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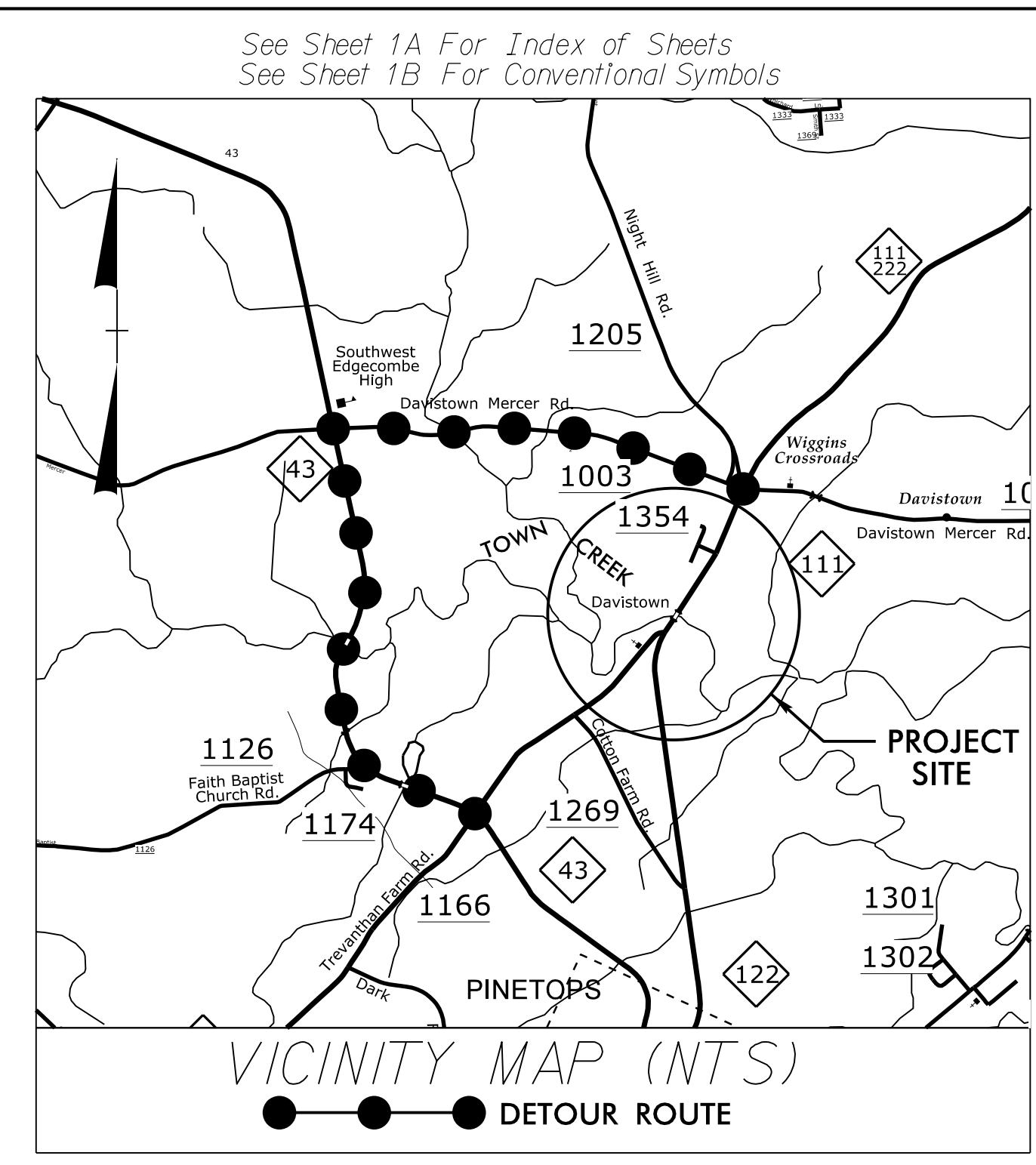
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09/08/2019

TIP PROJECT: B-5655

CONTRACT: DD00339



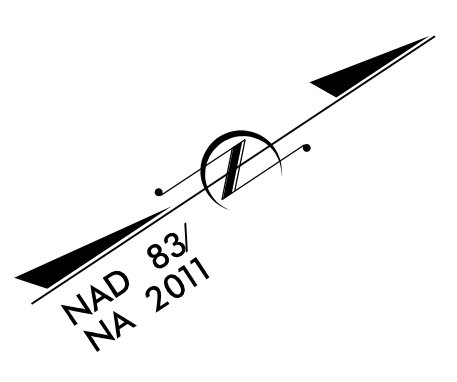
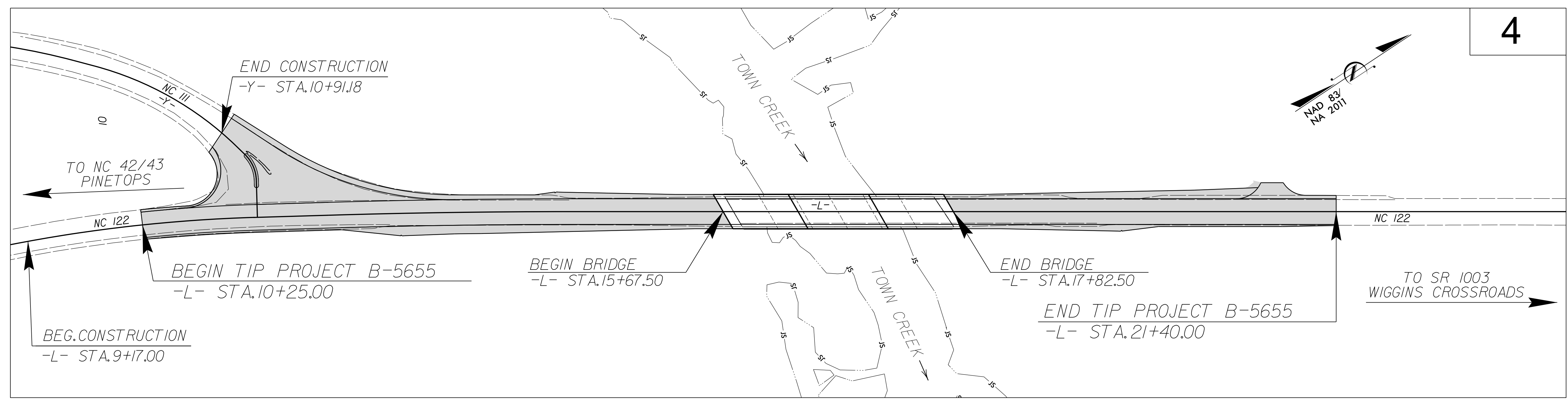
STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

# EDGECOMBE COUNTY

**LOCATION: REPLACE BRIDGE NO. 11 OVER  
TOWN CREEK ON NC 111/ NC 122**

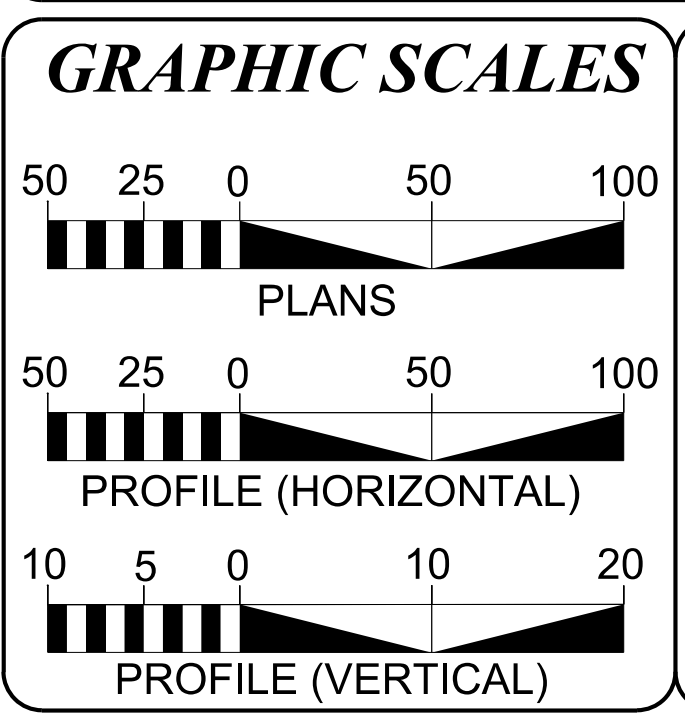
**TYPE OF WORK: GRADING, DRAINAGE, PAVING AND STRUCTURE**

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	<b>B-5655</b>	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
45610.1.1		P.E.	
45610.2.1		ROW/UTIL.	
45610.3.1		CONSTR.	



4

DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED



**DESIGN DATA**

ADT 2020 = 5075  
ADT 2040 = 6900

K = 10 %  
D = 55 %  
T = 4 %  
V = 60 MPH

\* (TTST = 2% + DUAL 2%)  
FUNC CLASS = MAJOR COLLECTOR  
REGIONAL TIER

**PROJECT LENGTH**

LENGTH OF ROADWAY TIP PROJECT B-5655 = .170 MILES  
LENGTH OF STRUCTURE TIP PROJECT B-5655 = .041 MILES  
TOTAL LENGTH OF TIP PROJECT B-5655 = .211 MILES

Prepared in the Office of:  
KCI Associates of N.C., P.A.  
4505 Falls of Neuse Road, Suite 400  
Raleigh, NC 27609  
Phone (919) 783-9214  
Fax (919) 783-9266  
<http://www.kci.com>

2018 STANDARD SPECIFICATIONS

**RIGHT OF WAY DATE:**  
OCTOBER 30, 2019

**LETTING DATE:**  
JANUARY 26, 2021

**NCDOT CONTACT:**

Plans Prepared For:  
**DIVISION OF HIGHWAYS**  
1000 Birch Ridge Dr.  
Raleigh NC, 27610

**DEWAYNE L. SYKES, P.E.**  
PROJECT ENGINEER

**BRYAN E. HOUGH, P.E.**  
PROJECT DESIGN ENGINEER

**DAVID STUTTS, P.E.**  
STRUCTURES MANAGEMENT UNIT

**HYDRAULICS ENGINEER**

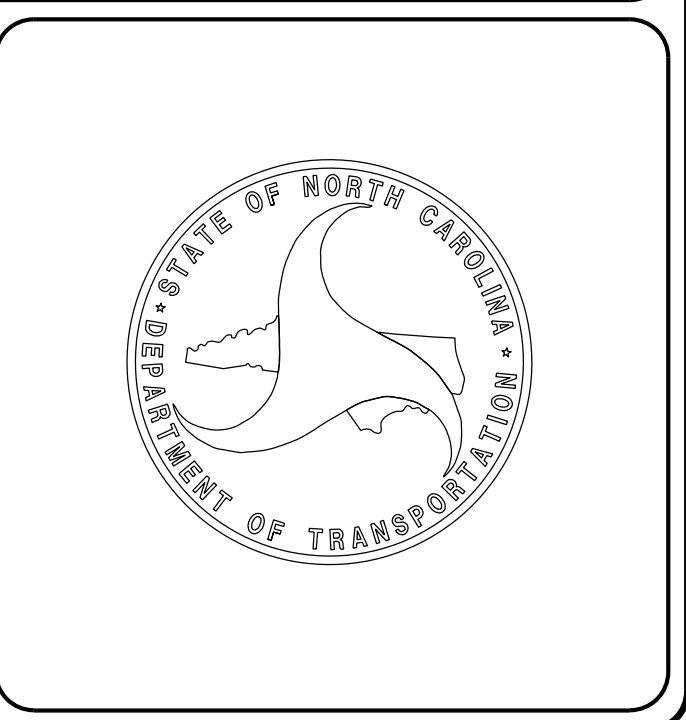
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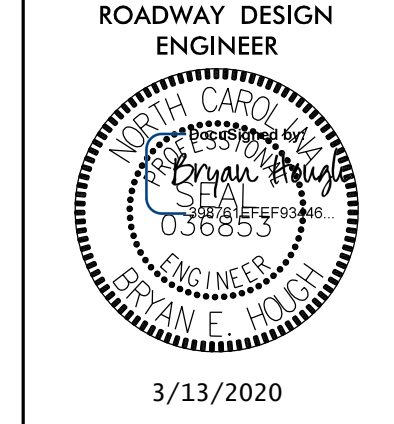
P.E. 11/24/2020

**ROADWAY DESIGN ENGINEER**

DocuSigned by:  
Bryan Hough  
SIGNATURE:

P.E. 11/23/2020





EFF. 01-16-2018

SHEET NUMBER	SHEET
1	TITLE SHEET
1A	INDEX OF SHEETS, GENERAL NOTES, AND STANDARD DRAWINGS
1B	CONVENTIONAL SYMBOLS
2A-1	TYPICAL SECTIONS, PAVEMENT SCHEDULE, WEDGING DETAIL, PROFILE KEY-IN DETAIL, SHOULDER BERM GUTTER DETAIL AND GUARDRAIL INSET
2B-1	OLD ROAD BED EXCAVATION DETAILS
2C-1	GUARDRAIL INSTALLATION DETAIL
3B-1	SUMMARY OF EARTHWORK, SUMMARY OF SHOULDER BERM GUTTER, SUMMARY OF PAVEMENT REMOVAL AND SUMMARY OF GUARDRAIL
3D-1	DRAINAGE SUMMARY SHEET
4	PLAN SHEET
5	PROFILE SHEET
RW-01	RW TITLE SHEET
RW02C-1 TO RW02C-2	SURVEY CONTROL SHEETS
RW02D-1	PROPOSED ALIGNMENT CONTROL SHEET
RW03E-1	PERMANENT EASEMENT CONTROL SHEET
RW04 TO RW05	RIGHT OF WAY SHEET
TMP-1 TO TMP-2B	TRANSPORTATION MANAGEMENT PLANS
PMP-1 TO PMP-2	PAVEMENT MARKING PLANS
EC-1 TO EC-5	EROSION CONTROL PLANS
RF-1	REFORESTATION PLANS
SIGN-1 TO SIGN-4	SIGNING PLANS
UO-1 TO UO-2	UTILITIES BY OTHERS PLANS
X-0	CROSS SECTION SUMMARY SHEET
X-1 TO X-12	CROSS-SECTIONS
S-1 TO S-29	STRUCTURE PLANS

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

**GRADING AND SURFACING OR RESURFACING AND WIDENING:**  
 THE GRADE LINES SHOWN DENOTE THE FINISHED ELEVATION OF THE PROPOSED SURFACING AT GRADE POINTS SHOWN ON THE TYPICAL SECTIONS. WHERE NO GRADE LINES ARE SHOWN, THE PROFILES SHOWN DENOTE THE TOP ELEVATION OF THE EXISTING PAVEMENT ALONG THE CENTER LINE OF SURVEY ON WHICH THE PROPOSED RESURFACING WILL BE PLACED. GRADE LINES MAY BE ADJUSTED 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.

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

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

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

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

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

**UTILITIES:**  
 UTILITY OWNERS ON THIS PROJECT ARE EDGEcombe COUNTY WATER AND SEWER, EDGEcombe-MARTIN COUNTY EMC, CENTURY LINK.  
 ANY RELOCATION OF EXISTING UTILITIES WILL BE ACCOMPLISHED BY OTHERS.

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

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
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	
422.01	Bridge Approach Fills - Type I Standard Approach Fill
DIVISION 5 - SUBGRADE, BASES AND SHOULDERS	
560.01	Method of Shoulder Construction - High Side of Superelevated Curve - Method I
DIVISION 8 - INCIDENTALS	
840.00	Concrete Base Pad for Drainage Structures
840.25	Anchorage for Frames - Brick or Concrete or Precast
840.29	Frames and Narrow Slot Flat Grates
840.35	Traffic Bearing Grated Drop Inlet - for Cast iron Double Frame and Grates
840.46	Traffic Bearing Precast Drainage Structure
840.66	Drainage Structure Steps
846.01	Concrete Curb, Gutter and Curb & Gutter
846.04	Drop Inlet Installation in Shoulder Berm Gutter
852.01	Concrete Islands
862.01	Guardrail Placement
862.02	Guardrail Installation
862.03	Structure Anchor Units
862.04	Anchoring End of Guardrail - B-77 and B-83 Anchor Units
876.01	Riprap in Channels
876.02	Guide for Riprap at Pipe Outlets

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

# STATE OF NORTH CAROLINA, DIVISION OF HIGHWAYS

## CONVENTIONAL PLAN SHEET SYMBOLS

12/2/2016

### BOUNDARIES AND PROPERTY:

State Line	-----
County Line	-----
Township Line	-----
City Line	-----
Reservation Line	-----
Property Line	-----
Existing Iron Pin	○ EIP
Computed Property Corner	-----
Property Monument	□ ECM
Parcel/Sequence Number	①23
Existing Fence Line	-x-x-x-
Proposed Woven Wire Fence	○
Proposed Chain Link Fence	□
Proposed Barbed Wire Fence	◇
Existing Wetland Boundary	--- WLB ---
Proposed Wetland Boundary	--- WLB ---
Existing Endangered Animal Boundary	--- EAB ---
Existing Endangered Plant Boundary	--- EPB ---
Existing Historic Property Boundary	--- HPB ---
Known Contamination Area: Soil	☠-s-☠
Potential Contamination Area: Soil	☠-s-☠
Known Contamination Area: Water	☠-w-☠
Potential Contamination Area: Water	☠-w-☠
Contaminated Site: Known or Potential	☠ ?

### BUILDINGS AND OTHER CULTURE:

Gas Pump Vent or U/G Tank Cap	○
Sign	○ S
Well	○ W
Small Mine	✕
Foundation	□
Area Outline	□
Cemetery	□
Building	□
School	□
Church	□
Dam	▬

### HYDROLOGY:

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

### RAILROADS:

Standard Gauge	-----
RR Signal Milepost	○ CSX TRANSPORTATION MILEPOST 35
Switch	□ SWITCH
RR Abandoned	-----
RR Dismantled	-----

### RIGHT OF WAY & PROJECT CONTROL:

Secondary Horiz and Vert Control Point	◆
Primary Horiz Control Point	○
Primary Horiz and Vert Control Point	●
Exist Permanent Easement Pin and Cap	◇
New Permanent Easement Pin and Cap	◆
Vertical Benchmark	▲
Existing Right of Way Marker	△
Existing Right of Way Line	-----
New Right of Way Line	-----
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	--- C ---
Proposed Slope Stakes Fill	--- F ---
Proposed Curb Ramp	--- CR ---
Existing Metal Guardrail	-----
Proposed Guardrail	-----
Existing Cable Guiderail	-----
Proposed Cable Guiderail	-----
Equality Symbol	⊕
Pavement Removal	-----

### VEGETATION:

Single Tree	○
Single Shrub	○

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

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

### 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:

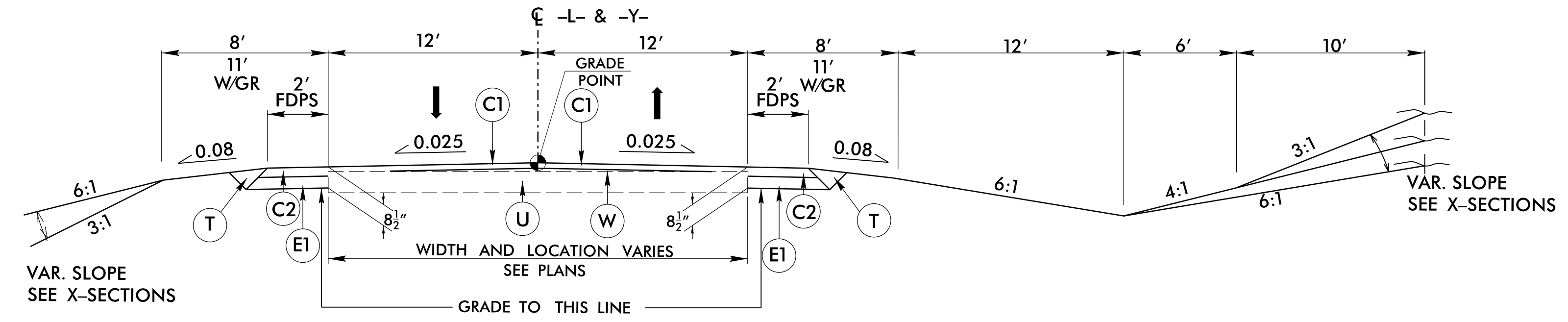
Sanitary Sewer Manhole	⊕
Sanitary Sewer Cleanout	⊕
U/G Sanitary Sewer Line	-----
Above Ground Sanitary Sewer	-----
SS Forced Main Line LOS B (S.U.E.*)	-----
SS Forced Main Line LOS C (S.U.E.*)	-----
SS Forced Main Line LOS D (S.U.E.*)	-----

### 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	AATUR
End of Information	E.O.I.

6/22/20

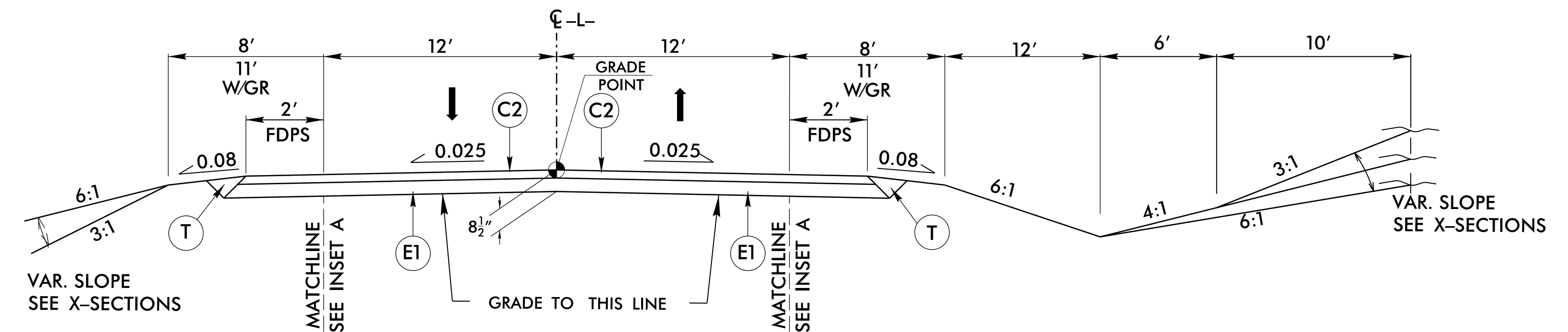
FINAL PAVEMENT SCHEDULE	
ALL PAVEMENT EDGE SLOPES ARE 1:1 UNLESS OTHERWISE NOTED.	
C1	PROP. APPROX. 1 1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 165.0 LBS. PER SQ. YD.
C2	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 165.0 LBS. PER SQ. YD. IN EACH OF TWO LAYERS
C3	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD. PER 1" DEPTH TO BE PLACED IN LAYERS NOT 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. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH TO BE PLACED IN LAYERS NOT LESS THAN 3" IN DEPTH OR GREATER THAN 5 1/2" IN DEPTH.
R1	SHOULDER BERM GUTTER.
T	EARTH MATERIAL.
U	EXISTING PAVEMENT.
V	INCIDENTAL MILLING.
W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE DETAIL SHOWING METHOD OF WEDGING).



ROADWAY TYPICAL SECTION NO. 1

ROADWAY TYPICAL SECTION NO. 1

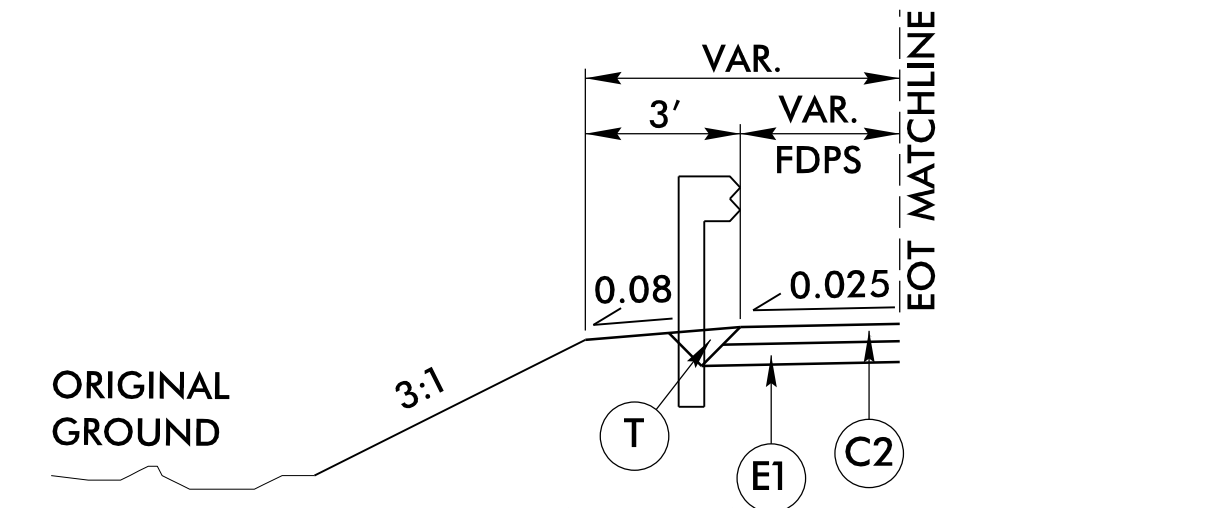
- L- STA. 10+25.00 TO STA. 13+33.00
- L- STA. 19+70.00 TO STA. 21+40.00
- Y- STA. 10+12.00 TO STA. 10+91.18



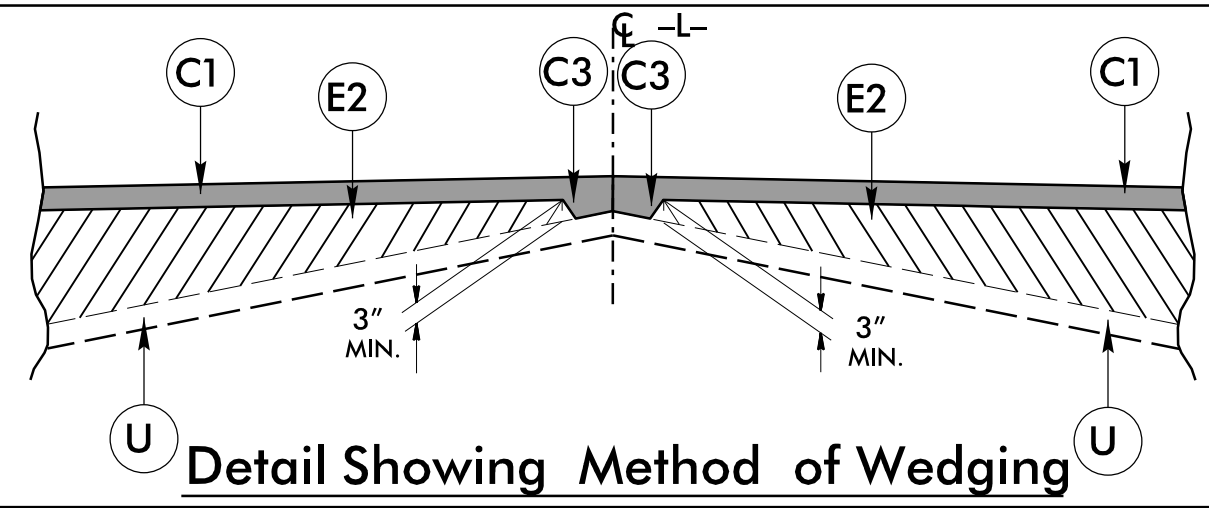
ROADWAY TYPICAL SECTION NO. 2

ROADWAY TYPICAL SECTION NO. 2

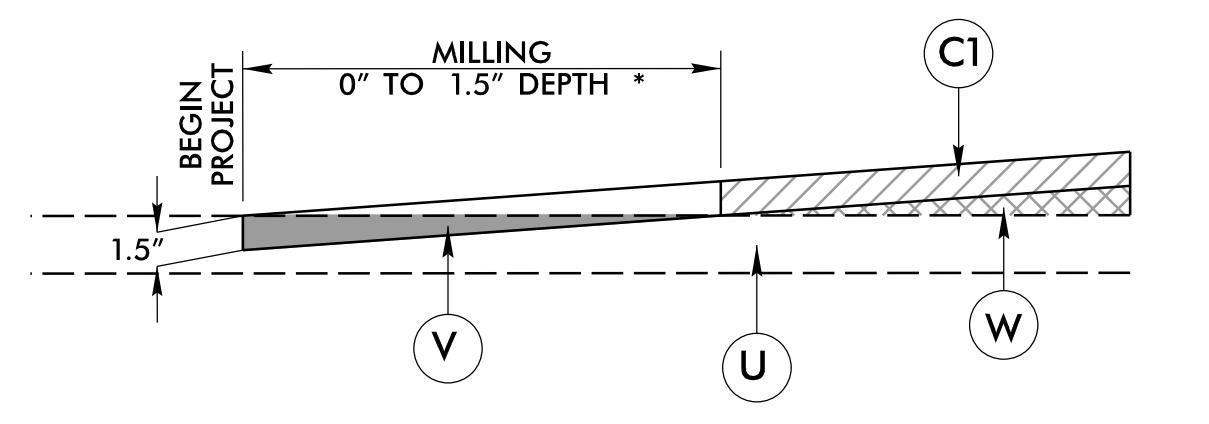
- L- STA. 13+33.00 TO STA. 15+67.50 (BEGIN BRIDGE)
- L- STA. 17+82.50 (END BRIDGE) TO STA. 19+70.00



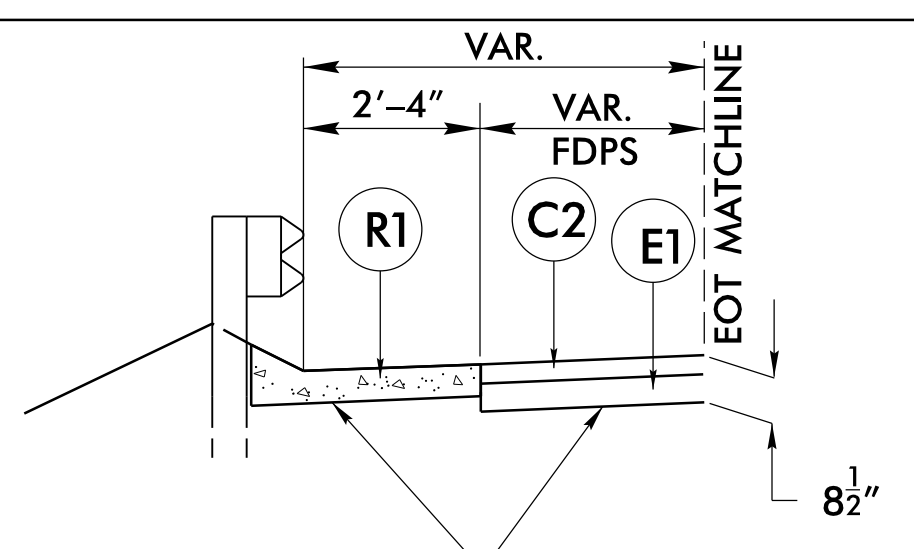
INSET A  
(USE WITH TYPICAL SECTIONS NO. 1 & 2)  
USE IN GUARDRAIL LOCATIONS  
(SEE GUARDRAIL SUMMARY 3B-1 FOR LOCATIONS)



PROFILE KEY-IN DETAIL

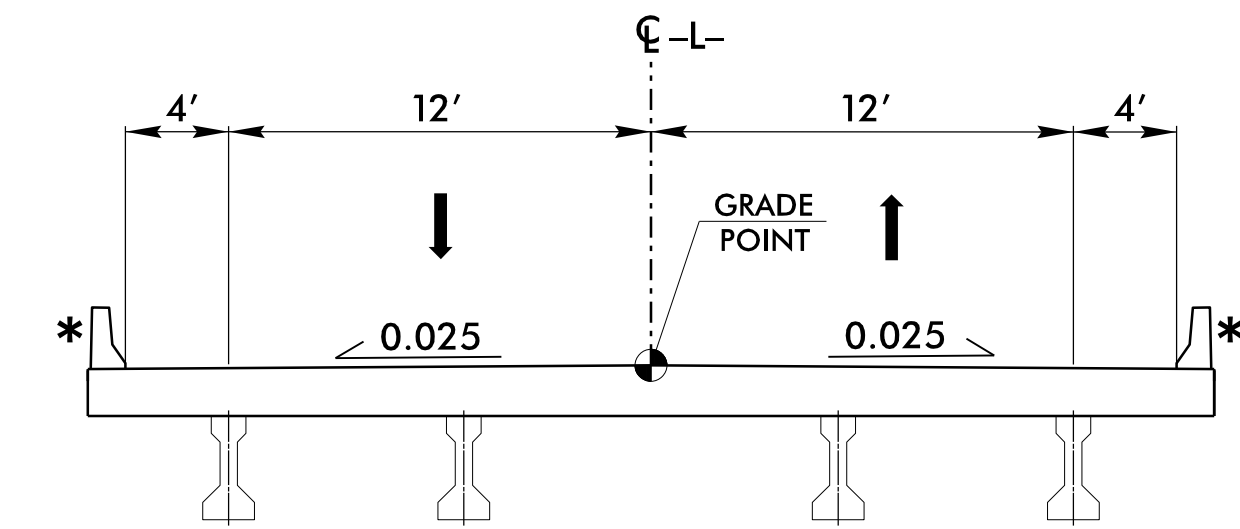


NOTE: MIRROR FOR END PROJECT \* MILL DEPTH AS SHOWN ON PLANS OR AS DIRECTED BY THE ENGINEER



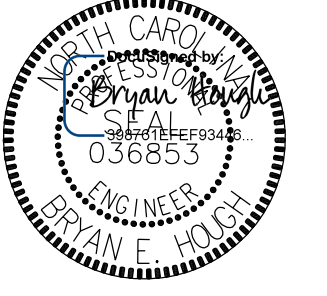


DETAIL SHOWING SHOULDER BERM GUTTER (SBG) ON TOP OF SUBGRADE  
(USE WITH TYPICAL SECTION NO. 2)

- L- STA. 15+11.00 TO -L- STA. 15+35.76 (BEG. APPR. SLAB) LT
- L- STA. 15+23.00 TO -L- STA. 15+51.54 (BEG. APPR. SLAB) RT
- L- STA. 17+98.46 (END APPR. SLAB) TO -L- STA. 18+18.00 LT
- L- STA. 18+14.25 (END APPR. SLAB) TO -L- STA. 18+27.00 RT



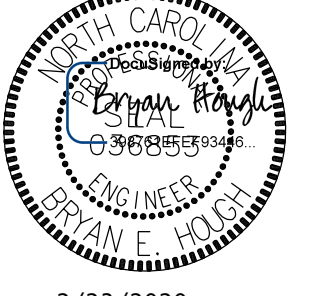
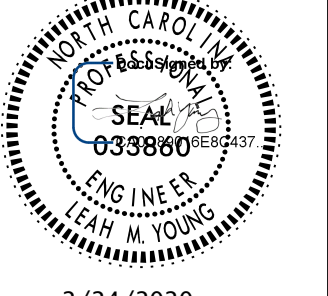
BRIDGE TYPICAL SECTION

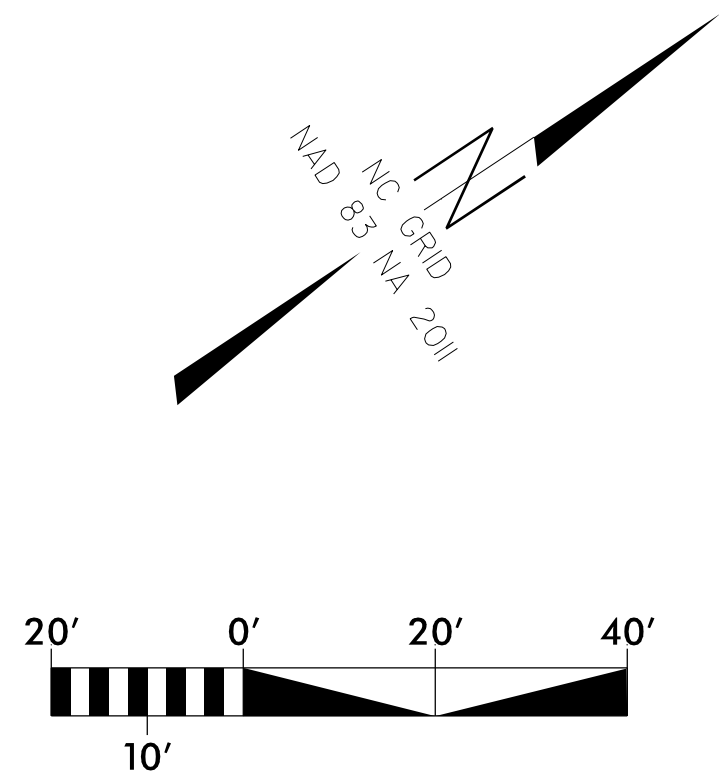
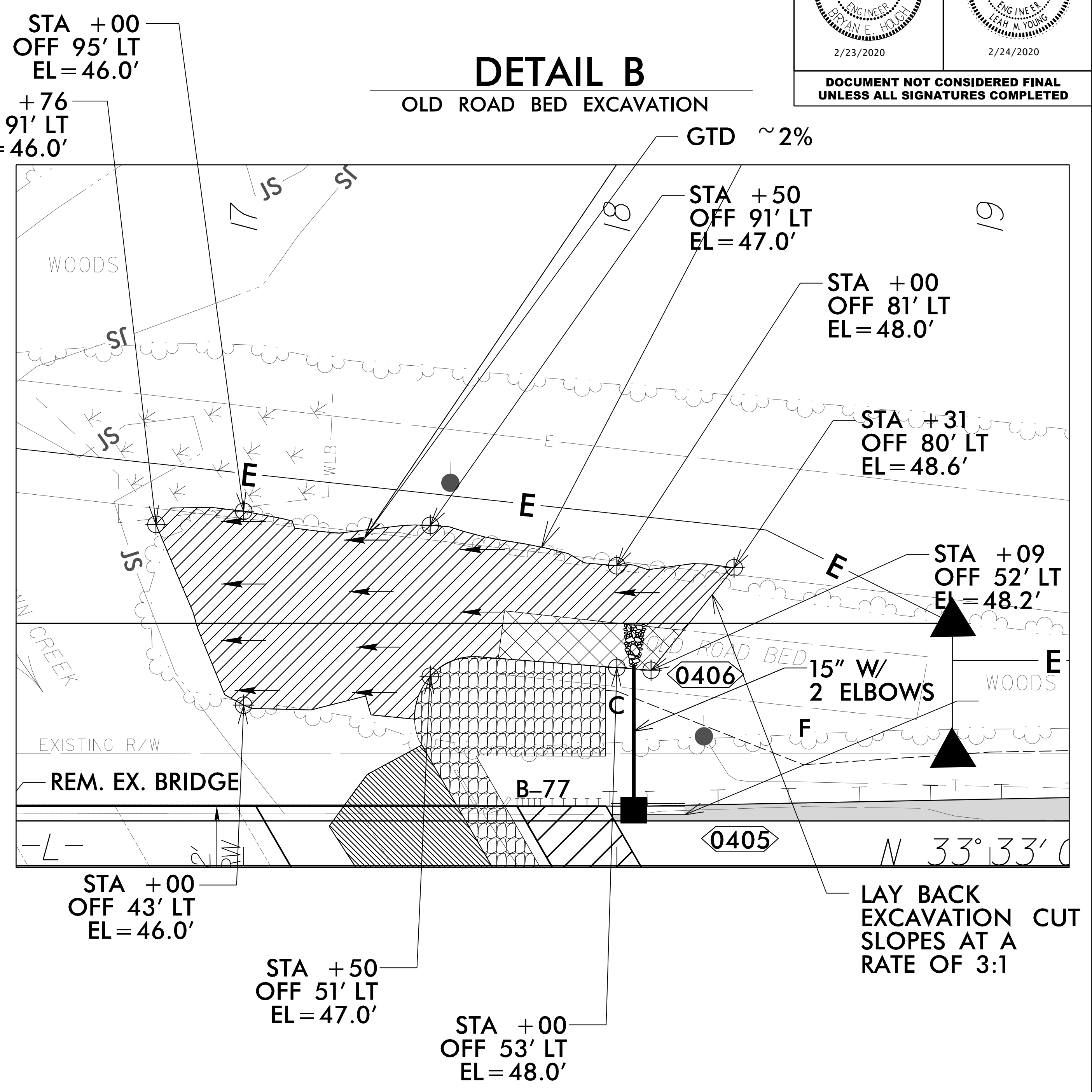
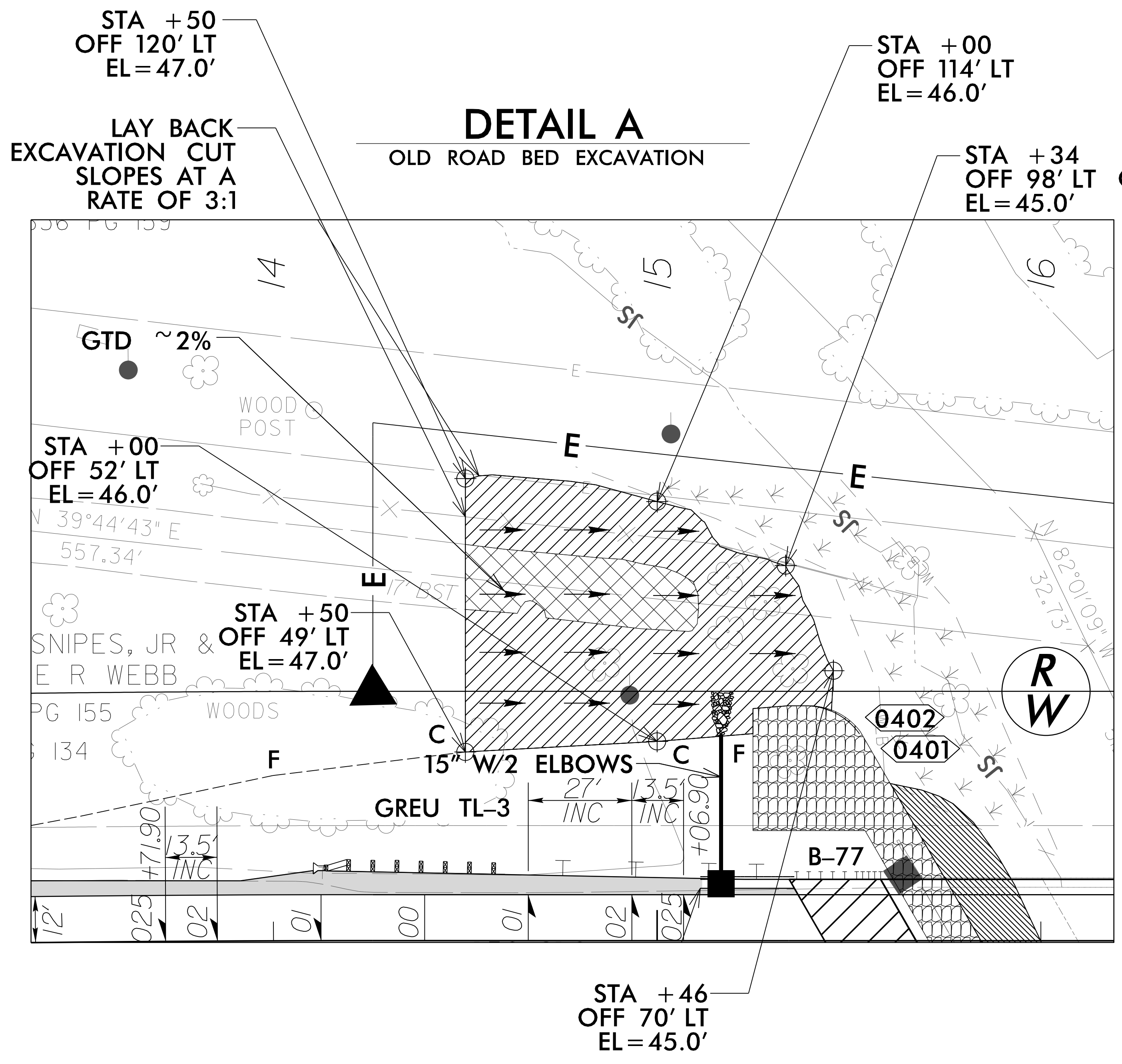
- L- BRIDGE TYPICAL SECTION
- L- STA. 15+67.50 TO STA. 17+82.50
- \* SEE STRUCTURE PLANS FOR RAIL TYPE AND DIMENSIONS

PROJECT REFERENCE NO. B-5655	SHEET NO. 2A-1
ROADWAY DESIGN ENGINEER 	PAVEMENT DESIGN ENGINEER 
2/21/2020	2/24/2020
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
 KCI Engineers • Planners • Scientists • Construction Managers 4505 Falls of Neuse Road, Suite 400 Raleigh, NC 27609 Phone (919) 783-9214 • Fax (919) 783-9266	

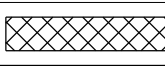

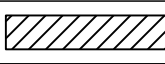

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6/2/2020

PROJECT REFERENCE NO. B-5655	SHEET NO. 2B-1
ROADWAY DESIGN ENGINEER 	HYDRAULICS ENGINEER 
2/23/2020	2/24/2020
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



LEGEND:

	PAVEMENT REMOVAL
	EXCAVATION (STR. PAY ITEM)
	EXCAVATION (OLD ROAD BED)
	BRIDGE APPROACH SLAB

23 FEB 2020 10:37 AM C:\Users\BETTINGER\OneDrive\Documents\B-5655\Roadway\Proj\B-5655\_Rdy\_2B\_Details.dgn

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

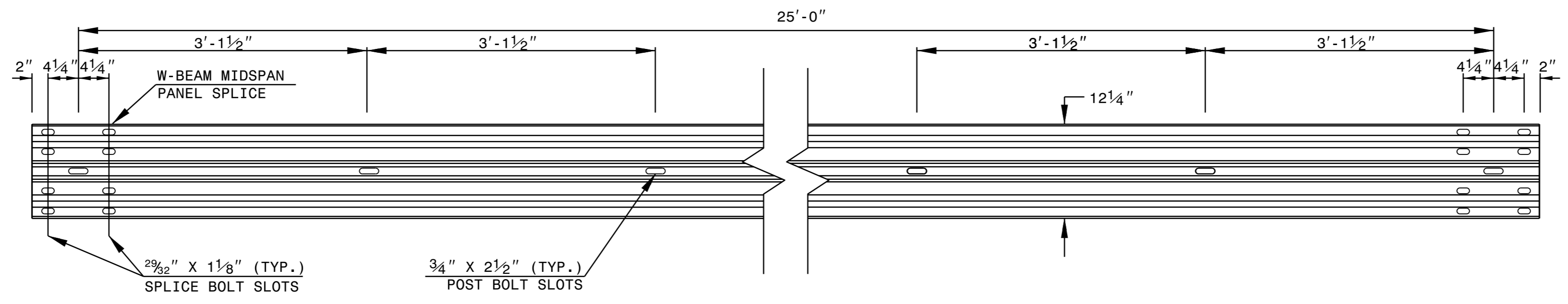
ROADWAY DETAIL DRAWING FOR  
**GUARDRAIL INSTALLATION**

SHEET 6 OF 8  
**862D02**

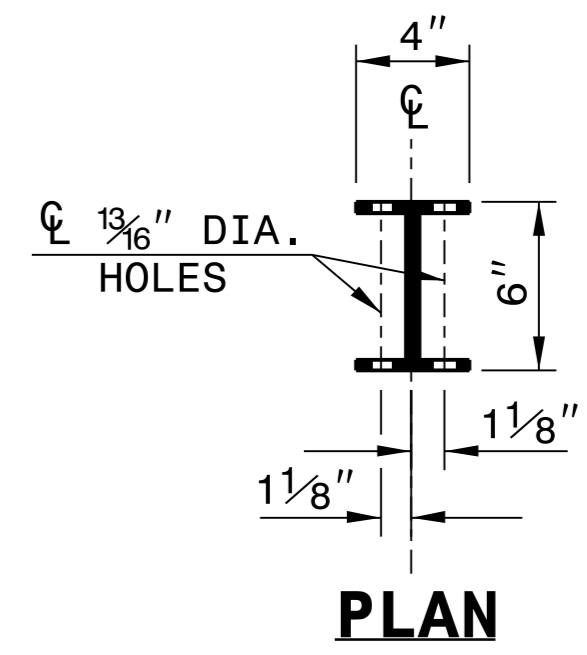
STATE OF NORTH CAROLINA  
DEPT. OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
RALEIGH, N.C.

ROADWAY DETAIL DRAWING FOR  
**GUARDRAIL INSTALLATION**

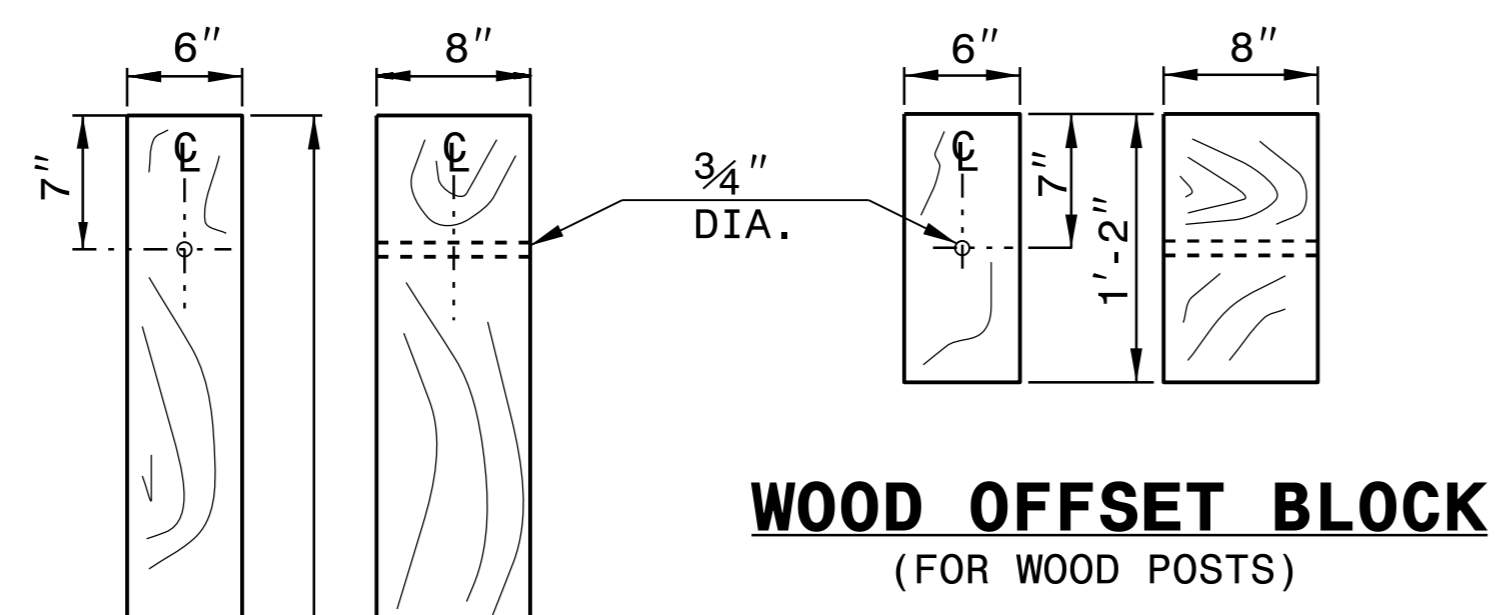
SHEET 6 OF 8  
**862D02**



**STANDARD W-BEAM GUARDRAIL**



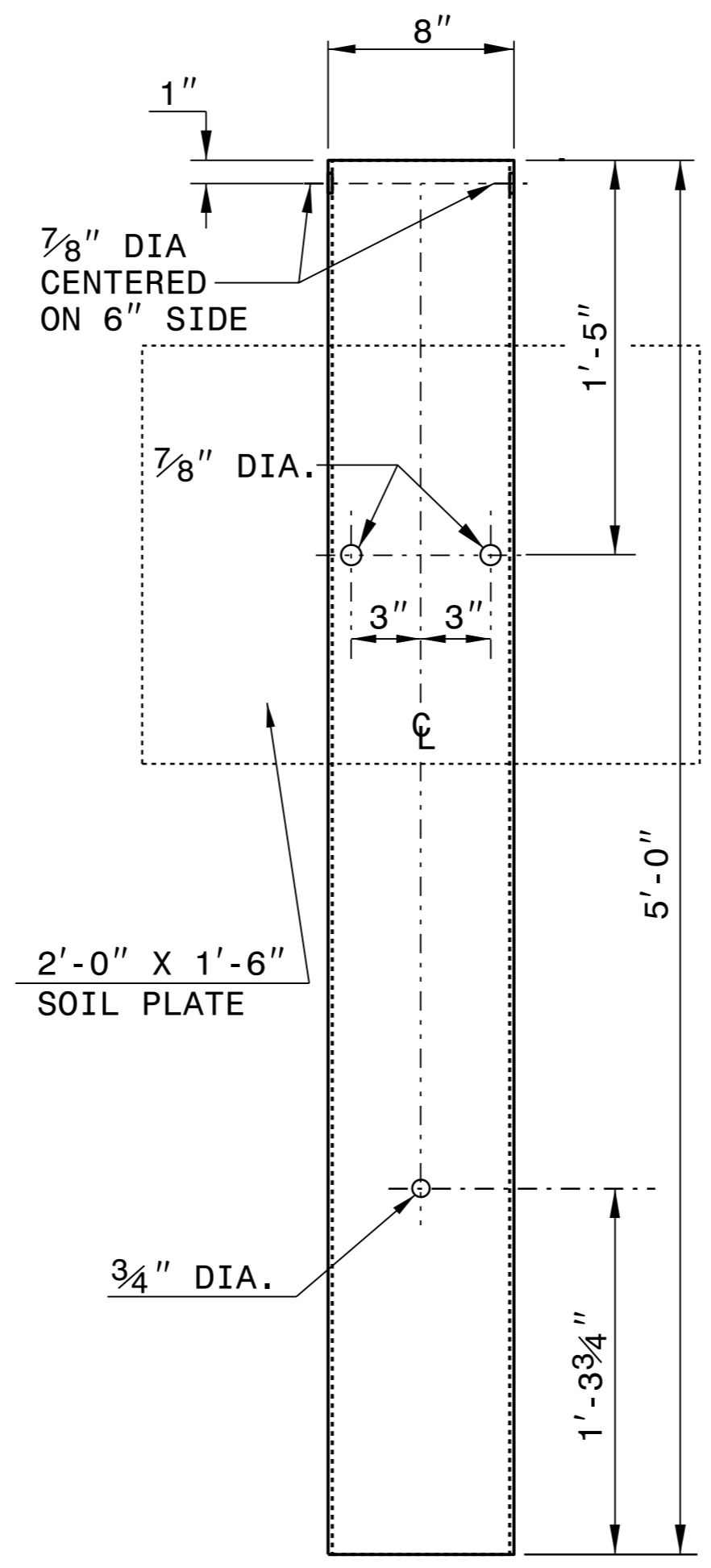
**PLAN**



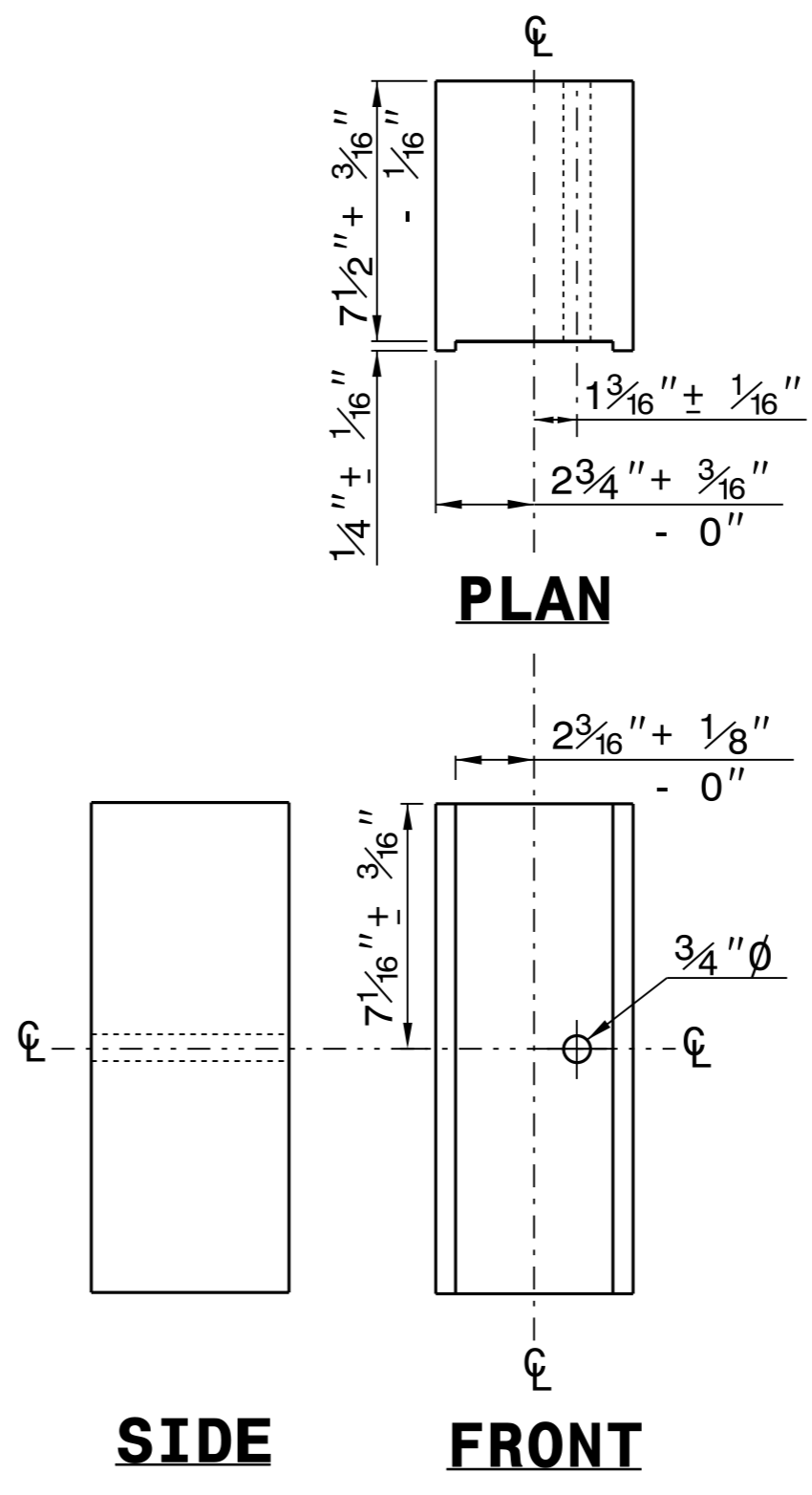
**WOOD OFFSET BLOCK  
(FOR WOOD POSTS)**

**STANDARD  
LINE POST**

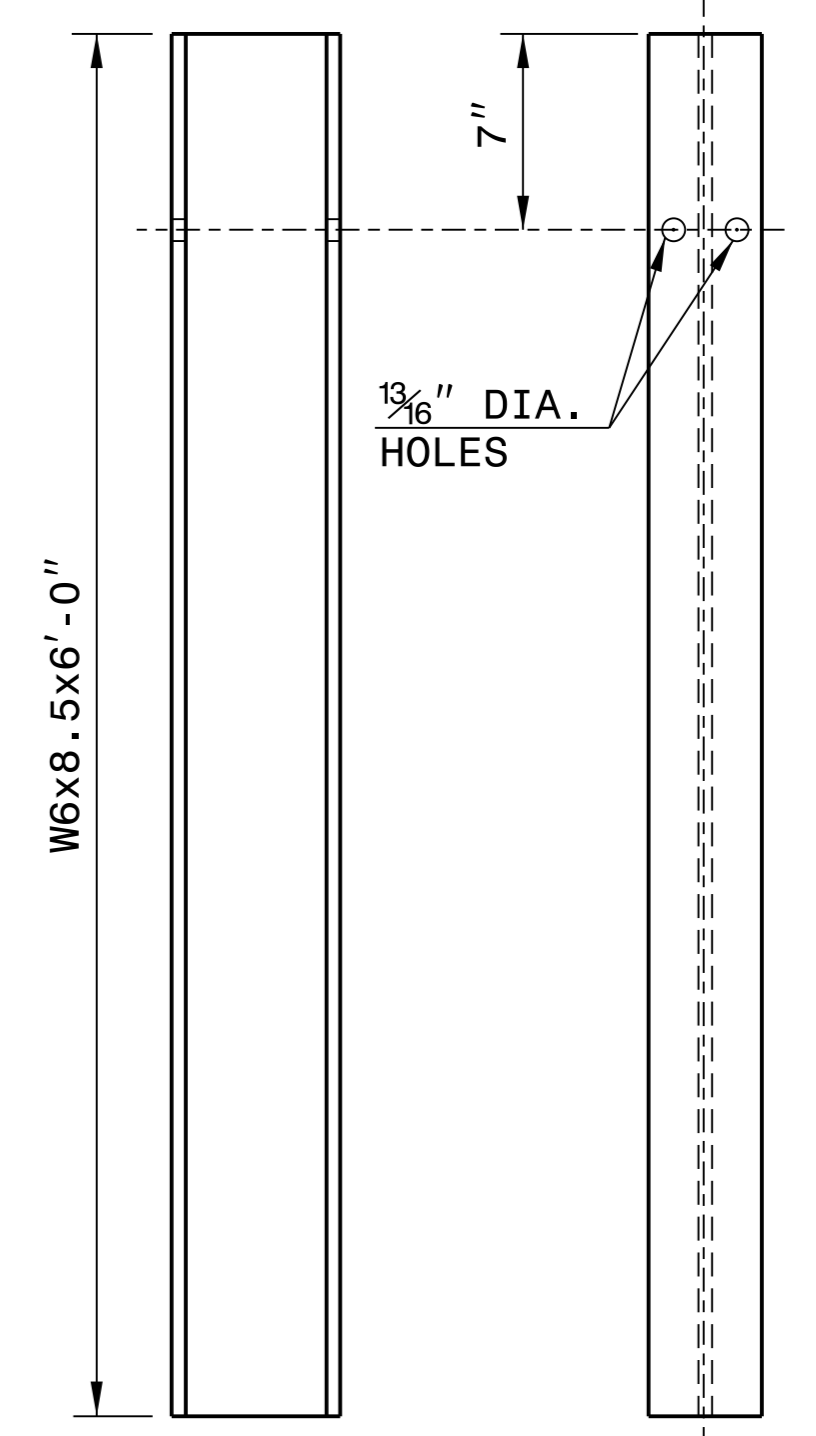
**SHORT WOOD  
BREAKAWAY POST**



**STEEL TUBE  
TS 6"x8"x0.1875"**

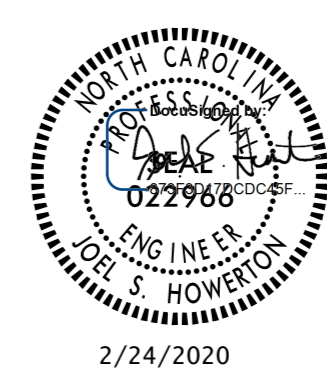


**ROUTED  
OFFSET BLOCK**



**"W6" STEEL POST**

**SYSTEM PARTS**



2/24/2020

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

**SEE TITLE BLOCK**

ORIGINAL BY: J. HOWERTON	DATE: 3-7-2018
MODIFIED BY:	DATE:
CHECKED BY:	DATE:
FILE SPEC.:	

## DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA

### SUMMARY OF EARTHWORK IN CUBIC YARDS

STATION	STATION	UNCL. EXCAV.	UNDERCUT EXCAV.	EMBANK. +%	BORROW	WASTE
-L- 10+25.00	15+67.50 (BEG. BR.)	804		1,278	474	
-Y- 10+12.00	10+91.18	7				7
SUBTOTAL:		811		1,278	474	7
-L- 17+82.50 (END BR.)	21+40.00	765		610		155
SUBTOTAL:		765		610		155
TOTALS:		1,576		1,888	474	162
WASTE IN LEIU OF BORROW					-162	-162
PROJECT TOTAL:		1,576		1,888	312	
EST 5% TO REPLACE TOP SOIL ON BORROW PIT					16	
GRAND TOTAL:		1,708			328	
SAY:		1,750			350	

PER GEOTECH RECOMMENDATION: EST. SELECT GRANULAR MATERIAL: 200 CY  
 PER GEOTECH RECOMMENDATION: EST. UNDERCUT = 200 CY

NOTE:  
 APPROXIMATE QUANTITIES ONLY. UNCLASSIFIED EXCAVATION, BORROW, EXCAVATION, FINE GRADING, CLEARING AND GRUBBING, AND REMOVAL OF EXISTING ASPHALT PAVEMENT WILL BE PAID FOR AT THE LUMP SUM PRICE FOR "GRADING".

THESE EARTHWORK QUANTITIES ARE BASED IN PART ON SUBSURFACE DATA PROVIDED BY THE GEOTECHNICAL ENGINEERING UNIT.

### SHOULDER BERM GUTTER

SURVEY LINE	STATION	STATION	LOCATION LT/RT/CL	LF
-L-	15+11.00	15+35.76	LT	24.76
-L-	15+23.00	15+51.54	RT	28.54
-L-	17+98.46	18+18.00	LT	19.54
-L-	18+14.25	18+27.00	RT	12.75
TOTAL:				85.59
SAY:				95

### REMOVAL OF EXISTING ASPHALT PAVEMENT

SURVEY LINE	STATION	STATION	LOCATION LT/RT/CL	YD <sup>2</sup>
-L-	13+33.00	15+68.00	CL	622.46
-L-	17+83.00	19+70.00	CL	488.00
-L-	10+25.00	10+92.00	LT	16.16
-L-	14+50.00	15+10.00	LT	108.89
-L-	17+68.00	18+18.00	LT	81.14
TOTAL:				1,316.65
SAY:				1,450

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

### GUARDRAIL SUMMARY

SURVEY LINE	BEG. STA.	END STA.	LOCATION	LENGTH		WARRANT POINT	"N" DIST. FROM E.O.L.	TOTAL SHOUL. WIDTH	FLARE LENGTH		ANCHORS								TEMP. CRASH CUSHIONS			SINGLE FACED GUARDRAIL	REMOVE EXISTING GUARDRAIL	REMOVE AND STOCKPILE EXISTING GUARDRAIL	REMARKS											
				STRAIGHT	SHOP CURVED				DOUBLE FACED	APPROACH END	TRAILING END	APPROACH END	TRAILING END	XI MOD	B-77	GREU 350	M-350	TEMP. W-BEAM RETROFIT	TYPE III	VI MOD	GREU TL-3					AT-1	EA	G	NG							
-L-	14+10.42	15+58.41 (BR.)	LEFT	147.875'		15+58.41 (BR.)	8.00'	11.00'		62.5'		1.25'		1																						
-L-	12+66.22	15+76.75 (BR.)	RIGHT	310.375'		15+76.75 (BR.)	8.00'	11.00'	200'		4.0'			1																						
-L-	17+91.74 (BR.)	19+39.91	RIGHT	147.875'		17+91.74 (BR.)	8.00'	11.00'		62.5'		1.25'		1																						
-L-	17+73.26 (BR.)	20+57.60	LEFT	285.375'		17+73.26 (BR.)	8.00'	11.00'	200'		4.0'			1																						
SUBTOTAL				891.50'																																
LESS ANCHOR DEDUCTIONS:																																				
GREU TL-3				4 @ 50.00' =	-200.00'																															
B-77				4 @ 22.875' =	-91.50'																															
ANCHOR DEDUCTION TOTAL:				-291.50'																																
PROJECT TOTAL				600.00'																																
SAY				600.00'																																
ADDITIONAL GUARDRAIL POST =				5 EA																																

4/04/06  
 27 FEB 2020 10:35  
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12-3700BHZ

COMPUTED BY: EAS DATE: 2/24/2020  
CHECKED BY: LMY DATE: 2/24/2020

PROJECT NO. SHEET NO.  
B-5655 3D-1

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS


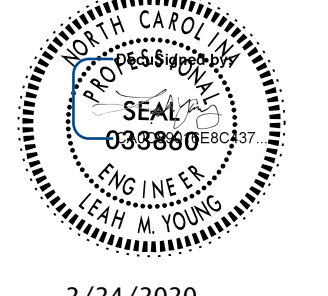

Note: Invert Elevations indicated are for Bid Purposes only and shall not be used for project construction stakeout.  
See "Standard Specifications For Roads and Structures, Section 300-5".

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

Table with columns for LINE & STATION, OFFSET, STRUCTURE NUMBER, TOP ELEVATION, INVERT ELEVATION, MINIMUM REQUIRED SLOPE, Drainage Pipe (RCP, CSP, CAAP, HDPE, or PVC), ENDWALLS, REINFORCED ENDWALLS, MASONRY, QUANTITIES FOR DRAINAGE STRUCTURES, FRAME, GRATES, AND HOOD, CONCRETE TRANSITIONAL SECTION, and REMARKS. Includes summary rows for SHEET TOTALS and PROJECT TOTALS.

ABBREVIATIONS  
C.A.A. CORRUGATED ALUMINIUM ALLOY  
C.B. CATCH BASIN  
C.S. CORRUGATED STEEL  
D.I. DROP INLET  
G.D.I. GRATED DROP INLET  
H.D.P.E. HIGH DENSITY POLYETHYLENE  
J.B. JUNCTION BOX  
M.H. MANHOLE  
N.S. NARROW SLOT  
P.V.C. POLYVINYL CHLORIDE  
R.C. REINFORCED CONCRETE  
T.B.D.I. TRAFFIC BEARING DROP INLET  
T.B.J.B. TRAFFIC BEARING JUNCTION BOX  
W.S. WIDE SLOT

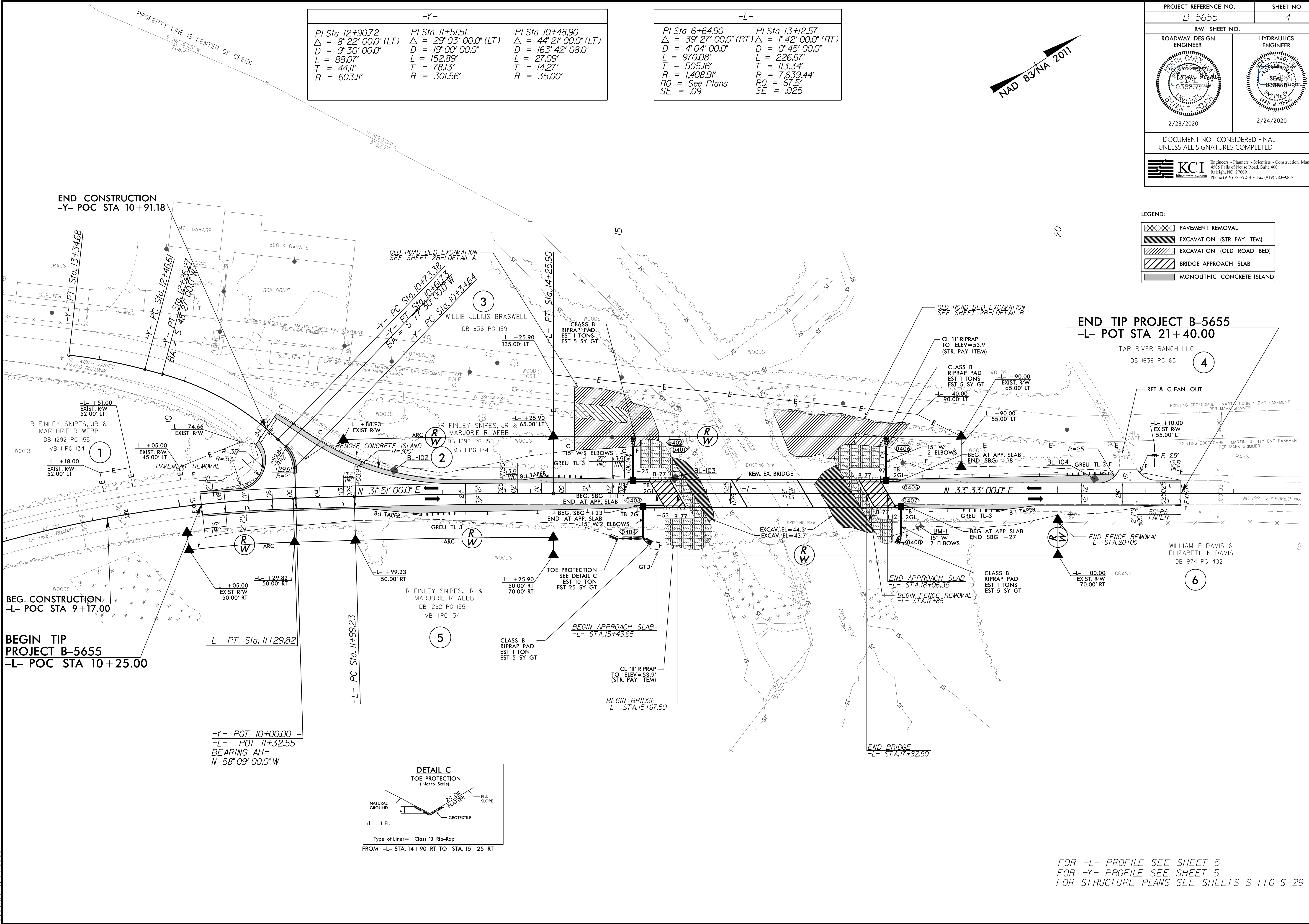
8/17/199

PROJECT REFERENCE NO. <b>B-5655</b>		SHEET NO. <b>4</b>	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER  2/23/2020		HYDRAULICS ENGINEER  2/24/2020	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			
 KCI Engineers • Planners • Scientists • Construction Managers 4505 Falls of Neuse Road, Suite 400 Raleigh, NC 27609 Phone (919) 783-9214 • Fax (919) 783-9266			




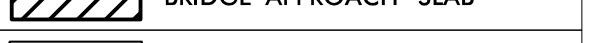
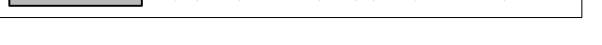


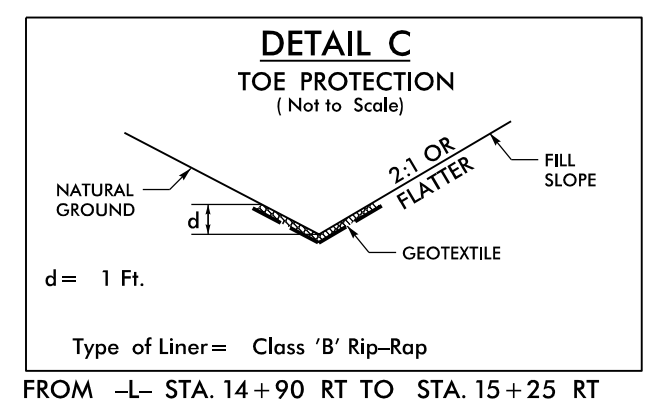
-Y-		
PI Sta 12+90.72	PI Sta 11+51.51	PI Sta 10+48.90
$\Delta = 8^{\circ} 22' 00.0''$ (LT)	$\Delta = 29^{\circ} 03' 00.0''$ (LT)	$\Delta = 44^{\circ} 21' 00.0''$ (LT)
D = 9' 30' 00.0"	D = 19' 00' 00.0"	D = 163' 42' 08.0"
L = 88.07'	L = 152.89'	L = 27.09'
T = 44.11'	T = 78.13'	T = 14.27'
R = 603.11'	R = 301.56'	R = 35.00'

-L-	
PI Sta 6+64.90	PI Sta 13+12.57
$\Delta = 39^{\circ} 27' 00.0''$ (RT)	$\Delta = 1^{\circ} 42' 00.0''$ (RT)
D = 4' 04' 00.0"	D = 0' 45' 00.0"
L = 970.08'	L = 226.67'
T = 505.16'	T = 113.34'
R = 1,408.91'	R = 7,639.44'
RO = See Plans	RO = 67.5'
SE = .09	SE = .025



LEGEND:

-  PAVEMENT REMOVAL
-  EXCAVATION (STR. PAY ITEM)
-  EXCAVATION (OLD ROAD BED)
-  BRIDGE APPROACH SLAB
-  MONOLITHIC CONCRETE ISLAND



FOR -L- PROFILE SEE SHEET 5  
FOR -Y- PROFILE SEE SHEET 5  
FOR STRUCTURE PLANS SEE SHEETS S-1 TO S-29

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 20180104\_5655.dwg

5/28/20

BM #1 - RR SPIKE IN BASE OF 18" MAPLE  
-L- STA. 18+42.41, 37.58' RT  
EL. = 54.23'

BEGIN GRADE -L- STA 10+25.00  
ELEV. 53.96'

PI = 12+50.00  
EL = 54.88'  
VC = 120'  
K = 209  
DS = 60 mph

BEGIN APPR. SLAB -L- STA 15+43.65

BEGIN BRIDGE -L- STA 15+67.50

ID STATION  
-L- STA 16+75.00

PI = 16+70.00  
EL = 59.00'  
VC = 330'  
K = 184  
DS = 60 mph

END BRIDGE -L- STA 17+82.50

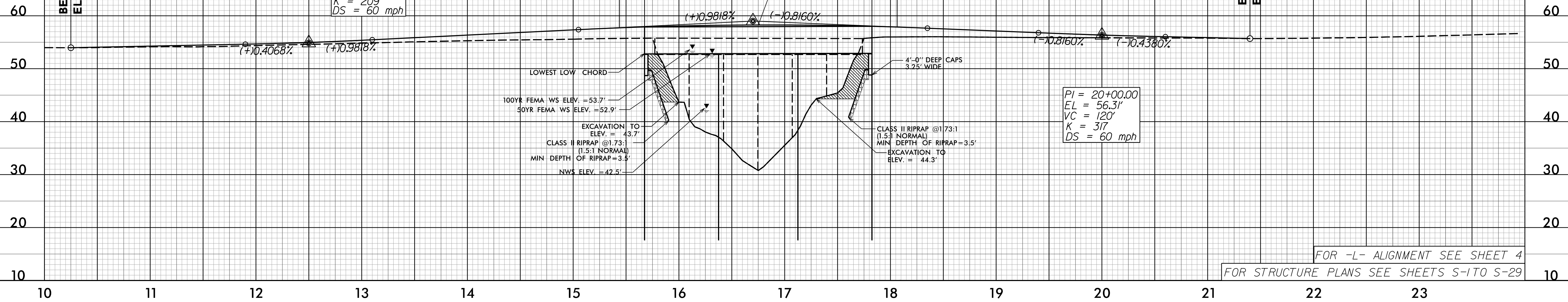
END APPR. SLAB -L- STA 18+06.35

END GRADE -L- STA 21+40.00  
ELEV. 55.69'

BRIDGE HYDRAULIC DATA

DESIGN DISCHARGE (FEMA) = 7015 CFS  
DESIGN FREQUENCY (FEMA) = 50 YRS  
DESIGN HW ELEV.(FEMA) = 52.9 FT  
BASE DISCHARGE (FEMA) = 8372 CFS  
BASE FREQUENCY (FEMA) = 100 YRS  
BASE HW ELEV.(FEMA) = 53.7 FT  
OT DISCHARGE (FEMA) = 5768 CFS  
OT FREQUENCY (FEMA) = 25 YRS  
OT ELEVATION = 51.9 FT

DATE OF SURVEY = 12/13/2018  
W.S.ELEVATION AT DATE OF SURVEY = 42.5 FT  
NORMAL WSEL = 42.5 FT



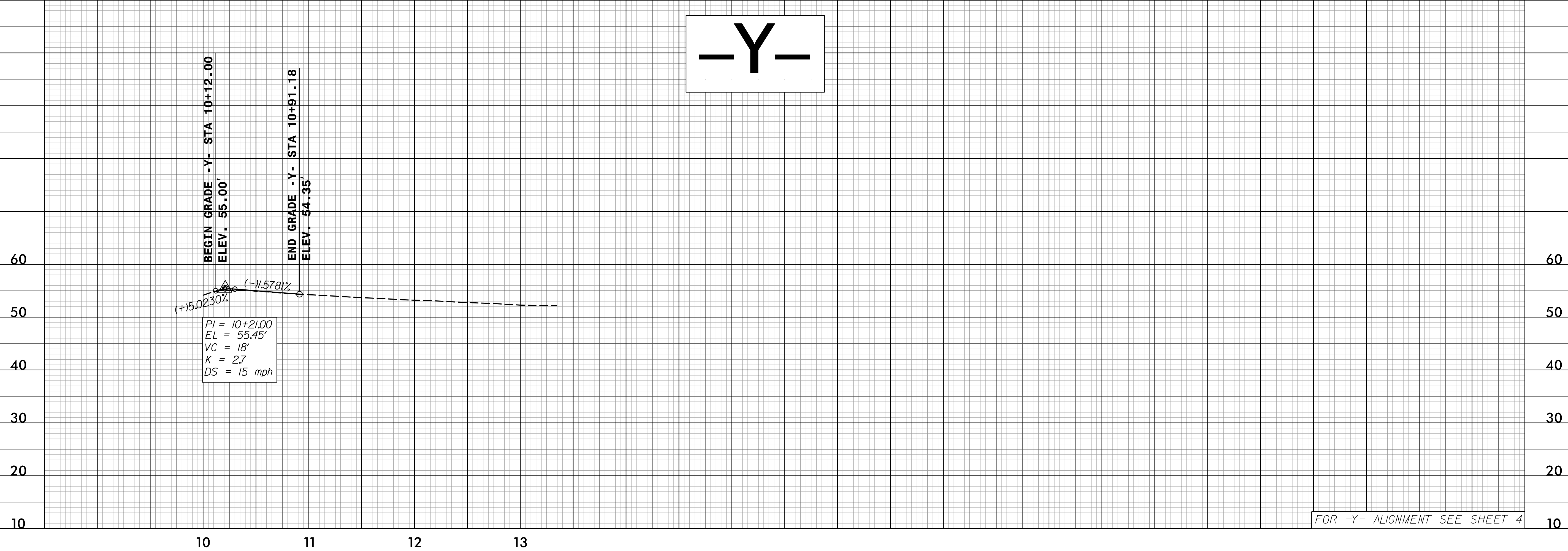
FOR -L- ALIGNMENT SEE SHEET 4  
FOR STRUCTURE PLANS SEE SHEETS S-1 TO S-29

-Y-

BEGIN GRADE -Y- STA 10+12.00  
ELEV. 55.00'

END GRADE -Y- STA 10+91.18  
ELEV. 54.35'

PI = 10+21.00  
EL = 55.45'  
VC = 18'  
K = 2.7  
DS = 15 mph



FOR -Y- ALIGNMENT SEE SHEET 4

PROJECT REFERENCE NO.	B-5655	SHEET NO.	5
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
2/23/2020		2/24/2020	

DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED

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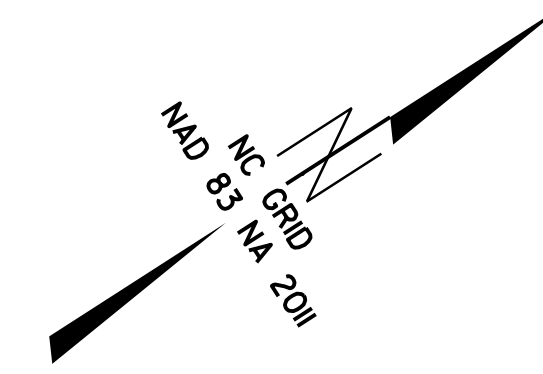
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-5655	RW01	7

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

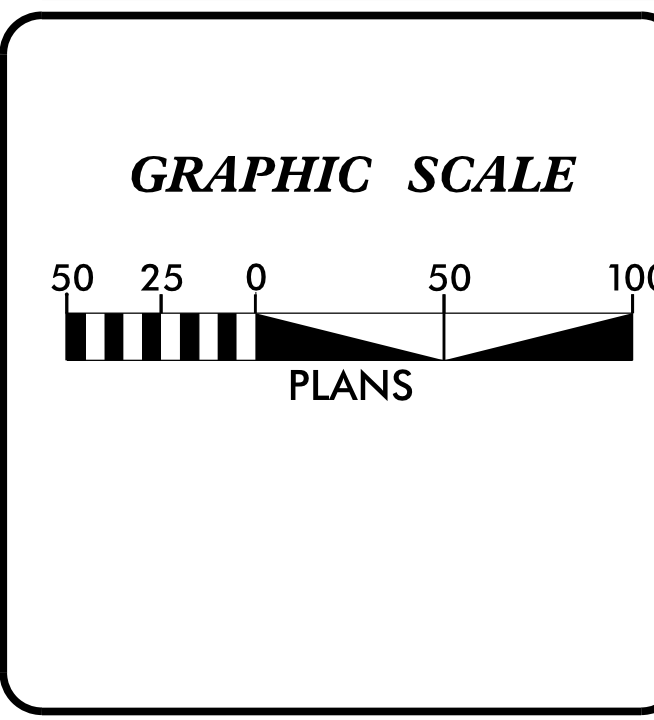
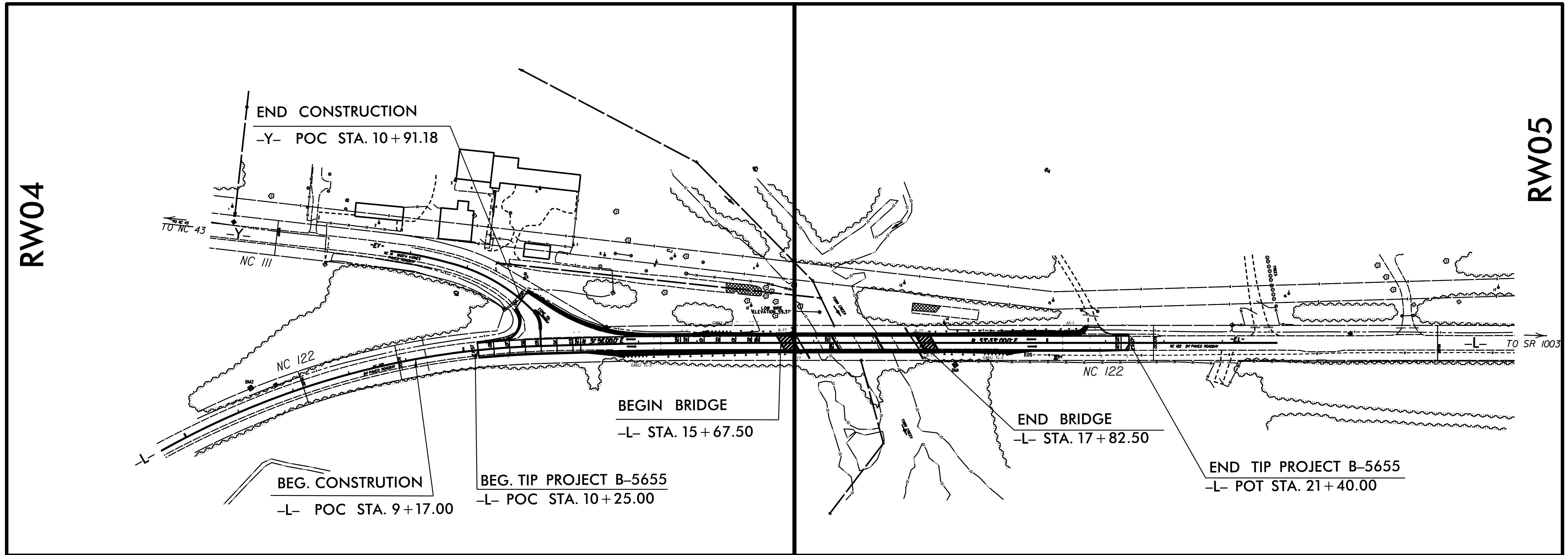
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SURVEY CONTROL, EXISTING CENTERLINES,  
RIGHT OF WAY, EASEMENTS AND PROPERTY TIES

**EDGECOMBE COUNTY**



**TIP PROJECT: B-5655**



**DATUM DESCRIPTION**

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCGS FOR MONUMENT "B-5655-2" WITH NAD 83/NSRS 2011 STATE PLANE GRID COORDINATES OF NORTHING: 755670.633(ft) EASTING: 2404462.383(ft) ELEVATION: 52.971(ft)

THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99992423

THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "B-5655-2" TO -L- STATION 10+00.00 IS N 10°55'53" E 822.398(ft)

ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES VERTICAL DATUM USED IS NAVD 88 / GEOID G12NC

Prepared in the Office of:

**HAWKEYE GEOMATICS, PC**  
135.5 MAIN STREET  
OXFORD, NC 27565

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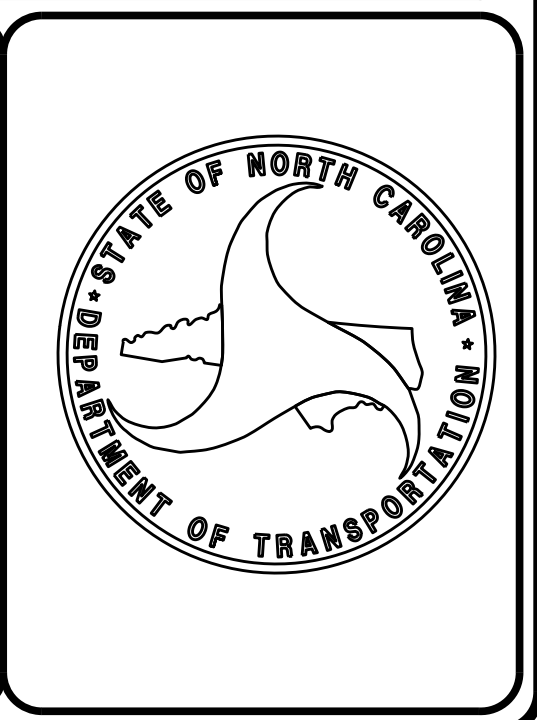
2018 STANDARD SPECIFICATIONS

<b>RIGHT OF WAY DATE:</b>	<b>LETTING DATE:</b>

PROFESSIONAL LAND SURVEYOR

DocuSigned by:  
*Aaron Perkinson* 1/23/2020

AA28A78ED5814F0  
SIGNATURE: \_\_\_\_\_ Date: \_\_\_\_\_

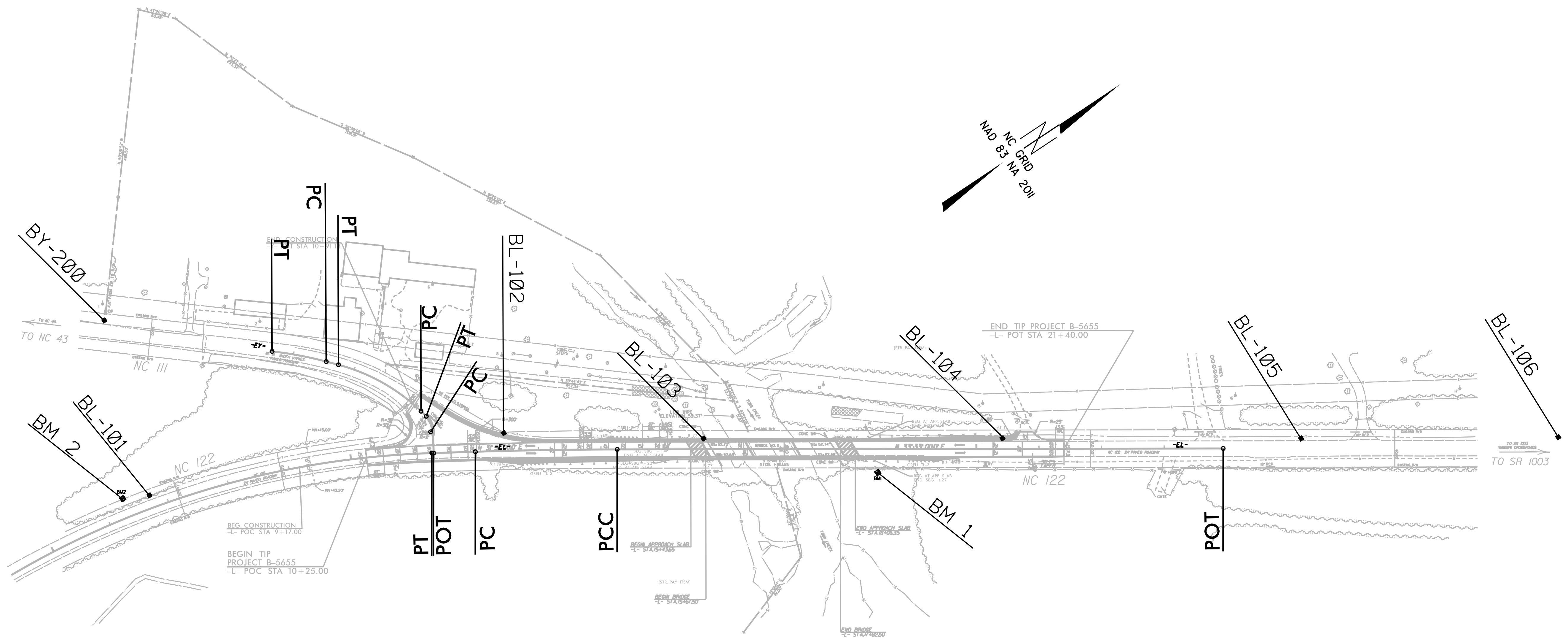


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AJ.Perkinson AT AU-HSPC

PROJECT REFERENCE NO.	SHEET NO.
B-5655	RW02C-1
Location and Surveys	
HAWKEYE GEOMATICS, PC 135.5 MAIN STREET OXFORD, NC 27565	

# SURVEY CONTROL SHEET

W/ EXISTING CENTERLINE ALIGNMENTS PRIOR TO CONSTRUCTION



- 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.

23-JAN-2020 10:32  
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 AJ\_Perkinson AT AT HSPC

PROJECT REFERENCE NO.	SHEET NO.
B-5655	RW02C-2
<b>Location and Surveys</b>	
HAWKEYE GEOMATICS, PC 135.5 MAIN STREET OXFORD, NC 27565	

# SURVEY CONTROL SHEET

W/ EXISTING CENTERLINE ALIGNMENTS PRIOR TO CONSTRUCTION

REVISIONS

I5-JAN-2020\_08:54  
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 AJ Perkinson AT AJ-HSPC

BL POINT	DESC.	NORTH	EAST	ELEVATION
GPS1	GPS-1	754752.6280	2404588.4270	52.64
GPS2	GPS-2	755670.6330	2404462.3830	52.97
BL101	BL-101	756178.1662	2404487.9135	53.90
BL102	BL-102	756704.6741	2404718.5648	54.11
BL103	BL-103	756965.6034	2404902.7946	56.17
BL104	BL-104	757363.5753	2405167.1297	55.36
BL105	BL-105	757760.7399	2405431.6685	57.40
BL106	BL-106	758104.0404	2405657.6808	68.24

BY POINT	DESC.	NORTH	EAST	ELEVATION
BY200	BY-200	756272.8779	2404215.2809	51.11
BL102	BL-102	756704.6741	2404718.5648	54.11

.....  
 BM1 ELEVATION = 54.23  
 N 757167 E 2405102  
 RR SPIKE IN BASE OF 18" MAPLE  
 .....

.....  
 BM2 ELEVATION = 55.03  
 N 756140 E 2404468  
 RR SPIKE IN BASE OF 18" PINE  
 .....

EL									
POINT	N	E	BEARING	DIST	DELTA	D	L	T	R
POT	755515.062	2404501.457							
LINE			N 07°36'00.0" W	147.80					
PC	755661.563	2404481.910							
CURVE			N 12°07'30.0" E	951.03	39°27'00.0"(RT)	04°04'00.0"	970.08	505.16	1408.91
PT	756591.380	2404681.670							
LINE			N 31°51'00.0" E	69.41					
PC	756650.338	2404718.297							
CURVE			N 32°42'00.0" E	226.66	01°42'00.0"(RT)	00°45'00.0"	226.67	113.34	7639.44
PT	756841.074	2404840.747							
LINE			N 33°33'00.0" E	1394.94					
POT	758003.620	2405611.679							

EY									
POINT	N	E	BEARING	DIST	DELTA	D	L	T	R
POT	756226.872	2404201.396							
LINE			N 40°05'00.0" E	316.03					
PC	756468.669	2404404.888							
CURVE			N 44°16'00.0" E	87.99	08°22'00.0"(RT)	09°30'00.0"	88.07	44.11	603.11
PT	756531.680	2404466.306							
LINE			N 48°27'00.0" E	20.33					
PC	756545.166	2404481.523							
CURVE			N 62°58'30.0" E	151.26	29°03'00.0"(RT)	19°00'00.0"	152.89	78.13	301.56
PT	756613.897	2404616.269							
LINE			N 77°30'00.0" E	94.30					
POT	756634.308	2404708.338							

**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.

# PROPOSED ALIGNMENT CONTROL SHEET

PROJECT REFERENCE NO.	SHEET NO.
B-5655	RW02D-1
Location and Surveys	
HAWKEYE GEOMATICS, PC 135.5 MAIN STREET OXFORD, NC 27565	

6/2/99

REVISIONS

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L

TYPE	STATION	NORTH	EAST
PC	1+59.74	755661.5626	2404481.9098
PT	11+29.82	756591.3796	2404681.6697
PC	11+99.23	756650.3381	2404718.2968
PT	14+25.90	756841.0736	2404840.7468
POT	23+94.30	757648.1481	2405375.9512

Y

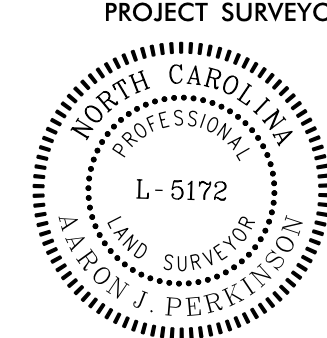
TYPE	STATION	NORTH	EAST
POT	10+00.00	756593.6987	2404683.1104
PC	10+34.64	756611.9778	2404653.6866
PT	10+61.73	756616.4180	2404627.6418
PC	10+73.38	756613.8967	2404616.2689
PT	12+26.27	756545.1662	2404481.5232
PC	12+46.61	756531.6796	2404466.3061
PT	13+34.68	756468.6687	2404404.8878

**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 INFORMATINO REGARDING PROJECT CONTROL IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.

6/2/2020

# RIGHT OF WAY CONTROL SHEET

PROJECT REFERENCE NO. B-5655	SHEET NO. RW03E-1
Location and Surveys	
HAWKEYE GEOMATICS, PC 135.5 MAIN STREET OXFORD, NC 27565	
	
PROJECT SURVEYOR	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

ROW MARKER IRON PIN AND CAP-E

ALIGN	STATION	OFFSET	NORTH	EAST
L	10+05.00	50.00	756460.0526	2404665.2217
L	10+05.00	30.00	756469.0621	2404647.3659
L	11+29.82	50.00	756564.9947	2404724.1413
L	11+99.23	50.00	756623.9533	2404760.7684
L	14+25.90	50.00	756813.4404	2404882.4170
L	14+25.90	70.00	756802.3871	2404899.0851
L	14+25.90	-65.00	756876.9968	2404786.5755
L	18+90.00	-65.00	757263.7828	2405043.0693
L	18+90.00	-30.00	757244.4395	2405072.2384
L	20+00.00	70.00	757280.8475	2405216.3719
L	20+00.00	30.00	757302.9541	2405183.0356

ROW MARKER IRON PIN AND CAP-E

ALIGN	STATION	OFFSET	NORTH	EAST
Y	10+45.86	61.29	756675.8828	2404657.6525

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

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

Witness my original signature, registration number and seal this 13th day of January, 2020.

DocuSigned by:

*Aaron Perkinson*

AA2BA78ED0514E0.....  
Professional Land Surveyor

L-5172  
PLS ■

Seal

**NOTES:**


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

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

REVISIONS

23 - JAN - 2020 12:23  
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 A. J. Perkinson




PROJECT REFERENCE NO. B-5655	SHEET NO. RW04
<b>Location and Surveys</b>	
HAWKEYE GEOMATICS, PC 135.5 MAIN STREET OXFORD, NC 27565	
PROJECT SURVEYOR	
	
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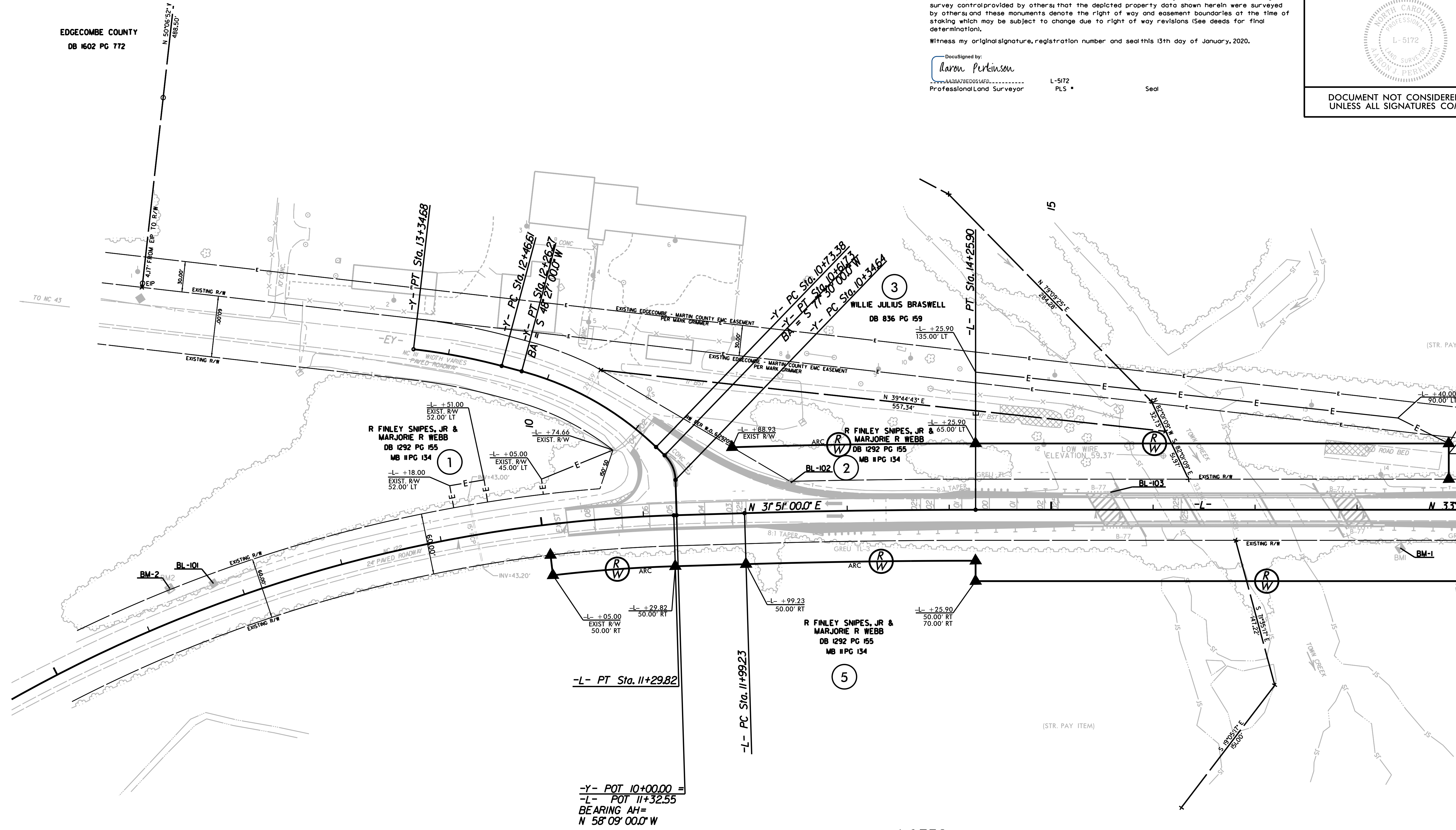
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DocuSigned by:  
  
 Aaron Perkinson  
 Professional Land Surveyor L-5172  
 PLS \* Seal

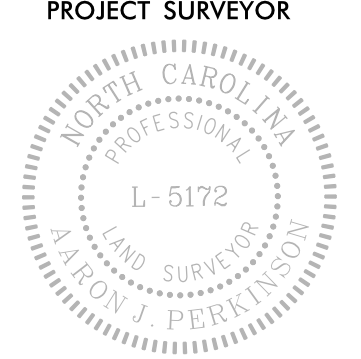
REVISIONS

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 User: jperkinson  
 Aaron J. Perkinson



MATCHLINE STA. 19+00.00 (SHEET 5)

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

PROJECT REFERENCE NO.	SHEET NO.
B-5655	RW05
<b>Location and Surveys</b>	
HAWKEYE GEOMATICS, PC 135.5 MAIN STREET OXFORD, NC 27565	
PROJECT SURVEYOR	
	
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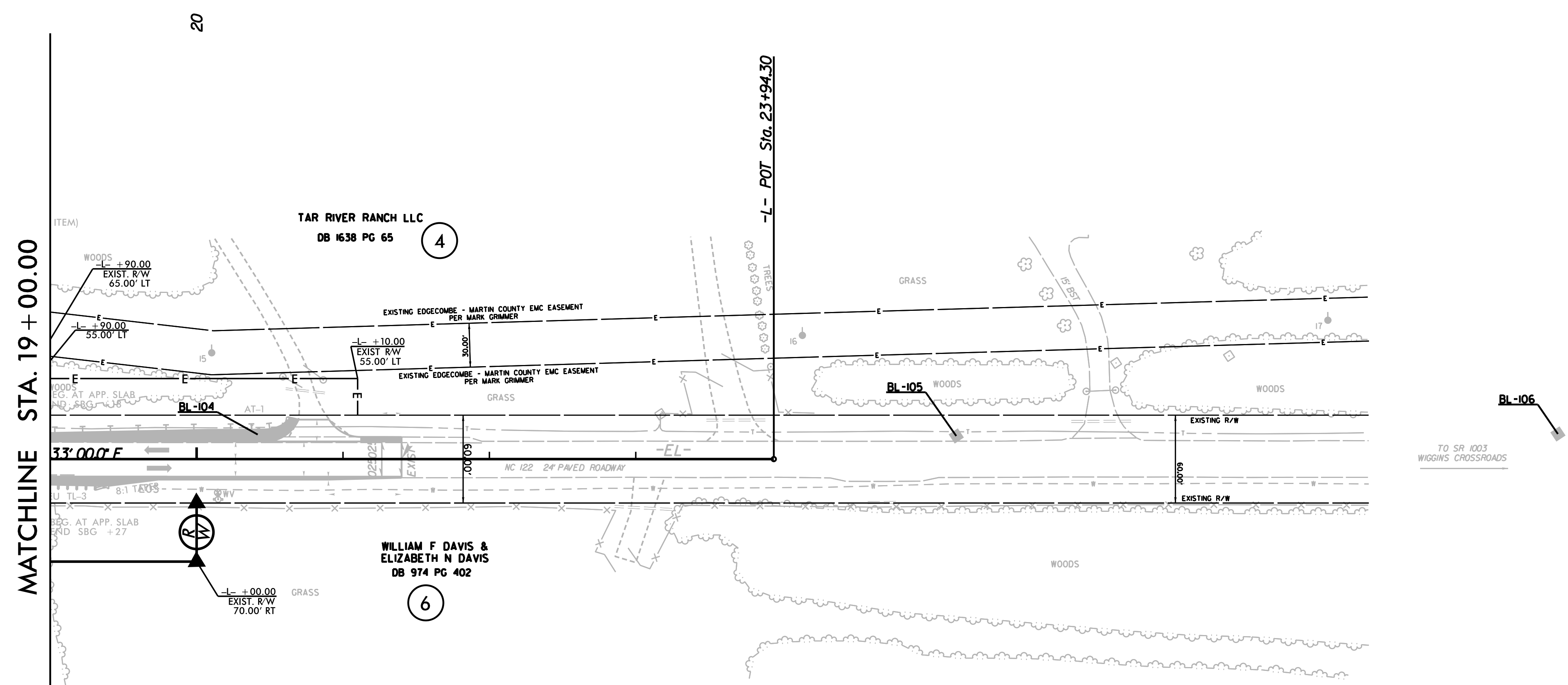
DocuSigned by:  
*Aaron Perkinson*  
L-5172  
Professional Land Surveyor

L-5172  
PLS \*

Seal

REVISIONS

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 Aaron J. Perkinson



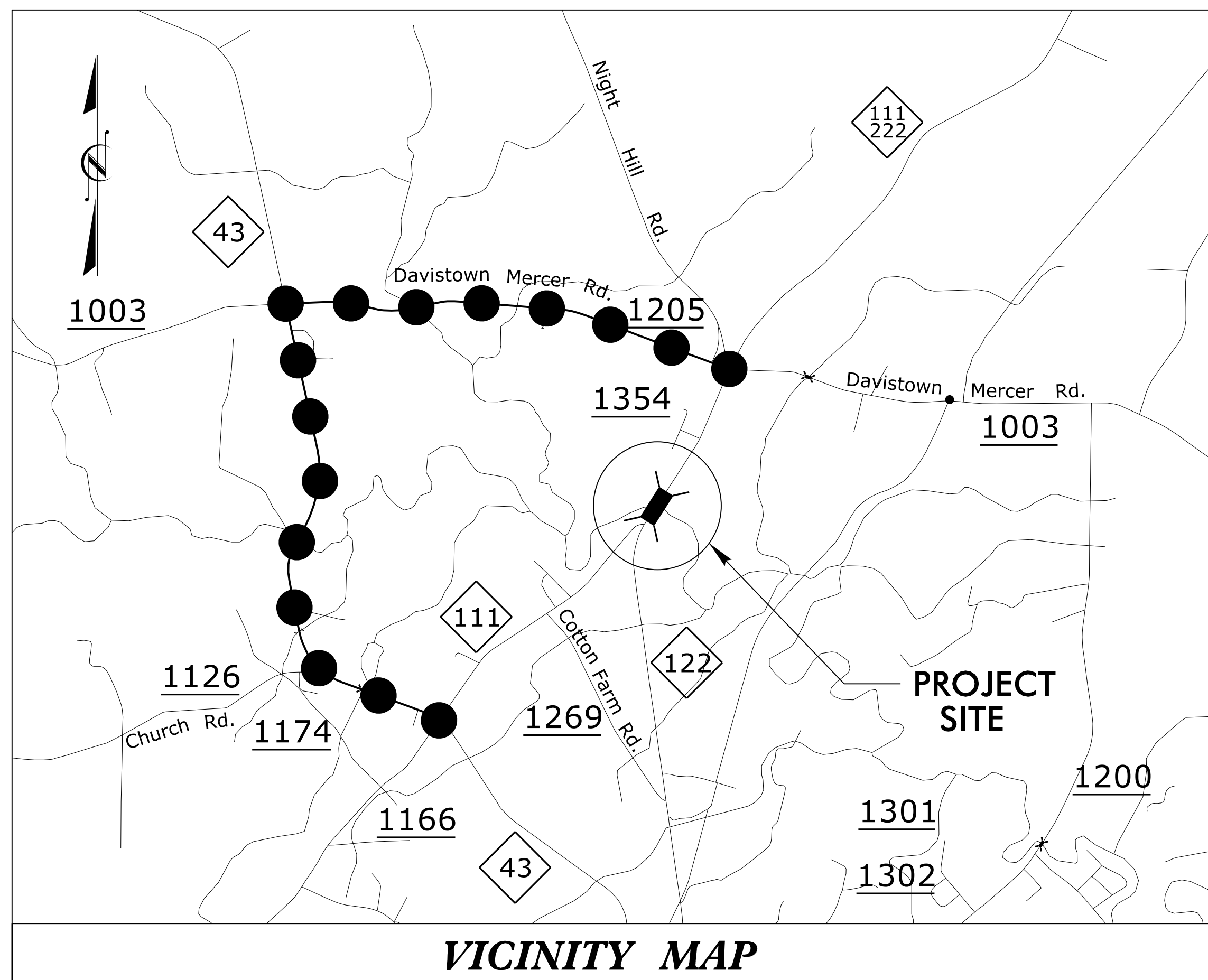
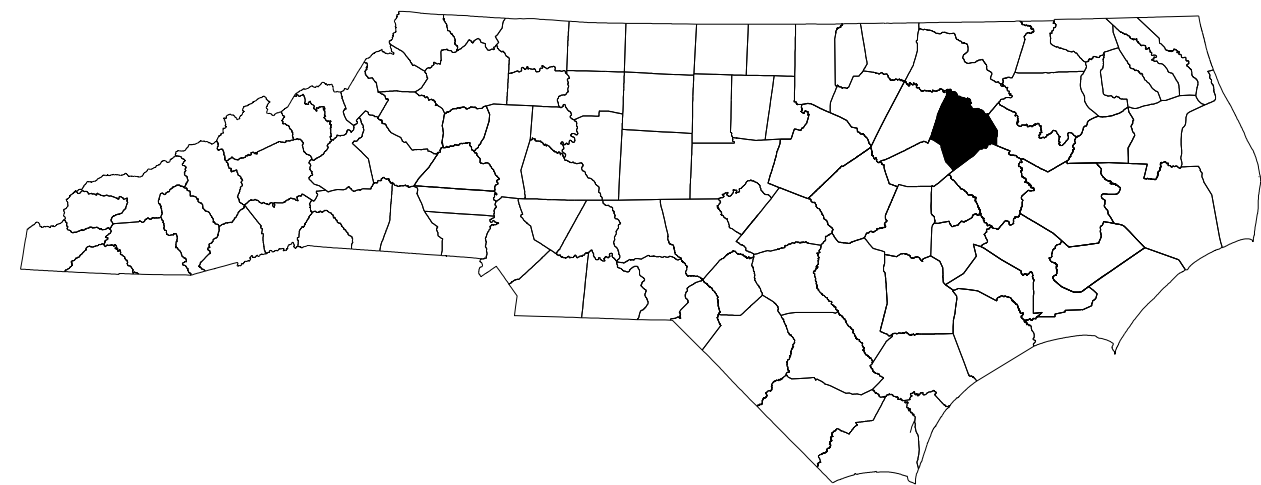
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STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

**TRANSPORTATION MANAGEMENT PLAN**

**EDGECOMBE COUNTY**



**LOCATION: BRIDGE NO. 11 OVER  
TOWN CREEK ON NC 111/NC 122**

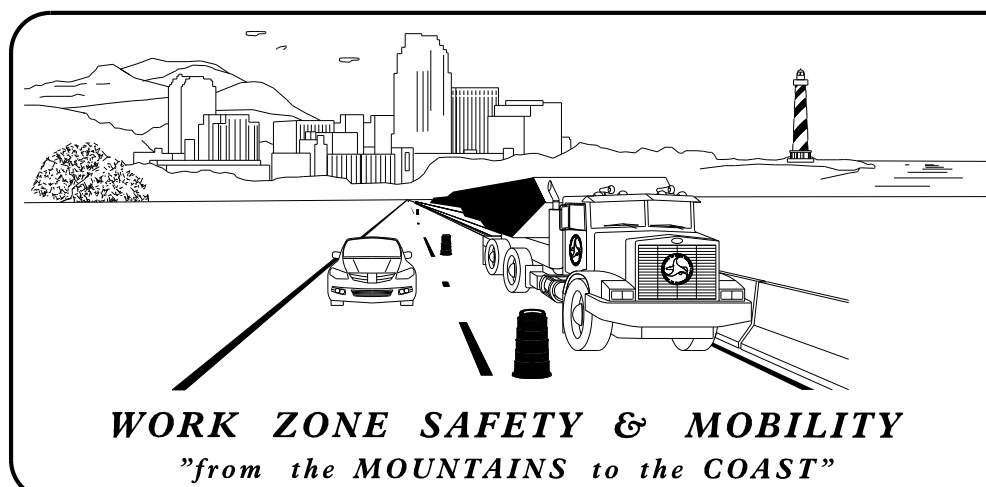


**INDEX OF SHEETS**

<u>SHEET NO.</u>	<u>TITLE</u>
TMP-1	TITLE SHEET, VICINITY MAP, AND INDEX OF SHEETS
TMP-1A	LIST OF APPLICABLE ROADWAY STANDARD DRAWINGS AND LEGEND
TMP-1B	TRANSPORTATION OPERATIONS PLAN: (MANAGEMENT STRATEGIES, GENERAL NOTES, LOCAL NOTES, AND TEMPORARY TRAFFIC CONTROL PHASING)
TMP-2 & TMP-2A	OFFSITE DETOUR ROUTE
TMP-2B	OFFSITE DETOUR SIGNS

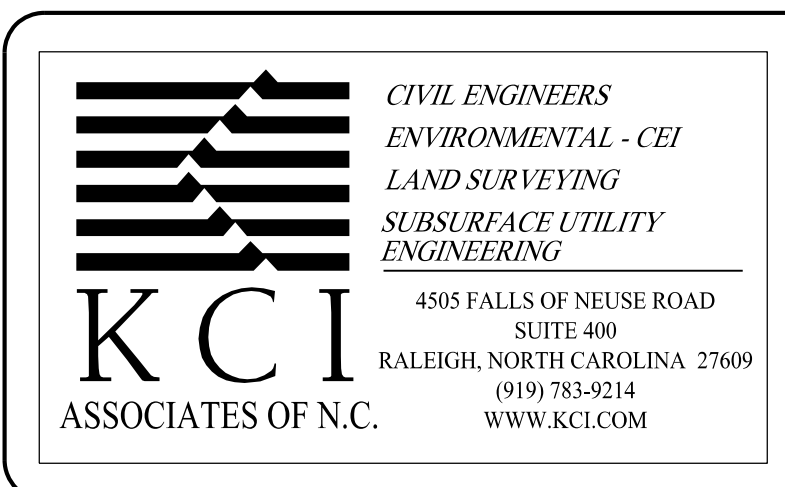
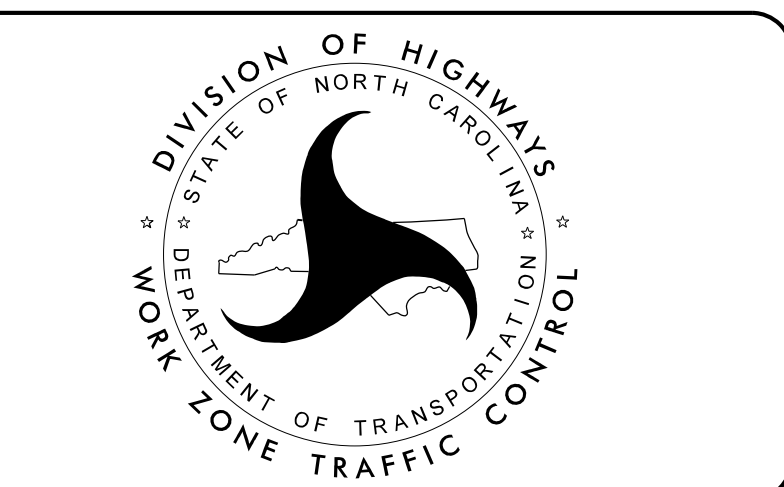
SHEET NO.  
TMP-1

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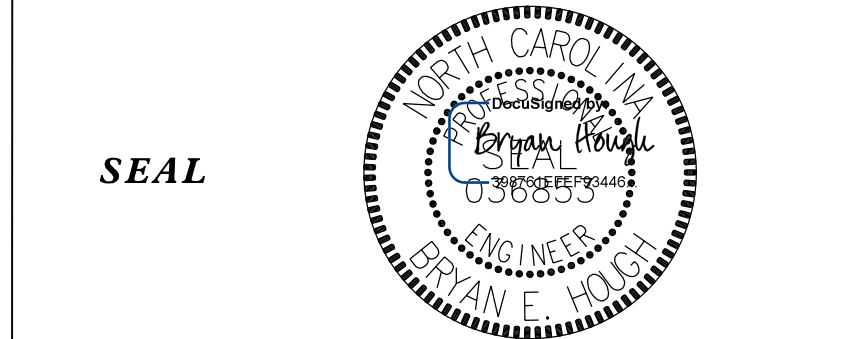
**N.C.D.O.T. WORK ZONE TRAFFIC CONTROL**  
1561 MAIL SERVICE CENTER (MSC) RALEIGH, NC 27699-1561  
750 N. GREENFIELD PARKWAY, GARNER, NC 27529 (DELIVERY)  
PHONE: (919) 773-2800 FAX: (919) 771-2745

J.E. HUMMER, PHD, PE **STATE TRAFFIC MANAGEMENT ENGINEER**  
STEVE KITE, P.E. **TRAFFIC CONTROL PROJECT ENGINEER**  
SPENCER JENNINGS **TRAFFIC CONTROL PROJECT DESIGN ENGINEER**  
WILLIAM DEBREW **TRAFFIC CONTROL DESIGN ENGINEER**



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

APPROVED: \_\_\_\_\_  
DATE: 3/13/2020



**TIP PROJECT: B-5655**

# 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
1101.02	TEMPORARY LANE CLOSURES
1101.03	TEMPORARY ROAD CLOSURES
1101.04	TEMPORARY SHOULDER CLOSURES
1101.05	WORK ZONE VEHICLE ACCESSES
1101.11	TRAFFIC CONTROL DESIGN TABLES
1110.01	STATIONARY WORK ZONE SIGNS
1110.02	PORTABLE WORK ZONE SIGNS
1115.01	FLASHING ARROW BOARDS
1130.01	DRUM
1135.01	CONES
1145.01	BARRICADES
1150.01	FLAGGING DEVICES
1180.01	SKINNY-DRUM
1205.01	PAVEMENT MARKINGS - LINE TYPES AND OFFSETS
1205.02	PAVEMENT MARKINGS - TWO-LANE AND MULTI-LANE ROADWAYS
1205.04	PAVEMENT MARKINGS - INTERSECTIONS
1205.05	PAVEMENT MARKINGS - TURN LANES
1205.08	PAVEMENT MARKINGS - SYMBOLS AND WORD MESSAGES
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
1264.01	OBJECT MARKERS - TYPES
1264.02	OBJECT MARKERS - INSTALLATION

# LEGEND

## GENERAL

- DIRECTION OF TRAFFIC FLOW
- EXIST. PVMT.
- NORTH ARROW
- PROPOSED PVMT.

WORK AREA

REMOVAL

## PAVEMENT MARKINGS

- EXISTING LINES
- TEMPORARY LINES

## TRAFFIC CONTROL DEVICES

- BARRICADE (TYPE III)
- DRUM
- FLAGGER

## TEMPORARY SIGNING

- PORTABLE SIGN
- STATIONARY SIGN
- STATIONARY OR PORTABLE SIGN

## PAVEMENT MARKERS

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

## PAVEMENT MARKING SYMBOLS

- PAVEMENT MARKING SYMBOLS

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**KCI**  
 Engineers • Planners • Scientists • Construction Managers  
 4265 Falls of Neuse Road, Suite 400  
 Raleigh, NC 27609-4270  
 Phone (919) 783-9214 • Fax (919) 783-9266

APPROVED: _____ DATE: 2/24/2020  SEAL			ROADWAY STANDARD DRAWINGS & LEGEND
<b>DOCUMENT NOT CONSIDERED FINAL                  UNLESS ALL SIGNATURES COMPLETED</b>			

PROJ. REFERENCE NO.	SHEET NO.
B-5655	TMP-1B

## MANAGEMENT STRATEGIES

1. CLOSE NC 111/ NC 122 AND DETOUR TRAFFIC OFF-SITE VIA NC 43 AND DAVISTOWN-MERCER RD.
2. LOCAL ACCESS TO ALL RESIDENCES AND BUSINESSES WILL BE MAINTAINED BETWEEN CLOSURE POINTS AT ALL TIMES DURING CONSTRUCTION.

## GENERAL NOTES

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

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

### TRAFFIC PATTERN ALTERATIONS

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

### SIGNING

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

PROVIDE SIGNING REQUIRED FOR THE OFF-SITE DETOUR ROUTE AS SHOWN IN THE TRAFFIC MANAGEMENT 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 PAVEMENT MARKINGS AND PAVEMENT MARKERS ON THE FINAL SURFACE AS SHOWN IN THE FINAL PAVEMENT MARKING PLAN.

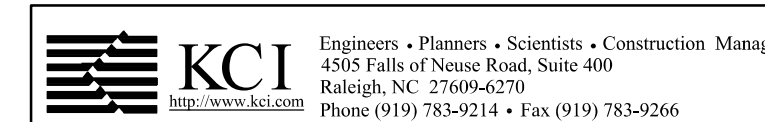
- G) TIE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING LINES.

## PHASING

NOTE: BEFORE BEGINNING CONSTRUCTION THE CONTRACTOR SHALL PLACE ADVANCE WORK ZONE WARNING SIGNS ALONG NC 111/ NC 122 (SEE RSD 1101.01, SHEET 3 OF 3).

- STEP 1) USING ROADWAY STD. DRAWING 1101.03, SHEET 1 OF 9, CLOSE NC 111/ NC 122 AND DETOUR TRAFFIC OFF-SITE AS SHOWN ON TMP-3.
- STEP 2) REMOVE THE EXISTING STRUCTURE.
- STEP 3) CONSTRUCT THE PROPOSED STRUCTURE AND ROADWAY -L- UP TO BUT NOT INCLUDING THE FINAL LIFT OF SURFACE COURSE. USING FLAGGERS AS NEEDED, CONSTRUCT THE JUNCTION OF NC 111 AND NC 122.
- STEP 4) PLACE THE FINAL LIFT OF SURFACE COURSE.
- STEP 5) PLACE FINAL PAVEMENT MARKINGS AND MARKERS ACCORDING TO THE FINAL PAVEMENT MARKING PLANS.
- STEP 6) REMOVE ALL WORK ZONE TRAFFIC CONTROL DEVICES AND SIGNING. OPEN NC 111/ NC 122 AND PLACE TRAFFIC ONTO THE FINAL PATTERN.

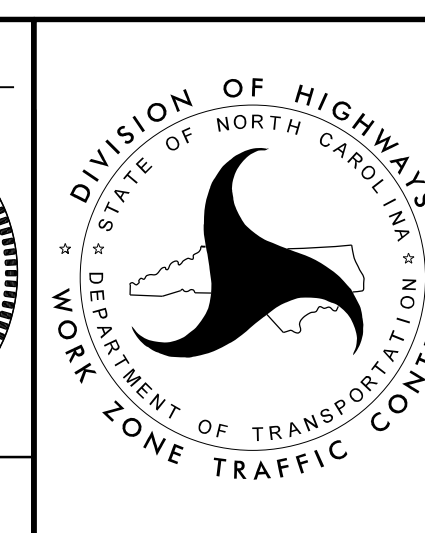
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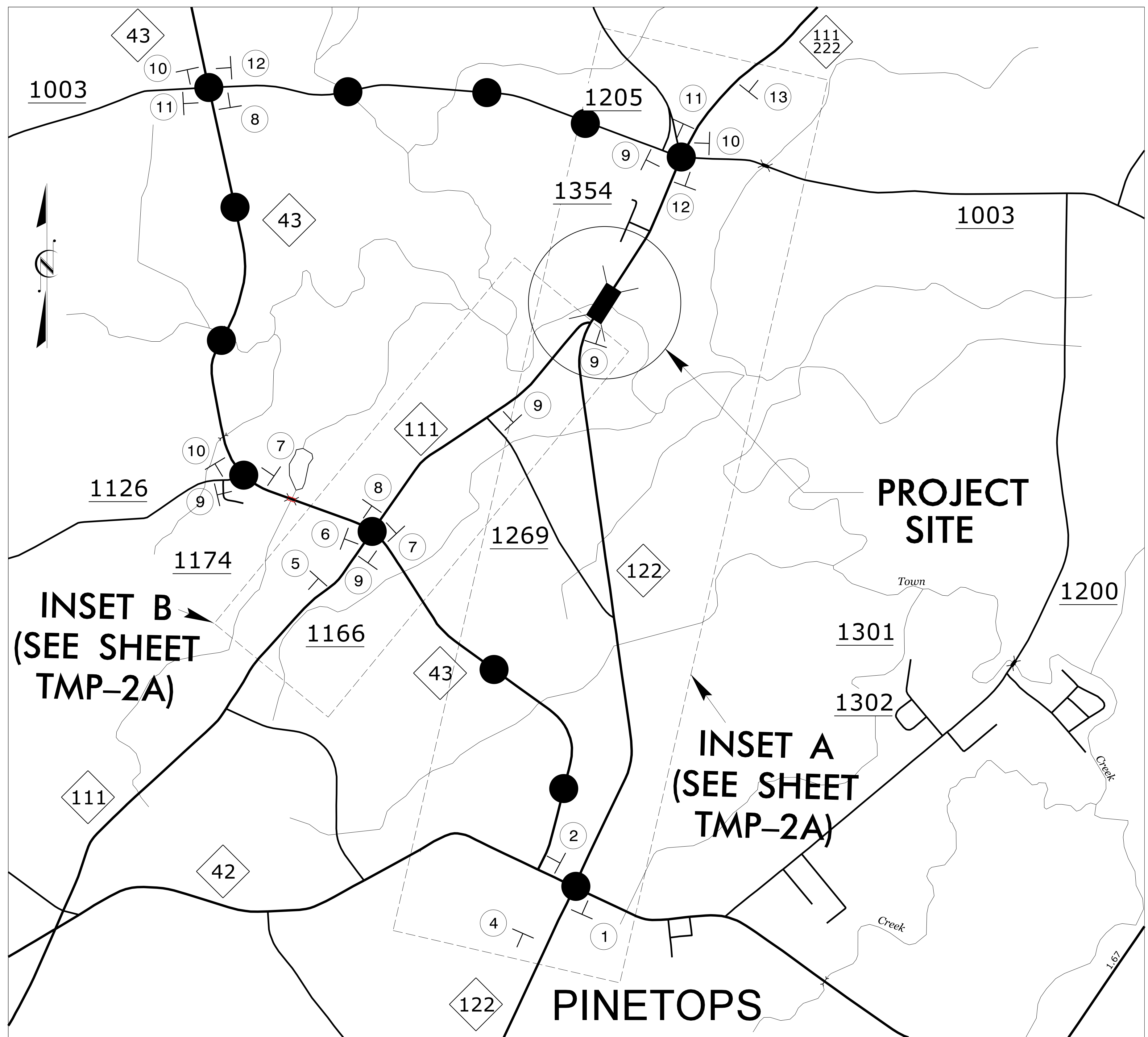
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DATE: 3/13/2020

SEAL

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UNLESS ALL SIGNATURES COMPLETED**



TRANSPORTATION  
OPERATIONS  
PLAN



- NOTES:
1. REFER TO ROADWAY STANDARD DRAWING 1101.03, SHEET 1 OF 9 FOR APPLICABLE NOTES.
  2. ALL SIGN SPACING DIMENSIONS ARE APPROXIMATE. FIELD ADJUST AS NECESSARY OR AS DIRECTED BY THE ENGINEER.
  3. ALL DETOUR SIGN LOCATIONS ARE APPROXIMATE.

**INSET B  
(SEE SHEET  
TMP-2A)**

**INSET A  
(SEE SHEET  
TMP-2A)**

● ● ● DETOUR ROUTE

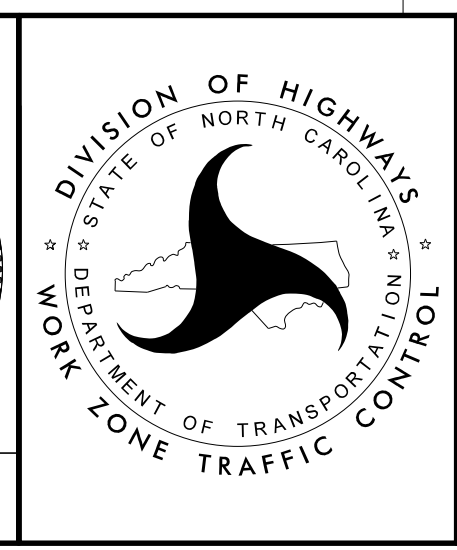
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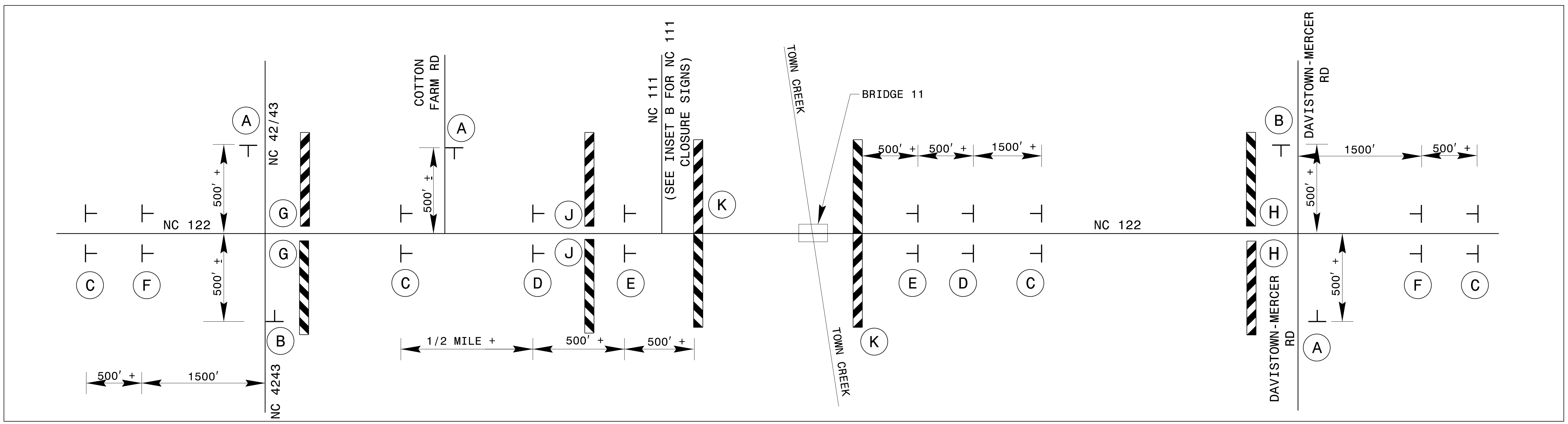
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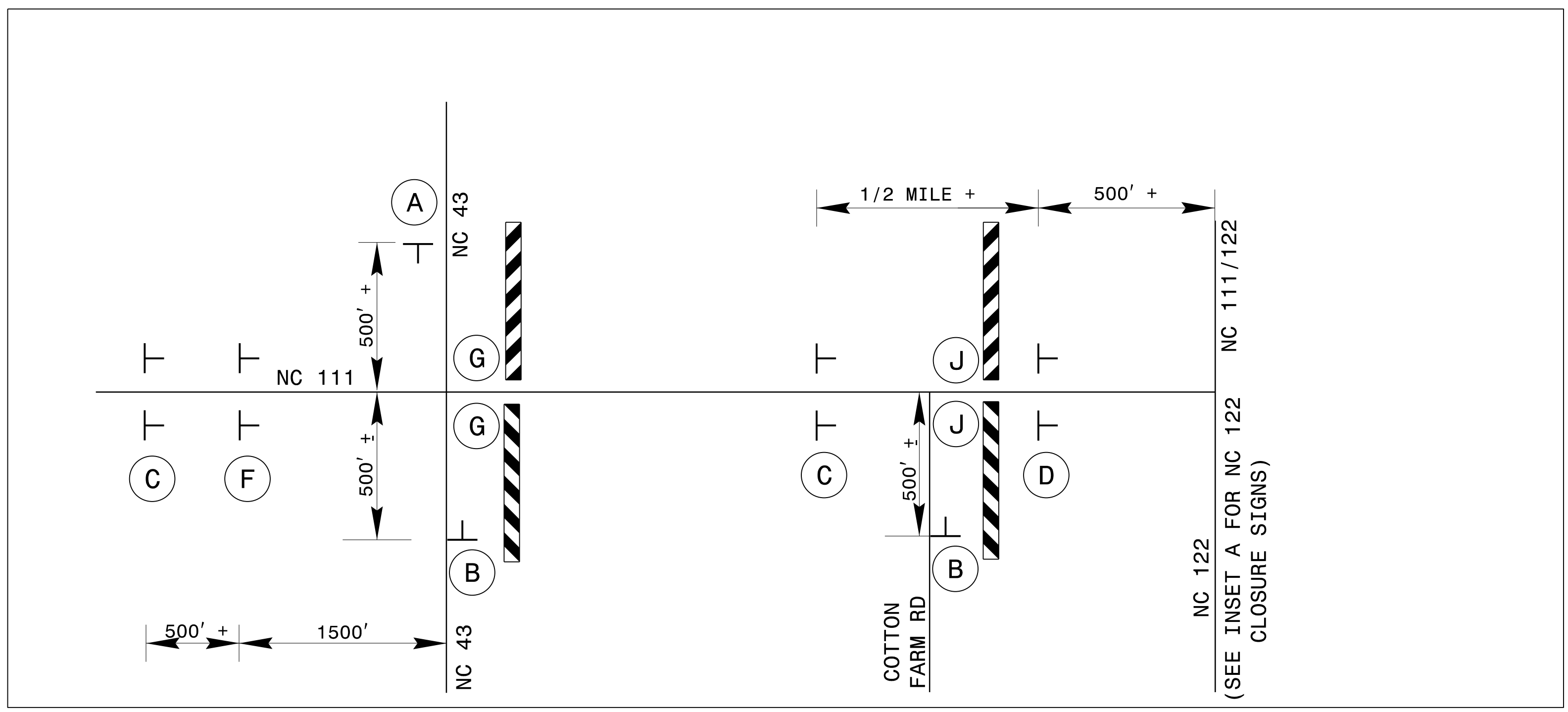


**OFFSITE DETOUR ROUTE**

### INSET A



### INSET B



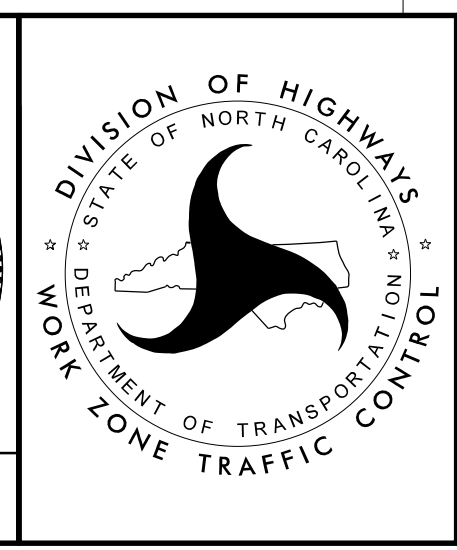
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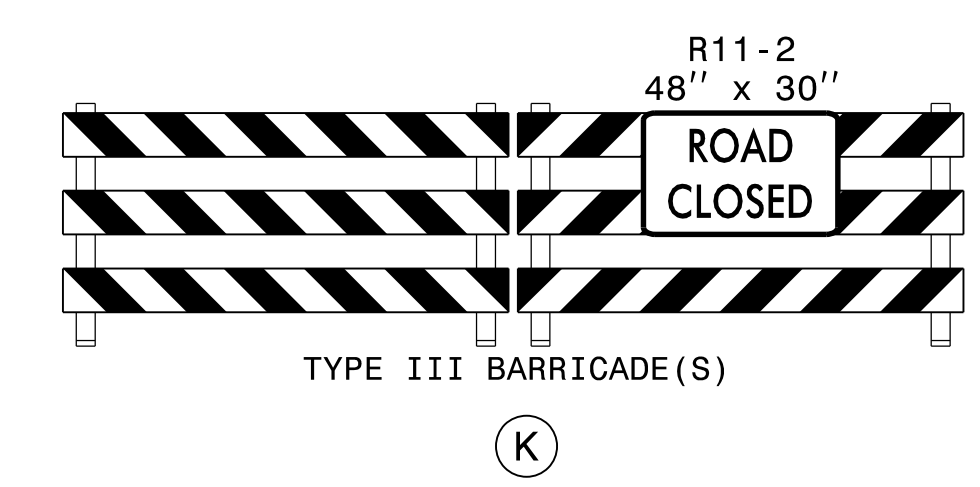
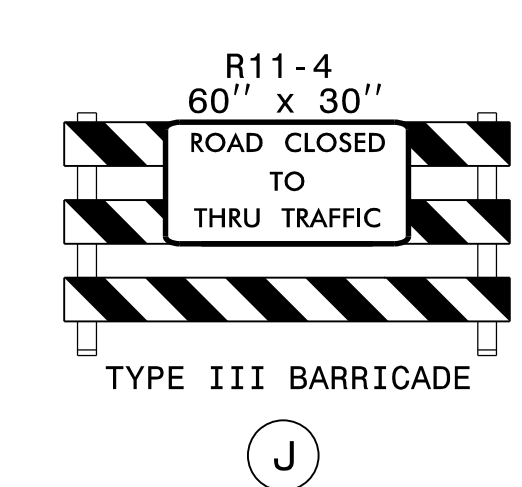
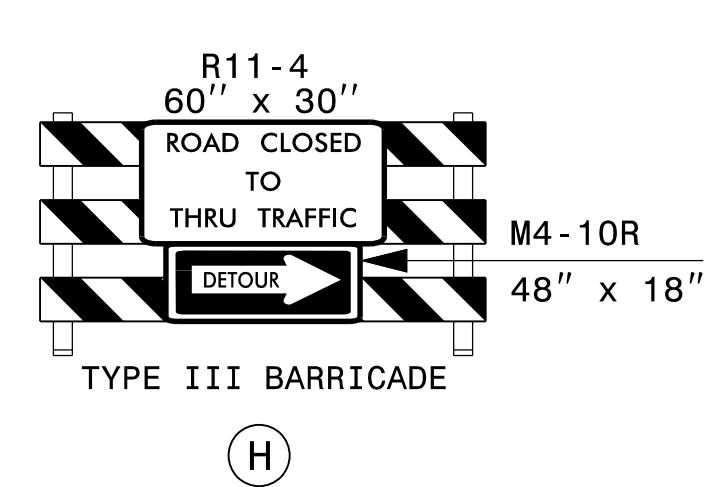
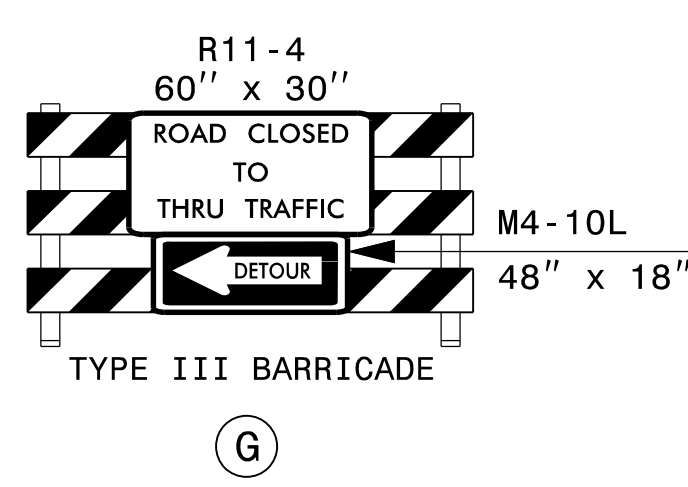
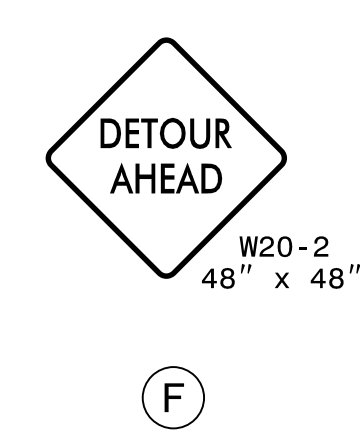
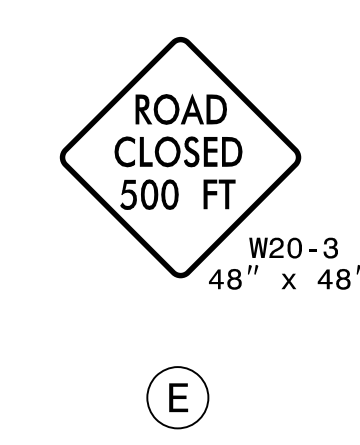
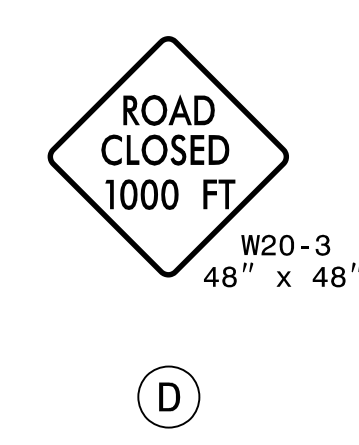
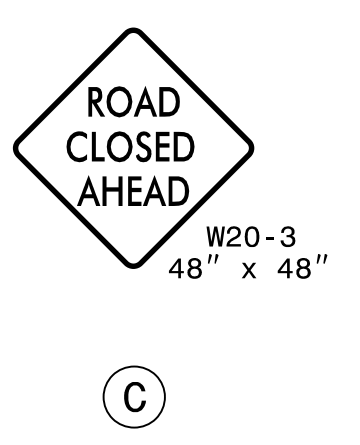
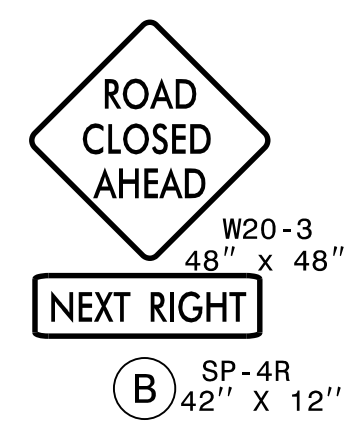
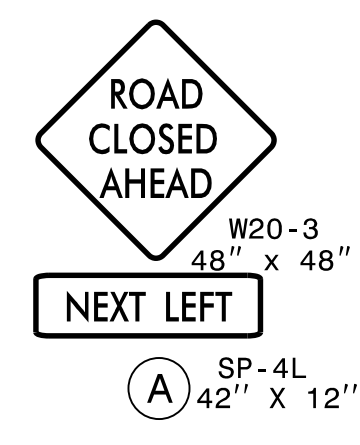
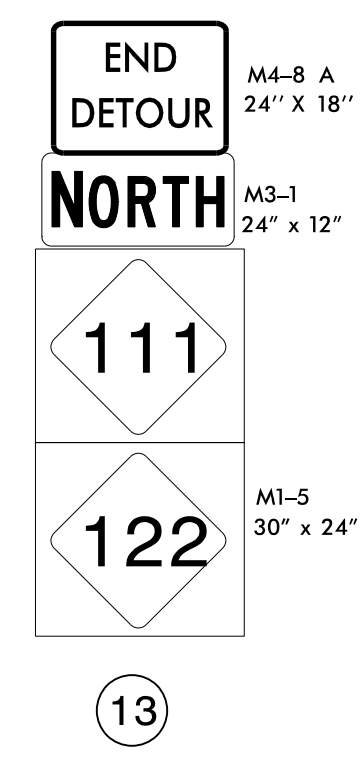
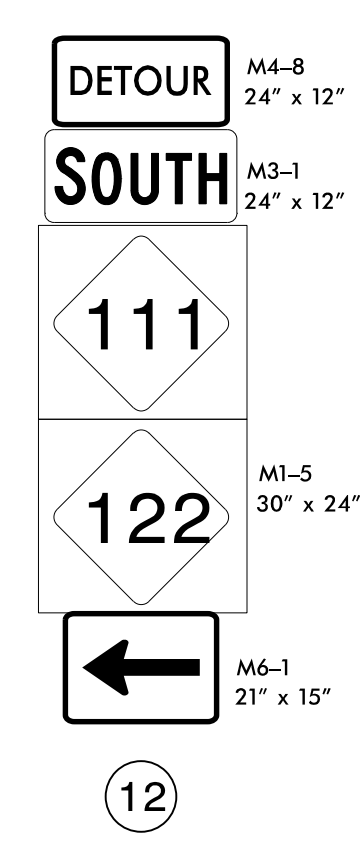
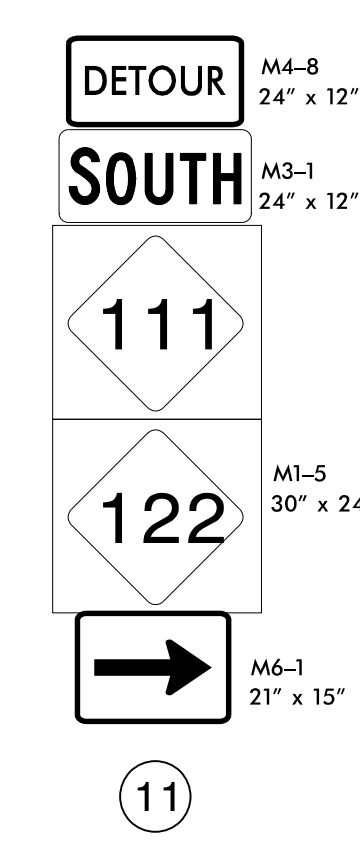
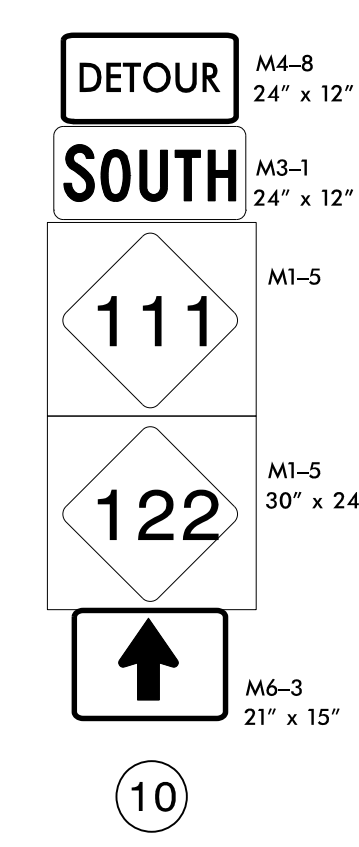
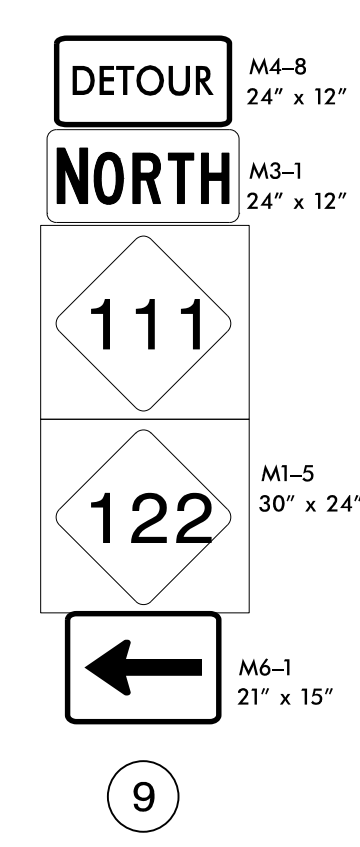
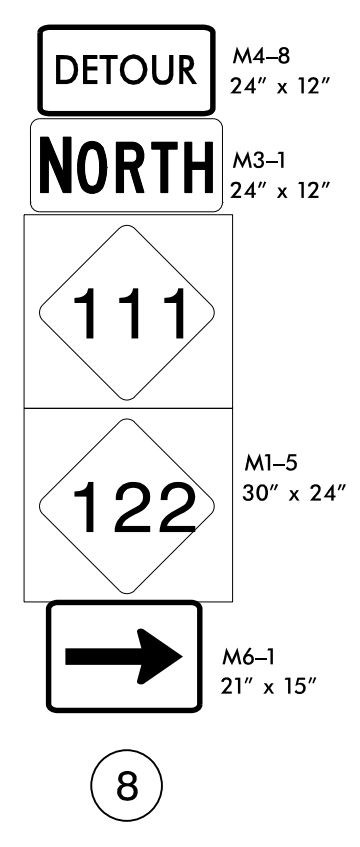
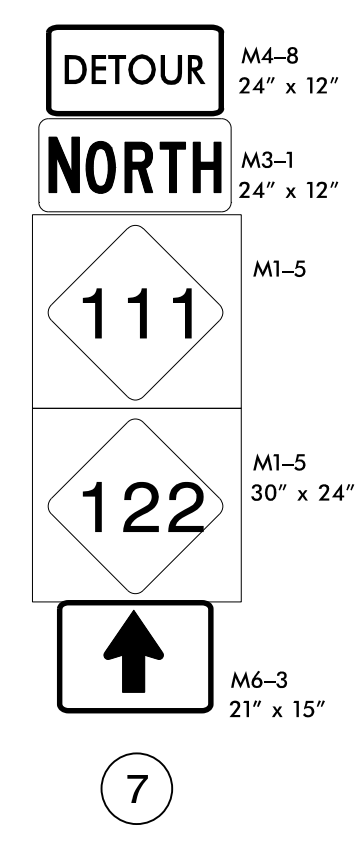
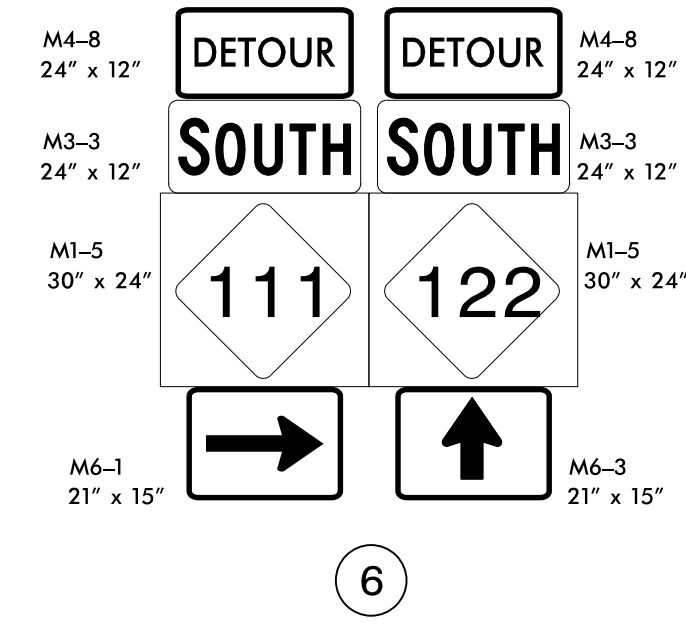
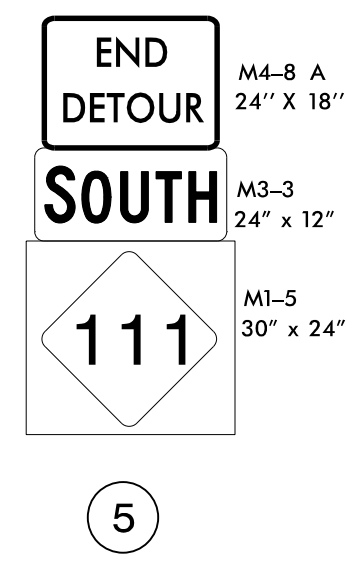
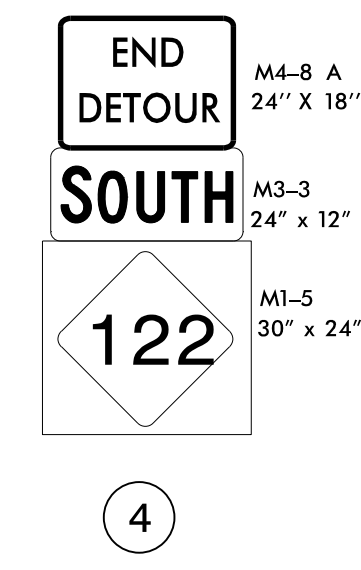
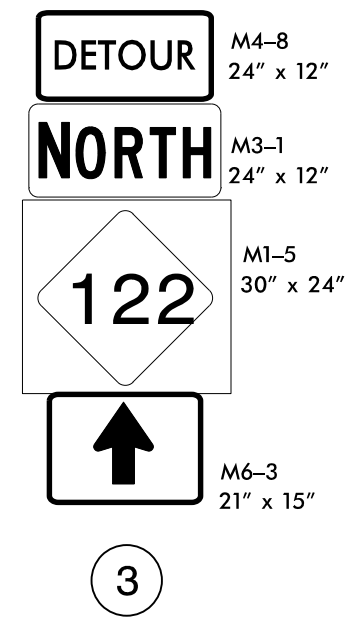
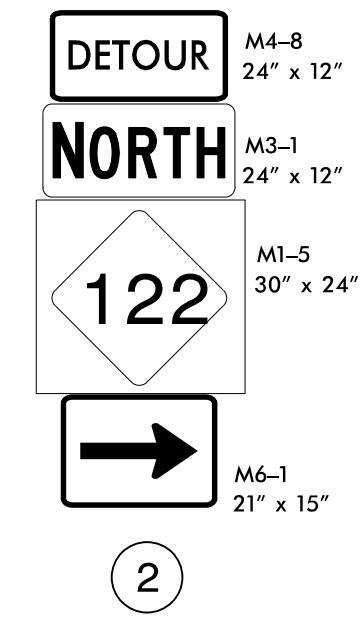
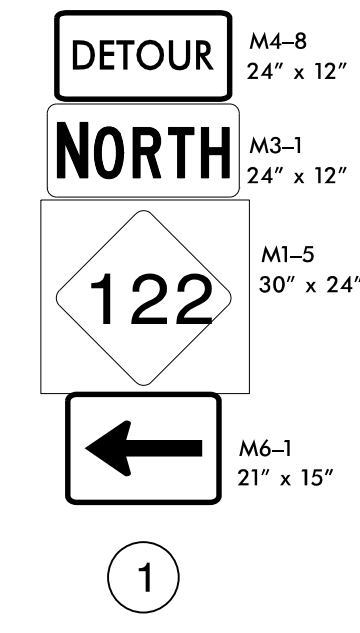
**DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED**



**OFFSITE DETOUR ROUTE**

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

3/12/2020  
 M:\2018\251801945.20 B-5655\TrafficControl\TCP\B5655\_TC\_TMP\_02A.dgn  
 User: bryan.hough

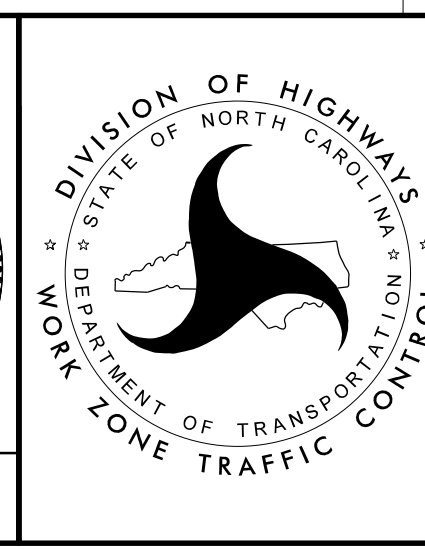


NOTES:  
 1. REFER TO ROADWAY STANDARD DRAWING 1101.03, SHEET 1 OF 9 FOR APPLICABLE NOTES.  
 2. ALL SIGN SPACING DIMENSIONS ARE APPROXIMATE. FIELD ADJUST AS NECESSARY OR AS DIRECTED BY THE ENGINEER.  
 3. ALL DETOUR SIGN LOCATIONS ARE APPROXIMATE.

3/12/2020  
 M:\2018\251801945\20 B-5655\TrafficControl\TCP\B5655\_TC\_TMP\_02B.dgn  
 User: bryan.hough

**KCI** Engineers • Planners • Scientists • Construction Managers  
 4505 Falls of Neuse Road, Suite 400  
 Raleigh, NC 27609-6270  
 Phone (919) 783-9214 • Fax (919) 783-9266

APPROVED: \_\_\_\_\_  
 DATE: 3/13/2020  
 SEAL



**OFFSITE DETOUR SIGNS**

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



PROJ. REFERENCE NO. B-5655	SHEET NO. PMP-1
APPROVED: _____	
DATE: 2/24/2020	
SEAL 	
 <small>Engineers • Planners • Scientists • Construction Managers 4601 Six Forks Road, Landmark Center II, Suite 220 Raleigh, NC 27609-5210 Phone (919) 783-9214 • Fax (919) 783-9266</small>	

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

**PAVEMENT MARKING PLAN**

**EDGECOMBE COUNTY**

**LOCATION: BRIDGE NO. 11 OVER TOWN CREEK ON NC 111/NC 122**

**PAVEMENT MARKING SCHEDULE**

<u>SYMBOL DESCRIPTION</u>	<u>FINAL PAVEMENT MARKINGS</u>
T1 WHITE EDGELINE	THERMOPLASTIC (4", 90 MILS)
T13 YELLOW DOUBLE CENTER	THERMOPLASTIC (4", 90 MILS)
T11 YELLOW SINGLE CENTER	THERMOPLASTIC (4", 90 MILS)
T12 10 FT. YELLOW SKIP	THERMOPLASTIC (4", 90 MILS)
T4 3 FT.-9 FT./SP WHITE MINISKIP	THERMOPLASTIC (4", 90 MILS)
T61 WHITE STOP BAR	THERMOPLASTIC (24", 90 MILS)
C12 10 FT. YELLOW SKIP	COLD APPLIED (4", TYPE 2)
C11 YELLOW SINGLE CENTER	COLD APPLIED (4", TYPE 2)
C1 WHITE EDGELINE	COLD APPLIED (4", TYPE 2)

**GENERAL NOTES**

- THE FOLLOWING GENERAL NOTES APPLY AT ALL TIMES FOR THE DURATION OF THE CONSTRUCTION PROJECT, EXCEPT WHEN OTHERWISE NOTED IN THE PLAN, OR DIRECTED BY THE ENGINEER.
- A) INSTALL PAVEMENT MARKINGS AND PAVEMENT MARKERS ON THE FINAL SURFACE AS FOLLOWS:
 

ROAD NAME	MARKING	MARKER
-L- NC 111/NC 122	THERMOPLASTIC	NONE
-BRIDGE-	COLD-APPLIED (TYPE 2)	NONE
  - B) TIE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING LINES.
  - C) REMOVE/REPLACE ANY CONFLICTING/DAMAGED PAVEMENT MARKINGS AND MARKERS.
  - D) PASSING ZONES WILL BE DETERMINED IN THE FIELD AND MUST BE APPROVED BY THE ENGINEER.
  - E) STOP BAR LOCATION AT NON-SIGNALIZED INTERSECTIONS MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER.
  - F) REMOVE ALL RESIDUE AND SURFACE LAITANCE BY ACCEPTABLE METHODS ON THE BRIDGE DECK(S) PRIOR TO PLACING COLD APPLIED PLASTIC PAVEMENT MARKINGS.
  - G) UNLESS OTHERWISE SPECIFIED, HEATED-IN-PLACE THERMOPLASTIC MAY BE USED IN LIEU OF EXTRUDED THERMOPLASTIC FOR STOP BARS, SYMBOLS, CHARACTERS AND DIAGONALS. IF HEATED-IN-PLACE IS USED, IT SHALL BE PAID FOR USING THE EXTRUDED THERMOPLASTIC PAY ITEM.
  - H) TYPE III COLD APPLIED PLASTIC MAY BE USED IN LIEU OF TYPE II COLD APPLIED PLASTIC. IF TYPE III COLD APPLIED PLASTIC IS USED, IT SHALL BE PAID FOR USING THE TYPE II COLD APPLIED PLASTIC PAY ITEM.

**ROADWAY STANDARD DRAWING**

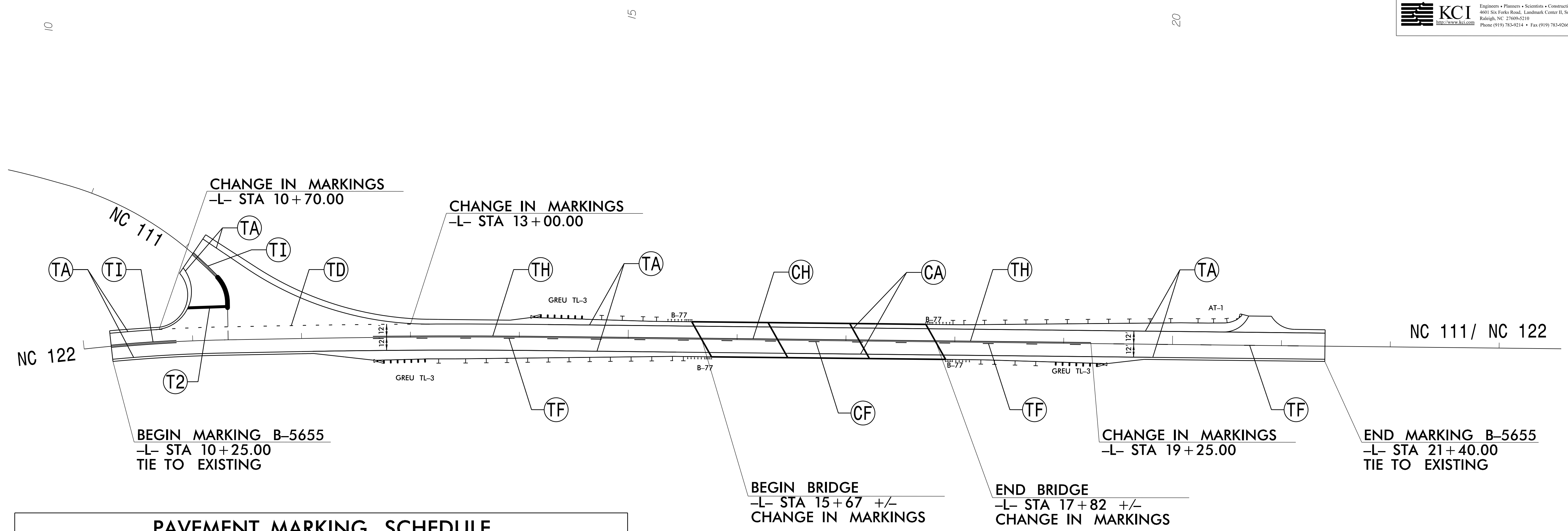
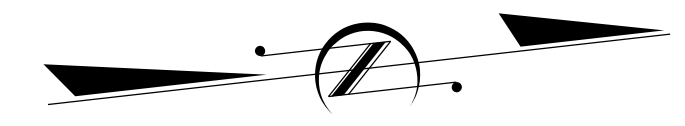
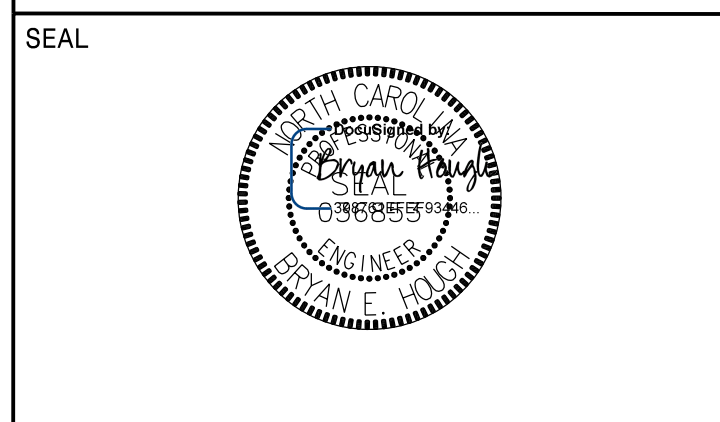
THE FOLLOWING ROADWAY STANDARDS AS APPEAR IN "ROADWAY STANDARD DRAWINGS" - N.C. DEPARTMENT OF TRANSPORTATION - RALEIGH, N.C., DATED JANUARY 2018 ARE APPLICABLE TO THIS PROJECT AND BY REFERENCE HEREBY ARE CONSIDERED A PART OF THESE PLANS:

<u>STD. NO.</u>	<u>TITLE</u>
1205.01	PAVEMENT MARKINGS - LINE TYPES AND OFFSETS
1205.02	PAVEMENT MARKINGS - TWO-LANE AND MULTILANE ROADWAYS
1205.12	PAVEMENT MARKINGS - BRIDGES
1261.01	GUARDRAIL AND BARRIER DELINEATORS - INSTALLATION SPACING
1261.02	GUARDRAIL AND BARRIER DELINEATORS - TYPES AND MOUNTING
1262.01	GUARDRAIL AND DELINEATION

**INDEX**

<u>SHEET NO.</u>	<u>DESCRIPTION</u>
PMP-1	PAVEMENT MARKING PLAN TITLE AND SCHEDULE SHEET
PMP-2	PAVEMENT MARKING DETAIL

24-FEB-2020 12:55  
 M:\2018\20180104\5\_20 B-5655\Traffic\TrafficControl\TCP\B5655\_PMP\_01.dgn  
 \$\$\$SUBDRAWING\$\$\$



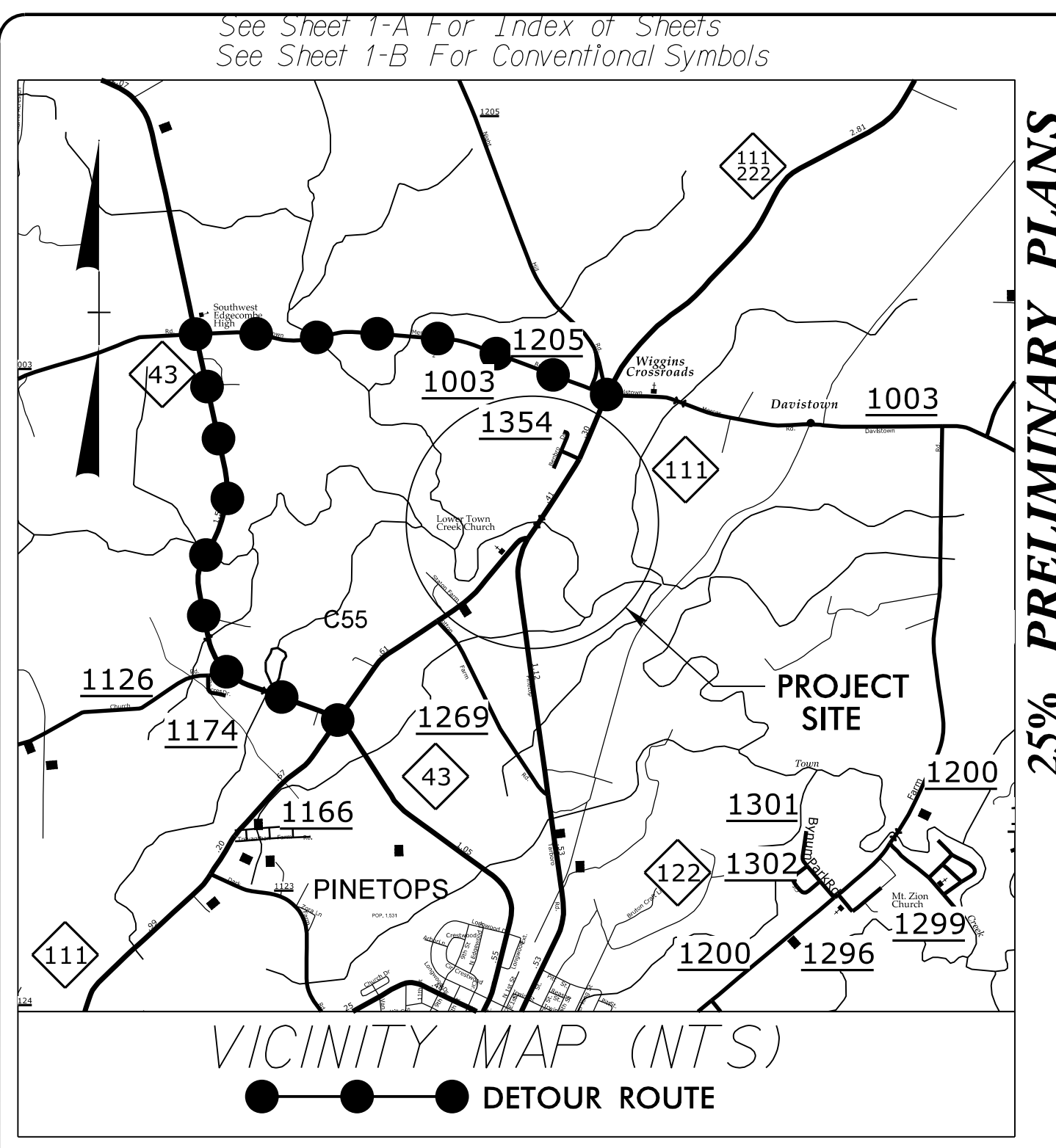
PAVEMENT MARKING SCHEDULE	
ⓐ THERMOPLASTIC (4", 90 MILS) WHITE EDGELINE (4")	Ⓒ COLD APPLIED (4", TYPE 2) WHITE EDGELINE
ⓑ THERMOPLASTIC (4", 90 MILS) YELLOW DOUBLE CENTER (4")	Ⓓ COLD APPLIED (4", TYPE 2) YELLOW SINGLE CENTER
Ⓓ THERMOPLASTIC (4", 90 MILS) YELLOW SINGLE CENTER (4")	Ⓕ COLD APPLIED (4", TYPE 2) 10 FT. YELLOW SKIP
Ⓕ THERMOPLASTIC (4", 90 MILS) 10 FT. YELLOW SKIP (4")	ⓐ THERMOPLASTIC (24", 90 MILS) WHITE STOP BAR
Ⓖ THERMOPLASTIC (4", 90 MILS) 3 FT.-9 FT./SP WHITE MINISKIP (4")	

**PAVEMENT MARKING DETAIL  
AND SCHEDULE**

\$\$\$\$\$\$SYTIME\$\$\$\$\$\$  
 \$\$\$\$\$\$DATE\$\$\$\$\$\$  
 \$\$\$\$\$\$DRAWN\$\$\$\$\$\$  
 \$\$\$\$\$\$CHECKED\$\$\$\$\$\$  
 \$\$\$\$\$\$DATE\$\$\$\$\$\$

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-5655	EC-1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	

**TIP PROJECT: B-5655**



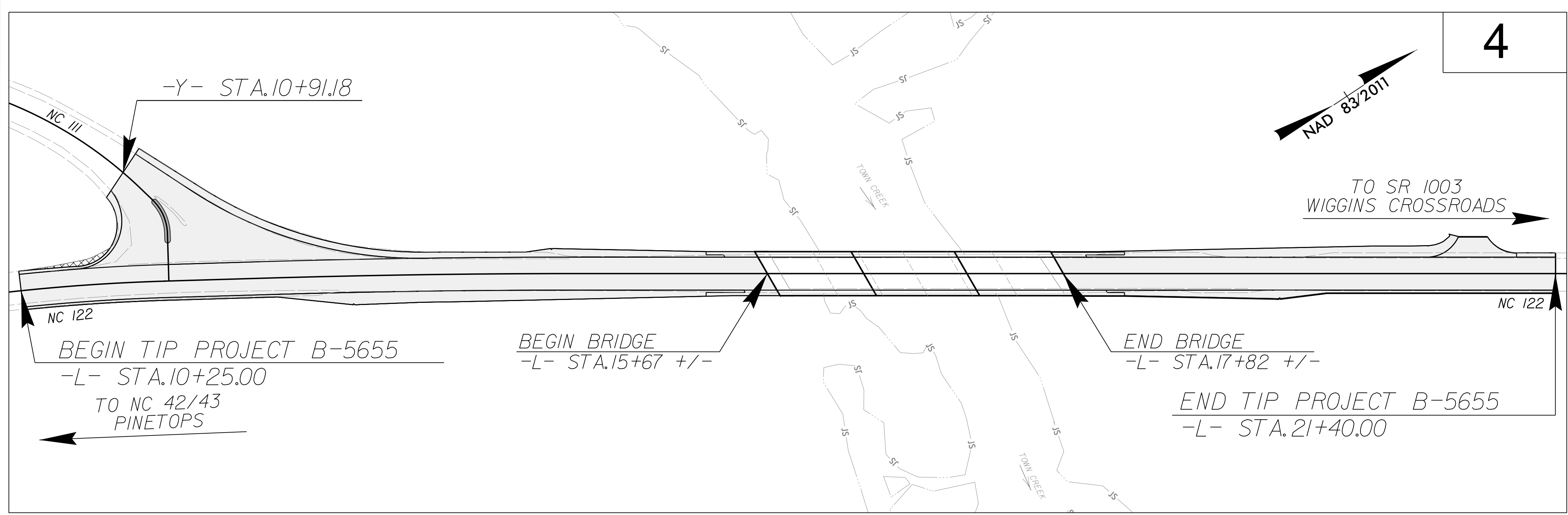
STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

PLAN FOR PROPOSED  
HIGHWAY EROSION CONTROL

**EDGECOMBE COUNTY**

**LOCATION: REPLACE BRIDGE NO. 11 OVER TOWN CREEK  
ON NC 111 / NC 122**

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



THIS PROJECT IS NOT WITHIN MUNICIPAL BOUNDARIES.  
CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD II.

**EROSION AND SEDIMENT CONTROL MEASURES**

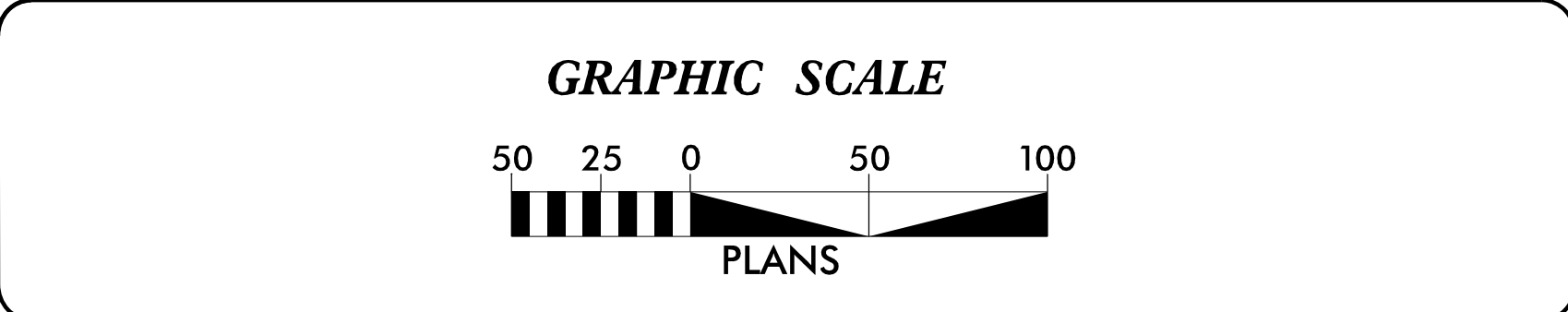
Std. #	Description	Symbol
1630.03	Temporary Silt Ditch	---
1630.05	Temporary Diversion	→
1605.01	Temporary Silt Fence	
1606.01	Special Sediment Control Fence	△△△
1622.01	Temporary Berms and Slope Drains	—
1630.02	Silt Basin Type B	▨
1633.01	Temporary Rock Silt Check Type-A	⊗
	Temporary Rock Silt Check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

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

**THIS PROJECT HAS BEEN DESIGNED TO SENSITIVE WATERSHED STANDARDS.**

**ENVIRONMENTALLY SENSITIVE AREA(S) EXIST ON THIS PROJECT**

Refer To E. C. Special Provisions for Special Considerations.



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

**KCI**  
http://www.kci.com

Prepared in the Office of:

**KCI ASSOCIATES OF NORTH CAROLINA, PA**  
4505 FALLS OF NEUSE ROAD  
RALEIGH, NC 27609

Designed by:

**GREG BRICKHAM, PE** #3006  
NAME LEVEL III CERTIFICATION NO.

Roadway Standard Drawings

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

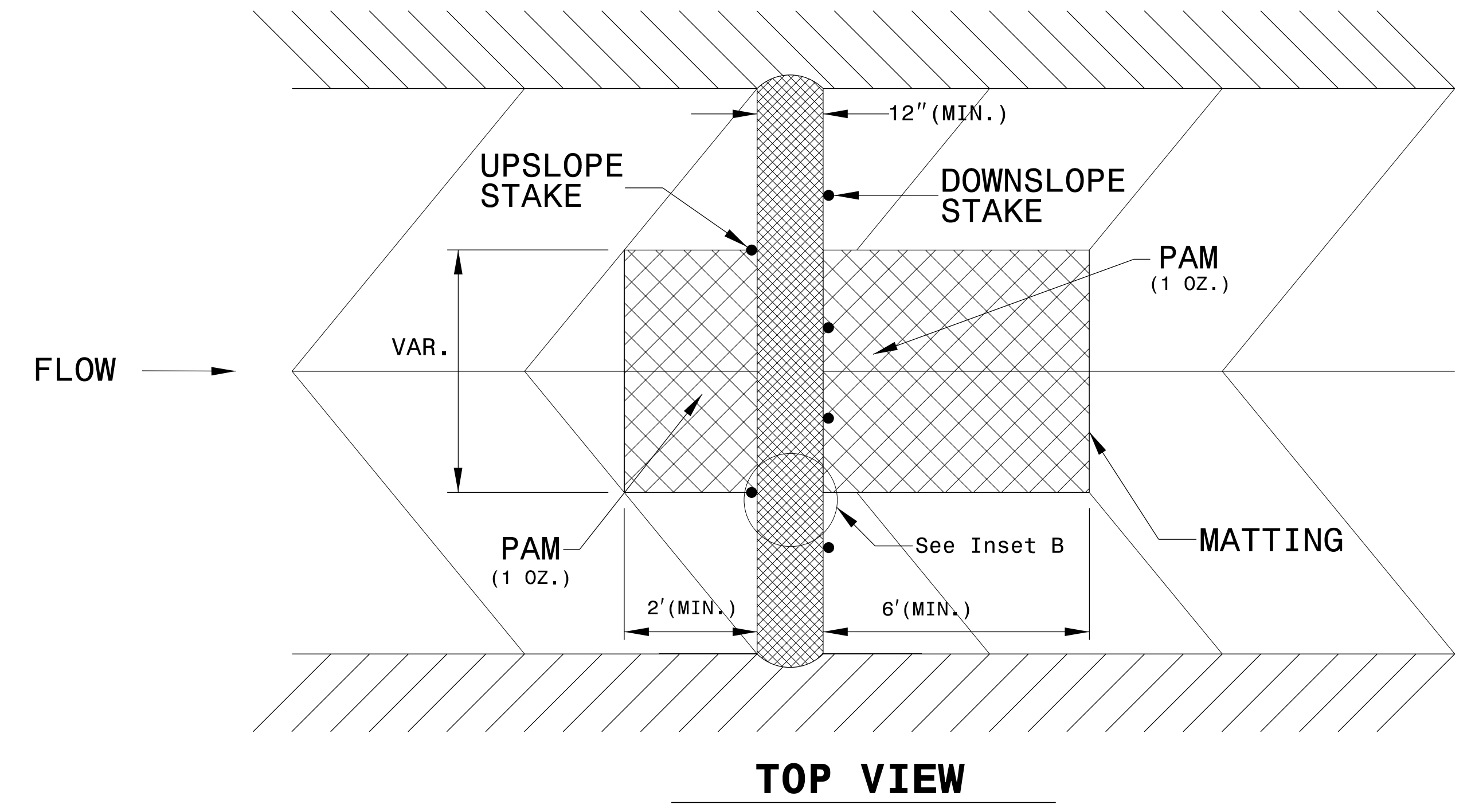
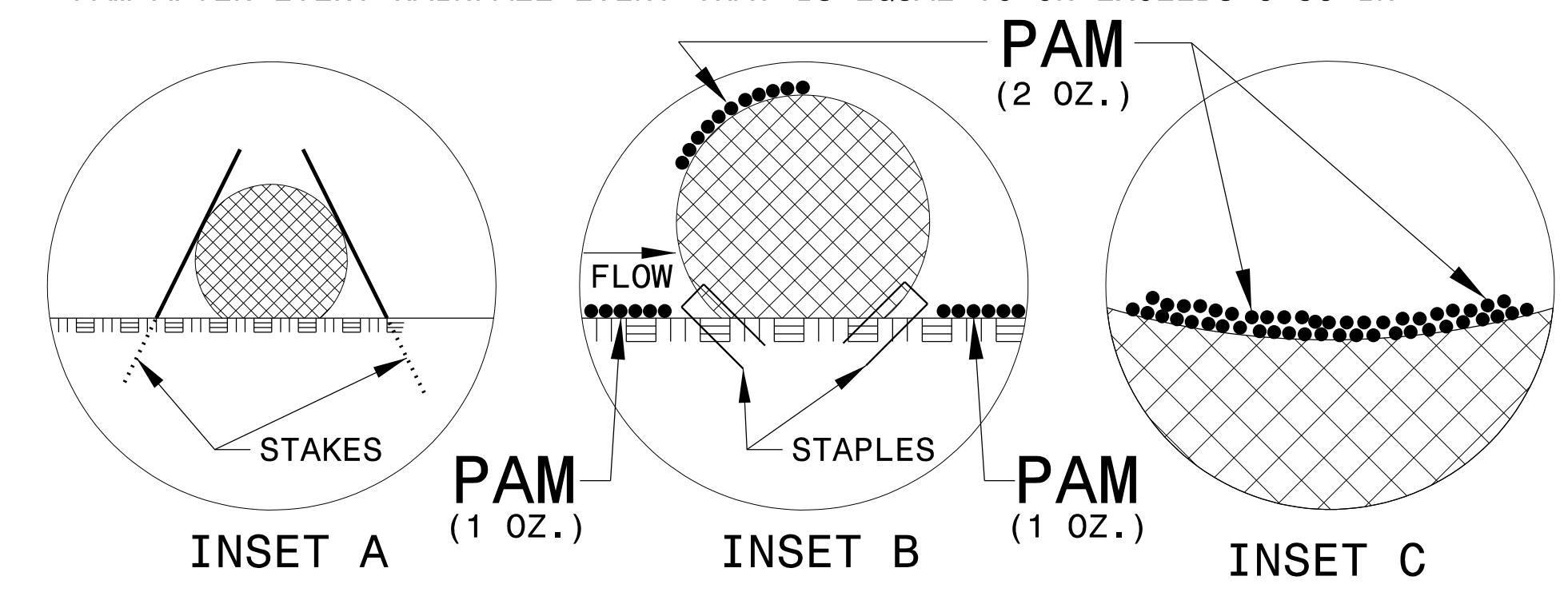
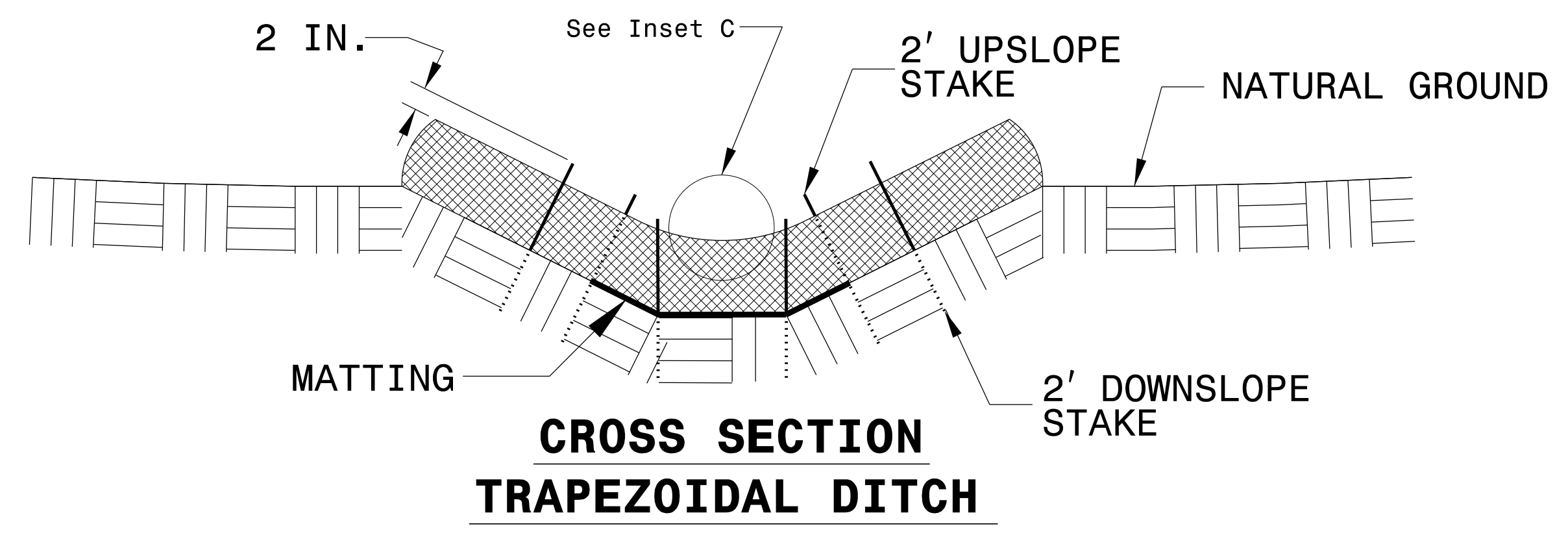
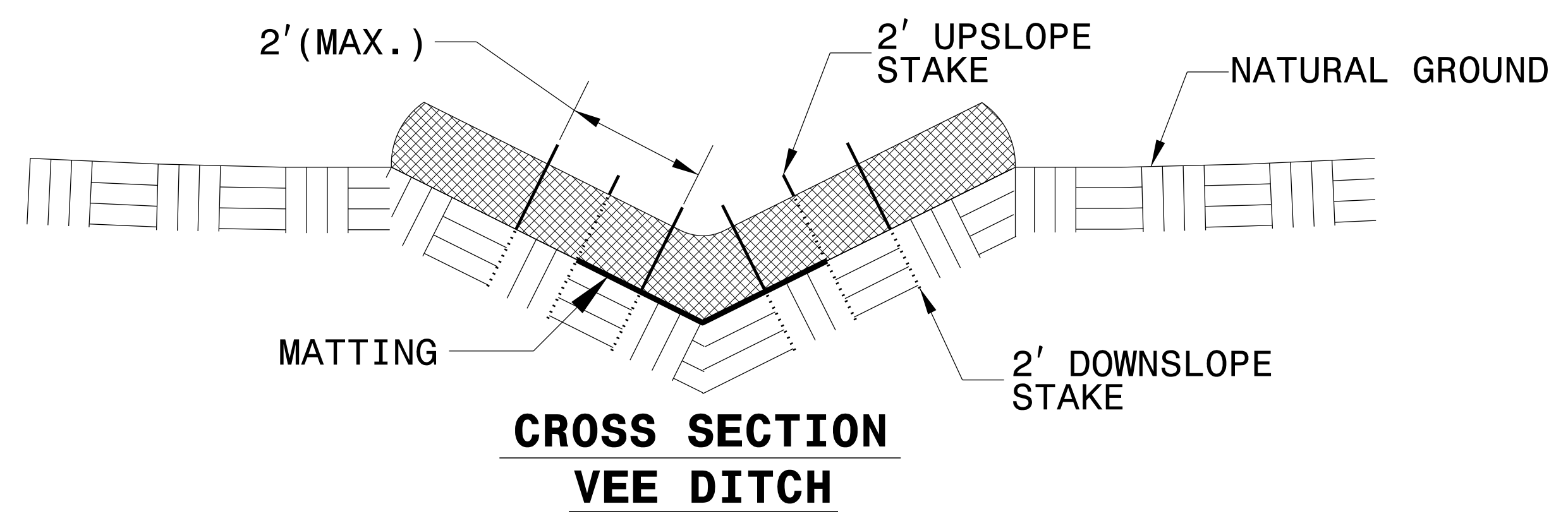
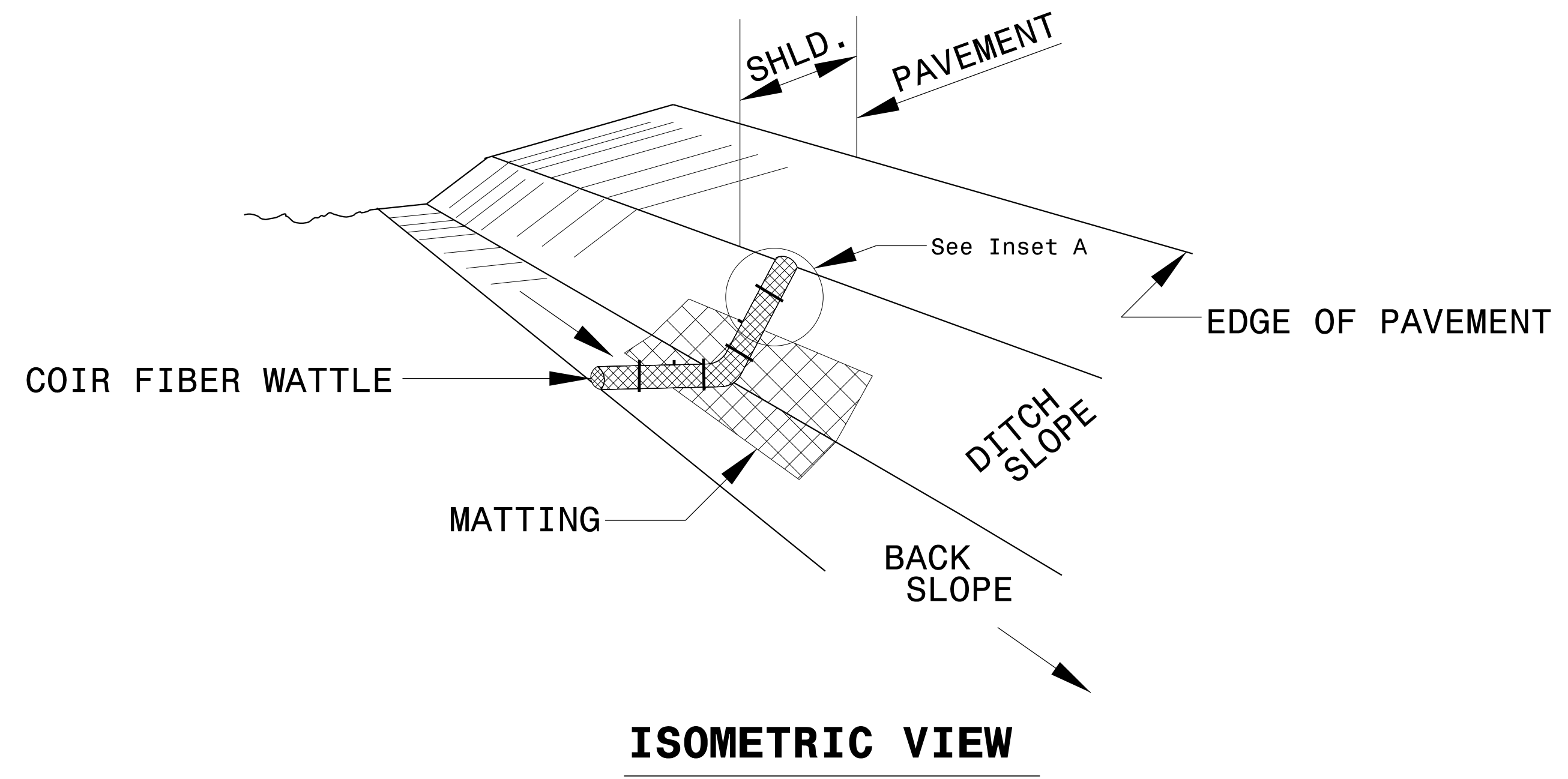
1604.01 Railroad Erosion Control Detail	1632.01 Rock Inlet Sediment Trap Type A
1605.01 Temporary Silt Fence	1632.02 Rock Inlet Sediment Trap Type B
1606.01 Special Sediment Control Fence	1632.03 Rock Inlet Sediment Trap Type C
1607.01 Gravel Construction Entrance	1633.01 Temporary Rock Silt Check Type A
1622.01 Temporary Berms and Slope Drains	1633.02 Temporary Rock Silt Check Type B
1630.01 Riser Basin	1634.01 Temporary Rock Sediment Dam Type A
1630.02 Silt Basin Type B	1634.02 Temporary Rock Sediment Dam Type B
1630.03 Temporary Silt Ditch	1635.01 Rock Pipe Inlet Sediment Trap Type A
1630.04 Stilling Basin	1635.02 Rock Pipe Inlet Sediment Trap Type B
1630.05 Temporary Diversion	1640.01 Coir Fiber Baffle
1630.06 Special Stilling Basin	1645.01 Temporary Stream Crossing
1631.01 Matting Installation	

PROJECT REFERENCE NO. B-5655	SHEET NO. EC-2
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

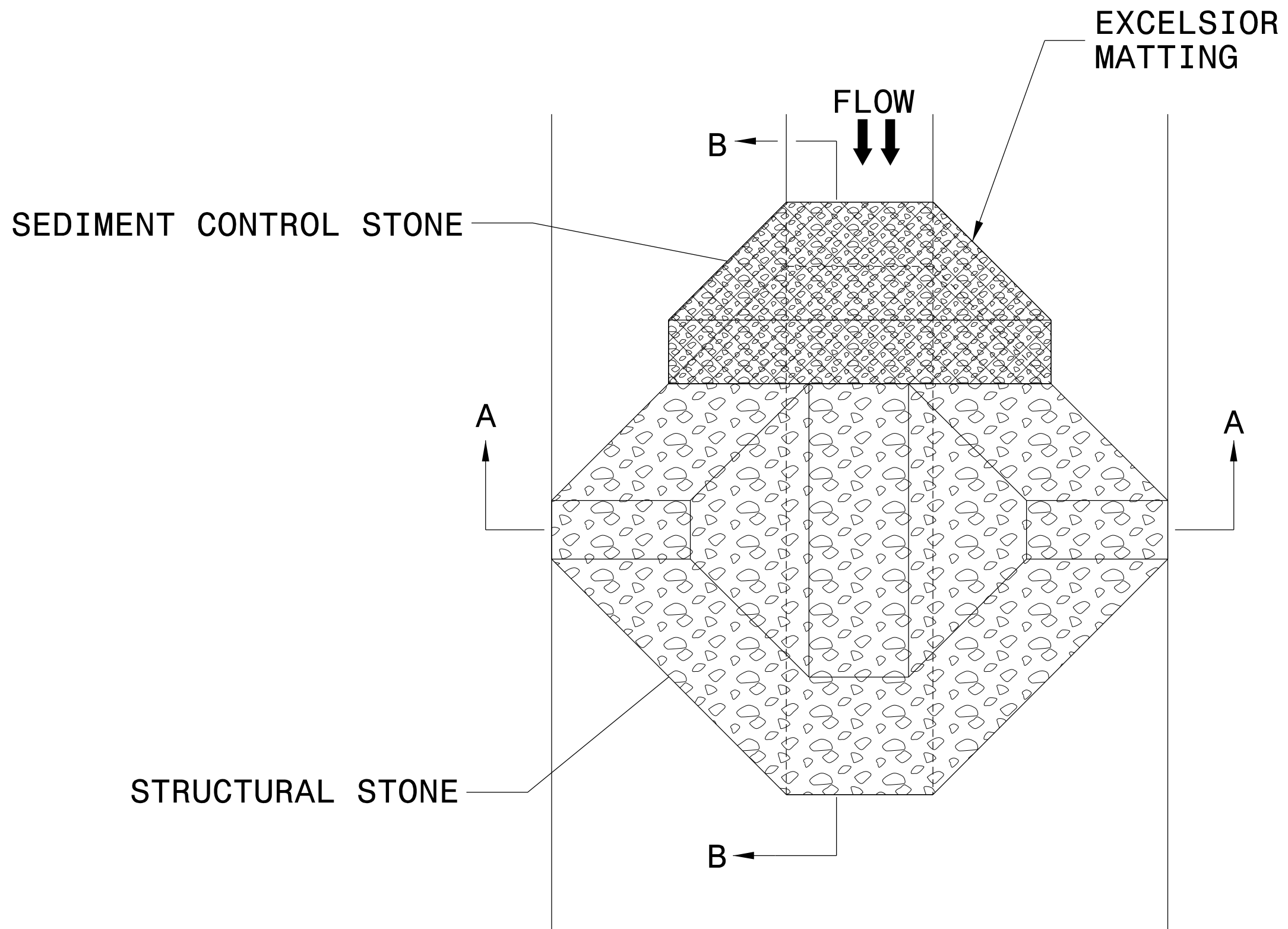
# COIR FIBER WATTLE WITH POLYACRYLAMIDE (PAM) DETAIL

**NOTES:**

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



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



PLAN

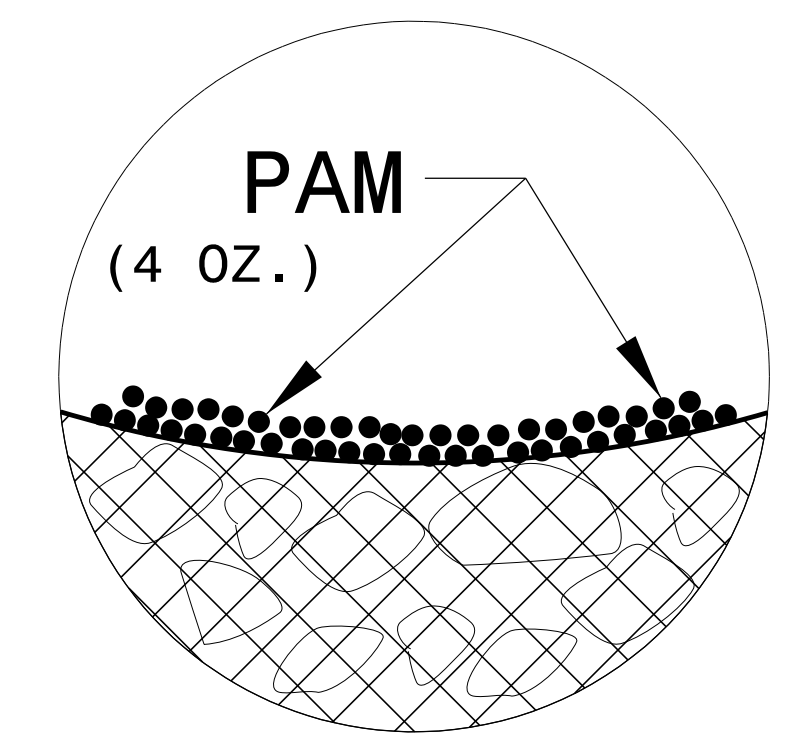
NOTES:

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

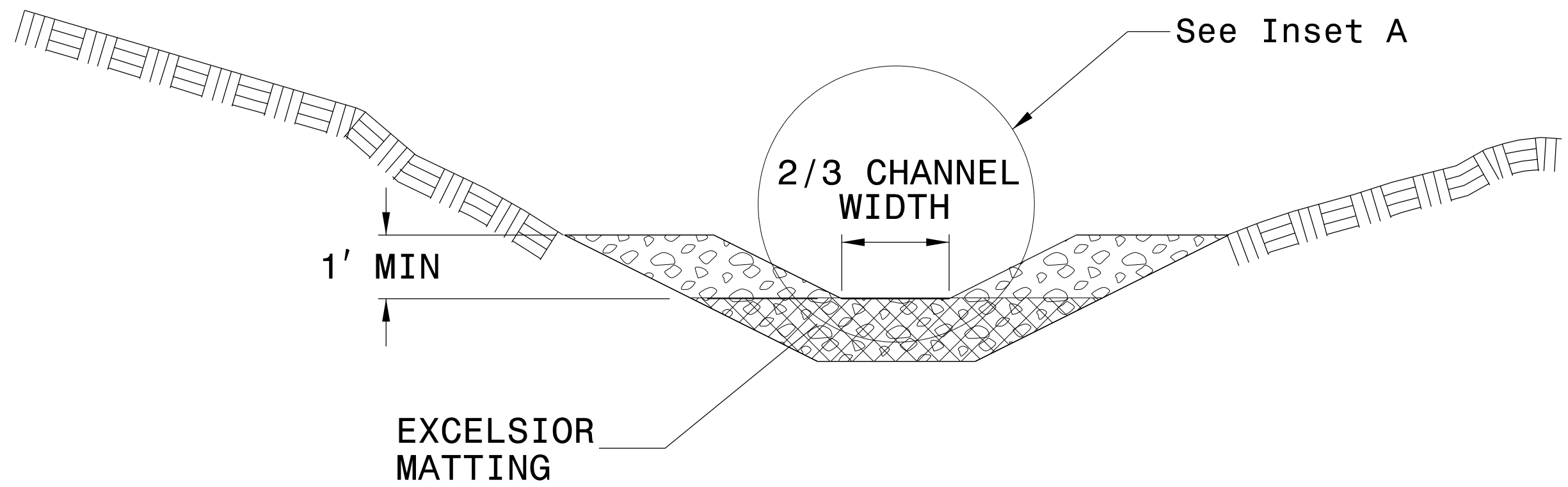
USE EXCELSIOR FOR MATTING MATERIAL AND ANCHOR MATTING SECTION AT TOP AND BOTTOM WITH CLASS B STONE.

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

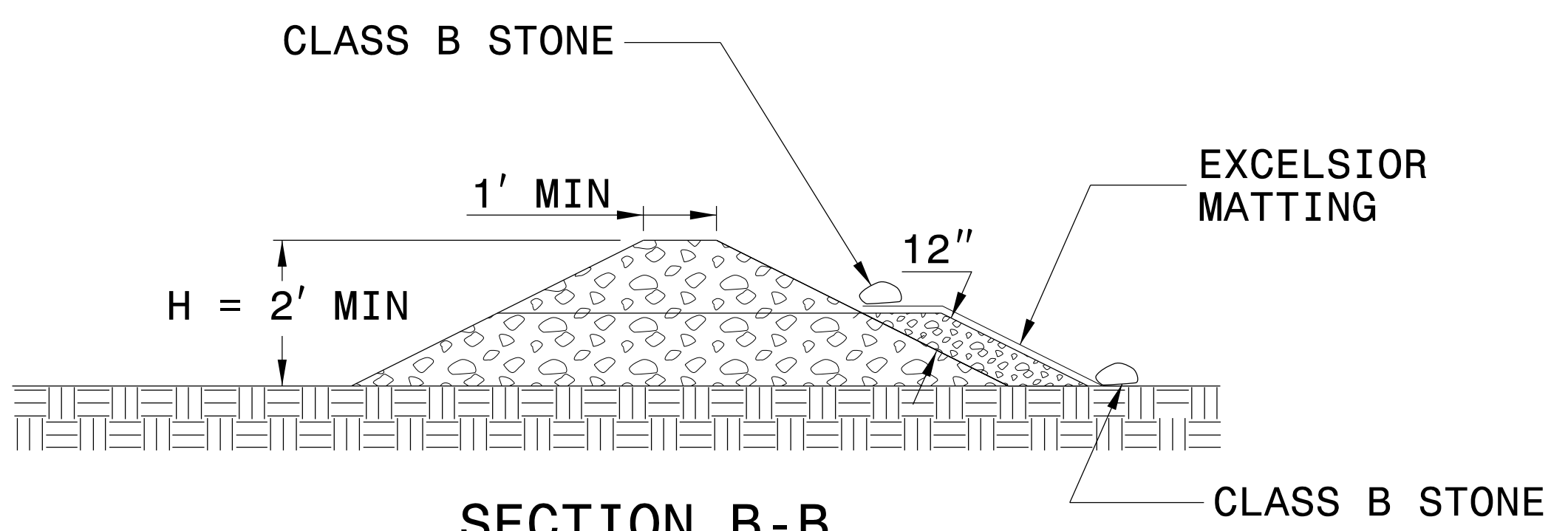
INITIALLY APPLY 4 OUNCES OF POLYACRYLAMIDE (PAM) TO TOP OF MATTING SECTION AND AFTER EVERY RAINFALL EVENT THAT EQUALS OR EXCEEDS 0.50 INCHES.



INSET A



SECTION A-A



SECTION B-B

NOT TO SCALE

DIVISION OF HIGHWAYS  
STATE OF NORTH CAROLINA

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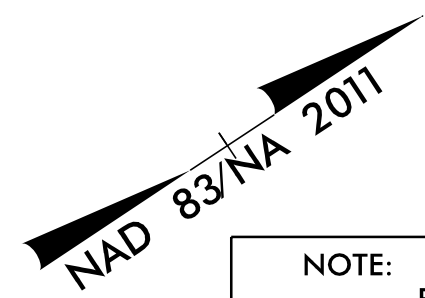


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## ***SOIL STABILIZATION TIMEFRAMES***

<i>SITE DESCRIPTION</i>	<i>STABILIZATION TIME</i>	<i>TIMEFRAME EXCEPTIONS</i>
PERIMETER DIKES, SWALES, DITCHES AND SLOPES	7 DAYS	NONE
HIGH QUALITY WATER (HQW) ZONES	7 DAYS	NONE
SLOPES STEEPER THAN 3:1	7 DAYS	IF SLOPES ARE 10' OR LESS IN LENGTH AND ARE NOT STEEPER THAN 2:1, 14 DAYS ARE ALLOWED.
SLOPES 3:1 OR FLATTER	14 DAYS	7 DAYS FOR SLOPES GREATER THAN 50' IN LENGTH.
ALL OTHER AREAS WITH SLOPES FLATTER THAN 4:1	14 DAYS	NONE, EXCEPT FOR PERIMETERS AND HQW ZONES.

CLEARING AND GRUBBING  
EROSION CONTROL FOR  
CONSTRUCTION SHEET 4



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

ENVIRONMENTALLY SENSITIVE AREA  
SEE PROJECT SPECIAL PROVISIONS

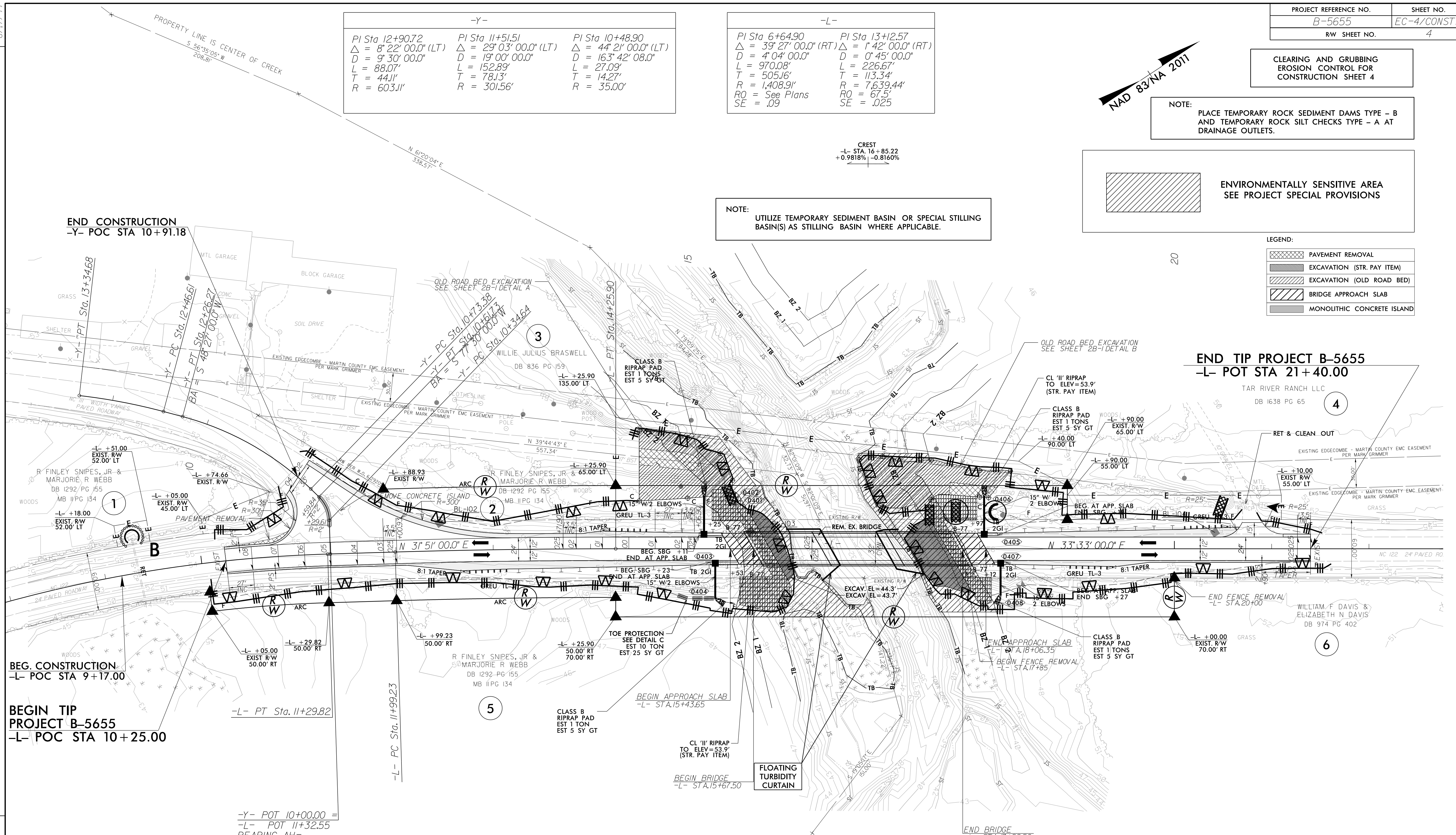
NOTE:  
UTILIZE TEMPORARY SEDIMENT BASIN OR SPECIAL STILLING  
BASIN(S) AS STILLING BASIN WHERE APPLICABLE.

- LEGEND:
- PAVEMENT REMOVAL
  - EXCAVATION (STR. PAY ITEM)
  - EXCAVATION (OLD ROAD BED)
  - BRIDGE APPROACH SLAB
  - MONOLITHIC CONCRETE ISLAND

-Y-		
PI Sta 12+90.72	PI Sta 11+51.51	PI Sta 10+48.90
$\Delta = 8^{\circ} 22' 00.0''$ (LT)	$\Delta = 29^{\circ} 03' 00.0''$ (LT)	$\Delta = 44^{\circ} 21' 00.0''$ (LT)
D = 9' 30" 00.0"	D = 19' 00" 00.0"	D = 163' 42" 08.0"
L = 88.07'	L = 152.89'	L = 27.09'
T = 44.11'	T = 78.13'	T = 14.27'
R = 603.11'	R = 301.56'	R = 35.00'

-L-	
PI Sta 6+64.90	PI Sta 13+12.57
$\Delta = 39^{\circ} 27' 00.0''$ (RT)	$\Delta = 1^{\circ} 42' 00.0''$ (RT)
D = 4' 04" 00.0"	D = 0' 45" 00.0"
L = 970.08'	L = 226.67'
T = 505.16'	T = 113.34'
R = 1,408.91'	R = 7,639.44'
RO = See Plans	RO = 67.5'
SE = .09	SE = .025

CREST  
-L- STA. 16+85.22  
+0.9818% | -0.8160%



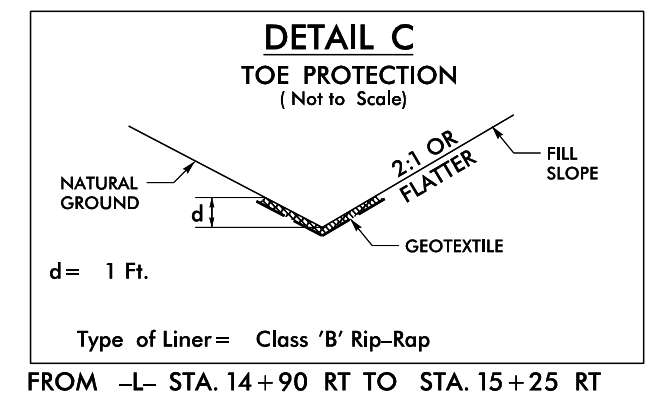
END CONSTRUCTION  
-Y- POC STA 10+91.18

END TIP PROJECT B-5655  
-L- POT STA 21+40.00

BEG. CONSTRUCTION  
-L- POC STA 9+17.00

BEGIN TIP  
PROJECT B-5655  
-L- POC STA 10+25.00

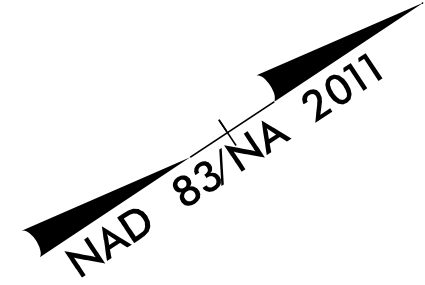
-Y- POT 10+00.00 =  
-L- POT 11+32.55  
BEARING AH=  
N 58° 09' 00.0" W



FOR -L- PROFILE SEE SHEET 5  
FOR -Y- PROFILE SEE SHEET 5  
FOR STRUCTURE PLANS SEE SHEETS S-1 TO S-29

REVISIONS

8/17/99  
 2/24/2020  
 B:\2018\51801945.20\_B-5655\_REU\_EC-4\_C&G\_PLAN\_SHEET.dgn  
 Elizabeth Sheldon



-Y-		
PI Sta 12+90.72	PI Sta 11+51.51	PI Sta 10+48.90
$\Delta = 8^{\circ} 22' 00.0''$ (LT)	$\Delta = 29^{\circ} 03' 00.0''$ (LT)	$\Delta = 44^{\circ} 21' 00.0''$ (LT)
D = 9' 30" 00.0"	D = 19' 00" 00.0"	D = 163' 42" 08.0"
L = 88.07'	L = 152.89'	L = 27.09'
T = 44.11'	T = 78.13'	T = 14.27'
R = 603.11'	R = 301.56'	R = 35.00'

-L-	
PI Sta 6+64.90	PI Sta 13+12.57
$\Delta = 39^{\circ} 27' 00.0''$ (RT)	$\Delta = 1^{\circ} 42' 00.0''$ (RT)
D = 4' 04" 00.0"	D = 0' 45" 00.0"
L = 970.08'	L = 226.67'
T = 505.16'	T = 113.34'
R = 1,408.91'	R = 7,639.44'
RO = See Plans	RO = 67.5'
SE = .09	SE = .025

Place Matting for Erosion Control  
on Excavated Area as Work Allows.  
Sta. 14+50 to Sta. 15+46

Place Matting for Erosion Control  
on Excavated Area as Work Allows.  
Sta. 16+76 to Sta. 18+31

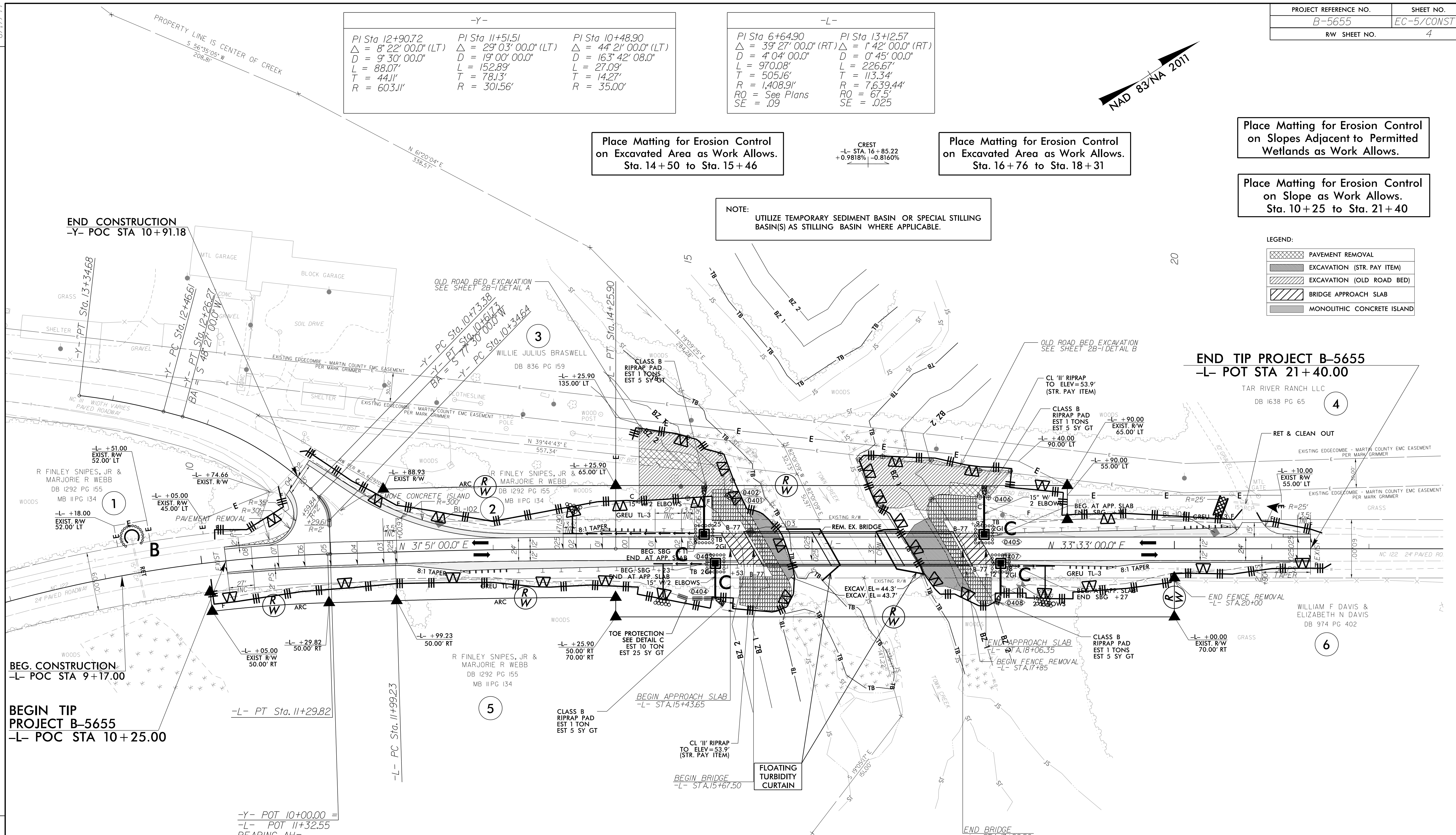
Place Matting for Erosion Control  
on Slopes Adjacent to Permitted  
Wetlands as Work Allows.

Place Matting for Erosion Control  
on Slope as Work Allows.  
Sta. 10+25 to Sta. 21+40

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

LEGEND:

	PAVEMENT REMOVAL
	EXCAVATION (STR. PAY ITEM)
	EXCAVATION (OLD ROAD BED)
	BRIDGE APPROACH SLAB
	MONOLITHIC CONCRETE ISLAND



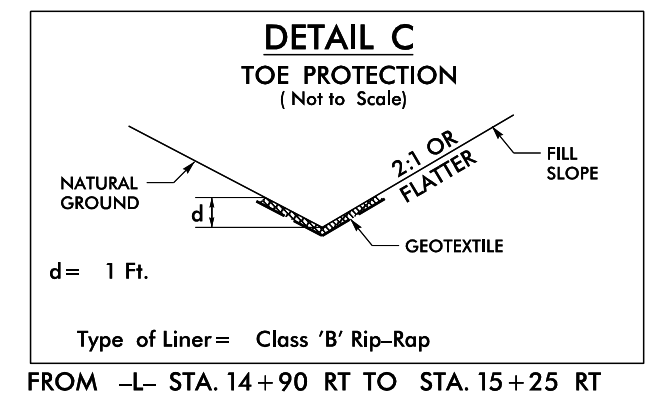
END CONSTRUCTION  
-Y- POC STA 10+91.18

END TIP PROJECT B-5655  
-L- POT STA 21+40.00

BEG. CONSTRUCTION  
-L- POC STA 9+17.00

BEGIN TIP  
PROJECT B-5655  
-L- POC STA 10+25.00

-Y- POT 10+00.00 =  
-L- POT 11+32.55  
BEARING AH=  
N 58° 09' 00.0" W



8/17/99  
 REVISIONS  
 2/24/2020  
 Elizabeth Sheldon  
 2018  
 5/18/1945.20 B-5655\_REU\_EC-5\_FINAL\_PLAN\_SHEET.dgn

FOR -L- PROFILE SEE SHEET 5  
FOR -Y- PROFILE SEE SHEET 5  
FOR STRUCTURE PLANS SEE SHEETS S-1 TO S-29



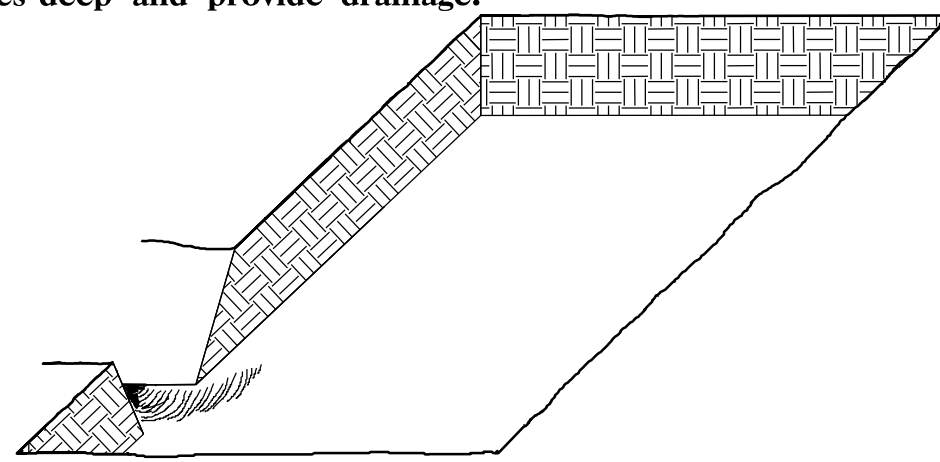
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-5655	RF-1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	

# PLANTING DETAILS

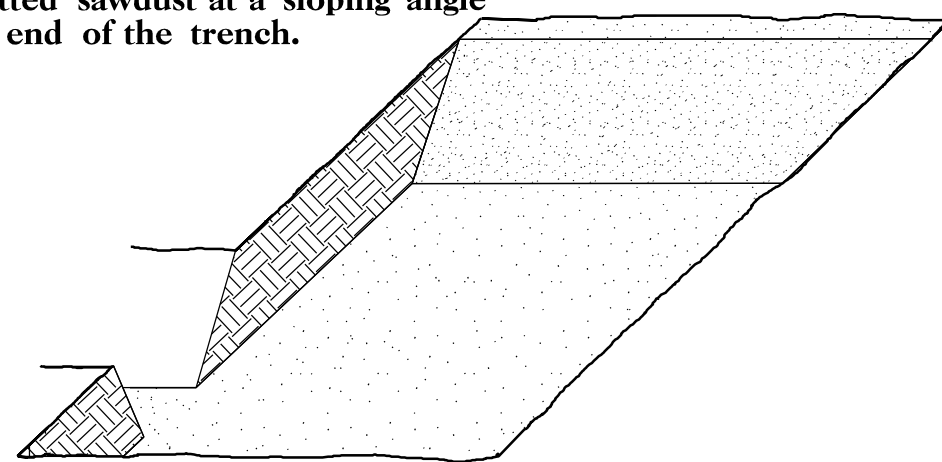
## SEEDLING / LINER BAREROOT PLANTING DETAIL

### HEALING IN

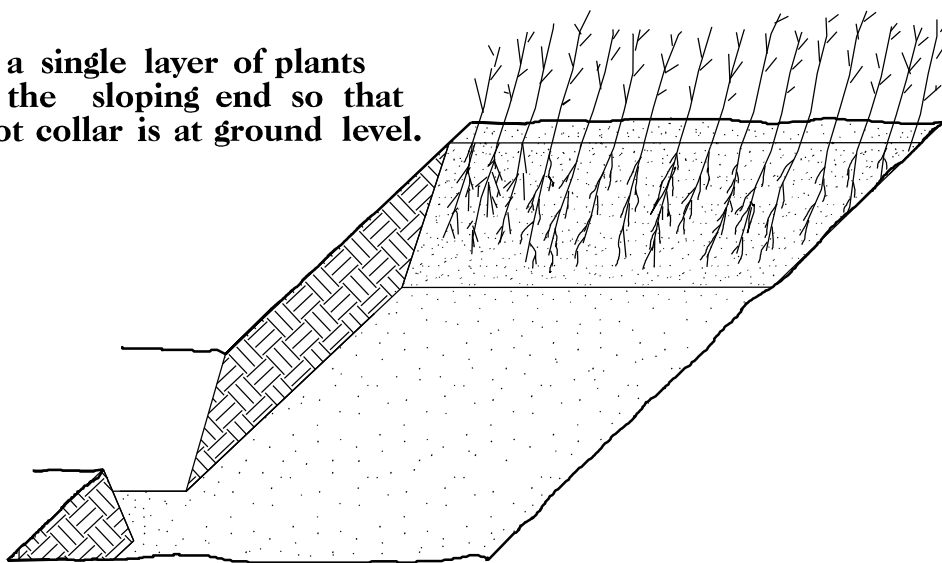
1. Locate a healing-in site in a shady, well protected area.
2. Excavate a flat bottom trench 12 inches deep and provide drainage.



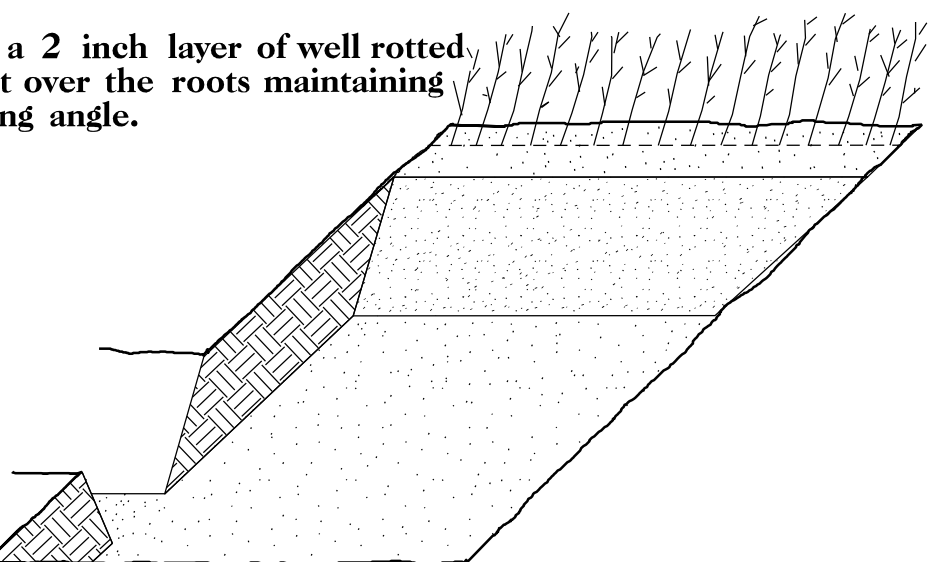
3. Backfill the trench with 2 inches well rotted sawdust. Place a 2 inch layer of well rotted sawdust at a sloping angle at one end of the trench.



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

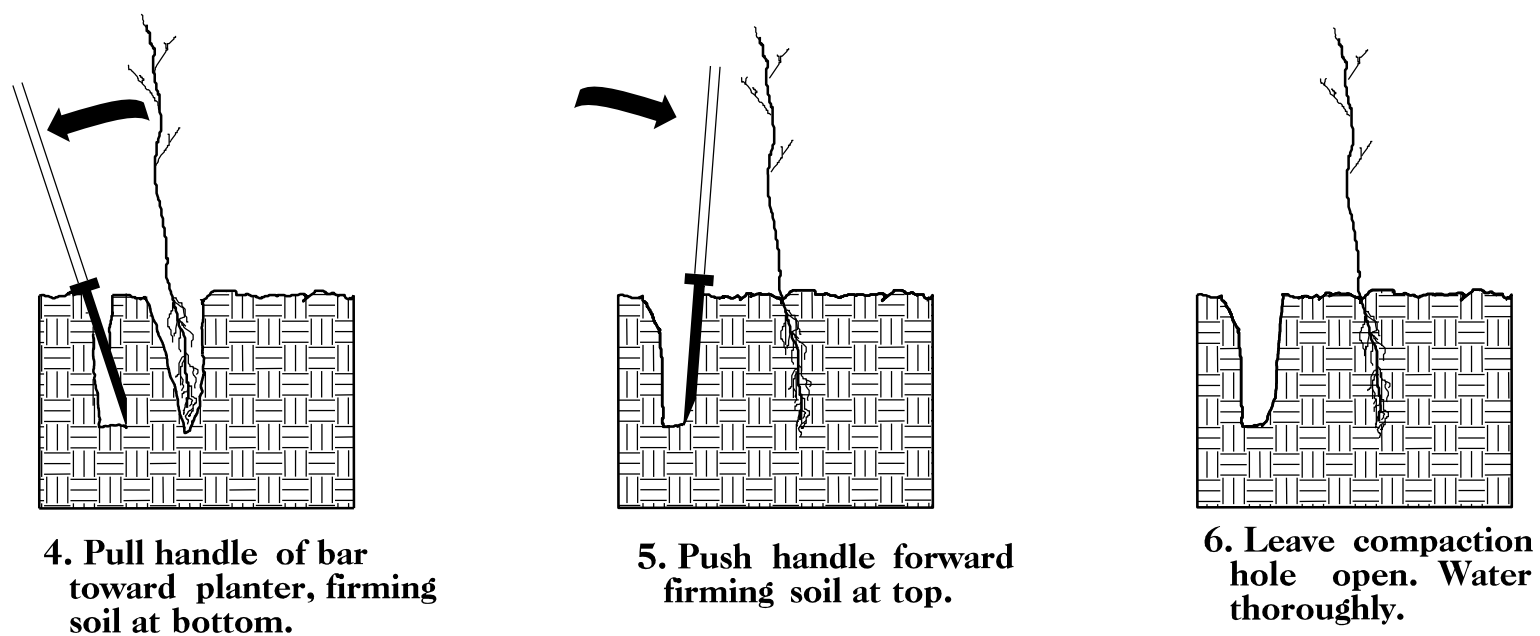
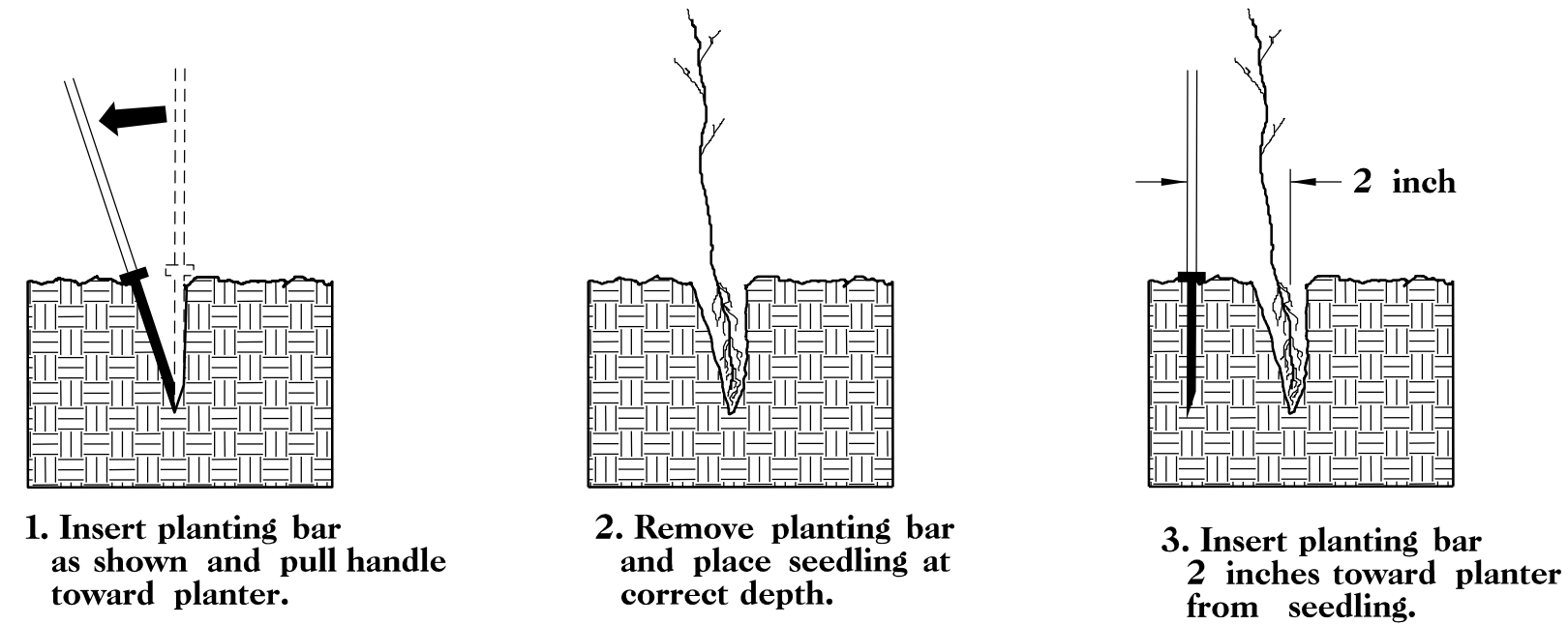


5. Place a 2 inch layer of well rotted sawdust over the roots maintaining a sloping angle.



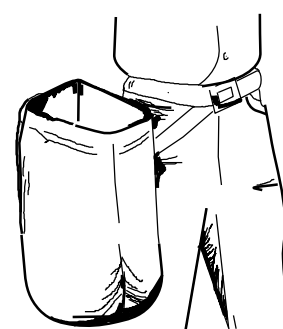
6. Repeat layers of plants and sawdust as necessary and water thoroughly.

### DIBBLE PLANTING METHOD USING THE KBC PLANTING BAR

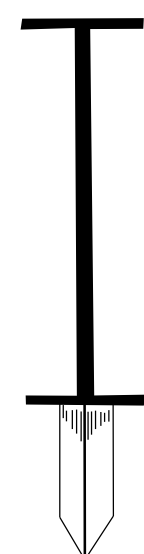


### PLANTING NOTES:

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



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



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

## REFORESTATION

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

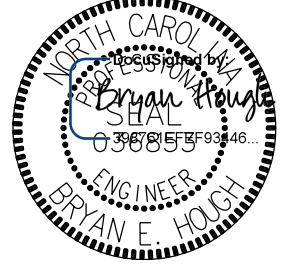

### REFORESTATION

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

40%	LIRIODENDRON TULIPIFERA	TULIP POPLAR	12 in - 18 in BR
30%	PLATANUS OCCIDENTALIS	AMERICAN SYCAMORE	12 in - 18 in BR
30%	BETULA NIGRA	RIVER BIRCH	12 in - 18 in BR

## REFORESTATION DETAIL SHEET

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

PROJ. REFERENCE NO. B-5655	SHEET NO. SIGN-1
APPROVED: _____	
DATE: _____	
SEAL	
	
11/23/2020	
	
<small>Engineers • Planners • Scientists • Construction Managers 4601 Six Forks Road, Landmark Center II, Suite 210 Raleigh, NC 27609-5210 Phone (919) 783-9214 • Fax (919) 783-9266</small>	

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

**SIGNING PLAN**

**EDGECOMBE COUNTY**

**LOCATION: BRIDGE NO. 11 OVER TOWN CREEK ON NC 11/NC 112**

**TIP PROJECT: B-5655**

**CONTRACT: DD00339**

**SUMMARY OF QUANTITIES**

ITEM NO.		ITEM DESCRIPTION	QUANTITY	UNIT
DESC. NO.	SECT. NO.			
4072000000-E	903	SUPPORTS, 3-LB STEEL U-CHANNEL	195	LF.
4096000000-N	904	SIGN ERECTION, TYPE D	2	EA.
4102000000-N	904	SIGN ERECTION, TYPE E	6	EA.
4108000000-N	904	SIGN ERECTION, TYPE F	7	EA.
4155000000-N	907	DISPOSAL OF SIGN SYSTEM, U-CHANNEL	11	EA.
4158000000-N	907	DISPOSAL OF SIGN SYSTEM, WOOD	2	EA.

**GENERAL NOTES**

- SIGNS FURNISHED BY STATE.
- CONFIRM IN WRITING AT LEAST 4 MONTHS IN ADVANCE THE ACTUAL DATE THE DEPARTMENT FURNISHED SIGNS WILL BE REQUIRED.
- ALL TYPE 'D' SIGNS SHALL BE MOUNTED ON TWO U-CHANNEL POSTS UNLESS OTHERWISE INDICATED ON THE PLANS.
- ALL EXISTING SIGNS ON "U" CHANNEL POST WITHIN THE PROJECT LIMITS SHALL BE REMOVED AND DISPOSED OF UNLESS OTHERWISE NOTED ON PLANS.
- WHEN EXISTING SIGNS ARE REMOVED AND INSTALLED ON NEW SUPPORTS, THE RE-ERECTION SHALL IMMEDIATELY FOLLOW THE REMOVAL.
- SEE ROADWAY PLANS FOR GUARD/GUIDE RAIL DETAILS.

**ROADWAY STANDARD DRAWING**

THE FOLLOWING ROADWAY STANDARDS AS APPEAR 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:

<b>STD. NO.</b>	<b>TITLE</b>
904.10	ORIENTATION OF GROUND MOUNTED SIGNS
904.50	MOUNTING OF TYPE 'D', 'E' AND 'F' SIGNS ON 'U' CHANNEL POSTS

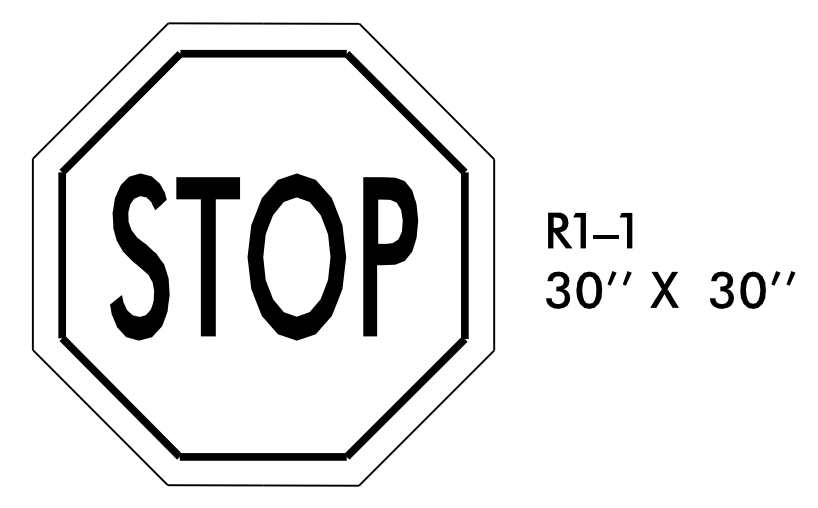
**INDEX**

SHEET NO.	DESCRIPTION
SIGN-1	TITLE SHEET
SIGN-2	SIGN DESIGNS
SIGN-3	TYPE "E" & "F" SIGNS
SIGN-4	SIGN DETAIL PLAN

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\$\$\$\$\$USERNAME\$\$\$\$\$



401 QUANTITY REQ'D 2



R1-1  
30" X 30"

ONE "U" POST PER SIGN

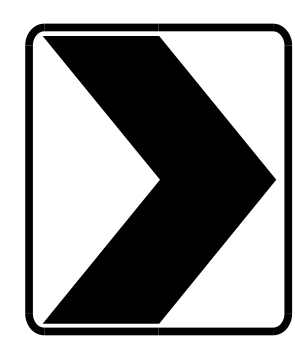
402 QUANTITY REQ'D 1



R2-1  
24" X 30"

MOUNT BELOW SIGN 404  
IN 1 INSTALLATION

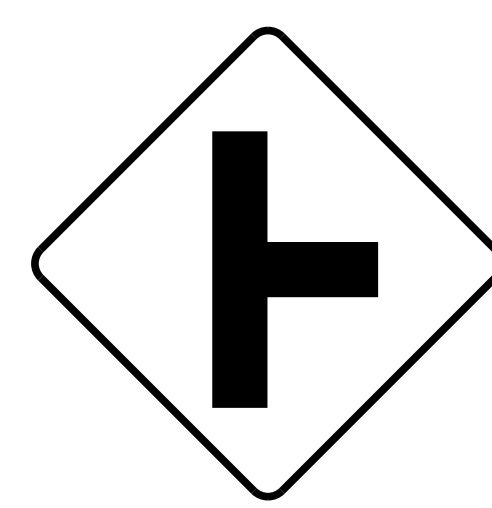
403 QUANTITY REQ'D 1



W1-8  
18" X 24"

ONE "U" POST PER SIGN

404 QUANTITY REQ'D 1



W2-2  
48" X 48"

ONE "U" POST PER SIGN

405 QUANTITY REQ'D 1



W8-13  
36" X 36"

ONE "U" POST PER SIGN

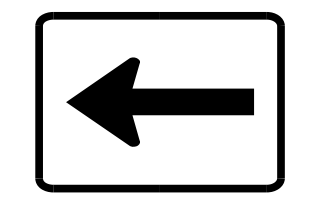
501 QUANTITY REQ'D 1



M3-3  
24" X 12"



M1-5  
30" X 24"



M6-1 L  
21" X 15"

ONE "U" POST PER SIGN

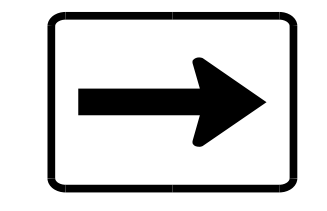
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M1-5  
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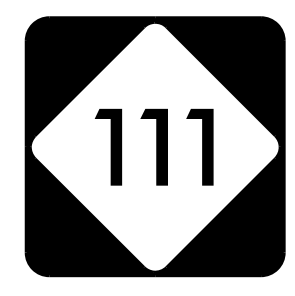
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ONE "U" POST PER SIGN

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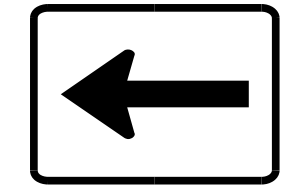
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M1-5  
30" X 24"



M1-5  
30" X 24"



M6-1 L  
21" X 15"

ONE "U" POST PER SIGN

504 QUANTITY REQ'D 1



M3-1  
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M1-5  
30" X 24"

ONE "U" POST PER SIGN

505 QUANTITY REQ'D 1



M3-1  
24" X 12"



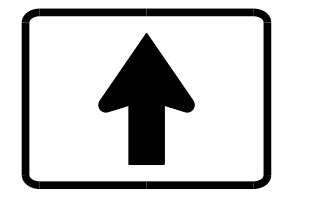
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ONE "U" POST PER SIGN

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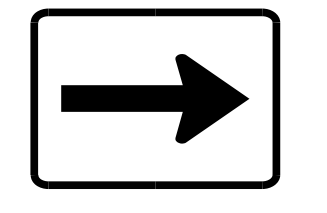
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ONE "U" POST PER SIGN

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M6-1  
21" X 15"

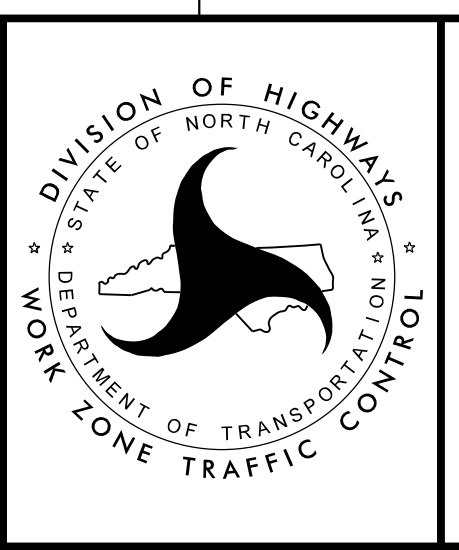
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DCGN: 038853  
USER NAME: BRYAN E. HOUGH

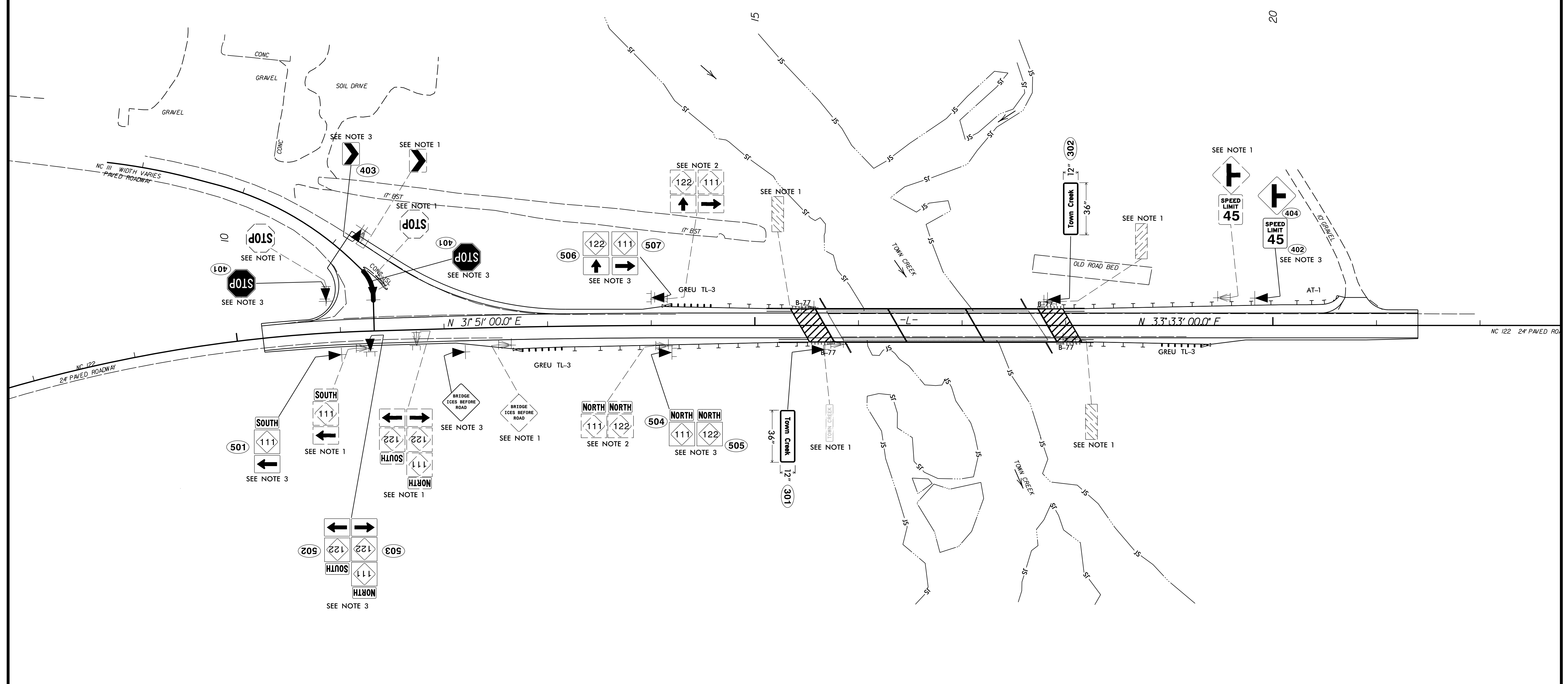
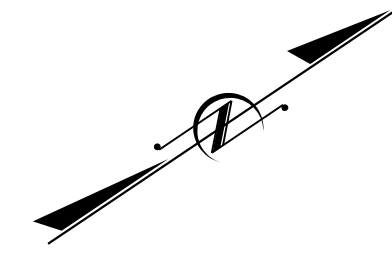
APPROVED: \_\_\_\_\_  
DATE: 2/4/2020

SEAL

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



TYPE "E" & "F"  
SIGNS



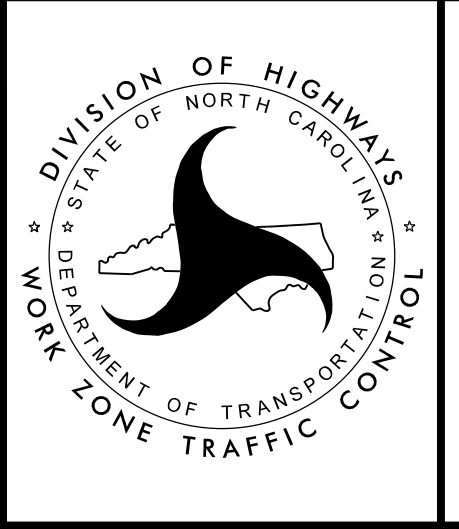
**PROJECT NOTES**

1	DISPOSAL OF SIGN SYSTEM, U-CHANNEL
2	DISPOSAL OF SIGN SYSTEM, WOOD
3	SIGN ERECTION, TYPE D, E, AND F

APPROVED: \_\_\_\_\_  
 DATE: 2/4/2020

SEAL

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



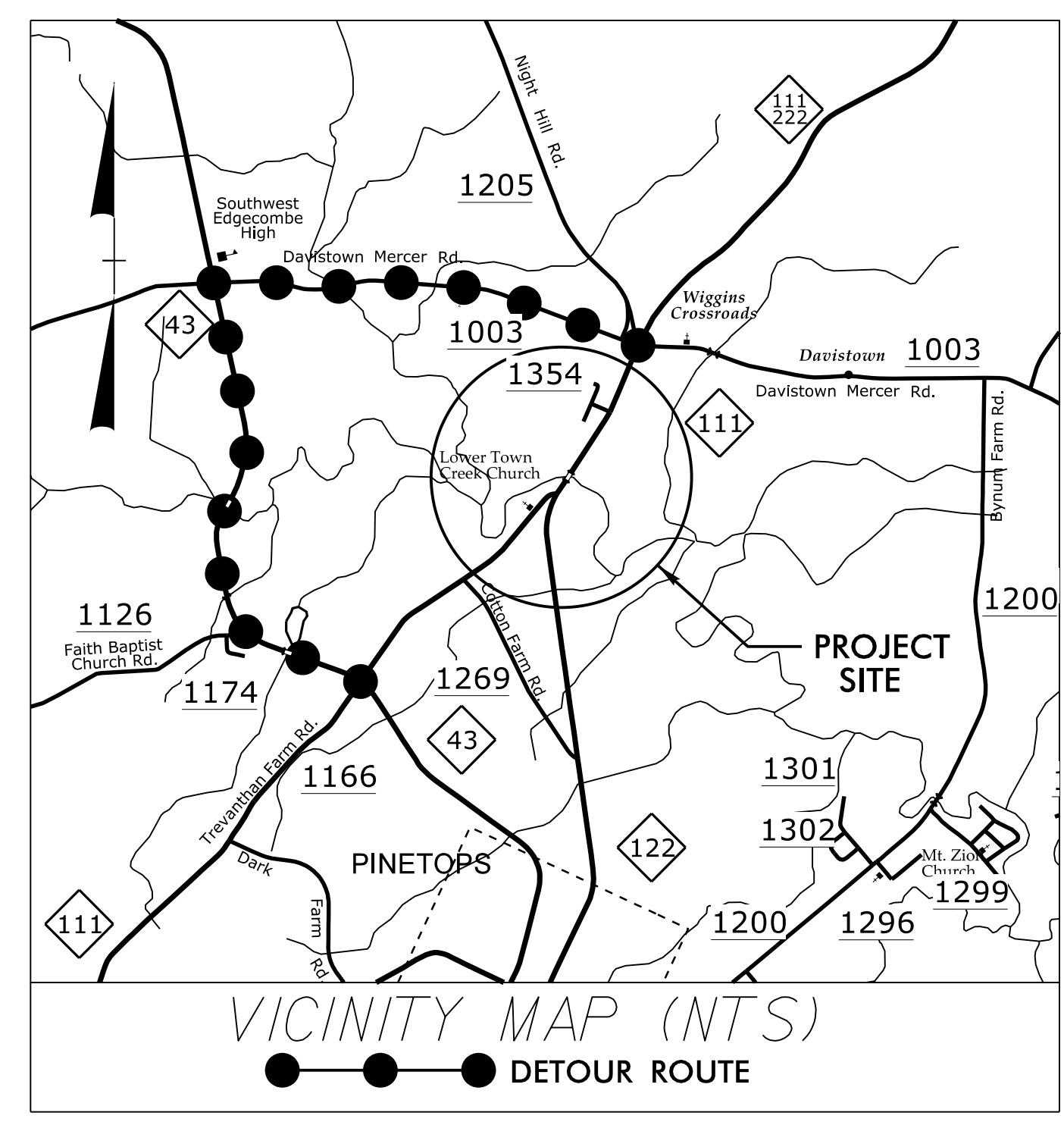
**SIGN DETAIL SHEET**

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

09.08/99

**TIP PROJECT: B-5655**

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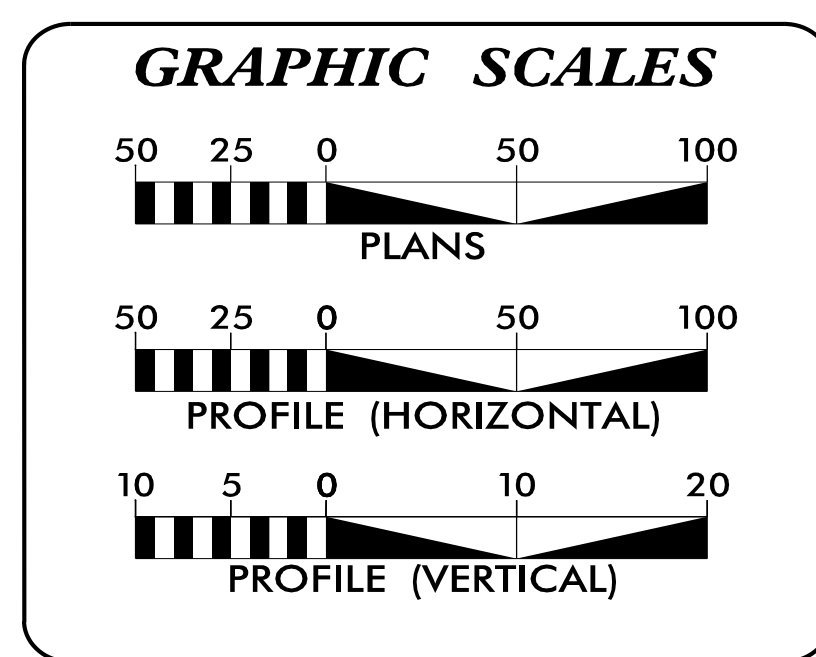
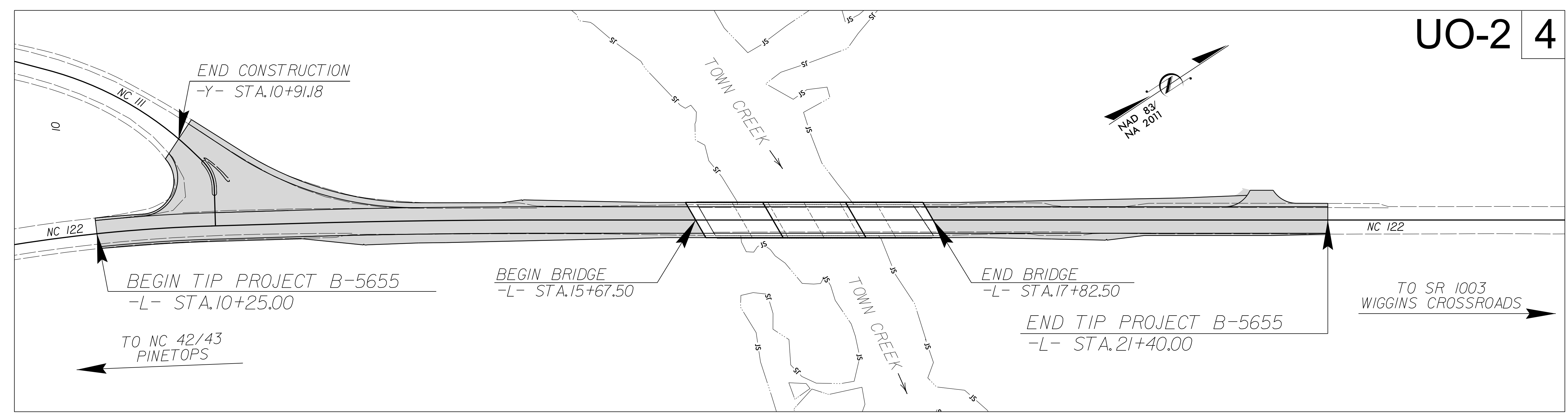
STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

**UTILITIES BY OTHERS PLANS  
EDGECOMBE COUNTY**

**LOCATION: REPLACE BRIDGE NO. 11 OVER  
TOWN CREEK ON NC 11/NC 122**  
**TYPE OF WORK: RELOCATION OF UNDERGROUND  
COMMUNICATION LINES**

T.I.P. NO.	SHEET NO.
B-5655	UO-1

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



**INDEX OF SHEETS**

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

**UTILITY OWNERS WITH CONFLICTS**

(A) COMMUNICATION LINES - CENTURYLINK

PREPARED IN THE OFFICE OF:

**KCI**  
KCI Associates of N.C., P.A.  
4505 Falls of Neuse Road, Suite 400  
Raleigh, NC 27609  
Phone (919) 783-9214  
Fax (919) 783-9266

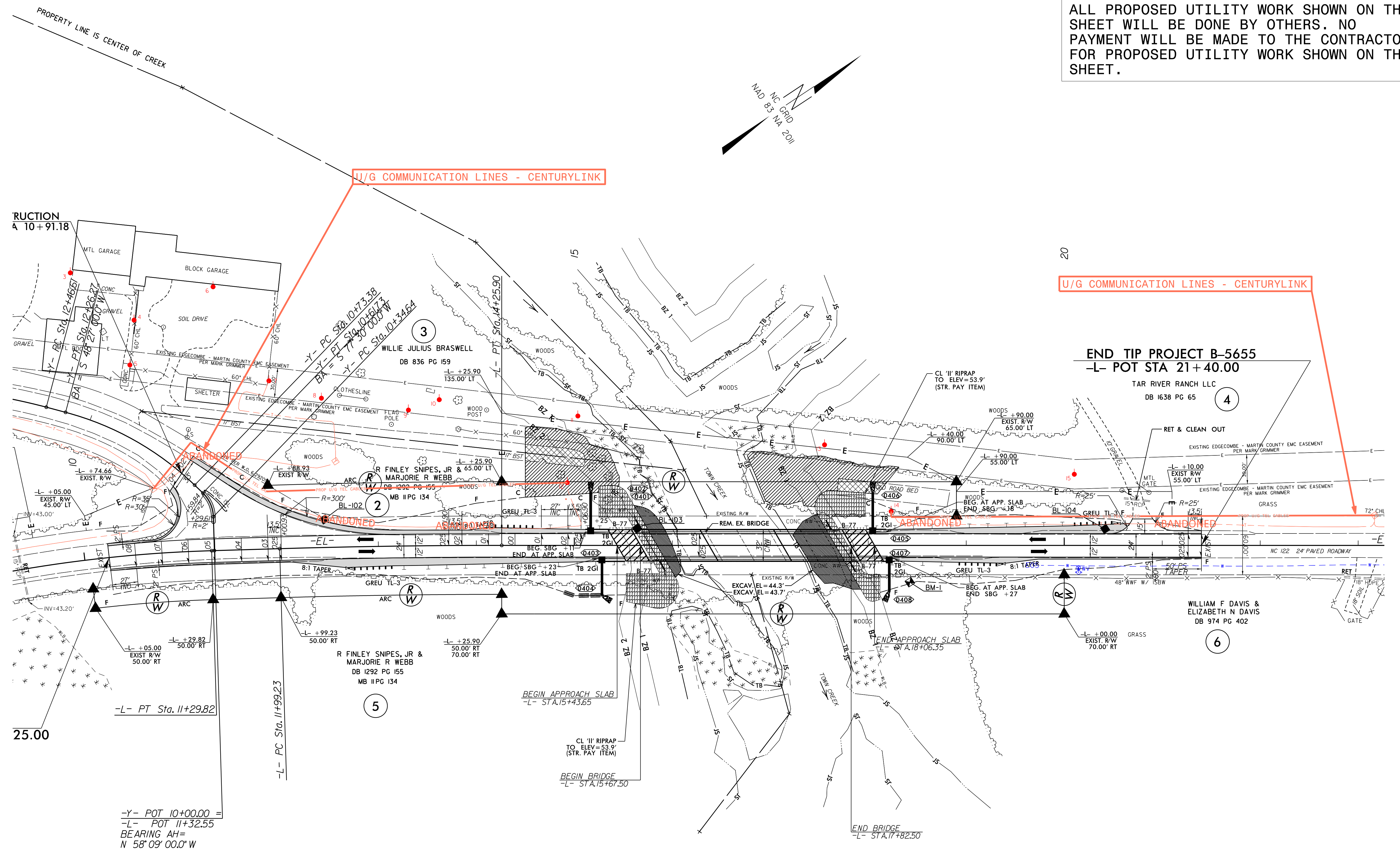
**JOHN FAISON** PROJECT UTILITY COORDINATOR  
**DANIEL ALLEN** PROJECT UTILITY DESIGNER

**DIVISION OF HIGHWAYS  
UTILITIES UNIT**  
1000 BIRCH RIDGE DRIVE  
RALEIGH NC 27610

**NABIL HAMDAN** REGIONAL UTILITIES ENGINEER  
**KELVIN MARTIN, EI** SENIOR UTILITIES ENGINEER  
**KYLE PLEASANT** UTILITIES AREA COORDINATOR  
**LARRY JAMES JR.** SENIOR UTILITIES COORDINATOR

**UTILITIES BY OTHERS**  
THIS SHEET CORRESPONDS TO RDY-4

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

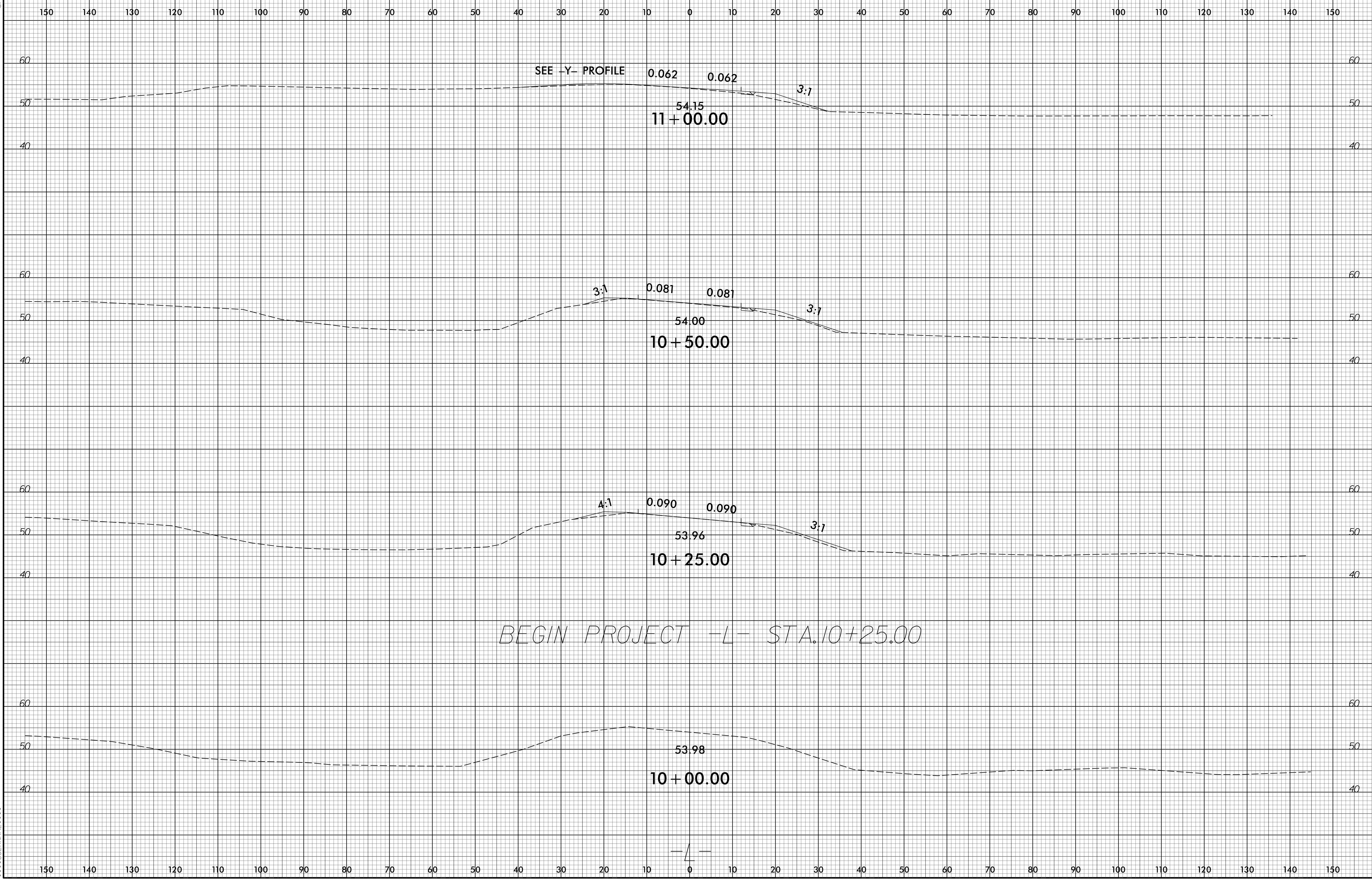


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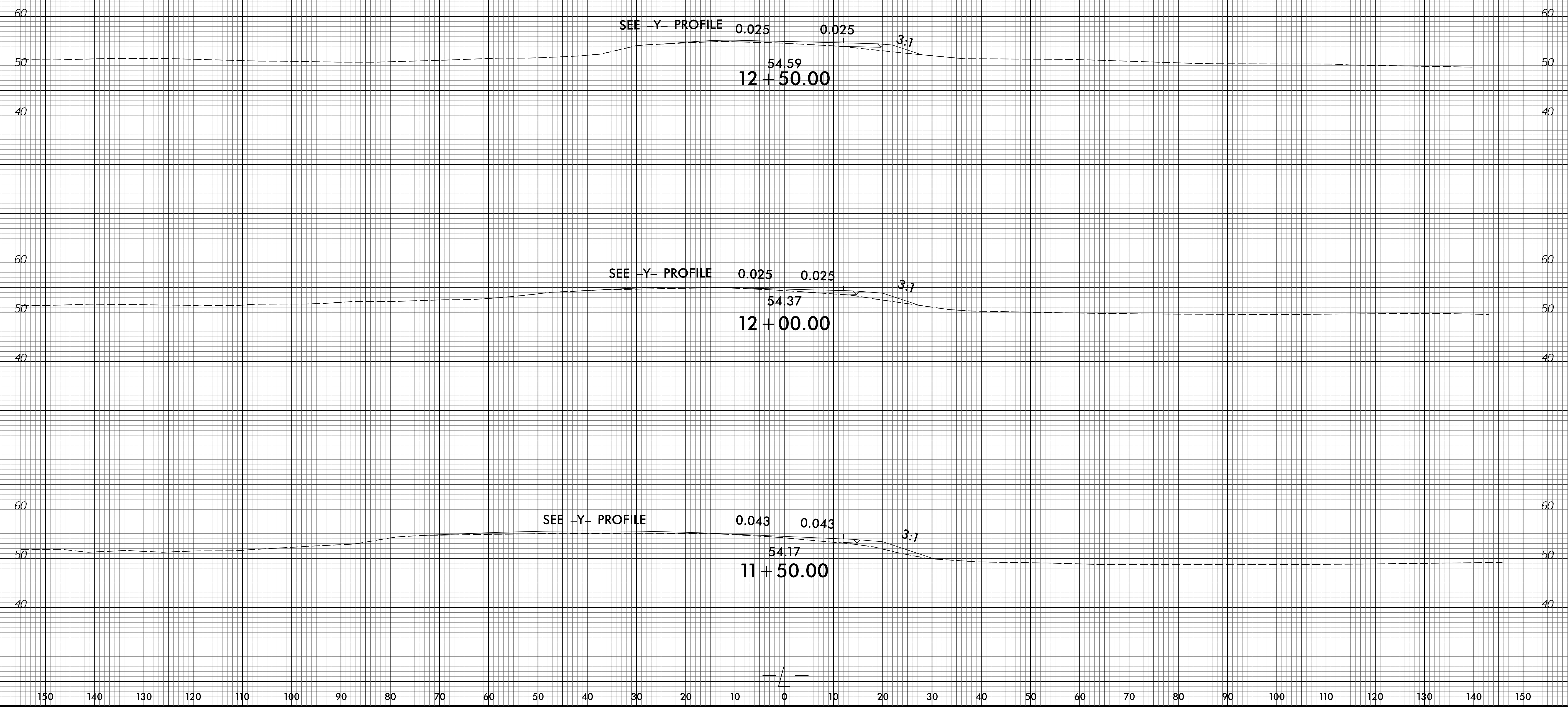


6/23/16

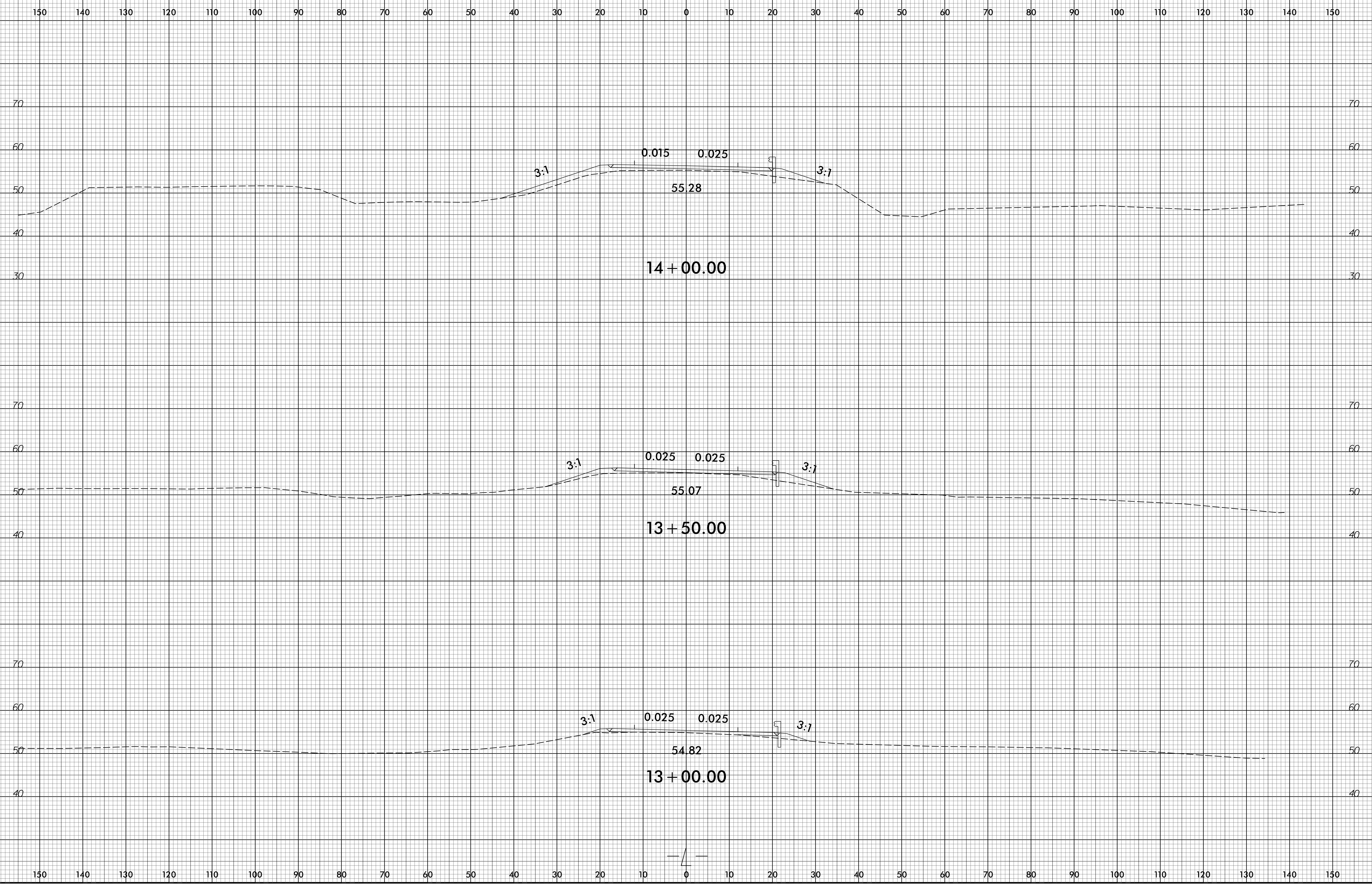


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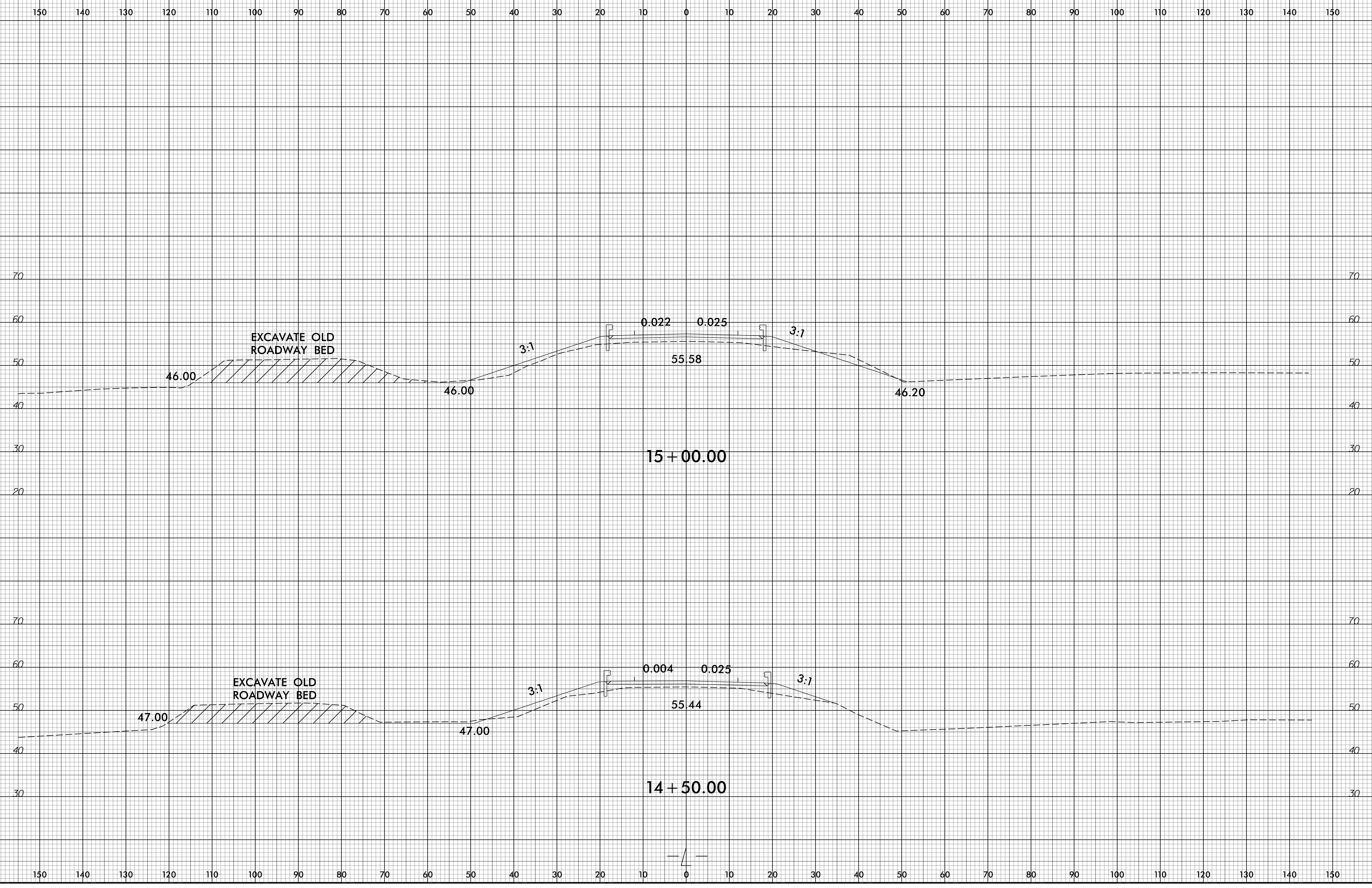
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6/23/16



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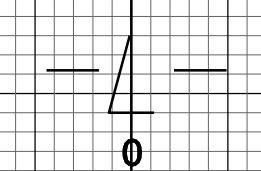
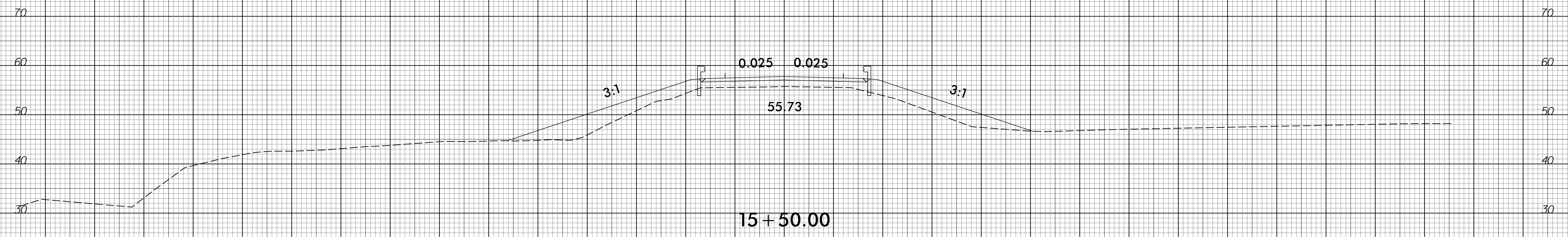
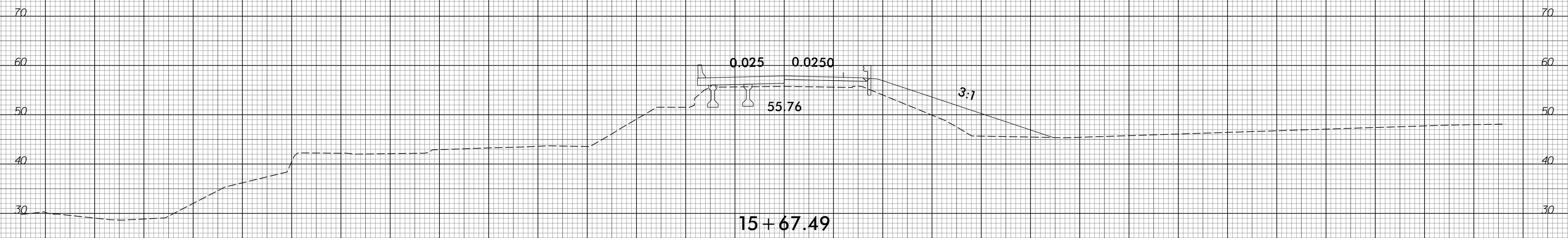


6/23/16

0	5	10	PROJ. REFERENCE NO.	SHEET NO.
█	█	█	B-5655	X-5

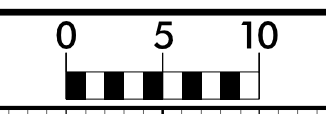
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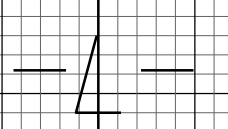
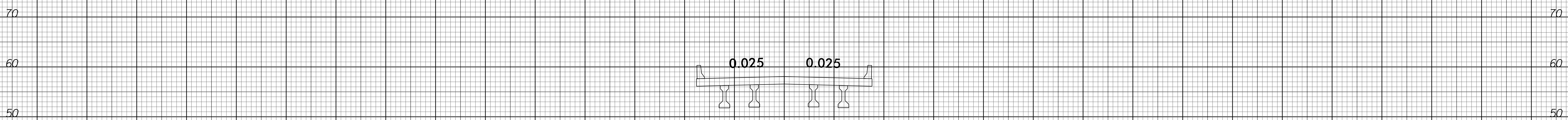
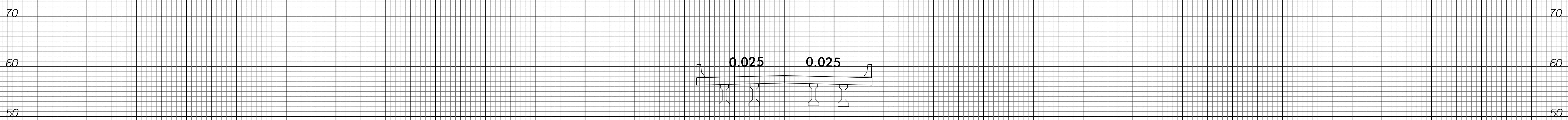


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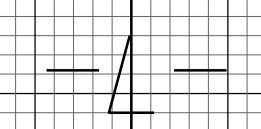
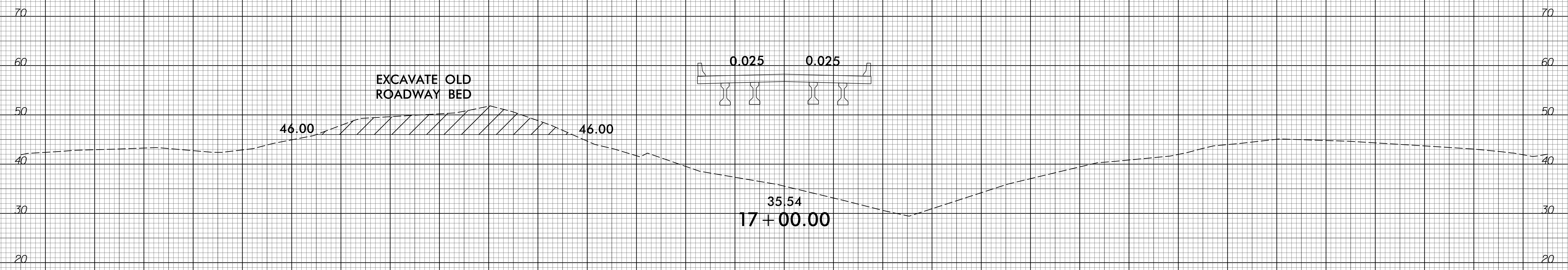
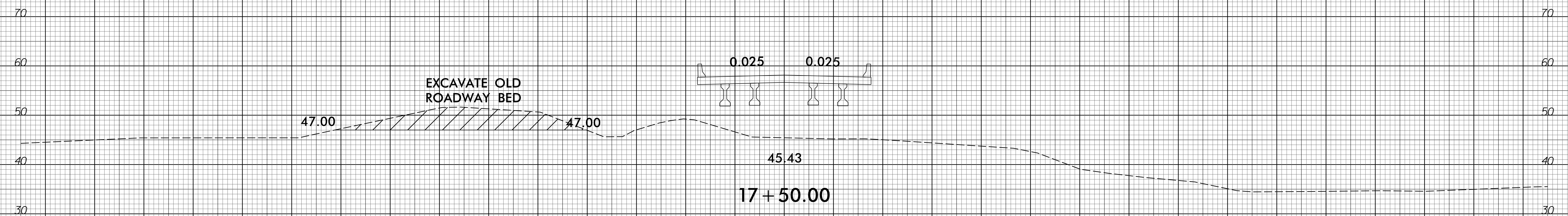


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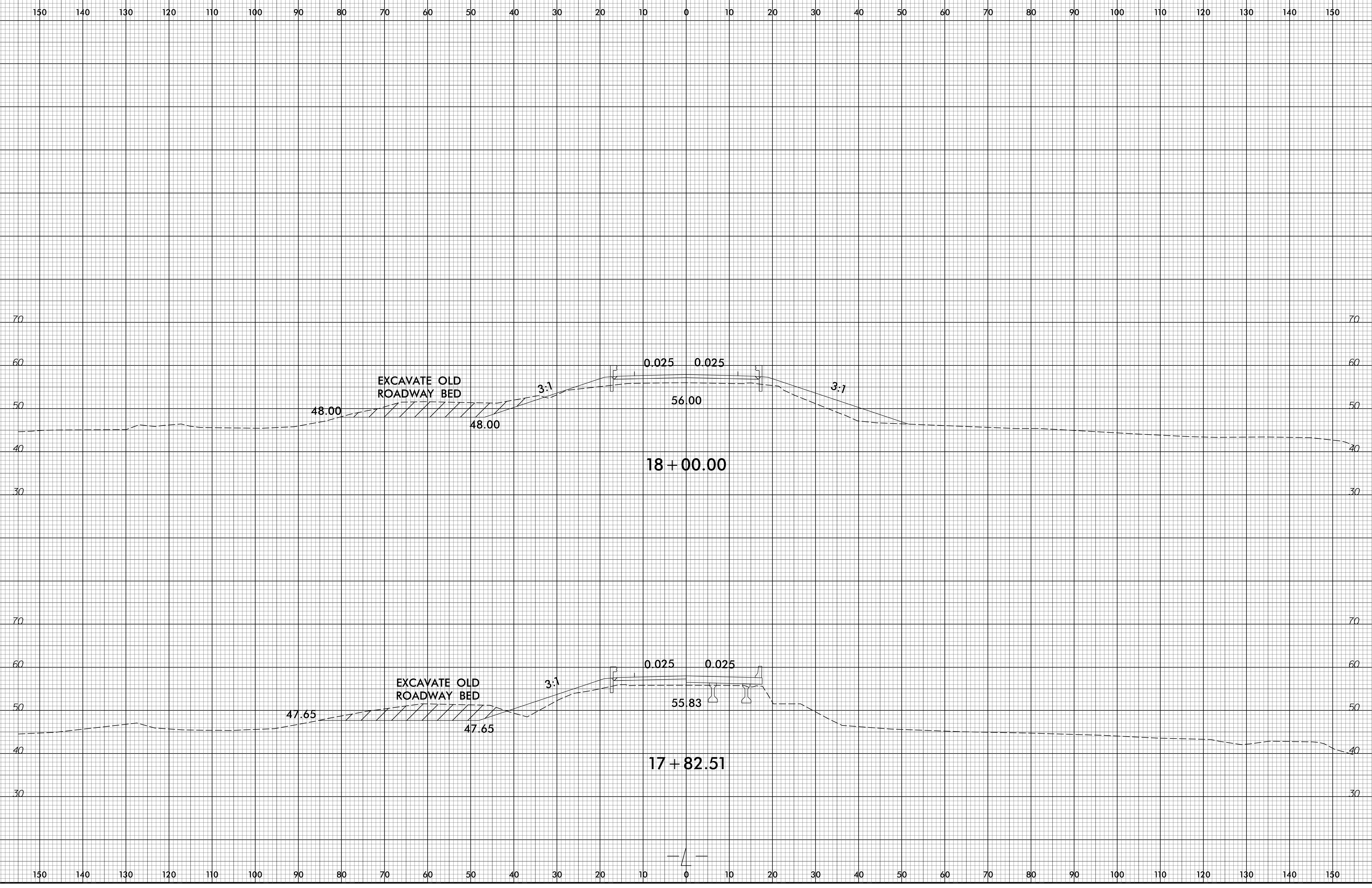


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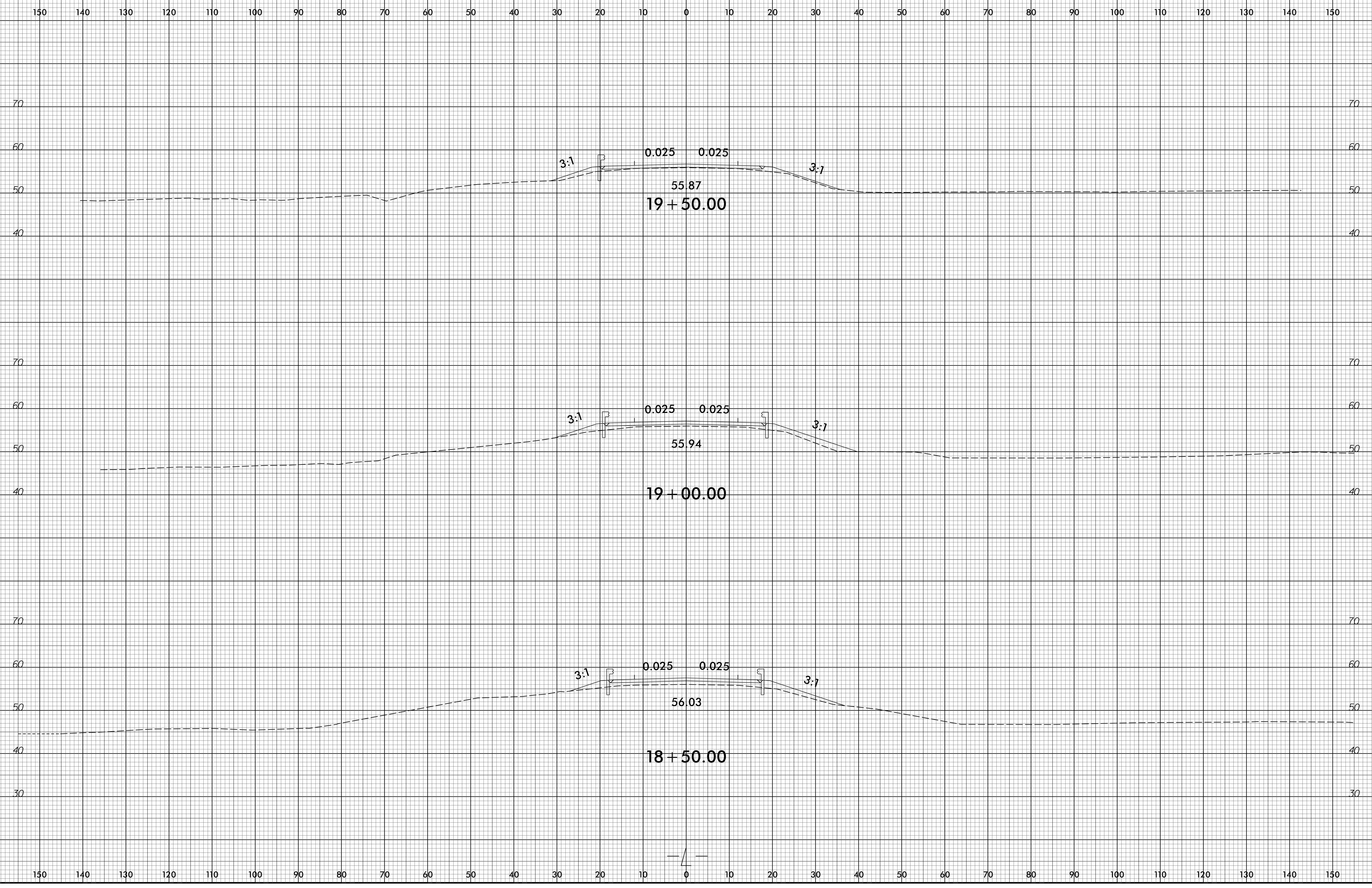


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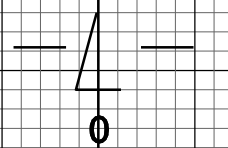


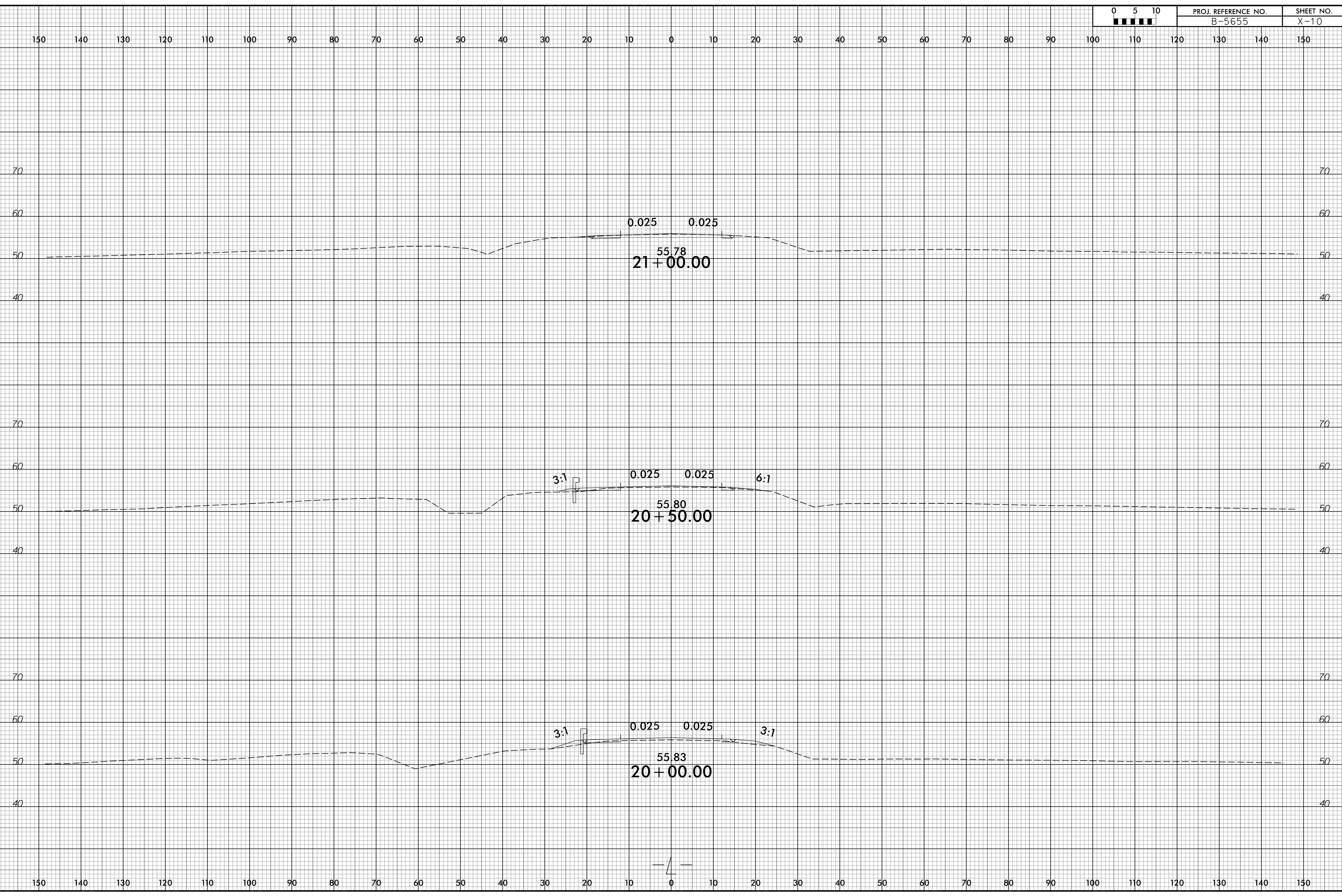


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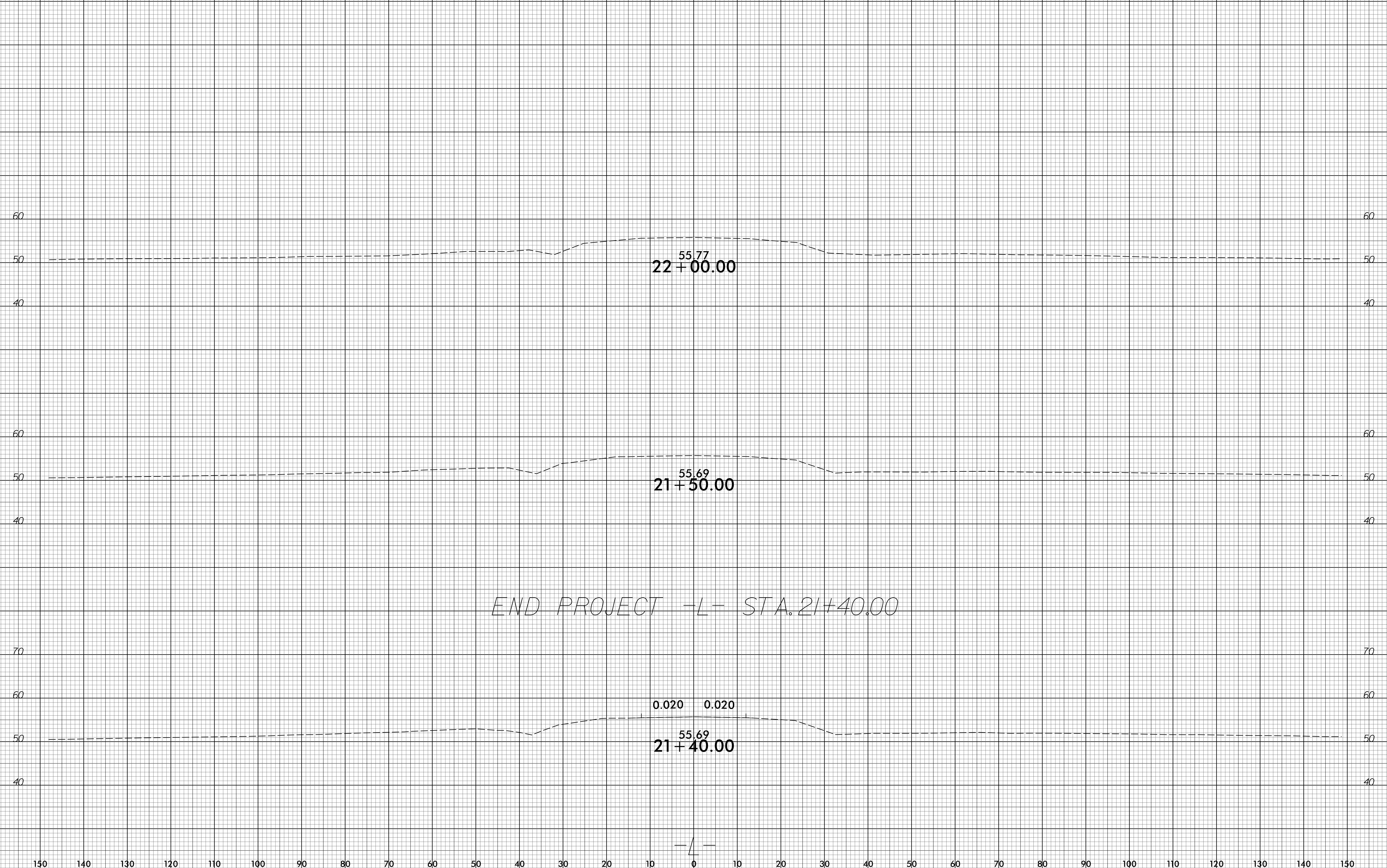
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6/23/16

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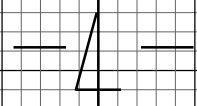
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21+50.00

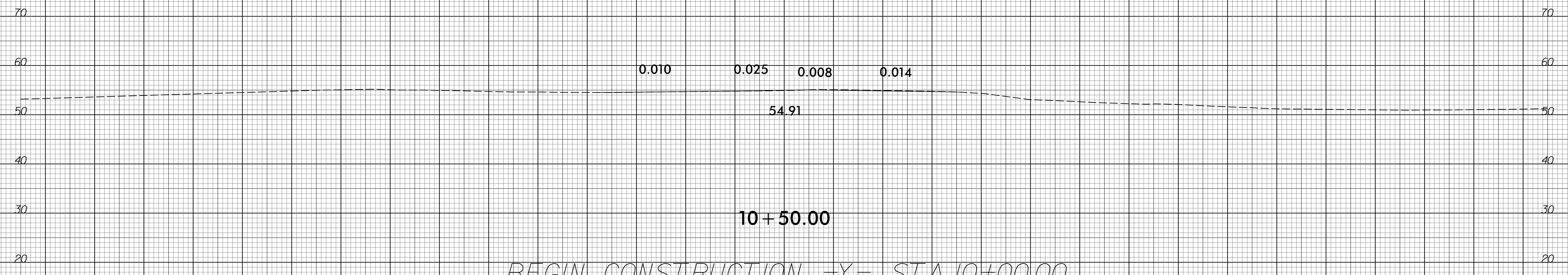
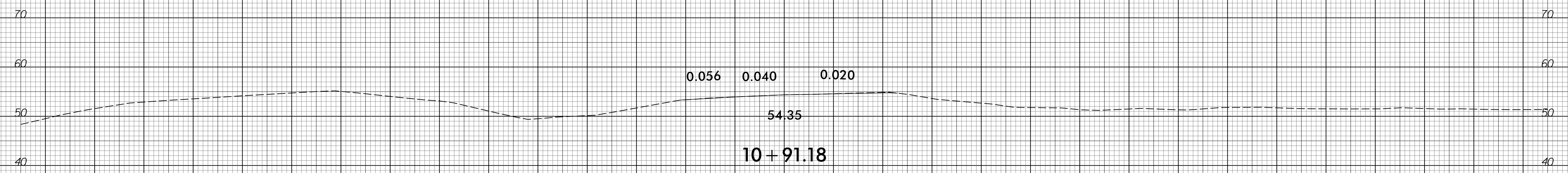


24-FEB-2020 14:08  
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 \$\$\$USERNAME\$\$\$

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

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

*END CONSTRUCTION -Y- STA. 10+91.18*



*BEGIN CONSTRUCTION -Y- STA. 10+00.00*

-Y-

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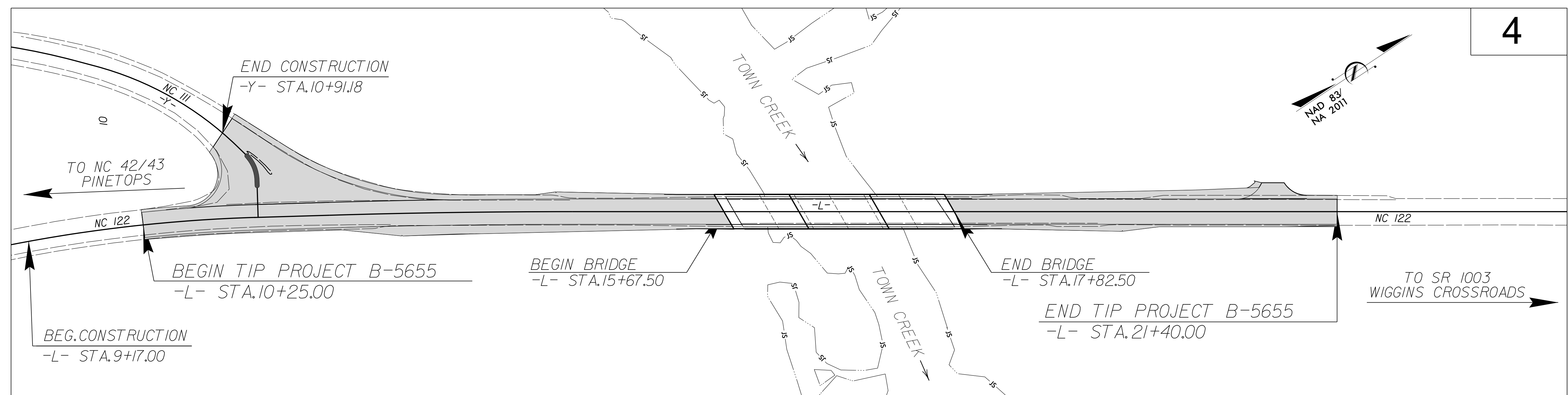
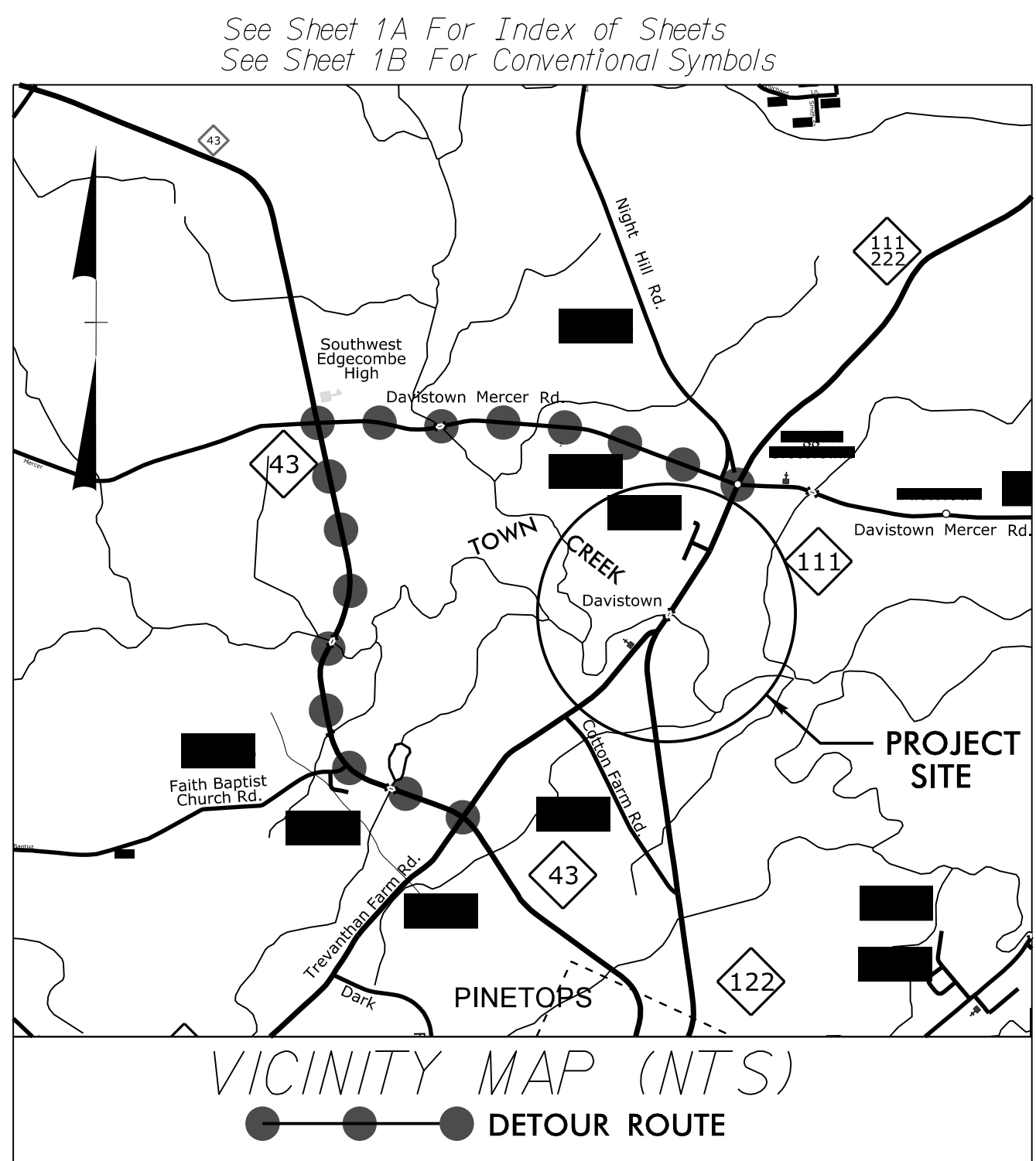
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	<b>B-5655</b>	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
45610.1.1		P.E.	
45610.2.1		ROW/UTIL.	
45610.3.1		CONSTR.	

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

# EDGECOMBE COUNTY

**LOCATION: REPLACE BRIDGE NO. 11 OVER  
TOWN CREEK ON NC 111/ NC 122**

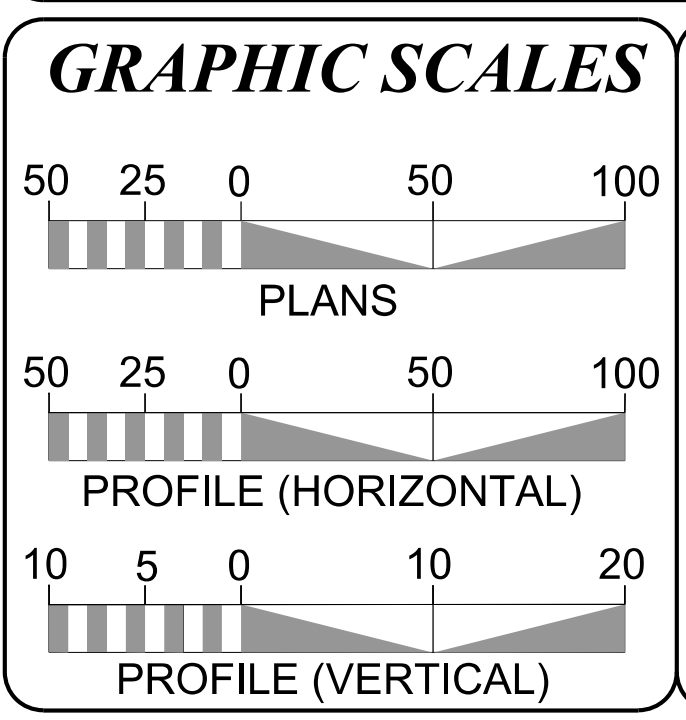
**TYPE OF WORK: GRADING, DRAINAGE, PAVING AND STRUCTURE**



## STRUCTURE

DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED

**TIP PROJECT: B-5655**  
**CONTRACT: DD00339**



**DESIGN DATA**

ADT 2020 =	5075
ADT 2040 =	6900
K =	10 %
D =	55 %
T =	4 %
V =	60 MPH

\* (TTST = 2% + DUAL 2%)  
FUNC CLASS = MAJOR COLLECTOR  
REGIONAL TIER

**PROJECT LENGTH**

LENGTH OF ROADWAY TIP PROJECT B-5655	=	.170 MILES
LENGTH OF STRUCTURE TIP PROJECT B-5655	=	.041 MILES
TOTAL LENGTH OF TIP PROJECT B-5655	=	.211 MILES

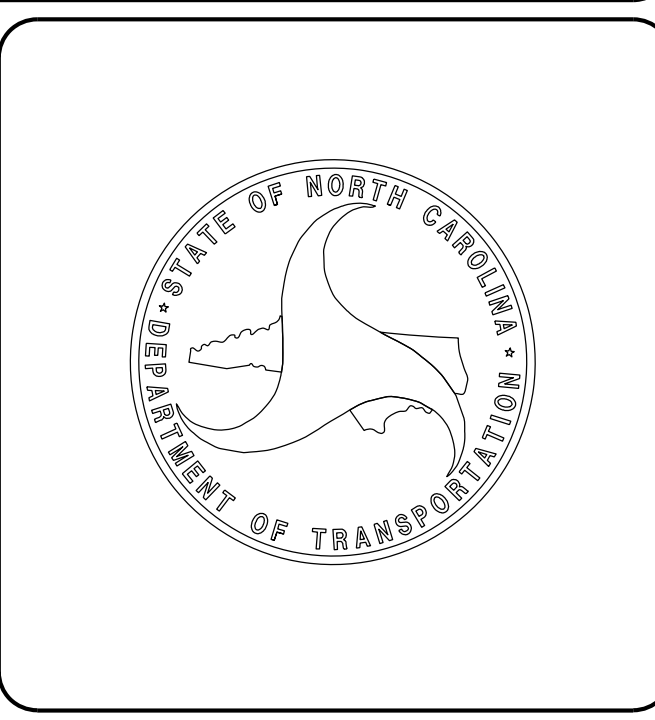
Prepared in the Office of: <b>KCI</b> KCI Associates of N.C., P.A. 4505 Falls of Neuse Road, Suite 400 Raleigh, NC 27609 Phone (919) 783-9214 Fax (919) 783-9266	Plans Prepared For: <b>DIVISION OF HIGHWAYS</b> 1000 Birch Ridge Dr. Raleigh NC, 27610
2018 STANDARD SPECIFICATIONS	<b>ELIZABETH R. PHIPPS, P.E.</b> PROJECT ENGINEER
<b>RIGHT OF WAY DATE:</b> OCTOBER 30, 2019	<b>ROBERT C. LARSON, P.E.</b> PROJECT DESIGN ENGINEER
<b>LETTING DATE:</b> JANUARY 26, 2021	<b>DAVID STUTTS, P.E.</b> STRUCTURES MANAGEMENT UNIT
<b>NCDOT CONTACT:</b>	

**HYDRAULICS ENGINEER**

SIGNATURE: \_\_\_\_\_

**STRUCTURE DESIGN ENGINEER**

SIGNATURE: \_\_\_\_\_



25-NOV-2020 13:58  
M:\2018\251801945\20\_B-5655\Structures\Drawings\Final\400\_001-B5655-SMU\_TITILE.dgn  
Pom.Flor AT 12-6L8DVFZ

15+00

16+00

17+00

18+00

(+0.9818% (-)0.8160%

PI = 16+70.00  
EL = 59.00'  
VC = 330'

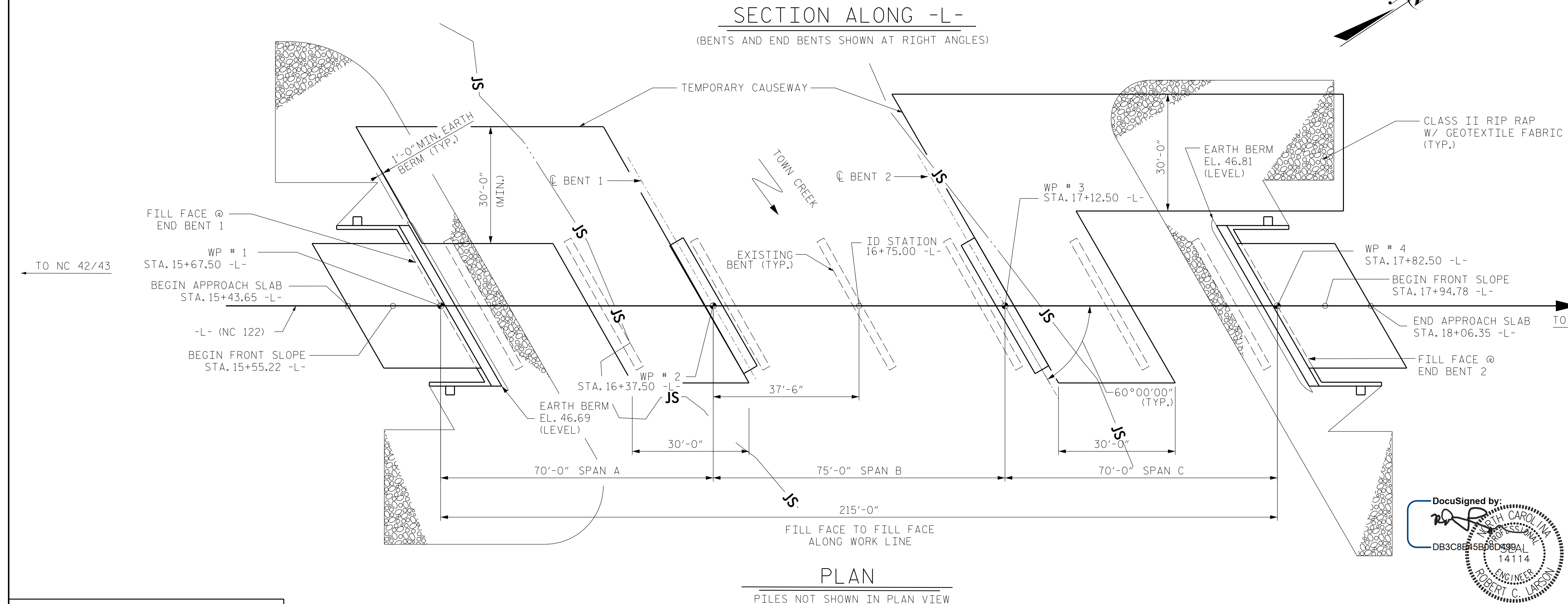
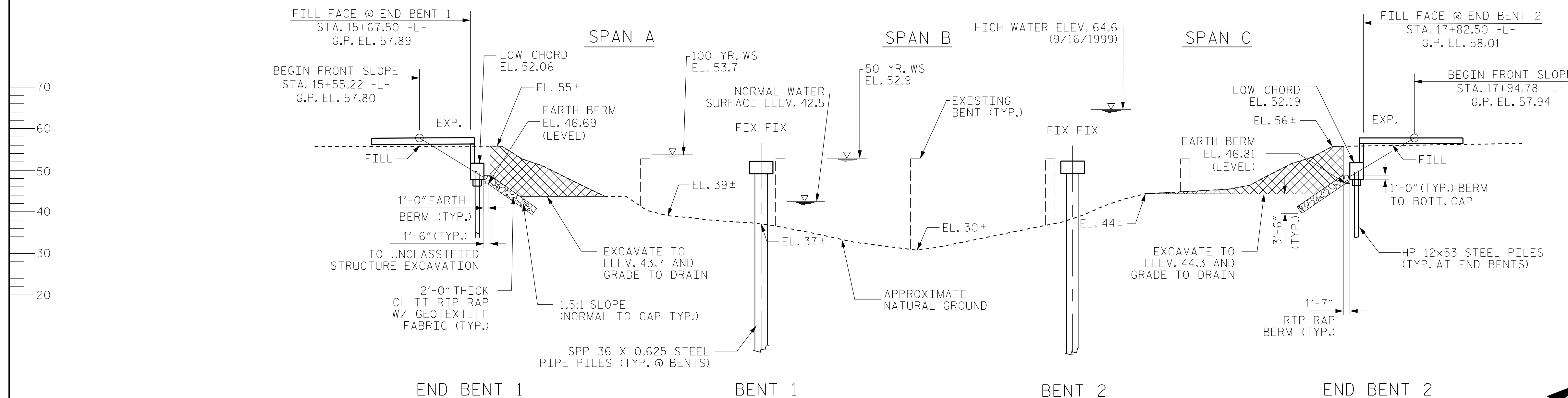
GRADE DATA -L-

BRIDGE HYDRAULIC DATA		
DESIGN DISCHARGE	= 7015	CFS
DESIGN FREQUENCY	= 50	YRS
DESIGN HW ELEVATION	= 52.9	FT
DRAINAGE AREA	= 162.0	SQ. MI.
BASE DISCHARGE (Q100)	= 8372	CFS
BASE HW ELEVATION	= 53.7	FT

OVERTOPPING DATA		
OVERTOPPING DISCHARGE	= 5768	CFS
OVERTOPPING FREQUENCY	= 25	YRS
OVERTOPPING ELEVATION	= 51.9	* FT

\* 1050'± OFF END OF PROPOSED BRIDGE



I HEREBY CERTIFY THESE PLANS ARE THE AS-BUILT PLANS

PROJECT NO. B-5655  
EDGEcombe COUNTY  
STATION: 16+75.00 -L-  
SHEET 1 OF 3 REPLACES BRIDGE NO. 11

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

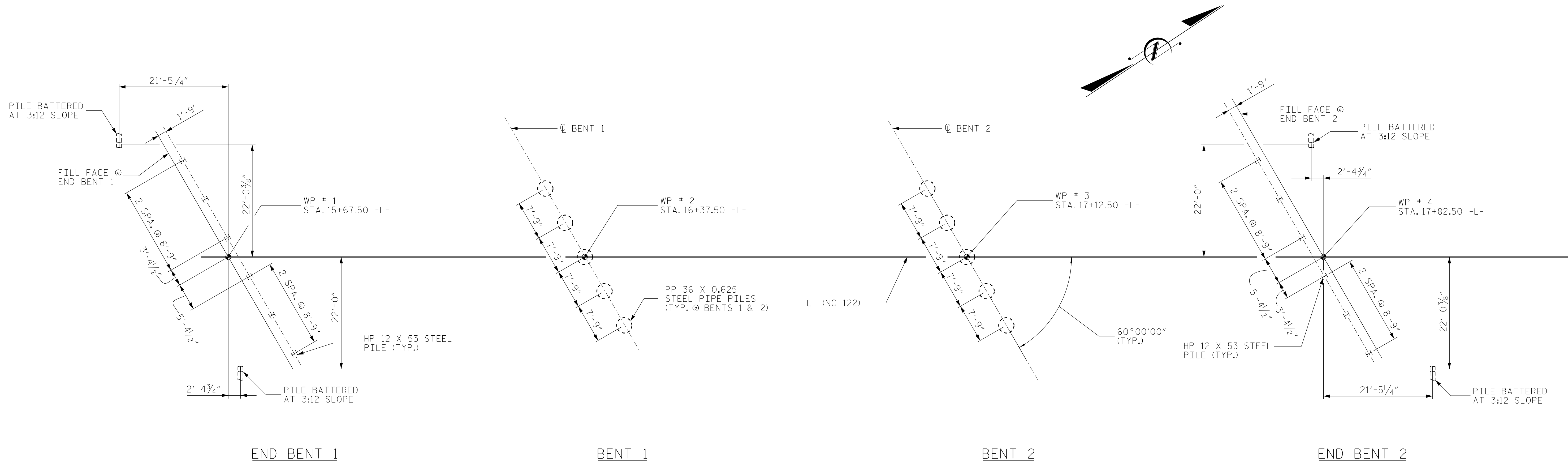
GENERAL DRAWING  
FOR BRIDGE ON NC 122 OVER  
TOWN CREEK BETWEEN  
NC 42/43 AND SR 1003

DESIGN ENGINEER OF RECORD: DATE: 3/24/2020  
DRAWN BY: A. SAMBOY DATE: 04/11/19  
CHECKED BY: R.C. LARSON DATE: 06/18/19

DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED

KCI Associates  
of North Carolina, P.A.  
2605 Falls of Neuse Road, Suite 400 Raleigh, NC 27609-6270 Phone 919-785-9244

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	SHEET NO.
1			3			S-1
2			4			TOTAL SHEETS 29



**FOUNDATION LAYOUT**

ALL PILES ARE VERTICAL UNLESS NOTED OTHERWISE. DIMENSIONS ARE SHOWN AT BOTTOM OF CAP.

**FOUNDATION NOTES**

FOR PILES, SEE SECTION 450 OF THE STANDARD SPECIFICATIONS.

PILES AT END BENT 1 AND END BENT 2 ARE DESIGNED FOR A FACTORED RESISTANCE OF 105 TONS PER PILE.

PILES AT BENT 1 AND BENT 2 ARE DESIGNED FOR A FACTORED RESISTANCE OF 240 TONS PER PILE.

DRIVE PILES AT END BENT 1 AND END BENT 2 TO A REQUIRED DRIVING RESISTANCE OF 175 TONS PER PILE.

INSTALL PILES AT BENT 1 AND BENT 2 TO A TIP ELEVATION NO HIGHER THAN -16.0 FT.

DRIVE PILES AT BENT 1 AND BENT 2 TO A REQUIRED DRIVING RESISTANCE OF 435 TONS PER PILE. THIS REQUIRED DRIVING RESISTANCE INCLUDES ADDITIONAL RESISTANCE FOR SCOUR.

THE SCOUR CRITICAL ELEVATIONS FOR BENT 1 AND BENT 2 IS ELEVATION 16.0 FT. SCOUR CRITICAL ELEVATIONS ARE USED TO MONITOR POSSIBLE SCOUR PROBLEMS DURING THE LIFE OF THE STRUCTURE.

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.

IT HAS BEEN ESTIMATED THAT A HAMMER WITH AN EQUIVALENT RATED ENERGY IN THE RANGE OF 75-180 FT-KIPS PER BLOW WILL BE REQUIRED TO DRIVE PILES AT BENT NO.1 AND BENT NO.2. THIS ESTIMATED ENERGY RANGE DOES NOT RELEASE THE CONTRACTOR FROM PROVIDING DRIVING EQUIPMENT IN ACCORDANCE WITH SUBARTICLE 450-3(D)(2) OF THE STANDARD SPECIFICATIONS.

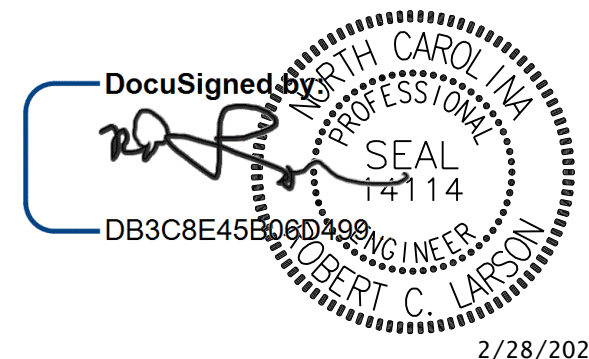
PIPE PILE PLATES ARE REQUIRED FOR STEEL PIPE PILES AT BENT NO.1 AND BENT NO.2. USE PIPE PILE PLATES WITH A DIAMETER EQUAL TO THE PIPE PILE DIAMETER. FOR STEEL PIPE PILE PLATES, SEE SECTION 450 OF THE STANDARD SPECIFICATIONS.

PROJECT NO. B-5655  
EDGECOMBE COUNTY  
 STATION: 16+75.00 -L-

SHEET 2 OF 3

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**GENERAL DRAWING**  
 FOR BRIDGE ON NC 122 OVER  
 TOWN CREEK BETWEEN  
 NC 42/43 AND SR 1003



DESIGN ENGINEER OF RECORD: DATE: 2/28/2020

DRAWN BY: R. C. LARSON DATE: 11/24/19  
 CHECKED BY: A. K. ALLANKI DATE: 12/09/19

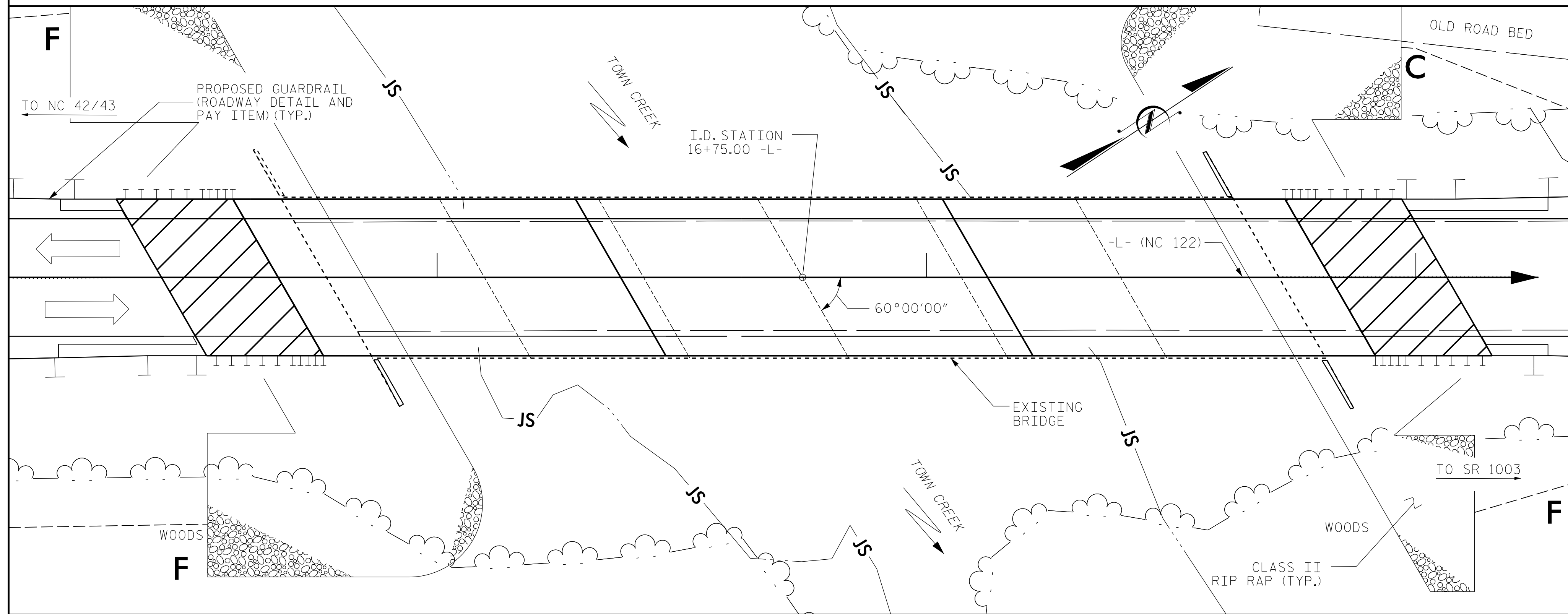
**DOCUMENT NOT CONSIDERED FINAL  
 UNLESS ALL SIGNATURES COMPLETED**

**KCI Associates**  
 of North Carolina, P.A.  
2505 Falls of Neuse Road, Suite 400 Raleigh, NC 27609-6270 Phone 199-783-924

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

TOTAL SHEETS: 29

BENCHMARK: BM#1: R/R SPIKE IN BASE OF 18" MAPLE. STA 18+42.41 -L-; OFFSET 37.6' RT ELEV. 54.23 NAVD 88



**LOCATION SKETCH**

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

**NOTES:**

- ASSUMED LIVE LOAD = HL-93 OR ALTERNATE LOADING.
- THIS BRIDGE HAS BEEN DESIGNED IN ACCORDANCE WITH THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS.
- THIS BRIDGE IS LOCATED IN SEISMIC ZONE 1. FOR OTHER DESIGN DATA AND GENERAL NOTES, SEE SHEET SN.
- FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.
- FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.
- FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.
- FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.
- PRESTRESSED CONCRETE DECK PANELS MAY BE USED IN LIEU OF METAL STAY-IN-PLACE FORMS IN ACCORDANCE WITH ARTICLE 420-3 OF THE STANDARD SPECIFICATIONS.
- REMOVABLE FORMS MAY BE USED IN LIEU OF METAL STAY-IN-PLACE FORMS IN ACCORDANCE WITH ARTICLE 420-3 OF THE STANDARD SPECIFICATIONS.
- AT THE CONTRACTOR'S OPTION, AND UPON REMOVAL OF THE CAUSEWAY, THE CLASS II RIP RAP USED IN THE CAUSEWAY MAY BE PLACED AS RIP RAP SLOPE PROTECTION. SEE SPECIAL PROVISIONS FOR CONSTRUCTION, MAINTENANCE AND REMOVAL OF TEMPORARY ACCESS AT STATION 16+75.00-L-
- NEEDLE BEAMS WILL NOT BE ALLOWED UNLESS OTHERWISE CALLED FOR ON THE PLANS OR APPROVED BY THE ENGINEER.
- INASMUCH AS THE PAINT SYSTEM ON THE EXISTING STRUCTURAL STEEL CONTAINS LEAD, THE CONTRACTOR'S ATTENTION IS DIRECTED TO ARTICLE 107-1 OF THE STANDARD SPECIFICATIONS. ANY COSTS RESULTING FROM COMPLIANCE WITH APPLICABLE STATE OR FEDERAL REGULATIONS PERTAINING TO HANDLING OF MATERIALS CONTAINING LEAD BASED PAINT SHALL BE INCLUDED IN THE BID PRICE FOR 'REMOVAL OF EXISTING STRUCTURE AT STATION 16+75.00-L-.'
- THE MATERIAL SHOWN IN THE CROSS-HATCHED AREA SHALL BE EXCAVATED FOR A DISTANCE OF 40 FT EACH SIDE OF CENTERLINE ROADWAY AS DIRECTED BY THE ENGINEER. THIS WORK WILL BE PAID FOR AT THE CONTRACT LUMP SUM PRICE FOR UNCLASSIFIED STRUCTURE EXCAVATION. SEE SECTION 412 OF THE STANDARD SPECIFICATIONS.

**TOTAL BILL OF MATERIAL**

	CONSTRUCTION, MAINTENANCE AND REMOVAL OF TEMPORARY ACCESS @ STA. 16+75.00 -L- LUMP SUM	REMOVAL OF EXISTING STRUCTURE @ STA. 16+75.00 -L- LUMP SUM	ASBESTOS ASSESSMENT LUMP SUM	PDA TESTING EACH	UNCLASSIFIED STRUCTURE EXCAVATION @ STA. 16+75.00 -L- LUMP SUM	REINFORCED CONCRETE DECK SLAB SQ.FT.	GROOVING BRIDGE FLOORS SQ.FT.	CLASS A CONCRETE CU.YDS.	BRIDGE APPROACH SLABS LUMP SUM	REINFORCING STEEL LBS.	45" PRESTRESSED CONCRETE GIRDERS		PILE DRIVING EQUIPMENT SETUP FOR HP12X53 STEEL PILES EACH	PILE DRIVING EQUIPMENT SETUP FOR PP30X0.625 GALV. STEEL PILES EACH	HP 12 X 53 STEEL PILES		PP 36X0.625 GALVANIZED STEEL PILES NO.	PIPE PILE PLATES EACH	PILE REDRIVES EACH	CONCRETE BARRIER RAIL LIN.FT.	CLASS II RIP RAP (2'-0" THICK) TONS	GEOTEXTILE FOR DRAINAGE SQ.YDS.	ELASTO-MERIC BEARINGS LUMP SUM	FOAM JOINT SEALS LUMP SUM	FIBER OPTIC CONDUIT SYSTEM LIN. FT.	
											NO.	LIN.FT.			NO.	LIN.FT.										
SUPERSTRUCTURE					LUMP SUM	7494	7495		LUMP SUM		12	841.33									425.20			LUMP SUM	LUMP SUM	421.2
END BENT 1								47.8		5518			8		8	560			3		430	480				
BENT 1	LUMP SUM							19.3		3498				5			5	350	5	3						
BENT 2	LUMP SUM							19.3		3498				5			5	350	5	3						
END BENT 2								47.8		5518			8		8	560				3		350	385			
TOTAL	LUMP SUM	LUMP SUM	LUMP SUM	2	LUMP SUM	7494	7495	134.2	LUMP SUM	18,032	12	841.33	16	10	16	1120	10	700	10	12	425.20	780	865	LUMP SUM	LUMP SUM	421.2

**NOTES (CONT'D):**

THE EXISTING STRUCTURE CONSISTING OF 1 @ 31'-0", 4 @ 32'-6", AND 1 @ 32'-6" STEEL BEAM SPANS WITH CLEAR ROADWAY WIDTH OF 28'-1", REINFORCED CONCRETE DECK ON CONCRETE PILE AND POST-AND-BEAM BENTS AND LOCATED AT THE PROPOSED STRUCTURE SHALL BE REMOVED. THE EXISTING BRIDGE IS PRESENTLY NOT POSTED FOR LOAD LIMIT. SHOULD THE STRUCTURAL INTEGRITY OF THE BRIDGE DETERIORATE DURING CONSTRUCTION OF THE PROPOSED BRIDGE, A LOAD LIMIT MAY BE POSTED AND MAY BE REDUCED AS FOUND NECESSARY DURING THE LIFE OF THE PROJECT

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

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

THIS STRUCTURE HAS BEEN DESIGNED IN ACCORDANCE WITH "HEC 18-EVALUATING SCOUR AT BRIDGES."

FOR INTERIOR BENTS 1 AND 2, 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.

FOR EROSION CONTROL MEASURES, SEE EROSION CONTROL PLANS.

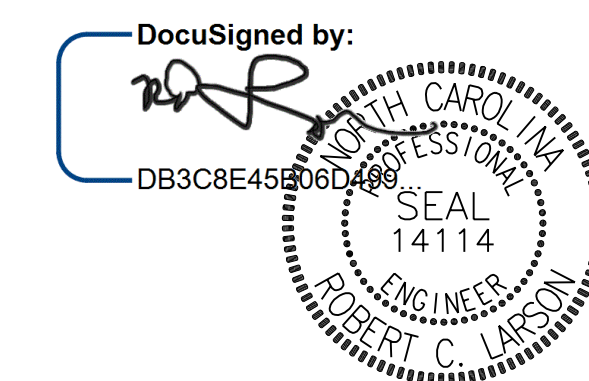
FOR ASBESTOS ASSESSMENT FOR BRIDGE DEMOLITION AND RENOVATION ACTIVITIES, SEE SPECIAL PROVISIONS.

PROJECT NO. B-5655  
EDGEcombe COUNTY  
 STATION: 16+75.00 -L-

SHEET 3 OF 3

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**GENERAL DRAWING**  
 FOR BRIDGE ON NC 122 OVER  
 TOWN CREEK BETWEEN  
 NC 42/43 AND SR 1003



3/24/2020

DESIGN ENGINEER OF RECORD: R.C. LARSON DATE: 3/24/2020  
 DRAWN BY: A. SAMBOY DATE: 04/11/19  
 CHECKED BY: R.C. LARSON DATE: 06/18/19

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

ENGINEERS • PLANNERS • SCIENTISTS • CONSTRUCTION MANAGERS LICENSE NUMBER: C-0764  
**KCI Associates**  
 of North Carolina, P.A.  
 2505 Falls of Neuse Road, Suite 400 Raleigh, NC 27609-6270 Phone 919-783-9244

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

TOTAL SHEETS: 29



LOAD FACTORS:

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

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

LEVEL	VEHICLE	WEIGHT (W) (TONS)	CONTROLLING LOAD RATING (#)	MINIMUM RATING FACTORS (RF)	TONS = W x RF	STRENGTH I LIMIT STATE										SERVICE III LIMIT STATE					COMMENT NUMBER			
						MOMENT					SHEAR					MOMENT								
						LIVE-LOAD FACTORS ( $\gamma_{LL}$ )	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (FT)	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (FT)	LIVE-LOAD FACTORS ( $\gamma_{LL}$ )	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN		GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (FT)	
DESIGN LOAD RATING	HL-93 (INVENTORY)	N/A	①	1.05	--	1.75	0.783	1.26	A	E	33.3	1.027	1.05	B	I	6.8	0.80	0.714	1.05	B	I	36.7		
	HL-93 (OPERATING)	N/A		1.39	--	1.35	0.783	1.64	A	E	33.3	1.027	1.39	B	I	6.8	N/A	--	--	--	--	--		
	HS-20 (INVENTORY)	36,000	②	1.35	48.60	1.75	0.783	1.63	A	E	33.3	1.027	1.35	B	I	6.8	0.80	0.731	1.36	A	I	33.3		
	HS-20 (OPERATING)	36,000		1.77	63.72	1.35	0.783	2.11	A	E	33.3	1.027	1.77	B	I	6.8	N/A	--	--	--	--	--		
LEGAL LOAD RATING	SINGLE VEHICLE (SV)	SNSH	13,500		3.02	40.77	1.40	0.783	4.51	A	E	33.3	1.027	4.16	B	I	6.8	0.80	0.731	3.02	A	I	33.3	
		SNGARBS2	20,000		2.27	45.40	1.40	0.783	3.39	A	E	33.3	1.027	2.93	B	I	6.8	0.80	0.731	2.27	A	I	33.3	
		SNAGRIS2	22,000		2.16	47.52	1.40	0.783	3.23	A	E	33.3	1.027	2.72	B	I	6.8	0.80	0.731	2.16	A	I	33.3	
		SNCOTTS3	27,250		1.50	40.87	1.40	0.783	2.25	A	E	33.3	1.027	2.03	B	I	6.8	0.80	0.731	1.50	A	I	33.3	
		SNAGGRS4	34,925		1.26	44.00	1.40	0.783	1.89	A	E	33.3	1.027	1.68	B	I	6.8	0.80	0.731	1.26	A	I	33.3	
		SNS5A	35,550		1.24	44.08	1.40	0.783	1.85	A	E	33.3	1.027	1.70	B	I	6.8	0.80	0.731	1.24	A	I	33.3	
		SNS6A	39,950		1.14	45.54	1.40	0.783	1.70	A	E	33.3	1.027	1.54	B	I	6.8	0.80	0.731	1.14	A	I	33.3	
		SNS7B	42,000		1.08	45.36	1.40	0.783	1.62	A	E	33.3	1.027	1.51	B	I	6.8	0.80	0.731	1.08	A	I	33.3	
	TRUCK TRACTOR SEMI-TRAILER (TTST)	TNAGRIT3	33,000		1.39	45.87	1.40	0.783	2.08	A	E	33.3	1.027	1.85	B	I	6.8	0.80	0.731	1.39	A	I	33.3	
		TNT4A	33,075		1.40	46.30	1.40	0.783	2.09	A	E	33.3	1.027	1.80	B	I	6.8	0.80	0.731	1.40	A	I	33.3	
		TNT6A	41,600		1.15	47.84	1.40	0.783	1.71	A	E	33.3	1.027	1.62	B	I	6.8	0.80	0.731	1.15	A	I	33.3	
		TNT7A	42,000		1.15	48.30	1.40	0.783	1.72	A	E	33.3	1.027	1.58	B	I	6.8	0.80	0.731	1.15	A	I	33.3	
		TNT7B	42,000		1.20	50.40	1.40	0.783	1.79	A	E	33.3	1.027	1.48	B	I	6.8	0.80	0.731	1.20	A	I	33.3	
		TNAGRIT4	43,000		1.14	49.02	1.40	0.783	1.70	A	E	33.3	1.027	1.43	B	I	6.8	0.80	0.731	1.14	A	I	33.3	
TNAGT5A	45,000		1.07	48.15	1.40	0.783	1.60	A	E	33.3	1.027	1.42	B	I	6.8	0.80	0.731	1.07	A	I	33.3			
TNAGT5B	45,000		③	1.05	47.25	1.40	0.783	1.58	A	E	33.3	1.027	1.35	B	I	6.8	0.80	0.731	1.05	A	I	33.3		

**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)

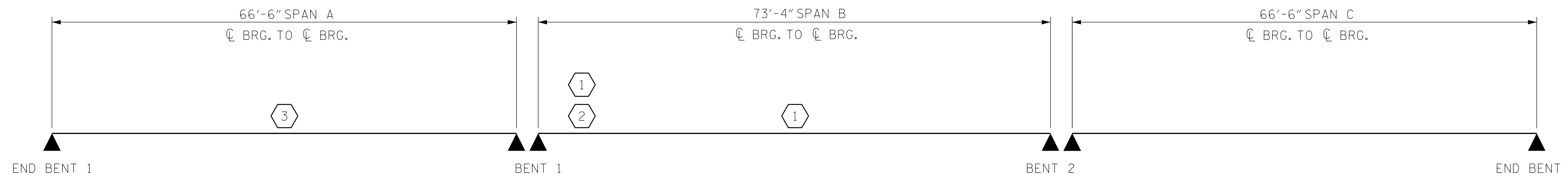
③ LEGAL LOAD RATING \*\*

\*\* SEE CHART FOR VEHICLE TYPE

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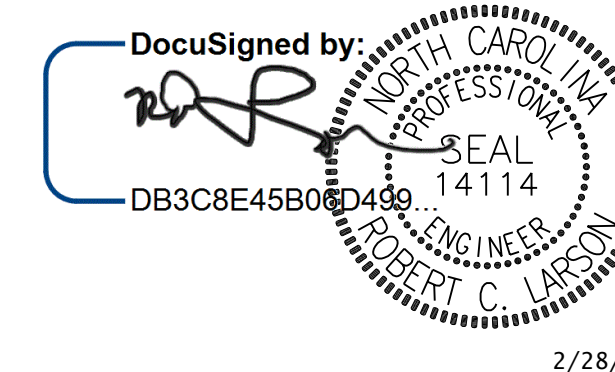
GIRDER LOCATION

I - INTERIOR GIRDER  
 E - EXTERIOR GIRDER



PROJECT NO. B-5655  
EDGEcombe COUNTY  
 STATION: 16+75.00 -L-

DESIGN ENGINEER OF RECORD:	DATE: 2/28/2020
ASSEMBLED BY: A. K. ALLANKI	DATE: 10/24/19
CHECKED BY: R. C. LARSON	DATE: 11/01/19
DRAWN BY: MAA	1/08
CHECKED BY: GM/DI	2/08
REV. 11/12/08RR	MAA/GM
REV. 10/1/11	MAA/GM
REV. 12/17	MAA/THC



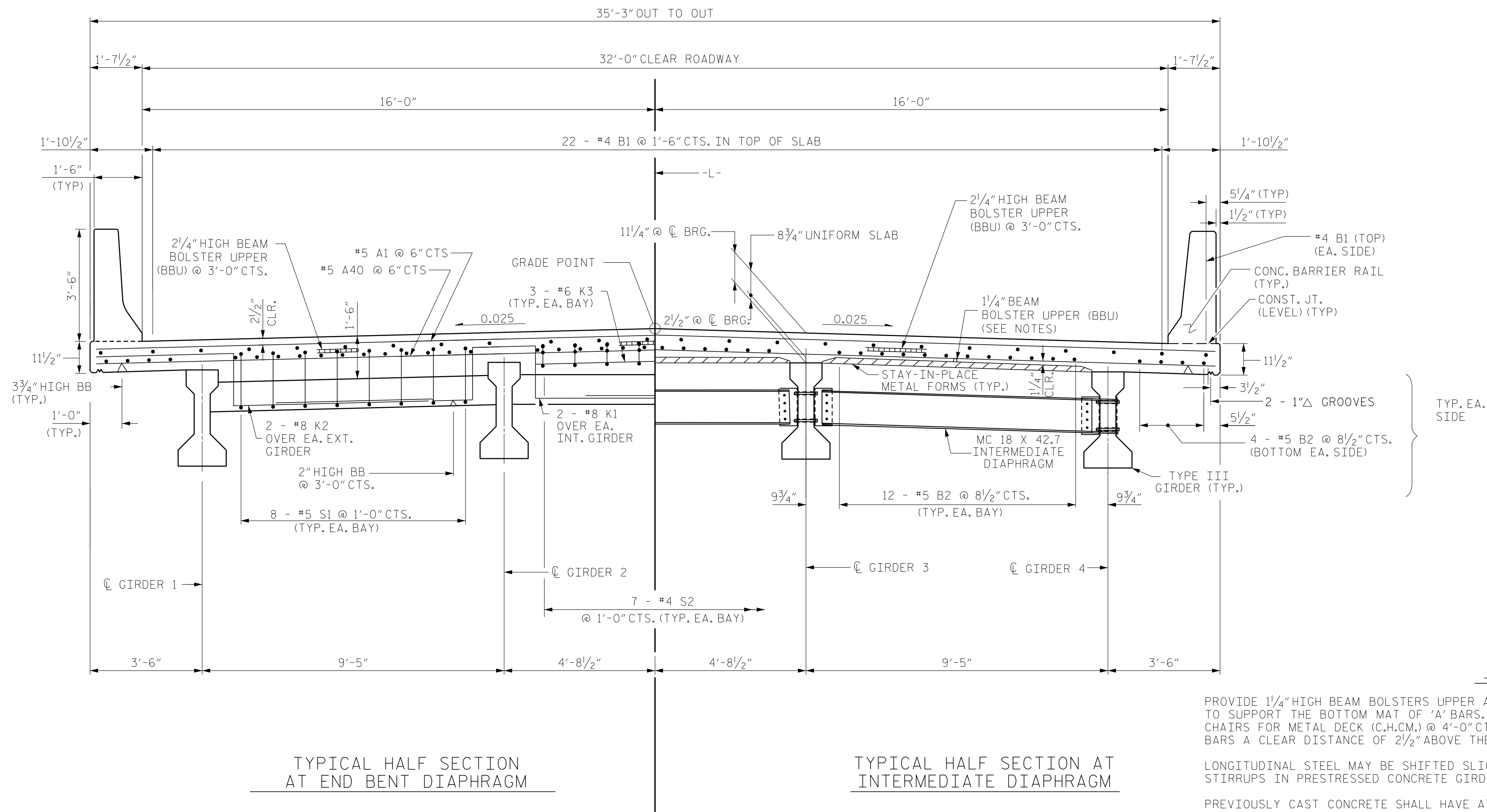
STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

STANDARD  
 LRFR SUMMARY FOR  
 PRESTRESSED  
 CONCRETE GIRDERS  
 (NON-INTERSTATE TRAFFIC)

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

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

REVISIONS		SHEET NO.
		S-4
		TOTAL SHEETS 29



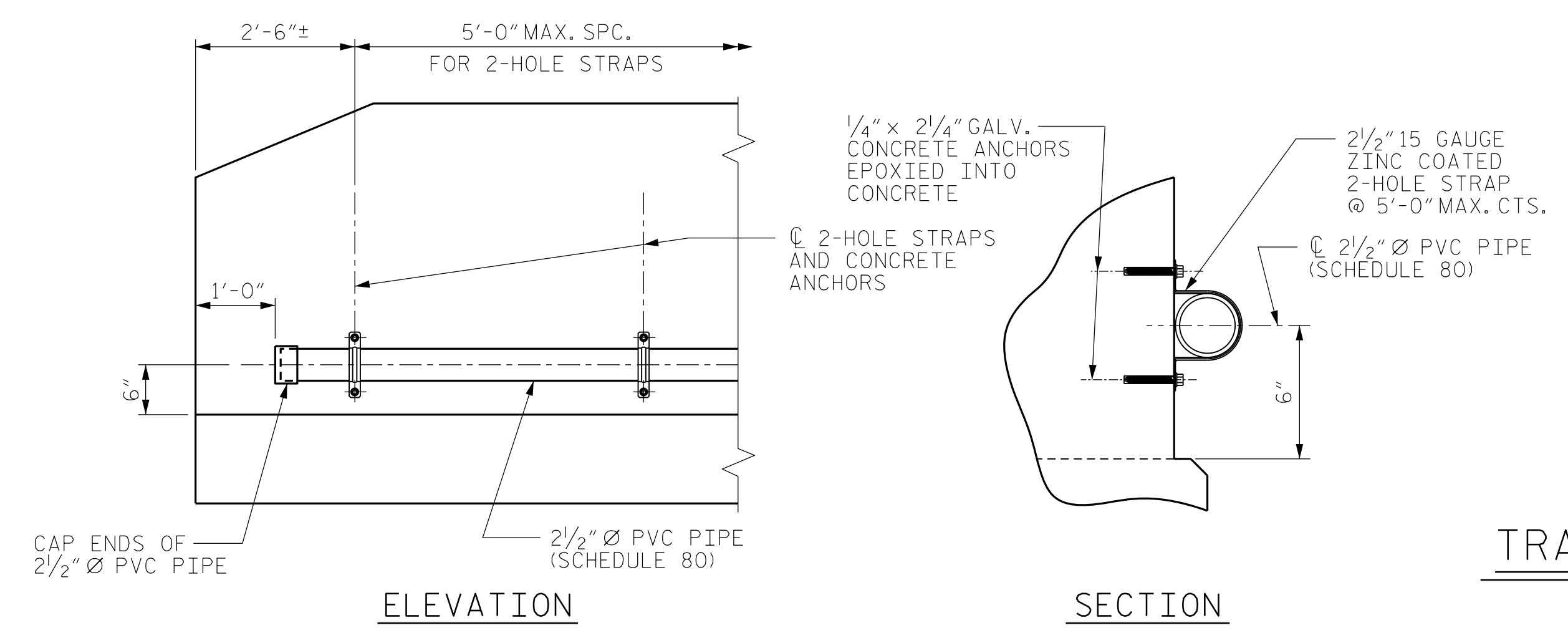
TYPICAL HALF SECTION AT END BENT DIAPHRAGM

TYPICAL HALF SECTION AT INTERMEDIATE DIAPHRAGM

TYPICAL SECTION

NOTES

- PROVIDE 1 1/4" HIGH BEAM BOLSTERS UPPER AT 4'-0" CTS. ATOP THE METAL STAY-IN-PLACE FORMS TO SUPPORT THE BOTTOM MAT OF 'A' BARS. WHEN USING REMOVABLE FORMS, PROVIDE CONTINUOUS HIGH CHAIRS FOR METAL DECK (C.H.C.M.) @ 4'-0" CTS. WITH A HEIGHT TO SUPPORT THE BOTTOM MAT OF 'A' BARS A CLEAR DISTANCE OF 2 1/2" ABOVE THE TOP OF THE REMOVABLE FORM.
- LONGITUDINAL STEEL MAY BE SHIFTED SLIGHTLY, AS NECESSARY, TO AVOID INTERFERENCE WITH STIRRUPS IN PRESTRESSED CONCRETE GIRDERS.
- PREVIOUSLY CAST CONCRETE SHALL HAVE ATTAINED A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI BEFORE ADDITIONAL CONCRETE IS CAST.
- SEE SHEET "CONCRETE BARRIER RAIL" FOR ADDITIONAL REINFORCING STEEL EMBEDDED IN SLAB.
- NO WELDING OF FORMS OR FALSEWORK TO THE TOP OF THE GIRDER WILL BE PERMITTED IN THE LINK SLAB AREA.
- FOR FIBER OPTIC CONDUIT SYSTEM, SEE SPECIAL PROVISIONS.



FIBER OPTIC CONDUIT SYSTEM DETAILS

TRANSVERSE CONSTRUCTION JOINT DETAIL

NOTE: REINFORCING STEEL IN SLAB NOT SHOWN. LONGITUDINAL REINFORCING STEEL SHALL BE CONTINUOUS THRU JOINT

PROJECT NO. B-5655  
EDGEcombe COUNTY  
STATION: 16+75.00 -L-

SHEET 1 OF 2

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

SUPERSTRUCTURE  
TYPICAL SECTION

DocuSigned by:  
ROBERT C. LARSON  
Professional Engineer  
SEAL  
14114  
2/28/2020

DESIGN ENGINEER OF RECORD: R.C. LARSON DATE: 2/28/2020

DRAWN BY: A. SAMBOY DATE: 04/25/19

CHECKED BY: R.C. LARSON DATE: 10/15/19

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

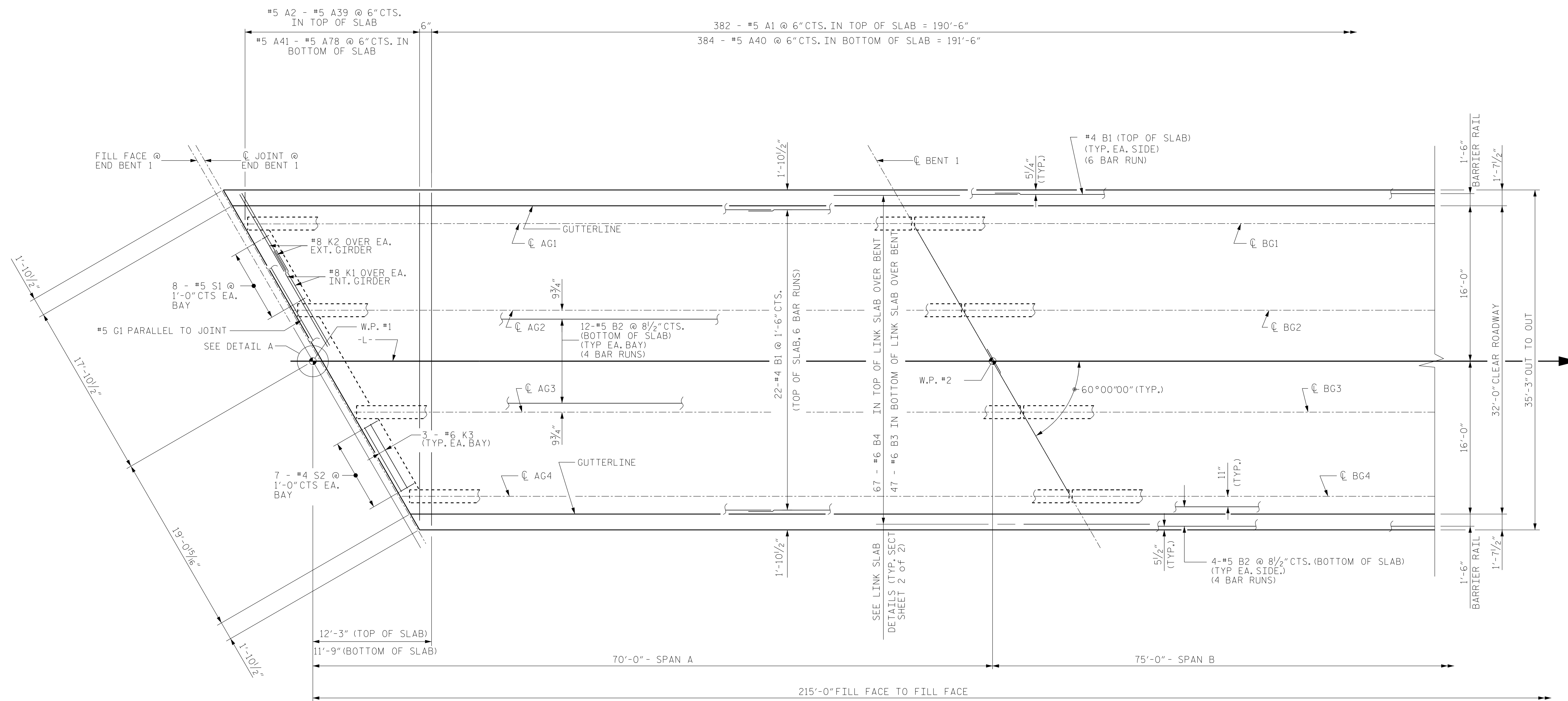
DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED

KCI Associates  
of North Carolina, P.A.  
2609 Falls of Neuse Road, Suite 400 Raleigh, NC 27609-6270 Phone 919-783-9244

REVISIONS		SHEET NO.	
NO.	DATE	NO.	DATE
1		3	
2		4	

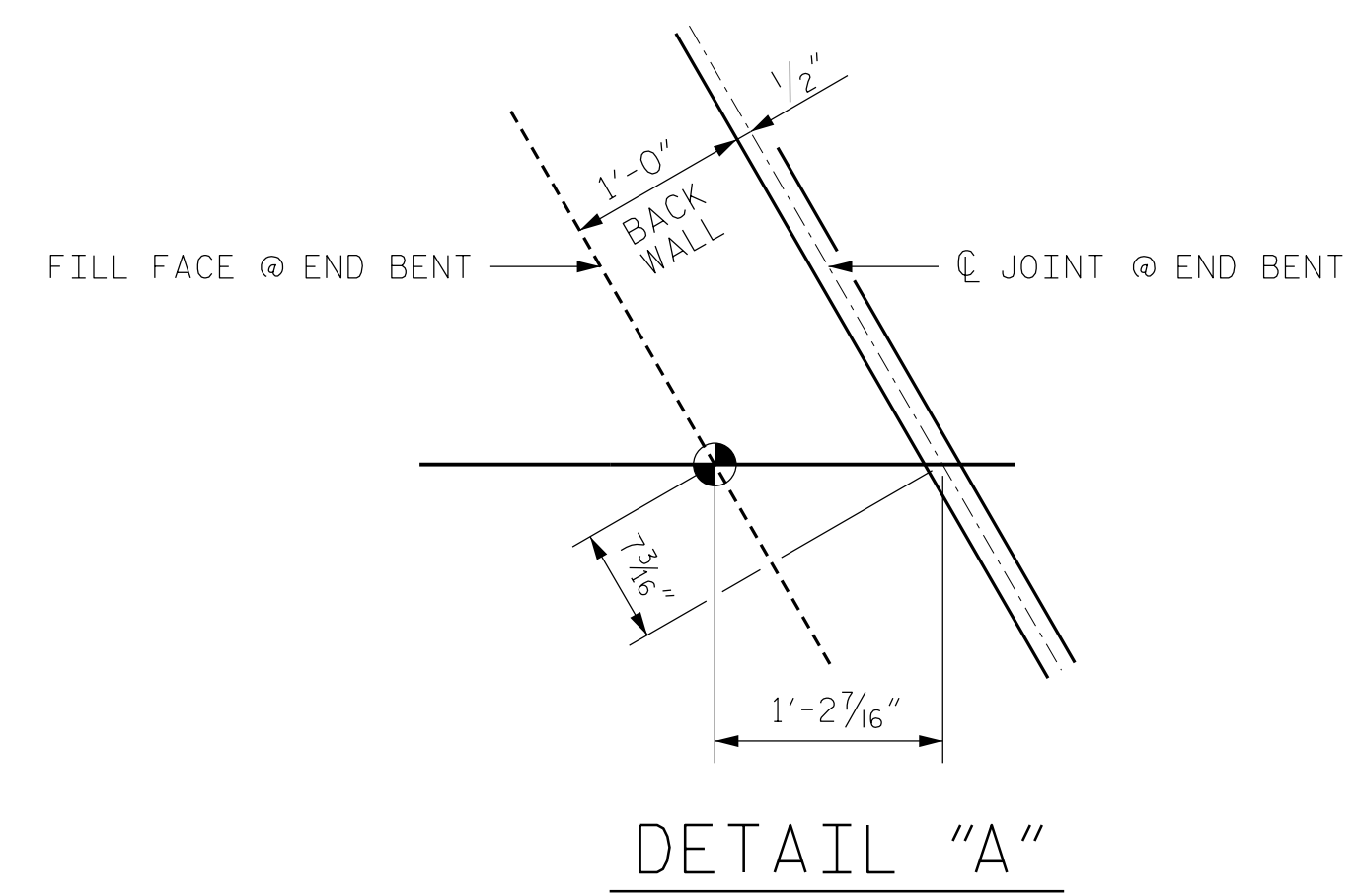
TOTAL SHEETS: 29





PLAN - SPAN A

PART PLAN - SPAN B



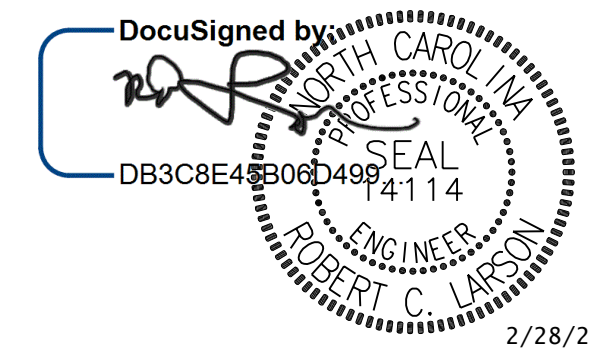
DETAIL "A"

PROJECT NO. B-5655  
 EDGECOMBE COUNTY  
 STATION: 16+75.00 -L-

SHEET 1 OF 2

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

SUPERSTRUCTURE  
 PLAN OF SPANS  
 A - B



DESIGN ENGINEER OF RECORD: [Signature] DATE: 2/28/2020

DRAWN BY: A. SAMBOY DATE: 04/23/19

CHECKED BY: R. C. LARSON DATE: 10/14/19

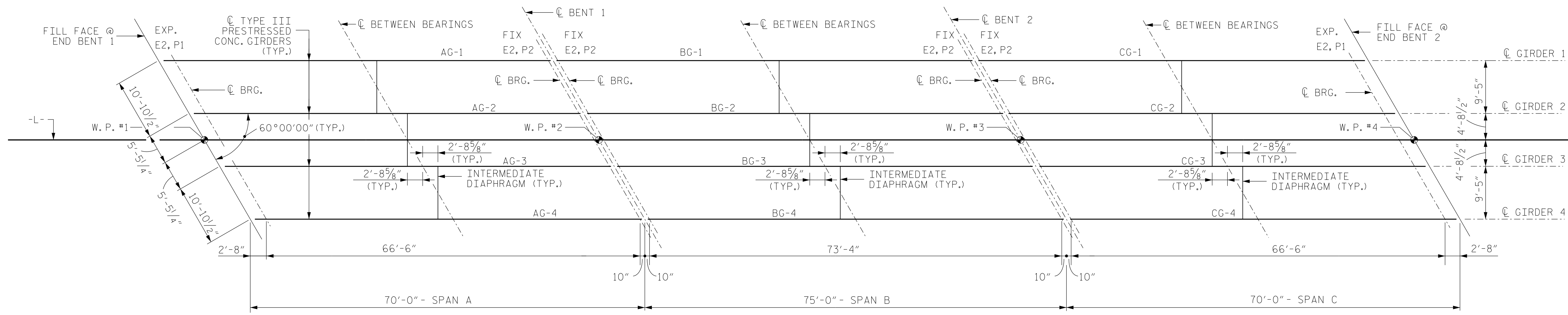
DOCUMENT NOT CONSIDERED FINAL  
 UNLESS ALL SIGNATURES COMPLETED



REVISIONS		SHEET NO.	
NO.	BY:	DATE:	SHEET NO.
1			S-7
2			TOTAL SHEETS 29



KCI JOB NO: 251801945.13

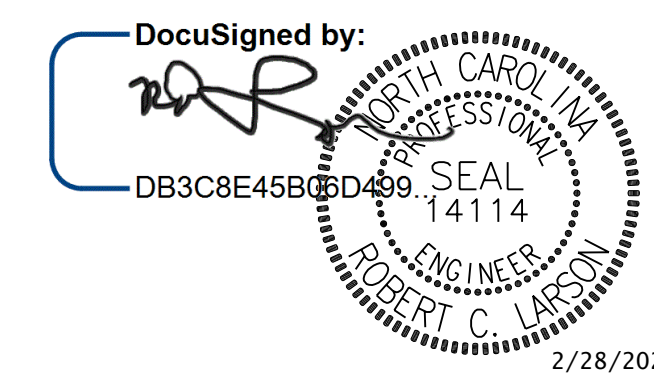


GIRDER LAYOUT

PROJECT NO. B-5655  
EDGEcombe COUNTY  
 STATION: 16+75.00 -L-

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**SUPERSTRUCTURE  
 GIRDER LAYOUT**



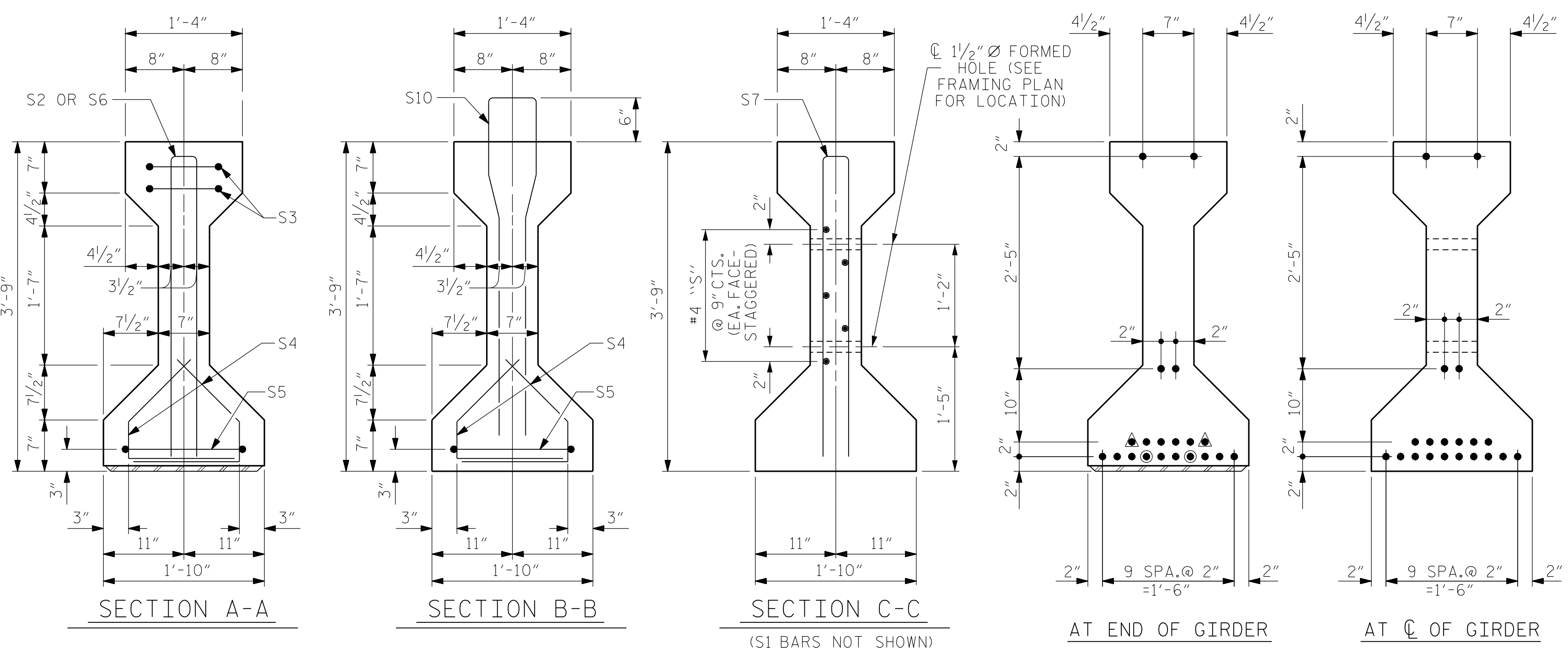
DESIGN ENGINEER OF RECORD	DATE: 2/28/2020
DRAWN BY: A. K. ALLANKI	DATE: 09/11/19
CHECKED BY: R. C. LARSON	DATE: 09/12/19

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ENGINEERS • PLANNERS • SCIENTISTS • CONSTRUCTION MANAGERS LICENSE NUMBER: C-0764

**KCI Associates**  
 of North Carolina, P.A.  
 4505 Falls of Neuse Road, Suite 400 Raleigh, NC 27609-6270 Phone 1919-783-924

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-9
1			3			TOTAL SHEETS
2			4			29



**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.

APPLY EPOXY PROTECTIVE COATING TO END OF GIRDER SURFACES.

EMBEDDED PLATE "B-1" SHALL BE GALVANIZED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

ANCHOR STUDS SHALL CONFORM TO AASHTO M169 GRADES 1010 THROUGH 1020 OR APPROVED EQUAL, AND SHALL MEET THE TYPE "B" REQUIREMENTS OF SUBSECTION 7.3 OF THE ANSI/AASHTO/AWS D1.5 BRIDGE WELDING CODE.

ALL PRESTRESSED STRANDS SHALL BE CUT FLUSH WITH THE GIRDER ENDS.

THE TRANSFER OF LOAD FROM THE ANCHORAGES TO THE GIRDER SHALL BE DONE WHEN CONCRETE HAS REACHED A COMPRESSIVE STRENGTH OF NOT LESS THAN 5000 PSI.

DEPENDING ON THE TYPE OF SYSTEM USED TO SUPPORT THE DECK SLAB FORMS, PRESET ANCHORS MAY BE NECESSARY IN THE PRESTRESSED CONCRETE GIRDER.

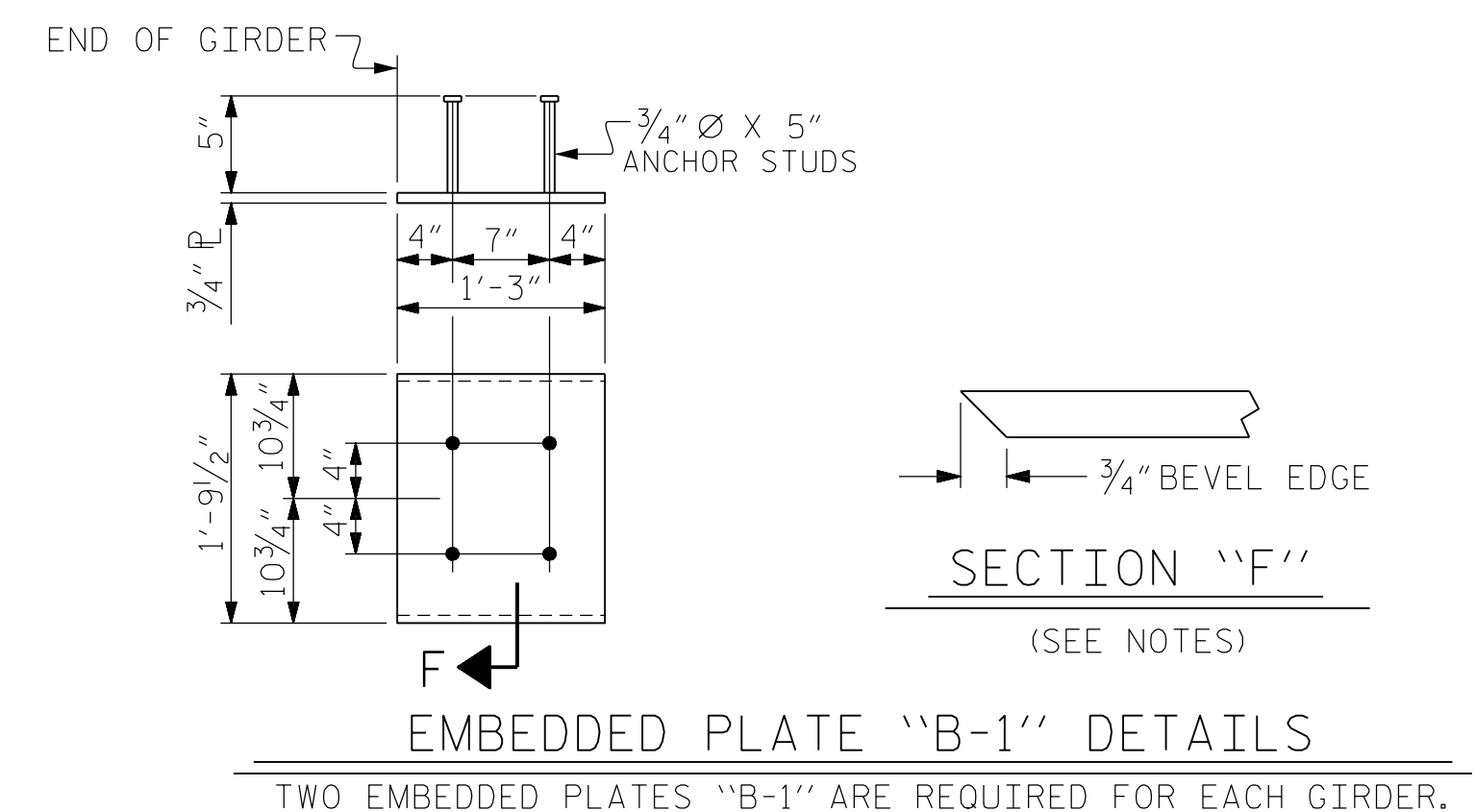
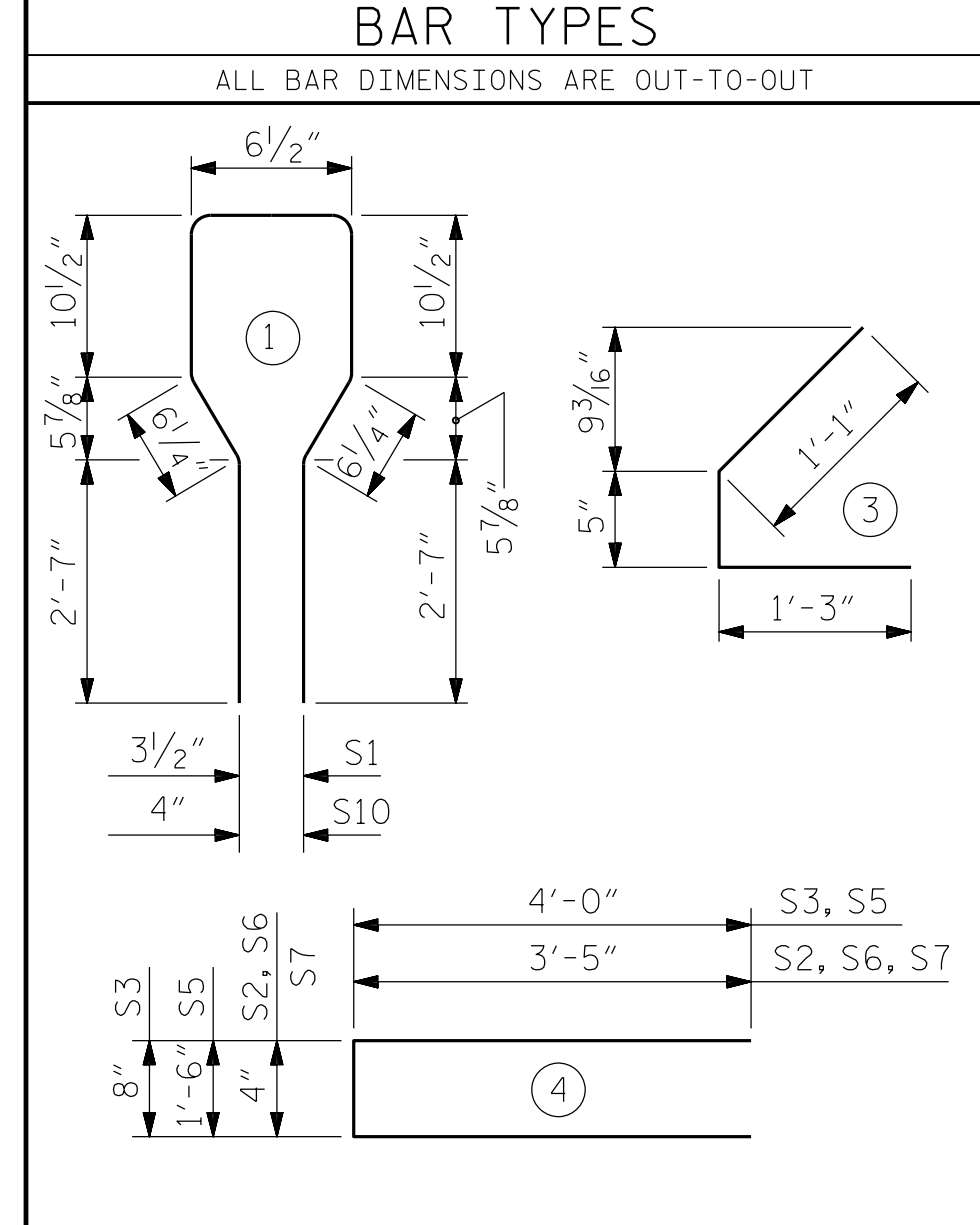
THE TOP SURFACE OF THE GIRDER SHALL BE RAKED TO A DEPTH OF 1/4" EXCEPT IN THE AREA BETWEEN THE STIRRUP AND THE EDGE OF THE GIRDER AND EXCEPT WHERE SHOWN IN PLAN VIEW.

**0.6" Ø L. R. GRADE 270 STRANDS**

AREA (SQ. INCHES)	ULTIMATE STRENGTH (LBS. PER STRAND)	APPLIED PRESTRESS (LBS. PER STRAND)
0.217	58,600	43,950

**REINFORCING STEEL FOR ONE GIRDER**

BAR	NUMBER	SIZE	TYPE	LENGTH	WEIGHT
S1	62	#4	1	8'-6"	352
S2	6	#6	4	7'-2"	65
S3	4	#4	4	8'-8"	23
S4	56	#4	3	2'-9"	103
S5	2	#4	4	9'-6"	13
S6	2	#4	4	7'-2"	10
S7	2	#5	4	7'-2"	15
S8	4	#5	4	7'-2"	30
S9	5	#4	STR	7'-0"	23
S10	5	#4	STR	12'-6"	42
S10	6	#6	1	8'-6"	77

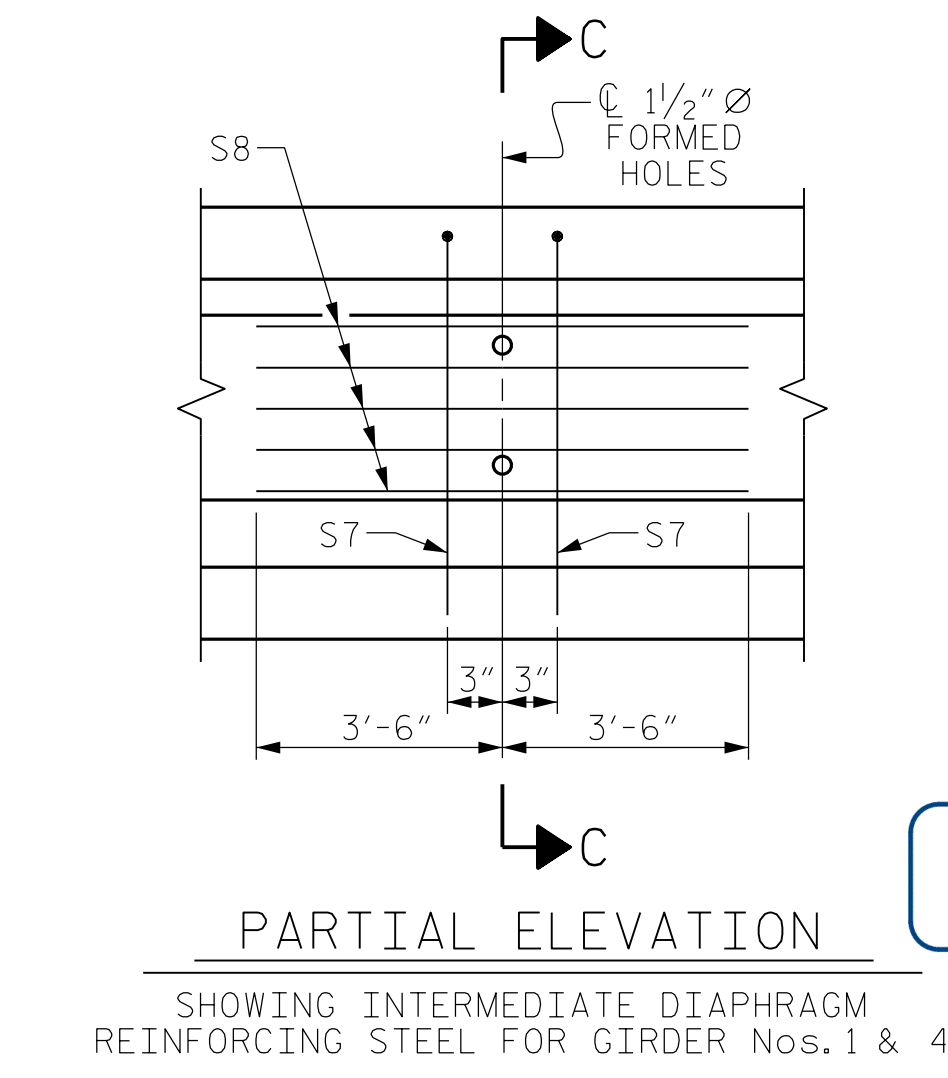
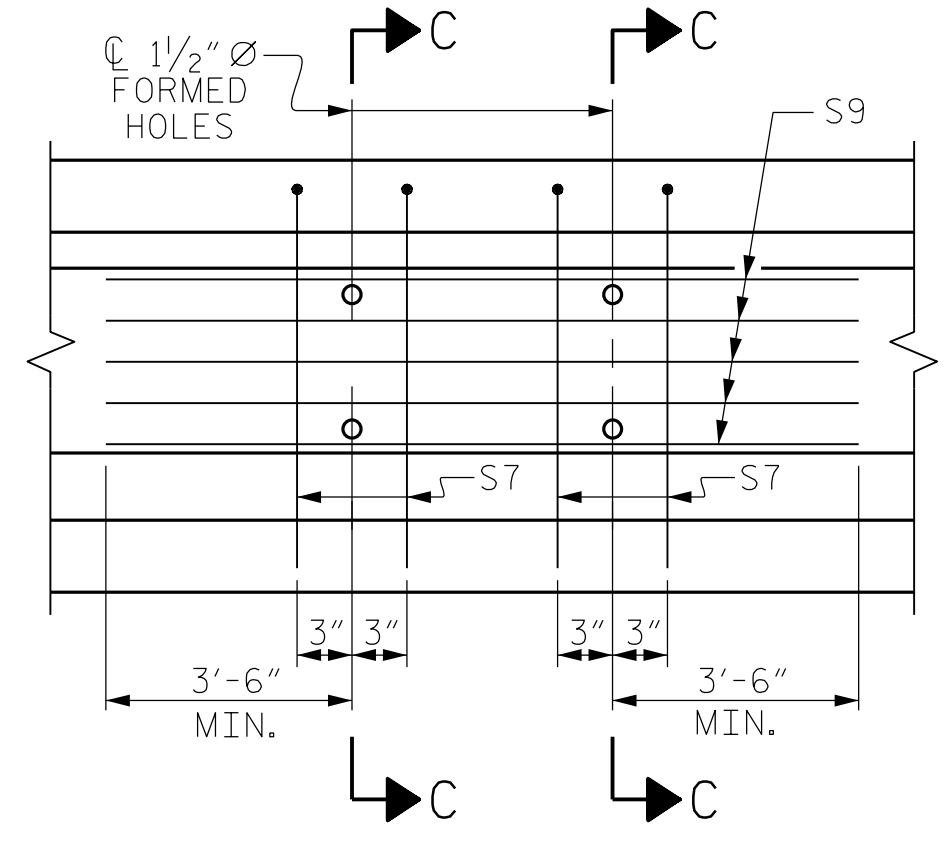


**0.6" Ø LOW RELAXATION STRAND LAYOUT**

⊙ BOND SHALL BE BROKEN ON THESE STRANDS FOR A DISTANCE OF 4'-0" FROM END OF GIRDER. SEE STANDARD SPECIFICATIONS, ARTICLE 1078-7.

⚠ BOND SHALL BE BROKEN ON THESE STRANDS FOR A DISTANCE OF 6'-0" FROM END OF GIRDER. SEE STANDARD SPECIFICATIONS, ARTICLE 1078-7.

**DEBONDING LEGEND**



**QUANTITIES FOR ONE GIRDER**

	REINFORCING STEEL	6000 PSI CONCRETE	0.6" Ø L. R. STRANDS
	LB.	C.Y.	No.
EXTERIOR GIRDER	681	9.8	20
INTERIOR GIRDER	715	9.8	20

**GIRDERS REQUIRED**

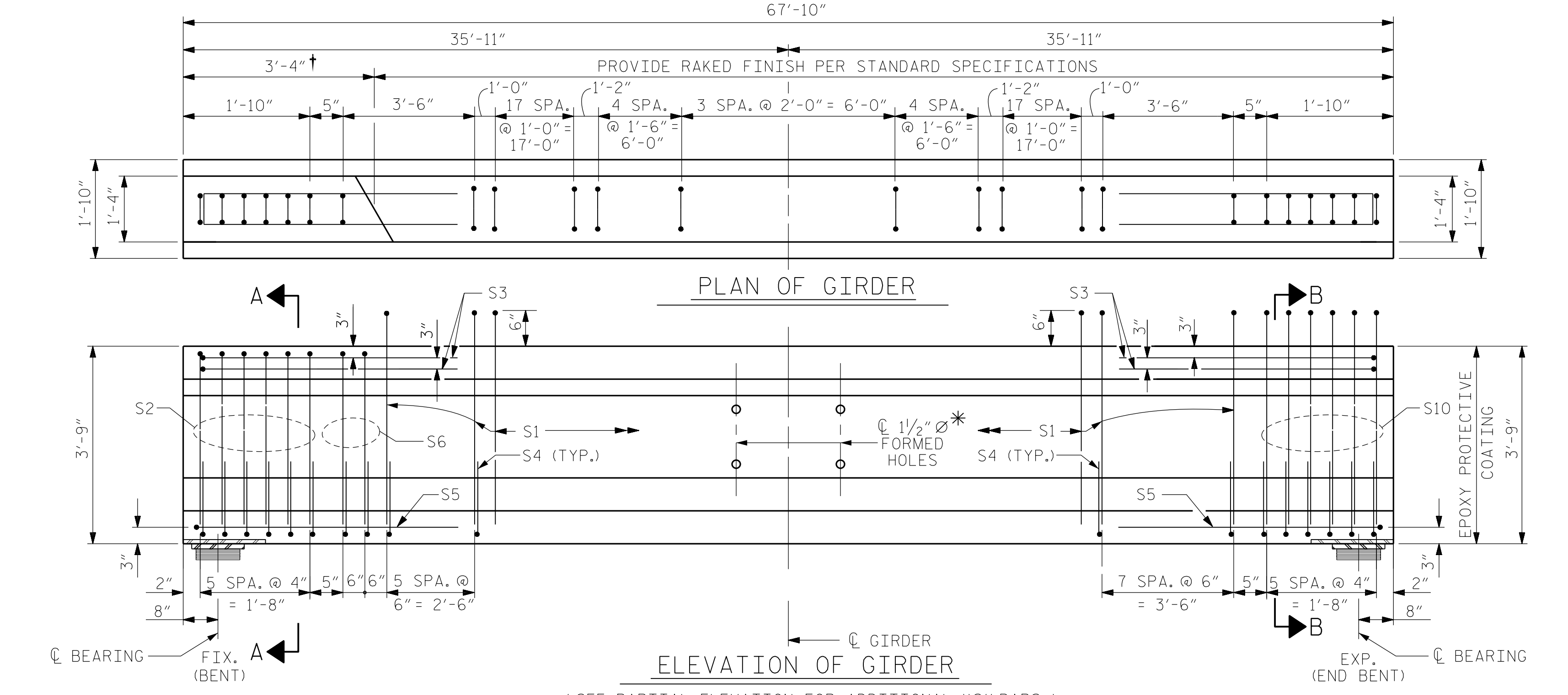
NUMBER	LENGTH	TOTAL LENGTH
8	67'-10"	542'-8"

PROJECT NO. B-5655  
EDGEcombe COUNTY  
 STATION: 16+75.00 -L-

SHEET 1 OF 3

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

STANDARD  
 AASHTO TYPE III  
 PRESTRESSED CONCRETE GIRDER  
 SPAN A OR C



ASSEMBLED BY : R. C. LARSON DATE : 09/11/19  
 CHECKED BY : A. K. ALLANKI DATE : 09/24/19

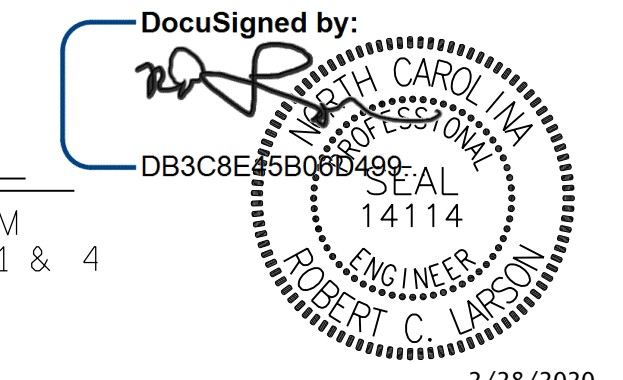
REV. 1/15 MAA/TMG  
 REV. 2/15 MAA/TMG  
 REV. 12/17 MAA/THC

DESIGN ENGINEER OF RECORD: DATE : 2/28/2020

\* SEE FRAMING PLAN FOR LOCATION

† PROVIDE A SMOOTH TROWEL FINISH TO TOP OF GIRDER IN THESE AREAS TO PREVENT BOND WITH DECK SLAB

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



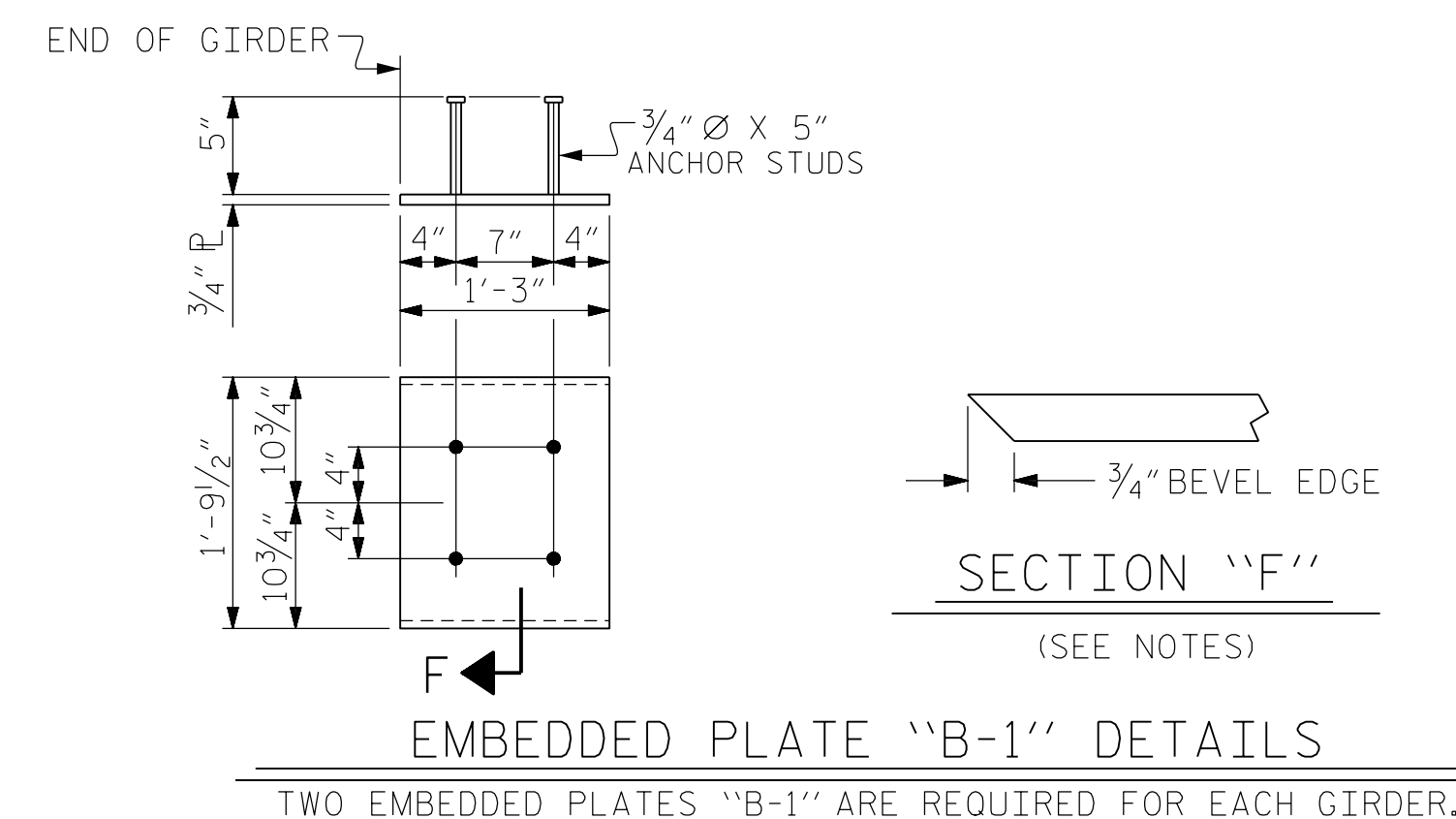
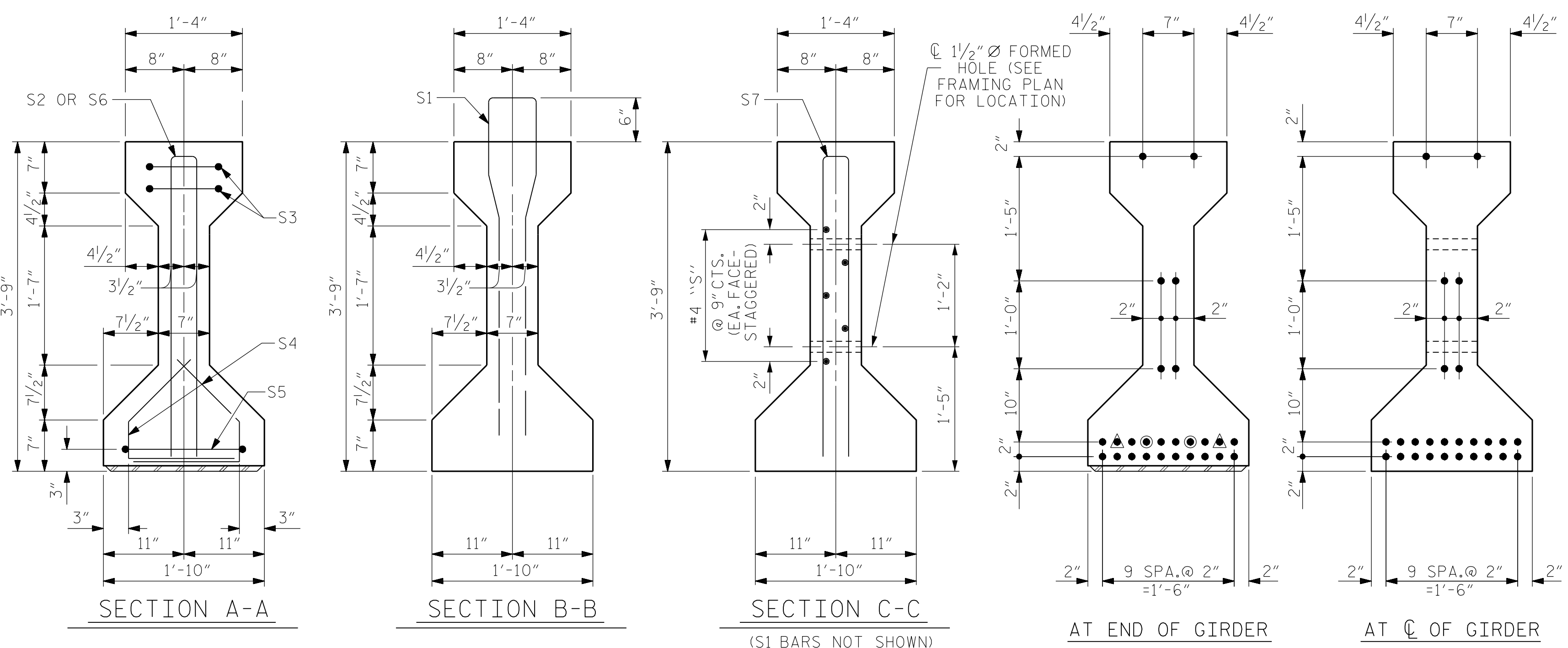
**REVISIONS**

NO.	BY:	DATE:	NO.	BY:	DATE:
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SHEET NO. S-10  
 TOTAL SHEETS 29

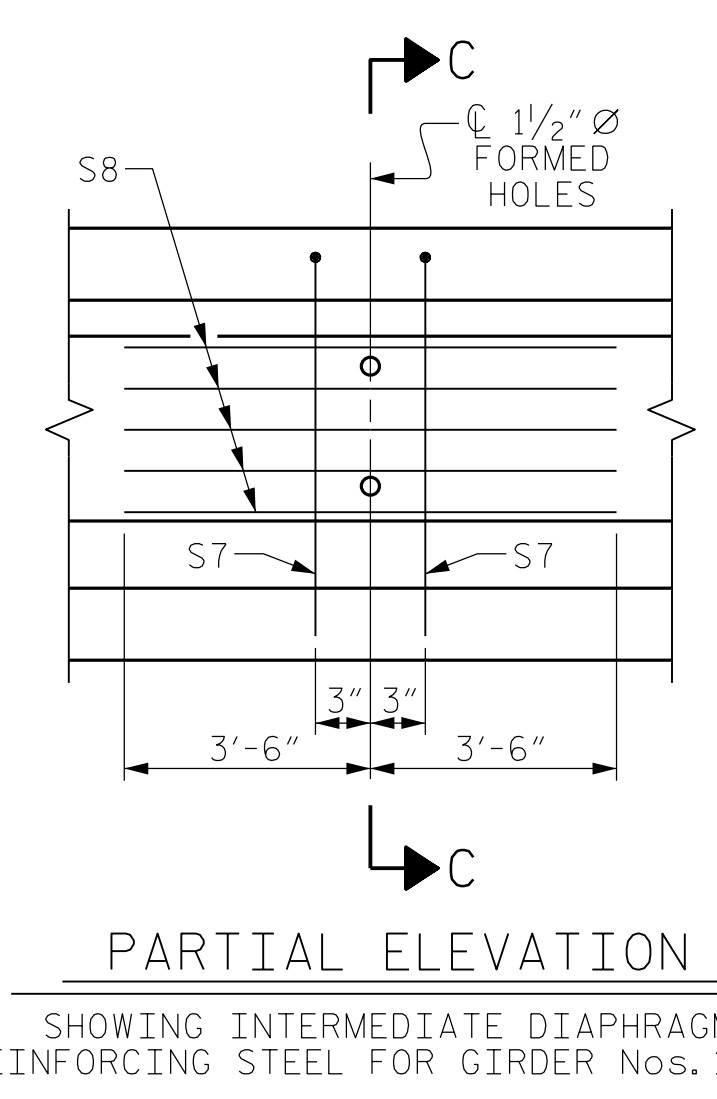
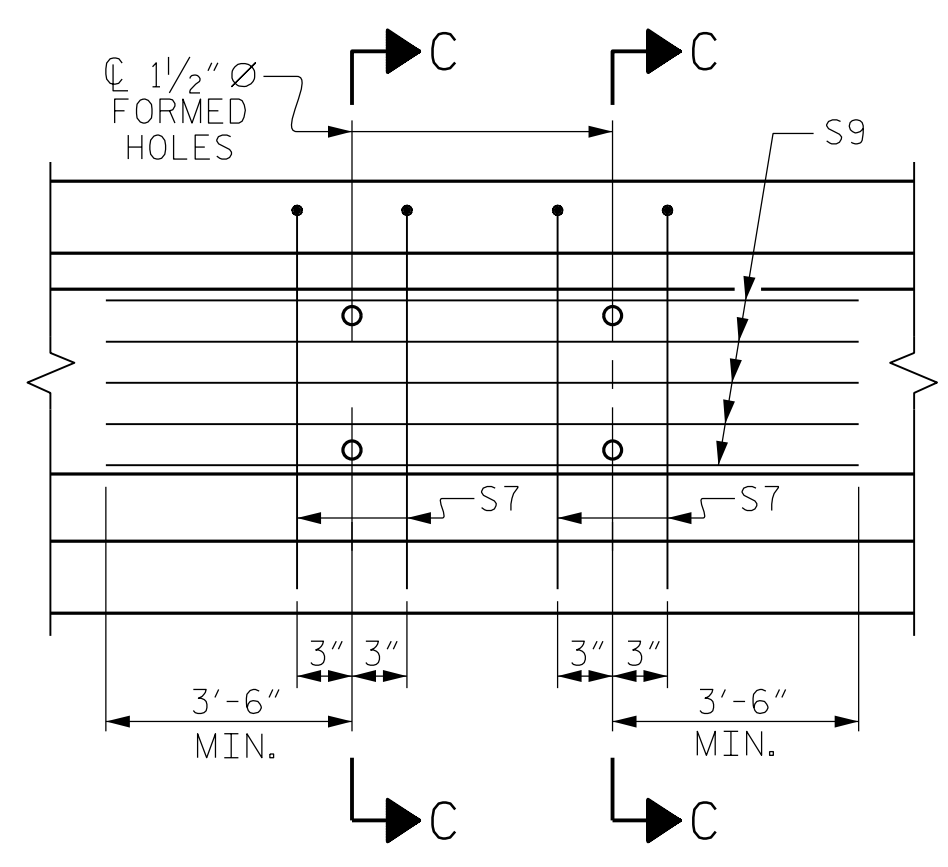
STD. NO. PCG2

KCI JOB NO: 251801945.20



0.6" Ø LOW RELAXATION STRAND LAYOUT

- DEBONDING LEGEND
- BOND SHALL BE BROKEN ON THESE STRANDS FOR A DISTANCE OF 4'-0" FROM END OF GIRDER. SEE STANDARD SPECIFICATIONS, ARTICLE 1078-7.
  - ▲ BOND SHALL BE BROKEN ON THESE STRANDS FOR A DISTANCE OF 14'-0" FROM END OF GIRDER. SEE STANDARD SPECIFICATIONS, ARTICLE 1078-7.



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.

APPLY EPOXY PROTECTIVE COATING TO END OF GIRDER SURFACES.

EMBEDDED PLATE "B-1" SHALL BE GALVANIZED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

ANCHOR STUDS SHALL CONFORM TO AASHTO M169 GRADES 1010 THROUGH 1020 OR APPROVED EQUAL, AND SHALL MEET THE TYPE "B" REQUIREMENTS OF SUBSECTION 7.3 OF THE ANSI/AASHTO/AWS D1.5 BRIDGE WELDING CODE.

ALL PRESTRESSED STRANDS SHALL BE CUT FLUSH WITH THE GIRDER ENDS.

THE TRANSFER OF LOAD FROM THE ANCHORAGES TO THE GIRDER SHALL BE DONE WHEN CONCRETE HAS REACHED A COMPRESSIVE STRENGTH OF NOT LESS THAN 5000 PSI.

DEPENDING ON THE TYPE OF SYSTEM USED TO SUPPORT THE DECK SLAB FORMS, PRESET ANCHORS MAY BE NECESSARY IN THE PRESTRESSED CONCRETE GIRDER.

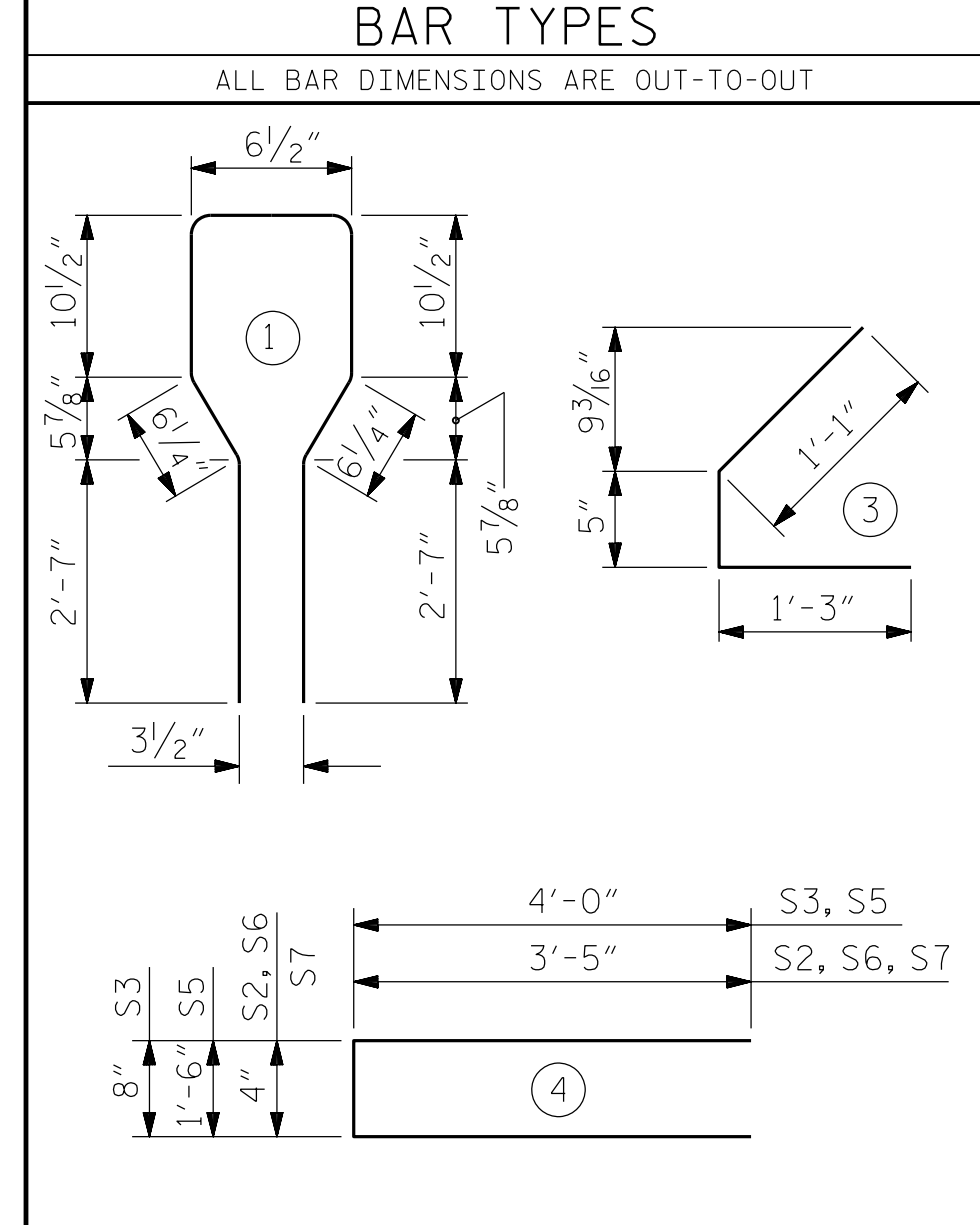
THE TOP SURFACE OF THE GIRDER SHALL BE RAKED TO A DEPTH OF 1/4" EXCEPT IN THE AREA BETWEEN THE STIRRUP AND THE EDGE OF THE GIRDER AND EXCEPT WHERE SHOWN IN PLAN VIEW.

0.6" Ø L. R. GRADE 270 STRANDS

AREA (SQ. INCHES)	ULTIMATE STRENGTH (LBS. PER STRAND)	APPLIED PRESTRESS (LBS. PER STRAND)
0.217	58,600	43,950

REINFORCING STEEL FOR ONE GIRDER

BAR	NUMBER	SIZE	TYPE	LENGTH	WEIGHT
S1	61	#4	1	8'-6"	346
S2	16	#6	4	7'-2"	172
S3	4	#4	4	8'-8"	23
S4	60	#4	3	2'-9"	110
S5	2	#4	4	9'-6"	13
S6	4	#4	4	7'-2"	19
S7	2	#5	4	7'-2"	15
S7	4	#5	4	7'-2"	30
S8	5	#4	STR	7'-0"	23
S9	5	#4	STR	12'-6"	42



QUANTITIES FOR ONE GIRDER

	REINFORCING STEEL LB.	6000 PSI CONCRETE C.Y.	0.6" Ø L. R. STRANDS No.
EXTERIOR GIRDER	721	10.7	26
INTERIOR GIRDER	755	10.7	26

GIRDERS REQUIRED

NUMBER	LENGTH	TOTAL LENGTH
4	74'-8"	298'-8"

PROJECT NO. B-5655  
 EDGEcombe COUNTY  
 STATION: 16+75.00 -L-

SHEET 2 OF 3

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

STANDARD  
 AASHTO TYPE III  
 PRESTRESSED CONCRETE GIRDER  
 SPAN B

REVISIONS

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

SHEET NO. S-11  
 TOTAL SHEETS 29

KCI JOB NO: 251801945.20

ASSEMBLED BY: R. C. LARSON DATE: 09/11/19  
 CHECKED BY: A. K. ALLANKI DATE: 09/25/19  
 DRAWN BY: JMB 12/87  
 CHECKED BY: ARB 12/87

REV. 1/15 MAA/TMG  
 REV. 2/15 MAA/TMG  
 REV. 12/17 MAA/THC

DESIGN ENGINEER OF RECORD  
 DATE: 2/28/2020

\* SEE FRAMING PLAN FOR LOCATION

† PROVIDE A SMOOTH TROWEL FINISH TO TOP OF GIRDER IN THESE AREAS TO PREVENT BOND WITH DECK SLAB

DOCUMENT NOT CONSIDERED FINAL  
 UNLESS ALL SIGNATURES COMPLETED

DocuSigned by:  
 KCI Associates of North Carolina, P.A.  
 ENGINEER  
 SEAL 14114  
 ROBERT C. LARSON  
 2/28/2020

STD. NO. PCG2



DEAD LOAD DEFLECTION TABLE FOR GIRDERS																								
0.6" Ø LOW RELAXATION		SPAN A or C (INTERIOR)											SPAN A or C (EXTERIOR)											
TENTH POINTS		0	.1	.2	.3	.4	.5	.6	.7	.8	.9	0	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	0	
CAMBER ( GIRDER ALONE IN PLACE )		↑	0.000	0.037	0.070	0.095	0.112	0.117	0.112	0.095	0.070	0.037	0.000	0.000	0.037	0.070	0.095	0.112	0.117	0.112	0.095	0.070	0.037	0.000
* DEFLECTION DUE TO SUPERIMPOSED D.L.		↓	0.000	0.025	0.049	0.068	0.081	0.085	0.081	0.068	0.049	0.025	0.000	0.000	0.022	0.044	0.062	0.073	0.077	0.073	0.062	0.044	0.022	0.000
FINAL CAMBER		↑	0	1/8"	1/4"	5/16"	3/8"	3/8"	3/8"	5/16"	1/4"	1/8"	0	0	3/16"	5/16"	3/8"	1/2"	1/2"	1/2"	3/8"	5/16"	3/16"	0
0.6" Ø LOW RELAXATION		SPAN B (INTERIOR)											SPAN B (EXTERIOR)											
TENTH POINTS		0	.1	.2	.3	.4	.5	.6	.7	.8	.9	0	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	0	
CAMBER ( GIRDER ALONE IN PLACE )		↑	0.000	0.052	0.098	0.134	0.157	0.165	0.157	0.134	0.098	0.052	0.000	0.000	0.052	0.098	0.134	0.157	0.165	0.157	0.134	0.098	0.052	0.000
* DEFLECTION DUE TO SUPERIMPOSED D.L.		↓	0.000	0.037	0.073	0.101	0.119	0.126	0.119	0.101	0.073	0.037	0.000	0.000	0.033	0.066	0.092	0.108	0.114	0.108	0.092	0.066	0.033	0.000
FINAL CAMBER		↑	0	3/16"	5/16"	3/8"	7/16"	1/2"	7/16"	3/8"	5/16"	3/16"	0	0	1/4"	3/8"	1/2"	9/16"	5/8"	9/16"	1/2"	3/8"	1/4"	0

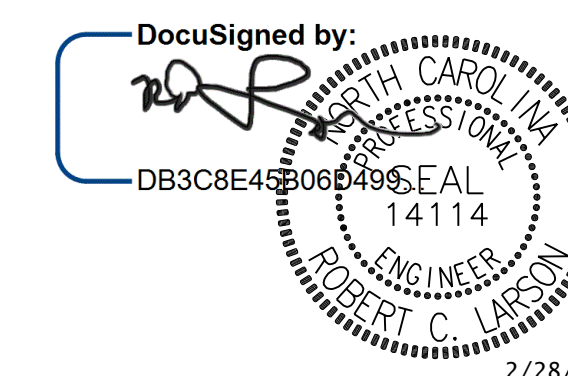
\* INCLUDES FUTURE WEARING SURFACE  
 ALL VALUES ARE SHOWN IN FEET ( DECIMAL FORM ), EXCEPT " FINAL CAMBER ", WHICH IS GIVEN IN INCHES ( FRACTION FORM ).

PROJECT NO. B-5655  
EDGEcombe COUNTY  
 STATION: 16+75.00 -L-

SHEET 3 OF 3

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

PRESTRESSED CONCRETE GIRDER  
 DEAD LOAD DEFLECTIONS



DESIGN ENGINEER OF RECORD: [Signature] DATE: 2/28/2020  
 DRAWN BY: A.K. ALLANKI DATE: 10/23/19  
 CHECKED BY: R.C. LARSON DATE: 11/01/19

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

ENGINEERS • PLANNERS • SCIENTISTS • CONSTRUCTION MANAGERS LICENSE NUMBER: C-0764  
**KCI Associates**  
 of North Carolina, P.A.  
 4505 Falls of Neuse Road, Suite 400 Raleigh, NC 27609-6270 Phone 919-783-924

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-12
1			3			TOTAL SHEETS
2			4			29

STRUCTURAL STEEL NOTES

ALL INTERMEDIATE DIAPHRAGM STEEL AND CONNECTOR PLATES SHALL BE AASHTO M270 GRADE 50 OR APPROVED EQUAL.

TENSION ON THE ASTM A325 BOLTS THROUGH THE CHANNEL MEMBER SHALL BE CALIBRATED USING DIRECT TENSION INDICATOR WASHERS IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

TENSION ON THE ASTM A449 BOLTS THROUGH THE GIRDER WEB SHALL BE SNUG TIGHTENED FOLLOWED BY AN ADDITIONAL 1/4 TURN.

THE PLATES, BENT PLATES, CHANNELS, AND ANGLES SHALL BE GALVANIZED OR METALLIZED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS. FOR THERMAL SPRAYED COATINGS (METALLIZATION), SEE SPECIAL PROVISIONS.

FOR METALLIZATION, APPLY A THERMAL SPRAYED COATING WITH A SEAL COAT TO ALL STEEL DIAPHRAGM SURFACES IN ACCORDANCE WITH THE DEPARTMENTS THERMAL SPRAYED COATINGS (METALLIZATION) PROGRAM, THERMAL SPRAYED COATINGS SPECIAL PROVISION AND SECTION 442 OF THE STANDARD SPECIFICATIONS.

GALVANIZE THE HIGH STRENGTH BOLTS, NUTS, WASHERS AND DIRECT TENSION INDICATORS IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

USE AN ASTM F436 HARDENED WASHER WITH STANDARD AND SLOTTED HOLES UNDER EACH BOLT HEAD AND NUT.

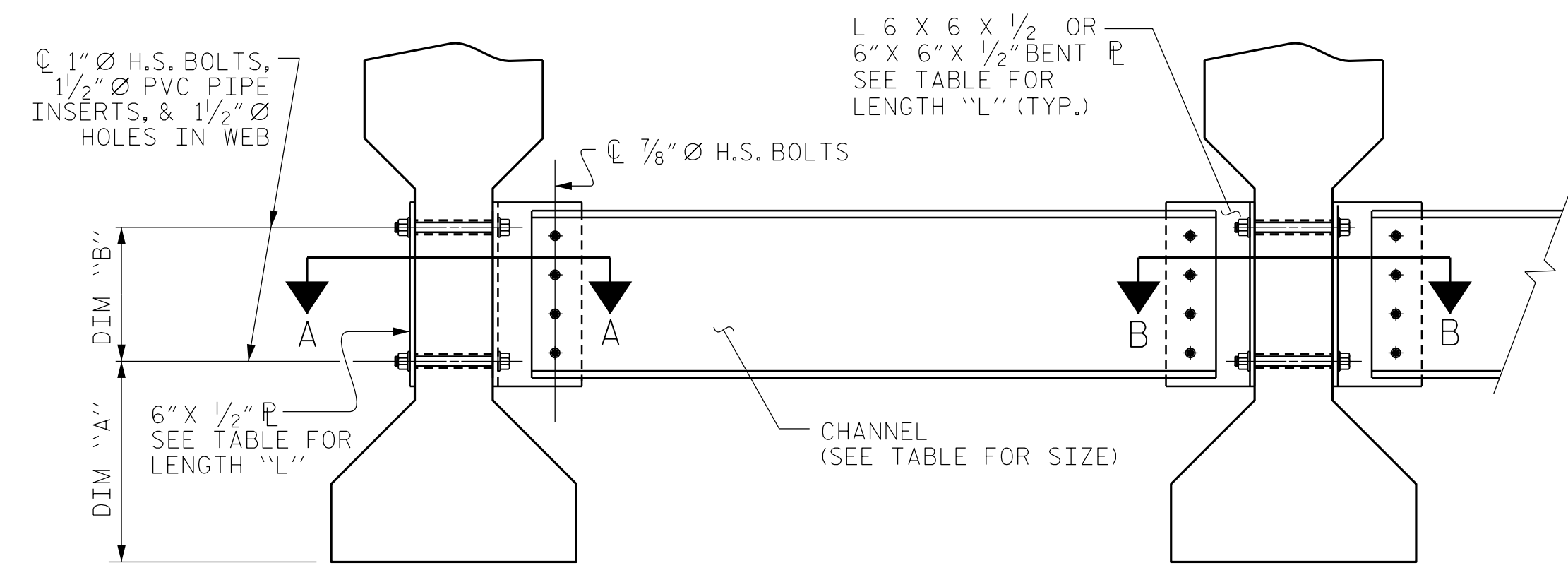
FOR BOLTS THROUGH THE GIRDER WEB, PROVIDE SUFFICIENT LENGTH OF THREADS ON ALL BOLTS TO ACCOMMODATE WASHERS AND THE THICKNESS OF CONNECTING MEMBER PLUS AT LEAST 1/4" PROJECTION BEYOND THE NUT.

INTERMEDIATE DIAPHRAGM ASSEMBLY SHALL COMPLY WITH SECTION 1072 OF THE STANDARD SPECIFICATIONS.

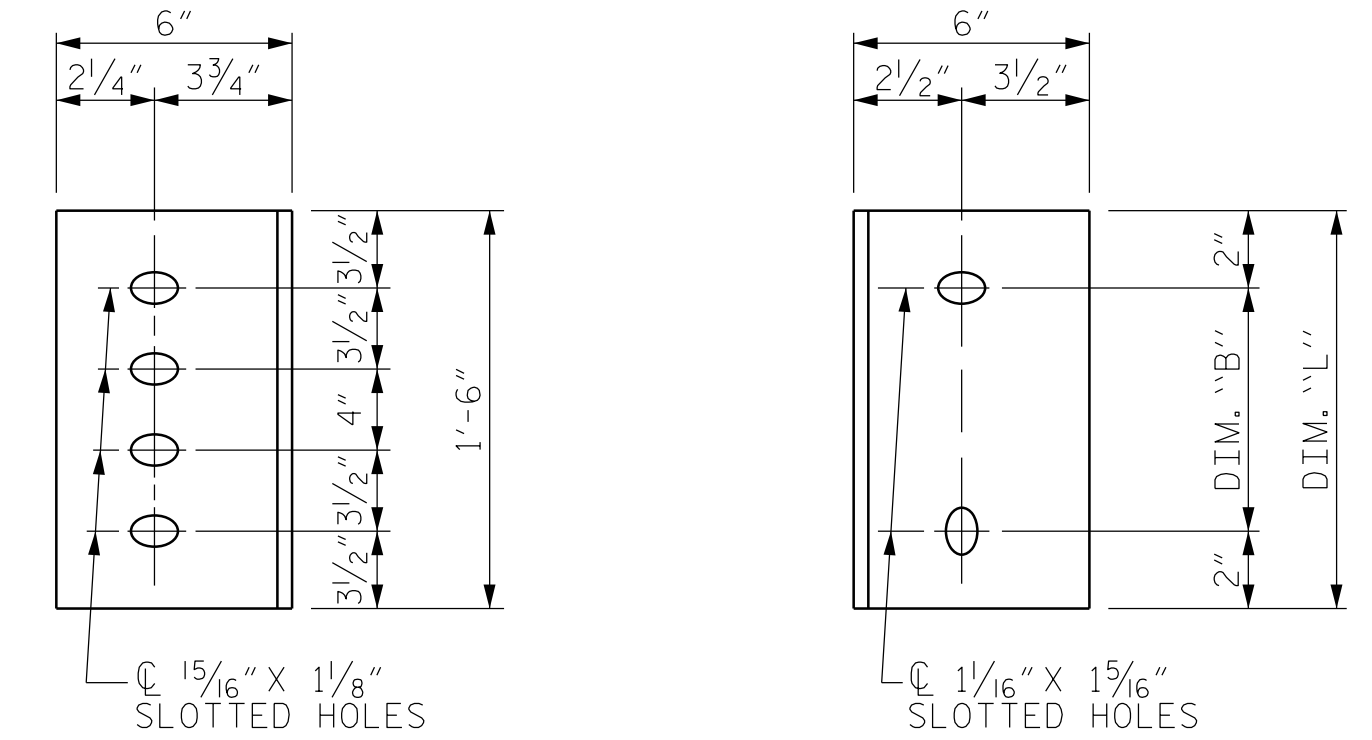
SUBMIT TWO SETS OF WORKING DRAWINGS FOR THE INTERMEDIATE DIAPHRAGM ASSEMBLY FOR REVIEW, COMMENTS AND ACCEPTANCE. AFTER REVIEW, COMMENTS, AND ACCEPTANCE, SUBMIT SEVEN SETS FOR DISTRIBUTION.

IN THE EXTERIOR BAYS, PLACE TEMPORARY STRUTS BETWEEN PRESTRESSED GIRDERS ADJACENT TO THE STEEL DIAPHRAGMS. STRUTS SHALL REMAIN IN PLACE 3 DAYS AFTER CONCRETE IS PLACED.

THE COST OF THE STEEL DIAPHRAGMS AND ASSEMBLIES SHALL BE INCLUDED IN THE UNIT PRICE BID FOR PRESTRESSED CONCRETE GIRDERS.



EXTERIOR GIRDER INTERIOR GIRDER  
PART SECTION AT INTERMEDIATE DIAPHRAGM  
(TYPE III GIRDER SHOWN)



DIAPHRAGM FACE WEB FACE  
(TYPE III GDR.)

CONNECTOR PLATE DETAILS

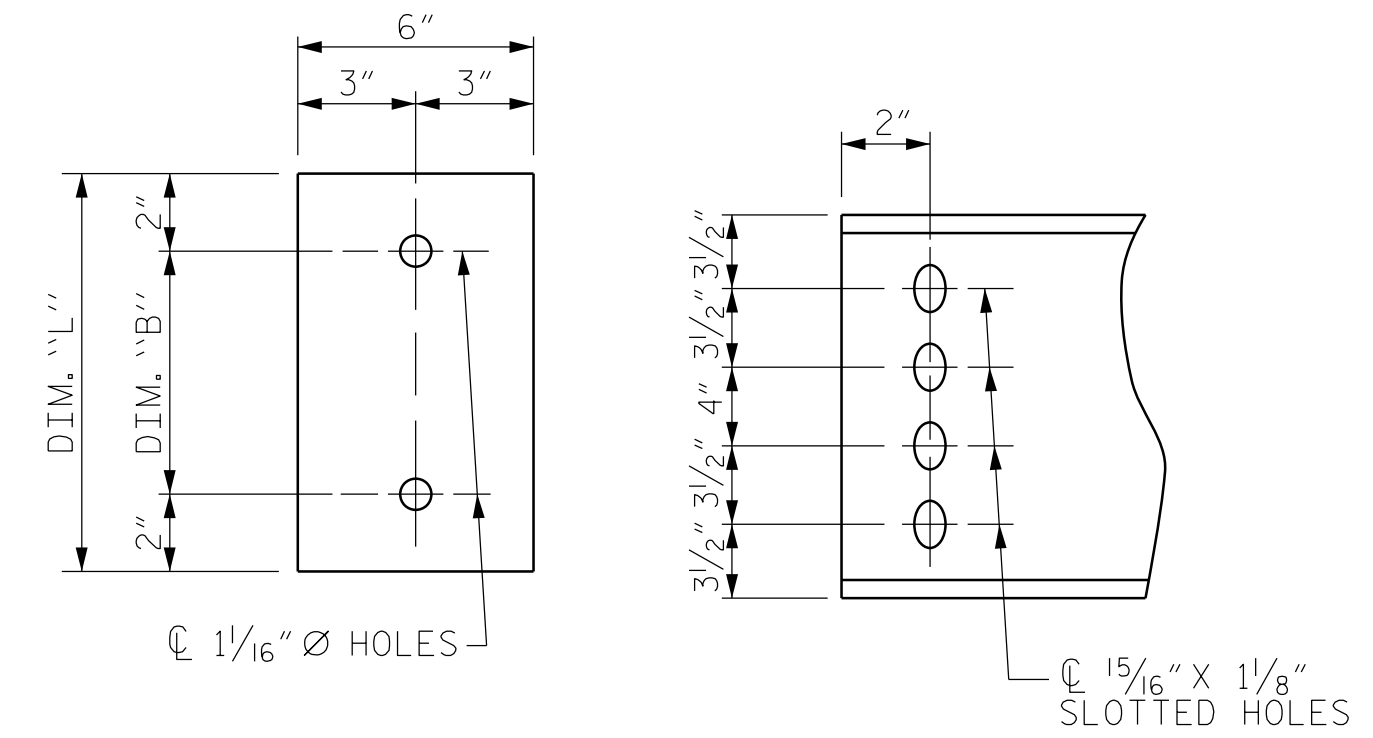
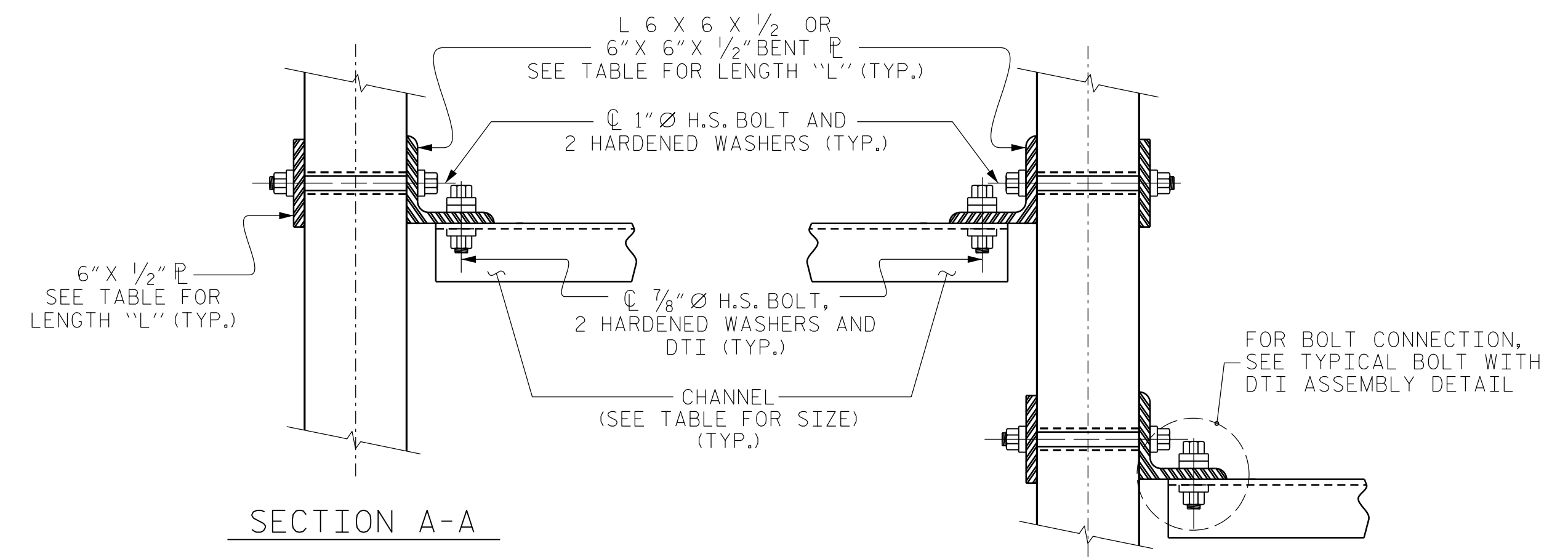


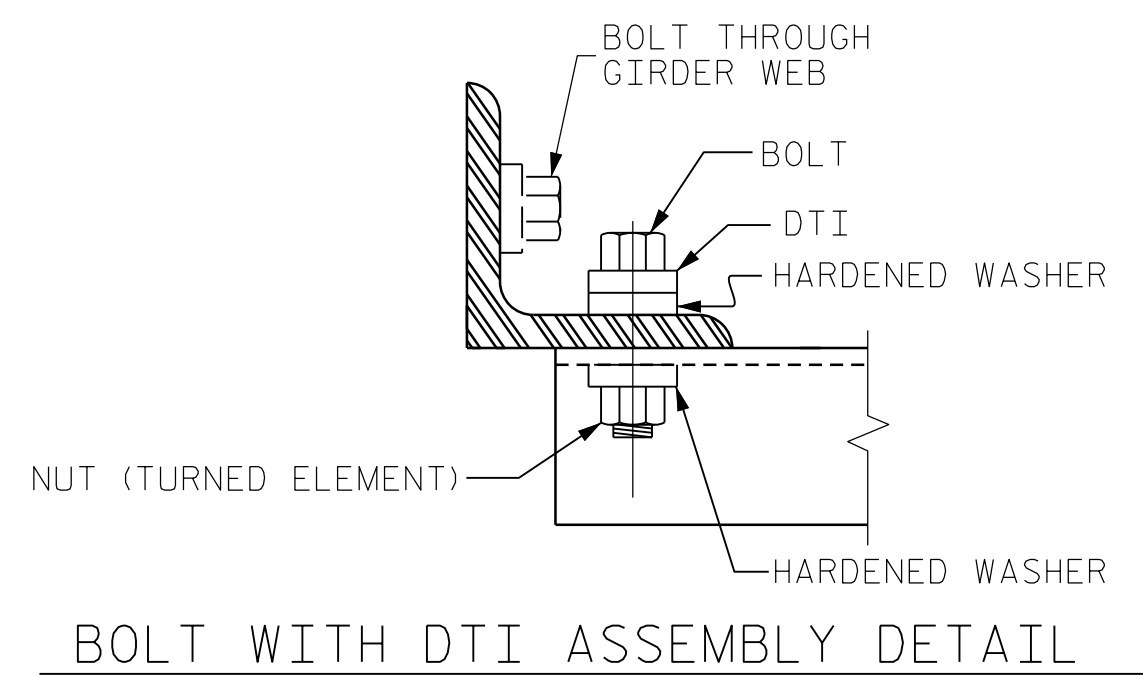
PLATE DETAILS CHANNEL END  
(TYPE III GDR.)



SECTION A-A SECTION B-B  
CONNECTION DETAILS  
(SKEW > 110° SHOWN SKEW < 70° SIM.)

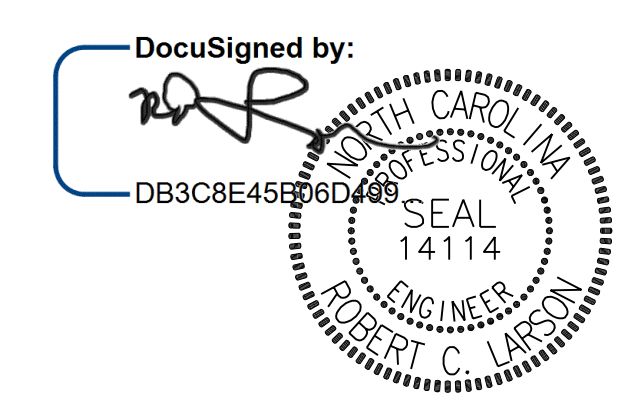
TABLE

GIRDER TYPE	CHANNEL SIZE	DIM "A"	DIM "B"	DIM "L"
III	MC 18 x 42.7	1'-5"	1'-2"	1'-6"



BOLT WITH DTI ASSEMBLY DETAIL

PROJECT NO. B-5655  
EDGEcombe COUNTY  
STATION: 16+75.00 -L-



STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH  
STANDARD  
INTERMEDIATE  
STEEL DIAPHRAGMS  
FOR TYPE II, III, & IV  
PRESTRESSED CONCRETE  
GIRDERS

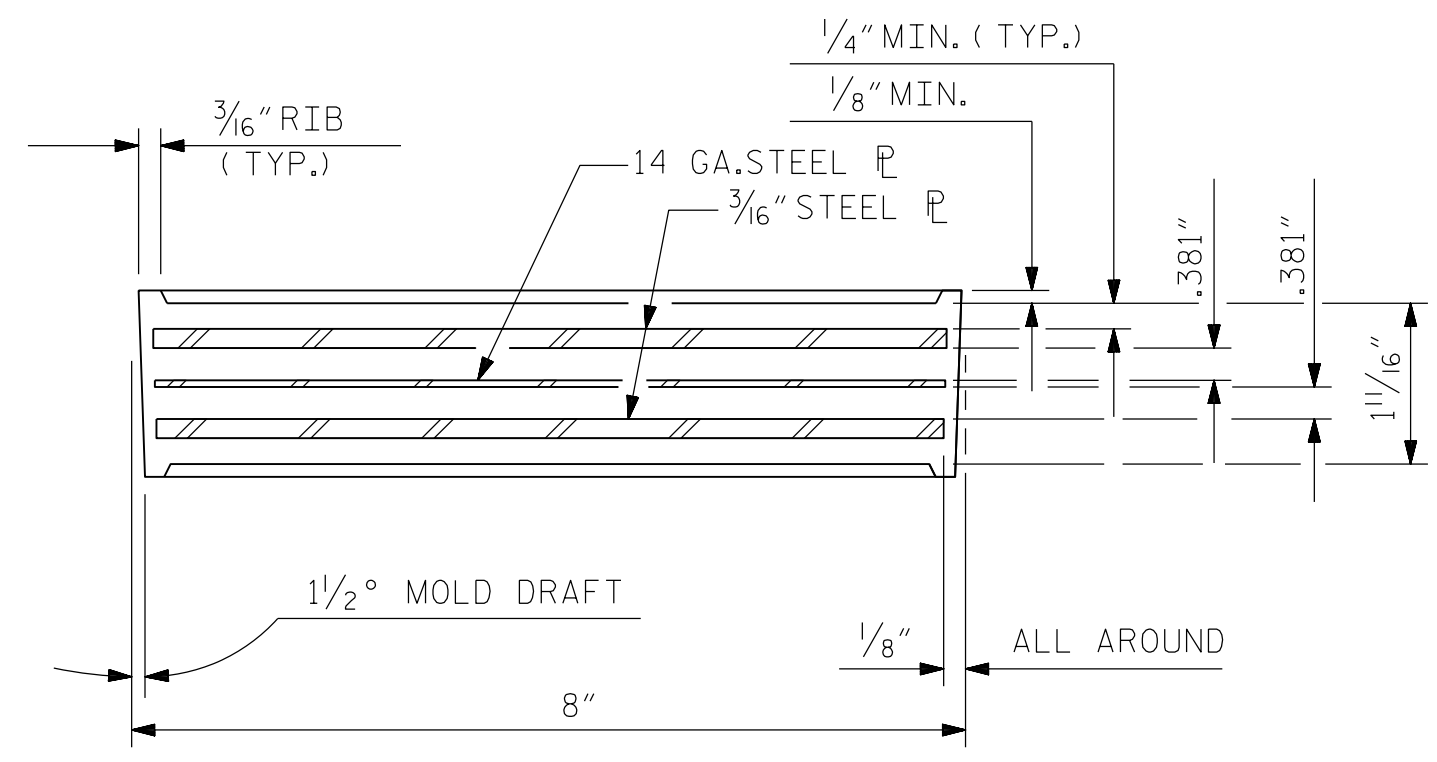
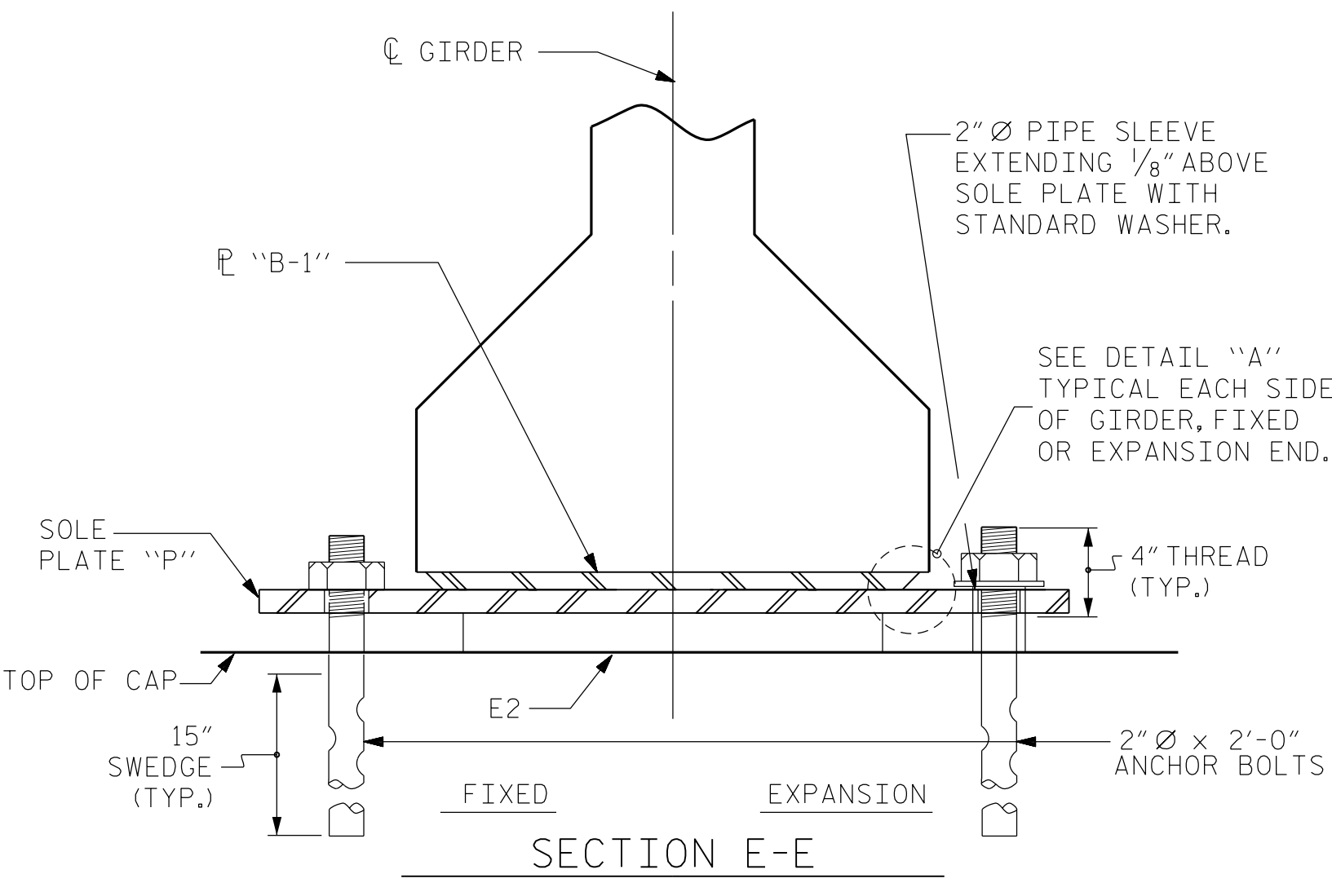
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NO.	BY:	DATE:	NO.	BY:	DATE:	S-13
1			3			TOTAL SHEETS 29
2			4			

DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED

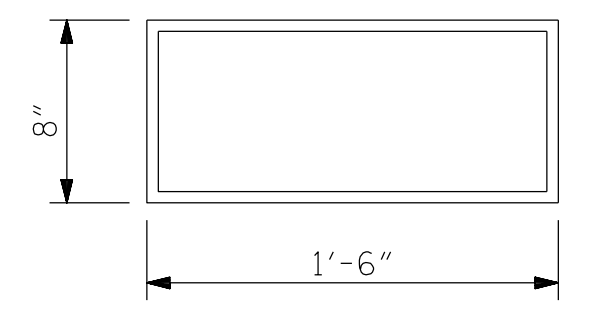


KCI JOB NO: 251801945.20

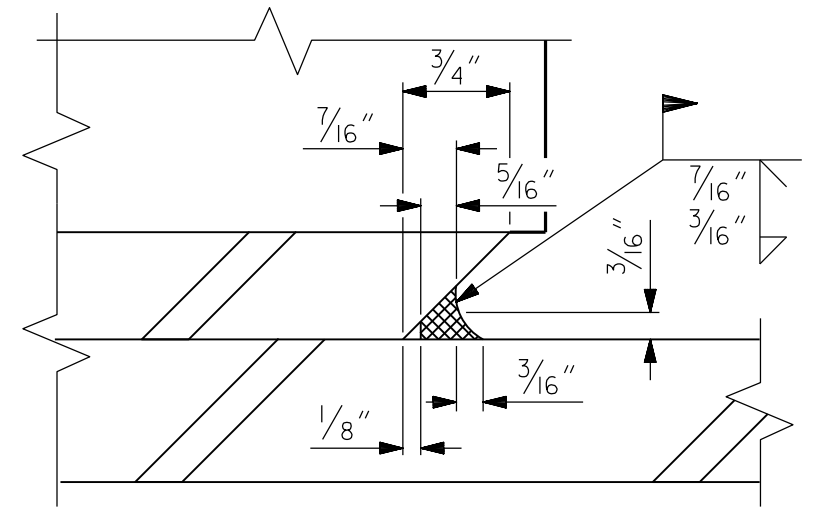
DESIGN ENGINEER OF RECORD	DocuSigned by: DATE : 2/28/2020
ASSEMBLED BY : A. K. ALLANKI	DATE : 09/11/19
CHECKED BY : R. C. LARSON	DATE : 10/13/19
DRAWN BY : TLA 6/05	REV. 5/10/06RRR KMM/GM
CHECKED BY : VC 6/05	REV. 10/1/11 MAA/GM
	REV. 12/17 MAA/THC



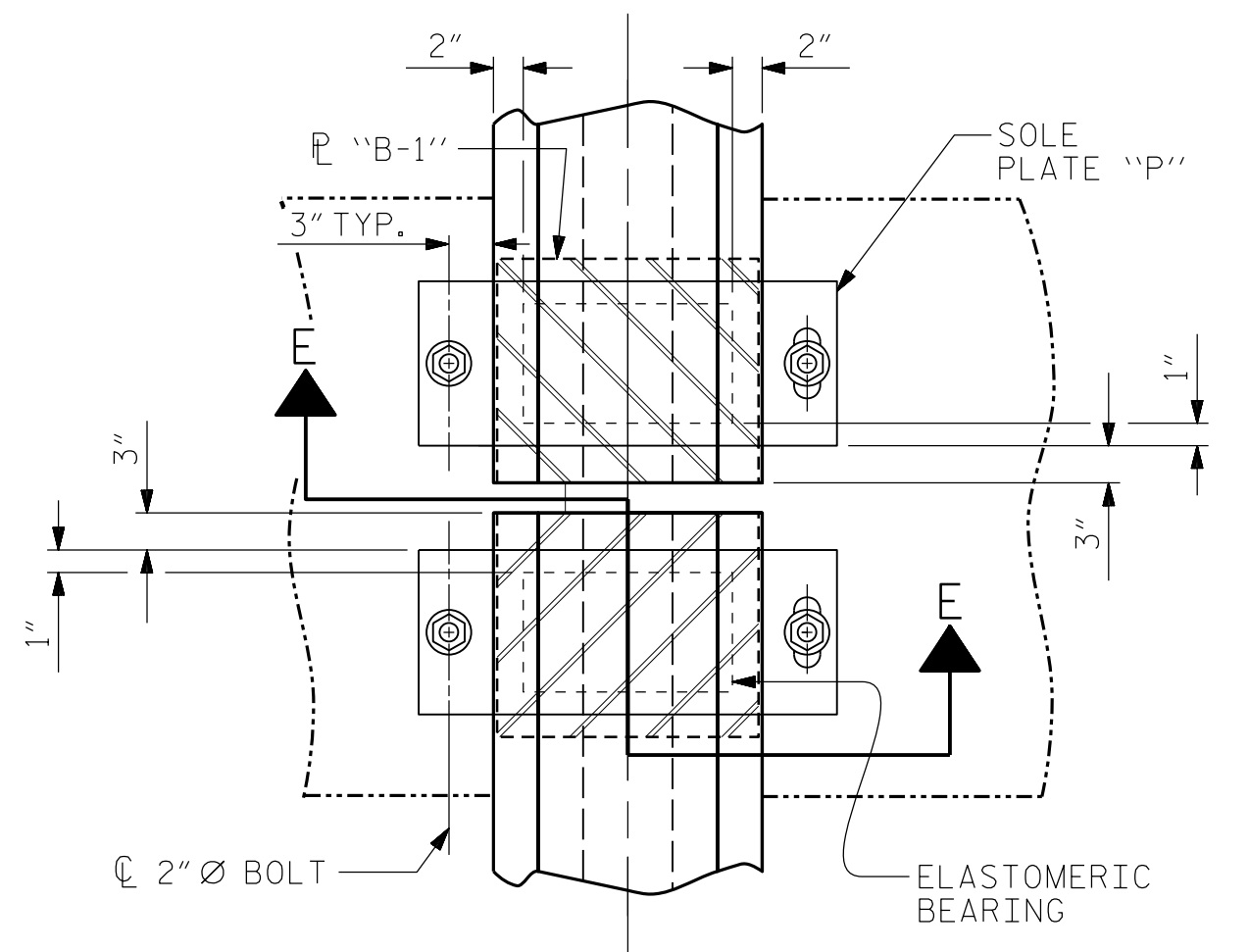
TYPICAL SECTION OF ELASTOMERIC BEARINGS



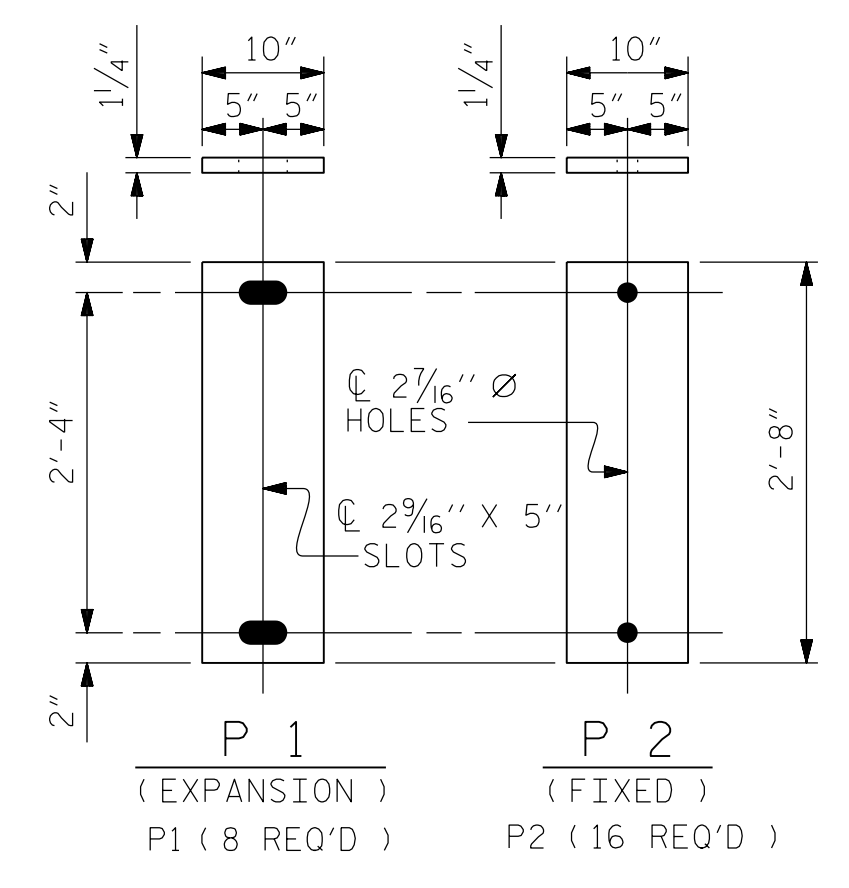
E2 (24 REQ'D)  
PLAN VIEW OF ELASTOMERIC BEARING  
TYPE III



DETAIL "A"



TYPICAL HALF-PLAN (SHOWING EXPANSION CONDITION)



SOLE PLATE DETAILS ("P")

NOTES

AT ALL FIXED POINTS OF SUPPORT, NUTS FOR ANCHOR BOLTS ARE TO BE TIGHTENED FINGER TIGHT AND THEN BACKED OFF 1/2 TURN. THE THREAD OF THE NUT AND BOLT SHALL THEN BE BURRED WITH A SHARP POINTED TOOL.

THE 2" Ø PIPE SLEEVE SHALL BE CUT FROM SCHEDULE 40 PVC PLASTIC PIPE. THE PVC PLASTIC PIPE SHALL MEET THE REQUIREMENTS OF ASTM D1785.

STEEL SOLE PLATES, ANCHOR BOLTS, NUTS, AND WASHERS SHALL BE GALVANIZED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

PRIOR TO WELDING, GRIND THE GALVANIZED SURFACE OF THE PORTION OF THE EMBEDDED PLATE AND SOLE PLATE THAT ARE TO BE WELDED. AFTER WELDING, DAMAGED GALVANIZED SURFACES SHALL BE REPAIRED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

WHEN WELDING THE SOLE PLATE TO THE EMBEDDED PLATE IN THE GIRDER, USE TEMPERATURE INDICATING WAX PENS, OR OTHER SUITABLE MEANS, TO ENSURE THAT THE TEMPERATURE OF THE SOLE PLATE DOES NOT EXCEED 300°F. TEMPERATURES ABOVE THIS MAY DAMAGE THE ELASTOMER.

SOLE PLATE "P", BOLTS, NUTS, WASHERS, AND PIPE SLEEVE SHALL BE INCLUDED IN THE PAY ITEM FOR PRESTRESSED CONCRETE GIRDERS.

ANCHOR BOLTS SHALL MEET THE REQUIREMENTS OF ASTM A449. NUTS SHALL MEET THE REQUIREMENTS OF AASHTO M291-DH OR AASHTO M292-2H. WASHERS SHALL MEET THE REQUIREMENTS OF AASHTO M293. SHOP DRAWINGS ARE NOT REQUIRED FOR ANCHOR BOLT, NUTS AND WASHERS. SHOP INSPECTION IS REQUIRED.

ALL SURFACES OF BEARING PLATES SHALL BE SMOOTH AND STRAIGHT.

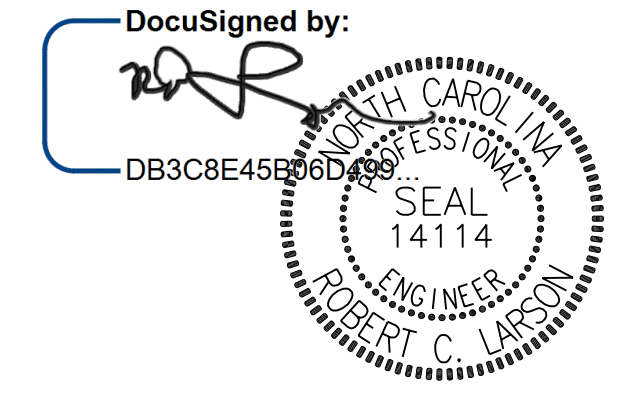
THE ELASTOMER IN THE STEEL REINFORCED BEARINGS SHALL HAVE A SHEAR MODULUS OF 0.160 KSI, IN ACCORDANCE WITH AASHTO M251.

FOR STEEL REINFORCED ELASTOMERIC BEARINGS, SEE SPECIAL PROVISIONS.

ALL SOLE PLATES SHALL BE AASHTO M270 GRADE 36.

MAXIMUM ALLOWABLE SERVICE LOADS	
D.L.+L.L. (NO IMPACT)	
TYPE III	205 k

PROJECT NO. B-5655  
EDGEcombe COUNTY  
STATION: 16+75.00 -L-



STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH  
STANDARD  
ELASTOMERIC BEARING  
DETAILS  
PRESTRESSED CONCRETE GIRDER  
SUPERSTRUCTURE

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			29
2			4			

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UNLESS ALL SIGNATURES COMPLETED

KCI Associates  
of North Carolina, P.A.  
400 Falls of Neuse Road, Suite 400, Raleigh, NC 27609-6270 Phone: (919) 783-9201

2/28/2020

KCI JOB NO: 251801945.20

DESIGN ENGINEER OF RECORD	DocuSigned by: [Signature]	DATE: 2/28/2020
ASSEMBLED BY: R. C. LARSON	DATE: 09/16/19	
CHECKED BY: A. K. ALLANKI	DATE: 09/25/19	
DRAWN BY: WJH 8/89	REV. 6/13 AAC/MAA	
CHECKED BY: CRK 8/89	REV. 1/15 MAA/TMG	
	REV. 12/17 MAA/THC	



NOTES

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

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

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

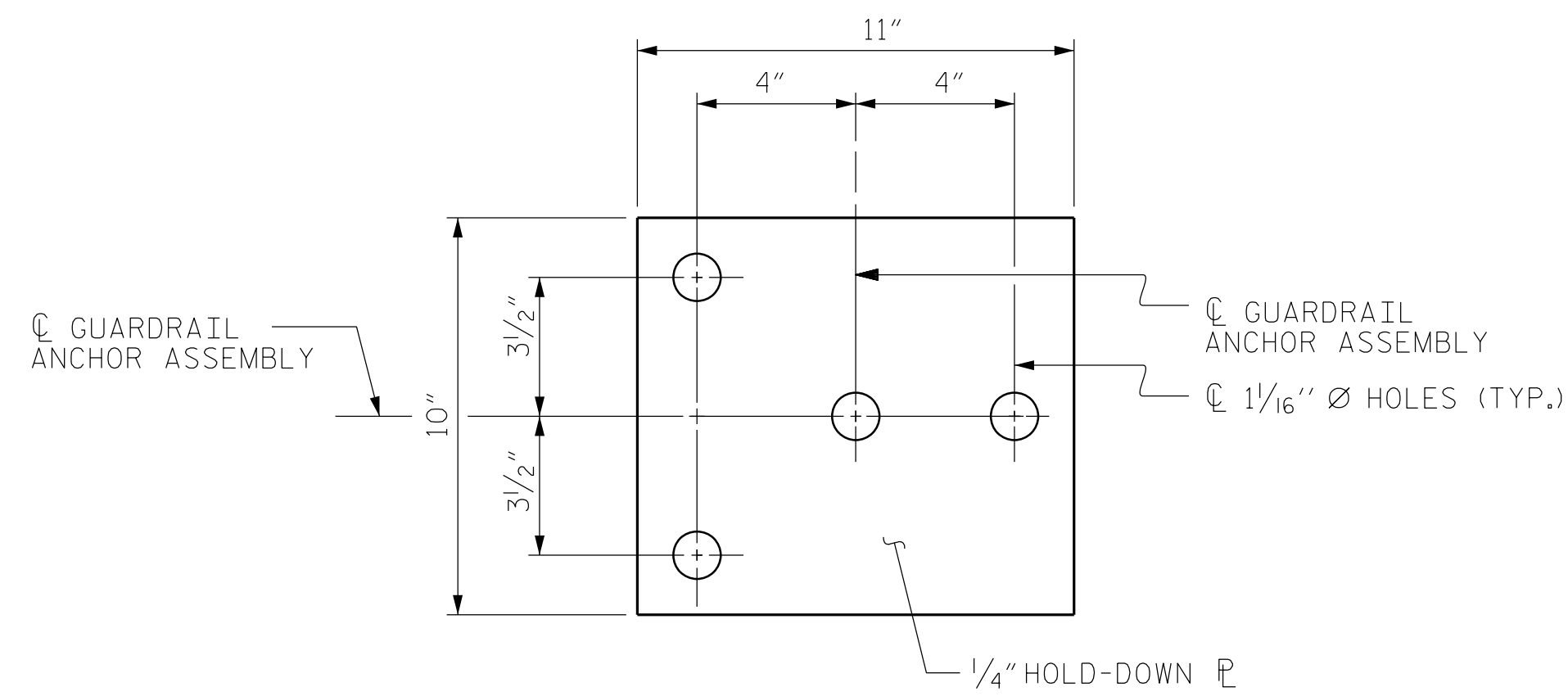
THE GUARDRAIL ANCHOR ASSEMBLY IS REQUIRED AT ALL POINTS WHERE APPROACH GUARDRAIL IS TO BE ATTACHED TO THE END OF BARRIER RAIL. FOR POINTS OF ATTACHMENT, SEE SKETCH.

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

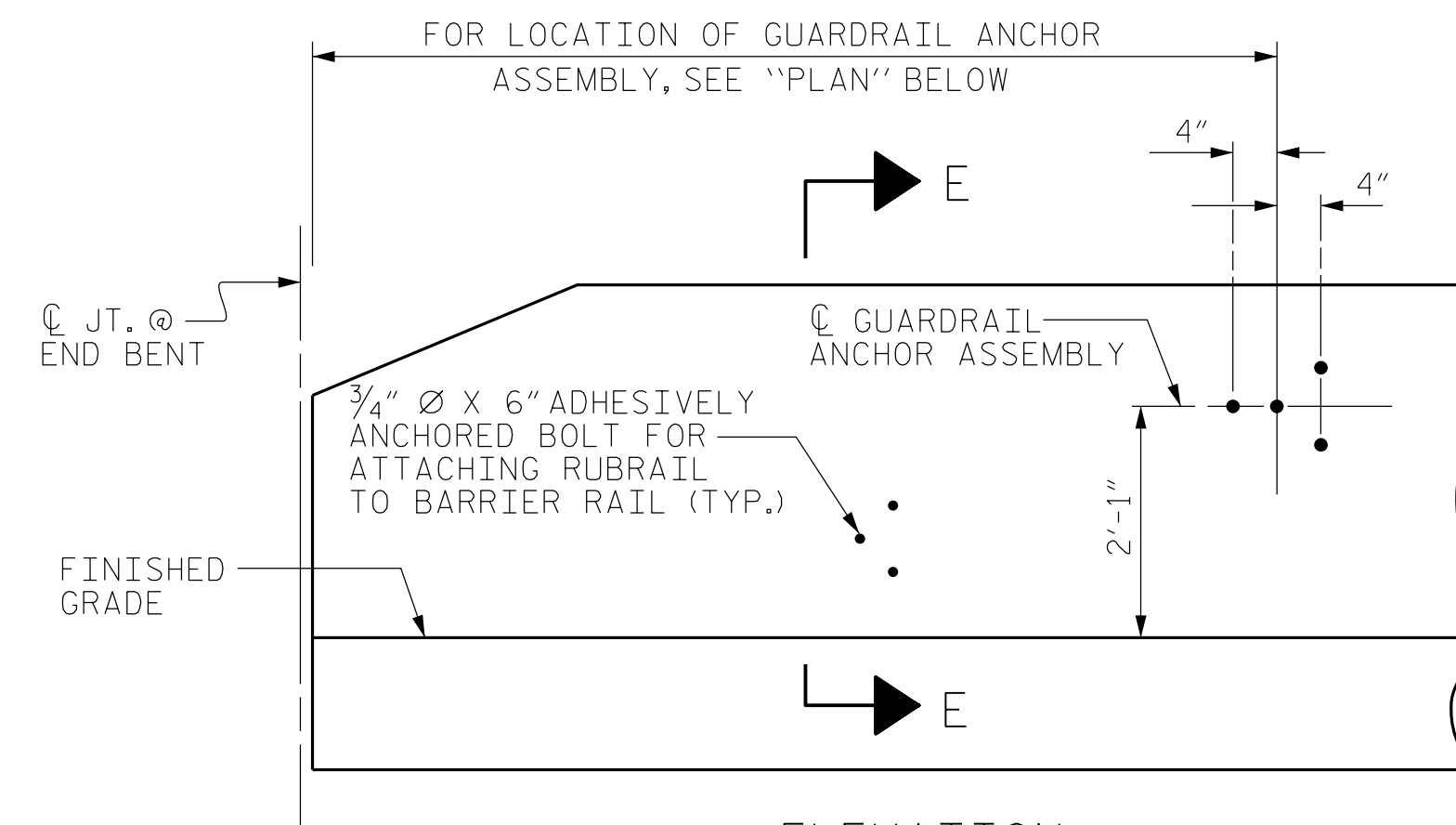
THE COST OF THE GUARDRAIL ANCHOR ASSEMBLY SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR CONCRETE BARRIER RAIL.

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

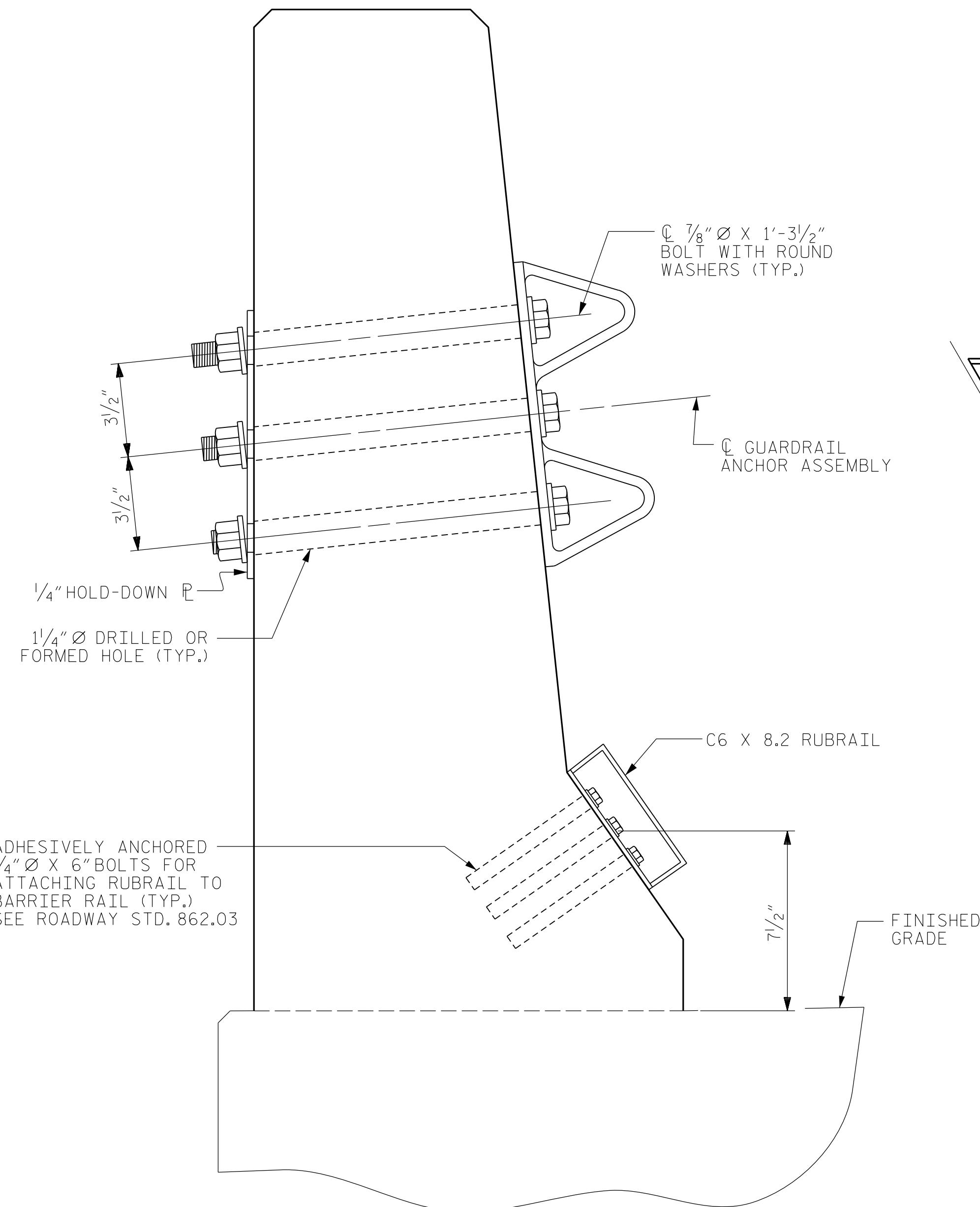
THE C6 X 8.2 RUBRAIL IS TO BE ADHESIVELY ANCHORED TO THE RAIL USING THREE 3/4" Ø X 6" BOLTS WITH WASHERS. LEVEL ONE FIELD TESTING IS REQUIRED, AND THE YIELD LOAD OF THE 3/4" Ø BOLT IS 12 KIPS. FOR ADHESIVELY ANCHORED ANCHOR BOLTS OR DOWELS, SEE STANDARD SPECIFICATIONS. SEE ROADWAY STANDARD 862.03 FOR DETAILS AND LOCATION OF THE RUBRAIL.



PLAN

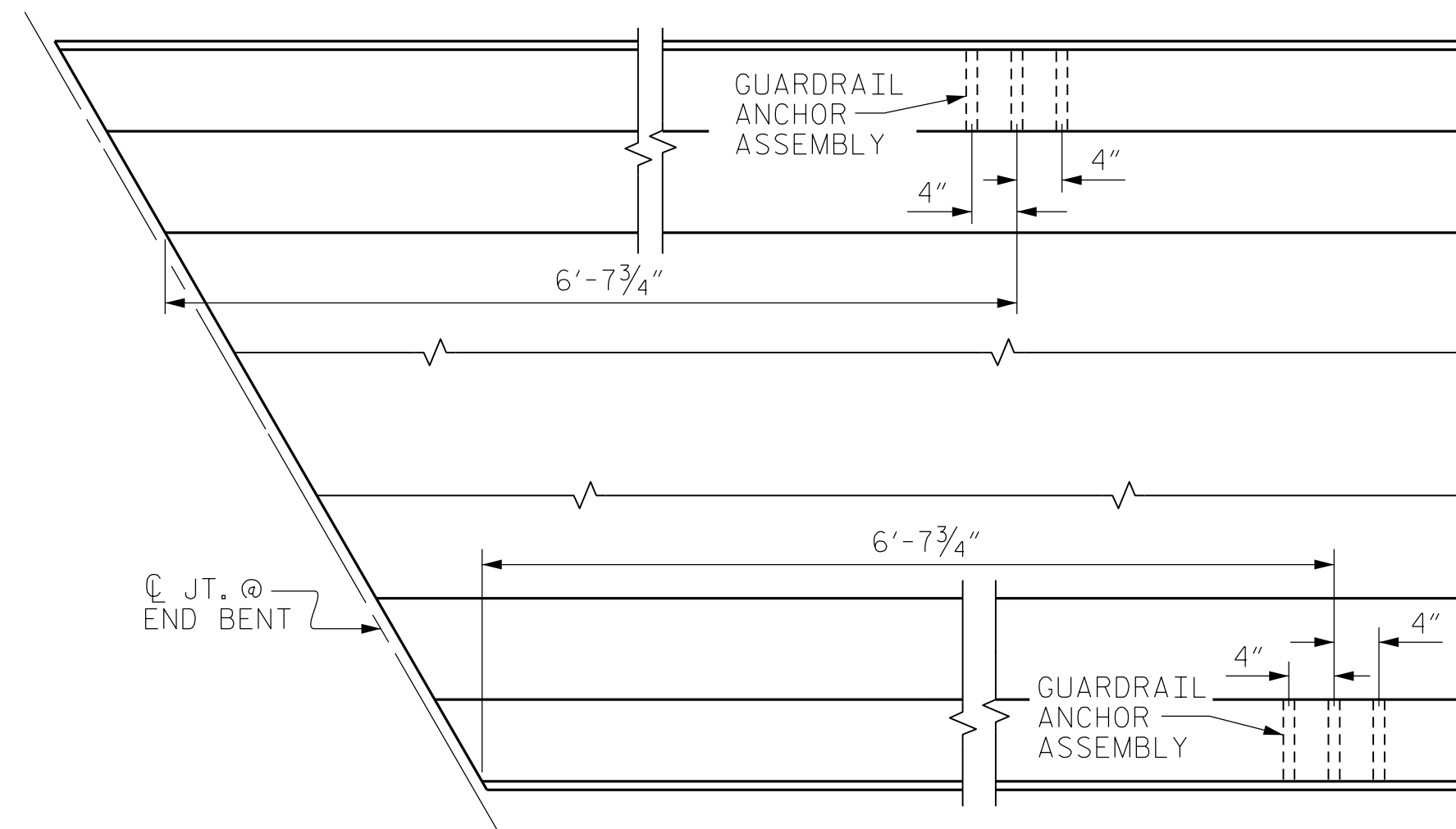


ELEVATION



SECTION E-E

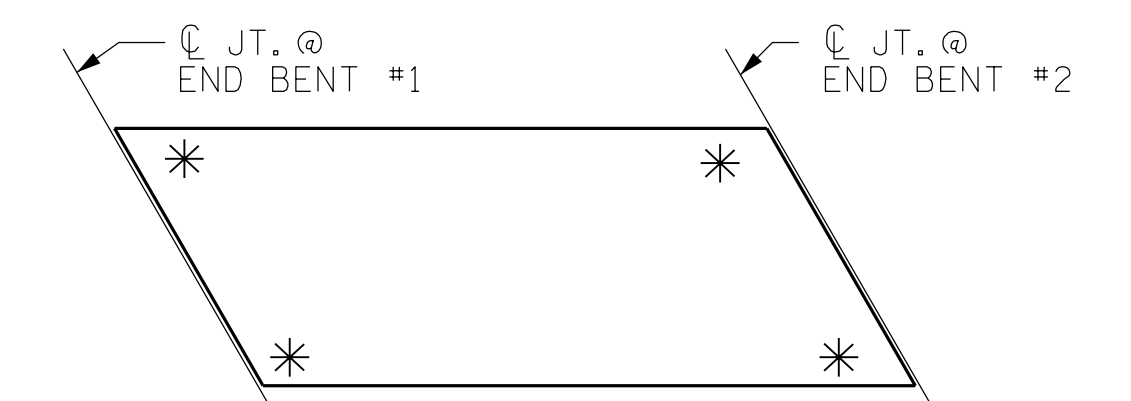
GUARDRAIL ANCHOR ASSEMBLY DETAILS



PLAN

LOCATION OF ANCHORS FOR GUARDRAIL

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

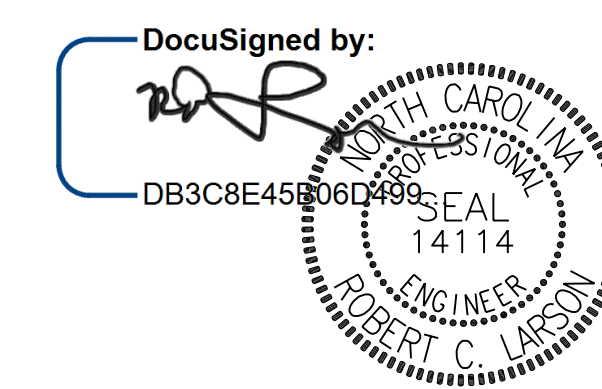


SKETCH SHOWING POINTS OF ATTACHMENTS

\* DENOTES GUARDRAIL ANCHOR ASSEMBLY

PROJECT NO. B-5655  
 EDGECOMBE COUNTY  
 STATION: 16+75.00 -L-

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



2/28/2020

DESIGN ENGINEER OF RECORD:	DATE: 2/28/2020
ASSEMBLED BY: R. C. LARSON	DATE: 09/15/19
CHECKED BY: R. J. FLORY	DATE: 01/29/2020
DRAWN BY: TLA 5/06	REV. 7/12 MAA/GM
CHECKED BY: GM 5/06	REV. 6/13 MAA/GM
	REV. 12/17 MAA/THC

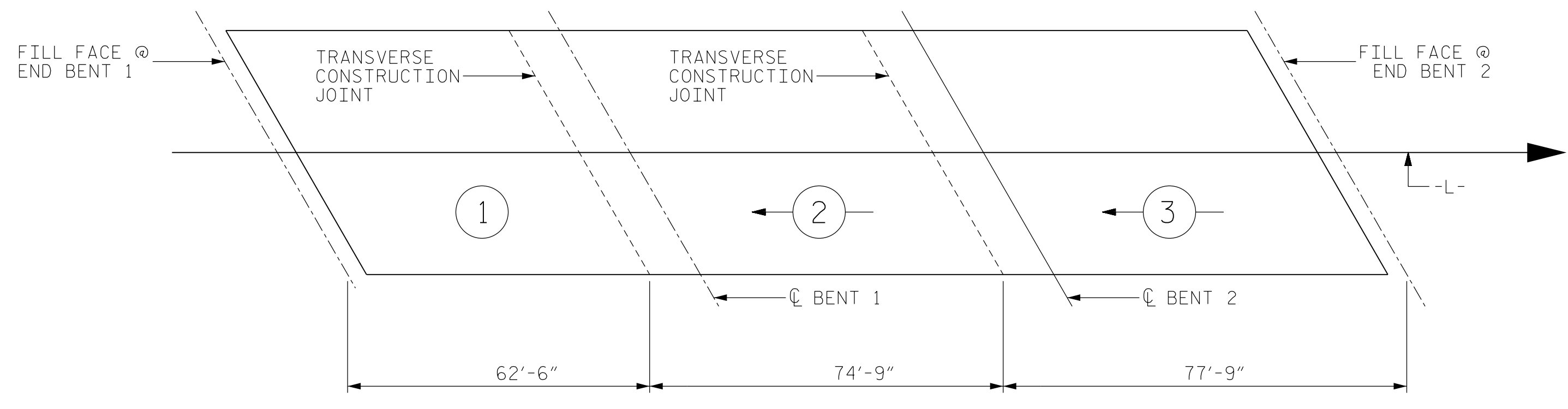
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 UNLESS ALL SIGNATURES COMPLETED



REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
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2			4			29

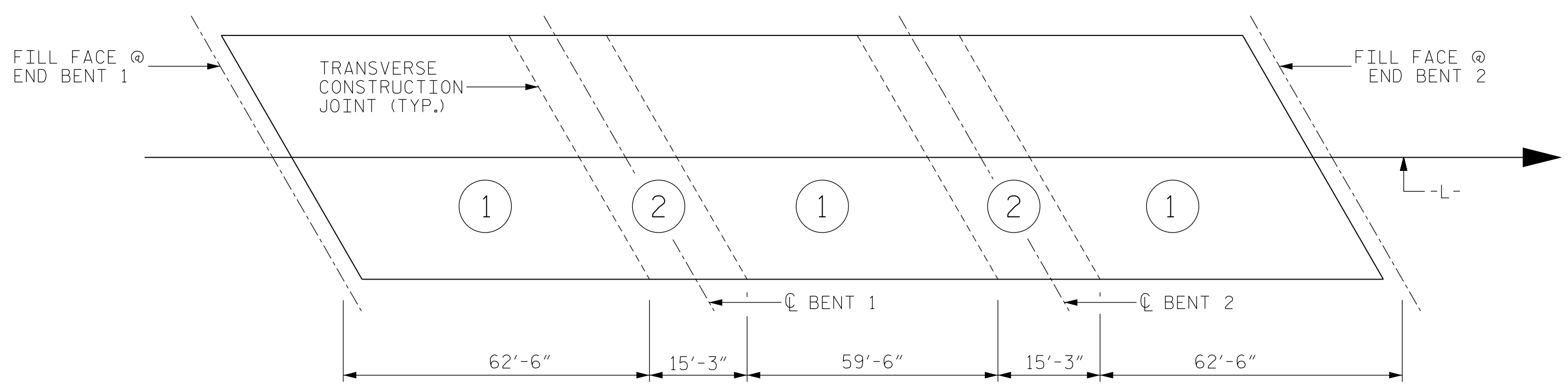
(SHT 1a) STD. NO. GRA2

KCI\_JOB NO: 251801945.20



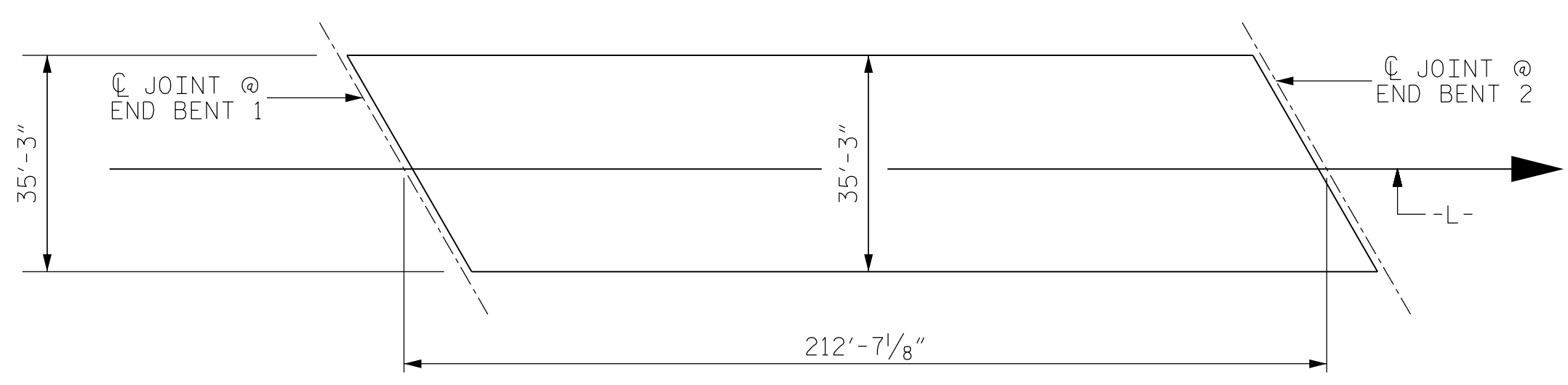
**DECK POURING SEQUENCE**

← ② INDICATES POURING SEQUENCE AND DIRECTION



**OPTIONAL POURING SEQUENCE**

POUR 2 CANNOT BE STARTED UNTIL BOTH ADJACENT POURS 1 HAVE REACHED A MINIMUM STRENGTH OF 3000 PSI.

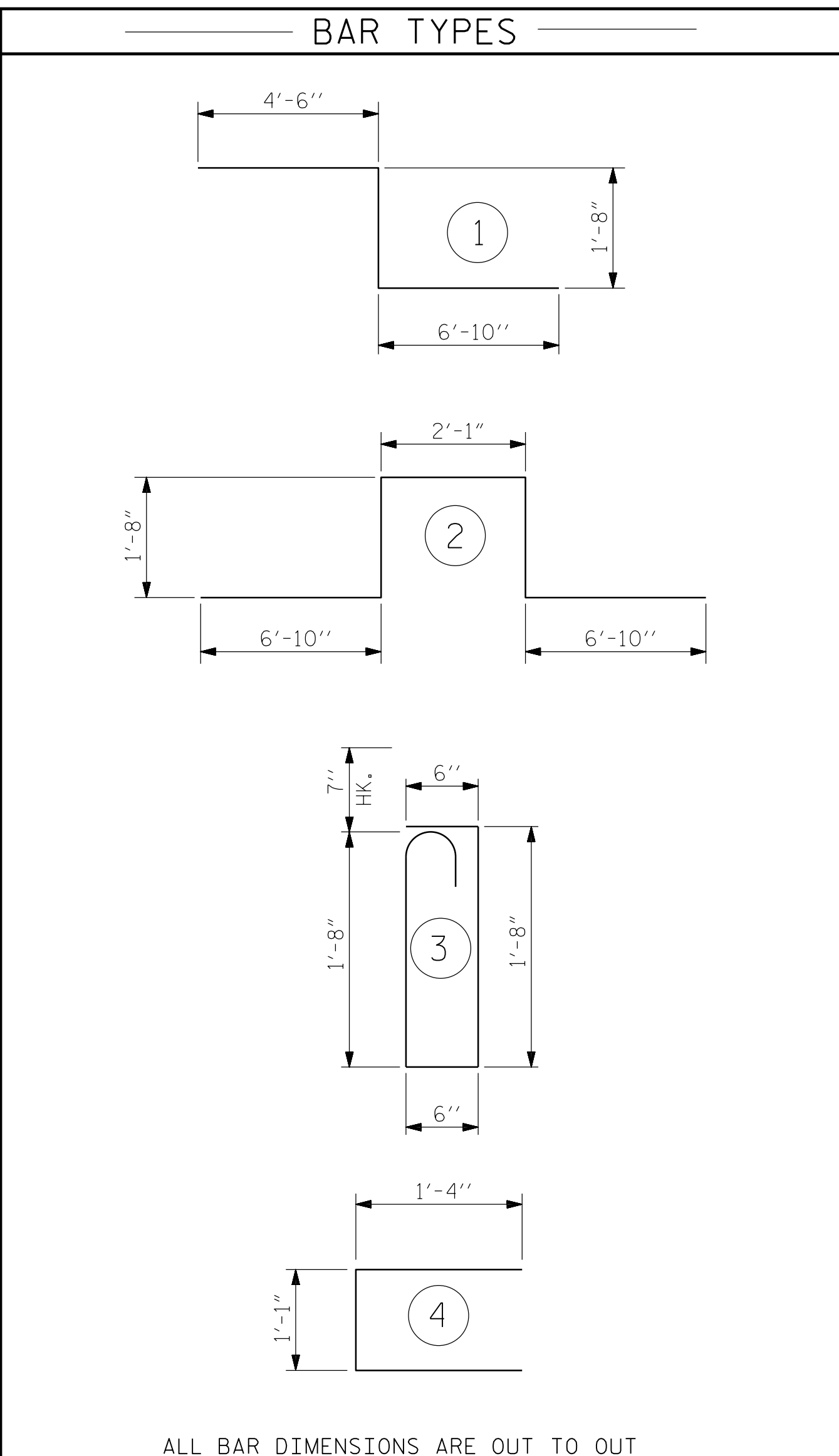


LAYOUT FOR COMPUTING AREA REINFORCED CONCRETE DECK SLAB (SQ. FT. = 7,494)

BILL OF MATERIAL											
BAR NO.	NO.	SIZE	TYPE	LENGTH	WEIGHT	BAR NO.	NO.	SIZE	TYPE	LENGTH	WEIGHT
* A1	382	5	STR.	34'-11"	13912	A51	2	5	STR.	25'-9"	54
* A2	2	5	STR.	34'-4"	72	A52	2	5	STR.	24'-11"	52
* A3	2	5	STR.	33'-6"	70	A53	2	5	STR.	24'-0"	50
* A4	2	5	STR.	32'-7"	68	A54	2	5	STR.	23'-2"	48
* A5	2	5	STR.	31'-9"	66	A55	2	5	STR.	22'-3"	46
* A6	2	5	STR.	30'-11"	64	A56	2	5	STR.	21'-5"	45
* A7	2	5	STR.	30'-0"	63	A57	2	5	STR.	20'-7"	43
* A8	2	5	STR.	29'-2"	61	A58	2	5	STR.	19'-8"	41
* A9	2	5	STR.	28'-3"	59	A59	2	5	STR.	18'-10"	39
* A10	2	5	STR.	27'-5"	57	A60	2	5	STR.	17'-11"	37
* A11	2	5	STR.	26'-7"	55	A61	2	5	STR.	17'-1"	36
* A12	2	5	STR.	25'-8"	54	A62	2	5	STR.	16'-3"	34
* A13	2	5	STR.	24'-10"	52	A63	2	5	STR.	15'-4"	32
* A14	2	5	STR.	24'-0"	50	A64	2	5	STR.	14'-6"	30
* A15	2	5	STR.	23'-1"	48	A65	2	5	STR.	13'-7"	28
* A16	2	5	STR.	22'-3"	46	A66	2	5	STR.	12'-9"	27
* A17	2	5	STR.	21'-4"	45	A67	2	5	STR.	11'-11"	25
* A18	2	5	STR.	20'-6"	43	A68	2	5	STR.	11'-0"	23
* A19	2	5	STR.	19'-8"	41	A69	2	5	STR.	10'-2"	21
* A20	2	5	STR.	18'-9"	39	A70	2	5	STR.	9'-3"	19
* A21	2	5	STR.	17'-11"	37	A71	2	5	STR.	8'-5"	18
* A22	2	5	STR.	17'-0"	35	A72	2	5	STR.	7'-7"	16
* A23	2	5	STR.	16'-2"	34	A73	2	5	STR.	6'-8"	14
* A24	2	5	STR.	15'-4"	32	A74	2	5	STR.	5'-10"	12
* A25	2	5	STR.	14'-5"	30	A75	2	5	STR.	5'-0"	10
* A26	2	5	STR.	13'-7"	28	A76	2	5	STR.	4'-1"	9
* A27	2	5	STR.	12'-8"	26	A77	2	5	STR.	3'-3"	7
* A28	2	5	STR.	11'-10"	25	A78	2	5	STR.	2'-4"	5
* A29	2	5	STR.	11'-0"	23						
* A30	2	5	STR.	10'-1"	21	* B1	144	4	STR.	36'-11"	3551
* A31	2	5	STR.	9'-3"	19	B2	176	5	STR.	54'-6"	10004
* A32	2	5	STR.	8'-4"	17	B3	94	6	STR.	13'-3"	1871
* A33	2	5	STR.	7'-6"	16	* B4	67	6	STR.	13'-3"	1333
* A34	2	5	STR.	6'-8"	14						
* A35	2	5	STR.	5'-9"	12	* G1	2	5	STR.	40'-0"	83
* A36	2	5	STR.	4'-11"	10						
* A37	2	5	STR.	4'-0"	8	* K1	8	8	2	19'-1"	408
* A38	2	5	STR.	3'-2"	7	* K2	8	8	1	13'-0"	278
* A39	2	5	STR.	2'-4"	5	* K3	18	6	STR.	8'-11"	241
A40	334	5	STR.	34'-11"	12164						
A41	2	5	STR.	34'-5"	72	* S1	48	4	3	4'-11"	158
A42	2	5	STR.	33'-6"	70	* S2	42	4	4	3'-9"	105
A43	2	5	STR.	32'-8"	68						
A44	2	5	STR.	31'-10"	66						
A45	2	5	STR.	30'-11"	64						
A46	2	5	STR.	30'-1"	63						
A47	2	5	STR.	29'-2"	61						
A48	2	5	STR.	28'-4"	59						
A49	2	5	STR.	27'-6"	57						
A50	2	5	STR.	26'-7"	55						

GROOVING BRIDGE FLOORS	
APPROACH SLABS	1,375 SQ.FT.
BRIDGE DECK	6,120 SQ.FT.
TOTAL	7,495 SQ.FT.

BAR SIZE	SUPERSTRUCTURE EXCEPT APPROACH SLABS, PARAPETS, AND BARRIER RAILS		APPROACH SLABS		PARAPETS AND BARRIER RAILS
	EPOXY COATED	UNCOATED	EPOXY COATED	UNCOATED	
#4	1'-11"	1'-7"	1'-11"	1'-7"	2'-6"
#5	2'-5"	2'-0"	2'-5"	2'-0"	3'-1"
#6	2'-10"	2'-5"	3'-7"	2'-5"	3'-8"
#7	4'-2"	2'-9"			
#8	4'-9"	3'-2"			

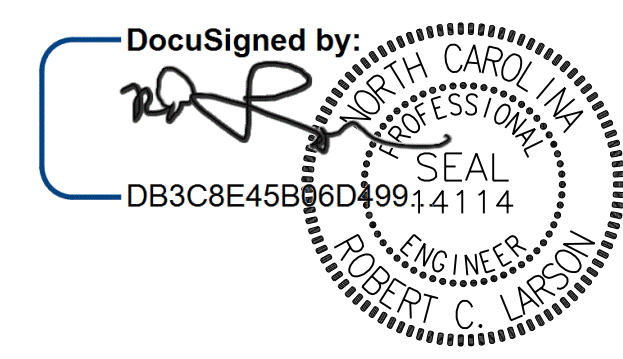


ALL BAR DIMENSIONS ARE OUT TO OUT

SUPERSTRUCTURE BILL OF MATERIAL			
	CLASS AA CONCRETE (CU. YDS.)	REINFORCING STEEL (LBS.)	EPOXY COATED REINFORCING STEEL (LBS.)
POUR 1	71.1		
POUR 2	84.1		
POUR 3	88.3		
TOTALS**	243.5	25495	21521

\*\*QUANTITIES FOR BARRIER RAIL ARE NOT INCLUDED

PROJECT NO. B-5655  
 EDGEcombe COUNTY  
 STATION: 16+75.00 -L-



STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
 STANDARD  
 SUPERSTRUCTURE  
 BILL OF MATERIAL

KCI\_JOB NO: 251801945.20

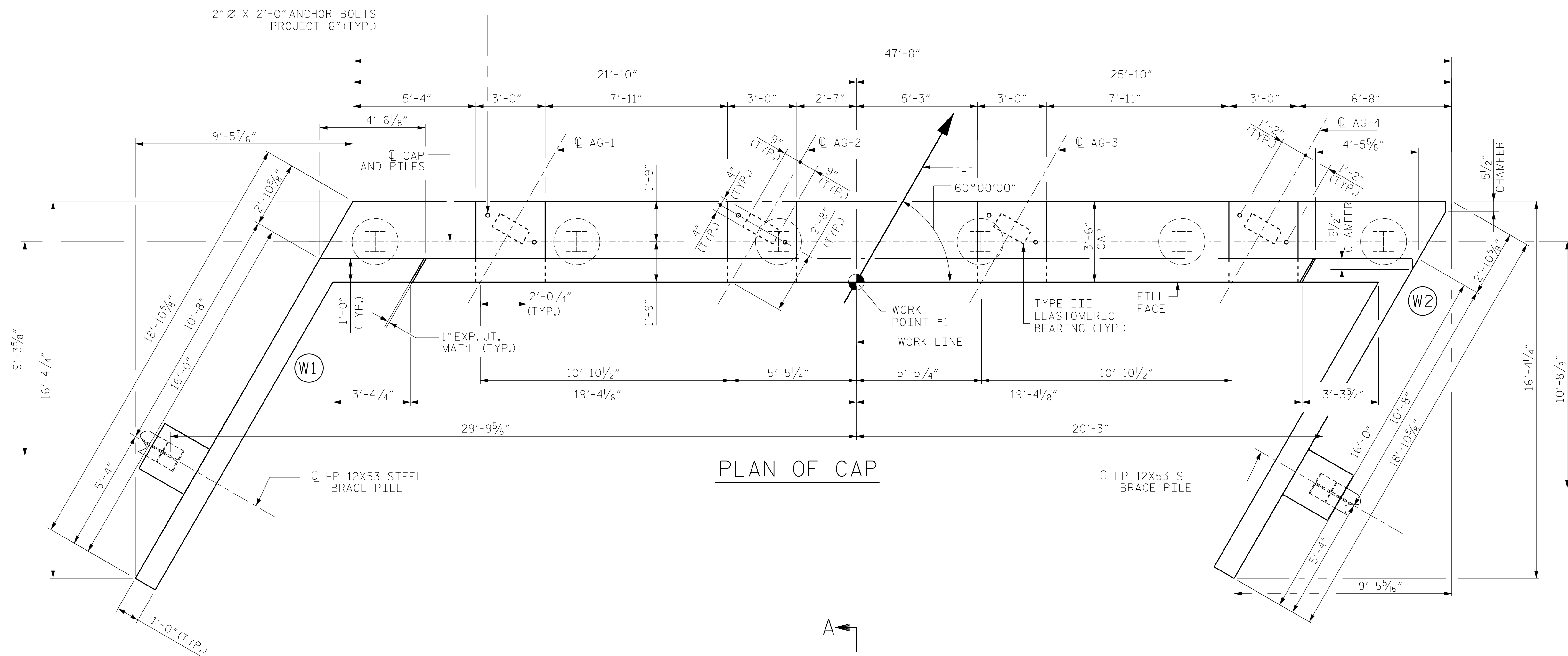
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ASSEMBLED BY: A. SAMBOY	DATE: 10/22/19
CHECKED BY: R. C. LARSON	DATE: 10/25/19
DRAWN BY: JMB 5/87	REV. 10/1/11 MAA/GM
CHECKED BY: SJD 9/87	REV. 12/17 MAA/THC
	REV. 06/19 BNB/THC

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

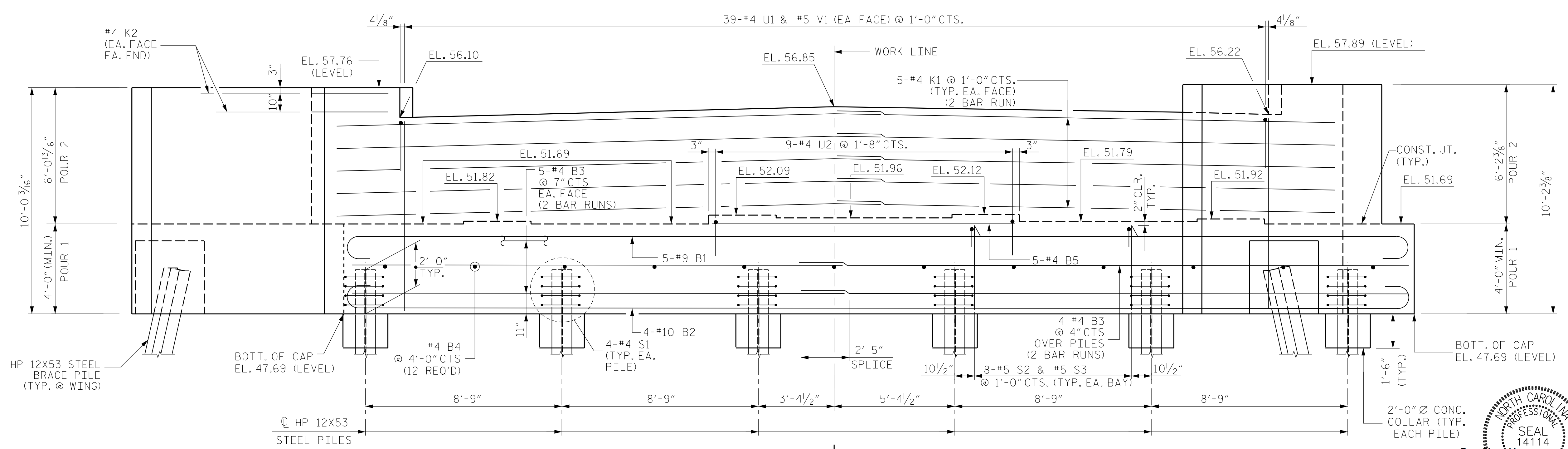
ENGINEERS • PLANNERS • SCIENTISTS • CONSTRUCTION MANAGERS LICENSE NUMBER: C-0764  
**KCI Associates**  
 of North Carolina, P.A.  
 4505 Falls of Neuse Road, Suite 400, Raleigh, NC 27609-6270 Phone: (919) 783-9201

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-17
1			3			TOTAL SHEETS 29
2			4			

STD. NO. BOM2



PLAN OF CAP



ELEVATION

NOTES

- THE CONCRETE IN THE SHADED AREA OF THE WING SHALL BE POURED AFTER THE JOINT BETWEEN THE DECK AND THE APPROACH SLAB HAS BEEN SAWED AND THE BARRIER RAIL IS CAST IF SLIPFORMING IS USED.
- FOR "TEMPORARY DRAINAGE AT END BENT", SEE END BENT 2.
- FOR SECTION A-A SEE SHEET 3 OF 3.
- STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR ANCHOR BOLTS.
- BACKWALL SHALL BE PLACED BEFORE APPLYING THE EPOXY PROTECTIVE COATING.
- THE TOP SURFACE AREAS OF THE END BENT CAP SHALL BE CURED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS EXCEPT THE MEMBRANE CURING COMPOUND METHOD SHALL NOT BE USED.
- THE TOP SURFACE OF THE CAP EXCEPT THE BRIDGE SEAT BUILDUPS SHALL BE SLOPED TRANSVERSELY FROM THE FILL FACE TO THE BACK FACE AT THE RATE OF 2%.

PROJECT NO. B-5655  
 EDGEcombe COUNTY  
 STATION: 16+75.00 -L-

SHEET 1 OF 3

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**SUBSTRUCTURE  
 END BENT 1**

DESIGNED BY: *[Signature]*  
 NORTH CAROLINA PROFESSIONAL SEAL 14114  
 ENGINEER  
 ROBERT C. LARSON  
 DB3C8E45B06D499... 2/28/2020

DESIGN ENGINEER OF RECORD: *[Signature]* DATE: 2/28/2020

DRAWN BY: A. K. ALLANKI DATE: 11/01/19

CHECKED BY: R. C. LARSON DATE: 11/04/19

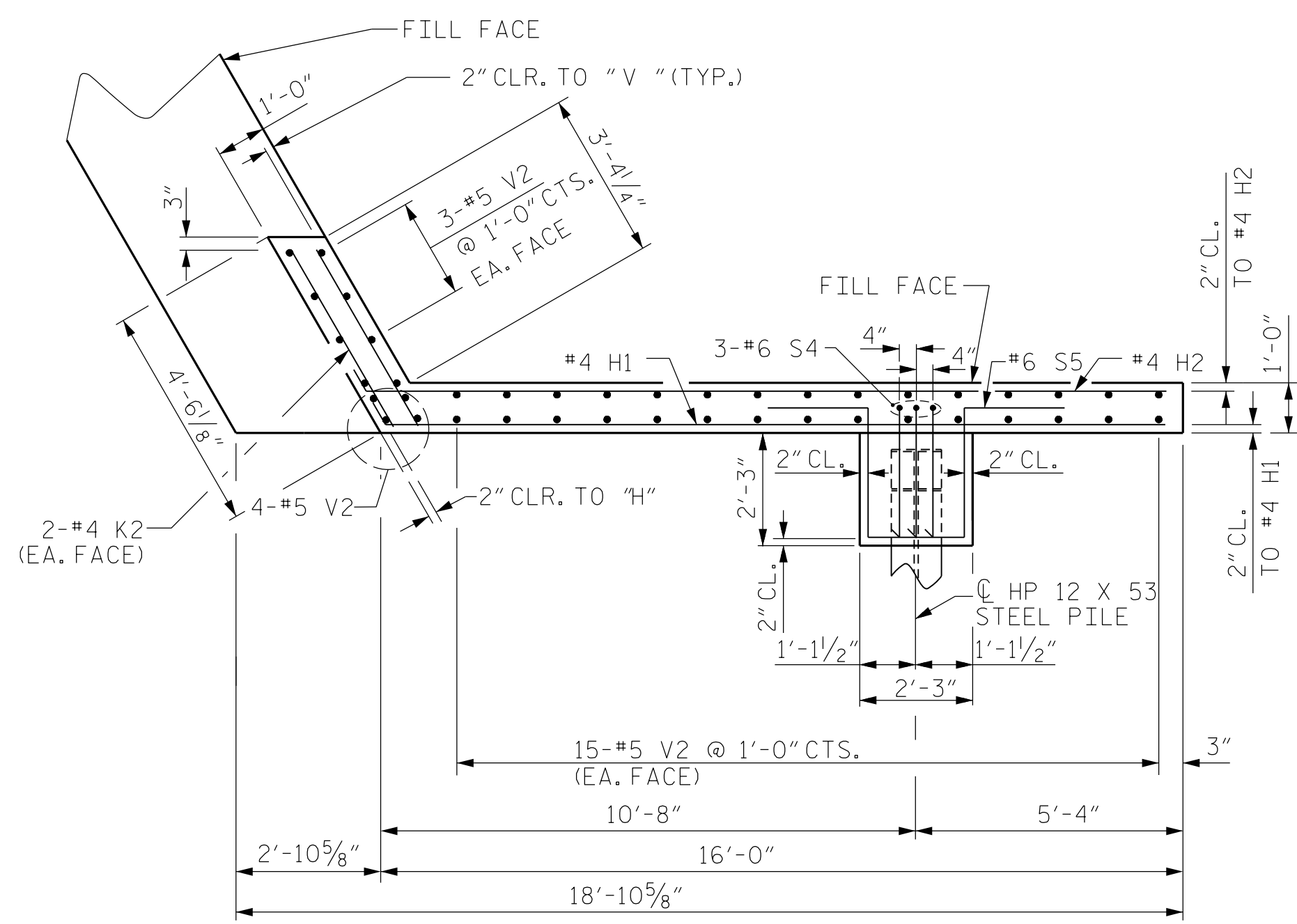
**DOCUMENT NOT CONSIDERED FINAL  
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ENGINEERS • PLANNERS • SCIENTISTS • CONSTRUCTION MANAGERS LICENSE NUMBER: C-0764

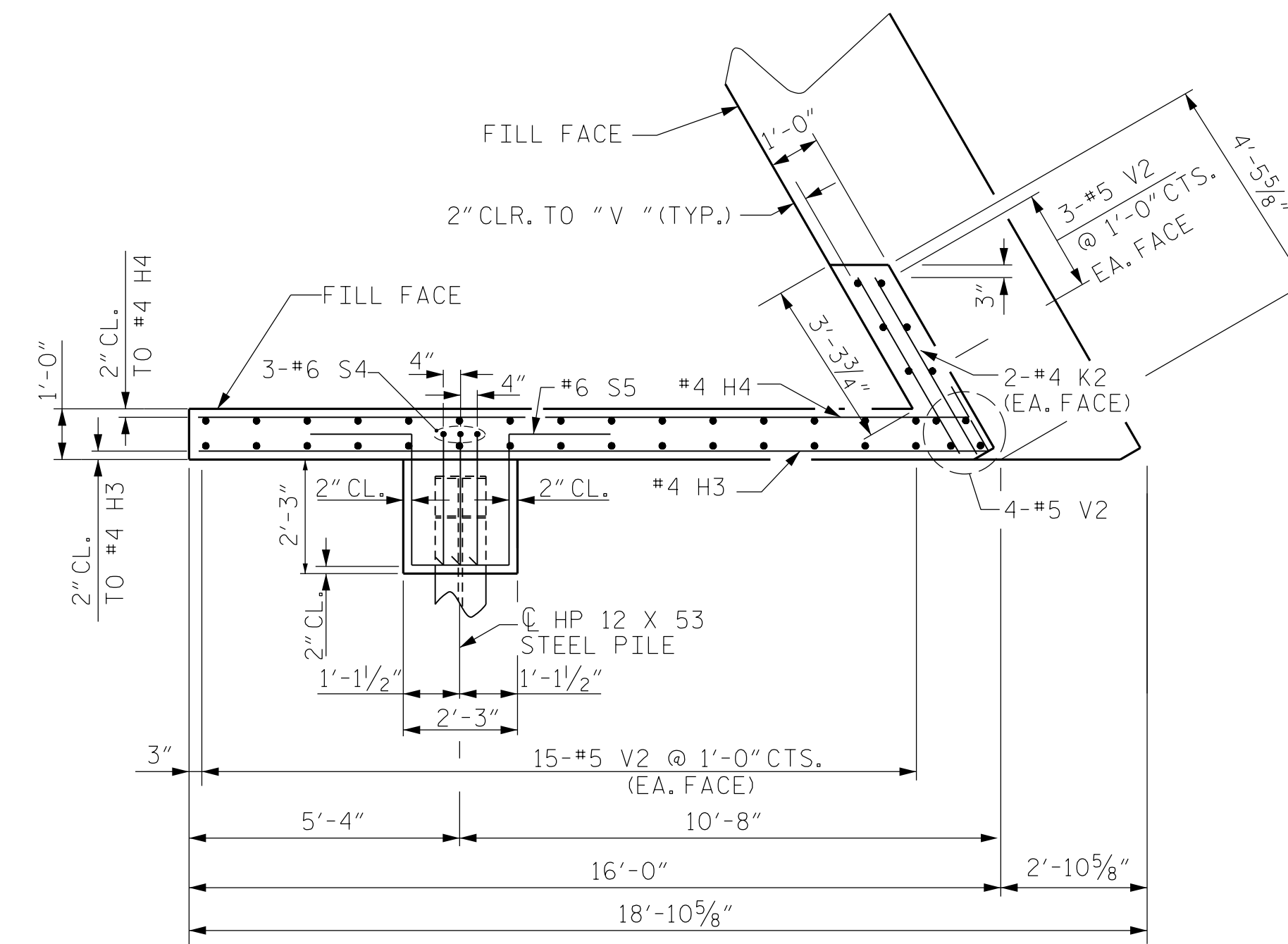
**KCI Associates**  
 of North Carolina, P.A.  
 6505 Falls of Neuse Road, Suite 400 Raleigh, NC 27609-6270 Phone 919-783-9244

REVISIONS		SHEET NO.	
NO.	DATE	NO.	DATE
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2		4	

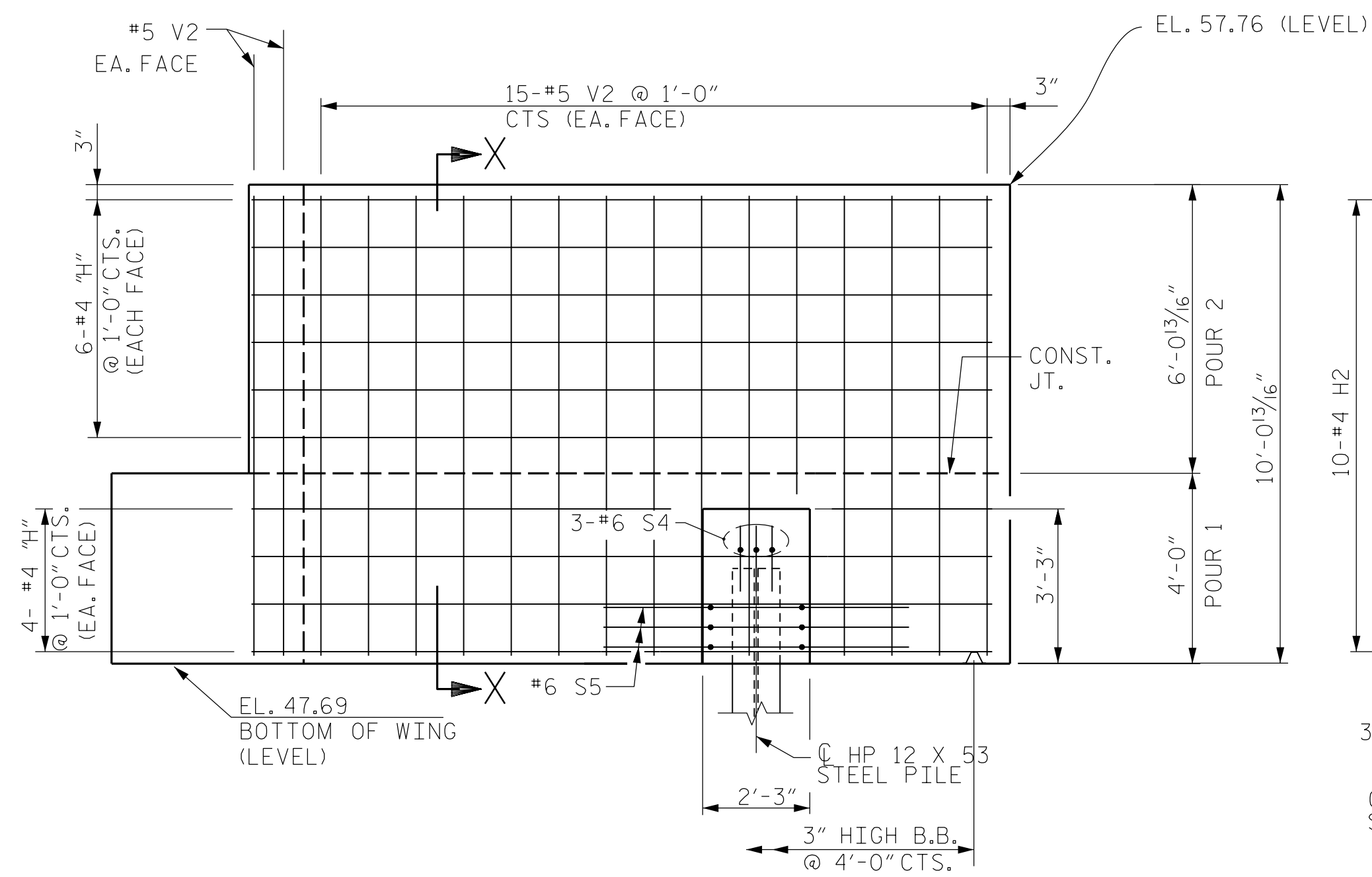
TOTAL SHEETS: 29



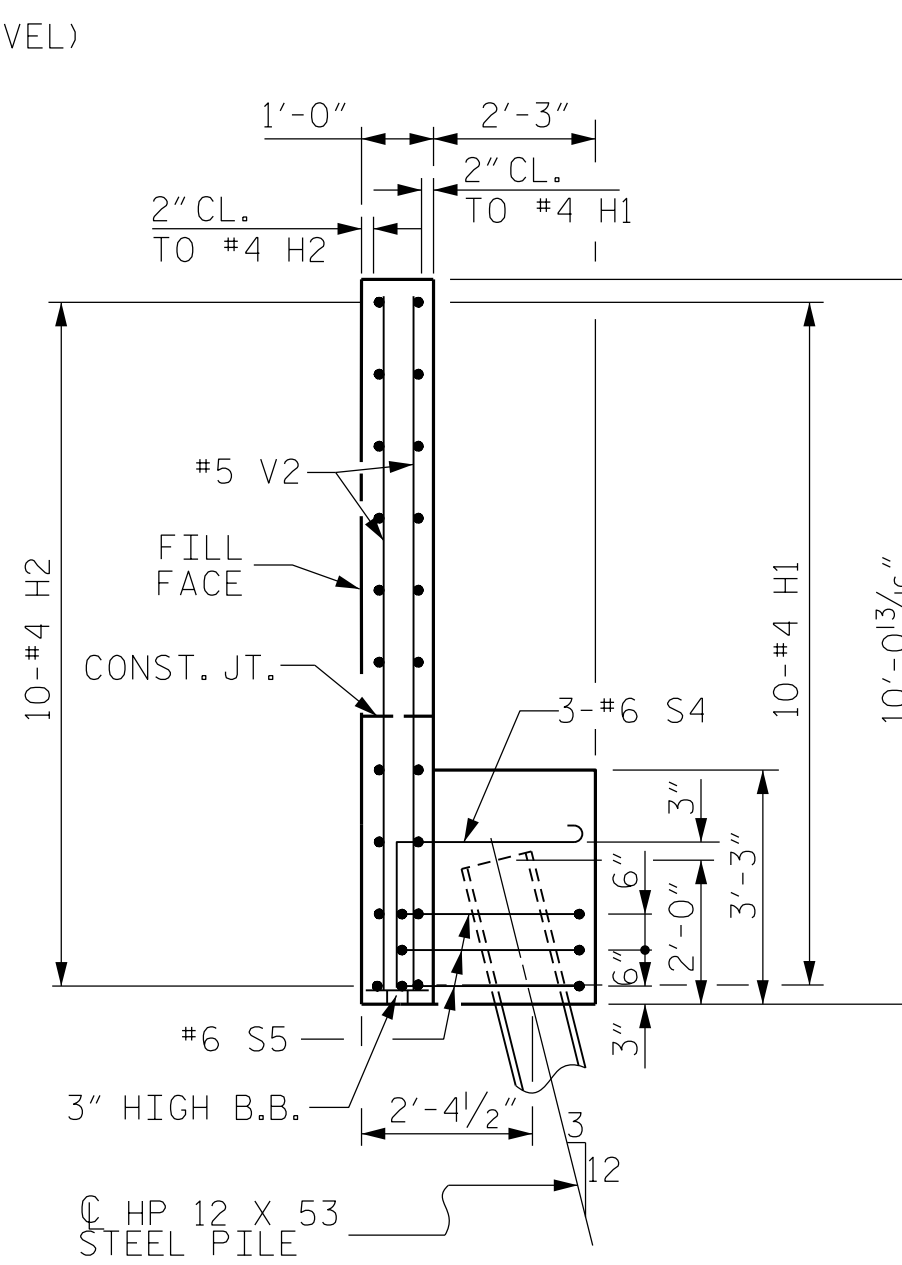
PLAN W1



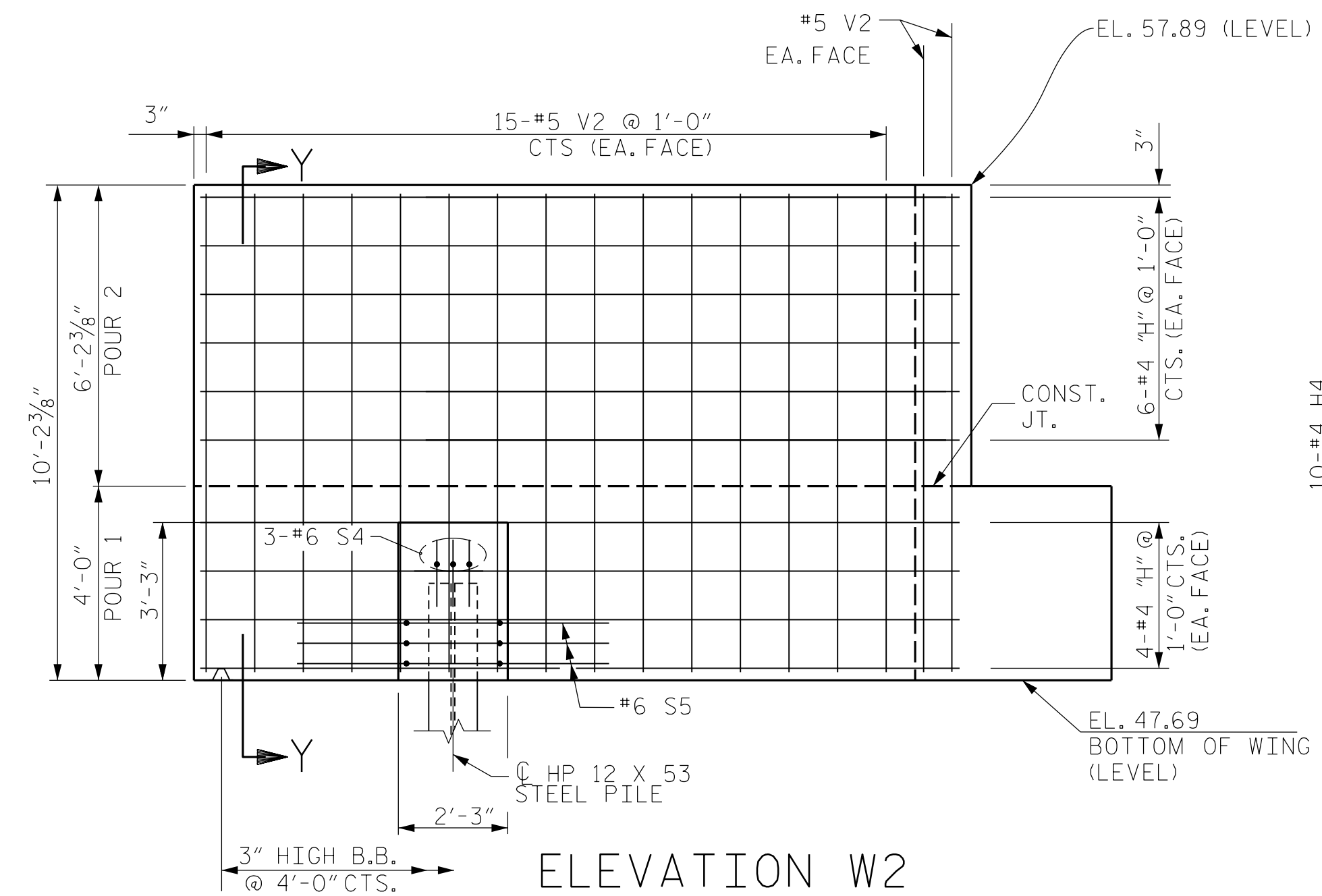
PLAN W2



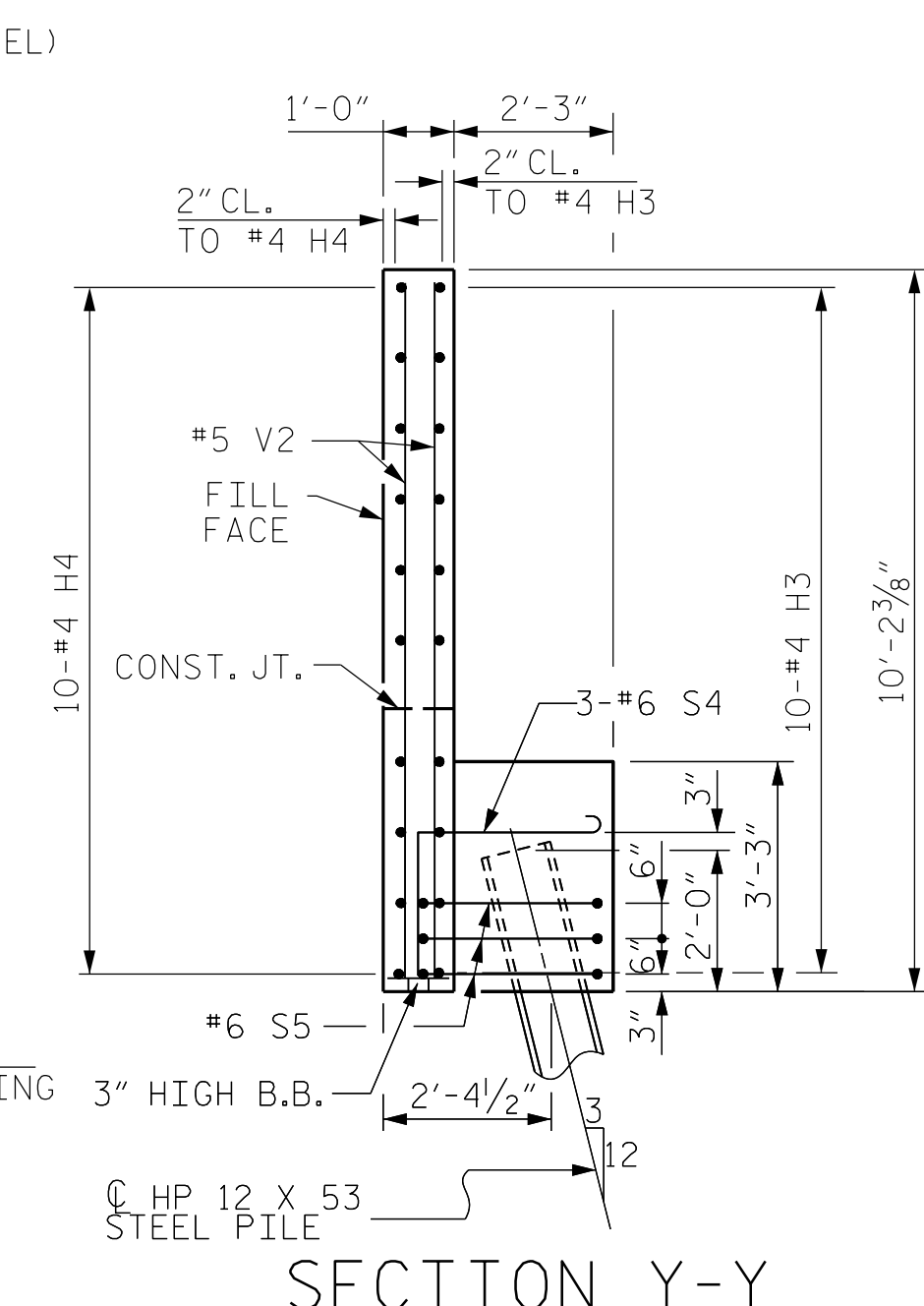
ELEVATION W1



SECTION X-X



ELEVATION W2



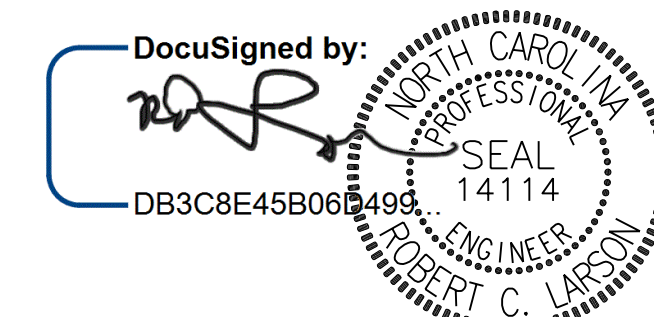
SECTION Y-Y

PROJECT NO. B-5655  
 EDGEcombe COUNTY  
 STATION: 16+75.00 -L-

SHEET 2 OF 3

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

SUBSTRUCTURE  
 END BENT 1



2/28/2020

DESIGN ENGINEER OF RECORD DATE: 2/28/2020  
 DRAWN BY: A. K. ALLANKI DATE: 11/12/19  
 CHECKED BY: R. C. LARSON DATE: 11/22/19

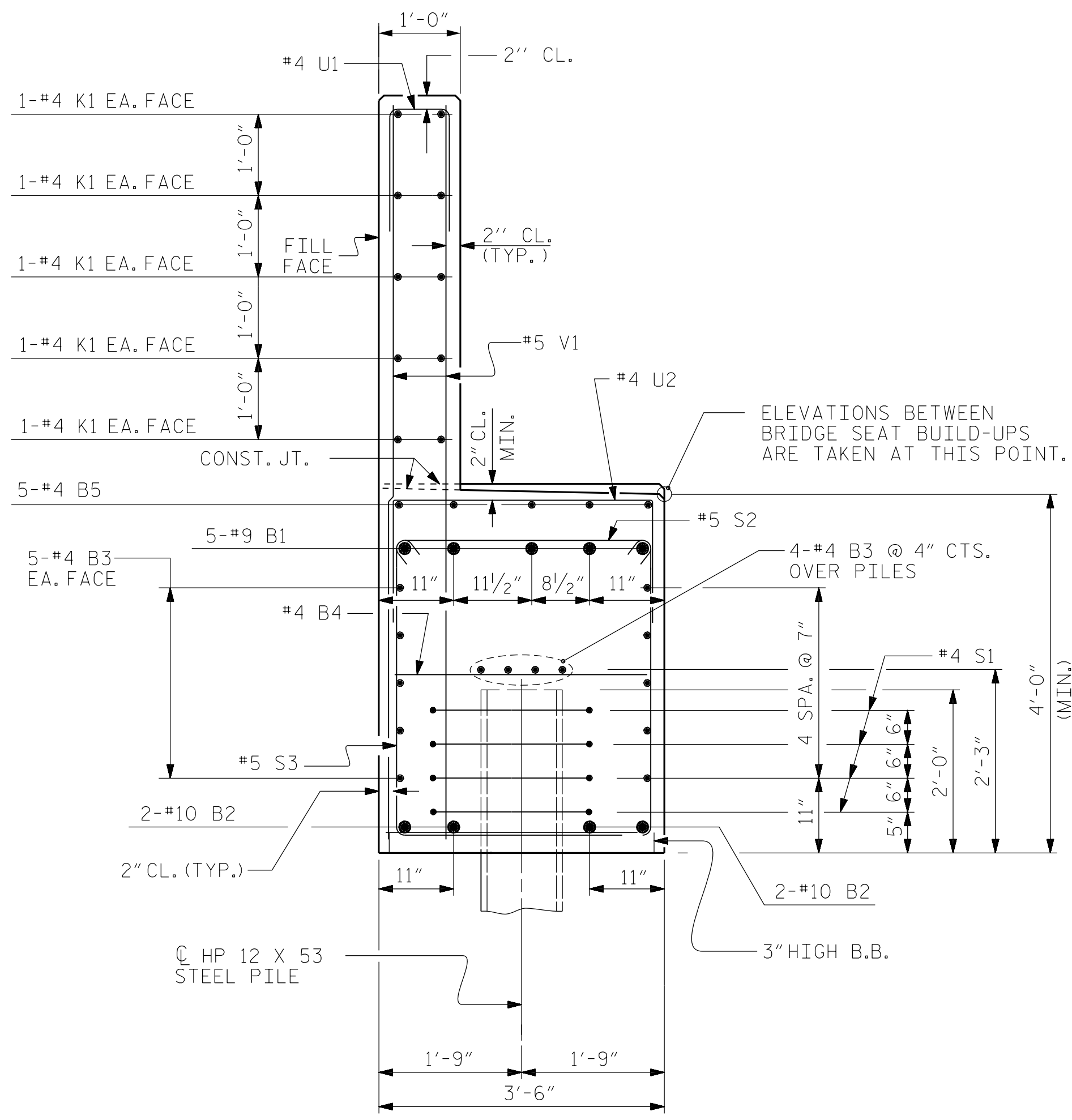
DOCUMENT NOT CONSIDERED FINAL  
 UNLESS ALL SIGNATURES COMPLETED

KCI Associates  
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 2505 Falls of Neuse Road, Suite 400 Raleigh, NC 27609-6270 Phone 199-785-924

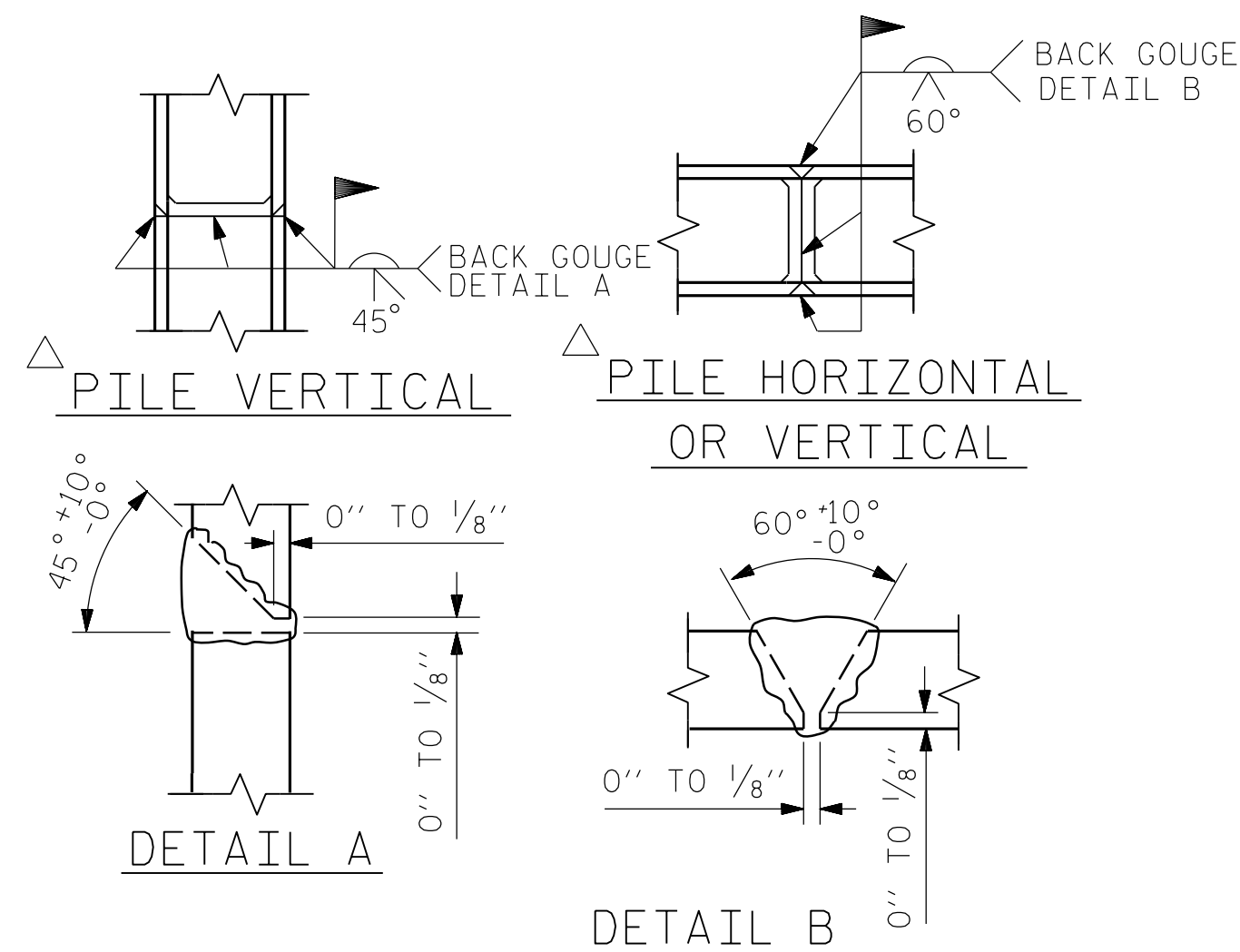
REVISIONS				SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		

TOTAL SHEETS: 29





SECTION A-A

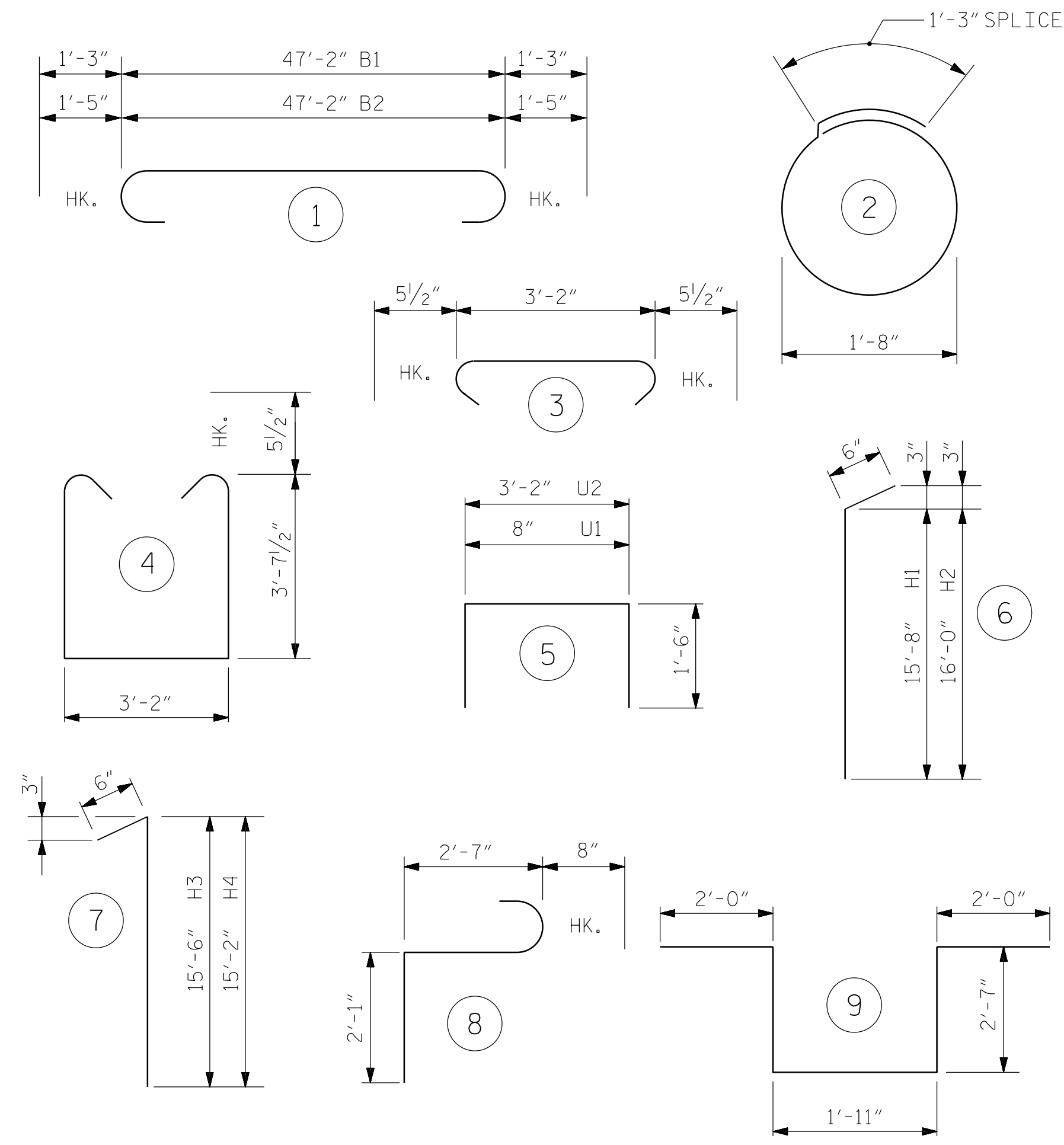


PILE SPLICE DETAILS

POSITION OF PILE DURING WELDING.

DESIGN ENGINEER OF RECORD: *[Signature]* DATE: 2/28/2020  
 DRAWN BY: A. K. ALLANKI DATE: 11/21/19  
 CHECKED BY: R. C. LARSON DATE: 11/22/19

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL

END BENT 1					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	5	9	1	49'-8"	844
B2	4	10	1	50'-0"	861
B3	28	4	STR.	24'-11"	466
B4	12	4	STR.	3'-2"	25
B5	5	4	STR.	13'-6"	45
H1	10	4	6	16'-2"	108
H2	10	4	6	16'-6"	110
H3	10	4	7	16'-0"	107
H4	10	4	7	15'-8"	105
K1	20	4	STR.	24'-11"	333
K2	8	4	STR.	4'-0"	21
S1	24	4	2	6'-6"	104
S2	40	5	3	4'-1"	170
S3	40	5	4	11'-4"	473
S4	6	6	8	5'-4"	48
S5	6	6	9	11'-1"	100
U1	39	4	5	3'-8"	96
U2	9	4	5	6'-2"	37
V1	78	5	STR.	8'-0"	651
V2	80	5	STR.	9'-9"	814
REINFORCING STEEL, LBS.					5518
CLASS A CONCRETE, CY				POUR 1	32.4
				POUR 2	15.4
TOTAL					47.8
HP 12X53 STEEL PILES				NO.	8
				L.F.	560
PILE DRIVING EQUIPMENT SETUP FOR HP 12X53 STEEL PILES, EA.					8
PILE REDRIVES, EA.					3

PROJECT NO. B-5655  
 EDGEcombe COUNTY  
 STATION: 16+75.00 -L-

SHEET 3 OF 3

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

SUBSTRUCTURE  
 END BENT 1

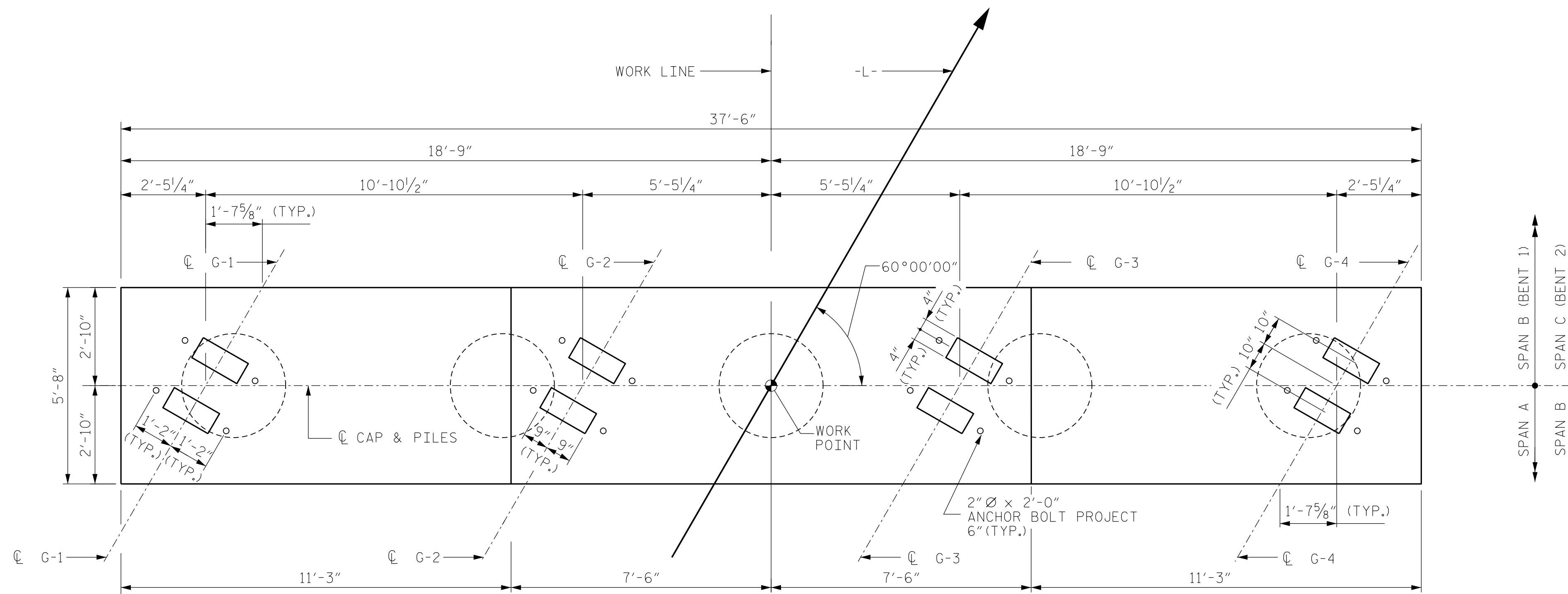
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*[Signature]*  
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 NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 14114  
 ROBERT C. LARSON  
 2/28/2020

DOCUMENT NOT CONSIDERED FINAL  
 UNLESS ALL SIGNATURES COMPLETED

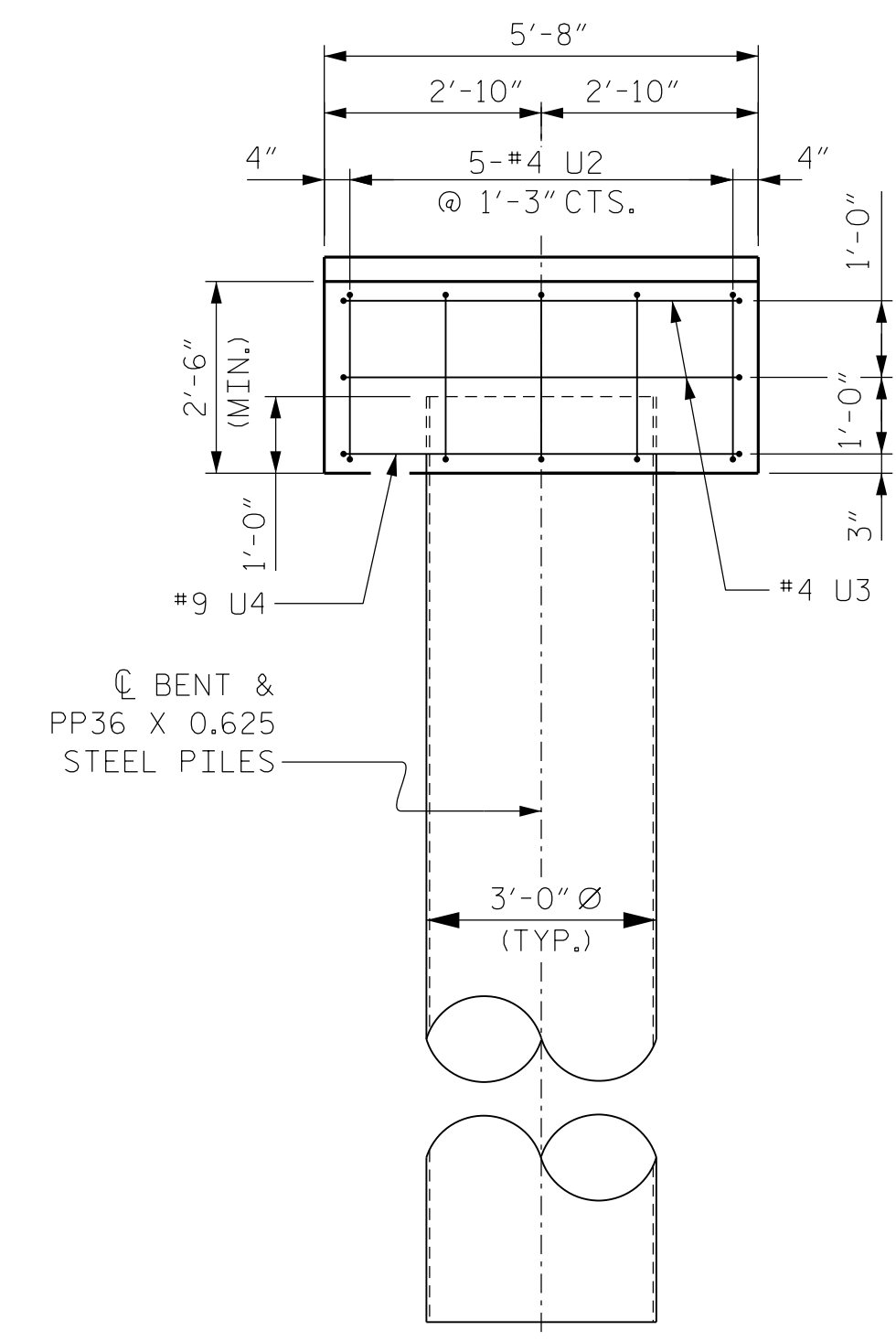
KCI Associates  
 of North Carolina, P.A.  
 2505 Falls of Neuse Road, Suite 400 Raleigh, NC 27609-6270 Phone 199-785-924

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

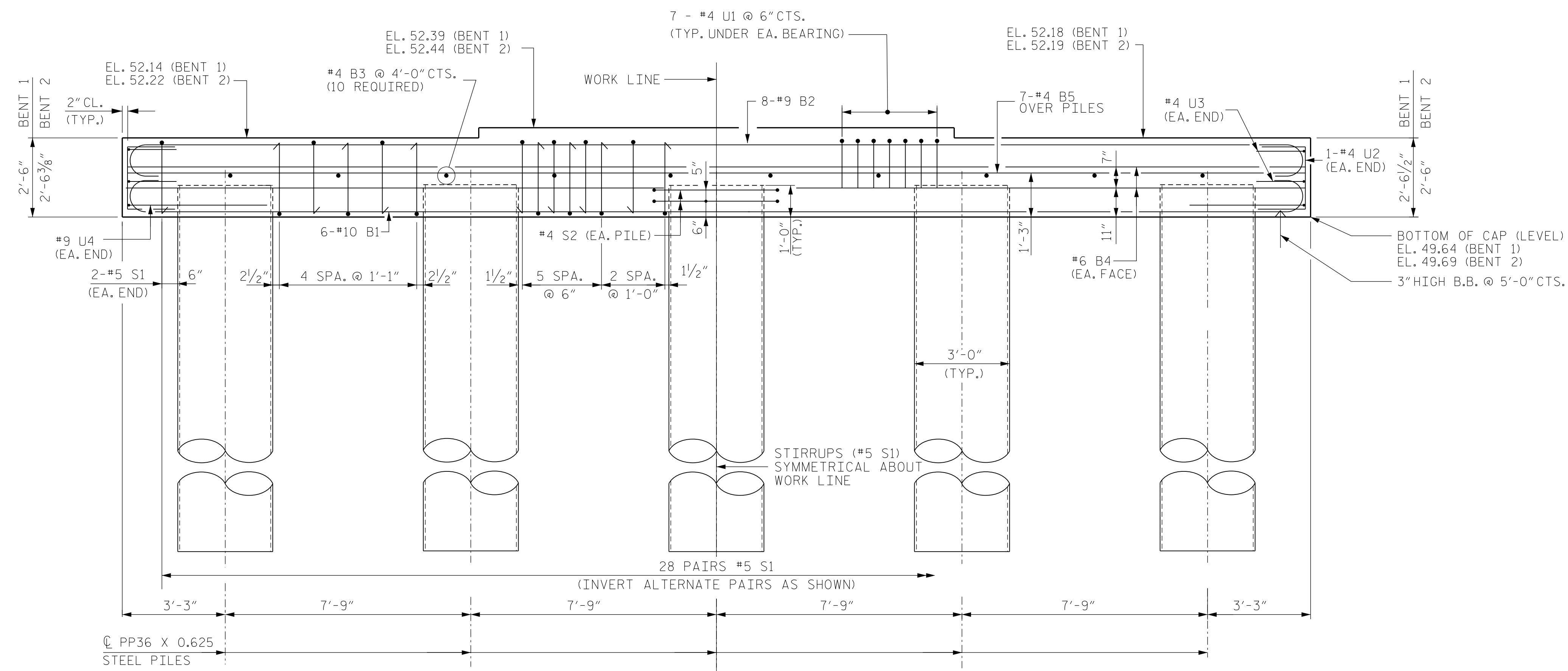
SHEET NO. S-20  
 TOTAL SHEETS 29



PLAN OF CAP



END ELEVATION



ELEVATION

NOTES

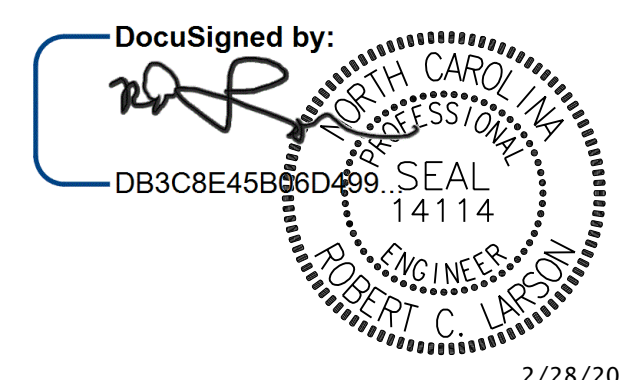
- STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR ANCHOR BOLTS.
- GALVANIZE THE TOP OF EACH INTERIOR BENT PILE A MINIMUM OF 40'. GALVANIZE IN ACCORDANCE WITH SECTION 1076 OF THE STANDARD SPECIFICATIONS.
- FOR CONCRETE PLUG AND REINFORCING IN PILES SEE "36" STEEL PIPE PILE" SHEET.
- FOR SECTION THRU BENT CAP SEE SHEET 2 OF 2

PROJECT NO. B-5655  
EDGEcombe COUNTY  
 STATION: 16+75.00 -L-

SHEET 1 OF 2

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

SUBSTRUCTURE  
 BENT 1 OR 2

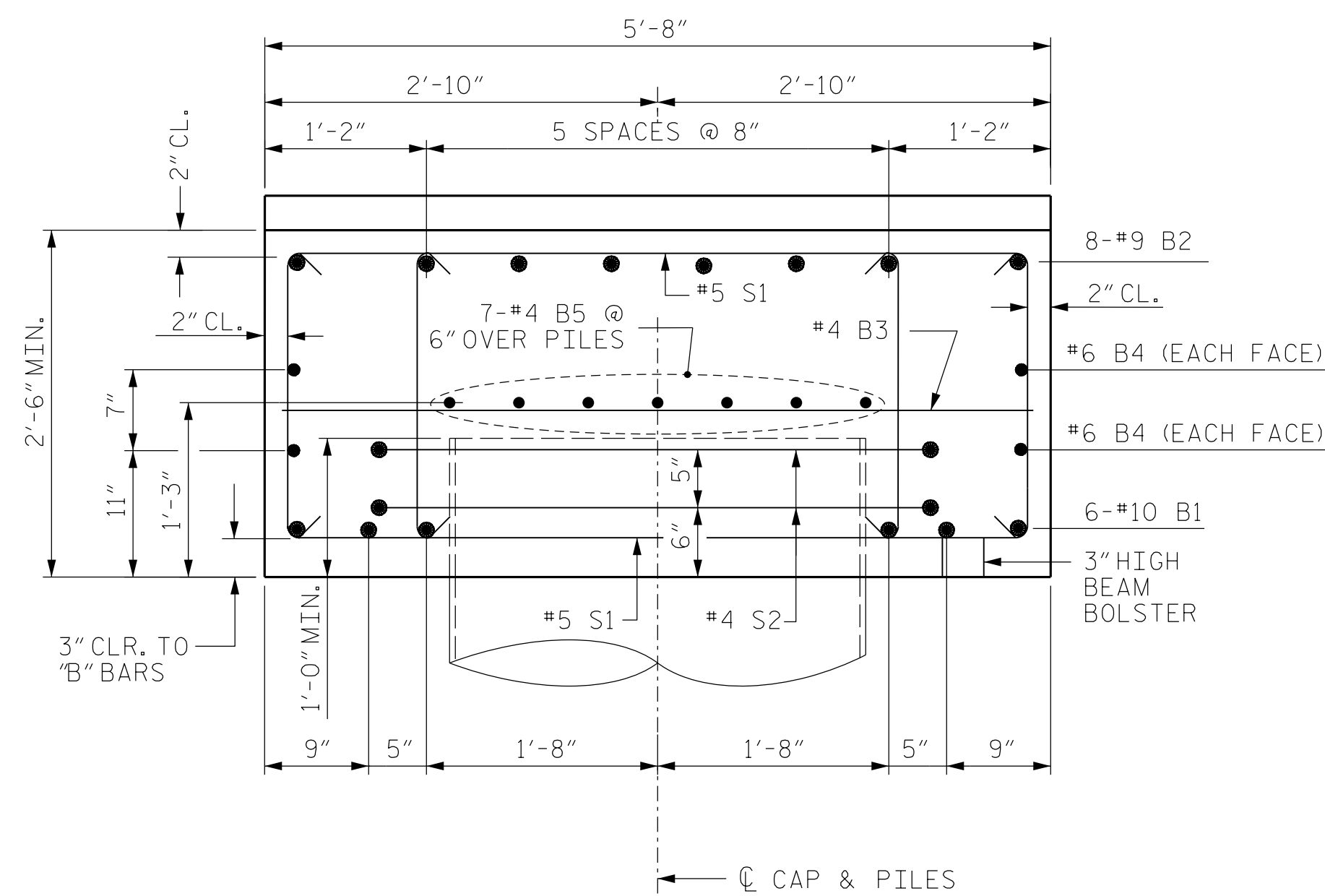


DESIGN ENGINEER OF RECORD:	DATE:
<i>(Signature)</i>	2/28/2020
DRAWN BY: A. SAMBOY	DATE: 11/05/19
CHECKED BY: R. C. LARSON	DATE: 11/21/19

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

ENGINEERS • PLANNERS • SCIENTISTS • CONSTRUCTION MANAGERS LICENSE NUMBER: C-0764					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
					SHEET NO. S-21
					TOTAL SHEETS 29

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SECTION THRU BENT CAP

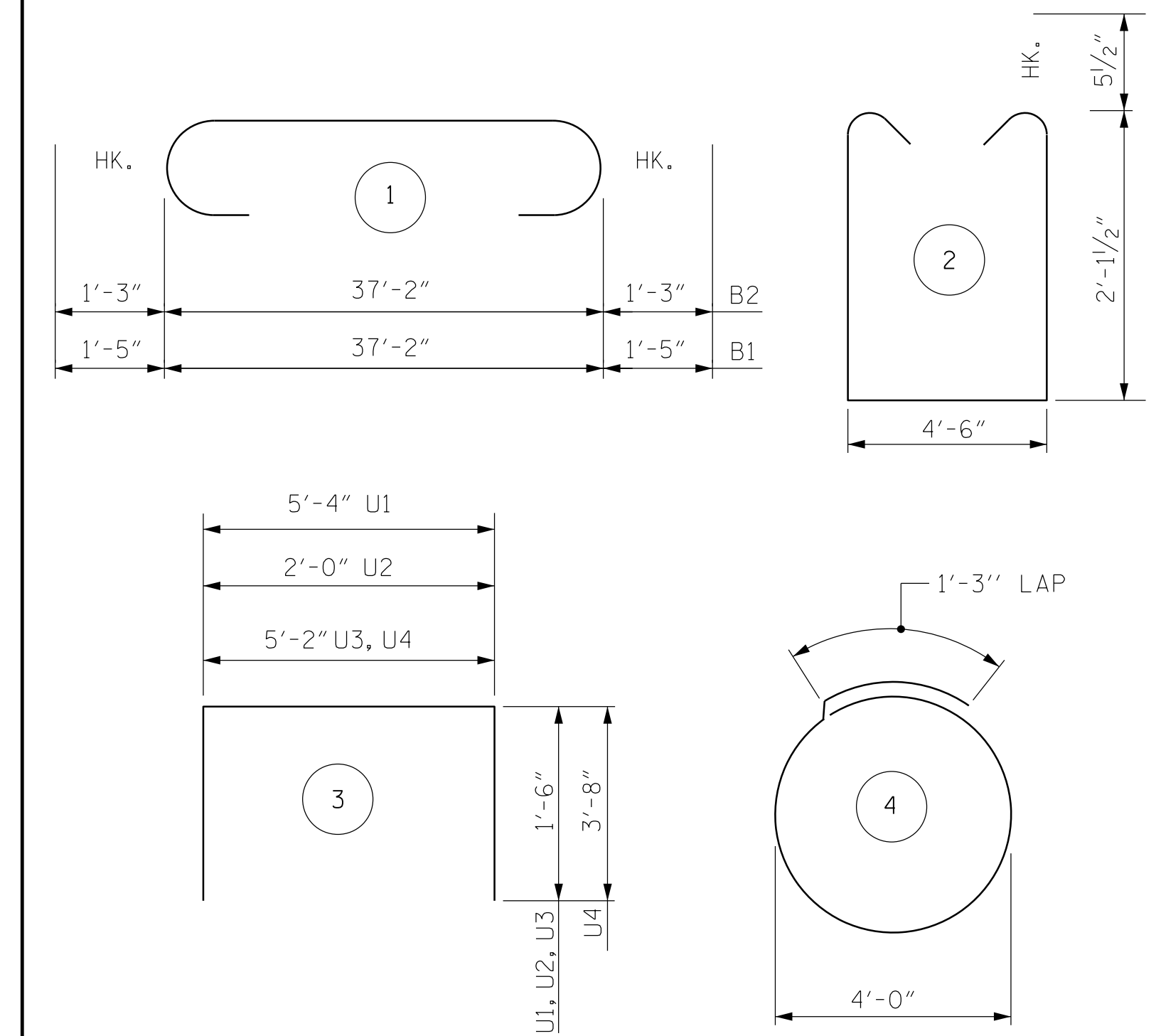
BILL OF MATERIAL					
FOR BENT 1 OR 2					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	6	10	1	40'-0"	1033
B2	8	9	1	39'-8"	1079
B3	10	4	STR.	5'-4"	36
B4	4	6	STR.	37'-2"	223
B5	7	4	STR.	37'-2"	174
S1	56	5	2	9'-8"	565
S2	10	4	4	13'-10"	92
U1	28	4	3	8'-4"	156
U2	10	4	3	5'-0"	33
U3	4	4	3	8'-2"	22
U4	2	9	3	12'-6"	85

REINFORCING STEEL, LBS.	3498
CLASS A CONCRETE, CU. YD.	19.3
PP 36 X 0.625 GALVANIZED STEEL PILES	
NO.	5
LIN. FT.	350
PIPE PILE PLATES, EACH	5
PILE DRIVING EQUIPMENT SETUP FOR PP 36 X 0.625 GALVANIZED STEEL PILES, EA.	5
PILE REDRIVES, EA.	3

(NOTE: PILE HEADS HAVE BEEN DEDUCTED FROM CLASS A CONCRETE)

ALL BAR DIMENSIONS ARE OUT TO OUT.

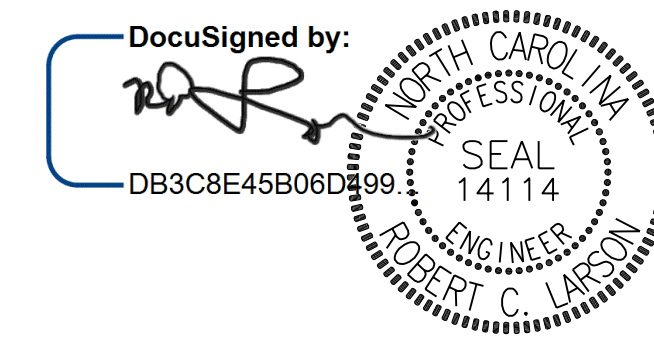


PROJECT NO. B-5655  
EDGECOMBE COUNTY  
 STATION: 16+75.00 -L-

SHEET 2 OF 2

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

SUBSTRUCTURE  
 BENT 1 OR 2



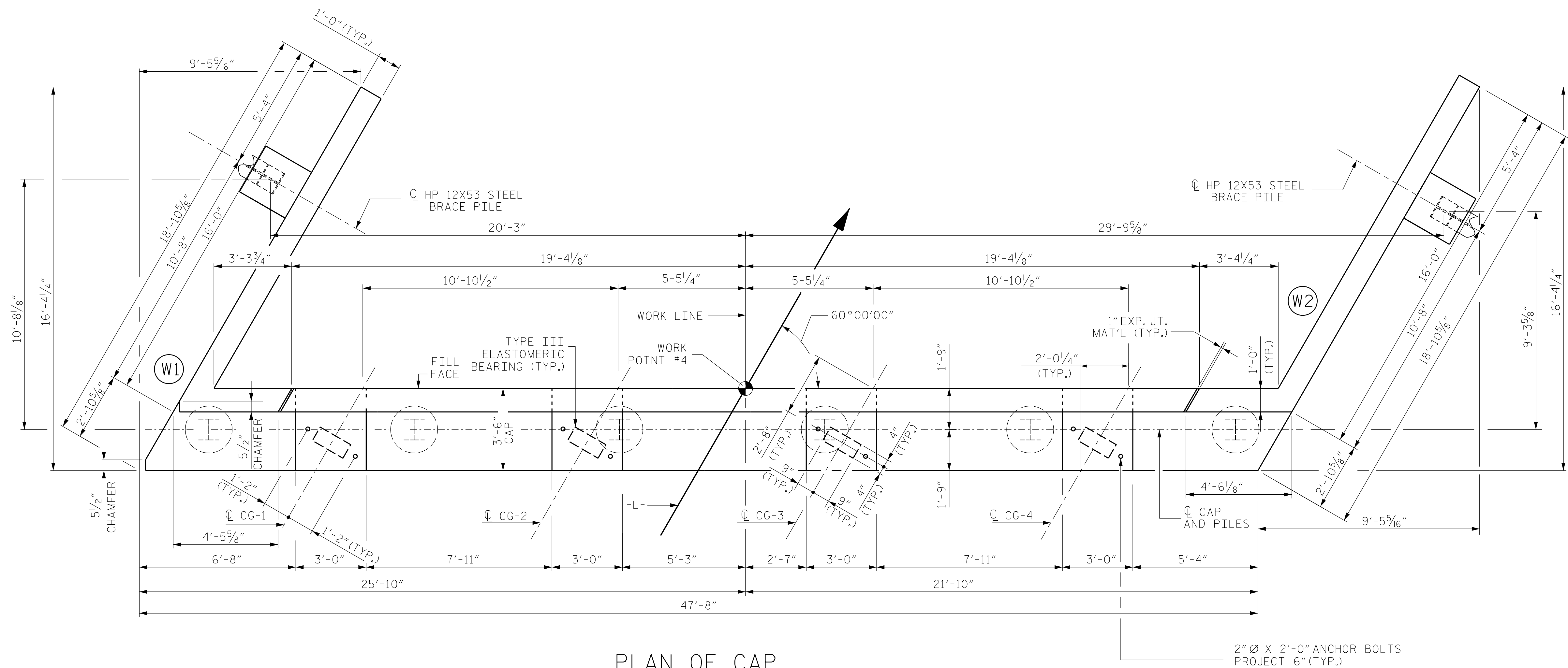
DESIGN ENGINEER OF RECORD: R. C. LARSON DATE: 2/28/2020  
 DRAWN BY: A. SAMBOY DATE: 11/22/19  
 CHECKED BY: R. C. LARSON DATE: 12/05/19

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

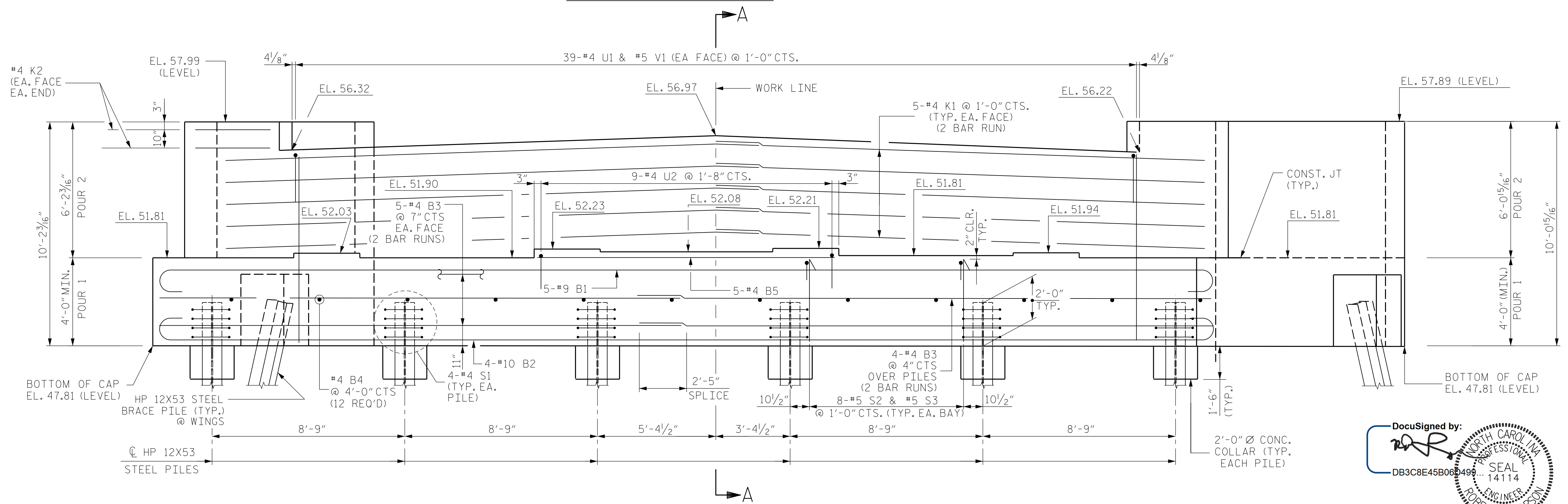
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NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		

SHEET NO. <u>S-22</u>	TOTAL SHEETS <u>29</u>
-----------------------	------------------------

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**KCI Associates**  
 of North Carolina, P.A.  
4505 Falls of Neuse Road, Suite 400 Raleigh, NC 27609-6370 Phone 919/783-924



PLAN OF CAP



ELEVATION

NOTES

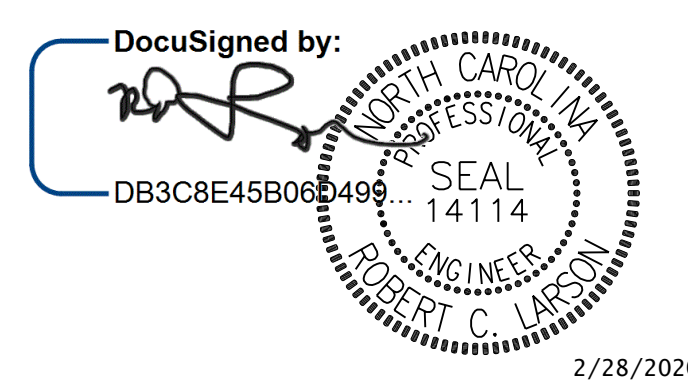
- THE CONCRETE IN THE SHADED AREA OF THE WING SHALL BE POURED AFTER THE JOINT BETWEEN THE DECK AND THE APPROACH SLAB HAS BEEN SAWED AND THE BARRIER RAIL IS CAST IF SLIPFORMING IS USED.
- FOR "PILE SPLICE DETAILS", SEE END BENT 1.
- FOR SECTION A-A SEE SHEET 3 OF 3.
- STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR ANCHOR BOLTS.
- BACKWALL SHALL BE PLACED BEFORE APPLYING THE EPOXY PROTECTIVE COATING.
- THE TOP SURFACE AREAS OF THE END BENT CAP SHALL BE CURED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS EXCEPT THE MEMBRANE CURING COMPOUND METHOD SHALL NOT BE USED.
- THE TOP SURFACE OF THE CAP EXCEPT THE BRIDGE SEAT BUILDUPS SHALL BE SLOPED TRANSVERSELY FROM THE FILL FACE TO THE BACK FACE AT THE RATE OF 2%.

PROJECT NO. B-5655  
 EDGECOMBE COUNTY  
 STATION: 16+75.00 -L-

SHEET 1 OF 3

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**SUBSTRUCTURE  
 END BENT 2**



DESIGN ENGINEER OF RECORD: *[Signature]* DATE: 2/28/2020  
 DRAWN BY: A. K. ALLANKI DATE: 11/15/19  
 CHECKED BY: R. C. LARSON DATE: 11/23/19

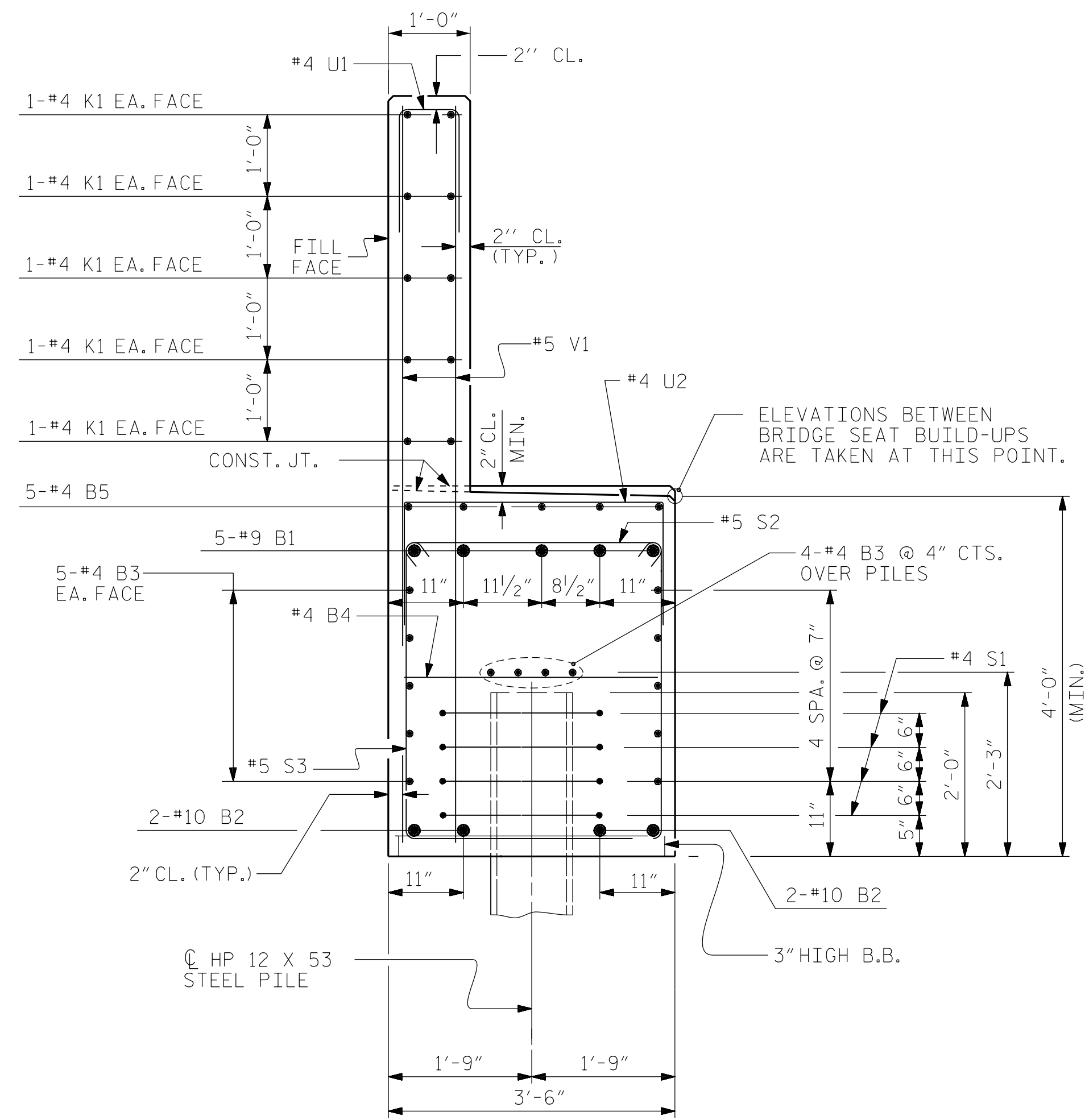
**DOCUMENT NOT CONSIDERED FINAL  
 UNLESS ALL SIGNATURES COMPLETED**

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**KCI Associates**  
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 2505 Falls of Neuse Road, Suite 400 Raleigh, NC 27609-6270 Phone 199-785-924

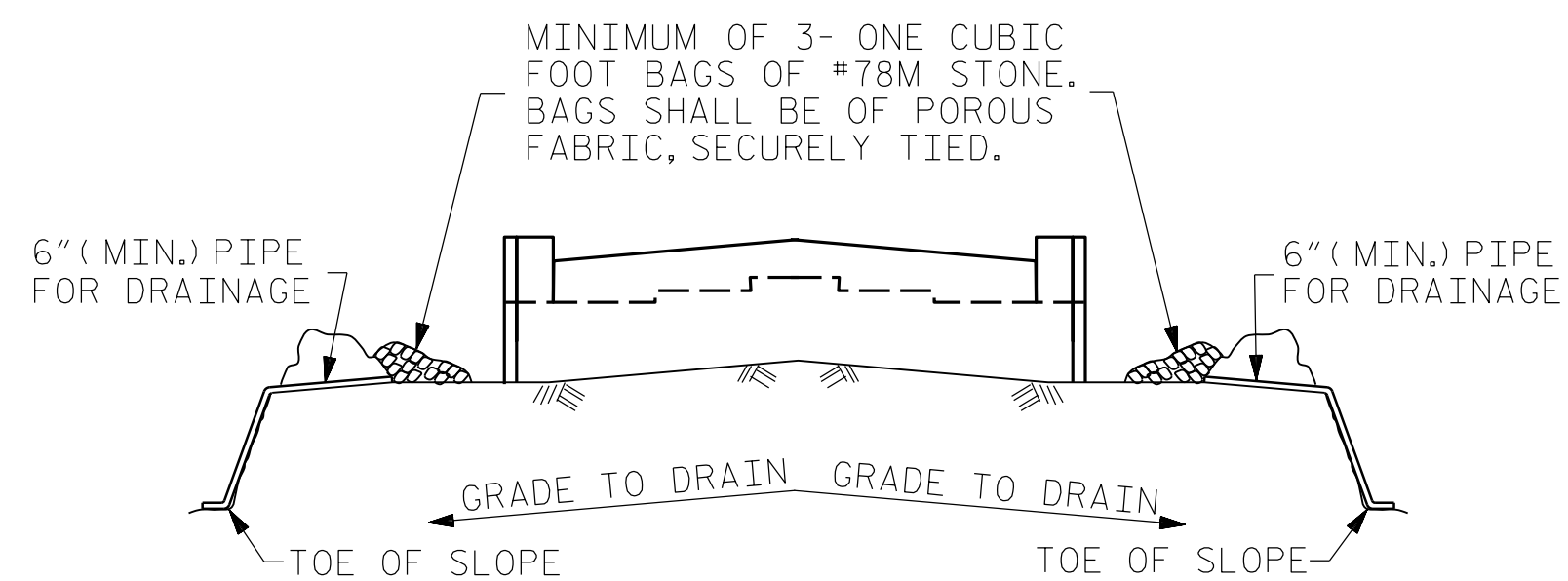
REVISIONS		SHEET NO.	
NO.	DATE	NO.	DATE
1		3	
2		4	

TOTAL SHEETS: 29





SECTION A-A



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.

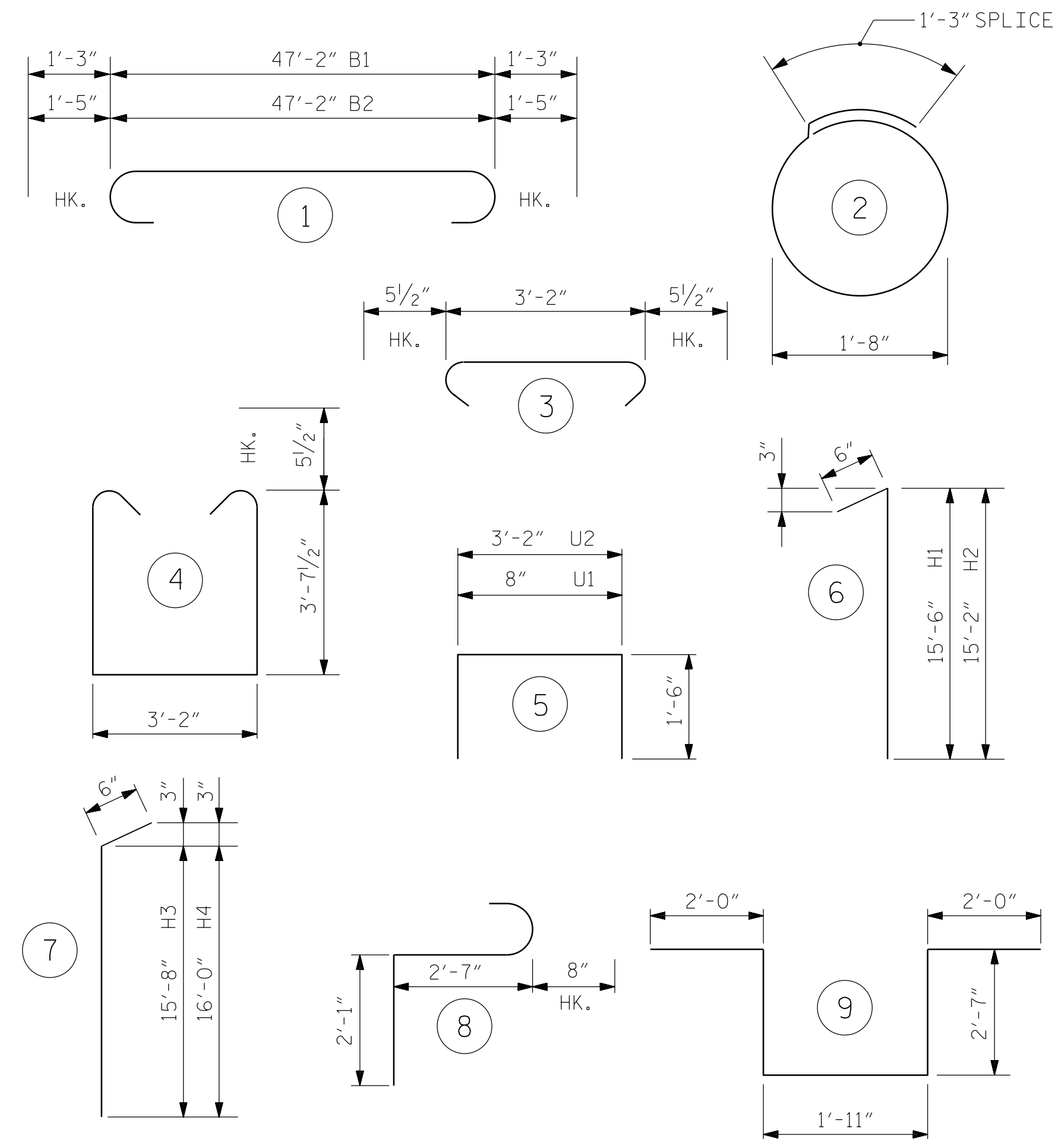
BAGGED STONE SHALL REMAIN IN PLACE UNTIL THE ENGINEER DIRECTS THAT IT BE REMOVED. THE CONTRACTOR SHALL REMOVE AND DISPOSE OF SILT ACCUMULATIONS AT BAGGED STONE WHEN SO DIRECTED BY THE ENGINEER. BAGS SHALL BE REMOVED AND REPLACED WHENEVER THE ENGINEER DETERMINES THAT THEY HAVE DETERIORATED AND LOST THEIR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

DESIGN ENGINEER OF RECORD	DATE: 2/28/2020
DRAWN BY: A. K. ALLANKI	DATE: 11/18/19
CHECKED BY: R. C. LARSON	DATE: 11/24/19

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL

END BENT 2

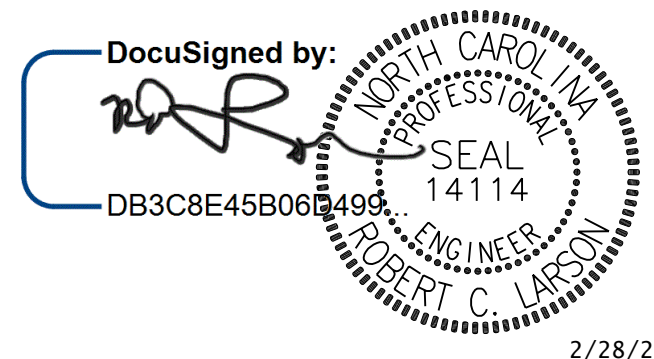
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
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B2	4	10	1	50'-0"	861
B3	28	4	STR.	24'-11"	466
B4	12	4	STR.	3'-2"	25
B5	5	4	STR.	13'-6"	45
H1	10	4	6	16'-0"	107
H2	10	4	6	15'-8"	105
H3	10	4	7	16'-2"	108
H4	10	4	7	16'-6"	110
K1	20	4	STR.	24'-11"	333
K2	8	4	STR.	4'-0"	21
S1	24	4	2	6'-6"	104
S2	40	5	3	4'-1"	170
S3	40	5	4	11'-4"	473
S4	6	6	8	5'-4"	48
S5	6	6	9	11'-1"	100
U1	39	4	5	3'-8"	96
U2	9	4	5	6'-2"	37
V1	78	5	STR.	8'-0"	651
V2	80	5	STR.	9'-9"	814
REINFORCING STEEL, LBS.					5518
CLASS A CONCRETE, CY POUR 1					32.4
POUR 2					15.4
TOTAL					47.8
HP 12X53 STEEL PILES					NO. 8
L.F.					560
PILE DRIVING EQUIPMENT SETUP FOR HP 12X53 STEEL PILES, EA.					8
PILE REDRIVES, EA.					3

PROJECT NO. B-5655  
 EDGEcombe COUNTY  
 STATION: 16+75.00 -L-

SHEET 3 OF 3

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

SUBSTRUCTURE  
 END BENT 2



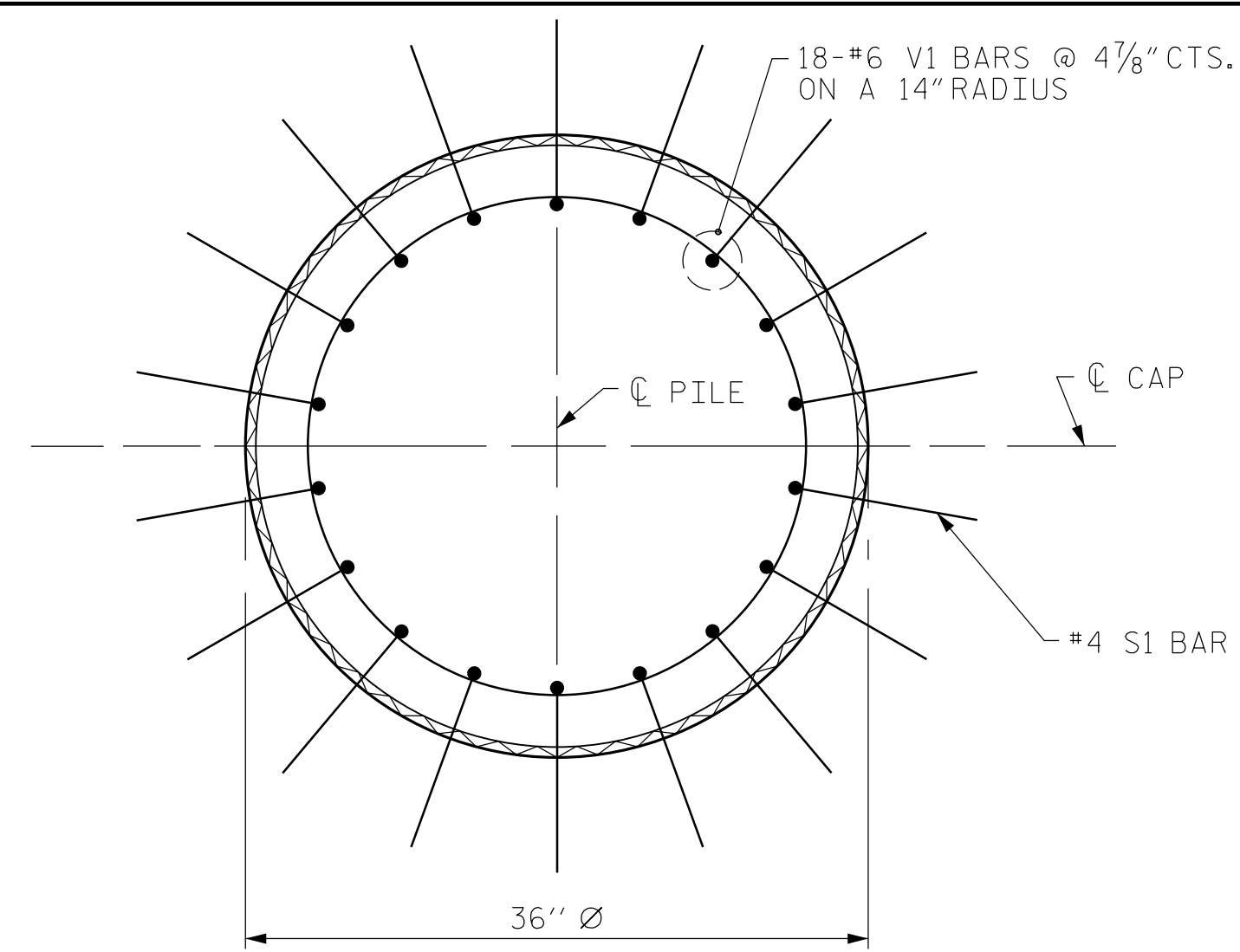
2/28/2020

DOCUMENT NOT CONSIDERED FINAL  
 UNLESS ALL SIGNATURES COMPLETED

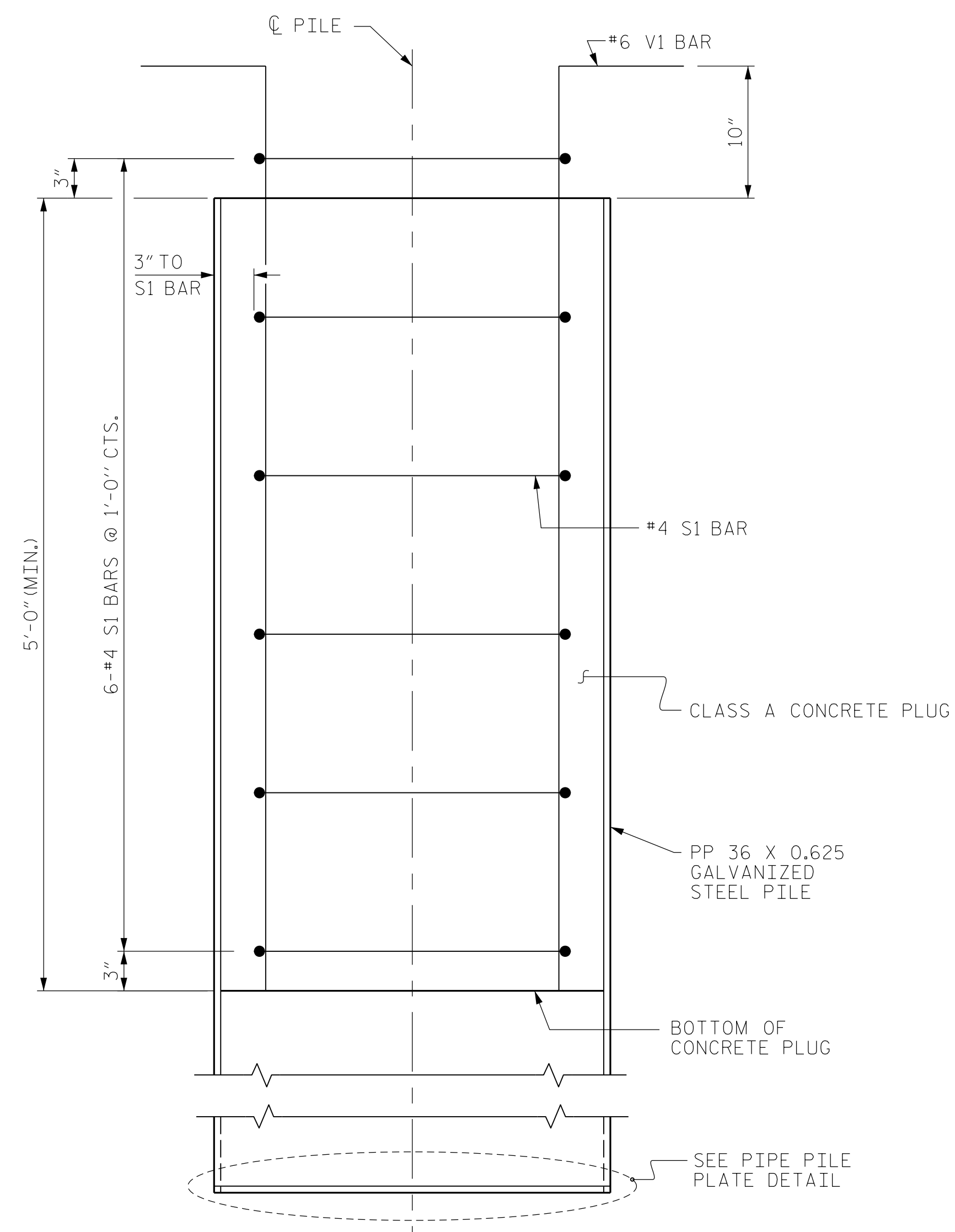


REVISIONS		SHEET NO.	
NO.	DATE:	NO.	DATE:
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TOTAL SHEETS: 29

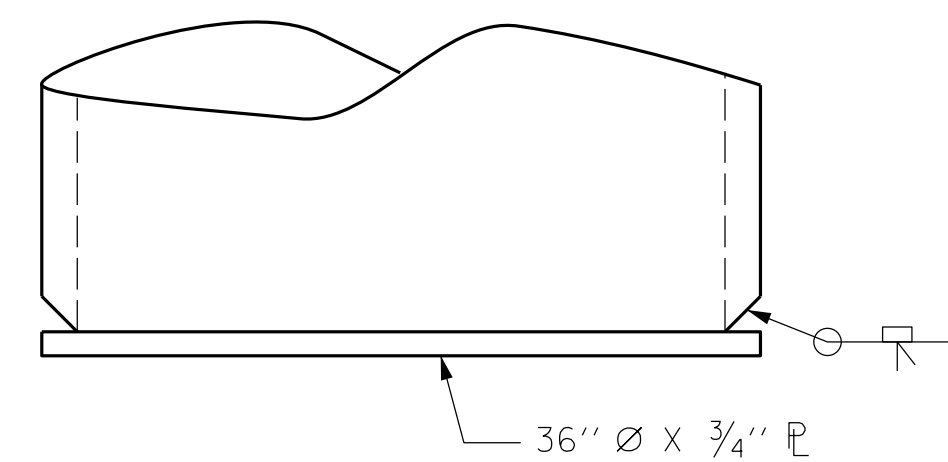


PLAN

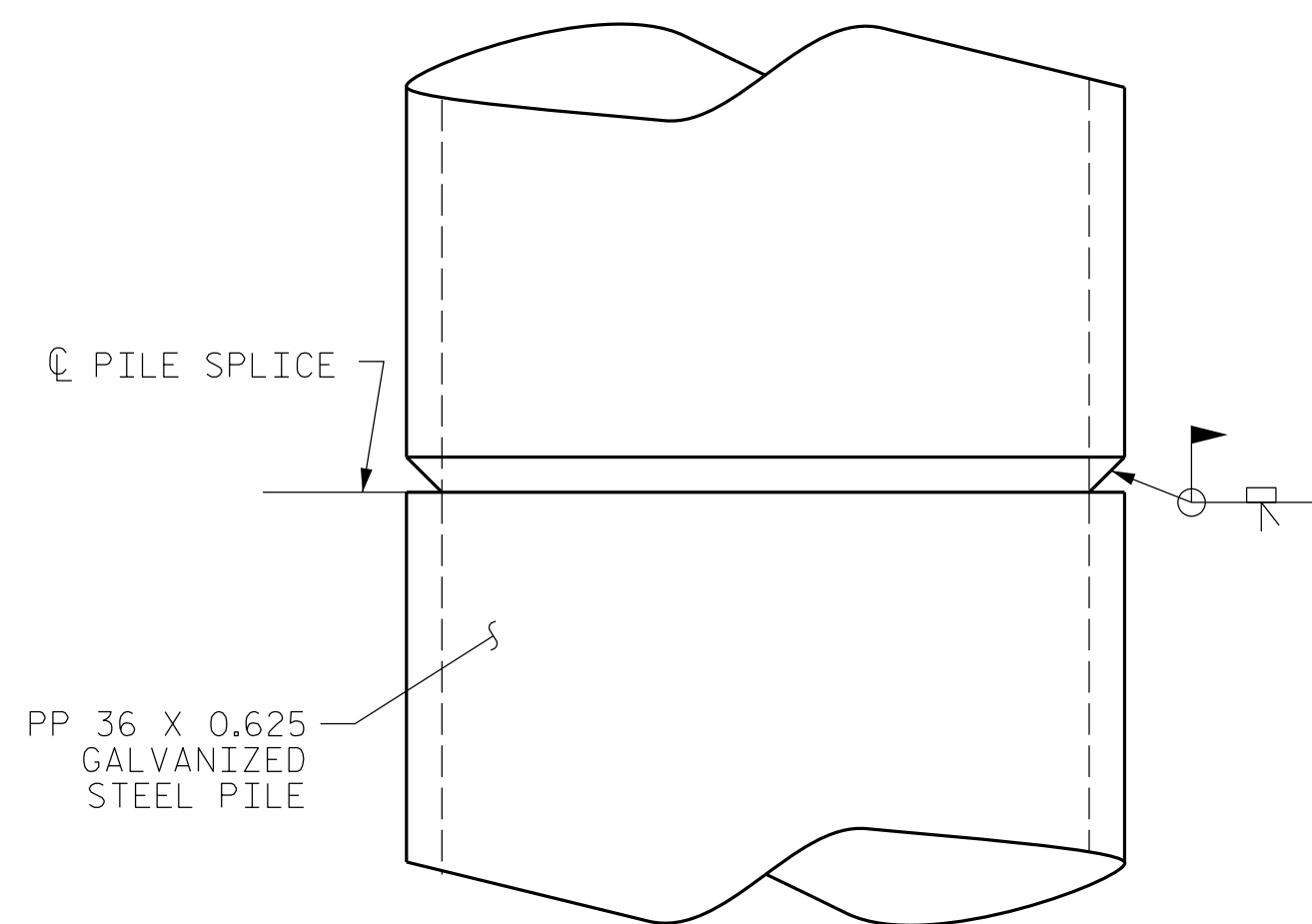


ELEVATION

PP 36 X 0.625 GALVANIZED STEEL PILE  
(CLOSED END)



PIPE PILE PLATE DETAIL



PIPE PILE SPLICE DETAIL

NOTES

PIPE PILES SHALL BE IN ACCORDANCE WITH SECTION 1084 OF THE STANDARD SPECIFICATIONS.

GALVANIZE STEEL PIPE PILES IN ACCORDANCE WITH SECTION 1076 OF THE STANDARD SPECIFICATIONS UNLESS METALLIZING IS REQUIRED. GALVANIZING OR METALLIZING PIPE PILE PLATES IS NOT REQUIRED.

PIPE PILE PLATE SHALL BE IN ACCORDANCE WITH SECTION 450 OF THE STANDARD SPECIFICATIONS.

REMOVE AND REPLACE OR REPAIR TO THE SATISFACTION OF THE ENGINEER PILES THAT ARE DAMAGED, DEFORMED OR COLLAPSED DURING INSTALLATION OR DRIVING.

PILE SPLICES SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS AND AWS D1.1.

FOR CLOSED END PIPE PILES, REMOVE ALL SOIL AND WATER FROM INSIDE THE PILES JUST PRIOR TO PLACING REINFORCING STEEL AND CONCRETE FOR THE CONCRETE PLUG.

FORM THE CONCRETE PLUG SUCH THAT THE REINFORCING STEEL OR CONCRETE DOES NOT MOVE AND THE CLEARANCE FROM THE REINFORCING STEEL TO THE INSIDE OF THE PILE IS MAINTAINED AFTER CONCRETE PLACEMENT. DO NOT PLACE CONCRETE IN THE BENT CAP UNTIL THE CONCRETE PLUG HAS ATTAINED A MINIMUM COMPRESSIVE STRENGTH OF 1500 PSI.

THE REINFORCING STEEL, CLASS A CONCRETE, AND GALVANIZING ARE CONSIDERED INCIDENTAL TO THE CONTRACT UNIT PRICE BID PER LINEAR FOOT FOR PP 36 X 0.625 GALVANIZED STEEL PILES.

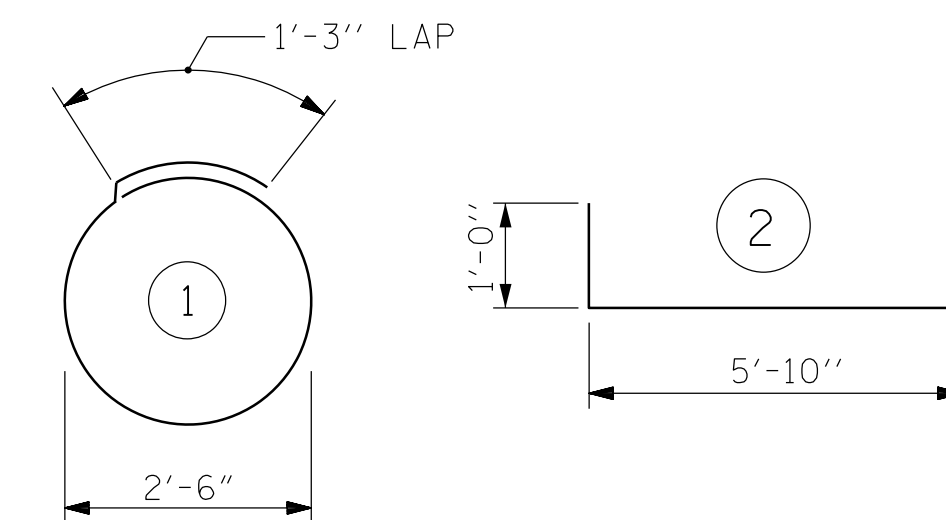
BILL OF MATERIAL FOR ONE  
PP 36 X 0.50 GALVANIZED STEEL PILE

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
S1	6	#4	1	9'-2"	37
V1	18	#6	2	6'-10"	185

REINFORCING STEEL = 222 LBS.

CLASS A CONCRETE  
5'-0" MINIMUM PLUG 1.3 CY

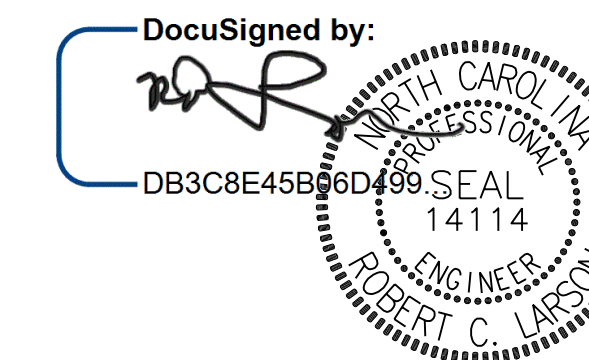
BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

PROJECT NO. B-5655  
EDGEcombe COUNTY  
STATION: 16+75.00 -L-

36" STEEL PIPE PILE  
(CLOSED END)



2/28/2020

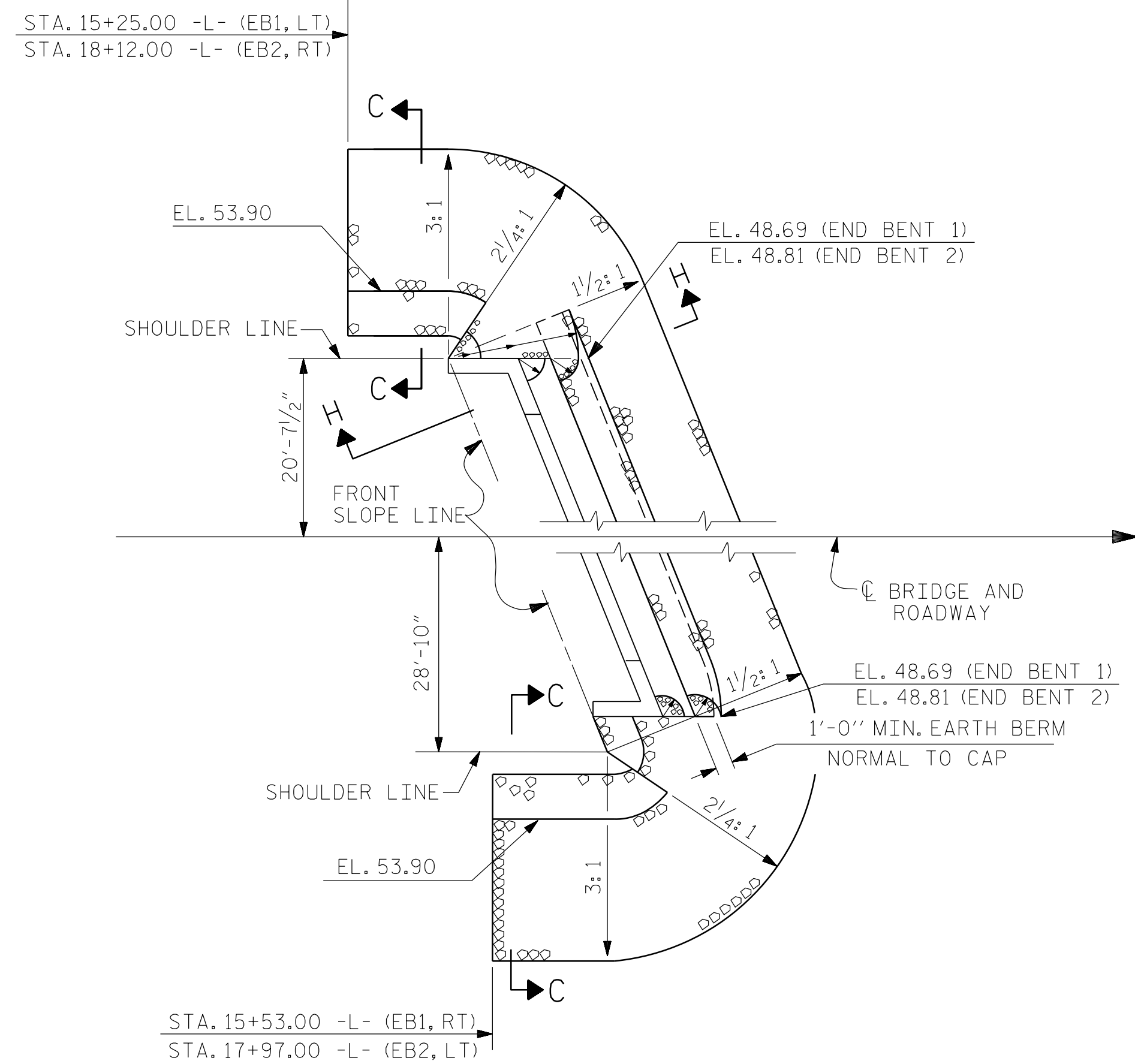
DESIGN ENGINEER OF RECORD: DATE: 2/28/2020

DRAWN BY: R. C. LARSON DATE: 10/30/19  
CHECKED BY: A. K. ALLANKI DATE: 12/12/19

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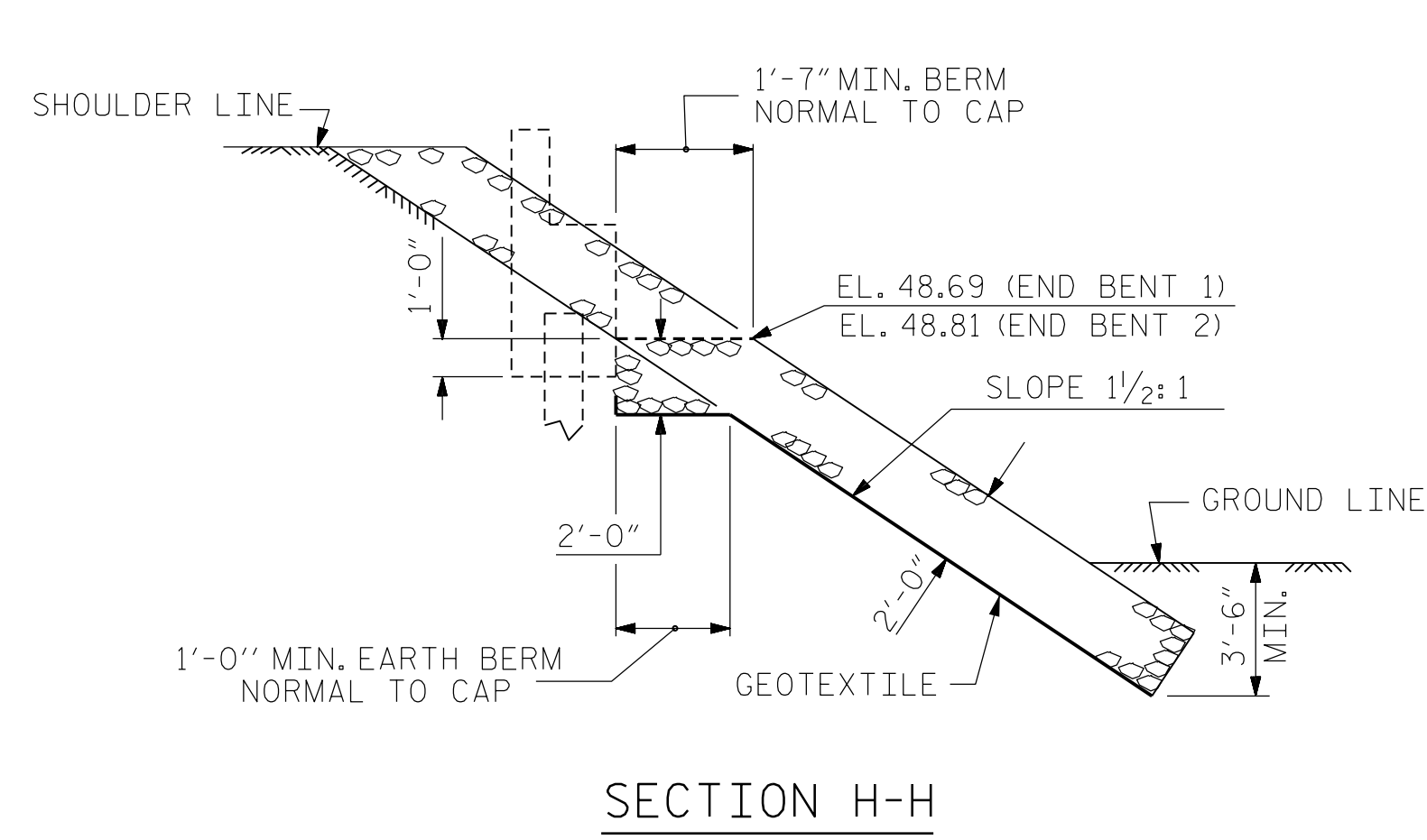
NO.		BY:	DATE:	NO.		BY:	DATE:	SHEET NO.
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2				4				TOTAL SHEETS 29



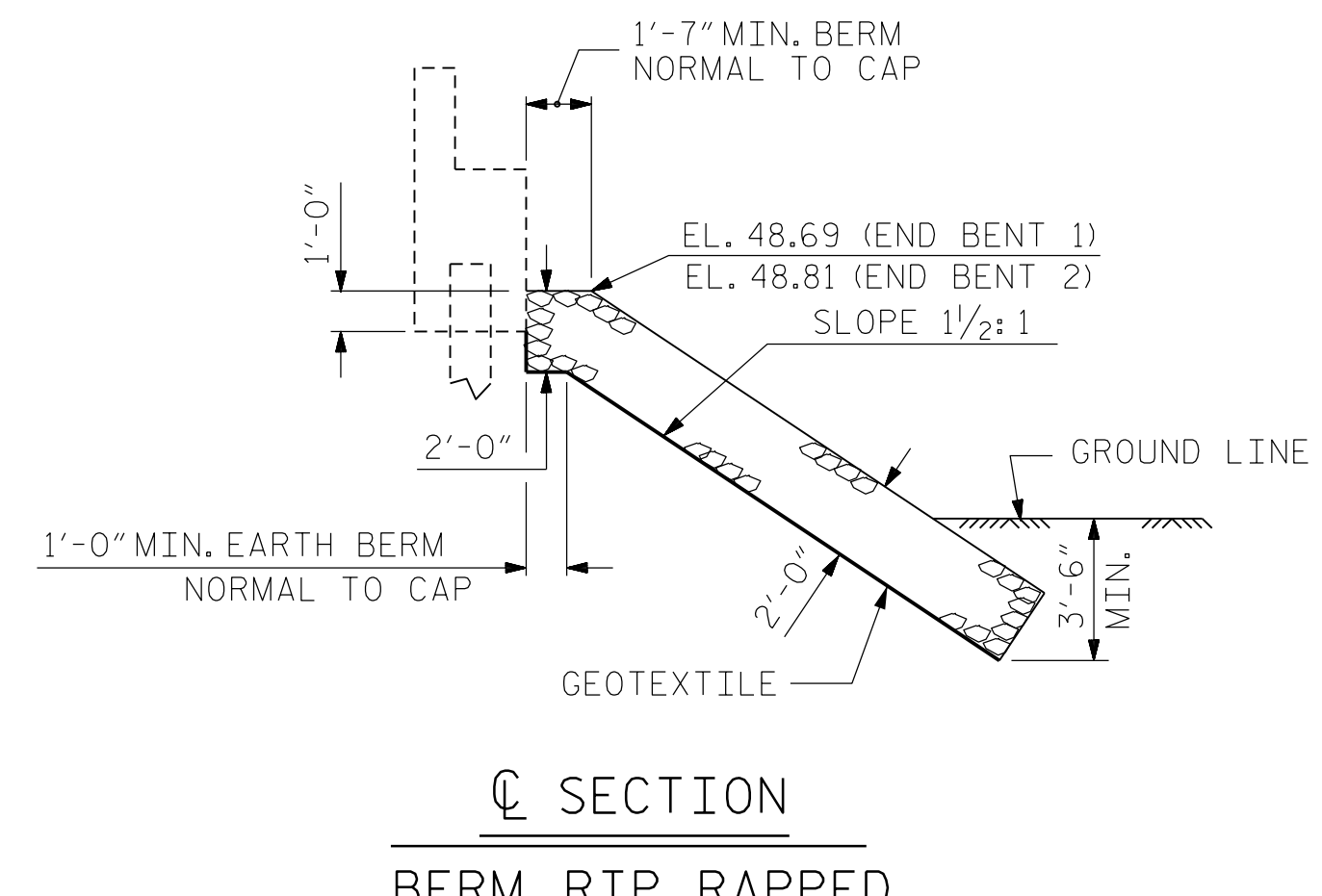
NOTES :  
FOR BERM WIDTH DIMENSIONS, SEE GENERAL DRAWING.

SHOULDER RIP RAP IS HIGHER THAN BERM RIP RAP

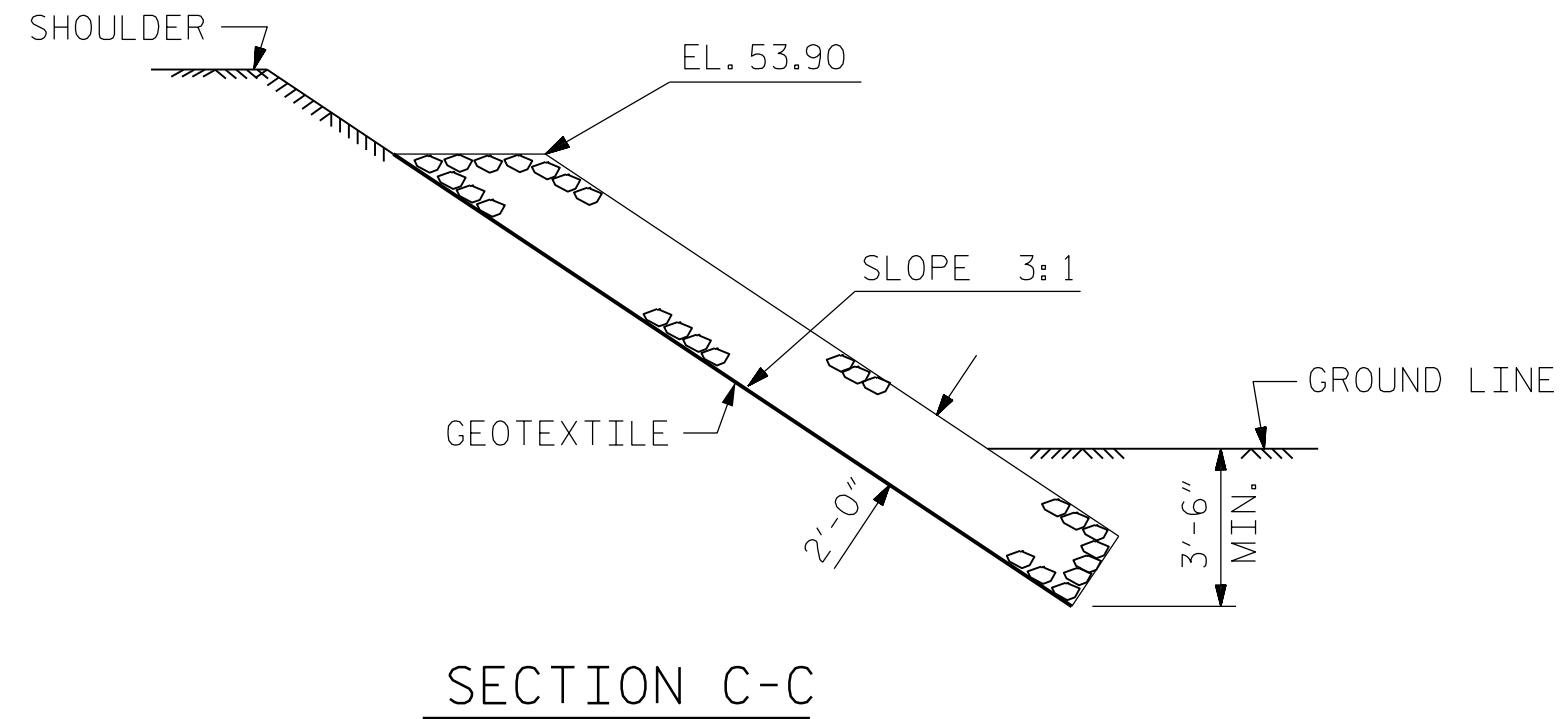
ESTIMATED QUANTITIES		
BRIDGE @ STA. 16+75.00-L-	RIP RAP CLASS II (2'-0" THICK)	GEOTEXTILE FOR DRAINAGE
	TONS	SQUARE YARDS
END BENT 1	430	480
END BENT 2	350	385



SECTION H-H



SECTION C-C  
BERM RIP RAPPED



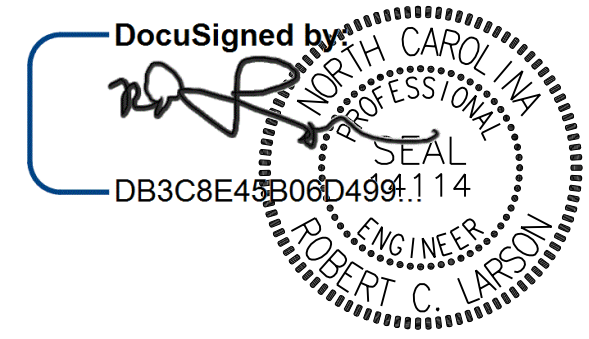
SECTION C-C

PROJECT NO. B-5655  
EDGEcombe COUNTY  
STATION: 16+75.00 -L-

SHEET 1 OF 1

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

STANDARD  
RIP RAP DETAILS



2/28/2020

DESIGN ENGINEER OF RECORD:	DATE:	2/28/2020
ASSEMBLED BY: R. C. LARSON	DATE:	11/12/19
CHECKED BY: R. J. FLORY	DATE:	01/29/2020
DRAWN BY: REK 1/84	REV. 10/1/11	MAA/GM
CHECKED BY: RDU 1/84	REV. 12/21/11	MAA/GM
	REV. 12/17	MAA/THC

**DOCUMENT NOT CONSIDERED FINAL  
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ENGINEERS • PLANNERS • SCIENTISTS • CONSTRUCTION MANAGERS LICENSE NUMBER: C-0784

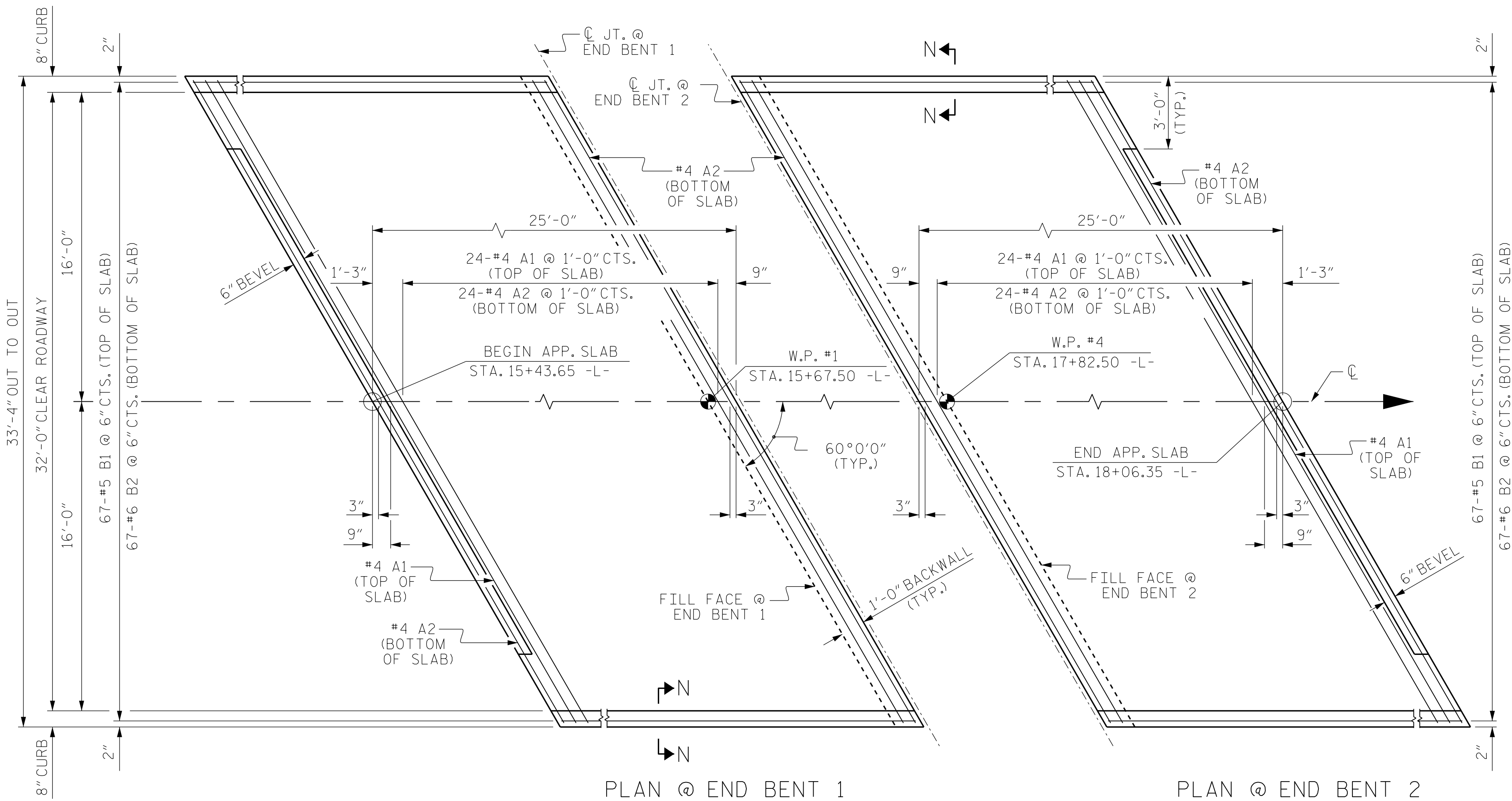
**KCI Associates**  
of North Carolina, P.A.

4505 Falls of Neuse Road, Suite 400, Raleigh, NC 27609-6270 Phone: (919) 783-9201

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-27
1			3			TOTAL SHEETS
2			4			29

KCI JOB NO: 251801945.20





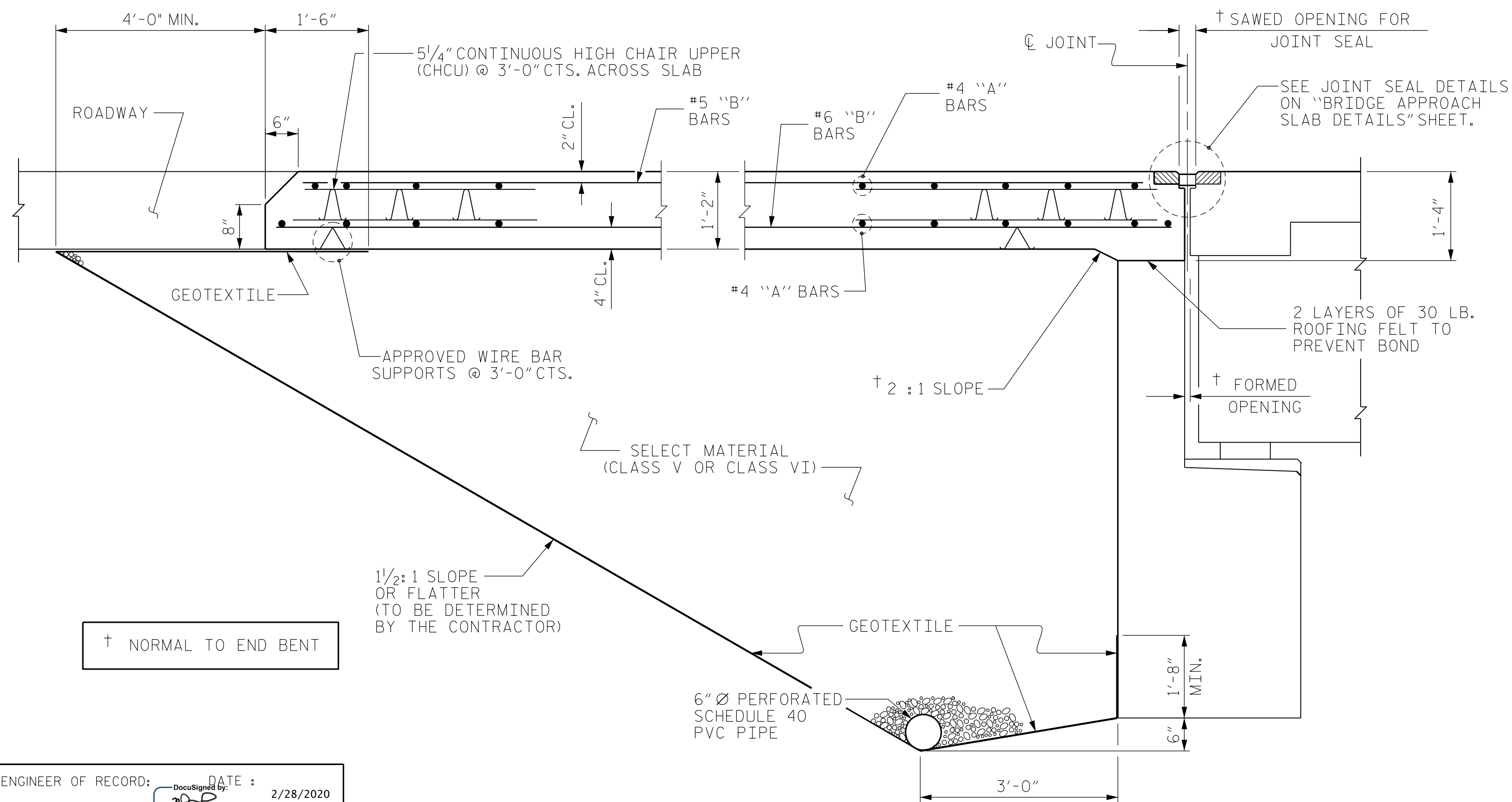
PLAN @ END BENT 1 PLAN @ END BENT 2  
DIMENSIONS SHOWN ARE TYPICAL FOR BOTH APPROACH SLABS

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

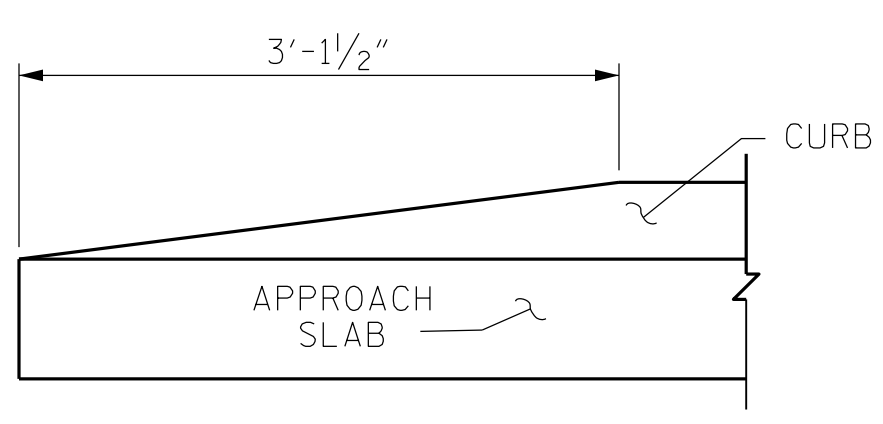
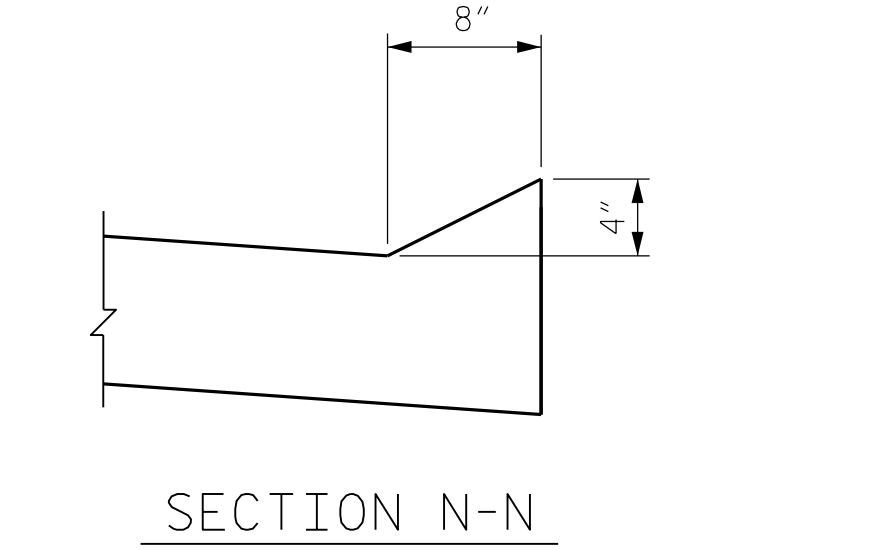
BILL OF MATERIAL					
APPROACH SLAB AT END BENT 1					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
*A1	25	#4	STR	38'-1"	636
A2	26	#4	STR	38'-1"	661
*B1	67	#5	STR	23'-6"	1642
B2	67	#6	STR	24'-7"	2474
REINFORCING STEEL				LBS.	3135
* EPOXY COATED REINFORCING STEEL				LBS.	2278
CLASS AA CONCRETE				C. Y.	36.3
APPROACH SLAB AT END BENT 2					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
*A1	25	#4	STR	38'-1"	636
A2	26	#4	STR	38'-1"	661
*B1	67	#5	STR	23'-6"	1642
B2	67	#6	STR	24'-7"	2474
REINFORCING STEEL				LBS.	3135
* EPOXY COATED REINFORCING STEEL				LBS.	2278
CLASS AA CONCRETE				C. Y.	36.3

NOTES

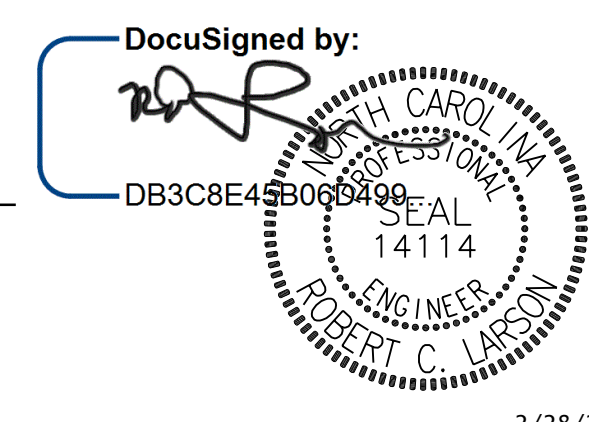
- FOR BRIDGE APPROACH FILL INCLUDING GEOTEXTILE, 6" Ø DRAINAGE PIPE, AND SELECT MATERIAL BACKFILL, SEE ROADWAY PLANS.
- GEOTEXTILE SHALL BE TYPE 1 IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS SECTION 1056.
- SELECT MATERIAL BACKFILL (CLASS V OR CLASS VI) SHALL BE IN ACCORDANCE WITH STANDARD SPECIFICATIONS SECTION 1016.
- SELECT MATERIAL BACKFILL IS TO BE CONTINUOUS ALONG FILL FACE OF BACKWALL FROM OUTSIDE EDGE TO OUTSIDE EDGE OF APPROACH SLAB.
- APPROACH SLAB SHALL NOT BE CONSTRUCTED PRIOR TO COMPLETION OF THE BRIDGE DECK.
- THE JOINT SHALL BE SAWED PRIOR TO THE CASTING OF THE BARRIER RAIL OR PARAPET AND END POST.
- FOR THE 6" 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.
- WITH FOAM JOINT SEAL
- FOR FOAM JOINT SEALS, SEE SPECIAL PROVISIONS.
- THE NOMINAL UNCOMPRESSED SEAL WIDTH OF THE FOAM JOINT SEAL SHALL BE 2".
- FOR ELASTOMERIC CONCRETE, SEE SPECIAL PROVISIONS.



SECTION THRU SLAB  
(TYPE I - STANDARD APPROACH FILL)



END OF CURB WITHOUT SHOULDER BERM GUTTER  
CURB DETAILS



PROJECT NO. B-5655  
EDGECOMBE COUNTY  
STATION: 16+75.00 -L-

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

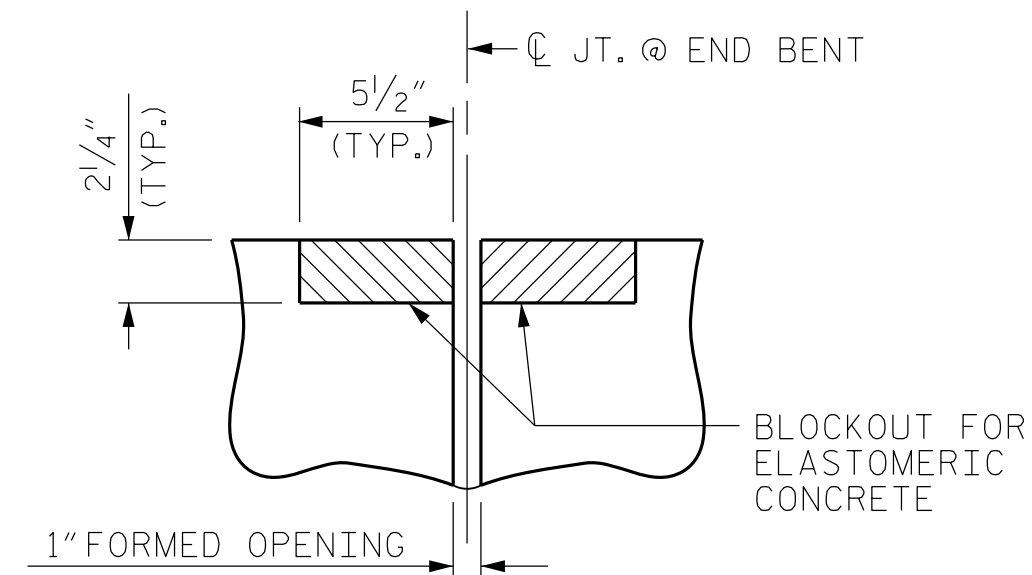
SHEET NO.	
S-28	TOTAL SHEETS 29

KCI JOB NO: 251801945.20

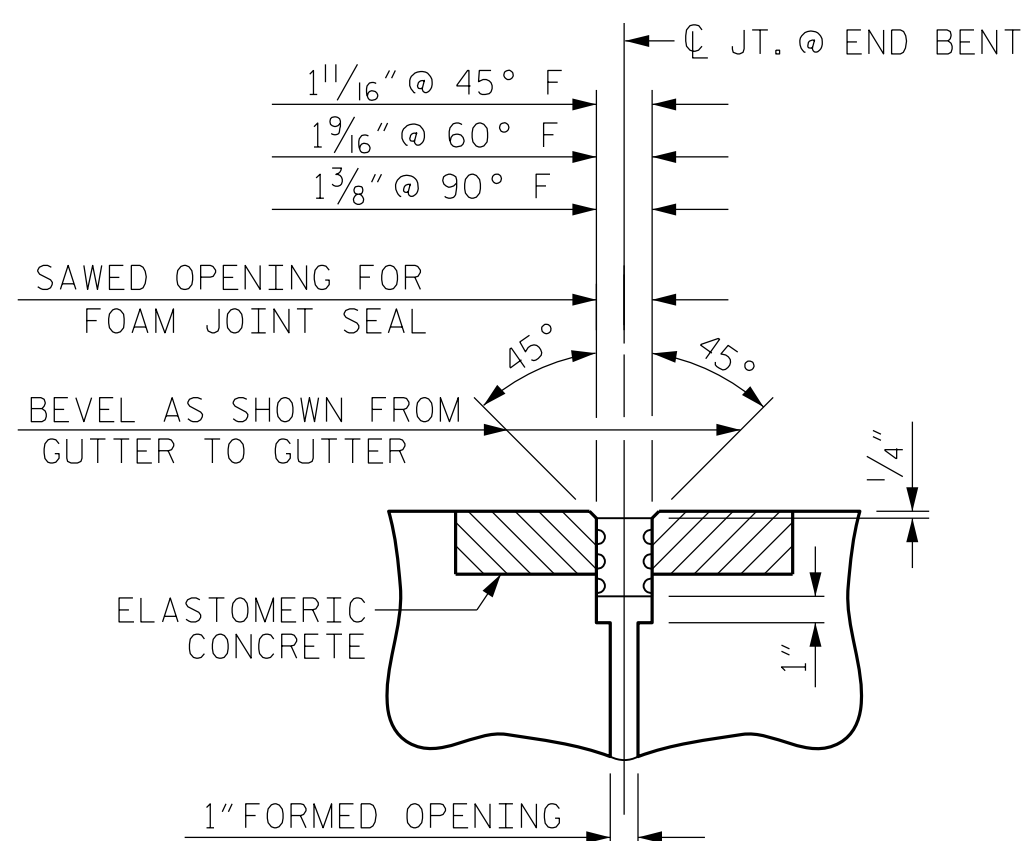
DESIGN ENGINEER OF RECORD:	DATE: 2/28/2020
ASSEMBLED BY: C.E. LARSON	DATE: 11/19
CHECKED BY: R.C. LARSON	DATE: 10/13/19
DRAWN BY: EEM 3/95	REV. 6/13 MAA/GM
CHECKED BY: VAP 3/95	REV. 12/17 MAA/THC
	REV. 06/19 BNB/THC

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





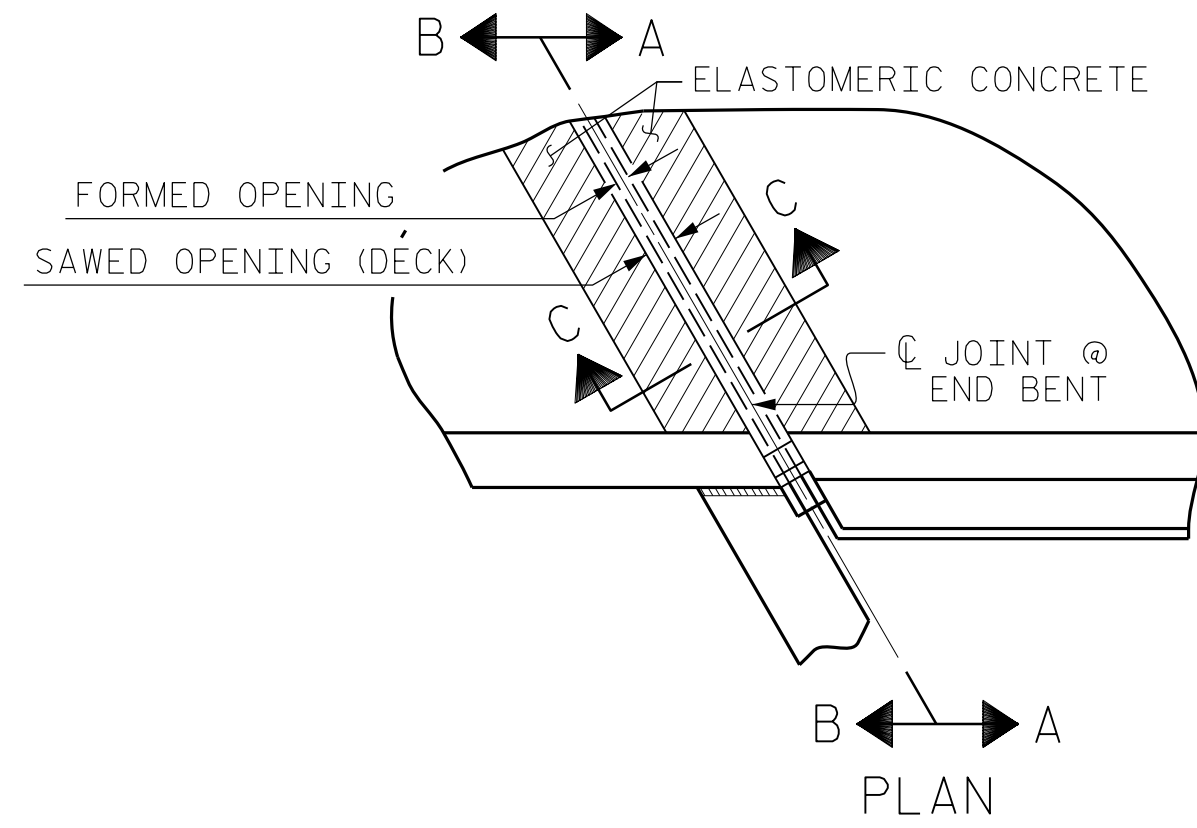
SECTION C-C  
FOAM JOINT SEAL  
(PRE-SAWED ELASTOMERIC  
CONCRETE DIMENSIONS)



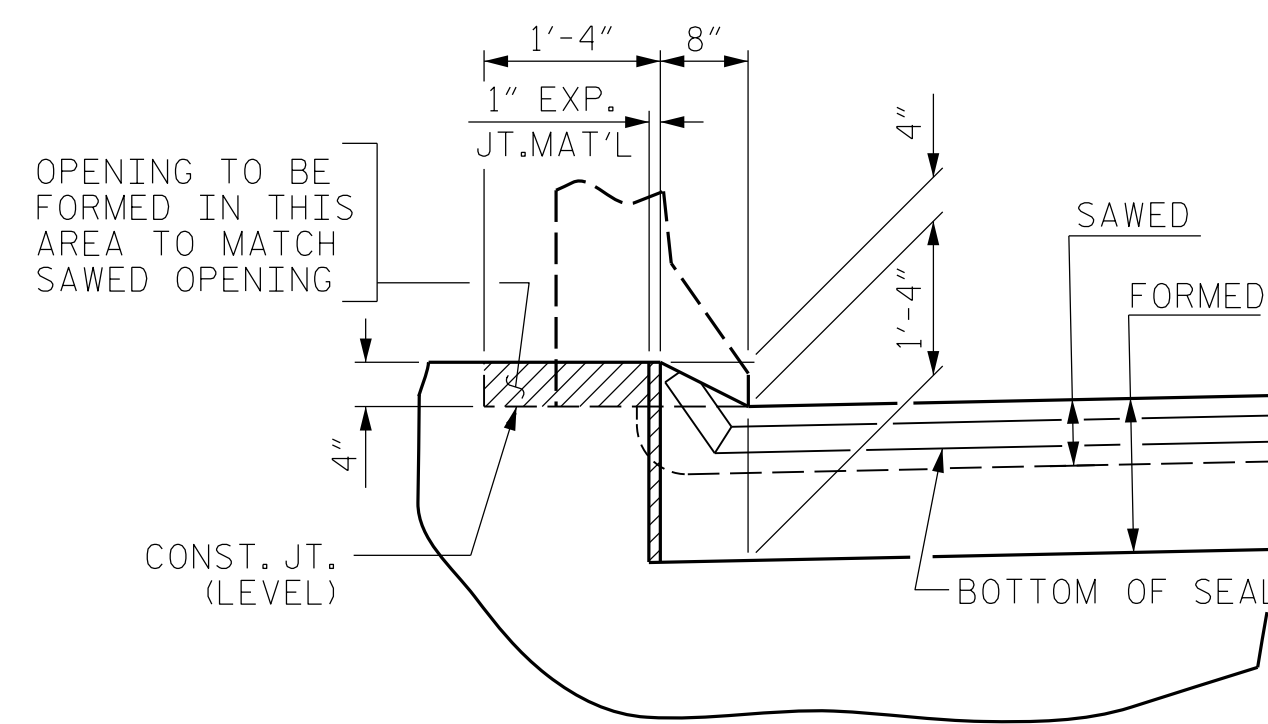
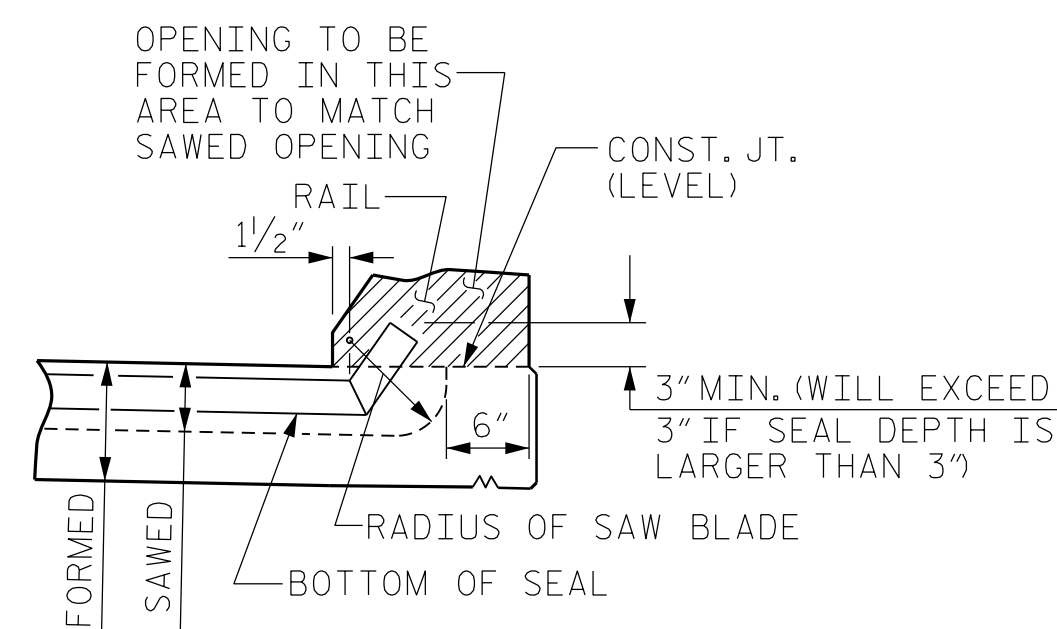
SECTION C-C  
FOAM JOINT SEAL  
(EXPANSION)

ELASTOMERIC CONCRETE	
END BENT NO.	ELASTOMERIC CONCRETE * (CU. FT.)
1	6.3
2	6.3
TOTAL	12.6

\* BASED ON THE MINIMUM BLOCKOUT SHOWN.



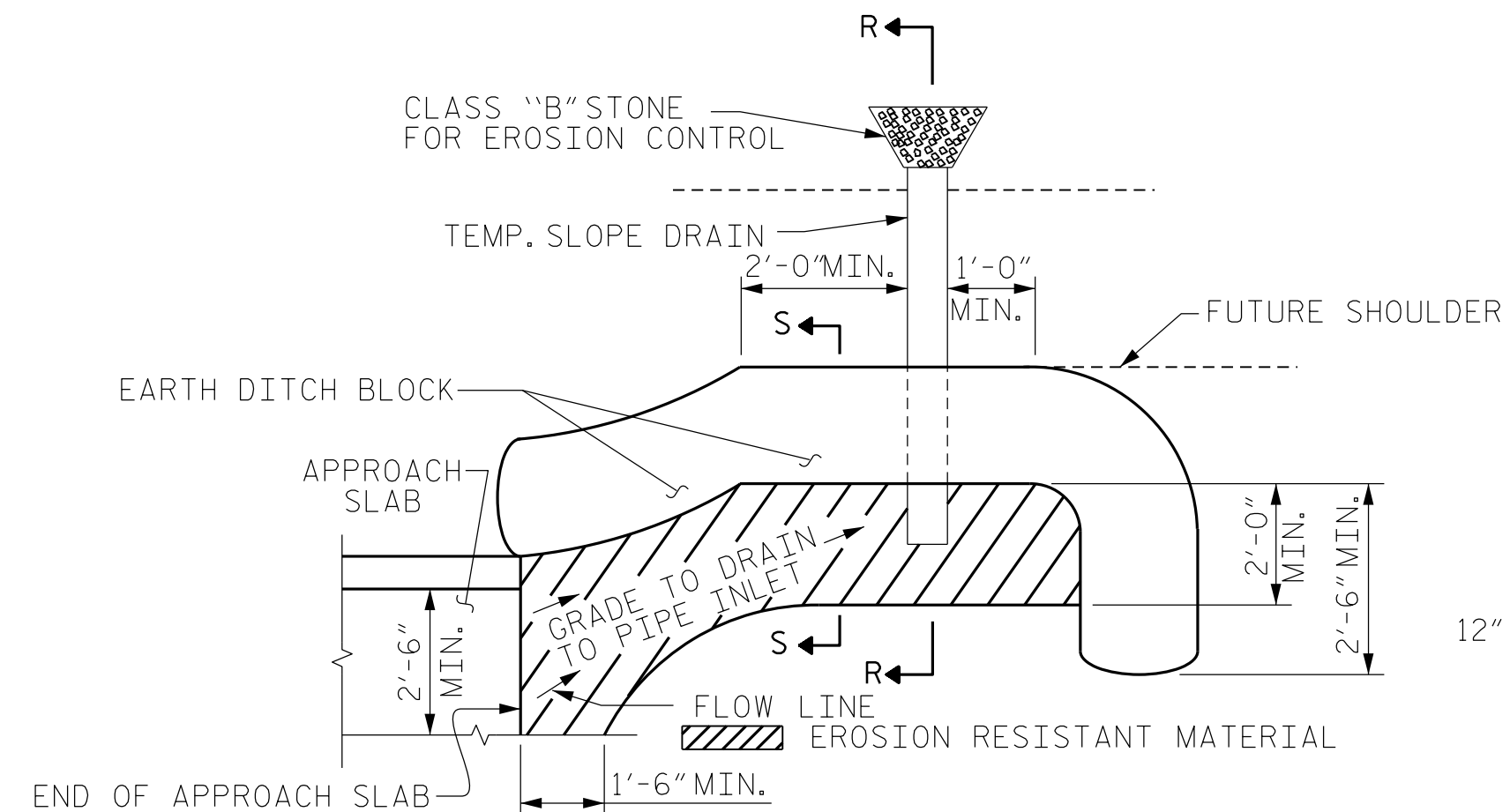
SECTION A-A



SECTION B-B

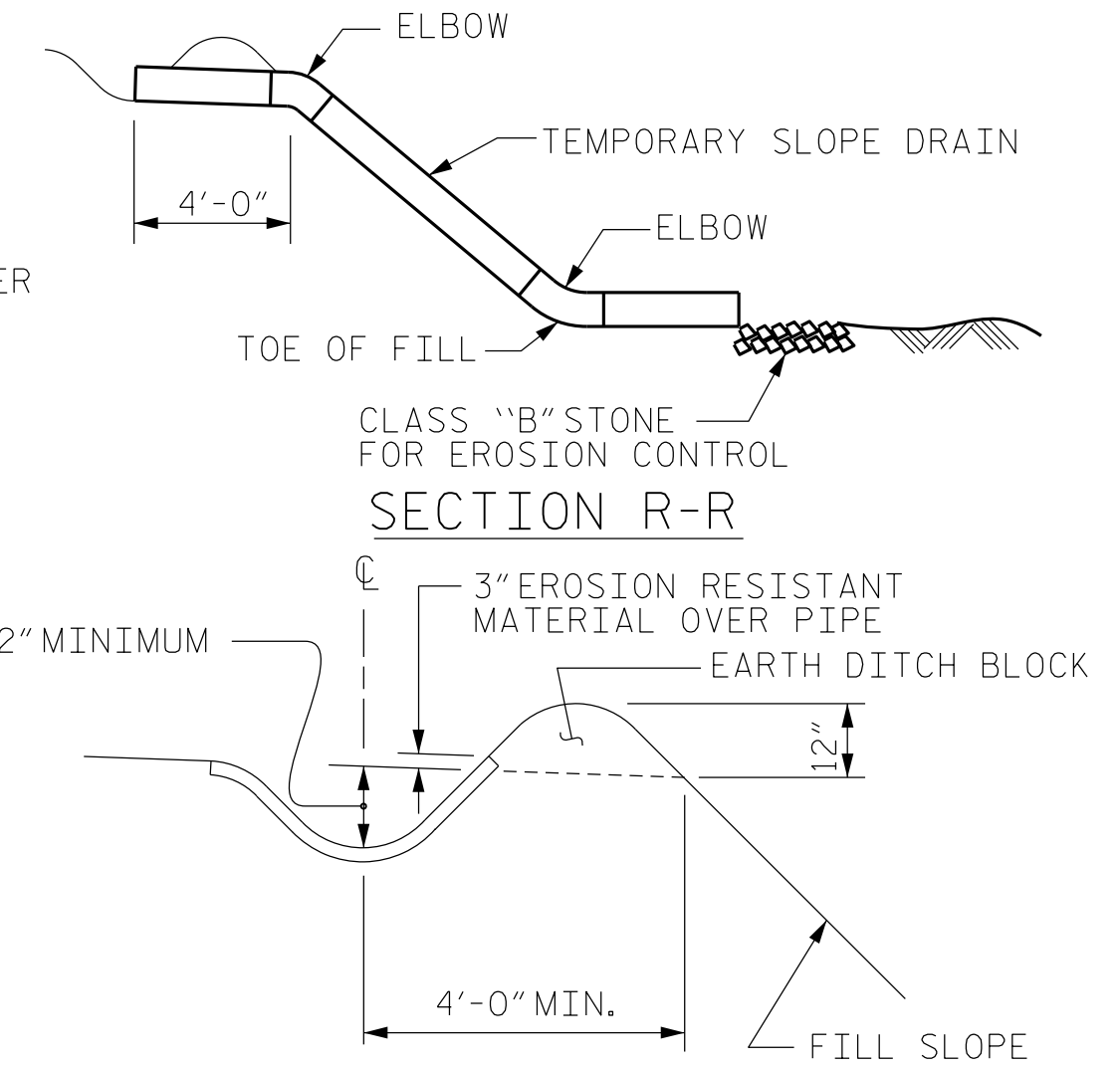
**JOINT SEAL DETAILS @ END BENT**

FOAM JOINT SEAL TO BE CUT, HEAT WELDED AND TURNED UP PARALLEL TO SLOPED FACE OF THE BARRIER RAIL.  
THE JOINT SHALL BE SAWED PRIOR TO THE CASTING OF THE BARRIER RAIL.



PLAN VIEW

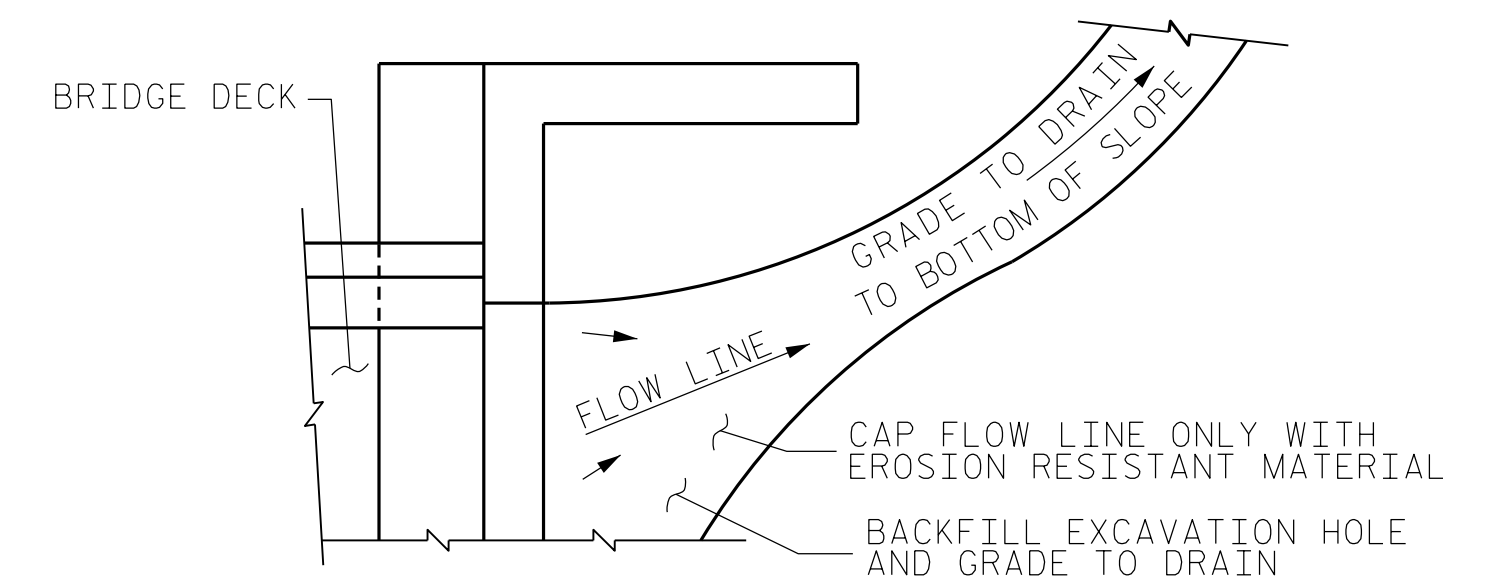
NOTE: IMMEDIATELY AFTER THE CONSTRUCTION OF THE APPROACH SLAB, THE CONTRACTOR SHALL PROVIDE TEMPORARY BERM AND SLOPE DRAIN. CONTRACTOR SHALL GRADE TO PIPE INLET AND PROVIDE EROSION RESISTANT MATERIAL AS SHOWN. THE EROSION RESISTANT MATERIAL SHALL BE EITHER 1) ASPHALT PLANT MIX, TYPE 1 OR TYPE 2, MIN.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



SECTION S-S

**TEMPORARY BERM AND SLOPE DRAIN DETAILS**

(TO BE USED WHEN SHOULDER BERM GUTTER IS REQUIRED)



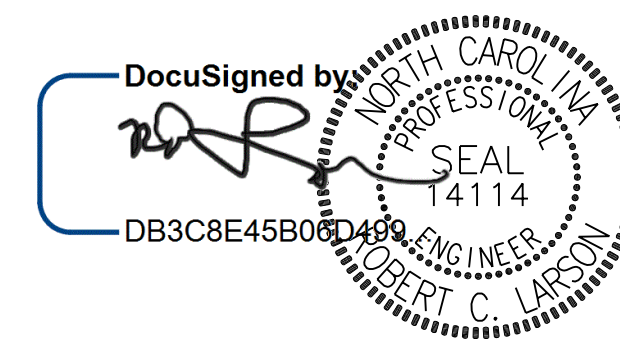
NOTE: IF THE APPROACH SLAB IS NOT CONSTRUCTED IMMEDIATELY AFTER THE BACKFILLING OF THE END BENT EXCAVATION, GRADE TO DRAIN TO THE BOTTOM OF THE SLOPE AND PROVIDE EROSION RESISTANT MATERIAL, SUCH AS FIBERGLASS ROVING OR AS DIRECTED BY THE ENGINEER TO PREVENT SOIL EROSION AND TO PROTECT THE AREA ADJACENT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

TEMPORARY DRAINAGE DETAIL

PROJECT NO. B-5655  
EDGEcombe COUNTY  
STATION: 16+75.00 -L-

SHEET 2 OF 2

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH  
STANDARD  
BRIDGE APPROACH  
SLAB DETAILS



2/28/2020

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-29
1			3			TOTAL SHEETS
2			4			29

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

ENGINEERS • PLANNERS • SCIENTISTS • CONSTRUCTION MANAGERS LICENSE NUMBER: C-074  
**KCI Associates**  
of North Carolina, P.A.  
4505 Falls of Neuse Road, Suite 400 Raleigh, NC 27609-6270 Phone (919) 783-9201

STD. NO. BAS4 (SHT 1a)

KCI JOB NO: 251801945.20

DESIGN ENGINEER OF RECORD	DATE: 2/28/2020
ASSEMBLED BY: C. E. LARSON	DATE: 10/11/19
CHECKED BY: R. C. LARSON	DATE: 10/13/19
DRAWN BY: FCJ 11/88	REV. 6/13 MAA/GM
CHECKED BY: ARB 11/88	REV. 12/17 MAA/THC
	REV. 5/18 MAA/THC

## STANDARD NOTES

### DESIGN DATA:

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

### MATERIAL AND WORKMANSHIP:

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

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

### CONCRETE:

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

### CONCRETE CHAMFERS:

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

### DOWELS:

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

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

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

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

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

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

### REINFORCING STEEL:

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

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

### STRUCTURAL STEEL:

AT THE CONTRACTOR'S OPTION, HE MAY SUBSTITUTE  $\frac{1}{8}$ "  $\emptyset$  SHEAR STUDS FOR THE  $\frac{3}{4}$ "  $\emptyset$  STUDS SPECIFIED ON THE PLANS. THIS SUBSTITUTION SHALL BE MADE AT THE RATE OF 3 -  $\frac{1}{8}$ "  $\emptyset$  STUDS FOR 4 -  $\frac{3}{4}$ "  $\emptyset$  STUDS, AND STUD SPACING CHANGES SHALL BE MADE AS NECESSARY TO PROVIDE THE SAME EQUIVALENT NUMBER OF  $\frac{1}{8}$ "  $\emptyset$  STUDS ALONG THE BEAM AS SHOWN FOR  $\frac{3}{4}$ "  $\emptyset$  STUDS BASED ON THE RATIO OF 3 -  $\frac{1}{8}$ "  $\emptyset$  STUDS FOR 4 -  $\frac{3}{4}$ "  $\emptyset$  STUDS. STUDS OF THE LENGTH SPECIFIED ON THE PLANS MUST BE PROVIDED. THE MAXIMUM SPACING SHALL BE 2'-0".

EXCEPT AT THE INTERIOR SUPPORTS OF CONTINUOUS BEAMS WHERE THE COVER PLATE IS IN CONTACT WITH BEARING PLATE, THE CONTRACTOR MAY, AT HIS OPTION, SUBSTITUTE FOR THE COVER PLATES DESIGNATED ON THE PLANS COVER PLATES OF THE EQUIVALENT AREA PROVIDED THESE PLATES ARE AT LEAST  $\frac{3}{16}$ " 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  $\frac{1}{16}$ " INCH OR EQUIVALENT FLAT SURFACE AT A SUITABLE ANGLE PRIOR TO PAINTING, GALVANIZING, OR METALLIZING.

### HANDRAILS AND POSTS:

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

METAL HANDRAILS SHALL BE IN ACCORDANCE WITH THE PLANS. RAILS SHALL BE AS MANUFACTURED FOR BRIDGE RAILING. CASTINGS SHALL BE OF A UNIFORM APPEARANCE. 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