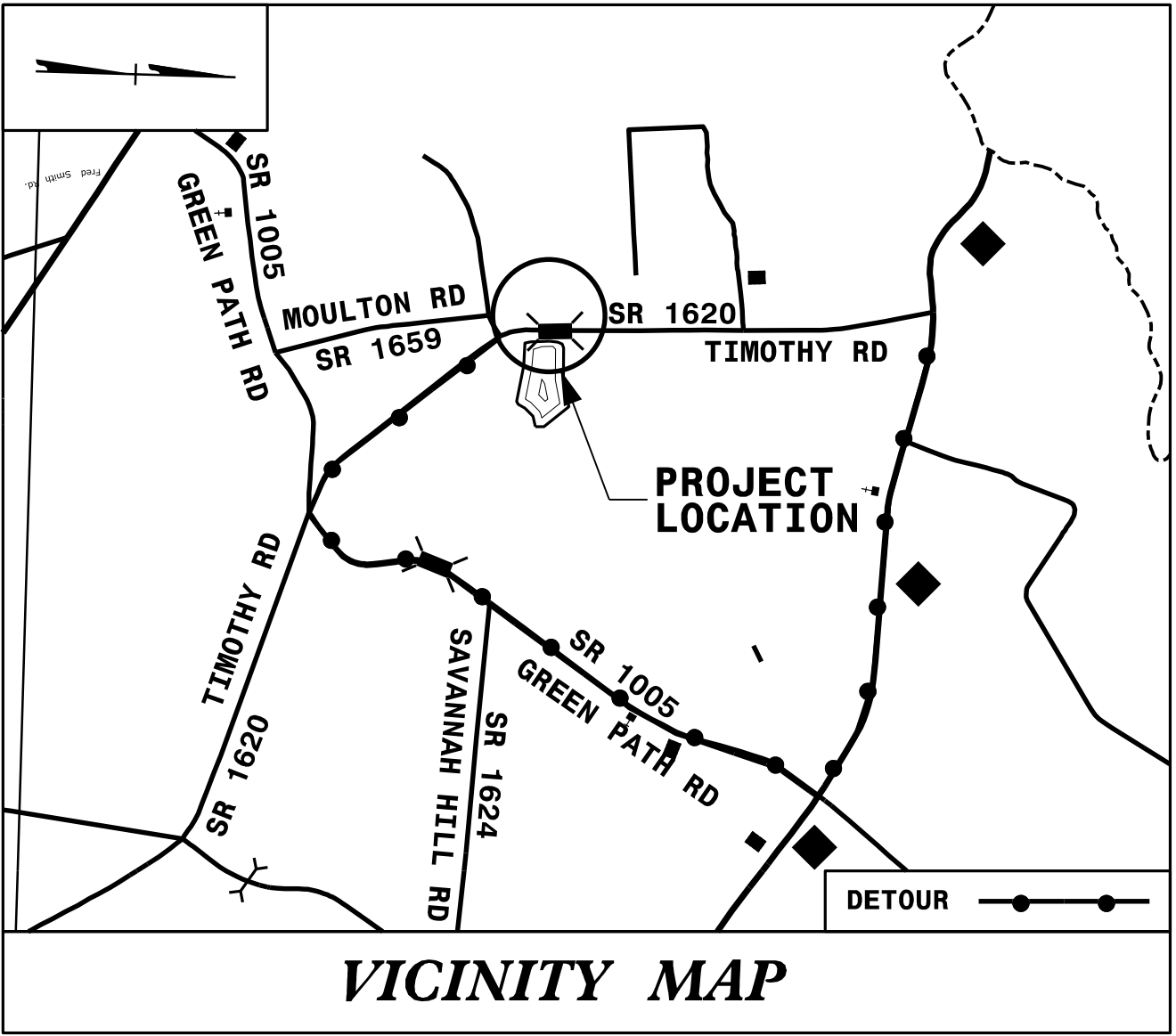


08/08/24

TIP PROJECT: B-5631

CONTRACT: DC00260

See Sheet 1A For Index of Sheets

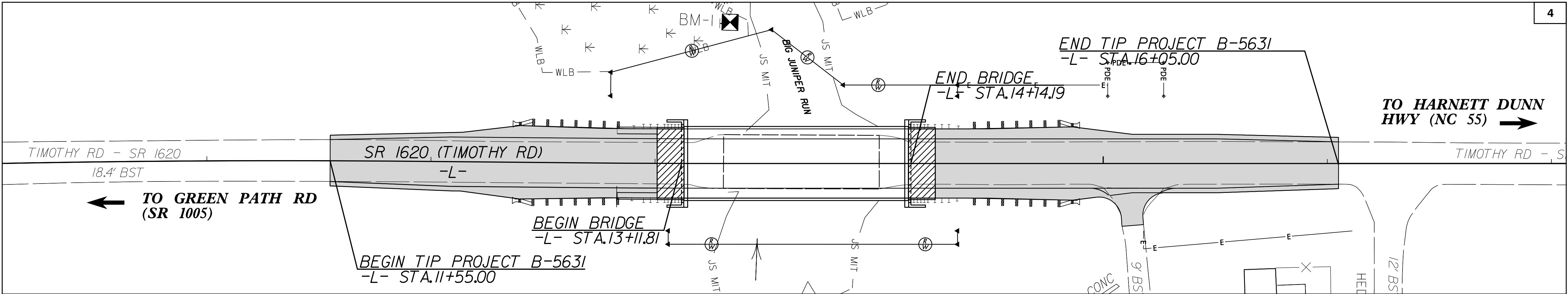
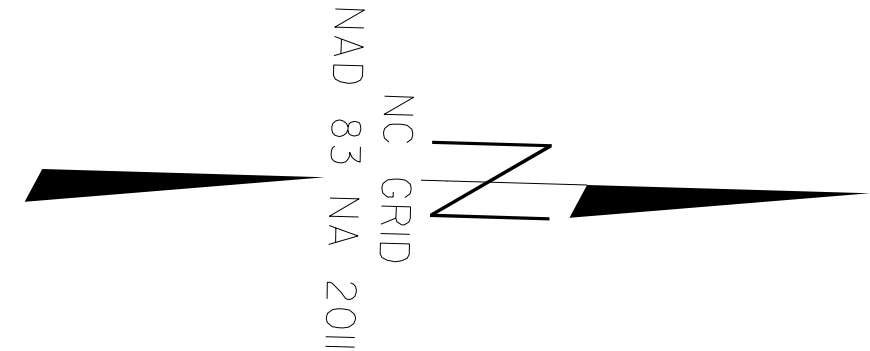
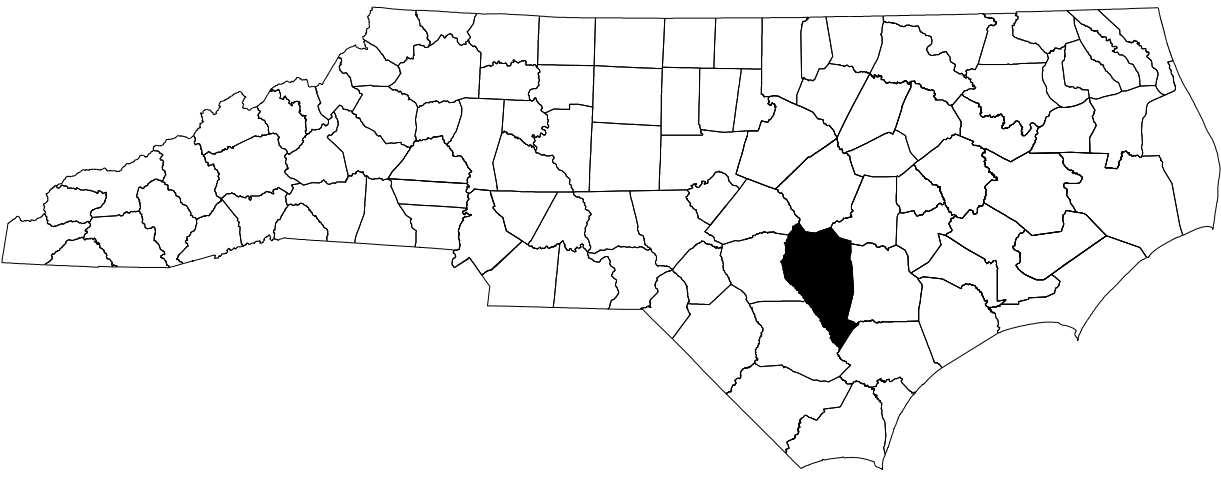


STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

SAMPSON COUNTY

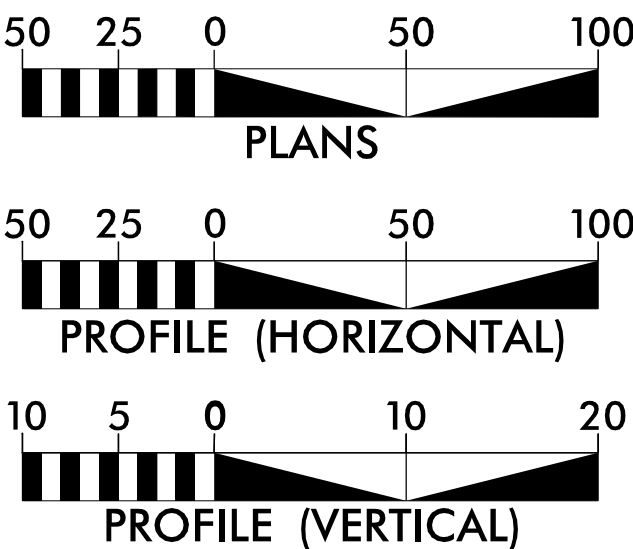
LOCATION: BRIDGE NO. 169 ON SR 1620 (TIMOTHY RD)
OVER BIG JUNIPER RUN

TYPE OF WORK: GRADING, DRAINAGE, PAVING AND STRUCTURE



DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

GRAPHIC SCALES



DESIGN DATA

ADT 2017 = 350
V = 60 MPH
T = 6%
*TTST= 2% DUAL 4%
FUNC CLASS = LOCAL
SUB-REGIONAL TIER

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-5631 = 0.066 MILES
LENGTH STRUCTURES TIP PROJECT B-5631 = 0.019 MILES
TOTAL LENGTH TIP PROJECT B-5631 = 0.085 MILES

NCDOT CONTACT: MONICA J. DUVAL
DIVISION PROJECT MANAGER

Prepared in the Office of:



NC FIRM LICENSE No: C-1506
301 Fayetteville St., Suite 1500
Raleigh, NC 27601
(919)882-7839

2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
DECEMBER 20, 2018

LETTING DATE:
SEPTEMBER 15, 2022

JACOB H. DUKE, P.E.
PROJECT ENGINEER

JASON M. DEBONE
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

8/11/2022

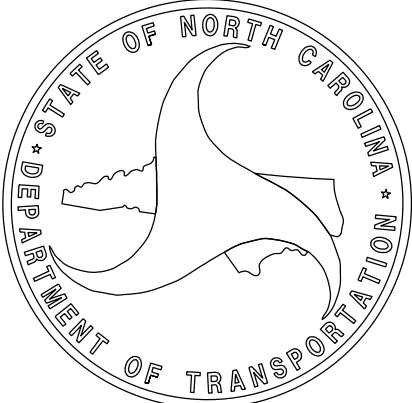
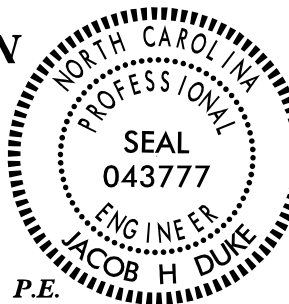
DocuSigned by:
Eric P. Hadland
ABAB37AF57BFACE
SIGNATURE:



ROADWAY DESIGN ENGINEER

8/11/2022

DocuSigned by:
Jacob H. Duke
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SIGNATURE:



8/17/99

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INDEX OF SHEETS	
SHEET NUMBER	SHEET
1	TITLE SHEET
1A	INDEX OF SHEETS, GENERAL NOTES, AND STANDARD DRAWINGS
1B	CONVENTIONAL SYMBOLS
2A-1 THRU 2A-2	PAVEMENT SCHEDULE AND TYPICAL SECTIONS
2C-1	DETAIL OF MODIFIED METHOD III CLEARING
3B-1	ROADWAY SUMMARIES
3D-1	DRAINAGE SUMMARIES
4	PLAN AND PROFILE SHEET
RW01 THRU RW04	SURVEY CONTROL, EXISTING CENTERLINE, RIGHT OF WAY SHEETS
TMP-1 THRU TMP-3	TRAFFIC CONTROL PLANS
PMP-1	PAVEMENT MARKING PLAN
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-4	CROSS-SECTIONS
S-1 THRU S-19	STRUCTURE PLANS

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

GRADING AND SURFACING:

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

CLEARING:

CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD III MODIFIED. CLEARING LIMITS SHALL EXTEND 5' BEYOND TOE OF SLOPE WITH NO GRUBBING.

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 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.

DRIVEWAYS:

DRIVEWAYS SHALL BE CONSTRUCTED AT LOCATIONS SHOWN ON PLANS OR AS DIRECTED BY THE ENGINEER.

GUARDRAIL:

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

END BENTS:

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

UTILITIES:

UTILITY OWNERS ON THIS PROJECT ARE:
CENTURY LINK
DUKE ENERGY DISTRIBUTION
SAMPSON COUNTY PUBLIC WORKS
SPECTRUM

ANY RELOCATION OF EXISTING UTILITIES WILL BE ACCOMPLISHED BY OTHERS.

RIGHT-OF-WAY MARKERS:

ALL RIGHT-OF-WAY MARKERS AND PERMANENT EASEMENT MARKERS ARE TO BE PLACED BY L&S. THE CONTRACT SURVEYOR WILL BE RESPONSIBLE FOR RESETTING ANY POINTS DISTURBED BY CONSTRUCTION.

01-16-2018

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 - METHOD III MODIFIED. SEE DETAIL.
225.02	GUIDE FOR GRADING SUBGRADE - SECONDARY AND LOCAL
225.04	METHOD OF OBTAINING SUPERELEVATION - TWO LANE PAVEMENT
DIVISION 3 - PIPE CULVERTS	
300.01	METHOD OF PIPE INSTALLATION
DIVISION 4 - MAJOR STRUCTURES	
422.02	BRIDGE APPROACH FILLS - TYPE II MODIFIED APPROACH FILL
DIVISION 5 - SUBGRADE, BASES AND SHOULDERS	
560.01	METHOD OF SHOULDER CONSTRUCTION - HIGH SIDE OF SUPERELEVATED CURVE -
METHOD 1	
DIVISION 8 - INCIDENTALS	
840.00	CONCRETE BASE PAD FOR DRAINAGE STRUCTURES
840.18	CONCRETE GRATED DROP INLET TYPE 'B' - 12" THRU 36" PIPE
840.24	FRAMES AND NARROW SLOT SAG GRATES
840.27	BRICK GRATED DROP INLET TYPE 'B' - 12" THRU 36" PIPE
840.29	FRAMES AND NARROW SLOT FLAT GRATES
840.35	TRAFFIC BEARING GRATED DROP INLET
846.01	CONCRETE CURB, GUTTER AND CURB AND GUTTER
846.04	DROP INLET INSTALLATION IN SHOULDER BERM GUTTER
862.01	GUARDRAIL PLACMENT
862.02	GUARDRAIL INSTALLATION
862.03	STRUCTURE ANCHOR UNITS
876.02	GUIDE FOR RIP RAP AT PIPE OUTLETS

PREPARED IN THE OFFICE OF:

KCA

KISINGER CAMPO & ASSOCIATES

NC FIRM LICENSE No: C-1506
301 Fayetteville St., Suite 1500
Raleigh, NC 27601
(919)882-7639

PROJECT REFERENCE NO.

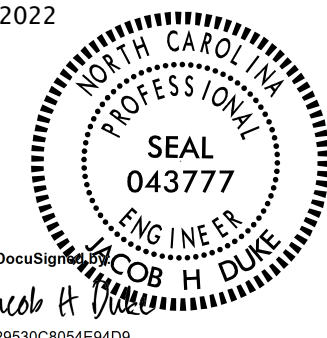
B-5631

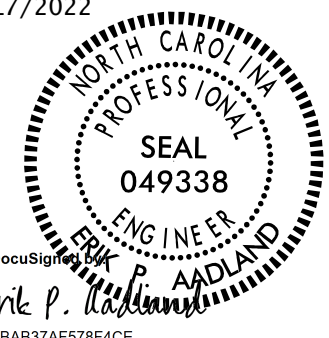
SHEET NO.

1A

ROADWAY DESIGN ENGINEER

8/17/2022





DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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

BRIDGE NO. 810169

PROJECT REFERENCE NO.
B-5631

SHEET NO.
2A-1

ROADWAY DESIGN
ENGINEER

8/11/2022

PROFESSIONAL
SEAL
043777
ENGINEER

8/11/2022

Do not Sign
Jacob H. Duke
23800000040400

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

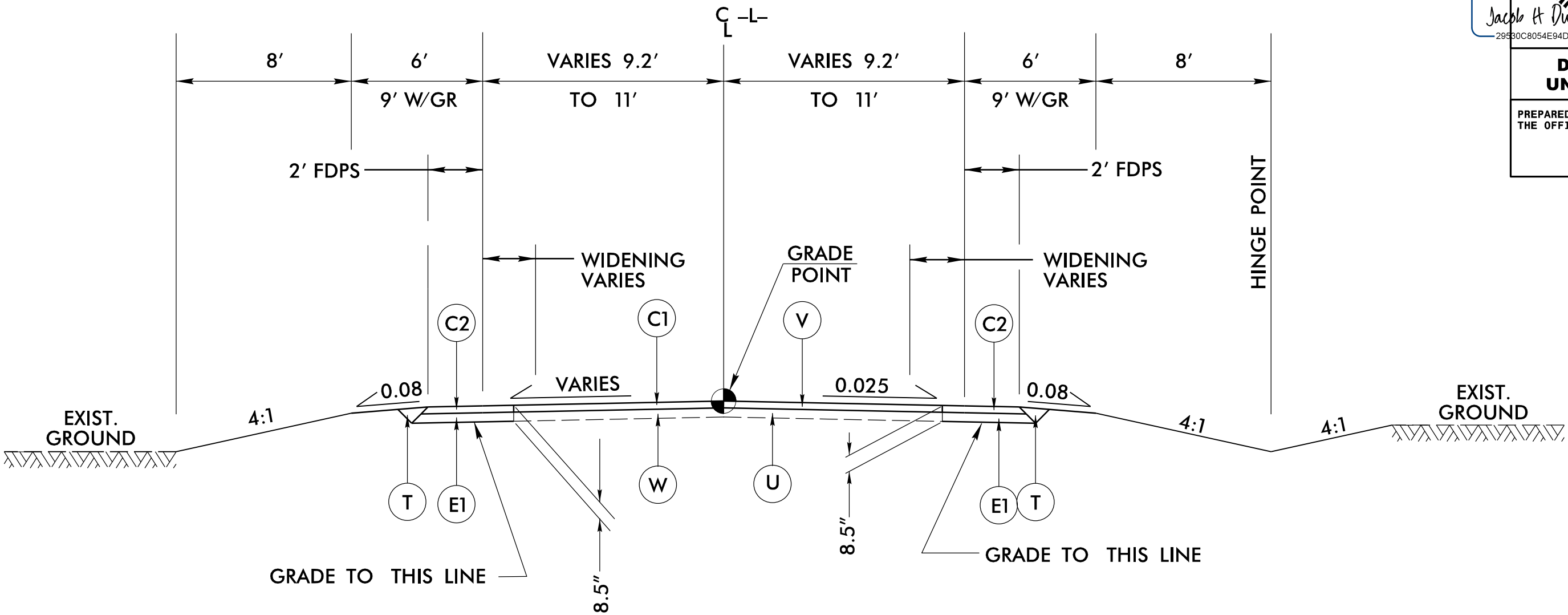
PREPARED IN
THE OFFICE OF:

KCA
KISINGER CAMPO
& ASSOCIATES

NC FIRM LICENSE No: C-1506
301 Fayetteville St.,
Suite 1500
Raleigh, NC 27601
(919)882-7839

PAVEMENT SCHEDULE (FINAL PAVEMENT)	
C1	PROP. APPROX. 1.5" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 165.0 LBS. PER SQ. YD.
C2	PROP. APPROX. 3.0" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 165.0 LBS. PER SQ. YD. IN EACH OF THE TWO LAYERS.
C3	PROP. VARIABLE DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 110.0 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 1" OR TO EXCEED 1.5" IN DEPTH.
E1	PROP. APPROX. 5.5" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 627 LBS PER SQ. YD.
E2	PROP. VARIABLE DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 114 LBS PER SQ. YD. PER 1" DEPTH. TO BE PLACED ON LAYERS NOR LESS THAN 3" IN DEPTH OR GEATER THAN 5.5' IN DEPTH.
R1	SHOULDER BERM GUTTER
T	EARTH MATERIAL.
U	EXISTING PAVEMENT.
V	MILLING BITUMINOUS PAVEMENT. 1.5 " DEPTH.
W	VARIABLE DEPTH PAYMENT (SEE STANDARD WEDGING DETAIL)

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

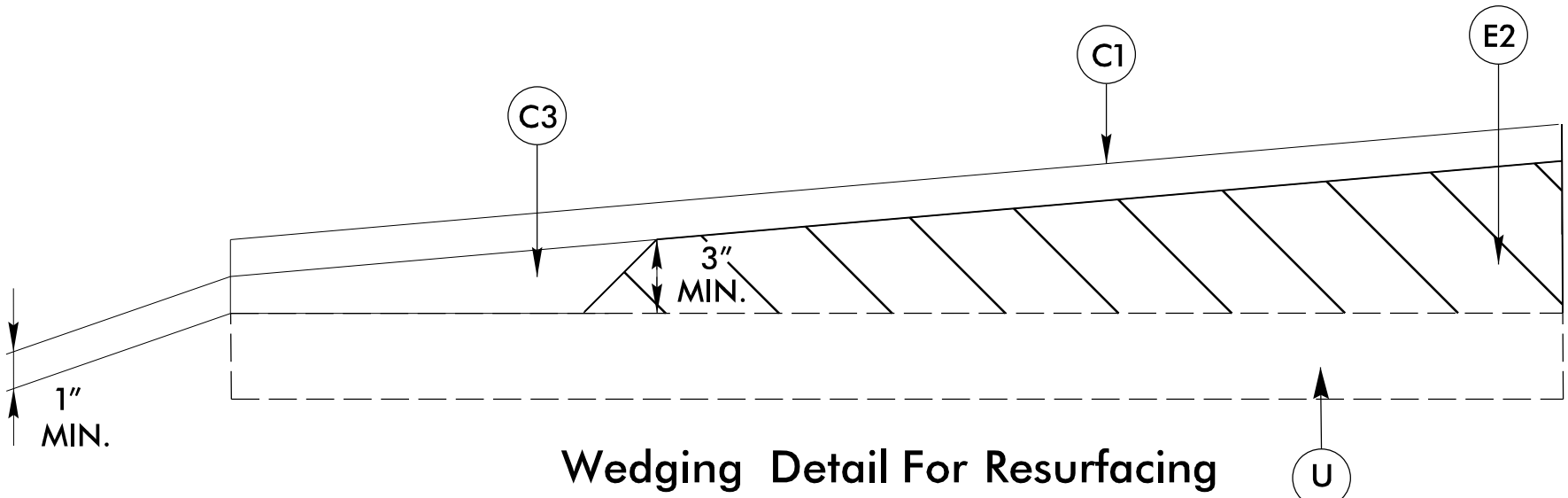


TYPICAL SECTION NO. 1

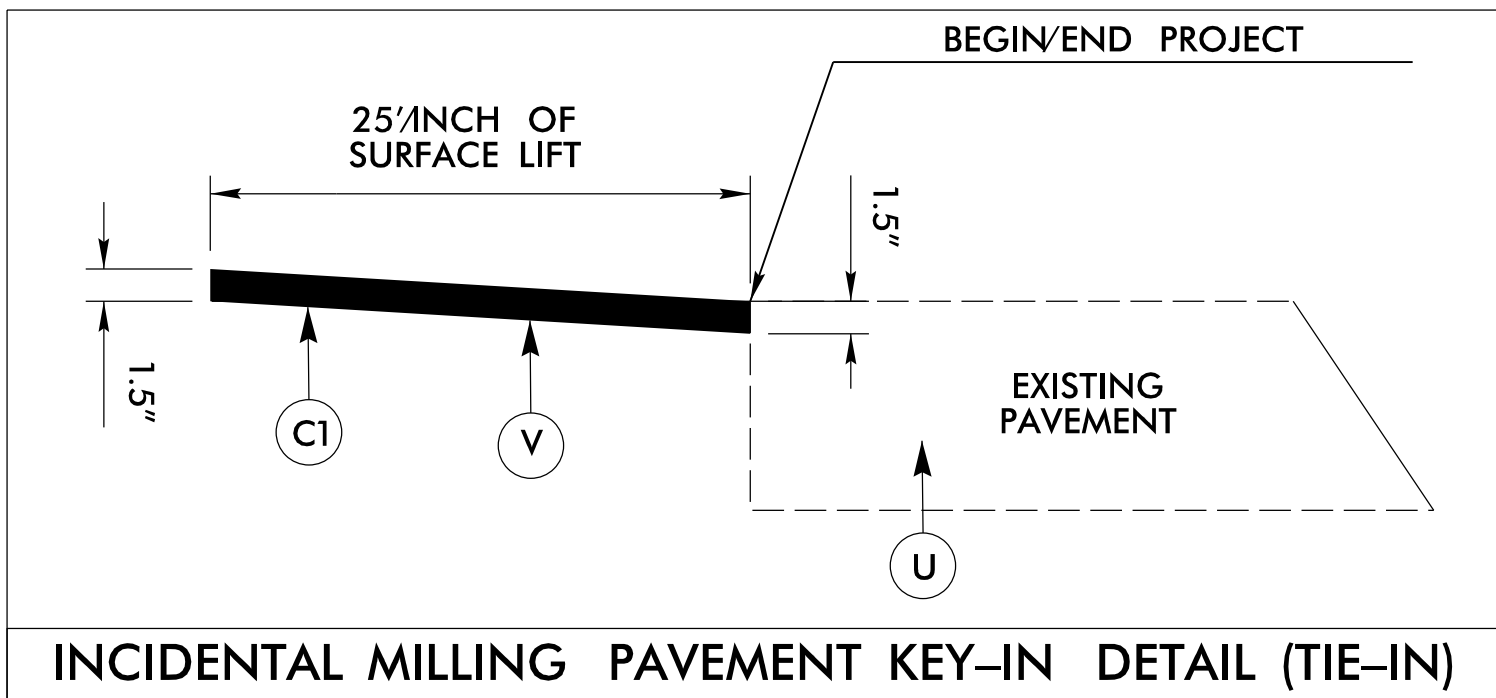
-L- (SR 1620)

USE TYPICAL SECTION NO. 1

-L- STA. 11+55.00 TO STA. 12+38.64
-L- STA. 15+75.00 TO STA. 16+05.00



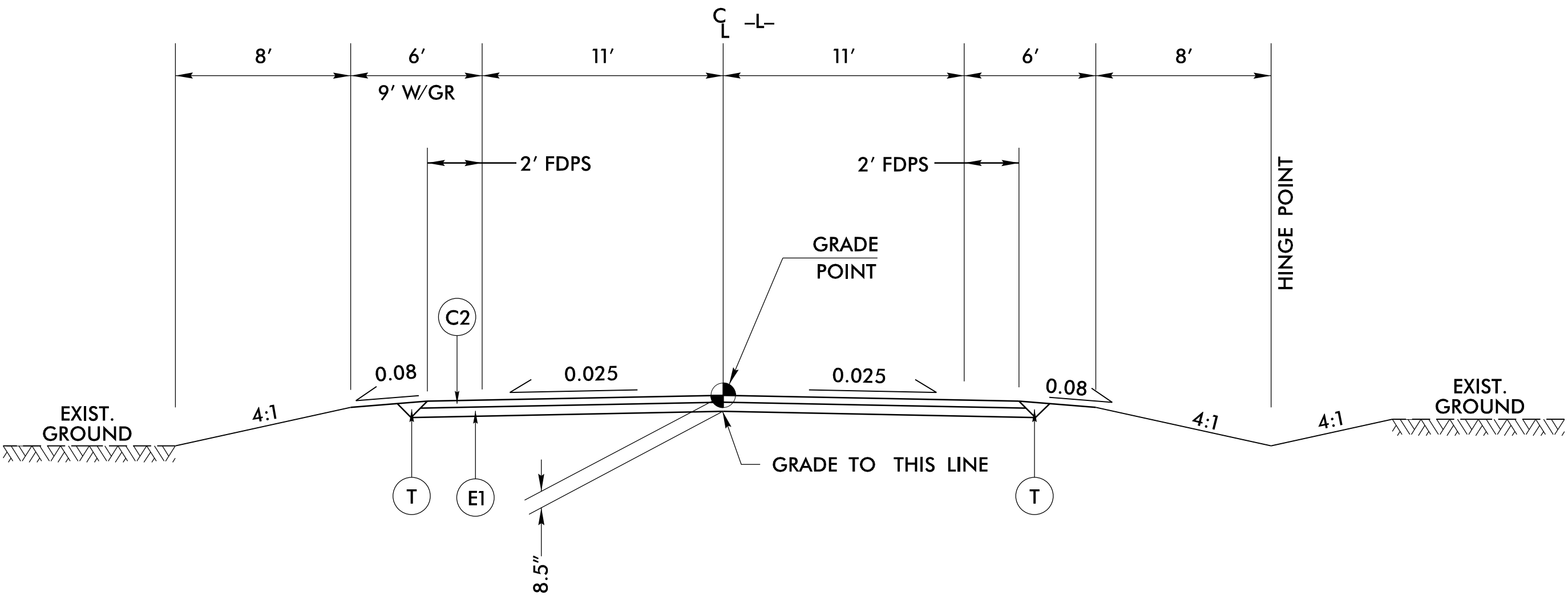
Wedging Detail For Resurfacing



INCIDENTAL MILLING PAVEMENT KEY-IN DETAIL (TIE-IN)

-L- STA. 11+55.00 TO STA. 12+38.64
-L- STA. 15+75.00 TO STA. 16+05.00

STATION RANGES ARE APPROXIMATE ONLY.
GRADE MAY BE ADJUSTED BY ENGINEER
TO ENSURE A PROPER TIE-IN.



TYPICAL SECTION NO. 2

-L- (SR 1620)

USE TYPICAL SECTION NO. 2

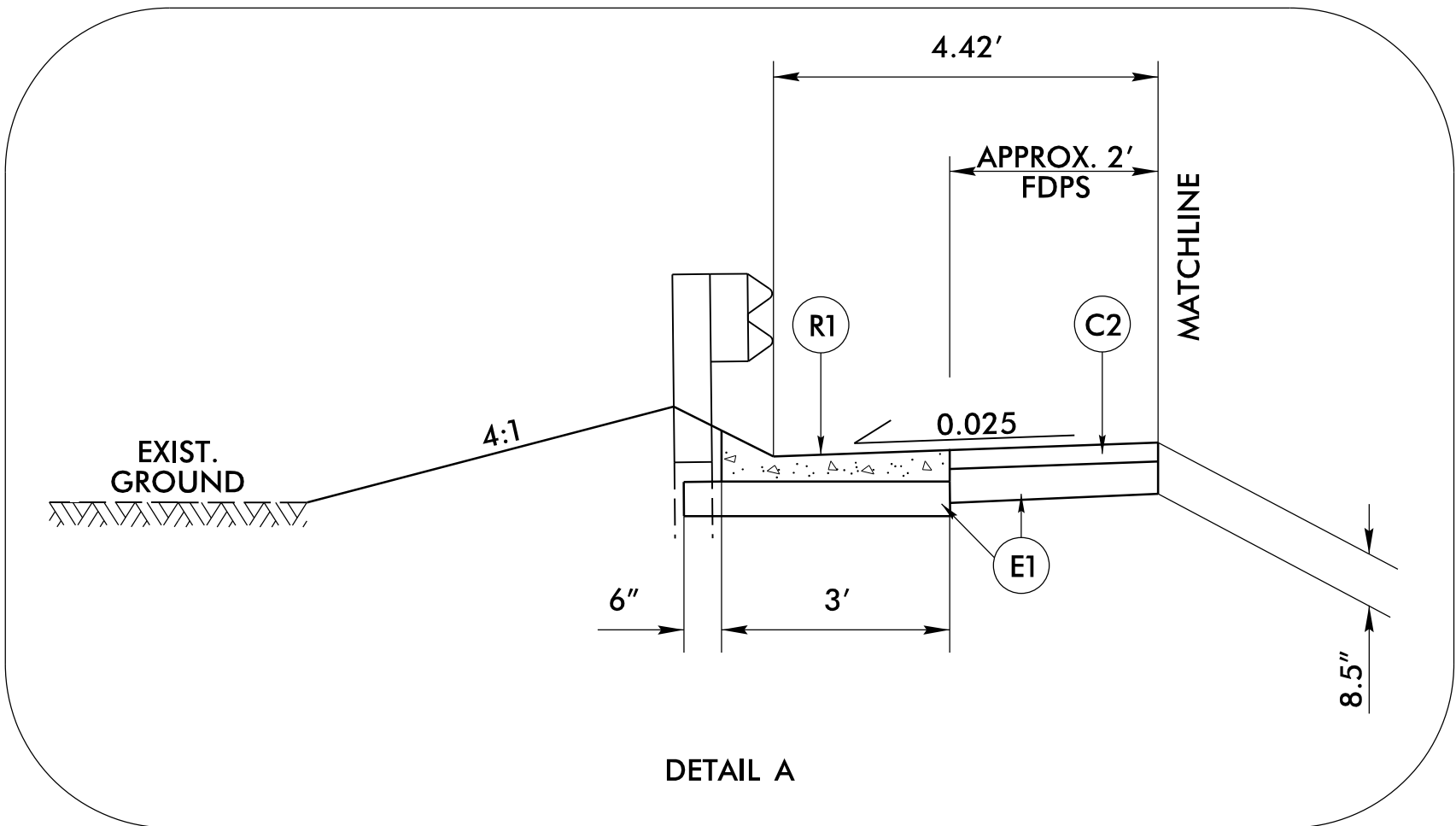
-L- STA. 14+87.36 TO STA. 15+75.00

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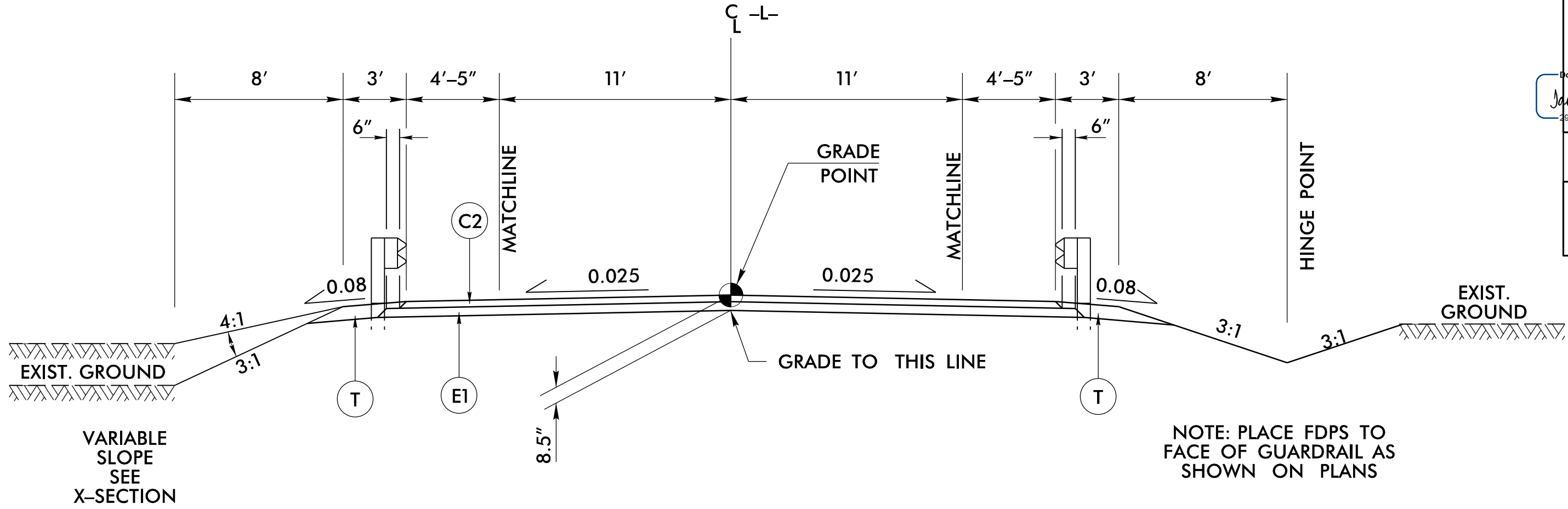
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T	EARTH MATERIAL.
U	EXISTING PAVEMENT.
V	MILLING BITUMINOUS PAVEMENT. 1.5 " DEPTH.
W	VARIABLE DEPTH PAYMENT (SEE STANDARD WEDGING DETAIL)

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



USE DETAIL A IN CONJUNCTION WITH TYPICAL SECTION NO. 3

-L- STA. 12+83.00 TO STA. 13+00.94 (BEGIN APPROACH SLAB) (LT & RT)



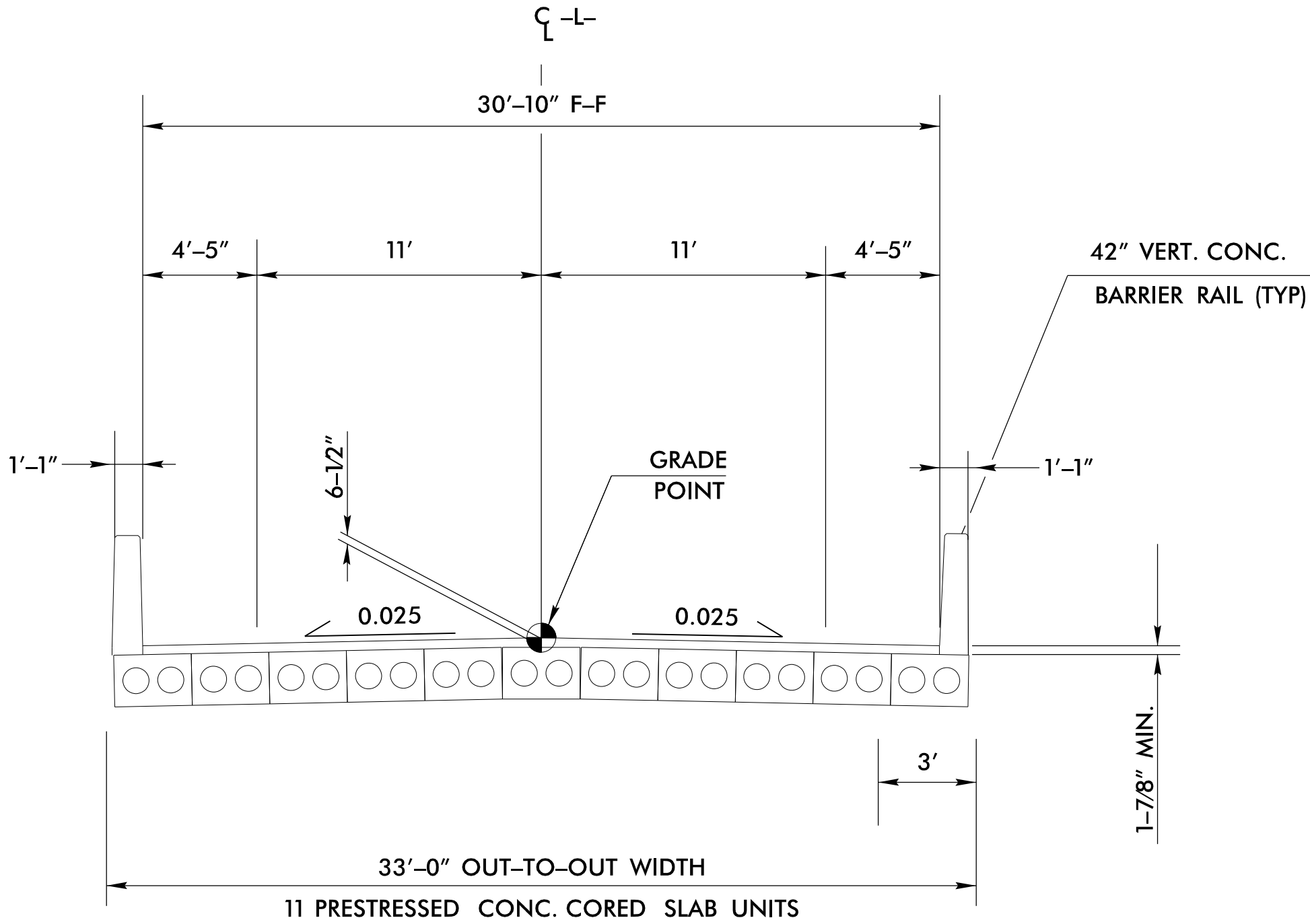
TYPICAL SECTION NO. 3

-L- (SR 1620)

USE TYPICAL SECTION NO. 3

-L- STA. 12+38.64 STA. 13+11.81 (BEGIN BRIDGE)

-L- STA. 14+14.19 (END BRIDGE) TO STA. 14+87.36



BRIDGE TYPICAL SECTION

FOR BRIDGE OVER BIG JUNIPER RUN

USE BRIDGE TYPICAL SECTION

-L- STA 13+11.81 (BEGIN BRIDGE) TO STA. 14+14.19 (END BRIDGE)

BRIDGE NO. 810169

PROJECT REFERENCE NO. B-5631		SHEET NO. 2A-2
ROADWAY DESIGN ENGINEER 8/11/2022 JACOB H. DUKER Professional Engineer Seal 043777 NORTH CAROLINA 06530C804E4029		
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED		
PREPARED IN THE OFFICE OF: KCA KISINGER CAMPO & ASSOCIATES		NC FIRM LICENSE No: C-1506 301 Fayetteville St., Suite 1500 Raleigh, NC 27601 (919)882-7839

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

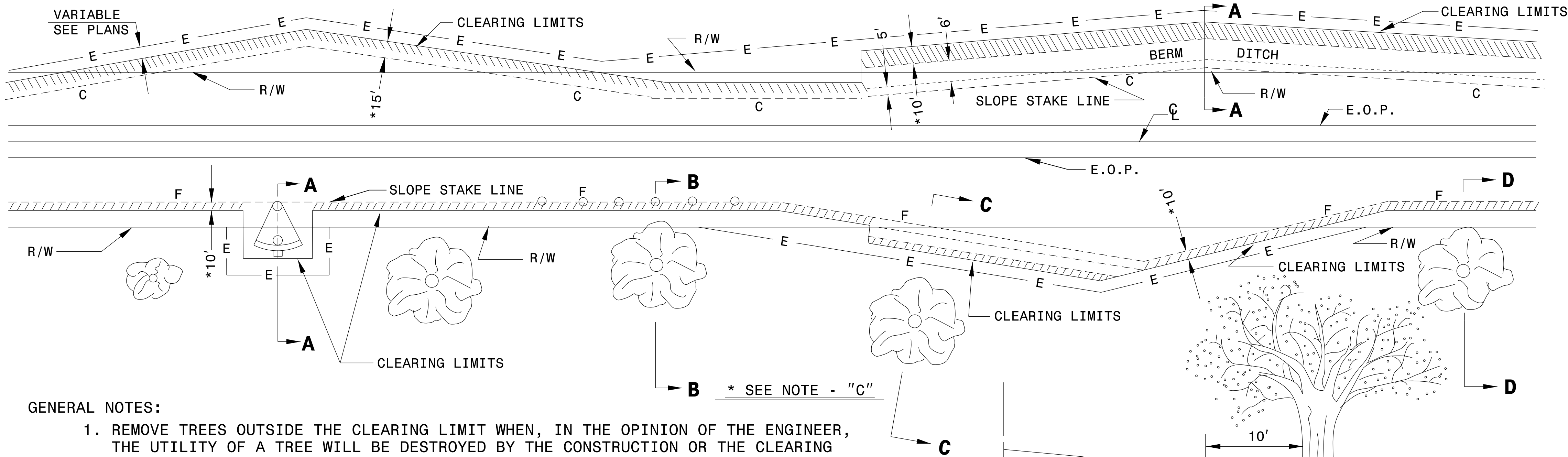
ENGLISH DETAIL DRAWING FOR
METHOD OF CLEARING
MODIFIED METHOD - III

SHEET 1 OF 1
200D03

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

ENGLISH DETAIL DRAWING FOR
METHOD OF CLEARING
MODIFIED METHOD - III

SHEET 1 OF 1
200D03



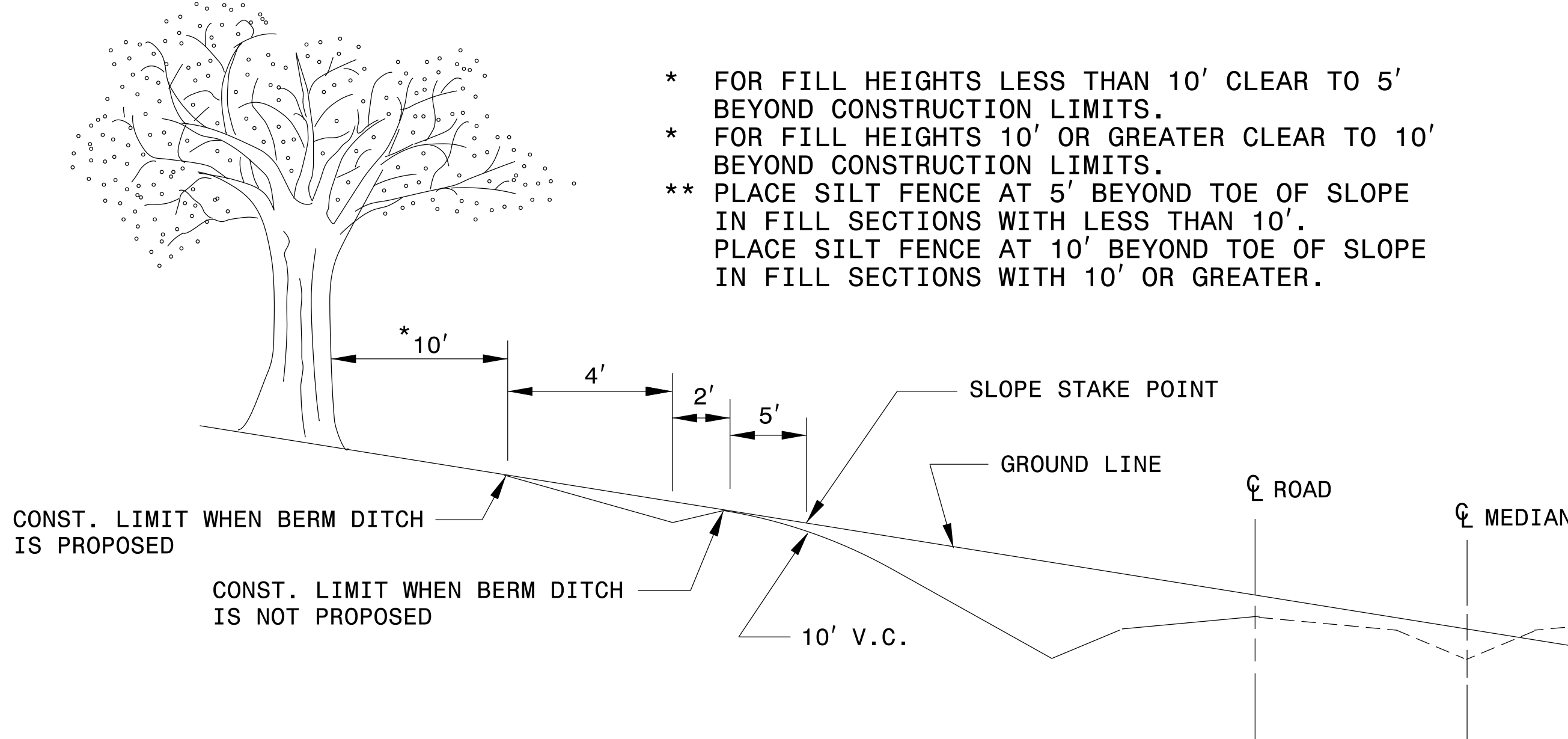
GENERAL NOTES:

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

METHOD III CLEARING LIMITS

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

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



PART SECTION D-D

LATERAL DITCH, CHECK DAM,
SILT BASIN, SILT DITCH,
TEMPORARY DIVERSION

PART SECTION C-C

PART SECTION B-B

SECTION A-A

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

SUMMARY OF EARTHWORK

Station	Station	Uncl. Excav.	Embank. +%	Borrow	Waste
-L- STA 11+55.00	-L- STA 13+11.81 (Begin Bridge)	2	38	36	0
-L- STA 14+14.91 (End Bridge)	-L- STA 16+05.00	17	221	204	
PROJECT TOTALS:		19	259	240	0
REPLACE TOP SOIL ON BORROW PIT (5%):				12	
GRAND TOTALS:		19	259	252	0
SAY:		20		260	0

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

Per Geotechnical Report, the following are to be added as contingency items.

- 300 CY of Undercut Excavation
- 300 CY of Select Granular Material
- 300 SY of Geotextile for Soil Stabilization.

PAVEMENT REMOVAL SUMMARY

IN SQUARE YARDS

SURVEY LINE	Station	Station	LOCATION LT/RT/CL	ASPHALT REMOVAL	ASPHALT BREAKUP	CONCRETE REMOVAL	CONCRETE BREAKUP
-L-	11+55	12+39	RT	6.12			
-L-	11+55	12+39	LT	7.74			
-L-	14+14	15+10	LT/RT		220		
-L-	15+75	16+05	RT	2.19			
-L-	15+75	16+05	LT	3.91			
-L-	12+39	13+12	LT/RT	162.6			
-L-	15+10	15+75	LT/RT	144.44			
		TOTAL:		327	220		
		SAY:		330	220		

SHOULDER BERM GUTTER SUMMARY

LINE	Station	Station	LENGTH
-L-	12+83.00	13+00.94	17.94
-L-	12+83.15	13+00.94	17.79
		TOTAL:	35.73
		SAY:	40

GUARDRAIL SUMMARY

"N" = DISTANCE FROM EDGE OF LANE TO FACE OF GUARDRAIL
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
W = TOTAL WIDTH OF FLARE FROM BEGINNING OF TAPER TO END OF GUARDRAIL

G = GATING IMPACT ATTENUATOR TYPE 350
NG = NON-GATING IMPACT ATTENUATOR TYPE 350

[illegible]

BRIDGE NO. 810169

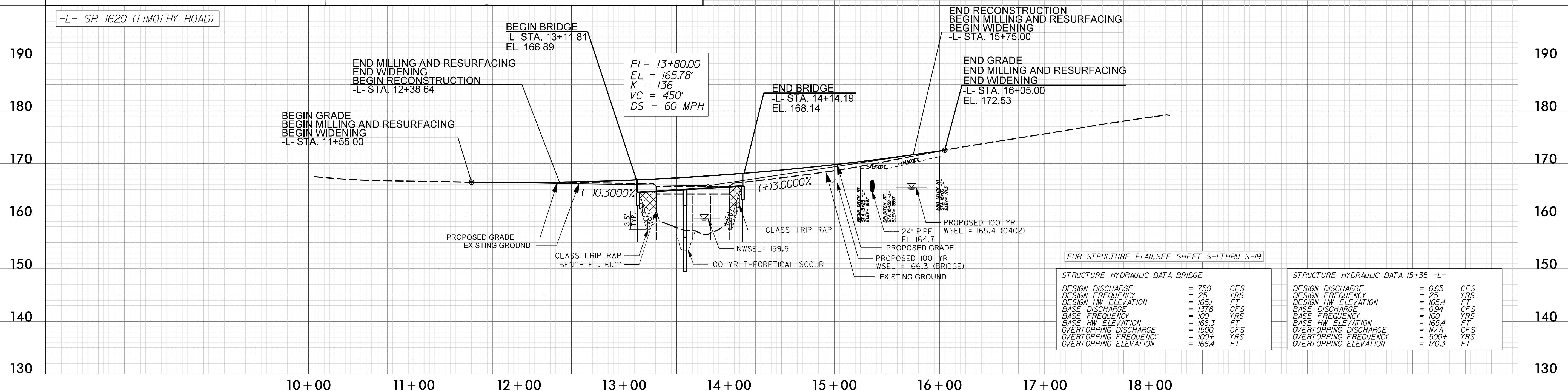
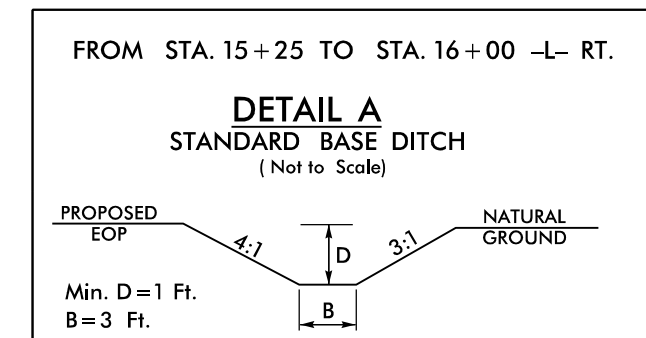
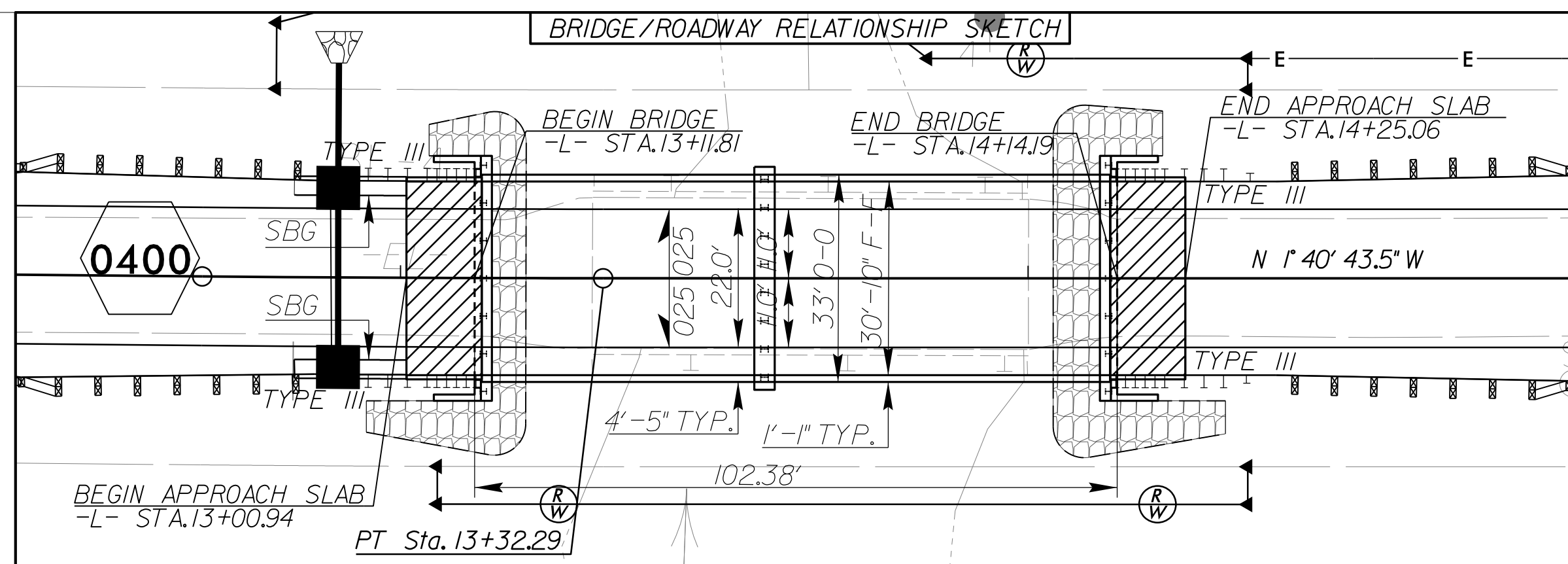
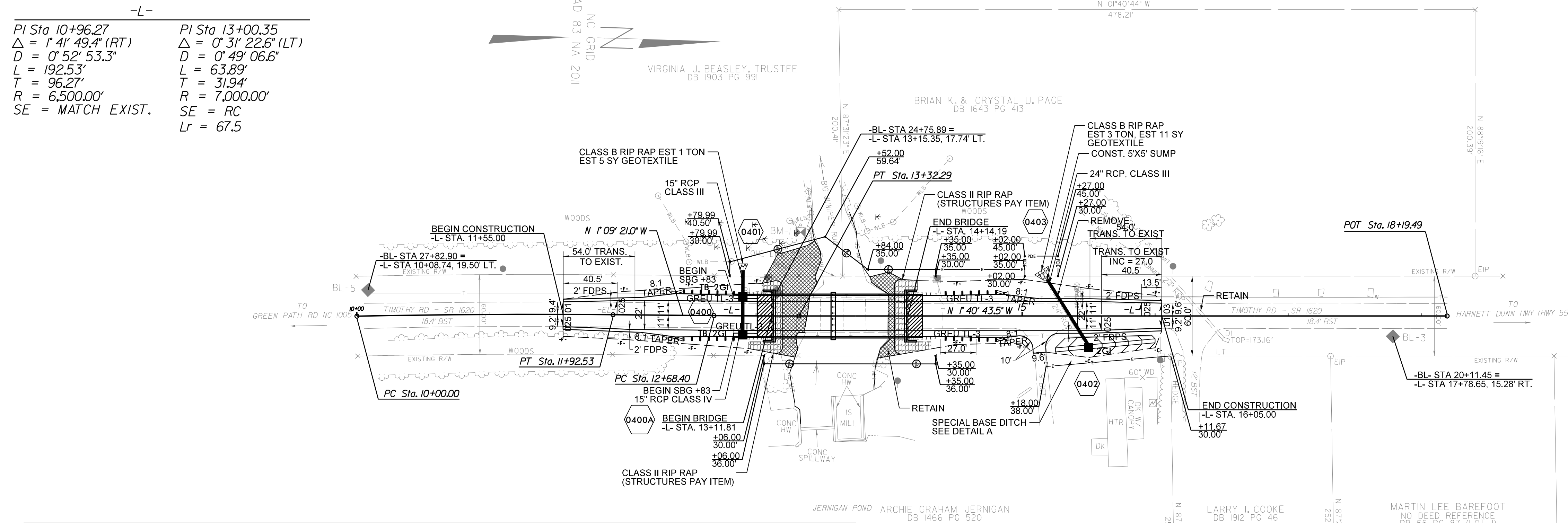
PROJECT REFERENCE NO.	SHEET NO.
B-5631	3D-1
PREPARED IN THE OFFICE OF:  KCA KINSINGER CAMPO & ASSOCIATES	NC FIRM LICENSE NO: C-1506 301 Fayetteville St., Suite 1500 Raleigh, NC 27601 (919)882-7839
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

[illegible]

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

Per Geotechnical Report, the following is to be added as contingency item.

- 200 LF of 6" Perforated Subdrain Pipe



STRUCTURE HYDRAULIC DATA BRIDGE		
DESIGN DISCHARGE	= 75	CFS
DESIGN FREQUENCY	= 250	YRS
DESIGN HW ELEVATION	= 165.1	FT
BASE DISCHARGE	= 1378	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 166.3	FT
OVERTOPPING DISCHARGE	= 1600	CFS
OVERTOPPING FREQUENCY	= 100+	YRS
OVERTOPPING ELEVATION	= 166.4	FT

```

STRUCTURE HYDRAULIC DATA 15+35 -L-
DESIGN DISCHARGE                = 0.65    CFS
DESIGN FLOW FREQUENCY            = 25      YRS
DESIGN HW ELEVATION              = 165.4   FT
BASE DISCHARGE                   = 0.94    CFS
BASE FLOW FREQUENCY              = 100     YRS
BASE HW ELEVATION                = 165.4   FT
OVERTOPPING DISCHARGE            = N/A     CFS
OVERTOPPING FREQUENCY            = 500+    YRS
OVERTOPPING ELEVATION            = 170.3   FT

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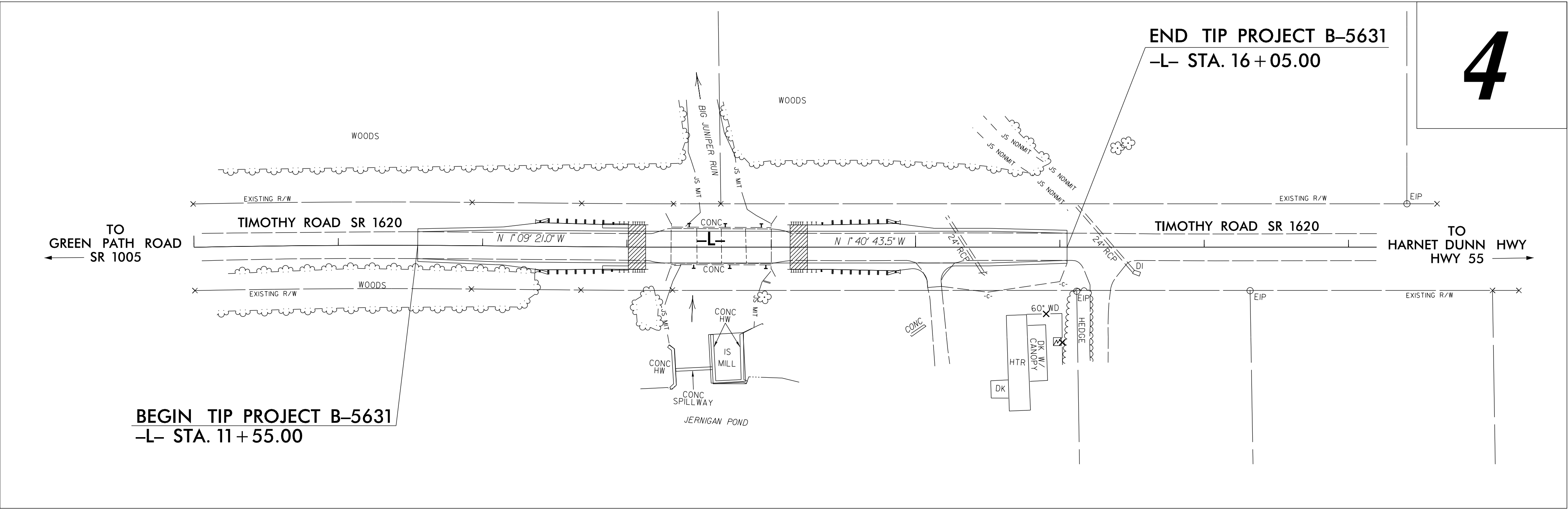
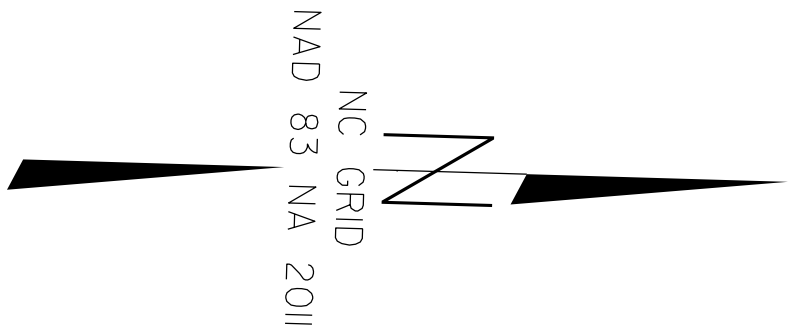

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-5631	RW01	5

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

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

SAMPSON COUNTY

**LOCATION: BRIDGE NO. 169 ON SR 1620 (TIMOTHY ROAD)
OVER BIG JUNIPER RUN**



GRAPHIC SCALE
PLAN SHEET RW04



DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCGS FOR MONUMENT "B5631-2" WITH NAD 83/NA 2011 STATE PLANE GRID COORDINATES OF NORTHING: 558141.990(ft) EASTING: 2130374.317(ft) ELEVATION: 186.150(ft) THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 1.0001308571 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "B5631-2" TO L- STATION 10+00.00 IS S 00-59°31.4" E 1237.80(ft) ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES VERTICAL DATUM USED IS NAVD 88

Prepared in the Office of:

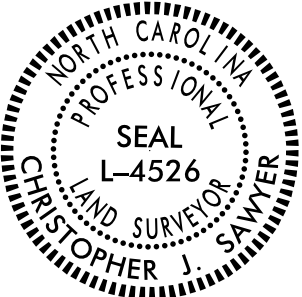
LOCATION AND SURVEYS UNIT
DIVISION 3
5310 BARBADOS BLVD, SUITE 102
CASTLE HAYNE, NORTH CAROLINA 28429

2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
DECEMBER 20, 2018

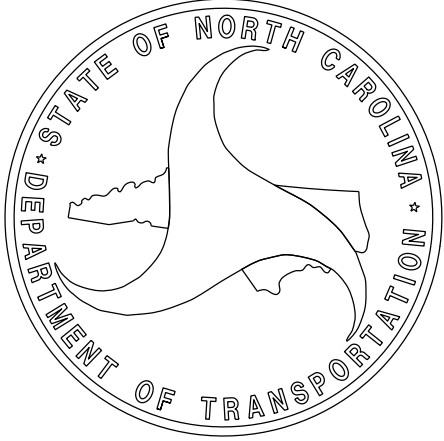
LETTING DATE:
SEPTEMBER 15, 2022

PROFESSIONAL LAND
SURVEYOR

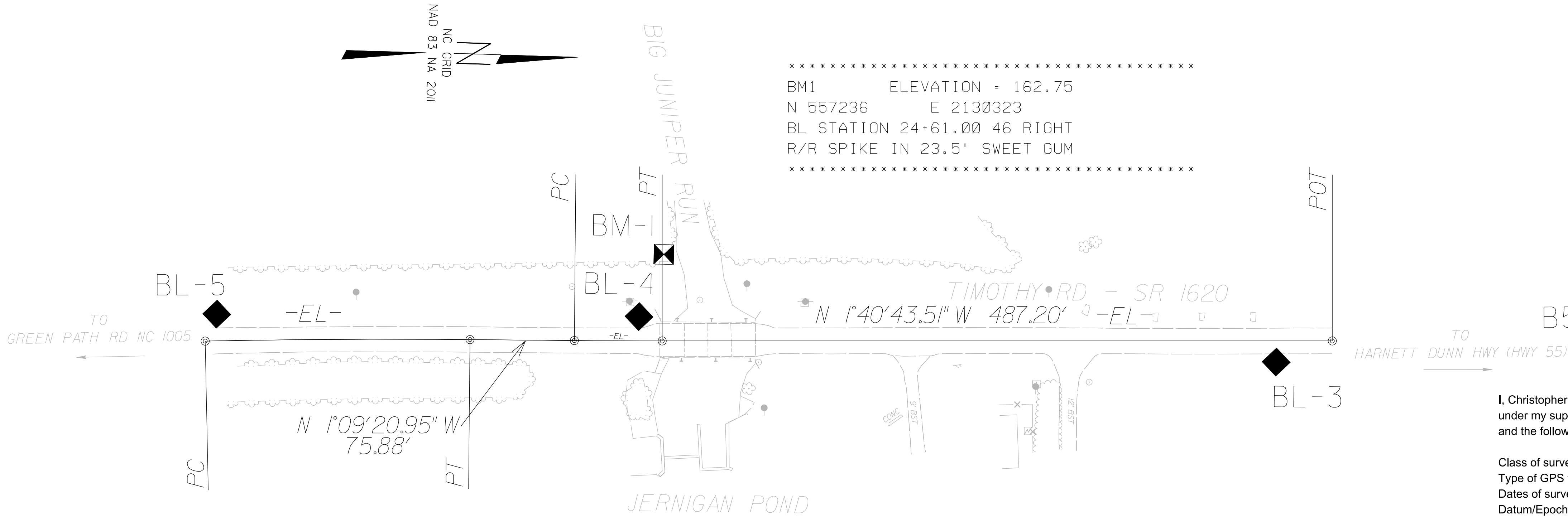


DocuSigned by:
Christopher J. Sawyer
07/29/2022
SIGNATURE: _____

Date: _____



SURVEY CONTROL SHEET
W/EXISTING CENTERLINE ALIGNMENTS PRIOR TO CONSTRUCTION



BM1 ELEVATION = 162.75
N 557236 E 2130323
BL STATION 24+61.00 46 RIGHT
R/R SPIKE IN 23.5" SWEET GUM

BL	POINT	DESC.	NORTH	EAST	ELEVATION
	B56311	GPS CAP & REBAR	559193.8670	2130341.9790	196.45
	B56312	GPS CAP & REBAR	558141.9900	2130374.3170	186.15
	BL3	TRV CAP & REBAR	557683.1160	2130388.0990	177.56
	BL4	TRV CAP & REBAR	557219.0900	2130368.6440	165.57
	BL5	TRV CAP & REBAR	556912.1630	2130375.8440	167.42

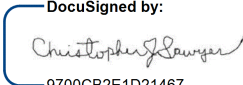
EL	POINT	N	E	BEARING	DIST	DELTA	D	L	T	R
	PC	556904.373	2130395.748							
	CURVE			N 02°00'15.7" W	192.52	01°41'49.4"(RT)	00°52'53.3"	192.53	96.27	6500.00
	PT	557096.773	2130389.015							
	LINE			N 01°09'21.0" W	75.88					
	PC	557172.636	2130387.484							
	CURVE			N 01°25'02.2" W	63.89	00°31'22.6"(LT)	00°49'06.6"	63.89	31.94	7000.00
	PT	557236.505	2130385.904							
	LINE			N 01°40'43.5" W	487.20					
	POT	557723.492	2130371.631							

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

Class of survey: **AA**
Type of GPS field procedure: RTN
Dates of survey: February 4, 2016
Datum/Epoch: NAD83/NA2011
Published/Fixed-control use: N/A
Localized around: GPS2
Northing: 558141.990
Easting: 2130374.317
Combined grid factor: 1.0001308571
Geoid model: G12NC
Units: Survey Feet

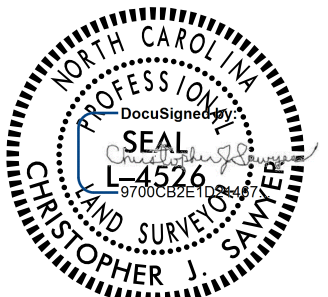
I also certify that the Baseline Control for this project was completed under my direct and responsible charge from an actual survey made under my supervision; that all horizontal closures had a minimum ratio of precision of 1:20,000 (Class AA) and Vertical accuracy to Class A. Field work was performed from March 2016 , and all coordinates are based on NAD 83/2011 and all elevations are based on NAVD 88; that this survey was performed to meet the requirements of 21NCAC 56.1600 as applicable.

This 5th day of July, 2022.

DocuSigned by:

9700CBDE1D21467
Professional Land Surveyor L-4526

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.

PROJECT REFERENCE NO.	SHEET NO.
B-5631	RW02C-1
Location and Surveys	
LOCATION AND SURVEYS UNIT DIVISION 3 5310 BARBADOS BLVD, SUITE 102 CASTLE HAYNE, NORTH CAROLINA 28429	
PROJECT SURVEYOR  07/29/2022	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

6/2/99

25-JUN-2022 14:50
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EDB_0169\Working\CONTROL SHEETS\B5631_1s_rw02d+1.18119.dgn

REVISIONS

PROPOSED ALIGNMENT CONTROL SHEET

PROJECT REFERENCE NO.
B-5631

SHEET NO.
RW02D-1

Location and Surveys

LOCATION AND SURVEYS UNIT
DIVISION 3
5310 BARBADOS BLVD, SUITE 102
CASTLE HAYNE, NORTH CAROLINA 28429

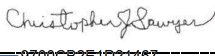
PROJECT SURVEYOR



DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

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

This 5th day of July, 2022.

DocuSigned by:


9700C82E1D21667

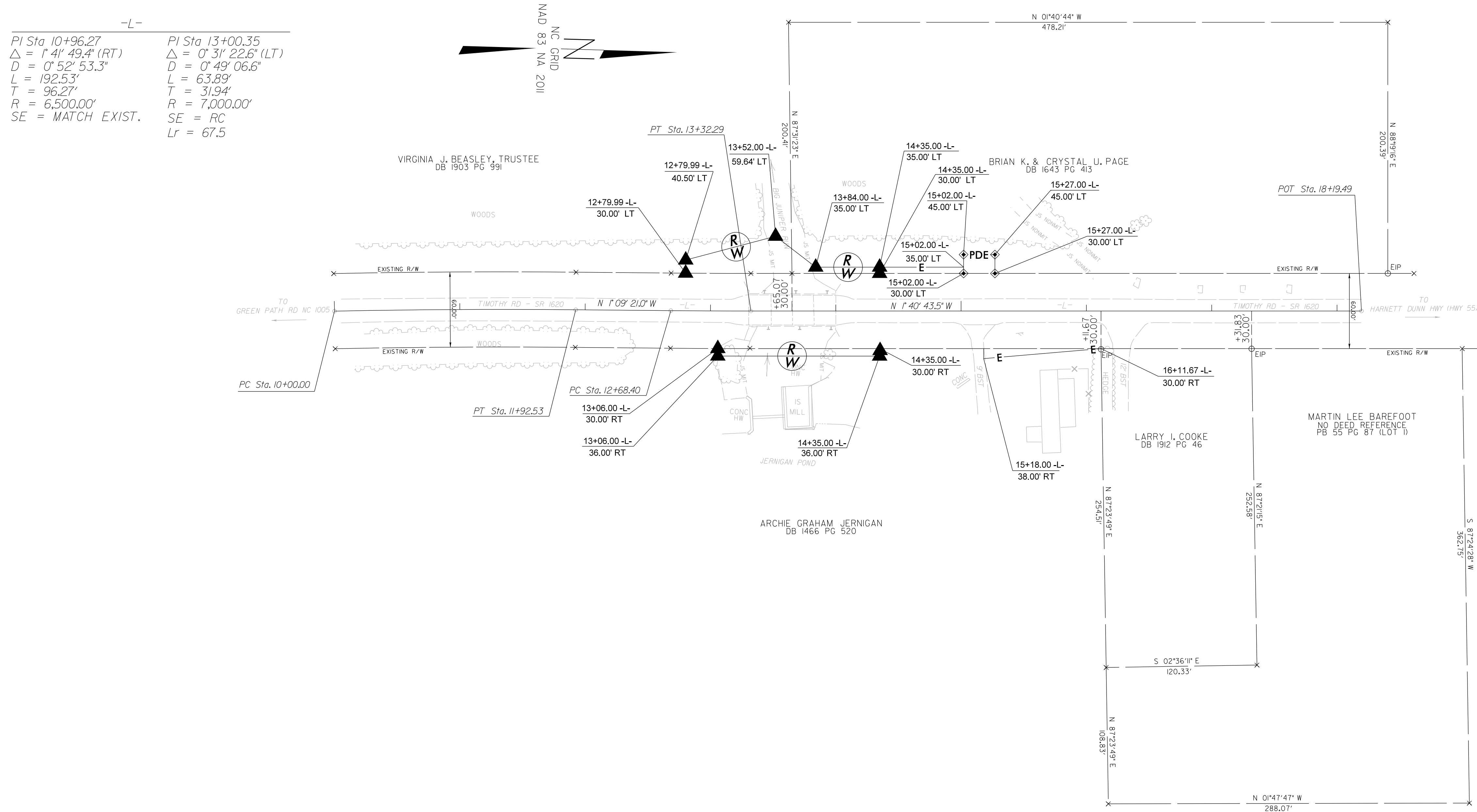
Professional Land Surveyor L-4526

L			
TYPE	STATION	NORTH	EAST
PC	10+00.00	556904.3731	2130395.7481
PT	11+92.53	557096.7733	2130389.0147
PC	12+68.40	557172.6359	2130387.4841
PT	13+32.29	557236.5045	2130385.9039
POT	18+19.49	557723.4915	2130371.6312

NOTES:

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

REVISIONS



I, Christopher J. Sawyer, PLS, certify that the right of way and permanent easement monumentation for this project shown herein was completed under my direct and responsible charge from an actual survey made under my supervision; that all horizontal closures had a minimum ratio of precision of 1:10,000 (Class A). Field work was performed from May 9, 2019, and all coordinates are based on NAD83/2011; That this survey was performed to meet the requirements of 21NCAC 56.1600 as applicable.

This 18th day of July, 2022.

DocuSigned by:
Christopher J. Sawyer
9700CB2E1D21467...
Professional Land Surveyor L-4526

PROJECT REFERENCE NO.	SHEET NO.
B-5631	RW04
Location and Surveys	
LOCATION AND SURVEYS UNIT DIVISION 3 5310 BARBADOS BLVD, SUITE 100 CASTLE HAYNE, NORTH CAROLINA 28429	
PROJECT SURVEYOR 	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

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.
3. RIGHT OF WAY MONUMENTATION ESTABLISHED MAY 9, 2019.

7/11/2019
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User:amcswain

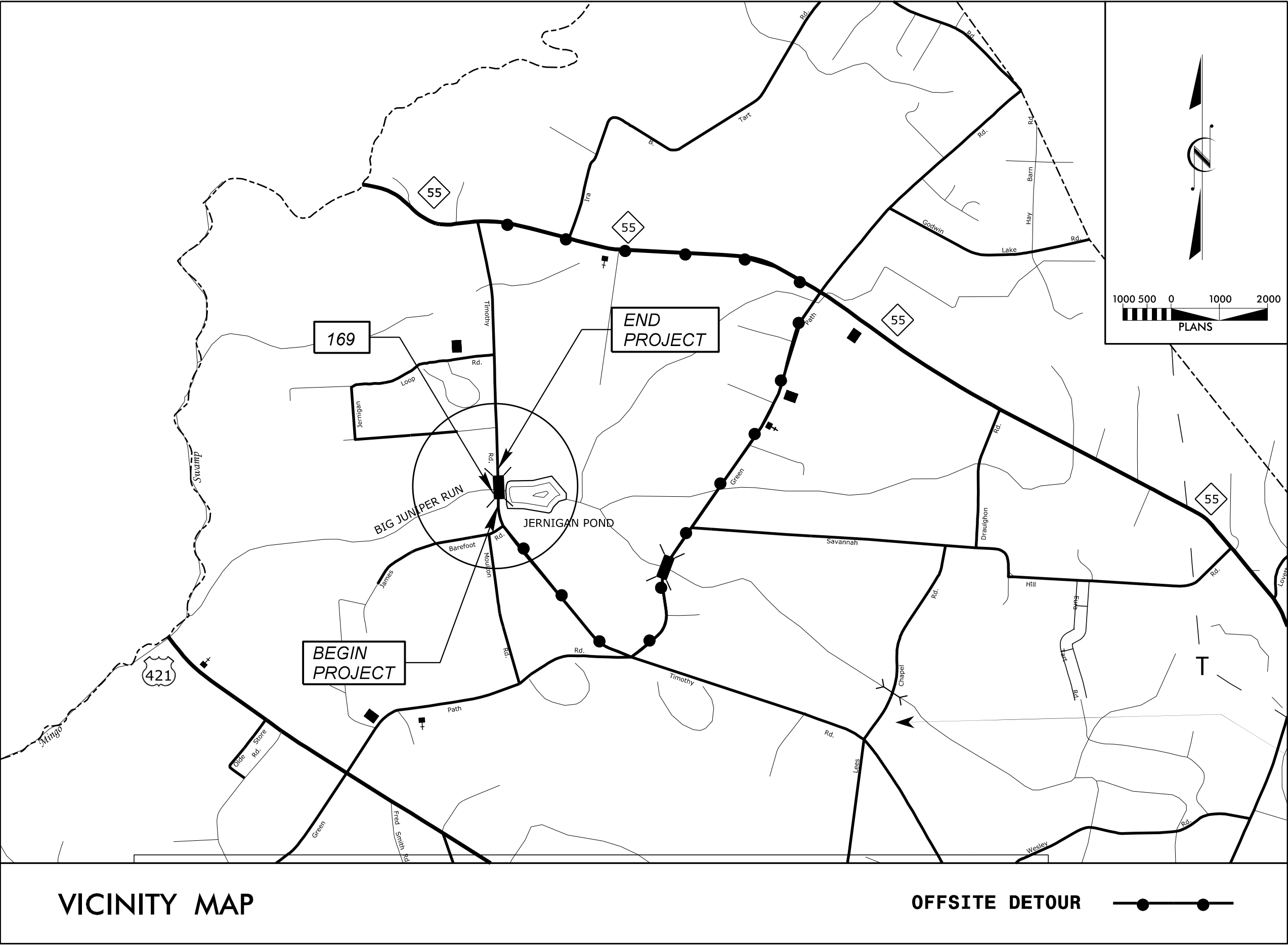
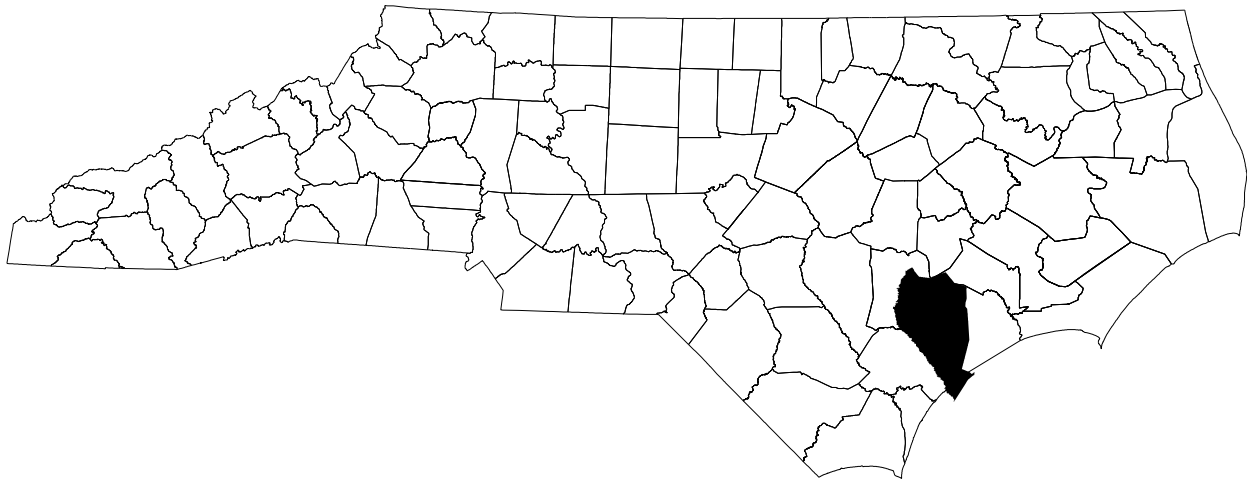
REVISIONS

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

TRANSPORTATION MANAGEMENT PLAN

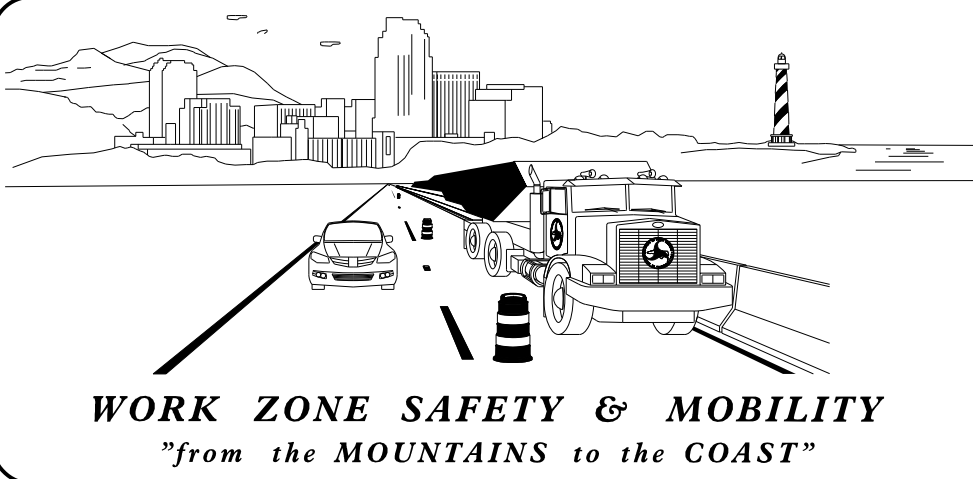
SAMPSON COUNTY

LOCATION: BRIDGE NO.169 ON SR 1620 (TIMOTHY RD)
OVER BIG JUNIPER RUN



VICINITY MAP

OFFSITE DETOUR



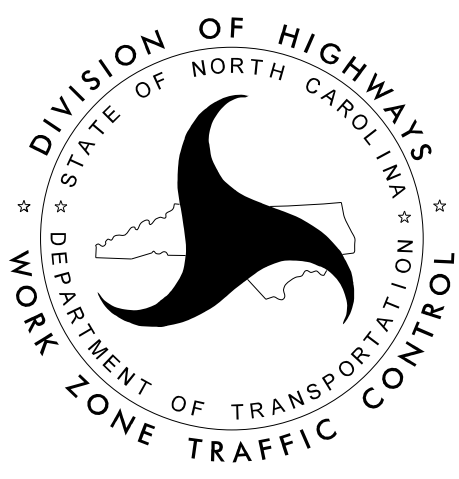
PLANS PREPARED BY:

JONATHAN C. LANGSTON, P.E.
PROJECT ENGINEER

ALLEN J. McSWAIN
PROJECT DESIGN ENGINEER

NCDOT CONTACTS:

JESSI LEONARD, P.E.
DIVISION TRAFFIC ENGINEER

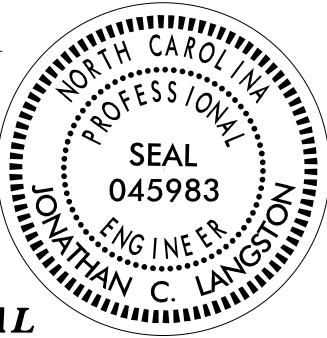


KCA
KISINGER CAMPO
& ASSOCIATES

Kisinger Campo & Associates Corp.
301 Fayetteville Street, Suite 1500
Raleigh, NC 27601
(919) 882-7839
NC Firm License No: C-1506

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

APPROVED: 
DATE: 7/11/2019



SEAL

INDEX OF SHEETS

SHEET NO.	TITLE
TMP-1	TITLE SHEET, VICINITY MAP, AND ROADWAY STANDARD DRAWINGS
TMP-1A	LEGEND, GENERAL NOTES, AND PHASING
TMP-2	OFFSITE DETOUR OVERVIEW
TMP-3	SIGN DETAILS - TIMOTHY RD.

ROADWAY STANDARD DRAWINGS

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

STD. NO.	TITLE
1101.01	WORK ZONE ADVANCE WARNING SIGNS
1101.03	TEMPORARY ROAD CLOSURES
1101.11	TRAFFIC CONTROL DESIGN TABLES
1110.01	STATIONARY WORK ZONE SIGNS
1110.02	PORTABLE WORK ZONE SIGNS
1145.01	BARRICADES - TYPE III
1205.01	PAVEMENT MARKINGS - LINE TYPES AND OFFSETS
1205.02	PAVEMENT MARKINGS - TWO-LANE AND MULTI-LANE ROADWAYS
1205.12	PAVEMENT MARKINGS - BRIDGES
1250.01	RAISED PAVEMENT MARKERS - INSTALLATION SPACING
1251.01	RAISED PAVEMENT MARKERS - PERMANENT AND TEMPORARY
1261.01	GUARDRAIL AND BARRIER DELINEATORS - INSTALLATION SPACING
1261.02	GUARDRAIL AND BARRIER DELINEATORS - TYPES AND MOUNTING
1262.01	GUARDRAIL END DELINEATION

SHEET NO.
TMP-I

CONTRACT: DC00260

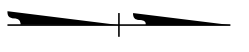
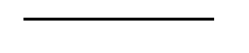
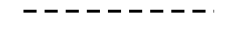
PROJECT: B-5631

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7/11/2019
User:cmoswain

REVISIONS

LEGEND

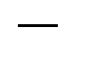
GENERAL

- 
- DIRECTION OF TRAFFIC FLOW
- 
- NORTH ARROW
- 
- EXIST. PVMT.
- 
- PROP. PVMT.
- 
- WORK AREA

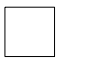
TRAFFIC CONTROL DEVICES

- 
- BARRICADE (TYPE III)
- 
- CONE
- 
- DRUM
- 
- SKINNY DRUM
- 
- FLAGGER

TEMPORARY SIGNING

- 
- PORTABLE SIGN
- 
- STATIONARY SIGN
- 
- STATIONARY OR PORTABLE SIGN

PAVEMENT MARKERS

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

GENERAL NOTES

CHANGES MAY BE REQUIRED WHEN PHYSICAL DIMENSIONS IN THE DETAIL DRAWINGS, STANDARD DETAILS, AND ROADWAY DETAILS ARE NOT ATTAINABLE TO MEET FIELD CONDITIONS OR RESULT IN DUPLICATE OR UNDESIRE OVERLAPPING OF DEVICES. MODIFICATION MAY INCLUDE: MOVING, SUPPLEMENTING, COVERING, OR REMOVAL OF DEVICES AS DIRECTED BY THE ENGINEER.

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

TRAFFIC PATTERN ALTERATIONS

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

SIGNING

- B) PROVIDE SIGNING AND DEVICE REQUIRED TO CLOSE THE ROAD ACCORDING TO THE ROADWAY STANDARD DRAWINGS AND TRAFFIC CONTROL PLAN SHEET TMP-2.

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

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

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

- 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.

PAVEMENT MARKINGS AND MARKERS

- F) INSTALL TEMPORARY PAVEMENT MARKINGS AND TEMPORARY PAVEMENT MARKERS ON INTERIM LAYERS OF PAVEMENT AS FOLLOWS:

ROAD NAME	MARKING	MARKER
(SR 1620) TIMOTHY RD	PAINT	RAISED

- G) TIE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING LINES.

ADDITIONAL NOTES

- H) ACCESS TO ALL DRIVEWAYS AND JERNIGAN POND MUST BE MAINTAINED DURING LIFE OF PROJECT ALL PHASES OF CONSTRUCTION AT THE FIRST DRIVEWAY NORTHEAST OF THE STRUCTURE TO ALLOW FOR PLAINVIEW FIRE DEPARTMENT TO FILL THEIR EMERGENCY VEHICLES.

- I) MAINTAIN TRAFFIC TO ALL RESIDENTS DURING LIFE OF PROJECT AND ALL PHASES OF CONSTRUCTION.

PHASING

PHASE I

STEP 1

PRIOR TO ANY CONSTRUCTION OPERATIONS, PLACE AND COVER OFF-SITE DETOUR SIGNS FOR TIMOTHY RD/SR 1620, NC 55/HARNETT-DUNN HWY, GREEN PATH RD/ SR 1005 AND JAMES BAREFOOT RD/SR 1618 AS SHOWN ON TMP-2 AND IN ACCORDANCE WITH RSD 1101.03 (SHEETS 1 OF 9).

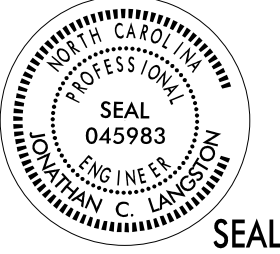
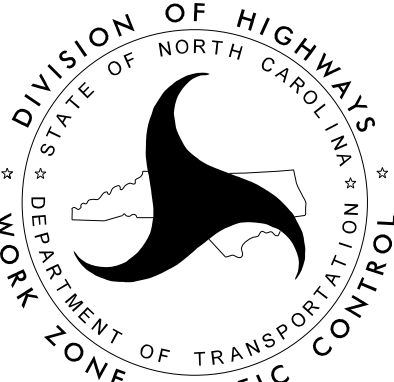
STEP 2

USING OFF-SITE DETOUR, UNCOVER DETOUR SIGNS, CLOSE -L- (SR 1620 / TIMOTHY RD) TO TRAFFIC AND CONSTRUCT PROPOSED BRIDGE AND ROADWAY UP TO AND INCLUDING THE FINAL LAYER OF SURFACE COURSE PER ROADWAY AND BRIDGE PLANS.

STEP 3

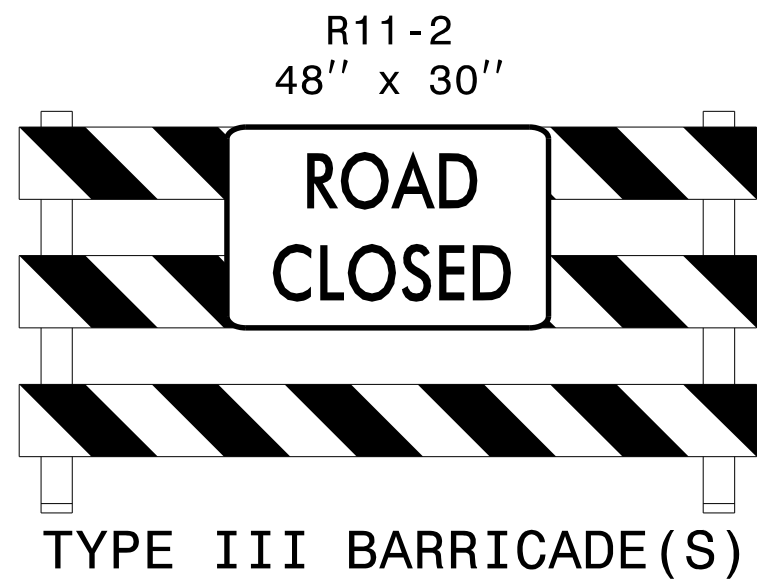
UPON COMPLETION OF BRIDGE AND ROADWAY CONSTRUCTION, PLACE FINAL PAVEMENT MARKINGS AND MARKERS IN ACCORDANCE WITH RSD 1205.01, 1205.02, 1205.12, 1250.01, AND 1251.01. REMOVE BARRICADES AND DETOUR SIGNS AND OPEN -L- (SR 1620 / TIMOTHY RD) TO TRAFFIC

PROJ. REFERENCE NO.	SHEET NO.
B-5631	TMP-1A
KCA Kisinger Campo & Associates Corp. 301 Fayetteville Street Suite 1500 Raleigh, NC 27601 NC LICENSE No. C-1506	

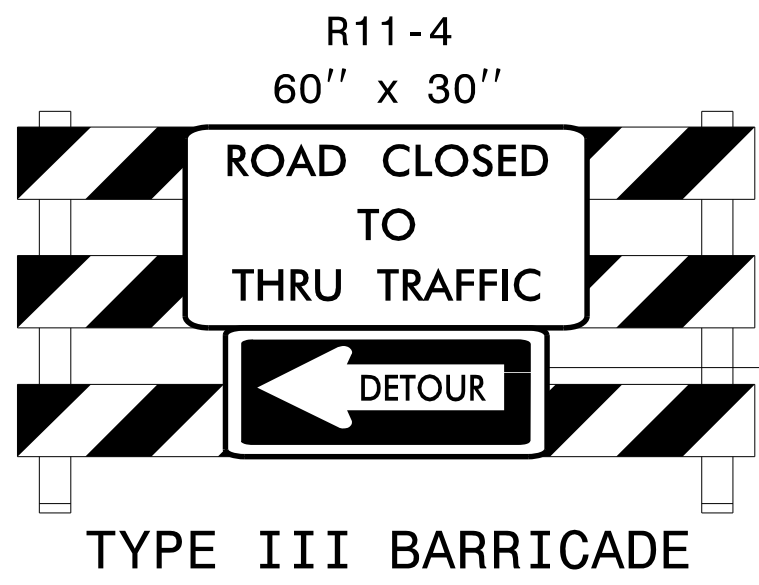
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7/11/2019
User:cmoswain

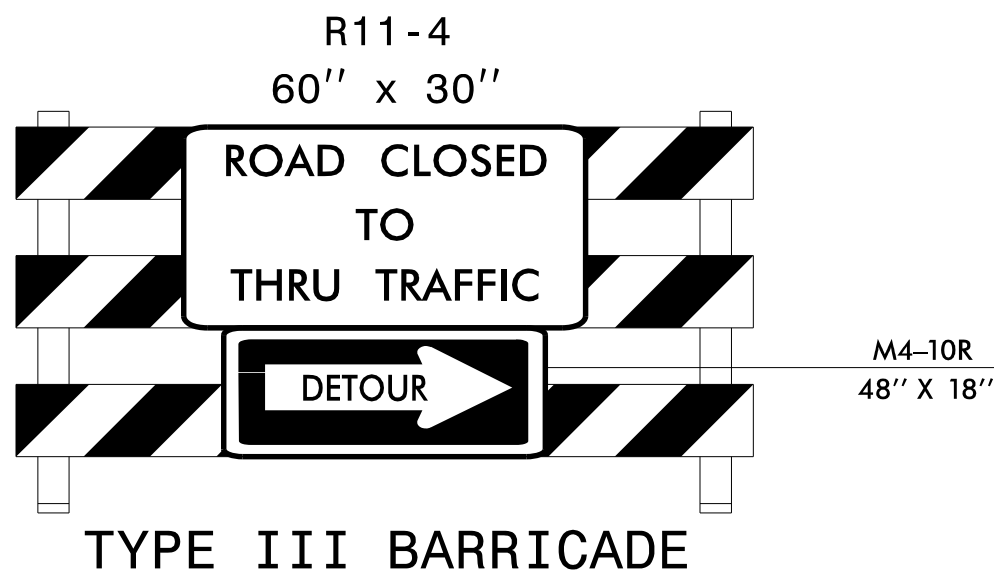
REVISIONS



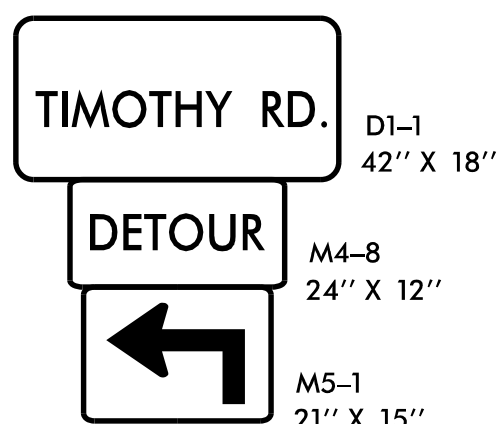
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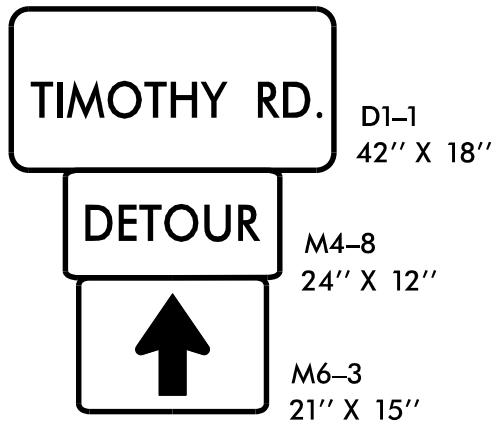
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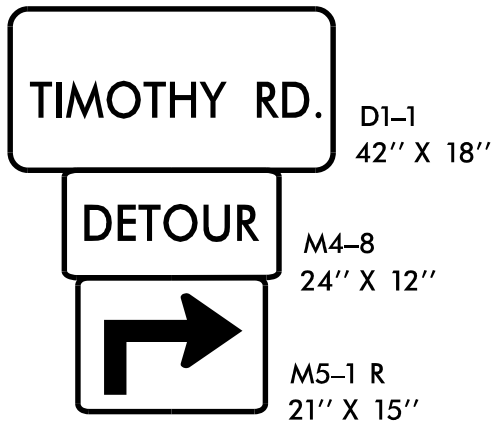
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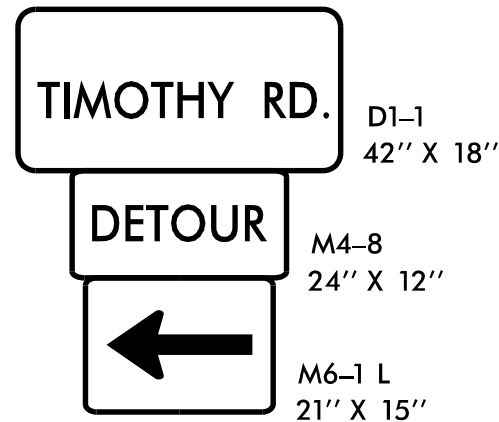
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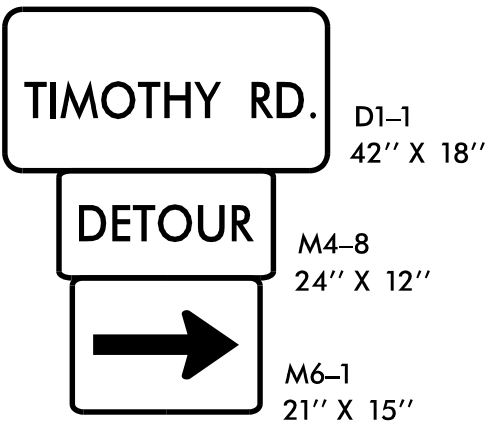
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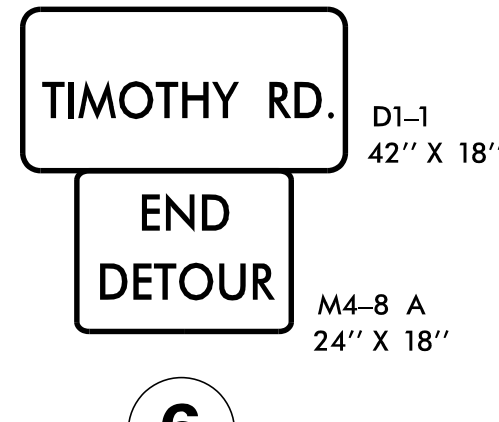
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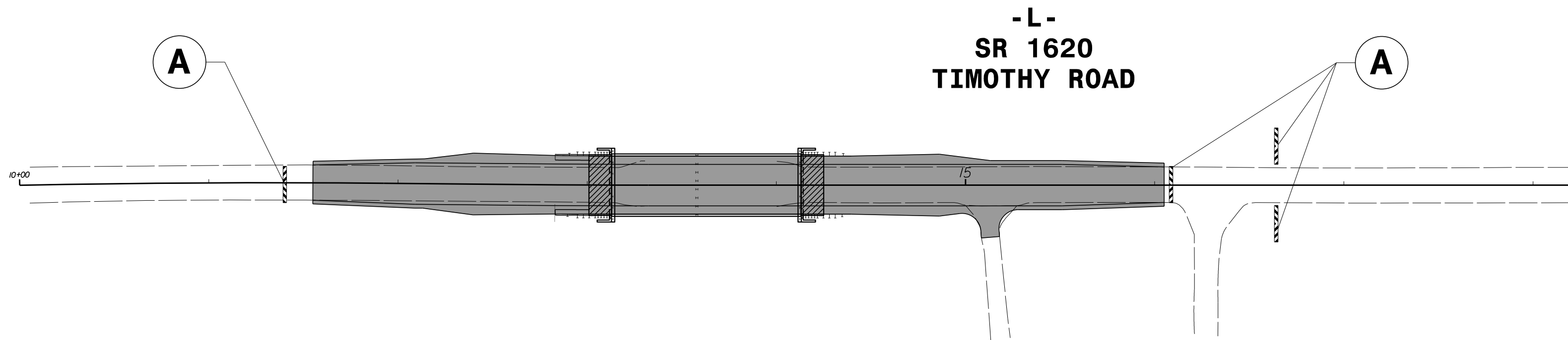
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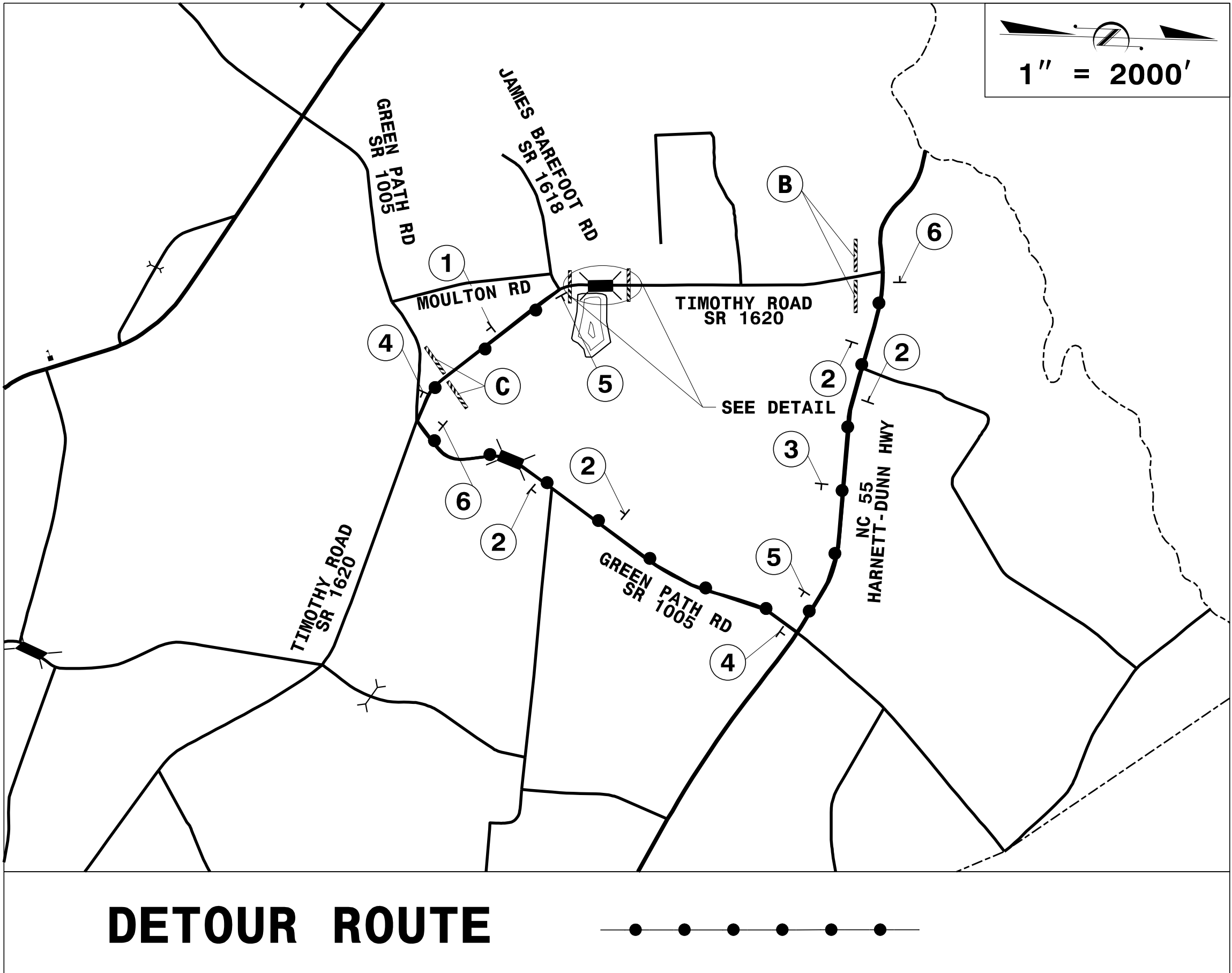
6



LEGEND	
	SIGN - STATIONARY
	BARRICADE (TYPE III)

THIS SHEET TO BE UTILIZED IN CONJUNCTION WITH
RSD 1101.03, SHEETS 1 AND 2 OF 9 FOR ADDITIONAL
SIGN REQUIREMENTS TO INCLUDE:

W20-3	11 EACH
W20-2	1 EACH
SP-4R	1 EACH
SP-4L	2 EACH



DETOUR ROUTE

DETOUR DESCRIPTIONS:

- NORTH ROUTE:**
- FROM JAMES BAREFOOT RD, RIGHT ONTO SB TIMOTHY RD, LEFT ON TO NB GREEN PATH RD, LEFT ONTO WB HARNETT DUNN HWY.
- SOUTH ROUTE:**
- FROM EB HARNETT DUNN HWY, CONTINUE STRAIGHT, RIGHT ONTO GREEN PATH RD, RIGHT ON TO TIMOTHY ROAD

NOTES:

TRAFFIC CONTROL DEVICES **A**, **B**, **C** AND **1** THRU **6**
SHALL BE INSTALLED PER ENGINEER'S INSTRUCTIONS.

FOR DETOUR DESTINATION SIGN, SEE SIGN DETAIL SHEET (TMP-3)

DocuSigned by: <i>Jonathan Langston</i> APPROVED: _____ DATE: 7/11/2019 SEAL DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA SEAL DEPARTMENT OF TRANSPORTATION WORK ZONE TRAFFIC CONTROL	TRANSPORTATION MANAGEMENT PLAN OFFSITE DETOUR OVERVIEW
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User:cmoswain

REVISIONS

PROJ. REFERENCE NO.
B-5631

SHEET NO.
TMP-3

KCA

Kisinger Campo & Associates Corp.
301 Fayetteville Street
Suite 1500
Raleigh, NC 27601
NC LICENSE No. C-1506

SIGN NUMBER: 1

TYPE:STATIONARY

QUANTITY: 12

SIGN WIDTH: 3'-6"

HEIGHT: 1'-6"

TOTAL AREA: 5.3 Sq.Ft.

BORDER TYPE: INSET

RECESS: 0.38"

WIDTH: 0.63"

RADII: 1.50"

NO. Z BARS:

LENGTH:

BACKG COLOR: Fluorescent Orange

COPY COLOR: Black

SYMBOL	X	Y	WID	HT

MAT'L: Ø.080" (2.0 mm) ALUMINUM

DESIGN BY: J. LANGSTON

PROJECT ID: B-5631

CHECKED BY: J. DUKE

LOCATION: SAMPSON COUNTY

DATE: 3/26/2019

DIV: 3

1'-6"

3'-6"

6.5"

5"C

6.5"

3.85"

34.3"

3.85"

TIMOTHY RD

BORDER

R=1.5"

TH=0.63"

IN=0.38"

Spacing Factor is 1 unless specified otherwise

LETTER POSITIONS

Letter spacings are to start of next letter																									Series/Size
																									Text Length
		T	I	M	O	T	H	Y		R	D														C 2000
	3.9	3.3	1.8	4.3	3.5	3.3	3.5	3.2	5	3.6	2.8	3.9													34.3

FILENAME: Guidesign_Design

NORTH CAROLINA D.O.T. SIGN DETAIL

DocuSigned by:
Jonathan Langston

APPROVED: 99AABAC18BE4426...

DATE: 7/11/2019

SEAL

Professional Engineer
045983
Jonathan C. Langston
North Carolina

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

DIVISION OF HIGHWAYS

STATE OF NORTH CAROLINA

DEPARTMENT OF TRANSPORTATION

WORK ZONE TRAFFIC CONTROL

TRANSPORTATION
MANAGEMENT PLAN

SIGN DETAILS
TIMOTHY RD.

CONTRACT: DC00260

TIP NUMBER: B-5631

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PAVEMENT MARKING PLAN
SAMPSON COUNTY

LOCATION: BRIDGE NO. 169 ON SR 1620 (TIMOTHY RD)
OVER BIG JUNIPER RUN

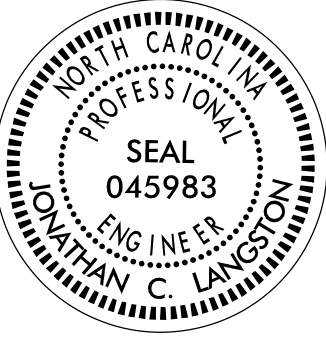
PROJECT REFERENCE NO.
B-5631

SHEET NO.
PMP-1

DocuSigned by:
APPROVED: Jonathan Langston
99AABAC18BE4423.

DATE: 7/11/2019

SEAL



DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

ROADWAY STANDARD DRAWINGS

THE FOLLOWING ROADWAY STANDARDS AS SHOWN 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 MULTI-LANE ROADWAYS
1205.12	PAVEMENT MARKINGS - BRIDGES
1250.01	RAISED PAVEMENT MARKERS - INSTALLATION SPACING
1251.01	RAISED PAVEMENT MARKERS - PERMANENT AND TEMPORARY
1261.01	GUARDRAIL AND BARRIER DELINEATOR SPACING
1261.02	GUARDRAIL AND BARRIER DELINEATOR TYPES
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.

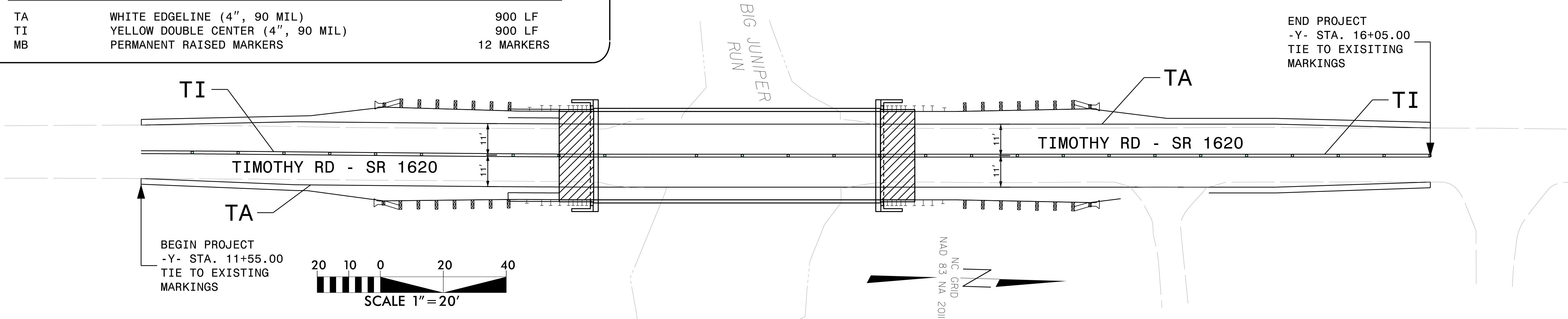
PAVEMENT MARKINGS AND MARKERS

- A) INSTALL PERMANENT PAVEMENT MARKINGS AND PERMANENT RAISED MARKERS ON LAYERS OF PAVEMENT AS FOLLOWS:
- | | | |
|----------------------|---------------|------------------|
| ROAD NAME | MARKING | MARKER |
| SR 1620 (TIMOTHY RD) | THERMOPLASTIC | PERMANENT RAISED |
- B) TIE PROPOSED PAVEMENT MARKINGS LINES TO EXISTING PAVMENT MARKING LINES.
- C) REMOVE/REPLACE ANY CONFLICTING/DAMAGED PAVEMENT MARKINGS AND MARKERS.

PAVEMENT MARKING SCHEDULE

SYMBOL	DESCRIPTION	QUANTITY
TA	WHITE EDGELINE (4", 90 MIL)	900 LF
TI	YELLOW DOUBLE CENTER (4", 90 MIL)	900 LF
MB	PERMANENT RAISED MARKERS	12 MARKERS

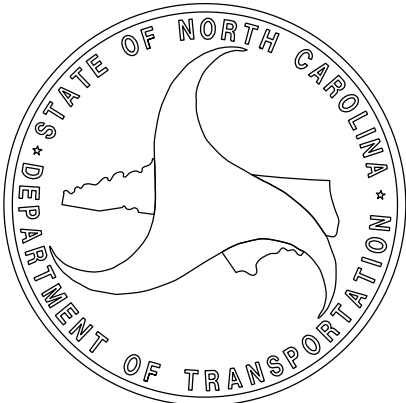
PAVEMENT MARKING DETAIL



NC FIRM LICENSE No: C-1506
301 Fayetteville St.,
Suite 1500
Raleigh, NC 27601
(919)882-7839

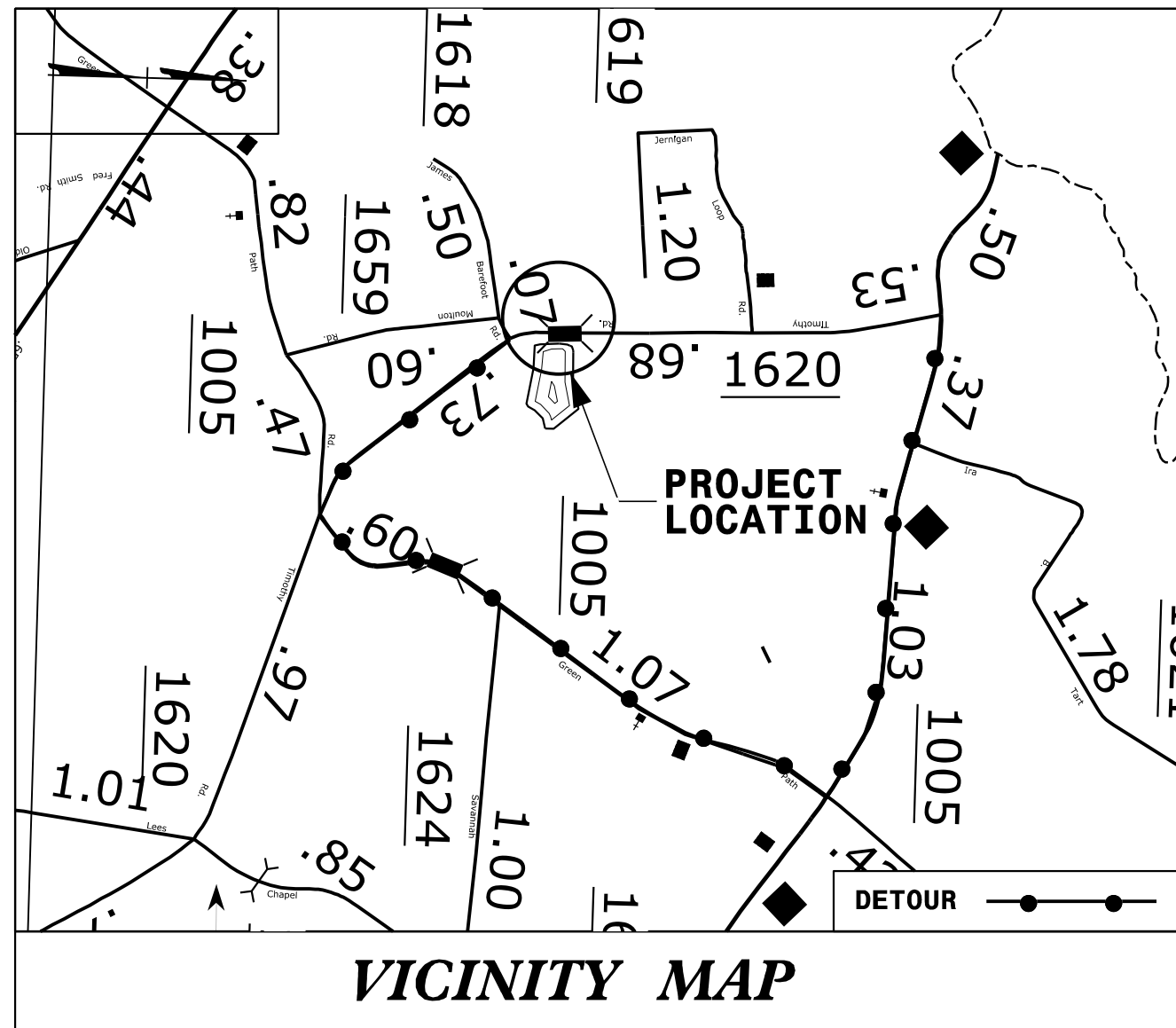
JONATHAN LANGSTON, PE PROJECT ENGINEER

JASON DEBONE PROJECT DESIGNER



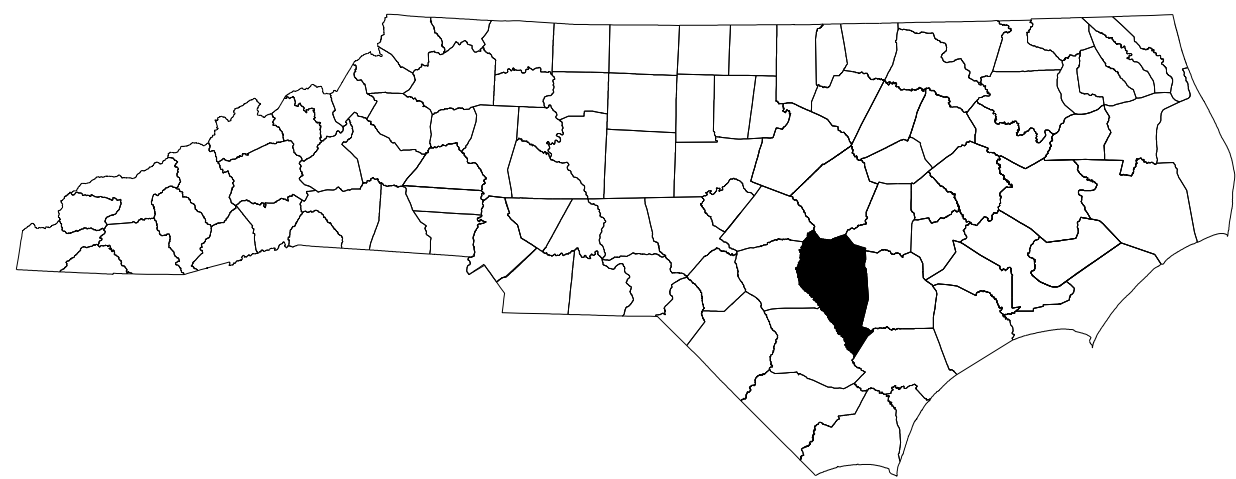
INDEX OF SHEETS

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



VICINITY MAP

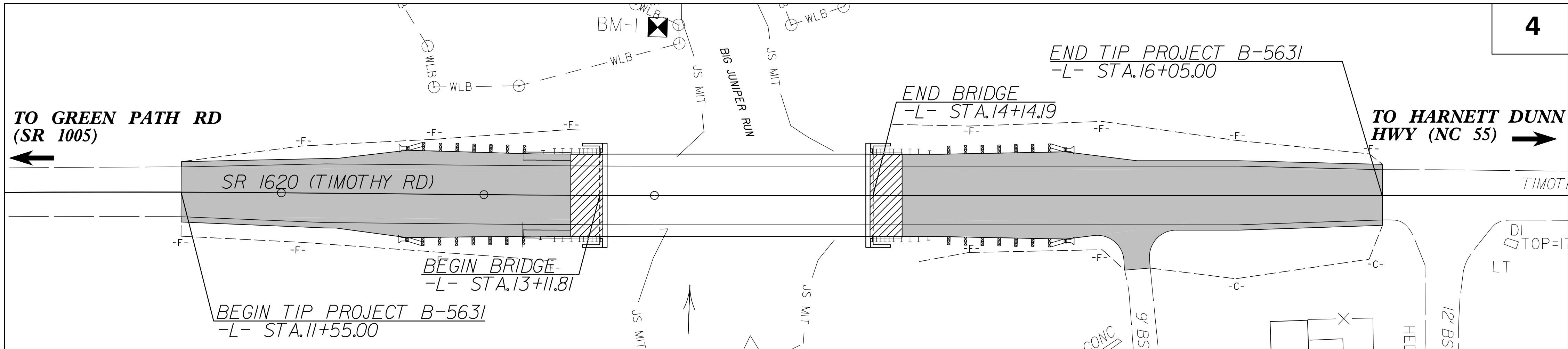
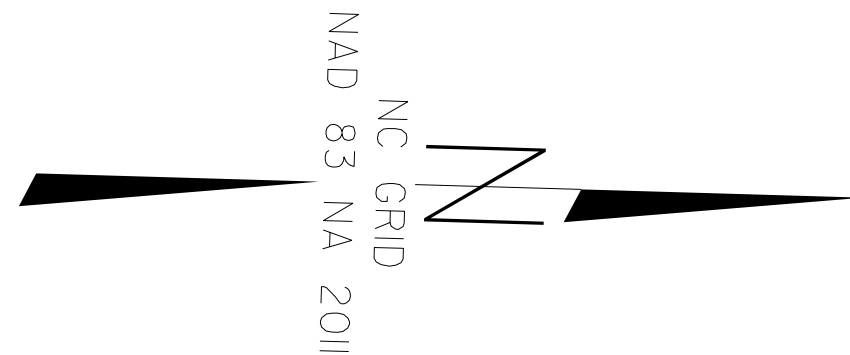
THIS PROJECT IS NOT LOCATED WITHIN MUNICIPAL BOUNDARIES.



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

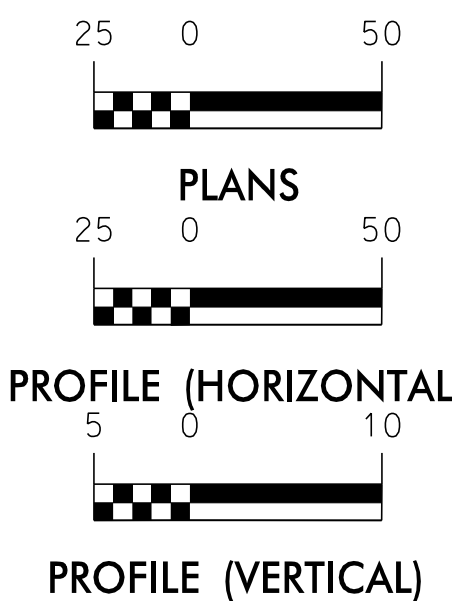
BRIDGE NO.169 ON SR 1620 (TIMOTHY RD)
OVER BIG JUNIPER RUN

TYPE OF WORK: GRADING, DRAINAGE, PAVING AND STRUCTURE



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

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 NORTH CAROLINA DEPARTMENT OF ENVIRONMENTAL QUALITY DIVISION OF WATER RESOURCES.



2018 STANDARD SPECIFICATIONS

SAM CULLUM, PE

4109

NAME

LEVEL III CERTIFICATION NO.

ROADSIDE ENVIRONMENTAL UNIT

2018 STANDARD SPECIFICATIONS

NOELLE RING, CPESC

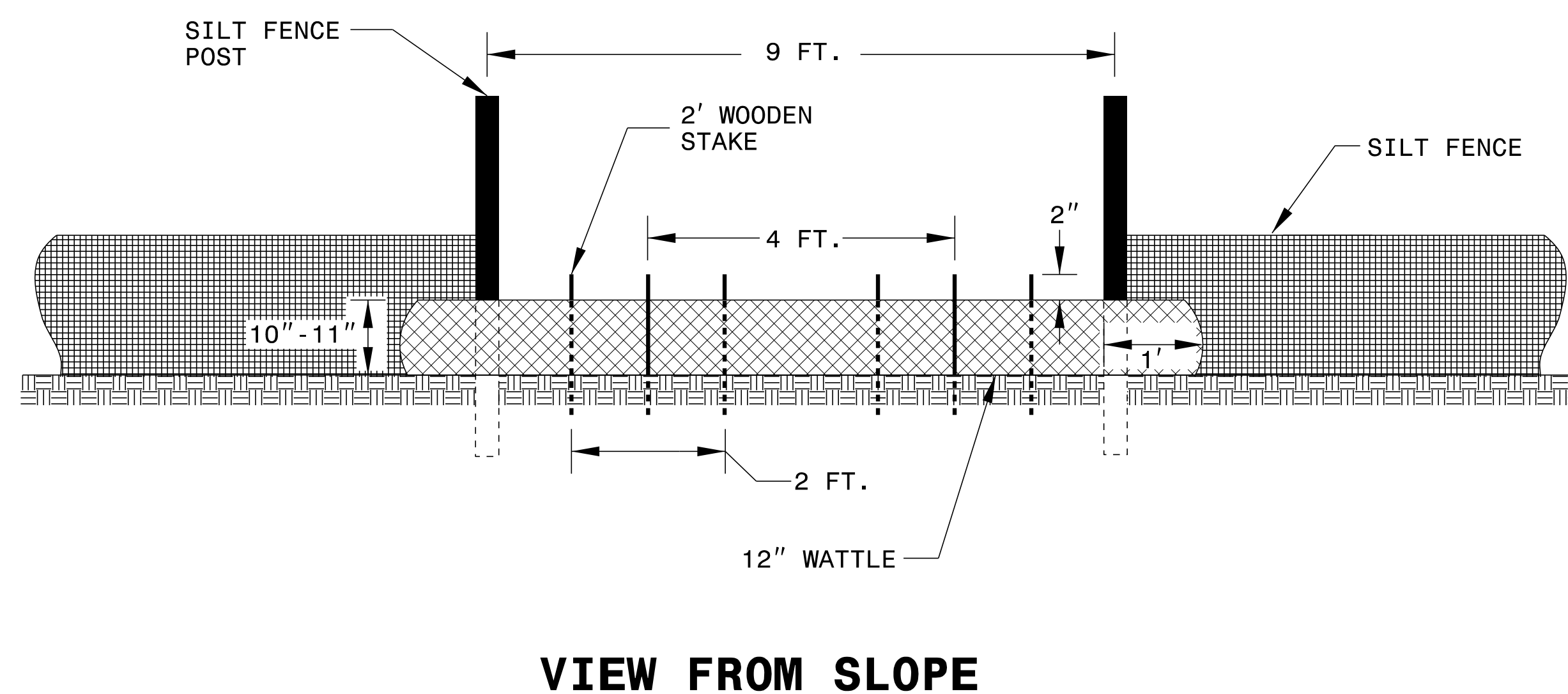
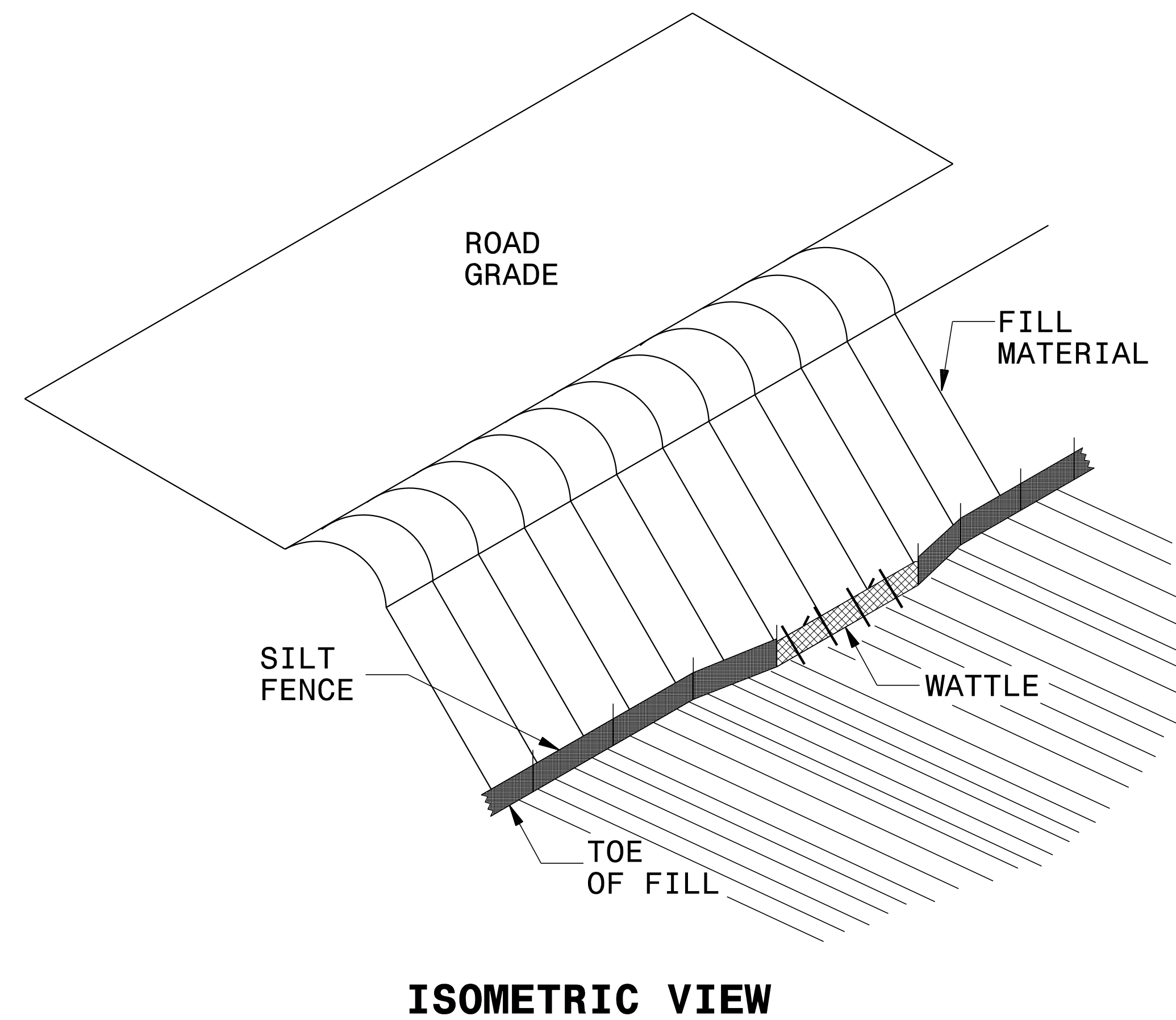
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-5631	EC-1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
455861.1	BRZ-1620(004)	PE	
455861.1	BRZ-1620(004)	ROW & UTIL.	
455861.1	BRZ-1620(004)	CONST.	

EROSION AND SEDIMENT CONTROL MEASURES

Std. #	Description	Symbol
1630.03	Temporary Silt Ditch	TSD
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	W
	Wattle / Coir Fiber Wattle with Polyacrylamide (PAM)	W-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	RA
1632.02	Type B	RB
1632.03	Type C	RC
	Skimmer Basin	SB
	Tiered Skimmer Basin	TSB
	Infiltration Basin	IB

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

SILT FENCE COIR FIBER WATTLE BREAK DETAIL



NOTES:

USE MINIMUM 12 IN. DIAMETER COIR FIBER (COCONUT FIBER) WATTLE AND LENGTH OF 10 FT.

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

DO NOT PLACE WATTLE ON TOE OF SLOPE.

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

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

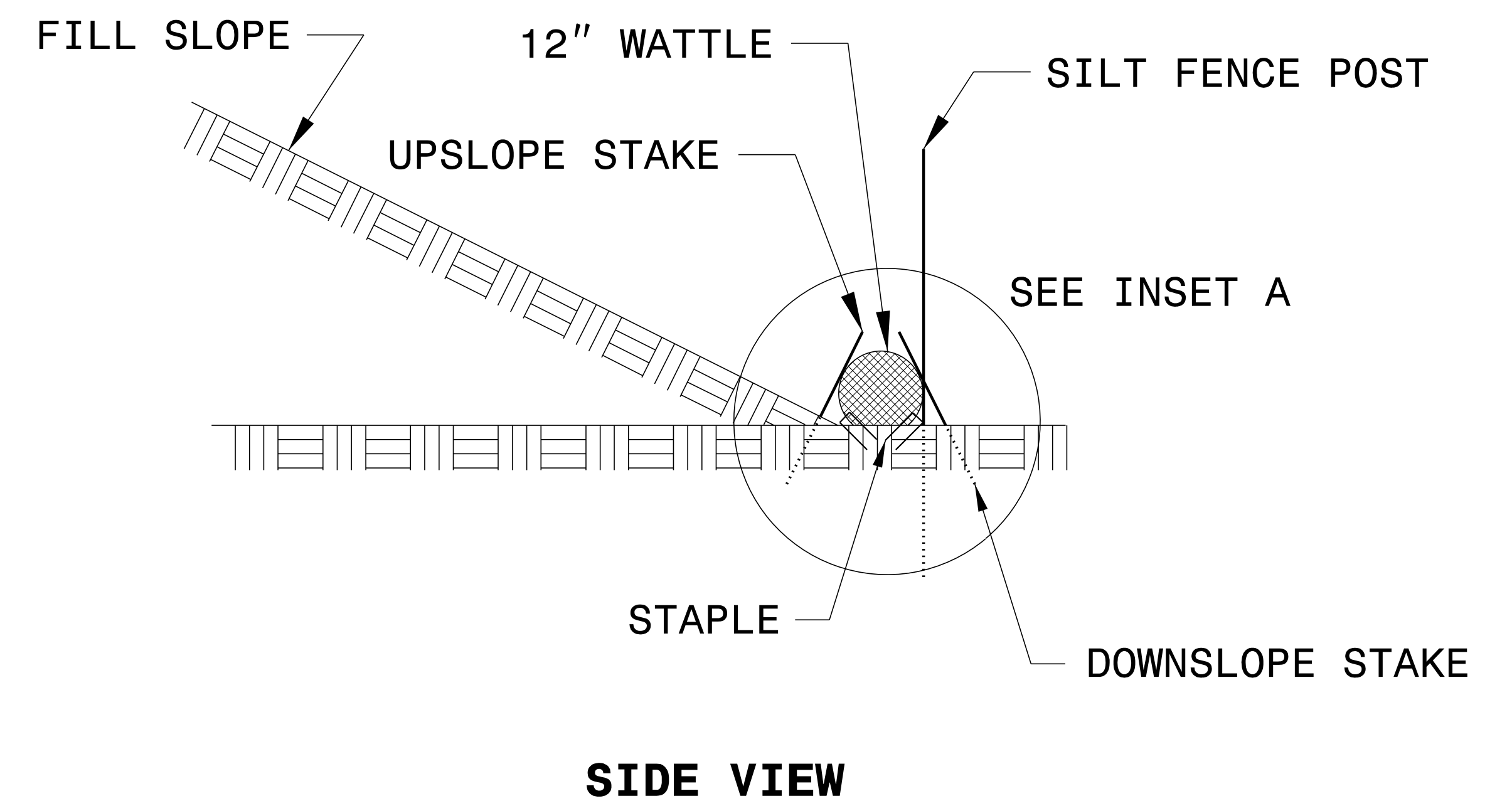
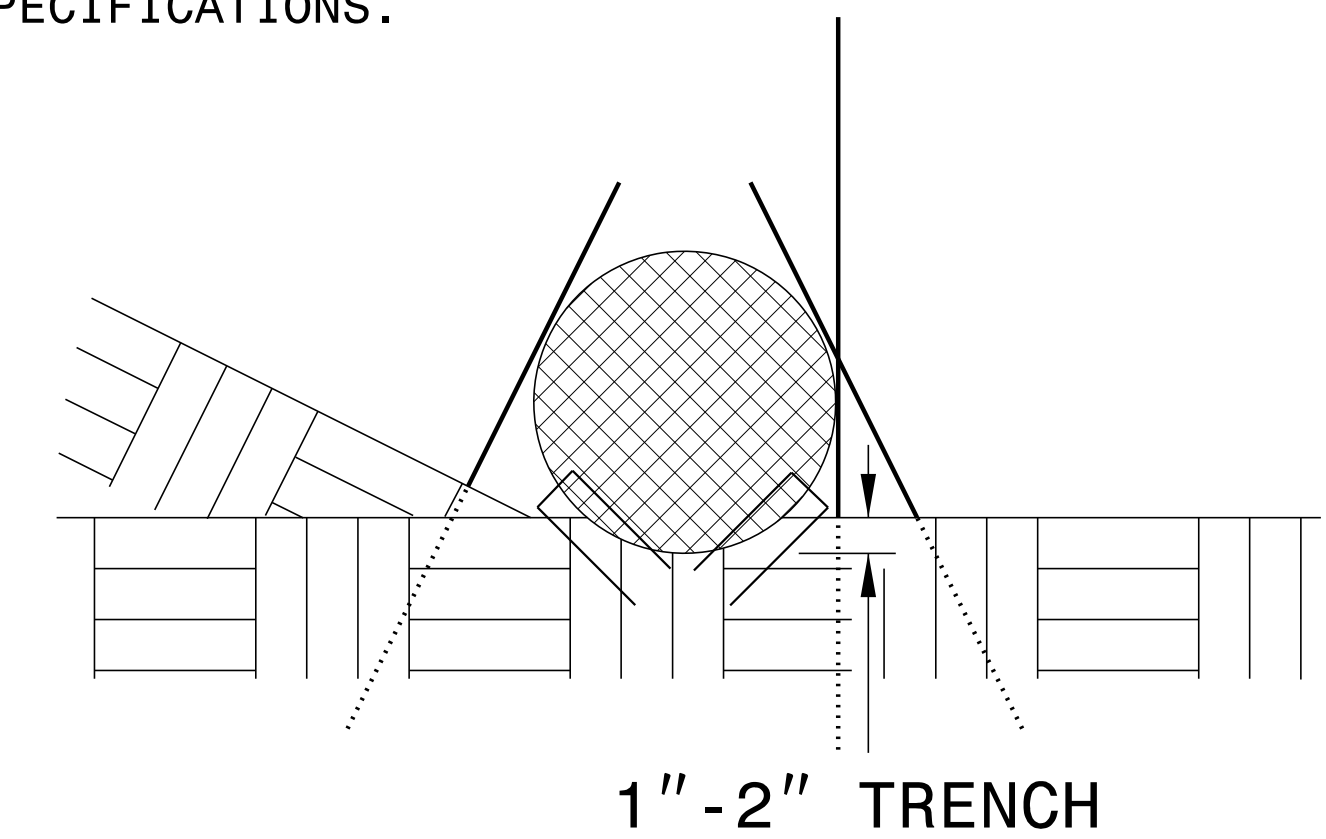
PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12" IN LENGTH.

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

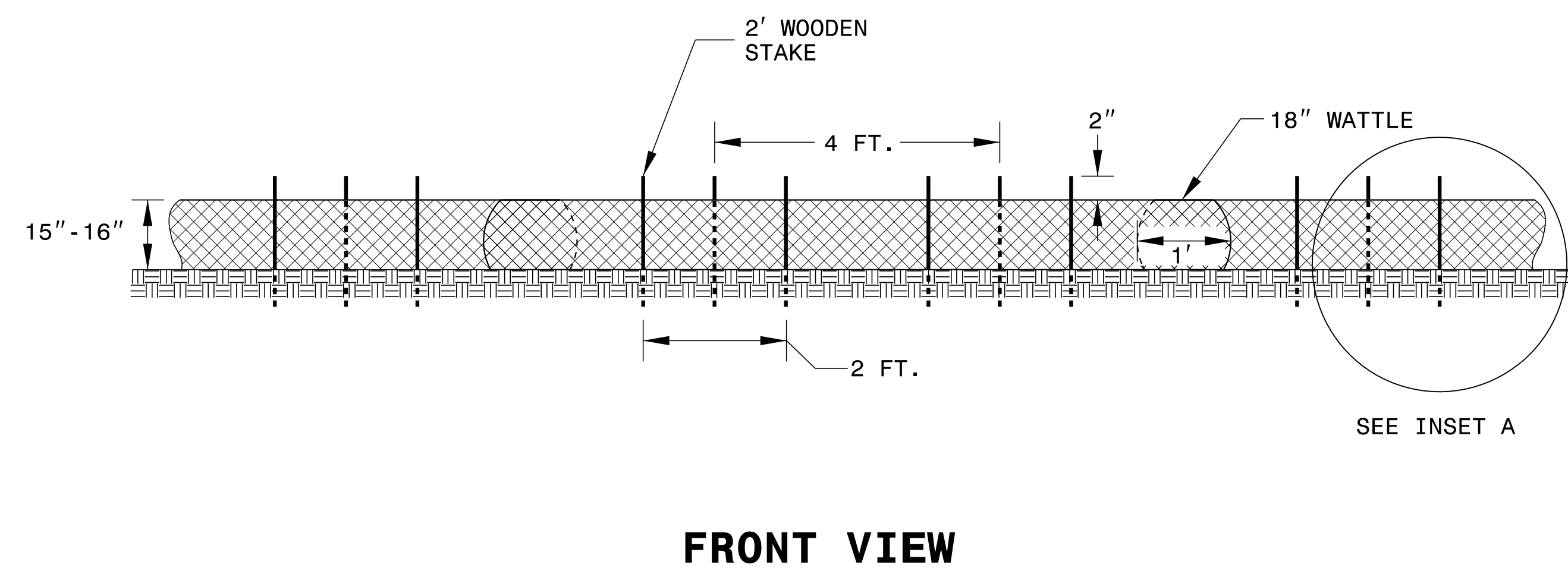
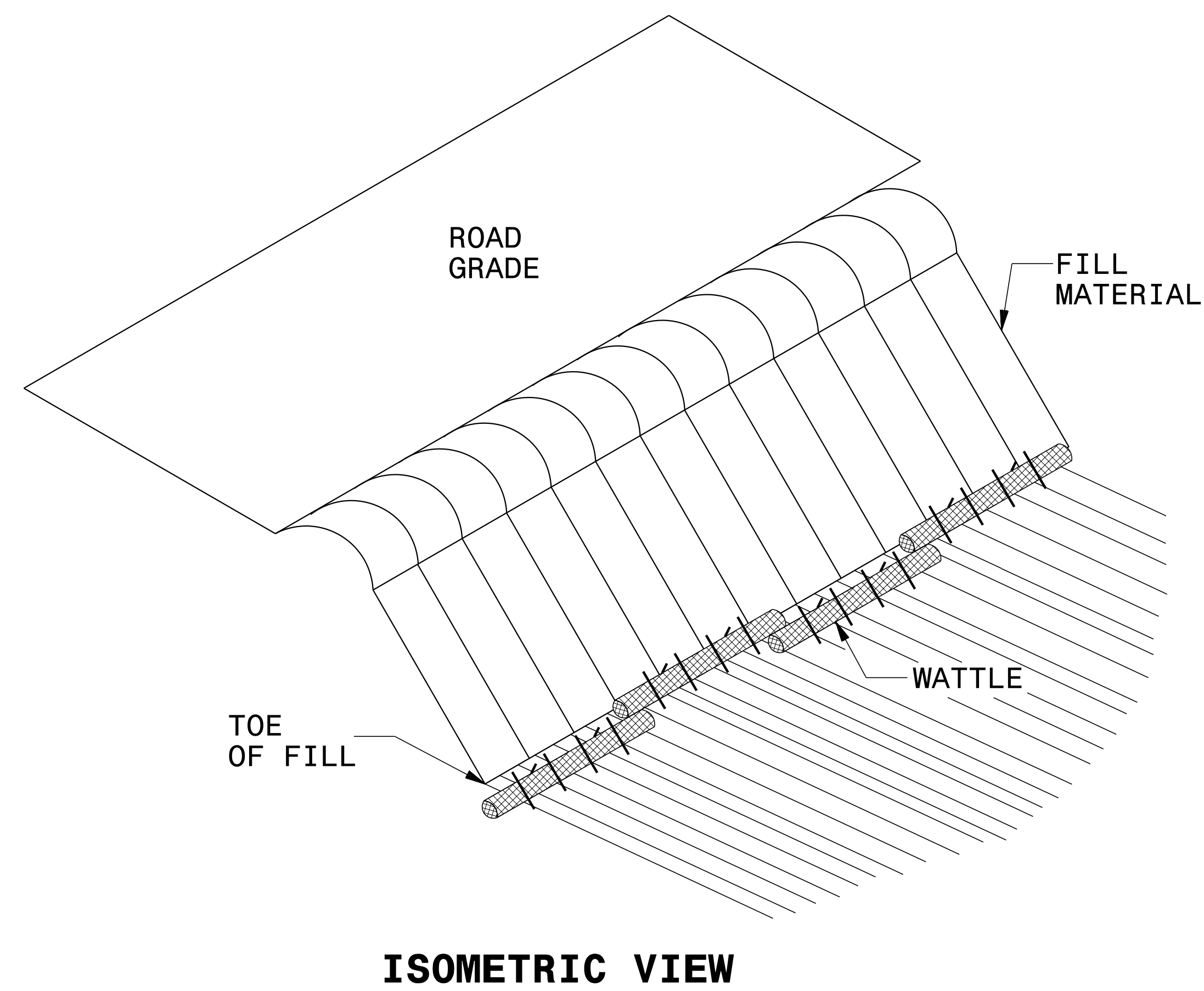
WATTLE INSTALLATION CAN BE ON OUTSIDE OF THE SILT FENCE AS DIRECTED.

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

INSET A



COIR FIBER WATTLE BARRIER DETAIL



NOTES:

USE MINIMUM 18 IN. NOMINAL DIAMETER COIR FIBER (COCONUT) 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.

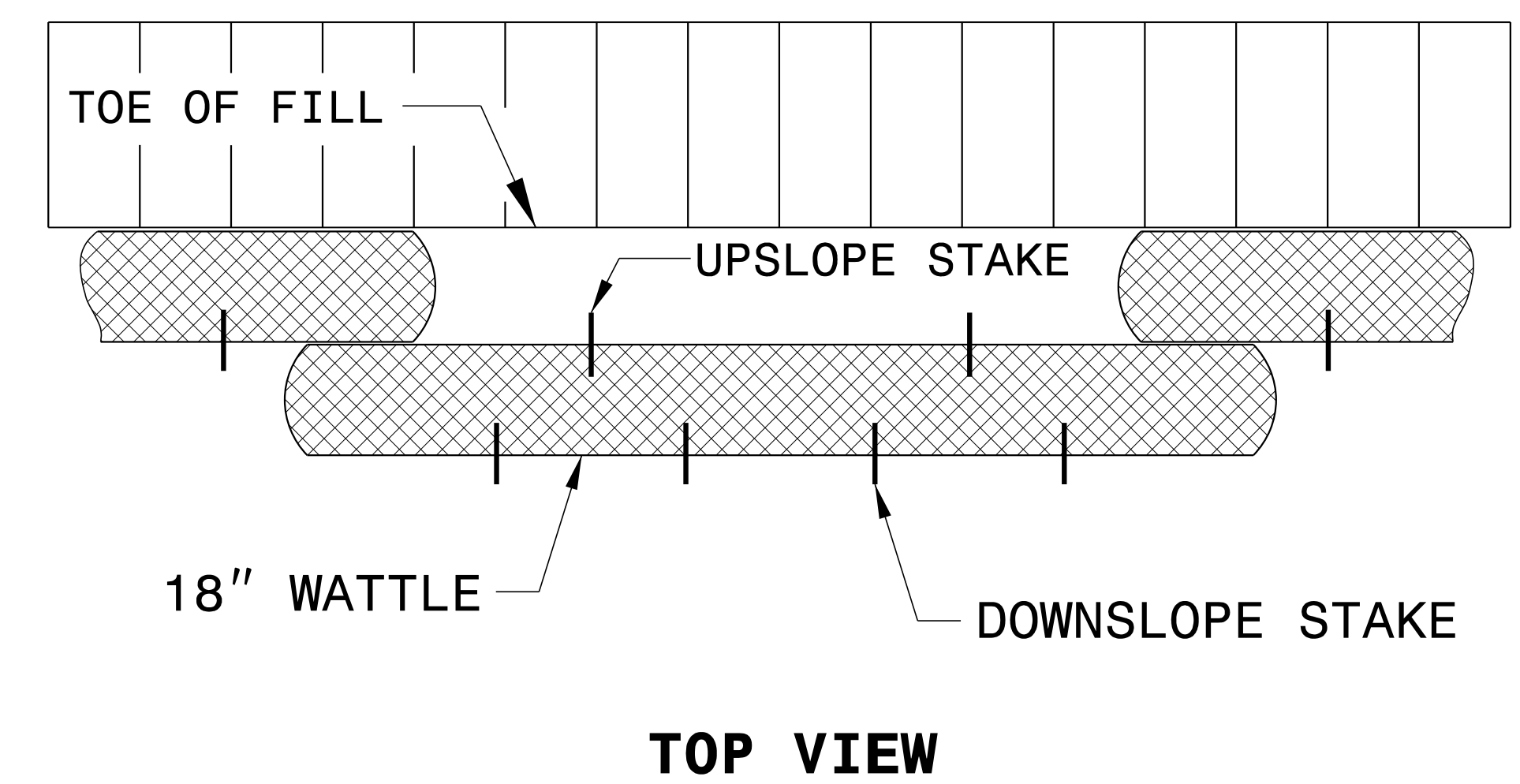
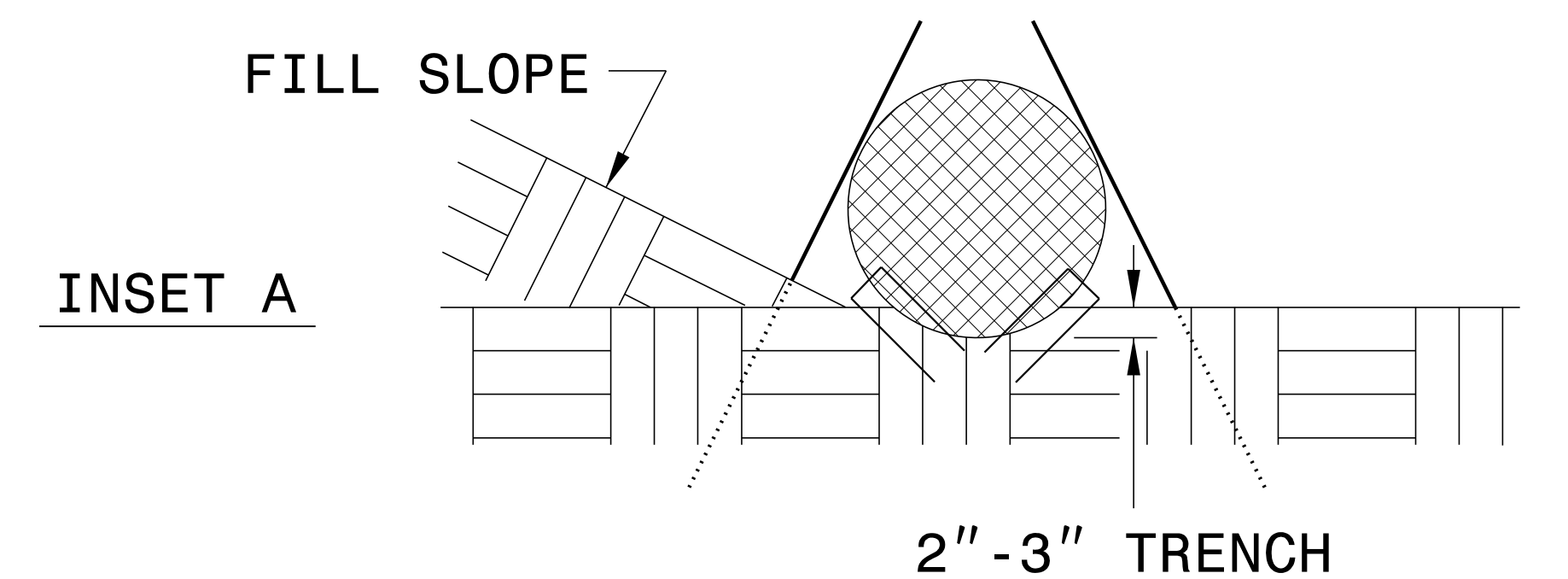
USE 2 FT. WOODEN STAKES WITH A 2 IN. BY 2 IN. NOMINAL CROSS SECTION.

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.



7/2/99

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

PROJECT REFERENCE NO.	SHEET NO.
B-5631	EC-3
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.

PERMANENT SOIL REINFORCEMENT MAT

[illegible]

DETAIL A
STANDARD BASE DITCH
(Not to Scale)

PROPOSED EOP

4:1

D

3:1

NATURAL GROUND

Min. D = 1 Ft.
B = 3 Ft.

B

STRUCTURE HYDRAULIC DATA BRIDGE		
DESIGN DISCHARGE	= 750	CFS
DESIGN FREQUENCY	= 25	YRS
DESIGN HW ELEVATION	= 1651	FT
BASE DISCHARGE	= 1378	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 166.3	FT
OVERTOPPING DISCHARGE	= 1500	CFS
OVERTOPPING FREQUENCY	= 100+	YRS
OVERTOPPING ELEVATION	= 166.4	FT

```

STRUCTURE HYDRAULIC DATA I5+35 -L-
DESIGN DISCHARGE           = 0.65  CFS
DESIGN FREQUENCY           = 25    YRS
DESIGN HW ELEVATION        = 165.4
BASE DISCHARGE             = 0.94  CFS
BASE FREQUENCY             = 100   YRS
BASE HW ELEVATION          = 165.4
OVERTOPPING DISCHARGE      = N/A   CFS
OVERTOPPING FREQUENCY      = 500+  YRS
OVERTOPPING ELEVATION      = 170.3 FT

```

-L-	
<i>PI Sta 10+96.27</i>	<i>PI Sta 13+00.35</i>
<i>Δ = 1° 41' 49.4" (RT)</i>	<i>Δ = 0° 31' 22.6" (LT)</i>
<i>D = 0° 52' 53.3"</i>	<i>D = 0° 49' 06.6"</i>
<i>L = 192.53'</i>	<i>L = 63.89'</i>
<i>T = 96.27'</i>	<i>T = 31.94'</i>
<i>R = 6,500.00'</i>	<i>R = 7,000.00'</i>
<i>SE = MATCH EXIST.</i>	<i>SE = RC</i>
	<i>Lr = 67.5</i>

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

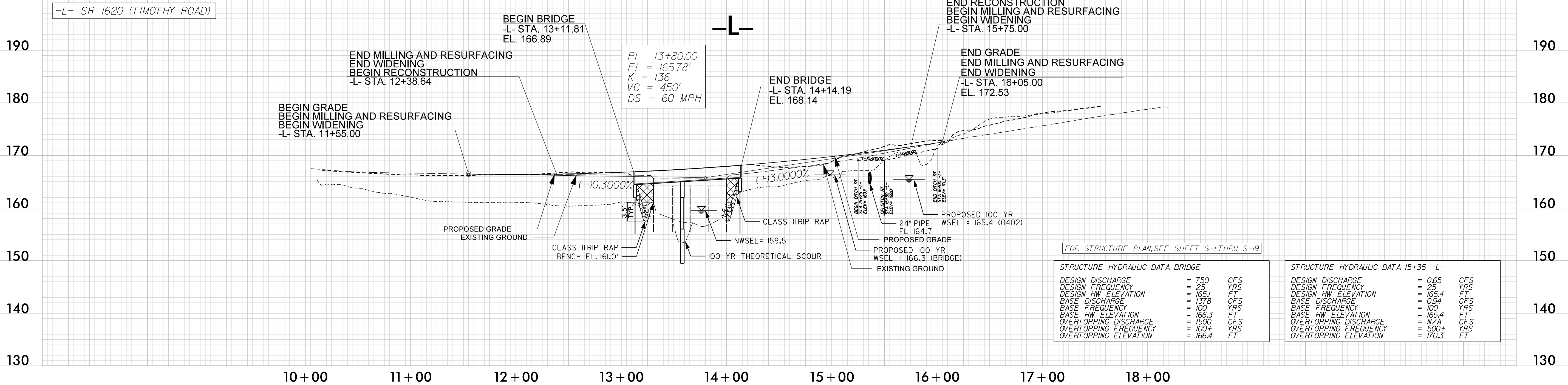
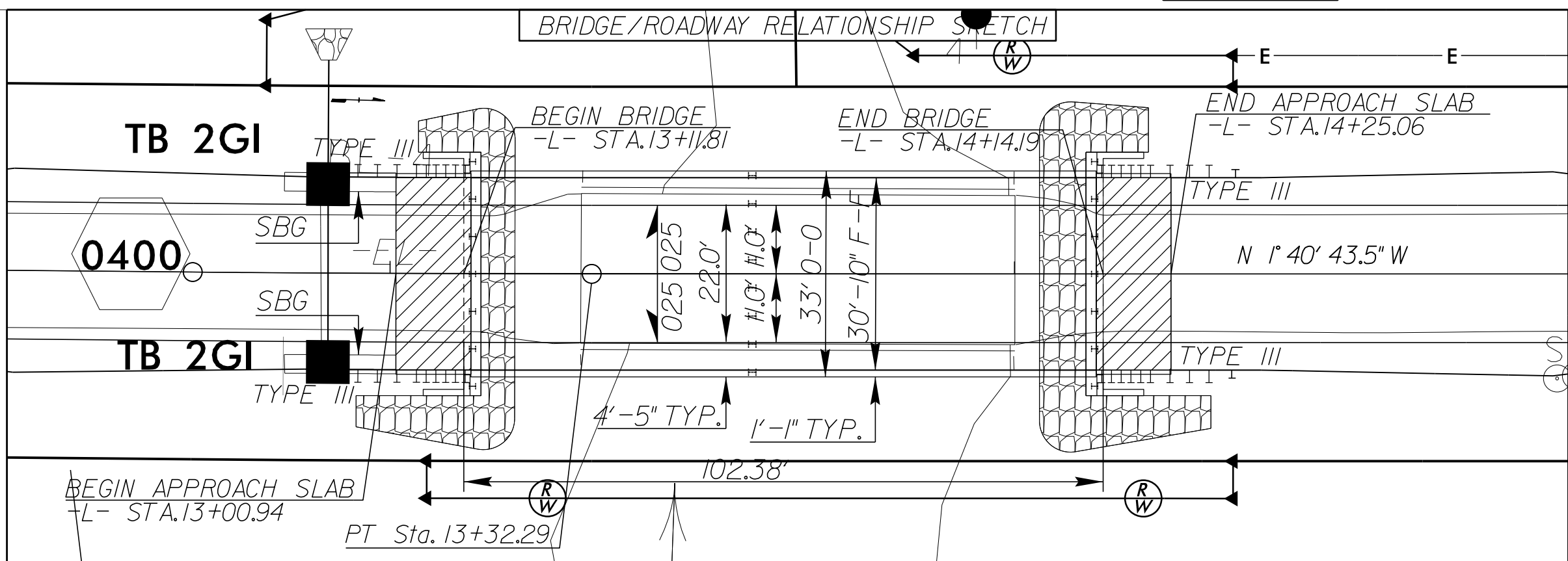
Temporary Rock
Silt Check Type A
1 ft. weir height

Temporary Rock
Silt Check Type A
1 ft. weir height

Temporary Rock
Silt Check Type A
1 ft. weir height

Temporary Rock
Silt Check Type A
1 ft. weir height

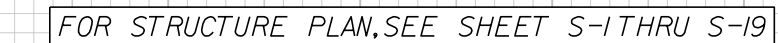
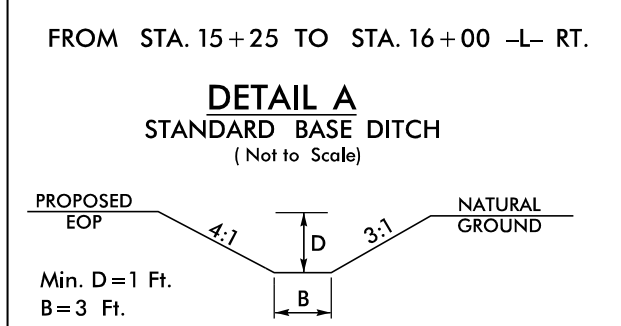
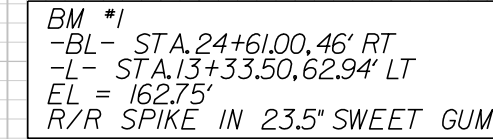
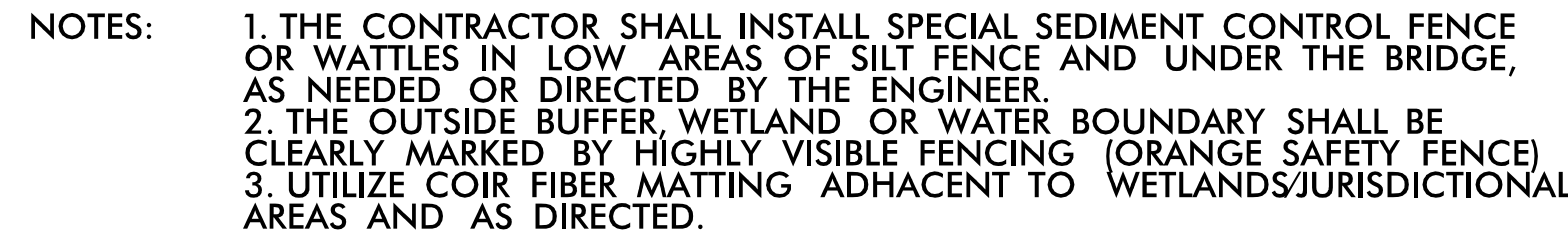
1. THE CONTRACTOR SHALL INSTALL SPECIAL SEDIMENT CONTROL FENCE OR WATTLES IN LOW AREAS OF SILT FENCE AND UNDER THE BRIDGE, AS NEEDED OR DIRECTED BY THE ENGINEER.
2. THE OUTSIDE BUFFER, WETLAND OR WATER BOUNDARY SHALL BE CLEARLY MARKED BY HIGHLY VISIBLE FENCING (ORANGE SAFETY FENCE)
3. UTILIZE COIR FIBER MATTING ADJACENT TO WETLANDS/JURISDICTIONAL AREAS AND AS DIRECTED.



REVISIONS

8/17/99

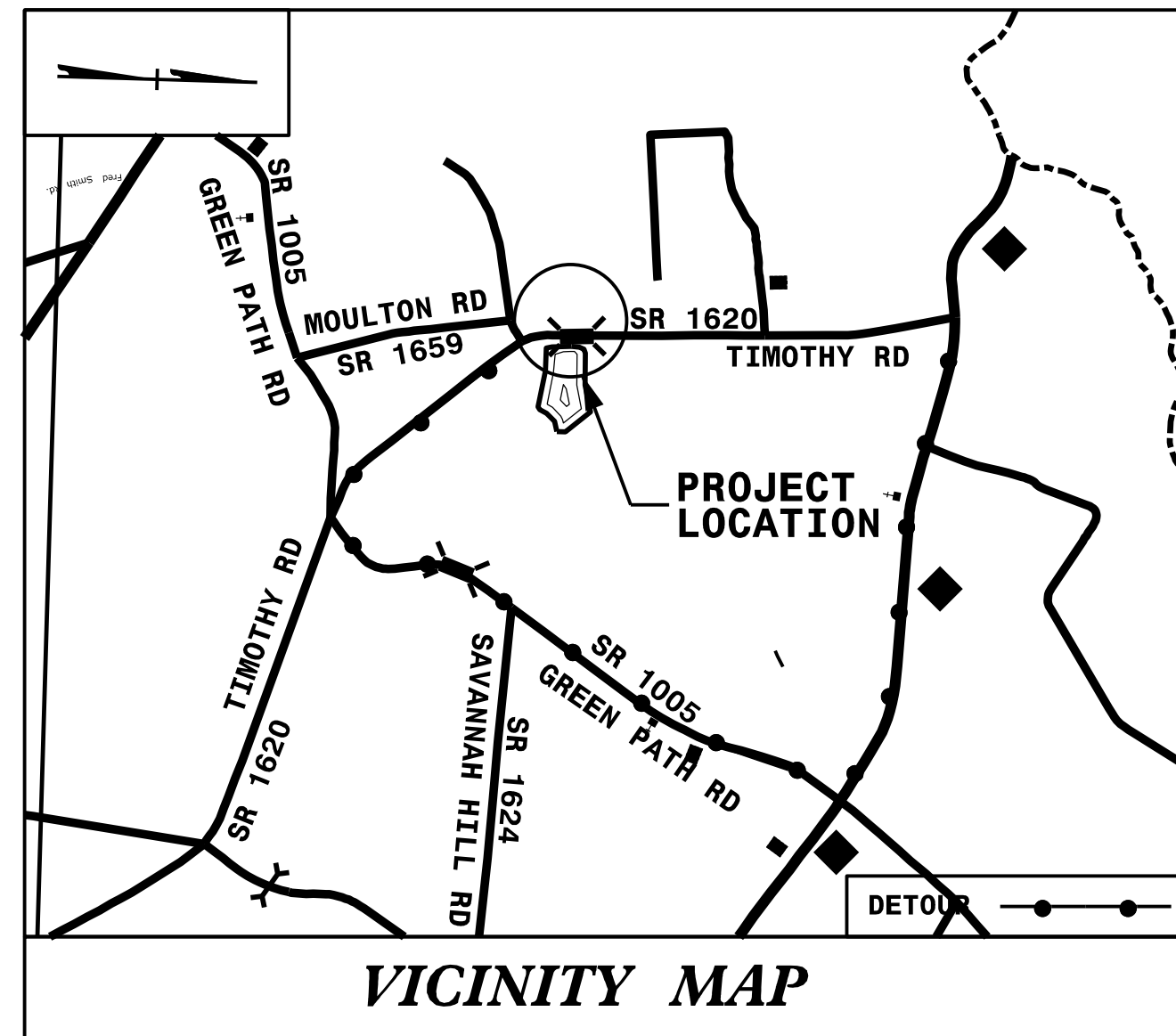
G:\4201720.13-B-5631\Hydraulics\CADD\Erosion Control\B-5631-EC_PlanProfileSheet_C&G.dgn



STRUCTURE HYDRAULIC DATA 15+35 -L-		
DESIGN DISCHARGE	= 0.65	CFS
DESIGN FREQUENCY	= 25	YRS
DESIGN HW ELEVATION	= 165.4	FT
BASE DISCHARGE	= 0.94	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 165.4	FT
OVERTOPPING DISCHARGE	= N/A	CFS
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING ELEVATION	= 170.3	FT

TIP PROJECT: B-5631

CONTRACT: DC00260



VICINITY MAP

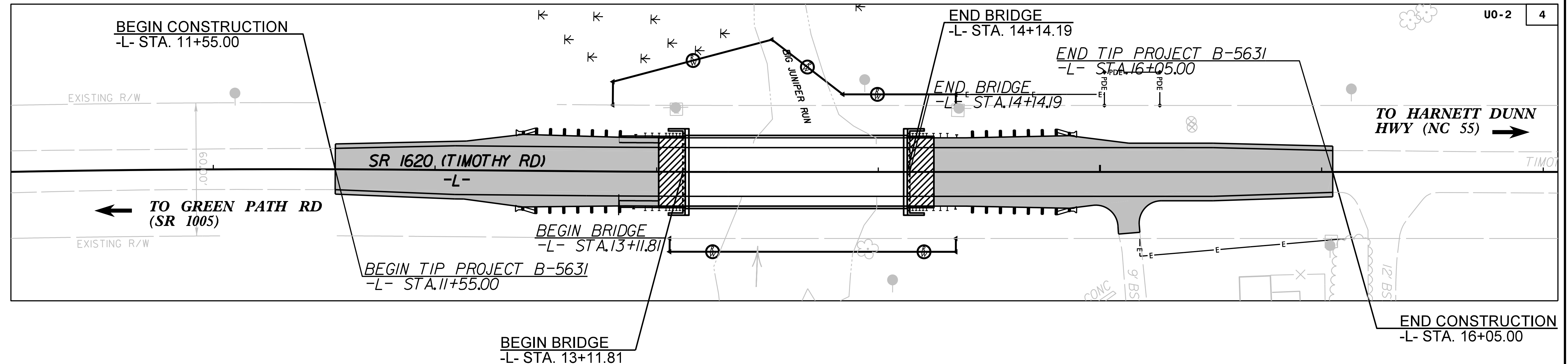
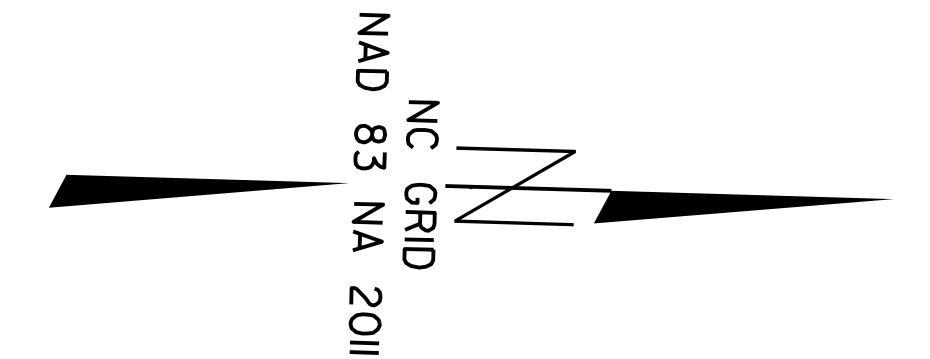
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

UTILITIES BY OTHERS PLANS
SAMPSON COUNTY

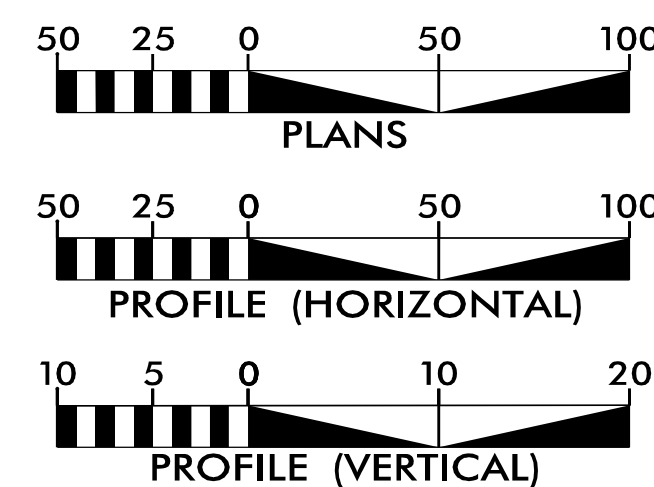
LOCATION: BRIDGE NO. 169 ON SR 1620 (TIMOTHY RD)
OVER BIG JUNIPER RUN

TYPE OF WORK: POWER (DISTRIBUTION) AND COMMUNICATIONS

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.



GRAPHIC SCALES



INDEX OF SHEETS

SHEET NO.:

UO-1

UO-2

DESCRIPTION:

TITLE SHEET

UBO PLAN SHEET

UTILITY OWNERS WITH CONFLICTS

(A) POWER (DISTRIBUTION) - DUKE ENERGY
(B) COMMUNICATIONS - CENTURYLINK

PREPARED IN THE OFFICE OF:

SO-DEEP | SAM NCTM

SO-DEEP | SAM NC, Inc.

A SAM COMPANY

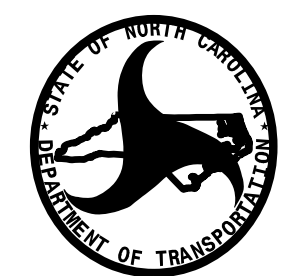
2800-154 Sumner Boulevard, Raleigh, NC 27616 Tel. 919-878-7466

Keith Garry

UTILITY PROJECT MANAGER

Chris Travis

PROJECT UTILITY COORDINATOR



DIVISION OF HIGHWAYS
DIVISION 03

DIV ADDRESS
5501 Barbados Blvd
Castle Hayne, NC 28429

Derek Pielech

Division Bridge Program Engineer

Monica J. Duval

8/17/99

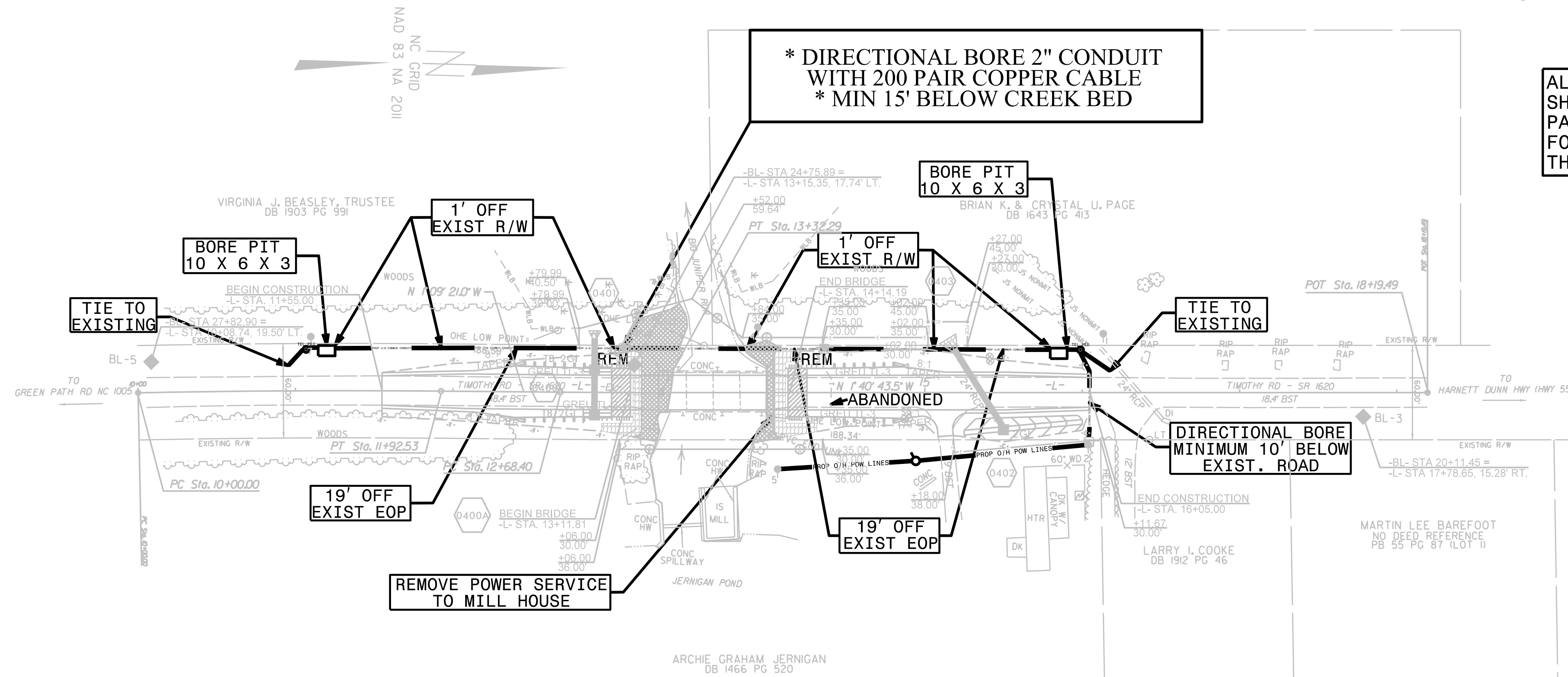
REVISIONS

BRIDGE NO. 810169

PROJECT REFERENCE NO.	SHEET NO.
B-5631	U0-2
THIS SHEET CORRESPONDS TO RDY- 4	

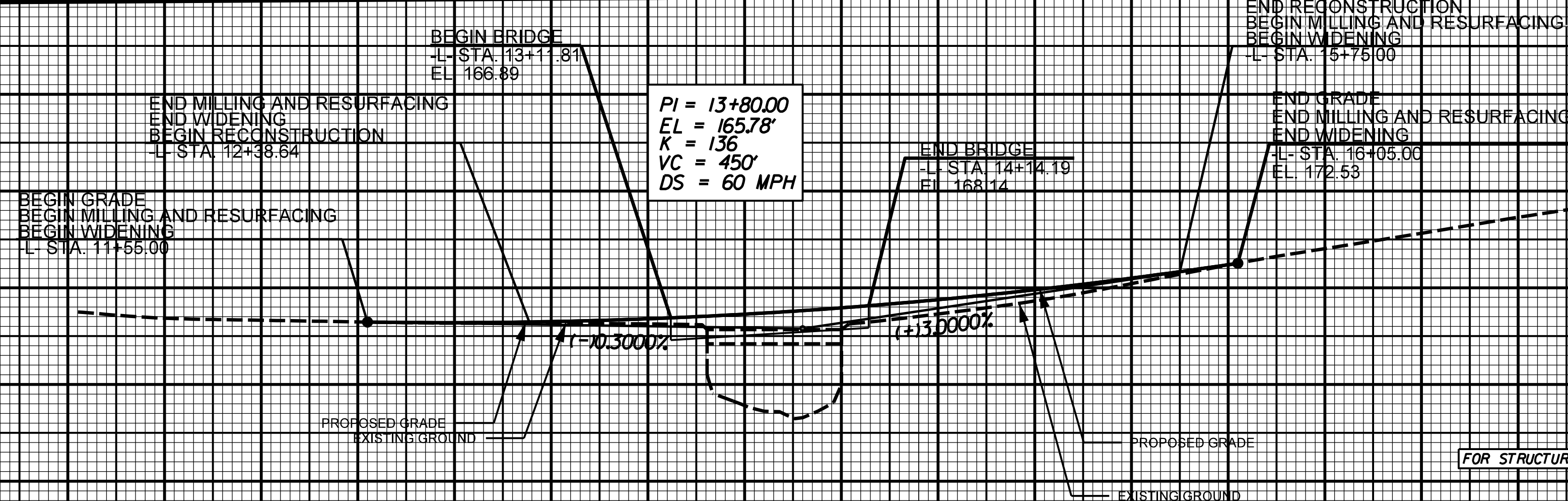
UTILITIES BY OTHERS

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



BH 1'
-BL- STA 24+6100.46' RT
-L- STA 13+3350.6294' LT
EL = 162.75
R/R SPIKE IN 23.5' SWEET GUM

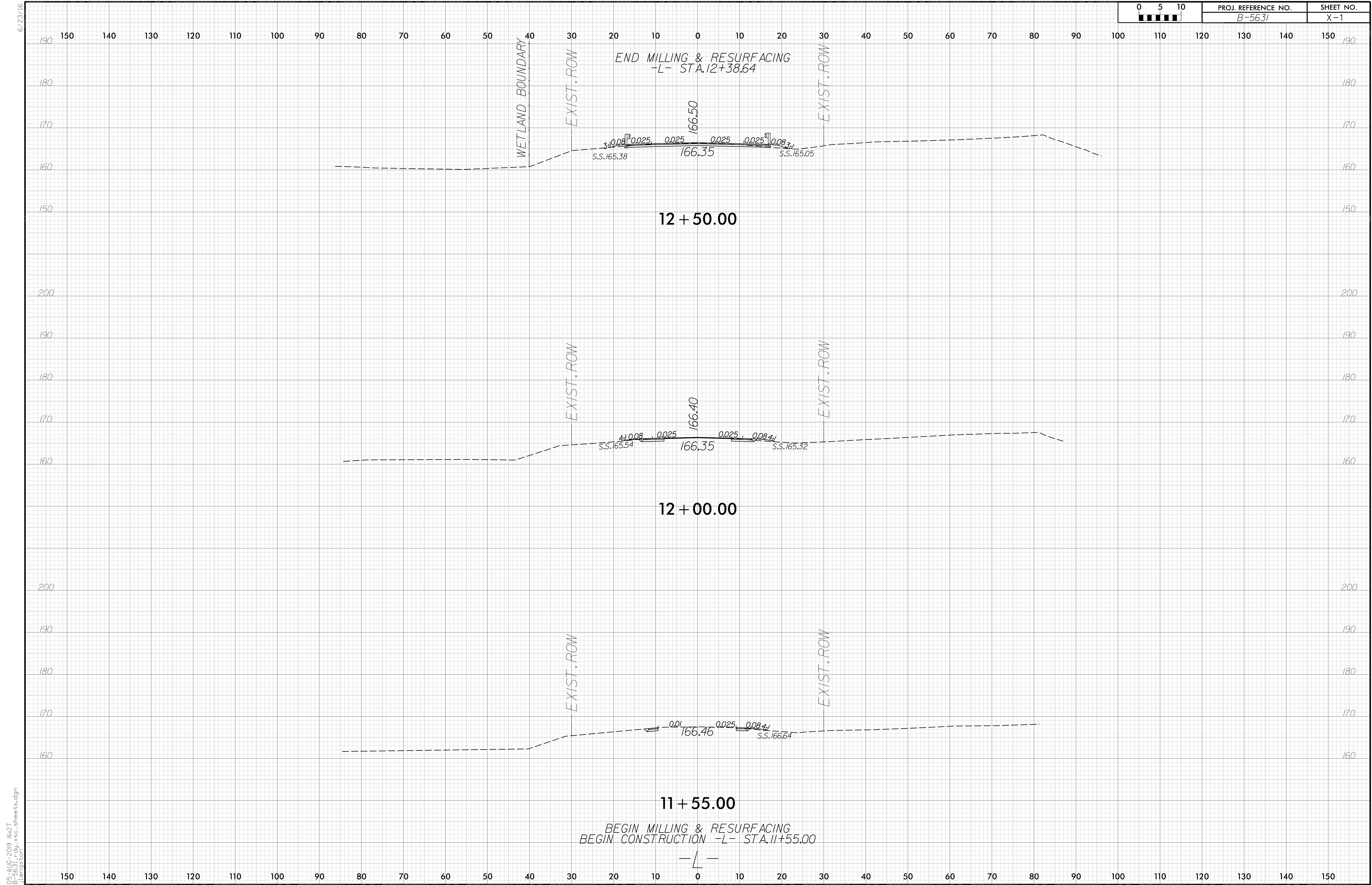
-L- SR 1620 (TIMOTHY ROAD)



CROSS-SECTION SUMMARY

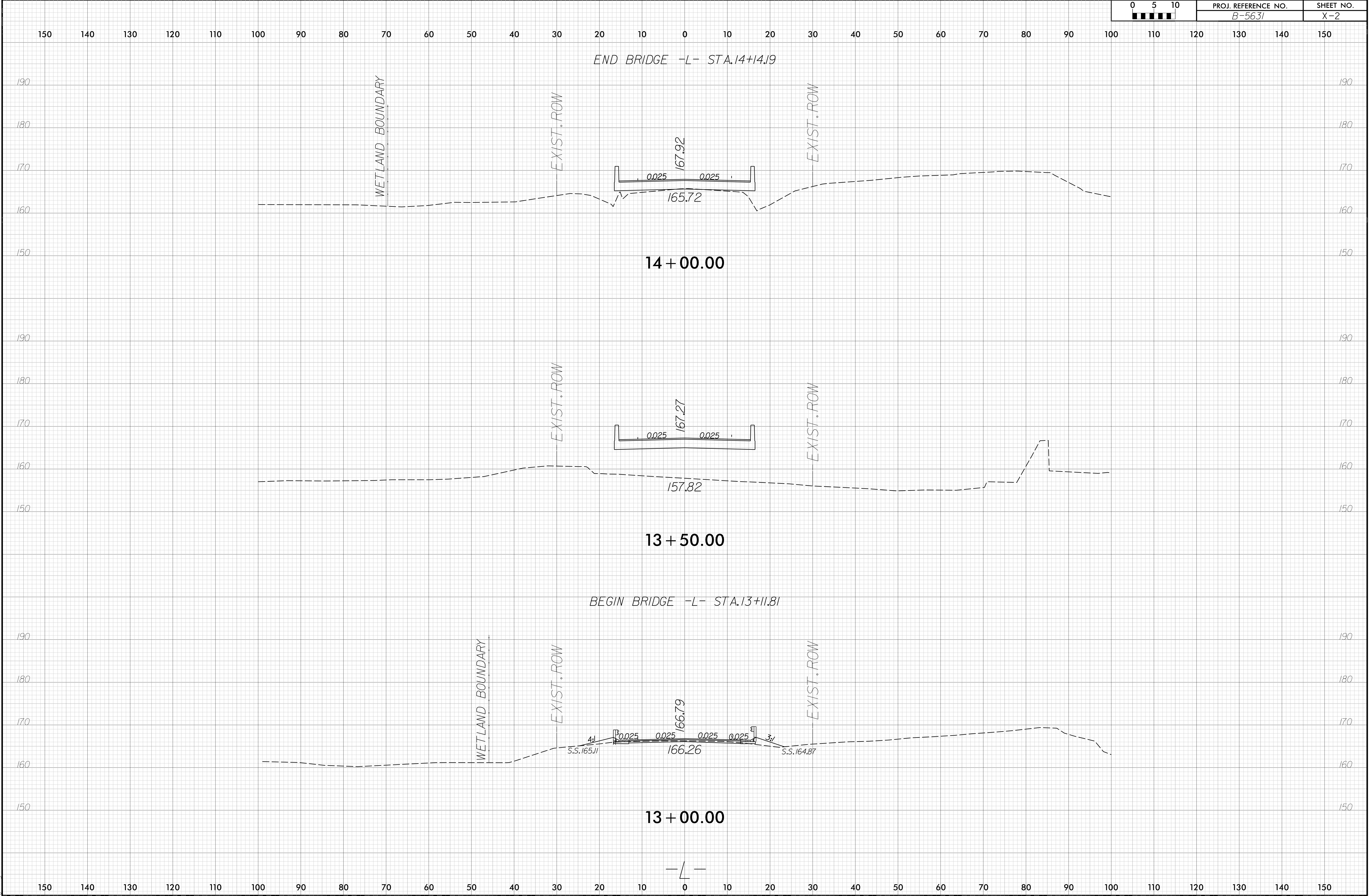
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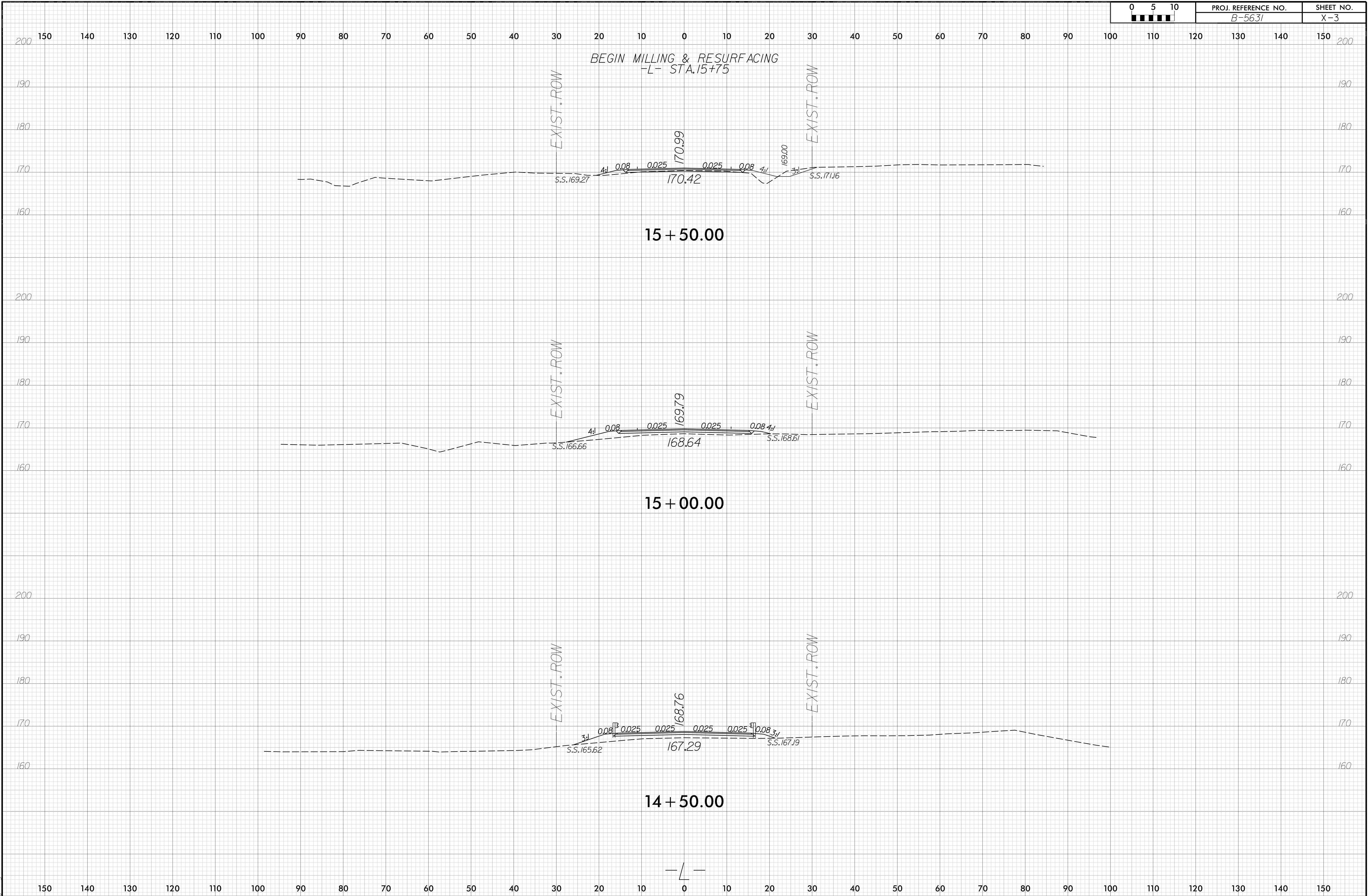
Note: Approximate quantities only. Unclassified Excavation, Borrow Excavation, Fine Grading, Clearing and Grubbing, and Removal of Existing Pavement will be paid for at the contract lump sum price for "Grading."



6/23/16

0	5	10	PROJ. REFERENCE NO.	SHEET NO.
■	■	■	B-5631	X-2





6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	B-5631	X-4

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

200

190

180

170

160

END MILLING & RESURFACING
END CONSTRUCTION -L- STA. 16+05.00

EXIST. ROW

EXIST. ROW

16 + 05.00

200

190

180

170

160

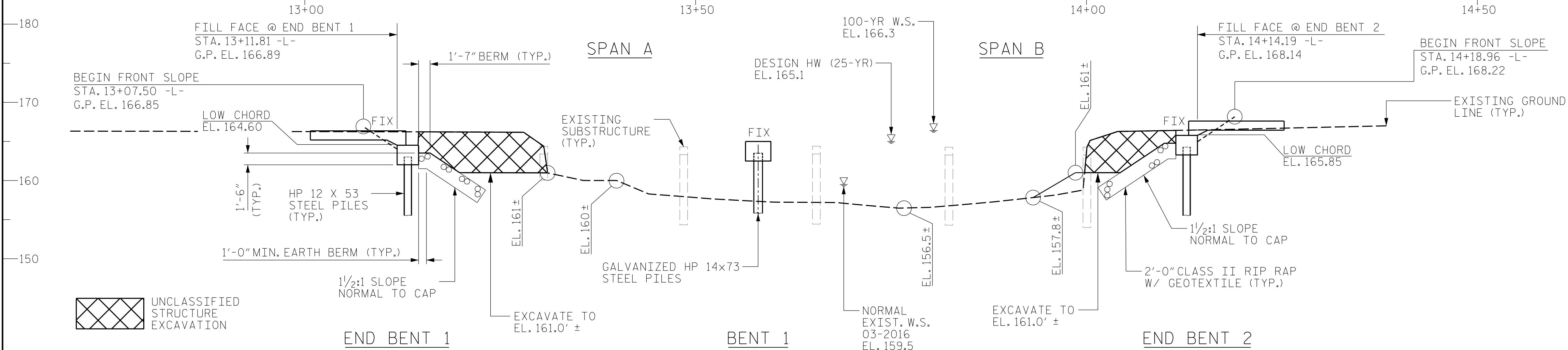
EXIST. ROW

EXIST. ROW

16 + 00.00

— / —

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150



GRADE DATA -L-

PI = 13+80.00
EL. = 165.78'
V.C. = 450'

HORIZONTAL CURVE DATA -L-

PI STA. 10+96.27
Δ = 1° 41' 49.4" (RT)
D = 0° 52' 53.3"
L = 192.53'
T = 96.27'
R = 6,500.00'

PI STA. 13+00.35
Δ = 0° 31' 22.6" (LT)
D = 0° 49' 06.6"
L = 63.89'
T = 31.94'
R = 7,000.00'

I HEREBY CERTIFY THESE PLANS
ARE THE AS-BUILT PLANS

PROJECT NO. B-5631
SAMPSON COUNTY
STATION: 13+63.00

SHEET 1 OF 4 REPLACES BRIDGE NO. 810169

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING
FOR BRIDGE ON SR 1620 OVER
BIG JUNIPER RUN BETWEEN
HARNETT DUNN HWY (NC 55) AND
GREEN PATH RD (SR 1005)

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

DRAWN BY : JACOB H. DUKE DATE : 07-2018
CHECKED BY : DIEGO AGUIRRE DATE : 07-2018
DESIGN ENGINEER OF RECORD: JACOB H. DUKE DATE : 07-2018

DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

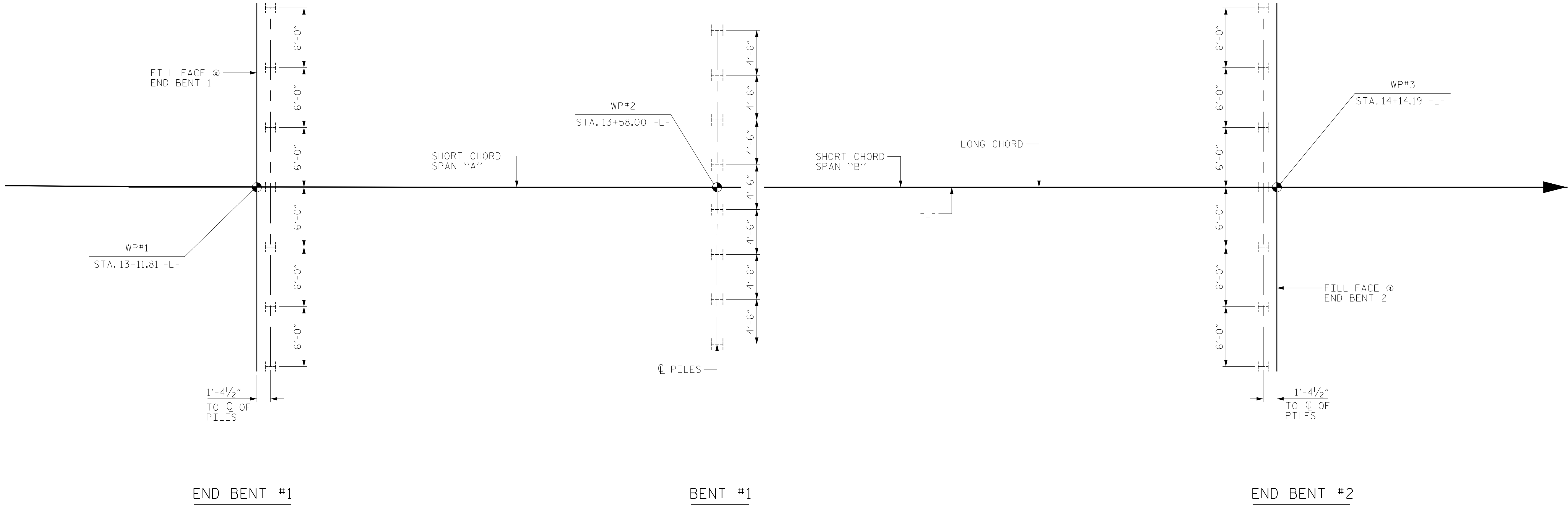
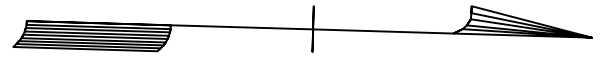
8/2/2019
B-5631.SMU. CD01.810169.dgn
jduke

Seal of Jacob H. Duke, Professional Engineer, No. 043777, State of North Carolina.

KCA
KISINGER CAMPO
& ASSOCIATES
301 FAYETTEVILLE ST., SUITE 1500
RALEIGH, NC 27601 (919) 882-7839
NC FIRM LICENSE: C-1506

FOUNDATION NOTES:

1. DIFFERENCE BETWEEN -L- AND LONG CHORD IS NEGLIGIBLE AT PILE LOCATIONS.
2. FOR PILES,SEE SECTION 450 OF THE STANDARD SPECIFICATIONS.
3. PILES AT END BENT NO.1 AND ARE DESIGNED FOR A FACTORED RESISTANCE OF 61 TONS/PILE.
4. PILES AT BENT NO.1 ARE DESIGNED FOR A FACTORED RESISTANCE OF 120 TONS/PILE
5. PILES AT END BENT NO.2 ARE DESIGNED FOR A FACTORED RESISTANCE OF 71 TONS/PILE.
6. DRIVE PILES AT END BENT NO.1 TO A REQUIRED DRIVING RESISTANCE OF 105 TONS/PILE.
7. DRIVE PILES AT BENT NO.1 TO A REQUIRED DRIVING RESISTANCE OF 205 TONS/PILE.
8. DRIVE PILES AT END BENT NO.2 TO A REQUIRED DRIVING RESISTANCE OF 120 TONS/PILE.
9. INSTALL PILES AT BENT NO.1 TO A TIP ELEVATION NO GREATER HIGHER THAN 139.0'.
10. THE SCOUR CRITICAL ELEVATIONS FOR BENT NO.1 IS EL.151.0'. SCOUR CRITICAL ELEVATIONS ARE USED TO MONITOR POSSIBLE SCOUR PROBLEMS DURING THE LIFE OF THE STRUCTURE.
11. 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.
12. FOR INTERIOR BENT 1,ONLY PARTIAL GALVANIZING OF THE PILES IS REQUIRED.SEE INTERIOR BENT SHEETS FOR REQUIRED GALVANIZED LENGTHS.PAYMENT FOR PARTIALLY GALVANIZED PILES WILL BE MADE UNDER THE CONTRACT UNIT PRICE FOR GALVANIZED STEEL PILES.

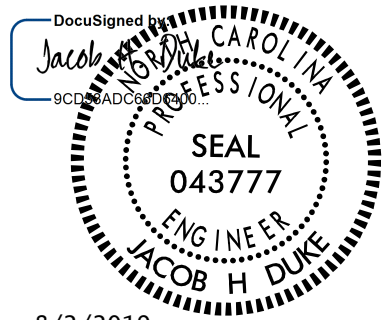


FOUNDATION LAYOUT PLAN

(ALL PILES AT END BENTS ARE HP 12 X 53 STEEL PILES
ALL PILES AT BENT 1 ARE HP 14 X 73 GALVANIZED STEEL
PILE DIMENSION LOCATIONS ARE SHOWN TO
CENTERLINE OF PILES)

PROJECT NO. B-5631
SAMPSON COUNTY
STATION: 13+63.00

SHEET 2 OF 4



STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH						SHEET NO.	
GENERAL DRAWING FOR BRIDGE ON SR 1620 OVER BIG JUNIPER RUN BETWEEN HARNETT DUNN HWY (NC 55) AND GREEN PATH RD (SR 1005)						S-2	
REVISIONS						TOTAL SHEETS	
NO.	BY:	DATE:	NO.	BY:	DATE:	19	
1			3				
2			4				

DRAWN BY :	JACOB H. DUKE	DATE :	08-2018
CHECKED BY :	DIEGO AGUIRRE	DATE :	08-2018
DESIGN ENGINEER OF RECORD:	JACOB H. DUKE	DATE :	01-2019

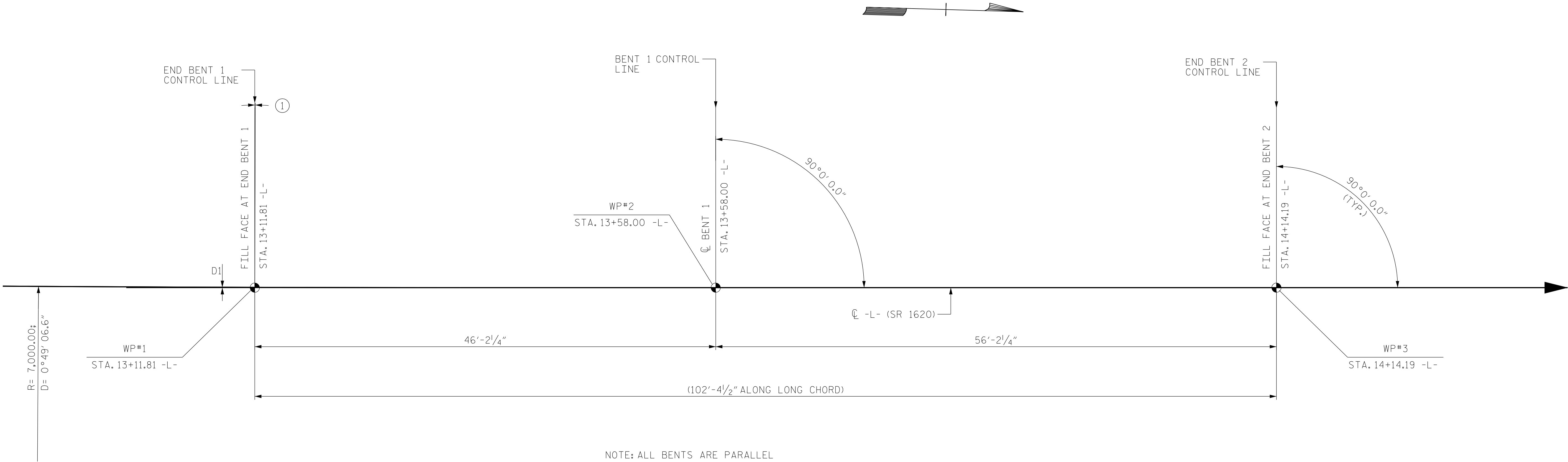
8/2/2019
B-5631.SMU - FL.810169.dgn
jduke

DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

301 FAYETTEVILLE ST., SUITE 1500
RALEIGH, NC 27601 (919) 882-7839
NC FIRM LICENSE: C-1506

OFFSET:
D1 = 0.031'

ANGLES:
(DEG-MIN-SEC)
① 00°10'5.2"



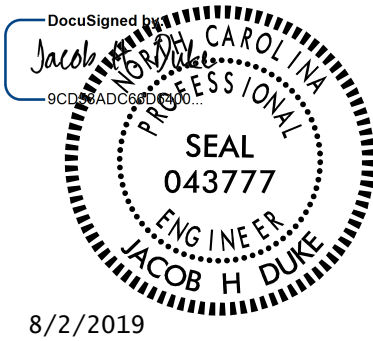
NOTE: ALL BENTS ARE PARALLEL

LONG CHORD LAYOUT

NOTE: NO OFFSETS AT WP #2 & WP#3

PROJECT NO. B-5631
SAMPSON COUNTY
STATION: 13+63.00

SHEET 3 OF 4



8/2/2019



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
GENERAL DRAWING
FOR BRIDGE ON SR 1620 OVER
BIG JUNIPER RUN BETWEEN
HARNETT DUNN HWY (NC 55) AND
GREEN PATH RD (SR 1005)

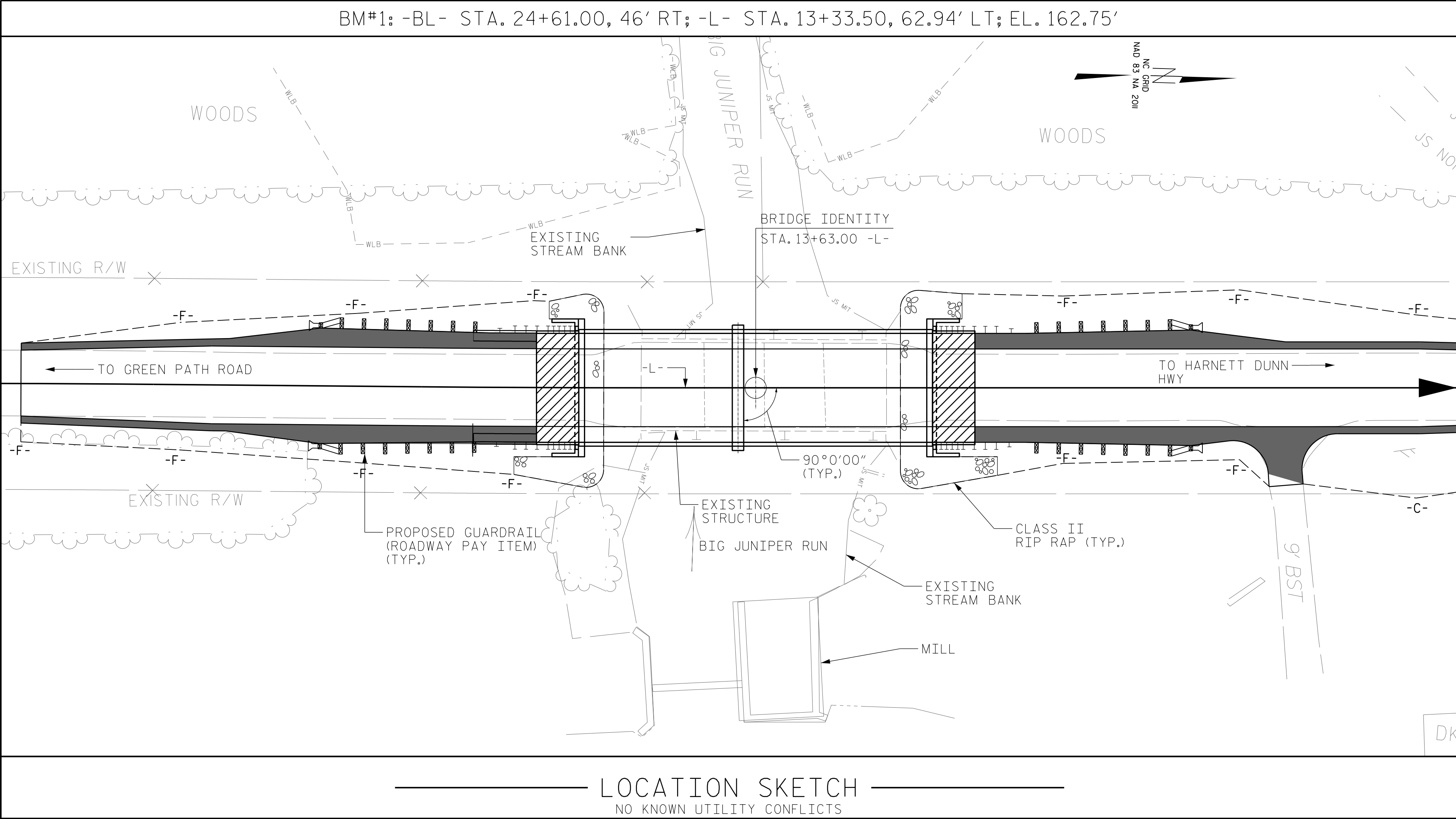
DRAWN BY : JACOB H. DUKE DATE : 08-2018
CHECKED BY : DIEGO AGUIRRE DATE : 08-2018
DESIGN ENGINEER OF RECORD: JACOB H. DUKE DATE : 01-2019

8/2/2019
B-5631.SMU.LC.810169.dgn
jduke

DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

301 FAYETTEVILLE ST., SUITE 1500
RALEIGH, NC 27601 (919) 882-7839
NC FIRM LICENSE: C-1506

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



GENERAL NOTES

ASSUMED LIVE LOAD = HL-93 OR ALTERNATE LOADING.

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

THE STRUCTURE HAS BEEN DESIGNED IN ACCORDANCE WITH "HEC 18, EVALUATING SCOUR AT BRIDGES."

FOR OTHER DESIGN DATA AND GENERAL NOTES, SEE STANDARD NOTES.

THE EXISTING STRUCTURE CONSISTS OF 4 SPANS AT VARIOUS CENTERS, REINFORCED CONCRETE FLOOR ON TIMBER JOISTS WITH A CLEAR ROADWAY OF 24'-0" ON TIMBER CAPS, PILES AND STEEL CRUTCH BENTS. ALL BENTS, END BENTS, AND CRUTCH BENTS SHALL BE REMOVED.

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

THE MATERIAL SHOWN IN THE CROSS-HATCHED AREA ON SHEET S-1 SHALL BE EXCAVATED TO THE LIMITS SHOWN ON SHEET S-1 AS DIRECTED BY THE ENGINEER. THIS WORK WILL BE PAID FOR AT THE LUMP SUM PRICE FOR UNCLASSIFIED STRUCTURE EXCAVATION. SEE SECTION 412 OF THE STANDARD SPECIFICATIONS.

THIS BRIDGE IS IN SEISMIC ZONE 1.

FOR INTERIOR BENT 1, ONLY PARTIAL GALVANIZING OF THE PILES IS REQUIRED. SEE INTERIOR BENT SHEET(S) FOR REQUIRED GALVANIZED LENGTHS. PAYMENT FOR PARTIALLY GALVANIZED PILES WILL BE MADE UNDER THE CONTRACT UNIT PRICE FOR GALVANIZED STEEL PILES.

NO WAITING PERIOD IS REQUIRED BEFORE BEGINNING OF END BENT CONSTRUCTION.

SEE EROSION CONTROL PLANS FOR EROSION CONTROL MEASURES.

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

FOR ASBESTOS ASSESSMENT, SEE SPECIAL PROVISIONS.

ASPHALT WEARING SURFACE, GUARDRAIL ATTACHMENT UNITS AND APPROACH SLAB FILL ARE ROADWAY PAY ITEMS. FOR MORE INFORMATION, SEE ROADWAY PLANS.

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

TOTAL BILL OF MATERIAL

	REMOVAL OF EXISTING STRUCTURE @ STA.13+63.00	ASBESTOS ASSESSMENT	PDA TESTING	UNCLASSIFIED STRUCTURE EXCAVATION @ 13+63.00	CLASS A CONCRETE (BRIDGE)	BRIDGE APPROACH SLABS, STA. 13+63.00	REINFORCING STEEL (BRIDGE)	PILE DRIVING EQUIPMENT SETUP FOR HP 12 X 53 STEEL PILES	PILE DRIVING EQUIPMENT SETUP FOR HP 12 X 73 GALVANIZED STEEL PILES	HP 12 X 53 STEEL PILES		HP 14 X 73 GALVANIZED STEEL PILES		PILE REDRIVES	VERTICAL CONCRETE BARRIER RAIL	RIP RAP CLASS II (2'-0") THICK	GEOTEXTILE FOR DRAINAGE	ELASTOMERIC BEARINGS	3'-0" X 1'-9" PRESTRESSED CONCRETE CORED SLABS	
	LUMP SUM	LUMP SUM	EA.	LUMP SUM	CU. YDS.	LUMP SUM	LBS.			NO.	LIN.FT.	NO.	LIN.FT.	EA.	LIN.FT.	TONS	SQ. YDS.	LUMP SUM	NO.	LIN.FT.
SUPERSTRUCTURE						LUMP SUM									201			LUMP SUM	22	1100
END BENT NO. 1					14.2		2115	7		7	315			3		87	97			
BENT NO. 1					10.7		2136		8			8	520	4						
END BENT NO. 2					14.2		2115	7		7	315			3		102	114			
TOTAL	LUMP SUM	LUMP SUM	1	LUMP SUM	39.1	LUMP SUM	6366	14	8	14	630	8	520	10	201	189	211	LUMP SUM	22	1100

PROJECT NO. B-5631
SAMPSON COUNTY
STATION: 13+63.00

SHEET 4 OF 4

HYDRAULIC DATA

DESIGN DISCHARGE 750 CFS
FREQUENCY OF DESIGN FLOOD 25 YRS.
DESIGN HIGH WATER ELEVATION 165.1'
DRAINAGE AREA 6.5 SQ.MI.
BASE DISCHARGE (Q100) 1378 CFS
BASE HIGH WATER ELEVATION 166.3'

OVERTOPPING FLOOD DATA

OVERTOPPING DISCHARGE 1500 CFS
FREQUENCY OF OVERTOPPING FLOOD 100+ YRS.
OVERTOPPING FLOOD ELEVATION 166.4'

SAG STA. 11+96 -L-



STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH						GENERAL DRAWING FOR BRIDGE ON SR 1620 OVER BIG JUNIPER RUN BETWEEN HARNETT DUNN HWY (NC 55) AND GREEN PATH RD (SR 1005)		
REVISIONS						SHEET NO. S-4		
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS 19		
1			3					
2			4					

DRAWN BY : JACOB H. DUKE DATE : 08/2018
CHECKED BY : DIEGO AGUIRRE DATE : 08/2018
DESIGN ENGINEER OF RECORD: JACOB H. DUKE DATE : 08/2018

DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

KCS
KISINGER CAMPO
& ASSOCIATES
301 FAYETTEVILLE ST., SUITE 1500
RALEIGH, NC 27601 (919) 882-7839
NC FIRM LICENSE: C-1506

LOAD FACTORS:

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

NOTES:

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

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

CONTROLLING LOAD RATING

1

DESIGN LOAD RATING (HL-93)

2

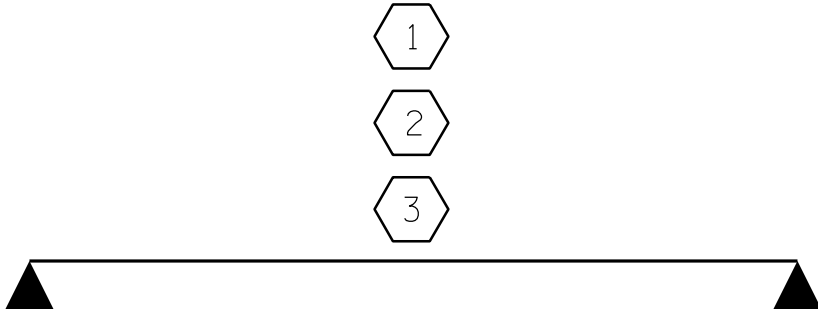
DESIGN LOAD RATING (HS-20)

3

LEGAL LOAD RATING **

** SEE CHART FOR VEHICLE TYPE

GIRDER LOCATION

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

LRFR SUMMARY
FOR SPAN 'A'

PROJECT NO. B-5631
SAMPSON COUNTY
STATION: 13+63.00

SHEET 1 OF 2

DocuSigned by
Jacob H. Duke
Professional Engineer
SEAL
043777
ENGINEER
JACOB H. DUKE

8/2/2019

KCA
KISINGER CAMPO & ASSOCIATES
301 FAYETTEVILLE ST., SUITE 1500
RALEIGH, NC 27601 (919) 882-7839
NC FIRM LICENSE: C-1506

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

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-5
1			3			TOTAL SHEETS 19
2			4			

DRAWN BY : JACOB H. DUKE DATE : 08/2018
CHECKED BY : DIEGO AGUIRRE DATE : 08/2018
DESIGN ENGINEER OF RECORD: JACOB H. DUKE DATE : 08/2018

DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-5
1			3			TOTAL SHEETS 19
2			4			

LOAD FACTORS:

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

NOTES:

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

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

CONTROLLING LOAD RATING

1

DESIGN LOAD RATING (HL-93)

2

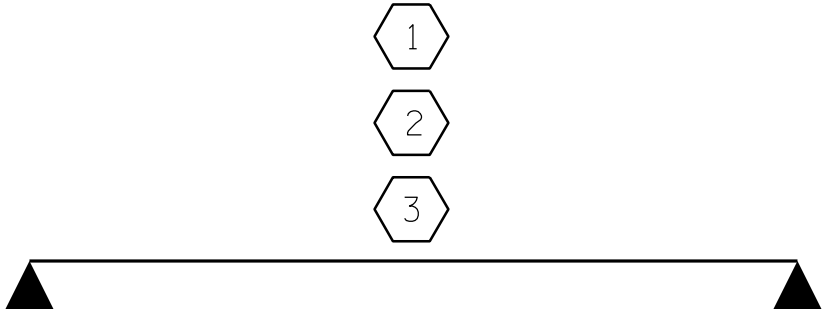
DESIGN LOAD RATING (HS-20)

3

LEGAL LOAD RATING **

** SEE CHART FOR VEHICLE TYPE

GIRDER LOCATION

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

LRFR SUMMARY
FOR SPAN 'B'

PROJECT NO. B-5631
SAMPSON COUNTY
STATION: 13+63.00

SHEET 2 OF 2

DocuSigned by
Jacob H. Duke
Professional Engineer
SEAL
043777
ENGINEER
JACOB H. DUKE

8/2/2019

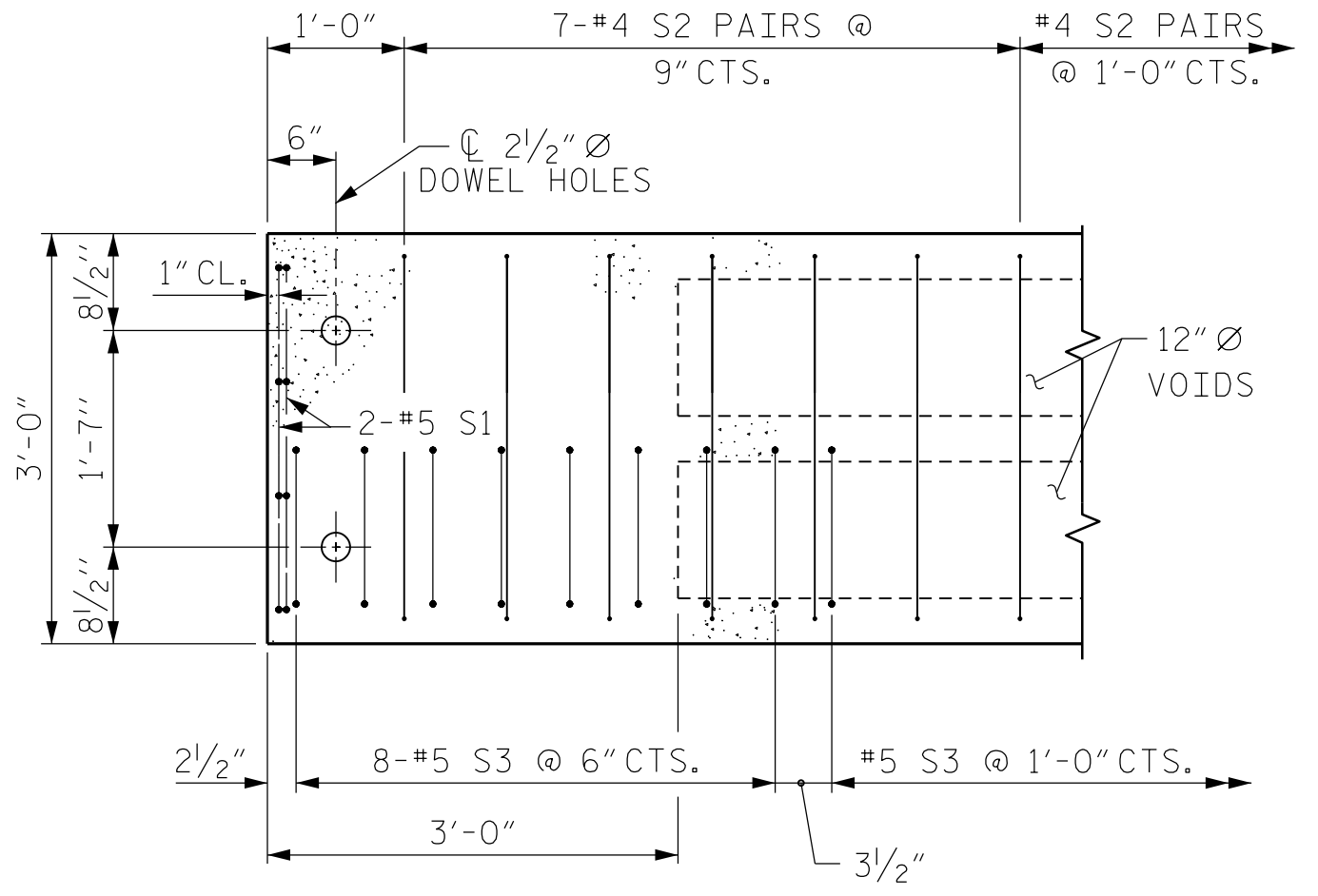
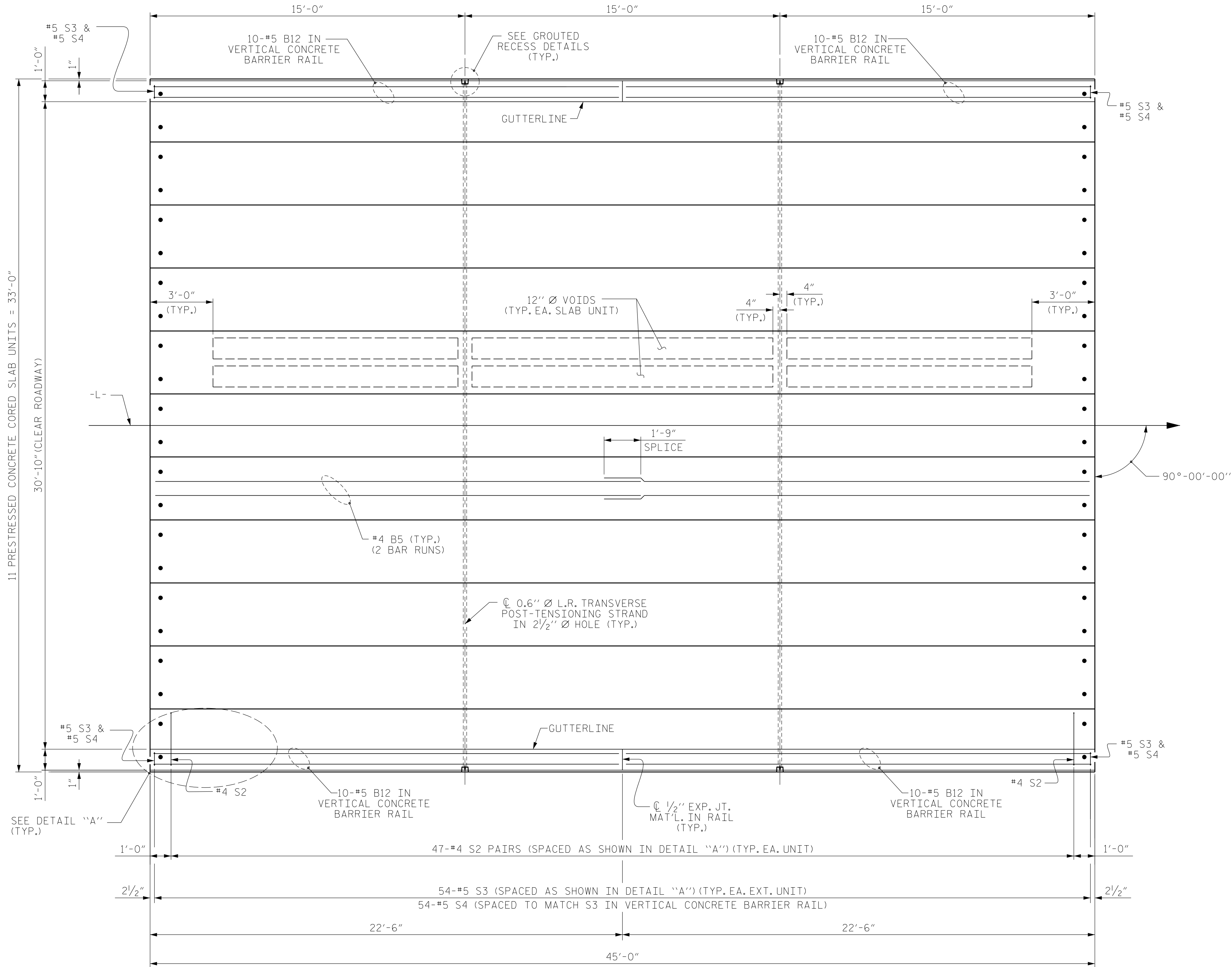
KCA
KISINGER CAMPO & ASSOCIATES
301 FAYETTEVILLE ST., SUITE 1500
RALEIGH, NC 27601 (919) 882-7839
NC FIRM LICENSE: C-1506

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

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-6
1			3			TOTAL SHEETS 19
2			4			

DRAWN BY : JACOB H. DUKE DATE : 08/2018
CHECKED BY : DIEGO AGUIRRE DATE : 08/2018
DESIGN ENGINEER OF RECORD: JACOB H. DUKE DATE : 08/2018

DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

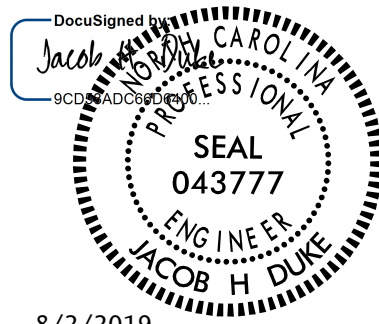


DETAIL "A"

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

PROJECT NO. B-5631
SAMPSON COUNTY
STATION: STA. 13+63.00

SHEET 2 OF 4



8/2/2019



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

ASSEMBLED BY : JACOB H. DUKE	DATE : 12-2018
CHECKED BY : DIEGO AGUIRRE	DATE : 12-2018
DRAWN BY : DGE 3/09	REV. 12/5/11 MAA/AAC
CHECKED BY : BCH 3/09	REV. 8/14 MAA/TMG

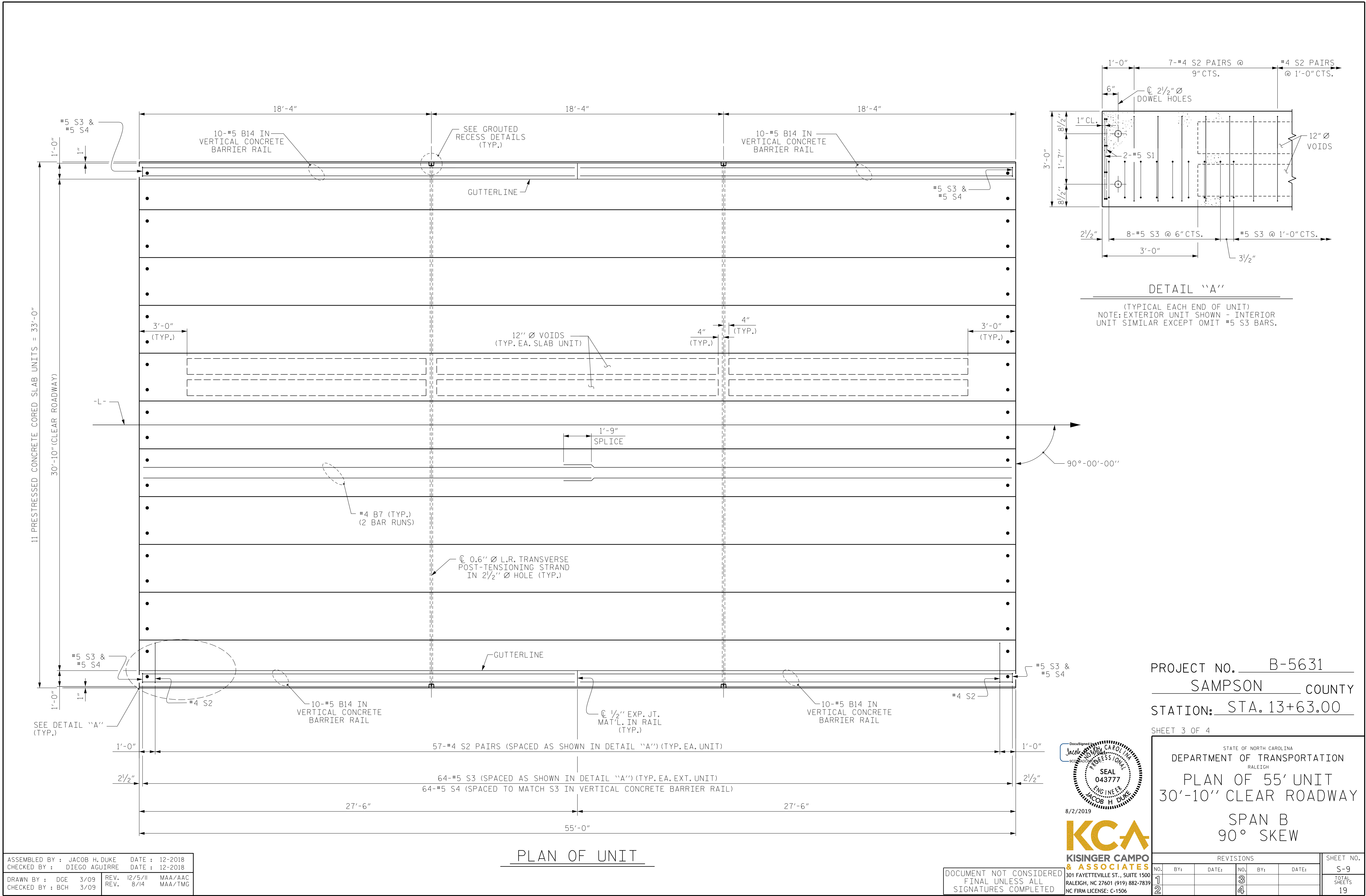
8/2/2019
B-5631.SMU. CS02_810169.dgn
jduke

DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

301 FAYETTEVILLE ST., SUITE 1500
RALEIGH, NC 27601 (919) 882-7839
NC FIRM LICENSE: C-1506

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-8
1			3			TOTAL SHEETS
2			4			19

STD. NO. 21" PCS-33-90S-45L



ASSEMBLED BY : JACOB H. DUKE	DATE : 12-2018
CHECKED BY : DIEGO AGUIRRE	DATE : 12-2018
DRAWN BY : DGE 3/09	REV. 12/5/11 MAA/AAC
CHECKED BY : BCH 3/09	REV. 8/14 MAA/TMG

8/2/2019
B-5631.SMU - CS03.810169.dgn
jduke

DocuSigned by:
Jacob H. Duke
Professional Engineer
SEAL
043777
ENGINEER
JACOB H. DUKE
8/2/2019

KCA
KISINGER CAMPO & ASSOCIATES
301 FAYETTEVILLE ST., SUITE 1500
RALEIGH, NC 27601 (919) 882-7839
NC FIRM LICENSE: C-1506

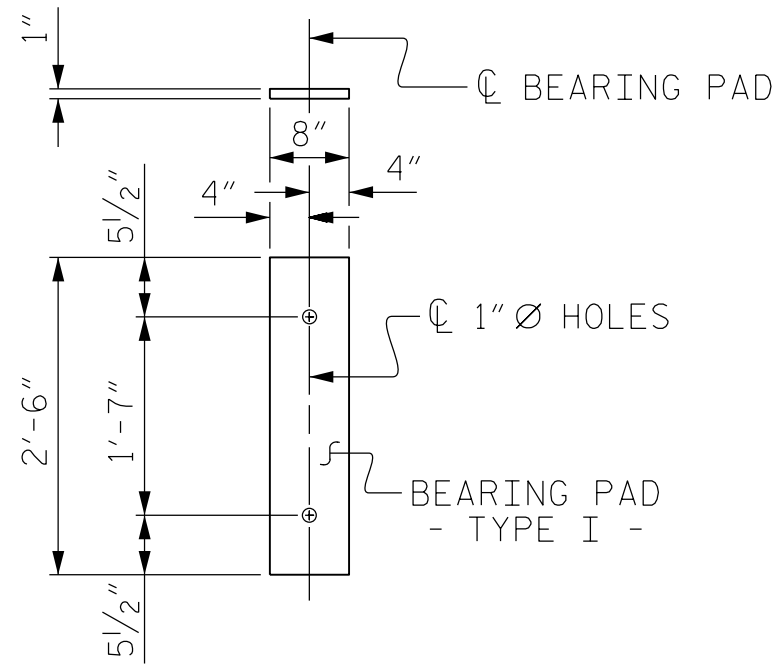
DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
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PROJECT NO. B-5631
SAMPSON COUNTY
STATION: STA. 13+63.00

SHEET 3 OF 4

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-9
1			3			TOTAL SHEETS
2			4			19

STD. NO. 21" PCS_33_90S_55L



FIXED END
(TYPE I - 44 REQ'D)

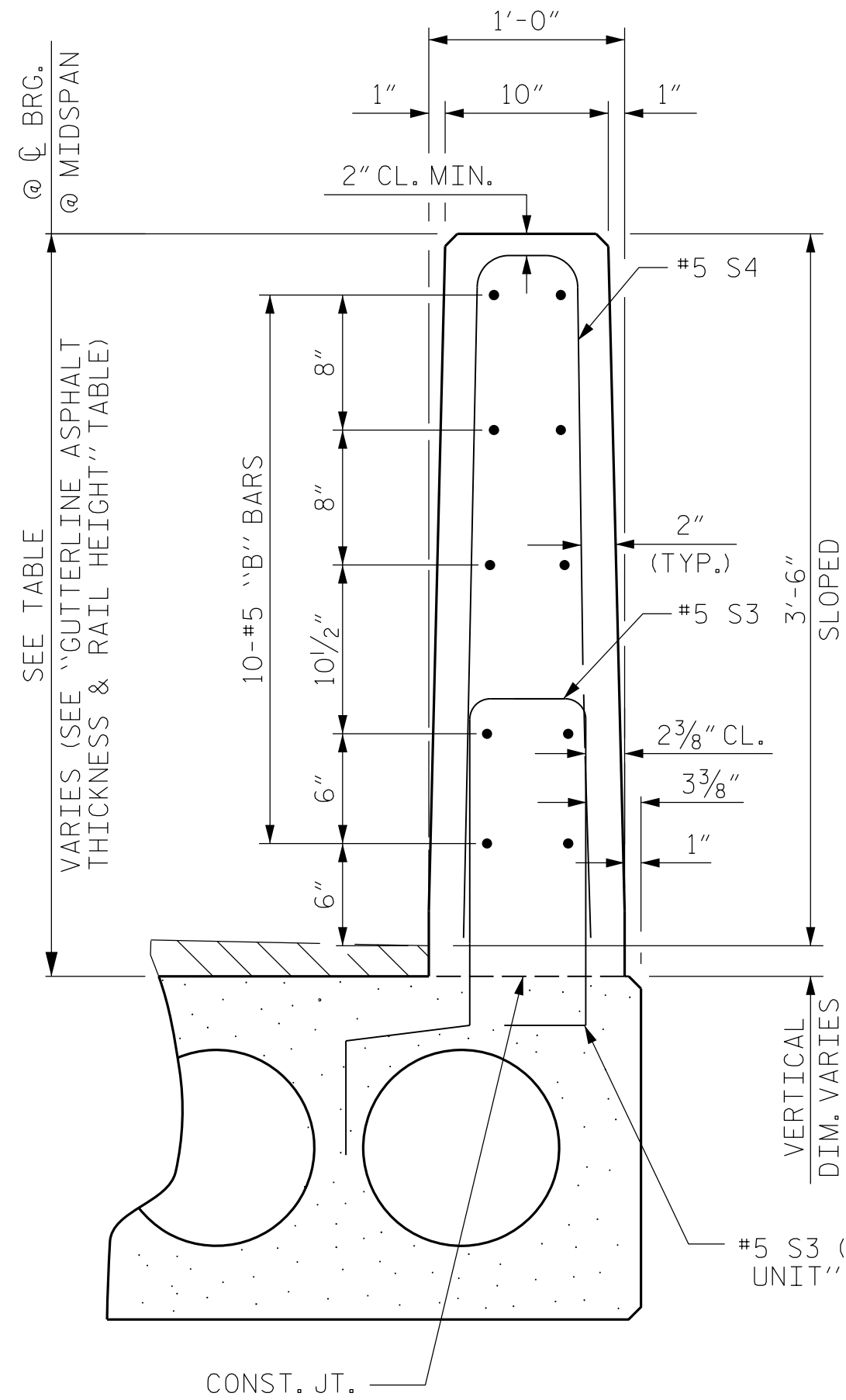
ELASTOMERIC BEARING DETAILS

ELASTOMER IN ALL BEARINGS SHALL BE 50 DUROMETER HARDNESS.

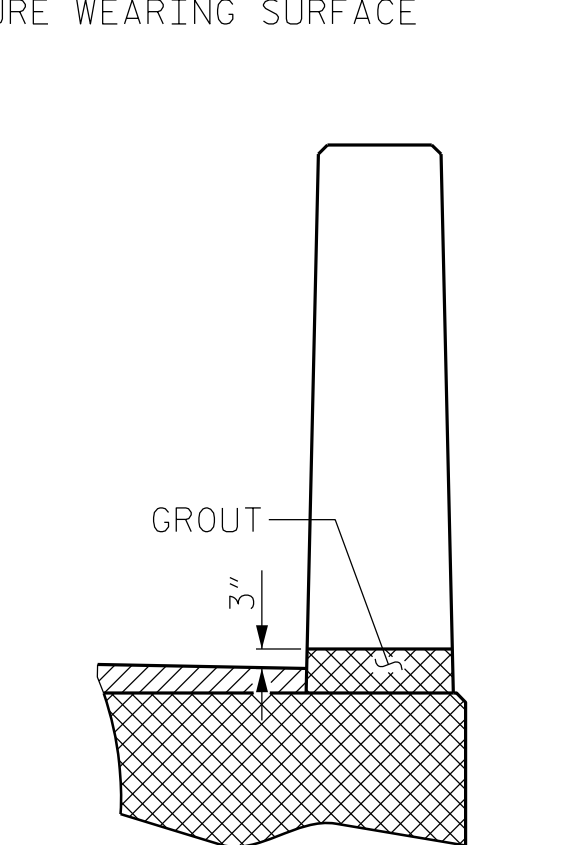
DEAD LOAD DEFLECTION AND CAMBER		DEAD LOAD DEFLECTION AND CAMBER	
	3'-0" x 1'-9"		3'-0" x 1'-9"
45' CORED SLAB UNIT	0.6" Ø L.R. STRAND	55' CORED SLAB UNIT	0.6" Ø L.R. STRAND
CAMBER (SLAB ALONE IN PLACE)	7/8" ↑	CAMBER (SLAB ALONE IN PLACE)	1 1/2" ↑
DEFLECTION DUE TO SUPERIMPOSED DEAD LOAD**	1/8" ↓	DEFLECTION DUE TO SUPERIMPOSED DEAD LOAD**	3/8" ↓
FINAL CAMBER	3/4" ↑	FINAL CAMBER	1 1/8" ↑

** INCLUDES FUTURE WEARING SURFACE

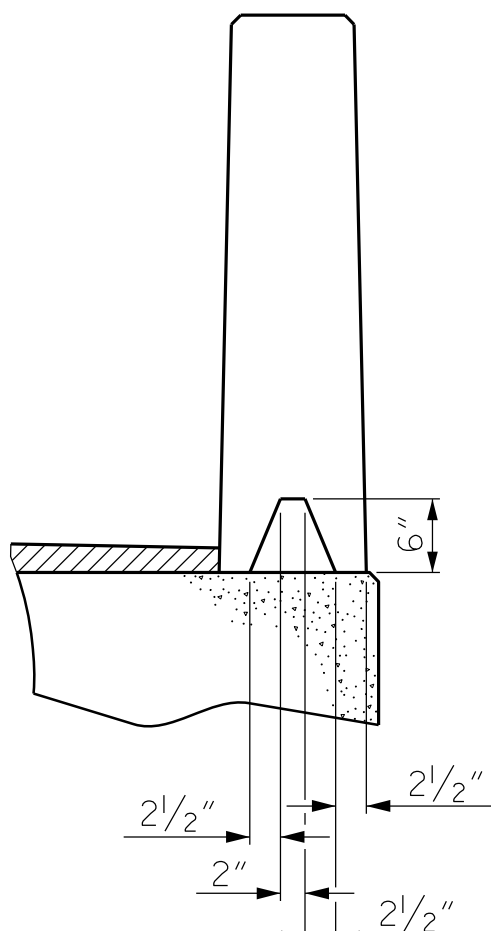
** INCLUDES FUTURE WEARING SURFACE



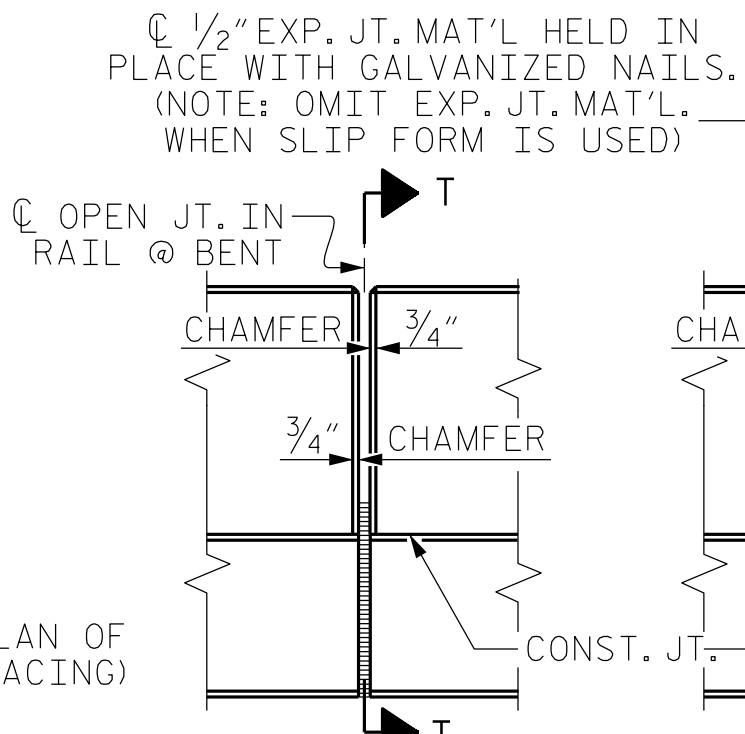
VERTICAL CONCRETE BARRIER RAIL SECTION



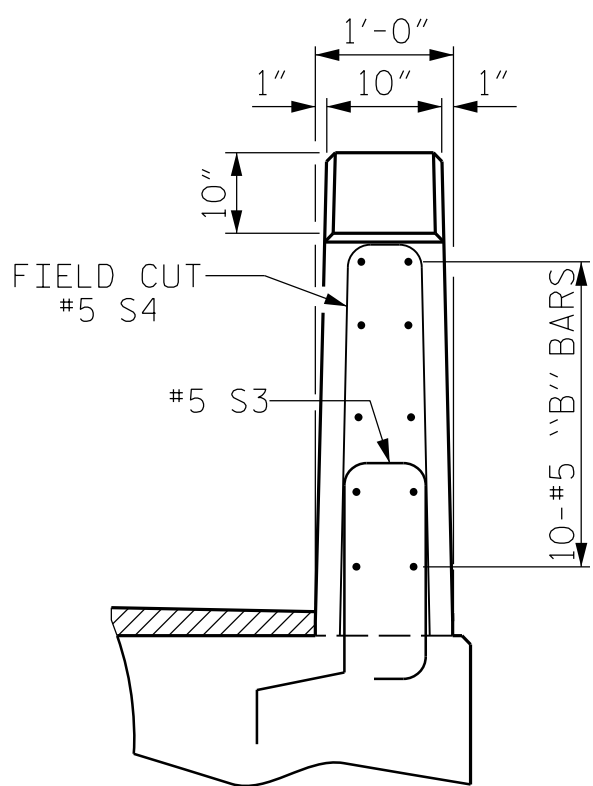
SECTION T-T
AT OPEN JOINT AT BENT
(THIS IS TO BE USED WHERE
FOAM JOINT IS NOT USED)



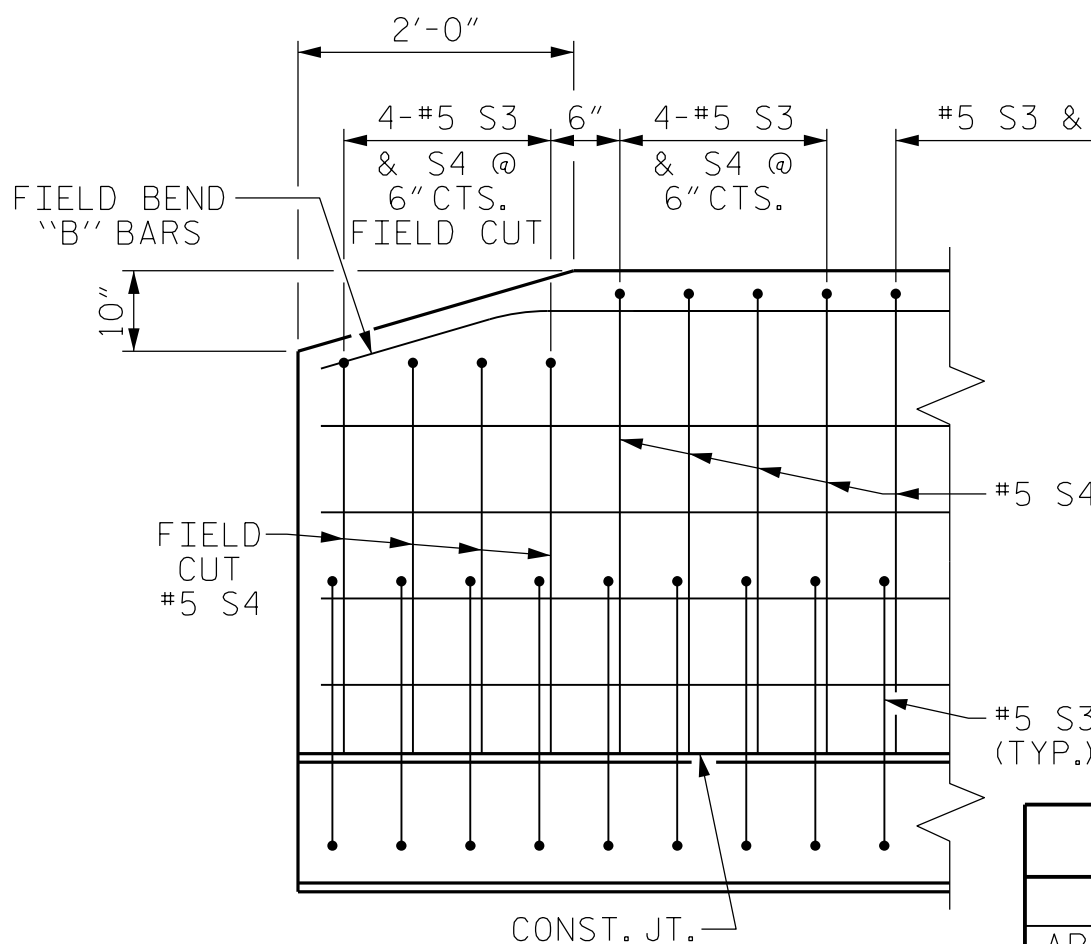
SECTION S-S
AT DAM IN OPEN JOINT
(THIS IS TO BE USED ONLY
WHEN SLIP FORM IS USED)



ELEVATION AT EXPANSION JOINTS



END VIEW



SIDE VIEW

END OF RAIL DETAILS

BILL OF MATERIAL FOR VERTICAL CONCRETE BARRIER RAIL

SPAN A (45' UNIT)						
BAR	BARS PER PAIR OF EXTERIOR UNITS	TOTAL NO.	SIZE	TYPE	LENGTH	WEIGHT
*B12	40	40	#5	STR	22'-1"	921
*S4	108	108	#5	2	7'-2"	807
*EPOXY COATED REINFORCING STEEL						LBS. 1728
CLASS AA CONCRETE						CU.YDS. 11.5
TOTAL VERTICAL CONCRETE BARRIER RAIL						LN. FT. 90.25
SPAN B (55' UNIT)						
BAR	BARS PER PAIR OF EXTERIOR UNITS	TOTAL NO.	SIZE	TYPE	LENGTH	WEIGHT
*B14	40	40	#5	STR	27'-1"	1130
*S4	128	128	#5	2	7'-2"	957
*EPOXY COATED REINFORCING STEEL						LBS. 2087
CLASS AA CONCRETE						CU.YDS. 14.1
TOTAL VERTICAL CONCRETE BARRIER RAIL						LN. FT. 110.25

GUTTERLINE ASPHALT THICKNESS & RAIL HEIGHT

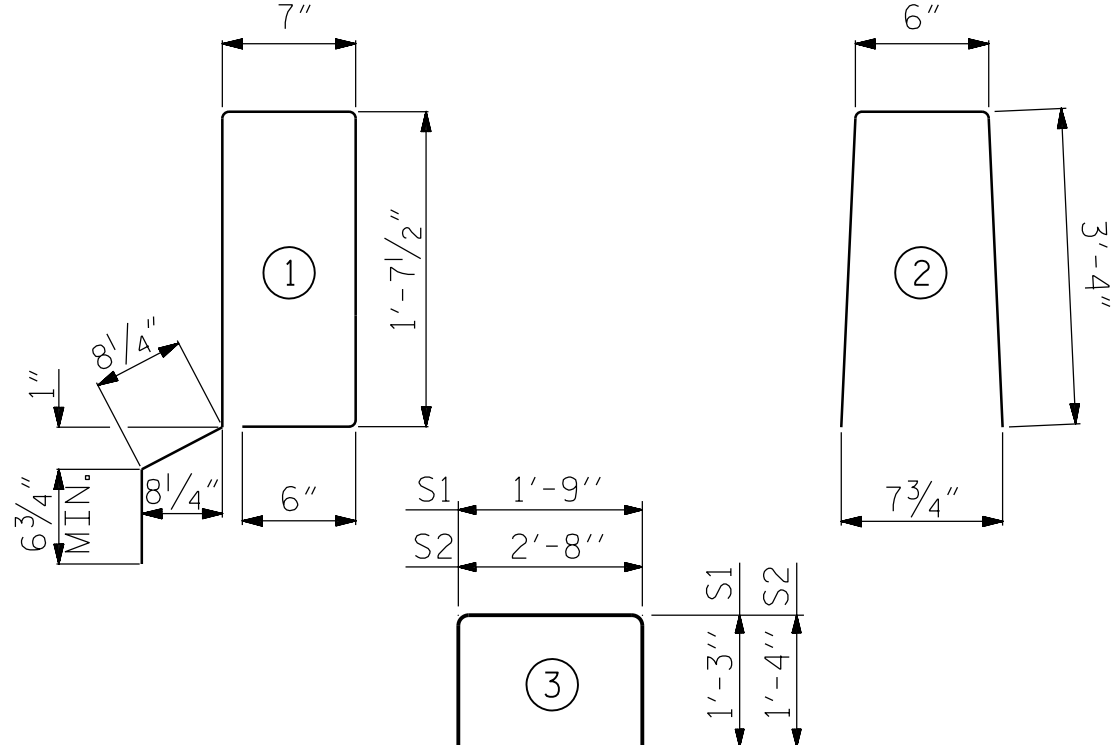
	ASPHALT OVERLAY THICKNESS	RAIL HEIGHT
	@ MID-SPAN	@ MID-SPAN
40' & 45' UNITS	1 1/8"	3'-7 1/8"
50' & 55' UNITS	(**) 3/4"	3'-6 3/4"

(**) ASPHALT THICKNESS 2.0FT FROM
VERTICAL CONCRETE BARRIER
(WHEEL PATH) = 1 1/8"

CONCRETE RELEASE STRENGTH

UNIT	PSI
25', 30' & 35' UNITS	4000
40' & 45' UNITS	4000
50' & 55' UNITS	4900

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT

BILL OF MATERIAL FOR ONE 45' CORED SLAB UNIT

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

BILL OF MATERIAL FOR ONE 55' CORED SLAB UNIT

				EXTERIOR UNIT		INTERIOR UNIT	
BAR	NUMBER	SIZE	TYPE	LENGTH	WEIGHT	LENGTH	WEIGHT
B7	4	#4	STR	28'-3"	75	28'-3"	75
S1	8	#5	3	4'-3"	35	4'-3"	35
S2	114	#4	3	5'-4"	406	5'-4"	406
* S3	64	#5	1	5'-7"	373		
REINFORCING STEEL				LBS.	516	516	
* EPOXY COATED REINFORCING STEEL				LBS.	373		
6500 P.S.I. CONCRETE				CU. YDS.	7.8	7.8	
0.6"Ø L.R. STRANDS				No.	19	19	

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.

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

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

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

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

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

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

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

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

CORED SLABS REQUIRED

	NUMBER	LENGTH	TOTAL LENGTH
45' UNIT			
EXTERIOR C.S.	2	45'-0"	90'-0"
INTERIOR C.S.	9	45'-0"	405'-0"
TOTAL	11		495'-0"
55' UNIT			
EXTERIOR C.S.	2	55'-0"	110'-0"
INTERIOR C.S.	9	55'-0"	495'-0"
TOTAL	11		605'-0"

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

DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED



PROJECT NO. B-5631
SAMPSON COUNTY
STATION: STA. 13+63.00

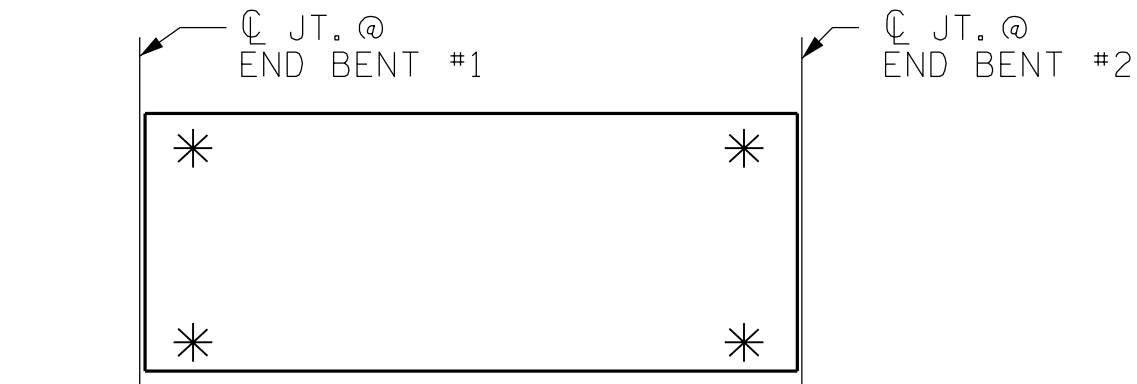
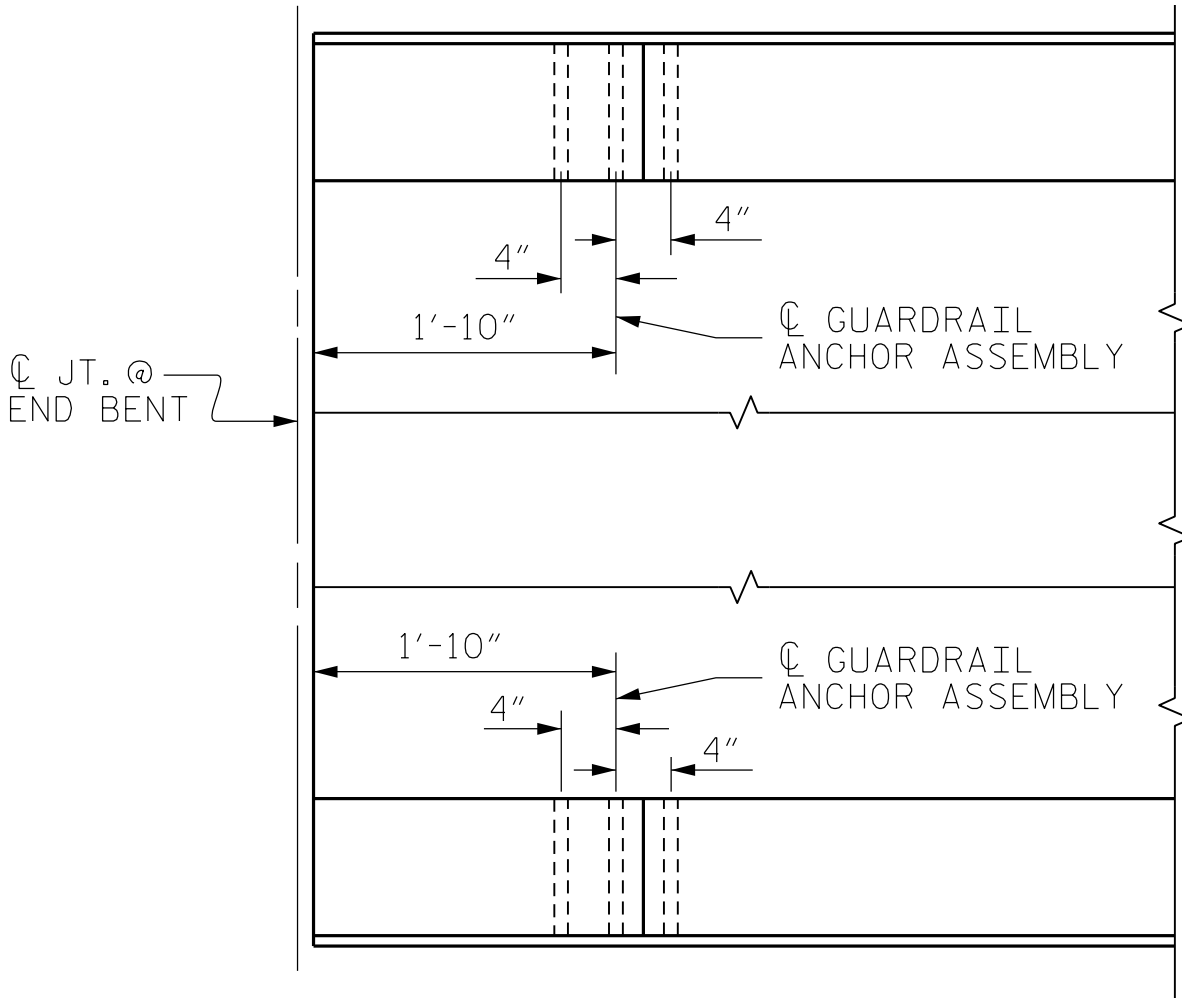
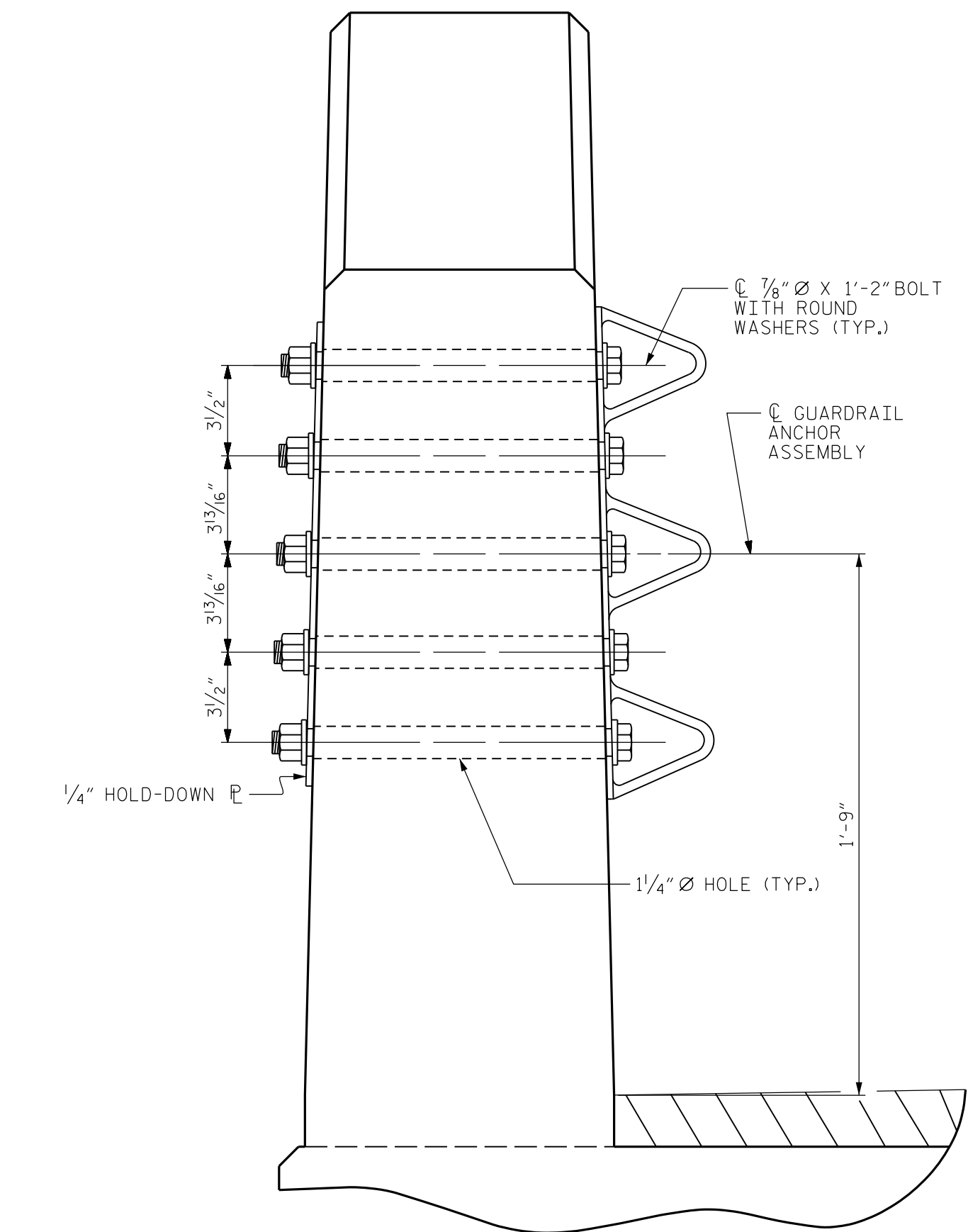
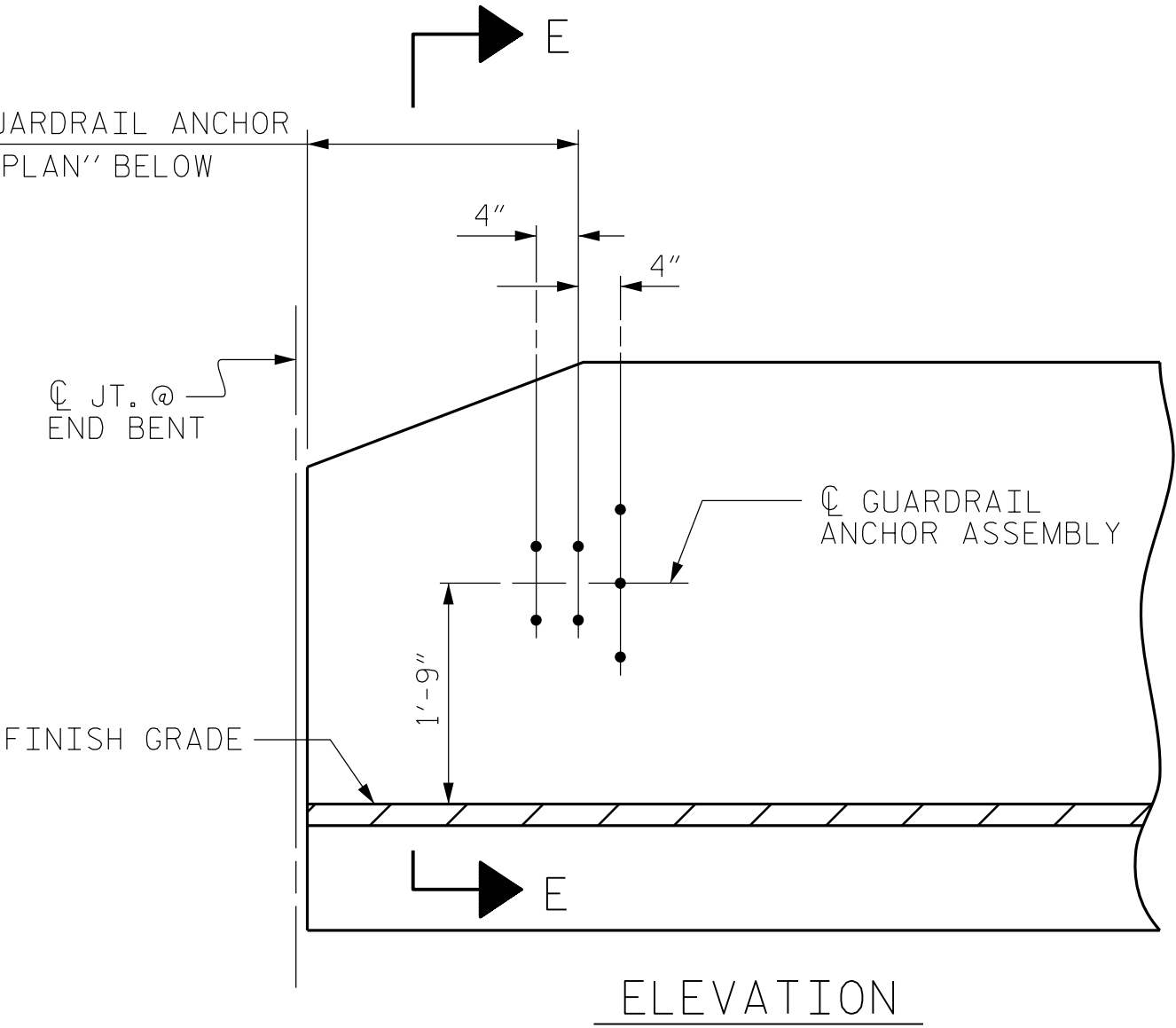
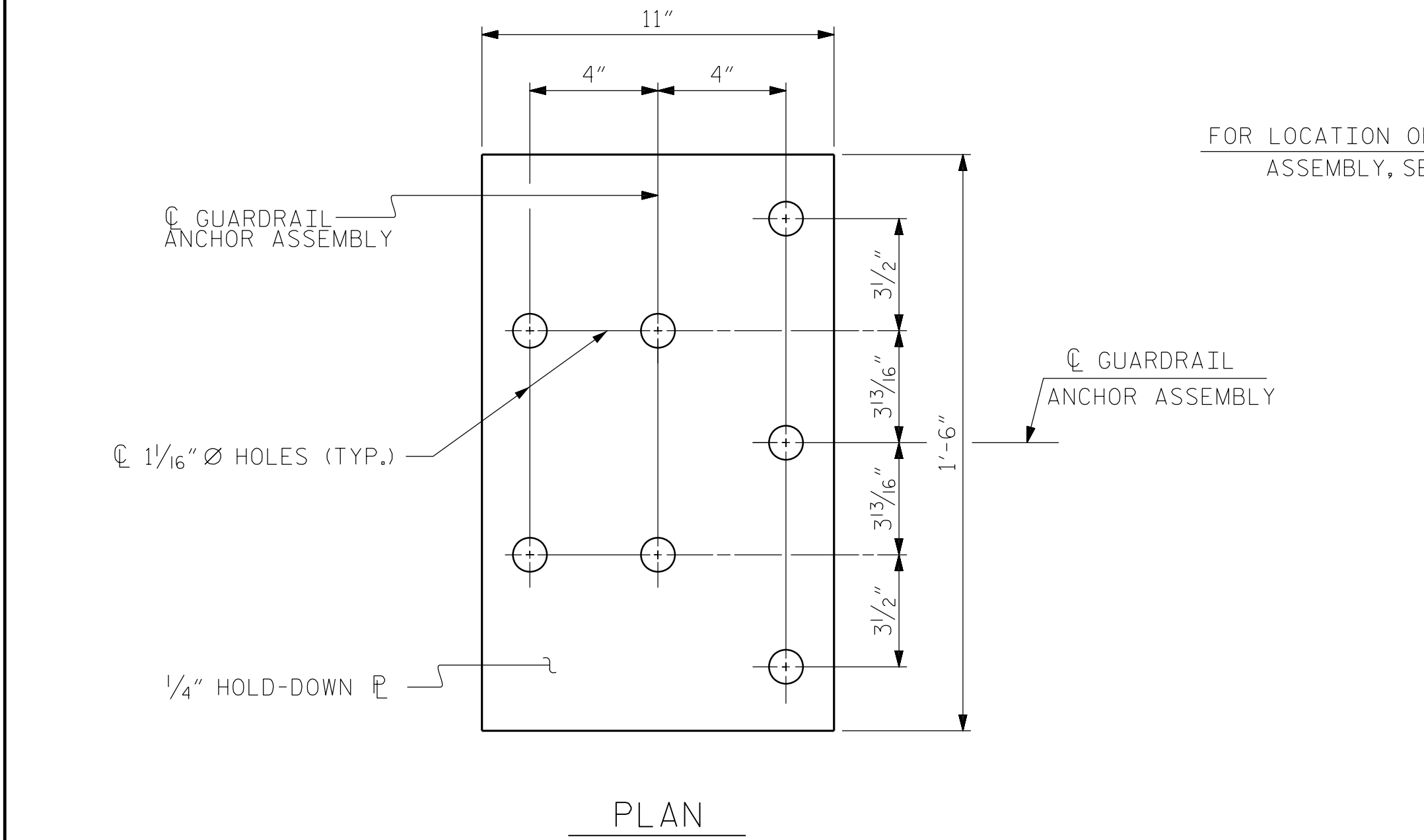
SHEET 4 OF 4

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

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S-10
2			4			TOTAL SHEETS 19

STD. NO. 21" PCS3_33_90S

ASSEMBLED BY : JACOB H. DUKE	DATE : 12-2018
CHECKED BY : DIEGO AGUIRRE	DATE : 12-2018
DRAWN BY : DGE 5/09	REV. 5/18
CHECKED BY : BCH 6/09	MAA/THC



SKETCH SHOWING
POINTS OF ATTACHMENT

* DENOTES GUARDRAIL ANCHOR ASSEMBLY

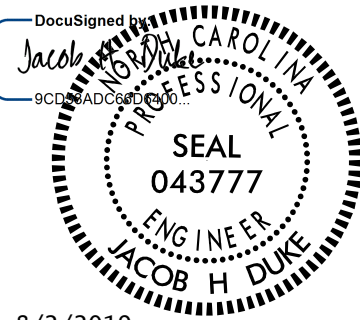
LOCATION OF
ANCHORS FOR GUARDRAIL

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

PROJECT NO. B-5631
SAMPSON COUNTY
STATION: STA. 13+63.00

ASSEMBLED BY : JACOB H. DUKE	DATE : 12-2018
CHECKED BY : DIEGO AGUIRRE	DATE : 12-2018
DRAWN BY : MAA 5/10	REV. 1/15 MAA/TMG
CHECKED BY : GM 5/10	REV. 12/17 MAA/THC
	REV. 5/18 MAA/THC

8/2/2019
B-5631.SMU - GR_810169.dgn
jduke



KCA
KISINGER CAMPO
& ASSOCIATES

301 FAYETTEVILLE ST., SUITE 1500
RALEIGH, NC 27601 (919) 882-7839
NC FIRM LICENSE: C-1506

DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH						SHEET NO.
STANDARD GUARDRAIL ANCHORAGE DETAILS FOR VERTICAL CONCRETE BARRIER RAIL						S-11
REVISIONS						TOTAL SHEETS
NO.	BY:	DATE:	NO.	BY:	DATE:	19
1			3			
2			4			

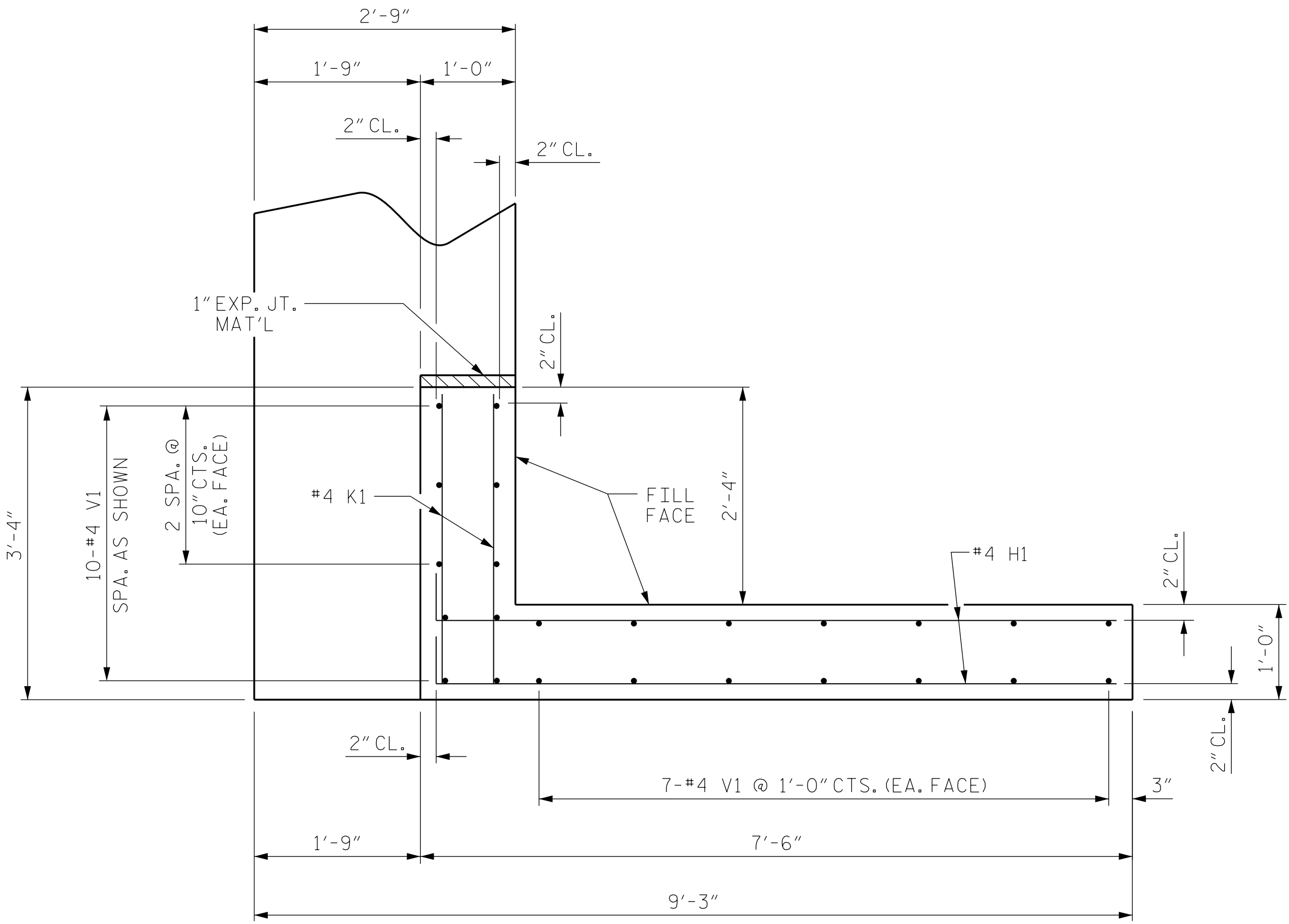
(SHT 1) STD. NO. GRA3



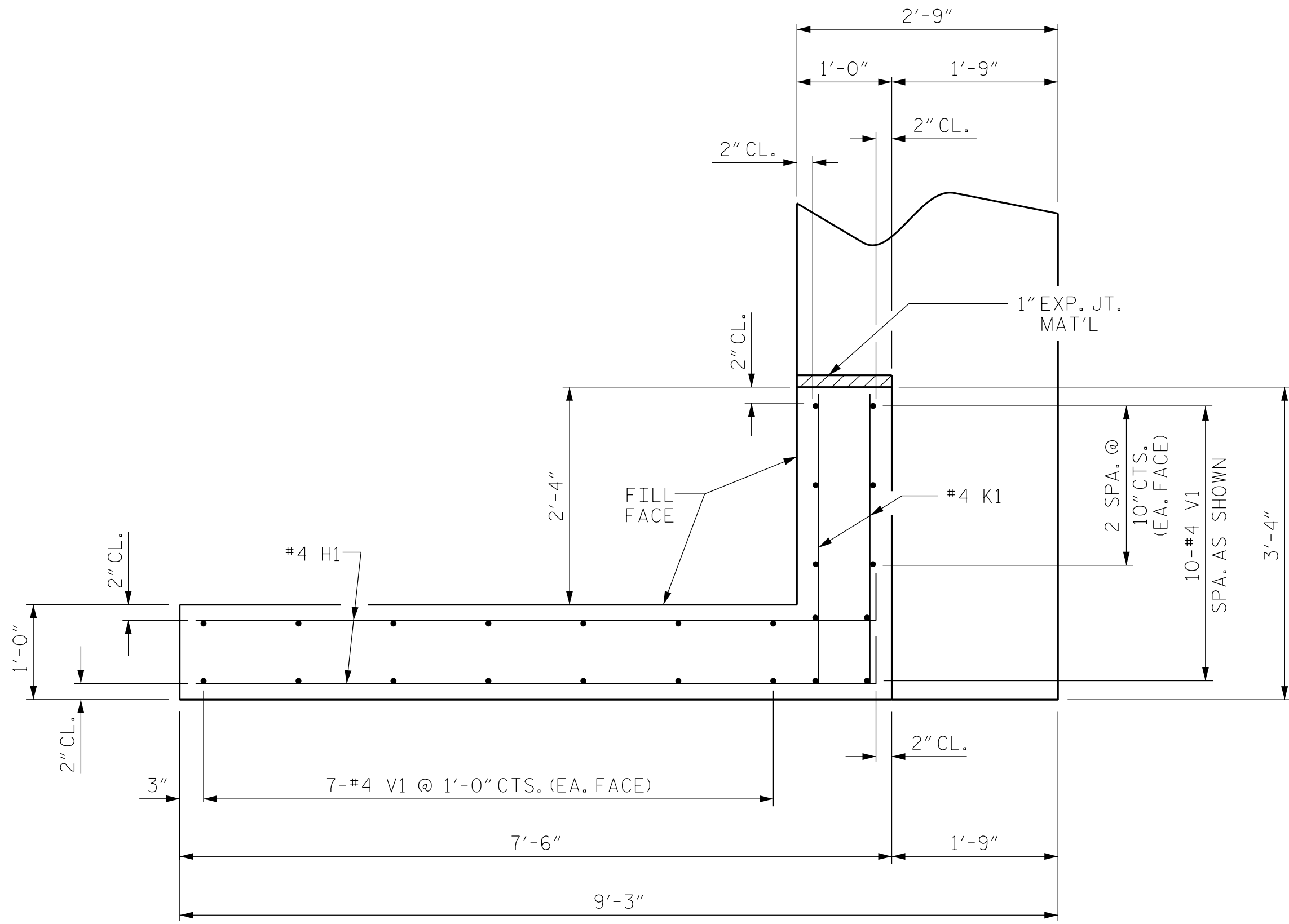
STD. NO. EB_33_90S



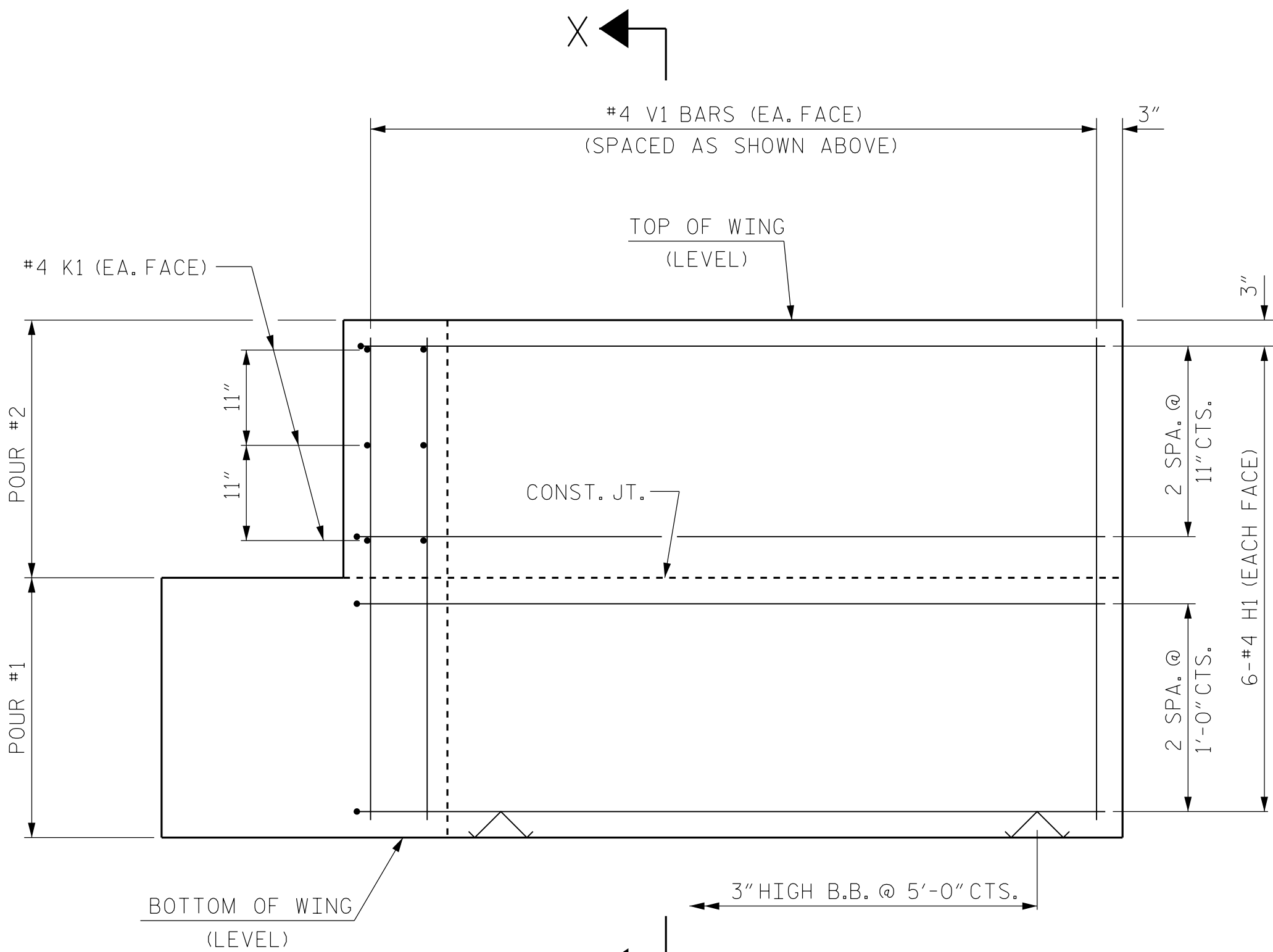
STD. NO. EB_33_90S



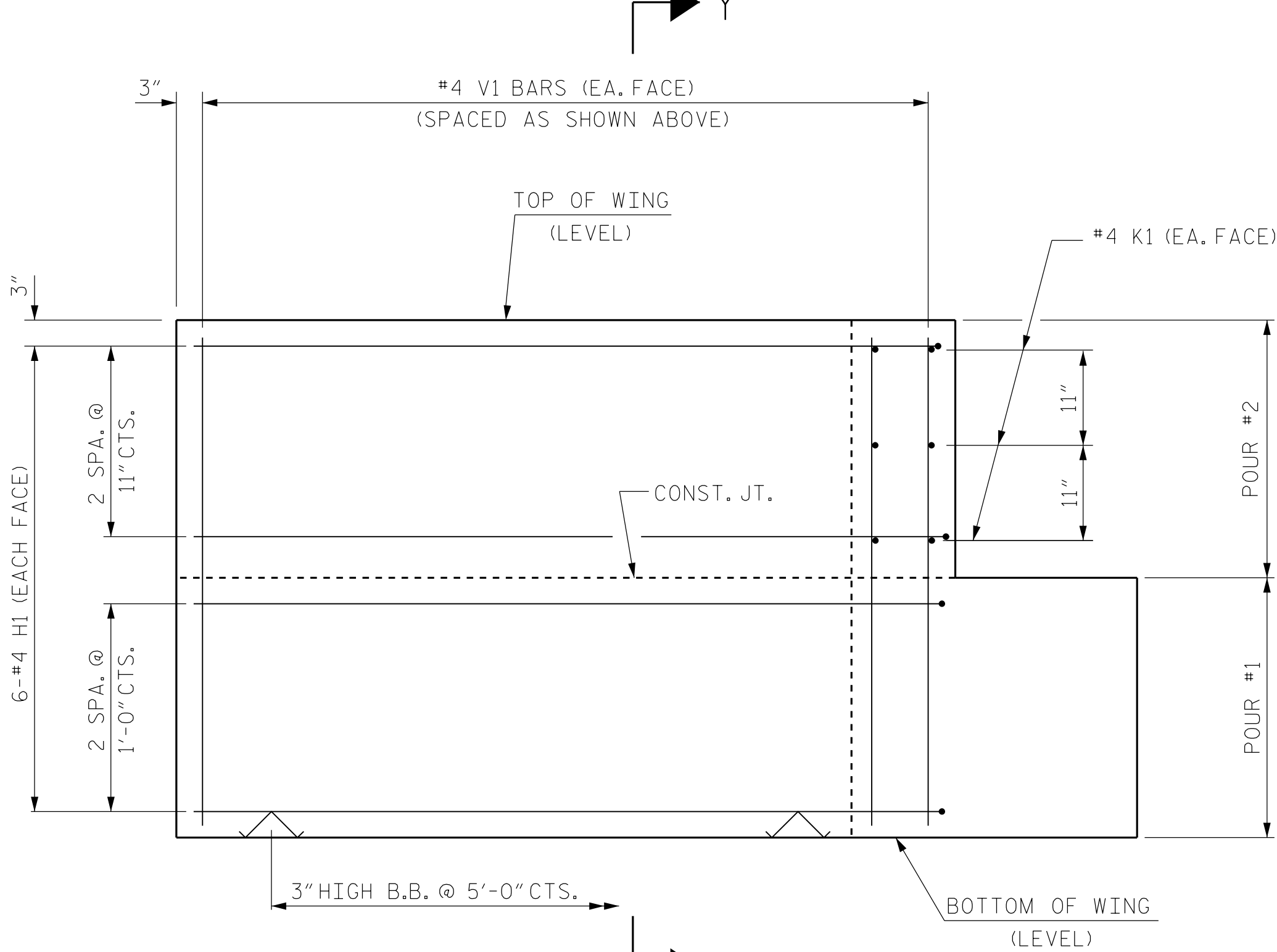
PLAN OF WING (W1)



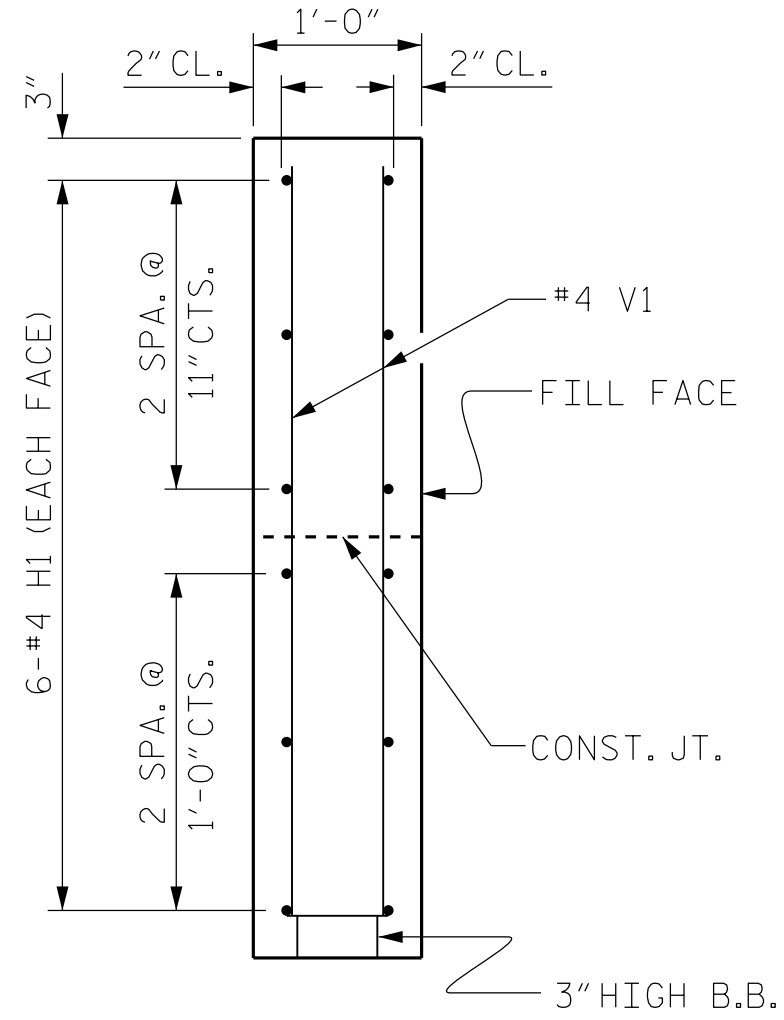
PLAN OF WING (W2)



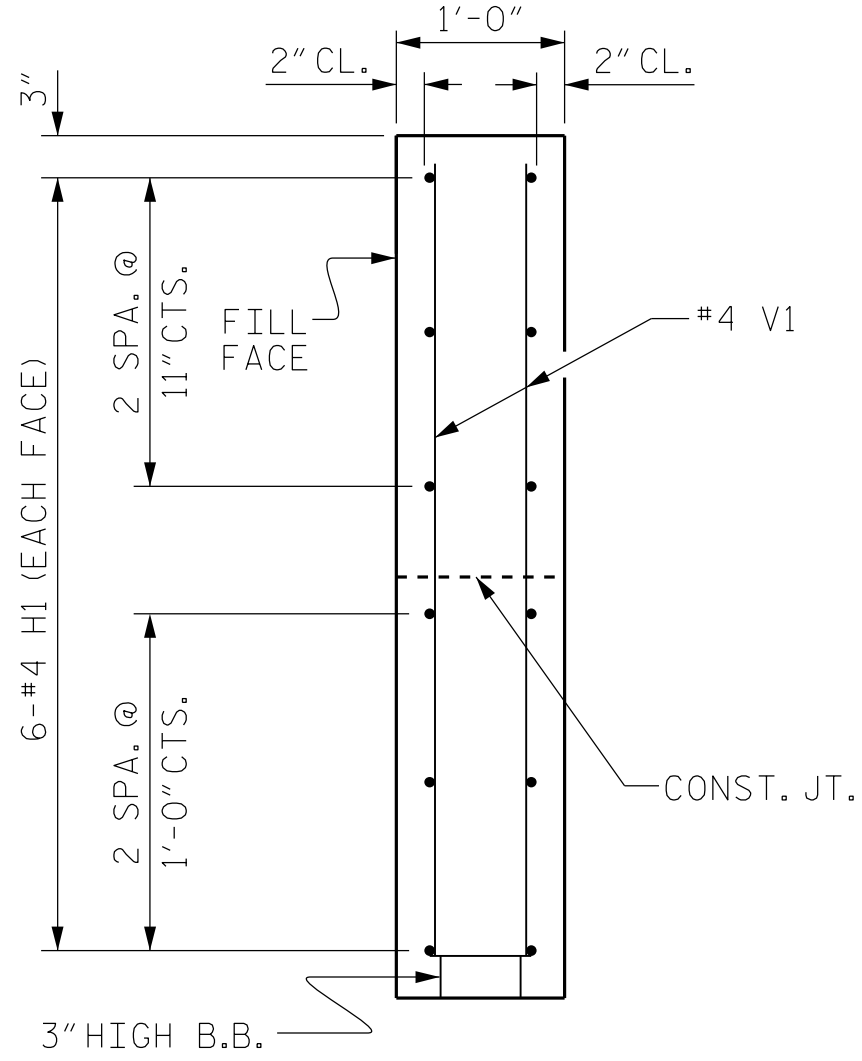
ELEVATION OF WING (W1)



ELEVATION OF WING (W2)



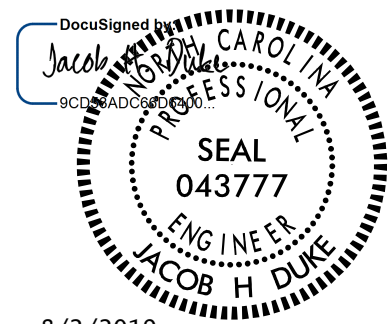
SECTION X-X



SECTION Y-Y

PROJECT NO. B-5631
SAMPSON COUNTY
STATION: STA. 13+63.00

SHEET 3 OF 4



8/2/2019

KCA
KISINGER CAMPO
& ASSOCIATES

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RALEIGH, NC 27601 (919) 882-7839
NC FIRM LICENSE: C-1506

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE
END BENT
WING DETAILS

ASSEMBLED BY : JACOB H. DUKE DATE : 12-2018
CHECKED BY : DIEGO AGUIRRE DATE : 12-2018
DRAWN BY : DGE 02/10
CHECKED BY : MKT 02/10
REV. 4/15
MAA/TMG

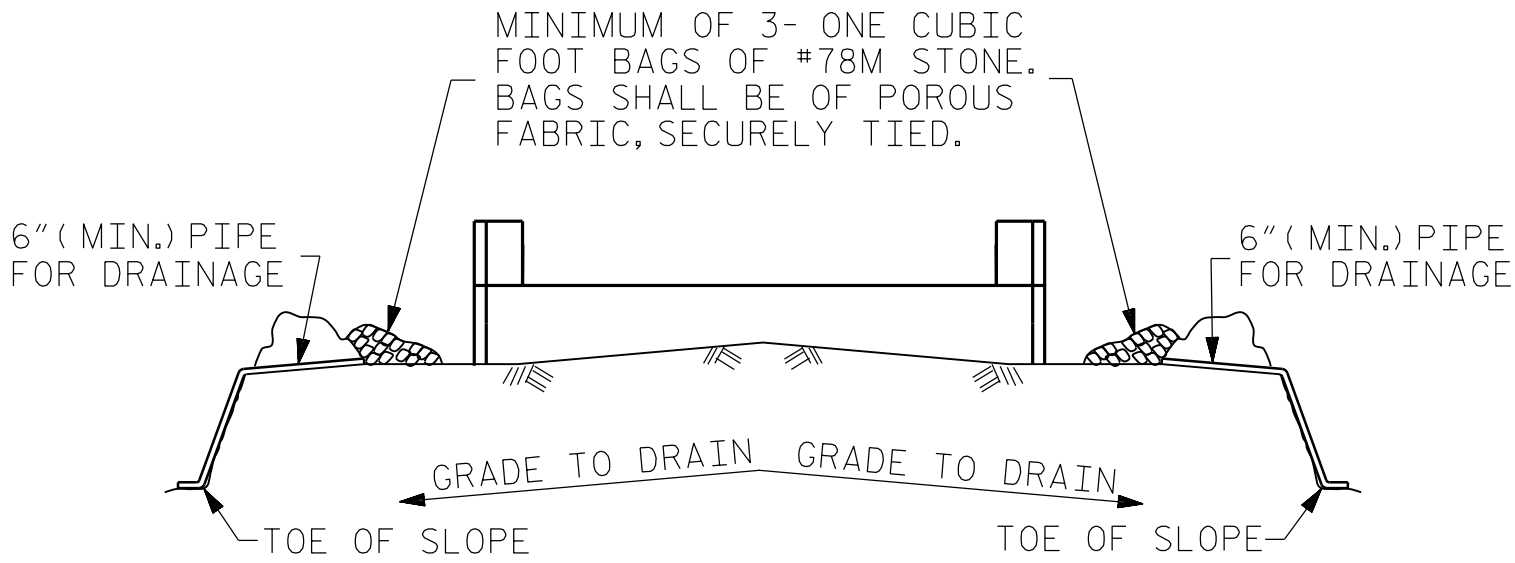
8/2/2019
B-5631.SMU. E3.810169.dgn
jduke

WING DETAILS

DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	S-14	
1			3			TOTAL SHEETS	
2			4			19	

STD. NO. EB_33_90S

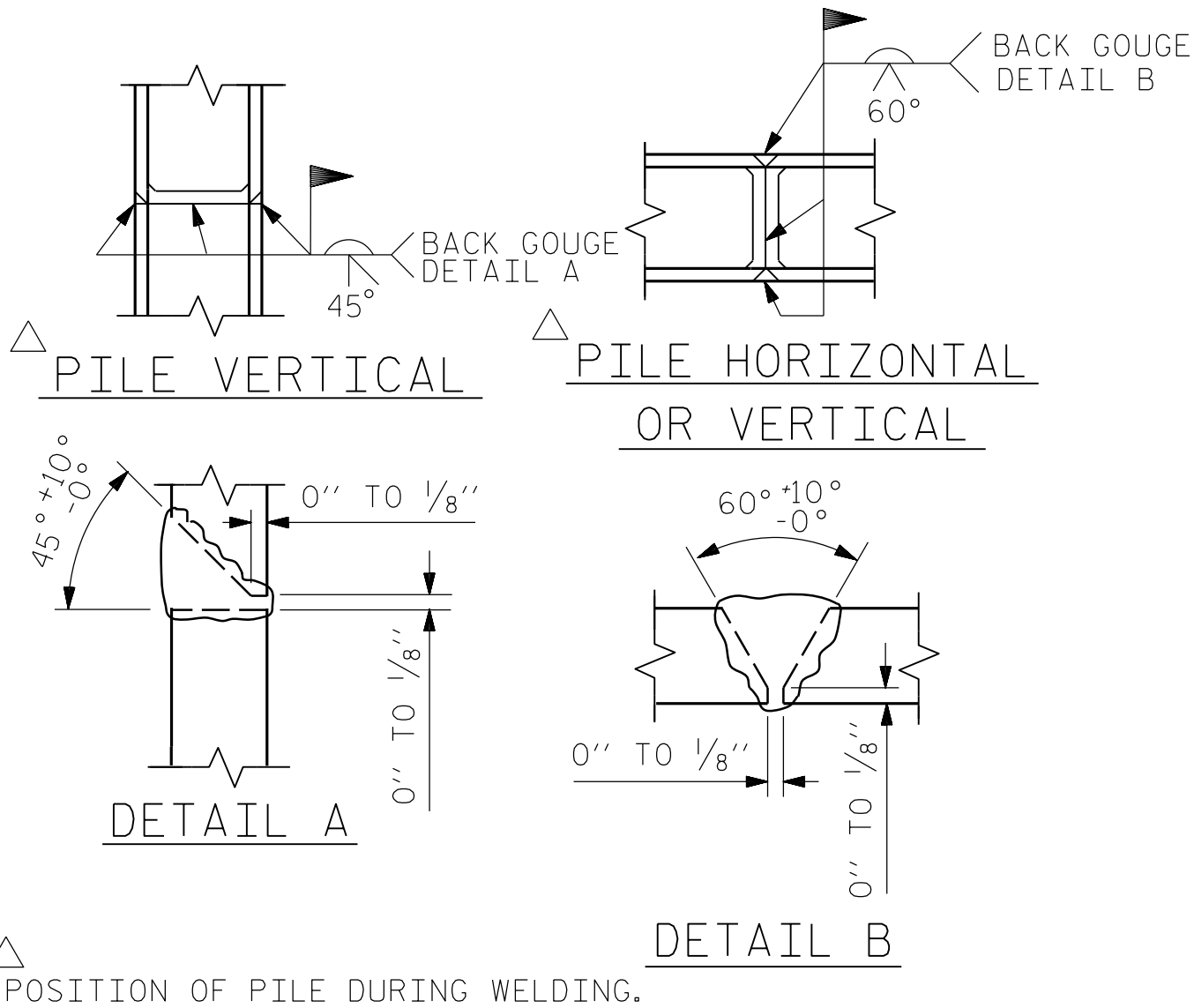


BAGGED STONE AND PIPE SHALL BE PLACED IMMEDIATELY AFTER COMPLETION OF END BENT EXCAVATION. PIPE MAY BE EITHER CONCRETE, CORRUGATED STEEL, CORRUGATED ALUMINUM ALLOY, OR CORRUGATED PLASTIC. PERFORATED PIPE WILL NOT BE ALLOWED.

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

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

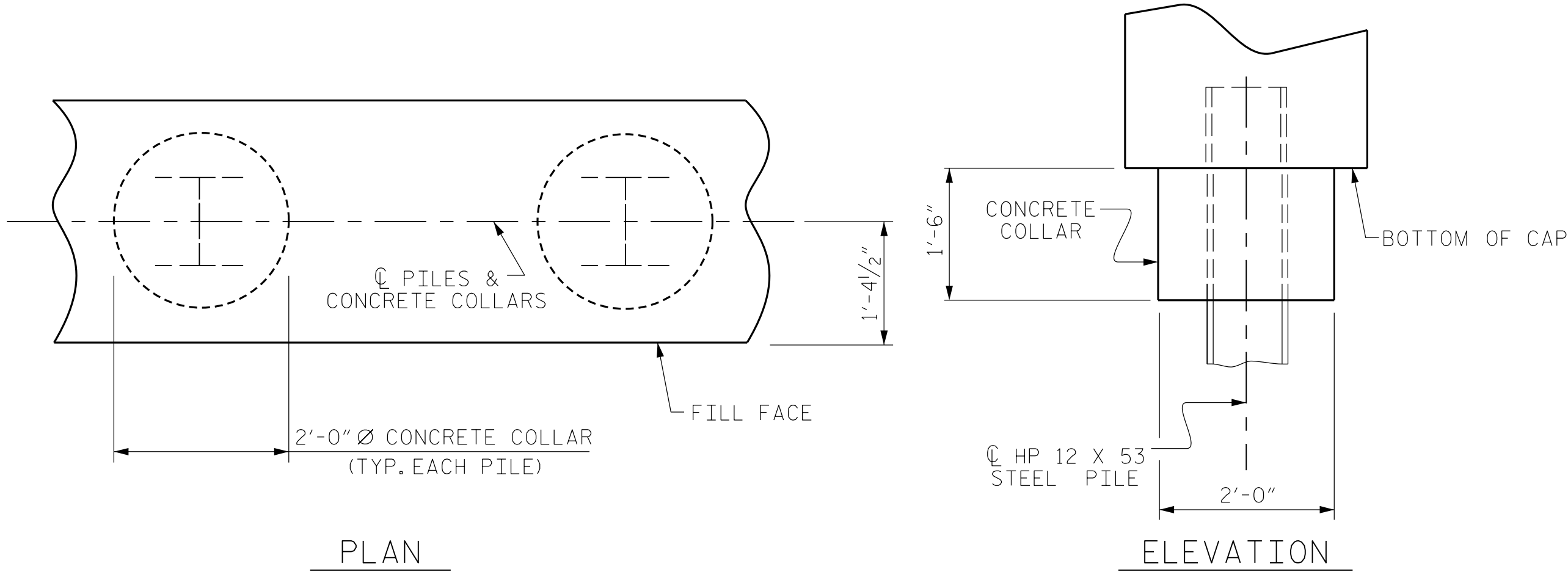
TEMPORARY DRAINAGE AT END BENT



PILE SPLICE DETAILS

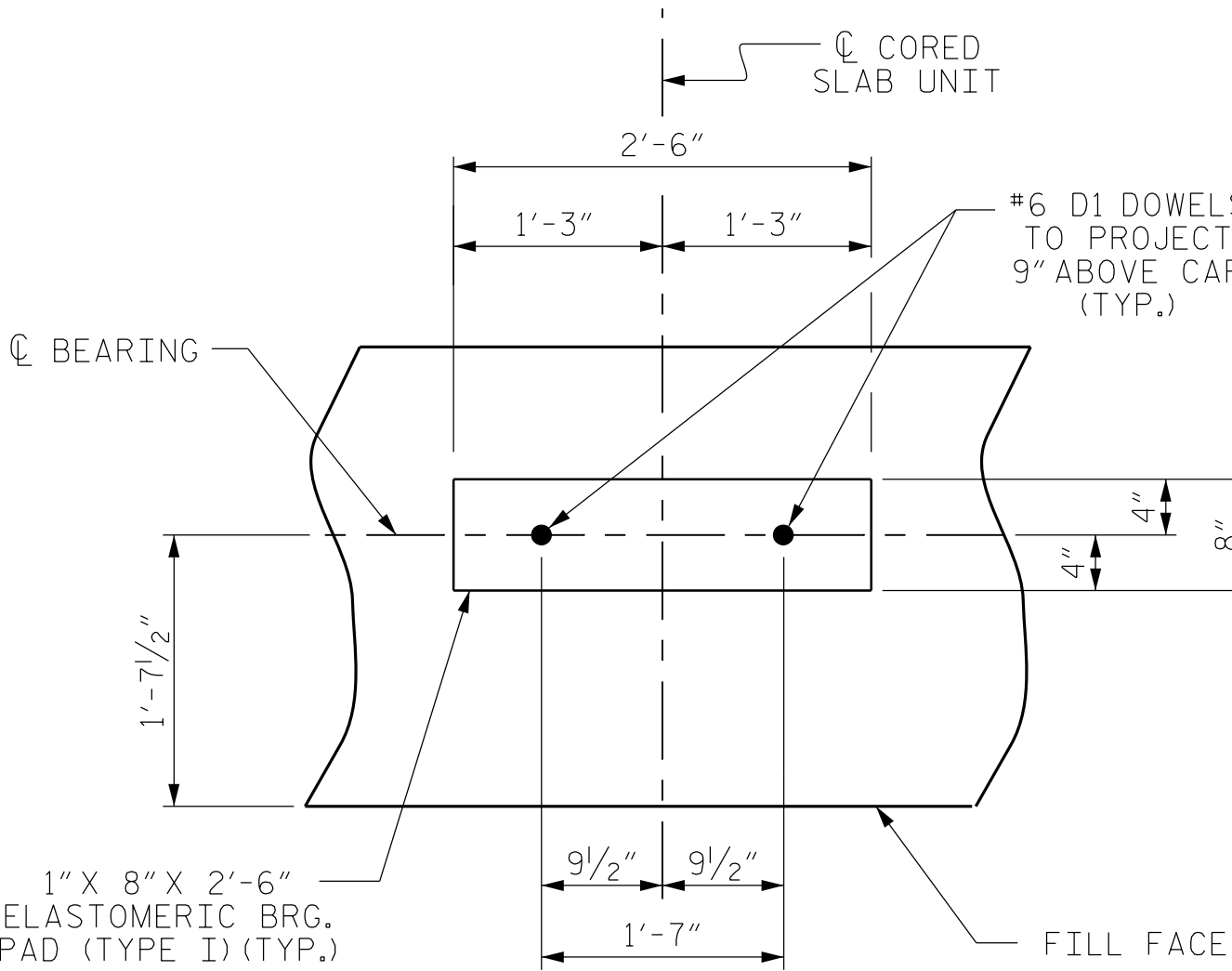
BAR TYPES	
ALL BAR DIMENSIONS ARE OUT TO OUT.	
END BENT No. 1	END BENT No. 2
HP 12 X 53 STEEL PILES NO: 7 LIN. FT.= 315	HP 12 X 53 STEEL PILES NO: 7 LIN. FT.= 315
PILE DRIVING EQUIPMENT SETUP FOR HP 12 X 53 STEEL PILES NO: 7	PILE DRIVING EQUIPMENT SETUP FOR HP 12 X 53 STEEL PILES NO: 7
PILE REDRIVES NO: 3	PILE REDRIVES NO: 3

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



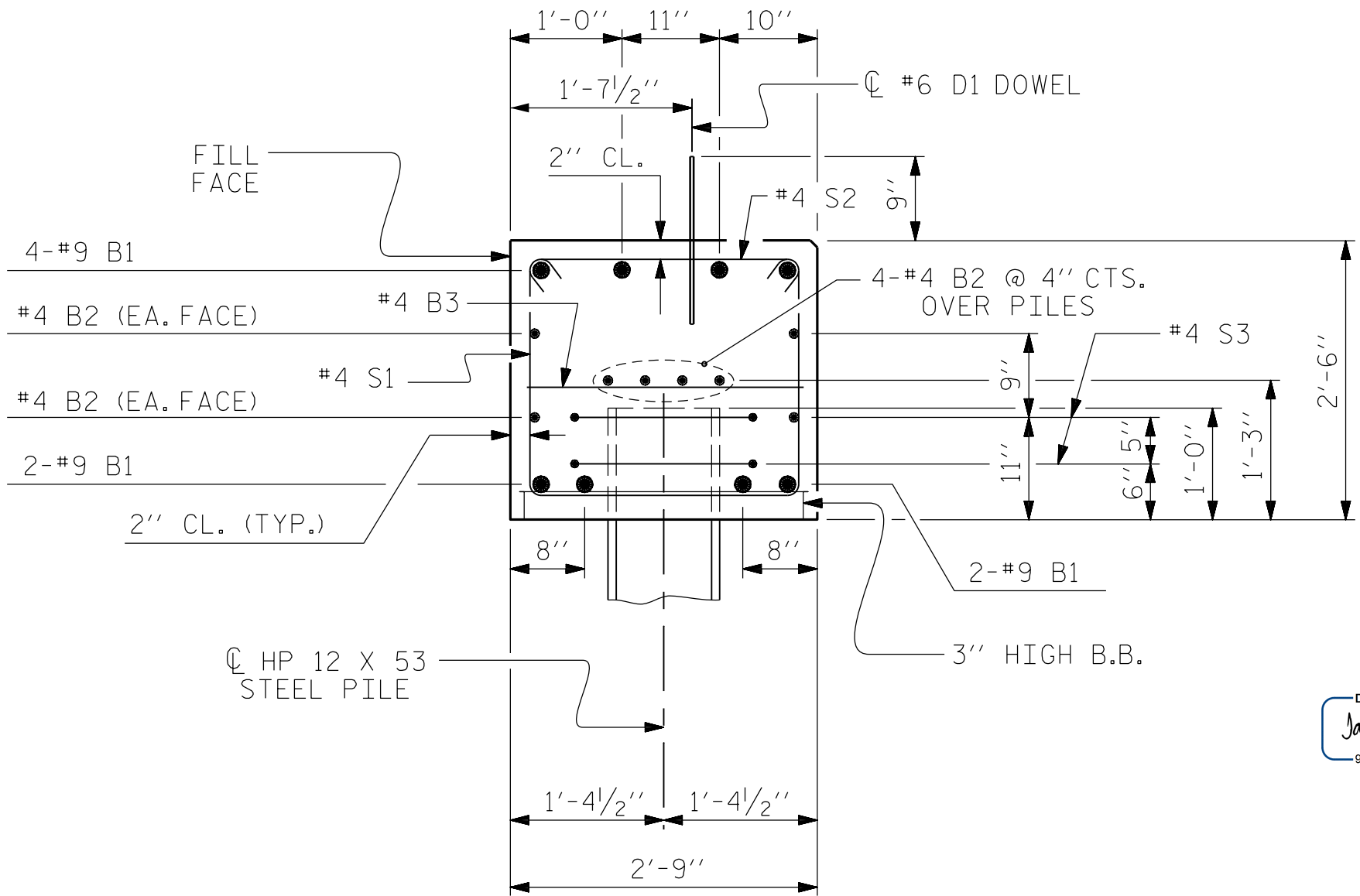
CORROSION PROTECTION FOR STEEL PILES DETAIL

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



DETAIL "A"

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



SECTION A-A

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



PROJECT NO. B-5631
SAMPSON COUNTY
STATION: STA. 13+63.00

SHEET 4 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

END BENT No. 1 & 2
DETAILS

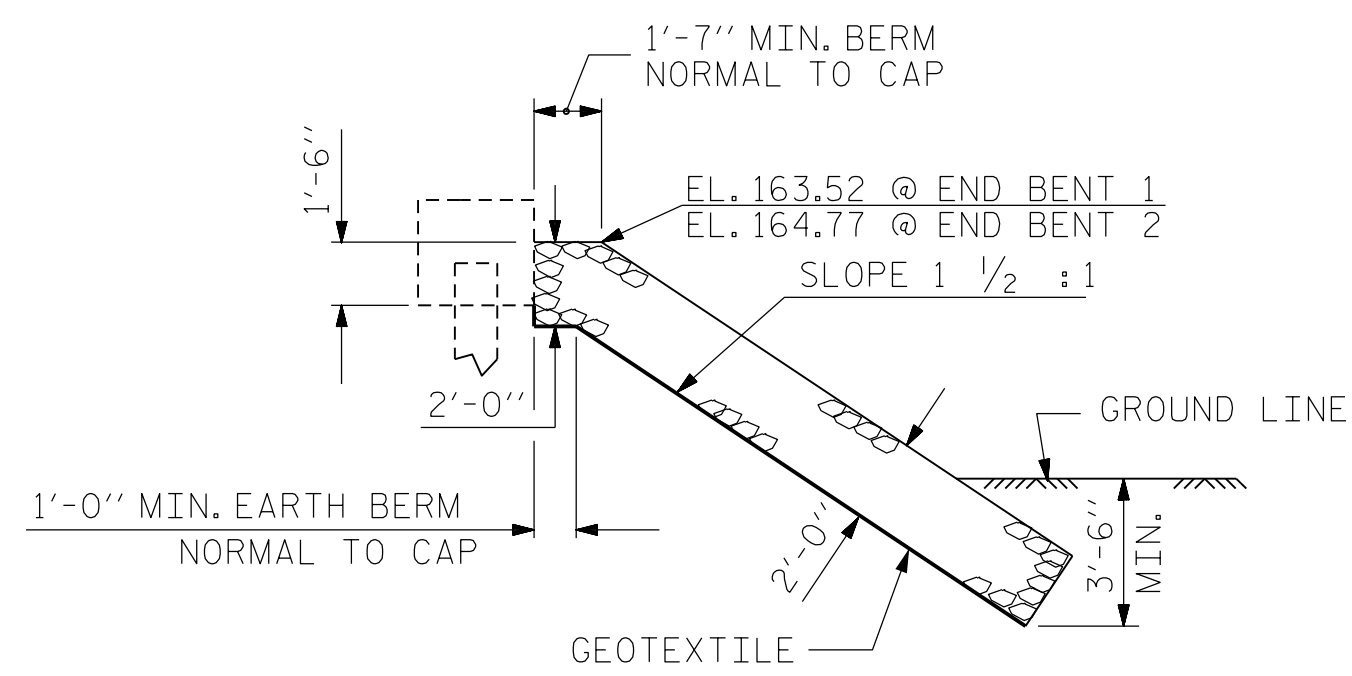
ASSEMBLED BY : JACOB H. DUKE	DATE : 12-2018
CHECKED BY : DIEGO AGUIRRE	DATE : 12-2018
DRAWN BY : DGE	12/09
CHECKED BY : MKT	01/10
REV. 4/17	MAA/THC

DOCUMENT NOT CONSIDERED
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301 FAYETTEVILLE ST., SUITE 1500
RALEIGH, NC 27601 (919) 882-7839
NC FIRM LICENSE: C-1506

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-15
1			3			TOTAL SHEETS 19
2			4			

PROJECT NO. B-5631
SAMPSON COUNTY
 STATION: STA. 13+63.00



SHOULDER

EL. 163.52 @ END BENT 1
EL. 164.77 @ END BENT 2

VARIABLE

SLOPE 2:1

GEOTEXTILE

2'-0"

3'-6" MIN.

GROUND LINE

DocuSign
by Jacob
9/2/2018

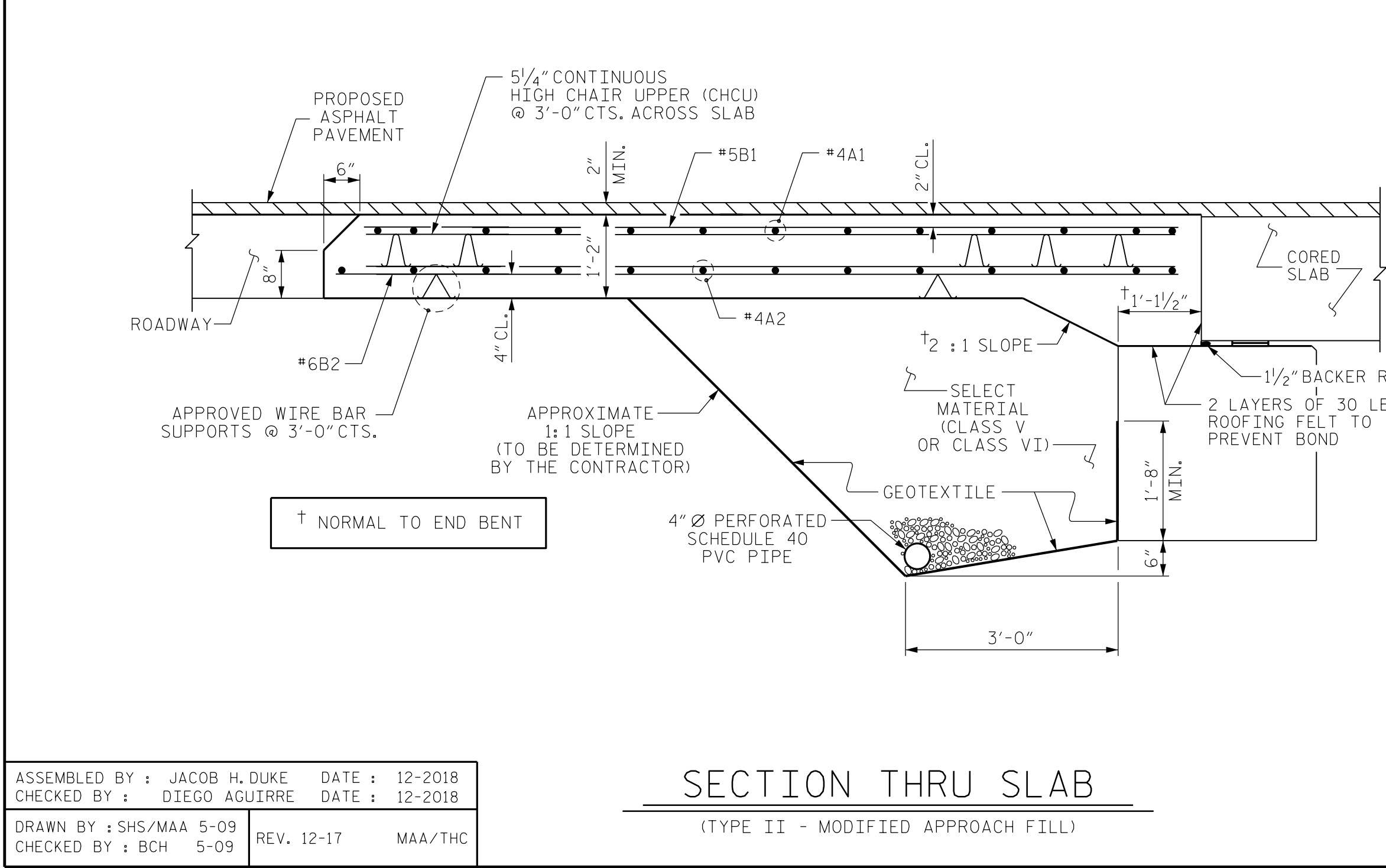
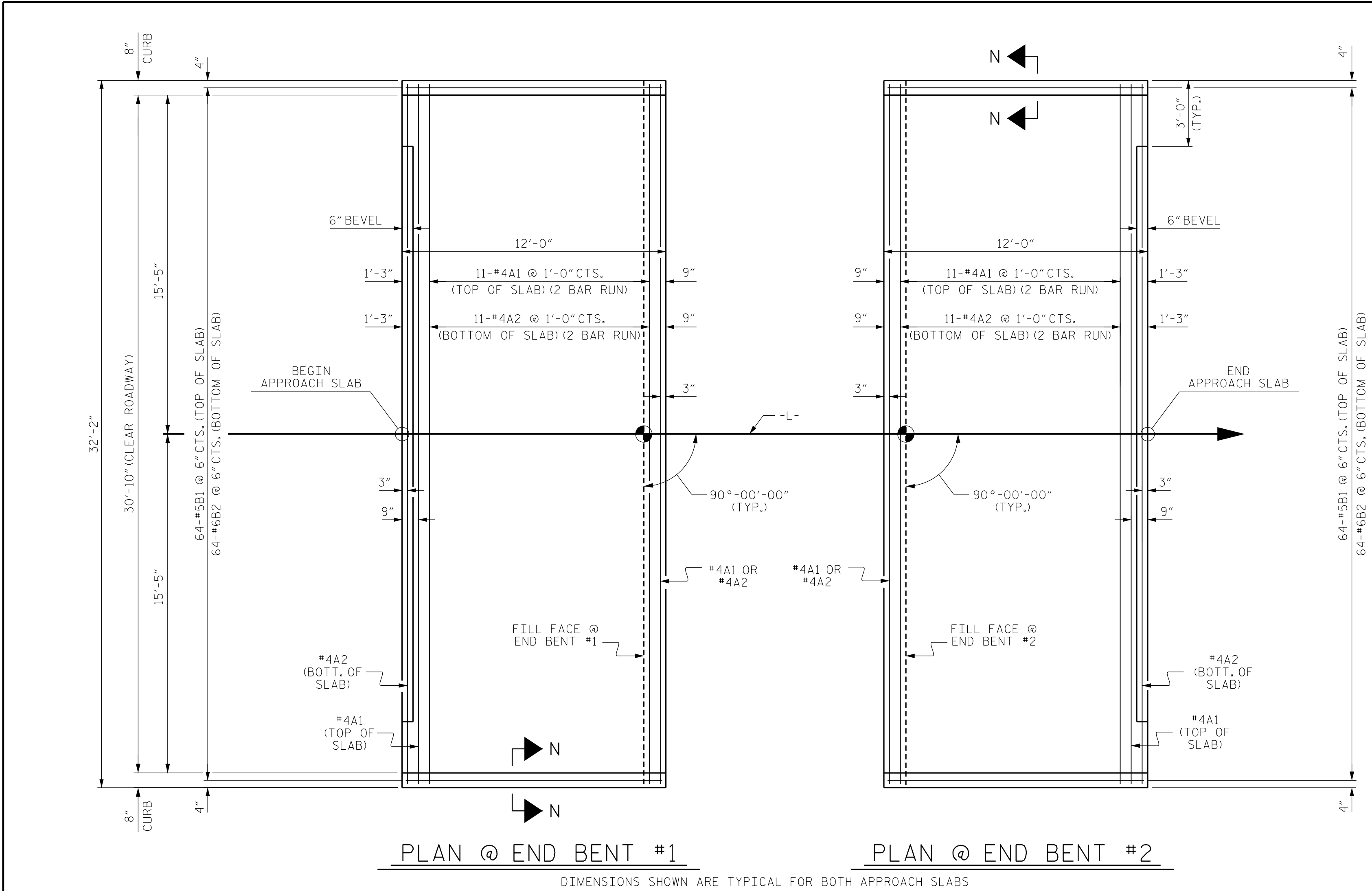
SECTION
BERM RIP RAPPED



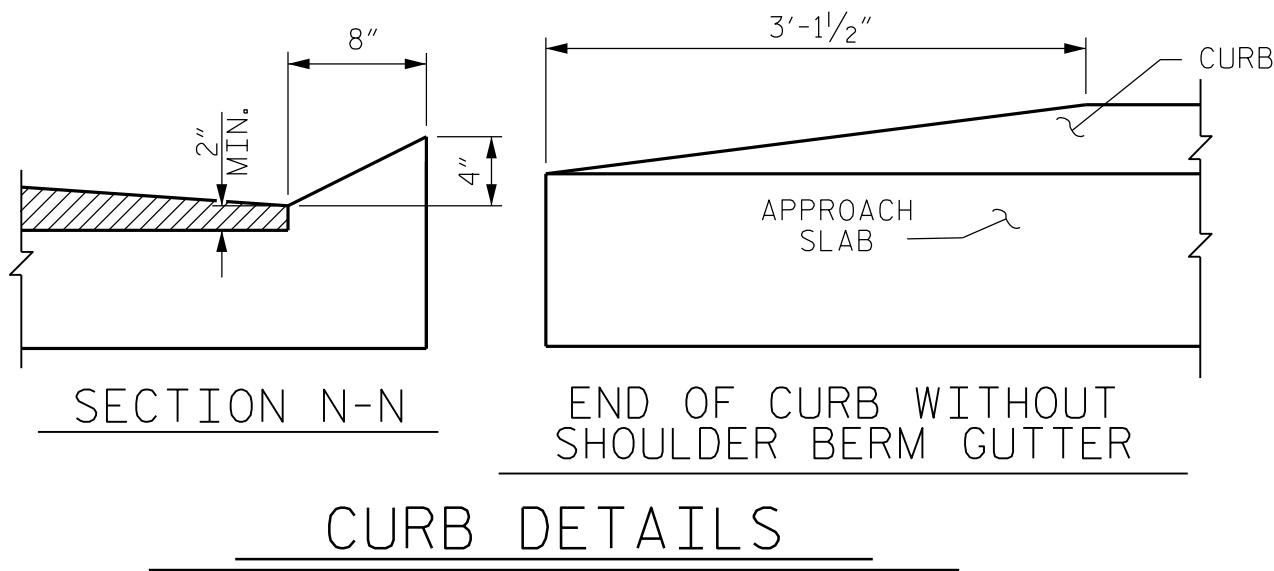
STANDARD
RIP RAP DETAILS

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-18
1			3			TOTAL SHEETS
2			4			19

STD. NO. RR1



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



NOTES

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

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

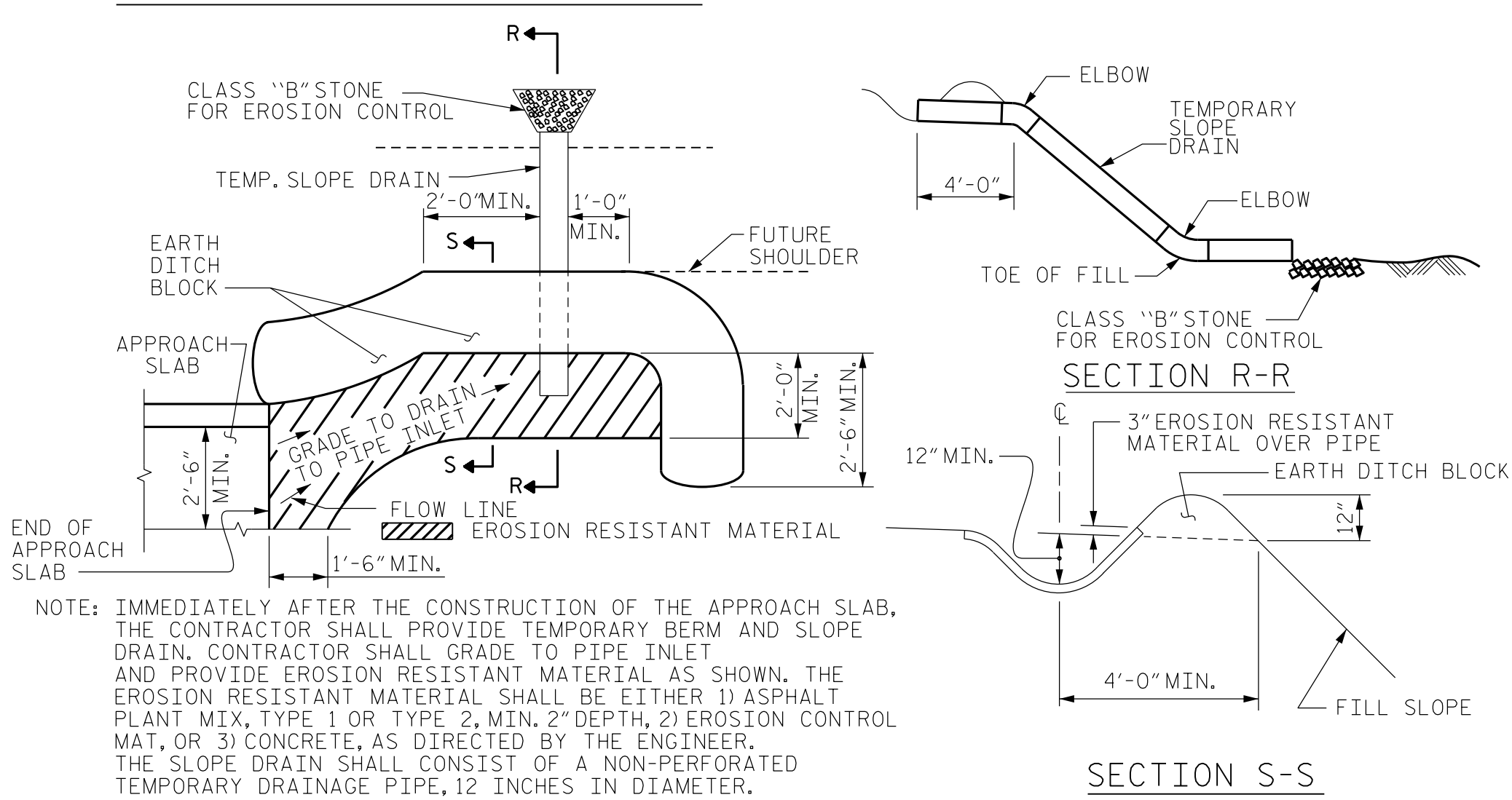
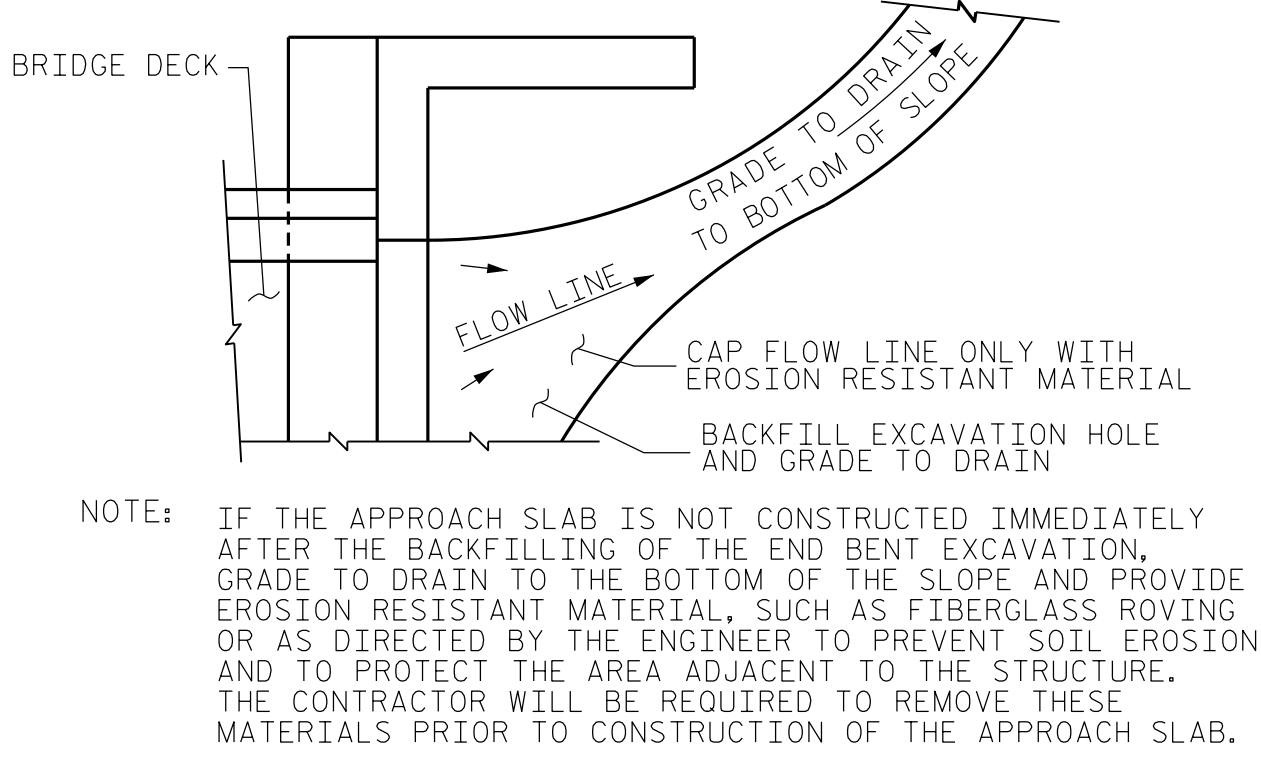
SELECT MATERIAL BACKFILL (CLASS V OR CLASS VI) SHALL BE IN ACCORDANCE WITH STANDARD SPECIFICATIONS SECTION 1016.

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

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

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

APPROACH SLAB GROOVING IS NOT REQUIRED.



TEMPORARY BERM AND SLOPE DRAIN DETAILS

(TO BE USED WHEN SHOULDER BERM GUTTER IS REQUIRED)

BILL OF MATERIAL					
APPROACH SLAB AT EB #1					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
* A1	26	#4	STR	16'-11"	294
A2	26	#4	STR	16'-9"	291
* B1	64	#5	STR	11'-2"	745
B2	64	#6	STR	11'-8"	1121
REINFORCING STEEL				LBS.	1412
* EPOXY COATED REINFORCING STEEL				LBS.	1039
CLASS AA CONCRETE				C. Y.	18.4
APPROACH SLAB AT EB #2					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
* A1	26	#4	STR	16'-11"	294
A2	26	#4	STR	16'-9"	291
* B1	64	#5	STR	11'-2"	745
B2	64	#6	STR	11'-8"	1121
REINFORCING STEEL				LBS.	1412
* EPOXY COATED REINFORCING STEEL				LBS.	1039
CLASS AA CONCRETE				C. Y.	18.4

PROJECT NO. B-5631

SAMPSON COUNTY

STATION: STA. 13+63.00



STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
STANDARD BRIDGE APPROACH SLAB FOR PRESTRESSED CONCRETE CORED SLAB UNIT (SUB-REGIONAL TIER) 90° SKEW					
REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
					TOTAL SHEETS 19

DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

301 FAYETTEVILLE ST., SUITE 1500
RALEIGH, NC 27601 (919) 882-7839
NC FIRM LICENSE: C-1506

STANDARD NOTES

DESIGN DATA:

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

MATERIAL AND WORKMANSHIP:

EXCEPT AS MAY OTHERWISE BE SPECIFIED ON PLANS OR IN THE SPECIAL PROVISIONS, ALL MATERIAL AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE 2018 "STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES" OF THE N.C. DEPARTMENT OF TRANSPORTATION.

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

CONCRETE:

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

CONCRETE CHAMFERS:

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

DOWELS:

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

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

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

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

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

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

REINFORCING STEEL:

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

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

STRUCTURAL STEEL:

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

EXCEPT AT THE INTERIOR SUPPORTS OF CONTINUOUS BEAMS WHERE THE COVER PLATE IS IN CONTACT WITH BEARING PLATE, THE CONTRACTOR MAY, AT HIS OPTION, SUBSTITUTE FOR THE COVER PLATES DESIGNATED ON THE PLANS COVER PLATES OF THE EQUIVALENT AREA PROVIDED THESE PLATES ARE AT LEAST 3/16" IN THICKNESS AND DO NOT EXCEED A WIDTH EQUAL TO THE FLANGE WIDTH LESS 2" OR A THICKNESS EQUAL TO 2 TIMES THE FLANGE THICKNESS. THE SIZE OF FILLET WELDS SHALL CONFORM TO THE REQUIREMENTS OF THE CURRENT ANSI/AASHTO/AWS "BRIDGE WELDING CODE". ELECTROSLAG WELDING WILL NOT BE PERMITTED.

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

HANDRAILS AND POSTS:

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

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

SPECIAL NOTES:

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

ENGLISH

JANUARY, 1990

STD. NO. SN