

09/08/09

See Sheet 1-A For Index of Sheets

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

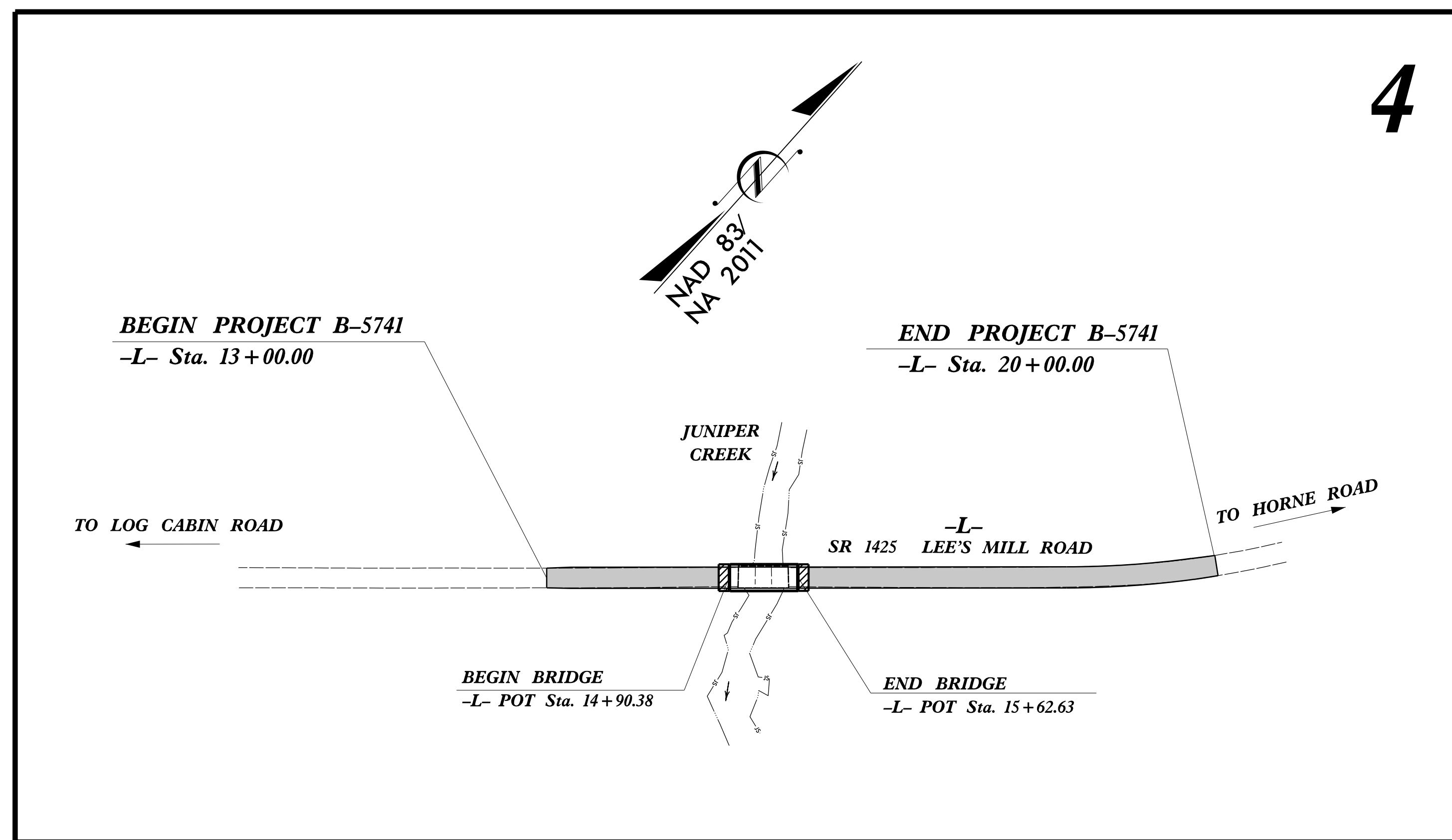
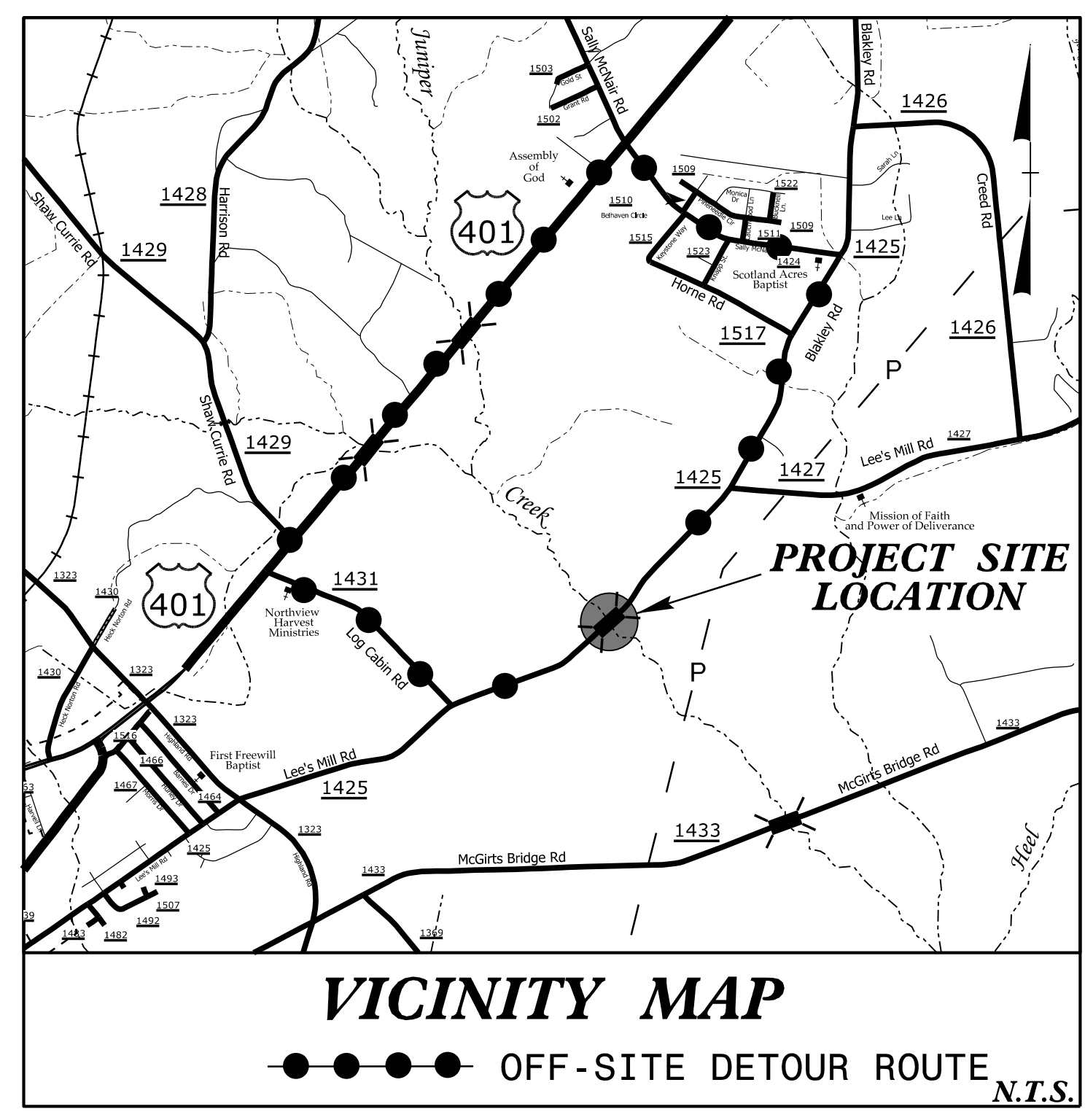
SCOTLAND COUNTY

**LOCATION: BRIDGE NO. 820030 ON SR 1425 (LEE'S MILL ROAD)
OVER JUNIPER CREEK**

TYPE OF WORK: GRADING, DRAINAGE, PAVING AND STRUCTURE

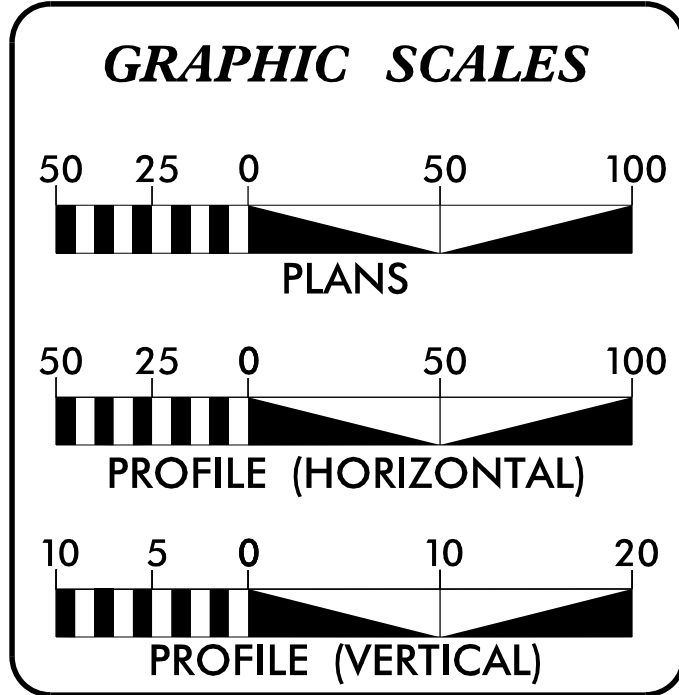
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-5741	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
45697.1.1		P.E.	
45697.2.1		R/W	

TIP PROJECT: B-5741



DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

CONTRACT:



DESIGN DATA

ADT 2010 = 1800
ADT =

K = %
D = %
T = 7 % *
V = 60 MPH
* TTST = DUAL
FUNC CLASS = LOCAL
SUBREGIONAL TIER

PROJECT LENGTH

LENGTH ROADWAY PROJECT B-5741	=	0.119 mi
LENGTH STRUCTURE PROJECT B-5741	=	0.014 mi
TOTAL LENGTH OF PROJECT B-5741	=	0.133 mi

PLANS PREPARED BY:
CH ENGINEERING
3220 GLEN ROYAL RD, RALEIGH, NC 27617
TELE 919.788.0224 FAX 919.788.0232
NC LICENSE #P-01899

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
JULY 1, 2016

LETTING DATE:
DECEMBER 2016

PLANS PREPARED FOR:
**DIVISION OF HIGHWAYS
DIVISION 8**
902 N Sandhills Blvd
Aberdeen, NC 28315

BRIAN A. WILES, PE
PROJECT ENGINEER

TIM WELCH, PE
NCDOT CONTACT
DIV 8 BRIDGE PROGRAM MANAGER

HYDRAULICS ENGINEER

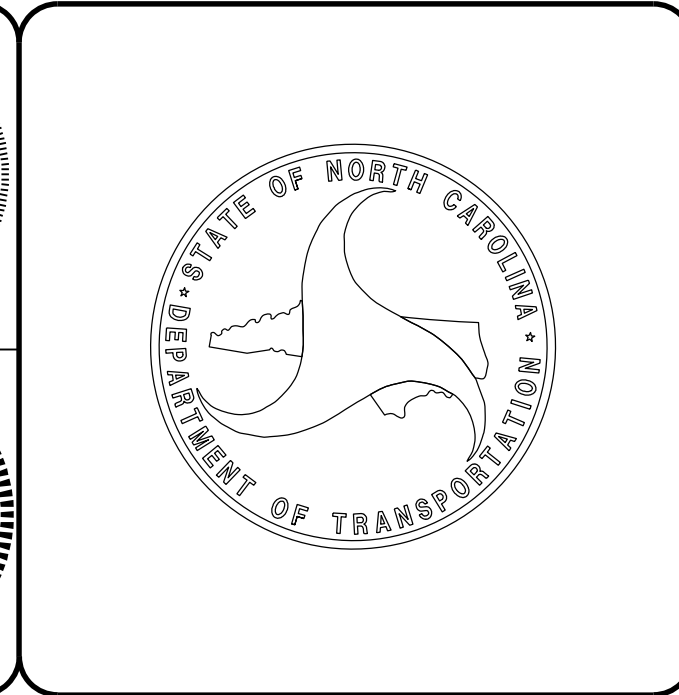
DocuSigned by:
Melanie Myrtle
12/19/2016

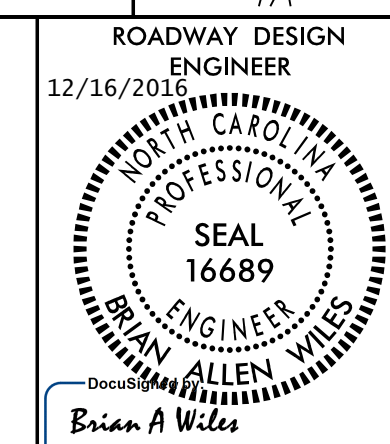
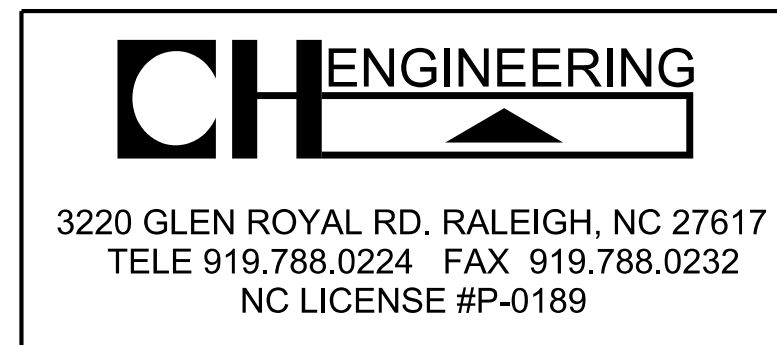
SIGNATURE:

ROADWAY DESIGN ENGINEER

DocuSigned by:
Brian A Wiles
12/19/2016

SIGNATURE:





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

SHEET NUMBER	INDEX OF SHEETS SHEET
1	TITLE SHEET
1A	INDEX OF SHEETS, GENERAL NOTES AND STANDARD DRAWINGS
1B	CONVENTIONAL SYMBOLS
1C-1	SURVEY CONTROL SHEETS
2A-1	PAVEMENT SCHEDULE, TYPICAL SECTIONS AND WEDGING DETAILS
2C-1	DETAIL OF STRUCTURE ANCHOR UNIT, TYPE III
3B-1	SUMMARIES OF EARTHWORK, ASPHALT PAVEMENT REMOVAL, SHOULDER BERM GUTTER AND GUARDRAIL
3D-1	LIST OF PIPES, ENDWALLS, ETC. (for PIPES 48" & UNDER)
4	PLAN SHEET
5	PROFILE SHEET
TMP-1 THRU TMP-2	TRAFFIC MANAGEMENT PLANS
EC-1 THRU EC-5	EROSION CONTROL PLANS
UD-1 THRU UD-2	UTILITIES BY OTHERS PLANS
X-1 THRU X-13	CROSS-SECTIONS
S-1 THRU S-14	STRUCTURE PLANS

GENERAL NOTES: 2012 SPECIFICATIONS
EFFECTIVE: 01-17-2012
REVISED: 10-31-2014

**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 III.

SUPERELEVATION:

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

SHOULDER CONSTRUCTION:

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

GUARDRAIL:

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

TEMPORARY SHORING:

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

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.

UTILITIES:

UTILITY OWNERS ON THIS PROJECT ARE Lumbée River EMC - Power and City of Laurinburg - Water.

ANY RELOCATION OF EXISTING UTILITIES WILL BE ACCOMPLISHED BY OTHERS, EXCEPT AS SHOWN ON THE PLANS.

2012 ROADWAY ENGLISH STANDARD DRAWINGS

The following Roadway Standards as appear in "Roadway Standard Drawings" Highway Design Branch - N. C. Department of Transportation - Raleigh, N. C., Dated January, 2012 are applicable to this project and by reference hereby are considered a part of these plans:

STD.NO.	TITLE
DIVISION 2 - EARTHWORK	
200.03	Method of Clearing - Method III
225.02	Guide for Grading Subgrade - Secondary and Local
225.04	Method of Obtaining Superelevation - Two Lane Pavement
DIVISION 3 - PIPE CULVERTS	
300.01	Method of Pipe Installation
DIVISION 4 - MAJOR STRUCTURES	
422.11	Bridge Approach Fills - Sub Regional Tier
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	
838.01	Concrete Endwall for Single and Double Pipe Culverts - 15" thru 48" Pipe 90 Skew
838.11	Brick Endwall for Single and Double Pipe Culverts - 15" thru 48" Pipe 90 Skew
840.00	Concrete Base Pad for Drainage Structures
840.18	Concrete Grated Drop Inlet Type 'B' - 12" thru 36" Pipe
840.24	Frames and Narrow Slot Sag Grates
840.25	Anchorage for Frames - Brick or Concrete or Precast
840.27	Brick Grated Drop Inlet Type 'B' - 12" thru 36" Pipe
840.29	Frames and Narrow Slot Flat Grates
840.35	Traffic Bearing Grated Drop Inlet - for Cast Iron Double Frame and Grates
840.45	Precast Drainage Structure
840.46	Traffic Bearing Precast Drainage Structure
840.66	Drainage Structure Steps
846.01	Concrete Curb, Gutter and Curb & Gutter
846.04	Drop Inlet Installation in Shoulder Berm Gutter
862.01	Guardrail Placement
862.02	Guardrail Installation
876.01	Rip Rap in Channels
876.02	Guide for Rip Rap at Pipe Outlets

EFF. 01-17-2012
REV. 02-29-2016

STATE OF NORTH CAROLINA, DIVISION OF HIGHWAYS

CONVENTIONAL PLAN SHEET SYMBOLS

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

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	----- NLB
Proposed Wetland Boundary	----- NLB
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	○
Well	○
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	○
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	-----
Proposed Right of Way Line with Iron Pin and Cap Marker	-----
Proposed Right of Way Line with Concrete or Granite RW Marker	-----
Proposed Control of Access Line with Concrete CA Marker	-----
Existing Control of Access	-----
Proposed Control of Access	-----
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	-----
Proposed Guardrail	-----
Existing Cable Guiderail	-----
Proposed Cable Guiderail	-----
Equality Symbol	○
Pavement Removal	-----

VEGETATION:

Single Tree	☼
Single Shrub	☼
Hedge	-----
Woods Line	-----

Orchard	☼ ☼ ☼ ☼
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	○
Storm Sewer	----- S

UTILITIES:

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

TELEPHONE:

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

WATER:

Water Manhole	⊕
Water Meter	○
Water Valve	⊗
Water Hydrant	⊕
U/G Water Line LOS B (S.U.E.*)	----- 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	○
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.*)	----- TUL
U/G Tank; Water, Gas, Oil	□
Underground Storage Tank, Approx. Loc.	□
A/G Tank; Water, Gas, Oil	□
Geoenvironmental Boring	⊕
U/G Test Hole LOS A (S.U.E.*)	⊕
Abandoned According to Utility Records	AATUR
End of Information	E.O.I.

6/2/99

SURVEY CONTROL SHEET B-5741

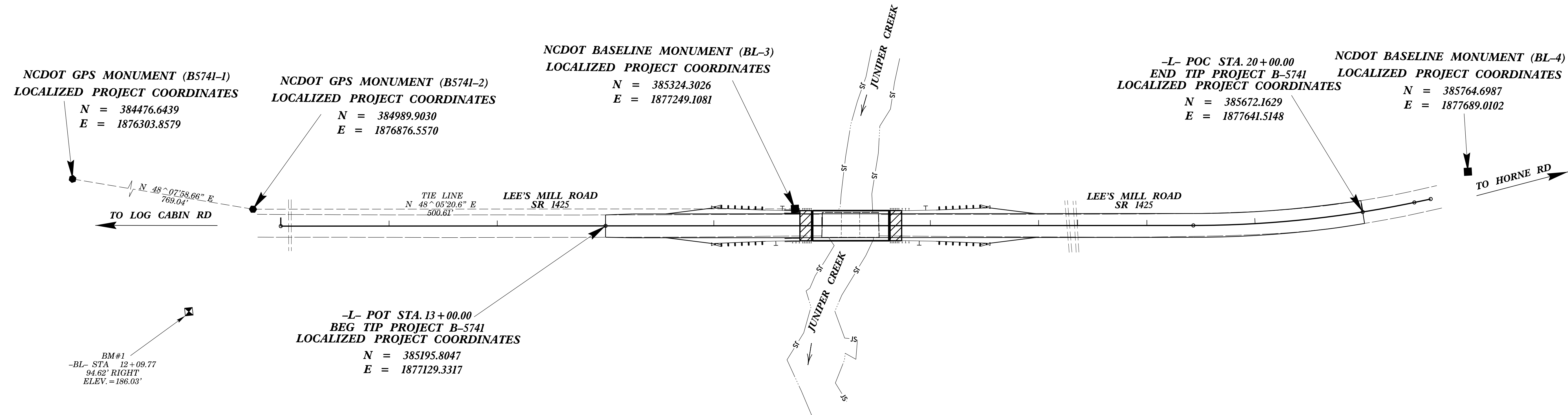
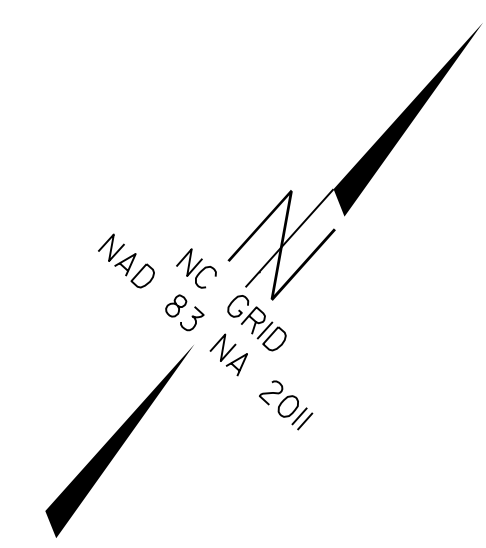
CH ENGINEERING

3220 GLEN ROYAL RD. RALEIGH, NC 27617
 TELE 919.788.0224 FAX 919.788.0232
 NC LICENSE #P-0189

PROJECT REFERENCE NO.	SHEET NO.
B-5741	1C-1

BL	POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
1		GPS B-5741-1	384476.6439	1876303.8579	193.21	OUTSIDE PROJECT LIMITS	
2		GPS B-5741-2	384989.9030	1876876.5570	189.30	OUTSIDE PROJECT LIMITS	
3		BL-3	385324.3026	1877249.1081	190.82	14+74.97	15.60 LT
4		BL-4	385764.6987	1877689.0102	189.03	OUTSIDE PROJECT LIMITS	

 BM1 ELEVATION = 186.03
 N 384880 E 1876896
 BL STATION 12+09.77 94.62' RIGHT
 RR SPIKE IN 15" MAPLE



NOTES:

- SITE CALIBRATION INFORMATION HAS NOT BEEN PROVIDED FOR THIS PROJECT. IF FURTHER INFORMATION IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.
 - ◆ INDICATES CONTROL MONUMENTS USED OR SET FOR HORIZONTAL PROJECT CONTROL BY THE NCDOT 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.

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "B5741-2"

WITH NAD 83/NA 2011 STATE PLANE GRID COORDINATES OF
 NORTHING: 384989.903(++) EASTING: 1876876.557(++)
 ELEVATION: 189.30(++)

THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.999898553

THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "B5741-2" TO -L- STATION 13+00 IS
 N 50° 50' 05.64" E 326.02'

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

NOTE: DRAWING NOT TO SCALE

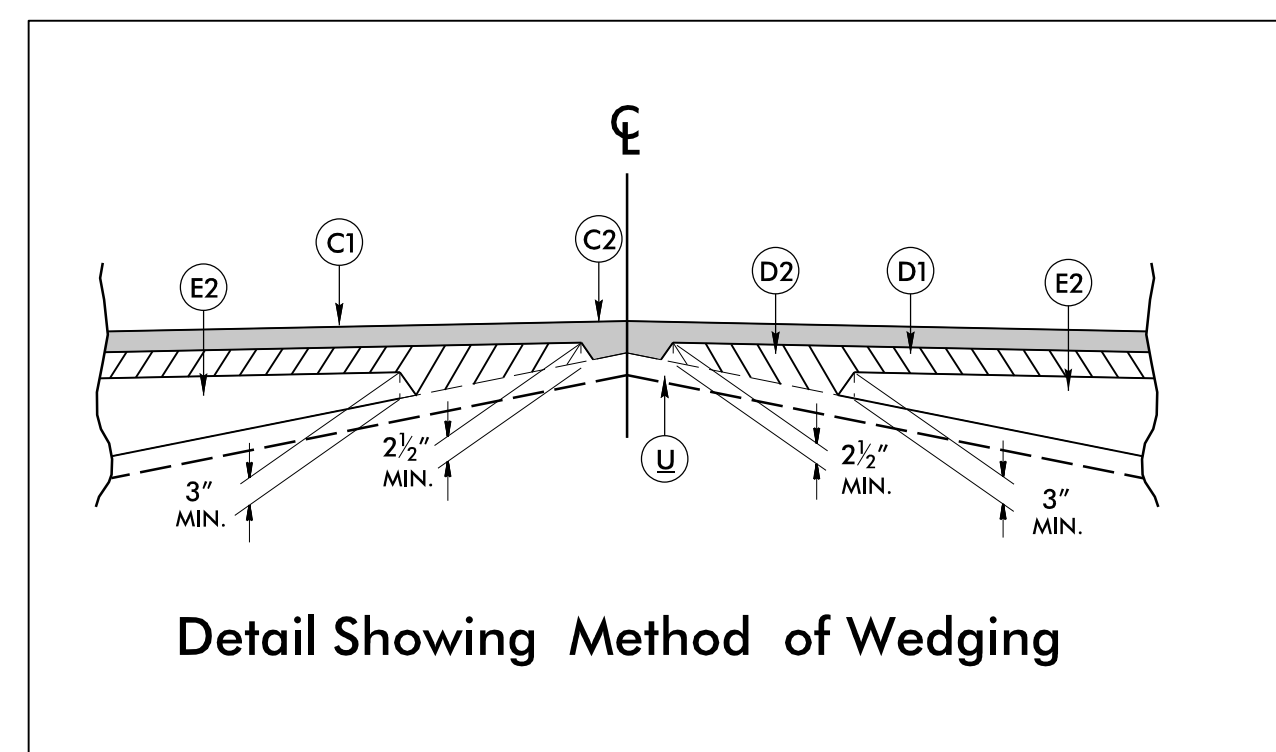
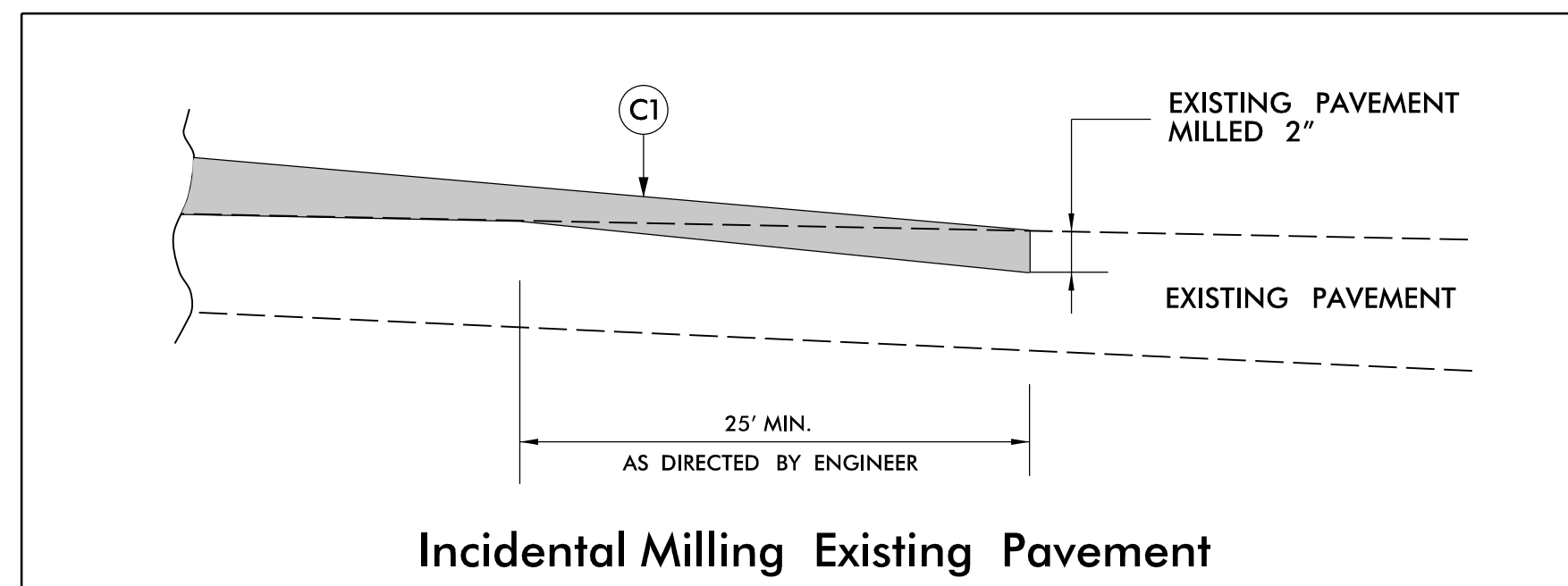
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6/2/99

PAVEMENT SCHEDULE

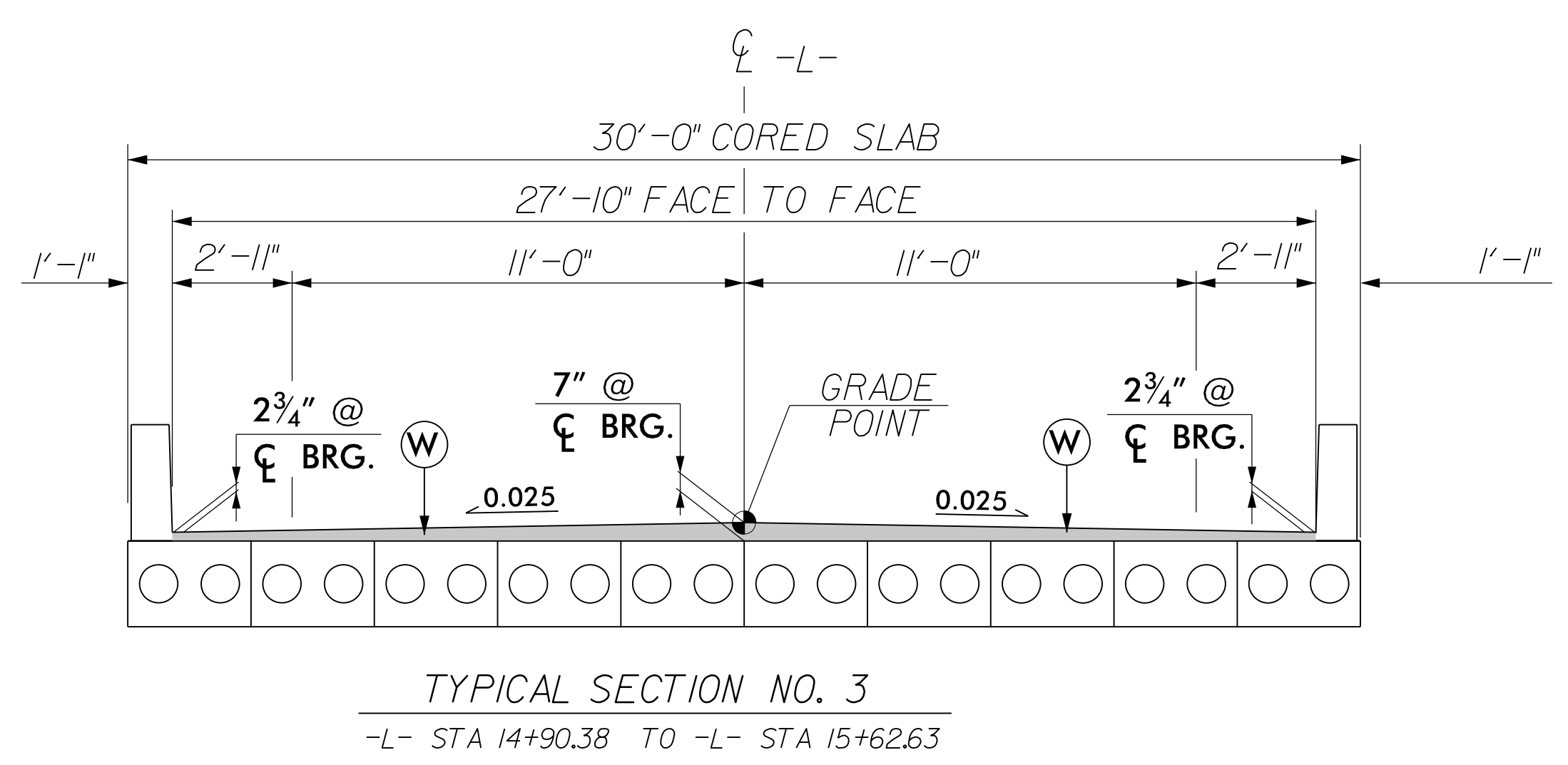
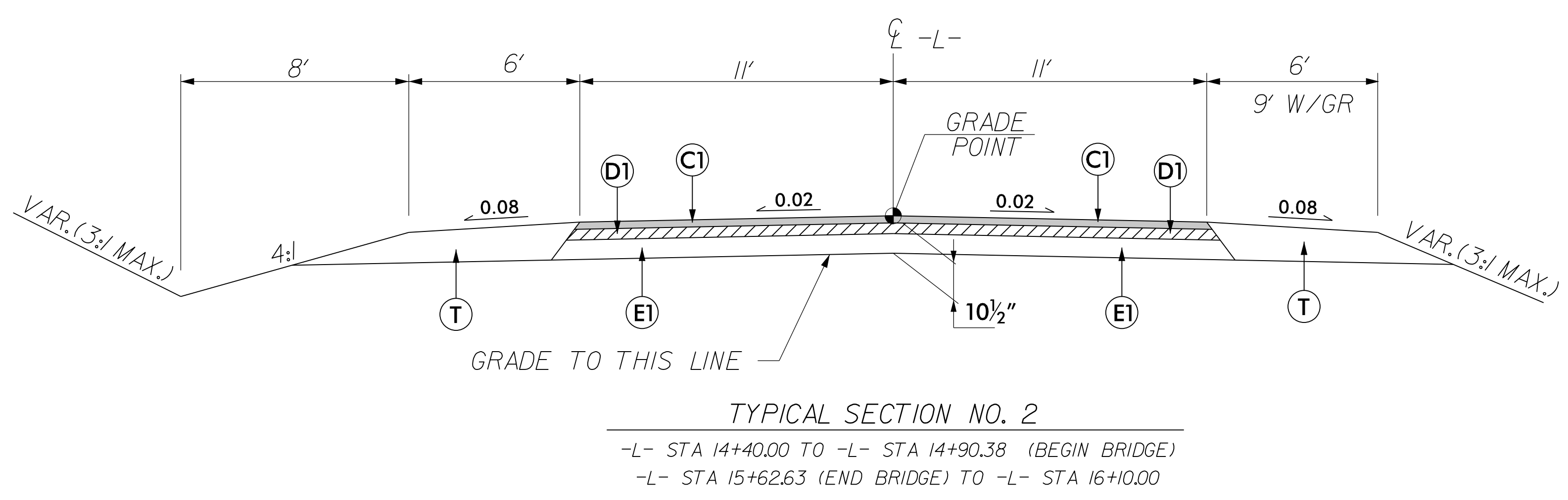
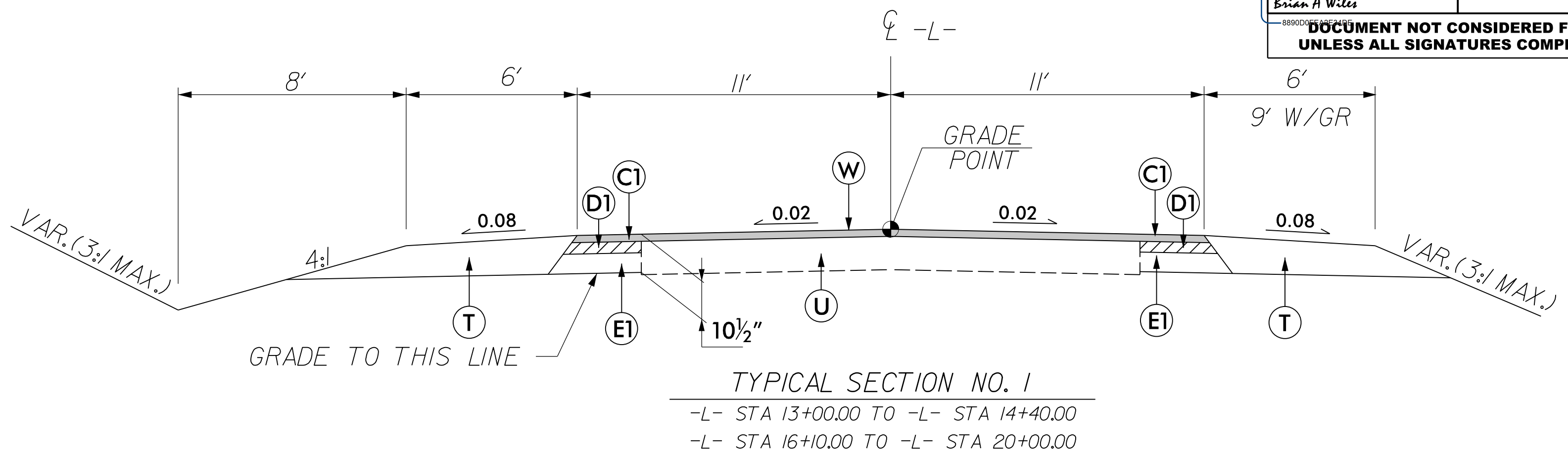
C1	PROP. APPROX. 2" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C2	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT TO EXCEED 1½" IN DEPTH.
D1	PROP. APPROX. 3" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 342 LBS. PER SQ. YD.
D2	PROP. VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 2½" IN DEPTH OR GREATER THAN 4" IN DEPTH.
E1	PROP. APPROX. 5½" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 627 LBS. PER SQ. YD.
E2	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 3" IN DEPTH OR GREATER THAN 5½" IN DEPTH.
T	EARTH MATERIAL.
U	EXISTING PAVEMENT.
W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE STANDARD WEDGING DETAIL THIS SHEET)

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



CH ENGINEERING
 3220 GLEN ROYAL RD. RALEIGH, NC 27617
 TELE 919.788.0224 FAX 919.788.0232
 NC LICENSE #P-0189

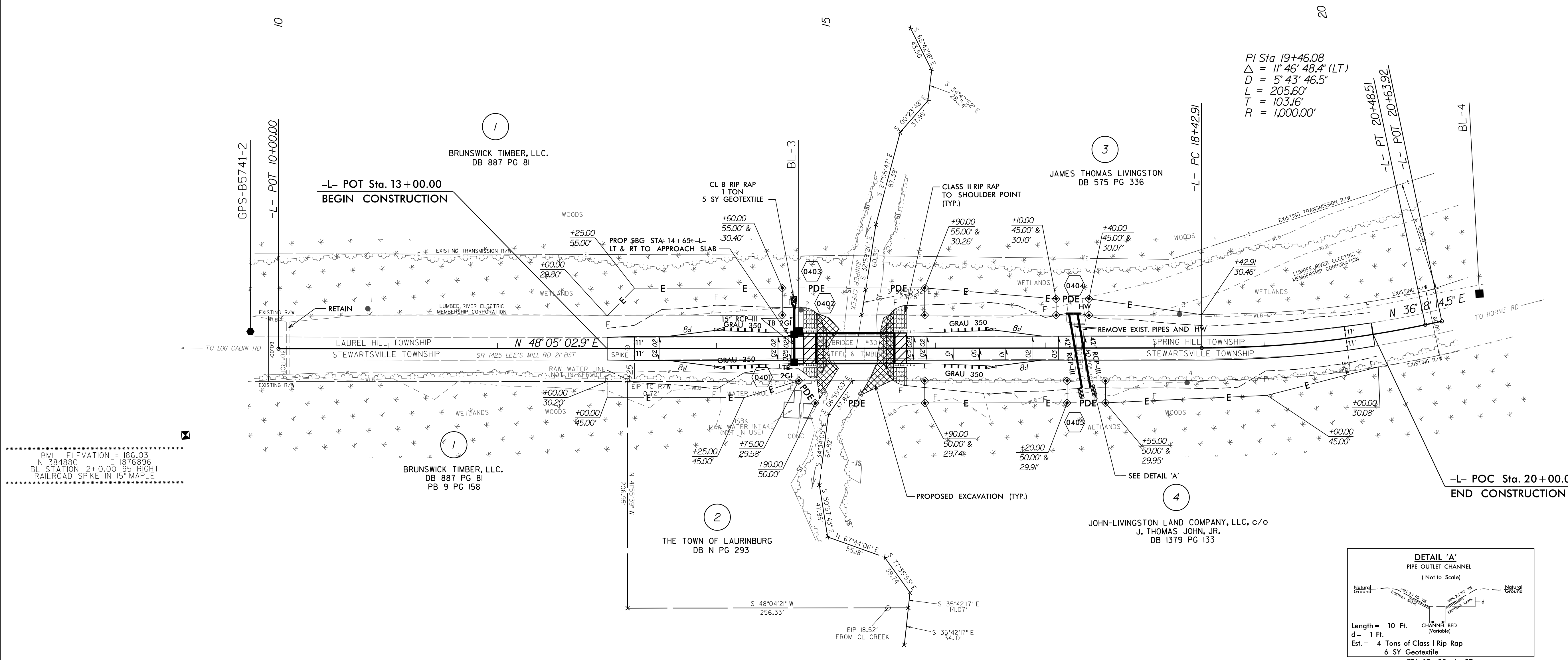
PROJECT REFERENCE NO. B-5741	SHEET NO. 2A-1
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER
12/16/2016 NORTH CAROLINA PROFESSIONAL SEAL SEAL 16689 BRIAN ALLEN WILES ENGINEER	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



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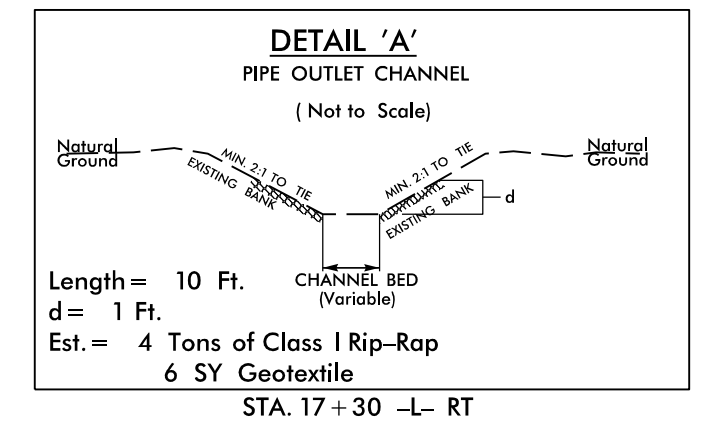
CH ENGINEERING
 3220 GLEN ROYAL RD. RALEIGH, NC 27617
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 NC LICENSE #P-0189

PROJECT REFERENCE NO. B-5741	SHEET NO. 4
ROADWAY DESIGN ENGINEER 12/19/2016	HYDRAULICS ENGINEER 12/19/2016
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

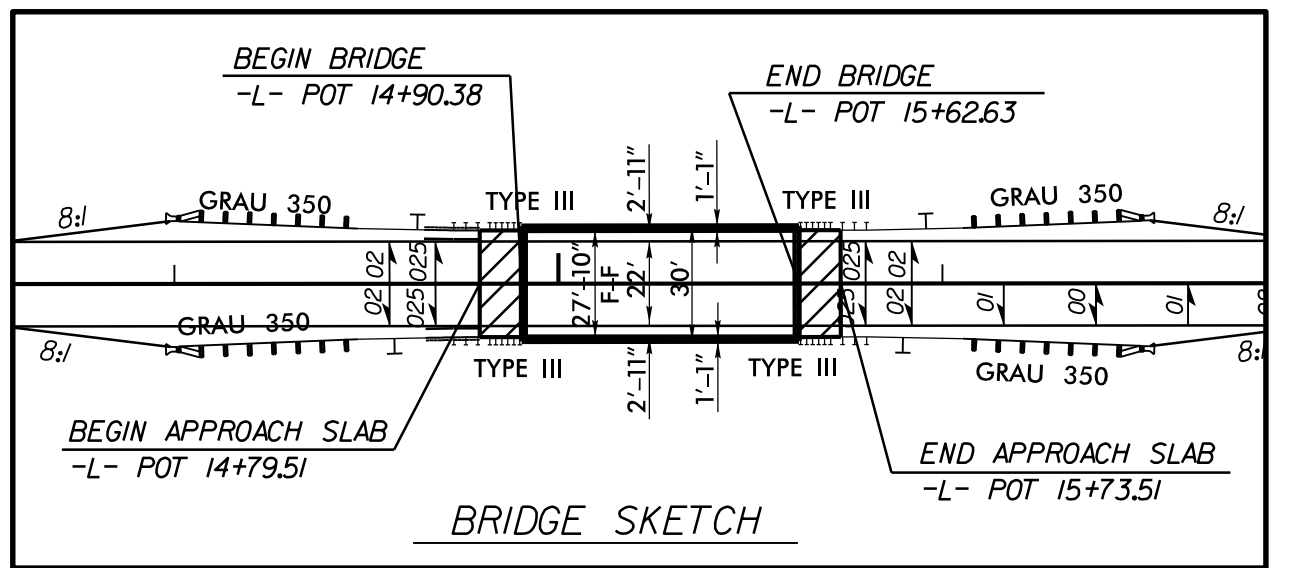


PI Sta 19+46.08
 $\Delta = 11' 46' 48.4''$ (LT)
 $D = 5' 43' 46.5''$
 $L = 205.60'$
 $T = 103.16'$
 $R = 1,000.00'$

BMI ELEVATION = 186.03
 N 384880 E 1876896
 BL STATION 12+10.00 95' RIGHT
 RAILROAD SPIKE IN 15' MAPLE



FOR PROFILE, SEE SHEET 5



5/14/19

CH ENGINEERING
 3220 GLEN ROYAL RD. RALEIGH, NC 27617
 TELE 919.788.0224 FAX 919.788.0232
 NC LICENSE #P-0189

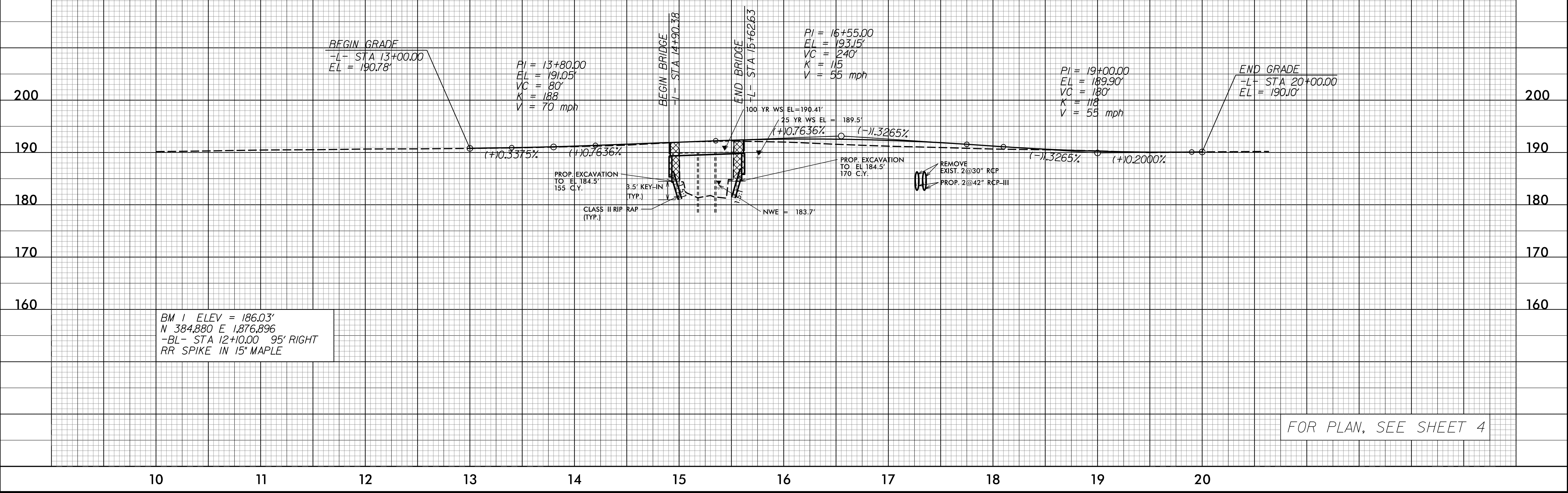
PROJECT REFERENCE NO. <i>B-5741</i>	SHEET NO. 5
ROADWAY DESIGN ENGINEER 12/19/2016	HYDRAULICS ENGINEER 12/19/2016
<i>Brian A Wilder</i>	<i>Melaine Nguyen</i>

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

BRIDGE HYDRAULIC DATA

DESIGN DISCHARGE	= 1889	CFS
DESIGN FREQUENCY	= 25	YRS
DESIGN HW ELEVATION	= 189.5	FT
BASE DISCHARGE	= 2620	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 190.41	FT
OVERTOPPING DISCHARGE	= 2015	CFS
OVERTOPPING FREQUENCY	= 25+	YRS
OVERTOPPING ELEVATION	= 189.73	FT

DATE OF SURVEY	= 2-2-16	
W.S. ELEVATION AT DATE OF SURVEY	= 184.2	FT



BM 1 ELEV = 186.03'
 N 384,880 E 1,876,896
 -BL- STA 12+10.00 95' RIGHT
 RR SPIKE IN 15' MAPLE

FOR PLAN, SEE SHEET 4

R:\8/2016\PROJECTS\B5741\RDY\p1.05.dgn

THE FOLLOWING ROADWAY STANDARDS AS APPEAR IN "ROADWAY STANDARD DRAWINGS" - PROJECT SERVICES UNIT - N.C. DEPARTMENT OF TRANSPORTATION - RALEIGH, N.C., DATED JANUARY 2012 ARE APPLICABLE TO THIS PROJECT AND BY REFERENCE HEREBY ARE CONSIDERED A PART OF THESE PLANS:

STD.	TITLE
1101.03	TEMPORARY ROAD CLOSURES
1110.01	STATIONARY WORK ZONE SIGNS
1145.01	BARRICADES
1205.01	PAVEMENT MARKINGS - LINE TYPES AND OFFSETS
1205.12	PAVEMENT MARKINGS - BRIDGES
1250.01	RAISED PAVEMENT MARKERS - INSTALLATION SPACING
1251.01	RAISED PAVEMENT MARKERS - TYPES AND MOUNTING
1261.01	GUARDRAIL AND BARRIER DELINEATORS - INSTALLATION SPACING
1261.02	GUARDRAIL AND BARRIER DELINEATORS - TYPES AND MOUNTING
1262.01	GUARDRAIL END DELINEATION

GENERAL NOTES

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

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

TRAFFIC PATTERN ALTERATIONS

- A) NOTIFY THE ENGINEER TWENTY ONE (21) CALENDAR DAYS PRIOR TO ANY TRAFFIC PATTEN ALTERATION.

SIGNING

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

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

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

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

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

TRAFFIC CONTROL DEVICES

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

PAVEMENT MARKINGS AND MARKERS

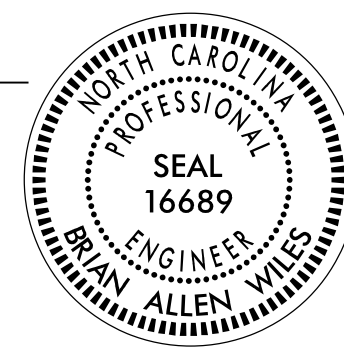
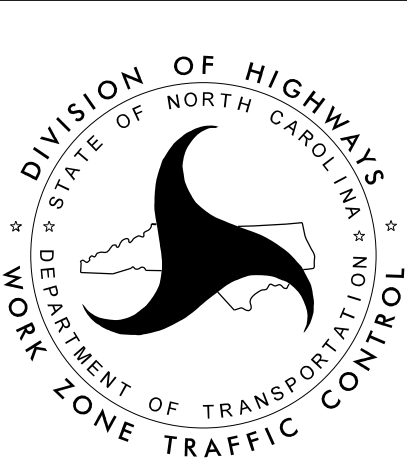
- F) INSTALL PAVEMENT MARKINGS ON THE FINAL SURFACE.

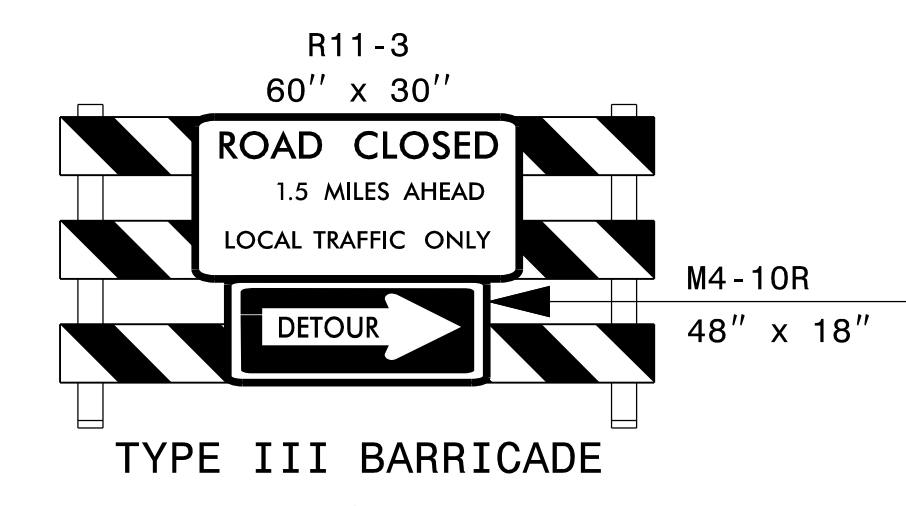
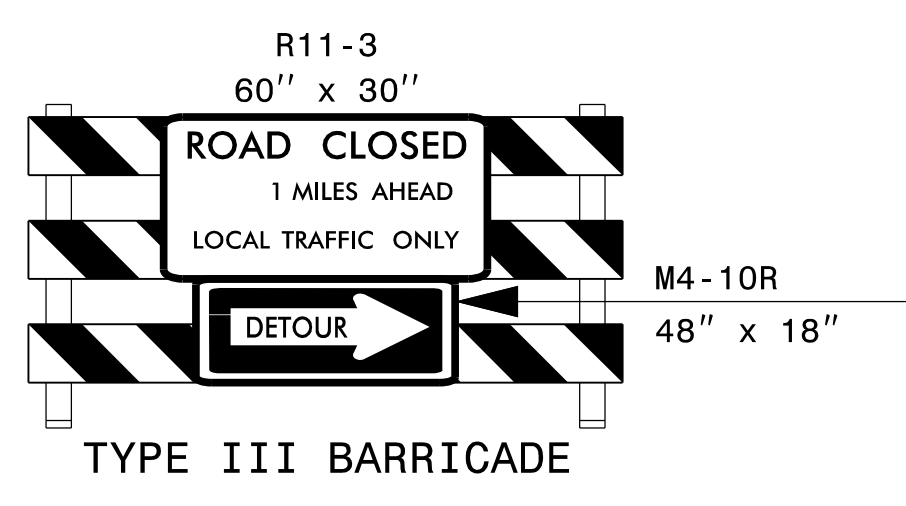
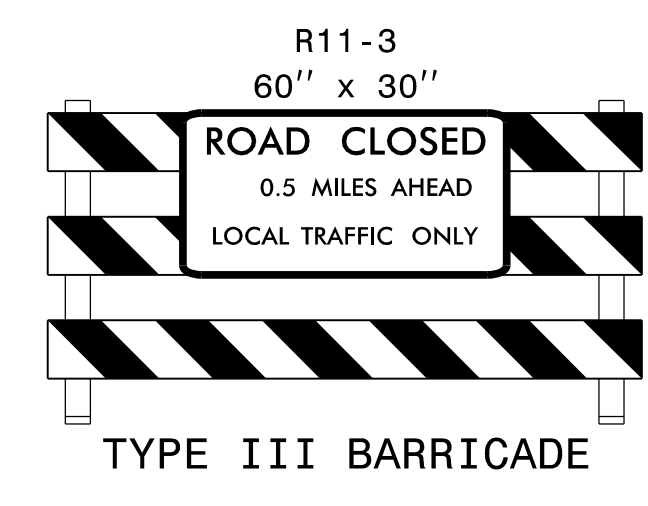
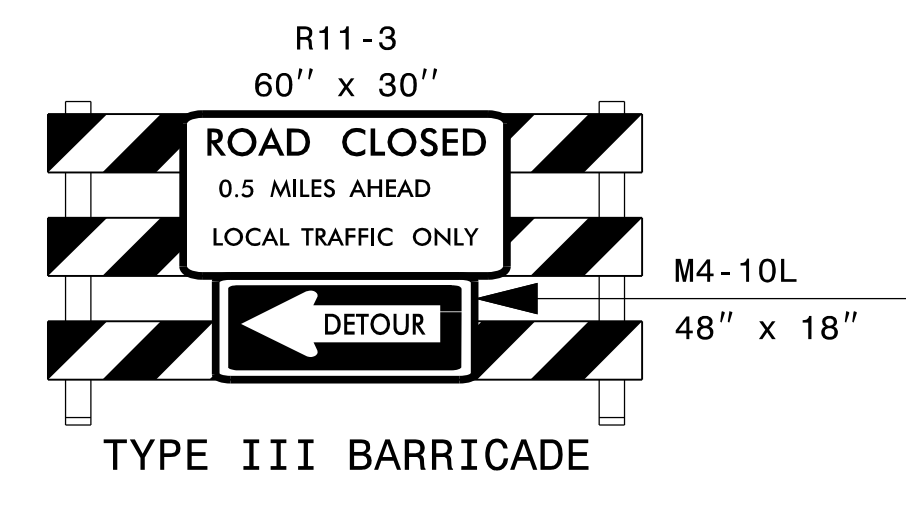
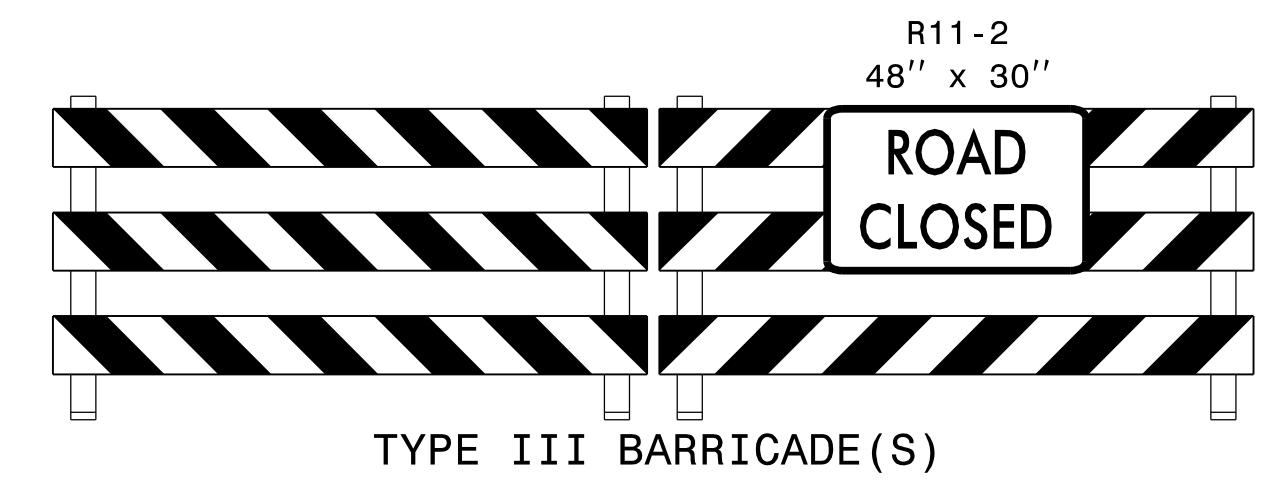
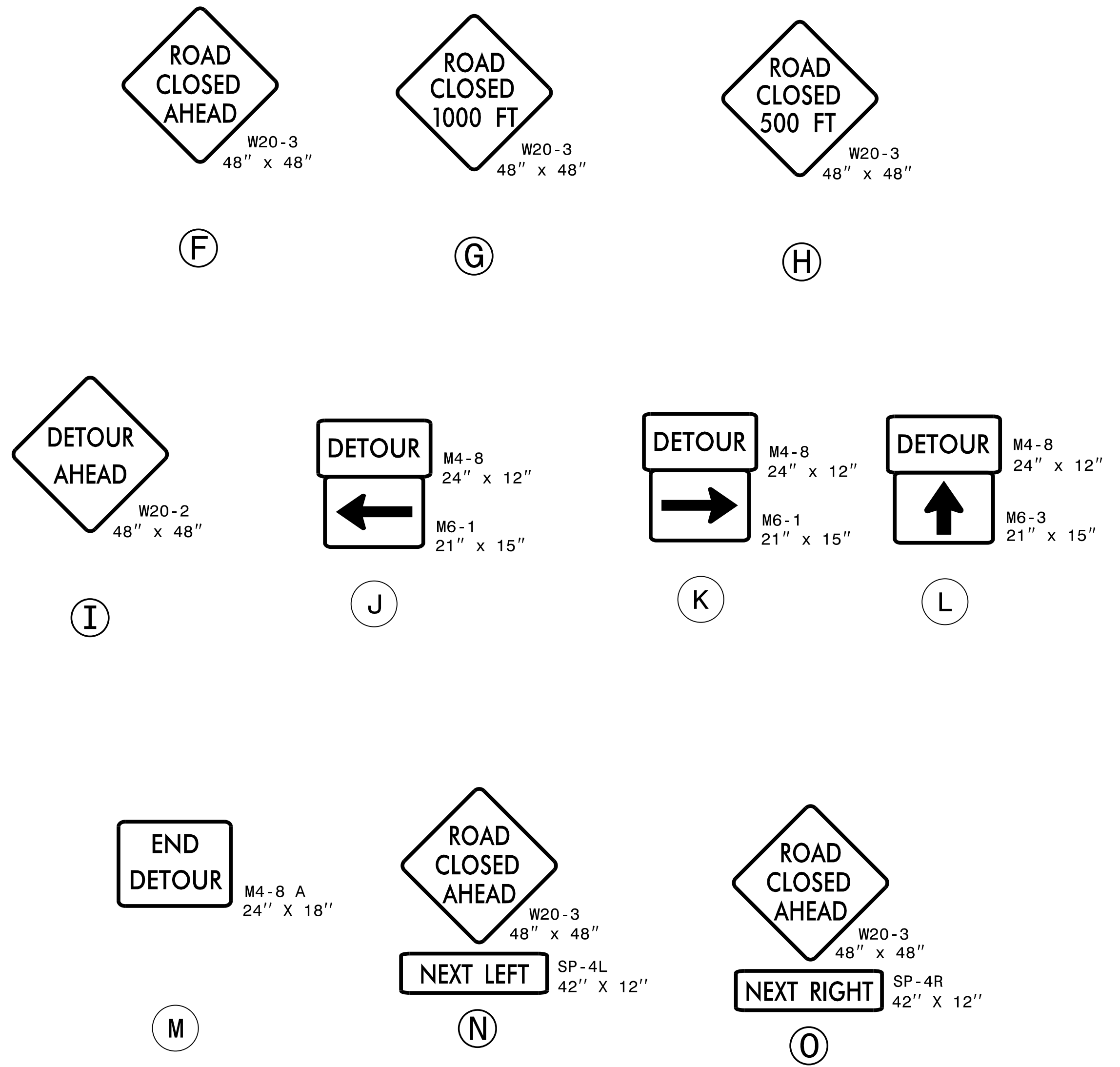
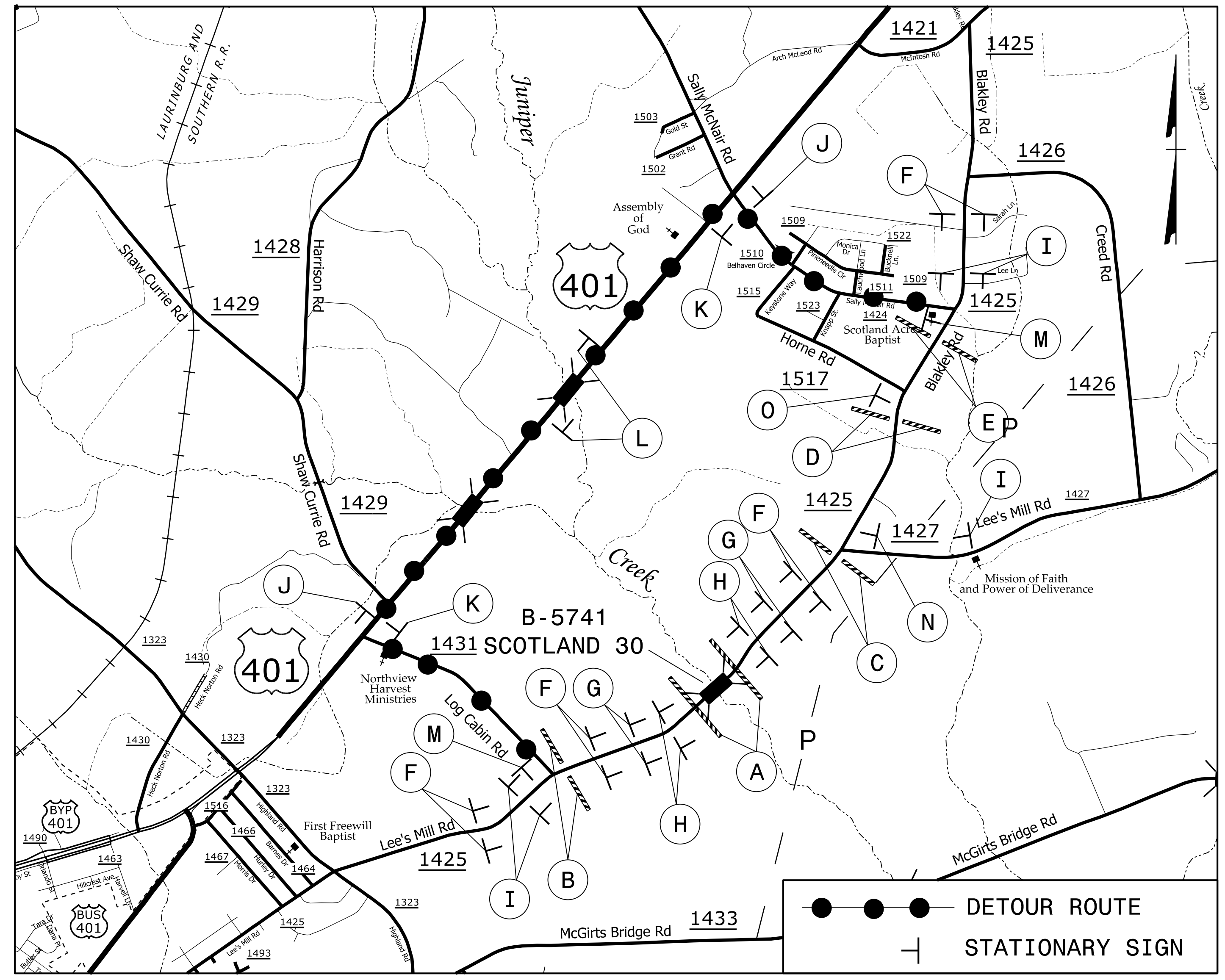
PHASING

- STEP 1: USING ROADWAY STANDARD DRAWING NUMBER 1101.03, SHEET 1 OF 9, AND TMP-2, PERFORM THE FOLLOWING:
 - INSTALL ALL ROAD CLOSURE AND DETOUR SIGNING INCLUDING BARRICADES
 - CLOSE SR 1425 (LEE'S MILL ROAD)
 - PLACE TRAFFIC ONTO OFF-SITE DETOUR
- STEP 2: REMOVE EXISTING BRIDGE #030 AND CONSTRUCT THE PROPOSED BRIDGE AND APPROACHES AS SHOWN IN THE CONSTRUCTION PLANS.
- STEP 3: INSTALL FINAL PAVEMENT MARKINGS.
- STEP 4: REMOVE ALL TRAFFIC CONTROL SIGNING AND DEVICES AND RE-OPEN SR 1425 (LEE'S MILL ROAD) TO THE FINAL TRAFFIC PATTERN.

PAVEMENT MARKING

THERMOPLASTIC PAVEMENT MARKING LINES (4", 90 MILS)	1400 LF
THERMOPLASTIC PAVEMENT MARKING LINES (4", 120 MILS)	1400 LF
PERMANENT RAISED PAVEMENT MARKERS	10 EACH

APPROVED: <u>Brian A Wiles</u> <small>8800DFEA2E34DE</small> DATE: 12/16/2016 SEAL 		TRANSPORTATION OPERATIONS PLAN
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED		

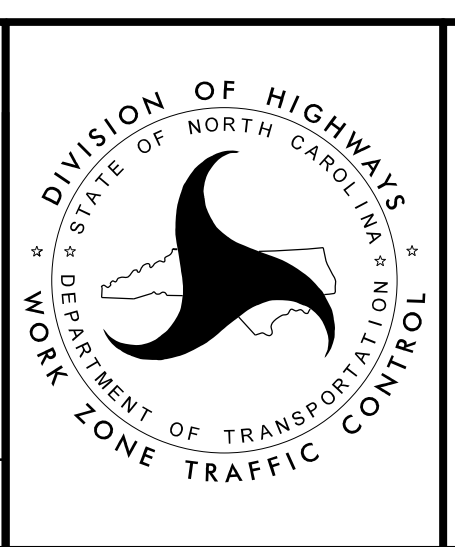


APPROVED: Brian A Wiles
DATE: 12/16/2016

DocuSigned by:
Brian A Wiles
8890DFEA2E4DDE

SEAL

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED



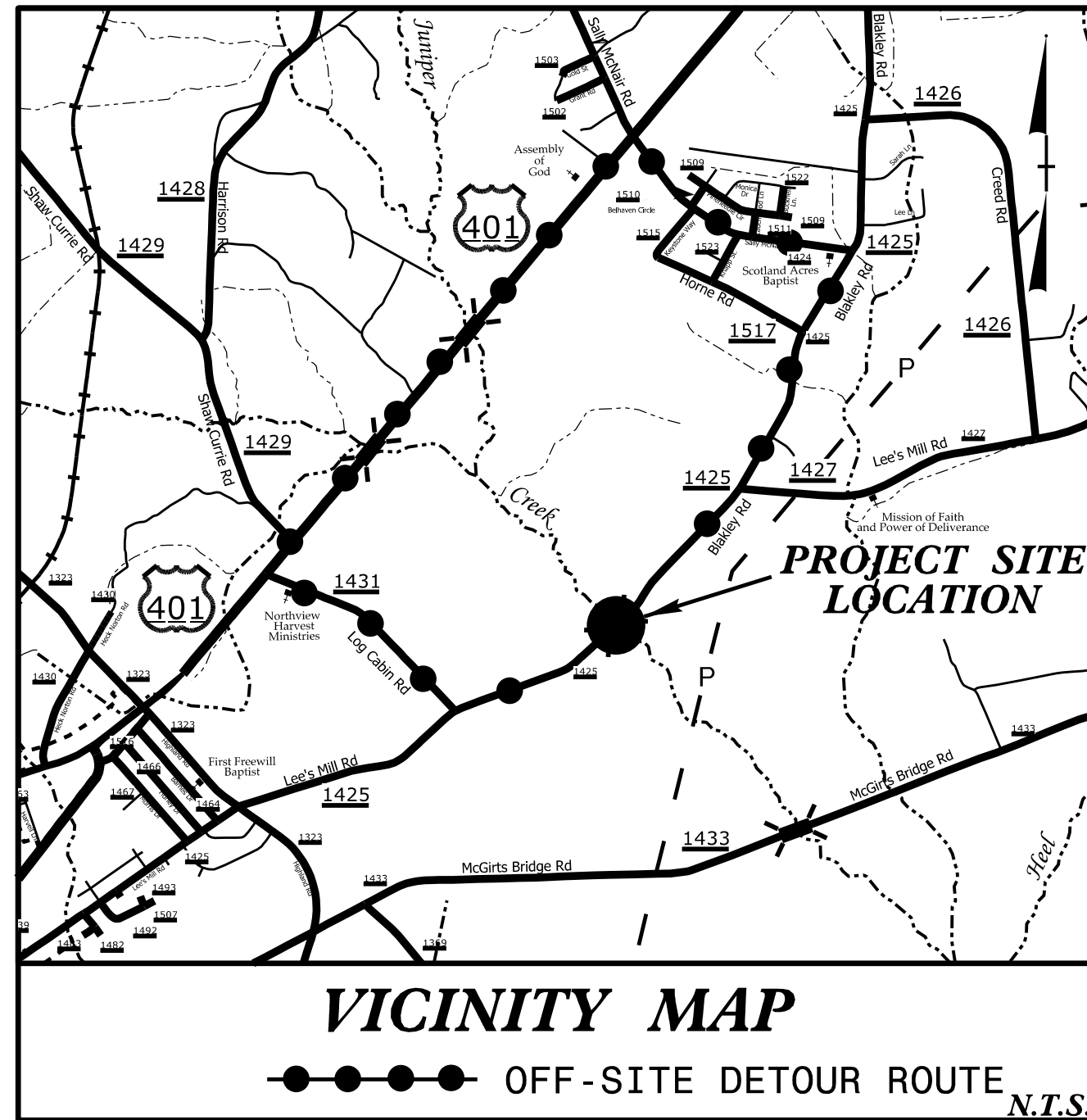
DETOUR ROUTE
AND
SIGNS

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

12/16/2016 10:41:00 AM TrafficControl\TCP\B5741\TC_TMP.dgn USERNAME

TIP PROJECT: B-5741

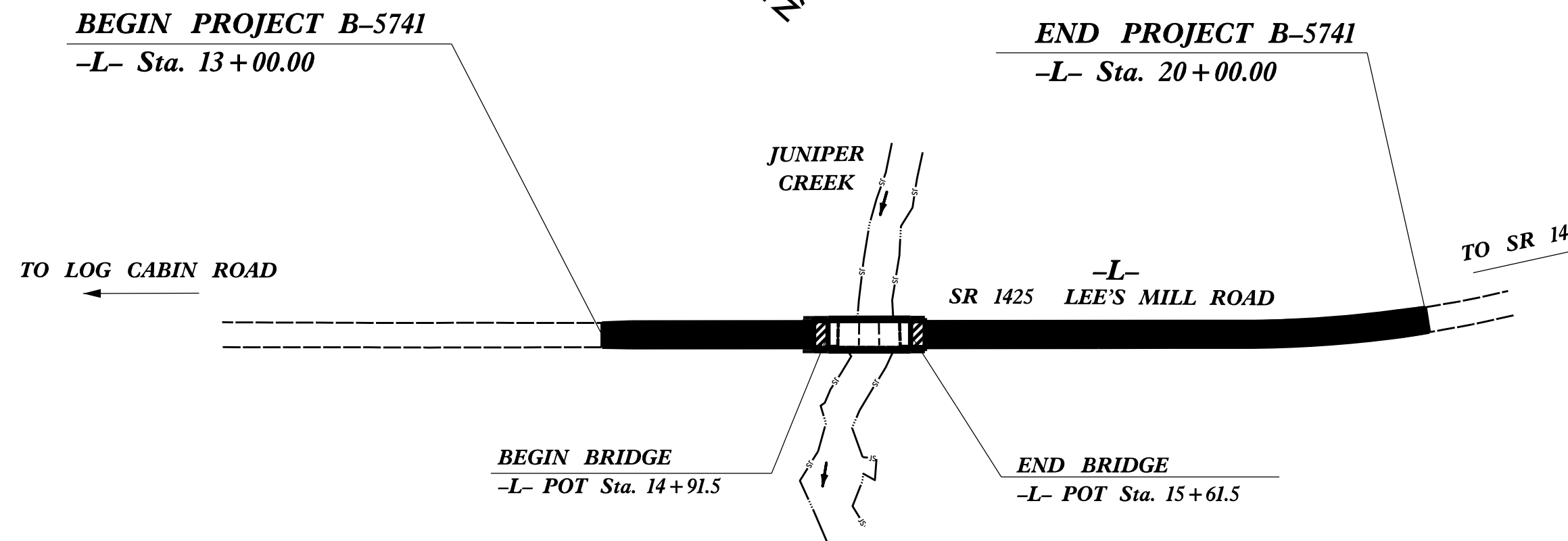
See Sheet 1-A For Index of Sheets



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

LOCATION: BRIDGE NO. 820030 ON SR 1425 (LEE'S MILL ROAD)
 OVER JUNIPER CREEK

TYPE OF WORK: GRADING, DRAINAGE, PAVING AND STRUCTURE



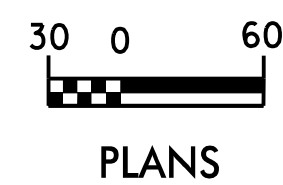
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-5741	EC-1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	

EROSION AND SEDIMENT CONTROL MEASURES

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

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

GRAPHIC SCALE



THESE EROSION AND SEDIMENT CONTROL PLANS COMPLY WITH THE REGULATIONS SET FORTH BY THE NCG-010000 GENERAL CONSTRUCTION PERMIT EFFECTIVE AUGUST 3, 2011 AND ISSUED BY THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES DIVISION OF WATER RESOURCES.

Prepared in the Office of:
MI-ENGINEERING
 1011 SCHAUB DRIVE, SUITE 100
 RALEIGH, NC 27606

Designed by:
MELANIE NGUYEN 3223
 NAME LEVEL III CERTIFICATION NO.

Reviewed in the Office of:
ROADSIDE ENVIRONMENTAL UNIT
 P.O. BOX 429
 1530 SOUTH 7TH STREET
 SANFORD, NC 27330
2012 STANDARD SPECIFICATIONS

Reviewed by:
BARRY HARRINGTON

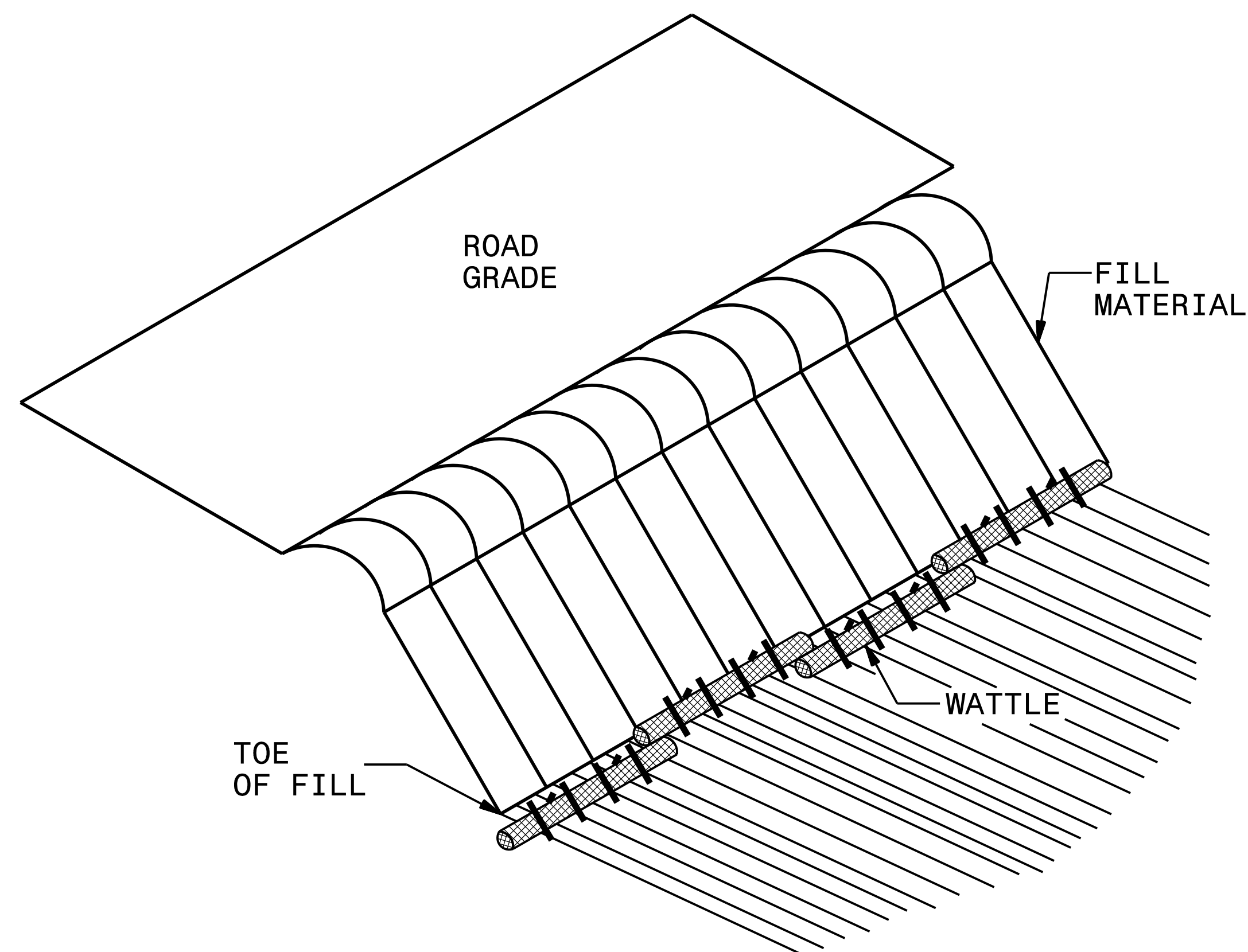
Roadway Standard Drawings

The following roadway english standards as appear in "Roadway Standard Drawings"- Roadway Design Unit - N. C. Department of Transportation - Raleigh, N. C., dated January 2012 and the latest revision thereto are applicable to this project and by reference hereby are considered a part of these plans.

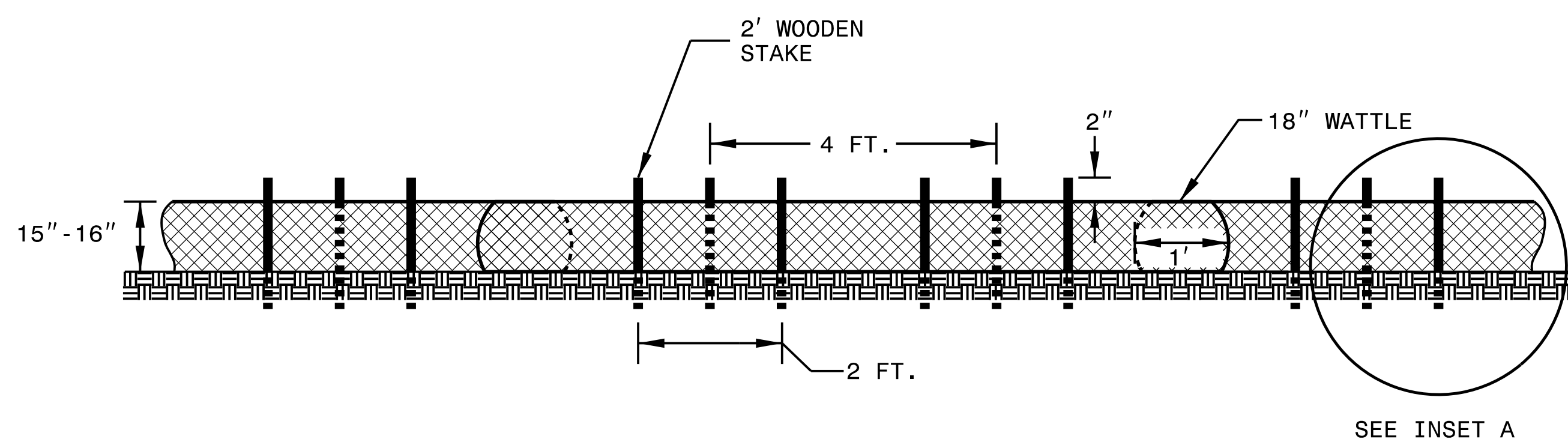
1604.01 Railroad Erosion Control Detail	1632.01 Rock Inlet Sediment Trap Type A
1605.01 Temporary Silt Fence	1632.02 Rock Inlet Sediment Trap Type B
1606.01 Special Sediment Control Fence	1632.03 Rock Inlet Sediment Trap Type C
1607.01 Gravel Construction Entrance	1633.01 Temporary Rock Silt Check Type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

PROJECT REFERENCE NO. <i>B-5741</i>	SHEET NO. <i>EC-2</i>
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

COIR FIBER WATTLE BARRIER DETAIL



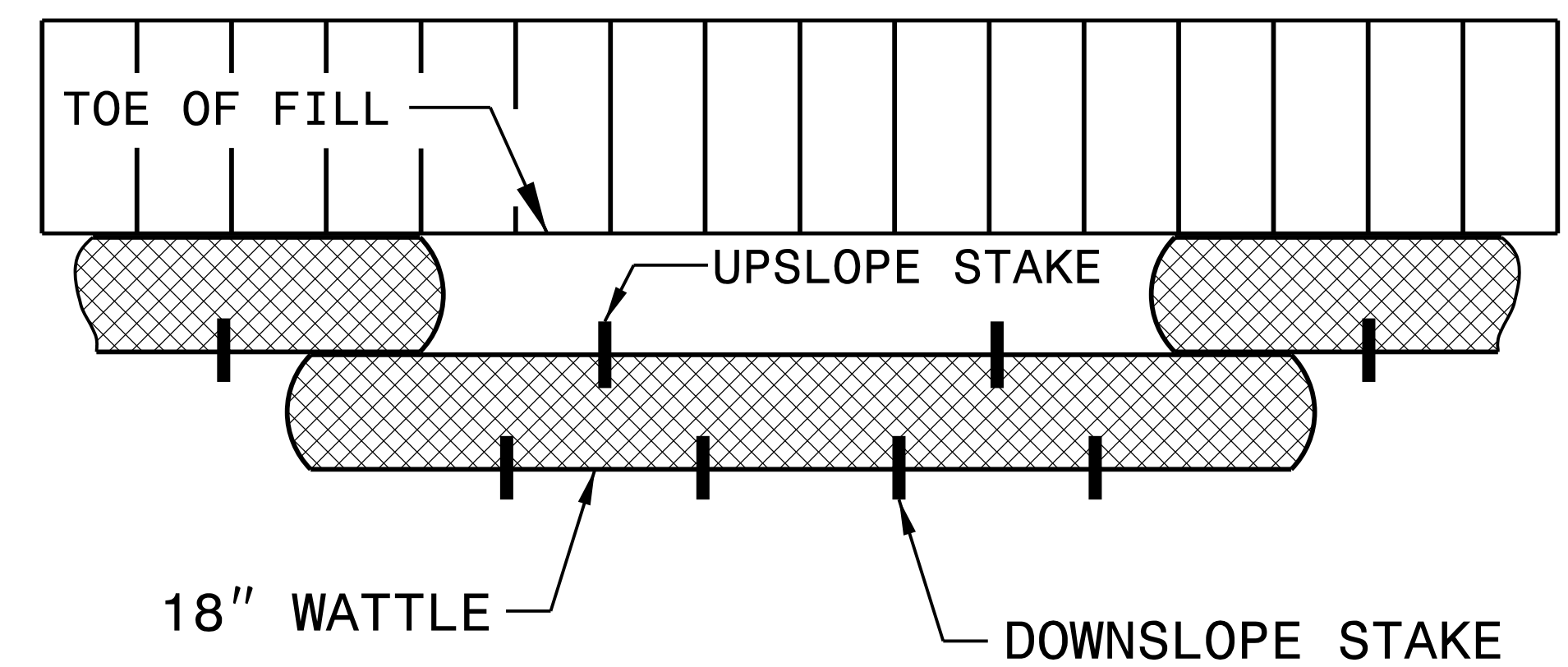
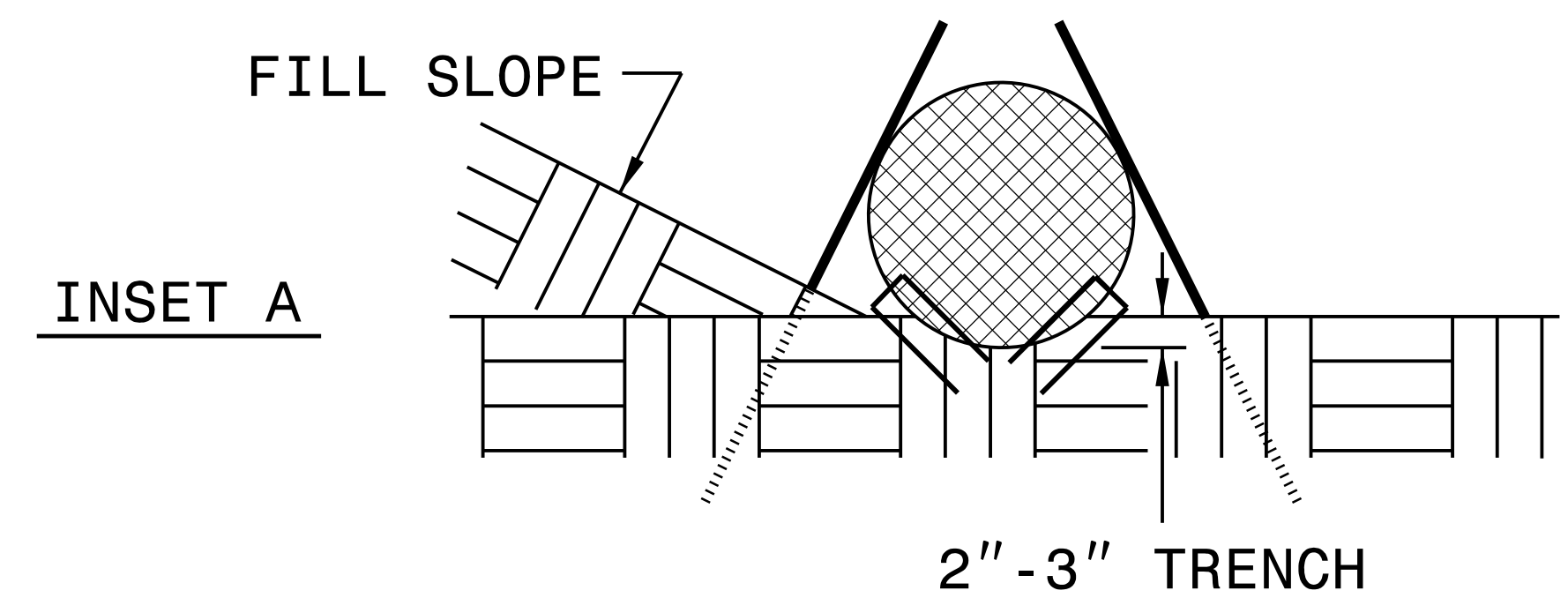
ISOMETRIC VIEW



FRONT VIEW

NOTES:

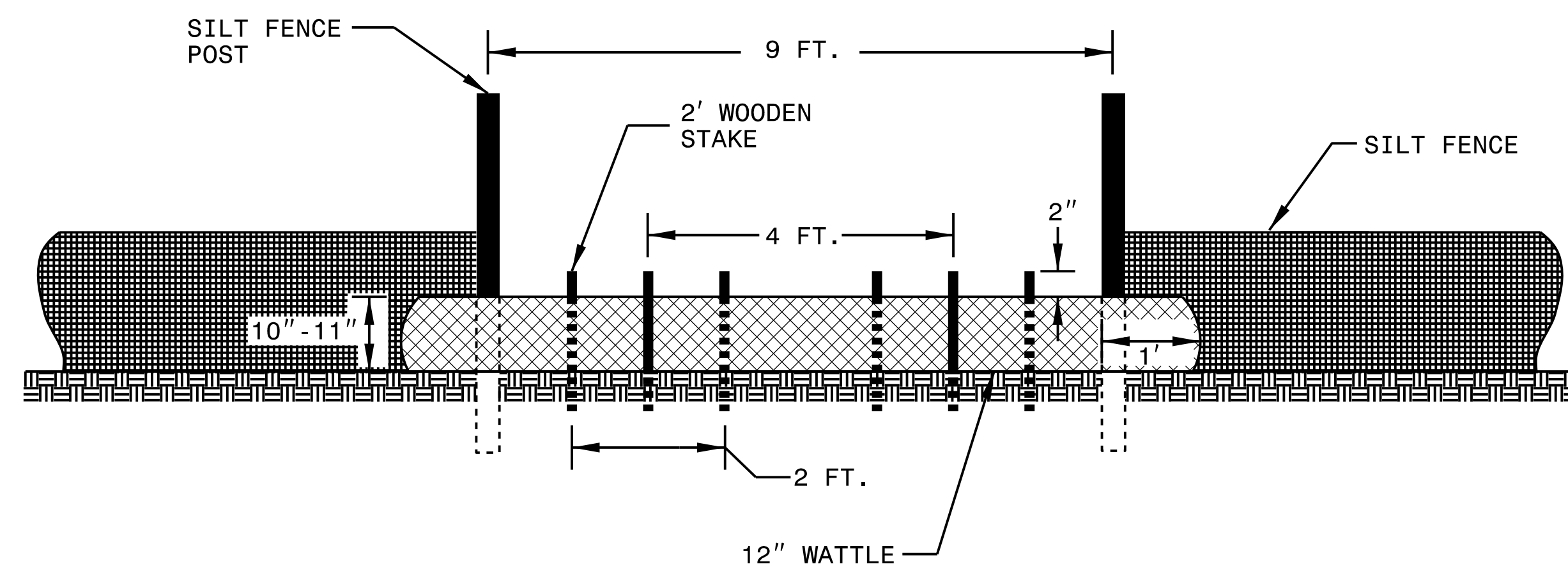
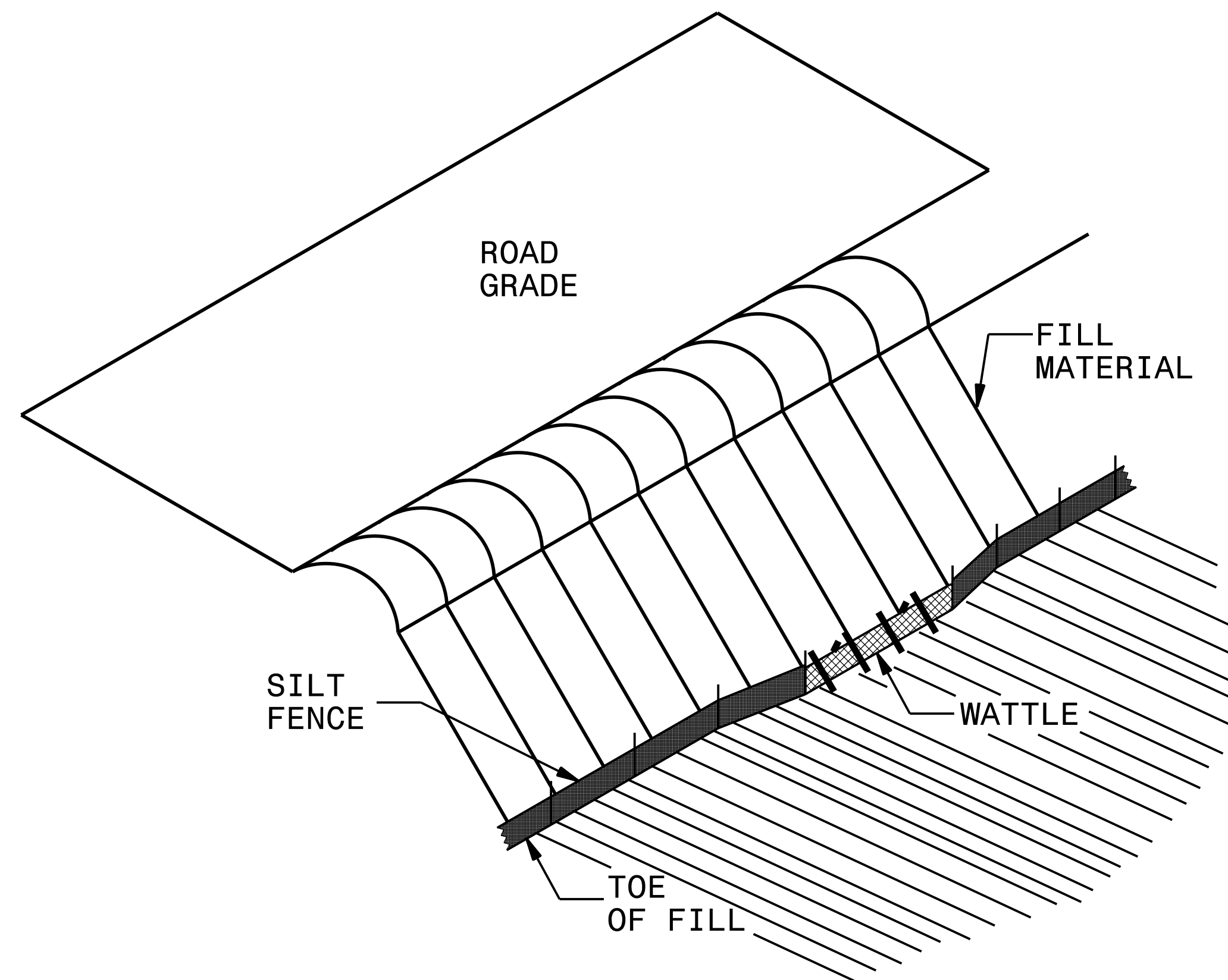
- USE MINIMUM 18 IN. NOMINAL DIAMETER COIR FIBER (COCONUT) WATTLE AND LENGTH OF 10 FT.
- EXCAVATE A 2 TO 3 INCH TRENCH FOR WATTLE TO BE PLACED.
- DO NOT PLACE WATTLES ON TOE OF SLOPE.
- USE 2 FT. WOODEN STAKES WITH A 2 IN. BY 2 IN. NOMINAL CROSS SECTION.
- INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 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.



TOP VIEW

SILT FENCE COIR FIBER WATTLE BREAK DETAIL

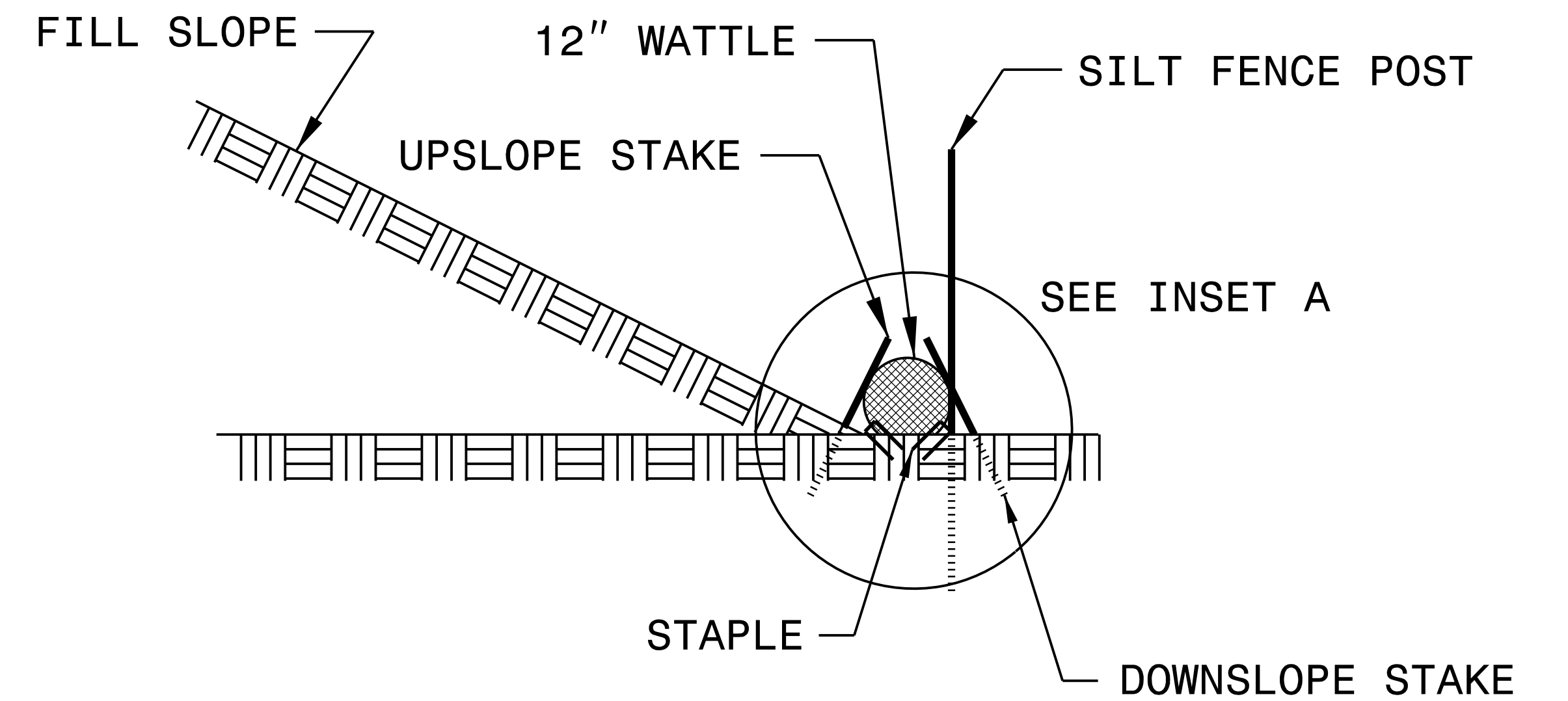
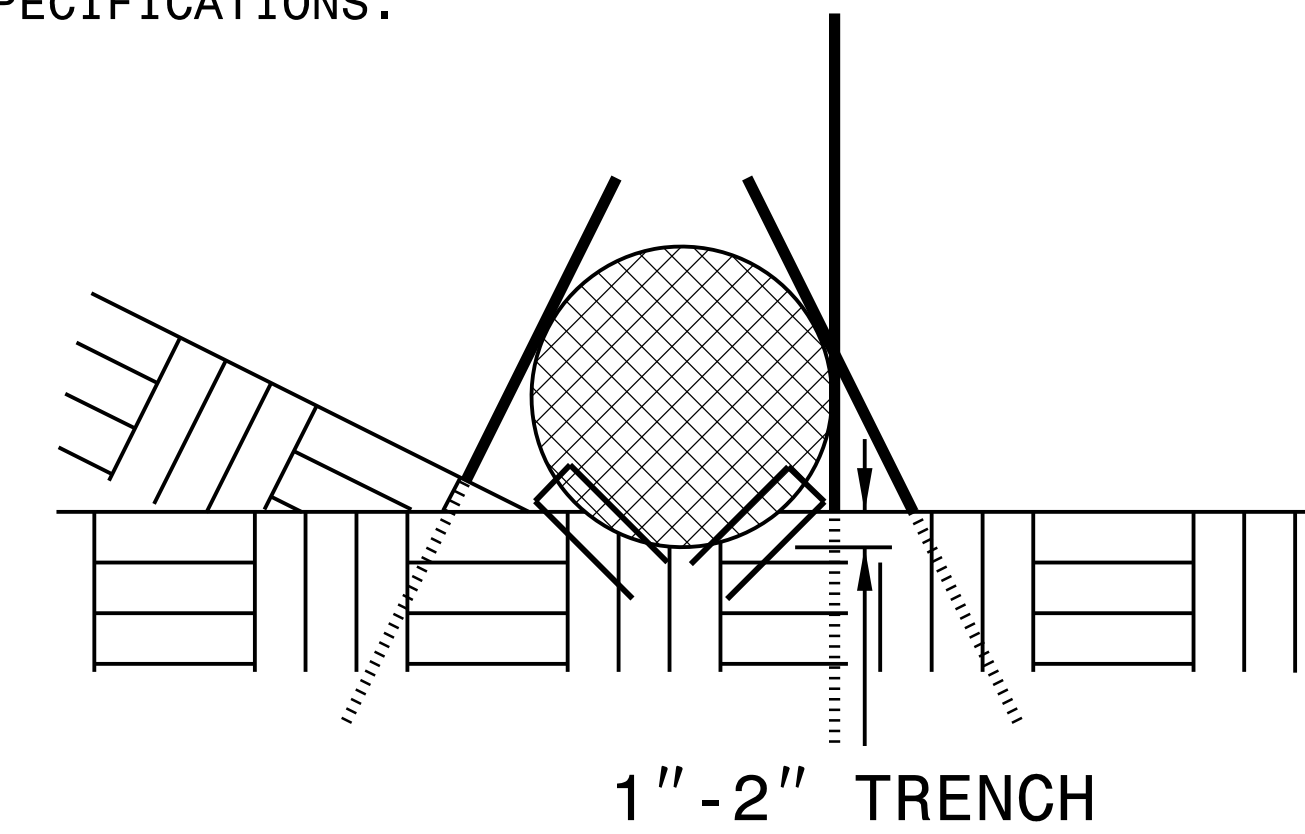
PROJECT REFERENCE NO. <i>B-5741</i>	SHEET NO. <i>EC-2A</i>
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



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



DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

PROJECT REFERENCE NO.	SHEET NO.
<i>B-574I</i>	<i>EC-3</i>
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

SOIL STABILIZATION TIMEFRAMES

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

FINAL GRADE PLAN

PROJECT REFERENCE NO.	SHEET NO.
B-5741	EC-05/CONST.04
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NOTES: ANY DEVIATION FROM OPTIONS GIVEN WILL REQUIRE PRIOR APPROVAL BY ENGINEER.

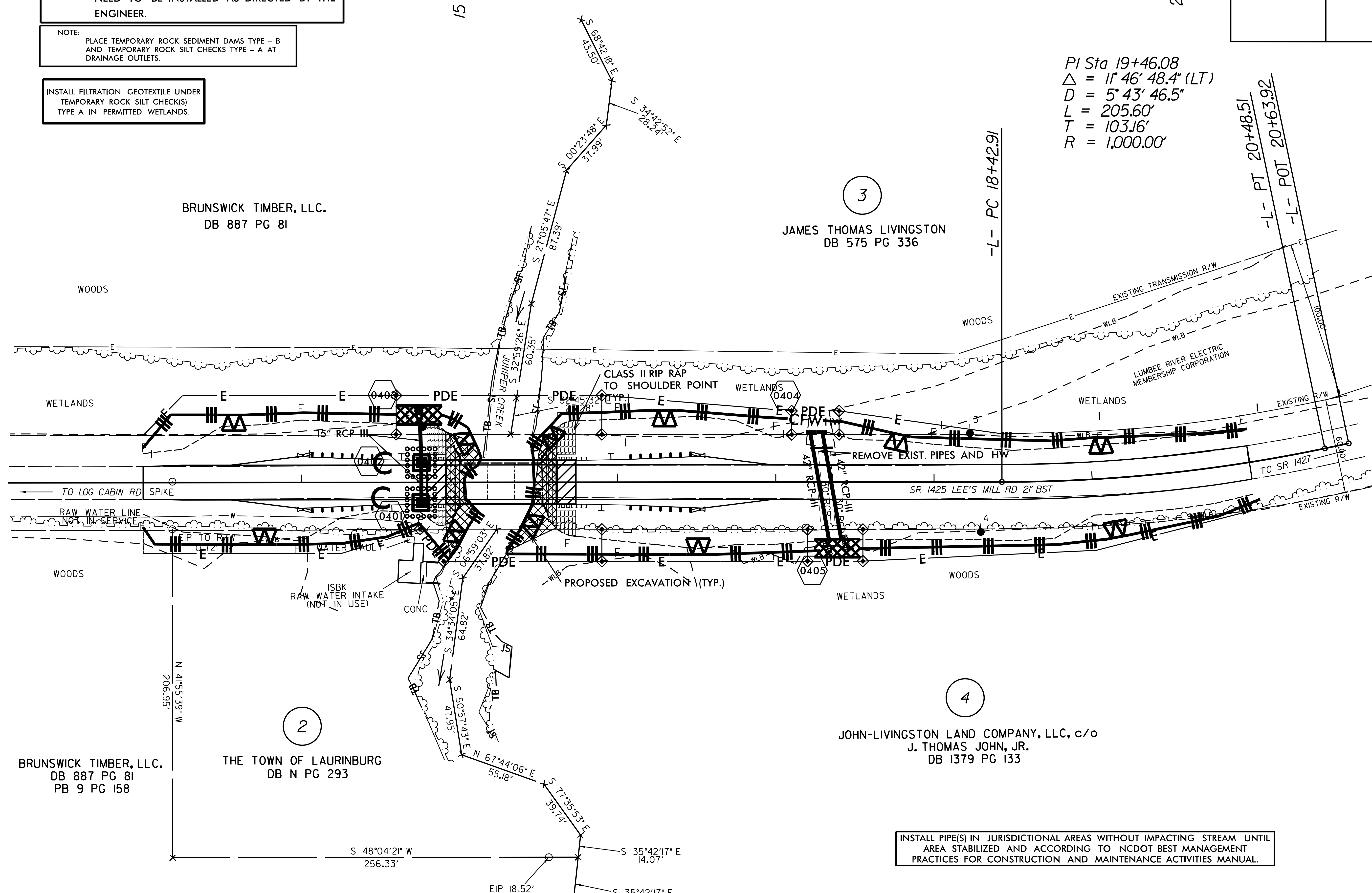
ADDITIONAL EROSION CONTROL DEVICES MAY NEED TO BE INSTALLED AS DIRECTED BY THE ENGINEER.

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

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

PI Sta 19+46.08
 $\Delta = 1^{\circ} 46' 48.4''$ (LT)
 $D = 5^{\circ} 43' 46.5''$
 $L = 205.60'$
 $T = 103.16'$
 $R = 1,000.00'$

REVISIONS



BRUNSWICK TIMBER, LLC.
DB 887 PG 81

JAMES THOMAS LIVINGSTON
DB 575 PG 336

BRUNSWICK TIMBER, LLC.
DB 887 PG 81
PB 9 PG 158

THE TOWN OF LAURINBURG
DB N PG 293

JOHN-LIVINGSTON LAND COMPANY, LLC, c/o
J. THOMAS JOHN, JR.
DB 1379 PG 133

INSTALL PIPE(S) IN JURISDICTIONAL AREAS WITHOUT IMPACTING STREAM UNTIL AREA STABILIZED AND ACCORDING TO NCDOT BEST MANAGEMENT PRACTICES FOR CONSTRUCTION AND MAINTENANCE ACTIVITIES MANUAL.

T.I.P. NO.	SHEET NO.
B-5741	UO-01

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

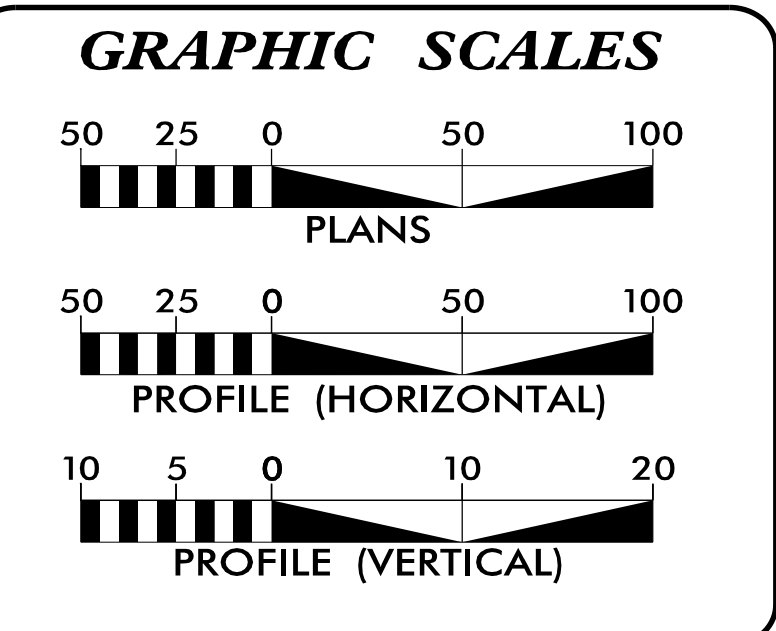
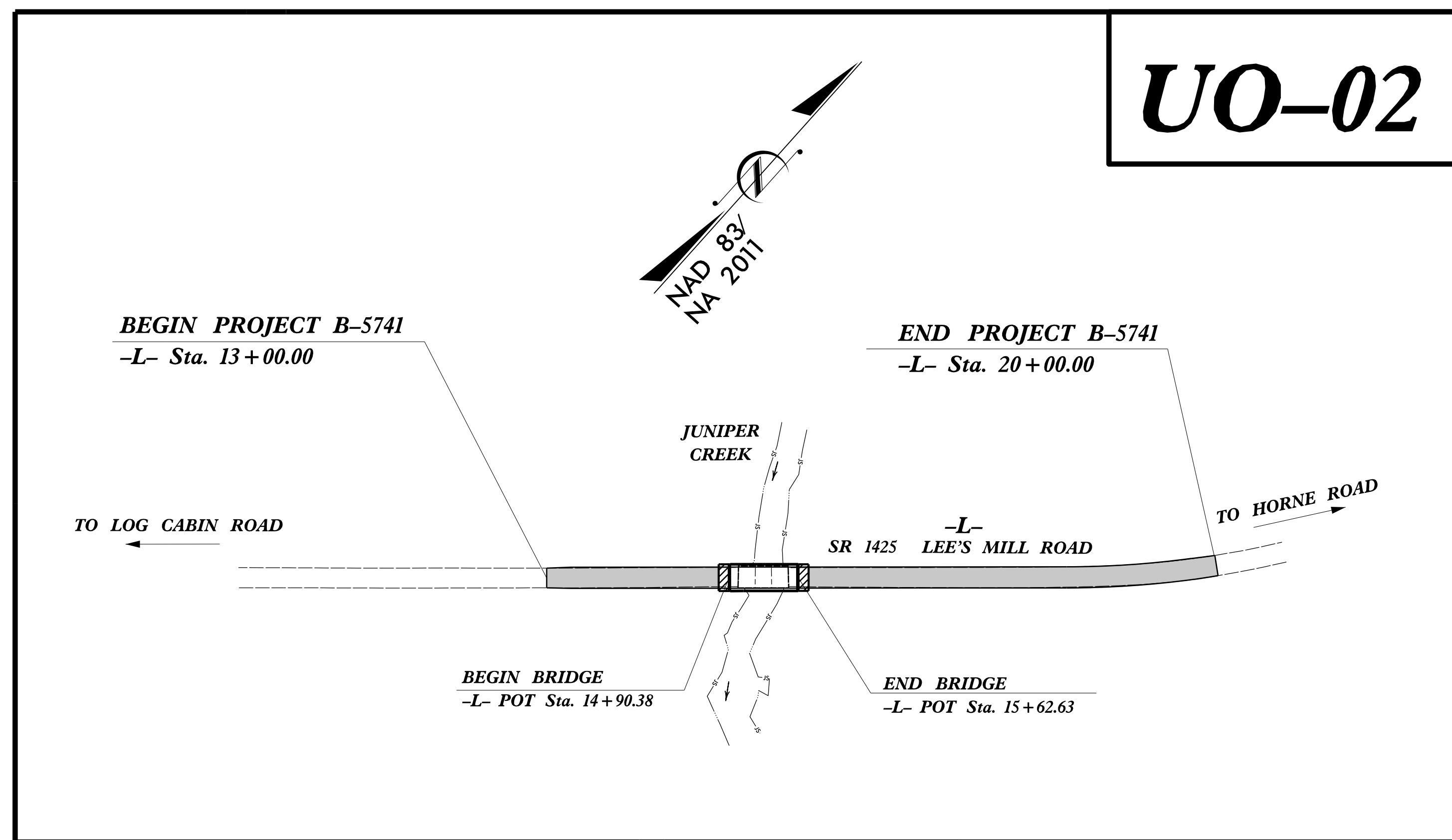
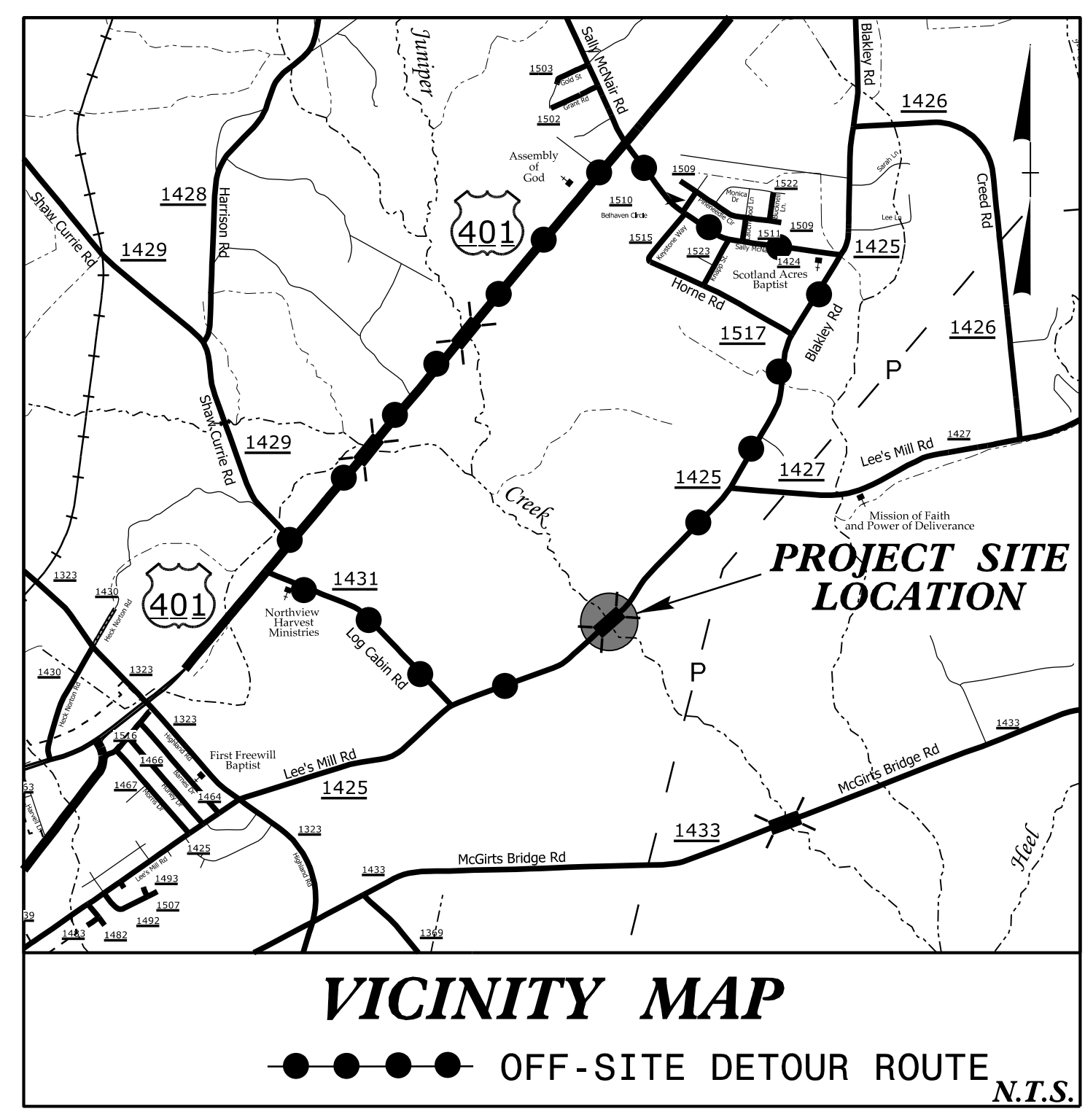
STATE OF NORTH CAROLINA
 DIVISION OF HIGHWAYS

**UTILITIES BY OTHERS PLANS
 SCOTLAND COUNTY**

LOCATION: BRIDGE No. 820030 ON SR 1425 (LEE'S MILL ROAD)
 OVER JUNIPER CREEK

TYPE OF WORK: AERIAL & BURIED UTILITIES

TIP PROJECT: B-5741



INDEX OF SHEETS

SHEET NO.:	DESCRIPTION:
UO-01	TITLE SHEET
UO-02	UBO PLAN SHEET

UTILITY OWNERS ON PROJECT

(A) LUMBEE RIVER EMC - POWER
 (B) CITY OF LAURINBURG - WATER

PLANS PREPARED BY:

CH ENGINEERING

3220 GLEN ROYAL RD. RALEIGH, NC 27617
 TELE 919.788.0224 FAX 919.788.0232
 NC LICENSE #P-0189

UTILITIES PROJECT ENGINEER
 Mary Jo Lee, P.E.

**DIVISION OF HIGHWAYS
 UTILITIES UNIT**
 1555 MAIL SERVICES CENTER
 RALEIGH, NC 27699-1555
 PHONE (919) 707-6690
 FAX (919) 250-4151

 UTILITIES REGIONAL ENGINEER

 UTILITIES ENGINEER

JAMIE YOW
 UTILITIES AREA COORDINATOR

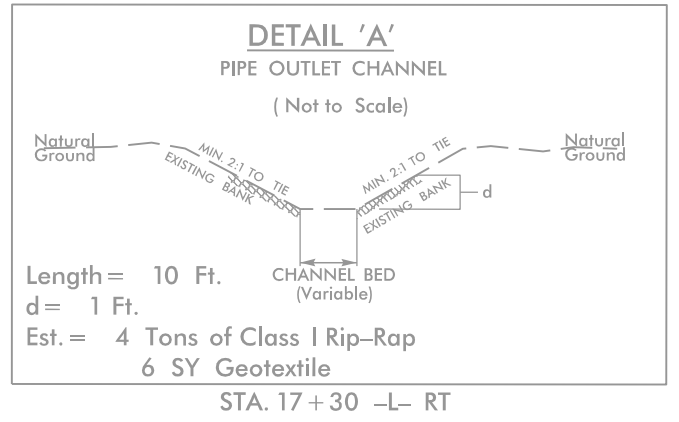
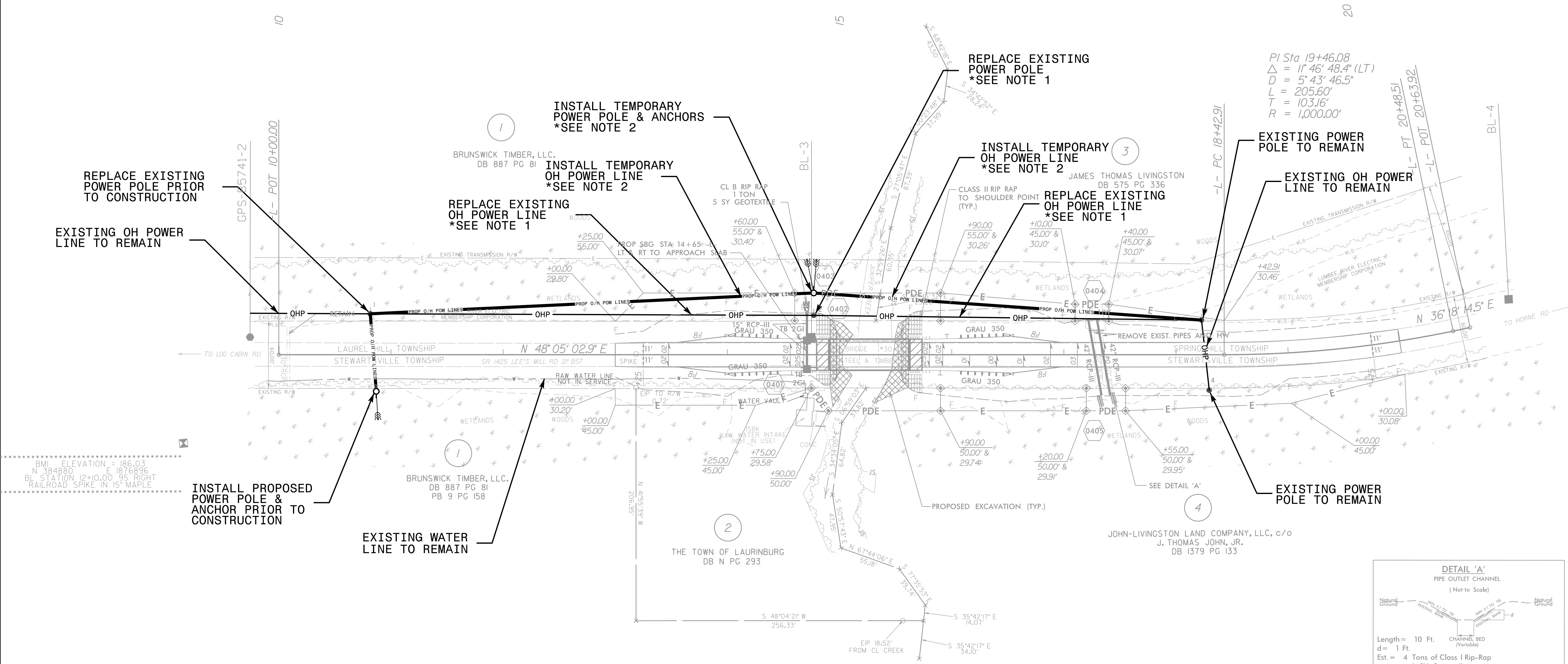
 UTILITIES COORDINATOR

UTILITIES BY OTHERS

NOTE:
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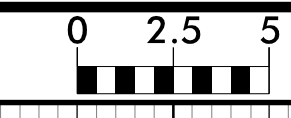
CH ENGINEERING
 3220 GLEN ROYAL RD. RALEIGH, NC 27617
 TELE 919.788.0224 FAX 919.788.0232
 NC LICENSE #P-0189

NOTES:
 1: LUMBEE RIVER EMC TO REMOVE EXISTING POLES AND OH LINES DURING PRECONSTRUCTION THEN PERMANENTLY INSTALL REPLACEMENT POLES & OH LINES AT PREVIOUS EXISTING LOCATIONS AFTER CONSTRUCTION
 2: LUMBEE RIVER EMC TO INSTALL TEMPORARY POLES AND ANCHORS PRIOR TO CONSTRUCTION AND WILL REMOVE AFTER CONSTRUCTION

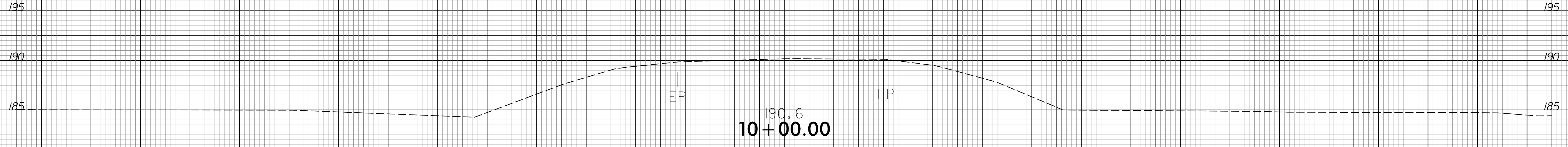
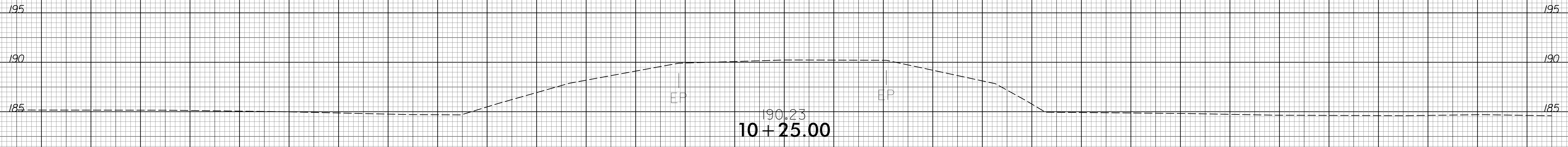
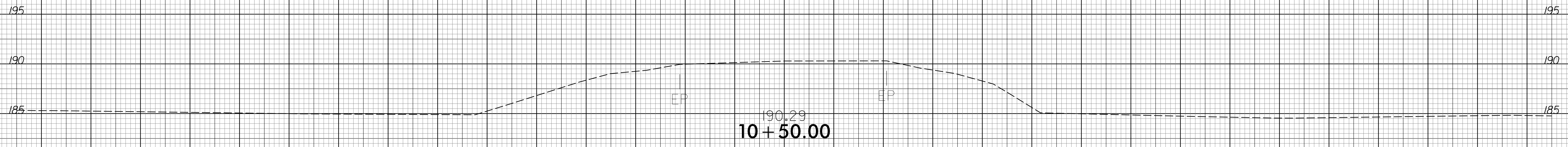
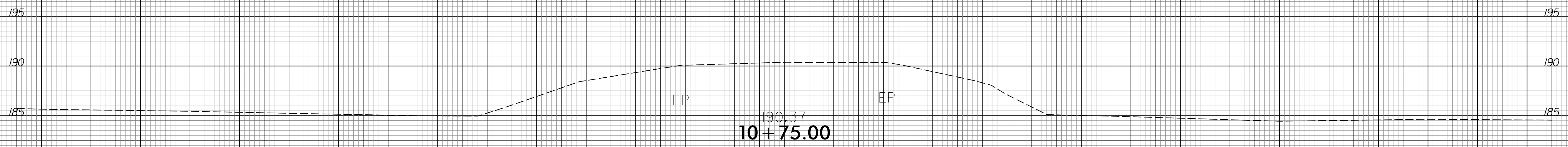


5/14/99

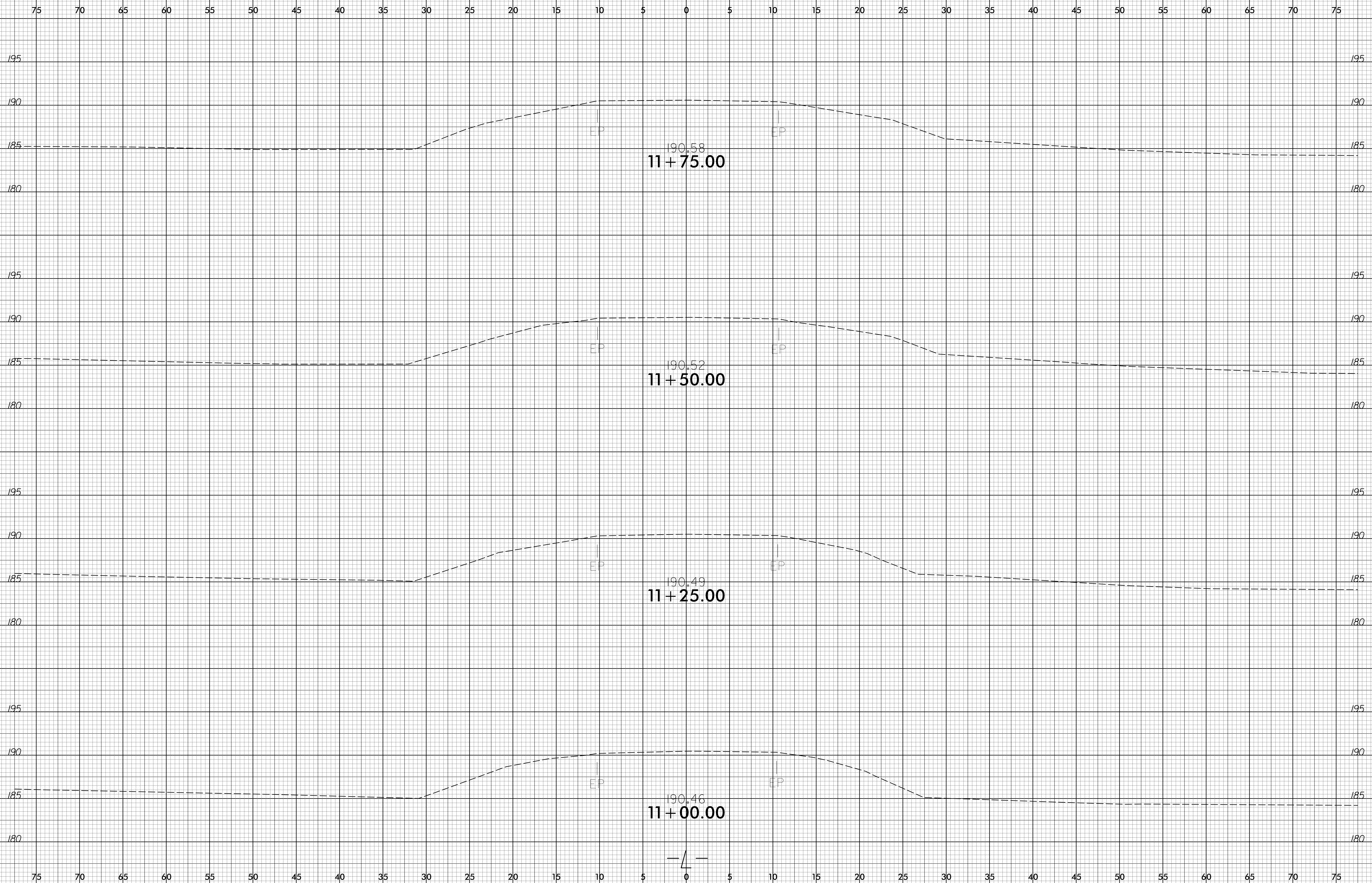
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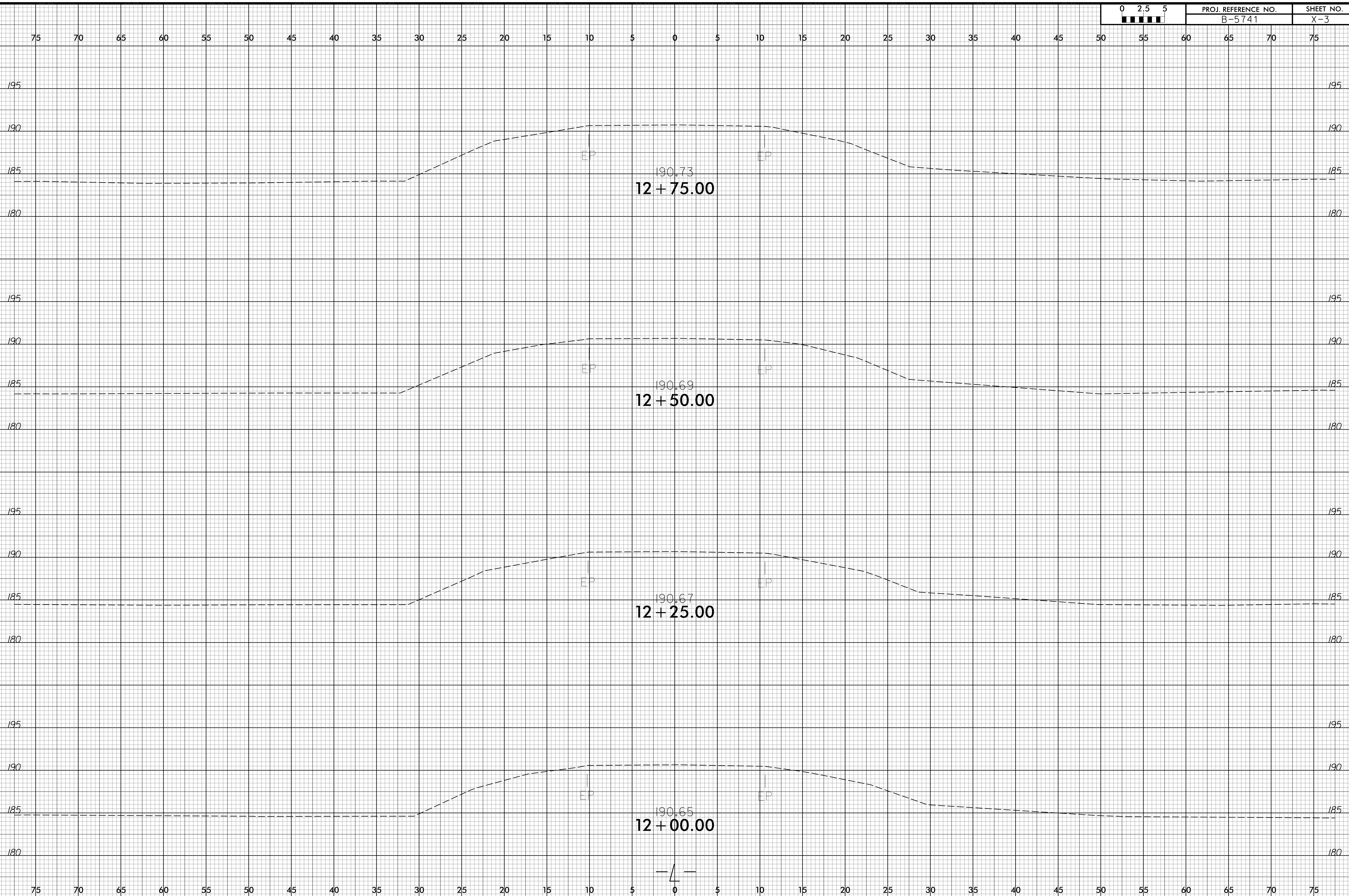


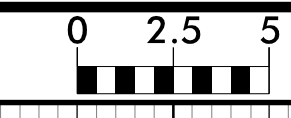
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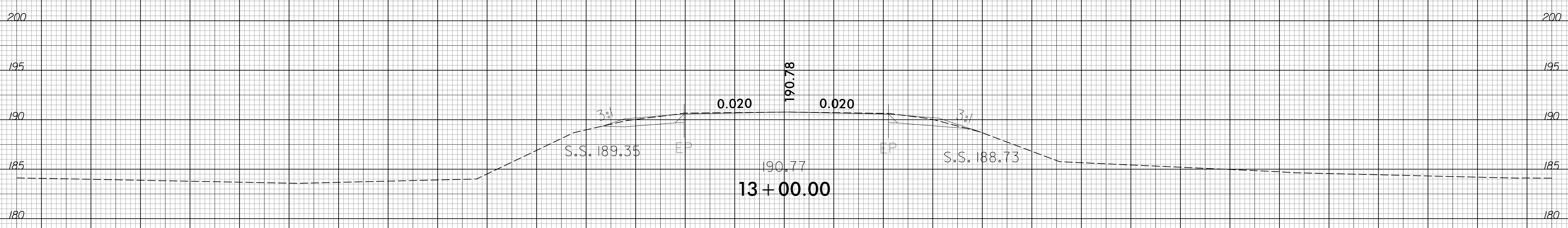
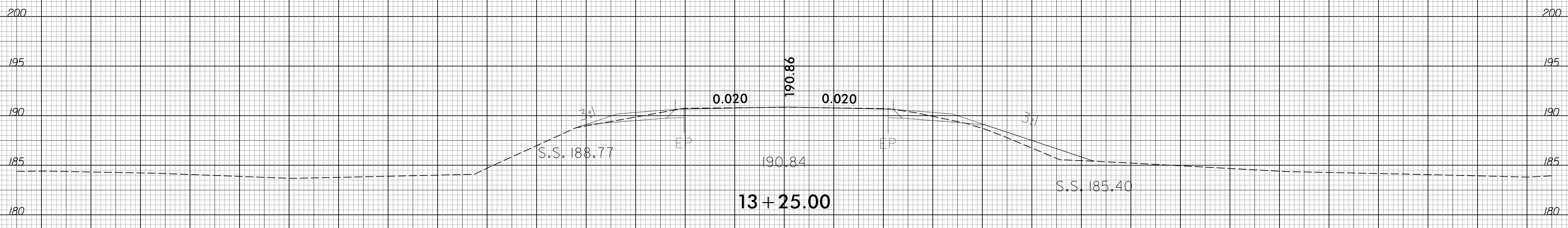
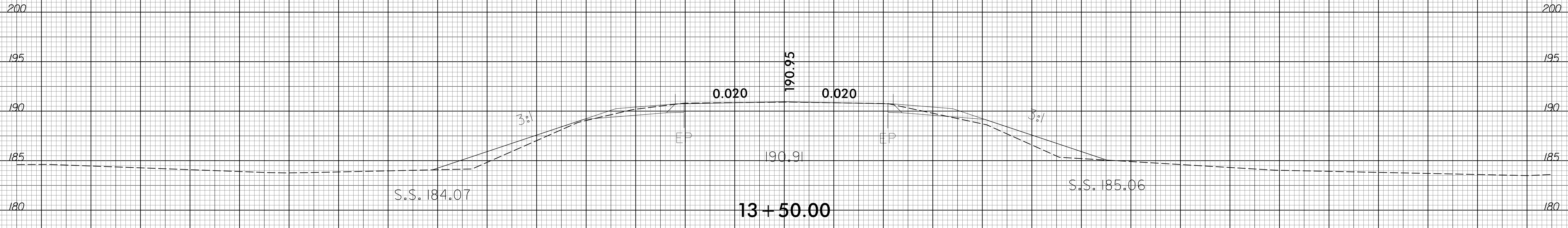
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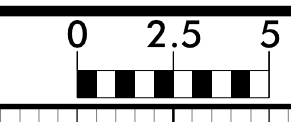




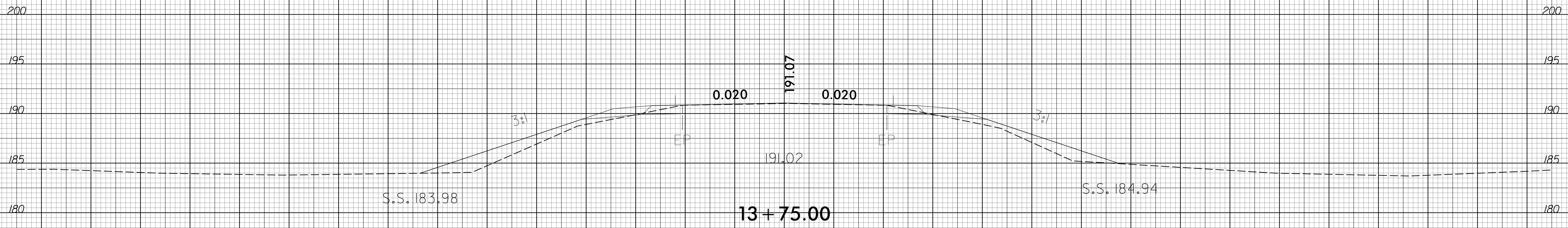
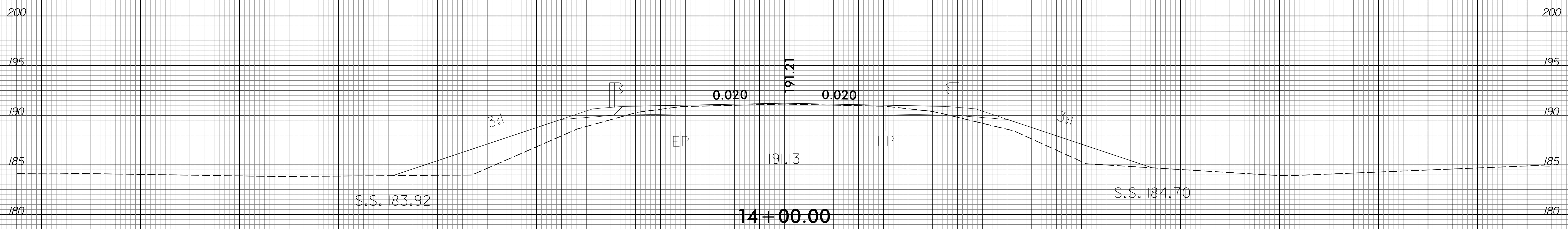
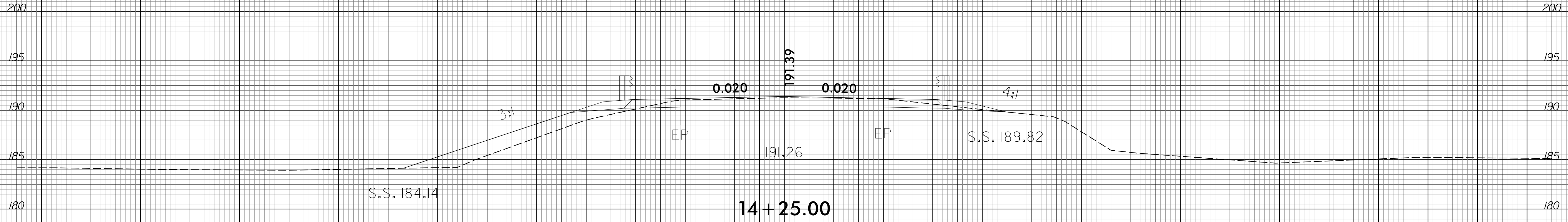
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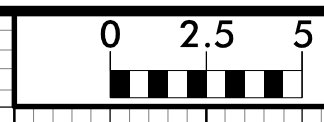
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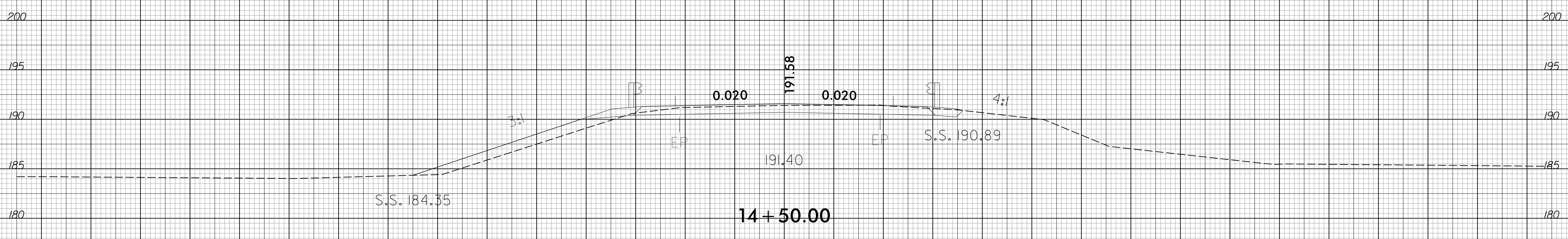
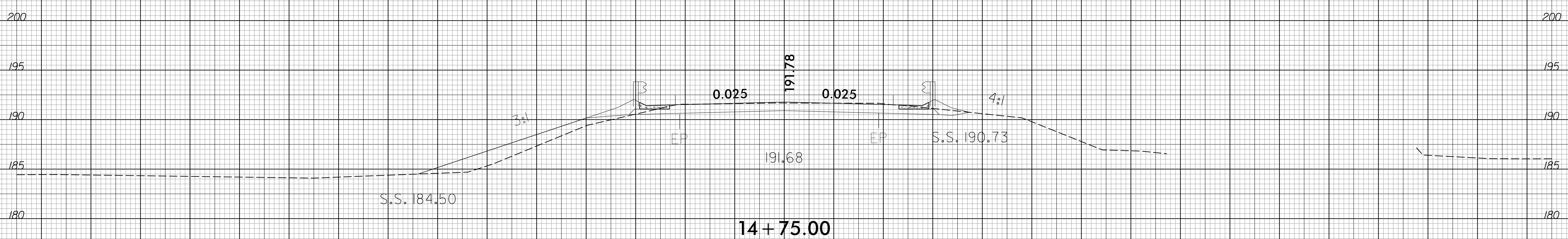
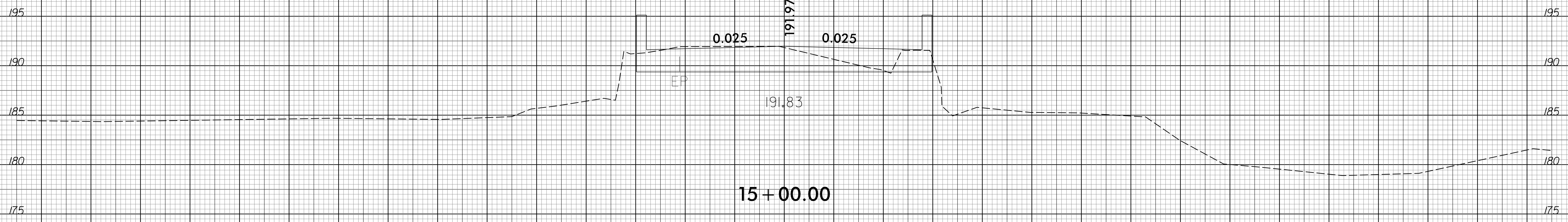
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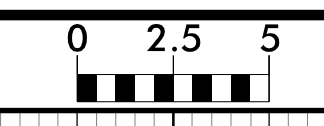


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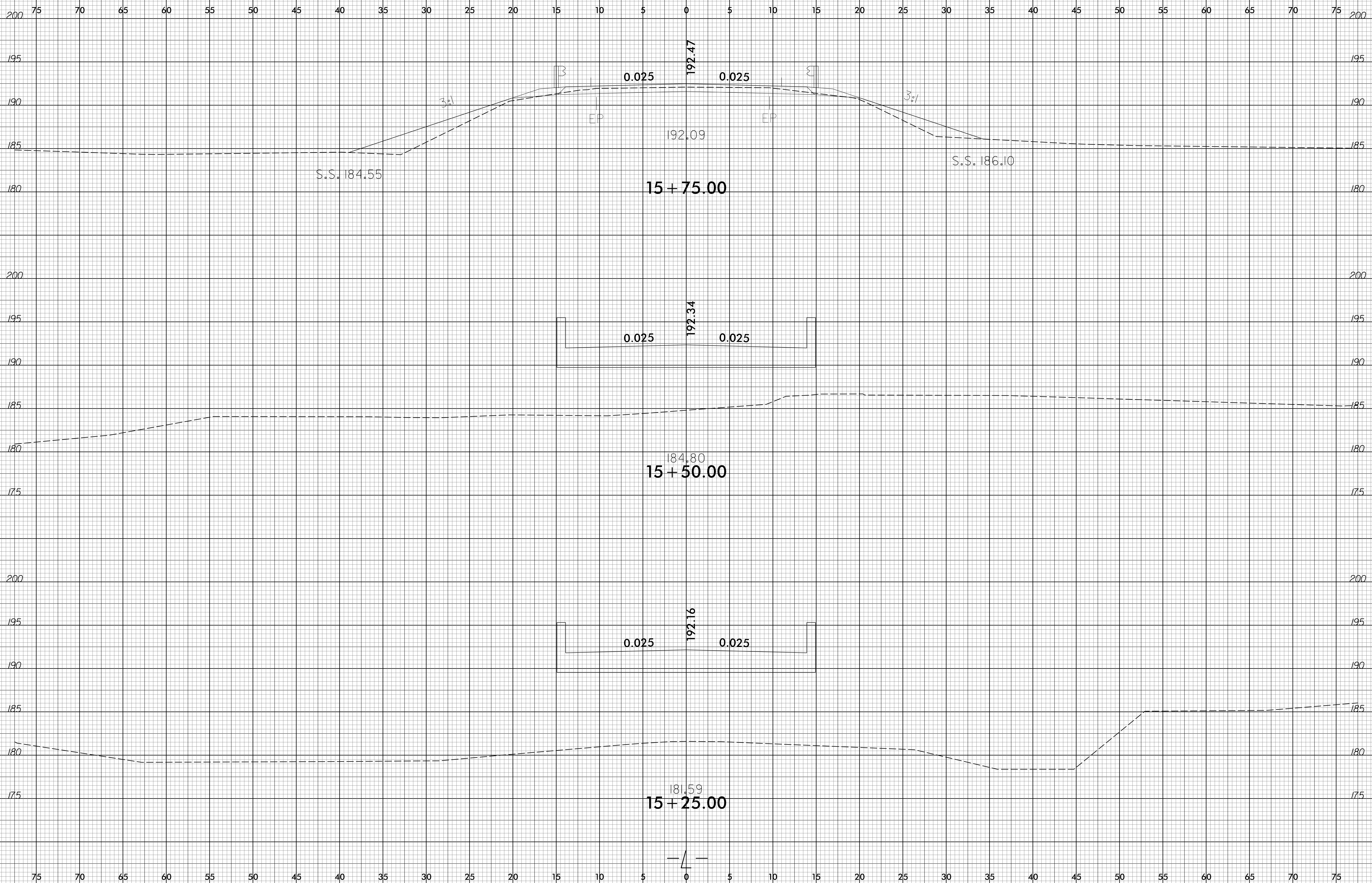
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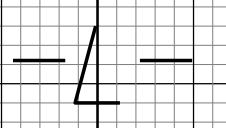


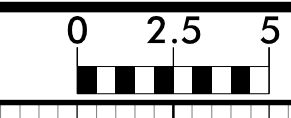
PROJ. REFERENCE NO.
B-5741

SHEET NO.
X-7

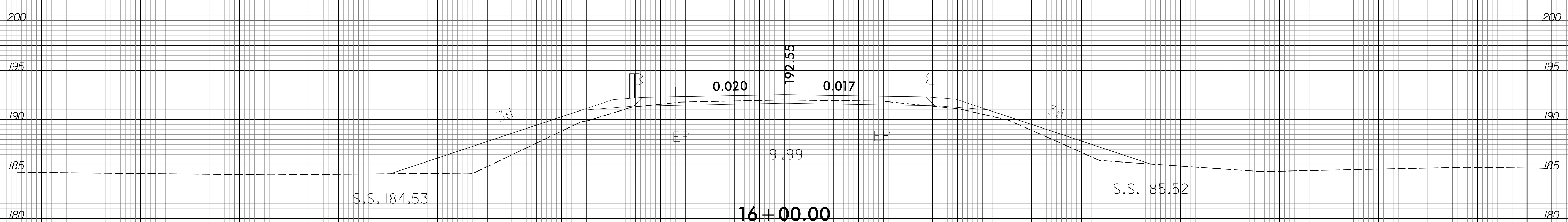
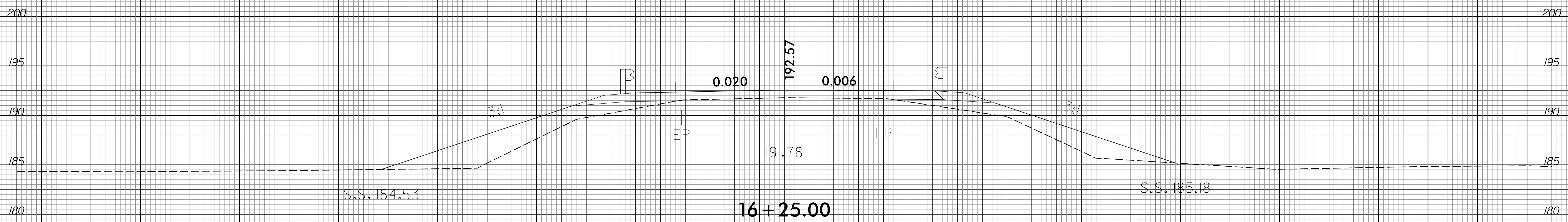
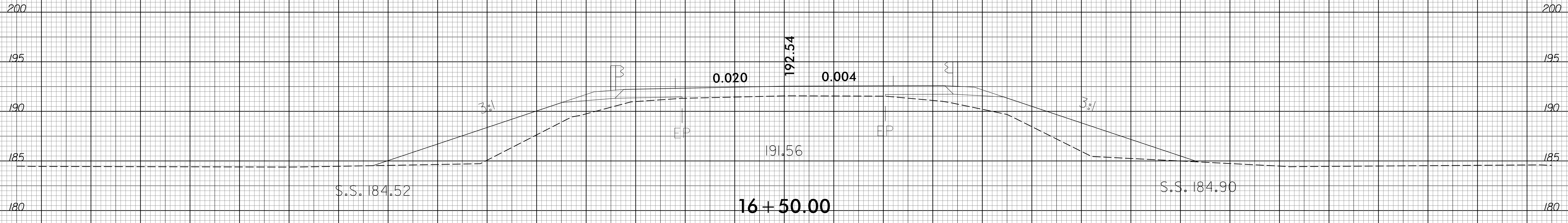


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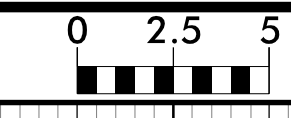




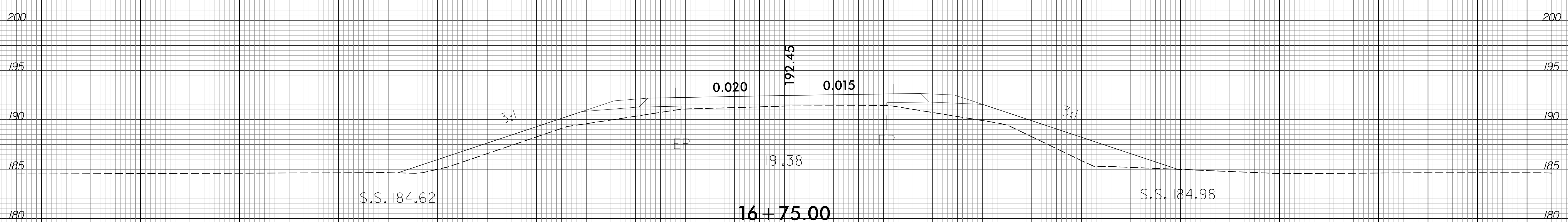
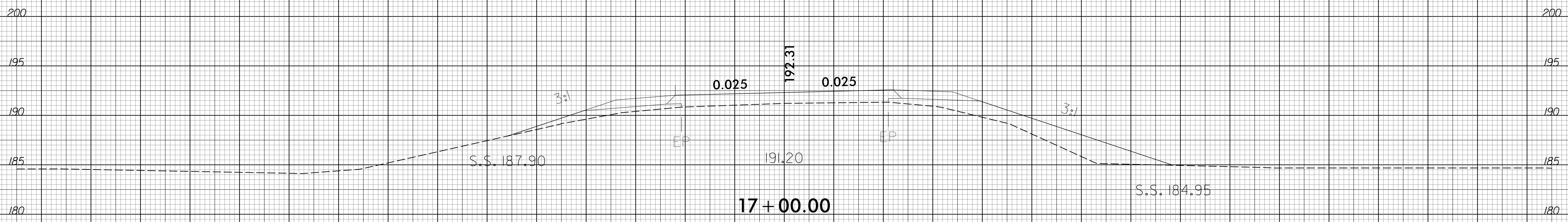
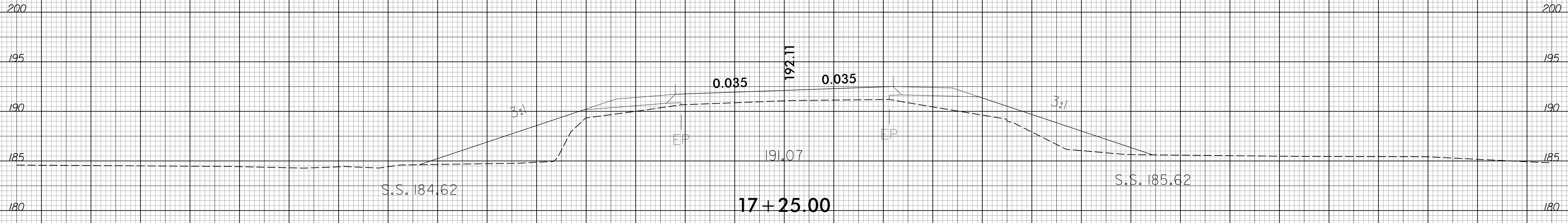
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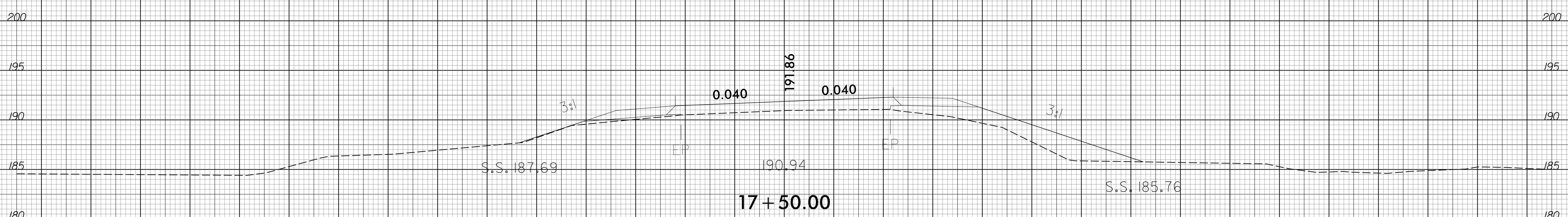
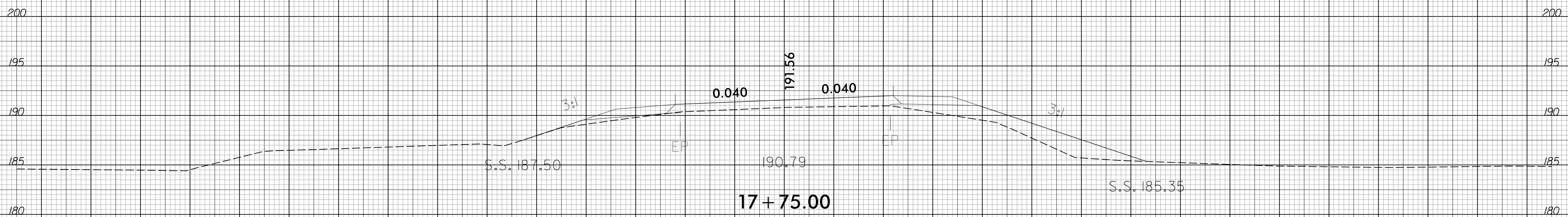
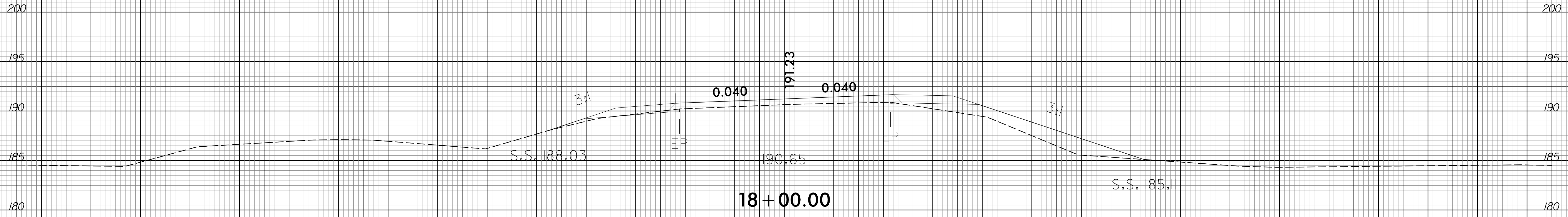
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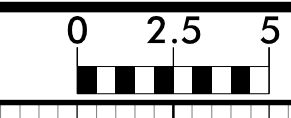
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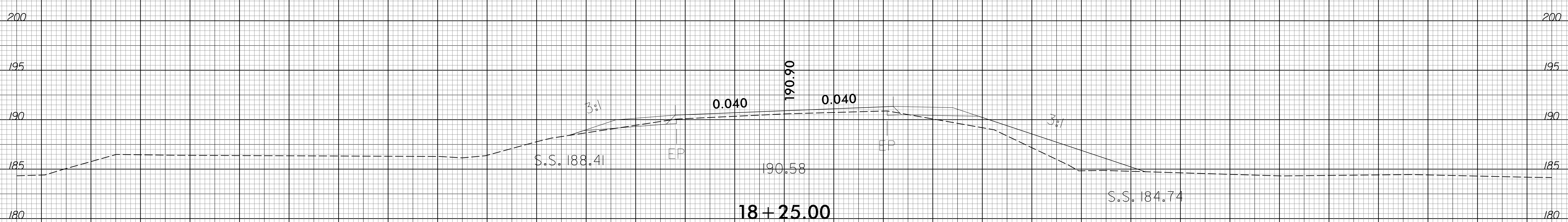
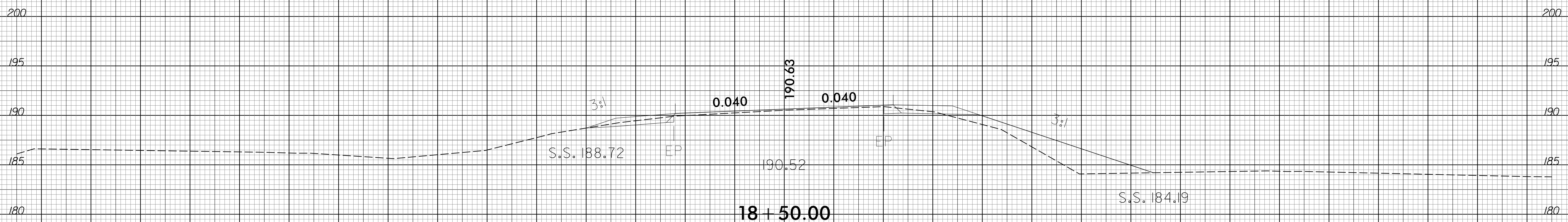
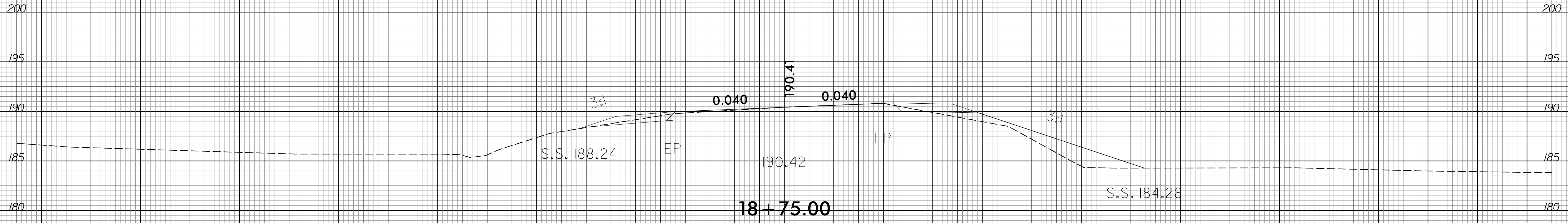


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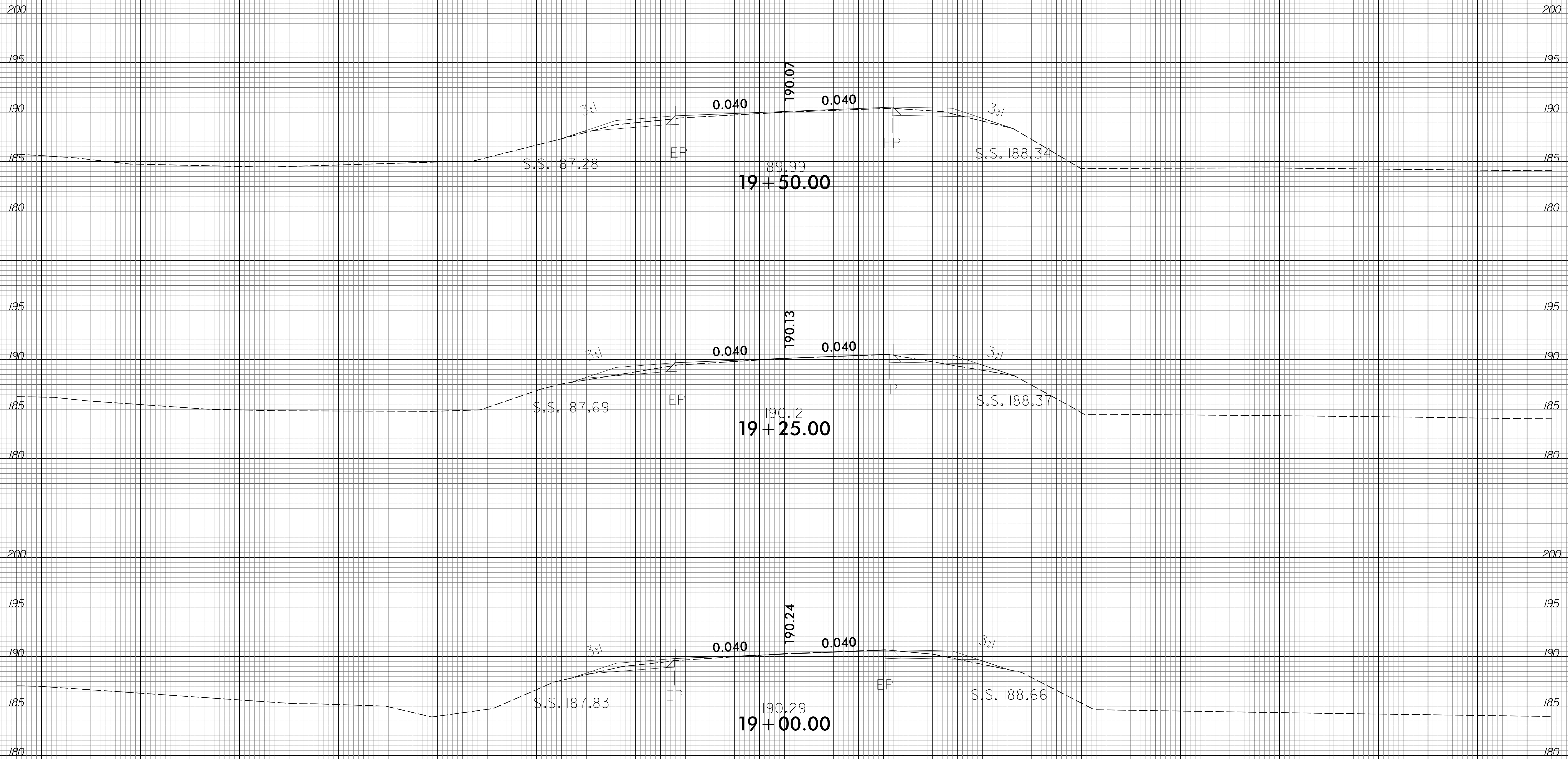
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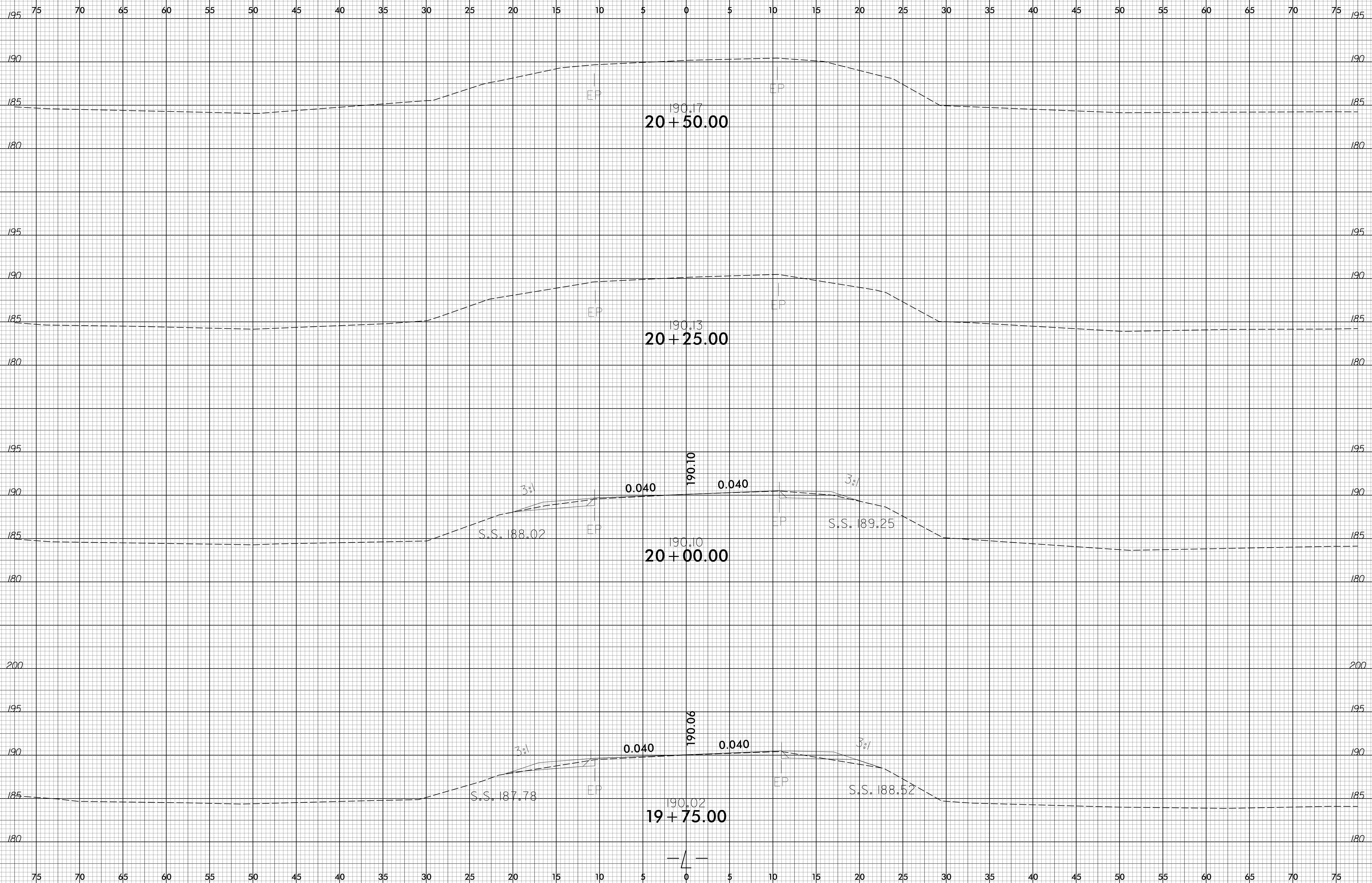
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14+50 15+00 15+50 16+00

SPAN A

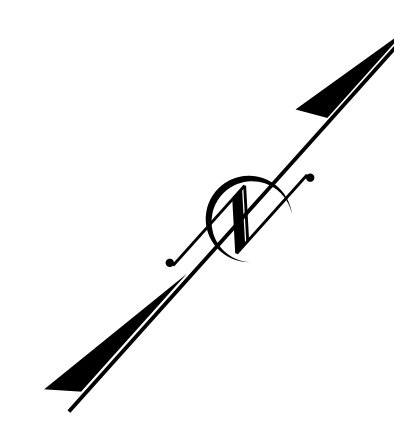
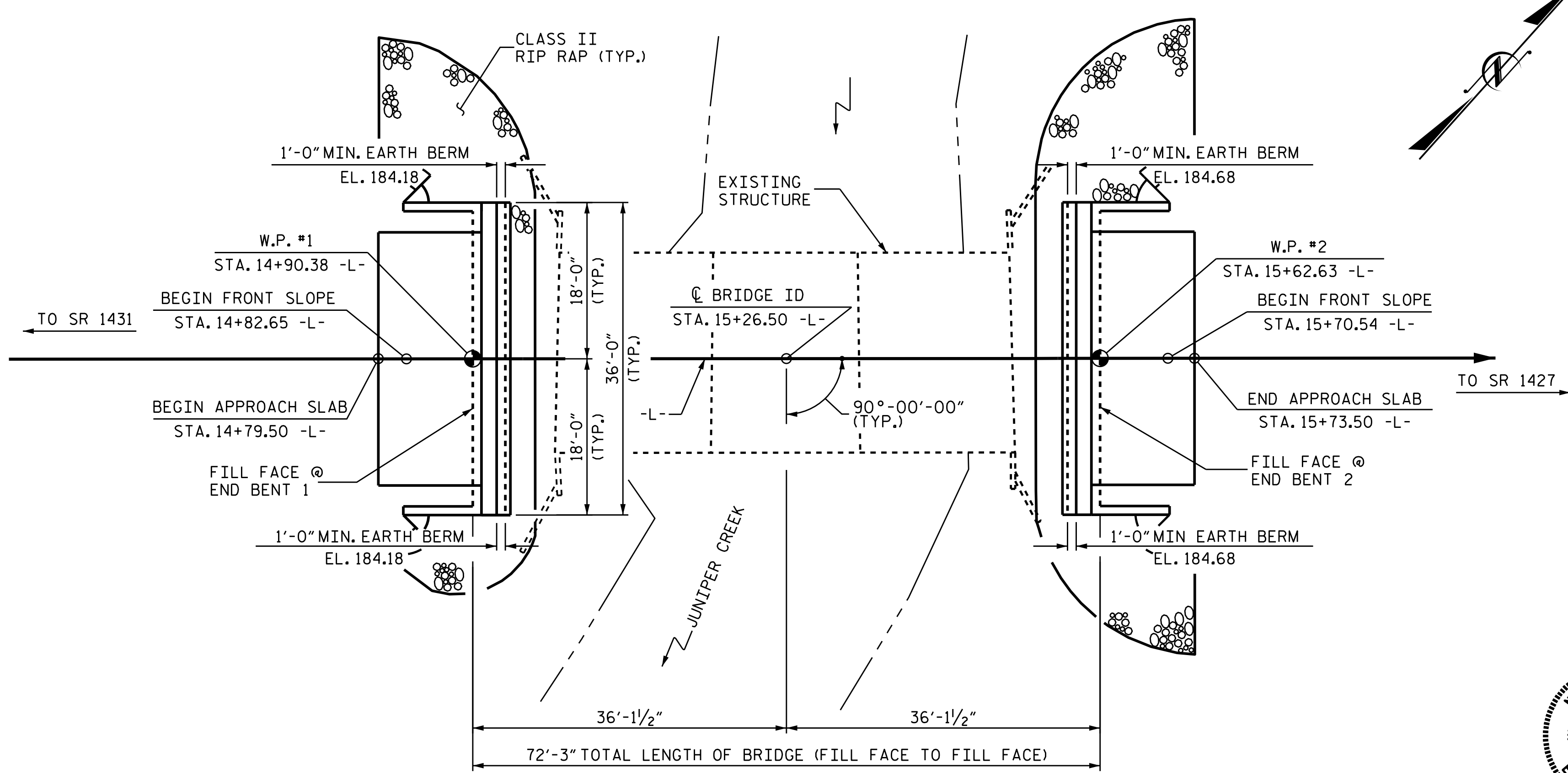
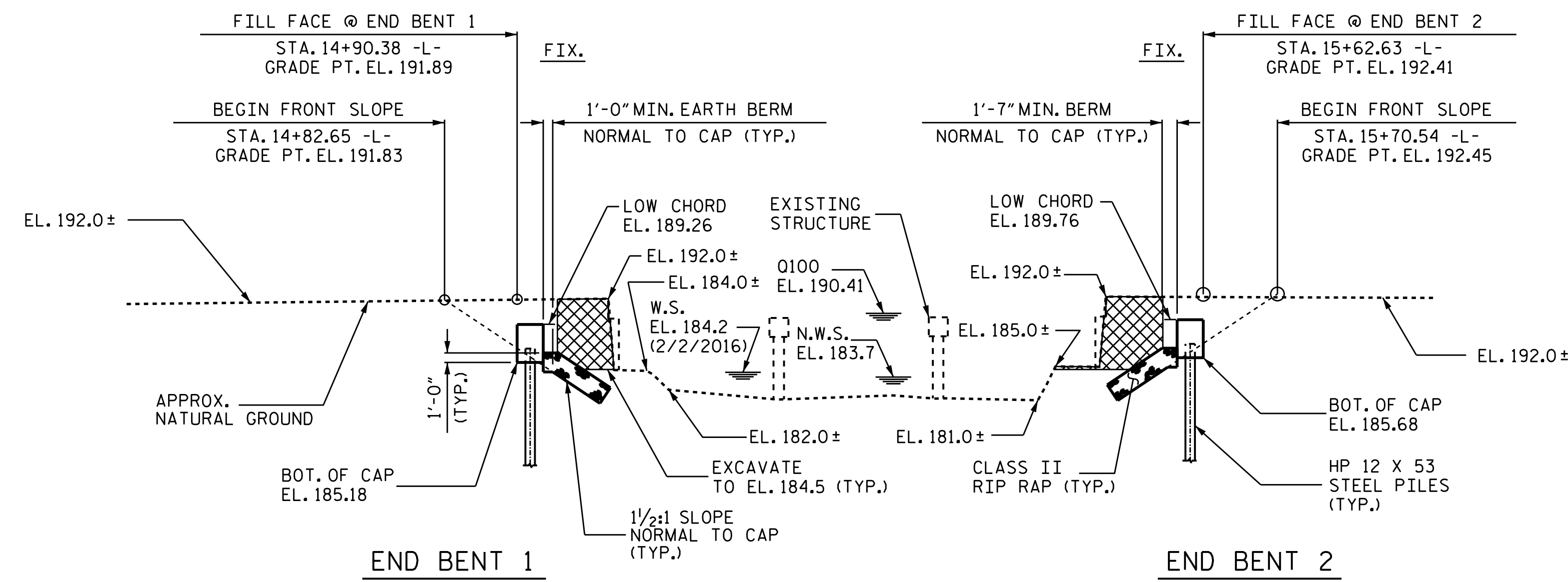
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PI = STA. 16+55.00 -L-
EL. = 193.15'
VC = 240'

GRADE DATA

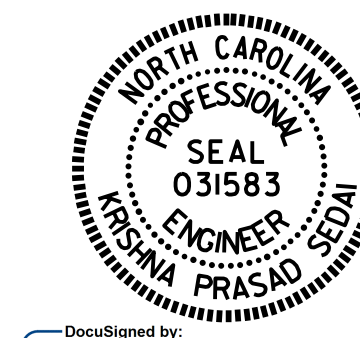
UNCLASSIFIED
STRUCTURE
EXCAVATION

I HEREBY CERTIFY THESE PLANS
ARE THE AS-BUILT PLANS



PROJECT NO. B-5741
SCOTLAND COUNTY
STATION: 15+26.50 -L-
SHEET 1 OF 3 REPLACES BRIDGE No. 30

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
GENERAL DRAWING
FOR BRIDGE OVER
JUNIPER CREEK
ON SR 1425 BETWEEN
SR 1431 AND SR 1427



DocuSigned by:
Emily E. Murray
CAE87AEDC8AED
8/29/2016

DocuSigned by:
Krishna P. Sedai
EABF7941508F4B7
8/29/2016

DRAWN BY : Z. THORNTON DATE : 05/11/16
CHECKED BY : K.P. SEDAI DATE : 7/6/16
DESIGN ENGINEER OF RECORD: K. P. SEDAI DATE : 8/17/16

DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

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

NOTES

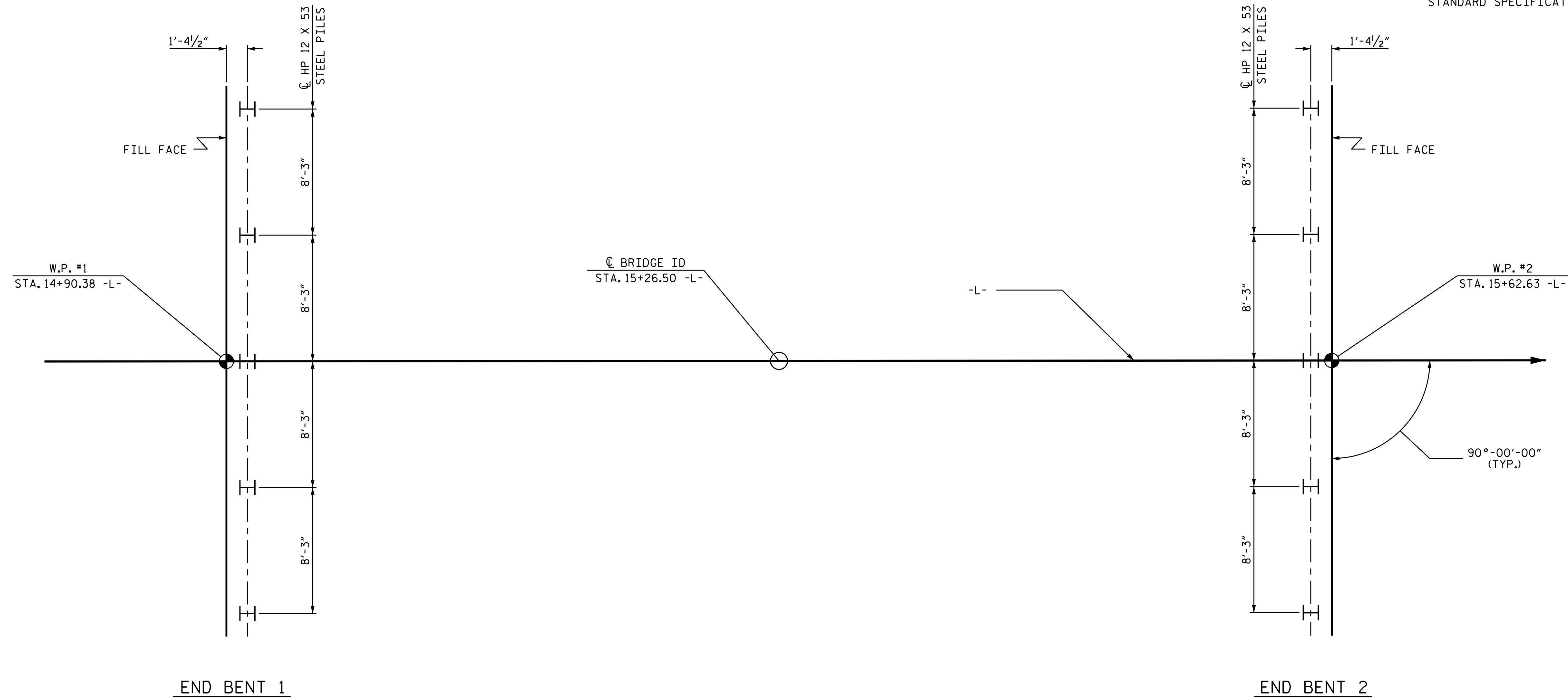
FOR PILES, SEE GEOTECHNICAL SPECIAL PROVISIONS AND SECTION 450 OF THE STANDARD SPECIFICATIONS.

PILES AT END BENT 1 AND END BENT 2 ARE DESIGNED FOR A FACTORED RESISTANCE OF 100 TONS PER PILE.

DRIVE PILES AT END BENT 1 AND END BENT 2 TO A REQUIRED DRIVING RESISTANCE OF 170 TONS PER PILE.

IT HAS BEEN ESTIMATED THAT A HAMMER WITH AN EQUIVALENT RATED ENERGY IN THE RANGE OF 20,000 TO 30,000 FT.-LBS PER BLOW WILL BE REQUIRED TO DRIVE PILES AT END BENT 1 AND END BENT 2. THIS ESTIMATED ENERGY RANGE DOES NOT RELEASE THE CONTRACTOR FROM PROVIDING DRIVING EQUIPMENT IN ACCORDANCE WITH SUBARTICLE 450-3(D)(2) OF THE STANDARD SPECIFICATIONS.

TESTING THE FIRST PRODUCTION PILE WITH THE PDA DURING DRIVING, RESTRIKING OR REDRIVING IS REQUIRED AT END BENT 1 AND END BENT 2. FOR PDA TESTING, SEE SECTION 450 OF THE STANDARD SPECIFICATIONS.

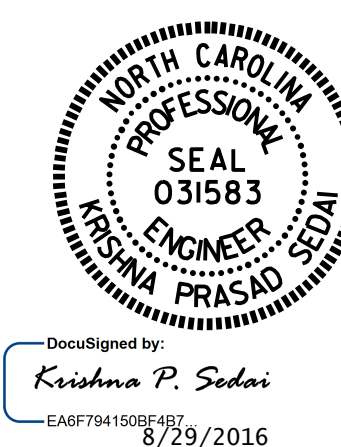


FOUNDATION LAYOUT

DIMENSIONS LOCATING PILES ARE SHOWN TO THE CENTERLINE OF PILES.

PROJECT NO. B-5741
SCOTLAND COUNTY
 STATION: 15+26.50 -L-

SHEET 2 OF 3



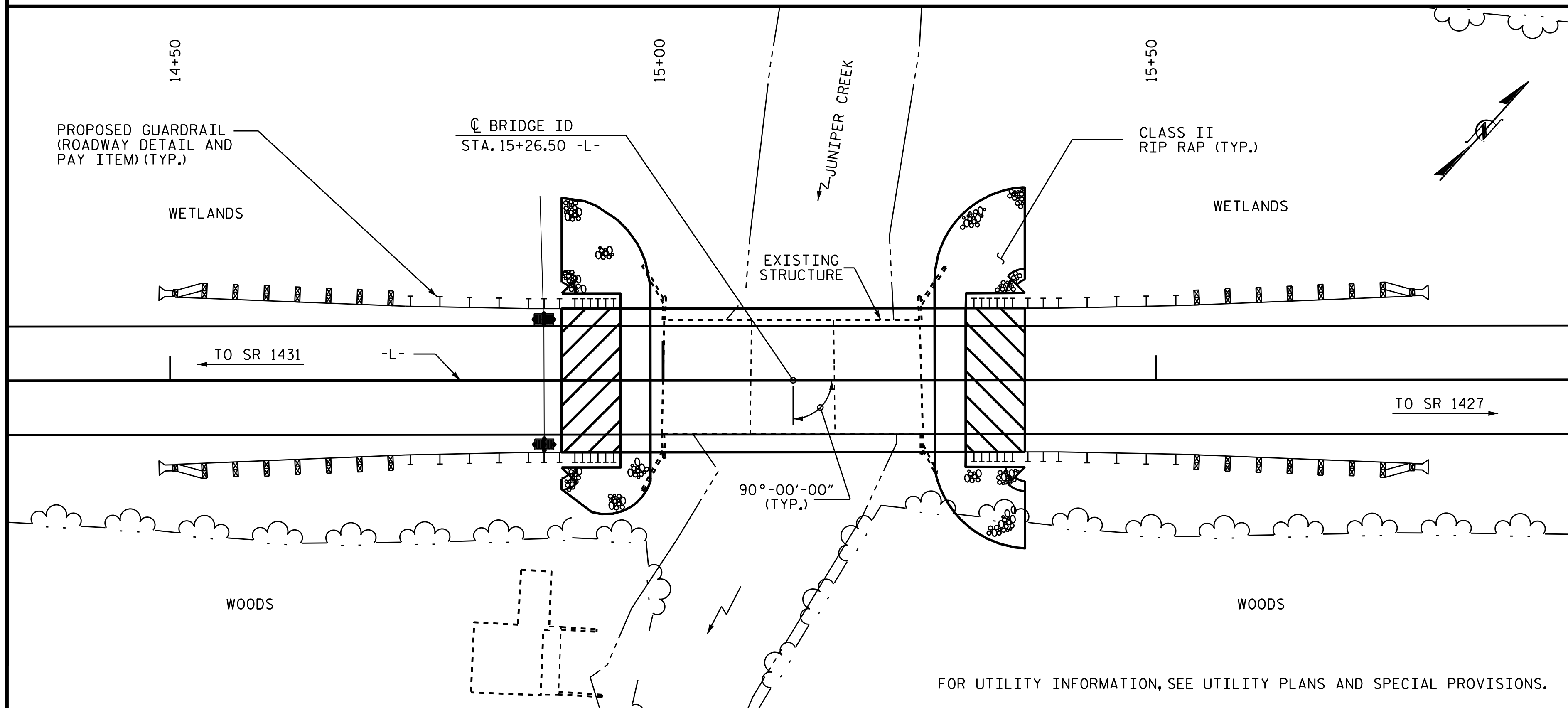
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
**GENERAL DRAWING
 FOR BRIDGE OVER
 JUNIPER CREEK
 ON SR 1425 BETWEEN
 SR 1431 AND SR 1427**

DRAWN BY : Z. THORNTON DATE : 5/11/16
 CHECKED BY : K.P. SEDAI DATE : 7/6/16
 DESIGN ENGINEER OF RECORD: K. P. SEDAI DATE : 8/17/16

DOCUMENT NOT CONSIDERED
 FINAL UNLESS ALL
 SIGNATURES COMPLETED

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

B.M. #1: R/R SPIKE IN 15" Ø MAPLE, 95' RT. OF STA. 12+10.00 -BL-, EL. 186.03



LOCATION SKETCH

NOTES

ASSUMED LIVE LOAD = HL 93 OR ALTERNATE LOADING.
 FOR OTHER DESIGN DATA AND GENERAL NOTES, SEE SHEET SN.
 FOR EROSION CONTROL MEASURES, SEE EROSION CONTROL PLANS.
 THIS BRIDGE HAS BEEN DESIGNED IN ACCORDANCE WITH THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS.
 THIS BRIDGE IS LOCATED IN SEISMIC ZONE 2.
 THE EXISTING STRUCTURE CONSISTING OF 1 SPAN @ 18'-0", 1 SPAN @ 16'-8" AND 1 SPAN @ 17'-8" WITH A 4.5" AWS AND TIMBER DECK ON STEEL I-BEAMS, ON TIMEBER CAPS AND PILES AND TIMBER BULKHEADS, WITH A CLEAR ROADWAY WIDTH OF 23'-0" LOCATED AT THE PROPOSED STRUCTURE, SHALL BE REMOVED. THE EXISTING BRIDGE IS PRESENTLY POSTED BELOW THE LEGAL LOAD LIMIT. SHOULD THE STRUCTURAL INTEGRITY OF THE BRIDGE FURTHER DETERIORATE, THIS LOAD LIMITATION MAY BE REDUCED AS FOUND NECESSARY DURING THE LIFE OF THE PROJECT.
 REMOVAL OF THE EXISTING BRIDGE SHALL BE PERFORMED IN A MANNER THAT PREVENTS DEBRIS FROM FALLING INTO THE WATER. THE CONTRACTOR SHALL SUBMIT DEMOLITION PLANS FOR REVIEW AND REMOVE THE BRIDGE IN ACCORDANCE WITH ARTICLE 402-2 OF THE STANDARD SPECIFICATIONS.
 THE MATERIAL SHOWN IN THE CROSS-HATCHED AREA ON SHEET S-1 SHALL BE EXCAVATED FOR A DISTANCE OF 26 FT. EACH SIDE OF CENTERLINE ROADWAY AS DIRECTED BY THE ENGINEER. THIS WORK WILL BE PAID FOR AT THE CONTRACT LUMP SUM PRICE FOR UNCLASSIFIED STRUCTURE EXCAVATION. SEE SECTION 412 OF THE STANDARD SPECIFICATIONS.
 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.

ASPHALT WEARING SURFACE IS INCLUDED IN ROADWAY QUANTITY ON ROADWAY PLANS.
 FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.
 FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.
 INASMUCH AS THE PAINT SYSTEM ON THE EXISTING STRUCTURAL STEEL CONTAINS LEAD, THE CONTRACTOR'S ATTENTION IS DIRECTED TO ARTICLE 107-1 OF THE STANDARD SPECIFICATIONS. ANY COSTS RESULTING FROM COMPLIANCE WITH APPLICABLE STATE OR FEDERAL REGULATIONS PERTAINING TO HANDLING OF MATERIALS CONTAINING LEAD BASED PAINT SHALL BE INCLUDED IN THE BID PRICE FOR "REMOVAL OF EXISTING STRUCTURE AT STATION 15+26.50 -L-".
 FOR FALSEWORK & FORMWORK, SEE SPECIAL PROVISIONS.
 FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.
 THIS STRUCTURE HAS BEEN DESIGNED IN ACCORDANCE WITH HEC 18, "EVALUATING SCOUR AT BRIDGES."
 AT THE CONTRACTOR'S OPTION, PRESTRESSED CONCRETE END BENT CAPS MAY BE SUBSTITUTED IN PLACE OF THE CAST-IN-PLACE CAPS. THE CONTRACTOR SHALL COORDINATE WITH THE RESIDENT ENGINEER TO RECEIVE REVISED PLANS AND DETAILS FROM THE STRUCTURES MANAGEMENT UNIT. THE REDESIGN AND ANY ADDITIONAL MATERIALS NEEDED WILL BE AT NO ADDITIONAL COST TO THE CONTRACTOR.
 FOR ASBESTOS ASSESSMENT FOR BRIDGE DEMOLITION AND RENOVATION ACTIVITIES, SEE SPECIAL PROVISIONS.

HYDRAULIC DATA

DESIGN DISCHARGE.....1,880 C.F.S.
 FREQUENCY OF DESIGN DISCHARGE..... 25 YRS
 DESIGN HIGH WATER ELEVATION..... 189.50
 DRAINAGE AREA.....51.6 SQ. MI.
 BASE DISCHARGE(Q100)..... 2,620 C.F.S.
 BASE HIGH WATER ELEVATION.....190.41

OVERTOPPING DATA

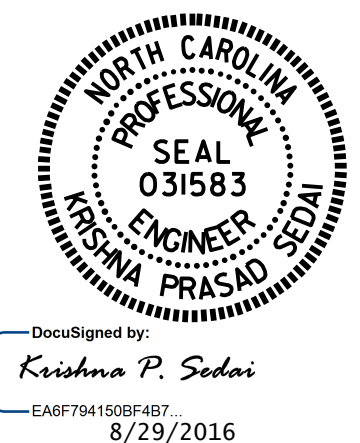
OVERTOPPING DISCHARGE.....2,015 C.F.S.
 FREQUENCY OF OVERTOPPING..... 25+ YRS.
 OVERTOPPING ELEVATION..... 189.73

TOTAL BILL OF MATERIAL

	REMOVAL OF EXISTING STRUCTURE	PDA TESTING	UNCLASSIFIED STRUCTURE EXCAVATION	CLASS A CONCRETE	BRIDGE APPROACH SLABS	REINFORCING STEEL	HP12X53 STEEL PILES		PILE REDRIVES	VERTICAL CONCRETE BARRIER RAIL	RIP RAP CLASS II (2'-0" THICK)	GEOTEXTILE FOR DRAINAGE	ELASTOMERIC BEARINGS	3'-0" X 2'-0" PRESTRESSED CONCRETE CORED SLABS		ASBESTOS ASSESSMENT
							NO.	LIN.FT.						NO.	LIN.FT.	
SUPERSTRUCTURE	LUMP SUM	EACH	LUMP SUM	CU. YDS.	LUMP SUM	LBS.			EACH	LIN.FT.	TONS	SO. YDS.	LUMP SUM	NO.	LIN.FT.	LUMP SUM
END BENT NO. 1				20.2		2449	5	325	5		110	120		10	700.00	
END BENT NO. 2				20.2		2449	5	350	5		120	135				
TOTAL	LUMP SUM	2	LUMP SUM	40.4	LUMP SUM	4898	10	675	10	140.0	230	255	LUMP SUM	10	700.00	LUMP SUM

PROJECT NO. B-5741
SCOTLAND COUNTY
 STATION: 15+26.50 -L-

SHEET 3 OF 3



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
**GENERAL DRAWING
 FOR BRIDGE OVER
 JUNIPER CREEK
 ON SR 1425 BETWEEN
 SR 1431 AND SR 1427**

DRAWN BY : Z. THORNTON DATE : 05/10/16
 CHECKED BY : K.P. SEDA DATE : 07/06/16
 DESIGN ENGINEER OF RECORD : K. P. SEDA DATE : 8/17/16

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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

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

LEVEL	VEHICLE	WEIGHT (W) (TONS)	CONTROLLING LOAD RATING	MINIMUM RATING FACTORS (RF)	TONS = W X RF	STRENGTH I LIMIT STATE										SERVICE III LIMIT STATE					COMMENT NUMBER			
						MOMENT					SHEAR					MOMENT								
						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	1.006	--	1.75	0.273	1.03	70'	EL	34.5	0.507	1.32	70'	EL	6.9	0.80	0.273	1.01	70'	EL	34.5		
	HL-93(0pr)	N/A	--	1.341	--	1.35	0.273	1.34	70'	EL	34.5	0.507	1.72	70'	EL	6.9	N/A	--	--	--	--	--		
	HS-20(InV)	36.000	2	1.306	47.020	1.75	0.273	1.34	70'	EL	34.5	0.507	1.65	70'	EL	6.9	0.80	0.273	1.31	70'	EL	34.5		
	HS-20(0pr)	36.000	--	1.740	62.640	1.35	0.273	1.74	70'	EL	34.5	0.507	2.14	70'	EL	6.9	N/A	--	--	--	--	--		
LEGAL LOAD RATING	SV	SNSH	13.500	--	2.917	39.379	1.40	0.273	3.75	70'	EL	34.5	0.507	4.87	70'	EL	6.9	0.80	0.273	2.92	70'	EL	34.5	
		SNGARBS2	20.000	--	2.187	43.741	1.40	0.273	2.81	70'	EL	34.5	0.507	3.47	70'	EL	6.9	0.80	0.273	2.19	70'	EL	34.5	
		SNAGRIS2	22.000	--	2.077	45.69	1.40	0.273	2.67	70'	EL	34.5	0.507	3.23	70'	EL	6.9	0.80	0.273	2.08	70'	EL	34.5	
		SNCOTTS3	27.250	--	1.452	39.565	1.40	0.273	1.87	70'	EL	34.5	0.507	2.43	70'	EL	6.9	0.80	0.273	1.45	70'	EL	34.5	
		SNAGGRS4	34.925	--	1.218	42.554	1.40	0.273	1.57	70'	EL	34.5	0.507	2.03	70'	EL	6.9	0.80	0.273	1.22	70'	EL	34.5	
		SNS5A	35.550	--	1.191	42.346	1.40	0.273	1.53	70'	EL	34.5	0.507	2.06	70'	EL	6.9	0.80	0.273	1.19	70'	EL	34.5	
		SNS6A	39.950	--	1.095	43.747	1.40	0.273	1.41	70'	EL	34.5	0.507	1.88	70'	EL	6.9	0.80	0.273	1.10	70'	EL	34.5	
	SNS7B	42.000	--	1.043	43.801	1.40	0.273	1.34	70'	EL	34.5	0.507	1.85	70'	EL	6.9	0.80	0.273	1.04	70'	EL	34.5		
	TTST	TNAGRIT3	33.000	--	1.336	44.087	1.40	0.273	1.72	70'	EL	34.5	0.507	2.23	70'	EL	6.9	0.80	0.273	1.34	70'	EL	34.5	
		TNT4A	33.075	--	1.342	44.401	1.40	0.273	1.72	70'	EL	34.5	0.507	2.17	70'	EL	6.9	0.80	0.273	1.34	70'	EL	34.5	
		TNT6A	41.600	--	1.100	45.746	1.40	0.273	1.41	70'	EL	34.5	0.507	1.98	70'	EL	6.9	0.80	0.273	1.10	70'	EL	34.5	
		TNT7A	42.000	--	1.106	46.462	1.40	0.273	1.42	70'	EL	34.5	0.507	1.94	70'	EL	6.9	0.80	0.273	1.11	70'	EL	34.5	
		TNT7B	42.000	--	1.147	48.180	1.40	0.273	1.47	70'	EL	34.5	0.507	1.80	70'	EL	6.9	0.80	0.273	1.15	70'	EL	34.5	
		TNAGRIT4	43.000	--	1.089	46.838	1.40	0.273	1.40	70'	EL	34.5	0.507	1.74	70'	EL	6.9	0.80	0.273	1.09	70'	EL	34.5	
TNAGT5A		45.000	--	1.026	46.175	1.40	0.273	1.32	70'	EL	34.5	0.507	1.74	70'	EL	6.9	0.80	0.273	1.03	70'	EL	34.5		
TNAGT5B	45.000	3	1.013	45.579	1.40	0.273	1.30	70'	EL	34.5	0.507	1.66	70'	EL	6.9	0.80	0.273	1.01	70'	EL	34.5			

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)

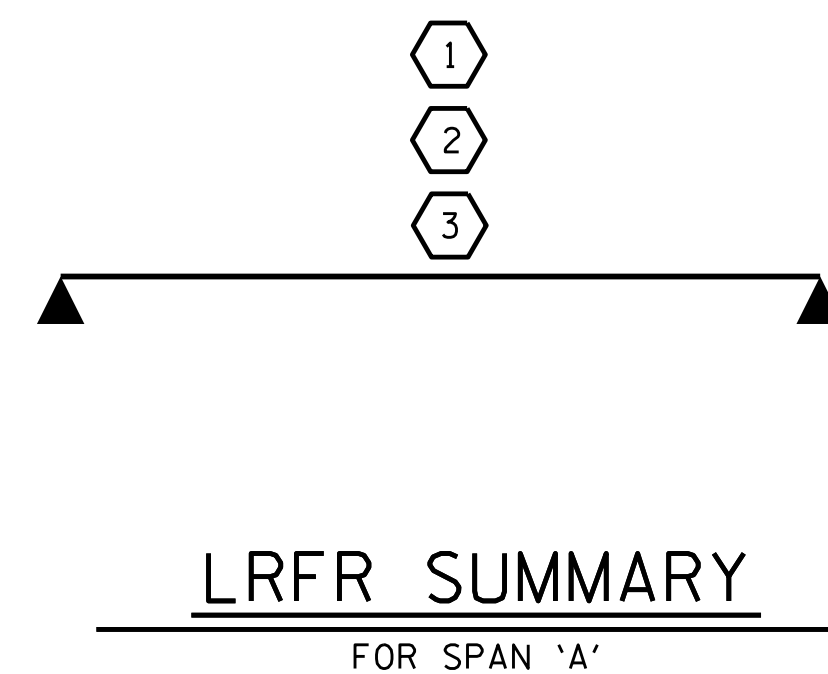
2 DESIGN LOAD RATING (HS-20)

3 LEGAL LOAD RATING **

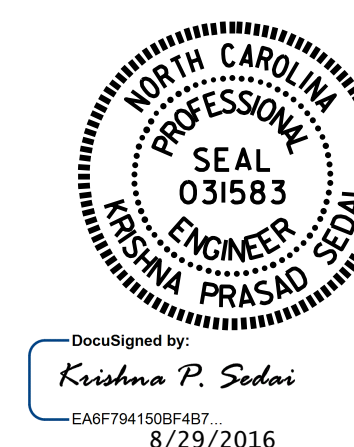
** SEE CHART FOR VEHICLE TYPE

GIRDER LOCATION

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



PROJECT NO. B-5741
SCOTLAND COUNTY
STATION: 15+26.50 -L-

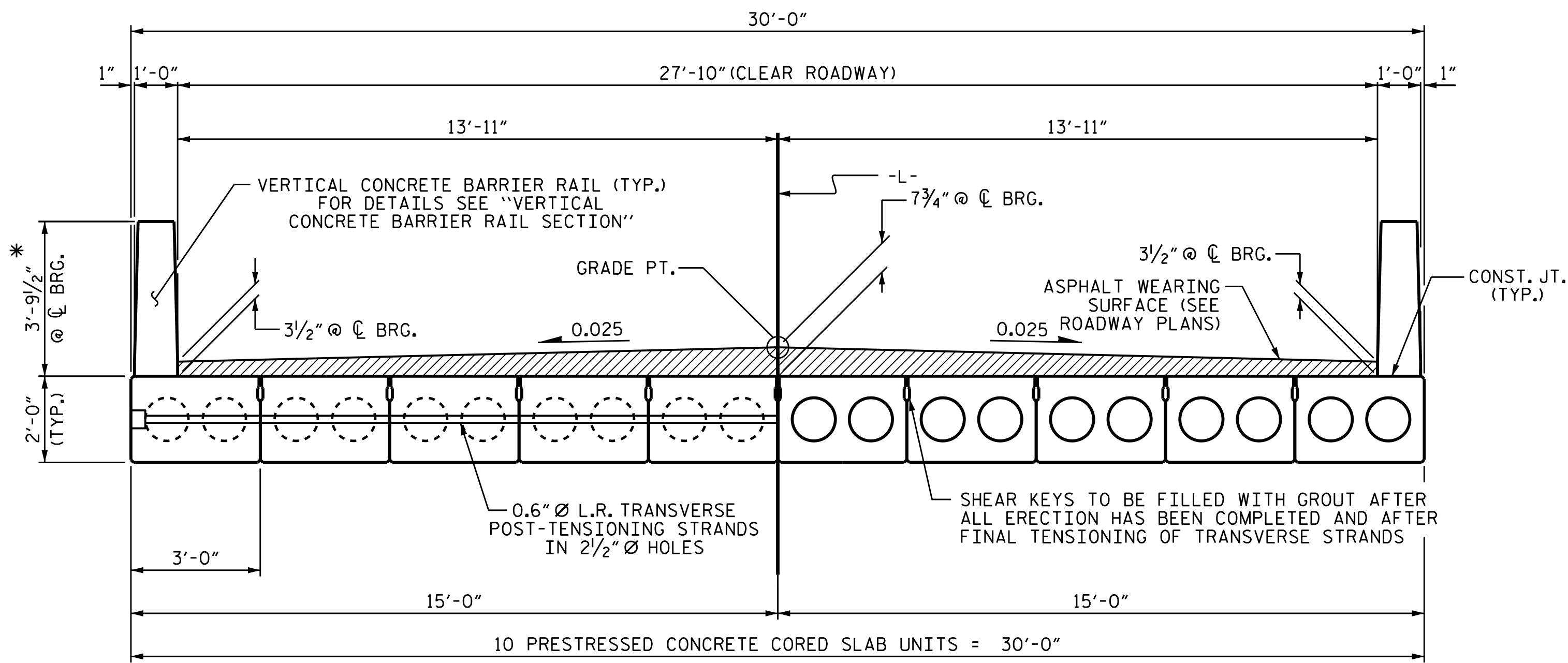


STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
STANDARD
LRFR SUMMARY FOR
70' CORED SLAB UNIT
90° SKEW
(NON-INTERSTATE TRAFFIC)

ASSEMBLED BY : Z. THORNTON DATE :05/13/16
CHECKED BY : K. P. SEDAİ DATE :05/13/16
DRAWN BY : CVC 6/10
CHECKED BY : DNS 6/10

DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

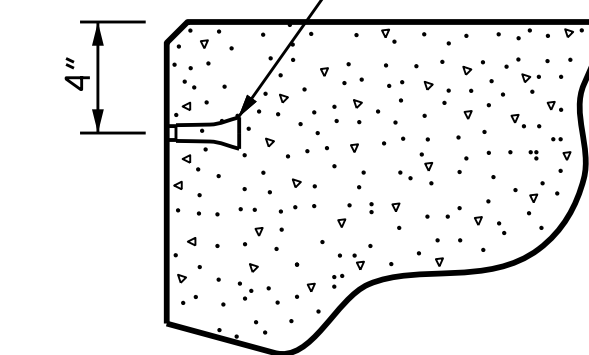
REVISIONS						SHEET NO. S-4
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 14
2			4			



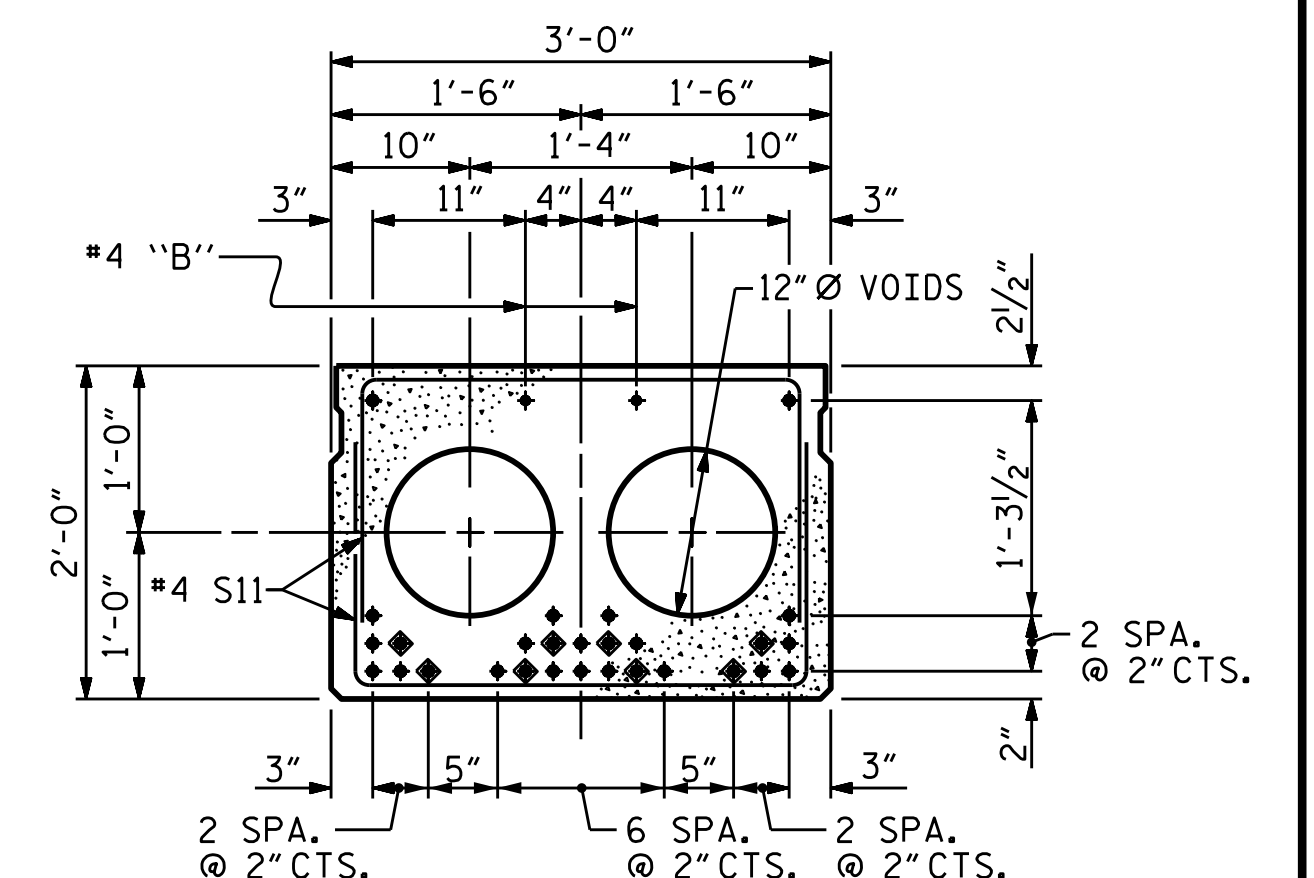
HALF SECTION AT INTERMEDIATE DIAPHRAGMS **TYPICAL SECTION** HALF SECTION THROUGH VOIDS

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

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



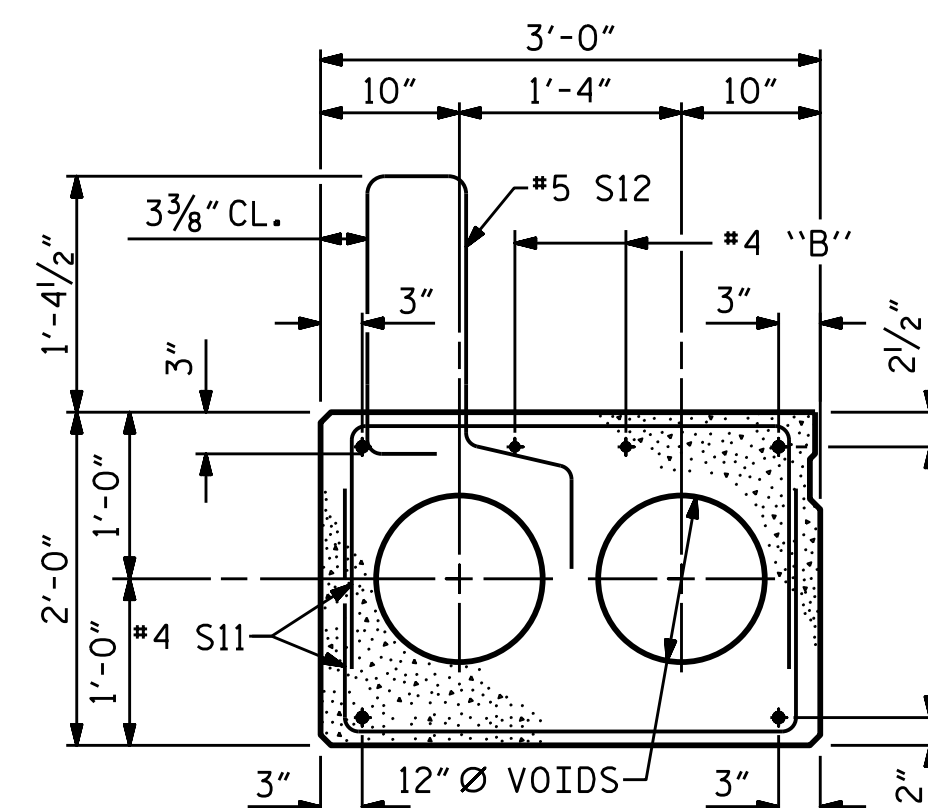
THREADED INSERT DETAIL



INTERIOR SLAB SECTION (70' UNIT)
(28 STRANDS REQUIRED)
0.6" Ø LOW
RELAXATION STRAND LAYOUT

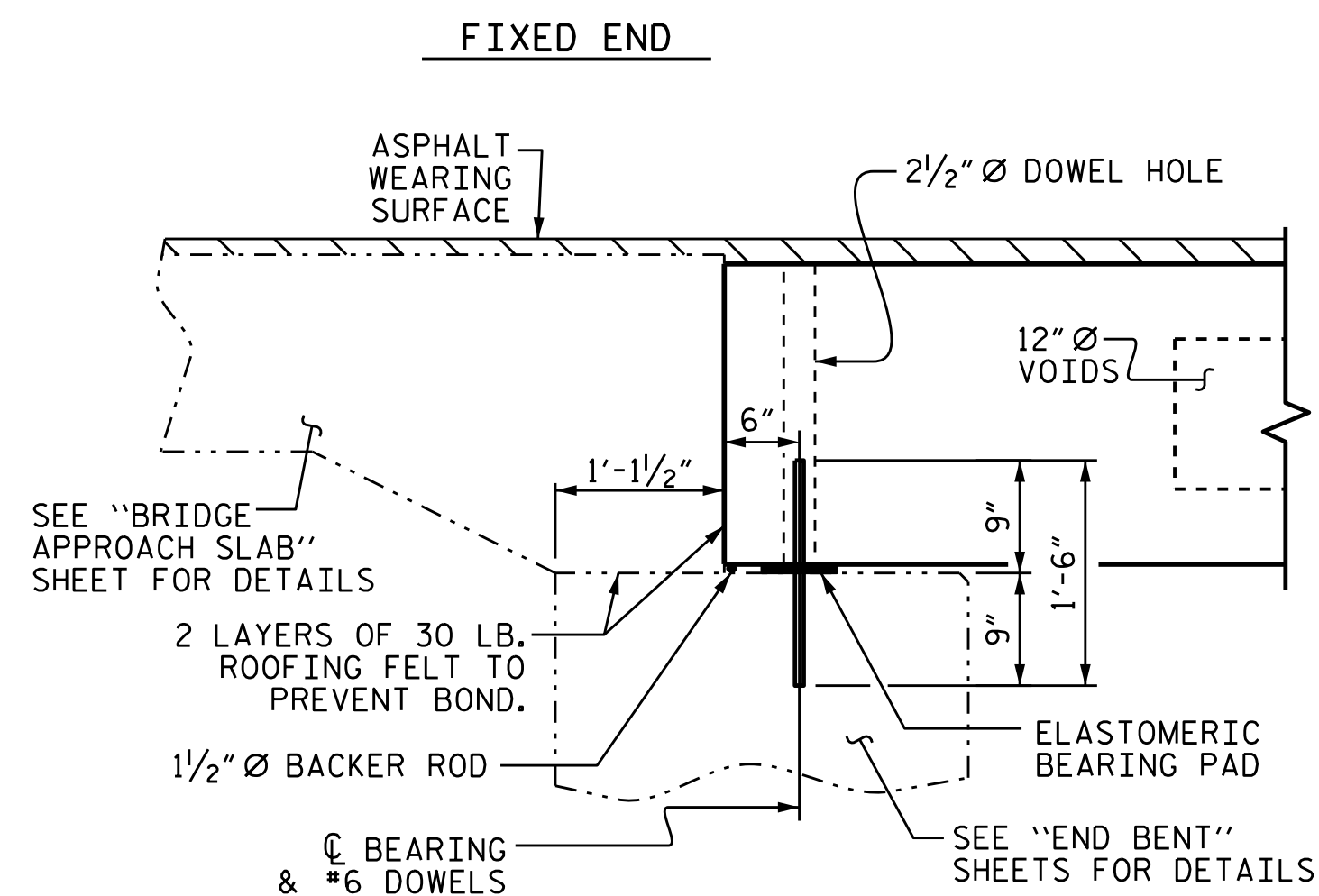
◆ BOND SHALL BE BROKEN ON THESE STRANDS FOR A DISTANCE OF 12'-0" FROM END OF CORED SLAB UNIT. SEE STANDARD SPECIFICATIONS, ARTICLE 1078-7.

DEBONDING LEGEND

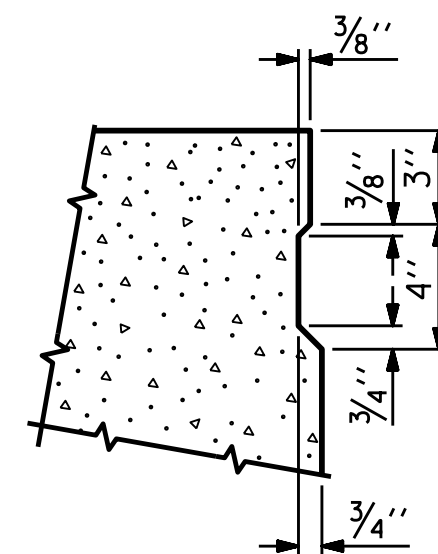


EXTERIOR SLAB SECTION

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

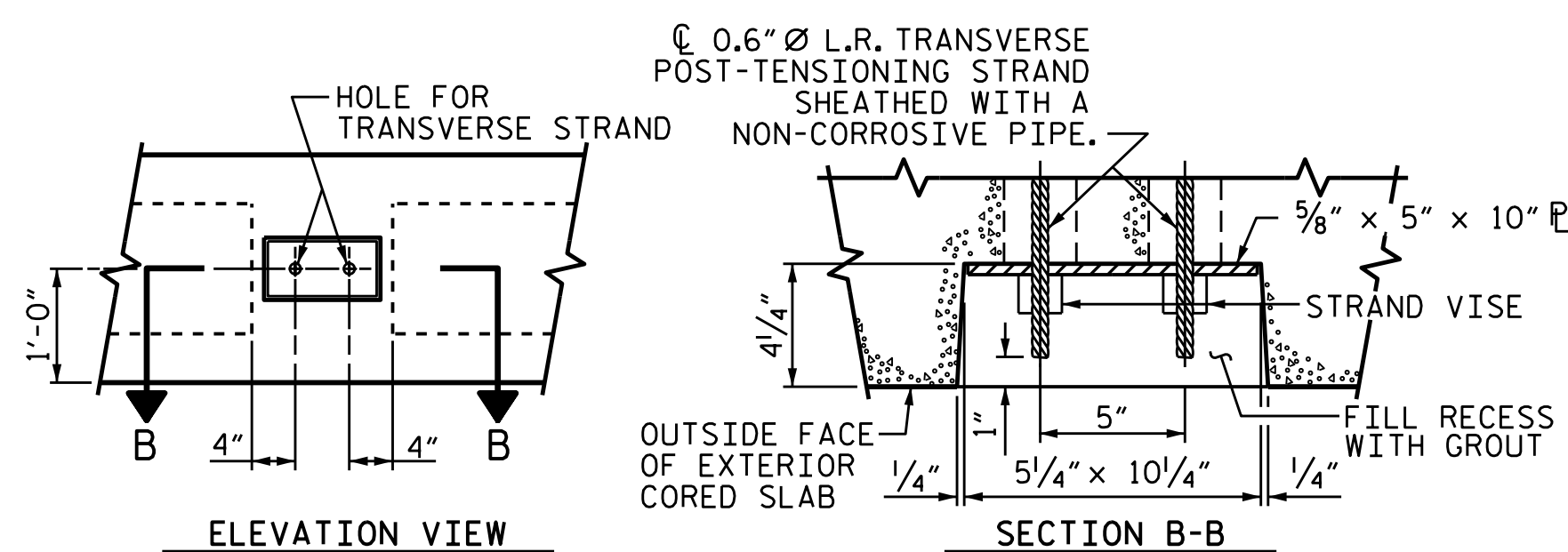


SECTION AT END BENT

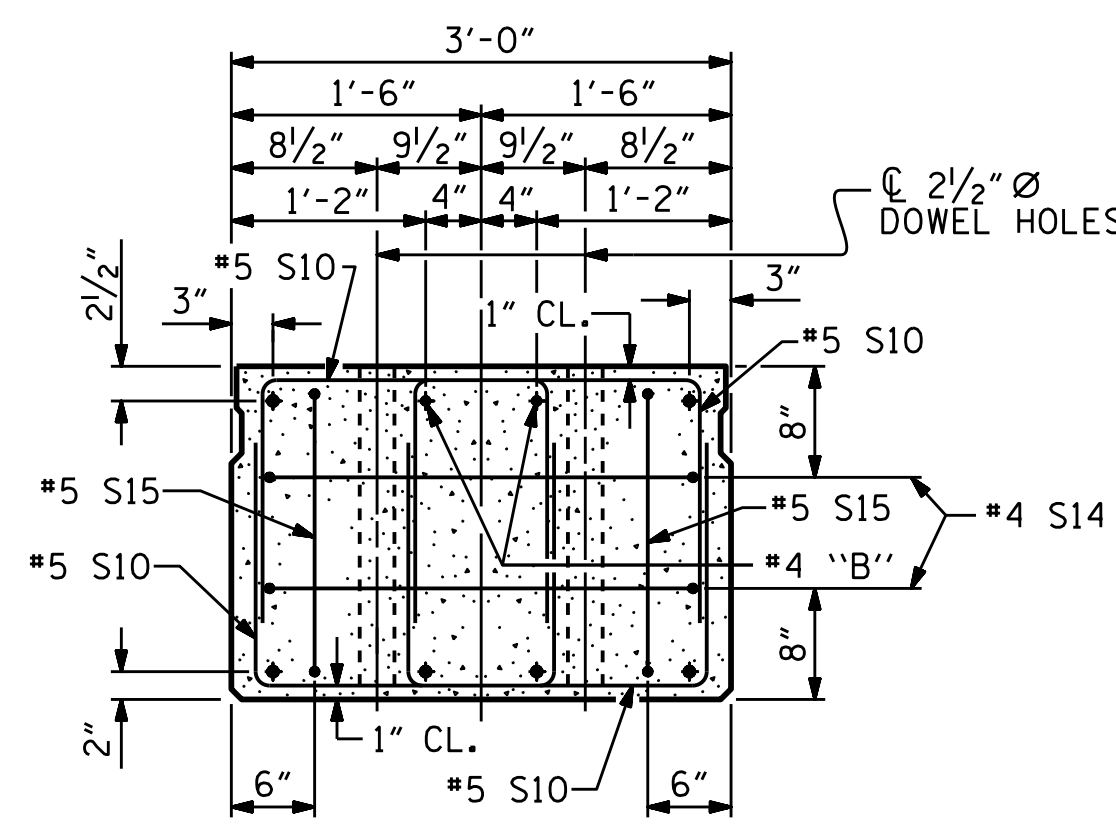


SHEAR KEY DETAIL

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

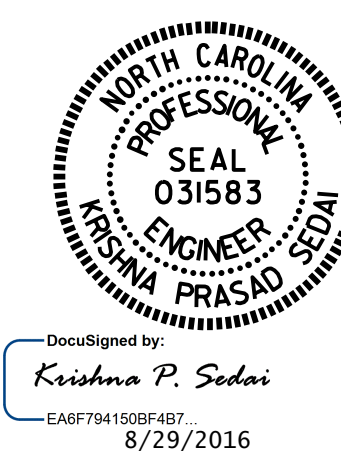


GRouted RECESS AT END OF POST-TENSIONED STRAND-CORED SLABS



END ELEVATION

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



PROJECT NO. B-5741
SCOTLAND COUNTY
STATION: 15+26.50 -L-

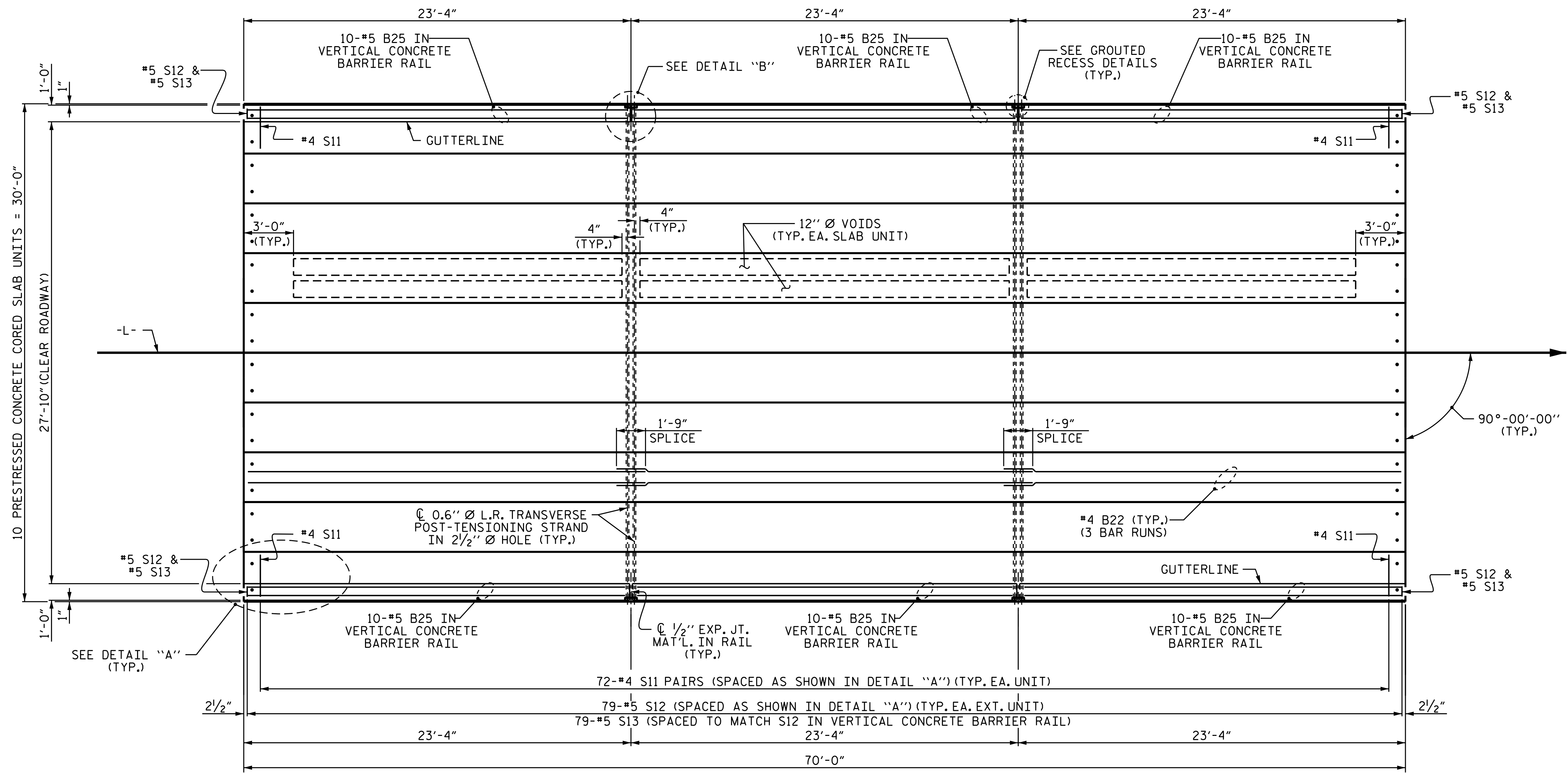
SHEET 1 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
STANDARD
3'-0" X 2'-0"
PRESTRESSED CONCRETE
CORED SLAB UNIT

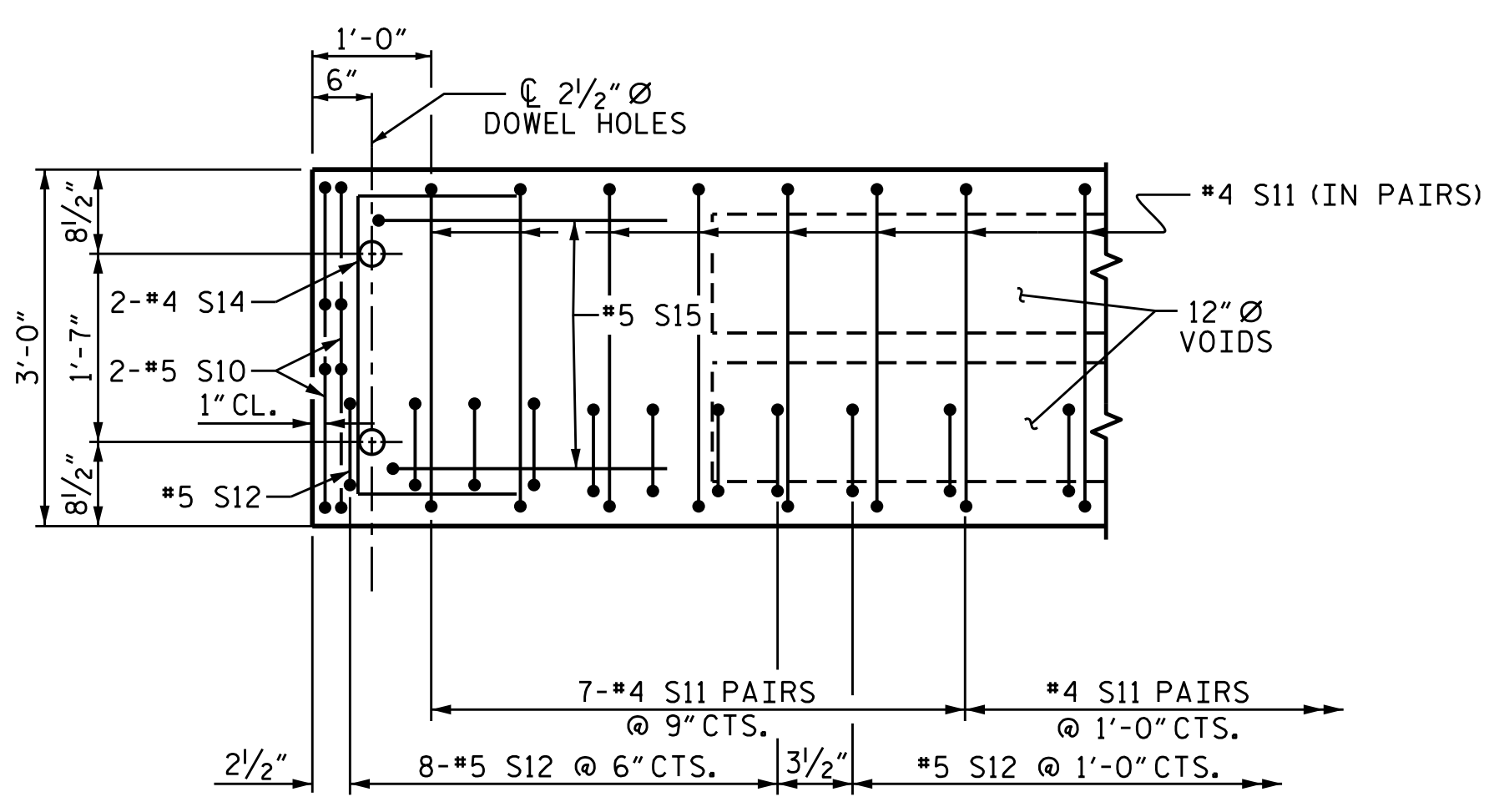
ASSEMBLED BY : Z. THORNTON	DATE : 05/13/16
CHECKED BY : K. P. SEDA I	DATE : 05/13/16
DRAWN BY : MAA	6/10
CHECKED BY : MKT	7/10
REV. 8/14	MAA/TMG

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

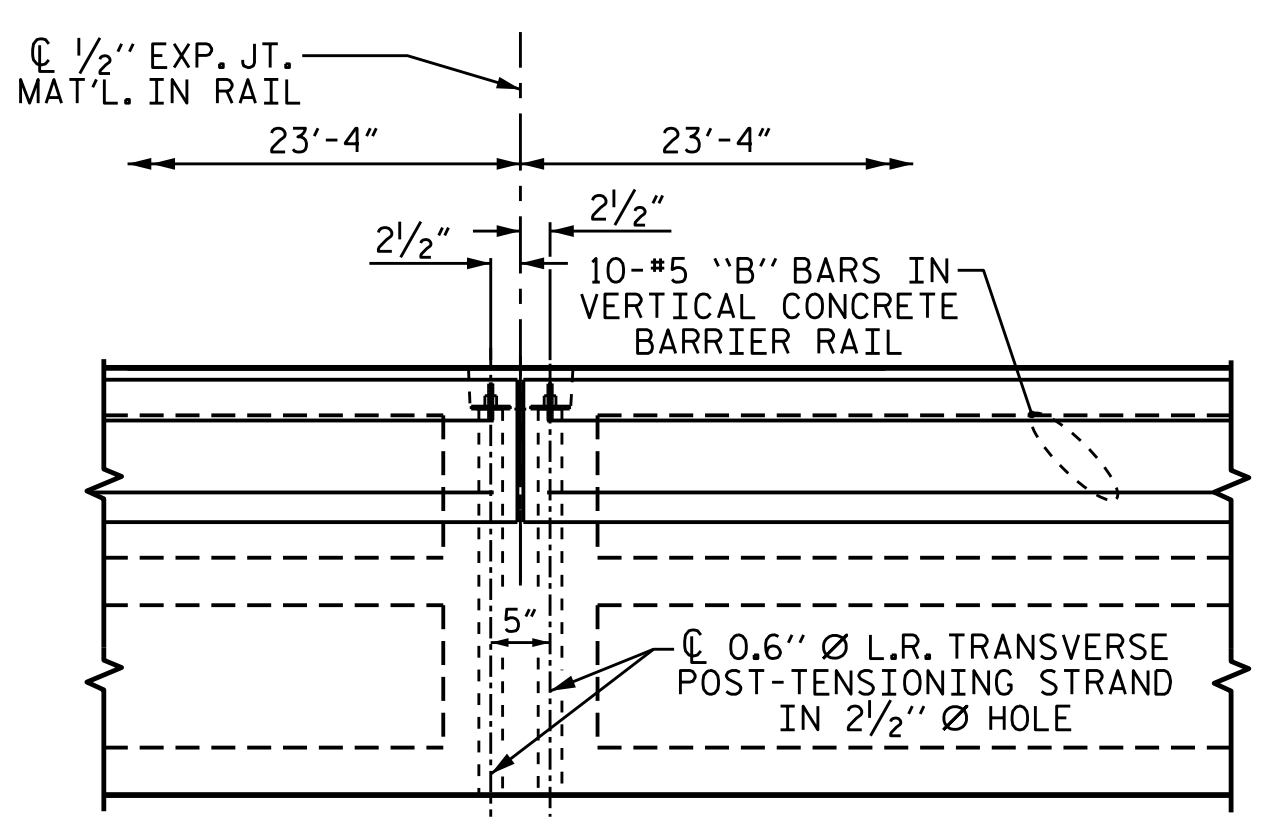
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-5
1			3			TOTAL SHEETS 14
2			4			



PLAN OF UNIT



DETAIL "A"



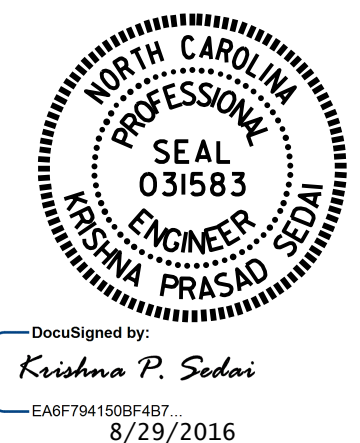
DETAIL "B"

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

ASSEMBLED BY : Z. THORNTON	DATE : 05/13/16
CHECKED BY : K. P. SEDAI	DATE : 05/13/16
DRAWN BY : MAA	6/10
CHECKED BY : MKT	7/10
REV. 12/5/11	MAA/AAC
REV. 8/14	MAA/TMG

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

19-AUG-2016 12:11
W:\Structures\Plans\B-5741.SMU.PS.dgn
ksedal



PROJECT NO. B-5741
SCOTLAND COUNTY
STATION: 15+26.50 -L-

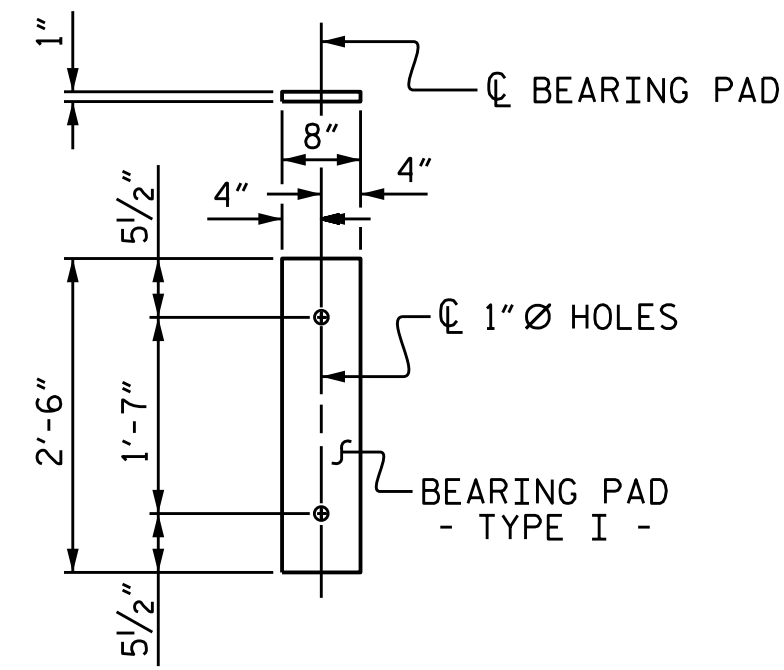
SHEET 2 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
**PLAN OF 70' UNIT
27'-10" CLEAR ROADWAY
90° SKEW**

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-6
1			3			TOTAL SHEETS
2			4			14

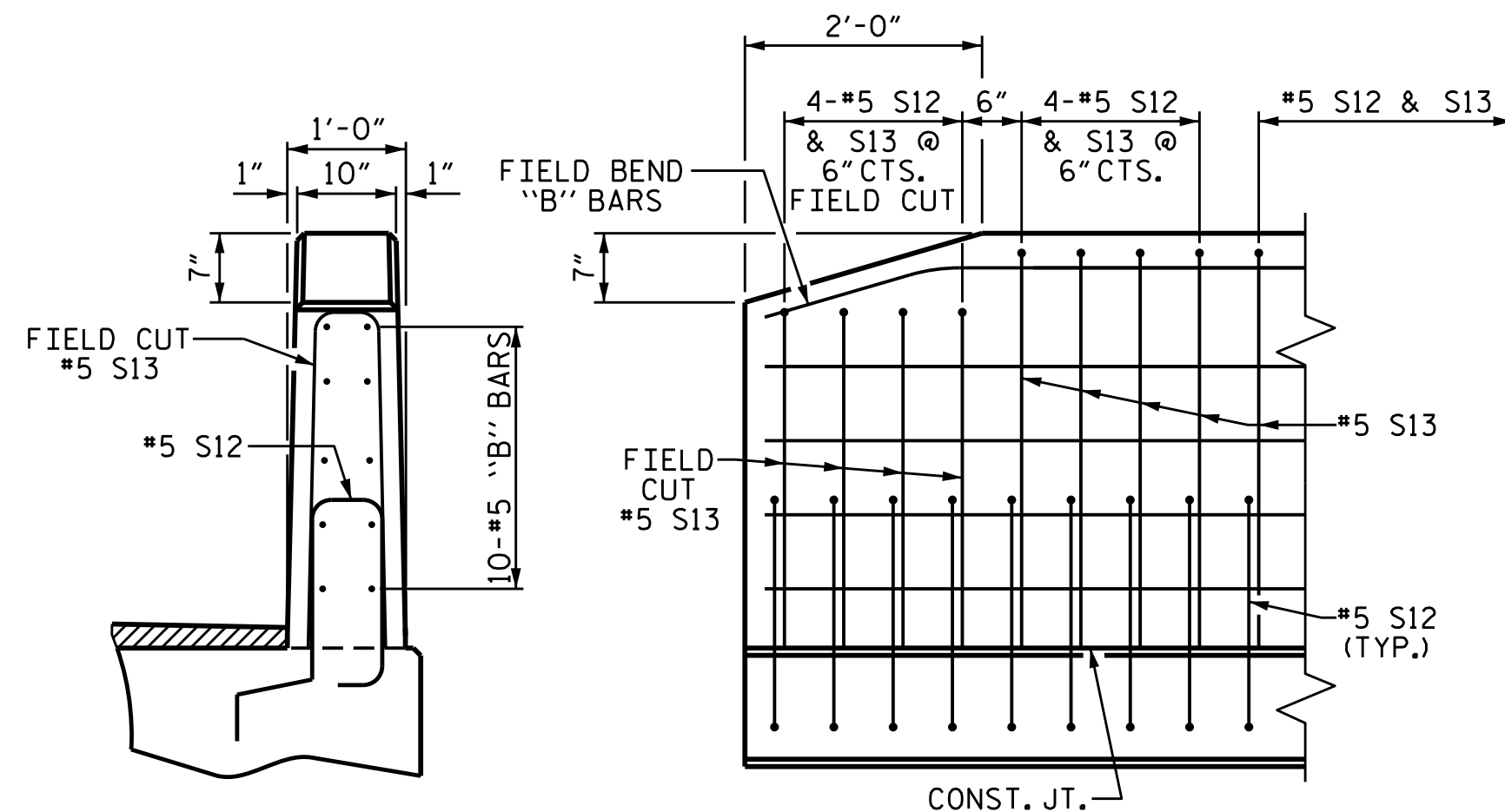
STD. NO. 24PCS_30_90S_70L



FIXED END
(TYPE I - 20 REQ'D)

ELASTOMERIC BEARING DETAILS

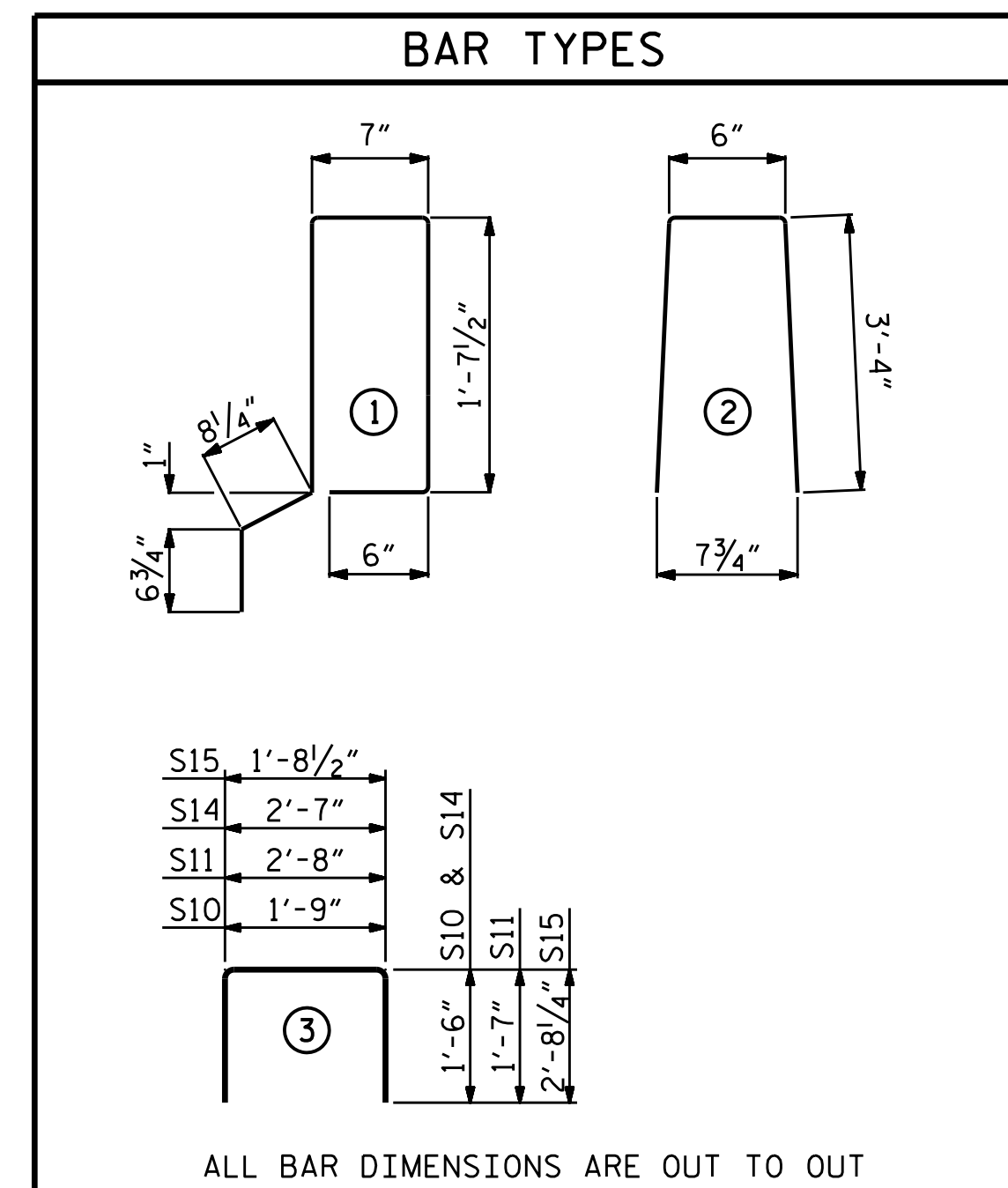
ELASTOMER IN ALL BEARINGS SHALL BE 60 DUROMETER HARDNESS.



END VIEW

SIDE VIEW

END OF RAIL DETAILS



NOTES

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

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

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

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

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

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

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

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

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

APPLY EPOXY PROTECTIVE COATING TO CORED SLAB UNIT ENDS.

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.

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

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

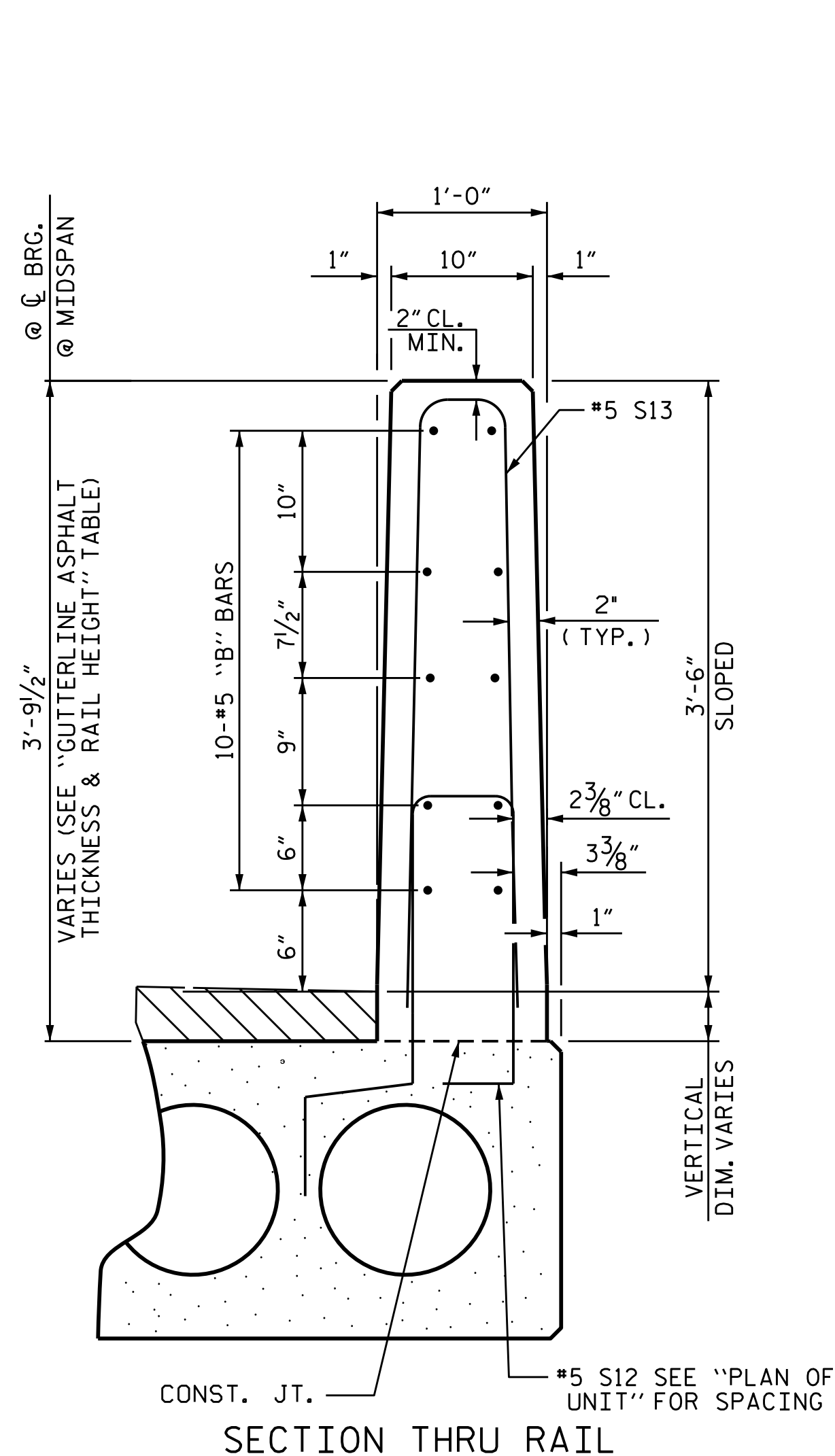
FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

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

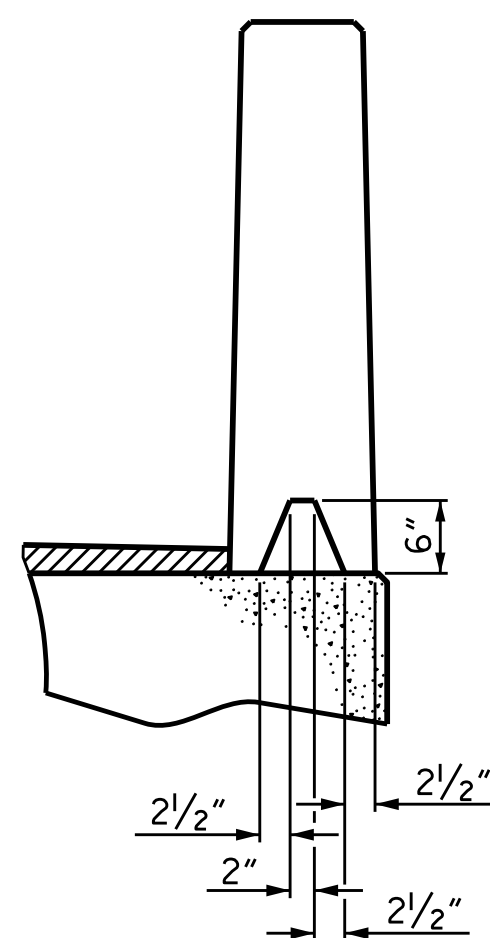
THE PERMITTED THREADED INSERTS IN THE EXTERIOR UNITS SHALL BE SIZED BY THE CONTRACTOR, SPACED AT 4'-0" CENTERS AND GALVANIZED IN ACCORDANCE WITH SECTION 1076 OF THE STANDARD SPECIFICATIONS. STAINLESS STEEL THREADED INSERTS MAY BE USED AS AN ALTERNATE.

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.

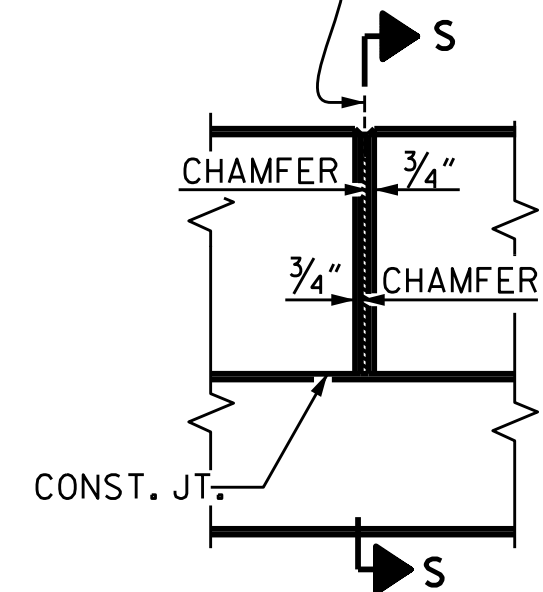


SECTION THRU RAIL



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

1/2" EXP. JT. MAT'L HELD IN PLACE WITH GALVANIZED NAILS. (NOTE: OMIT EXP. JT. MAT'L WHEN SLIP FORM IS USED)



ELEVATION AT EXPANSION JOINTS

BILL OF MATERIAL FOR VERTICAL CONCRETE BARRIER RAIL

BAR	BARS PER PAIR OF EXTERIOR UNITS	TOTAL NO.	SIZE	TYPE	LENGTH	WEIGHT
70' UNIT						
*B25	60	60	#5	STR	22'-11"	1434
*S13	158	158	#5	2	7'-2"	1181
* EPOXY COATED REINFORCING STEEL					LBS.	2615
CLASS AA CONCRETE					CU.YDS.	18.1
TOTAL VERTICAL CONCRETE BARRIER RAIL					LN. FT.	140.00

DEAD LOAD DEFLECTION AND CAMBER

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

** INCLUDES FUTURE WEARING SURFACE

CORED SLABS REQUIRED

	NUMBER	LENGTH	TOTAL LENGTH
70' UNIT			
EXTERIOR C.S.	2	70'-0"	140'-0"
INTERIOR C.S.	8	70'-0"	560'-0"
TOTAL	10	-	700'-0"

BILL OF MATERIAL FOR ONE 70' CORED SLAB UNIT

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

CONCRETE RELEASE STRENGTH

UNIT	PSI
70' UNITS	5500

GRADE 270 STRANDS

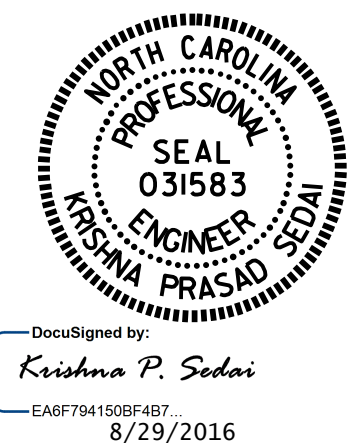
	0.6" Ø L.R.
AREA (SQUARE INCHES)	0.217
ULTIMATE STRENGTH (LBS. PER STRAND)	58,600
APPLIED PRESTRESS (LBS. PER STRAND)	43,950

GUTTERLINE ASPHALT THICKNESS & RAIL HEIGHT

	ASPHALT OVERLAY THICKNESS @ MID-SPAN	RAIL HEIGHT @ MID-SPAN
70' UNITS	2"	3'-8"

VERTICAL CONCRETE BARRIER RAIL DETAILS

ASSEMBLED BY : Z. THORNTON DATE : 05/13/16
 CHECKED BY : K. P. SEDA DATE : 05/13/16
 DRAWN BY : MAA 6/10
 CHECKED BY : MKT 7/10
 REV. 11/14 MAA/TMG



PROJECT NO. B-5741
 SCOTLAND COUNTY
 STATION: 15+26.50 -L-

SHEET 3 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 STANDARD
 3'-0" X 2'-0"
 PRESTRESSED CONCRETE
 CORED SLAB UNIT

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-7
1			3			TOTAL SHEETS 14
2			4			

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NOTES

THE GUARDRAIL ANCHOR ASSEMBLY SHALL CONSIST OF A 1/4" HOLD DOWN PLATE AND 7 - 7/8" 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 7/8" Ø GALVANIZED BOLTS, NUTS AND WASHERS. THEY SHALL CONFORM TO OR EXCEED THE MECHANICAL REQUIREMENTS OF ASTM A307. THE USE OF THIS ALTERNATE SHALL BE APPROVED BY THE ENGINEER.)

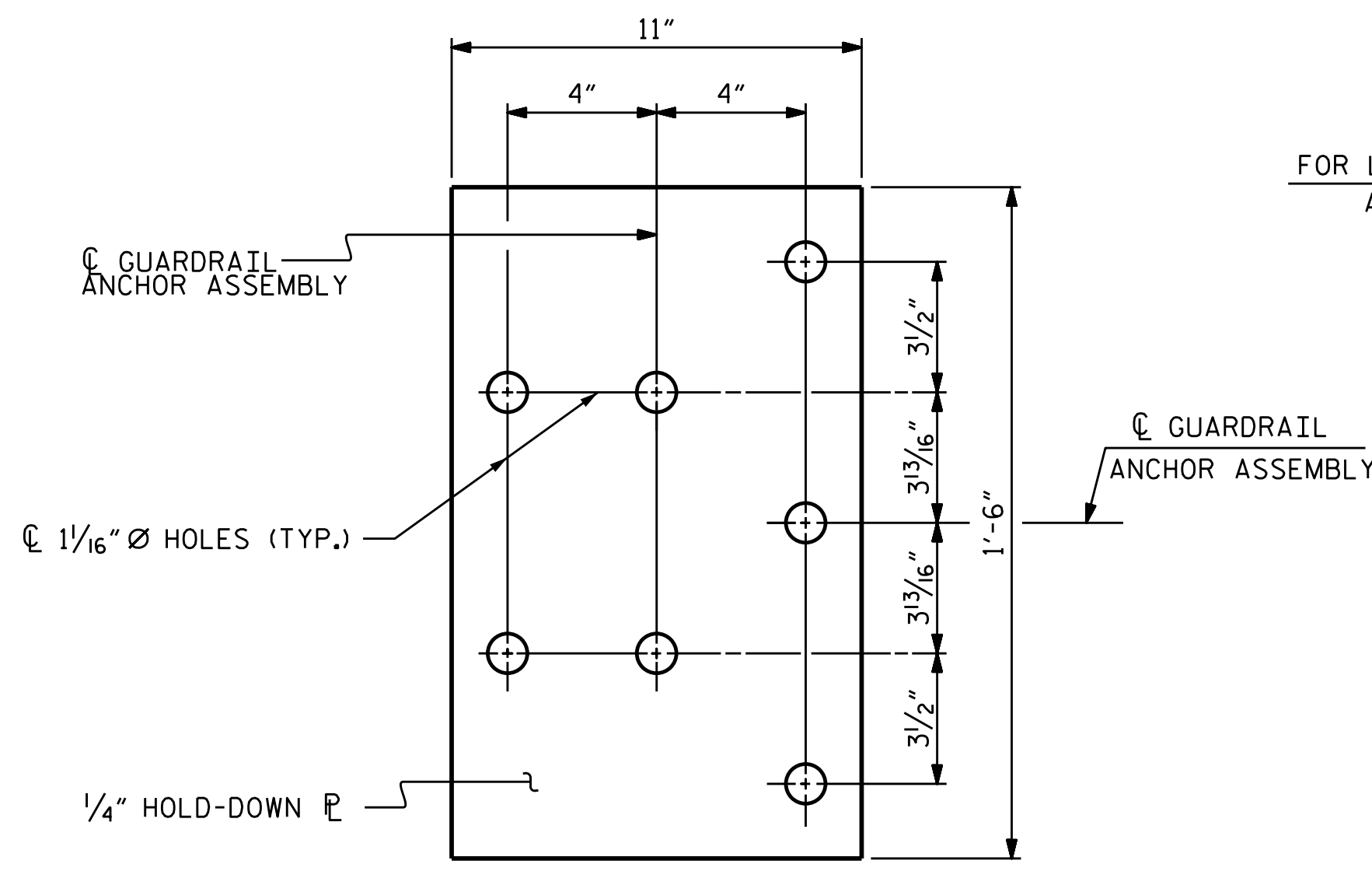
THE GUARDRAIL ANCHOR ASSEMBLY IS REQUIRED AT ALL POINTS WHERE APPROACH GUARDRAIL IS TO BE ATTACHED TO THE END OF BARRIER RAIL. FOR POINTS OF ATTACHMENT, SEE SKETCH.

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

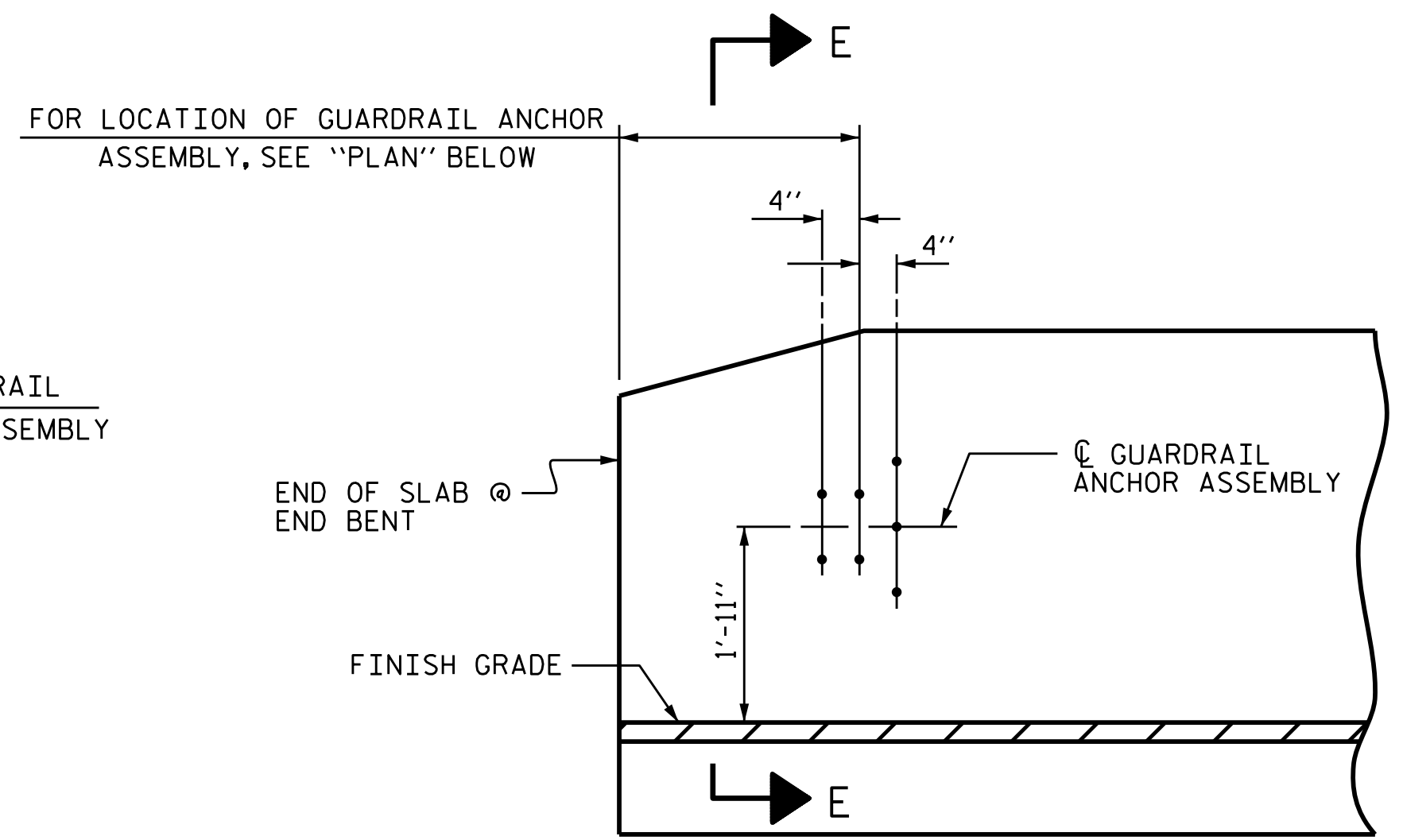
THE COST OF THE GUARDRAIL ANCHOR ASSEMBLY SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR VERTICAL CONCRETE BARRIER RAIL.

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

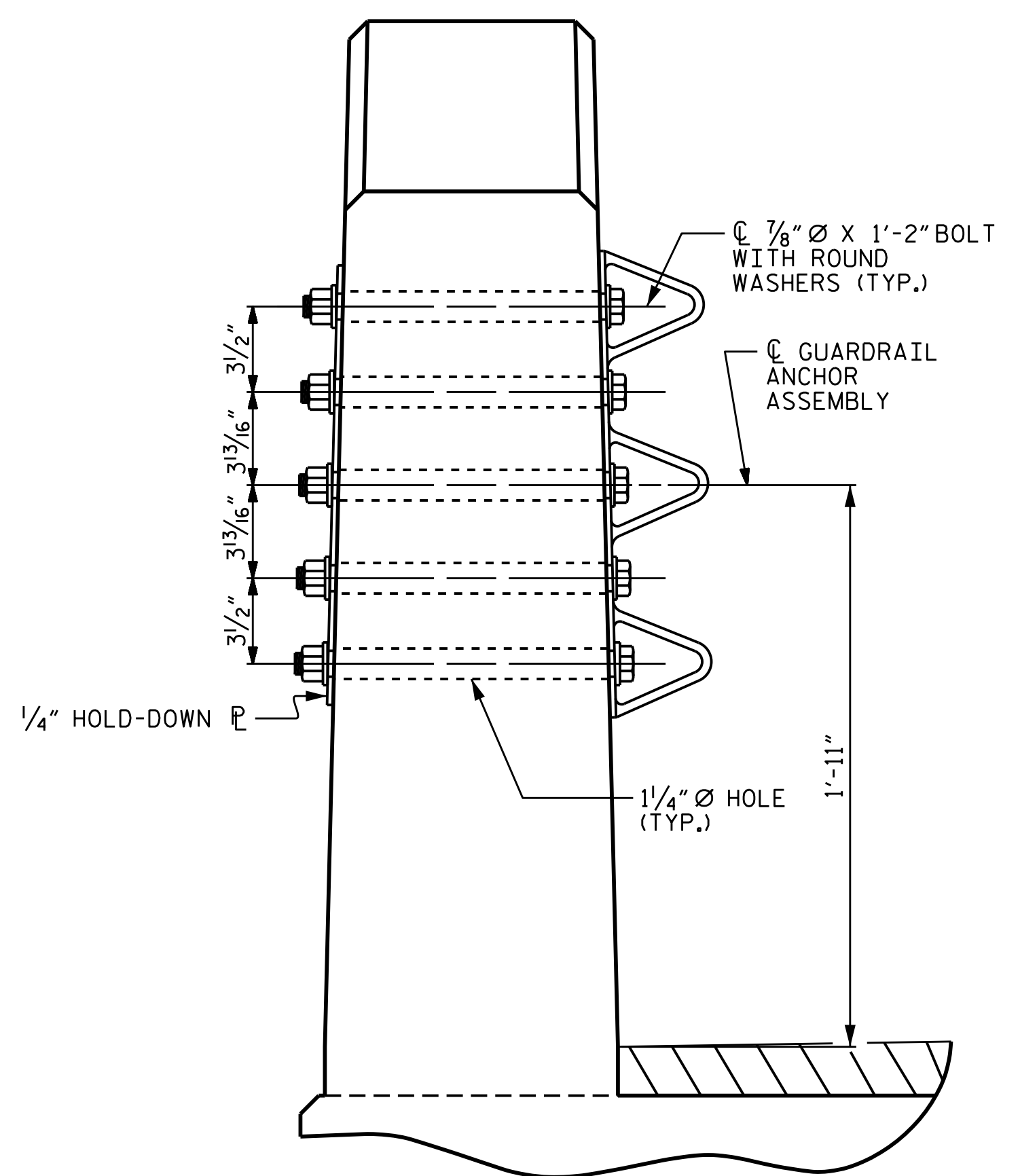
THE 1 1/4" Ø HOLES SHALL BE FORMED OR DRILLED WITH A CORE BIT. IMPACT TOOLS WILL NOT BE PERMITTED. ANY CONCRETE DAMAGED BY THIS WORK SHALL BE REPAIRED TO THE SATISFACTION OF THE ENGINEER.



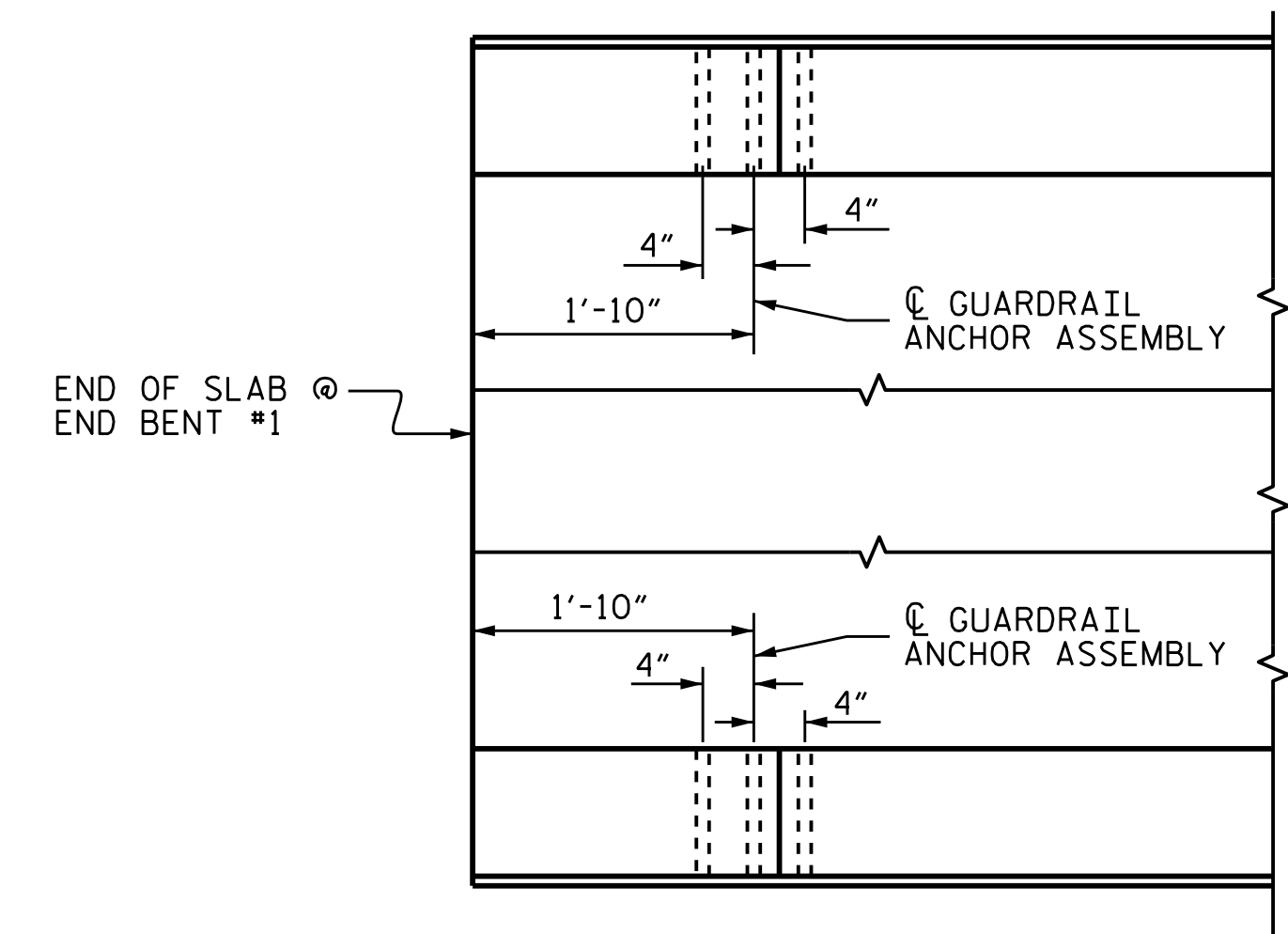
PLAN



ELEVATION

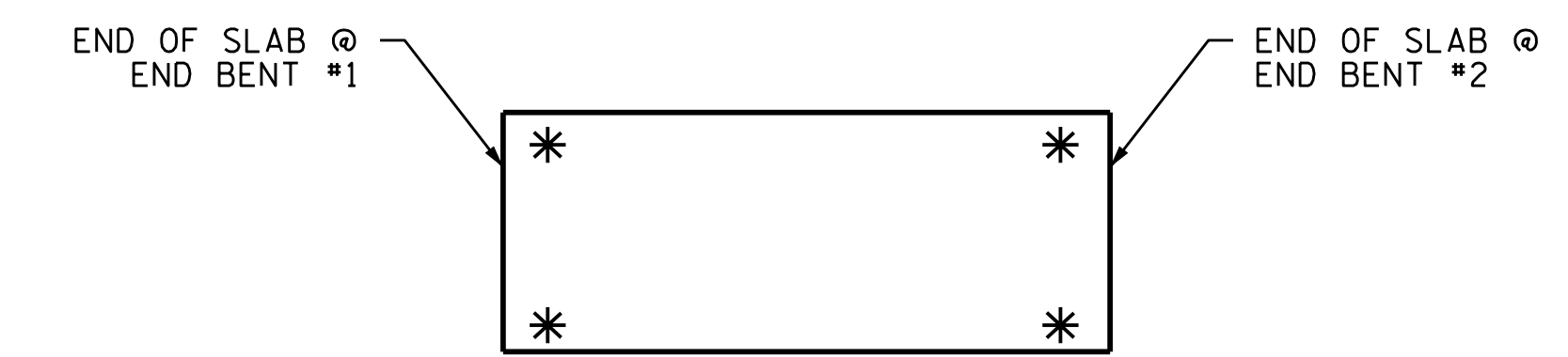


SECTION E-E
GUARDRAIL ANCHOR ASSEMBLY DETAILS



PLAN
LOCATION OF ANCHORS FOR GUARDRAIL

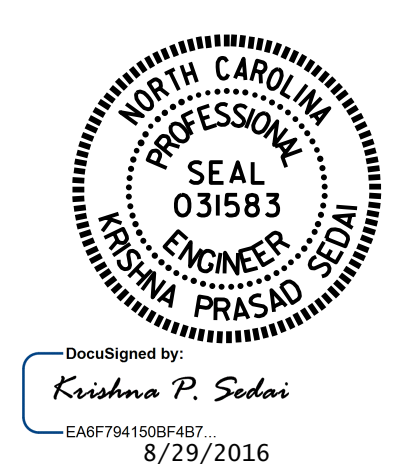
END BENT #1 SHOWN, END BENT #2 SIMILAR.



SKETCH SHOWING POINTS OF ATTACHMENT

* DENOTES GUARDRAIL ANCHOR ASSEMBLY

PROJECT NO. B-5741
SCOTLAND COUNTY
 STATION: 15+26.50 -L-



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

ASSEMBLED BY : Z. THORNTON	DATE : 05/13/16
CHECKED BY : K. P. SEDAI	DATE : 05/13/16
DRAWN BY : MAA	5/10
CHECKED BY : GM	5/10
REV. 12/5/11	MAA/GM
REV. 6/13	MAA/GM
REV. 1/15	MAA/TMG

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REVISIONS						SHEET NO.
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1			3			TOTAL SHEETS 14
2			4			

NOTES

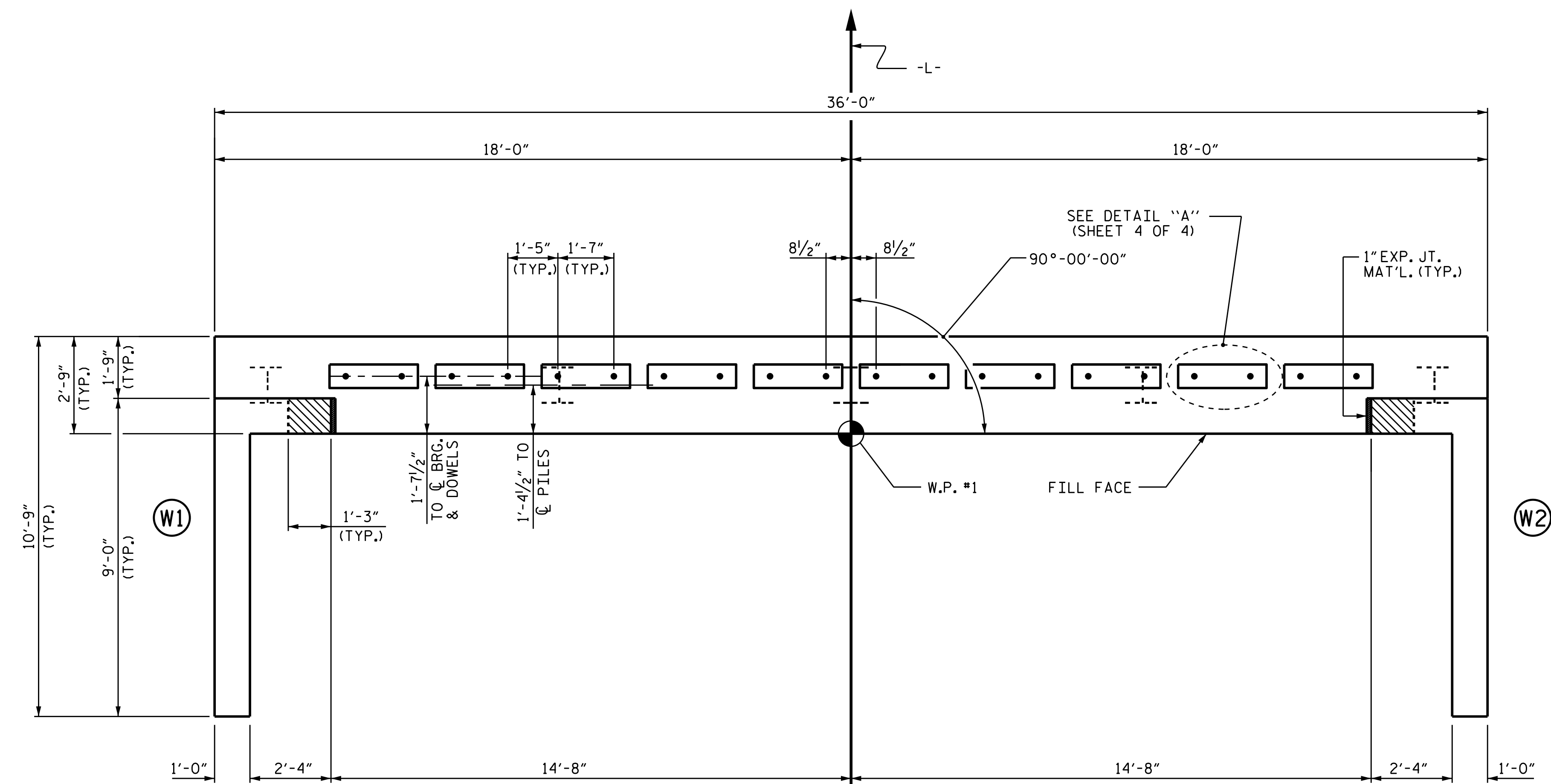
STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR DOWELS.

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

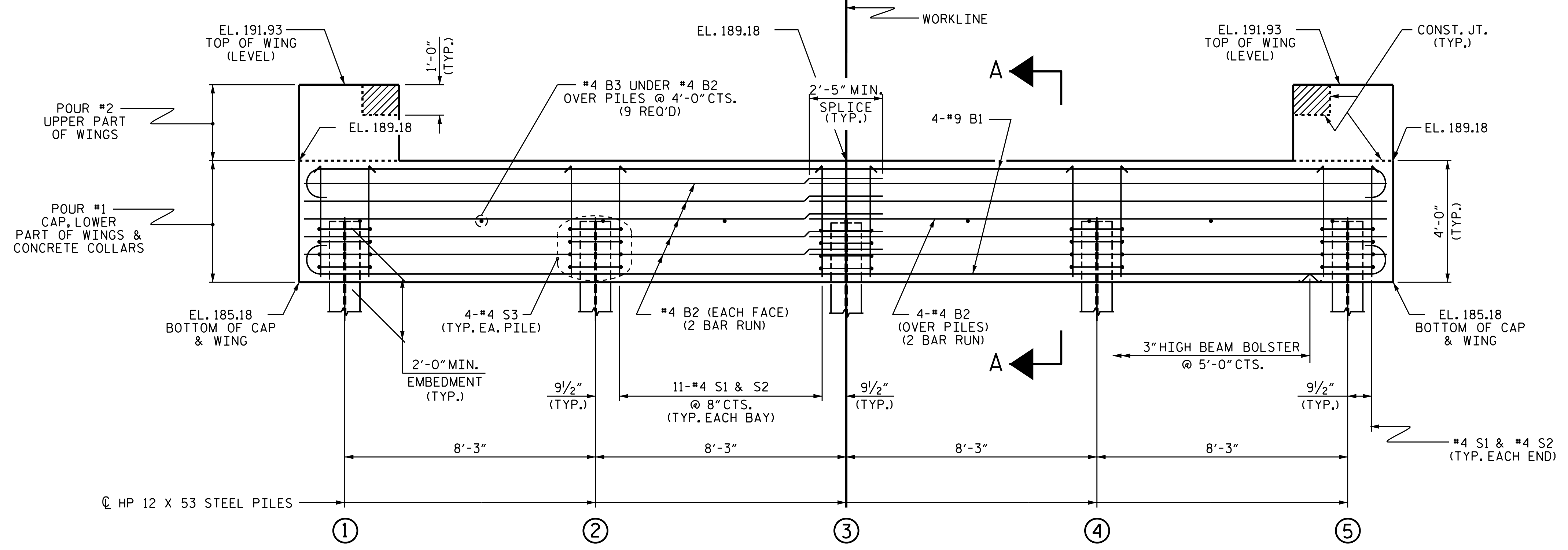
FOR PILE SPLICE DETAILS, SEE SHEET 4 OF 4.

FOR WING DETAILS, SEE SHEET 3 OF 4.

INSTALL THE 4" DIA. DRAIN PIPE THROUGH THE WING WALL AS REQUIRED FOR REINFORCED BRIDGE APPROACH FILLS, SEE THE ROADWAY PLANS. REINFORCING STEEL IN THE WING WALL MAY BE SHIFTED AS NECESSARY TO CLEAR THE DRAIN PIPE.



PLAN

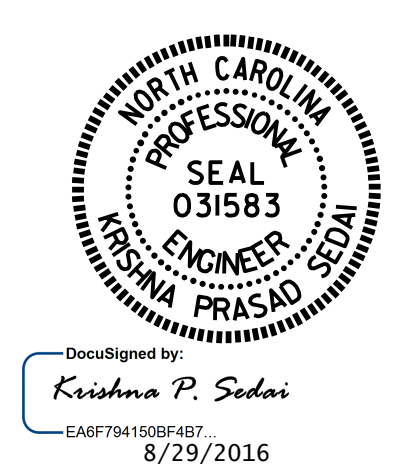


ELEVATION

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

PROJECT NO. B-5741
 SCOTLAND COUNTY
 STATION: 15+26.50 -L-

SHEET 1 OF 4



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUBSTRUCTURE
END BENT No. 1

ASSEMBLED BY : Z. THORNTON	DATE : 05/05/16
CHECKED BY : K. P. SEDA	DATE : 05/16/16
DRAWN BY : WJH	12/11
CHECKED BY : AAC	12/11
REV. 4/15	MAA/TMG

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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-9
1			3			TOTAL SHEETS 14
2			4			

NOTES

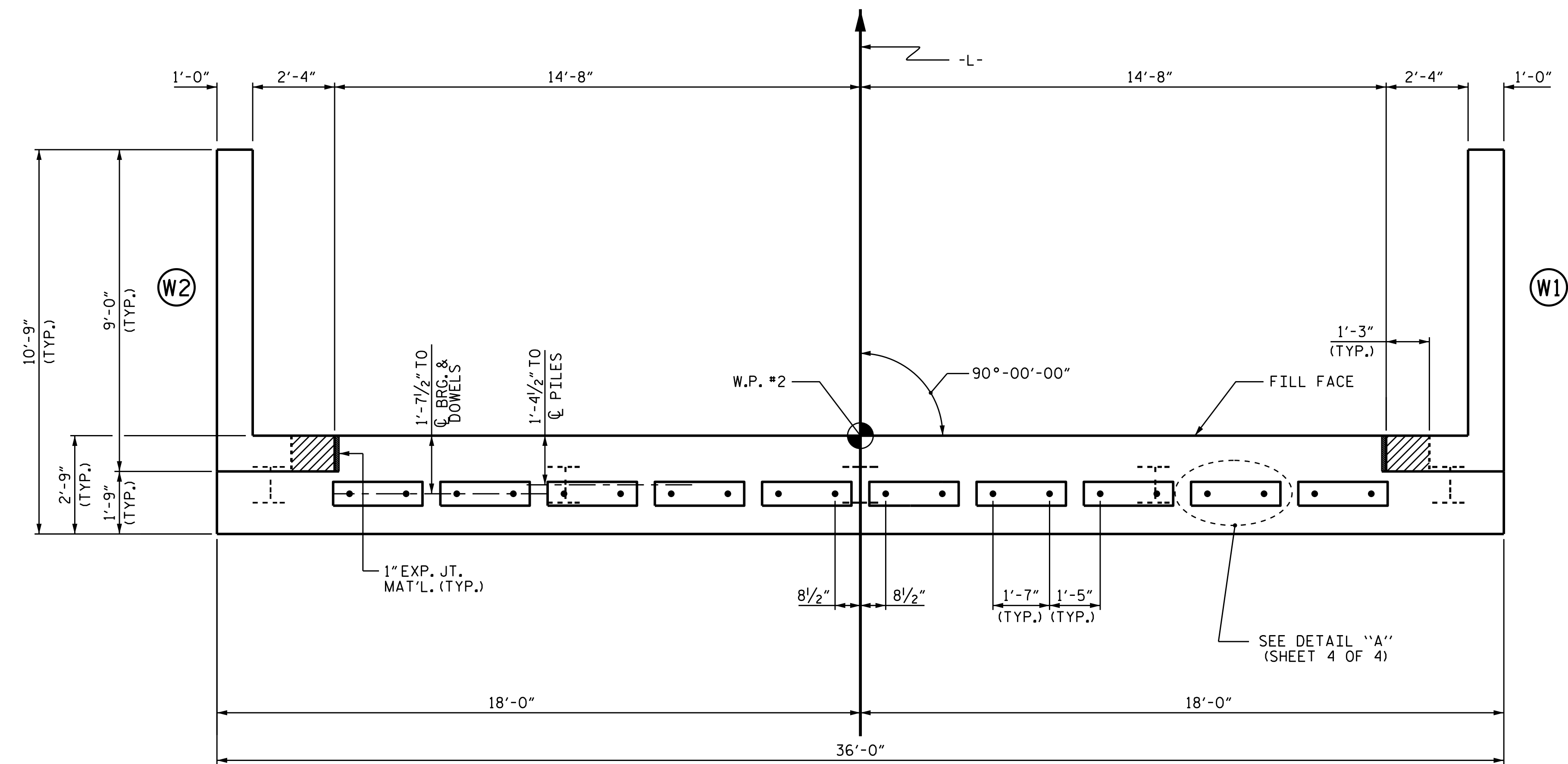
STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR DOWELS.

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

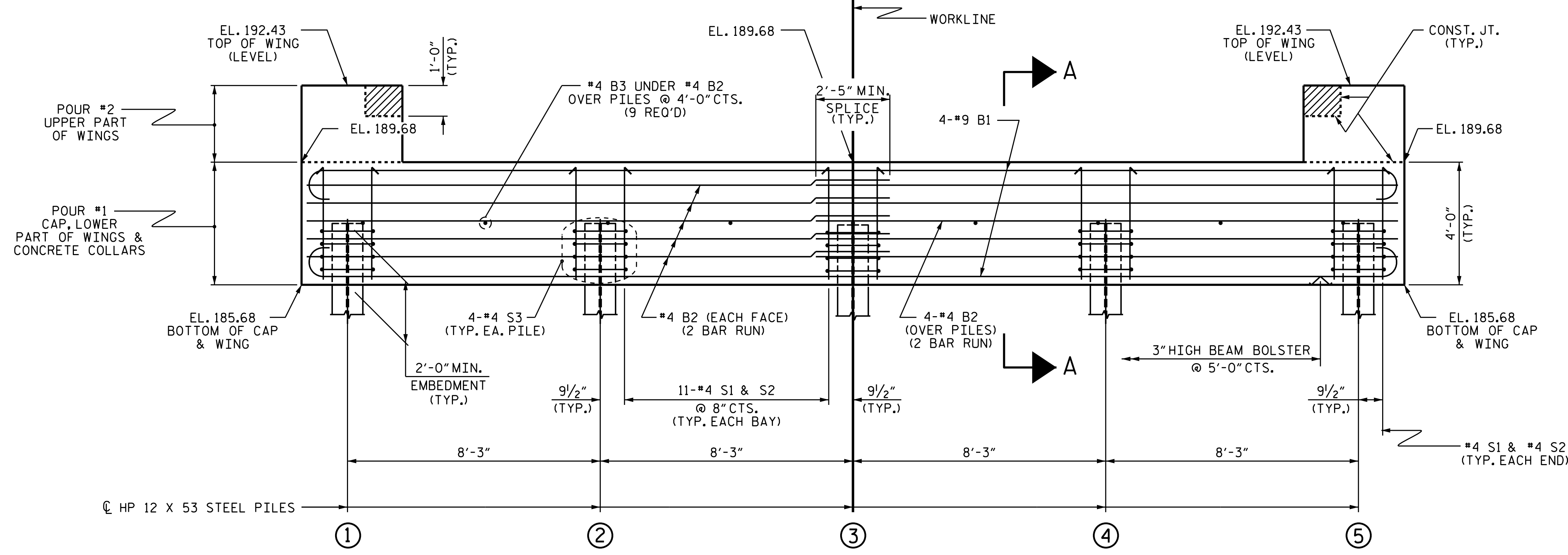
FOR PILE SPLICE DETAILS, SEE SHEET 4 OF 4.

FOR WING DETAILS, SEE SHEET 3 OF 4.

INSTALL THE 4" DIA. DRAIN PIPE THROUGH THE WING WALL AS REQUIRED FOR REINFORCED BRIDGE APPROACH FILLS, SEE THE ROADWAY PLANS. REINFORCING STEEL IN THE WING WALL MAY BE SHIFTED AS NECESSARY TO CLEAR THE DRAIN PIPE.



PLAN



ELEVATION

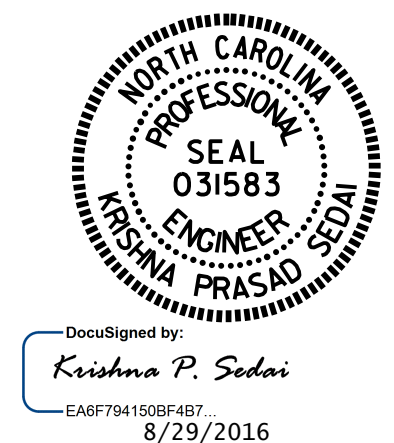
WINGS NOT SHOWN FOR CLARITY.
FOR SECTION A-A, SEE SHEET 4 OF 4.
CONCRETE COLLARS FOR STEEL PILES NOT SHOWN IN PLAN AND ELEVATION VIEWS FOR CLARITY.
SEE "CORROSION PROTECTION FOR STEEL PILES DETAIL", SHEET 4 OF 4.

PROJECT NO. B-5741
SCOTLAND COUNTY
STATION: 15+26.50 -L-

SHEET 2 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

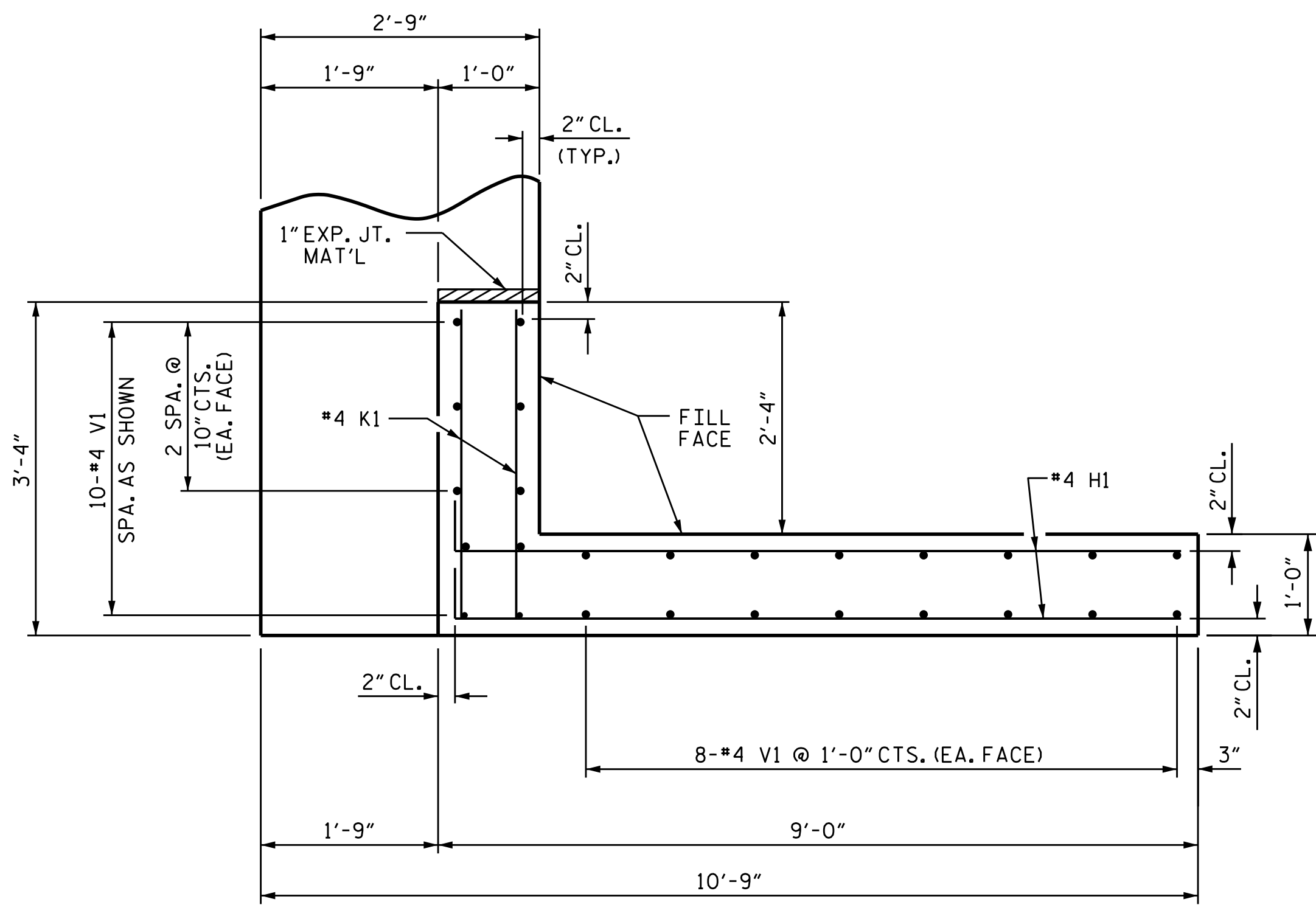
SUBSTRUCTURE
END BENT No. 2



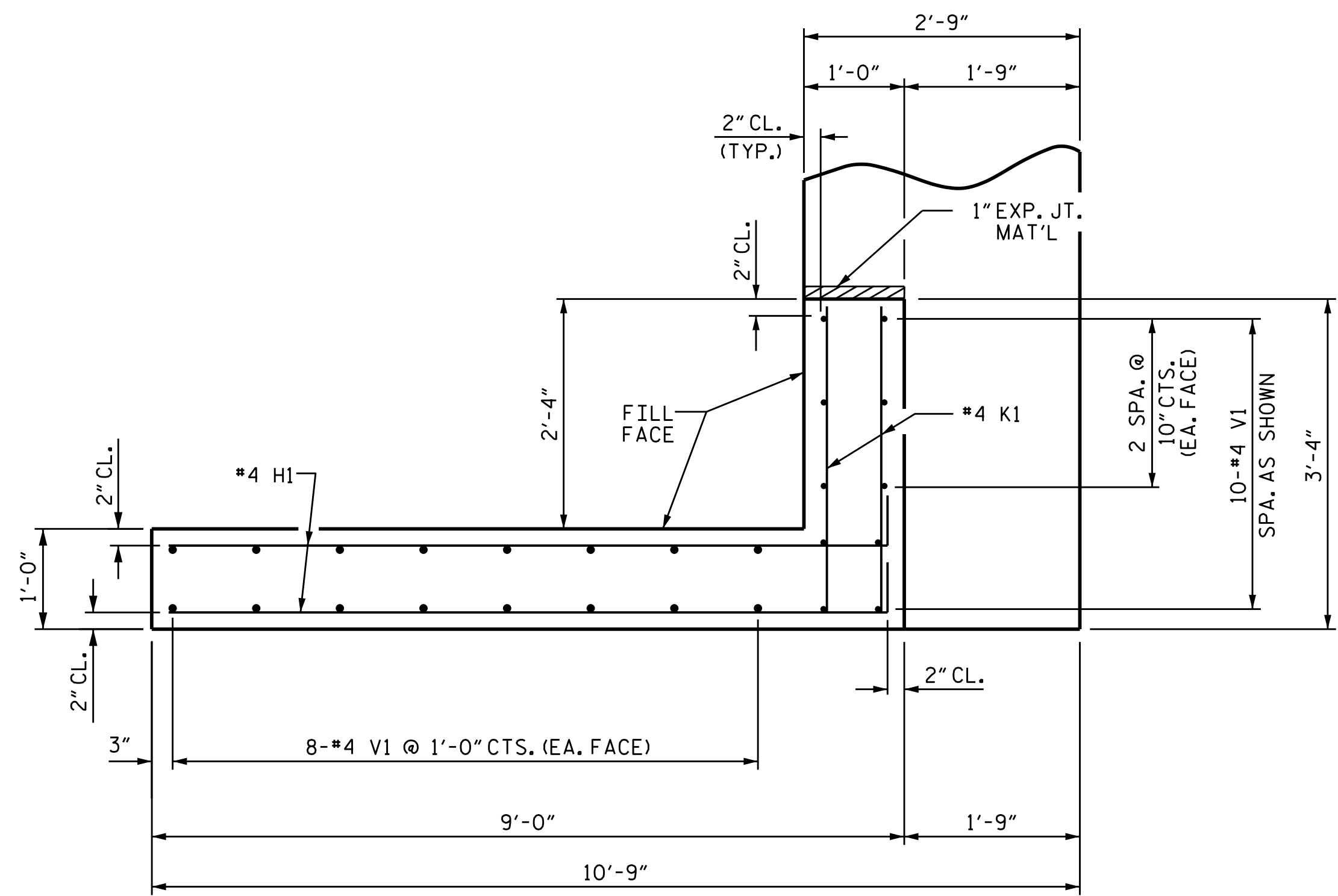
ASSEMBLED BY : Z. THORNTON	DATE :05/05/16
CHECKED BY : K. P. SEDA	DATE :05/16/16
DRAWN BY : WJH	12/11
CHECKED BY : AAC	12/11
REV. 4/15	MAA/TMG

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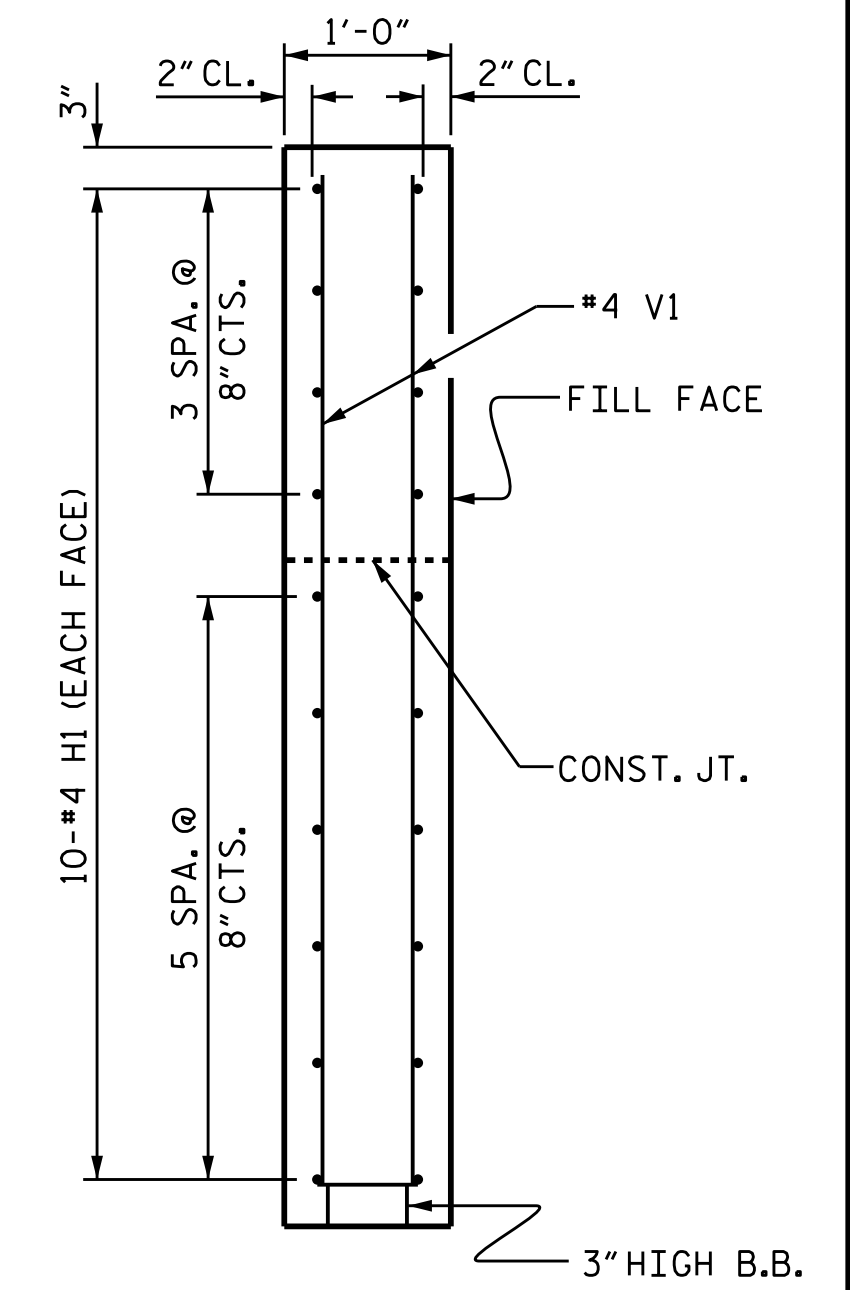
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1			3			TOTAL SHEETS 14
2			4			



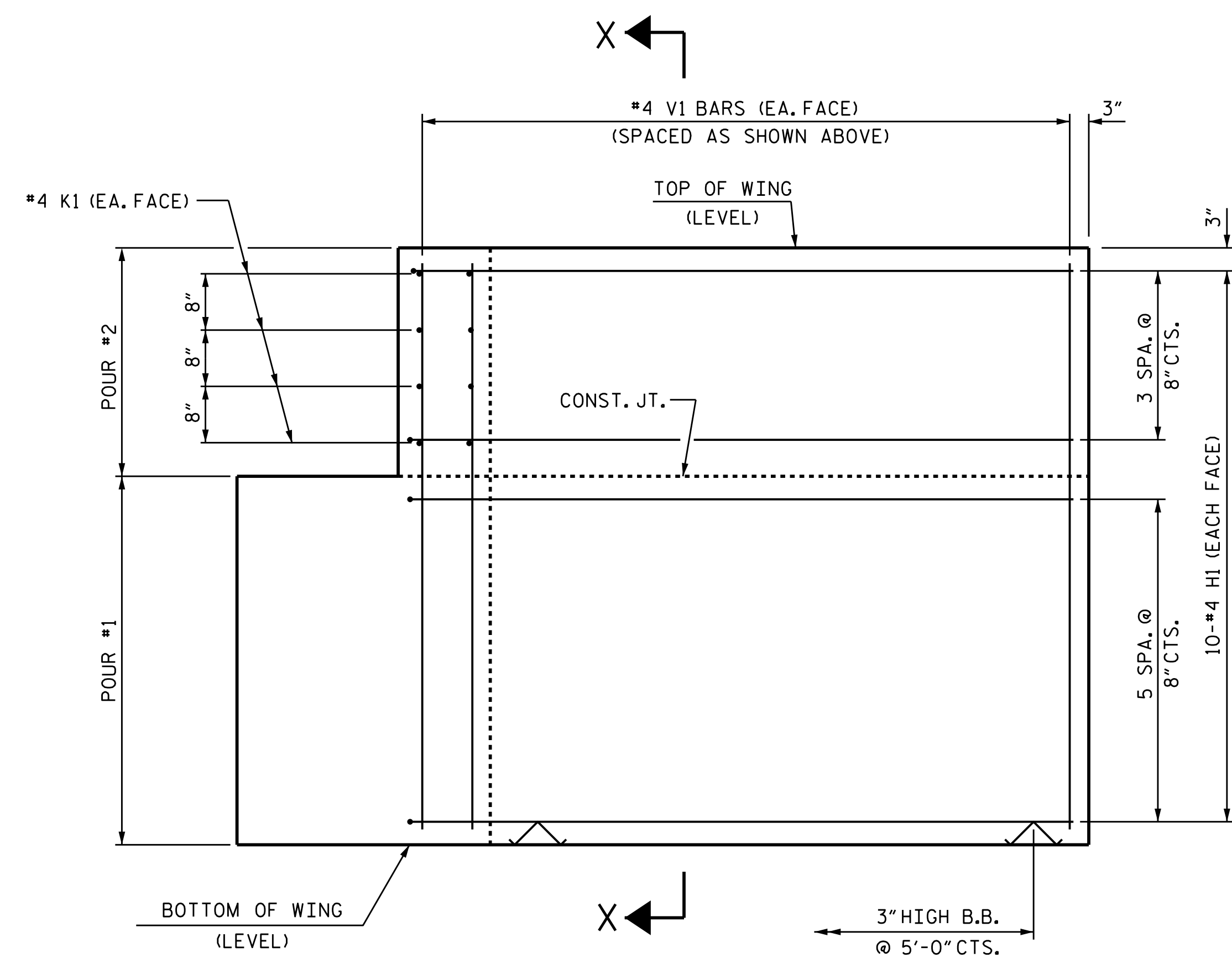
PLAN OF WING (W1)



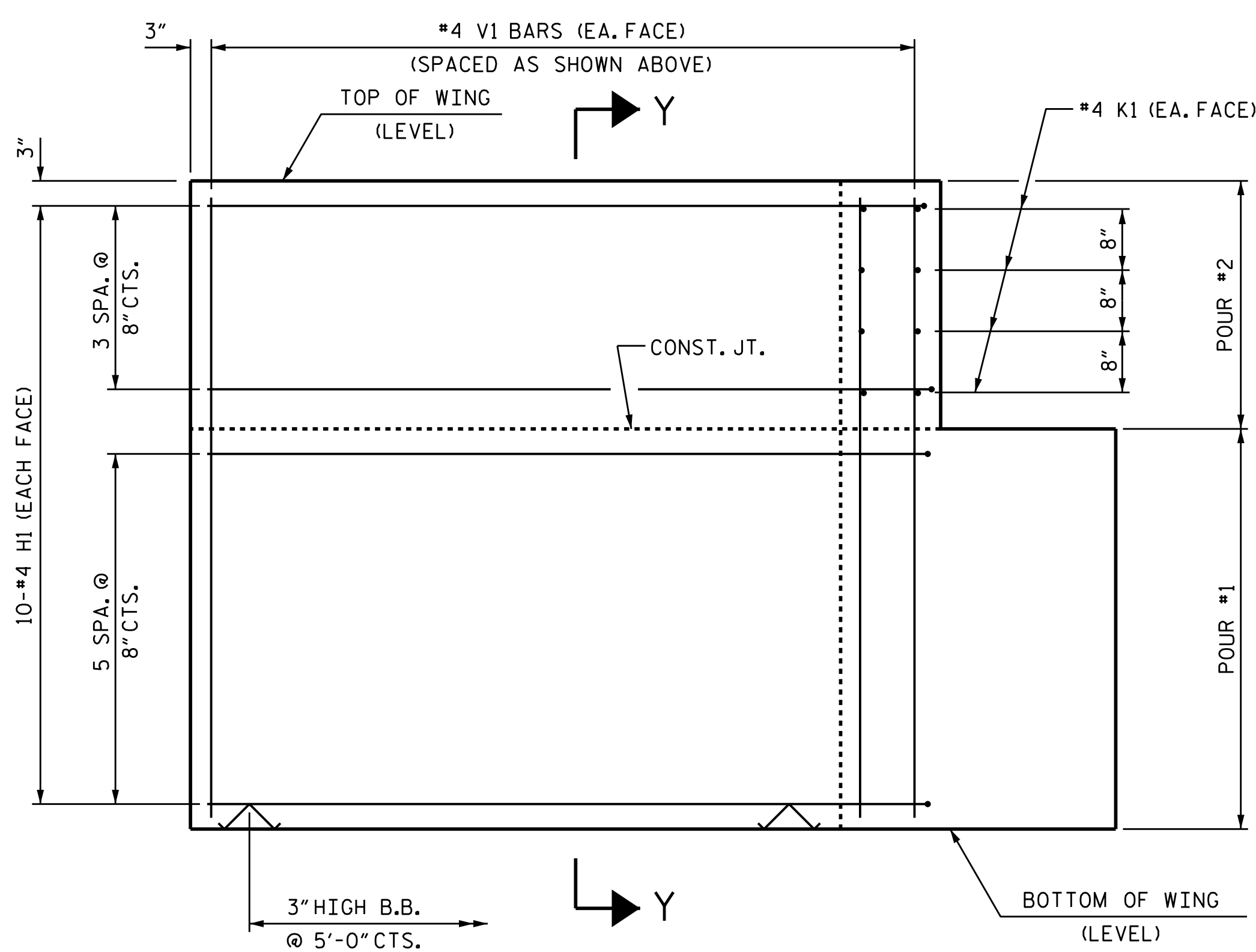
PLAN OF WING (W2)



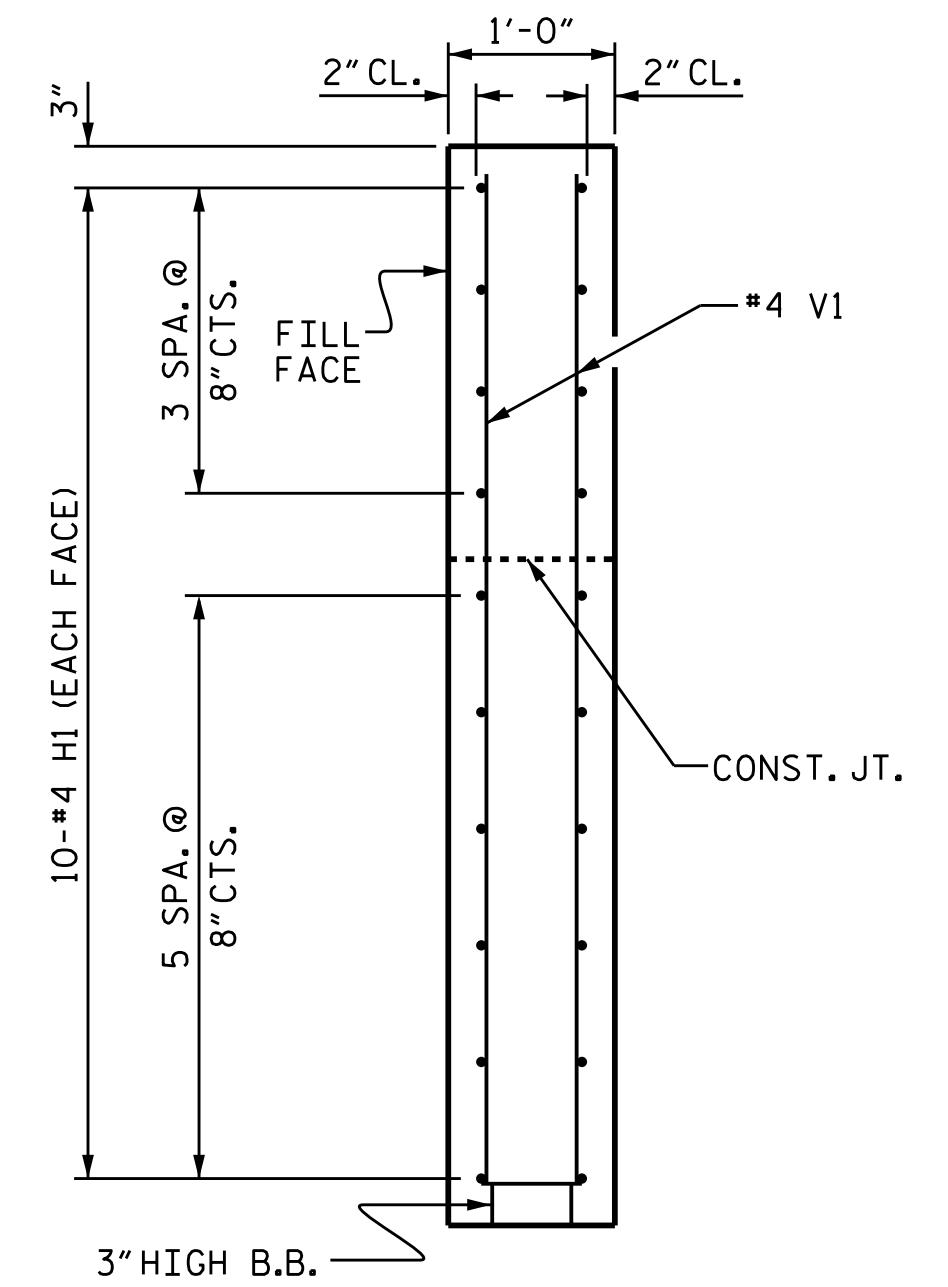
SECTION X-X



ELEVATION OF WING (W1)



ELEVATION OF WING (W2)



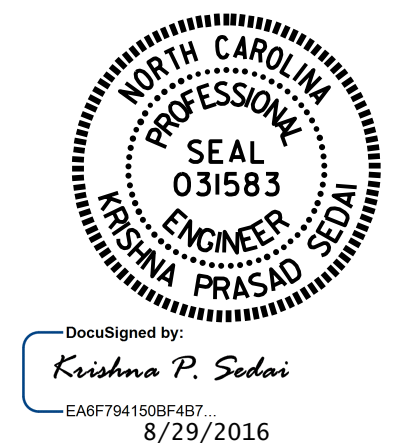
SECTION Y-Y

PROJECT NO. B-5741
 SCOTLAND COUNTY
 STATION: 15+26.50 -L-

SHEET 3 OF 4

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUBSTRUCTURE
 END BENT
 WING DETAILS



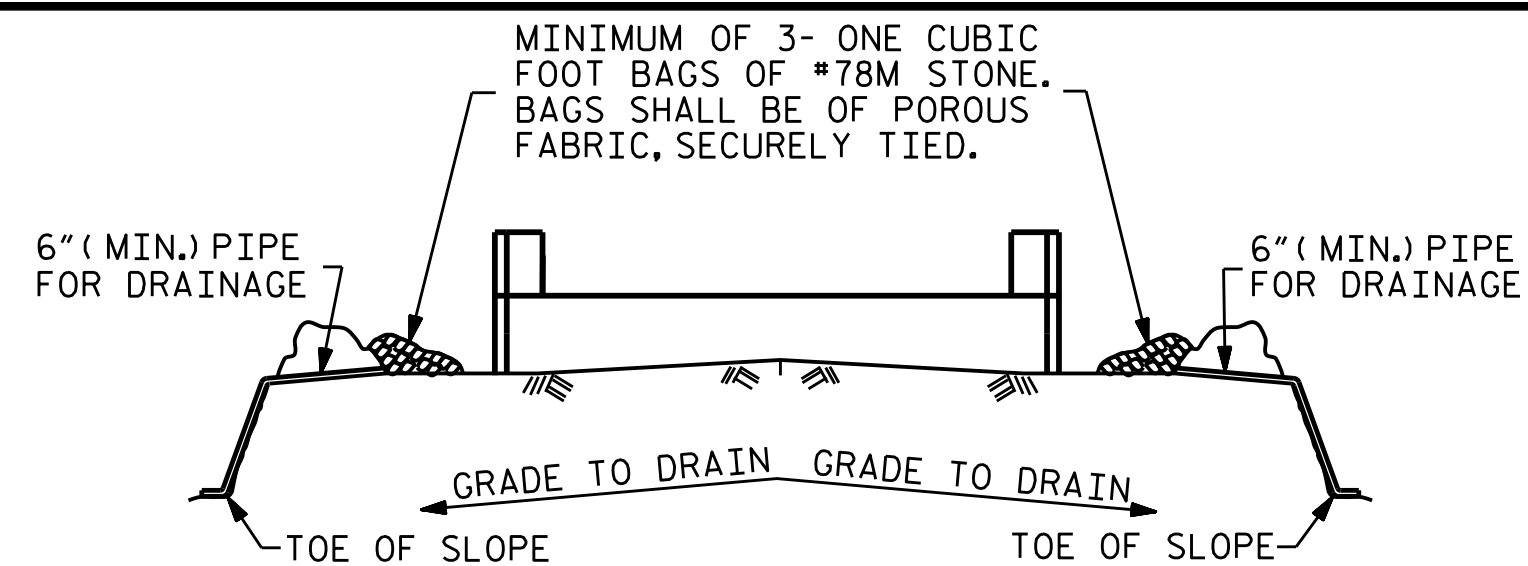
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CHECKED BY : K. P. SEDA	DATE :05/16/16
DRAWN BY : WJH	12/11
CHECKED BY : AAC	12/11
REV. 4/15	MAA/TMG

WING DETAILS

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 FINAL UNLESS ALL
 SIGNATURES COMPLETED

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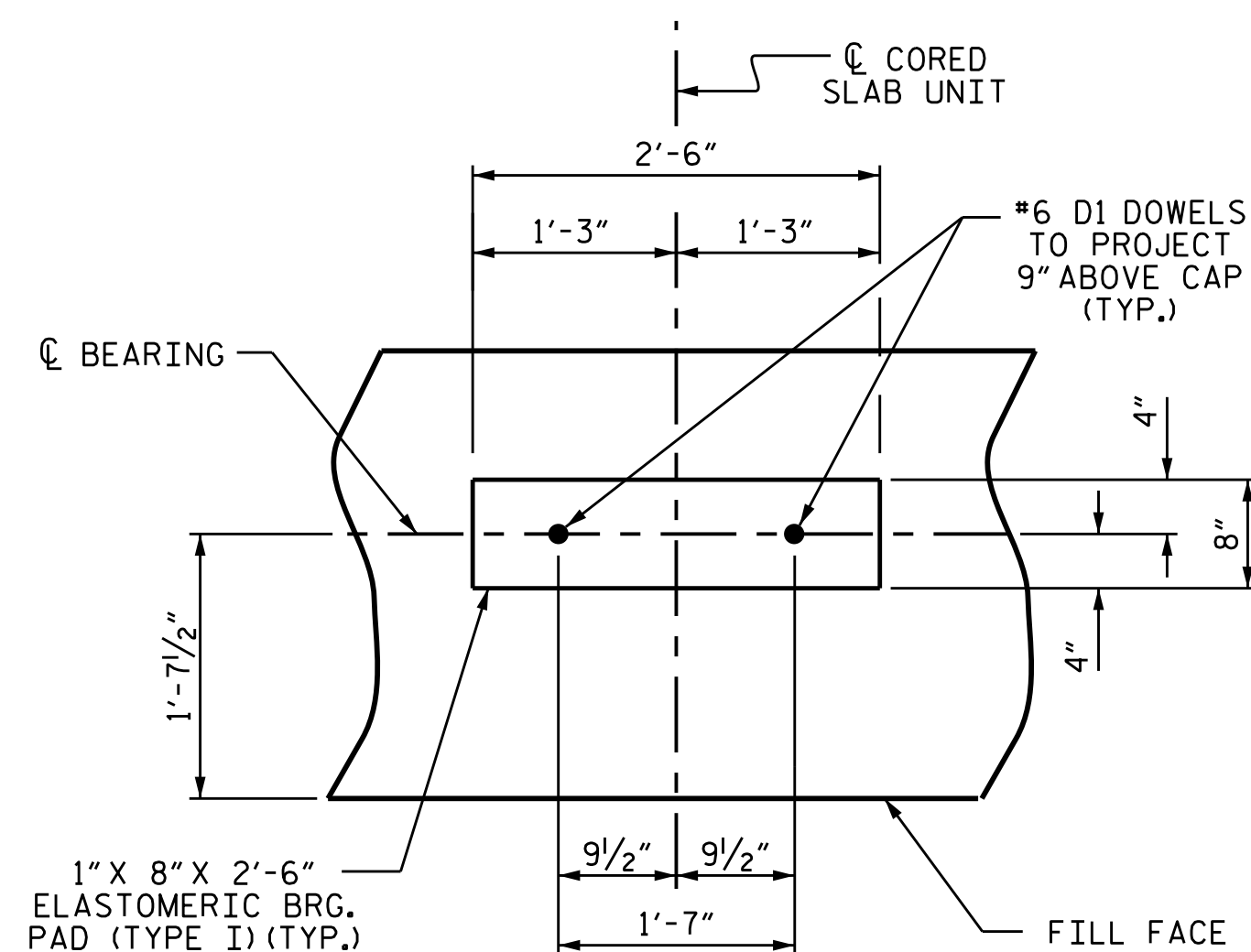


BAGGED STONE AND PIPE SHALL BE PLACED IMMEDIATELY AFTER COMPLETION OF END BENT EXCAVATION. PIPE MAY BE EITHER CONCRETE, CORRUGATED STEEL, CORRUGATED ALUMINUM ALLOY, OR CORRUGATED PLASTIC. PERFORATED PIPE WILL NOT BE ALLOWED.

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

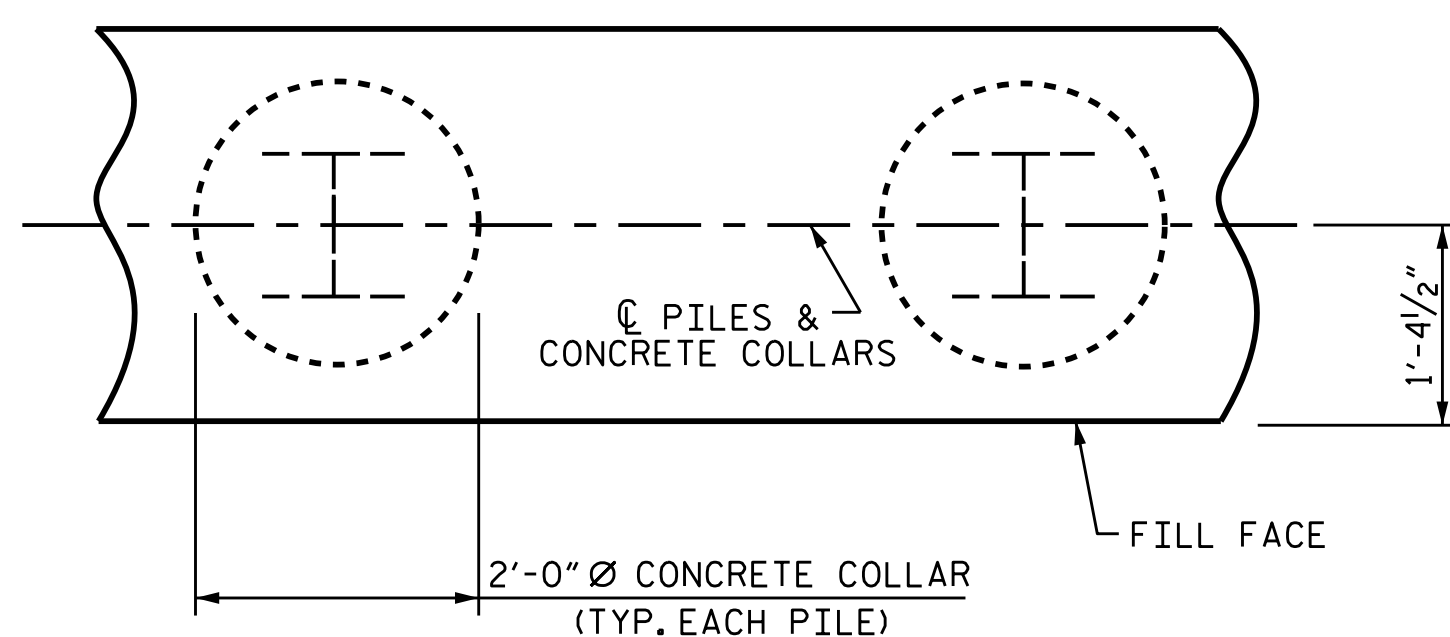
NO SEPARATE PAYMENT WILL BE MADE FOR THIS WORK AND THE ENTIRE COST OF THIS WORK SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR THE SEVERAL PAY ITEMS.

TEMPORARY DRAINAGE AT END BENT



DETAIL "A"

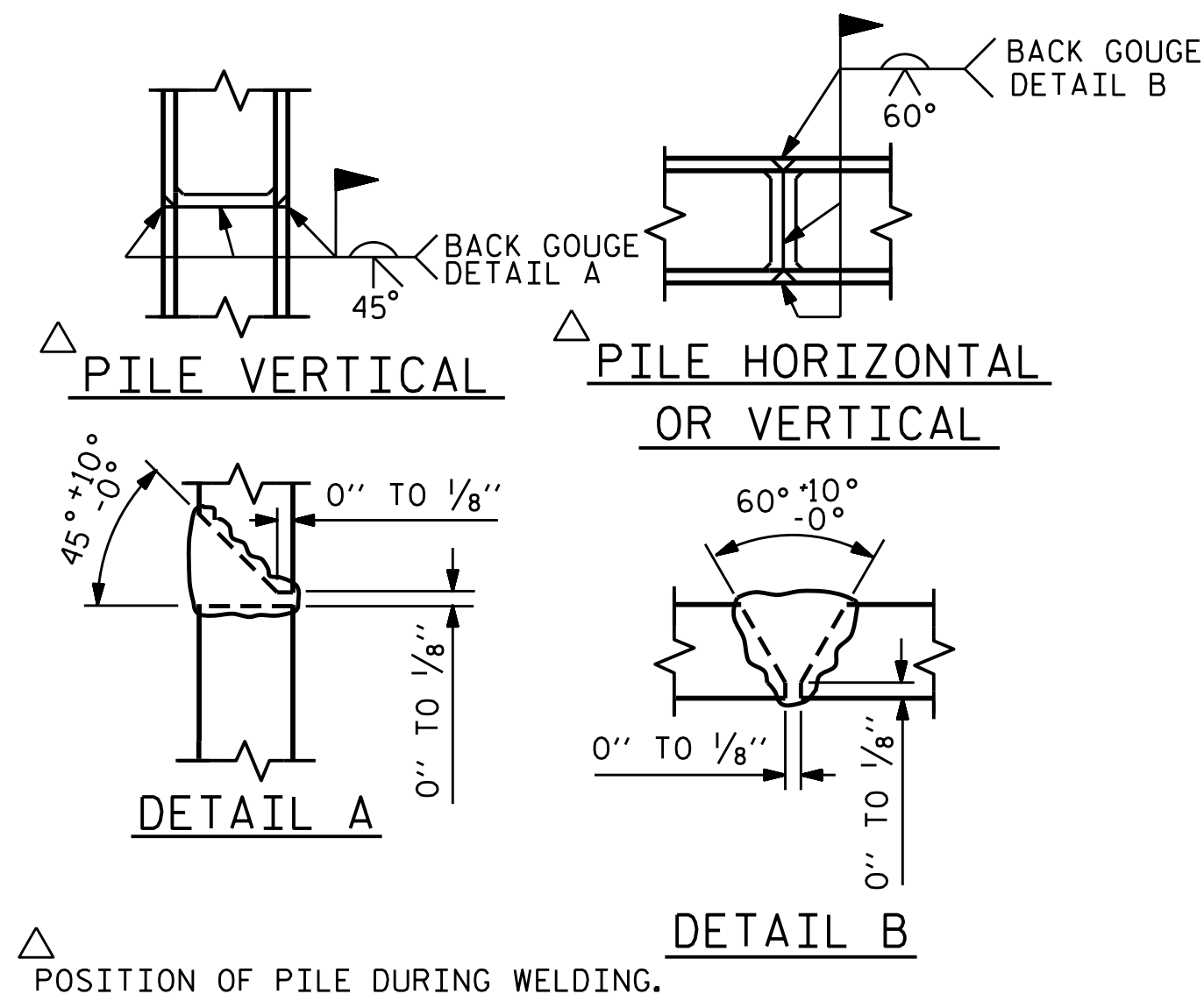
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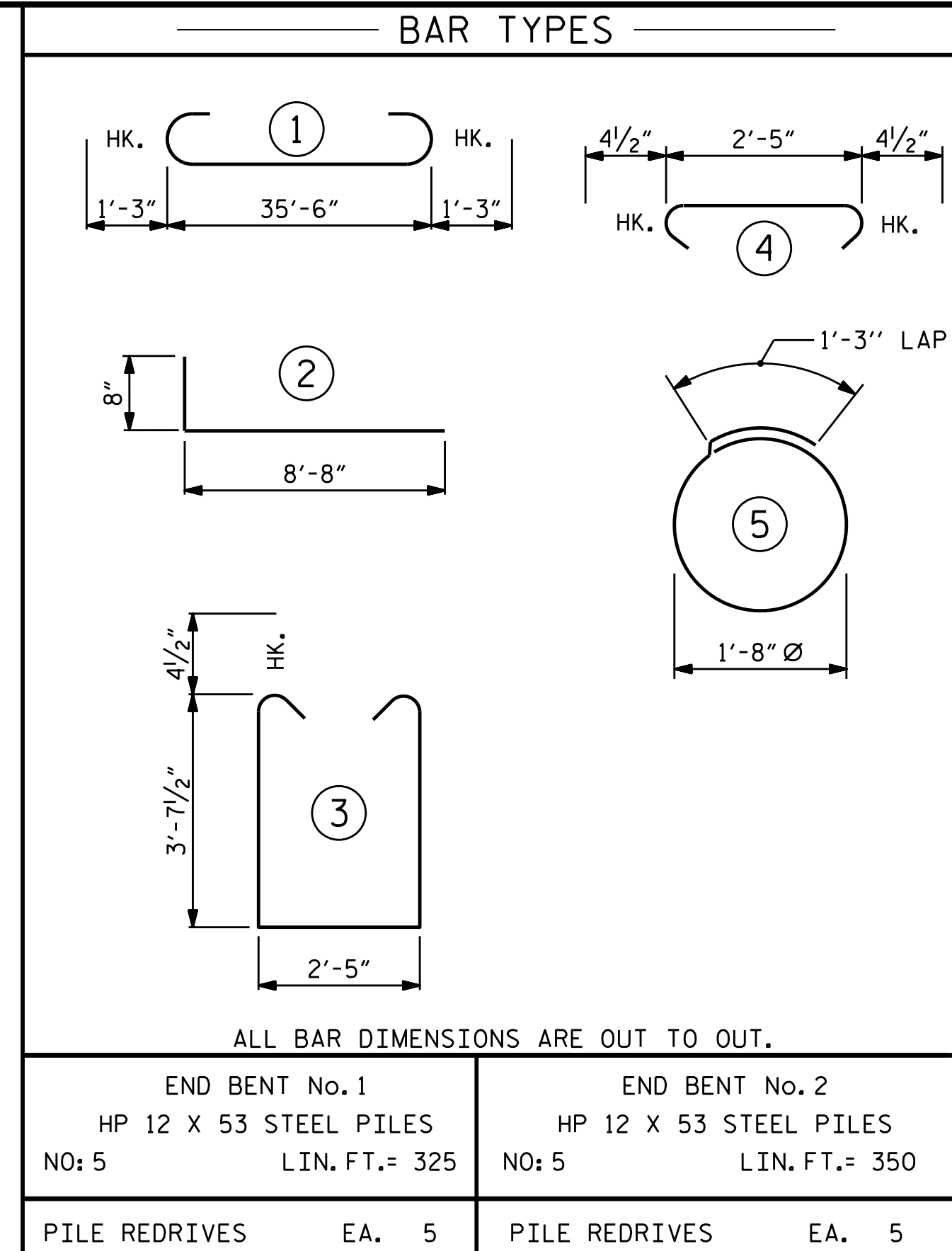
PLAN

CORROSION PROTECTION FOR STEEL PILES DETAIL

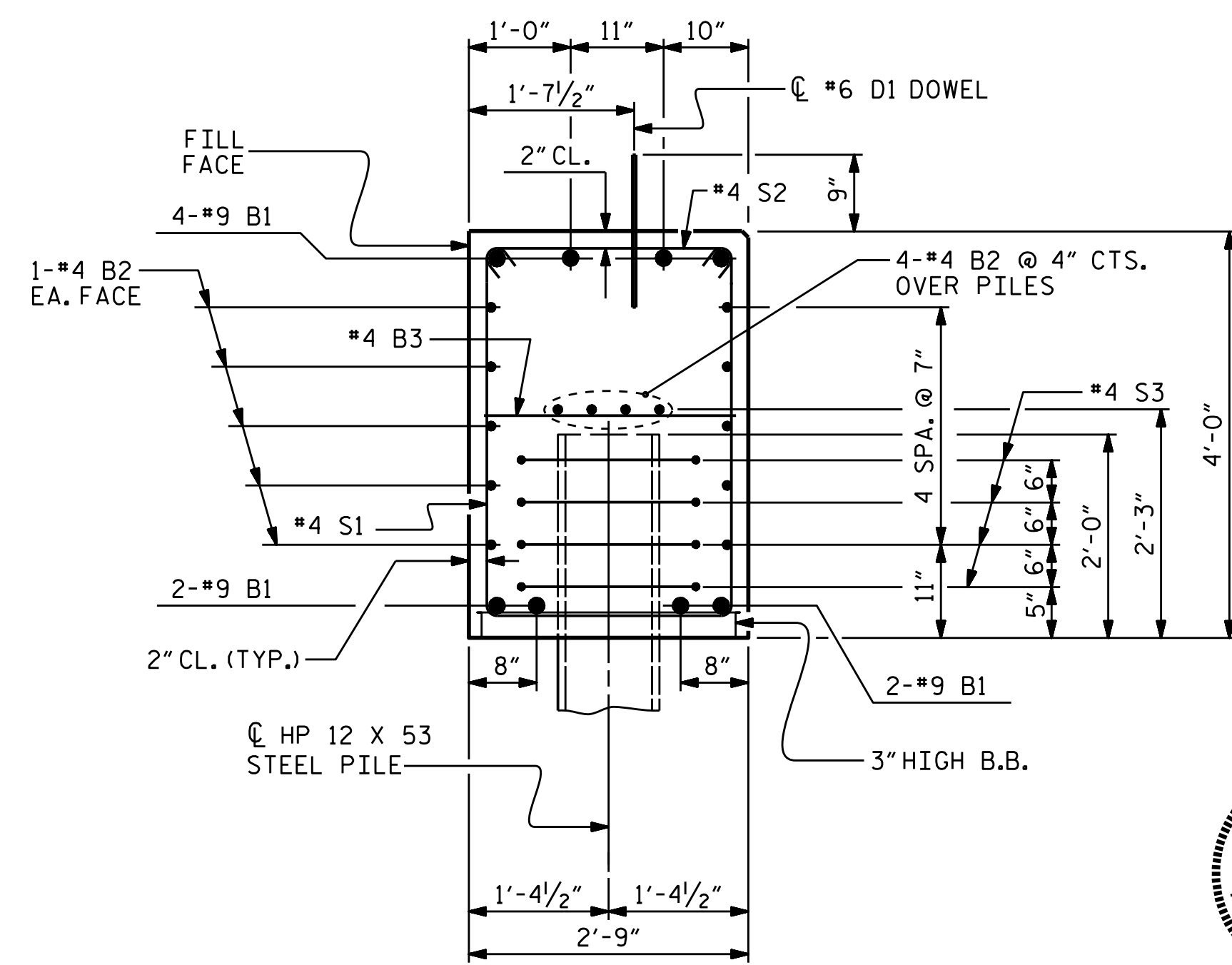
(END BENT No. 1 SHOWN, END BENT No. 2 SIMILAR BY ROTATION)



PILE SPLICE DETAILS

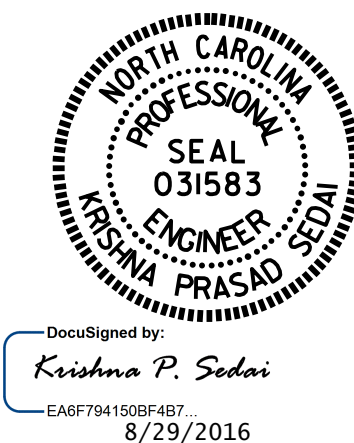


BILL OF MATERIAL FOR ONE END BENT					
BAR NO.	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	8	#9	1	38'-0"	1034
B2	28	#4	STR	19'-1"	357
B3	9	#4	STR	2'-5"	15
D1	20	#6	STR	1'-6"	45
H1	40	#4	2	9'-4"	249
K1	16	#4	STR	2'-11"	31
S1	46	#4	3	10'-5"	320
S2	46	#4	4	3'-2"	97
S3	20	#4	5	6'-6"	87
V1	52	#4	STR	6'-2"	214
REINFORCING STEEL (FOR ONE END BENT)					2449 LBS.
CLASS A CONCRETE BREAKDOWN (FOR ONE END BENT)					
POUR #1 CAP, LOWER PART OF WINGS & COLLARS					17.9 C.Y.
POUR #2 UPPER PART OF WINGS					2.3 C.Y.
TOTAL CLASS A CONCRETE					20.2 C.Y.



SECTION A-A

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



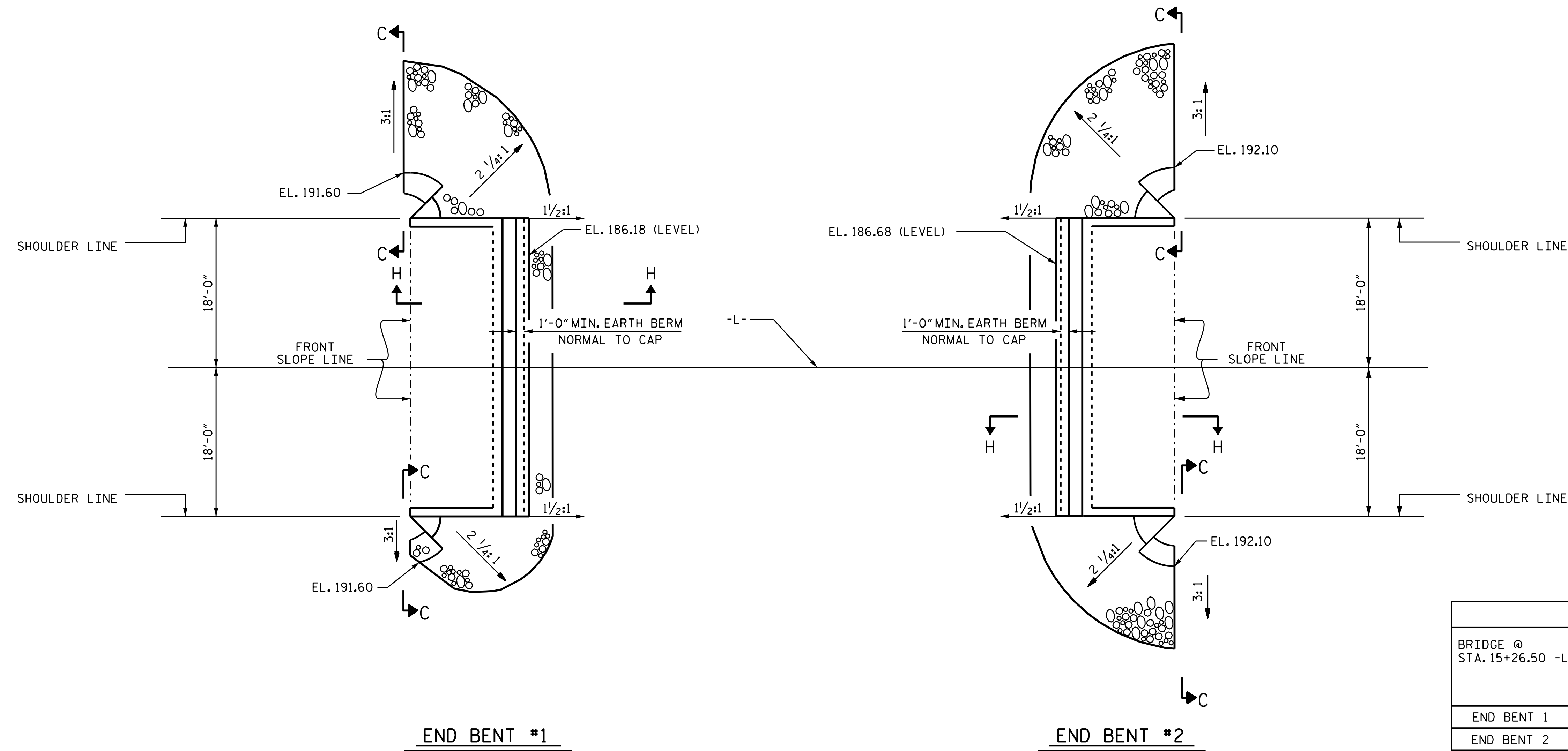
PROJECT NO. B-5741
SCOTLAND COUNTY
STATION: 15+26.50 -L-
SHEET 4 OF 4

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-12	
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2			4				

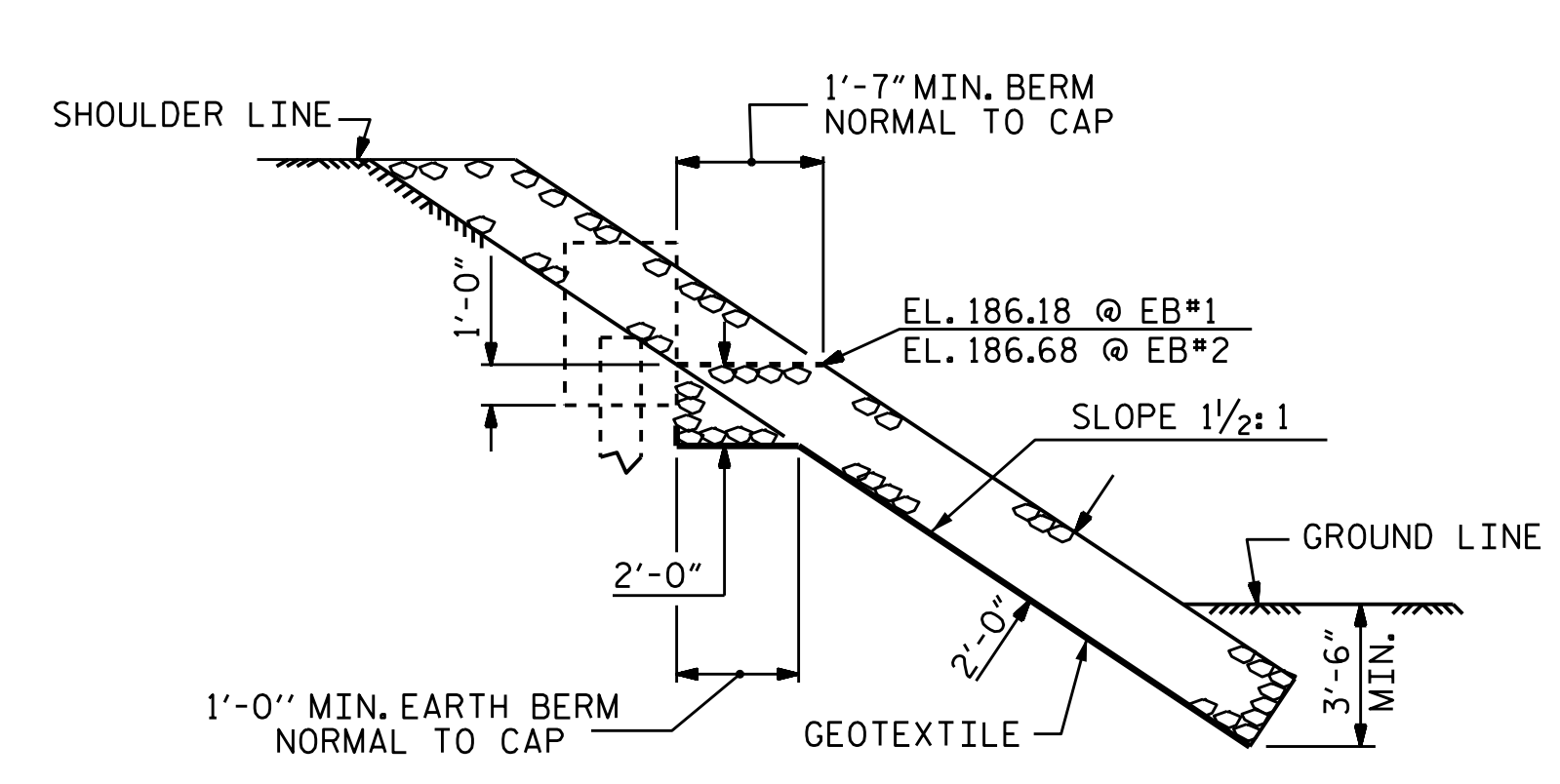
ASSEMBLED BY : Z. THORNTON	DATE : 05/05/16
CHECKED BY : K. P. SEDAI	DATE : 05/16/16
DRAWN BY : WJH	12/11
CHECKED BY : AAC	12/11

NOTES :
FOR BERM WIDTH DIMENSIONS, SEE GENERAL DRAWING.

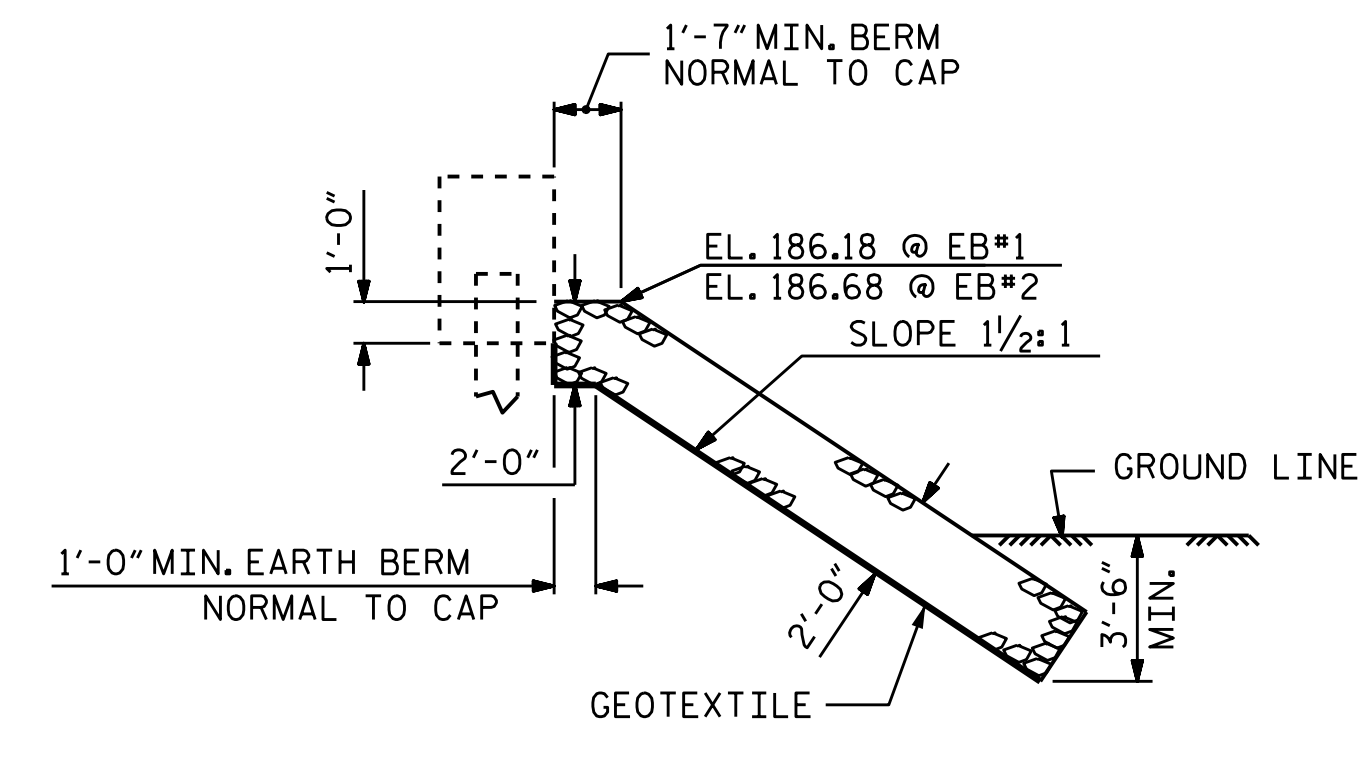


PLAN

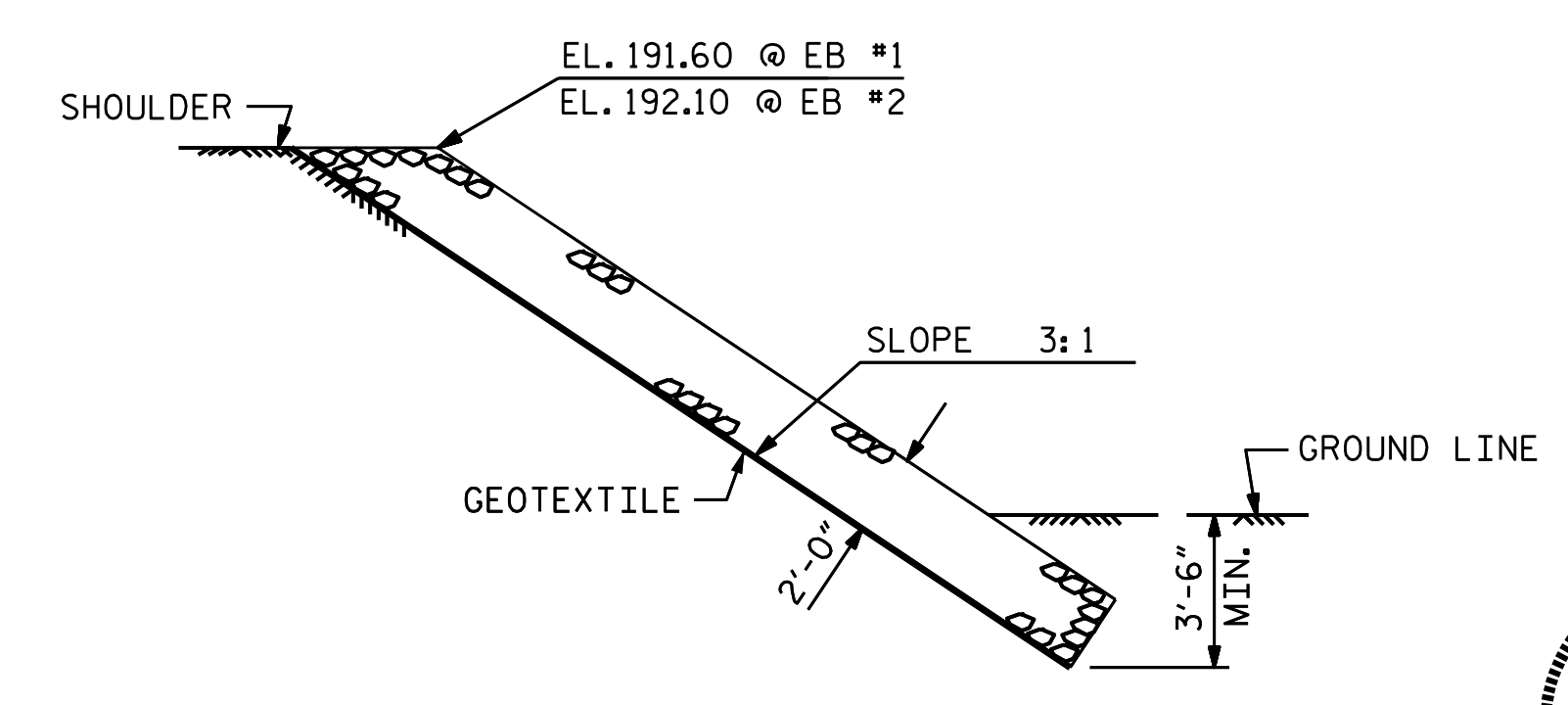
ESTIMATED QUANTITIES		
BRIDGE @ STA. 15+26.50 -L-	RIP RAP CLASS II (2'-0" THICK)	GEOTEXTILE FOR DRAINAGE
	TONS	SQUARE YARDS
END BENT 1	110	120
END BENT 2	120	135



SECTION H-H

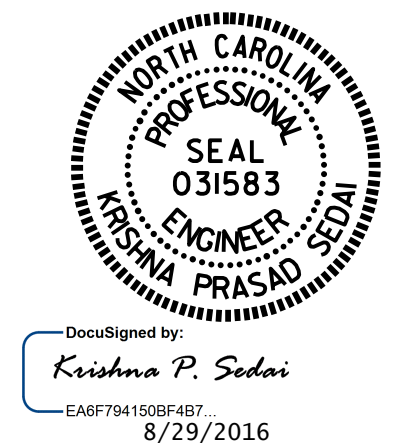


SECTION C-C
BERM RIP RAPPED



SECTION C-C

PROJECT NO. B-5741
SCOTLAND COUNTY
STATION: 15+26.50 -L-



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
STANDARD
= RIP RAP DETAILS =

ASSEMBLED BY : Z. THORNTON	DATE : 05/16/16
CHECKED BY : K. P. SEDAI	DATE : 05/16/16
DRAWN BY : REK 1/84	REV. 5/1/06R TLA/GM
CHECKED BY : ROU 1/84	REV. 10/1/11 MAA/GM
	REV. 12/21/11 MAA/GM

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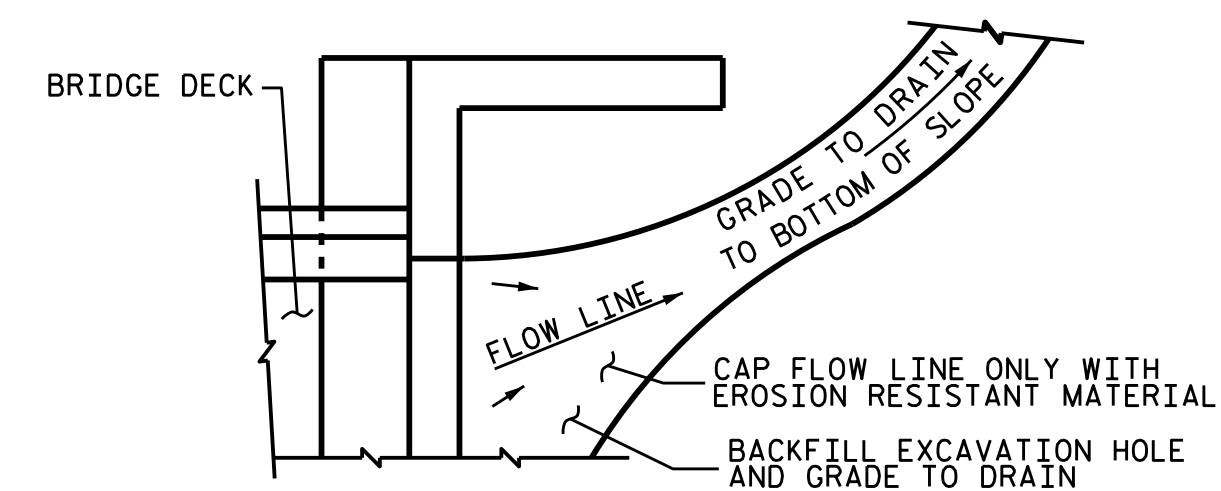
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NO.	BY:	DATE:	NO.	BY:	DATE:	S-13
1			3			TOTAL SHEETS
2			4			14

NOTES

FOR REINFORCED BRIDGE APPROACH FILL INCLUDING GEOTEXTILE, IMPERMEABLE GEOMEMBRANE, 4" Ø DRAINAGE PIPE, #78M STONE, AND SELECT MATERIAL, SEE ROADWAY PLANS.

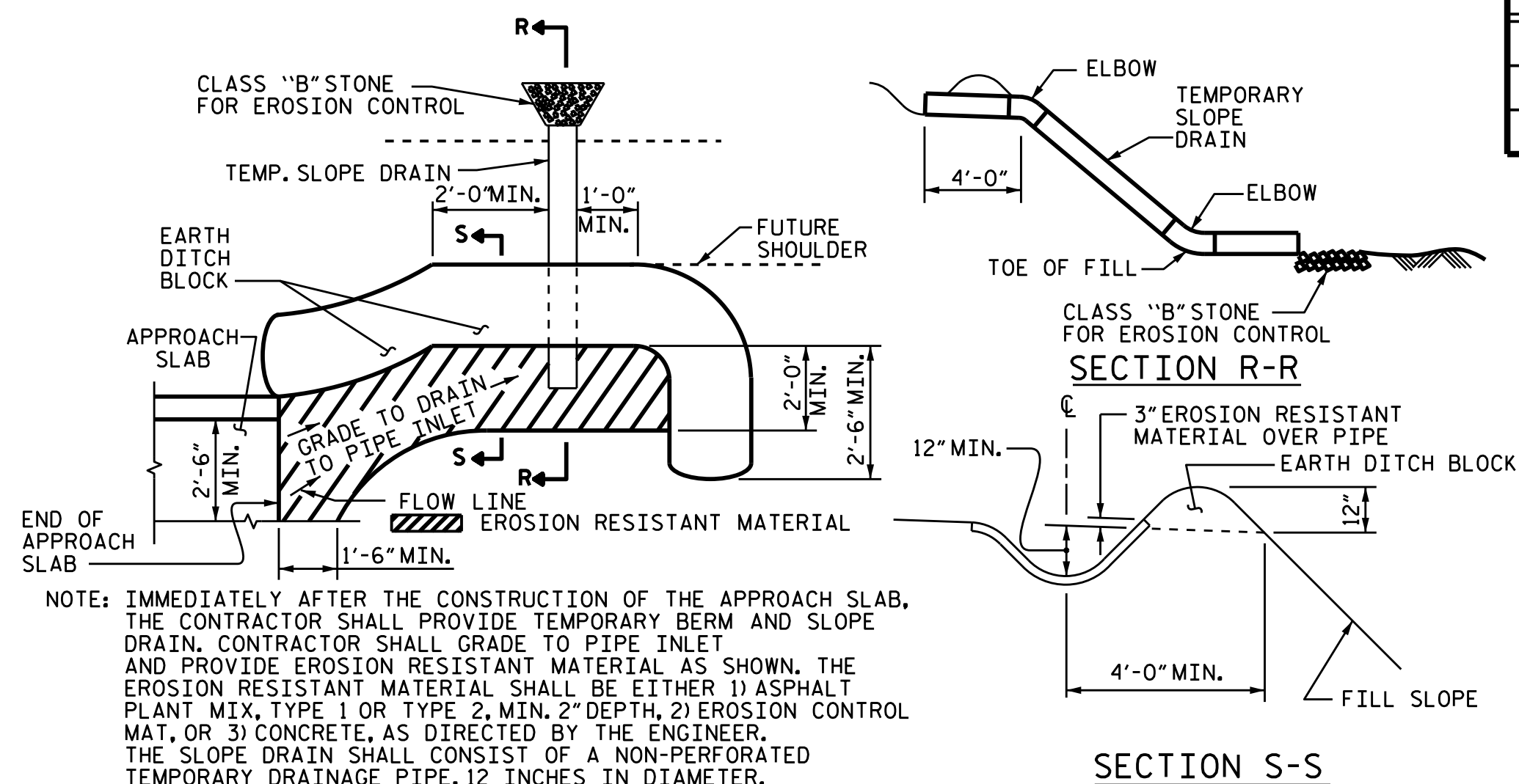
AREA BETWEEN THE WINGWALL AND APPROACH SLAB SHALL BE GRADED TO DRAIN THE WATER AWAY FROM THE FILL FACE OF THE BRIDGE AND SHALL BE PAVED. SEE ROADWAY PLANS.

APPROACH SLAB GROOVING IS NOT REQUIRED.



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

TEMPORARY DRAINAGE DETAIL

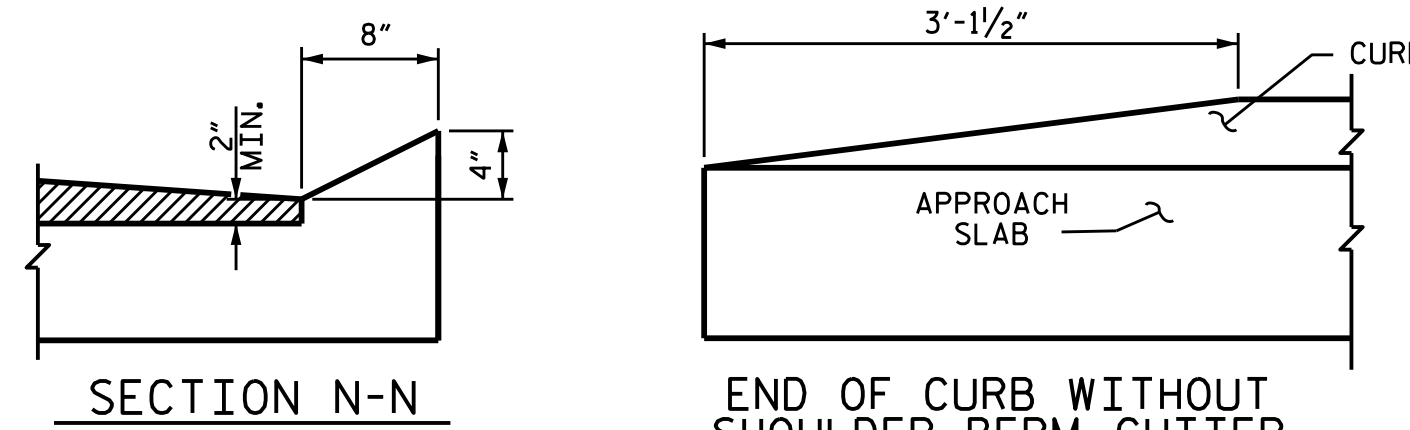


NOTE: IMMEDIATELY AFTER THE CONSTRUCTION OF THE APPROACH SLAB, THE CONTRACTOR SHALL PROVIDE TEMPORARY BERM AND SLOPE DRAIN. CONTRACTOR SHALL GRADE TO PIPE INLET AND PROVIDE EROSION RESISTANT MATERIAL AS SHOWN. THE EROSION RESISTANT MATERIAL SHALL BE EITHER 1) ASPHALT PLANT MIX, TYPE 1 OR TYPE 2, MIN.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

PLAN VIEW

TEMPORARY BERM AND SLOPE DRAIN DETAILS

(TO BE USED WHEN SHOULDER BERM GUTTER IS REQUIRED)



CURB DETAILS

BILL OF MATERIAL

APPROACH SLAB AT EB #1

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
*A1	13	#4	STR	28'-10"	250
A2	13	#4	STR	28'-10"	250
*B1	58	#5	STR	11'-2"	676
B2	58	#6	STR	11'-8"	1016

REINFORCING STEEL	LBS.	1266
*EPOXY COATED REINFORCING STEEL	LBS.	926

CLASS AA CONCRETE	C. Y.	17.7
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APPROACH SLAB AT EB #2

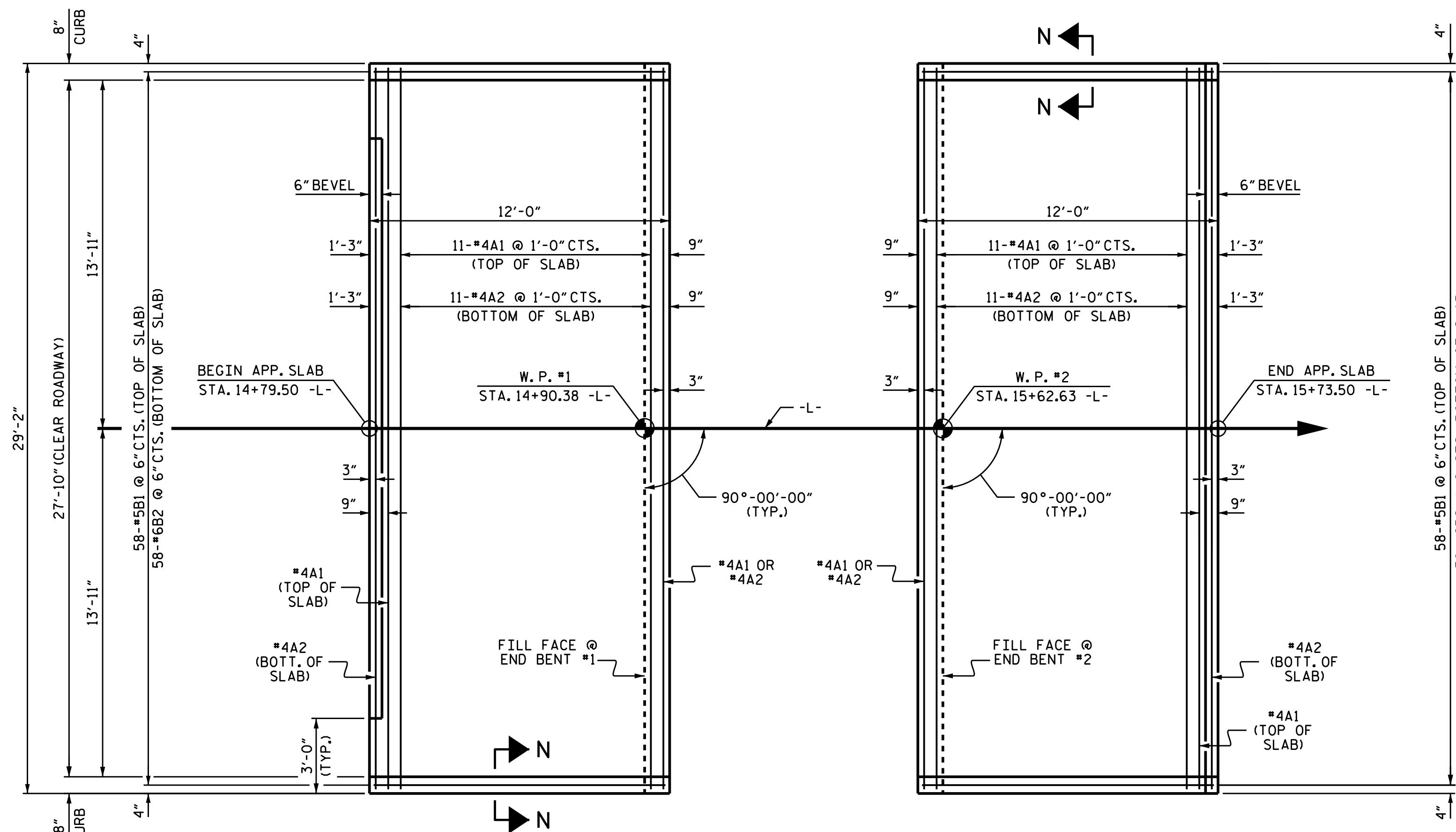
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
*A1	13	#4	STR	28'-10"	250
A2	13	#4	STR	28'-10"	250
*B1	58	#5	STR	11'-2"	676
B2	58	#6	STR	11'-8"	1016

REINFORCING STEEL	LBS.	1266
*EPOXY COATED REINFORCING STEEL	LBS.	926

CLASS AA CONCRETE	C. Y.	17.7
-------------------	-------	------

SPLICE LENGTHS

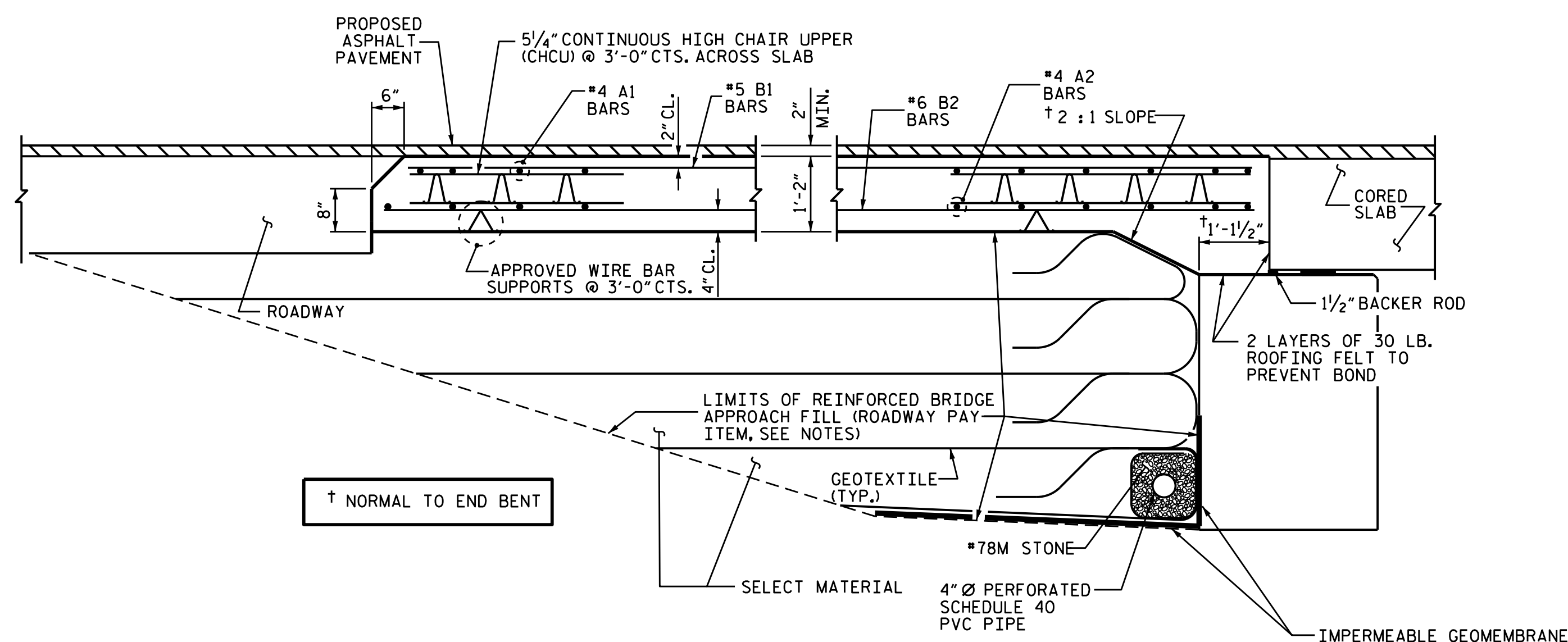
BAR SIZE	EPOXY COATED	UNCOATED
#4	2'-0"	1'-9"
#5	2'-6"	2'-2"
#6	3'-10"	2'-7"



PLAN @ END BENT #1

PLAN @ END BENT #2

DIMENSIONS SHOWN ARE TYPICAL FOR BOTH APPROACH SLABS



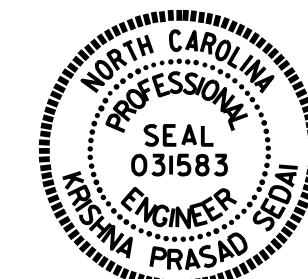
SECTION THRU SLAB

PROJECT NO. B-5741
 SCOTLAND COUNTY
 STATION: 15+26.50 -L-

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

STANDARD
 BRIDGE APPROACH SLAB
 FOR PRESTRESSED CONCRETE
 CORED SLAB UNIT

90° SKEW



DocuSigned by:
 Krishna P. Sedai
 EAEF7B41508F4B7
 8/29/2016

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

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ASSEMBLED BY : Z. THORNTON DATE : 05/16/16
 CHECKED BY : K. P. SEDA I DATE : 05/16/16
 DRAWN BY : SHS/MAA 5-09
 CHECKED BY : BCH 5-09

REV. 9-15 MAA/TMG

STANDARD NOTES

DESIGN DATA:

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

MATERIAL AND WORKMANSHIP:

EXCEPT AS MAY OTHERWISE BE SPECIFIED ON PLANS OR IN THE SPECIAL PROVISIONS, ALL MATERIAL AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE 2012 "STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES" OF THE N. C. DEPARTMENT OF TRANSPORTATION.

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

CONCRETE:

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

CONCRETE CHAMFERS:

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

DOWELS:

DOWELS WHEN INDICATED ON PLANS AS FOR CULVERT EXTENSIONS, SHALL BE EMBEDDED AT LEAST 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.

ENGLISH

JANUARY, 1990

STD. NO. SN