

**This electronic collection of documents is provided  
for the convenience of the user  
and is Not a Certified Document –**

**The documents contained herein were originally issued  
and sealed by the individuals whose names and license  
numbers appear on each page, on the dates appearing  
with their signature on that page.**

**This file or an individual page  
shall not be considered a certified document.**

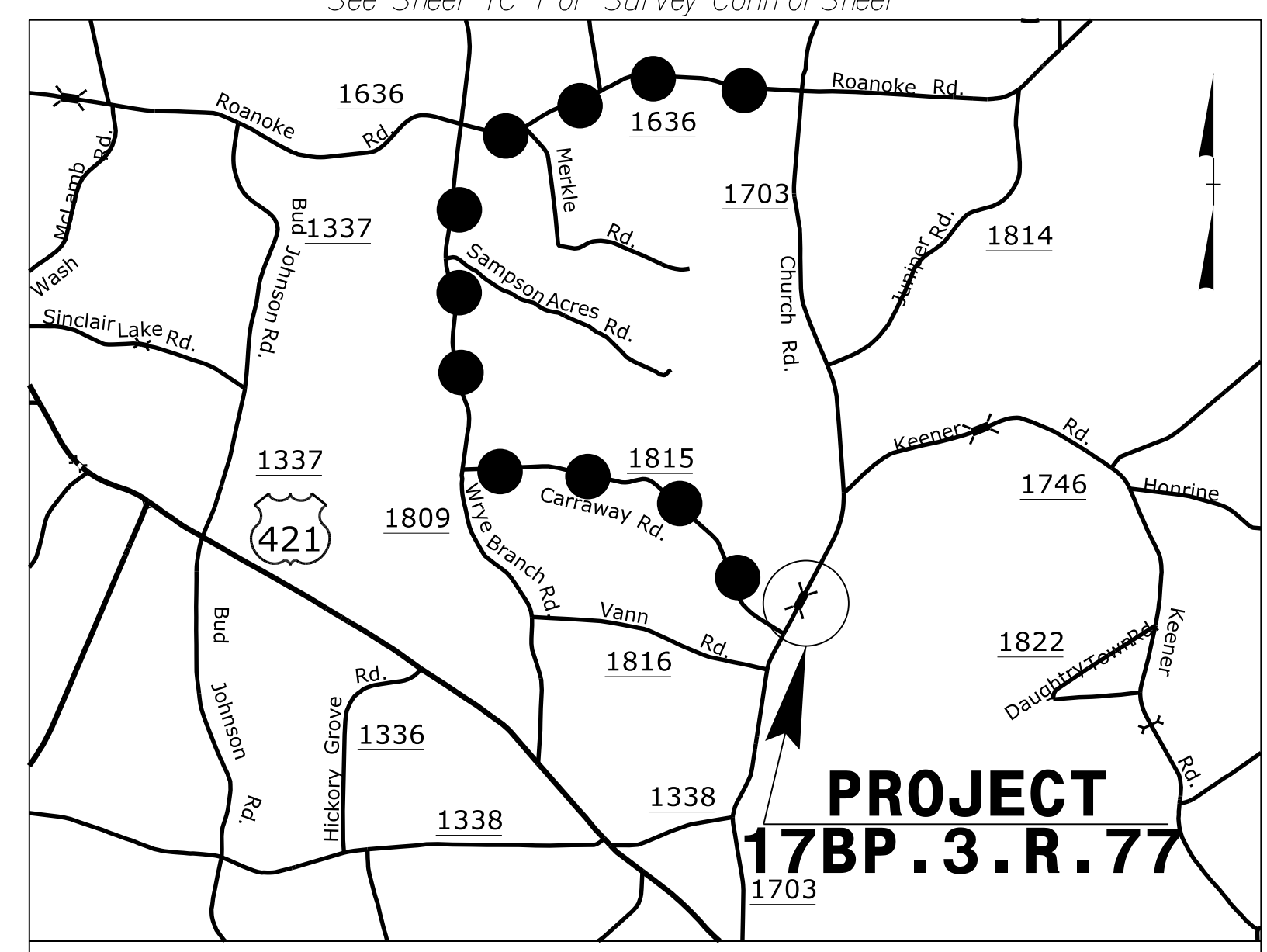
09/28/19

30-JUL-2019 12:18  
 J:\Division\_3\Bridges Replacement\B-4638\Roadway\Proj\B-4638\_rdy\_tsh.dgn  
 \$\$\$SERNAME\$\$\$

**PROJECT: 17BP.3.R.77**

**CONTRACT: DC00250**

See Sheet 1A For Index of Sheets  
 See Sheet 1B For Conventional Symbols  
 See Sheet 1C For Survey Control Sheet



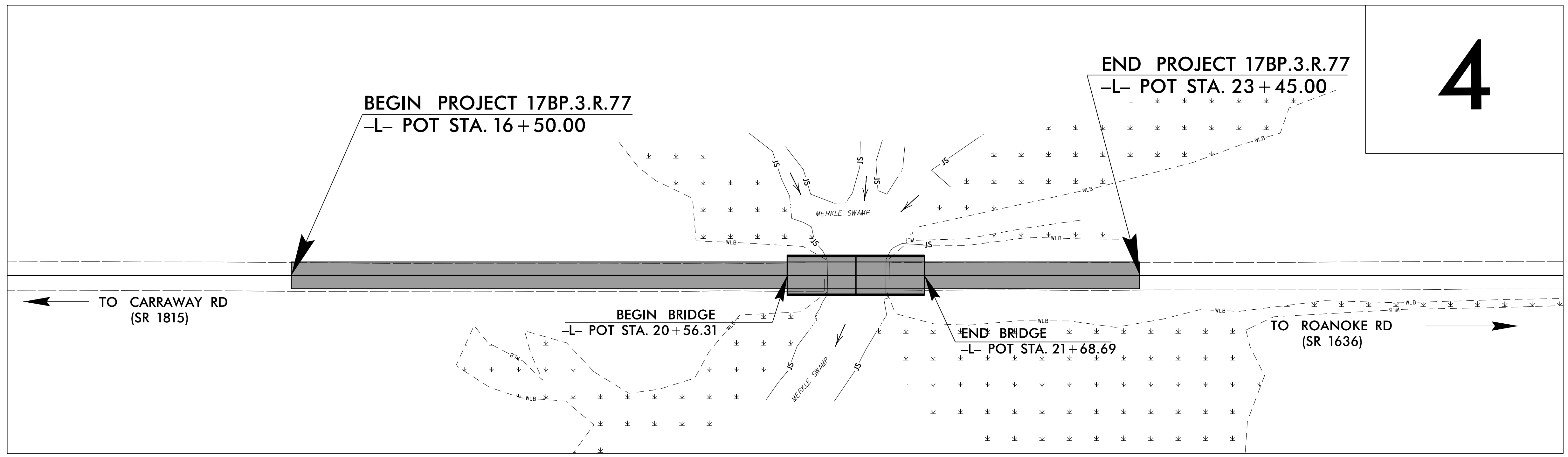
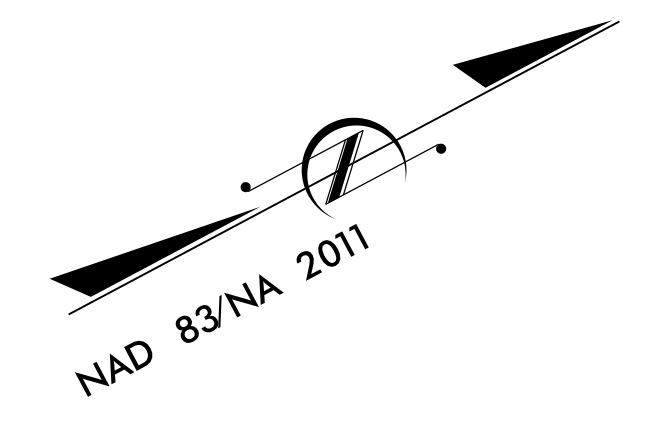
**VICINITY MAP**  
 —●— DENOTES OFF-SITE DETOUR

STATE OF NORTH CAROLINA  
 DIVISION OF HIGHWAYS  
**SAMPSON COUNTY**

**LOCATION: BRIDGE NO. 195 OVER MERKLE SWAMP  
 ON SR 1703 (CHURCH RD)**

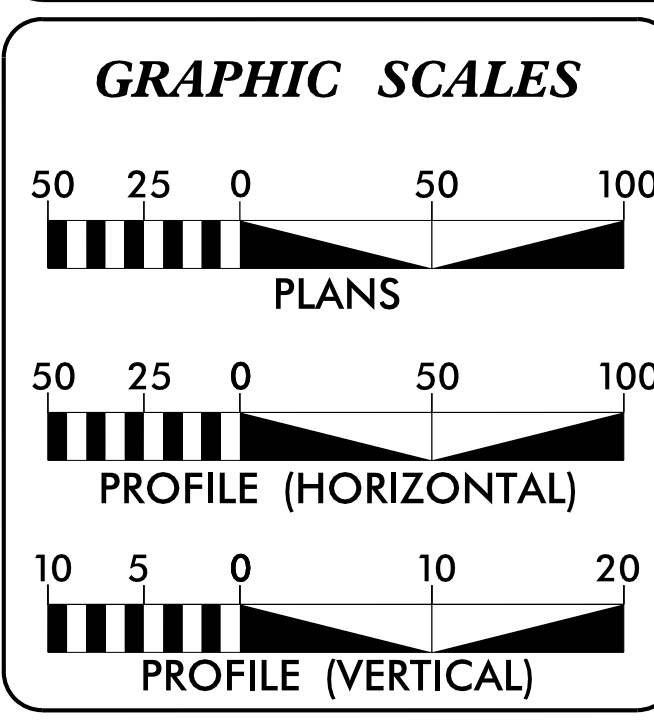
**TYPE OF WORK: GRADING, DRAINAGE, PAVING, AND STRUCTURE**

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	17BP.3.R.77	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
17BP.3.R.77		PE	
17BP.3.R.77		ROW	
17BP.3.R.77		CONST	



NCDOT CONTACT: MONICA DUVAL

DOCUMENT NOT CONSIDERED FINAL  
 UNLESS ALL SIGNATURES COMPLETED



**DESIGN DATA**

ADT 2015 =	500
ADT 2040 =	1000
K =	%
D =	%
T =	% *
V =	60 MPH
* TTST =	% DUAL = %
FUNC CLASS =	MINOR COLLECTOR SUB-REGIONAL TIER

**PROJECT LENGTH**

LENGTH OF ROADWAY PROJECT 17BP.3.R.77 =	0.111 MI.
LENGTH OF STRUCTURE PROJECT 17BP.3.R.77 =	0.021 MI.
TOTAL LENGTH OF PROJECT 17BP.3.R.77 =	0.132 MI.

Prepared for the North Carolina Department of Transportation in the office of:

**PARSONS** SUNGATE DESIGN GROUP, P.A.

2018 STANDARD SPECIFICATIONS

**RIGHT OF WAY DATE:**  
JUNE 5, 2018

**LETTING DATE:**  
SEPTEMBER 19, 2019

**DAVID L. WILVER, PE**  
PROJECT ENGINEER

**J. MATTHEW PICKENS, PE**  
PROJECT DESIGN ENGINEER

**HYDRAULICS ENGINEER**

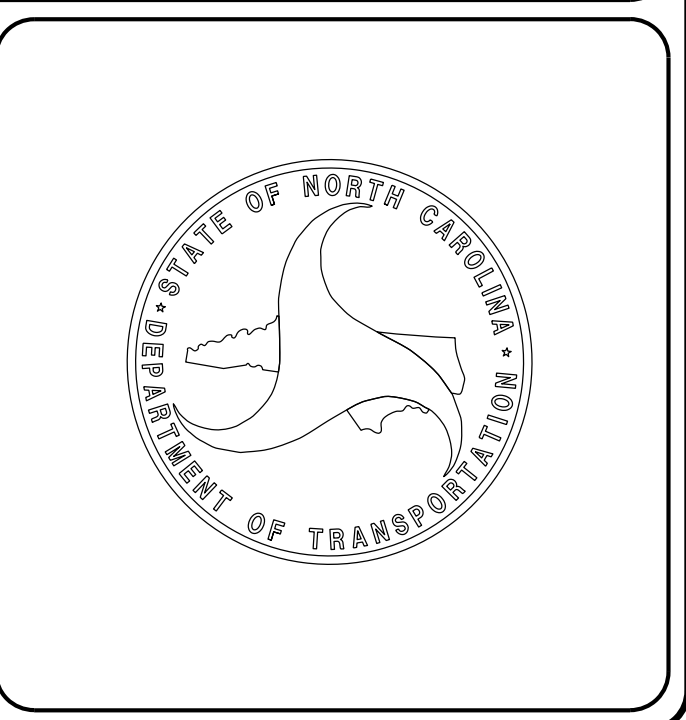
SEAL 026971 30/2019

DocuSigned by:  
 Joshua G Dalton  
 SIGNATURE

**ROADWAY DESIGN ENGINEER**

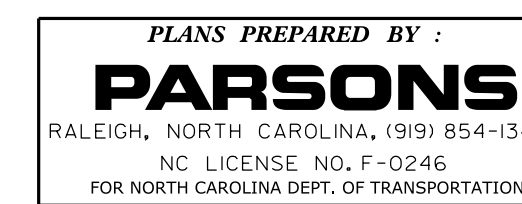
SEAL 37950 30/2019

DocuSigned by:  
 Jason M. Pickens  
 SIGNATURE

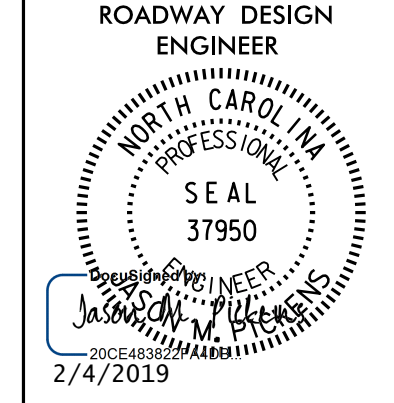




8/17/99



PROJECT REFERENCE NO. 17BP.3.R.77	SHEET NO. 1A
--------------------------------------	-----------------



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

INDEX OF SHEETS	
SHEET NUMBER	SHEET
1	TITLE SHEET
1A	INDEX OF SHEETS, GENERAL NOTES, AND STANDARD DRAWINGS
1B	CONVENTIONAL SYMBOLS
1C	SURVEY CONTROL SHEET
1D	PROPOSED ALIGNMENT CONTROL SHEET
1E	RIGHT OF WAY CONTROL SHEET
2A-1	PAVEMENT SCHEDULE AND TYPICAL SECTIONS
2C-1	MODIFIED METHOD III DETAIL
3B-1	ROADWAY AND DRAINAGE SUMMARIES
3G-1	GEOTECHNICAL SUMMARY
4	PLAN & PROFILE SHEET
TMP-1 THRU TMP-3	TRAFFIC MANAGEMENT PLANS
PMP-1 THRU PMP-2	PAVEMENT MARKING PLANS
EC-1 THRU EC-4	EROSION CONTROL PLANS
UD-1 THRU UD-2	UTILITIES BY OTHERS PLANS
X-1A	CROSS-SECTION SUMMARY SHEET
X-1 THRU X-4	CROSS-SECTIONS
S-1 THRU S-16	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 III.

**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

**SIDE ROADS:** THE CONTRACTOR WILL BE REQUIRED TO DO ALL NECESSARY WORK TO PROVIDE SUITABLE CONNECTIONS WITH ALL ROADS, STREETS, AND DRIVES ENTERING THIS PROJECT. THIS WORK WILL BE PAID FOR AT THE CONTRACT UNIT PRICE FOR THE PARTICULAR ITEMS INVOLVED.

**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.

**UTILITIES:** UTILITY OWNERS ON THIS PROJECT ARE POWER - DUKE POWER (MILES PARKER), PHONE - STAR TELEPHONE (JOHNNY EASON), TV - STAR VISION CATC (JOHNNY EASON)  
ANY RELOCATION OF EXISTING UTILITIES WILL BE ACCOMPLISHED BY OTHERS.

**RIGHT-OF-WAY MARKERS:** ALL RIGHT OF WAY & PERMANENT EASEMENT MARKERS ARE PLACED BY L&S. THE CONTRACT SURVEYOR WILL BE RESPONSIBLE FOR RESETTING ANYPOINTS DISTURBED DURING CONSTRUCTION.

2018 ROADWAY ENGLISH STANDARD DRAWINGS

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:

STD.NO.	TITLE
DIVISION 2 - EARTHWORK	
200.03	Method of Clearing - Modified Method III (See Detail in Lieu of Standard)
225.02	Guide for Grading Subgrade - Secondary and Local
225.04	Method of Obtaining Superelevation - Two Lane Pavement
DIVISION 3 - PIPE CULVERTS	
300.01	Method of Pipe Installation
DIVISION 4 - MAJOR STRUCTURES	
422.02	Bridge Approach Fills - Type II Modified Approach Fill
DIVISION 5 - SUBGRADE, BASES AND SHOULDERS	
560.01	Method of Shoulder Construction - High Side of Superelevated Curve - Method I
DIVISION 6 - ASPHALT BASES AND PAVEMENTS	
654.01	Pavement Repairs
DIVISION 8 - INCIDENTALS	
840.00	Concrete Base Pad for Drainage Structures
840.29	Frames and Narrow Slot Flat Grates
840.35	Traffic Bearing Grated Drop Inlet - for Cast Iron Double Frame and Grates
840.66	Drainage Structure Steps
862.01	Guardrail Placement
862.02	Guardrail Installation
876.02	Guide for Rip Rap at Pipe Outlets

EFF. 01-16-2018  
REV.

# STATE OF NORTH CAROLINA, DIVISION OF HIGHWAYS

## CONVENTIONAL PLAN SHEET SYMBOLS

12/2/2016

### BOUNDARIES AND PROPERTY:

State Line	-----
County Line	-----
Township Line	-----
City Line	-----
Reservation Line	-----
Property Line	-----
Existing Iron Pin	○ EIP
Computed Property Corner	-----
Property Monument	□ ECM
Parcel/Sequence Number	①23
Existing Fence Line	-x-x-x-
Proposed Woven Wire Fence	○
Proposed Chain Link Fence	□
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	☠-s-☠
Potential Contamination Area: Soil	☠-s-☠
Known Contamination Area: Water	☠-w-☠
Potential Contamination Area: Water	☠-w-☠
Contaminated Site: Known or Potential	☠?

### BUILDINGS AND OTHER CULTURE:

Gas Pump Vent or U/G Tank Cap	○
Sign	○ S
Well	○ W
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	○ MILEPOST 35
Switch	□ SWITCH
RR Abandoned	-----
RR Dismantled	-----

### RIGHT OF WAY & PROJECT CONTROL:

Secondary Horiz and Vert Control Point	◆
Primary Horiz Control Point	○
Primary Horiz and Vert Control Point	◆
Exist Permanent Easement Pin and Cap	◇
New Permanent Easement Pin and Cap	◆
Vertical Benchmark	▲
Existing Right of Way Marker	△
Existing Right of Way Line	-----
New Right of Way Line	----- R/W
New Right of Way Line with Pin and Cap	----- R/W ▲
New Right of Way Line with Concrete or Granite R/W Marker	----- R/W ▲
New Control of Access Line with Concrete C/A Marker	----- C/A
Existing Control of Access	----- C/A
New Control of Access	----- C/A
Existing Easement Line	----- E
New Temporary Construction Easement	----- E
New Temporary Drainage Easement	----- TDE
New Permanent Drainage Easement	----- PDE
New Permanent Drainage / Utility Easement	----- DUE
New Permanent Utility Easement	----- PUE
New Temporary Utility Easement	----- TUE
New 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	----- CR
Existing Metal Guardrail	-----
Proposed Guardrail	-----
Existing Cable Guiderail	-----
Proposed Cable Guiderail	-----
Equality Symbol	⊕
Pavement Removal	▨

### VEGETATION:

Single Tree	☼
Single Shrub	☼

*Note: Not to Scale*      \*S.U.E. = *Subsurface Utility Engineering*

Hedge	-----
Woods Line	-----
Orchard	-----
Vineyard	----- Vineyard

### EXISTING STRUCTURES:

MAJOR:	
Bridge, Tunnel or Box Culvert	----- CONC
Bridge Wing Wall, Head Wall and End Wall	----- CONC WW
MINOR:	
Head and End Wall	----- CONC HW
Pipe Culvert	-----
Footbridge	-----
Drainage Box: Catch Basin, DI or JB	□ CB
Paved Ditch Gutter	-----
Storm Sewer Manhole	○ S
Storm Sewer	----- S

### UTILITIES:

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 LOS B (S.U.E.*)	----- P
U/G Power Line LOS C (S.U.E.*)	----- P
U/G Power Line LOS D (S.U.E.*)	----- P

### TELEPHONE:

Existing Telephone Pole	●
Proposed Telephone Pole	○
Telephone Manhole	⊕
Telephone Pedestal	⊠
Telephone Cell Tower	⊠
U/G Telephone Cable Hand Hole	○
U/G Telephone Cable LOS B (S.U.E.*)	----- T
U/G Telephone Cable LOS C (S.U.E.*)	----- T
U/G Telephone Cable LOS D (S.U.E.*)	----- T
U/G Telephone Conduit LOS B (S.U.E.*)	----- TC
U/G Telephone Conduit LOS C (S.U.E.*)	----- TC
U/G Telephone Conduit LOS D (S.U.E.*)	----- TC
U/G Fiber Optics Cable LOS B (S.U.E.*)	----- T FO
U/G Fiber Optics Cable LOS C (S.U.E.*)	----- T FO
U/G Fiber Optics Cable LOS D (S.U.E.*)	----- T FO

### WATER:

Water Manhole	⊕
Water Meter	○
Water Valve	⊗
Water Hydrant	⊕
U/G Water Line LOS B (S.U.E.*)	-----
U/G Water Line LOS C (S.U.E.*)	-----
U/G Water Line LOS D (S.U.E.*)	-----
Above Ground Water Line	----- A/G Water

### TV:

TV Pedestal	⊕
TV Tower	⊗
U/G TV Cable Hand Hole	○
U/G TV Cable LOS B (S.U.E.*)	----- TV
U/G TV Cable LOS C (S.U.E.*)	----- TV
U/G TV Cable LOS D (S.U.E.*)	----- TV
U/G Fiber Optic Cable LOS B (S.U.E.*)	----- TV FO
U/G Fiber Optic Cable LOS C (S.U.E.*)	----- TV FO
U/G Fiber Optic Cable LOS D (S.U.E.*)	----- TV FO

### GAS:

Gas Valve	◇
Gas Meter	⊕
U/G Gas Line LOS B (S.U.E.*)	----- G
U/G Gas Line LOS C (S.U.E.*)	----- G
U/G Gas Line LOS D (S.U.E.*)	----- 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 Forced Main Line LOS B (S.U.E.*)	----- FSS
SS Forced Main Line LOS C (S.U.E.*)	----- FSS
SS Forced Main Line LOS D (S.U.E.*)	----- FSS

### MISCELLANEOUS:

Utility Pole	●
Utility Pole with Base	□
Utility Located Object	○
Utility Traffic Signal Box	⊠
Utility Unknown U/G Line LOS B (S.U.E.*)	----- 7UTL
U/G Tank; Water, Gas, Oil	□
Underground Storage Tank, Approx. Loc.	⊕
A/G Tank; Water, Gas, Oil	□
Geoenvironmental Boring	⊕
U/G Test Hole LOS A (S.U.E.*)	⊕
Abandoned According to Utility Records	AATUR
End of Information	E.O.I.









# RIGHT OF WAY CONTROL SHEET 17BP.3.R.77

## ROW CAP & REBAR MARKER - E

ALIGN	STATION	OFFSET	NORTH	EAST
L	19+75.00	-45.00	505618.92225	2179721.04613
L	19+75.00	-28.68	505611.25552	2179735.45729
L	22+50.00	-29.12	505854.24541	2179864.22494
L	22+50.00	-45.00	505861.70361	2179850.20577

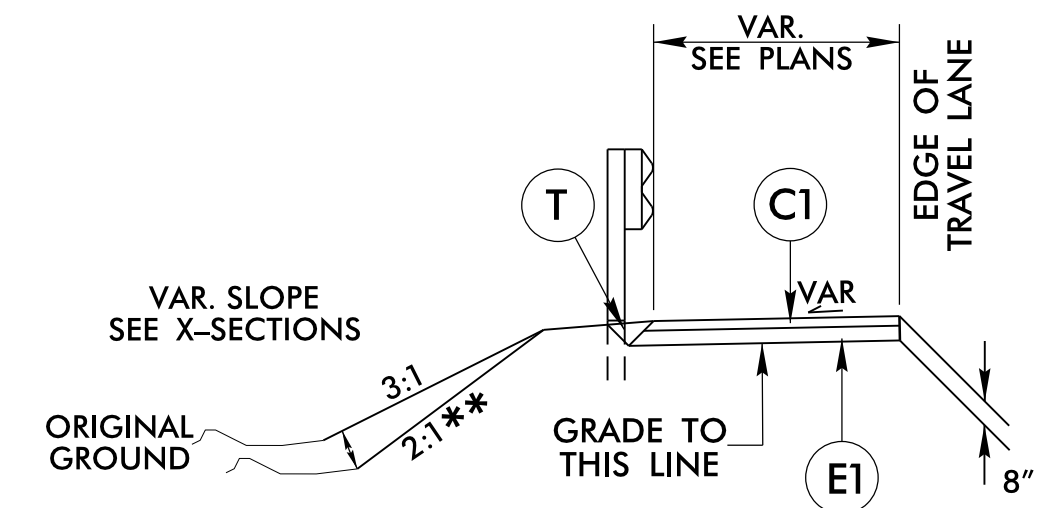
**NOTES:**

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

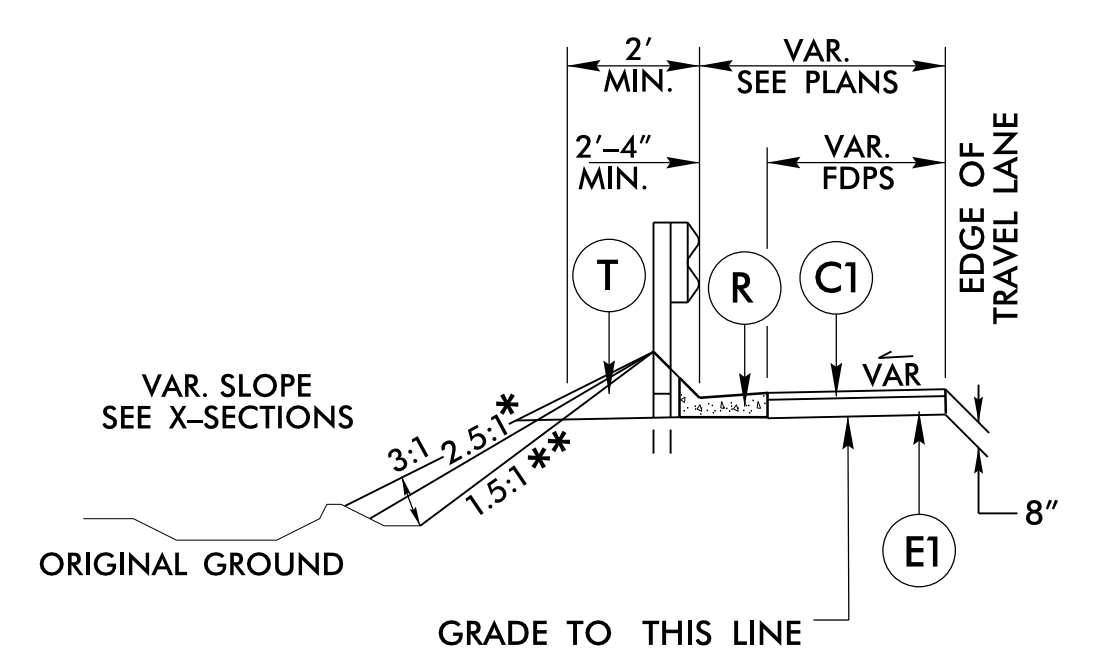
8/17/99  
01-FEB-2019 13:50  
J:\DIVISION 3\Bridges Replacement\B-4638\Roadway\Proj\B-4638\_rdy\_tjpd.dgn  
3/7/2019

FINAL PAVEMENT SCHEDULE	
C1	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
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. 5" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 570 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.
R	SHOULDER BERM GUTTER.
T	EARTH MATERIAL.
U	EXISTING PAVEMENT.
W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE DETAIL SHOWING METHOD OF WEDGING)

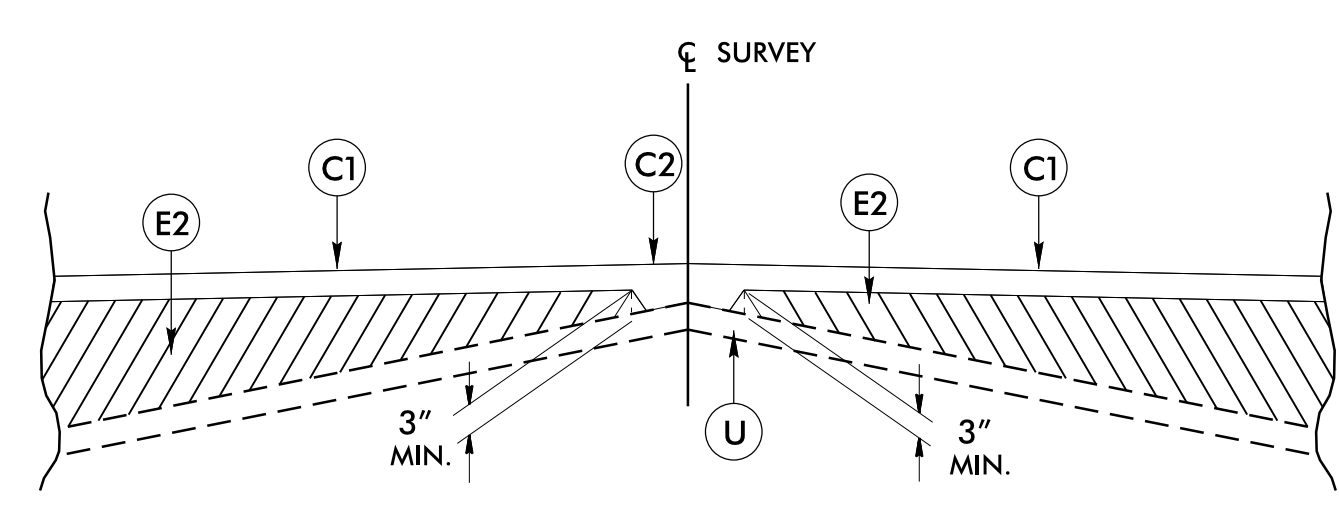
NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.



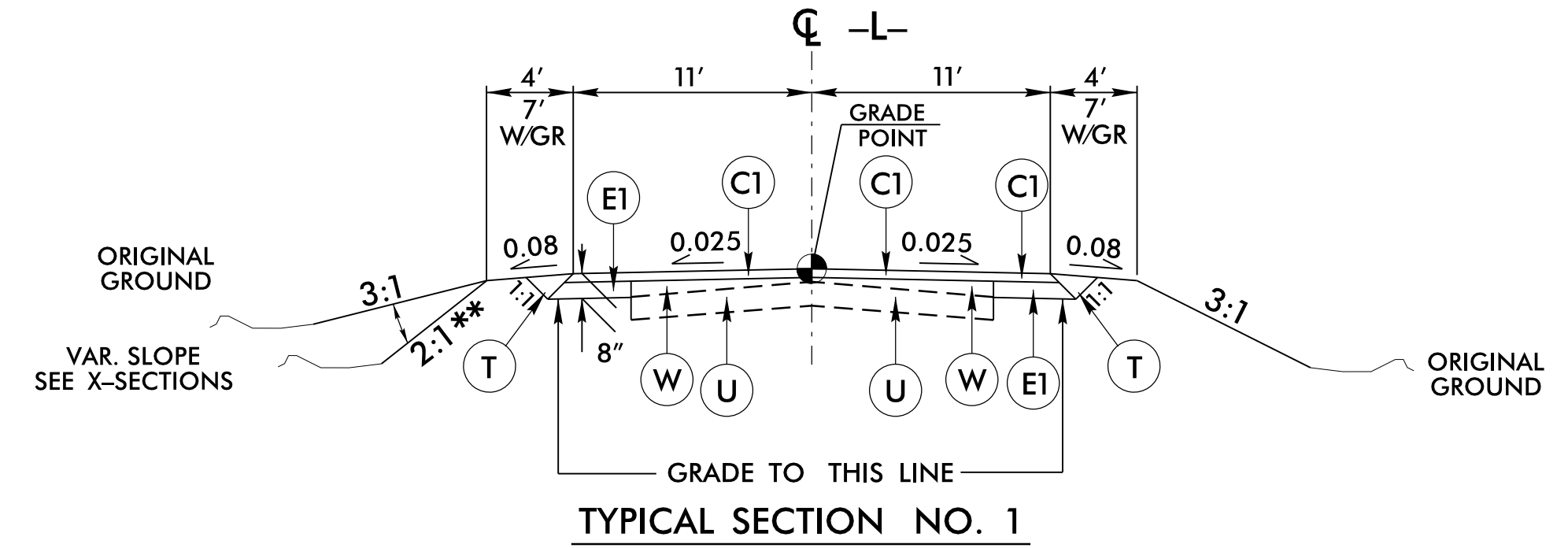
**DETAIL SHOWING FULL DEPTH PAVED SHOULDERS TO FACE OF GUARDRAIL**  
 FROM STA. 19+82.50 TO STA. 20+46.50 -L- LT  
 FROM STA. 19+82.50 TO STA. 20+46.50 -L- RT  
 FROM STA. 21+92.00 TO STA. 22+42.50 -L- LT \*\*  
 FROM STA. 21+92.00 TO STA. 22+42.50 -L- RT



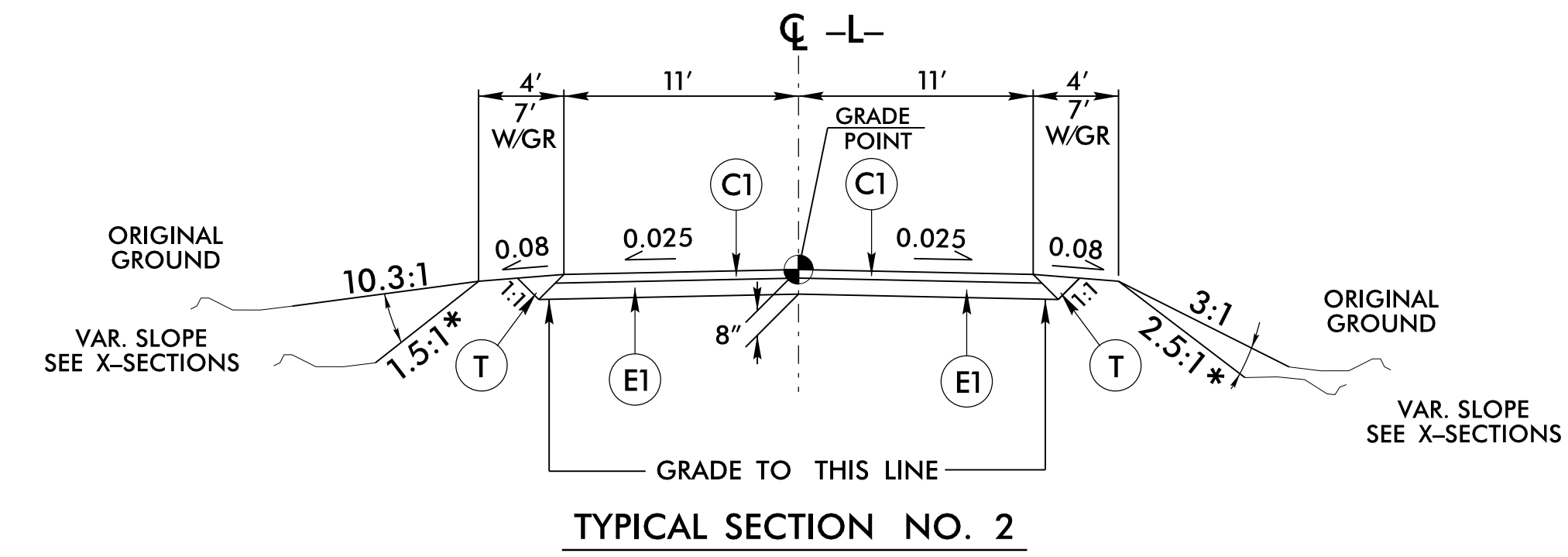
**DETAIL SHOWING SHOULDER BERM GUTTER (SBG)**  
 FROM STA. 21+79.56 TO STA. 21+92.00 -L- LT \*\*  
 FROM STA. 21+79.56 TO STA. 21+92.00 -L- RT \*



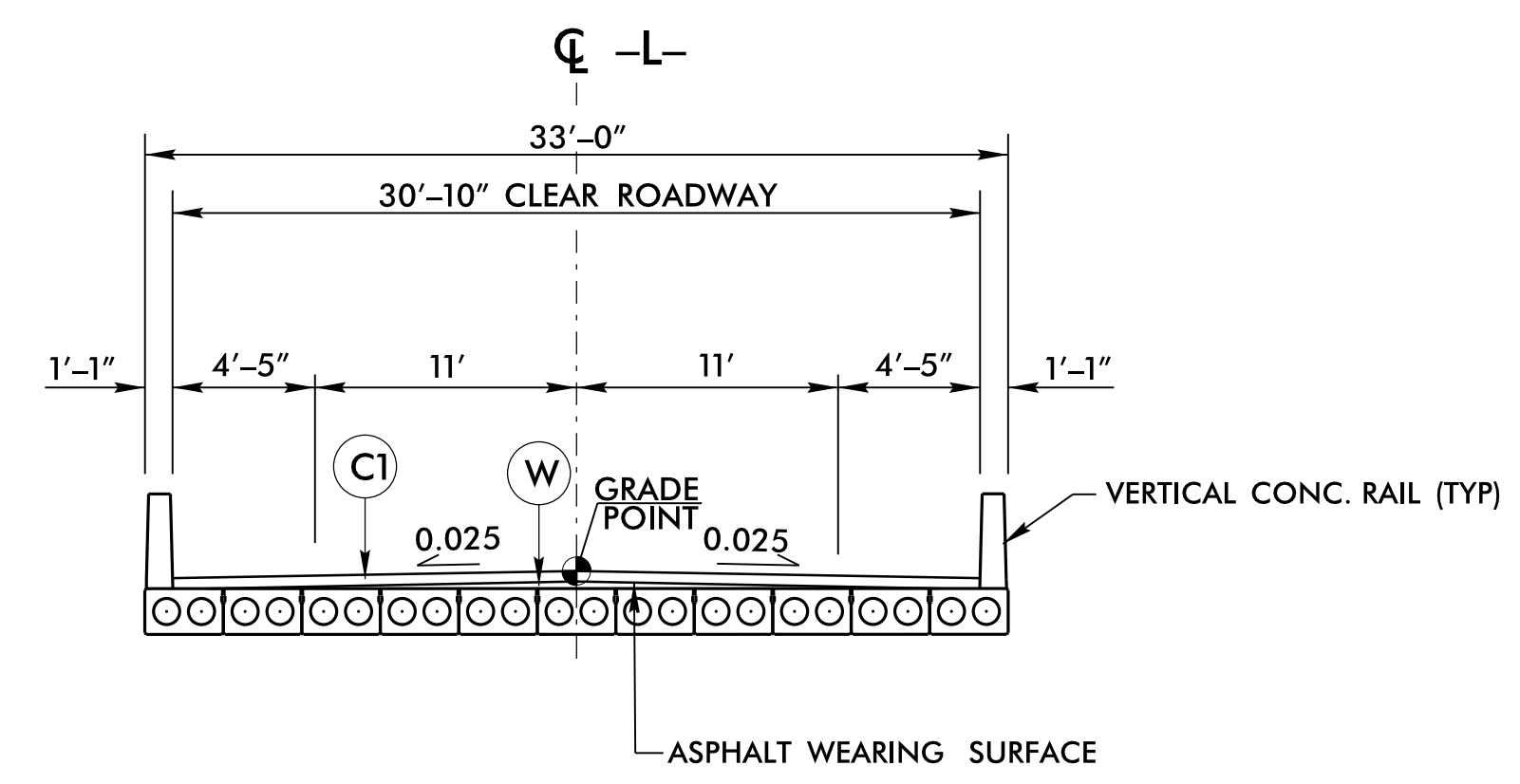
**DETAIL SHOWING METHOD OF WEDGING**



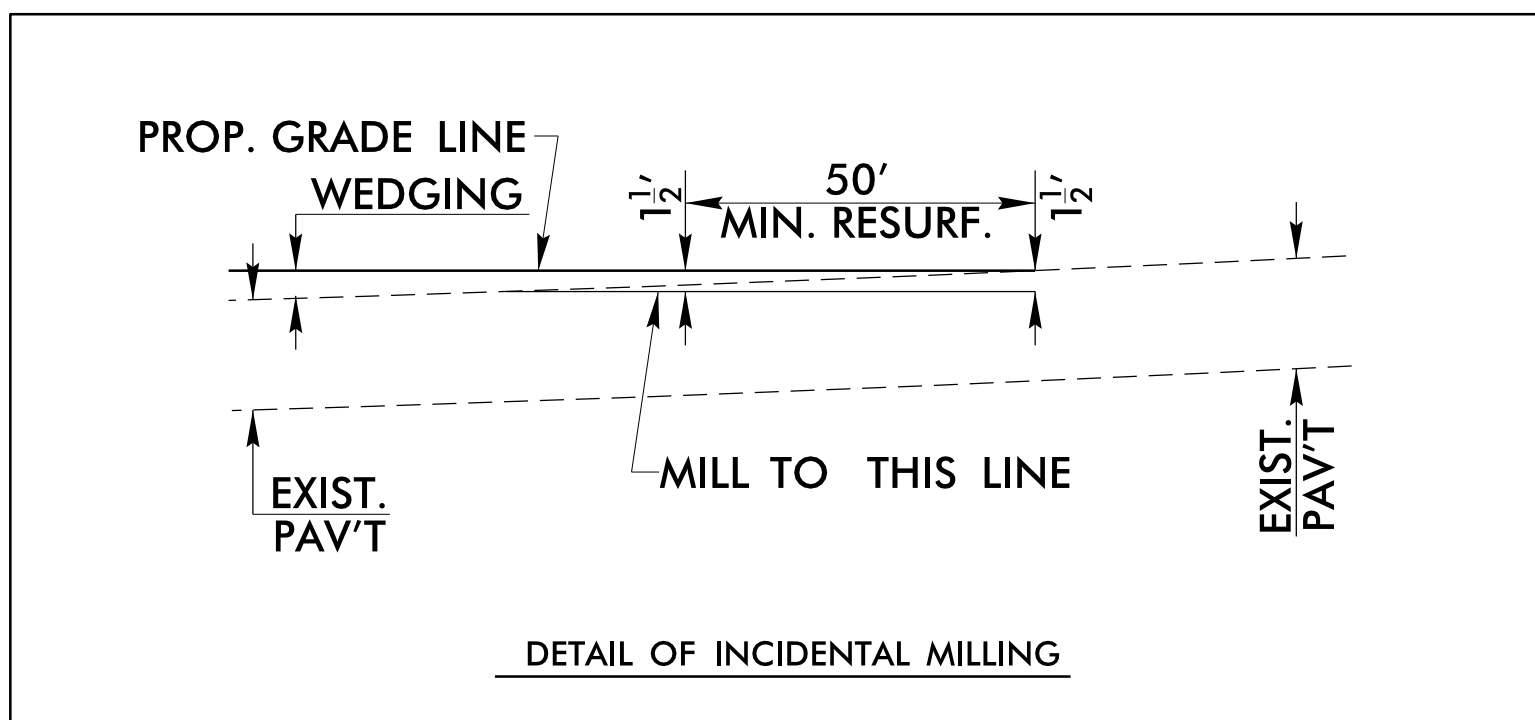
USE TYPICAL SECTION NO. 1  
 -L- STA. 16+50.00 TO -L- STA. 17+50.00  
 -L- STA. 22+00.00 TO -L- STA. 23+45.00\*\*



USE TYPICAL SECTION NO. 2  
 -L- STA. 17+50.00 TO -L- STA. 20+56.31 (BEGIN BRIDGE)  
 -L- STA. 21+68.69 (END BRIDGE) TO -L- STA. 22+00.00\*\*



**TYPICAL SECTION ON STRUCTURE**  
 -L- STA. 20+56.31 TO -L- STA. 21+68.69



**DETAIL OF INCIDENTAL MILLING**

PLANS PREPARED BY:  
**PARSONS**  
 RALEIGH, NORTH CAROLINA, (919) 854-1345  
 NC LICENSE NO. F-0246  
 FOR NORTH CAROLINA DEPT. OF TRANSPORTATION

PROJECT REFERENCE NO. 17BP.3.R.77	SHEET NO. 2A-1
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

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



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

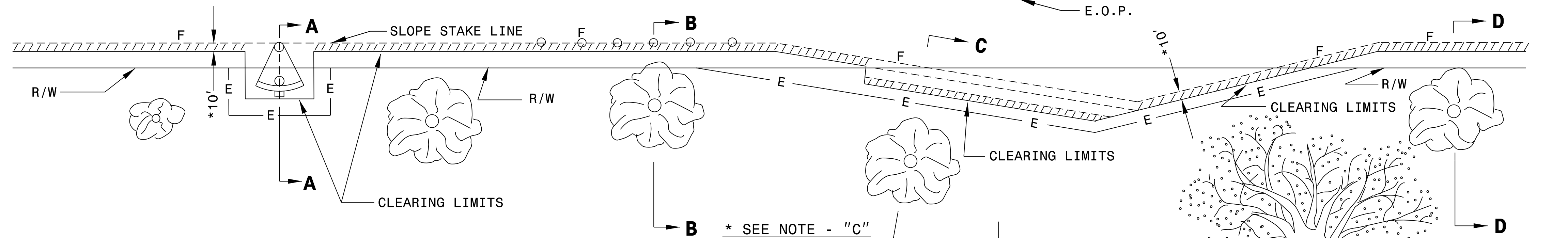
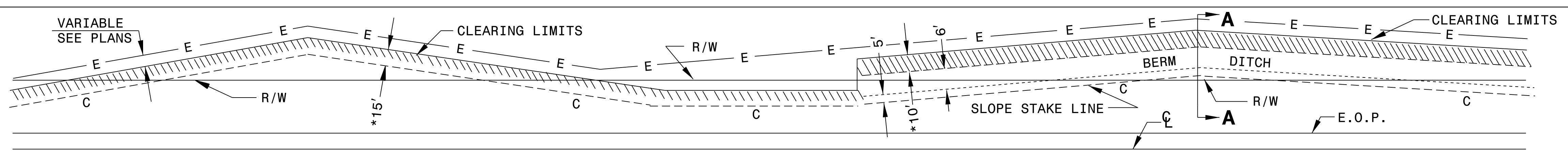
ENGLISH DETAIL DRAWING FOR METHOD OF CLEARING MODIFIED METHOD - III

SHEET 1 OF 1 200D03

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



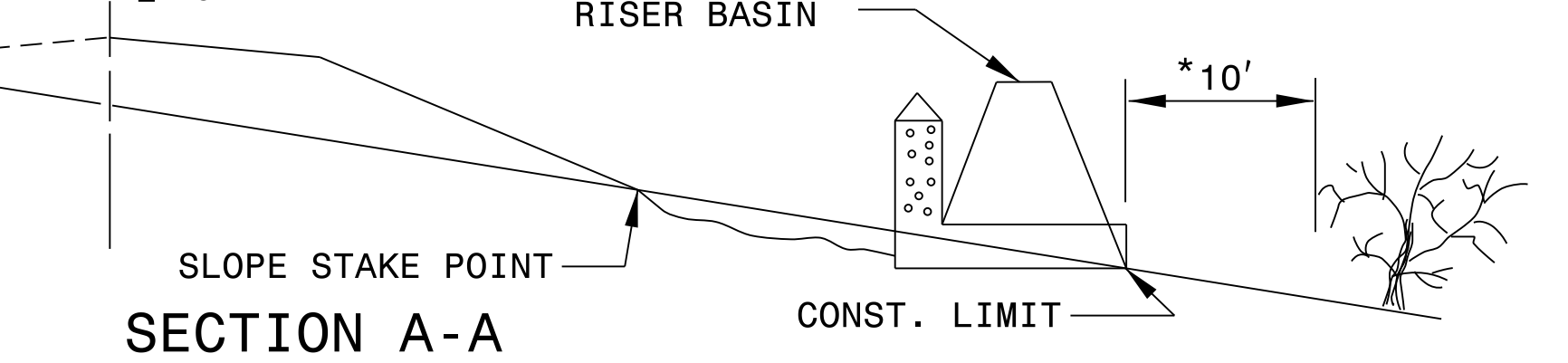
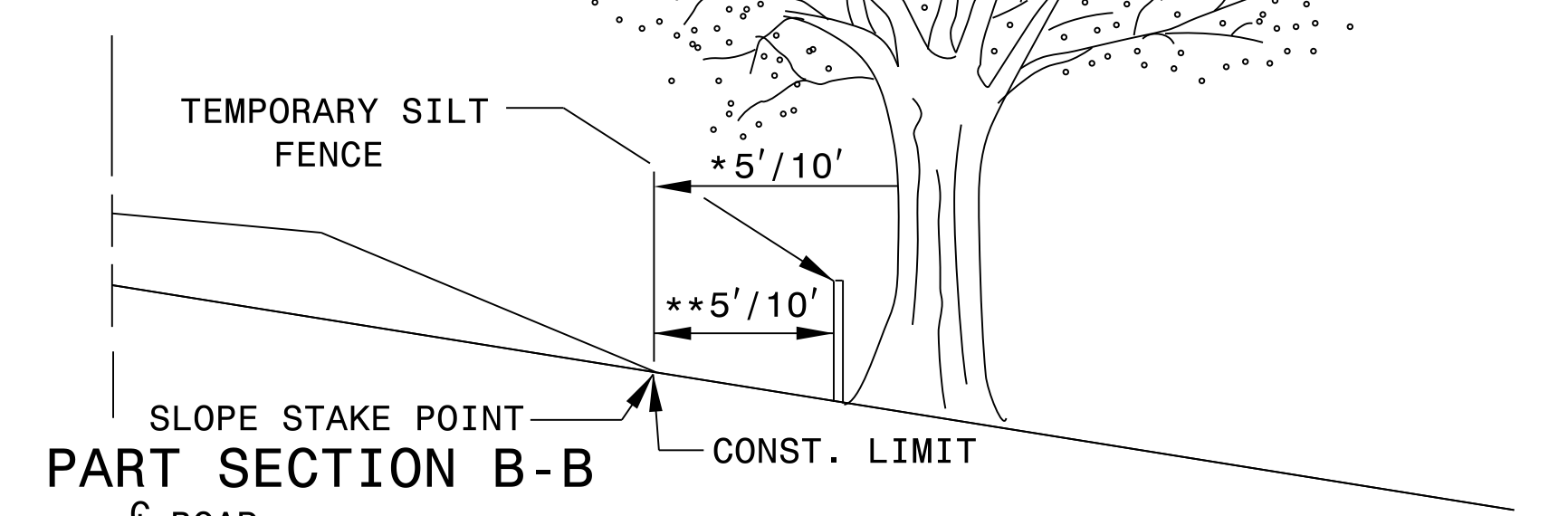
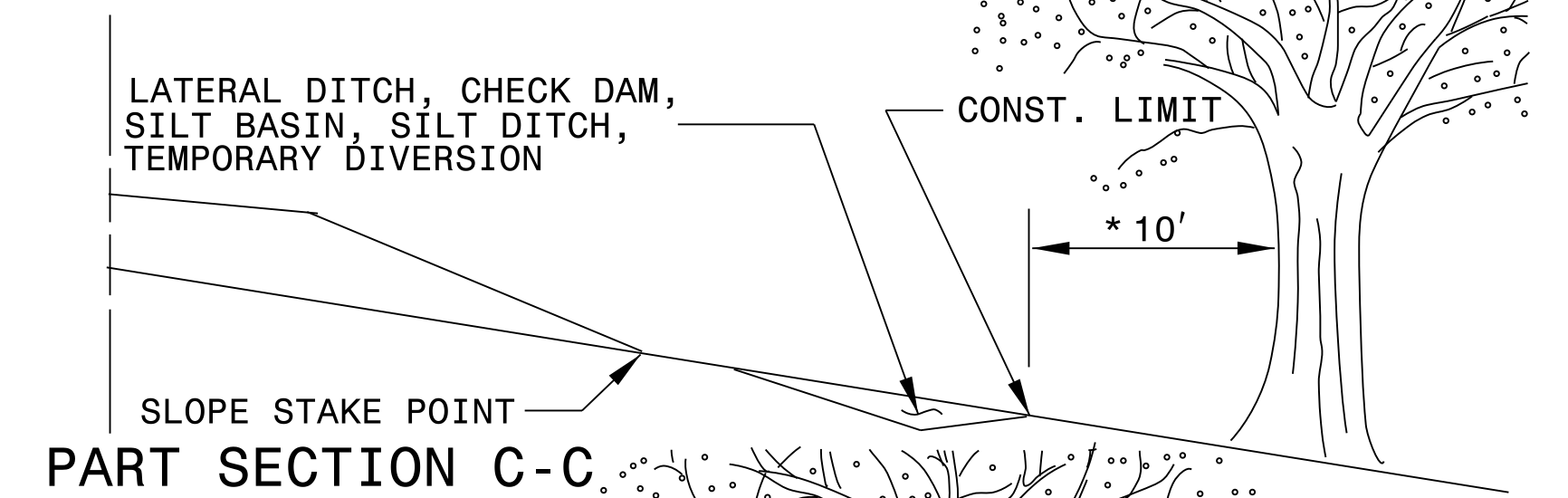
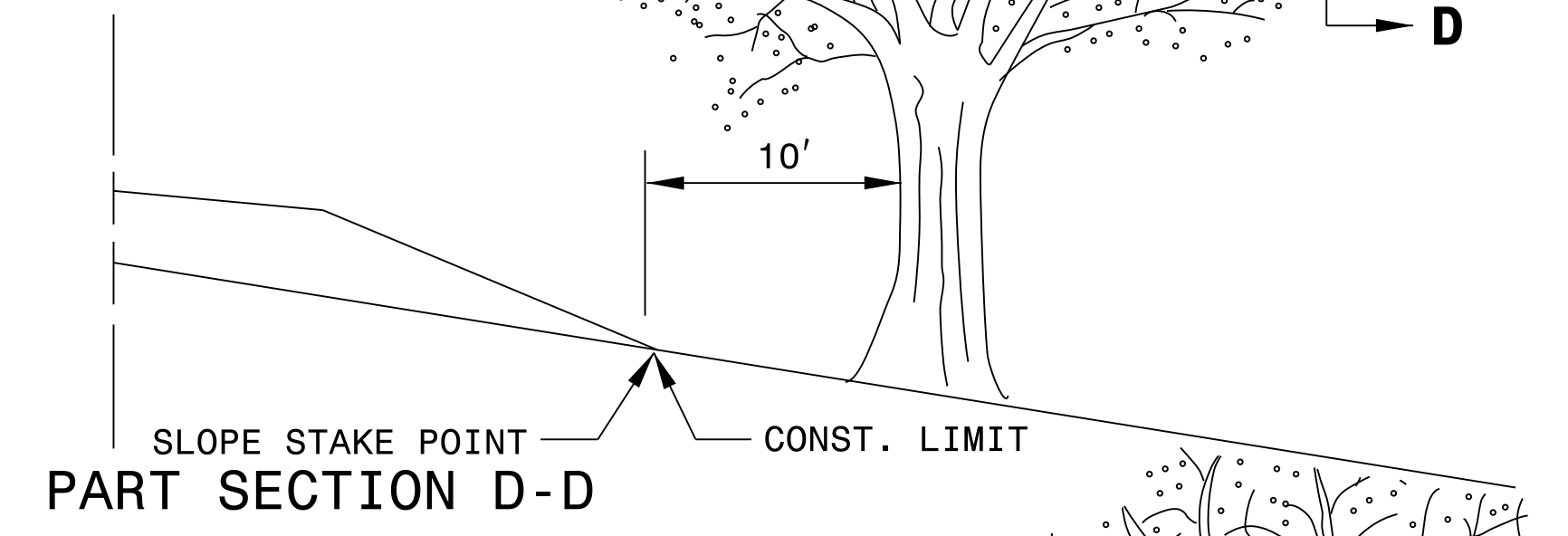
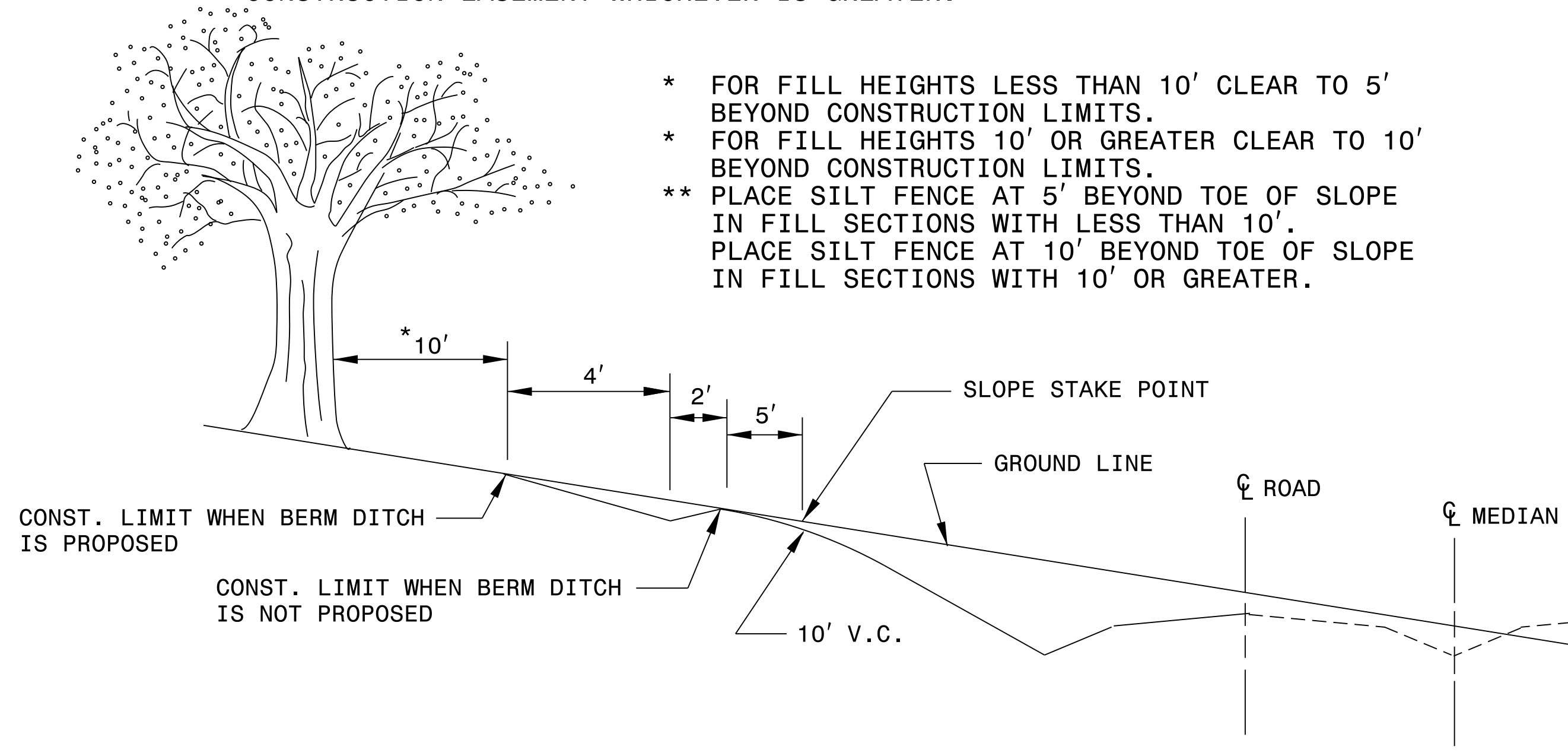
GENERAL NOTES:

- 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.

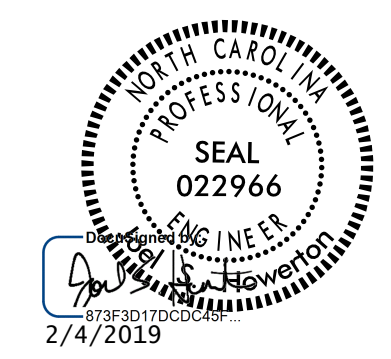
METHOD III CLEARING LIMITS

- (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.



05-DEC-2017 10:43:11 S:\Contracts\Special\Details\kkempf\english\0200D0301.modified.method III Cond.dgn Jhower-ton AT CSD-292595



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.: kkempf/english/0200d301.dgn DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED





STATE OF NORTH CAROLINA  
 DIVISION OF HIGHWAYS

**SUMMARY OF SUBSURFACE DRAINAGE FOR PAVEMENT STABILIZATION**

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

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

**SUMMARY OF GEOTEXTILE FOR PAVEMENT STABILIZATION**

LINE	Station	Station	Geotextile for Pavement Stabilization SY	Class IV Subgrade Stabilization TONS
CONTINGENCY				
			<b>TOTAL SY/TONS:</b>	0 0*

\*Total tons of "Class IV Subgrade Stabilization" is only the estimated quantity for pavement stabilization and may only represent a portion of the subgrade stabilization quantity shown in the Item Sheets of the Proposal.

**SUMMARY OF AGGREGATE SUBGRADE/STABILIZATION**

LINE	Station	Station	Aggregate Type* ASU(1/2)/AST	Aggregate Thickness INCHES [8" for ASU(2)]	Shallow Undercut CY	Class IV Subgrade Stabilization TONS	Geotextile for Soil Stabilization SY	Stabilizer Aggregate TONS	Class IV Aggregate Stabilization TONS
-L-	22+25	23+45	ASU (1)	12	50	100	200		
CONTINGENCY			ASU (1)	12	100	200	300		
			<b>TOTAL CY/TONS/SY:</b>		150	300**	500**	0	0

\*ASU(1/2) = Aggregate Subgrade (Type 1 or 2)  
 \*AST = Aggregate Stabilization  
 \*\*Total tons of "Class IV Subgrade Stabilization" and total square yards of "Geotextile for Soil Stabilization" are only the estimated quantities for ASU(1/2)/AST and may only represent a portion of the subgrade stabilization and geotextile quantities shown in the Item Sheets of the Proposal.

**SUMMARY OF ROCK PLATING**

LINE	Beginning Slope (H:V)	Approx. Station	Ending Slope (H:V)	Approx. Station	Location LT/RT	Rock Plating Detail No. 1/2/3/4	Riprap Class* 1/2/B	Rock Plating SY
							<b>TOTAL SY:</b>	0

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

**SUMMARY OF REINFORCED SOIL SLOPES AND SLOPE EROSION CONTROL**

LINE	Beginning Slope/ RSS (H:V)	Approx. Station	Ending Slope/ RSS (H:V)	Approx. Station	Location LT/RT	Reinforced Soil Slope (RSS) SY	Geocells SY	Coir Fiber Mat SY	Matting for Erosion Control SY
						<b>TOTAL SY:</b>	0	0	0* 0**

\*Total square yards of "Coir Fiber Mat" is only the estimated quantity for slopes steeper than 2:1 (H:V) and may only represent a portion of the coir fiber mat quantity shown in the Item Sheets of the Proposal.  
 \*\*Total square yards of "Matting for Erosion Control" is only the estimated quantity for RSS and may only represent a portion of the matting quantity shown in the Item Sheets of the Proposal.

**SUMMARY OF PRE-SPLITTING OF ROCK**

LINE	Beginning Rock Cut Slope (H:V)	Approx. Station	Ending Rock Cut Slope (H:V)	Approx. Station	Location LT/RT	Pre-splitting of Rock SY	
						<b>TOTAL SY:</b>	0

**SUMMARY OF SURCHARGES AND SURCHARGE WAITING PERIODS**

LINE	Station	Station	Surcharge Height FT	MONTHS

**SUMMARY OF SETTLEMENT GAUGES**

Gauge No.	LINE and Station	Offset	
		Distance FT	Direction LT/RT
<b>TOTAL GAUGES (EACH):</b>			

**SUMMARY OF EMBANKMENT WAITING PERIODS**

LINE	Station	Station	MONTHS

**SUMMARY OF BRIDGE WAITING PERIODS**

Bridge Description	End Bent/ Bent No.	MONTHS

5/28/99

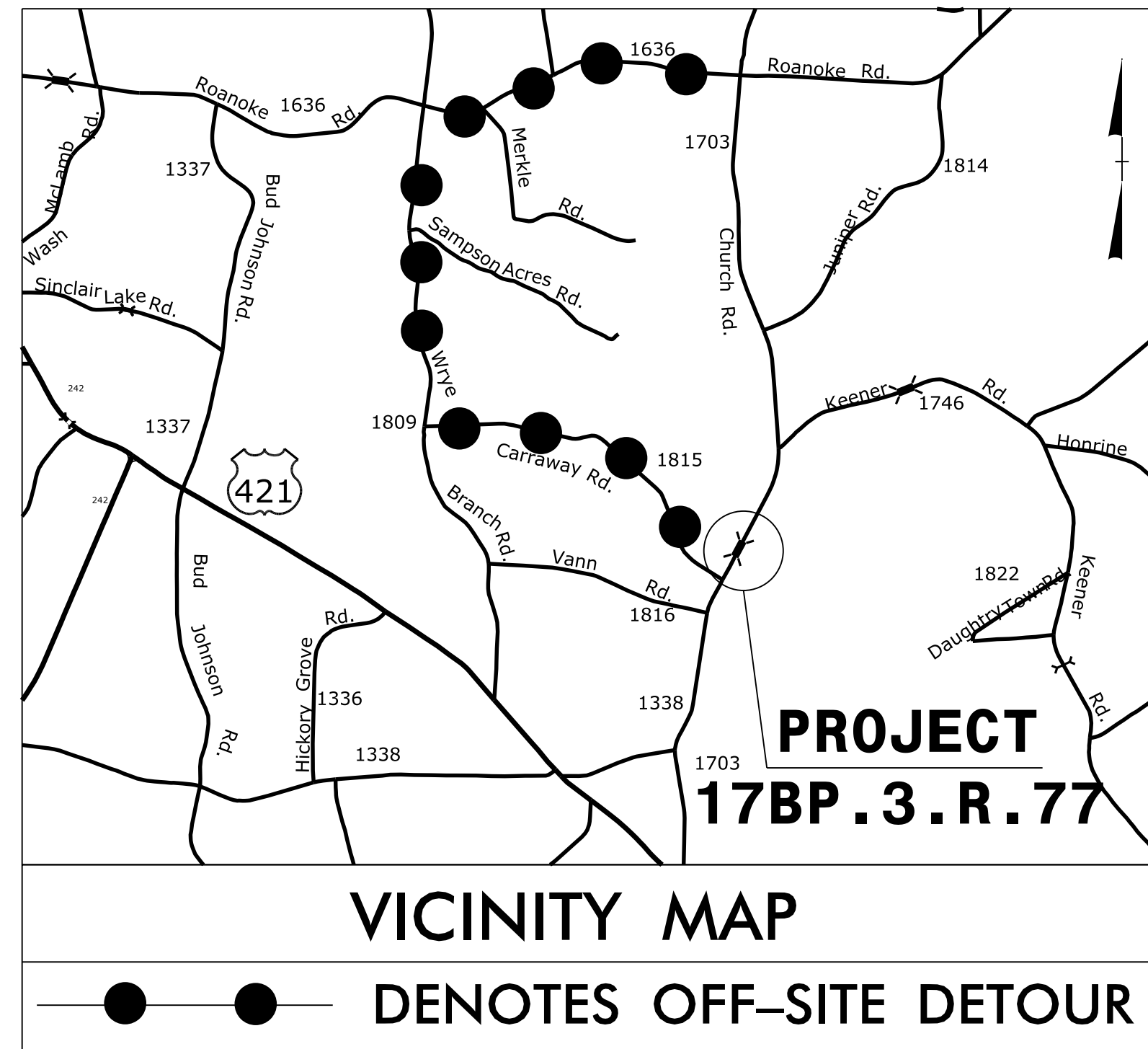
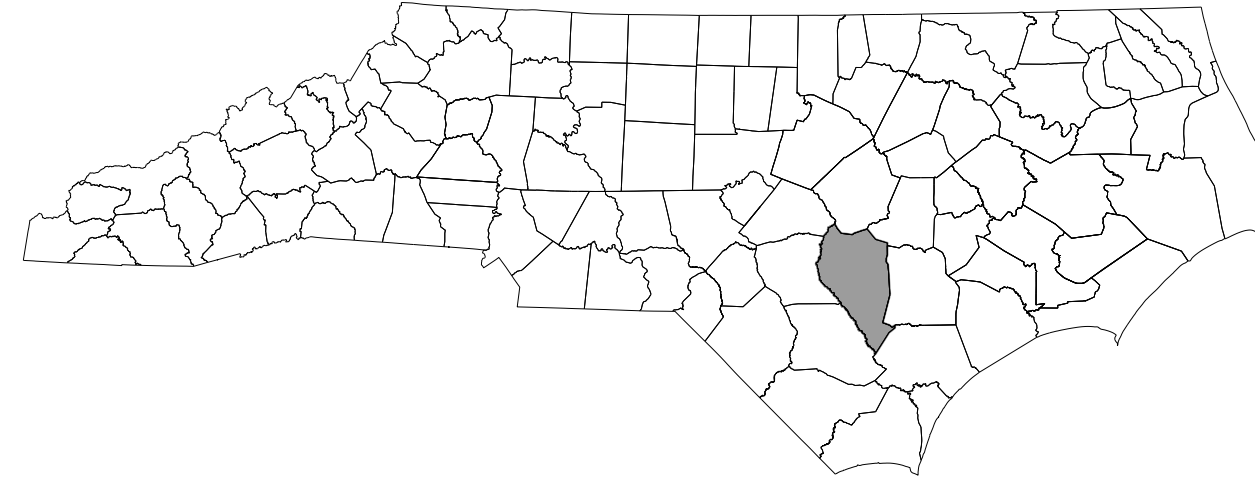
0:\FEB-2019\3\FEB-2019\Roadway\Proc\B-4638\Roadway\Proc\B-4638\_rdy.sum\_3G-1.dgn





STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

**TRANSPORTATION MANAGEMENT PLAN**  
**SAMPSON COUNTY**



**INDEX OF SHEETS**

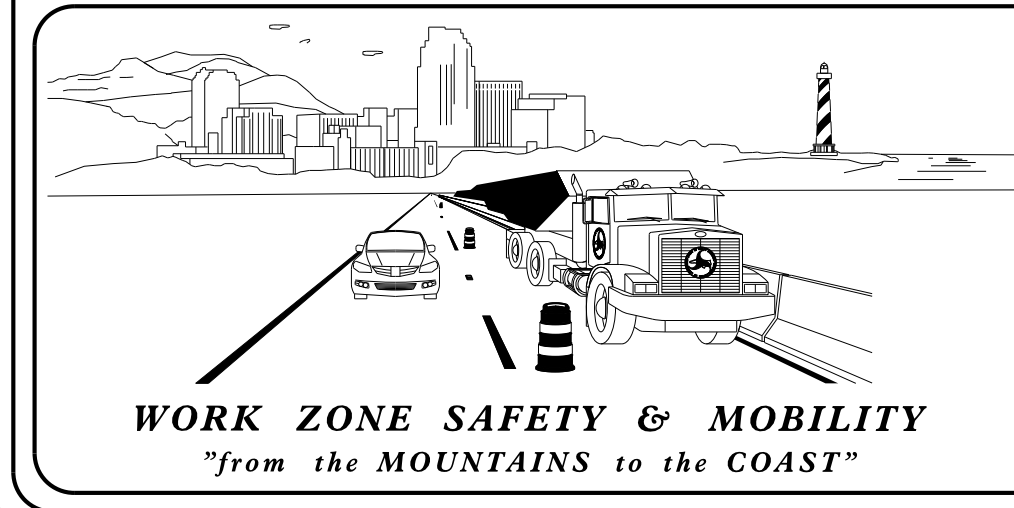
SHEET NO.	TITLE
TMP-1	TITLE SHEET, VICINITY MAP, AND INDEX OF SHEETS AND LIST OF APPLICABLE ROADWAY STANDARD DRAWINGS
TMP-1A	TRANSPORTATION OPERATIONS PLAN: (MANAGEMENT STRATEGIES, GENERAL NOTES AND PHASING)
TMP-2	SPECIAL SIGN DESIGN
TMP-3	OFF-SITE DETOUR ROUTE AND BARRICADE PLACEMENT

**ROADWAY STANDARD DRAWINGS**

THE FOLLOWING ROADWAY STANDARDS 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:

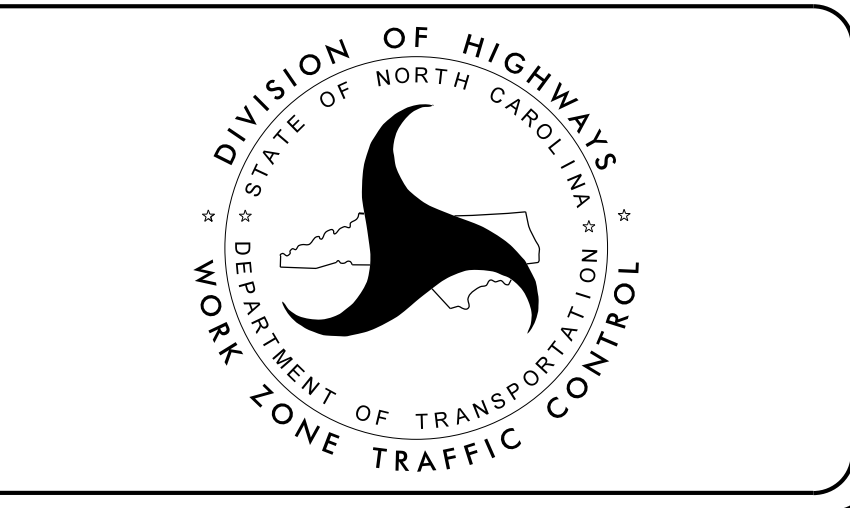
STD. NO.	TITLE
1101.03	TEMPORARY ROAD CLOSURES
1101.04	TEMPORARY SHOULDER CLOSURES
1110.01	STATIONARY WORK ZONE SIGNS
1145.01	BARRICADES

DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED



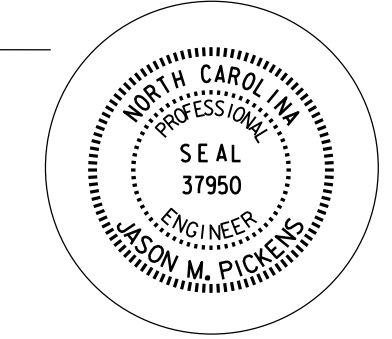
PLANS PREPARED BY:  
EDWARD S. ROBBINS, PE  
TRAFFIC CONTROL PROJECT ENGINEER  
J. MATTHEW PICKENS, PE  
TRAFFIC CONTROL ENGINEER

NCDOT CONTACTS:  
MONICA DUVAL



PLANS PREPARED BY:  
**PARSONS**  
RALEIGH, NORTH CAROLINA, (919) 854-1345  
NC LICENSE NO. F-0246  
FOR NORTH CAROLINA DEPT. OF TRANSPORTATION

APPROVED: Jason M. Pickens  
DATE: 2/4/2019



SEAL

01-FEB-2019 13:51 J:\Division 3 Bridge Replacement\B-4638\TrafficControl\TCP\B-4638\_TC\_TMP\_01.dgn \$\$\$USERNAME\$\$\$

SHEET NO. TMP-1  
**17BP.3.R.77**  
**TIP PROJECT:**

## MANAGEMENT STRATEGIES

DURING REPLACEMENT OF BRIDGE OVER LITTLE POLE CREEK, SR 1703 (CHURCH ROAD) WILL BE CLOSED TO THROUGH TRAFFIC. SR 1703 TRAFFIC WILL BE DETOURED OFF-SITE VIA SR 1636 (ROANOKE ROAD) TO SR 1809 (WRYE BRANCH ROAD) TO SR 1815 (CARRAWAY ROAD) BACK TO SR 1703.

## 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. MODIFICATIONS 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 CONSTRUCTION PROJECT EXCEPT WHEN OTHERWISE NOTED IN THE PLANS OR DIRECTED BY THE ENGINEER.

### TRAFFIC PATTERN ALTERATIONS

A) NOTIFY THE ENGINEER TWENTY ONE (21) CALENDAR DAYS PRIOR TO ANY TRAFFIC PATTERN ALTERATIONS.

### SIGNING

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

CONTRACTOR WILL PROVIDE SIGNING REQUIRED FOR THE OFF-SITE DETOUR ROUTE AS SHOWN IN THE TRAFFIC CONTROL PLANS, UNLESS OTHERWISE NOTED.

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

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

### TRAFFIC CONTROL DEVICES

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

### LOCAL NOTES

1. CONTRACTOR TO MAINTAIN ACCESS TO ALL DRIVEWAYS WITHIN THE PROJECT LIMITS AT ALL TIMES.

## PHASING

### PHASE 1

STEP 1: USING ROADWAY STANDARD DRAWING NUMBER 1101.04, SHEET 1 OF 1, CONTRACTOR TO INSTALL ALL ADVANCE WARNING SIGNS FOR DETOUR, KEEPING SIGNS COVERED (SEE TMP-2A AND ROADWAY STANDARD DRAWING NO. 1101.03, SHEETS 1 OF 9 AND 2 OF 9).

WORKING IN A CONTINUOUS MANNER, COMPLETE THE FOLLOWING WORK IN PHASE I, STEP 2.

STEP 2: CLOSE SR 1703 (CHURCH RD) TO TRAFFIC, UNCOVER ALL ADVANCE WARNING SIGNS FOR ROAD CLOSURE AND SHIFT TRAFFIC TO TEMPORARY DETOUR.

STEP 3: DISMANTLE AND REMOVE EXISTING BRIDGE NO. 195 OVER LITTLE POLE CREEK.

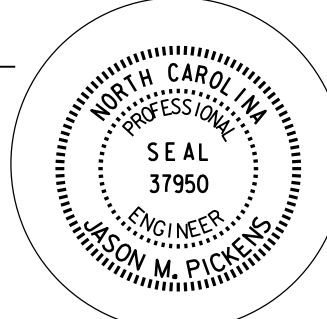

STEP 4: COMPLETE CONSTRUCTION OF PROPOSED STRUCTURE, APPROACH ROADWAY WIDENING AND PAVING (SEE ROADWAY PLANS).

STEP 5: CONTRACTOR TO PLACE FINAL PAVEMENT MARKINGS (PAINT) ON SR 1703 (CHURCH RD).

WORKING IN A CONTINUOUS MANNER, COMPLETE THE FOLLOWING WORK IN PHASE I, STEP 6.

STEP 6: USING ROADWAY STANDARD DRAWINGS NO. 1101.04, SHEET 1 OF 1, REMOVE ALL ADVANCE WARNING SIGNS FOR ROAD CLOSURE, ALL TRAFFIC CONTROL DEVICES AND OPEN SR 1703 (CHURCH RD) TO TRAFFIC.

O:\FEB-2019 [3+5] \DIVISION 3 Bridge Replacement\B-4638\TrafficControl\TCP\B-4638\_TC\_TMP\_01A.dgn  
 \$\$\$USERNAME\$\$\$

DocuSigned by: APPROVED: <i>Jason M. Pickens</i> <small>20CE483822FA4DB</small> DATE: 2/4/2019  SEAL 		<h2 style="margin: 0;">TRANSPORTATION OPERATIONS PLAN</h2>
<b>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</b>		



<p><b>SIGN NUMBER:</b> SP-1      <b>BACKG COLOR:</b> Fluorescent Orange</p> <p><b>TYPE:</b> D      <b>COPY COLOR:</b> Black</p> <p><b>QUANTITY:</b> SEE PLANS</p> <p><b>SIGN WIDTH:</b> 3'-0" <b>HEIGHT:</b> 2'-0" <b>TOTAL AREA:</b> 6.0 Sq.Ft.</p> <p><b>BORDER TYPE:</b> RECESSED <b>RECESS:</b> 0.38" <b>WIDTH:</b> 0.38" <b>RADII:</b> 1.5"</p> <p><b>NO. Z BARS:</b> <b>LENGTH:</b></p> <p><b>NOTES:</b></p> <ol style="list-style-type: none"> <li>Legend and border shall be direct applied black non-reflective sheeting.</li> <li>Background shall be Grade B, fluorescent orange, retroreflective sheeting.</li> <li>To be mounted with Detour signing.</li> </ol>	<p><b>DESIGN BY:</b> JMP      <b>CHECKED BY:</b> ESR      <b>DATE:</b> OCTOBER 2017</p> <p><b>PROJECT ID:</b> 17BP.3.R.77      <b>DIV:</b> 3</p>																																																																																																										
<p><b>LETTER POSITIONS</b></p> <p style="text-align: center;"><b>Letter spacings are to start of next letter</b></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th>C</th> <th>H</th> <th>U</th> <th>R</th> <th>C</th> <th>H</th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th>Series/Size Text Length</th> </tr> </thead> <tbody> <tr> <td></td> <td>5.4</td> <td>4.3</td> <td>4.5</td> <td>4.6</td> <td>4.3</td> <td>4.2</td> <td>3.3</td> <td>5.4</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>C 2000</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>25.2</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>C 2000</td> </tr> <tr> <td></td> <td>9.6</td> <td>4.3</td> <td>4.5</td> <td>4.7</td> <td>3.3</td> <td>9.6</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>16.8</td> </tr> </tbody> </table>				C	H	U	R	C	H														Series/Size Text Length		5.4	4.3	4.5	4.6	4.3	4.2	3.3	5.4												C 2000																					25.2																					C 2000		9.6	4.3	4.5	4.7	3.3	9.6														16.8
	C	H	U	R	C	H														Series/Size Text Length																																																																																							
	5.4	4.3	4.5	4.6	4.3	4.2	3.3	5.4												C 2000																																																																																							
																				25.2																																																																																							
																				C 2000																																																																																							
	9.6	4.3	4.5	4.7	3.3	9.6														16.8																																																																																							

Spacing Factor is 1 unless specified otherwise

01-FEB-2019 13:51  
 U:\DIVISION\_3\Bridges Replacement\B-4638\TrafficControl\TCP\B-4638\_TC\_TMP\_02.dgn  
 \$\$\$USERNAME\$\$\$

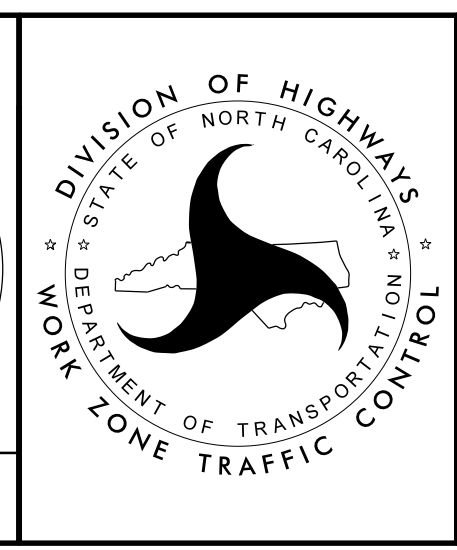
PLANS PREPARED BY:  
**PARSONS**  
 8540 CENTERVIEW DR., SUITE 217  
 FAYETTEVILLE, NORTH CAROLINA 27008  
 NC LICENSE NO. F-0246  
 FOR NORTH CAROLINA DEPT. OF TRANSPORTATION

APPROVED: *Jason M. Pickens*  
20CE483822FA4DB

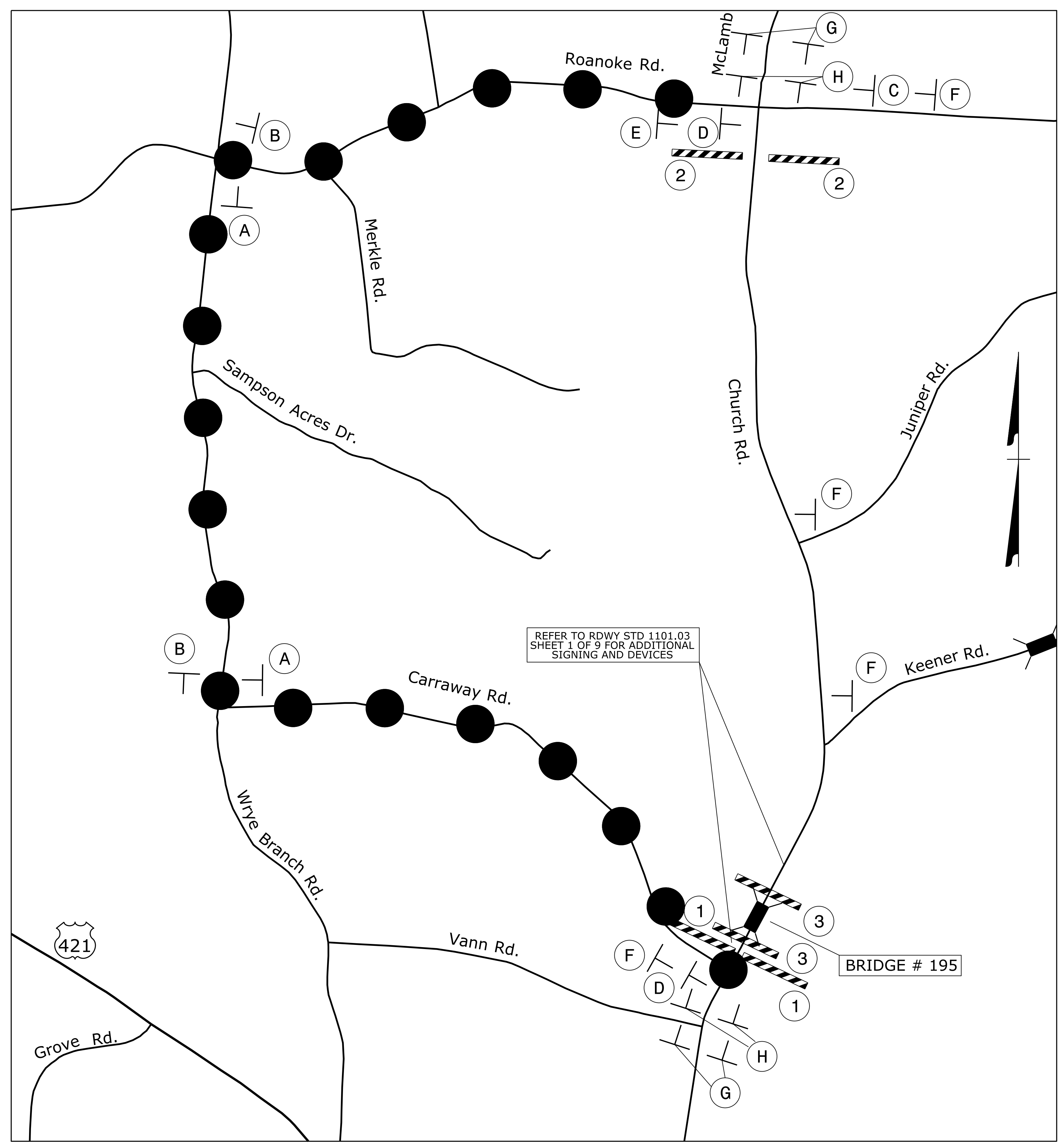
DATE: 2/4/2019

SEAL

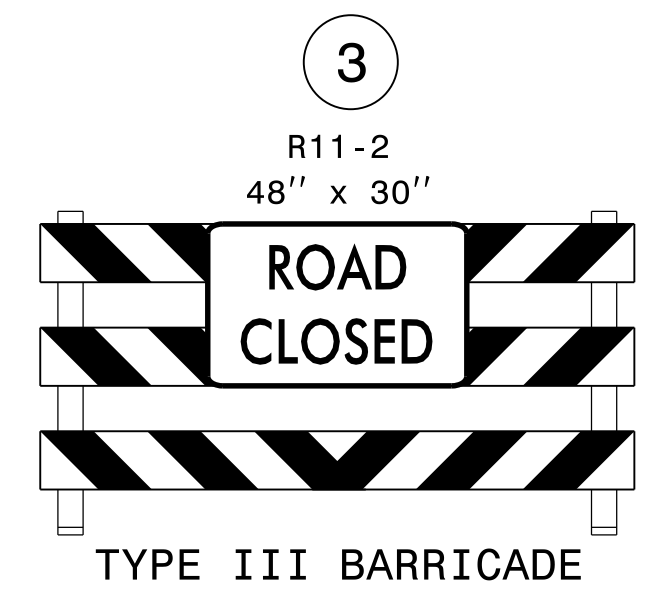
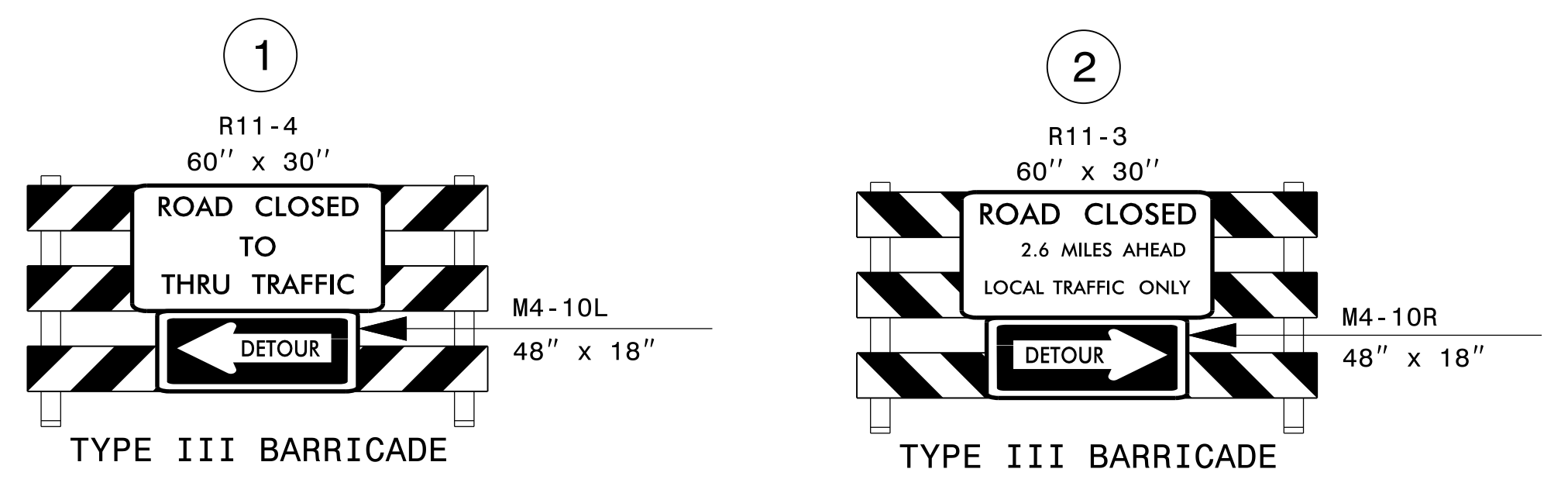
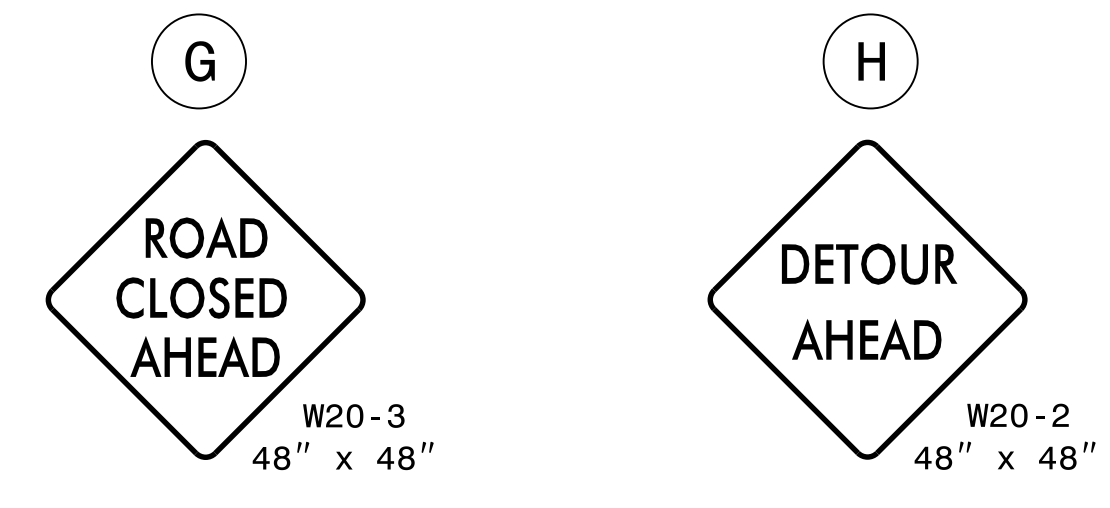
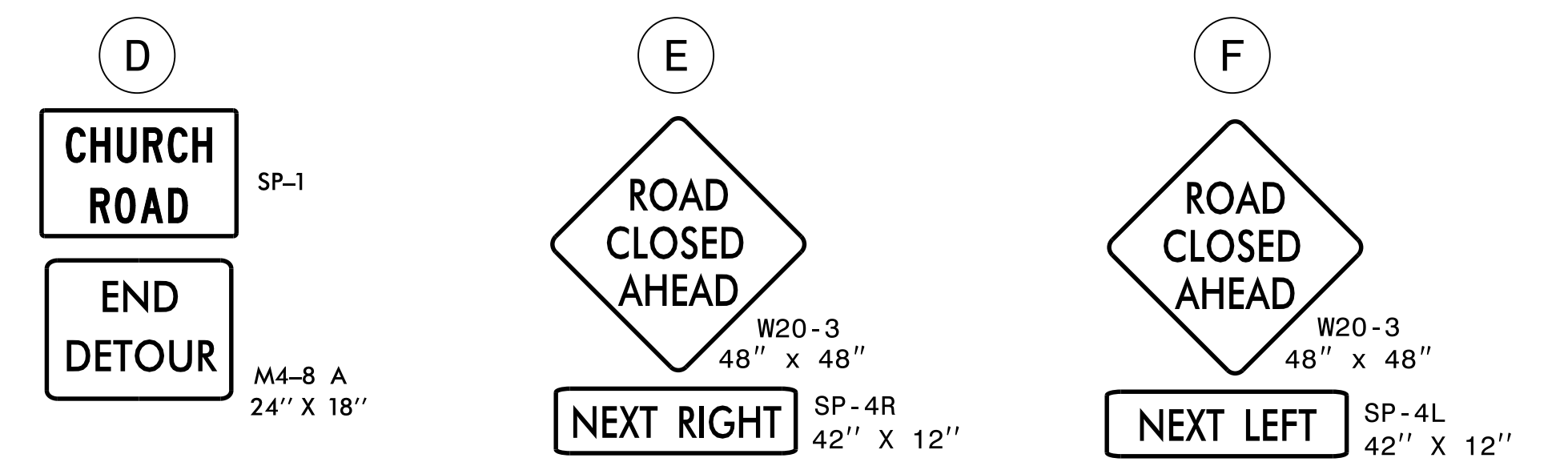
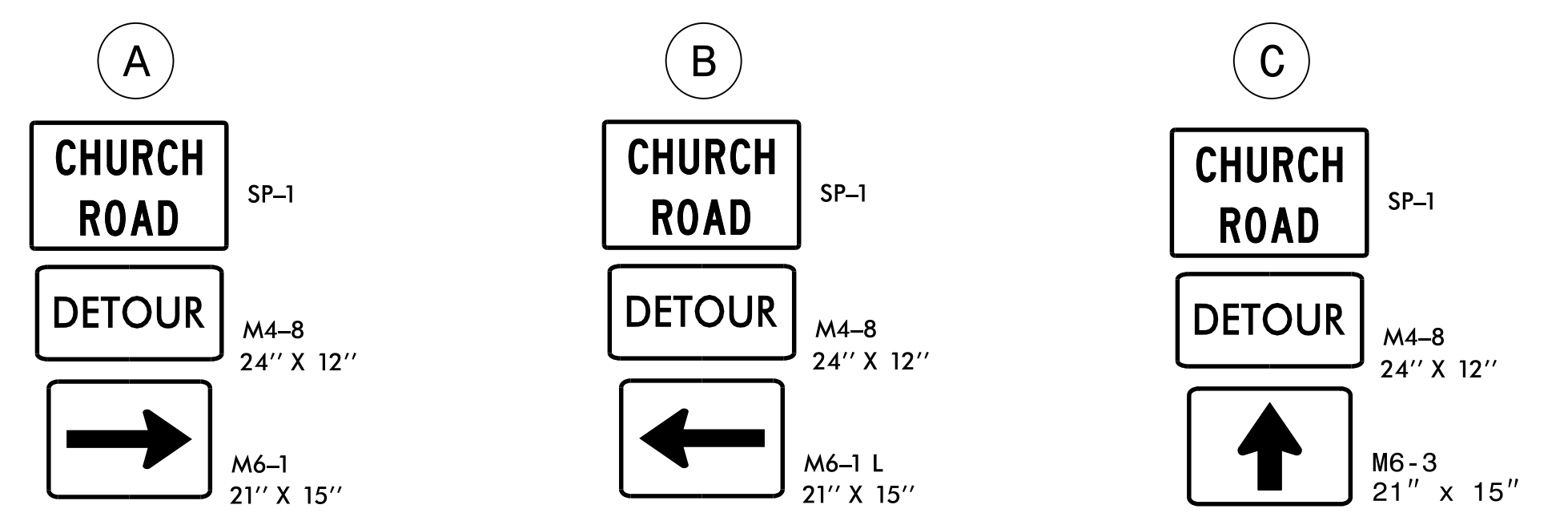
**DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED**



SPECIAL SIGN DESIGN



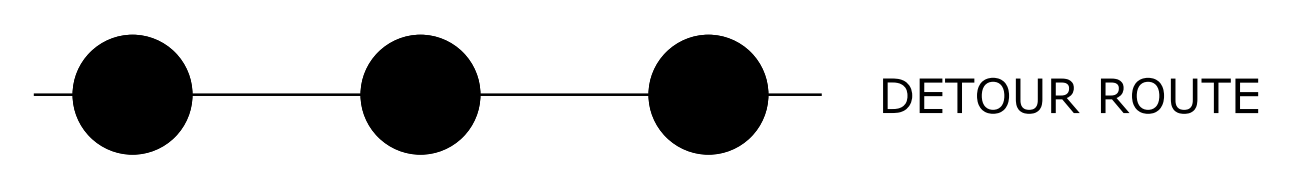
REFER TO RDWY STD 1101.03  
SHEET 1 OF 9 FOR ADDITIONAL  
SIGNING AND DEVICES



**LEGEND**

- TRAFFIC CONTROL DEVICES
- BARRICADE (TYPE III)
- TEMPORARY SIGNING
- STATIONARY SIGN

01-FEB-2019 13:51  
 J:\Division\_3\Bridg Replacement\B-4638\TrafficControl\TCP\B-4638\_TC\_TMP\_03.dgn  
 \$\$\$USERNAME\$\$\$



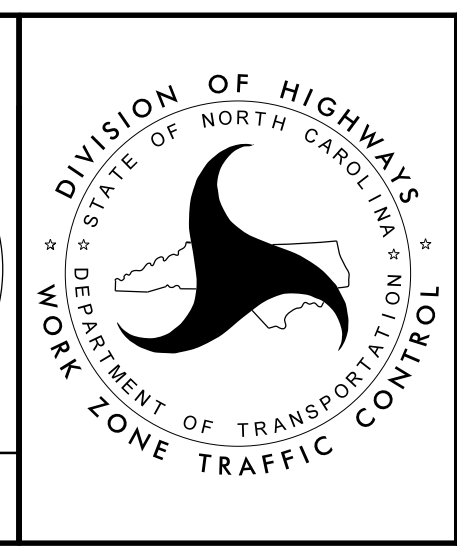
PLANS PREPARED BY :

**PARSONS**  
 RALEIGH, NORTH CAROLINA, (919) 854-1345  
 NC LICENSE NO. F-0246  
 FOR NORTH CAROLINA DEPT. OF TRANSPORTATION

APPROVED: Jason M. Pickens  
 DATE: 2/4/2019

SEAL

DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED



OFF-SITE DETOUR ROUTE AND BARRICADE PLACEMENT

**PROJECT: 17BP.3.R.77**

**STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION**

**PAVEMENT MARKING PLAN  
SAMPSON COUNTY**

**LOCATION: BRIDGE NO. 195 OVER MERKLE SWAMP  
ON SR 1703 (CHURCH RD.)**

<b>TIP NO.</b> 17BP.3.R.77	<b>SHEET NO.</b> PMP - 1
DocuSigned by: APPROVED:  Steve Miller ID: 8F6C815CEE498	
DATE: 2/1/2019	
<b>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</b>	

**INDEX**

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

**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
SR 1703 (CHURCH RD.)	PAINT	NONE

B) PLACE TWO APPLICATIONS OF PAINT PAVEMENT MARKINGS ON THE FINAL WEARING SURFACE. PLACE THE SECOND APPLICATION OF PAINT UPON SUFFICIENT DRYING TIME OF THE FIRST.

C) TIE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING LINES.

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

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

**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
1261.01	GUARDRAIL AND BARRIER DELINEATORS - INSTALLATION SPACING
1261.02	GUARDRAIL AND BARRIER DELINEATORS - TYPES AND MOUNTING
1262.01	GUARDRAIL END DELINEATION

**PAVEMENT MARKING SCHEDULE**

SYMBOL	DESCRIPTION
	<u>PAINT (4")</u>
PA	WHITE EDGELINE
PF	10 FT. YELLOW SKIP
PH	YELLOW SINGLE CENTER
PI	YELLOW DOUBLE CENTER

**N.C.D.O.T. CONTACT INFORMATION**

<b>Ayman Alqudwah, PE, CPM</b> SIGNING AND DELINEATION REGIONAL ENGINEER	
<b>Walter Johnson</b> SIGNING AND DELINEATION PROJECT DESIGN ENGINEER	

**PLAN PREPARED BY: SEPI Engineering**

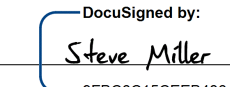

<b>Steve Miller, PE</b>	PROJECT MANAGER
<b>Robert Screws, EI</b>	TRAFFIC ENGINEER

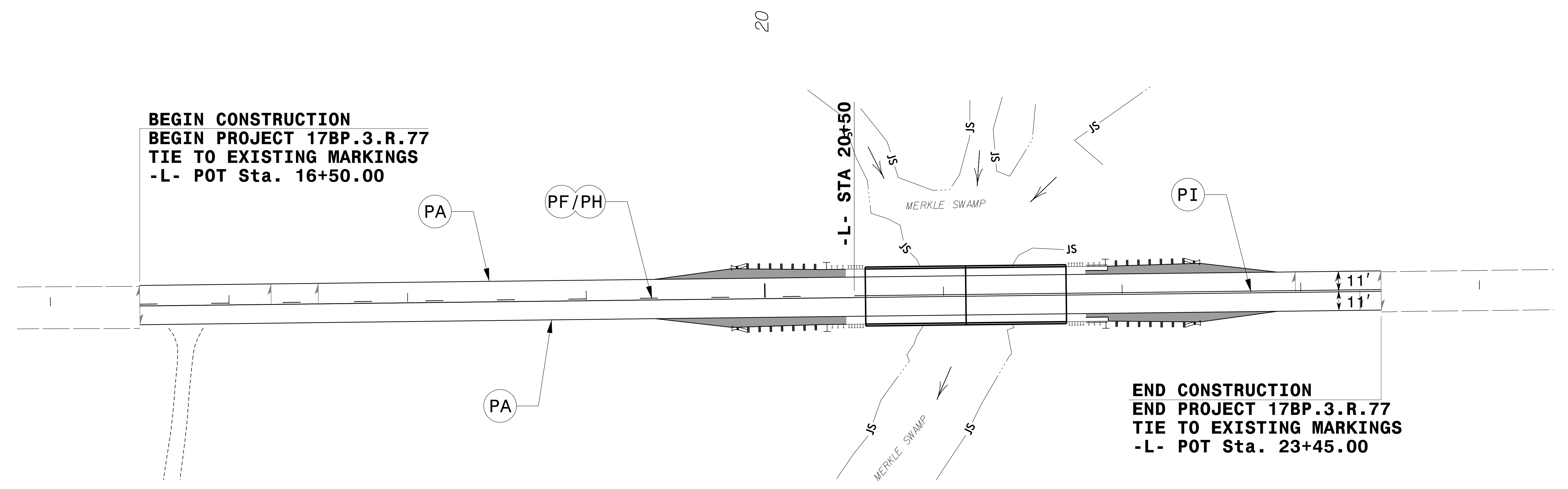
SEPI

ENGINEERING & CONSTRUCTION

1025 Wade Avenue  
Raleigh, NC 27605  
Tel: 919-789-9977  
Fax: 919-789-9591  
License: C-2197



TIP NO. 17BP.3.R.77	SHEET NO. PMP-2
APPROVED:  DocuSigned by: Steve Miller 2/1/2019	
DATE: 2/1/2019	
SEAL 	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25  
26  
27  
28  
29  
30  
31  
32  
33  
34  
35  
36  
37  
38  
39  
40  
41  
42  
43  
44  
45  
46  
47  
48  
49  
50  
51  
52  
53  
54  
55  
56  
57  
58  
59  
60  
61  
62  
63  
64  
65  
66  
67  
68  
69  
70  
71  
72  
73  
74  
75  
76  
77  
78  
79  
80  
81  
82  
83  
84  
85  
86  
87  
88  
89  
90  
91  
92  
93  
94  
95  
96  
97  
98  
99  
100

**SEPI**  
ENGINEERING &  
CONSTRUCTION

1025 Wade Avenue  
Raleigh, NC 27605  
Tel: 919-789-9977  
Fax: 919-789-9591  
License: C-2197

**PAVEMENT MARKING DETAIL**

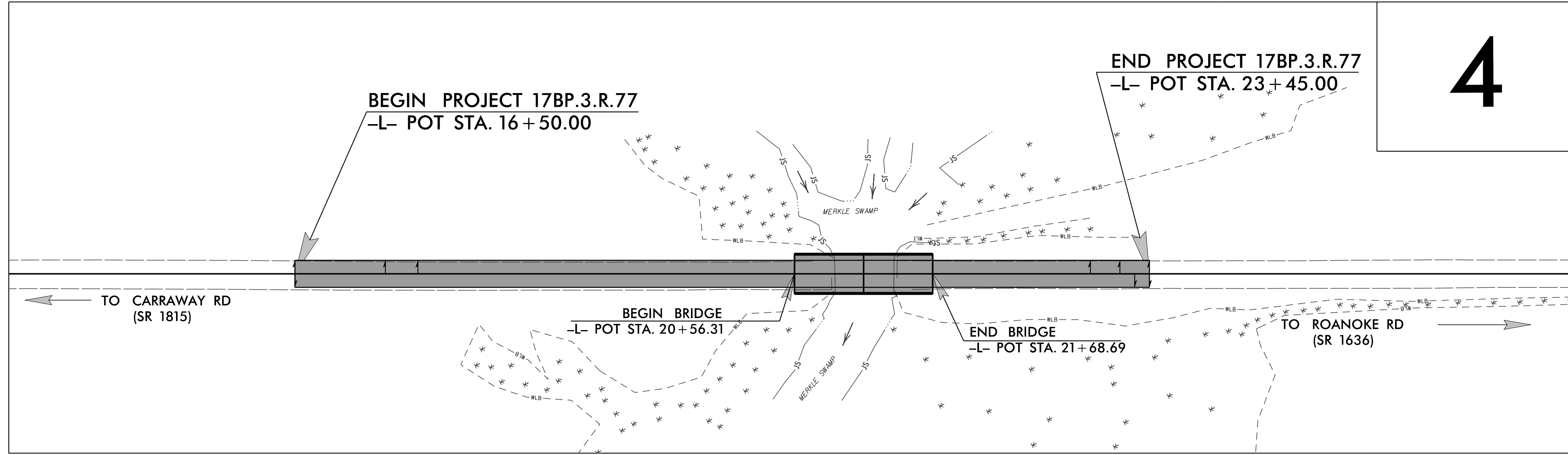
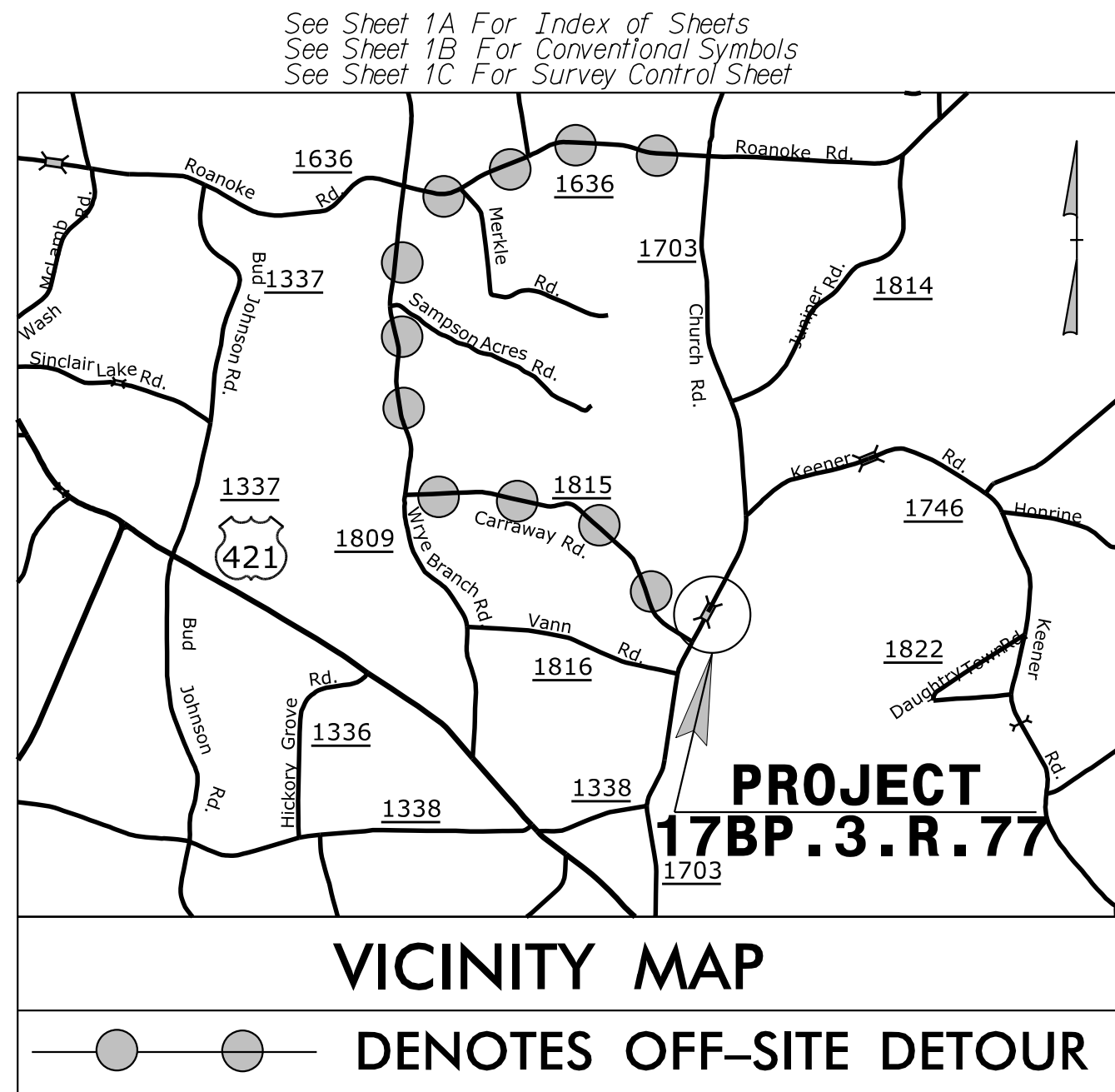
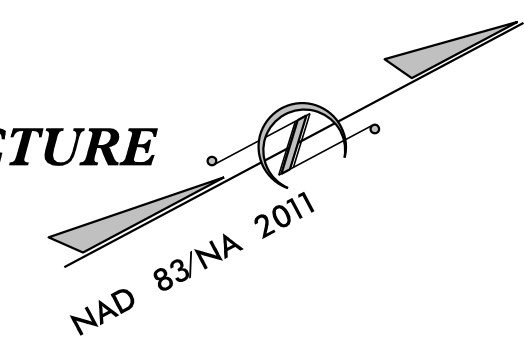
**TIP PROJECT: 17BP.3.R.77**

2018 STANDARD SPECIFICATIONS  
**RIGHT OF WAY DATE:**  
 JUNE 5, 2018  
**LETTING DATE:**  
 SEPTEMBER 19, 2019

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

**LOCATION: BRIDGE NO. 195 OVER MERKLE SWAMP  
 ON SR 1703 (CHURCH RD)**

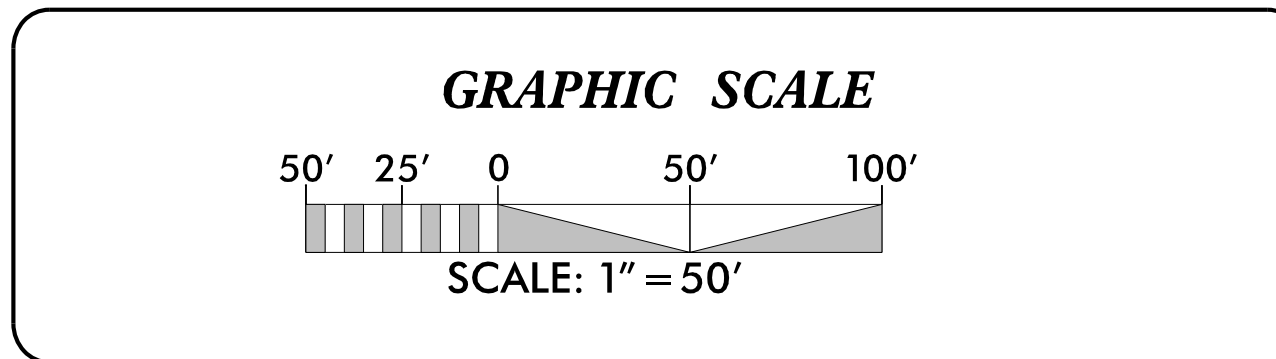
**TYPE OF WORK: GRADING, DRAINAGE, PAVING, AND STRUCTURE**



**EROSION AND SEDIMENT CONTROL MEASURES**

Std. #	Description	Symbol
1630.03	Temporary Silt Ditch	TD
1630.05	Temporary Diversion	TD
1605.01	Temporary Silt Fence	III III III
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.



THESE EROSION AND SEDIMENT CONTROL PLANS COMPLY WITH THE REGULATIONS SET FORTH BY THE NCG-010000 GENERAL CONSTRUCTION PERMIT EFFECTIVE AUGUST 1, 2016 AND ISSUED BY THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENTAL QUALITY DIVISION OF WATER RESOURCES.

Prepared in the Office of:  
**SUNGATE DESIGN GROUP, P.A.**

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

Designed by:  
**MATTHEW C. EDWARDS, EI** 3992  
 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:  
**NOELLE RING, CPESC**

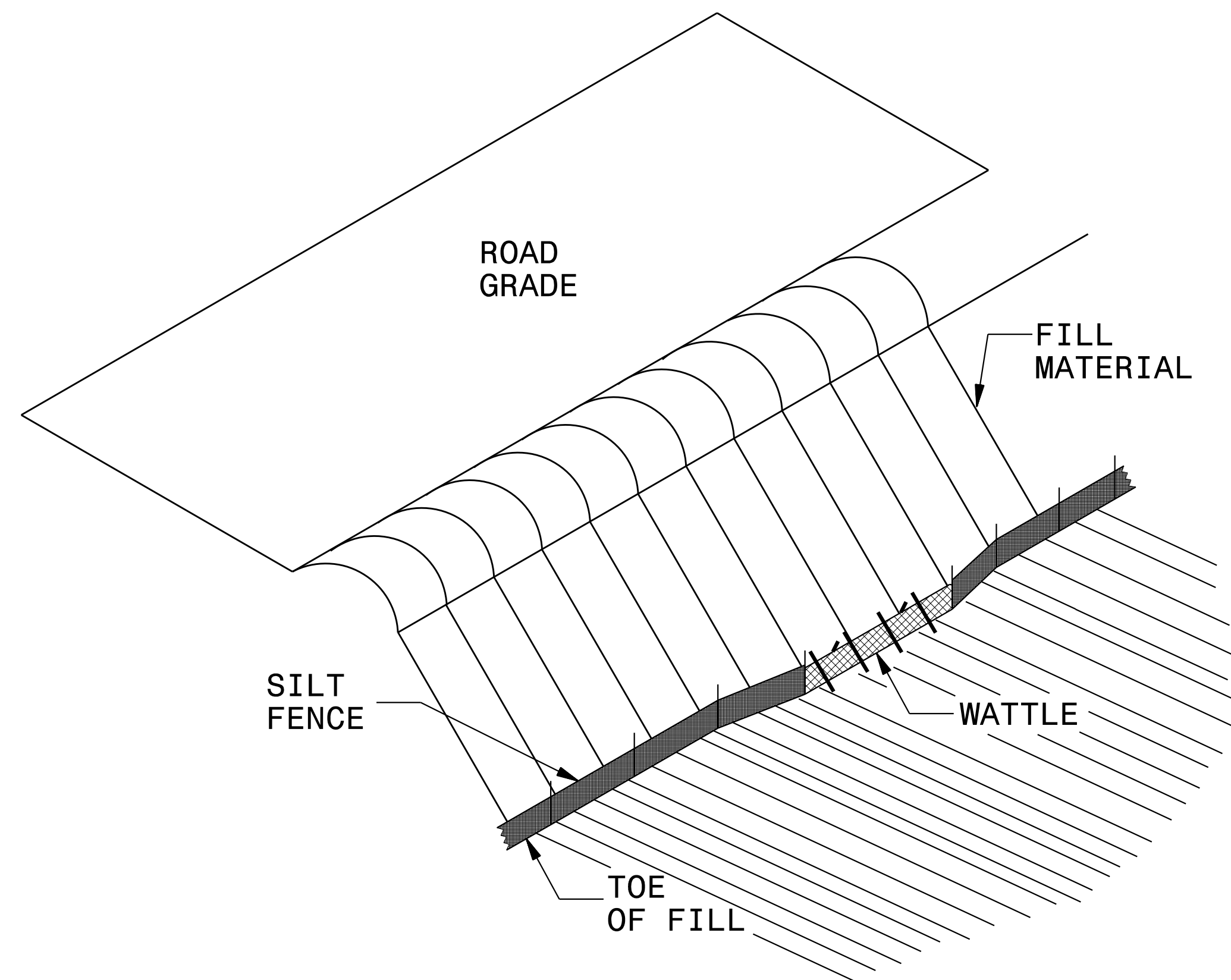
Roadway Standard Drawings

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.

1604.01 Railroad Erosion Control Detail	1632.01 Rock Inlet Sediment Trap Type A
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 Baffle
1630.06 Special Stilling Basin	1645.01 Temporary Stream Crossing
1631.01 Matting Installation	

# SILT FENCE WATTLE BREAK DETAIL

PROJECT REFERENCE NO. 17BP.3.R.77	SHEET NO. EC-2
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

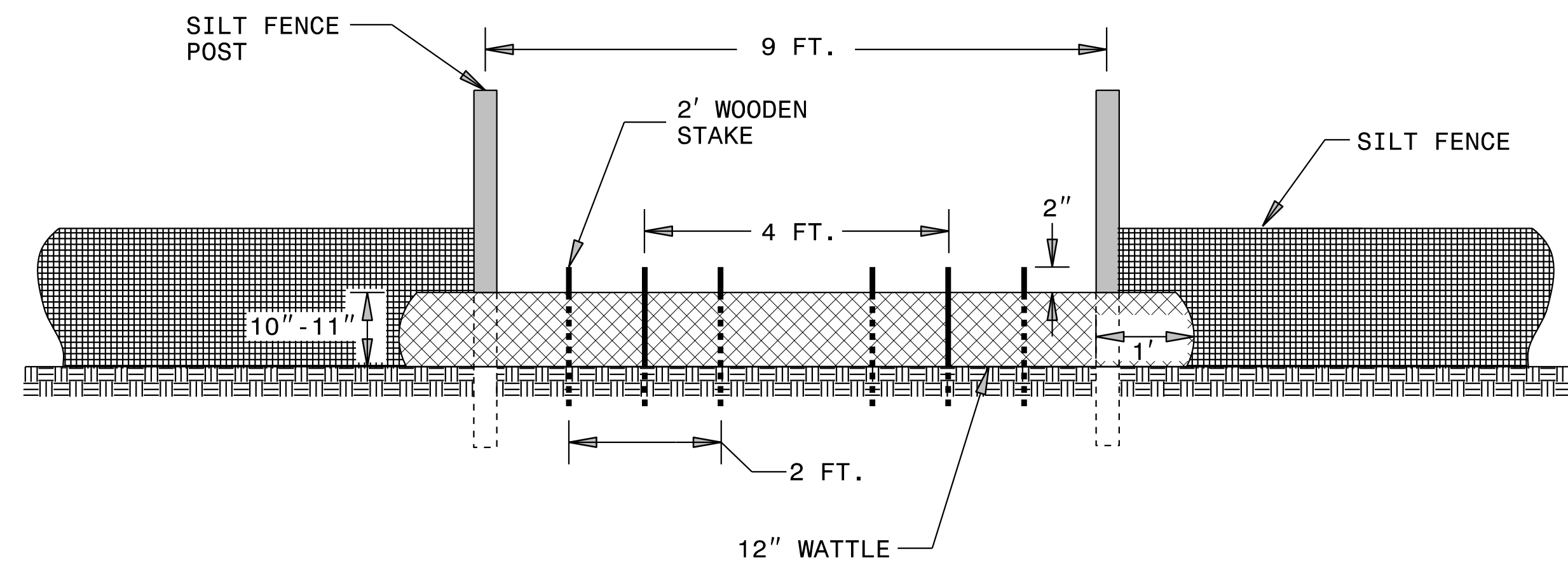
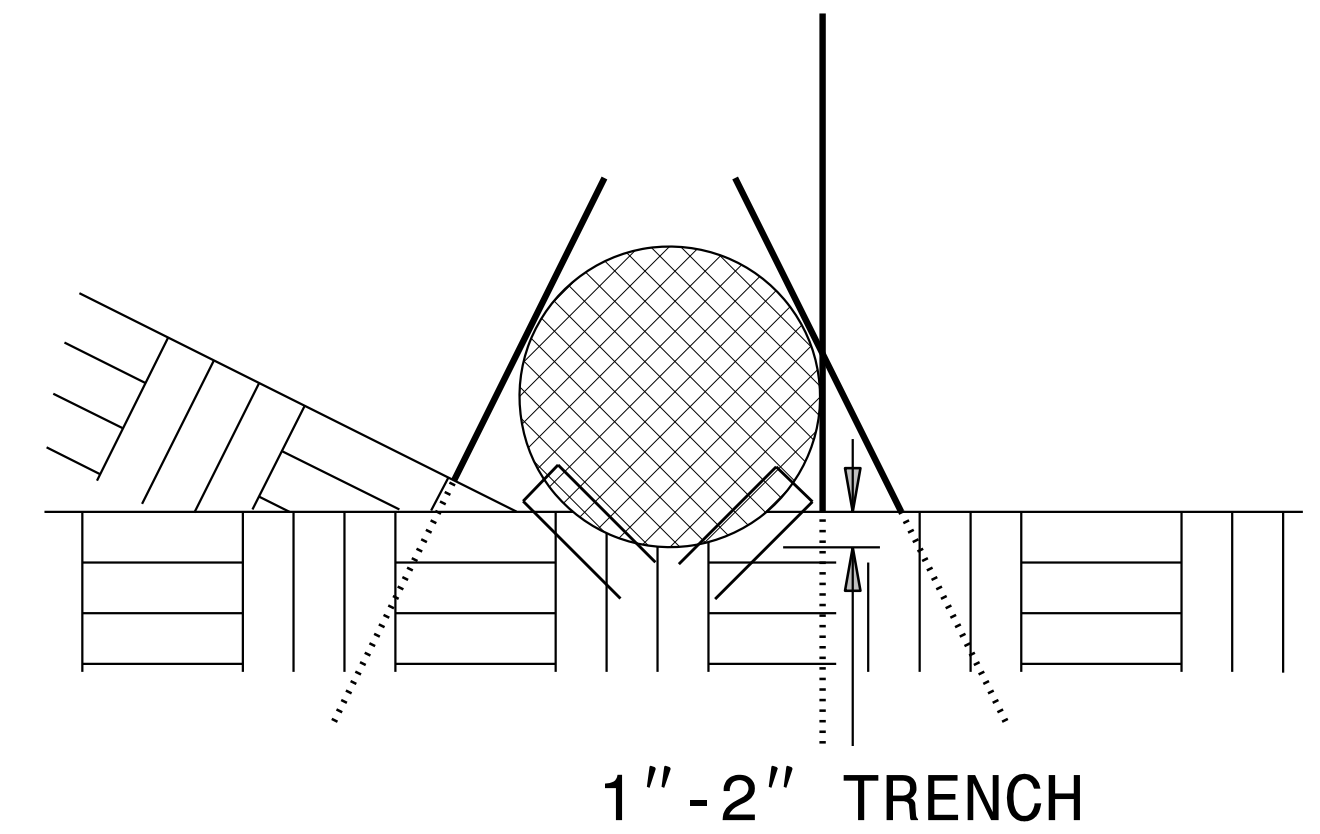


**ISOMETRIC VIEW**

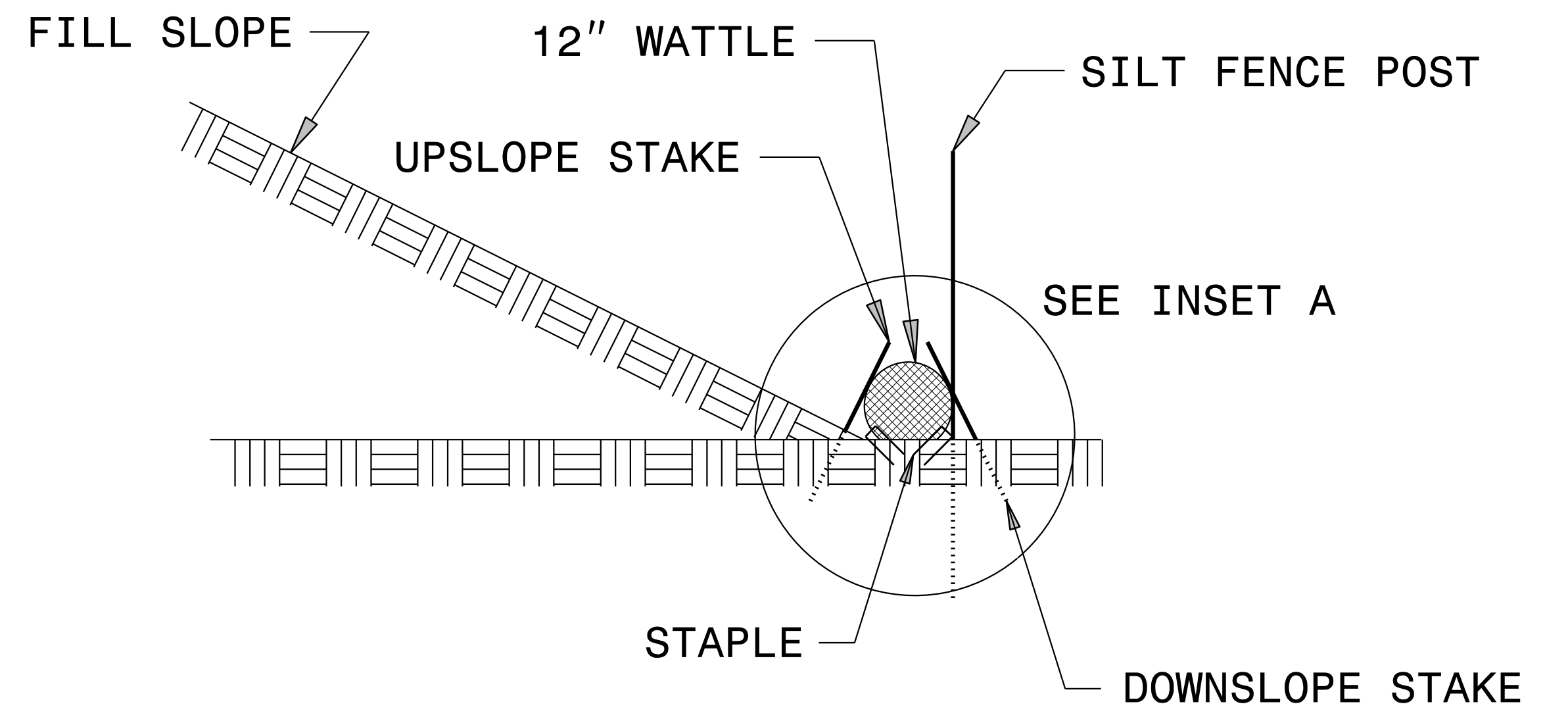
**NOTES:**

- USE MINIMUM 12 IN. DIAMETER EXCELSIOR 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**



**VIEW FROM SLOPE**



**SIDE VIEW**



DIVISION OF HIGHWAYS  
STATE OF NORTH CAROLINA

---



---

PROJECT REFERENCE NO. <i>17BP.3.R.77</i>	SHEET NO. <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.	SHEET NO.
17BP.3.R.77	EC-04/CONST.04
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

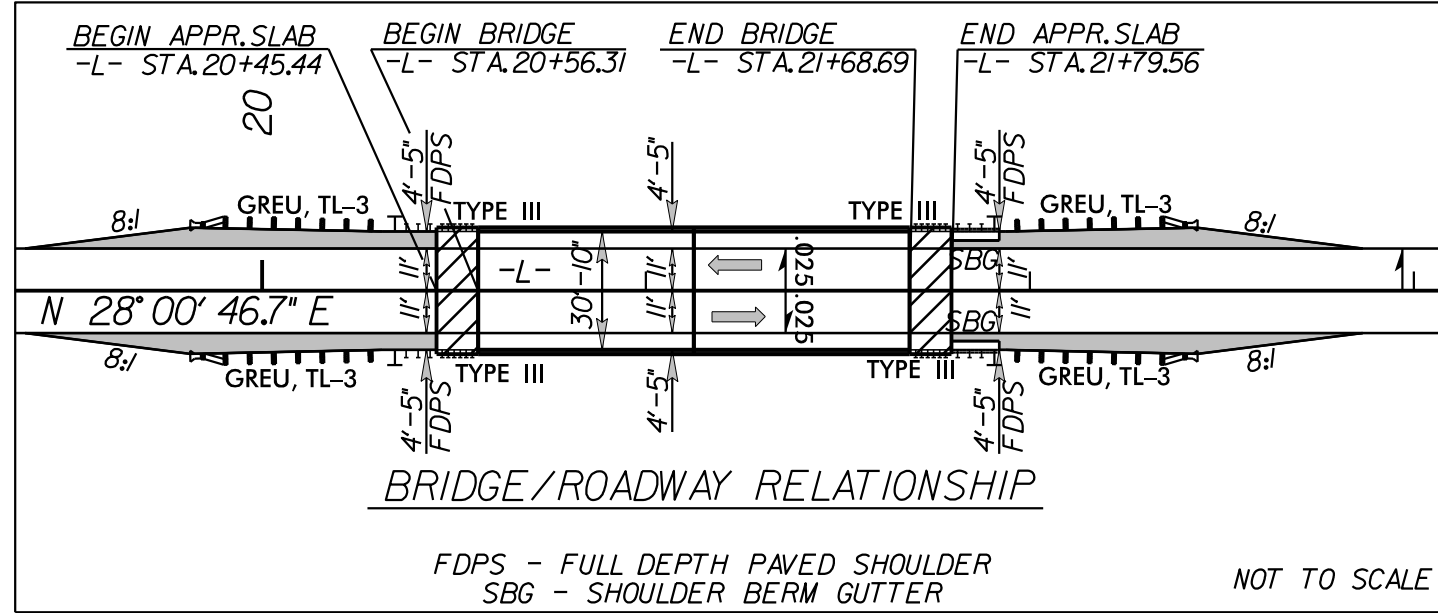
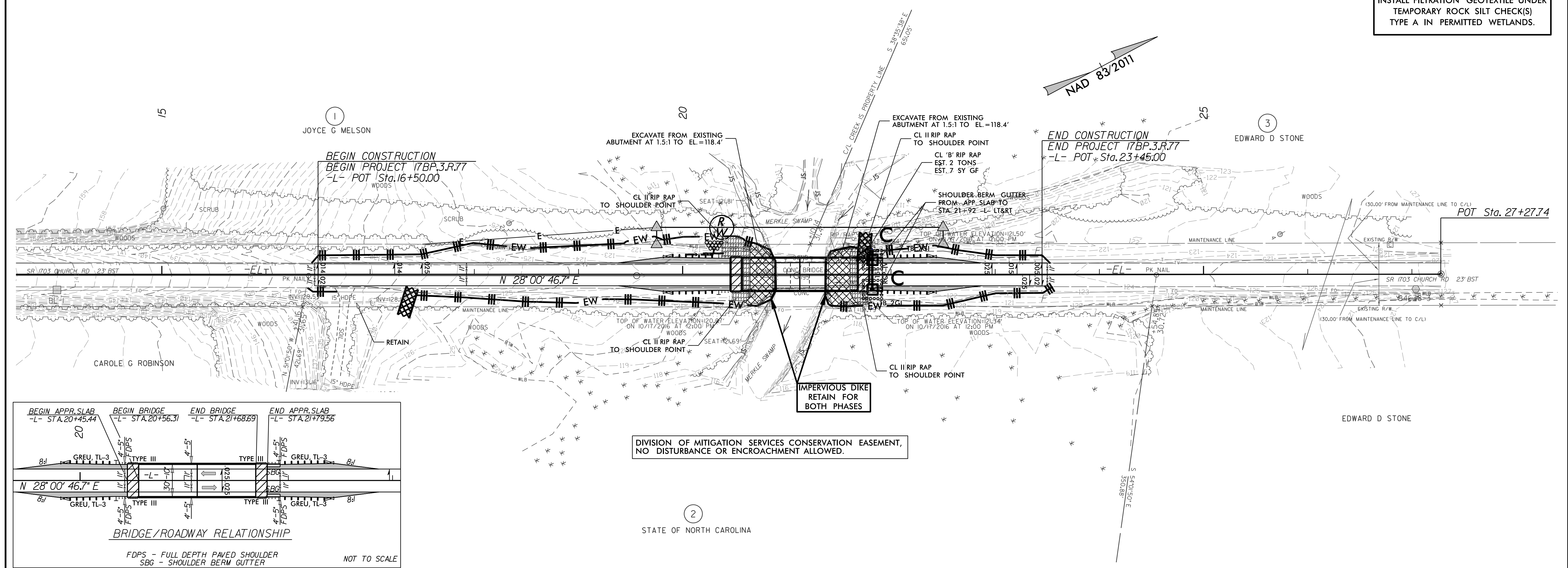
NOTE:  
UTILIZE SPECIAL STILLING BASIN(S)  
WHERE APPLICABLE.

NOTE:  
IMPERVIOUS DIKES MAY BE MODIFIED  
AND/OR ELIMINATED AS DIRECTED.

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

CLEARING AND GRUBBING  
AND FINAL GRADING  
EROSION CONTROL FOR  
CONSTRUCTION SHEET 04

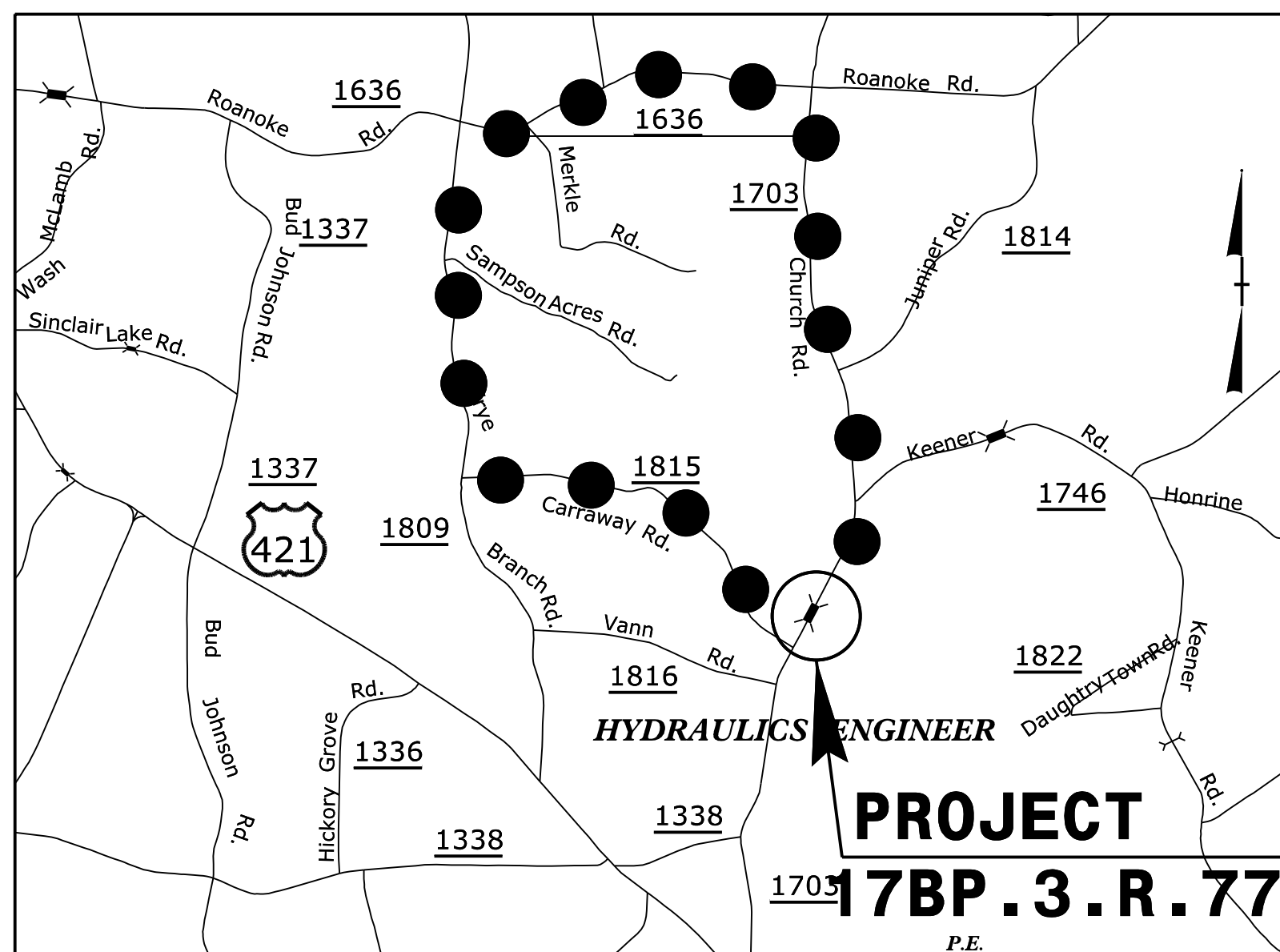
INSTALL FILTRATION GEOTEXTILE UNDER  
TEMPORARY ROCK SILT CHECK(S)  
TYPE A IN PERMITTED WETLANDS.



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

09/08/99

**TIP PROJECT: 17BP.3.R.77**



**VICINITY MAP**

● ● DENOTES OFF-SITE DETOUR

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

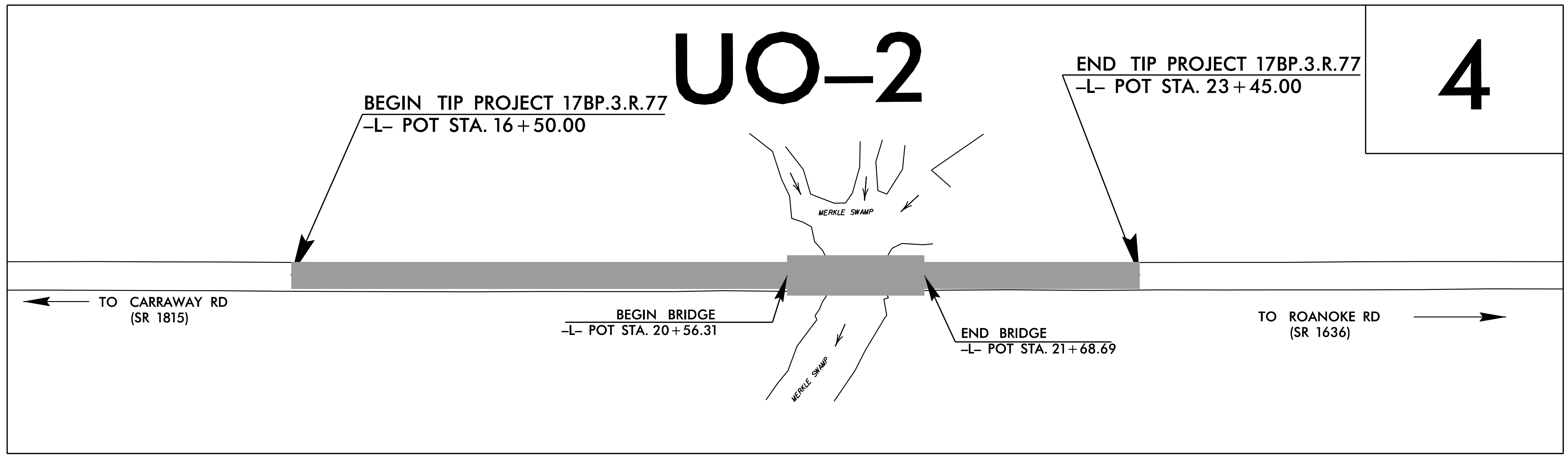
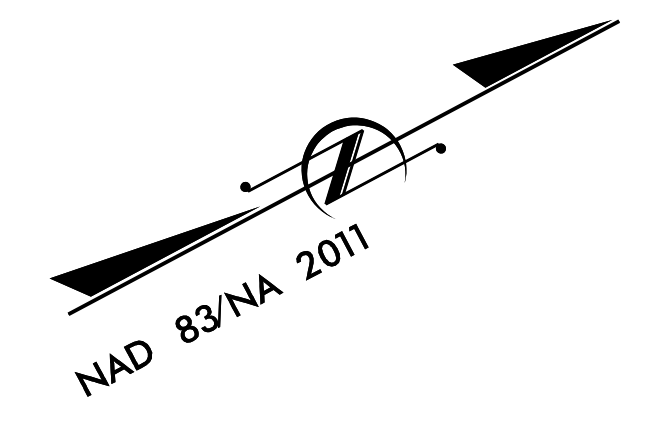
**UTILITIES BY OTHERS PLANS  
SAMPSON COUNTY**

**LOCATION: BRIDGE NO. 195 OVER MERKLE SWAMP  
ON SR 1703 (CHURCH RD)**

**TYPE OF WORK: COMMUNICATIONS**

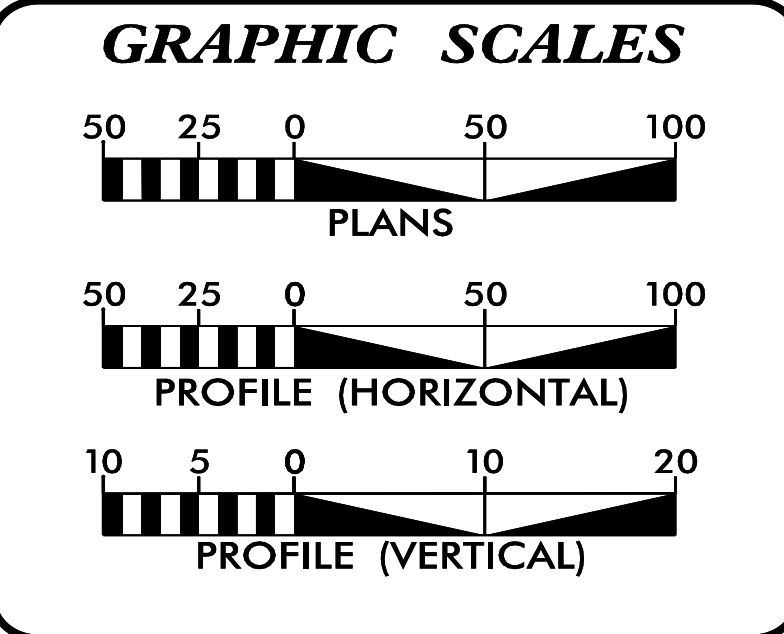
T.I.P. NO.	SHEET NO.
17BP.3.R.77	UO-1

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



**CONTRACT:**

\$\$\$\$\$ SYSTEM \$\$\$\$\$\$  
\$\$\$\$\$ DOWN \$\$\$\$\$\$  
\$\$\$\$\$ USERNAME \$\$\$\$\$\$



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

**UTILITY OWNERS WITH CONFLICTS**

(A) COMMUNICATION - STAR COMMUNICATIONS

PREPARED IN THE OFFICE OF:

**SO-DEEP | SAM NC**  
A SAM COMPANY

SO-DEEP | SAM NC, Inc.  
2800-154 Sumner Boulevard, Raleigh, NC 27616 Tel 919-878-7466

Keith Garry UTILITY PROJECT MANAGER  
Dave Hale PROJECT UTILITY COORDINATOR

**DIVISION OF HIGHWAYS  
DIVISION 3**

DIV ADDRESS  
5501 Barbados Blvd.  
Castle Hayne, NC 28429

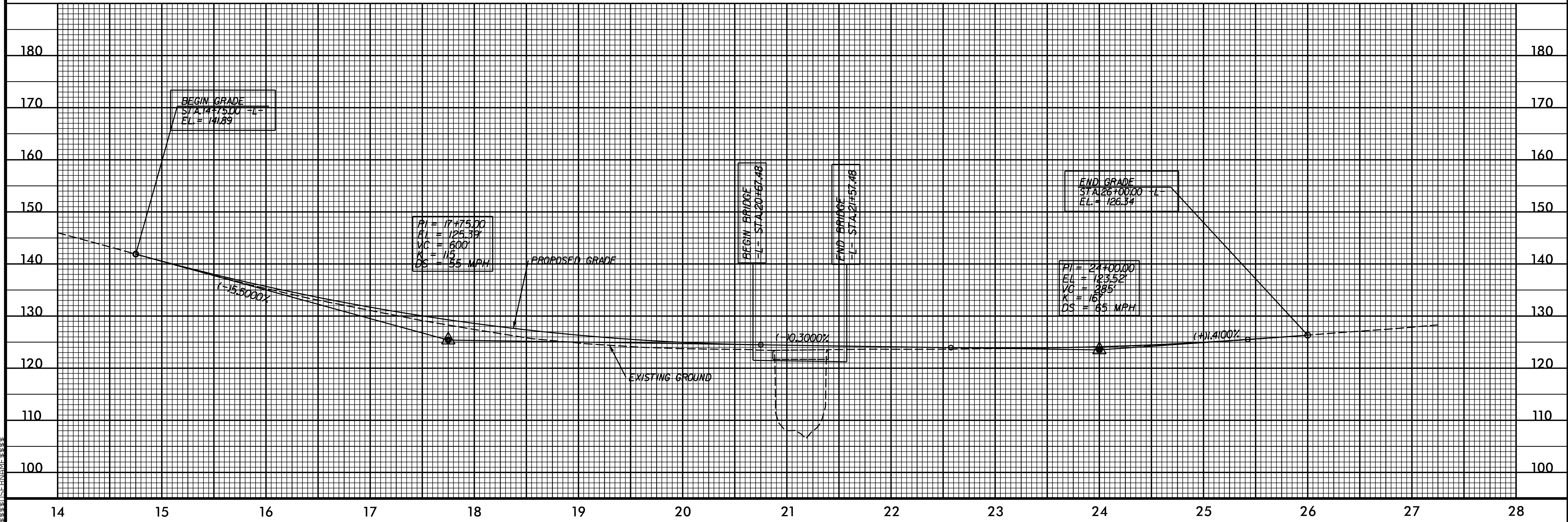
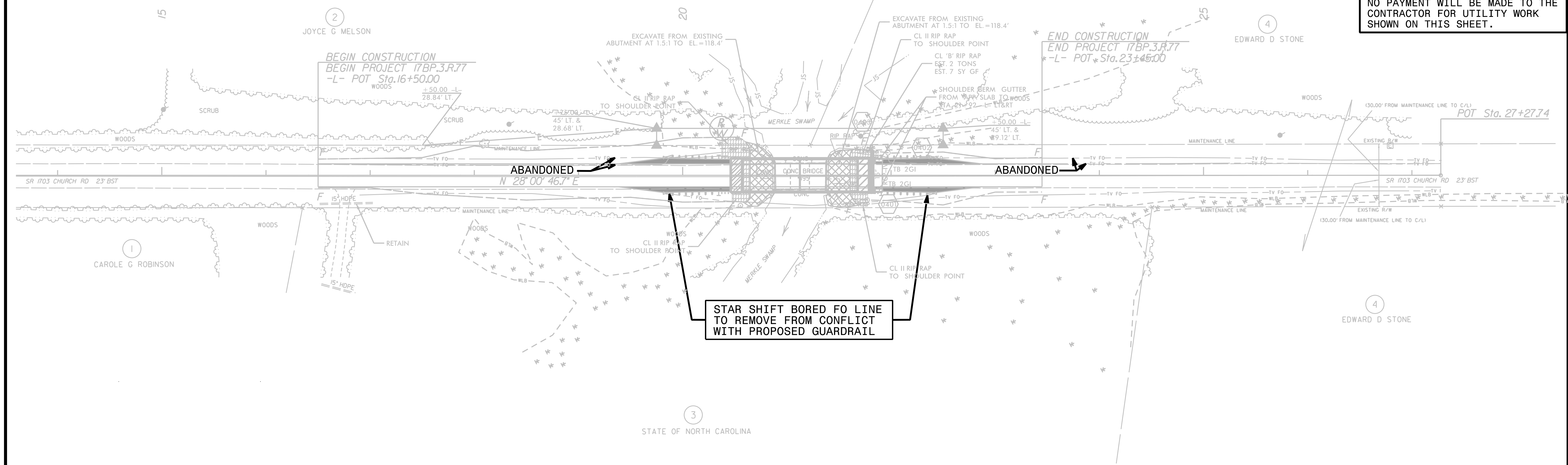
Al Edgerton DIVISION CONTACT #1  
Monica Duval DIVISION CONTACT #2



8/17/99

PLANS PREPARED BY:  
**PARSONS**  
 RALEIGH, NORTH CAROLINA, (919) 854-1345  
 NC LICENSE NO. F-0246  
 FOR NORTH CAROLINA DEPT. OF TRANSPORTATION  
**SUNGATE DESIGN GROUP, P.A.**  
 905 JONES FRANKLIN ROAD  
 RALEIGH, NORTH CAROLINA 27608  
 TEL: (919) 859-2248 FAX: (919) 856-6258  
 ENG. FIRM LICENSE NO. C490

PROJECT REFERENCE NO. <b>17BP.3.R.77</b>	SHEET NO. <b>U0-2</b>
<b>THIS SHEET CORRESPONDS TO R0Y-4</b>	
<b>UTILITIES BY OTHERS</b>	
NOTE: ALL UTILITY WORK SHOWN ON THIS SHEET WILL BE DONE BY OTHERS. NO PAYMENT WILL BE MADE TO THE CONTRACTOR FOR UTILITY WORK SHOWN ON THIS SHEET.	



8/17/99  
 17BP.3.R.77  
 U0-2  
 THIS SHEET CORRESPONDS TO R0Y-4  
 UTILITIES BY OTHERS

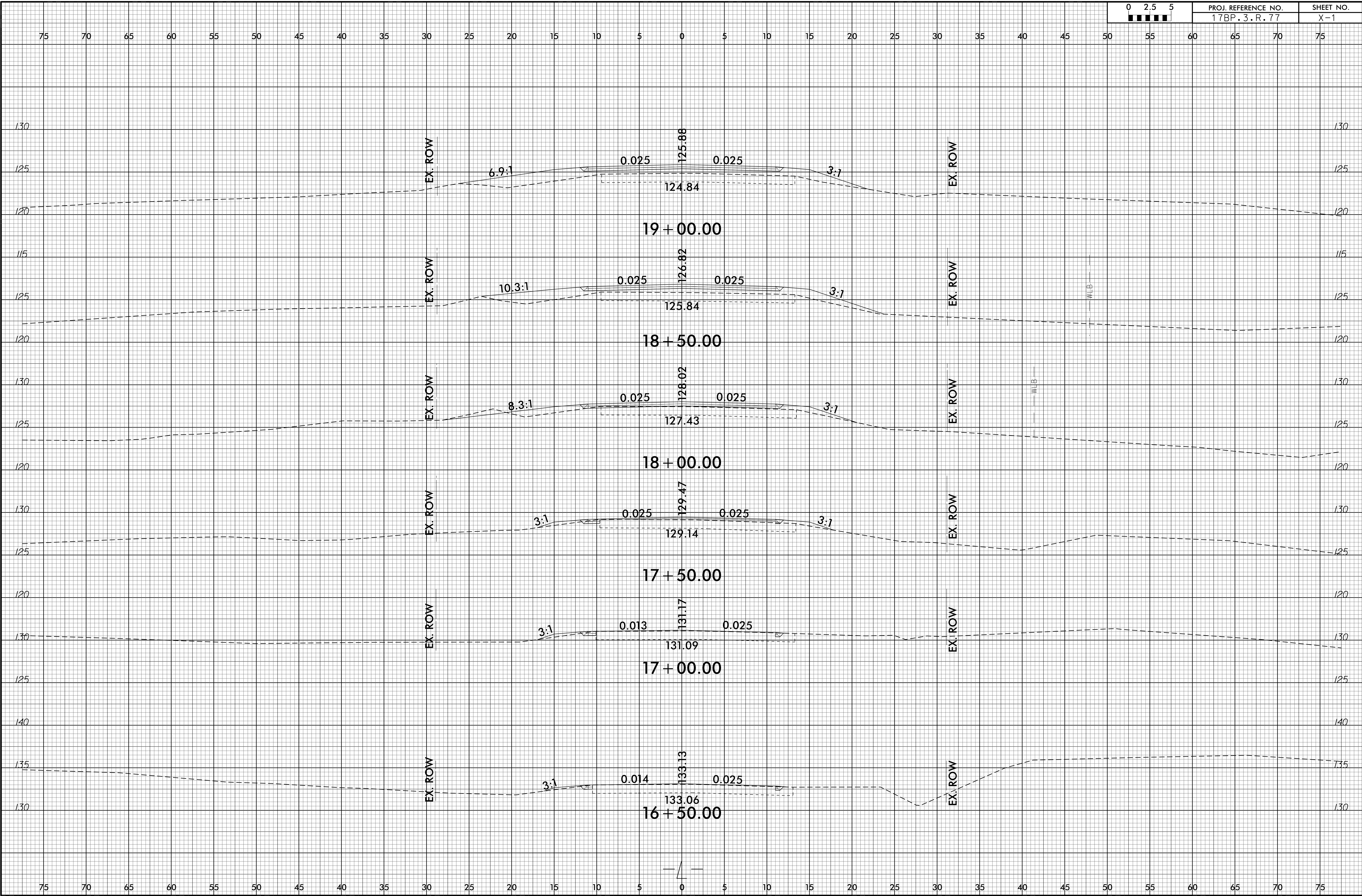


6/23/16



PROJ. REFERENCE NO.  
17BP.3.R.77

SHEET NO.  
X-1



01-FEB-2019 13:51  
3:\U\17BP\17BP.3.R.77\17BP.3.R.77.dgn  
17BP.3.R.77.dgn

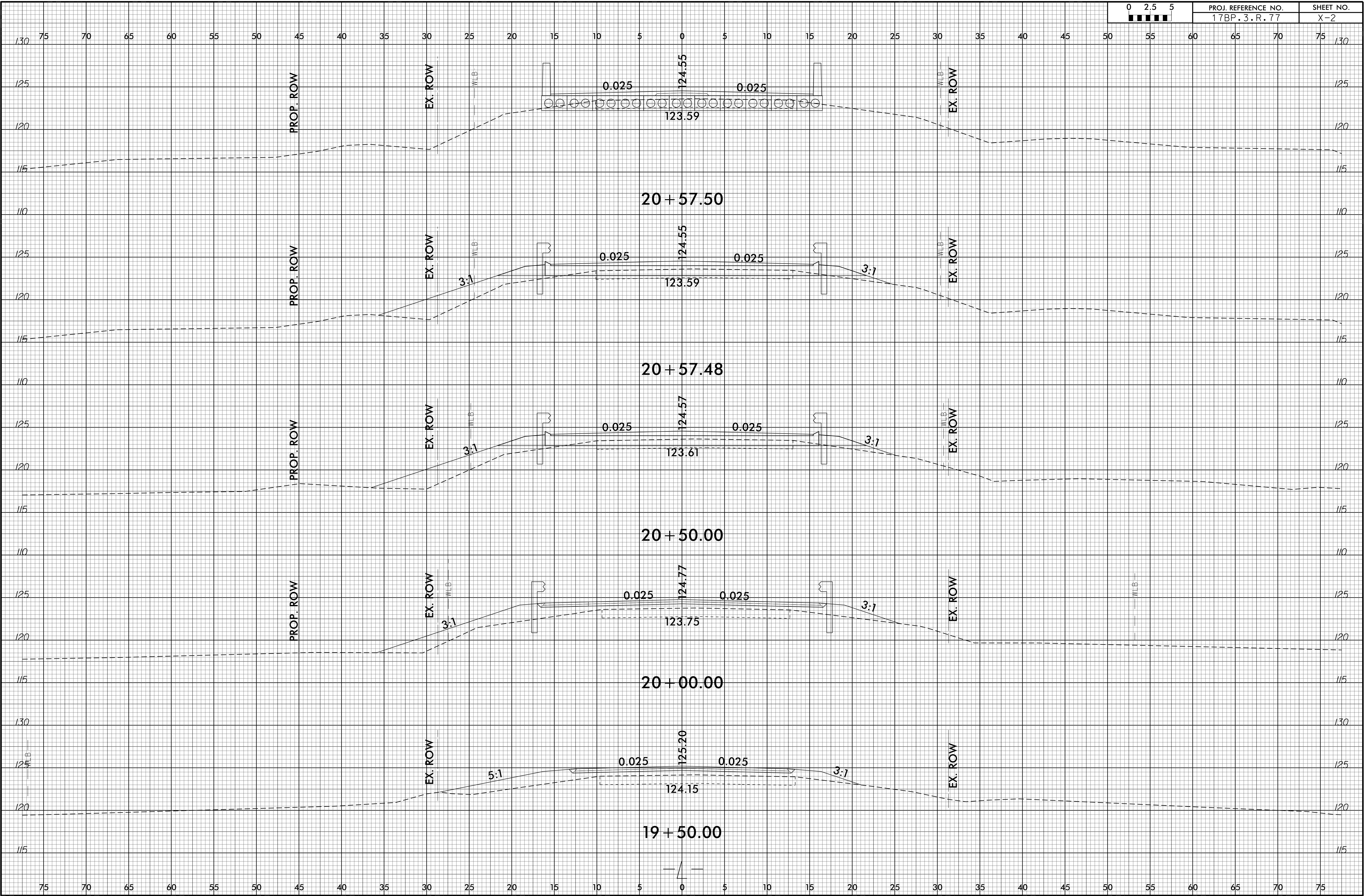


6/23/16



PROJ. REFERENCE NO.  
17BP.3.R.77

SHEET NO.  
X-2



01-FEB-2019 13:51  
 J:\UAV\GIS\01\Bridges Replacement\B-4638\Roadway\XSC\B-4638-Fdy\_XPL.dgn  
 3:38:32 PM

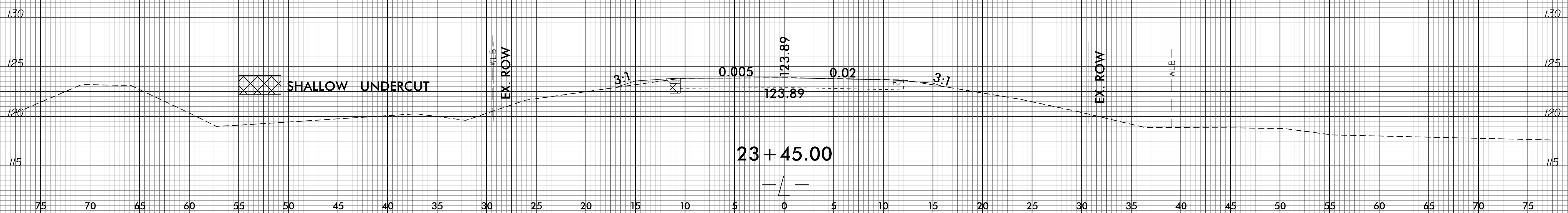


6/23/16



PROJ. REFERENCE NO.	SHEET NO.
17BP.3.R.77	X-4

75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75



01-FEB-2019 13:51  
 J:\UAV\GIS\01\Bridges Replacement\B-4638\Roadway\XSC\B-4638.Fdy\_XPL.dgn  
 3:38:21 PM



09/28/19

TIP PROJECT: 17BP.3.R.77

CONTRACT: DC00250

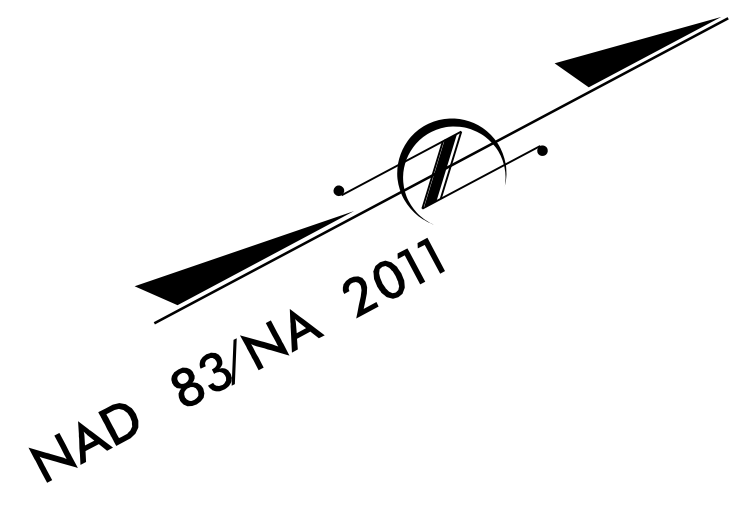
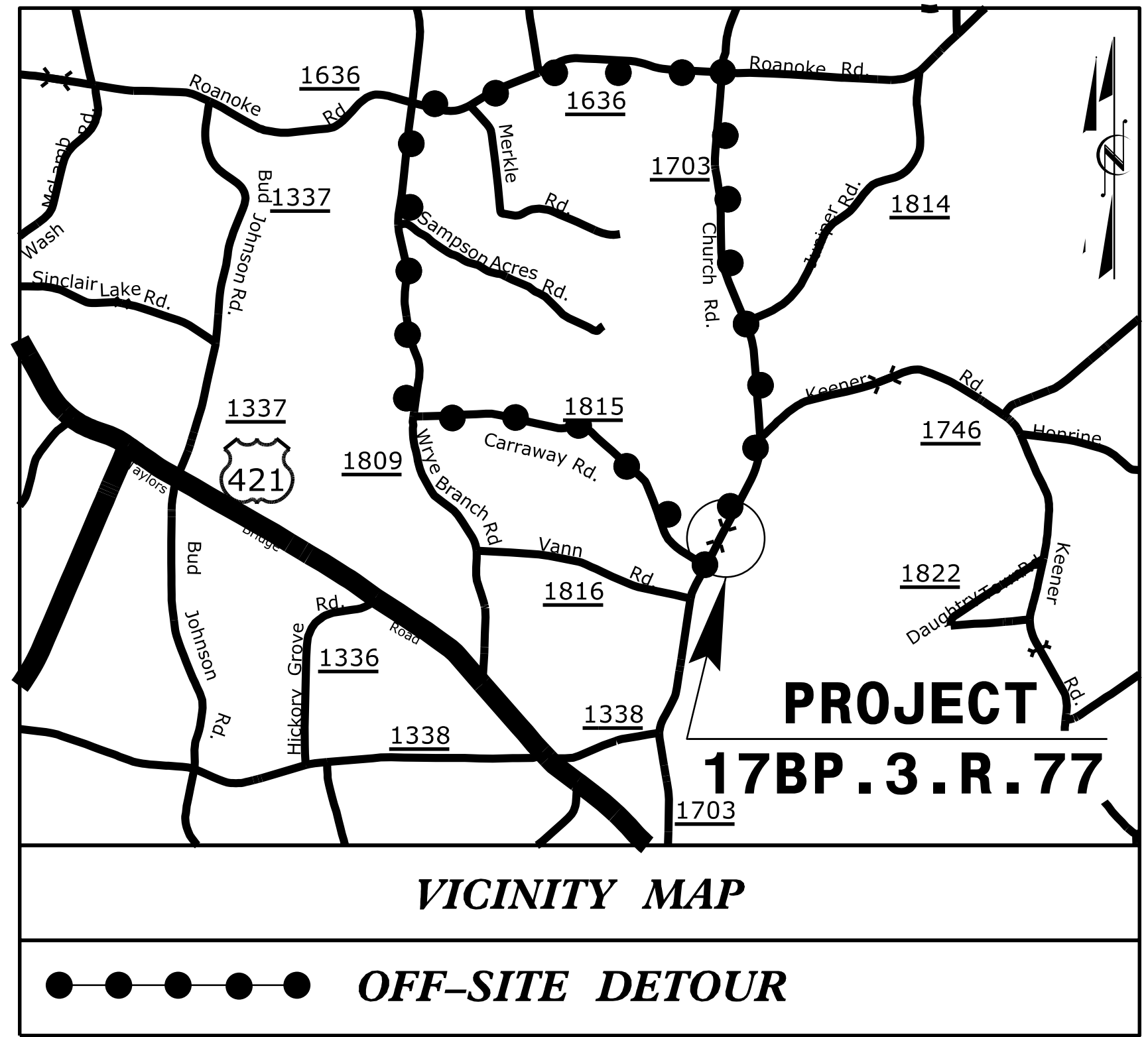
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	17BP.3.R.77		16
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
17BP.3.R.77		P.E.	
17BP.3.R.77		ROW	
17BP.3.R.77		CONST	

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

# SAMPSON COUNTY

LOCATION: BRIDGE No. 195 OVER MERKLE SWAMP  
ON SR 1703 (CHRUCH ROAD)

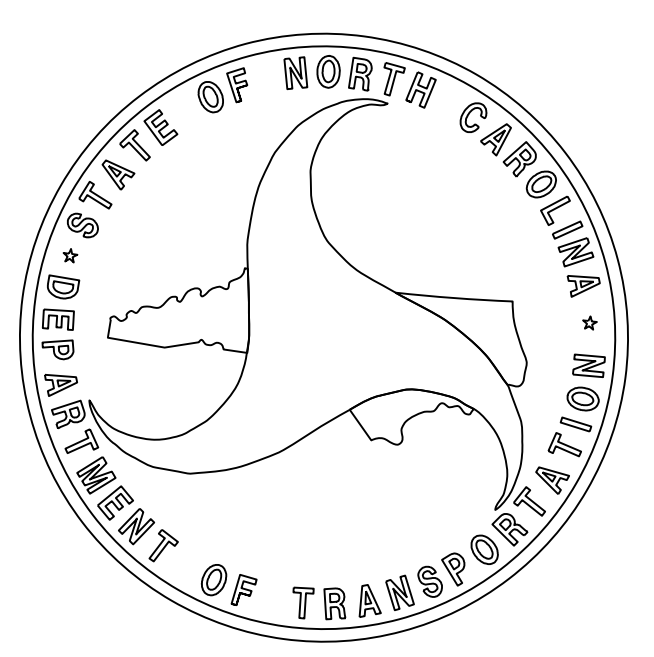
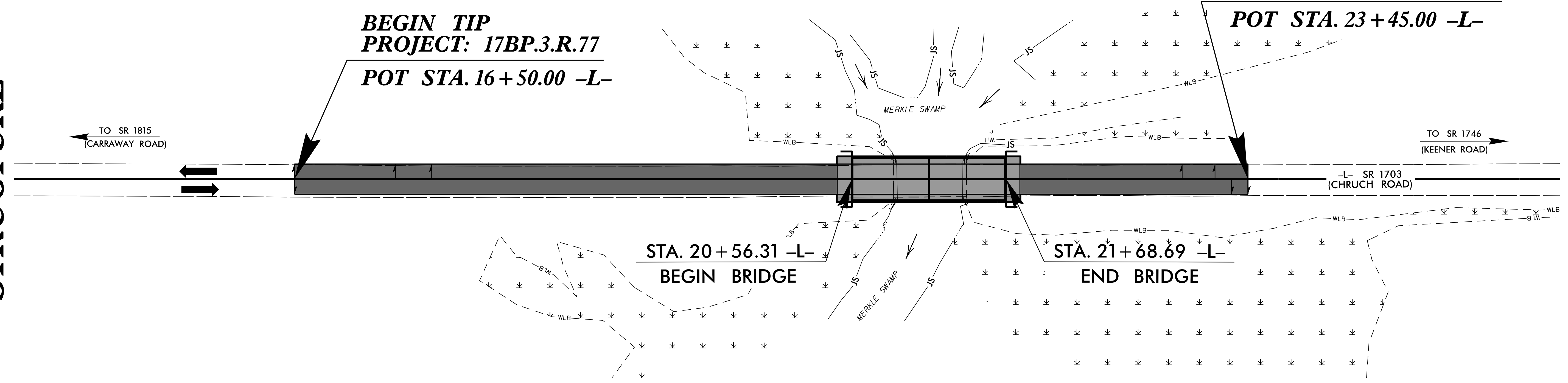
TYPE OF WORK: GRADING, DRAINAGE, PAVING AND STRUCTURE



END TIP  
PROJECT: 17BP.3.R.77  
POT STA. 23+45.00 -L-

BEGIN TIP  
PROJECT: 17BP.3.R.77  
POT STA. 16+50.00 -L-

STRUCTURE



**DESIGN DATA**

ADT 2015	=	500
ADT 2040	=	1000
K	=	%
D	=	%
T	=	% *
V	=	60 MPH
* TTST	=	% DUAL = %
FUNC CLASS	=	MINOR COLLECTOR
		SUB-REGIONAL TIER

**PROJECT LENGTH**

LENGTH OF ROADWAY TIP PROJECT: 17BP.3.R.77	=	0.111 MILES
LENGTH OF STRUCTURE TIP PROJECT: 17BP.3.R.77	=	0.021 MILES
TOTAL LENGTH OF TIP PROJECT: 17BP.3.R.77	=	0.132 MILES

PLANS PREPARED BY :

**PARSONS**  
5540 Centerview Drive, Suite 217  
Raleigh, NC 27606-3386  
NC LICENSE No. F-0246  
FOR NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

2018 STANDARD SPECIFICATIONS

LETTING DATE:  
SEPTEMBER 19, 2019

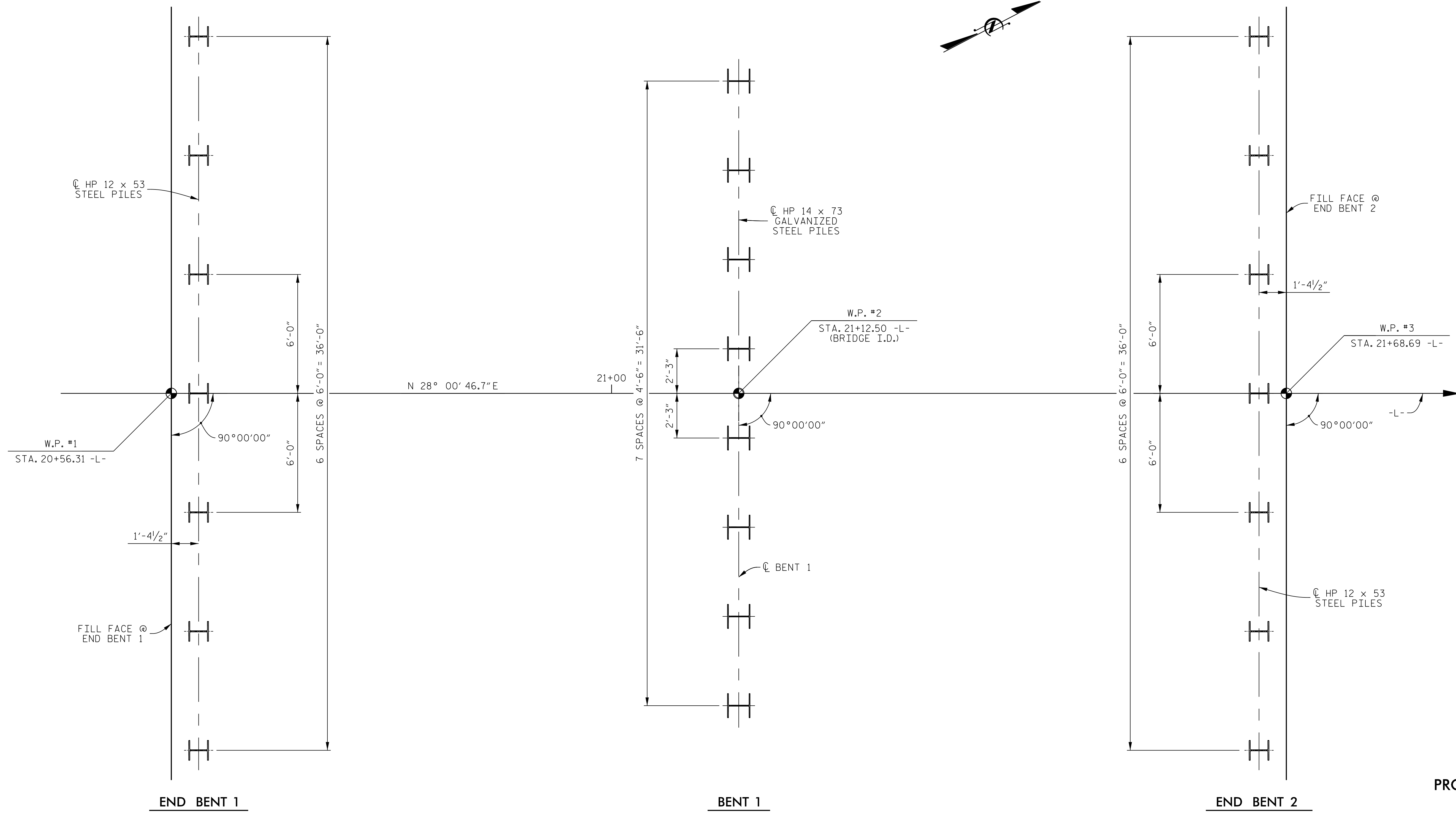
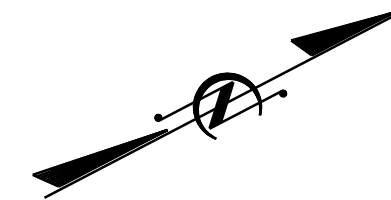
DAVID L. WILVER, P.E.  
PROJECT ENGINEER

JOSHUA B. TAYLOR, P.E.  
PROJECT DESIGN ENGINEER

Professional Engineer Seal for Joshua B. Taylor, License No. 033698, State of North Carolina, expires 8/25/2019.







**FOUNDATION LAYOUT**

PROJECT NO. 17BP.3.R.77  
SAMPSON COUNTY  
 STATION: 21+12.50 -L-

SHEET 2 OF 3

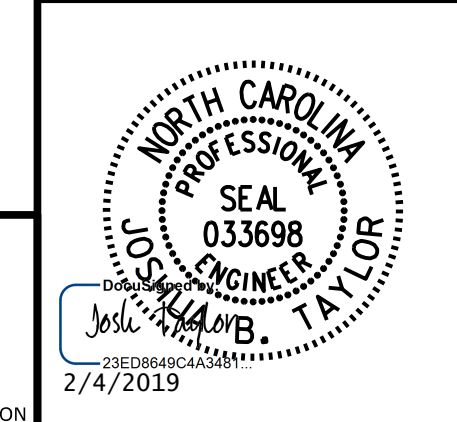
**NOTES**

FOR PILES, SEE SECTION 450 OF THE STANDARD SPECIFICATIONS.  
 PILES AT END BENT 1 AND END BENT 2 ARE DESIGNED FOR A FACTORED RESISTANCE OF 75 TONS PER PILE.  
 DRIVE PILES AT END BENT 1 AND END BENT 2 TO A REQUIRED DRIVING RESISTANCE OF 125 TONS PER PILE.

PILES AT BENT 1 ARE DESIGNED FOR A FACTORED RESISTANCE OF 120 TONS PER PILE.  
 DRIVE PILES AT BENT 1 TO A REQUIRED DRIVING RESISTANCE OF 200 TONS PER PILE. THIS REQUIRED DRIVING RESISTANCE INCLUDES ADDITIONAL RESISTANCE FOR SCOUR.  
 INSTALL PILES AT BENT 1 TO A TIP ELEVATION NO HIGHER THAN 92.5 FEET.

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.  
 THE SCOUR CRITICAL ELEVATION FOR BENT 1 ELEVATION 103.0 FEET. SCOUR CRITICAL IS ELEVATIONS ARE USED TO MONITOR POSSIBLE SCOUR PROBLEMS DURING THE LIFE OF THE STRUCTURE.

DOCUMENT NOT CONSIDERED FINAL  
 UNLESS ALL SIGNATURES COMPLETED



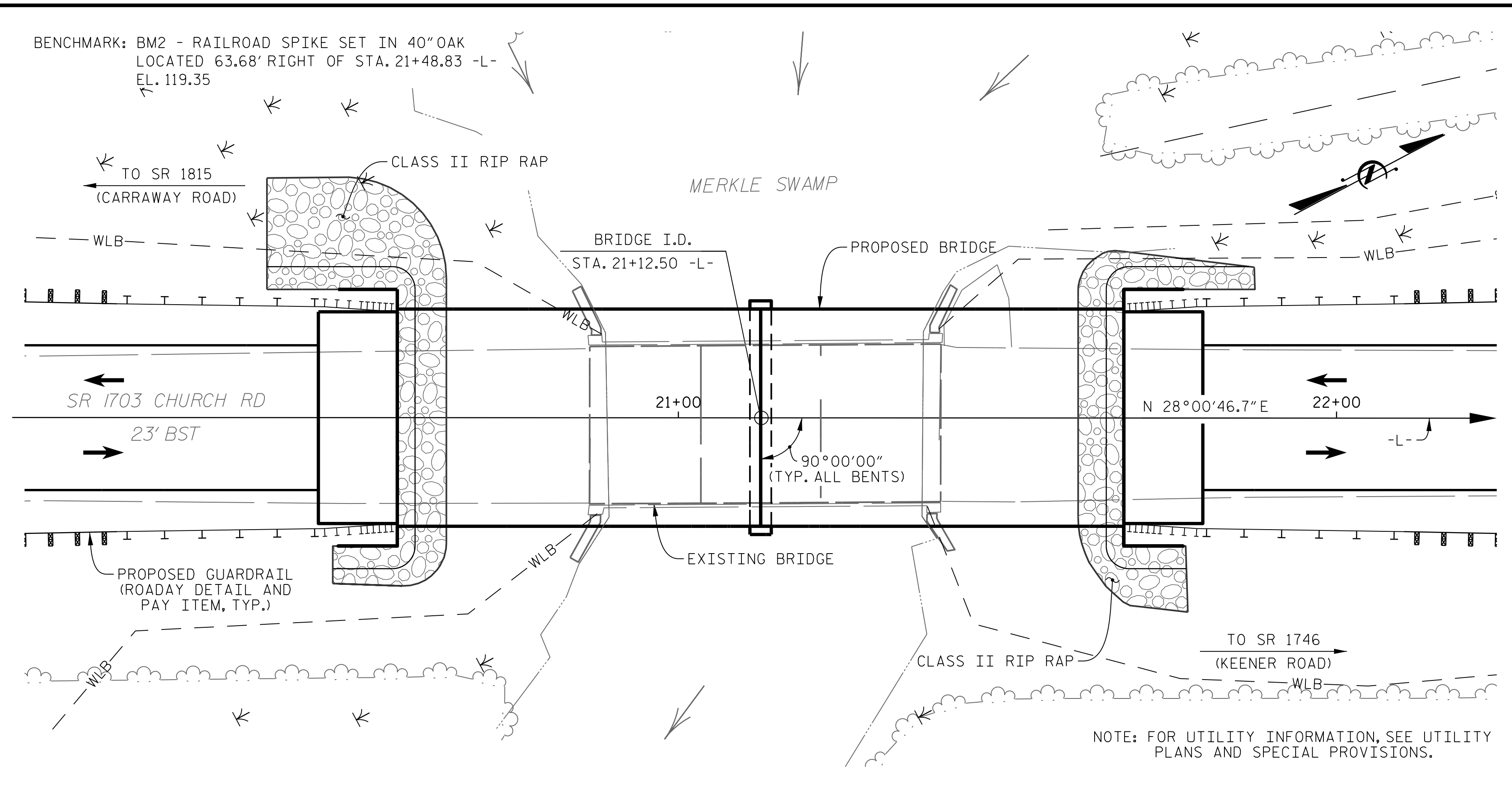
PLANS PREPARED BY :  
**PARSONS**  
 5540 CenterView Drive, Suite 217  
 Raleigh, NC 27606-3386  
 NC LICENSE No. F-0246  
 FOR NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

DRAWN BY :	K. E. LOFTON	DATE :	9-18
CHECKED BY :	J. B. TAYLOR	DATE :	11-18
DESIGN ENGINEER :	P. R. GALLAGHER	DATE :	11-18

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
GENERAL DRAWING BRIDGE OVER MERKLE SWAMP ON SR 1703 (CHURCH ROAD) BETWEEN SR 1815 AND SR 1746					
REVISIONS					
No.	BY:	DATE:	No.	BY:	DATE:
1			3		
2			4		
SHEET No.					S-2
TOTAL SHEETS					16

FILE: j:\projects\3\1746\msh\174638\structures\plans\174638\_80795.dwg  
 DATE: 2/20/19  
 1:56:07 PM





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.
- FOR OTHER DESIGN DATA AND GENERAL NOTES, SEE SHEET SN.
- FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.
- FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.
- FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.
- FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.
- INASMUCH AS THE PAINT SYSTEM ON THE EXISTING STRUCTURAL STEEL CONTAINS LEAD, THE CONTRACTOR'S ATTENTION IS DIRECTED TO ARTICLE 107-1 OF THE STANDARD SPECIFICATIONS. ANY COSTS RESULTING FROM COMPLIANCE WITH APPLICABLE STATE OR FEDERAL REGULATIONS PERTAINING TO HANDLING OF MATERIALS CONTAINING LEAD BASED PAINT SHALL BE INCLUDED IN THE BID PRICE FOR "REMOVAL OF EXISTING STRUCTURE AT STA. 21+12.50 -L-."
- THE MATERIAL SHOWN IN THE CROSS-HATCHED AREA ON SHEET S-1 SHALL BE EXCAVATED FOR A DISTANCE OF 33'-0" LEFT AND RIGHT OF CENTERLINE ROADWAY AT END BENT 1 AND 25'-0" LEFT AND 33'-0" RIGHT OF CENTERLINE ROADWAY AT END BENT 2 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 3 SPANS (1 @ 16'-11", 1 @ 18'-0", AND 1 @ 18'-5") WITH A CLEAR ROADWAY WIDTH OF 24'-0" WITH A CONCRETE DECK ON STEEL I-BEAMS ON CONCRETE CAPS WITH (A) ONE TRANSVERSE CRUTCH BENT WITH CONCRETE CAP AND TIMBER PILES AND (B) TWO PARALLEL CRUTCH BENTS WITH STEEL CAP AND STEEL PILES INSTALLED AT EACH TIMBER PILE BENT AND LOCATED AT THE PROPOSED STRUCTURE SHALL BE REMOVED. THE EXISTING BRIDGE IS PRESENTLY POSTED FOR LOAD LIMIT.
- THE SUBSTRUCTURE OF THE EXISTING BRIDGE INDICATED ON THE PLANS IS FROM THE BEST INFORMATION AVAILABLE. SINCE THIS INFORMATION IS SHOWN FOR THE CONVENIENCE OF THE CONTRACTOR, THE CONTRACTOR SHALL HAVE NO CLAIM WHATSOEVER AGAINST THE DEPARTMENT OF TRANSPORTATION FOR ANY DELAYS OR ADDITIONAL COST INCURRED BASED ON DIFFERENCES BETWEEN THE EXISTING BRIDGE SUBSTRUCTURE SHOWN ON THE PLANS AND THE ACTUAL CONDITIONS AT THE PROJECT SITE.
- REMOVAL OF THE EXISTING BRIDGE SHALL BE PERFORMED IN A MANNER THAT PREVENTS DEBRIS FROM FALLING INTO THE WATER. THE CONTRACTOR SHALL SUBMIT DEMOLITION PLANS FOR REVIEW AND REMOVE THE BRIDGE IN ACCORDANCE WITH ARTICLE 402-2 OF THE STANDARD SPECIFICATIONS.
- THIS STRUCTURE HAS BEEN DESIGNED IN ACCORDANCE WITH "HEC 18-EVALUATING SCOUR AT BRIDGES."
- FOR INTERIOR BENT 1, 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.
- FOR EROSION CONTROL MEASURES, SEE EROSION CONTROL PLANS.
- ASPHALT WEARING SURFACE IS INCLUDED IN ROADWAY QUANTITY ON ROADWAY PLANS.
- FOR ASBESTOS ASSESSMENT FOR BRIDGE DEMOLITION AND RENOVATION ACTIVITIES, SEE SPECIAL PROVISIONS.
- FOR REMOVAL OF EXISTING BRIDGE PILES, SEE SPECIAL PROVISIONS.
- FOR FIBER OPTIC CONDUIT SYSTEM, SEE SPECIAL PROVISIONS.

**TOTAL BILL OF MATERIAL**

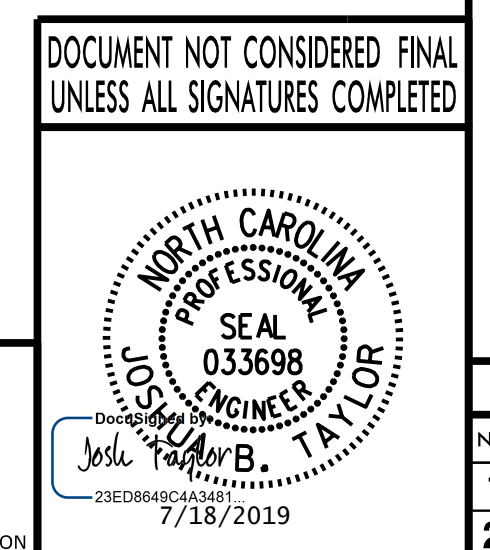
	REMOVAL OF EXISTING STRUCTURE AT STA. 21+12.50 -L-	ASBESTOS ASSESMENT	PDA TESTING	UNCLASSIFIED STRUCTURE EXCAVATION AT STA. 21+12.50 -L-	CLASS A CONCRETE	BRIDGE APPROACH SLABS AT STA. 21+12.50 -L-	REINFORCING STEEL	PILE DRIVING EQUIPMENT SETUP FOR HP 12 x 53 STEEL PILES
	LUMP SUM	LUMP SUM	EACH	LUMP SUM	CU. YDS.	LUMP SUM	LBS.	EACH
SUPERSTRUCTURE								
END BENT 1					14.4		2,115	7
BENT 1					10.7		2,136	
END BENT 2					14.4		2,115	7
TOTAL	LUMP SUM	LUMP SUM	2	LUMP SUM	39.5	LUMP SUM	6,366	14

	PILE DRIVING EQUIPMENT SETUP FOR HP 14 x 73 GALVANIZED STEEL PILES	HP 12 x 53 STEEL PILES		HP 14 x 73 GALVANIZED STEEL PILES		PILE REDRIVES	VERTICAL CONCRETE BARRIER RAIL	RIP RAP CLASS II (2'-0" THICK)	GEOTEXTILE FOR DRAINAGE	ELASTOMERIC BEARINGS	3'-0" x 2'-0" PRESTRESSED CONCRETE CORED SLABS	FIBER OPTIC CONDUIT SYSTEM AT STA. 21+12.50 -L-	
	EACH	No.	LIN. FT.	No.	LIN. FT.	EACH	LIN. FT.	TON	SQ. YD.	LUMP SUM	No.	LIN. FT.	LIN. FT.
SUPERSTRUCTURE							220.0				22	1,210.0	216.0
END BENT 1		7	350			7		133	147				
BENT 1	8			8	520	8							
END BENT 2		7	350			7		98	109				
TOTAL	8	14	700	8	520	22	220.0	231	256	LUMP SUM	22	1,210.0	216.0

PROJECT NO. 17BP.3.R.77  
SAMPSON COUNTY  
 STATION: 21 + 12.50 -L-  
 SHEET 3 OF 3

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
 GENERAL DRAWING  
 BRIDGE OVER MERKLE SWAMP  
 ON SR 1703 (CHURCH ROAD)  
 BETWEEN SR 1815 AND SR 1746



PLANS PREPARED BY:  
**PARSONS**  
 5540 CenterView Drive, Suite 217  
 Raleigh, NC 27606-3386  
 NC LICENSE No. F-0246

DRAWN BY : K.E. LOFTON DATE : 9-18  
 CHECKED BY : J.B. TAYLOR DATE : 11-18  
 DESIGN ENGINEER : P.R. GALLAGHER DATE : 11-18

⚠️ ADDED FIBER OPTIC CONDUIT SYSTEM NOTE AND PAY ITEM.

REVISIONS						SHEET No.
No.	BY:	DATE:	No.	BY:	DATE:	5-3.1
1	LOFTON	7-19-19	3			TOTAL SHEETS
2			4			16

FILE: j:\projects\3\bridges\merkle\17-4638\structures\plans\17BP.3.R.77.dgn  
 DATE: 7/18/2019 12:27:04 PM

## 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	1.974	--	1.75	0.278	2.49	55'	EL	27	0.526	1.97	55'	EL	5.4	0.80	0.278	2.27	55'	EL	27		
	HL-93(OPr)	N/A	--	2.559	--	1.35	0.278	3.23	55'	EL	27	0.526	2.56	55'	EL	5.4	N/A	--	--	--	--	--		
	HS-20(Inv)	36.000	2	2.358	84.885	1.75	0.278	3.12	55'	EL	27	0.526	2.36	55'	EL	5.4	0.80	0.278	2.84	55'	EL	27		
	HS-20(OPr)	36.000	--	3.057	110.036	1.35	0.278	4.04	55'	EL	27	0.526	3.06	55'	EL	5.4	N/A	--	--	--	--	--		
LEGAL LOAD RATING	SV	SNSH	13.500	--	5.965	80.53	1.4	0.278	8.19	55'	EL	27	0.526	6.71	55'	EL	5.4	0.80	0.278	5.97	55'	EL	27	
		SNGARBS2	20.000	--	4.621	92.422	1.4	0.278	6.36	55'	EL	27	0.526	4.86	55'	EL	5.4	0.80	0.278	4.62	55'	EL	27	
		SNAGRIS2	22.000	--	4.434	97.548	1.4	0.278	6.12	55'	EL	21.6	0.526	4.55	55'	EL	5.4	0.80	0.278	4.43	55'	EL	27	
		SNCOTTS3	27.250	--	2.974	81.029	1.4	0.278	4.08	55'	EL	27	0.526	3.36	55'	EL	5.4	0.80	0.278	2.97	55'	EL	27	
		SNAGGRS4	34.925	--	2.555	89.234	1.4	0.278	3.51	55'	EL	27	0.526	2.85	55'	EL	5.4	0.80	0.278	2.56	55'	EL	27	
		SNS5A	35.550	--	2.494	88.65	1.4	0.278	3.42	55'	EL	27	0.526	2.93	55'	EL	5.4	0.80	0.278	2.49	55'	EL	27	
		SNS6A	39.950	--	2.318	92.619	1.4	0.278	3.18	55'	EL	27	0.526	2.7	55'	EL	5.4	0.80	0.278	2.32	55'	EL	27	
	SNS7B	42.000	--	2.209	92.776	1.4	0.278	3.03	55'	EL	27	0.526	2.69	55'	EL	5.4	0.80	0.278	2.21	55'	EL	27		
	TTST	TNAGRIT3	33.000	--	2.836	93.596	1.4	0.278	3.89	55'	EL	27	0.526	3.19	55'	EL	5.4	0.80	0.278	2.84	55'	EL	27	
		TNT4A	33.075	--	2.857	94.504	1.4	0.278	3.92	55'	EL	27	0.526	3.08	55'	EL	5.4	0.80	0.278	2.86	55'	EL	27	
		TNT6A	41.600	--	2.366	98.442	1.4	0.278	3.25	55'	EL	27	0.526	2.94	55'	EL	5.4	0.80	0.278	2.37	55'	EL	27	
		TNT7A	42.000	--	2.395	100.575	1.4	0.278	3.29	55'	EL	27	0.526	2.76	55'	EL	5.4	0.80	0.278	2.39	55'	EL	27	
		TNT7B	42.000	--	2.499	104.94	1.4	0.278	3.43	55'	EL	27	0.526	2.6	55'	EL	5.4	0.80	0.278	2.50	55'	EL	27	
		TNAGRIT4	43.000	--	2.365	101.706	1.4	0.278	3.25	55'	EL	27	0.526	2.51	55'	EL	5.4	0.80	0.278	2.37	55'	EL	27	
TNAGT5A		45.000	--	2.216	99.716	1.4	0.278	3.04	55'	EL	27	0.526	2.53	55'	EL	5.4	0.80	0.278	2.22	55'	EL	27		
TNAGT5B	45.000	3	2.177	97.95	1.4	0.278	2.99	55'	EL	27	0.526	2.38	55'	EL	5.4	0.80	0.278	2.18	55'	EL	27			

### LOAD FACTORS

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

### NOTES

MINIMUM RATING FACTORS ARE BASED ON THE STRENGTH I AND SERVICE III LIMIT STATES.  
ALLOWABLE STRESSES FOR SERVICE III LIMIT STATE ARE AS REQUIRED FOR DESIGN.

# CONTROLLING LOAD RATING

1 DESIGN LOAD RATING (HL-93)

2 DESIGN LOAD RATING (HS-20)

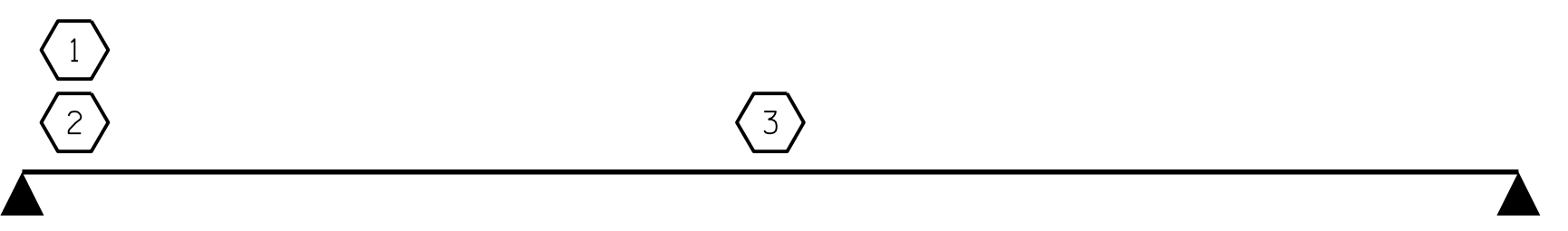
3 LEGAL LOAD RATING \*\*

\*\* SEE CHART FOR VEHICLE TYPE

---

GIRDER LOCATION

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



**LRFR SUMMARY**  
FOR SPAN A AND SPAN B

PROJECT NO. 17BP.3.R.77  
SAMPSON COUNTY  
STATION: 21+12.50 -L-

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

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

DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED

2/4/2019

PLANS PREPARED BY :

**PARSONS**

5540 CenterView Drive, Suite 217  
Raleigh, NC 27606-3386  
NC LICENSE No. F-0246

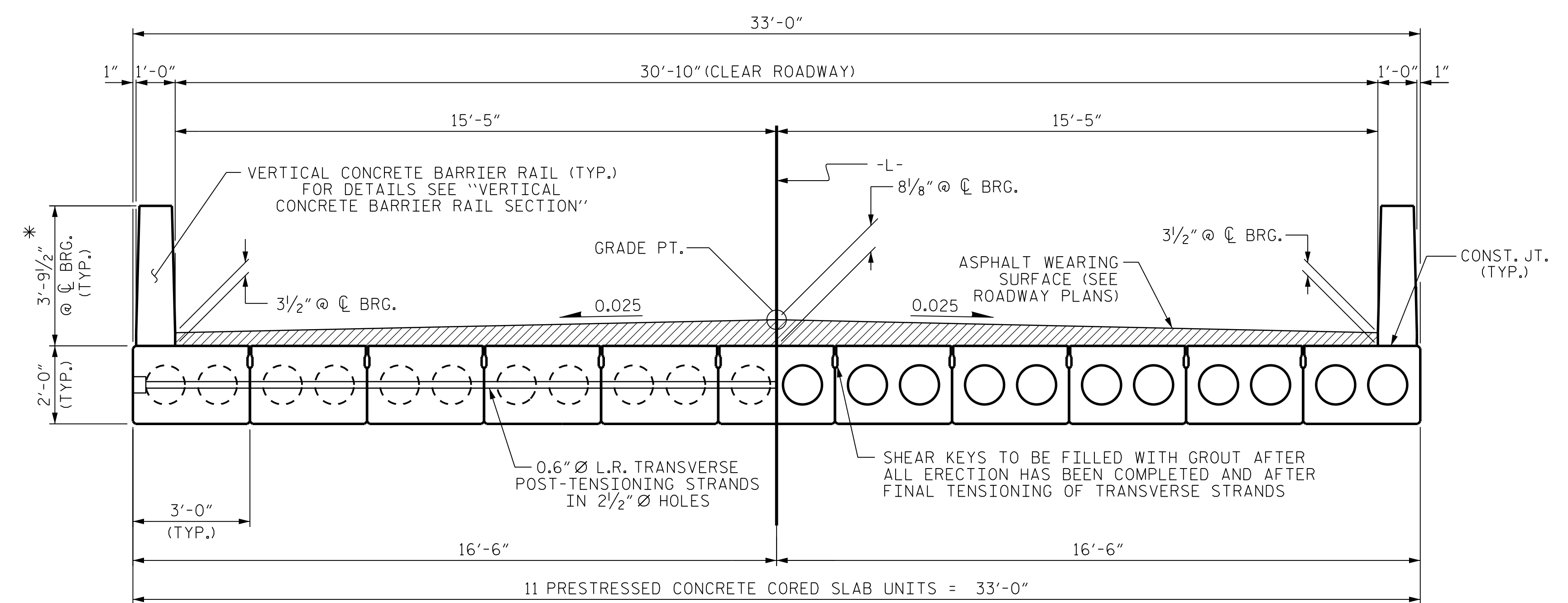
FOR NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

DRAWN BY : K. E. LOFTON	DATE : 9-18
CHECKED BY : J. B. TAYLOR	DATE : 11-18
DESIGN ENGINEER : P. R. GALLAGHER	DATE : 11-18

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

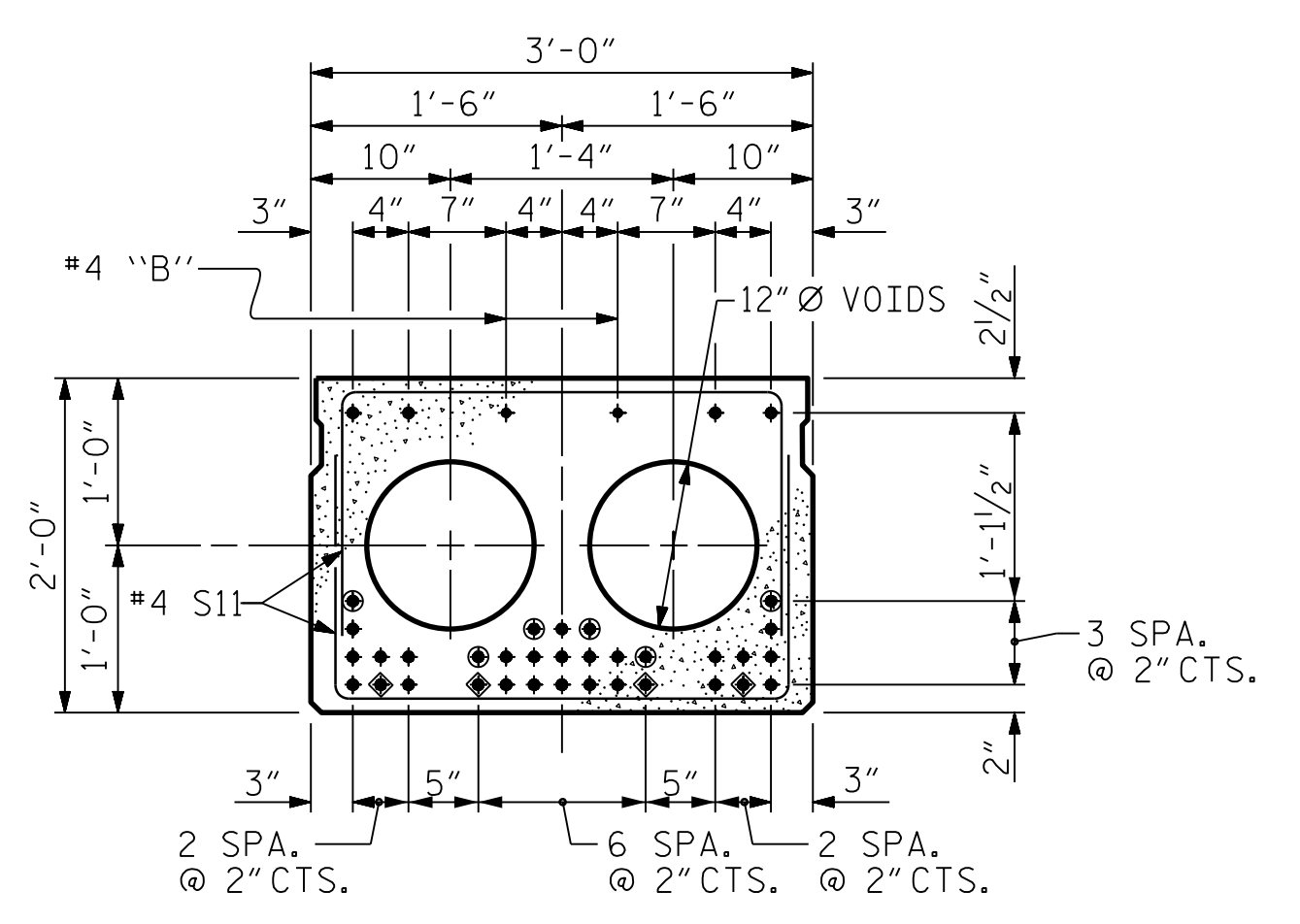
ASSEMBLED BY : K. E. LOFTON	DATE : 9-18
CHECKED BY : J. B. TAYLOR	DATE : 11-18
DRAWN BY : CVC	6/10
CHECKED BY : DNS	6/10





HALF SECTION AT INTERMEDIATE DIAPHRAGMS      **TYPICAL SECTION**      HALF SECTION THROUGH VOIDS

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

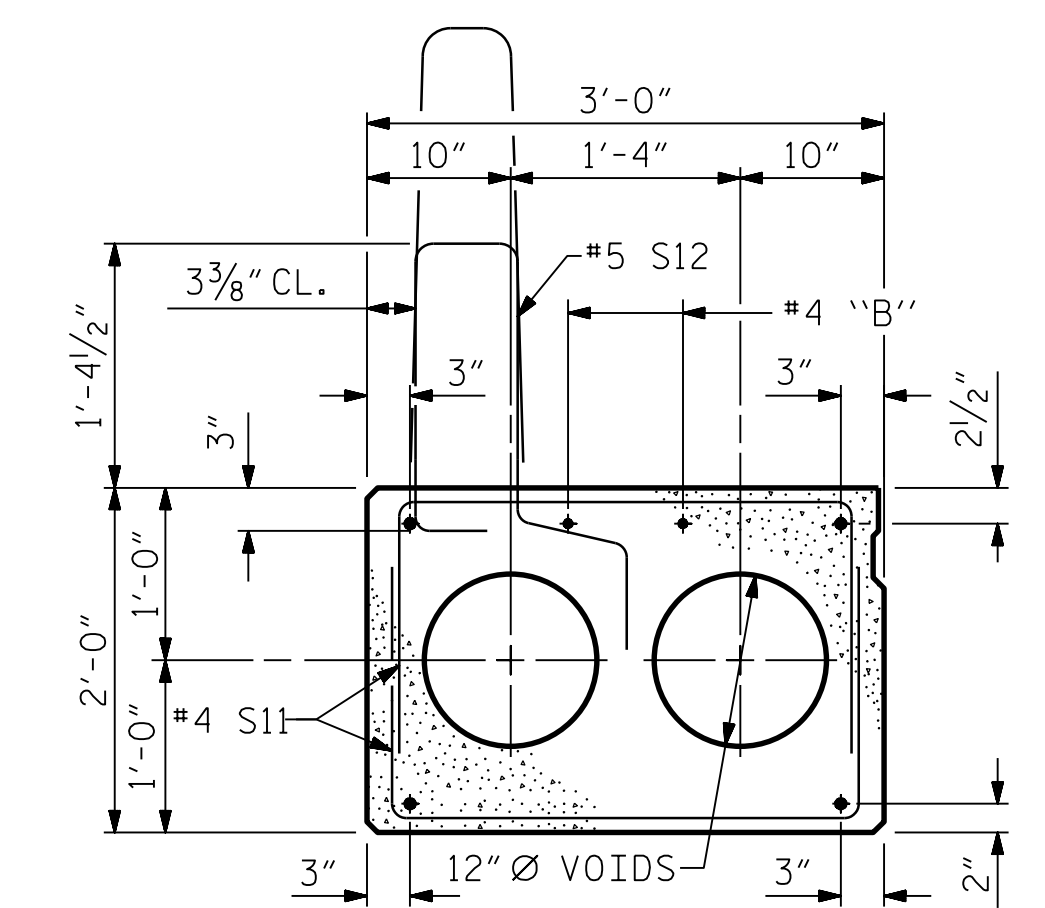


INTERIOR SLAB SECTION (55' UNIT)  
(31 STRANDS REQUIRED)

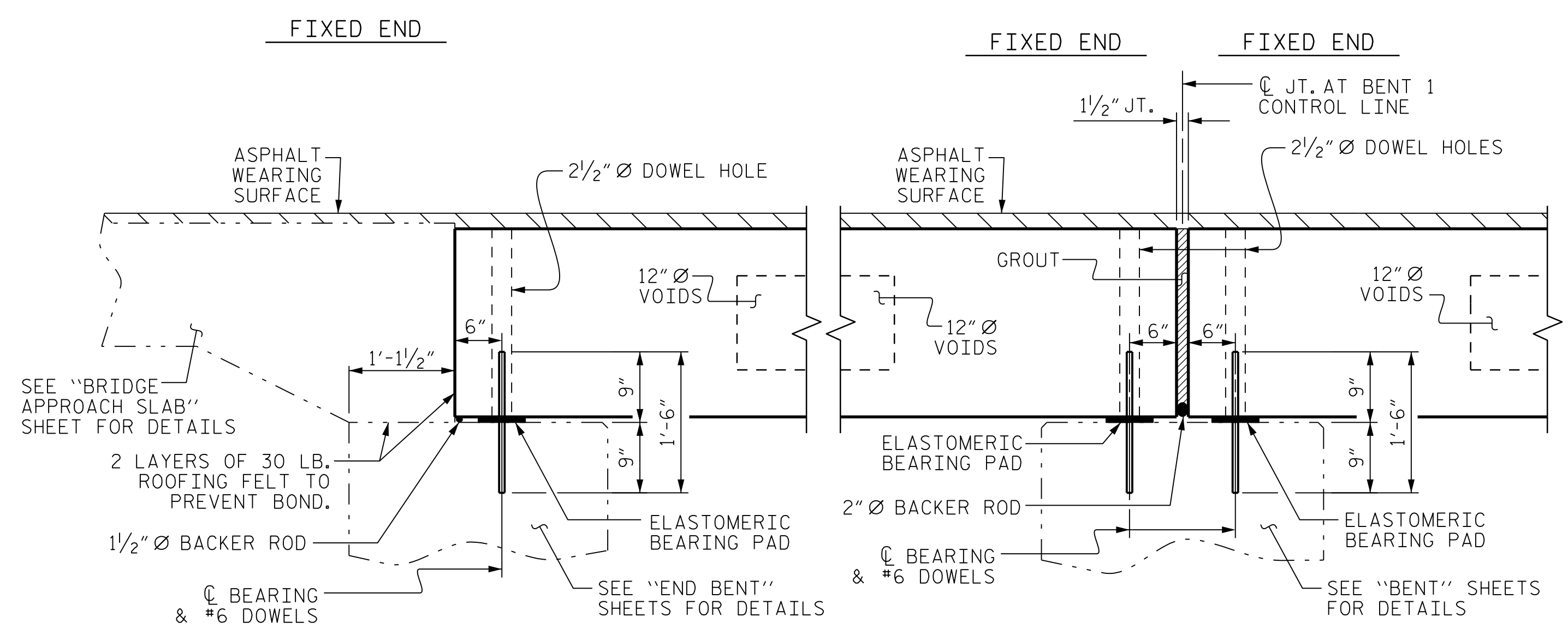
**0.6" Ø LOW RELAXATION STRAND LAYOUT**

- ◆ BOND SHALL BE BROKEN ON THESE STRANDS FOR A DISTANCE OF 12'-0" FROM END OF CORED SLAB UNIT. SEE STANDARD SPECIFICATIONS, ARTICLE 1078-7.
- OPTIONAL FULL LENGTH DEBONDED STRANDS. THESE STRANDS ARE NOT REQUIRED. IF THE FABRICATOR CHOOSES TO INCLUDE THESE STRANDS IN THE CORED SLAB UNIT, THE STRANDS SHALL BE DEBONDED FOR THE FULL LENGTH OF THE UNIT AT NO ADDITIONAL COST. SEE STANDARD SPECIFICATIONS, ARTICLE 1078-7.

**DEBONDING LEGEND**

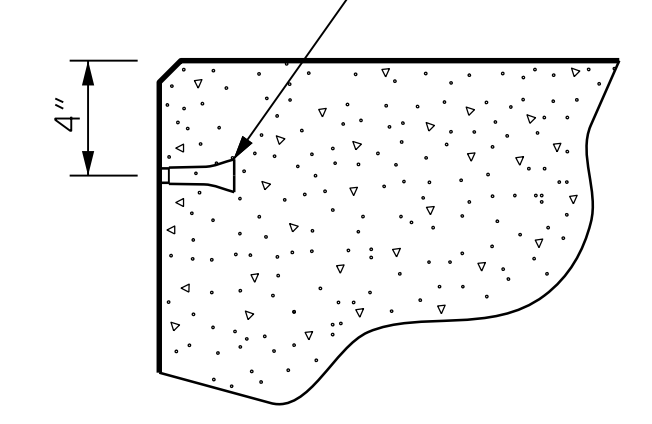


EXTERIOR SLAB SECTION  
(FOR PRESTRESSED STRAND LAYOUT, SEE INTERIOR SLAB SECTION.)

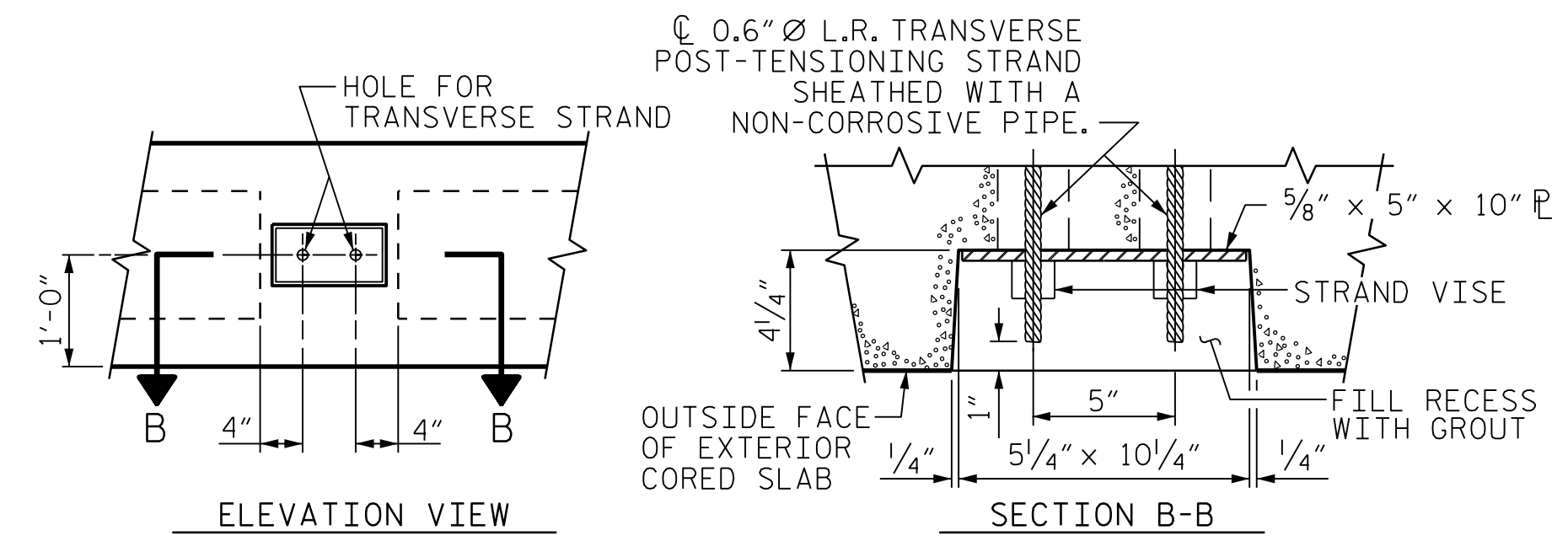


SECTION AT END BENT      SECTION AT BENT

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

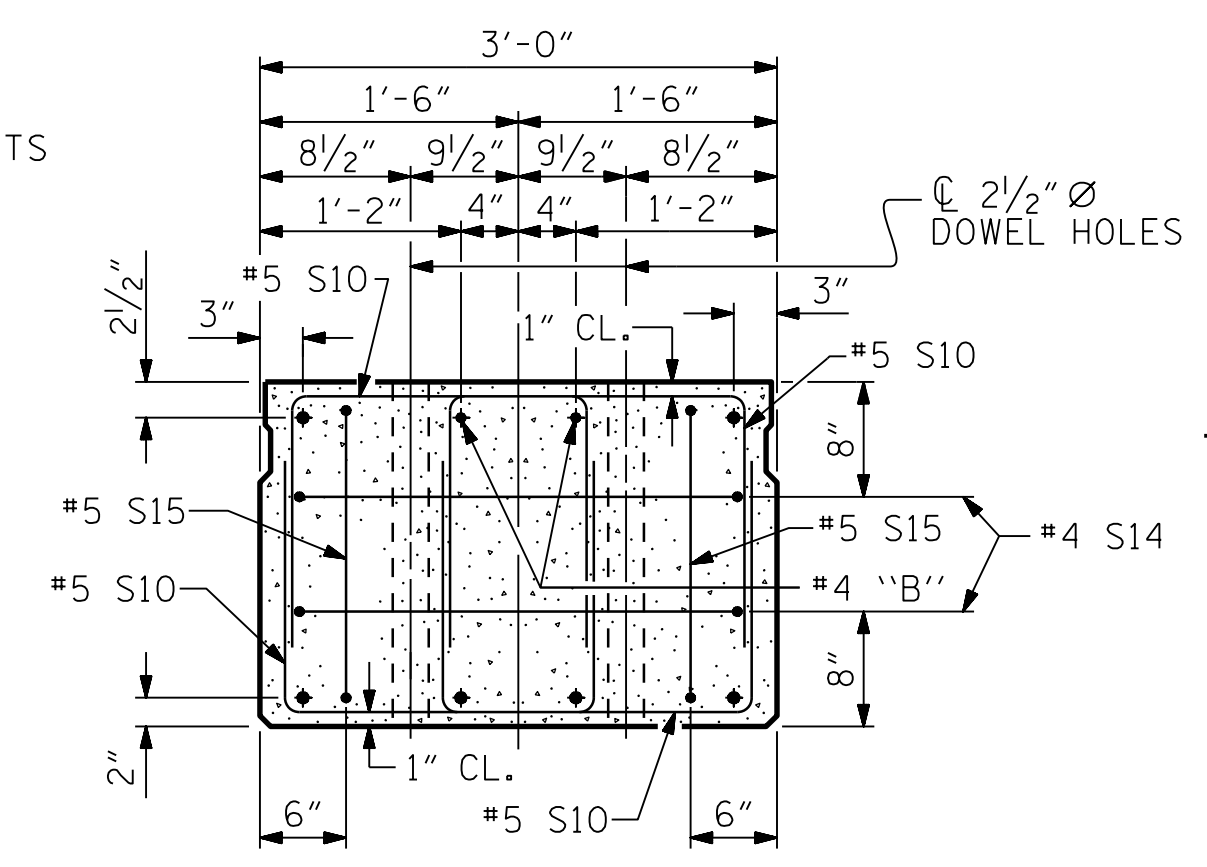


THREADED INSERT DETAIL

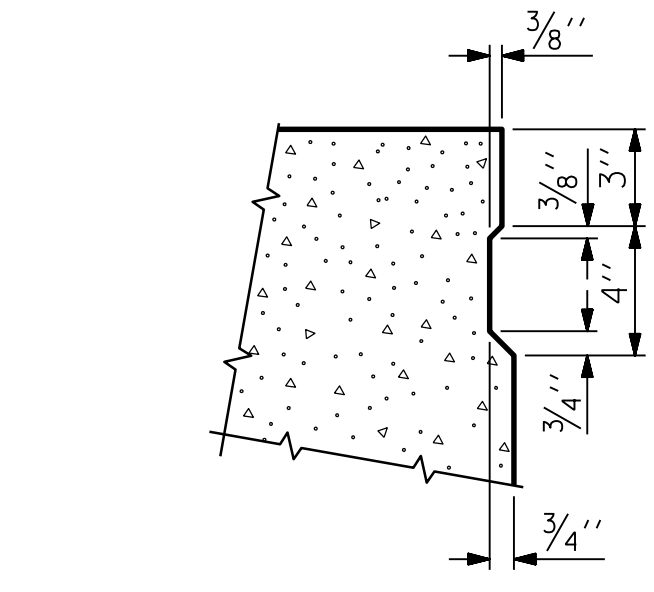


ELEVATION VIEW      SECTION B-B

**GRAUTED RECESS AT END OF POST-TENSIONED STRAND-CORED SLABS**



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



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

PROJECT NO. **17BP.3.R.77**  
**SAMPSON** COUNTY  
STATION: **21+12.50 -L-**

SHEET 1 OF 3

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

STANDARD  
**3'-0" x 2'-0"**  
**PRESTRESSED CONCRETE CORED SLAB UNIT**  
**90° SKEW**

DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED

**NORTH CAROLINA PROFESSIONAL ENGINEER**  
SEAL 033698  
**J. B. TAYLOR**  
2/4/2019

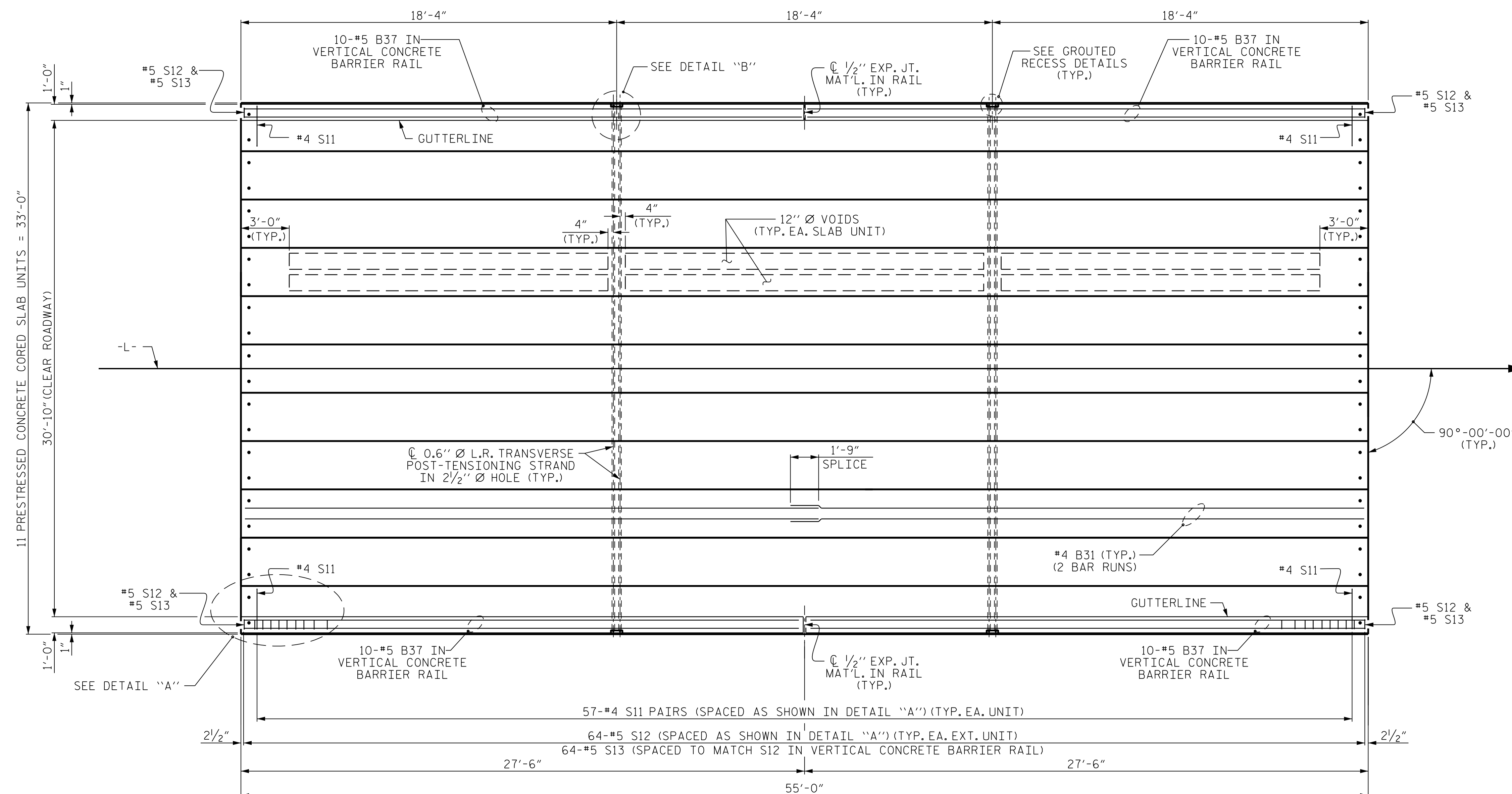
ASSEMBLED BY : K. E. LOFTON	DATE : 9-18
CHECKED BY : J. B. TAYLOR	DATE : 11-18
DRAWN BY : MAA 7/10	REV. 9/14 MAA/TMG
CHECKED BY : MKT 8/10	

DRAWN BY : K. E. LOFTON	DATE : 9-18
CHECKED BY : J. B. TAYLOR	DATE : 11-18
DESIGN ENGINEER : P. R. GALLAGHER	DATE : 11-18

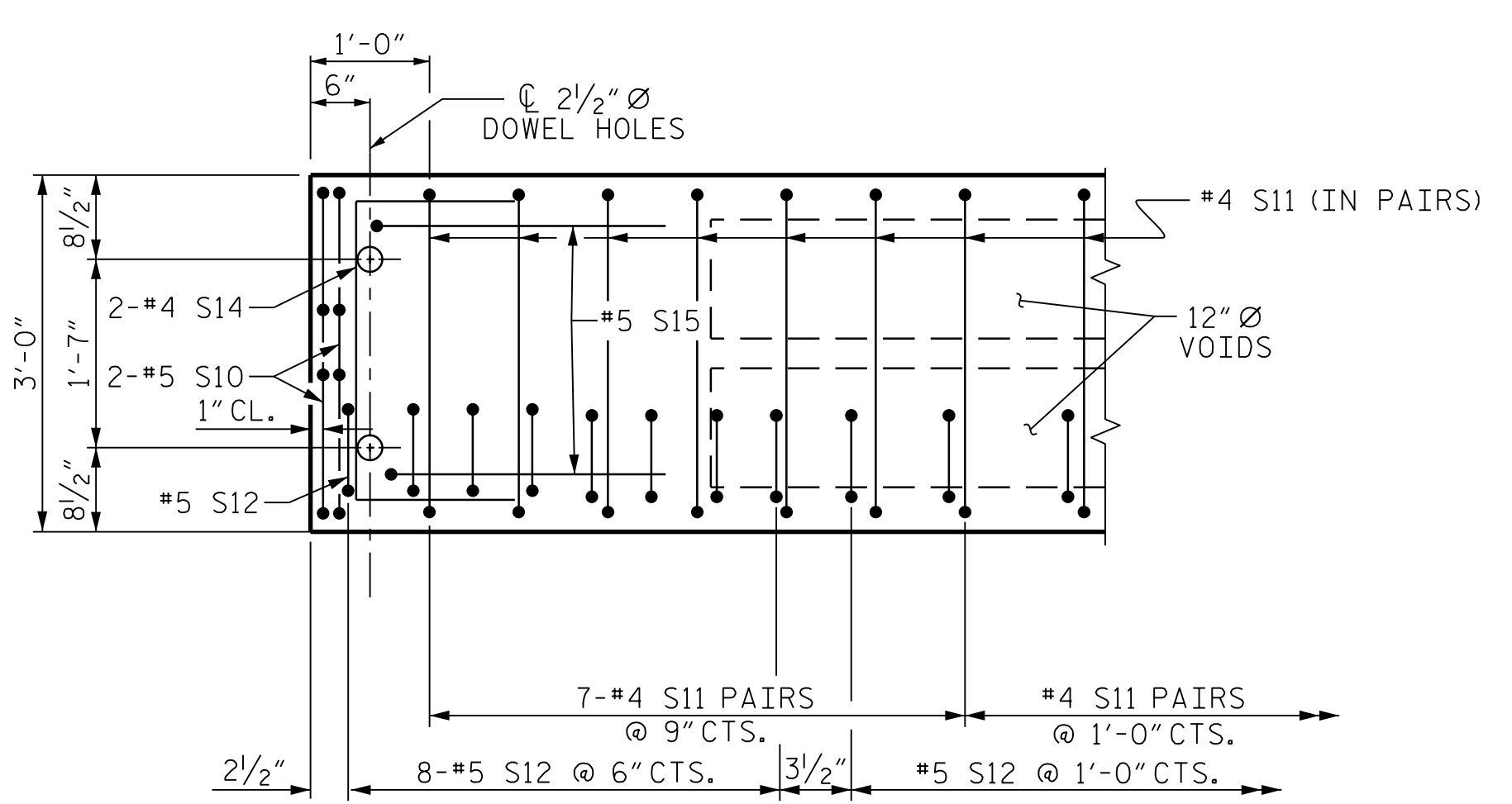
PLANS PREPARED BY :  
**PARSONS**  
5540 CenterView Drive, Suite 217  
Raleigh, NC 27606-3386  
NC LICENSE No. F-0246  
FOR NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

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

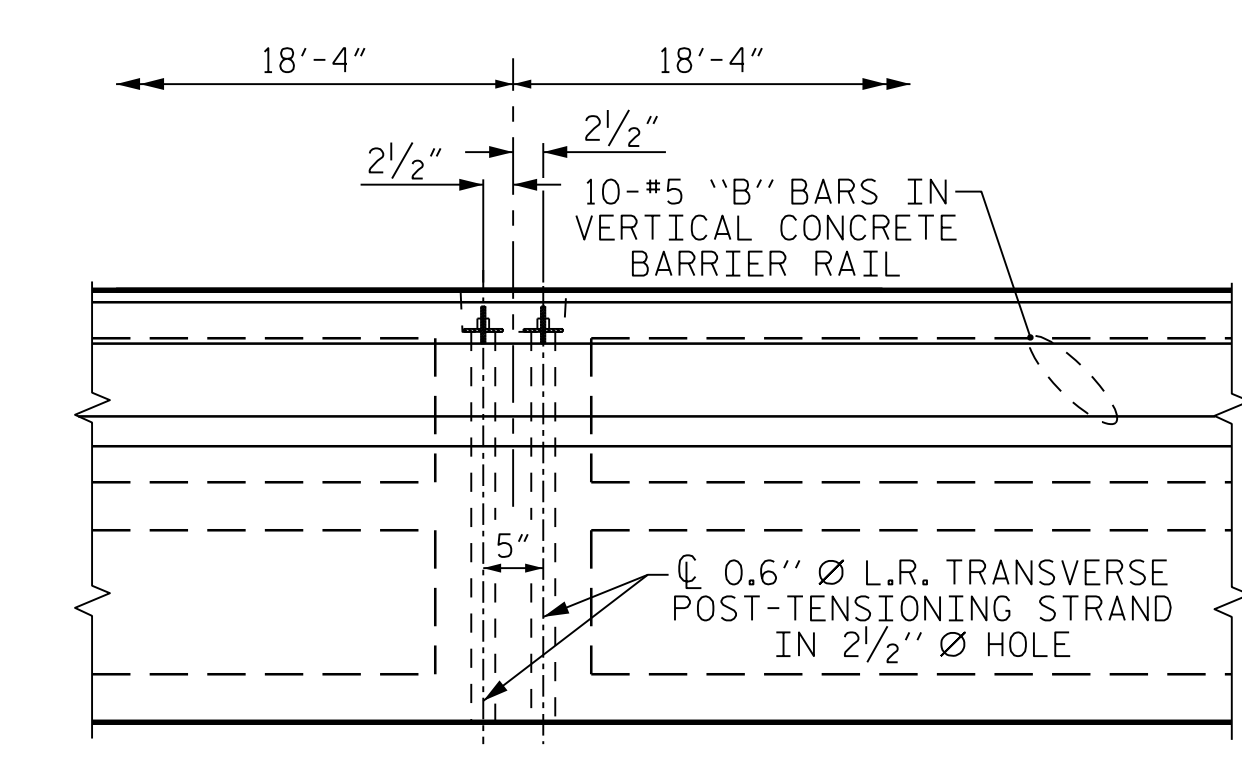




PLAN OF UNIT



DETAIL "A"



DETAIL "B"

#4 S11 BARS MAY BE SHIFTED AS NECESSARY TO MAINTAIN 1" CLEAR TO GROUDED RECESS AND 2 1/2" Ø TRANSVERSE POST-TENSIONING STRAND HOLES

ASSEMBLED BY : K.E. LOFTON	DATE : 9-18
CHECKED BY : J.B. TAYLOR	DATE : 11-18
DRAWN BY : MAA 7/10	REV. 12/5/11 MAA/AAC
CHECKED BY : MKT 8/10	REV. 8/14 MAA/TMG

(TYPICAL EACH END OF UNIT)  
NOTE: EXTERIOR UNIT SHOWN - INTERIOR UNIT SIMILAR EXCEPT OMIT #5 S12 BARS.

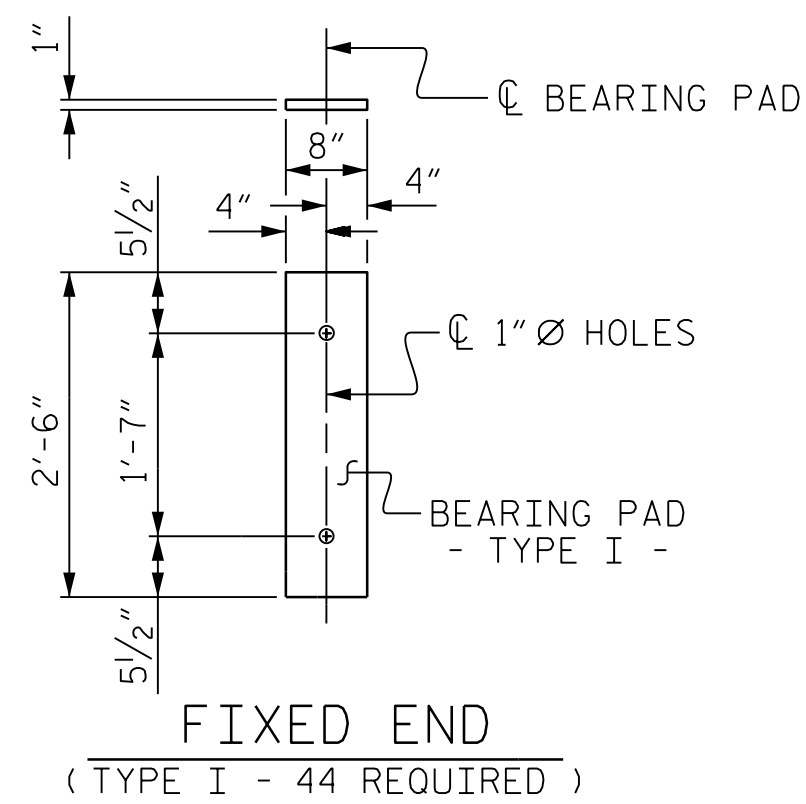
DRAWN BY : K.E. LOFTON	DATE : 9-18
CHECKED BY : J.B. TAYLOR	DATE : 11-18
DESIGN ENGINEER : P.R. GALLAGHER	DATE : 11-18

PLANS PREPARED BY :  
**PARSONS**  
5540 CenterView Drive, Suite 217  
Raleigh, NC 27606-3386  
NC LICENSE No. F-0246  
FOR NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED

PROJECT NO. 17BP.3.R.77  
SAMPSON COUNTY  
STATION: 21+12.50 -L-  
SHEET 2 OF 3

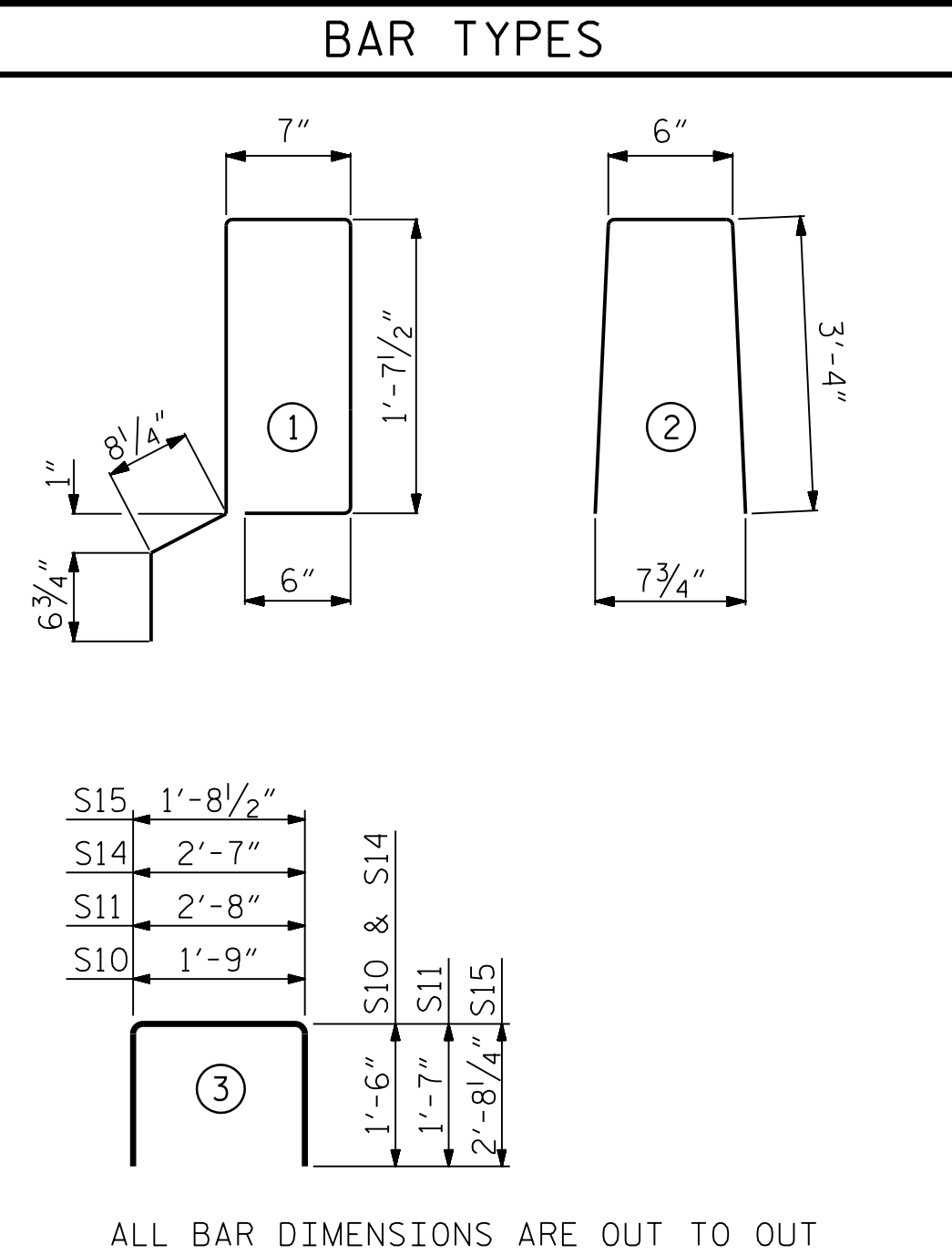
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
<b>PLAN OF 55' UNIT 30'-10" CLEAR ROADWAY 90° SKEW</b>					
REVISIONS					SHEET No.
No.	BY:	DATE:	No.	BY:	DATE:
1			3		
2			4		
TOTAL SHEETS					16



### ELASTOMERIC BEARING DETAILS

ELASTOMER IN ALL BEARINGS SHALL BE 60 DUROMETER HARDNESS.

BILL OF MATERIAL FOR ONE 55' CORED SLAB UNIT							
BAR	NUMBER	SIZE	TYPE	EXTERIOR UNIT		INTERIOR UNIT	
				LENGTH	WEIGHT	LENGTH	WEIGHT
B31	4	#4	STR	28'-3"	75	28'-3"	75
S10	8	#5	3	4'-9"	40	4'-9"	40
S11	114	#4	3	5'-10"	444	5'-10"	444
*S12	64	#5	1	5'-7"	373		
S14	4	#4	3	5'-7"	15	5'-7"	15
S15	4	#5	3	7'-1"	30	7'-1"	30
REINFORCING STEEL				LBS.	604	604	
*EPOXY COATED REINFORCING STEEL				LBS.	373		
8500 P.S.I. CONCRETE				CU. YDS.	9.4	9.4	
0.6" Ø L.R. STRANDS				No.	31	31	



### 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 1/2" 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 SIDEWAYS. AT LEAST SIX WEEKS PRIOR TO CASTING CORED SLABS, THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER FOR REVIEW AND COMMENT, DETAILED DRAWINGS OF THE PROPOSED HOLD-DOWN SYSTEM. IN ADDITION TO STRUCTURAL DETAILS, LOCATION AND SPACING OF THE HOLD-DOWNS SHALL BE INDICATED.

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.

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

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

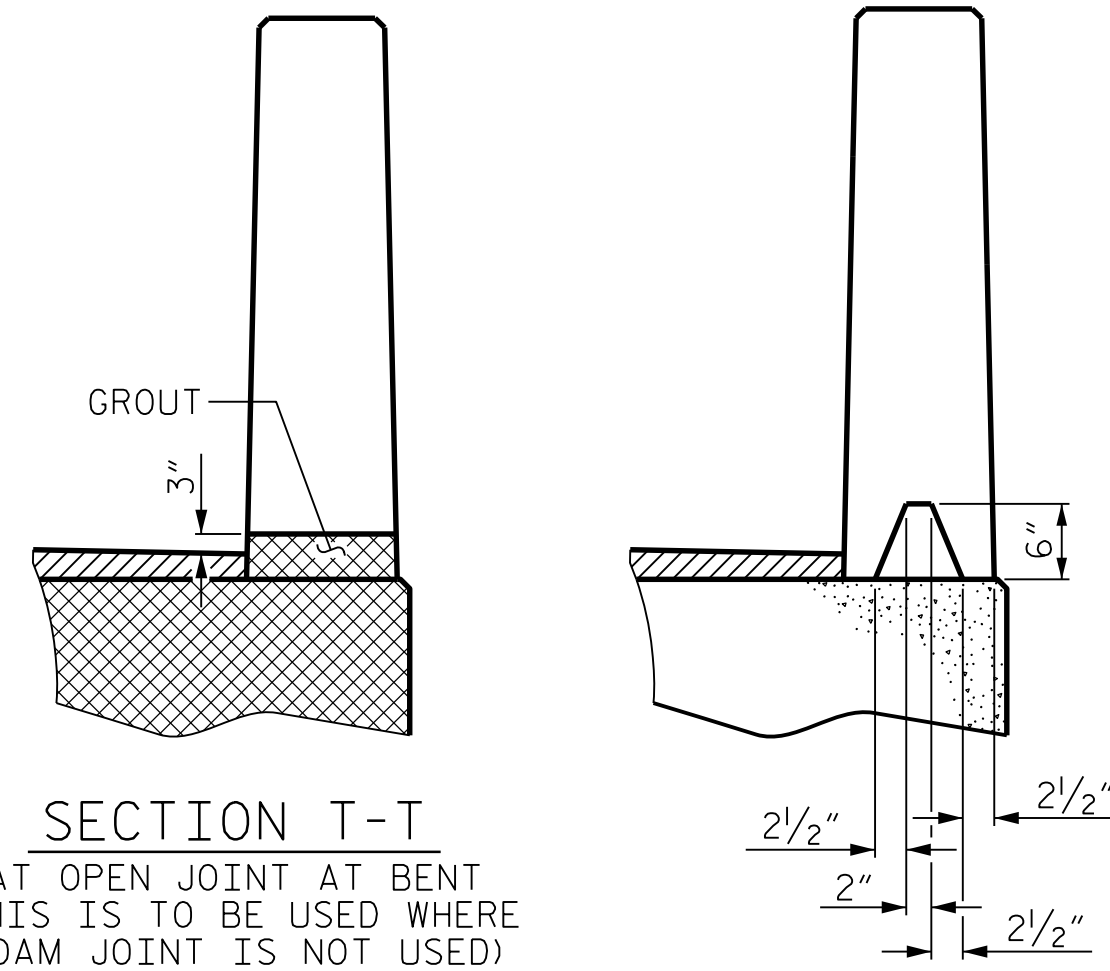
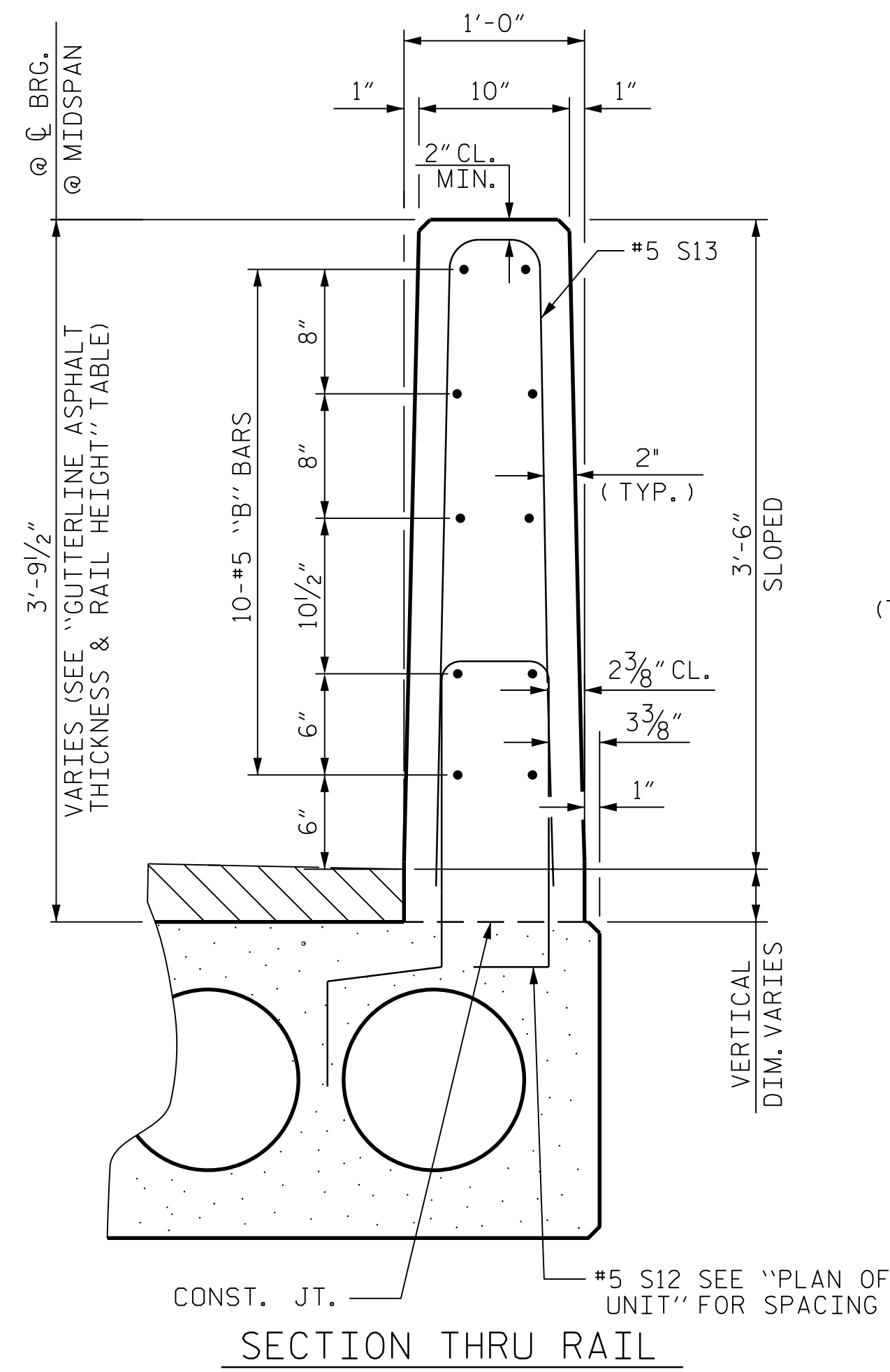
APPLY EPOXY PROTECTIVE COATING TO CORED SLAB UNIT ENDS.

BILL OF MATERIAL FOR VERTICAL CONCRETE BARRIER RAIL						
BAR	BARS PER PAIR OF EXTERIOR UNITS	TOTAL NO.	SIZE	TYPE	LENGTH	WEIGHT
55' UNIT (SPAN A AND SPAN B)						
*B37	40	80	#5	STR	27'-1"	2,260
*S13	128	256	#5	2	7'-2"	1,914
*EPOXY COATED REINFORCING STEEL				LBS.		4,174
CLASS AA CONCRETE				CU. YDS.		28.6
TOTAL VERTICAL CONCRETE BARRIER RAIL				LN. FT.		220.0

DEAD LOAD DEFLECTION AND CAMBER	
55' CORED SLAB UNIT	3'-0" x 2'-0" 0.6" Ø L.R. STRAND
CAMBER (SLAB ALONE IN PLACE)	1 3/4" ↑
DEFLECTION DUE TO SUPERIMPOSED DEAD LOAD**	1/4" ↓
FINAL CAMBER	1 1/2" ↑

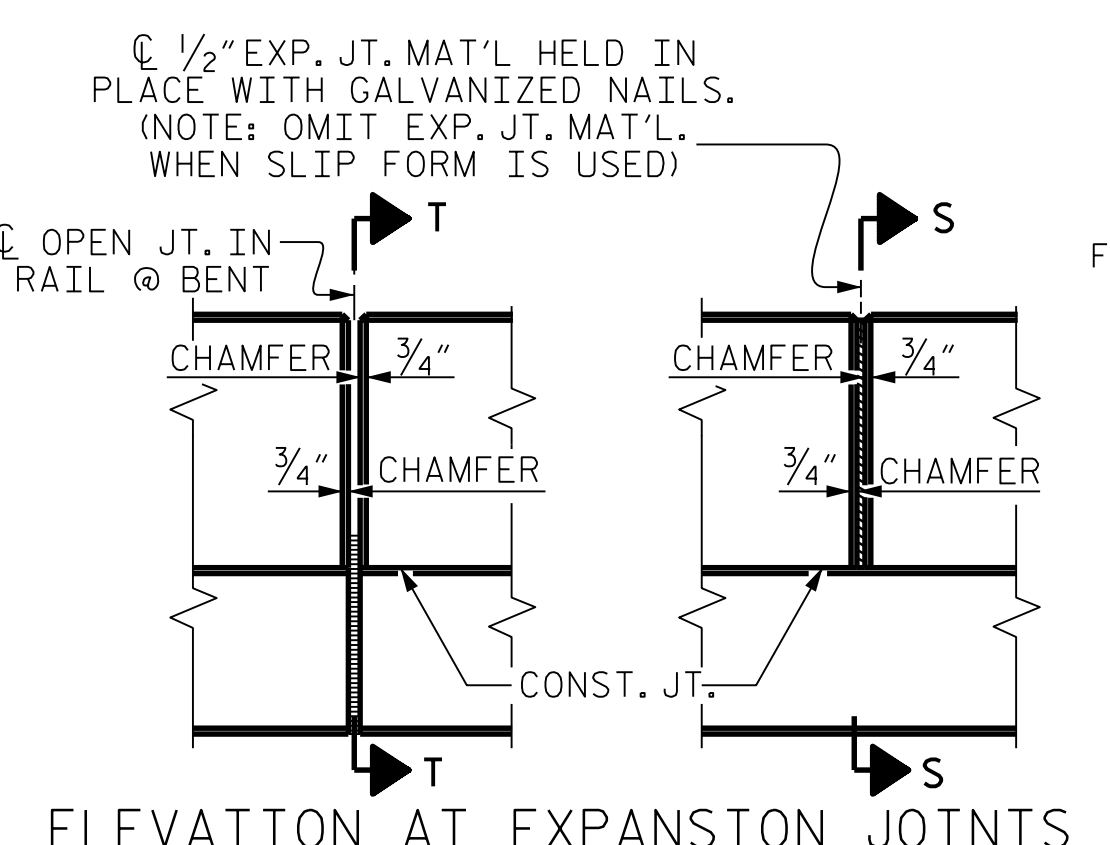
\*\* INCLUDES FUTURE WEARING SURFACE

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

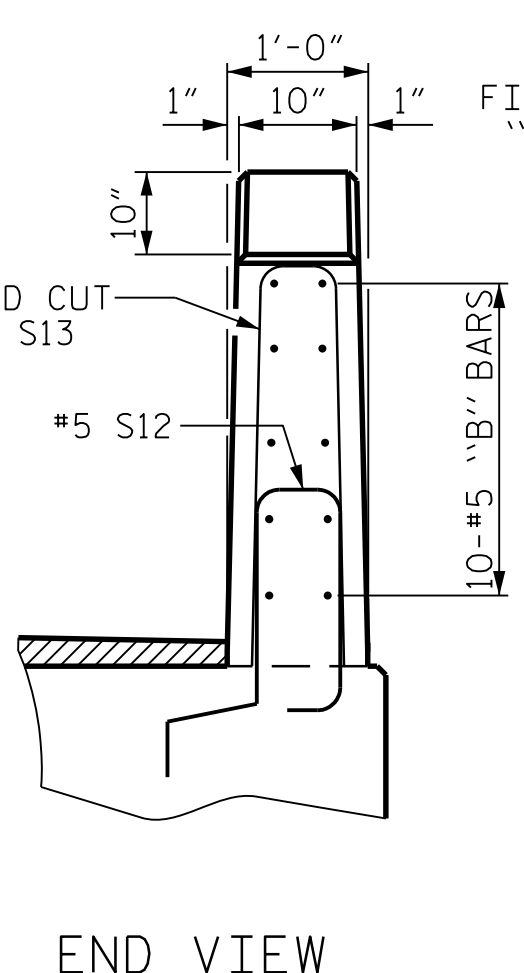


SECTION T-T  
AT OPEN JOINT AT BENT  
(THIS IS TO BE USED WHERE FOAM JOINT IS NOT USED)

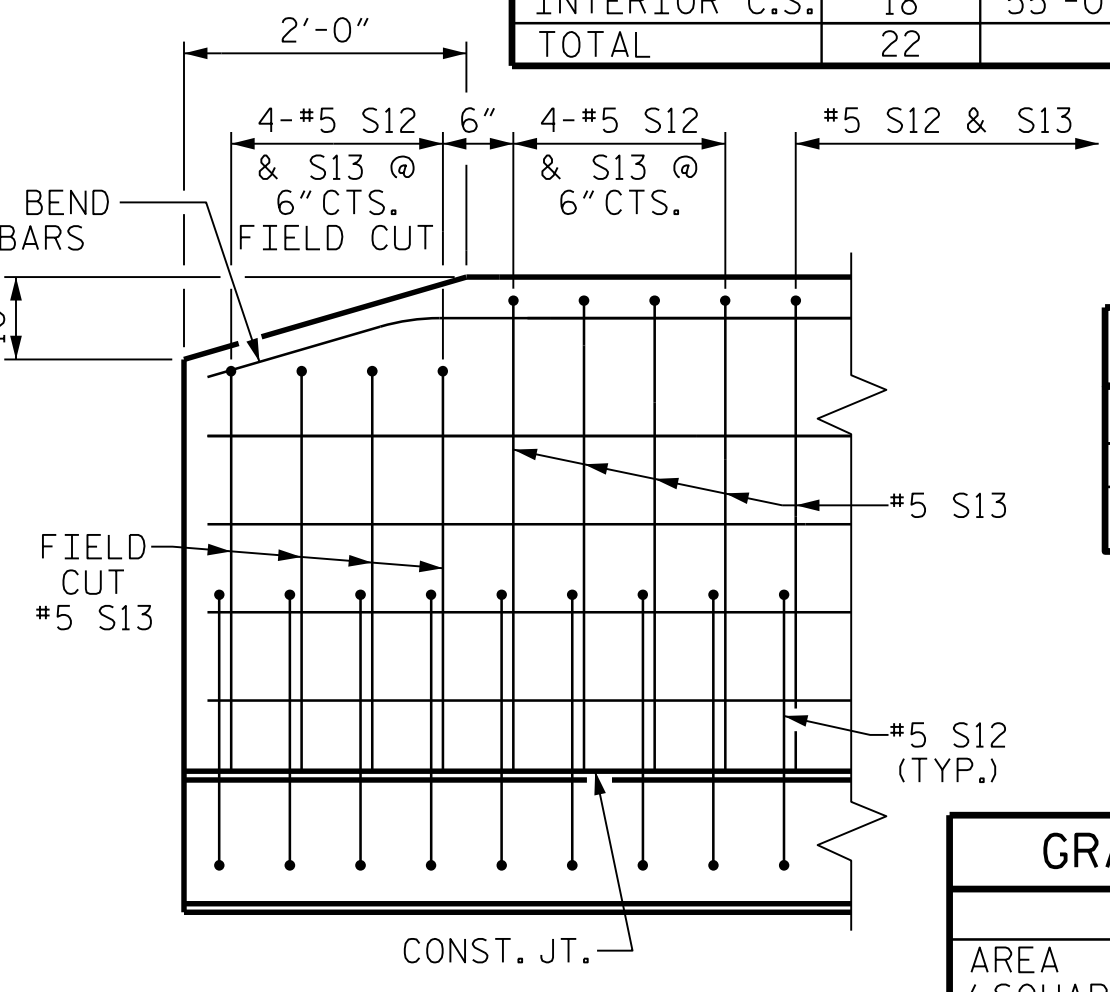
SECTION S-S  
AT DAM IN OPEN JOINT  
(THIS IS TO BE USED ONLY WHEN SLIP FORM IS USED)



### VERTICAL CONCRETE BARRIER RAIL DETAILS



### END OF RAIL DETAILS



### END OF RAIL DETAILS

CORED SLABS REQUIRED			
	NUMBER	LENGTH	TOTAL LENGTH
55' UNIT			
EXTERIOR C.S.	4	55'-0"	220'-0"
INTERIOR C.S.	18	55'-0"	990'-0"
TOTAL	22		1210'-0"

CONCRETE RELEASE STRENGTH	
UNIT	PSI
55' UNITS	6200

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

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 033698 J. B. TAYLOR 2/4/2019

PROJECT NO. 17BP.3.R.77  
SAMPSON COUNTY  
 STATION: 21+12.50 -L-  
 SHEET 3 OF 3

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
SUPERSTRUCTURE					
3'-0" x 2'-0" PRESTRESSED CONCRETE CORED SLAB UNIT					
90° SKEW					
REVISIONS					SHEET No.
No.	BY:	DATE:	No.	BY:	DATE:
1			3		
2			4		
					TOTAL SHEETS
					16

ASSEMBLED BY :	K. E. LOFTON	DATE :	9-18
CHECKED BY :	J. B. TAYLOR	DATE :	11-18
DRAWN BY :	MAA 6/10	REV. 5/18	MAA/THC
CHECKED BY :	MKT 8/10		

DRAWN BY :	K. E. LOFTON	DATE :	9-18
CHECKED BY :	J. B. TAYLOR	DATE :	11-18
DESIGN ENGINEER :	P. R. GALLAGHER	DATE :	11-18

PLANS PREPARED BY : **PARSONS**  
 5540 CenterView Drive, Suite 217  
 Raleigh, NC 27606-3386  
 NC LICENSE No. F-0246



NOTES

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

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

BOLTS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A307 AND NUTS SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M291. BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED. (AT THE CONTRACTOR'S OPTION, STAINLESS STEEL BOLTS, NUTS AND WASHERS MAY BE USED AS AN ALTERNATE FOR THE 1/8" Ø GALVANIZED BOLTS, NUTS AND WASHERS. THEY SHALL CONFORM TO OR EXCEED THE MECHANICAL REQUIREMENTS OF ASTM A307. THE USE OF THIS ALTERNATE SHALL BE APPROVED BY THE ENGINEER.)

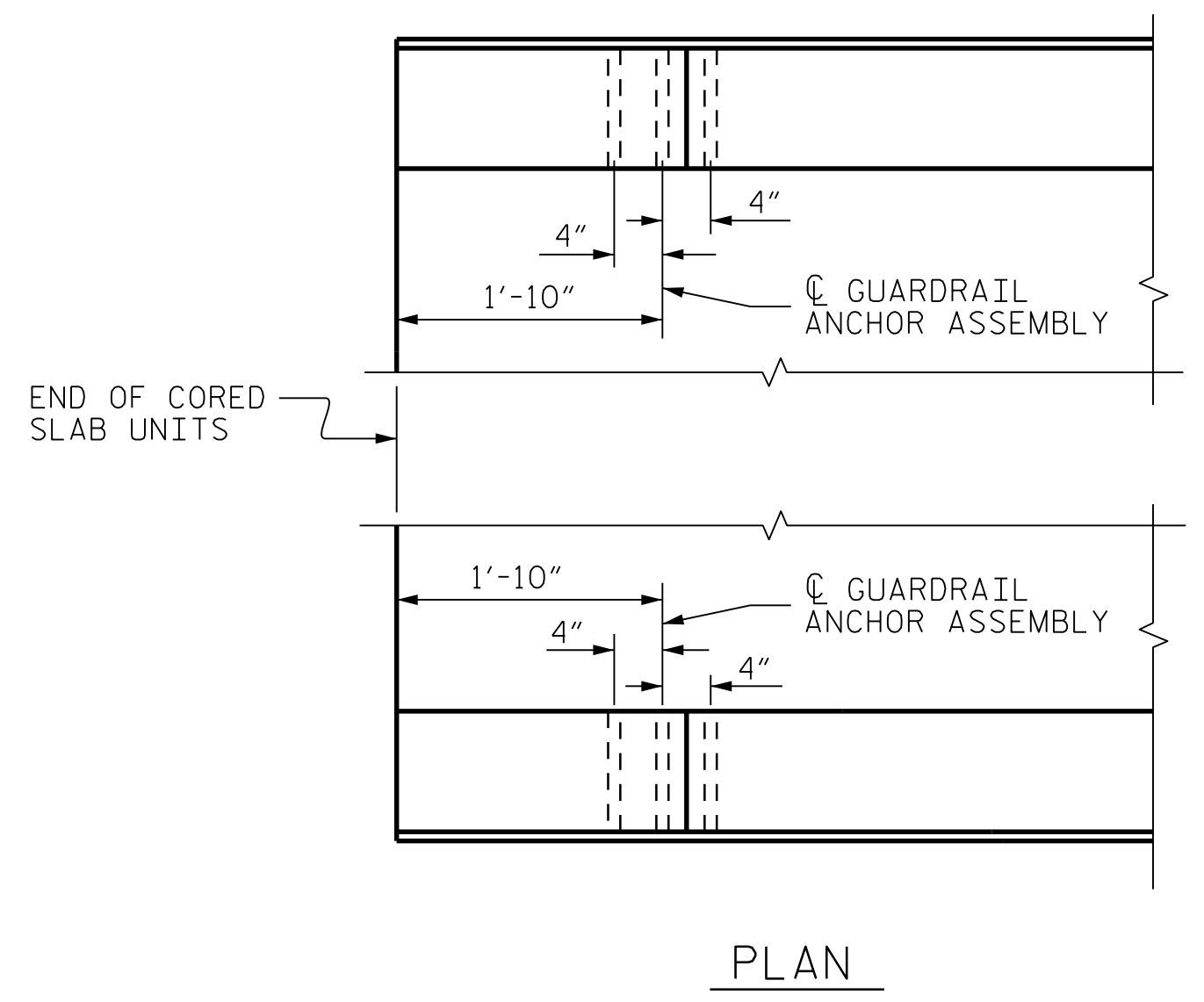
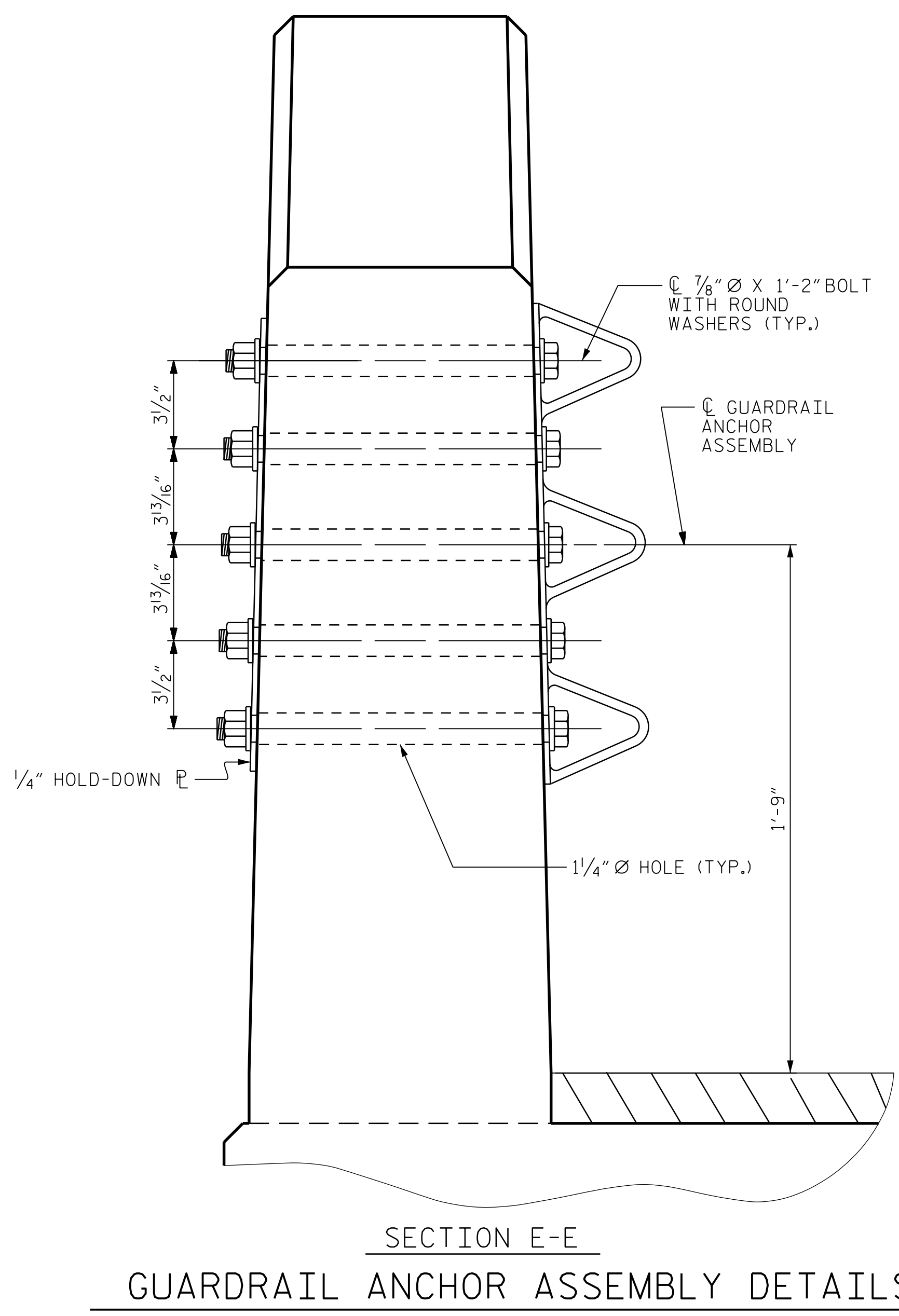
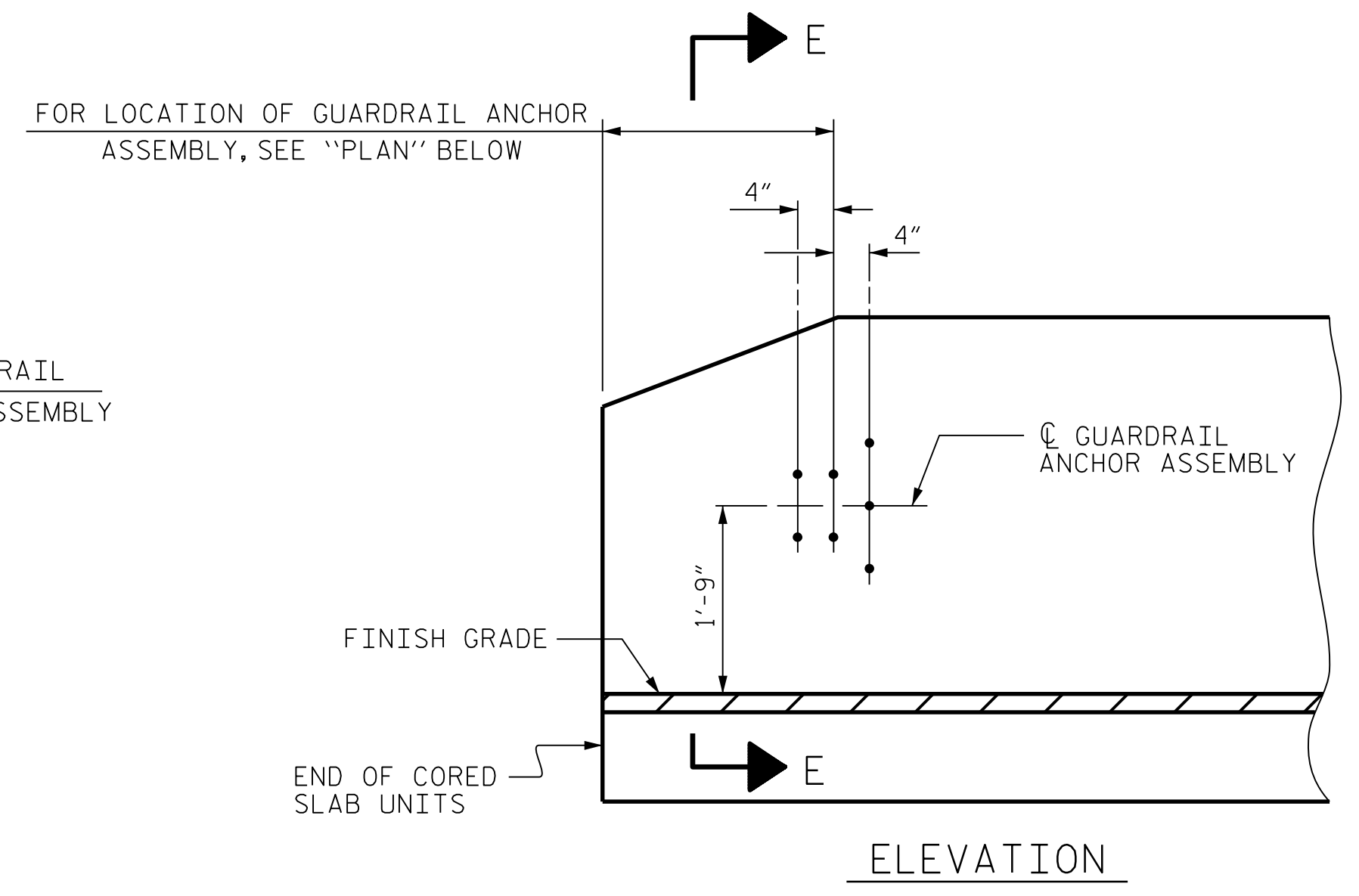
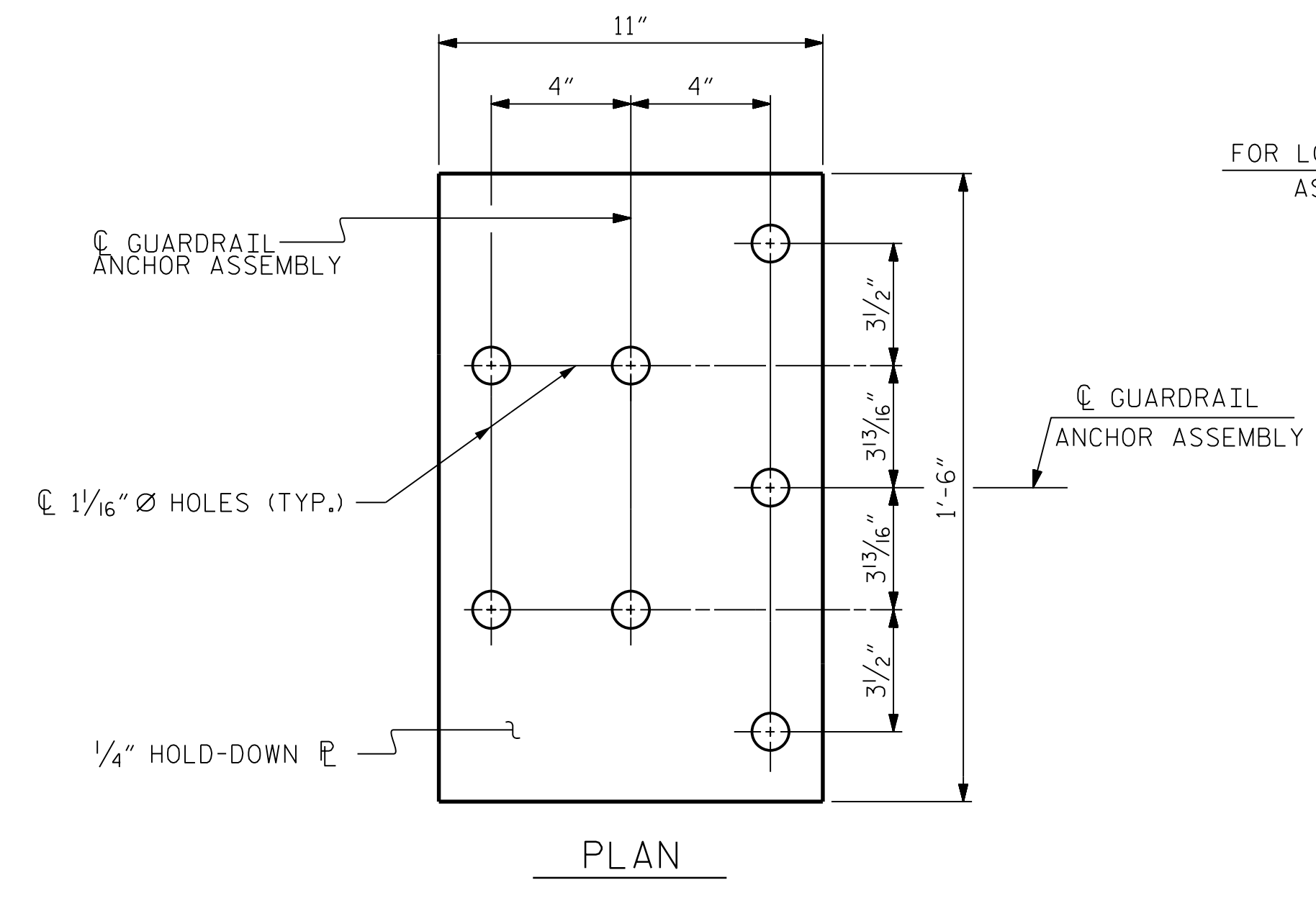
THE GUARDRAIL ANCHOR ASSEMBLY IS REQUIRED AT ALL POINTS WHERE APPROACH GUARDRAIL IS TO BE ATTACHED TO THE END OF BARRIER RAIL. FOR POINTS OF ATTACHMENT, SEE SKETCH.

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

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

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

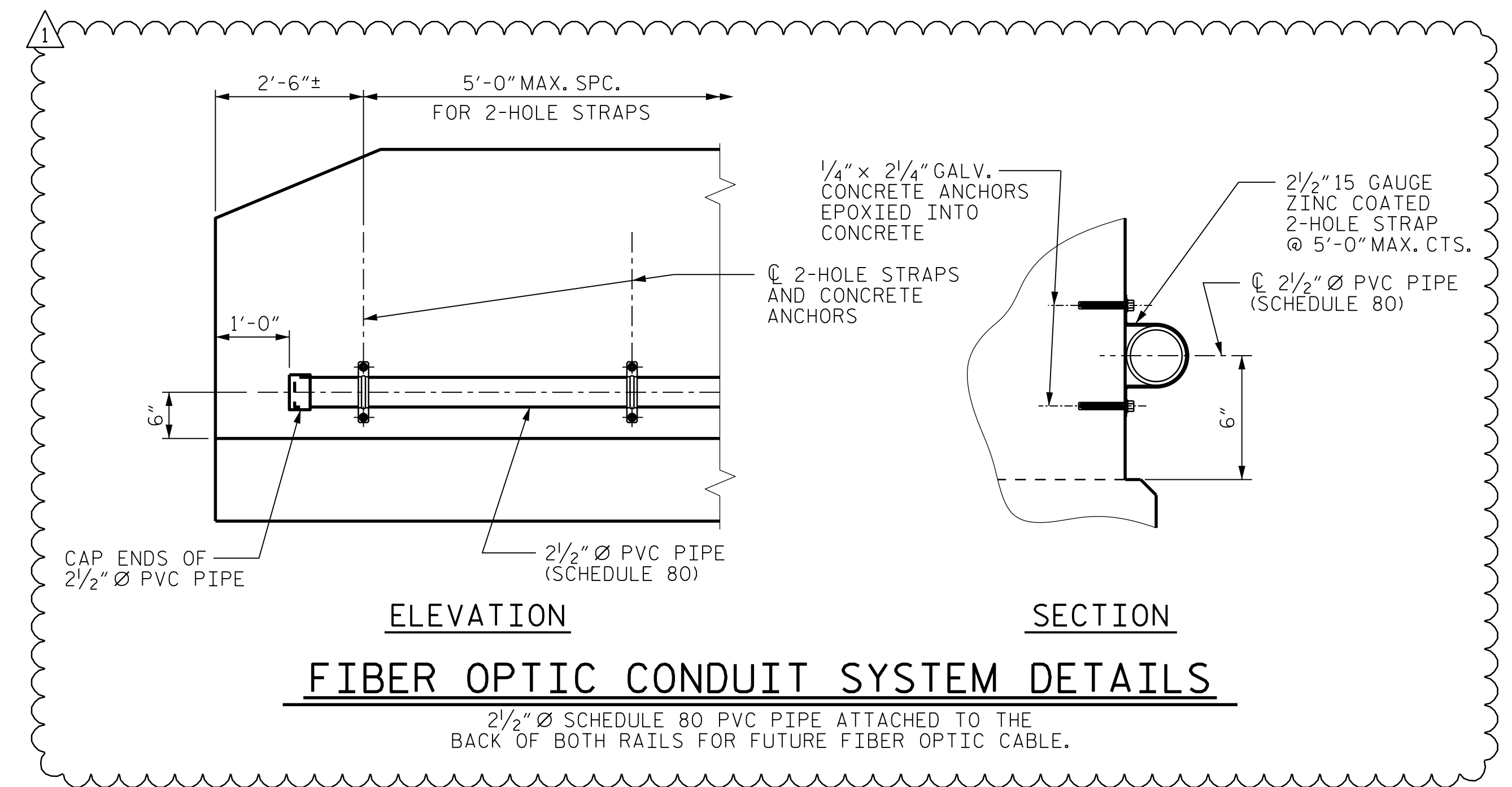
THE 1 1/4" Ø HOLES SHALL BE FORMED OR DRILLED WITH A CORE BIT. IMPACT TOOLS WILL NOT BE PERMITTED. ANY CONCRETE DAMAGED BY THIS WORK SHALL BE REPAIRED TO THE SATISFACTION OF THE ENGINEER.



LOCATION OF ANCHORS FOR GUARDRAIL  
END BENT 1 SHOWN, END BENT 2 SIMILAR.



SKETCH SHOWING POINTS OF ATTACHMENT  
\* DENOTES GUARDRAIL ANCHOR ASSEMBLY



ELEVATION SECTION  
**FIBER OPTIC CONDUIT SYSTEM DETAILS**

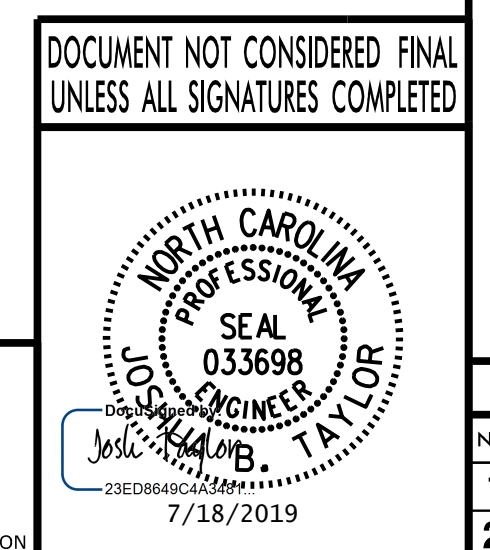
1 ADDED FIBER OPTIC CONDUIT SYSTEM DETAILS

PROJECT NO. 17BP.3.R.77  
SAMPSON COUNTY  
 STATION: 21+12.50 -L-

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**GUARDRAIL ANCHORAGE AND FIBER OPTIC CONDUIT SYSTEM DETAILS FOR VERTICAL CONCRETE BARRIER RAIL**

REVISIONS						SHEET No.
No.	BY:	DATE:	No.	BY:	DATE:	5-8.1
1	LOFTON	7-19-19	3			TOTAL SHEETS
2			4			16



PLANS PREPARED BY:  
**PARSONS**  
 5540 CenterView Drive, Suite 217  
 Raleigh, NC 27606-3386  
 NC LICENSE No. F-0246  
 FOR NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

DRAWN BY : K. E. LOFTON DATE : 9-18  
 CHECKED BY : J. B. TAYLOR DATE : 11-18  
 DESIGN ENGINEER : P. R. GALLAGHER DATE : 11-18



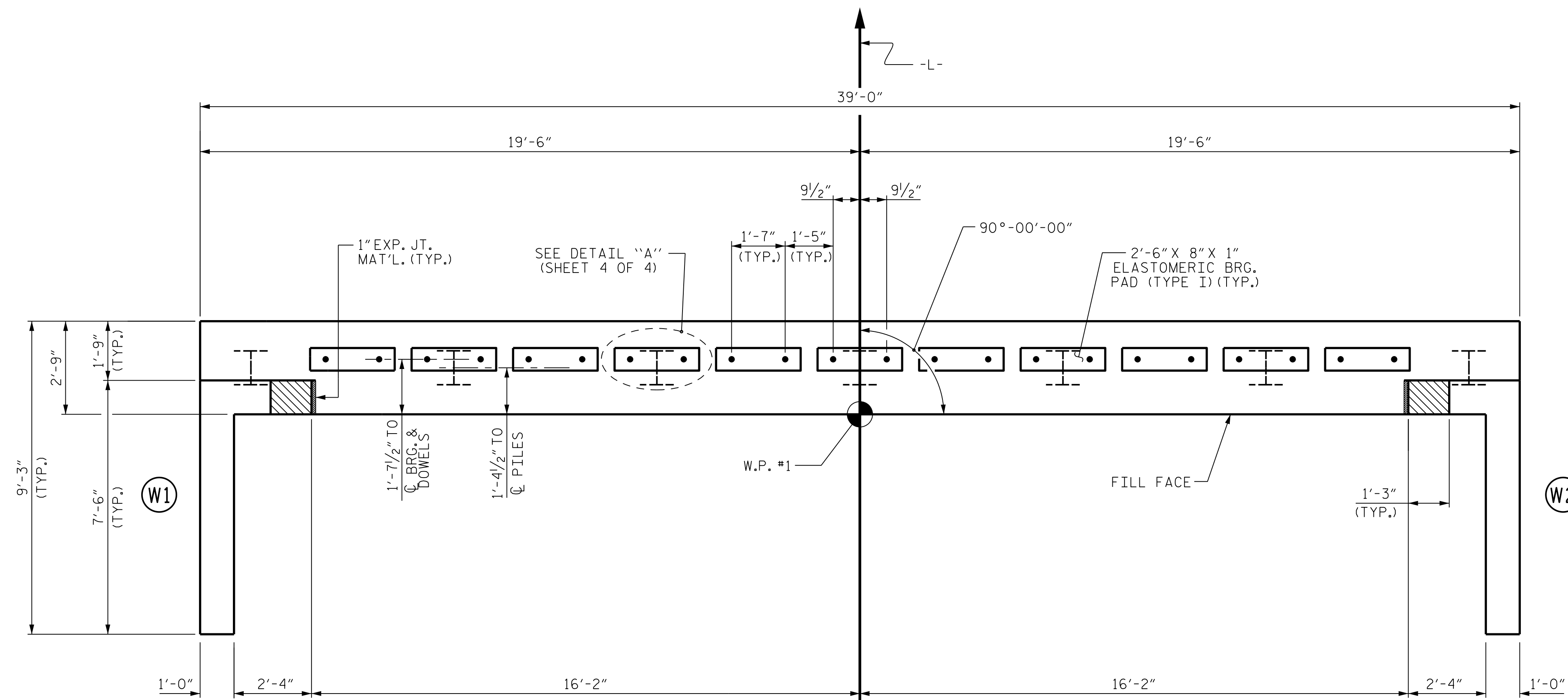
**NOTES**

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

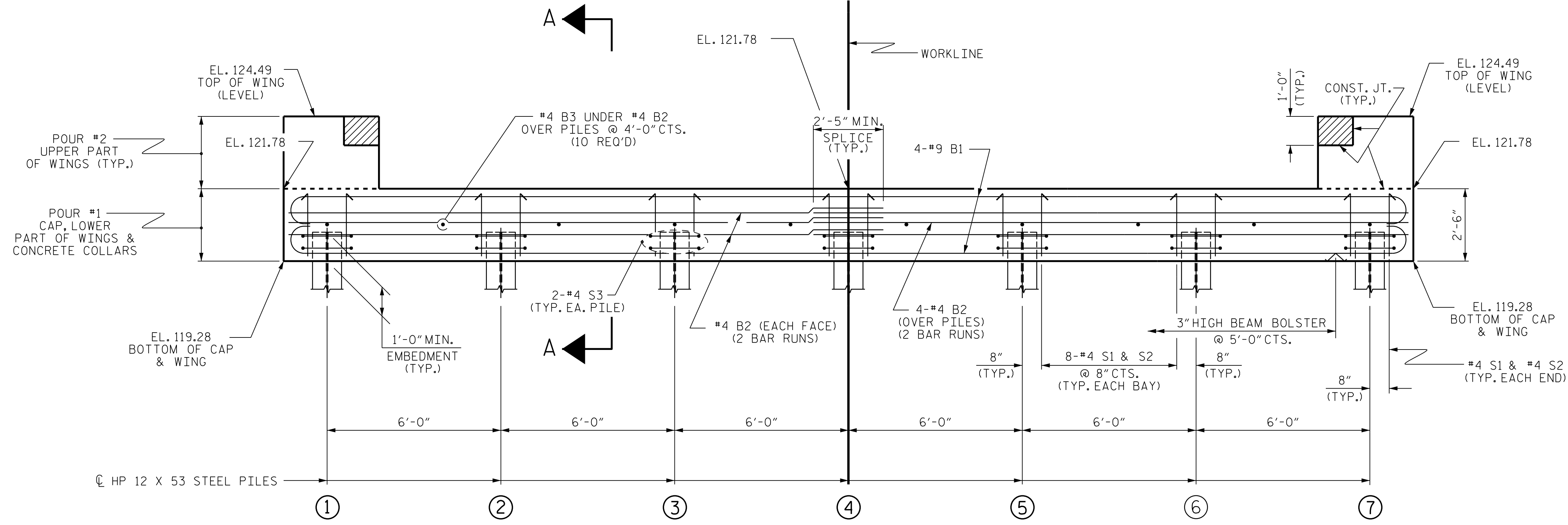
THE CONCRETE IN THE SHADED AREA OF THE WING SHALL BE POURED AFTER THE VERTICAL CONCRETE BARRIER RAIL IS CAST IF SLIP FORMING IS USED.

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.

PROJECT NO. **17BP.3.R.77**

**SAMPSON COUNTY**

STATION: **21 + 12.50 -L-**

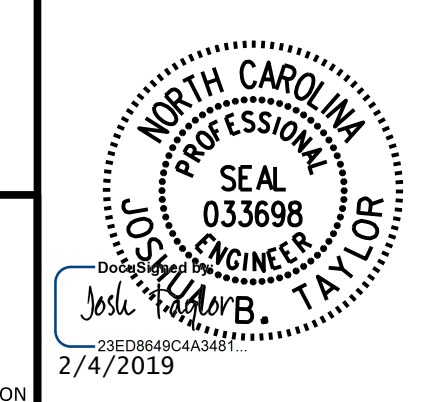
SHEET 1 OF 4

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**SUBSTRUCTURE**

**END BENT 1**

DOCUMENT NOT CONSIDERED FINAL  
 UNLESS ALL SIGNATURES COMPLETED



PLANS PREPARED BY:  
**PARSONS**  
 5540 CenterView Drive, Suite 217  
 Raleigh, NC 27606-3386  
 NC LICENSE No. F-0246  
 FOR NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

DRAWN BY :	K. E. LOFTON	DATE :	9-18
CHECKED BY :	J. B. TAYLOR	DATE :	11-18
DESIGN ENGINEER :	P. R. GALLAGHER	DATE :	11-18

ASSEMBLED BY :	K. E. LOFTON	DATE :	9-18
CHECKED BY :	J. B. TAYLOR	DATE :	11-18
DRAWN BY :	DCE 01/10	REV. :	4/15 MAA/TMG
CHECKED BY :	MKT 01/10		

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

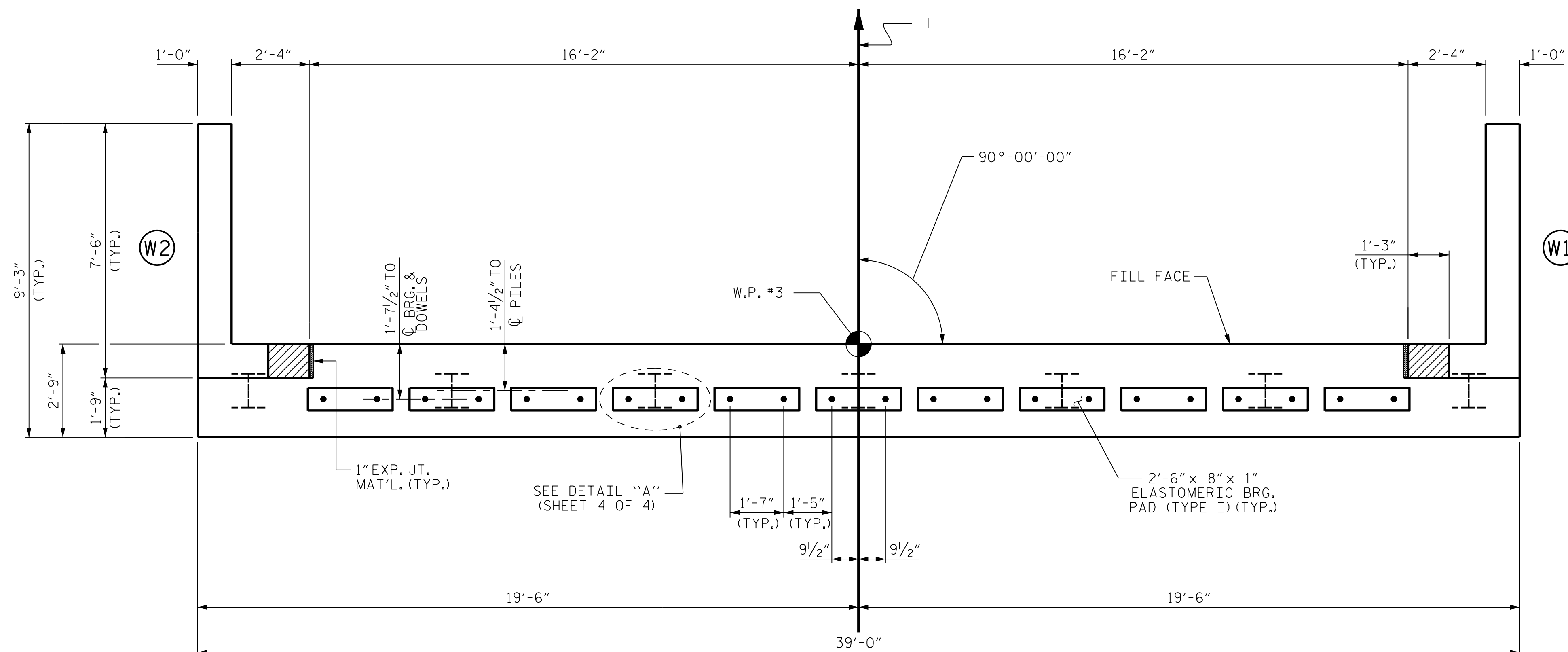
NOTES

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

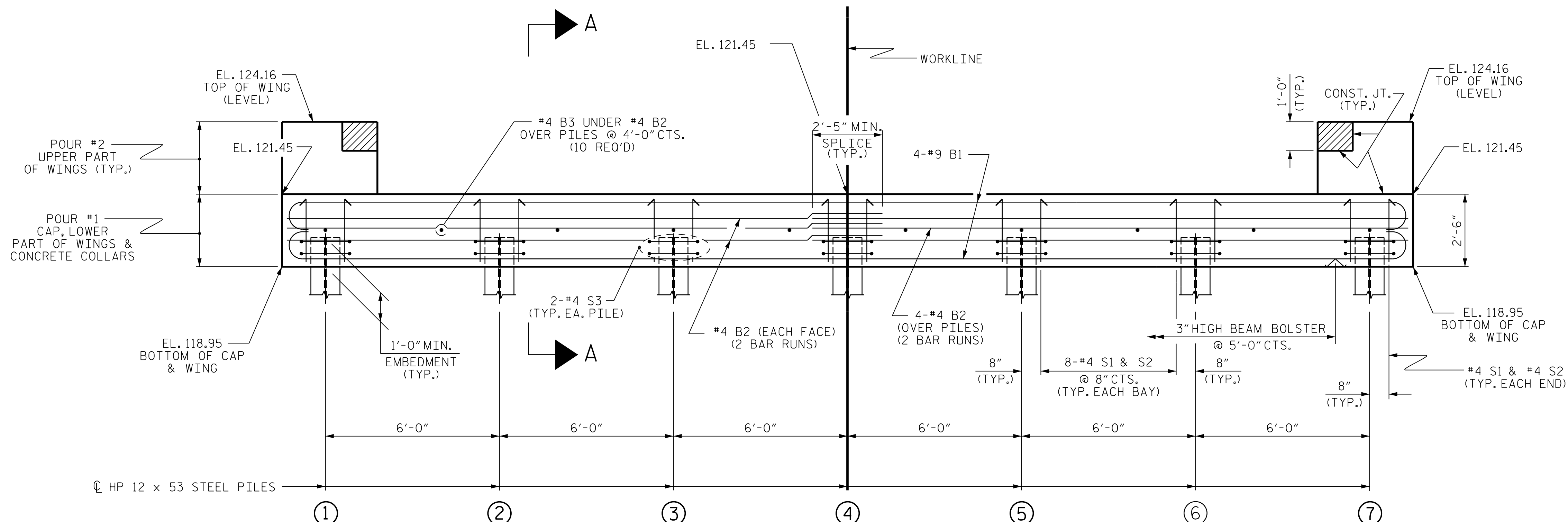
THE CONCRETE IN THE SHADED AREA OF THE WING SHALL BE POURED AFTER THE VERTICAL CONCRETE BARRIER RAIL IS CAST IF SLIP FORMING IS USED.

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.

PROJECT NO. 17BP.3.R.77  
SAMPSON COUNTY  
STATION: 21 + 12.50 -L-

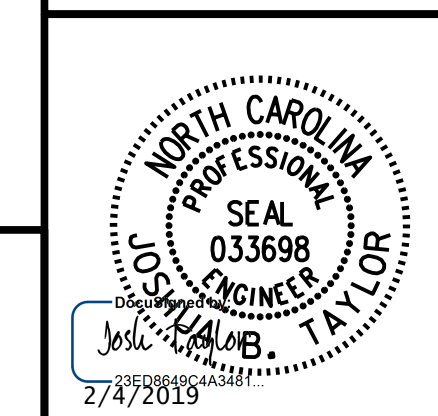
SHEET 2 OF 4

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

SUBSTRUCTURE

END BENT 2

DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED

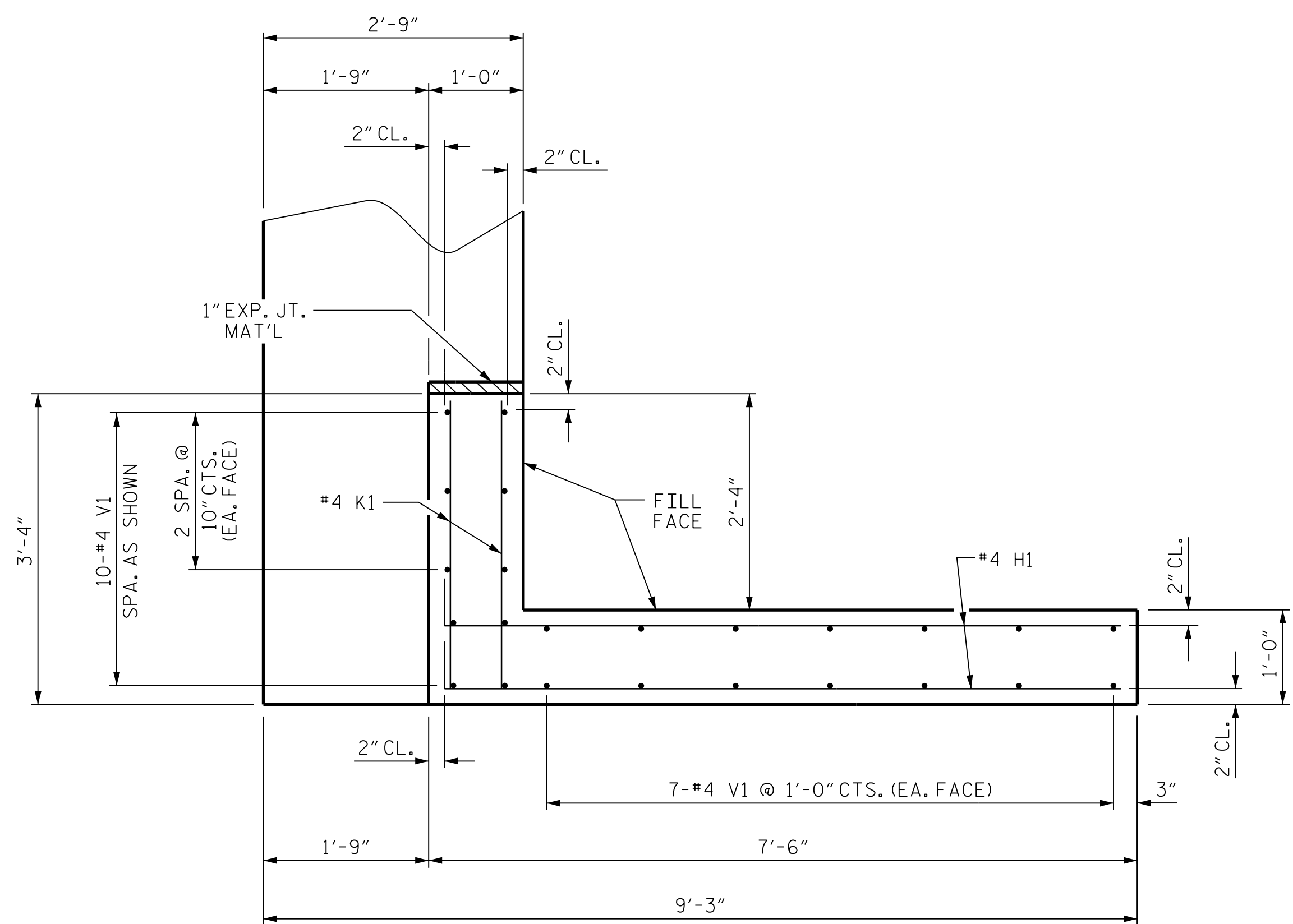


PLANS PREPARED BY:  
**PARSONS**  
5540 CenterView Drive, Suite 217  
Raleigh, NC 27606-3386  
NC LICENSE No. F-0246

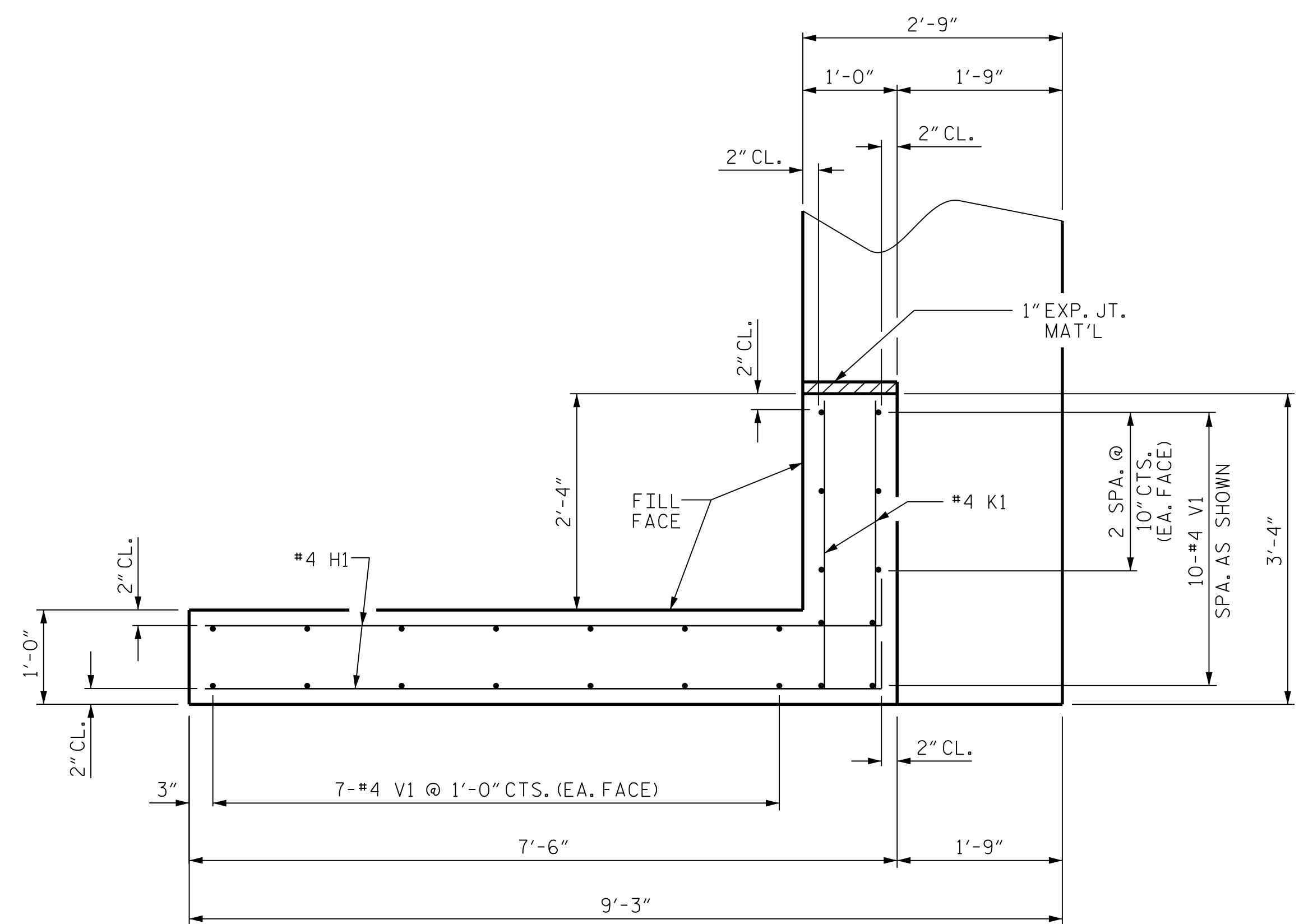
DRAWN BY : K. E. LOFTON DATE : 9-18  
CHECKED BY : J. B. TAYLOR DATE : 11-18  
DESIGN ENGINEER : P. R. GALLAGHER DATE : 11-18

ASSEMBLED BY : K. E. LOFTON DATE : 9-18  
CHECKED BY : J. B. TAYLOR DATE : 11-18  
DRAWN BY : DGE 01/10  
CHECKED BY : MKT 01/10  
REV. 4/15 MAA/TMG

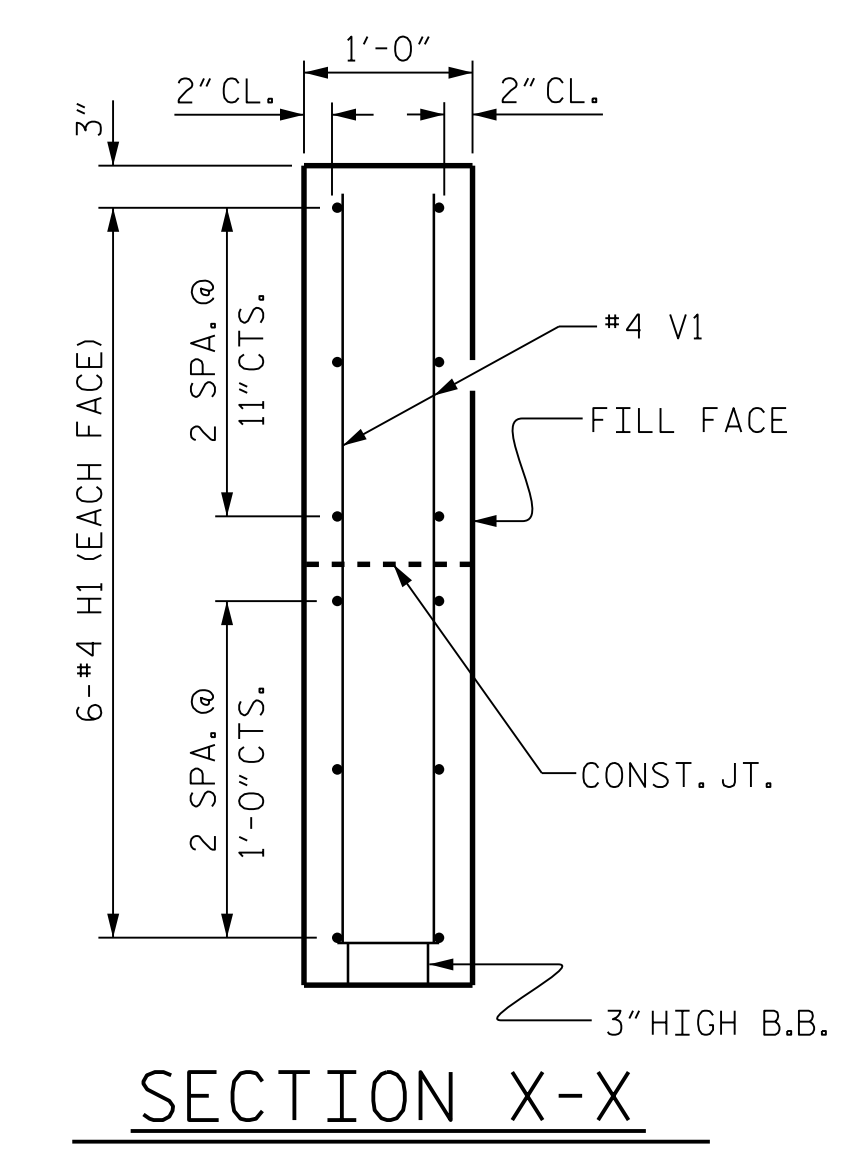
REVISIONS			SHEET No.		
No.	BY:	DATE:	No.	BY:	DATE:
1			3		
2			4		
					TOTAL SHEETS
					16



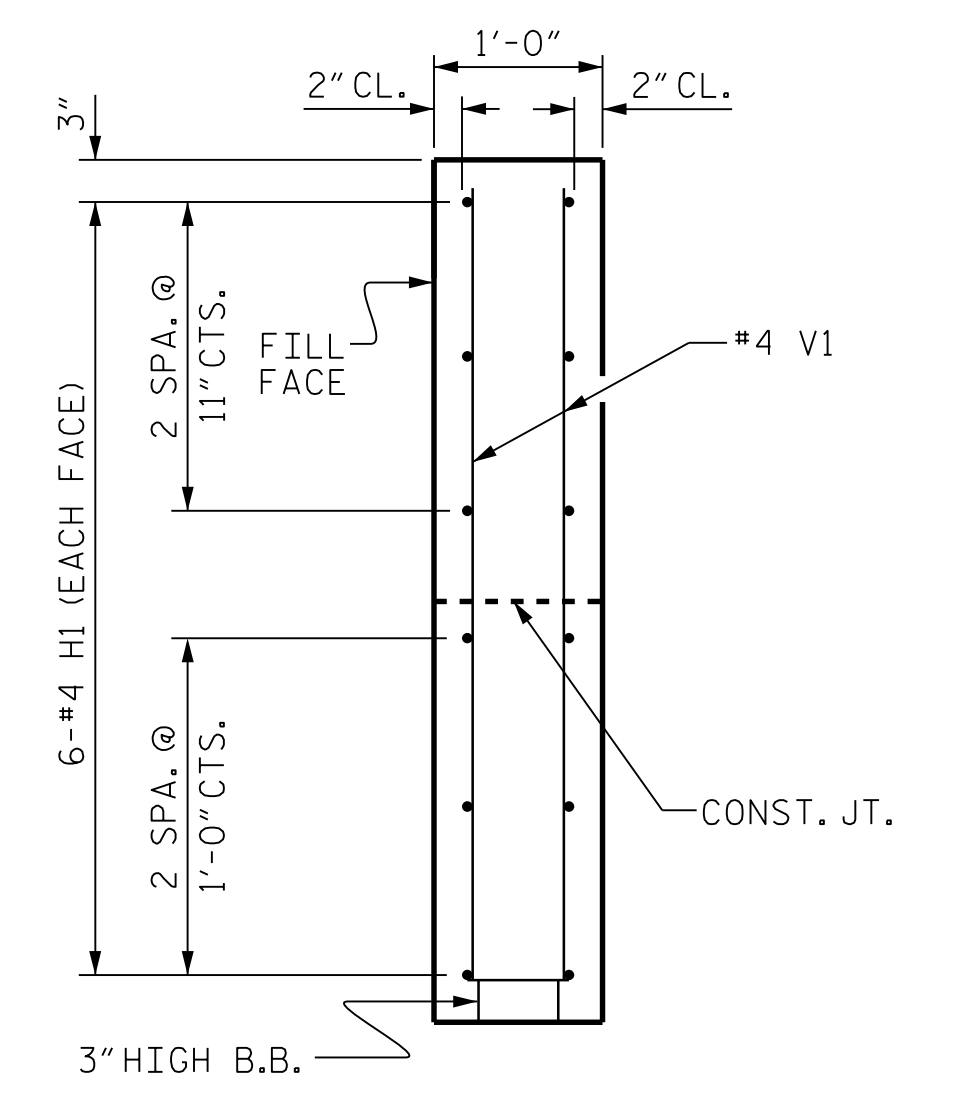
PLAN OF WING (W1)



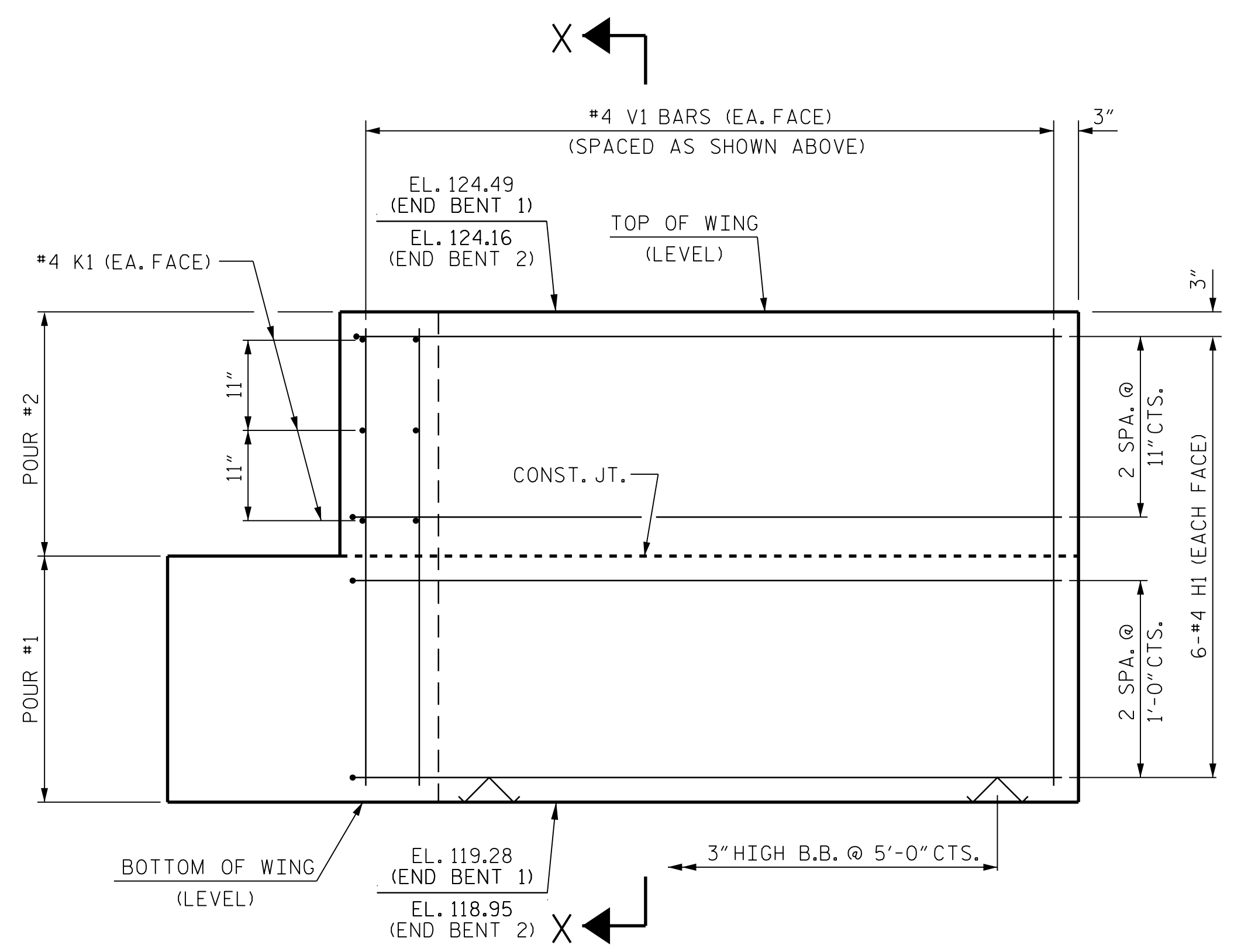
PLAN OF WING (W2)



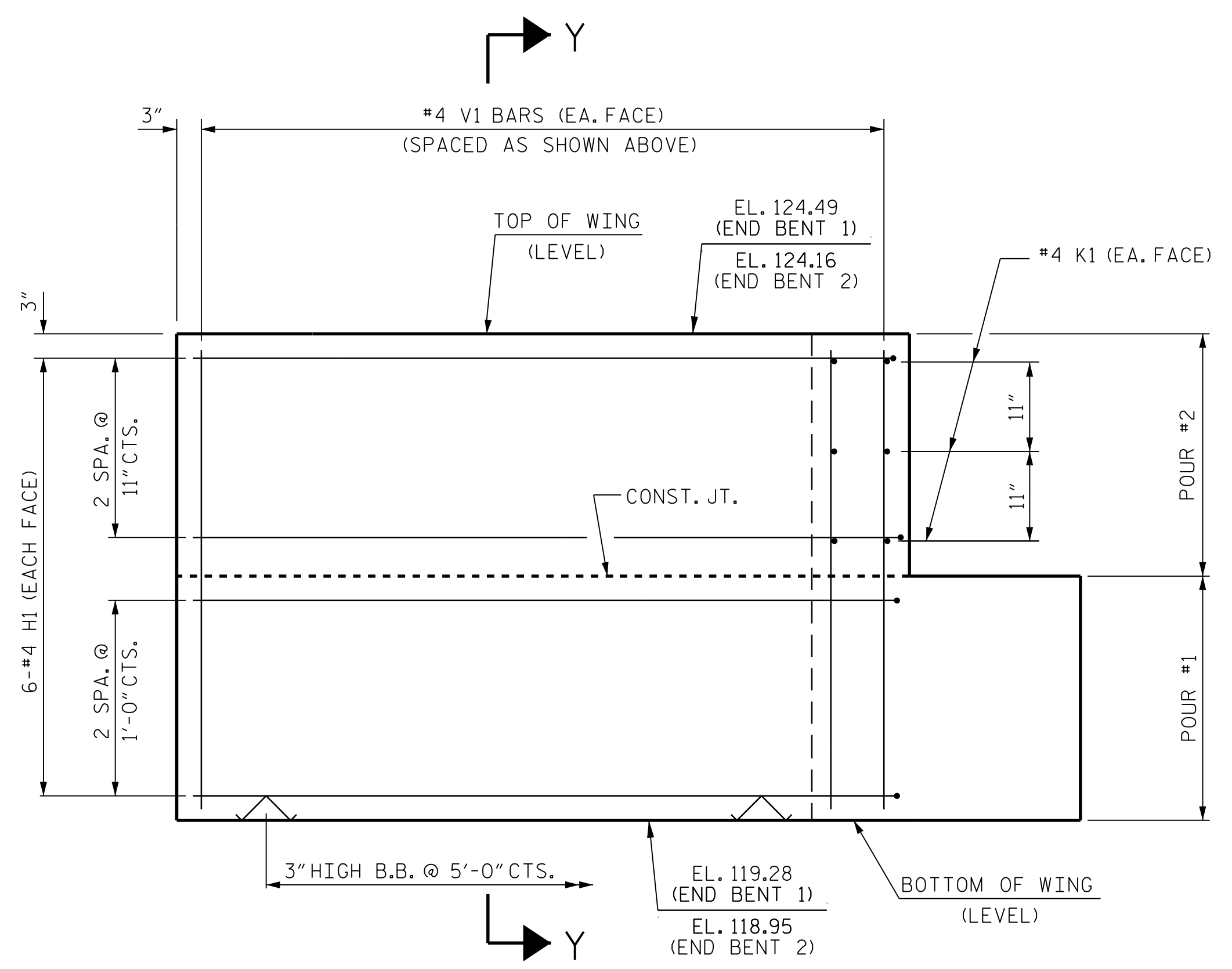
SECTION X-X



SECTION Y-Y



ELEVATION OF WING (W1)

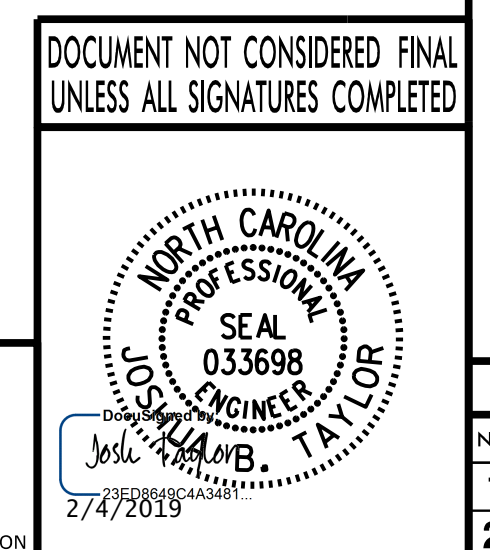


ELEVATION OF WING (W2)

WING DETAILS

PROJECT NO. 17BP.3.R.77  
SAMPSON COUNTY  
 STATION: 21+12.50 -L-  
 SHEET 3 OF 4

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
 SUBSTRUCTURE  
 END BENT WING DETAILS



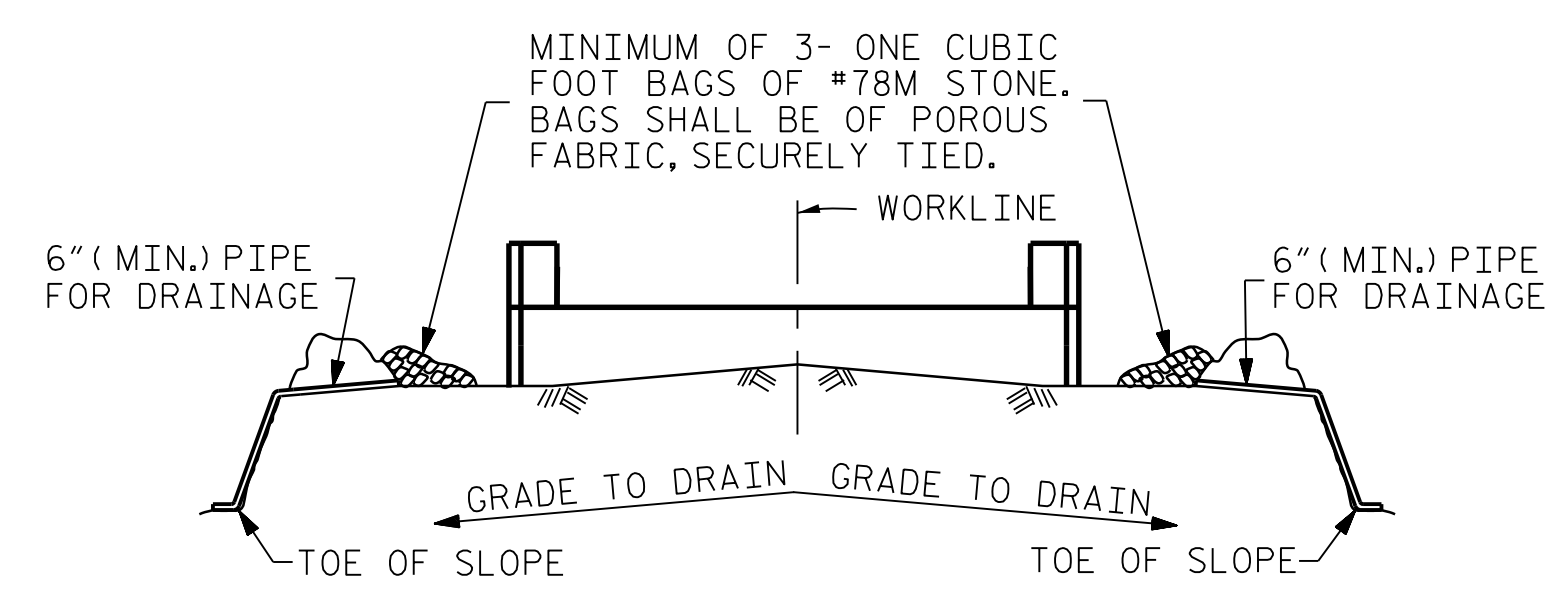
ASSEMBLED BY :	K. E. LOFTON	DATE :	9-18
CHECKED BY :	J. B. TAYLOR	DATE :	11-18
DRAWN BY :	DGE 02/10	REV.	4/15 MAA/TMG
CHECKED BY :	MKT 02/10		

DRAWN BY :	K. E. LOFTON	DATE :	9-18
CHECKED BY :	J. B. TAYLOR	DATE :	11-18
DESIGN ENGINEER :	P. R. GALLAGHER	DATE :	11-18

PLANS PREPARED BY :  
**PARSONS**  
 5540 CenterView Drive, Suite 217  
 Raleigh, NC 27606-3386  
 NC LICENSE No. F-0246  
 FOR NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

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



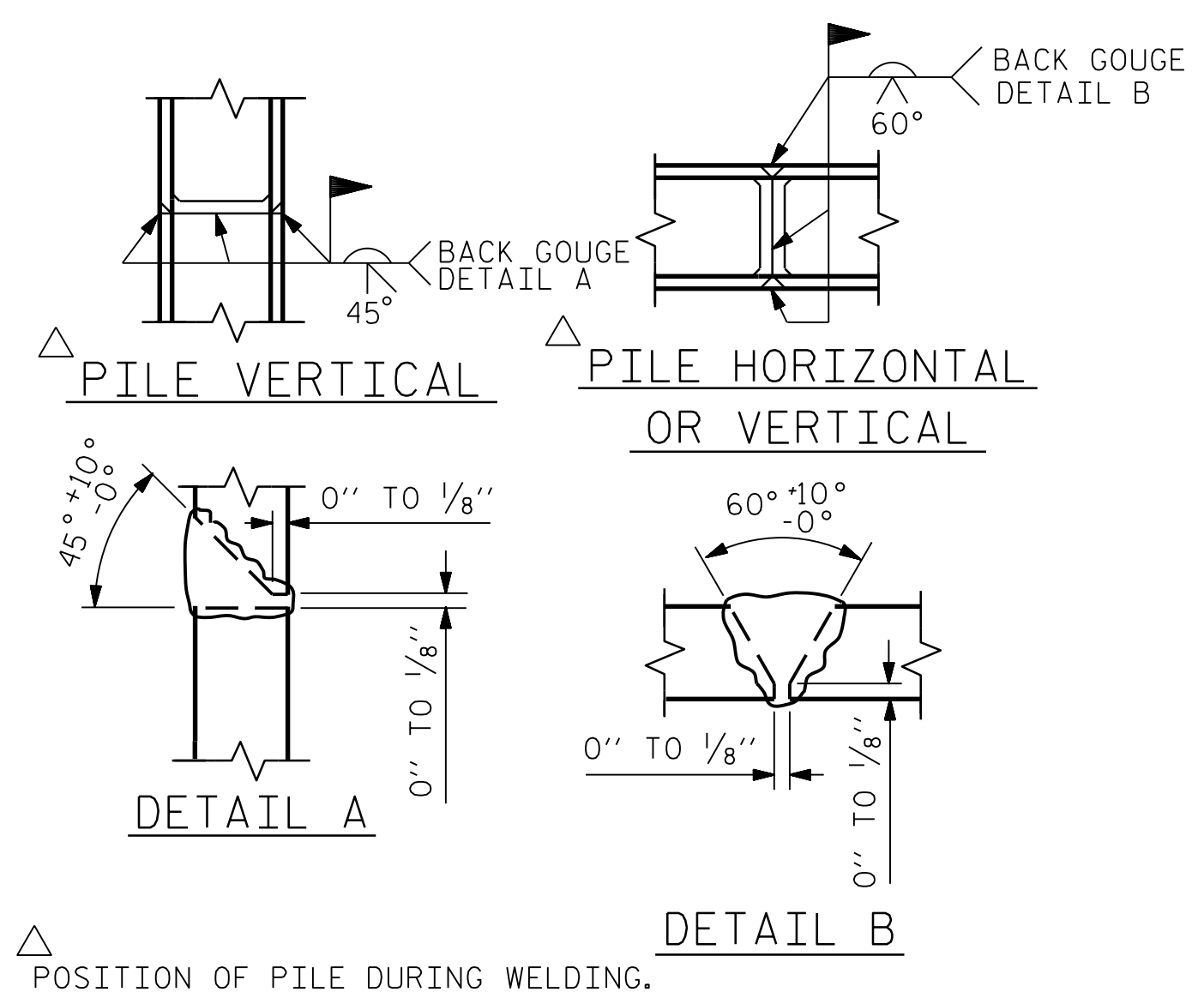


BAGGED STONE AND PIPE SHALL BE PLACED IMMEDIATELY AFTER COMPLETION OF END BENT EXCAVATION. PIPE MAY BE EITHER CONCRETE, CORRUGATED STEEL, CORRUGATED ALUMINUM ALLOY, OR CORRUGATED PLASTIC. PERFORATED PIPE WILL NOT BE ALLOWED.

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.

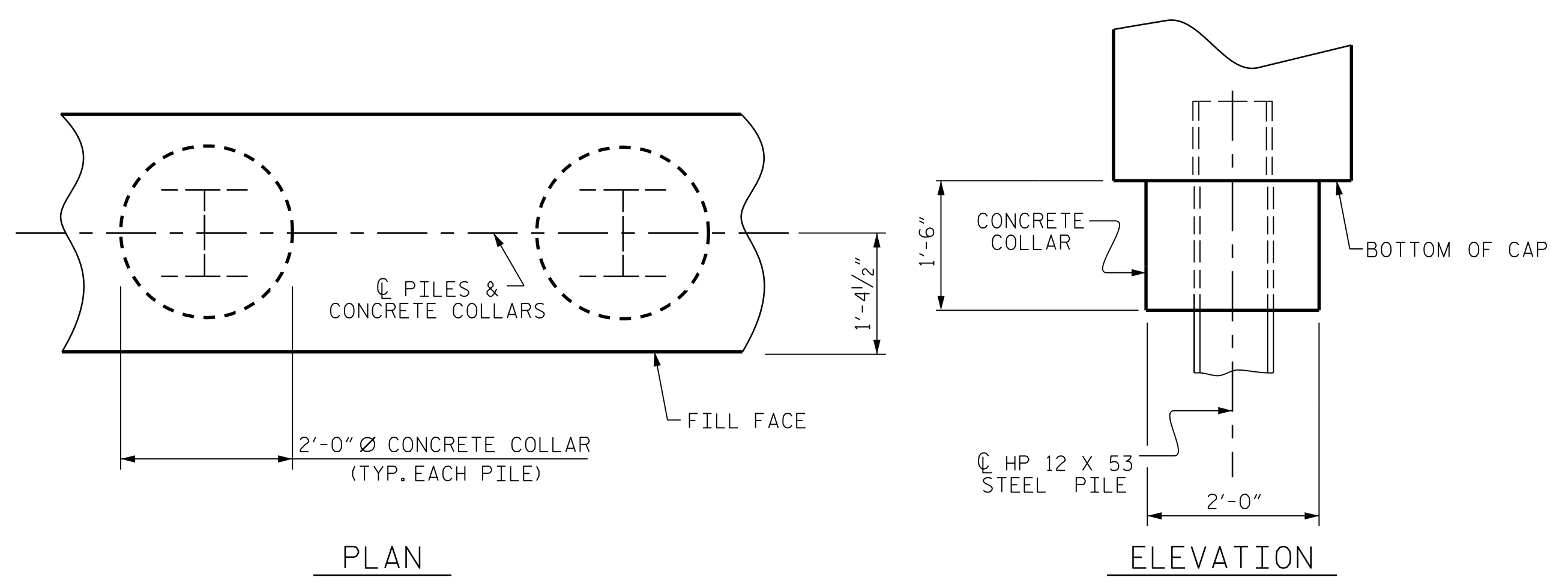
NO SEPARATE PAYMENT WILL BE MADE FOR THIS WORK AND THE ENTIRE COST OF THIS WORK SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR THE SEVERAL PAY ITEMS.

**TEMPORARY DRAINAGE AT END BENT**



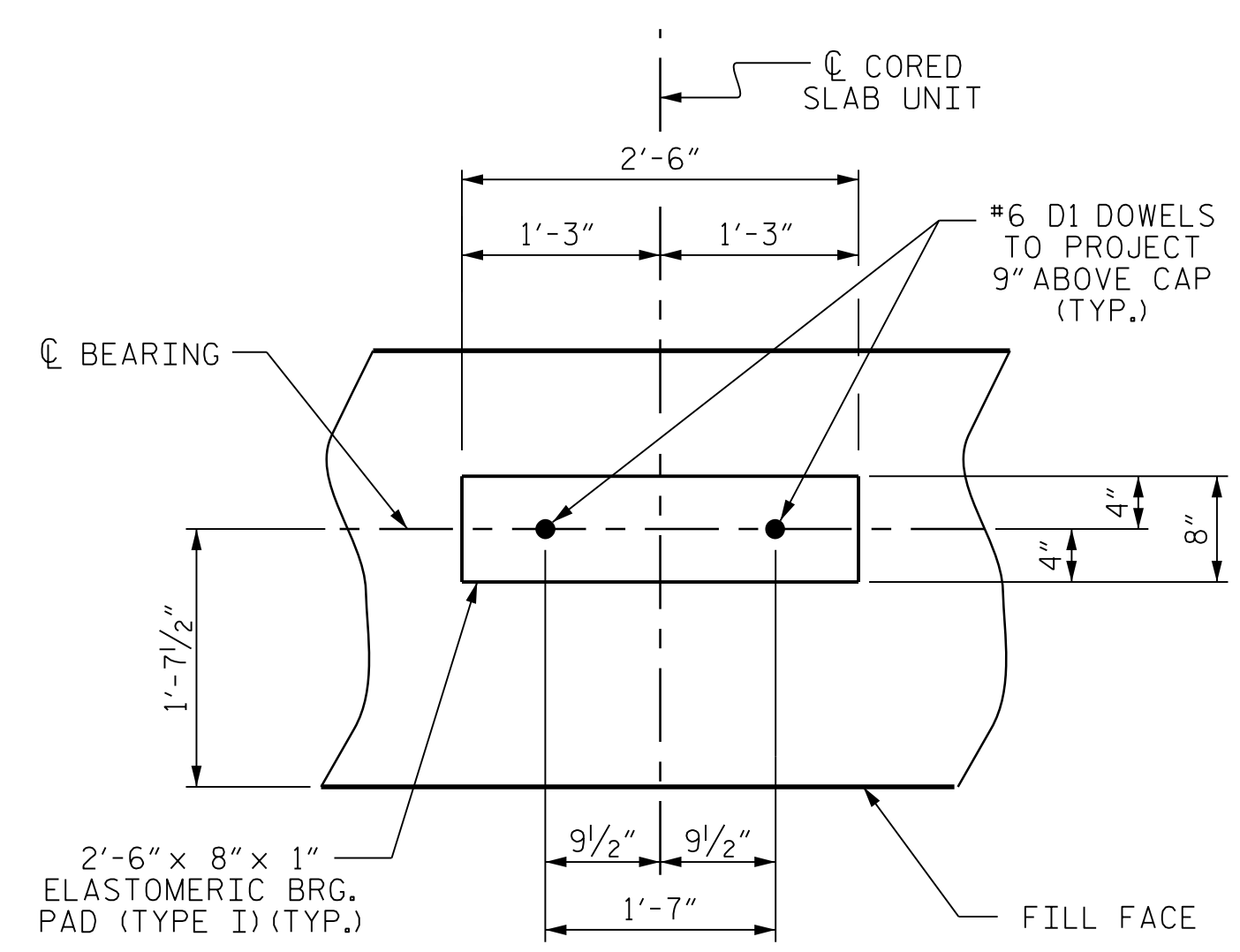
**PILE SPLICE DETAILS**

BAR TYPES					BILL OF MATERIAL FOR ONE END BENT						
BAR NO.	NO.	SIZE	TYPE	LENGTH	WEIGHT	BAR NO.	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	8	#9	1	41'-0"	1115	D1	22	#6	STR	1'-6"	50
B2	16	#4	STR	20'-7"	220	H1	24	#4	2	7'-10"	126
B3	10	#4	STR	2'-5"	16	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										2.0 C.Y.	
TOTAL CLASS A CONCRETE										14.4 C.Y.	

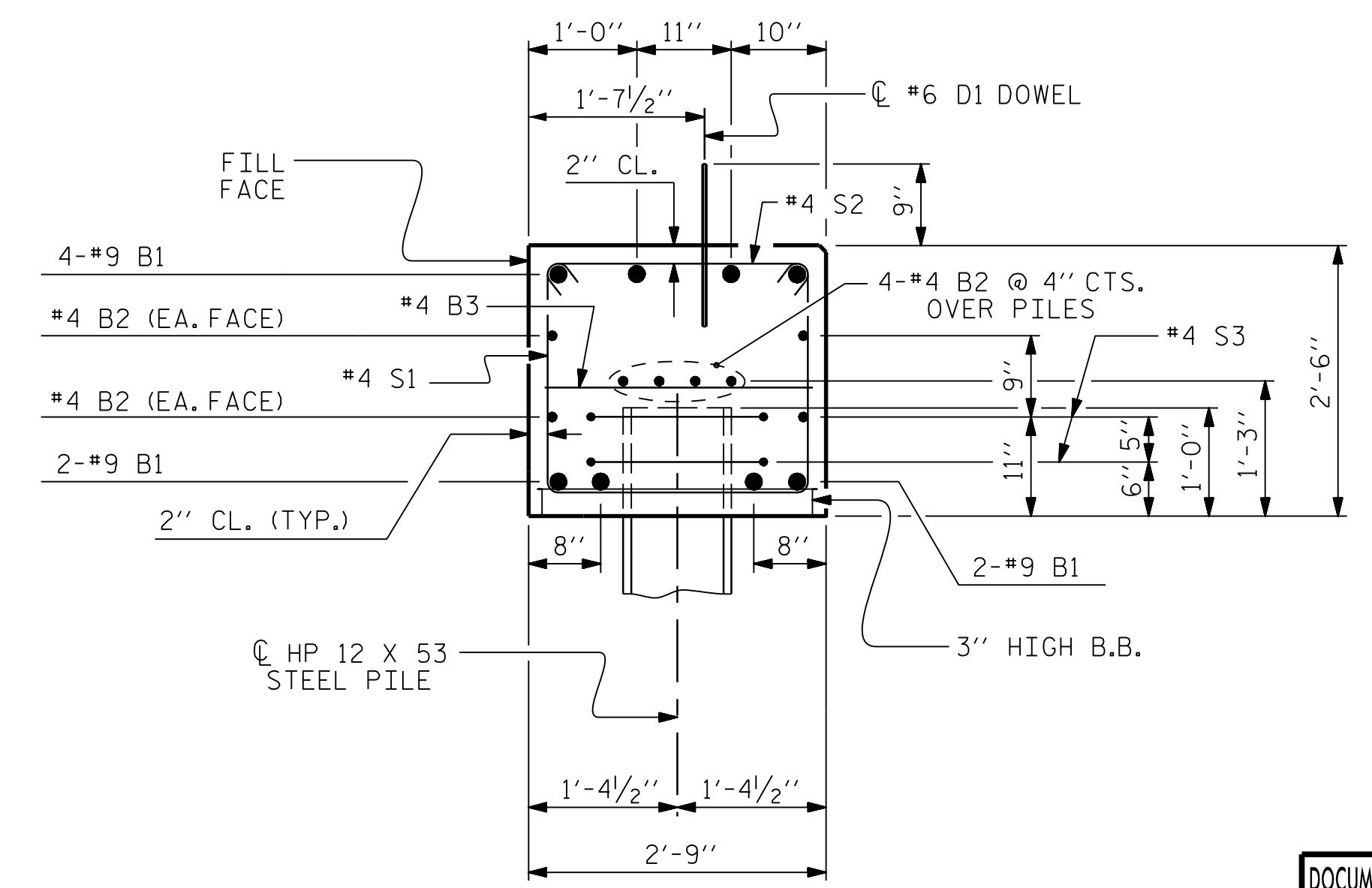


**CORROSION PROTECTION FOR STEEL PILES DETAIL**

(END BENT 1 SHOWN, END BENT 2 SIMILAR BY ROTATION)



(END BENT SHOWN, END BENT 2 SIMILAR BY ROTATION)



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

PROJECT NO. **17BP.3.R.77**

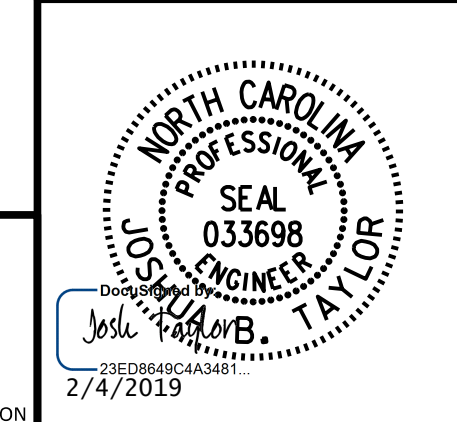
**SAMPSON** COUNTY

STATION: **21+12.50 -L-**

SHEET 4 OF 4

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
SUBSTRUCTURE					
END BENT DETAILS					
REVISIONS					SHEET No.
No.	BY:	DATE:	No.	BY:	DATE:
1			3		
2			4		
					TOTAL SHEETS
					16

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



PLANS PREPARED BY:

**PARSONS**

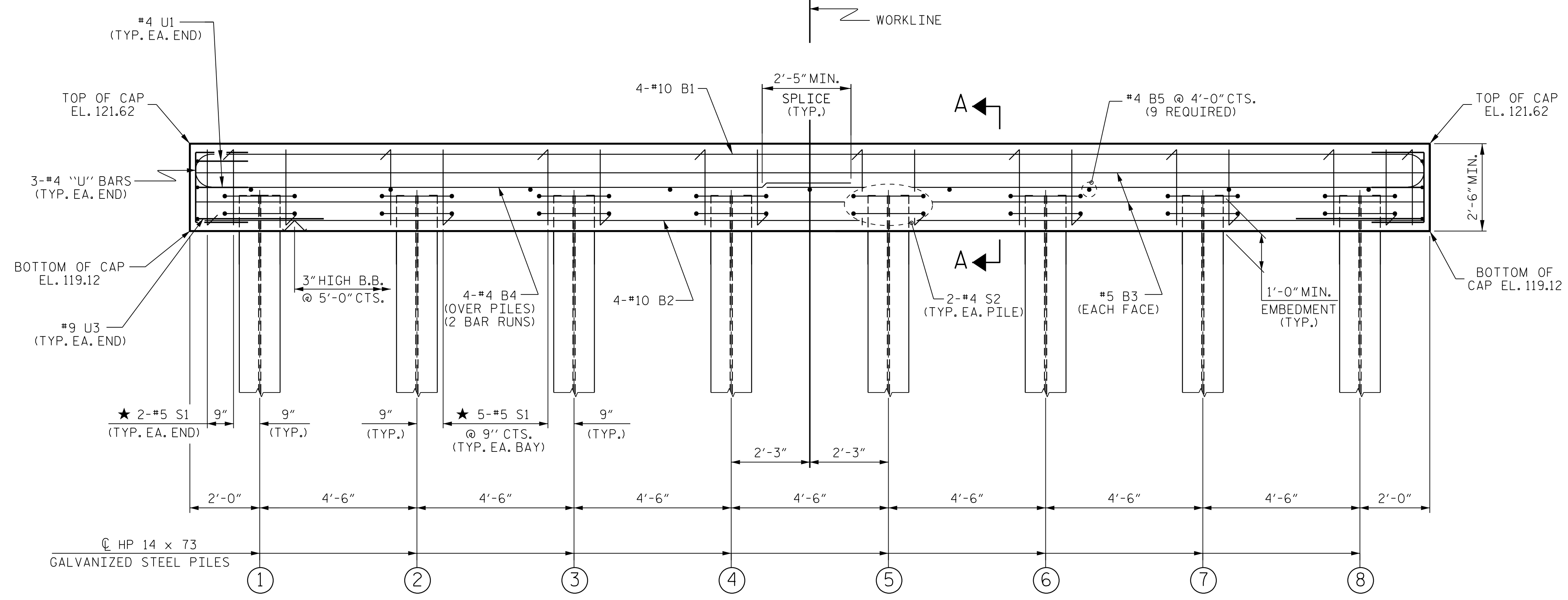
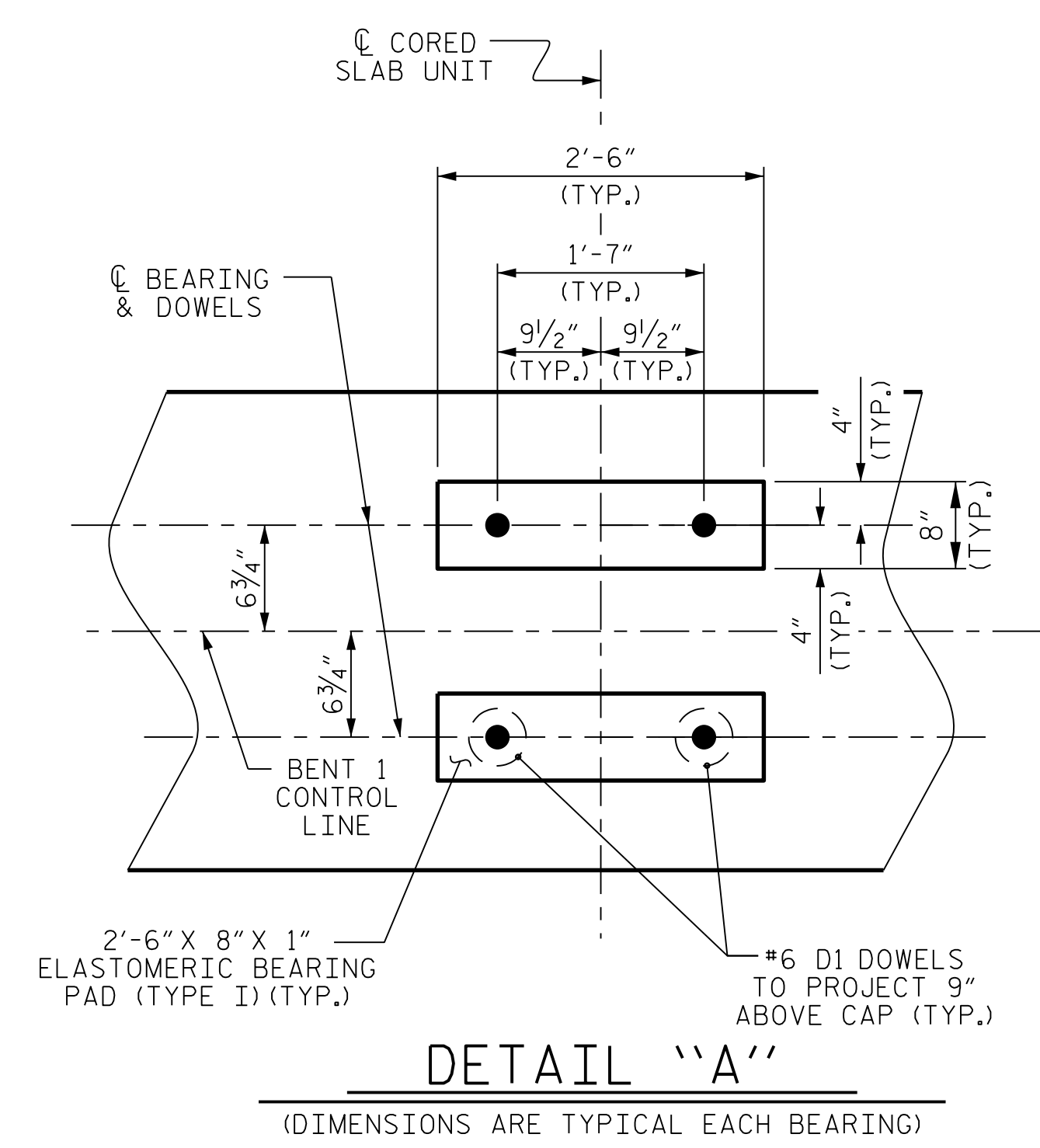
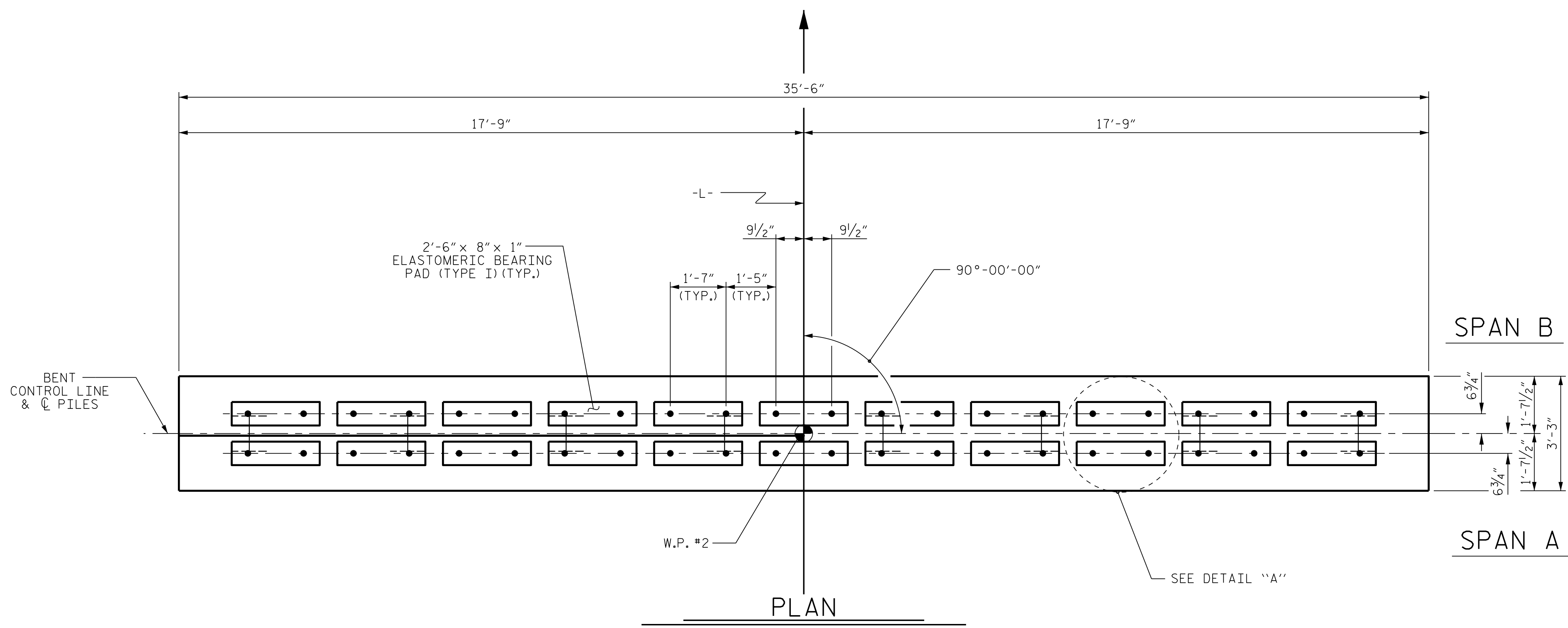
5540 CenterView Drive, Suite 217  
Raleigh, NC 27606-3386  
NC LICENSE No. F-0246

DRAWN BY :	K. E. LOFTON	DATE :	9-18
CHECKED BY :	J. B. TAYLOR	DATE :	11-18
DESIGN ENGINEER :	P. R. GALLAGHER	DATE :	11-18

ASSEMBLED BY :	K. E. LOFTON	DATE :	9-18
CHECKED BY :	J. B. TAYLOR	DATE :	11-18
DRAWN BY :	DCE	12/09	
CHECKED BY :	MKT	01/10	
REV.	4/17	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 38 FEET. GALVANIZE IN ACCORDANCE WITH SECTION 1076 OF THE STANDARD SPECIFICATIONS.



PROJECT NO. 17BP.3.R.77  
SAMPSON COUNTY  
 STATION: 21+12.50 -L-

SHEET 1 OF 2

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**SUBSTRUCTURE**

**BENT 1**

DOCUMENT NOT CONSIDERED FINAL  
 UNLESS ALL SIGNATURES COMPLETED

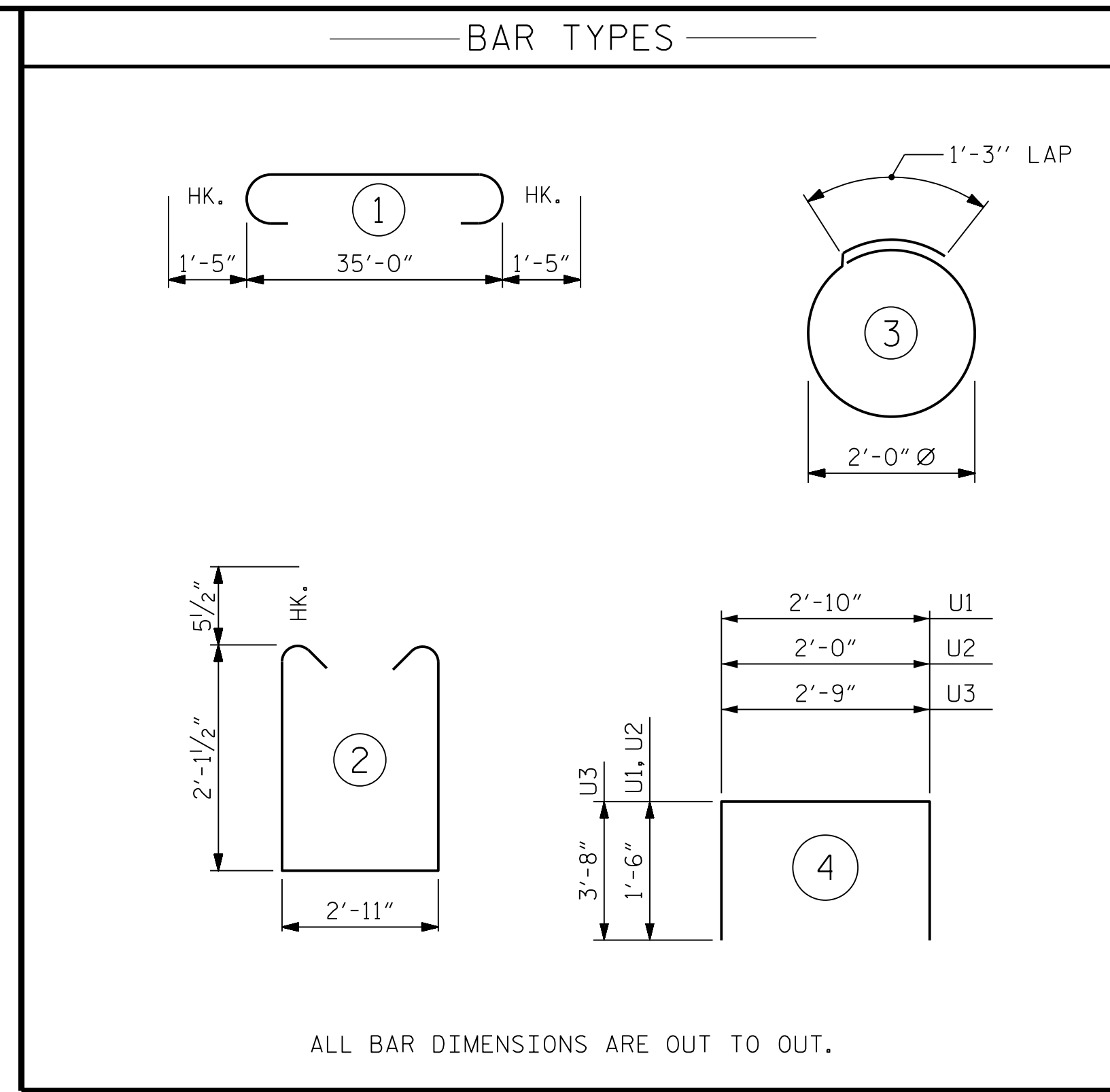
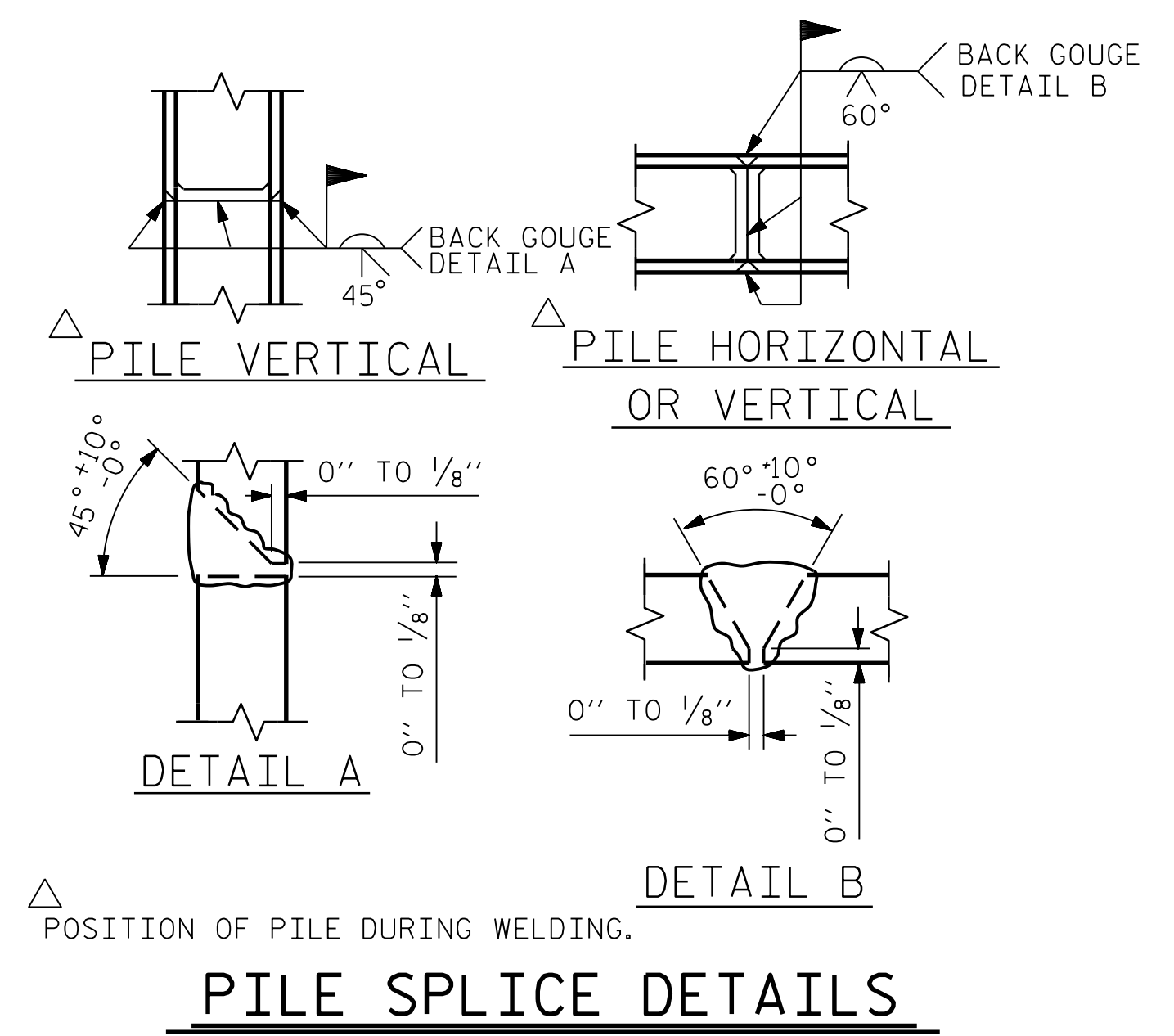
**PROFESSIONAL SEAL**  
 J. B. TAYLOR  
 ENGINEER  
 033698  
 2/4/2018

PLANS PREPARED BY:  
**PARSONS**  
 5540 CenterView Drive, Suite 217  
 Raleigh, NC 27606-3386  
 NC LICENSE No. F-0246  
 FOR NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

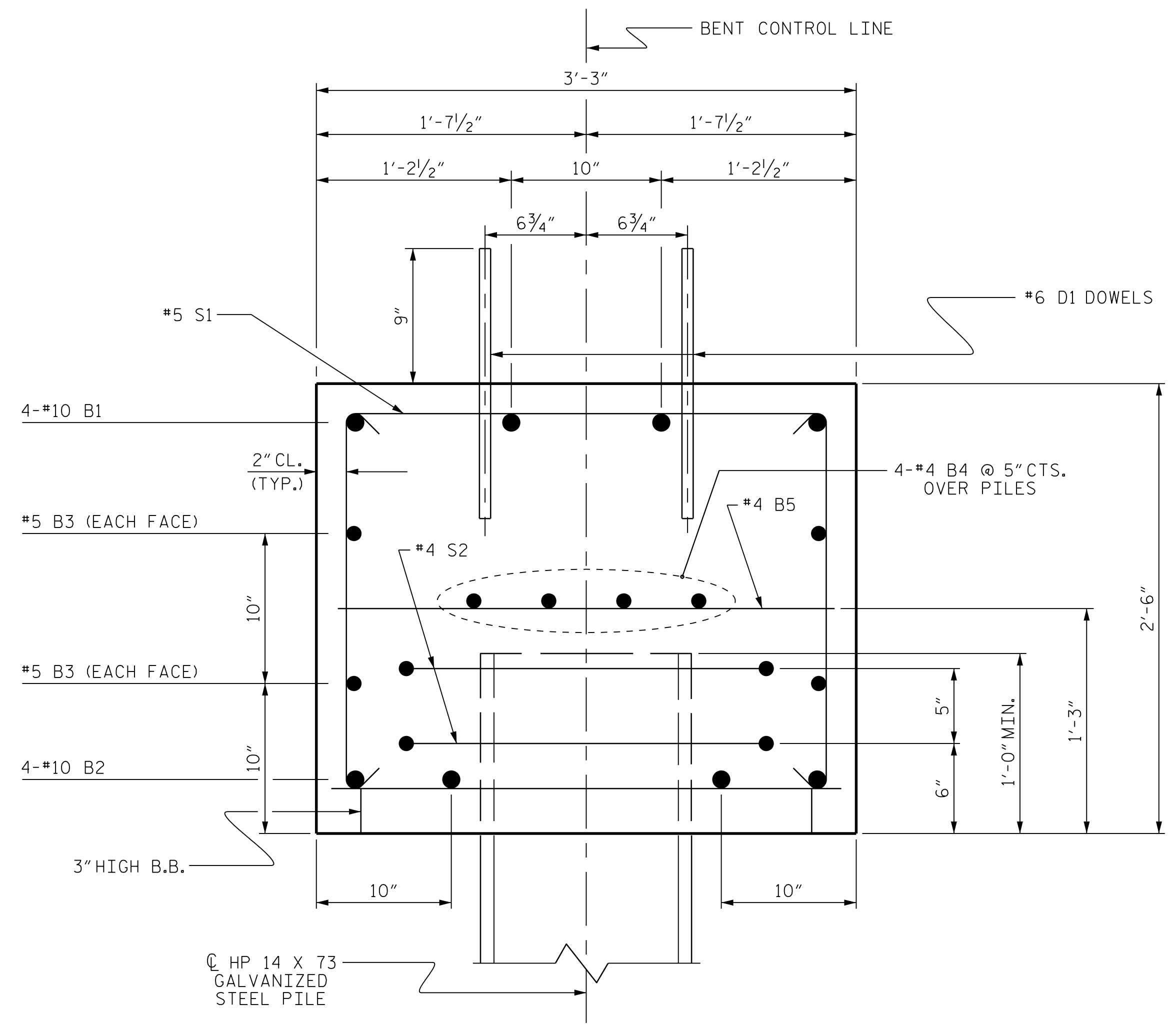
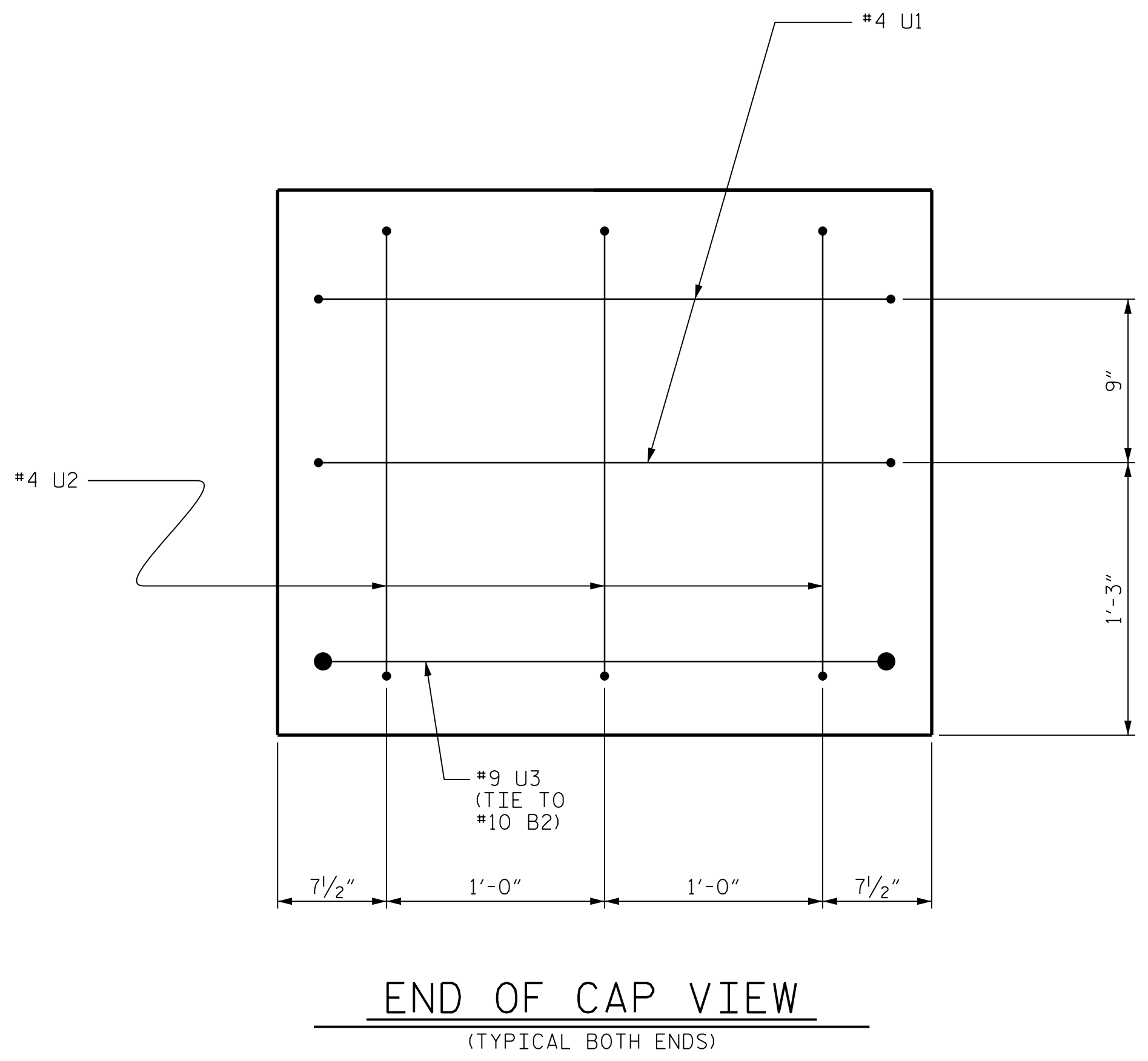
DRAWN BY :	K. E. LOFTON	DATE :	9-18
CHECKED BY :	J. B. TAYLOR	DATE :	11-18
DESIGN ENGINEER :	P. R. GALLAGHER	DATE :	11-18

ASSEMBLED BY :	K. E. LOFTON	DATE :	9-18
CHECKED BY :	J. B. TAYLOR	DATE :	11-18
DRAWN BY :	DGE 05/10	REV. 6/17	MAA/THC
CHECKED BY :	MKT 05/10		

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

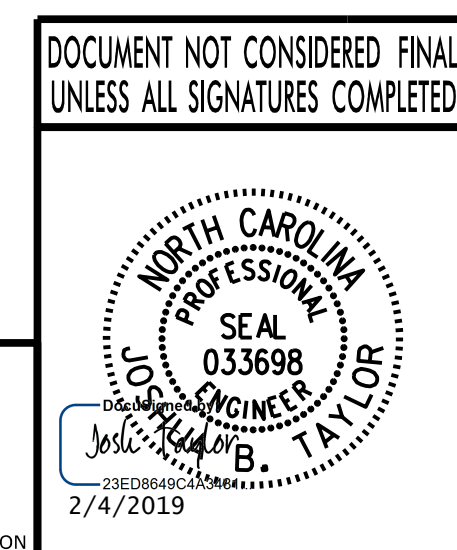


BILL OF MATERIAL FOR ONE BENT					
BAR	No.	SIZE	TYPE	LENGTH	WEIGHT
B1	4	#10	1	37'-10"	651
B2	4	#10	STR	35'-2"	605
B3	4	#5	STR	35'-2"	147
B4	8	#4	STR	18'-10"	101
B5	9	#4	STR	2'-11"	18
D1	44	#6	STR	1'-6"	99
S1	39	#5	2	8'-1"	329
S2	16	#4	3	7'-7"	81
U1	4	#4	4	5'-10"	16
U2	6	#4	4	5'-0"	20
U3	2	#9	4	10'-1"	69
REINFORCING STEEL					2,136 LBS.
CLASS A CONCRETE BREAKDOWN					
TOTAL CLASS A CONCRETE					10.7 C.Y.
HP 14 x 73 GALVANIZED STEEL PILES					
No. 8					LIN. FT. 520
PILE DRIVING EQUIPMENT SETUP FOR HP 14 x 73 GALVANIZED STEEL PILES					No: 8
PILE REDRIVES					No: 8



PROJECT NO. 17BP.3.R.77  
SAMPSON COUNTY  
 STATION: 21+12.50 -L-  
 SHEET 2 OF 2

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

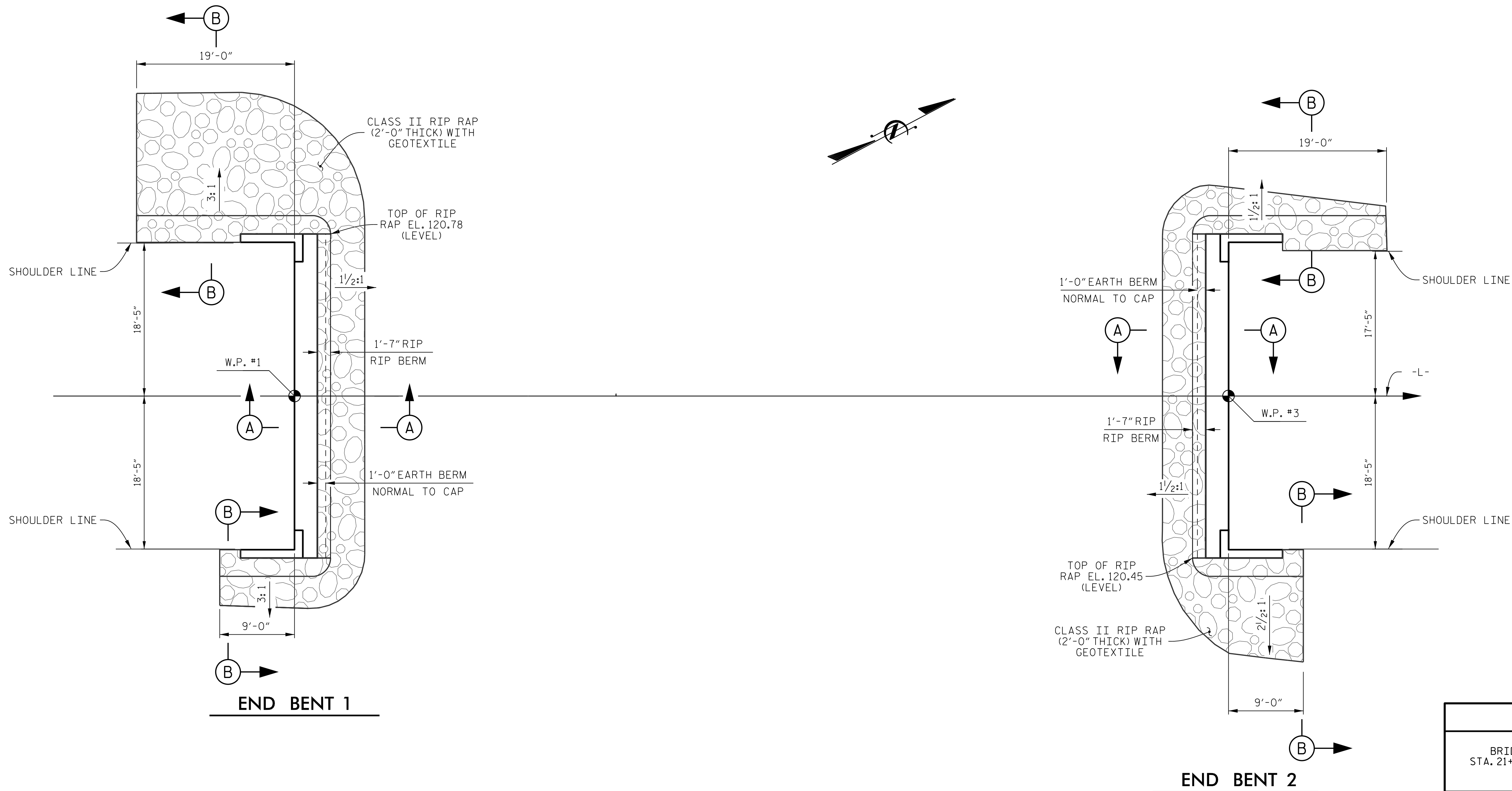


PLANS PREPARED BY:  
**PARSONS**  
 5540 CenterView Drive, Suite 217  
 Raleigh, NC 27606-3386  
 NC LICENSE No. F-0246  
 FOR NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

DRAWN BY : K. E. LOFTON DATE : 9-18  
 CHECKED BY : J. B. TAYLOR DATE : 11-18  
 DESIGN ENGINEER : P. R. GALLAGHER DATE : 11-18

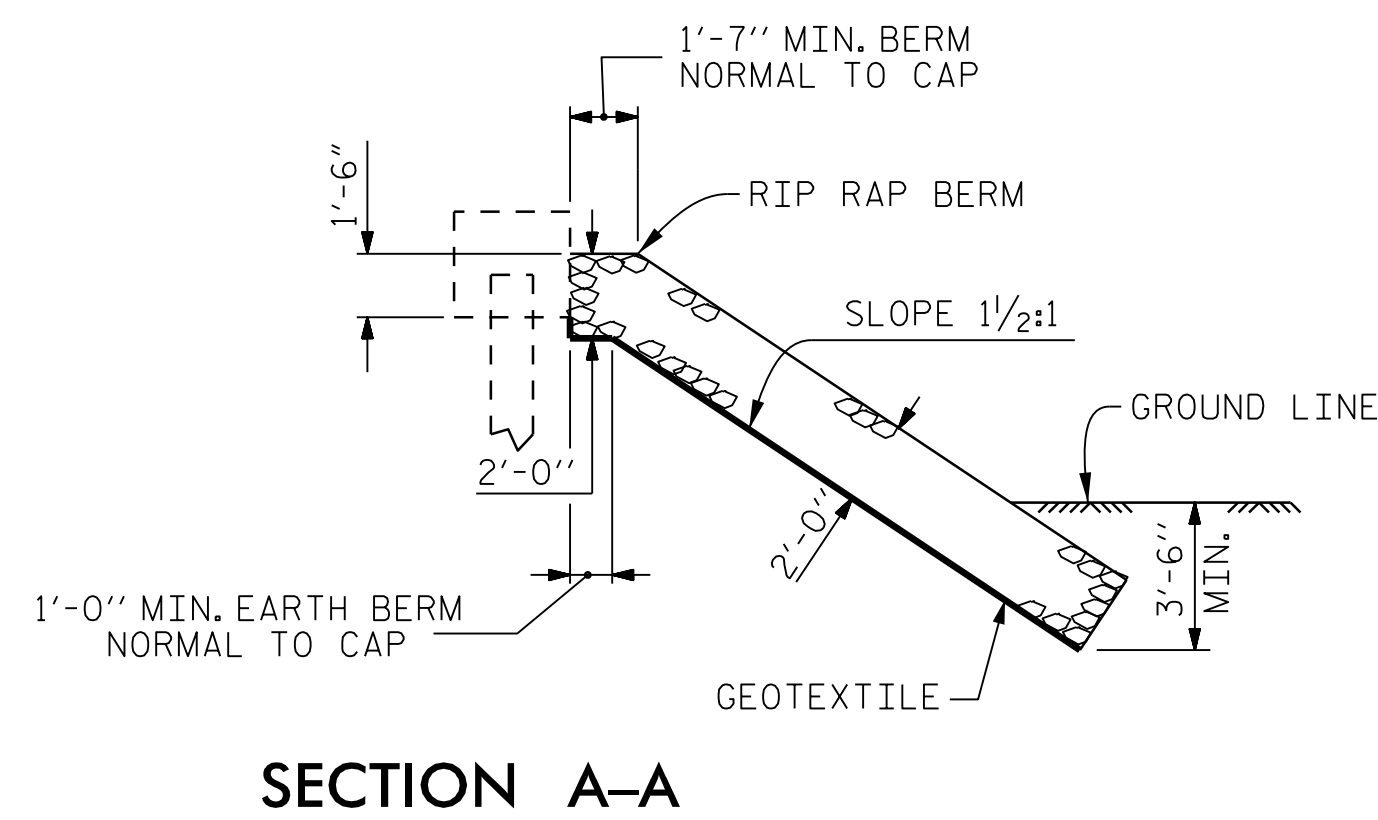
ASSEMBLED BY : K. E. LOFTON DATE : 9-18  
 CHECKED BY : J. B. TAYLOR DATE : 11-18  
 DRAWN BY : DGE 05/10 REV. 6/17 MAA/THC  
 CHECKED BY : MKT 05/10



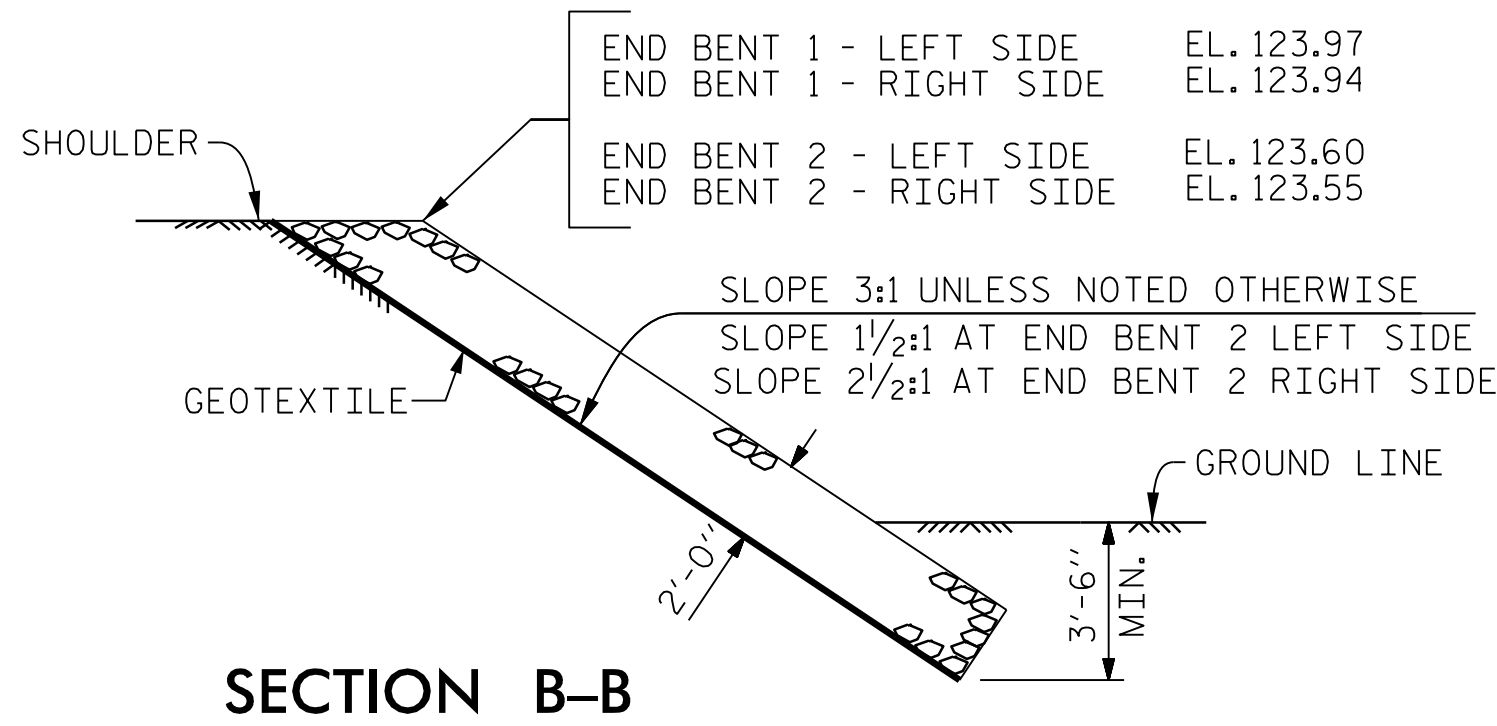


PLAN

ESTIMATED QUANTITIES		
BRIDGE @ STA. 21+12.50 -L-	PLAIN RIP RAP CLASS II ( TONS )	GEOTEXTILE FOR DRAINAGE ( SQUARE YARDS )
END BENT 1	133	147
END BENT 2	98	109



SECTION A-A



SECTION B-B

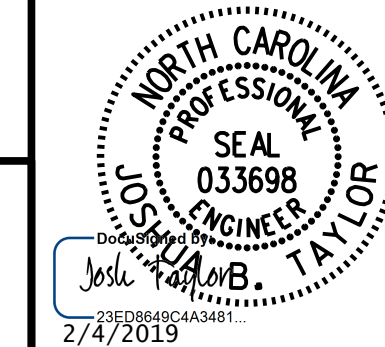
END BENT 1 - LEFT SIDE	EL. 123.97
END BENT 1 - RIGHT SIDE	EL. 123.94
END BENT 2 - LEFT SIDE	EL. 123.60
END BENT 2 - RIGHT SIDE	EL. 123.55

PROJECT NO. 17BP.3.R.77  
SAMPSON COUNTY  
 STATION: 21 + 12.50 -L-

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

RIP RAP DETAILS

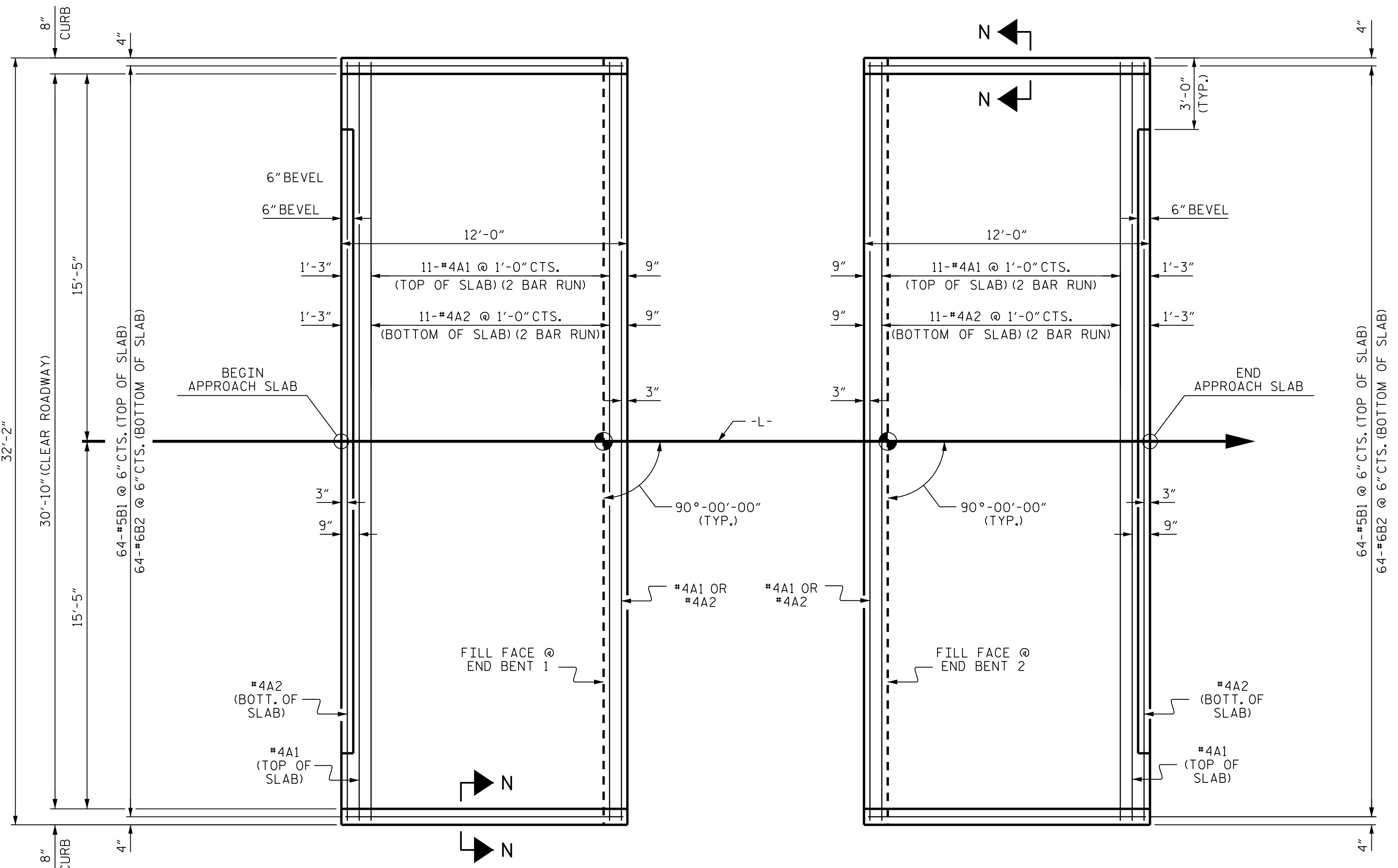
DOCUMENT NOT CONSIDERED FINAL  
 UNLESS ALL SIGNATURES COMPLETED



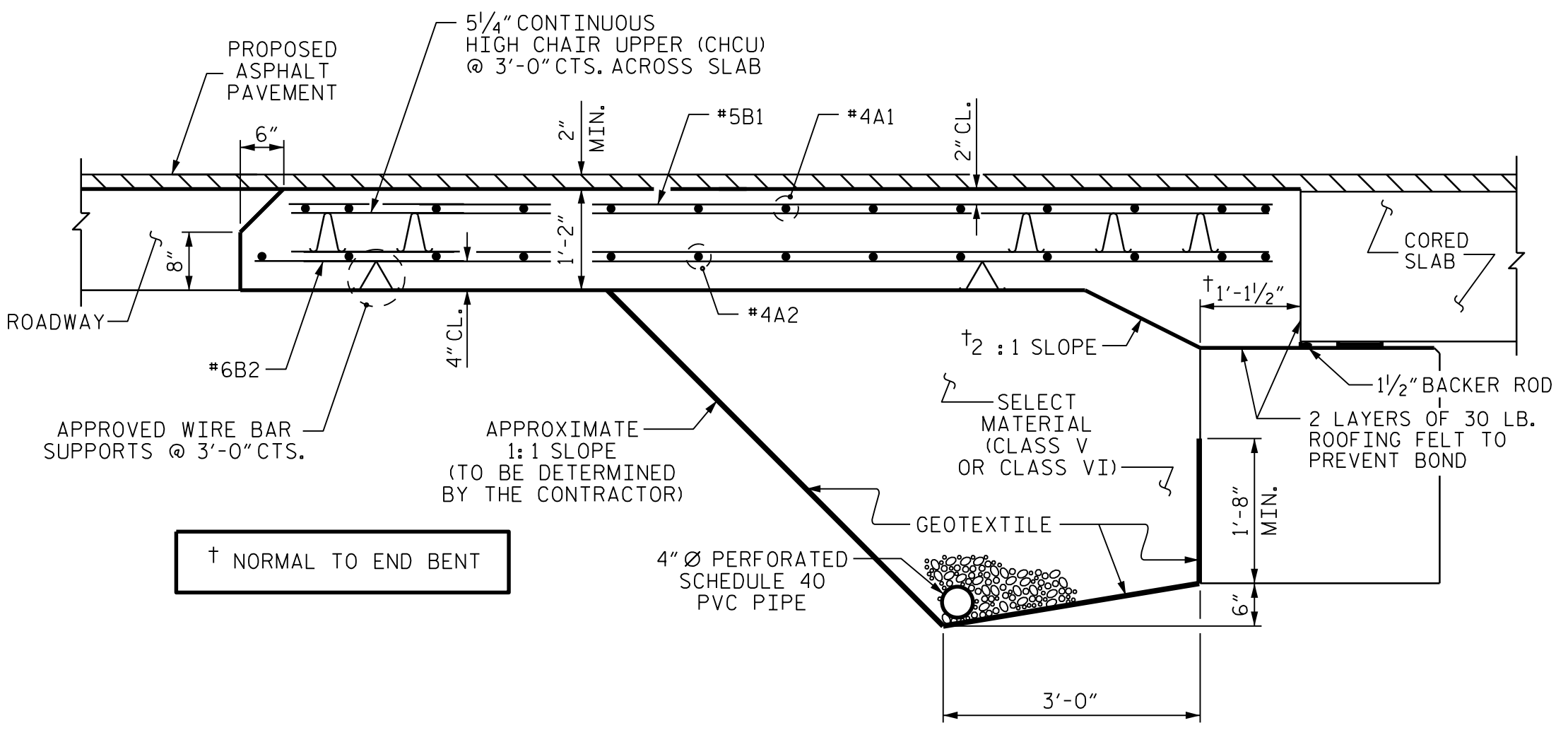
PLANS PREPARED BY :  
**PARSONS**  
 5540 CenterView Drive, Suite 217  
 Raleigh, NC 27606-3386  
 NC LICENSE No. F-0246

DRAWN BY :	K. E. LOFTON	DATE :	9-18
CHECKED BY :	J. B. TAYLOR	DATE :	11-18
DESIGN ENGINEER :	P. R. GALLAGHER	DATE :	11-18

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



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



**SECTION THRU SLAB**  
 (TYPE II - MODIFIED APPROACH FILL)

ASSEMBLED BY : K. E. LOFTON      DATE : 9-18  
 CHECKED BY : J. B. TAYLOR      DATE : 11-18  
 DRAWN BY : SHS/MAA 5-09      REV. 12-17      MAA/THC  
 CHECKED BY : AAC 5-09

**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.

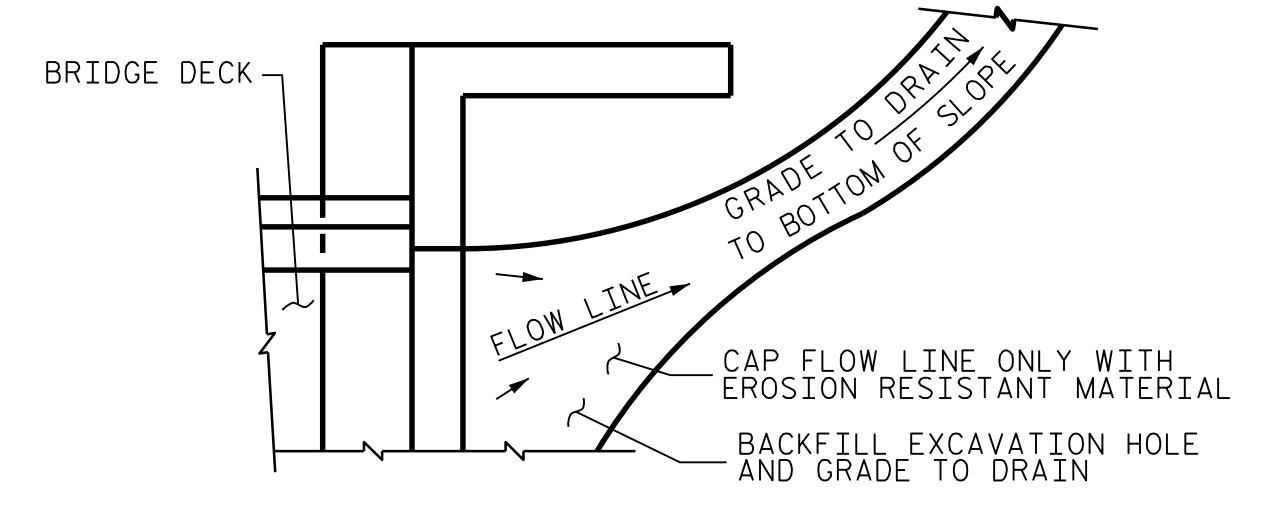
SELECT MATERIAL BACKFILL (CLASS V OR CLASS VI) SHALL BE IN ACCORDANCE WITH STANDARD SPECIFICATIONS SECTION 1016.

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.

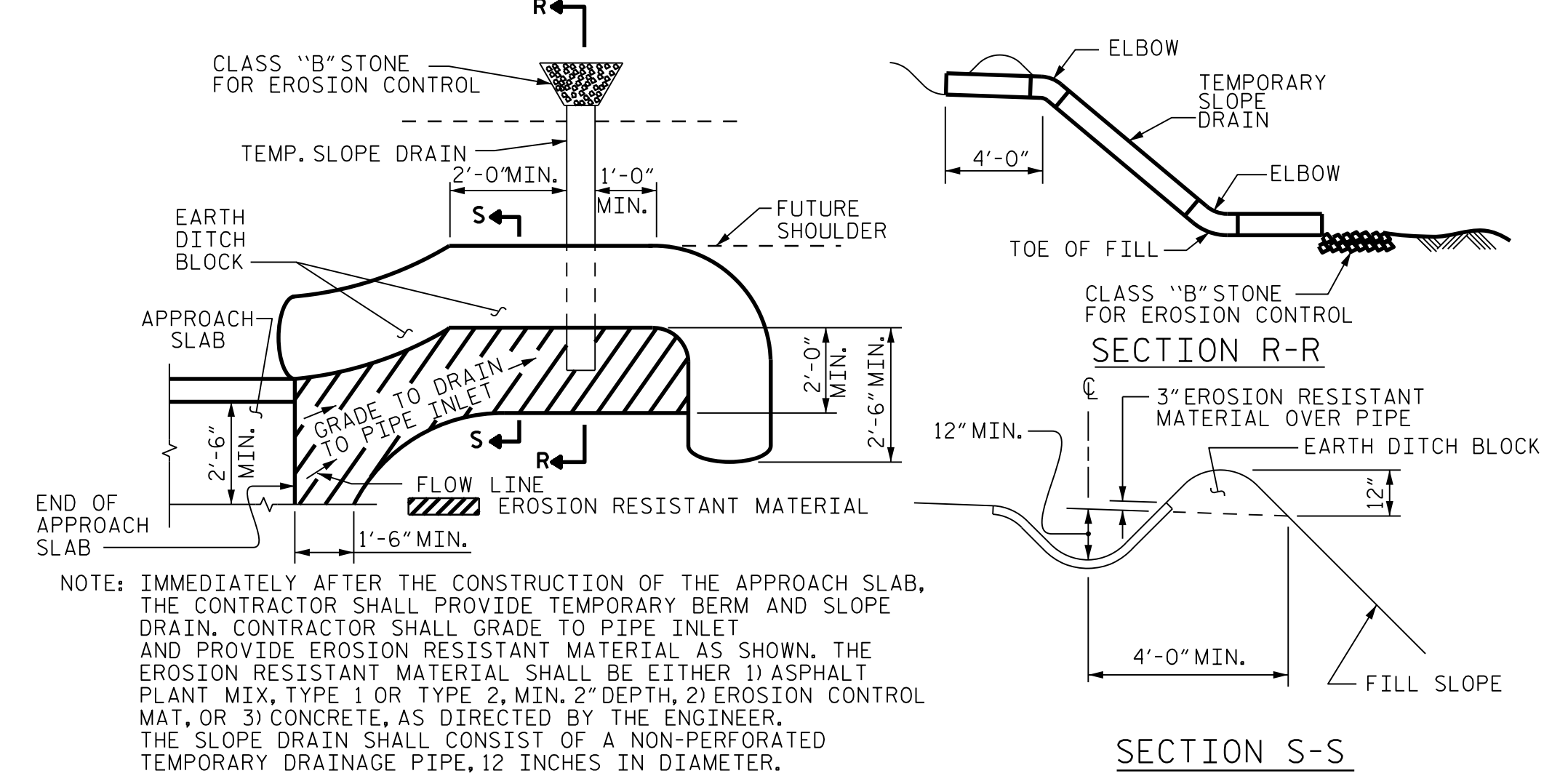
AREA BETWEEN THE WINGWALL AND APPROACH SLAB SHALL BE GRADED TO DRAIN THE WATER AWAY FROM THE FILL FACE OF THE BRIDGE AND SHALL BE PAVED. SEE ROADWAY PLANS.

APPROACH SLAB GROOVING IS NOT REQUIRED.

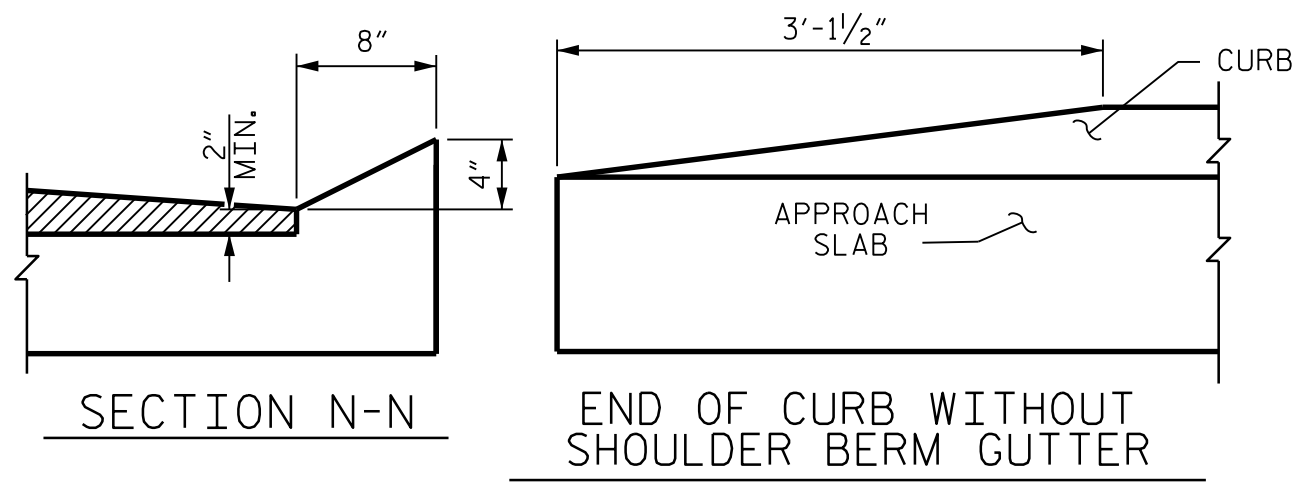


NOTE: IF THE APPROACH SLAB IS NOT CONSTRUCTED IMMEDIATELY AFTER THE BACKFILLING OF THE END BENT EXCAVATION, GRADE TO DRAIN TO THE BOTTOM OF THE SLOPE AND PROVIDE EROSION RESISTANT MATERIAL, SUCH AS FIBERGLASS ROVING OR AS DIRECTED BY THE ENGINEER TO PREVENT SOIL EROSION AND TO PROTECT THE AREA ADJACENT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

**TEMPORARY DRAINAGE DETAIL**



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



**CURB DETAILS**

SPlice LENGTHS		
BAR SIZE	EPOXY COATED	UNCOATED
#4	2'-0"	1'-9"
#5	2'-6"	2'-2"
#6	3'-10"	2'-7"

DRAWN BY : K. E. LOFTON      DATE : 9-18  
 CHECKED BY : J. B. TAYLOR      DATE : 11-18  
 DESIGN ENGINEER : P. R. GALLAGHER      DATE : 11-18

PLANS PREPARED BY :  
**PARSONS**  
 5540 CenterView Drive, Suite 217  
 Raleigh, NC 27606-3386  
 NC LICENSE No. F-0246

DOCUMENT NOT CONSIDERED FINAL  
 UNLESS ALL SIGNATURES COMPLETED

**PROFESSIONAL ENGINEER**  
 SEAL 033698  
 J. B. TAYLOR  
 2/4/2018

BILL OF MATERIAL					
APPROACH SLAB AT END BENT 1					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
*A1	26	#4	STR	16'-11"	294
A2	26	#4	STR	16'-9"	291
*B1	64	#5	STR	11'-2"	745
B2	64	#6	STR	11'-8"	1121
REINFORCING STEEL				LBS.	1412
*EPOXY COATED REINFORCING STEEL				LBS.	1039
CLASS AA CONCRETE				C. Y.	19.5
APPROACH SLAB AT END BENT 2					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
*A1	26	#4	STR	16'-11"	294
A2	26	#4	STR	16'-9"	291
*B1	64	#5	STR	11'-2"	745
B2	64	#6	STR	11'-8"	1121
REINFORCING STEEL				LBS.	1412
*EPOXY COATED REINFORCING STEEL				LBS.	1039
CLASS AA CONCRETE				C. Y.	19.5

PROJECT NO. **17BP.3.R.77**  
**SAMPSON** COUNTY  
 STATION: **21+12.50 -L-**

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

STANDARD  
**BRIDGE APPROACH  
 SLAB FOR PRESTRESSED  
 CONCRETE CORED SLAB UNIT  
 (SUB-REGIONAL TIER - 90° SKEW)**

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



## 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 2012 "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 1'-0" 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  $\frac{1}{16}$ " OR EQUIVALENT FLAT SURFACE AT A SUITABLE ANGLE PRIOR TO PAINTING, GALVANIZING, OR METALLIZING.

### HANDRAILS AND POSTS:

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

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

### SPECIAL NOTES:

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

PROJECT NO. 17BP.3.R.77  
SAMPSON COUNTY  
STATION: 21 + 12.50 -L-

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

## STANDARD NOTES

# ENGLISH

JANUARY, 1990

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

STD. No. SN

PLE: 1:\division 3 bridges replacement\5-4638\structures\plan\84638\_810195\_ams\_01.dgn  
 DATE: 2/20/09 1:57:15 PM