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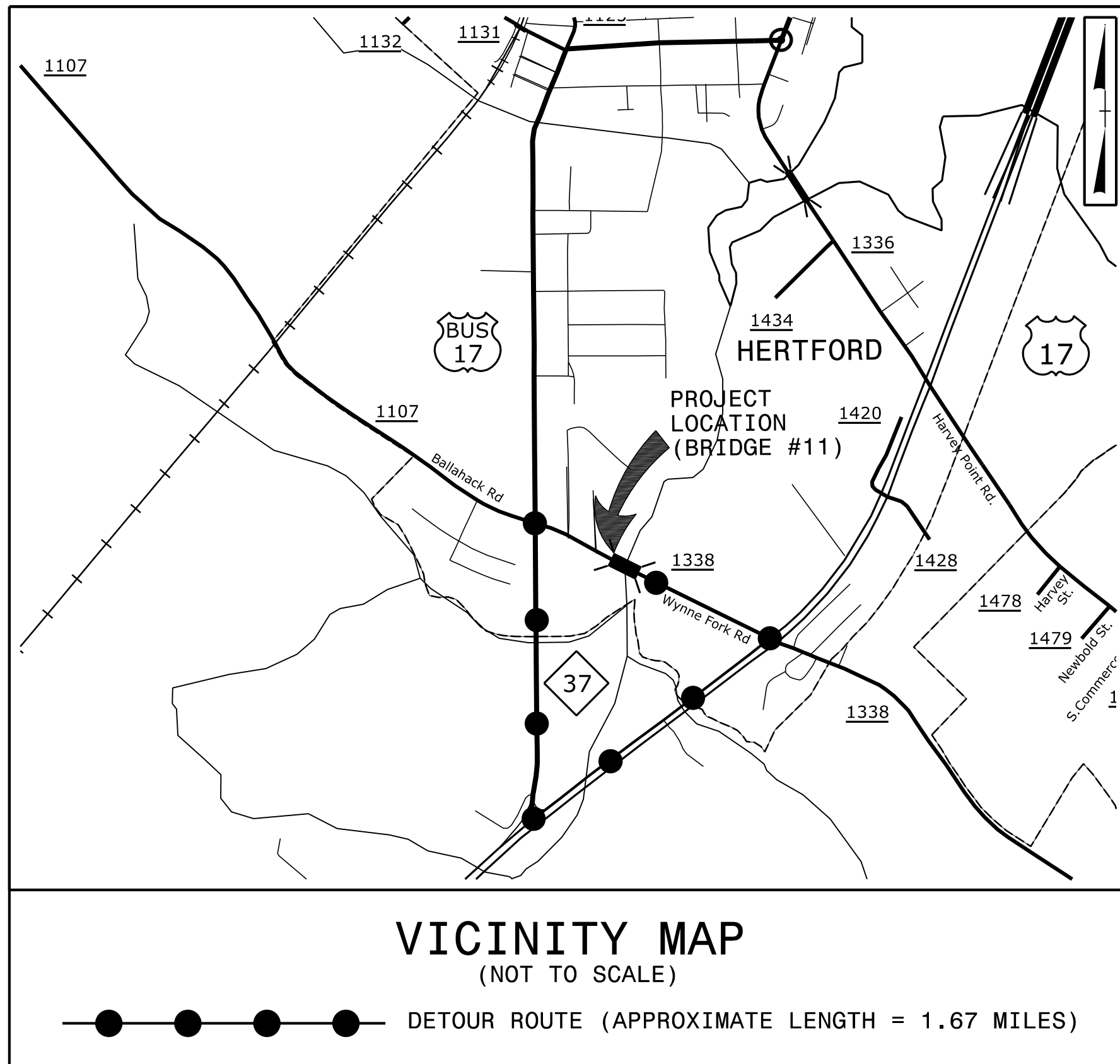
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09/08/2018

TIP PROJECT: B-5606

CONTRACT: DA00425

See Sheet 1A For Index of Sheets



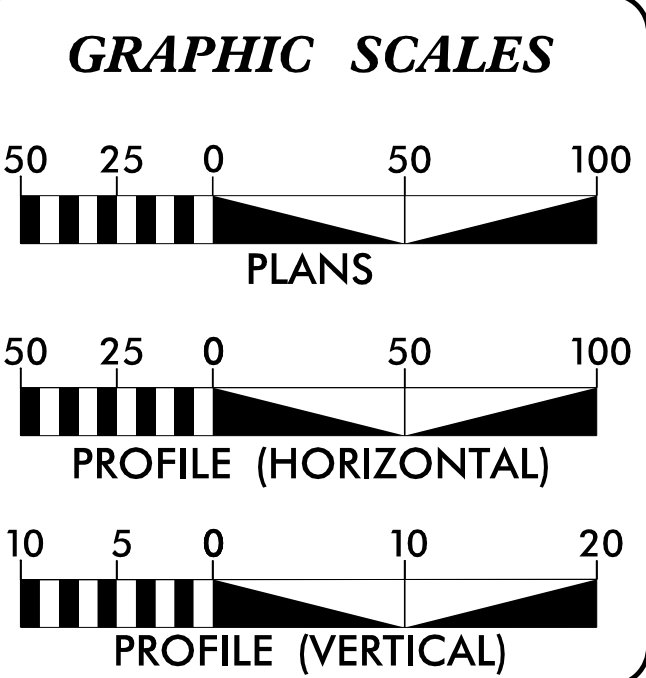
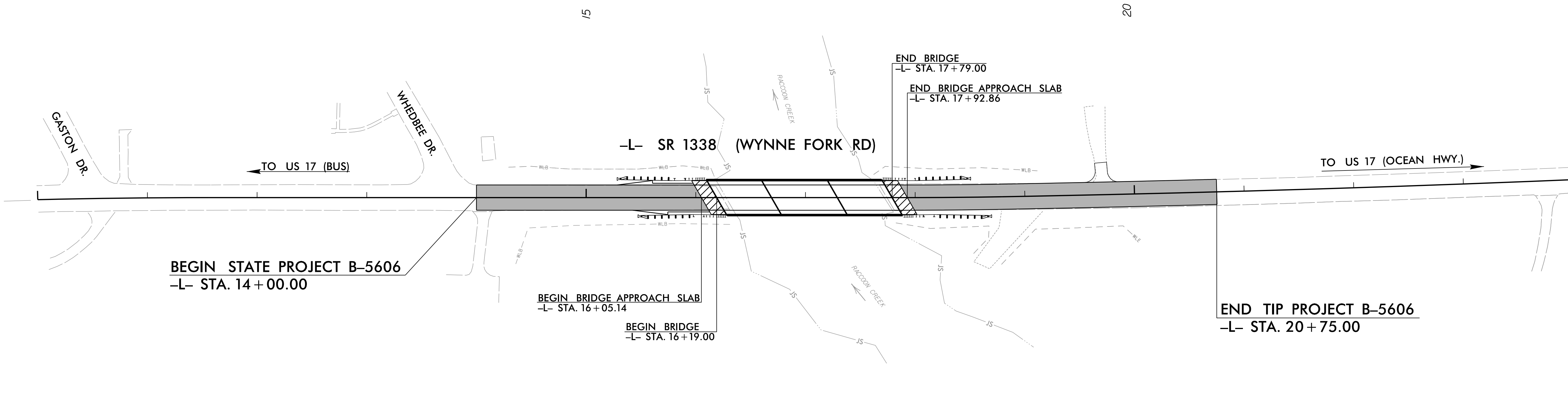
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PERQUIMANS COUNTY

**LOCATION: REPLACEMENT OF BRIDGE II OVER
RACCOON CREEK
SR 1338 (WYNNE FORK RD)**

TYPE OF WORK: GRADING, DRAINAGE, PAVING AND STRUCTURE

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-5606	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
	45561.1.1	PE	
	45561.3.1	CONST.	



DESIGN DATA

ADT 2011 = 1400

FUNC CLASS = LOCAL

SUB-REGIONAL TIER

PROJECT LENGTH

LENGTH ROADWAY STATE PROJECT B-5606 = 0.098 MILES

LENGTH STRUCTURES STATE PROJECT B-5606 = 0.030 MILES

TOTAL LENGTH STATE PROJECT B-5606 = 0.128 MILES

Prepared for:
HIGHWAY DIVISION 1
113 Airport Drive, Suite 100
Edenton, NC 27932

2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
JANUARY, 2018

LETTING DATE:

Prepared by:
CALYX
ENGINEERS + CONSULTANTS

6750 TRYON ROAD
CARY, NC 27518
phone: 919.851.1912
CALYXengineers.com
NC License # F-1333

L. KEVIN AUSTIN, PE
PROJECT MANAGER

STEPHEN C. BROWDE, PE
ROADWAY PROJECT DESIGN ENGINEER

NCDOT CONTACT

HYDRAULICS ENGINEER

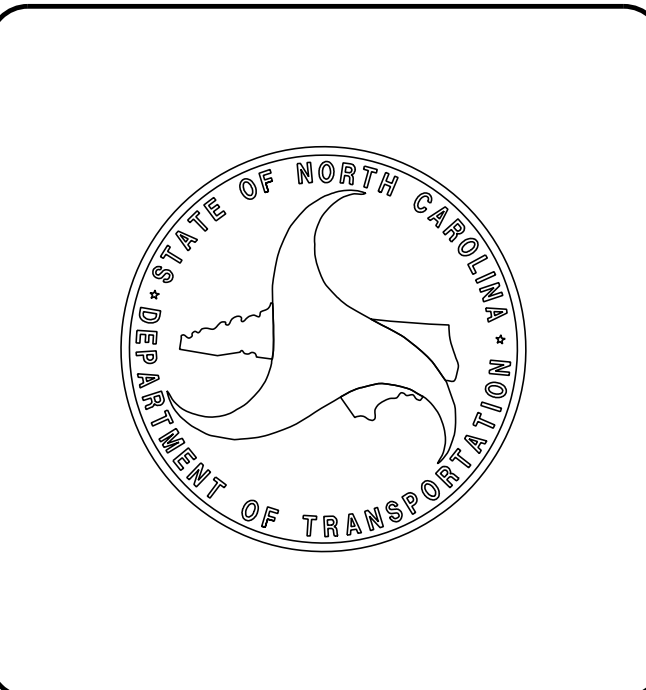
David P. Birk
5/15/2018

SIGNATURE: _____ P.E.

ROADWAY DESIGN ENGINEER

Stephen C. Browde
5/16/2018

SIGNATURE: _____ P.E.



STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

INDEX OF SHEETS, GENERAL NOTES, AND LIST OF STANDARDS

PROJECT REFERENCE NO. B-5606	SHEET NO. 1A
ROADWAY DESIGN ENGINEER	

INDEX OF SHEETS

SHEET #	DESCRIPTION
1	TITLE SHEET
1A	INDEX OF SHEETS, GENERAL NOTES, & LIST OF STANDARD DRAWINGS
1B	CONVENTIONAL PLAN SHEET SYMBOLS
1C-1 THRU 1C-2	SURVEY CONTROL SHEET
2A-1	PAVEMENT SCHEDULE AND TYPICAL SECTIONS
2C-1	DETAILS FOR STRUCTURE ANCHOR UNITS
3B-1	SUMMARIES OF GUARDRAIL, EARTHWORK, ASPHALT PAVEMENT REMOVAL & SHOULDER BERM GUTTER
3D-1	SUMMARY OF DRAINAGE
4-5	PLAN & PROFILE SHEETS
TMP-1	TRANSPORTATION MANAGEMENT PLAN
EC-1 THRU EC-5	EROSION CONTROL PLANS
X-1 THRU X-7	CROSS-SECTIONS
S-1 THRU S-24	STRUCTURE PLANS

STANDARD SPECIFICATIONS

GENERAL NOTES:

2018 SPECIFICATIONS
EFFECTIVE: 01-16-2018
REVISED:

**GRADE LINE:
GRADING AND SURFACING:**

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

CLEARING:

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

SUPERELEVATION:

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

SHOULDER CONSTRUCTION:

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

SIDE ROADS:

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

GUARDRAIL:

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

SUBSURFACE PLANS:

NO SUBSURFACE PLANS ARE AVAILABLE ON THIS PROJECT. THE CONTRACTOR SHOULD MAKE HIS OWN INVESTIGATION AS TO THE SUBSURFACE CONDITIONS.

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.

RIGHT-OF-WAY MARKERS:

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

LIST OF STANDARD DRAWINGS

2018 ROADWAY ENGLISH STANDARD DRAWINGS

EFF. 01-16-2018
REV.

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	
200.02	Method of Clearing - Method II
225.02	Guide for Grading Subgrade - Secondary and Local
225.04	Method of Obtaining Superelevation - Two Lane Pavement
DIVISION 3 - PIPE CULVERTS	
300.01	Method of Pipe Installation
DIVISION 4 - MAJOR STRUCTURES	
422.02	Reinforced Bridge Approach Fills - Type II Modified Approach Fill
DIVISION 5 - SUBGRADE, BASES AND SHOULDERS	
560.01	Method of Shoulder Construction - High Side of Superelevated Curve - Method I
DIVISION 6 - ASPHALT BASES AND PAVEMENTS	
654.01	Pavement Repairs
DIVISION 8 - INCIDENTALS	
840.00	Concrete Base Pad for Drainage Structures
840.18	Concrete Grated Drop Inlet Type 'B' - 12" thru 36" Pipe
840.29	Frames and Narrow Slot Flat Grates
840.35	Traffic Bearing Grated Drop Inlet - for Cast Iron Double Frame and Grates
846.01	Concrete Curb, Gutter and Curb & Gutter
846.04	Drop Inlet Installation in Shoulder Berm Gutter
876.02	Guide for Rip Rap at Pipe Outlets

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

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

04/06/15

BOUNDARIES AND PROPERTY:

State Line	-----
County Line	-----
Township Line	-----
City Line	-----
Reservation Line	-----
Property Line	-----
Existing Iron Pin	○ EIP
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	-☒-☒-
Potential Contamination Area: Soil	-☒-☒-
Known Contamination Area: Water	-☒-☒-
Potential Contamination Area: Water	-☒-☒-
Contaminated Site: Known or Potential	☠☢

BUILDINGS AND OTHER CULTURE:

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

HYDROLOGY:

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

RAILROADS:

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

RIGHT OF WAY:

Baseline Control Point	◆
Existing Right of Way Marker	△
Existing Right of Way Line	-----
Proposed Right of Way Line	○ RW
Proposed Right of Way Line with Iron Pin and Cap Marker	○ RW ▲
Proposed Right of Way Line with Concrete or Granite RW Marker	▲ RW
Proposed Control of Access Line with Concrete C/A Marker	○ C/A
Existing Control of Access	○ C/A
Proposed Control of Access	○ C/A
Existing Easement Line	-E-
Proposed Temporary Construction Easement	-E-
Proposed Temporary Drainage Easement	-TDE-
Proposed Permanent Drainage Easement	-PDE-
Proposed Permanent Drainage / Utility Easement	-DUE-
Proposed Permanent Utility Easement	-PUE-
Proposed Temporary Utility Easement	-TUE-
Proposed Aerial Utility Easement	-AUE-
Proposed Permanent Easement with Iron Pin and Cap Marker	◆

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	-T-T-T-
Proposed Guardrail	-T-T-T-
Existing Cable Guiderail	-□-□-□-
Proposed Cable Guiderail	-□-□-□-
Equality Symbol	⊕
Pavement Removal	□

VEGETATION:

Single Tree	☼
Single Shrub	☼
Hedge	~~~~~
Woods Line	~~~~~

Orchard	☼☼☼☼
Vineyard	□ Vineyard

EXISTING STRUCTURES:

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

UTILITIES:

POWER:	
Existing Power Pole	●
Proposed Power Pole	○
Existing Joint Use Pole	●
Proposed Joint Use Pole	○
Power Manhole	○ P
Power Line Tower	□
Power Transformer	□
U/G Power Cable Hand Hole	○
H-Frame Pole	●-●
U/G Power Line LOS B (S.U.E.*)	-----P-----
U/G Power Line LOS C (S.U.E.*)	-----P-----
U/G Power Line LOS D (S.U.E.*)	-----P-----

TELEPHONE:

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

WATER:

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

TV:

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

GAS:

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

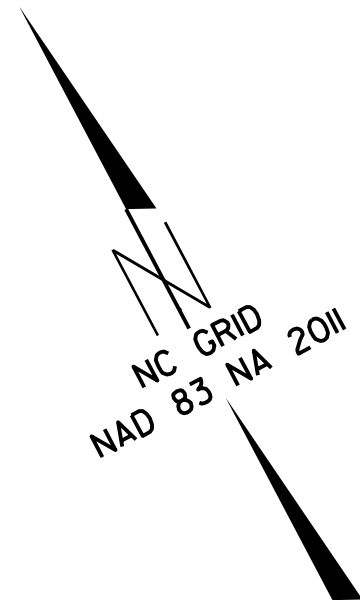
SANITARY SEWER:

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

MISCELLANEOUS:

Utility Pole	●
Utility Pole with Base	□
Utility Located Object	○
Utility Traffic Signal Box	□
Utility Unknown U/G Line LOS B (S.U.E.*)	-----TUUL-----
U/G Tank; Water, Gas, Oil	□
Underground Storage Tank, Approx. Loc.	□ UST
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.

SURVEY CONTROL SHEET B-5606



CONTROL DATA

BL	POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
B56061	GPS MON	B56061	891769.9770	2745443.4960	9.06	10+58.80	29.11 LT
3	BL3		891495.7460	2745920.3170	4.23	16+08.21	13.10 LT
B56062	GPS MON	B56062	891099.0400	2746613.8300	10.04	OUTSIDE PROJECT LIMITS	

BENCH DATA

 BM1 ELEVATION = 2.04
 N 891268 E 2746110
 BL STATION 13+28.00 103 RIGHT
 RR SPIKE IN 12" CYPRESS

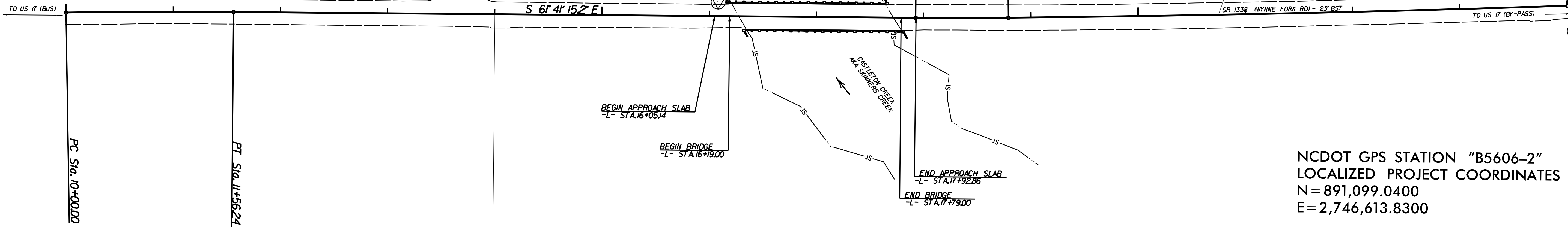
NCDOT GPS STATION "B5506-1"
 LOCALIZED PROJECT COORDINATES
 N = 891769.9970
 E = 2745443.4960

NCDOT BASELINE STATION "BL-3"
 LOCALIZED PROJECT COORDINATES
 N = 891495.7460
 E = 2745920.3170

END CONSTRUCTION
 -L- STA. 20+75.00
 LOCALIZED PROJECT COORDINATES
 N = 891267.4471
 E = 2746327.4816

NCDOT GPS STATION "B5606-2"
 LOCALIZED PROJECT COORDINATES
 N = 891,099.0400
 E = 2,746,613.8300

BEGIN CONSTRUCTION
 -L- STA. 14+00.00
 LOCALIZED PROJECT COORDINATES
 N = 891582.9586
 E = 2743730.7993



DATUM DESCRIPTION
 THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCS FOR MONUMENT "B56062"
 WITH NAD 83/NA 2011 STATE PLANE GRID COORDINATES OF
 NORTHING: 891,099.040(ft) EASTING: 2,746,613.830(ft)
 ELEVATION: 10.04(ft)
 THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.9999931624
 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "B56062" TO -L- STATION 14+00 IS
 N 61° 16' 34.94" W 1006.94'
 ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
 VERTICAL DATUM USED IS NAVD 88

NOTE: DRAWING NOT TO SCALE

NOTES:

THE CONTROL DATA FOR THIS PROJECT CAN BE FOUND ELECTRONICALLY BY SELECTING PROJECT CONTROL DATA AT:
[HTTP://WWW.NCDOT.GOV/DOH/PRECONSTRUCT/HIGHWAY/LOCATION/PROJECT/](http://www.ncdot.gov/doh/preconstruct/highway/location/project/)

THE FILES TO BE FOUND ARE AS FOLLOWS:
 TIP B5606_LS_CONTROL.TXT

SITE CALIBRATION INFORMATION HAS NOT BEEN PROVIDED FOR THIS PROJECT. IF FURTHER INFORMATION IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.

⊙ INDICATES GEODETIC CONTROL MONUMENTS USED OR SET FOR HORIZONTAL PROJECT CONTROL BY THE NCDOT LOCATION AND SURVEYS UNIT.
 PROJECT CONTROL ESTABLISHED USING GLOBAL POSITIONING SYSTEM.

SURVEY CONTROL SHEET B-5606

ROW MARKER IRON PIN AND CAP-E

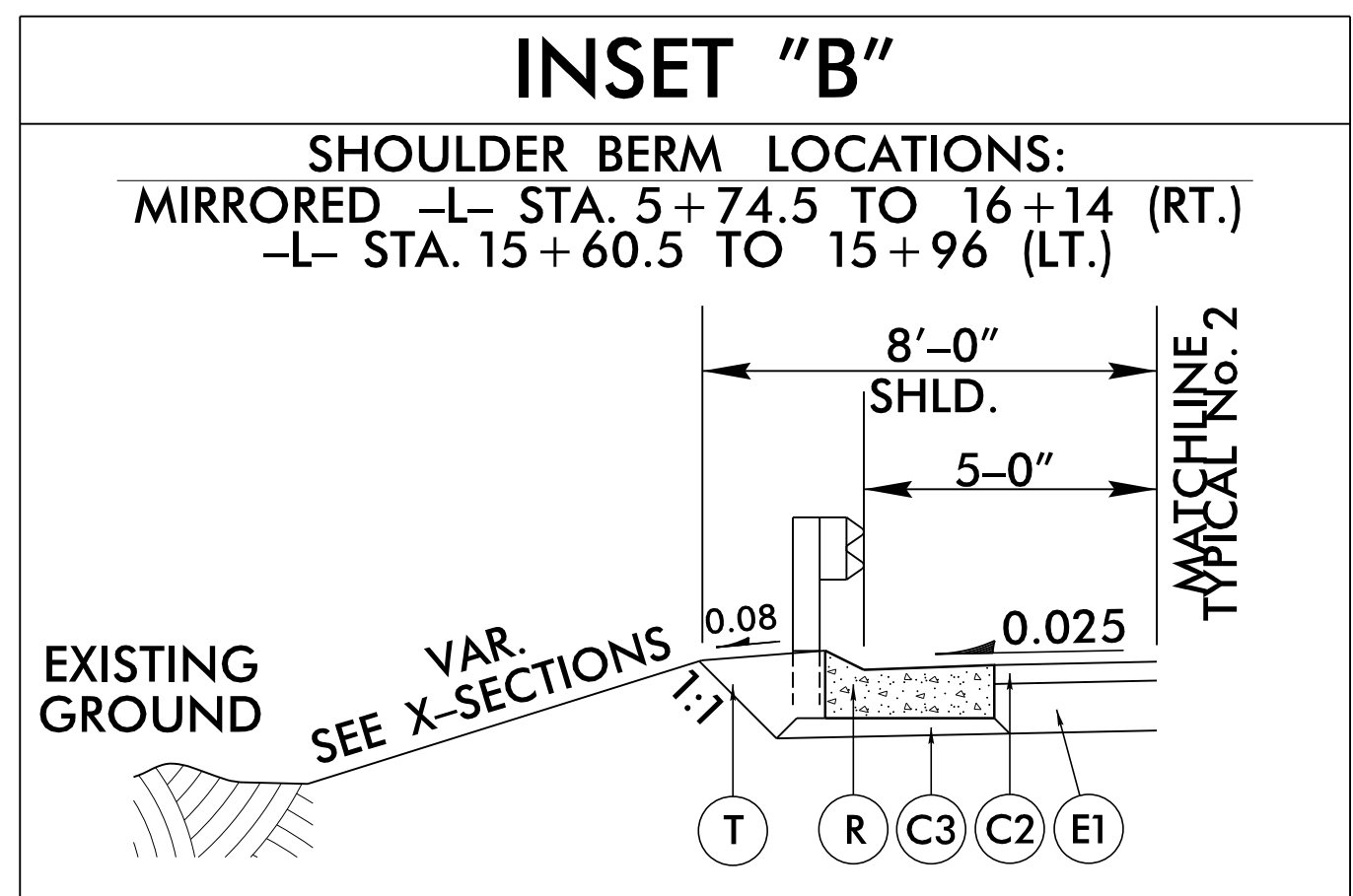
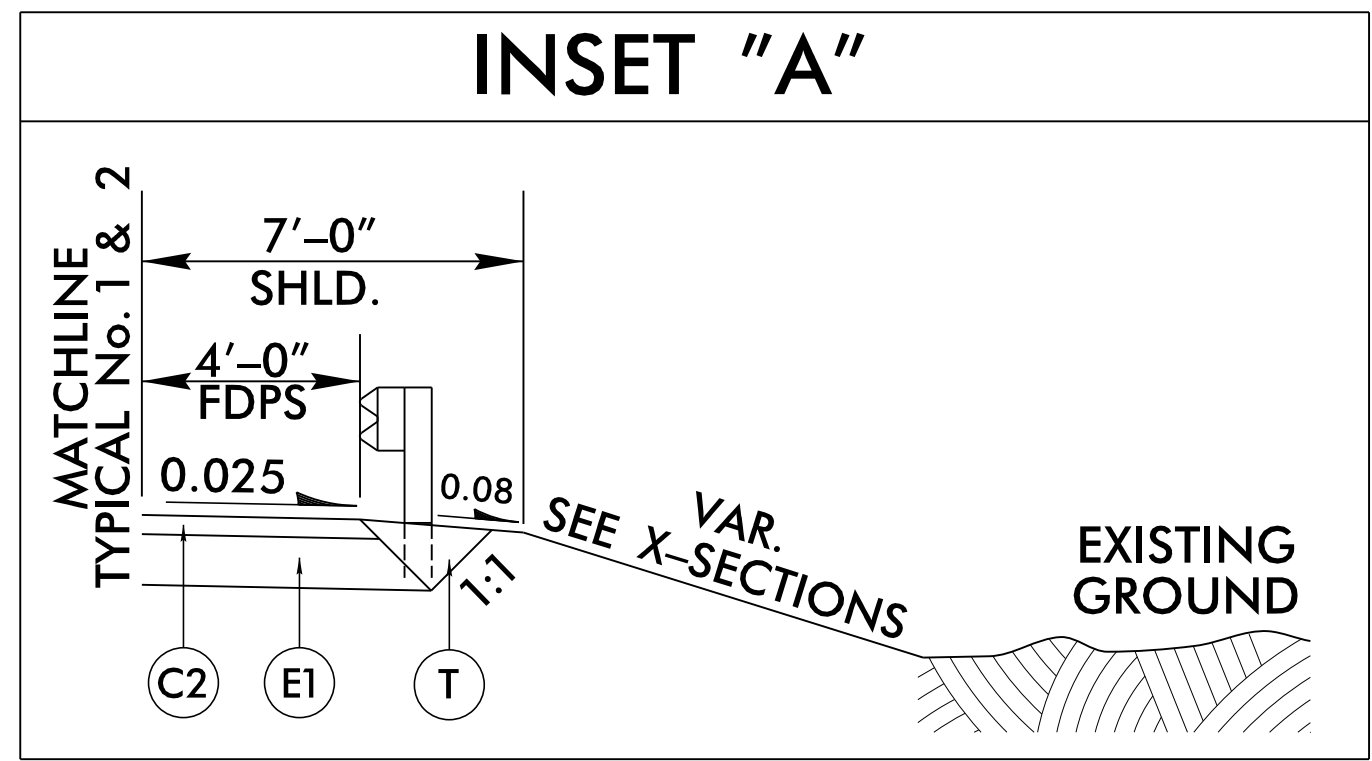
ALIGN	STATION	OFFSET	NORTH	EAST
L	14+75.00	-40.00	891582.6026	2745815.7986
L	14+75.00	-30.00	891573.7988	2745811.0558
L	14+75.00	30.00	891520.9764	2745782.5990
L	14+75.00	40.00	891512.1726	2745777.8562
L	17+92.54	-40.00	891432.0013	2746095.3500
L	17+92.54	40.00	891361.5714	2746057.4076
L	18+79.02	-40.00	891392.0227	2746171.2129
L	18+79.02	40.00	891320.9107	2746134.5647
L	19+32.64	-40.00	891367.5623	2746218.8147
L	19+35.08	-30.00	891357.5497	2746216.4269
L	21+00.00	40.00	891220.4664	2746331.8343
L	21+00.00	30.00	891229.4002	2746336.3281

NOTE: DRAWING NOT TO SCALE

PAVEMENT SCHEDULE

C1	PROP. APPROX. 1 1/2" ASPHALT CONCRETE SURFACE COURSE TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
C2	PROP. APPROX. 2.5" ASPHALT CONCRETE SURFACE COURSE TYPE S9.5B, AT AN AVERAGE RATE OF 140 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 112 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 342 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
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 5.5" IN DEPTH.
R	PROP. SHOULDER BERM GUTTER
T	EARTH MATERIAL.
U	EXISTING PAVEMENT.
W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE WEDGING DETAILS)

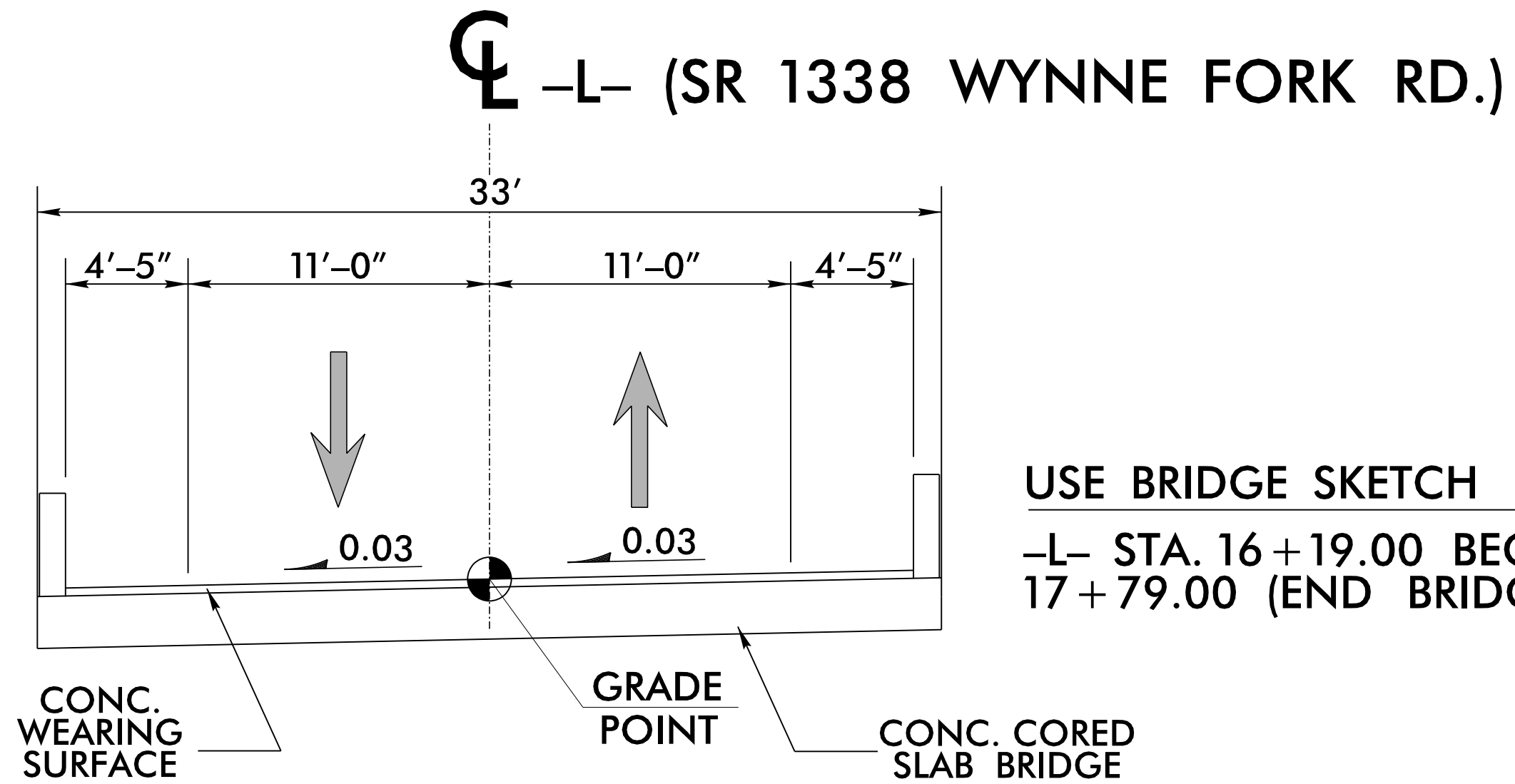
NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.



CALYX
 ENGINEERS + CONSULTANTS
 6750 TRYON ROAD
 CARY, NC 27518
 phone: 919.851.1912
 CALYXengineers.com
 NC License # F-1333

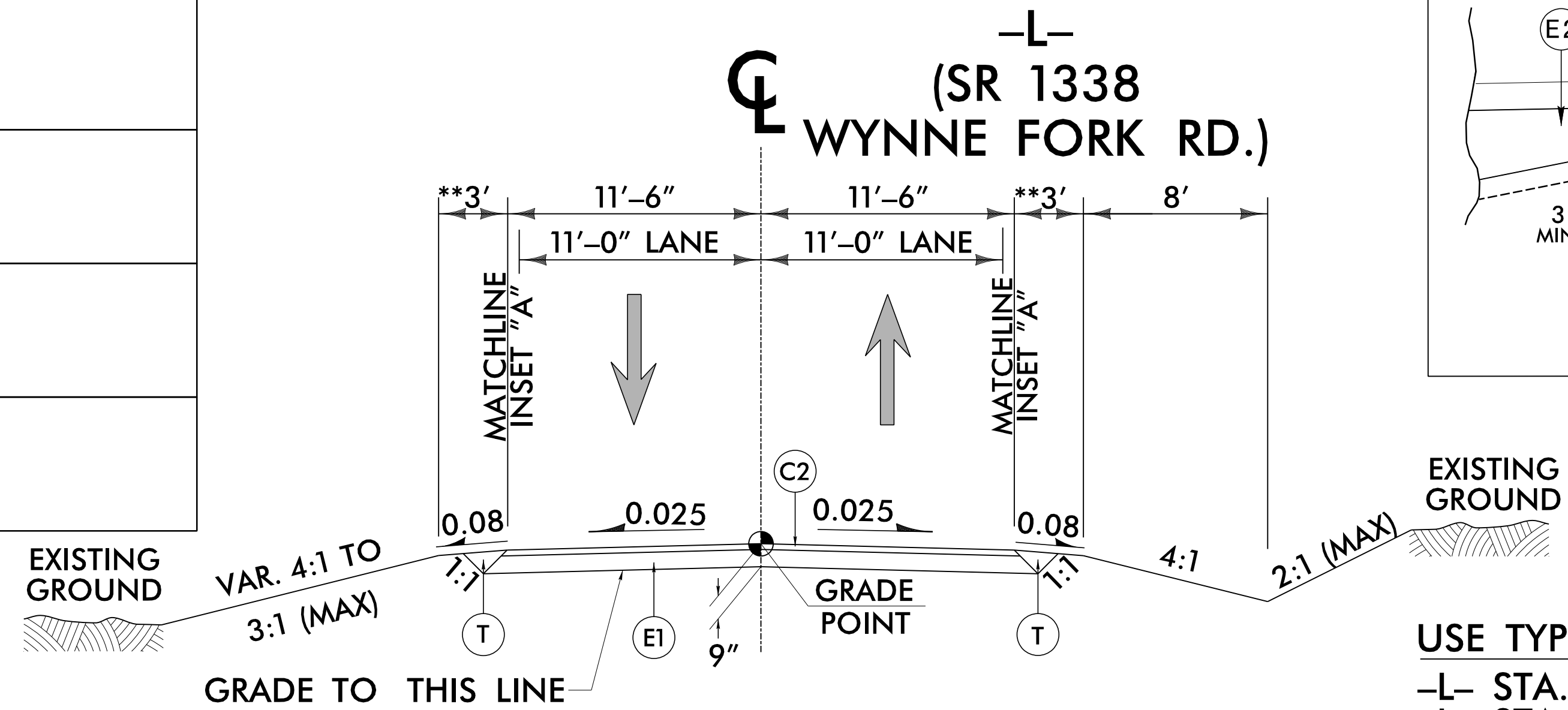
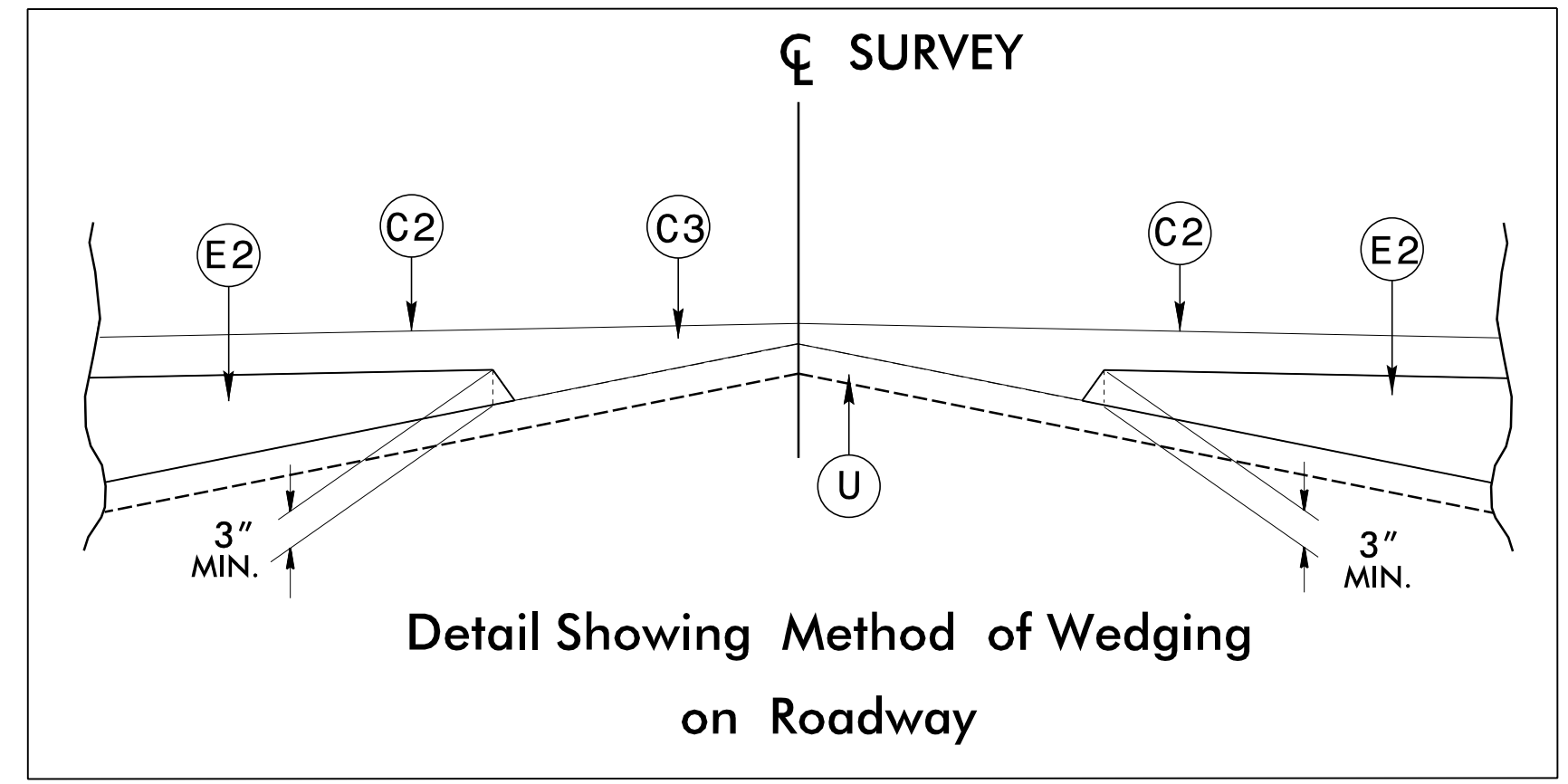
PROJECT REFERENCE NO. B-5606	SHEET NO. 2A-1
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

Professional Engineer Seal: Stephen A. Brown, License # 5759, expires 9/16/2018.



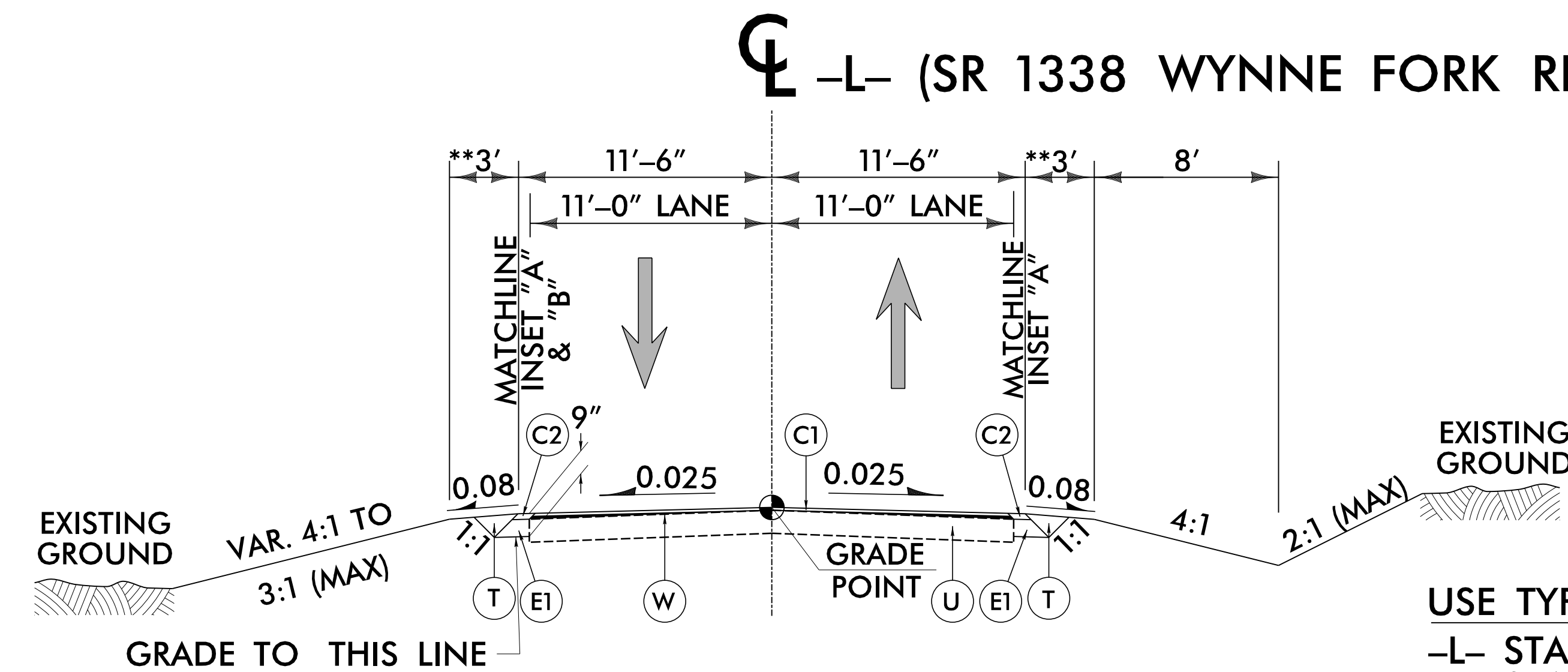
USE BRIDGE SKETCH NO. 1 AS FOLLOWS:
 -L- STA. 16+19.00 BEGIN BRIDGE) TO 17+79.00 (END BRIDGE)

BRIDGE SKETCH NO. 1
 BRIDGE #11



USE TYPICAL SECTION NO. 2 AS FOLLOWS:
 -L- STA. 14+00.00 TO 15+10.00
 -L- STA. 19+75.00 TO 20+75.00

TYPICAL SECTION NO. 2



USE TYPICAL SECTION NO. 3 AS FOLLOWS:
 -L- STA. 15+10.00 TO 16+19.00 (BEGIN BRIDGE)
 -L- STA. 17+79.00 (END BRIDGE) TO 19+75.00

TYPICAL SECTION NO. 3

I4-DEC-2017 10:36
 S:\Contracts\Special Details\Standard Drawings\Division 8\0862d0301.dgn
 Jhowerton AT: CSU-292595

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

ROADWAY DETAIL DRAWING FOR
STRUCTURE ANCHOR UNITS
GUARDRAIL ANCHOR UNIT, TYPE III
FOR ATTACHMENT TO RAIL ON BRIDGE

SHEET 1 OF 7
862D03

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

PLAN VIEW

ELEVATION

NOTE:

- **POST NOT REQUIRED FOR SKEW ANGLES GREATER THAN 150° OR LESS THAN 30° UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
- *THE DISTANCE FROM END OF BRIDGE RAIL TO CENTER LINE OF THE FIRST POST SHOULD BE 11 1/2" IF CONCRETE BACKWALL IS NOT PRESENT.
- SHOULDER BERM GUTTER MUST BE INSTALLED TO THE LIMITS 8" x 4" LIP CURB IS SHOWN IF ANCHOR UNIT IS NOT ADJACENT TO AN APPROACH SLAB.
- MEASURE GUARDRAIL HEIGHT FROM THE TOP OF ADJACENT SURFACE (SHOULDER, BERM, OR GUTTER).
- LAP JOINTS IN THE DIRECTION OF TRAFFIC FLOW.
- SEE SHEET 3 FOR POST SECTIONS 1 THRU 9.

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

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

SHEET 2 OF 7
862D03

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

PLAN VIEW

ELEVATION

NOTE:

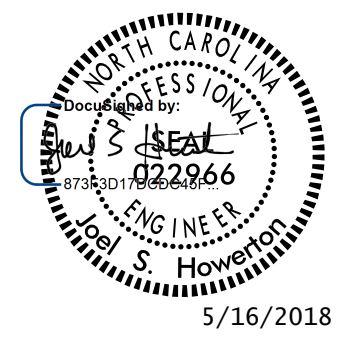
- **POST NOT REQUIRED FOR SKEW ANGLES GREATER THAN 150° OR LESS THAN 30° UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
- *THE DISTANCE FROM END OF BRIDGE RAIL TO CENTER LINE OF THE FIRST POST SHOULD BE 11 1/2" IF CONCRETE BACKWALL IS NOT PRESENT.
- SHOULDER BERM GUTTER MUST BE INSTALLED TO THE LIMITS 8" x 4" LIP CURB IS SHOWN IF ANCHOR UNIT IS NOT ADJACENT TO AN APPROACH SLAB.
- MEASURE GUARDRAIL HEIGHT FROM THE TOP OF ADJACENT SURFACE (SHOULDER, BERM, OR GUTTER).
- LAP JOINTS IN THE DIRECTION OF TRAFFIC FLOW.
- SEE SHEET 3 FOR POST SECTIONS 1 THRU 9.

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

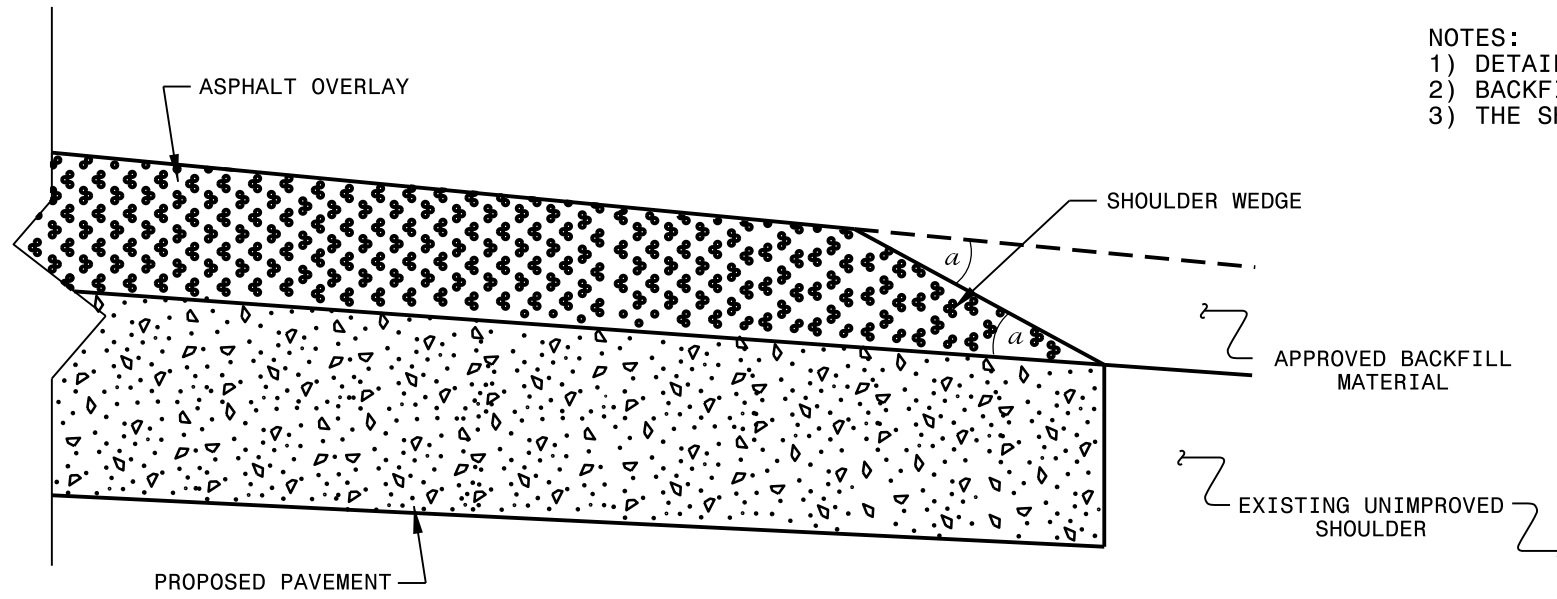
**CONTRACT STANDARDS
AND DEVELOPMENT UNIT**
Office 919-707-6950 FAX 919-250-4119

SEE TITLE BLOCK

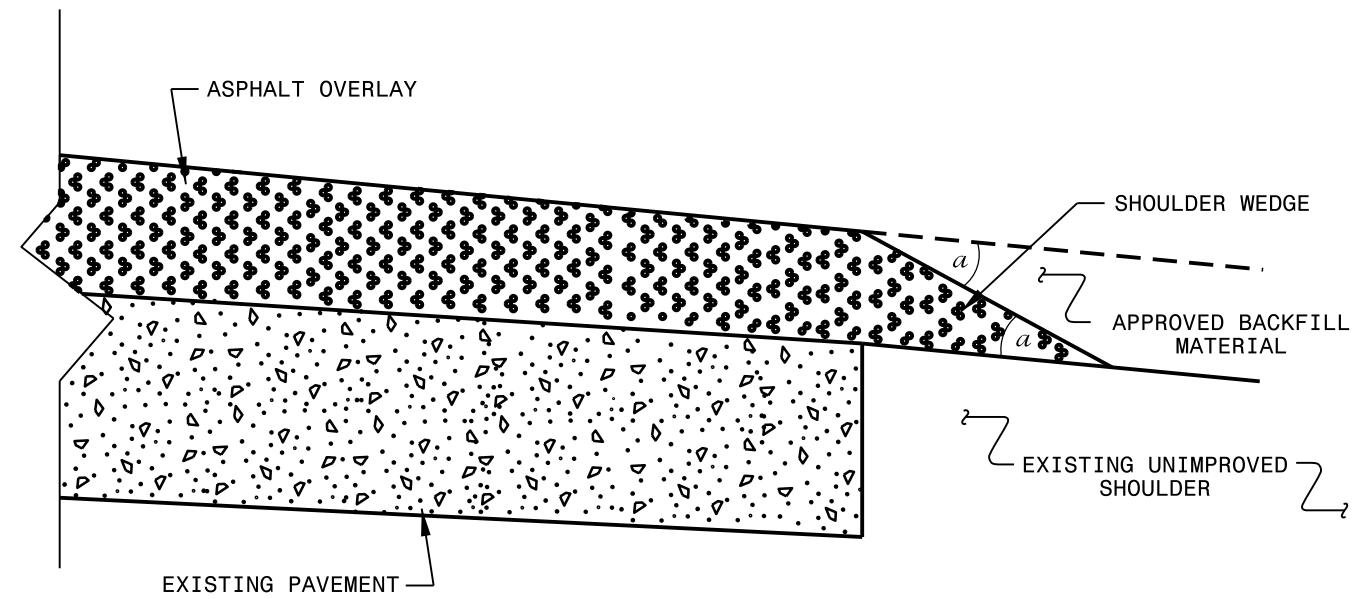
ORIGINAL BY: J HOWERTON	DATE: 06-22-12
MODIFIED BY:	DATE:
CHECKED BY:	DATE:
FILE SPEC.:	



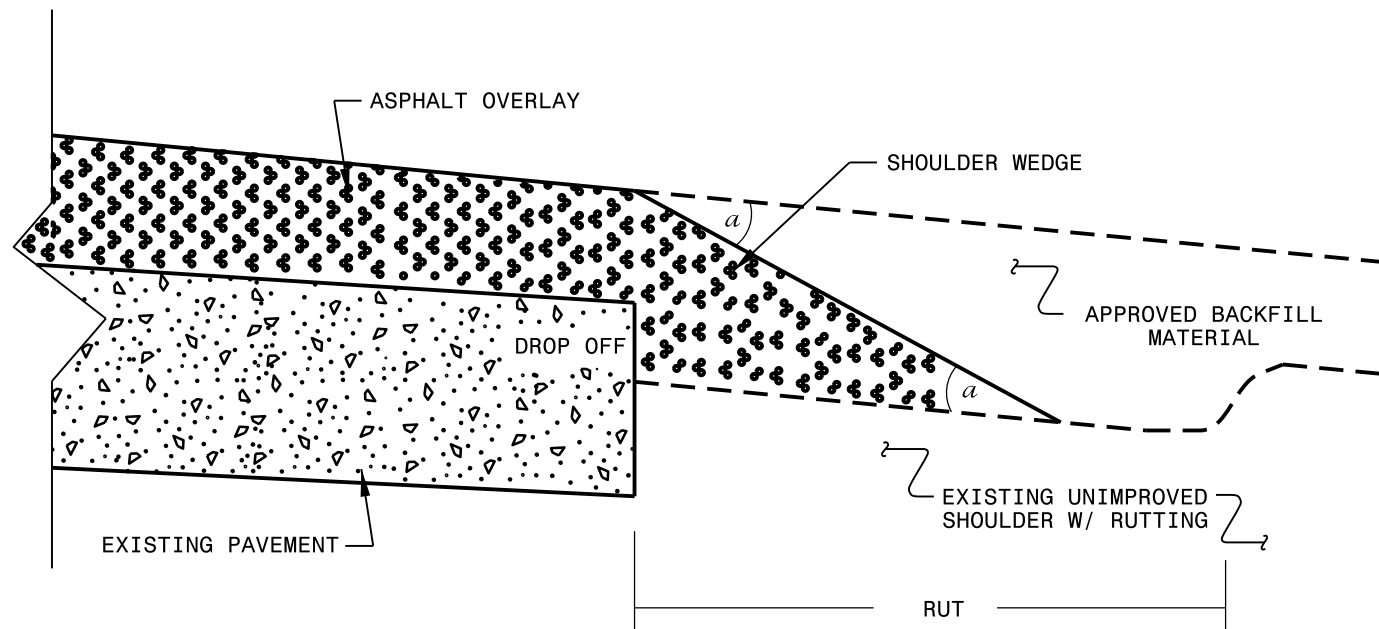
- NOTES:
 1) DETAIL DOES NOT APPLY TO OGAFB AND ULTRA-THIN BONDED WEARING COURSE.
 2) BACKFILL SHOULDER WITH APPROVED MATERIAL.
 3) THE SHOULDER WEDGE DEVICE MAY BE DISENGAGED AT PAVED DRIVEWAYS AND SIDE STREETS.



SHOULDER WEDGE DETAIL
 (Resurfacing Projects w/ Widening or
 with Existing Paved Shoulder having no dropoffs)



SHOULDER WEDGE DETAIL
 (Resurfacing Projects w/ NO Widening)

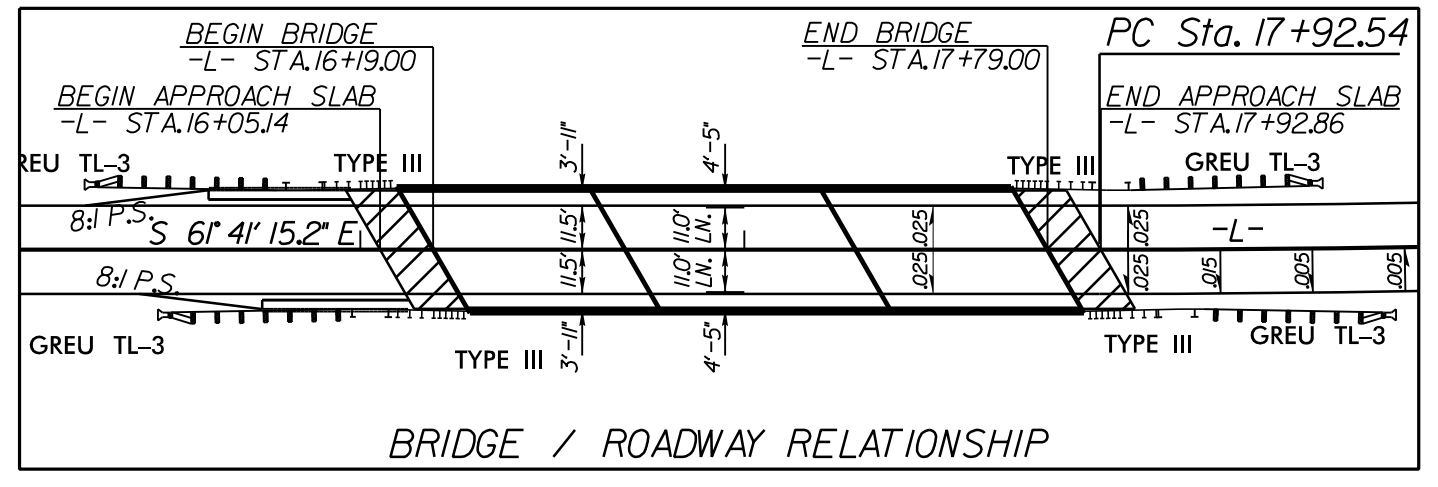


SHOULDER WEDGE DETAIL
 (Resurfacing Adjacent to
 Rutted Shoulder)

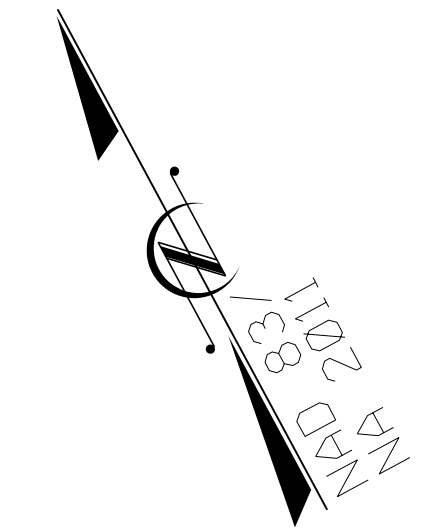
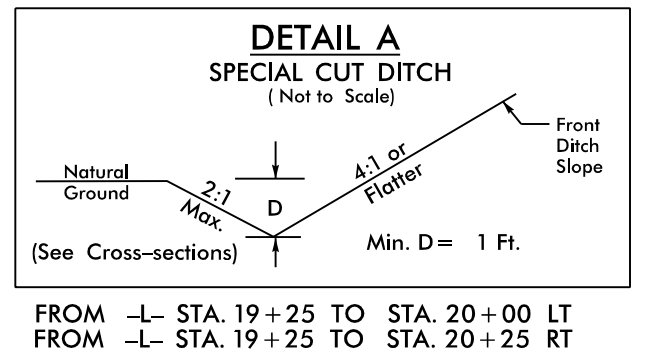
- SHOULDER WEDGE ANGLE = 30°

CONTRACT STANDARDS AND DEVELOPMENT UNIT	
Office 919-707-6950 FAX 919-250-4119	
SHOULDER WEDGE DETAILS	
ORIGINAL BY: T.SPELL	DATE: 7-19-11
MODIFIED BY:	DATE: 10/16/12
CHECKED BY:	DATE:
FILE SPEC.: s:\usr\details\stand\shoulderwedgedetail.dgn	

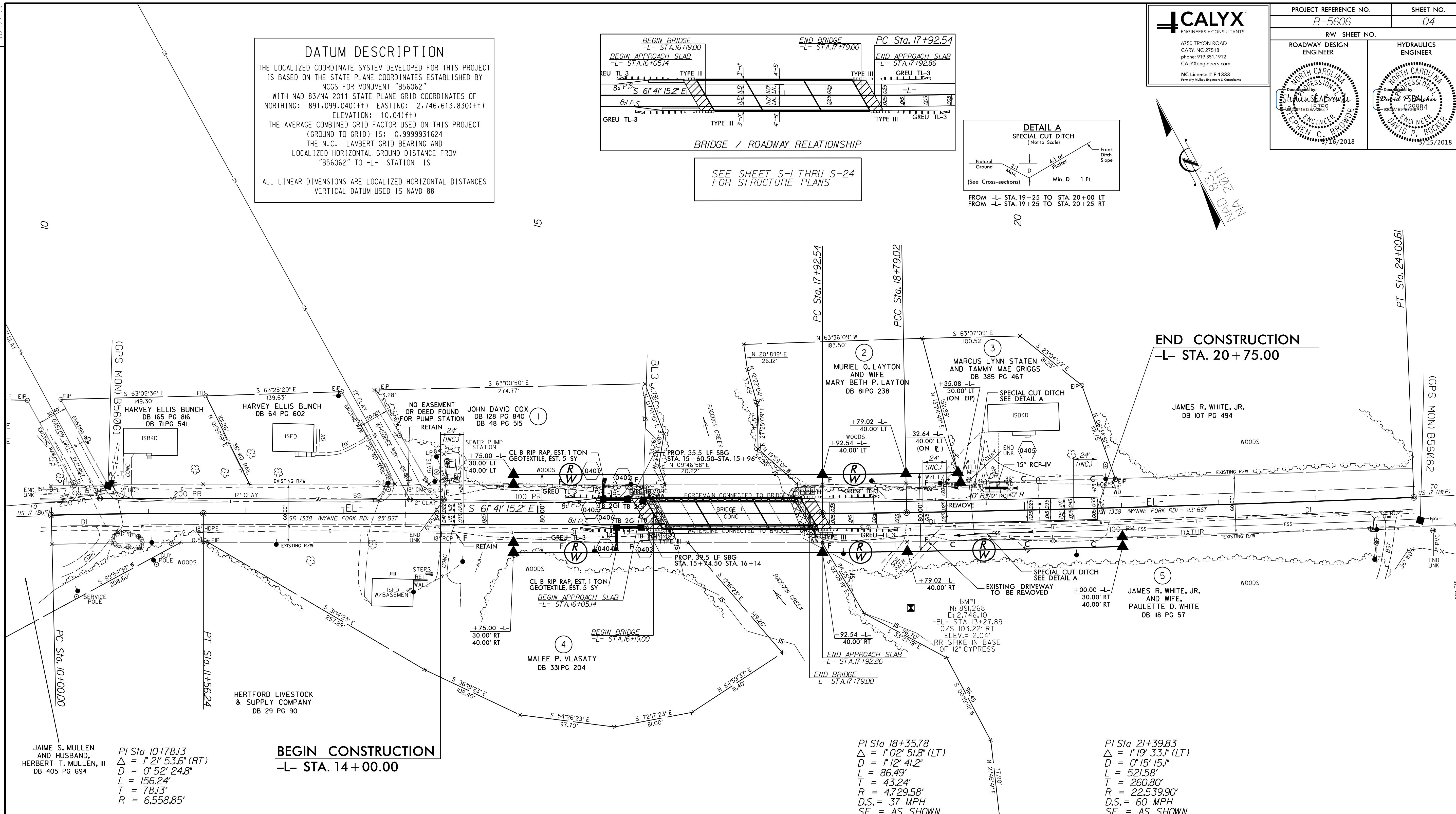
DATUM DESCRIPTION
THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCGS FOR MONUMENT "B56062" WITH NAD 83/NA 2011 STATE PLANE GRID COORDINATES OF NORTHING: 891,099.040(ft) EASTING: 2,746,613.830(ft) ELEVATION: 10.04(ft)
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.9999931624
THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "B56062" TO -L- STATION IS
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NAVD 88



SEE SHEET S-1 THRU S-24 FOR STRUCTURE PLANS



REVISIONS



JAIME S. MULLEN AND HUSBAND, HERBERT T. MULLEN, III
DB 405 PG 694
PI Sta 10+78J3
Δ = 1' 21" 53.6" (RT)
D = 0' 52" 24.8"
L = 156.24'
T = 78J3'
R = 6,558.85'

BEGIN CONSTRUCTION
-L- STA. 14+00.00

PI Sta 18+35.78
Δ = 1' 02" 51.8" (LT)
D = 1' 12" 41.2"
L = 86.49'
T = 43.24'
R = 4,729.58'
D.S. = 37 MPH
SE = AS SHOWN

PI Sta 21+39.83
Δ = 1' 19" 33.1" (LT)
D = 0' 15" 15.1"
L = 521.58'
T = 260.80'
R = 22,539.90'
D.S. = 60 MPH
SE = AS SHOWN

PARCEL NO.	PROPERTY OWNERS NAME	TOTAL AREA	AREA TAKEN	AREA REMAINING RIGHT	AREA REMAINING LEFT	CONSTRUCTION EASEMENT	PERMANENT DRAINAGE EASEMENT	TEMPORARY DRAINAGE EASEMENT
1	JOHN DAVID COX		1540 SF					
2	MURIEL Q. LAYTON AND WIFE MARY BETH P. LAYTON		1718 SF					
3	MARCUS LYNN STATEN AND TAMMY MAE GRIGGS		NO CLAIM					
4	MALEE P. VLASATY		1835 SF					
5	JAMES R. WHITE, JR. AND WIFE, PAULETTE D. WHITE		3057 SF					

NOTE: FOR -L- PROFILE SEE SHEET 5

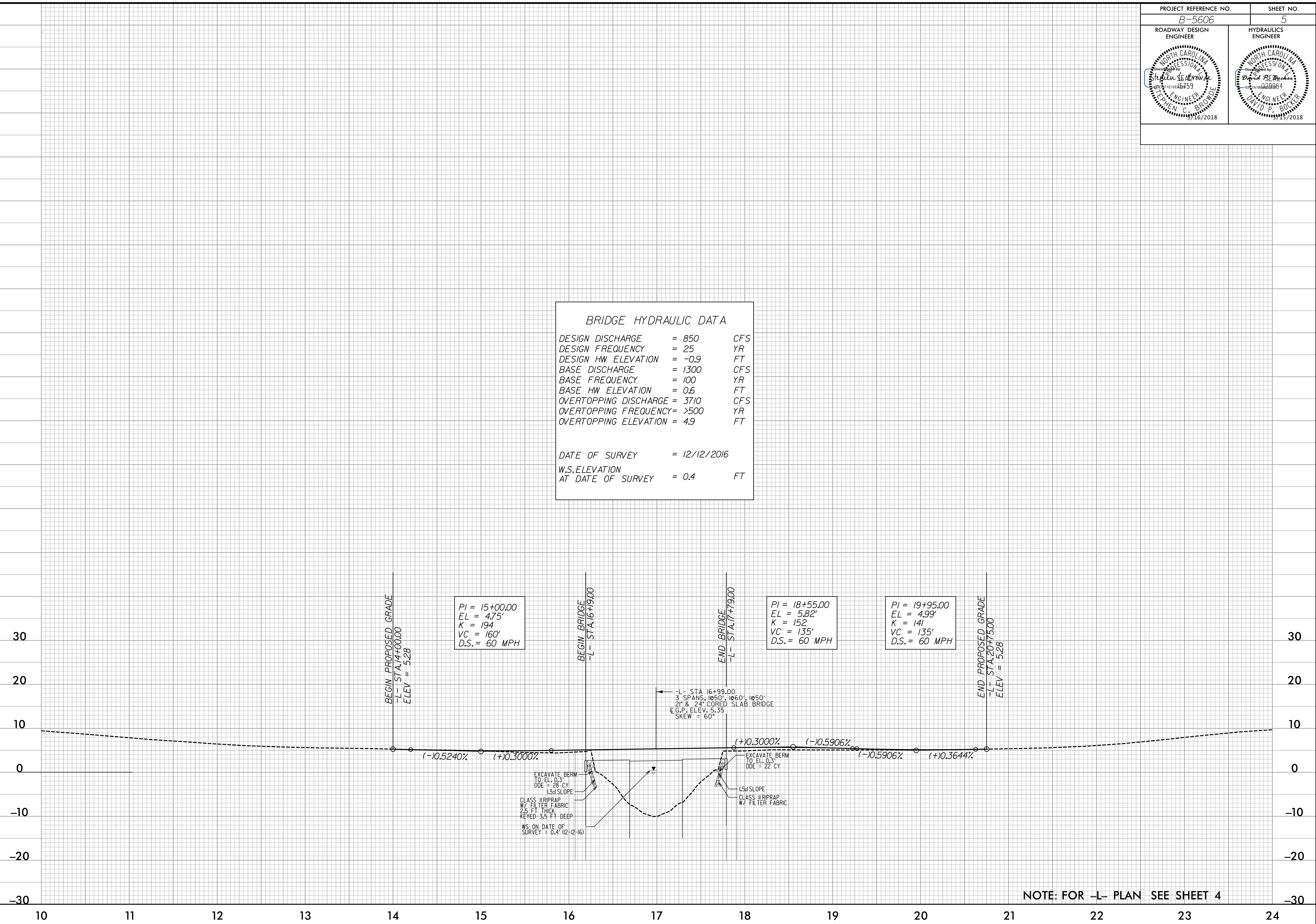
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5/14/99

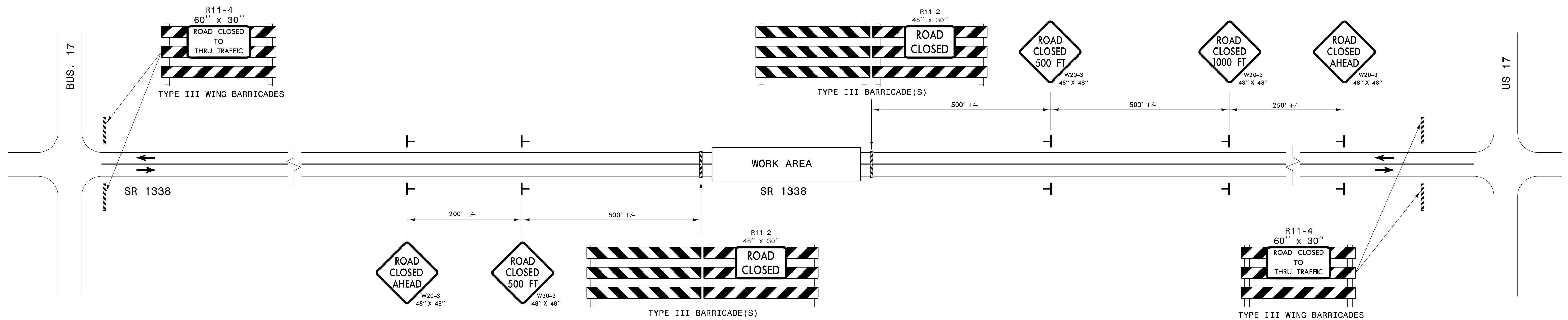
PROJECT REFERENCE NO. <i>B-5606</i>	SHEET NO. <i>5</i>
ROADWAY DESIGN ENGINEER <i>Stephen Seaton</i> 15759	HYDRAULICS ENGINEER <i>David P. Becker</i> 029984

BRIDGE HYDRAULIC DATA		
DESIGN DISCHARGE	= 850	CFS
DESIGN FREQUENCY	= 25	YR
DESIGN HW ELEVATION	= -0.9	FT
BASE DISCHARGE	= 1300	CFS
BASE FREQUENCY	= 100	YR
BASE HW ELEVATION	= 0.6	FT
OVERTOPPING DISCHARGE	= 3710	CFS
OVERTOPPING FREQUENCY	= >500	YR
OVERTOPPING ELEVATION	= 4.9	FT
DATE OF SURVEY	= 12/12/2016	
W.S. ELEVATION AT DATE OF SURVEY	= 0.4	FT

F:\10\2018\Projects\11-Perquimans\11_RDY_PFL.dgn
 5/14/2018 10:00 AM
 11-Perquimans\11_RDY_PFL.dgn



TRAFFIC CONTROL FOR TEMPORARY ROAD CLOSURE



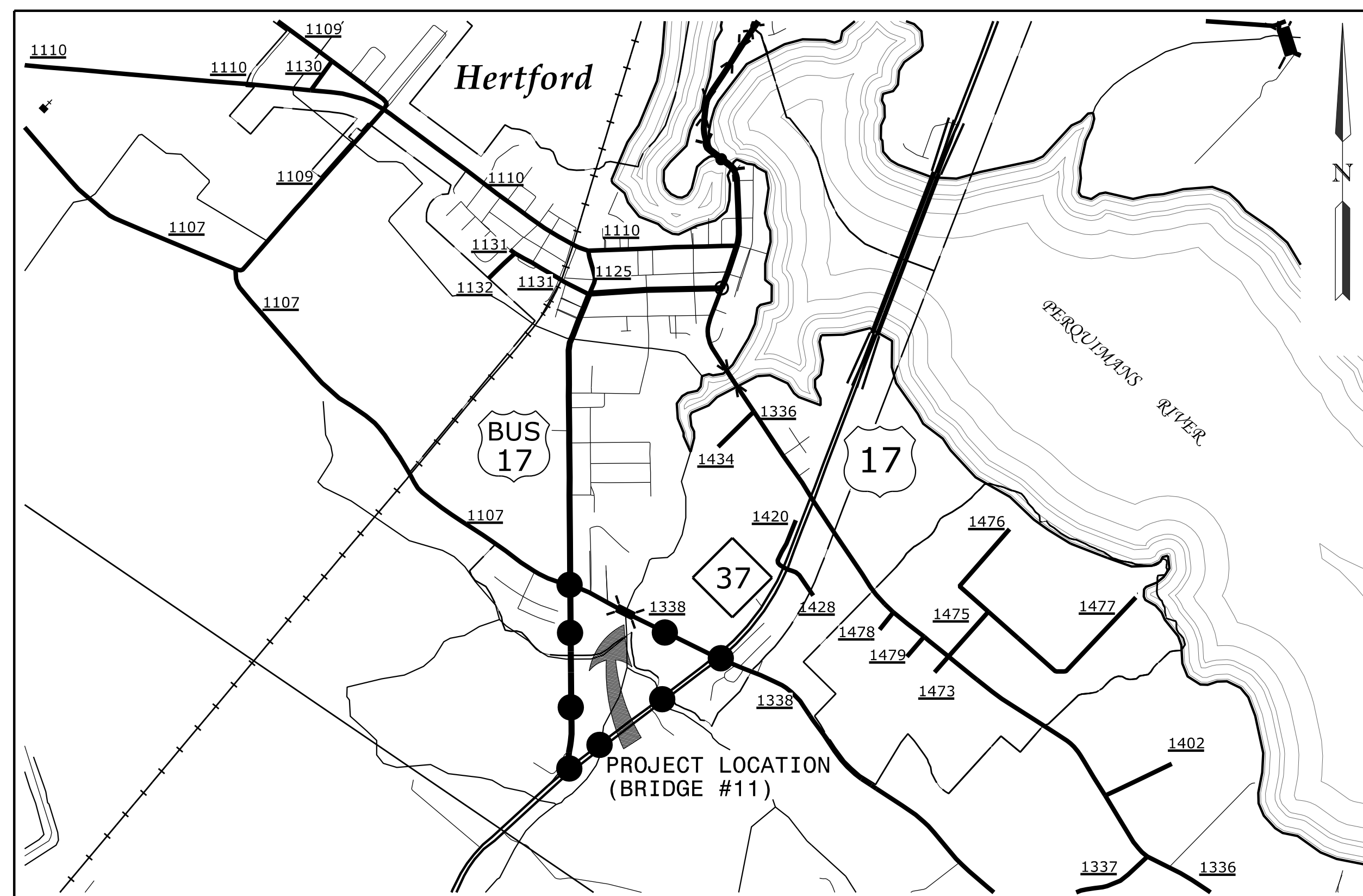
LEGEND

⊥ STATIONARY SIGN

← DIRECTION OF TRAFFIC FLOW

GENERAL NOTES

- 1- INSTALLATION OF TEMPORARY ROUTE MARKERS, DESTINATION SIGNS AND ANY NECESSARY MODIFICATIONS TO EXISTING OR PROPOSED REGULATORY OR WARNING SIGNS WILL BE MADE BY OTHERS (STATE OR CITY FORCES) UNLESS OTHERWISE DESIGNATED IN PLANS. PROVIDE A MINIMUM 21 CALENDAR DAY NOTICE TO STATE FORCES BEFORE A ROADWAY IS CLOSED TO TRAFFIC SUCH THAT NECESSARY PROVISIONS CAN BE MADE TO INFORM LOCAL EMERGENCY AND LAW ENFORCEMENT PERSONNEL, SCHOOLS OR ANY OTHER PARTIES AFFECTED BY THE ROAD CLOSURE.
- 2- DO NOT INSTALL ADVANCE WARNING SIGNS MORE THAN 3 DAYS PRIOR TO BEGINNING OF WORK.
- 3- INSTALL SIGNS BEFORE THE BARRICADES WHEN CLOSING THE ROADWAY TO TRAFFIC. REMOVE BARRICADES BEFORE SIGNS WHEN OPENING THE ROADWAY TO TRAFFIC. INSTALL/REMOVE SIGNS AND BARRICADES WITHIN THE SAME CALENDAR DAY.
- 4- POSITION WING BARRICADES ON THE SHOULDERS AND SLOPE THE STRIPES DOWNWARD IN THE DIRECTION TOWARD WHICH TRAFFIC MUST TURN IN DETOURING.
- 5- USE ADDITIONAL TYPE III BARRICADES IN STAGGERED LOCATIONS SUPPLEMENTED WITH SIGN R11-4 "ROAD CLOSED TO THRU TRAFFIC" IN THE EVENT THAT TRAFFIC MUST BE MAINTAINED BEYOND THE DETOUR POINT.
- 6- DO NOT DISPLAY FRACTIONS OR DECIMALS ON SIGN R11-3 "ROAD CLOSED XX MILES AHEAD".
- 7- USE PORTABLE SIGNS IF ROAD CLOSURE IS TO BE IMPLEMENTED FOR LESS THAN ONE DAY OR FOR EMERGENCIES.



VICINITY MAP
(NOT TO SCALE)

● ● ● ● ● DETOUR ROUTE (APPROXIMATE LENGTH = 1.5 MILES)

PROJECT NO. B-5606
PERQUIMANS COUNTY
 STATION: 16+99.00 -L-

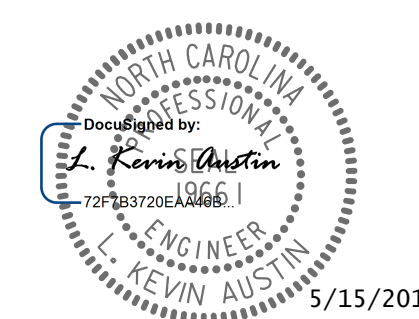
REPLACES BRIDGE NO. 11

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

TRAFFIC MANAGEMENT PLAN

30'-10" CLEAR ROADWAY - 60°SKEW

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



PLANS PREPARED BY:

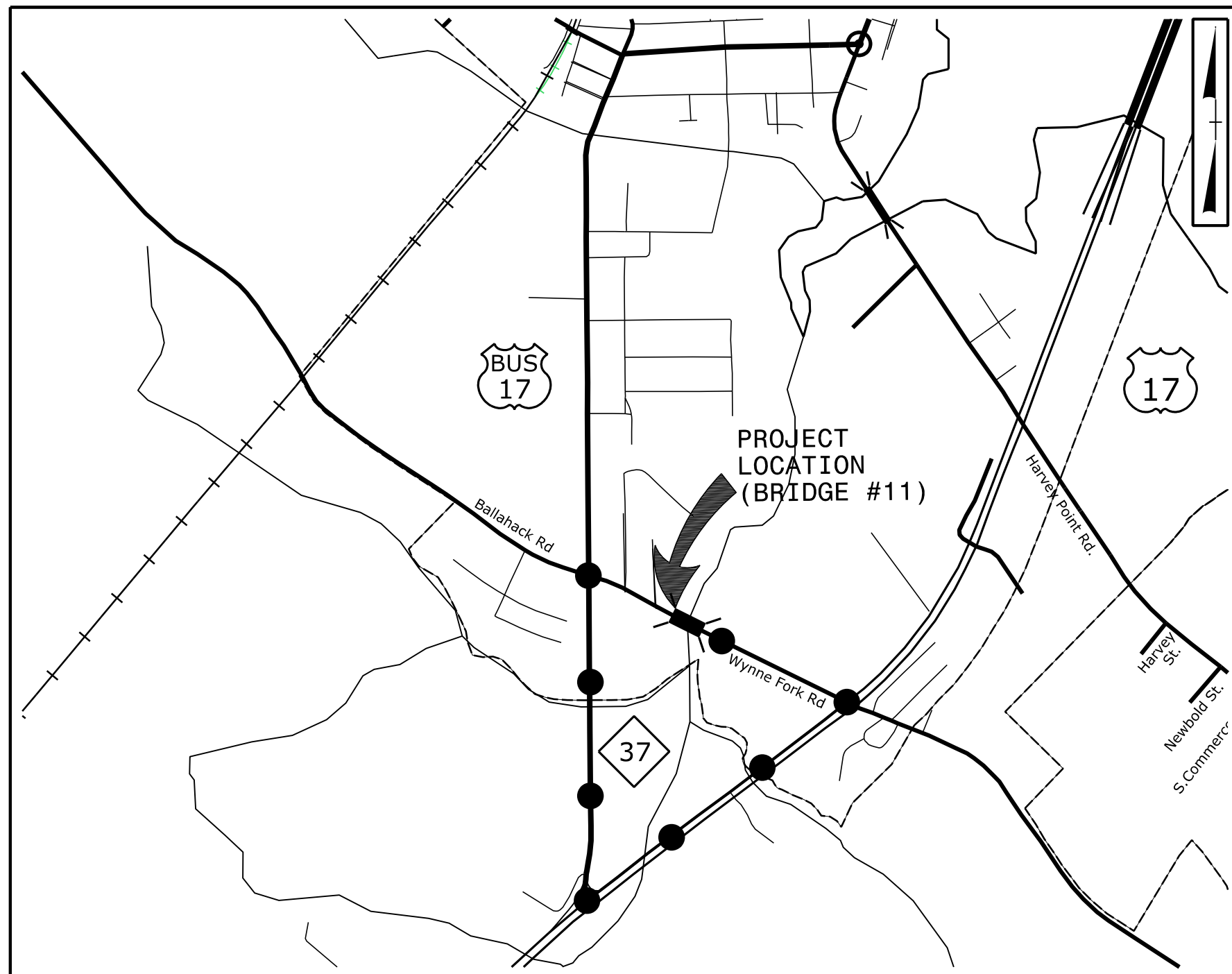
CALYX
 ENGINEERS + CONSULTANTS
 6750 TRYON ROAD
 CARY, NC 27518
 phone: 919.851.1912
 CALYXengineers.com
 NC License # F-1333

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

DRAWN BY : W. B. ALLEN DATE : 2/17
 CHECKED BY : L. K. AUSTIN DATE : 2/17
 DESIGN ENGINEER OF RECORD: L. K. AUSTIN DATE : 5/18

TIP PROJECT: B-5604

See Sheet 1A For Index of Sheets



VICINITY MAP (NOT TO SCALE)

DETOUR ROUTE (APPROXIMATE LENGTH = 1.67 MILES)

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

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

Table with columns: STATE, STATE PROJECT REFERENCE NO., SHEET NO., TOTAL SHEETS. Values: N.C., B-5606, EC-01, PE.

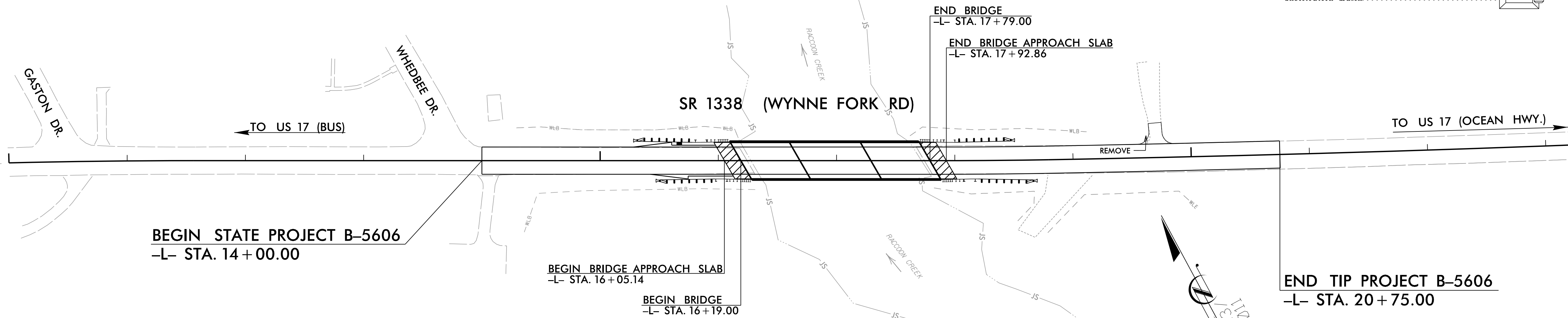
PERQUIMANS COUNTY

LOCATION: REPLACEMENT OF BRIDGE 11 OVER CASTLETON CREEK AKA SKINNERS CREEK SR 1338 (WYNNE FORK RD)

TYPE OF WORK: GRADING, DRAINAGE, PAVING AND STRUCTURE

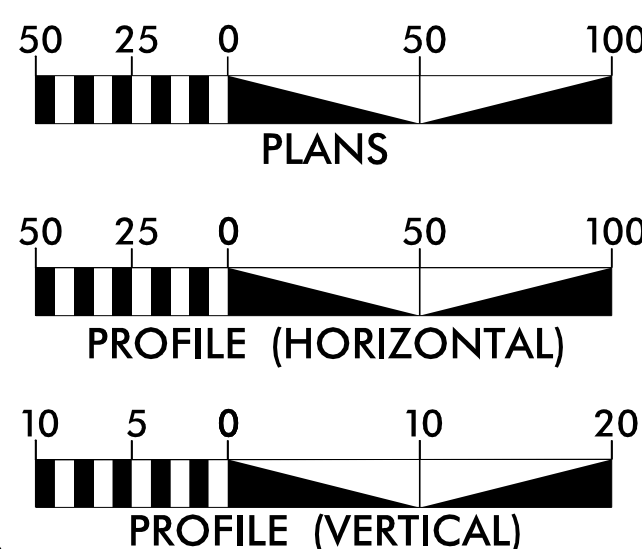
EROSION AND SEDIMENT CONTROL MEASURES

Table listing erosion and sediment control measures with standard numbers, descriptions, and symbols. Includes items like Temporary Silt Ditch, Rock Silt Check, Stilling Basin, etc.



THIS PROJECT IS WITHIN THE MUNICIPAL BOUNDARIES OF HERTFORD. CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD II.

GRAPHIC SCALES



THESE EROSION AND SEDIMENT CONTROL PLANS COMPLY WITH THE REGULATIONS SET FORTH BY THE NCG-010000 GENERAL CONSTRUCTION PERMIT EFFECTIVE AUGUST 1, 2016

Prepared in the Office of:

CALYX ENGINEERS & CONSULTANTS 7500 EAST INDEPENDENCE BOULEVARD, SUITE 100 CHARLOTTE, NC 28227

Designed by:

JAMES R. HOPSON, JR., PE 3736 LEVEL III CERTIFICATION NO.

Reviewed in the Office of:

ROADSIDE ENVIRONMENTAL UNIT 1 South Wilmington St. Raleigh, NC 27611 2018 STANDARD SPECIFICATIONS

Reviewed by:

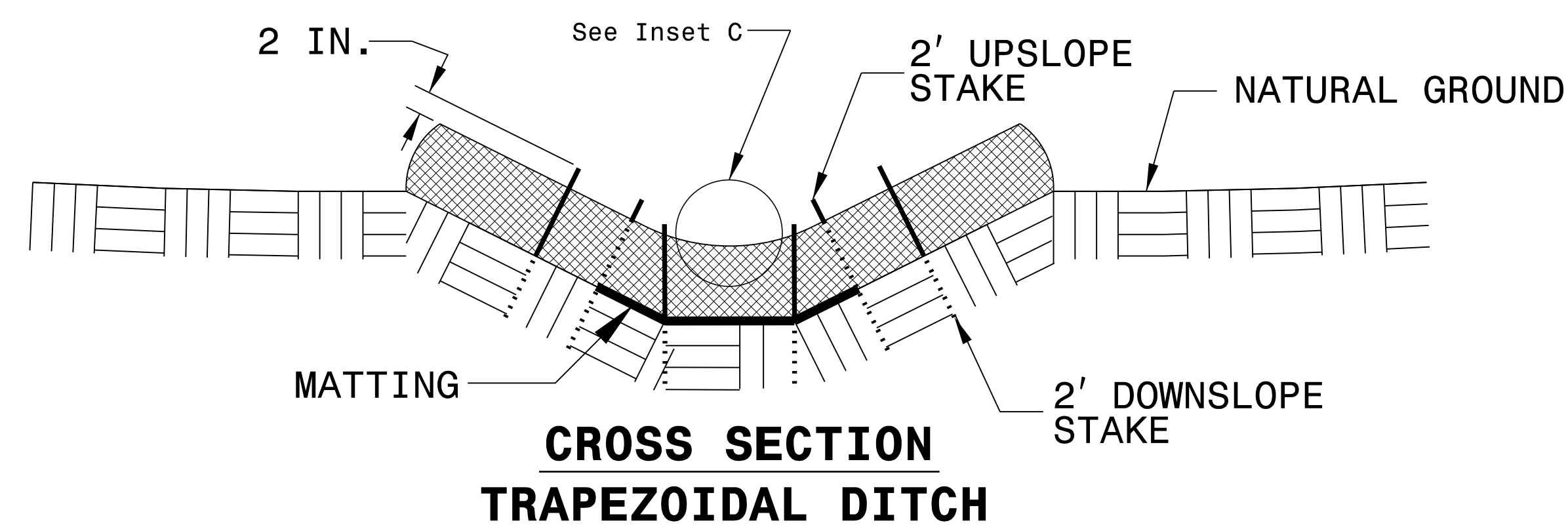
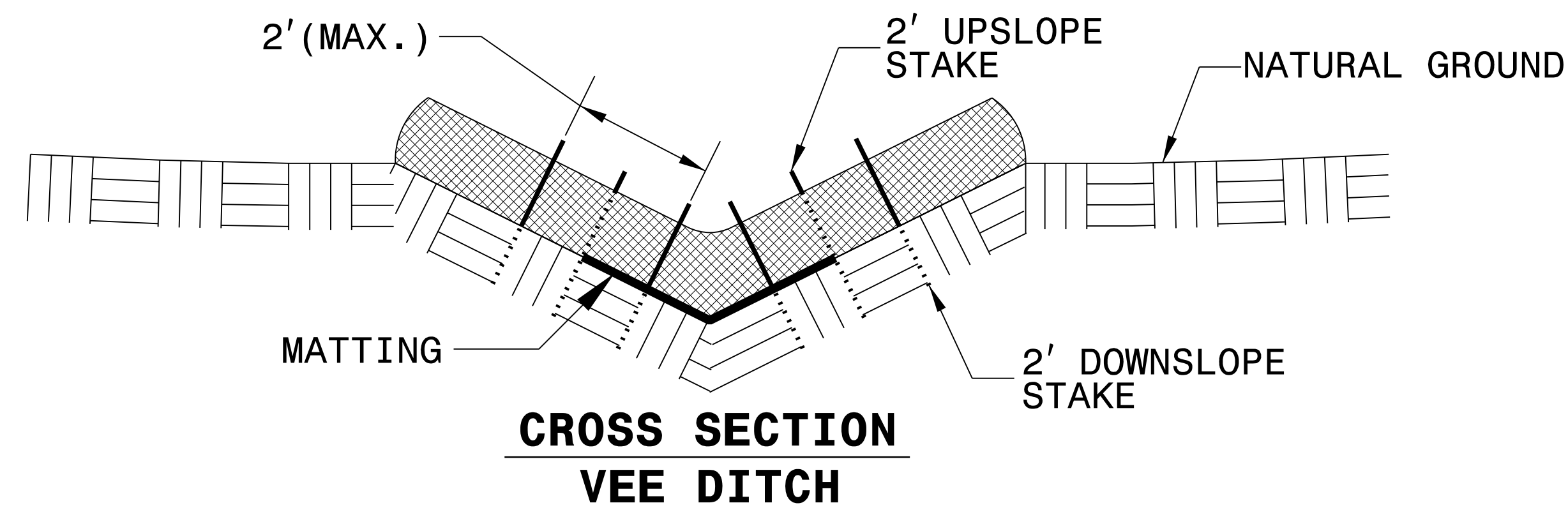
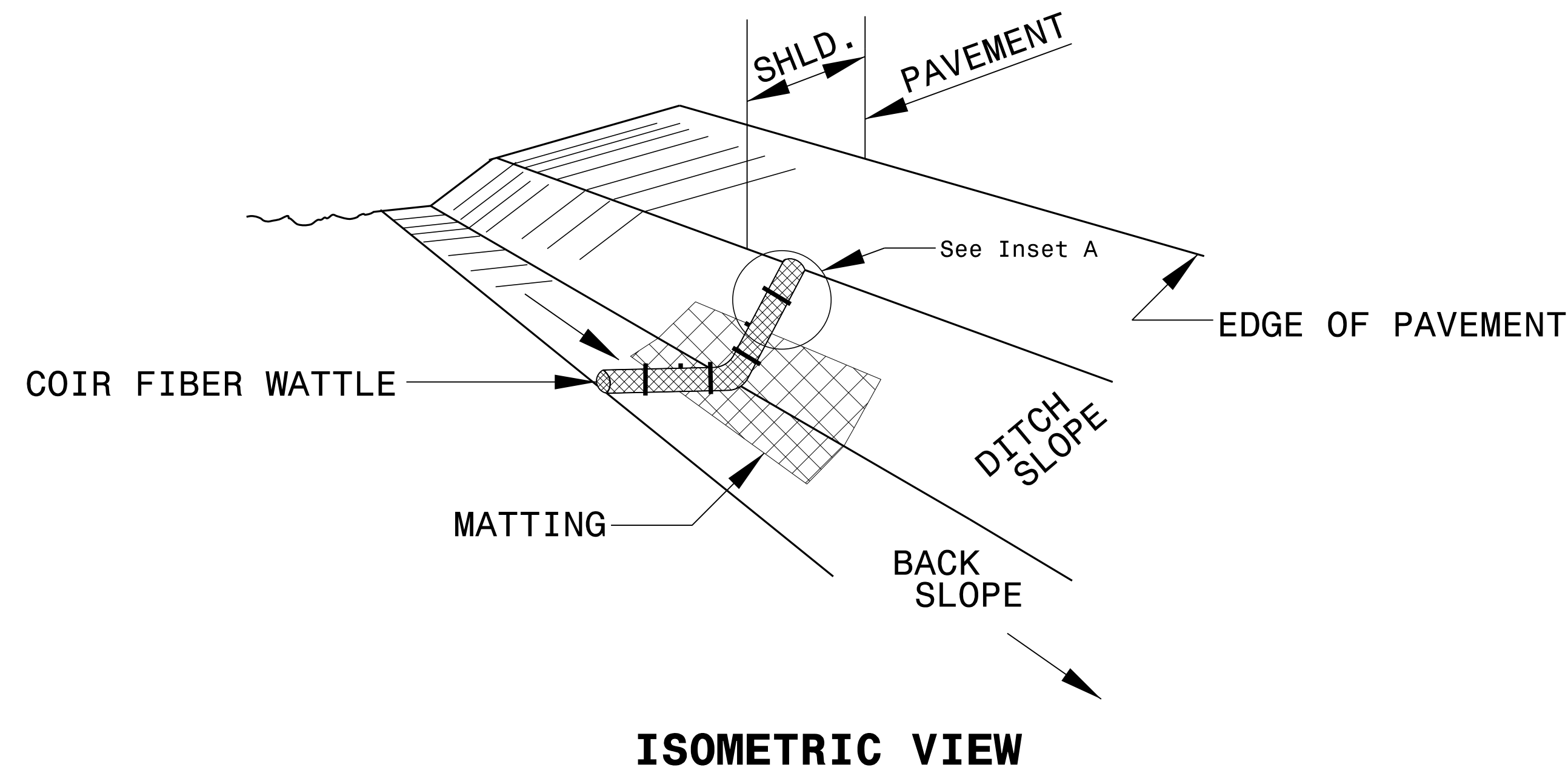
Roadway Standard Drawings

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.

Table listing roadway standard drawings and their corresponding standard numbers, such as Railroad Erosion Control Detail, Temporary Silt Fence, etc.

PROJECT REFERENCE NO. <i>B-5606</i>	SHEET NO. <i>EC-02</i>
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

COIR FIBER WATTLE WITH POLYACRYLAMIDE (PAM) DETAIL



NOTES:

USE MINIMUM 12 IN. DIAMETER COIR FIBER (COCONUT FIBER) WATTLE.

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

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

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

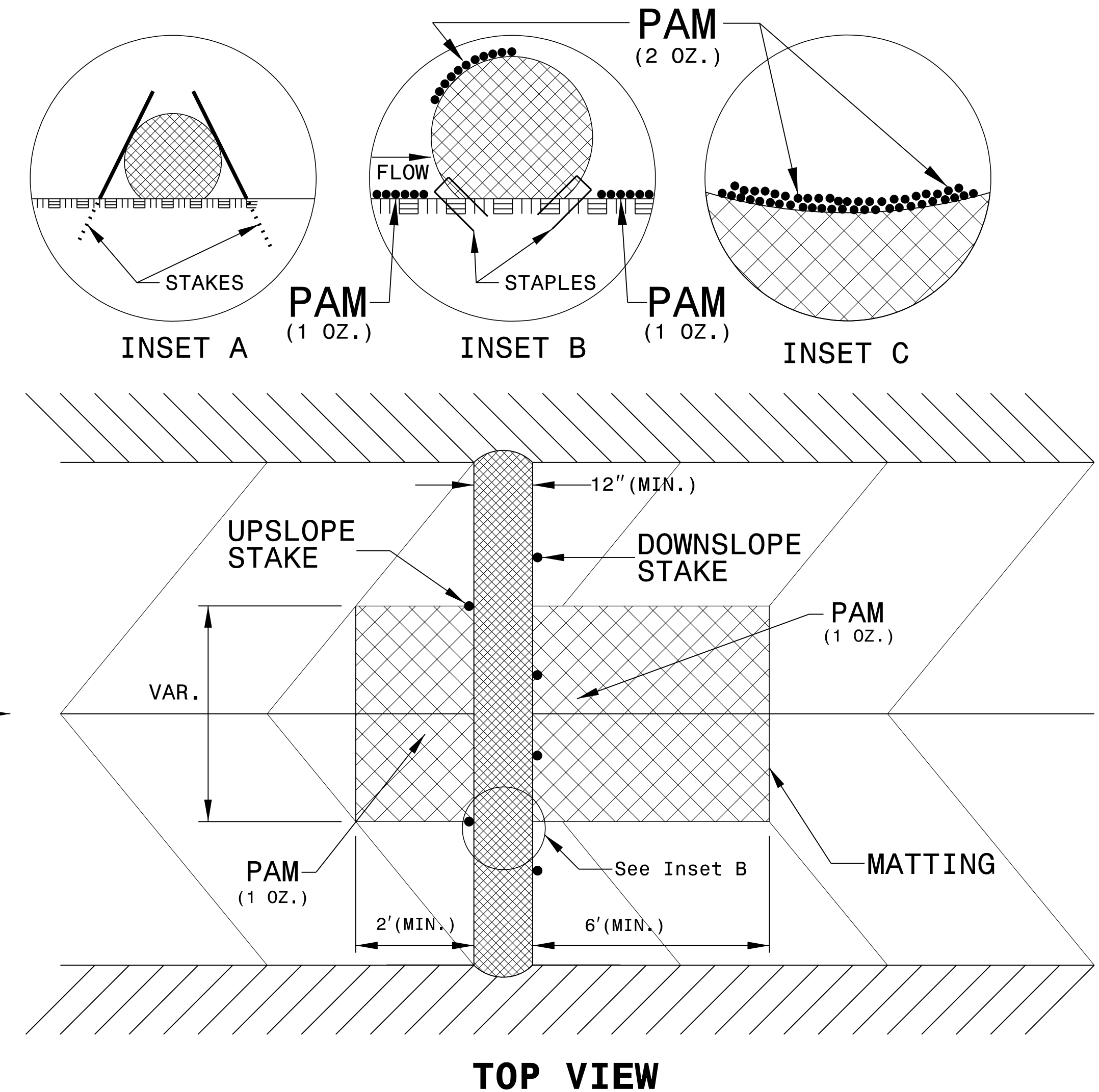
PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12" IN LENGTH.

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

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

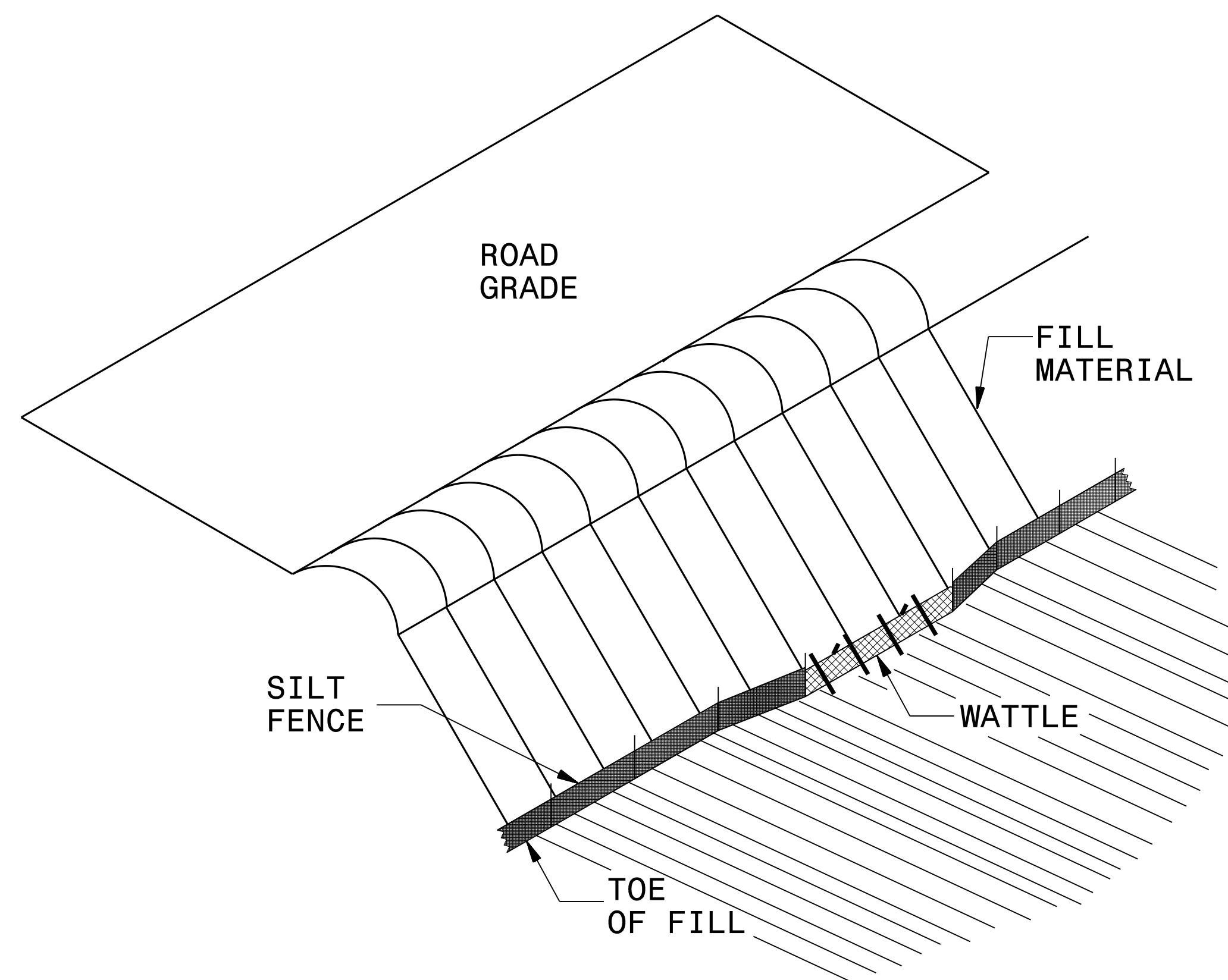
PRIOR TO POLYACRYLAMIDE (PAM) APPLICATION, OBTAIN A SOIL SAMPLE FROM PROJECT LOCATION, AND FROM OFFSITE MATERIAL, AND ANALYZE FOR APPROPRIATE PAM FLOCCULANT TO BE APPLIED TO EACH WATTLE.

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

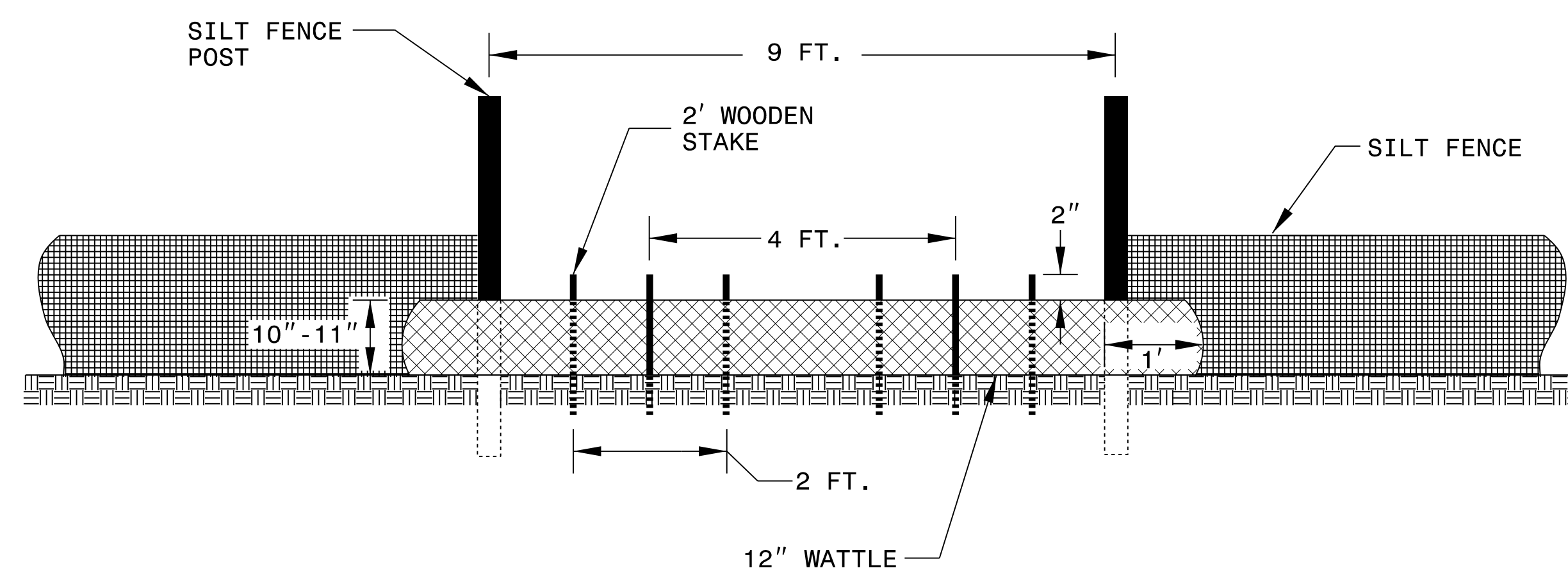


SILT FENCE COIR FIBER WATTLE BREAK DETAIL

PROJECT REFERENCE NO.		SHEET NO.	
B-5606		EC-02A	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	



ISOMETRIC VIEW

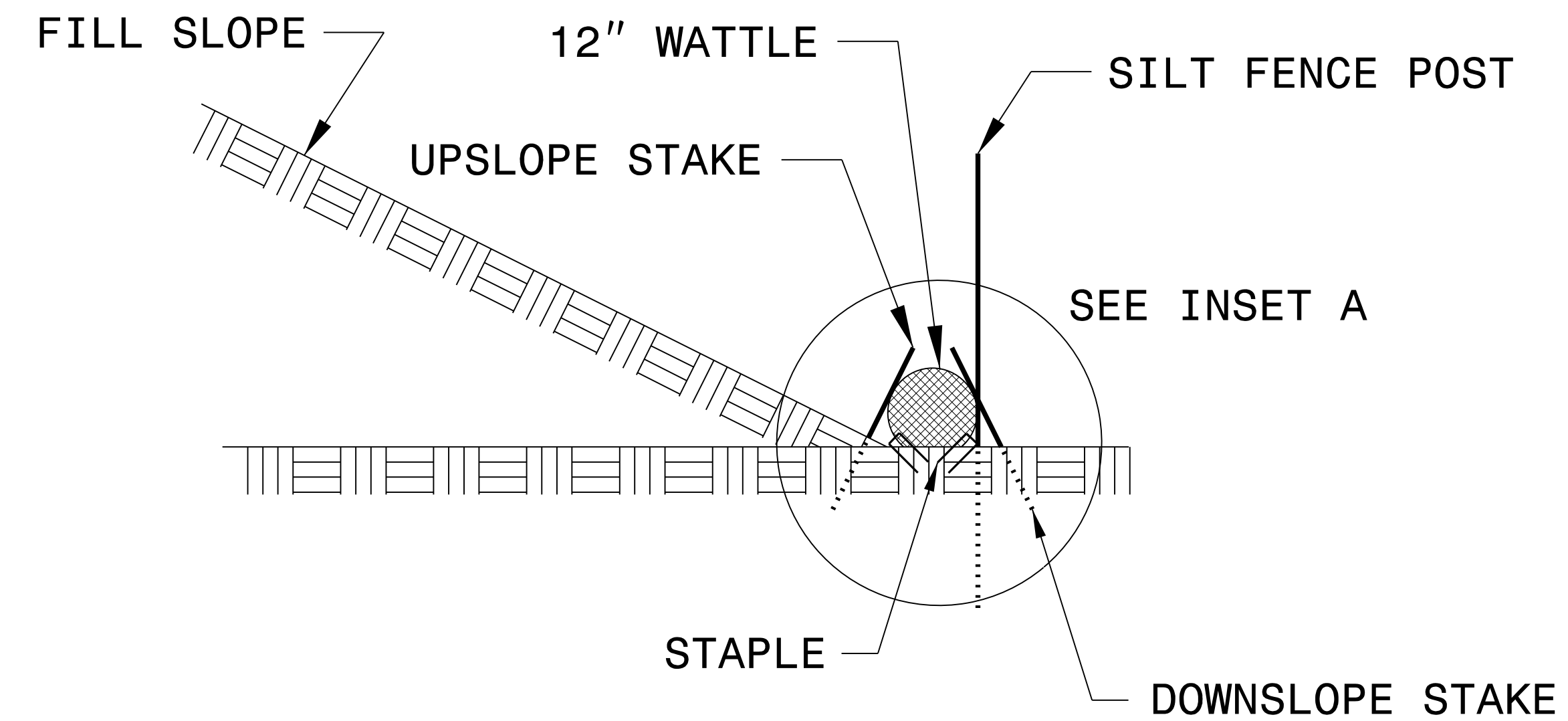
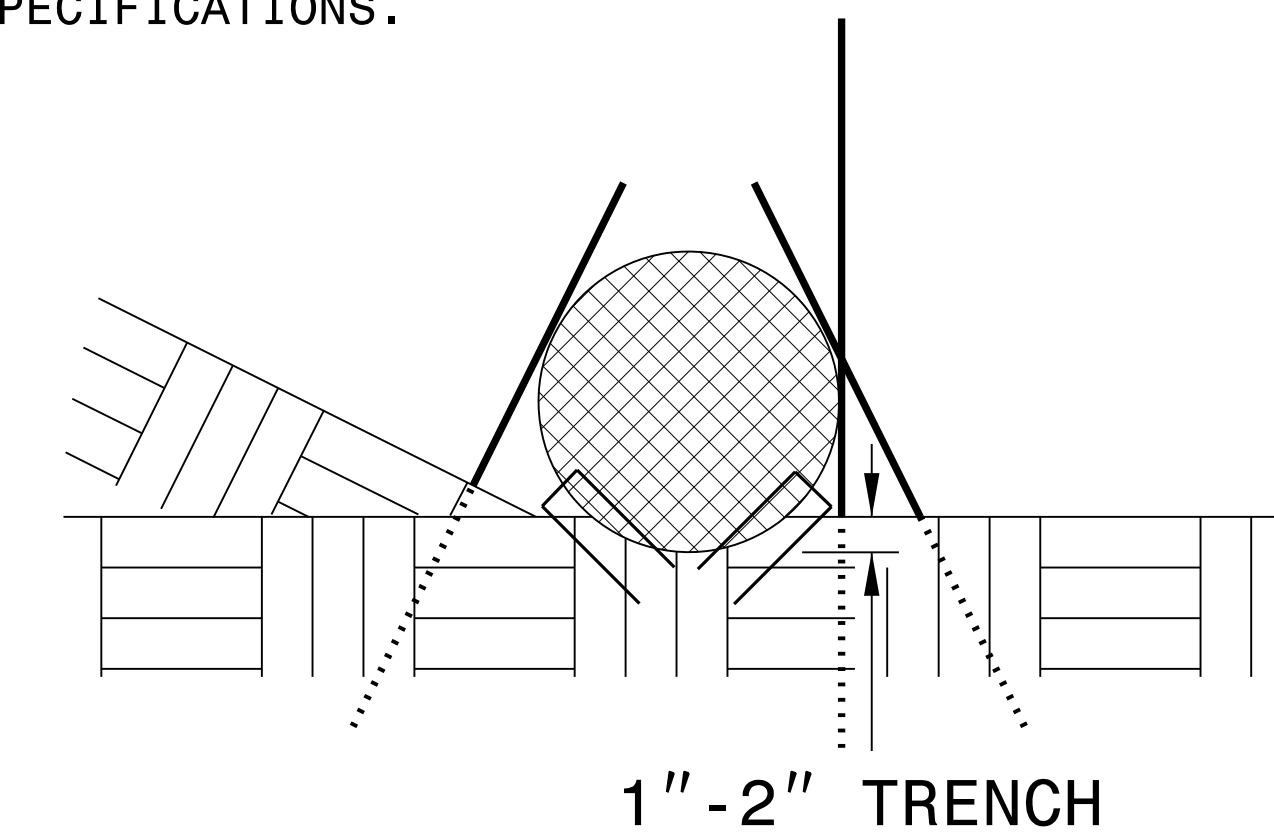


VIEW FROM SLOPE

NOTES:

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

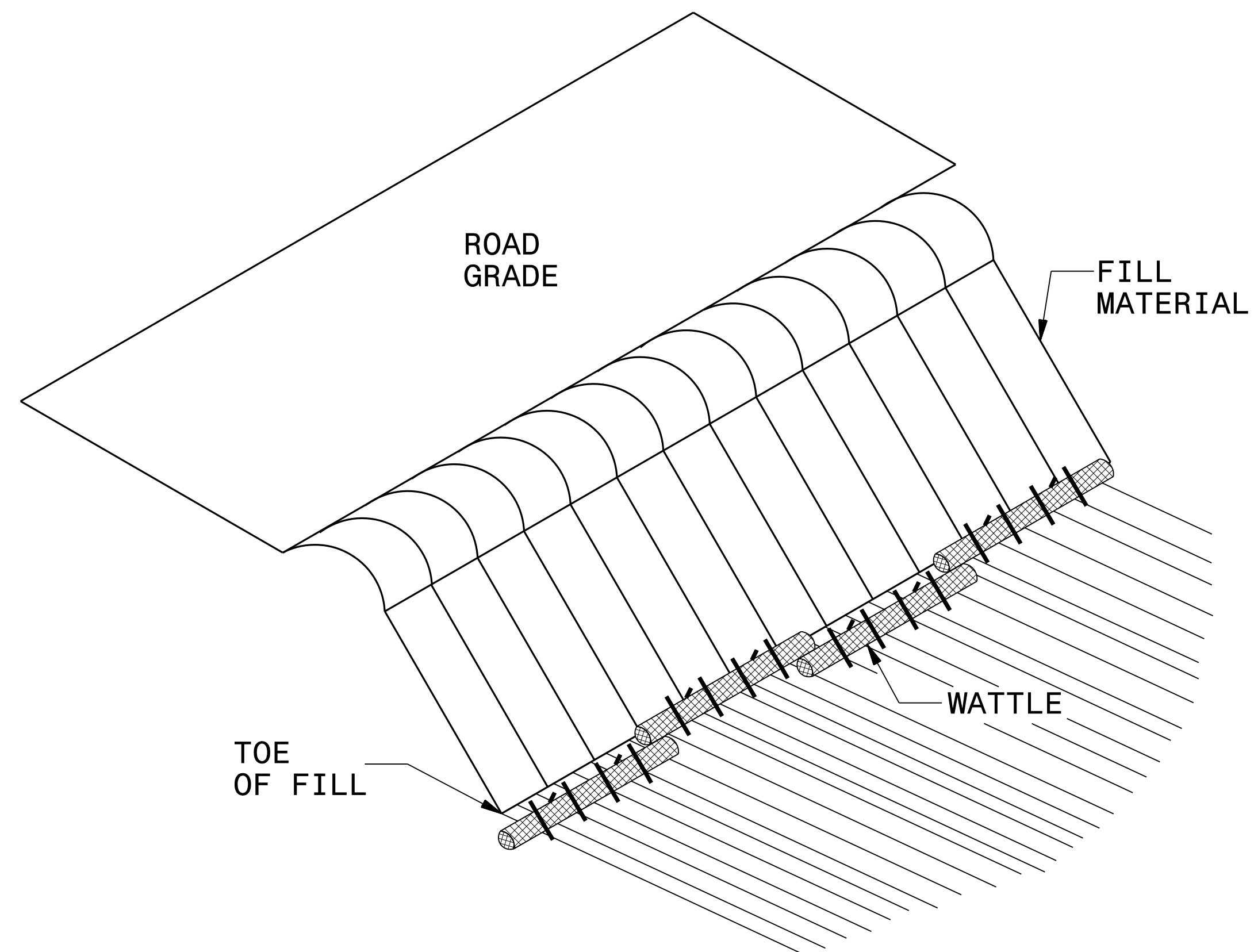
INSET A



SIDE VIEW

PROJECT REFERENCE NO. <i>B-5606</i>	SHEET NO. <i>EC-02B</i>
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

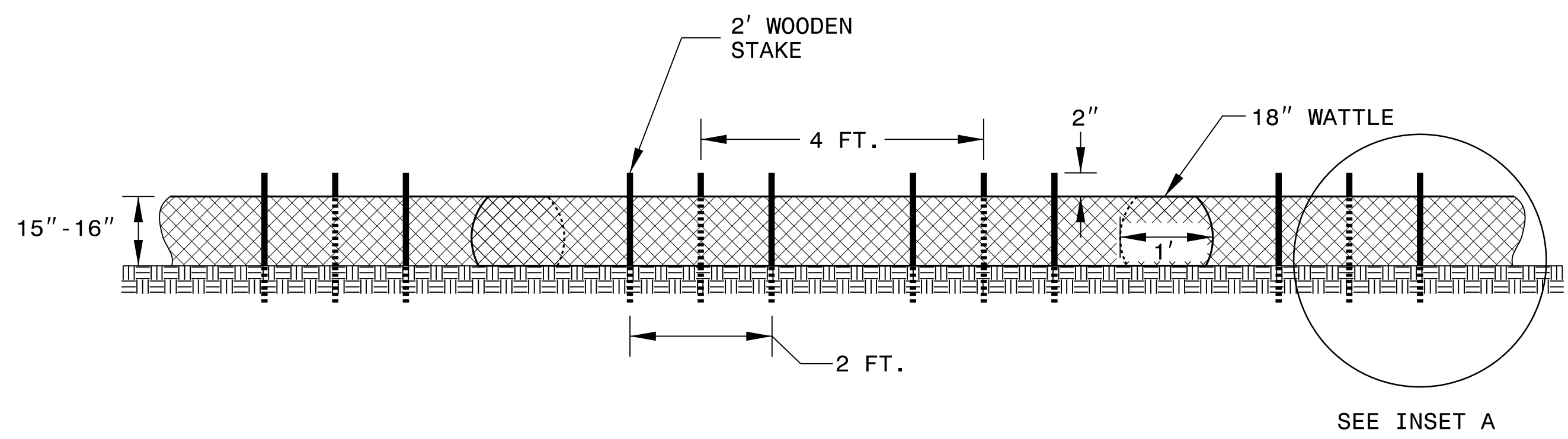
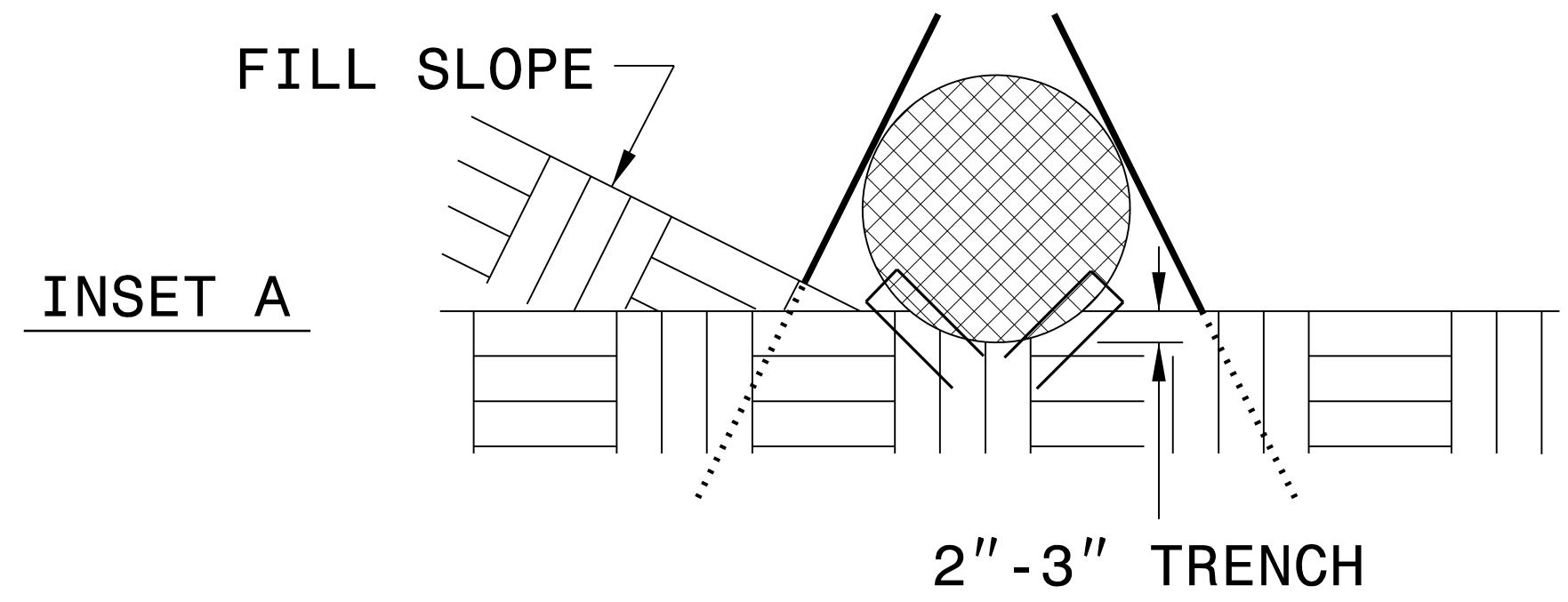
COIR FIBER WATTLE BARRIER DETAIL



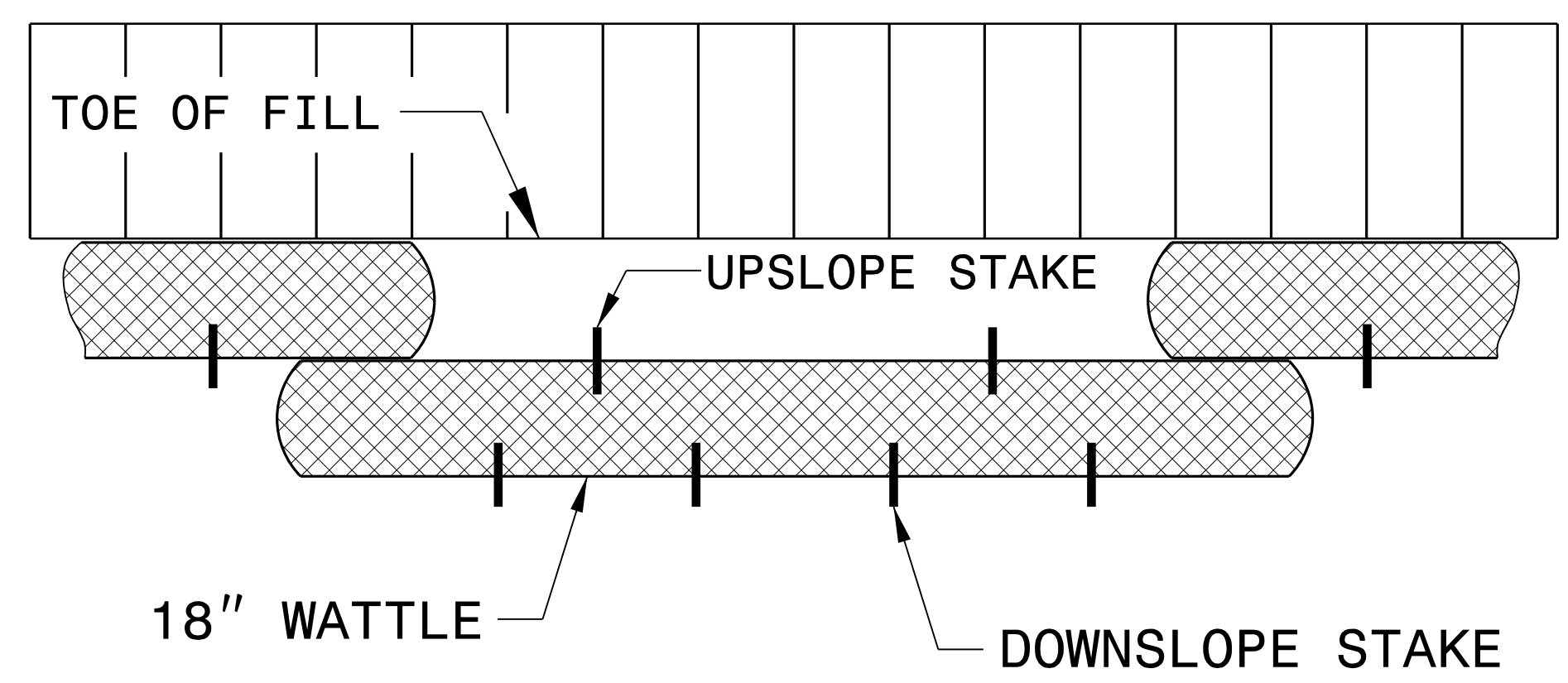
ISOMETRIC VIEW

NOTES:

- USE MINIMUM 18 IN. NOMINAL DIAMETER COIR FIBER (COCONUT) WATTLE AND LENGTH OF 10 FT.
- EXCAVATE A 2 TO 3 INCH TRENCH FOR WATTLE TO BE PLACED.
- DO NOT PLACE WATTLES ON TOE OF SLOPE.
- USE 2 FT. WOODEN STAKES WITH A 2 IN. BY 2 IN. NOMINAL CROSS SECTION.
- INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO GROUND.
- PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12" IN LENGTH.
- INSTALL STAPLES APPROXIMATELY EVERY 1 LINEAR FOOT ON BOTH SIDES OF WATTLE AND AT EACH END TO SECURE IT TO THE SOIL.
- FOR BREAKS ALONG LARGE SLOPES, USE MAXIMUM SPACING OF 25 FT.



FRONT VIEW



TOP VIEW

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

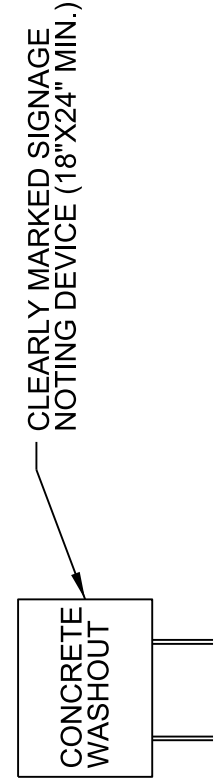
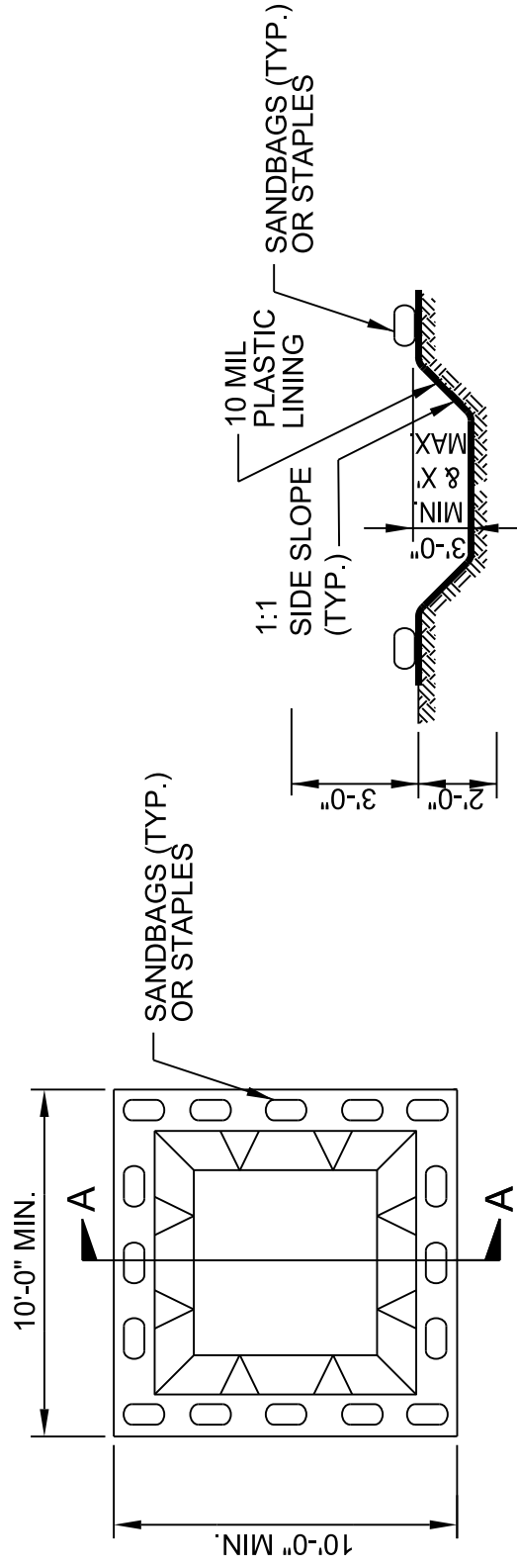
PROJECT REFERENCE NO. <i>B-5606</i>	SHEET NO. <i>EC-03</i>
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

SOIL STABILIZATION TIMEFRAMES

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

WITH LINER, NO GRAVEL APPROACH

ONSITE CONCRETE WASHOUT STRUCTURE WITH LINER



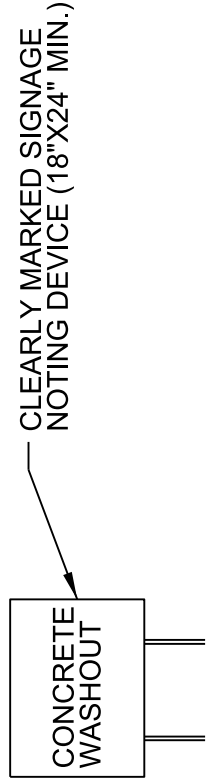
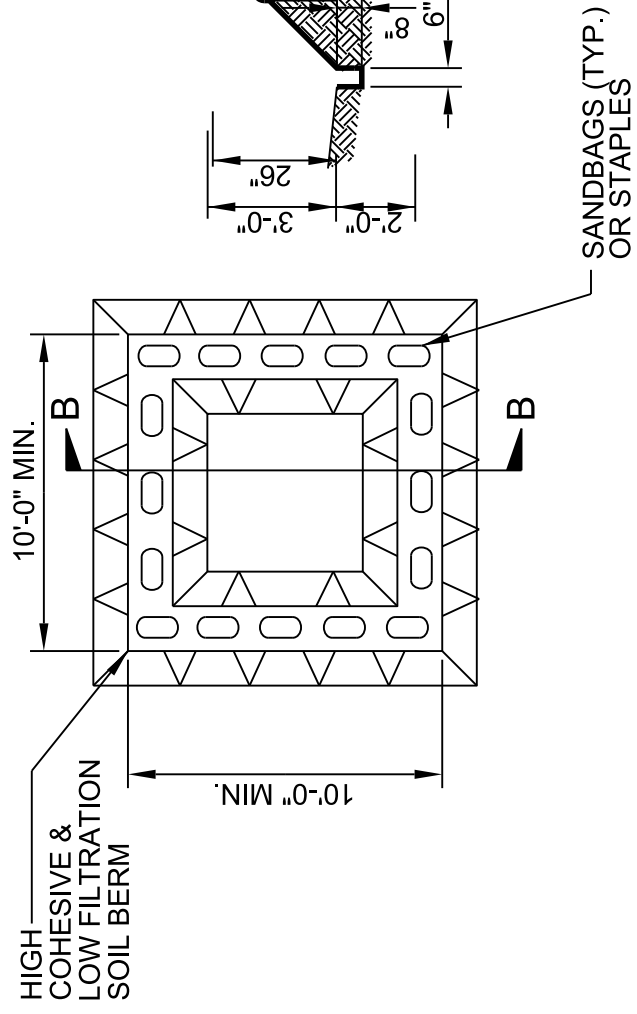
SECTION A-A

- NOTES:**
1. ACTUAL LOCATION DETERMINED IN FIELD
 2. THE CONCRETE WASHOUT STRUCTURES SHALL BE MAINTAINED WHEN THE LIQUID AND/OR SOLID REACHES 75% OF THE STRUCTURES CAPACITY.
 3. CONCRETE WASHOUT STRUCTURE NEEDS TO BE CLEARLY MARKED WITH SIGNAGE NOTING DEVICE.

PLAN

BELOW GRADE WASHOUT STRUCTURE

NOT TO SCALE



SECTION B-B

- NOTES:**
1. ACTUAL LOCATION DETERMINED IN FIELD
 2. THE CONCRETE WASHOUT STRUCTURES SHALL BE MAINTAINED WHEN THE LIQUID AND/OR SOLID REACHES 75% OF THE STRUCTURES CAPACITY TO PROVIDE ADEQUATE HOLDING CAPACITY WITH A MINIMUM 12 INCHES OF FREEBOARD.
 3. CONCRETE WASHOUT STRUCTURE NEEDS TO BE CLEARLY MARKED WITH SIGNAGE NOTING DEVICE.

PLAN

ABOVE GRADE WASHOUT STRUCTURE

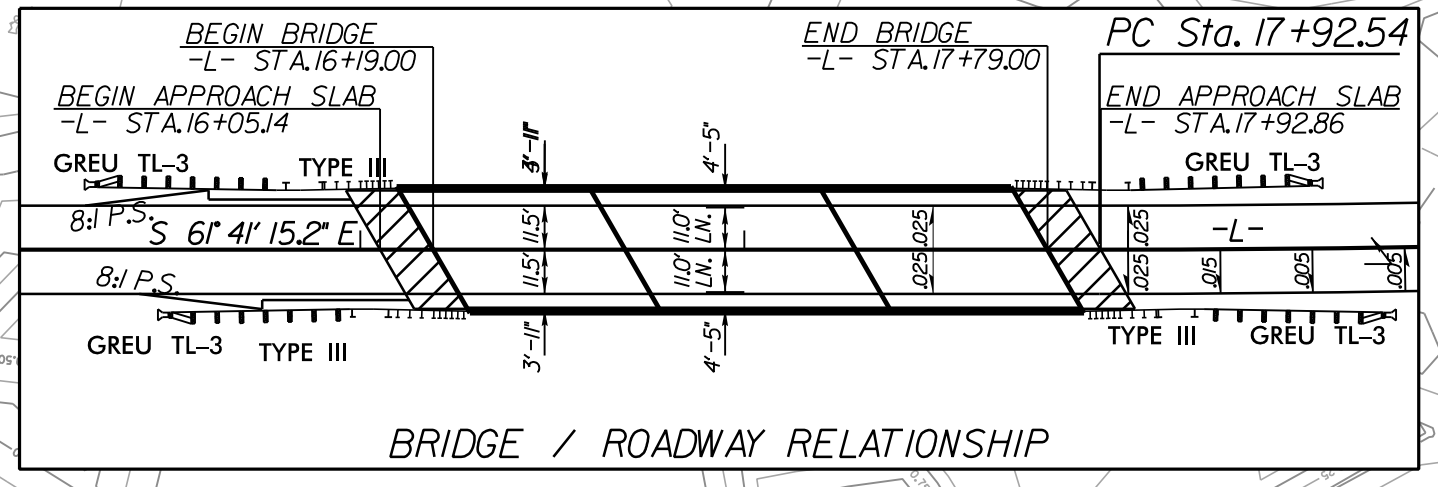
NOT TO SCALE

PRELIMINARY DESIGN
NOT FOR CONSTRUCTION

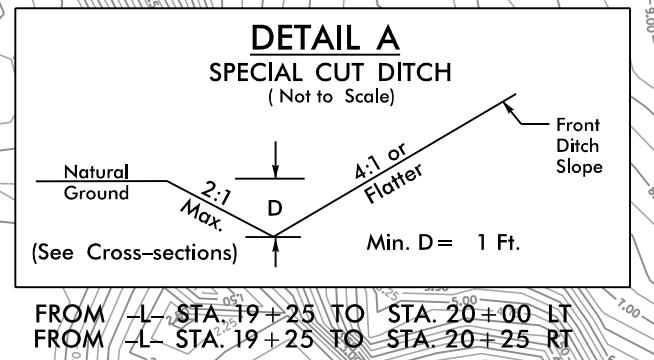
PROJECT REFERENCE NO. B-5606	SHEET NO. EC-04/CONST.04
RW SHEET NO.	HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER	

CALYX
ENGINEERS + CONSULTANTS
6750 TRYON ROAD
CARY, NC 27518
phone: 919.851.1912
CALYXengineers.com
NC License # F-1333
Formerly Wilby Engineers & Consultants

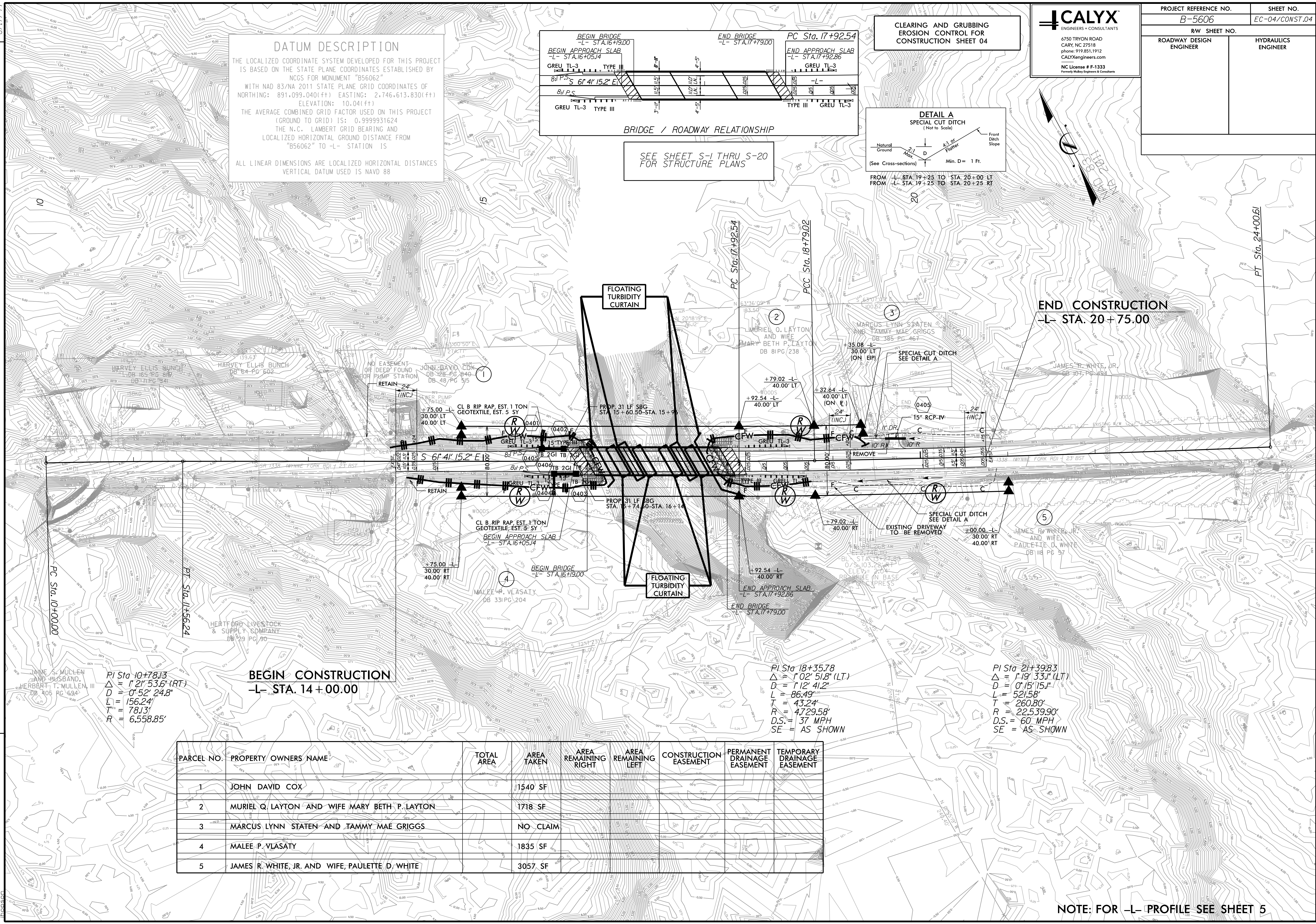
DATUM DESCRIPTION
THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCOS FOR MONUMENT "B56062"
WITH NAD 83/NA 2011 STATE PLANE GRID COORDINATES OF NORTHING: 891,099,040(ft) EASTING: 2,746,613.830(ft) ELEVATION: 10.04(ft)
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.9999931624
THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "B56062" TO -L- STATION IS
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NAVD 88



SEE SHEET S-1 THRU S-20 FOR STRUCTURE PLANS



REVISIONS



PI Sta 10+78.3
 $\Delta = 1' 21' 53.6''$ (RT)
 $D = 0' 52' 24.8''$
 $L = 156.24'$
 $T = 78.13'$
 $R = 6,558.85'$

BEGIN CONSTRUCTION
-L- STA. 14+00.00

PI Sta 18+35.78
 $\Delta = 1' 02' 51.8''$ (LT)
 $D = 1' 12' 41.2''$
 $L = 86.49'$
 $T = 43.24'$
 $R = 4,729.58'$
 $D.S. = 37$ MPH
 $SE = AS SHOWN$

PI Sta 21+39.83
 $\Delta = 1' 19' 33.1''$ (LT)
 $D = 0' 15' 15.1''$
 $L = 52.58'$
 $T = 260.80'$
 $R = 22,539.90'$
 $D.S. = 60$ MPH
 $SE = AS SHOWN$

PARCEL NO.	PROPERTY OWNERS NAME	TOTAL AREA	AREA TAKEN	AREA REMAINING RIGHT	AREA REMAINING LEFT	CONSTRUCTION EASEMENT	PERMANENT DRAINAGE EASEMENT	TEMPORARY DRAINAGE EASEMENT
1	JOHN DAVID COX	1540 SF						
2	MURIEL Q. LAYTON AND WIFE MARY BETH P. LAYTON	1718 SF						
3	MARCUS LYNN STATEN AND TAMMY MAE GRIGGS	NO CLAIM						
4	MALEE P. VLASATY	1835 SF						
5	JAMES R. WHITE, JR. AND WIFE, PAULETTE D. WHITE	3057 SF						

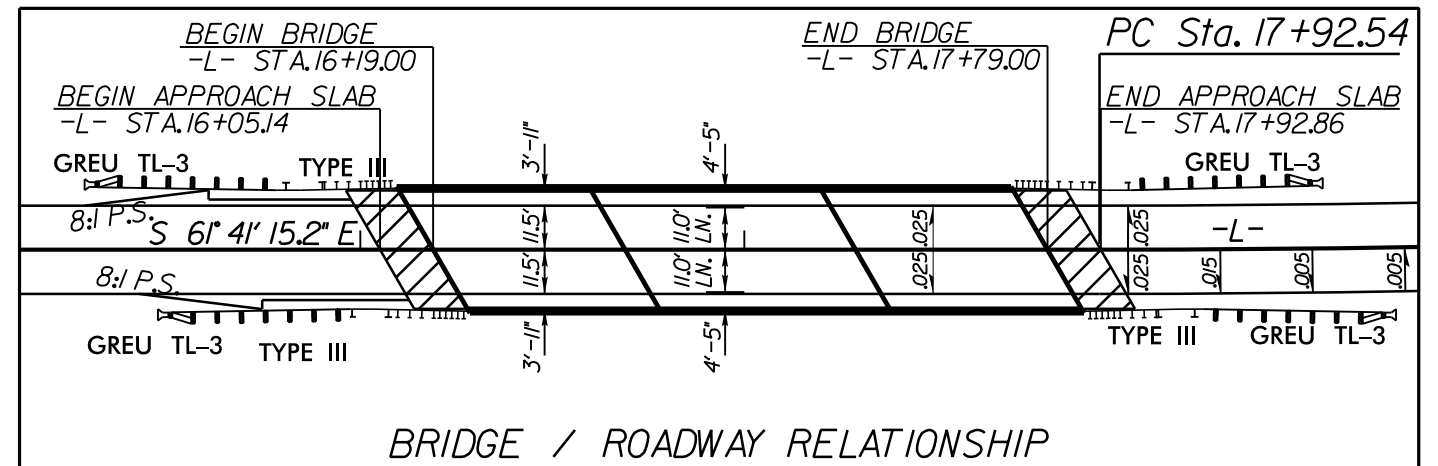
NOTE: FOR -L- PROFILE SEE SHEET 5

3/15/2018
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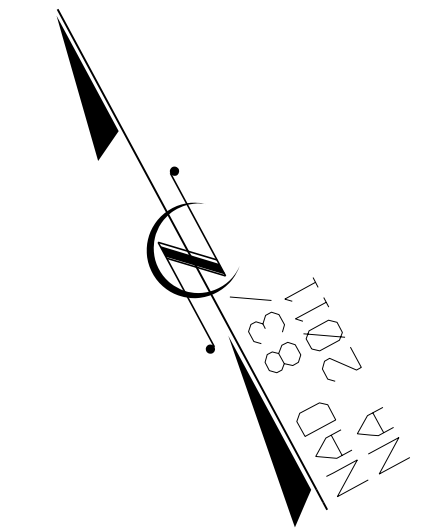
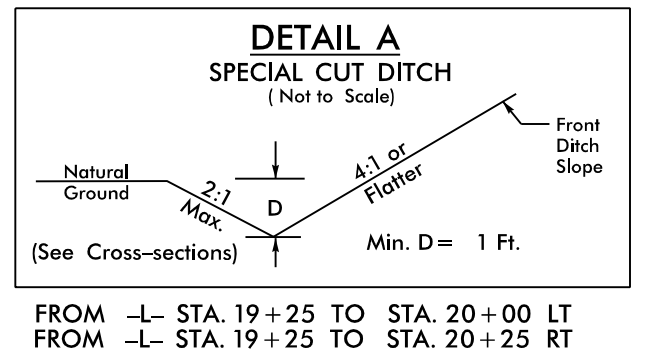


PROJECT REFERENCE NO. B-5606	SHEET NO. EC-05/CONST.04
RW SHEET NO.	HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER	

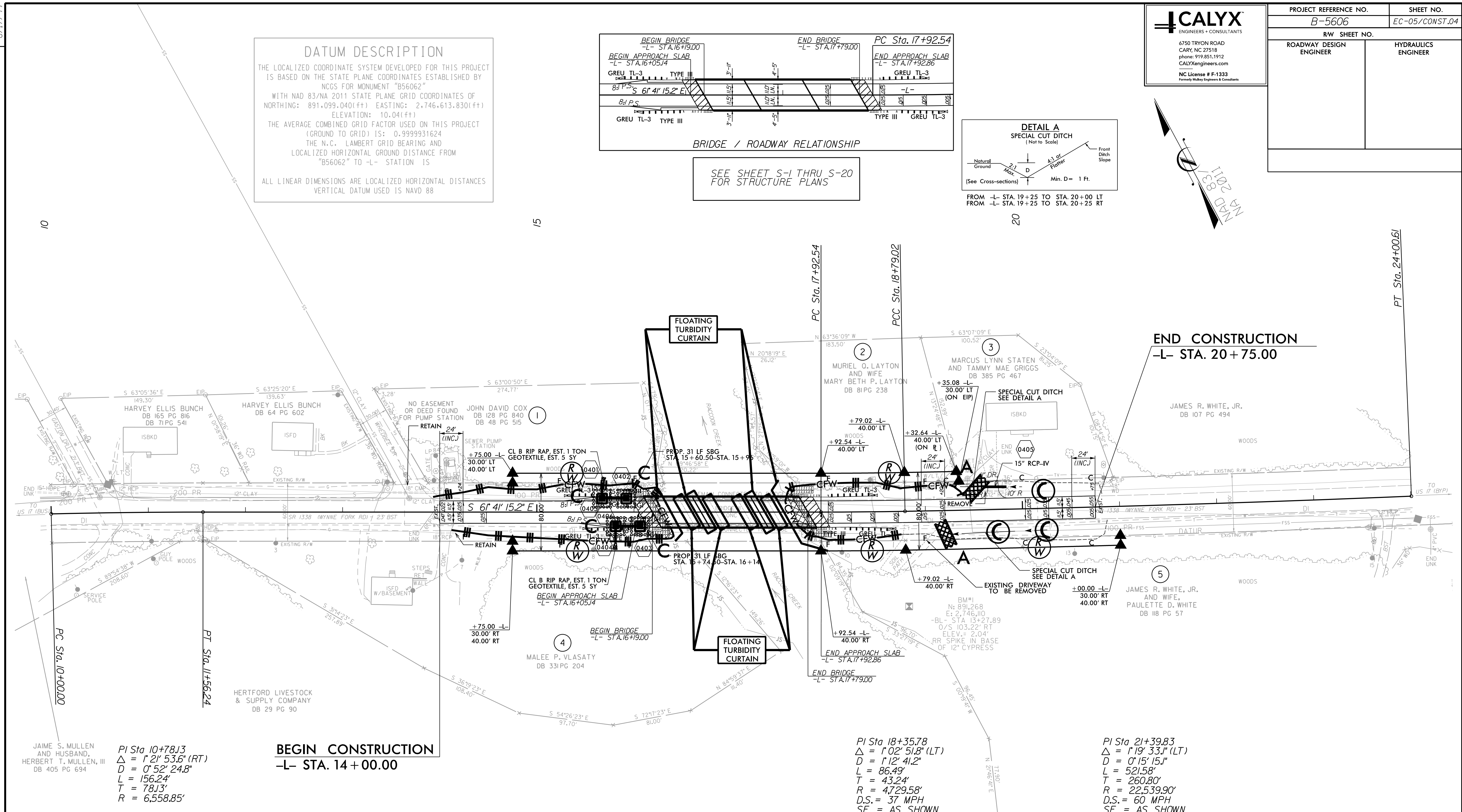
DATUM DESCRIPTION
 THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCGS FOR MONUMENT "B56062"
 WITH NAD 83/NA 2011 STATE PLANE GRID COORDINATES OF NORTHING: 891,099,040(ft) EASTING: 2,746,613.830(ft) ELEVATION: 10.04(ft)
 THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.9999931624
 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "B56062" TO -L- STATION IS
 ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
 VERTICAL DATUM USED IS NAVD 88



SEE SHEET S-1 THRU S-20 FOR STRUCTURE PLANS



REVISIONS



JAIME S. MULLEN AND HUSBAND, HERBERT T. MULLEN, III DB 405 PG 694
 PI Sta 10+78J3
 $\Delta = 1' 21'' 53.6'' (RT)$
 $D = 0' 52'' 24.8''$
 $L = 156.24'$
 $T = 78J3'$
 $R = 6,558.85'$

BEGIN CONSTRUCTION
 -L- STA. 14+00.00

PI Sta 18+35.78
 $\Delta = 1' 02'' 51.8'' (LT)$
 $D = 1' 12'' 41.2''$
 $L = 86.49'$
 $T = 43.24'$
 $R = 4,729.58'$
 $D.S. = 37 MPH$
 $SE = AS SHOWN$

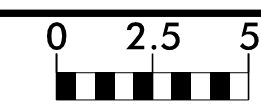
PI Sta 21+39.83
 $\Delta = 1' 19'' 33.1'' (LT)$
 $D = 0' 15'' 15.1''$
 $L = 521.58'$
 $T = 260.80'$
 $R = 22,539.90'$
 $D.S. = 60 MPH$
 $SE = AS SHOWN$

PARCEL NO.	PROPERTY OWNERS NAME	TOTAL AREA	AREA TAKEN	AREA REMAINING RIGHT	AREA REMAINING LEFT	CONSTRUCTION EASEMENT	PERMANENT DRAINAGE EASEMENT	TEMPORARY DRAINAGE EASEMENT
1	JOHN DAVID COX		1540 SF					
2	MURIEL Q. LAYTON AND WIFE MARY BETH P. LAYTON		1718 SF					
3	MARCUS LYNN STATEN AND TAMMY MAE GRIGGS		NO CLAIM					
4	MALEE P. VLASATY		1835 SF					
5	JAMES R. WHITE, JR. AND WIFE, PAULETTE D. WHITE		3057 SF					

NOTE: FOR -L- PROFILE SEE SHEET 5

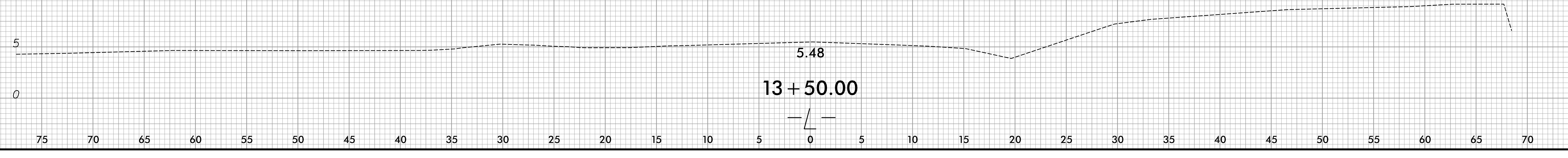
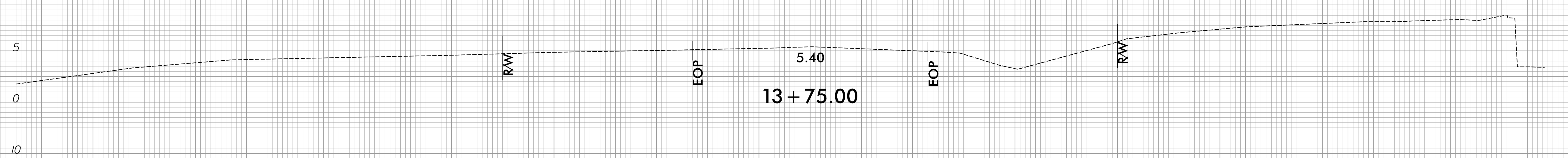
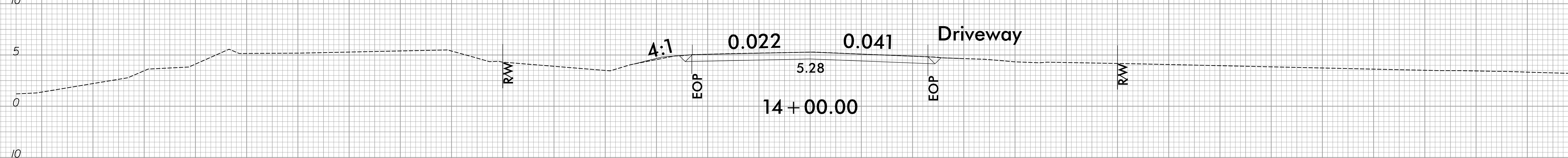
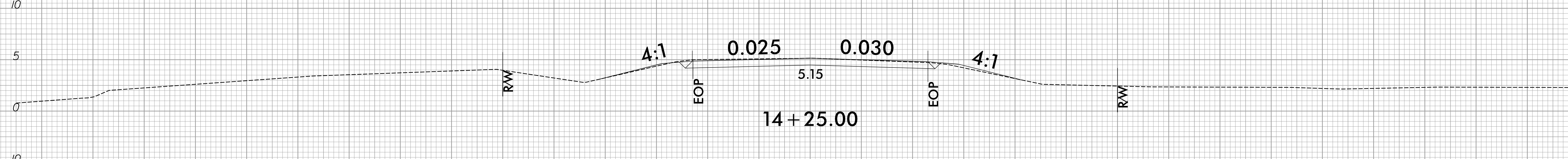
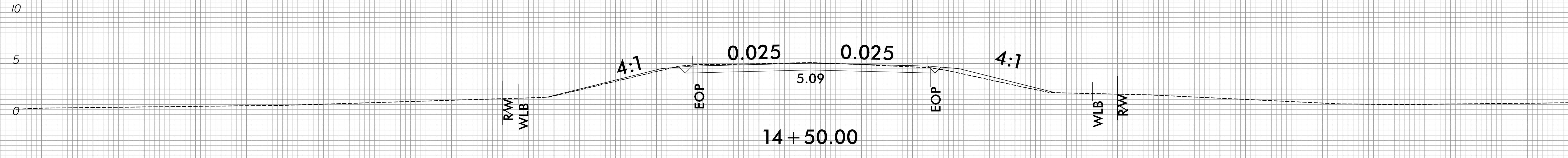
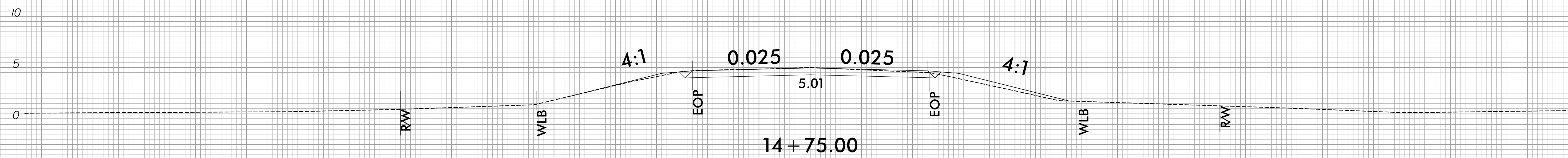
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 8/17/99

6/23/16



PROJ. REFERENCE NO.	SHEET NO.
B-5606	X-1

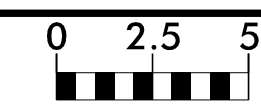
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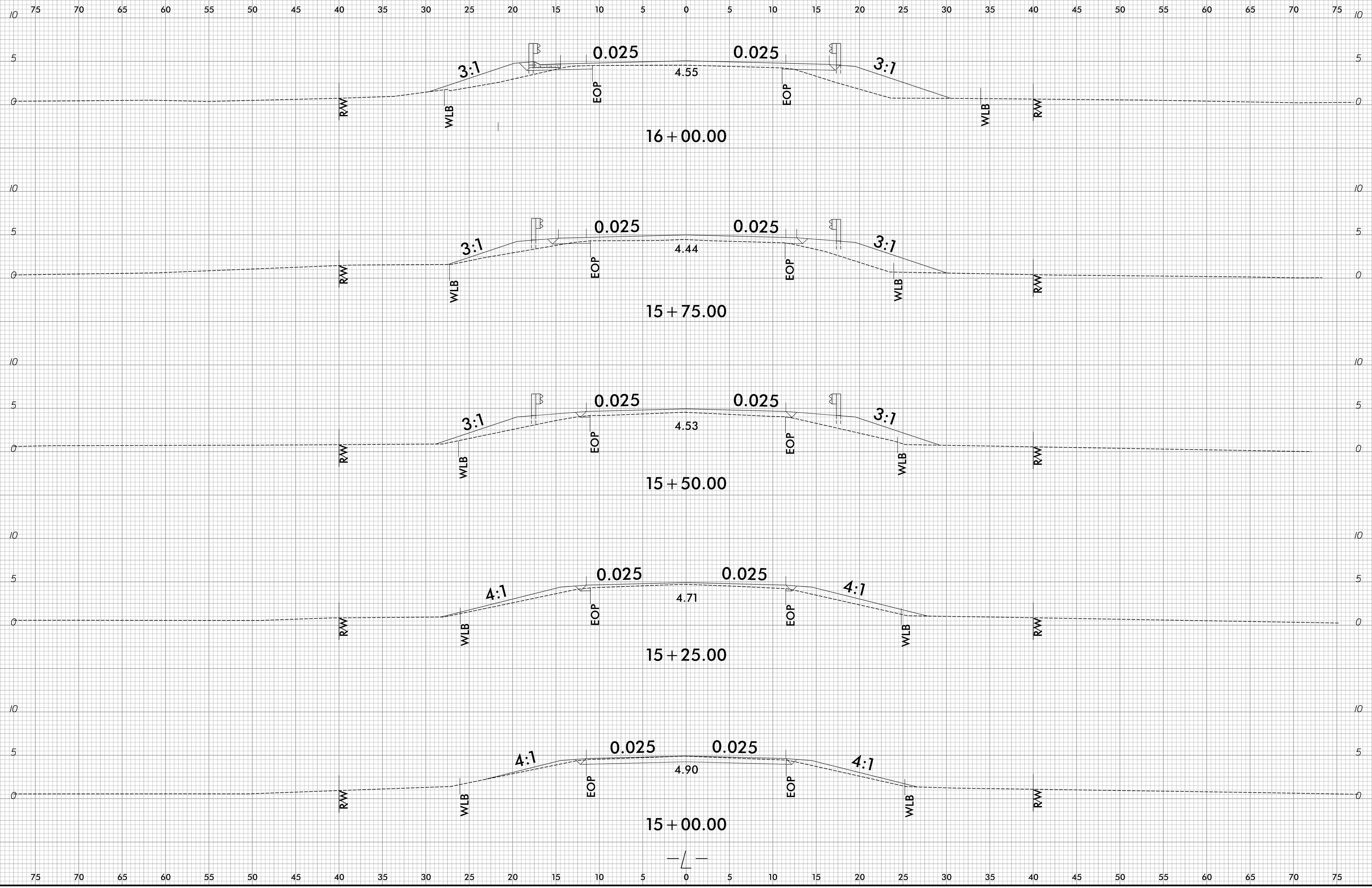
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6/23/16

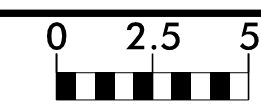


PROJ. REFERENCE NO.	SHEET NO.
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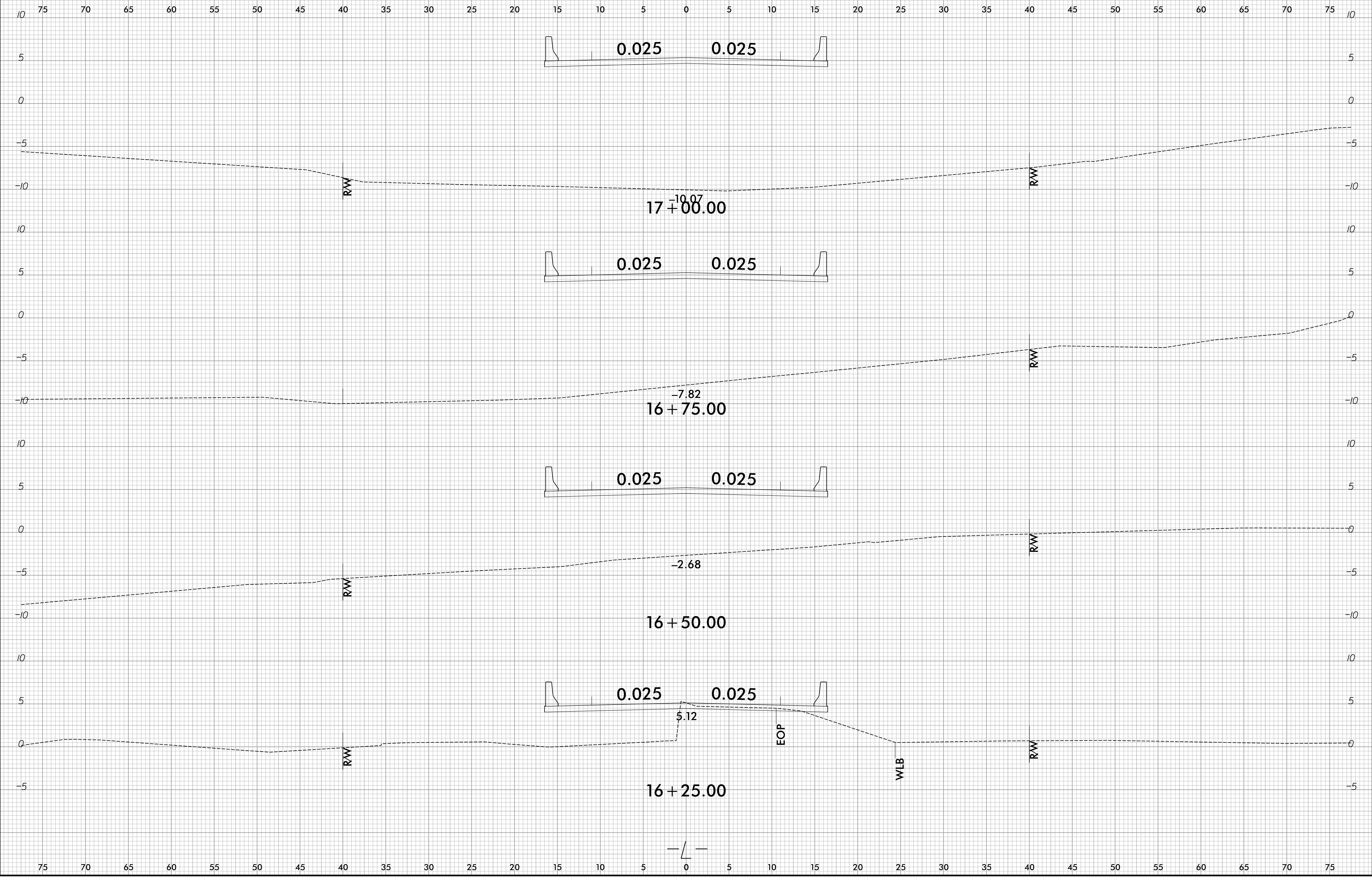


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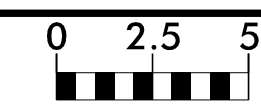


PROJ. REFERENCE NO.	SHEET NO.
B-5606	X-3



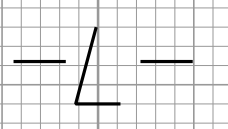
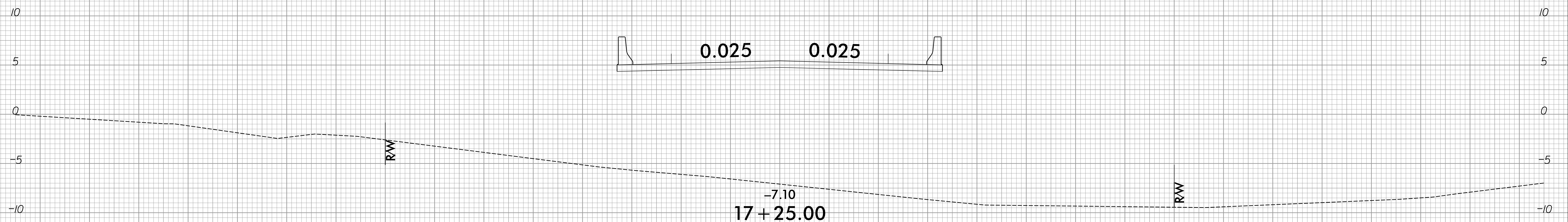
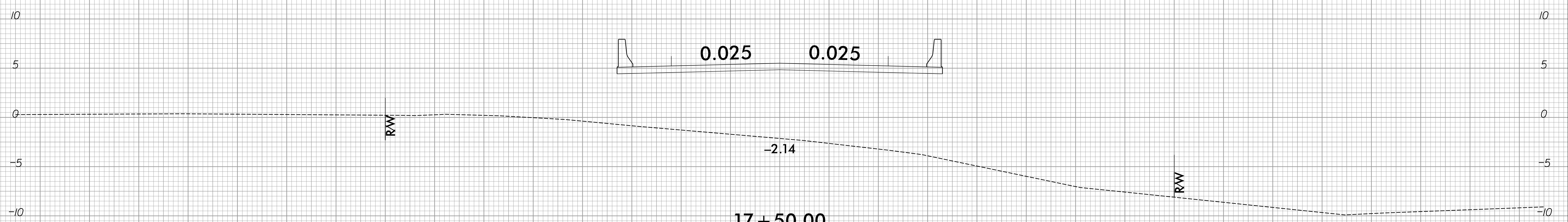
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6/23/16



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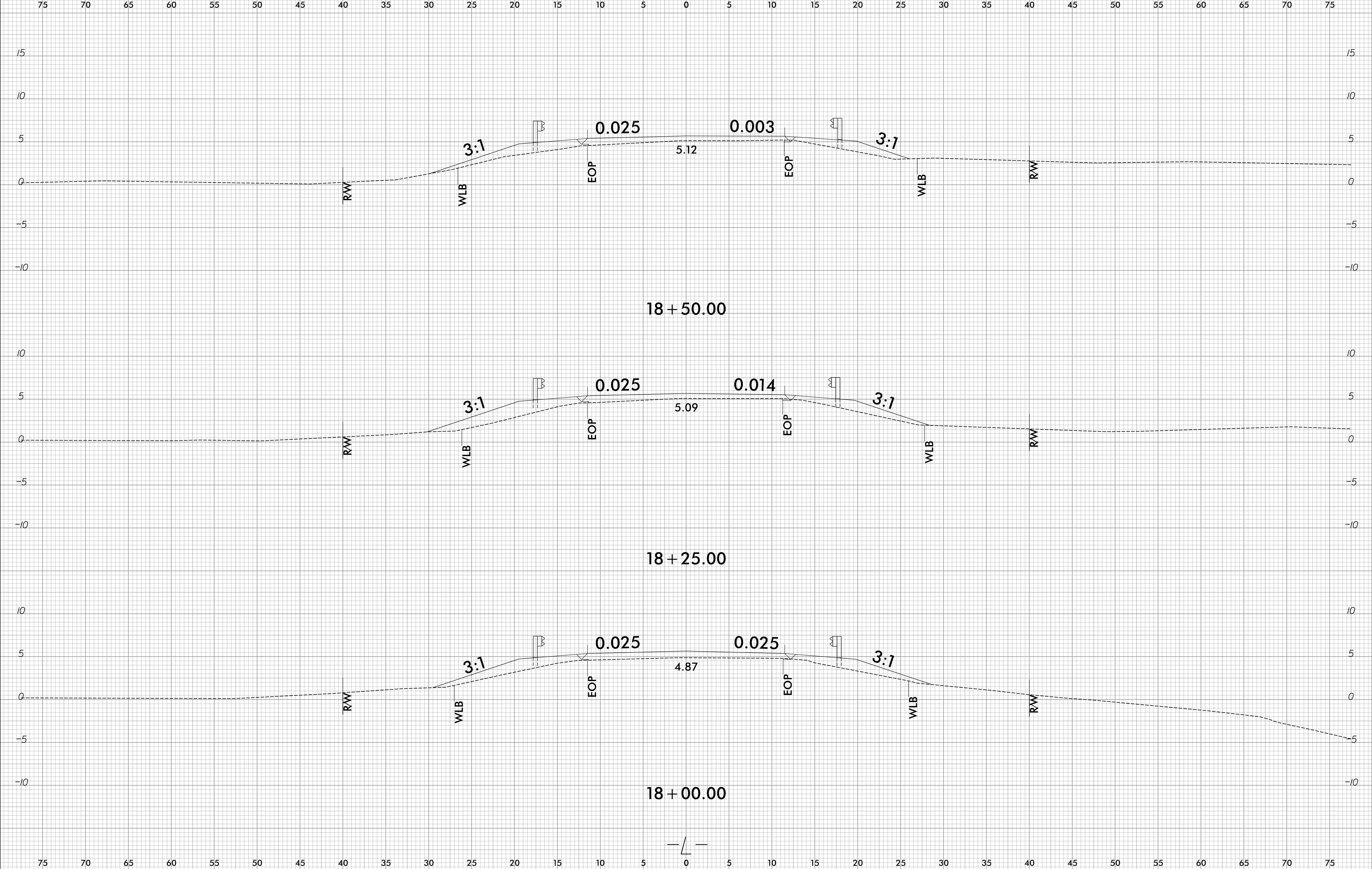


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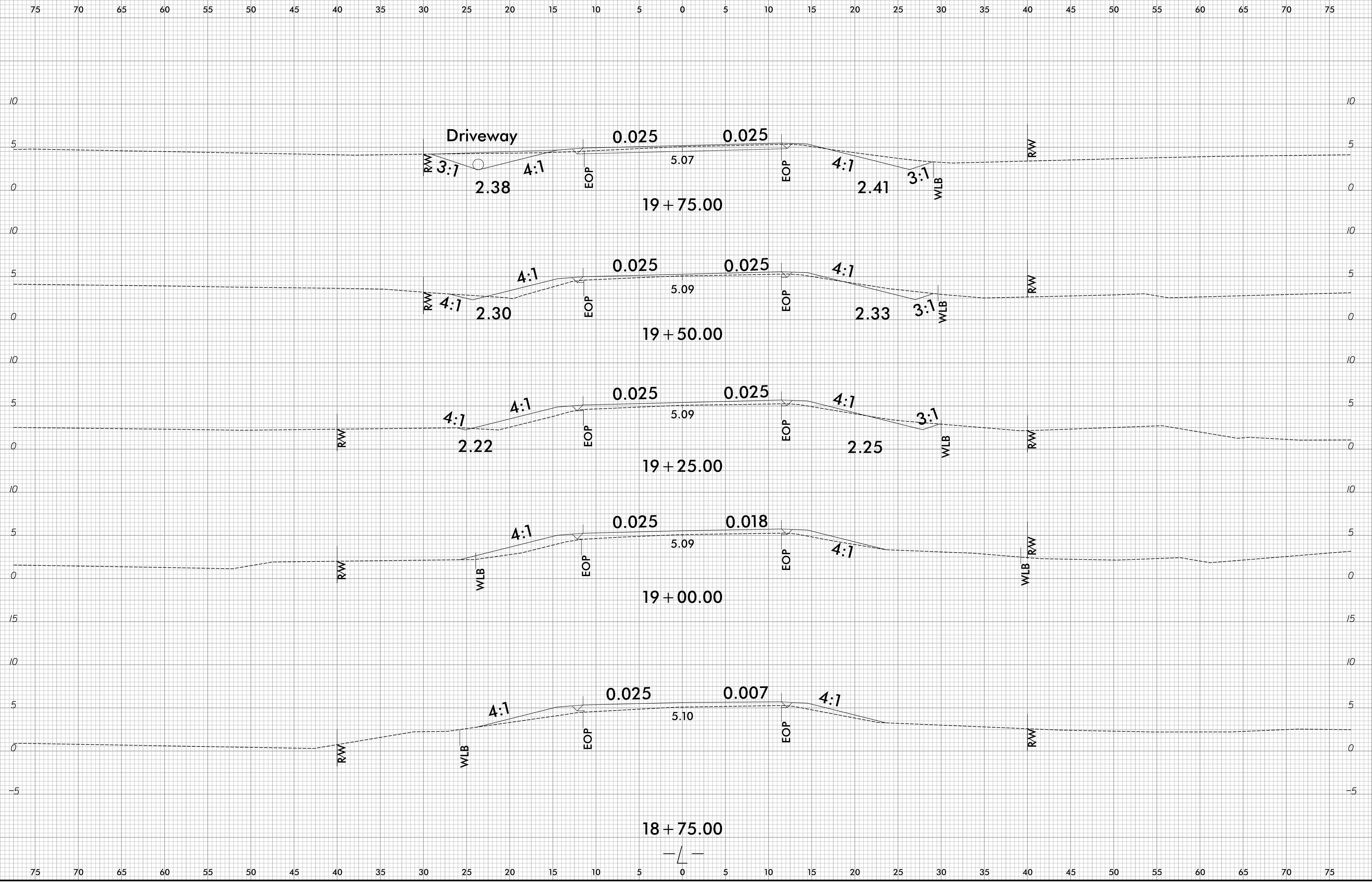
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	B-5606	X-5



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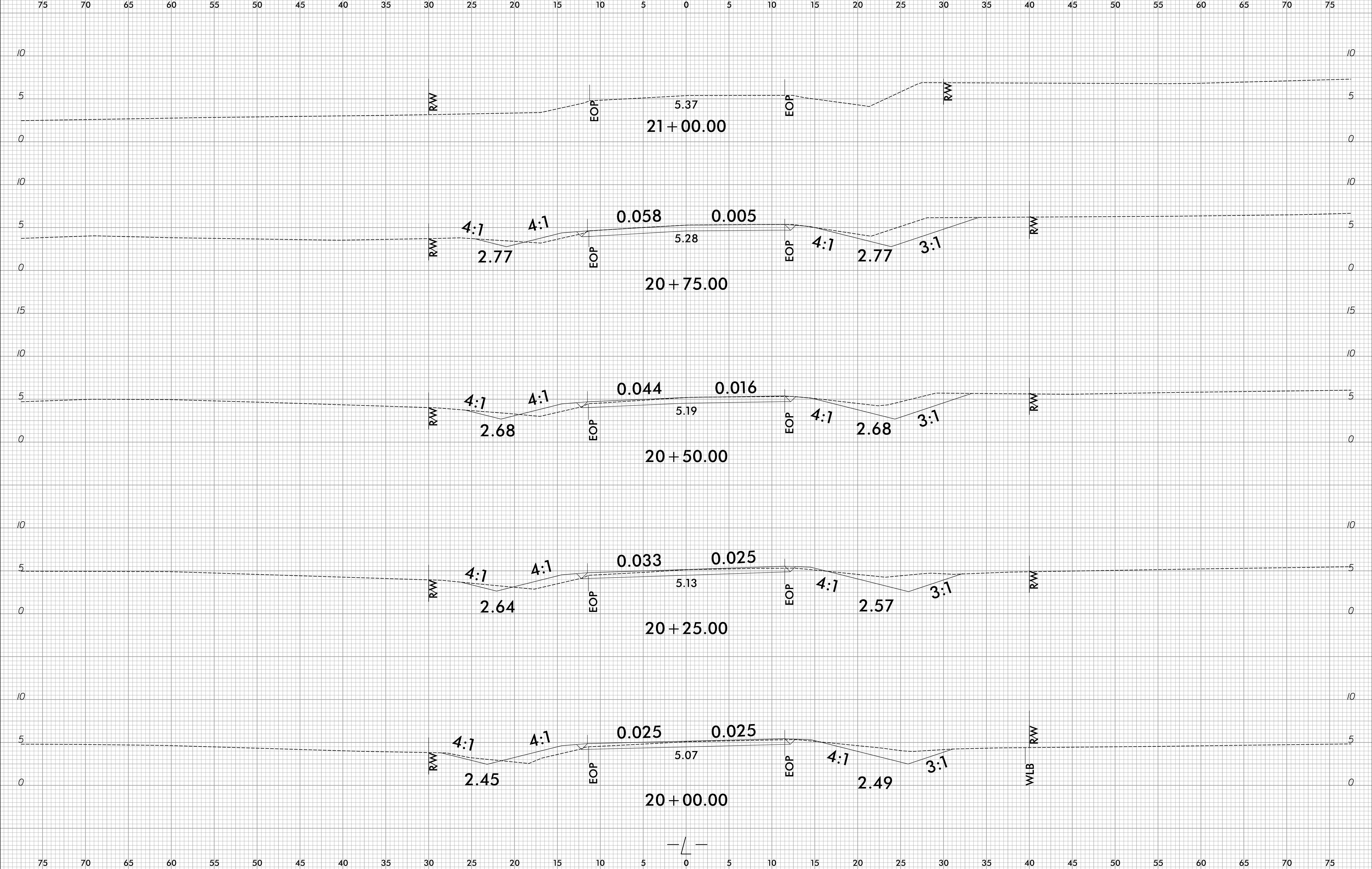
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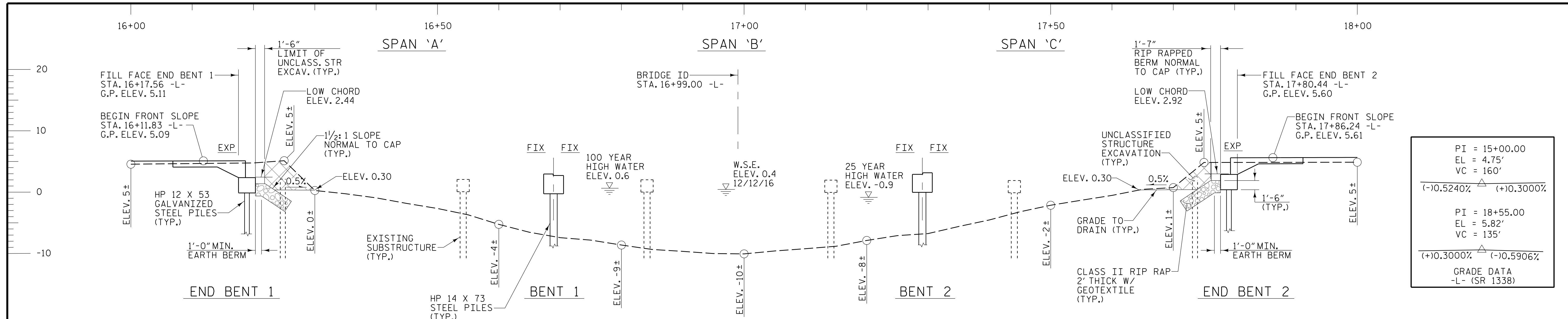
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6/23/16

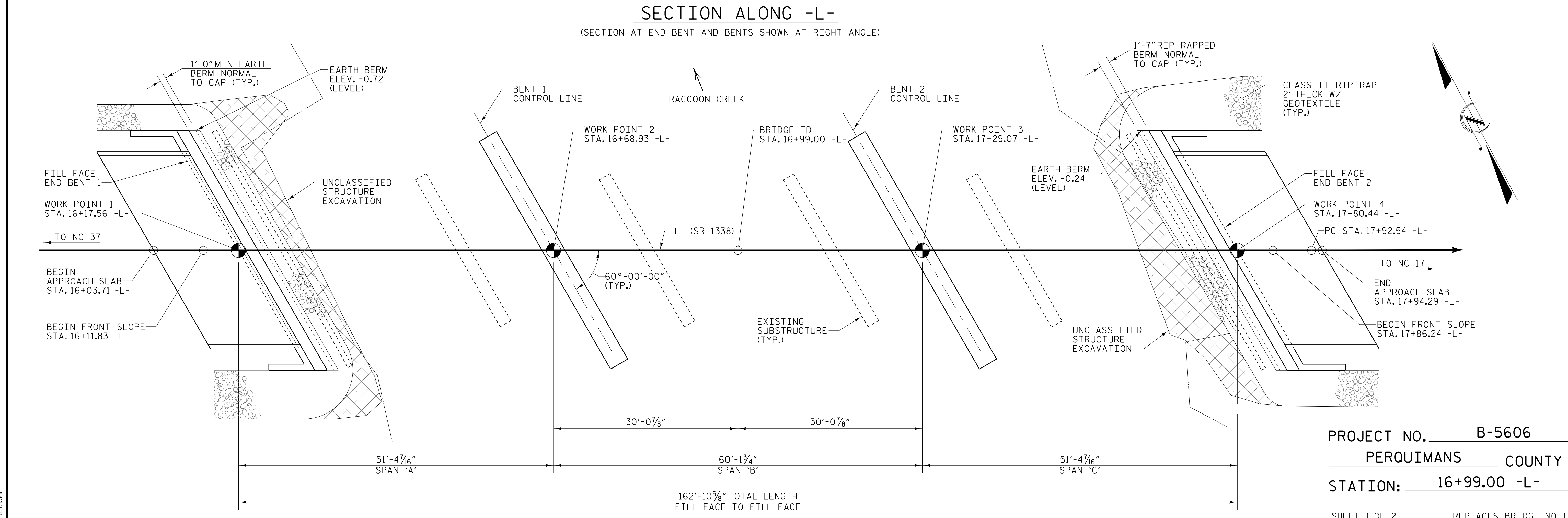
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	B-5606	X-7



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PI = 15+00.00	EL = 4.75'	VC = 160'
(-)0.5240%		(+)0.3000%
PI = 18+55.00	EL = 5.82'	VC = 135'
(+)0.3000%		(-)0.5906%
GRADE DATA -L- (SR 1338)		



PLAN
PILES NOT SHOWN FOR CLARITY

HYDRAULIC DATA:

DESIGN DISCHARGE -	850 CFS
FREQUENCY OF DESIGN FLOOD -	25 YEAR
DESIGN HIGH WATER ELEVATION -	-0.9
DRAINAGE AREA -	7.5 SQ. MI.
BASE DISCHARGE (Q 100) -	1300 CFS
BASE HIGH WATER ELEVATION -	0.6

OVERTOPPING DATA:

OVERTOPPING DISCHARGE -	3710 CFS
FREQUENCY OF OVERTOPPING -	>500 YEAR
OVERTOPPING FLOOD ELEVATION -	4.9

LOW POINT OF ROADWAY OVERTOPPING PROFILE OCCURS AT -L- STA. 15+22

HORIZONTAL CURVE DATA

PI STA. 18+35.78
$\Delta = 1^\circ 02' 51.8''$ (LT)
$D = 1^\circ 12' 41.2''$
$L = 86.49'$
$T = 43.24'$
$R = 4,729.58'$



CALYX
ENGINEERS + CONSULTANTS
6750 TRYON ROAD
CARY, NC 27518
phone: 919.851.1912
CALYXengineers.com
NC License # F-1333

PROJECT NO. B-5606
PERQUIMANS COUNTY
STATION: 16+99.00 -L-

SHEET 1 OF 2 REPLACES BRIDGE NO. 11

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
GENERAL DRAWING
BRIDGE ON SR 1338
OVER RACON CREEK
BETWEEN NC 37 & US 17
30'-10" CLEAR ROADWAY - 60° SKEW

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

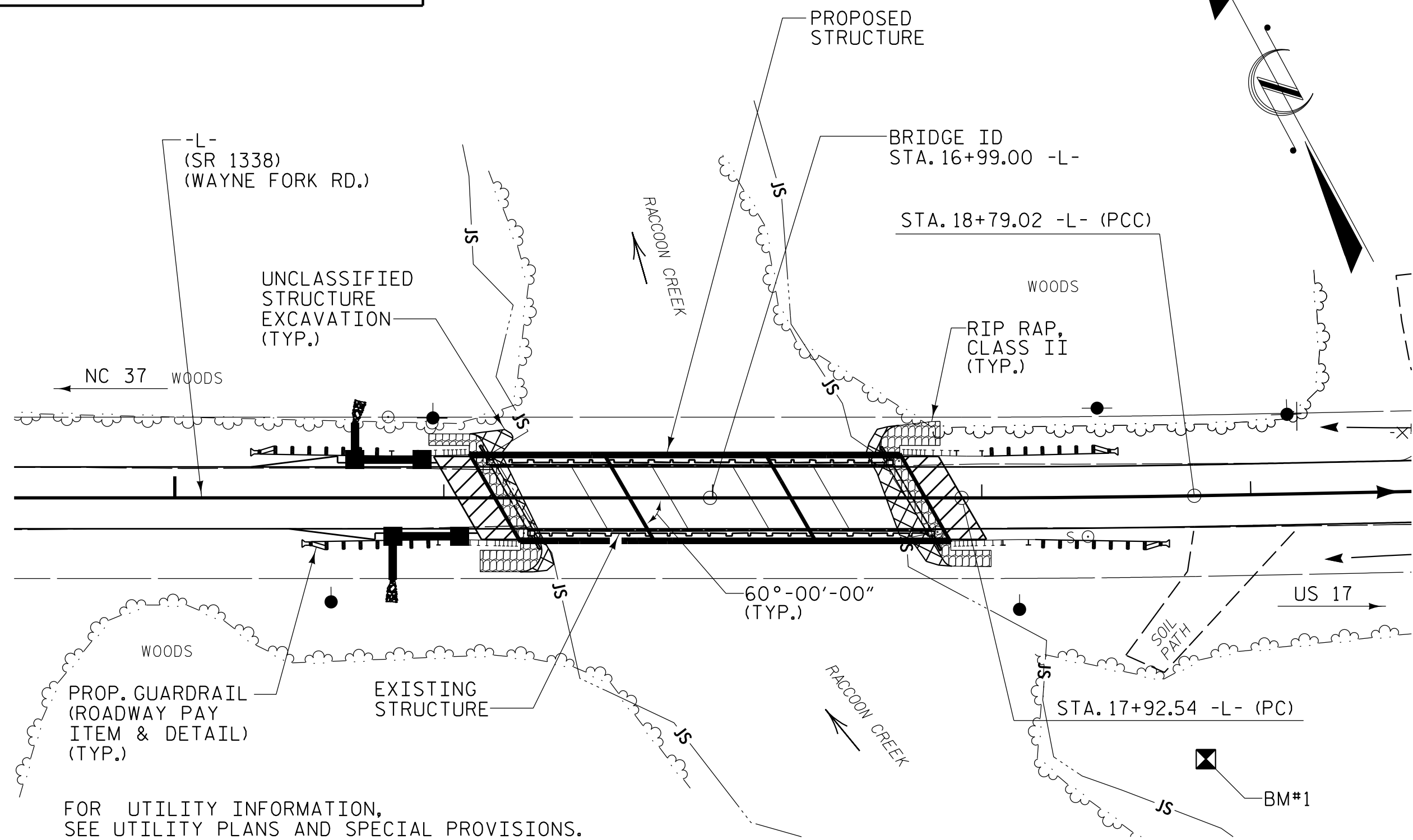
TOTAL SHEETS: 24

DRAWN BY :	W. B. ALLEN	DATE :	7/17
CHECKED BY :	Z. H. BROWN	DATE :	7/17
DESIGN ENGINEER OF RECORD:	L. K. AUSTIN	DATE :	5/18

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

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BM #1-RR SPIKE IN BASE OF 12" CYPRESS 98.01' RT. OF STA. 18+81.53 -L- ELEV.= 2.04'



LOCATION SKETCH

NOTES

- ASSUMED LIVE LOAD = HL-93 OR ALTERNATE LOADING.
- THIS BRIDGE HAS BEEN DESIGNED IN ACCORDANCE WITH THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS.
- THIS BRIDGE IS LOCATED IN SEISMIC ZONE 1.
- FOR EROSION CONTROL MEASURES SEE EROSION CONTROL PLANS.
- FOR OTHER DESIGN DATA AND GENERAL NOTES, SEE SHEET SN.
- REMOVAL OF THE EXISTING BRIDGE SHALL BE PERFORMED SO AS NOT TO ALLOW DEBRIS TO FALL INTO THE WATER. THE CONTRACTOR SHALL REMOVE THE BRIDGE AND SUBMIT PLANS FOR THE DEMOLITION IN ACCORDANCE WITH ARTICLE 402-2 OF THE STANDARD SPECIFICATIONS.
- THE MATERIAL SHOWN ON SHEET 1 OF 2 IN THE CROSS-HATCHED AREA SHALL BE EXCAVATED FOR A MAX. DISTANCE OF 28 FT. RT. AND 27 FT. LT. OF CENTERLINE ROADWAY AS DIRECTED BY THE ENGINEER. THIS WORK WILL BE PAID FOR AT THE LUMP SUM PRICE FOR UNCLASSIFIED STRUCTURE EXCAVATION. SEE SECTION 412 OF THE STANDARD SPECIFICATIONS.
- THE EXISTING STRUCTURE CONSISTING OF FIVE 30' SPANS WITH A 24'-2" CLEAR ROADWAY WIDTH AND REINF. CONCRETE FLOOR ON STEEL I-BEAMS SUPPORTED ON REINF. CONCRETE CAPS & PPC PILES SHALL BE REMOVED. THE BRIDGE IS PRESENTLY POSTED FOR LOAD LIMIT.
- 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+99.00 -L-.
- 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.

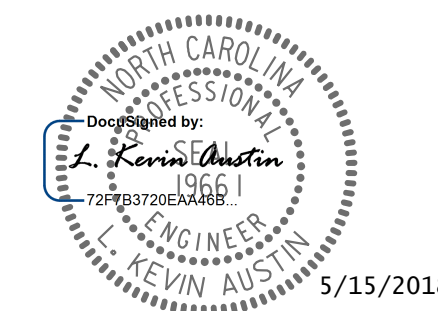
- IF EXISTING PPC PILES CANNOT BE REMOVED, THEY MAY BE CUT-OFF AT THE MUDLINE.
- THIS STRUCTURE HAS BEEN DESIGNED IN ACCORDANCE WITH HEC 18, "EVALUATING SCOUR AT BRIDGES".
- GALVANIZED STEEL PILES ARE REQUIRED IN ACCORDANCE WITH SECTION 1076 OF THE STANDARD SPECIFICATIONS.
- FOR ASBESTOS ASSESSMENT FOR BRIDGE DEMOLITION AND RENOVATIONS ACTIVITIES, SEE SPECIAL PROVISIONS.
- 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.
- NO DECK DRAINS REQUIRED.

FOUNDATION NOTES

- FOR PILES, SEE SECTION 450 OF THE STANDARD SPECIFICATIONS.
- PILES AT END BENT NO.1 AND END BENT NO.2 ARE DESIGNED FOR A FACTORED RESISTANCE OF 67 TONS PER PILE.
- DRIVE PILES AT END BENT NO.1 AND END BENT NO.2 TO A REQUIRED DRIVING RESISTANCE OF 90 TONS PER PILE.
- PILES AT BENT NO.1 AND BENT NO.2 ARE DESIGNED FOR A FACTORED RESISTANCE OF 118 TONS PER PILE.
- DRIVE PILES AT BENT NO.1 AND BENT NO.2 TO A REQUIRED DRIVING RESISTANCE OF 160 TONS PER PILE. THIS REQUIRED DRIVING RESISTANCE INCLUDES ADDITIONAL RESISTANCE FOR SCOUR.
- INSTALL PILES AT BENT NO.1 AND BENT NO.2 TO A TIP ELEVATION NO HIGHER THAN -42 FT.
- THE SCOUR CRITICAL ELEVATION FOR BENT NO.1 AND BENT NO.2 IS -16 FT. SCOUR CRITICAL ELEVATIONS ARE USED TO MONITOR POSSIBLE SCOUR PROBLEMS DURING THE LIFE OF THE STRUCTURE.
- IT HAS BEEN ESTIMATED THAT A HAMMER WITH AN EQUIVALENT RATED ENERGY IN THE RANGE OF 20 TO 40 FT-KIPS PER BLOW WILL BE REQUIRED TO DRIVE PILES AT END BENT NO.1, END BENT NO.2, BENT NO.1 AND BENT NO.2. THIS ESTIMATED ENERGY RANGE DOES NOT RELEASE THE CONTRACTOR FROM PROVIDING DRIVING EQUIPMENT IN ACCORDANCE WITH SUBARTICLE 450-3D(2) OF THE STANDARD SPECIFICATIONS.
- TESTING THE FIRST PRODUCTION PILE WITH THE PDA DURING DRIVING, IS REQUIRED AT END BENT NO.1 OR END BENT NO.2 AND BENT NO.1 OR BENT NO.2. FOR PDA TESTING, SEE SECTION 450 OF THE STANDARD SPECIFICATIONS.

PROJECT NO. B-5606
 PERQUIMANS COUNTY
 STATION: 16+99.00 -L-

SHEET 2 OF 2



PLANS PREPARED BY:
CALYX
 ENGINEERS + CONSULTANTS
 6750 TRYON ROAD
 CARY, NC 27518
 phone: 919.851.1912
 CALYXengineers.com
 NC License # F-1333

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
GENERAL DRAWING
 BRIDGE ON SR 1338
 OVER RACON CREEK
 BETWEEN NC 37 & US 17
 30'-10" CLEAR ROADWAY - 60°SKEW

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			24
2			4			

DRAWN BY : W. B. ALLEN DATE : 7/17
 CHECKED BY : Z. H. BROWN DATE : 8/17
 DESIGN ENGINEER OF RECORD: L. K. AUSTIN DATE : 5/18

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

	REMOVAL OF EXISTING STRUCTURE	ASBESTOS ASSESSMENT	PDA TESTING	UNCLASSIFIED STRUCTURE EXCAVATION	CONCRETE WEARING SURFACE	GROOVING BRIDGE FLOORS	CLASS A CONCRETE	BRIDGE APPROACH SLABS	REINFORCING STEEL	PILE DRIVING EQUIPMENT SETUP FOR HP 12 X 53 GALVANIZED STEEL PILES	PILE DRIVING EQUIPMENT SETUP FOR HP 14 X 73 GALVANIZED STEEL PILES
	LUMP SUM	LUMP SUM	EACH	LUMP SUM	SQ. FT.	SQ. FT.	CU. YARDS	LUMP SUM	LBS.	EACH	EACH
SUPERSTRUCTURE		LUMP SUM			4942	5173		LUMP SUM			
END BENT 1				LUMP SUM			15.8		2427	7	
BENT 1							14.8		2719		8
BENT 2							14.7		2719		8
END BENT 2				LUMP SUM			15.8		2427	7	
TOTAL	LUMP SUM	LUMP SUM	2	LUMP SUM	4942	5173	61.1	LUMP SUM	10292	14	16

	HP 12 X 53 GALVANIZED STEEL PILES	HP 14 X 73 GALVANIZED STEEL PILES	PILE REDRIVES	VERTICAL CONCRETE BARRIER RAIL	RIP RAP CLASS II (2'-0" THICK)	GEOTEXTILE FOR DRAINAGE	ELASTOMERIC BEARINGS	FOAM JOINT SEALS	3'-0" X 1'-9" PRESTRESSED CONCRETE CORED SLABS	3'-0" X 2'-0" PRESTRESSED CONCRETE CORED SLABS				
	NO.	LIN. FT.	NO.	LIN. FT.	EACH	LIN. FT.	TONS	SQ. YARDS	LUMP SUM	LUMP SUM	NO.	LIN. FT.	NO.	LIN. FT.
SUPERSTRUCTURE						320.87			LUMP SUM	LUMP SUM	22	1100.00	11	660.00
END BENT 1	7	560			4		52	58						
BENT 1			8	760	4									
BENT 2			8	760	4									
END BENT 2	7	560			4		59	66						
TOTAL	14	1120	16	1520	16	320.87	111	124	LUMP SUM	LUMP SUM	22	1100.00	11	660.00

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

LEVEL	VEHICLE	WEIGHT (W) (TONS)	CONTROLLING LOAD RATING	MINIMUM RATING FACTORS (RF)	TONS = W X RF	STRENGTH I LIMIT STATE										SERVICE III LIMIT STATE					COMMENT NUMBER			
						MOMENT					SHEAR					MOMENT								
						LIVELOAD FACTORS	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)	LIVELOAD FACTORS	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN		GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)	
DESIGN LOAD RATING	HL-93(Inv)	N/A	1	1.79	--	1.75	0.253	1.79	50'	EL	25.00	0.657	2.17	50'	EL	10.00	0.80	0.253	2.21	50'	EL	25.00		
	HL-93(Opr)	N/A	--	2.31	--	1.35	0.253	2.31	50'	EL	25.00	0.657	2.89	50'	EL	10.00	N/A	--	--	--	--	--		
	HS-20(Inv)	36.000	2	2.21	79.56	1.75	0.253	2.21	50'	EL	25.00	0.657	2.59	50'	EL	10.00	0.80	0.253	2.74	50'	EL	25.00		
	HS-20(Opr)	36.000	--	2.87	103.32	1.35	0.253	2.87	50'	EL	25.00	0.657	3.42	50'	EL	10.00	N/A	--	--	--	--	--		
LEGAL LOAD RATING	SV	SNSH	13.500	--	5.57	75.20	1.4	0.253	5.63	50'	EL	25.00	0.657	7.46	50'	EL	10.00	0.80	0.253	5.57	50'	EL	25.00	
		SNGARBS2	20.000	--	4.4	88.00	1.4	0.253	4.45	50'	EL	25.00	0.657	5.45	50'	EL	10.00	0.80	0.253	4.40	50'	EL	25.00	
		SNAGRIS2	22.000	--	4.28	94.16	1.4	0.253	4.33	50'	EL	25.00	0.657	5.12	50'	EL	10.00	0.80	0.253	4.28	50'	EL	25.00	
		SNCOTTS3	27.250	--	2.78	75.76	1.4	0.253	2.81	50'	EL	25.00	0.657	3.59	50'	EL	10.00	0.80	0.253	2.78	50'	EL	25.00	
		SNAGGRS4	34.925	--	2.42	84.52	1.4	0.253	2.44	50'	EL	25.00	0.657	3.12	50'	EL	10.00	0.80	0.253	2.42	50'	EL	25.00	
		SNS5A	35.550	--	2.36	83.90	1.4	0.253	2.38	50'	EL	25.00	0.657	3.25	50'	EL	10.00	0.80	0.253	2.36	50'	EL	25.00	
		SNS6A	39.950	--	2.2	87.89	1.4	0.253	2.23	50'	EL	25.00	0.657	3.01	50'	EL	10.00	0.80	0.253	2.20	50'	EL	25.00	
	SNS7B	42.000	--	2.1	88.20	1.4	0.253	2.12	50'	EL	25.00	0.657	3.05	50'	EL	10.00	0.80	0.253	2.10	50'	EL	25.00		
	TTST	TNAGRIT3	33.000	--	2.7	89.10	1.4	0.253	2.73	50'	EL	25.00	0.657	3.57	50'	EL	10.00	0.80	0.253	2.70	50'	EL	25.00	
		TNT4A	33.075	--	2.72	89.96	1.4	0.253	2.75	50'	EL	25.00	0.657	3.40	50'	EL	10.00	0.80	0.253	2.72	50'	EL	25.00	
		TNT6A	41.600	--	2.27	94.43	1.4	0.253	2.29	50'	EL	25.00	0.657	3.31	50'	EL	10.00	0.80	0.253	2.27	50'	EL	25.00	
		TNT7A	42.000	--	2.3	96.60	1.4	0.253	2.33	50'	EL	25.00	0.657	3.04	50'	EL	40.00	0.80	0.253	2.30	50'	EL	25.00	
		TNT7B	42.000	--	2.4	100.80	1.4	0.253	2.43	50'	EL	25.00	0.657	2.90	50'	EL	10.00	0.80	0.253	2.40	50'	EL	25.00	
		TNAGRIT4	43.000	--	2.28	98.04	1.4	0.253	2.30	50'	EL	25.00	0.657	2.78	50'	EL	10.00	0.80	0.253	2.28	50'	EL	25.00	
TNAGT5A		45.000	--	2.13	95.85	1.4	0.253	2.15	50'	EL	25.00	0.657	2.87	50'	EL	10.00	0.80	0.253	2.13	50'	EL	25.00		
TNAGT5B	45.000	3	2.09	94.05	1.4	0.253	2.11	50'	EL	25.00	0.657	2.62	50'	EL	10.00	0.80	0.253	2.09	50'	EL	25.00			

LOAD FACTORS:

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

NOTES:

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

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

COMMENTS:

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

CONTROLLING LOAD RATING

1 DESIGN LOAD RATING (HL-93)

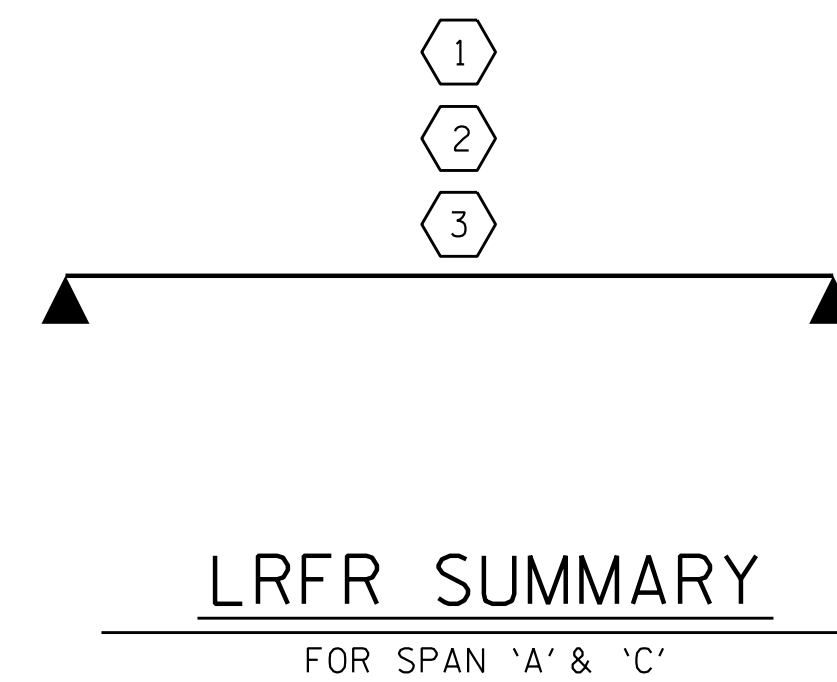
2 DESIGN LOAD RATING (HS-20)

3 LEGAL LOAD RATING **

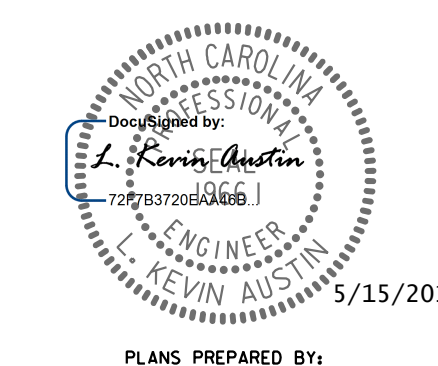
** SEE CHART FOR VEHICLE TYPE

GIRDER LOCATION

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



PROJECT NO. B-5606
PERQUIMANS COUNTY
 STATION: 16+99.00 -L-



CALYX
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6750 TRYON ROAD
CARY, NC 27518
phone: 919.851.1912
CALYXengineers.com
NC License # F-1333

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

**LRFR SUMMARY FOR
50' CORED SLAB UNIT
60° SKEW
(NON-INTERSTATE TRAFFIC)**

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-3
1			3			TOTAL SHEETS
2			4			24

DRAWN BY : W. B. ALLEN DATE : 7/17
 CHECKED BY : Z. H. BROWN DATE : 7/17
 DESIGN ENGINEER OF RECORD: L. K. AUSTIN DATE : 5/18

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

LOAD FACTORS:

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

LOAD AND RESISTANCE FACTOR RATING (LRFD) SUMMARY FOR PRESTRESSED CONCRETE GIRDERS																								
LEVEL	VEHICLE	WEIGHT (W) (TONS)	CONTROLLING LOAD RATING	MINIMUM RATING FACTORS (RF)	TONS = W X RF	STRENGTH I LIMIT STATE										SERVICE III LIMIT STATE						COMMENT NUMBER		
						LIVELOAD FACTORS	MOMENT					SHEAR					LIVELOAD FACTORS	MOMENT						
							DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)		DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION		DISTANCE FROM LEFT END OF SPAN (ft)	
DESIGN LOAD RATING	HL-93(Inv)	N/A	1	1.59	--	1.75	0.250	2.68	60'	EL	30.00	0.650	1.59	60'	EL	6.00	0.80	0.250	3.65	60'	EL	30.00		
	HL-93(0pr)	N/A	--	2.1	--	1.35	0.250	3.47	60'	EL	30.00	0.650	2.10	60'	EL	6.00	N/A	--	--	--	--	--		
	HS-20(Inv)	36.000	2	1.99	71.64	1.75	0.250	3.39	60'	EL	30.00	0.650	1.99	60'	EL	6.00	0.80	0.250	4.63	60'	EL	30.00		
	HS-20(0pr)	36.000	--	2.58	92.88	1.35	0.250	4.40	60'	EL	30.00	0.650	2.58	60'	EL	6.00	N/A	--	--	--	--	--		
LEGAL LOAD RATING	SV	SNSH	13,500	--	5.74	77.49	1.4	0.250	9.13	60'	EL	30.00	0.650	5.74	60'	EL	6.00	0.80	0.250	9.97	60'	EL	30.00	
		SNGARBS2	20,000	--	4.13	82.60	1.4	0.250	6.99	60'	EL	30.00	0.650	4.13	60'	EL	6.00	0.80	0.250	7.63	60'	EL	30.00	
		SNAGRIS2	22,000	--	3.86	84.92	1.4	0.250	6.70	60'	EL	30.00	0.650	3.86	60'	EL	54.00	0.80	0.250	7.32	60'	EL	30.00	
		SNCOTTS3	27,250	--	2.87	78.21	1.4	0.250	4.55	60'	EL	30.00	0.650	2.87	60'	EL	54.00	0.80	0.250	4.97	60'	EL	30.00	
		SNAGGRS4	34,925	--	2.42	84.52	1.4	0.250	3.87	60'	EL	30.00	0.650	2.42	60'	EL	6.00	0.80	0.250	4.23	60'	EL	30.00	
		SNS5A	35,550	--	2.46	87.45	1.4	0.250	3.78	60'	EL	30.00	0.650	2.46	60'	EL	54.00	0.80	0.250	4.13	60'	EL	30.00	
		SNS6A	39,950	--	2.26	90.29	1.4	0.250	3.50	60'	EL	30.00	0.650	2.26	60'	EL	6.00	0.80	0.250	3.82	60'	EL	30.00	
	TTST	SNS7B	42,000	--	2.24	94.08	1.4	0.250	3.33	60'	EL	30.00	0.650	2.24	60'	EL	6.00	0.80	0.250	3.64	60'	EL	30.00	
		TNAGRIT3	33,000	--	2.67	88.11	1.4	0.250	4.28	60'	EL	30.00	0.650	2.67	60'	EL	6.00	0.80	0.250	4.67	60'	EL	30.00	
		TNT4A	33,075	--	2.6	86.00	1.4	0.250	4.30	60'	EL	30.00	0.650	2.60	60'	EL	6.00	0.80	0.250	4.70	60'	EL	30.00	
		TNT6A	41,600	--	2.44	101.50	1.4	0.250	3.55	60'	EL	30.00	0.650	2.44	60'	EL	6.00	0.80	0.250	3.88	60'	EL	30.00	
		TNT7A	42,000	--	2.32	97.44	1.4	0.250	3.58	60'	EL	30.00	0.650	2.32	60'	EL	54.00	0.80	0.250	3.91	60'	EL	30.00	
		TNT7B	42,000	--	2.17	91.14	1.4	0.250	3.74	60'	EL	30.00	0.650	2.17	60'	EL	6.00	0.80	0.250	4.09	60'	EL	30.00	
		TNAGRIT4	43,000	--	2.11	90.73	1.4	0.250	3.53	60'	EL	30.00	0.650	2.11	60'	EL	54.00	0.80	0.250	3.86	60'	EL	30.00	
TNAGT5A	45,000	--	2.12	95.40	1.4	0.250	3.32	60'	EL	30.00	0.650	2.12	60'	EL	6.00	0.80	0.250	3.62	60'	EL	30.00			
TNAGT5B	45,000	3	2	90.00	1.4	0.250	3.26	60'	EL	30.00	0.650	2.00	60'	EL	6.00	0.80	0.250	3.57	60'	EL	30.00			

NOTES:

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

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

COMMENTS:

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

CONTROLLING LOAD RATING

1 DESIGN LOAD RATING (HL-93)

2 DESIGN LOAD RATING (HS-20)

3 LEGAL LOAD RATING **

** SEE CHART FOR VEHICLE TYPE

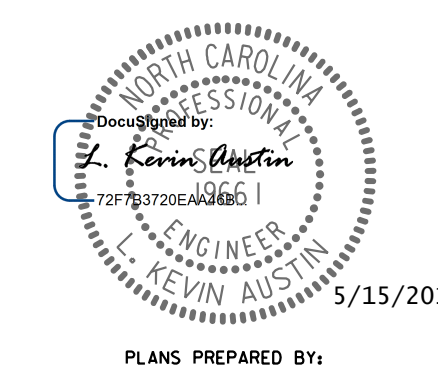
GIRDER LOCATION

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



LRFR SUMMARY
FOR SPAN 'B'

PROJECT NO. B-5606
PERQUIMANS COUNTY
 STATION: 16+99.00 -L-



CALYX
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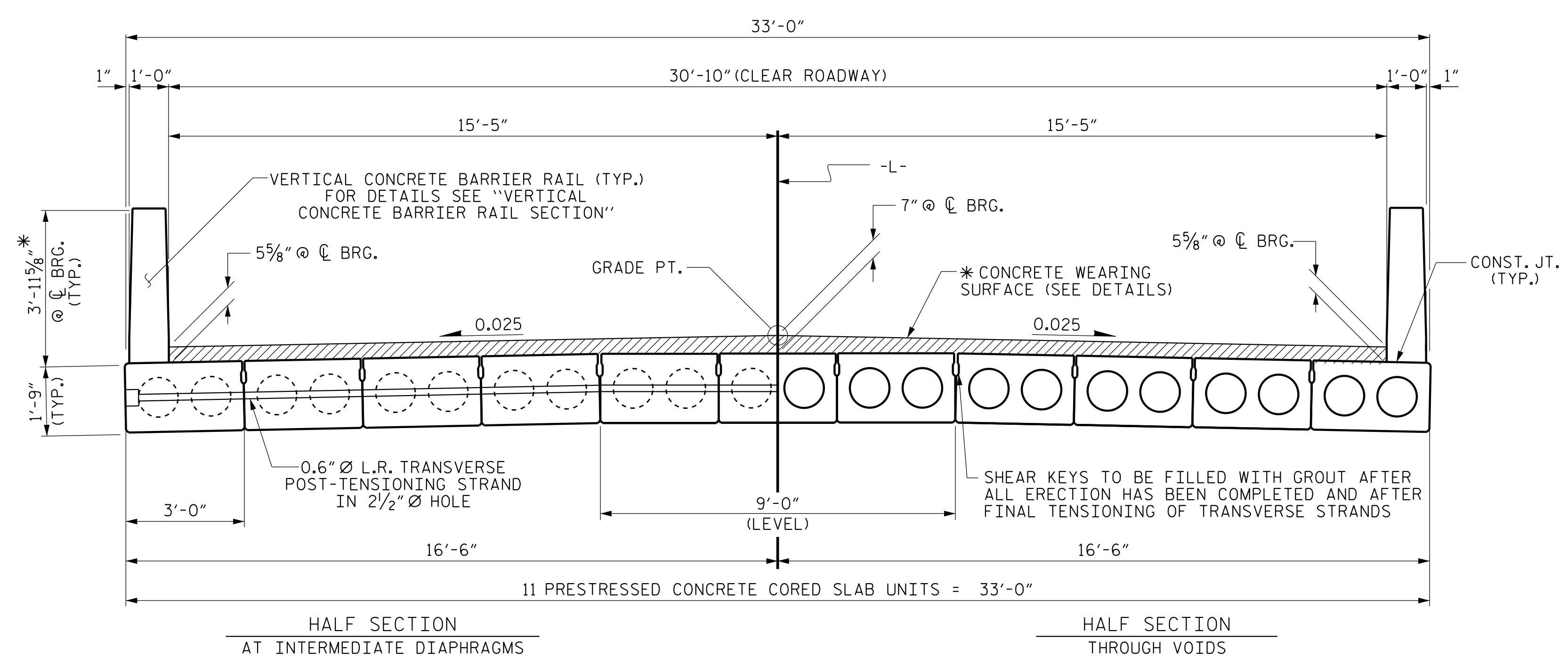
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

LRFR SUMMARY FOR
 60' CORED SLAB UNIT
 60° SKEW
 (NON-INTERSTATE TRAFFIC)

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS
2			4			24

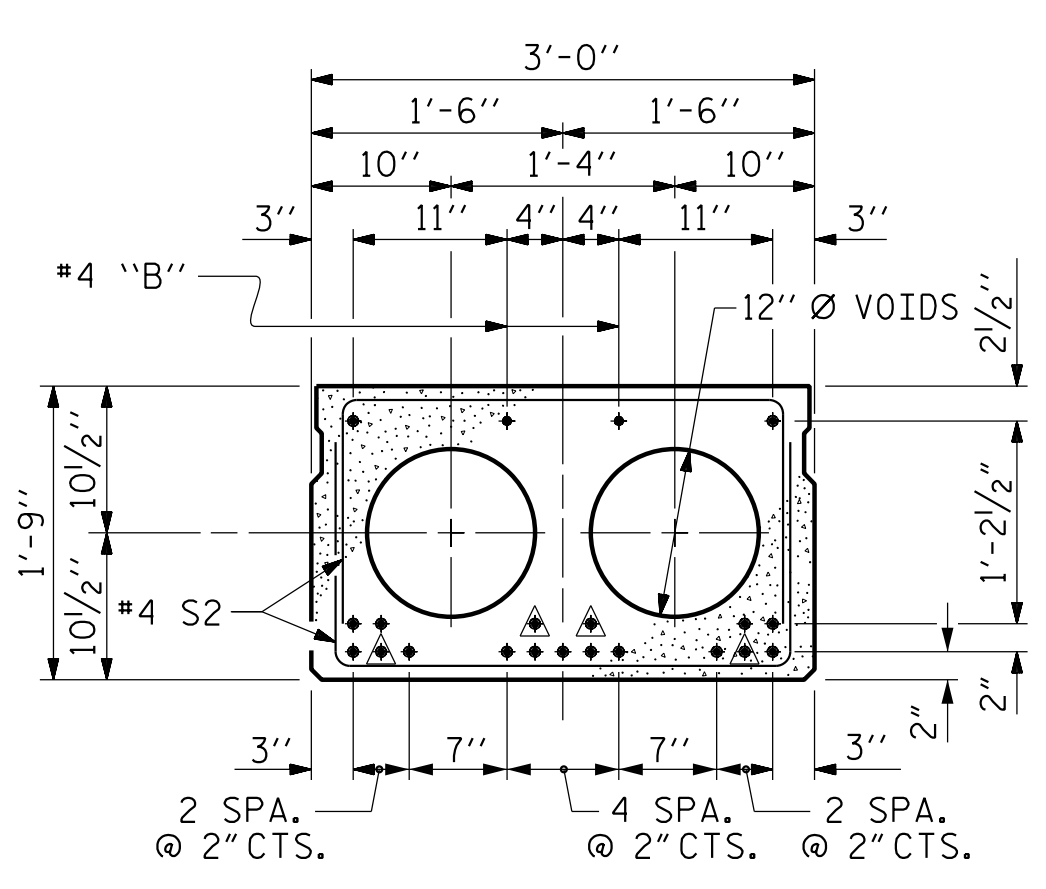
DRAWN BY : W. B. ALLEN DATE : 7/17
 CHECKED BY : Z. H. BROWN DATE : 7/17
 DESIGN ENGINEER OF RECORD: L. K. AUSTIN DATE : 5/18

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



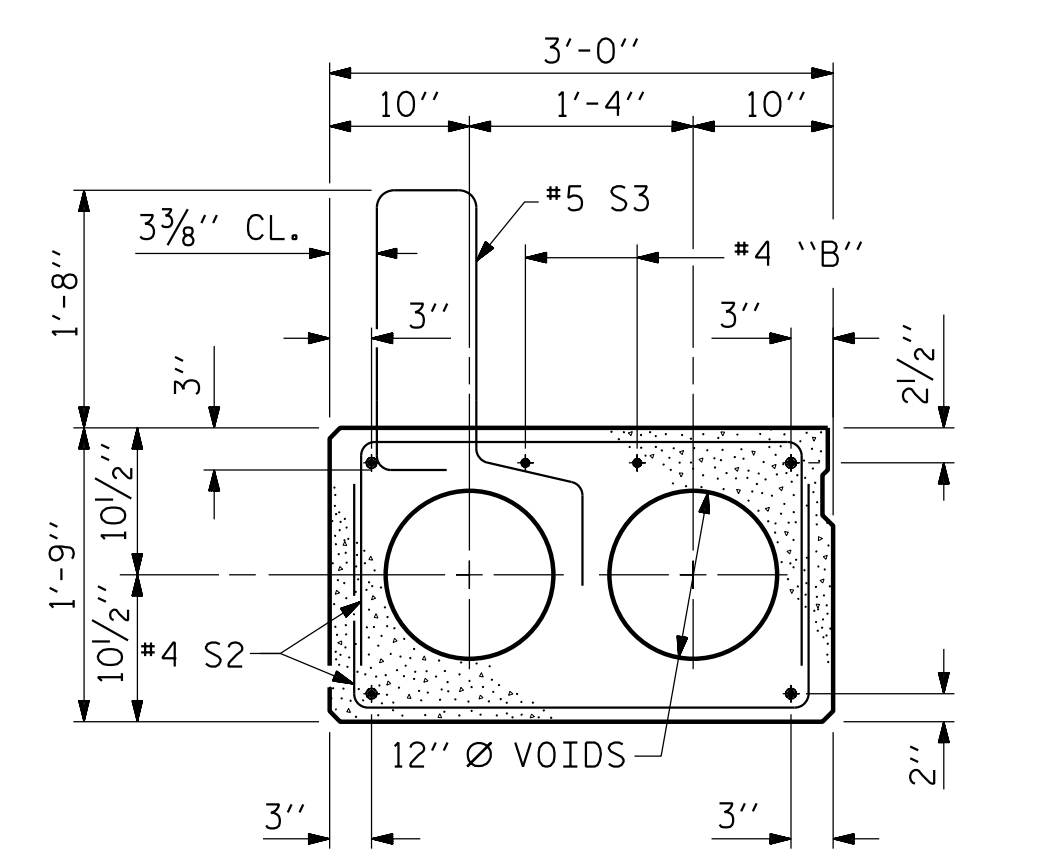
TYPICAL SECTION

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



INTERIOR SLAB SECTION (50' UNIT)
(19 STRANDS REQUIRED)

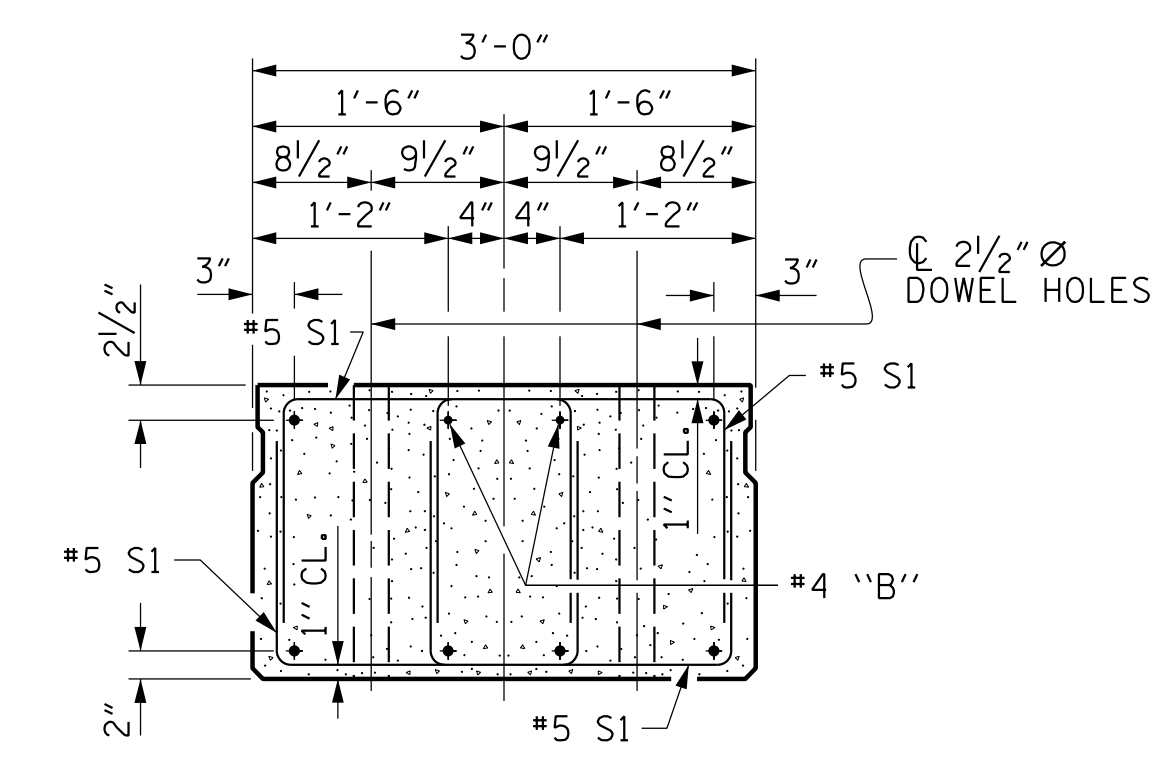
0.6" Ø LOW RELAXATION STRAND LAYOUT



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

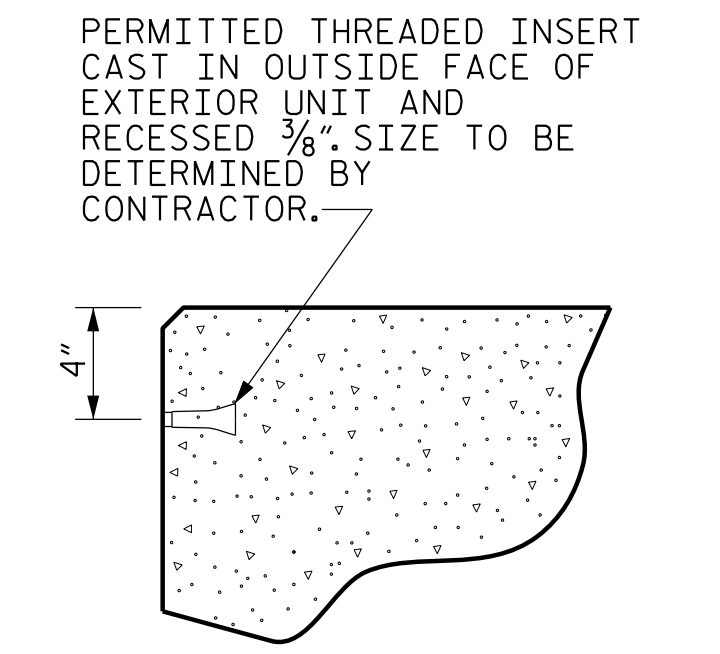
⚠ BOND SHALL BE BROKEN ON THESE STRANDS FOR A DISTANCE OF 6'-0" FROM END OF CORED SLAB UNIT. SEE STANDARD SPECIFICATIONS, ARTICLE 1078-7.

DEBONDING LEGEND

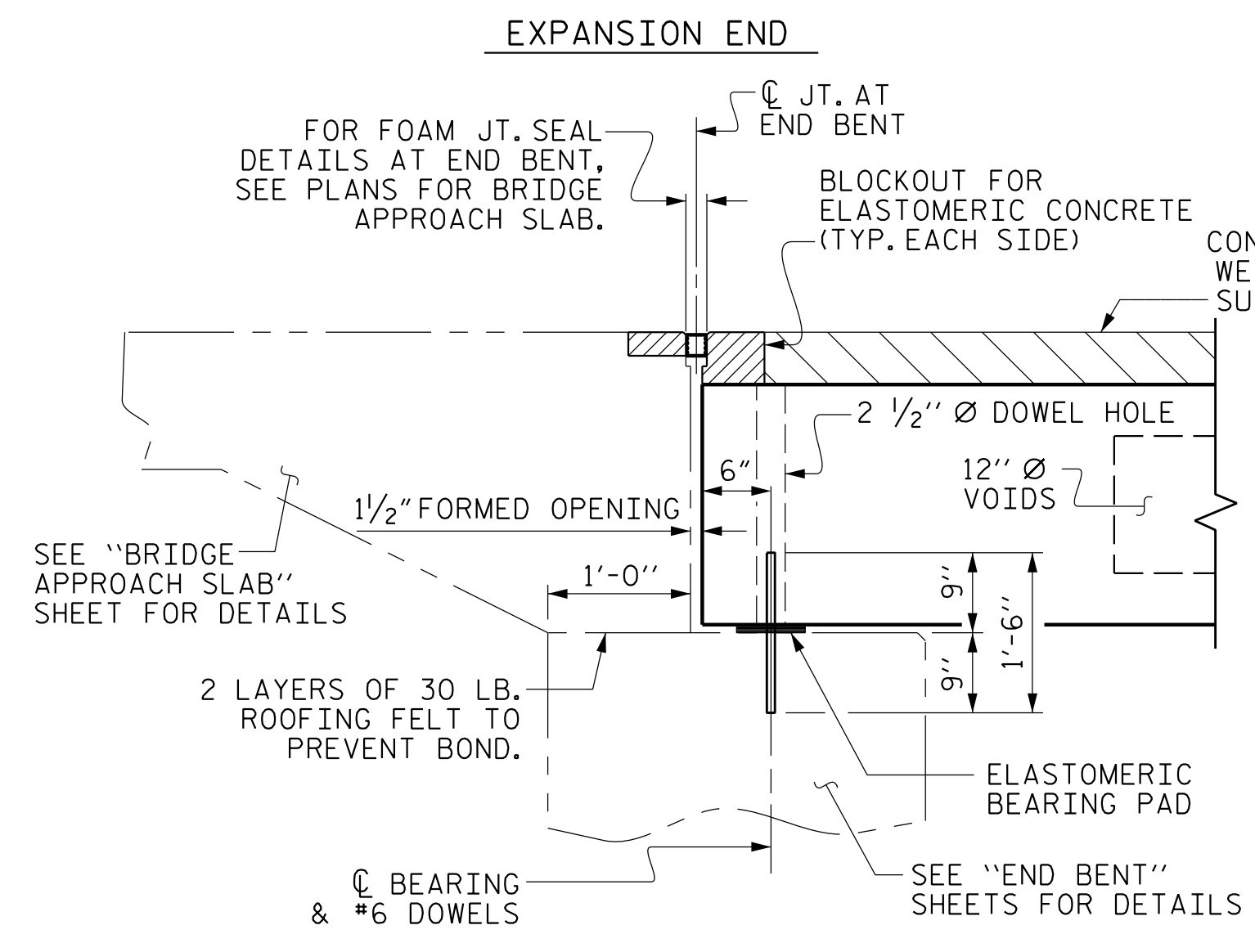


END ELEVATION

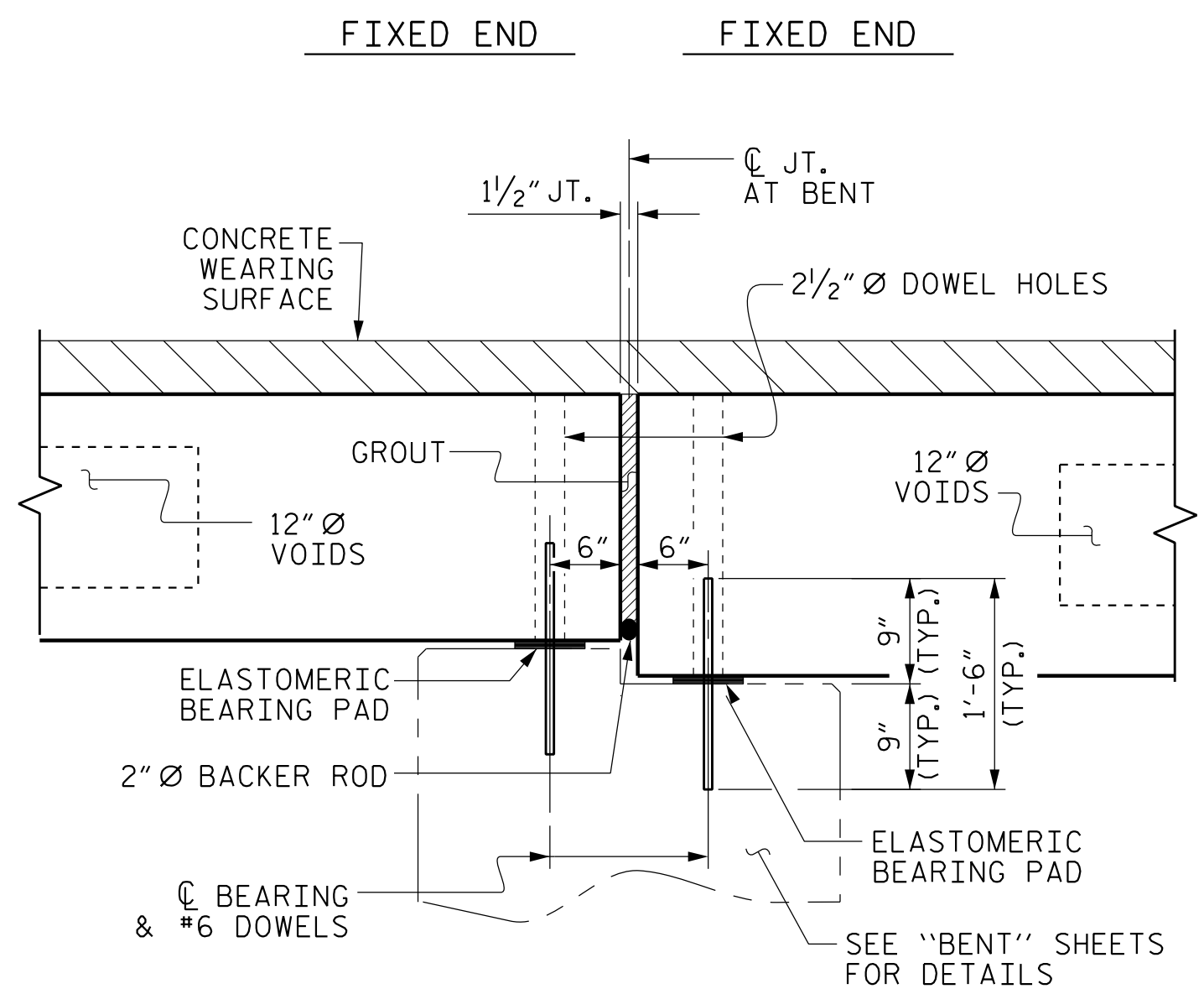
SHOWING PLACEMENT OF DOUBLE STIRRUPS AND LOCATION OF DOWEL HOLES. (STRAND LAYOUT NOT SHOWN.) INTERIOR SLAB UNIT SHOWN-EXTERIOR SLAB UNIT SIMILAR EXCEPT SHEAR KEY LOCATION.



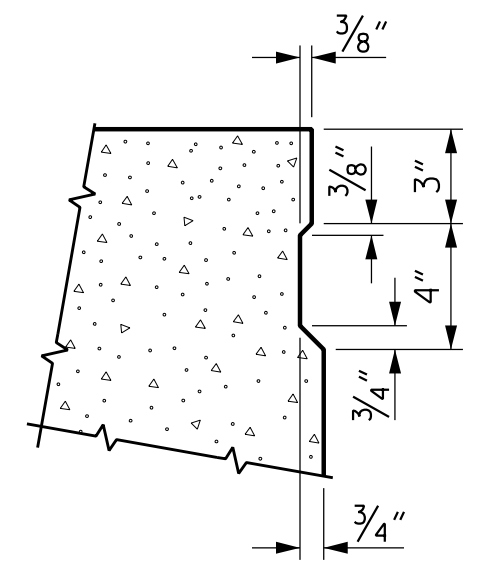
THREADED INSERT DETAIL



SECTION AT END BENT NO. 1
(END BENT NO. 2 SIM.)

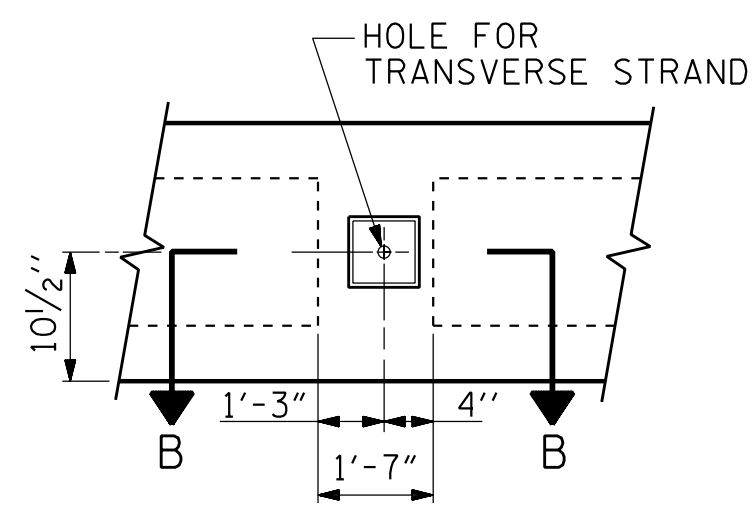


SECTION AT BENT NO. 1
(BENT NO. 2 SIM.)

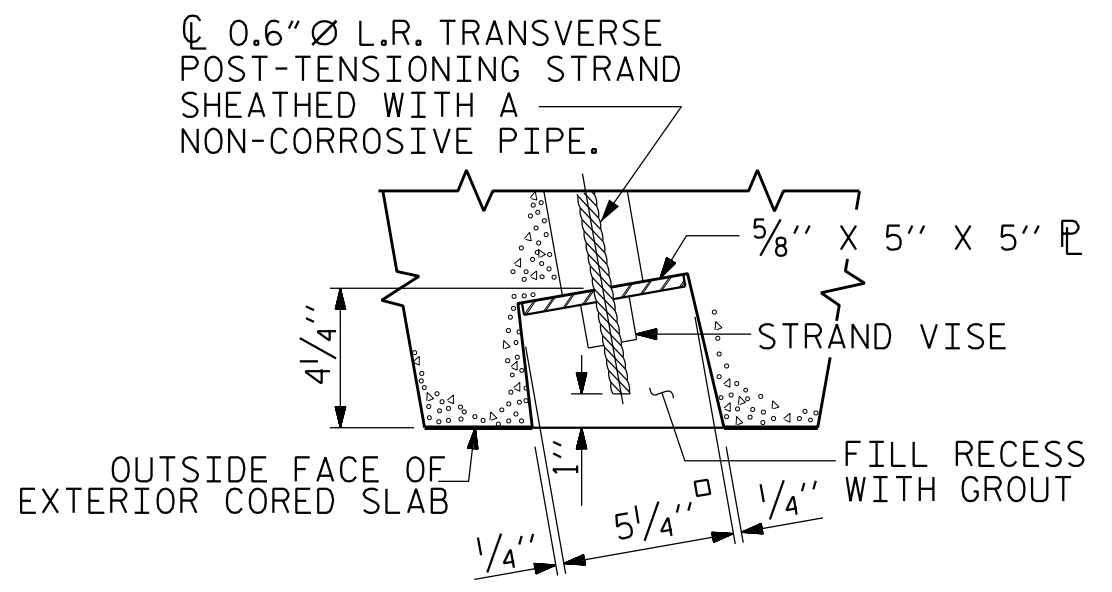


SHEAR KEY DETAIL

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



ELEVATION VIEW



SECTION B-B

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

DRAWN BY : W. B. ALLEN DATE : 7/17
 CHECKED BY : Z. H. BROWN DATE : 7/17
 DESIGN ENGINEER OF RECORD : L. K. AUSTIN DATE : 5/18

North Carolina Professional Engineer
 L. Kevin Austin
 License No. 120837260408
 5/15/2018
 PLANS PREPARED BY:
CALYX
 ENGINEERS + CONSULTANTS
 6750 TRYON ROAD
 CARY, NC 27518
 phone: 919.851.1912
 CALYXengineers.com
 NC License # F-1333

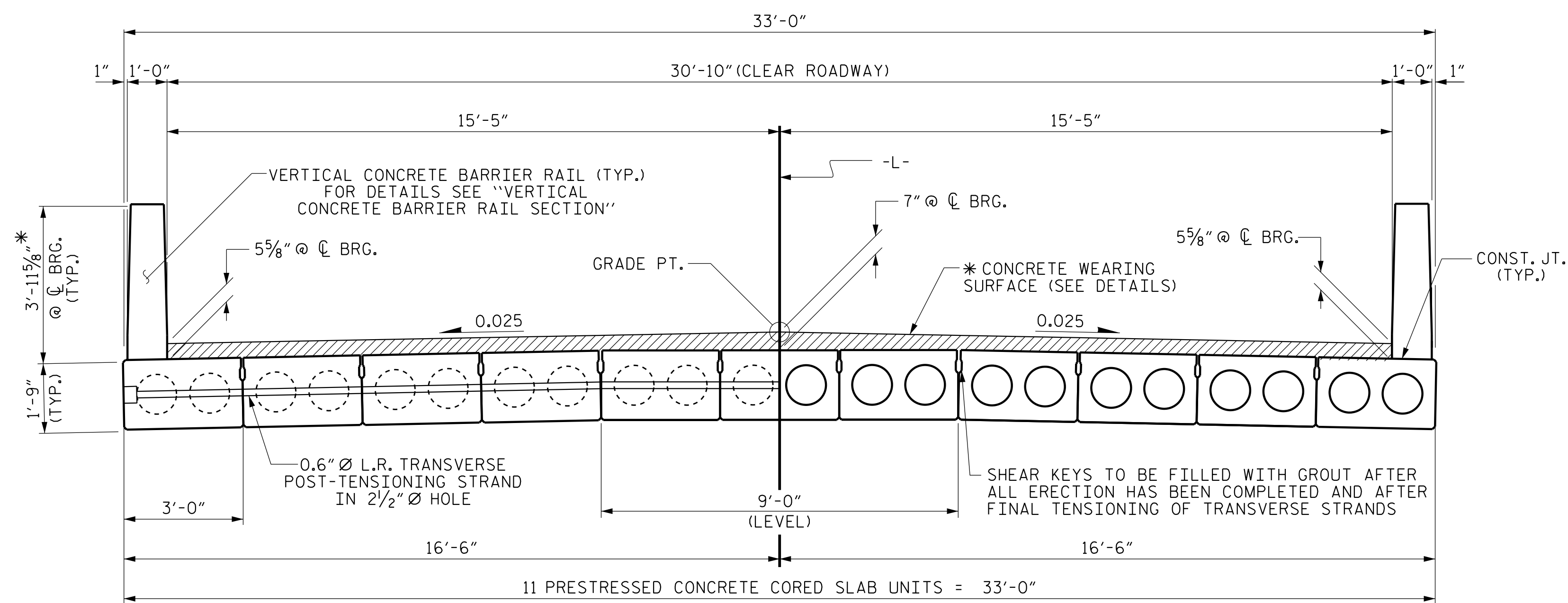
PROJECT NO. B-5606
PERQUIMANS COUNTY
 STATION: 16+99.00 -L-

SHEET 1 OF 6

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-5
1			3			TOTAL SHEETS
2			4			24

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
3'-0" X 1'-9"
PRESTRESSED CONCRETE
CORED SLAB UNIT
SPANS A & C 60° SKEW

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

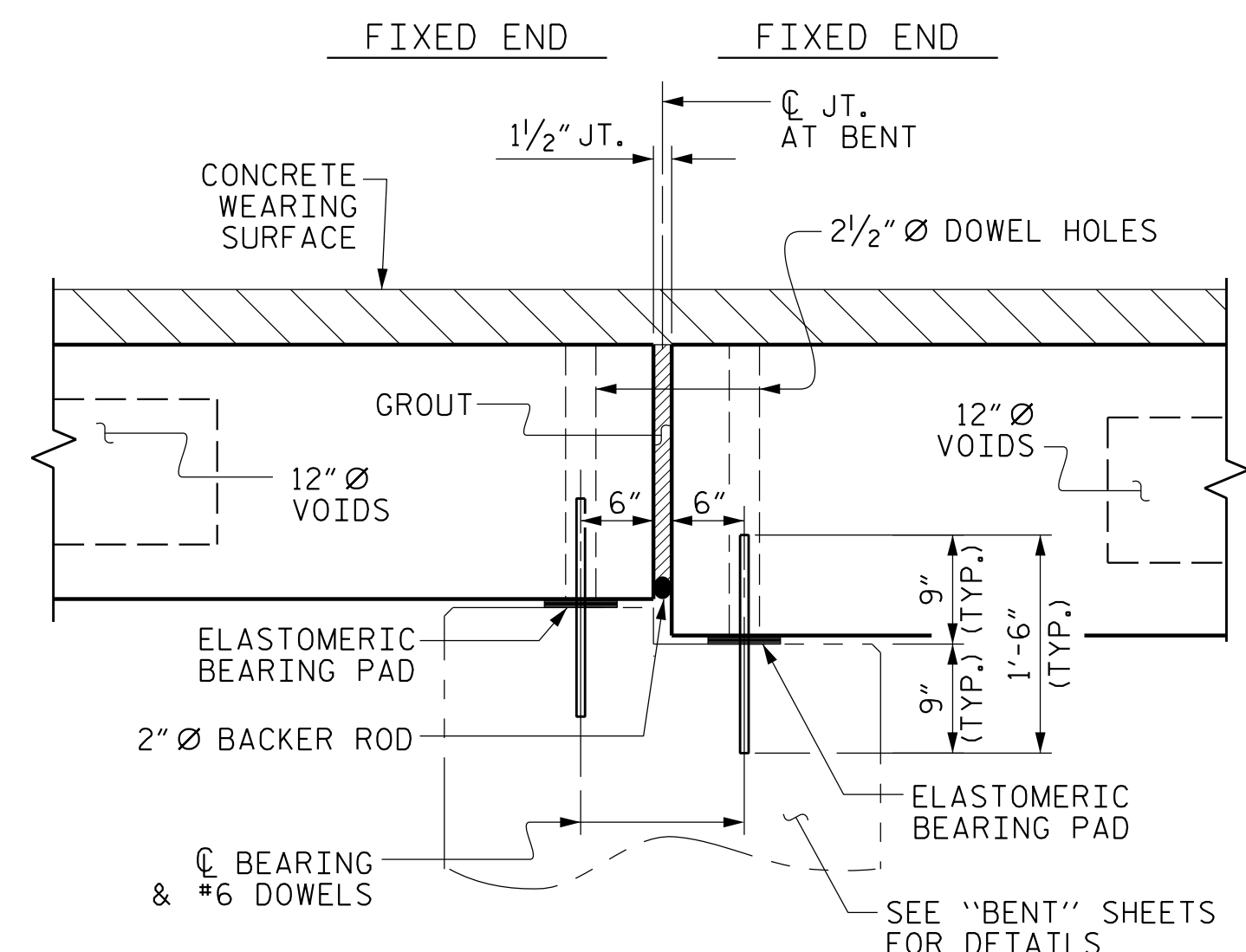


HALF SECTION
AT INTERMEDIATE DIAPHRAGMS

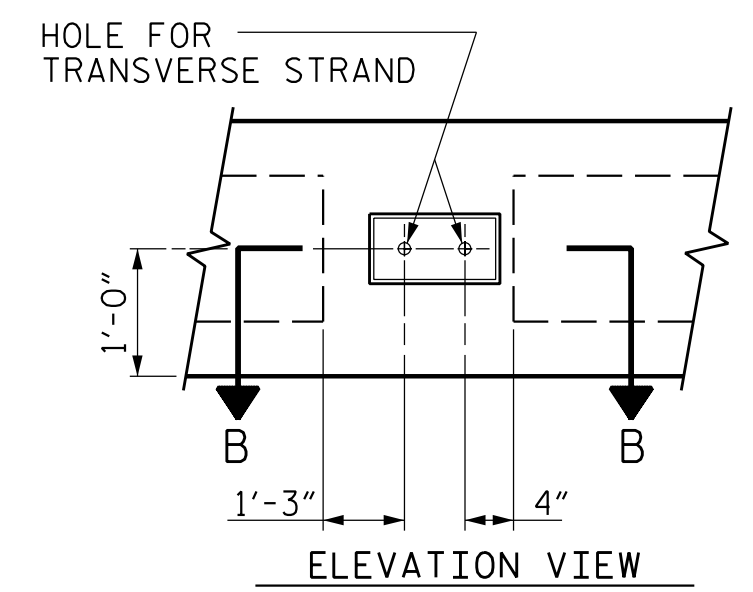
TYPICAL SECTION

HALF SECTION
THROUGH VOIDS

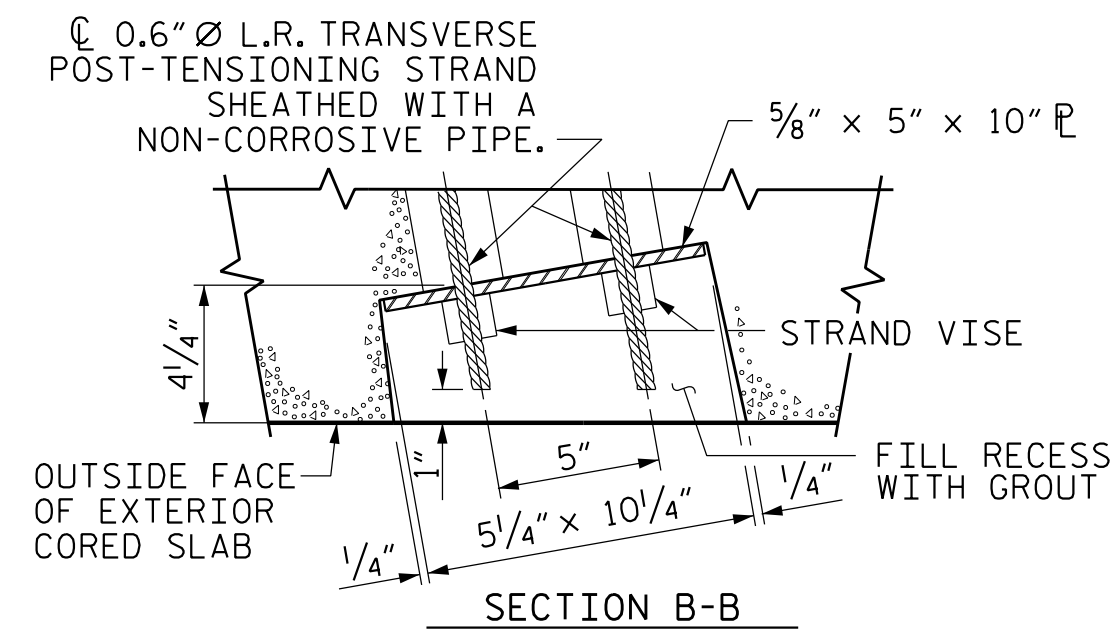
* - THE MAXIMUM BARRIER RAIL HEIGHT AND CONCRETE THICKNESS IS SHOWN. THE HEIGHT OF THE BARRIER RAIL AND CONCRETE THICKNESS VARIES WHILE THE TOP OF THE BARRIER RAIL FOLLOWS THE PROFILE OF THE GUTTERLINE. FOR RAIL HEIGHT DETAILS AND CONCRETE THICKNESS, SEE THE "VERTICAL CONCRETE BARRIER RAIL SECTION" DETAIL.



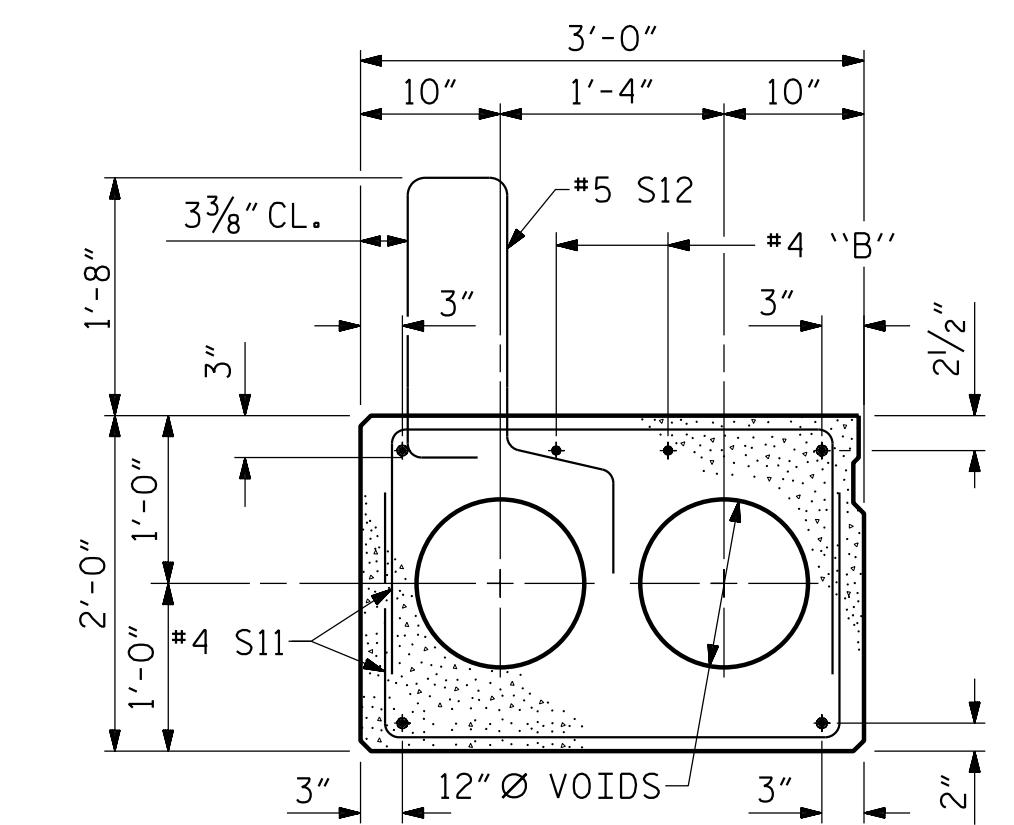
SECTION AT BENT NO. 1
(BENT NO. 2 SIM.)



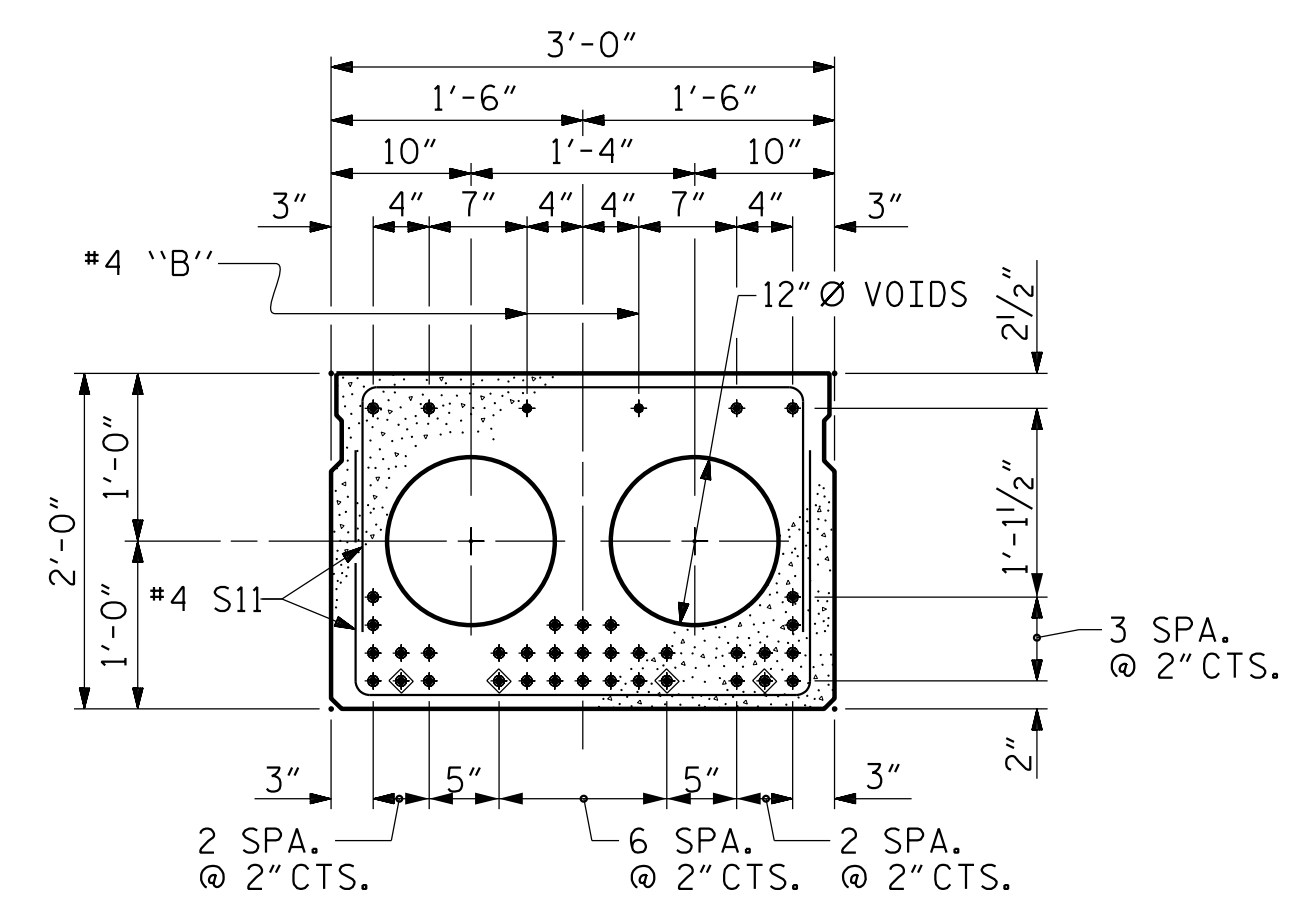
ELEVATION VIEW



SECTION B-B



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



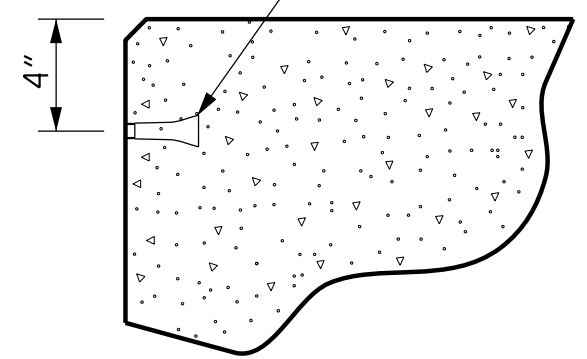
INTERIOR SLAB SECTION (60' UNIT)
(37 STRANDS REQUIRED)

0.6" Ø LOW RELAXATION STRAND LAYOUT

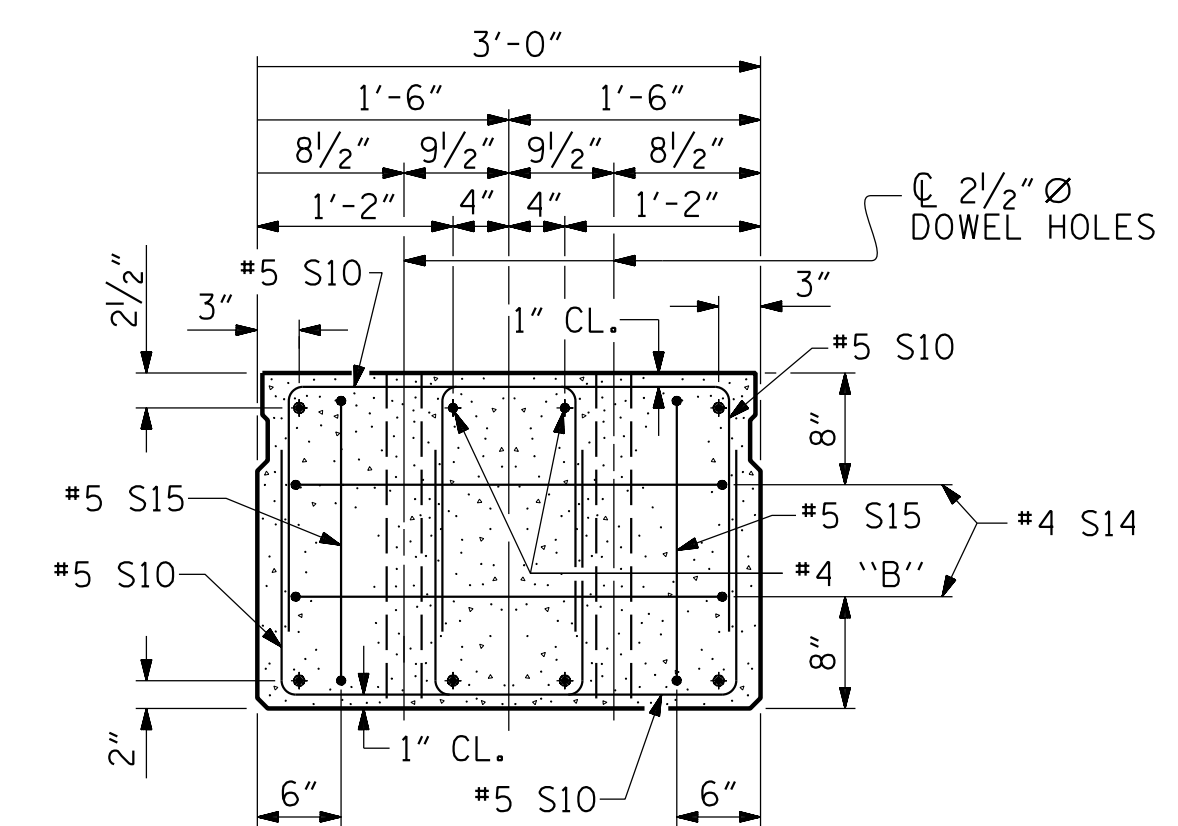
- ◆ BOND SHALL BE BROKEN ON THESE STRANDS FOR A DISTANCE OF 12'-0" FROM END OF CORED SLAB UNIT. SEE STANDARD SPECIFICATIONS, ARTICLE 1078-7.
- OPTIONAL FULL LENGTH DEBONDED STRANDS. THESE STRANDS ARE NOT REQUIRED. IF THE FABRICATOR CHOOSES TO INCLUDE THESE STRANDS IN THE CORED SLAB UNIT, THE STRANDS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

DEBONDING LEGEND

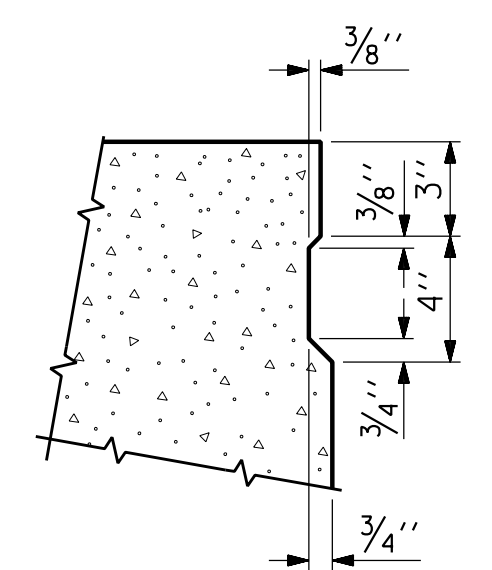
PERMITTED THREADED INSERT CAST IN OUTSIDE FACE OF EXTERIOR UNIT AND RECESSED 3/8" SIZE TO BE DETERMINED BY CONTRACTOR.



THREADED INSERT DETAIL



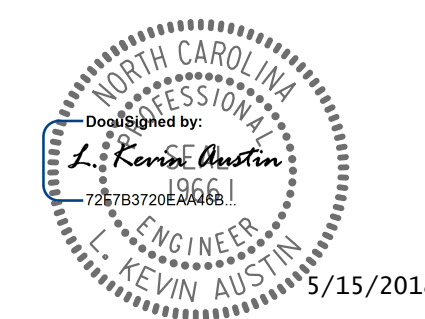
END ELEVATION
SHOWING PLACEMENT OF DOUBLE STIRRUPS AND LOCATION OF DOWEL HOLES. (STRAND LAYOUT NOT SHOWN). INTERIOR SLAB UNIT SHOWN-EXTERIOR SLAB UNIT SIMILAR EXCEPT SHEAR KEY LOCATION.



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

PROJECT NO. B-5606
PERQUIMANS COUNTY
STATION: 16+99.00 -L-

SHEET 2 OF 6



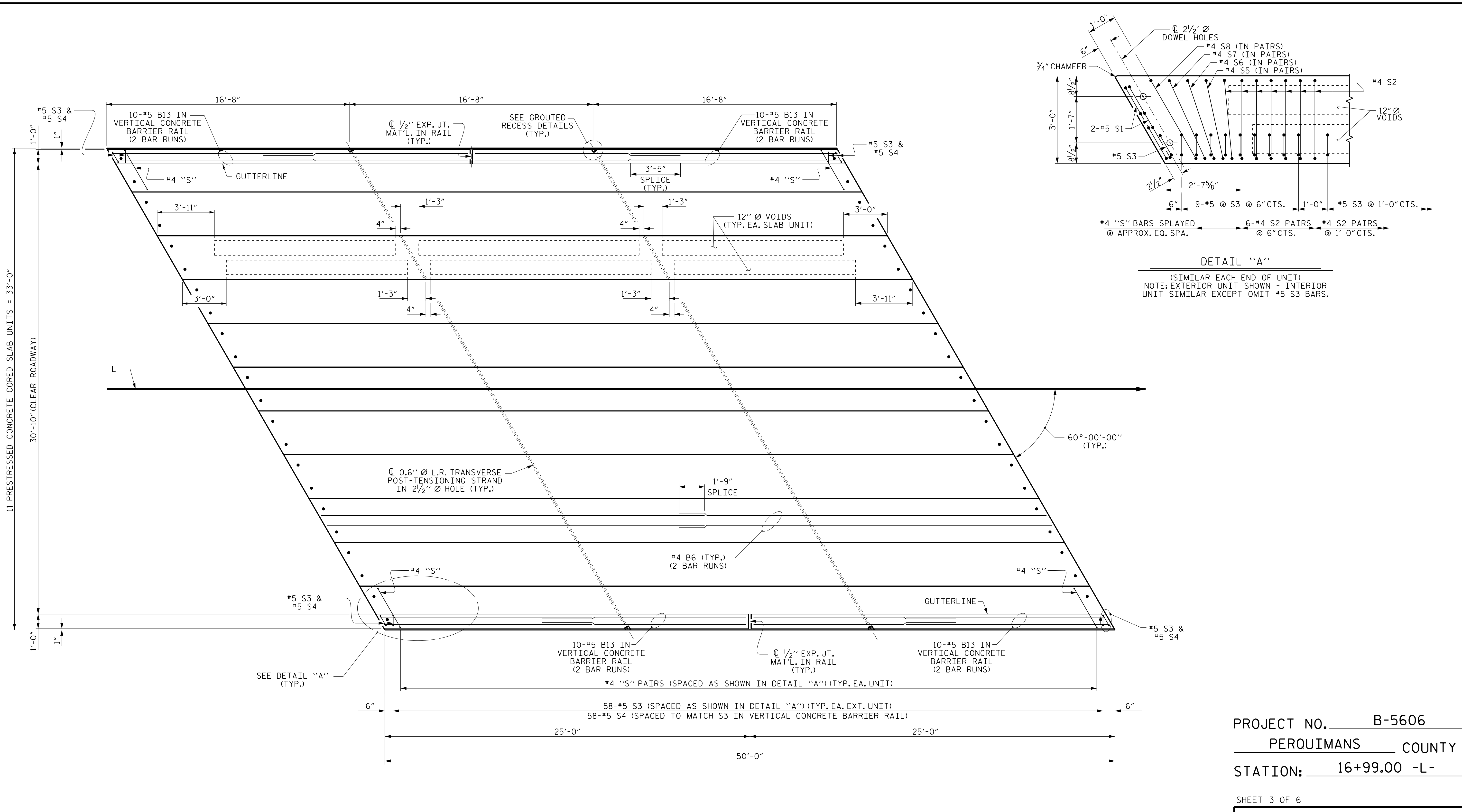
PLANS PREPARED BY:
CALYX
ENGINEERS + CONSULTANTS
6750 TRYON ROAD
CARY, NC 27518
phone: 919.851.1912
CALYXengineers.com
NC License # F-1333

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
3'-0" X 2'-0" PRESTRESSED CONCRETE CORED SLAB UNIT (TOP DOWN) SPAN B 60° SKEW					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
SHEET NO.					S-6
TOTAL SHEETS					24

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

5/15/2018 3:29 PM R:\Structures\B606.SML.CS2_700m.dgn

DRAWN BY :	W. B. ALLEN	DATE :	5/17
CHECKED BY :	Z. H. BROWN	DATE :	7/17
DESIGN ENGINEER OF RECORD:	L. K. AUSTIN	DATE :	5/18



PLAN OF UNIT

PROJECT NO. B-5606
 PERQUIMANS COUNTY
 STATION: 16+99.00 -L-

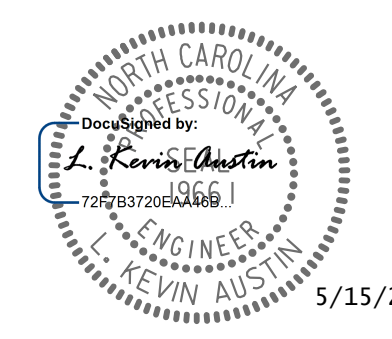
SHEET 3 OF 6

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 PLAN OF 50' UNIT
 30'-10" CLEAR ROADWAY
 60° SKEW
 SPANS A & C

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-7
1			3			TOTAL SHEETS
2			4			24

DOCUMENT NOT CONSIDERED FINAL
 UNLESS ALL SIGNATURES COMPLETED

THIS STANDARD DRAWING REVIEWED & ADOPTED FOR USE AT THE REFERENCED LOCATION BY THE UNDERSIGNED:

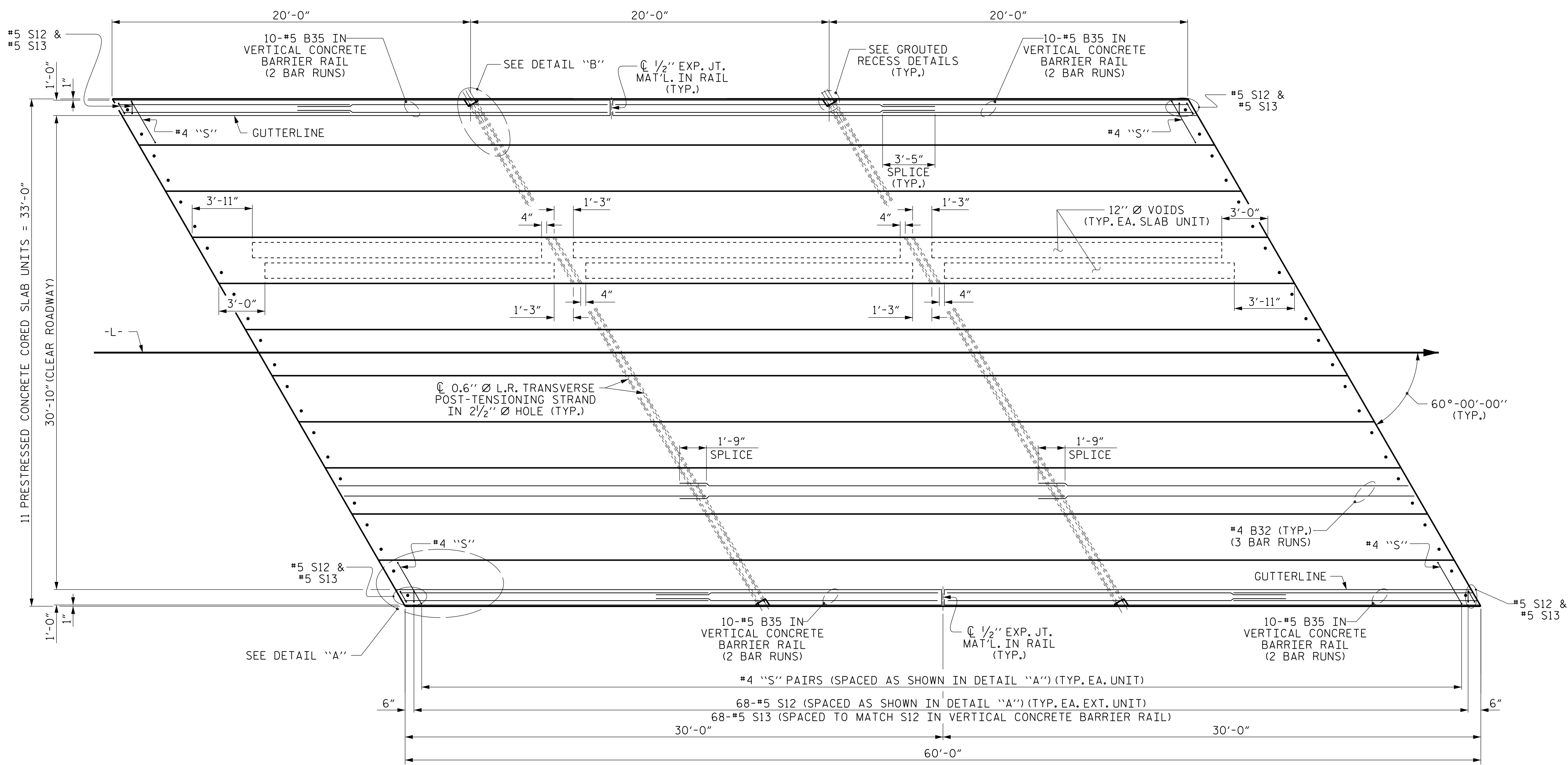


PLANS PREPARED BY:

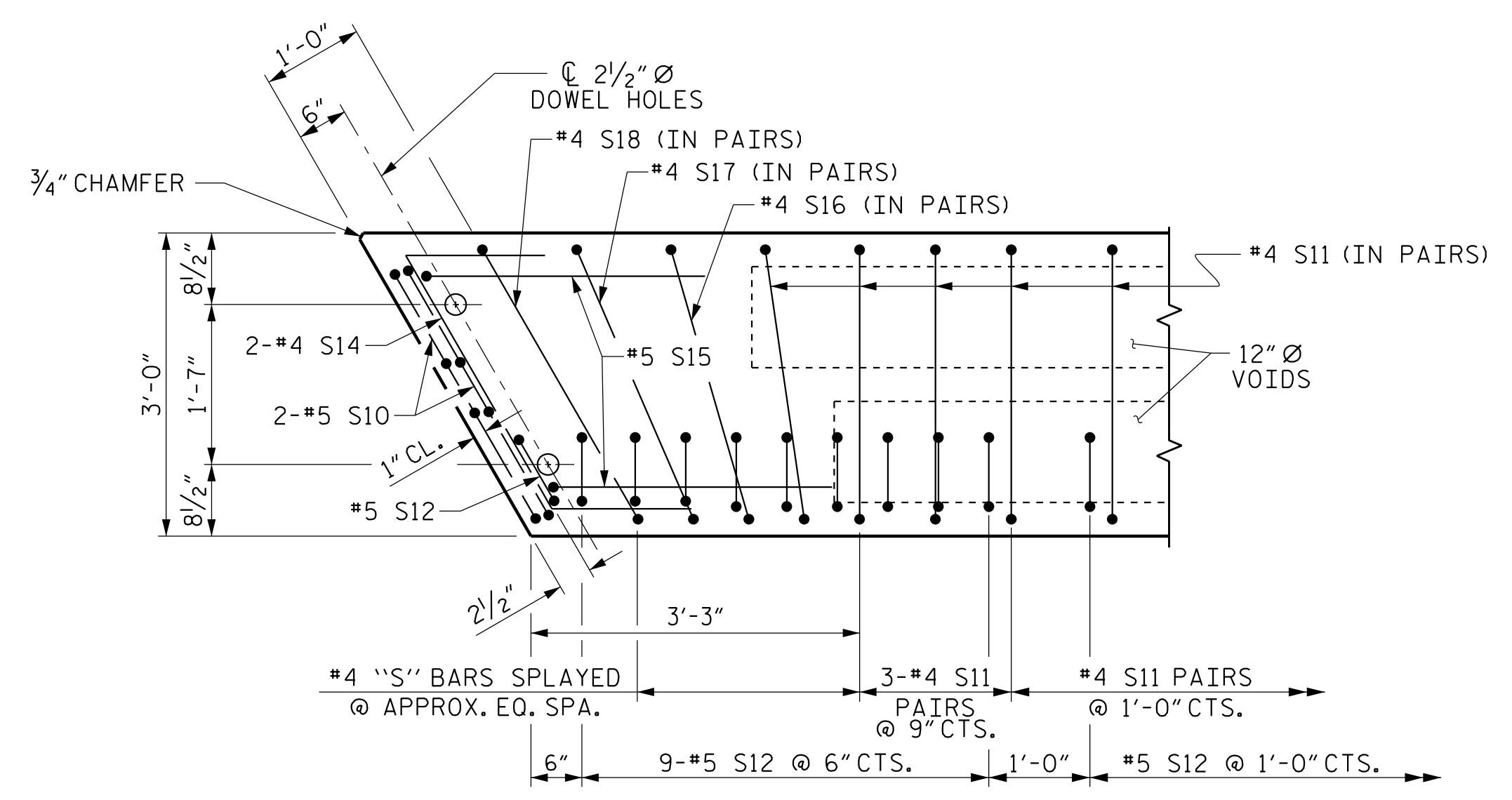
CALYX
 ENGINEERS + CONSULTANTS

6750 TRYON ROAD
 CARY, NC 27518
 phone: 919.851.1912
 CALYXengineers.com
 NC License # F-1333

ASSEMBLED BY :	W. B. ALLEN	DATE :	5/17
CHECKED BY :	Z. H. BROWN	DATE :	7/17
DRAWN BY :	DCE 3/09	REV. 12/5/11	MAA/AAC
CHECKED BY :	BCH 3/09	REV. 8/14	MAA/TMG

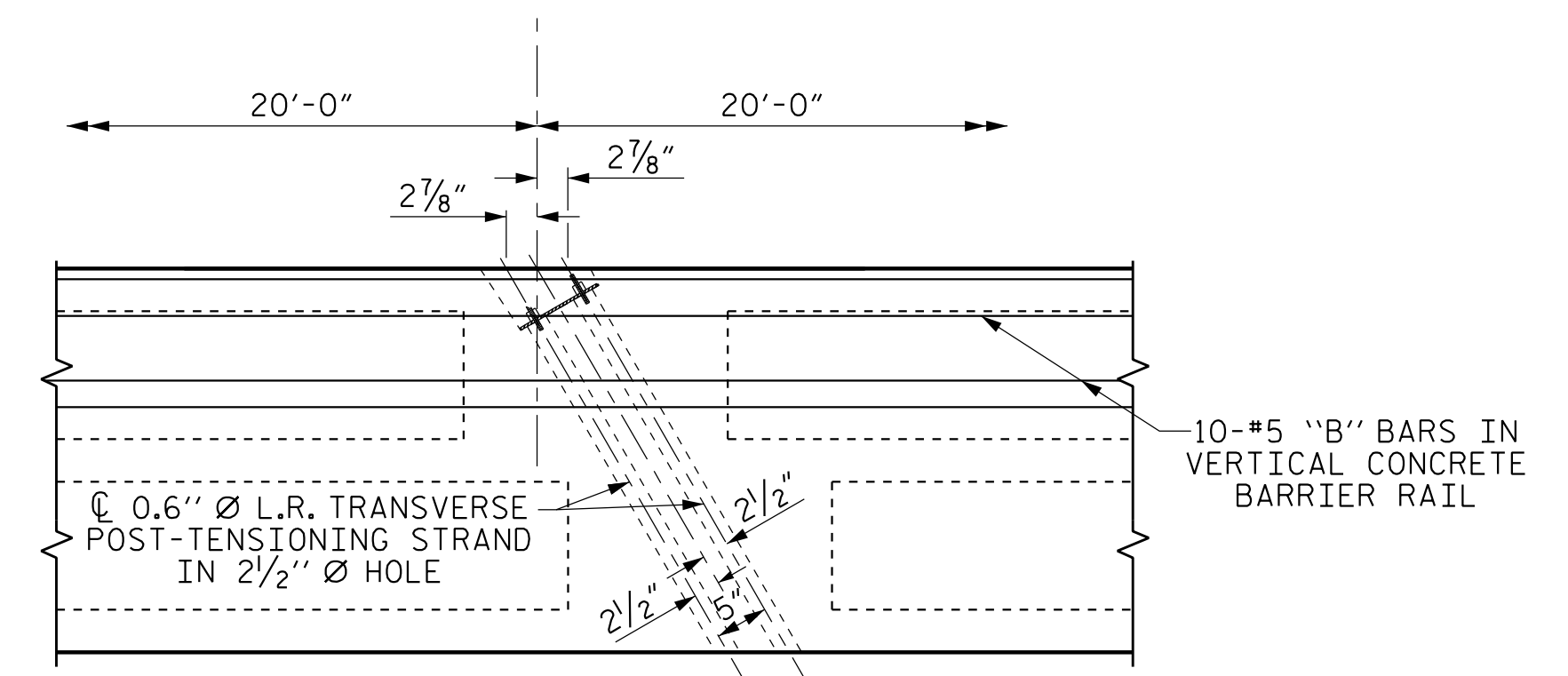


PLAN OF UNIT



DETAIL "A"

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



DETAIL "B"

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

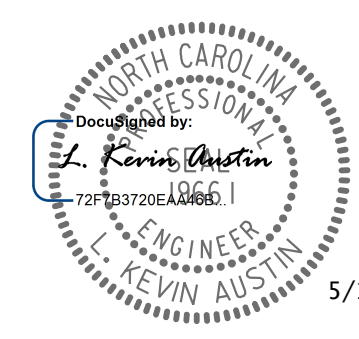
PLANS PREPARED BY:

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6750 TRYON ROAD
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PROJECT NO. B-5606
PERQUIMANS COUNTY
STATION: 16+99.00 -L-

SHEET 4 OF 6

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

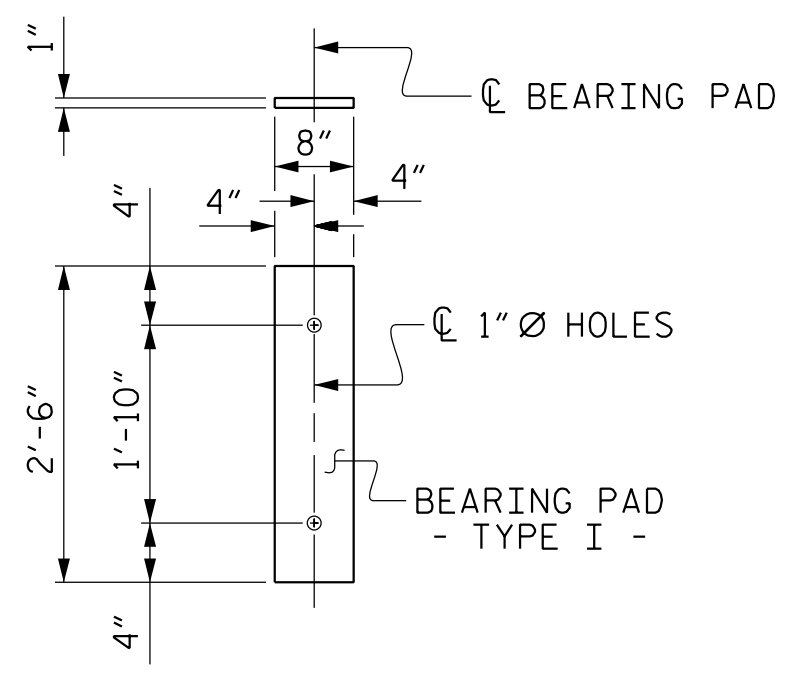
**PLAN OF 60' UNIT
30'-10" CLEAR ROADWAY
60° SKEW
SPAN B**

REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	S-8	
1			3			TOTAL SHEETS	
2			4			24	

STD. NO. 24PCS_33_60S_60L (TOP DOWN)

5/15/2018 3:42:21PM R:\Structures\B5606_SMU_CS4_T000.dgn

ASSEMBLED BY : W. B. ALLEN	DATE : 5/17
CHECKED BY : Z. H. BROWN	DATE : 7/17
DRAWN BY : MAA 7/10	REV. 12/5/11 MAA/AAC
CHECKED BY : MKT 8/10	REV. 8/14 MAA/TMG



FIXED & EXPANSION END
(TYPE I - 44 REQ'D)

ELASTOMERIC BEARING DETAILS

ELASTOMER IN ALL BEARINGS SHALL BE 60 DUROMETER HARDNESS.

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

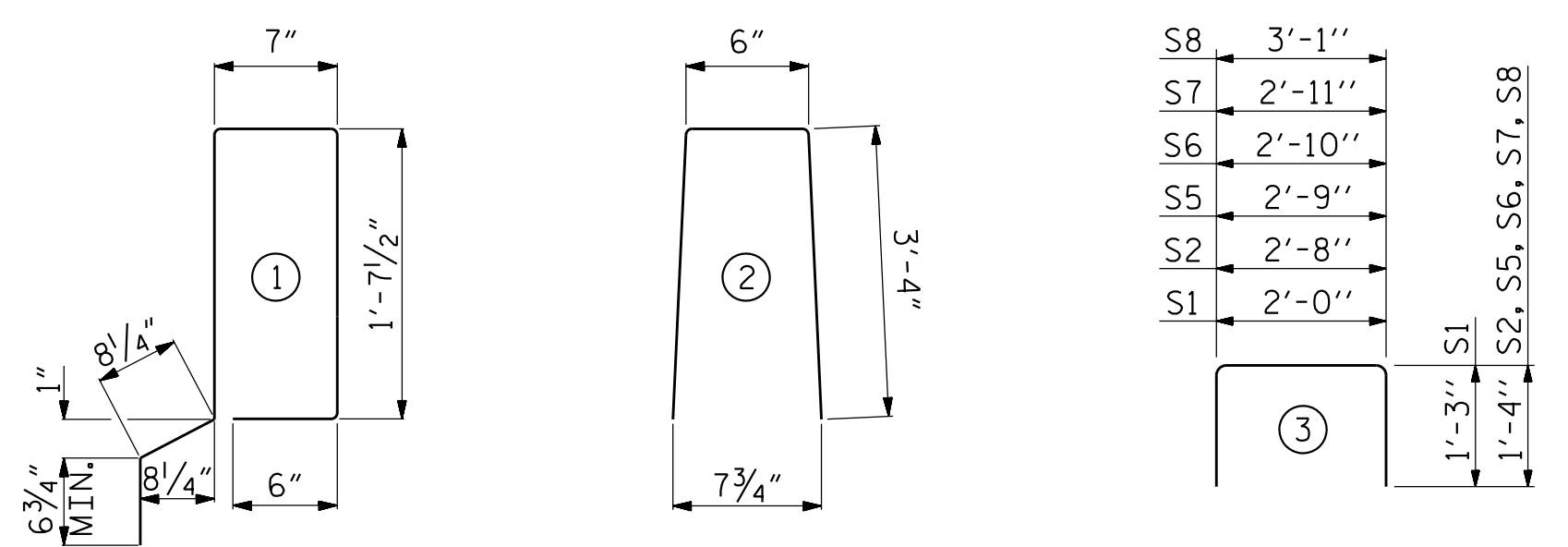
** INCLUDES FUTURE WEARING SURFACE

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

CONCRETE RELEASE STRENGTH	
UNIT	PSI
50' UNITS	4900

CORED SLABS REQUIRED			
50' UNIT	NUMBER	LENGTH	TOTAL LENGTH
EXTERIOR C.S.	4	50'-0"	200'-0"
INTERIOR C.S.	18	50'-0"	900'-0"
TOTAL	22		1100'-0"

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT

BILL OF MATERIAL FOR VERTICAL CONCRETE BARRIER RAIL						
BAR	BARS PER PAIR OF EXTERIOR UNITS	TOTAL NO.	SIZE	TYPE	LENGTH	WEIGHT
50' UNIT						
*B13	80	160	#5	STR	14'-3"	2378
*S4	120	240	#5	2	7'-2"	1794
*EPOXY COATED REINFORCING STEEL				LBS.		4172
CLASS AA CONCRETE				CU.YDS.		25.6
TOTAL VERTICAL CONCRETE BARRIER RAIL				LN.FT.		200.58

NOTES

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

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

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

THE 2 1/2" Ø DOWEL HOLES AT FIXED ENDS OF SLAB SECTIONS SHALL BE FILLED WITH NON-SHRINK GROUT. THE 2 1/2" Ø DOWEL HOLES AT EXPANSION ENDS OF SLAB SECTIONS SHALL BE FILLED WITH JOINT SEALER MATERIAL TO 1/2" ABOVE THE TOP OF DOWELS AND THEN FILLED WITH GROUT.

THE JOINT SEALER MATERIAL SHALL CONFORM TO THE REQUIREMENTS OF TYPE SL LOW MODULUS SILICONE SEALANT. THE 2" Ø BACKER ROD SHALL CONFORM TO THE REQUIREMENTS OF TYPE M BOND BREAKER. SEE SECTION 1028 OF THE STANDARD SPECIFICATIONS.

THE TOP OF THE CORED SLAB UNITS SHALL RECEIVE A RAKED FINISH IN ACCORDANCE WITH SECTION 1078-15 OF THE STANDARD SPECIFICATIONS.

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

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

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

APPLY EPOXY PROTECTIVE COATING TO CORED SLAB UNIT ENDS.

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

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

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

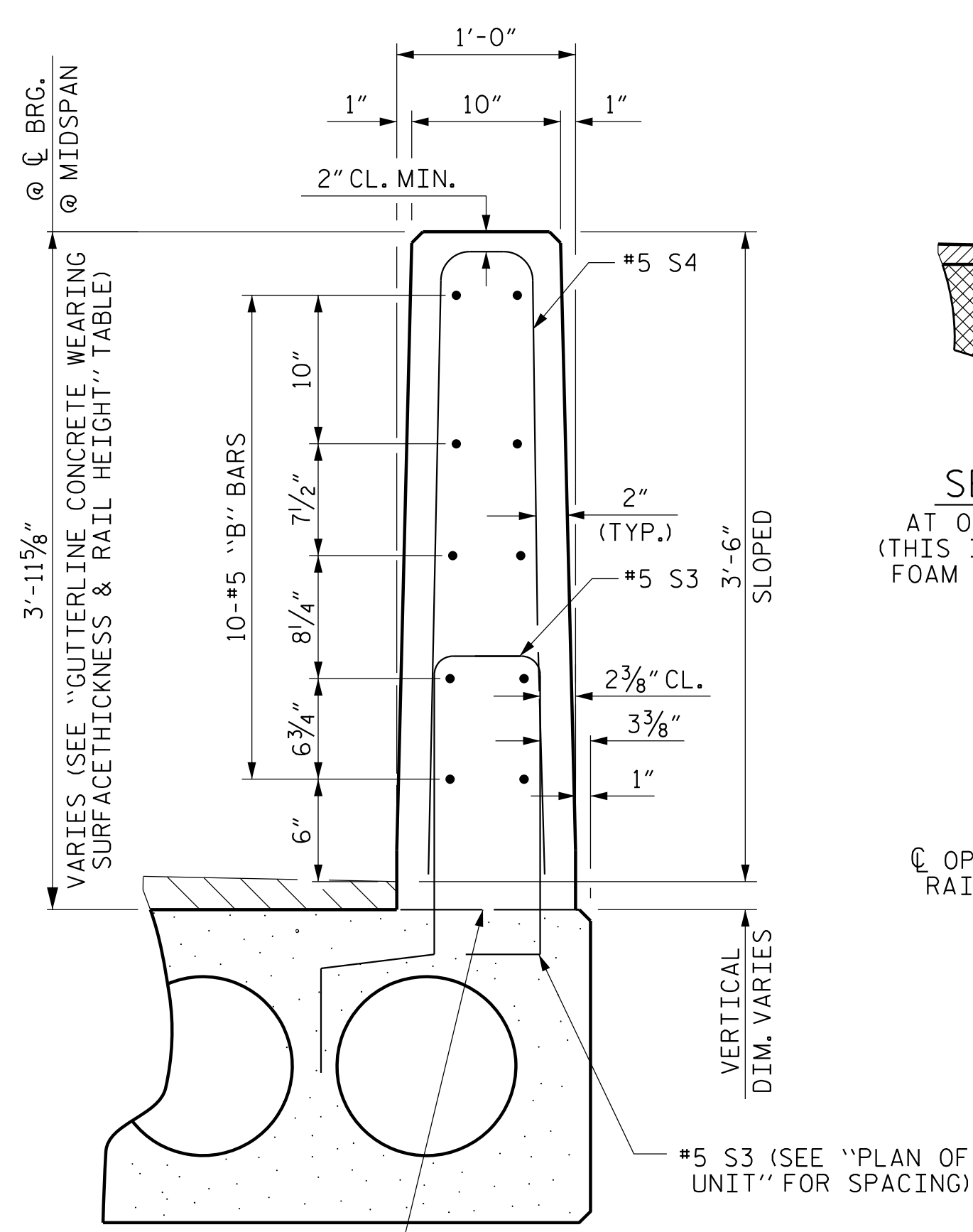
GROUT THE SHEAR KEYS BETWEEN THE LEVEL AND SLOPED CORED SLAB UNITS (I.E. SHEAR KEYS AT BREAK POINTS IN THE CAP) PRIOR TO TENSIONING THE TRANSVERSE STRANDS. FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

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

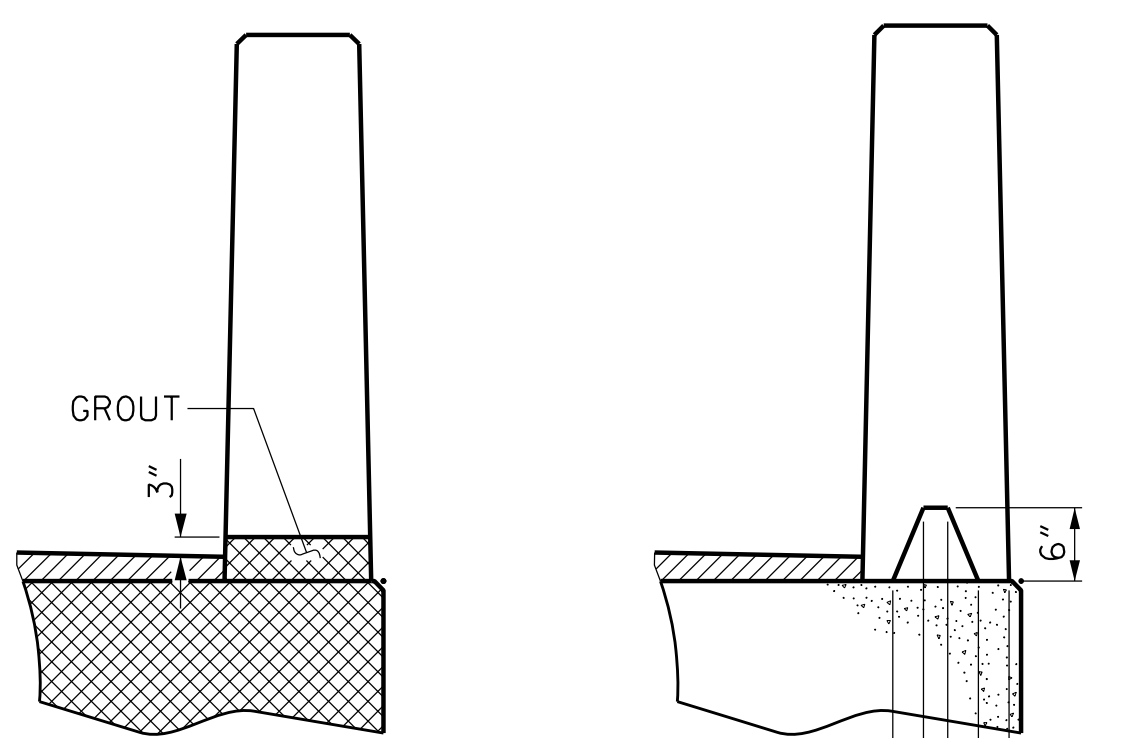
THE PERMITTED THREADED INSERTS IN THE EXTERIOR UNITS SHALL BE SIZED BY THE CONTRACTOR, SPACED AT 4'-0" CENTERS AND GALVANIZED IN ACCORDANCE WITH SECTION 1076 OF THE STANDARD SPECIFICATIONS. STAINLESS STEEL THREADED INSERTS MAY BE USED AS AN ALTERNATE.

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

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

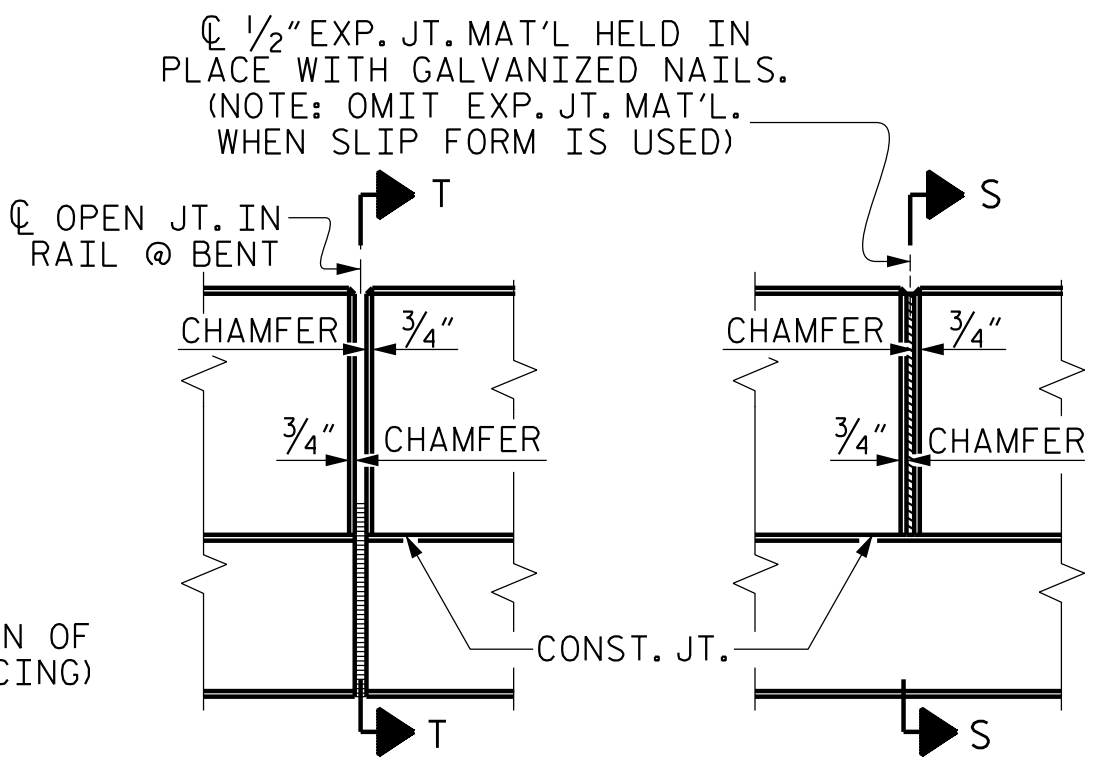


VERTICAL CONCRETE BARRIER RAIL SECTION



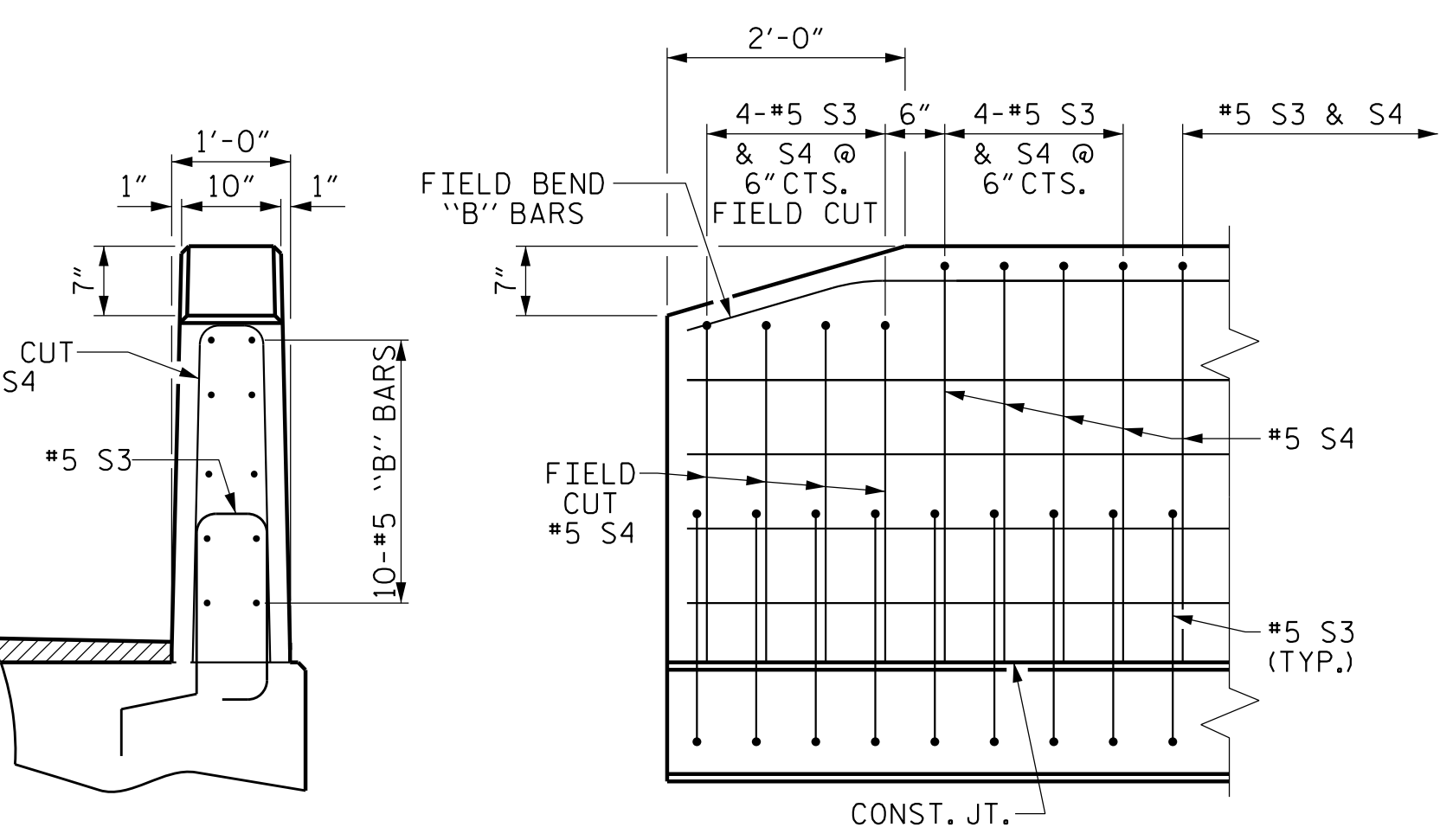
SECTION T-T
AT OPEN JOINT AT BENT
(THIS IS TO BE USED WHERE FOAM JOINT IS NOT USED)

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



ELEVATION AT EXPANSION JOINTS

BILL OF MATERIAL FOR ONE 50' CORED SLAB UNIT							
BAR	NUMBER	SIZE	TYPE	EXTERIOR UNIT LENGTH	EXTERIOR UNIT WEIGHT	INTERIOR UNIT LENGTH	INTERIOR UNIT WEIGHT
B6	4	#4	STR	25'-9"	69	25'-9"	69
S1	8	#5	3	4'-6"	38	4'-6"	38
S2	102	#4	3	5'-4"	363	5'-4"	363
*S3	60	#5	1	5'-7"	349		
S5	4	#4	3	5'-5"	14	5'-5"	14
S6	4	#4	3	5'-6"	15	5'-6"	15
S7	4	#4	3	5'-7"	15	5'-7"	15
S8	4	#4	3	5'-9"	15	5'-9"	15
REINFORCING STEEL				LBS.	529		529
*EPOXY COATED REINFORCING STEEL				LBS.	349		
6500 P.S.I. CONCRETE				CU. YDS.	7.3		7.3
0.6" Ø L.R. STRANDS				No.	19		19



END VIEW

SIDE VIEW

END OF RAIL DETAILS

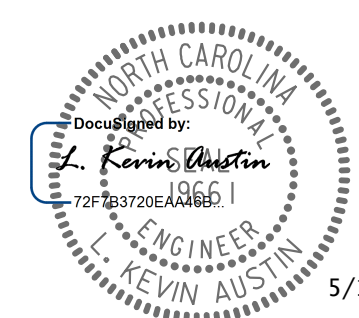
GUTTERLINE CONCRETE WEARING SURFACE THICKNESS & RAIL HEIGHT		
	CONCRETE WEARING SURFACE THICKNESS	RAIL HEIGHT
	@ MID-SPAN	@ MID-SPAN
50' UNITS	4 3/4"	3'-10 3/4"

PLANS PREPARED BY:

4750 TRYON ROAD
CARY, NC 27518
phone: 919.851.1912
CALYXengineers.com
NC License # F-1333

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

THIS STANDARD DRAWING REVIEWED & ADOPTED FOR USE AT THE REFERENCED LOCATION BY THE UNDERSIGNED:



5/15/2018

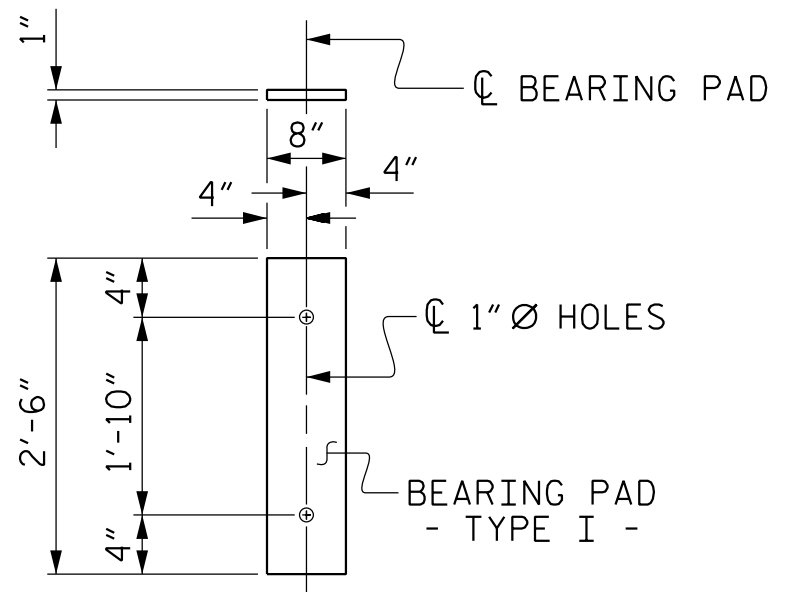
PROJECT NO. B-5606
PERQUIMANS COUNTY
STATION: 16+99.00 -L-

SHEET 5 OF 6

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
STANDARD 3'-0" X 1'-9" PRESTRESSED CONCRETE CORED SLAB UNIT 60° SKEW SPANS A & C					
REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
					TOTAL SHEETS 24

STD. NO. 21" PCS3_33_60S

ASSEMBLED BY : W. B. ALLEN	DATE : 7/17
CHECKED BY : Z. H. BROWN	DATE : 7/17
DRAWN BY : DCE 5/09	REV. 11/14
CHECKED BY : BCH 6/09	MAA/TMG



FIXED END
(TYPE I - 22 REQ'D)

ELASTOMERIC BEARING DETAILS

ELASTOMER IN ALL BEARINGS SHALL BE 60 DUROMETER HARDNESS.

DEAD LOAD DEFLECTION AND CAMBER	
60' CORED SLAB UNIT	3'-0" x 2'-0"
	0.6" Ø L.R. STRAND
CAMBER (SLAB ALONE IN PLACE)	2 3/16" ↑
DEFLECTION DUE TO SUPERIMPOSED DEAD LOAD**	7/16" ↓
FINAL CAMBER	1 3/4" ↑

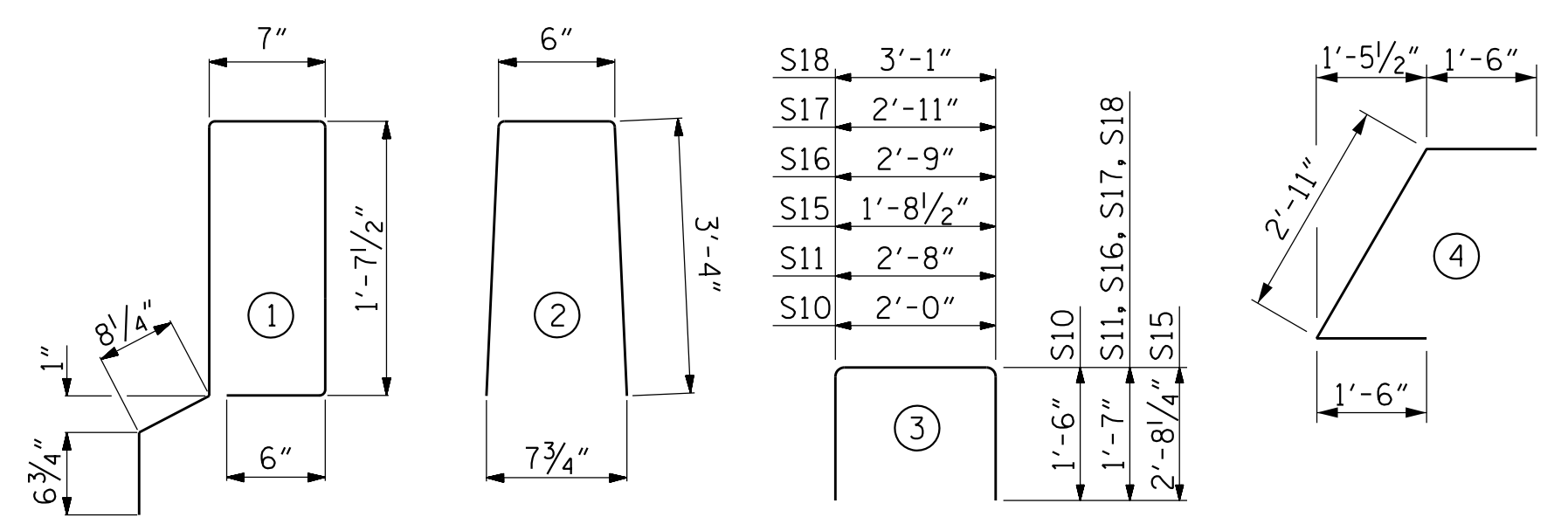
** INCLUDES FUTURE WEARING SURFACE

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

CONCRETE RELEASE STRENGTH	
UNIT	PSI
60' UNITS	7200

CORED SLABS REQUIRED			
60' UNIT	NUMBER	LENGTH	TOTAL LENGTH
EXTERIOR C.S.	2	60'-0"	120'-0"
INTERIOR C.S.	9	60'-0"	540'-0"
TOTAL	11		660'-0"

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT

BILL OF MATERIAL FOR VERTICAL CONCRETE BARRIER RAIL						
BAR	BARS PER PAIR OF EXTERIOR UNITS	TOTAL NO.	SIZE	TYPE	LENGTH	WEIGHT
60' UNIT						
*B23	80	80	#5	STR	16'-11"	1412
*S13	140	140	#5	2	7'-2"	1046
* EPOXY COATED REINFORCING STEEL					LBS.	2458
CLASS AA CONCRETE					CU.YDS.	15.5
TOTAL VERTICAL CONCRETE BARRIER RAIL					LN. FT.	120.29

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.

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

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

THE 2 1/2" Ø DOWEL HOLES AT FIXED ENDS OF SLAB SECTIONS SHALL BE FILLED WITH NON-SHRINK GROUT.

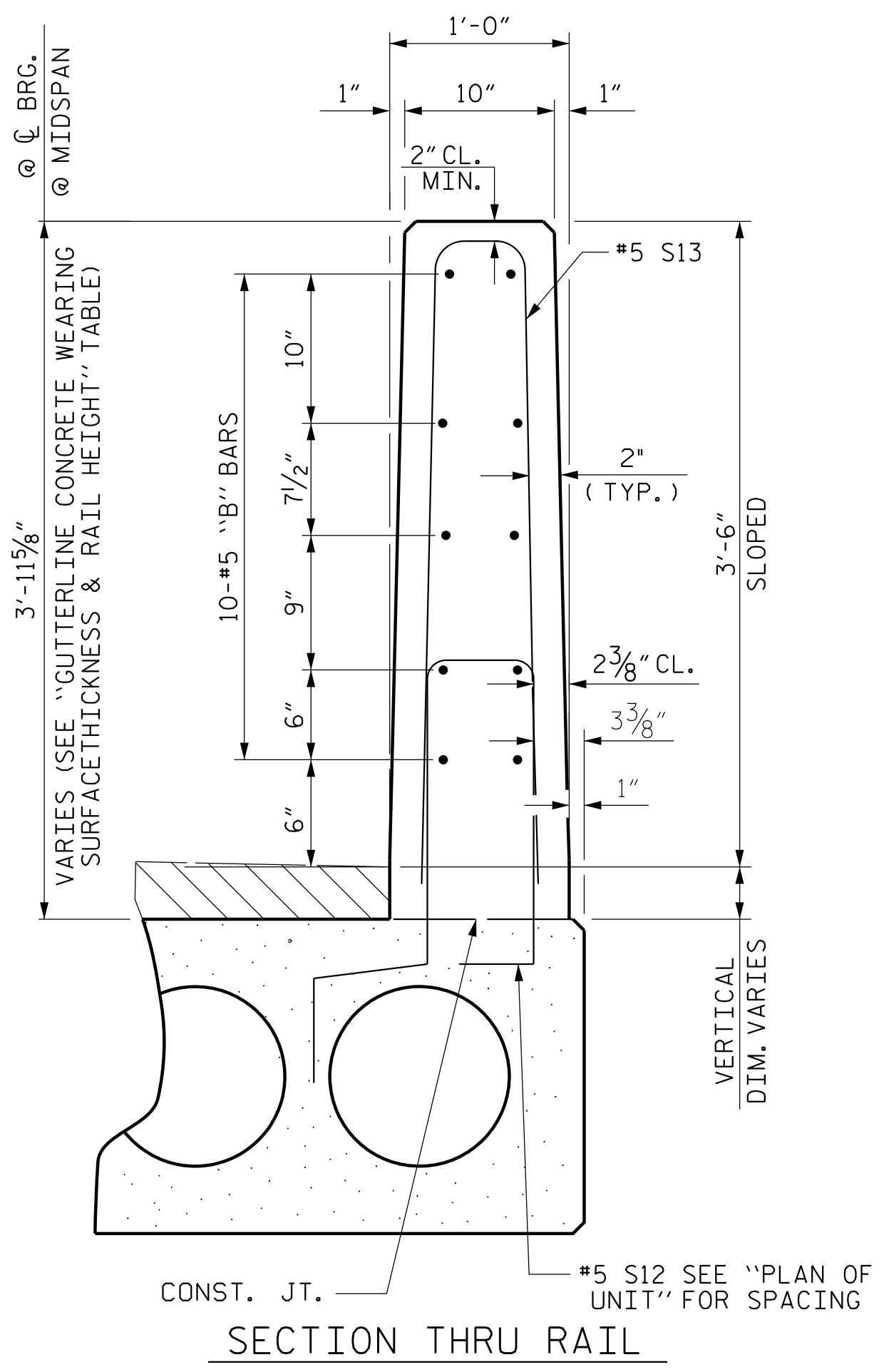
THE BACKER RODS SHALL CONFORM TO THE REQUIREMENTS OF TYPE M BOND BREAKER. SEE SECTION 1028 OF THE STANDARD SPECIFICATIONS.

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

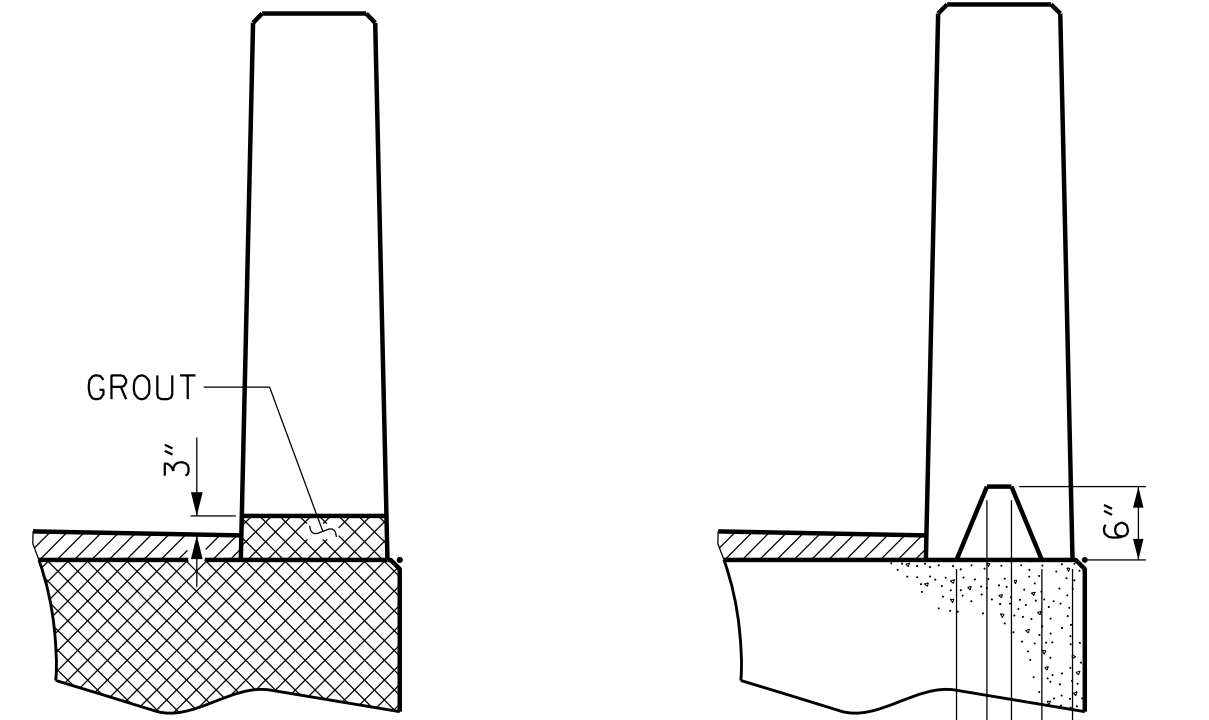
THE TRANSFER OF LOAD FROM THE ANCHORAGES TO THE CORED SLAB UNIT SHALL BE DONE WHEN THE CONCRETE HAS REACHED A COMPRESSIVE STRENGTH OF NOT LESS THAN THE REQUIRED STRENGTH SHOWN IN THE "CONCRETE RELEASE STRENGTH" TABLE.

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

BILL OF MATERIAL FOR ONE 60' CORED SLAB UNIT							
BAR	NUMBER	SIZE	TYPE	EXTERIOR UNIT LENGTH	EXTERIOR UNIT WEIGHT	INTERIOR UNIT LENGTH	INTERIOR UNIT WEIGHT
B32	6	#4	STR	21'-2"	85	21'-2"	85
S10	8	#5	3	5'-0"	42	5'-0"	42
S11	112	#4	3	5'-10"	436	5'-10"	436
*S12	70	#5	1	5'-7"	408		
S14	4	#4	4	5'-11"	16	5'-11"	16
S15	4	#5	3	7'-1"	30	7'-1"	30
S16	4	#4	3	5'-11"	16	5'-11"	16
S17	4	#4	3	6'-1"	16	6'-1"	16
S18	4	#4	3	6'-3"	17	6'-3"	17
REINFORCING STEEL				LBS.	658		658
* EPOXY COATED REINFORCING STEEL				LBS.	408		
9500 P.S.I. CONCRETE				CU. YDS.	10.4		10.4
0.6" Ø L.R. STRANDS				No.	37		37

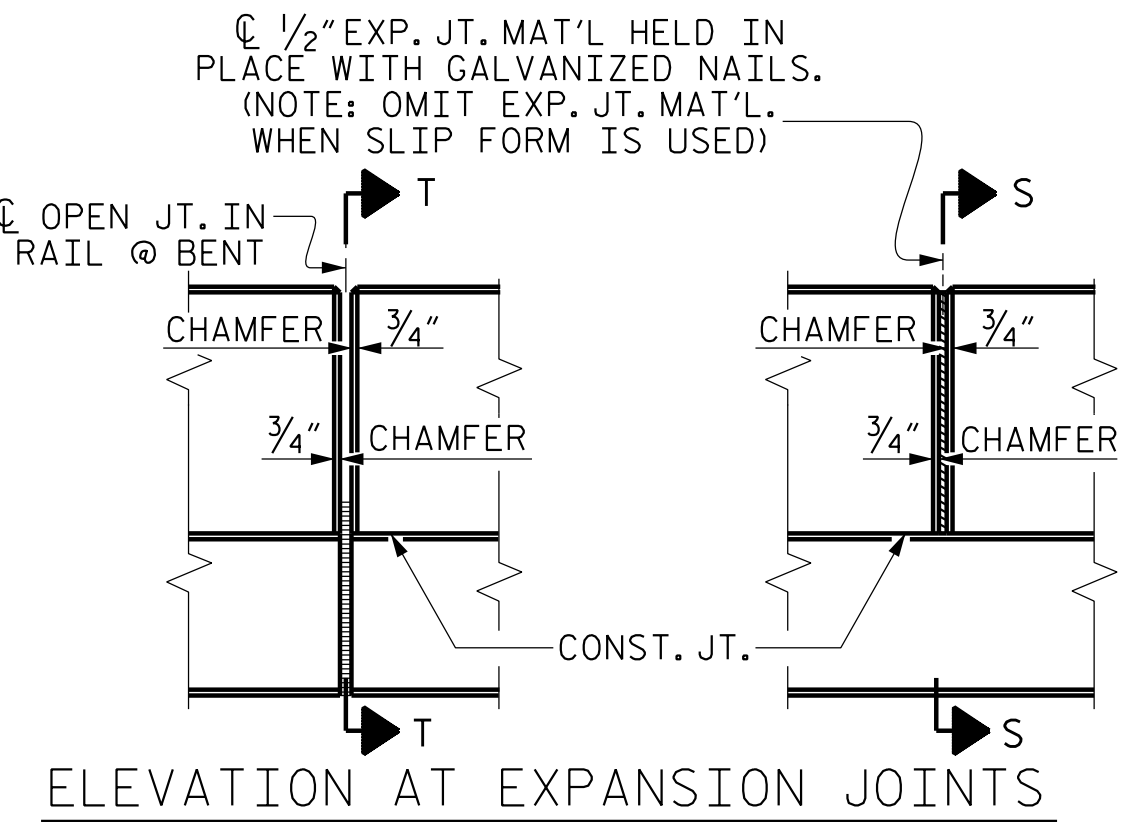


SECTION THRU RAIL

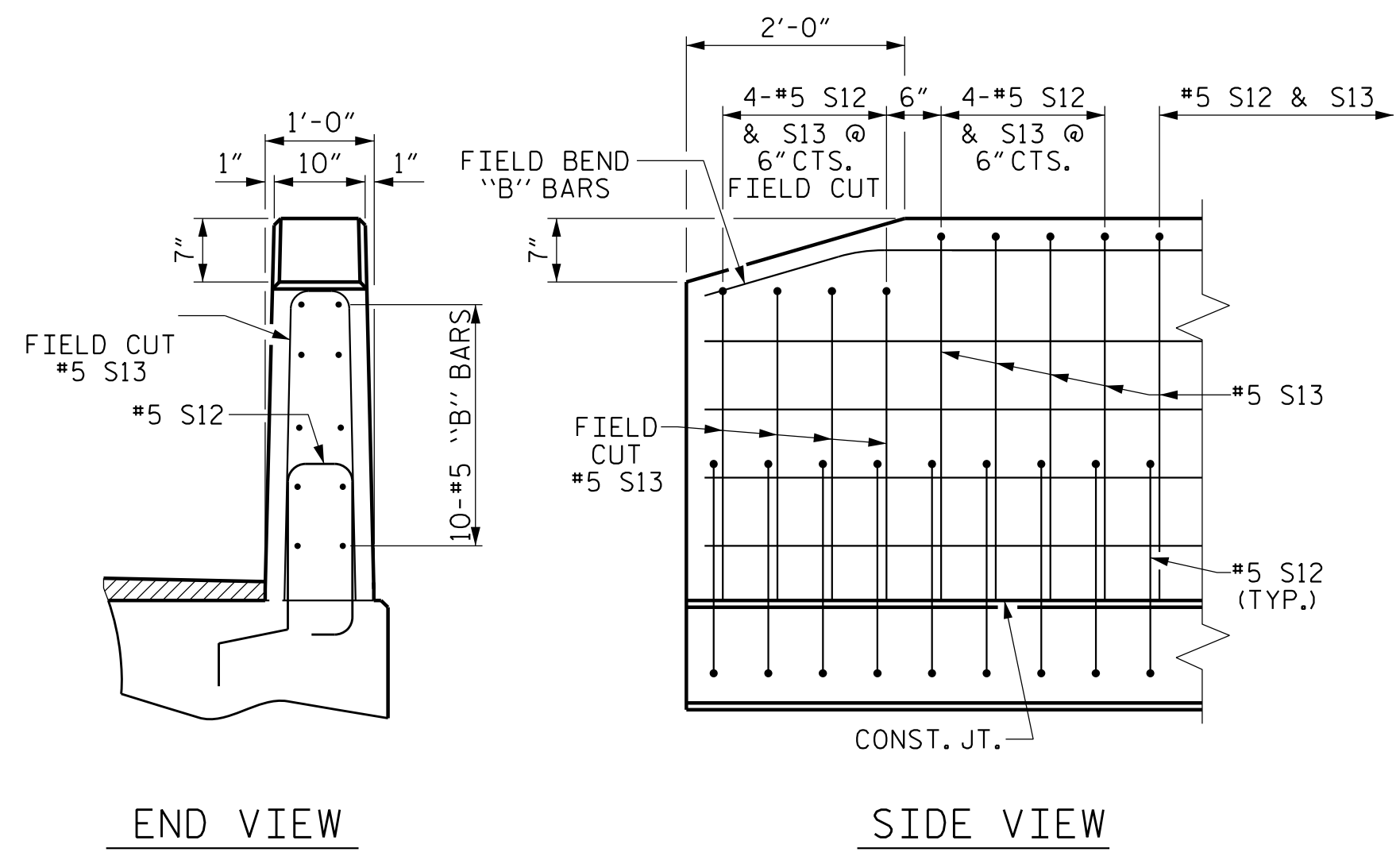


SECTION T-T
AT OPEN JOINT AT BENT
(THIS IS TO BE USED WHERE FOAM JOINT IS NOT USED)

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



ELEVATION AT EXPANSION JOINTS



END VIEW

SIDE VIEW

END OF RAIL DETAILS

GUTTERLINE CONCRETE WEARING SURFACE THICKNESS & RAIL HEIGHT		
	CONCRETE WEARING SURFACE THICKNESS	RAIL HEIGHT
	@ MID-SPAN	@ MID-SPAN
60' UNITS	3 7/8"	3'-9 7/8"

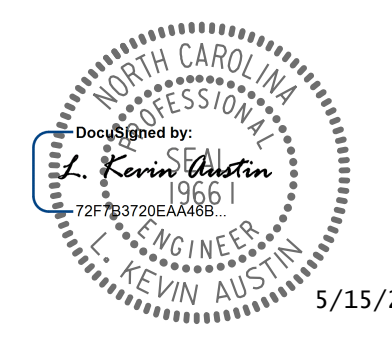
PLANS PREPARED BY:

CALYX
ENGINEERS + CONSULTANTS

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CARY, NC 27518
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CALYXengineers.com
NC License # F-1333

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

THIS STANDARD DRAWING REVIEWED & ADOPTED FOR USE AT THE REFERENCED LOCATION BY THE UNDERSIGNED:



PROJECT NO. B-5606
PERQUIMANS COUNTY
STATION: 16+99.00 -L-

SHEET 6 OF 6

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD
3'-0" X 2'-0"
PRESTRESSED CONCRETE
CORED SLAB UNIT
SPAN B 60° SKEW

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-10
1			3			TOTAL SHEETS
2			4			24

STD. NO. 24PCS3-33-60&120S (TOP DOWN)

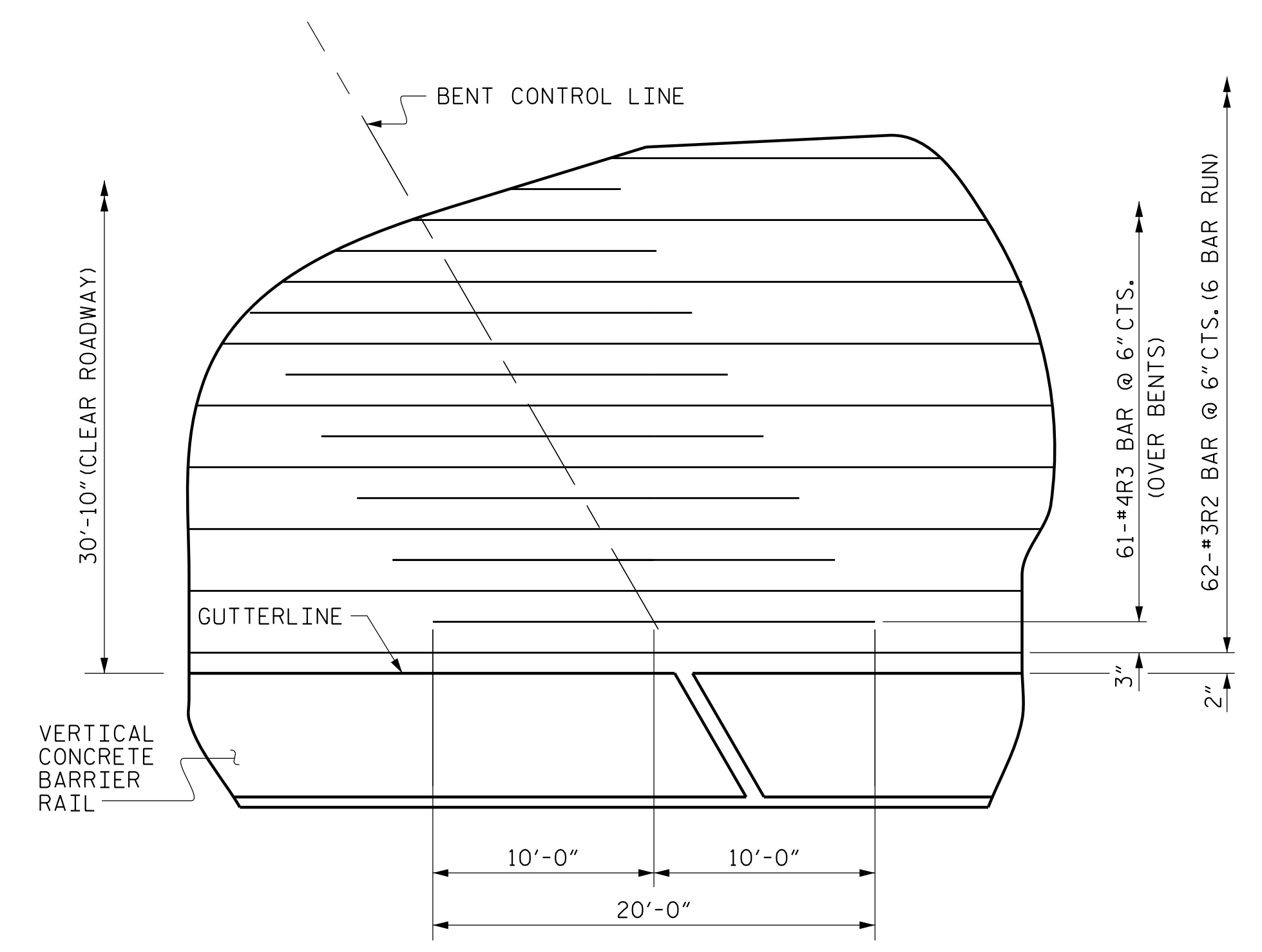
BEAM BOLSTER HEIGHT				
SPAN	AT ϕ BEARINGS		AT MID-SPAN	
	GUTTERS	GRADE PT.	GUTTERS	GRADE PT.
A	2 3/4"	4"	1 1/2"	3"
B	2 3/4"	4"	1"*	2 1/4"
C	2 3/4"	4"	1 1/2"	3"

** USE SLAB BOLSTER

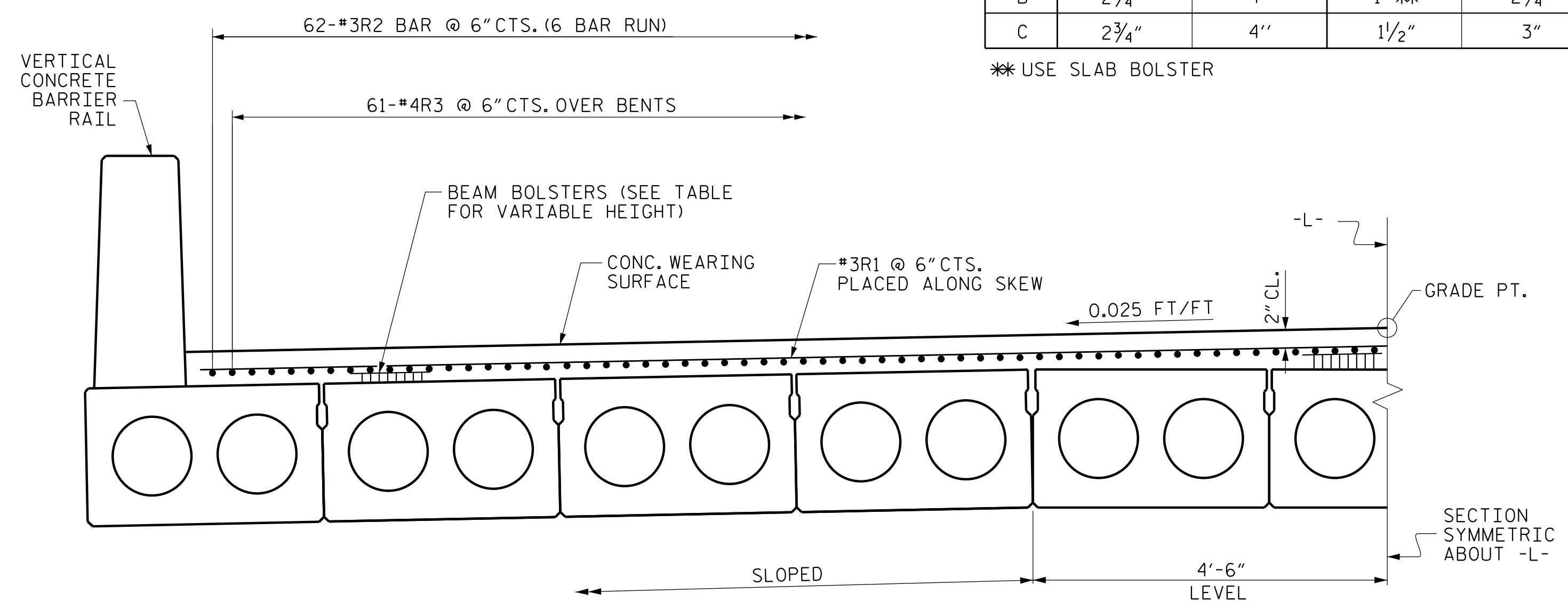
BILL OF MATERIAL					
CONCRETE WEARING SURFACE					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
* R1	636	#3	STR	18'-3"	4364
* R2	372	#3	STR	27'-7"	3858
* R3	122	#4	STR	20'-0"	1630
* EPOXY COATED REINF. STEEL = 9852 LBS					
CONCRETE WEARING SURFACE = 4942 SQ. FT.					

SPLICE LENGTH CHART	
BAR SIZE	EPOXY COATED
#3	1'-3"

GROOVING BRIDGE FLOOR QUANTITY	
	AREA (SQ. FT.)
BRIDGE DECK	4421
APPROACH SLABS	752
TOTAL	5173

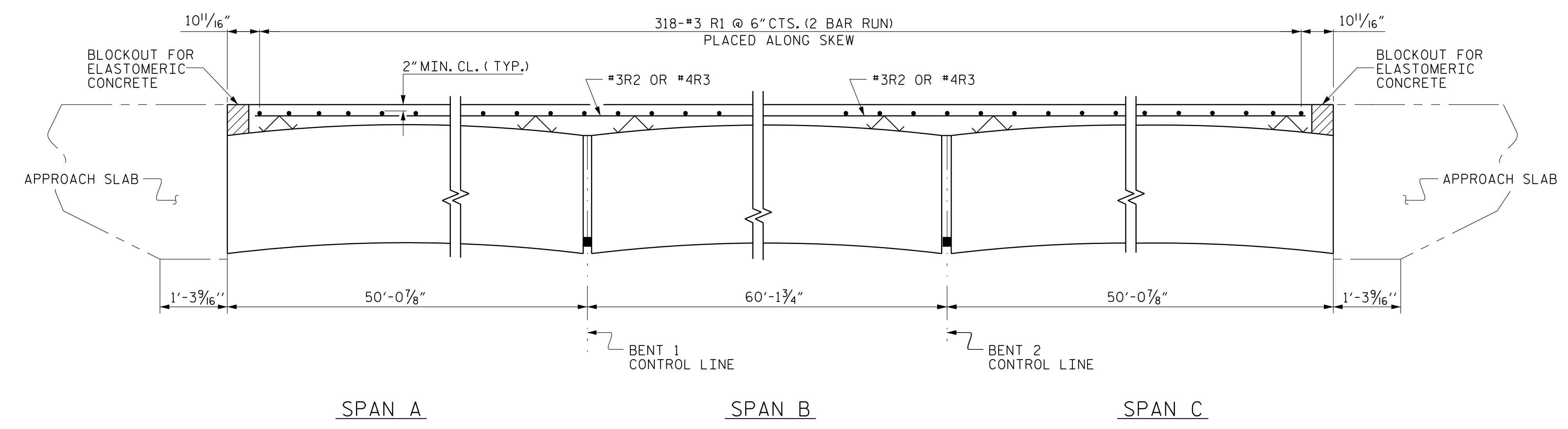


PLAN @ BENTS
R1 BARS NOT SHOWN FOR CLARITY.



REINFORCING STEEL AND BEAM BOLSTER HEIGHTS

NOTE: BEAM AND SLAB BOLSTER HEIGHTS BASED ON PREDICTED FINAL CAMBER AND THEORETICAL GRADE LINE ELEVATION AND VARY BETWEEN ϕ BEARING AND MID-SPAN FOR ALL SPANS.



ELEVATION OF THE CONCRETE WEARING SURFACE

NOTES:
 PLACEMENT OF THE CONCRETE WEARING SURFACE SHALL OCCUR AFTER CASTING THE VERTICAL CONCRETE BARRIER RAILS. THE COST OF THE REINFORCING STEEL CAST WITH THE CONCRETE WEARING SURFACE SHALL BE INCLUDED IN THE UNIT PRICE BID FOR CONCRETE WEARING SURFACE. FOR CONCRETE WEARING SURFACE, SEE SPECIAL PROVISIONS.
 ALL REINFORCING FOR THE CONCRETE WEARING SURFACE SHALL BE EPOXY COATED.

PROJECT NO. B-5606
PERQUIMANS COUNTY
 STATION: 16+99.00 -L-



PLANS PREPARED BY:
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STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUPERSTRUCTURE
CONCRETE WEARING SURFACE DETAILS
 30'-10" CLEAR ROADWAY - 60° SKEW

REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	S-11	
1			3			TOTAL SHEETS	
2			4			24	

DRAWN BY :	W. B. ALLEN	DATE :	6/17
CHECKED BY :	Z. H. BROWN	DATE :	8/17
DESIGN ENGINEER OF RECORD:	L. K. AUSTIN	DATE :	5/18

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5/15/2018 3:02:24 PM RA:\Structures\B5606_SML\DWG_7000.dgn

NOTES

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

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

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

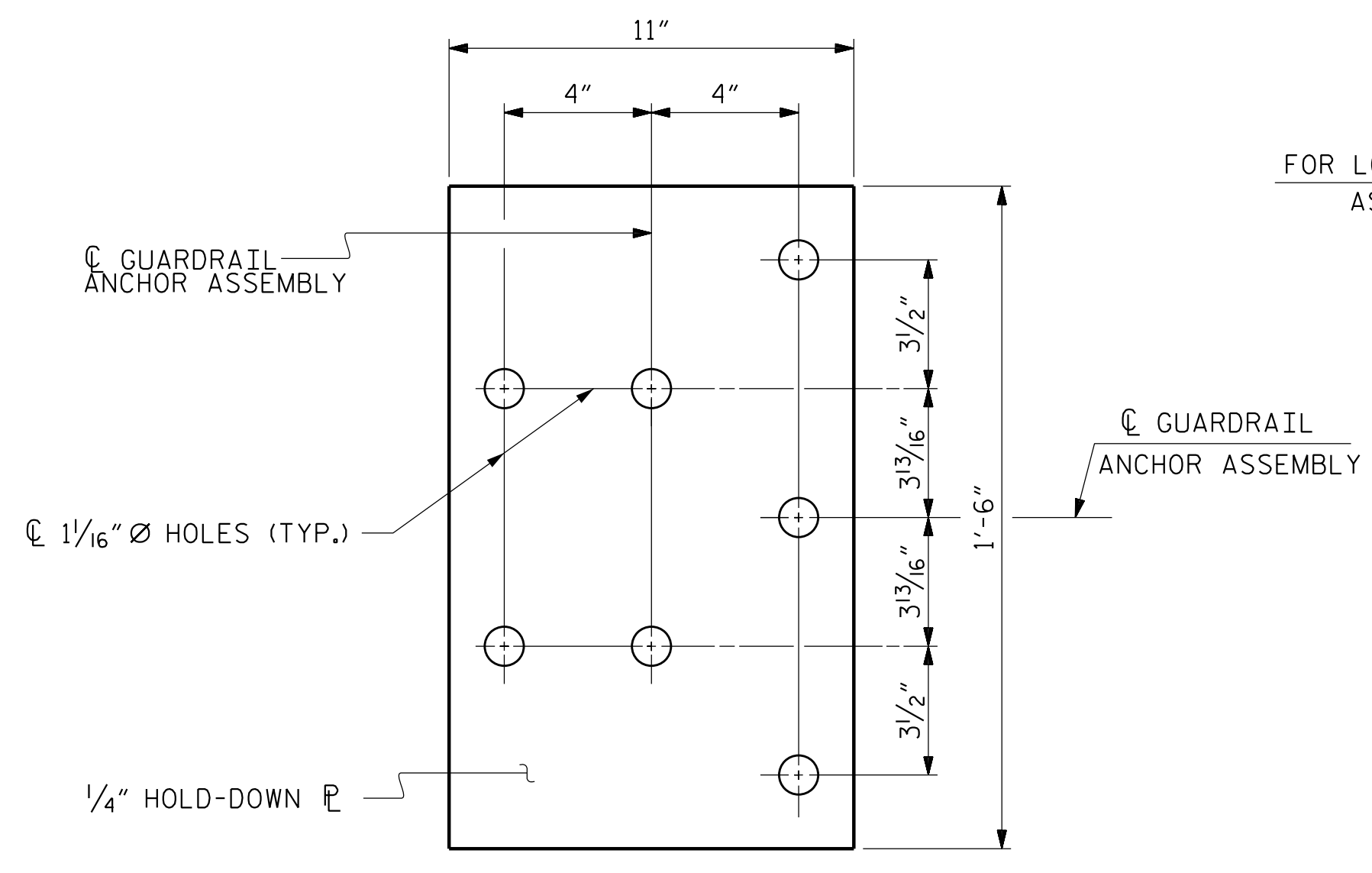
THE GUARDRAIL ANCHOR ASSEMBLY IS REQUIRED AT ALL POINTS WHERE APPROACH GUARDRAIL IS TO BE ATTACHED TO THE END OF BARRIER RAIL. FOR POINTS OF ATTACHMENT, SEE SKETCH.

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

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

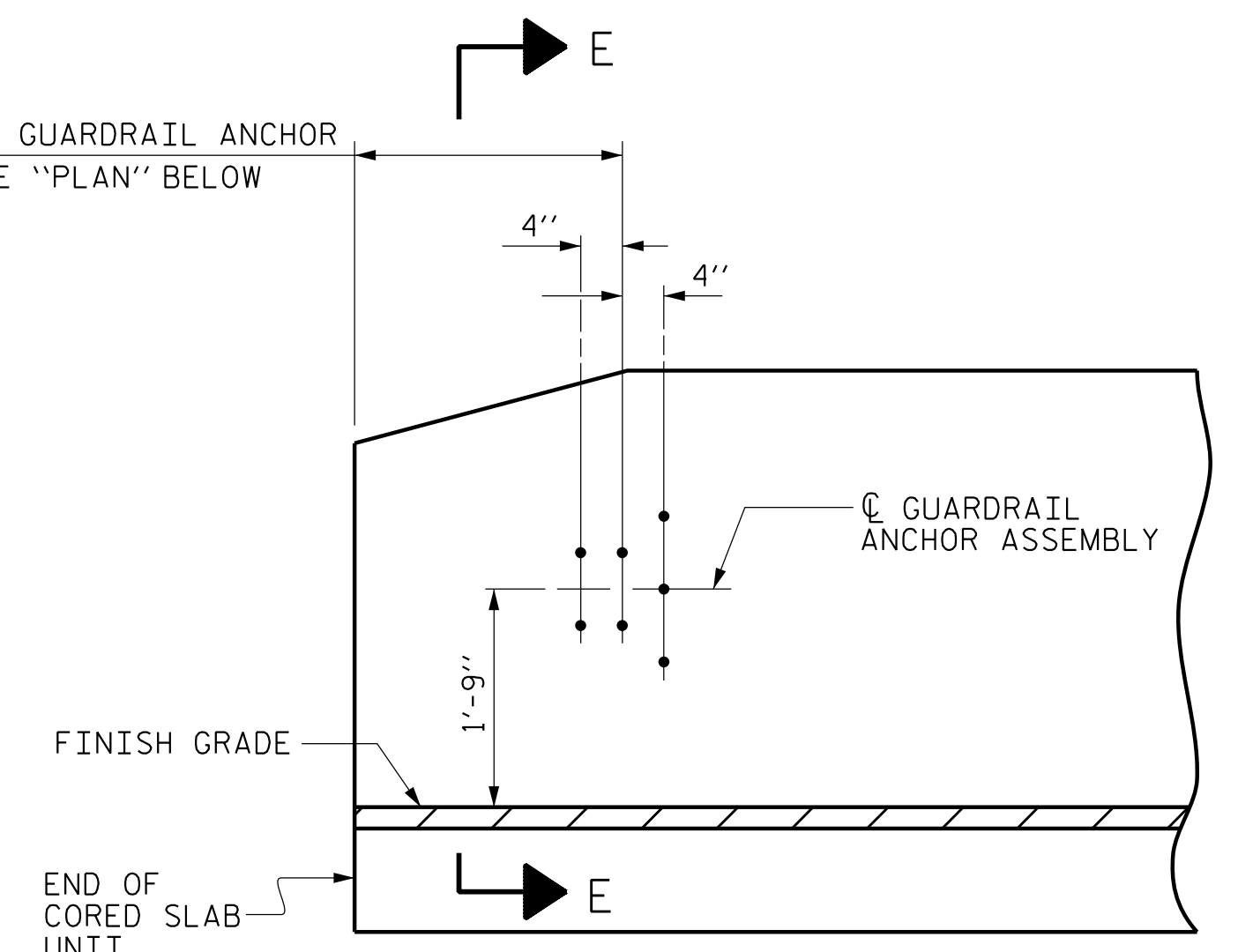
THE VERTICAL REINFORCING BARS MAY BE SHIFTED SLIGHTLY IN THE VERTICAL CONCRETE BARRIER RAIL TO CLEAR ASSEMBLY BOLTS.

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

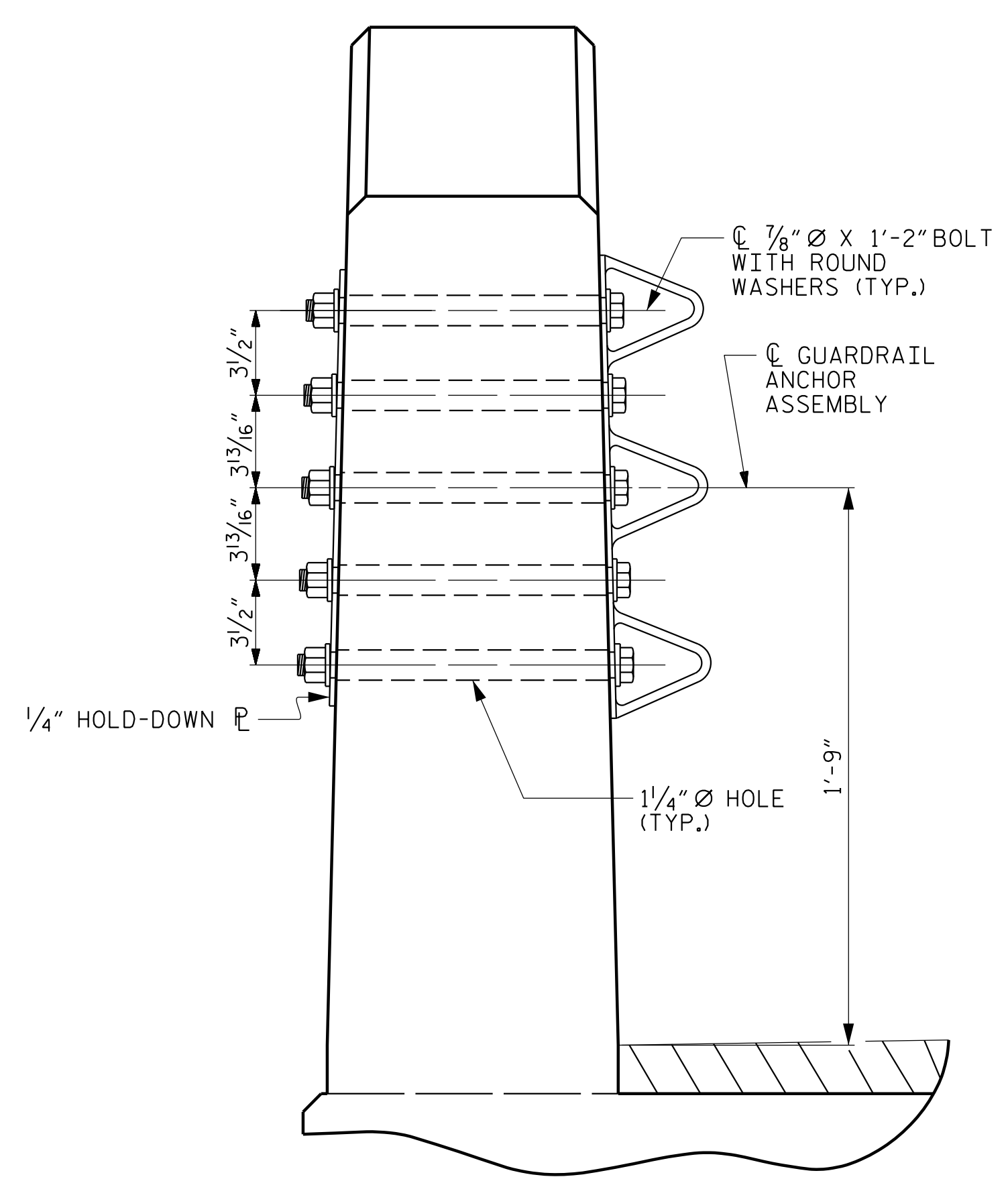


PLAN

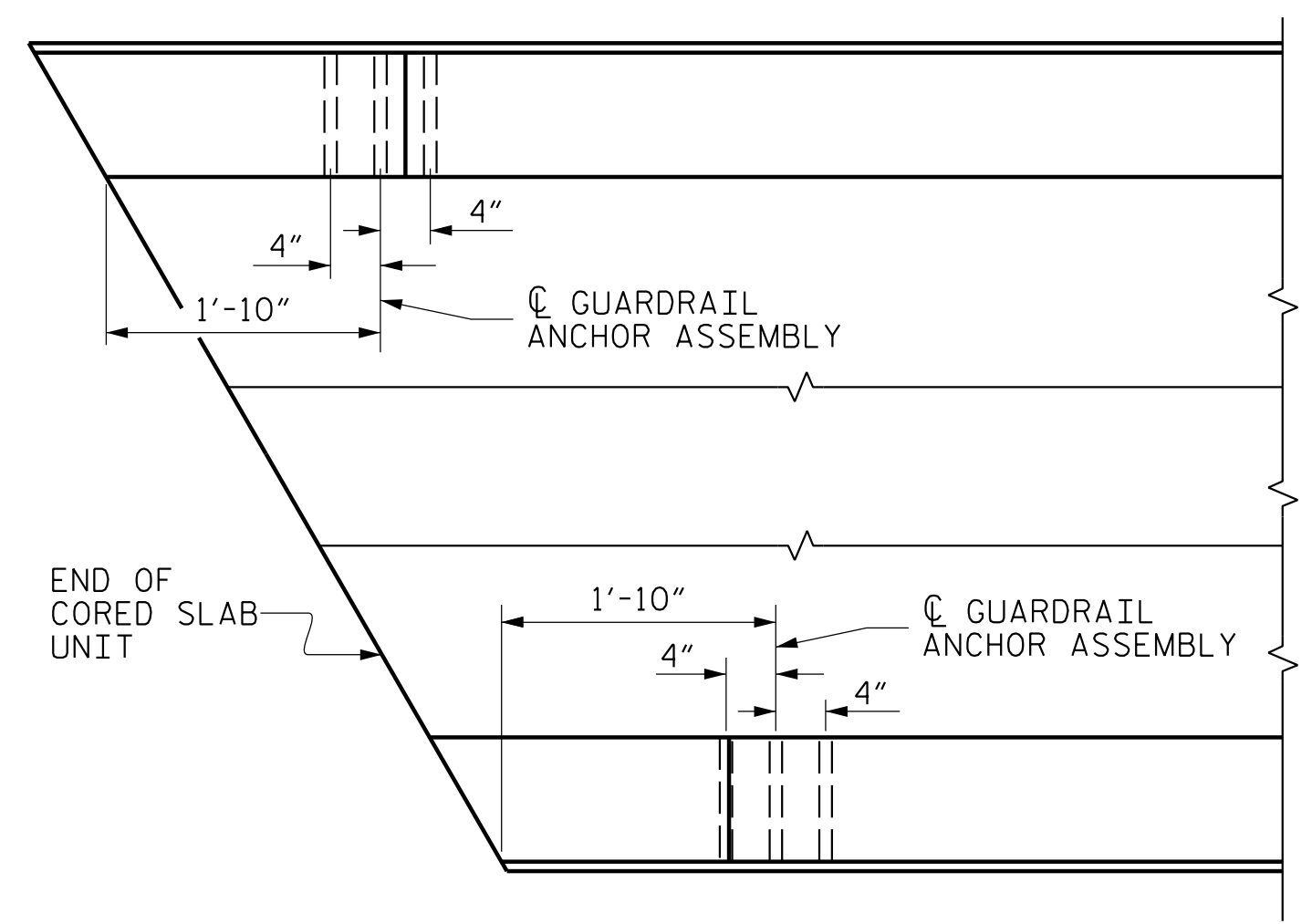
FOR LOCATION OF GUARDRAIL ANCHOR ASSEMBLY, SEE "PLAN" BELOW



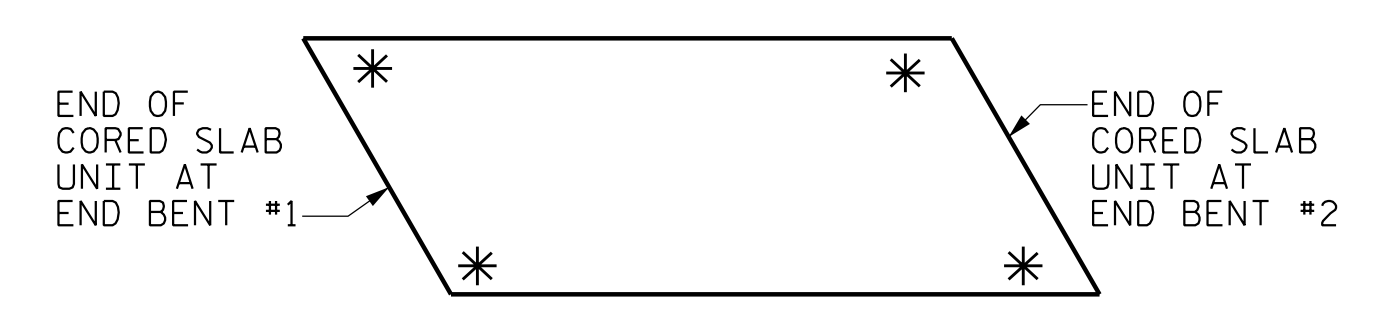
ELEVATION



SECTION E-E
GUARDRAIL ANCHOR ASSEMBLY DETAILS



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



SKETCH SHOWING POINTS OF ATTACHMENT
* DENOTES GUARDRAIL ANCHOR ASSEMBLY

PROJECT NO. B-5606
PERQUIMANS COUNTY
 STATION: 16+99.00 -L-

ASSEMBLED BY : W. B. ALLEN	DATE : 2/18
CHECKED BY : Z. H. BROWN	DATE : 2/18
DRAWN BY : MAA 5/10	REV. 6/13 MAA/GM
CHECKED BY : GM 5/10	REV. 1/15 MAA/TMG
	REV. 12/17 MAA/THC

PLANS PREPARED BY:

CALYX
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NC License # F-1333

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L. Kevin Austin
L. KEVIN AUSTIN
ENGINEER
5/15/2018

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

STANDARD
 GUARDRAIL ANCHORAGE
 DETAILS
 FOR VERTICAL CONCRETE
 BARRIER RAIL

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-12
1			3			TOTAL SHEETS
2			4			24

(SHT 1b) STD. NO. GRA3

5/15/2018 3:42:28 PM R:\Structures\B5606.SMU\CR_7001.dgn

NOTES

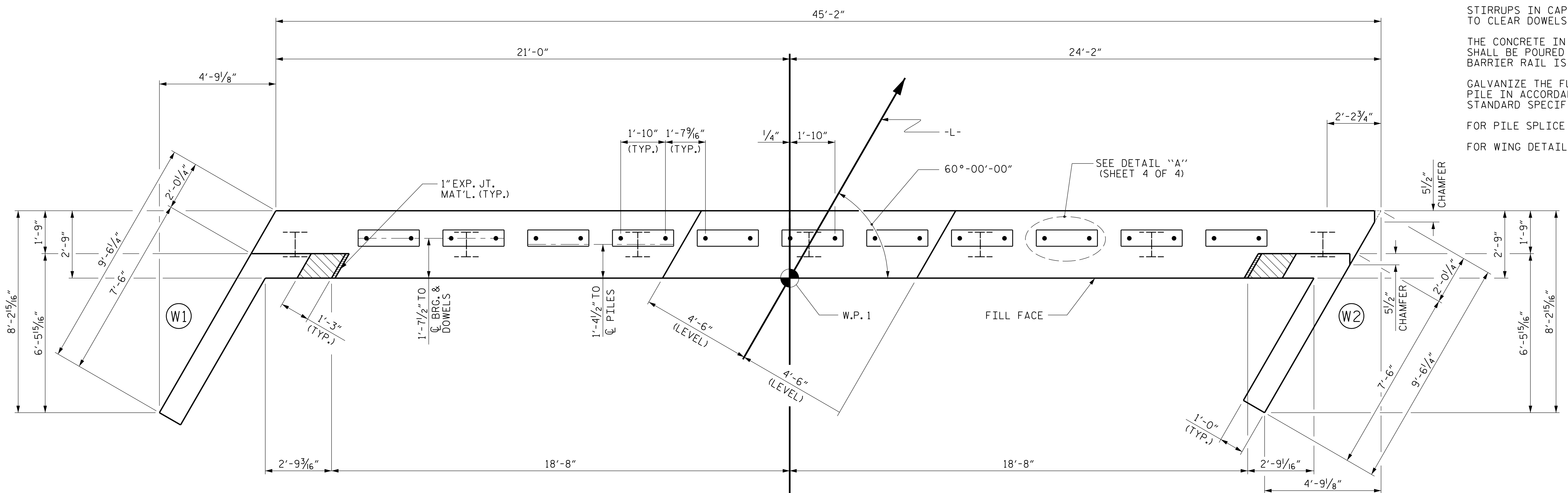
STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR DOWELS.

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

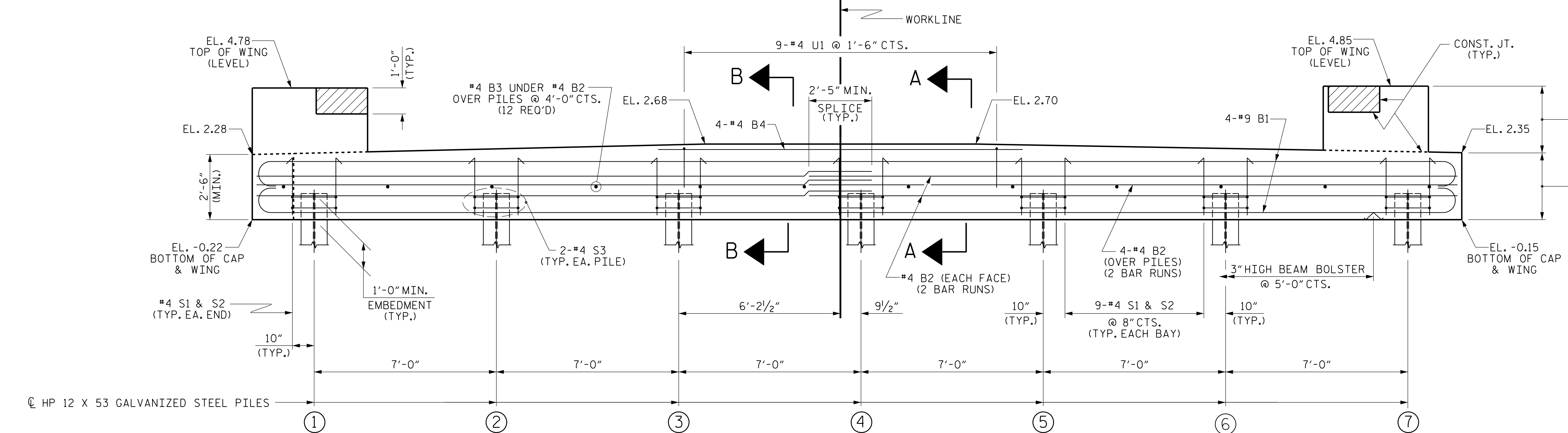
GALVANIZE THE FULL LENGTH OF EACH END BENT PILE IN ACCORDANCE WITH SECTION 1076 OF THE STANDARD SPECIFICATIONS

FOR PILE SPLICE DETAILS, SEE SHEET 4 OF 4.

FOR WING DETAILS, SEE SHEET 3 OF 4.



PLAN



ELEVATION

WINGS NOT SHOWN FOR CLARITY.
FOR SECTION A-A, SEE SHEET 4 OF 4.

PROJECT NO. B-5606
 PERQUIMANS COUNTY
 STATION: 16+99.00 -L-

SHEET 1 OF 4

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

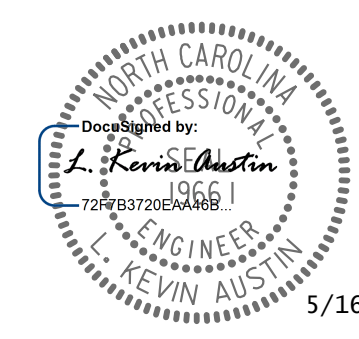
**SUBSTRUCTURE
 END BENT No. 1**

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-13
1			3			TOTAL SHEETS
2			4			24

STD. NO. EB_33_60S

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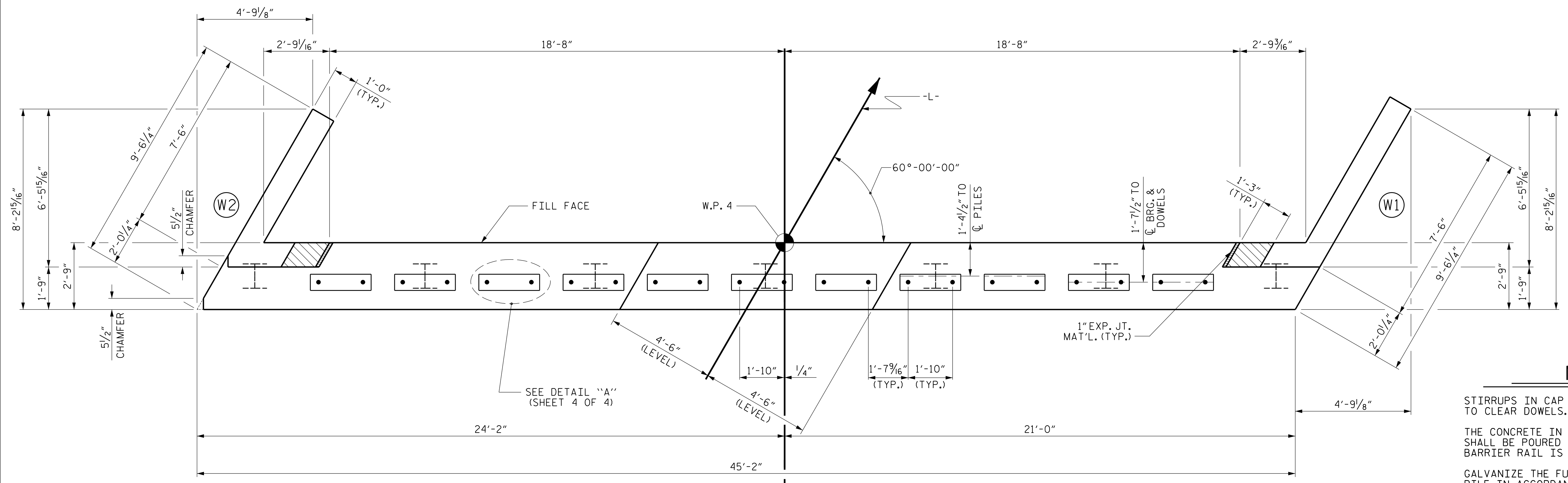
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 CALYXengineers.com
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DRAWN BY : DGE 01/10	REV. 4/15
CHECKED BY : MKT 01/10	MAA/TMG

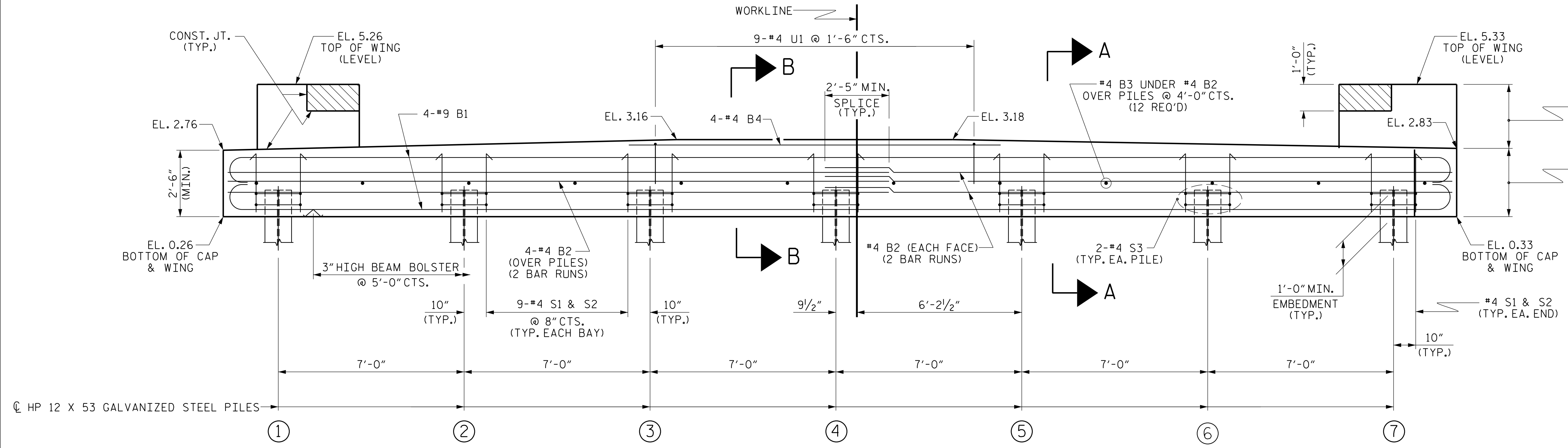
5/16/2018 10:27 PM R:\Structures\B5606.SMU\EL17001.dgn



PLAN

NOTES

- STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR DOWELS.
- THE CONCRETE IN THE SHADED AREA OF THE WING SHALL BE POURED AFTER THE VERTICAL CONCRETE BARRIER RAIL IS CAST IF SLIP FORMING IS USED.
- GALVANIZE THE FULL LENGTH OF EACH END BENT PILE IN ACCORDANCE WITH SECTION 1076 OF THE STANDARD SPECIFICATIONS
- FOR PILE SPLICE DETAILS, SEE SHEET 4 OF 4.
- FOR WING DETAILS, SEE SHEET 3 OF 4.



ELEVATION

WINGS NOT SHOWN FOR CLARITY. FOR SECTION A-A, SEE SHEET 4 OF 4.

PROJECT NO. B-5606
 PERQUIMANS COUNTY
 STATION: 16+99.00 -L-

SHEET 2 OF 4

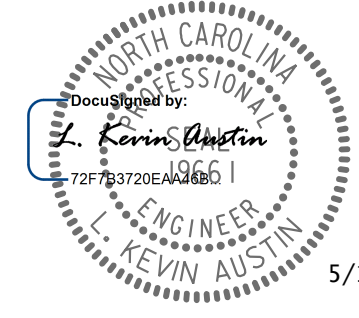
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUBSTRUCTURE
 END BENT No. 2

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-14
1			3			TOTAL SHEETS
2			4			24

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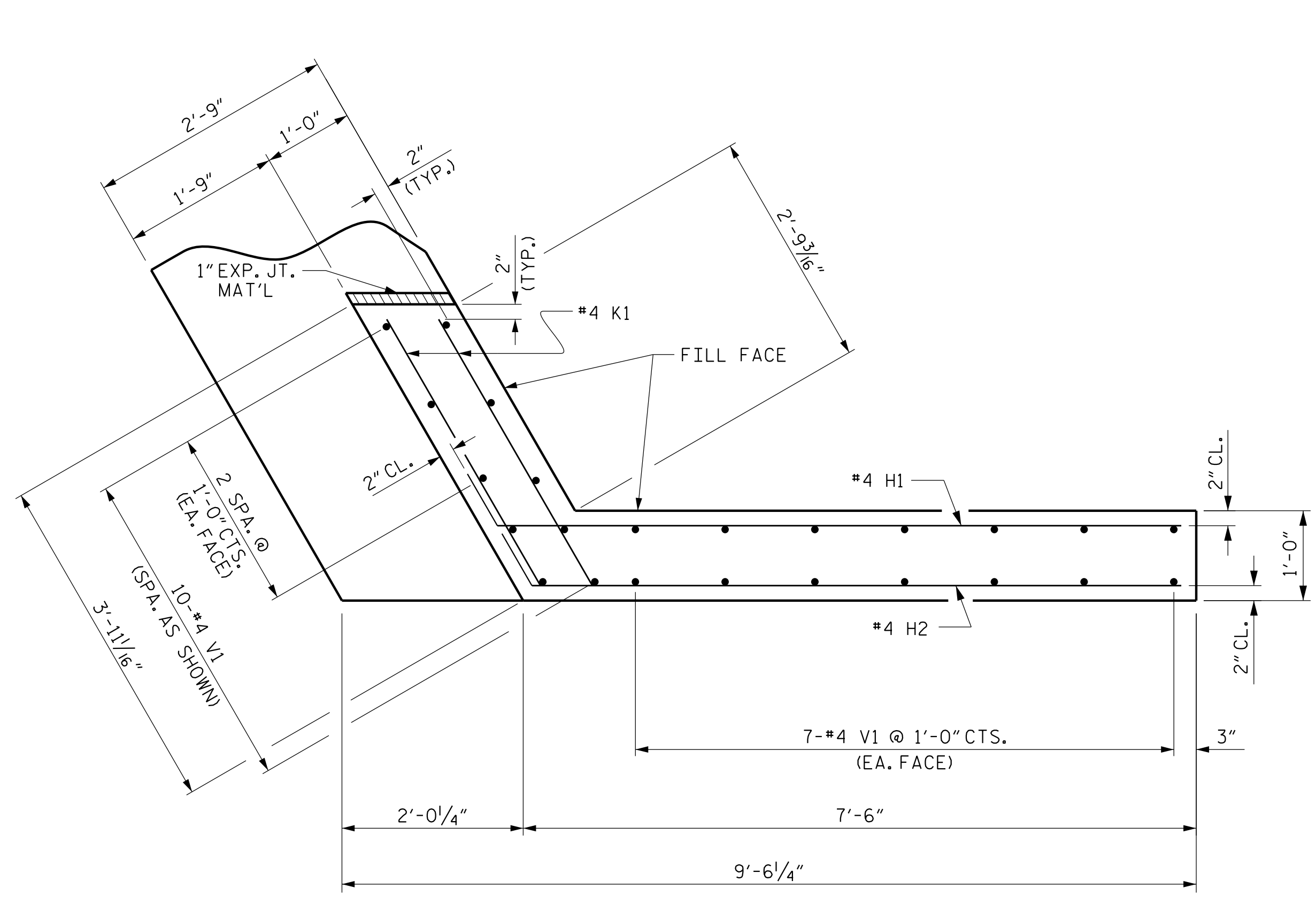
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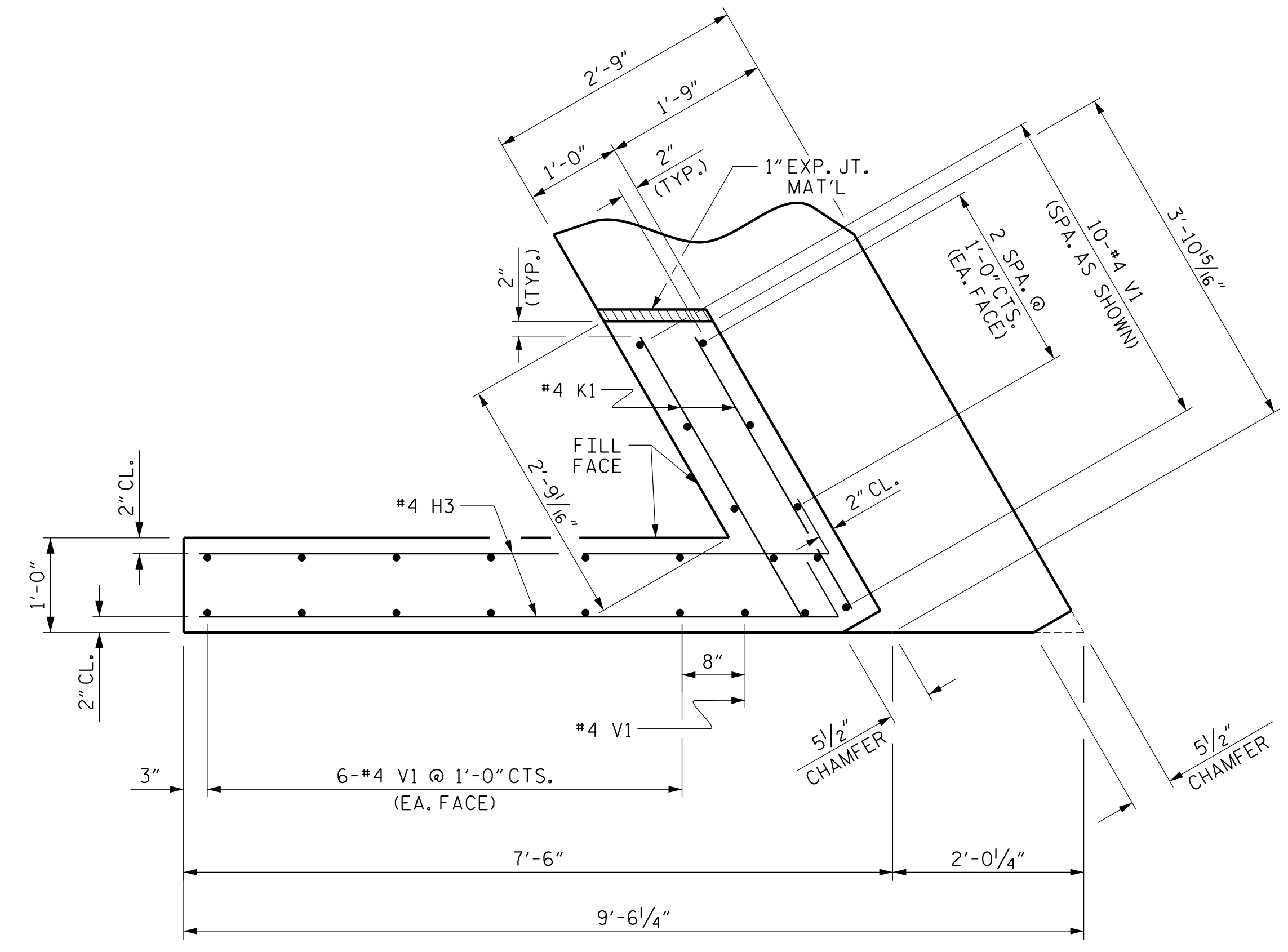
6750 TRYON ROAD
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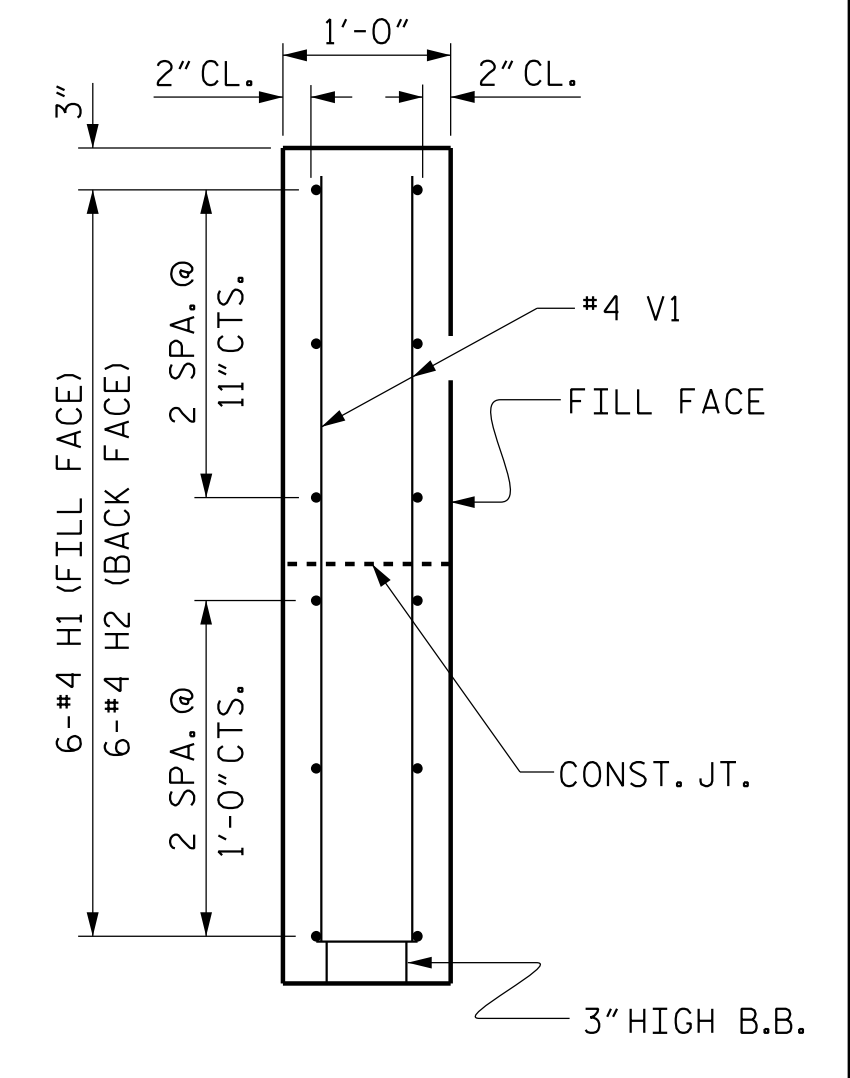
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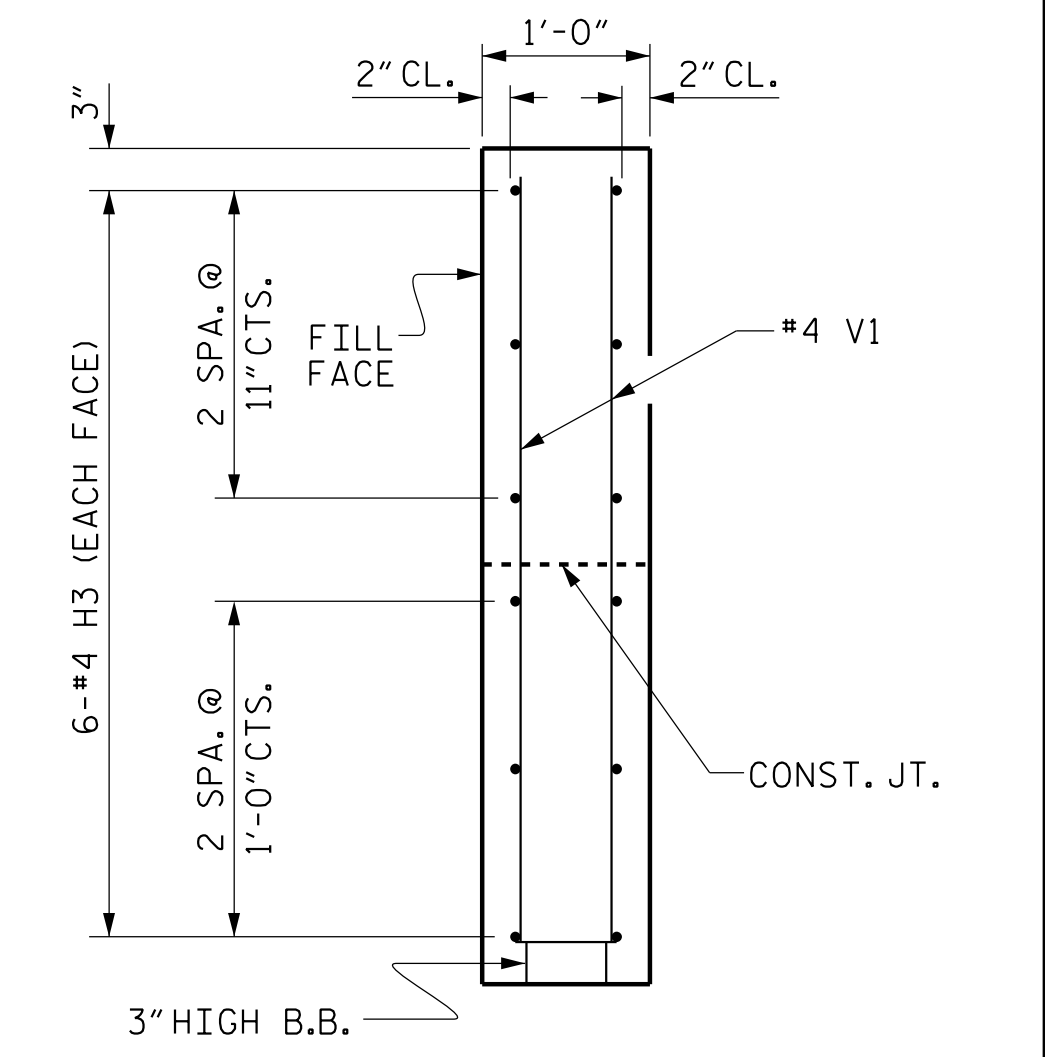
PLAN OF WING (W1)



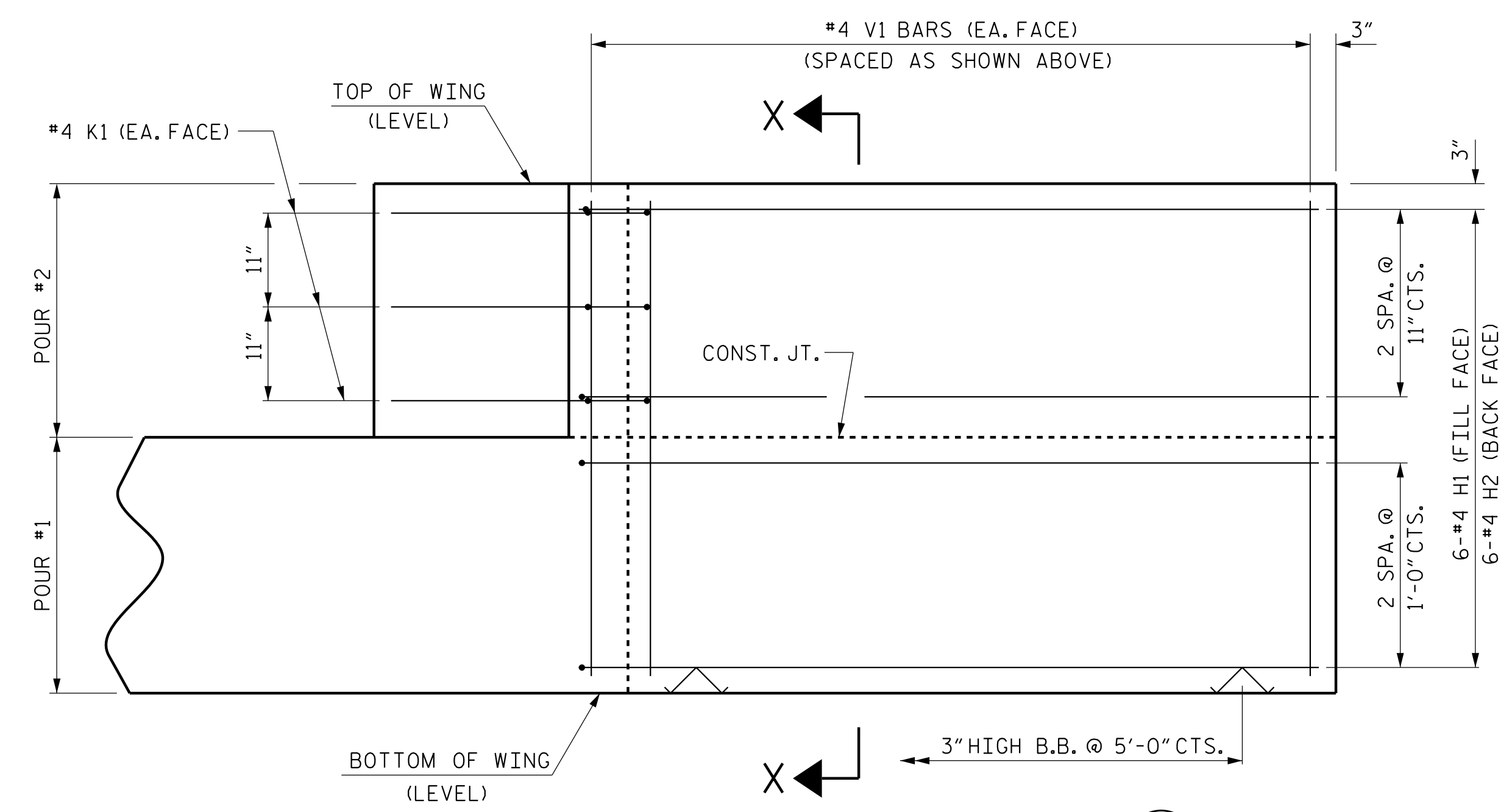
PLAN OF WING (W2)



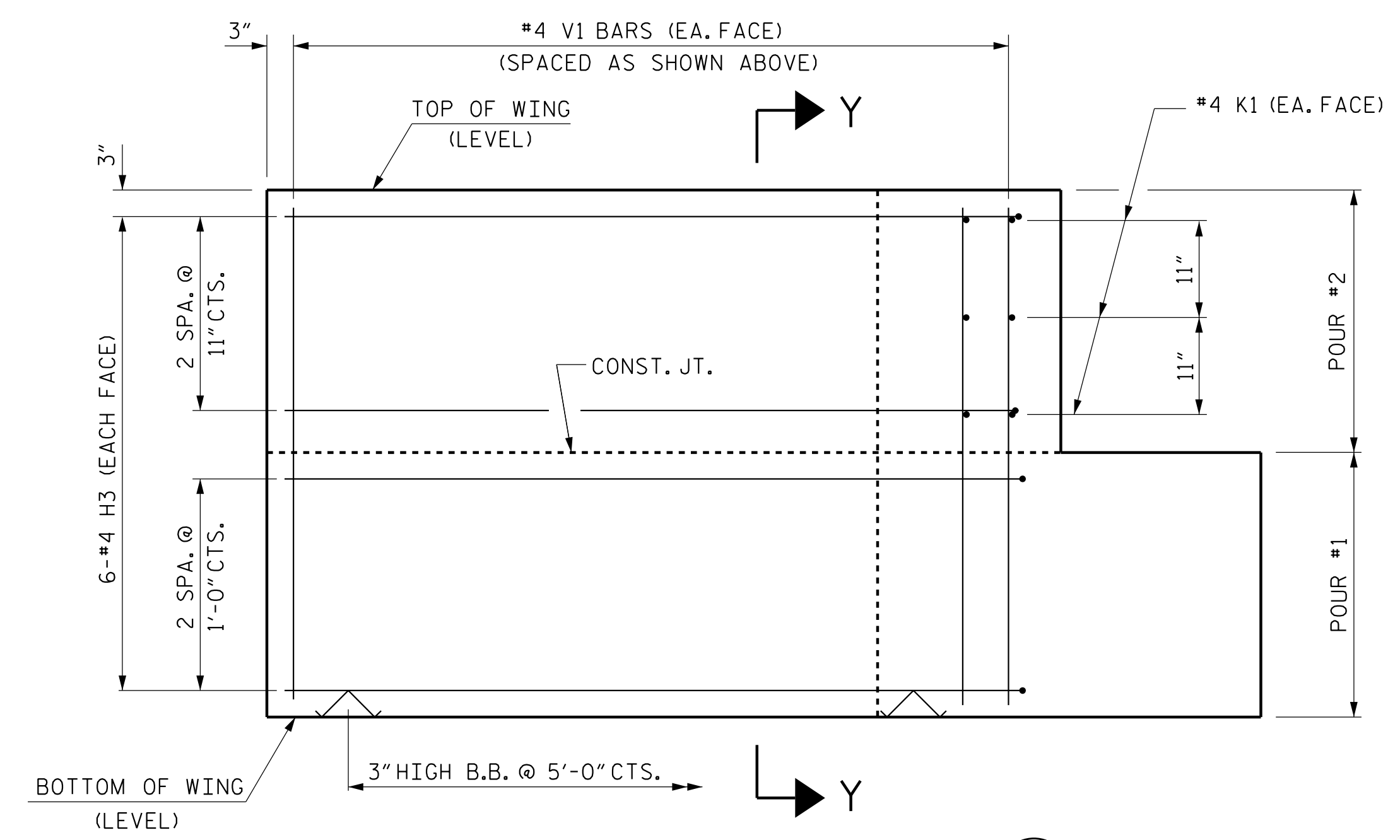
SECTION X-X



SECTION Y-Y



ELEVATION OF WING (W1)



ELEVATION OF WING (W2)

WING DETAILS

PROJECT NO. B-5606
 PERQUIMANS COUNTY
 STATION: 16+99.00 -L-

SHEET 3 OF 4

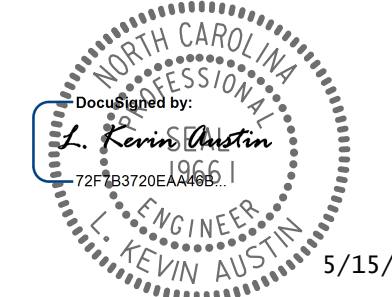
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

**SUBSTRUCTURE
 END BENT
 WING DETAILS**

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			24
2			4			

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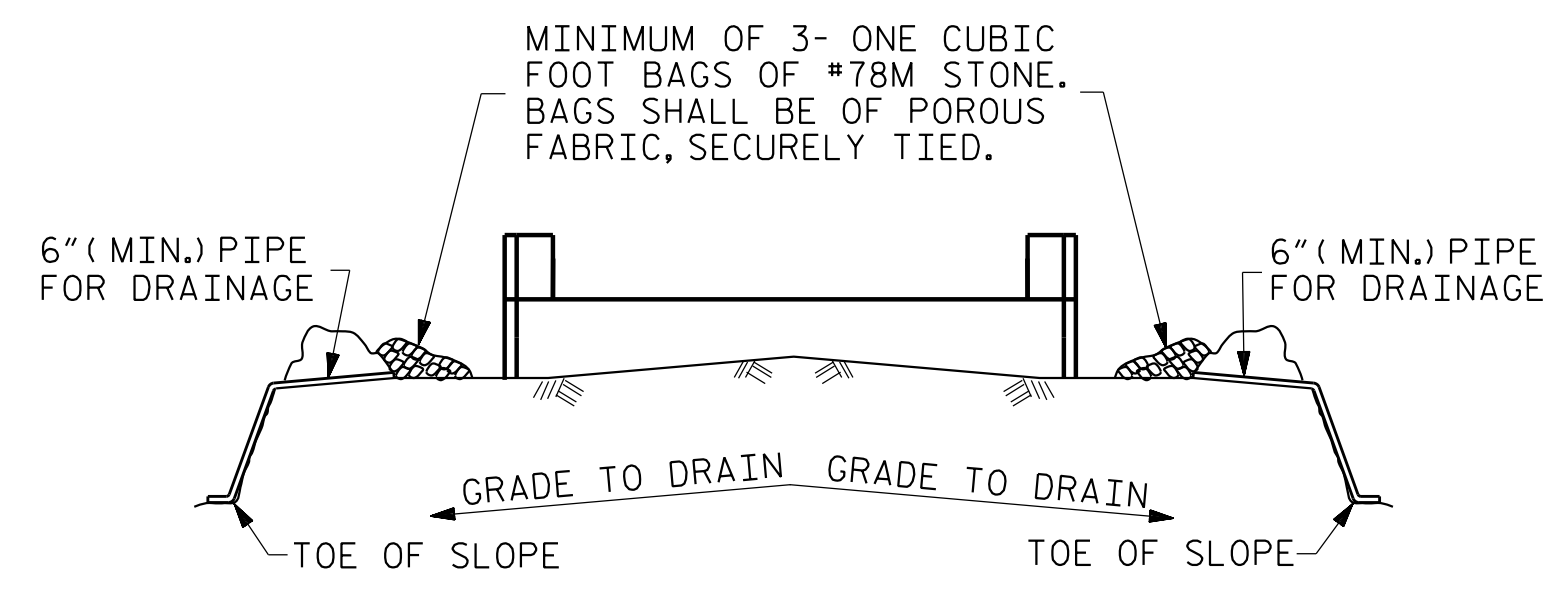


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ASSEMBLED BY : W.B. ALLEN	DATE : 5/17
CHECKED BY : Z.H. BROWN	DATE : 7/17
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CHECKED BY : MKT 01/10	MAA/TMG

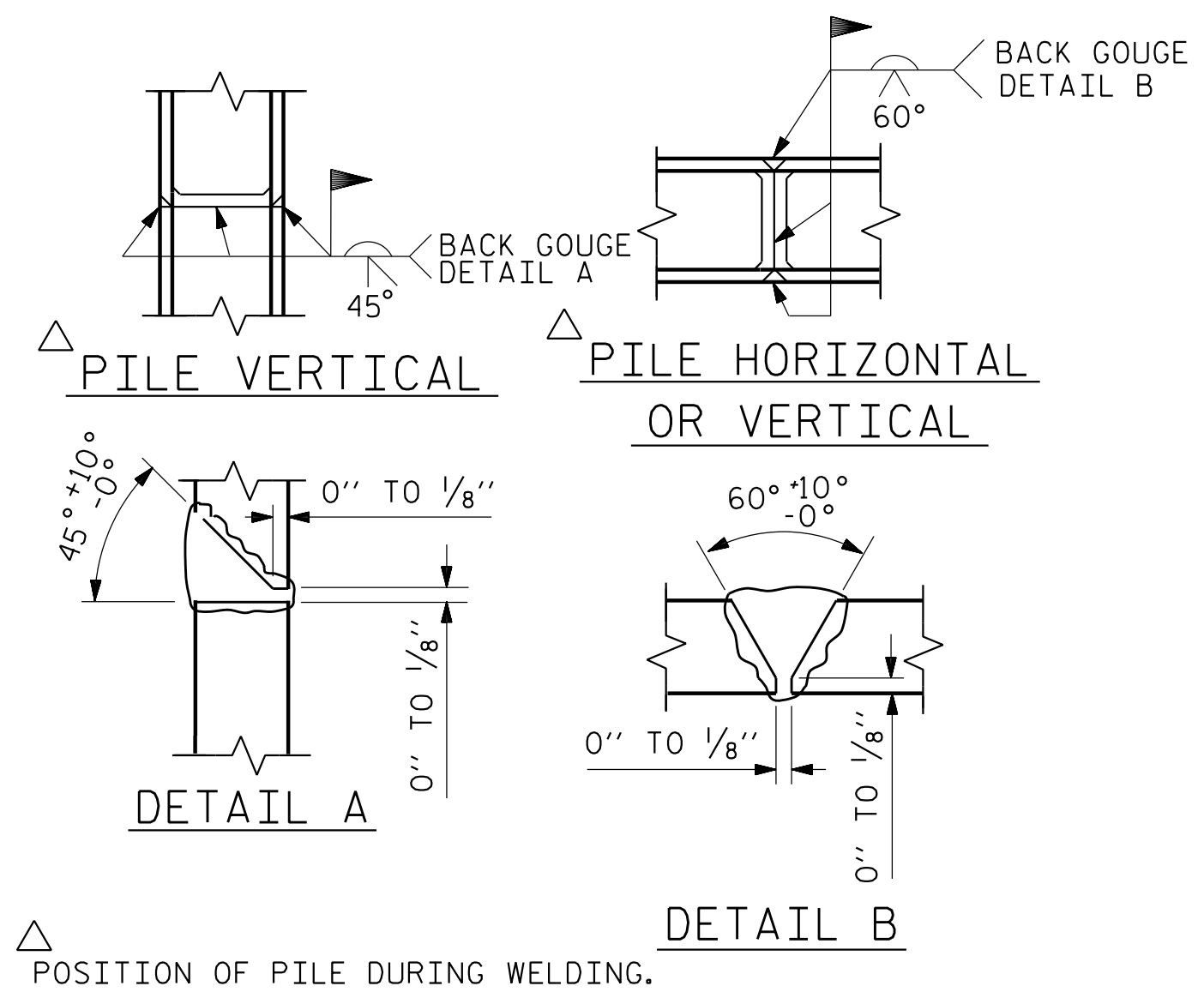


BAGGED STONE AND PIPE SHALL BE PLACED IMMEDIATELY AFTER COMPLETION OF END BENT EXCAVATION. PIPE MAY BE EITHER CONCRETE, CORRUGATED STEEL, CORRUGATED ALUMINUM ALLOY, OR CORRUGATED PLASTIC. PERFORATED PIPE WILL NOT BE ALLOWED.

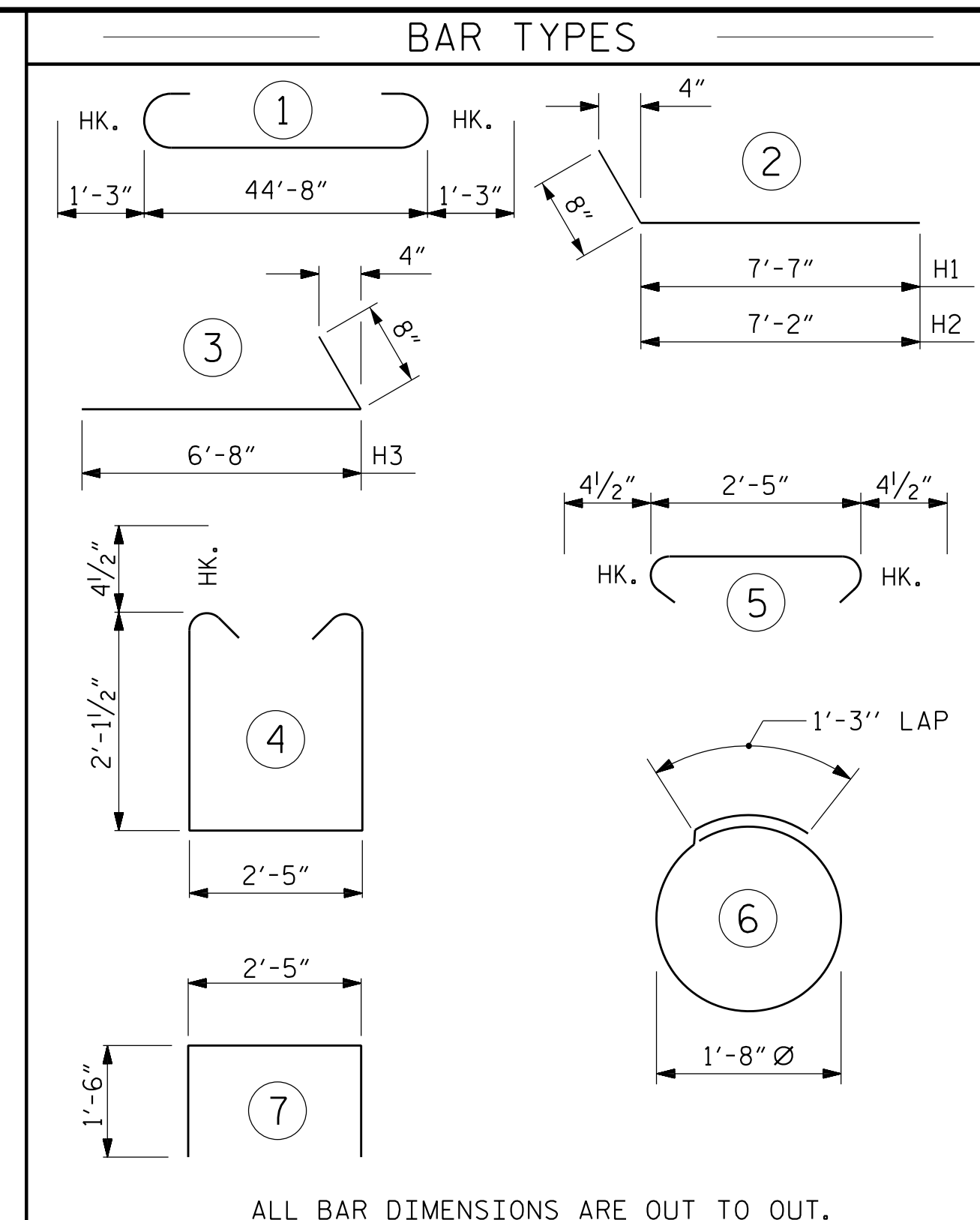
BAGGED STONE SHALL REMAIN IN PLACE UNTIL THE ENGINEER DIRECTS THAT IT BE REMOVED. THE CONTRACTOR SHALL REMOVE AND DISPOSE OF SILT ACCUMULATIONS AT BAGGED STONE WHEN SO DIRECTED BY THE ENGINEER. BAGS SHALL BE REMOVED AND REPLACED WHENEVER THE ENGINEER DETERMINES THAT THEY HAVE DETERIORATED AND LOST THEIR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

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

TEMPORARY DRAINAGE AT END BENT



PILE SPLICE DETAILS



BILL OF MATERIAL FOR ONE END BENT					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	8	#9		47'-2"	1283
B2	16	#4	STR	23'-8"	253
B3	12	#4	STR	2'-5"	19
B4	4	#4	STR	14'-0"	37
D1	22	#6	STR	1'-6"	50
H1	6	#4	2	8'-3"	33
H2	6	#4	2	7'-10"	31
H3	12	#4	3	7'-4"	59
K1	12	#4	STR	3'-3"	26
S1	56	#4	4	7'-5"	277
S2	56	#4	5	3'-2"	118
S3	14	#4	6	6'-6"	61
U1	9	#4	7	5'-5"	33
V1	47	#4	STR	4'-8"	147

REINFORCING STEEL (FOR ONE END BENT) 2427 LBS.

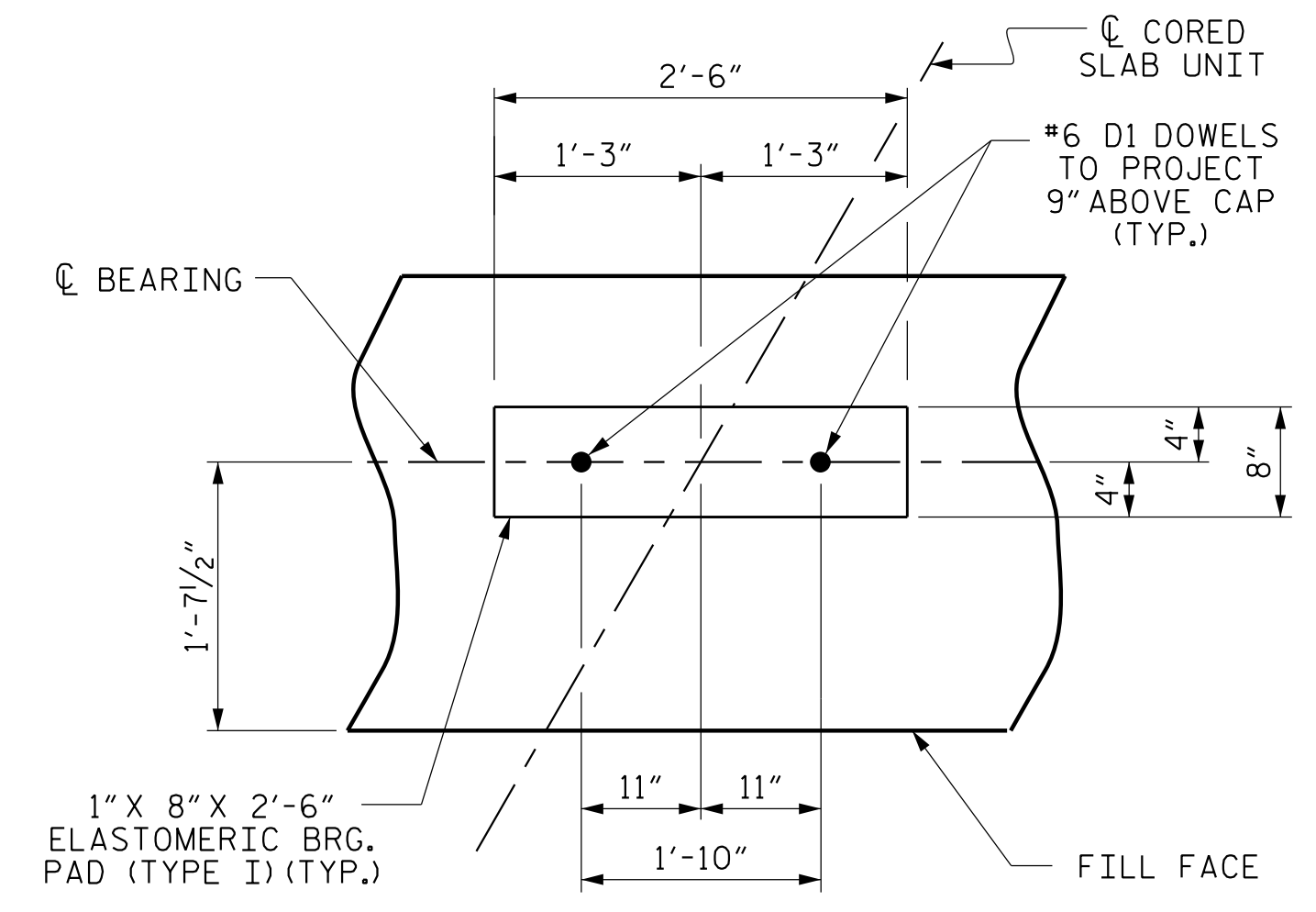
CLASS A CONCRETE BREAKDOWN (FOR ONE END BENT)

POUR #1 CAP & LOWER PART OF WINGS 13.9 C.Y.

POUR #2 UPPER PART OF WINGS 1.9 C.Y.

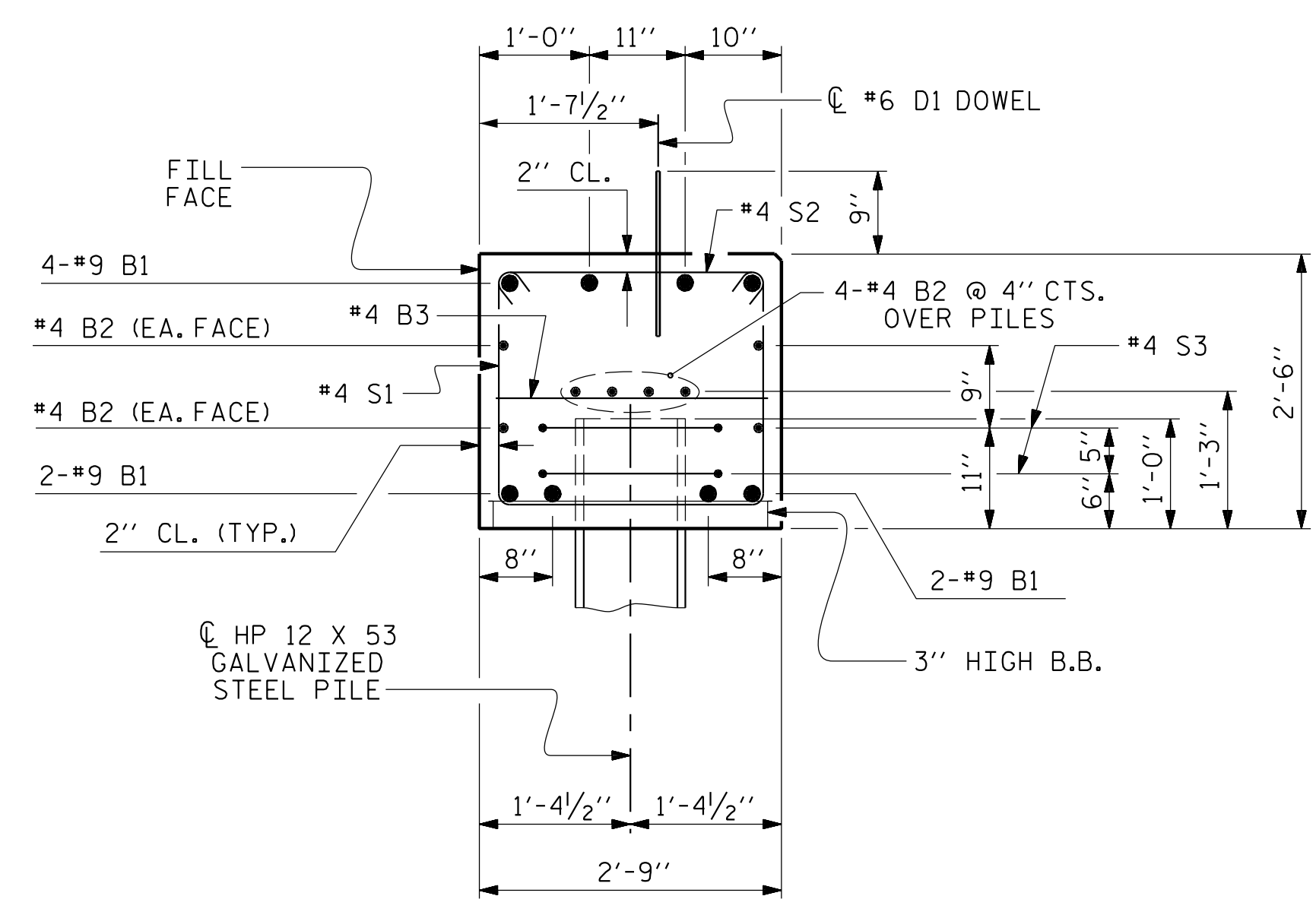
TOTAL CLASS A CONCRETE 15.8 C.Y.

END BENT No. 1		END BENT No. 2	
HP 12 X 53 GALVANIZED STEEL PILES	NO: 7	HP 12 X 53 GALVANIZED STEEL PILES	NO: 7
PILE DRIVING EQUIPMENT SETUP FOR HP 12 X 53 GALVANIZED STEEL PILES	NO: 7	PILE DRIVING EQUIPMENT SETUP FOR HP 12 X 53 GALVANIZED STEEL PILES	NO: 7
PILE REDRIVES	NO: 4	PILE REDRIVES	NO: 4

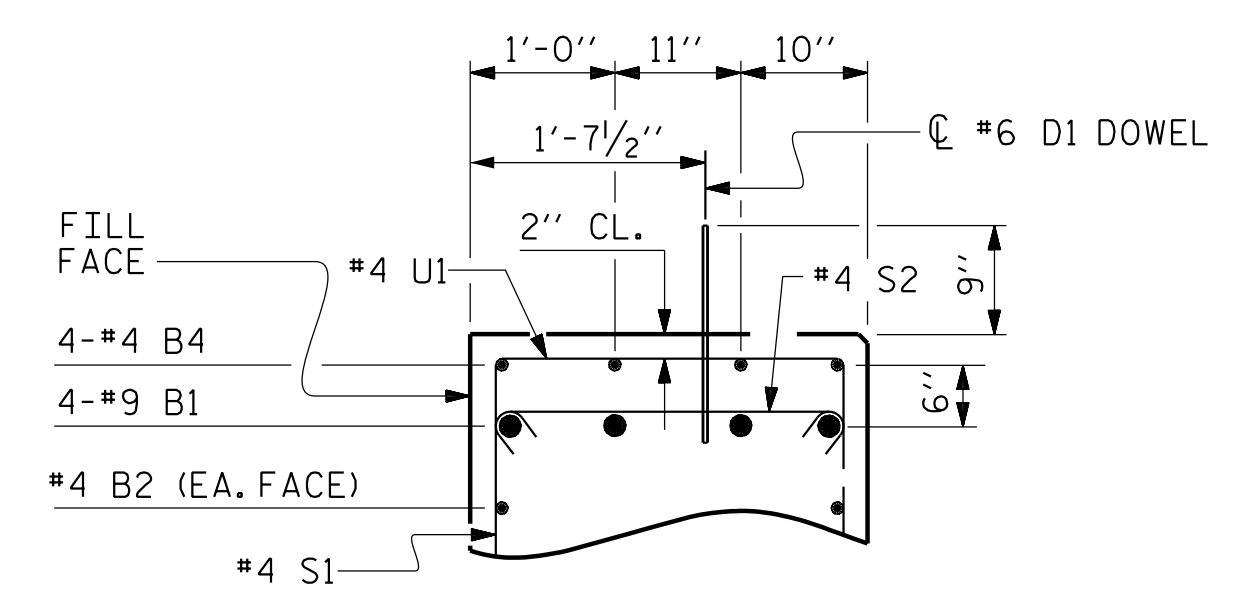


DETAIL "A"

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



SECTION A-A



PARTIAL SECTION B-B

ASSEMBLED BY : W. B. ALLEN	DATE : 5/17
CHECKED BY : Z. H. BROWN	DATE : 7/17
DRAWN BY : DGE 12/09	REV. 4/17
CHECKED BY : MKT 01/10	MAA/THC

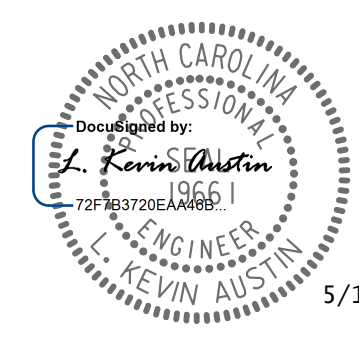
PLANS PREPARED BY:

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CALYXengineers.com
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PROJECT NO. B-5606
 PERQUIMANS COUNTY
 STATION: 16+99.00 -L-

SHEET 4 OF 4

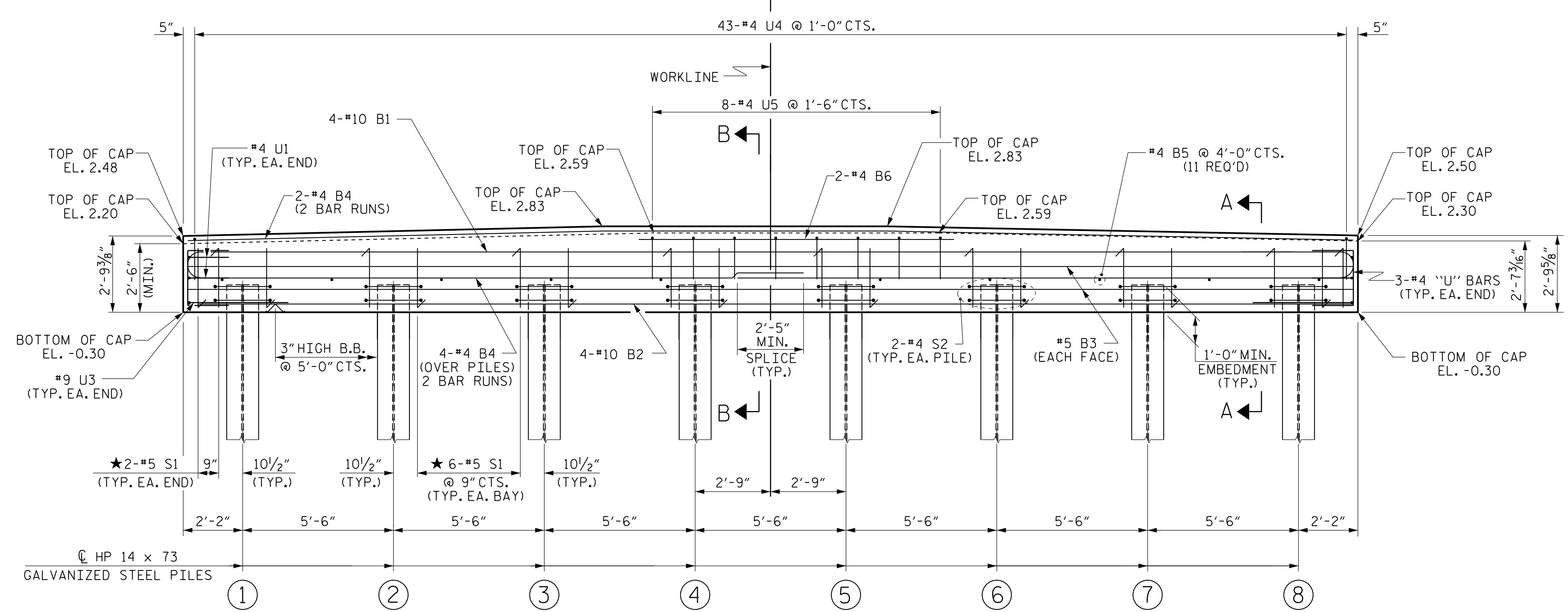
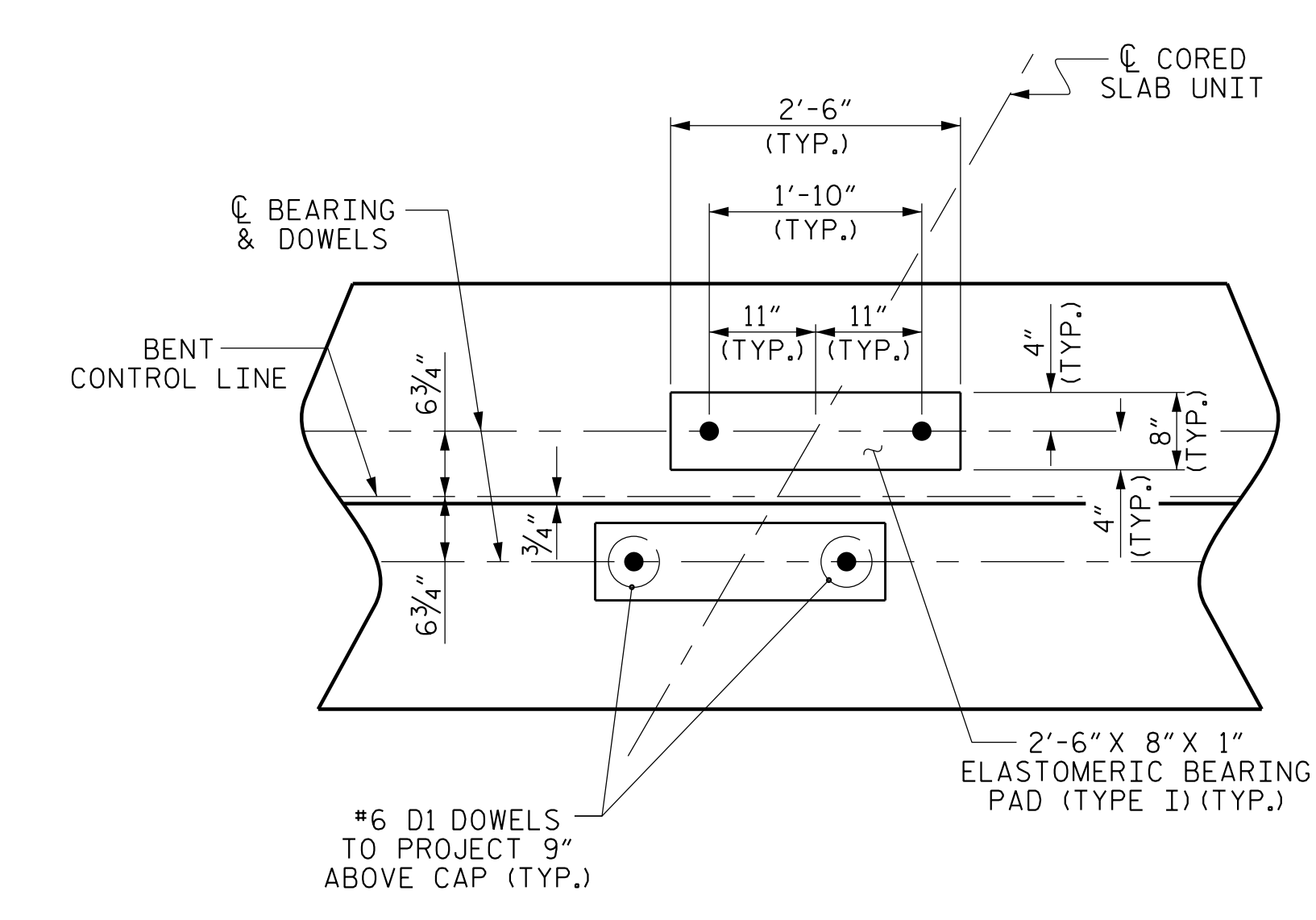
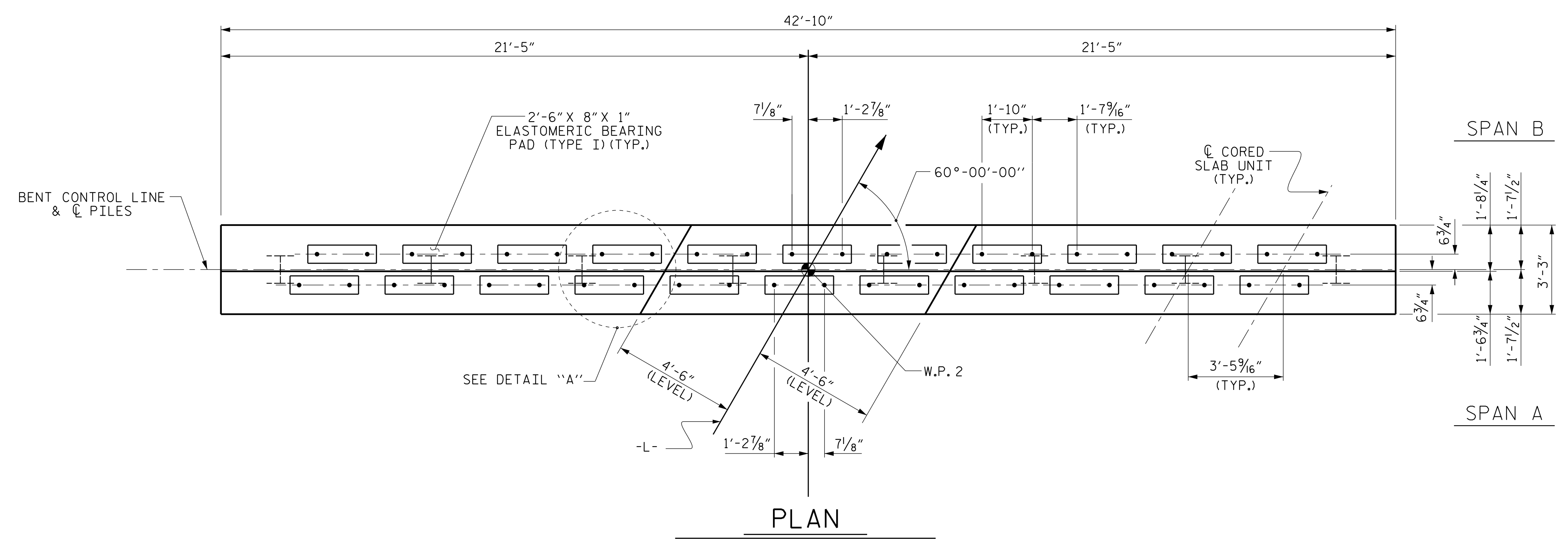
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUBSTRUCTURE
 END BENT No. 1 & 2
 DETAILS

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-16
1			3			TOTAL SHEETS
2			4			24

NOTES

- STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR DOWELS.
- ★ INVERT ALTERNATE STIRRUPS.
- GALVANIZE THE FULL LENGTH OF EACH INTERIOR BENT PILE IN ACCORDANCE WITH SECTION 1076 OF THE STANDARD SPECIFICATIONS.



PROJECT NO. B-5606
 PERQUIMANS COUNTY
 STATION: 16+99.00 -L-

SHEET 1 OF 2

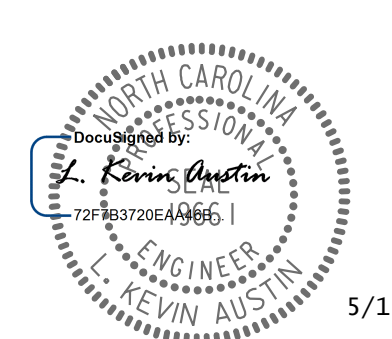
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUBSTRUCTURE
 BENT No. 1

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-17
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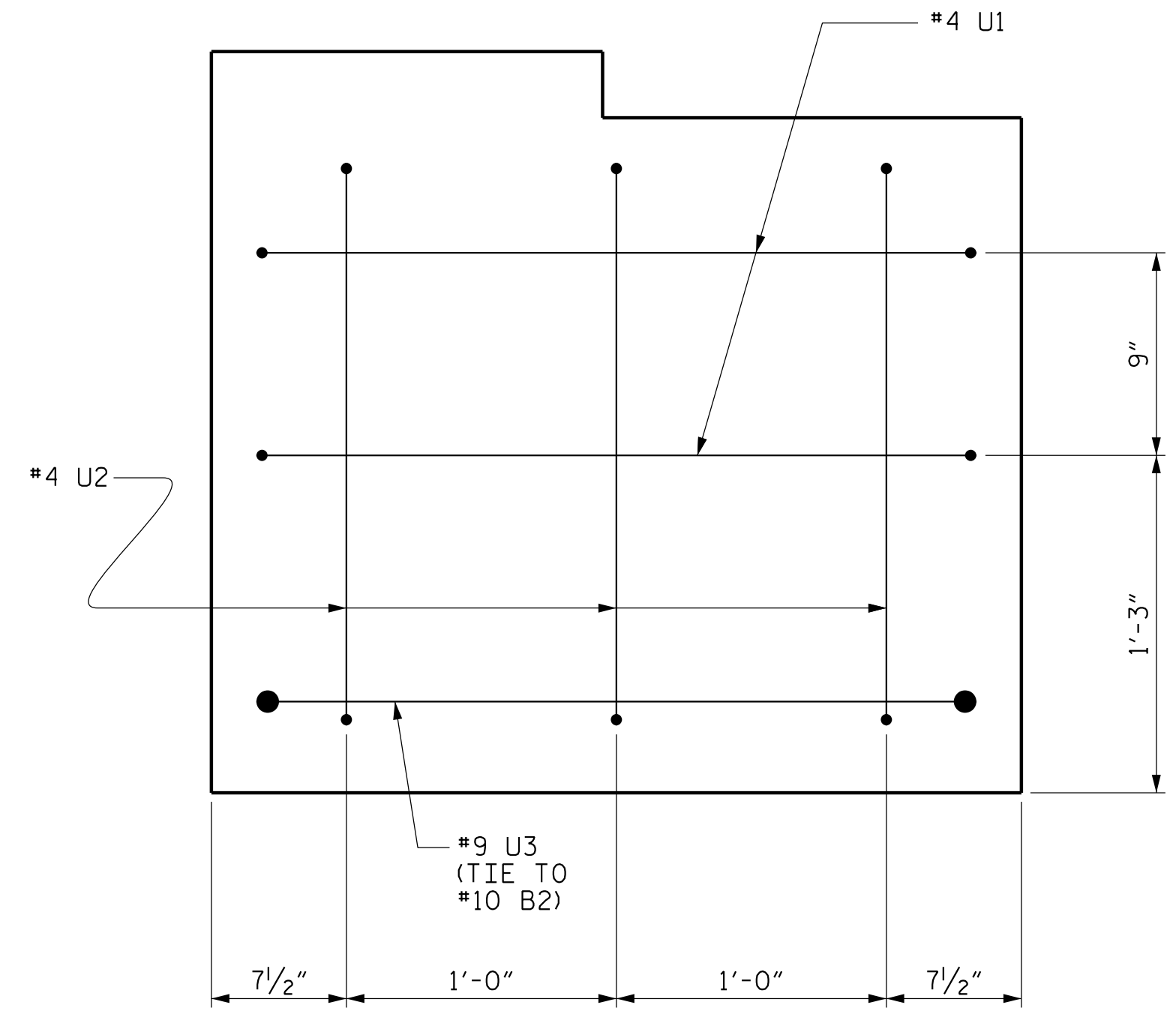
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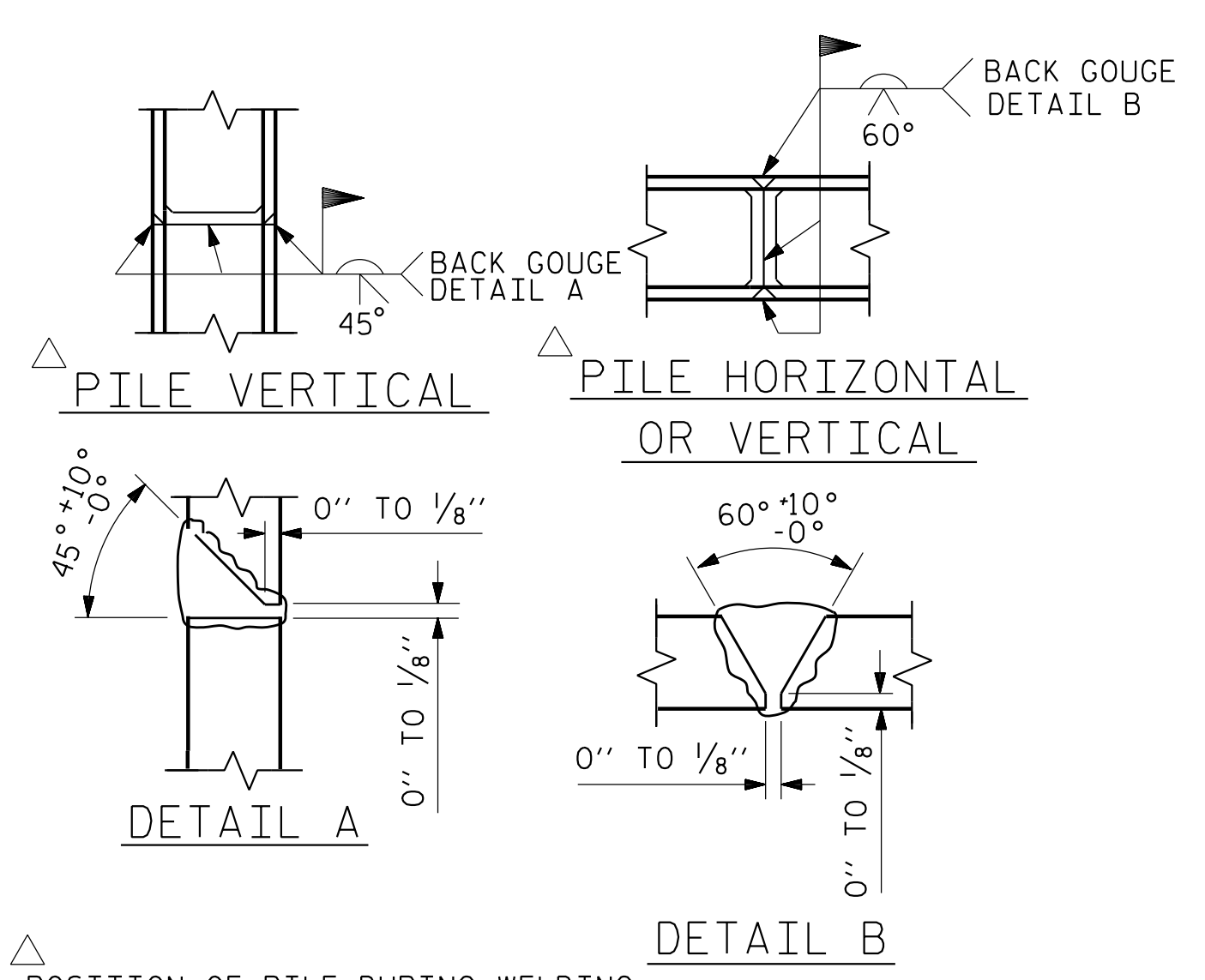
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ASSEMBLED BY : W. B. ALLEN	DATE : 8/17
CHECKED BY : Z. H. BROWN	DATE : 8/17
DRAWN BY : DGE 05/10	REV. 6/17 MAA/THC
CHECKED BY : MKT 05/10	

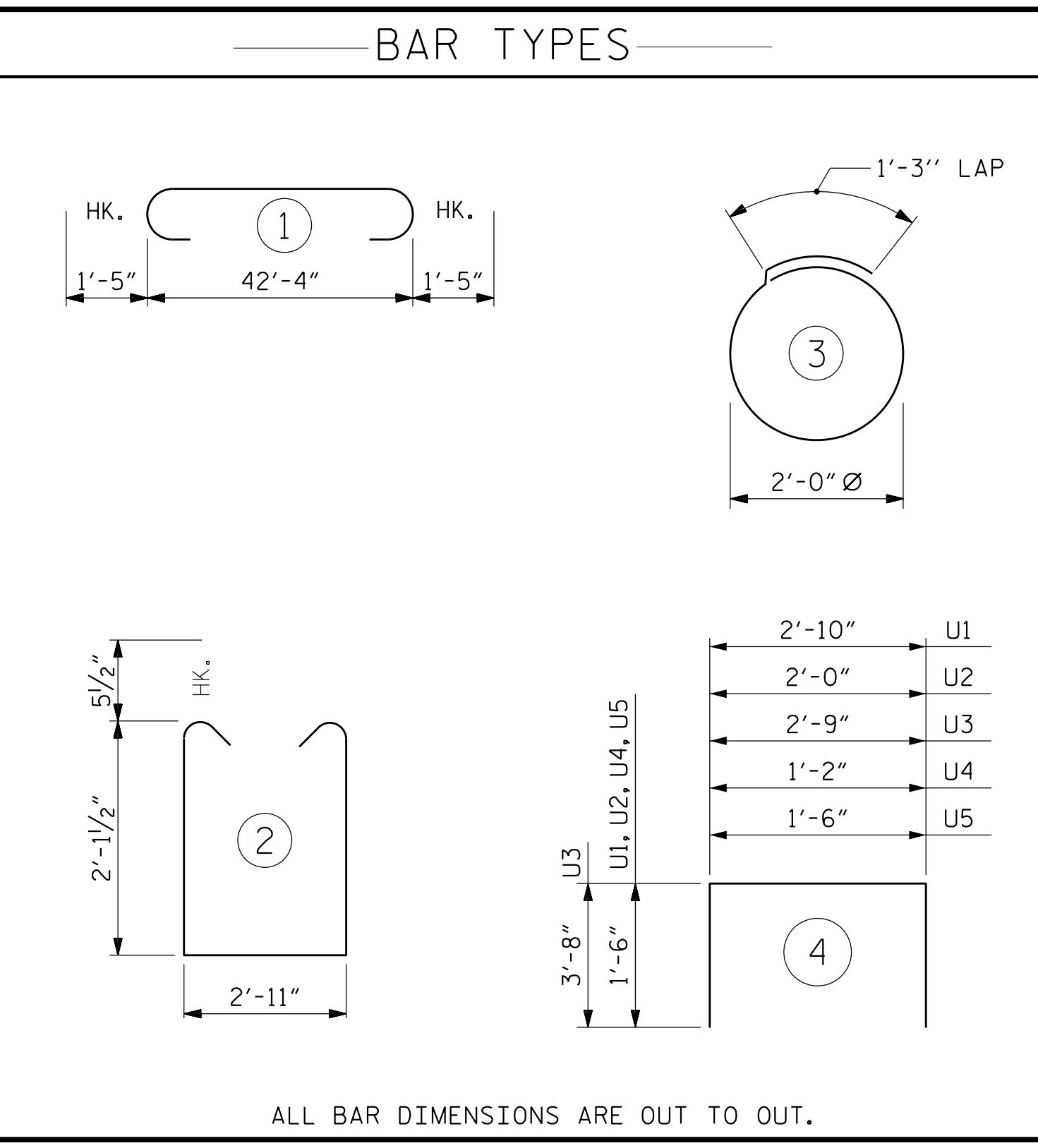
FOR SECTION A-A & SECTION B-B, SEE SHEET 2 OF 2



END OF CAP VIEW
(SIMILAR BOTH ENDS)

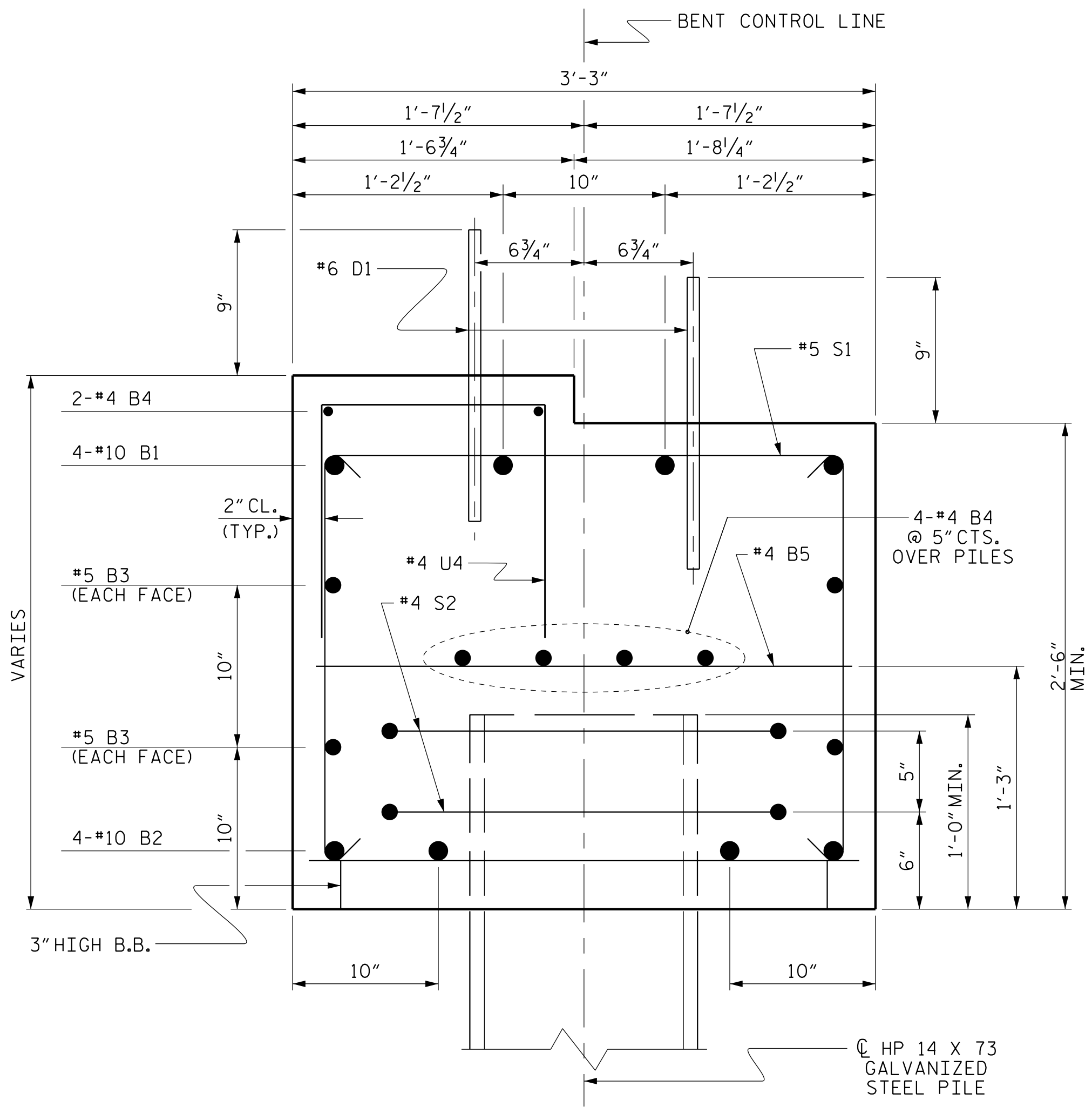


PILE SPLICE DETAILS

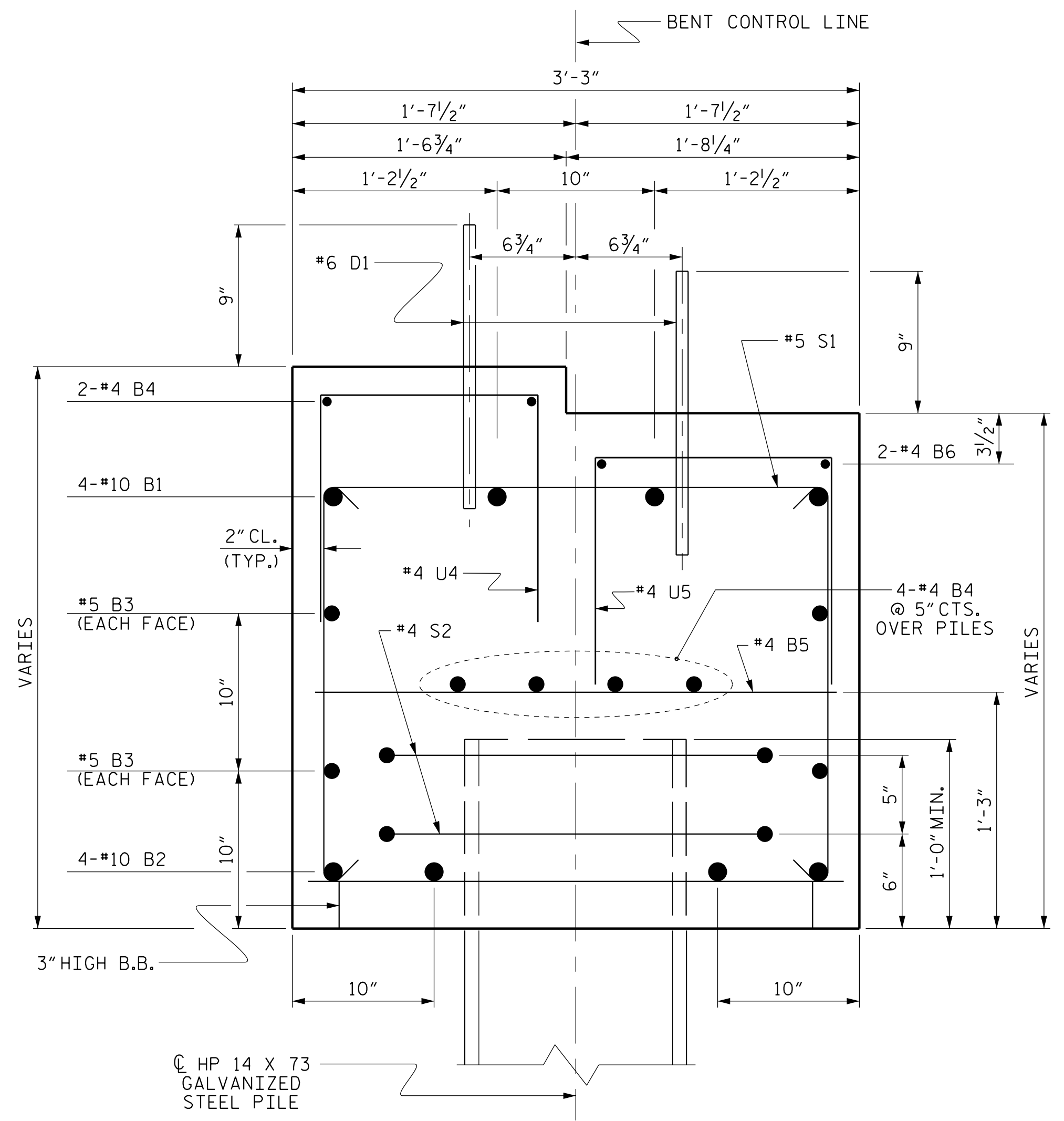


ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL					
FOR ONE BENT					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	4	#10	1	45'-2"	777
B2	4	#10	STR	42'-6"	732
B3	4	#5	STR	42'-6"	177
B4	12	#4	STR	22'-6"	180
B5	11	#4	STR	2'-11"	21
B6	2	#4	STR	11'-6"	15
D1	44	#6	STR	1'-6"	99
S1	46	#5	2	8'-1"	388
S2	16	#4	3	7'-7"	81
U1	4	#4	4	5'-10"	16
U2	6	#4	4	5'-0"	20
U3	2	#9	4	10'-1"	69
U4	43	#4	4	4'-2"	120
U5	8	#4	4	4'-6"	24
REINFORCING STEEL (FOR ONE BENT)					2719 LBS
CLASS A CONCRETE BREAKDOWN (FOR ONE BENT)					
TOTAL CLASS A CONCRETE					14.8 C.Y.
HP 14 X 73 GALVANIZED STEEL PILES (FOR ONE BENT)					
No. 8 LIN. FT.					760
PILE DRIVING EQUIPMENT SETUP FOR HP 14 X 73 GALVANIZED STEEL PILES (FOR ONE BENT)					
					NO: 8
PILE REDRIVES					NO: 4



SECTION A-A



SECTION B-B

PLANS PREPARED BY:

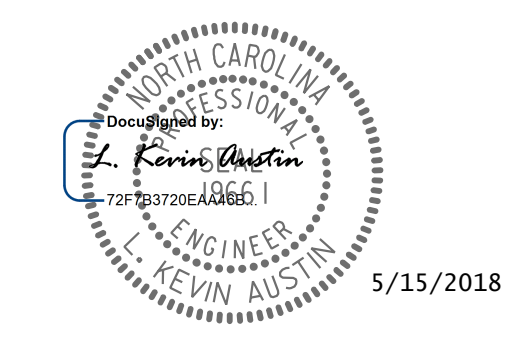
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PROJECT NO. B-5606
PERQUIMANS COUNTY
STATION: 16+99.00 -L-
SHEET 2 OF 2

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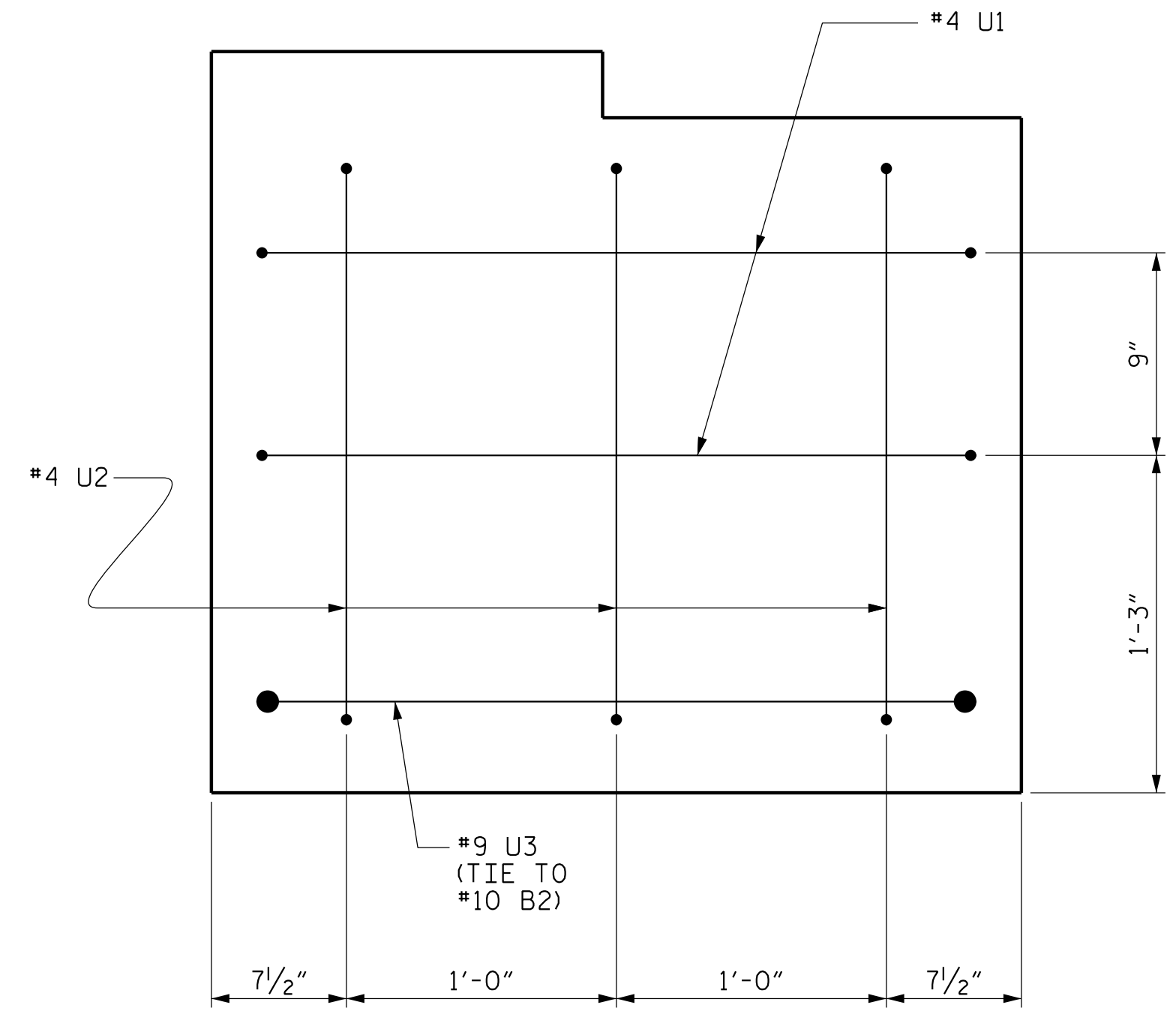


STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

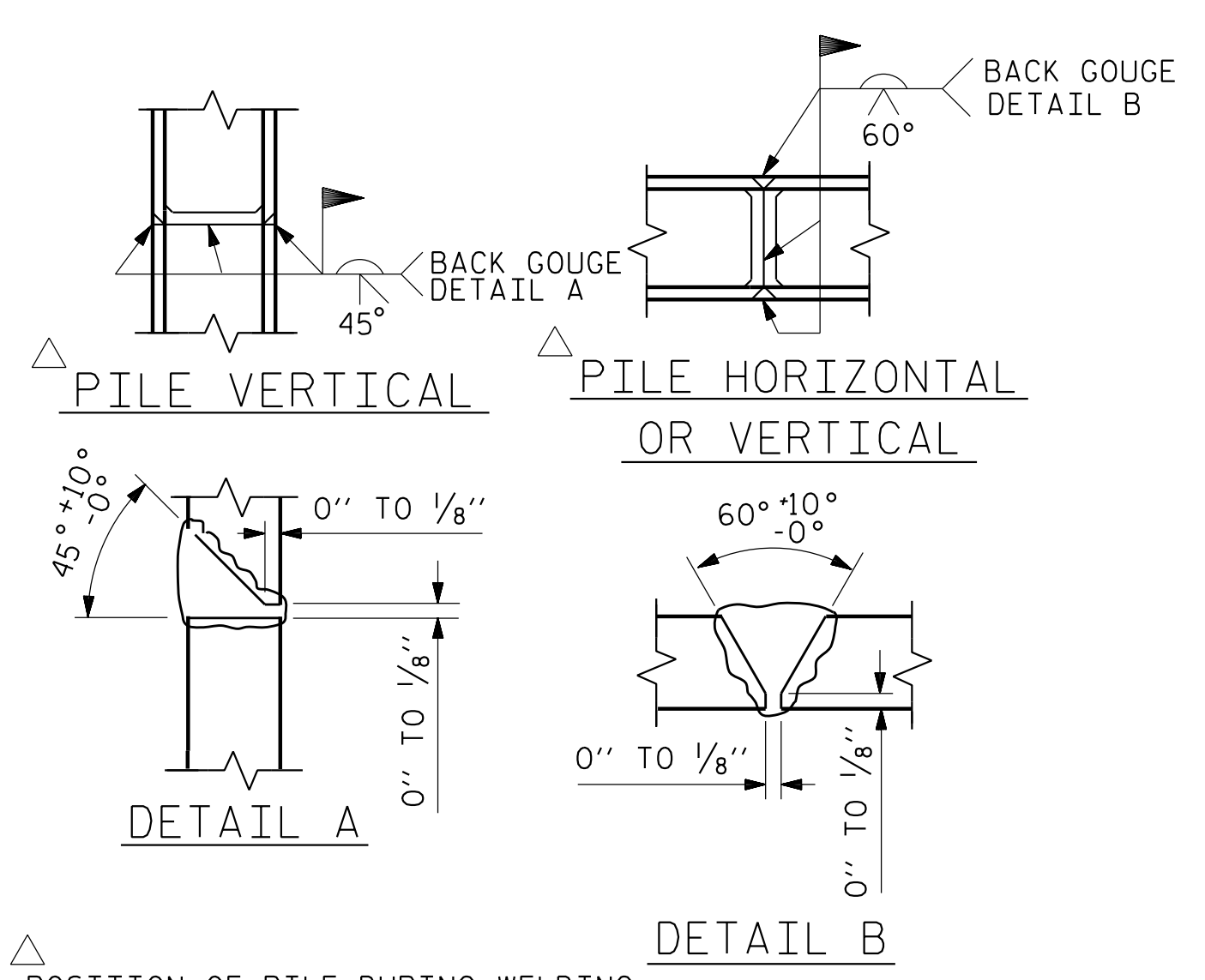
SUBSTRUCTURE
BENT No. 1

ASSEMBLED BY: <u>W. B. ALLEN</u>	DATE: <u>8/17</u>
CHECKED BY: <u>Z. H. BROWN</u>	DATE: <u>8/17</u>
DRAWN BY: <u>DGE 05/10</u>	REV. <u>6/17</u>
CHECKED BY: <u>MKT 05/10</u>	MAA/THC

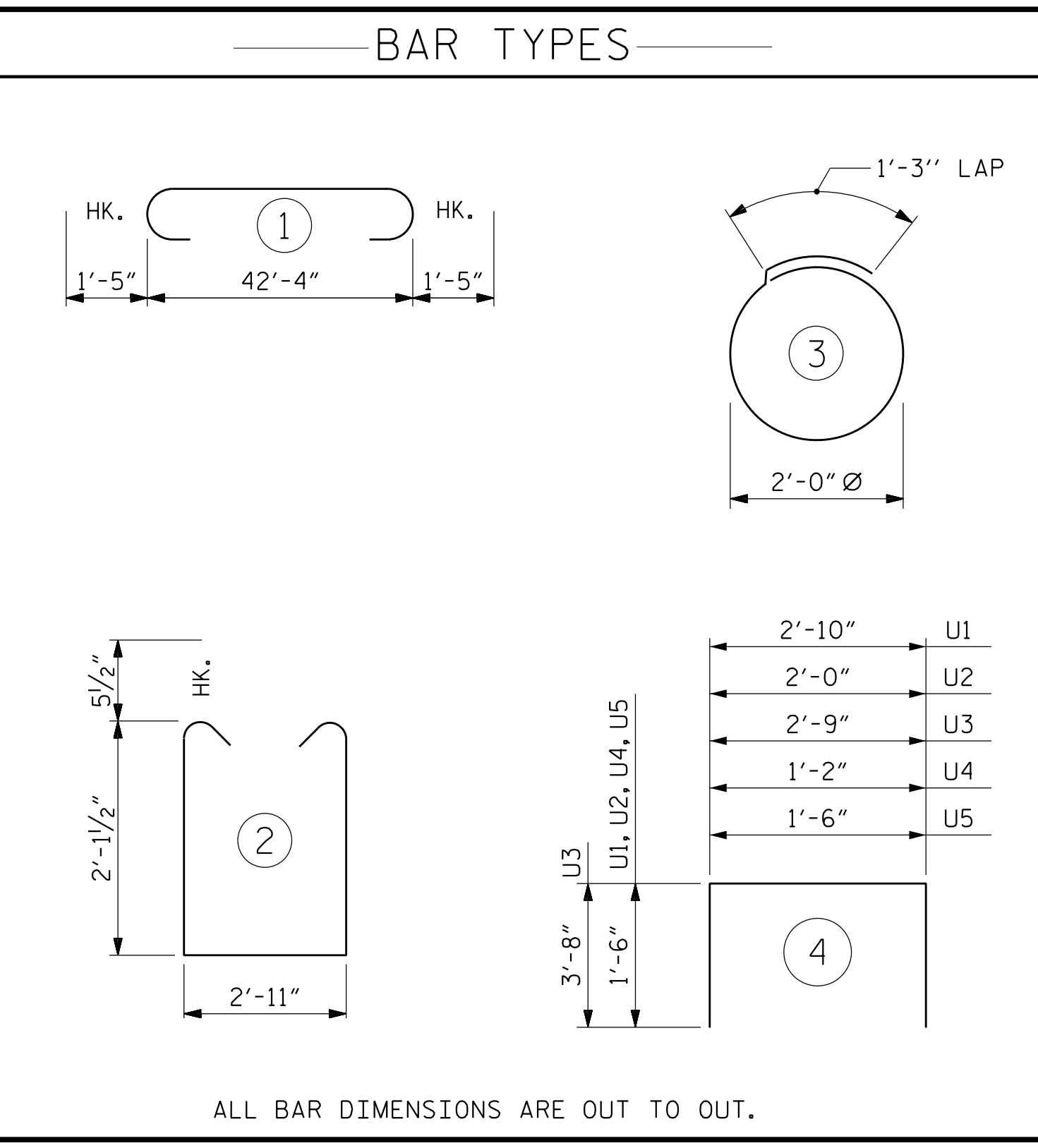
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-18
1			3			TOTAL SHEETS
2			4			24



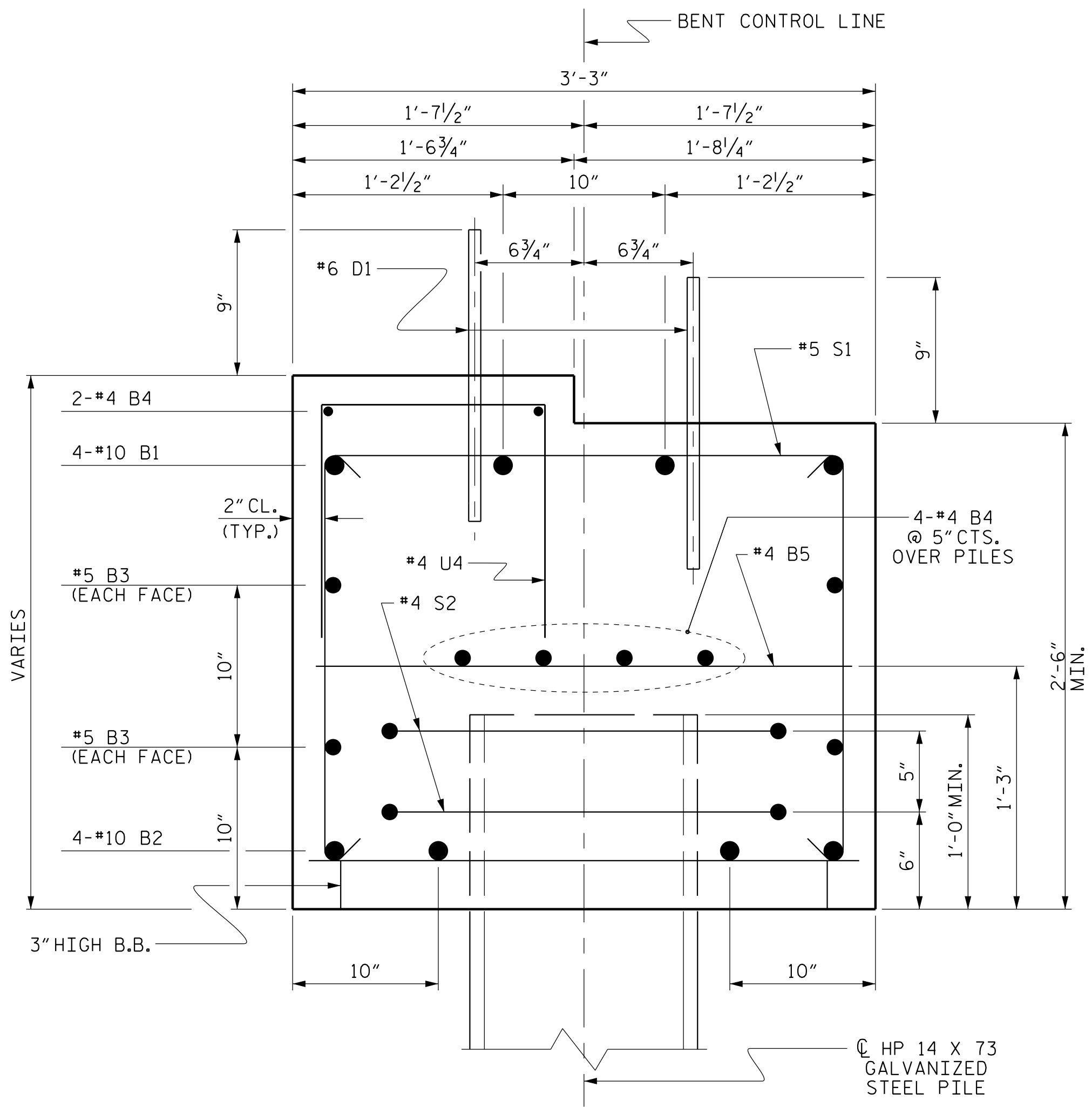
END OF CAP VIEW
(SIMILAR BOTH ENDS)



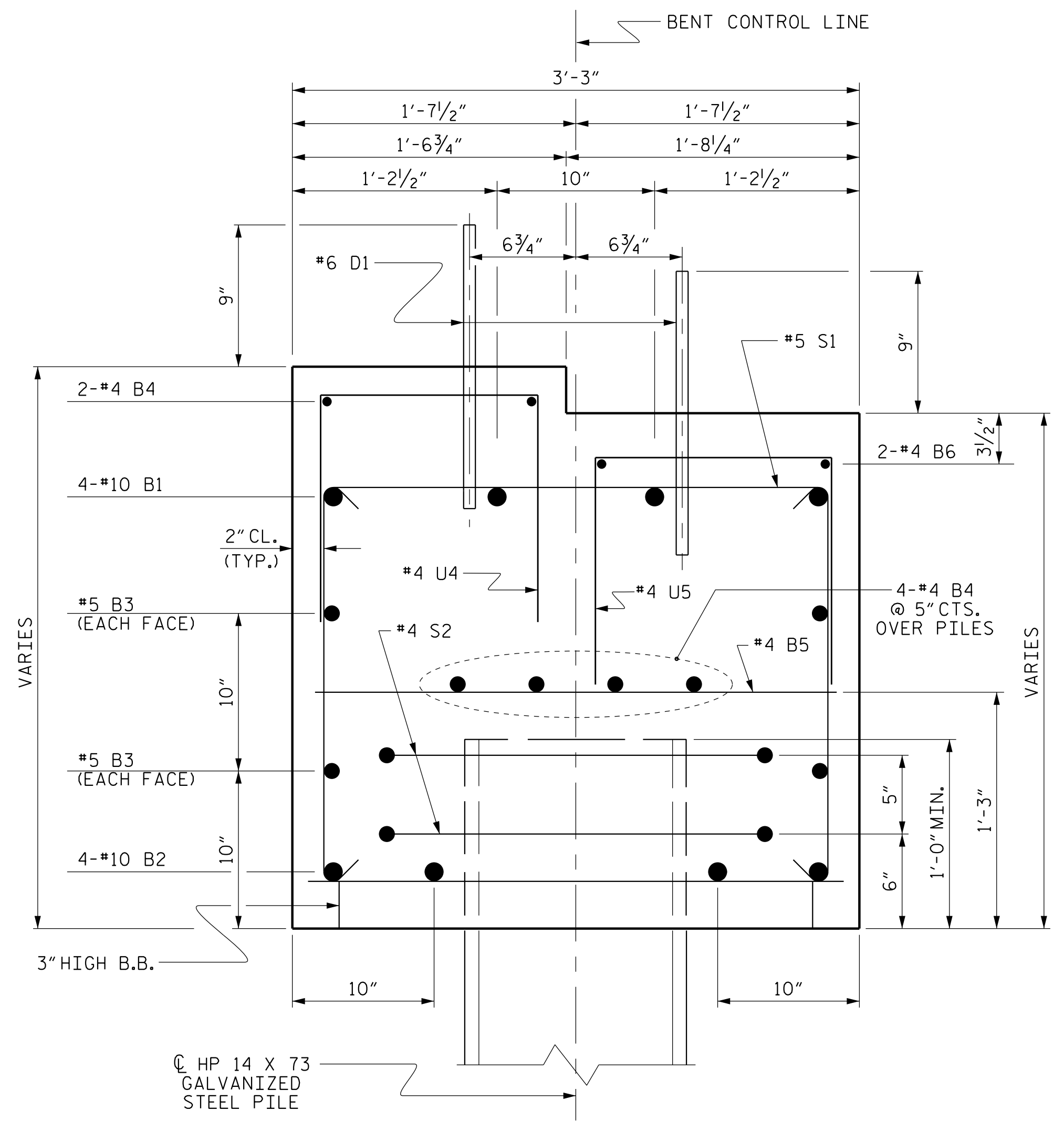
PILE SPLICE DETAILS



BILL OF MATERIAL					
FOR ONE BENT					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	4	#10	1	45'-2"	777
B2	4	#10	STR	42'-6"	732
B3	4	#5	STR	42'-6"	177
B4	12	#4	STR	22'-6"	180
B5	11	#4	STR	2'-11"	21
B6	2	#4	STR	11'-6"	15
D1	44	#6	STR	1'-6"	99
S1	46	#5	2	8'-1"	388
S2	16	#4	3	7'-7"	81
U1	4	#4	4	5'-10"	16
U2	6	#4	4	5'-0"	20
U3	2	#9	4	10'-1"	69
U4	43	#4	4	4'-2"	120
U5	8	#4	4	4'-6"	24
REINFORCING STEEL (FOR ONE BENT)				2719 LBS	
CLASS A CONCRETE BREAKDOWN (FOR ONE BENT)					
TOTAL CLASS A CONCRETE				14.7 C.Y.	
HP 14 X 73 GALVANIZED STEEL PILES (FOR ONE BENT)					
No. 8				LIN. FT. 760	
PILE DRIVING EQUIPMENT SETUP FOR HP 14 X 73 GALVANIZED STEEL PILES (FOR ONE BENT)				NO: 8	
PILE REDRIVES				NO: 4	



SECTION A-A



SECTION B-B

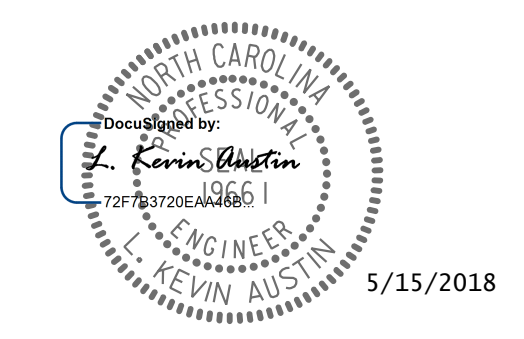
PLANS PREPARED BY:

6750 TRYON ROAD
CARY, NC 27518
phone: 919.851.1912
CALYXengineers.com
NC License # F-1333

PROJECT NO. B-5606
 PERQUIMANS COUNTY
 STATION: 16+99.00 -L-
 SHEET 2 OF 2

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 RALEIGH

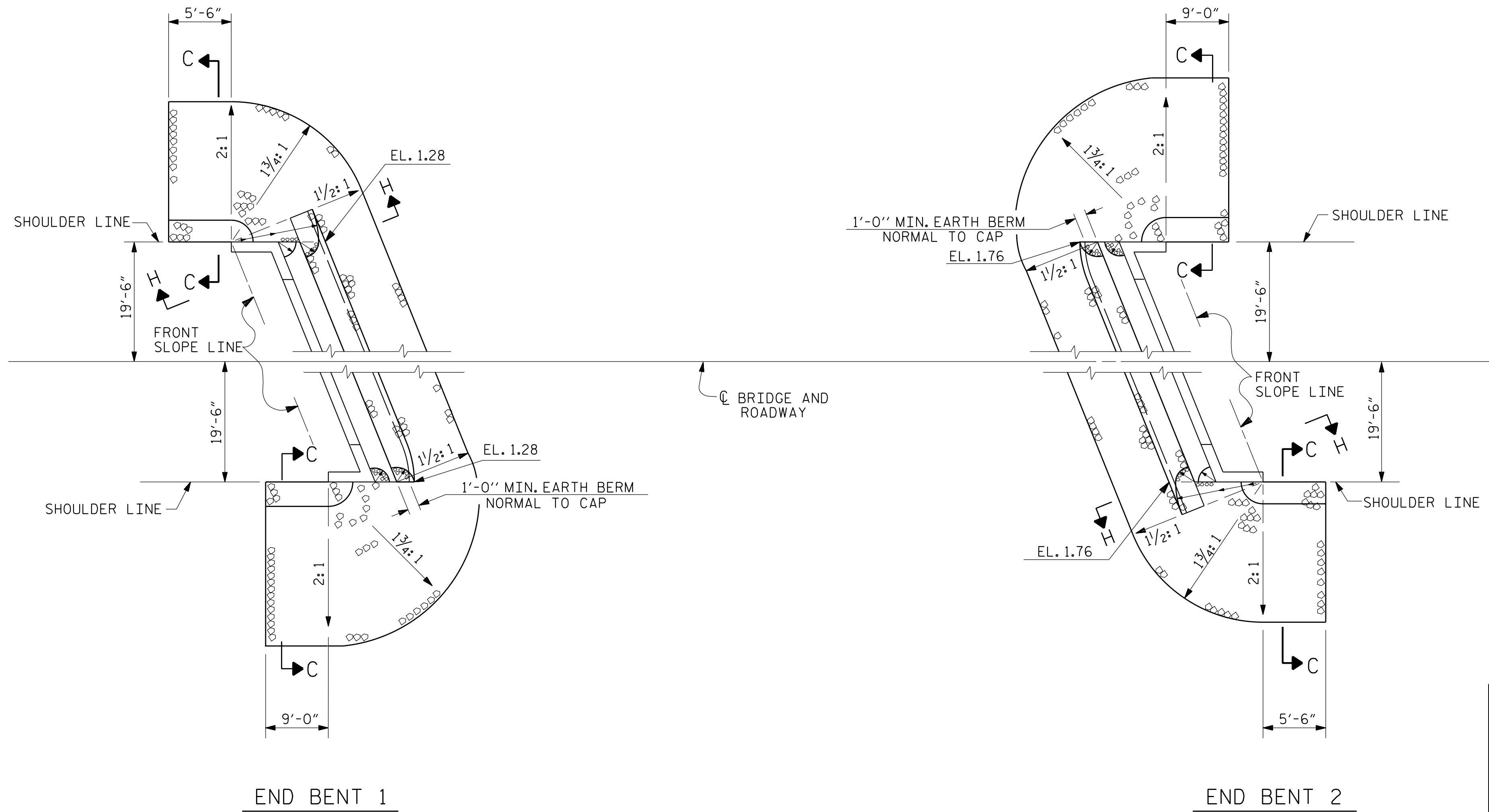
SUBSTRUCTURE
BENT No. 2

ASSEMBLED BY: <u>W. B. ALLEN</u>	DATE: <u>8/17</u>
CHECKED BY: <u>Z. H. BROWN</u>	DATE: <u>8/17</u>
DRAWN BY: <u>DGE 05/10</u>	REV. <u>6/17</u>
CHECKED BY: <u>MKT 05/10</u>	MAA/THC

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

SHEET NO. <u>S-20</u>	
TOTAL SHEETS <u>24</u>	

NOTES :
FOR BERM WIDTH DIMENSIONS, SEE GENERAL DRAWING.

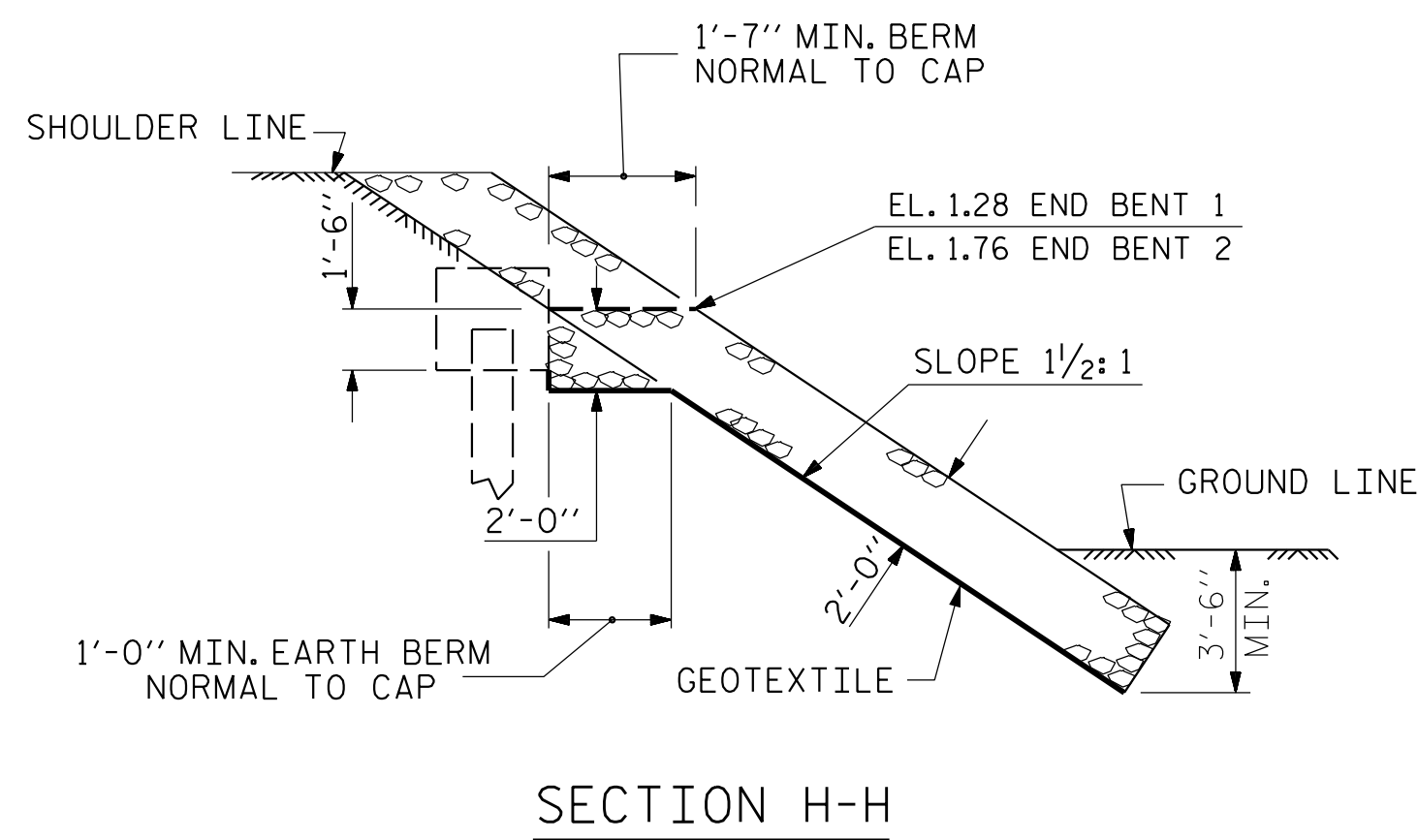


END BENT 1

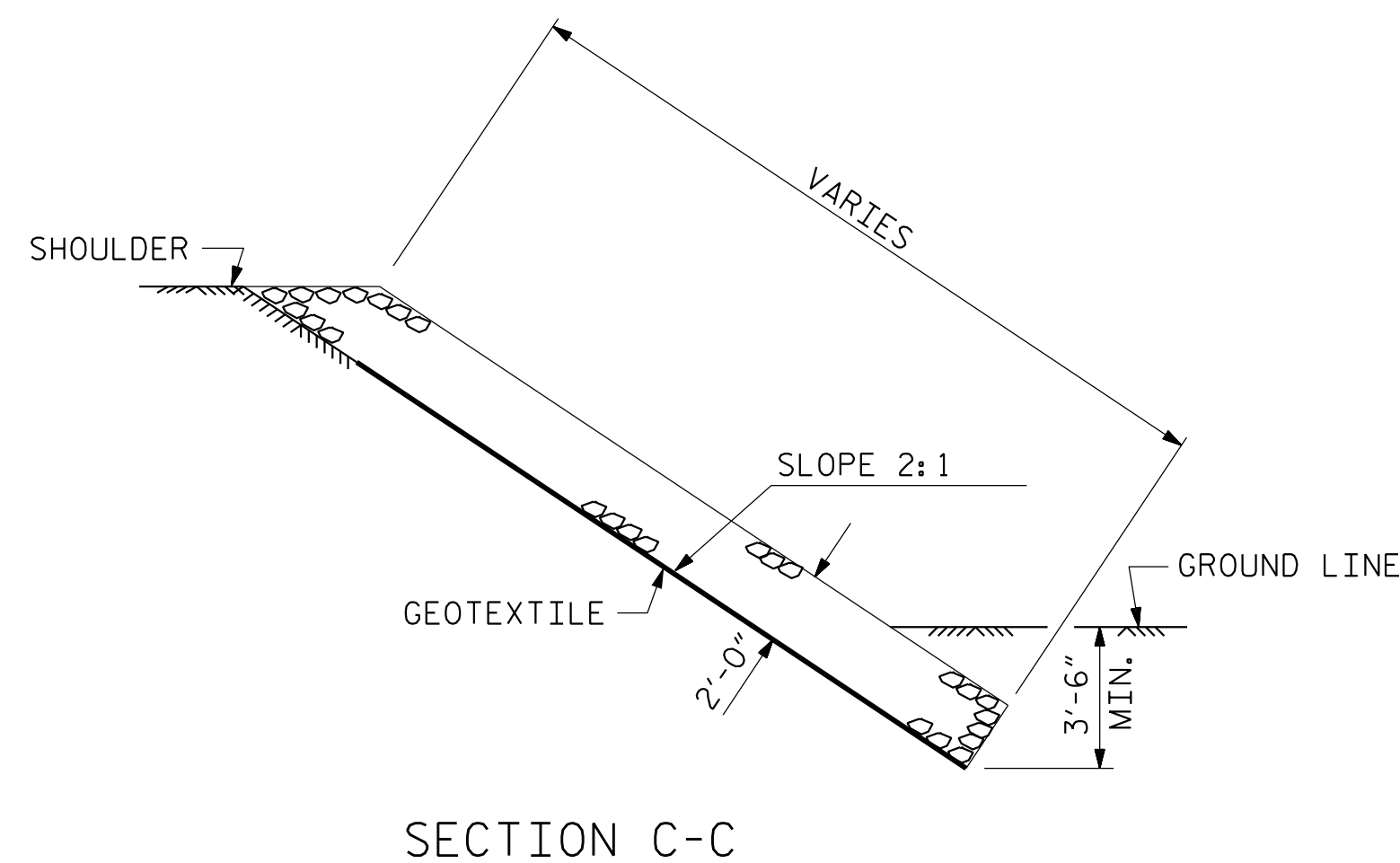
END BENT 2

SHOULDER RIP RAP IS HIGHER THAN BERM RIP RAP

ESTIMATED QUANTITIES		
BRIDGE @ STA. 16+99.00 -L-	RIP RAP CLASS II (2'-0" THICK)	GEOTEXTILE FOR DRAINAGE
	TONS	SQUARE YARDS
END BENT 1	52	58
END BENT 2	59	66



SECTION H-H



SECTION C-C

PROJECT NO. B-5606
PERQUIMANS COUNTY
 STATION: 16+99.00 -L-

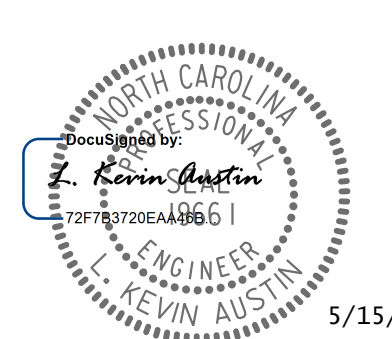
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

STANDARD
— RIP RAP DETAILS —

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-21
1			3			TOTAL SHEETS
2			4			24

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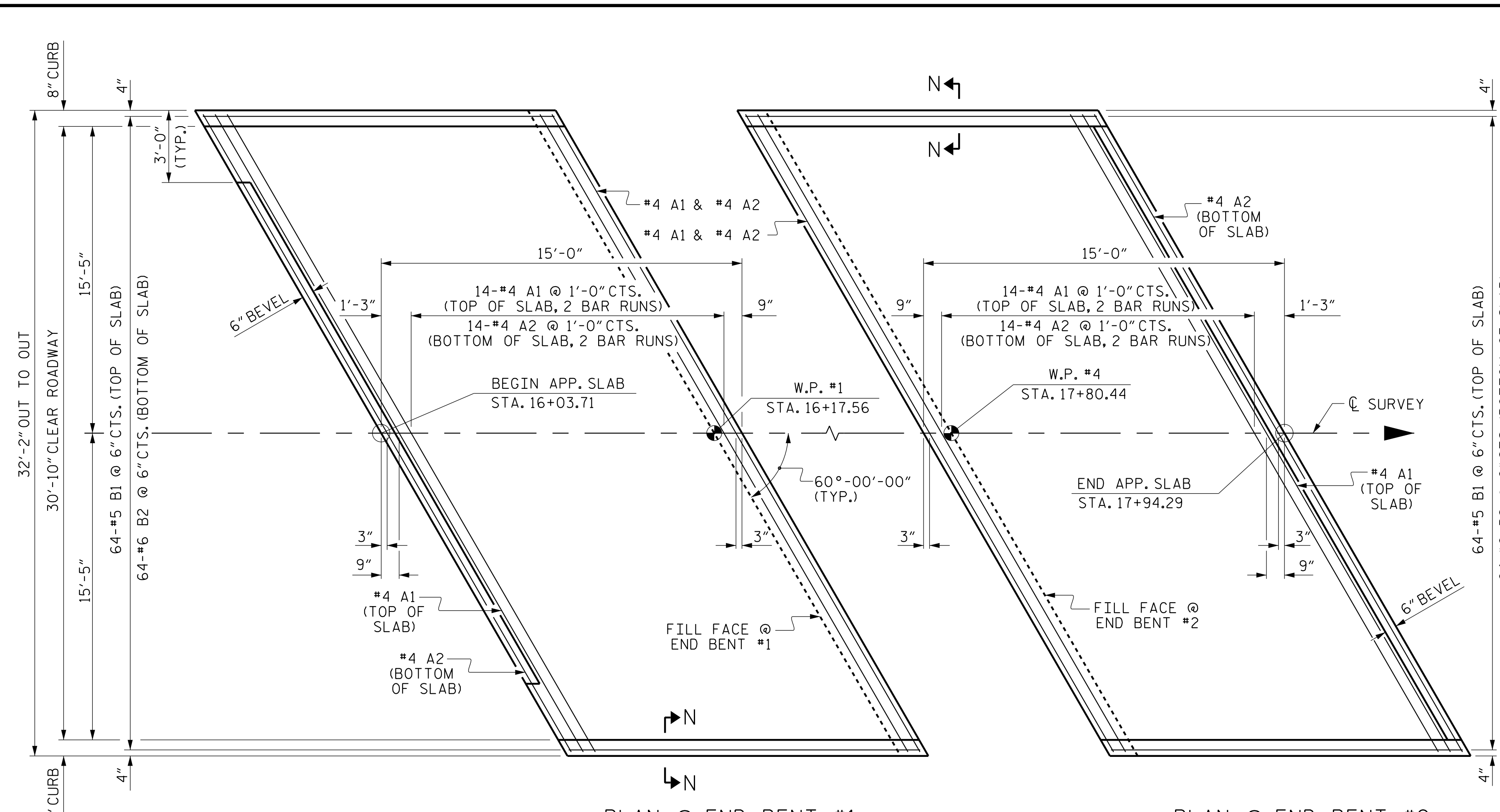
PLANS PREPARED BY:

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 CALYXengineers.com
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ASSEMBLED BY : W. B. ALLEN	DATE : 8/17
CHECKED BY : Z. H. BROWN	DATE : 8/17
DRAWN BY : REK 1/84	REV. 5/1/06R TLA/GM
CHECKED BY : RDU 1/84	REV. 10/1/11 MAA/GM
	REV. 12/21/11 MAA/GM

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

NOTES

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

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

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

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

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

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

THE JOINT SHALL BE SAWED PRIOR TO THE CASTING OF THE BARRIER RAIL.

WITH FOAM JOINT SEAL

FOR FOAM JOINT SEALS, SEE SPECIAL PROVISIONS.

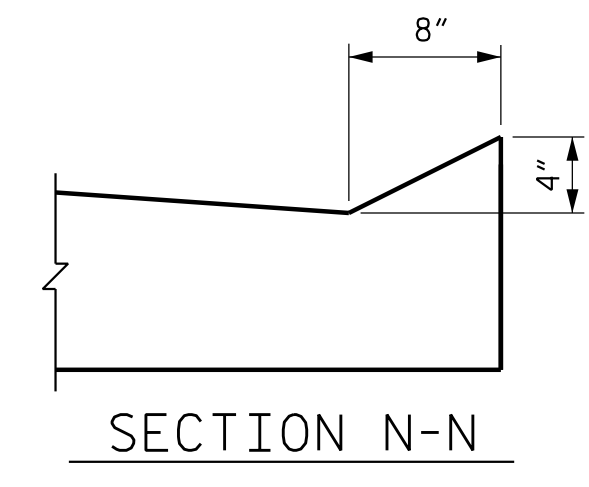
THE NOMINAL UNCOMPRESSED SEAL WIDTH OF THE FOAM JOINT SEAL SHALL BE 1".

FOR ELASTOMERIC CONCRETE, SEE SPECIAL PROVISIONS.

BILL OF MATERIAL

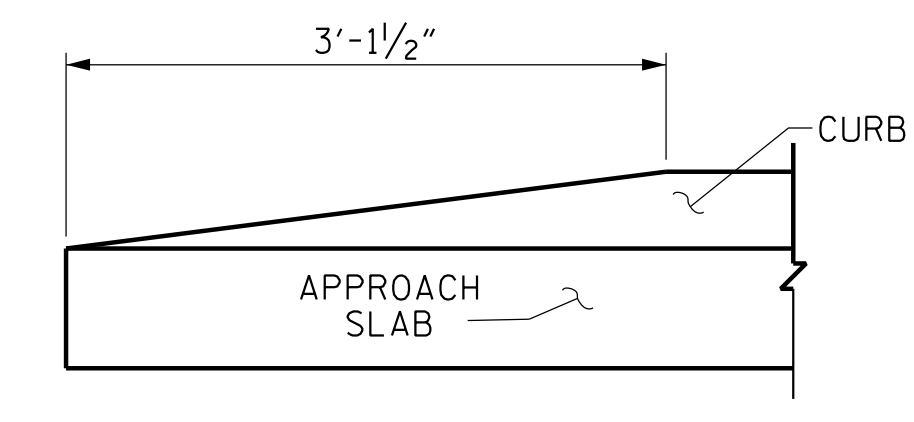
APPROACH SLAB AT EB #1					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
*A1	32	#4	STR	19'-5"	415
A2	32	#4	STR	19'-4"	413
*B1	64	#5	STR	13'-9"	918
B2	64	#6	STR	14'-8"	1410
REINFORCING STEEL					LBS. 1823
*EPOXY COATED REINFORCING STEEL					LBS. 1333
CLASS AA CONCRETE					C. Y. 23.5

APPROACH SLAB AT EB #2					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
*A1	32	#4	STR	19'-5"	415
A2	32	#4	STR	19'-4"	413
*B1	64	#5	STR	13'-9"	918
B2	64	#6	STR	14'-8"	1410
REINFORCING STEEL					LBS. 1823
*EPOXY COATED REINFORCING STEEL					LBS. 1333
CLASS AA CONCRETE					C. Y. 23.5

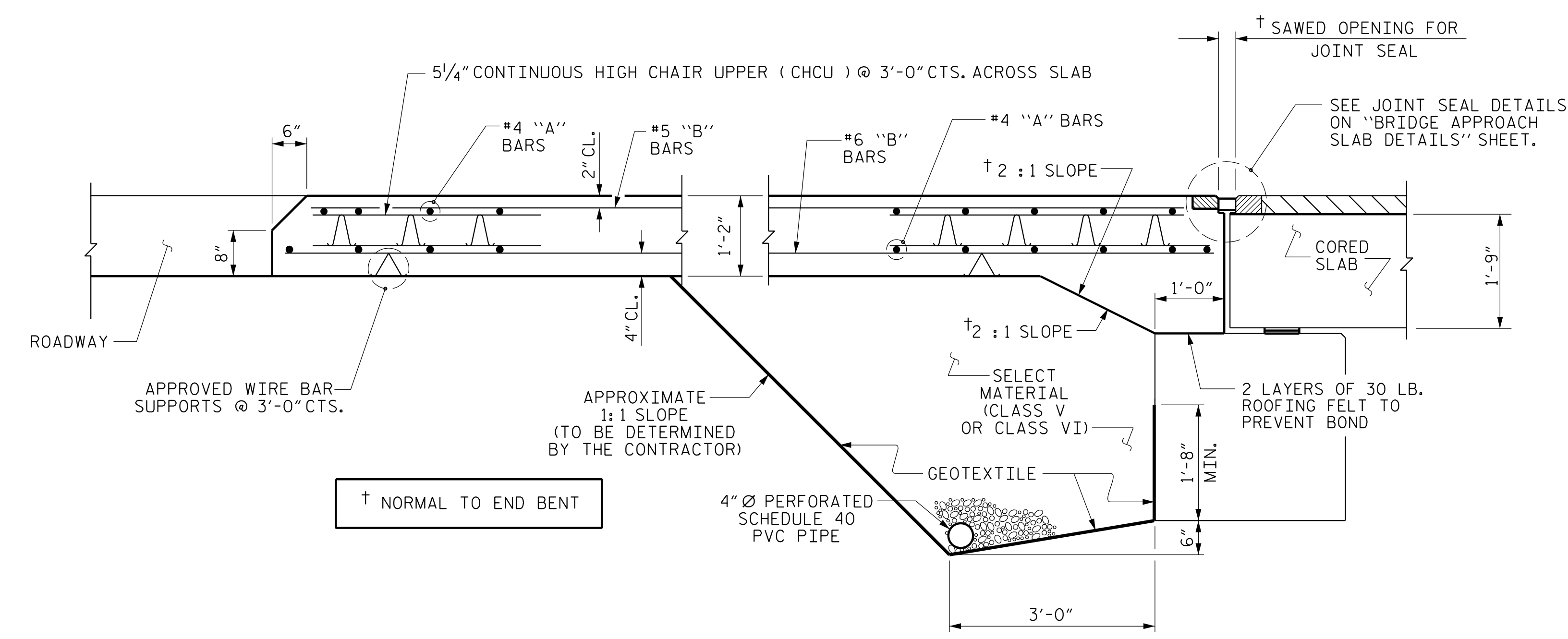


SPLICE LENGTHS

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



END OF CURB WITHOUT SHOULDER BERM GUTTER
CURB DETAILS



SECTION THRU SLAB
(TYPE II - MODIFIED APPROACH FILL)

PROJECT NO. B-5606
PERQUIMANS COUNTY
STATION: 16+99.00 -L-

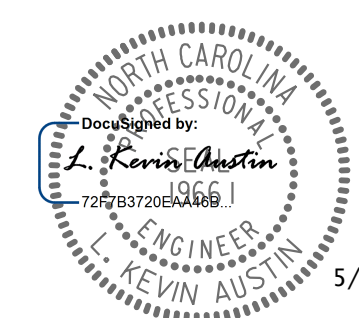
SHEET 1 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
STANDARD
BRIDGE APPROACH SLAB
FOR PRESTRESSED CONCRETE
CORED SLAB

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-22
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2			4			24

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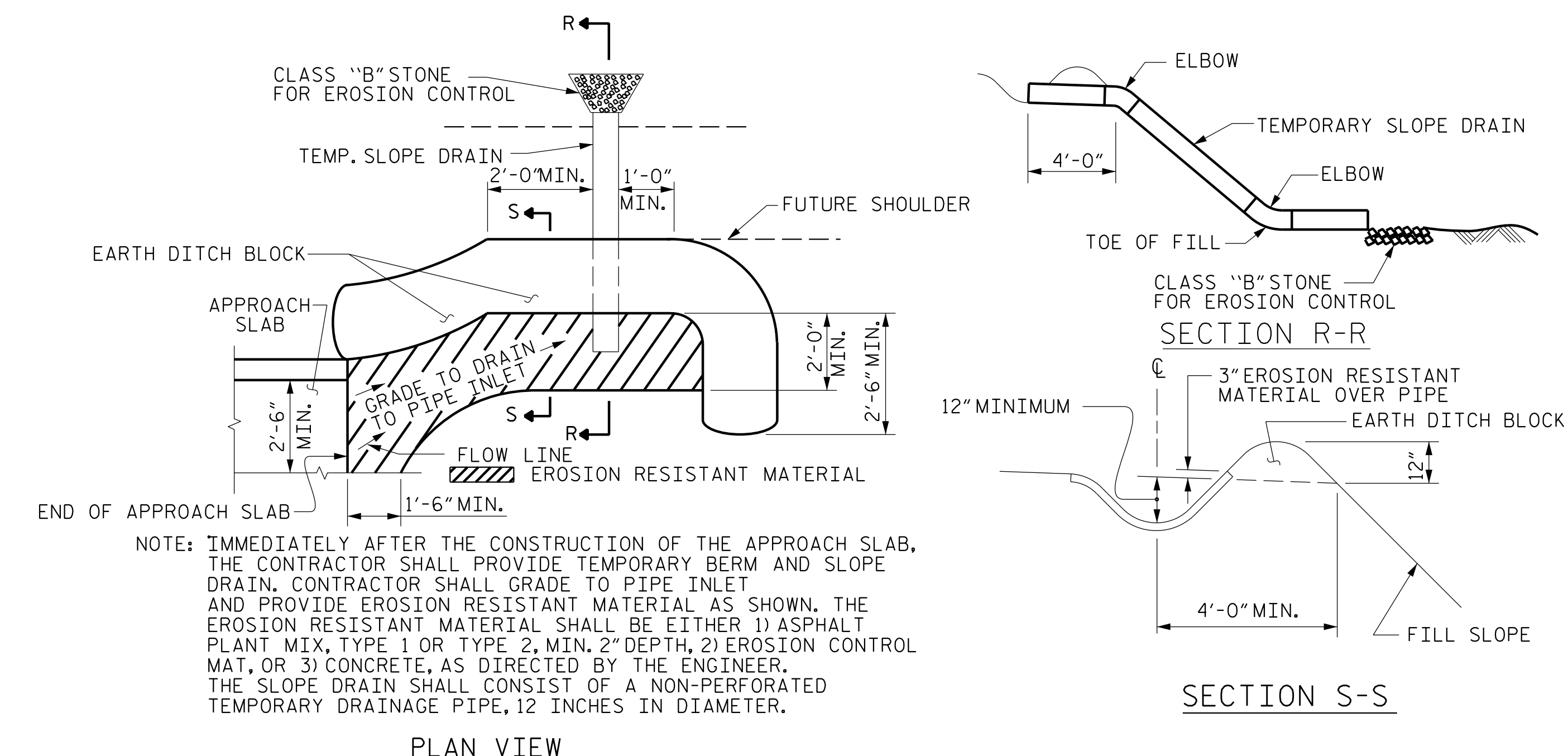
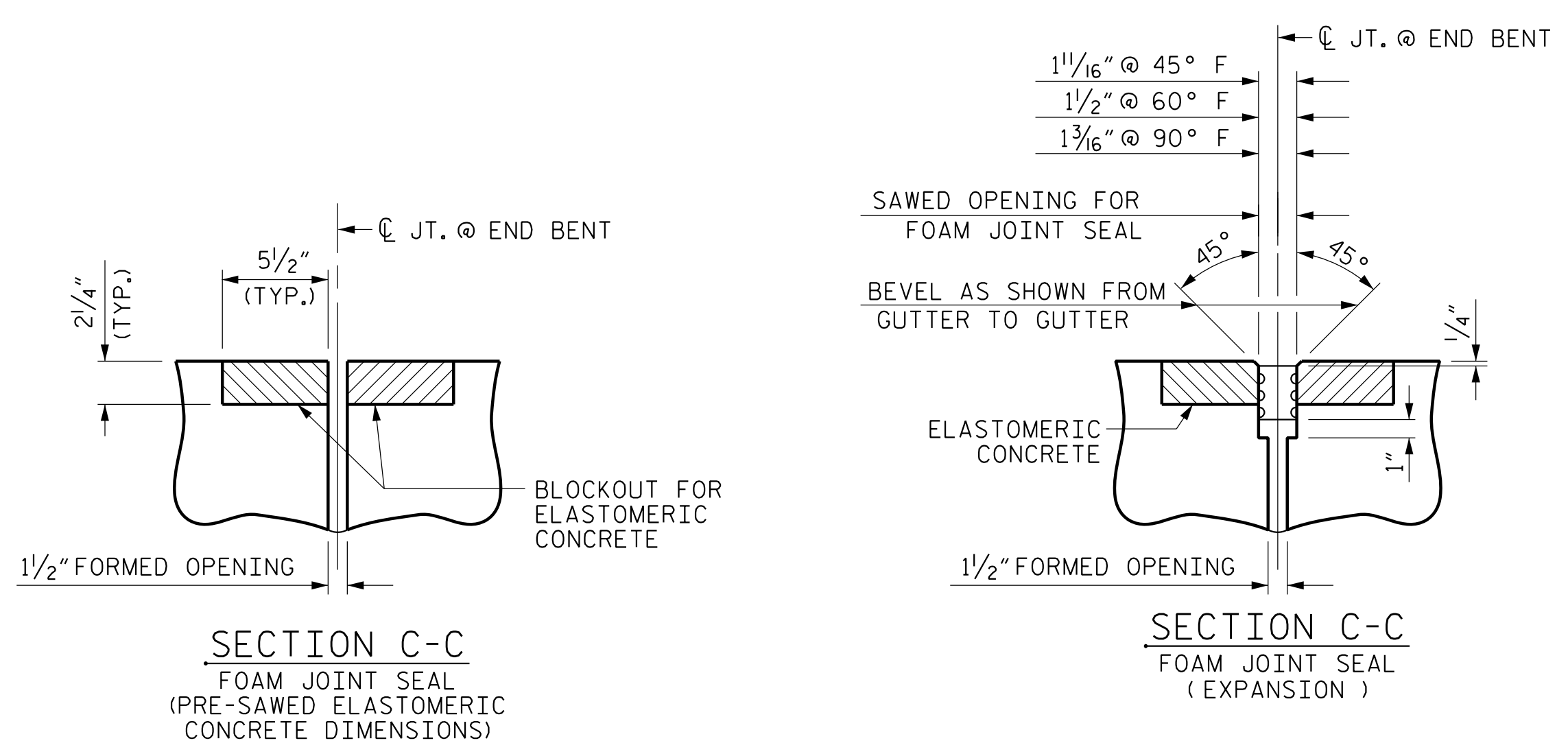


PLANS PREPARED BY:

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ASSEMBLED BY : W. B. ALLEN	DATE : 2/18
CHECKED BY : Z. H. BROWN	DATE : 2/18
DRAWN BY : FCJ 6/87	REV. 12/21/11 MAA/GM
CHECKED BY : EGA 6/87	REV. 6/13 MAA/GM
	REV. 12/17 MAA/THC



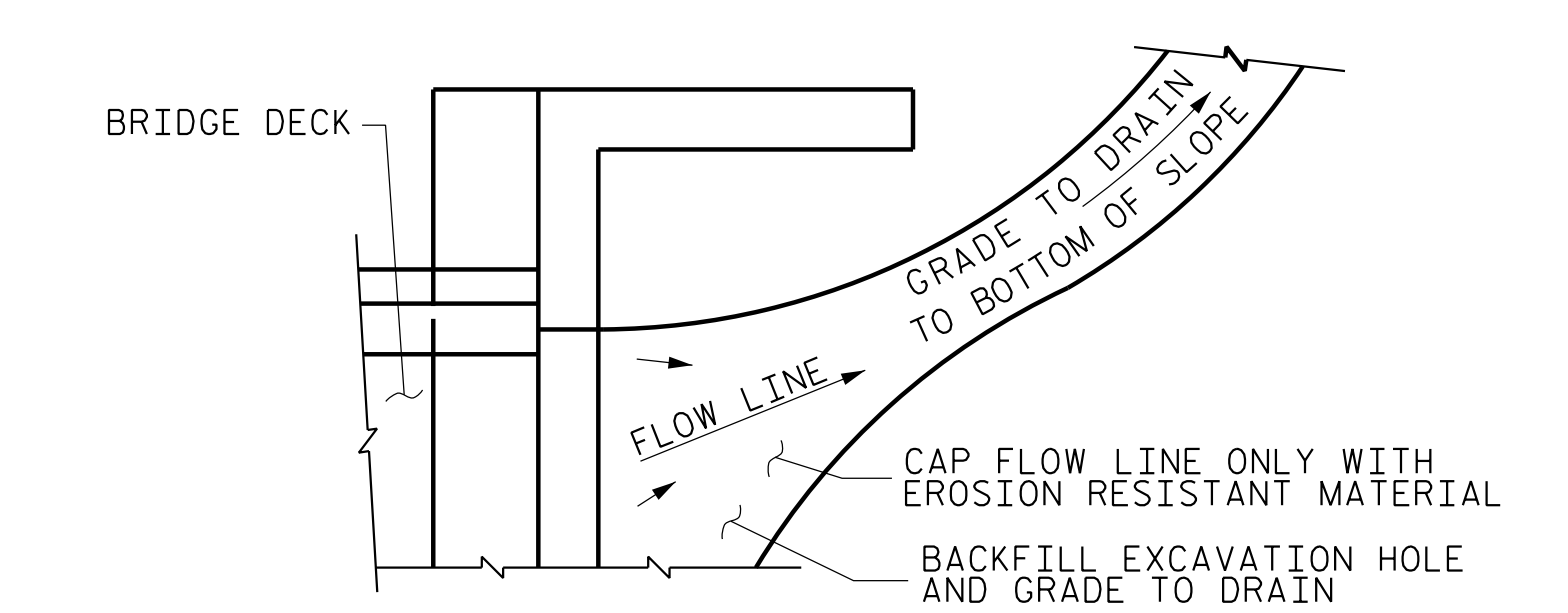
NOTE: IMMEDIATELY AFTER THE CONSTRUCTION OF THE APPROACH SLAB, THE CONTRACTOR SHALL PROVIDE TEMPORARY BERM AND SLOPE DRAIN. CONTRACTOR SHALL GRADE TO PIPE INLET AND PROVIDE EROSION RESISTANT MATERIAL AS SHOWN. THE EROSION RESISTANT MATERIAL SHALL BE EITHER 1) ASPHALT PLANT MIX, TYPE 1 OR TYPE 2, MIN. 2\"/>

TEMPORARY BERM AND SLOPE DRAIN DETAILS

(TO BE USED WHEN SHOULDER BERM GUTTER IS REQUIRED)

ELASTOMERIC CONCRETE	
END BENT NO.	ELASTOMERIC CONCRETE * (CU. FT.)
1	3.2
2	3.2
TOTAL	6.4

* BASED ON THE MINIMUM BLOCKOUT SHOWN.



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-5606
PERQUIMANS COUNTY
 STATION: 16+99.00 -L-

SHEET 2 OF 2

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

STANDARD
 BRIDGE APPROACH
 SLAB DETAILS

REVISIONS						SHEET NO.
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1			3			TOTAL SHEETS
2			4			24

PLANS PREPARED BY:

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THIS STANDARD DRAWING REVIEWED & ADOPTED FOR USE AT THE REFERENCED LOCATION BY THE UNDERSIGNED:

Professional Engineer Seal for L. Kevin Austin, State of North Carolina, License No. 172783720, dated 5/15/2018.

5/15/2018 3:02:44 PM R:\STRUCTURES\B5606.SMU\AS2.T000.dgn

ASSEMBLED BY :	W. B. ALLEN	DATE :	8/17
CHECKED BY :	Z. H. BROWN	DATE :	8/17
DRAWN BY :	FCJ 11/88	REV. 10/11/11	MAA/GM
CHECKED BY :	ARB 11/88	REV. 7/12	MAA/GM
		REV. 6/13	MAA/GM

STANDARD NOTES

DESIGN DATA:

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

MATERIAL AND WORKMANSHIP:

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

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

CONCRETE:

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

CONCRETE CHAMFERS:

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

DOWELS:

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

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

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

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

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

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

REINFORCING STEEL:

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

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

STRUCTURAL STEEL:

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

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

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

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