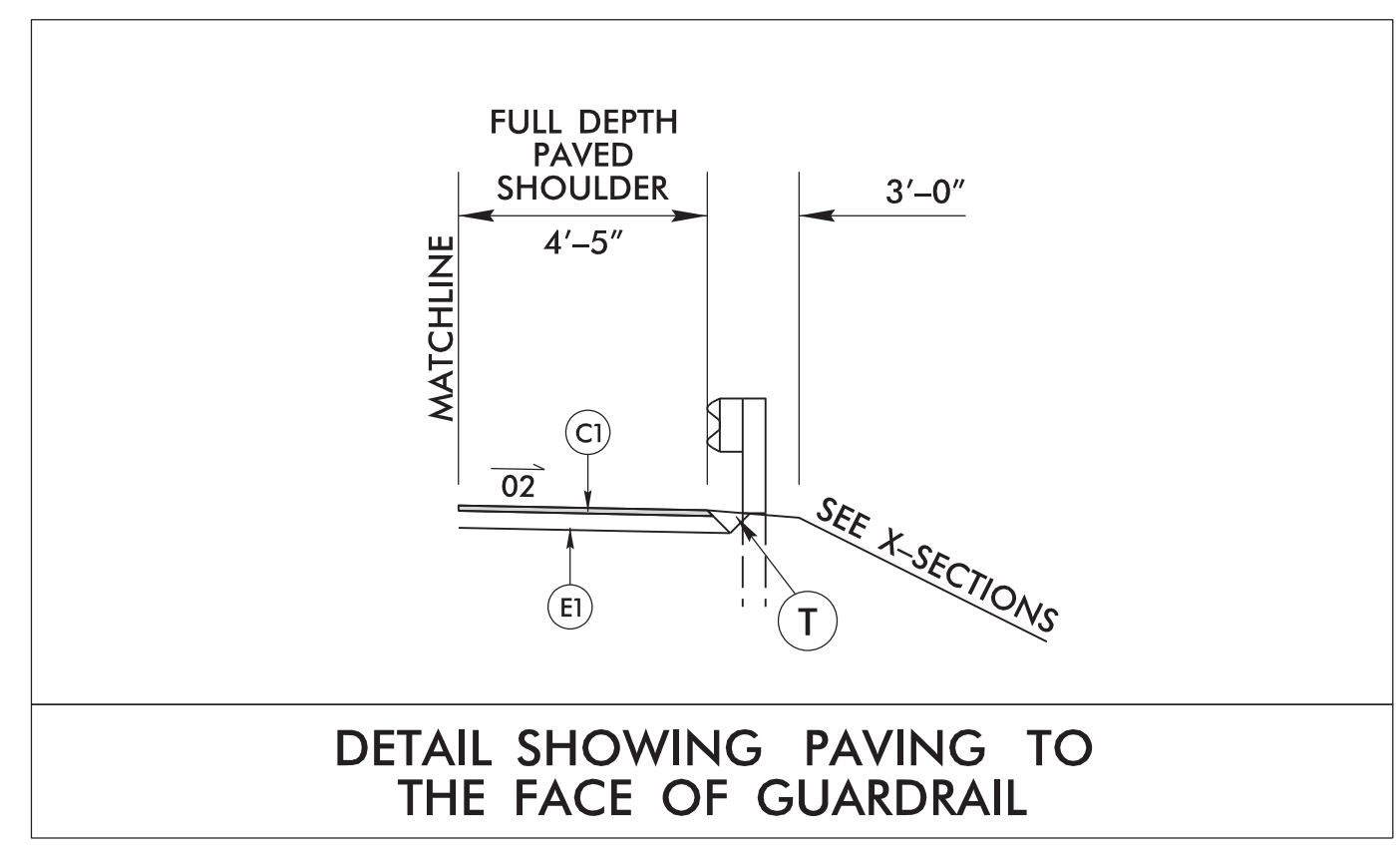


DETAIL SHOWING METHOD OF WEDGING

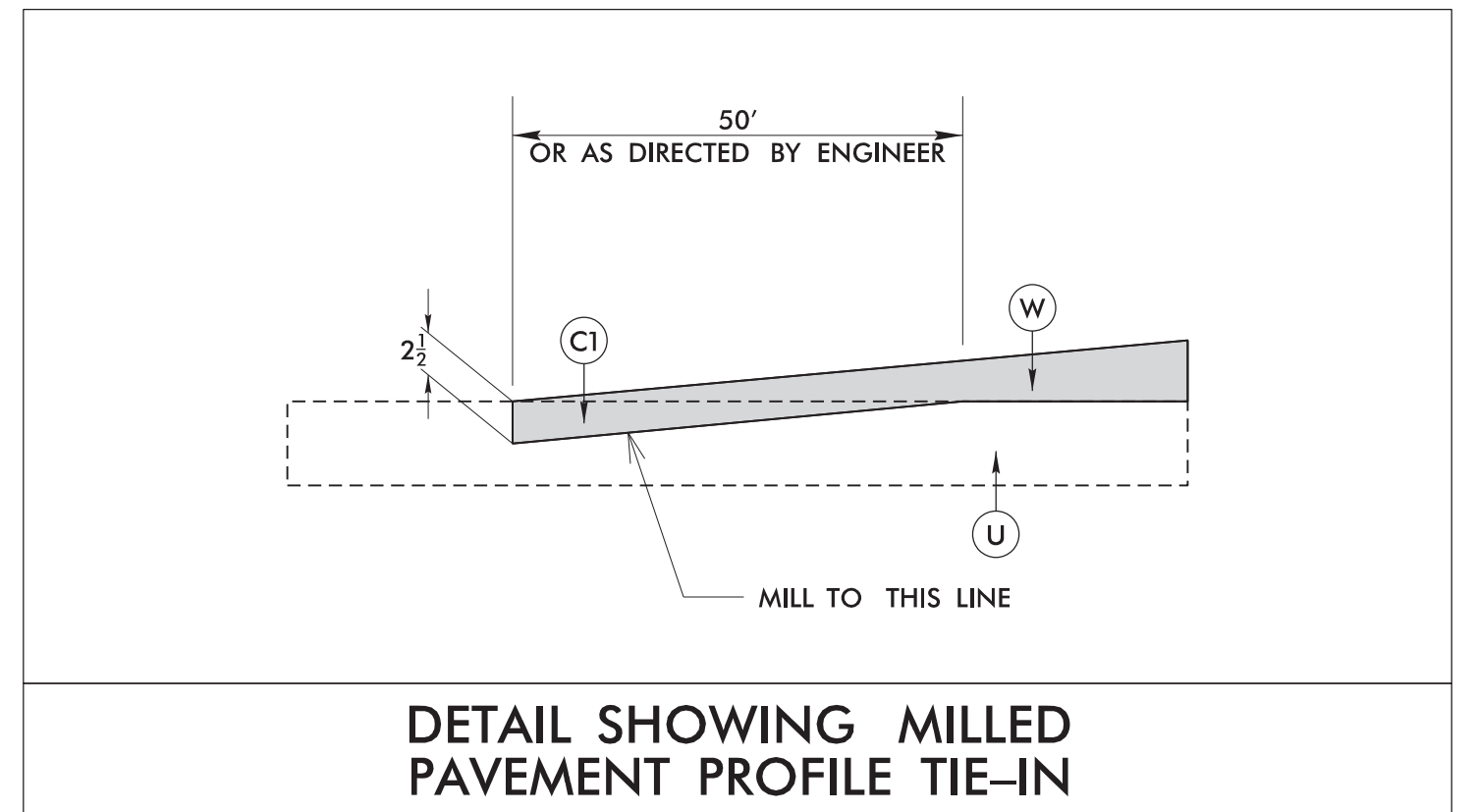


DETAIL SHOWING GUARDRAIL WITH MODIFIED SHOULDER BERM GUTTER

-L- STA. 16+60.13 TO -L- STA. 16+75.00 (RIGHT)



DETAIL SHOWING PAVING TO THE FACE OF GUARDRAIL



DETAIL SHOWING MILLED PAVEMENT PROFILE TIE-IN

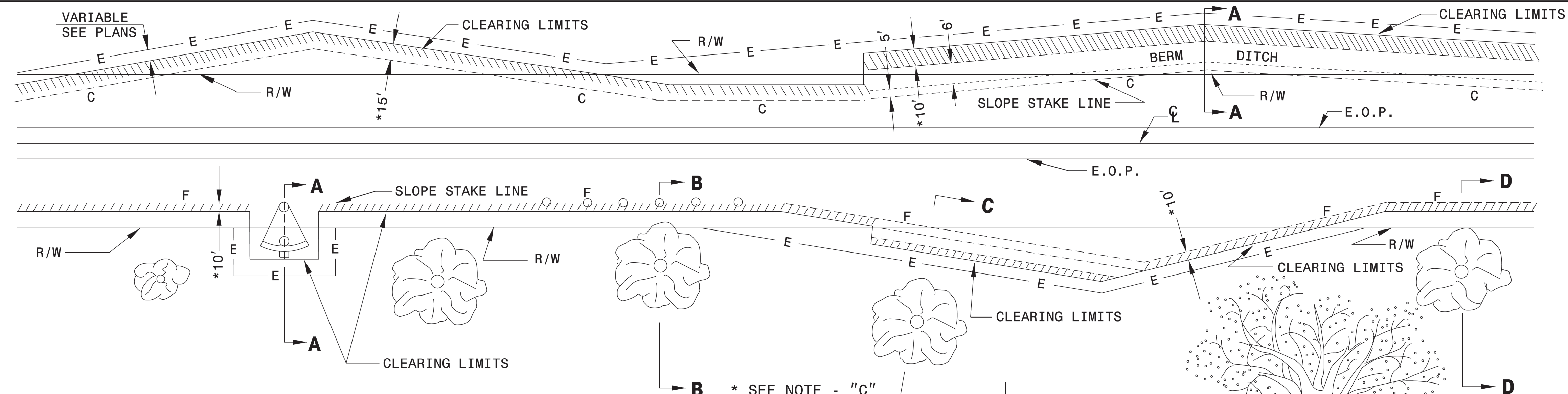
REVISIONS

8/1/2022
C:\Users\N\ProJ\B5306.RDY_TYP.dgn
USF

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

ENGLISH DETAIL DRAWING FOR
METHOD OF CLEARING
MODIFIED METHOD - III

SHEET 1 OF 1
200D03



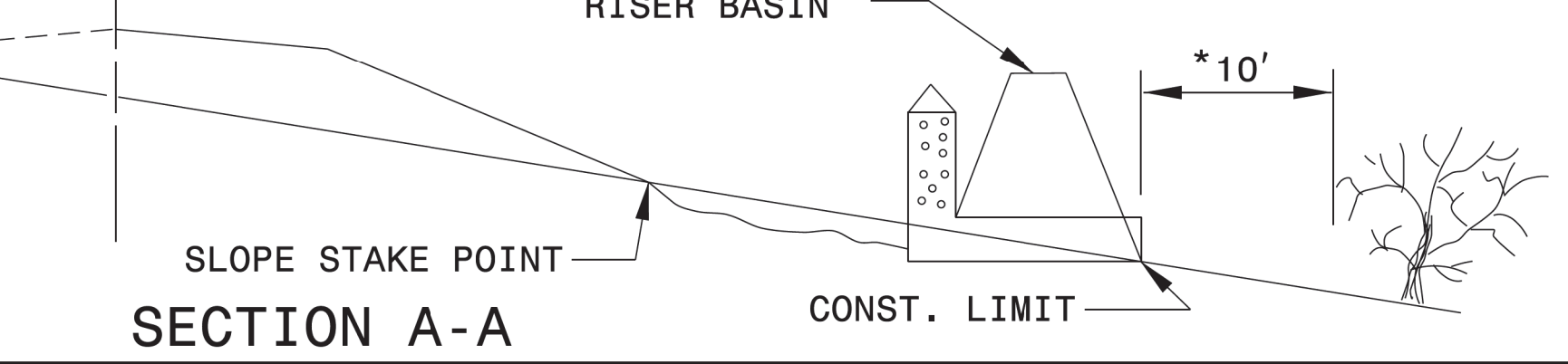
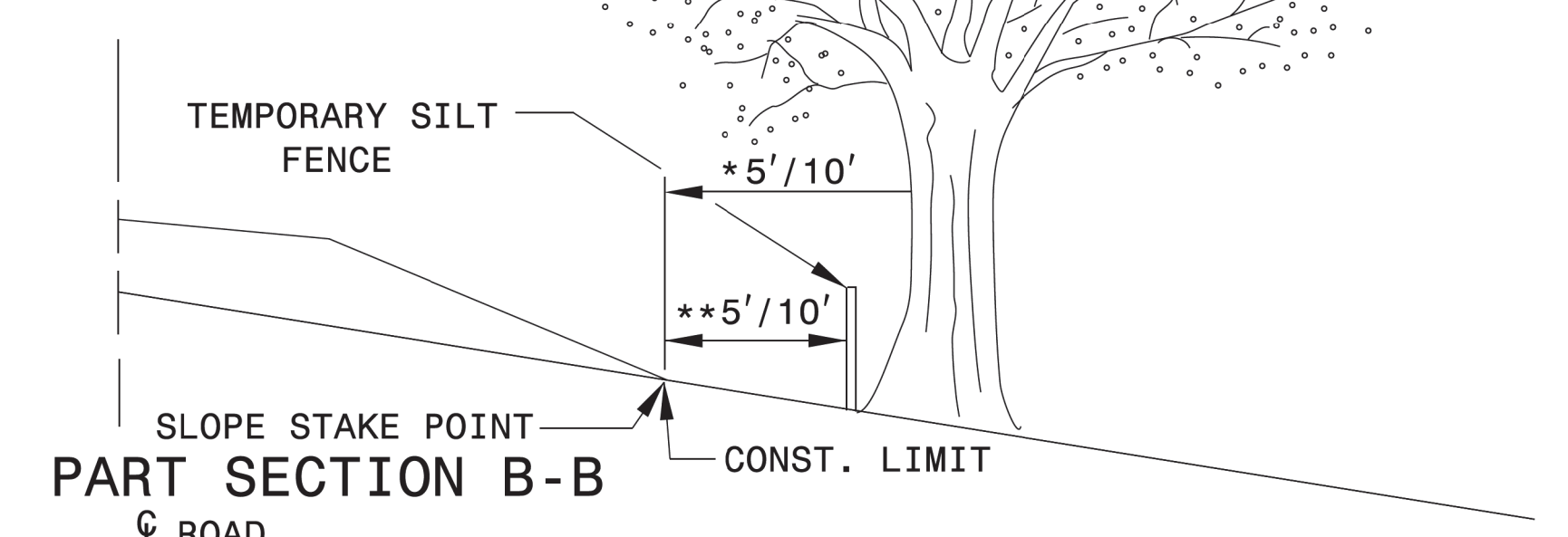
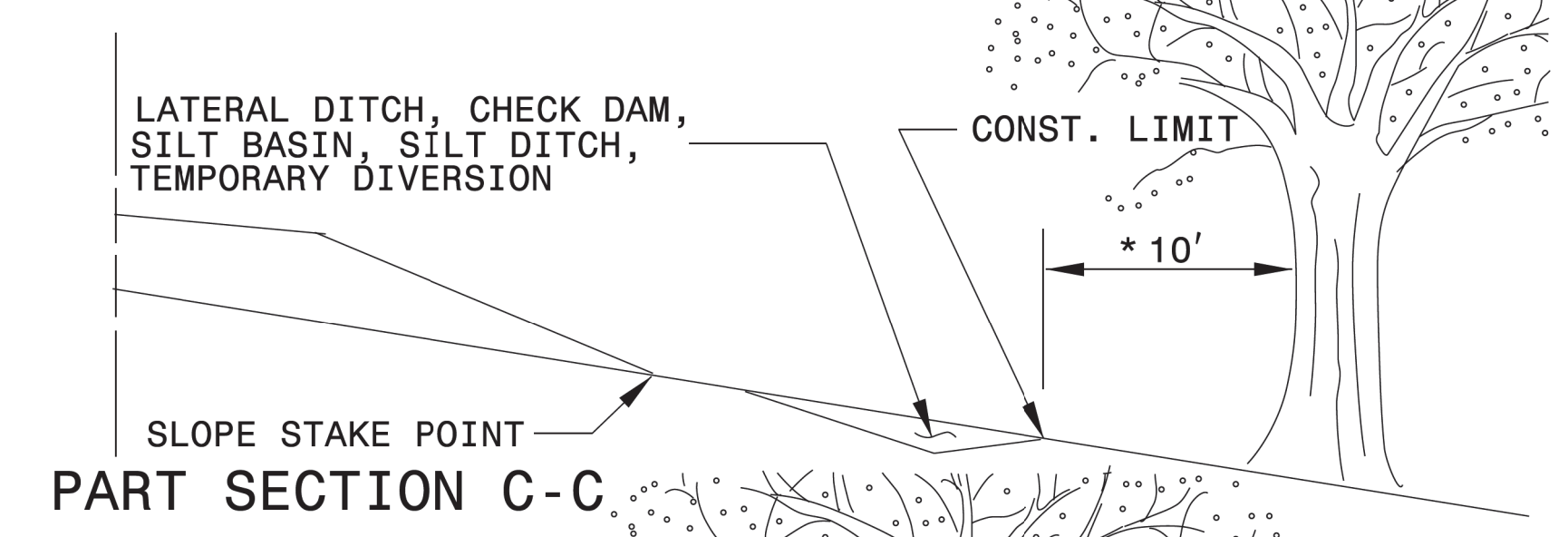
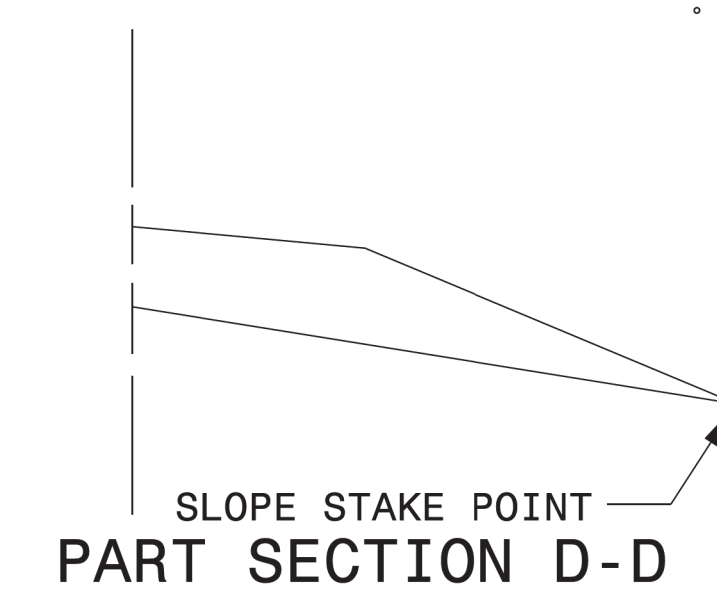
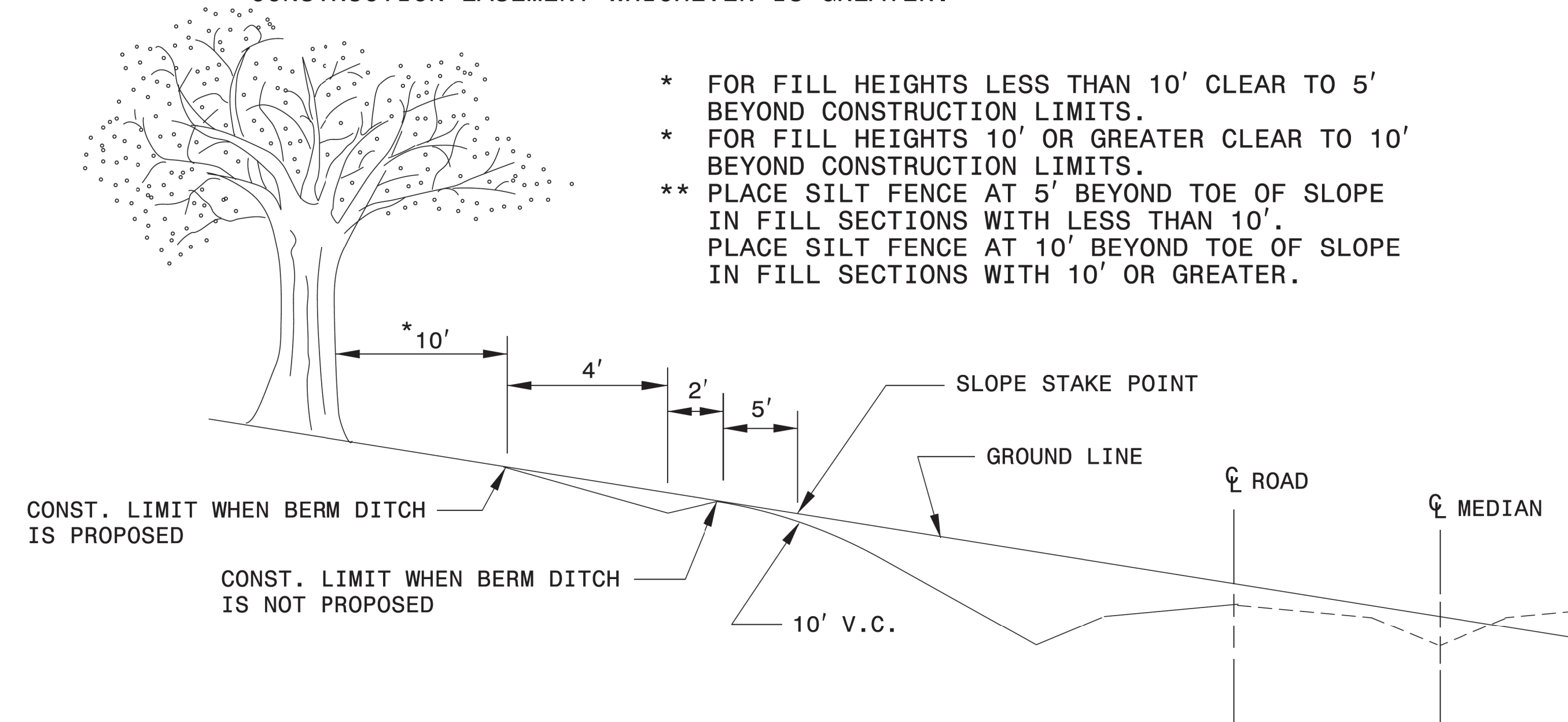
GENERAL NOTES:

1. REMOVE TREES OUTSIDE THE CLEARING LIMIT WHEN, IN THE OPINION OF THE ENGINEER, THE UTILITY OF A TREE WILL BE DESTROYED BY THE CONSTRUCTION OR THE CLEARING OPERATION.
2. CLEAR IN ACCORDANCE WITH THIS STANDARD EXCEPT WHERE ADDITIONAL CLEARING IS REQUIRED FOR SAFETY AS SHOWN ON THE PLANS.

METHOD III CLEARING LIMITS

- (A) CUTS -- CLEAR TO CONSTRUCTION LIMITS.
- (B) FILLS - CLEAR TO 5'/10' * BEYOND CONSTRUCTION LIMITS, UNLESS SPECIFIED OTHERWISE BY WETLAND PERMIT.
- (C) CUTS AND FILLS - WHEN THE CLEARING LIMITS (A AND B) EXCEED THE PROPOSED R/W OR PROPOSED CONSTRUCTION EASEMENTS, THEN CLEAR ONLY TO THE R/W OR CONSTRUCTION EASEMENT WHICHEVER IS GREATER.

- * FOR FILL HEIGHTS LESS THAN 10' CLEAR TO 5' BEYOND CONSTRUCTION LIMITS.
- * FOR FILL HEIGHTS 10' OR GREATER CLEAR TO 10' BEYOND CONSTRUCTION LIMITS.
- ** PLACE SILT FENCE AT 5' BEYOND TOE OF SLOPE IN FILL SECTIONS WITH LESS THAN 10'. PLACE SILT FENCE AT 10' BEYOND TOE OF SLOPE IN FILL SECTIONS WITH 10' OR GREATER.



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

ENGLISH DETAIL DRAWING FOR
METHOD OF CLEARING
MODIFIED METHOD - III

SHEET 1 OF 1
200D03



DocuSigned by:
Ken Davenport
E-186388474442

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

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

SEE TITLE BLOCK

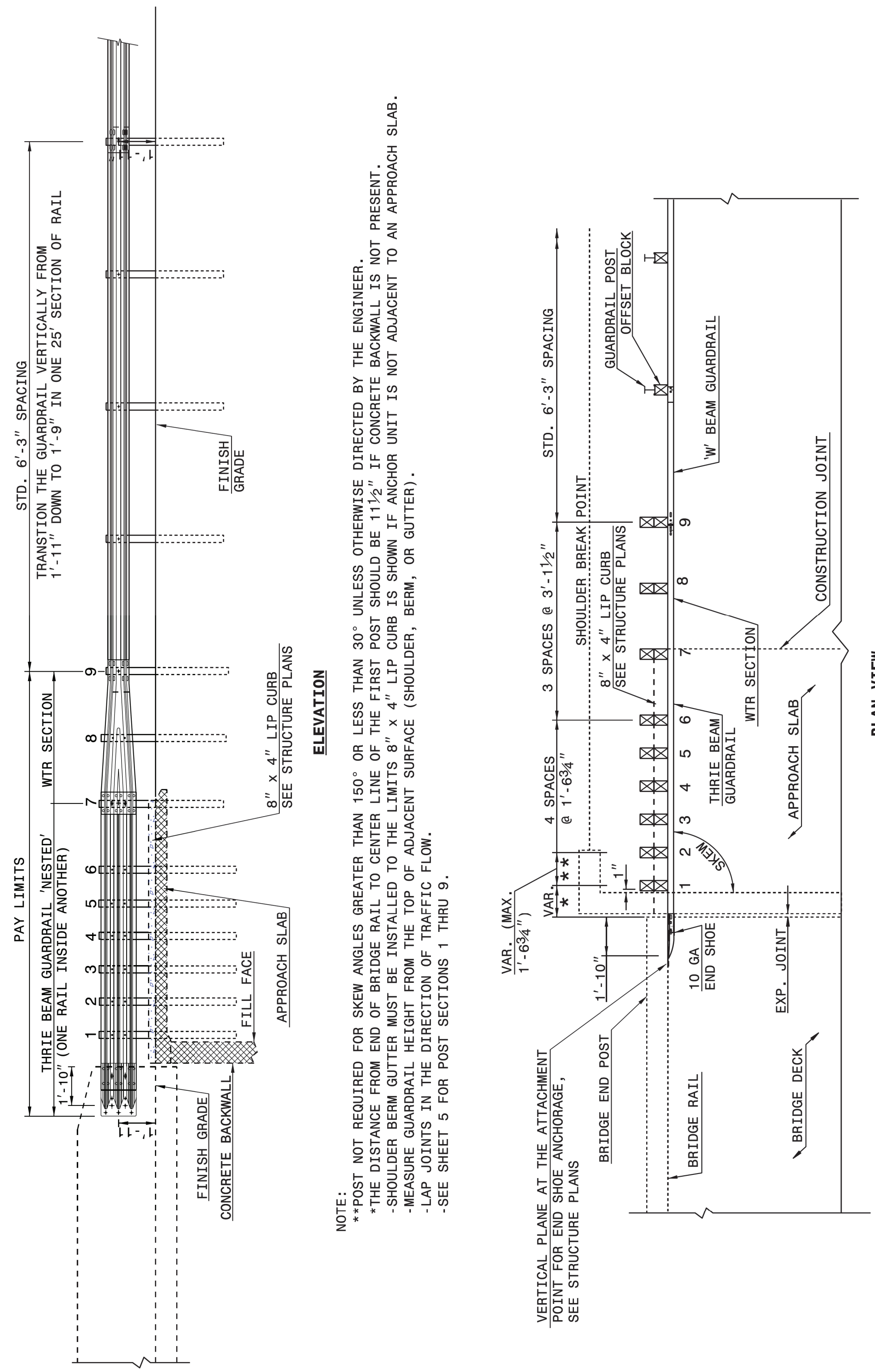
ORIGINAL BY: T.S.S. DATE: FEB. 2000
MODIFIED BY: K.A.K. DATE: AUG. 2016
CHECKED BY: DATE: _____
FILE SPEC.: k Kempf/english/0200d301.dgn

5/14/99

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

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

SHEET 2 OF 7 862d03



NOTE:
 **POST NOT REQUIRED FOR SKEW ANGLES GREATER THAN 150° OR LESS THAN 30° UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
 *THE DISTANCE FROM END OF BRIDGE RAIL TO CENTER LINE OF THE FIRST POST SHOULD BE 11 1/2" IF CONCRETE BACKWALL IS NOT PRESENT.
 -SHOULDER BERM GUTTER MUST BE INSTALLED TO THE LIMITS .8" x 4" LIP CURB IS SHOWN IF ANCHOR UNIT IS NOT ADJACENT TO AN APPROACH SLAB.
 -MEASURE GUARDRAIL HEIGHT FROM THE TOP OF ADJACENT SURFACE (SHOULDER, BERM, OR GUTTER).
 -LAP JOINTS IN THE DIRECTION OF TRAFFIC FLOW.
 -SEE SHEET 5 FOR POST SECTIONS 1 THRU 9.

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

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

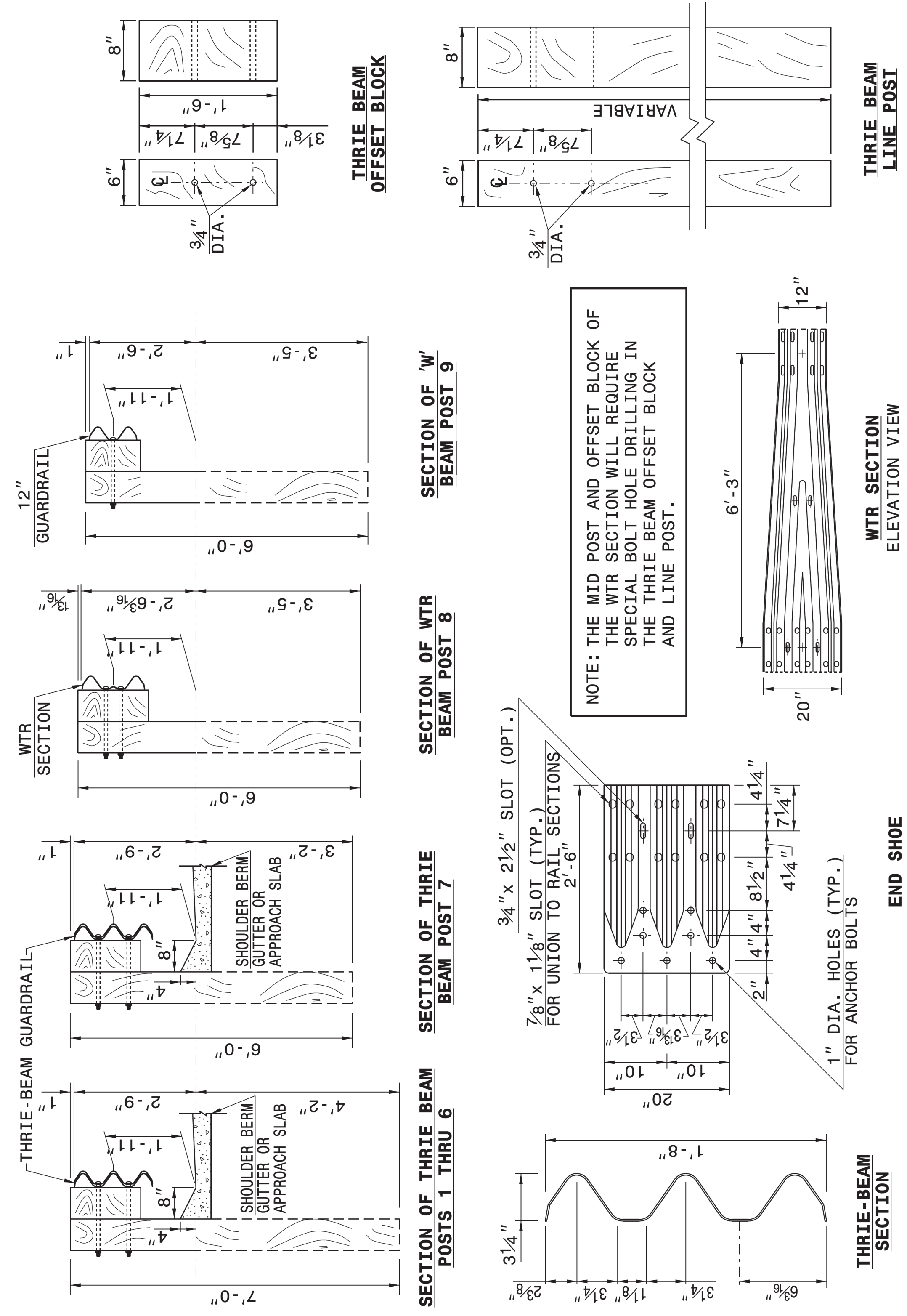
ENGLISH DETAIL DRAWING FOR STRUCTURE ANCHOR UNITS GUARDRAIL ANCHOR UNIT, TYPE III FOR ATTACHMENT TO RAIL ON BRIDGE - SUB REGIONAL TIER

SHEET 2 OF 7 862d03

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

ENGLISH DETAIL DRAWING FOR STRUCTURE ANCHOR UNITS GUARDRAIL ANCHOR UNIT, TYPE III

SHEET 3 OF 7 862d03

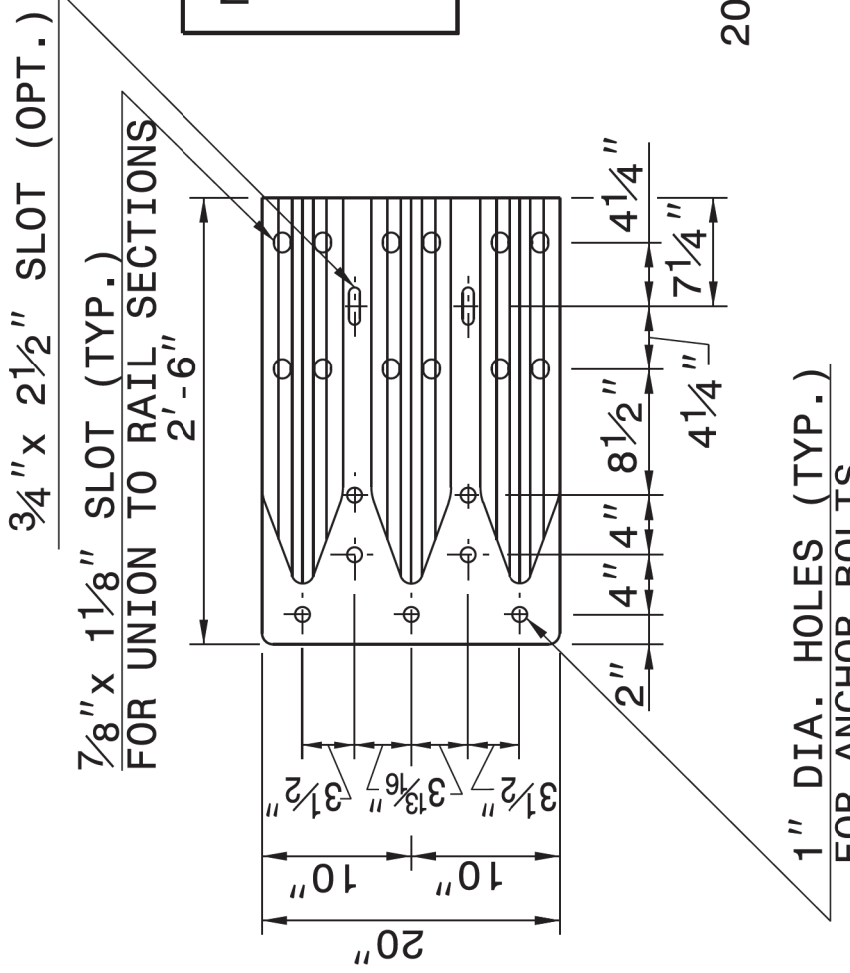


SECTION OF THRIE BEAM POSTS 1 THRU 6

SECTION OF THRIE BEAM POST 7

SECTION OF WTR BEAM POST 8

SECTION OF 'W' BEAM POST 9



THRIE-BEAM SECTION

END SHOE

WTR SECTION ELEVATION VIEW

THRIE BEAM LINE POST

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

ENGLISH DETAIL DRAWING FOR STRUCTURE ANCHOR UNITS GUARDRAIL ANCHOR UNIT, TYPE III

SHEET 3 OF 7 862d03

*****CUSTOMER USE ONLY*****

Professional Engineer Seal for Ken Davenport, License No. 022071, State of North Carolina. Seal includes the text 'NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 022071' and 'KEN DAVENPORT ENGINEER'. The seal is dated 8/9/2022.

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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

SEE TITLE BLOCK

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

STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

SUMMARY OF SUBSURFACE DRAINAGE

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

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

SUMMARY OF BRIDGE WAITING PERIODS

Bridge Description	End Bent/ Bent No.	MONTHS

SUMMARY OF SETTLEMENT GAUGES

Gauge No.	LINE	Approx. Station	Approx. Offset
TOTAL GAUGES (EACH):			

SUMMARY OF ROCK PLATING

LINE	Beginning Slope	Approx. Station	Ending Slope	Approx. Station	Location LT/RT	Rock Plating Detail No. 1/2/3/4	Riprap Class* 1/2/B	SY
-L-	2:1	13+50 +/-	2:1	15+00 +/-	LT	1	*	180
-L-	2:1	14+00 +/-	2:1	15+26 +/-	RT	1	*	110
-L-	2:1	16+60 +/-	2:1	17+50 +/-	RT	1	*	55
TOTAL SY:								345

*Use Class 1, 2 or B riprap if riprap class is not shown for rock plating location.

SUMMARY OF EMBANKMENT WAITING PERIODS

LINE	Station	Station	MONTHS

SUMMARY OF SURCHARGES AND SURCHARGE WAITING PERIODS

LINE	Station	Station	Surcharge Height FT	MONTHS

SUMMARY OF REINFORCED SOIL SLOPES (RSS)

LINE	Beginning Slope	Approx. Station	Ending Slope	Approx. Station	Location LT/RT	SY
TOTAL SY:						0

SUMMARY OF GEOTEXTILE FOR PAVEMENT STABILIZATION

LINE	Station	Station	SY
CONTINGENCY			
TOTAL SY:			0

SUMMARY OF AGGREGATE SUBGRADE/STABILIZATION

LINE	Station	Station	Aggregate Type ASU/AST	Aggregate Thickness INCHES	Shallow Undercut CY	Class IV Subgrade Stabilization TONS	Geotextile for Soil Stabilization SY	Stabilizer Aggregate TONS	Class IV Aggregate Stabilization TONS
CONTINGENCY			100			190	300		
TOTAL CY/TONS/SY:					0	190	300*	0	0

ASU = Aggregate Subgrade, AST = Aggregate Stabilization
*Total square yards of Geotextile for Soil Stabilization is only the estimated quantity for ASU/AST and may only represent a portion of the geotextile quantity shown in the Item Sheets of the Proposal.

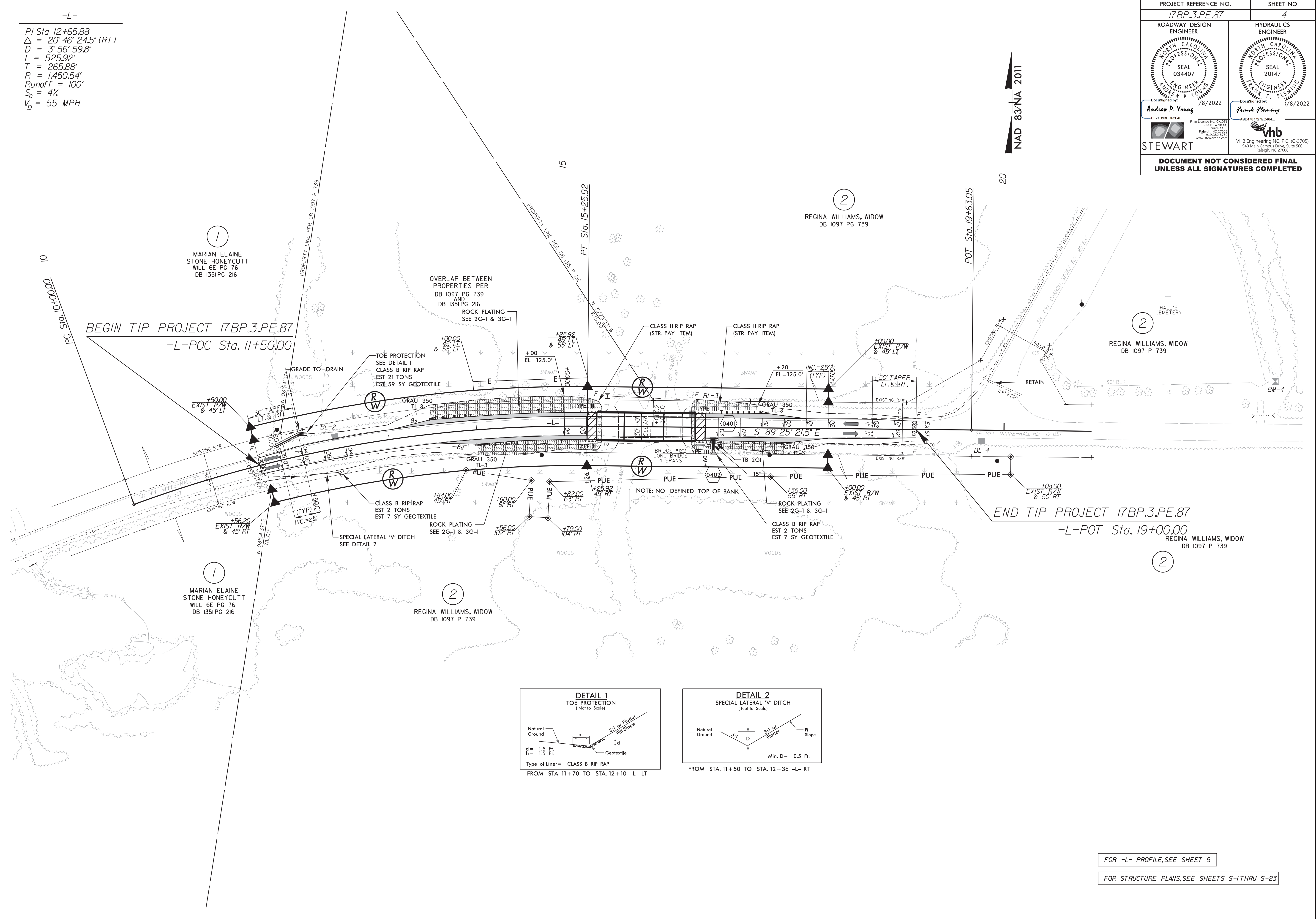
REVISIONS

8/17/99

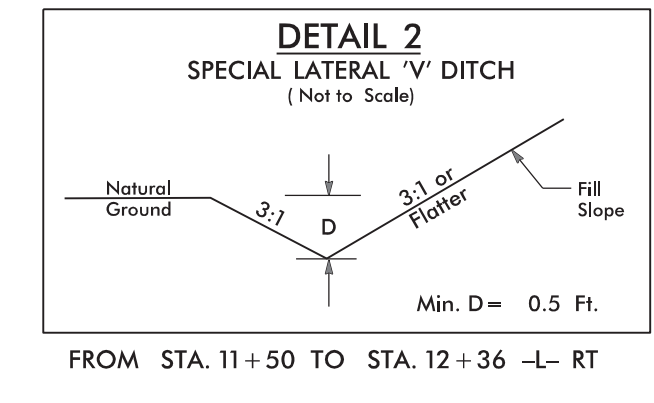
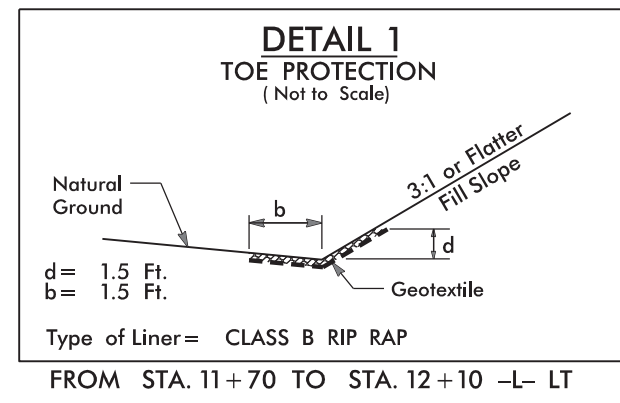
7/1/2023 B5306_PDX_SUM_36-1.dgn
USF/ehave

-L-
 PI Sta 12+65.88
 $\Delta = 20' 46" 24.5" (RT)$
 $D = 3' 56" 59.8"$
 $L = 525.92'$
 $T = 265.88'$
 $R = 1,450.54'$
 $Runoff = 100'$
 $S_e = 4\%$
 $V_D = 55 MPH$

NAD 83/NA 2011



REVISIONS



FOR -L- PROFILE, SEE SHEET 5

FOR STRUCTURE PLANS, SEE SHEETS S-1 THRU S-23

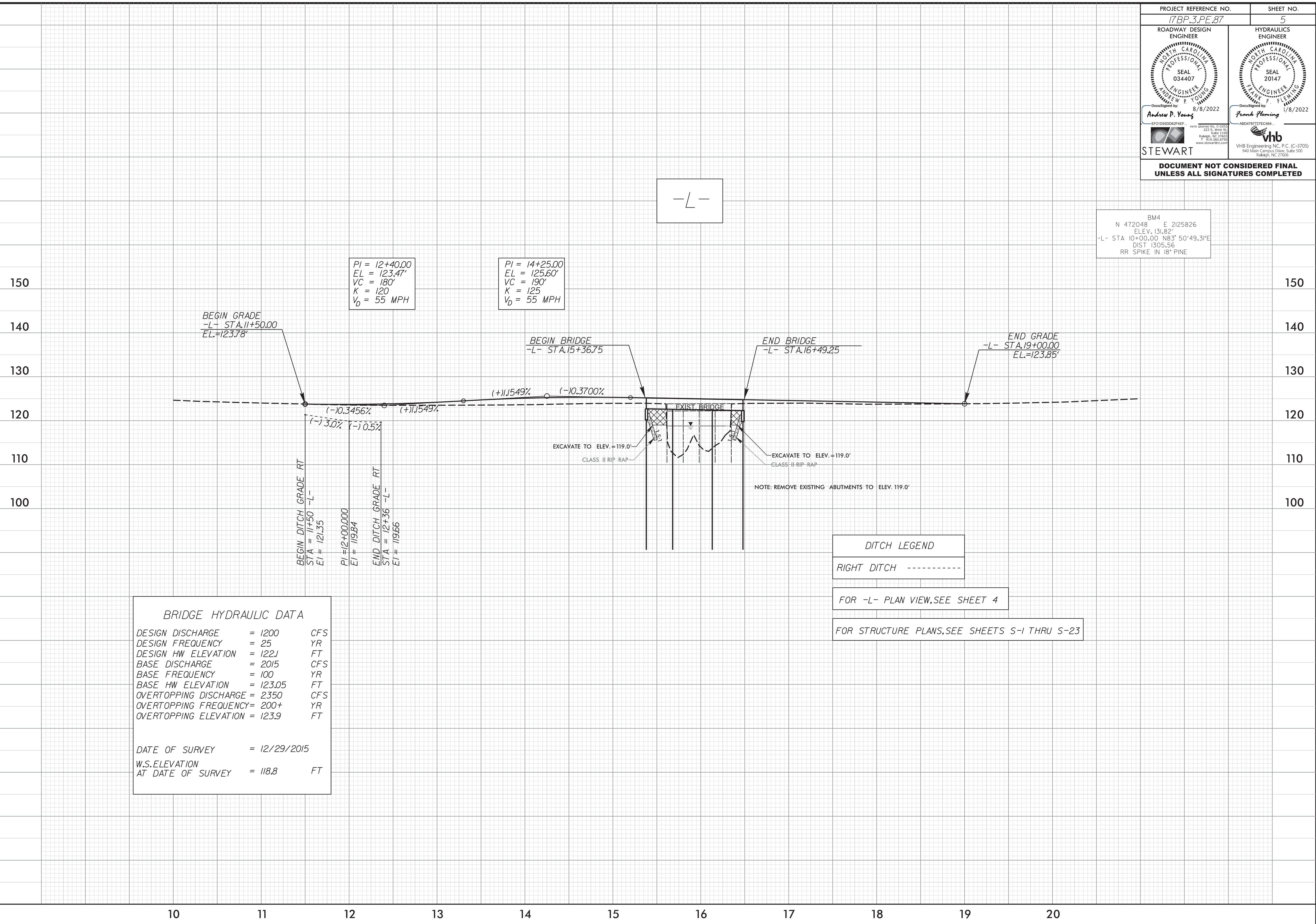
8/17/99

8/2/2022 B5306_PDX_PSH04.dgn
 IJF:cbw

5/28/99

PROJECT REFERENCE NO. 17BP.3.PE.87	SHEET NO. 5
ROADWAY DESIGN ENGINEER ANDREW P. YOUNG SEAL 034407 DocuSigned by: Andrew P. Young 8/8/2022	HYDRAULICS ENGINEER FRANK F. FLEMING SEAL 20147 DocuSigned by: Frank Fleming 8/8/2022
STEWART	VHB VHB Engineering NC, P.C. (C-3705) 940 Main Campus Drive, Suite 500 Raleigh, NC 27603
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

REVISIONS



BM4
N 472048 E 2125826
ELEV. 131.82'
-L- STA 10+00.00 N83° 50' 49.3"E
DIST 1305.56
RR SPIKE IN 18" PINE

PI = 12+40.00
EL = 123.47'
VC = 180'
K = 120
V_d = 55 MPH

PI = 14+25.00
EL = 125.60'
VC = 190'
K = 125
V_d = 55 MPH

BEGIN GRADE
-L- STA.11+50.00
EL.=123.78'

BEGIN BRIDGE
-L- STA.15+36.75

END BRIDGE
-L- STA.16+49.25

END GRADE
-L- STA.19+00.00
EL.=123.85'

BEGIN DITCH GRADE RT
STA = 11+50 -L-
EI = 121.35

PI=12+00.000
EI = 119.84

END DITCH GRADE RT
STA = 12+36 -L-
EI = 119.66

EXCAVATE TO ELEV.=119.0'
CLASS II RIP RAP

EXCAVATE TO ELEV.=119.0'
CLASS II RIP RAP

NOTE: REMOVE EXISTING ABUTMENTS TO ELEV. 119.0'

DITCH LEGEND
RIGHT DITCH -----

FOR -L- PLAN VIEW,SEE SHEET 4

FOR STRUCTURE PLANS,SEE SHEETS S-1 THRU S-23

BRIDGE HYDRAULIC DATA		
DESIGN DISCHARGE	= 1200	CFS
DESIGN FREQUENCY	= 25	YR
DESIGN HW ELEVATION	= 122.1	FT
BASE DISCHARGE	= 2015	CFS
BASE FREQUENCY	= 100	YR
BASE HW ELEVATION	= 123.05	FT
OVERTOPPING DISCHARGE	= 2350	CFS
OVERTOPPING FREQUENCY	= 200+	YR
OVERTOPPING ELEVATION	= 123.9	FT
DATE OF SURVEY	= 12/29/2015	
W.S.ELEVATION AT DATE OF SURVEY	= 118.8	FT

8/2/2022 B5306_P01_PS-H05.dgn

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	17BP.3.R.87	RW01	05

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

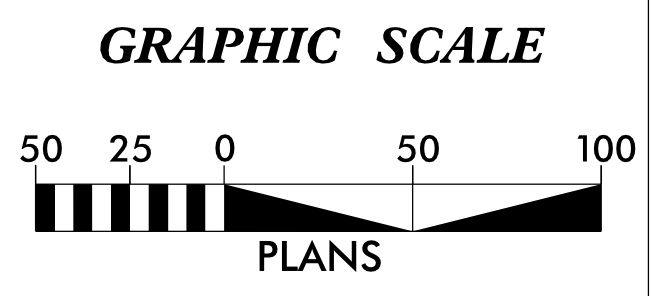
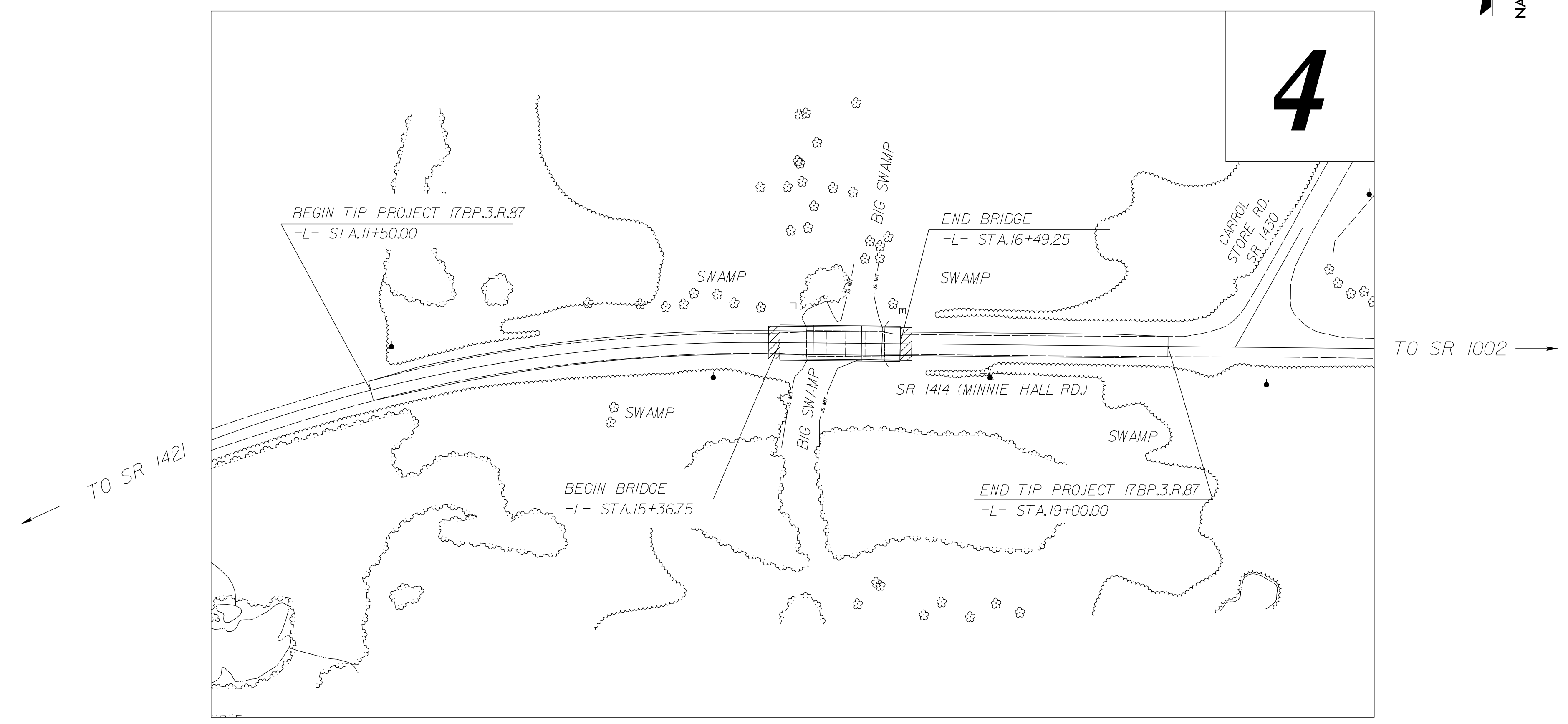
SURVEY CONTROL, EXISTING CENTERLINES,
RIGHT OF WAY, EASEMENTS AND PROPERTY TIES

SAMPSON COUNTY

LOCATION: BRIDGE NO. 122 OVER BIG SWAMP
ON SR 1414 (MINNIE HALL ROAD)



TIP PROJECT: 17BP.3.R.87



DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCGS FOR MONUMENT "B5306-2" WITH NAD 83/NA 2011 STATE PLANE GRID COORDINATES OF NORTHING: 471,026.926(ft) EASTING: 2,123,216.099(ft) ELEVATION: 136.98(ft) THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.999878227 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "B5306-2" TO -L- STATION 10+00.00 IS N 56-07'05.13" E 1580.65(ft) ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES VERTICAL DATUM USED IS NAVD 88

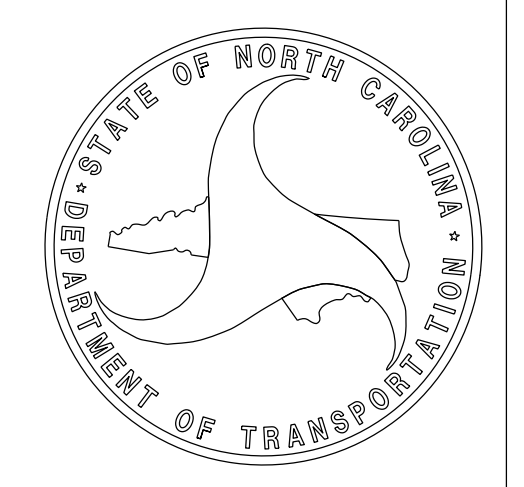
Prepared in the Office of:
LOCATIONS AND SURVEYS
5310 BARBADOS BLVD., SUITE 102
CASTLE HAYNE, N.C., 28429

2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: 03/18/2022	LETTING DATE: 09/29/2022
---	------------------------------------

PROFESSIONAL LAND SURVEYOR


DocuSigned by:
Christopher Sawyer 08/29/2022
SIGNATURE: _____ Date: _____



29-AUG-2022 11:39 S:\Units\Div03\Projects\BRID0E\Sampson\B5306_SRI414#122\Working\150 series set\B5306.is_rwl.rev_220829.dgn Individual AT LS-299896

SURVEY CONTROL SHEET

W/ EXISTING CENTERLINE ALIGNMENTS PRIOR TO CONSTRUCTION

PROJECT REFERENCE NO. 17BP.3.R.87	SHEET NO. RW02C-1
Location and Surveys	
DIVISION 3 5310 BARBADUS BLVD., SUITE 102 CASTLE HAYNE, N.C., 28429	
	
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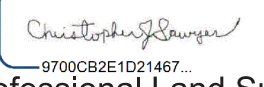
REVBL POINT	DESC.	NORTH	EAST	ELEVATION	REVBL STATION
B53061	GPS CAP AND REBAR	469831.0850	2123523.9310	136.72	5+00.00
B53062	GPS CAP AND REBAR	471026.9260	2123216.0990	136.98	17+34.83
BL1	TRV CAP AND REBAR	471779.3530	2124172.0940	127.86	29+51.41
BL2	TRV CAP AND REBAR	471984.9500	2124756.7190	123.47	35+71.13
BL4	TRV CAP AND REBAR	471980.2680	2125492.2890	123.22	43+06.72

I, CHRISTOPHER J. SAWYER, PLS, certify that the Project Control was verified under my supervision from an actual GPS survey made under my supervision and the following information was used to perform the survey:

Class of survey: **AA**
 Type of GPS field procedure: RTN
 Dates of survey: JULY 09, 2015 and APRIL 11, 2022
 Datum/Epoch: NAD 83/NA 2011
 Published/Fixed-control use: N/A FOR RTN
 Localized around: B5306-2
 Northing: 471026.926
 Easting: 2123216.099
 Combined grid factor: 0.999878227
 Geoid model: G 12NC
 Units: US SURVEY FEET

I also certify that the Baseline Control for this project was completed under my direct and responsible charge from an actual survey made under my supervision; that all horizontal closures had a minimum ratio of precision of 1:20,000 (Class AA) and Vertical accuracy to Class A. Field work was performed from JULY 2015 and APRIL 11, 2022, and all coordinates are based on NAD 83/2011 and all elevations are based on NAVD 88; that this survey was performed to meet the requirements of 21NCAC 56.1600 as applicable.

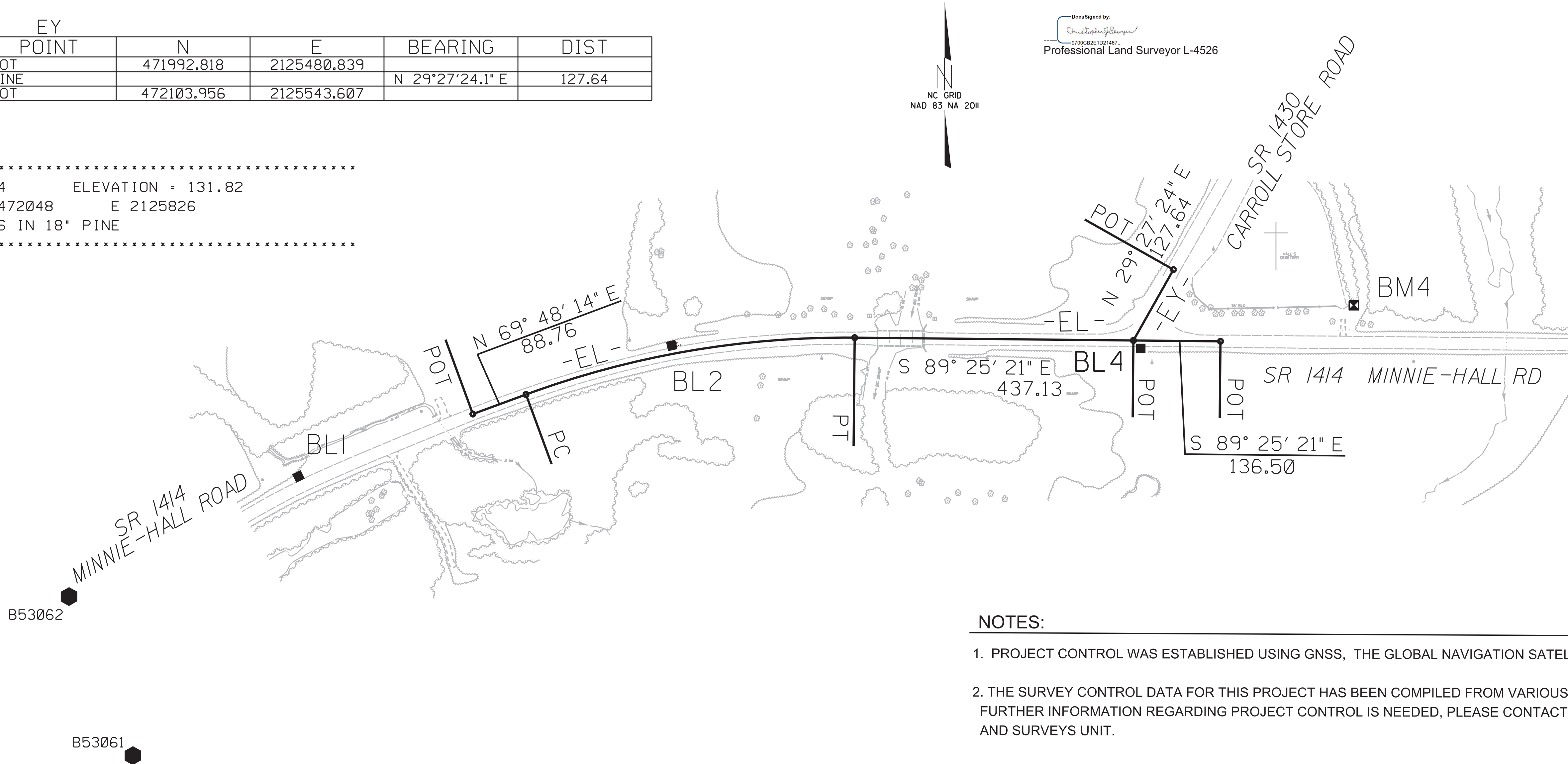
This 27TH day of APRIL, 2022.

DocuSigned by:

 9700CB2E1021467...
 Professional Land Surveyor L-4526

EL POINT	N	E	BEARING	DIST	DELTA	D	L	T	R
POT	471877.470	2124445.037							
LINE			N 69°48'14.0" E	88.76					
PC	471908.112	2124528.337							
CURVE			N 80°11'26.3" E	523.04	20°46'24.5(RT)	03°56'59.8"	525.92	265.88	1450.54
PT	471997.223	2125043.732							
LINE			S 89°25'21.5" E	437.13					
POT	471992.818	2125480.839							
LINE			S 89°25'21.5" E	136.50					
POT	471991.443	2125617.332							

EY POINT	N	E	BEARING	DIST
POT	471992.818	2125480.839		
LINE			N 29°27'24.1" E	127.64
POT	472103.956	2125543.607		

 BM4 ELEVATION = 131.82
 N 472048 E 2125826
 RRS IN 18" PINE




NOTES:

1. PROJECT CONTROL WAS ESTABLISHED USING GNSS, THE GLOBAL NAVIGATION SATELLITE SYSTEM.
2. THE SURVEY CONTROL DATA FOR THIS PROJECT HAS BEEN COMPILED FROM VARIOUS SOURCES. IF FURTHER INFORMATION REGARDING PROJECT CONTROL IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.
3. CONTROL ORIGINALLY FROM B-5306 SURVEY

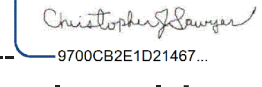
REVISIONS

PROPOSED ALIGNMENT CONTROL SHEET

PROJECT REFERENCE NO. 17BP.3.R.87	SHEET NO. RW02D-1
Location and Surveys	
DIVISION 3 5310 BARBADUS BLVD, SUITE 102 CASTLE HAYNE, N.C., 28429	
	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

I, CHRISTOPHER J. SAWYER, PLS, certify that the data compiled came from available surveys/mapping performed by others and provided to me by NCDOT and do not certify to the accuracy or quality of the individual data sources.

This 27TH day of APRIL, 2022.

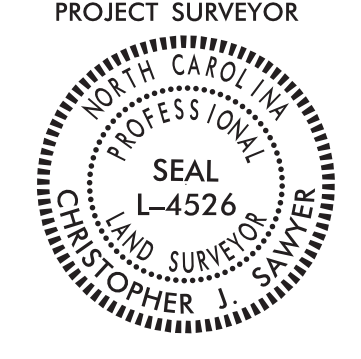
DocuSigned by:

9700CB2E1D21467
Professional Land Surveyor L-4526

TYPE	STATION	L	
		NORTH	EAST
PC	10+00.00	471908.1120	2124528.3370
PT	15+25.92	471997.2229	2125043.7316
POT	20+99.55	471991.4425	2125617.3321

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.

RIGHT OF WAY CONTROL SHEET

PROJECT REFERENCE NO. 17BP.3.R.87	SHEET NO. RW03E-1
Location and Surveys	
DIVISION 3 5310 BARBADOS BLVD., SUITE 102 CASTLE HAYNE, N.C., 28429	
	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

I, CHRISTOPHER J. SAWYER, PLS, certify that the right of way and permanent easement monumentation for this project shown herein was completed under my direct and responsible charge from an actual survey made under my supervision; that all horizontal closures had a minimum ratio of precision of 1:10,000 (Class A). Field work was performed APRIL 11, 2022, and all coordinates are based on NAD83/2011; That this survey was performed to meet the requirements of 21NCAC 56.1600 as applicable.

This 27TH day of APRIL, 2022.


 Professional Land Surveyor L-4526

ROW MARKER IRON PIN AND CAP-E

ALIGN	STATION	OFFSET	NORTH	EAST
L	11+50.00	-30.00	471981.6067	2124664.1435
L	11+50.00	-45.00	471996.1438	2124660.4458
L	11+56.20	45.00	471910.3893	2124688.4554
L	11+56.20	30.00	471924.9418	2124684.8199
L	15+25.92	-45.00	472042.2206	2125044.1850
L	15+25.92	45.00	471952.2252	2125043.2781
L	18+00.00	-30.00	472024.4595	2125318.1027
L	18+00.00	-45.00	472039.4587	2125318.2539
L	18+00.00	45.00	471949.4633	2125317.3469
L	18+00.00	30.00	471964.4625	2125317.4981
L	18+88.85	-30.00	472023.5641	2125406.9482
L	19+63.05	30.00	471962.8195	2125480.5398

NOT SET
NOT SET

ROW MARKER PERMANENT EASEMENT-E

ALIGN	STATION	OFFSET	NORTH	EAST
L	13+84.00	45.00	471946.8873	2124905.9221
L	14+56.00	102.00	471894.3166	2124977.7156
L	14+60.00	61.00	471935.4276	2124979.9822
L	14+79.00	104.00	471892.9627	2124999.1329
L	14+82.00	63.00	471934.0135	2125001.0890
L	17+35.00	55.00	471940.1188	2125252.2495
L	20+08.00	50.00	471942.3675	2125525.2860
L	20+08.00	30.00	471962.3665	2125525.4875

NOT SET
NOT SET
NOT SET
NOT SET

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.

REVISIONS

25-APR-2022 15:50
 C:\Users\ATL5289836\Documents\BRIDIGE\Sampson\B5306_SRI1414\122\Work\mg\150_series_set\B5306_1s_r\w03e-1_220428.dgn
 m.jduval

-L-

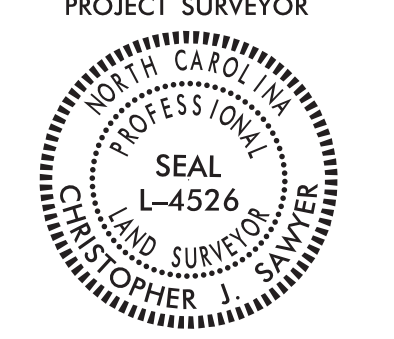
PI Sta 12+65.88
 $\Delta = 20' 46' 24.5''$ (RT)
 $D = 3' 56' 59.8''$
 $L = 525.92'$
 $T = 265.88'$
 $R = 1,450.54'$
 Runoff = 100'
 $S_e = 4\%$
 $V_D = 55$ MPH

NAD 83/NA 2011

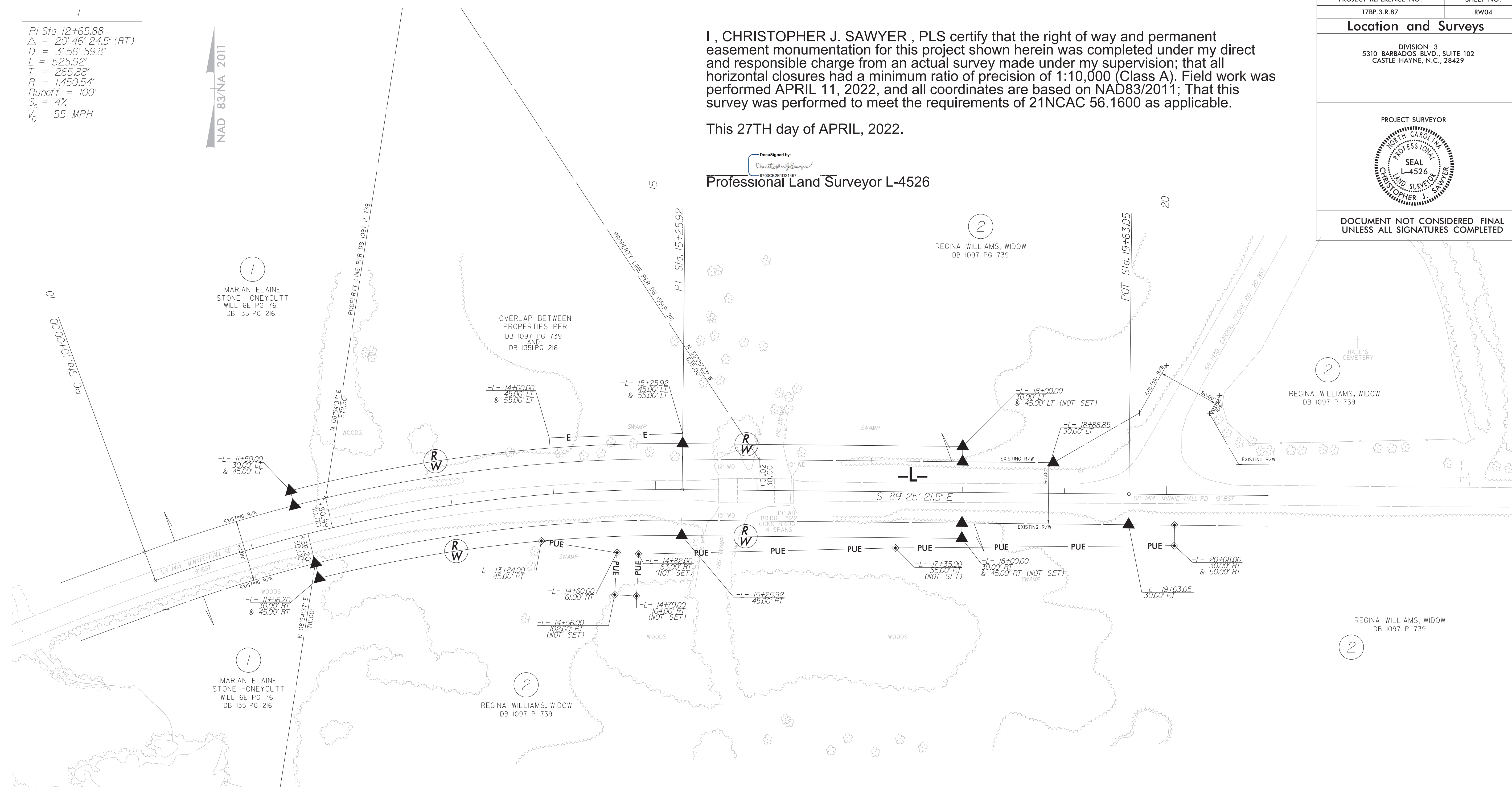
I, CHRISTOPHER J. SAWYER, PLS certify that the right of way and permanent easement monumentation for this project shown herein was completed under my direct and responsible charge from an actual survey made under my supervision; that all horizontal closures had a minimum ratio of precision of 1:10,000 (Class A). Field work was performed APRIL 11, 2022, and all coordinates are based on NAD83/2011; That this survey was performed to meet the requirements of 21NCAC 56.1600 as applicable.

This 27TH day of APRIL, 2022.

DocuSigned by:
 Christopher J Sawyer
 9790CB2E1D21467
 Professional Land Surveyor L-4526

PROJECT REFERENCE NO. 17BP.3.R.87	SHEET NO. RW04
Location and Surveys	
DIVISION 3 5310 BARBADOS BLVD., SUITE 102 CASTLE HAYNE, N.C., 28429	
PROJECT SURVEYOR  SEAL L-4526 CHRISTOPHER J. SAWYER	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

REVISIONS

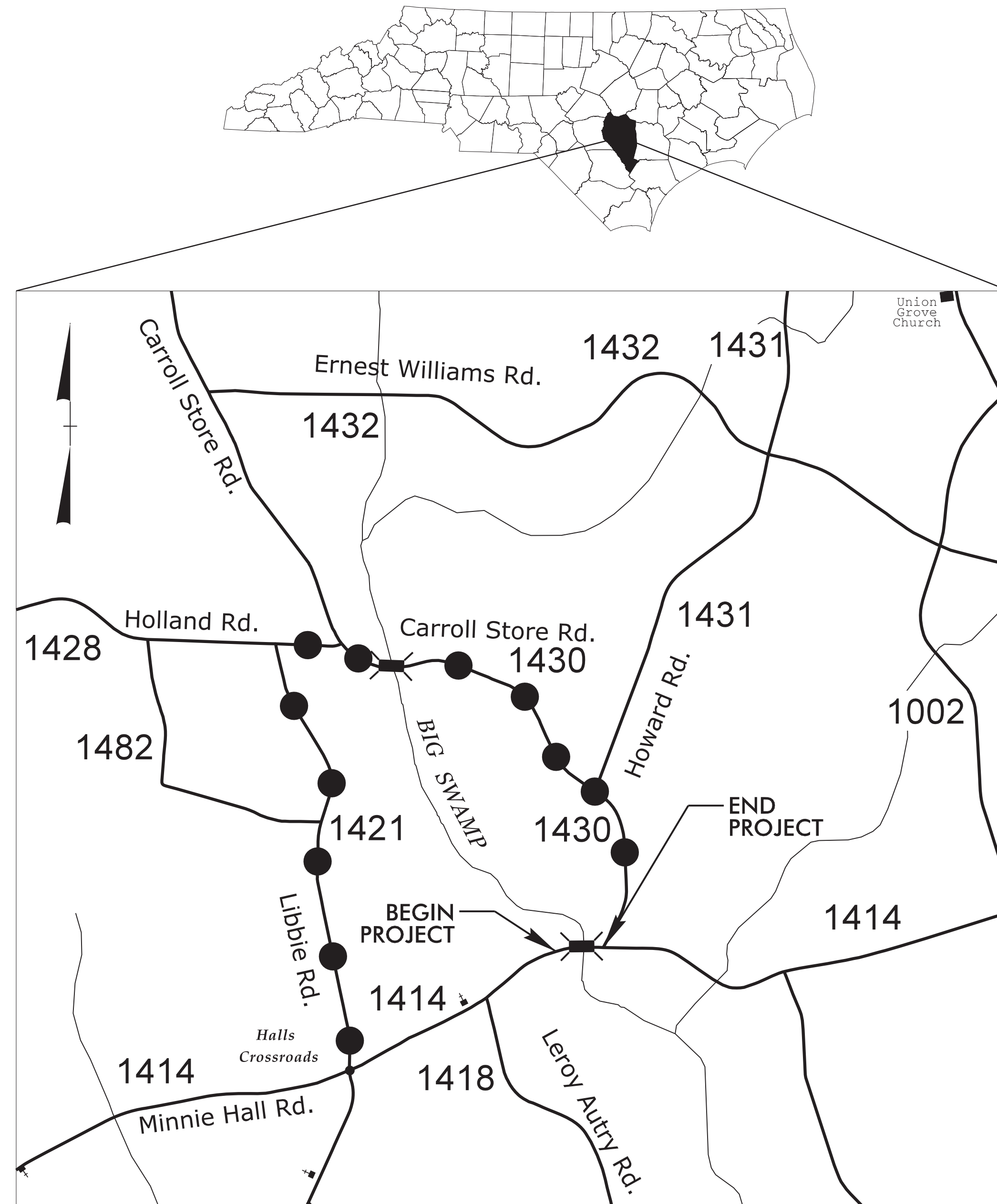


NOTES:

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..

TRANSPORTATION MANAGEMENT PLAN

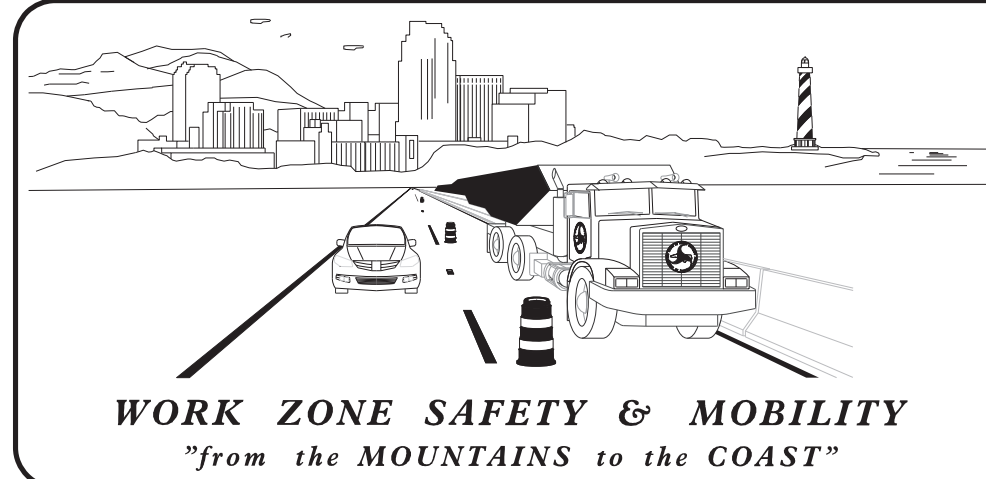
SAMPSON COUNTY



OFF-SITE DETOUR —●—●—●—

INDEX OF SHEETS

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



PLANS PREPARED BY:

ANDY YOUNG, PE

JOSHUA ROEMER

NCDOT CONTACTS:

DON PARKER, PE
PROJECT ENGINEER

SPENCER JENNINGS
PROJECT DESIGN ENGINEER



PLANS PREPARED BY:



APPROVED: Andrew P. Young

DATE: 8/8/2022

SEAL



DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

ROADWAY STANDARD DRAWINGS

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

<u>STD. NO.</u>	<u>TITLE</u>
1101.01	WORK ZONE WARNING SIGNS
1101.03	TEMPORARY ROAD CLOSURES
1110.01	STATIONARY WORK ZONE SIGNS
1130.01	DRUMS
1145.01	BARRICADES

LEGEND

GENERAL

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

WORK AREA

REMOVAL

SIGNALS

- EXISTING
- PROPOSED
- TEMPORARY
- PORTABLE

PAVEMENT MARKINGS

- EXISTING LINES
- TEMPORARY LINES

TRAFFIC CONTROL DEVICES

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

TEMPORARY SIGNING

- PORTABLE SIGN
- STATIONARY SIGN
- STATIONARY OR PORTABLE SIGN

PAVEMENT MARKERS

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

PAVEMENT MARKING SYMBOLS

- PAVEMENT MARKING SYMBOLS

8/2/2022
C:\TCP\17BP3PE87_TC_TMP_OIA.dgn
USER:rhowe

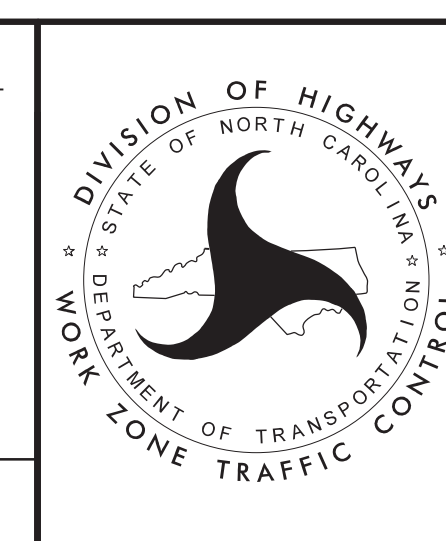
Firm License No. C-1051
223 S. West St.
Suite 1100
Raleigh, NC 27603
T 919.380.8750
www.stewartinc.com

APPROVED: Andrew P. Young

DATE: 8/8/2022

SEAL

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED



ROADWAY STANDARD
DRAWINGS & LEGEND

MANAGEMENT STRATEGIES

DURING CONSTRUCTION OF PROPOSED STRUCTURE BRIDGE No. 122 OVER BIG SWAMP, SR 1414 (MINNIE HALL RD.) WILL BE CLOSED TO THROUGH TRAFFIC. THROUGH TRAFFIC ON SR 1414 (MINNIE HALL RD.) WILL BE MAINTAINED USING AN OFF-SITE DETOUR.

THE OFF-SITE DETOUR WILL INCLUDE SR 1430 (CARROLL STORE RD.), SR 1428 (HOLLAND RD.), AND SR 1421 (LIBBIE RD.) (SEE SHEET TMP-3).

ACCESS TO ALL RESIDENCES WITHIN THE PROJECT LIMITS MUST BE MAINTAINED AT ALL TIMES.

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

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

TRAFFIC PATTERN ALTERATIONS

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

SIGNING

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

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

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

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

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

TRAFFIC CONTROL DEVICES

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

PHASING

STEP 1:

PROVIDE AND MAINTAIN CHANGEABLE MESSAGE SIGNS AT EACH END OF SR 1414 (MINNIE HALL RD.) FOR FOURTEEN (14) CALENDAR DAYS PRIOR TO ROAD CLOSURE. (SEE SHEET TMP-3).

STEP 2:

USING RSD 1101.03, SHEET 1 AND 2 OF 9, AND SHEET TMP-3, INSTALL ROAD CLOSURE AND DETOUR SIGNS, PLACE TYPE III BARRICADES TO CLOSE SR 1414 (MINNIE HALL RD.) TO THROUGH TRAFFIC, AND DETOUR TRAFFIC OFF-SITE. REMOVE CHANGEABLE MESSAGE SIGNS ONCE DETOUR IS IN PLACE.

STEP 3:

REMOVE THE EXISTING STRUCTURE.

STEP 4:

CONSTRUCT THE PROPOSED STRUCTURE AND ROADWAY.

STEP 5:

PLACE FINAL PAVEMENT MARKINGS ACCORDING TO THE PAVEMENT MARKING PLANS.

STEP 6:

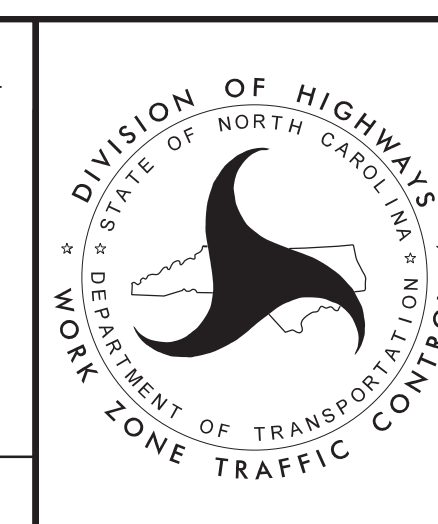
REMOVE ALL WORK ZONE TRAFFIC CONTROL DEVICES AND OPEN SR 1414 (MINNIE HALL RD.) TO TRAFFIC.



APPROVED: Andrew P. Young
DATE: 8/8/2022

SEAL

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED



SIGN NUMBER: SP-1 TYPE: STATIONARY QUANTITY: SEE PLANS SIGN WIDTH: 2'-0" HEIGHT: 2'-6" TOTAL AREA: 5.0 Sq.Ft. BORDER TYPE: INSET RECESS: 0.47" WIDTH: 0.63" RADII: 1.5" NO. Z BARS: LENGTH:	BACKG COLOR: Fluorescent Orange COPY COLOR: Black <table border="1"> <tr> <th>SYMBOL</th> <th>X</th> <th>Y</th> <th>WID</th> <th>HT</th> </tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> </table>	SYMBOL	X	Y	WID	HT																																																			DESIGN BY: Joshua Roemer, EI PROJECT ID: 17BP.3.PE.87	CHECKED BY: Andy Young, PE LOCATION: Sampson County	Apr 19, 2022 DIV: 3
	SYMBOL	X	Y	WID	HT																																																						
USE NOTES: 1,2 1. Legend and border shall be direct applied black non-reflective sheeting. 2. Background shall be NC GRADE B fluorescent orange retroreflective sheeting.	<p>BORDER R=1.5" TH=0.63" IN=0.47" Panel Style: construction_guide.ssi M.U.T.C.D.: 2009 Edition</p> <p style="text-align: right;">Spacing Factor is 1 unless specified otherwise</p>																																																										

LETTER POSITIONS

Letter locations are panel edge to lower left corner

																Series/Size Text Length
M	I	N	N	I	E											C 2000
4.7	8.2	9.6	12.7	15.9	17.3											14.7
H	A	L	L													C 2000
6.7	9.5	12.6	15.2													10.6
R	O	A	D													C 2000
6.7	9.6	12.4	15.5													11

FILENAME: 17BP3PE87_TC_TMP_02 **NORTH CAROLINA D.O.T. SIGN DETAIL**



APPROVED: Andrew P. Young
DocuSigned by: EF210930D62F4EF

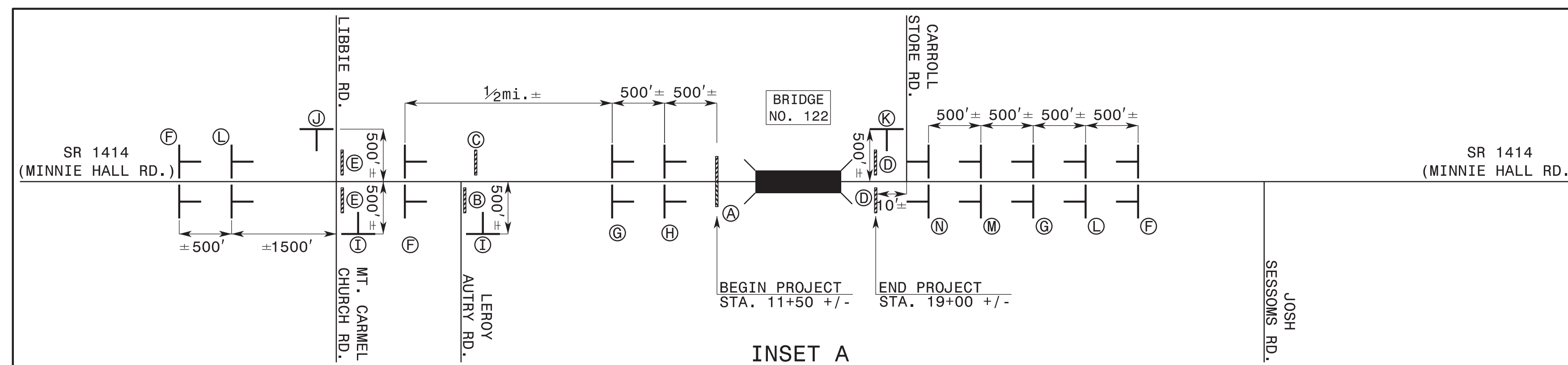
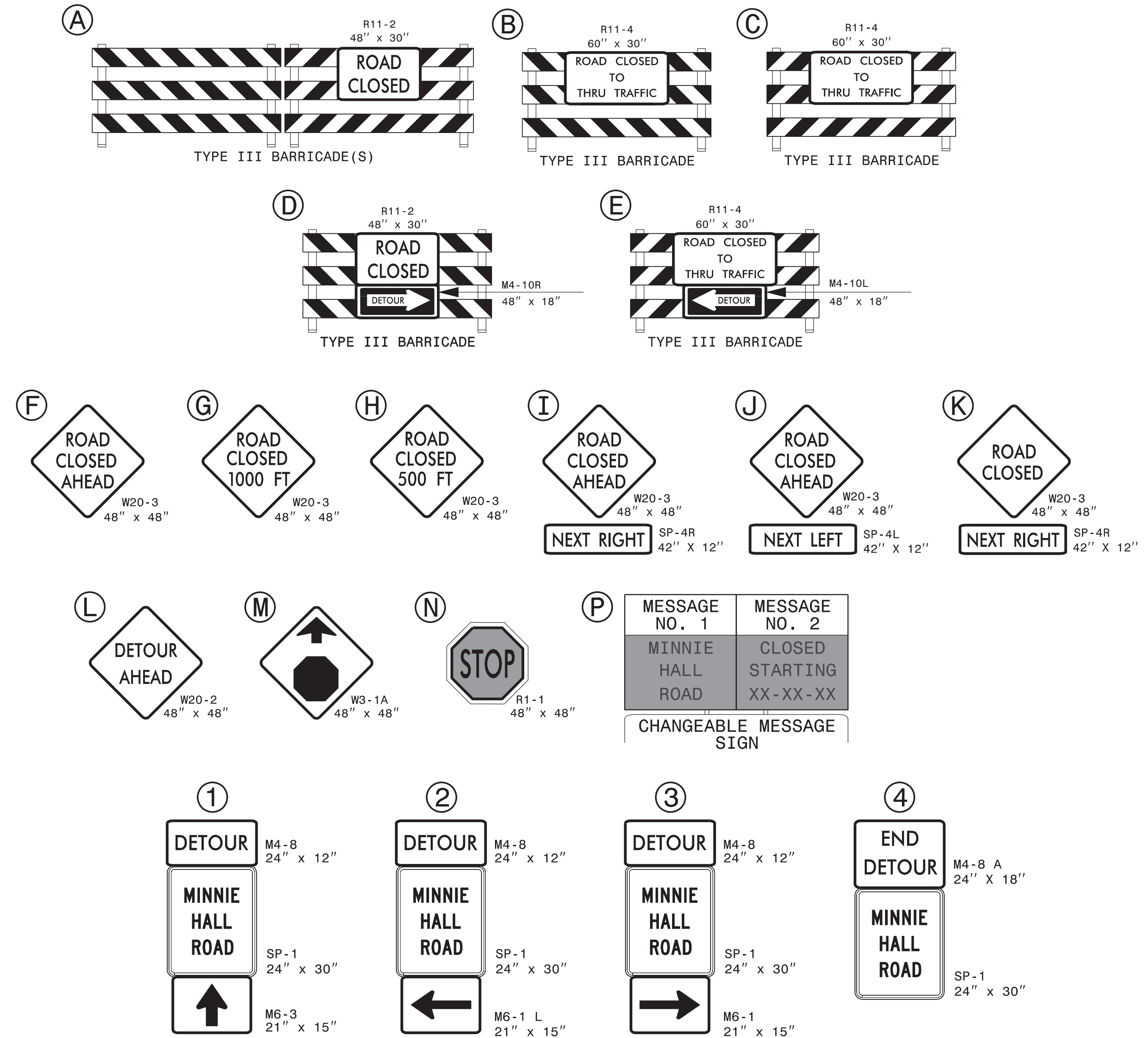
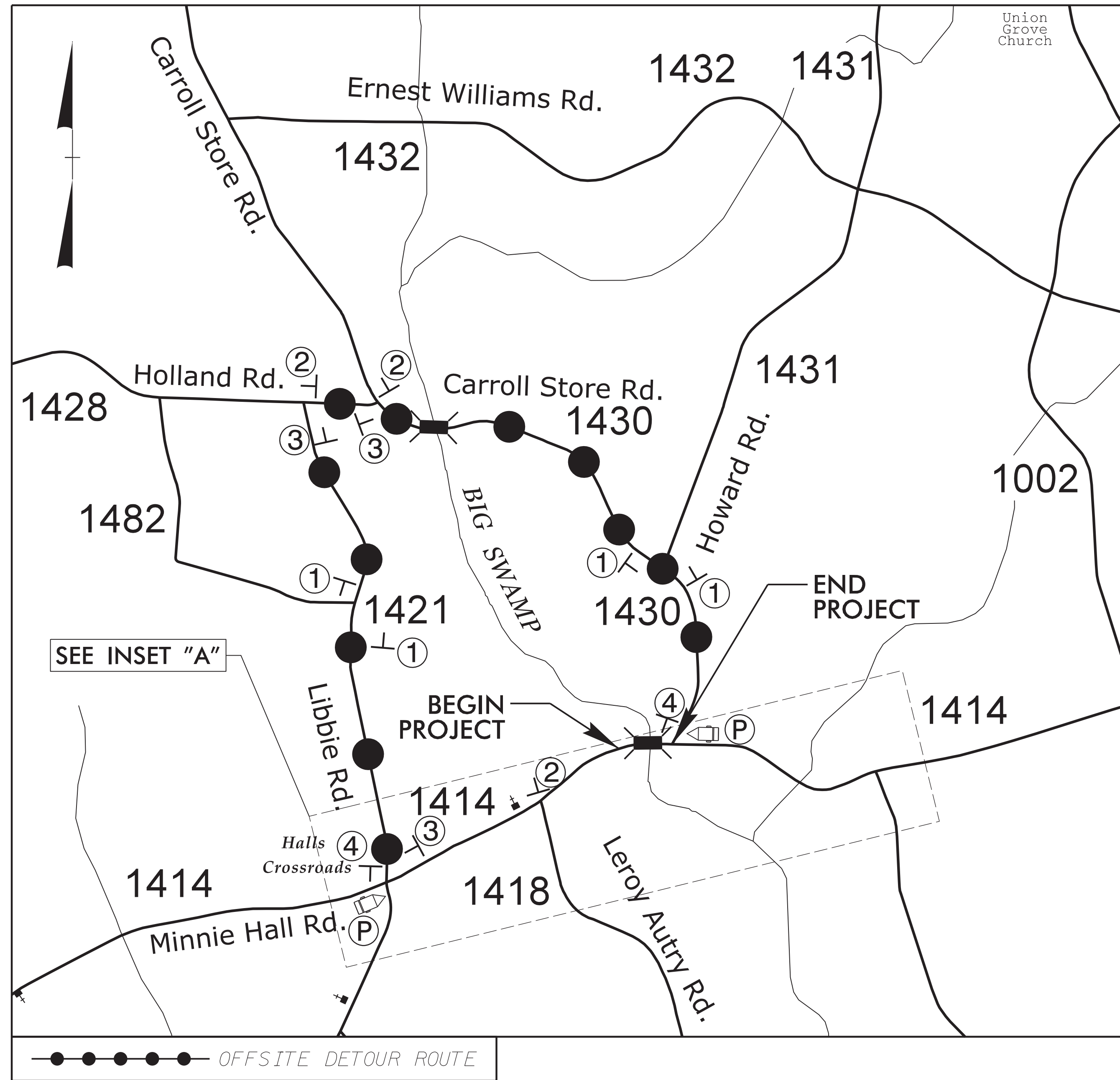
DATE: 8/8/2022

SEAL

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



SPECIAL SIGN DESIGN



REFER TO ROADWAY STANDARD DRAWING 1101.03, SHEETS 1 & 2 OF 9 FOR APPLICABLE NOTES.

STEWART
 Firm License No. C-1051
 223 S. West St.
 Suite 1100
 Raleigh, NC 27603
 T 919.380.8750
 www.stewartinc.com

APPROVED: Andrew P. Young
 DATE: 8/8/2022
 SEAL
 DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

DIVISION OF HIGHWAYS
 STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 WORK ZONE TRAFFIC CONTROL

OFF-SITE DETOUR

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

PAVEMENT MARKING PLAN
SAMPSON COUNTY

T.I.P.: 17BP.3.PE.87

CONTRACT: DC00409

INDEX

SHEET NO.	DESCRIPTION
PMP - 1	INDEX, ROADWAY STANDARD DRAWINGS, GENERAL NOTES, AND PAVEMENT MARKING SCHEDULE
PMP - 2	PAVEMENT MARKING DETAILS

ROADWAY STANDARD DRAWING

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

STD. NO.	TITLE
1205.01	PAVEMENT MARKINGS - LINE TYPES AND OFFSETS
1205.02	PAVEMENT MARKINGS - TWO-LANE AND MULTILANE ROADWAYS
1205.12	PAVEMENT MARKINGS - BRIDGES
1250.01	RAISED PAVEMENT MARKERS - INSTALLATION SPACING
1253.01	RAISED PAVEMENT MARKERS - SNOWPLOWABLE
1261.01	GUARDRAIL AND BARRIER DELINEATORS - INSTALLATION SPACING
1261.02	GUARDRAIL AND BARRIER DELINEATORS - TYPES AND 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
-L- SR 1414 (MINNIE HALL RD.) BRIDGE	THERMOPLASTIC THERMOPLASTIC	SNOWPLOWABLE SNOWPLOWABLE

- B) TIE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING LINES.
C) REMOVE/REPLACE ANY CONFLICTING/DAMAGED PAVEMENT MARKINGS AND MARKERS.
D) PASSING ZONES WILL BE DETERMINED IN THE FIELD AND MUST BE APPROVED BY THE ENGINEER.

PAVEMENT MARKING SCHEDULE

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

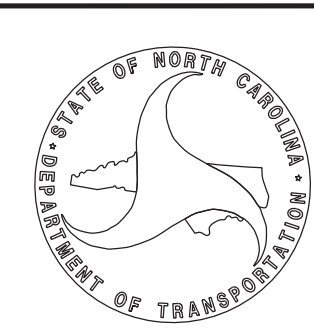
PAVEMENT MARKING SCHEDULE

SNOWPLOWABLE PAVEMENT MARKERS

SYMBOL	DESCRIPTION
ME	YELLOW & YELLOW

PLAN SUBMITTED TO:

<u>AYMAN I. ALQUDWAH, PE</u>	SIGNING AND DELINEATION REGIONAL ENGINEER
<u>DERRICK H. BEARD</u>	SIGNING AND DELINEATION PROJECT DESIGN ENGINEER

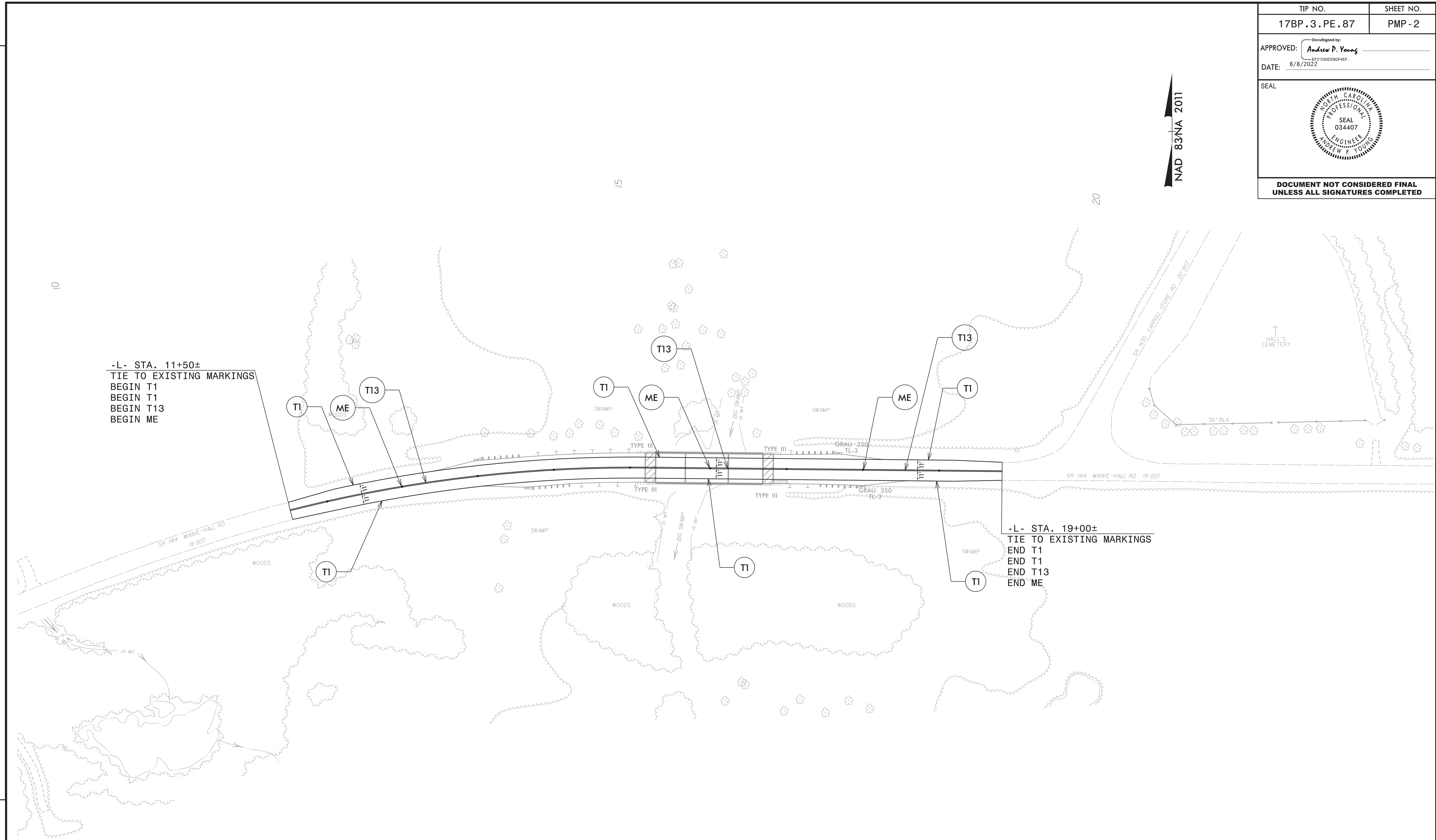


PLAN PREPARED BY: STEWART

<u>ANDY YOUNG, PE</u>	PROJECT ENGINEER
<u>JOSHUA ROEMER, EI</u>	PROJECT DESIGN ENGINEER



NAD 83/NA 2011



-L- STA. 11+50±
 TIE TO EXISTING MARKINGS
 BEGIN T1
 BEGIN T1
 BEGIN T13
 BEGIN ME

-L- STA. 19+00±
 TIE TO EXISTING MARKINGS
 END T1
 END T1
 END T13
 END ME

REVISIONS

8/8/2022
 \\17BP3PE87_Sgn_PMP_02.dgn
 USER: jr Deimer



PAVEMENT MARKING PLANS

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	17BP.3.PE.87	EC-1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
17BP.3.PE.87	N/A	PE	
17BP.3.ROW.87	N/A	ROW/UTL	

TIP PROJECT: 17BP.3.PE.87

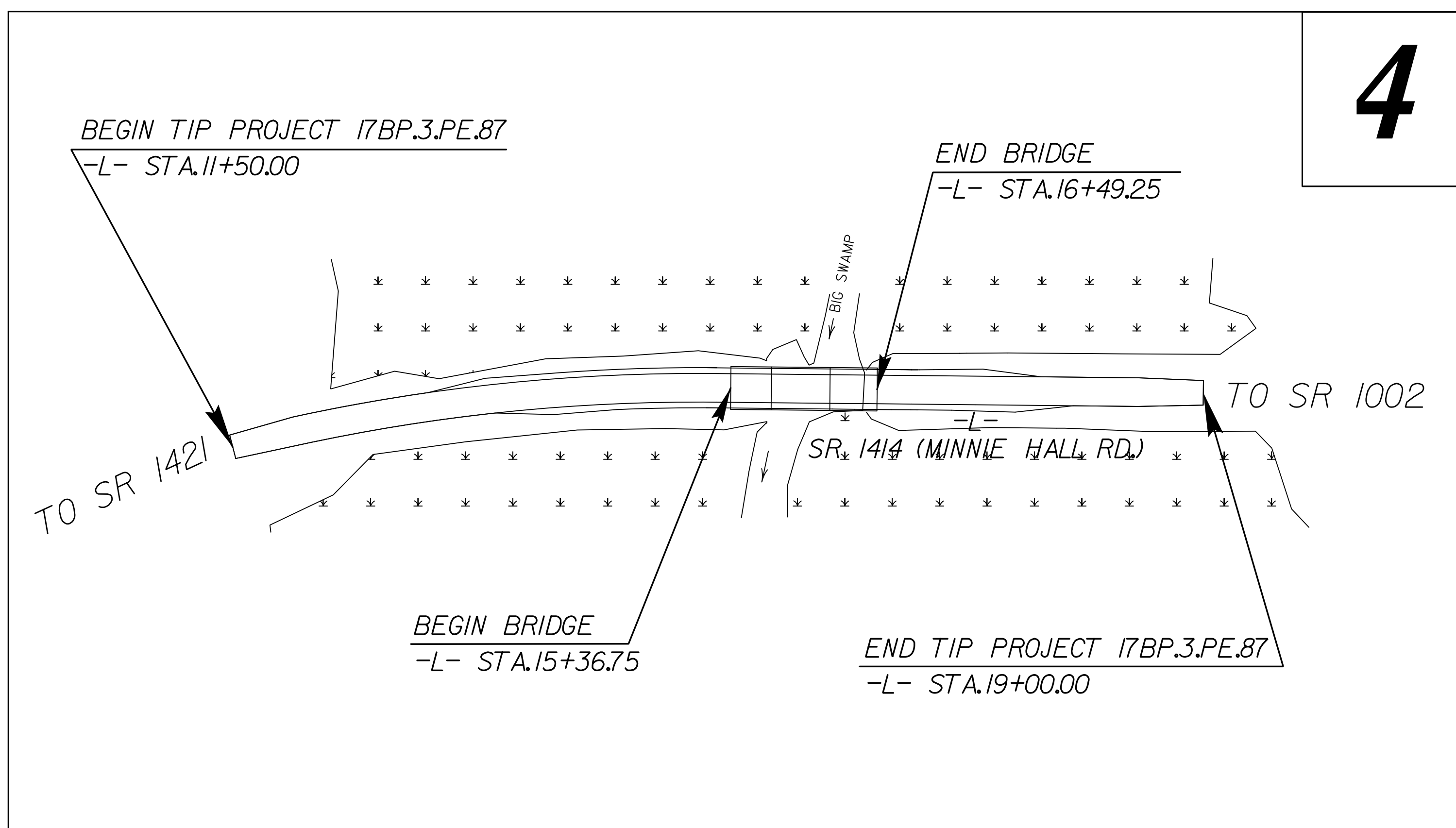
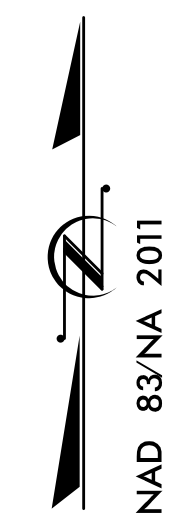
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PLAN FOR PROPOSED
HIGHWAY EROSION CONTROL

SAMPSON COUNTY

**LOCATION: BRIDGE NO. 122 OVER BIG SWAMP
ON SR 1414 (MINNIE HALL RD.)**

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

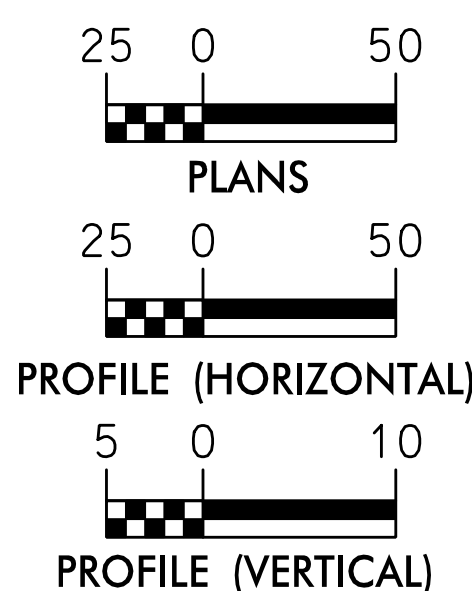


EROSION AND SEDIMENT CONTROL MEASURES

Sed. #	Description	Symbol
1630.03	Temporary Silt Ditch	TD
1630.05	Temporary Diversion	TD
1605.01	Temporary Silt Fence	
1606.01	Special Sediment Control Fence	△△△
1622.01	Temporary Berms and Slope Drains	▲
1630.02	Silt Basin Type B	▨
1633.01	Temporary Rock Silt Check Type-A	⊗
	Temporary Rock Silt Check Type-A with Matting and Polyacrylamide (PAM)	⊗
1633.02	Temporary Rock Silt Check Type-B	▶
	Wattle/Coir Fiber Wattle	⌒
	Wattle/Coir Fiber Wattle with Polyacrylamide (PAM)	⌒
1634.01	Temporary Rock Sediment Dam Type-A	■
1634.02	Temporary Rock Sediment Dam Type-B	⊓
1635.01	Rock Pipe Inlet Sediment Trap Type-A	⊓
1635.02	Rock Pipe Inlet Sediment Trap Type-B	⊓
1630.04	Stilling Basin	▭
1630.06	Special Stilling Basin	▭
	Rock Inlet Sediment Trap:	
1632.01	Type A	A
1632.02	Type B	B
1632.03	Type C	C
	Skimmer Basin	▭
	Tiered Skimmer Basin	▭
	Infiltration Basin	▭

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

GRAPHIC SCALE



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

Prepared In the Office of:



VHB Engineering NC, P.C. (C-3705)
940 Main Campus Drive, Suite 500
Raleigh, NC 27606

Designed by:

Courtney A. Carpenter, PE

3811

NAME

LEVEL III CERTIFICATION NO.

Reviewed In the Office of:

ROADSIDE ENVIRONMENTAL UNIT

1 South Wilmington St.
Raleigh, NC 27611

2018 STANDARD SPECIFICATIONS

Reviewed by:

Wes Chandler, PE

Roadway Standard Drawings

The following roadway english standards as appear in "Roadway Standard Drawings"- Roadway Design Unit - N. C. Department of Transportation - Raleigh, N. C., dated January 2018 and the latest revision thereto are applicable to this project and by reference hereby are considered a part of these plans.

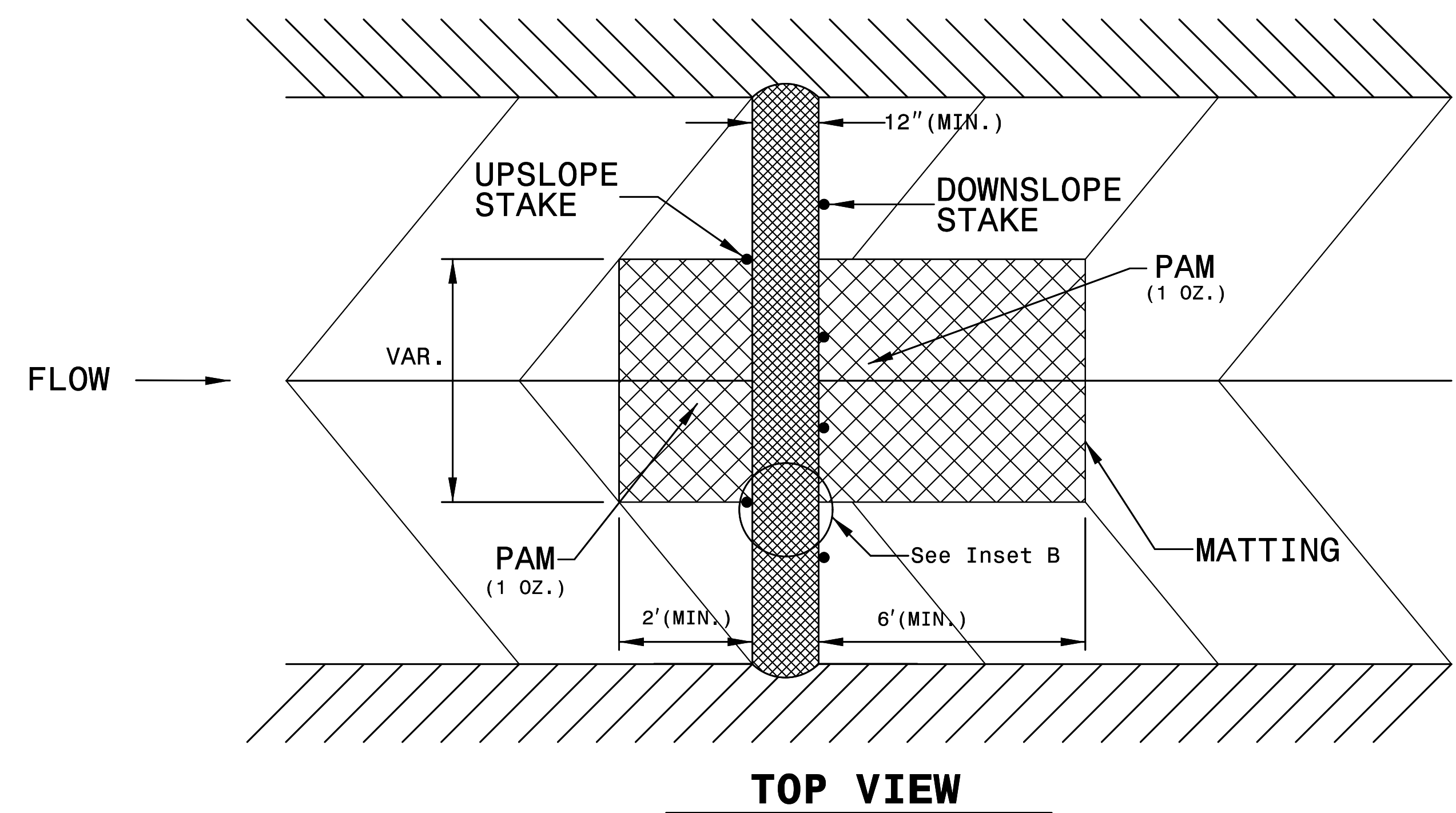
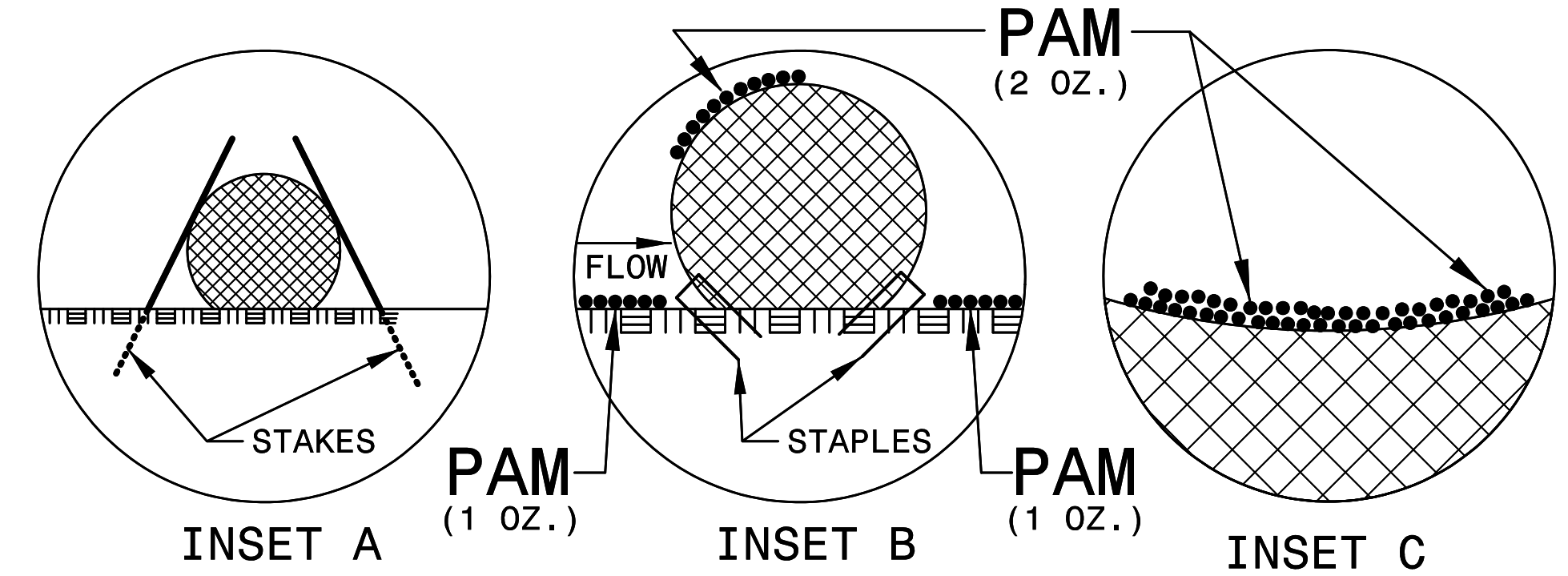
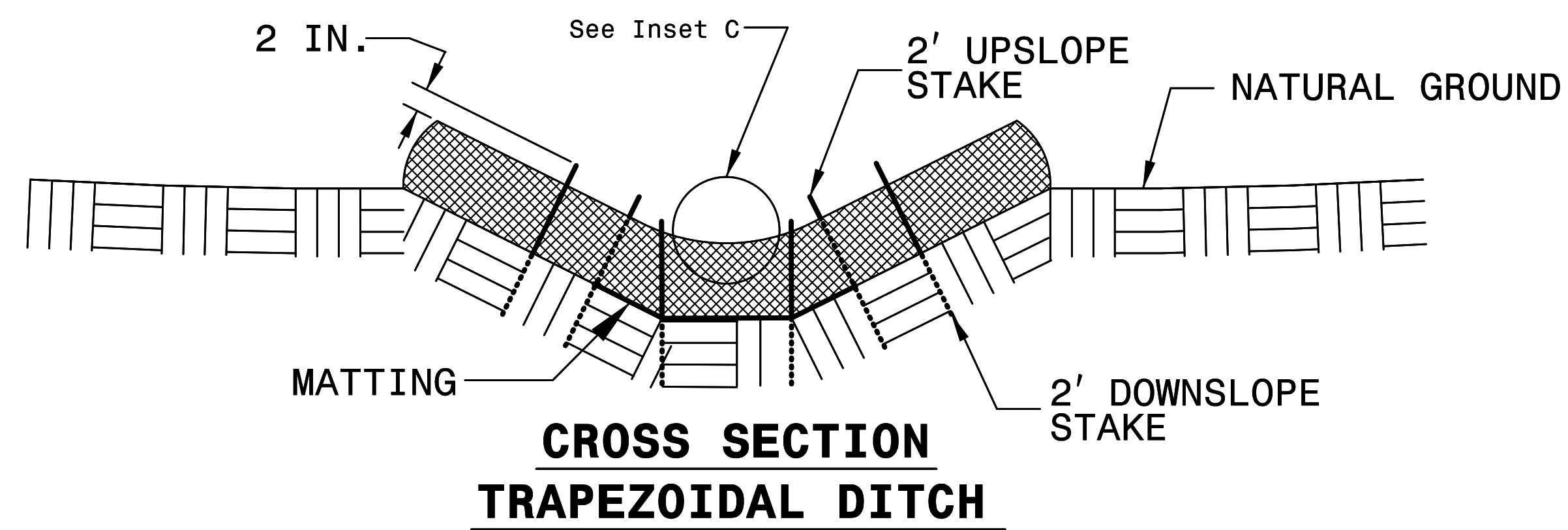
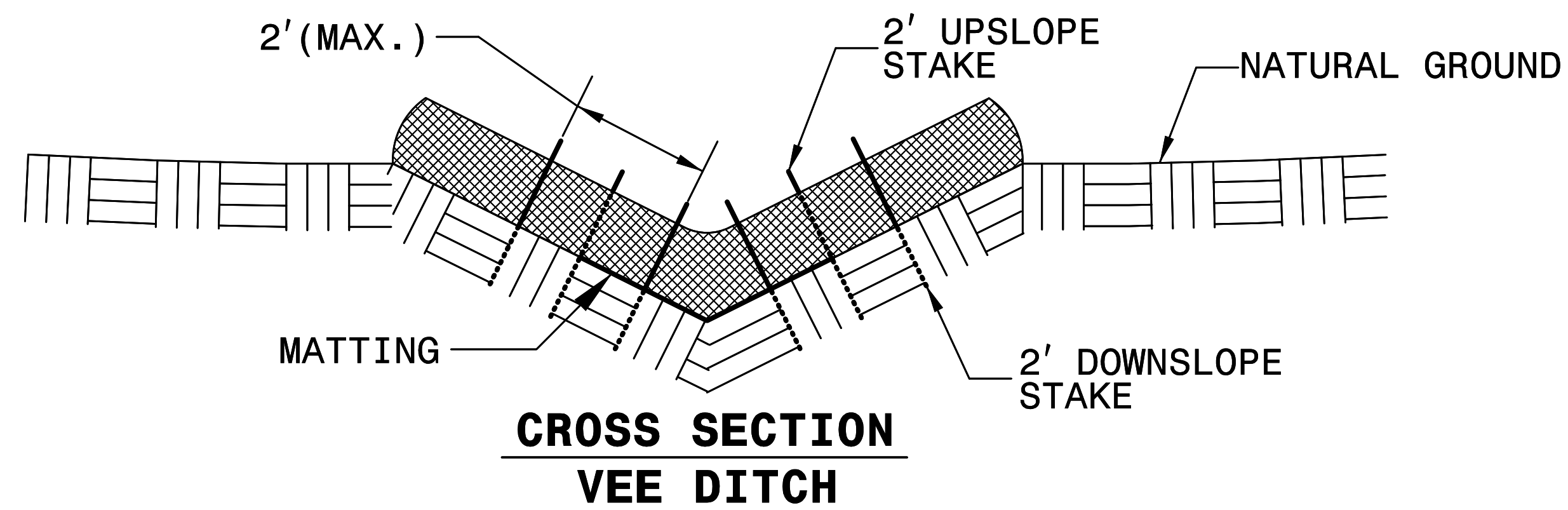
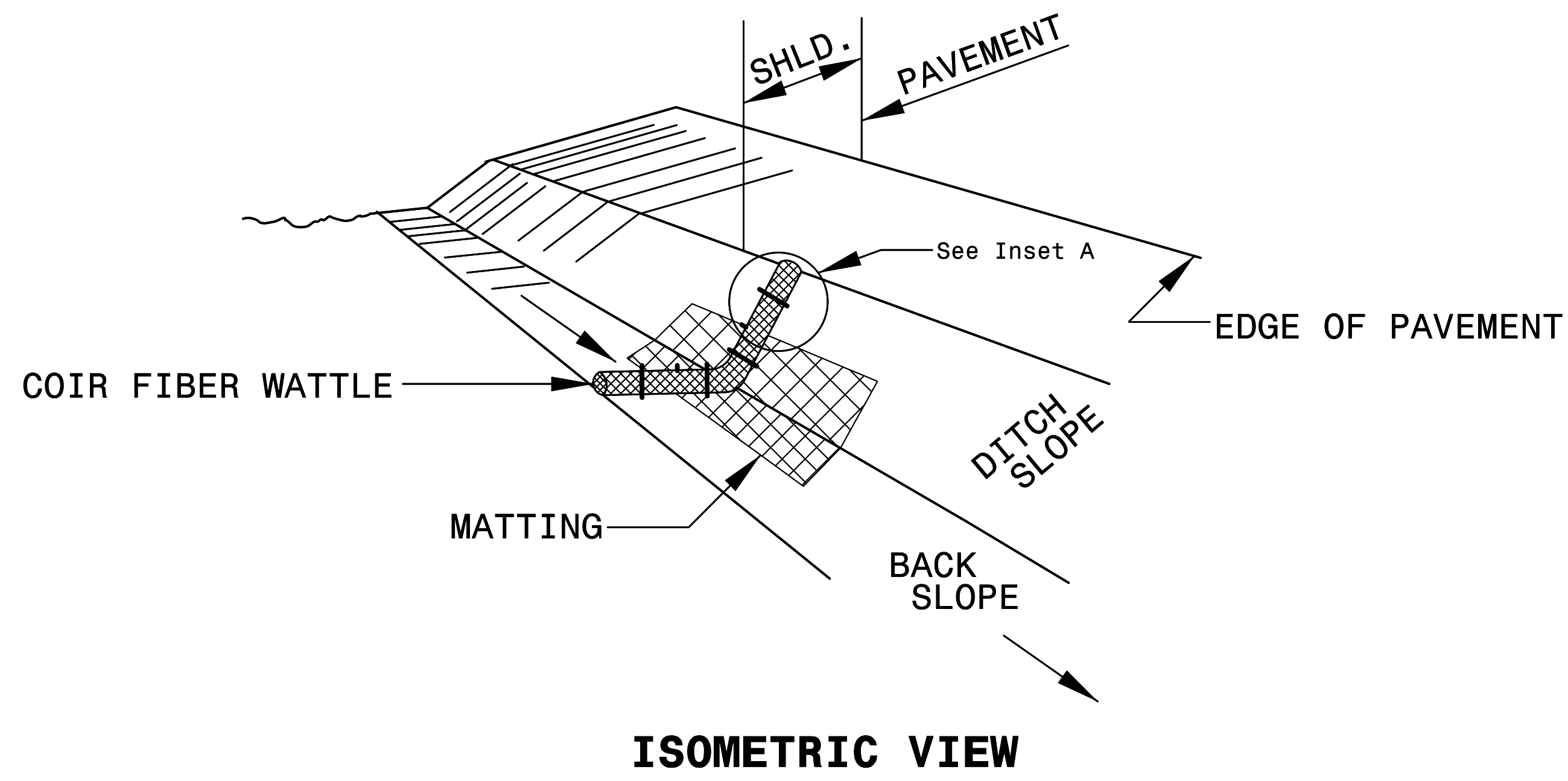
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1605.01 Temporary Silt Fence	1632.02 Rock Inlet Sediment Trap Type B
1606.01 Special Sediment Control Fence	1632.03 Rock Inlet Sediment Trap Type C
1607.01 Gravel Construction Entrance	1633.01 Temporary Rock Silt Check Type A
1622.01 Temporary Berms and Slope Drains	1633.02 Temporary Rock Silt Check Type B
1630.01 Riser Basin	1634.01 Temporary Rock Sediment Dam Type A
1630.02 Silt Basin Type B	1634.02 Temporary Rock Sediment Dam Type B
1630.03 Temporary Silt Ditch	1635.01 Rock Pipe Inlet Sediment Trap Type A
1630.04 Stilling Basin	1635.02 Rock Pipe Inlet Sediment Trap Type B
1630.05 Temporary Diversion	1640.01 Coir Fiber Wattle
1630.06 Special Stilling Basin	1645.01 Temporary Stream Crossing
1631.01 Matting Installation	

PROJECT REFERENCE NO. <i>17BP.3PE.87</i>	SHEET NO. <i>EC-2A</i>
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

COIR FIBER WATTLE WITH POLYACRYLAMIDE (PAM) DETAIL

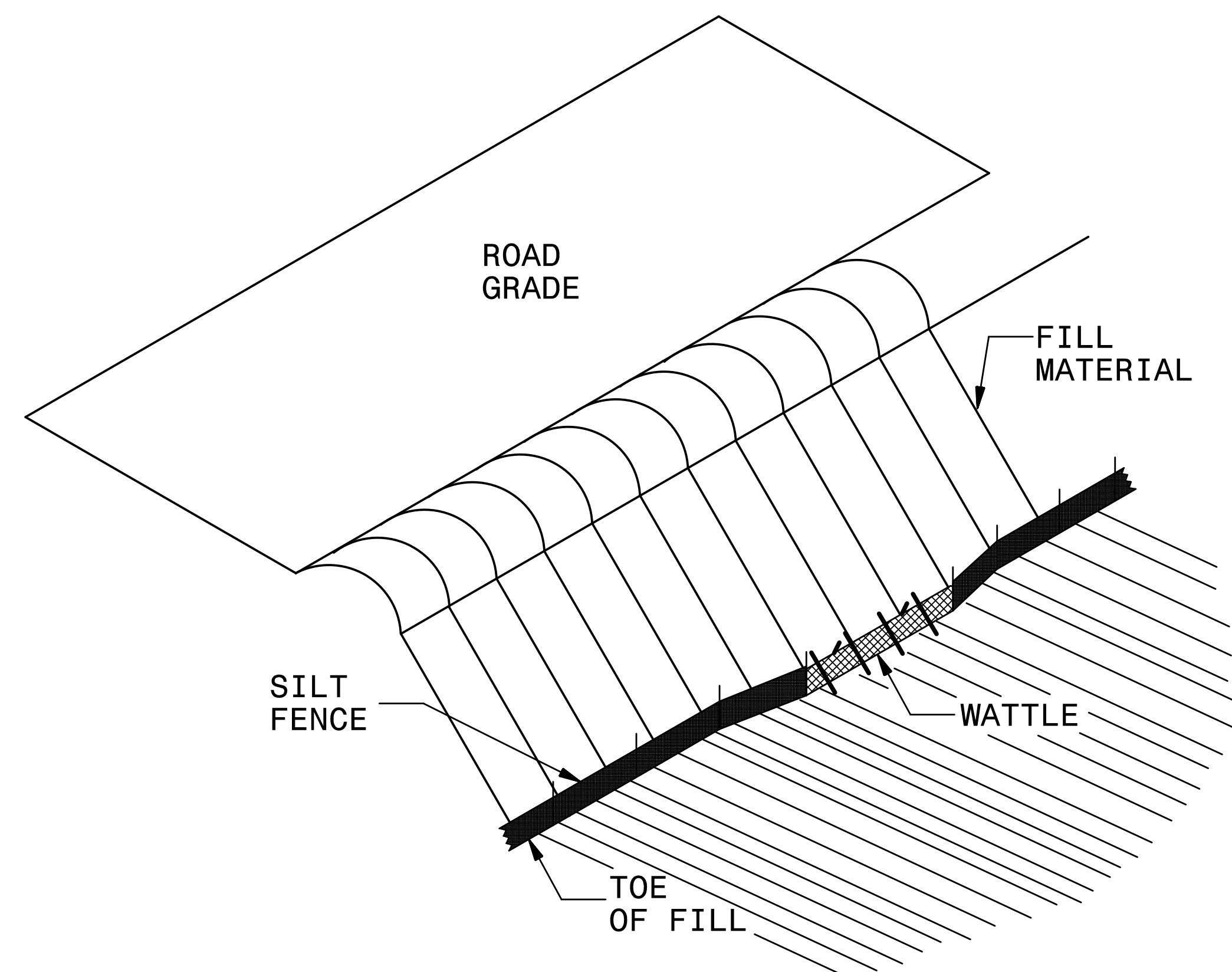
NOTES:

- USE MINIMUM 12 IN. DIAMETER COIR FIBER (COCONUT FIBER) WATTLE.
- USE 2 FT. WOODEN STAKES WITH A 2 IN. BY 2 IN. NOMINAL CROSS SECTION.
- ONLY INSTALL WATTLE(S) TO A HEIGHT IN DITCH SO FLOW WILL NOT WASH AROUND WATTLE AND SCOUR DITCH SLOPES AND AS DIRECTED.
- INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO BOTTOM OF DITCH.
- PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12" IN LENGTH.
- INSTALL STAPLES APPROXIMATELY EVERY 1 LINEAR FOOT ON BOTH SIDES OF WATTLE AND AT EACH END TO SECURE IT TO THE SOIL.
- INSTALL MATTING IN ACCORDANCE WITH SECTION 1631 OF THE STANDARD SPECIFICATIONS.
- PRIOR TO POLYACRYLAMIDE (PAM) APPLICATION, OBTAIN A SOIL SAMPLE FROM PROJECT LOCATION, AND FROM OFFSITE MATERIAL, AND ANALYZE FOR APPROPRIATE PAM FLOCCULANT TO BE APPLIED TO EACH WATTLE.
- INITIALLY APPLY 2 OUNCES OF ANIONIC OR NEUTRALLY CHARGED PAM OVER WATTLE WHERE WATER WILL FLOW AND 1 OUNCE OF PAM ON EACH SIDE OF WATTLE. REAPPLY PAM AFTER EVERY RAINFALL EVENT THAT IS EQUAL TO OR EXCEEDS 0.50 IN.

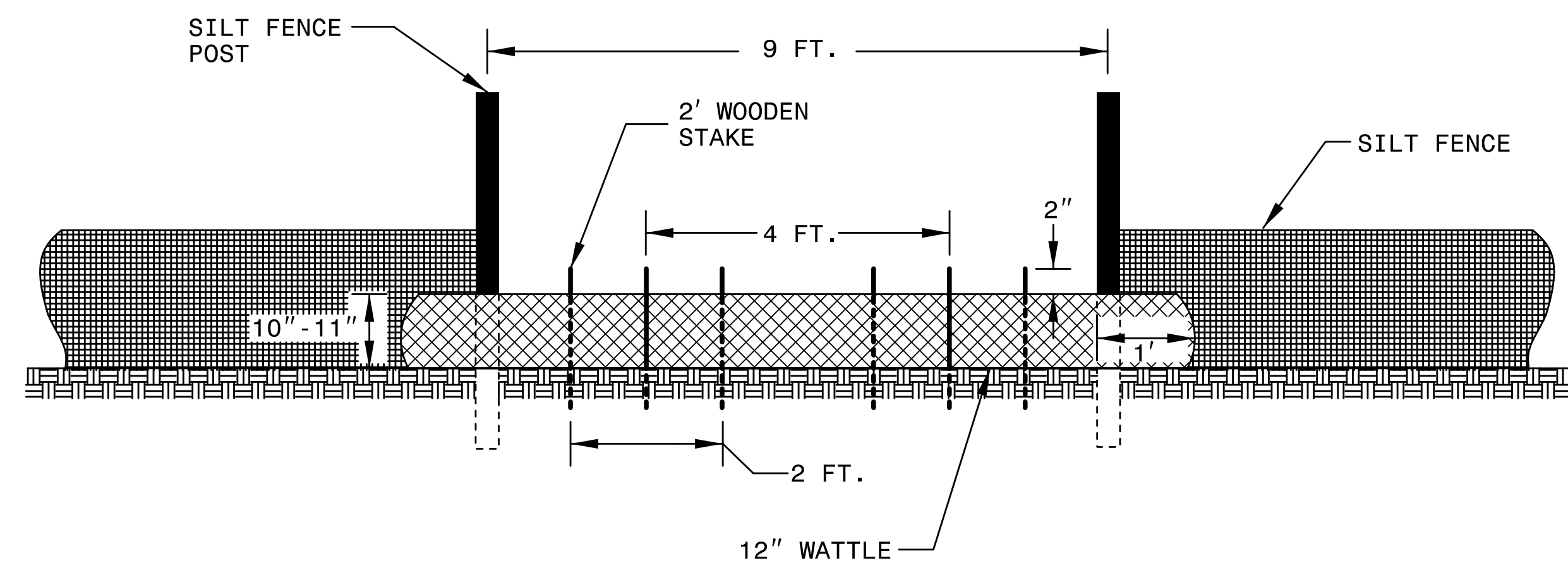


SILT FENCE COIR FIBER WATTLE BREAK DETAIL

PROJECT REFERENCE NO. 17BP.3.PE.87	SHEET NO. EC-2B
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



ISOMETRIC VIEW

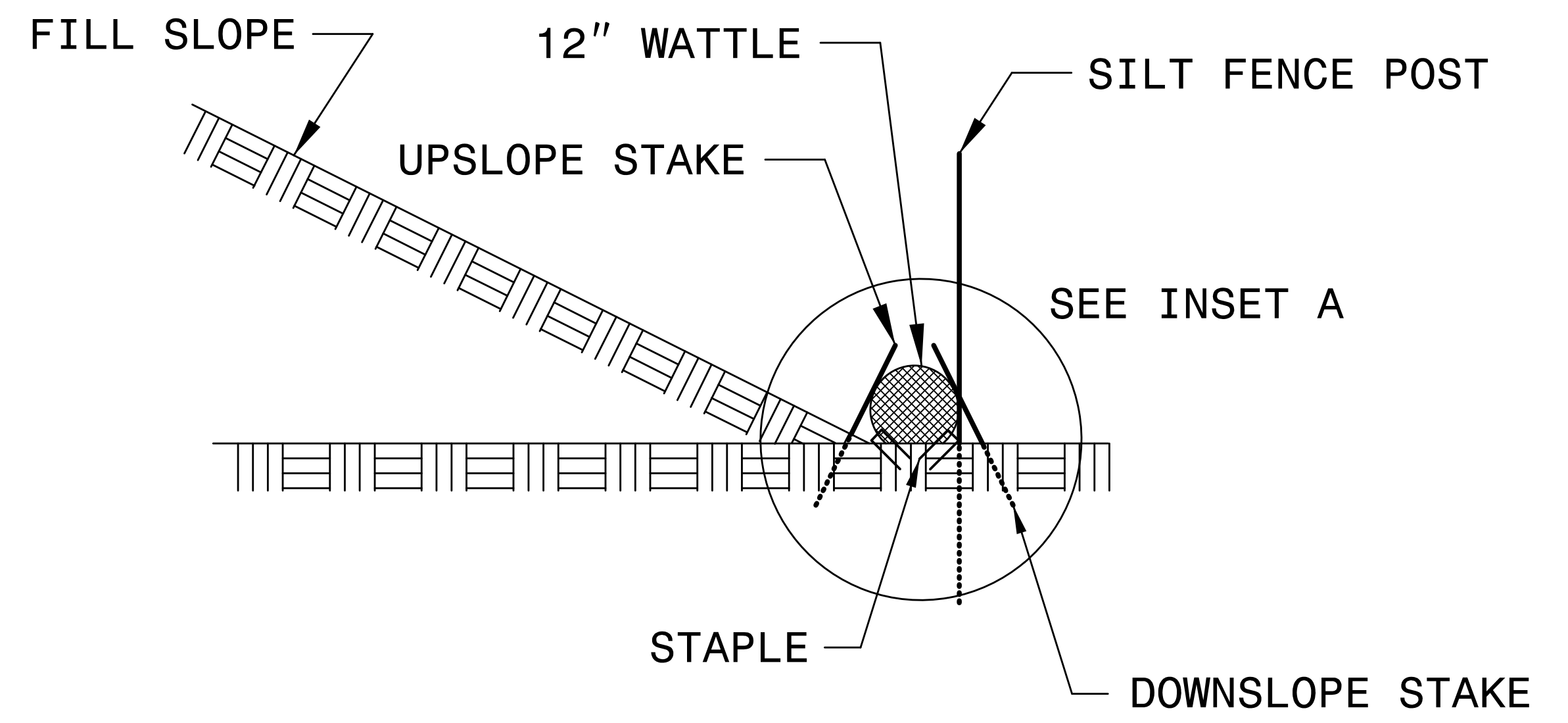
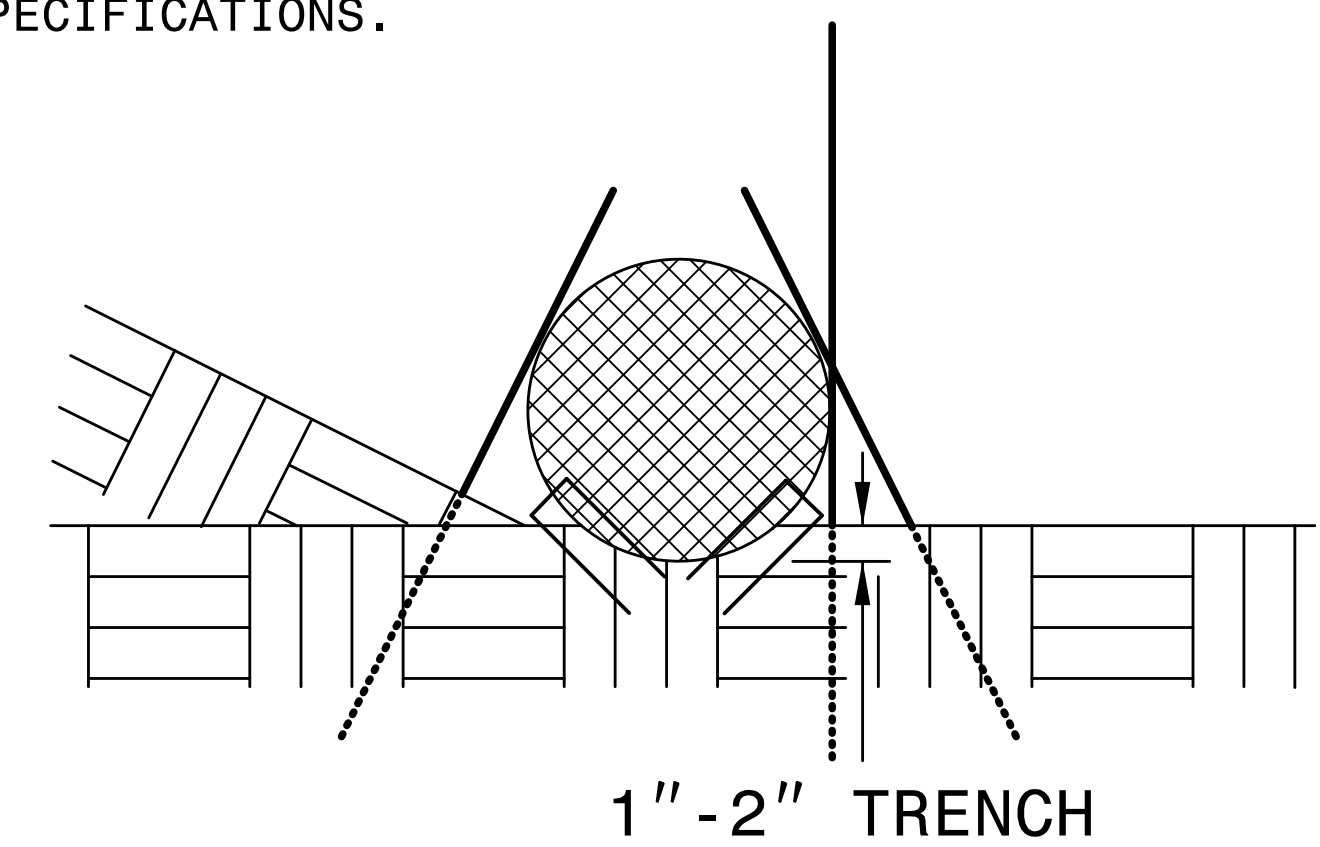


VIEW FROM SLOPE

NOTES:

- USE MINIMUM 12 IN. DIAMETER COIR FIBER (COCONUT FIBER) WATTLE AND LENGTH OF 10 FT.
- EXCAVATE A 1 TO 2 INCH TRENCH FOR WATTLE TO BE PLACED.
- DO NOT PLACE WATTLE ON TOE OF SLOPE.
- USE 2 FT. WOODEN STAKES WITH A 2 IN. BY 2 IN. NOMINAL CROSS SECTION.
- INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO GROUND.
- PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12" IN LENGTH.
- INSTALL STAPLES APPROXIMATELY EVERY 1 LINEAR FOOT ON BOTH SIDES OF WATTLE AND AT EACH END TO SECURE IT TO THE SOIL.
- WATTLE INSTALLATION CAN BE ON OUTSIDE OF THE SILT FENCE AS DIRECTED.
- INSTALL TEMPORARY SILT FENCE IN ACCORDANCE WITH SECTION 1605 OF THE STANDARD SPECIFICATIONS.

INSET A





SIDE VIEW

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

PROJECT REFERENCE NO.	SHEET NO.
<i>17BP.3.PE.87</i>	<i>EC-3</i>
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

SOIL STABILIZATION TIMEFRAMES

<i>SITE DESCRIPTION</i>	<i>STABILIZATION TIME</i>	<i>TIMEFRAME EXCEPTIONS</i>
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 OR FLATTER	14 DAYS	7 DAYS FOR SLOPES GREATER THAN 50' IN LENGTH.
ALL OTHER AREAS WITH SLOPES FLATTER THAN 4:1	14 DAYS	NONE, EXCEPT FOR PERIMETERS AND HQW ZONES.

PROJECT REFERENCE NO. 17BP.3.PE.87	SHEET NO. EC-04/CONST.04
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
 STEWART	 VHB Engineering NC, P.C. (C-2705) 1400 S. Salisbury Blvd., Suite 100 Wilmington, NC 28403 www.vhbinc.com

-L-
 PI Sta 12+65.88
 $\Delta = 20' 46" 24.5" (RT)$
 $D = 3' 56" 59.8"$
 $L = 525.92'$
 $T = 265.88'$
 $R = 1,450.54'$
 Runoff = 100'
 $S_p = 4\%$
 $V_D = 55 \text{ MPH}$

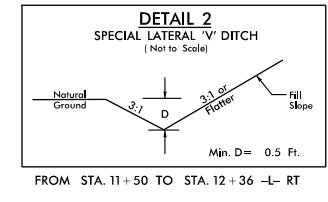
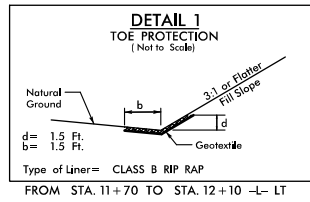
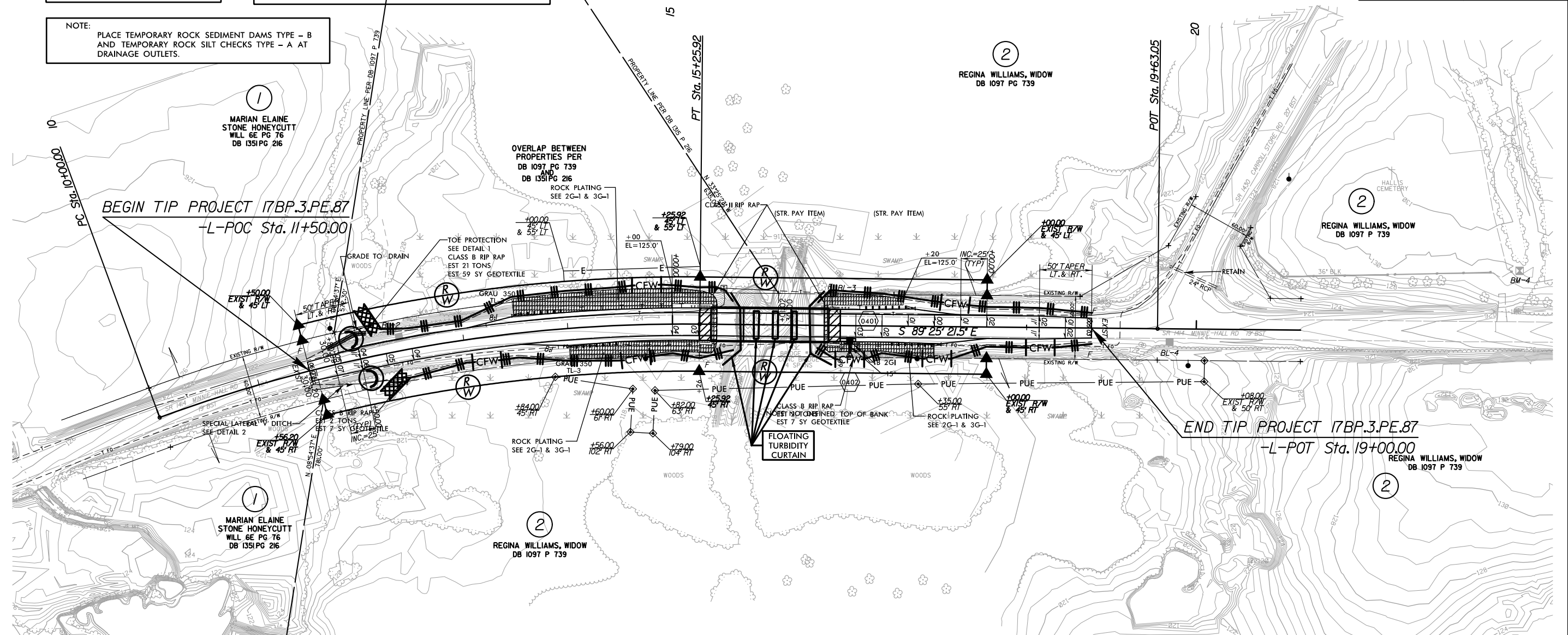
NOTE:
 THE OUTSIDE BUFFER, WETLAND OR WATER BOUNDARY SHALL BE CLEARLY MARKED BY HIGHLY VISIBLE FENCING (ORANGE SAFETY FENCE).

CLEARING AND GRUBBING EROSION CONTROL FOR CONSTRUCTION SHEET 4

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

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

NAD 83/NA 2011



FOR -L- PROFILE, SEE SHEET 5

FOR STRUCTURE PLANS, SEE SHEETS S-1 THRU S-7

REVISIONS

8.17.17.99
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PROJECT REFERENCE NO. 17BP.3.PE.87	SHEET NO. EC-05/CONST.04
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
STEWART	vhb

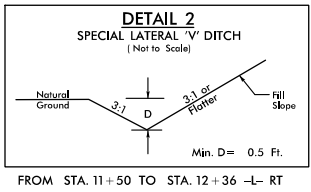
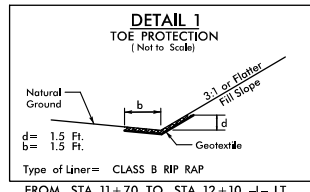
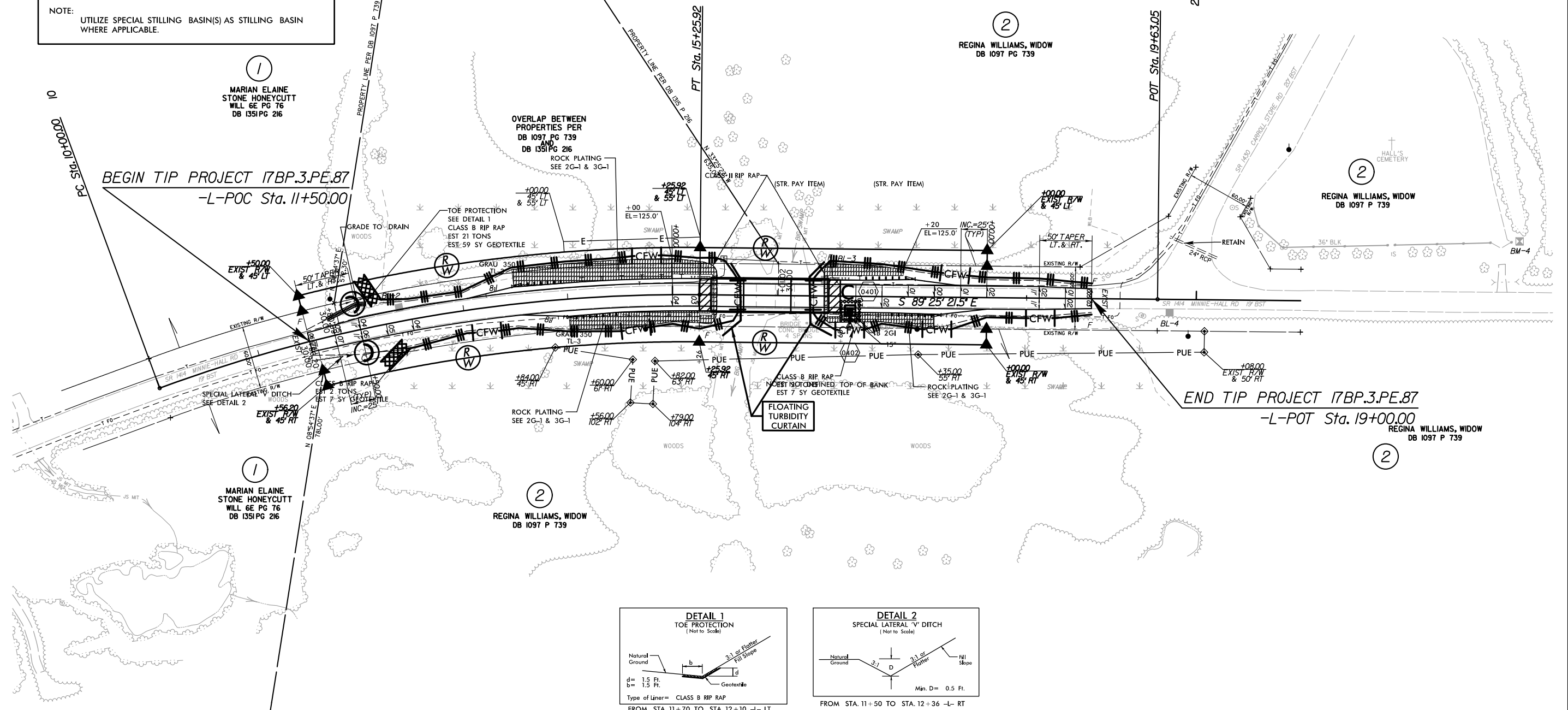
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 PI Sta 12+65.88
 $\Delta = 20' 46" 24.5" (RT)$
 $D = 3' 56" 59.8"$
 $L = 525.92'$
 $T = 265.88'$
 $R = 1,450.54'$
 $Runoff = 100'$
 $S_p = 4\%$
 $V_D = 55 MPH$

NOTE:
 THE OUTSIDE BUFFER, WETLAND OR WATER BOUNDARY SHALL BE CLEARLY MARKED BY HIGHLY VISIBLE FENCING (ORANGE SAFETY FENCE).

Place Matting for Erosion Control on Slopes Adjacent to Permitted Wetlands as Work Allows.

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

NAD 83/NA 2011



FOR -L- PROFILE, SEE SHEET 5
 FOR STRUCTURE PLANS, SEE SHEETS S-1 THRU S-7

REVISIONS

8:17/99
 8:59:37 AM
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09.08/2019

TIP PROJECT: 17BP.3.PE.87

CONTRACT: DC00409

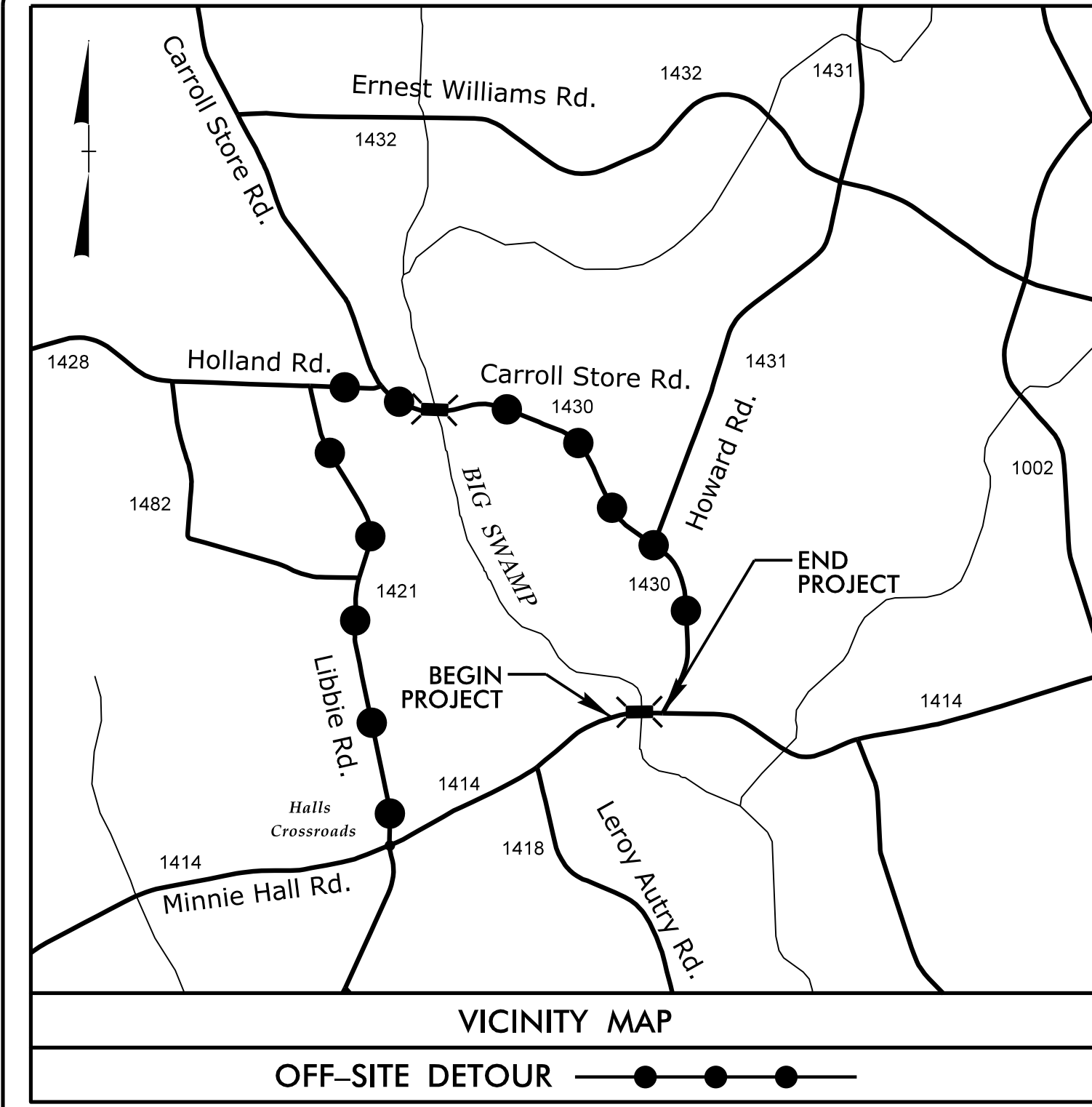
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

T.I.P. NO.	SHEET NO.
17BP.3.PE.87	UO-1

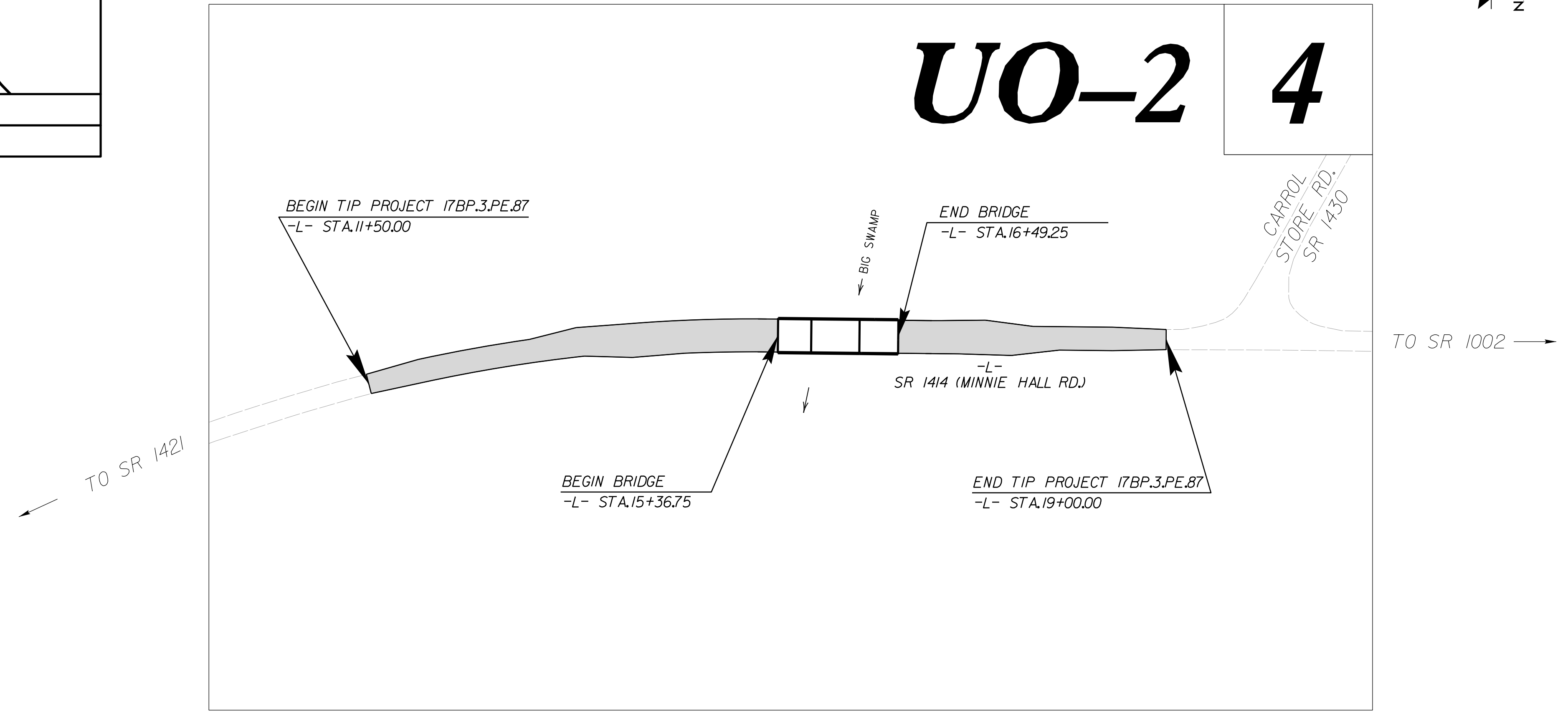
UTILITIES BY OTHERS PLANS
SAMPSON COUNTY

LOCATION: BRIDGE NO. 122 OVER BIG SWAMP
ON SR 1414 (MINNIE HALL RD.)

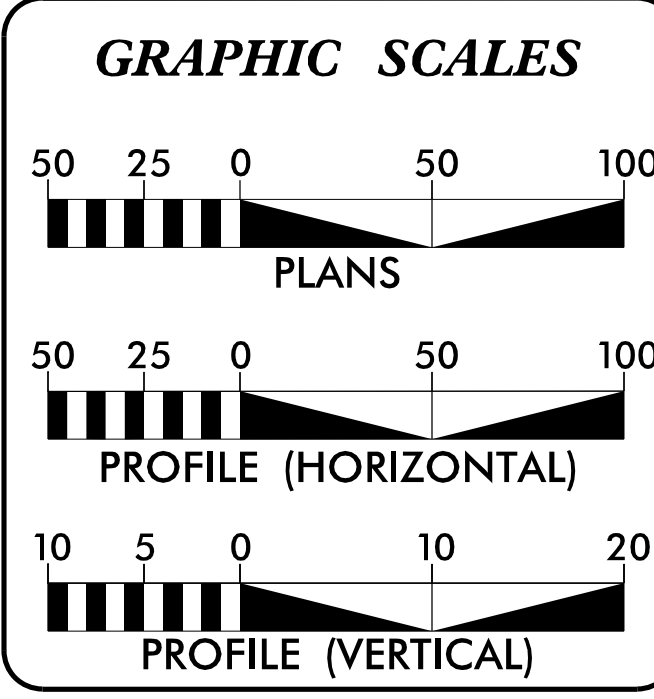
TYPE OF WORK: TELECOMMUNICATIONS AND
POWER RELOCATION



UO-2 4



DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED



SHEET NO.	DESCRIPTION
UO-1	TITLE SHEET
UO-2	UTILITY BY OTHERS PLAN SHEET

UTILITY OWNERS ON PROJECT
(A) SOUTH RIVER ELECTRIC MEMBERSHIP CORPORATION - POWER
(B) STAR TELEPHONE MEMBERSHIP CORPORATION - TELECOMMUNICATIONS

PREPARED IN THE OFFICE OF:

STEWART

223 S. West St. Suite 1100
RALEIGH, NC 27603
TEL: 919.360.8792

Firm License #: C-11951
www.stewartinc.com
PROJECT #: 17BP03.01

ANDY YOUNG, PE PROJECT ENGINEER
JOSHUA ROEMER PROJECT DESIGN ENGINEER

SEAL

DocuSigned by:
Andrew P. Young
8/11/2022

DIVISION OF HIGHWAYS
DIVISION 3
5501 BARBADOS BOULEVARD
CASTLE HAYNE NC 28429
PHONE (910) 341-2150
FAX (910) 675-0143

LONNY A. SLEEPER UTILITIES REGIONAL ENGINEER
ROY (CHRIS) SUTTON UTILITIES ENGINEER
UTILITIES AREA COORDINATOR
UTILITIES COORDINATOR

8/11/2022
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USER:ayoung

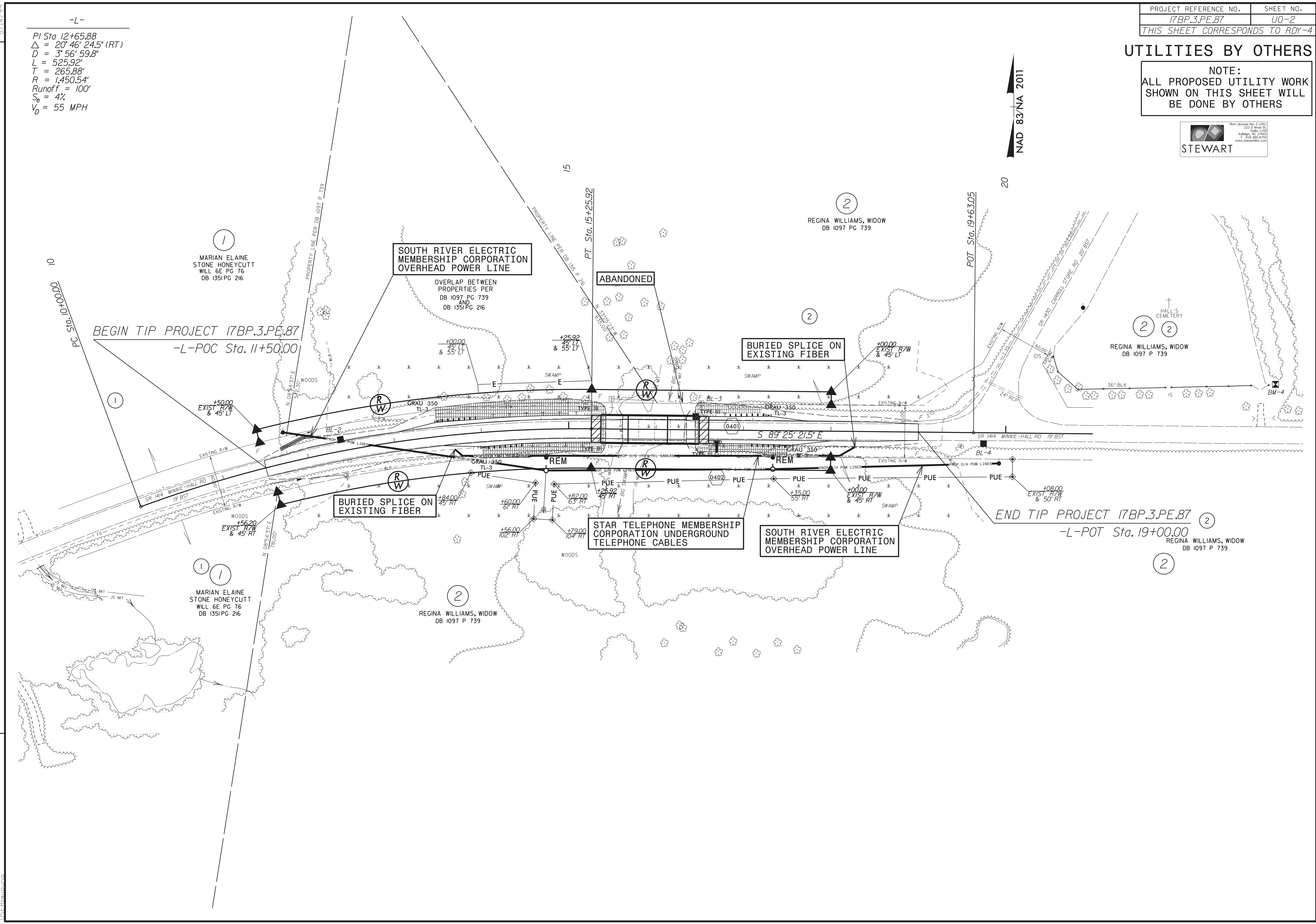
UTILITIES BY OTHERS

NOTE:
ALL PROPOSED UTILITY WORK
SHOWN ON THIS SHEET WILL
BE DONE BY OTHERS



-L-
PI Sta 12+65.88
 $\Delta = 20' 46' 24.5'' (RT)$
 $D = 3' 56' 59.8''$
 $L = 525.92'$
 $T = 265.88'$
 $R = 1,450.54'$
Runoff = 100'
 $S_e = 4\%$
 $V_D = 55 \text{ MPH}$

NAD 83/NA 2011



REVISIONS

8/19/2022 8:14:50 AM B5306_UTL_02.dgn

CROSS SECTION INDEX OF SHEETS

CROSS SECTION SUMMARY

X-1B

-L-

X-1 THRU X-6

REVISIONS

**STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS**

CROSS-SECTION SUMMARY

NOTE: EMBANKMENT COLUMN DOES NOT INCLUDE BACKFILL FOR UNDERCUT

Station L	Uncl. Exc. (cu. yd.)	Embt (cu. yd.)
11+50.00	0	0
12+00.00	3	18
12+50.00	3	32
13+00.00	1	28
13+50.00	4	53
14+00.00	19	87
14+50.00	33	96
15+00.00	39	92
15+36.75	15	71

Station L	Uncl. Exc. (cu. yd.)	Embt (cu. yd.)
16+49.25	0	0
17+00.00	5	79
17+50.00	18	37
18+00.00	13	16
18+50.00	1	8
19+00.00	2	4

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

REVISIONS

8/17/99

7/13/2002
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USER: rcenter



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

EXIST. WETLAND

EXIST. WETLAND

EXIST. WETLAND

123.51
12 + 50.00

123.57
12 + 00.00

123.78
11 + 50.00
BEGIN PROJECT

124.02
11 + 00.00

3:1

0.040

0.040

3:1

3:1

0.040

0.060

3:1

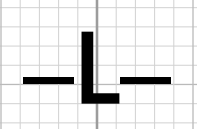
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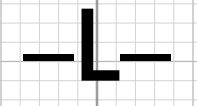
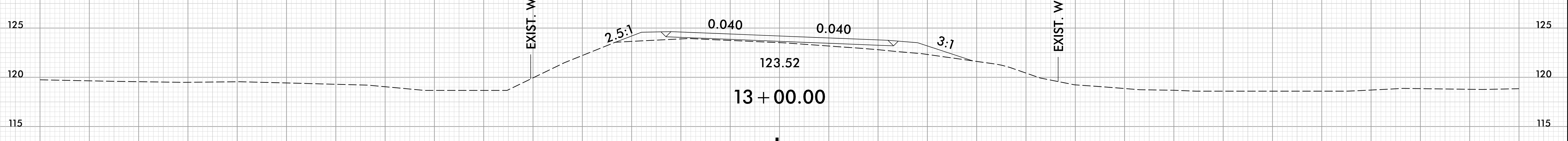
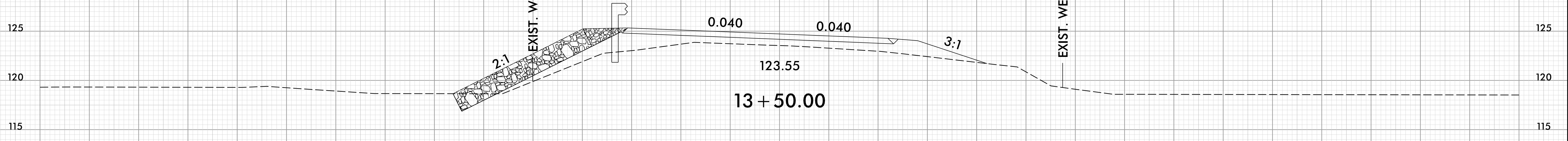
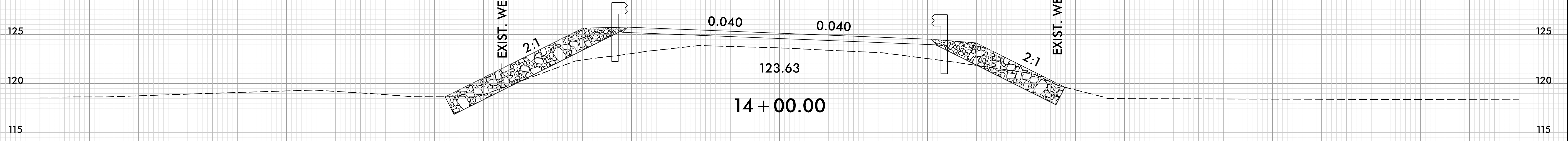
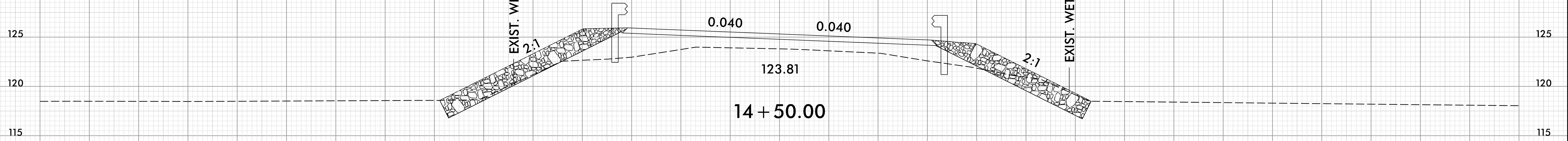
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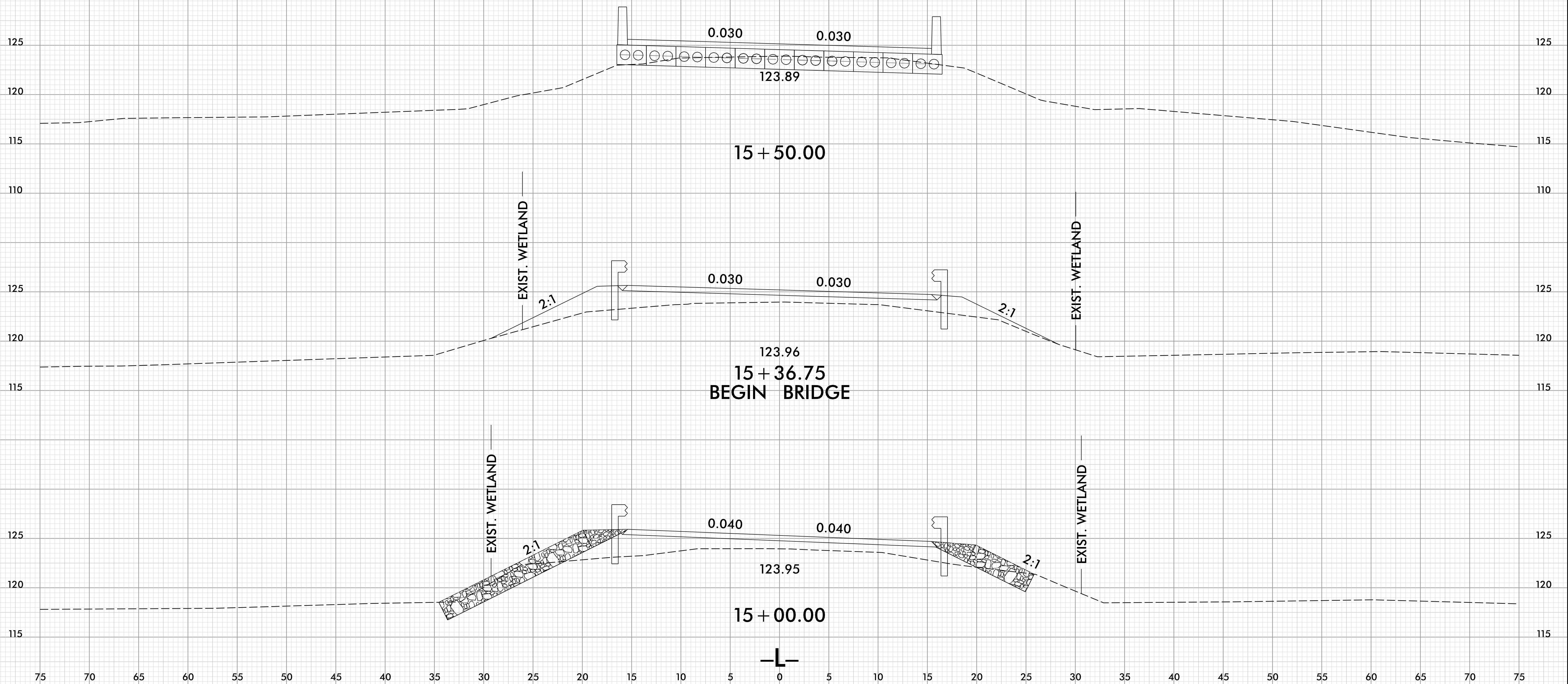
8/23/99



PROJ. REFERENCE NO.
17BP.3.PE.87

SHEET NO.
X-3

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7/14/2022
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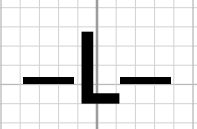
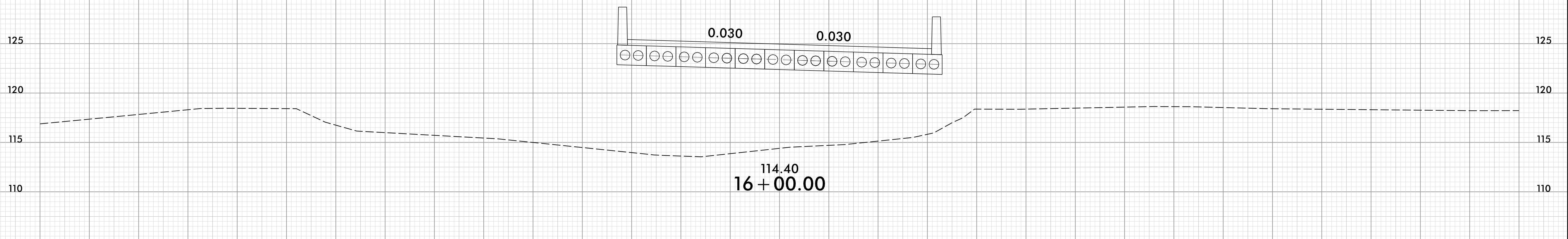
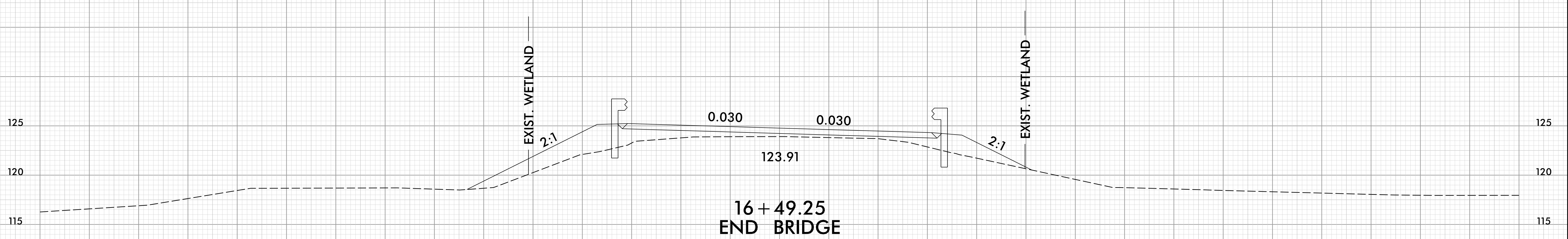
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PROJ. REFERENCE NO.
17BP.3.PE.87

SHEET NO.
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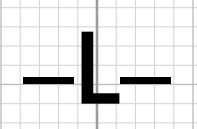
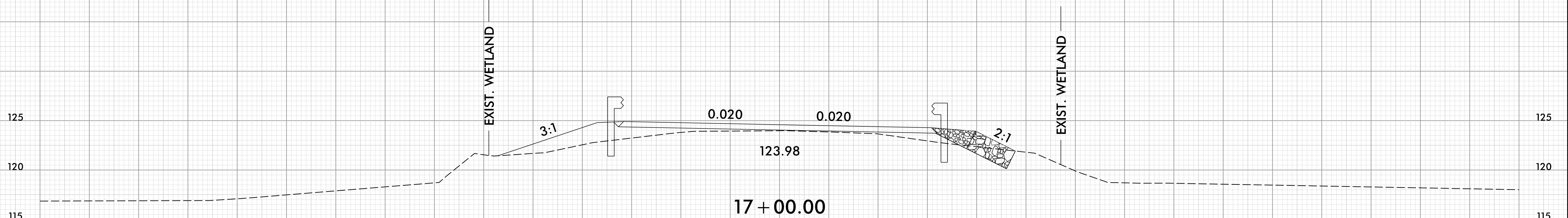
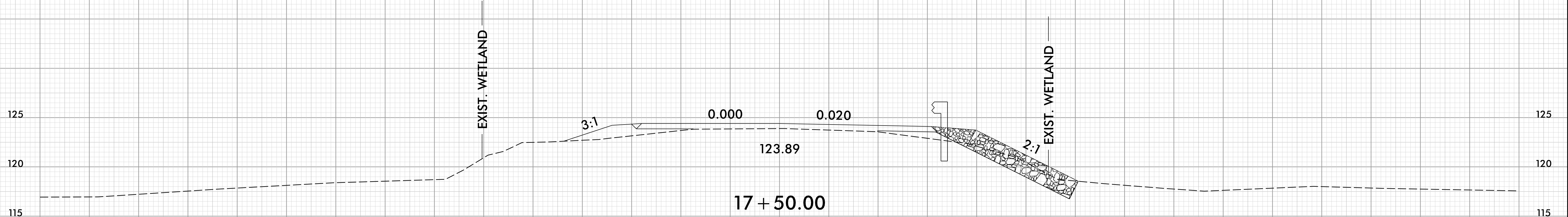
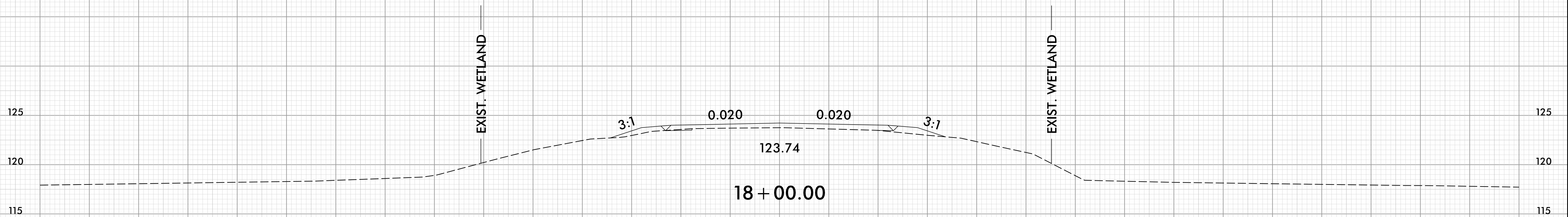


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7/14/2022
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17BP.3.PE.87



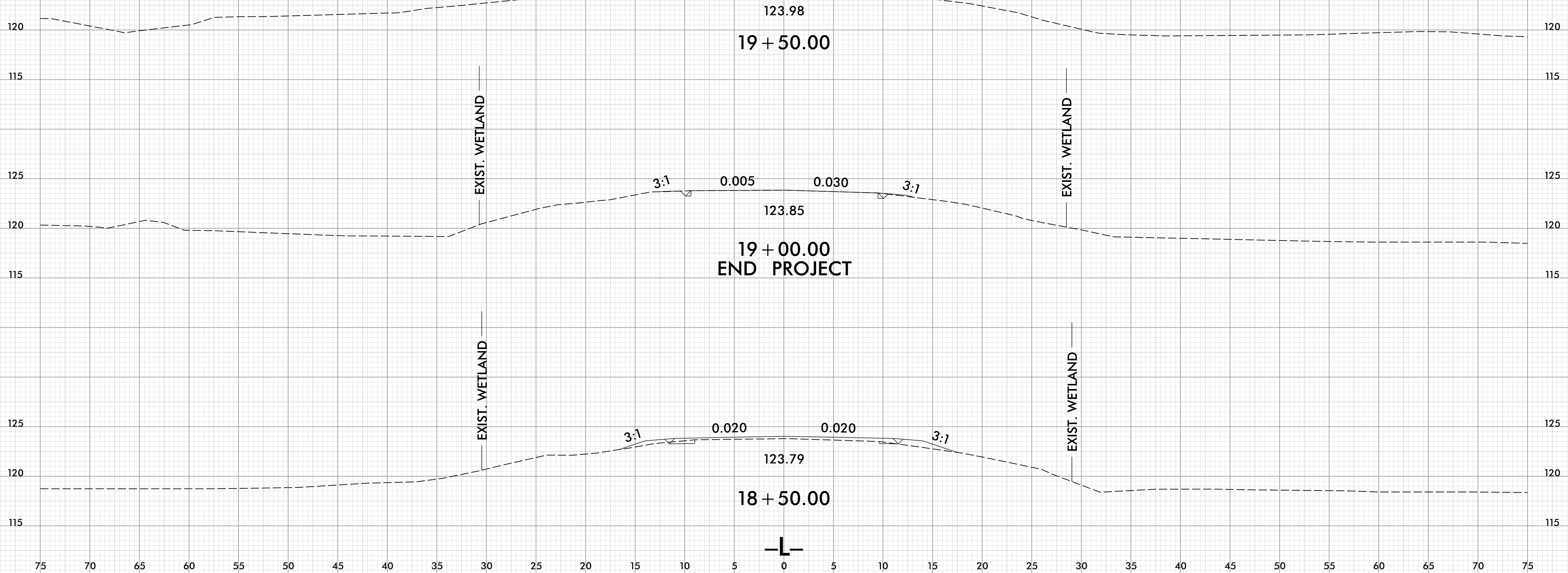
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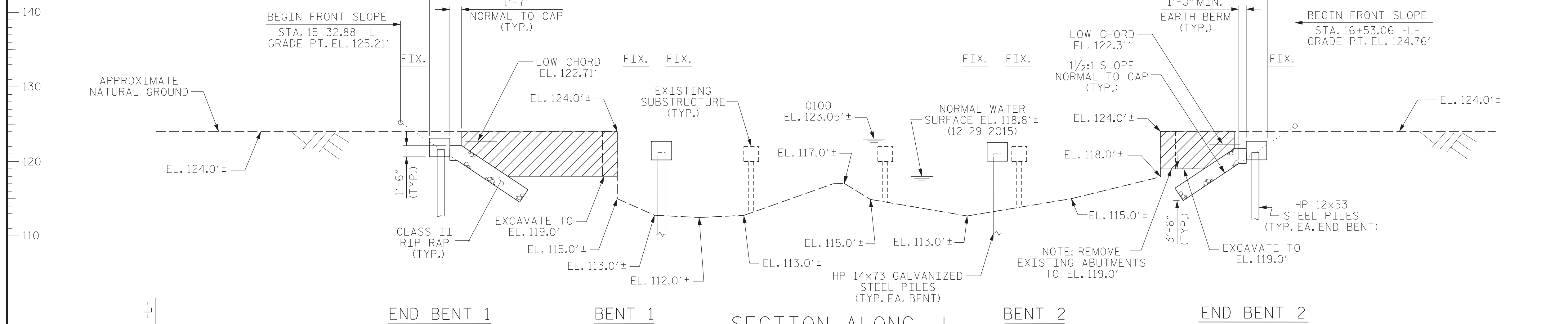


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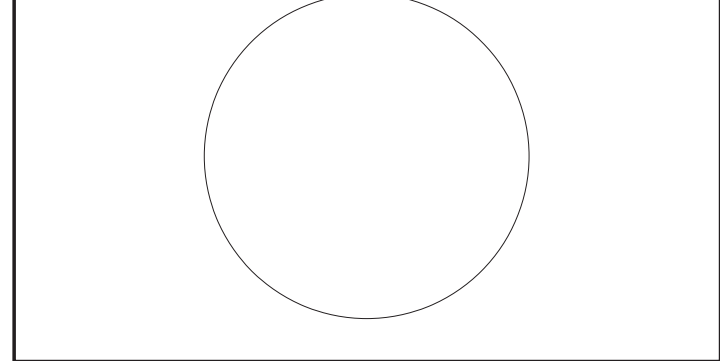
GRADE DATA

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VC = 190'

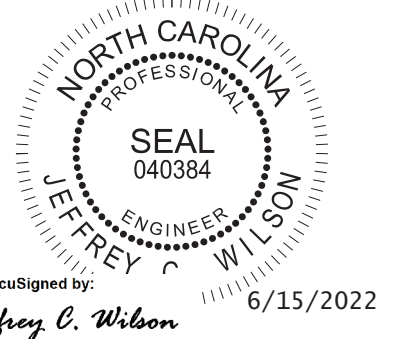
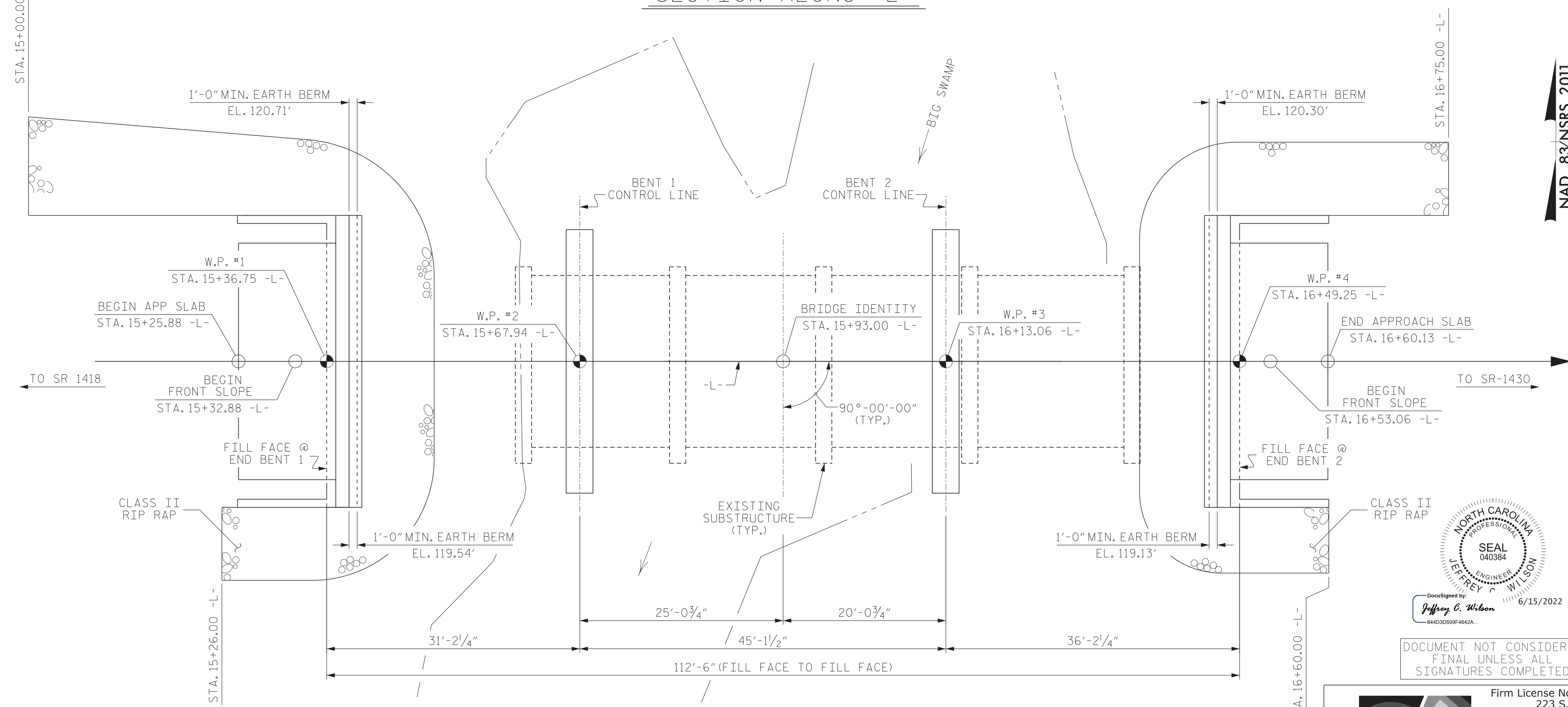


UNCLASSIFIED STRUCTURE EXCAVATION

I HEREBY CERTIFY THESE PLANS ARE THE AS-BUILT PLANS



NAD 83/NSRS 2011



DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

STEWART

Firm License No. C-1051
223 S. West St,
Suite 1100
Raleigh, NC 27603
T 919.380.8750
www.stewartinc.com

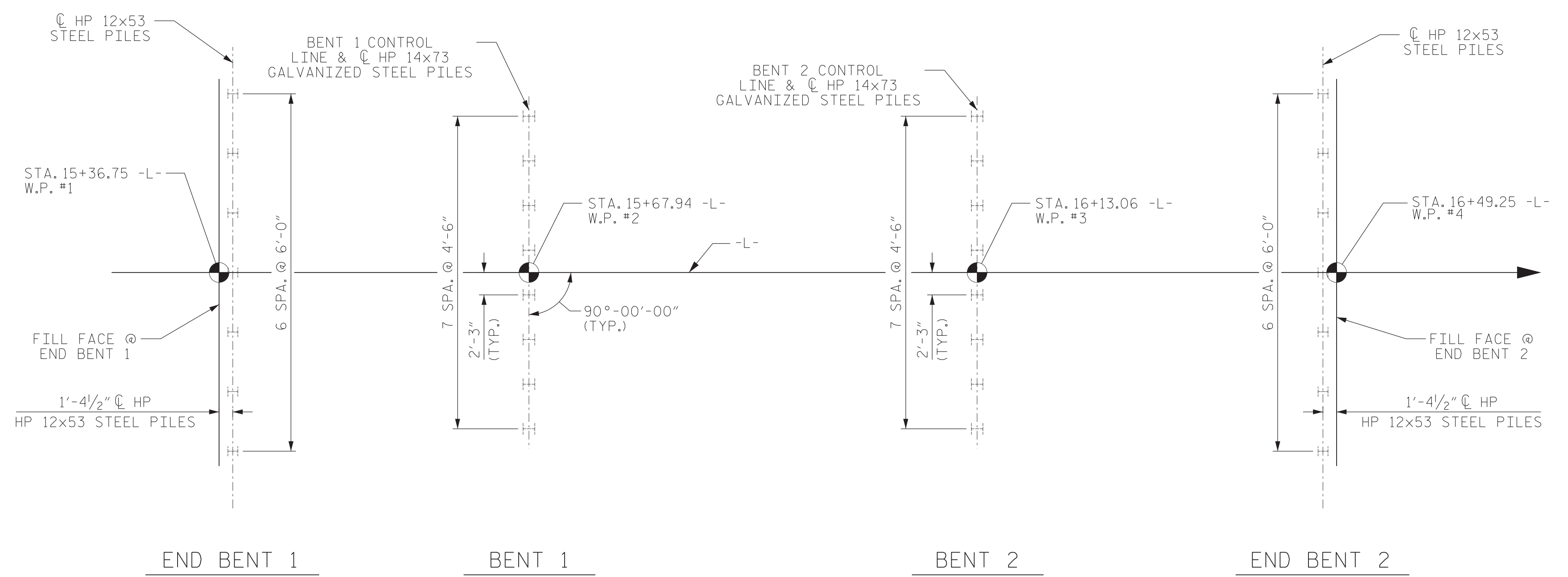
PROJECT NO. 17BP.3.R.87
SAMPSON COUNTY
STATION: 15+93.00 -L-
SHEET 1 OF 3 REPLACES BRIDGE NO. 122

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

6/14/2022
17BP.3.R.87_SMU_CDI_810122.dgn
USER: jwilson

DRAWN BY: J. WILSON DATE: 06-22
CHECKED BY: D. RUGGLES DATE: 06-22
DESIGN ENGINEER OF RECORD: J. WILSON DATE: 06-22

NAD 83/NSRS 2011

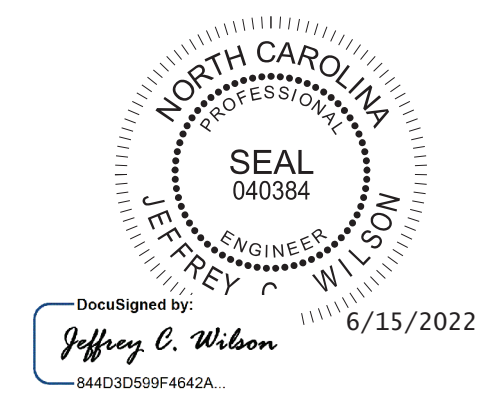


FOUNDATION LAYOUT
DIMENSIONS LOCATING PILES ARE SHOWN TO CENTERLINE OF PILES

FOUNDATION NOTES

- 1) FOR PILES, SEE GEOTECHNICAL SPECIAL PROVISIONS AND SECTION 450 OF THE STANDARD SPECIFICATIONS.
- 2) PILES AT END BENT 1 AND END BENT 2 ARE DESIGNED FOR A FACTORED RESISTANCE OF 55 TONS PER PILE.
- 3) PILES AT BENT 1 AND BENT 2 ARE DESIGNED FOR A FACTORED RESISTANCE OF 90 TONS PER PILE.
- 4) DRIVE PILES AT END BENT 1 AND END BENT 2 TO A REQUIRED DRIVING RESISTANCE OF 95 TONS PER PILE.
- 5) DRIVE PILES AT BENT 1 AND BENT 2 TO A REQUIRED DRIVING RESISTANCE OF 165 TONS PER PILE. THIS REQUIRED DRIVING RESISTANCE INCLUDES ADDITIONAL RESISTANCE FOR SCOUR.
- 6) INSTALL PILES AT BENT 1 TO A TIP ELEVATION NO HIGHER THAN 86 FT.
- 7) INSTALL PILES AT BENT 2 TO A TIP ELEVATION NO HIGHER THAN 89 FT.
- 8) THE SCOUR CRITICAL ELEVATION FOR BENT 1 AND BENT 2 IS ELEVATION 105 FT. SCOUR CRITICAL ELEVATIONS ARE USED TO MONITOR POSSIBLE SCOUR PROBLEMS DURING THE LIFE OF THE STRUCTURE.
- 9) TESTING PILES WITH THE PDA DURING DRIVING, RESTRIKING OR REDRIVING MAY BE REQUIRED. THE ENGINEER WILL DETERMINE THE NEED FOR PDA TESTING. FOR PDA TESTING, SEE SECTION 450 OF THE STANDARD SPECIFICATIONS.

PROJECT NO. 17BP.3.R.87
SAMPSON COUNTY
STATION: 15+93.00 -L-
SHEET 2 OF 3



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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

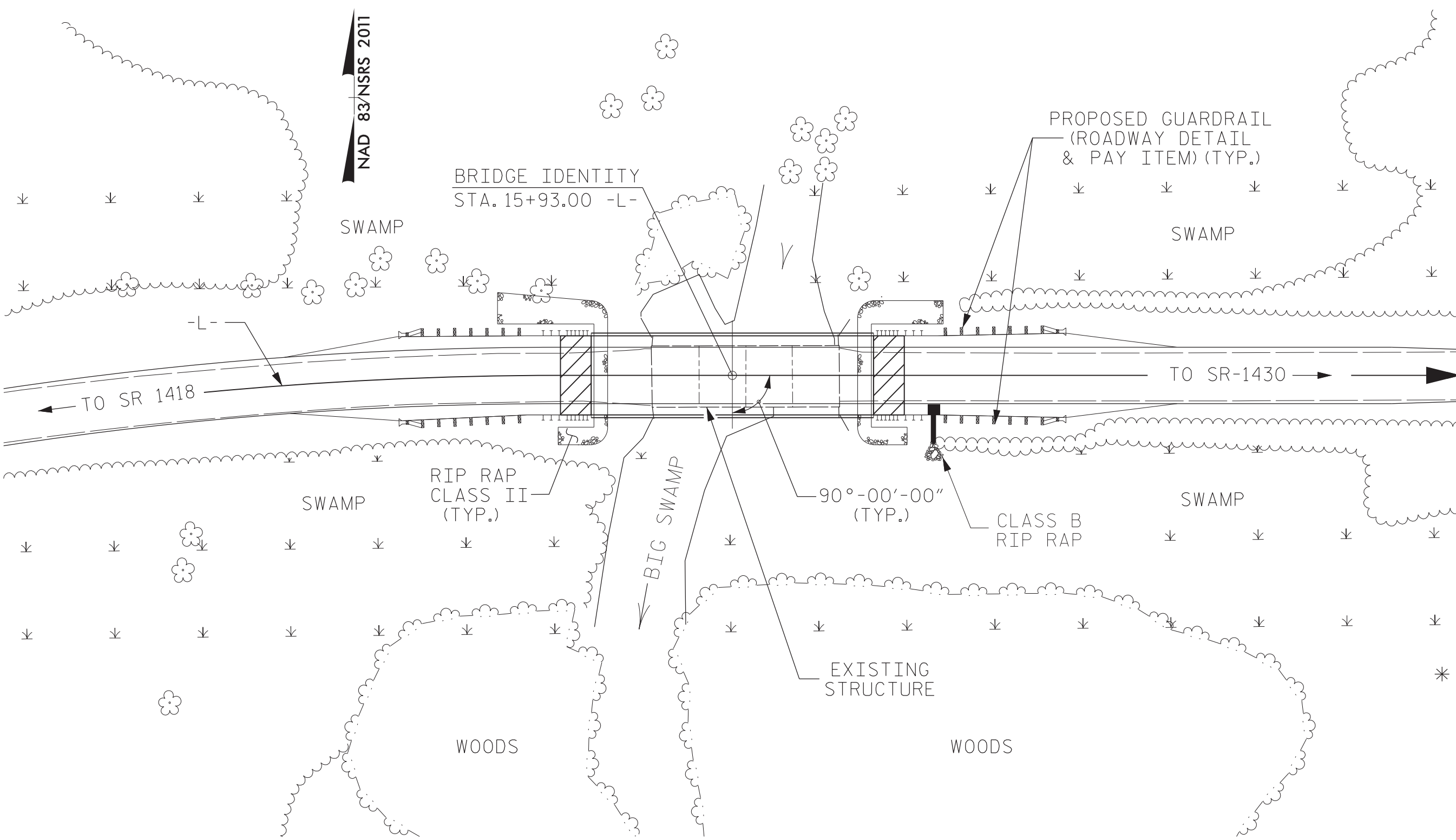
**GENERAL DRAWING
FOR BRIDGE ON SR 1414
OVER BIG SWAMP
BETWEEN SR 1430 AND SR 1418**

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

DRAWN BY: J. WILSON DATE: 06-22
CHECKED BY: D. RUGGLES DATE: 06-22
DESIGN ENGINEER OF RECORD: J. WILSON DATE: 06-22

6/14/2022
\\17BP.3.R.87_SMU_FL_810122.dgn
USER: jwilson

BM 4: RAILROAD SPIKE IN 18" PINE OUTSIDE OF CHAIN APPROX. 400 FT. FROM END OF PROJECT, OFFSET 50 FT. LEFT, EL. 131.82



HYDRAULIC DATA

DESIGN DISCHARGE = 1,200 CFS.
 FREQUENCY OF DESIGN FLOOD = 25 YRS.
 DESIGN HIGH WATER ELEVATION = 122.1
 DRAINAGE AREA = 13.8 SQ. MI.
 BASE DISCHARGE (Q100) = 2,015 CFS.
 BASE HIGH WATER ELEVATION = 123.05'

OVERTOPPING FLOOD DATA

OVERTOPPING DISCHARGE = 2,350 CFS.
 FREQUENCY OF OVERTOPPING FLOOD = 200+ YRS.
 OVERTOPPING FLOOD ELEVATION = 123.9 **

** CENTERLINE OF ROADWAY AT SAG STA. 19+00.00 -L-

NOTE: FOR UTILITY INFORMATION, SEE UTILITY PLANS AND SPECIAL PROVISIONS.

LOCATION SKETCH

NOTES

ASSUMED LIVE LOAD = HL-93 OR ALTERNATE LOADING.
 THIS BRIDGE HAS BEEN DESIGNED IN ACCORDANCE WITH THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS.
 THIS BRIDGE IS LOCATED IN SEISMIC ZONE 1.
 THIS BRIDGE SHALL BE CONSTRUCTED USING TOP-DOWN CONSTRUCTION METHODS. THE USE OF A TEMPORARY CAUSEWAY OR WORK BRIDGE IS NOT PERMITTED.
 THIS STRUCTURE HAS BEEN DESIGNED IN ACCORDANCE WITH "HEC 18 - EVALUATING SCOUR AT BRIDGES."
 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 DIFFERENCE BETWEEN THE EXISTING BRIDGE SUBSTRUCTURE SHOWN ON THE PLANS AND THE ACTUAL CONDITIONS AT THE PROJECT SITE.
 REMOVAL OF THE EXISTING BRIDGE SHALL BE PERFORMED SO AS NOT TO ALLOW DEBRIS TO FALL INTO THE WATER. THE CONTRACTOR SHALL REMOVE THE BRIDGE AND SUBMIT PLANS FOR DEMOLITION IN ACCORDANCE WITH ARTICLE 402-2 OF THE STANDARD SPECIFICATIONS.
 FOR OTHER DESIGN DATA AND GENERAL NOTES, SEE SHEET SN.
 FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.
 FOR FALSEWORK AND FRAMEWORK, SEE SPECIAL PROVISIONS.
 FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.
 FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.
 FOR EROSION CONTROL MEASURES, SEE EROSION CONTROL PLANS.
 ASPHALT WEARING SURFACE IS INCLUDED IN ROADWAY QUANTITY ON ROADWAY PLANS.
 THE MATERIAL SHOWN IN THE CROSS-HATCHED AREA SHALL BE EXCAVATED FOR A DISTANCE OF 20'± LEFT SIDE AND 20'± RIGHT 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 EXCAVATION. SEE SECTION 412 OF THE STANDARD SPECIFICATIONS.
 THE EXISTING STRUCTURE CONSISTING OF FOUR (4) STEEL I-BEAM SPANS @ 18.8', 18.2', 18.1', AND 18.9', 22'-0" ± CLEAR ROADWAY WIDTH AND REINFORCED CONCRETE SLAB ON TIMBER PILES WITH STEEL CRUTCH BENTS LOCATED AT THE PROPOSED STRUCTURE SHALL BE REMOVED. THE EXISTING BRIDGE IS PRESENTLY NOT POSTED FOR LOAD LIMIT.
 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 CONTRACTOR'S ATTENTION IS DIRECTED TO ARTICLE 107-1 OF THE STANDARD SPECIFICATIONS. ANY COSTS RESULTING FROM COMPLIANCE WITH APPLICABLE STATE OR FEDERAL REGULATIONS PERTAINING TO HANDLING OF MATERIALS CONTAINING LEAD BASED PAINT SHALL BE INCLUDE IN THE BID PRICE FOR "REMOVAL OF EXISTING STRUCTURE AT STATION 15+93.00 -L-".

FOR INTERIOR BENTS 1 AND 2, ONLY PARTIAL GALVANIZING OF THE PILES IS REQUIRED. SEE INTERIOR BENT SHEETS FOR REQUIRED GALVANIZED LENGTHS. PAYMENT FOR PARTIALLY GALVANIZED PILES WILL BE MADE UNDER THE CONTRACT UNIT PRICE FOR GALVANIZED STEEL PILES.

CONTRACTOR SHOULD BE AWARE THAT BENT CAP MAY BE BELOW WATER SURFACE. BENT CONSTRUCTION SHOULD ALLOW FOR THIS POSSIBILITY. NO ADDITIONAL PAYMENT WILL BE MADE FOR BENT CONSTRUCTION BELOW WATER. THE ENTIRE COST OF THIS WORK SHALL BE INCLUDED WITH THE VARIOUS PAY ITEMS.

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

TOTAL BILL OF MATERIAL

	REMOVAL OF EXISTING STRUCTURE	ASBESTOS ASSESSMENT	PDA TESTING	UNCLASSIFIED STRUCTURE EXCAVATION	CLASS A CONCRETE	BRIDGE APPROACH SLABS	REINFORCING STEEL	PILE DRIVING EQUIPMENT SETUP FOR HP 12x53 STEEL PILES	PILE DRIVING EQUIPMENT SETUP FOR HP 14x73 GALVANIZED STEEL PILES	HP 12x53 STEEL PILES		HP 14x73 GALVANIZED STEEL PILES		PILE REDRIVES
	LUMP SUM	LUMP SUM	EACH	LUMP SUM	CY	LUMP SUM	LBS	EACH	EACH	No.	LF	No.	LF	EACH
SUPERSTRUCTURE						LUMP SUM								
END BENT No. 1				LUMP SUM	14.2		2,115	7		7	315			7
BENT No. 1					10.7		2,136		8			8	440	8
BENT No. 2					10.7		2,136		8			8	400	8
END BENT No. 2				LUMP SUM	14.2		2,115	7		7	315			7
TOTAL	LUMP SUM	LUMP SUM	1	LUMP SUM	49.8	LUMP SUM	8,502	14	16	14	630	16	840	30

TOTAL BILL OF MATERIAL (CONT'D)

	VERTICAL CONCRETE BARRIER RAIL	RIP RAP CLASS II (2'-0" THICK)	GEOTEXTILE FOR DRAINAGE	ELASTOMERIC BEARINGS	3'-0" x 1'-9" PRESTRESSED CONCRETE CORED SLAB	
	LF	TON	SY	LUMP SUM	No.	LF
SUPERSTRUCTURE	220.75			LUMP SUM	33	1,210
END BENT No. 1		118	131			
BENT No. 1						
BENT No. 2						
END BENT No. 2		96	107			
TOTAL	220.75	214	238	LUMP SUM	33	1,210

PROJECT NO. 17BP.3.R.87
 SAMPSON COUNTY
 STATION: 15+93.00 -L-

SHEET 3 OF 3



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STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

GENERAL DRAWING
 FOR BRIDGE ON SR 1414
 OVER BIG SWAMP
 BETWEEN SR 1430 AND SR 1418

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

6/14/2022
 17BP_3.R.87_SMU_CD2-810122.dgn
 USER: jwilson

DRAWN BY: J. WILSON DATE: 06-22
 CHECKED BY: D. RUGGLES DATE: 06-22
 DESIGN ENGINEER OF RECORD: J. WILSON DATE: 06-22

LOAD AND RESISTANCE FACTOR RATING (LRFD) SUMMARY FOR PRESTRESSED CONCRETE GIRDERS

LEVEL	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			
						LIVELOAD FACTORS	MOMENT					SHEAR					LIVELOAD FACTORS	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 RATING	HL-93(Inv)	N/A	1	1.037	--	1.75	0.283	1.83	30'	EL	14.5	0.574	1.04	30'	EL	1.45	0.80	0.283	1.58	30'	EL	14.5		
	HL-93(Opr)	N/A	--	1.344	--	1.35	0.283	2.38	30'	EL	14.5	0.574	1.34	30'	EL	1.45	N/A	--	--	--	--	--	--	
	HS-20(Inv)	36.000	2	1.183	42.587	1.75	0.283	2.53	30'	EL	11.6	0.574	1.18	30'	EL	1.45	0.80	0.283	2.20	30'	EL	11.6		
	HS-20(Opr)	36.000	--	1.533	55.205	1.35	0.283	3.28	30'	EL	11.6	0.574	1.53	30'	EL	1.45	N/A	--	--	--	--	--	--	
LEGAL LOAD RATING	SV	SNSH	13.500	--	2.895	39.081	1.4	0.283	5.18	30'	EL	14.5	0.574	2.89	30'	EL	1.45	0.80	0.283	3.56	30'	EL	14.5	
		SNGARBS2	20.000	--	2.240	44.792	1.4	0.283	4.53	30'	EL	11.6	0.574	2.24	30'	EL	1.45	0.80	0.283	3.15	30'	EL	11.6	
		SNAGRIS2	22.000	--	2.157	47.463	1.4	0.283	4.6	30'	EL	11.6	0.574	2.16	30'	EL	1.45	0.80	0.283	3.20	30'	EL	11.6	
		SNCOTTS3	27.250	--	1.462	39.849	1.4	0.283	2.6	30'	EL	14.5	0.574	1.46	30'	EL	1.45	0.80	0.283	1.79	30'	EL	14.5	
		SNAGGRS4	34.925	--	1.346	46.999	1.4	0.283	2.5	30'	EL	14.5	0.574	1.35	30'	EL	1.45	0.80	0.283	1.72	30'	EL	14.5	
		SNS5A	35.550	--	1.427	50.733	1.4	0.283	2.42	30'	EL	14.5	0.574	1.43	30'	EL	1.45	0.80	0.283	1.67	30'	EL	14.5	
		SNS6A	39.950	--	1.341	53.59	1.4	0.283	2.29	30'	EL	14.5	0.574	1.34	30'	EL	1.45	0.80	0.283	1.58	30'	EL	14.5	
	TTST	SNS7B	42.000	--	1.369	57.505	1.4	0.283	2.23	30'	EL	14.5	0.574	1.37	30'	EL	1.45	0.80	0.283	1.53	30'	EL	14.5	
		TNAGRIT3	33.000	--	1.593	52.58	1.4	0.283	2.97	30'	EL	14.5	0.574	1.59	30'	EL	1.45	0.80	0.283	2.04	30'	EL	14.5	
		TNT4A	33.075	--	1.483	49.043	1.4	0.283	2.82	30'	EL	14.5	0.574	1.48	30'	EL	1.45	0.80	0.283	1.94	30'	EL	14.5	
		TNT6A	41.600	--	1.433	59.622	1.4	0.283	2.56	30'	EL	14.5	0.574	1.43	30'	EL	1.45	0.80	0.283	1.76	30'	EL	14.5	
		TNT7A	42.000	--	1.363	57.264	1.4	0.283	2.64	30'	EL	14.5	0.574	1.36	30'	EL	1.45	0.80	0.283	1.82	30'	EL	14.5	
		TNT7B	42.000	--	1.331	55.915	1.4	0.283	2.49	30'	EL	14.5	0.574	1.33	30'	EL	1.45	0.80	0.283	1.72	30'	EL	14.5	
		TNAGRIT4	43.000	--	1.287	55.356	1.4	0.283	2.58	30'	EL	14.5	0.574	1.29	30'	EL	1.45	0.80	0.283	1.78	30'	EL	14.5	
TNAGT5A	45.000	--	1.381	62.151	1.4	0.283	2.5	30'	EL	14.5	0.574	1.38	30'	EL	1.45	0.80	0.283	1.72	30'	EL	14.5			
TNAGT5B	45.000	3	1.212	54.54	1.4	0.283	2.41	30'	EL	11.6	0.574	1.21	30'	EL	1.45	0.80	0.283	1.66	30'	EL	11.6			

LOAD FACTORS:

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

NOTES:

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

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

COMMENTS:

-
-
-
-

CONTROLLING LOAD RATING

1 DESIGN LOAD RATING (HL-93)

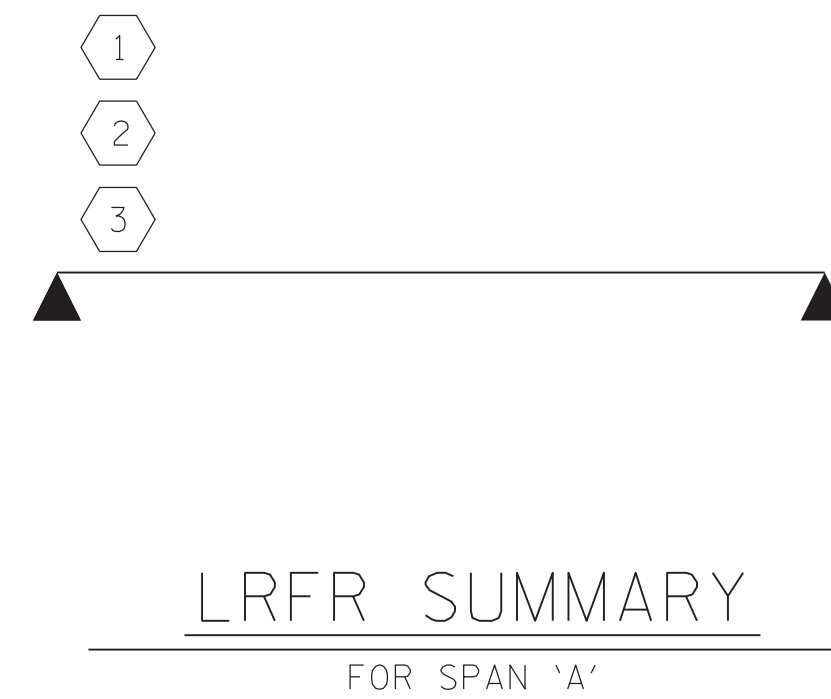
2 DESIGN LOAD RATING (HS-20)

3 LEGAL LOAD RATING **

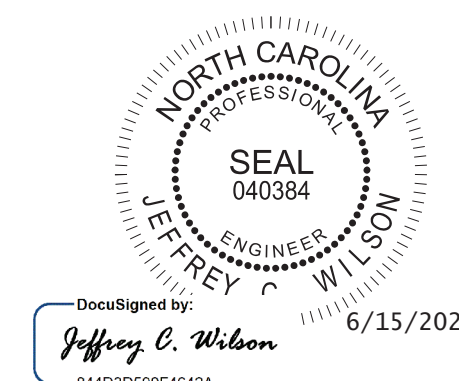
** SEE CHART FOR VEHICLE TYPE

GIRDER LOCATION

I - INTERIOR GIRDER
EL - EXTERIOR LEFT GIRDER
ER - EXTERIOR RIGHT GIRDER



PROJECT NO. 17BP.3.R.87
SAMPSON COUNTY
 STATION: 15+93.00 -L-



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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

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

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

ASSEMBLED BY :	JCW	DATE :	06/22
CHECKED BY :	DRR	DATE :	06/22
DRAWN BY :	CVC 6/10		
CHECKED BY :	DNS 6/10		

LOAD AND RESISTANCE FACTOR RATING (LRFD) SUMMARY FOR PRESTRESSED CONCRETE GIRDERS

LEVEL	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			
						MOMENT					SHEAR					MOMENT								
						LIVELOAD FACTORS	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)	LIVELOAD FACTORS	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN		GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)	
DESIGN LOAD RATING	HL-93(Inv)	N/A	1	1.088	--	1.75	0.277	1.34	45'	EL	22	0.539	1.23	45'	EL	2.2	0.80	0.277	1.09	45'	EL	22		
	HL-93(Opr)	N/A	--	1.590	--	1.35	0.277	1.74	45'	EL	22	0.539	1.59	45'	EL	2.2	N/A	--	--	--	--	--		
	HS-20(Inv)	36.000	2	1.336	48.104	1.75	0.277	1.65	45'	EL	22	0.539	1.45	45'	EL	2.2	0.80	0.277	1.34	45'	EL	22		
	HS-20(Opr)	36.000	--	1.882	67.763	1.35	0.277	2.14	45'	EL	22	0.539	1.88	45'	EL	2.2	N/A	--	--	--	--	--		
LEGAL LOAD RATING	SV	SNSH	13.500	--	2.611	35.252	1.4	0.277	4.02	45'	EL	22	0.539	4.01	45'	EL	2.2	0.80	0.277	2.61	45'	EL	22	
		SNGARBS2	20.000	--	2.108	42.166	1.4	0.277	3.25	45'	EL	22	0.539	2.94	45'	EL	2.2	0.80	0.277	2.11	45'	EL	22	
		SNAGRIS2	22.000	--	2.067	45.466	1.4	0.277	3.15	45'	EL	17.6	0.539	2.77	45'	EL	2.2	0.80	0.277	2.07	45'	EL	22	
		SNCOTTS3	27.250	--	1.304	35.527	1.4	0.277	2.01	45'	EL	22	0.539	2.01	45'	EL	2.2	0.80	0.277	1.30	45'	EL	22	
		SNAGGRS4	34.925	--	1.150	40.181	1.4	0.277	1.77	45'	EL	22	0.539	1.74	45'	EL	2.2	0.80	0.277	1.15	45'	EL	22	
		SNS5A	35.550	--	1.121	39.841	1.4	0.277	1.73	45'	EL	22	0.539	1.79	45'	EL	2.2	0.80	0.277	1.12	45'	EL	22	
		SNS6A	39.950	--	1.056	42.175	1.4	0.277	1.63	45'	EL	22	0.539	1.67	45'	EL	2.2	0.80	0.277	1.06	45'	EL	22	
	SNS7B	42.000	3	1.006	42.268	1.4	0.277	1.55	45'	EL	22	0.539	1.68	45'	EL	2.2	0.80	0.277	1.01	45'	EL	22		
	TTST	TNAGRIT3	33.000	--	1.296	42.759	1.4	0.277	2	45'	EL	22	0.539	1.96	45'	EL	2.2	0.80	0.277	1.30	45'	EL	22	
		TNT4A	33.075	--	1.309	43.305	1.4	0.277	2.02	45'	EL	22	0.539	1.88	45'	EL	2.2	0.80	0.277	1.31	45'	EL	22	
		TNT6A	41.600	--	1.099	45.712	1.4	0.277	1.69	45'	EL	22	0.539	1.83	45'	EL	2.2	0.80	0.277	1.10	45'	EL	22	
		TNT7A	42.000	--	1.120	47.043	1.4	0.277	1.73	45'	EL	22	0.539	1.69	45'	EL	2.2	0.80	0.277	1.12	45'	EL	22	
		TNT7B	42.000	--	1.166	48.975	1.4	0.277	1.8	45'	EL	22	0.539	1.61	45'	EL	2.2	0.80	0.277	1.17	45'	EL	22	
		TNAGRIT4	43.000	--	1.111	47.757	1.4	0.277	1.71	45'	EL	22	0.539	1.55	45'	EL	2.2	0.80	0.277	1.11	45'	EL	22	
TNAGT5A		45.000	--	1.033	46.505	1.4	0.277	1.59	45'	EL	22	0.539	1.59	45'	EL	2.2	0.80	0.277	1.03	45'	EL	22		
TNAGT5B	45.000	--	1.009	45.408	1.4	0.277	1.56	45'	EL	22	0.539	1.47	45'	EL	2.2	0.80	0.277	1.01	45'	EL	22			

LOAD FACTORS:

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

NOTES:

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

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

COMMENTS:

- 1.
- 2.
- 3.
- 4.

CONTROLLING LOAD RATING

1 DESIGN LOAD RATING (HL-93)

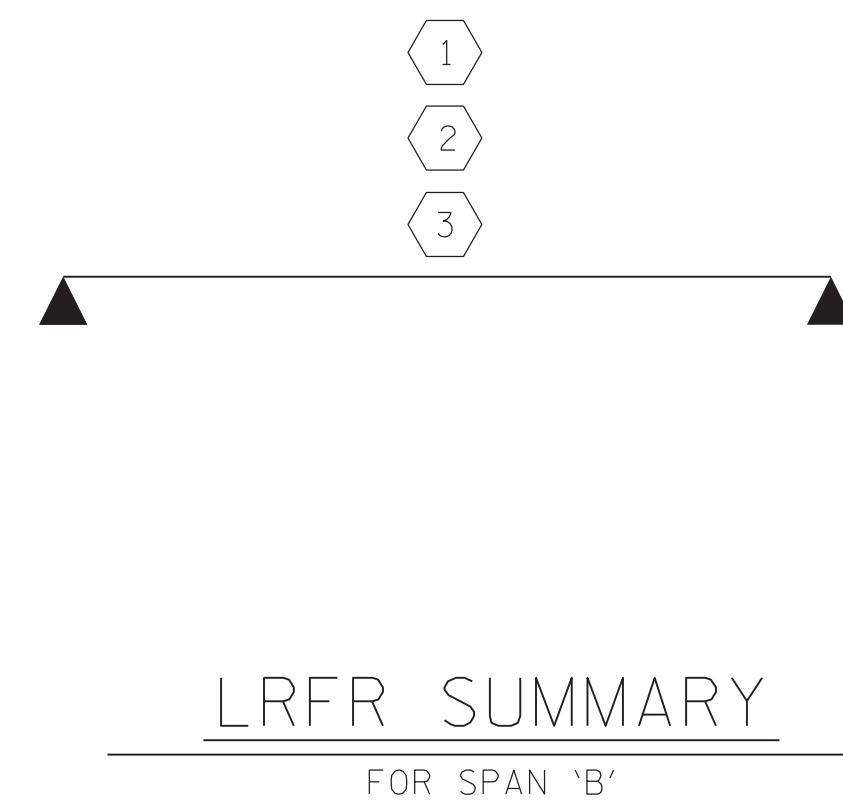
2 DESIGN LOAD RATING (HS-20)

3 LEGAL LOAD RATING **

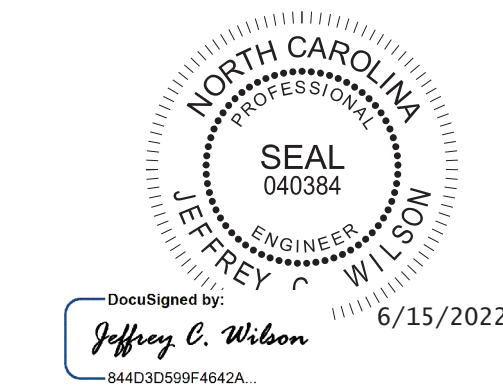
** SEE CHART FOR VEHICLE TYPE

GIRDER LOCATION

I - INTERIOR GIRDER
EL - EXTERIOR LEFT GIRDER
ER - EXTERIOR RIGHT GIRDER



PROJECT NO. 17BP.3.R.87
SAMPSON COUNTY
 STATION: 15+93.00 -L-



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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

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

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

ASSEMBLED BY :	JCW	DATE :	06/22
CHECKED BY :	DRR	DATE :	06/22
DRAWN BY :	CVC 6/10		
CHECKED BY :	DNS 6/10		

LOAD AND RESISTANCE FACTOR RATING (LRFD) SUMMARY FOR PRESTRESSED CONCRETE GIRDERS

LEVEL	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			
						MOMENT					SHEAR					MOMENT								
						LIVELOAD FACTORS	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)	LIVELOAD FACTORS	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN		GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)	
DESIGN LOAD RATING	HL-93(Inv)	N/A	1	1.032	--	1.75	0.28	1.36	35'	EL	17	0.561	1.03	35'	EL	1.7	0.80	0.28	1.05	35'	EL	17		
	HL-93(Opr)	N/A	--	1.338	--	1.35	0.28	1.77	35'	EL	17	0.561	1.34	35'	EL	1.7	N/A	--	--	--	--	--		
	HS-20(Inv)	36.000	2	1.189	42.810	1.75	0.28	1.79	35'	EL	13.6	0.561	1.19	35'	EL	1.7	0.80	0.28	1.39	35'	EL	17		
	HS-20(Opr)	36.000	--	1.542	55.494	1.35	0.28	2.32	35'	EL	13.6	0.561	1.54	35'	EL	1.7	N/A	--	--	--	--	--		
LEGAL LOAD RATING	SV	SNSH	13.500	--	2.400	32.402	1.4	0.28	3.89	35'	EL	17	0.561	3.06	35'	EL	1.7	0.80	0.28	2.40	35'	EL	17	
		SNGARBS2	20.000	--	2.052	41.044	1.4	0.28	3.29	35'	EL	13.6	0.561	2.32	35'	EL	1.7	0.80	0.28	2.05	35'	EL	13.6	
		SNAGRIS2	22.000	--	2.053	45.174	1.4	0.28	3.26	35'	EL	13.6	0.561	2.21	35'	EL	1.7	0.80	0.28	2.05	35'	EL	13.6	
		SNCOTTS3	27.250	--	1.202	32.744	1.4	0.28	1.95	35'	EL	17	0.561	1.54	35'	EL	1.7	0.80	0.28	1.20	35'	EL	17	
		SNAGGRS4	34.925	--	1.111	38.816	1.4	0.28	1.8	35'	EL	17	0.561	1.38	35'	EL	1.7	0.80	0.28	1.11	35'	EL	17	
		SNS5A	35.550	--	1.079	38.354	1.4	0.28	1.75	35'	EL	17	0.561	1.46	35'	EL	1.7	0.80	0.28	1.08	35'	EL	17	
		SNS6A	39.950	--	1.041	41.601	1.4	0.28	1.69	35'	EL	17	0.561	1.37	35'	EL	1.7	0.80	0.28	1.04	35'	EL	17	
	SNS7B	42.000	3	1.000	41.734	1.4	0.28	1.61	35'	EL	17	0.561	1.4	35'	EL	1.7	0.80	0.28	1.00	35'	EL	17		
	TTST	TNAGRIT3	33.000	--	1.286	42.439	1.4	0.28	2.08	35'	EL	17	0.561	1.6	35'	EL	1.7	0.80	0.28	1.29	35'	EL	17	
		TNT4A	33.075	--	1.285	42.512	1.4	0.28	2.08	35'	EL	17	0.561	1.51	35'	EL	1.7	0.80	0.28	1.29	35'	EL	17	
		TNT6A	41.600	--	1.126	46.84	1.4	0.28	1.82	35'	EL	17	0.561	1.48	35'	EL	1.7	0.80	0.28	1.13	35'	EL	17	
		TNT7A	42.000	--	1.163	48.833	1.4	0.28	1.89	35'	EL	17	0.561	1.37	35'	EL	1.7	0.80	0.28	1.16	35'	EL	17	
		TNT7B	42.000	--	1.144	48.061	1.4	0.28	1.85	35'	EL	17	0.561	1.33	35'	EL	1.7	0.80	0.28	1.14	35'	EL	17	
		TNAGRIT4	43.000	--	1.158	49.810	1.4	0.28	1.86	35'	EL	13.6	0.561	1.28	35'	EL	1.7	0.80	0.28	1.16	35'	EL	17	
TNAGT5A		45.000	--	1.068	48.071	1.4	0.28	1.73	35'	EL	17	0.561	1.35	35'	EL	1.7	0.80	0.28	1.07	35'	EL	17		
TNAGT5B	45.000	--	1.031	46.373	1.4	0.28	1.67	35'	EL	17	0.561	1.21	35'	EL	1.7	0.80	0.28	1.03	35'	EL	17			

LOAD FACTORS:

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

NOTES:

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

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

COMMENTS:

-
-
-
-

CONTROLLING LOAD RATING

1 DESIGN LOAD RATING (HL-93)

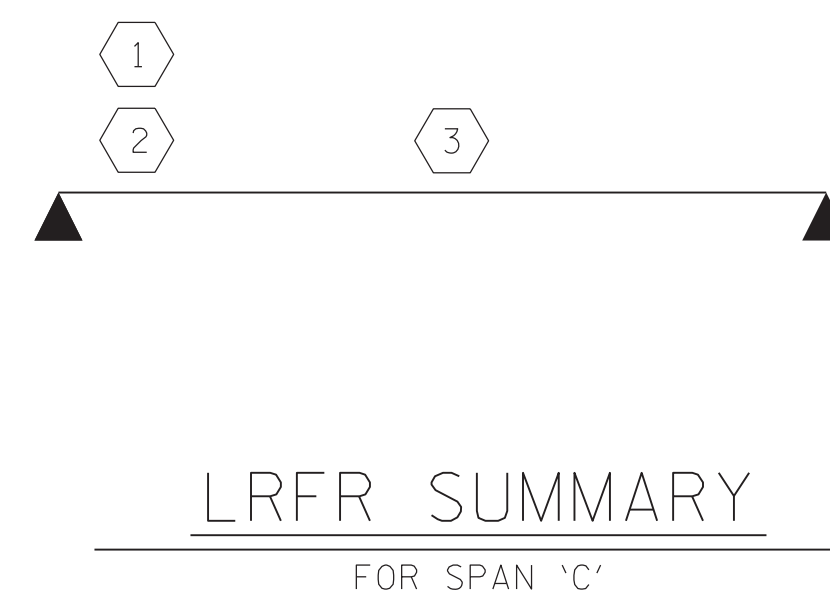
2 DESIGN LOAD RATING (HS-20)

3 LEGAL LOAD RATING **

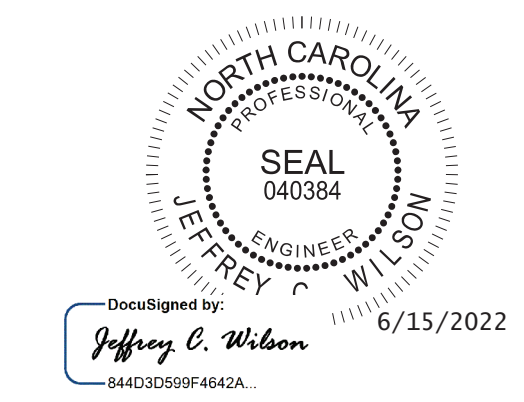
** SEE CHART FOR VEHICLE TYPE

GIRDER LOCATION

I - INTERIOR GIRDER
EL - EXTERIOR LEFT GIRDER
ER - EXTERIOR RIGHT GIRDER



PROJECT NO. 17BP.3.R.87
SAMPSON COUNTY
 STATION: 15+93.00 -L-



DOCUMENT NOT CONSIDERED
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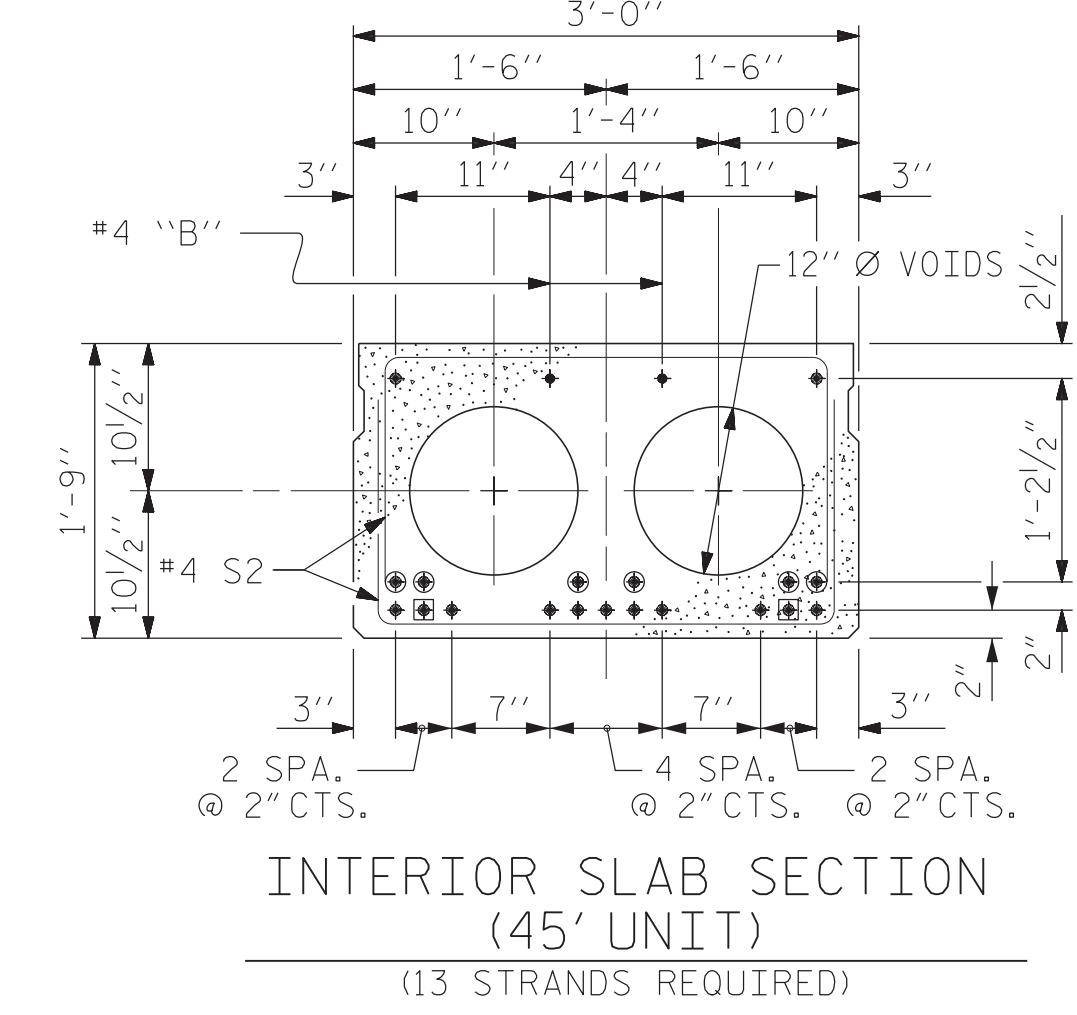
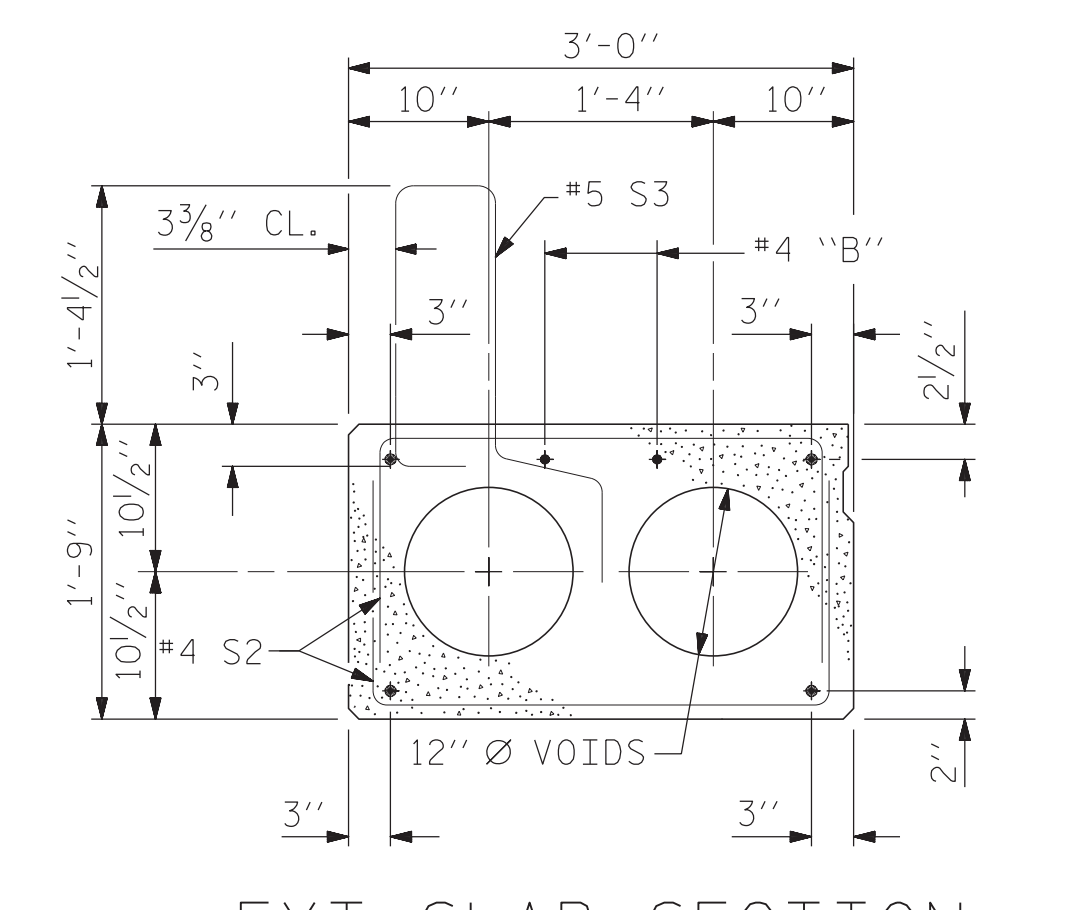
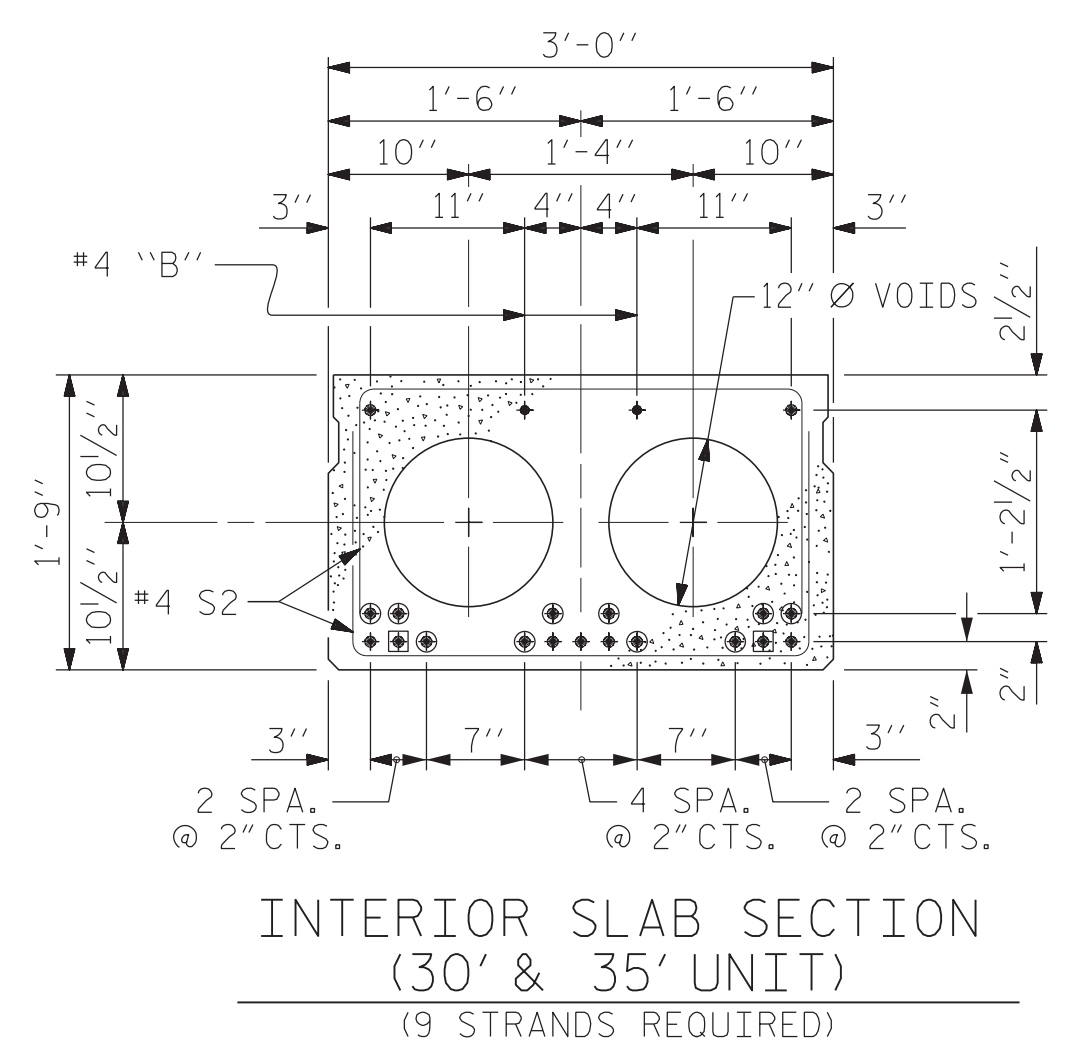
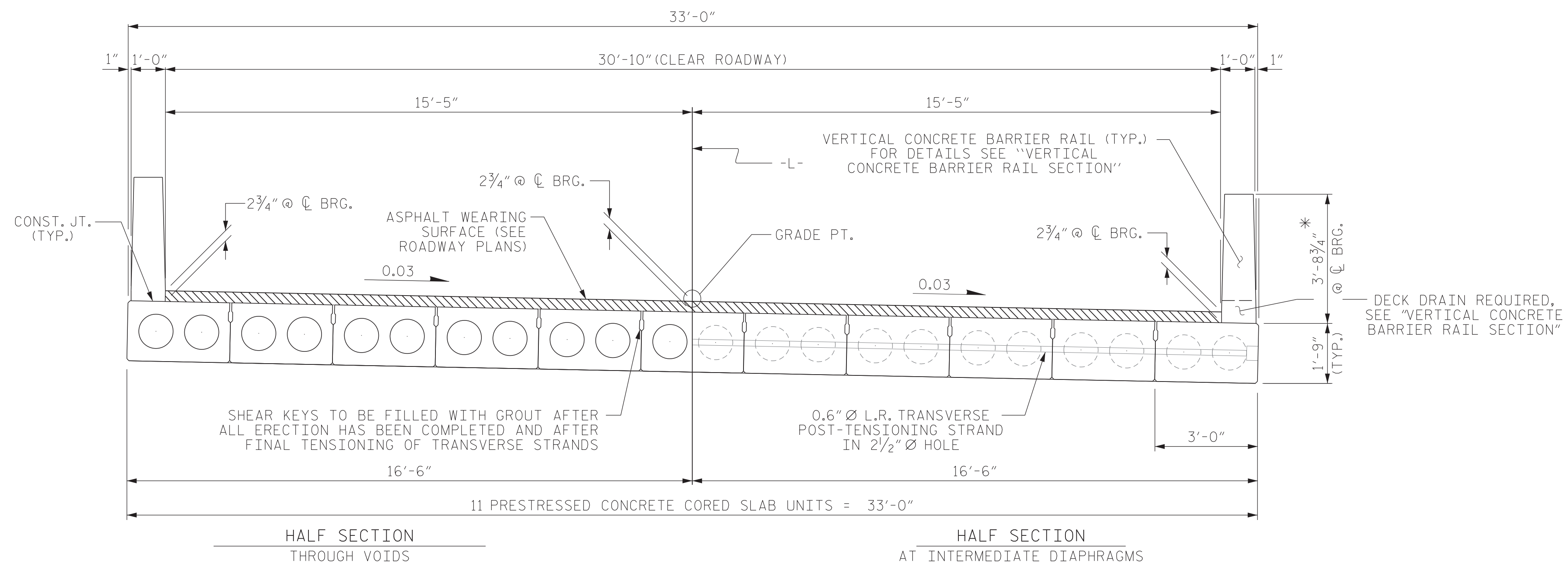
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Suite 1100
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T 919.380.8750
www.stewartinc.com

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
STANDARD
LRFR SUMMARY FOR
35' CORED SLAB UNIT
90° SKEW
(NON-INTERSTATE TRAFFIC)

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-6
1			3			TOTAL SHEETS
2			4			23

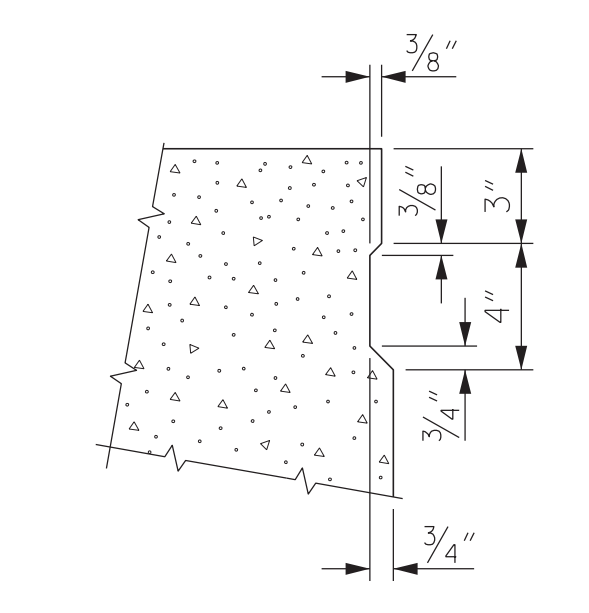
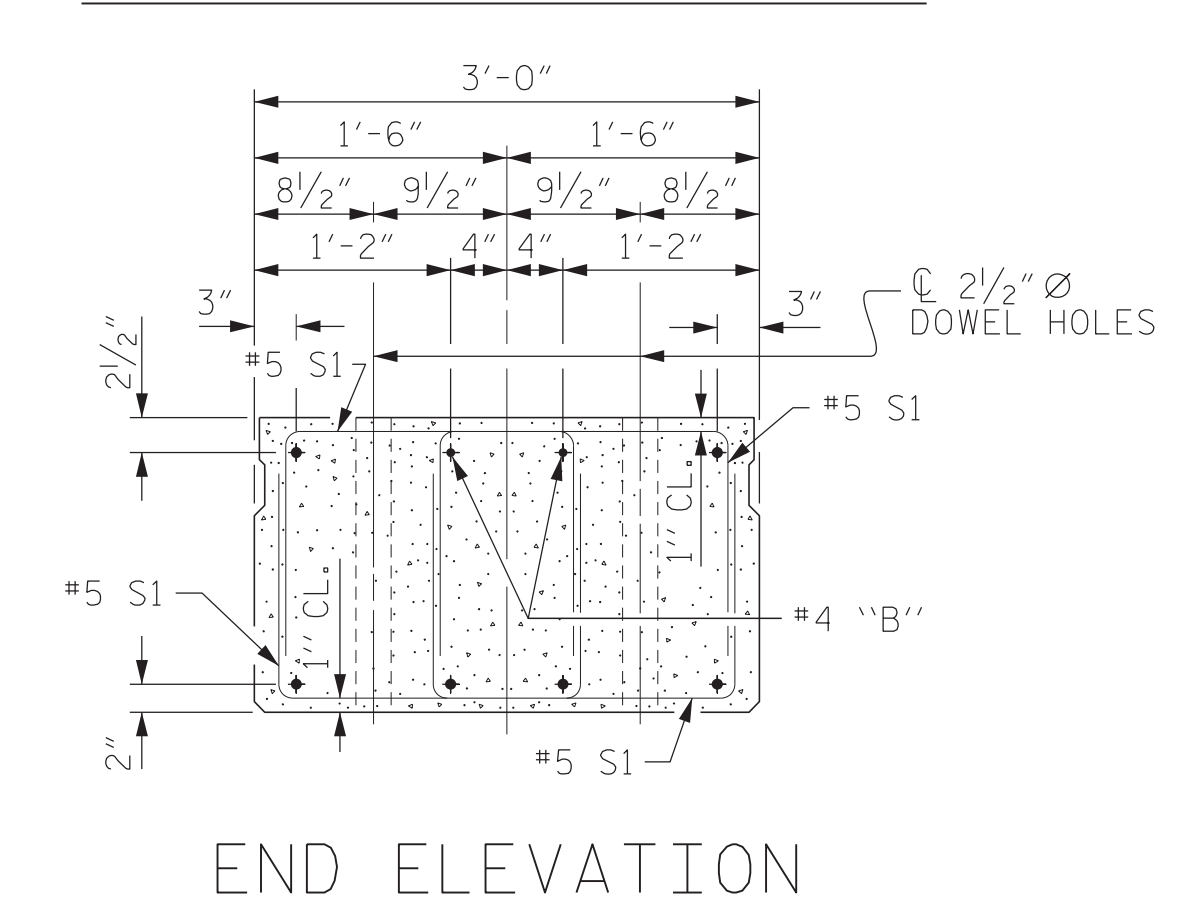
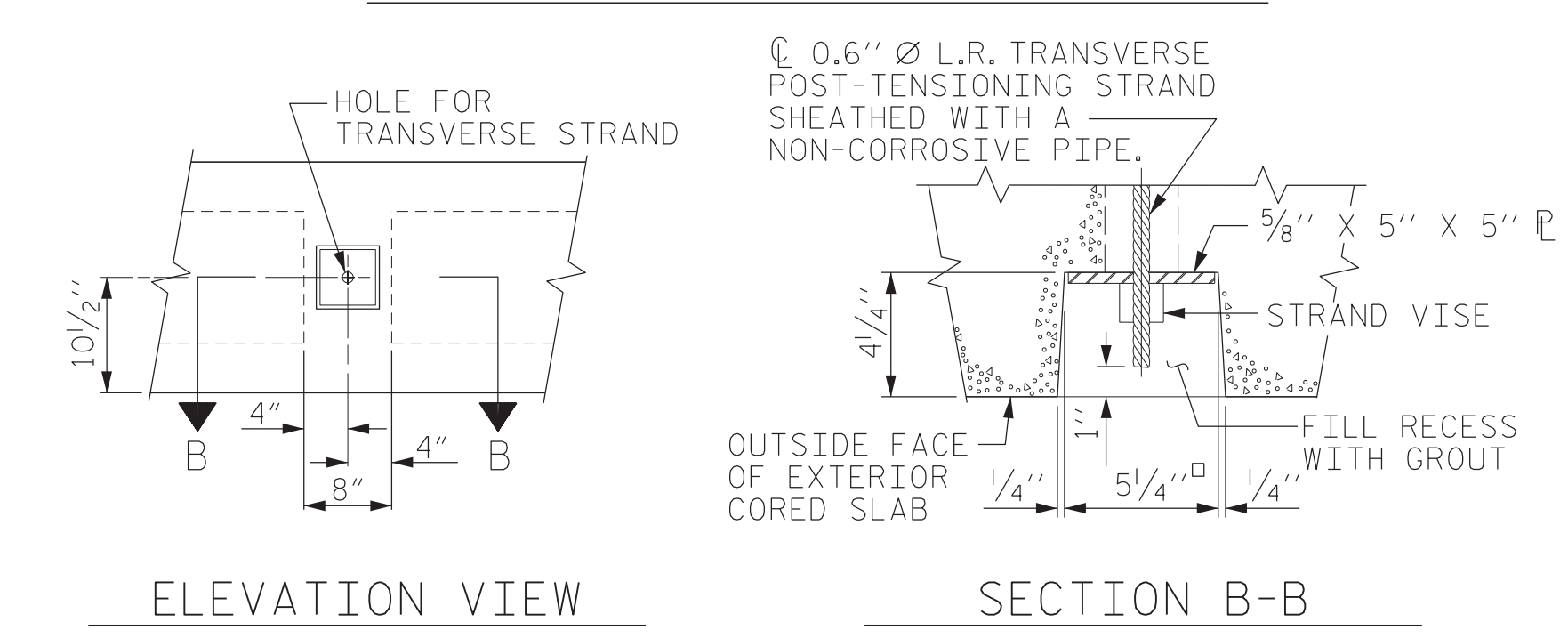
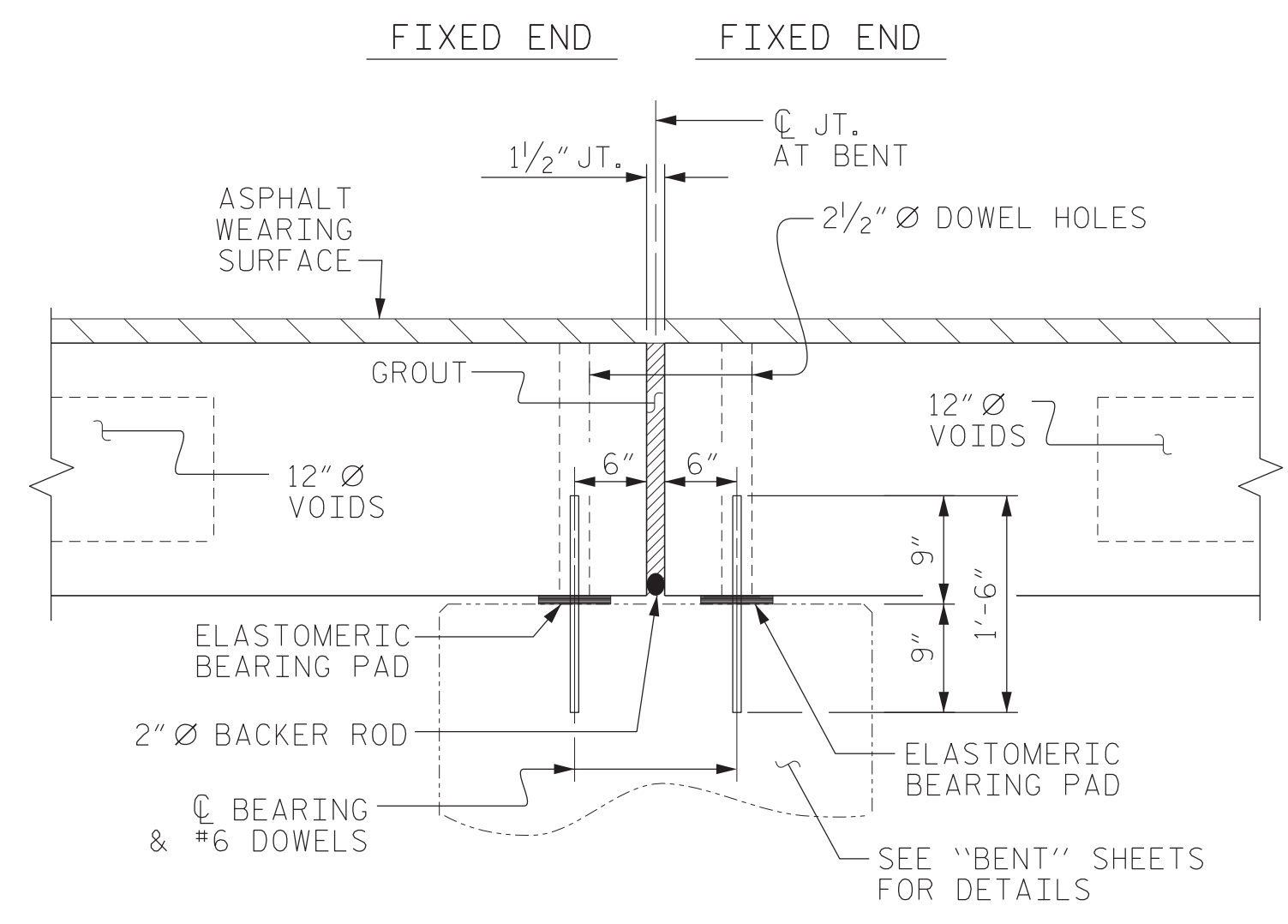
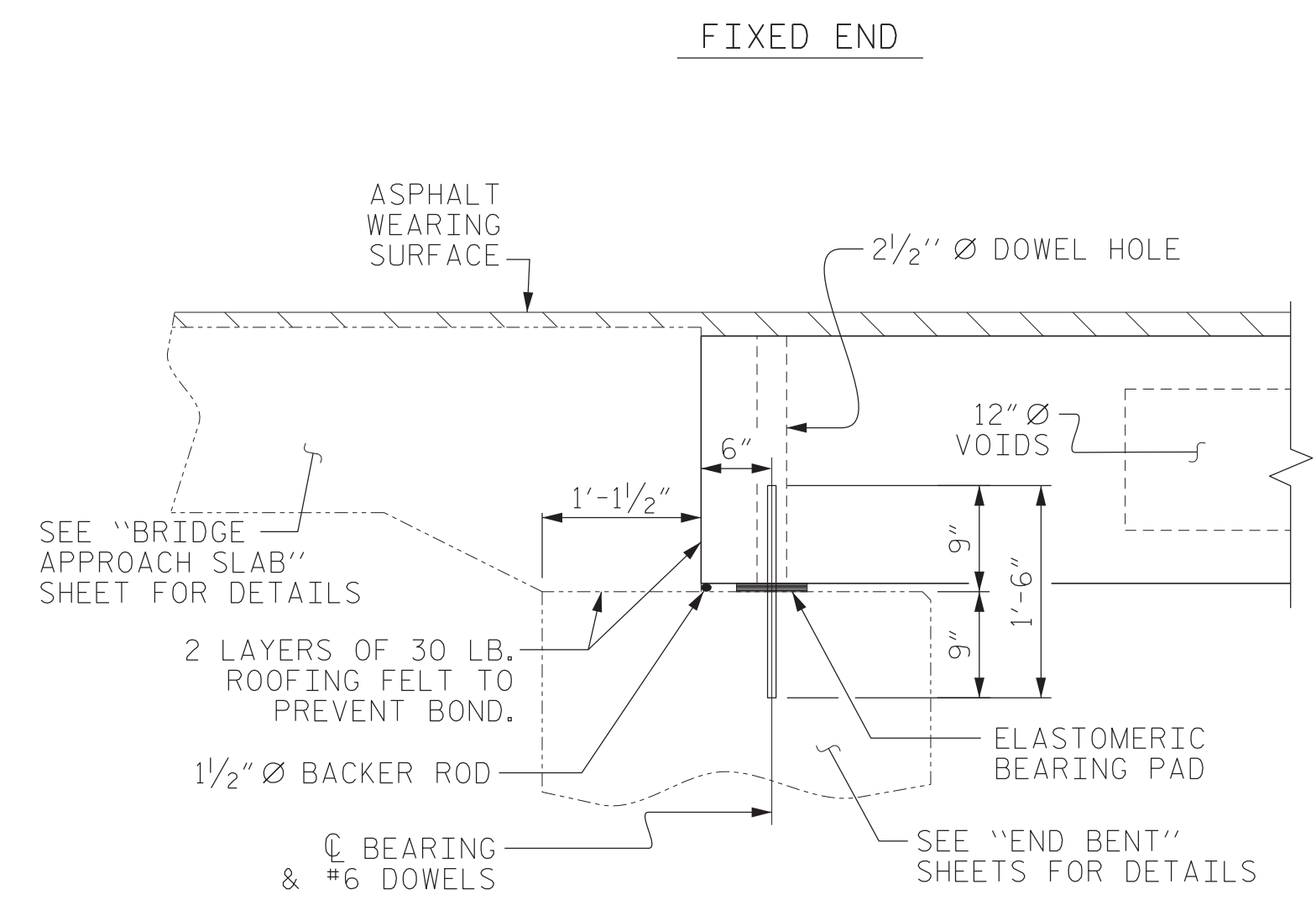
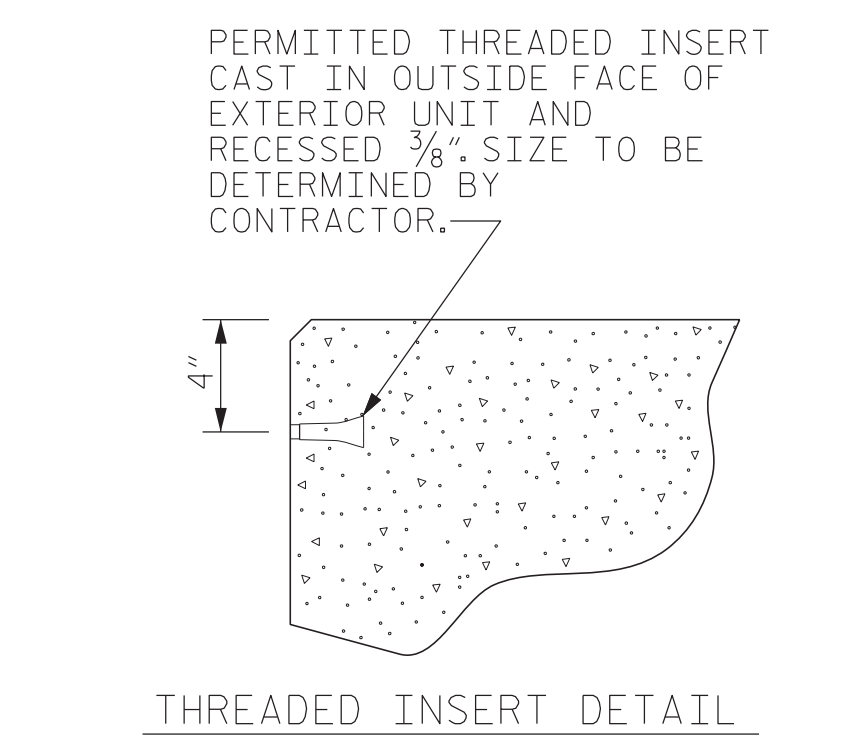
6/14/2022
\\17BP.3.R.87_SMU_CD5_810122.dgn
USER: jwilson

ASSEMBLED BY : JCW	DATE : 06/22
CHECKED BY : DRR	DATE : 06/22
DRAWN BY : CVC 6/10	
CHECKED BY : DNS 6/10	



- DEBONDING LEGEND**
- 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.

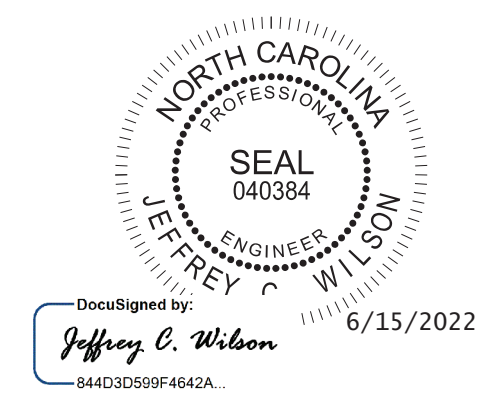
0.6" Ø LOW RELAXATION STRAND LAYOUT



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

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.

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



DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



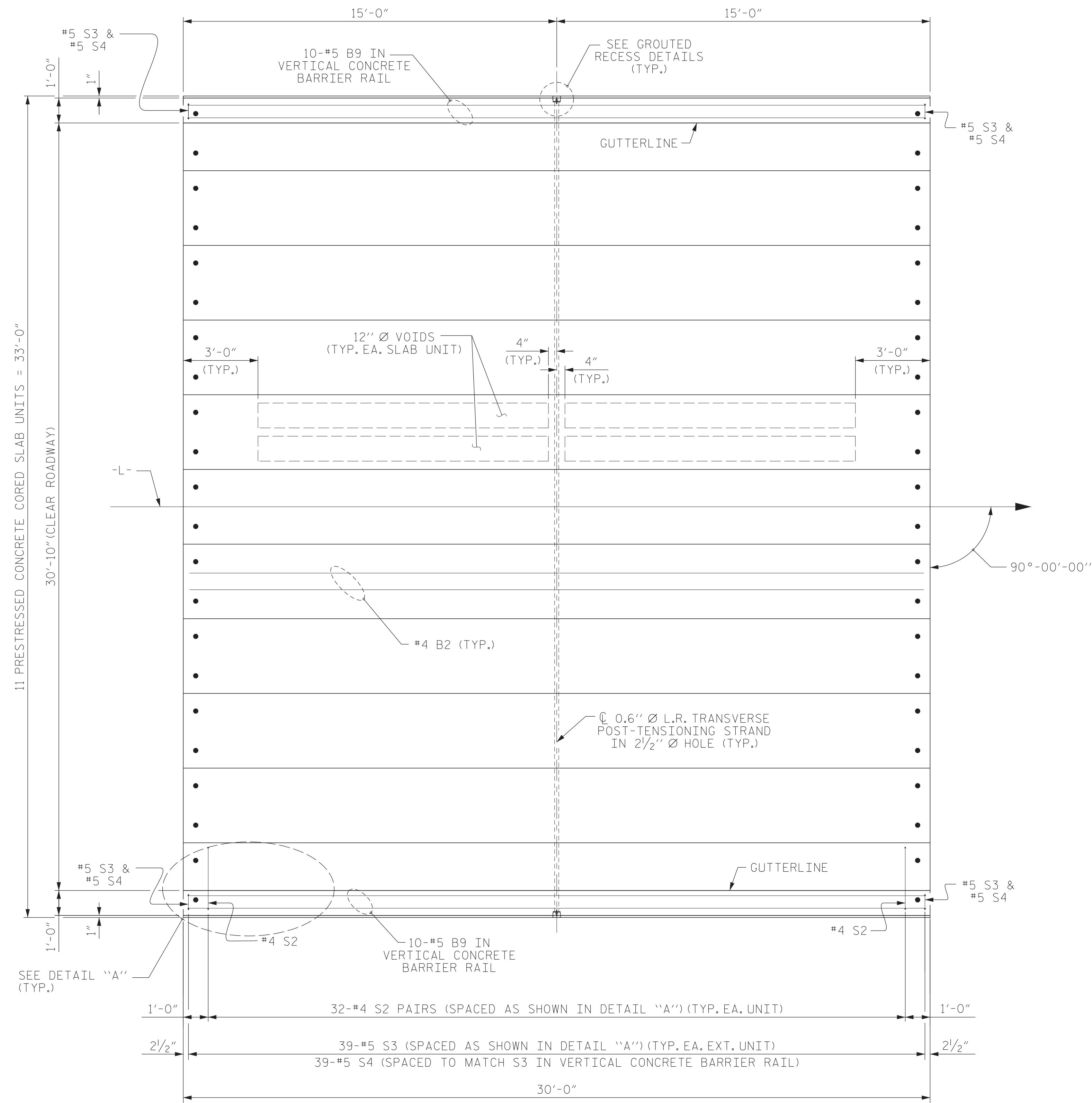
PROJECT NO. 17BP.3.R.87
SAMPSON COUNTY
STATION: 15+93.00 -L-
SHEET 1 OF 6

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
STANDARD
3'-0" X 1'-9"
PRESTRESSED CONCRETE
CORED SLAB UNIT
90° SKEW

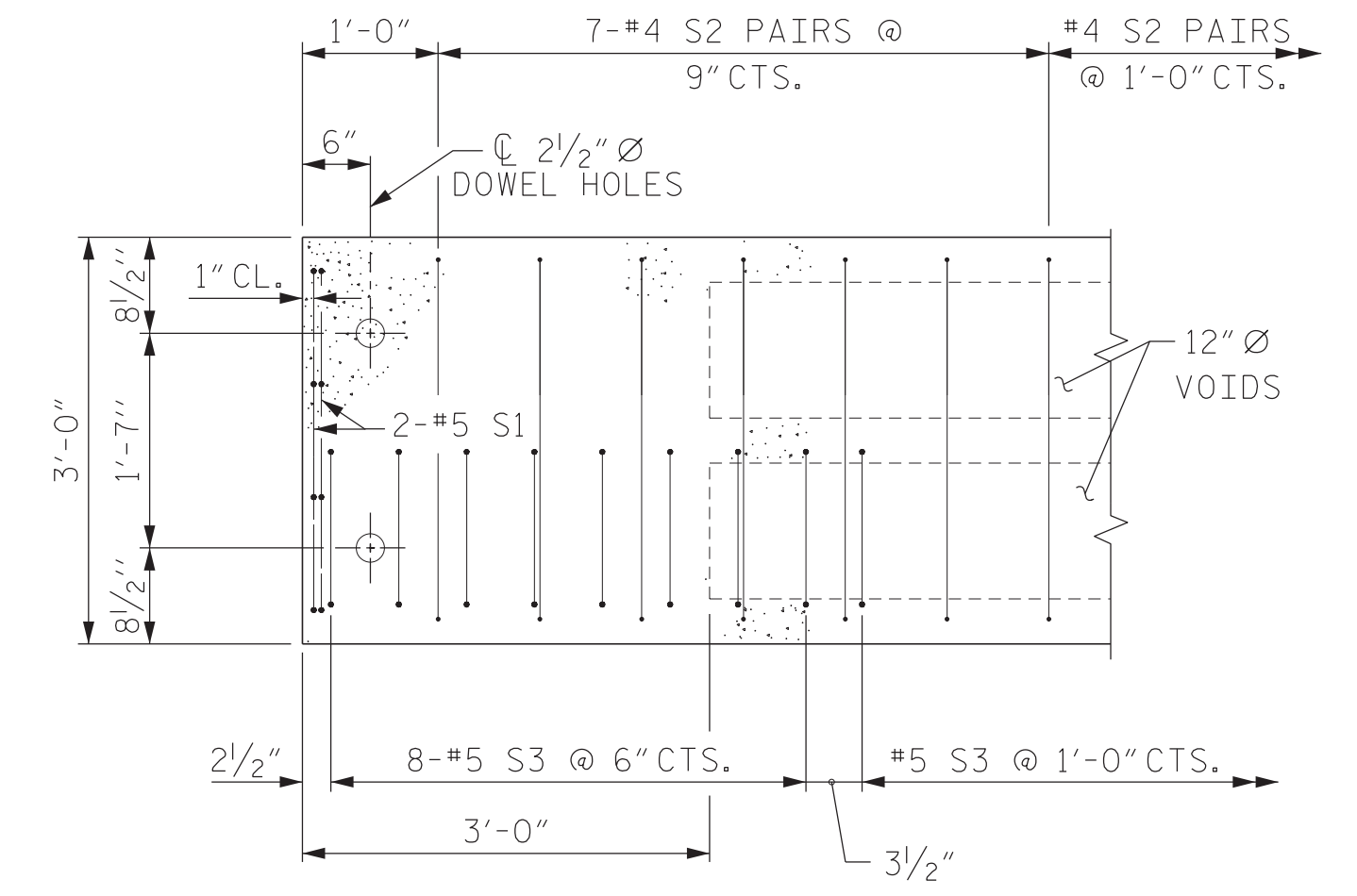
REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	S-7	
1			3			TOTAL SHEETS 23	
2			4				

6/14/2022
17BP_3.R.87_SMU-TS-810122.dgn
USER: jwilson

ASSEMBLED BY :	JCW	DATE :	06/22
CHECKED BY :	DRR	DATE :	06/22
DRAWN BY :	DCH 5/09	REV. 9/14	MAA/TMG
CHECKED BY :	BCH 6/09		

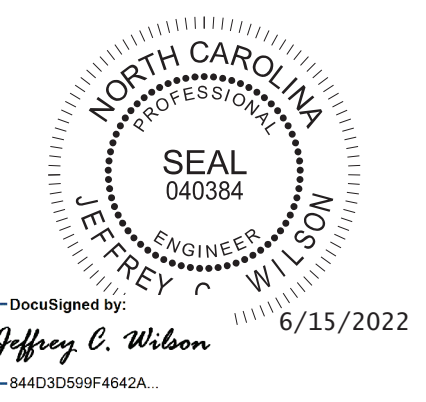


PLAN OF UNIT



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

PROJECT NO. 17BP.3.R.87
SAMPSON COUNTY
STATION: 15+93.00 -L-
SHEET 2 OF 6



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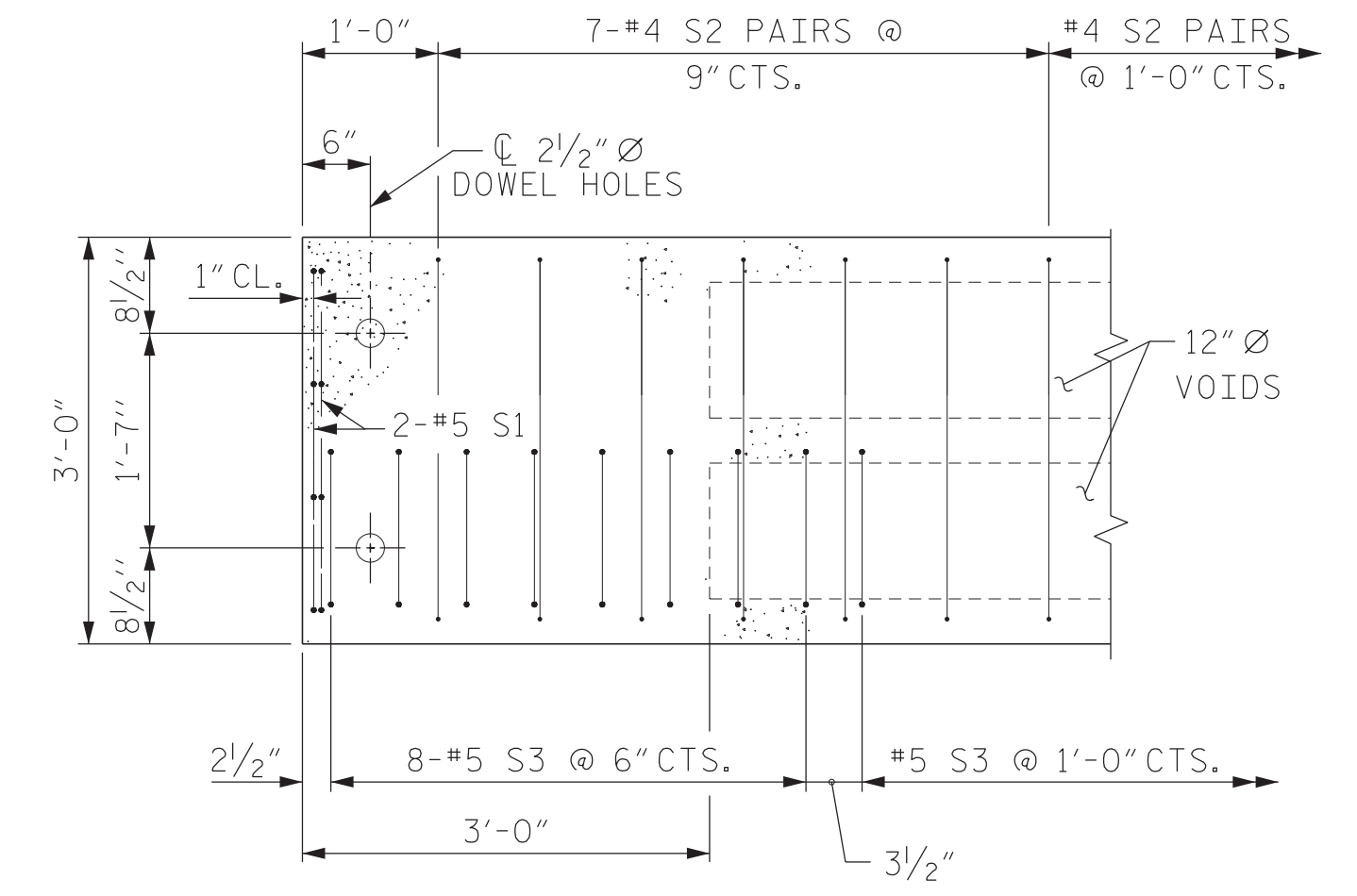
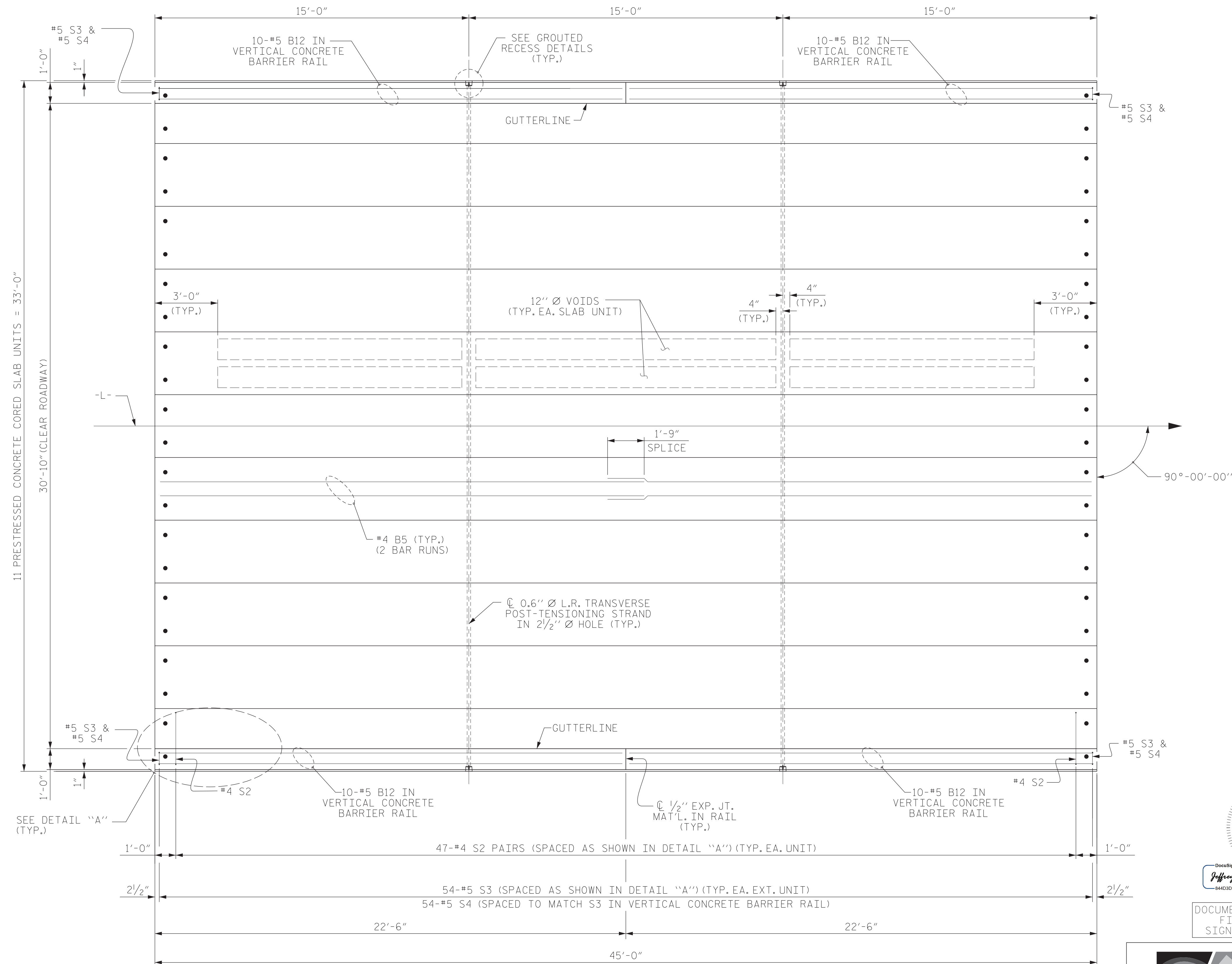
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SPAN A
PLAN OF 30' UNIT
30'-10" CLEAR ROADWAY
90° SKEW

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

STD. NO. 21" PCS_33_90S_30L

6/14/2022
17BP_3.R.87_SMU_S1_810122.dgn
USER: jwilson

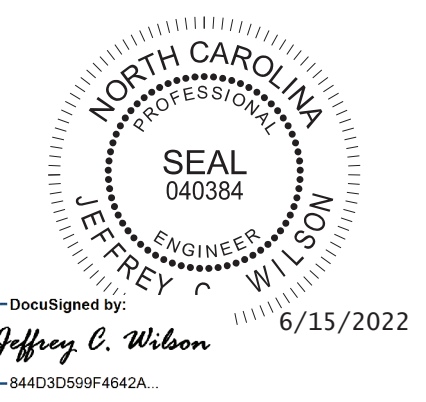
ASSEMBLED BY :	JCW	DATE :	06/22
CHECKED BY :	DRR	DATE :	06/22
DRAWN BY :	DCE 3/09	REV. 12/5/11	MAA/AAC
CHECKED BY :	BCH 3/09	REV. 8/14	MAA/TMG



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

PLAN OF UNIT

PROJECT NO. 17BP.3.R.87
SAMPSON COUNTY
 STATION: 15+93.00 -L-
 SHEET 3 OF 6



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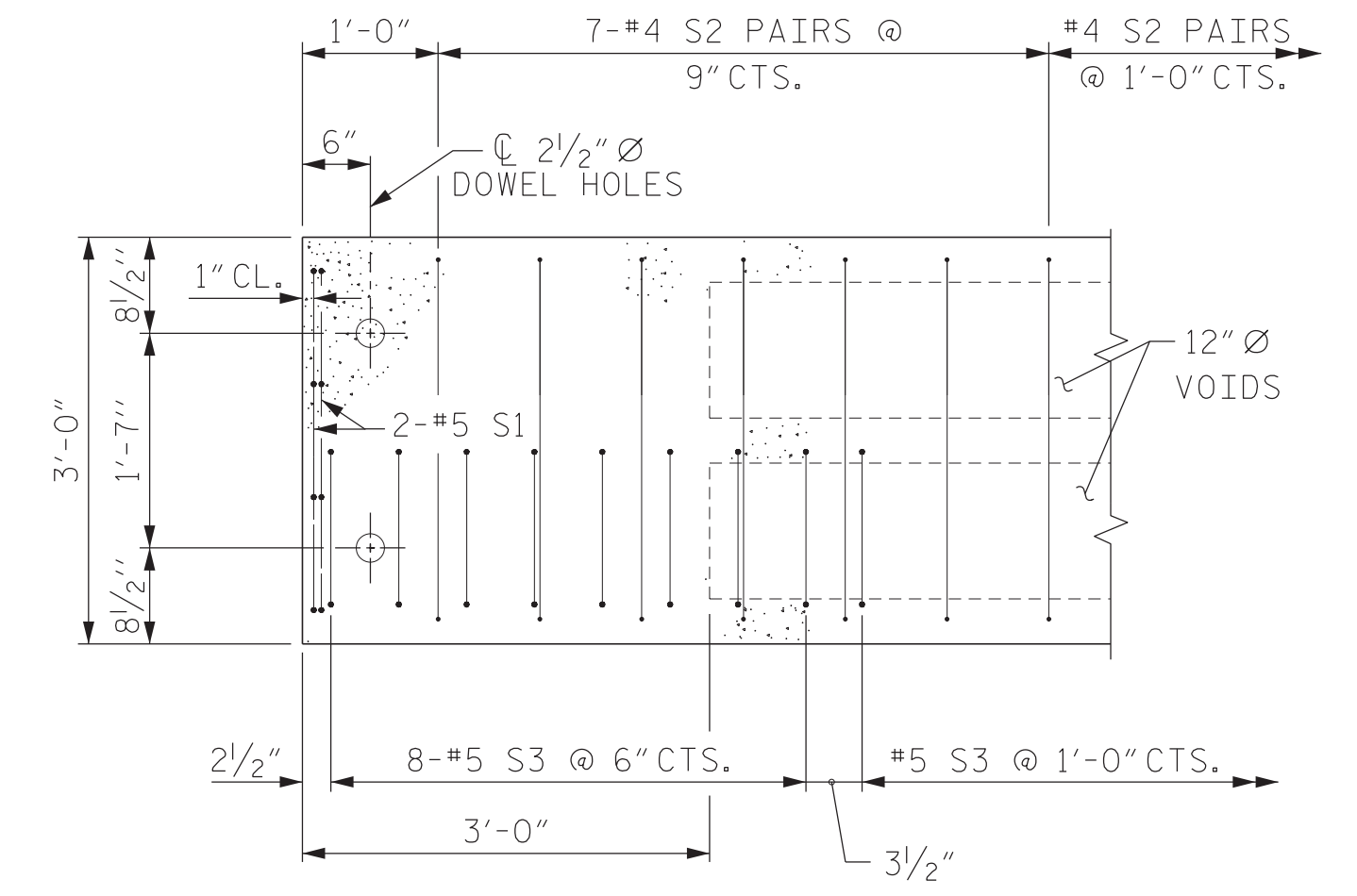
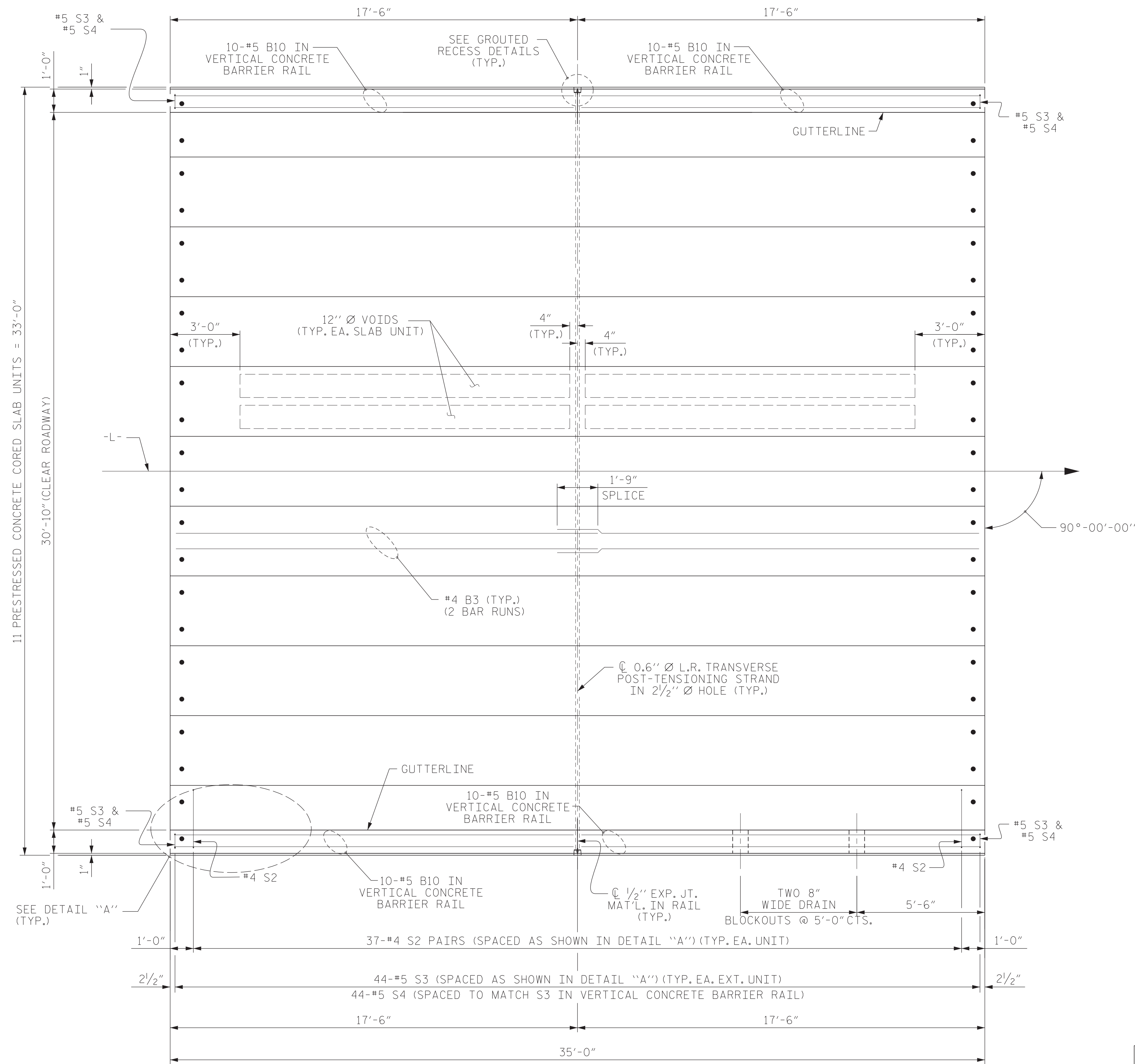


STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SPAN B
 PLAN OF 45' UNIT
 30'-10" CLEAR ROADWAY
 90° SKEW

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

ASSEMBLED BY :	JCW	DATE :	06/22
CHECKED BY :	DRR	DATE :	06/22
DRAWN BY :	DCE 3/09	REV. 12/5/11	MAA/AAC
CHECKED BY :	BCH 3/09	REV. 8/14	MAA/TMG

6/14/2022
 \\17BP_3.R.87_SMU_S2_810122.dgn
 USER: jwilson



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

PLAN OF UNIT

PROJECT NO. 17BP.3.R.87
SAMPSON COUNTY
 STATION: 15+93.00 -L-
 SHEET 4 OF 6



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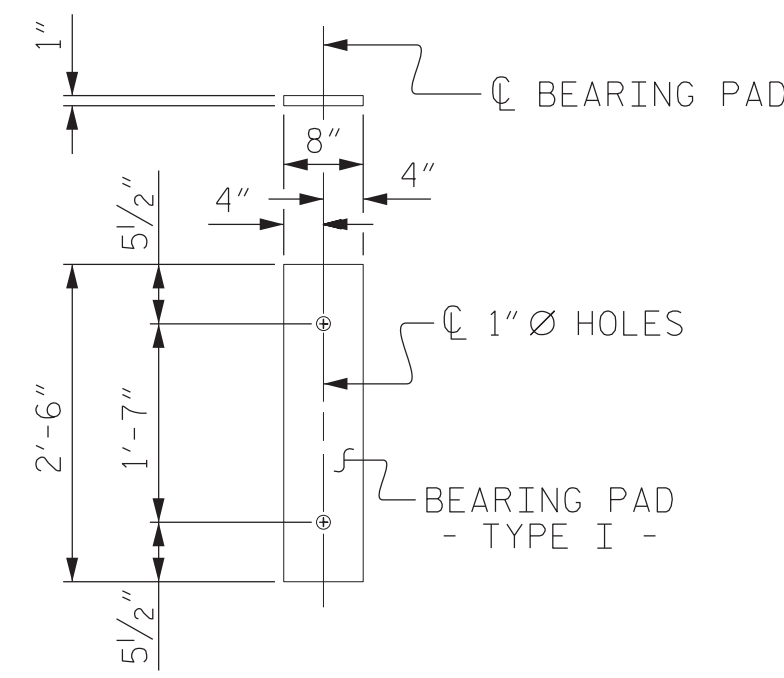
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SPAN C
 PLAN OF 35' UNIT
 30'-10" CLEAR ROADWAY
 90° SKEW

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-10
1			3			TOTAL SHEETS
2			4			23

STD. NO. 21" PCS_33_90S_35L

6/15/2022
 \\17BP_3.R.87_SMU_S3_810122.dgn
 USER: jwilson

ASSEMBLED BY :	JCW	DATE :	06/22
CHECKED BY :	DRR	DATE :	06/22
DRAWN BY :	DCE 3/09	REV. 12/5/11	MAA/AAC
CHECKED BY :	BCH 3/09	REV. 8/14	MAA/TMC



FIXED END
(TYPE I - 66 REQ'D)

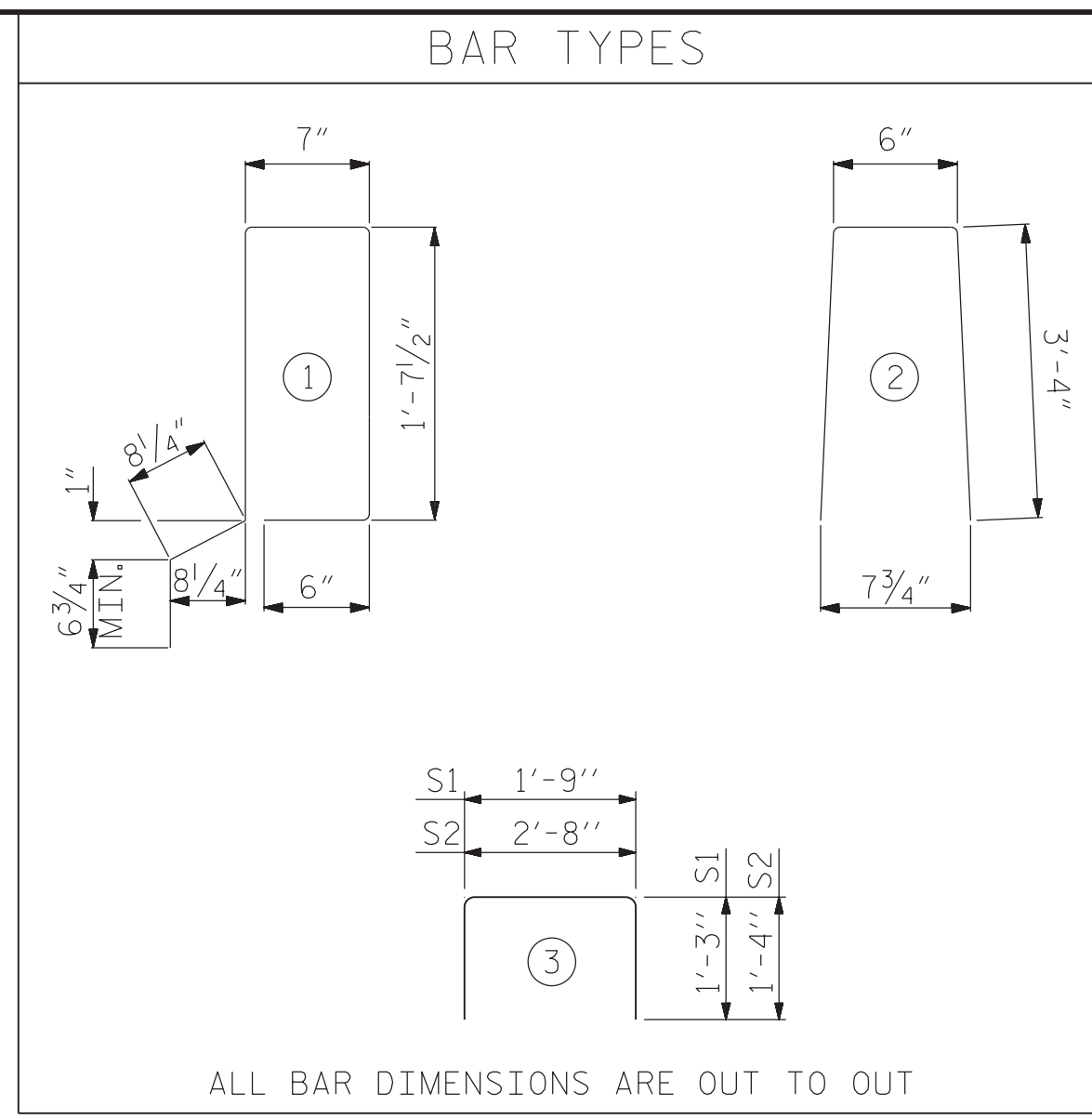
ELASTOMERIC BEARING DETAILS

ELASTOMER IN ALL BEARINGS SHALL BE 50 DUROMETER HARDNESS.

CORED SLABS REQUIRED			
	NUMBER	LENGTH	TOTAL LENGTH
30' UNIT			
EXTERIOR C.S.	2	30'-0"	60'-0"
INTERIOR C.S.	9	30'-0"	270'-0"
TOTAL	11		330'-0"

CORED SLABS REQUIRED			
	NUMBER	LENGTH	TOTAL LENGTH
35' UNIT			
EXTERIOR C.S.	2	35'-0"	70'-0"
INTERIOR C.S.	9	35'-0"	315'-0"
TOTAL	11		385'-0"

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



DEAD LOAD DEFLECTION AND CAMBER	
	3'-0" x 1'-9"
30' & 35' CORED SLAB UNIT	0.6" Ø L.R. STRAND
CAMBER (SLAB ALONE IN PLACE)	1/4" ↑
DEFLECTION DUE TO SUPERIMPOSED DEAD LOAD**	1/8" ↓
FINAL CAMBER	1/8" ↑

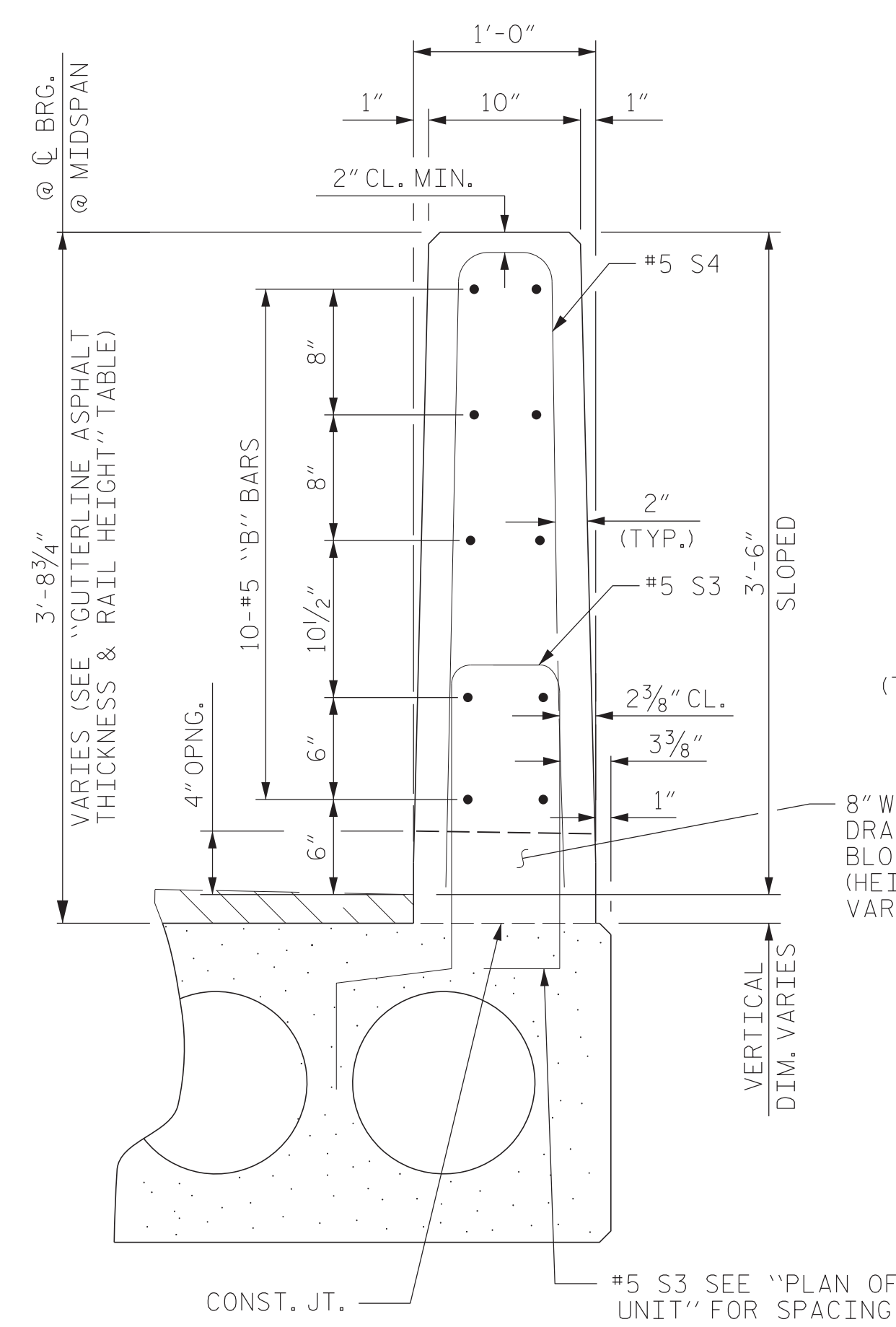
** INCLUDES FUTURE WEARING SURFACE

DEAD LOAD DEFLECTION AND CAMBER	
	3'-0" x 1'-9"
45' CORED SLAB UNIT	0.6" Ø L.R. STRAND
CAMBER (SLAB ALONE IN PLACE)	7/8" ↑
DEFLECTION DUE TO SUPERIMPOSED DEAD LOAD**	1/8" ↓
FINAL CAMBER	3/4" ↑

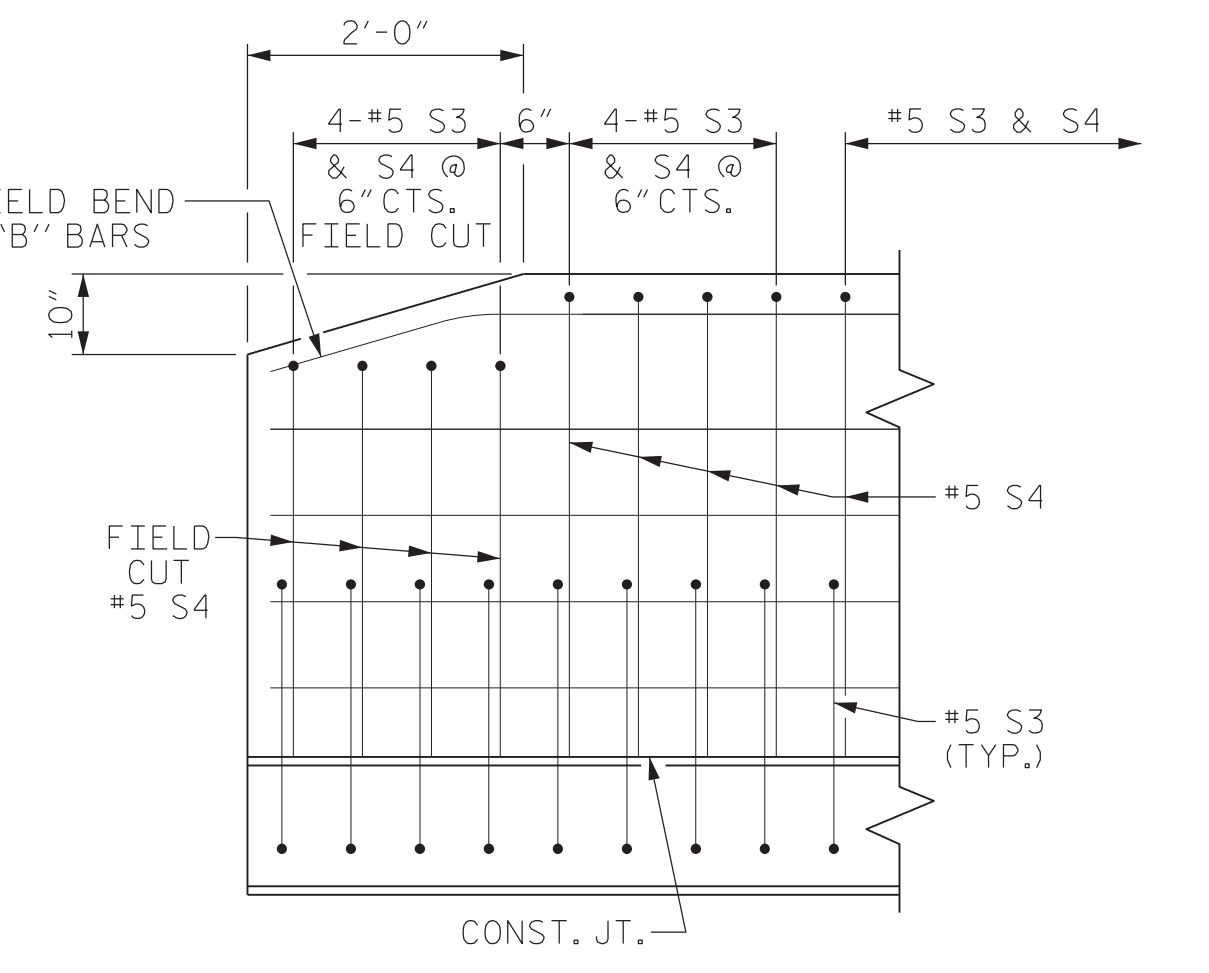
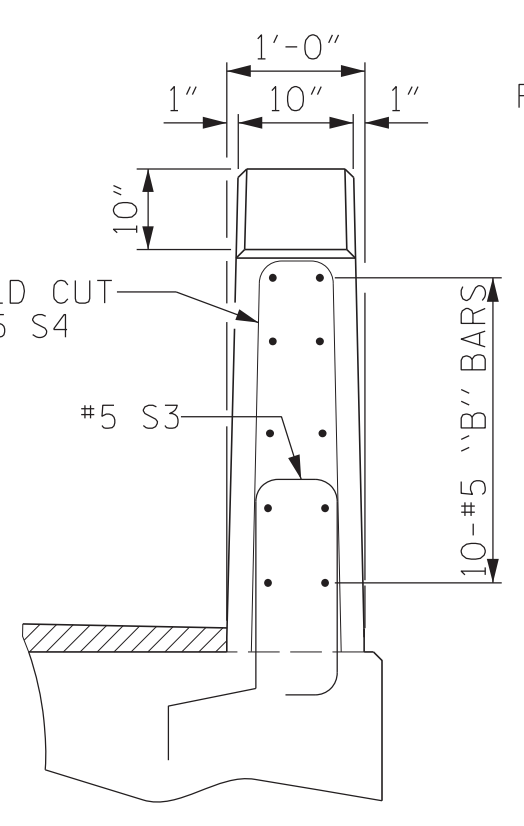
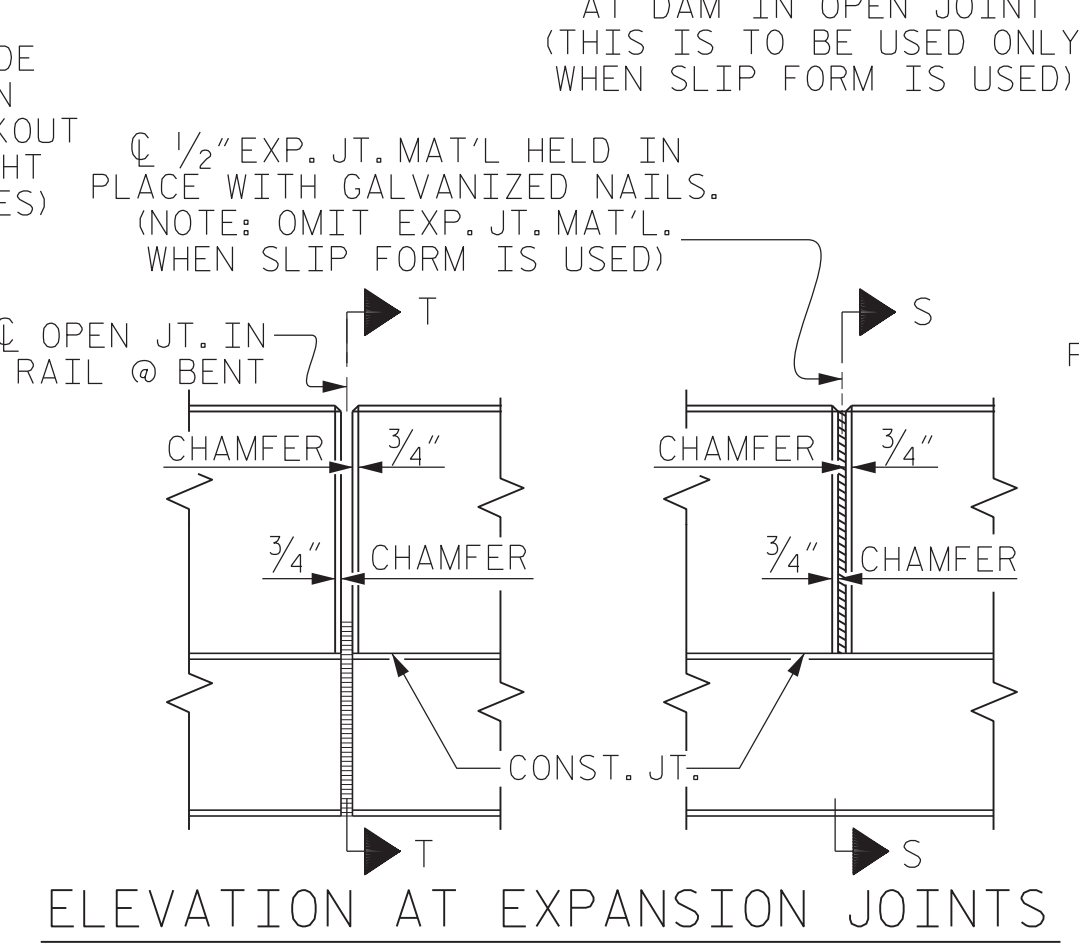
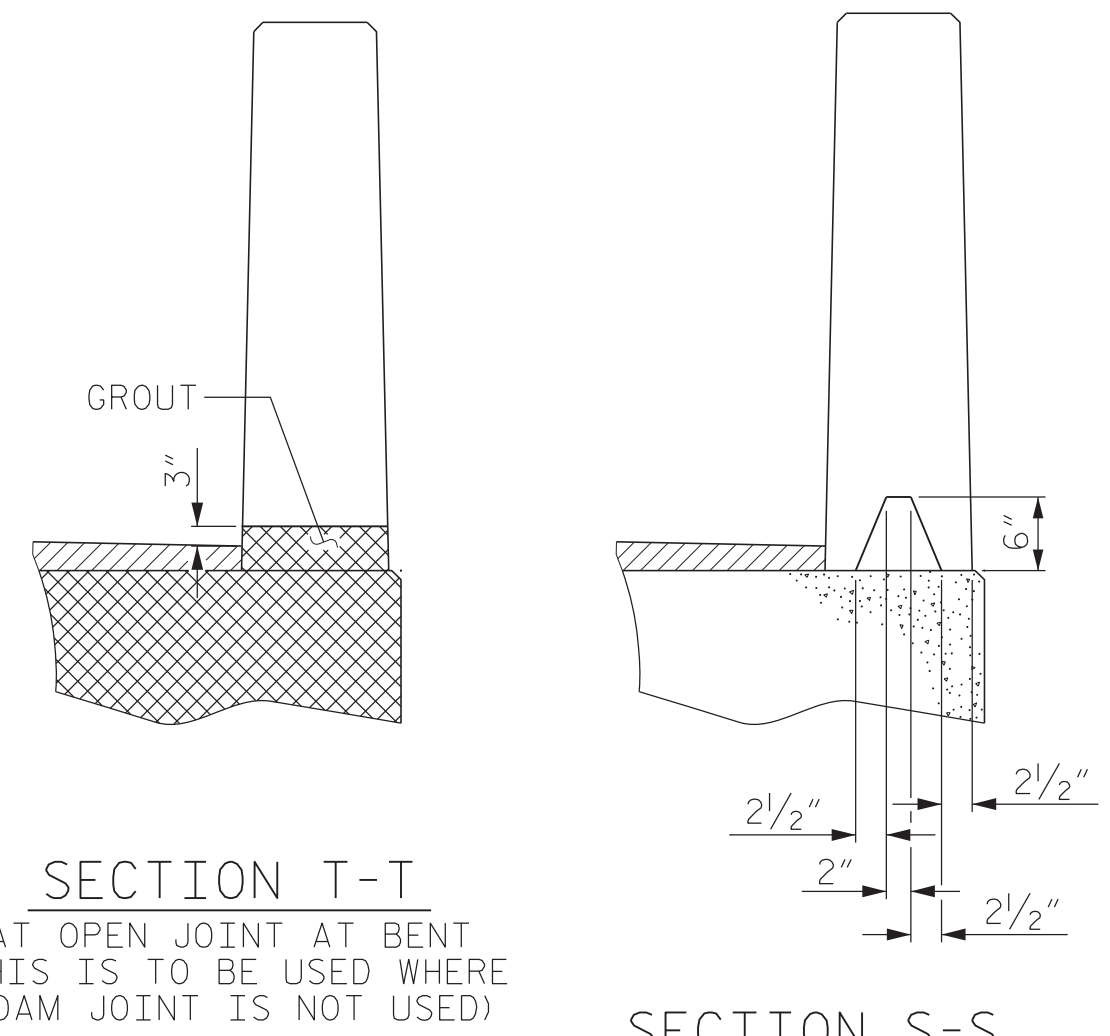
** INCLUDES FUTURE WEARING SURFACE

CONCRETE RELEASE STRENGTH	
UNIT	PSI
30', 35', & 45' UNITS	4000

GRADE 270 STRANDS	
	0.6" Ø L.R.
AREA (SQUARE INCHES)	0.217
ULTIMATE STRENGTH (LBS. PER STRAND)	58,600
APPLIED PRESTRESS (LBS. PER STRAND)	43,950



VERTICAL CONCRETE BARRIER RAIL SECTION



END OF RAIL DETAILS

NOTES

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

ALL REINFORCING STEEL CAST WITH THE CORED SLAB SECTIONS SHALL BE GRADE 60 AND SHALL BE INCLUDED IN THE UNIT PRICE BID FOR PRESTRESSED CONCRETE CORED SLABS.

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

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

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

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

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

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

APPLY EPOXY PROTECTIVE COATING TO CORED SLAB UNIT ENDS.

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

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

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

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

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

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

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

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

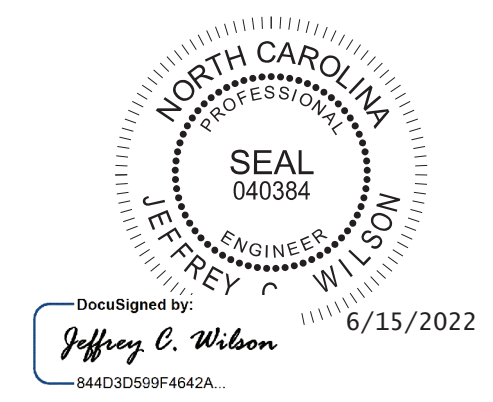
THE DRAIN OPENING AT THE GUTTERLINE SHALL BE 4" X 8". THE HEIGHT OF THE BLOCKOUT IN THE VERTICAL CONCRETE BARRIER RAIL SHALL EXTEND FROM THE TOP OF THE CORED SLAB UNIT TO THE TOP OF THE DRAIN OPENING.

APPLY EPOXY PROTECTIVE COATING TO EXTERIOR FACE OF THE EXTERIOR CORED SLAB UNITS THAT REQUIRE DRAINS IN THE BARRIER RAIL.

POST-TENSIONING SHALL BE DONE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

PROJECT NO. 17BP.3.R.87
SAMPSON COUNTY
STATION: 15+93.00 -L-

SHEET 5 OF 6



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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
STANDARD
3'-0" X 1'-9"
PRESTRESSED CONCRETE
CORED SLAB UNIT
90° SKEW

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

ASSEMBLED BY : JCW	DATE : 06/22
CHECKED BY : DRR	DATE : 06/22
DRAWN BY : DCE 5/09	REV. 5/18
CHECKED BY : BCH 6/09	MAA/THC

BILL OF MATERIAL FOR VERTICAL CONCRETE BARRIER RAIL						
BAR	BARS PER PAIR OF EXTERIOR UNITS	TOTAL NO.	SIZE	TYPE	LENGTH	WEIGHT
	30' UNIT					
* B9	20	20	#5	STR	29'-7"	617
* S4	78	78	#5	2	7'-2"	583
* EPOXY COATED REINFORCING STEEL				LBS.		1200
CLASS AA CONCRETE				CU.YDS.		7.7
TOTAL VERTICAL CONCRETE BARRIER RAIL				LN. FT.		60.25

BILL OF MATERIAL FOR VERTICAL CONCRETE BARRIER RAIL						
BAR	BARS PER PAIR OF EXTERIOR UNITS	TOTAL NO.	SIZE	TYPE	LENGTH	WEIGHT
	35' UNIT					
* B10	40	40	#5	STR	17'-1"	713
* S4	88	88	#5	2	7'-2"	658
* EPOXY COATED REINFORCING STEEL				LBS.		1371
CLASS AA CONCRETE				CU.YDS.		9.0
TOTAL VERTICAL CONCRETE BARRIER RAIL				LN. FT.		70.25

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

BILL OF MATERIAL FOR ONE 30' CORED SLAB UNIT							
BAR	NUMBER	SIZE	TYPE	EXTERIOR UNIT		INTERIOR UNIT	
				LENGTH	WEIGHT	LENGTH	WEIGHT
B2	2	#4	STR	29'-8"	40	29'-8"	40
S1	8	#5	3	4'-3"	35	4'-3"	35
S2	64	#4	3	5'-4"	228	5'-4"	228
* S3	39	#5	1	5'-7"	227		
REINFORCING STEEL				LBS.	303		303
* EPOXY COATED REINFORCING STEEL				LBS.	227		
5000 P.S.I. CONCRETE				CU. YDS.	4.4		4.4
0.6" Ø L.R. STRANDS				No.	9		9

BILL OF MATERIAL FOR ONE 35' CORED SLAB UNIT							
BAR	NUMBER	SIZE	TYPE	EXTERIOR UNIT		INTERIOR UNIT	
				LENGTH	WEIGHT	LENGTH	WEIGHT
B3	4	#4	STR	18'-3"	49	18'-3"	49
S1	8	#5	3	4'-3"	35	4'-3"	35
S2	74	#4	3	5'-4"	264	5'-4"	264
* S3	44	#5	1	5'-7"	256		
REINFORCING STEEL				LBS.	348		348
* EPOXY COATED REINFORCING STEEL				LBS.	256		
5000 P.S.I. CONCRETE				CU. YDS.	5.1		5.1
0.6" Ø L.R. STRANDS				No.	9		9

BILL OF MATERIAL FOR ONE 45' CORED SLAB UNIT							
BAR	NUMBER	SIZE	TYPE	EXTERIOR UNIT		INTERIOR UNIT	
				LENGTH	WEIGHT	LENGTH	WEIGHT
B5	4	#4	STR	23'-3"	62	23'-3"	62
S1	8	#5	3	4'-3"	35	4'-3"	35
S2	94	#4	3	5'-4"	335	5'-4"	335
* S3	54	#5	1	5'-7"	314		
REINFORCING STEEL				LBS.	432		432
* EPOXY COATED REINFORCING STEEL				LBS.	314		
5000 P.S.I. CONCRETE				CU. YDS.	6.5		6.5
0.6" Ø L.R. STRANDS				No.	13		13

GUTTERLINE ASPHALT THICKNESS & RAIL HEIGHT		
	ASPHALT OVERLAY THICKNESS	RAIL HEIGHT
	@ MID-SPAN	@ MID-SPAN
30' & 35' UNITS	2 5/8"	3'-8 5/8"
45' UNITS	2"	3'-8"

PROJECT NO. 17BP.3.R.87

SAMPSON COUNTY

STATION: 15+93.00 -L-

SHEET 6 OF 6



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

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-12
1			3			TOTAL SHEETS
2			4			23

STD. NO. 21"PCS3_33_90S

6/14/2022
17BP.3.R.87_SMU_CS2-810122.dgn
USER: jwilson

ASSEMBLED BY : JCW	DATE : 06/22
CHECKED BY : DRR	DATE : 06/22
DRAWN BY : DCE 5/09	REV. 5/18 MAA/THC
CHECKED BY : BCH 6/09	

NOTES

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

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

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

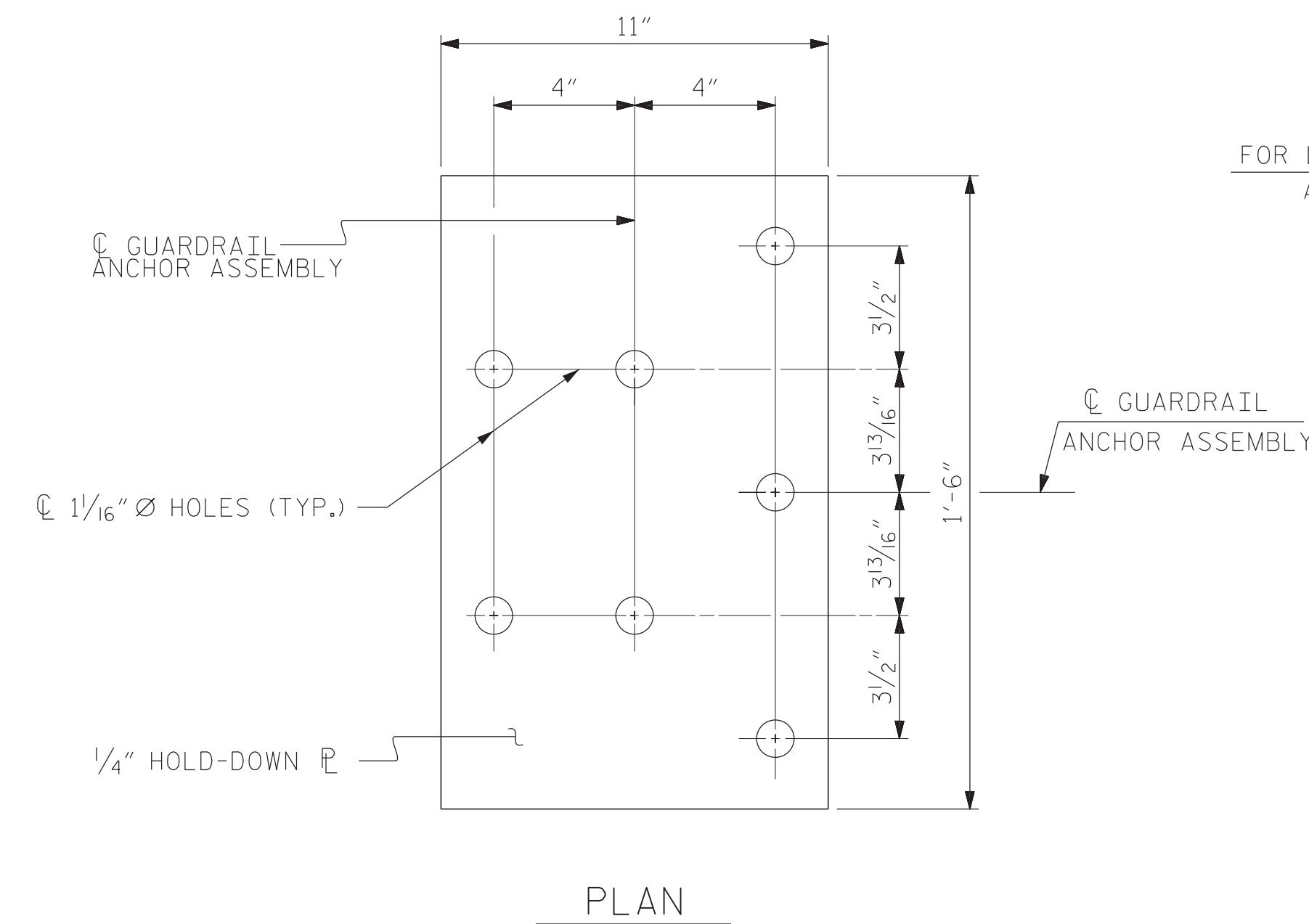
THE GUARDRAIL ANCHOR ASSEMBLY IS REQUIRED AT ALL POINTS WHERE APPROACH GUARDRAIL IS TO BE ATTACHED TO THE END OF BARRIER RAIL. FOR POINTS OF ATTACHMENT, SEE SKETCH.

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

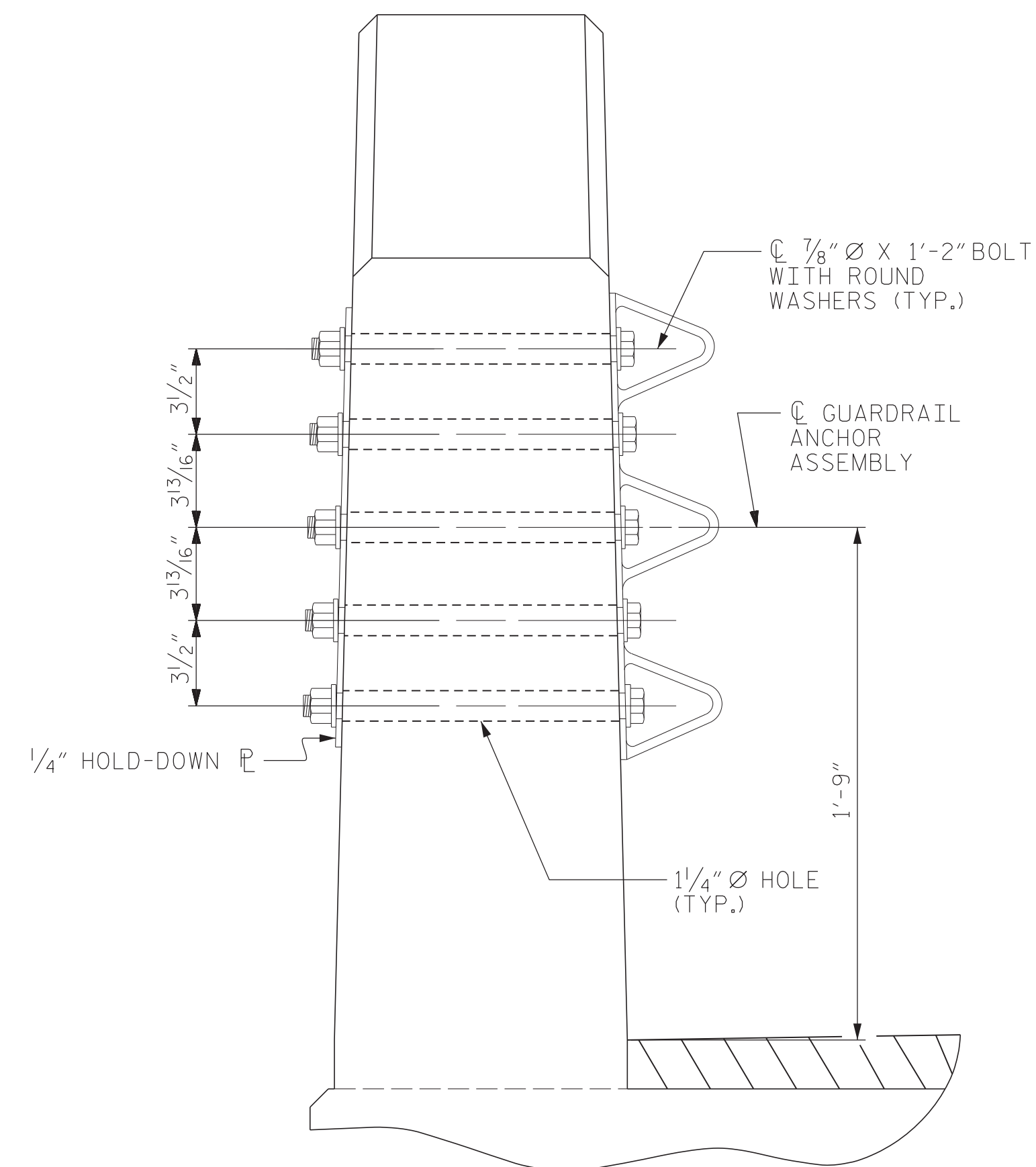
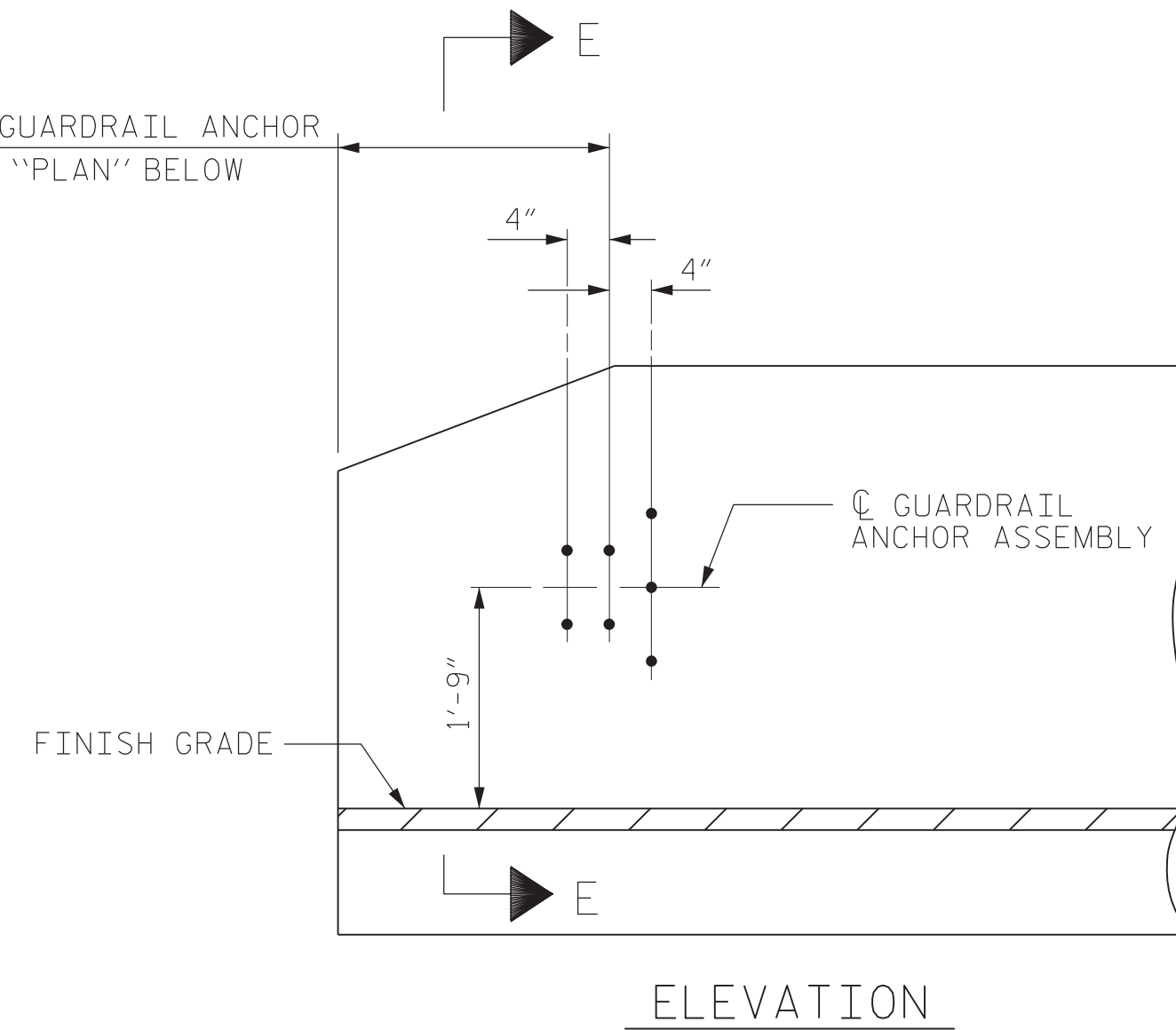
THE COST OF THE GUARDRAIL ANCHOR ASSEMBLY SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR VERTICAL CONCRETE BARRIER RAIL.

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

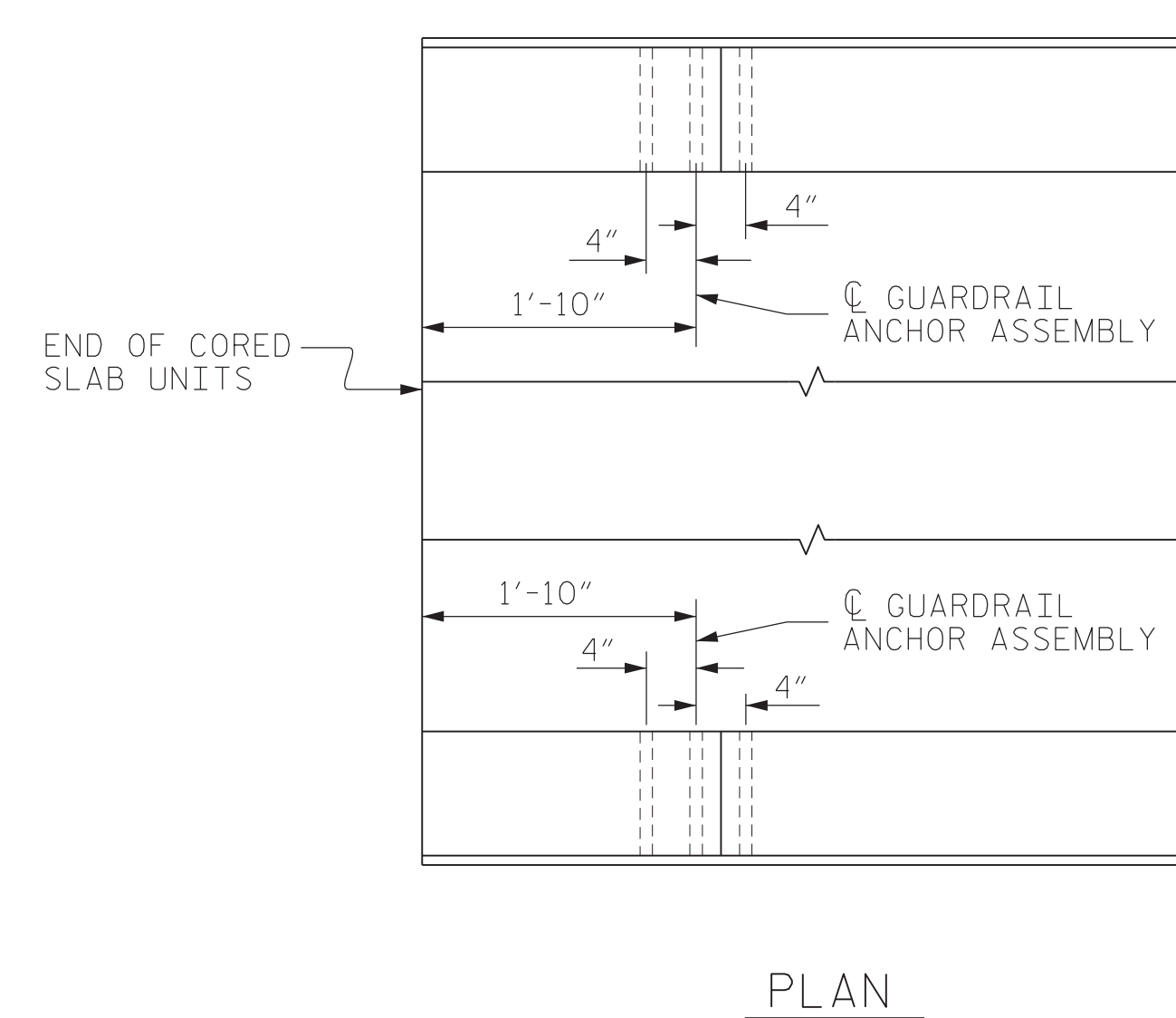
THE 1 1/4" Ø HOLES SHALL BE FORMED OR DRILLED WITH A CORE BIT. IMPACT TOOLS WILL NOT BE PERMITTED. ANY CONCRETE DAMAGED BY THIS WORK SHALL BE REPAIRED TO THE SATISFACTION OF THE ENGINEER.



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

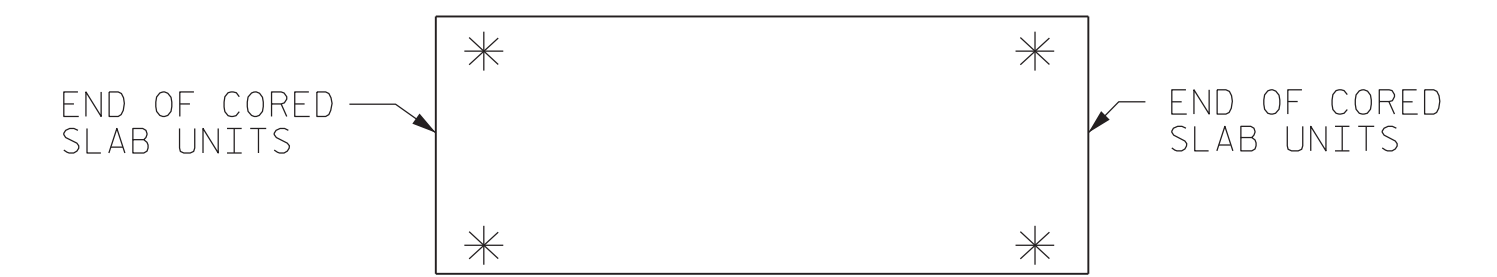


SECTION E-E
GUARDRAIL ANCHOR ASSEMBLY DETAILS



LOCATION OF ANCHORS FOR GUARDRAIL

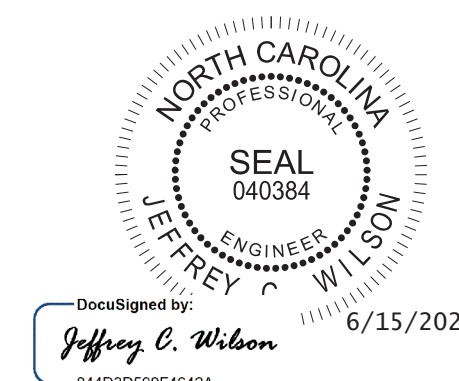
END BENT #1 SHOWN, END BENT #2 SIMILAR.



SKETCH SHOWING POINTS OF ATTACHMENT

* DENOTES GUARDRAIL ANCHOR ASSEMBLY

PROJECT NO. 17BP.3.R.87
SAMPSON COUNTY
STATION: 15+93.00 -L-



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

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	5-13
1			3			TOTAL SHEETS
2			4			23

(SHT 1) STD. NO. GRA3

ASSEMBLED BY : JCW	DATE : 06/22
CHECKED BY : DRR	DATE : 06/22
DRAWN BY : MAA 5/10	REV. 1/15 MAA/TMG
CHECKED BY : GM 5/10	REV. 12/17 MAA/THC
	REV. 5/18 MAA/THC

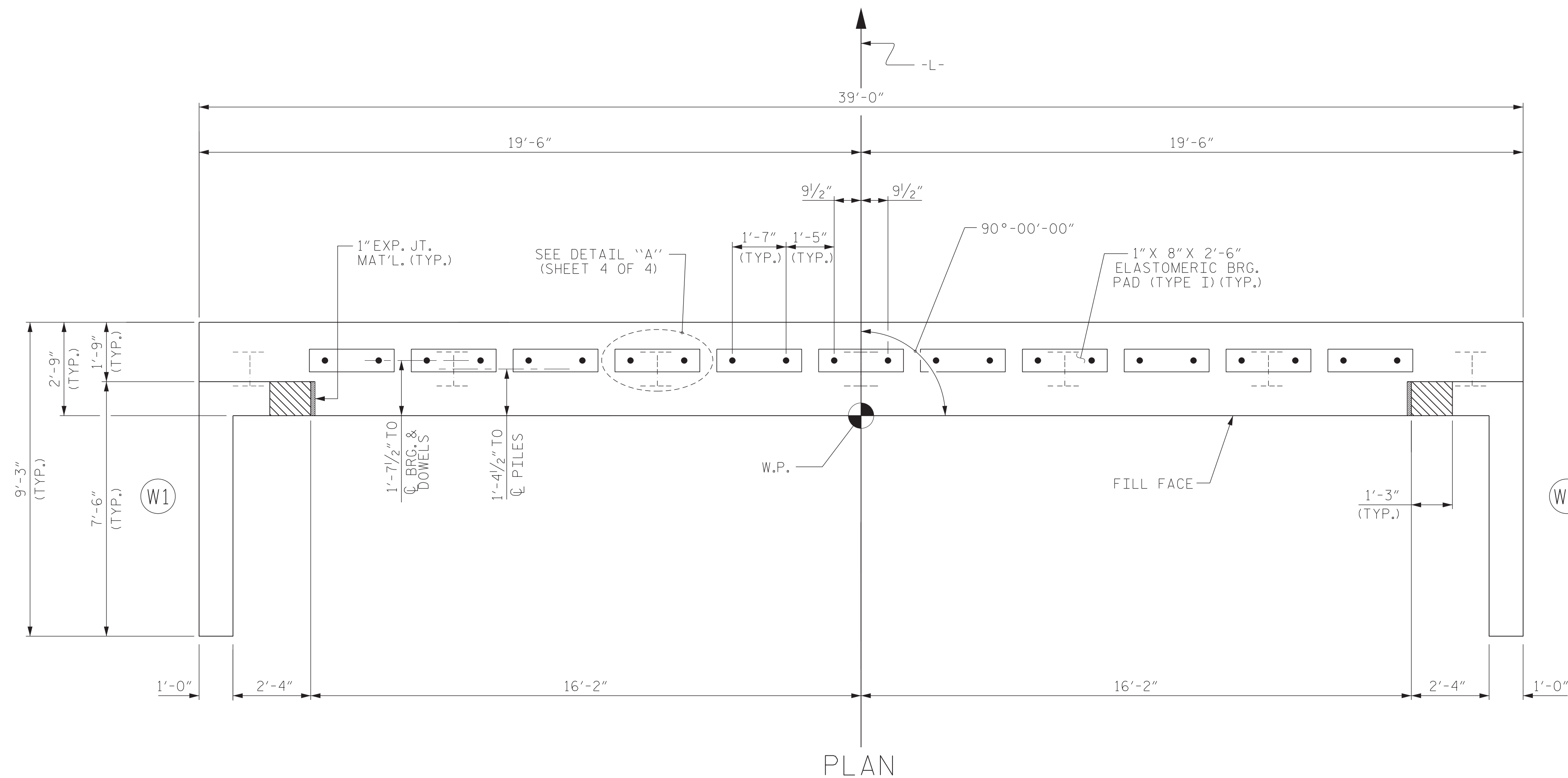
NOTES

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

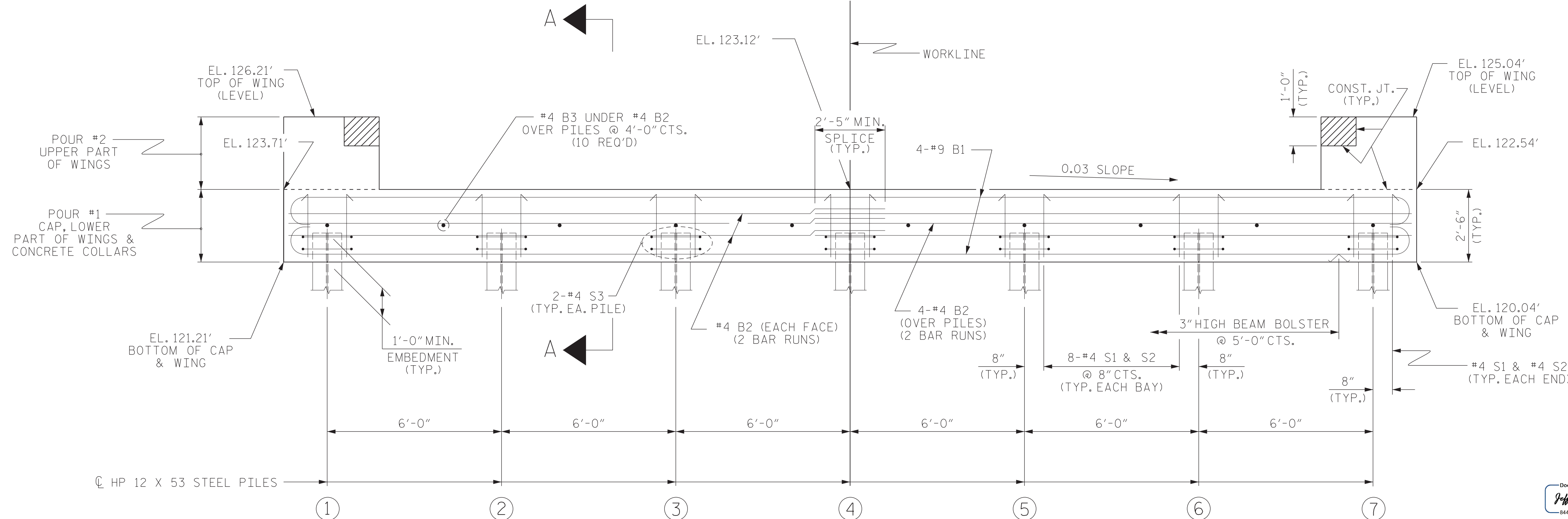
THE CONCRETE IN THE SHADED AREA OF THE WING SHALL BE POURED AFTER THE VERTICAL CONCRETE BARRIER RAIL IS CAST IF SLIP FORMING IS USED.

FOR PILE SPLICE DETAILS, SEE SHEET 4 OF 4.

FOR WING DETAILS, SEE SHEET 3 OF 4.



PLAN



ELEVATION

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

TOP OF PILE ELEVATIONS

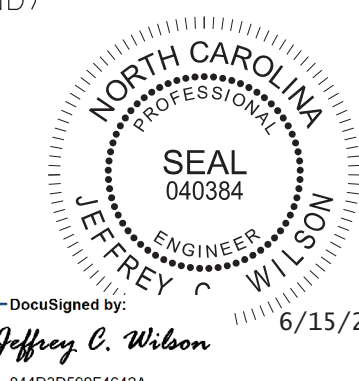
①	122.16'
②	121.98'
③	121.80'
④	121.62'
⑤	121.44'
⑥	121.26'
⑦	121.08'

PROJECT NO. 17BP.3.R.87
SAMPSON COUNTY
 STATION: 15+93.00 -L-

SHEET 1 OF 4

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUBSTRUCTURE
 END BENT No. 1



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REVISIONS						SHEET NO.
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1			3			TOTAL SHEETS 23
2			4			

6/14/2022
 17BP_3.R.87_SMU-E1-810122.dgn
 USER: jwilson

ASSEMBLED BY :	JCW	DATE :	06/22
CHECKED BY :	DRR	DATE :	06/22
DRAWN BY :	DCE	01/10	
CHECKED BY :	MKT	01/10	
REV. 4/15	MAA/TMC		

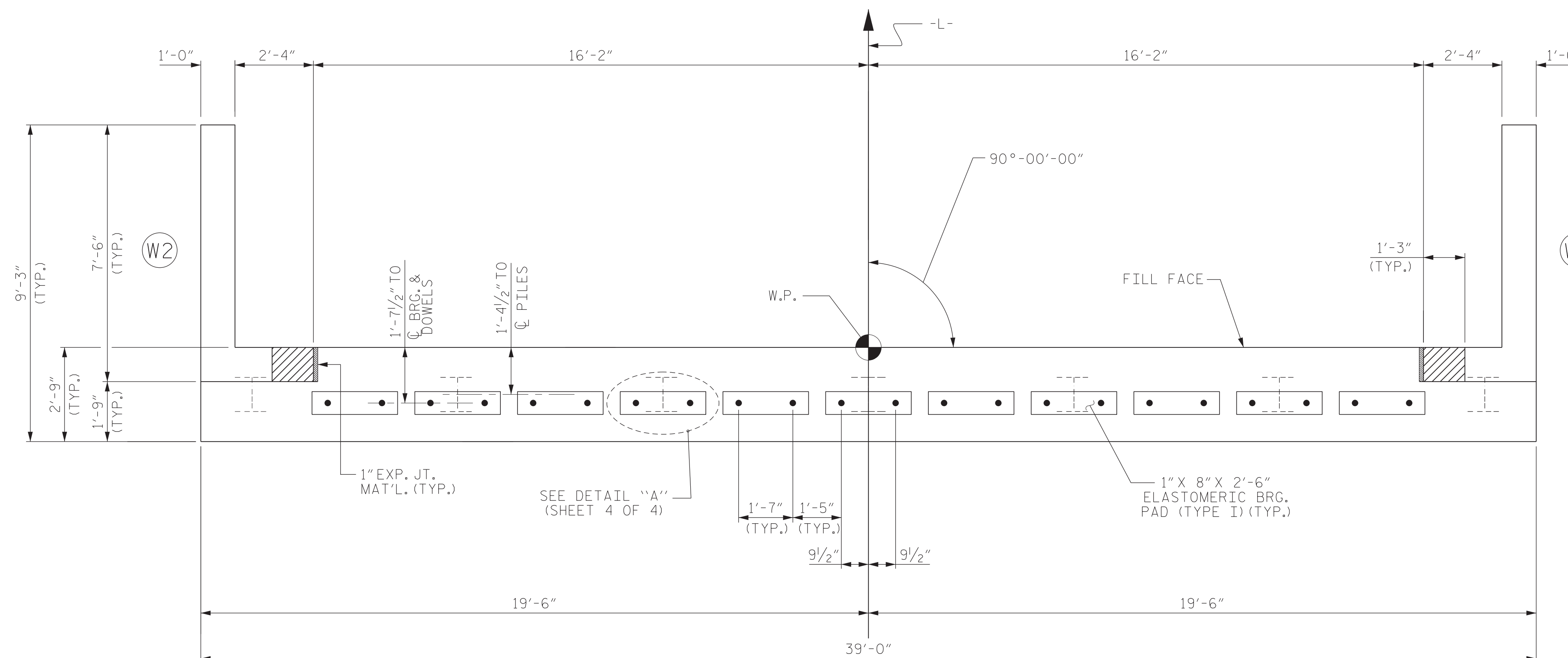
NOTES

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

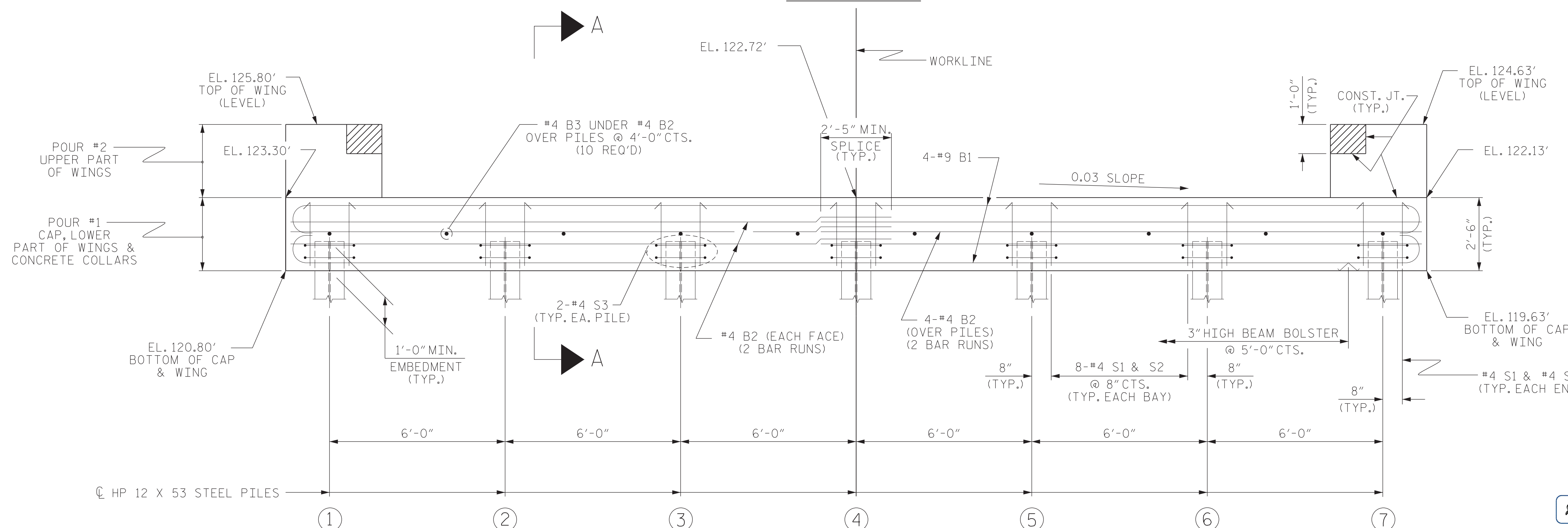
THE CONCRETE IN THE SHADED AREA OF THE WING SHALL BE POURED AFTER THE VERTICAL CONCRETE BARRIER RAIL IS CAST IF SLIP FORMING IS USED.

FOR PILE SPlice DETAILS, SEE SHEET 4 OF 4.

FOR WING DETAILS, SEE SHEET 3 OF 4.



PLAN



ELEVATION

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

TOP OF PILE ELEVATIONS

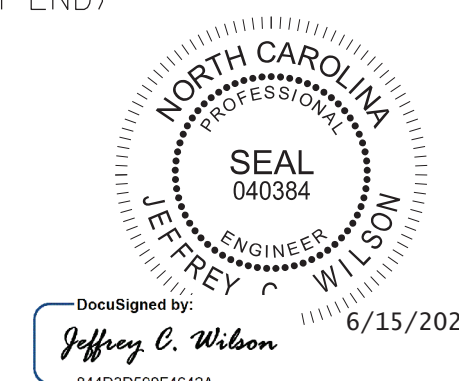
①	121.76'
②	121.58'
③	121.40'
④	121.22'
⑤	121.04'
⑥	120.86'
⑦	120.68'

PROJECT NO. 17BP.3.R.87
SAMPSON COUNTY
STATION: 15+93.00 -L-

SHEET 2 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE
END BENT No. 2



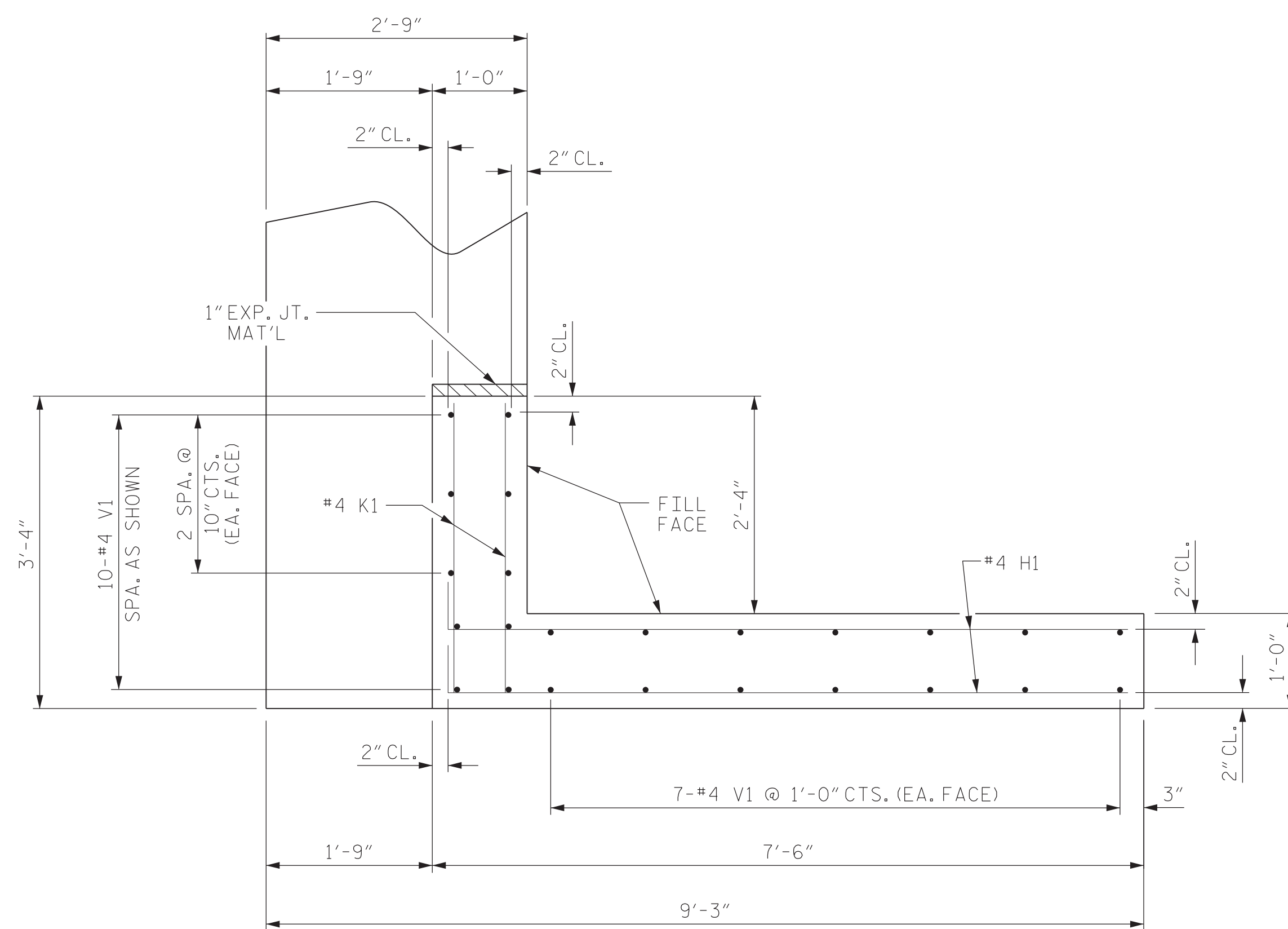
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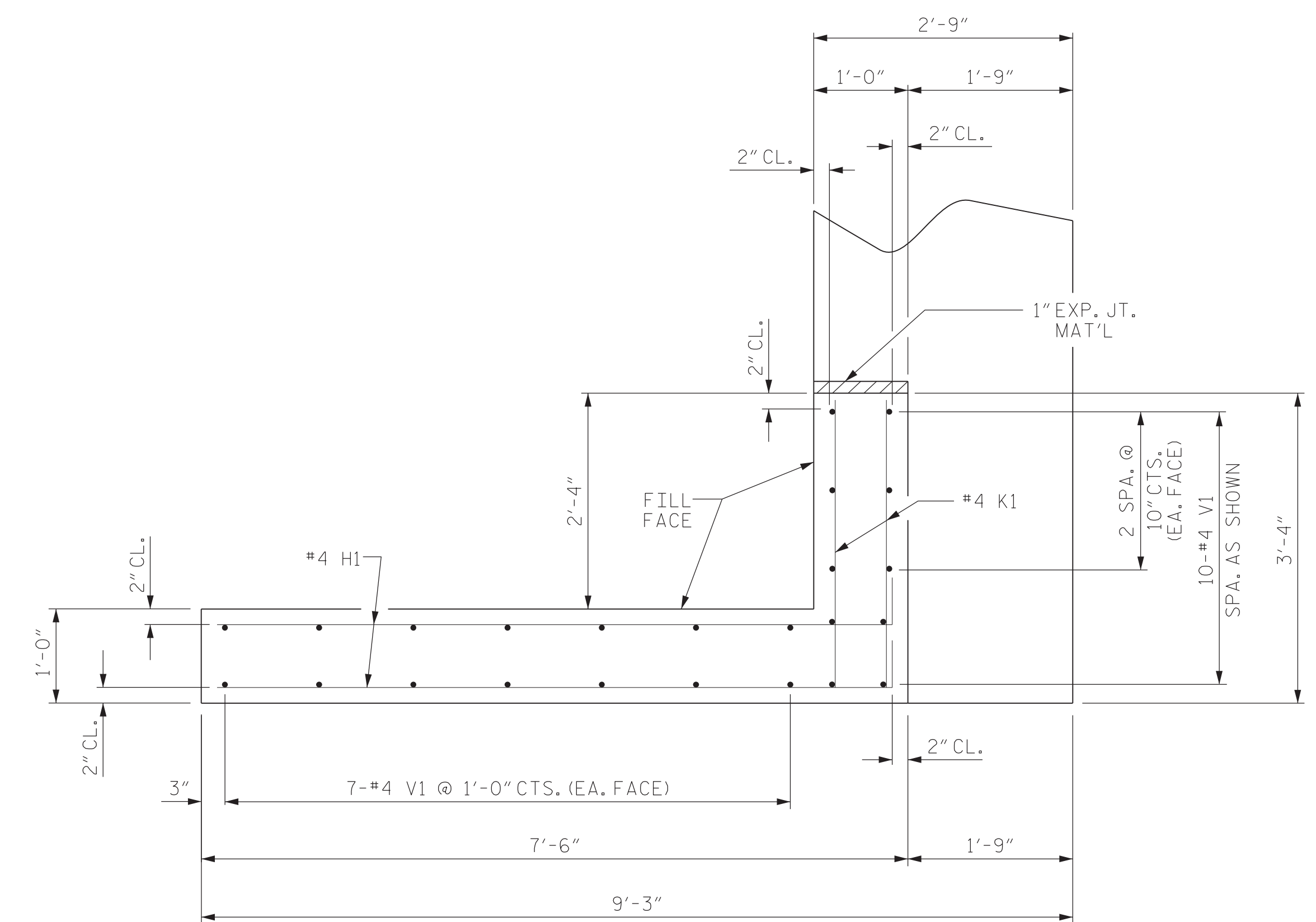


REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-15
1			3			TOTAL SHEETS
2			4			23

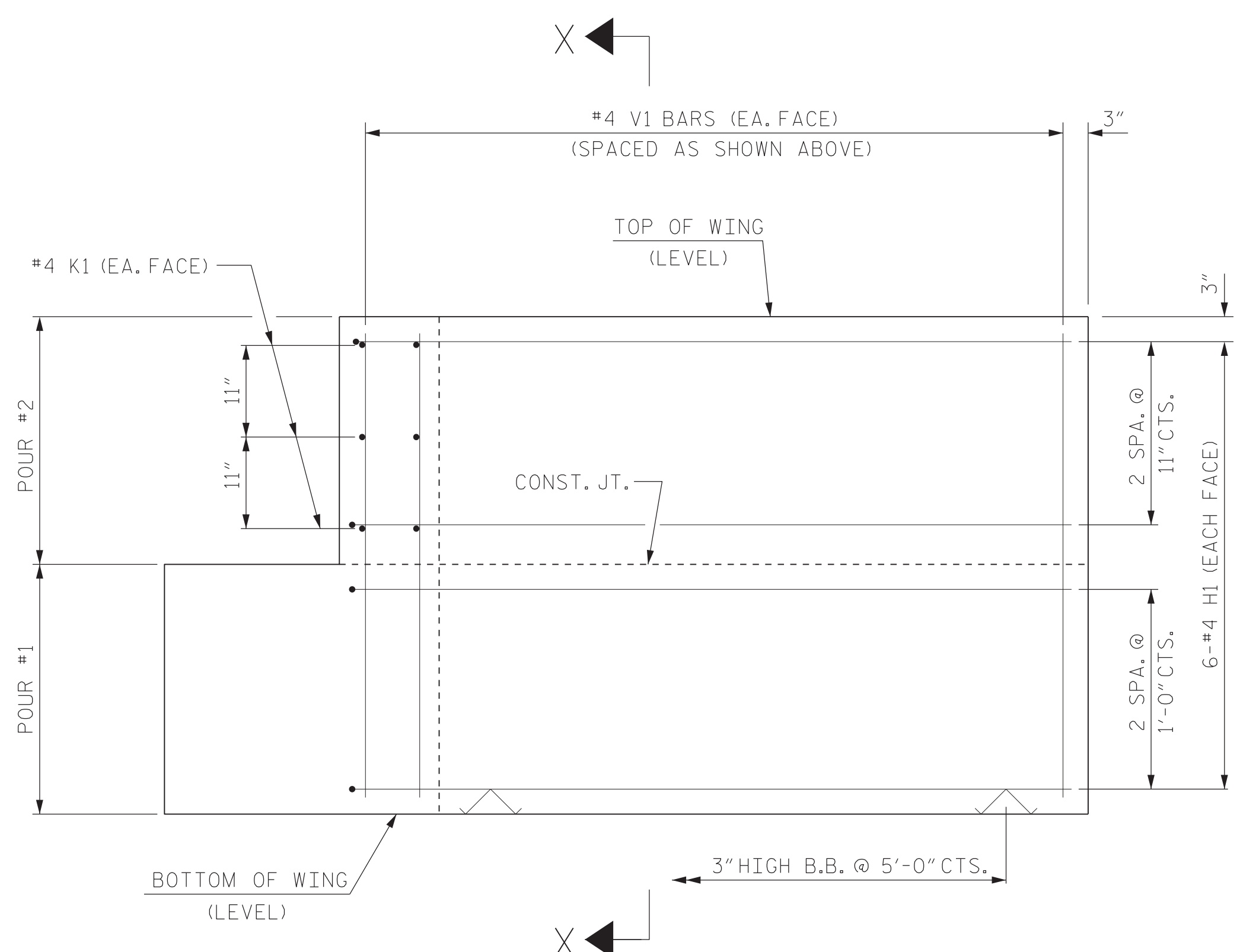
ASSEMBLED BY : JCW	DATE : 06/22
CHECKED BY : DRR	DATE : 06/22
DRAWN BY : DCE 01/10	REV. 4/15
CHECKED BY : MKT 01/10	MAA/TMC



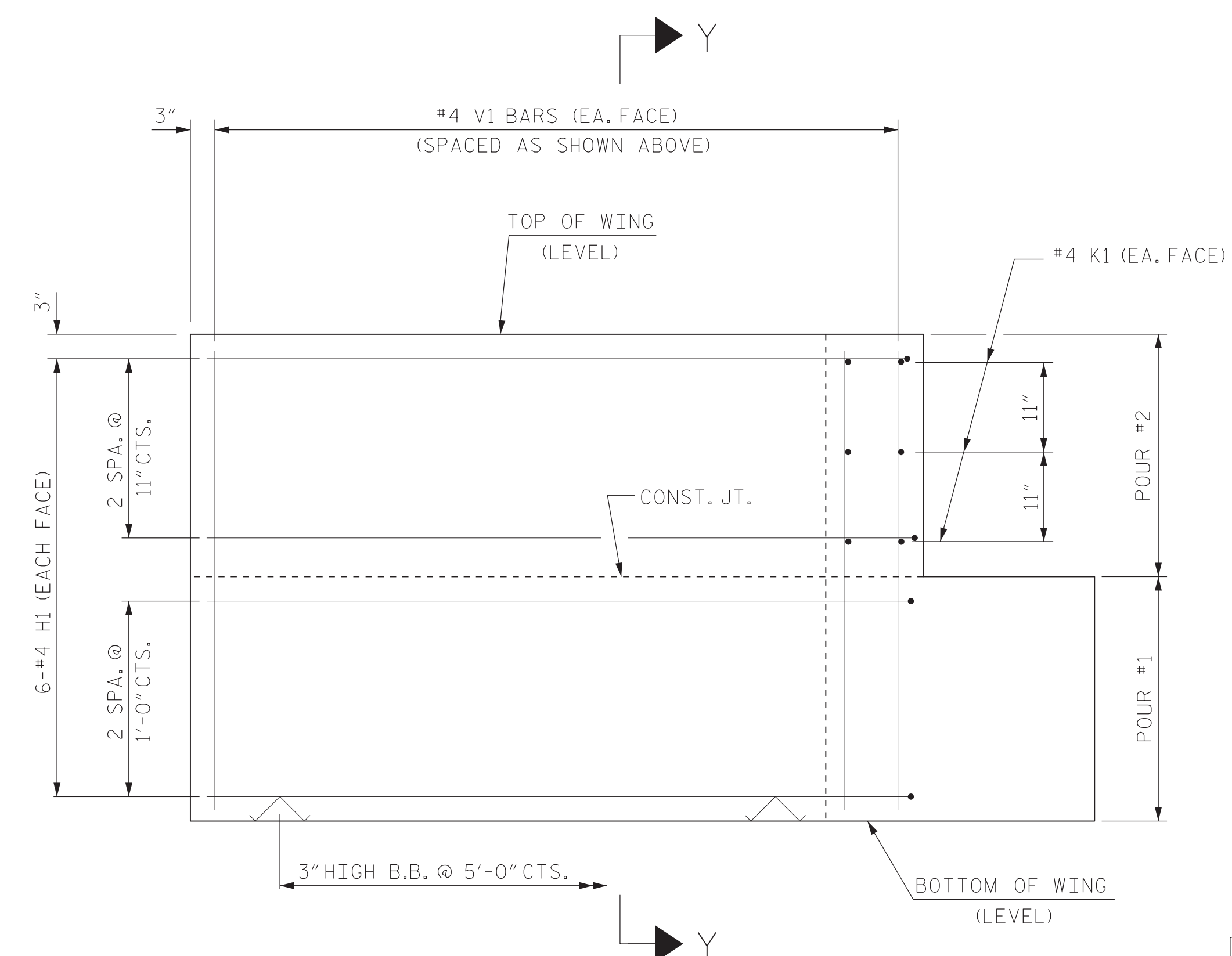
PLAN OF WING (W1)



PLAN OF WING (W2)

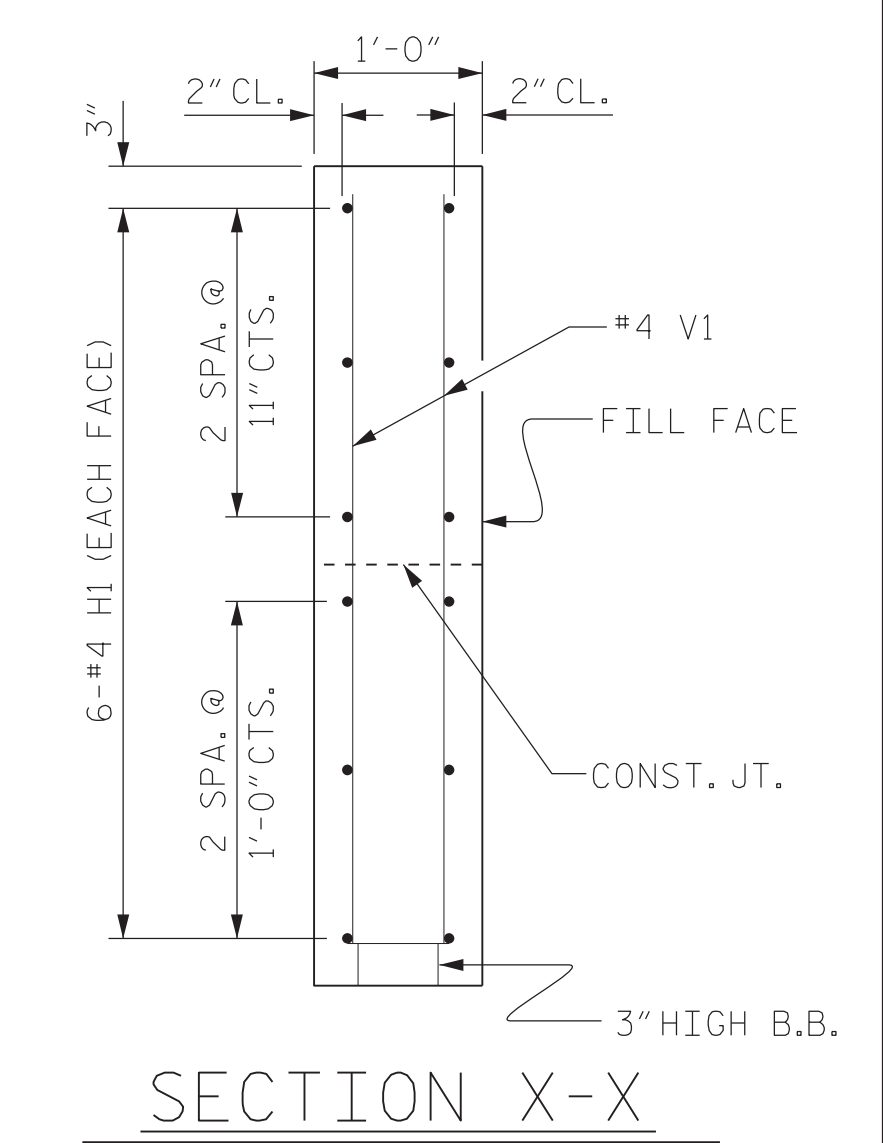


ELEVATION OF WING (W1)

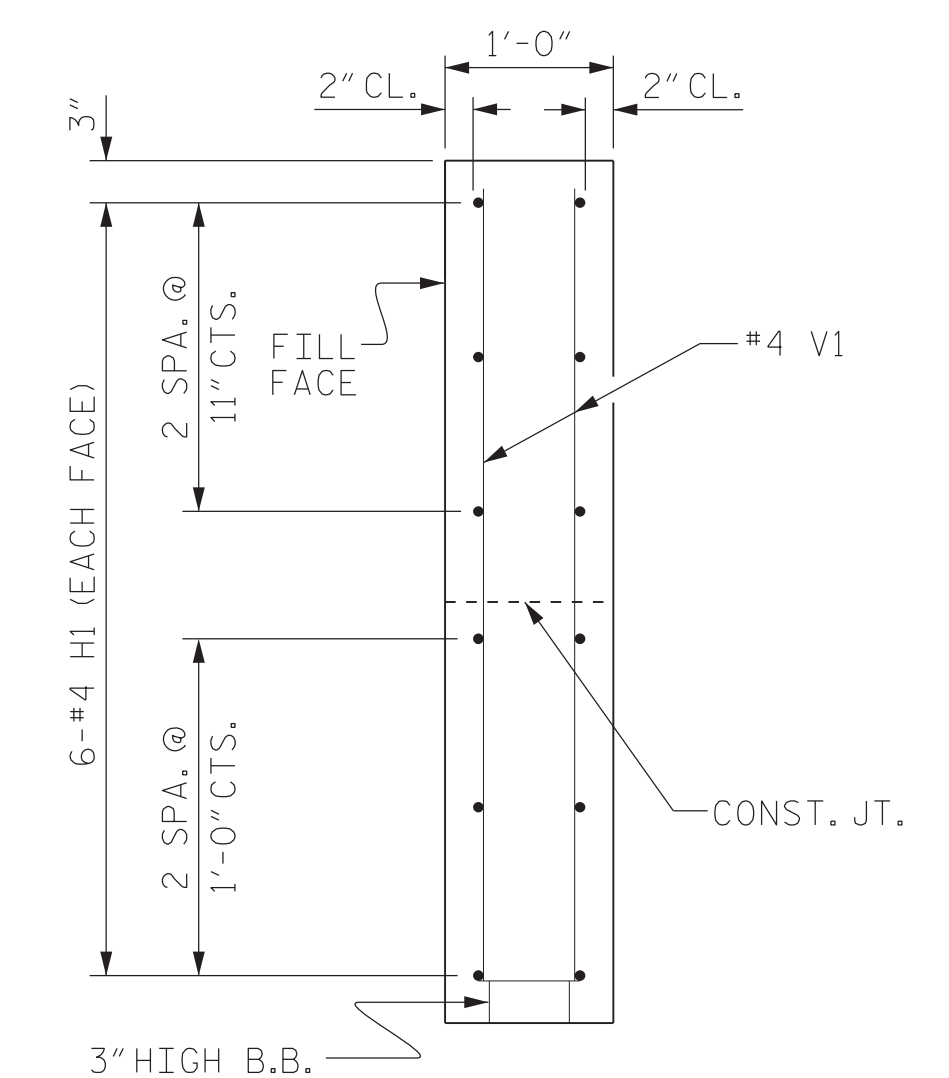


ELEVATION OF WING (W2)

WING DETAILS

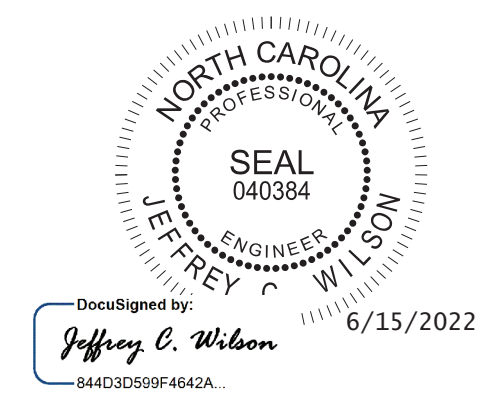


SECTION X-X



SECTION Y-Y

PROJECT NO. 17BP.3.R.87
 SAMPSON COUNTY
 STATION: 15+93.00 -L-
 SHEET 3 OF 4



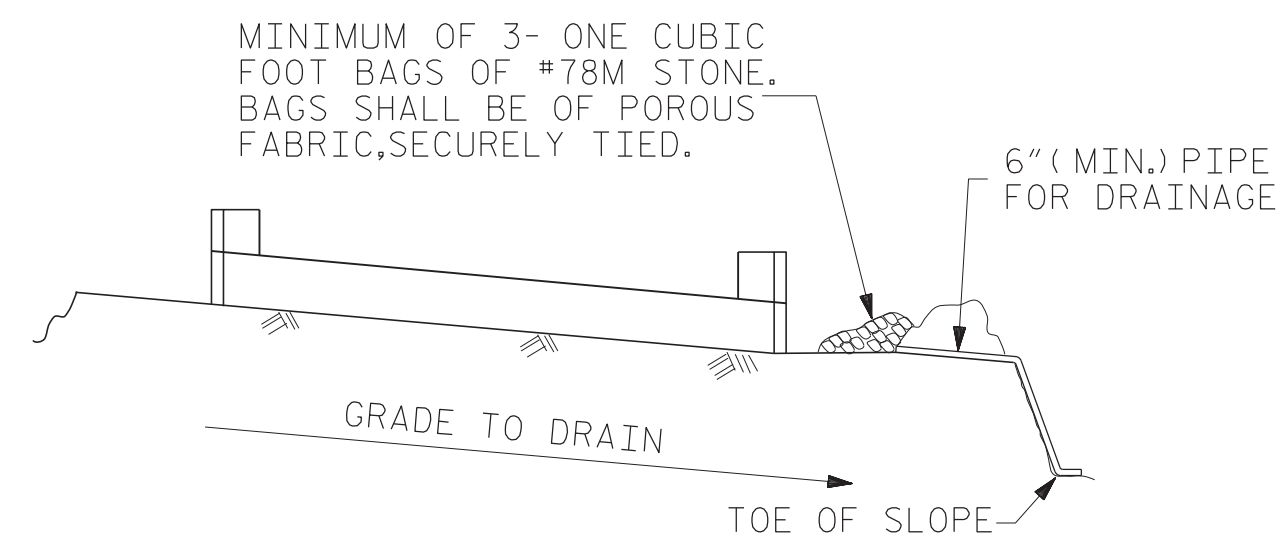
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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-16
1			3			TOTAL SHEETS 23
2			4			

6/14/2022
 17BP.3.R.87-SMU-E3-810122.dgn
 USER: jwilson

ASSEMBLED BY : JCW	DATE : 06/22
CHECKED BY : DRR	DATE : 06/22
DRAWN BY : DGE 02/10	REV. 4/15
CHECKED BY : MKT 02/10	MAA/TMC

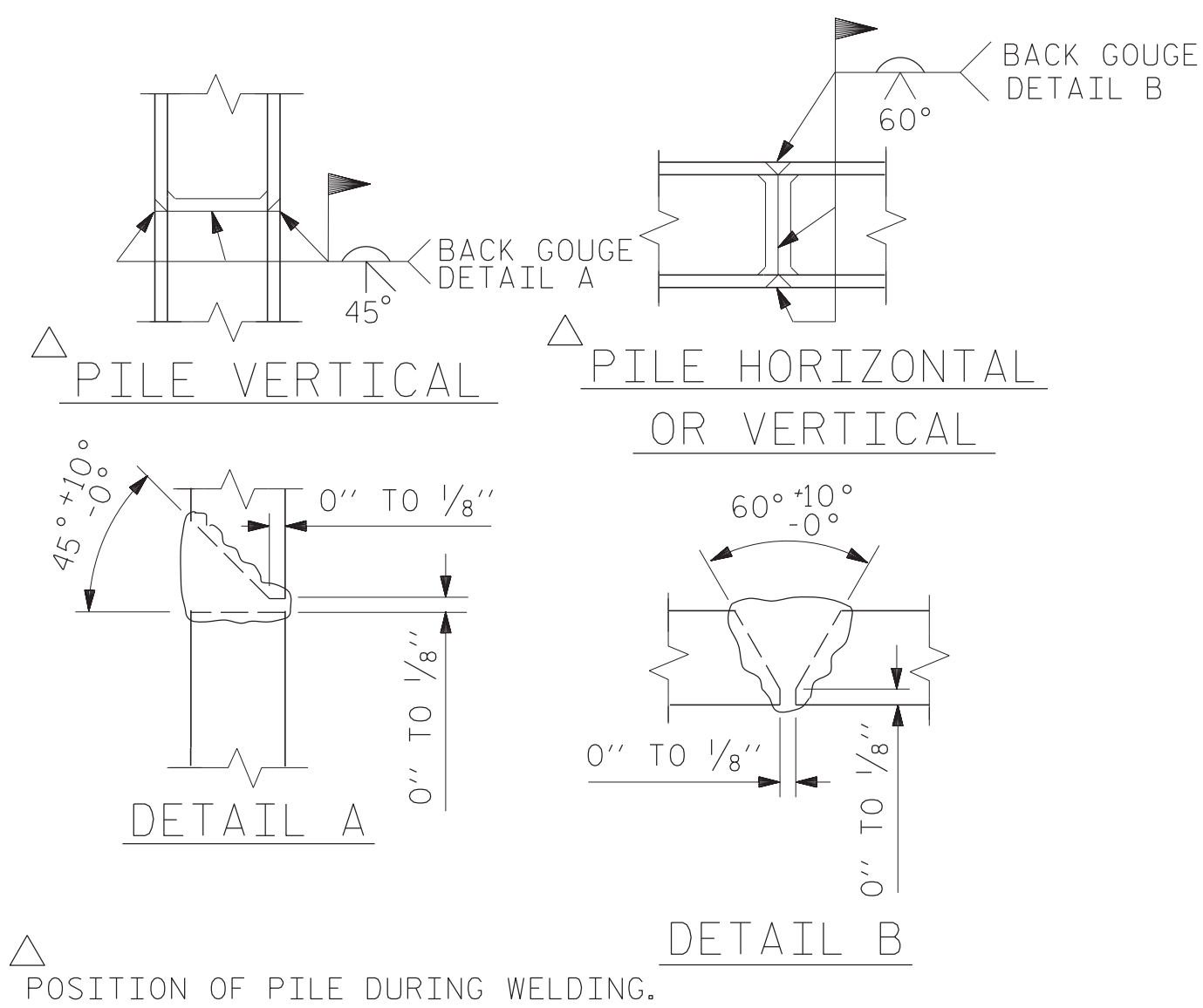


BAGGED STONE AND PIPE SHALL BE PLACED IMMEDIATELY AFTER COMPLETION OF END BENT EXCAVATION. PIPE MAY BE EITHER CONCRETE, CORRUGATED STEEL, CORRUGATED ALUMINUM ALLOY, OR CORRUGATED PLASTIC. PERFORATED PIPE WILL NOT BE ALLOWED.

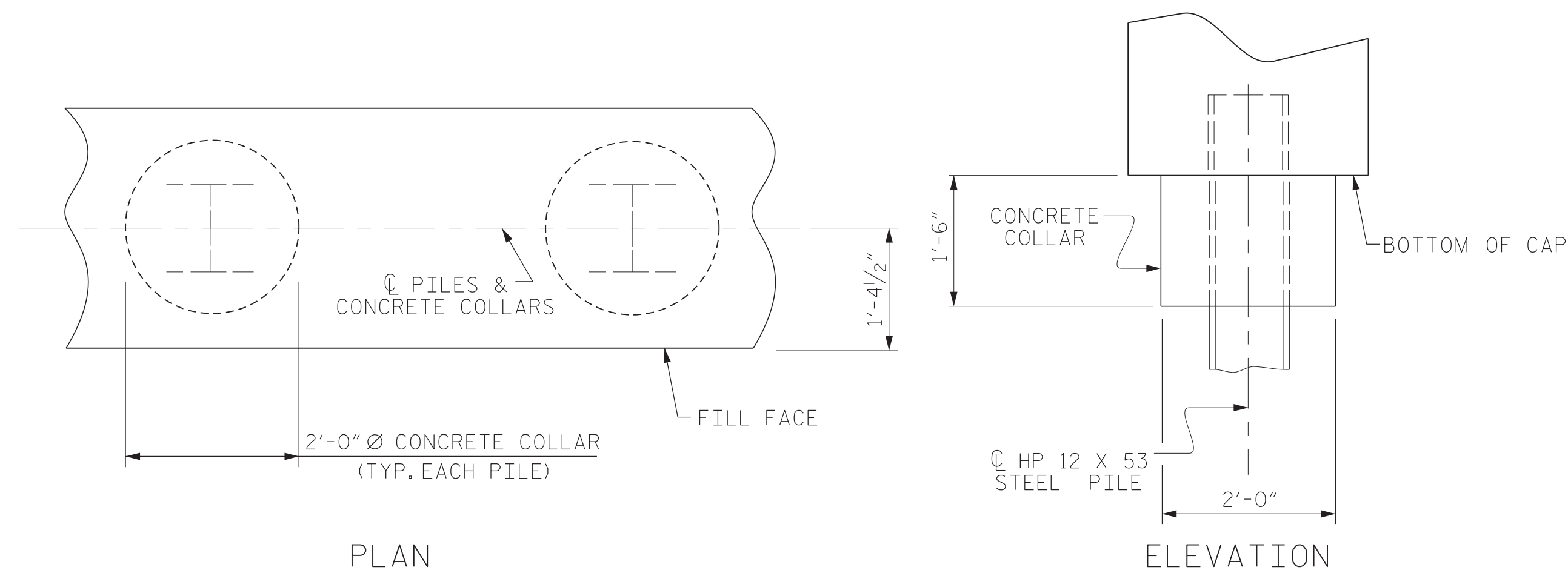
BAGGED STONE SHALL REMAIN IN PLACE UNTIL THE ENGINEER DIRECTS THAT IT BE REMOVED. THE CONTRACTOR SHALL REMOVE AND DISPOSE OF SILT ACCUMULATIONS AT BAGGED STONE WHEN SO DIRECTED BY THE ENGINEER. BAGS SHALL BE REMOVED AND REPLACED WHENEVER THE ENGINEER DETERMINES THAT THEY HAVE DETERIORATED AND LOST THEIR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

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

TEMPORARY DRAINAGE AT END BENT

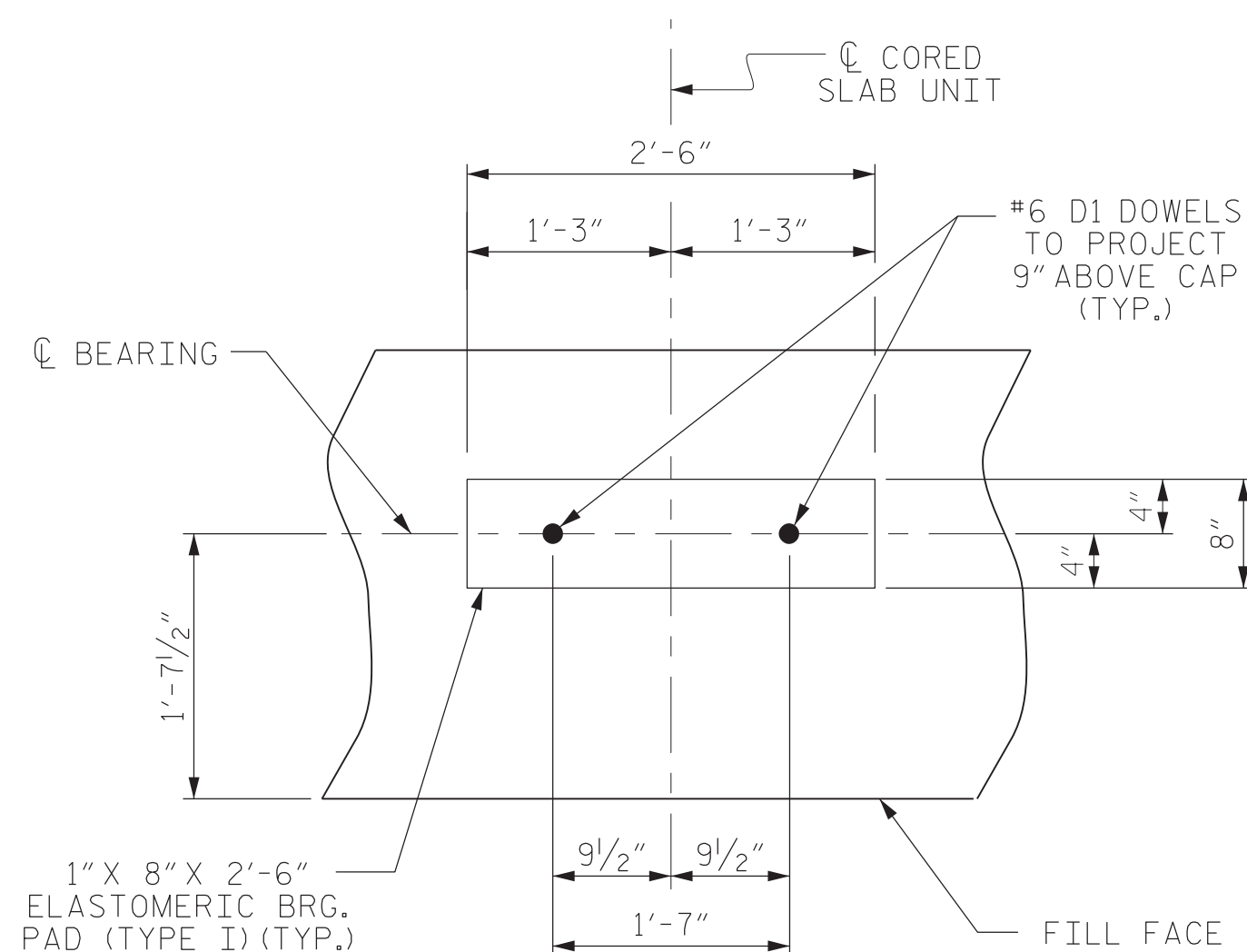


PILE SPLICE DETAILS



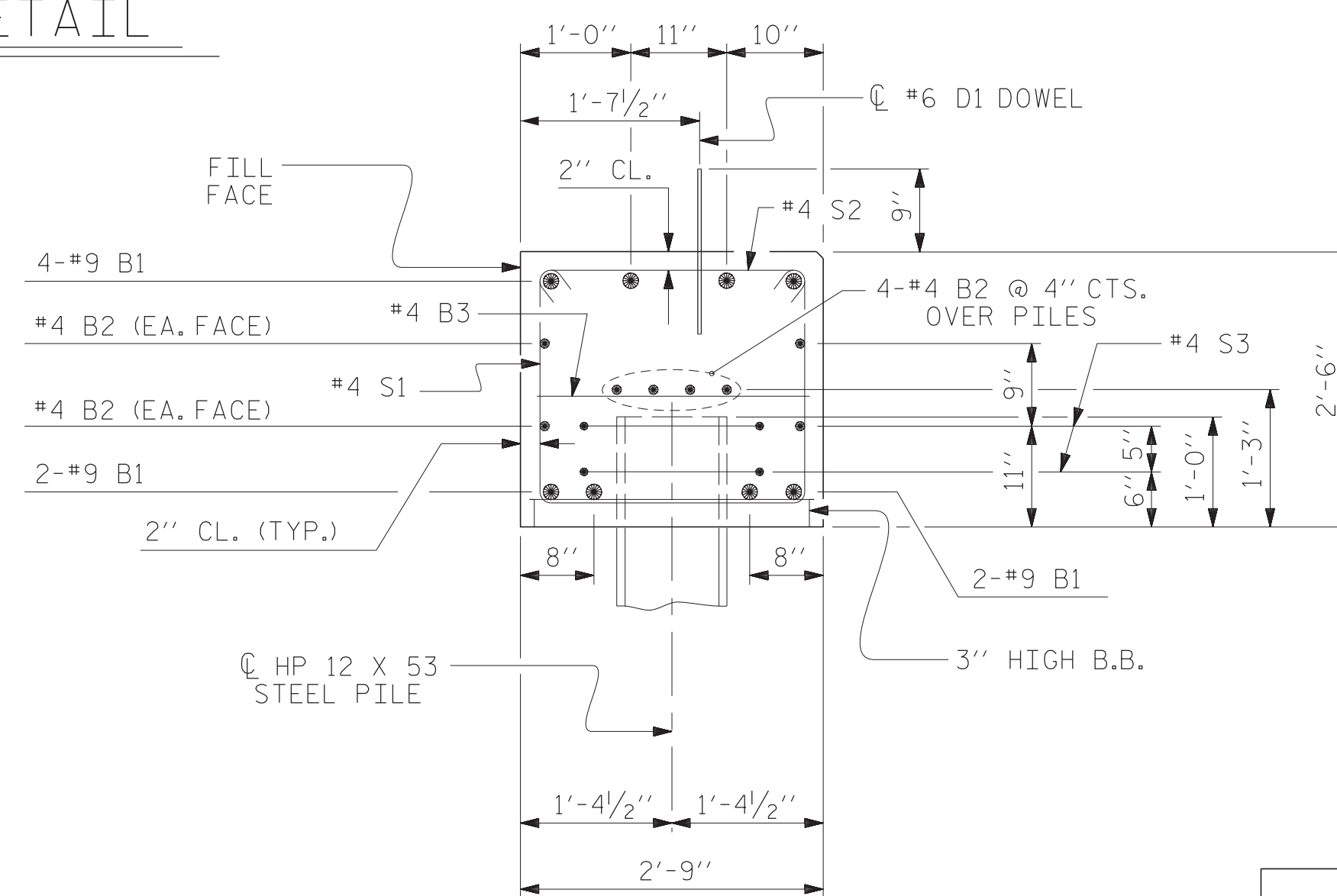
CORROSION PROTECTION FOR STEEL PILES DETAIL

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



DETAIL "A"

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



SECTION A-A

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

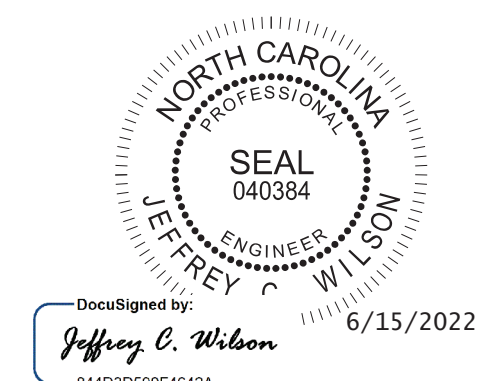
BAR TYPES	

ALL BAR DIMENSIONS ARE OUT TO OUT.

END BENT No. 1		END BENT No. 2	
HP 12 X 53 STEEL PILES NO: 7 LIN. FT.= 315	HP 12 X 53 STEEL PILES NO: 7 LIN. FT.= 315	PILE DRIVING EQUIPMENT SETUP FOR HP 12 X 53 STEEL PILES NO: 7	PILE DRIVING EQUIPMENT SETUP FOR HP 12 X 53 STEEL PILES NO: 7
PILE REDRIVES NO: 7	PILE REDRIVES NO: 7		

BILL OF MATERIAL FOR ONE END BENT					
BAR NO.	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	8	#9	1	41'-0"	1115
B2	16	#4	STR	20'-7"	220
B3	10	#4	STR	2'-5"	16
D1	22	#6	STR	1'-6"	50
H1	24	#4	2	7'-10"	126
K1	12	#4	STR	2'-11"	23
S1	50	#4	3	7'-5"	248
S2	50	#4	4	3'-2"	106
S3	14	#4	5	6'-6"	61
V1	48	#4	STR	4'-8"	150
REINFORCING STEEL (FOR ONE END BENT)					2115 LBS.
CLASS A CONCRETE BREAKDOWN (FOR ONE END BENT)					
POUR #1 CAP, LOWER PART OF WINGS & COLLARS					12.4 C.Y.
POUR #2 UPPER PART OF WINGS					1.8 C.Y.
TOTAL CLASS A CONCRETE					14.2 C.Y.

PROJECT NO. 17BP.3.R.87
 SAMPSON COUNTY
 STATION: 15+93.00 -L-
 SHEET 4 OF 4



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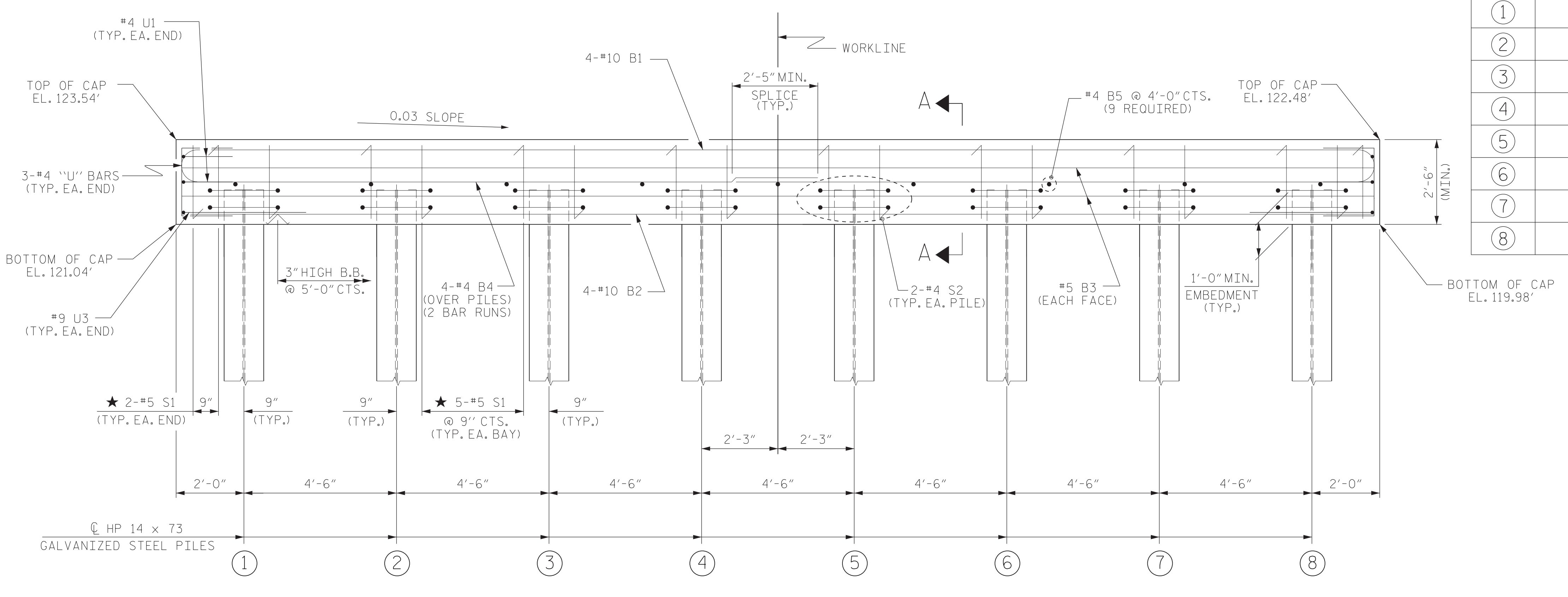
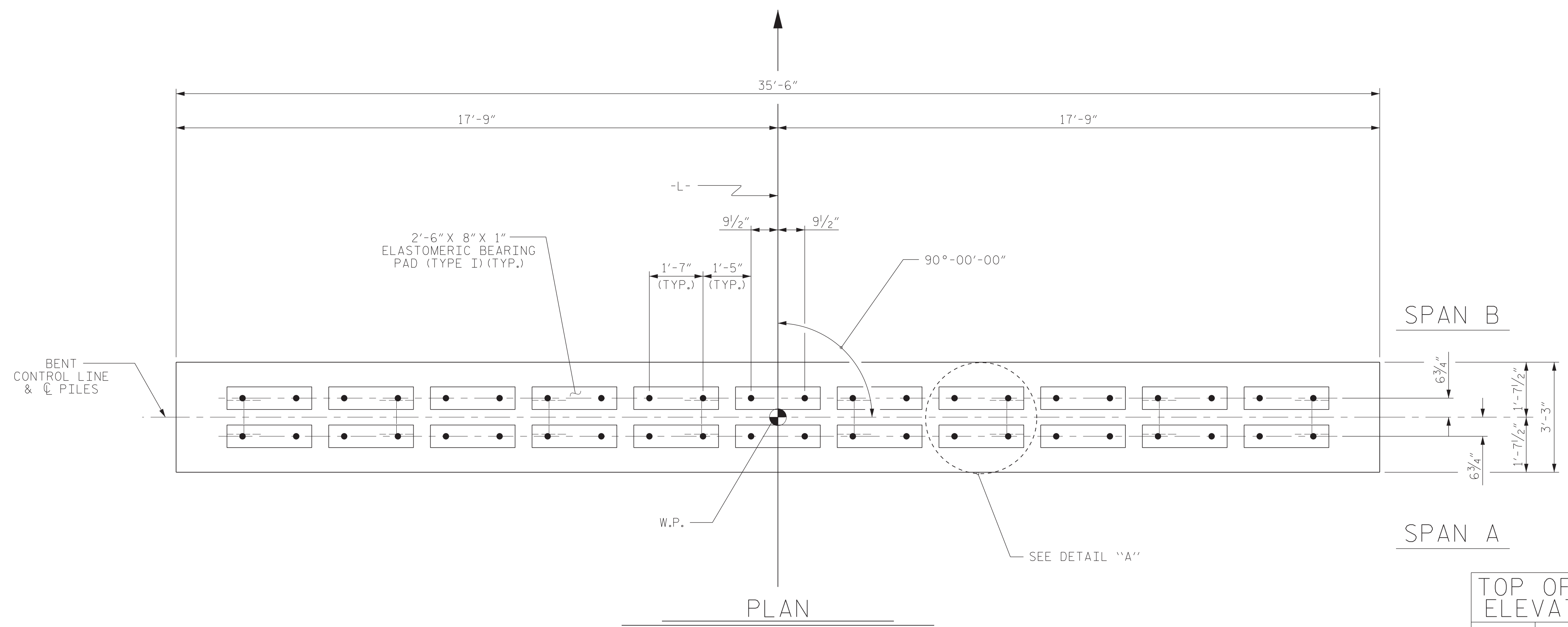
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
SUBSTRUCTURE					
END BENT No. 1 & 2 DETAILS					
REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
					S-17
					TOTAL SHEETS 23

6/14/2022
 17BP_3.R.87_SMU_E4_810122.dgn
 USER: jwilson

ASSEMBLED BY : JCW	DATE : 06/22
CHECKED BY : DRR	DATE : 06/22
DRAWN BY : DCE 12/09	REV. 4/17
CHECKED BY : MKT 01/10	MAA/THC

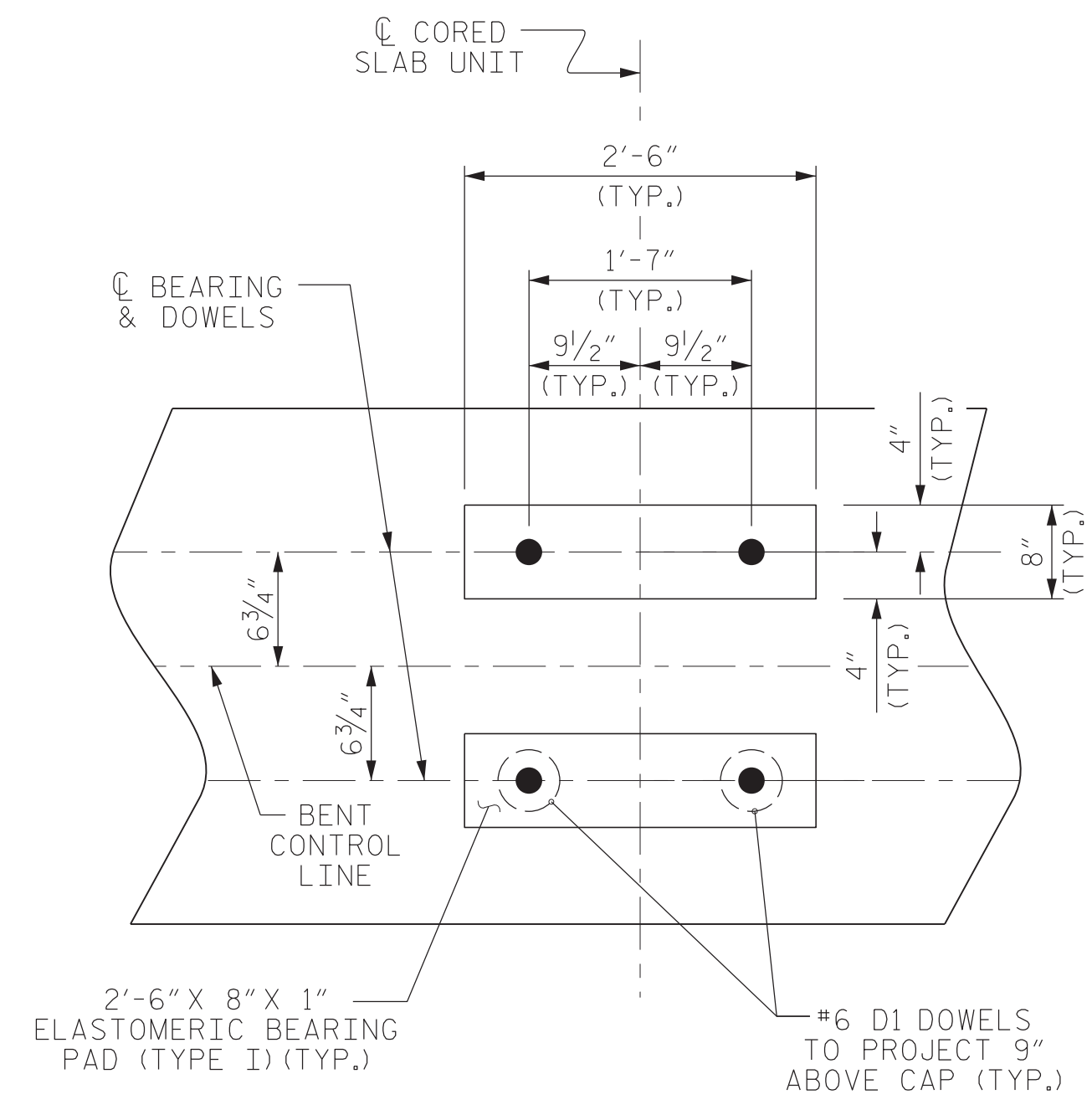
NOTES

STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR DOWELS.
 ★ INVERT ALTERNATE STIRRUPS.
 GALVANIZE THE TOP OF EACH INTERIOR BENT PILE A MINIMUM OF 29 FEET. GALVANIZE IN ACCORDANCE WITH SECTION 1076 OF THE STANDARD SPECIFICATIONS.



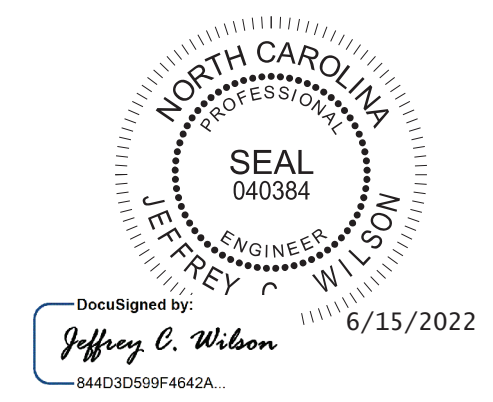
TOP OF PILE ELEVATIONS

①	121.98'
②	121.85'
③	121.71'
④	121.58'
⑤	121.44'
⑥	121.31'
⑦	121.17'
⑧	121.04'



DETAIL 'A'
 (DIMENSIONS ARE TYPICAL EACH BEARING)

PROJECT NO. 17BP.3.R.87
 SAMPSON COUNTY
 STATION: 15+93.00 -L-
 SHEET 1 OF 2



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STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

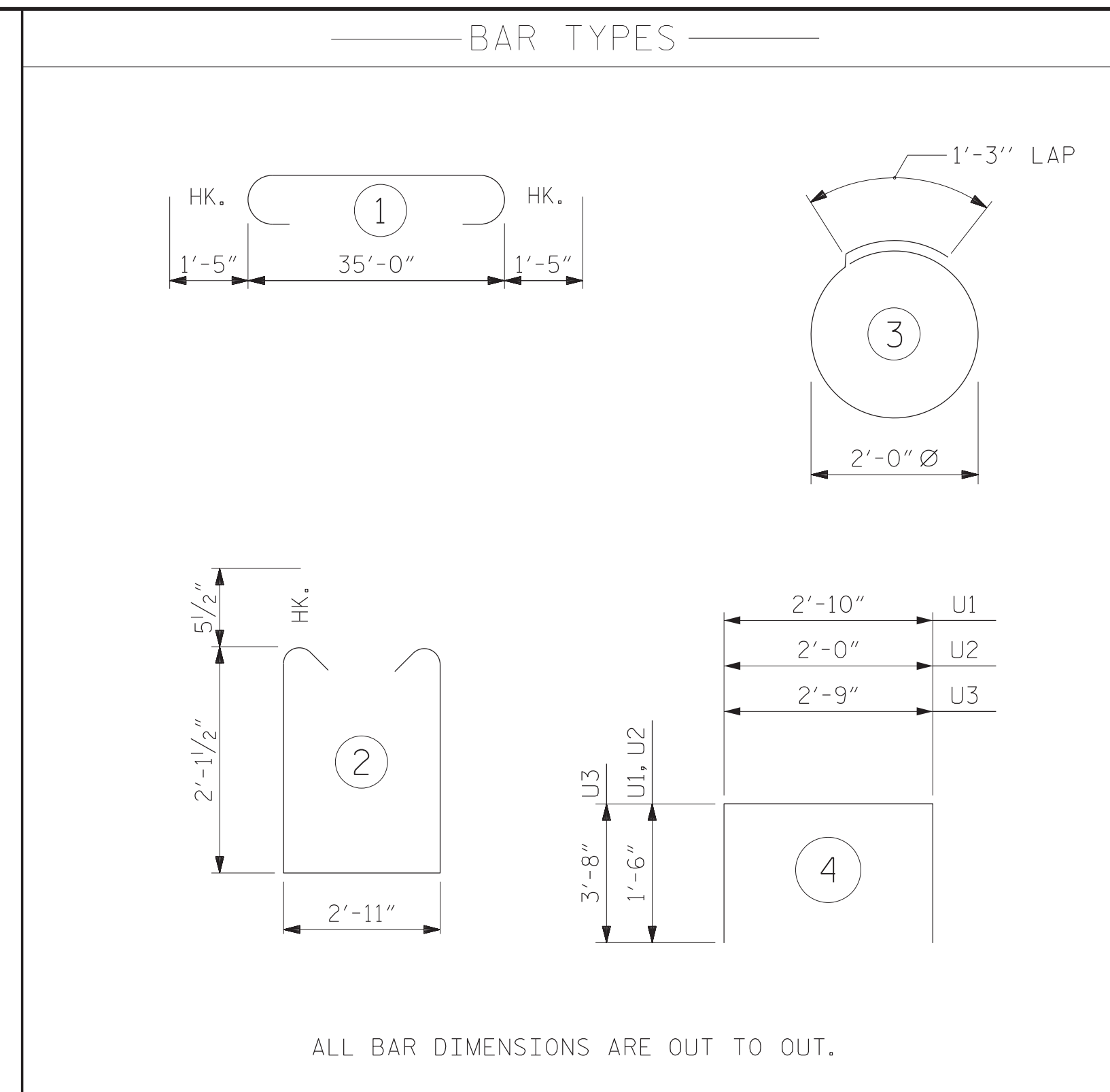
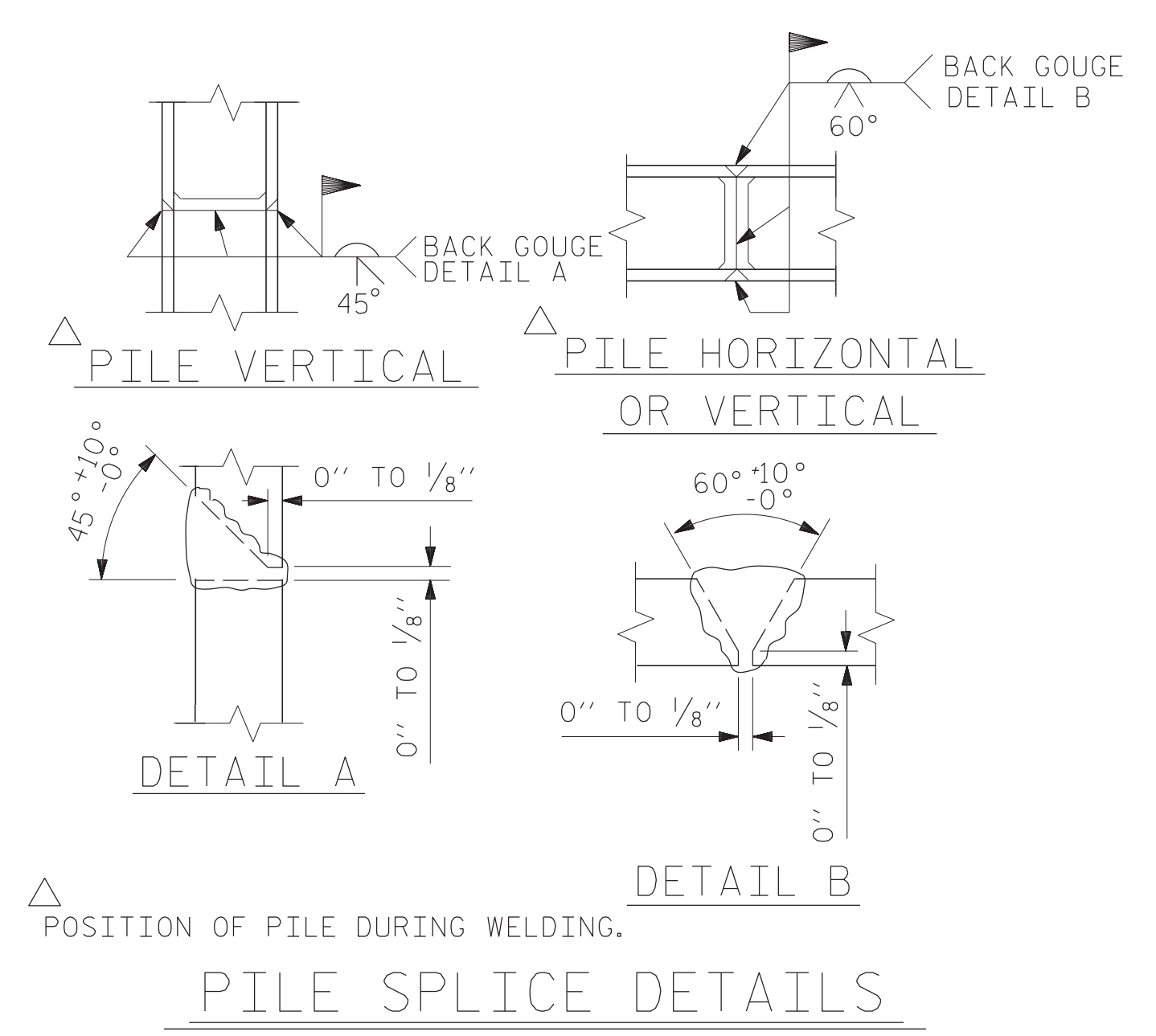
SUBSTRUCTURE BENT No. 1

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

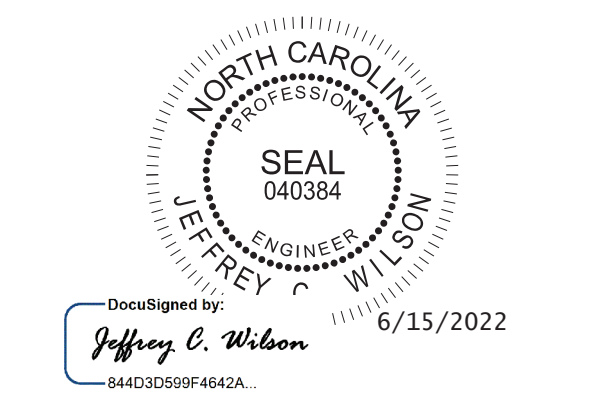
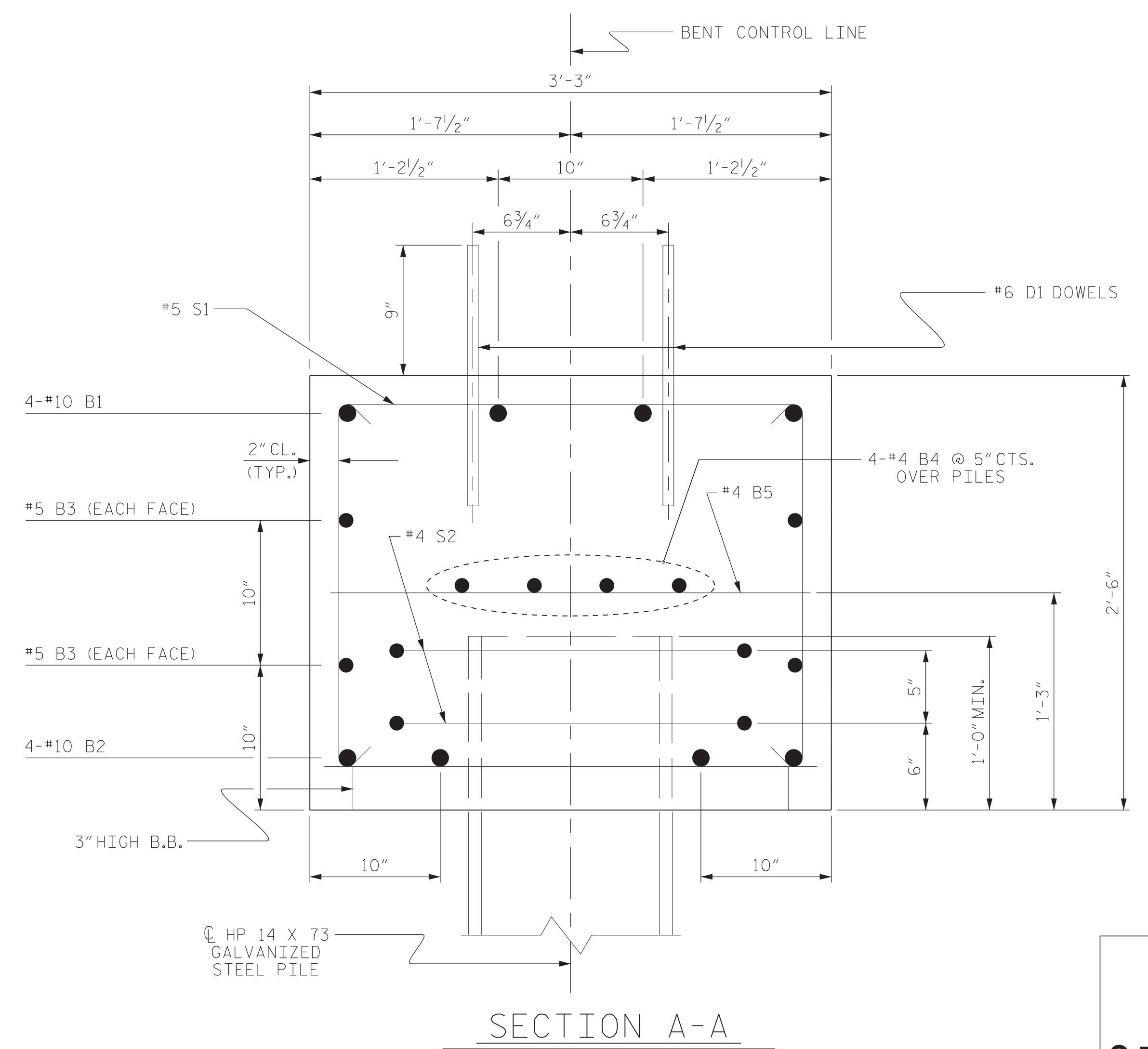
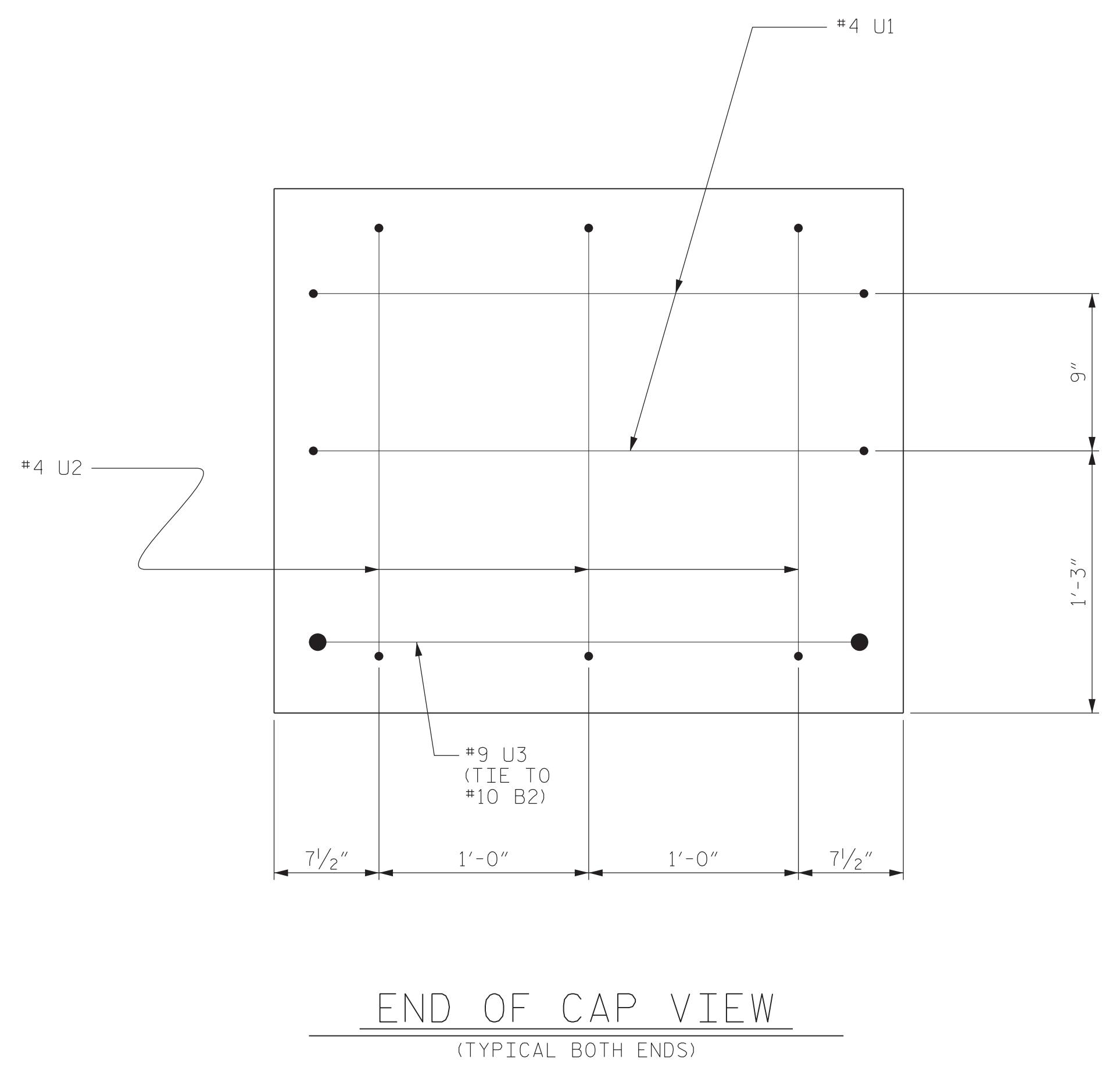
6/14/2022
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 USER: jwilson

ASSEMBLED BY : JCW	DATE : 06/22
CHECKED BY : DRR	DATE : 06/22
DRAWN BY : DGE 05/10	REV. 6/17 MAA/THC
CHECKED BY : MKT 05/10	

ELEVATION
 FOR SECTION A-A, SEE SHEET 2 OF 2



BILL OF MATERIAL FOR ONE BENT					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	4	#10	1	37'-10"	651
B2	4	#10	STR	35'-2"	605
B3	4	#5	STR	35'-2"	147
B4	8	#4	STR	18'-10"	101
B5	9	#4	STR	2'-11"	18
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	2	#4	4	5'-20"	8
U3	2	#9	4	10'-1"	69
REINFORCING STEEL (FOR ONE BENT)					2136 LBS
CLASS A CONCRETE BREAKDOWN (FOR ONE BENT)					
TOTAL CLASS A CONCRETE					10.7 C.Y.
HP 14 X 73 GALVANIZED STEEL PILES (FOR ONE BENT)					
No. 8					LIN. FT. 440
PILE DRIVING EQUIPMENT SETUP FOR HP 14 X 73 GALVANIZED STEEL PILES (FOR ONE BENT)					NO: 8
PILE REDRIVES					NO: 8



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PROJECT NO. 17BP.3.R.87
SAMPSON COUNTY
STATION: 15+93.00 -L-
SHEET 2 OF 2

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
SUBSTRUCTURE BENT No. 1					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		

SHEET NO. S-19
TOTAL SHEETS 23

6/14/2022
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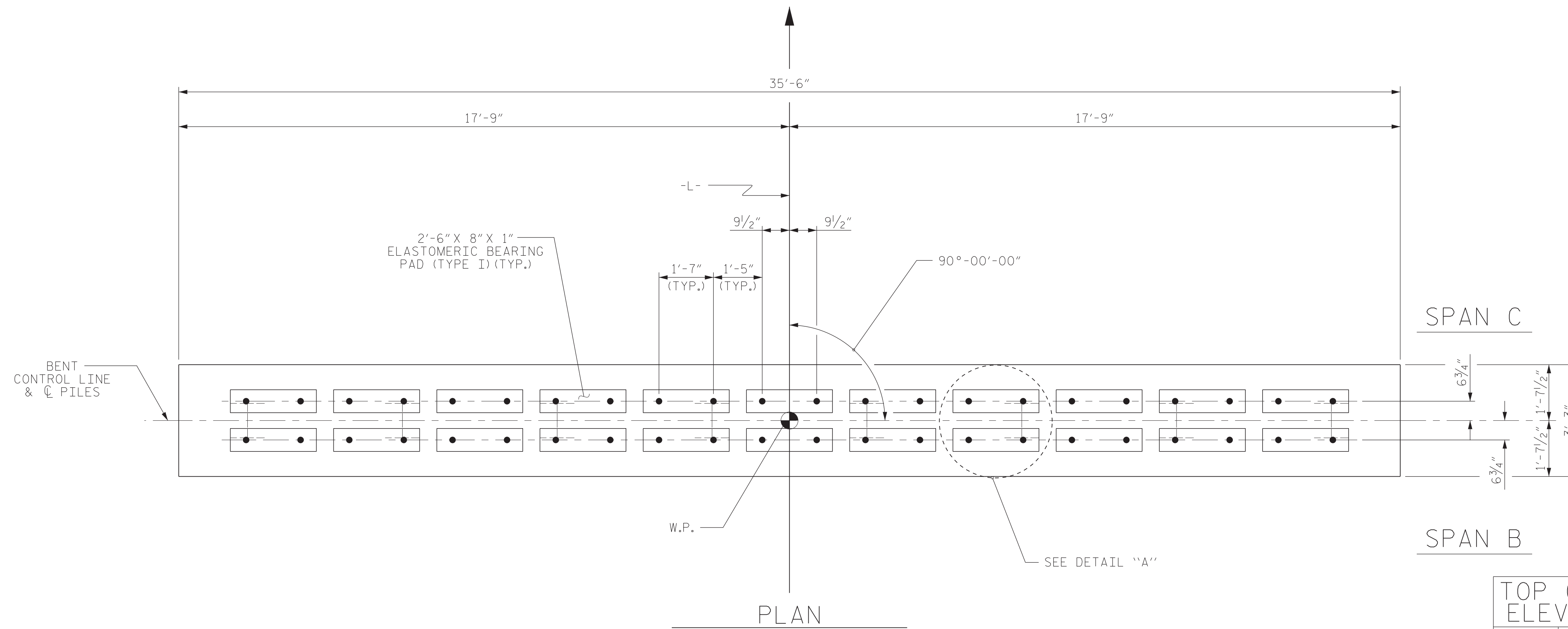
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CHECKED BY : DRR	DATE : 06/22
DRAWN BY : DGE 05/10	REV. 6/17
CHECKED BY : MKT 05/10	MAA/THC

NOTES

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

★ INVERT ALTERNATE STIRRUPS.

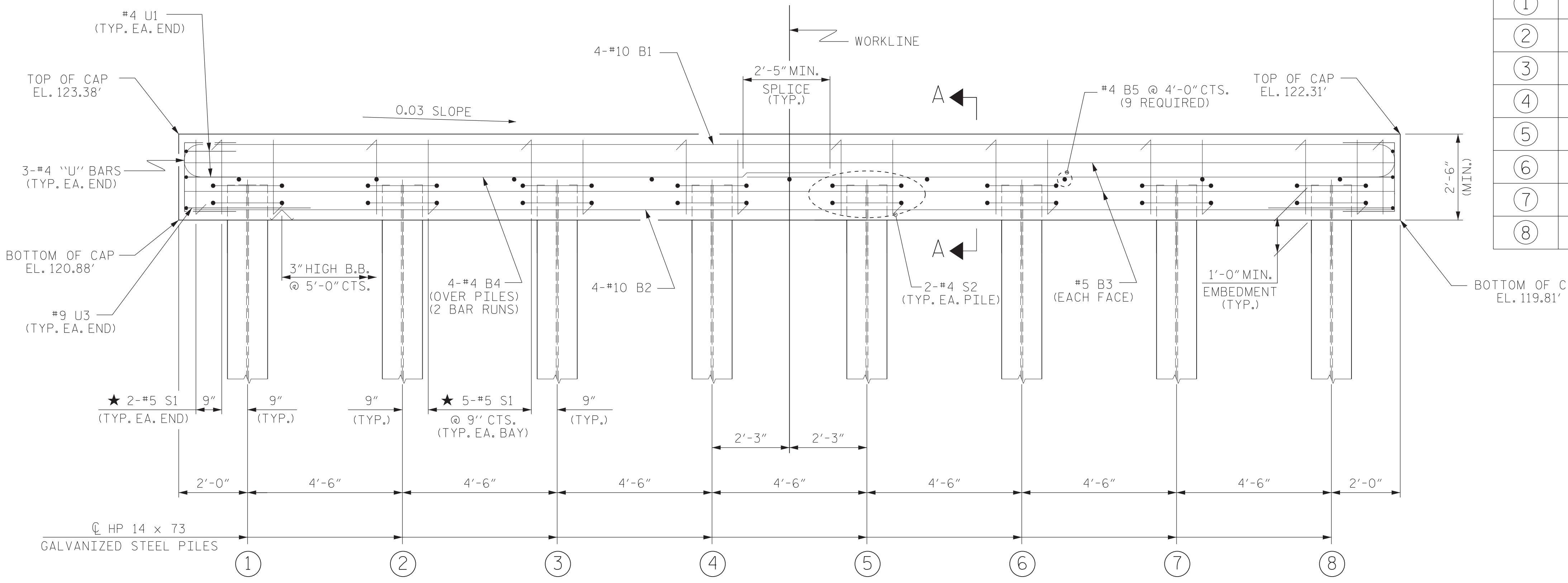
GALVANIZE THE TOP OF EACH INTERIOR BENT PILE A MINIMUM OF 29 FEET. GALVANIZE IN ACCORDANCE WITH SECTION 1076 OF THE STANDARD SPECIFICATIONS.



SPAN C

SPAN B

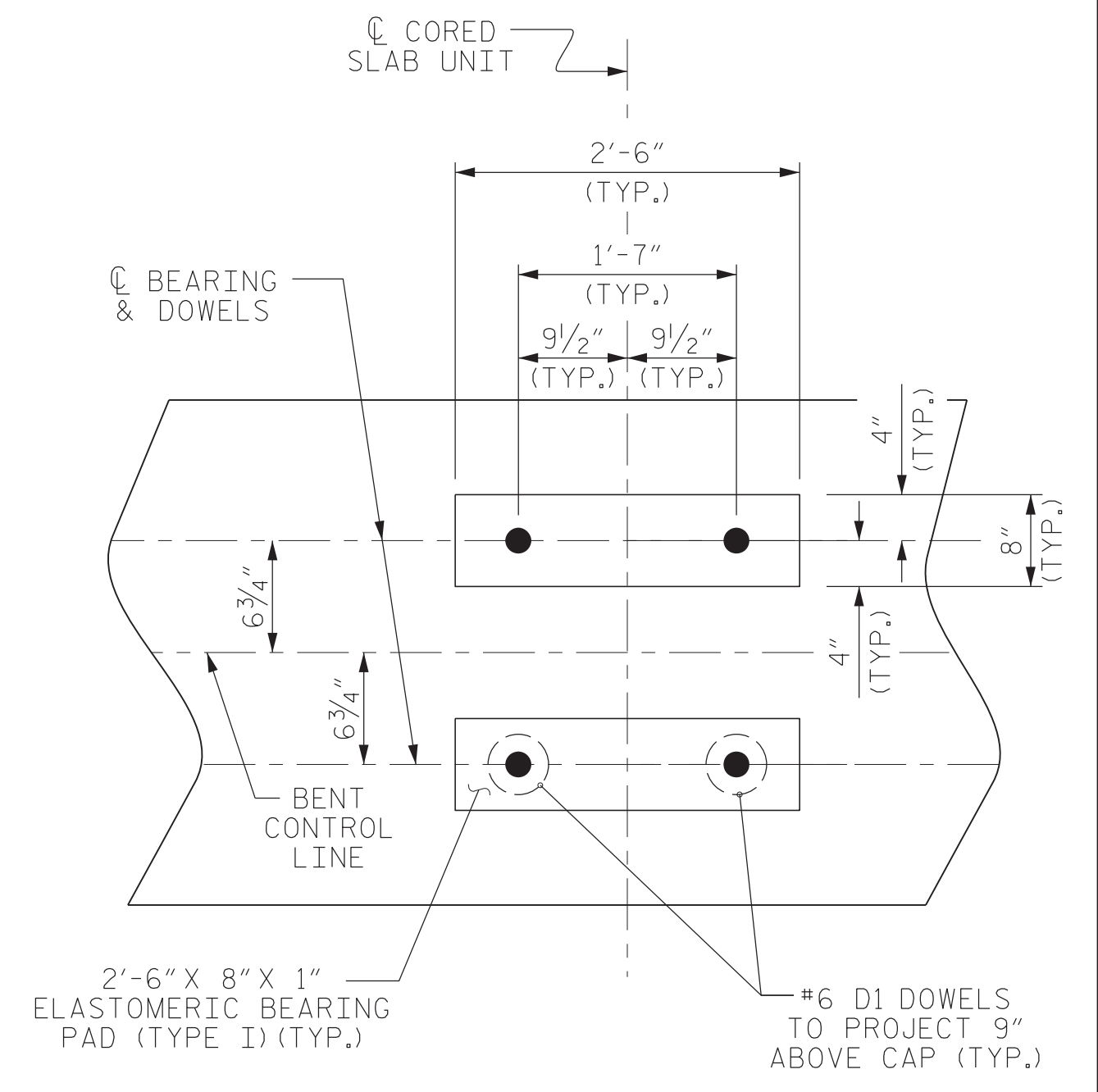
PLAN



ELEVATION

FOR SECTION A-A, SEE SHEET 2 OF 2

TOP OF PILE ELEVATIONS	
①	121.82'
②	121.68'
③	121.55'
④	121.41'
⑤	121.28'
⑥	121.14'
⑦	121.01'
⑧	120.87'

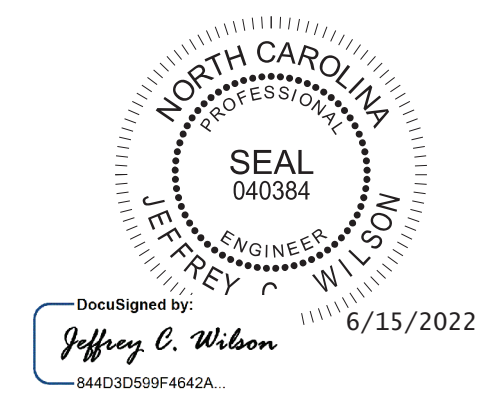


DETAIL "A"

(DIMENSIONS ARE TYPICAL EACH BEARING)

PROJECT NO. 17BP.3.R.87
 SAMPSON COUNTY
 STATION: 15+93.00 -L-

SHEET 1 OF 2



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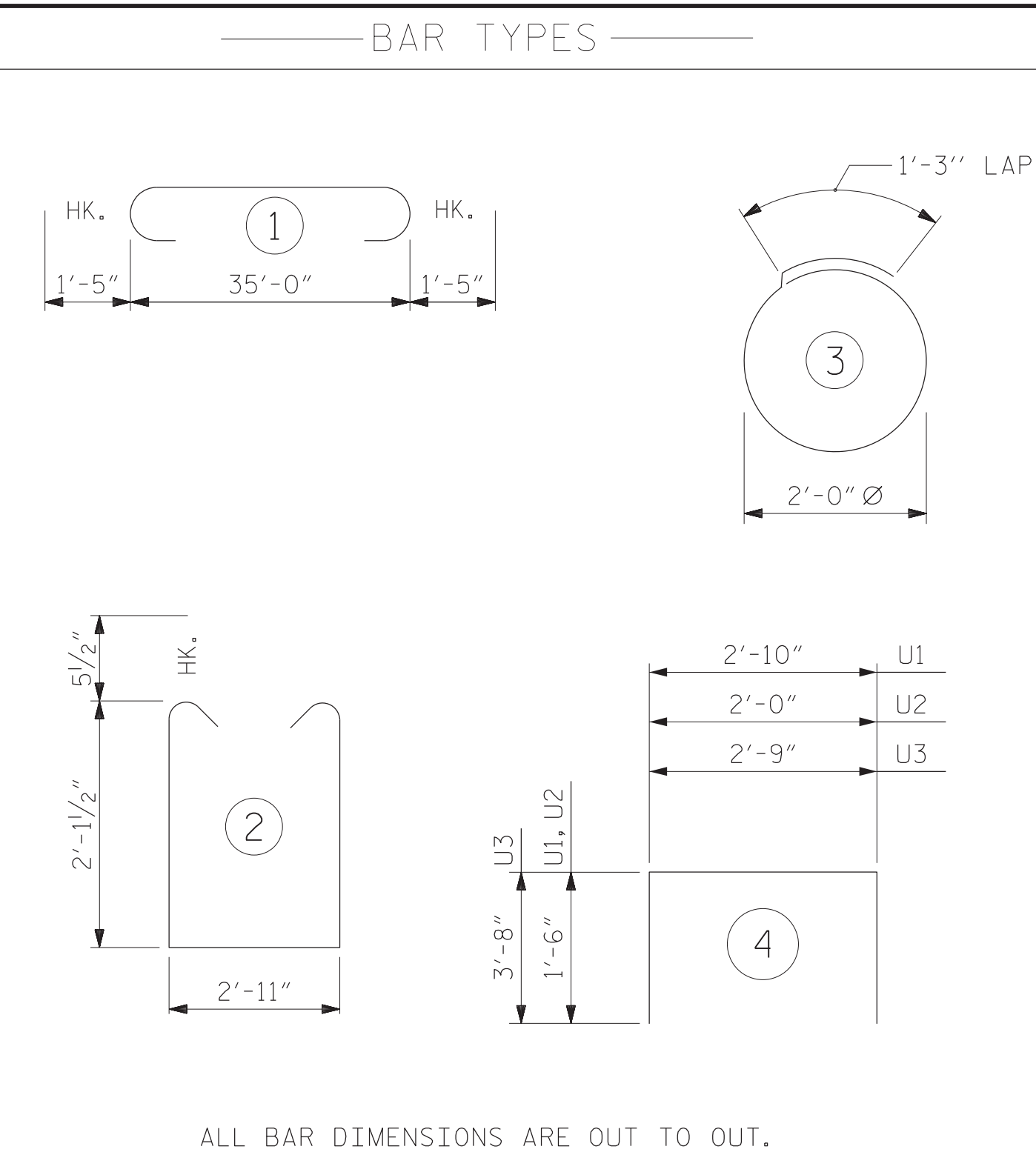
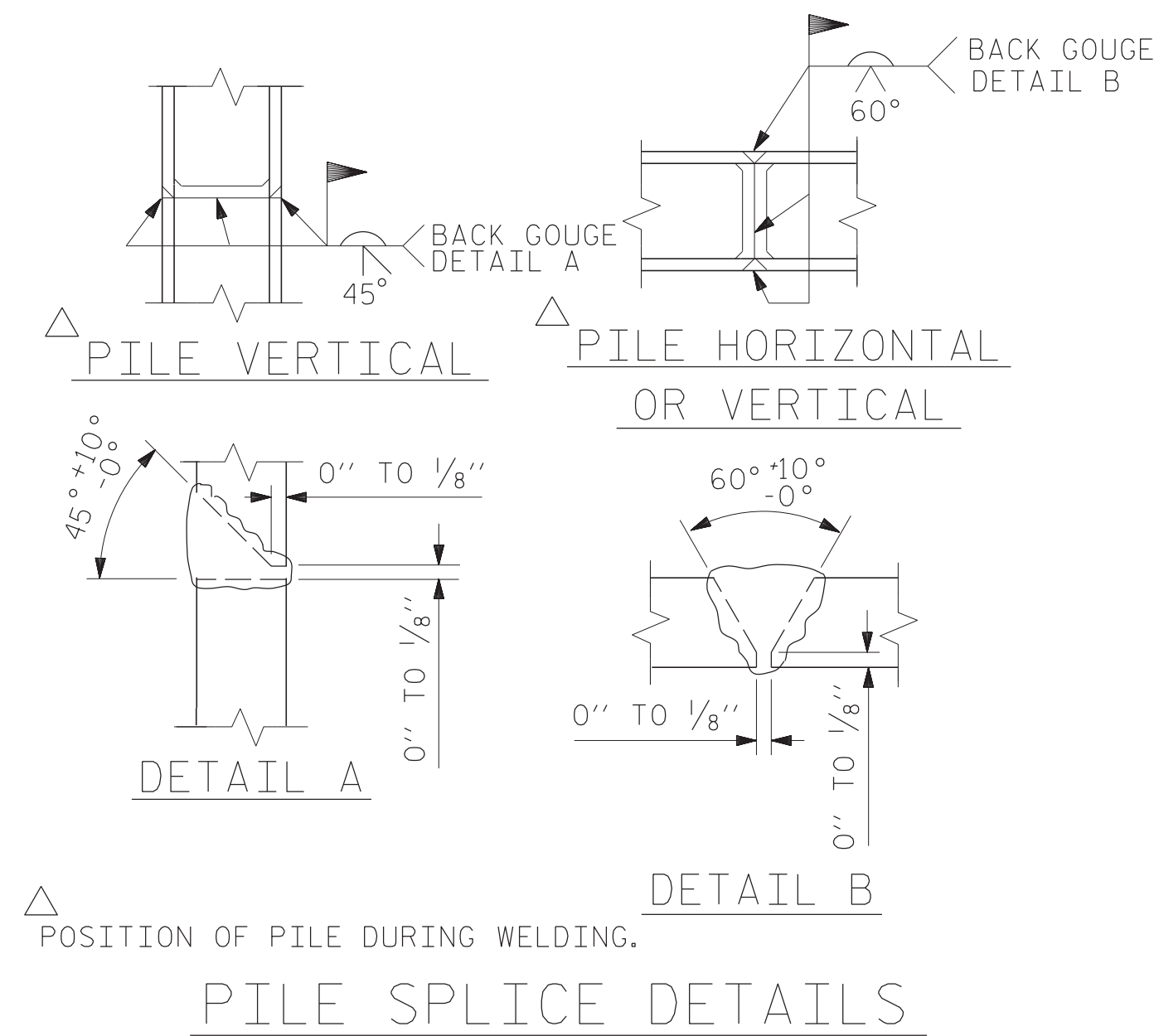
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STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
SUBSTRUCTURE BENT No. 2					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		

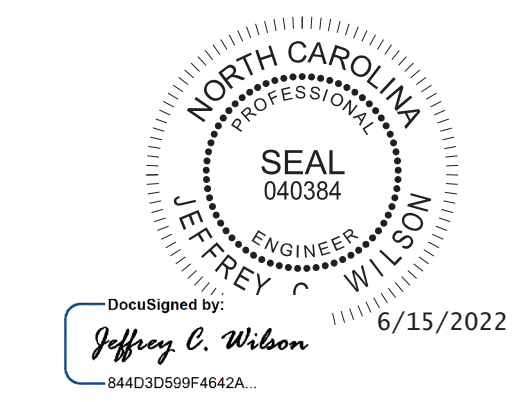
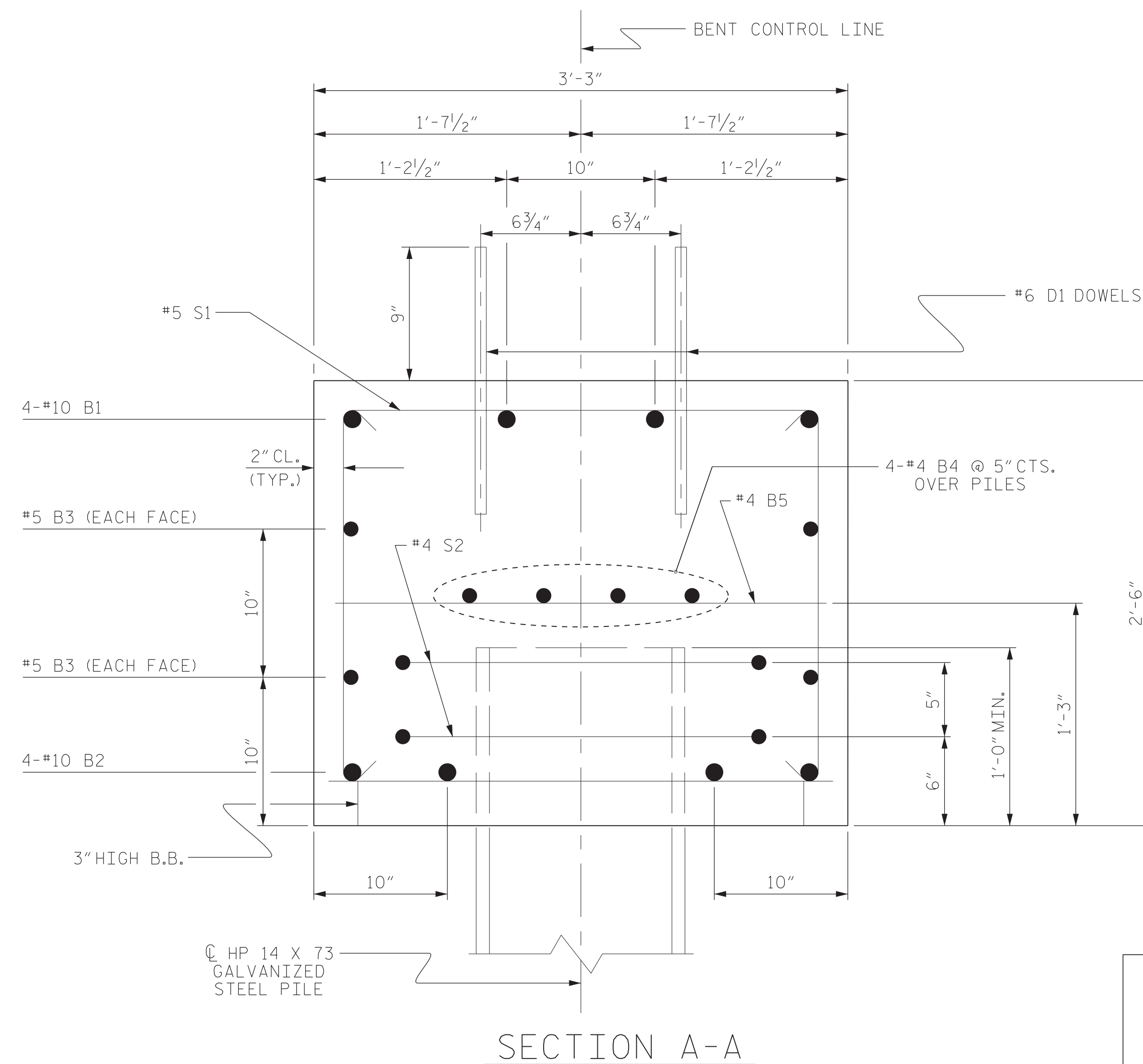
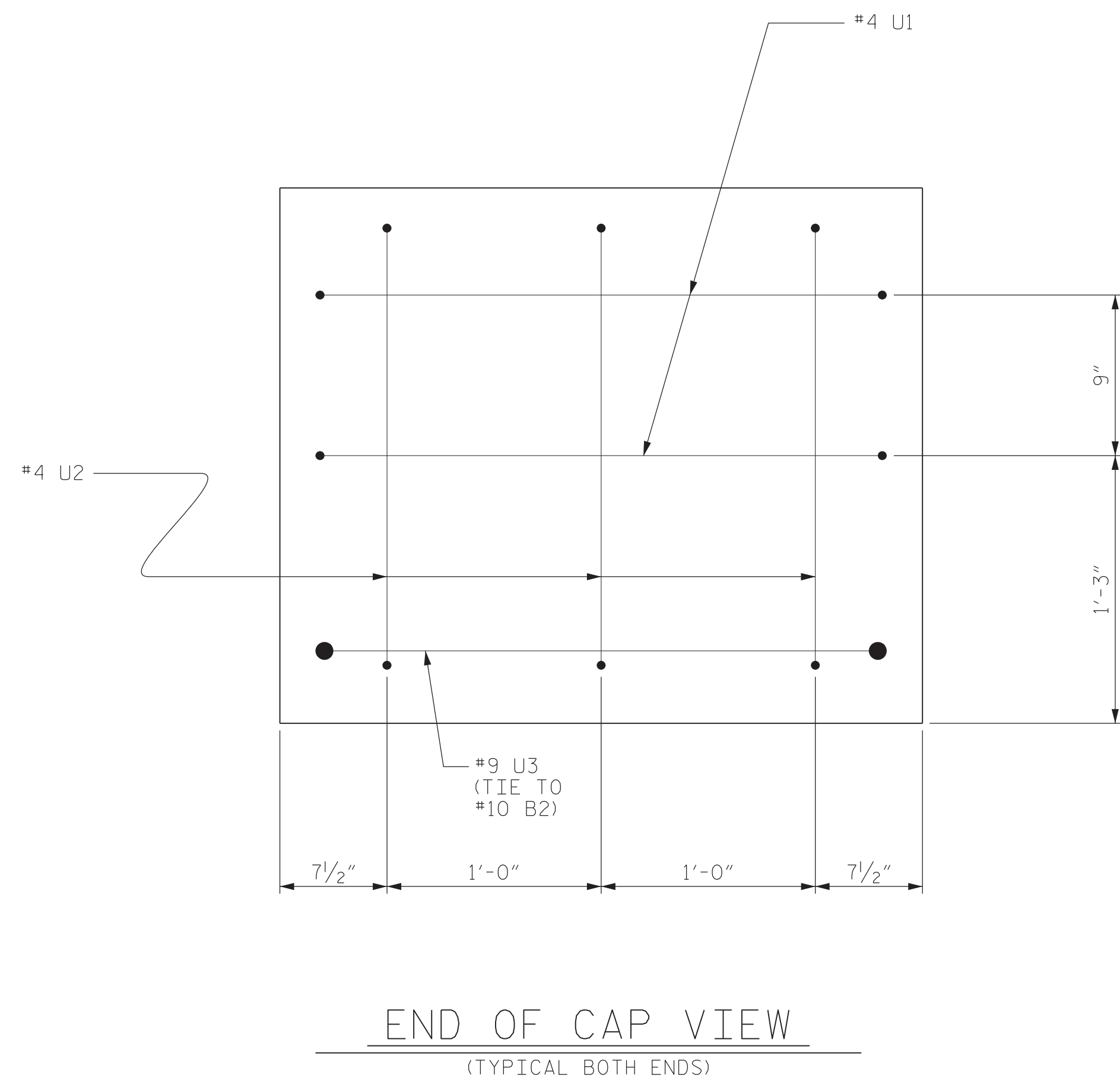
SHEET NO.	S-20
TOTAL SHEETS	23

6/14/2022
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 USER: jwilson

ASSEMBLED BY :	JCW	DATE :	06/22
CHECKED BY :	DRR	DATE :	06/22
DRAWN BY :	DGE 05/10	REV. 6/17	MAA/THC
CHECKED BY :	MKT 05/10		



BILL OF MATERIAL FOR ONE BENT					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	4	#10	1	37'-10"	651
B2	4	#10	STR	35'-2"	605
B3	4	#5	STR	35'-2"	147
B4	8	#4	STR	18'-10"	101
B5	9	#4	STR	2'-11"	18
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	2	#4	4	5'-20"	8
U3	2	#9	4	10'-1"	69
REINFORCING STEEL (FOR ONE BENT)					2136 LBS
CLASS A CONCRETE BREAKDOWN (FOR ONE BENT)					
TOTAL CLASS A CONCRETE					10.7 C.Y.
HP 14 X 73 GALVANIZED STEEL PILES (FOR ONE BENT)					
No. 8					LIN. FT. 400
PILE DRIVING EQUIPMENT SETUP FOR HP 14 X 73 GALVANIZED STEEL PILES (FOR ONE BENT)					NO: 8
PILE REDRIVES					NO: 8



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PROJECT NO. 17BP.3.R.87
SAMPSON COUNTY
STATION: 15+93.00 -L-
SHEET 2 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

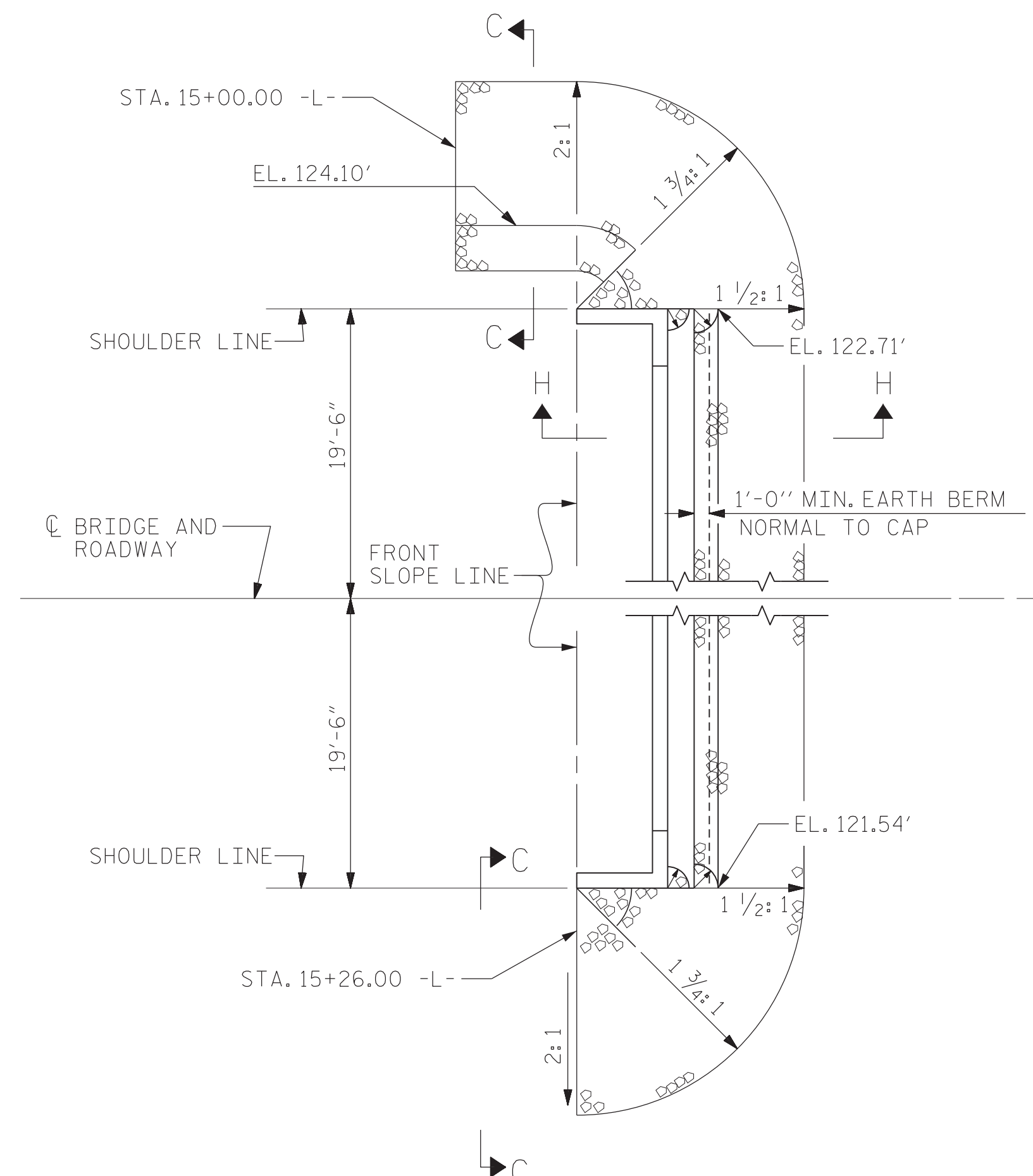
SUBSTRUCTURE
BENT No. 2

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

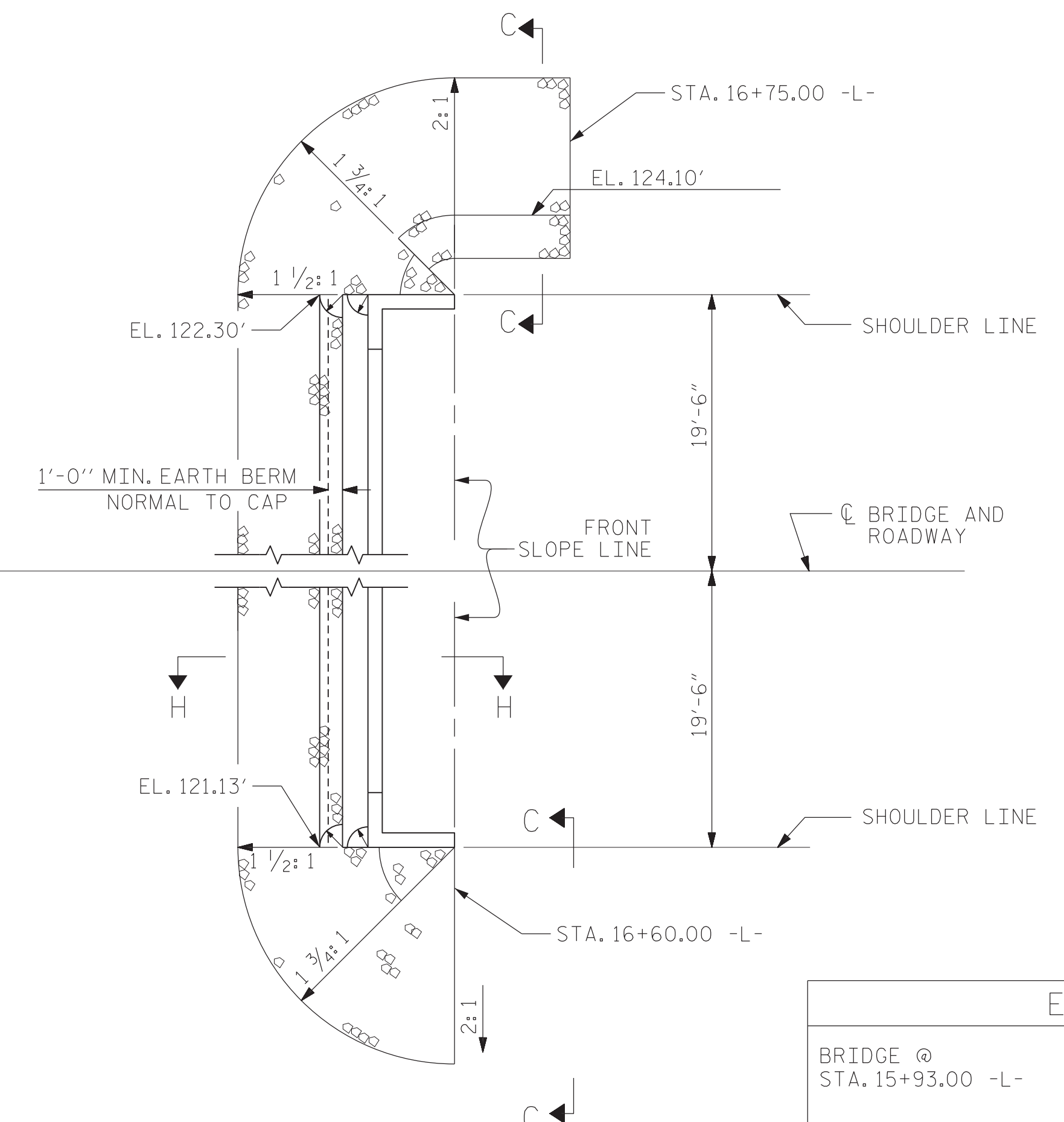
6/14/2022
17BP_3.R.87_SMU_B4_810122.dgn
USER: jwilson

ASSEMBLED BY : JCW	DATE : 06/22
CHECKED BY : DRR	DATE : 06/22
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CHECKED BY : MKT 05/10	MAA/THC

NOTES :
FOR BERM WIDTH DIMENSIONS, SEE GENERAL DRAWING.

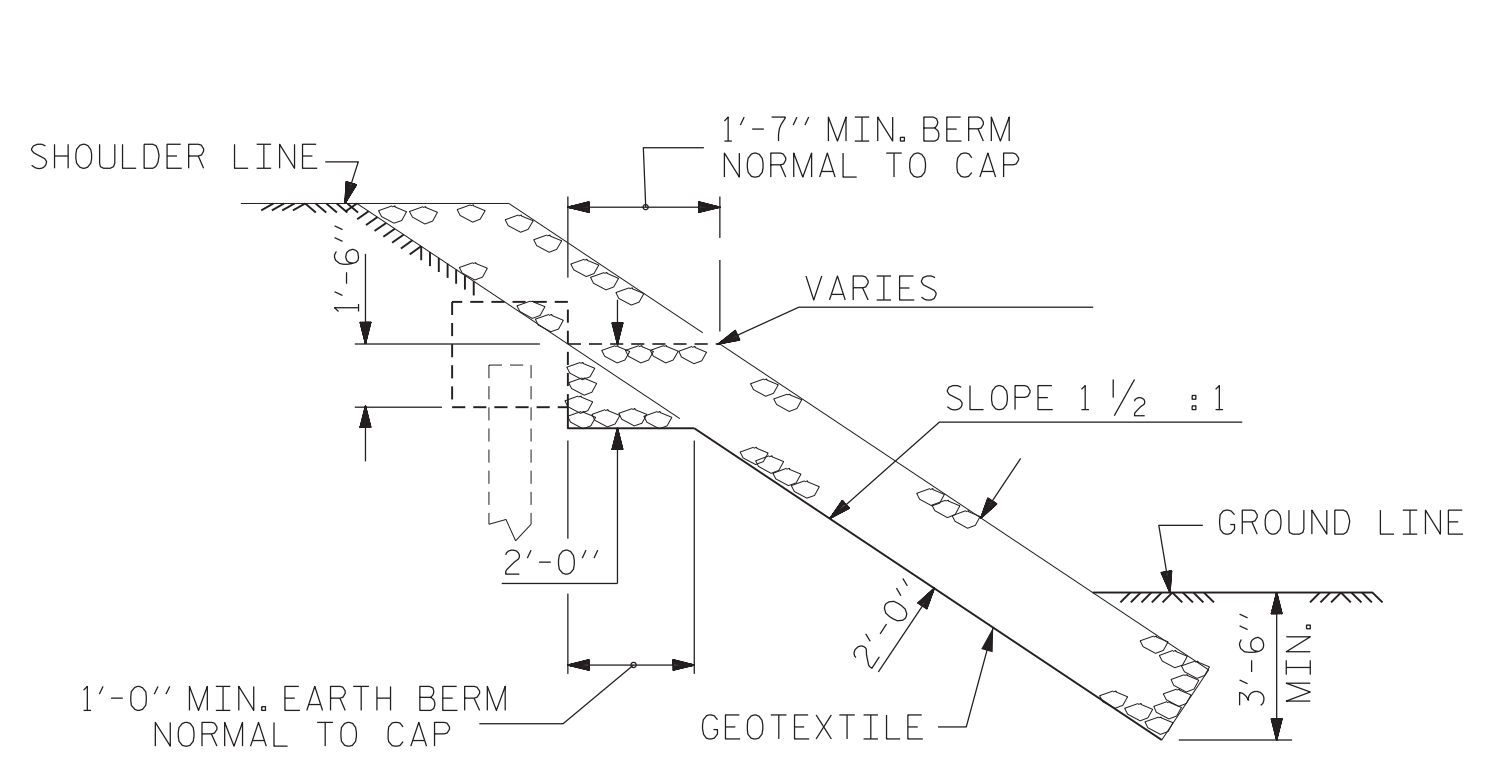


END BENT NO. 1

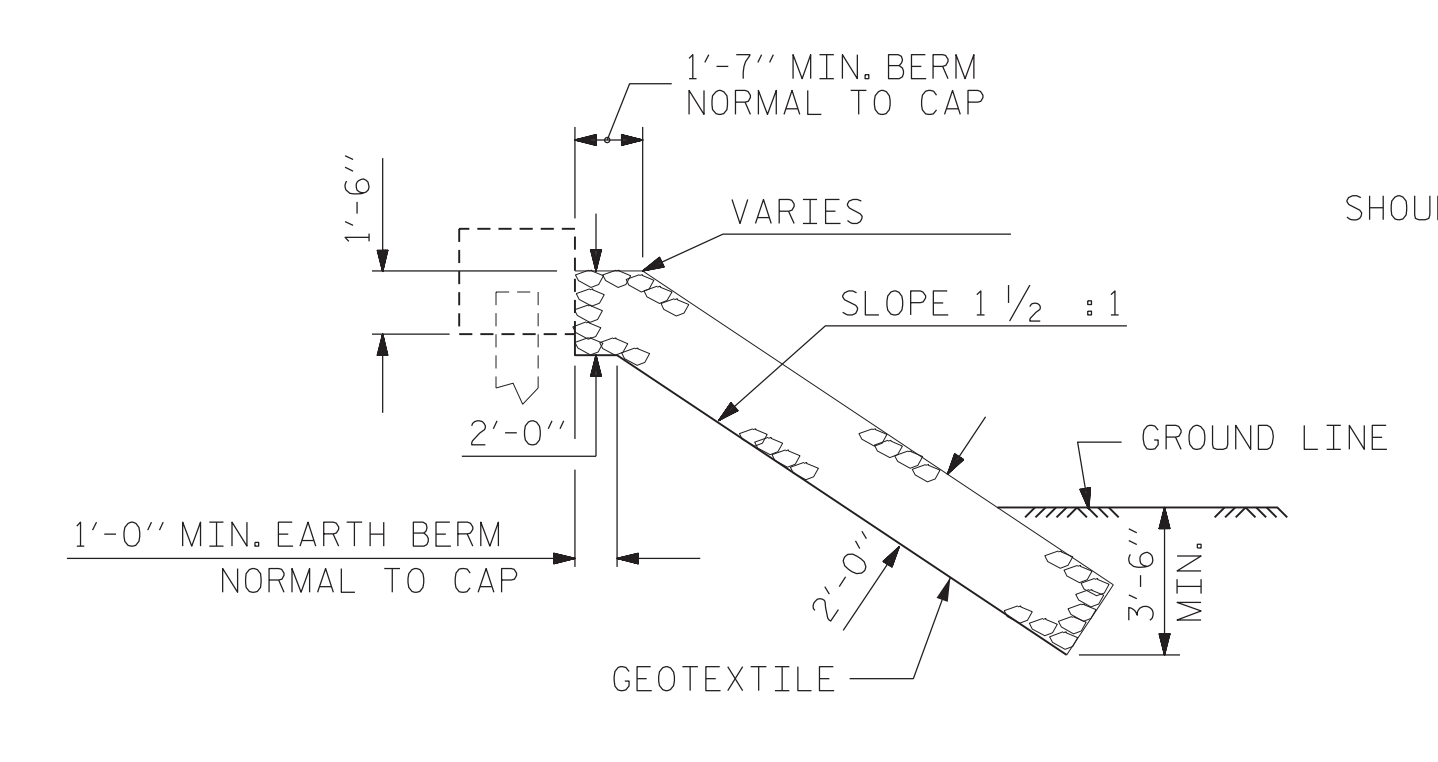


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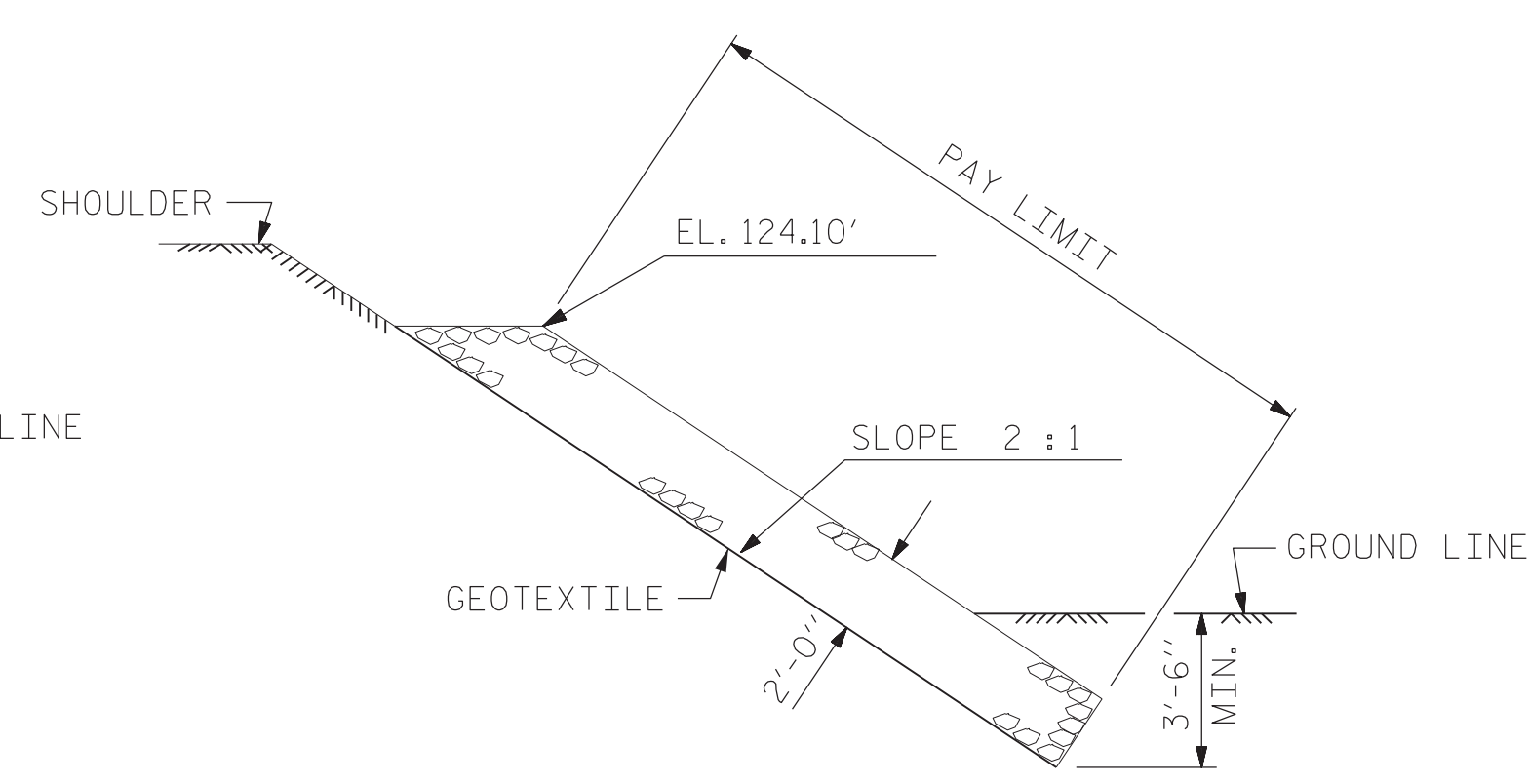
ESTIMATED QUANTITIES		
BRIDGE @ STA. 15+93.00 -L-	RIP RAP CLASS II (2'-0" THICK)	GEOTEXTILE FOR DRAINAGE
	TONS	SQUARE YARDS
END BENT 1	118	131
END BENT 2	96	107



SECTION H-H

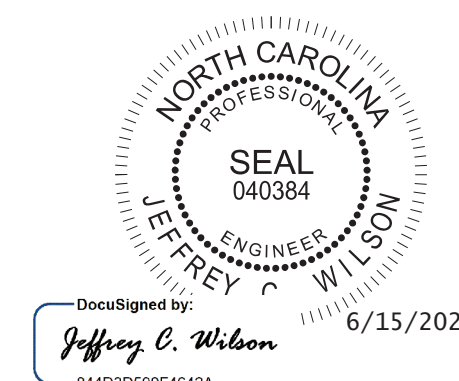


SECTION C-C
BERM RIP RAPPED



SECTION C-C

PROJECT NO. 17BP.3.R.87
SAMPSON COUNTY
STATION: 15+93.00 -L-



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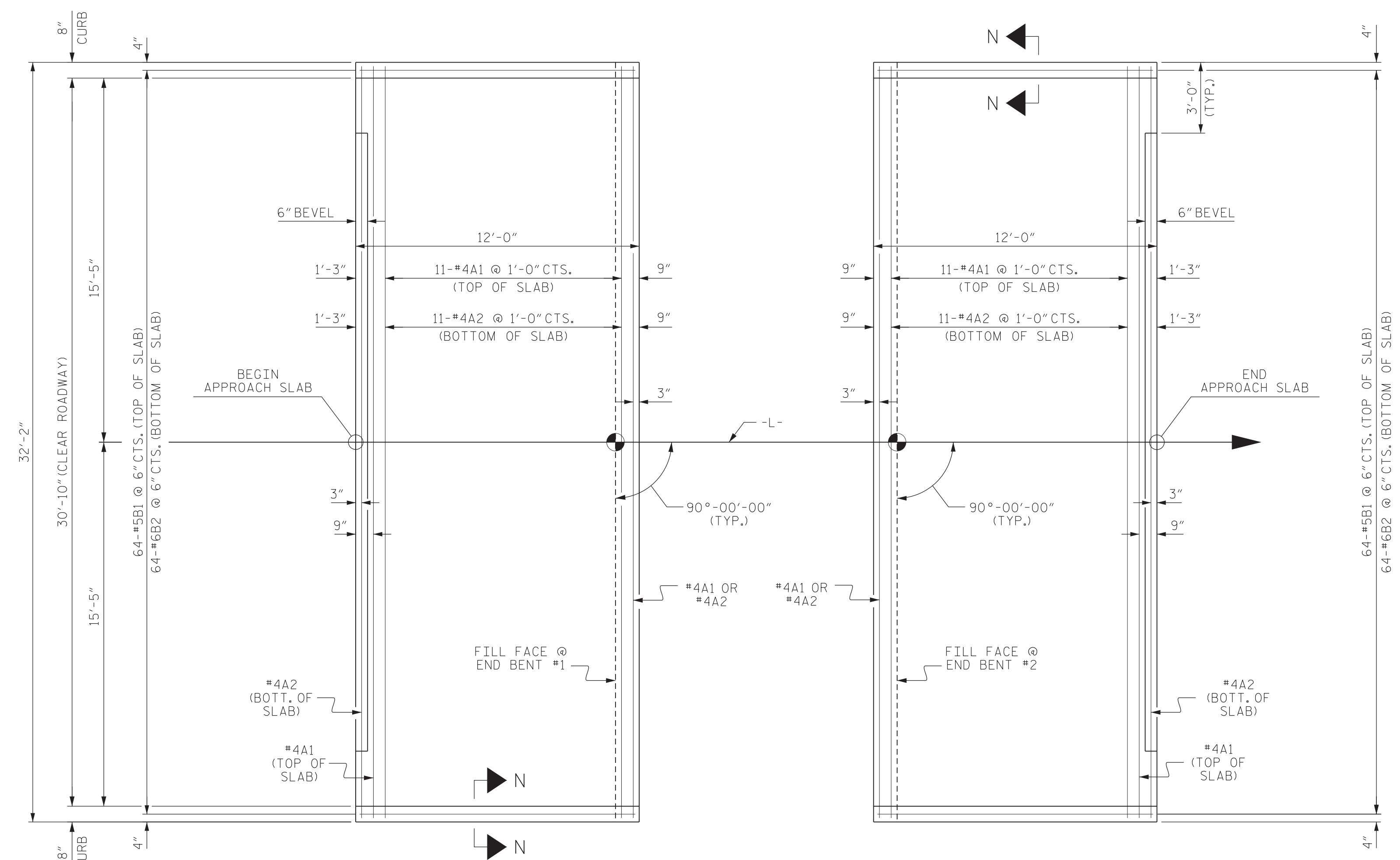
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH STANDARD RIP RAP DETAILS					
Firm License No. C-1051 223 S. West St, Suite 1100 Raleigh, NC 27603 T 919.380.8750 www.stewartinc.com					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
SHEET NO. S-22					TOTAL SHEETS 23



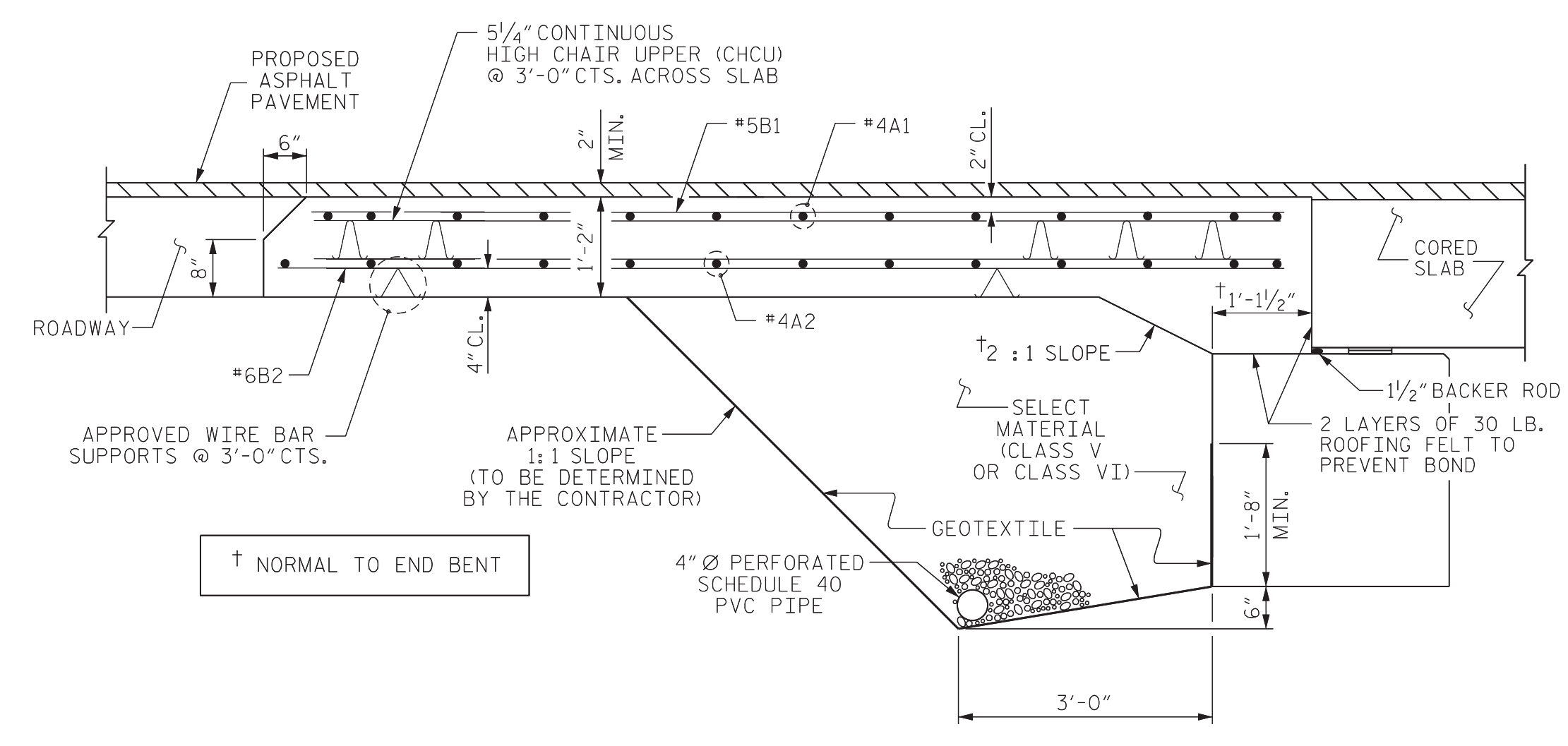
6/14/2022
17BP.3.R.87_SMU_RR-810122.dgn
USER: jwilson

ASSEMBLED BY : JCW	DATE : 06/22
CHECKED BY : DRR	DATE : 06/22
DRAWN BY : REK 1/84	REV. 10/1/11 MAA/GM
CHECKED BY : RDU 1/84	REV. 12/21/11 MAA/GM
	REV. 12/17 MAA/THC

STD. NO. RR1



PLAN @ END BENT #1
 PLAN @ END BENT #2
 DIMENSIONS SHOWN ARE TYPICAL FOR BOTH APPROACH SLABS



SECTION THRU SLAB
 (TYPE II - MODIFIED APPROACH FILL)

NOTES

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

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

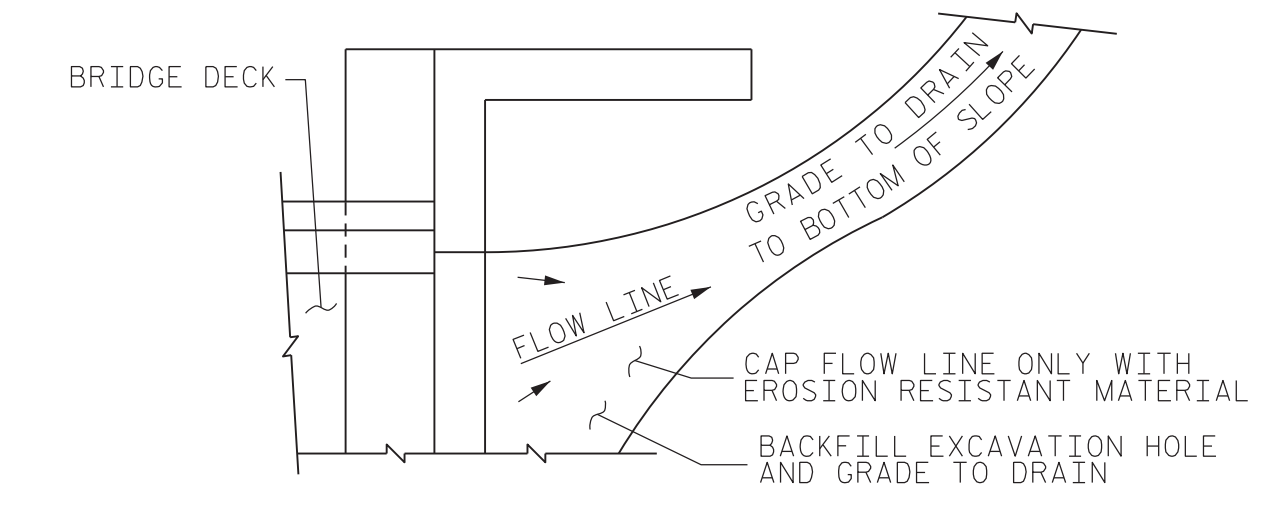
SELECT MATERIAL BACKFILL (CLASS V OR CLASS VI) SHALL BE IN ACCORDANCE WITH STANDARD SPECIFICATIONS SECTION 1016.

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

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

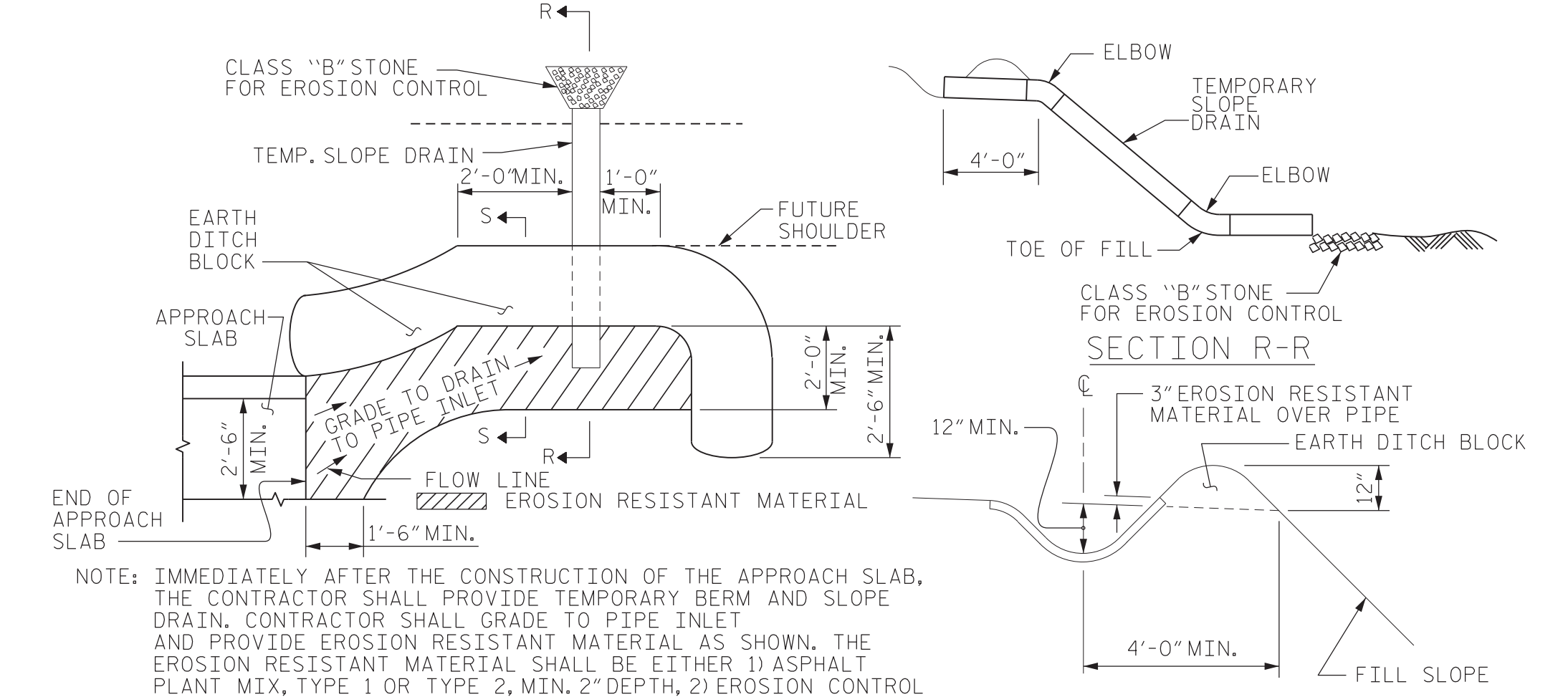
AREA BETWEEN THE WINGWALL AND APPROACH SLAB SHALL BE GRADED TO DRAIN THE WATER AWAY FROM THE FILL FACE OF THE BRIDGE AND SHALL BE PAVED. SEE ROADWAY PLANS.

APPROACH SLAB GROOVING IS NOT REQUIRED.



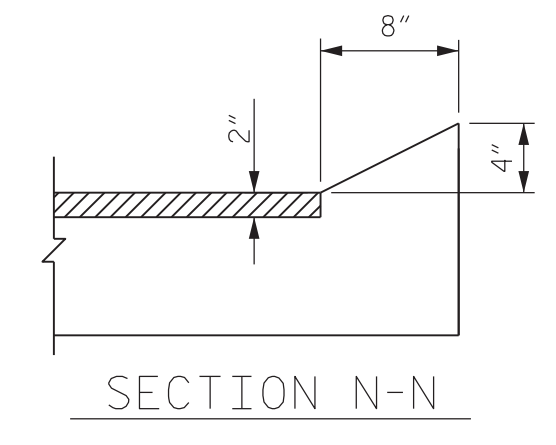
NOTE: IF THE APPROACH SLAB IS NOT CONSTRUCTED IMMEDIATELY AFTER THE BACKFILLING OF THE END BENT EXCAVATION, GRADE TO DRAIN TO THE BOTTOM OF THE SLOPE AND PROVIDE EROSION RESISTANT MATERIAL, SUCH AS FIBERGLASS ROVING OR AS DIRECTED BY THE ENGINEER TO PREVENT SOIL EROSION AND TO PROTECT THE AREA ADJACENT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

TEMPORARY DRAINAGE DETAIL



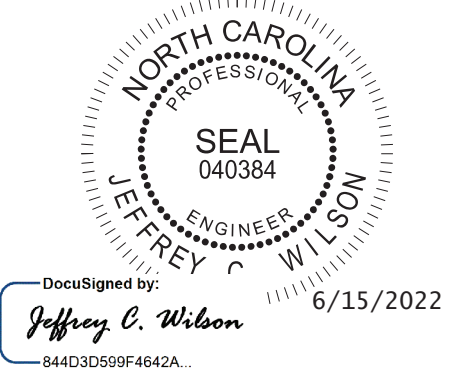
NOTE: IMMEDIATELY AFTER THE CONSTRUCTION OF THE APPROACH SLAB, THE CONTRACTOR SHALL PROVIDE TEMPORARY BERM AND SLOPE DRAIN. CONTRACTOR SHALL GRADE TO PIPE INLET AND PROVIDE EROSION RESISTANT MATERIAL AS SHOWN. THE EROSION RESISTANT MATERIAL SHALL BE EITHER 1) ASPHALT PLANT MIX, TYPE 1 OR TYPE 2, MIN.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

PLAN VIEW
 TEMPORARY BERM AND SLOPE DRAIN DETAILS
 (TO BE USED WHEN SHOULDER BERM GUTTER IS REQUIRED)



SECTION N-N
 CURB DETAILS

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



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BILL OF MATERIAL						
APPROACH SLAB AT EB #1						
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	
*A1	13	#4	STR	31'-10"	276	
A2	13	#4	STR	31'-10"	276	
*B1	64	#5	STR	11'-2"	745	
B2	64	#6	STR	11'-8"	1121	
REINFORCING STEEL					LBS.	1397
* EPOXY COATED REINFORCING STEEL					LBS.	1021
CLASS AA CONCRETE					C. Y.	18.4
APPROACH SLAB AT EB #2						
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	
*A1	13	#4	STR	31'-10"	276	
A2	13	#4	STR	31'-10"	276	
*B1	64	#5	STR	11'-2"	745	
B2	64	#6	STR	11'-8"	1121	
REINFORCING STEEL					LBS.	1397
* EPOXY COATED REINFORCING STEEL					LBS.	1021
CLASS AA CONCRETE					C. Y.	18.4

PROJECT NO. 17BP.3.R.87
 SAMPSON COUNTY
 STATION: 15+93.00 -L-

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

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

SHEET NO.
 S-23
 TOTAL SHEETS
 23

6/14/2022
 17BP.3.R.87_SMU-AS-810122.dgn
 USER: jwilson

ASSEMBLED BY : JCW	DATE : 06/22
CHECKED BY : DRR	DATE : 06/22
DRAWN BY : SHS/MAA 5-09	REV. 12-17 MAA/THC
CHECKED BY : BCH 5-09	REV. 08-19 BNB/THC

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 2018 "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 $\frac{3}{4}$ " WITH THE FOLLOWING EXCEPTIONS: TOP CORNERS OF CURBS MAY BE ROUNDED TO $1\frac{1}{2}$ " RADIUS WHICH IS BUILT INTO CURB FORMS; CORNERS OF TRANSVERSE FLOOR EXPANSION JOINTS SHALL BE ROUNDED WITH A $\frac{1}{4}$ " 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 $\frac{1}{4}$ " 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 $\frac{7}{8}$ " \emptyset SHEAR STUDS FOR THE $\frac{3}{4}$ " \emptyset STUDS SPECIFIED ON THE PLANS. THIS SUBSTITUTION SHALL BE MADE AT THE RATE OF 3 - $\frac{7}{8}$ " \emptyset STUDS FOR 4 - $\frac{3}{4}$ " \emptyset STUDS, AND STUD SPACING CHANGES SHALL BE MADE AS NECESSARY TO PROVIDE THE SAME EQUIVALENT NUMBER OF $\frac{7}{8}$ " \emptyset STUDS ALONG THE BEAM AS SHOWN FOR $\frac{3}{4}$ " \emptyset STUDS BASED ON THE RATIO OF 3 - $\frac{7}{8}$ " \emptyset STUDS FOR 4 - $\frac{3}{4}$ " \emptyset 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 $\frac{5}{16}$ " 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 $\frac{1}{16}$ " 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. FINISHES 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

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