

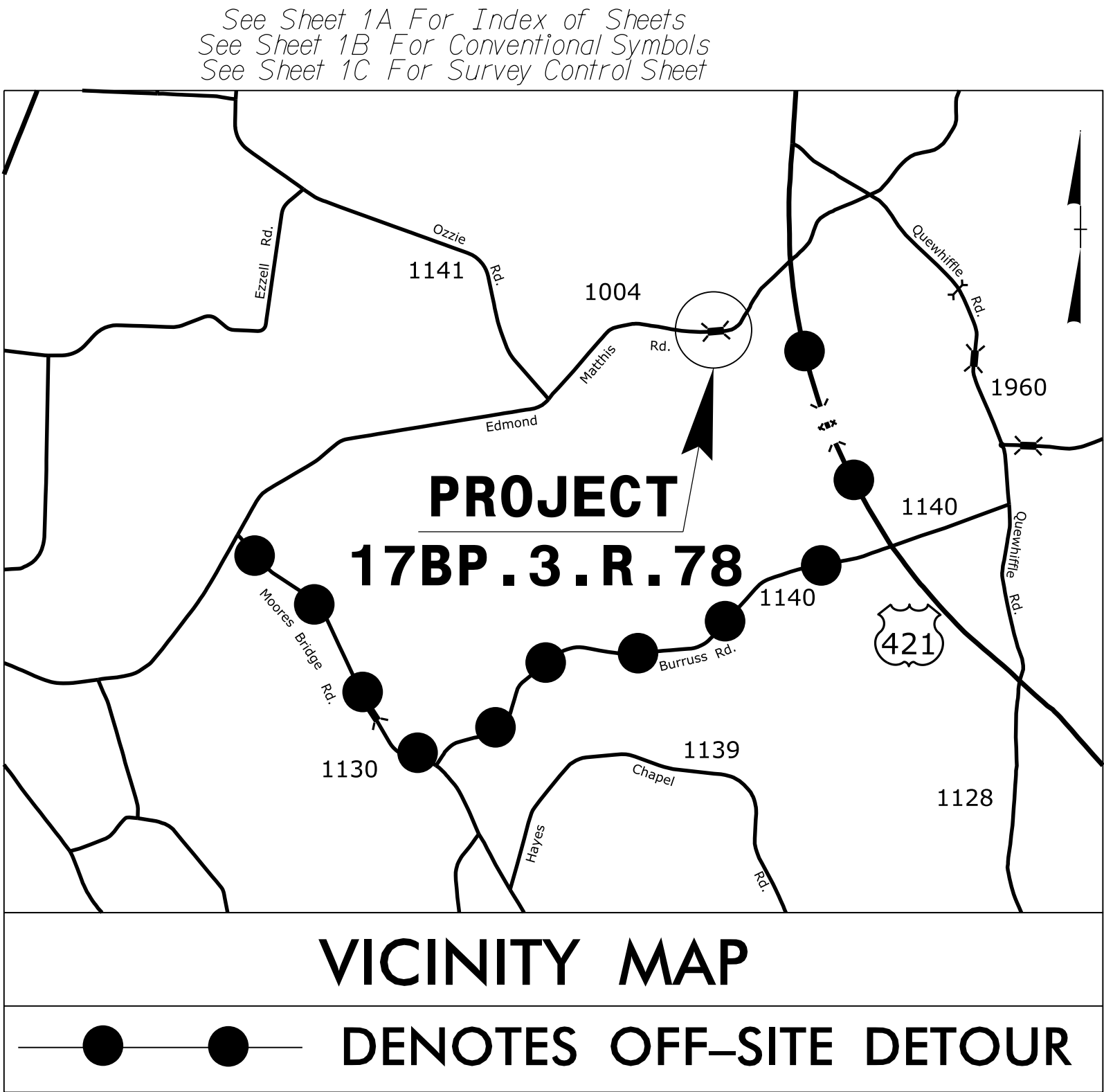
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with their signature on that page.**

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09/08/19

PROJECT: 17BP.3.R.78

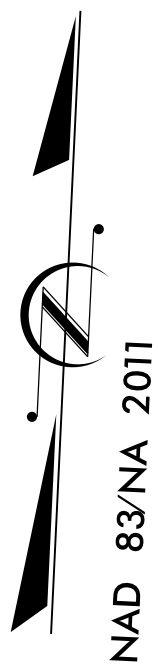


STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

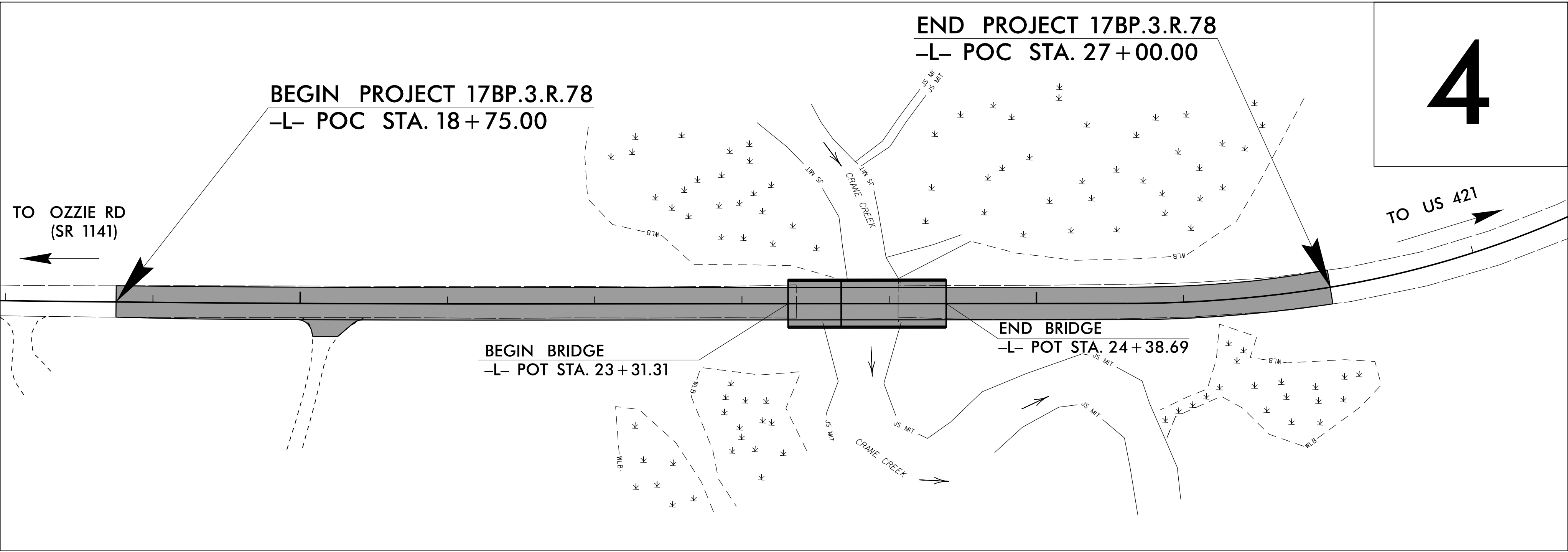
SAMPSON COUNTY

**LOCATION: BRIDGE NO.18 ON SR 1004 (EDMOND MATTHIS ROAD)
OVER CRANE CREEK**

TYPE OF WORK: GRADING, PAVING, DRAINAGE AND STRUCTURE



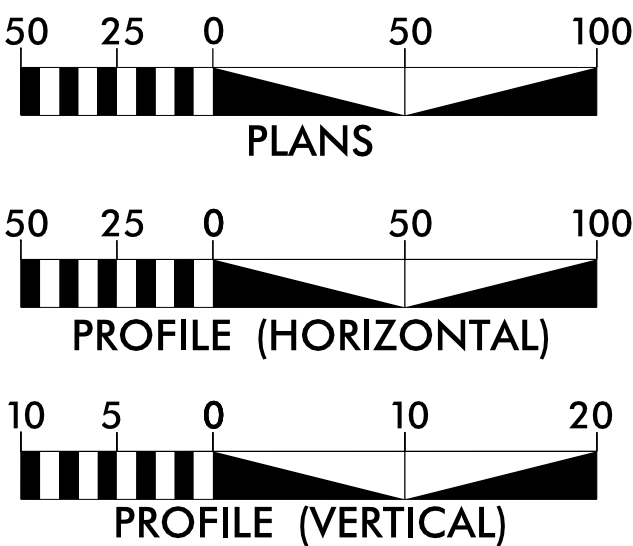
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	17BP.3.R.78	1	
STATE PROJ.NO.	P. A. PROJ.NO.	DESCRIPTION	
17BP.3.R.78		P.E.	
17BP.3.R.78		ROW	
17BP.3.R.78		CONST	



NCDOT CONTACT: MONICA DUVAL

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

GRAPHIC SCALES



DESIGN DATA

ADT 2015 = 1300
ADT 2040 = 1700
K = 10 %
D = 60 %
T = 18 % *
V = 60 MPH
* TTST = 8 DUAL = 10
FUNC CLASS =
MINOR COLLECTOR
SUBREGIONAL TIER

PROJECT LENGTH

LENGTH OF ROADWAY PROJECT 17BP.3.R.78 = 0.136 MI.
LENGTH OF STRUCTURE PROJECT 17BP.3.R.78 = 0.020 MI.
TOTAL LENGTH OF PROJECT 17BP.3.R.78 = 0.156 MI.

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



2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
MAY 16, 2018

LETTING DATE:
OCTOBER 3, 2019

DAVID L. WILVER, PE
PROJECT ENGINEER

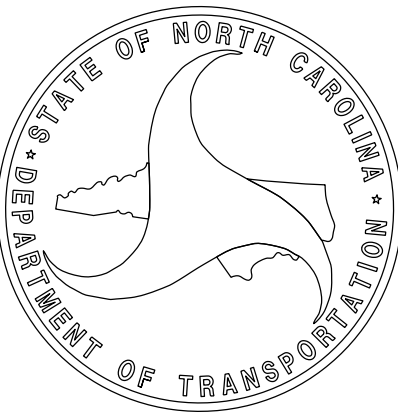
J. MATTHEW PICKENS, PE
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

DocuSigned by:
Jason G. Dalton
SEAL 026971
ENGINEER
P.E.

ROADWAY DESIGN ENGINEER

DocuSigned by:
Jason M. Pickens
SEAL 37950
ENGINEER
P.E.



8/17/99

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.78

SHEET NO.
1A

ROADWAY DESIGN ENGINEER

2/1/2019

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-5	EROSION CONTROL PLANS
UO-1 THRU UO-2	UTILITIES BY OTHERS PLANS
X-1A	CROSS-SECTION SUMMARY SHEET
X-1 THRU X-5	CROSS-SECTIONS
S-1 THRU S-20	STRUCTURE PLANS

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

GRADE LINE:
GRADING AND SURFACING:

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.

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

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

UTILITIES:
UTILITY OWNERS ON THIS PROJECT ARE POWER - FOUR COUNTY EMC (JOE DAIL), WATER - SAMPSON COUNTY WORKS (MARK TURLINGTON), PHONE - CENTURYLINK TELEPHONE (WAYNE HALL), PHONE - STAR TELEPHONE (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 RESETTNG 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
310.10	Driveway Pipe Construction
DIVISION 4 - MAJOR STRUCTURES	
422.02	Bridge Approach Fills - Type II Modiefied 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
840.25	Anchorage for Frames - Brick or Concrete or Precast
840.29	Frames and Narrow Slot Flat Grates
840.35	Traffic Bearing Grated Drop Inlet - for Cast Iron Double Frame and Grates
840.46	Traffic Bearing Precast Drainage Structure
840.66	Drainage Structure Steps
846.01	Concrete Curb, Gutter and Curb & Gutter
846.04	Drop Inlet Installation in Shoulder Berm Gutter
862.01	Guardrail Placement
862.02	Guardrail Installation
862.03	Structure Anchor Units
876.01	Rip Rap in Channels
876.02	Guide for Rip Rap at Pipe Outlets
876.04	Drainage Ditches with Class 'B' Rip Rap

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

BOUNDARIES AND PROPERTY:

State Line	
County Line	
Township Line	
City Line	
Reservation Line	
Property Line	
Existing Iron Pin	
Computed Property Corner	
Property Monument	
Parcel/Sequence Number	
Existing Fence Line	
Proposed Woven Wire Fence	
Proposed Chain Link Fence	
Proposed Barbed Wire Fence	
Existing Wetland Boundary	
Proposed Wetland Boundary	
Existing Endangered Animal Boundary	
Existing Endangered Plant Boundary	
Existing Historic Property Boundary	
Known Contamination Area: Soil	
Potential Contamination Area: Soil	
Known Contamination Area: Water	
Potential Contamination Area: Water	
Contaminated Site: Known or Potential	

BUILDINGS AND OTHER CULTURE:

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

HYDROLOGY:

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

RAILROADS:

Standard Gauge	
RR Signal Milepost	
Switch	
RR Abandoned	
RR Dismantled	

RIGHT OF WAY & PROJECT CONTROL:

Secondary Horiz and Vert Control Point	
Primary Horiz Control Point	
Primary Horiz and Vert Control Point	
Exist Permanent Easment 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	
New Right of Way Line with Pin and Cap	
New Right of Way Line with Concrete or Granite R/W Marker	
New Control of Access Line with Concrete C/A Marker	
Existing Control of Access	
New Control of Access	
Existing Easement Line	
New Temporary Construction Easement	
New Temporary Drainage Easement	
New Permanent Drainage Easement	
New Permanent Drainage /Utility Easement	
New Permanent Utility Easement	
New Temporary Utility Easement	
New Aerial Utility Easement	

ROADS AND RELATED FEATURES:

Existing Edge of Pavement	
Existing Curb	
Proposed Slope Stakes Cut	
Proposed Slope Stakes Fill	
Proposed Curb Ramp	
Existing Metal Guardrail	
Proposed Guardrail	
Existing Cable Guiderail	
Proposed Cable Guiderail	
Equality Symbol	
Pavement Removal	

VEGETATION:

Single Tree	
Single Shrub	

*S.U.E. = Subsurface Utility Engineering

Hedge	
Woods Line	
Orchard	
Vineyard	

EXISTING STRUCTURES:

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

UTILITIES:

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

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.*)	
U/G Telephone Cable LOS C (S.U.E.*)	
U/G Telephone Cable LOS D (S.U.E.*)	
U/G Telephone Conduit LOS B (S.U.E.*)	
U/G Telephone Conduit LOS C (S.U.E.*)	
U/G Telephone Conduit LOS D (S.U.E.*)	
U/G Fiber Optics Cable LOS B (S.U.E.*)	
U/G Fiber Optics Cable LOS C (S.U.E.*)	
U/G Fiber Optics Cable LOS D (S.U.E.*)	

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	

TV:

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

GAS:

Gas Valve	
Gas Meter	
U/G Gas Line LOS B (S.U.E.*)	
U/G Gas Line LOS C (S.U.E.*)	
U/G Gas Line LOS D (S.U.E.*)	
Above Ground Gas Line	

SANITARY SEWER:

Sanitary Sewer Manhole	
Sanitary Sewer Cleanout	
U/G Sanitary Sewer Line	
Above Ground Sanitary Sewer	
SS Forced Main Line LOS B (S.U.E.*)	
SS Forced Main Line LOS C (S.U.E.*)	
SS Forced Main Line LOS D (S.U.E.*)	

MISCELLANEOUS:

Utility Pole	
Utility Pole with Base	
Utility Located Object	
Utility Traffic Signal Box	
Utility Unknown U/G Line LOS B (S.U.E.*)	
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	
End of Information	

6/2/99

0:\FEB-2019\3299\Bridoe Replacement\B-4813\Roadway\Proj\B4813.LS.1C_180131.dgn

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PROJECT REFERENCE NO.	SHEET NO.
17BP.3.R.78	1C
Location and Surveys	

SURVEY CONTROL SHEET 17BP.3.R.78

W/EXISTING CENTERLINE ALIGNMENTS PRIOR TO CONSTRUCTION

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "B4813-2"

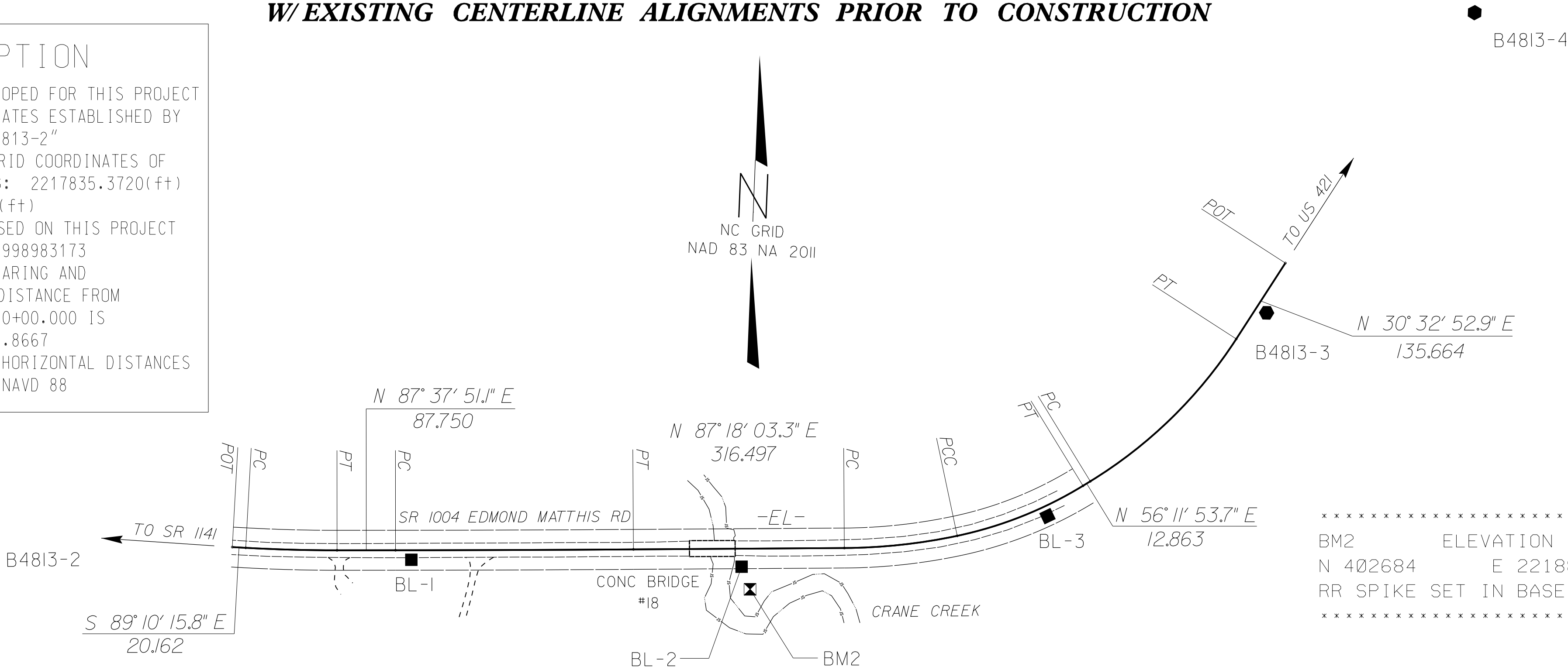
WITH NAD 83/NA 2011 STATE PLANE GRID COORDINATES OF
NORTHING: 402728.2080(±) EASTING: 2217835.3720(±)
ELEVATION: 75.5890(±)

THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.9998983173

THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "B4813-2" TO -L- STATION 10+00.000 IS
S 87° 25" 28" E 281.8667

ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NAVD 88

B4813-1



BL	POINT	DESC.	NORTH	EAST	ELEVATION
B48131	GPS CAP & REBAR		402896.8500	2216880.9250	89.03
B48132	GPS CAP & REBAR		402728.2080	2217835.3720	75.59
BL1	TRV CAP & REBAR		402707.3370	2218386.1990	64.31
BL2	TRV CAP & REBAR		402717.0410	2218881.8440	55.49
BL3	TRV CAP & REBAR		402811.5930	2219337.4020	62.40
B48133	GPS CAP & REBAR		403130.0730	2219653.6720	70.76
B48134	GPS CAP & REBAR		403914.8730	2220104.7270	81.01

EL	POINT	N	E	BEARING	DIST	DELTA	D	L	T	R
POT	LINE	402715.542	2218116.954	S 89°10'15.8" E	20.16					
PC	CURVE	402715.250	2218137.114	N 89°13'47.6" E	137.13	03°11'53.0"(LT)	02°19'54.7"	137.15	68.59	2457.09
PT	LINE	402717.093	2218274.231	N 87°37'51.1" E	87.75					
PC	CURVE	402720.721	2218361.906	N 87°27'57.2" E	357.07	00°19'47.8"(LT)	00°05'32.7"	357.07	178.54	62006.15
PT	LINE	402736.508	2218718.629	N 87°18'03.3" E	316.50					
PC	CURVE	402751.412	2219034.775	N 81°30'26.2" E	170.44	11°35'14.3"(LT)	06°47'12.9"	170.73	85.66	844.21
PT	LINE	402776.584	2219203.345	S 75°42'49.0" W	0.00					
PC	CURVE	402776.583	2219203.344	N 65°57'21.4" E	203.14	19°30'55.3"(LT)	09°33'37.1"	204.13	103.06	599.31
PT	LINE	402859.352	2219388.862	N 56°11'53.7" E	12.86					
PC	CURVE	402866.508	2219399.551	N 43°22'23.3" E	306.13	25°39'00.8"(LT)	08°18'32.7"	308.70	156.98	689.55
PT	LINE	403089.032	2219609.784	N 30°32'52.9" E	135.66					
POT		403205.867	2219678.737							

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

6/2/99

0:\FEB-2019\3729
01\1711\Bridges Replacement\B-4813\Roadway\Proj\B4813.LS.1E.180517.dgn
\$\$\$\$\$PERNAME\$\$\$\$\$

RIGHT OF WAY CONTROL SHEET 17BP.3.R.78

PROJECT REFERENCE NO.	SHEET NO.
17BP.3.R.78	1E
Location and Surveys	

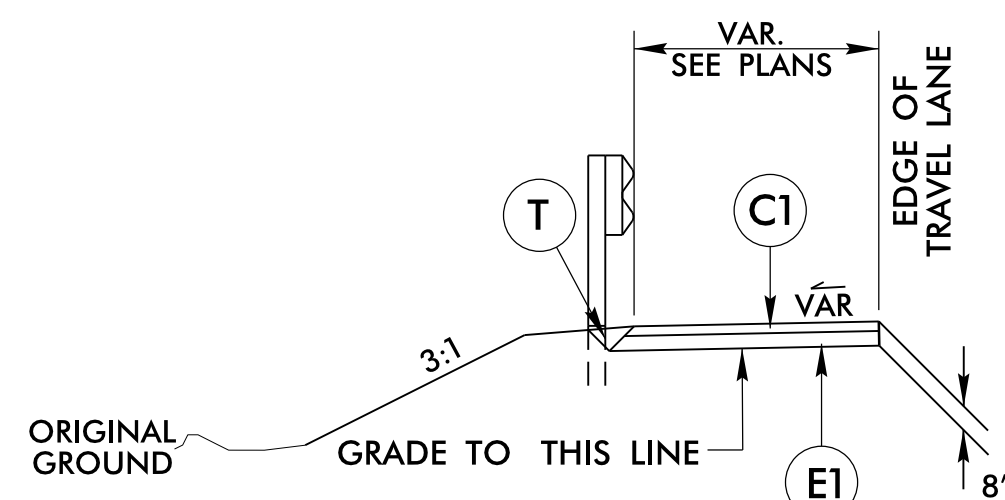
ROW CAP & REBAR MARKER-E				
ALIGN	STATION	OFFSET	NORTH	EAST
L	18+75.00	45.00	402673.99865	2218342.48674
L	18+75.00	29.12	402689.86748	2218341.90214
L	18+75.00	-45.00	402763.93764	2218339.17343
L	18+75.00	-30.88	402749.82742	2218339.69325
L	25+61.89	-45.00	402795.28052	2219024.84558
L	25+61.89	-30.71	402781.00983	2219025.52946
L	25+61.89	45.00	402705.38368	2219029.15361
L	27+00.00	45.00	402723.76904	2219173.18043
L	27+00.00	30.26	402738.19217	2219170.12557

- 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.

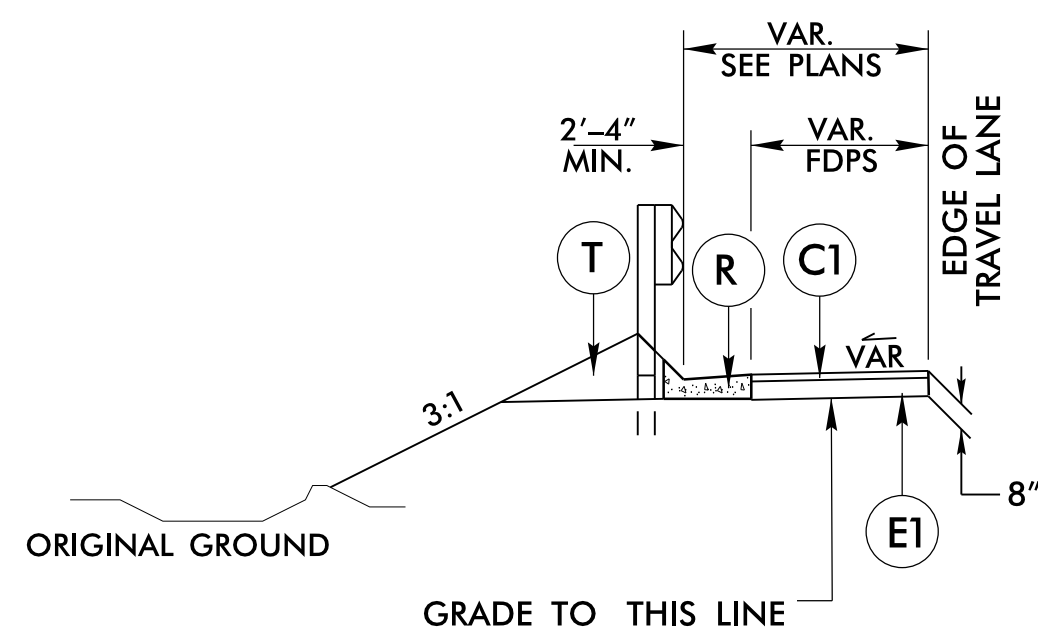
FINAL PAVEMENT SCHEDULE	
C1	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C2	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT TO EXCEED 1½" 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 5½" 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.



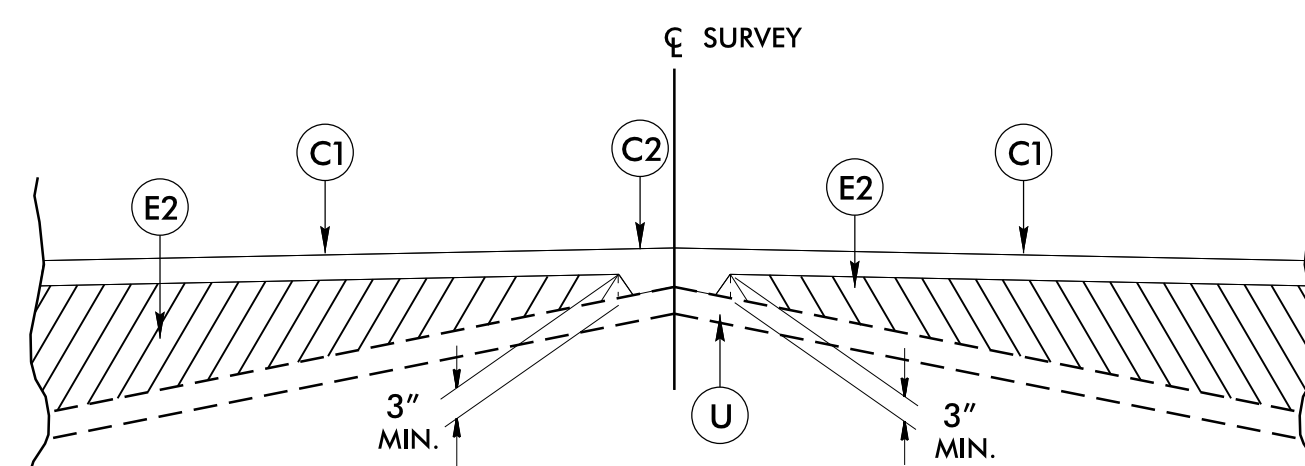
DETAIL SHOWING FULL DEPTH PAVED
SHOULDERS TO FACE OF GUARDRAIL

FROM STA. 22+56.31 TO STA. 23+20.44	-L- LT
FROM STA. 22+56.31 TO STA. 23+20.44	-L- RT
FROM STA. 24+64.00 TO STA. 25+13.69	-L- LT
FROM STA. 24+49.56 TO STA. 25+13.69	-L- RT

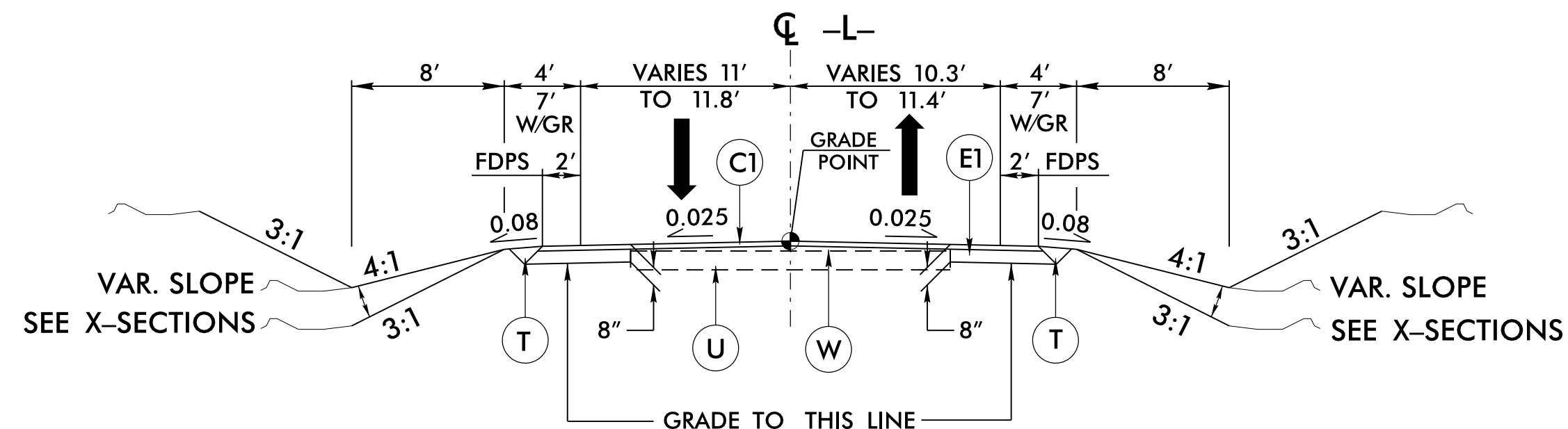


DETAIL SHOWING SHOULDER BERM GUTTER (SBG)

FROM STA. 24+49.56 TO STA. 24+64.00 -L- LT



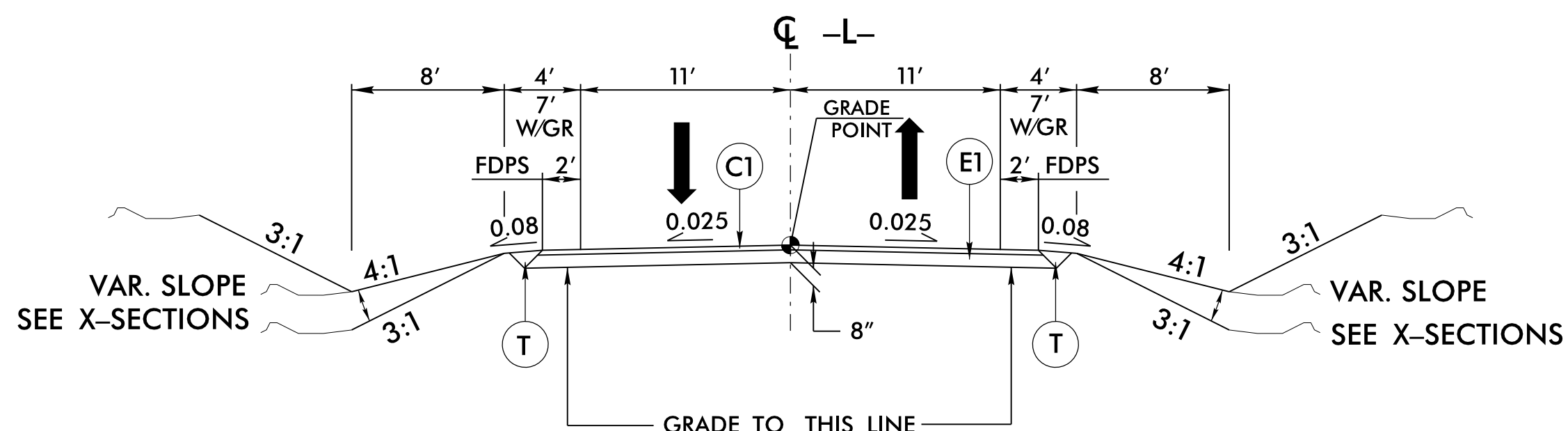
DETAIL SHOWING METHOD OF WEDGING



TYPICAL SECTION NO. 1

USE TYPICAL SECTION NO. 1

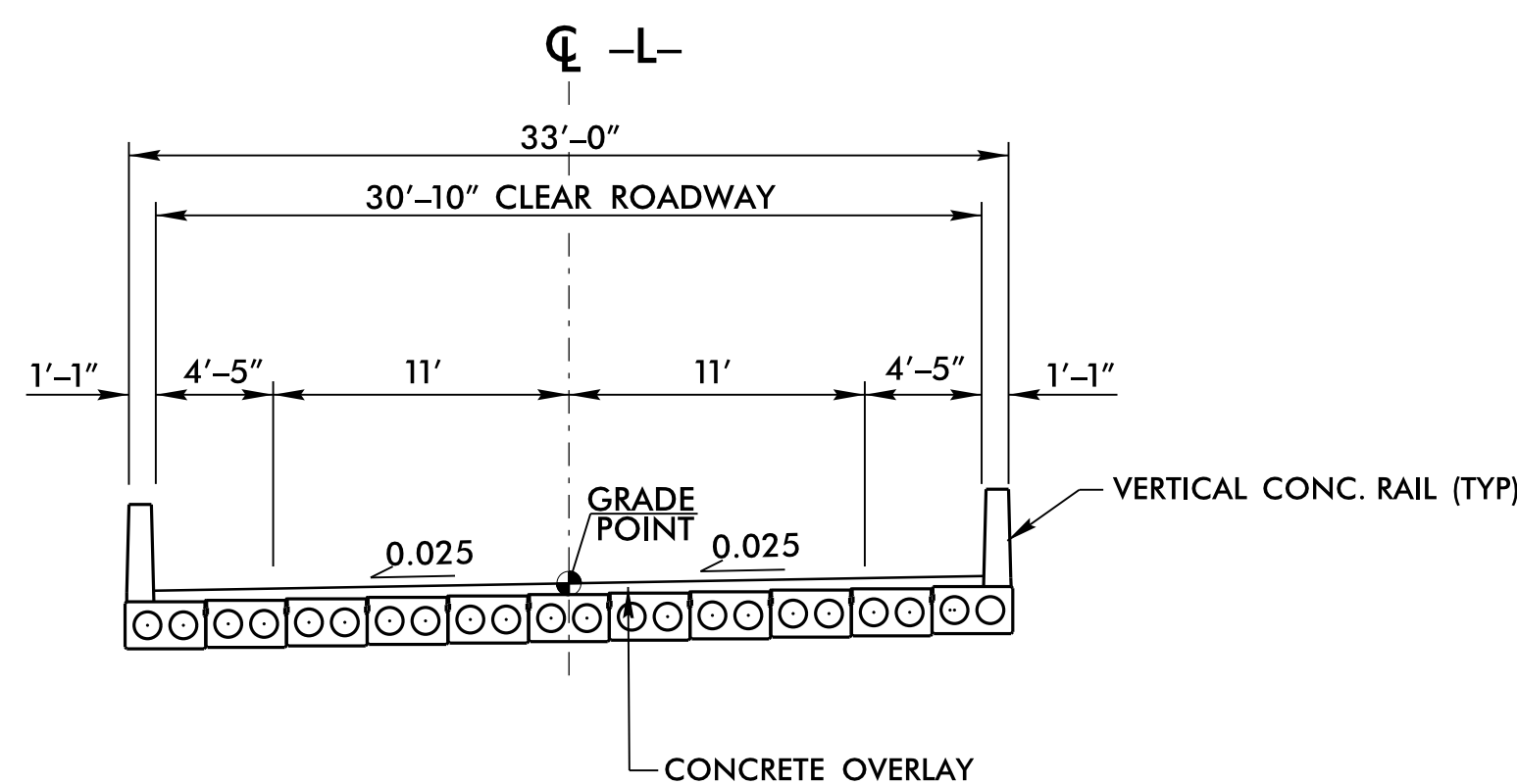
-L- STA. 18+75.00 TO -L- STA. 22+00.00
 -L- STA. 24+50.00 TO -L- STA. 27+00.00



TYPICAL SECTION NO. 2

USE TYPICAL SECTION NO. 2

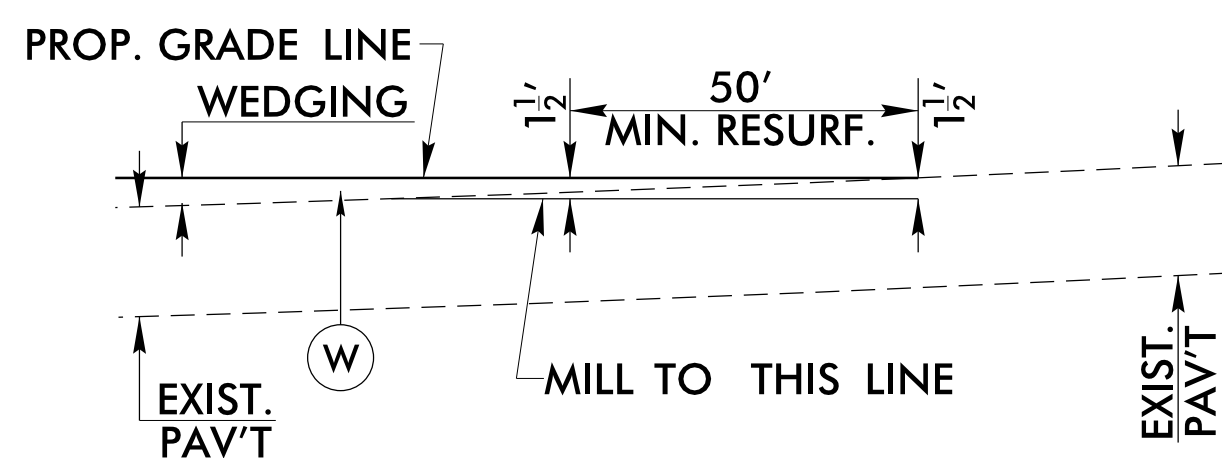
-L- STA. 22+00.00 TO -L- STA. 23+31.31 (BEGIN BRIDGE)
-L- STA. 24+38.69 (END BRIDGE) TO -L- STA. 24+50.00



TYPICAL SECTION NO. 3

USE TYPICAL SECTION NO. 3

-L- STA. 22+00.00 TO -L- STA. 23+31.31 (BEGIN BRIDGE)
-L- STA. 24+38.69 (END BRIDGE) TO -L- STA. 24+50.00



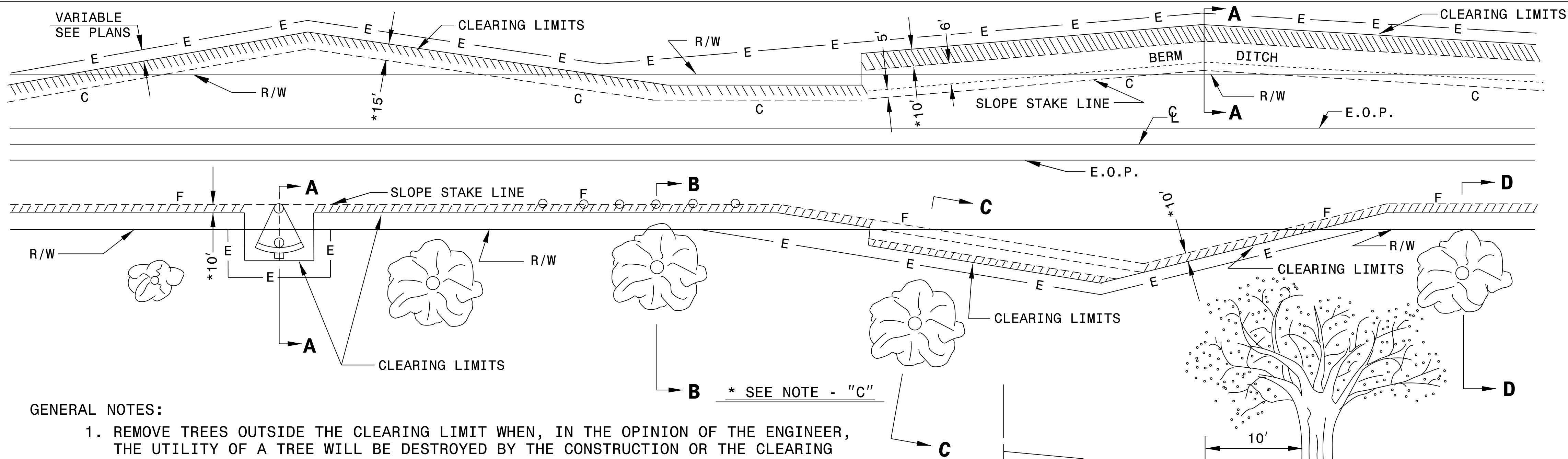
DETAIL OF INCIDENTAL MILLING

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

ENGLISH DETAIL DRAWING FOR
METHOD OF CLEARING
MODIFIED METHOD - III

SHEET 1 OF 1

200D03



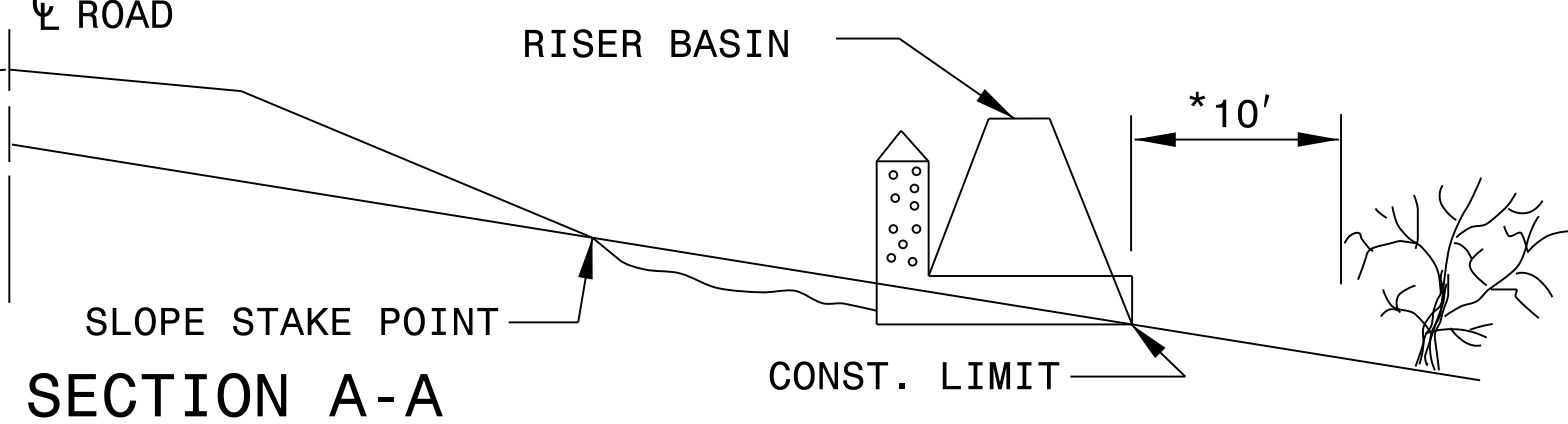
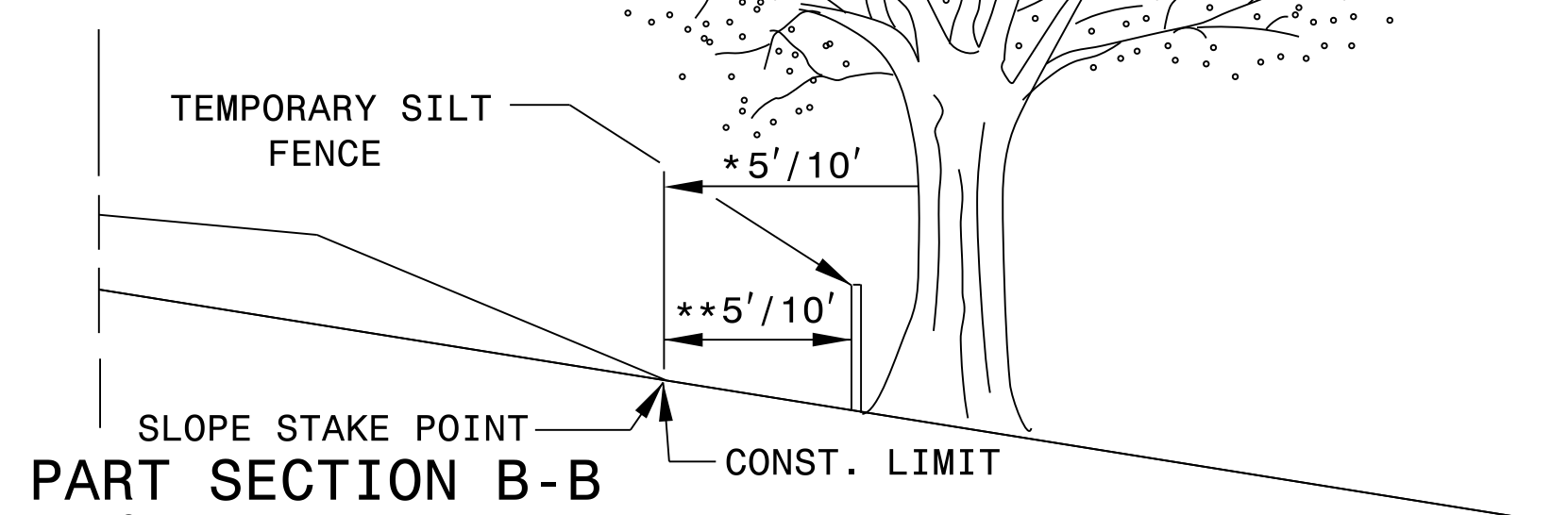
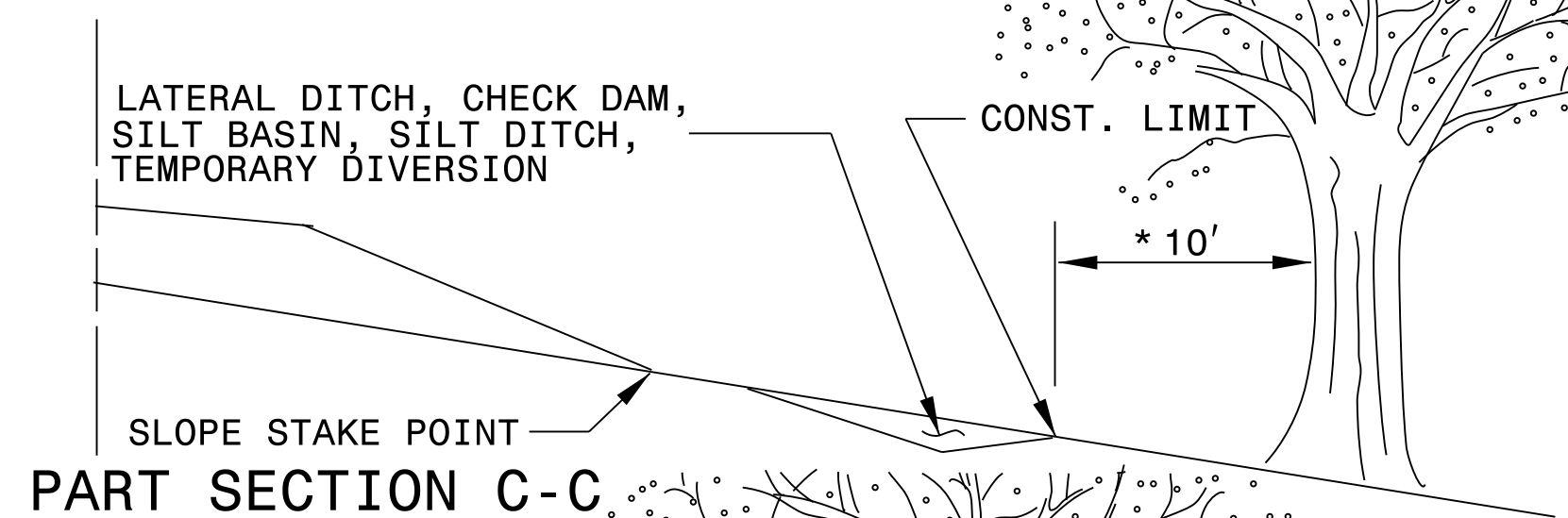
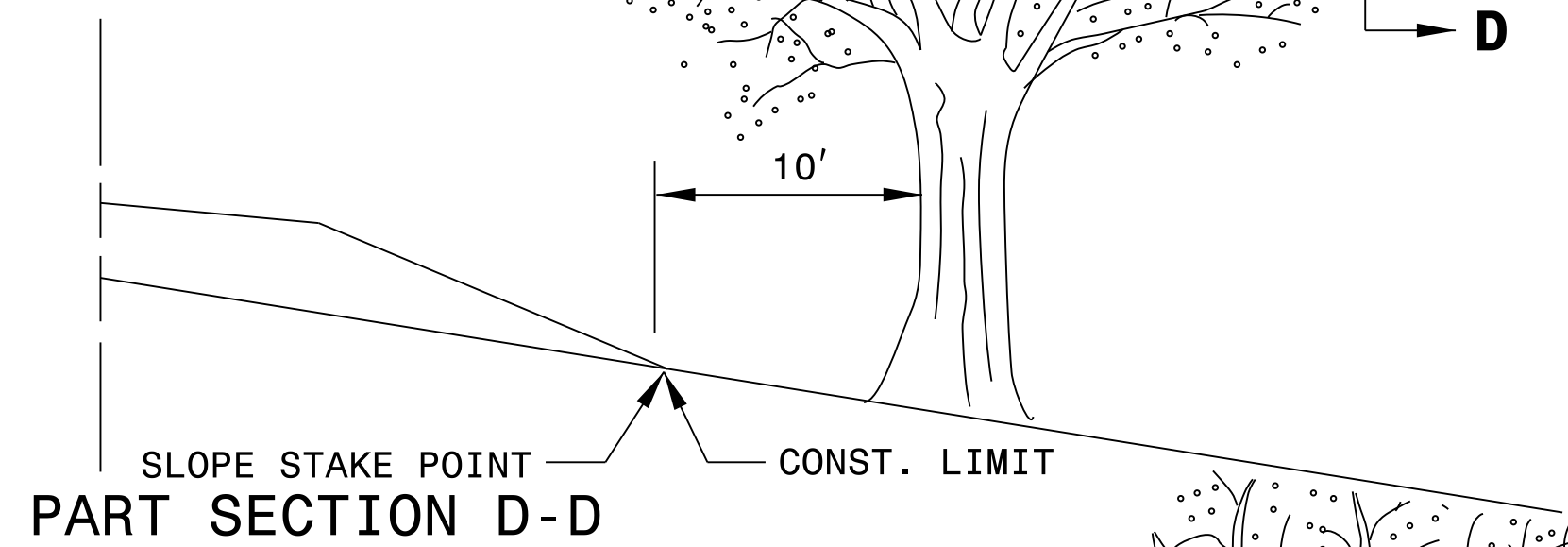
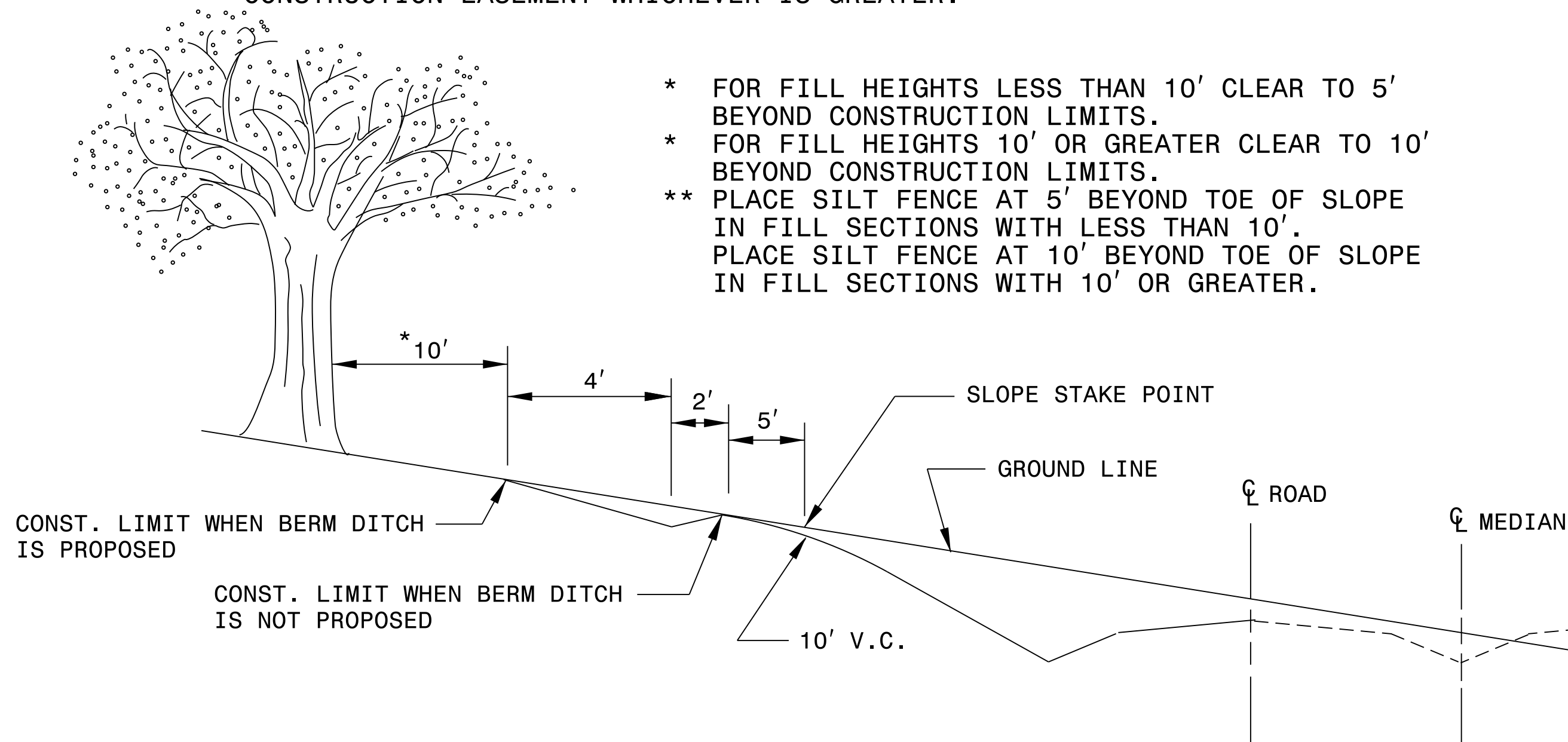
GENERAL NOTES:

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

METHOD III CLEARING LIMITS

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

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



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

METHOD OF CLEARING
MODIFIED METHOD - III

SHEET 1 OF 1

200D03



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

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

SEE TITLE BLOCK

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

PAVEMENT REMOVAL SUMMARY

SURVEY LINE	STATION	STATION	LOCATION LT/RT	LF
-L-	24 + 49.56	24 + 64.00	LT	14.4
			TOTAL:	14.4
			SAY:	15

SURVEY LINE	STATION	STATION	LOCATION LT/RT/CL	YD'
-L-	22 + 00	23 + 37	CL	326.14
-L-	24 + 06	24 + 50	CL	108.89
			TOTAL:	435.03
			SAY:	440

SHOULDER BERM GUTTER SUMMARY

NOTE: Invert Elevations are for Bid Purposes only and shall not be used for project construction stakeout.
See "Standard Specifications For Roads and Structures, Section 300-5".

[illegible]

W = TOTAL WIDTH OF FLARE FROM BEGINNING OF TAPER TO END OF GUARDRAIL. "N" = DISTANCE FROM EDGE OF LANE TO FACE OF GUARDRAIL.
G = GATING IMPACT ATTENUATOR TYPE 350
NG = NON-GATING IMPACT ATTENUATOR TYPE 350
TOTAL SHOULDER WIDTH = DISTANCE FROM EDGE OF TRAVEL LANE TO SHOULDER BREAK POINT.
FLARE LENGTH = DISTANCE FROM LAST SECTION OF PARALLEL GUARDRAIL TO END OF GUARDRAIL.

[illegible]

5/28/99

COMPUTED BY:	MJA	DATE:	12/10/2018
CHECKED BY:	AAN	DATE:	12/10/2018

(5-15-18)

PROJECT REFERENCE NO.	SHEET NO.
17BP.3.R.78	36-1

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
				TOTAL LF:	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				
			TOTAL SY/TONS:	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-	18+75	20+25	ASU (1)	12	50	100	200		
CONTINGENCY			ASU (1)	12	100	200	300		
			TOTAL CY/TONS/SY:		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
							TOTAL SY:	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
						TOTAL SY:	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 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
TOTAL GAUGES (EACH):			

SUMMARY OF EMBANKMENT
WAITING PERIODS

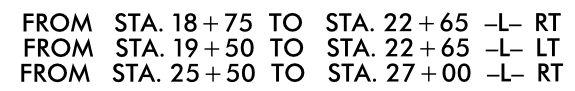
LINE	Station	Station	MONTHS

SUMMARY OF BRIDGE WAITING PERIODS

Bridge Description	End Bent/ Bent No.	MONTHS

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-splittin g of Rock SY
					TOTAL SY:	0



BEGIN PROJECT 17BP.3.R.78
-L- POC STA 18+75.00



FDPS - FULL DEPTH PAVED SHOULDER

NOT TO SCALE

$PI Sta\ 15+53.67$
 $\Delta = 12^{\circ}06'05.8$
 $D = 2^{\circ}52'45.1''$
 $L = 420.31'$
 $T = 210.94'$
 $R = 1,990.00'$

$PI Sta\ 19+56.15$
 $\Delta = 0^\circ 53' 33.3''$
 $D = 0^\circ 13' 52.0''$
 $L = 386.20'$
 $T = 193.10'$
 $R = 24,790.00'$

$PI Sta\ 26+26.89$
 $\Delta = 8^{\circ}29'49.7''$
 $D = 6^{\circ}32'53.1''$
 $L = 129.77'$
 $T = 65.00'$
 $R = 875.00'$

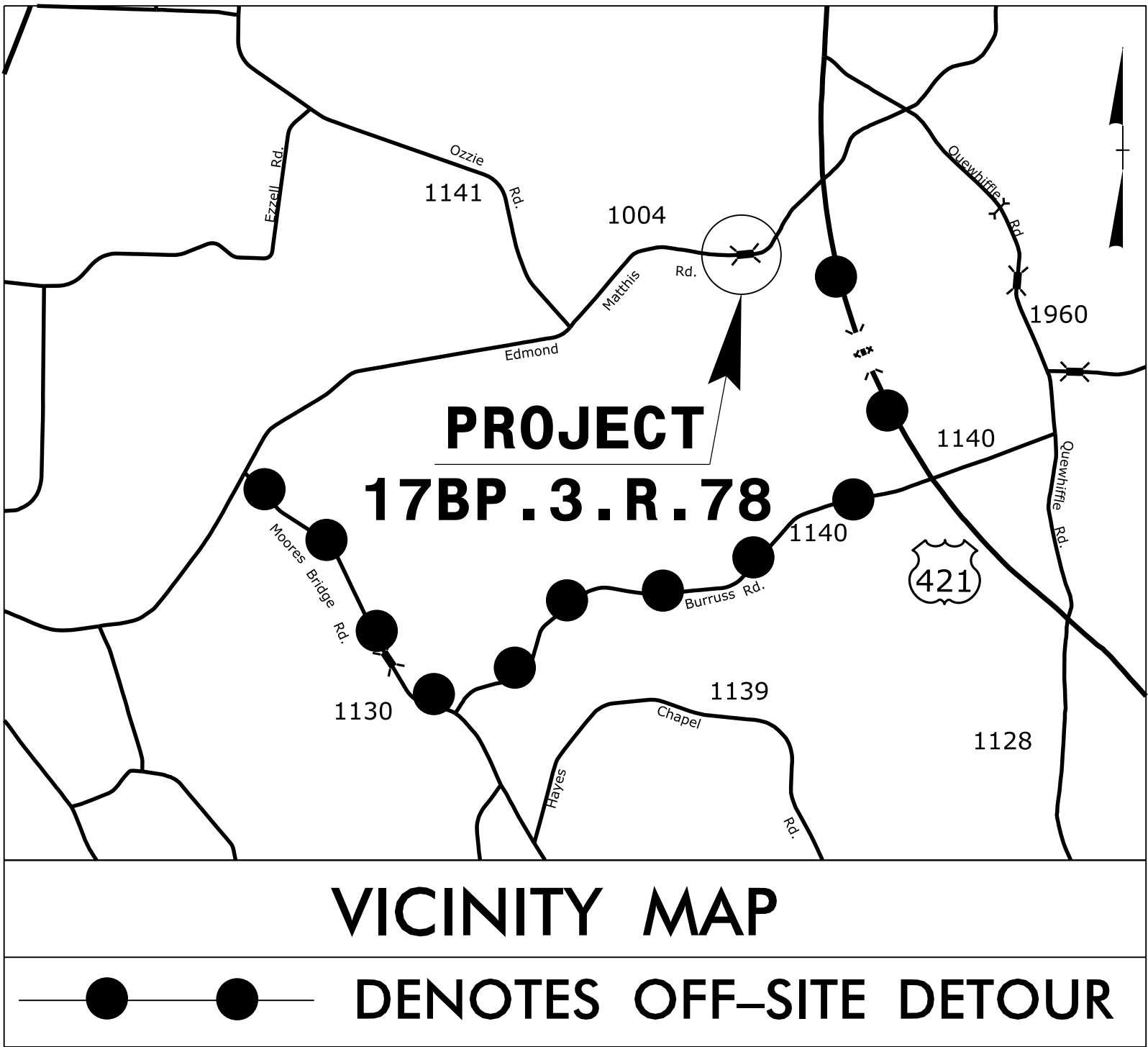
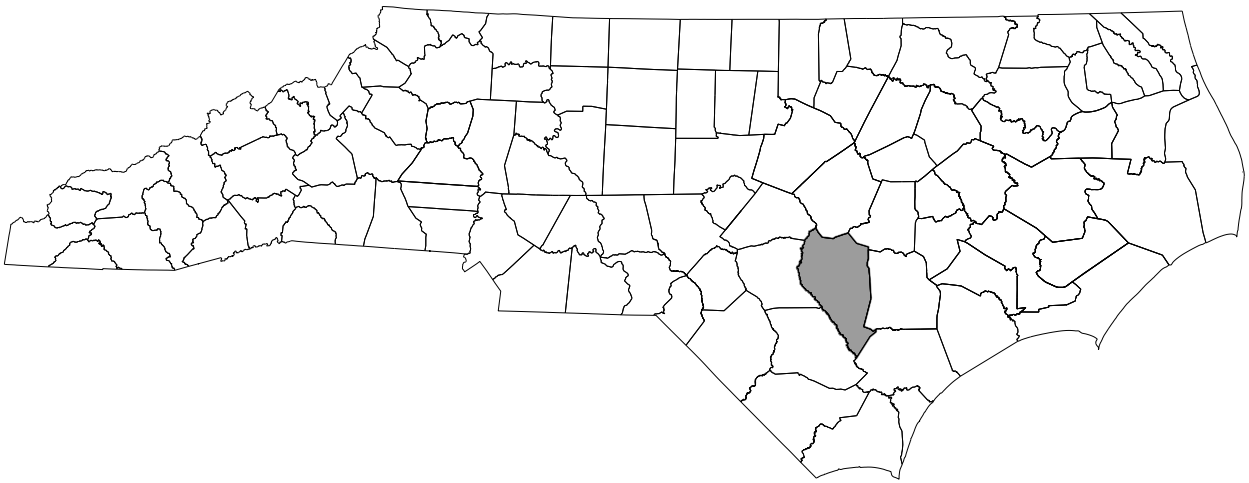
Pl Sta 29+26.92
 $\Delta = 38^{\circ} 54' 44.1''$
 $D = 8^{\circ} 36' 10.7''$
 $L = 452.31'$
 $T = 235.27'$
 $R = 666.00'$

BM #2 ELEVATION = 56.15'
N = 402683.73 E = 2218895.93
-L- STATION 24+27.79
60.25' RIGHT
R/R SPIKE SET IN BASE OF 20

09-SEP-2019 08:11
J:\Division 3 Bridge Replacement\B-4813\Roadway\Proj\B-4813-Rdy-psb-04.dgn
J:\Division 3 Bridge Replacement\B-4813\Roadway\Proj\B-4813-Rdy-psb-04.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
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APPROVED:

DocuSigned by:
Jason M. Pickens
20CE483822FA4D9.

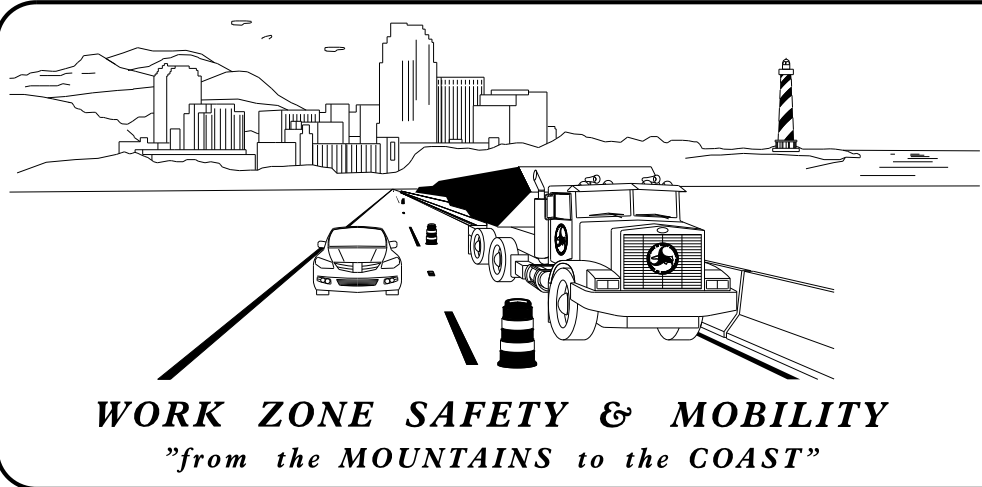
DATE: 2/1/2019

SEAL

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

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
WORK ZONE TRAFFIC CONTROL

SEAL
31950
ENGINEER
JASON M. PICKENS



PLANS PREPARED BY:

EDWARD S. ROBBINS, PE
TRAFFIC CONTROL PROJECT ENGINEER

J. MATTHEW PICKENS, PE
TRAFFIC CONTROL ENGINEER

NCDOT CONTACTS:

MONICA DUVAL



17BP.3.R.78

TIP PROJECT:

PROJ. REFERENCE NO.	SHEET NO.
17BP.3.R.78	TMP-1A

MANAGEMENT STRATEGIES

DURING REPLACEMENT OF BRIDGE OVER CRANE CREEK, SR 1004 (EDMOND MATTHIS ROAD) WILL BE CLOSED TO THROUGH TRAFFIC. SR 1004 TRAFFIC WILL BE DETOURED OFF-SITE VIA SR 1103 (MOORES BRIDGE ROAD) TO SR 1140 (BURRUSS ROAD) TO US 421 BACK TO SR 1004.

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 1004 (EDMOND MATTHIS 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. 16 OVER CRANE CREEK.

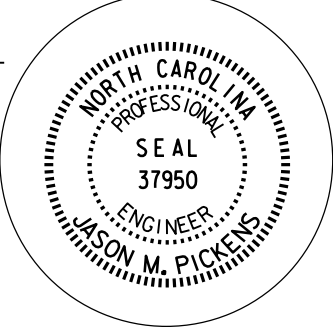
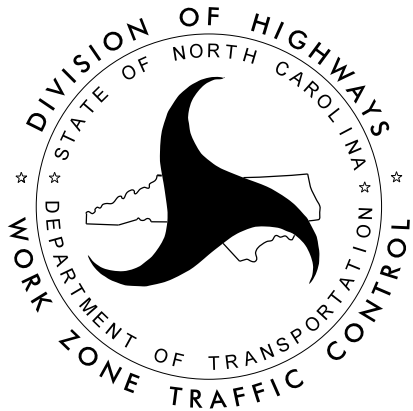
STEP 4: COMPLETE CONSTRUCTION OF PROPOSED STRUCTURE, APPROACH ROADWAY WIDENING AND PAVING (SEE ROADWAY PLANS).

STEP 5: CONTRACTOR TO PLACE FINAL PAVEMENT MARKINGS (PAINT) ON SR 1004 (EDMOND MATTHIS 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 1004 (EDMOND MATTHIS RD) TO TRAFFIC.

01-FEB-2019 13:30
C:\D:\Users\jason.m.pickens\Documents\17BP.3.R.78\17BP.3.R.78-TMP-01A.dgn
\$\$\$\$\$USERNAME\$\$\$\$\$

DocuSigned by: APPROVED: <i>Jason M. Pickens</i> 20CE483822FAADB DATE: 2/1/2019 SEAL  DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED		TRANSPORTATION OPERATIONS PLAN
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DocuSigned by: APPROVED: <i>Jason M. Pickens</i> DATE: 2/1/2019 SEAL 		SPECIAL SIGN DESIGN
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DocuSigned by: APPROVED: Jason M. Pickens 20CE483822FA4DB... DATE: <u>2/1/2019</u>		OFF-SITE DETOUR ROUTE AND BARRICADE PLACEMENT
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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

PAVEMENT MARKING PLAN
SAMPSON COUNTY

LOCATION: BRIDGE NO. 18 OVER CRANE CREEK
ON SR 1004 (EDMOND MATTHIS RD.)

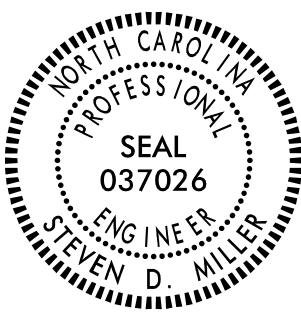
TIP NO.
17BP.3.R.78

SHEET NO.
PMP - 1

APPROVED:

DocuSigned by:
Steve Miller
9FBC9C15CEE8486...

DATE: 8/22/2019

SEAL


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INDEX

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

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
1251.01	RAISED PAVEMENT MARKERS - PERMANENT AND TEMPORARY
1261.01	GUARDRAIL AND BARRIER DELINEATORS - INSTALLATION SPACING
1261.02	GUARDRAIL AND BARRIER DELINEATORS - TYPES AND MOUNTING
1262.01	GUARDRAIL END DELINEATION

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 1004 (EDMOND MATTHIS RD.) BRIDGE No. 18	THERMO PAINT	RAISED RAISED

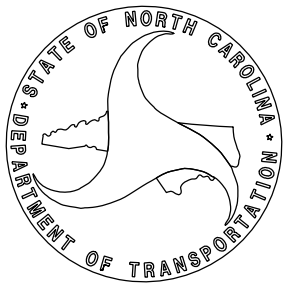
- B) PLACE TWO APPLICATIONS OF PAINT PAVEMENT MARKINGS ON THE FINAL WEARING SURFACE. PLACE THE SECOND APPLICATION OF PAINT UPON SUFFICIENT DRYING TIME OF THE FIRST.
- C) TIE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING LINES.
- D) REMOVE/REPLACE ANY CONFLICTING/DAMAGED PAVEMENT MARKINGS AND MARKERS.
- E) PASSING ZONES WILL BE DETERMINED IN THE FIELD AND MUST BE APPROVED BY THE ENGINEER.
- F) REMOVE ALL RESIDUE AND SURFACE LAITANCE BY ACCEPTABLE METHODS ON CONCRETE BRIDGE DECKS PRIOR TO PLACING PAINT PAVEMENT MARKING MATERIAL.

PAVEMENT
MARKING SCHEDULE

SYMBOL	DESCRIPTION
	<u>PAINT (4")</u>
PA	WHITE EDGELINE
PI	YELLOW DOUBLE CENTER
	<u>THERMOPLASTIC (4", 90 MIL)</u>
TA	WHITE EDGE LINE
TI	YELLOW DOUBLE CENTER

PLAN REVIEWED BY: N.C.D.O.T. SIGNING AND DELINEATION UNIT

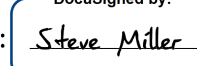
<u>Ayman Alqudwah, PE, CPM</u>	SIGNING AND DELINEATION REGIONAL ENGINEER
<u>Walter Johnson</u>	SIGNING AND DELINEATION PROJECT DESIGN ENGINEER

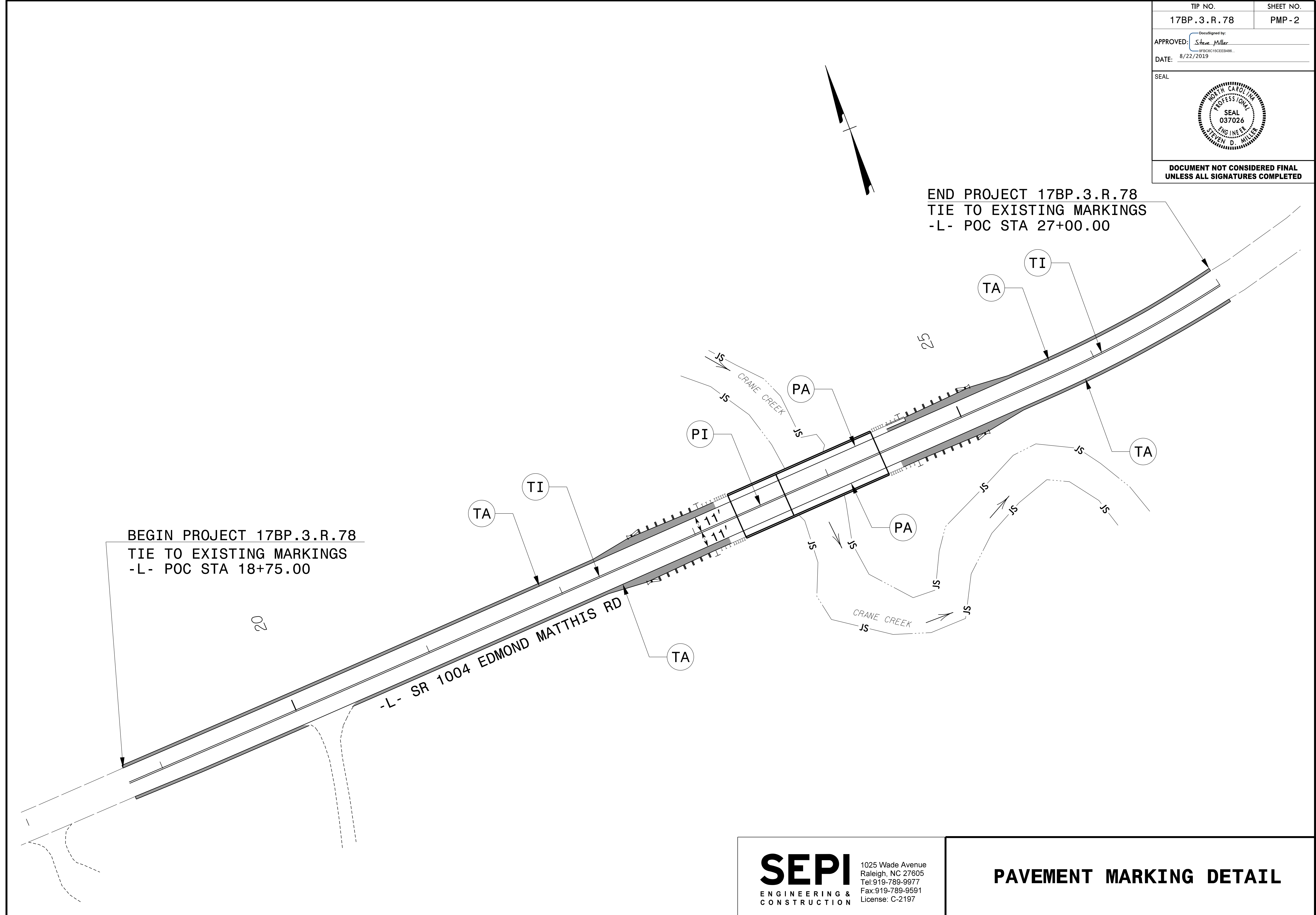


PLAN PREPARED BY: SEPI Engineering

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

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

TIP NO.	SHEET NO.
17BP.3.R.78	PMP-2
APPROVED:  DocuSigned by: Steven D. Miller 9F8C8C15CEE8486	
DATE: 8/22/2019	
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ENGINEERING &
CONSTRUCTION

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Raleigh, NC 27605
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Fax: 919-789-9591
License: C-2197

PAVEMENT MARKING DETAIL

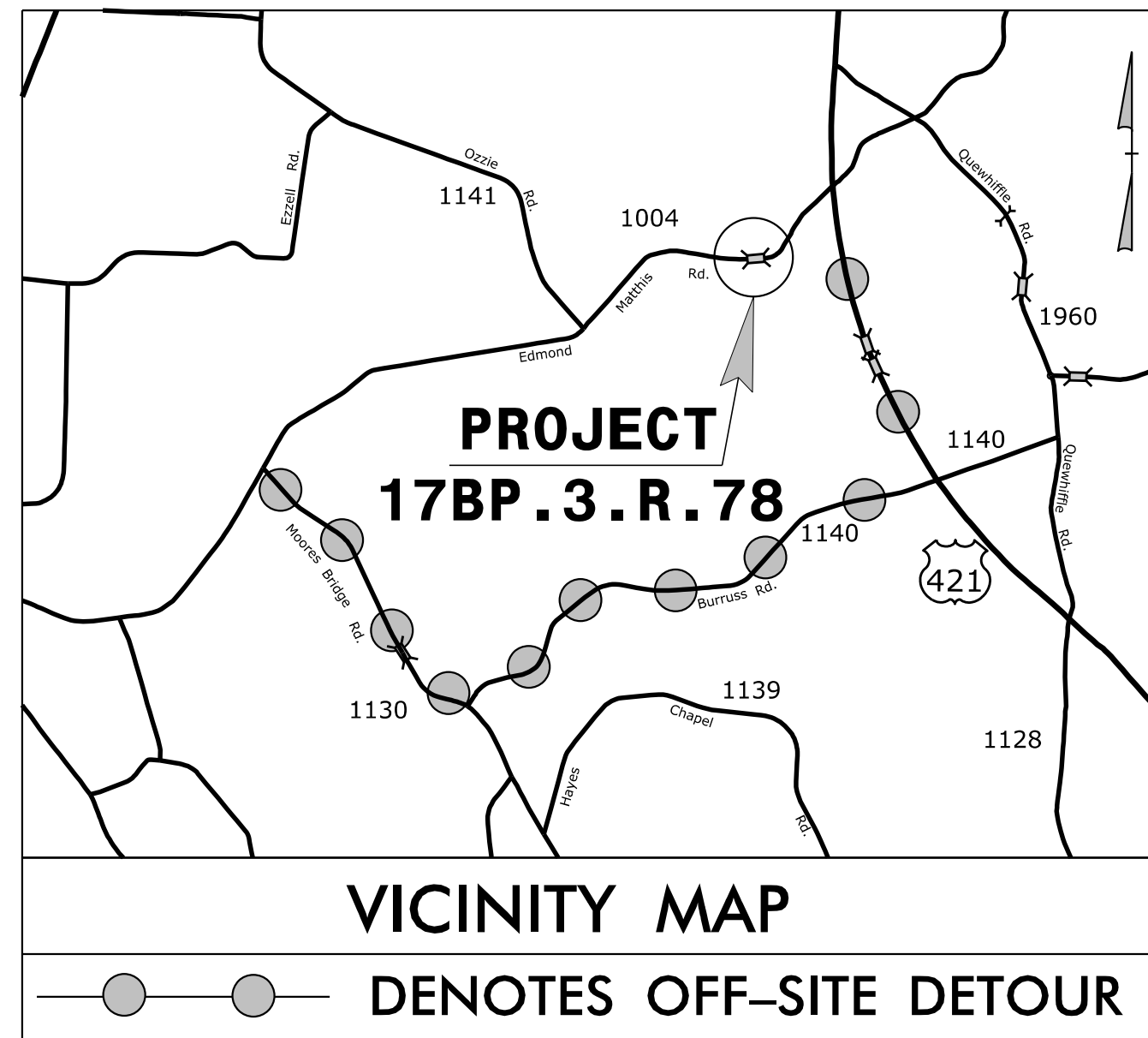
8/28/2019 17BP.3.R.78-EC.dgn

TIP PROJECT: 17BP.3.R.78

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

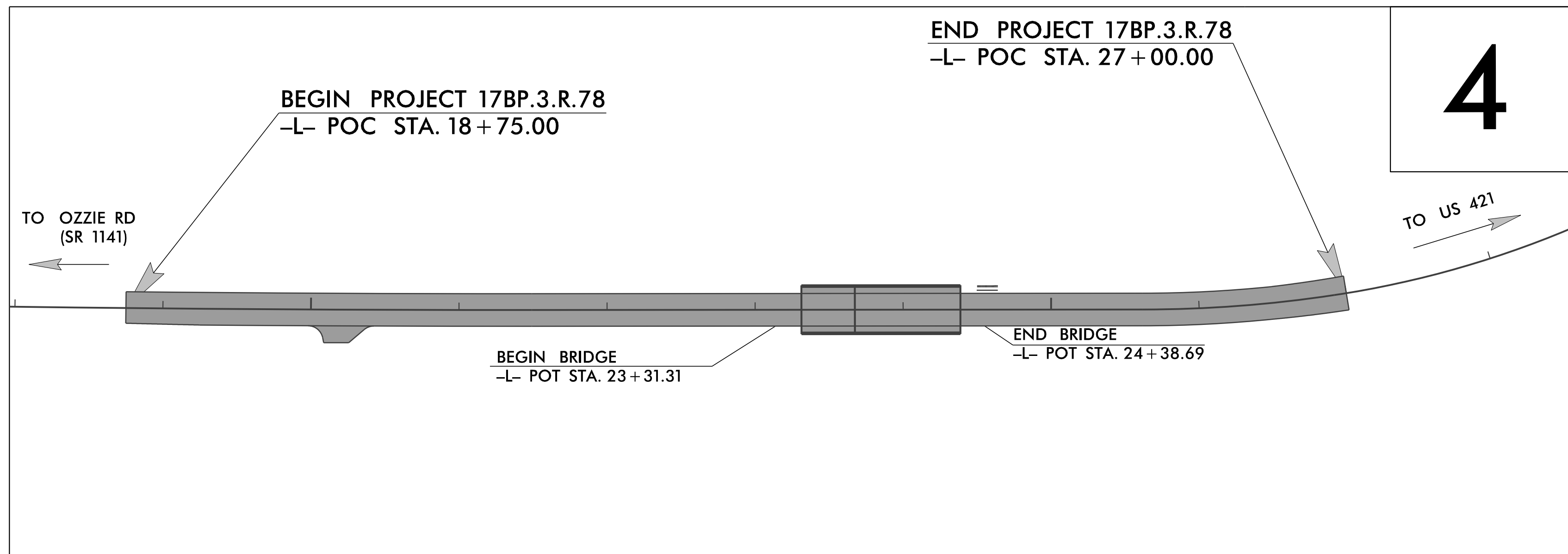
LOCATION: BRIDGE NO.18 ON SR 1004 (EDMOND MATTHIS ROAD)
OVER CRANE CREEK

TYPE OF WORK: GRADING, PAVING, DRAINAGE AND STRUCTURE



RIGHT OF WAY DATE:
MAY 16, 2018

LETTING DATE:
OCTOBER 03, 2019



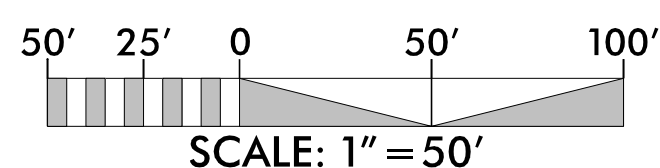
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	17BP.3.R.78	EC-1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
17BP.3.R.78		P.E.	
17BP.3.R.78		ROW	
17BP.3.R.78		CONST	

EROSION AND SEDIMENT CONTROL MEASURES

Std. #	Description	Symbol
1630.03	Temporary Silt Ditch	TD
1630.05	Temporary Diversion	TD
1605.01	Temporary Silt Fence	TSF
1606.01	Special Sediment Control Fence	SSCF
1622.01	Temporary Berms and Slope Drains	TBSD
1630.02	Silt Basin Type B	SB
1633.01	Temporary Rock Silt Check Type-A	TRSCA
	Temporary Rock Silt Check Type-A with Matting and Polyacrylamide (PAM)	TRSCA-PAM
1633.02	Temporary Rock Silt Check Type-B	TRSCB
	Wattle/ Coir Fiber Wattle	WCFW
	Wattle/ Coir Fiber Wattle with Polyacrylamide (PAM)	WCFW-PAM
1634.01	Temporary Rock Sediment Dam Type-A	TRSDA
1634.02	Temporary Rock Sediment Dam Type-B	TRSDB
1635.01	Rock Pipe Inlet Sediment Trap Type-A	RPISTRA
1635.02	Rock Pipe Inlet Sediment Trap Type-B	RPISTRB
1630.04	Stilling Basin	SB
1630.06	Special Stilling Basin	SSB
	Rock Inlet Sediment Trap:	
1632.01	Type A	A
1632.02	Type B	B
1632.03	Type C	C
	Skimmer Basin	SB
	Tiered Skimmer Basin	TSB
	Infiltration Basin	IB

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

GRAPHIC SCALE



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

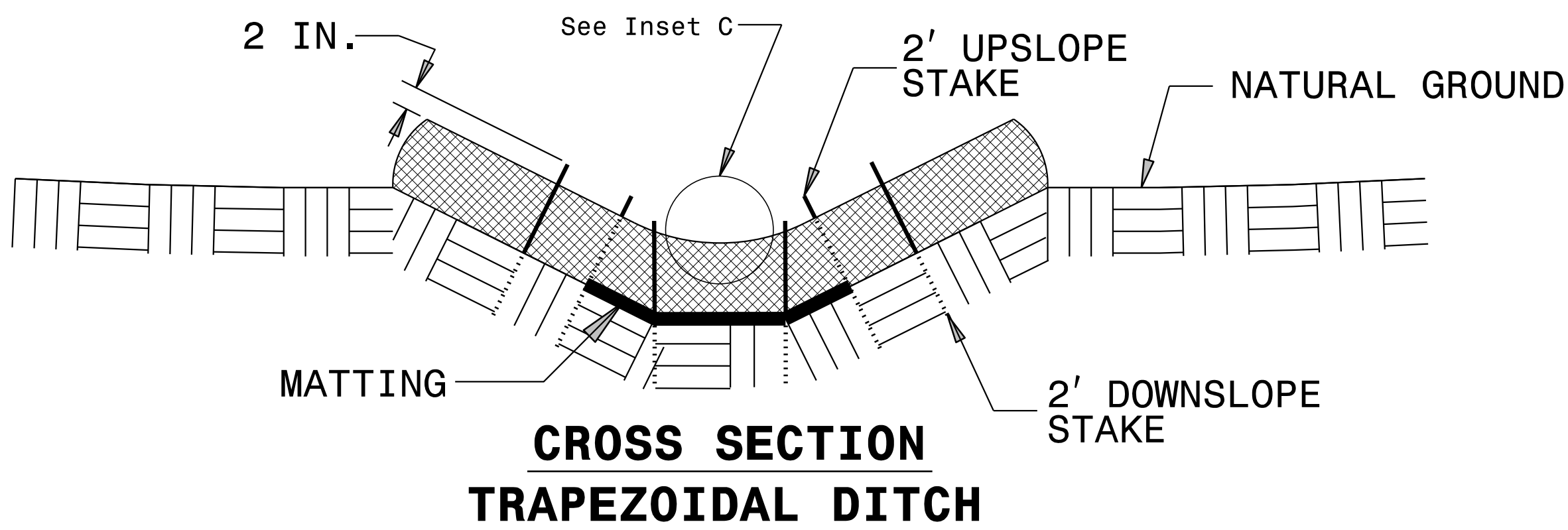
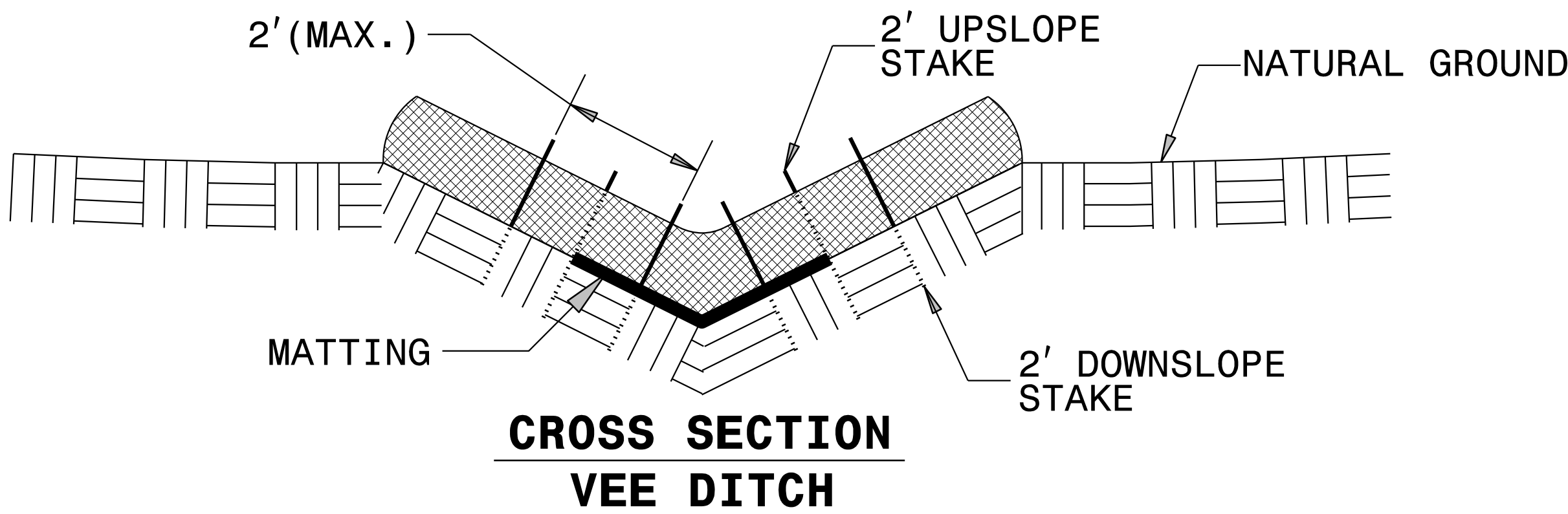
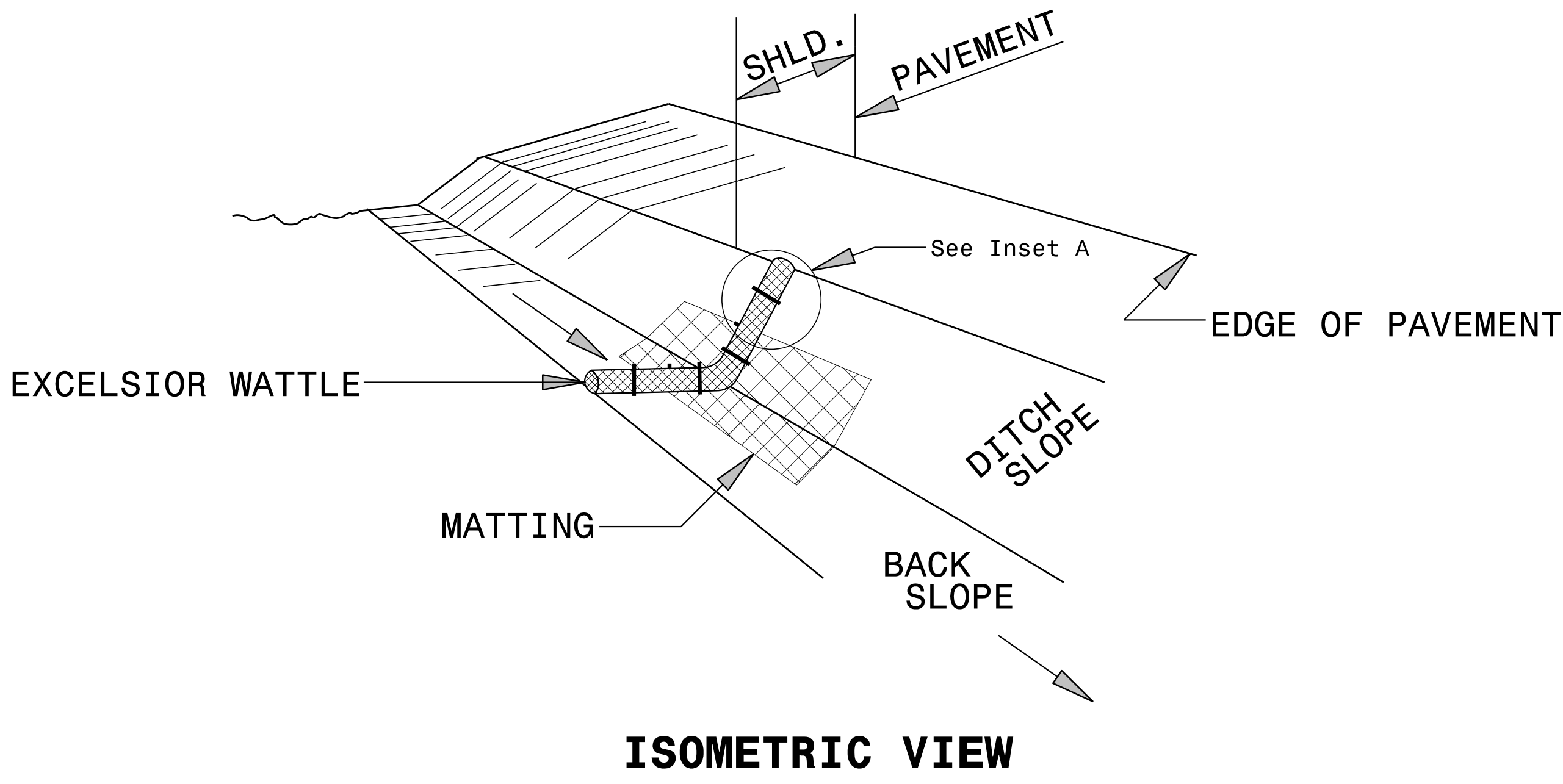
Roadway Standard Drawings

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		

WATTLE WITH POLYACRYLAMIDE (PAM) DETAIL

PROJECT REFERENCE NO.		SHEET NO.
17BP.3.R.78		EC-2
RW SHEET NO.		
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER



NOTES:

USE MINIMUM 12 IN. DIAMETER EXCELSIOR WATTLE.

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

ONLY INSTALL WATTLE(S) TO A HEIGHT IN DITCH SO FLOW WILL NOT WASH AROUND WATTLE AND SCOUR DITCH SLOPES AND AS DIRECTED.

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

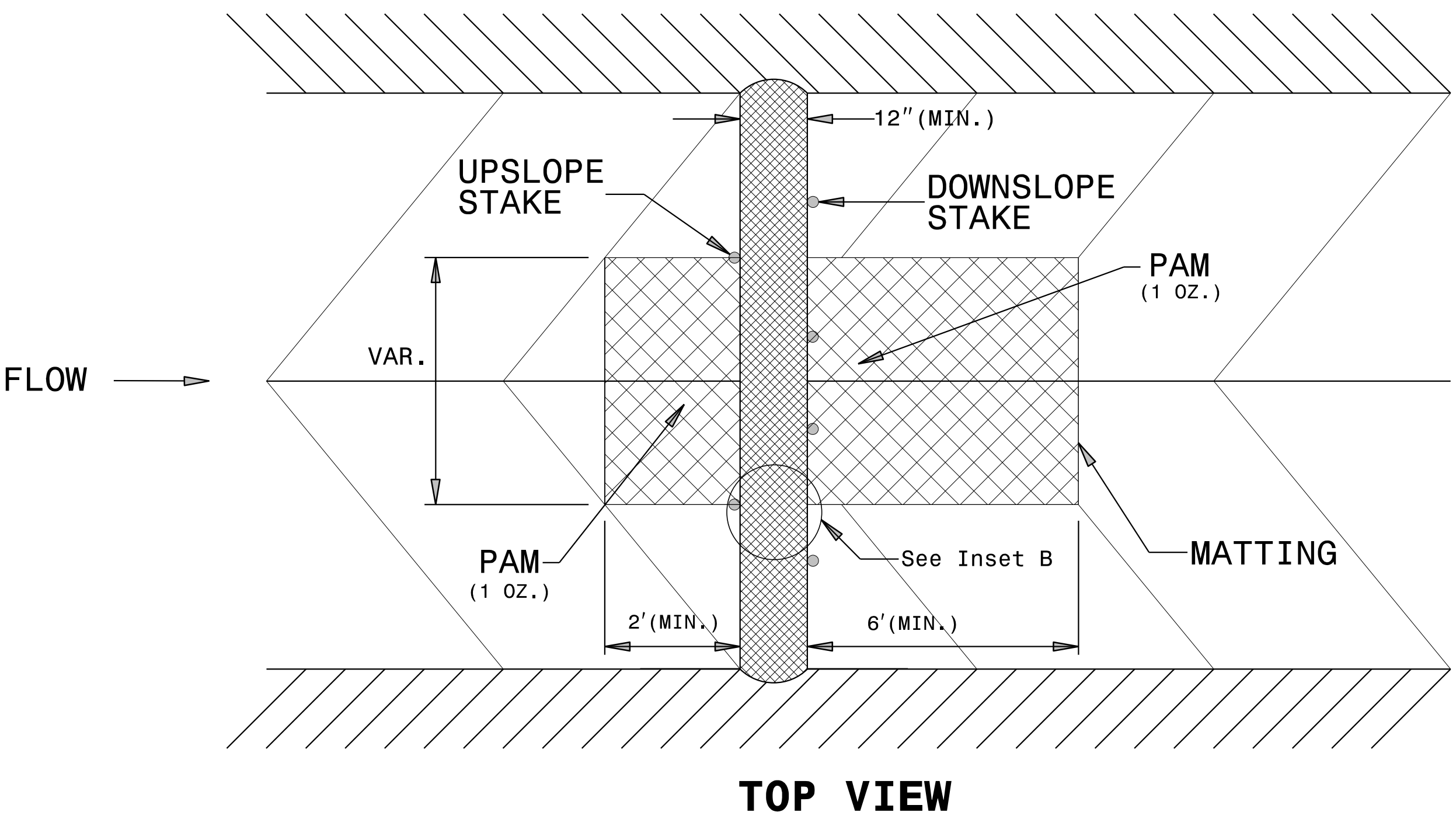
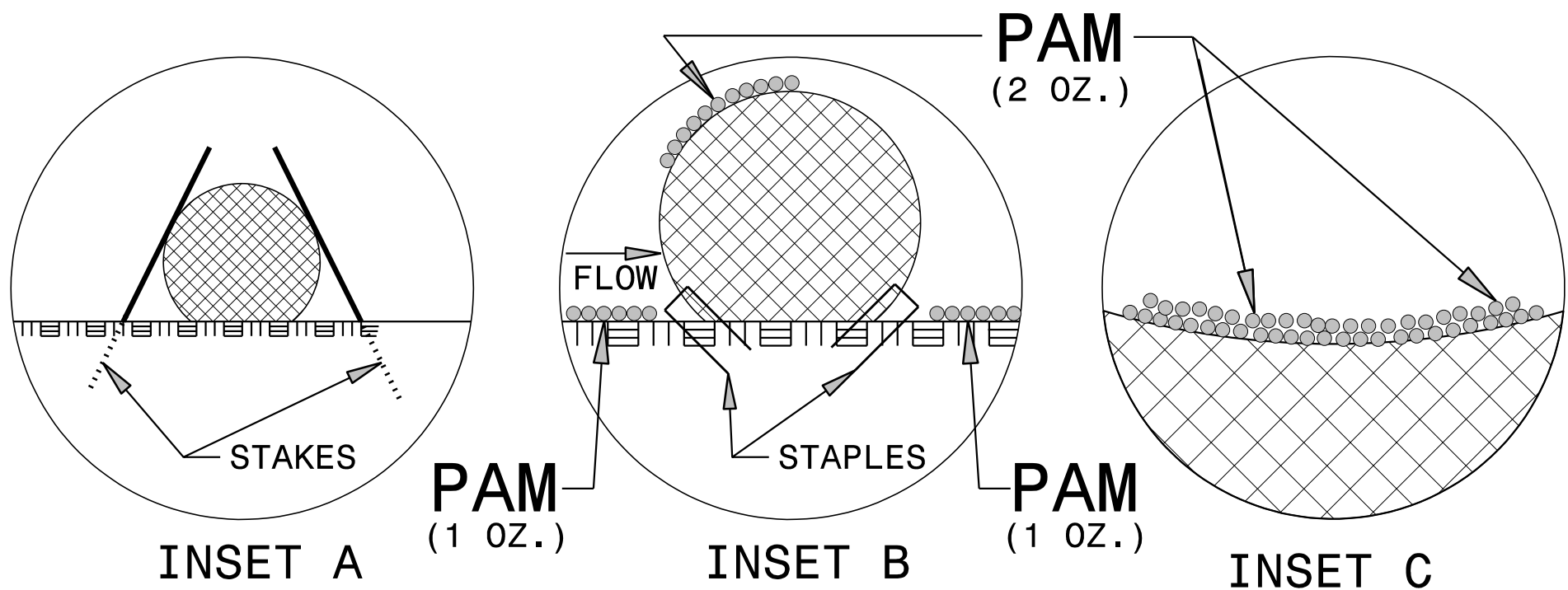
PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12" IN LENGTH.

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

INSTALL MATTING IN ACCORDANCE WITH SECTION 1631 OF THE STANDARD SPECIFICATIONS.

PRIOR TO POLYACRYLAMIDE (PAM) APPLICATION, OBTAIN A SOIL SAMPLE FROM PROJECT LOCATION, AND FROM OFFSITE MATERIAL, AND ANALYZE FOR APPROPRIATE PAM FLOCCULANT TO BE APPLIED TO EACH WATTLE.

INITIALLY APPLY 2 OUNCES OF ANIONIC OR NEUTRALLY CHARGED PAM OVER WATTLE WHERE WATER WILL FLOW AND 1 OUNCE OF PAM ON MATTING ON EACH SIDE OF WATTLE. REAPPLY PAM AFTER EVERY RAINFALL EVENT THAT IS EQUAL TO OR EXCEEDS 0.50 IN.



PROJECT REFERENCE NO.	SHEET NO.
17BP.3.R.78	EC-2A
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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.

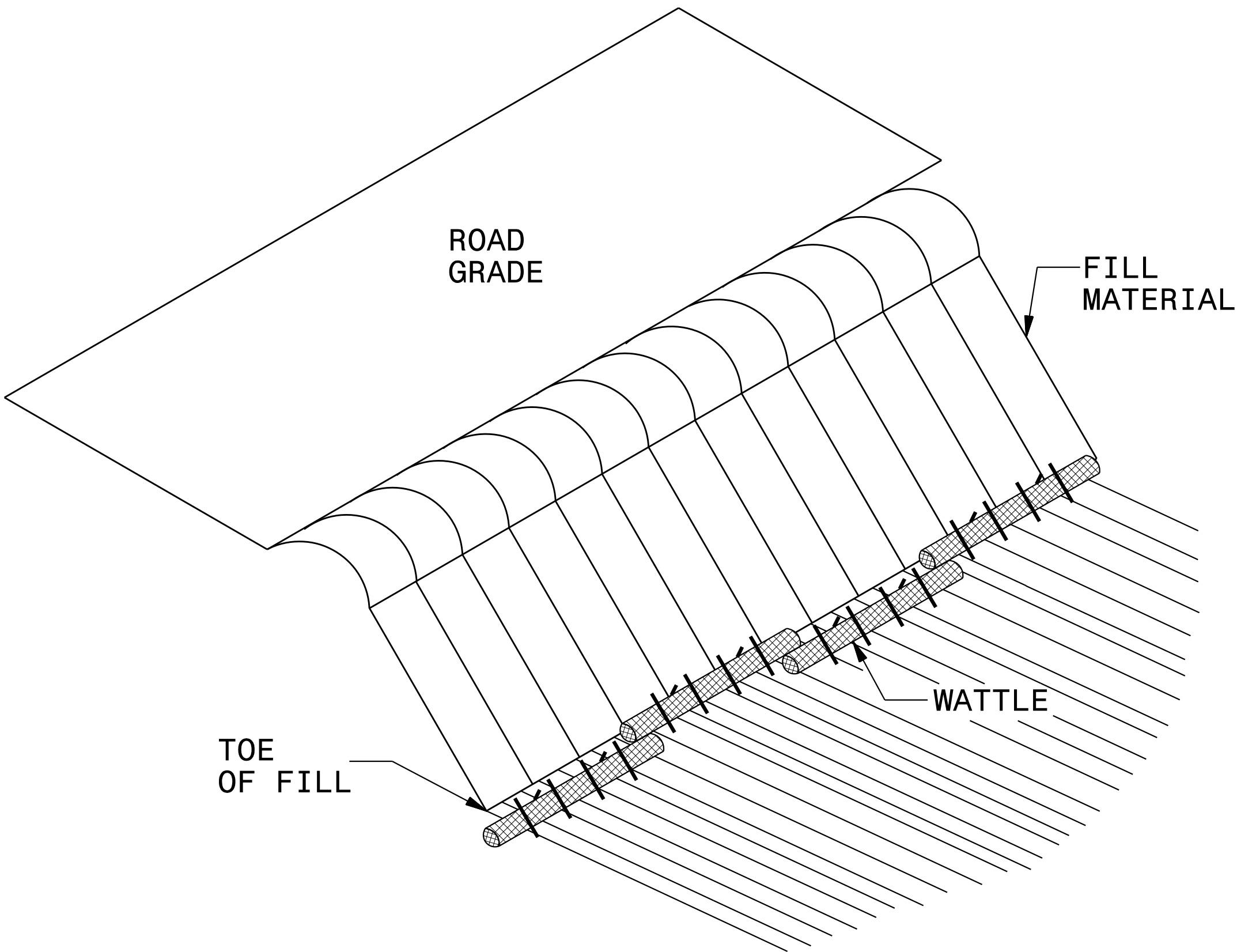
WATTLE INSTALLATION CAN BE ON OUTSIDE OF THE SILT FENCE AS DIRECTED.

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

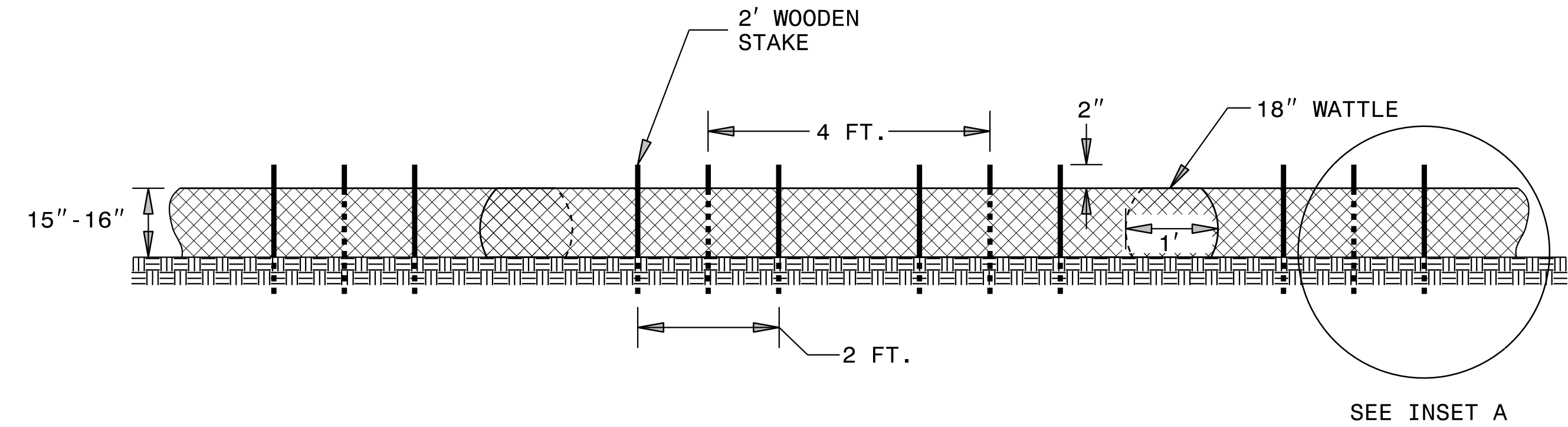


PROJECT REFERENCE NO.	SHEET NO.
17BP.3.R.78	EC-2B
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

WATTLE BARRIER DETAIL



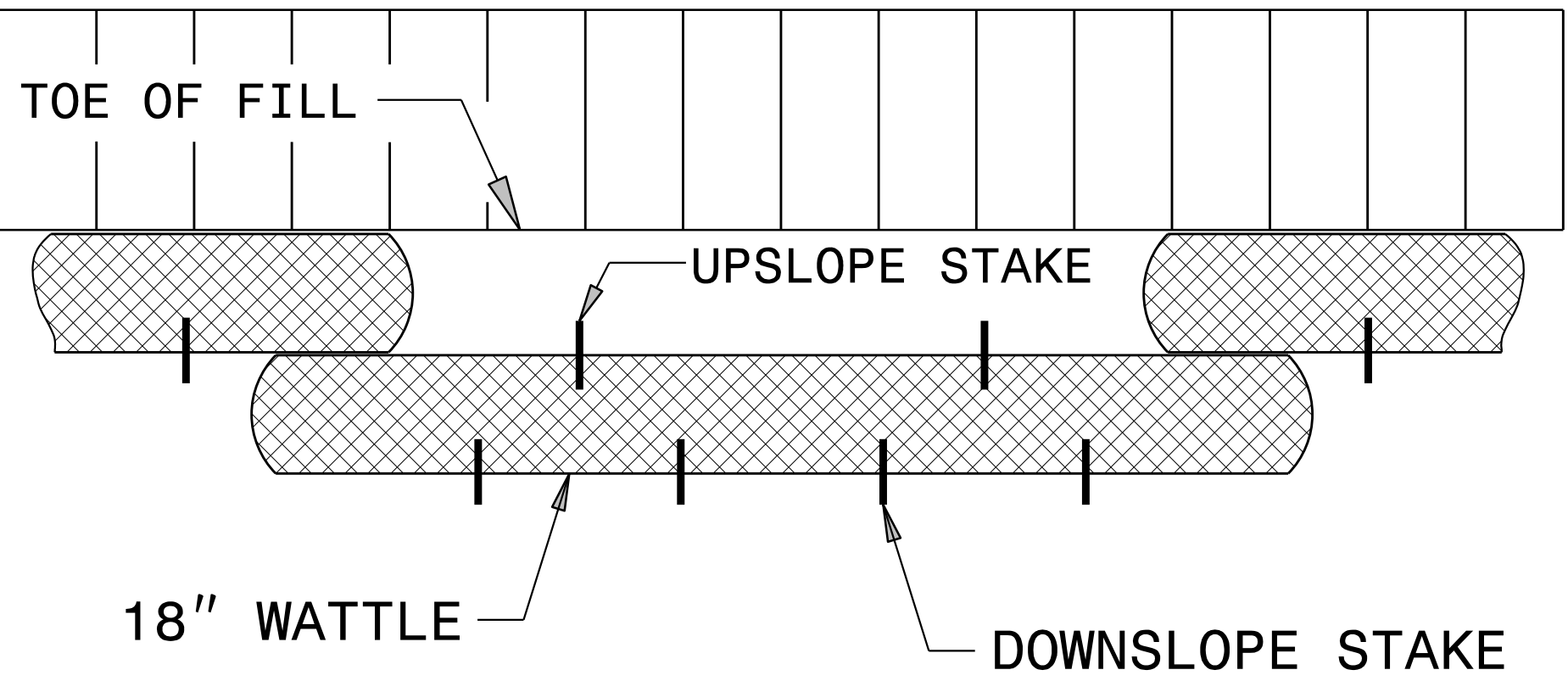
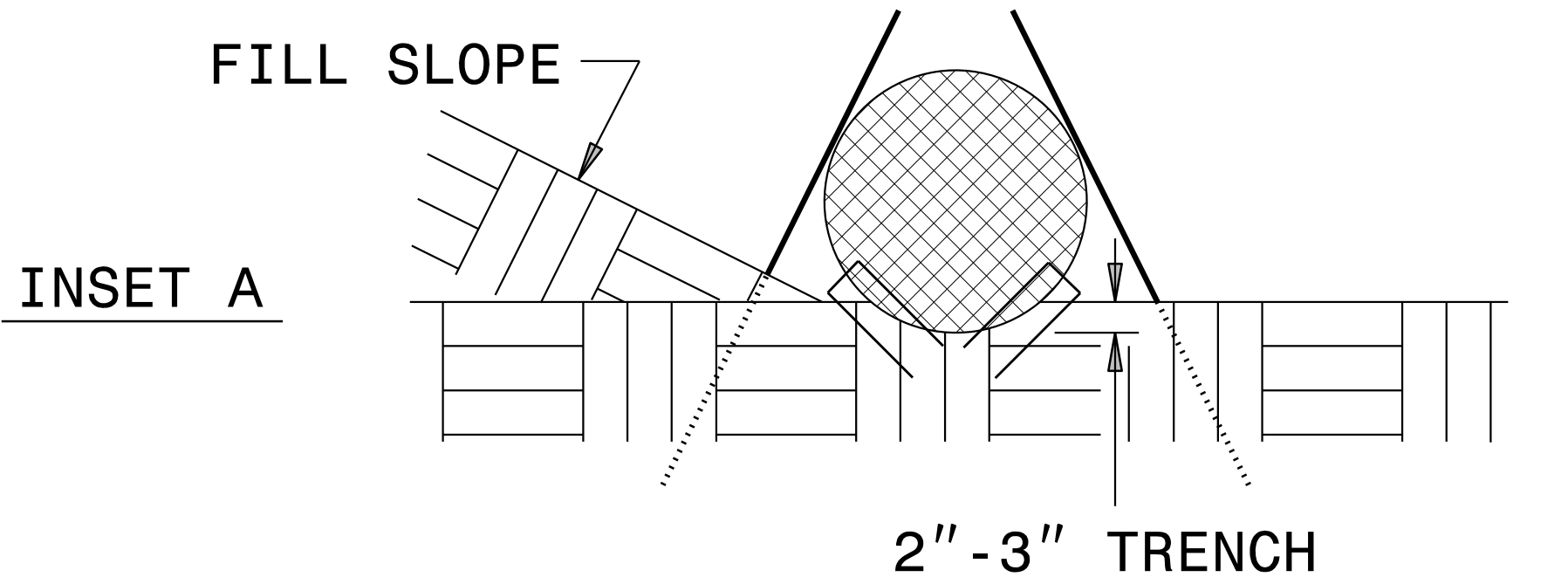
ISOMETRIC VIEW



FRONT VIEW

NOTES:

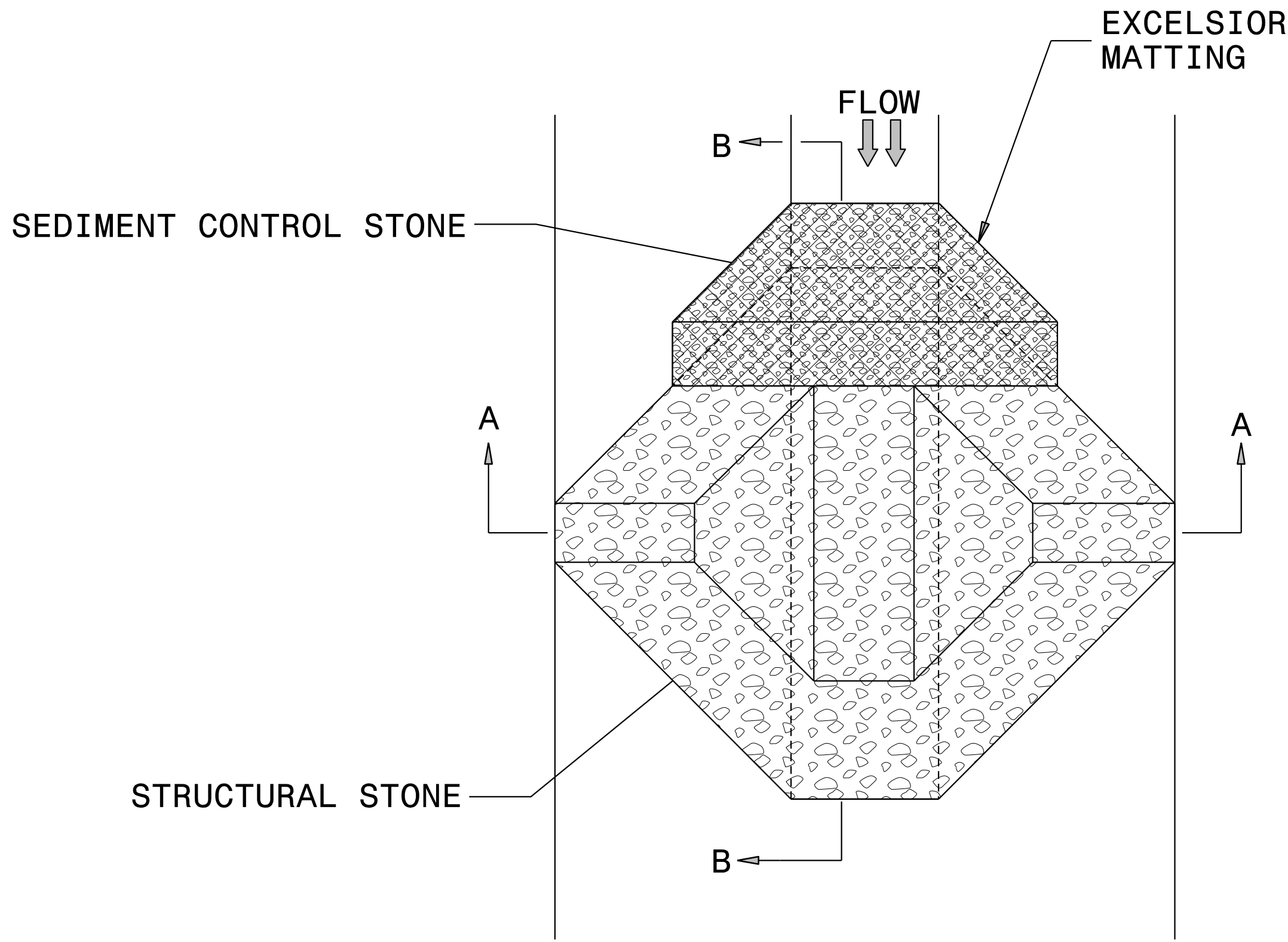
- USE MINIMUM 18 IN. NOMINAL DIAMETER EXCELSIOR WATTLE AND LENGTH OF 10 FT.
- EXCAVATE A 2 TO 3 INCH TRENCH FOR WATTLE TO BE PLACED.
- DO NOT PLACE WATTLES ON TOE OF SLOPE.
- USE 2 FT. WOODEN STAKES WITH A 2 IN. BY 2 IN. NOMINAL CROSS SECTION.
- INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES 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.
- FOR BREAKS ALONG LARGE SLOPES, USE MAXIMUM SPACING OF 25 FT.



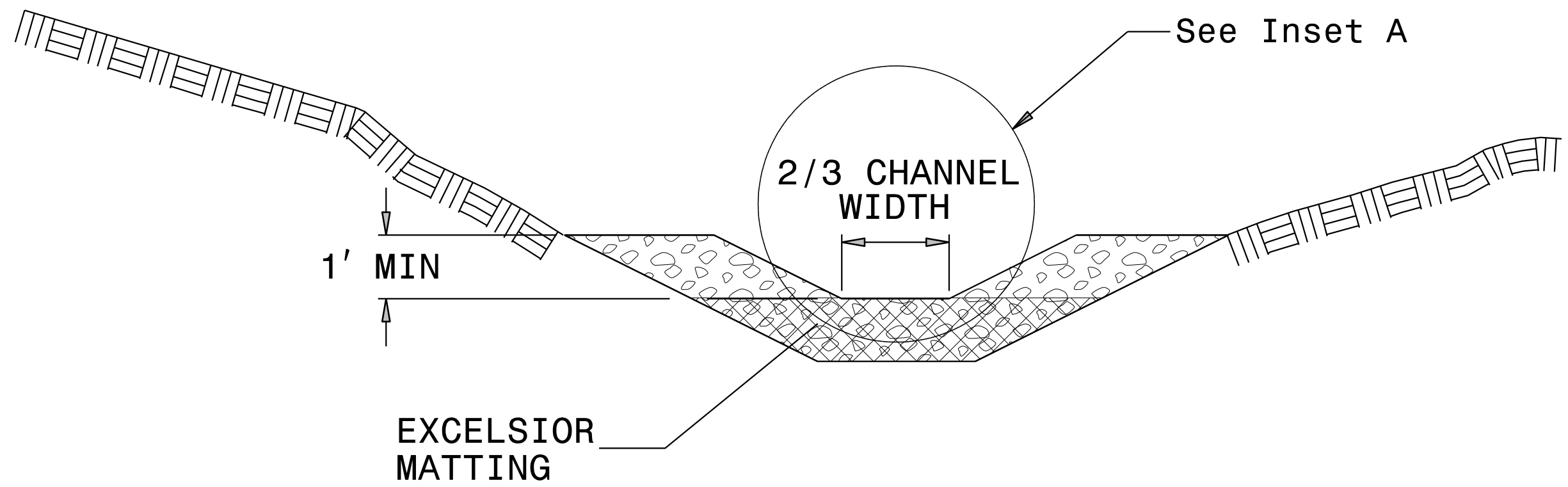
TOP VIEW

TEMPORARY ROCK SILT CHECK TYPE 'A' WITH EXCELSIOR MATTING AND POLYACRYLAMIDE (PAM)

PROJECT REFERENCE NO.	SHEET NO.
17BP.3.R.78	EC-2C
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



PLAN



SECTION A-A

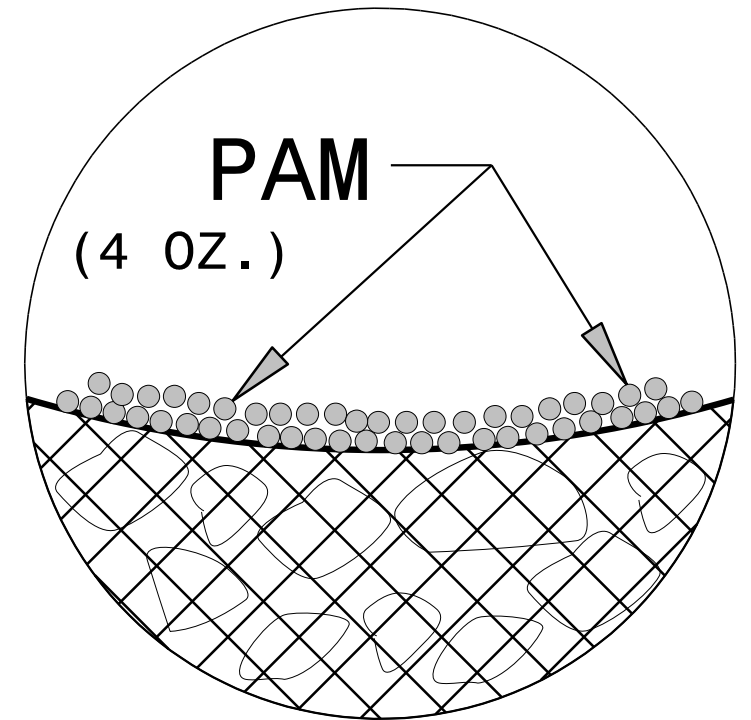
NOTES:

INSTALL TEMPORARY ROCK SILT CHECK TYPE A IN ACCORDANCE WITH ROADWAY STANDARD DRAWING NO. 1633.01.

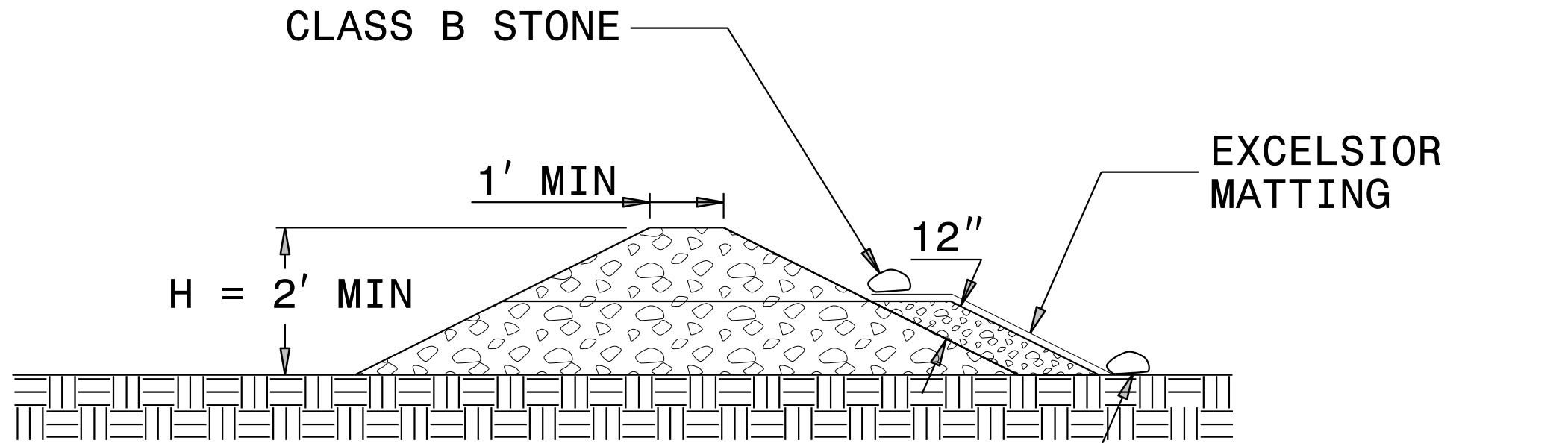
USE EXCELSIOR FOR MATTING MATERIAL AND ANCHOR MATTING SECTION AT TOP AND BOTTOM WITH CLASS B STONE.

PRIOR TO POLYACRYLAMIDE (PAM) APPLICATION, OBTAIN A SOIL SAMPLE FROM PROJECT LOCATION, AND FROM OFFSITE MATERIAL, AND ANALYZE FOR APPROPRIATE PAM FLOCCULANT TO BE APPLIED TO EACH ROCK SILT CHECK.

INITIALLY APPLY 4 OUNCES OF POLYACRYLAMIDE (PAM) TO TOP OF MATTING SECTION AND AFTER EVERY RAINFALL EVENT THAT EQUALS OR EXCEEDS 0.50 INCHES.



INSET A



SECTION B-B

NOT TO SCALE

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

PROJECT REFERENCE NO.	SHEET NO.
17BP.3.R.78	EC-3
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

SOIL STABILIZATION SUMMARY SHEET

MATTING FOR EROSION CONTROL

[illegible]

MATTING FOR EROSION CONTROL

[illegible]

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

PROJECT REFERENCE NO.	SHEET NO.
17BP.3R.78	EC-3A
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

SOIL STABILIZATION TIMEFRAMES

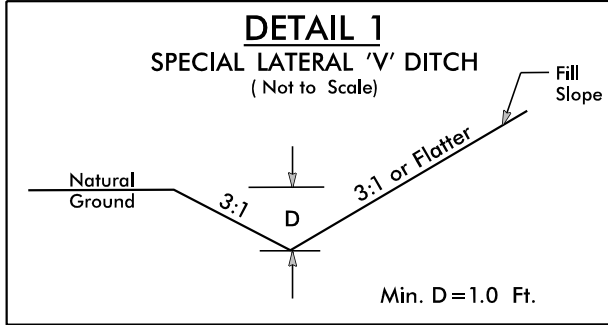
SITE DESCRIPTION	STABILIZATION TIME	TIMEFRAME EXCEPTIONS
PERIMETER DIKES, SWALES, DITCHES AND SLOPES	7 DAYS	NONE
HIGH QUALITY WATER (HQW) ZONES	7 DAYS	NONE
SLOPES STEEPER THAN 3:1	7 DAYS	IF SLOPES ARE 10' OR LESS IN LENGTH AND ARE NOT STEEPER THAN 2:1, 14 DAYS ARE ALLOWED.
SLOPES 3:1 OR FLATTER	14 DAYS	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.78	EC-04/CONST.04
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

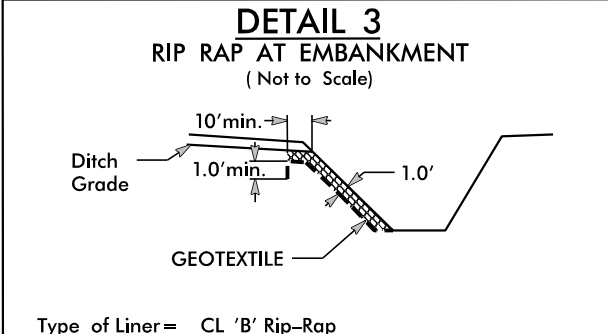
CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 04

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

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



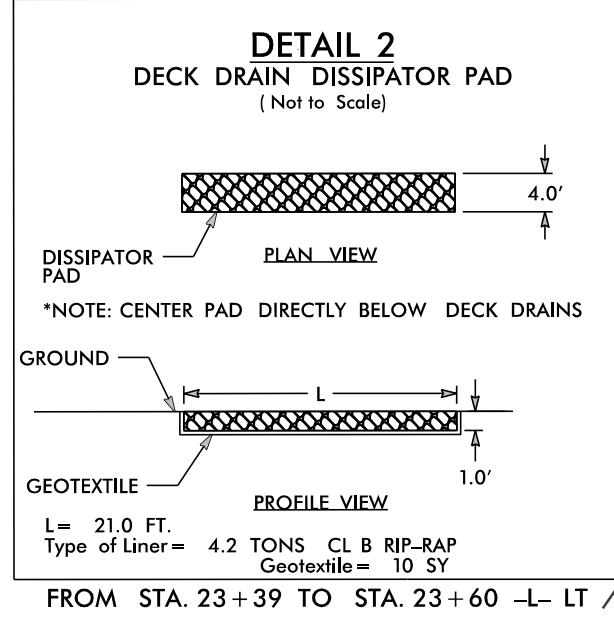
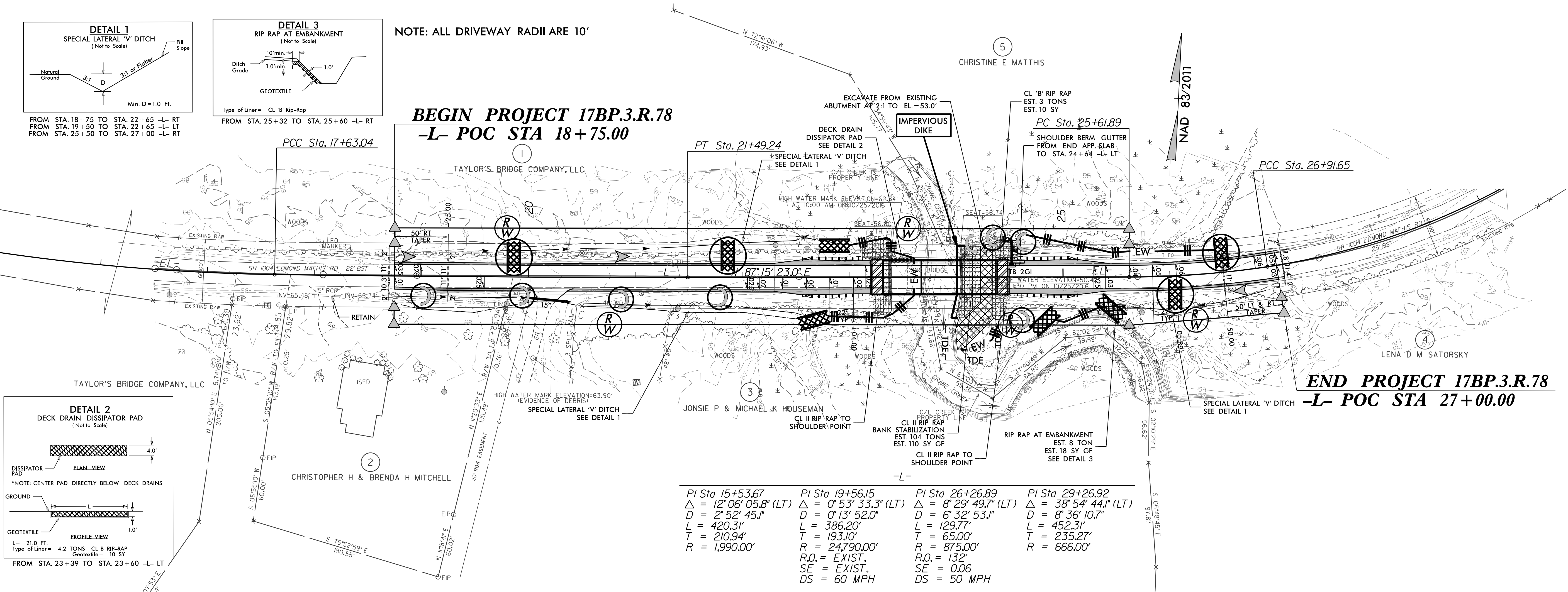
FROM STA. 18+75 TO STA. 22+65 -L- RT
FROM STA. 19+50 TO STA. 22+65 -L- LT
FROM STA. 25+50 TO STA. 27+00 -L- RT



Type of Liner = CL 'B' Rip-Rap
FROM STA. 25+32 TO STA. 25+60 -L- RT

NOTE: ALL DRIVEWAY RADII ARE 10'

BEGIN PROJECT 17BP.3.R.78
-L- POC STA 18+75.00



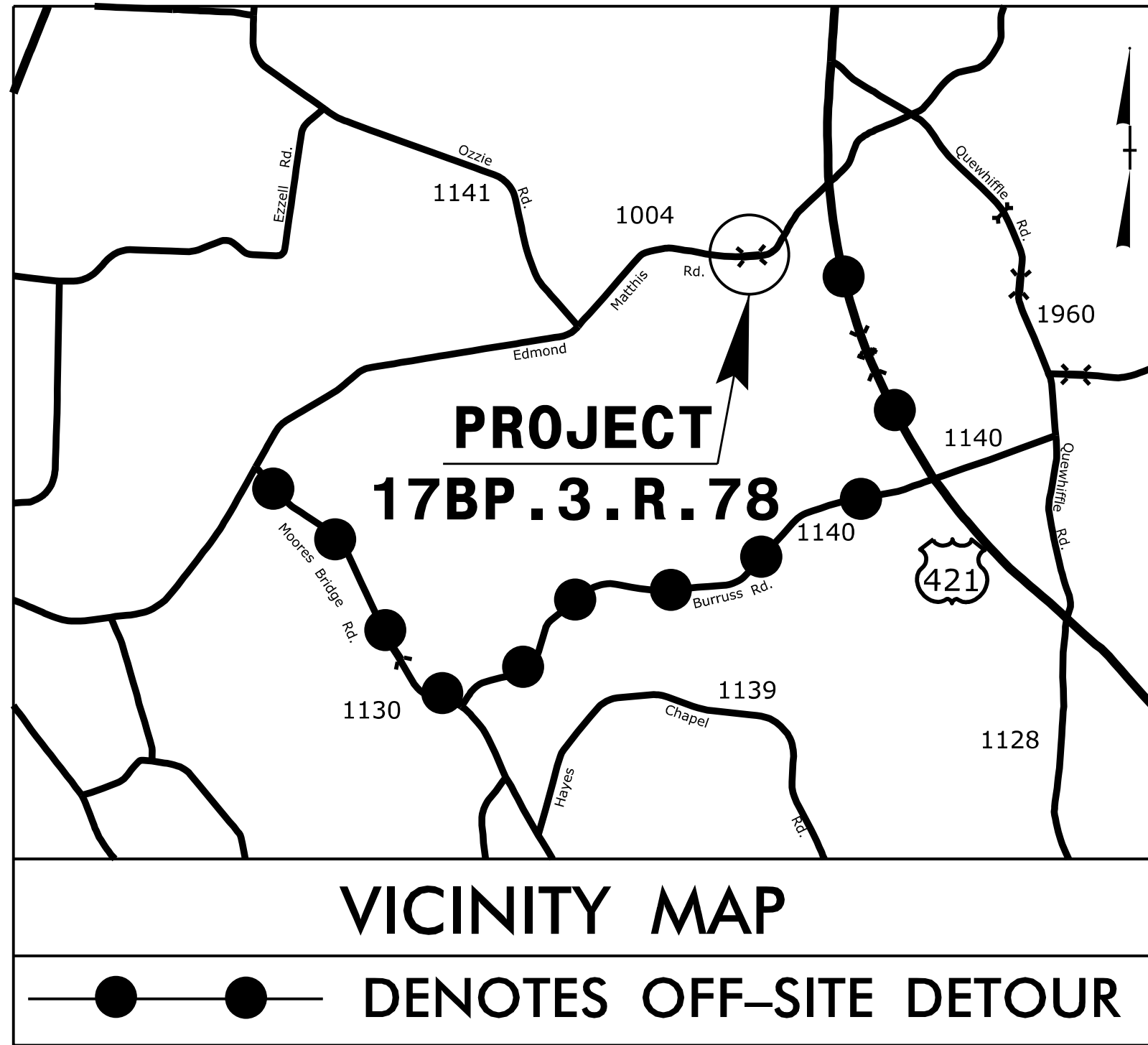
FROM STA. 23+39 TO STA. 23+60 -L- LT

PI Sta 15+53.67 $\Delta = 12^{\circ} 06' 05.8''$ (LT) $D = 2^{\circ} 52' 45.1''$ $L = 420.31'$ $T = 210.94'$ $R = 1,990.00'$	PI Sta 19+56.15 $\Delta = 0^{\circ} 53' 33.3''$ (LT) $D = 0^{\circ} 13' 52.0''$ $L = 386.20'$ $T = 193.10'$ $R = 24,790.00'$ R.O. = EXIST. SE = EXIST. DS = 60 MPH	PI Sta 26+26.89 $\Delta = 8^{\circ} 29' 49.7''$ (LT) $D = 6^{\circ} 32' 53.1''$ $L = 129.77'$ $T = 65.00'$ $R = 875.00'$ R.O. = 132' SE = 0.06 DS = 50 MPH	PI Sta 29+26.92 $\Delta = 38^{\circ} 54' 44.1''$ (LT) $D = 8^{\circ} 36' 10.7''$ $L = 452.31'$ $T = 235.27'$ $R = 666.00'$
---	--	--	---

09/08/99
\$\$\$\$\$SYTIME\$\$\$\$\$
\$\$\$\$\$DDN\$\$\$\$\$
\$\$\$\$\$USERNAME\$\$\$\$\$

PROJECT: 17BP.3.R.78

CONTRACT: DC00240



STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

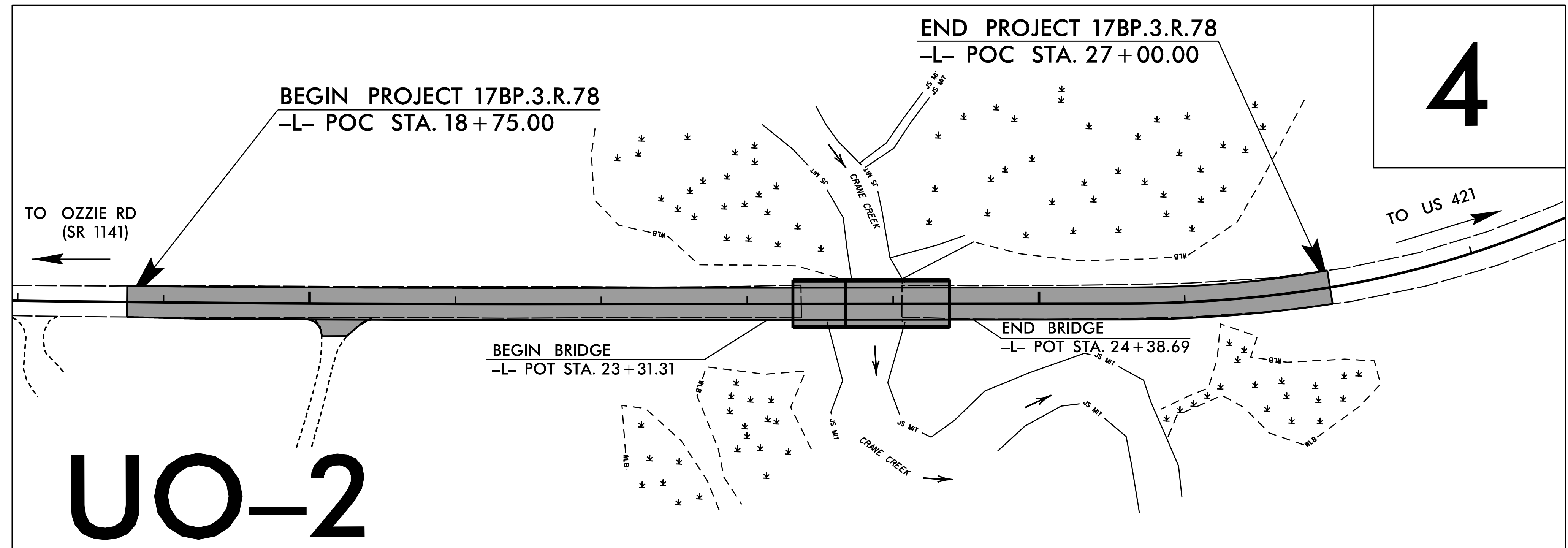
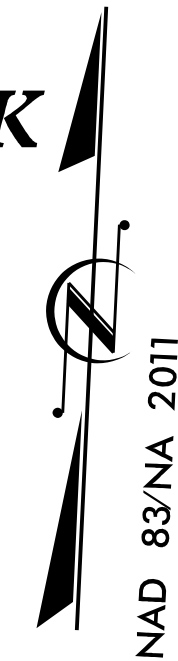
UTILITIES BY OTHERS PLANS SAMPSON COUNTY

LOCATION: BRIDGE #18 ON SR 1004
(EDMOND MATTHIS RD) OVER CRANE CREEK

TYPE OF WORK: COMMUNICATIONS

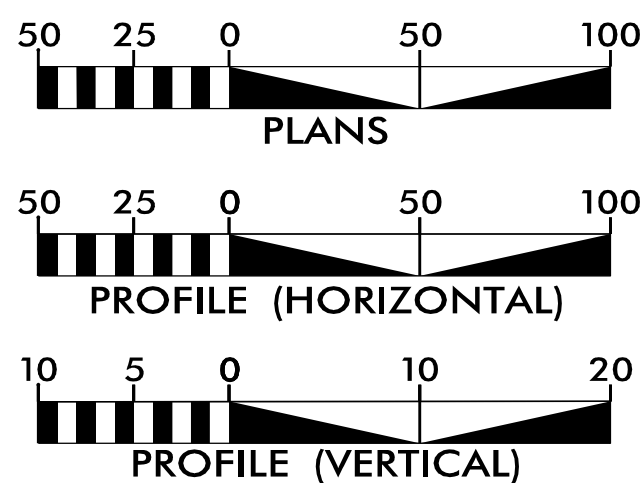
T.I.P. NO.	SHEET NO.
17BP.3.R.78	UO-1

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.



NCDOT CONTACT: MONICA DUVAL

GRAPHIC SCALES



INDEX OF SHEETS

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

UTILITY OWNERS WITH CONFLICTS

- (A) Communications – CenturyLink
- (B) Communications – Star Communications

PREPARED IN THE OFFICE OF:

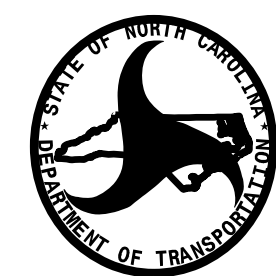
SO-DEEP | SAM NC

SO-DEEP | SAM NC, Inc.

A SAM COMPANY

2800-154 Sumner Boulevard, Raleigh, NC 27616 Tel 919-878-7466

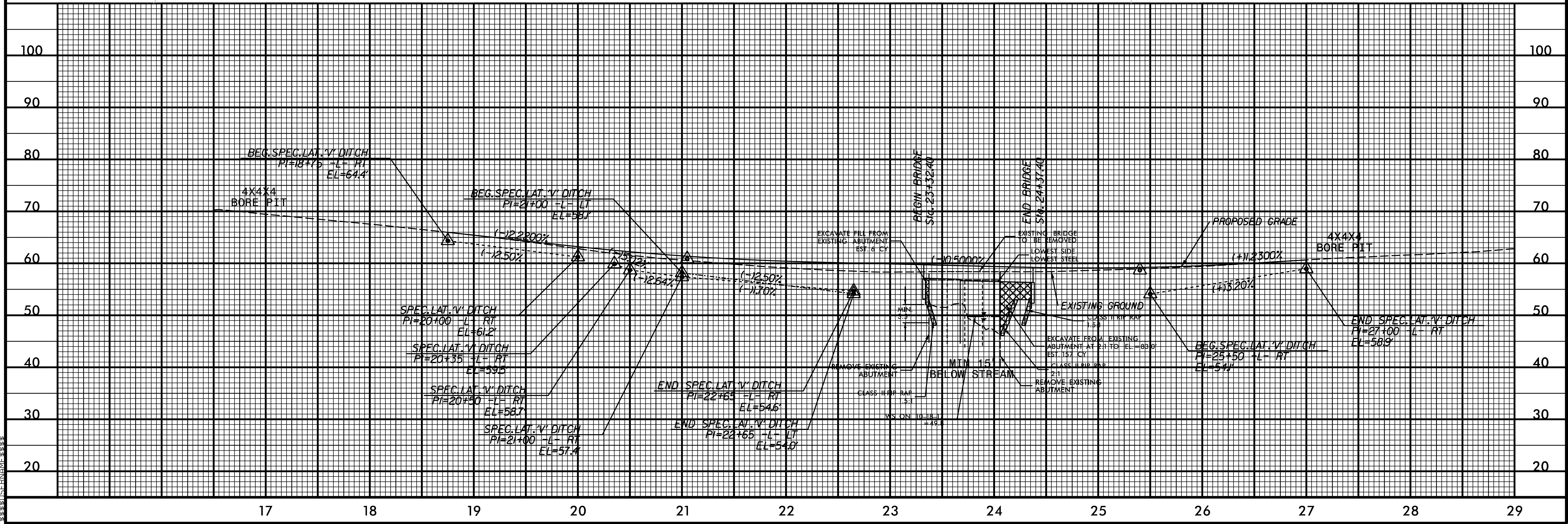
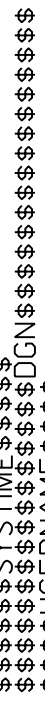
Keith Garry UTILITY PROJECT MANAGER
Zaki Wafa PROJECT UTILITY COORDINATOR



DIVISION OF HIGHWAYS
DIVISION 3

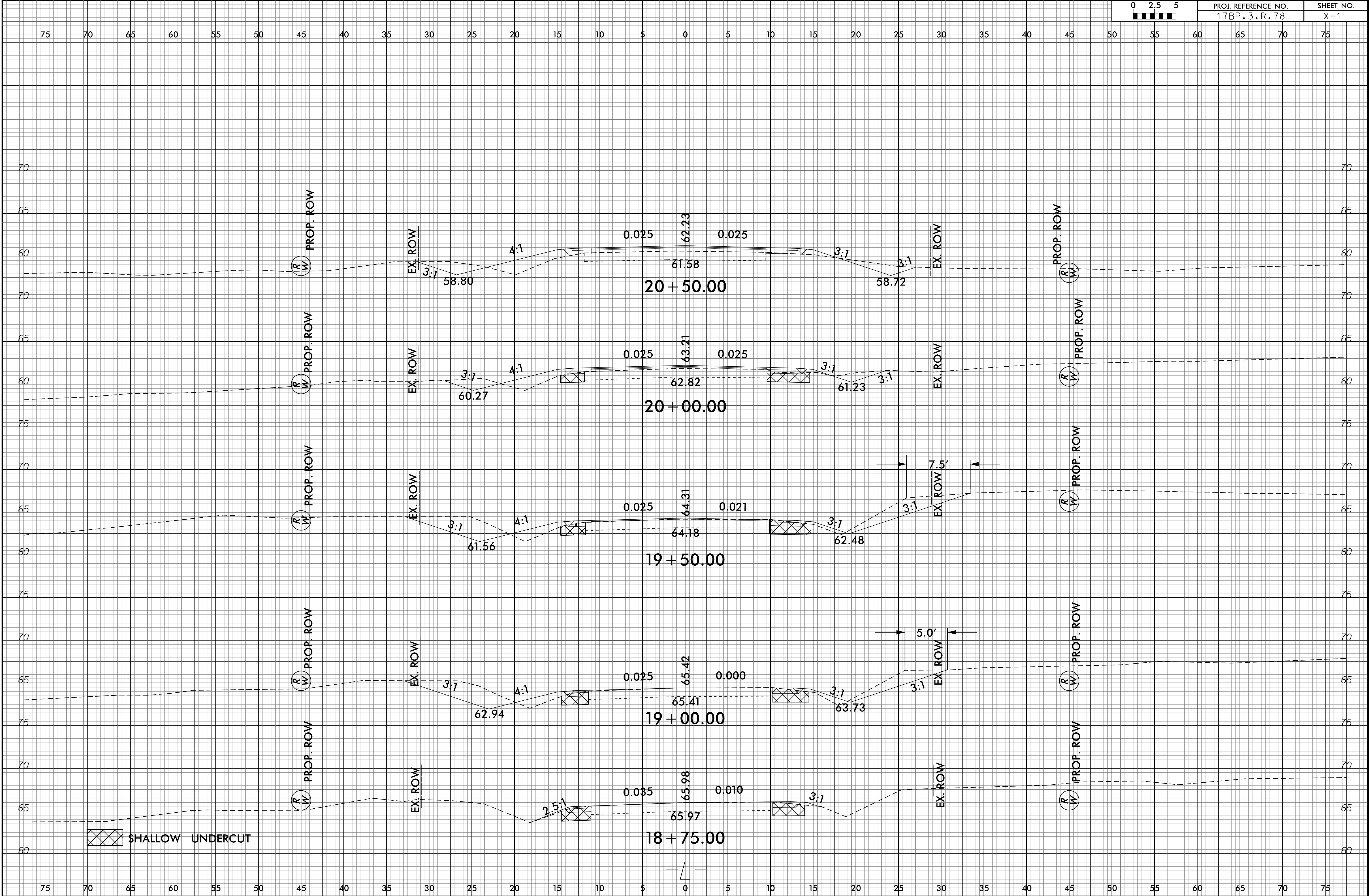
DIV ADDRESS
5501 Barbados Blvd.
Castle Hayne, 28429

Derek Pielech DIVISION CONTACT #1
Monica Duval DIVISION CONTACT #2



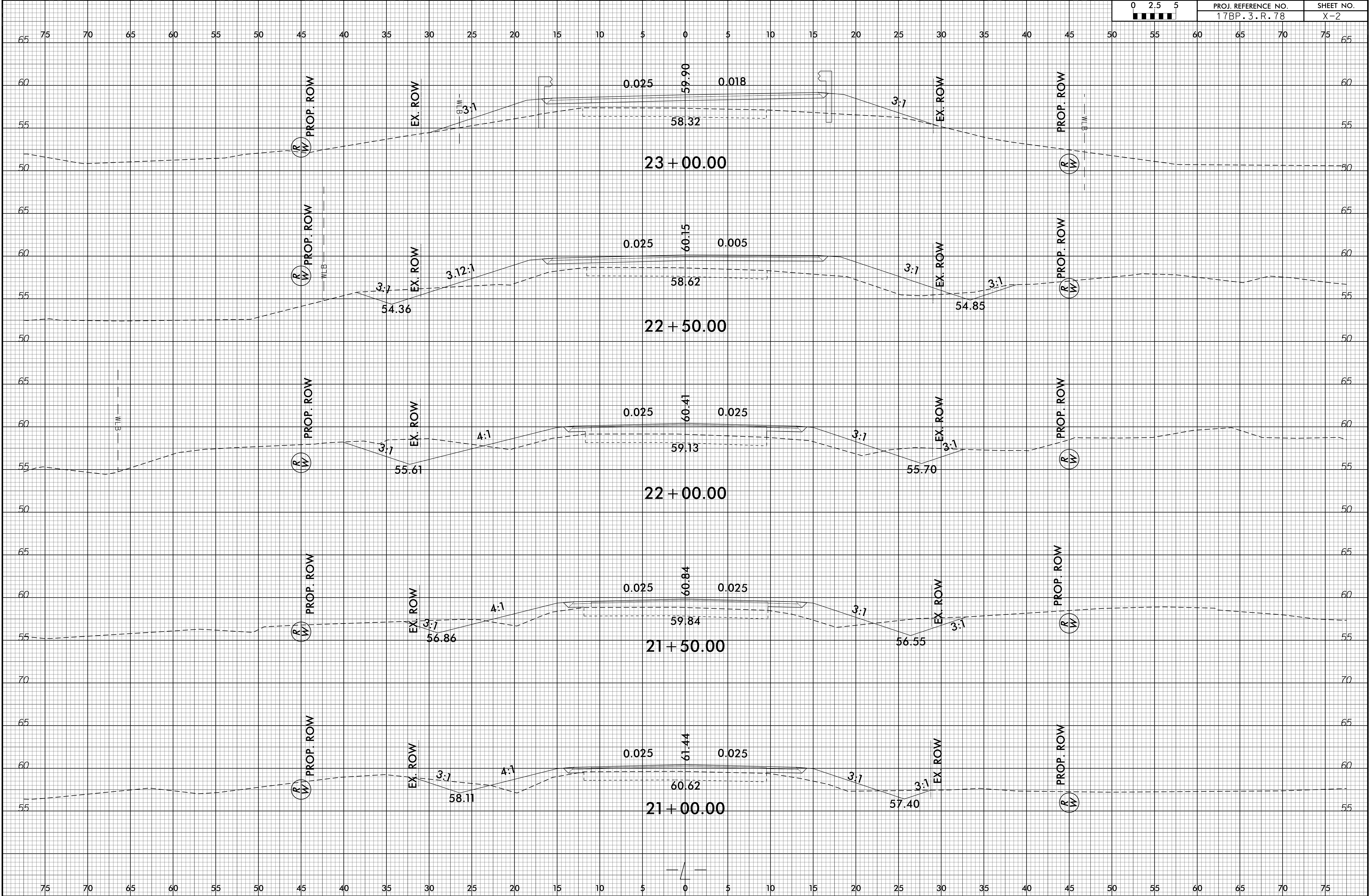
6/23/16

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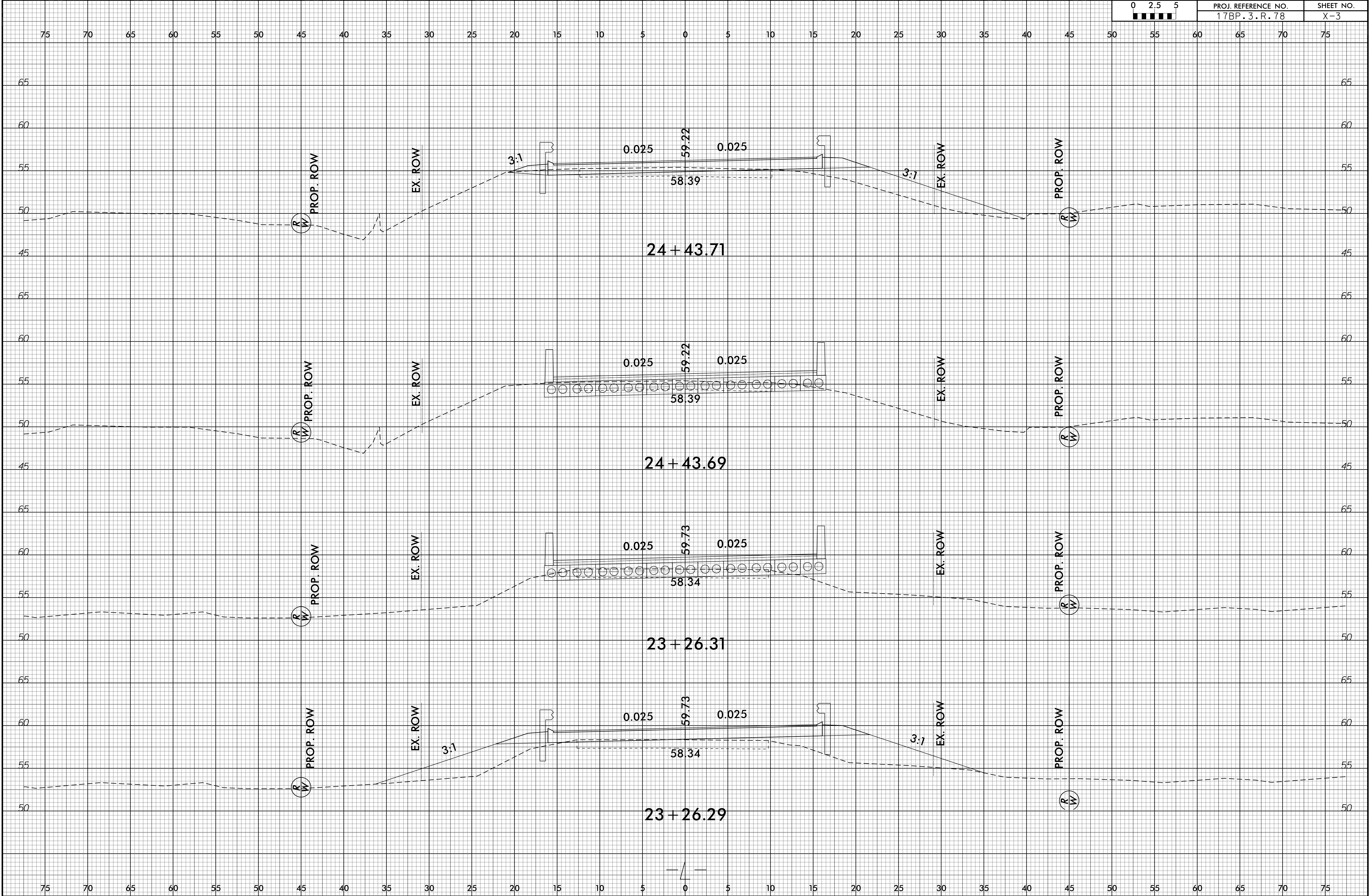
6/23/16

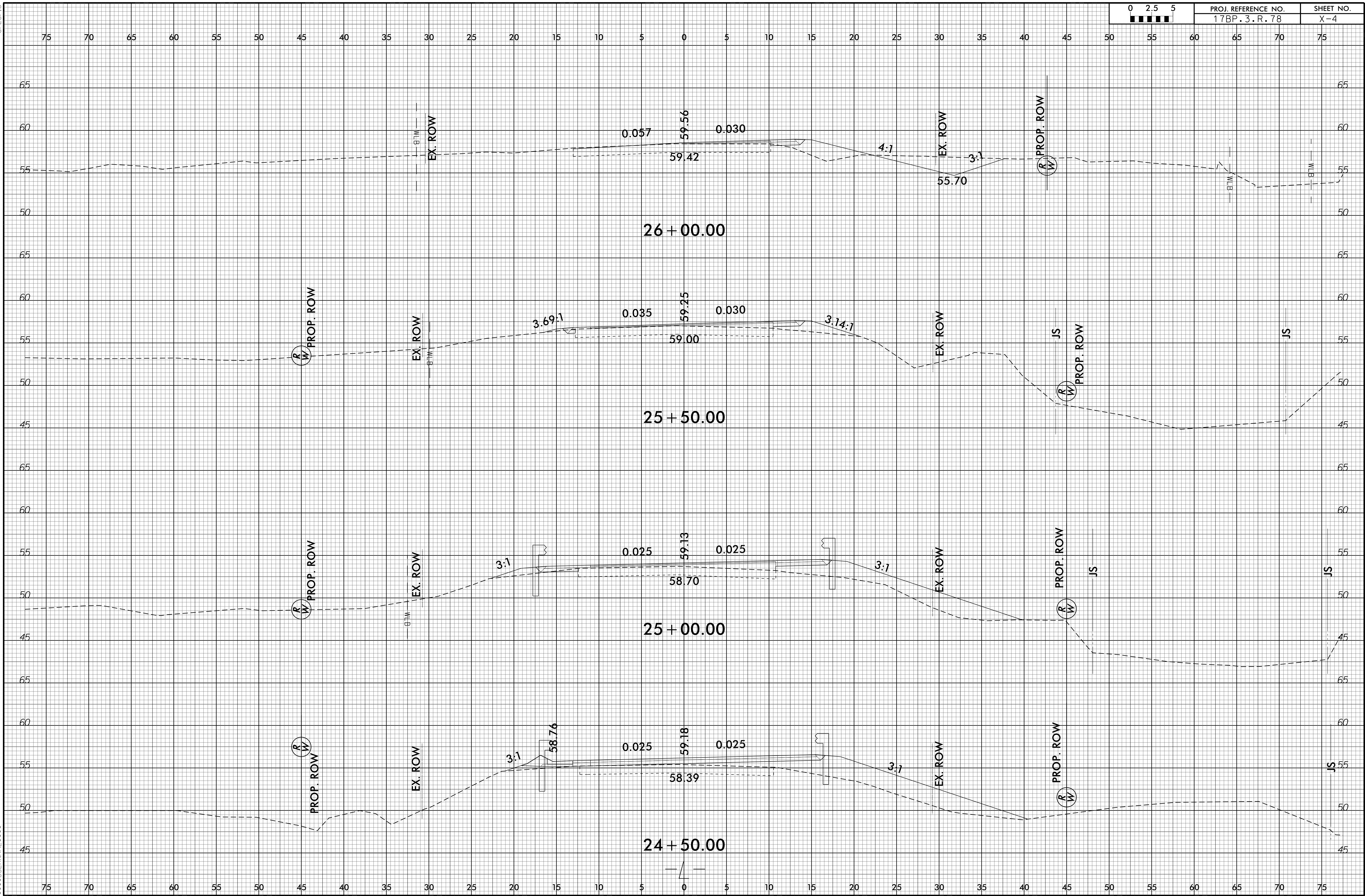
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6/23/16

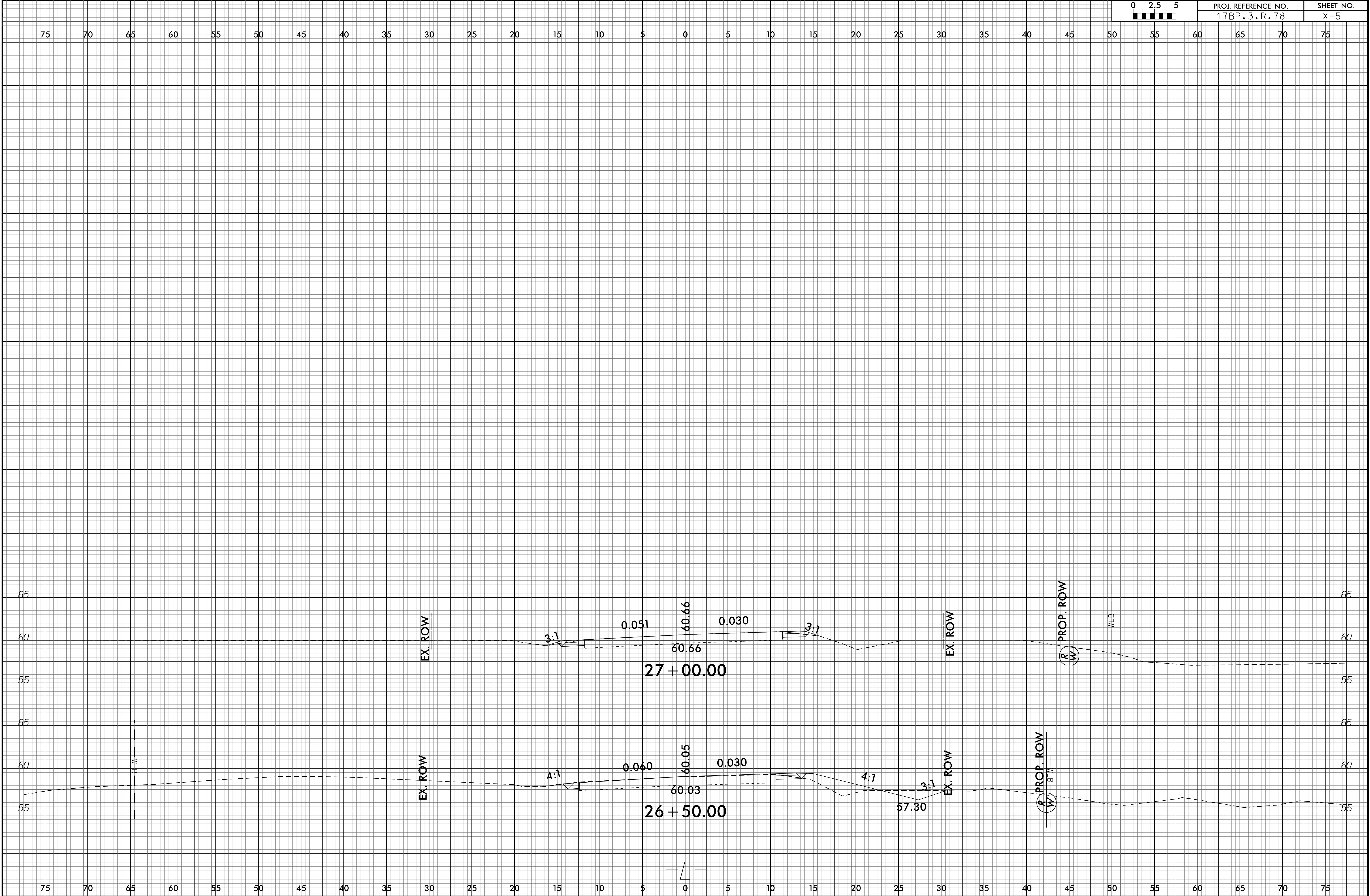
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6/23/16

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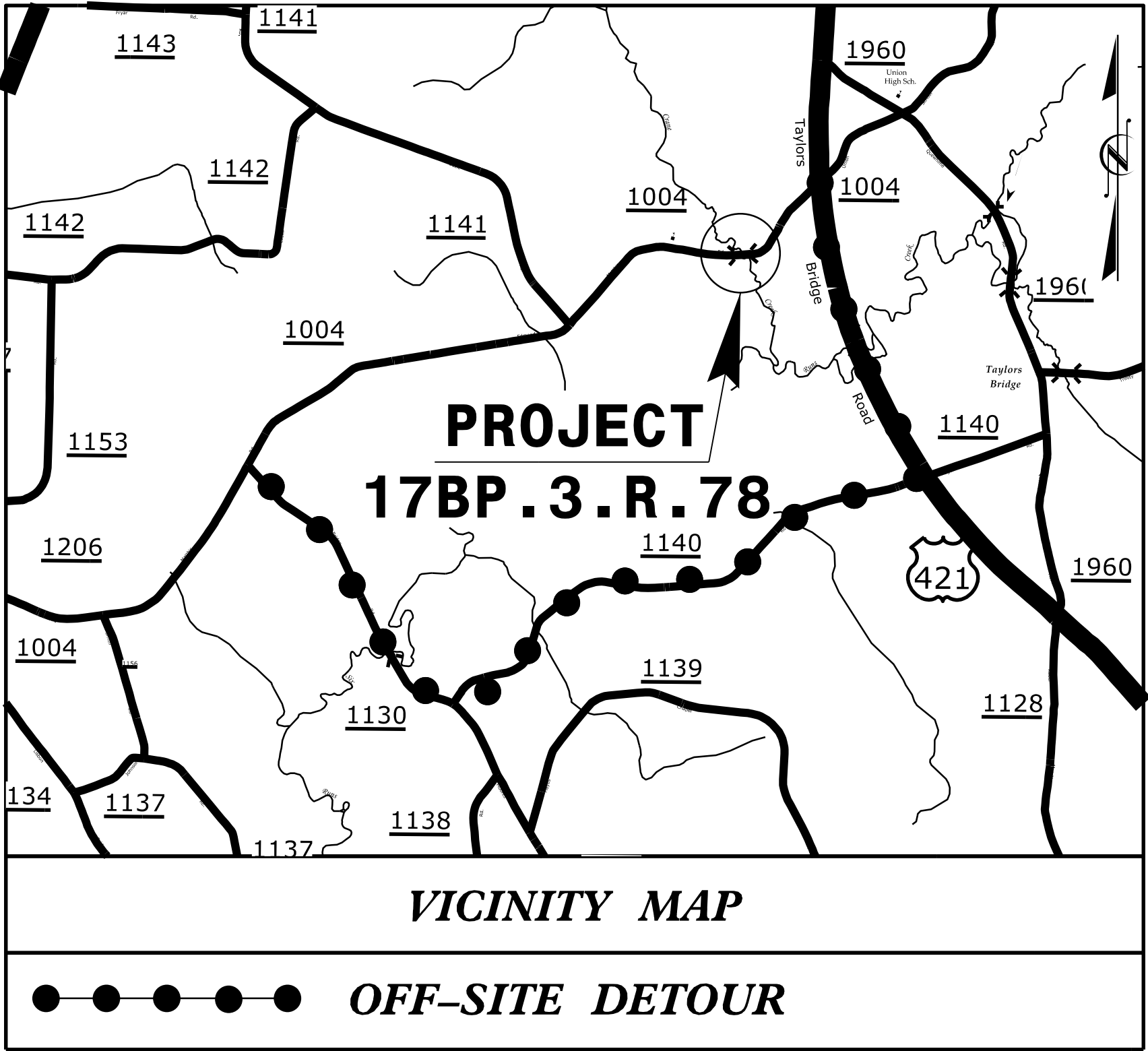


09/28/19

TIP PROJECT: 17BP.3.R.78

CONTRACT: DC00240

STRUCTURE



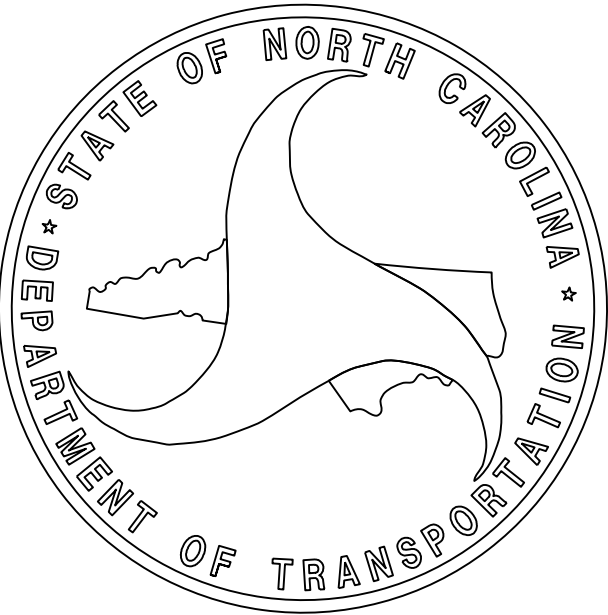
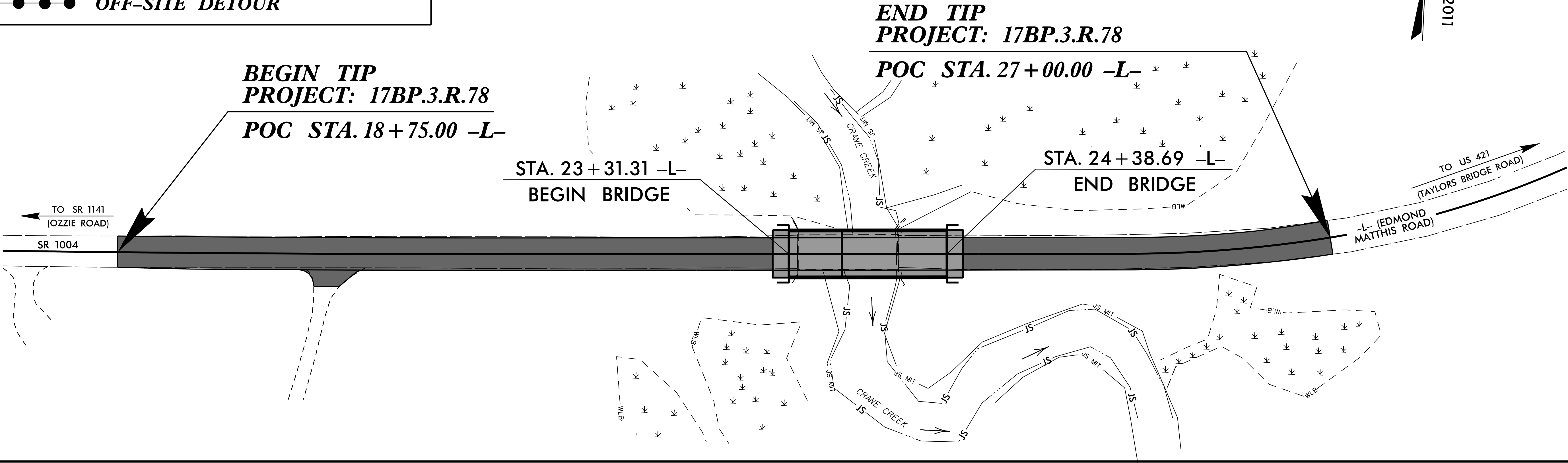
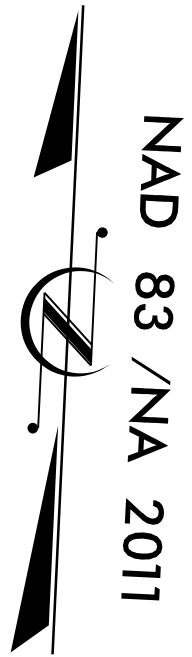
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

SAMPSON COUNTY

LOCATION: BRIDGE No.18 ON SR 1004 (EDMOND MATTHIS ROAD)
OVER CRANE CREEK

TYPE OF WORK: GRADING, PAVING, DRAINAGE AND STRUCTURE

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	17BP.3.R.78		20
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
17BP.3.R.78		P.E.	
17BP.3.R.78		ROW	
17BP.3.R.78		CONST	



DESIGN DATA

ADT 2015 = 1300
ADT 2040 = 1700

K = 10 %
D = 60 %
T = 18 % *
V = 60 MPH

* TTST = 8 DUAL = 10
FUNC CLASS =
MINOR COLLECTOR
SUB-REGIONAL TIER

PROJECT LENGTH

LENGTH OF ROADWAY TIP PROJECT: 17BP.3.R.78 = 0.136 MILES

LENGTH OF STRUCTURE TIP PROJECT: 17BP.3.R.78 = 0.020 MILES

TOTAL LENGTH OF TIP PROJECT: 17BP.3.R.78 = 0.156 MILES

PLANS PREPARED BY :

PARSONS

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

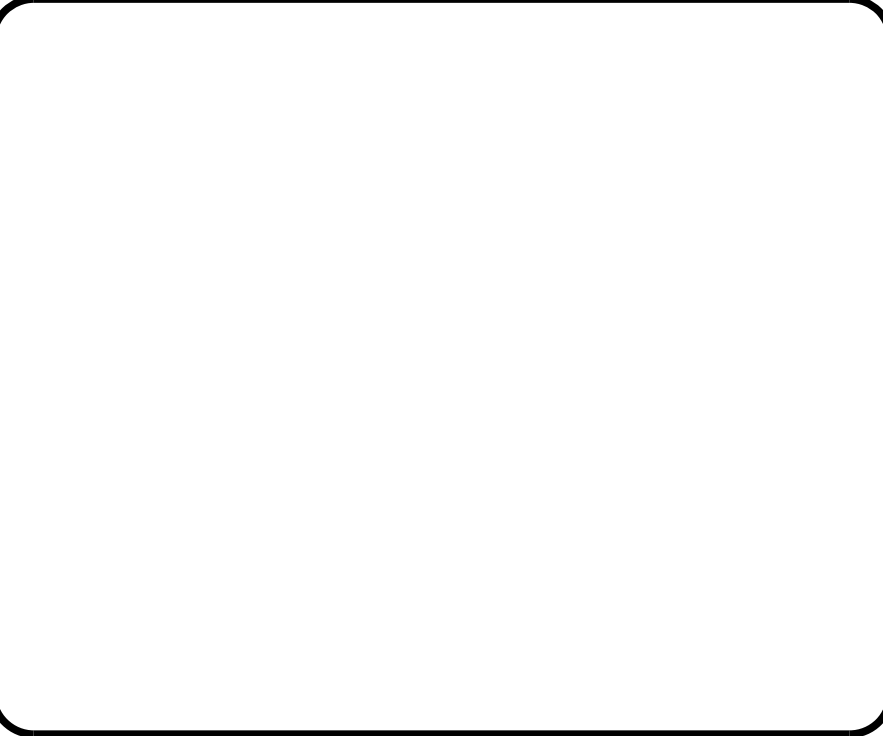
FOR NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

2018 STANDARD SPECIFICATIONS

LETTING DATE:
OCTOBER 3, 2019

DAVID L. WILVER, P.E.
PROJECT ENGINEER

PATRICK R. GALLAGHER, P.E.
PROJECT DESIGN ENGINEER



8/22/2019

NORTH CAROLINA
PROFESSIONAL
SEAL
033698
ENGINEER
TAYLOR

NOT A CERTIFIED DOCUMENT AS TO THE ORIGINAL DOCUMENT BUT ONLY AS TO THE REVISIONS.

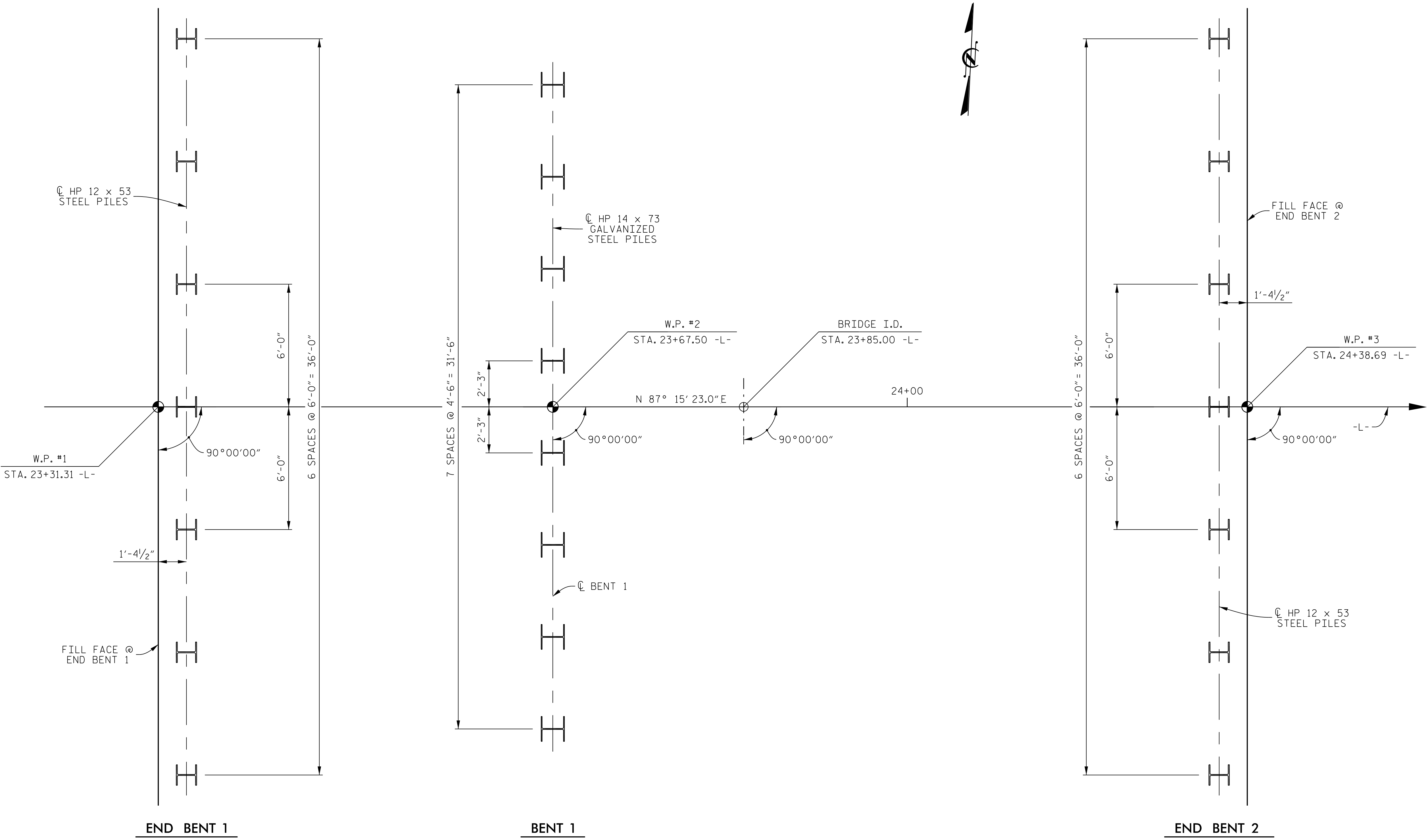
THIS DOCUMENT ORIGINALLY ISSUED AND SEALED BY :

PATRICK R. GALLAGHER (042890) ON 2/4/2019

PERSONAL USE ONLY
THIS DOCUMENT IS ONLY CERTIFIED AS TO THE REVISIONS.

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FILE: j:\61613-3\61613-3\Documents\18-4031 Structures\Plans\18403_010108_smu_01.dgn
DATE: 2/20/19 2:46:25 PM



FOUNDATION LAYOUT

NOTES

FOR PILES, SEE SECTION 450 OF THE STANDARD SPECIFICATIONS.

PILES AT END BENT 1 ARE DESIGNED FOR A FACTORED RESISTANCE OF 55 TONS PER PILE.

DRIVE PILES AT END BENT 1 TO A REQUIRED DRIVING RESISTANCE OF 95 TONS PER PILE.

PILES AT END BENT 2 ARE DESIGNED FOR A FACTORED RESISTANCE OF 85 TONS PER PILE.

DRIVE PILES AT END BENT 2 TO A REQUIRED DRIVING RESISTANCE OF 145 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 22.5 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 IS ELEVATION 40.0 FT. SCOUR CRITICAL ELEVATIONS ARE USED TO MONITOR POSSIBLE SCOUR PROBLEMS DURING THE LIFE OF THE STRUCTURE.

PROJECT NO. 17BP.3.R.78
SAMPSON COUNTY
STATION: 23 + 85.00 -L-

SHEET 2 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING

BRIDGE OVER CRANE CREEK ON
SR 1004 (EDMOND MATTHIS ROAD)
BETWEEN SR 1141 AND US 421

REVISIONS						SHEET No.
No.	BY:	DATE:	No.	BY:	DATE:	
1			3			S-2
2			4			

TOTAL SHEETS
20

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

NORTH CAROLINA
PROFESSIONAL
SEAL
042890
P. R. GALLAGHER
2/4/2019

LOAD FACTORS

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

NOTES

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

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

LOAD AND RESISTANCE FACTOR RATING (LRFR) 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	
						LIVE-LOAD FACTORS	MOMENT					SHEAR					LIVE-LOAD 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 (INVENTORY)	N/A	⬡1	1.032	--	1.75	0.28	1.36	35'	EL	17	0.561	1.03	35'	EL	1.7	0.80	0.28	1.05	35'	EL	17	--
	HL-93 (OPERATING)	N/A	--	1.338	--	1.35	0.28	1.77	35'	EL	17	0.561	1.34	35'	EL	1.7	N/A	--	--	--	--	--	--
	HS-20 (INVENTORY)	36.000	⬡2	1.189	42.810	1.75	0.28	1.79	35'	EL	13.6	0.561	1.19	35'	EL	1.7	0.80	0.28	1.39	35'	EL	17	--
	HS-20 (OPERATING)	36.000	--	1.542	55.494	1.35	0.28	2.32	35'	EL	13.6	0.561	1.54	35'	EL	1.7	N/A	--	--	--	--	--	--
LEGAL LOAD RATING	SINGLE VEHICLE (SV)	SNSH	--	2.400	32.402	1.40	0.28	3.89	35'	EL	17	0.561	3.06	35'	EL	1.7	0.80	0.28	2.40	35'	EL	17	--
		SNGARBS2	--	2.052	41.044	1.40	0.28	3.29	35'	EL	13.6	0.561	2.32	35'	EL	1.7	0.80	0.28	2.05	35'	EL	13.6	--
		SNAGRIS2	--	2.053	45.174	1.40	0.28	3.26	35'	EL	13.6	0.561	2.21	35'	EL	1.7	0.80	0.28	2.05	35'	EL	13.6	--
		SNCOTTS3	--	1.202	32.744	1.40	0.28	1.95	35'	EL	17	0.561	1.54	35'	EL	1.7	0.80	0.28	1.20	35'	EL	17	--
		SNAGGRS4	--	1.111	38.816	1.40	0.28	1.80	35'	EL	17	0.561	1.38	35'	EL	1.7	0.80	0.28	1.11	35'	EL	17	--
		SNS5A	--	1.079	38.354	1.40	0.28	1.75	35'	EL	17	0.561	1.46	35'	EL	1.7	0.80	0.28	1.08	35'	EL	17	--
		SNS6A	--	1.041	41.601	1.40	0.28	1.69	35'	EL	17	0.561	1.37	35'	EL	1.7	0.80	0.28	1.04	35'	EL	17	--
		SNS7B	⬡3	1.000	41.734	1.40	0.28	1.61	35'	EL	17	0.561	1.40	35'	EL	1.7	0.80	0.28	1.00	35'	EL	17	--
	TRUCK TRACTOR SEMI-TRAILER (TTST)	TNAGRIT3	--	1.286	42.439	1.40	0.28	2.08	35'	EL	17	0.561	1.60	35'	EL	1.7	0.80	0.28	1.29	35'	EL	17	--
		TNT4A	--	1.285	42.512	1.40	0.28	2.08	35'	EL	17	0.561	1.51	35'	EL	1.7	0.80	0.28	1.29	35'	EL	17	--
		TNT6A	--	1.126	46.840	1.40	0.28	1.82	35'	EL	17	0.561	1.48	35'	EL	1.7	0.80	0.28	1.13	35'	EL	17	--
		TNT7A	--	1.163	48.833	1.40	0.28	1.89	35'	EL	17	0.561	1.37	35'	EL	1.7	0.80	0.28	1.16	35'	EL	17	--
		TNT7B	--	1.144	48.061	1.40	0.28	1.85	35'	EL	17	0.561	1.33	35'	EL	1.7	0.80	0.28	1.14	35'	EL	17	--
		TNAGRIT4	--	1.158	49.810	1.40	0.28	1.86	35'	EL	13.6	0.561	1.28	35'	EL	1.7	0.80	0.28	1.16	35'	EL	17	--
		TNAGRT5A	--	1.068	48.071	1.40	0.28	1.73	35'	EL	17	0.561	1.35	35'	EL	1.7	0.80	0.28	1.07	35'	EL	17	--
		TNAGRT5B	--	1.031	46.373	1.40	0.28	1.67	35'	EL	17	0.561	1.21	35'	EL	1.7	0.80	0.28	1.03	35'	EL	17	--

⬡ CONTROLLING LOAD RATING

⬡1 DESIGN LOAD RATING (HL-93)

⬡2 DESIGN LOAD RATING (HS-20)

⬡3 LEGAL LOAD RATING **

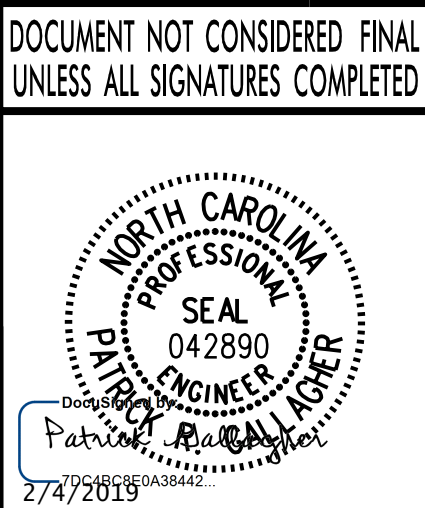
** SEE CHART FOR VEHICLE TYPE

GIRDER LOCATION

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

PROJECT NO. 17BP.3.R.78
SAMPSON COUNTY
STATION: 23 + 85.00 -L-

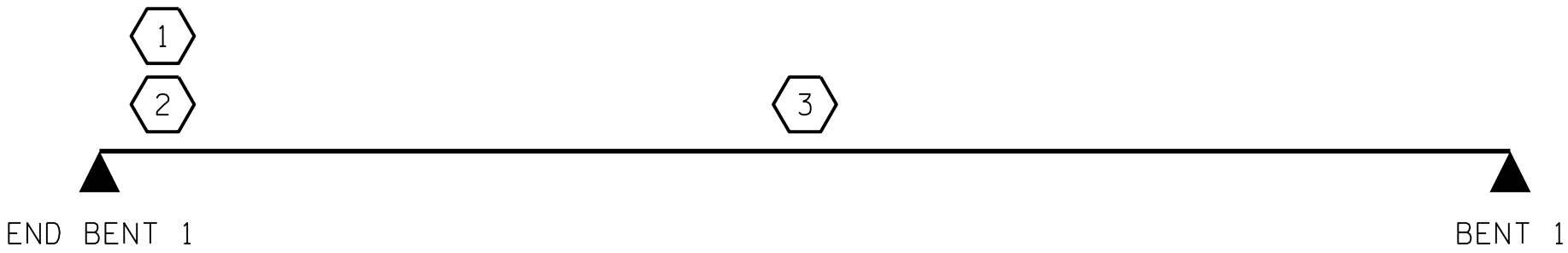
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH							
STANDARD LRFR SUMMARY FOR 35' CORED SLAB UNIT 90° SKEW (NON-INTERSTATE TRAFFIC)							
REVISIONS						SHEET No.	
No.	BY:	DATE:	No.	BY:	DATE:	S-4	
1			3			TOTAL SHEETS	
2			4			20	



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

LRFR SUMMARY
FOR SPAN A



ASSEMBLED BY : K. E. LOFTON	DATE : 8-18
CHECKED BY : P. R. GALLAGHER	DATE : 11-18
DRAWN BY : CVC	6/10
CHECKED BY : DNS	6/10

LOAD FACTORS

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

NOTES

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

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

LOAD AND RESISTANCE FACTOR RATING (LRFR) 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	
						LIVE-LOAD FACTORS (γ _{LL})	MOMENT					SHEAR					LIVE-LOAD FACTORS (γ _{LL})	MOMENT					
							DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)		DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION		DISTANCE FROM LEFT END OF SPAN (ft)
DESIGN LOAD RATING	HL-93 (INVENTORY)	N/A	⬡1⬢	1.006	--	1.75	0.273	1.03	70'	EL	34.5	0.507	1.32	70'	EL	6.9	0.80	0.273	1.01	70'	EL	34.5	--
	HL-93 (OPERATING)	N/A	--	1.341	--	1.35	0.273	1.34	70'	EL	34.5	0.507	1.72	70'	--	6.9	N/A	--	--	--	--	--	--
	HS-20 (INVENTORY)	36.000	⬡2⬢	1.306	47.020	1.75	0.273	1.34	70'	EL	34.5	0.507	1.65	70'	EL	6.9	0.80	0.273	1.31	70'	EL	34.5	--
	HS-20 (OPERATING)	36.000	--	1.740	62.640	1.35	0.273	1.74	70'	EL	34.5	0.507	2.14	70'	--	6.9	N/A	--	--	--	--	--	--
LEGAL LOAD RATING	SINGLE VEHICLE (SV)	SNSH	--	2.917	39.379	1.40	0.273	3.75	70'	EL	34.5	0.507	4.87	70'	EL	6.9	0.80	0.273	2.92	70'	EL	34.5	--
		SNGARBS2	--	2.187	43.741	1.40	0.273	2.81	70'	EL	34.5	0.507	3.47	70'	EL	6.9	0.80	0.273	2.19	70'	EL	34.5	--
		SNAGRIS2	--	2.077	45.69	1.40	0.273	2.67	70'	EL	34.5	0.507	3.23	70'	EL	6.9	0.80	0.273	2.08	70'	EL	34.5	--
		SNCOTTS3	--	1.452	39.565	1.40	0.273	1.87	70'	EL	34.5	0.507	2.43	70'	EL	6.9	0.80	0.273	1.45	70'	EL	34.5	--
		SNAGGRS4	--	1.218	42.554	1.40	0.273	1.57	70'	EL	34.5	0.507	2.03	70'	EL	6.9	0.80	0.273	1.22	70'	EL	34.5	--
		SNS5A	--	1.191	42.346	1.40	0.273	1.53	70'	EL	34.5	0.507	2.06	70'	EL	6.9	0.80	0.273	1.19	70'	EL	34.5	--
		SNS6A	--	1.095	43.747	1.40	0.273	1.41	70'	EL	34.5	0.507	1.88	70'	EL	6.9	0.80	0.273	1.10	70'	EL	34.5	--
		SNS7B	--	1.043	43.801	1.40	0.273	1.34	70'	EL	34.5	0.507	1.85	70'	EL	6.9	0.80	0.273	1.04	70'	EL	34.5	--
	TRUCK TRACTOR SEMI-TRAILER (TTST)	TNAGRIT3	--	1.336	44.087	1.40	0.273	1.72	70'	EL	34.5	0.507	2.23	70'	EL	6.9	0.80	0.273	1.34	70'	EL	34.5	--
		TNT4A	--	1.342	44.401	1.40	0.273	1.72	70'	EL	34.5	0.507	2.17	70'	EL	6.9	0.80	0.273	1.34	70'	EL	34.5	--
		TNT6A	--	1.100	45.746	1.40	0.273	1.41	70'	EL	34.5	0.507	1.98	70'	EL	6.9	0.80	0.273	1.10	70'	EL	34.5	--
		TNT7A	--	1.106	46.462	1.40	0.273	1.42	70'	EL	34.5	0.507	1.94	70'	EL	6.9	0.80	0.273	1.11	70'	EL	34.5	--
		TNT7B	--	1.147	48.180	1.40	0.273	1.47	70'	EL	34.5	0.507	1.80	70'	EL	6.9	0.80	0.273	1.15	70'	EL	34.5	--
		TNAGRIT4	--	1.089	46.838	1.40	0.273	1.40	70'	EL	34.5	0.507	1.74	70'	EL	6.9	0.80	0.273	1.09	70'	EL	34.5	--
		TNAGRT5A	--	1.026	46.175	1.40	0.273	1.32	70'	EL	34.5	0.507	1.74	70'	EL	6.9	0.80	0.273	1.03	70'	EL	34.5	--
		TNAGRT5B	⬡3⬢	1.013	45.579	1.40	0.273	1.30	70'	EL	34.5	0.507	1.66	70'	EL	6.9	0.80	0.273	1.01	70'	EL	34.5	--

⬡#⬢ CONTROLLING LOAD RATING

⬡1⬢ DESIGN LOAD RATING (HL-93)

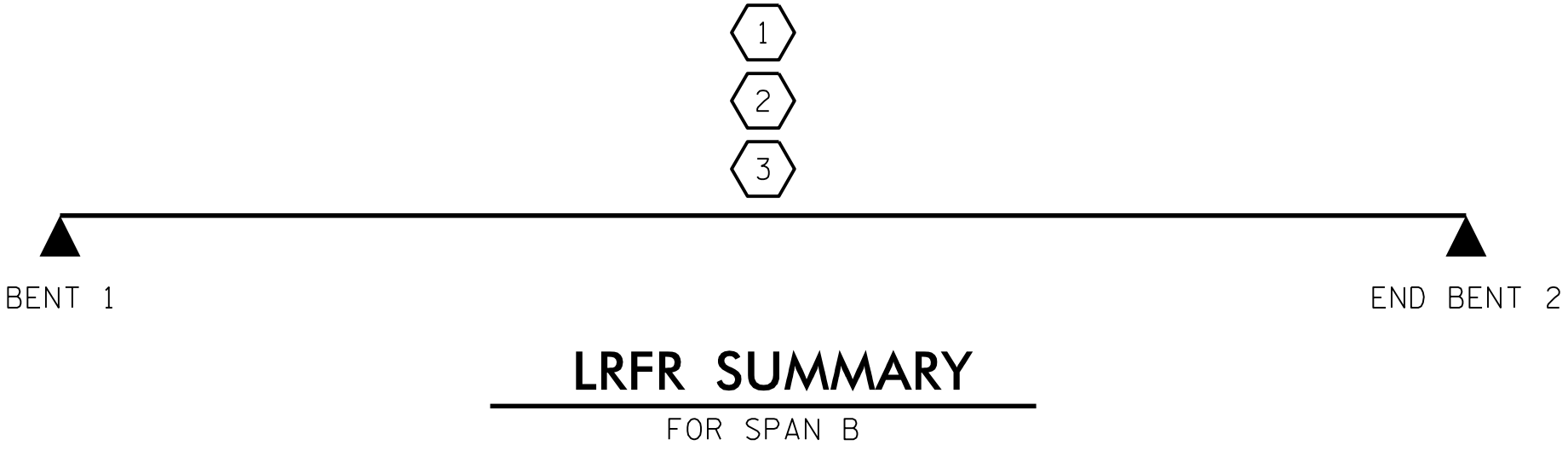
⬡2⬢ DESIGN LOAD RATING (HS-20)

⬡3⬢ LEGAL LOAD RATING **
** SEE CHART FOR VEHICLE TYPE

GIRDER LOCATION

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

PROJECT NO. 17BP.3.R.78
SAMPSON COUNTY
STATION: 23 + 85.00 -L-



ASSEMBLED BY : K.E. LOFTON	DATE : 8-18
CHECKED BY : P. R. GALLAGHER	DATE : 11-18
DRAWN BY : CVC 6/10	
CHECKED BY : DNS 6/10	

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

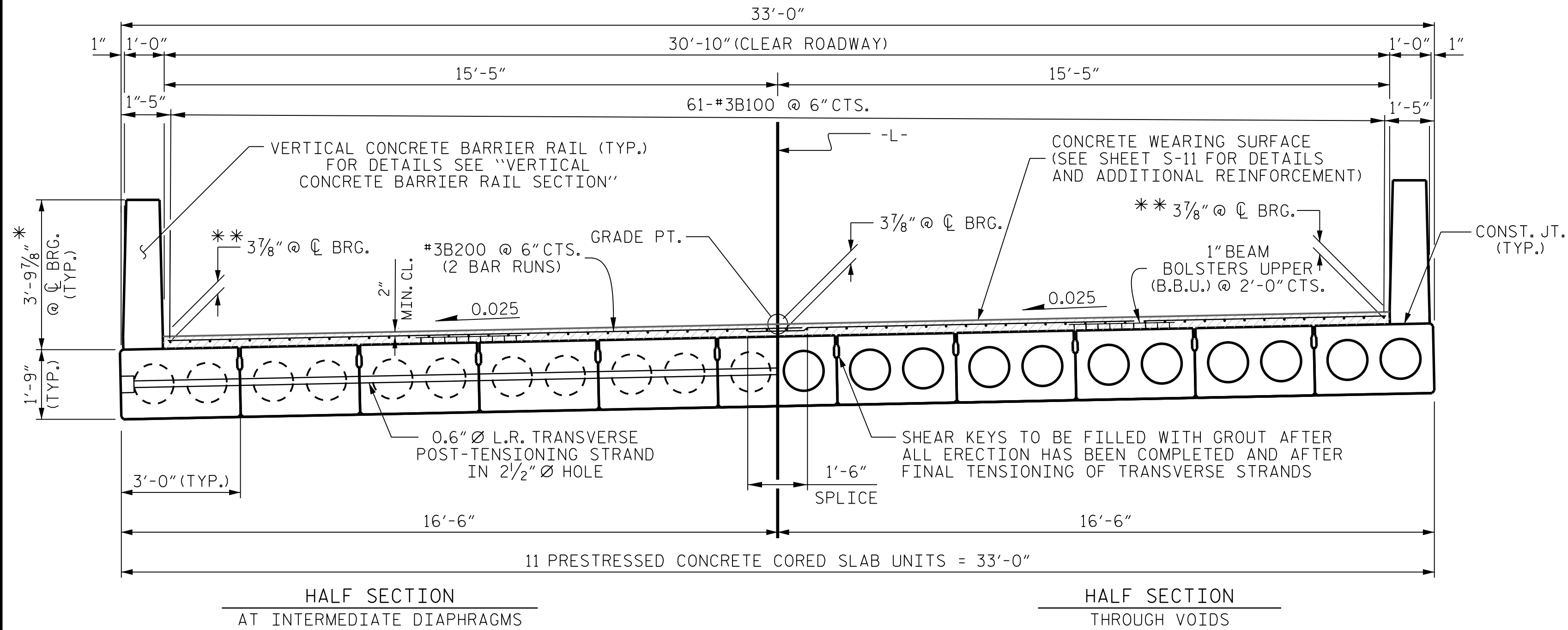
DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

NORTH CAROLINA
PROFESSIONAL
SEAL
042890
P. R. GALLAGHER
2/4/2019

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

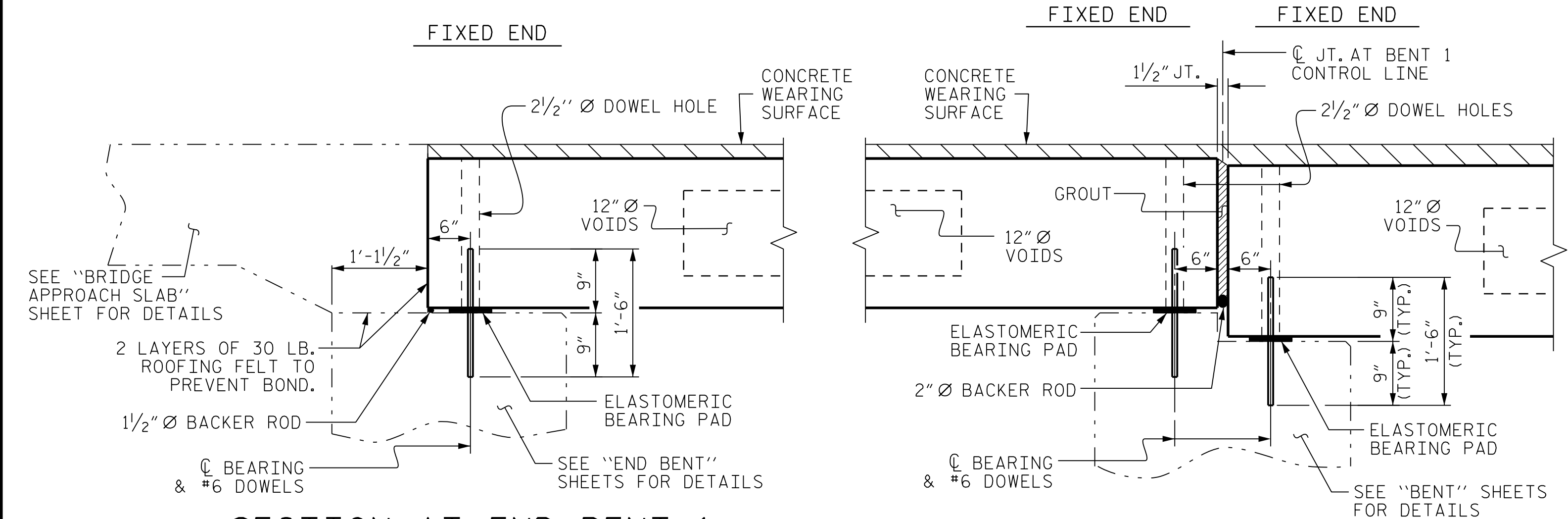
STANDARD
LRFR SUMMARY FOR
70' CORED SLAB UNIT
90° SKEW
(NON-INTERSTATE TRAFFIC)

REVISIONS						SHEET No. S-5
No.	BY:	DATE:	No.	BY:	DATE:	
1			3			TOTAL SHEETS 20
2			4			



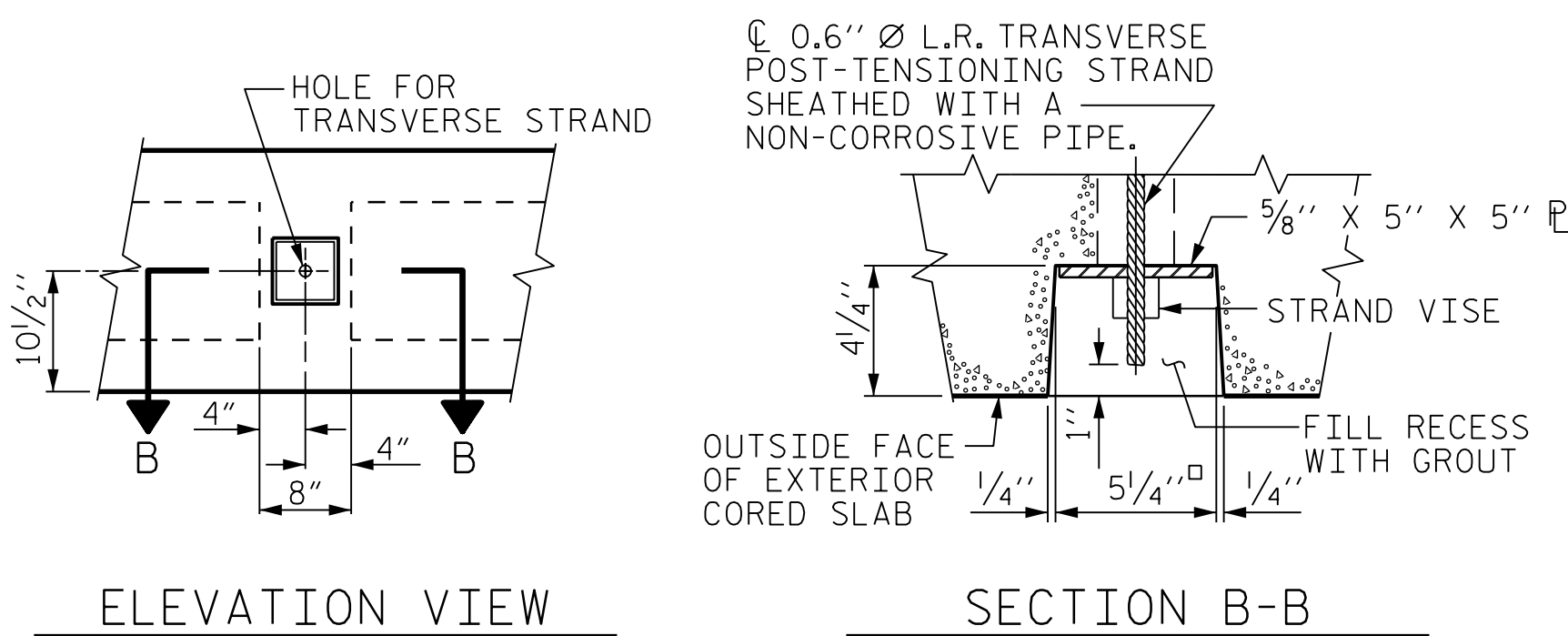
TYPICAL SECTION

- * - THE MAXIMUM BARRIER RAIL HEIGHT AND CONCRETE THICKNESS IS SHOWN. THE HEIGHT OF THE BARRIER RAIL AND CONCRETE THICKNESS VARIES WHILE THE TOP OF THE BARRIER RAIL FOLLOWS THE PROFILE OF THE GUTTERLINE. FOR RAIL HEIGHT DETAILS AND CONCRETE THICKNESS SEE THE "VERTICAL CONCRETE BARRIER RAIL SECTION" DETAIL.
- ** - OVERLAY THICKNESS AT CENTERLINE BEARING BASED ON PREDICTED DEFLECTION DUE TO CONCRETE OVERLAY.

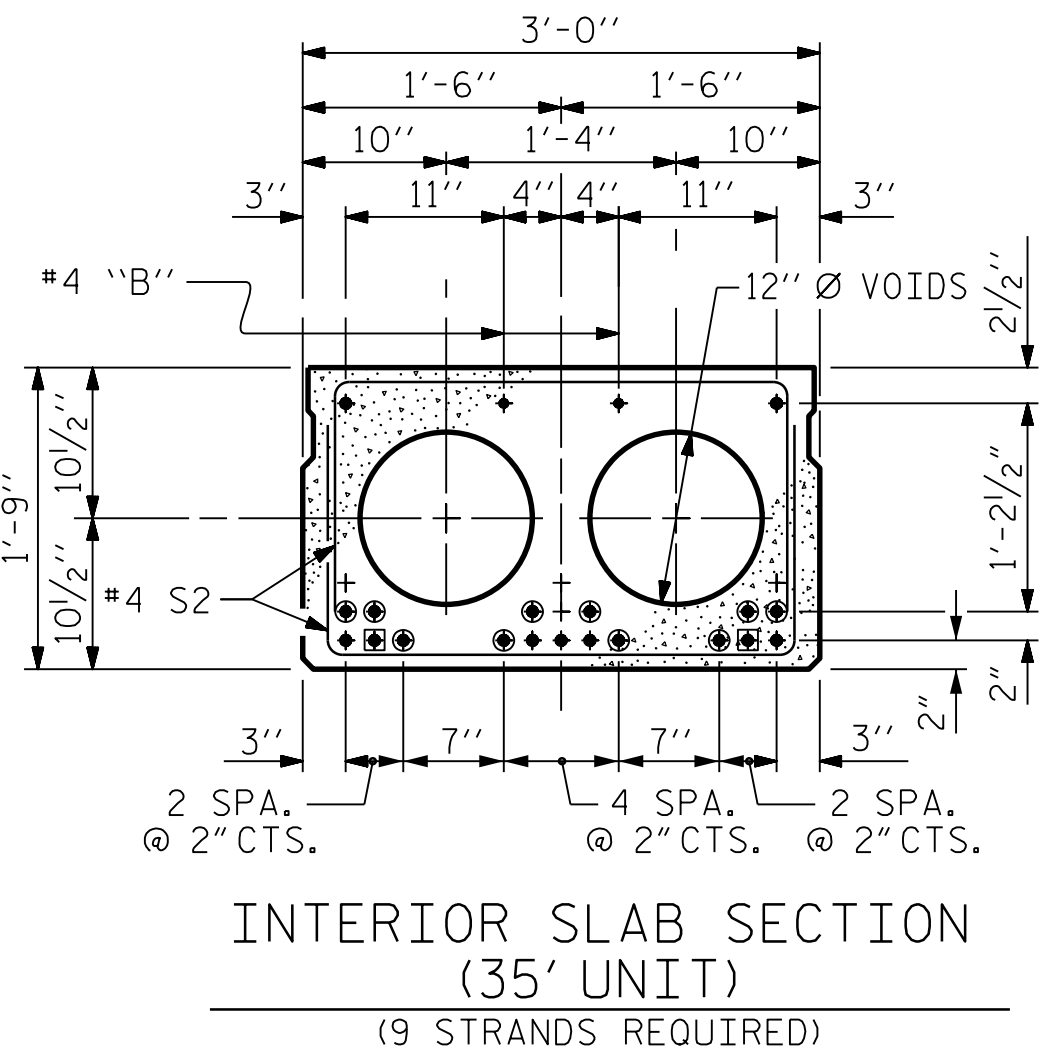


SECTION AT END BENT 1

SECTION AT BENT 1



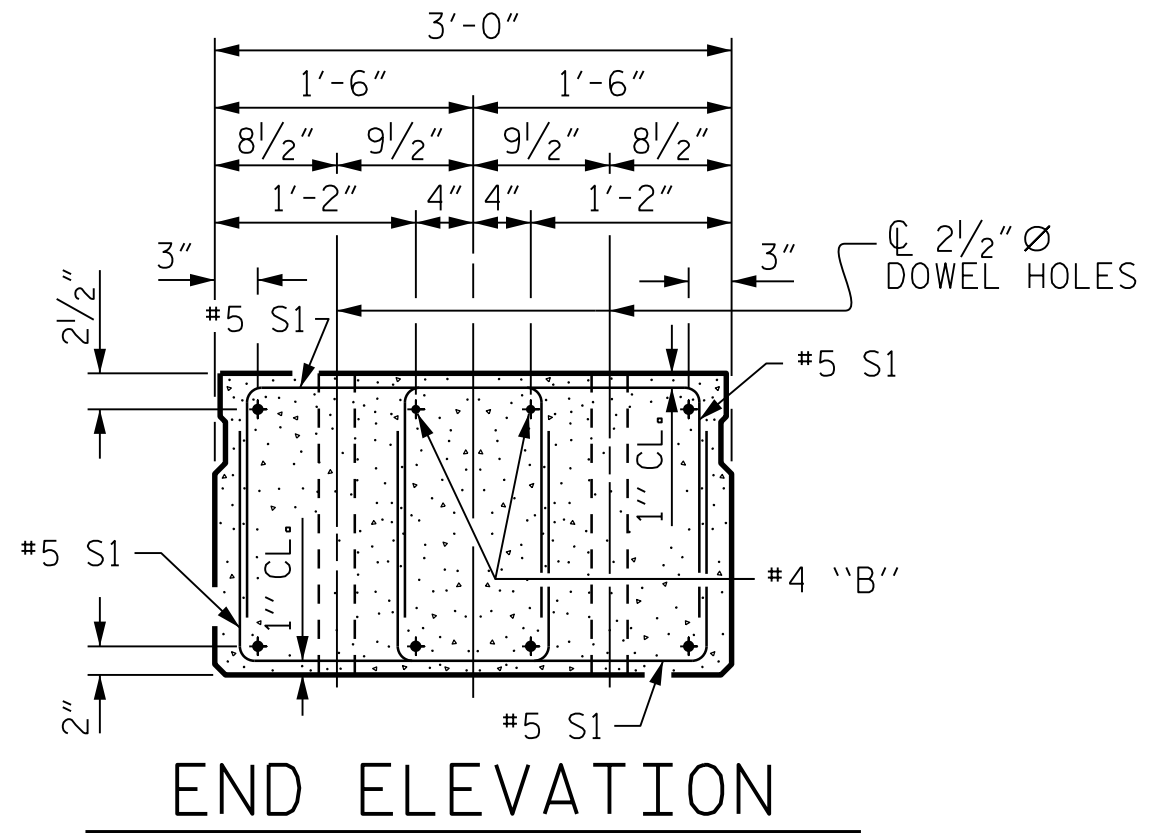
GROUTED RECESS AT END OF POST-TENSIONED STRAND OF CORED SLABS



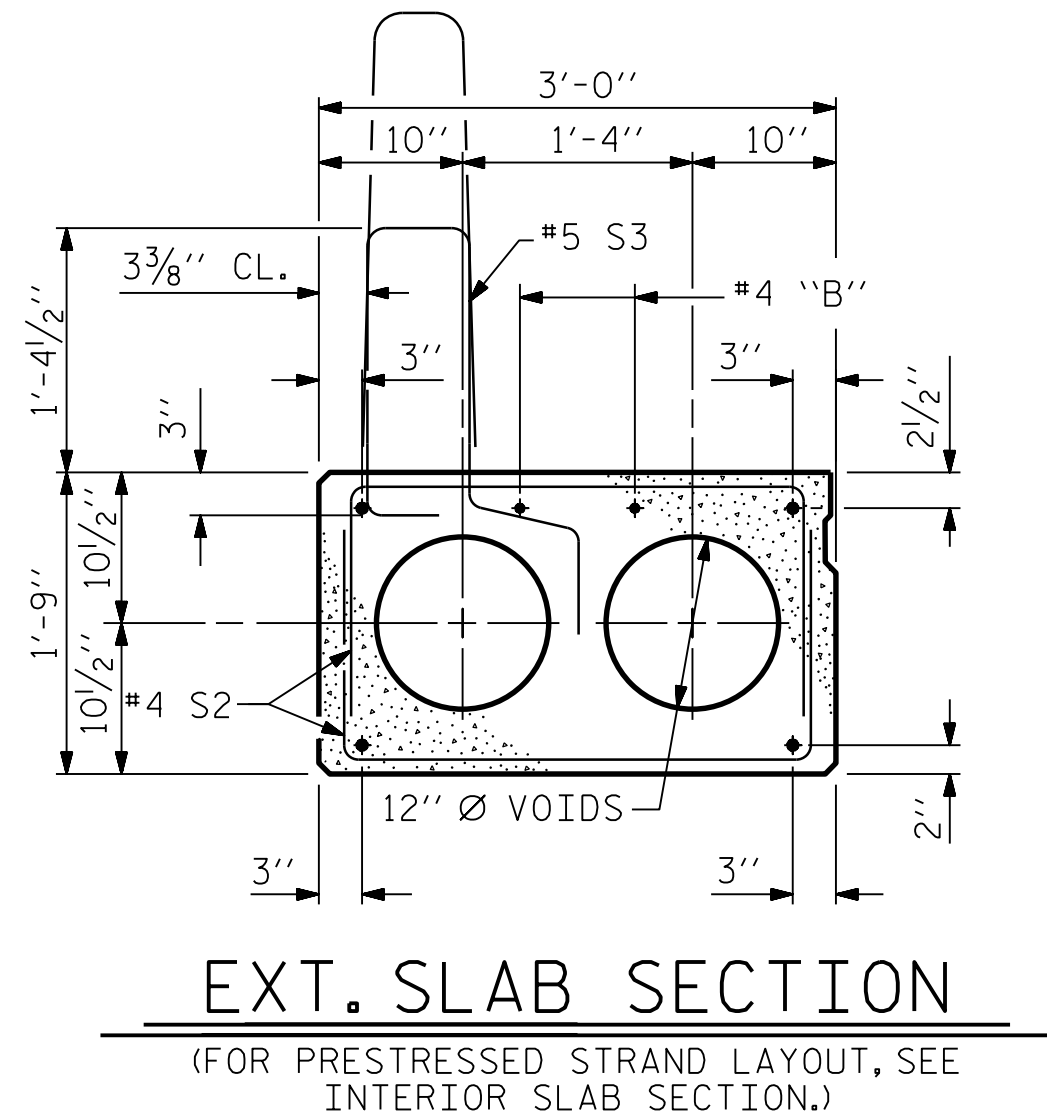
0.6" Ø LOW RELAXATION STRAND LAYOUT

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

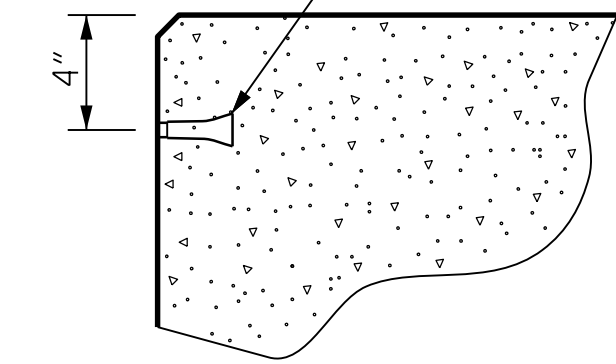
DEBONDING LEGEND



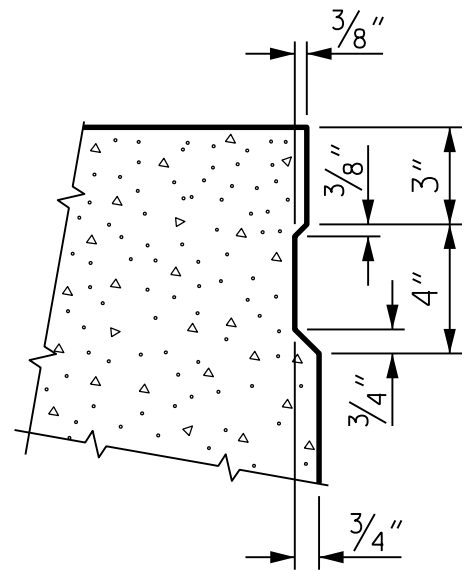
SHOWING PLACEMENT OF DOUBLE STIRRUPS AND LOCATION OF DOWEL HOLES. (STRAND LAYOUT NOT SHOWN.) INTERIOR SLAB UNIT SHOWN-EXTERIOR SLAB UNIT SIMILAR EXCEPT SHEAR KEY LOCATION.



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



THREADED INSERT DETAIL



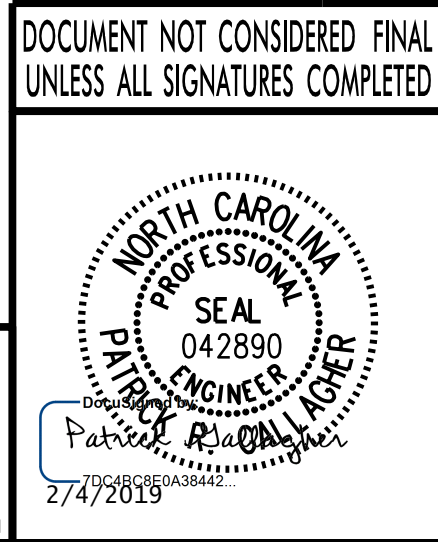
SHEAR KEY DETAIL

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

ASSEMBLED BY :	K. E. LOFTON	DATE :	9-18
CHECKED BY :	P. R. GALLAGHER	DATE :	11-18
DRAWN BY :	DGE 5/09	REV.	9/14
CHECKED BY :	BCH 6/09	MAA/TMG	

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	

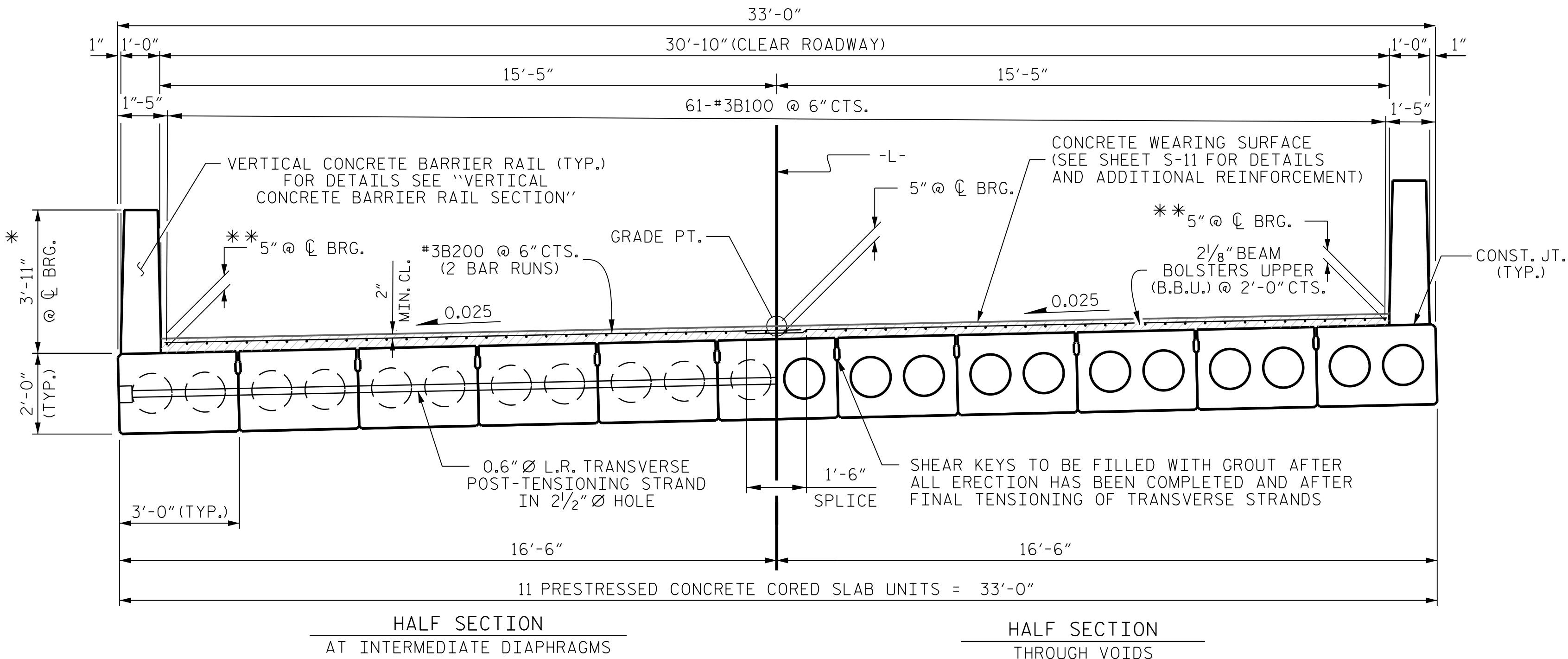


PROJECT NO. **17BP.3.R.78**
SAMPSON COUNTY
STATION: **23 + 85.00 -L-**

SHEET 1 OF 6

REVISIONS						SHEET No.
No.	BY:	DATE:	No.	BY:	DATE:	
1			3			TOTAL SHEETS 20
2			4			

STD. No. 21" PCS2_33_90S

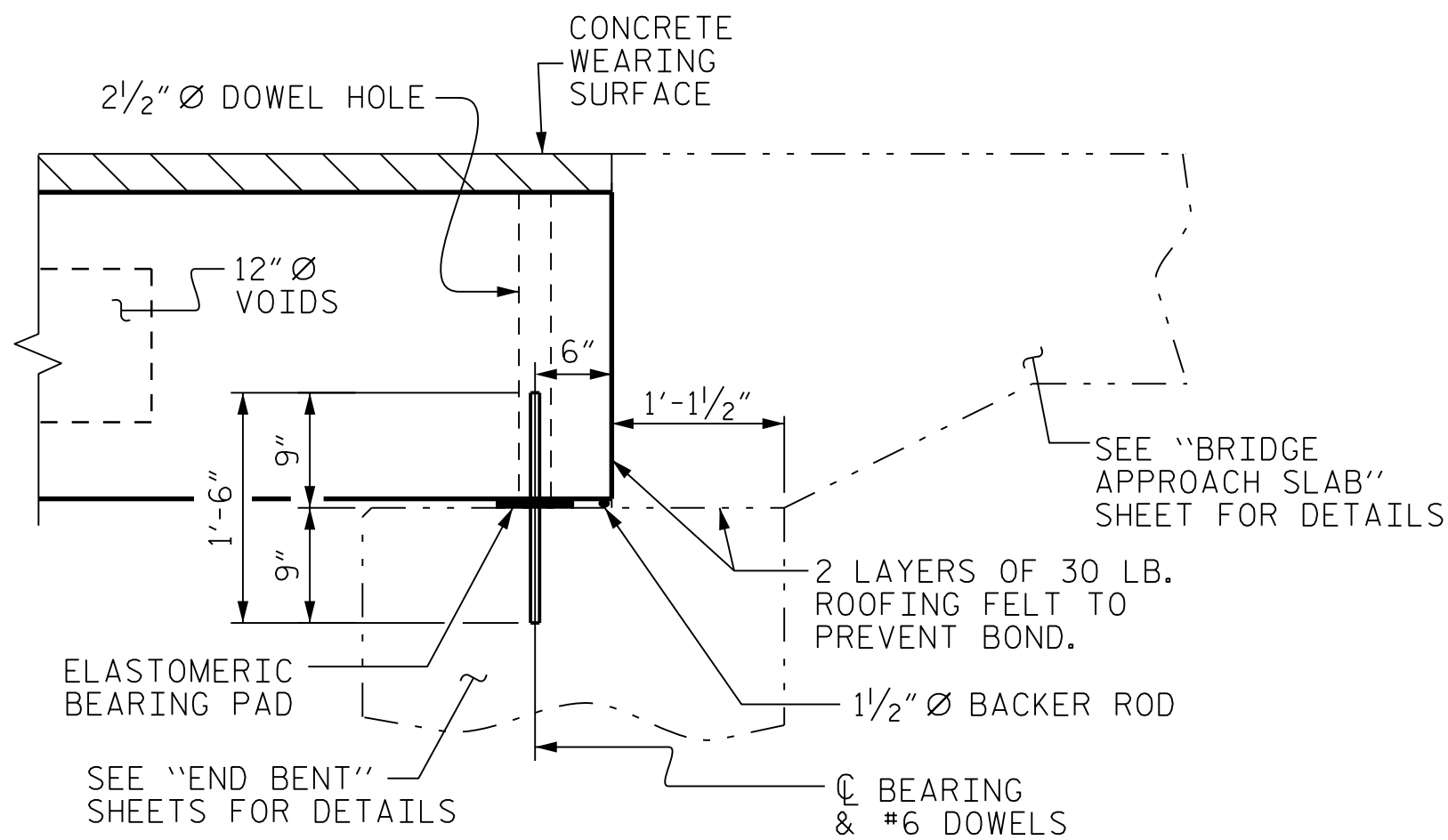


HALF SECTION AT INTERMEDIATE DIAPHRAGMS
HALF SECTION THROUGH VOIDS

TYPICAL SECTION

- * - THE MAXIMUM BARRIER RAIL HEIGHT AND CONCRETE THICKNESS IS SHOWN. THE HEIGHT OF THE BARRIER RAIL AND CONCRETE THICKNESS VARIES WHILE THE TOP OF THE BARRIER RAIL FOLLOWS THE PROFILE OF THE GUTTERLINE. FOR RAIL HEIGHT DETAILS AND CONCRETE THICKNESS SEE THE "VERTICAL CONCRETE BARRIER RAIL SECTION" DETAIL.
- ** - OVERLAY THICKNESS AT CENTERLINE BEARING BASED ON PREDICTED DEFLECTION DUE TO CONCRETE OVERLAY.

FIXED END



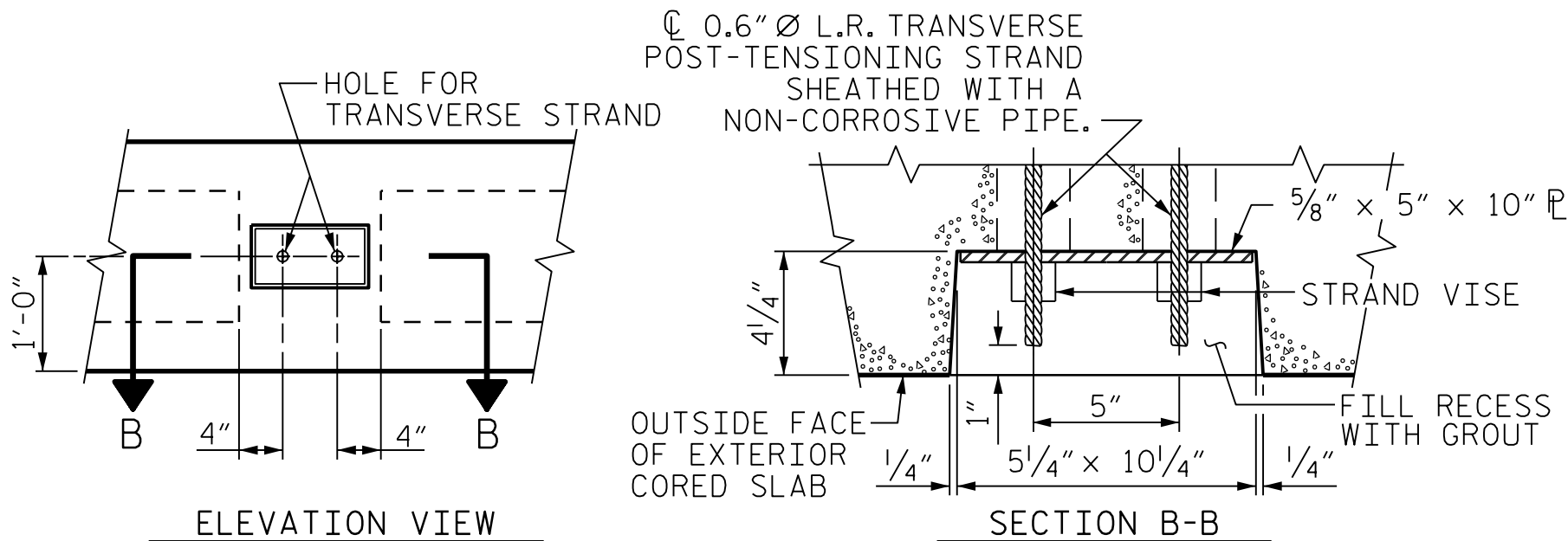
FOR SECTION AT BENT 1, SEE "3'-0" x 1'-9" PRESTRESSED CONCRETE CORED SLAB UNIT", SHEET 1 OF 6.

SECTION AT END BENT 2

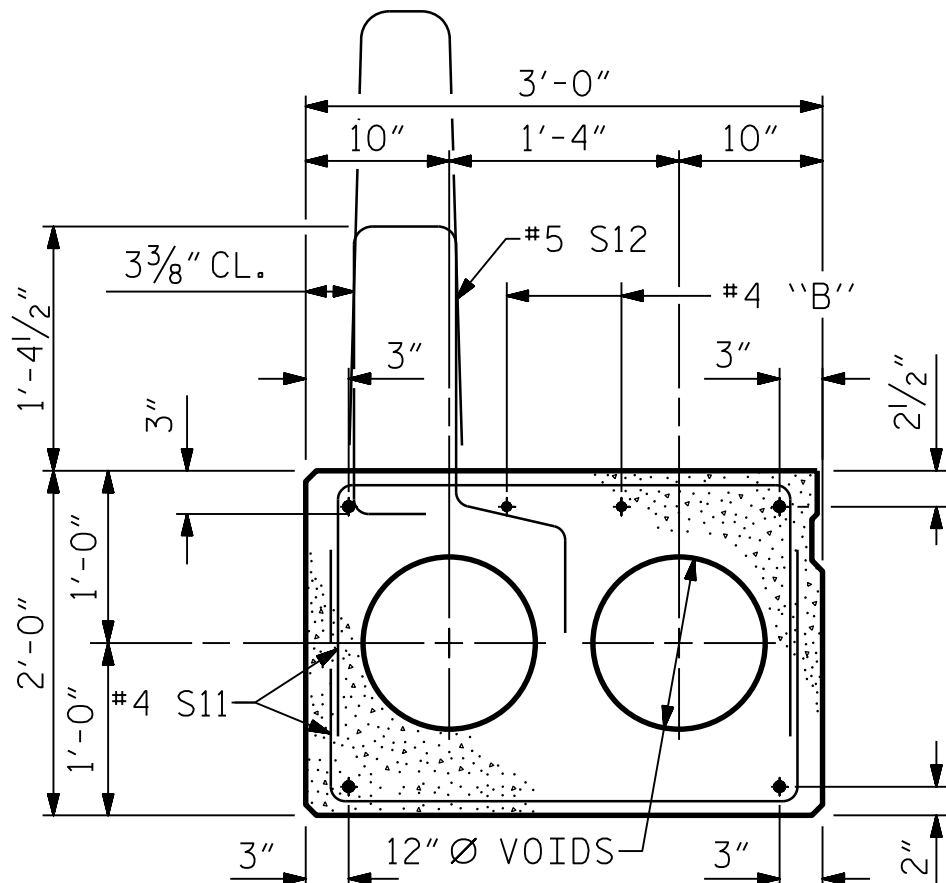
PERMITTED THREADED INSERT CAST IN OUTSIDE FACE OF EXTERIOR UNIT AND RECESSED 3/8" SIZE TO BE DETERMINED BY CONTRACTOR.



THREADED INSERT DETAIL

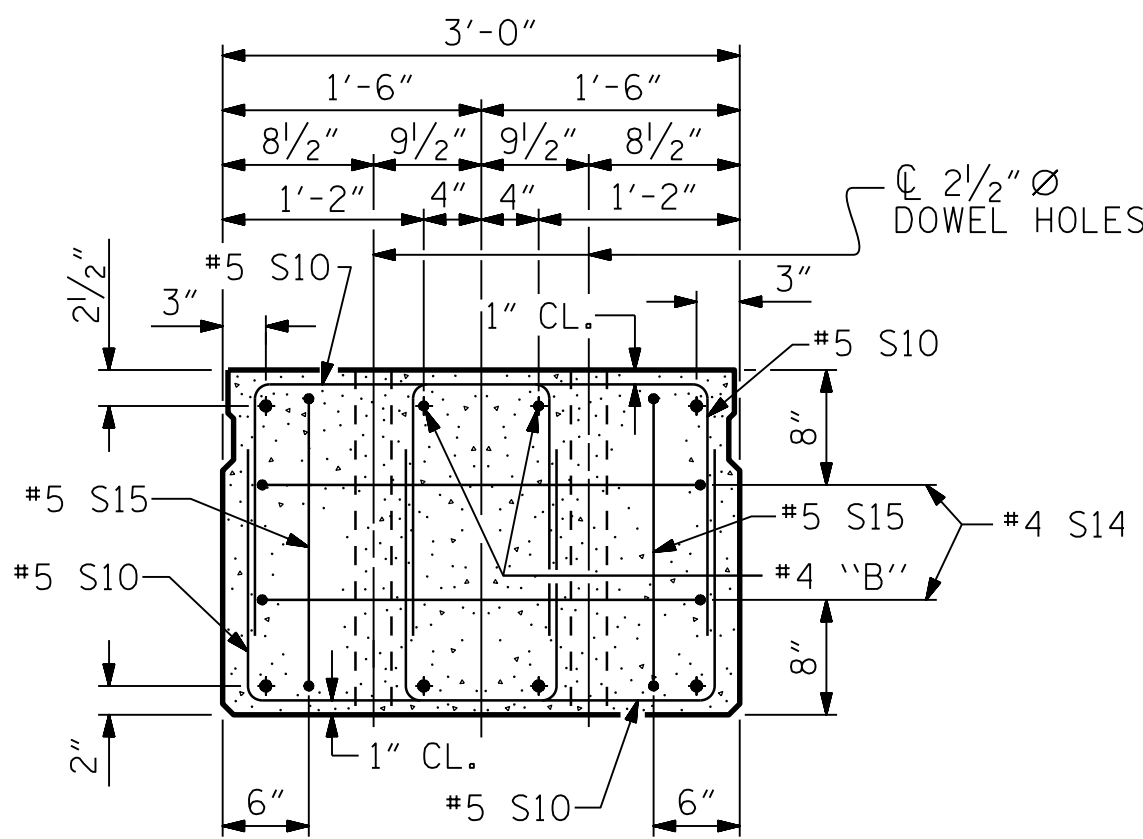


GROUTED RECESS AT END OF POST-TENSIONED STRAND CORED SLABS



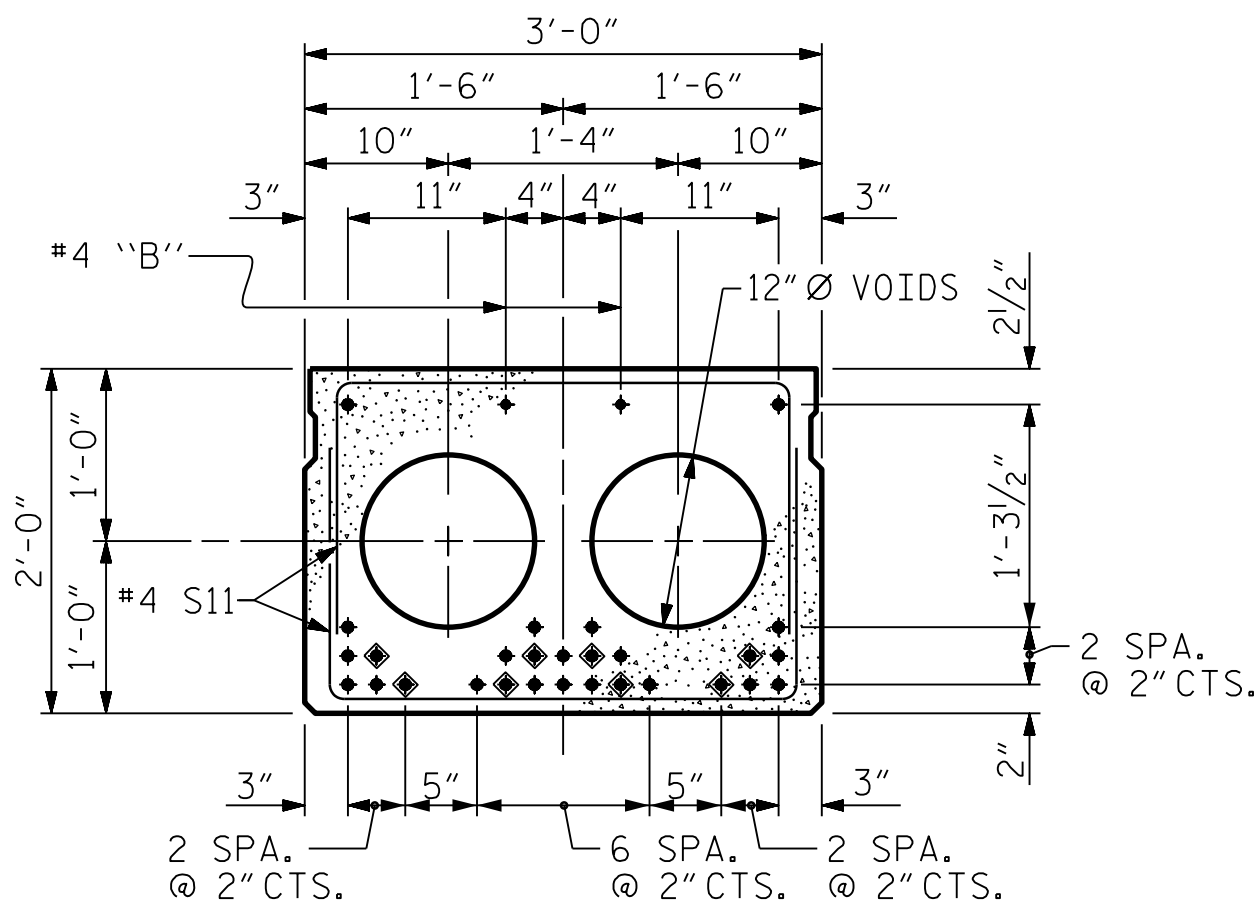
EXTERIOR SLAB SECTION

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



END ELEVATION

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

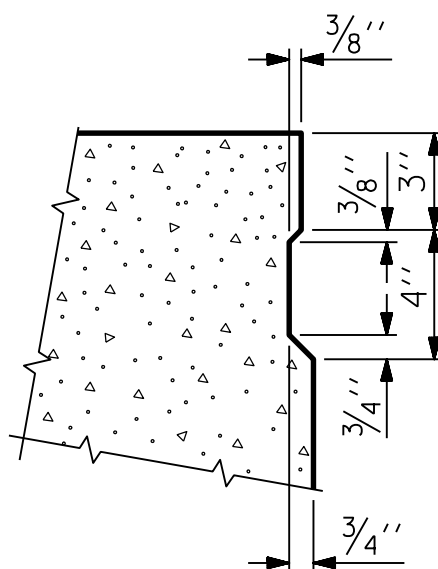


INTERIOR SLAB SECTION (70' UNIT)
(28 STRANDS REQUIRED)

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.

DEBONDING LEGEND



SHEAR KEY DETAIL

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

PROJECT NO. 17BP.3.R.78

SAMPSON COUNTY

STATION: 23 + 85.00 -L-

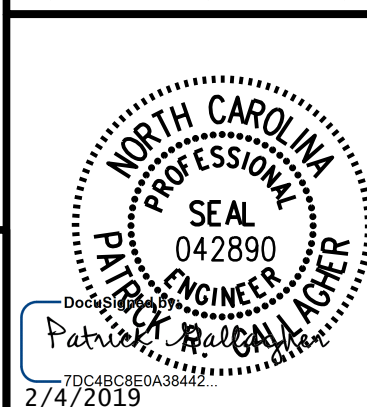
SHEET 2 OF 6

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

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

REVISIONS						SHEET No.
No.	BY:	DATE:	No.	BY:	DATE:	
1			3			TOTAL SHEETS 20
2			4			

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED



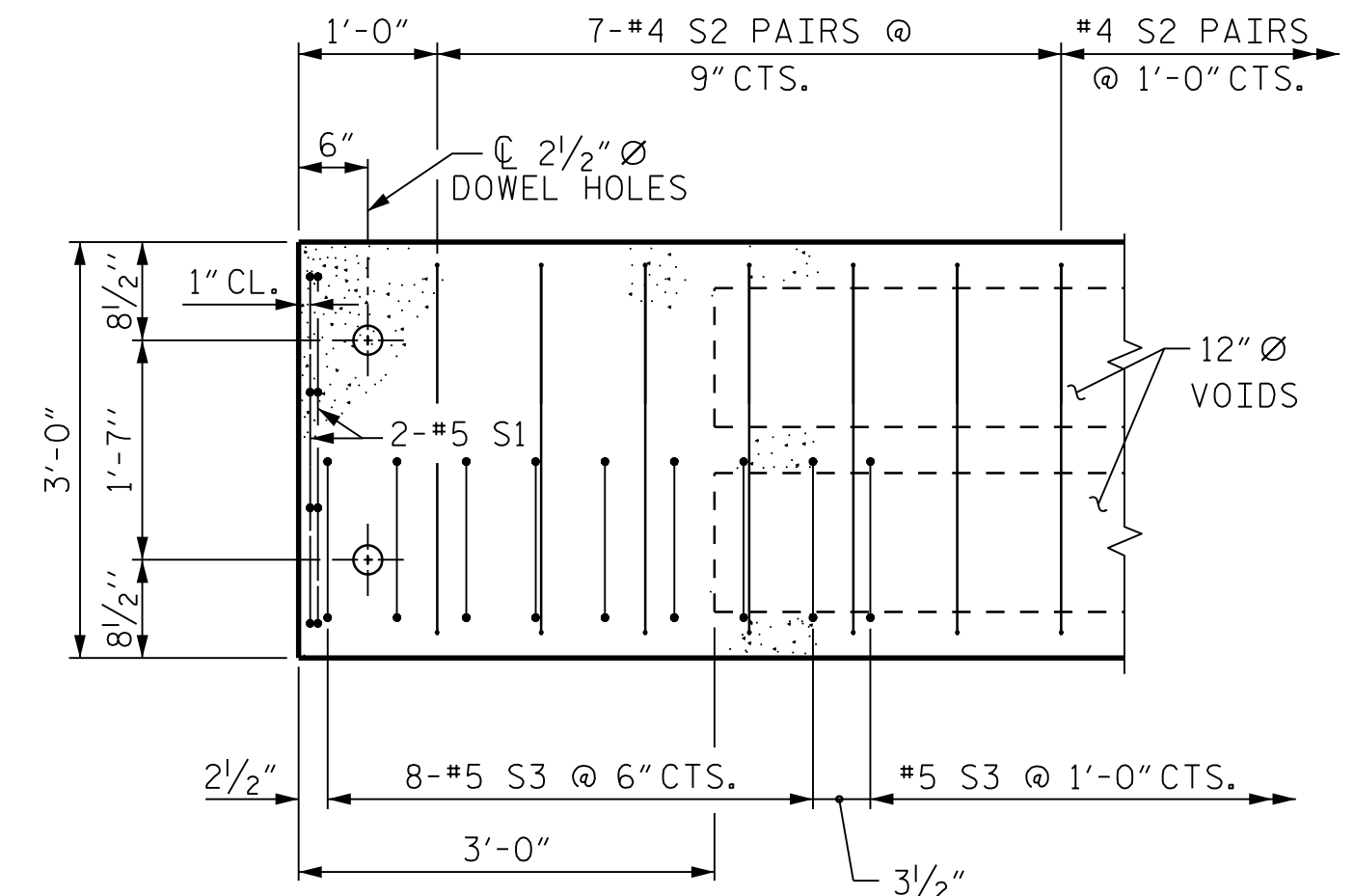
PLANS PREPARED BY :
PARSONS

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 : P. R. GALLAGHER DATE : 11-18
DRAWN BY : MAA 6/10
CHECKED BY : MKT 7/10
REV. 9/14 MAA/TMG

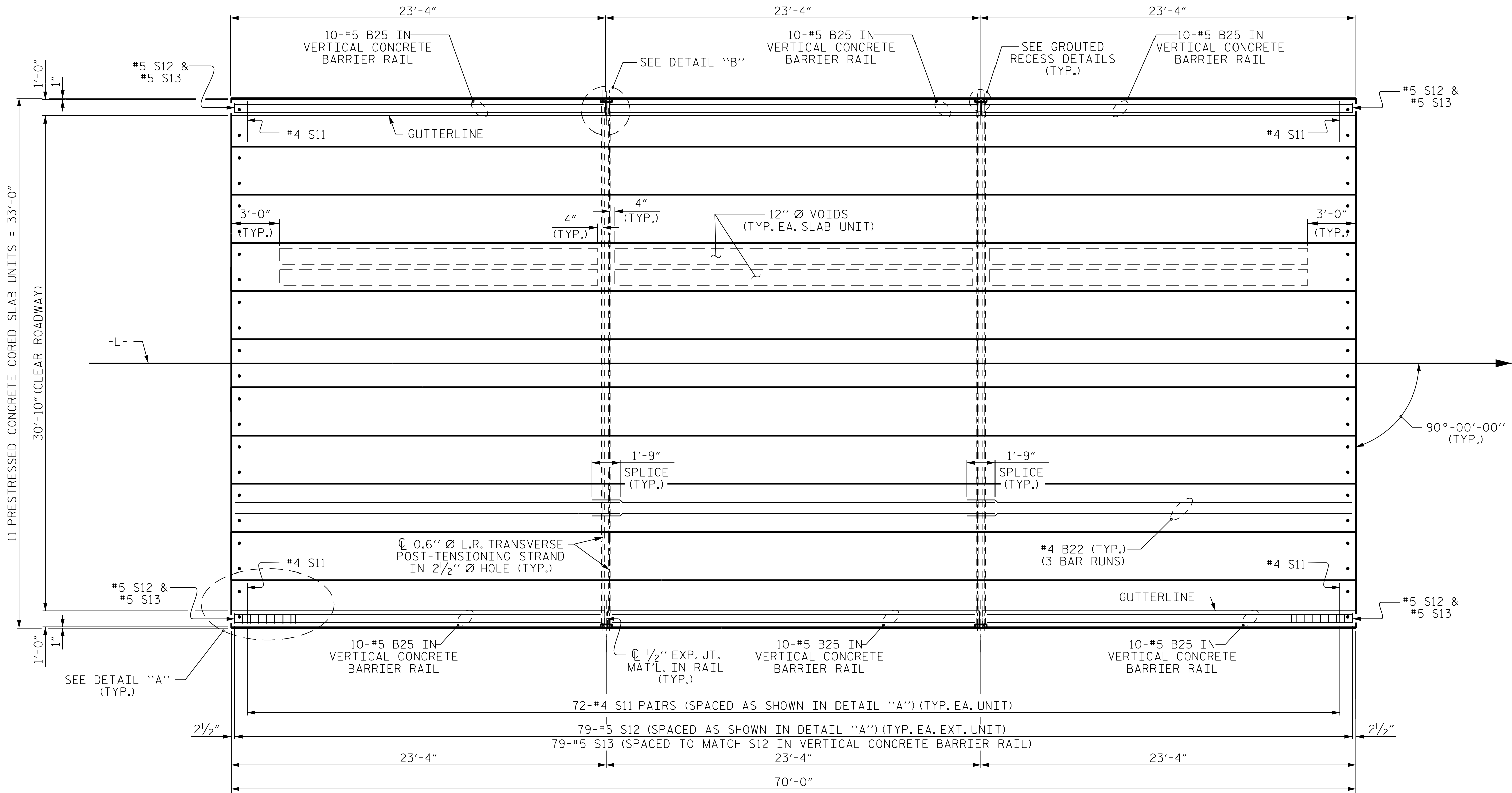


(TYPICAL EACH END OF UNIT)
NOTE: EXTERIOR UNIT SHOWN - INTERIOR
UNIT SIMILAR EXCEPT OMIT #5 S3 BARS.

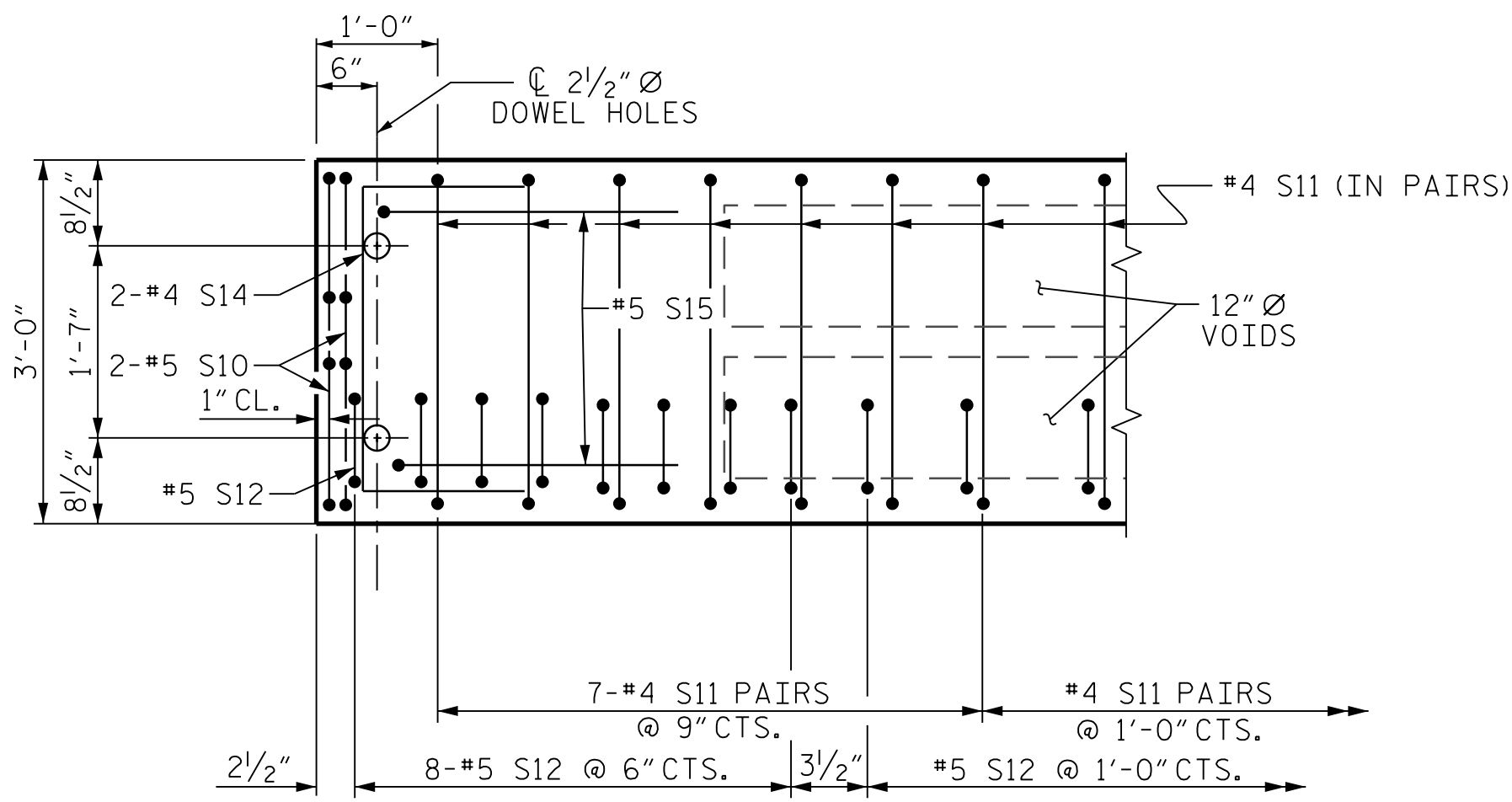
STD. No. 21" PCS_33_90S_35L

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

A circular professional engineer seal for the state of North Carolina. The outer ring contains the text "NORTH CAROLINA" at the top and "PROFESSIONAL ENGINEER" at the bottom. In the center, it says "SEAL" above the license number "042890". A signature, "Patricia R. Adams", is written across the seal. Below the seal, there is a blue rectangular stamp that reads "DOCUMENT" and "FOIA(b)(7)(D)". At the bottom left, the date "2/4/2019" is printed.

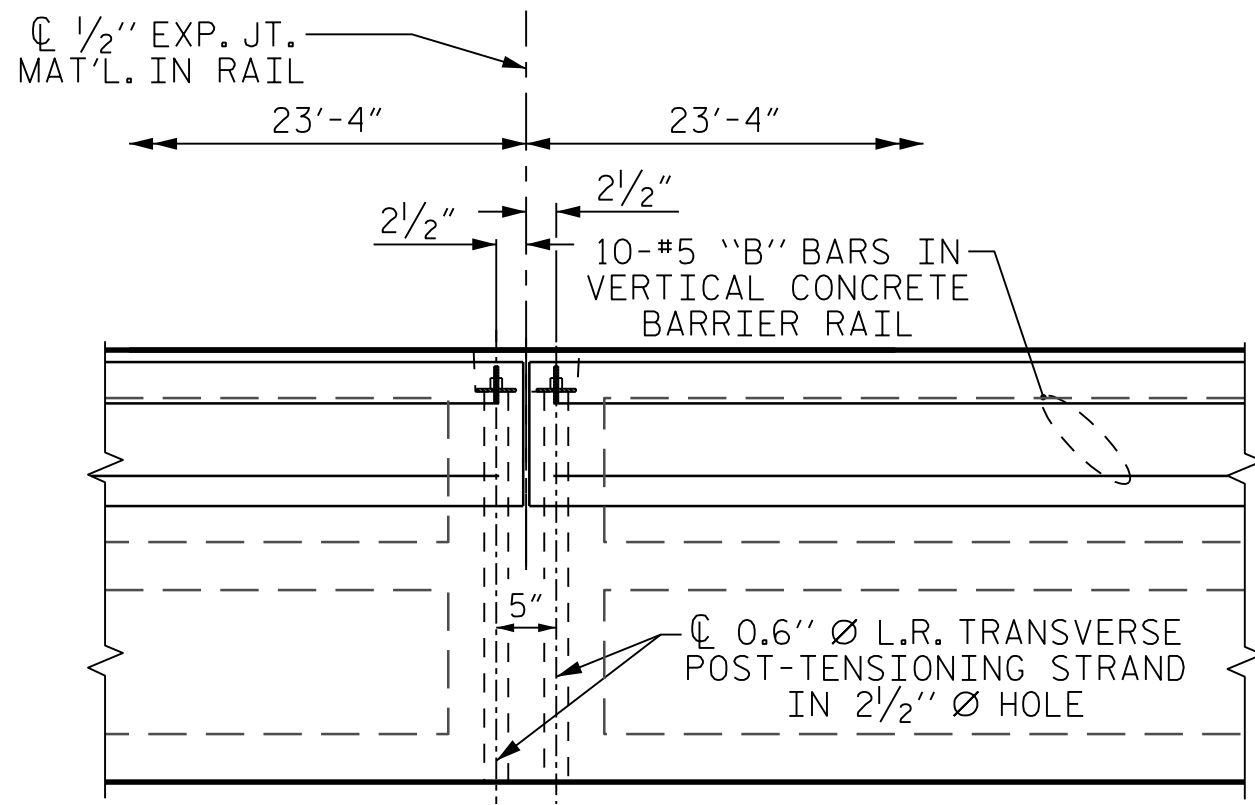


PLAN OF UNIT



DETAIL "A"

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



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 :	P. R. GALLAGHER	DATE :	11-18
DRAWN BY :	MAA 6/10	REV. 12/5/11	MAA/AAC
CHECKED BY :	MKT 7/10	REV. 8/14	MAA/TMG

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 :
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P. R. GALLAGHER
27472813

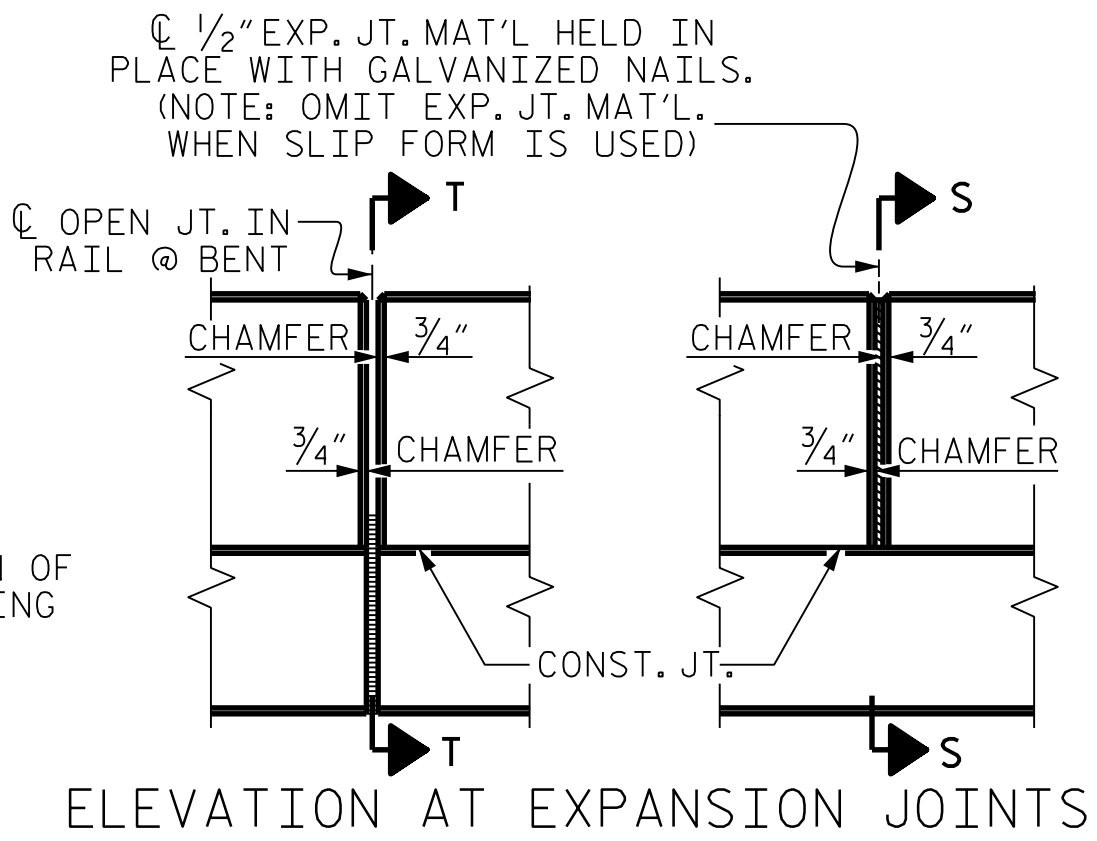
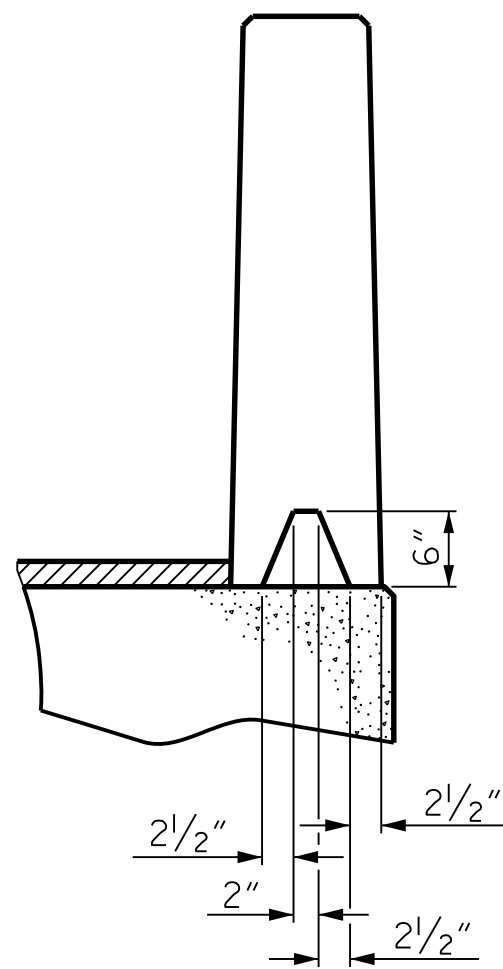
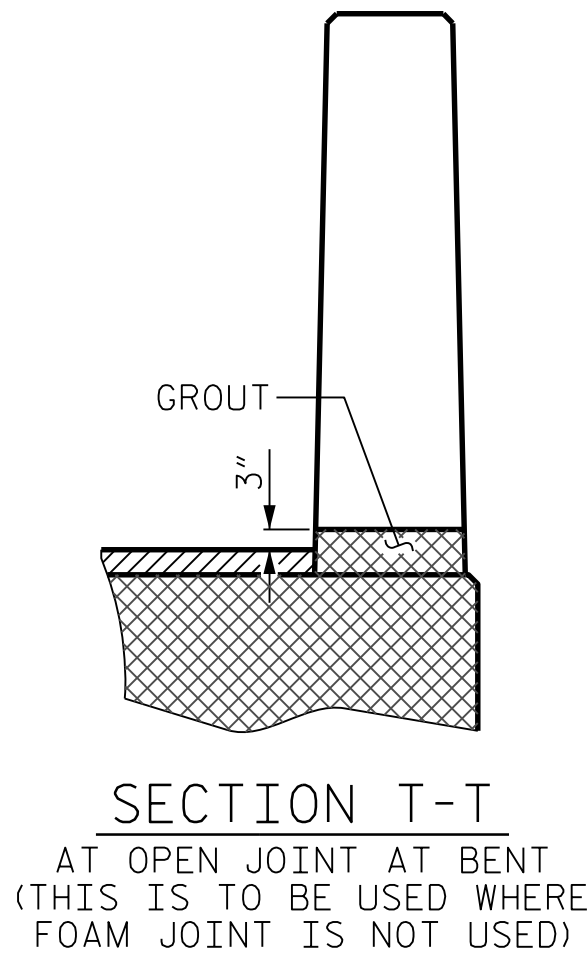
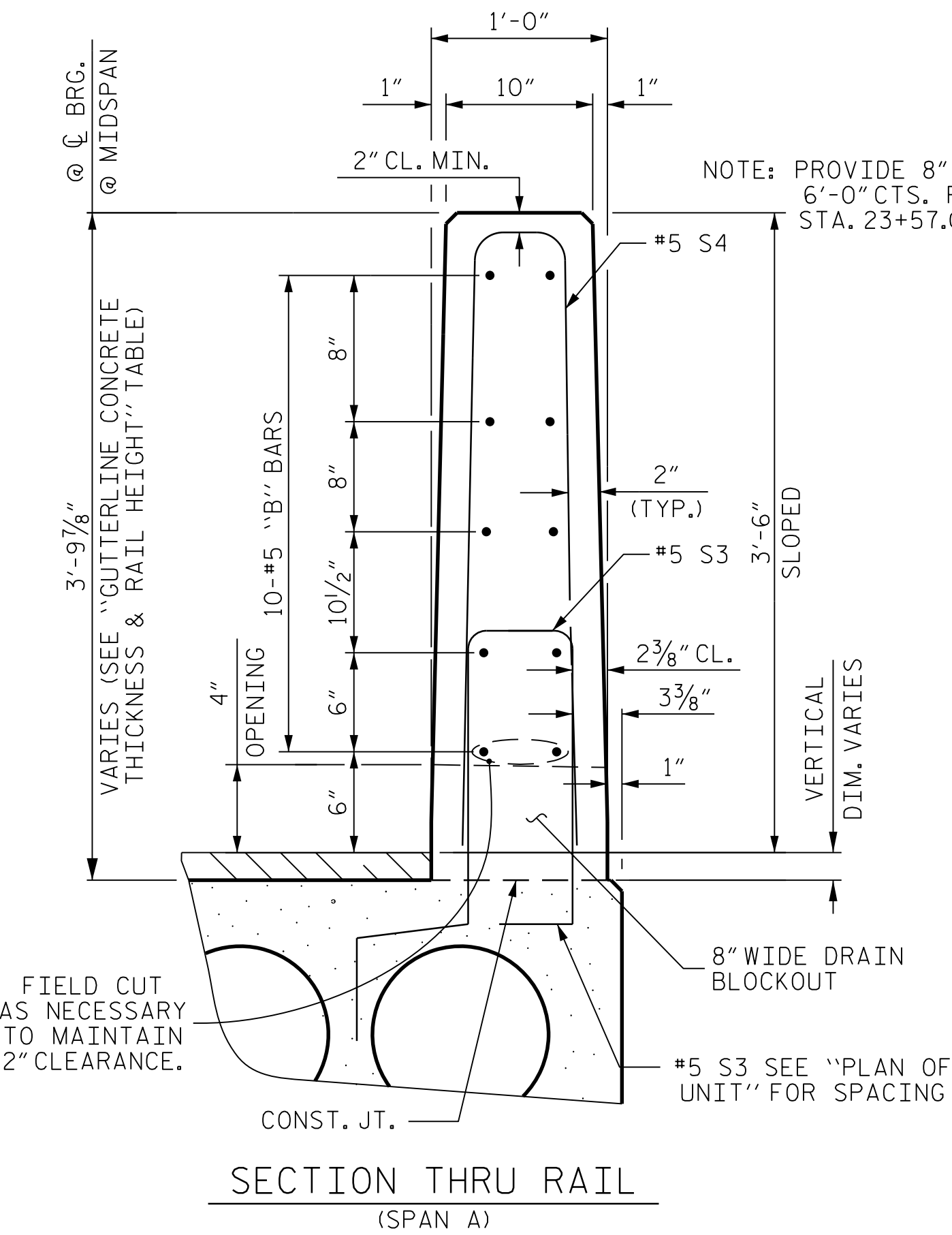
PROJECT NO. **17BP.3.R.78**
SAMPSON COUNTY
STATION: **23 + 85.00 -L-**

SHEET 4 OF 6

REVISIONS						SHEET No.
No.	BY:	DATE:	No.	BY:	DATE:	
1			3			S-9
2			4			
TOTAL SHEETS						20

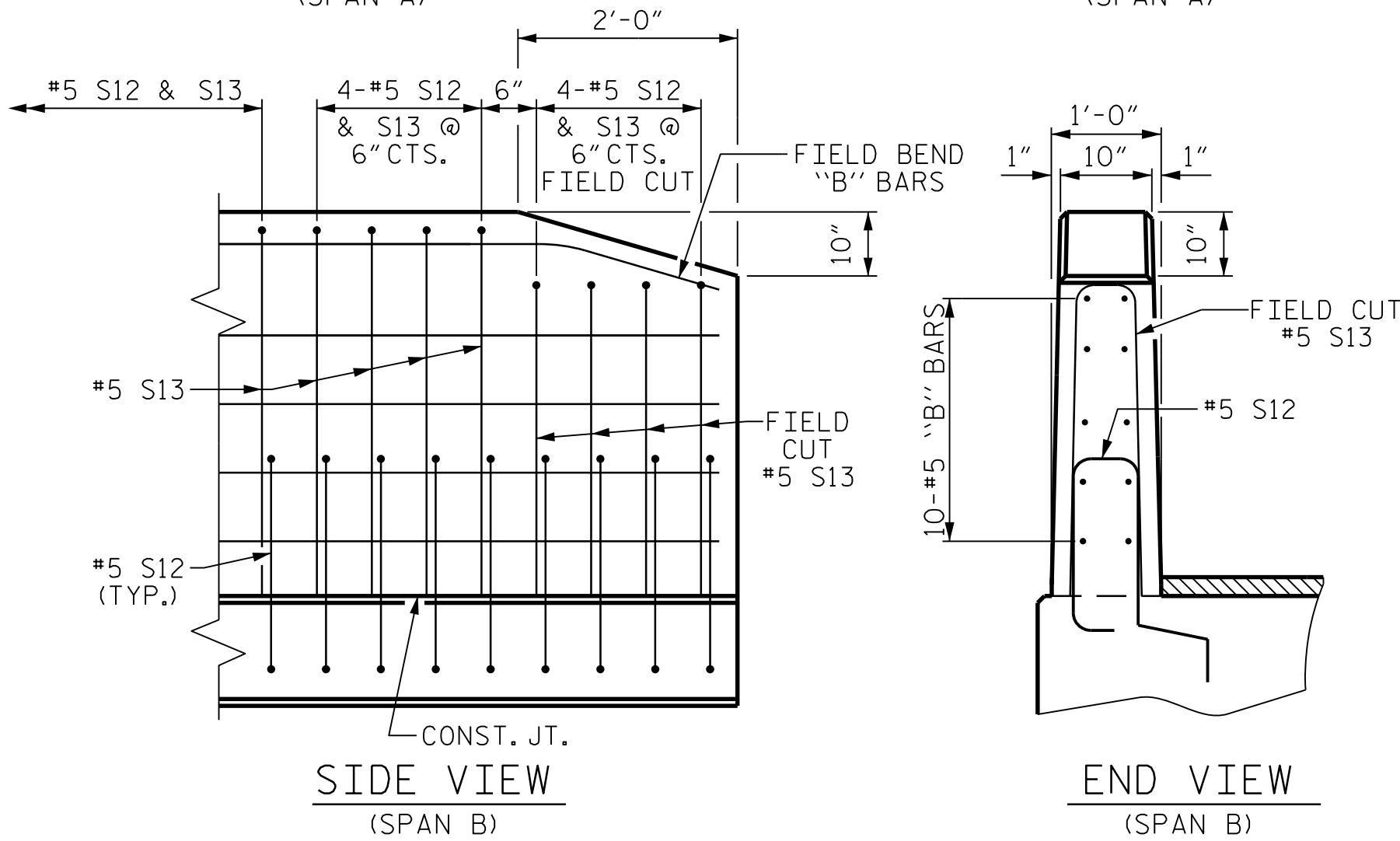
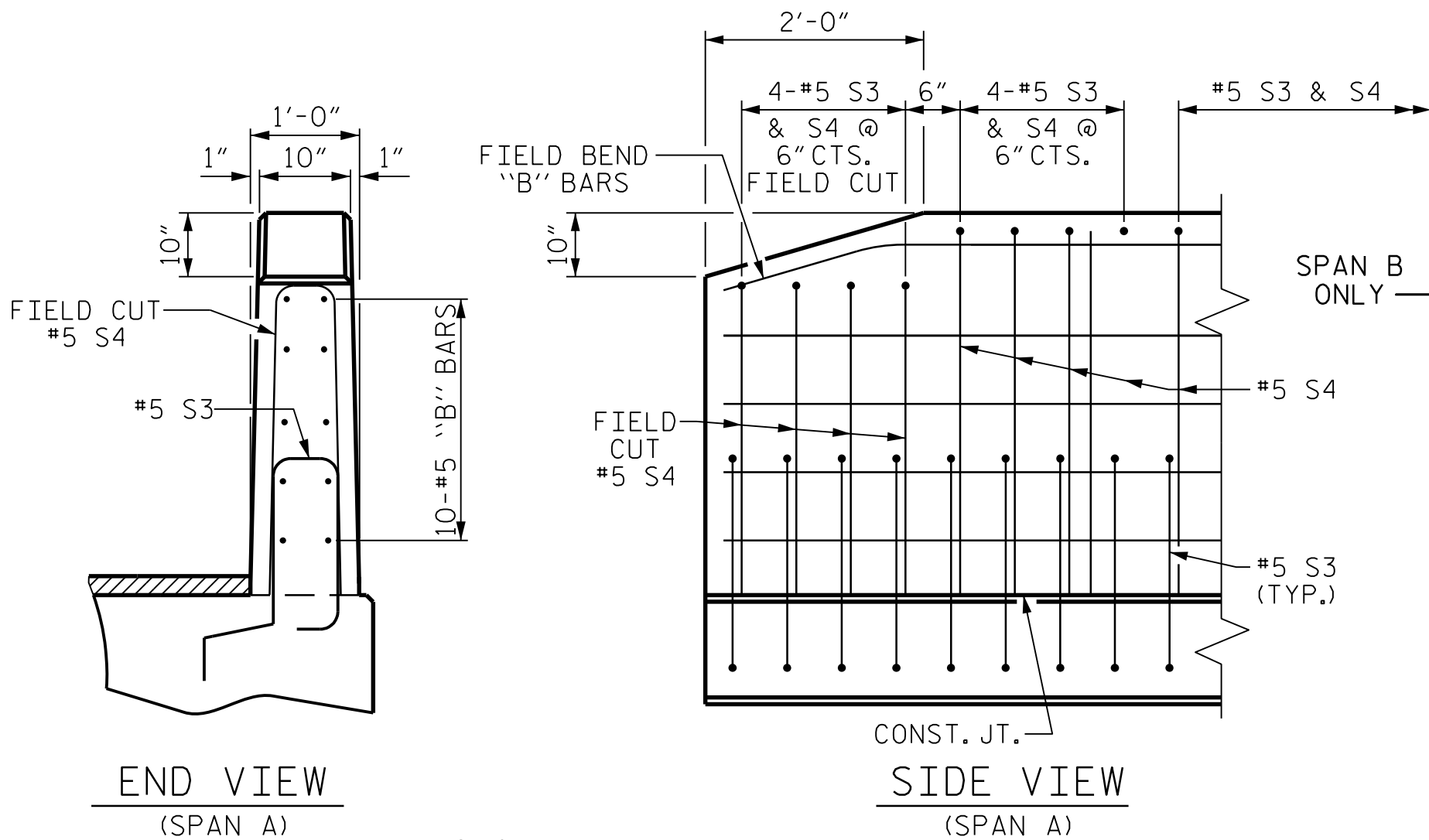
STD. No. 24" PCS_33_905_70L

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DATE: 2/2019 2:58:01 PM



SECTION THRU RAIL
(SPAN B)

VERTICAL CONCRETE BARRIER RAIL SECTION



END OF RAIL DETAILS

NOTES

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

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

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

THE 2 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.

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

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

APPLY EPOXY PROTECTIVE COATING TO CORED SLAB UNIT ENDS.

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

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

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

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

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

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

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

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

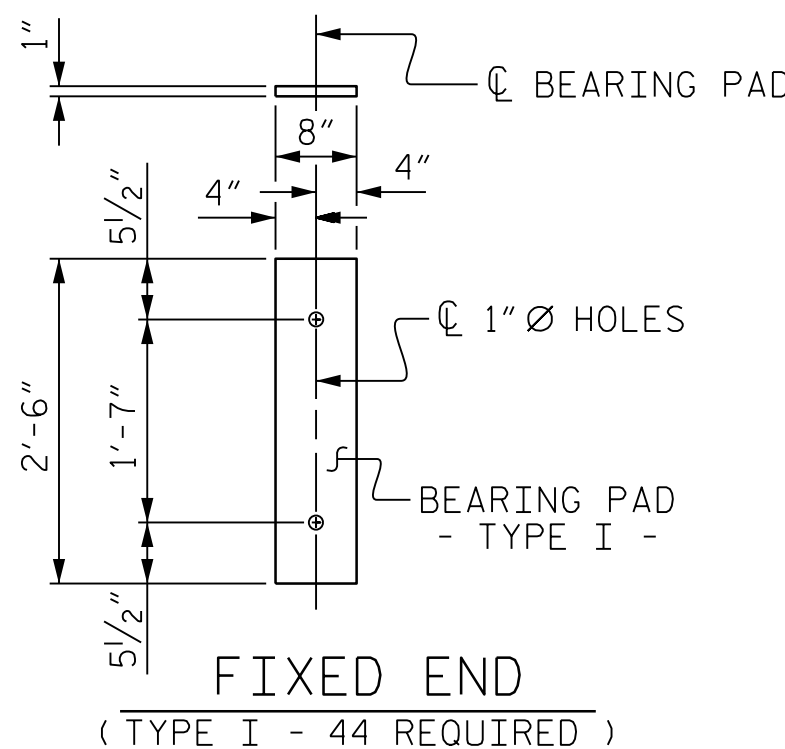
THE DRAIN OPENING AT THE GUTTERLINE SHALL BE 8" WIDE. THE HEIGHT OF THE BLOCKOUT IN THE VERTICAL CONCRETE BARRIER RAIL SHALL EXTEND FROM THE TOP OF THE CORED SLAB UNIT TO THE TOP OF THE DRAIN OPENING.

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

PLACEMENT OF THE CONCRETE WEARING SURFACE SHALL OCCUR AFTER CASTING THE CONCRETE RAIL. THE COST OF THE #3 BARS CAST WITH THE CONCRETE WEARING SURFACE SHALL BE INCLUDED IN THE UNIT PRICE BID FOR CONCRETE WEARING SURFACE. FOR CONCRETE WEARING SURFACE, SEE SPECIAL PROVISIONS.

MAINTAIN A SYMMETRIC TENSION FORCE BETWEEN EACH PAIR OF TRANSVERSE POST TENSIONING STRANDS IN THE DIAPHRAGM.

THE #4 S11 STIRRUPS MAY BE SHIFTED AS NECESSARY TO MAINTAIN 1" CLEAR TO THE GROUTED RECESS.



ELASTOMERIC BEARING DETAILS

ELASTOMER IN ALL BEARINGS SHALL BE 60 DUROMETER HARDNESS.

PROJECT NO. **17BP.3.R.78**
SAMPSON COUNTY
STATION: **23 + 85.00 -L-**

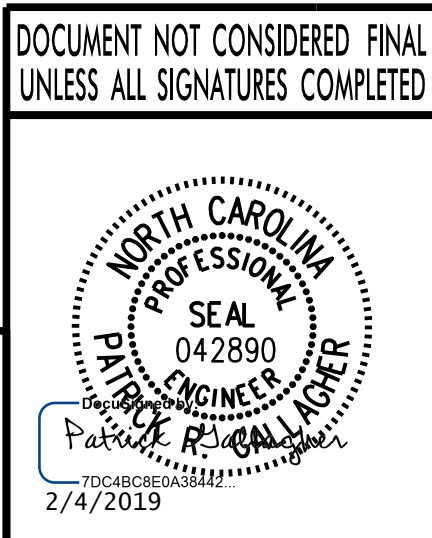
SHEET 5 OF 6

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

PRESTRESSED CONCRETE
CORED SLAB UNIT
90° SKEW

REVISIONS						SHEET No. S-10
No.	BY:	DATE:	No.	BY:	DATE:	
1			3			TOTAL SHEETS
2			4			20



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

DEAD LOAD DEFLECTION AND CAMBER	
SPAN A - 35' CORED SLAB UNIT	3'-0" x 1'-9"
	0.6" Ø L.R. STRAND
	1/2" ↑
	1/8" ↓
CAMBER (SLAB ALONE IN PLACE)	1/2" ↑
DEFLECTION DUE TO SUPERIMPOSED DEAD LOAD**	1/8" ↓
FINAL CAMBER	3/8" ↑
SPAN B - 70' CORED SLAB UNIT	3'-0" x 2'-0"
	0.6" Ø L.R. STRAND
	2 1/4" ↑
	3/4" ↓
CAMBER (SLAB ALONE IN PLACE)	2 1/4" ↑
DEFLECTION DUE TO SUPERIMPOSED DEAD LOAD**	3/4" ↓
FINAL CAMBER	1 1/2" ↑

** INCLUDES FUTURE WEARING SURFACE

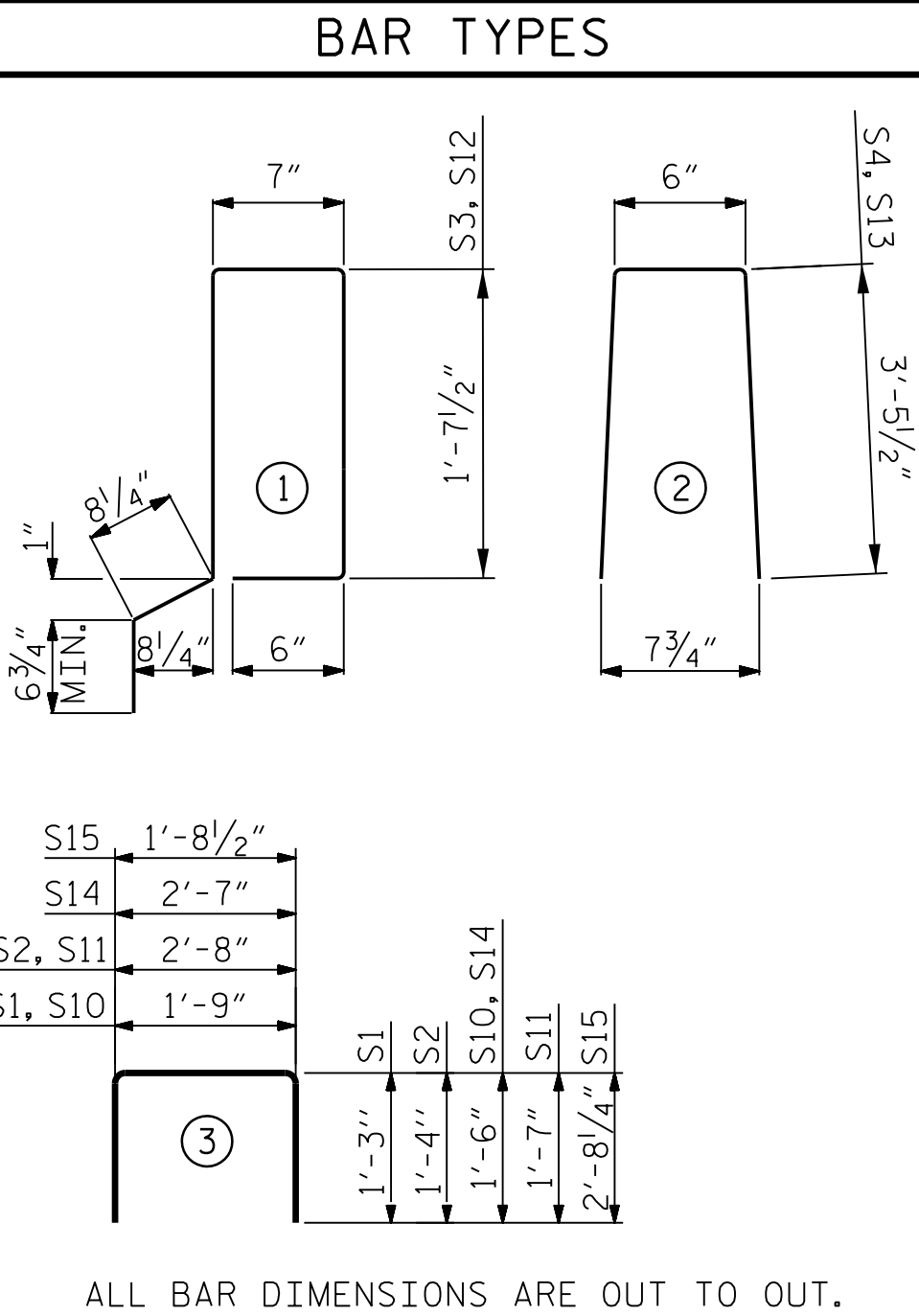
CORED SLABS REQUIRED			
	NUMBER	LENGTH	TOTAL LENGTH
SPAN A - 35' UNIT			
EXTERIOR C.S.	2	35'-0"	70'-0"
INTERIOR C.S.	9	35'-0"	315'-0"
TOTAL	11		385'-0"
SPAN B - 70' UNIT			
EXTERIOR C.S.	2	70'-0"	140'-0"
INTERIOR C.S.	9	70'-0"	630'-0"
TOTAL	11		770'-0"

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

BILL OF MATERIAL FOR ONE 70' CORED SLAB UNIT								
				EXTERIOR UNIT		INTERIOR UNIT		
BAR	NUMBER	SIZE	TYPE	LENGTH	WEIGHT	LENGTH	WEIGHT	
B22	6	#4	STR	24'-6"	98	24'-6"	98	
S10	8	#5	3	4'-9"	40	4'-9"	40	
S11	144	#4	3	5'-10"	561	5'-10"	561	
* S12	79	#5	1	5'-7"	460			
S14	4	#4	3	5'-7"	15	5'-7"	15	
S15	4	#5	3	7'-1"	30	7'-1"	30	
REINFORCING STEEL				LBS.	744		744	
* EPOXY COATED REINFORCING STEEL				LBS.	460			
7000 P.S.I. CONCRETE				CU. YDS.	11.8		11.8	
0.6" Ø L.R. STRANDS				No.	28		28	

BILL OF MATERIAL FOR VERTICAL CONCRETE BARRIER RAIL						
BAR	BARS PER PAIR OF EXTERIOR UNITS	TOTAL No.	SIZE	TYPE	LENGTH	WEIGHT
SPAN A - 35' UNIT						
* B10	40	40	#5	STR	17'-1"	713
* S4	88	88	#5	2	7'-5"	681
* EPOXY COATED REINFORCING STEEL				LBS.		1394
CLASS AA CONCRETE				CU. YDS.		9.0
TOTAL VERTICAL CONCRETE BARRIER RAIL				LN. FT.		70.25

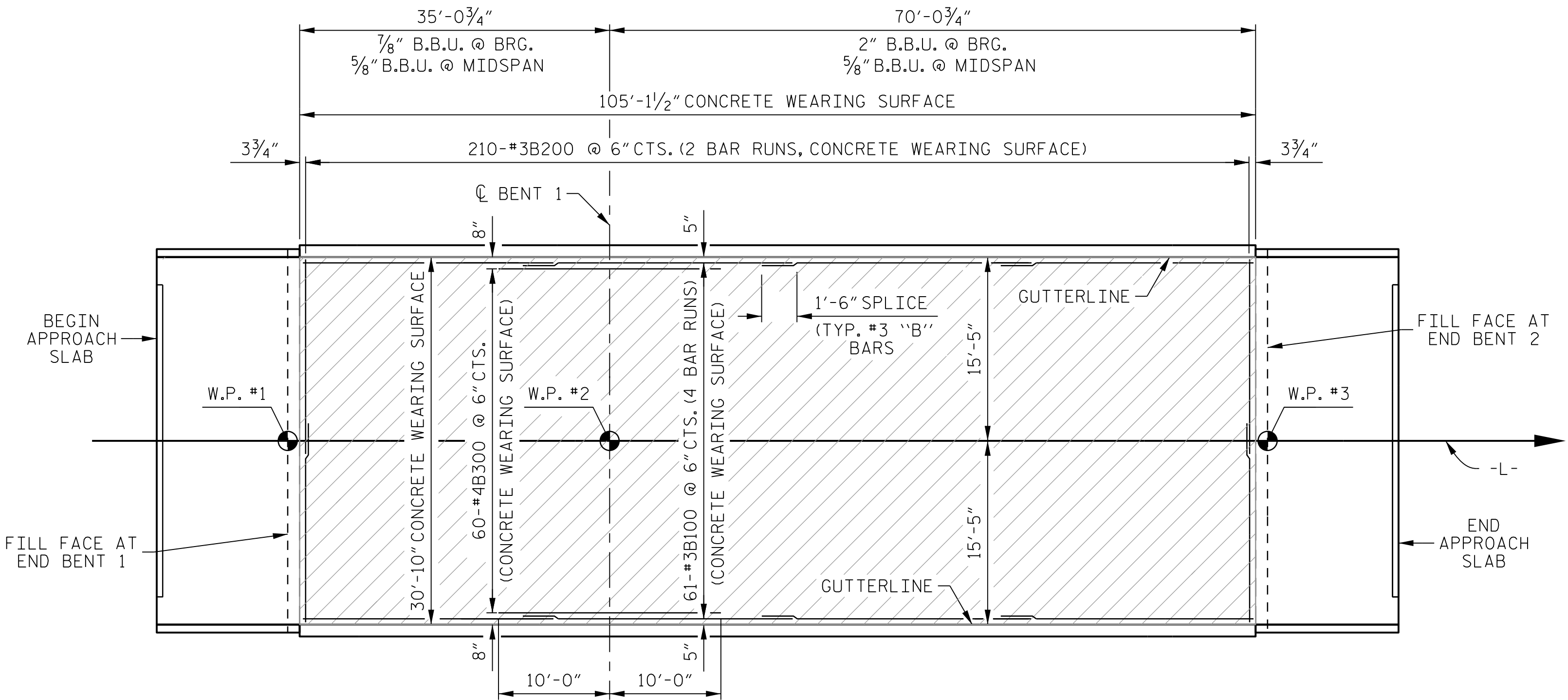
BILL OF MATERIAL FOR VERTICAL CONCRETE BARRIER RAIL						
BAR	BARS PER PAIR OF EXTERIOR UNITS	TOTAL No.	SIZE	TYPE	LENGTH	WEIGHT
SPAN B - 70' UNIT						
* B25	60	60	#5	STR	22'-11"	1434
* S13	158	158	#5	2	7'-5"	1222
* EPOXY COATED REINFORCING STEEL				LBS.		2656
CLASS AA CONCRETE				CU. YDS.		18.1
TOTAL VERTICAL CONCRETE BARRIER RAIL				LN. FT.		140.25



GUTTERLINE CONCRETE THICKNESS & RAIL HEIGHT		
	CONCRETE OVERLAY THICKNESS	RAIL HEIGHT
	@ MID-SPAN	@ MID-SPAN
SPAN A - 35' UNITS	3/2"	3'-9 1/2"
SPAN B - 70' UNITS	3 1/2"	3'-9 1/2"

CONCRETE RELEASE STRENGTH	
LOCATION	PSI
SPAN A - 35' UNITS	4000
SPAN B - 70' UNITS	5500

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



CONCRETE WEARING SURFACE LAYOUT

BILL OF MATERIAL FOR CONCRETE WEARING SURFACE						
BAR	NUMBER	SIZE	TYPE	LENGTH	WEIGHT	
* B100	244	#3	STR	27'- 4"	2,508	
* B200	420	#3	STR	16'- 0"	2,527	
* B300	60	#4	STR	20'- 0"	802	
* EPOXY COATED REINFORCING STEEL				5,837 LBS.		
CONCRETE WEARING SURFACE				38.8 CU. YDS.		
CONCRETE WEARING SURFACE AREA				3,241 SQ. FT.		
CONCRETE WEARING SURFACE GROOVING AREA				2,917 SQ. FT.		

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 :
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5540 Centerview Drive, Suite 217
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SEAL
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P. R. GALLAGHER
27472013

PROJECT NO. **17BP.3.R.78**
SAMPSON COUNTY
STATION: **23 + 85.00 -L-**
SHEET 6 OF 6

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH SUPERSTRUCTURE					
PRESTRESSED CONCRETE CORED SLAB UNIT 90° SKEW					
REVISIONS					
No.	BY:	DATE:	No.	BY:	DATE:
1			3		
2			4		
SHEET No. S-11					TOTAL SHEETS 20

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.)

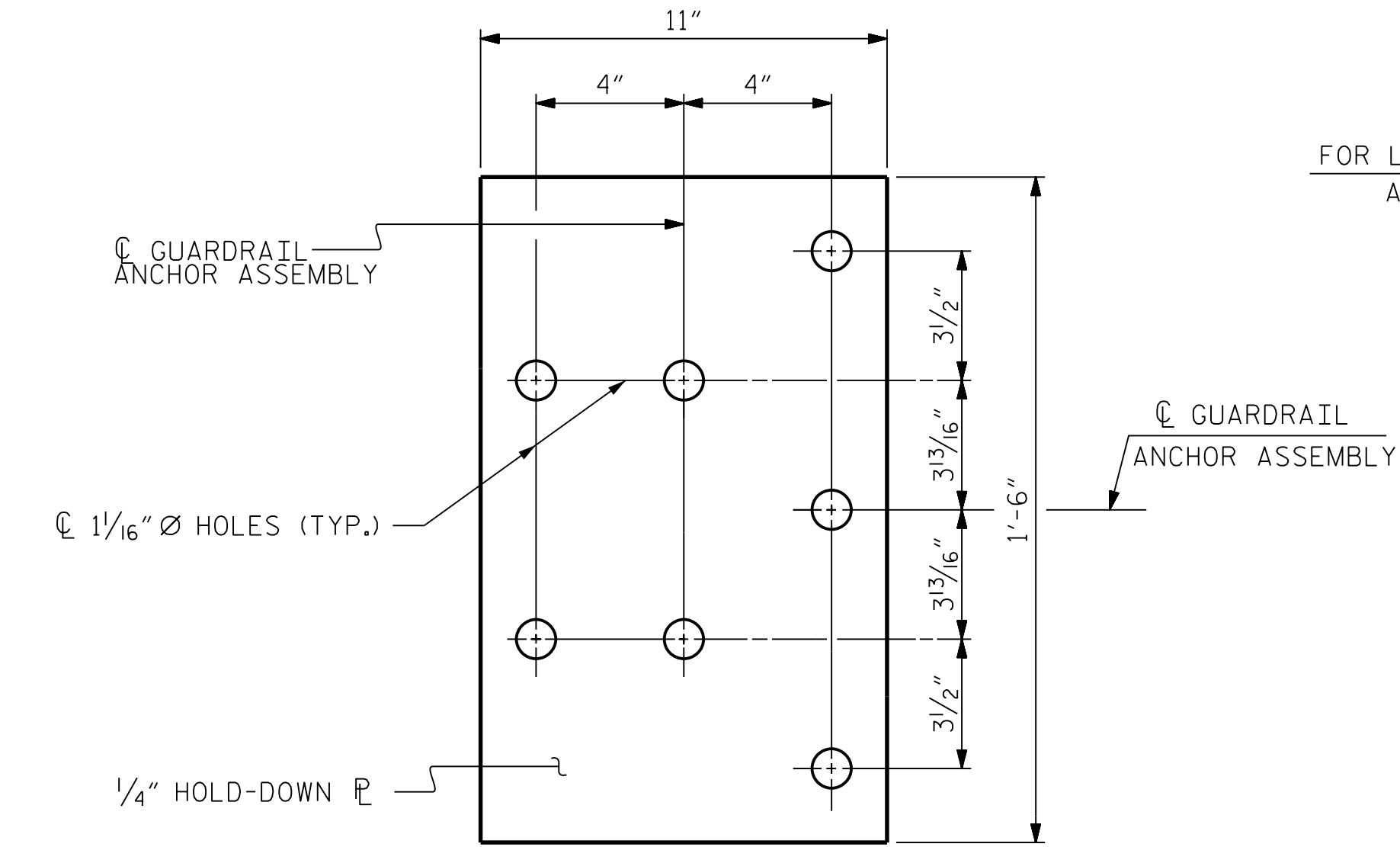
THE GUARDRAIL ANCHOR ASSEMBLY IS REQUIRED AT ALL POINTS WHERE APPROACH GUARDRAIL IS TO BE ATTACHED TO THE END OF BARRIER RAIL. FOR POINTS OF ATTACHMENT, SEE SKETCH.

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

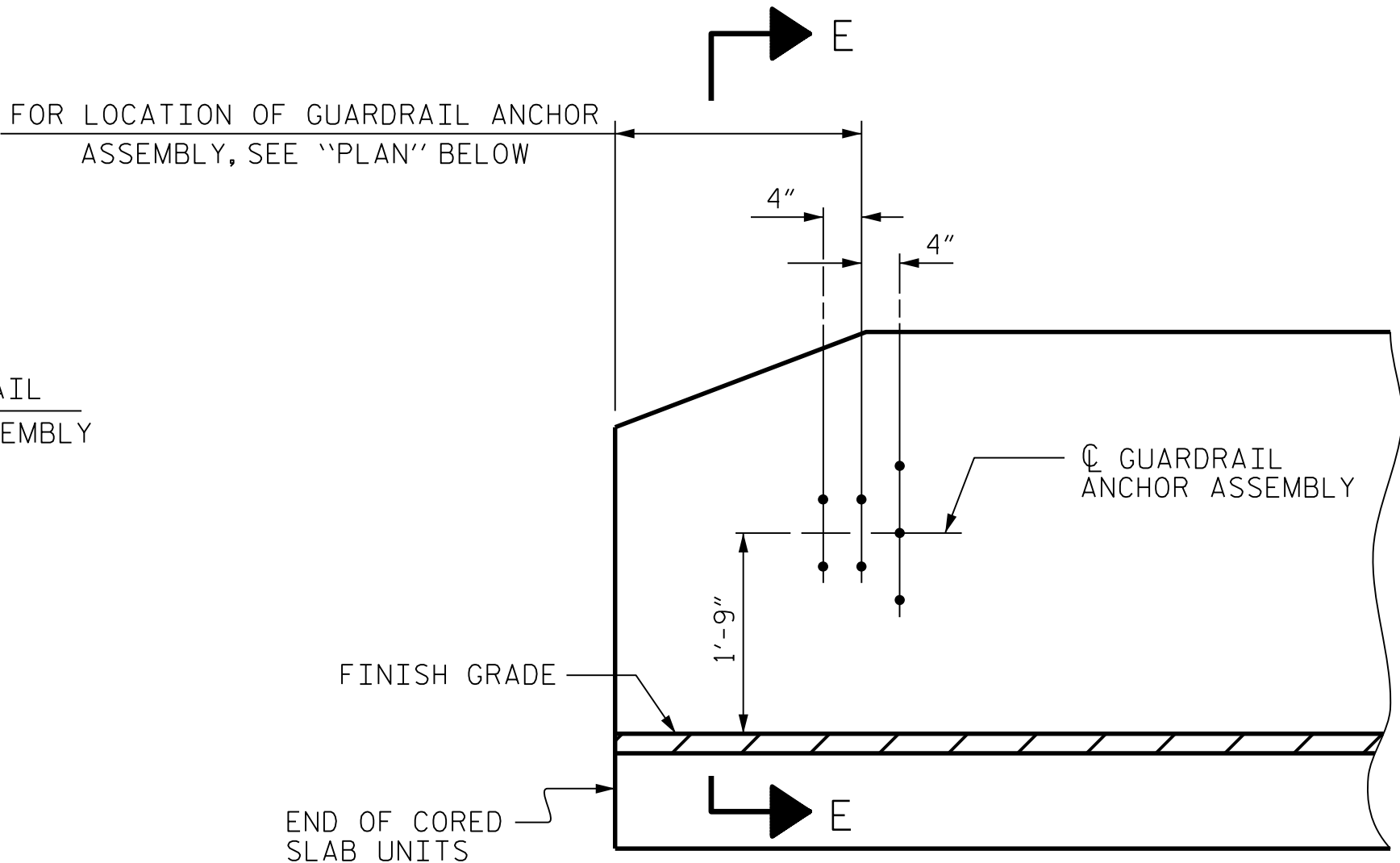
THE COST OF THE GUARDRAIL ANCHOR ASSEMBLY SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR VERTICAL CONCRETE BARRIER RAIL.

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

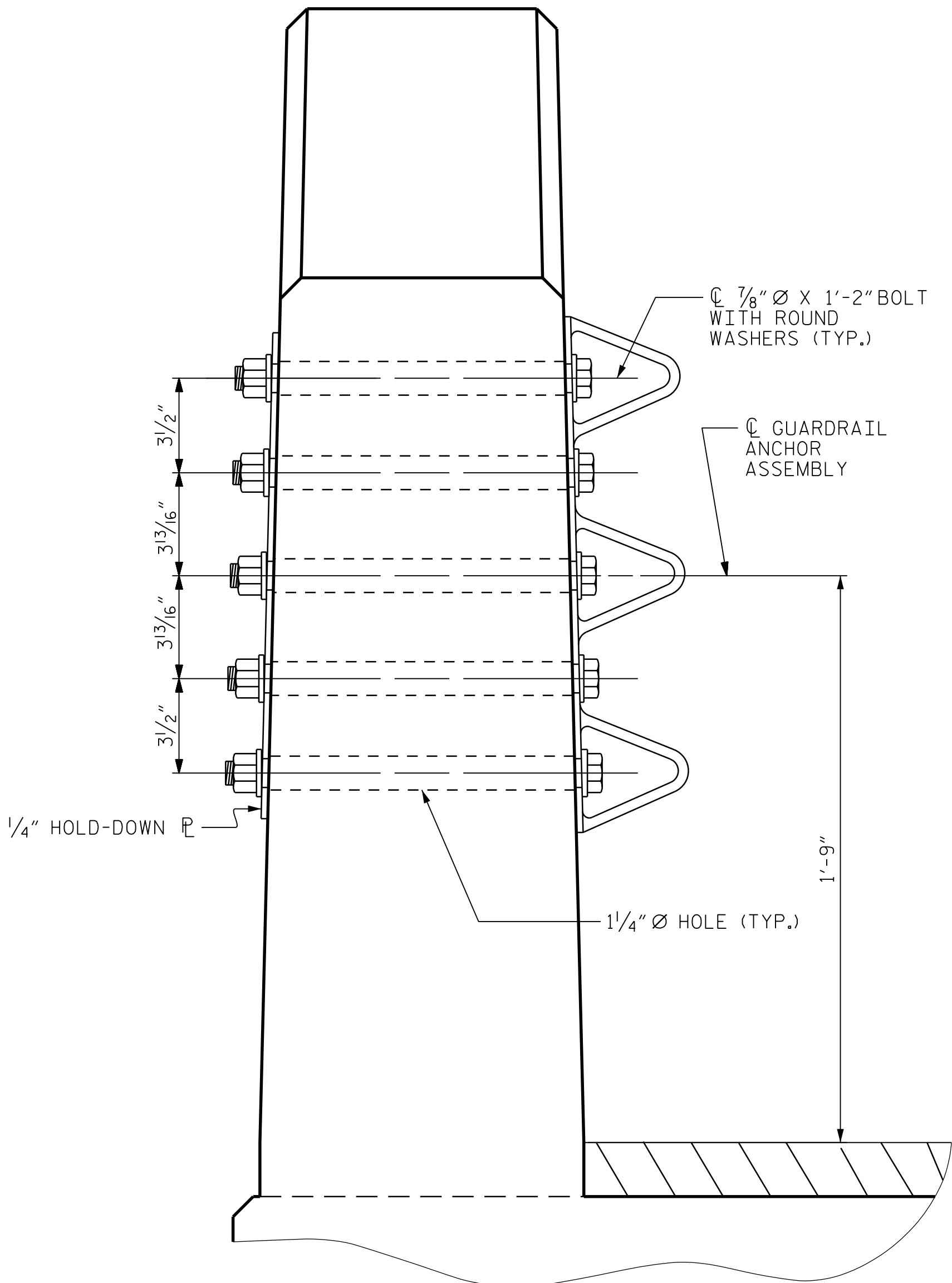
THE 1 1/4" Ø HOLES SHALL BE FORMED OR DRILLED WITH A CORE BIT. IMPACT TOOLS WILL NOT BE PERMITTED. ANY CONCRETE DAMAGED BY THIS WORK SHALL BE REPAIRED TO THE SATISFACTION OF THE ENGINEER.



PLAN

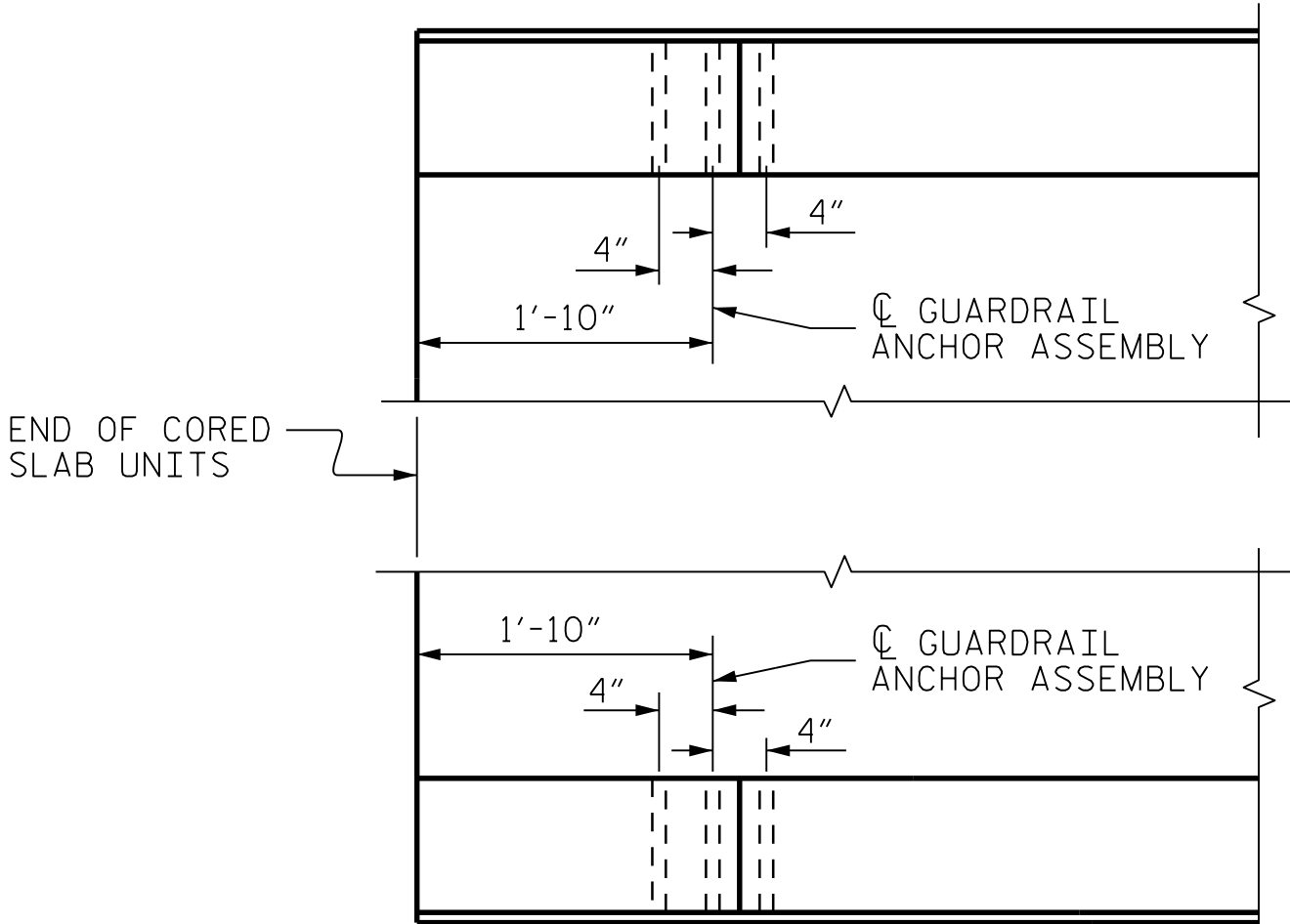


ELEVATION



SECTION E-E

GUARDRAIL ANCHOR ASSEMBLY DETAILS



PLAN

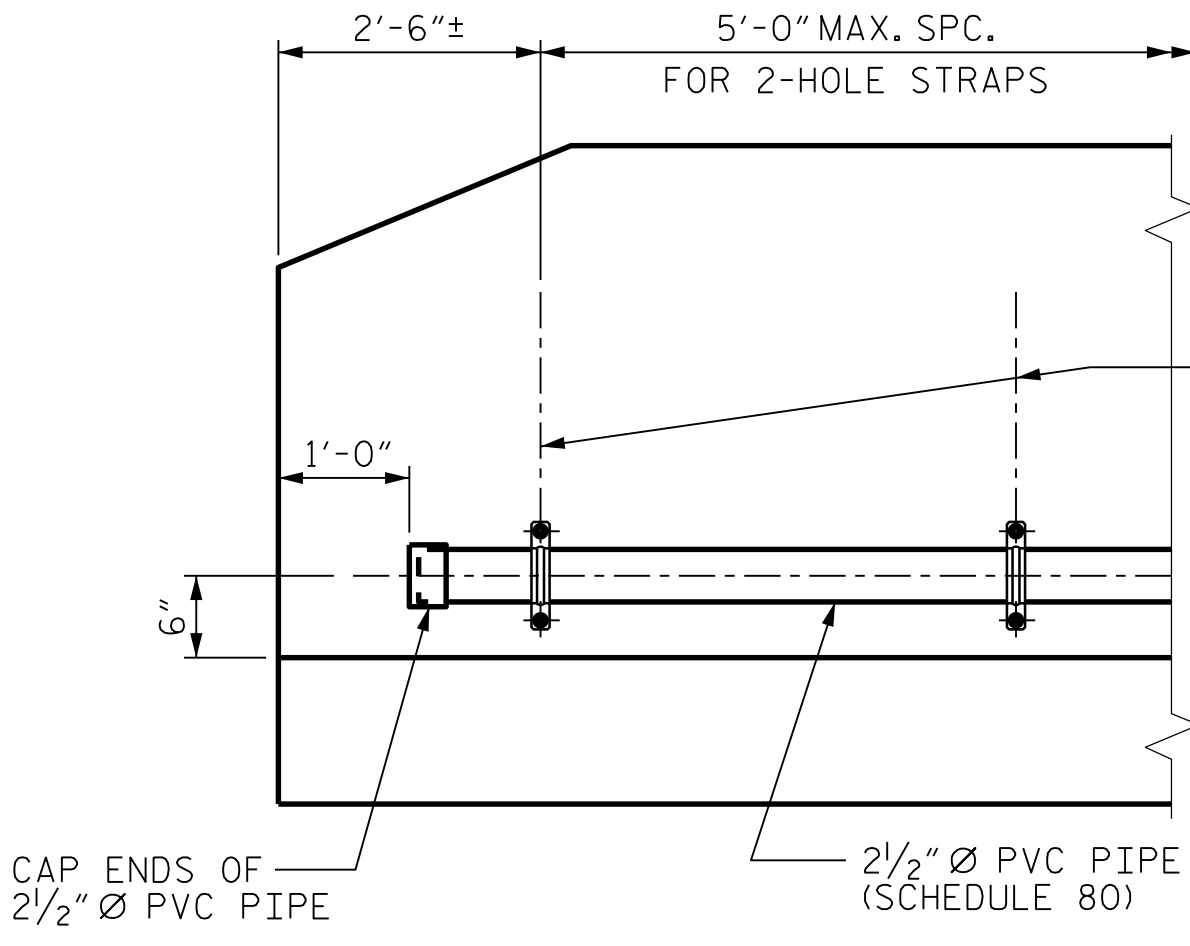
LOCATION OF ANCHORS FOR GUARDRAIL

END BENT 1 SHOWN, END BENT 2 SIMILAR.



SKETCH SHOWING POINTS OF ATTACHMENT

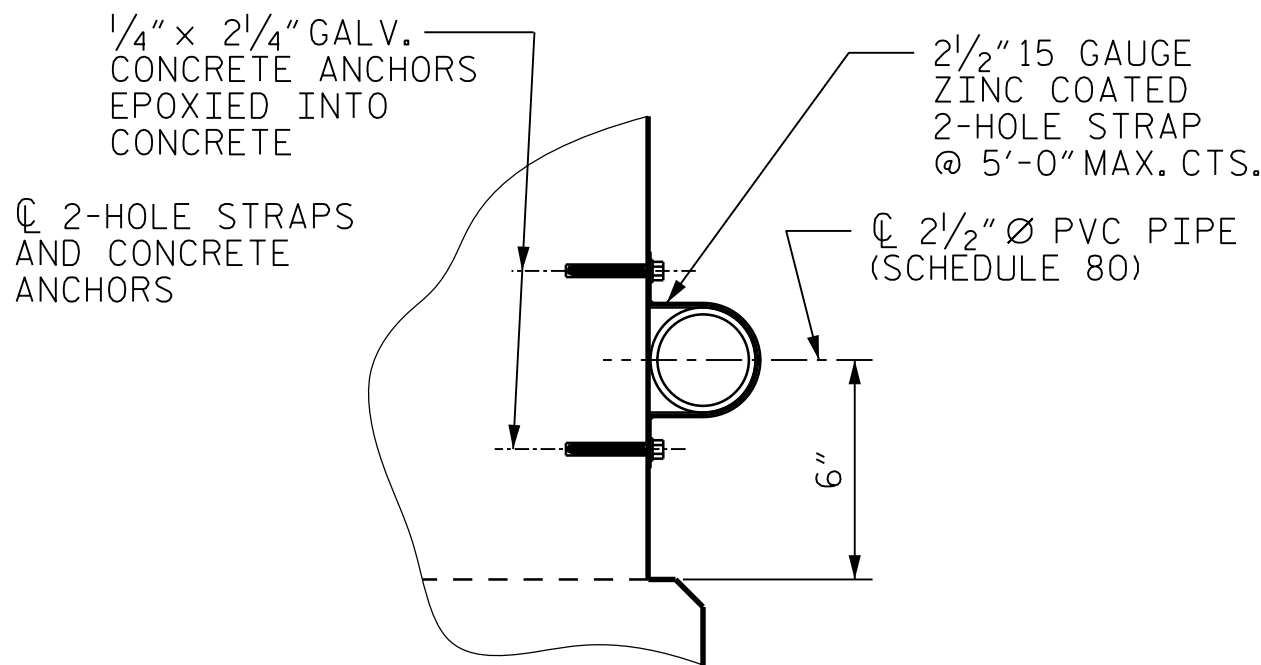
* DENOTES GUARDRAIL ANCHOR ASSEMBLY



ELEVATION

FIBER OPTIC CONDUIT SYSTEM DETAILS

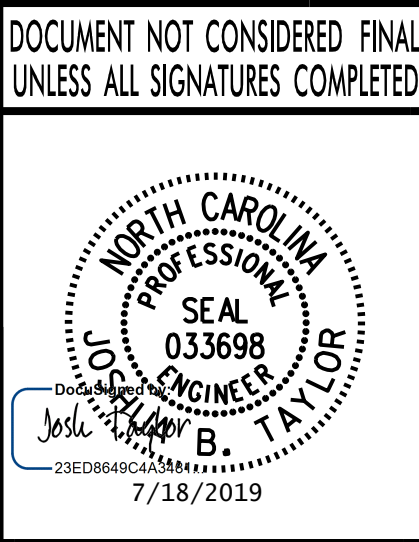
2 1/2" Ø SCHEDULE 80 PVC PIPE ATTACHED TO THE BACK OF BOTH RAILS FOR FUTURE FIBER OPTIC CABLE.



SECTION

PROJECT NO. 17BP.3.R.78
SAMPSON COUNTY
STATION: 23 + 85.00 -L-

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
GUARDRAIL ANCHORAGE AND FIBER OPTIC CONDUIT SYSTEM DETAILS FOR VERTICAL CONCRETE BARRIER RAIL					
REVISIONS					
No.	BY:	DATE:	No.	BY:	DATE:
1			3		
2			4		
SHEET No.					TOTAL SHEETS
S-12					20



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 : 7-19
CHECKED BY : J. B. TAYLOR DATE : 7-19
DESIGN ENGINEER : J. B. TAYLOR DATE : 7-19

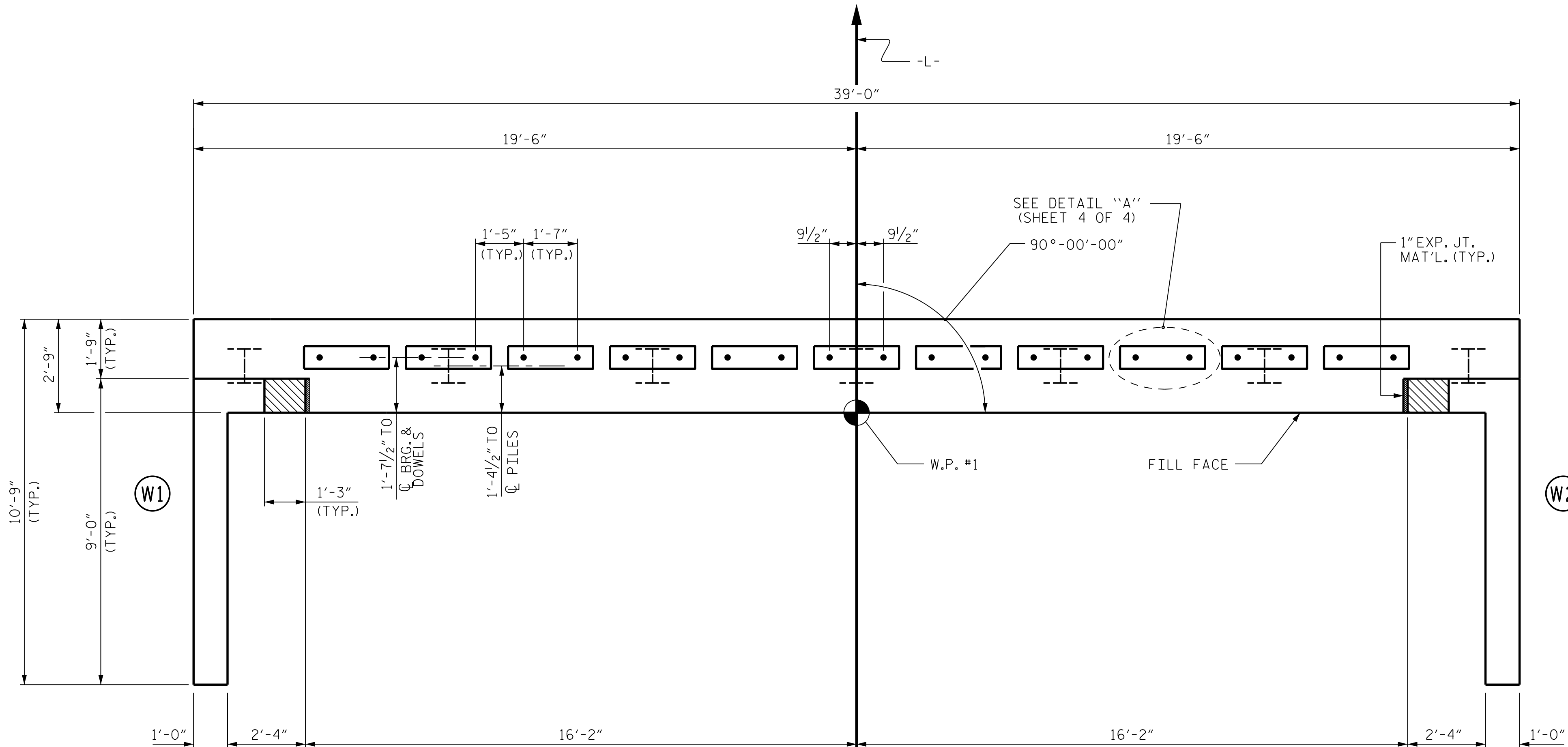
NOTES

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

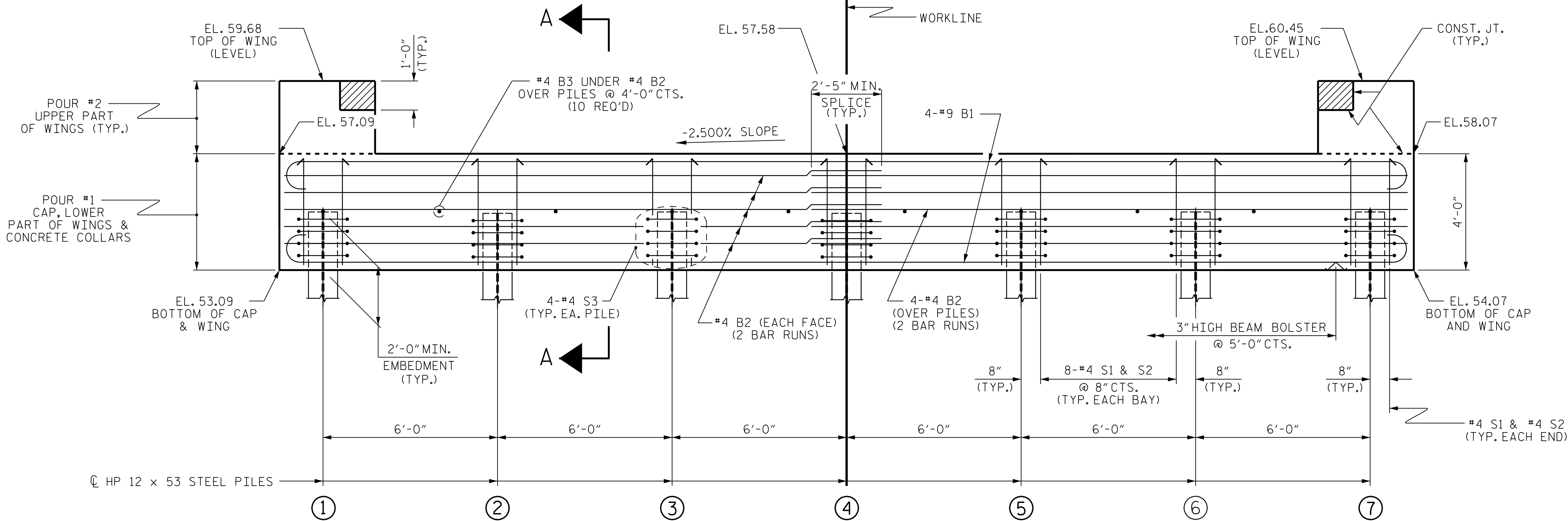
THE CONCRETE IN THE SHADED AREA OF THE WING SHALL BE POURED AFTER THE VERTICAL CONCRETE BARRIER RAIL IS CAST IF SLIP FORMING IS USED.

FOR PILE SPlice DETAILS, SEE SHEET 4 OF 4.

FOR WING DETAILS, SEE SHEET 3 OF 4.



PLAN



ELEVATION

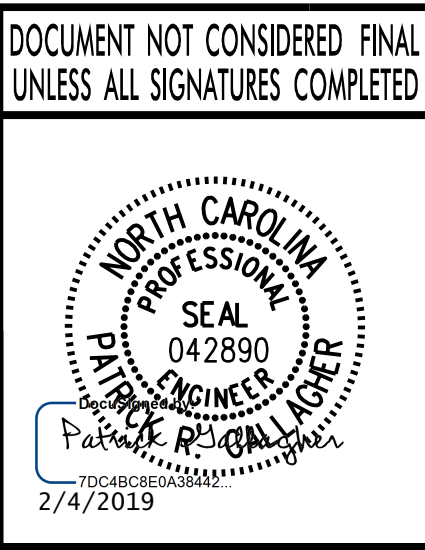
WINGS NOT SHOWN FOR CLARITY.
FOR SECTION A-A, SEE SHEET 4 OF 4.
CONCRETE COLLARS FOR STEEL PILES NOT SHOWN IN PLAN AND ELEVATION VIEWS FOR CLARITY.
SEE "CORROSION PROTECTION FOR STEEL PILES DETAIL", SHEET 4 OF 4.

TOP OF PILE ELEVATIONS	
①	55.13
②	55.28
③	55.43
④	55.58
⑤	55.73
⑥	55.88
⑦	56.03

PROJECT NO. 17BP.3.R.78
SAMPSON COUNTY
STATION: 23 + 85.00 -L-

SHEET 1 OF 4

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
SUBSTRUCTURE					
END BENT 1					
REVISIONS					
No.	BY:	DATE:	No.	BY:	DATE:
1			3		
2			4		
SHEET No.					TOTAL SHEETS
S-13					20



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FOR NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

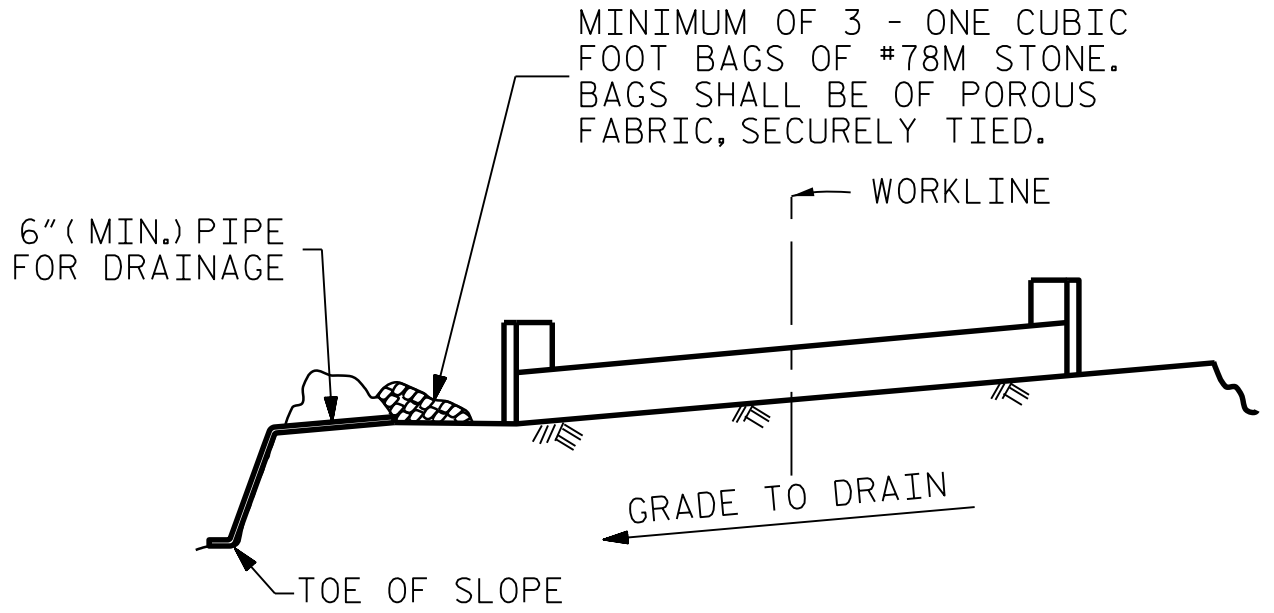
DRAWN BY : K. E. LOFTON DATE : 9-18
CHECKED BY : J. B. TAYLOR DATE : 11-18
DESIGN ENGINEER : P. R. GALLAGHER DATE : 11-18

ASSEMBLED BY : K. E. LOFTON DATE : 9-18
CHECKED BY : P. R. GALLAGHER DATE : 11-18
DRAWN BY : WJH 12/11
CHECKED BY : AAC 12/11
REV. 4/15 MAA/TMG

+

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FILE: j:\division_3\bridge\newdocument\B-403 Structures\Plans\B403_010208.snu_eb274.dgn
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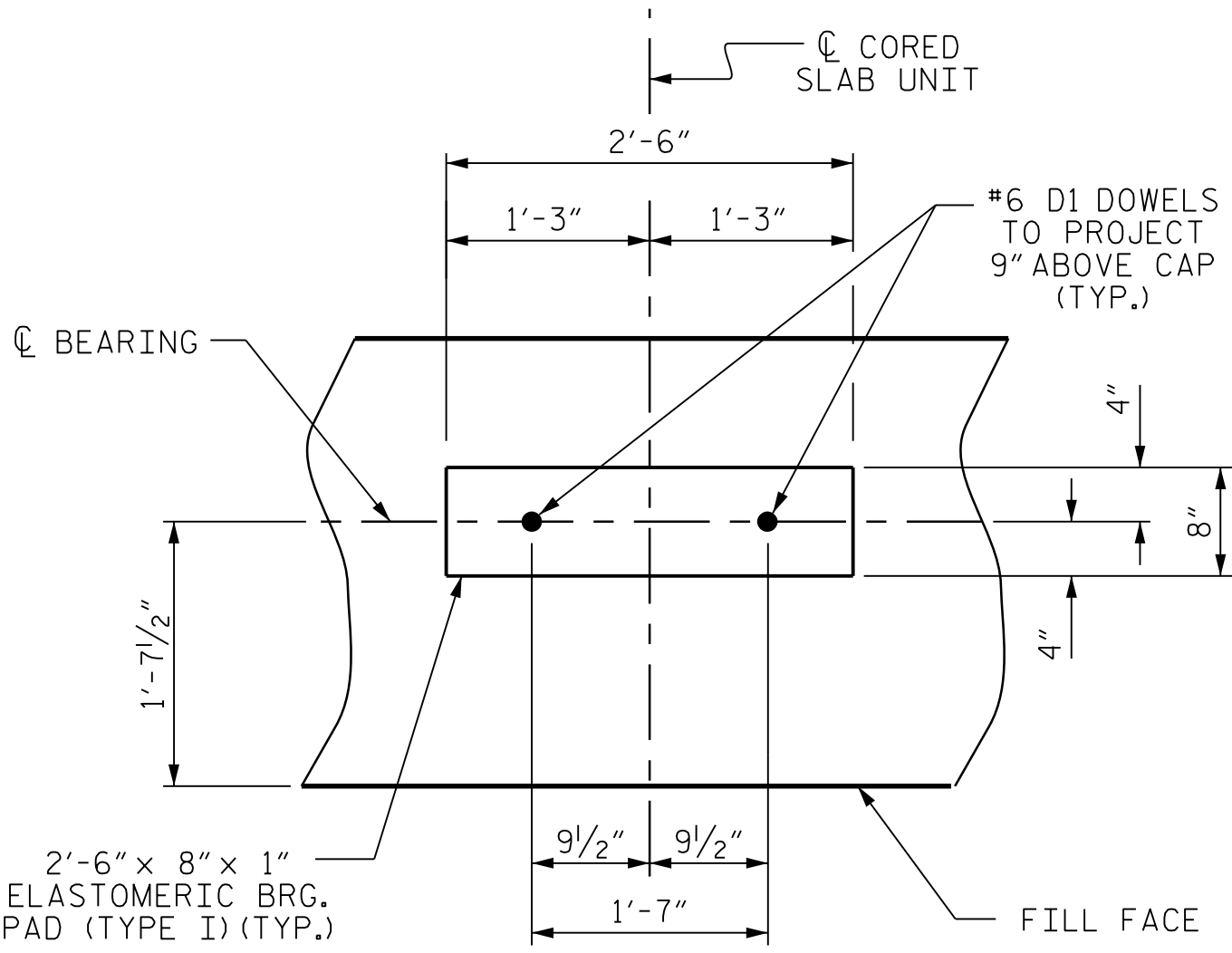


BAGGED STONE AND PIPE SHALL BE PLACED IMMEDIATELY AFTER COMPLETION OF END BENT EXCAVATION. PIPE MAY BE EITHER CONCRETE, CORRUGATED STEEL, CORRUGATED ALUMINUM ALLOY, OR CORRUGATED PLASTIC. PERFORATED PIPE WILL NOT BE ALLOWED.

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

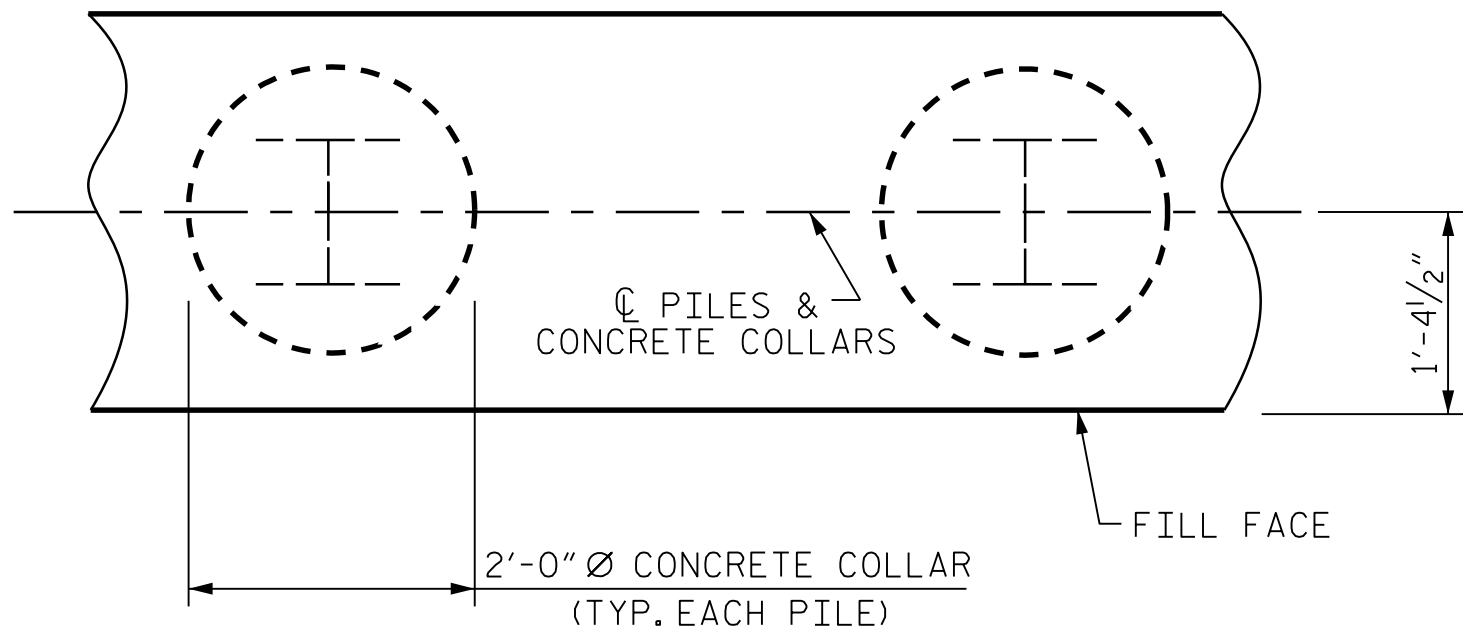
NO SEPARATE PAYMENT WILL BE MADE FOR THIS WORK AND THE ENTIRE COST OF THIS WORK SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR THE SEVERAL PAY ITEMS.

TEMPORARY DRAINAGE AT END BENT



DETAIL "A"

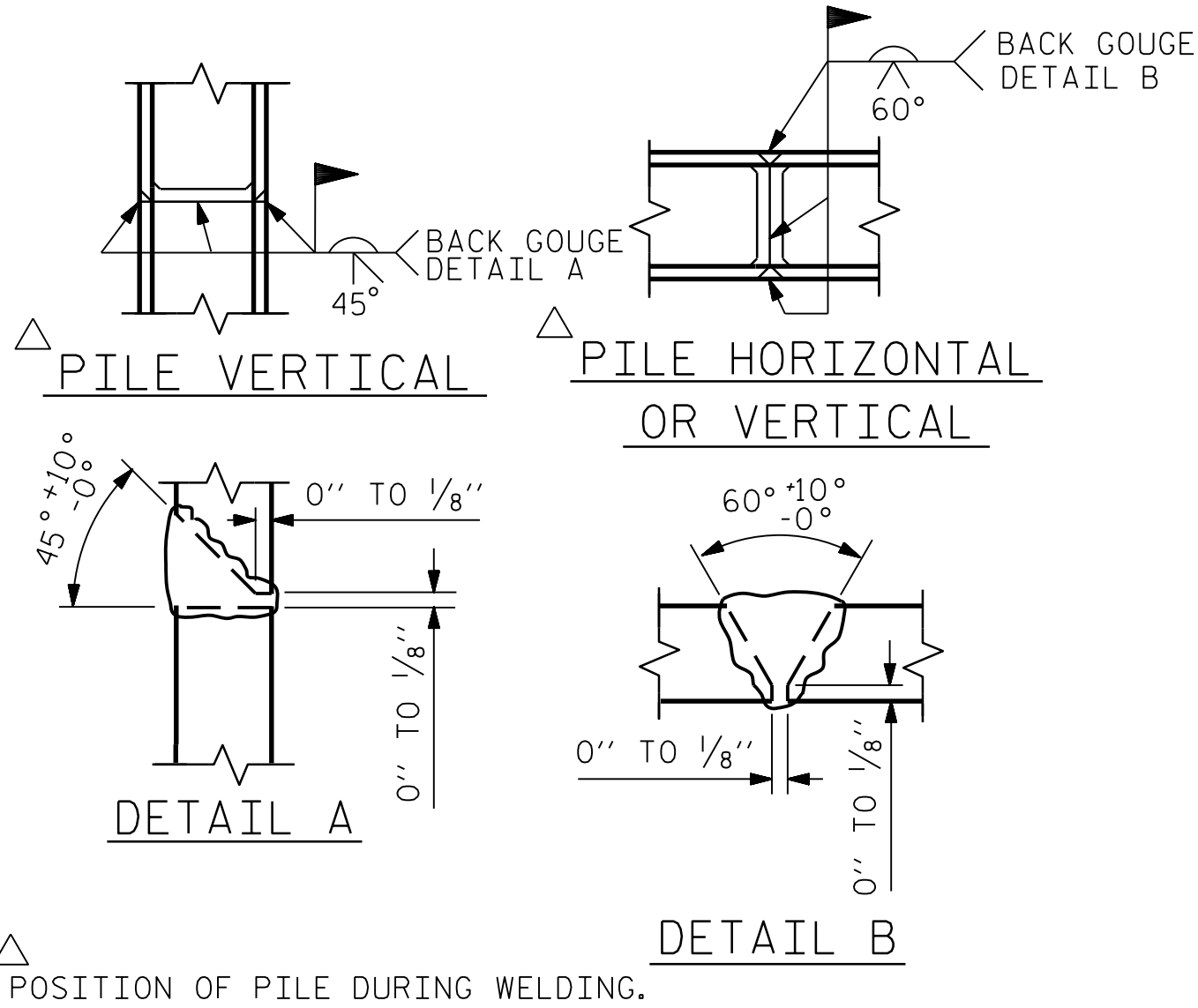
(END BENT No. 1 SHOWN, END BENT No. 2 SIMILAR BY ROTATION)



PLAN

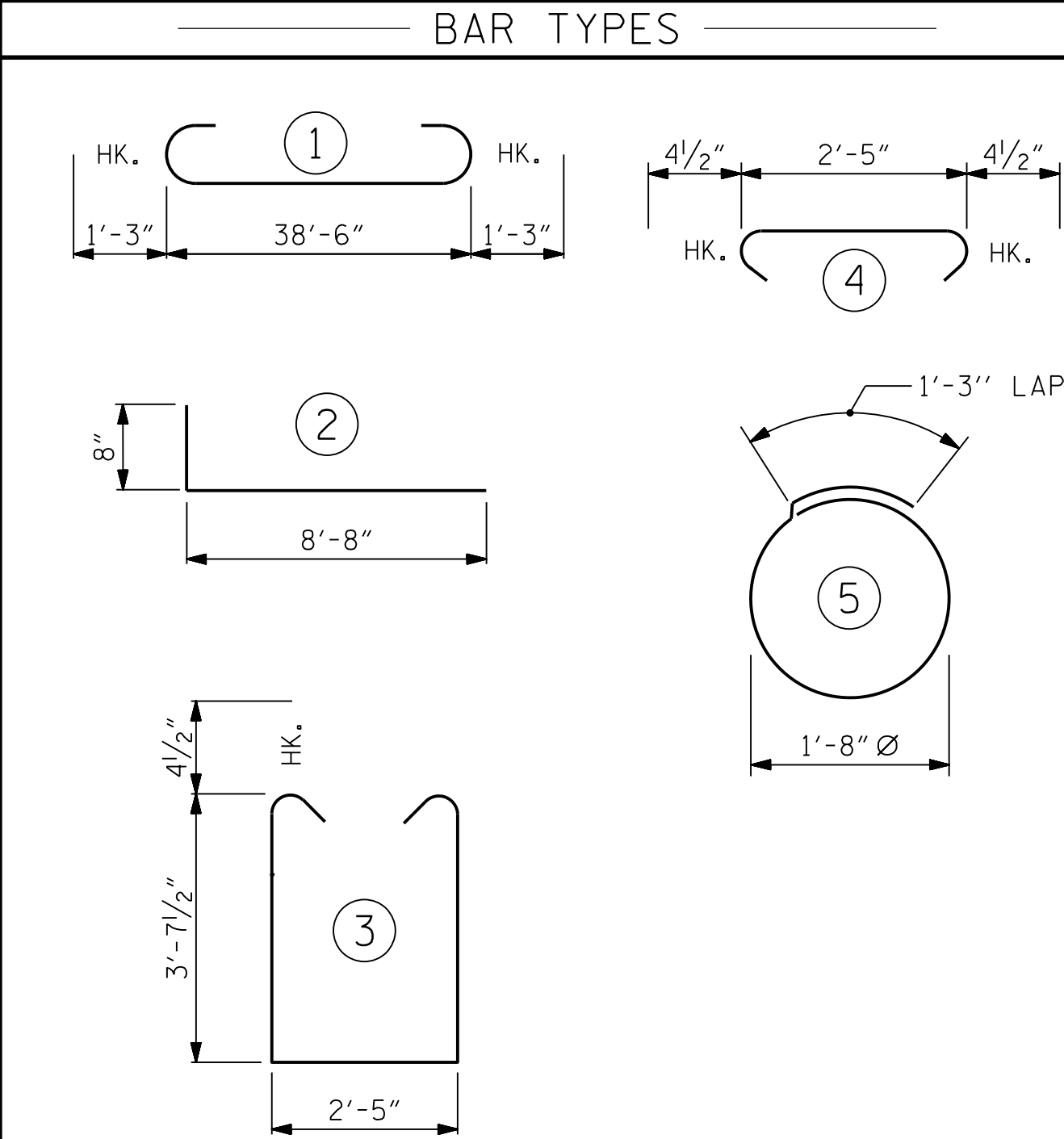
CORROSION PROTECTION FOR STEEL PILES DETAIL

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



PILE SPLICE DETAILS

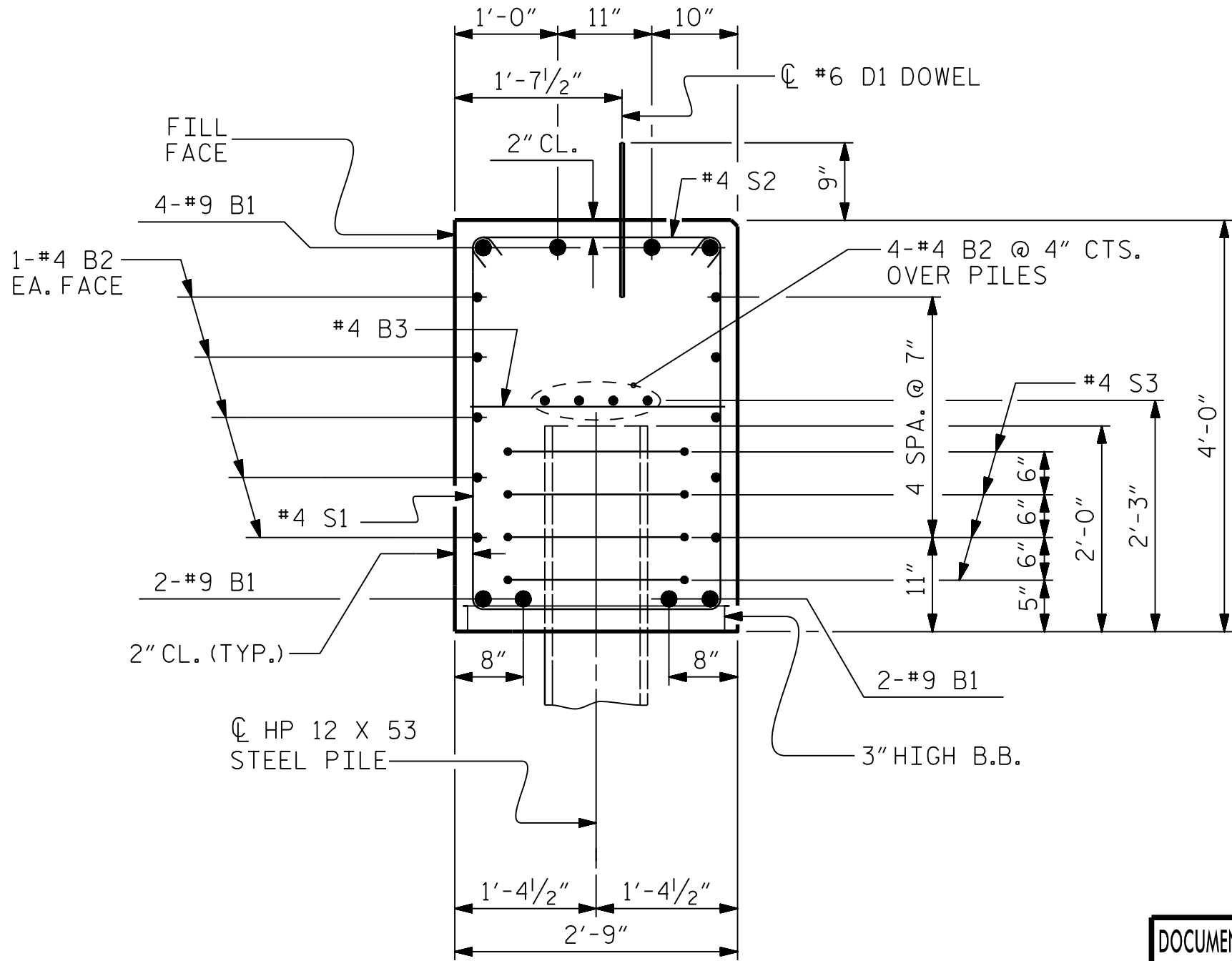
△ POSITION OF PILE DURING WELDING.



ALL BAR DIMENSIONS ARE OUT TO OUT.

END BENT No. 1	END BENT No. 2
HP 12 X 53 STEEL PILES NO: 7 LIN. FT.= 315	HP 12 X 53 STEEL PILES NO: 7 LIN. FT.= 350
PILE DRIVING EQUIPMENT SETUP FOR HP 12 X 53 STEEL PILES NO: 7	PILE DRIVING EQUIPMENT SETUP FOR HP 12 X 53 STEEL PILES NO: 7
PILE REDRIVES NO: 4	PILE REDRIVES NO: 4

BILL OF MATERIAL					
FOR END BENT 1					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	8	#9		41'-0"	1115
B2	28	#4	STR	20'-7"	385
B3	10	#4	STR	2'-5"	16
D1	22	#6	STR	1'-6"	50
H1	40	#4	2	9'-4"	249
K1	16	#4	STR	2'-11"	31
S1	50	#4	3	10'-5"	348
S2	50	#4	4	3'-2"	106
S3	28	#4	5	6'-6"	122
V1	52	#4	STR	6'-0"	208
REINFORCING STEEL (FOR END BENT 1)					2630 LBS.
CLASS A CONCRETE BREAKDOWN (FOR END BENT 1)					
POUR #1 CAP, LOWER PART OF WINGS & COLLARS					19.5 C.Y.
POUR #2 UPPER PART OF WINGS					2.1 C.Y.
TOTAL CLASS A CONCRETE					21.6 C.Y.
FOR END BENT 2					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	8	#9	1	41'-0"	1115
B2	28	#4	STR	20'-7"	385
B3	10	#4	STR	2'-5"	16
D1	22	#6	STR	1'-6"	50
H1	40	#4	2	9'-4"	249
K1	16	#4	STR	2'-11"	31
S1	50	#4	3	10'-5"	348
S2	50	#4	4	3'-2"	106
S3	28	#4	5	6'-6"	122
V1	52	#4	STR	6'-4"	214
REINFORCING STEEL (FOR END BENT 2)					2642 LBS.
CLASS A CONCRETE BREAKDOWN (FOR END BENT 2)					
POUR #1 CAP, LOWER PART OF WINGS & COLLARS					19.5 C.Y.
POUR #2 UPPER PART OF WINGS					2.7 C.Y.
TOTAL CLASS A CONCRETE					22.2 C.Y.



SECTION A-A

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

ASSEMBLED BY : K. E. LOFTON	DATE : 9-18
CHECKED BY : P. R. GALLAGHER	DATE : 11-18
DRAWN BY : WJH 12/11	REV. 4/17 MAA/THC
CHECKED BY : AAC 12/11	

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

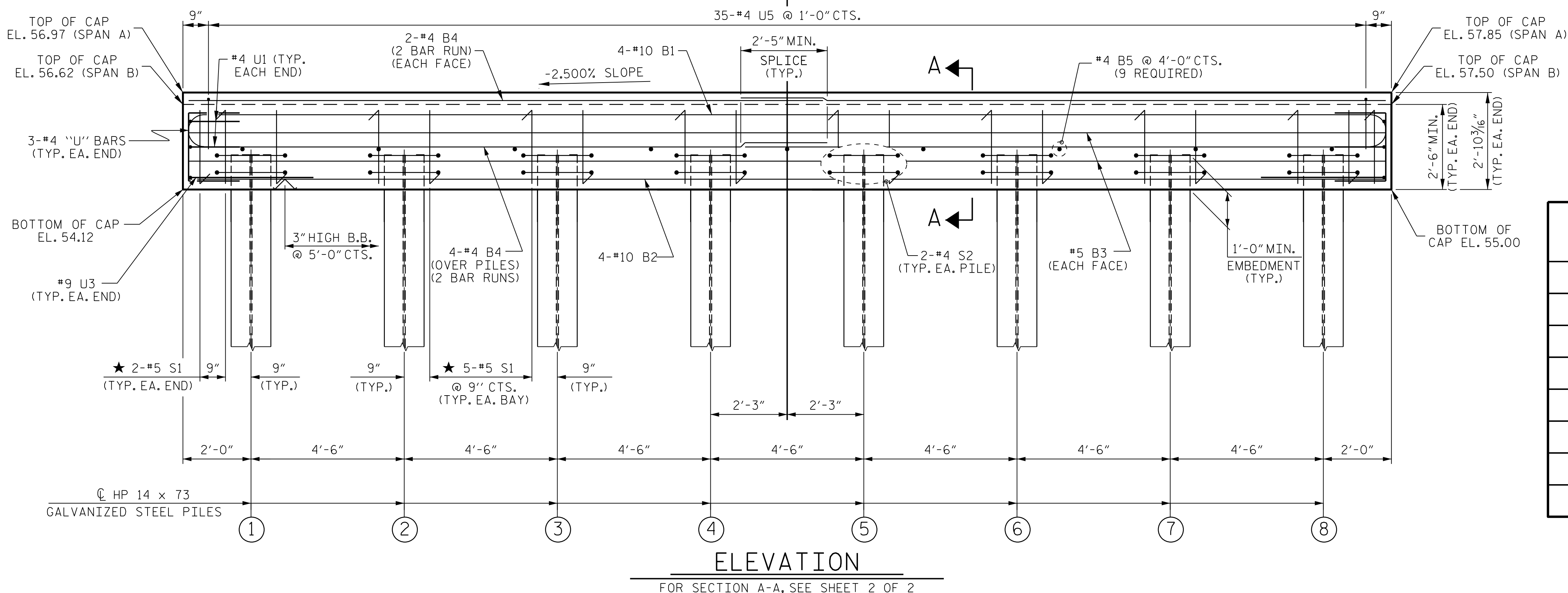
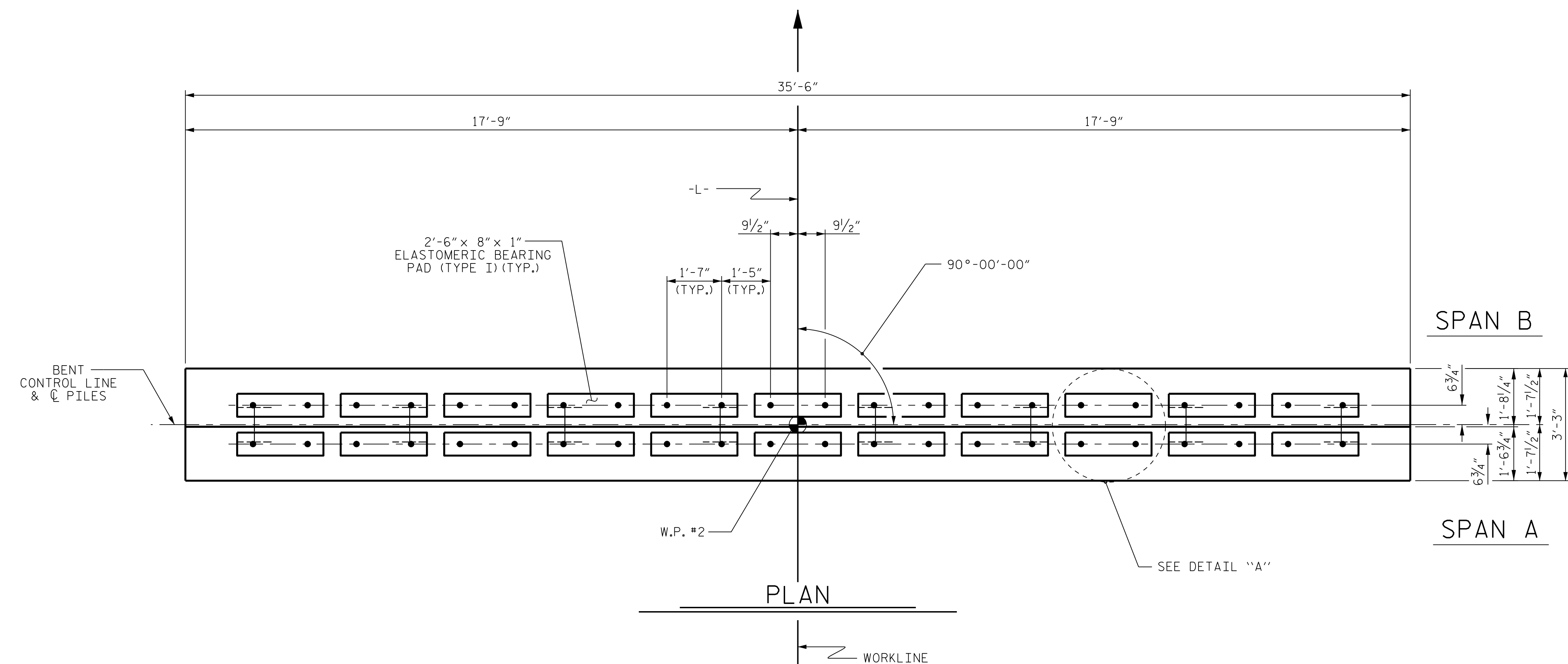
PLANS PREPARED BY :
PARSONS
5540 Centerview Drive, Suite 217
Raleigh, NC 27606-3386
NC LICENSE No. F-0246
FOR NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

NORTH CAROLINA
PROFESSIONAL
SEAL
042890
P. R. GALLAGHER
27472019

PROJECT NO. **17BP.3.R.78**
SAMPSON COUNTY
STATION: **23 + 85.00 -L-**
SHEET 4 OF 4

REVISIONS						SHEET No.	
No.	BY:	DATE:	No.	BY:	DATE:	TOTAL SHEETS	
1			3			5-16	
2			4			20	



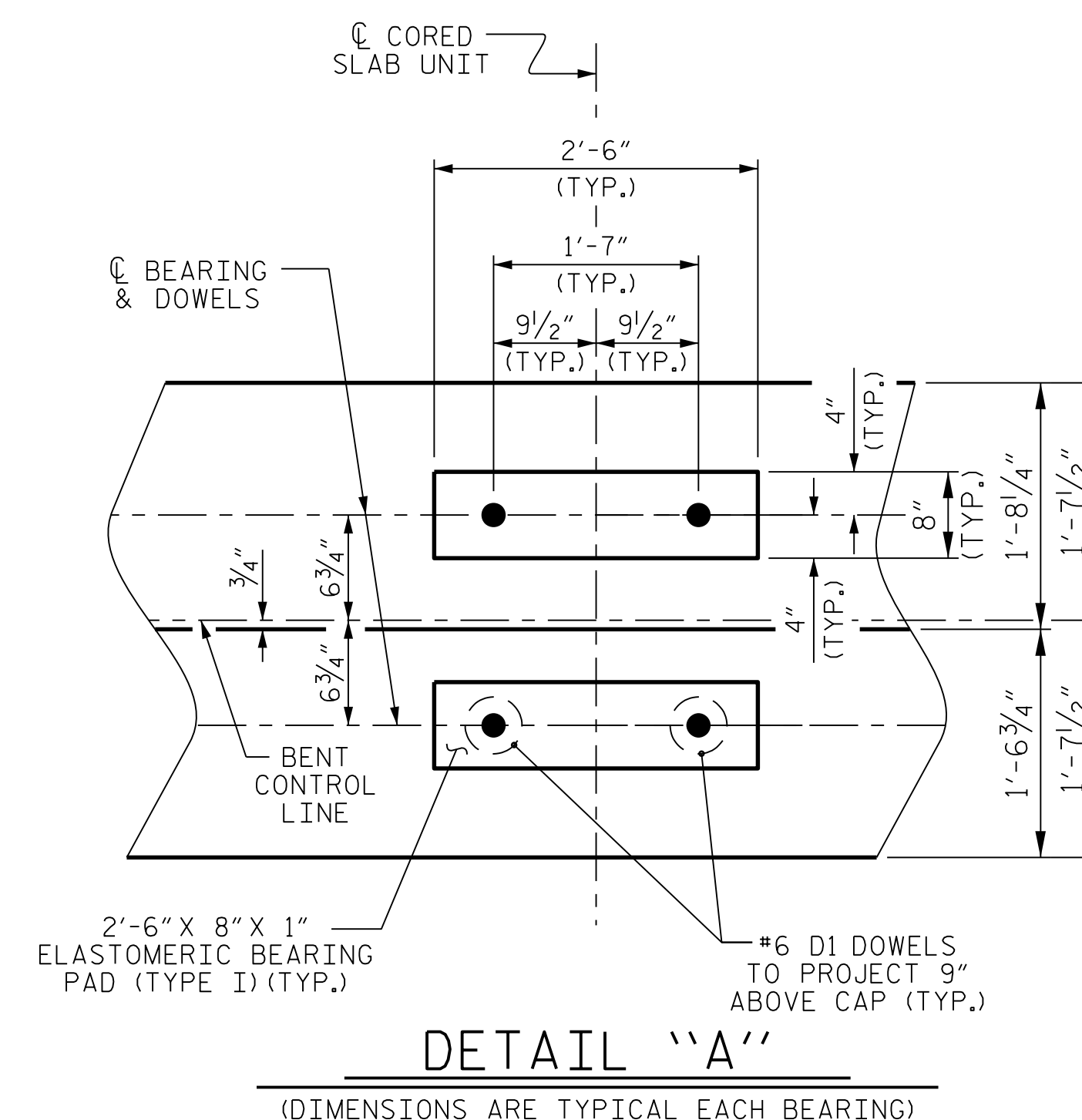
TOP OF PILE ELEVATIONS	
①	55.17
②	55.28
③	55.39
④	55.51
⑤	55.62
⑥	55.73
⑦	55.84
⑧	55.96

NOTES

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

★ INVERT ALTERNATE STIRRUPS.

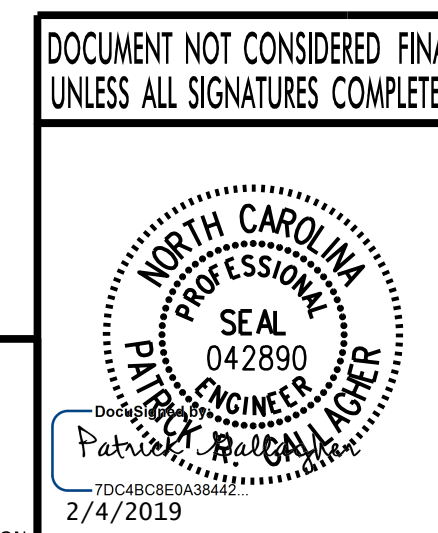
GALVANIZE THE TOP OF EACH INTERIOR BENT PILE A MINIMUM OF 36 FEET. GALVANIZE IN ACCORDANCE WITH SECTION 1076 OF THE STANDARD SPECIFICATIONS.



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

DRAWN BY : K. E. LOFTON DATE : 9-18-81
CHECKED BY : J. B. TAYLOR DATE : 11-18-81
DESIGN ENGINEER : P. R. GALLAGHER DATE : 11-18-81

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



PROJECT NO. 17BP.3.R.78
SAMPSON COUNT
 STATION: 23 + 85.00 -L-

SHEET 1 OF 2

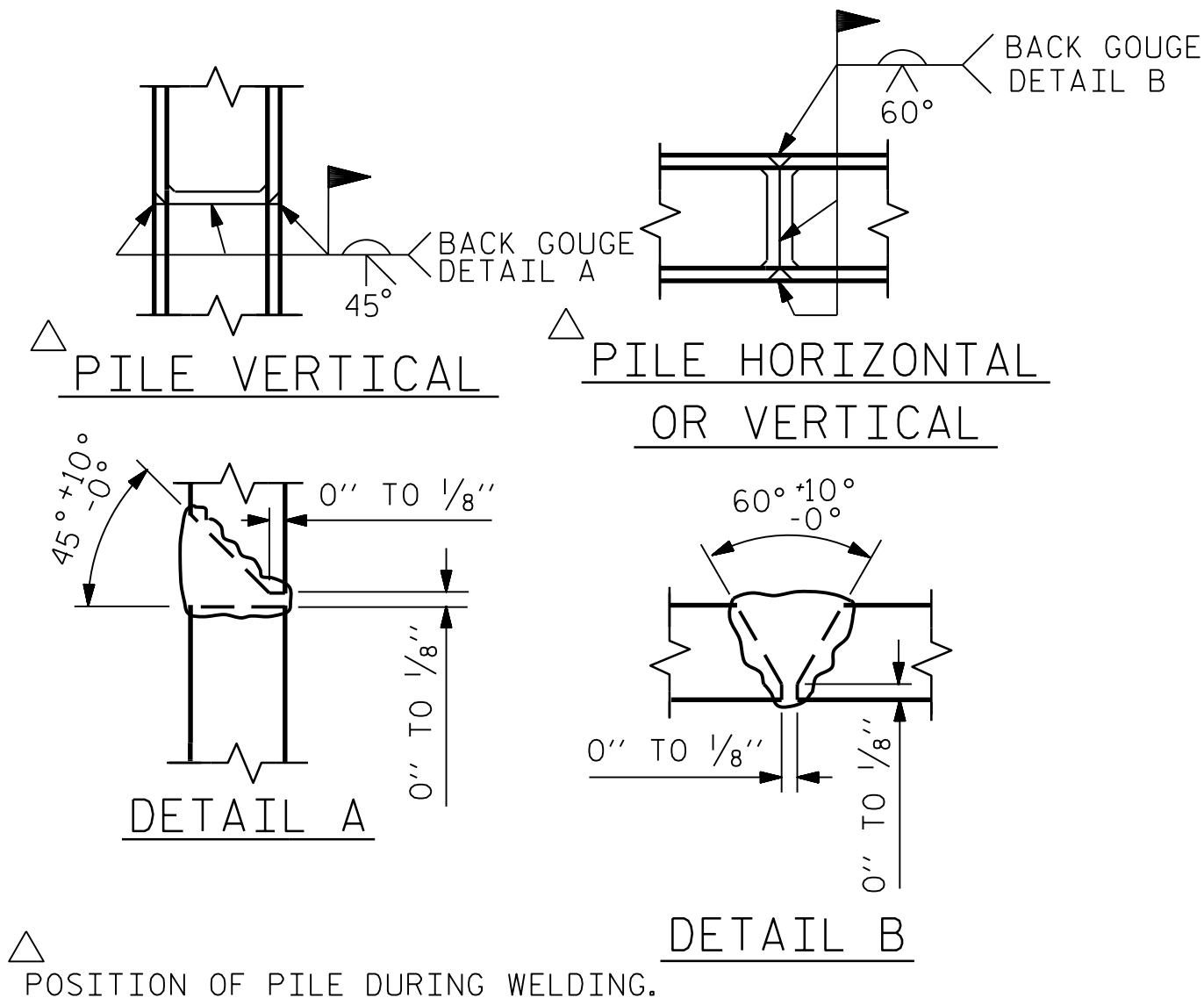
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

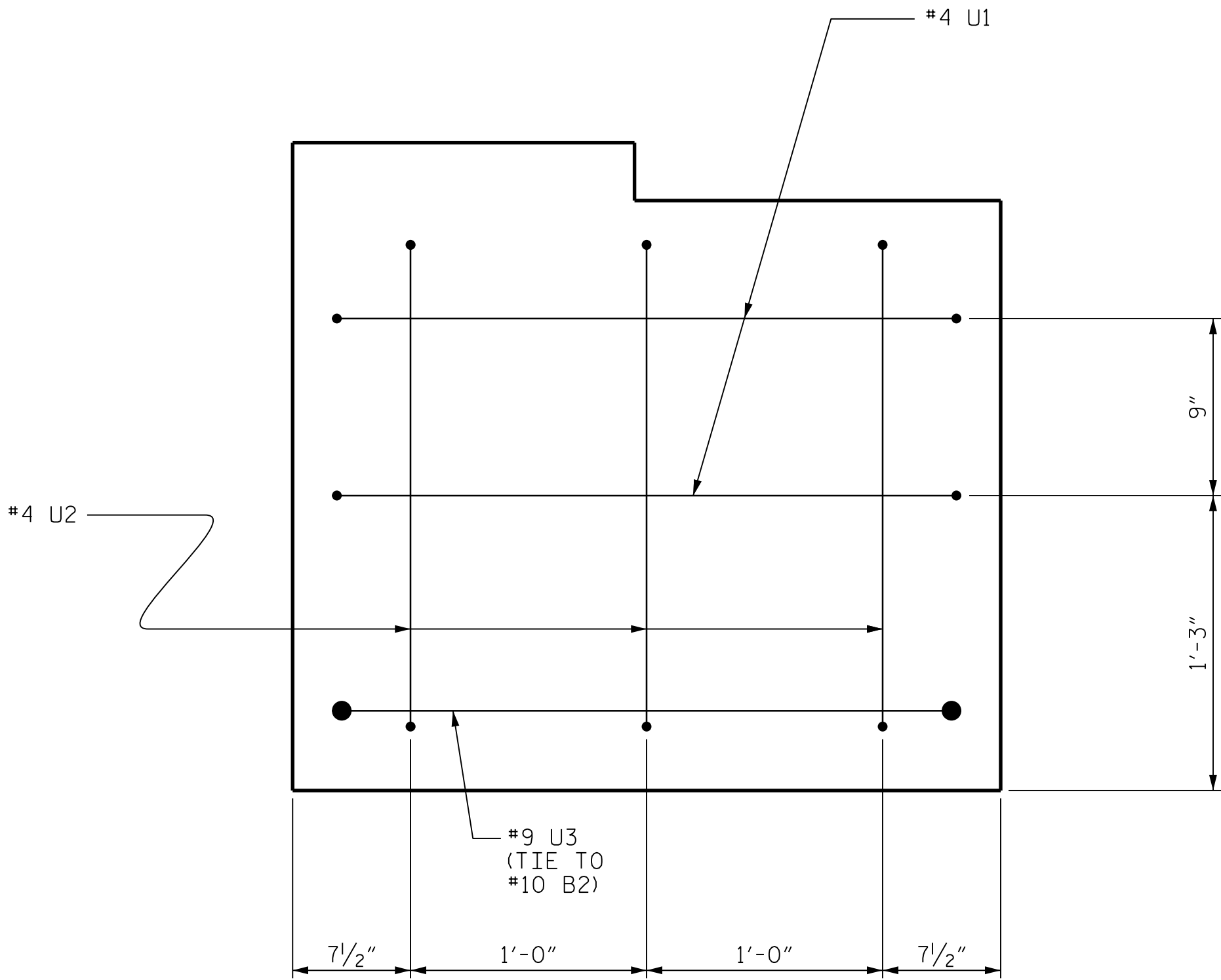
BENT 1

REVISIONS						SHEET No. S-17
No.	BY:	DATE:	No.	BY:	DATE:	
1			3			TOTAL SHEETS 20
2			4			

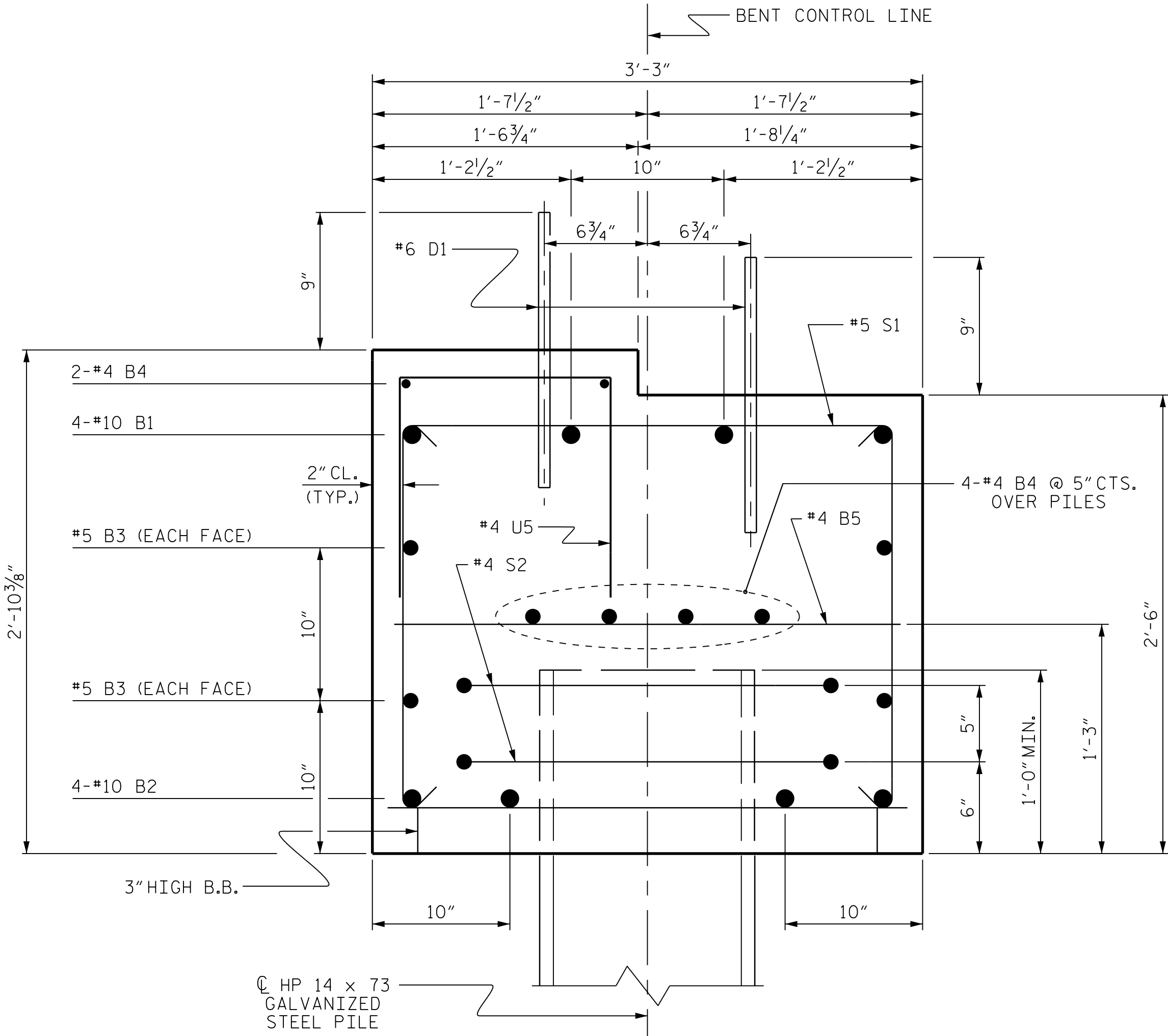
STD. No. 14" HP BT 33 90S <60'



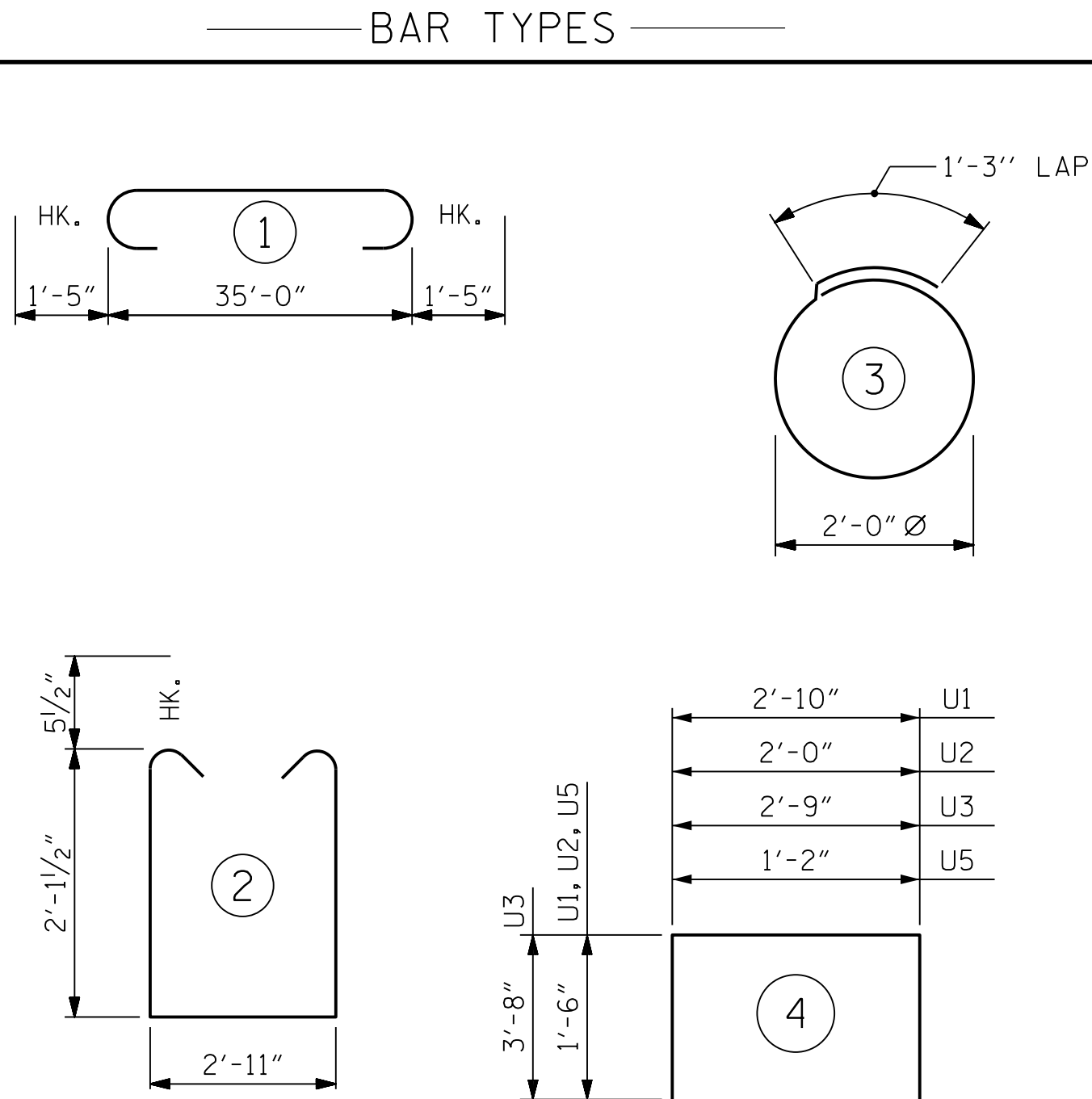
PILE SPLICE DETAILS



END OF CAP VIEW
(SIMILAR BOTH ENDS)



SECTION A-A



ALL BAR DIMENSIONS ARE OUT TO OUT.

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	12	#4	STR	18'-10"	151
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
U5	35	#4	4	4'-2"	97

REINFORCING STEEL		2,283 LBS
CLASS A CONCRETE BREAKDOWN		
TOTAL CLASS A CONCRETE		11.7 C.Y.
HP 14 x 73 GALVANIZED STEEL PILES		
No. 8	LIN. FT.	480
PILE DRIVING EQUIPMENT SETUP FOR HP 14 x 73 GALVANIZED STEEL PILES		No: 8
PILE REDRIVES		No: 4

PROJECT NO. 17BP.3.R.78
SAMPSON COUNTY
STATION: 23 + 85.00 -L-

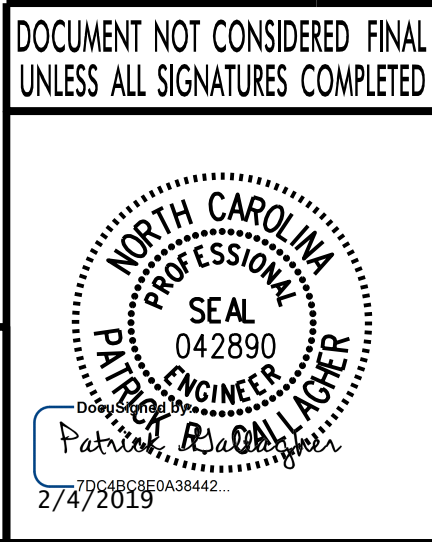
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

BENT DETAILS

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

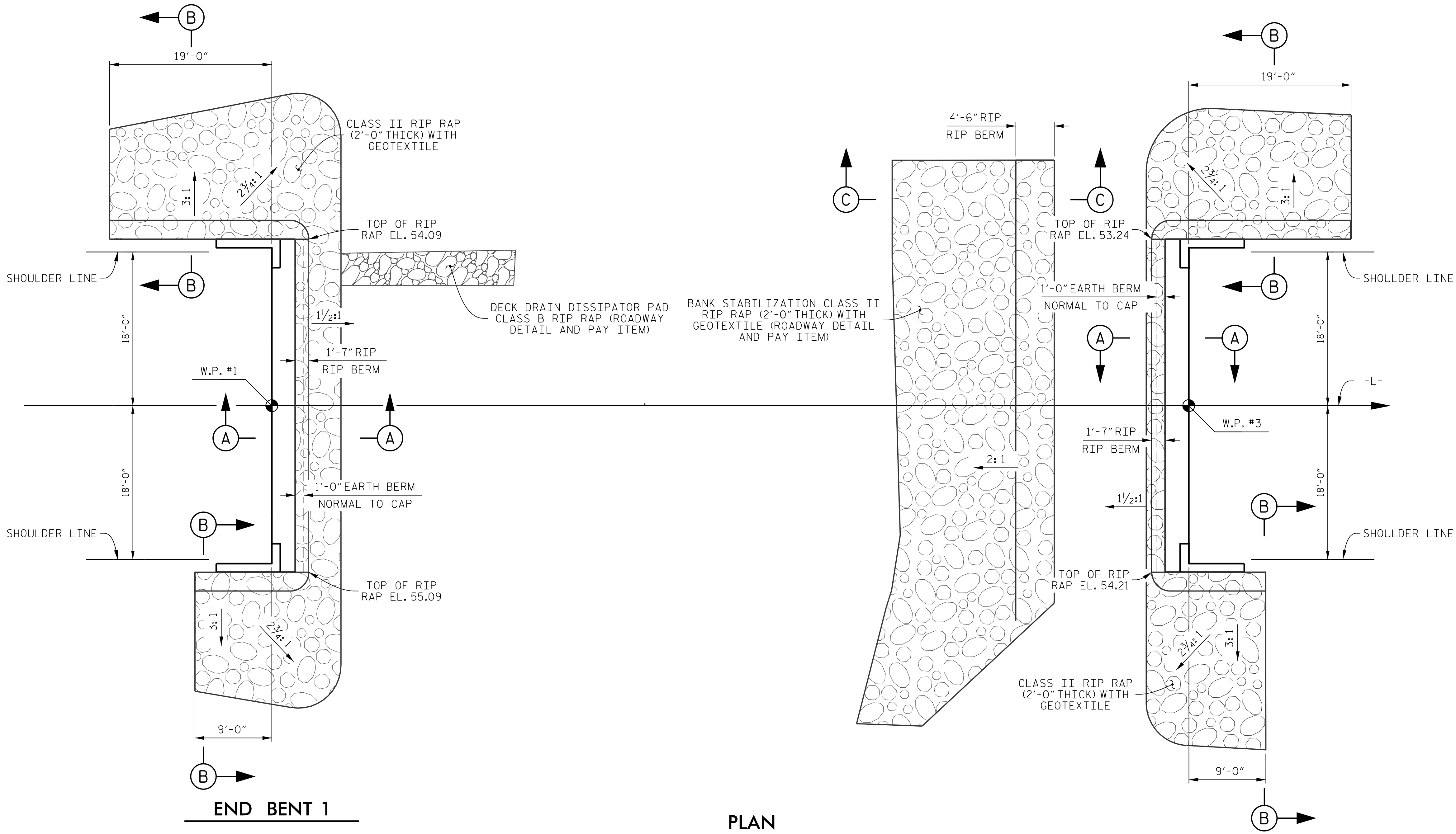
TOTAL SHEETS 20



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

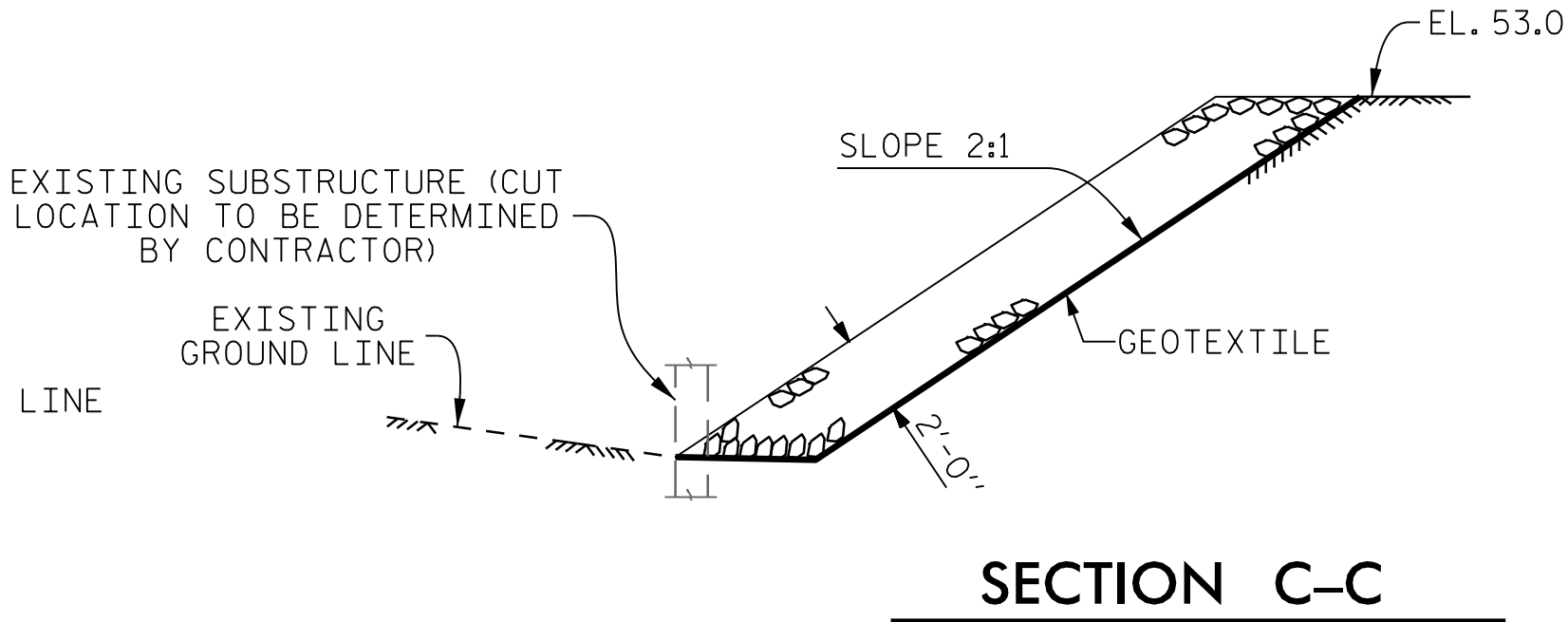
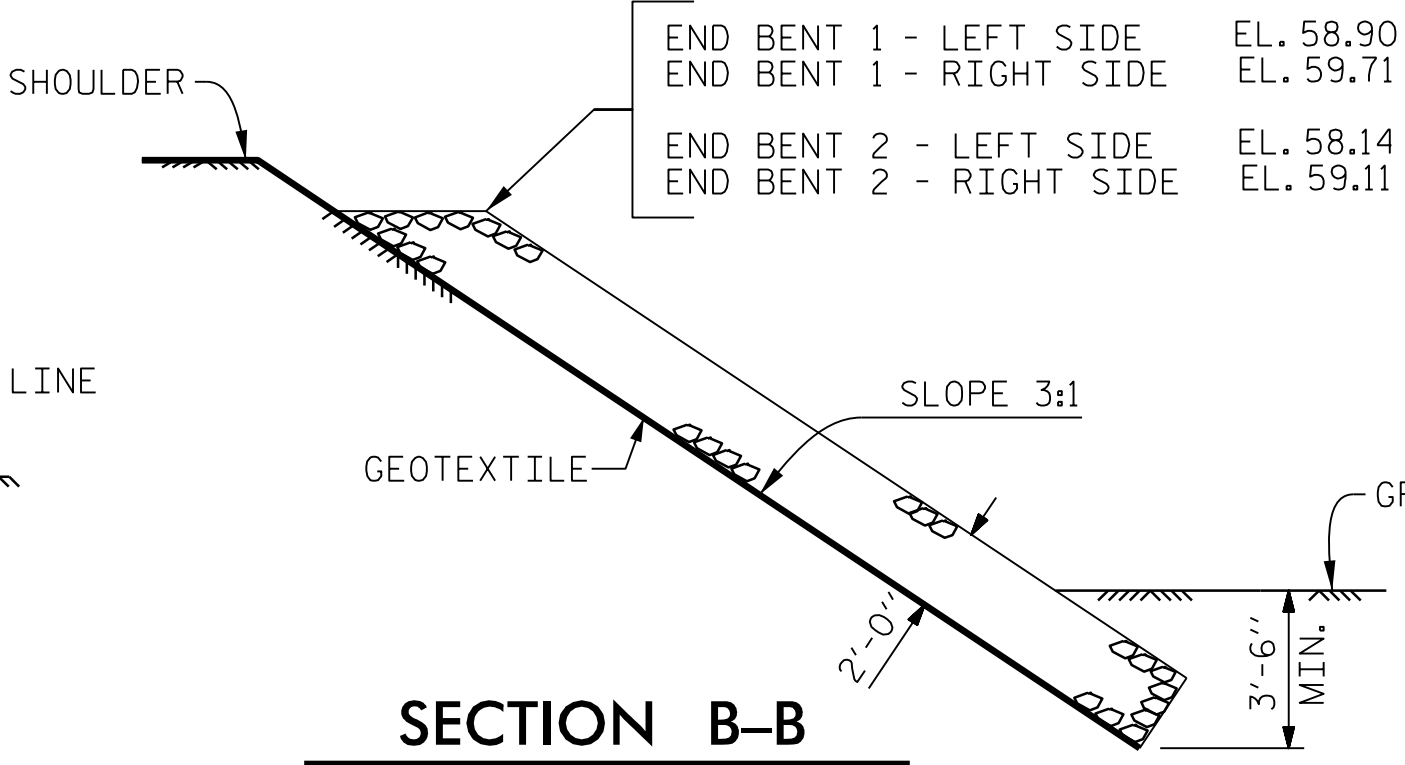
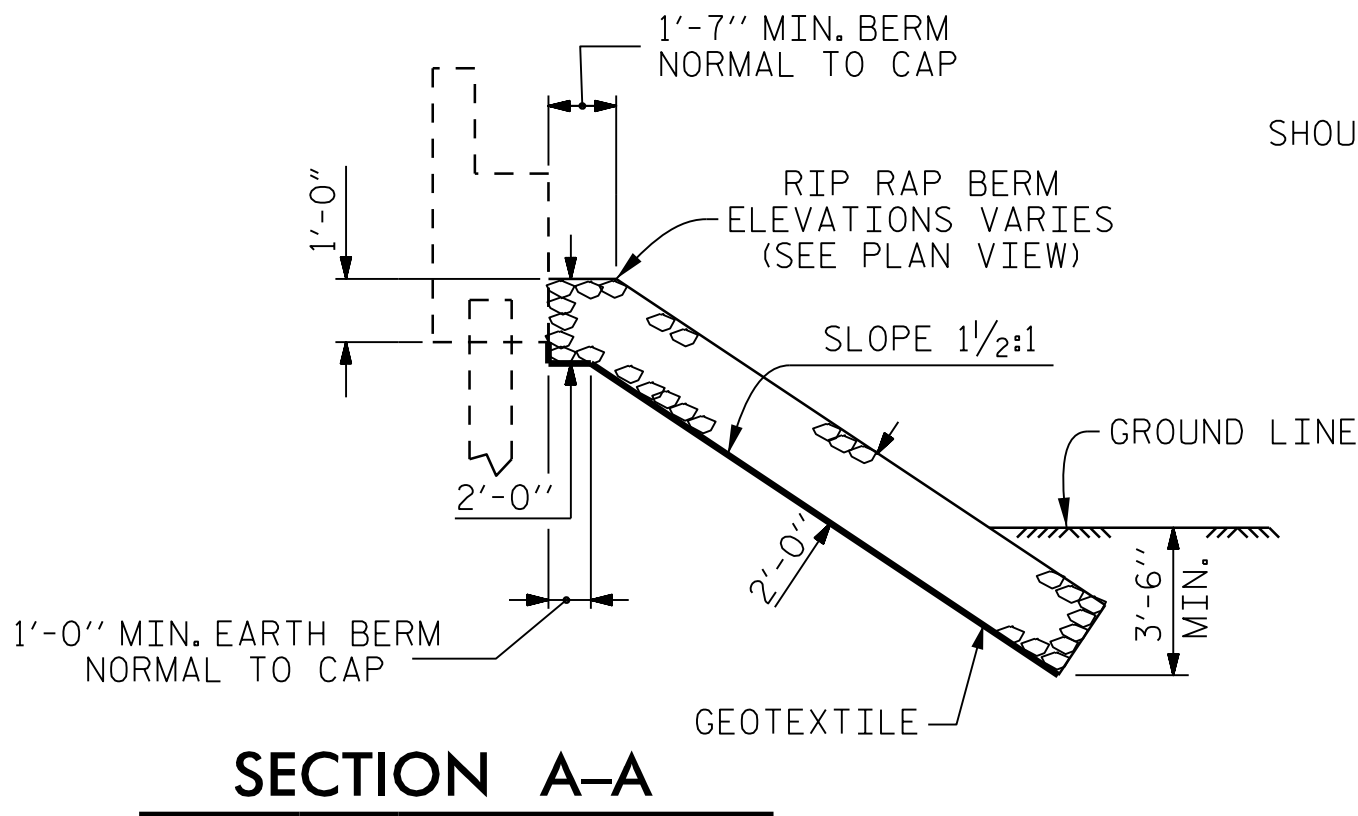
DRAWN BY : K. E. LOFTON DATE : 9-18
CHECKED BY : J. B. TAYLOR DATE : 11-18
DESIGN ENGINEER : P. R. GALLAGHER DATE : 11-18

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



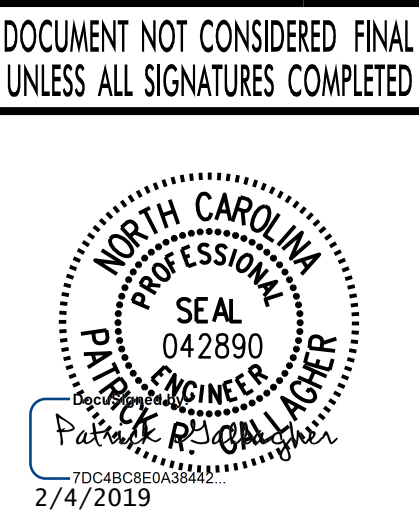
ESTIMATED QUANTITIES		
BRIDGE @ STA. 23+85.00 -L-	PLAIN RIP RAP CLASS II (TONS)	GEOTEXTILE FOR DRAINAGE (SQUARE YARDS)
END BENT 1	155	172
END BENT 2	161	179

PROJECT NO. 17BP.3.R.78
SAMPSON COUNTY
STATION: 23 + 85.00 -L-



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

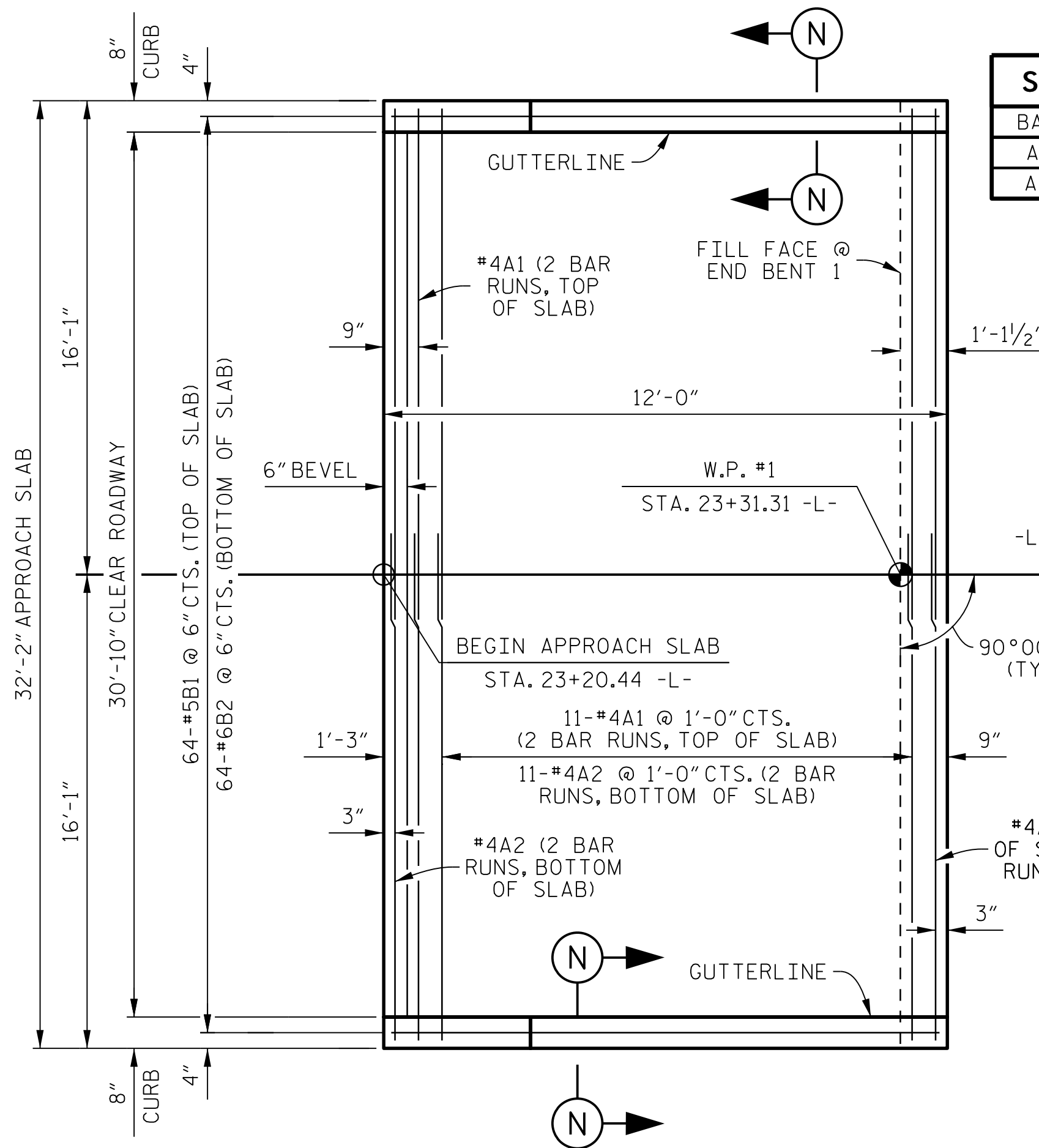


REVISIONS						SHEET No.	
No.	BY:	DATE:	No.	BY:	DATE:	5-19	
1			3			TOTAL SHEETS	
2			4			20	

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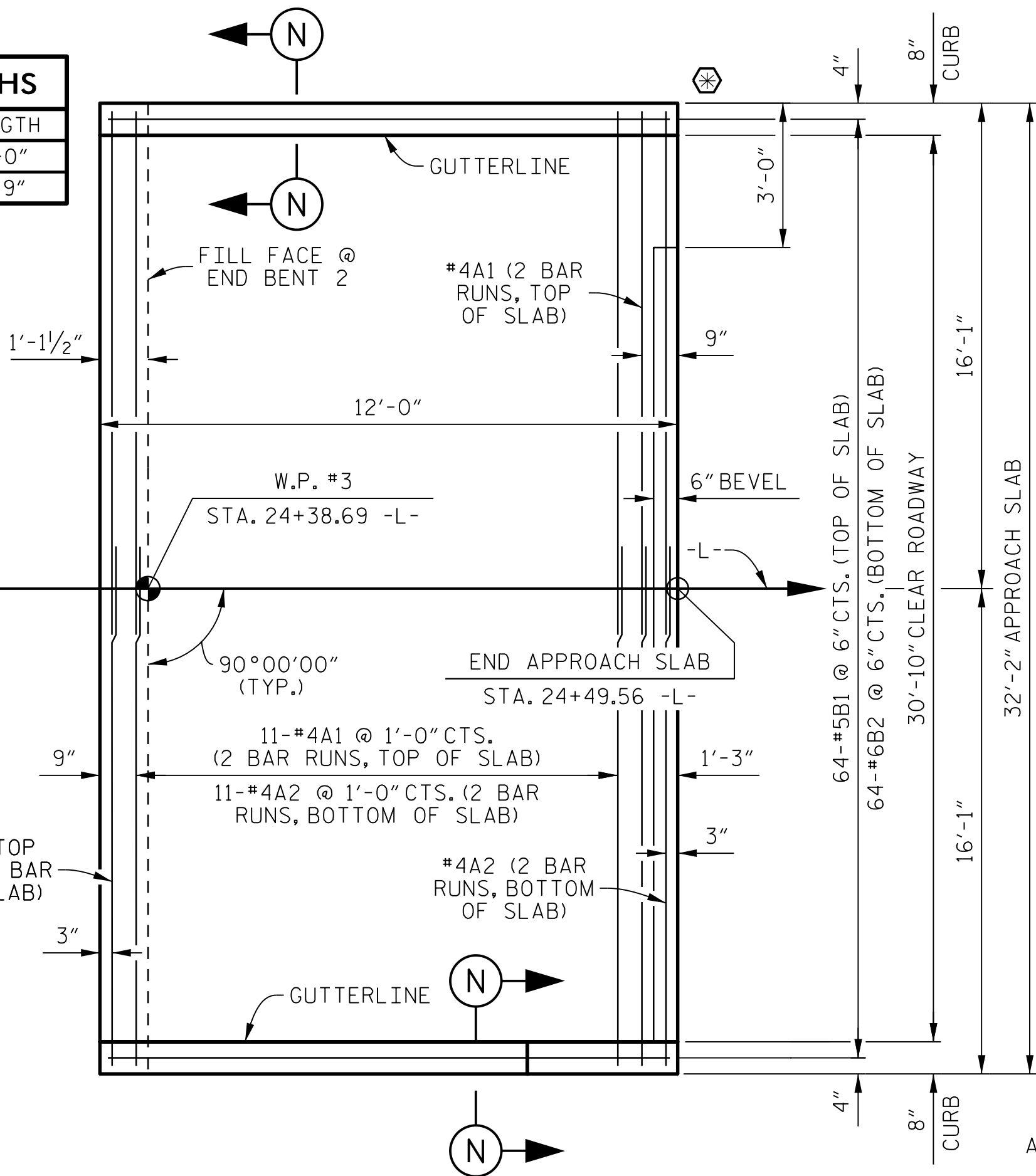
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DATE: 2/20/19
2/20/2019 PM



PLAN OF APPROACH SLAB AT END BENT 1

SPLICE LENGTHS		
BAR	SIZE	LENGTH
A1	#4	2'-0"
A2	#4	1'-9"



PLAN OF APPROACH SLAB AT END BENT 2

NOTES

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

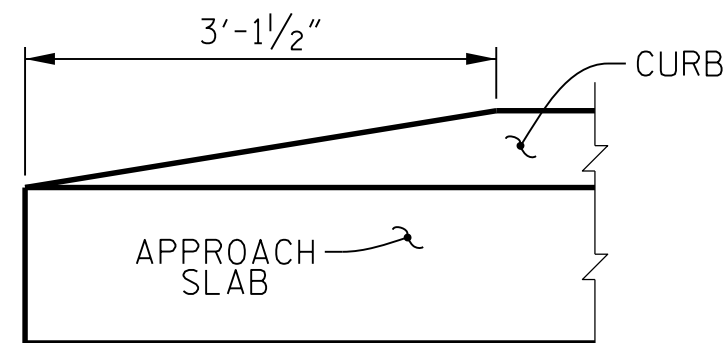
GEOTEXTILE SHALL BE TYPE I IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS SECTION 1056.

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.

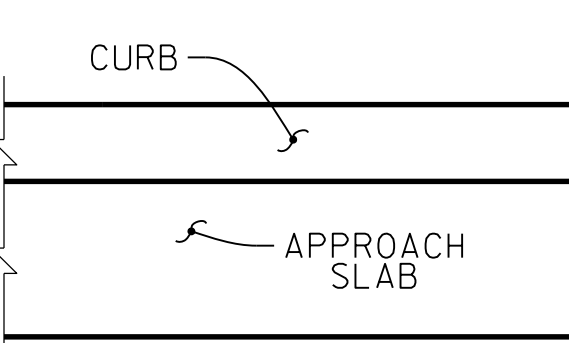
AREA BETWEEN THE WINGWALL AND APPROACH SLAB SHALL BE GRADED TO DRAIN THE WATER AWAY FROM THE FILL FACE OF THE BRIDGE AND SHALL BE PAVED. SEE ROADWAY PLANS.

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



END OF CURB WITHOUT SHOULDER BERM GUTTER

(END BENT 1 APPROACH SLAB, END BENT 2 APPROACH SLAB RIGHT END)



END OF CURB WITH SHOULDER BERM GUTTER

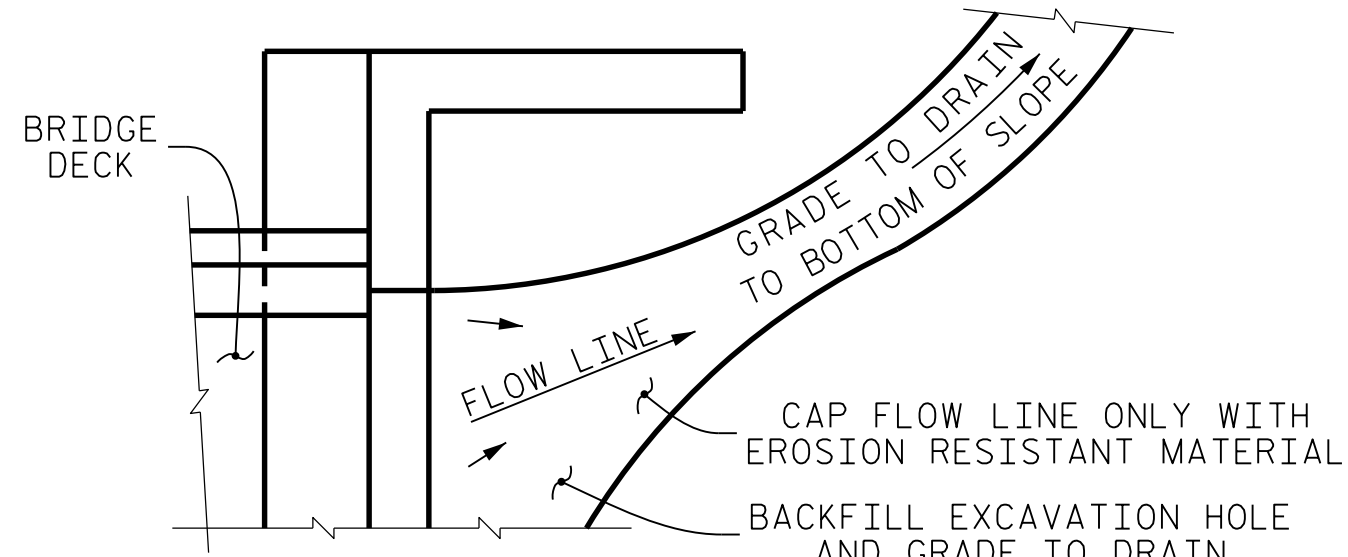
(END BENT 2 APPROACH SLAB, LEFT END)

CURB DETAILS

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

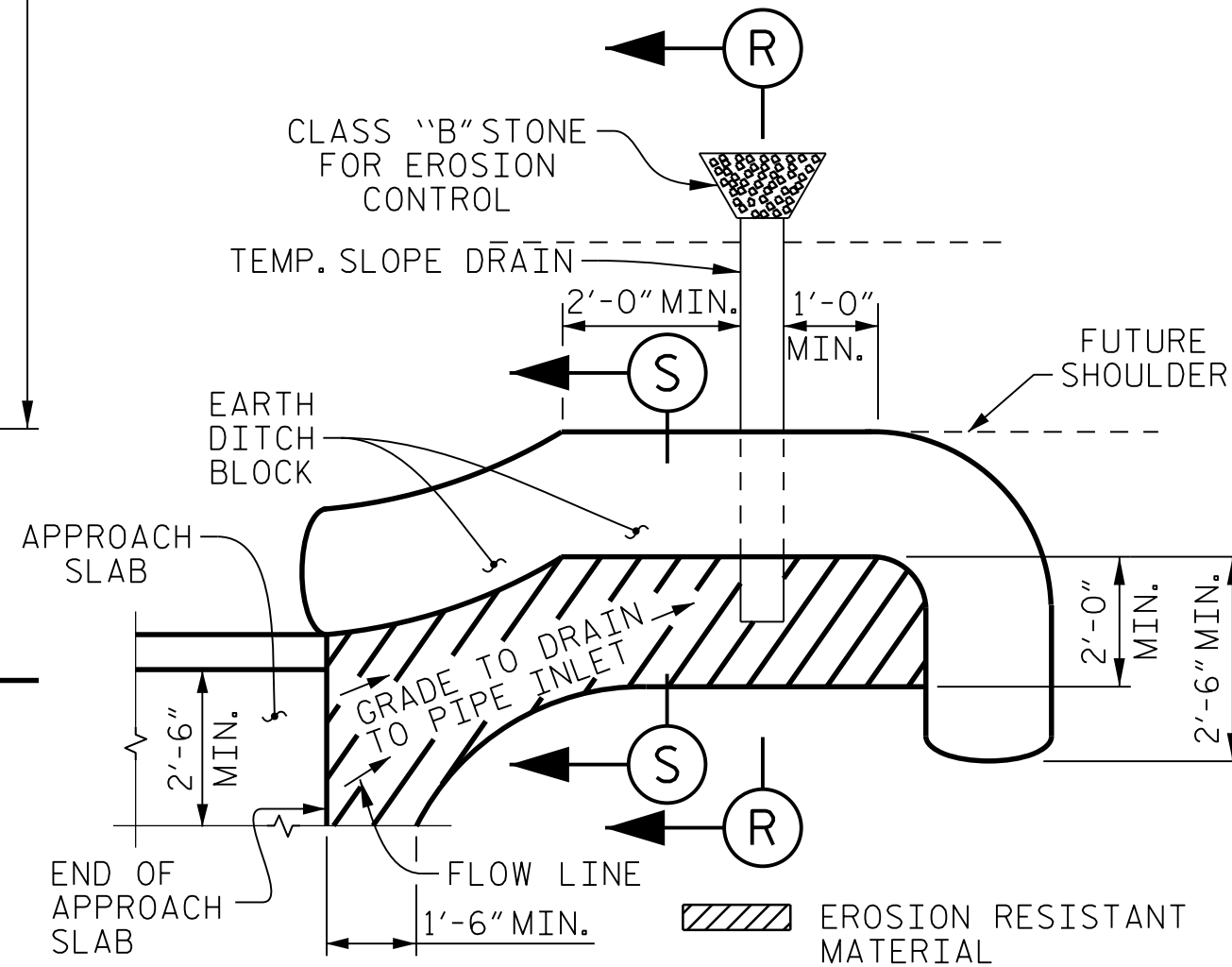
PLANS PREPARED BY :
PARSONS

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



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

TEMPORARY DRAINAGE DETAIL

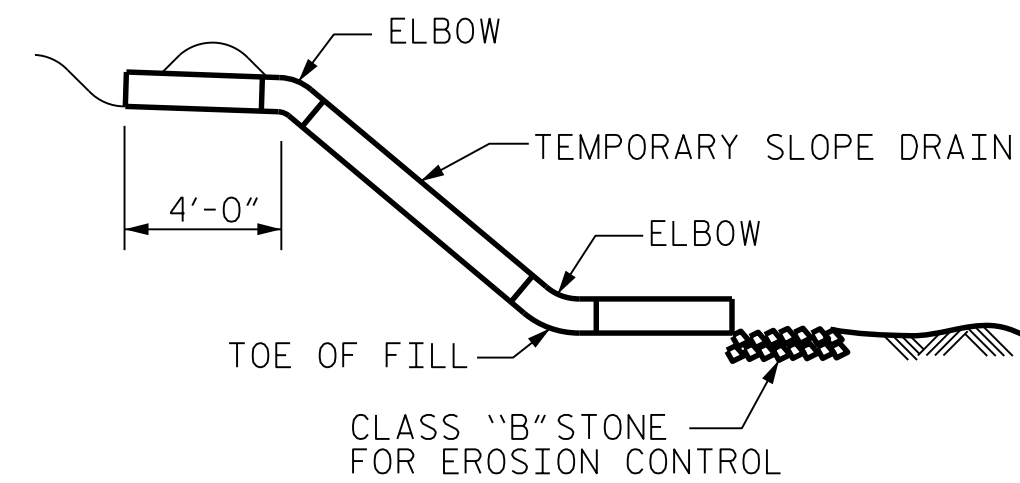


NOTE: IMMEDIATELY AFTER THE CONSTRUCTION OF THE APPROACH SLAB, THE CONTRACTOR SHALL PROVIDE TEMPORARY BERM AND SLOPE DRAIN. CONTRACTOR SHALL GRADE TO PIPE INLET AND PROVIDE EROSION RESISTANT MATERIAL AS SHOWN. THE EROSION RESISTANT MATERIAL SHALL BE EITHER 1) ASPHALT PLANT MIX, TYPE 1 OR TYPE 2, MIN.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

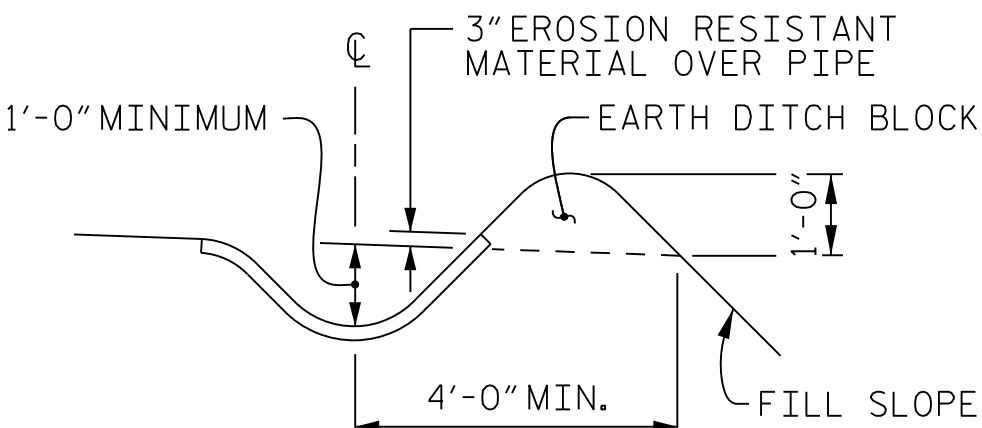
PLAN VIEW

TEMPORARY BERM AND SLOPE DRAIN DETAILS

(TO BE USED WHEN SHOULDER BERM GUTTER IS REQUIRED)



SECTION R-R



SECTION S-S

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"	1,121

REINFORCING STEEL 1,412 LBS.

* EPOXY COATED REINFORCING STEEL 1,039 LBS.

CLASS "AA" CONCRETE 19.1 CU. YDS.

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"	1,121

REINFORCING STEEL 1,412 LBS.

* EPOXY COATED REINFORCING STEEL 1,039 LBS.

CLASS "AA" CONCRETE 20.6 CU. YDS.

PROJECT NO. 17BP.3.R.78

SAMPSON COUNTY

STATION: 23 + 85.00 -L-

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BRIDGE APPROACH
SLAB FOR PRESTRESSED
CONCRETE BOX BEAM UNIT
(SUB-REGIONAL TIER - 90° SKEW)

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

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 3/4" WITH THE FOLLOWING EXCEPTIONS: TOP CORNERS OF CURBS MAY BE ROUNDED TO 1 1/2" RADIUS WHICH IS BUILT INTO CURB FORMS; CORNERS OF TRANSVERSE FLOOR EXPANSION JOINTS SHALL BE ROUNDED WITH A 1/4" FINISHING TOOL UNLESS OTHERWISE REQUIRED ON PLANS; AND CORNERS OF EXPANSION JOINTS IN THE ROADWAY FACES AND TOPS OF CURBS AND SIDEWALKS SHALL BE ROUNDED TO A 1/4" RADIUS WITH A FINISHING STONE OR TOOL UNLESS OTHERWISE REQUIRED ON PLANS.

DOWELS:

DOWELS WHEN INDICATED ON PLANS AS FOR CULVERT EXTENSIONS, SHALL BE EMBEDDED AT LEAST 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 7/8" Ø SHEAR STUDS FOR THE 3/4" Ø STUDS SPECIFIED ON THE PLANS. THIS SUBSTITUTION SHALL BE MADE AT THE RATE OF 3 - 7/8" Ø STUDS FOR 4 - 3/4" Ø STUDS, AND STUD SPACING CHANGES SHALL BE MADE AS NECESSARY TO PROVIDE THE SAME EQUIVALENT NUMBER OF 7/8" Ø STUDS ALONG THE BEAM AS SHOWN FOR 3/4" Ø STUDS BASED ON THE RATIO OF 3 - 7/8" Ø STUDS FOR 4 - 3/4" Ø STUDS. STUDS OF THE LENGTH SPECIFIED ON THE PLANS MUST BE PROVIDED. THE MAXIMUM SPACING SHALL BE 2'-0".

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

WITH THE SOLE EXCEPTION OF EDGES AT SURFACES WHICH BEAR ON OTHER SURFACES, ALL SHARP EDGES AND ENDS OF SHAPES AND PLATES SHALL BE SLIGHTLY ROUNDED BY SUITABLE MEANS TO A RADIUS OF APPROXIMATELY 1/16" 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.78

SAMPSON COUNTY

STATION: 23 + 85.00 -L-

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD NOTES

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

ENGLISH
JANUARY, 1990

PLANS PREPARED BY :
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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