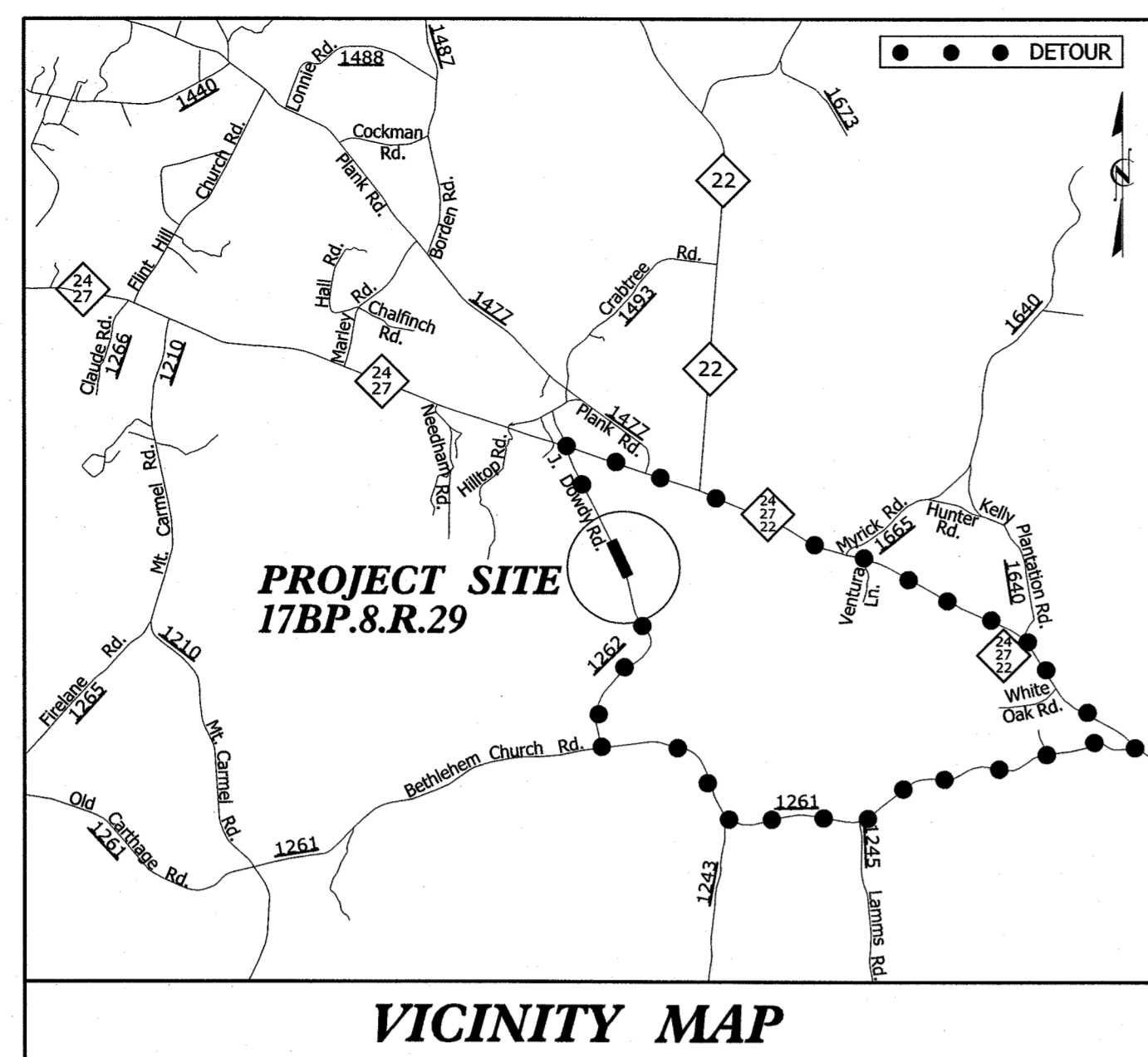


09/08/99

TIP PROJECT: 17BP.8.R.29

CONTRACT:

See Sheet 1-A For Index of Sheets



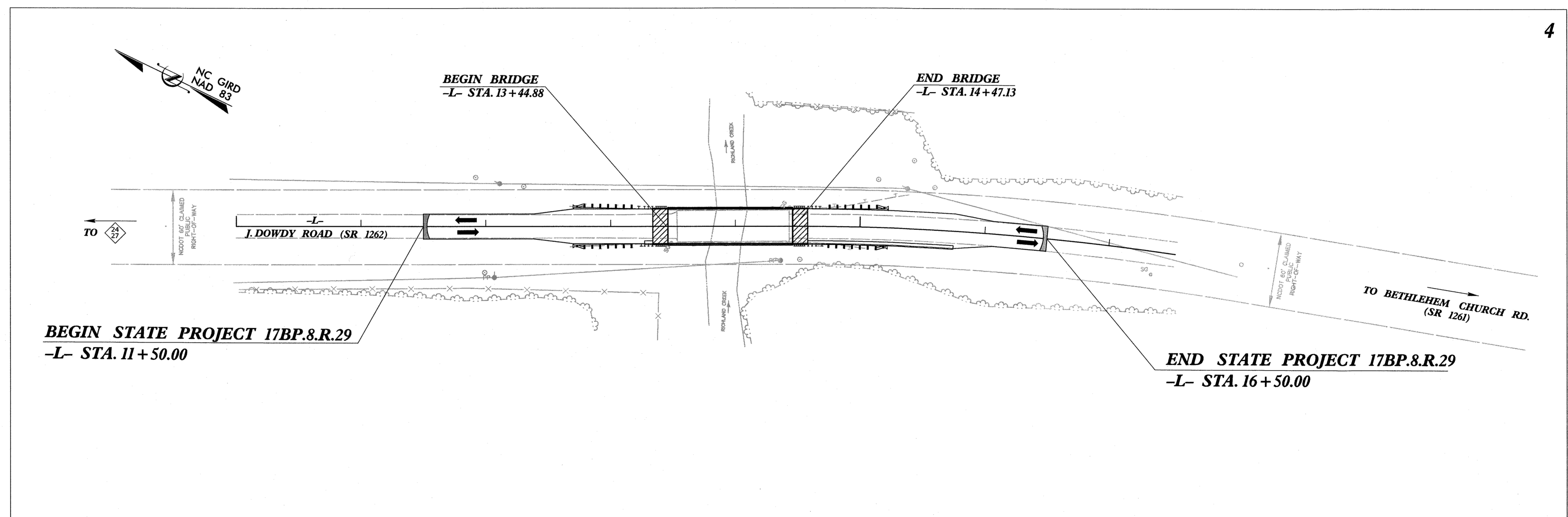
VICINITY MAP

STATE OF NORTH CAROLINA
 DIVISION OF HIGHWAYS
MOORE COUNTY

**LOCATION: REPLACEMENT OF BRIDGE NO. 69 ON J. DOWDY ROAD
 (SR 1262) OVER RICHLAND CREEK**

**TYPE OF WORK: GRADING, PAVING, TRAFFIC CONTROL,
 DRAINAGE, AND STRUCTURES**

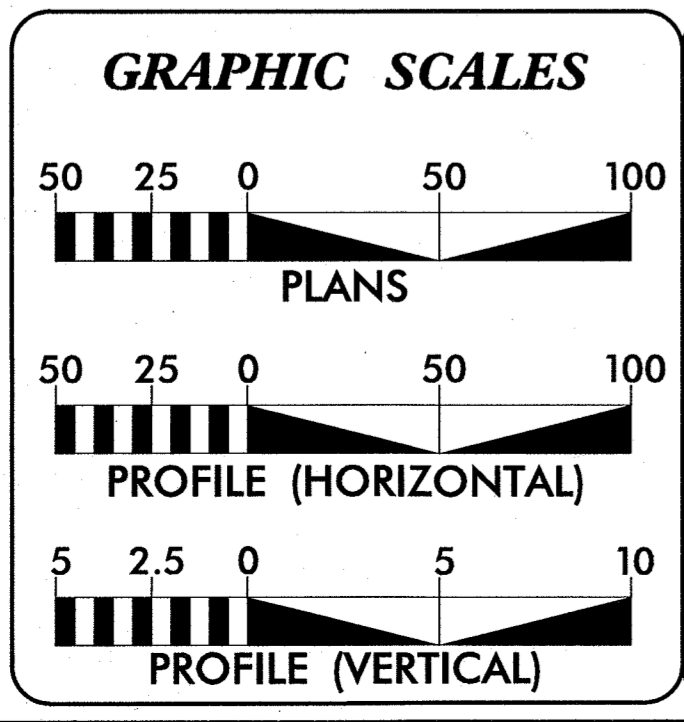
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	17BP.8.R.29	1	39
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
17BP.8.R.29		PE	
17BP.8.R.29		CONSTRUCTION	



4

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

CONTACT: TIMOTHY F. WELCH, PE
NCDOT HIGHWAY DIVISION 8



DESIGN DATA

ADT 2008 =	290
ADT 2025 =	680
DHV =	NA %
D =	NA %
T =	NA % *
V =	60 MPH
* TTST =	NA DUAL NA
FUNC CLASS =	LOCAL
SUB REGIONAL TIER	

PROJECT LENGTH

LENGTH OF ROADWAY PROJECT 17BP.8.R.29	=	0.075 MILE
LENGTH OF STRUCTURE PROJECT 17BP.8.R.29	=	0.020 MILE
TOTAL LENGTH PROJECT 17BP.8.R.29	=	0.095 MILE

Prepared In the Office of:
WSP
 For The
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
 2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: XXXXXX	BRIAN D. DEHLER, PE PROJECT ENGINEER
LETTING DATE: XXXXXX	JENNIFER L. STARNES, PE PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: *Timothy F. Welch*

ROADWAY DESIGN ENGINEER

SIGNATURE: *Brian D. Dehler*

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

STATE HIGHWAY DESIGN ENGINEER

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

WSP
 15401 Weston Parkway
 Suite 100
 Cary, NC 27513
 NC License # F-0891
 TEL: (919) 678-0035
 FAX: (919) 678-0206

PROJECT REFERENCE NO. 17BP.8.R.29	SHEET NO. 1-A
ROADWAY DESIGN ENGINEER	

INDEX OF SHEETS	
SHEET NUMBER	SHEET
1	TITLE SHEET
1-A	INDEX OF SHEETS, GENERAL NOTES, AND LIST OF STANDARD DRAWINGS
1-B	CONVENTIONAL SYMBOLS
1-C	SURVEY CONTROL SHEET
2	PAVEMENT SCHEDULE, TYPICAL SECTIONS, AND WEDGING DETAILS
3	SUMMARY OF QUANTITIES
3-A	MISCELLANEOUS SUMMARIES (DRAINAGE, EARTHWORK, GUARDRAIL, PAVEMENT REMOVAL, RIGHT-OF-WAY, & SHOULDER BERM GUTTER)
4	PLAN & PROFILE SHEET
TMP-1 THRU TMP-2	TRAFFIC MANAGEMENT PLANS
SP-1	SPECIAL SIGN DESIGN
PMP-1	PAVEMENT MARKING PLANS
EC-1 THRU EC-5	EROSION CONTROL PLANS
UO-1 THRU UO-3	UTILITIES BY OTHERS
X-1	CROSS SECTIONS
S-1 THRU S-16	STRUCTURE PLANS
SN	STRUCTURE NOTES

GENERAL NOTES:

2012 SPECIFICATIONS
 EFFECTIVE: 01-17-12
 REVISED: 11-01-11

GRADING AND SURFACING OR RESURFACING AND WIDENING:
 THE GRADE LINES SHOWN DENOTE THE FINISHED ELEVATION OF THE PROPOSED SURFACING AT GRADE POINTS SHOWN ON THE TYPICAL SECTIONS. WHERE NO GRADE LINES ARE SHOWN, THE PROFILES SHOWN DENOTE THE TOP ELEVATION OF THE EXISTING PAVEMENT ALONG THE CENTER LINE OF SURVEY ON WHICH THE PROPOSED RESURFACING WILL BE PLACED. GRADE LINES MAY BE ADJUSTED BY THE ENGINEER IN ORDER TO SECURE A PROPER TIE-IN.

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

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

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

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

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:

UTILITY	UTILITY OWNER
Power	Randolph EMC
Phone	Sprint/Century Link

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

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

- 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 | Reinforced 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 | |
| 840.24 | Frames and Narrow Slot Sag Grates |
| 840.29 | Frames and Narrow Slot Flat Grates |
| 840.35 | Traffic Bearing Grated Drop Inlet - for Cast Iron Double Frame and Grates |
| 846.01 | Concrete Curb, Gutter and Curb & Gutter |
| 846.04 | Drop Inlet Installation in Shoulder Berm Gutter |
| 862.01 | Guardrail Placement |
| 862.02 | Guardrail Installation |
| 862.03 | Structure Anchor Units |
| 876.01 | Rip Rap in Channels |
| 876.02 | Guide for Rip Rap at Pipe Outlets |

04/16/11

Note: Not to Scale

*S.U.E. = Subsurface Utility Engineering

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CONVENTIONAL PLAN SHEET SYMBOLS

BOUNDARIES AND PROPERTY:

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

BUILDINGS AND OTHER CULTURE:

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

HYDROLOGY:

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

RAILROADS:

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

RIGHT OF WAY:

Baseline Control Point	◆
Existing Right of Way Marker	△
Existing Right of Way Line	-----
Proposed Right of Way Line	○ RW
Proposed Right of Way Line with Iron Pin and Cap Marker	○ RW ▲
Proposed Right of Way Line with Concrete or Granite RW Marker	▲ RW
Proposed Control of Access Line with Concrete C/A Marker	○ C/A
Existing Control of Access	○
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	□ Vineyard

EXISTING STRUCTURES:

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

UTILITIES:

POWER:	
Existing Power Pole	●
Proposed Power Pole	○
Existing Joint Use Pole	●
Proposed Joint Use Pole	○
Power Manhole	○ P
Power Line Tower	⊗
Power Transformer	⊗
U/G Power Cable Hand Hole	○
H-Frame Pole	●
Recorded U/G Power Line	---P---
Designated U/G Power Line (S.U.E.*)	---P---

TELEPHONE:

Existing Telephone Pole	●
Proposed Telephone Pole	○
Telephone Manhole	○ T
Telephone Booth	□
Telephone Pedestal	□
Telephone Cell Tower	⊗
U/G Telephone Cable Hand Hole	○ TH
Recorded U/G Telephone Cable	---T---
Designated U/G Telephone Cable (S.U.E.*)	---T---
Recorded U/G Telephone Conduit	---TC---
Designated U/G Telephone Conduit (S.U.E.*)	---TC---
Recorded U/G Fiber Optics Cable	---T FO---
Designated U/G Fiber Optics Cable (S.U.E.*)	---T FO---

WATER:

Water Manhole	○ W
Water Meter	○
Water Valve	⊗
Water Hydrant	⊕
Recorded U/G Water Line	---W---
Designated U/G Water Line (S.U.E.*)	---W---
Above Ground Water Line	---A/G Water---

TV:

TV Satellite Dish	⊗
TV Pedestal	□
TV Tower	⊗
U/G TV Cable Hand Hole	○ TH
Recorded U/G TV Cable	---TV---
Designated U/G TV Cable (S.U.E.*)	---TV---
Recorded U/G Fiber Optic Cable	---TV FO---
Designated U/G Fiber Optic Cable (S.U.E.*)	---TV FO---

GAS:

Gas Valve	◇
Gas Meter	⊕
Recorded U/G Gas Line	---G---
Designated U/G Gas Line (S.U.E.*)	---G---
Above Ground Gas Line	---A/G Gas---

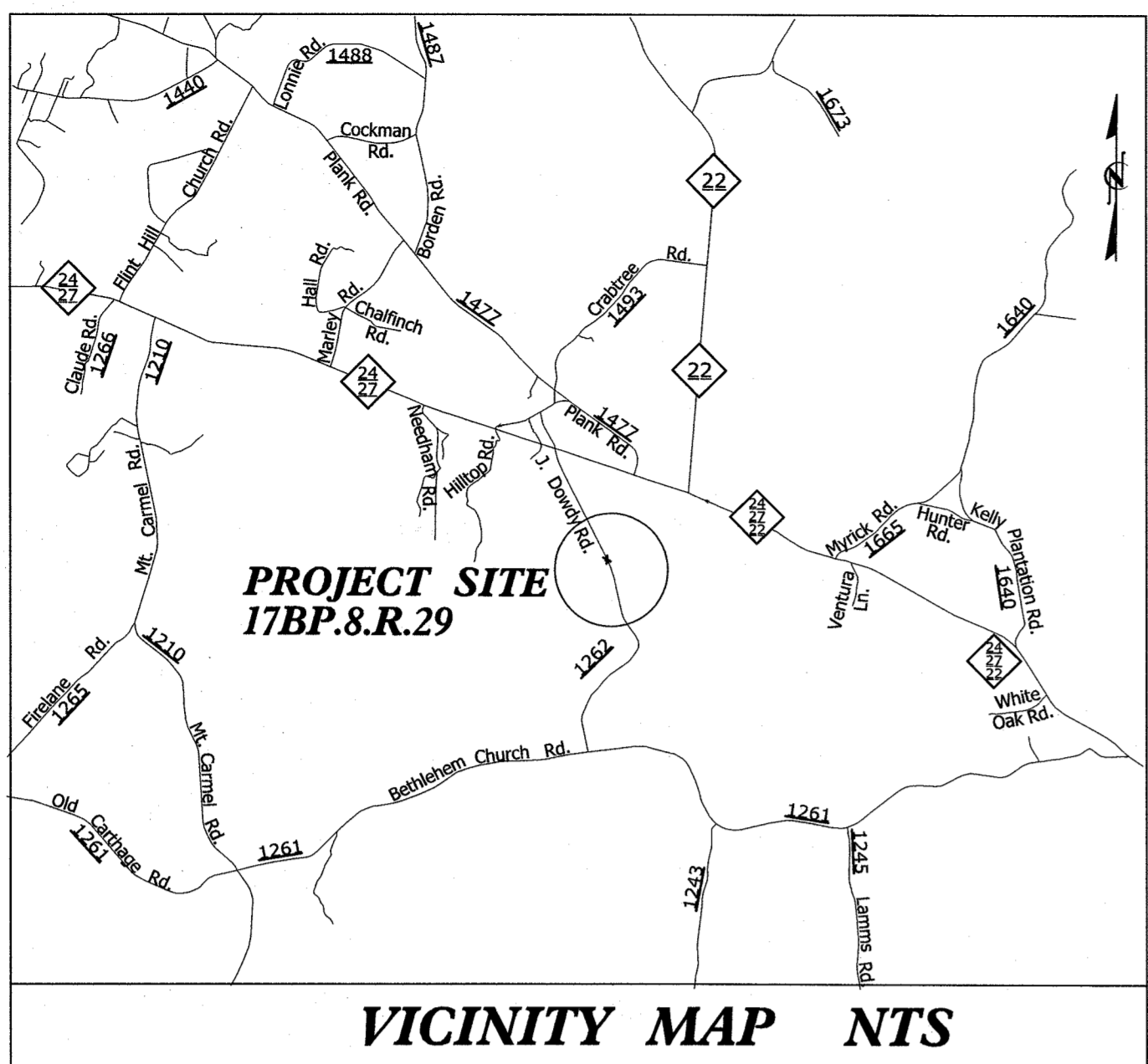
SANITARY SEWER:

Sanitary Sewer Manhole	⊕
Sanitary Sewer Cleanout	⊕
U/G Sanitary Sewer Line	---SS---
Above Ground Sanitary Sewer	---A/G Sanitary Sewer---
Recorded SS Forced Main Line	---FSS---
Designated SS Forced Main Line (S.U.E.*)	---FSS---

MISCELLANEOUS:

Utility Pole	●
Utility Pole with Base	□
Utility Located Object	○
Utility Traffic Signal Box	□
Utility Unknown U/G Line	---?UTL---
U/G Tank; Water, Gas, Oil	□
Underground Storage Tank, Approx. Loc.	⊕
A/G Tank; Water, Gas, Oil	□
Geoenvironmental Boring	⊕
U/G Test Hole (S.U.E.*)	⊕
Abandoned According to Utility Records	AATUR
End of Information	E.O.I.

8/17/99



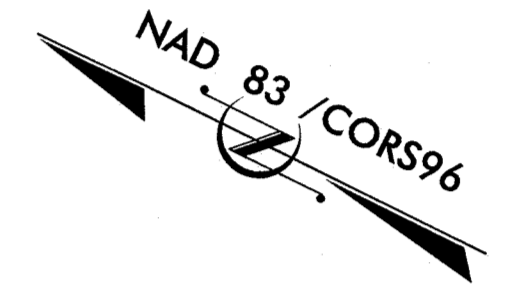
VICINITY MAP NTS

SURVEY CONTROL SHEET 17BP.8.R.29

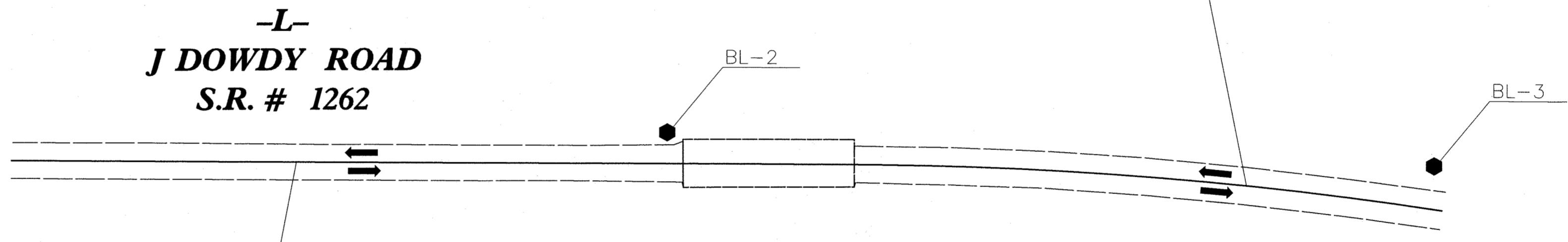
BL POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	L OFFSET
1	BL-1	592,889.63	1,851,432.63	312.76	OUTSIDE LIMITS	OUTSIDE LIMITS
2	BL-2	592,491.22	1,851,629.02	307.06	13+45.63	16.17 LEFT
3	BL-3	592,121.55	1,851,791.42	327.54	17+46.96	22.35 LEFT

WSP
 15401 Weston Parkway
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 Cary, NC 27513
 NC License # F-0891
 TEL: (919) 678-0035
 FAX: (919) 678-0206

PROJECT REFERENCE NO. 17BP.8.R.29	SHEET NO. 1-C
SURVEYOR	



-L- STA. 16+50.00 END STATE PROJECT 17BP.8.R.29
LOCALIZED PROJECT COORDINATES
N = 592,206.4146 E = 1,851,738.5550



-L- STA. 11+50.00 BEGIN STATE PROJECT 17BP.8.R.29
LOCALIZED PROJECT COORDINATES
N = 592,660.3204 E = 1,851,529.3369

DATUM DESCRIPTION

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

WITH NAD83/CORS96 STATE PLANE GRID COORDINATES OF
 NORTHING: 592,491.22 (FT), EASTING: 1,851,629.02 (FT),
 ELEVATION: 307.06 (FT).

THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99986508

THE N.C. LAMBERT GRID BEARING AND LOCALIZED GROUND DISTANCE FROM "BL-2" TO -L- STATION 10+00 IS N 28° 28' 21" W 346.01'

ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
 VERTICAL DATUM USED IS NAVD88.

NOTES:

- THE CONTROL DATA FOR THIS PROJECT WAS PROVIDED BY WSP SELLS. CONTROL POINTS PROVIDED ARE AS FOLLOWS:**
 BL-1
 BL-2
 BL-3
- SITE CALIBRATION INFORMATION HAS NOT BEEN PROVIDED FOR THIS PROJECT.**
- INDICATES GEODETIC CONTROL MONUMENTS USED OR SET FOR HORIZONTAL PROJECT CONTROL BY WSP SELLS.
 - ◆ INDICATES CONTROL MONUMENTS USED OR SET FOR HORIZONTAL PROJECT CONTROL BY WSP SELLS.

R:\10\2003\17BP.8.R.29\Roadway\Proj\17BP.8.R.29_rdy_PSH01C.con.dgn
 12/15/2013 10:54:28

8/17/99

WSP
 15401 Weston Parkway
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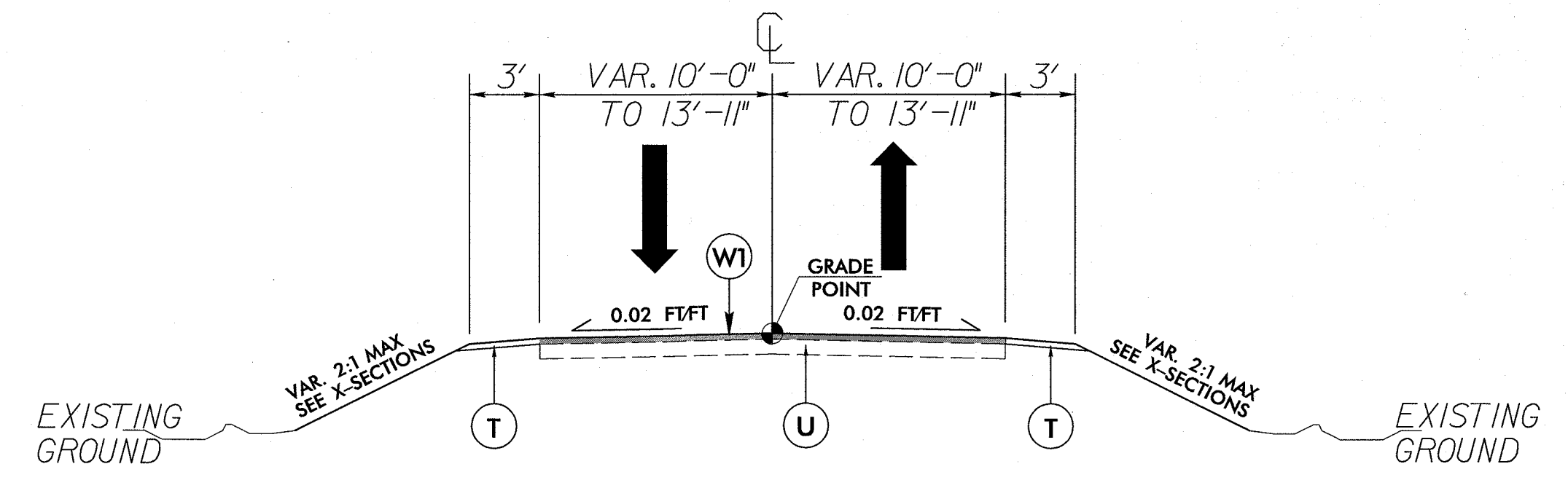
PROJECT REFERENCE NO.
 17BP.8.R.29

SHEET NO.
 2

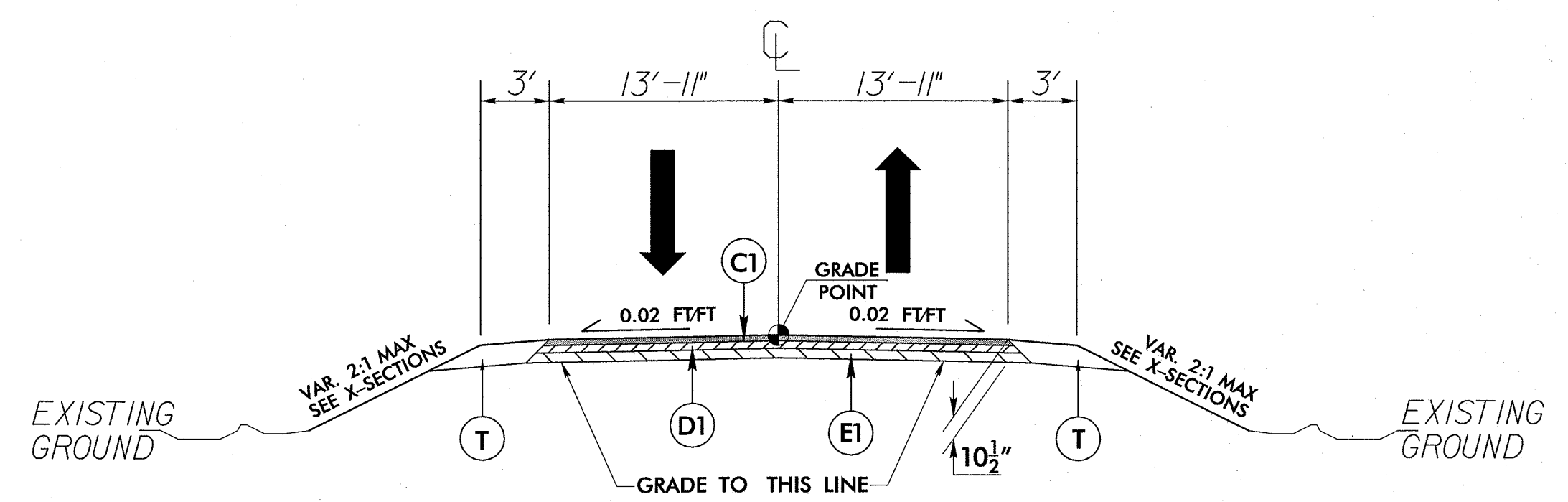
RW SHEET NO.

ROADWAY DESIGN ENGINEER
 [Signature]

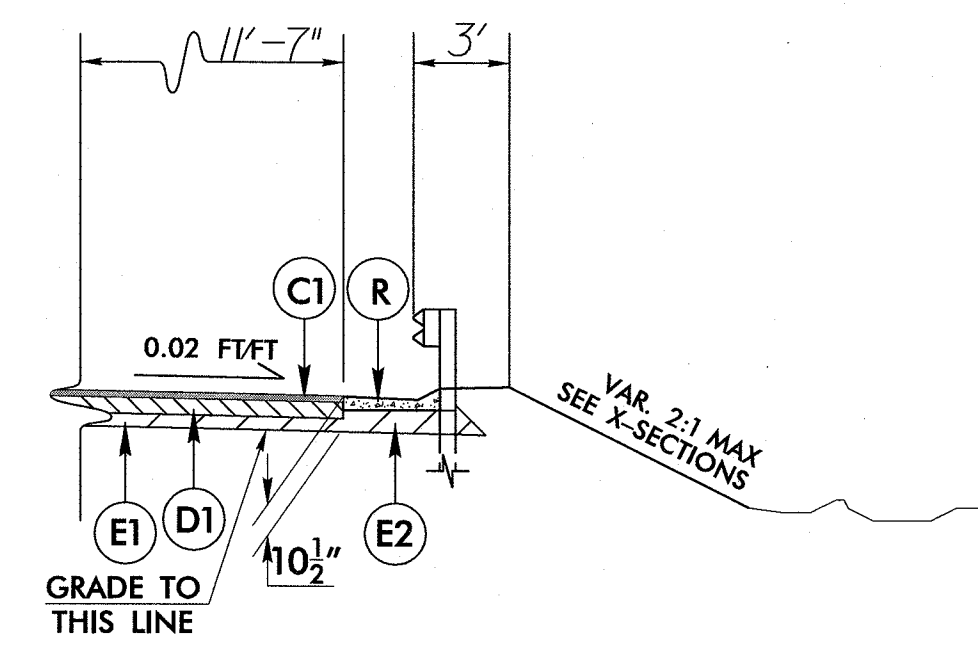
HYDRAULICS ENGINEER
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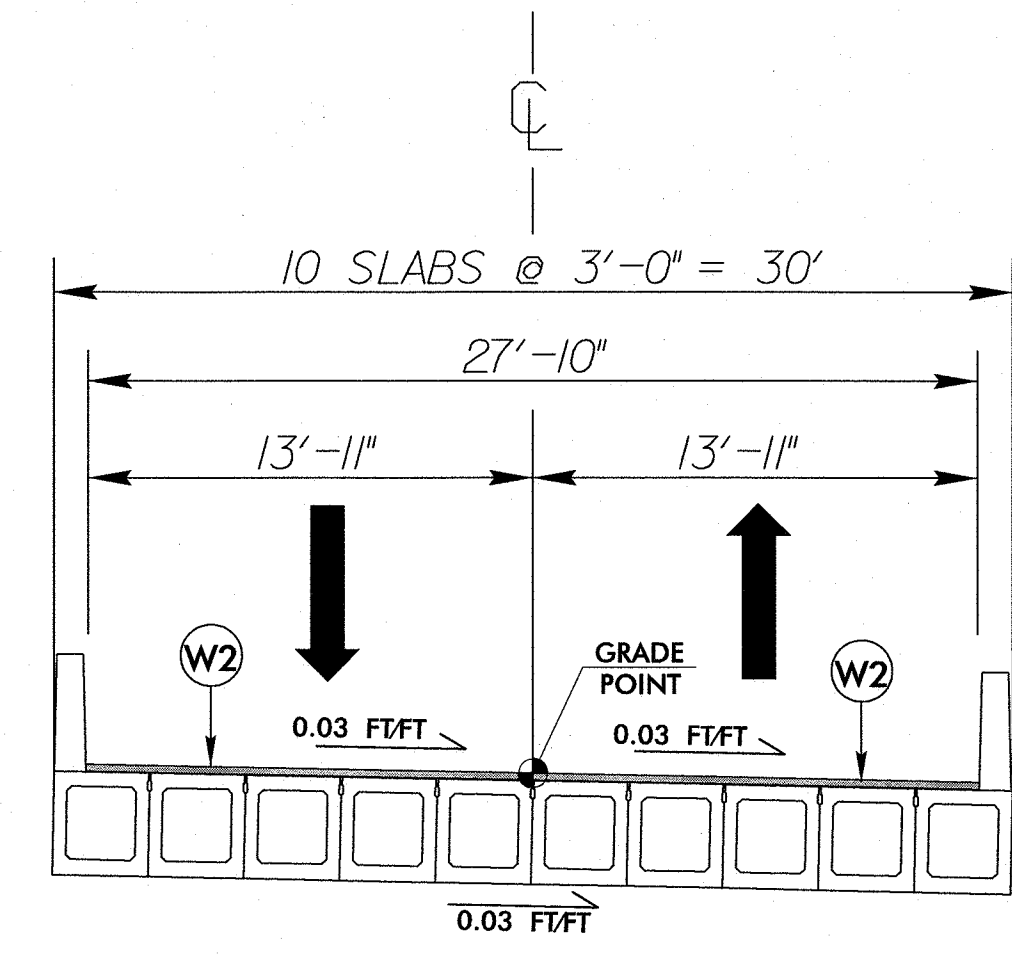
TYPICAL SECTION NO. 1
 -L- STA. 11+50.00 TO 12+80.00
 -L- STA. 15+25.00 TO 16+50.00



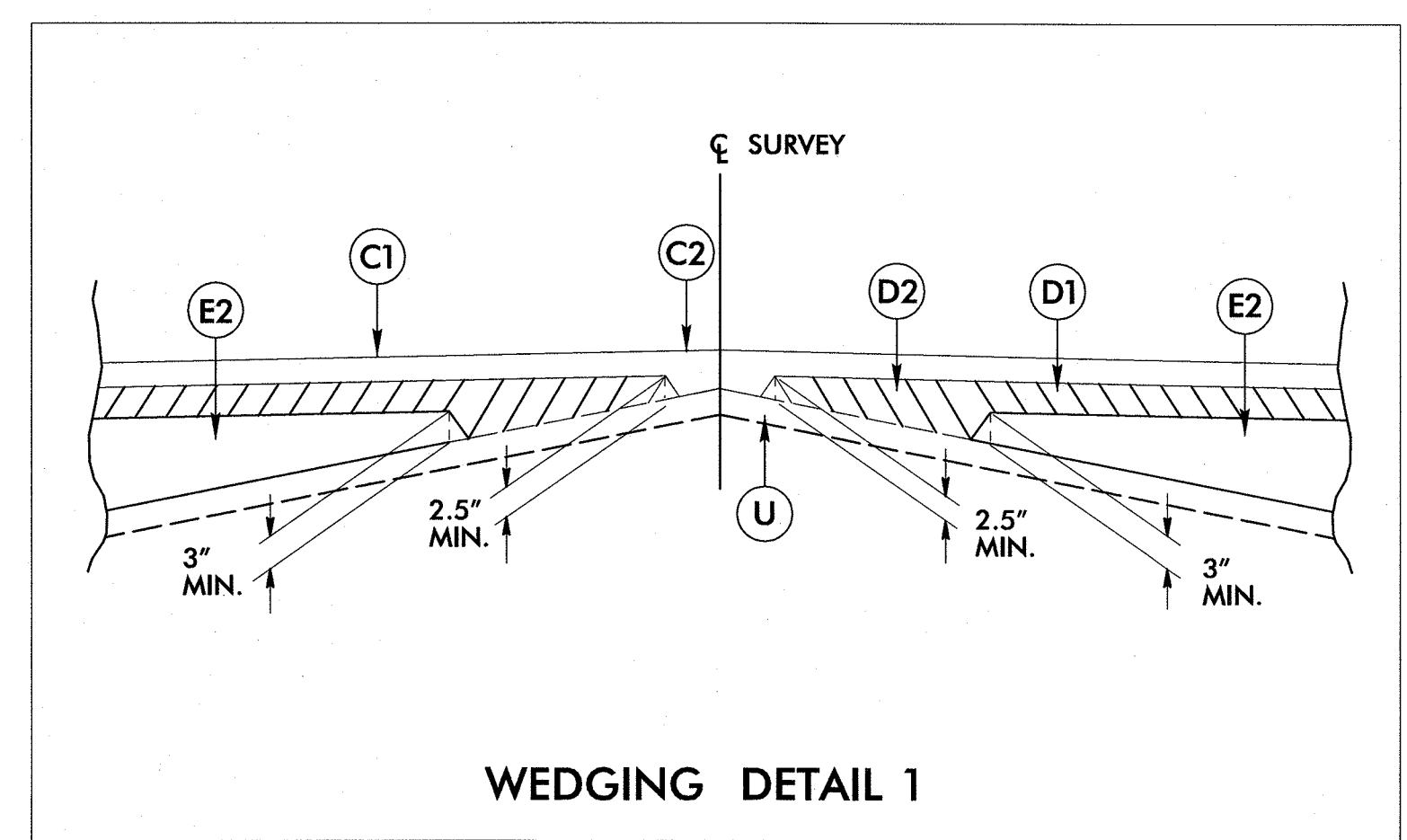
TYPICAL SECTION NO. 2
 (USE IN CONJUNCTION WITH DETAIL A)
 -L- STA. 12+80.00 TO 13+44.88 (BEGIN BRIDGE)
 -L- STA. 14+47.13 (END BRIDGE) TO 15+25.00



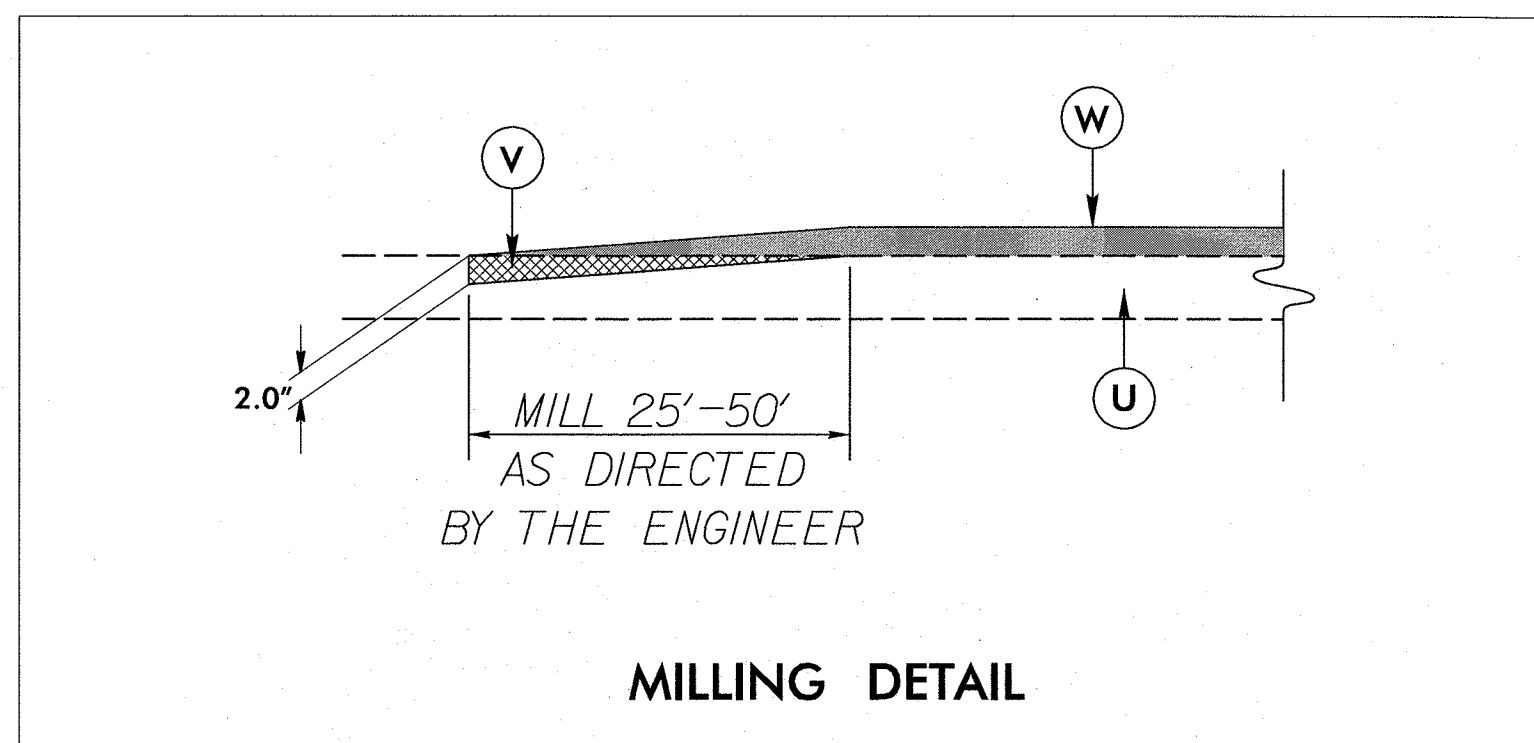
DETAIL A
SHOULDER BERM GUTTER SECTION
 (RIGHT SIDE SHOWN)
 -L- STA. 13+27.25 TO STA. 13+33.88 (RT)
 -L- STA. 14+58.15 TO STA. 15+75.00 (RT)



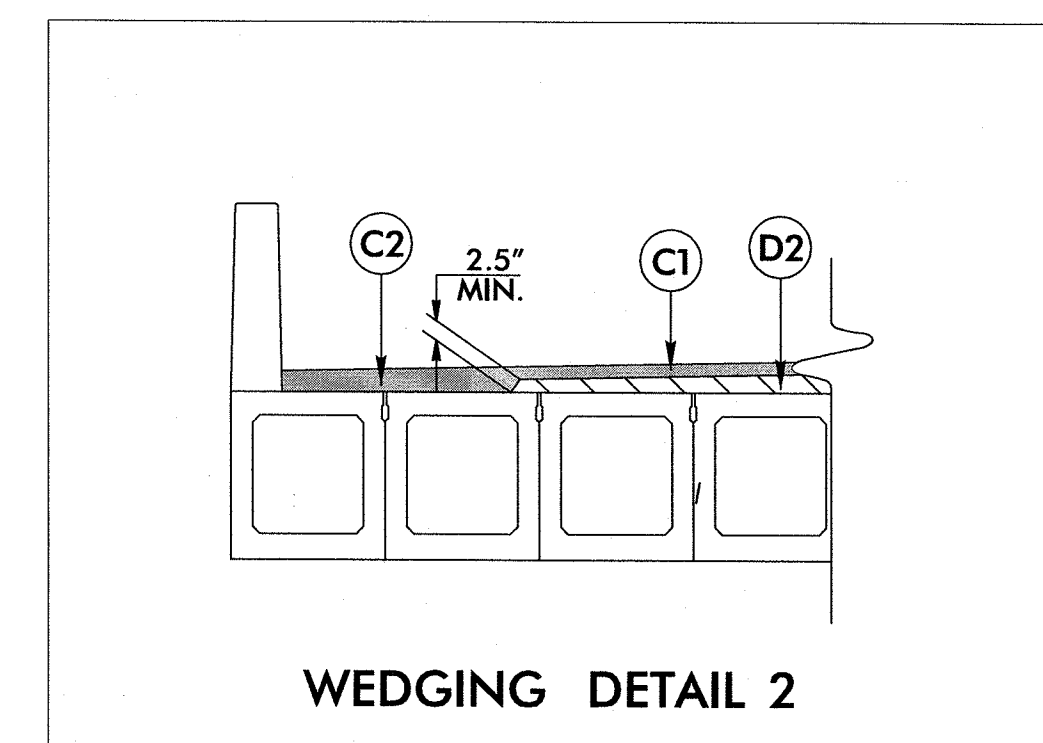
BRIDGE TYPICAL SECTION



WEDGING DETAIL 1



MILLING DETAIL



WEDGING DETAIL 2

PAVEMENT SCHEDULE	
C1	PROP. APPROX. 2" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 220 LBS. PER SQ. YD.
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 1.5" 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 2 1/2" IN DEPTH OR GREATER THAN 3" IN DEPTH.
E1	PROP. APPROX. 5.5" 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 5 1/2" IN DEPTH.
R	SHOULDER BERM GUTTER.
T	EARTH MATERIAL.
U	EXISTING PAVEMENT.
V	MILLING BITUMINOUS PAVEMENT.
W1	WEDGING (SEE WEDGING DETAIL 1 THIS SHEET).
W2	WEDGING (SEE WEDGING DETAIL 2 THIS SHEET).

NOTES:
 1. ALL SLOPES ARE 1:1 UNLESS OTHERWISE NOTED.

REVISIONS

12/10/99 10:30 AM R:\Roadway\Proj\17BP.8.R.29\rdy_PSH02.txd
 12/10/99 10:30 AM R:\Roadway\Proj\17BP.8.R.29\rdy_PSH02.txd

STATE OF NORTH CAROLINA
 DIVISION OF HIGHWAYS

ROADWAY SUMMARY OF QUANTITIES FOR PROJECT 17BP.8.R.29

ITEM NUMBER	SECTION NUMBER	QUANTITY	UNITS	DESCRIPTION
000010000-N	800	1	LS	MOBILIZATION
000040000-N	801	1	LS	CONSTRUCTION SURVEYING
003000000-N	SP	1	LS	BRG APP SUB REG TIER STA. 13+96.00 -L-
004300000-N	226	1	LS	GRADING
005000000-E	226	1	ACR	SUPP CLEARING & GRUBBING
031800000-E	300	20	TON	FND CONDIR MATL MINOR STRS
032000000-E	300	60	SY	FND CONDIR GEOTEXTILE
044820000-E	310	128	LF	15" RCP CULV CLASS IV
058200000-E	310	44	LF	15" CS PIPE CULV 0.064" THICK
063600000-E	310	4	EA	15" CS ELBOW 0.064" THICK
122000000-E	545	50	TON	INCIDENTAL STONE BASE
133000000-E	607	230	SY	INCIDENTAL MILLING
148900000-E	610	190	TON	ASP CONC BASE CRS B25.0B
149800000-E	610	140	TON	ASP CONC INTR CRS I19.0B
152500000-E	610	180	TON	ASP CONC SURF CRS SF9.5A
157500000-E	620	30	TON	ASP FOR PLANT MIX
228600000-E	840	4	EA	MASNRY DRAINAGE STRUCT
235500000-N	840	3	EA	FRAME W/GRATE 840.29 STD
236600000-N	840	1	EA	FRAME W/2GRTS 840.24 STD
255600000-E	846	125	LF	SHOULDER BERMS GUTTER
303000000-E	862	25	LF	STL BM GUARDRAIL
315000000-N	862	5	EA	ADDIT GUARDRAIL POSTS
321500000-N	862	4	EA	GR ANCHOR TYPE III
327000000-N	SP	4	EA	GR ANCHOR TYPE 350
337500000-E	SP	512	LF	REMV & STKPILE GUARDRAIL
362800000-E	876	65	TON	RIP RAP, CLASS I
365600000-E	876	315	SY	GEOTEXTILE FOR DRAINAGE
439900000-N	1105	1	LS	TEMP TRAFFIC CONTROL
481000000-E	1205	4000	LF	PAINT PVT MARKINGS 4"
600000000-E	1605	470	LF	TEMPORARY SILT FENCE
600600000-E	1610	95	TON	EROS CONTRL STONE CL A
600900000-E	1610	75	TON	EROS CONTRL STONE CL B
601200000-E	1610	95	TON	SEDIMENT CONTROL STONE
601500000-E	1615	1	ACR	TEMPORARY MULCHING
601800000-E	1620	50	LB	SEED FOR TEMP SEEDING
602100000-E	1620	0.25	TON	FERT FOR TEMP SEEDING
602400000-E	1622	200	LF	TEMPORARY SLOPE DRAINS
602900000-E	SP	100	LF	SAFETY FENCE
603000000-E	1630	90	CY	SILT EXCAVATION
603600000-E	1631	15820	SY	MATTING FOR EROS CONTROL
603700000-E	SP	115	SY	COIR FIBER MAT
604200000-E	1632	315	LF	1/4" HARDWARE CLOTH
607101000-E	SP	15	LF	WATTLE
607102000-E	SP	10	LB	POLYACRYLAMIDE (PAM)
608400000-E	1660	3	ACR	SEEDING AND MULCHING
608700000-E	1660	3	ACR	MOWING
609000000-E	1661	50	LB	SEED FOR REPAIR SEEDING
609300000-E	1661	0.25	TON	FERT FOR REPAIR SEEDING
609600000-E	1662	50	LB	SEED FOR SUPP SEEDING
610800000-E	1665	0.75	TON	FERTILIZER TOPDRESSING
611450000-N	1667	10	MHR	SPECIALIZED HAND MOWING
611700000-N	SP	13	EA	RESPONSE FOR EROS CONTROL
803500000-N	402	1	LS	REMV EXIST STR STA. 13+96.00 -L-
812100000-N	412	1	LS	UNCL STR EXCAV STA. 13+96.00 -L-
818200000-E	420	55	CY	CLASS A CONCRETE (BRIDGE)
821000000-N	422	1	LS	BRG APPR SLAB STA. 13+96.00 -L-
821700000-E	425	8780	LB	REINF STEEL (BRIDGE)
838400000-E	450	175	LF	HPI4X73 PILES
839100000-N	450	10	EA	STEEL PILE POINTS
850500000-E	460	200	LF	VERT CONC BARRIER RAIL
860800000-E	876	270	TON	RIP RAP II (2'-0")
862200000-E	876	300	SY	GEOTEXTILE FOR DRAINAGE
865700000-N	430	1	LS	ELASTOMERIC BEARINGS
875320000-E	430	1000	LF	3'-0"X 3'-3" PRESTR BOX BEAM

6/21/00
 12/10/2013
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RIGHT OF WAY AREA DATA

Table with columns: PARCEL NO., PROPERTY OWNERS NAMES, TOTAL ACREAGE, AREA TAKEN, AREA REMAINING RT., AREA REMAINING LT., TEMP. CONSTR. EASE, PERM. DRAIN. EASE, TEMP. DRAIN. EASE.

SUMMARY OF EARTHWORK

Table with columns: STATION, STATION, UNCL. EXCAV. (CY), EMBANK. + 20% (CY), BORROW (CY), WASTE (CY).

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

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

Large table with columns: STATION, LOCATION (LT/RT OR CL), STRUCTURE NO., TOP ELEVATION, INVERT ELEVATION, SLOPE CRITICAL, DRAINAGE PIPE (RCP, CSP, CAAP, HDPE, or PVC), C.S. PIPE (UNLESS NOTED OTHERWISE), CLASS III R.C. PIPE (UNLESS OTHERWISE NOTED), ENDWALLS, QUANTITIES FOR DRAINAGE STRUCTURES, TYPE OF GRATE, CORR. STEEL ELBOWS NO. & SIZE, CONC. COLLARS CL. "B" C.Y. STD. 840.72, CONC. & BRICK PIPE PLUG, C.Y. STD. 840.71, PIPE REMOVAL LIN.FT., ABBREVIATIONS, REMARKS.

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

SHOULDER BERM GUTTER SUMMARY

PAVEMENT REMOVAL SUMMARY

Table with columns: LINE, STATION, STATION, LENGTH.

Table with columns: SURVEY LINE, STATION, STATION, LOCATION LT/RT/CL, YD².

GUARDRAIL SUMMARY

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

Table with columns: LINE, BEG. STA., END STA., LOCATION, LENGTH (STRAIGHT, SHOP CURVED, DOUBLE FACED), WARRANT POINT (APPROACH END, TRAILING END), "N" DIST. FROM E.O.L., TOTAL SHOUL. WIDTH, FLARE LENGTH (APPROACH END, TRAILING END), W (APPROACH END, TRAILING END), ANCHORS (XI MOD, TYPE III, GRAU 350, M-350, XIII, CAT-1, VI MOD, BIC, AT-1), IMPACT ATTENUATOR TYPE 350 (EA, G, NG), SINGLE FACED GUARDRAIL, REMOVE EXISTING GUARDRAIL, REMOVE AND STOCKPILE EXISTING GUARDRAIL, REMARKS.

6/21/00
R:\10\20\3\Roadway\Proj\17BP.8.R.29\Roadway\Proj\17BP.8.R.29\rdy_PSH03A_sum.dgn

8/17/99

- NOTES:
- EXISTING CONCRETE FOOTERS AT INTERIOR BENTS 1 & 2 SHALL BE RETAINED.
 - CONTRACTOR SHALL REMOVE AND STOCKPILE EXISTING GUARDRAIL AT A LOCATION AS DIRECTED BY THE ENGINEER.
 - STRUCTURE ANCHOR UNITS SHALL BE TYPE III UNLESS OTHERWISE SHOWN ON THE PLANS.
 - GUARDRAIL ANCHOR UNITS SHALL BE GRAU-350 UNLESS OTHERWISE SHOWN ON THE PLANS.

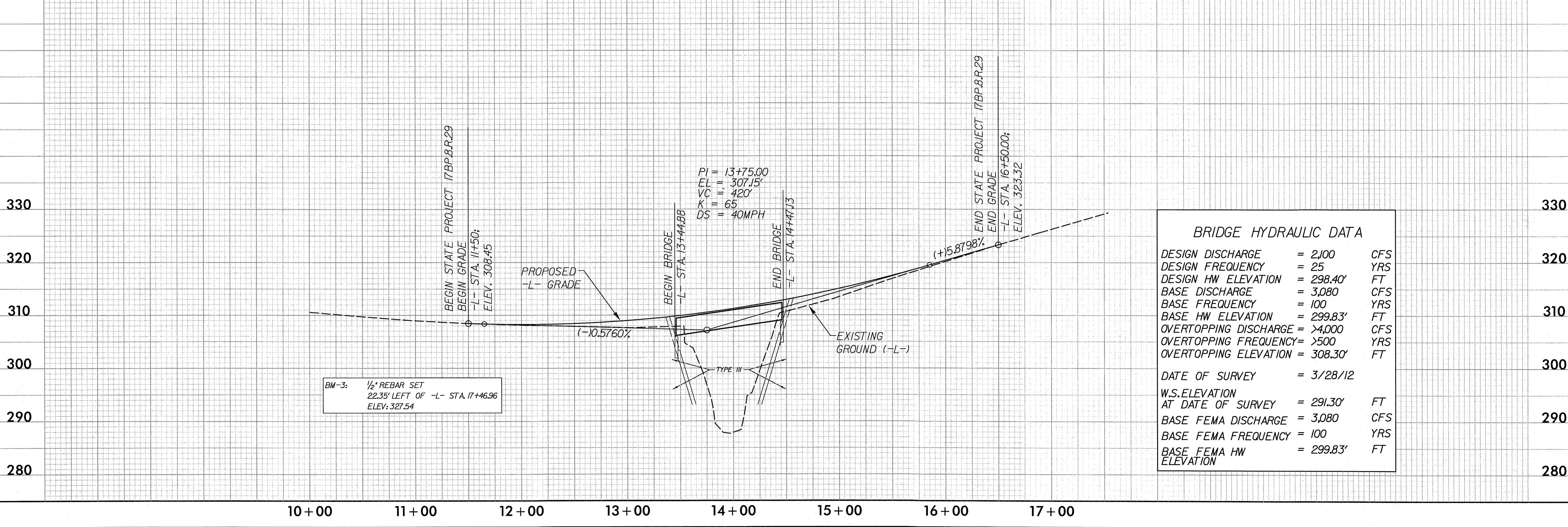
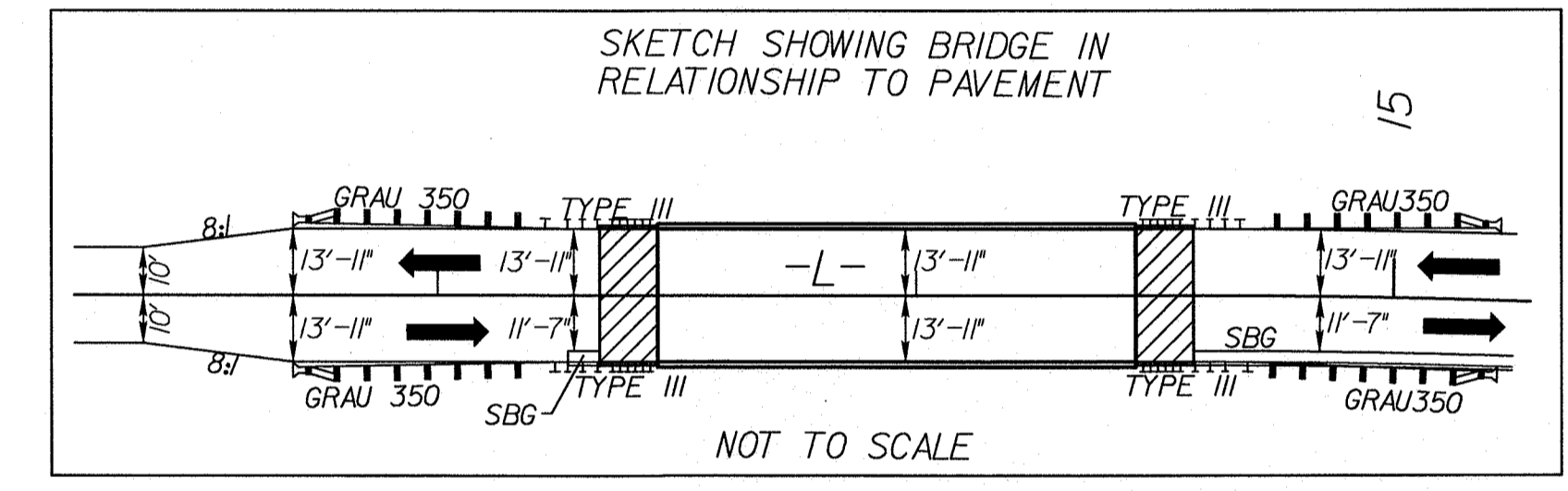
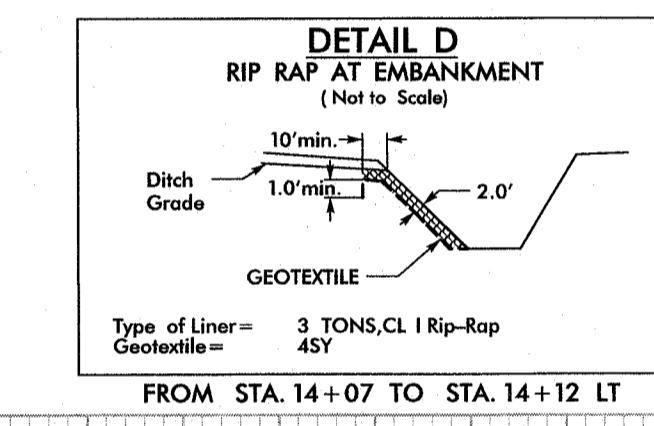
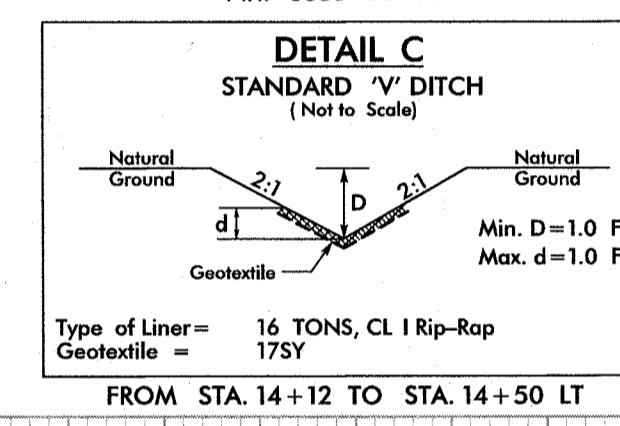
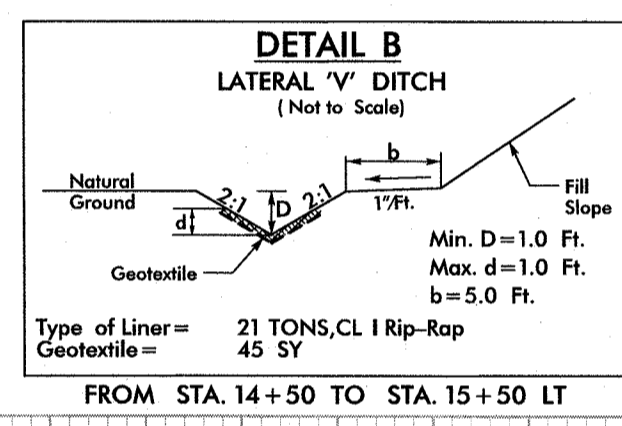
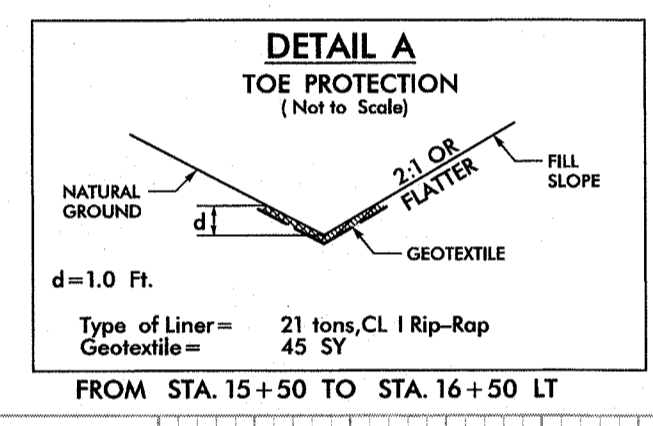
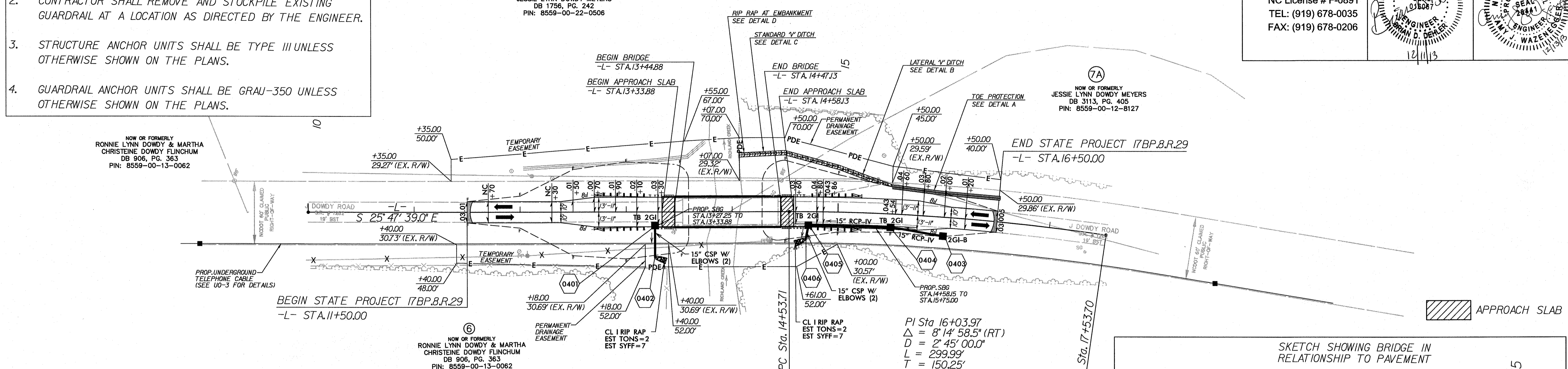
WSP
 15401 Weston Parkway
 Suite 100
 Cary, NC 27513
 NC License # F-0891
 TEL: (919) 678-0035
 FAX: (919) 678-0206

PROJECT REFERENCE NO. 17BP.8.R.29
 SHEET NO. 4
 RW SHEET NO. ROADWAY DESIGN ENGINEER
 HYDRAULICS ENGINEER

NOW OR FORMERLY
 RONNIE LYNN DOWDY & MARTHA
 CHRISTINE DOWDY FLINCHUM
 DB 906, PG. 363
 PIN: 8559-00-13-0062

NOW OR FORMERLY
 JESSIE LYNN DOWDY MEYERS
 DB 1756, PG. 242
 PIN: 8559-00-22-0506

NOW OR FORMERLY
 JESSIE LYNN DOWDY MEYERS
 DB 3113, PG. 405
 PIN: 8559-00-12-8127



BRIDGE HYDRAULIC DATA

DESIGN DISCHARGE	= 2,100	CFS	
DESIGN FREQUENCY	= 25	YRS	
DESIGN HW ELEVATION	= 298.40'	FT	
BASE DISCHARGE	= 3,080	CFS	
BASE FREQUENCY	= 100	YRS	
BASE HW ELEVATION	= 299.83'	FT	
OVERTOPPING DISCHARGE	= >4,000	CFS	
OVERTOPPING FREQUENCY	= >500	YRS	
OVERTOPPING ELEVATION	= 308.30'	FT	
DATE OF SURVEY	= 3/28/12		
W.S. ELEVATION	= 291.30'	FT	
AT DATE OF SURVEY			
BASE FEMA DISCHARGE	= 3,080	CFS	
BASE FEMA FREQUENCY	= 100	YRS	
BASE FEMA HW ELEVATION	= 299.83'	FT	

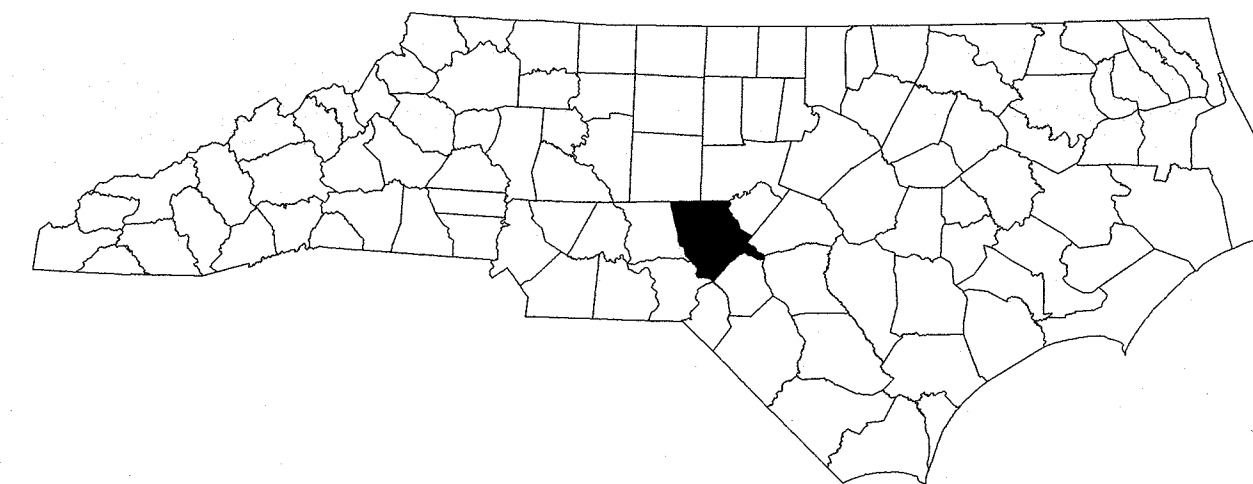
REVISIONS

DATE TIME DRAWN BY CHECKED BY

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

TRANSPORTATION MANAGEMENT PLAN

MOORE COUNTY



INDEX OF SHEETS

SHEET NO.	TITLE
TMP-1	TITLE SHEET, INDEX OF SHEETS LIST OF APPLICABLE ROADWAY STANDARD DRAWINGS, AND LEGEND
TMP-1A	CONSTRUCTION PHASING AND GENERAL NOTES
TMP-2	OFFSITE DETOUR PLAN

ROADWAY STANDARD DRAWINGS

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

STD. NO.	TITLE
1101.01	WORK ZONE WARNING SIGNS
1101.03	TEMPORARY ROAD CLOSURES
1110.01	STATIONARY WORK ZONE SIGNS
1110.02	PORTABLE WORK ZONE SIGNS
1130.01	DRUMS
1135.01	CONES
1145.01	BARRICADES
1205.01	PAVEMENT MARKINGS - LINE TYPES AND OFFSETS
1205.02	PAVEMENT MARKINGS - TWO LANE AND MULTILANE ROADWAYS
1205.04	PAVEMENT MARKINGS - INTERSECTIONS
1205.12	PAVEMENT MARKINGS - BRIDGES
1261.01	GUARDRAIL AND BARRIER DELINEATORS - INSTALLATION SPACING
1261.02	GUARDRAIL AND BARRIER DELINEATORS - TYPES AND MOUNTING
1262.01	GUARDRAIL END DELINEATION

LEGEND

GENERAL

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

- WORK AREA
- REMOVAL
- USER DEFINED (IF NEEDED)
- USER DEFINED (IF NEEDED)

TRAFFIC CONTROL DEVICES

- BARRICADE (TYPE III)
- CONE
- DRUM SKINNY DRUM TUBULAR MARKER
- TEMPORARY CRASH CUSHION
- FLASHING ARROW PANEL (TYPE C)
- FLAGGER
- LAW ENFORCEMENT
- TRUCK MOUNTED IMPACT ATTENUATOR (TMIA)
- CHANGEABLE MESSAGE SIGN

TEMPORARY SIGNING

- PORTABLE SIGN
- STATIONARY SIGN
- STATIONARY OR PORTABLE SIGN

SIGNALS

- EXISTING
- PROPOSED
- TEMPORARY

PAVEMENT MARKINGS

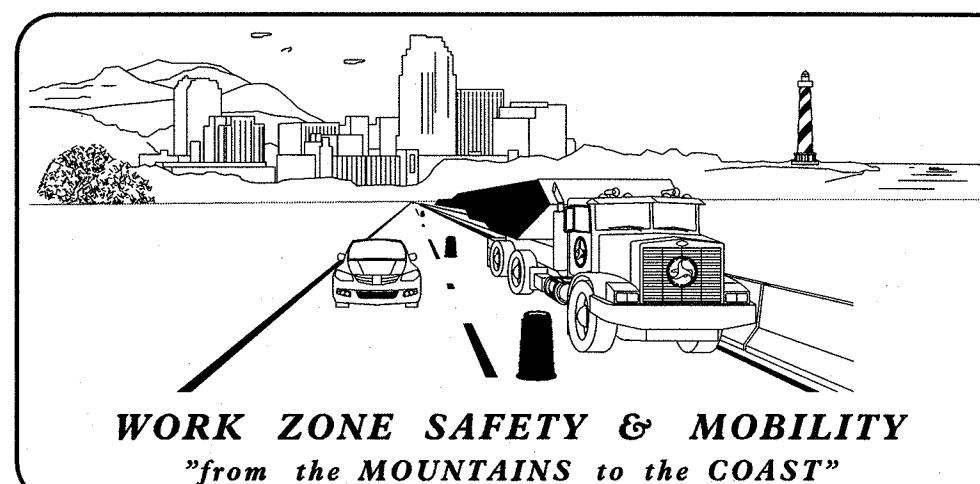
- EXISTING LINES
- TEMPORARY LINES

PAVEMENT MARKERS

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

PAVEMENT MARKING SYMBOLS

- PAVEMENT MARKING SYMBOLS



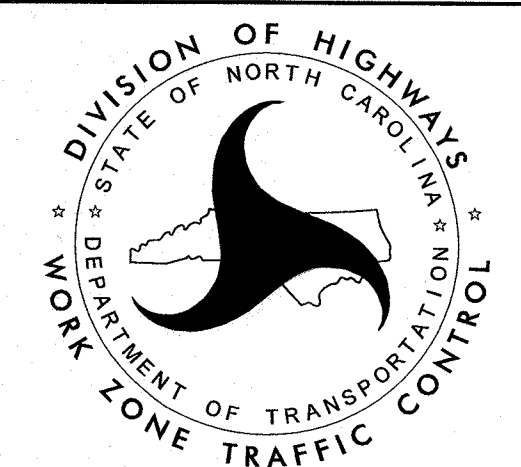
N.C.D.O.T. WORK ZONE TRAFFIC CONTROL
1561 MAIL SERVICE CENTER (MSC) RALEIGH, NC 27699-1561
750 N. GREENFIELD PARKWAY, GARNER, NC 27529 (DELIVERY)
PHONE: (919) 773-2800 FAX: (919) 771-2745

J. S. BOURNE, P.E. STATE TRAFFIC MANAGEMENT ENGINEER

TRAFFIC CONTROL PROJECT ENGINEER

TRAFFIC CONTROL PROJECT DESIGN ENGINEER

TRAFFIC CONTROL DESIGN ENGINEER



WSP
15401 Weston Parkway
Suite 100
Cary, NC 27513
NC License # F-0891
TEL: (919) 678-0035
FAX: (919) 678-0206

APPROVED: _____
DATE: _____

SEAL

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J.SB:DLB

CONSTRUCTION PHASING

STEP 1:

INSTALL WORK ZONE ADVANCE WARNING SIGNS AND DETOUR AS SHOWN ON TMP-2. PLACE TYPE III BARRICADES WITH "ROAD CLOSED" SIGNS AND CLOSE S.R. #1262 (J DOWDY ROAD) TO THRU TRAFFIC.

STEP 2:

REMOVE THE EXISTING BRIDGE OVER RICHLAND CREEK AND BEGIN CONSTRUCTION OF -L- BRIDGE OVER RICHLAND CREEK.

-L- STA. 13+45 +/- TO 14+47 +/- (BRIDGE)

STEP 3:

COMPLETE CONSTRUCTION OF THE FOLLOWING:

-L- STA. 13+45 +/- TO 14+47 +/- (BRIDGE)

CONSTRUCT THE FOLLOWING, INCLUDING THE FINAL LAYER OF SURFACE COURSE BETWEEN THE FOLLOWING STATIONS:

-L- STA. 11+50 +/- TO 16+50 +/- (BOTH DIRECTIONS)

STEP 4:

INSTALL PERMANENT PAVEMENT MARKINGS IN THE FOLLOWING LOCATIONS:

-L- STA. 11+50 +/- TO 16+50 +/- (BOTH DIRECTIONS)

STEP 5:

REMOVE TYPE III BARRICADES AND DETOUR, AND OPEN S.R. #1262 (J DOWDY ROAD) TO TRAFFIC.

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 PATTERN ALTERATION.

SIGNING

B) INSTALL ADVANCE WORK ZONE WARNING SIGNS WHEN WORK IS WITHIN 40 FT FROM THE EDGE OF TRAVEL LANE AND NO MORE THAN THREE (3) DAYS PRIOR TO THE BEGINNING OF CONSTRUCTION.

C) CONTRACTOR WILL BE RESPONSIBLE FOR PERMANENT SIGNING.

D) CONTRACTOR WILL BE RESPONSIBLE FOR DETOUR SIGNING OFF THE PROJECT LIMITS.

E) COVER OR REMOVE ALL DETOUR SIGNS WITHIN AND OFF THE PROJECT LIMITS WHEN A DETOUR IS NOT IN OPERATION.

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

TRAFFIC CONTROL DEVICES

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

PAVEMENT MARKINGS AND MARKERS


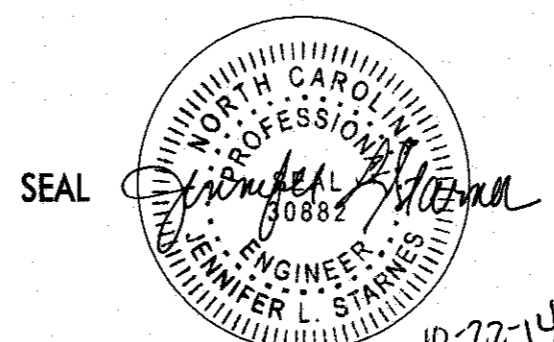
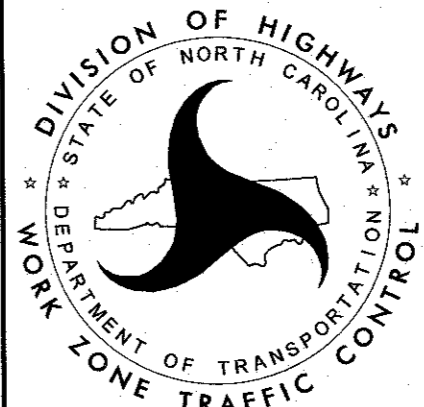
H) INSTALL PAVEMENT MARKINGS AND PAVEMENT MARKERS ON THE FINAL SURFACE AS FOLLOWS:

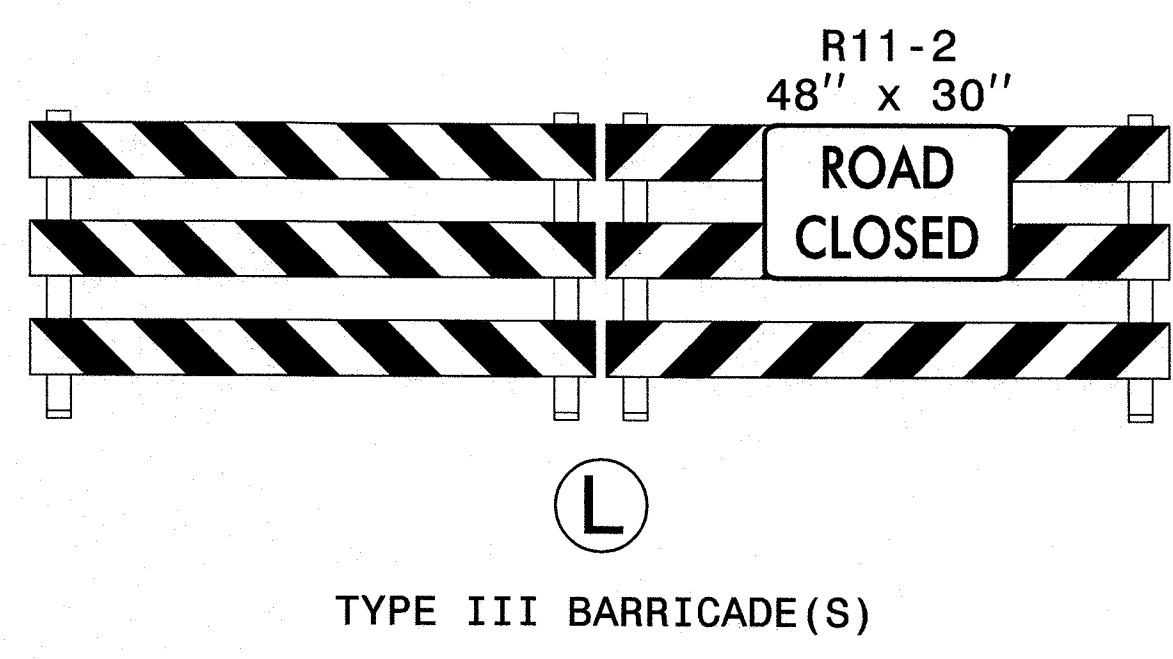
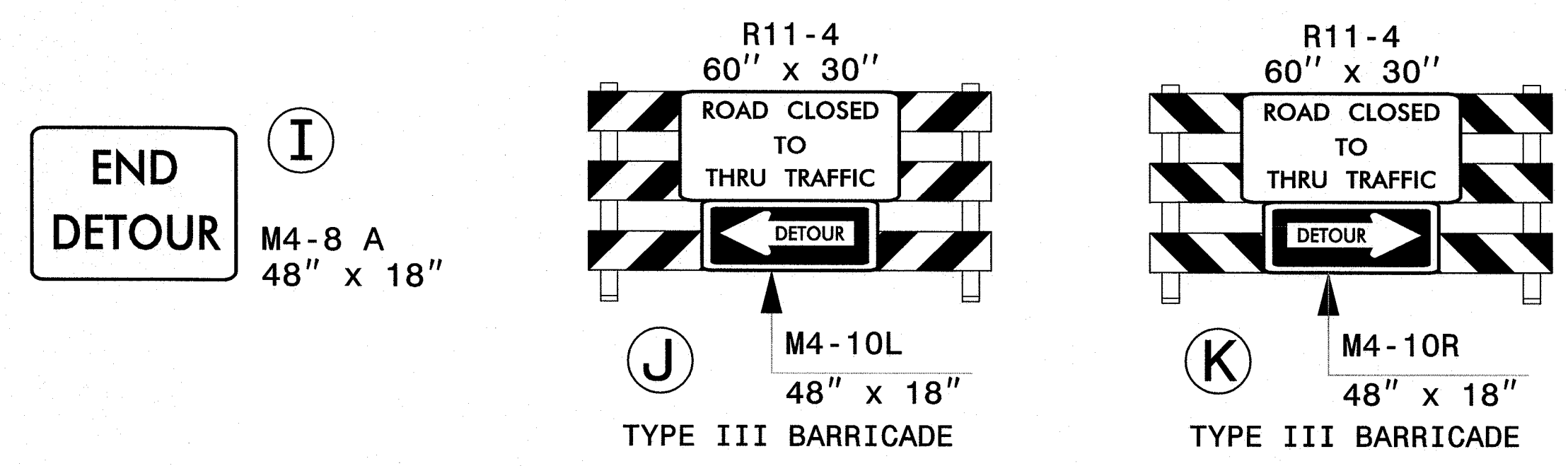
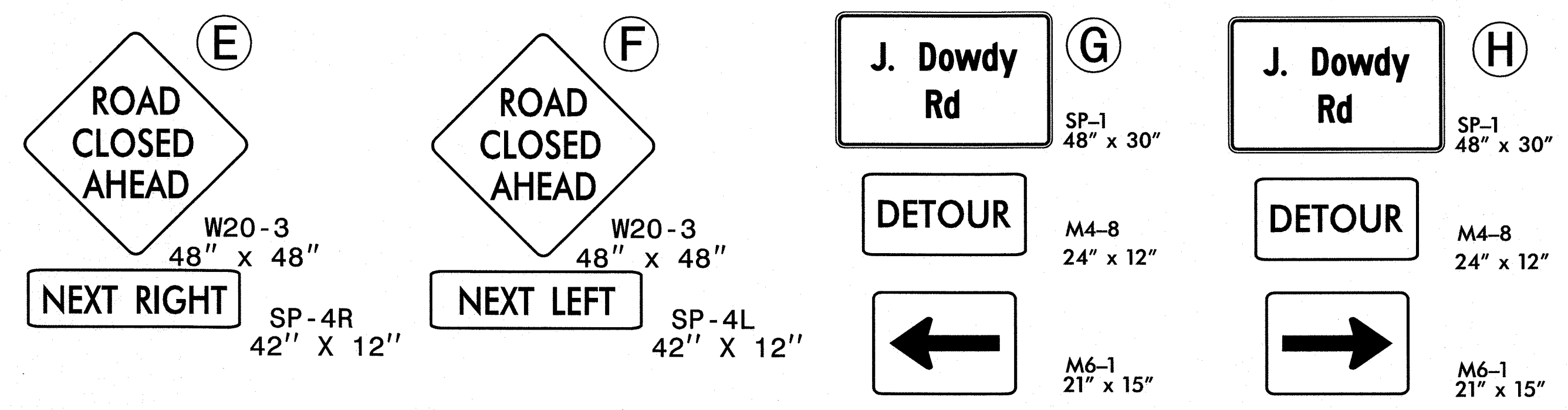
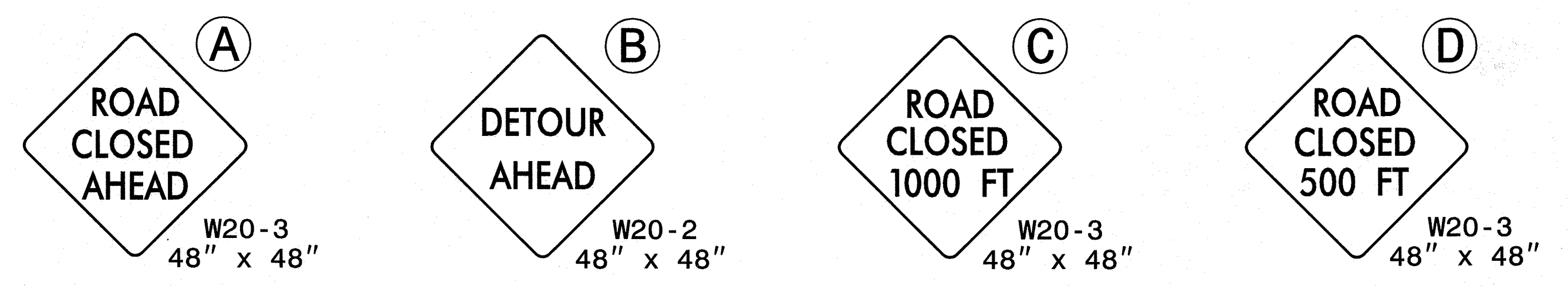
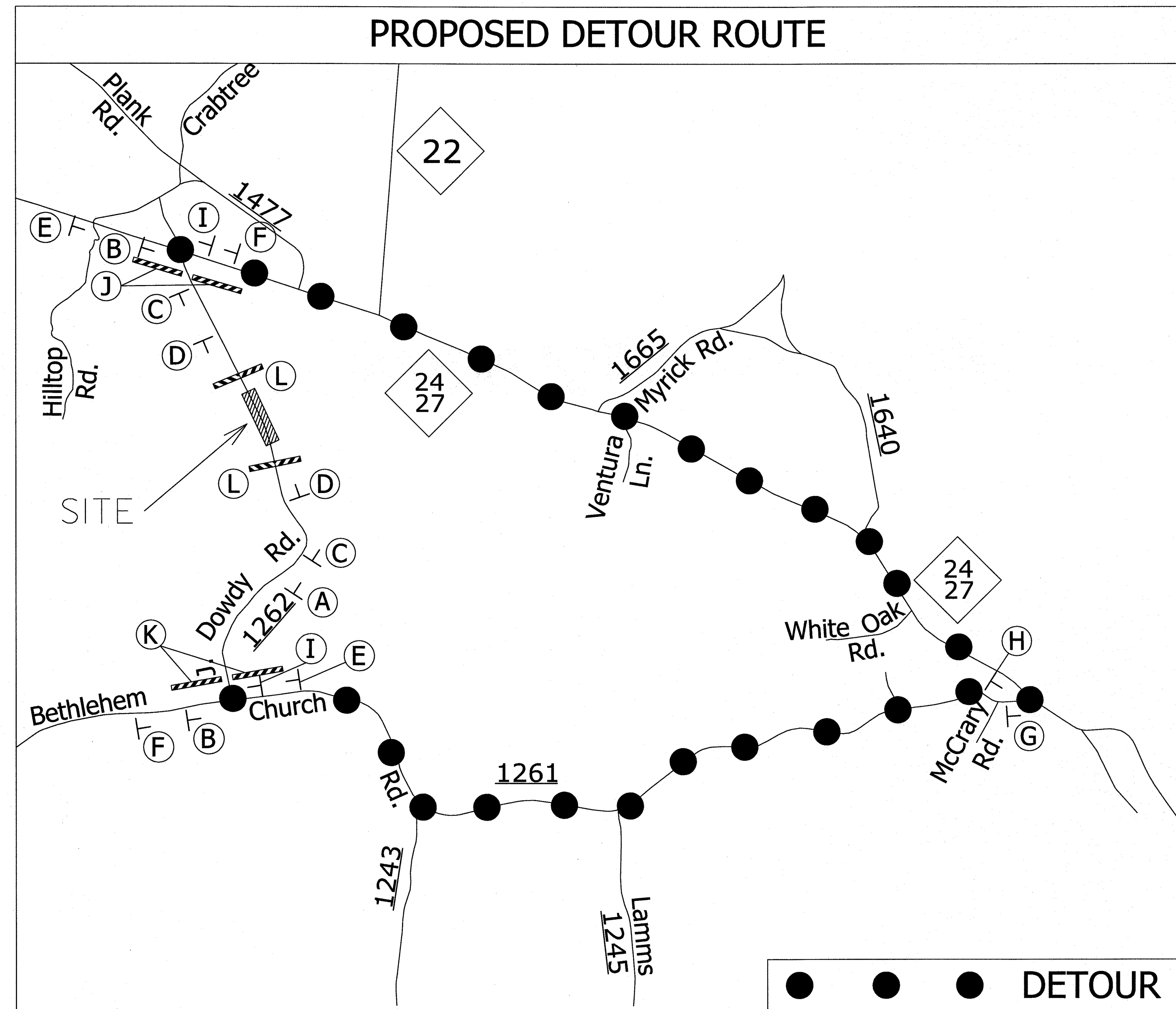
ROAD NAME	MARKING	MARKER
J Dowdy Rd	Paint	None

I) TIE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING LINES.

J) REMOVE/REPLACE ANY CONFLICTING/DAMAGED PAVEMENT MARKINGS AND MARKERS BY THE END OF EACH DAY'S OPERATION.

10/22/2014 R:\17BP.8.R.29\TrafficControl\TCP\N.R.29-TC_PSH-01B.dgn Us1s042B

 15401 Weston Parkway Suite 100 Cary, NC 27513 NC License # F-0891 TEL: (919) 678-0035 FAX: (919) 678-0206	APPROVED: _____	DATE: _____	 SEAL <i>Shirley L. Starnes</i> ENGINEER 10-22-14	 DIVISION OF HIGHWAYS DEPARTMENT OF TRANSPORTATION WORK ZONE TRAFFIC CONTROL	<h1 style="margin: 0;">CONSTRUCTION PHASING AND GENERAL NOTES</h1>



12/10/2013
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 usiso4218

<p> WSP 15401 Weston Parkway Suite 100 Cary, NC 27513 NC License # F-0891 TEL: (919) 678-0035 FAX: (919) 678-0206 </p>	APPROVED: <i>Brian D. Denber</i> DATE: 12/11/13 		<h2>OFFSITE DETOUR PLAN</h2>
---	---	--	------------------------------

SIGN NUMBER: SP-1
 TYPE: STATIONARY
 QUANTITY: SEE PLANS

BACKG COLOR: Fluorescent Orange
 COPY COLOR: Black

DESIGN BY: G. TENG
 PROJECT ID: 17BP.8.R.29

CHECKED BY: B. DEHLER
 DIV: 8

DATE: Nov 14, 2013

SIGN WIDTH: 4'-0"
 HEIGHT: 1'-6"
 TOTAL AREA: 6.0 Sq.Ft.

SYMBOL	X	Y	WID	HT

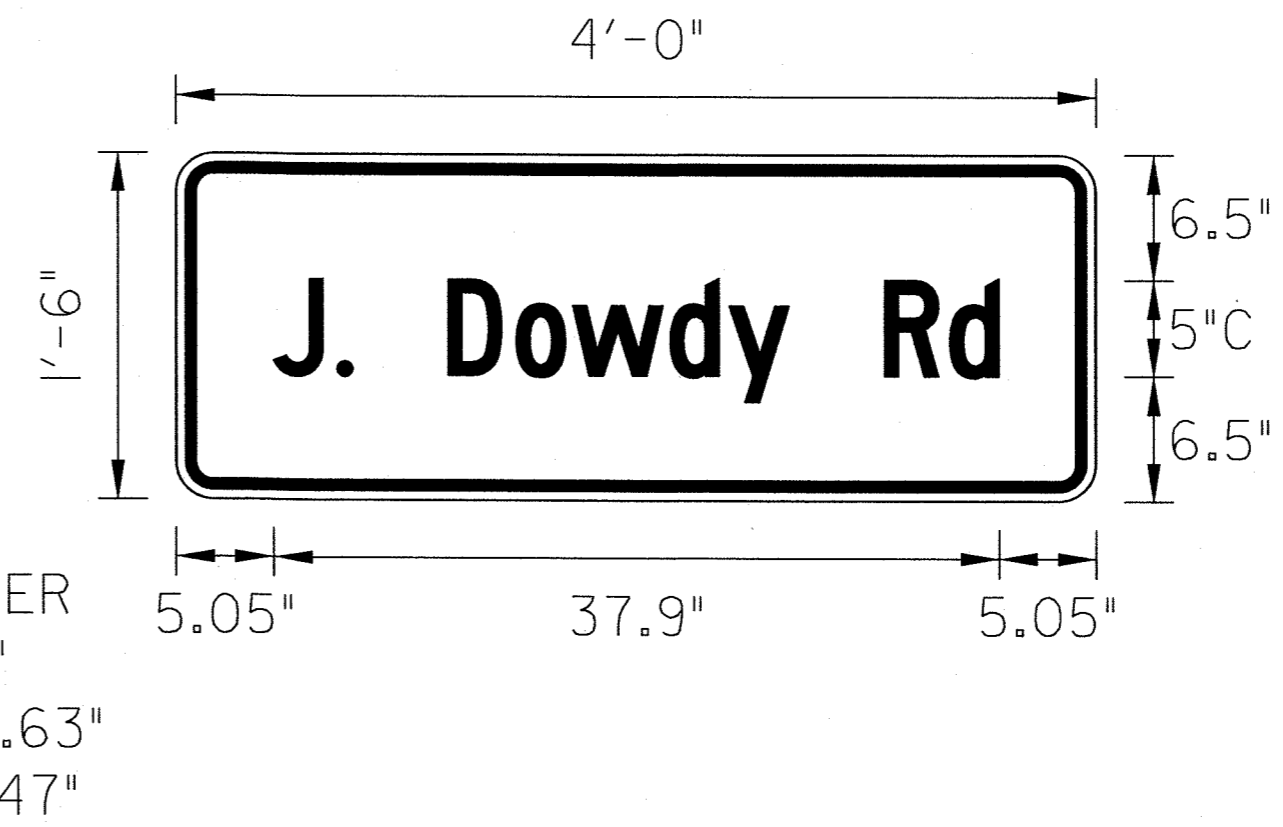
BORDER TYPE: INSET
 RECESS: 0.47"
 WIDTH: 0.63"
 RADII: 1.5"

MAT'L: 0.080" (2.0 mm) ALUMINUM

NO. Z BARS:
 LENGTH:

USE NOTES: 1,2

- Legend and border shall be direct applied black non-reflective sheeting.
- Background shall be NC GRADE B fluorescent orange retroreflective sheeting.



Spacing Factor is 1 unless specified otherwise

LETTER POSITIONS

Letter locations are panel edge to lower left corner

Letter locations are panel edge to lower left corner											Series/Size
J	.	D	o	w	d	y	R	d			Text Length
5.1	8.4	9.2	14.2	17.7	20.7	25.8	28.9	32	37	40.4	C 2000
											37.9

FILENAME: J DOWDY RD

NORTH CAROLINA D.O.T. SIGN DETAIL

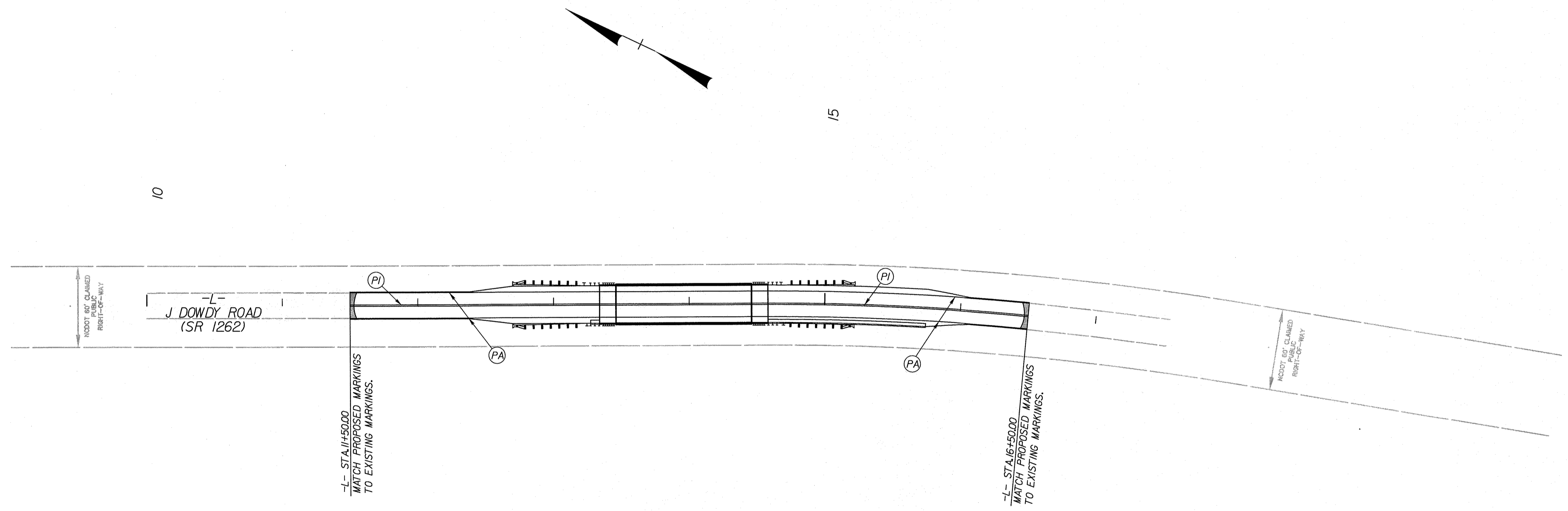
11/14/2013
 R:\17BP.8.R.29\Traffic\Signing\CADD\Sign Designs\J DOWDY RD.dgn
 US101226

<p>15401 Weston Parkway Suite 100 Cary, NC 27513 NC License # F-0891 TEL: (919) 678-0035 FAX: (919) 678-0206</p>	APPROVED: <i>[Signature]</i> DATE: 12/11/13			SPECIAL SIGN DESIGN
	SEAL			

PAVEMENT MARKING SCHEDULE
TIP PROJECT # 17BP.8.R.29

SYMBOL	DESCRIPTION	FINAL PAVEMENT MARKINGS	PAY ITEM QUANTITY BREAKDOWN	TOTAL QUANTITY
PI	YELLOW DOUBLE CENTER	PAINT (4")	1000LF (2 COATS)	2000 LF
PA	WHITE EDGELINE	PAINT (4")	1000LF (2 COATS)	2000 LF

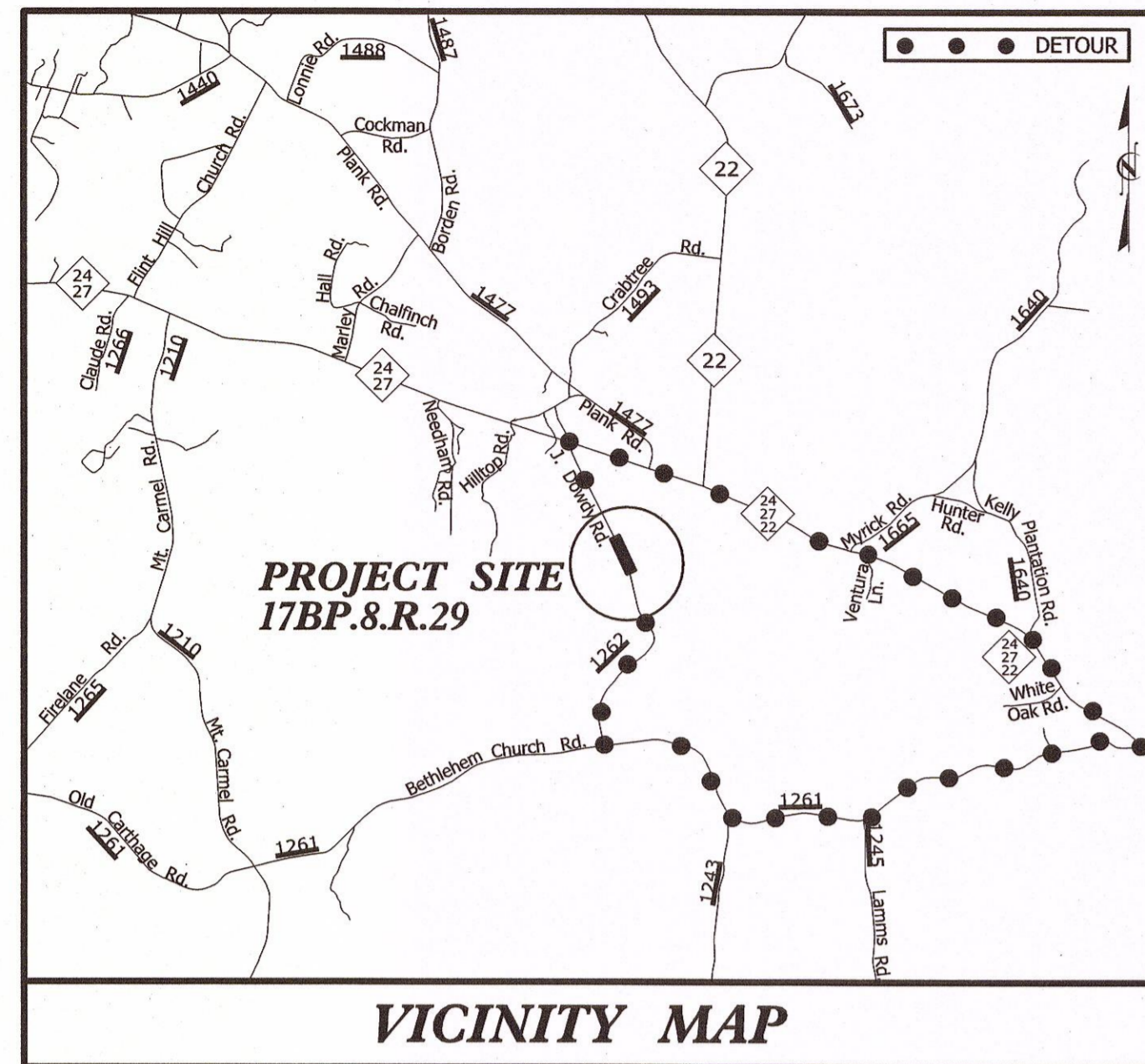
NOTES:
1. MATCH EXISTING LANE WIDTHS THROUGHOUT NEWLY CONSTRUCTED AREA.



12/10/2013
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 US180428

<p>15401 Weston Parkway Suite 100 Cary, NC 27513 NC License # F-0891 TEL: (919) 678-0035 FAX: (919) 678-0206</p>	APPROVED: <i>Brian D. Dehler</i> DATE: 12/11/13			<h2>PAVEMENT MARKING PLAN</h2>
	SEAL			

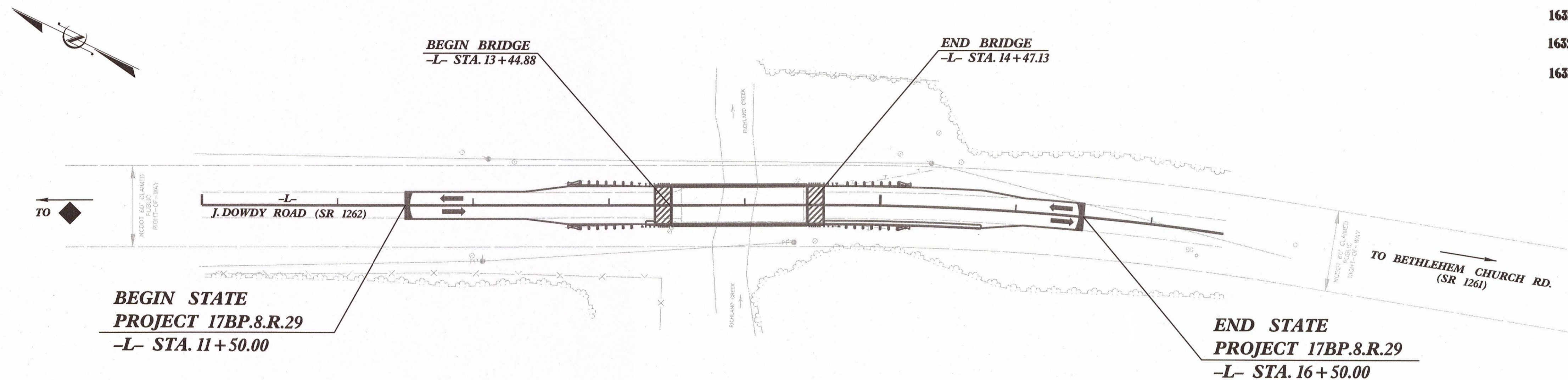
TIP PROJECT: 17BP.8.R.29



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

**LOCATION: REPLACEMENT OF BRIDGE NO. 69 ON J. DOWDY ROAD
(SR 1262) OVER RICHLAND CREEK**

**TYPE OF WORK: GRADING, PAVING, TRAFFIC CONTROL,
DRAINAGE, & STRUCTURES**

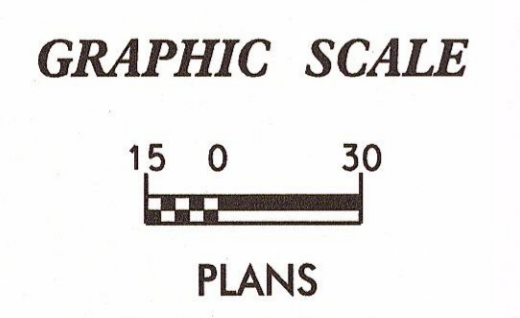


STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	17BP.8.R.29	EC-1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
17BP.8.R.29		PE	

EROSION AND SEDIMENT CONTROL MEASURES

Std. #	Description	Symbol
1630.05	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	---
1632.02	Type B	---
1632.03	Type C	---
	Skimmer Basin	---
	Tiered Skimmer Basin	---
	Infiltration Basin	---

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



ROADSIDE ENVIRONMENTAL UNIT
DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

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

PLANS PREPARED IN THE OFFICE OF:

WSP
Transportation & Infrastructure
15401 Weston Parkway Suite 100
Cary, NC 27513 - 919.678.0035
www.wspells.com
LICENSE NO. F-0891

EROSION CONTROL ENGINEER

ANDREW M. HOWELL
LEVEL IIIA NAME

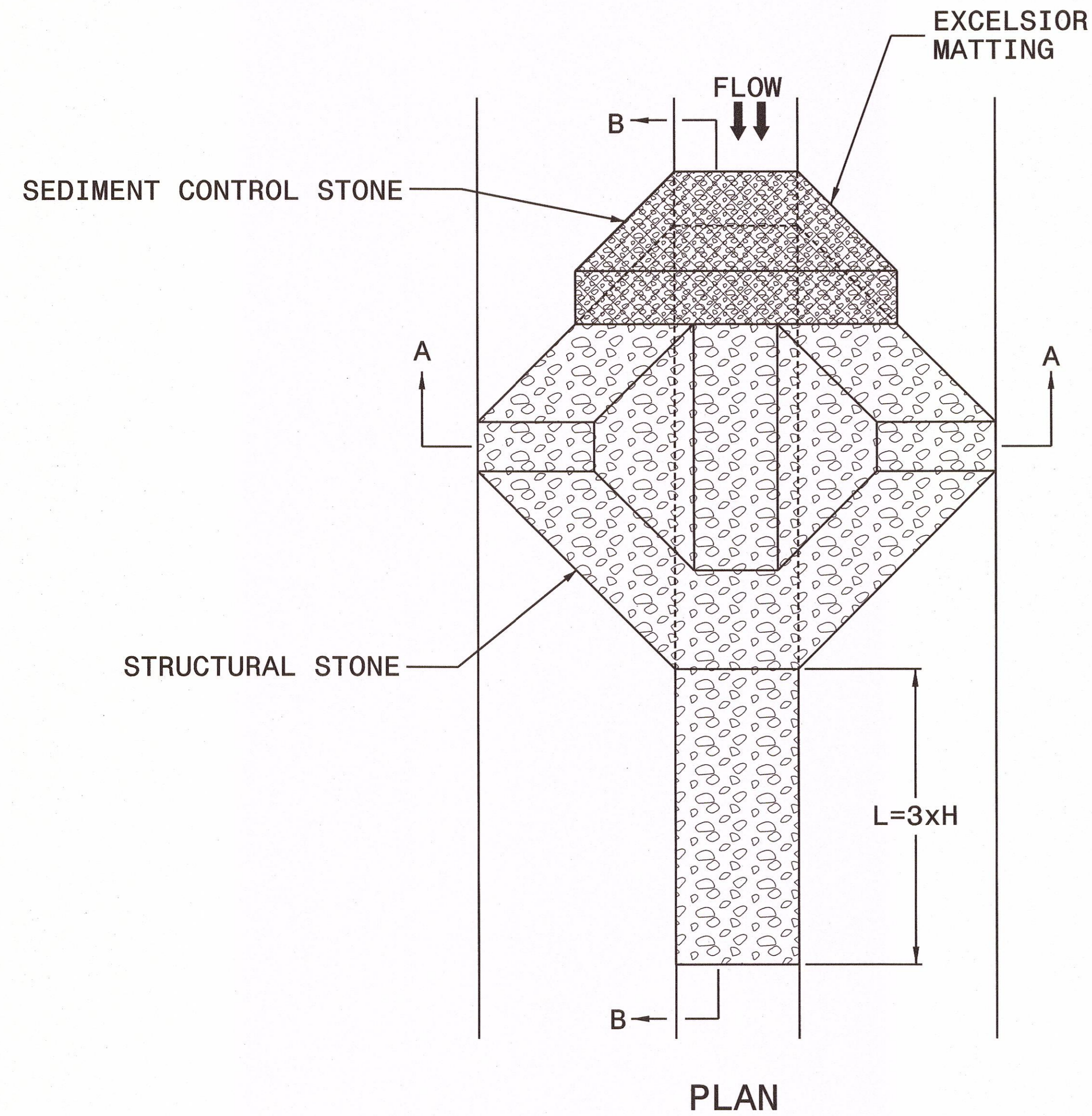
Roadway Standard Drawings

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 Riser Basin	1633.02 Temporary Rock Silt Check Type B
1630.02 Silt Basin Type B	1634.01 Temporary Rock Sediment Dam Type A
1630.03 Temporary Silt Ditch	1634.02 Temporary Rock Sediment Dam Type B
1630.04 Stilling Basin	1635.01 Rock Pipe Inlet Sediment Trap Type A
1630.05 Temporary Diversion	1635.02 Rock Pipe Inlet Sediment Trap Type B
1630.06 Special Stilling Basin	1640.01 Coir Fiber Baffle
1631.01 Matting Installation	1645.01 Temporary Stream Crossing

R:\17BP.8.R.29\Drawings\17BP.8.R.29.ec-1.tsh.dgn

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

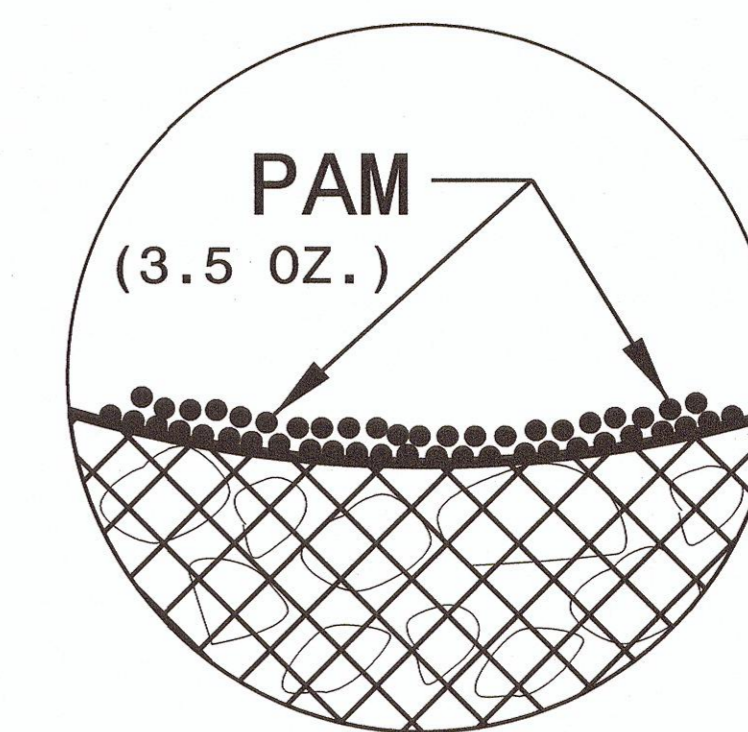


NOTES

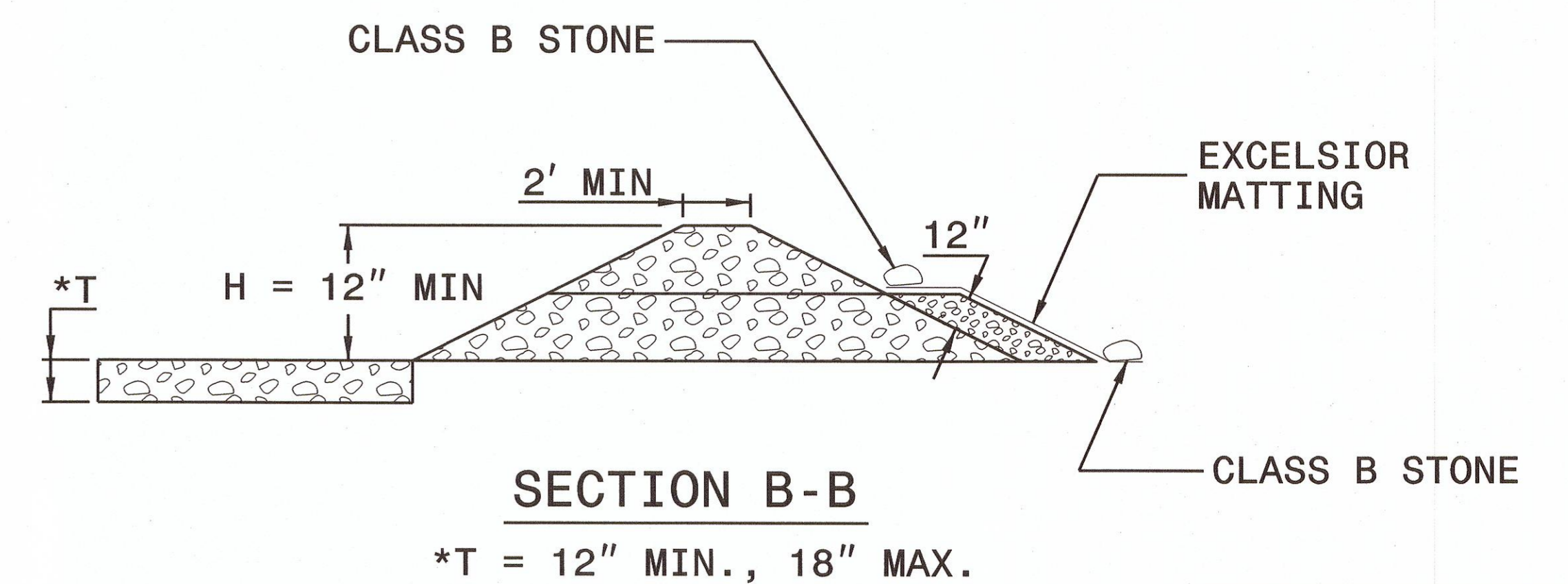
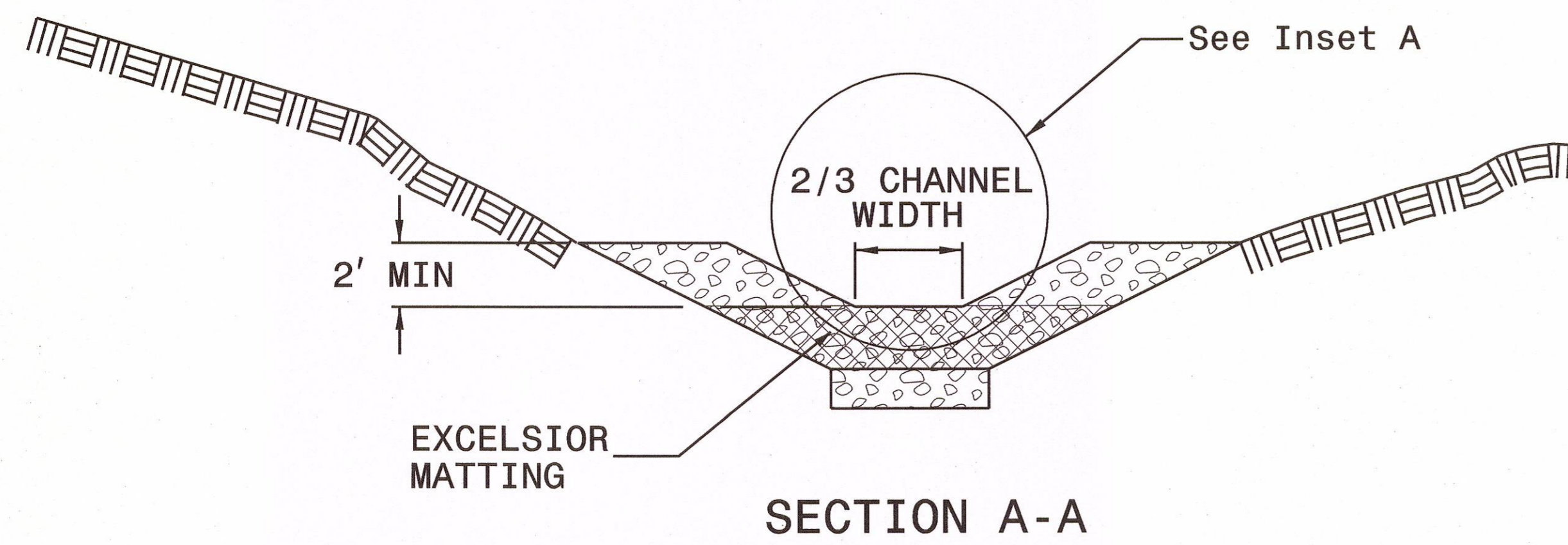
USE EXCELSIOR FOR MATTING MATERIAL AND ANCHOR MATTING SECTION AT TOP AND BOTTOM WITH CLASS B STONE.

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

INITIALLY APPLY 3.5 OUNCES OF POLYACRYLAMIDE (PAM) TO TOP OF MATTING SECTION AND AFTER EVERY RAINFALL EVENT THAT EQUALS OR EXCEEDS 0.50 INCHES.



INSET A



NOT TO SCALE

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

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.

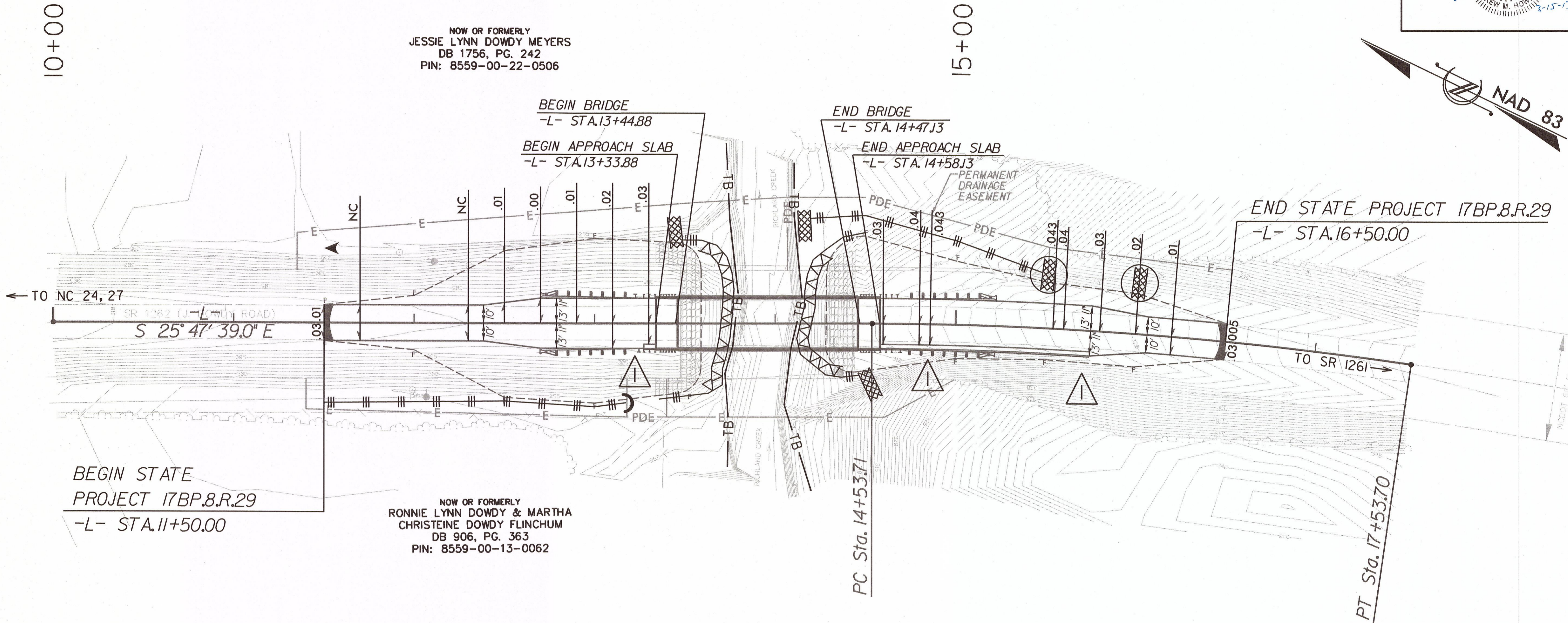
EROSION CONTROL PLAN

WSP · SELLS
 Transportation & Infrastructure
 15401 Weston Parkway Suite 100
 Cary, NC 27513 - 919.678.0035
 www.wspells.com
 LICENSE NO. F-0891

PROJECT REFERENCE NO. 17BP.8.R.29	SHEET NO. EC-4/CONST.4
RW SHEET NO.	
EROSION CONTROL ENGINEER	

NOW OR FORMERLY
 JESSIE LYNN DOWDY MEYERS
 DB 1756, PG. 242
 PIN: 8559-00-22-0506

NOW OR FORMERLY
 RONNIE LYNN DOWDY & MARTHA
 CHRISTEINE DOWDY FLINCHUM
 DB 906, PG. 363
 PIN: 8559-00-13-0062



PLAN ALONG -L-

SCALE : 1" = 30'

CLEARING AND GRUBBING
 EROSION CONTROL FOR
 CONSTRUCTION SHEET 4

REVISION 1 BY AMH. 03-15-13 - REMOVED PROPOSED DRAINAGE C&G FROM PLAN. ORIGINALLY SEALED ON 1-24-13 BY AMH.

3/15/2013
 11:04:28 AM
 H:\Projects\17BP.8.R.29\Drainage\62-0069.ec-EC4_Sheet.dgn

8/17/99

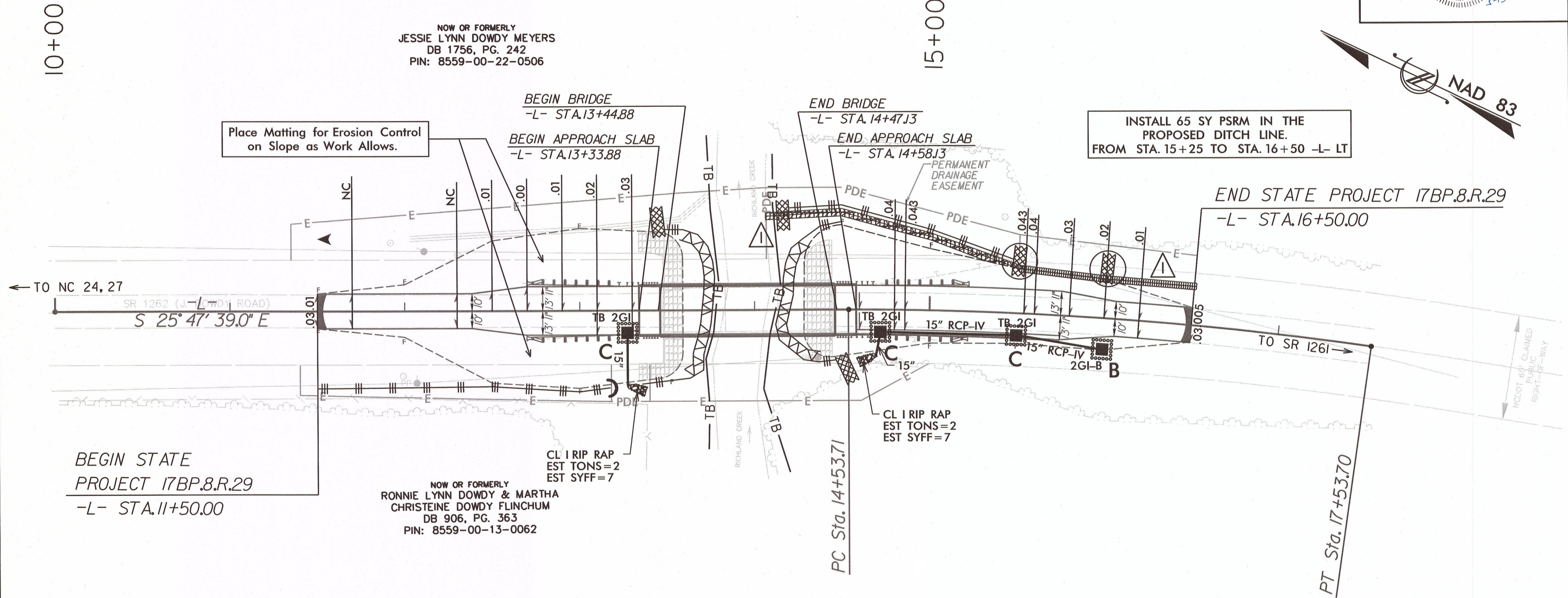
EROSION CONTROL PLAN

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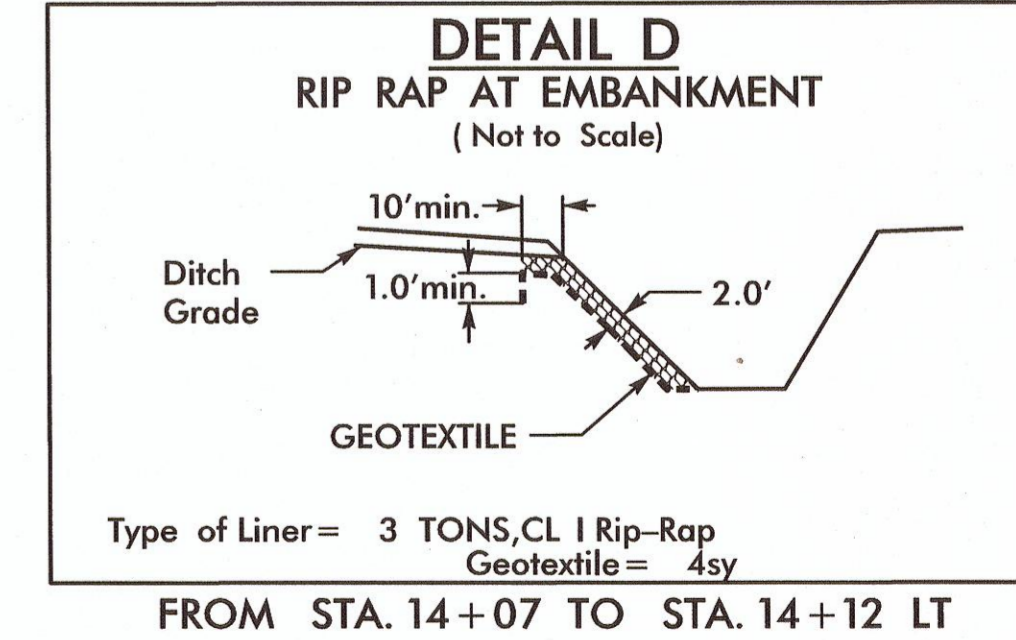
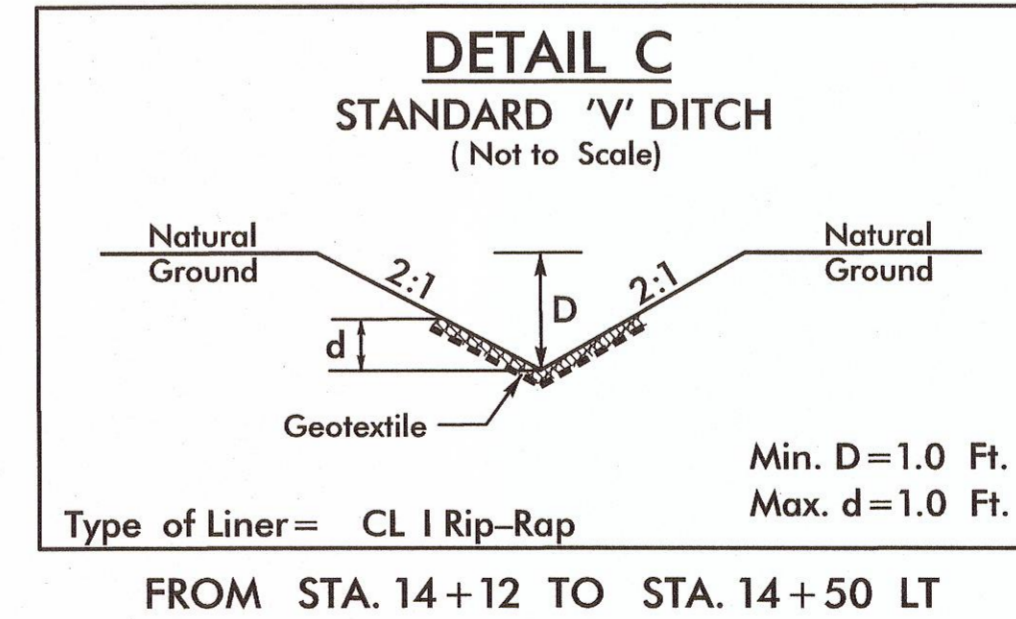
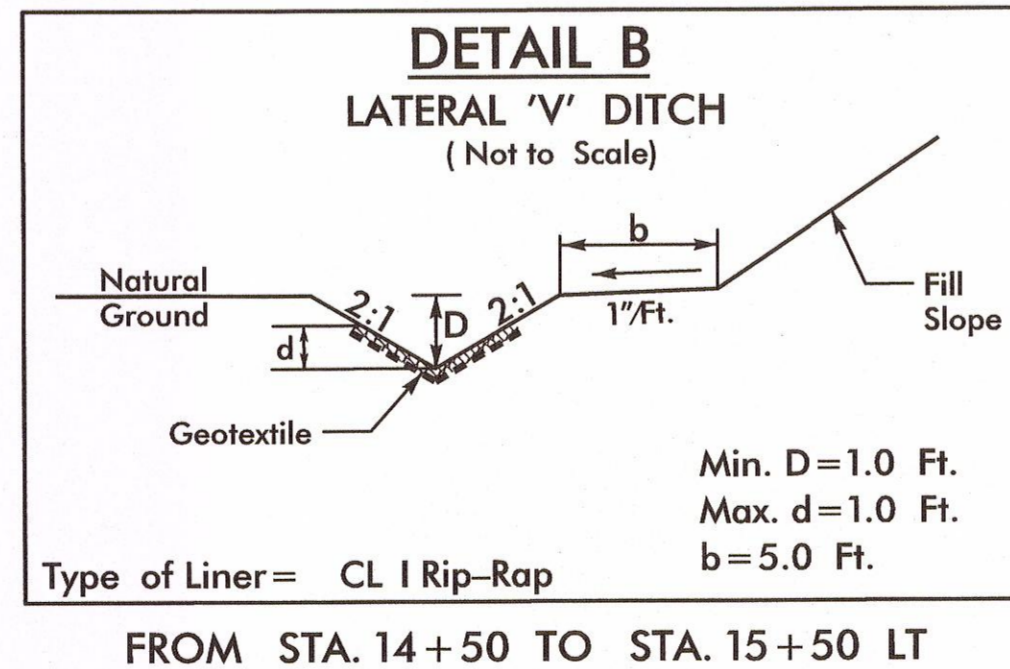
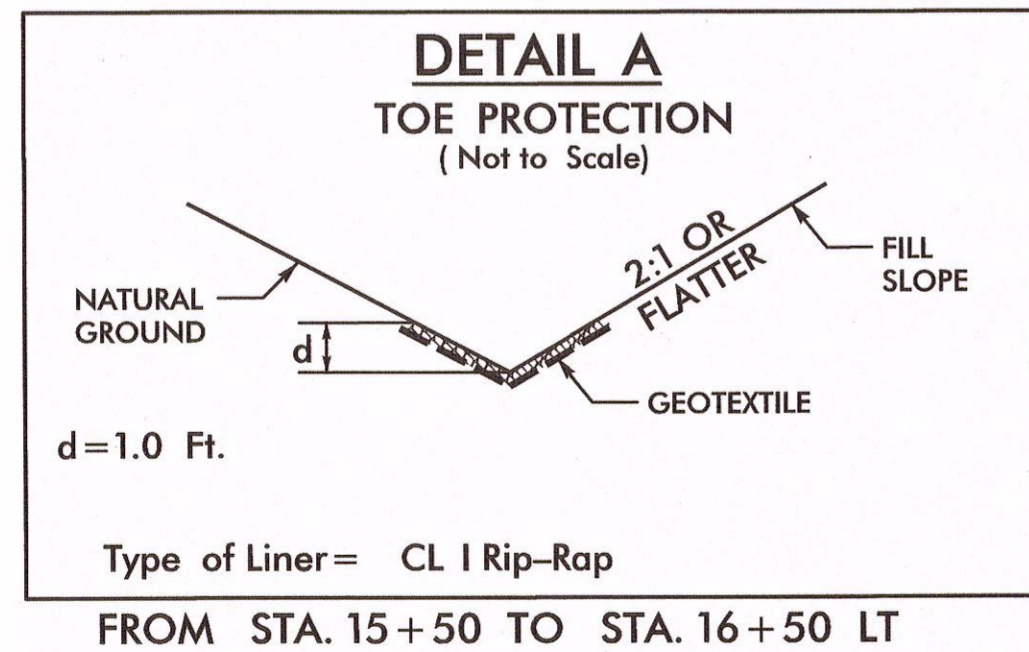
PROJECT REFERENCE NO. 17BP.8.R.29	SHEET NO. EC-5/CONST.4
RW SHEET NO. EROSION CONTROL ENGINEER	

NOW OR FORMERLY
 JESSIE LYNN DOWDY MEYERS
 DB 1756, PG. 242
 PIN: 8559-00-22-0506

NOW OR FORMERLY
 RONNIE LYNN DOWDY & MARTHA
 CHRISTEINE DOWDY FLINCHUM
 DB 906, PG. 363
 PIN: 8559-00-13-0062



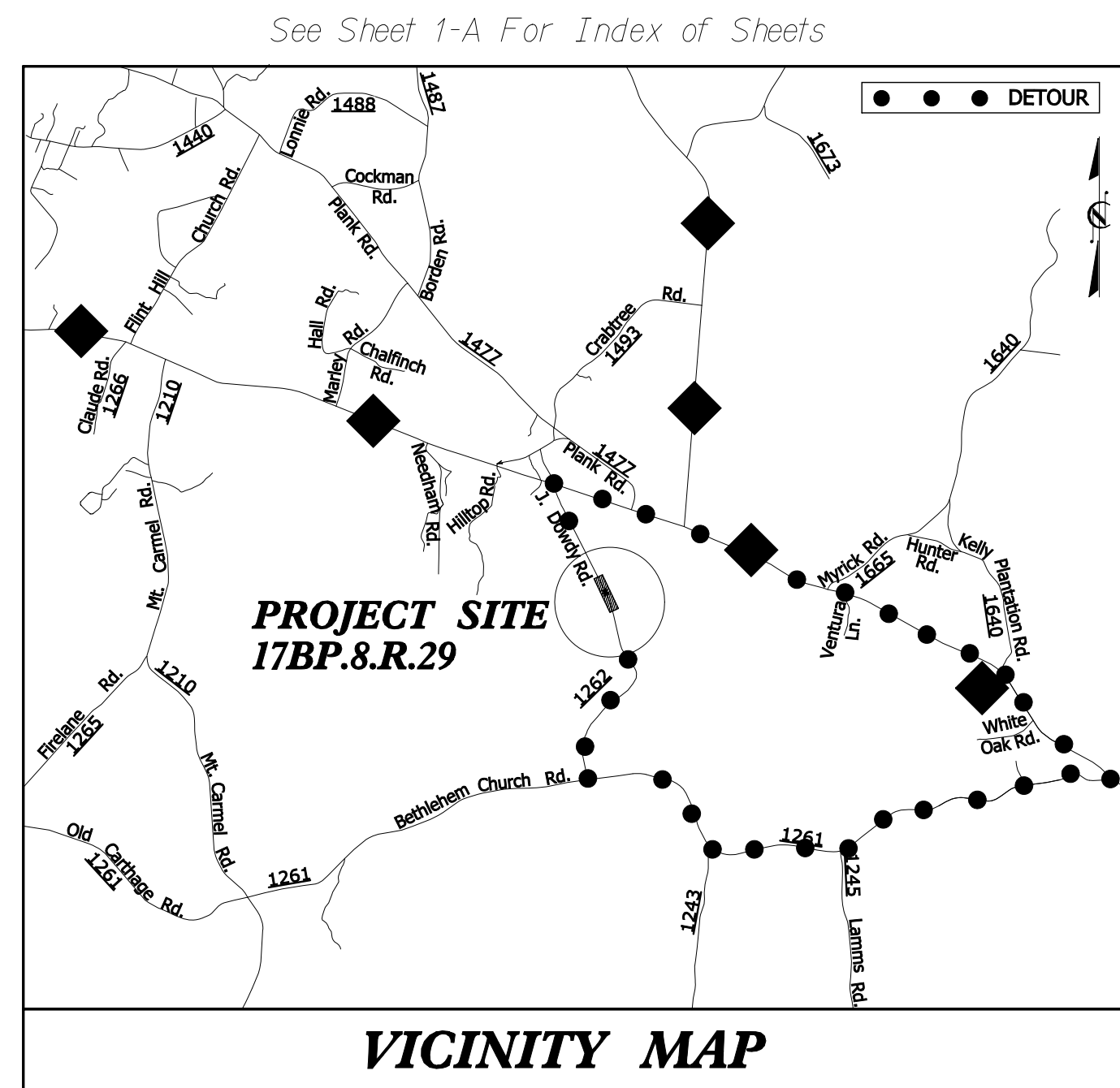
PLAN ALONG -L-
 SCALE: 1" = 30'



REVISION 1 BY AMH, 03-15-13 - REVISED PROPOSED DRAINAGE AND ADDED DITCH DETAILS TO PLAN. ORIGINALLY SEALED ON 1-24-13 BY AMH.

R:\15763\17BP.8.R.29\Drainage\62-0069.ec_EC5_Sheet.dgn 8/17/13

TIP PROJECT: 17BP.8.R.29



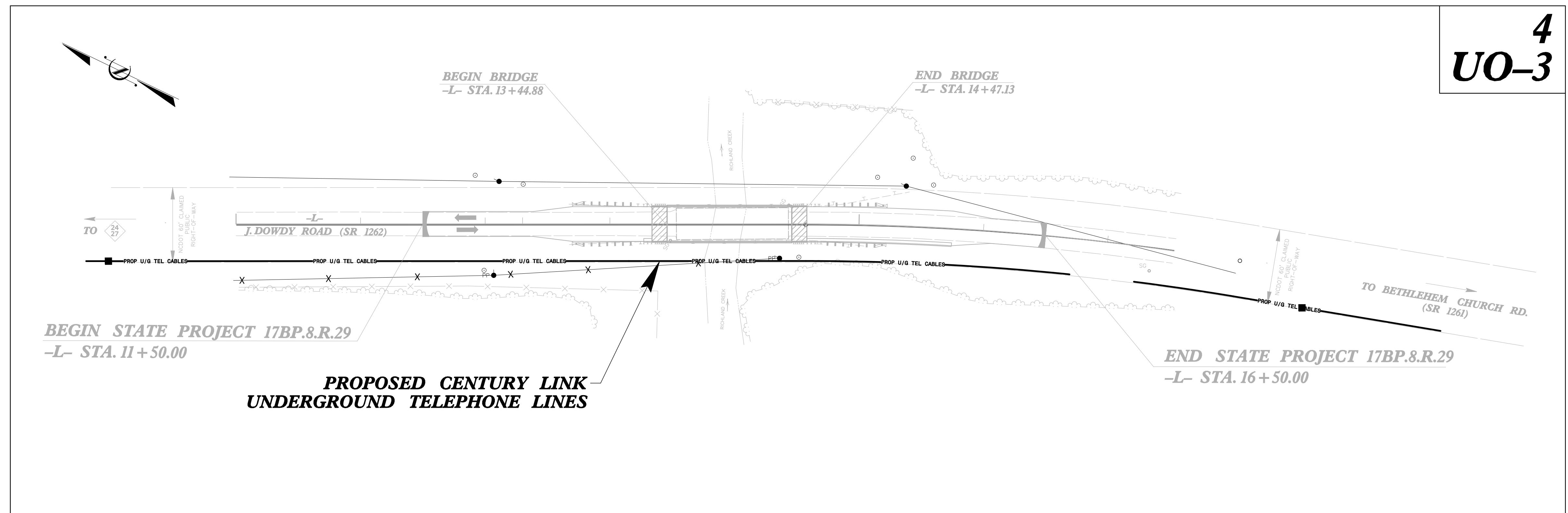
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

UTILITIES BY OTHERS PLANS
MOORE COUNTY

LOCATION: REPLACEMENT OF BRIDGE NO. 69 ON J. DOWDY ROAD
(SR 1262) OVER RICHLAND CREEK

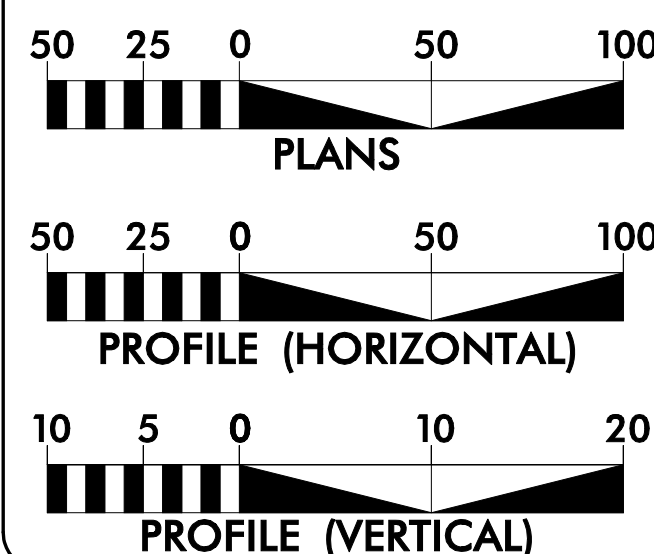
TYPE OF WORK: ELECTRIC POWER, TELEPHONE

T.I.P. NO.	SHEET NO.
17BP.8.R.29	UO-1



4
UO-3

GRAPHIC SCALES



INDEX OF SHEETS

SHEET NO.	DESCRIPTION
UO-1	TITLE SHEET
UO-2	UTILITY SYMBOLOGY SHEET
UO-3	UBO PLAN SHEET

PRIVATE UTILITY OWNERS ON PROJECT

(1) TELECOMMUNICATIONS - CENTURY LINK

HINDE ENGINEERING
License No. C-2639
7520 E. Independence Blvd., Suite 230 Charlotte, NC 28227



STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PROJECT REFERENCE NO. 17BP-8.R.29 SHEET NO. UO-2

UTILITIES BY OTHERS

NOTE:
ALL PROPOSED UTILITY WORK
SHOWN ON THIS SHEET WILL
BE DONE BY OTHERS



UTILITIES PLAN SHEET SYMBOLS

PROPOSED WATER SYMBOLS

Water Line (Sized as Shown)	
11 1/4 Degree Bend	
22 1/2 Degree Bend	
45 Degree Bend	
90 Degree Bend	
Plug	
Tee	
Cross	
Reducer	
Gate Valve	
Butterfly Valve	
Tapping Valve	
Line Stop	
Line Stop with Bypass	
Blow Off	
Fire Hydrant	
Relocate Fire Hydrant	
Remove Fire Hydrant	REM FH
Water Meter	
Relocate Water Meter	
Remove Water Meter	REM WM
Water Pump Station	
RPZ Backflow Preventer	
DCV Backflow Preventer	
Relocate RPZ Backflow Preventer	
Relocate DCV Backflow Preventer	

PROPOSED SEWER SYMBOLS

Gravity Sewer Line (Sized as Shown)	
Force Main Sewer Line (Sized as Shown)	
Manhole (Sized per Note)	
Sewer Pump Station	

PROPOSED MISCELLANEOUS UTILITIES SYMBOLS

Power Pole	
Telephone Pole	
Joint Use Pole	
Telephone Pedestal	
Utility Line by Others (Type as Shown)	
Trenchless Installation	
Encasement by Open Cut	
Encasement	

Thrust Block	
Air Release Valve	
Utility Vault	
Concrete Pier	
Steel Pier	
Plan Note	
Pay Item Note	

EXISTING UTILITIES SYMBOLS

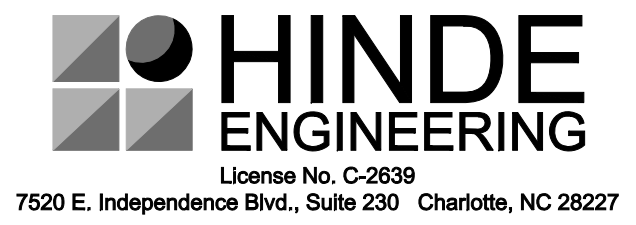
Power Pole		*Underground Power Line	
Telephone Pole		*Underground Telephone Cable	
Joint Use Pole		*Underground Telephone Conduit	
Utility Pole		*Underground Fiber Optics Telephone Cable	
Utility Pole with Base		*Underground TV Cable	
H-Frame Pole		*Underground Fiber Optics TV Cable	
Power Transmission Line Tower		*Underground Gas Pipeline	
Water Manhole		Aboveground Gas Pipeline	
Power Manhole		*Underground Water Line	
Telephone Manhole		Aboveground Water Line	
Sanitary Sewer Manhole		*Underground Gravity Sanitary Sewer Line	
Hand Hole for Cable		Aboveground Gravity Sanitary Sewer Line	
Power Transformer		*Underground SS Forced Main Line	
Telephone Pedestal		Underground Unknown Utility Line	
CATV Pedestal		SUE Test Hole	
Gas Valve		Water Meter	
Gas Meter		Water Valve	
Located Miscellaneous Utility Object		Fire Hydrant	
Abandoned According to Utility Records	AATUR	Sanitary Sewer Cleanout	
End of Information	E.O.I.		

*For Existing Utilities
Utility Line Drawn from Record

Designated Utility Line

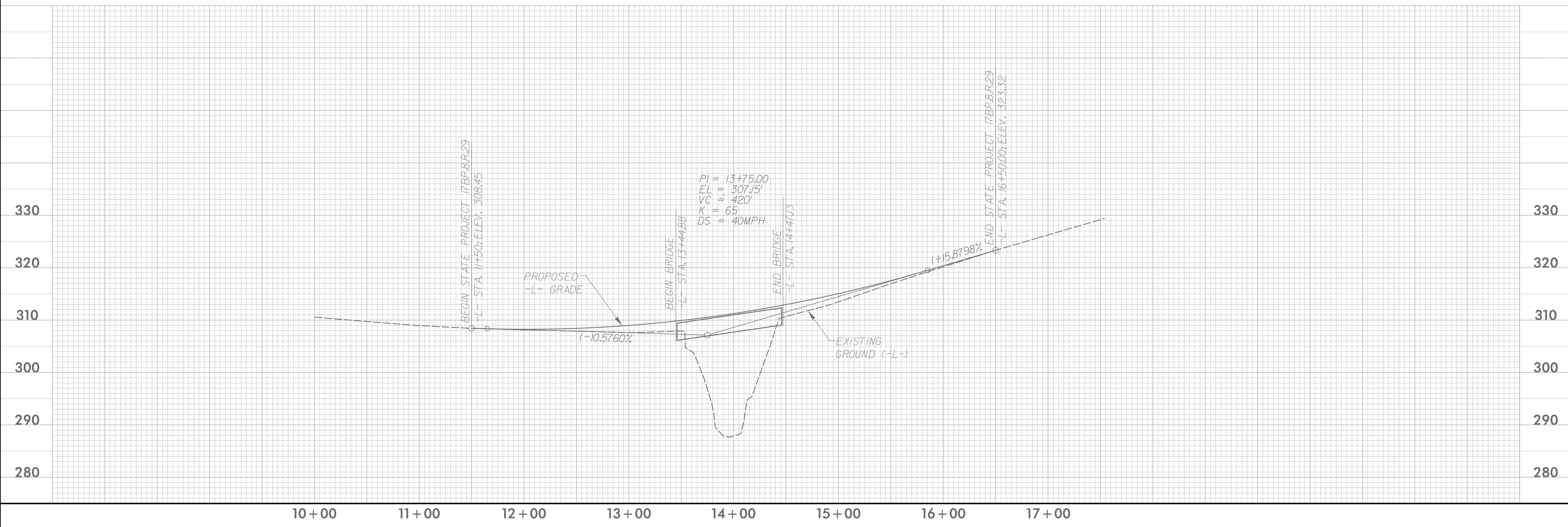
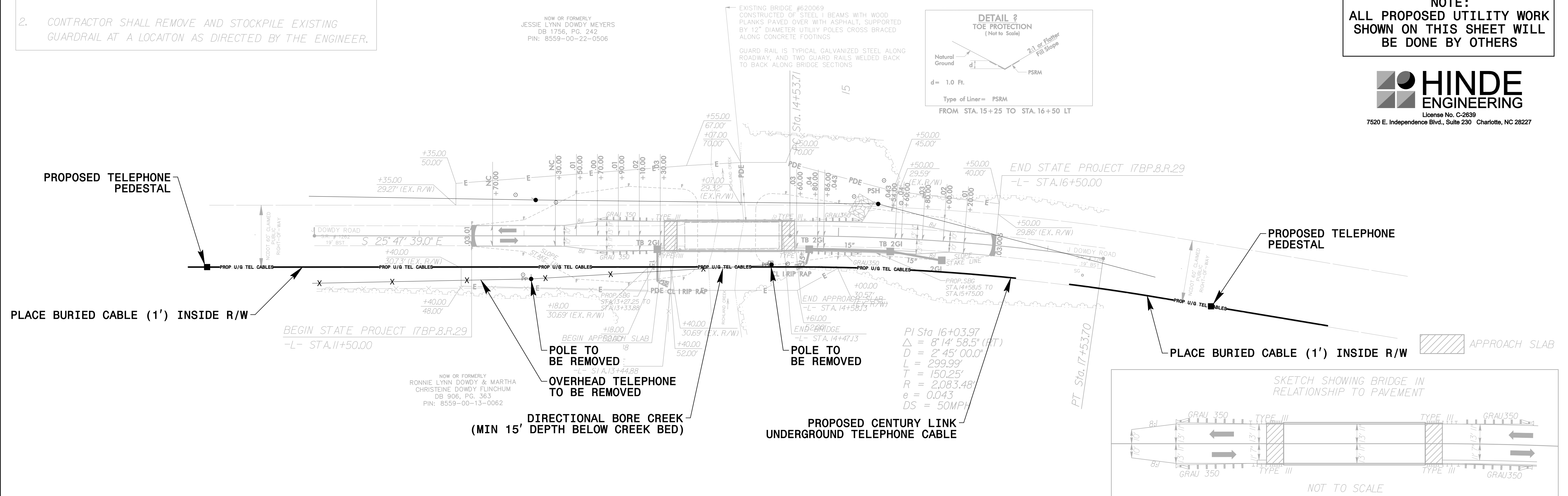
UTILITIES BY OTHERS

NOTE:
ALL PROPOSED UTILITY WORK SHOWN ON THIS SHEET WILL BE DONE BY OTHERS

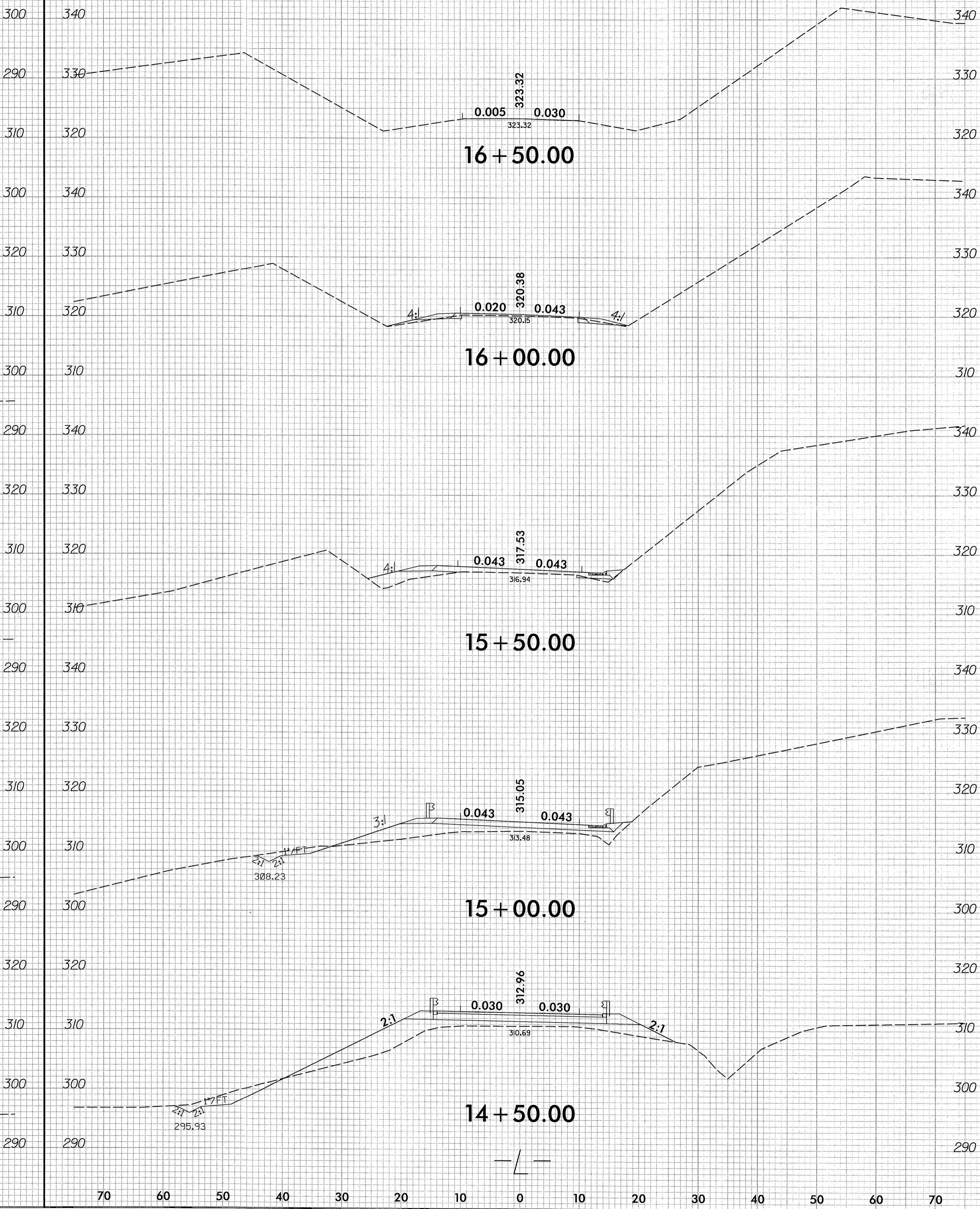
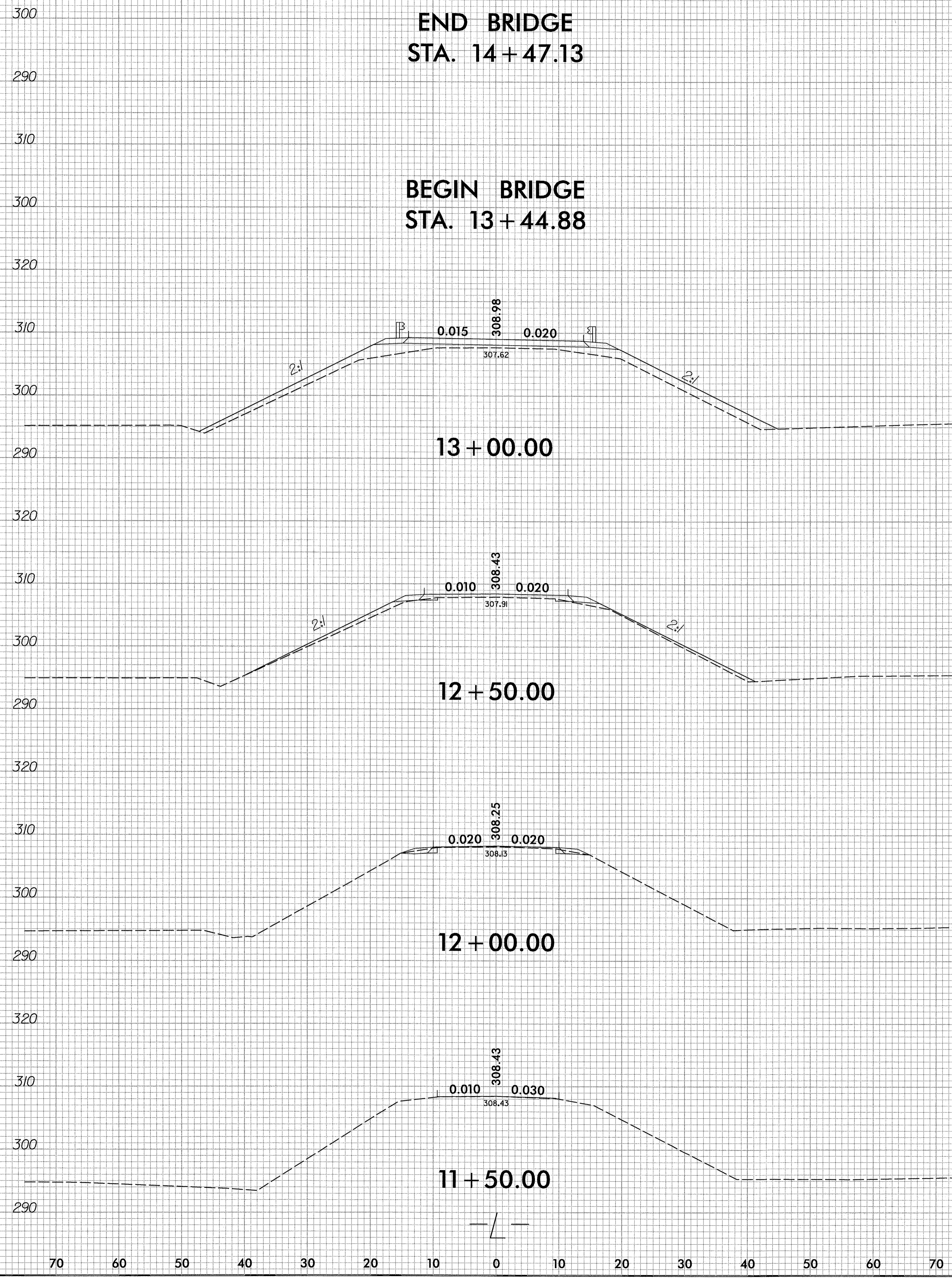


NOTES:

- EXISTING CONCRETE FOOTERS AT INTERIOR BENTS 1 & 2 SHALL BE RETAINED.
- CONTRACTOR SHALL REMOVE AND STOCKPILE EXISTING GUARDRAIL AT A LOCATION AS DIRECTED BY THE ENGINEER.



8/23/99



12/10/2013
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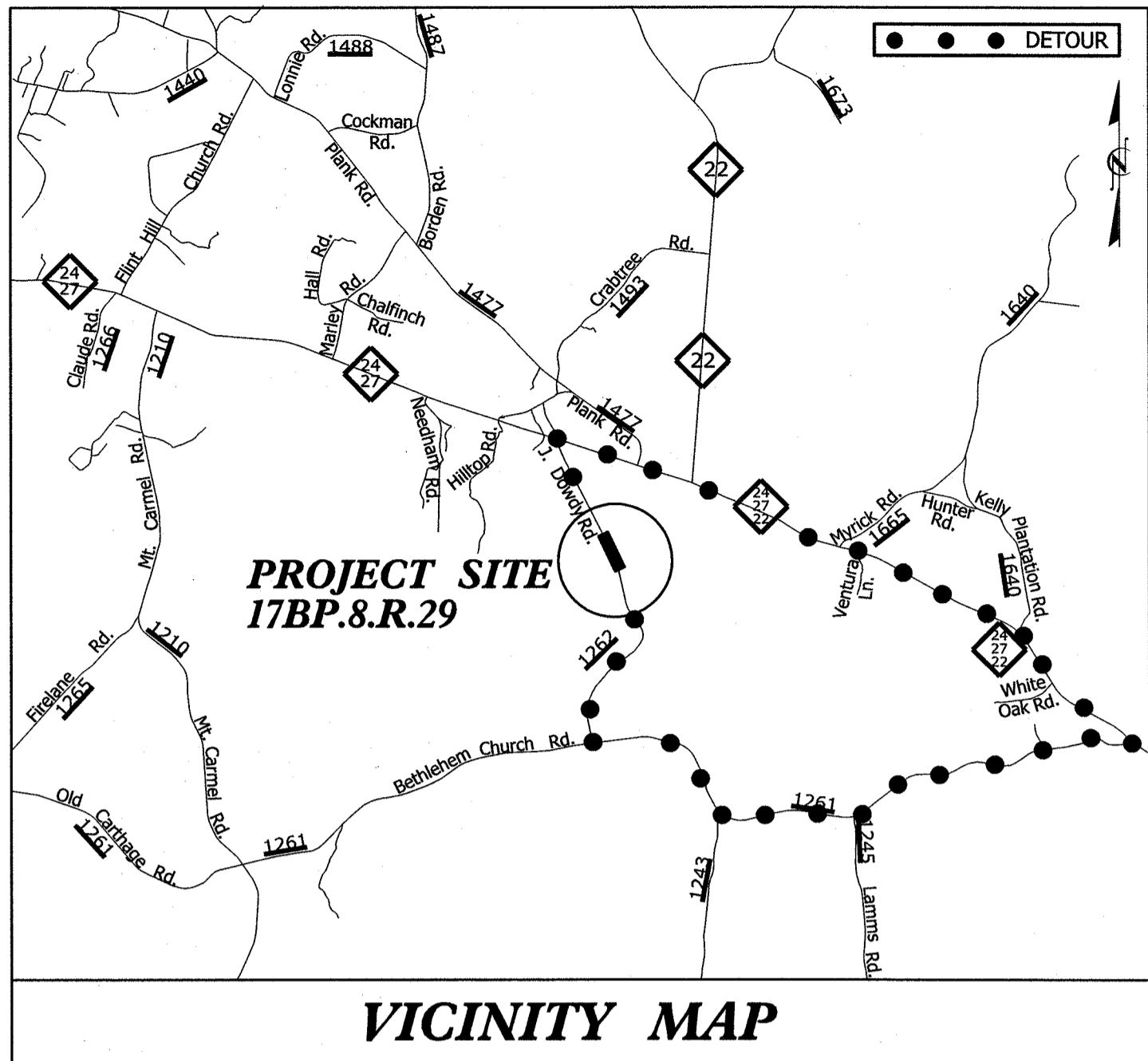
TIP PROJECT: 17BP.8.R.29

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	17BP.8.R.29		
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
17BP.8.R.29		PE	

STATE OF NORTH CAROLINA

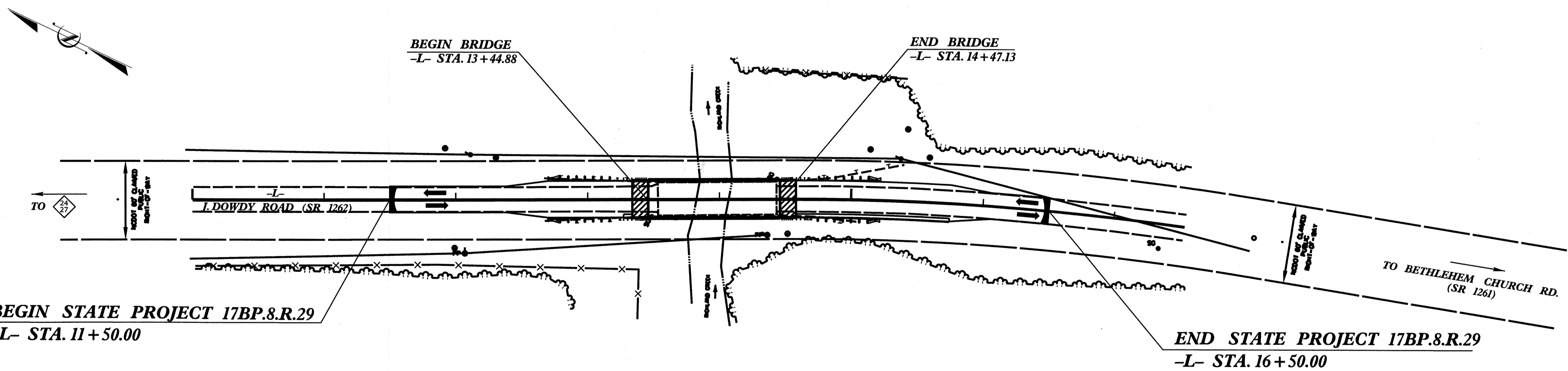
DIVISION OF HIGHWAYS

MOORE COUNTY



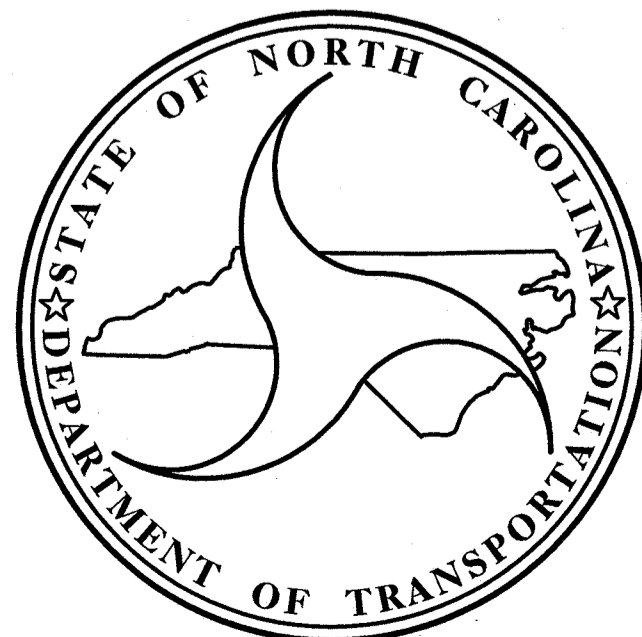
LOCATION: REPLACEMENT OF BRIDGE NO. 69 ON J. DOWDY ROAD (SR 1262) OVER RICHLAND CREEK

TYPE OF WORK: GRADING, PAVING, TRAFFIC CONTROL, DRAINAGE, & STRUCTURE



STRUCTURE

CONTRACT:



DESIGN DATA

ADT 2008 =	290
ADT 2025 =	680
DHV =	NA %
D =	NA %
T =	NA % *
V =	60 MPH
* TTST =	NA DUAL NA
FUNC CLASS =	LOCAL
SUB REGIONAL TIER	

PROJECT LENGTH

LENGTH OF ROADWAY PROJECT 17BP.8.R.29	=	0.075 MILE
LENGTH OF STRUCTURE PROJECT 17BP.8.R.29	=	0.020 MILE
TOTAL LENGTH PROJECT 17BP.8.R.29	=	0.095 MILE

2012 STANDARD SPECIFICATIONS

LETTING DATE:
OCTOBER 22, 2013

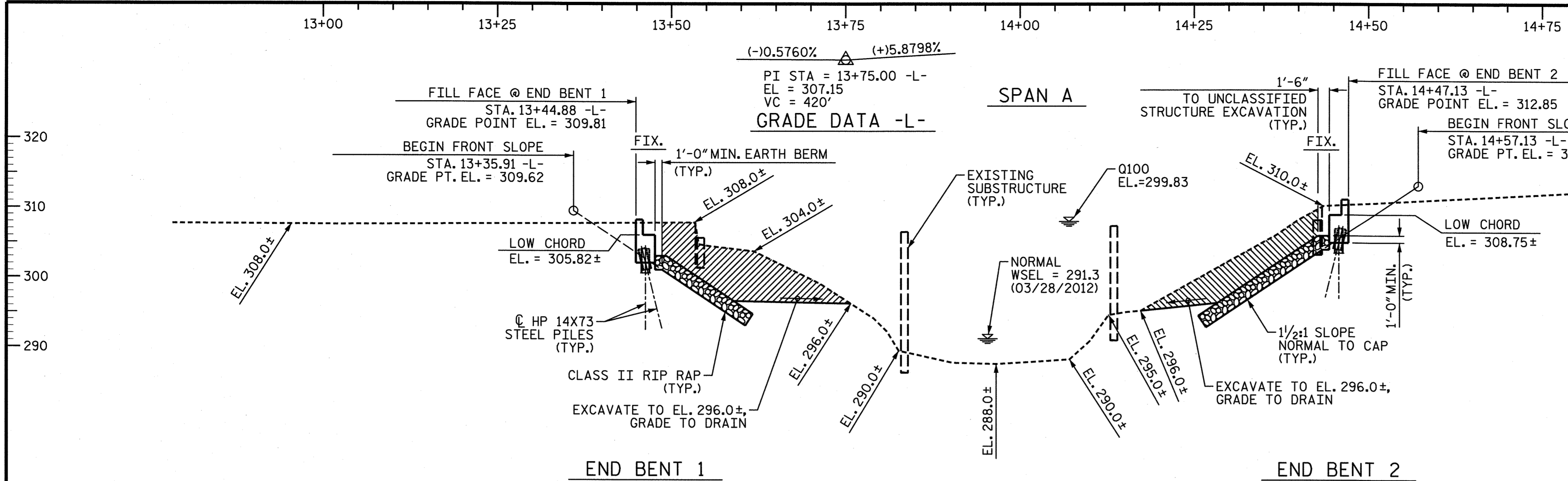
WSP
Transportation & Infrastructure
15401 Weston Parkway Suite 100 • Cary, NC 27513 • 919.678.0035
www.wspgroup.com
LICENSE NO. F-0891

J. J. Barcomb, P.E.
Project Engineer

N. A. Pierce, P.E.
Project Design Engineer



DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA



SECTION ALONG C -L-
 (SECTION TAKEN AT RIGHT ANGLES TO END BENTS)
 (APPROXIMATE GROUND LINE ELEVATIONS ARE ALONG THE UPSTREAM EDGE OF THE EXISTING BRIDGE)

UNCLASSIFIED STRUCTURE EXCAVATION (SEE NOTES)

HORIZONTAL CURVE DATA

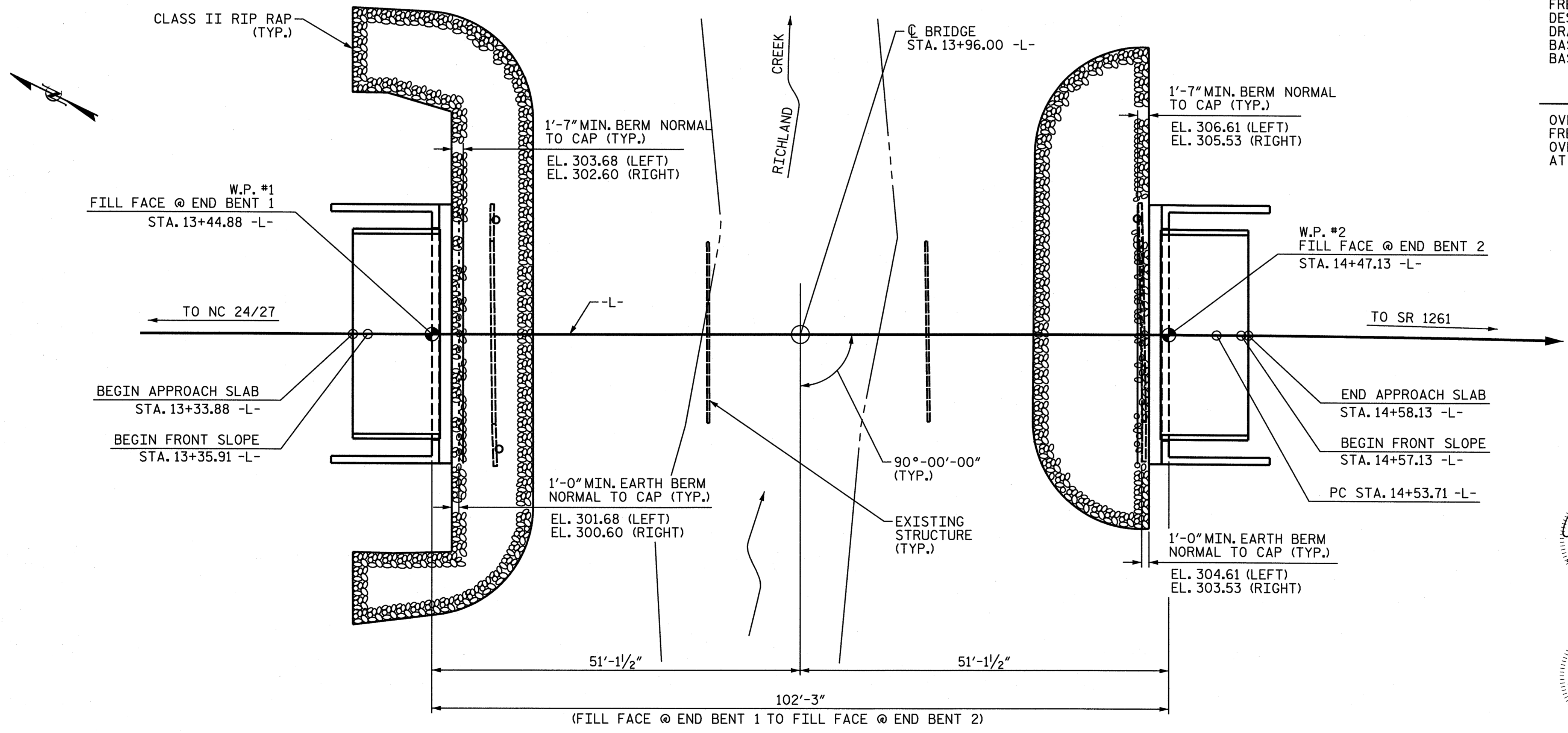
PI STA.	16+03.97 -L-
Δ	8°-14'-58.5" (RT)
D	2°-45'-00.0"
L	299.99'
T	150.25'
R	2,083.48'

HYDRAULIC DATA

DESIGN DISCHARGE	=2100 CFS
FREQUENCY OF DESIGN FLOOD	=25 YEARS
DESIGN HIGH WATER ELEVATION	=298.4
DRAINAGE AREA	=9.7 SQ. MI.
BASE DISCHARGE (Q100)	=3080 CFS
BASE HIGH WATER ELEVATION	=299.83

OVERTOPPING FLOOD DATA

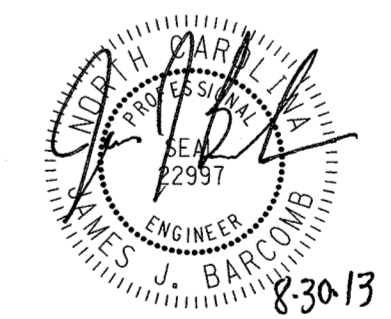
OVERTOPPING DISCHARGE	=4000+ CFS
FREQUENCY OF OVERTOPPING FLOOD	=500+ YEARS
OVERTOPPING FLOOD ELEVATION	=308.3
AT SAG STA. 12+02.47 -L-	



PLAN

(FOR CLARITY, PILES ARE NOT SHOWN IN PLAN VIEW)

I HEREBY CERTIFY THESE PLANS ARE THE AS-BUILT PLANS



DESIGN ENGINEER OF RECORD:
 DATE: 08/20/13

WSP
 Transportation & Infrastructure
 15401 Weston Parkway Suite 100
 Cary, NC 27513 - 919.678.0035
 www.wspgroup.com
 LICENSE NO. F-0891

PROJECT NO. 17BP.8.R.29
 MOORE COUNTY
 STATION: 13+96.00 -L-

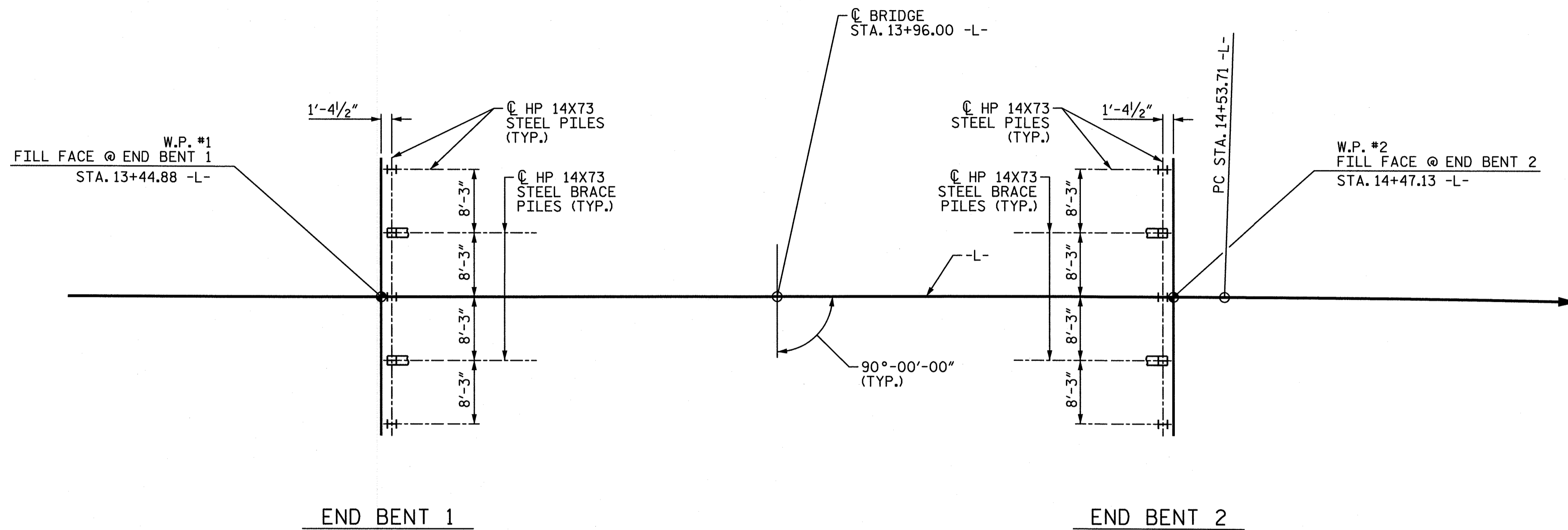
SHEET 1 OF 3 REPLACES BRIDGE #69

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
GENERAL DRAWING
 FOR BRIDGE OVER RICHLAND CREEK ON SR 1262 BETWEEN NC 24/27 AND SR 1261

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

DRAWN BY: M. HOBBS DATE: 08/12
 CHECKED BY: N. PIERCE DATE: 08/12

8/30/2013
 R:\17BP.8.R.29\Structures\Drafting\General Drawings\R.29.SD.GD.dgn
 usmh04386



FOUNDATION LAYOUT

(DIMENSIONS LOCATING PILES ARE SHOWN TO THE PILE CENTERLINE AT THE BOTTOM OF THE CAP)

HORIZONTAL CURVE DATA

PI STA. 16+03.97 -L-
 $\Delta = 8^\circ-14'-58.5''$ (RT)
 $D = 2^\circ-45'-00.0''$
 $L = 299.99'$
 $T = 150.25'$
 $R = 2,083.48'$

FOUNDATION NOTES

FOR PILES, SEE SECTION 450 OF THE STANDARD SPECIFICATIONS.

PILES ARE DESIGNED FOR A FACTORED RESISTANCE OF 139 TONS PER PILE FOR END BENT 1 AND END BENT 2.

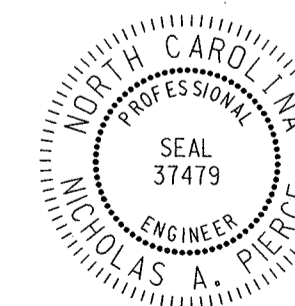
DRIVE PILES AT END BENT 1 AND END BENT 2 TO A REQUIRED DRIVING RESISTANCE OF 232 TONS PER PILE.

STEEL PILE POINTS ARE REQUIRED FOR PILES AT END BENT 1 AND END BENT 2.

IT HAS BEEN ESTIMATED THAT A HAMMER WITH AN EQUIVALENT RATED ENERGY IN THE RANGE OF 30 TO 55 FT-KIPS 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 THE PILES PROVISION.

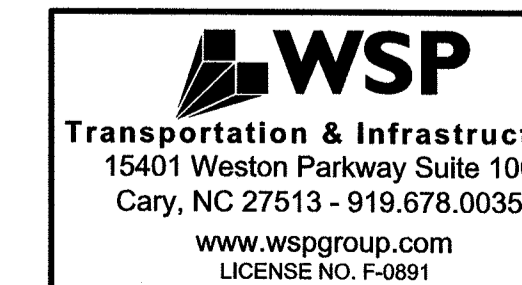
PROJECT NO. 17BP.8.R.29
MOORE COUNTY
 STATION: 13+96.00 -L-

SHEET 2 OF 3



DESIGN ENGINEER OF RECORD:

DATE: 08/12



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

GENERAL DRAWING

FOR BRIDGE OVER RICHLAND CREEK ON SR 1262 BETWEEN NC 24/27 AND SR 1261

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

DRAWN BY: M. HOBBS DATE: 08/12
 CHECKED BY: N. PIERCE DATE: 08/12

TOTAL BILL OF MATERIAL

	REMOVAL OF EXISTING STRUCTURE @ STA. 13+96.00 -L-	UNCLASSIFIED STRUCTURE EXCAVATION	CLASS A CONCRETE	BRIDGE APPROACH SLABS	REINFORCING STEEL	HP 14 X 73 STEEL PILES	STEEL PILE POINTS	VERTICAL CONCRETE BARRIER RAIL	RIP RAP CLASS II (2'-0" THICK)	GEOTEXTILE FOR DRAINAGE	ELASTOMERIC BEARINGS	3'-0" X 3'-3" PRESTRESSED CONCRETE BOX BEAMS		
	LUMP SUM	LUMP SUM	CU. YDS.	LUMP SUM	LBS.	NO.	LIN.FT.	EACH	LIN.FT.	TONS	SQ.YDS.	LUMP SUM	NO.	LIN.FT.
SUPERSTRUCTURE				LUMP SUM					200.00			LUMP SUM	10	1000.00
END BENT 1		LUMP SUM	27.4		4390	5	75	5		150	166			
END BENT 2		LUMP SUM	27.4		4390	5	100	5		118	131			
TOTAL	LUMP SUM	LUMP SUM	54.8	LUMP SUM	8780	10	175	10	200.00	268	297	LUMP SUM	10	1000.00

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.

THE EXISTING STRUCTURE CONSISTING OF 3 SPANS, 1 @ 30'-0", 1 @ 30'-0", AND 1 @ 30'-6" WITH A CLEAR ROADWAY WIDTH OF 23'-9" ASPHALT WEARING SURFACE ON TIMBER DECK OVER STEEL I-BEAMS WITH TIMBER CAPS AND PILES AT ABUTMENTS AND INTERIOR BENTS WITH INTERIOR BENTS HAVING CONCRETE FOOTINGS AND LOCATED AT PROPOSED STRUCTURE SHALL BE REMOVED. THE EXISTING BRIDGE IS PRESENTLY POSTED BELOW 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 SO AS NOT TO ALLOW DEBRIS TO FALL INTO THE WATER. THE CONTRACTOR SHALL REMOVE THE BRIDGE AND SUBMIT PLANS FOR DEMOLITION IN ACCORDANCE WITH ARTICLE 402-2 OF THE STANDARD SPECIFICATIONS.

RETAIN THE EXISTING CONCRETE FOOTINGS AT BOTH BENT 1 AND BENT 2 OF THE EXISTING STRUCTURE.

THE MATERIAL SHOWN IN THE CROSS-HATCHED AREA ON SHEET S-1 SHALL BE EXCAVATED FOR A DISTANCE OF 40 FT. EACH SIDE OF CENTERLINE ROADWAY AS DIRECTED BY THE ENGINEER. THIS WORK WILL BE PAID FOR AT THE CONTRACT LUMP SUM PRICE FOR UNCLASSIFIED STRUCTURE EXCAVATION. SEE SECTION 412 OF THE STANDARD SPECIFICATIONS.

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.

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

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 13+96.00 -L-".

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

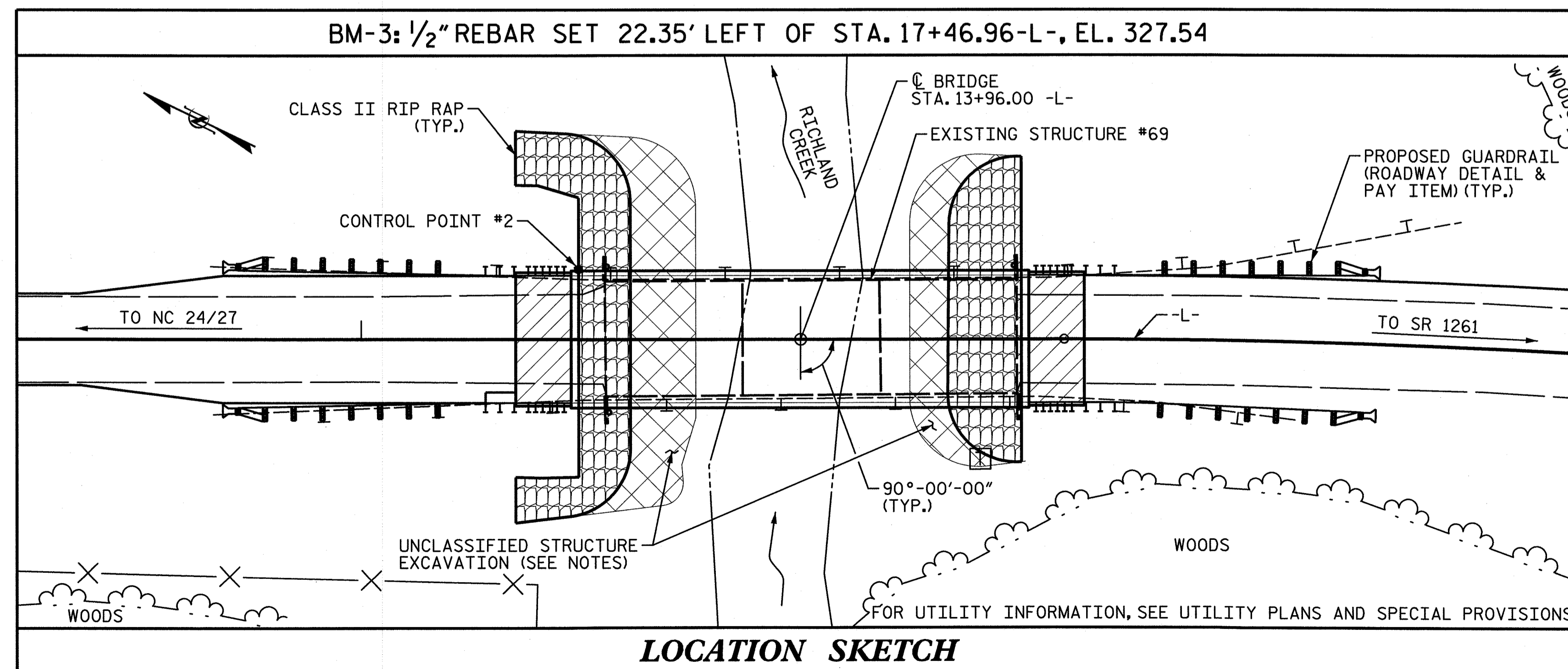
FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

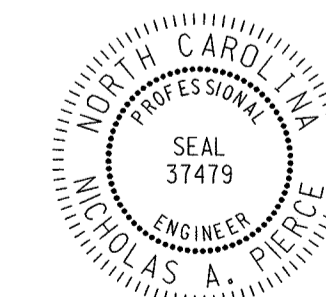
FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

THIS BRIDGE IS LOCATED IN SEISMIC ZONE 1.

ASPHALT WEARING SURFACE IS INCLUDED IN THE ROADWAY QUANTITY ON ROADWAY PLANS.



LOCATION SKETCH



DESIGN ENGINEER OF RECORD:
Nicholas A. Pierce
DATE: 08/29/13

WSP
Transportation & Infrastructure
15401 Weston Parkway Suite 100
Cary, NC 27513 - 919.678.0035
www.wspgroup.com
LICENSE NO. F-0891

PROJECT NO. 17BP.8.R.29
MOORE COUNTY
STATION: 13+96.00 -L-

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING

FOR BRIDGE OVER RICHLAND CREEK ON SR 1262 BETWEEN NC 24/27 AND SR 1261

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

DRAWN BY: M. HOBBS DATE: 08/12
CHECKED BY: N. PIERCE DATE: 08/12

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

LEVEL	VEHICLE	WEIGHT (W) (TONS)	CONTROLLING LOAD RATING	MINIMUM RATING FACTORS (RF)	TONS = W X RF	STRENGTH I LIMIT STATE										SERVICE III LIMIT STATE					COMMENT NUMBER			
						MOMENT					SHEAR					MOMENT								
						LIVELOAD FACTORS	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)	LIVELOAD FACTORS	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN		GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)	
DESIGN LOAD RATING	HL-93(Inv)	N/A	1	1.035	--	1.75	0.272	1.26	A	EL	49.25	0.489	1.34	A	EL	4.925	0.80	0.272	1.04	A	EL	49.25		
	HL-93(Opr)	N/A	--	1.633	--	1.35	0.272	1.63	A	EL	49.25	0.489	1.73	A	EL	4.925	N/A	--	--	--	--	--		
	HS-20(Inv)	36.000	2	1.44	51.84	1.75	0.272	1.75	A	EL	49.25	0.489	1.81	A	EL	4.925	0.80	0.272	1.44	A	EL	49.25		
	HS-20(Opr)	36.000	--	2.271	81.756	1.35	0.272	2.27	A	EL	49.25	0.489	2.35	A	EL	4.925	N/A	--	--	--	--	--		
LEGAL LOAD RATING	SV	SNSH	13.500	--	3.413	46.079	1.4	0.272	5.19	A	EL	49.25	0.489	5.59	A	EL	4.925	0.80	0.272	3.41	A	EL	49.25	
		SNGARBS2	20.000	--	2.473	49.452	1.4	0.272	3.76	A	EL	49.25	0.489	3.91	A	EL	4.925	0.80	0.272	2.47	A	EL	49.25	
		SNAGRIS2	22.000	--	2.313	50.885	1.4	0.272	3.52	A	EL	49.25	0.489	3.6	A	EL	4.925	0.80	0.272	2.31	A	EL	49.25	
		SNCOTTS3	27.250	--	1.696	46.228	1.4	0.272	2.58	A	EL	49.25	0.489	2.78	A	EL	4.925	0.80	0.272	1.70	A	EL	49.25	
		SNAGGRS4	34.925	--	1.39	48.556	1.4	0.272	2.11	A	EL	49.25	0.489	2.26	A	EL	4.925	0.80	0.272	1.39	A	EL	49.25	
		SNS5A	35.550	--	1.361	48.398	1.4	0.272	2.07	A	EL	49.25	0.489	2.27	A	EL	4.925	0.80	0.272	1.36	A	EL	49.25	
		SNS6A	39.950	--	1.238	49.456	1.4	0.272	1.88	A	EL	49.25	0.489	2.05	A	EL	4.925	0.80	0.272	1.24	A	EL	49.25	
	SNS7B	42.000	--	1.178	49.496	1.4	0.272	1.79	A	EL	49.25	0.489	2	A	EL	4.925	0.80	0.272	1.18	A	EL	49.25		
	TTST	TNAGRIT3	33.000	--	1.506	49.709	1.4	0.272	2.29	A	EL	49.25	0.489	2.46	A	EL	4.925	0.80	0.272	1.51	A	EL	49.25	
		TNT4A	33.075	--	1.51	49.942	1.4	0.272	2.3	A	EL	49.25	0.489	2.41	A	EL	4.925	0.80	0.272	1.51	A	EL	49.25	
		TNT6A	41.600	--	1.224	50.926	1.4	0.272	1.86	A	EL	49.25	0.489	2.09	A	EL	4.925	0.80	0.272	1.22	A	EL	49.25	
		TNT7A	42.000	--	1.225	51.442	1.4	0.272	1.86	A	EL	49.25	0.489	2.05	A	EL	4.925	0.80	0.272	1.22	A	EL	49.25	
		TNT7B	42.000	--	1.254	52.657	1.4	0.272	1.91	A	EL	49.25	0.489	1.96	A	EL	4.925	0.80	0.272	1.25	A	EL	49.25	
		TNAGRIT4	43.000	--	1.203	51.711	1.4	0.272	1.83	A	EL	49.25	0.489	1.91	A	EL	4.925	0.80	0.272	1.20	A	EL	49.25	
TNAGT5A		45.000	--	1.139	51.236	1.4	0.272	1.73	A	EL	49.25	0.489	1.87	A	EL	4.925	0.80	0.272	1.14	A	EL	49.25		
TNAGT5B	45.000	3	1.129	50.805	1.4	0.272	1.72	A	EL	49.25	0.489	1.82	A	EL	4.925	0.80	0.272	1.13	A	EL	49.25			

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

Ⓛ DESIGN LOAD RATING (HL-93)

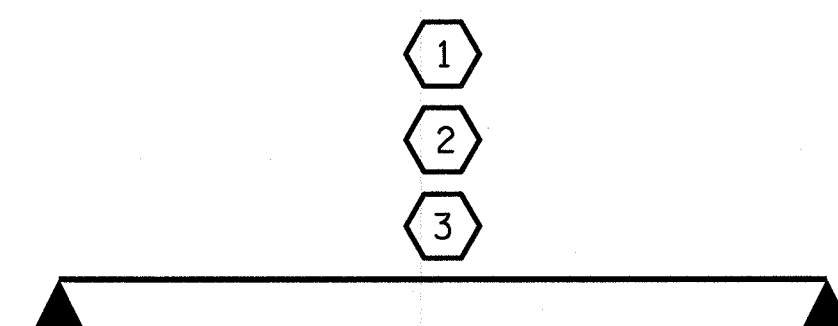
Ⓜ DESIGN LOAD RATING (HS-20)

Ⓝ LEGAL LOAD RATING **

** SEE CHART FOR VEHICLE TYPE

GIRDER LOCATION

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



LRFR SUMMARY

PROJECT NO. 17BP.8.R.29
MOORE COUNTY
 STATION: 13+96.00 -L-



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STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

STANDARD
 LRFR SUMMARY FOR
 100' BOX BEAM UNIT
 90° SKEW
 (NON-INTERSTATE TRAFFIC)

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

ASSEMBLED BY : MAH	DATE : 08/12
CHECKED BY : NAP	DATE : 08/12
DRAWN BY : TMG II/II	
CHECKED BY : AAC II/II	

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 BOX BEAM SECTIONS SHALL BE GRADE 60 AND SHALL BE INCLUDED IN THE UNIT PRICE BID FOR PRESTRESSED CONCRETE BOX BEAMS.

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

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

THE BACKERS ROD SHALL CONFORM TO THE REQUIREMENTS OF TYPE M BOND BREAKER, SEE SECTION 1028 OF THE STANDARD SPECIFICATIONS.

THE TRANSFER OF LOAD FROM THE ANCHORAGES TO THE BOX BEAM UNIT SHALL BE DONE WHEN THE CONCRETE HAS REACHED A COMPRESSIVE STRENGTH OF NOT LESS THAN 5500 PSI.

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

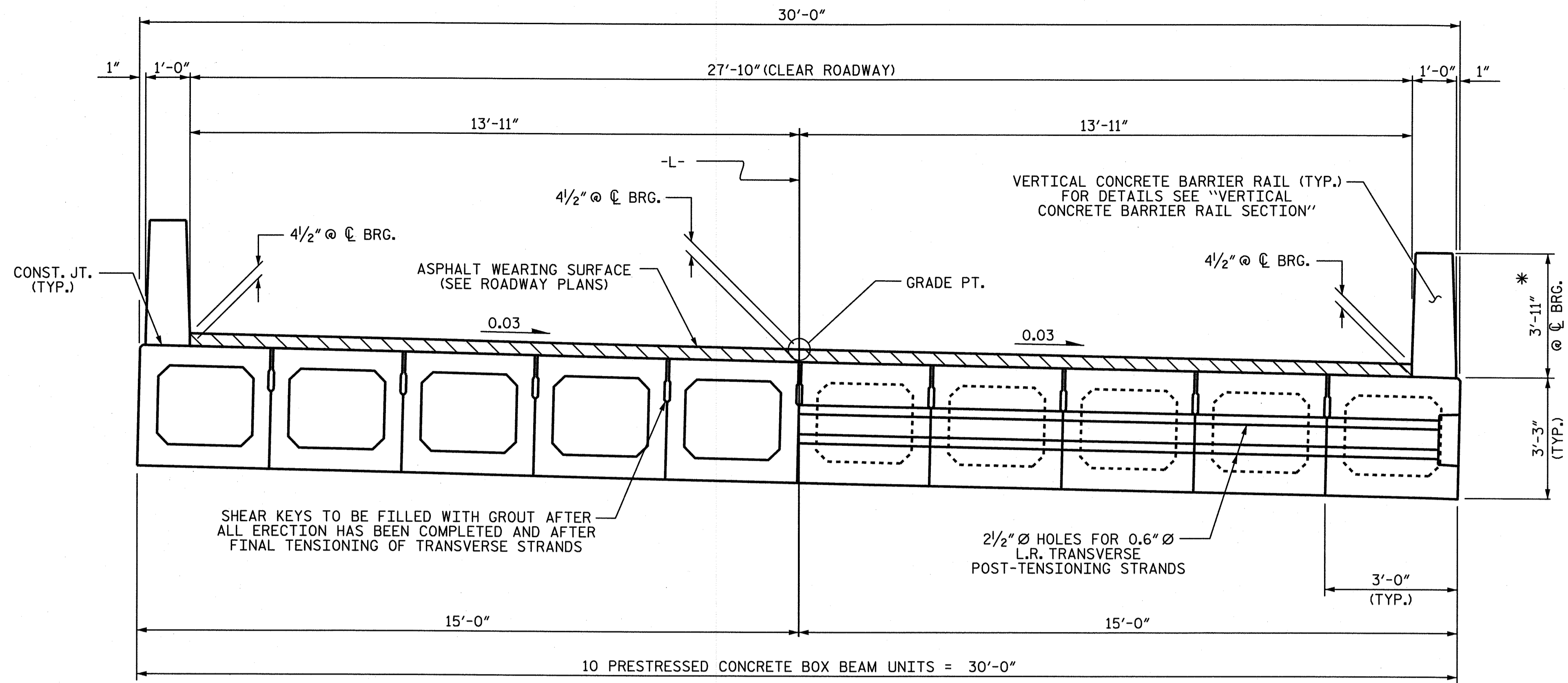
PRESTRESSING STRANDS SHALL BE CUT FLUSH WITH THE BOX BEAM UNIT ENDS.

APPLY EPOXY PROTECTIVE COATING TO BOX BEAM UNIT ENDS.

VERTICAL 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 VERTICAL CONTRACTION JOINT SHALL BE LOCATED AT EACH THIRD POINT BETWEEN BARRIER RAIL EXPANSION JOINTS. ONLY ONE CONTRACTION JOINT IS REQUIRED AT MIDPOINT OF BARRIER RAIL SEGMENTS LESS THAN 20 FEET IN LENGTH AND NO CONTRACTION JOINTS ARE REQUIRED FOR THOSE SEGMENTS LESS THAN 10 FEET IN LENGTH.

THE LOCATION OF THE VOID DRAINS MAY BE SHIFTED SLIGHTLY WHERE NECESSARY TO CLEAR PRESTRESSING STRANDS OR TRANSVERSE REINFORCING STEEL.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.



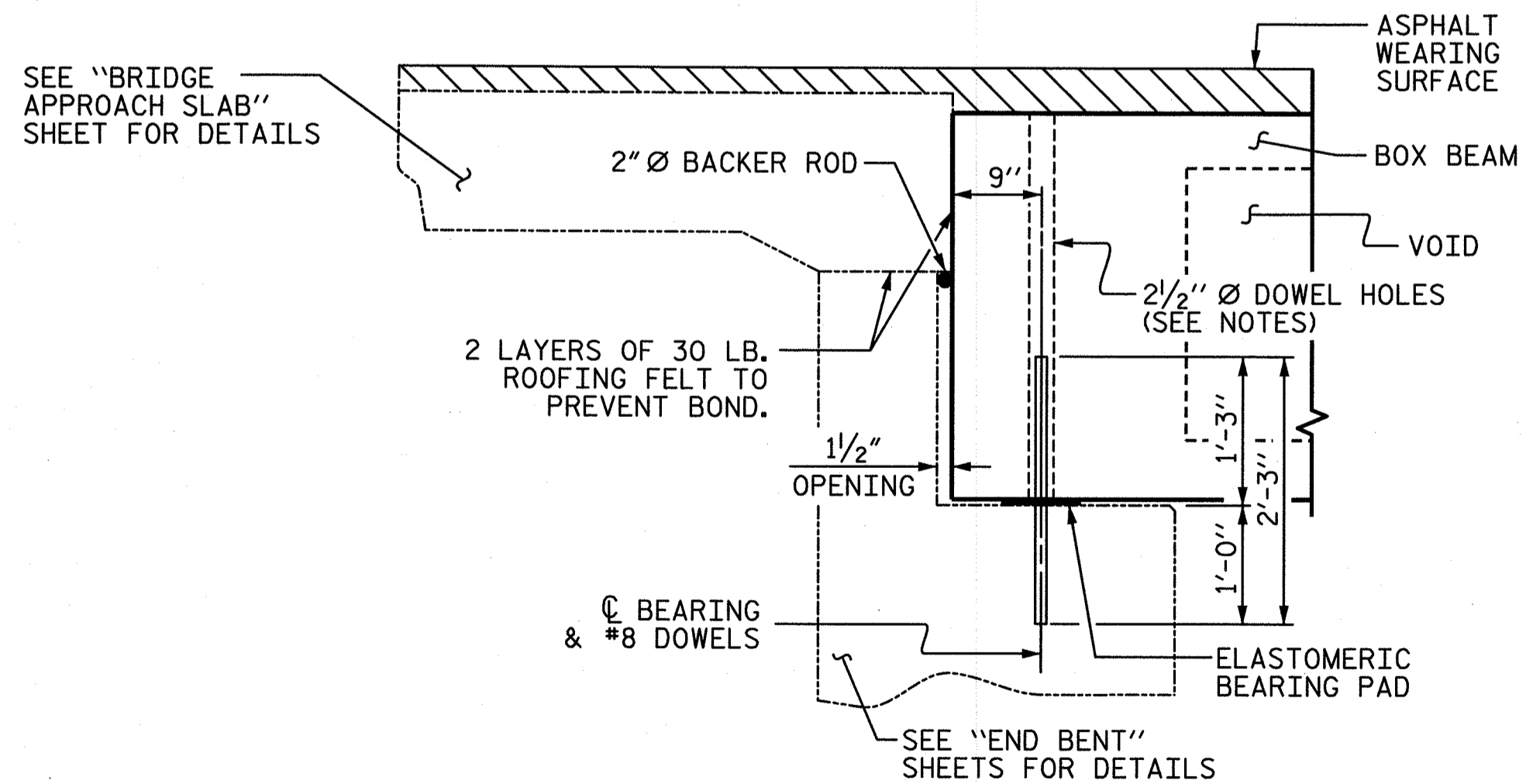
HALF SECTION THROUGH VOIDS

HALF SECTION AT INTERMEDIATE DIAPHRAGMS

TYPICAL SECTION

*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.

FIXED END



SECTION AT END BENT

PROJECT NO. 17BP.8.R.29
MOORE COUNTY
STATION: 13+96.00 -L-

SHEET 1 OF 5

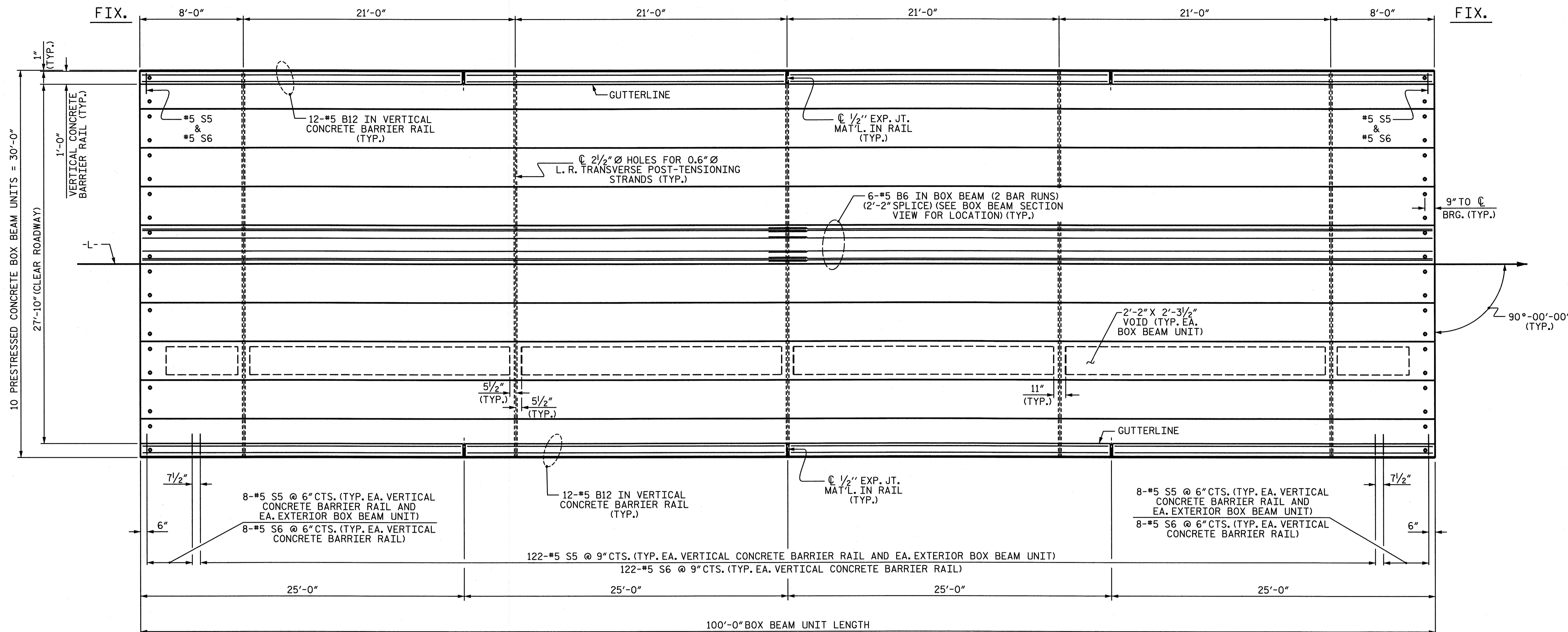


STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
STANDARD
3'-0" X 3'-3"
PRESTRESSED CONCRETE
BOX BEAM UNIT

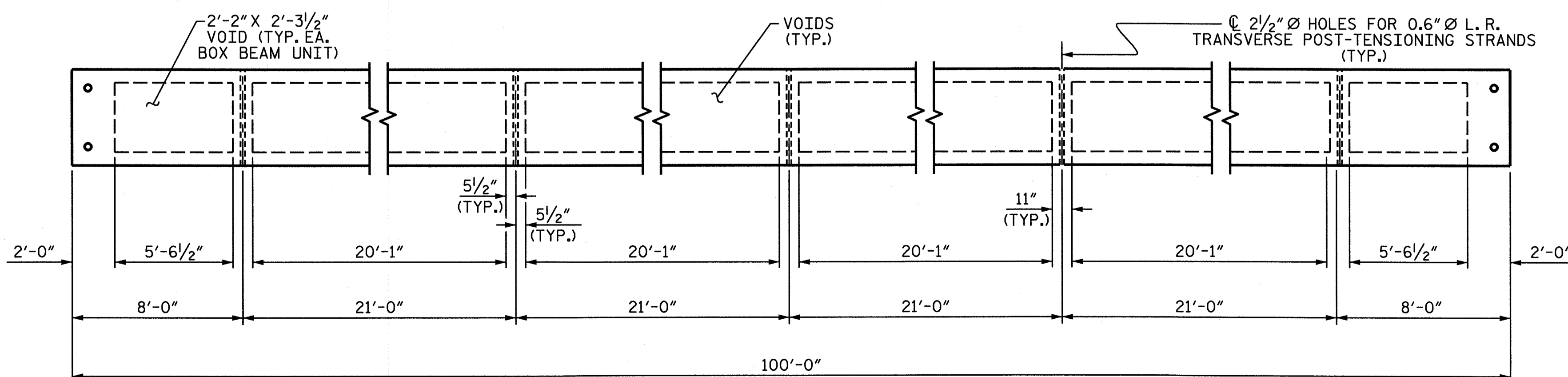
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REVISIONS						SHEET NO. S-5
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 16
2			4			

ASSEMBLED BY : MAH	DATE : 08/12
CHECKED BY : NAP	DATE : 08/12
DRAWN BY : DGE 8/11	
CHECKED BY : TMG 11/11	



PLAN OF UNIT



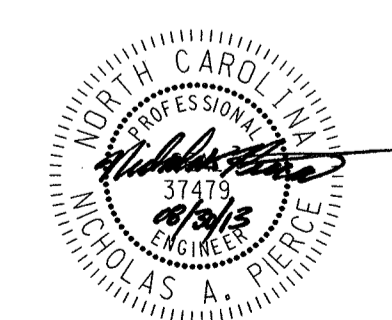
DIAPHRAGM AND VOID LAYOUT

PROJECT NO. 17BP.8.R.29
 MOORE COUNTY
 STATION: 13+96.00 -L-

SHEET 2 OF 5

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

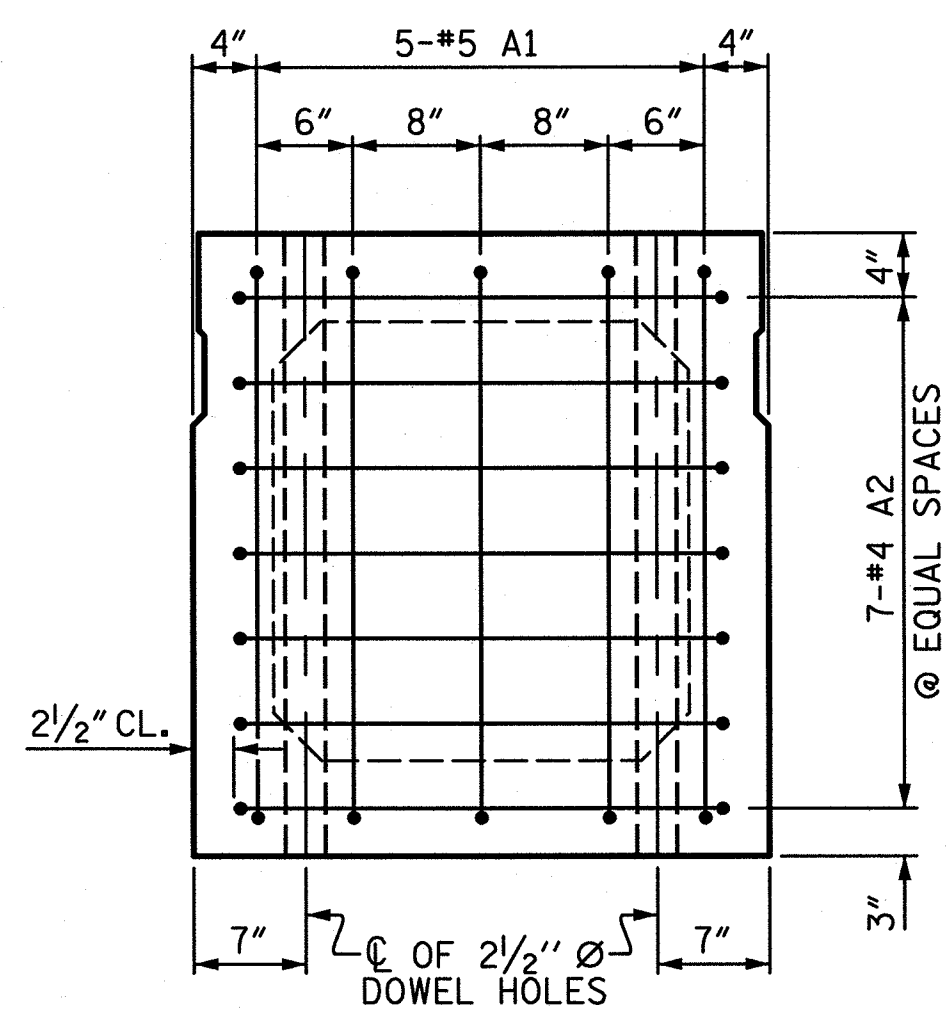
PLAN OF 100' UNIT
 27'-10" CLEAR ROADWAY
 90° SKEW



ASSEMBLED BY :	MAH	DATE :	08/12
CHECKED BY :	NAP	DATE :	08/12
DRAWN BY :	DGE	DATE :	8/10
CHECKED BY :	TMG	DATE :	11/11

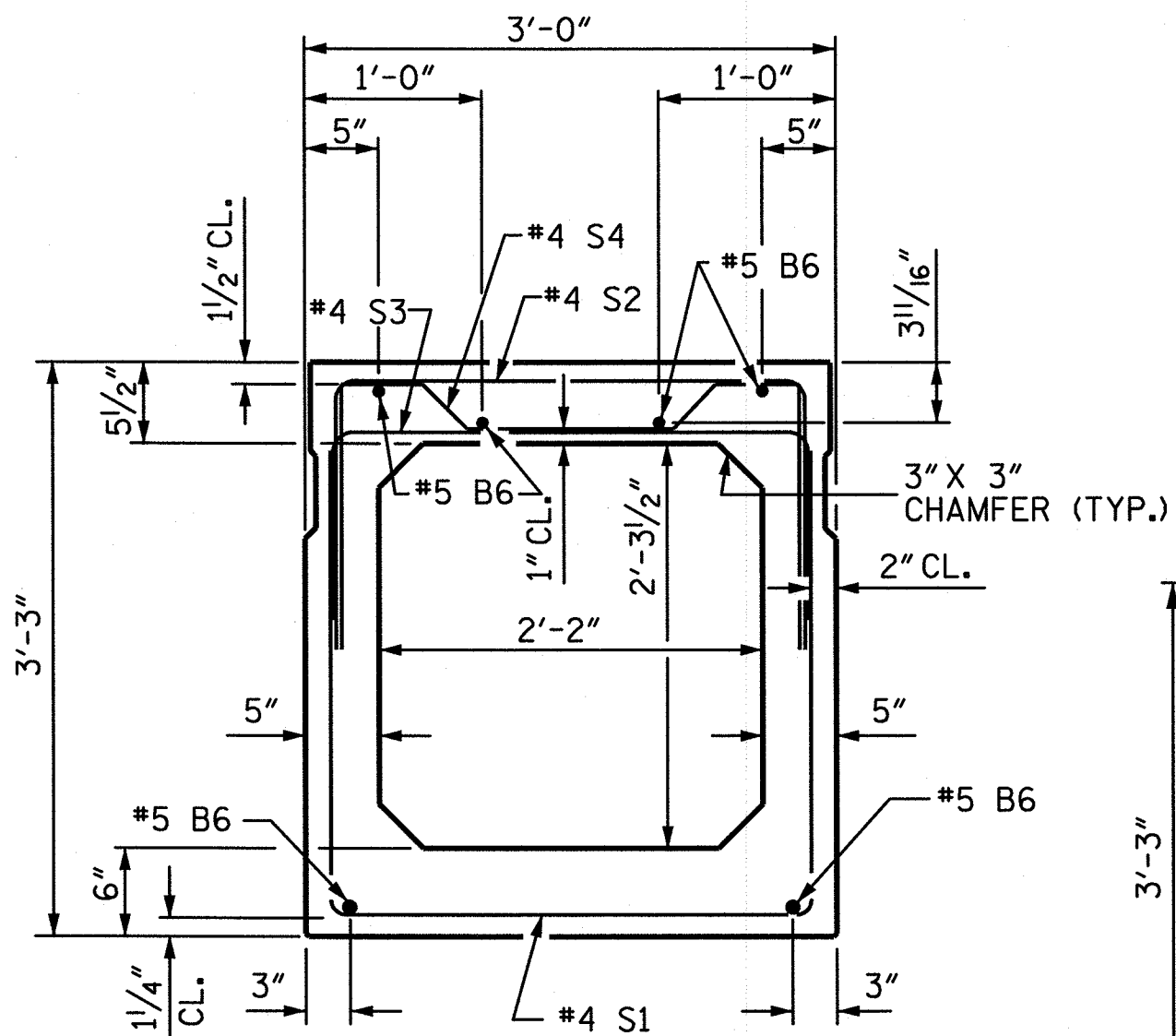
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-6
1			3			TOTAL SHEETS
			4			16

8/30/2013
 R:\17BP.8.R.29\Structures\Drafting\Superstructure\R.29_SD_PCB2.dgn
 usmh04386



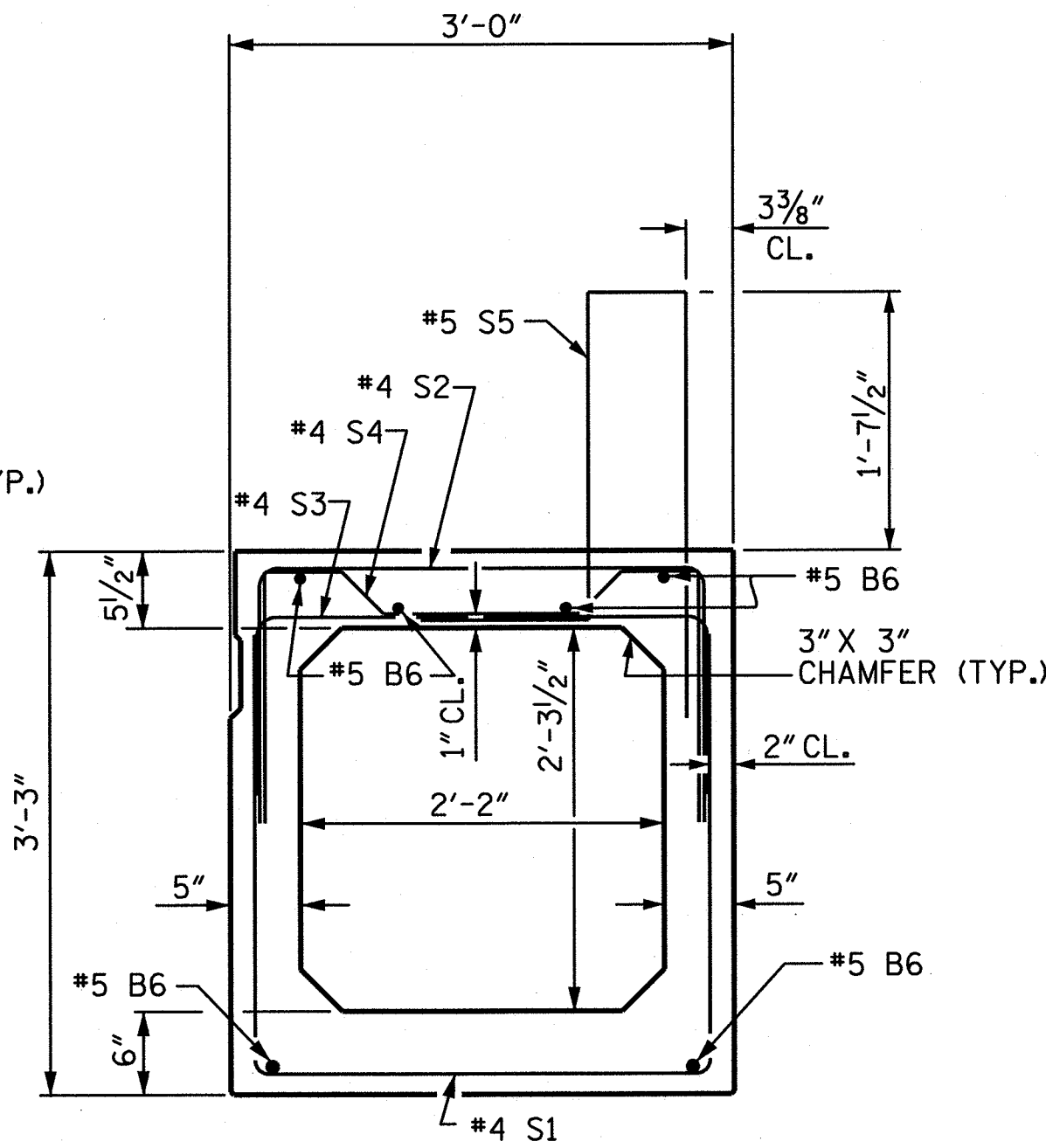
END ELEVATION

SHOWING PLACEMENT OF #5 & #4 "A" BARS AND LOCATION OF DOWEL HOLES. (INTERIOR BOX BEAM SECTION SHOWN-EXTERIOR SECTION SIMILAR EXCEPT SHEAR KEY LOCATION. STRAND LAYOUT NOT SHOWN.)



INTERIOR BOX BEAM SECTION

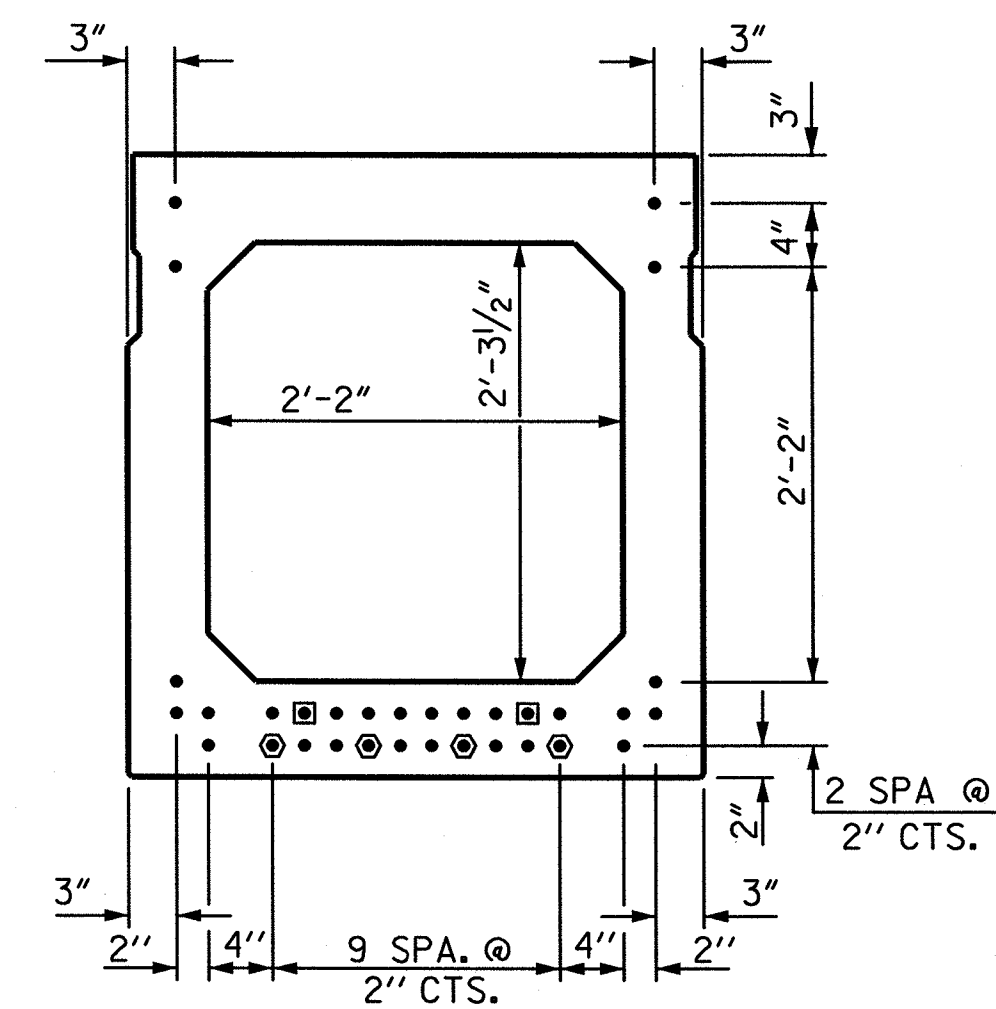
(STRAND LAYOUT NOT SHOWN)



EXTERIOR BOX BEAM SECTION

(STRAND LAYOUT NOT SHOWN)

0.6" Ø LOW RELAXATION STRAND LAYOUT



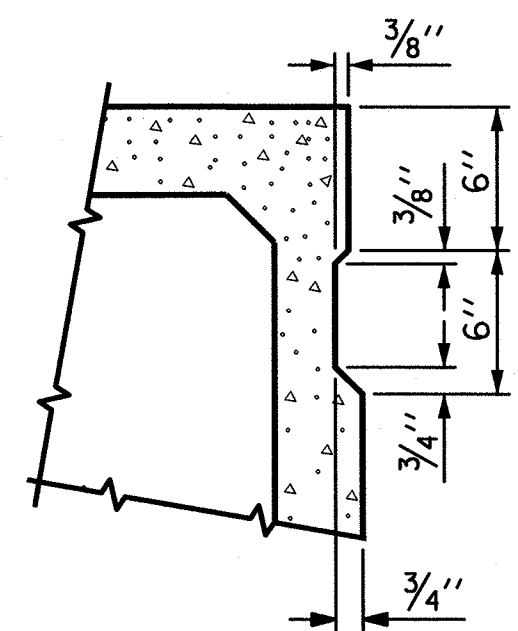
TYPICAL STRAND LOCATION

(32 STRANDS REQUIRED)

DEBONDING LEGEND

- FULLY BONDED STRANDS
- ◐ STRANDS DEBONDED FOR 4'-0" FROM END OF GIRDER
- ◑ STRANDS DEBONDED FOR 12'-0" FROM END OF GIRDER

BOND SHALL BE BROKEN ON STRANDS AS SHOWN FOR THE SPECIFIED LENGTH FROM EACH END OF THE BOX BEAM. SEE STANDARD SPECIFICATIONS ARTICLE 1078-7.

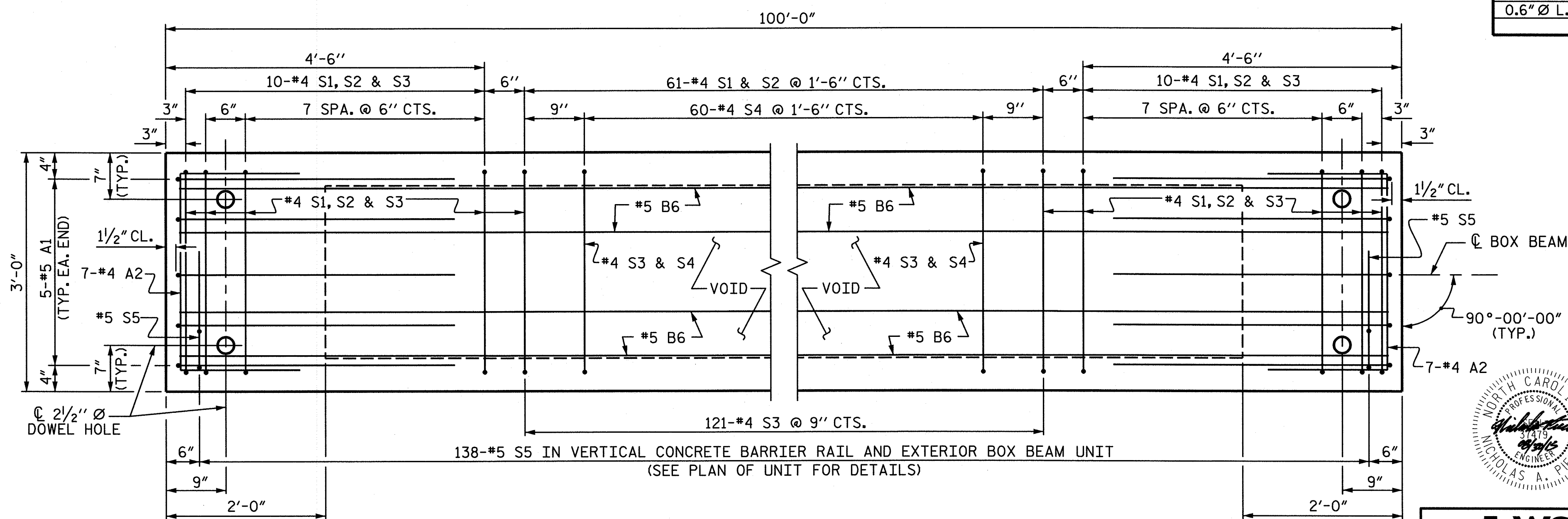


SHEAR KEY DETAIL

NOTE: OMIT SHEAR KEY ON OUTSIDE FACE OF EXTERIOR BOX BEAMS.

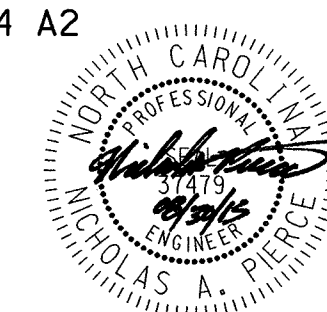
GRADE 270 STRANDS	
	0.6" Ø L.R.
AREA (SQUARE INCHES)	0.217
ULTIMATE STRENGTH (LBS. PER STRAND)	58,600
APPLIED PRESTRESS (LBS. PER STRAND)	43,950

BAR TYPES							
①		②		③		④	
⑤		⑥		⑦		⑧	
ALL BAR DIMENSIONS ARE OUT TO OUT							
BILL OF MATERIAL FOR ONE BOX BEAM SECTION							
BAR	NUMBER	SIZE	TYPE	EXTERIOR UNIT LENGTH	EXTERIOR UNIT WEIGHT	INTERIOR UNIT LENGTH	INTERIOR UNIT WEIGHT
A1	10	#5	1	7'-2"	75	7'-2"	75
A2	44	#4	2	5'-7"	164	5'-7"	164
B6	12	#5	STR	50'-11"	637	50'-11"	637
K1	15	#4	6	7'-2"	72	7'-2"	72
K2	10	#4	STR	2'-7"	17	2'-7"	17
S1	81	#4	3	8'-6"	460	8'-6"	460
S2	81	#4	3	5'-8"	307	5'-8"	307
S3	141	#4	3	4'-10"	455	4'-10"	455
S4	60	#4	4	5'-10"	234	5'-10"	234
*S5	138	#5	5	6'-4"	912	--	--
REINFORCING STEEL				2421	LBS.	2421	LBS.
*EPOXY COATED REINF. STEEL				912	LBS.		
7500 P.S.I. CONCRETE				19.6	CU. YDS.	19.4	CU. YDS.
0.6" Ø L.R. STRANDS				No. 32		No. 32	



PLAN OF BOX BEAM

EXTERIOR UNIT SHOWN, INTERIOR UNIT SIMILAR EXCEPT OMIT #5 S5 BARS. FOR LOCATION OF DIAPHRAGMS, SEE PLAN OF UNIT. FOR REINFORCING STEEL IN DIAPHRAGMS, SEE DIAPHRAGM DETAILS.



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MOORE COUNTY

STATION: 13+96.00 -L-

SHEET 3 OF 5

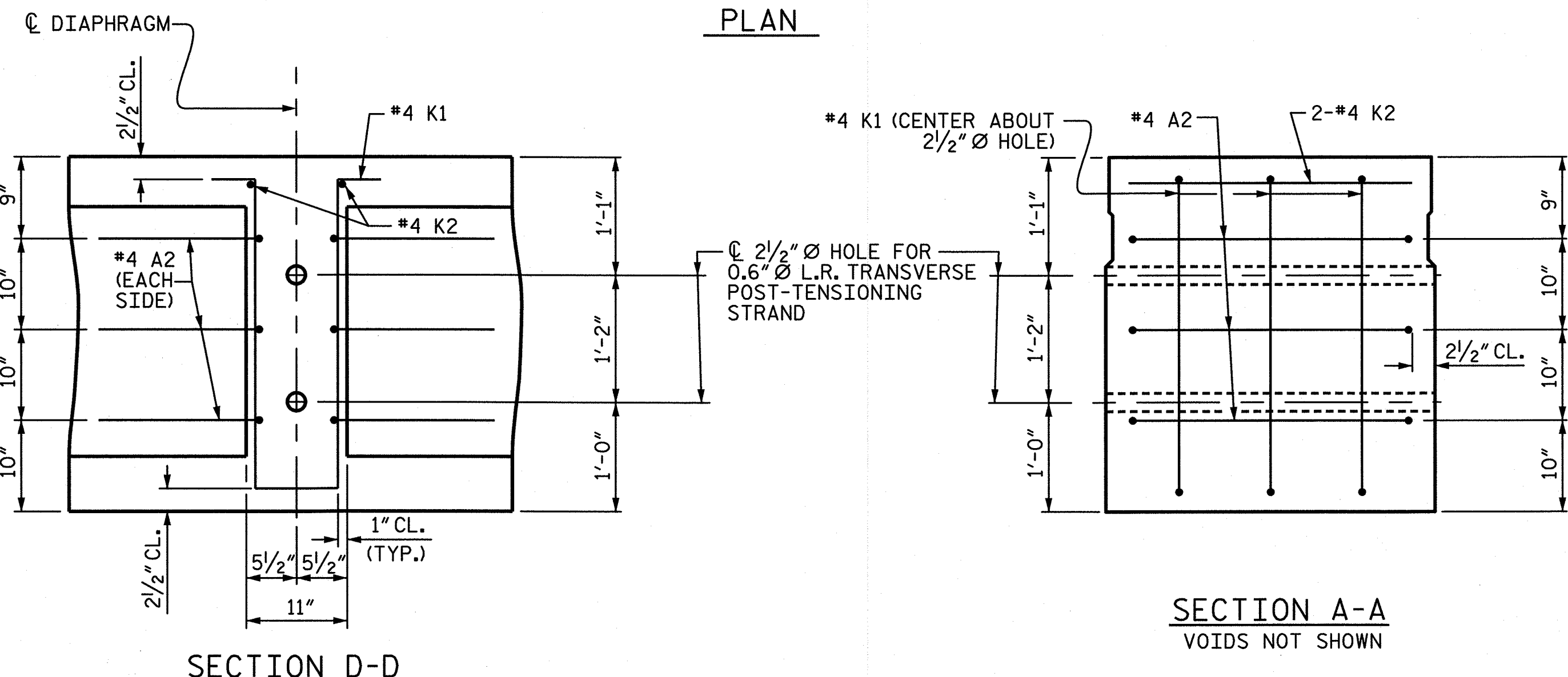
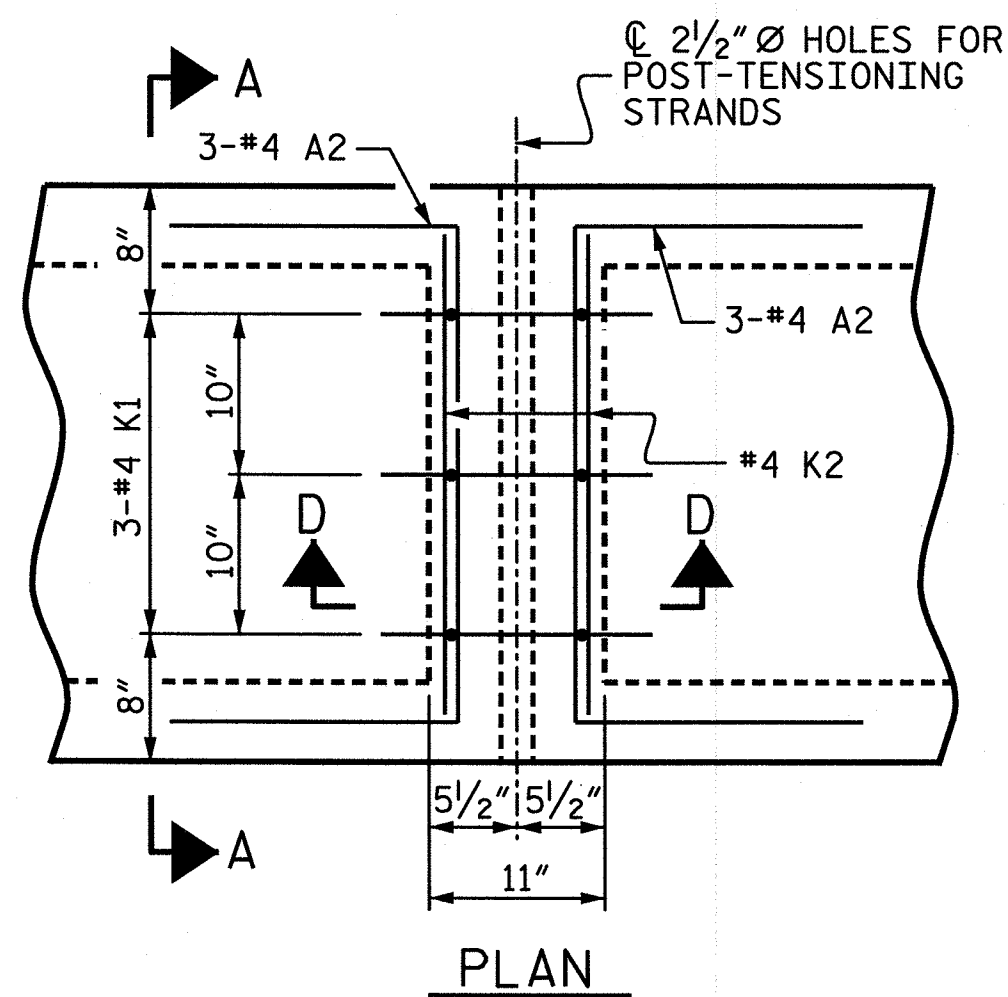
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 STANDARD

3'-0" X 3'-3"
 PRESTRESSED CONCRETE
 BOX BEAM UNIT

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-7
1			3			TOTAL SHEETS
2			4			16

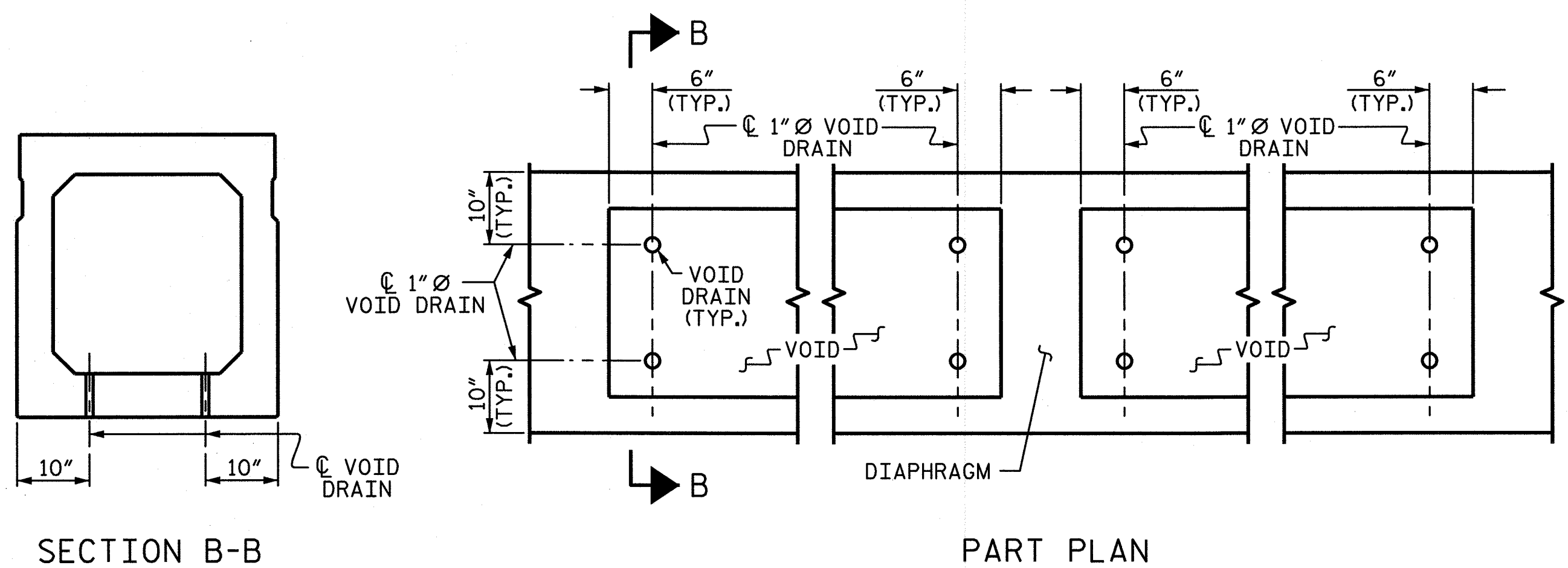
STD. NO. 39PCBB6_90S.100L

ASSEMBLED BY :	MAH	DATE :	08/12
CHECKED BY :	NAP	DATE :	08/12
DRAWN BY :	DGE II/II		
CHECKED BY :	TMG II/II		



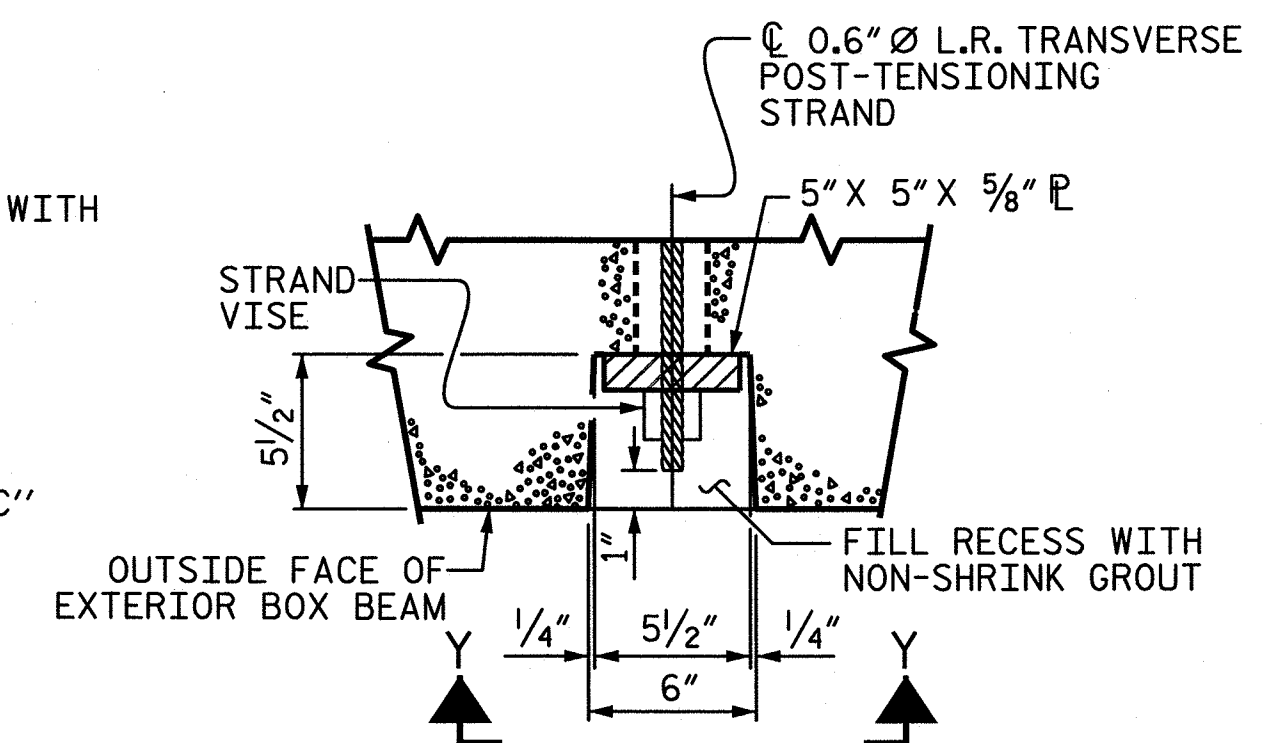
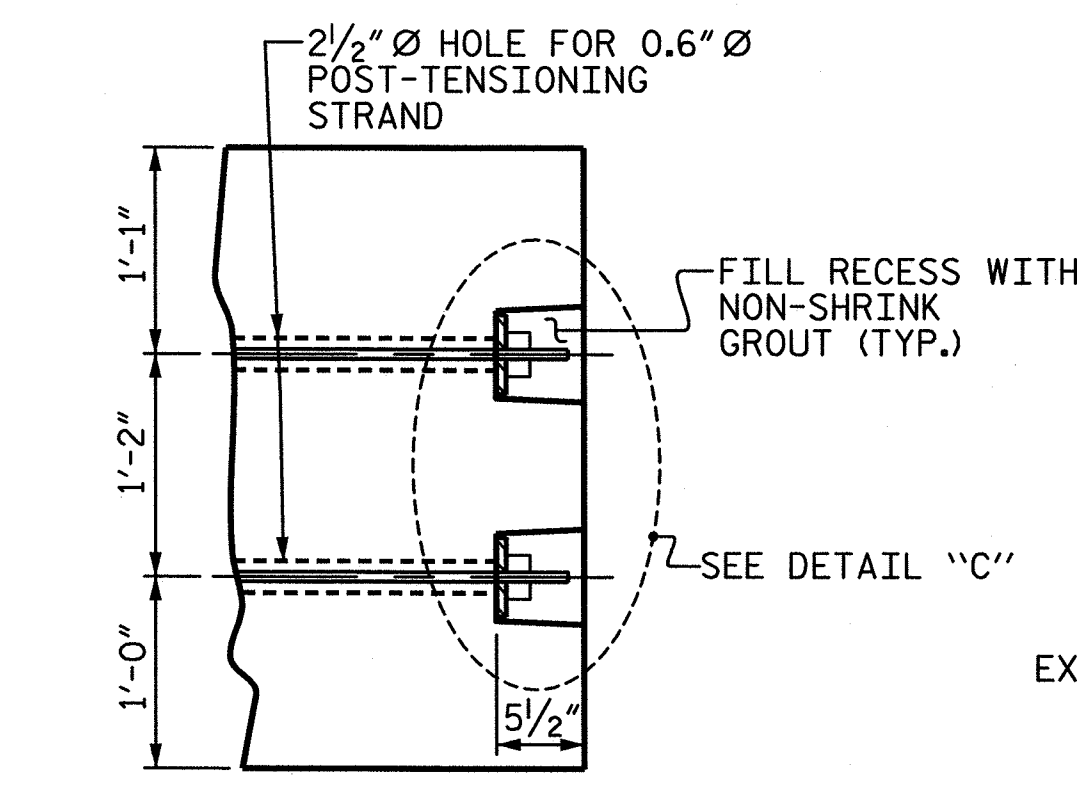
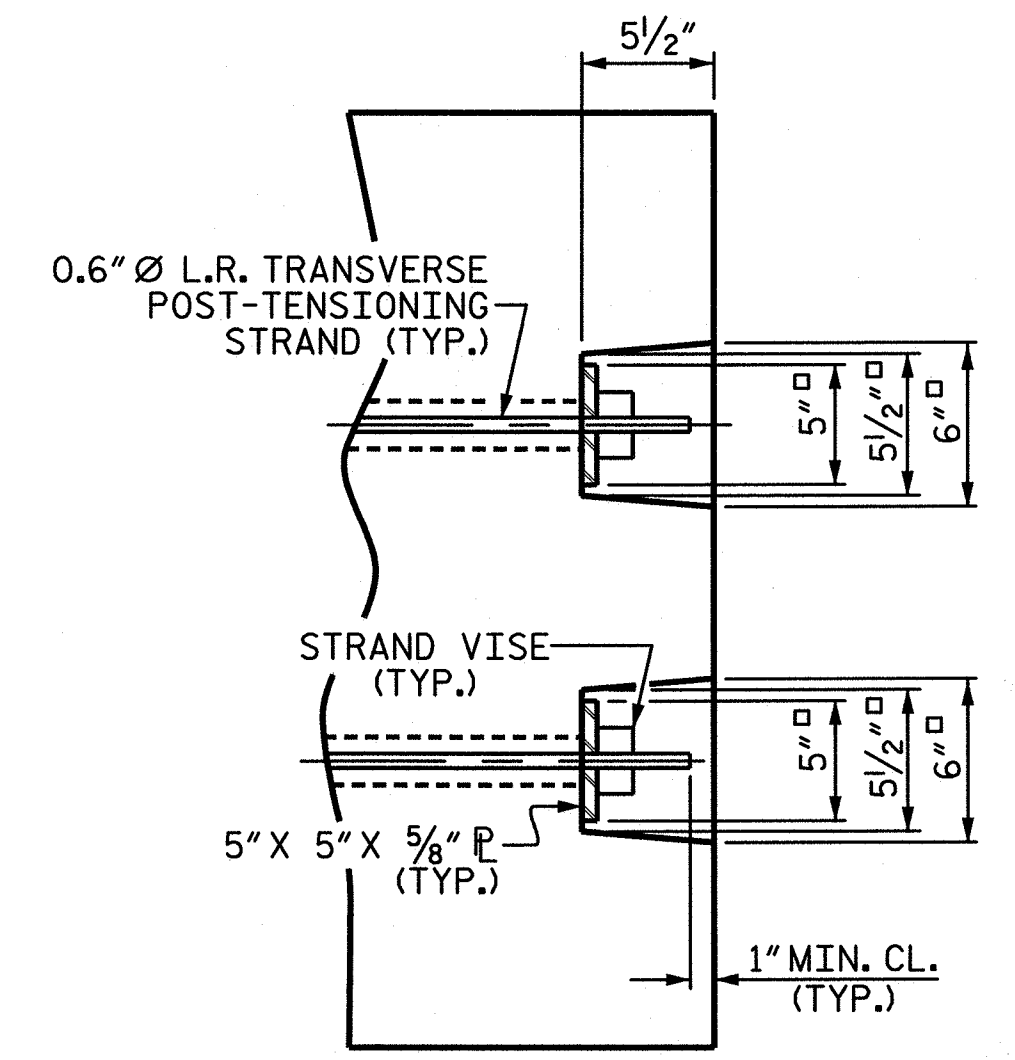
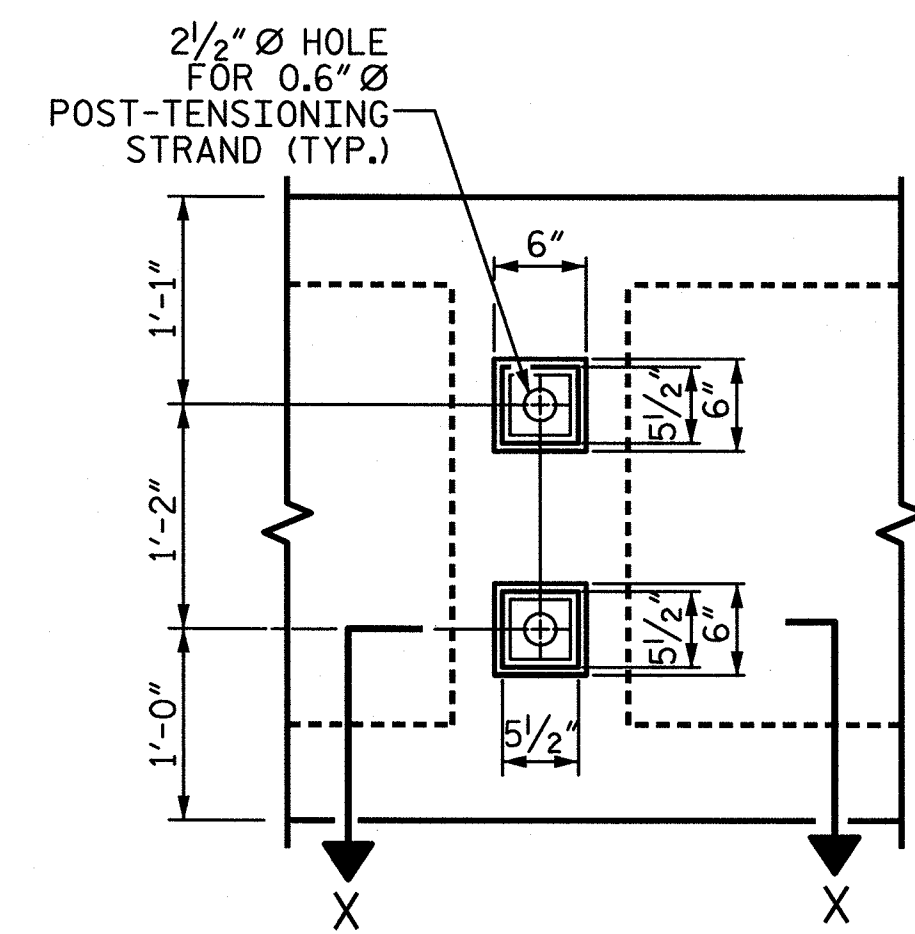
DOUBLE DIAPHRAGM DETAILS

*4 "S" BARS NOT SHOWN. *4 "S" BARS MAY BE SHIFTED SLIGHTLY TO CLEAR 2 1/2" Ø HOLE.



VOID DRAIN DETAILS

(DIMENSIONS SHOWN ARE TYPICAL FOR EACH VOID)



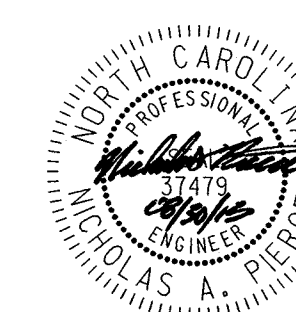
GROUDED RECESS DETAIL AT END OF POST-TENSIONED STRANDS OF EXTERIOR BOX BEAM

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

** INCLUDES FUTURE WEARING SURFACE

PROJECT NO. 17BP.8.R.29
MOORE COUNTY
STATION: 13+96.00 -L-

SHEET 4 OF 5

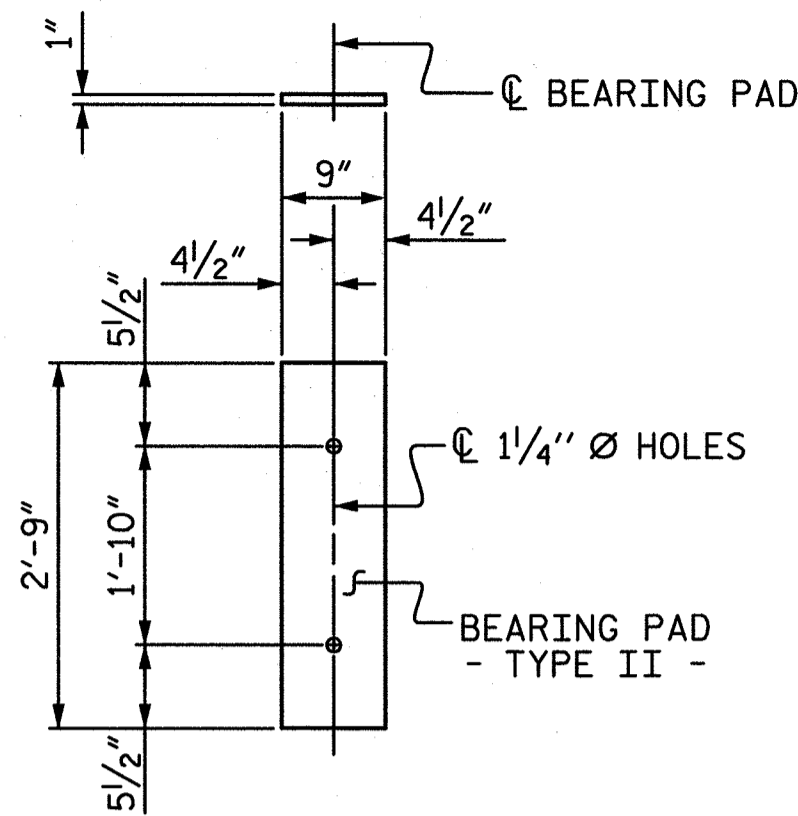


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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
STANDARD
3'-0" X 3'-3"
PRESTRESSED CONCRETE
BOX BEAM UNIT

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	5-8
1			3			TOTAL SHEETS
2			4			16

ASSEMBLED BY: MAH	DATE: 08/12
CHECKED BY: NAP	DATE: 08/12
DRAWN BY: DGE 15/05	ADDED 7/11/05
CHECKED BY: CMG 6/1/06	REV. 5/1/06
	REV. 10/1/11
	TLA/GM
	MAA/GM



FIXED END

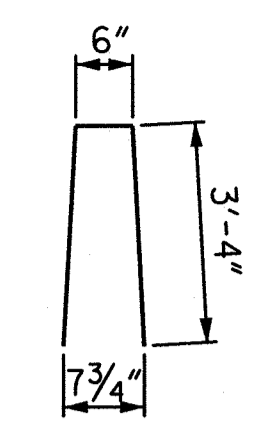
(TYPE II - 20 REQ'D)

ELASTOMERIC BEARING DETAILS

ELASTOMER IN ALL BEARINGS SHALL BE 60 DUROMETER HARDNESS.

BILL OF MATERIAL FOR VERTICAL CONCRETE BARRIER RAIL

BAR	BARS PER PAIR OF EXTERIOR UNITS	SIZE	TYPE	LENGTH	WEIGHT
100' UNIT					
*B12	96	#5	STR	24'-7"	2461
*S6	276	#5	1	7'-2"	2063
* EPOXY COATED REINFORCING STEEL				LBS.	4524
CLASS AA CONCRETE				CU.YDS.	26.9
TOTAL VERTICAL CONCRETE BARRIER RAIL				LN. FT.	200.0



①

BAR TYPE

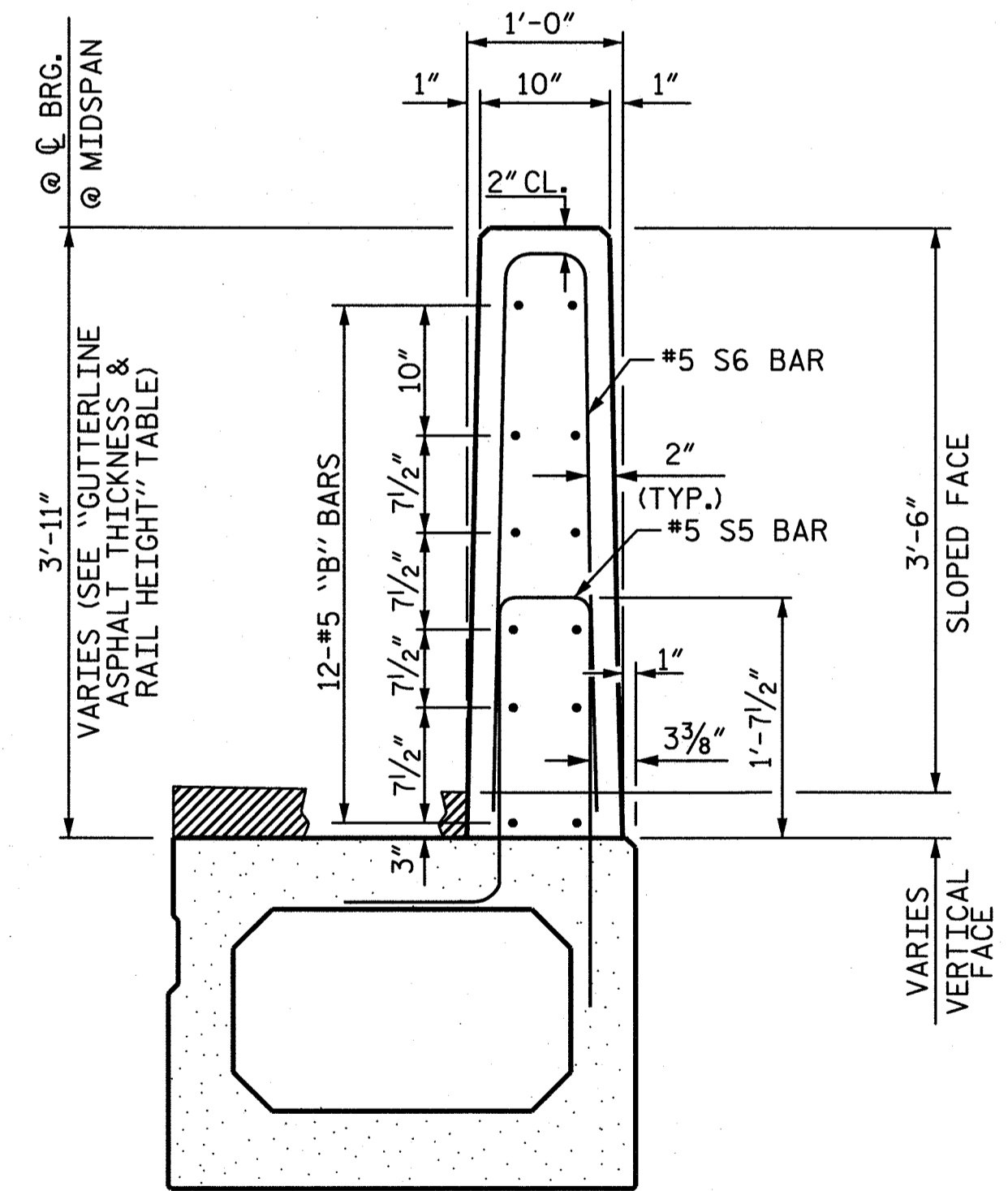
BAR DIMENSIONS ARE OUT TO OUT

BOX BEAM UNITS REQUIRED

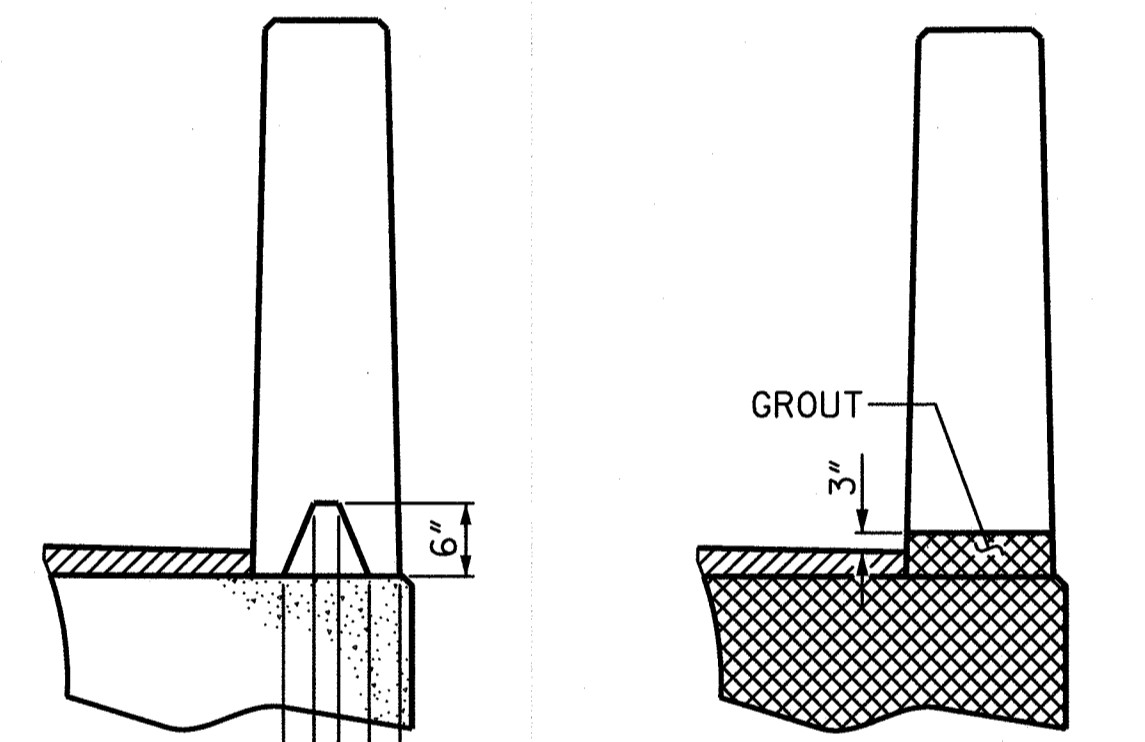
	NUMBER	LENGTH	TOTAL LENGTH
EXTERIOR B.B.	2	100'-0"	200'-0"
INTERIOR B.B.	8	100'-0"	800'-0"
TOTAL	10		1000'-0"

GUTTERLINE ASPHALT THICKNESS & RAIL HEIGHT

	ASPHALT OVERLAY THICKNESS @ MID-SPAN	RAIL HEIGHT @ MID-SPAN
100' UNITS	2"	3'-8 1/2"



SECTION THRU RAIL

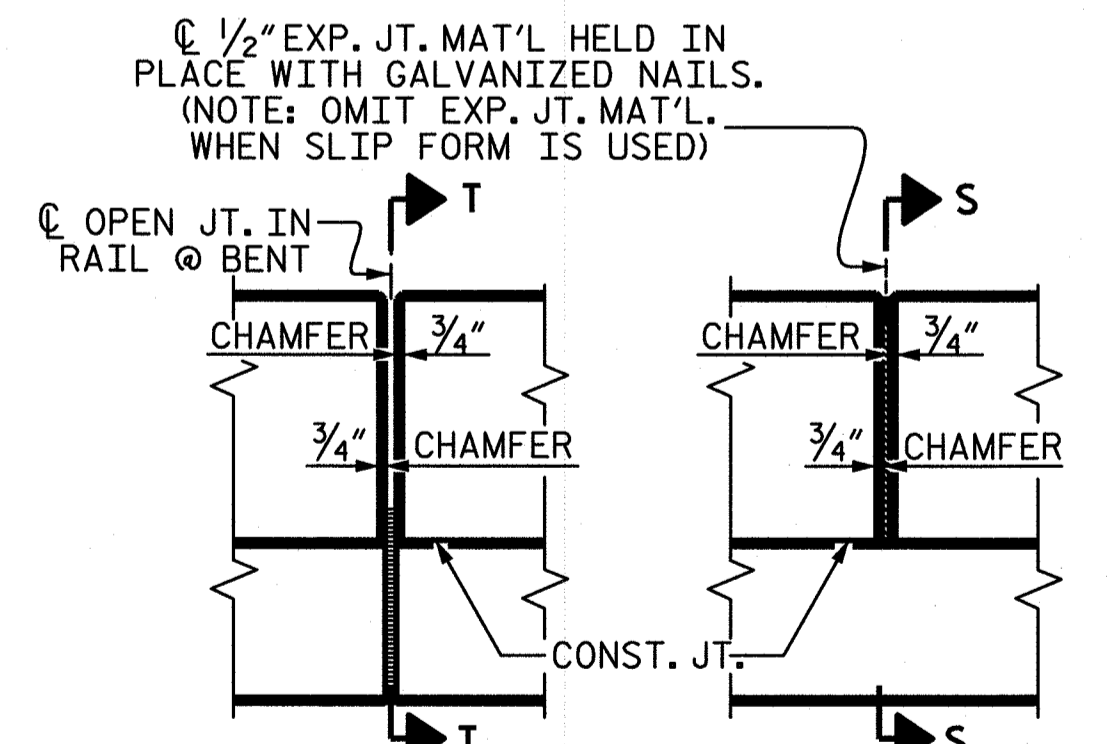


SECTION T-T

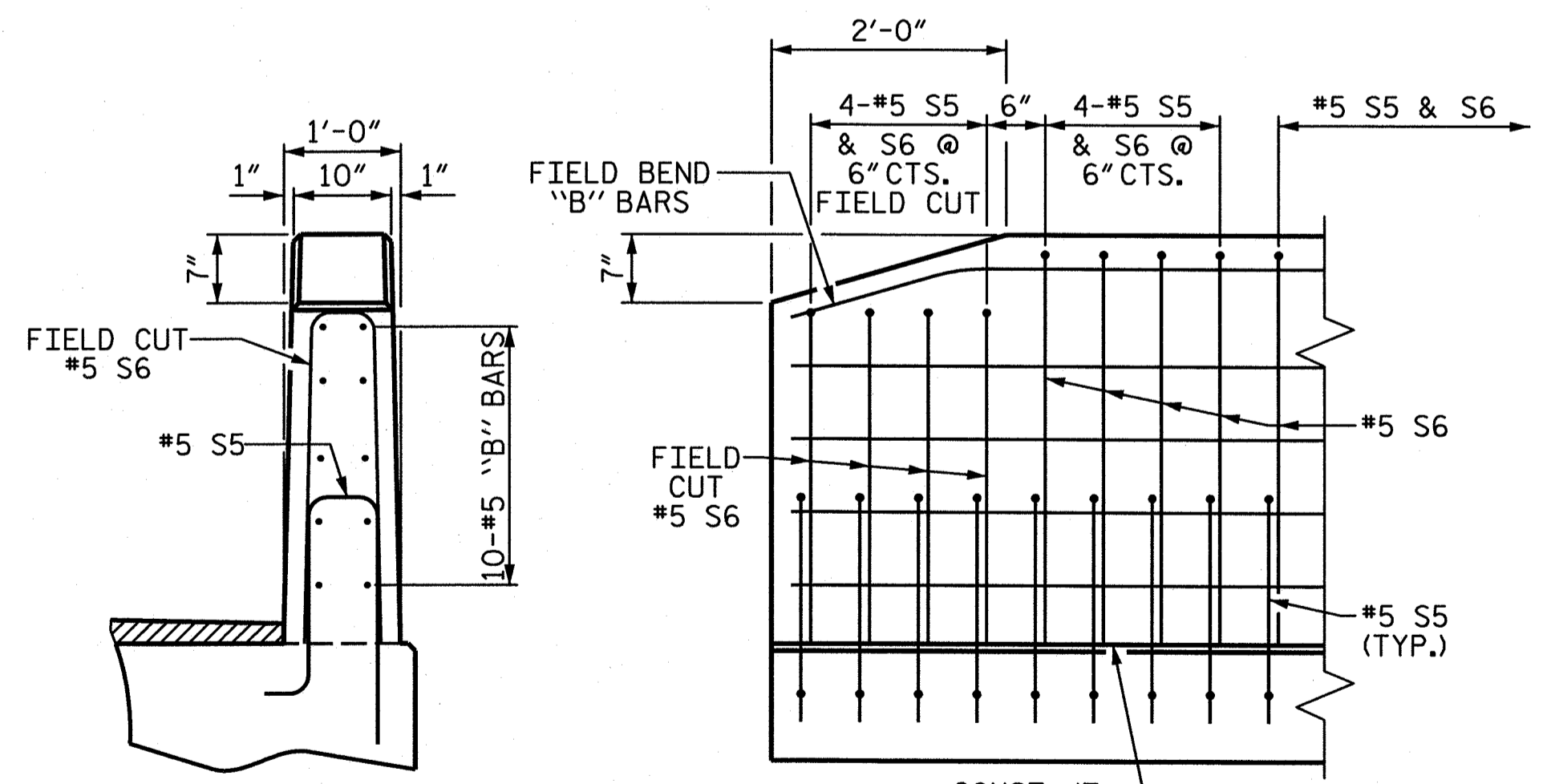
AT OPEN JOINT AT BENT (THIS IS TO BE USED WHERE FOAM JOINT IS NOT USED)

SECTION S-S

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



ELEVATION AT EXPANSION JOINTS



END VIEW

SIDE VIEW

END OF RAIL DETAILS

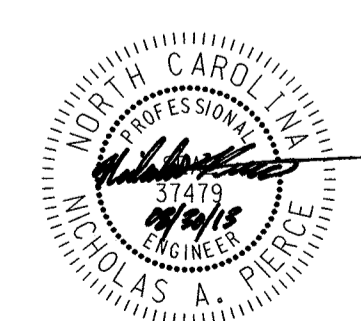
VERTICAL CONCRETE BARRIER RAIL DETAILS

PROJECT NO. 17BP.8.R.29

MOORE COUNTY

STATION: 13+96.00 -L-

SHEET 5 OF 5



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STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 STANDARD
 3'-0" X 3'-3"
 PRESTRESSED CONCRETE
 BOX BEAM UNIT

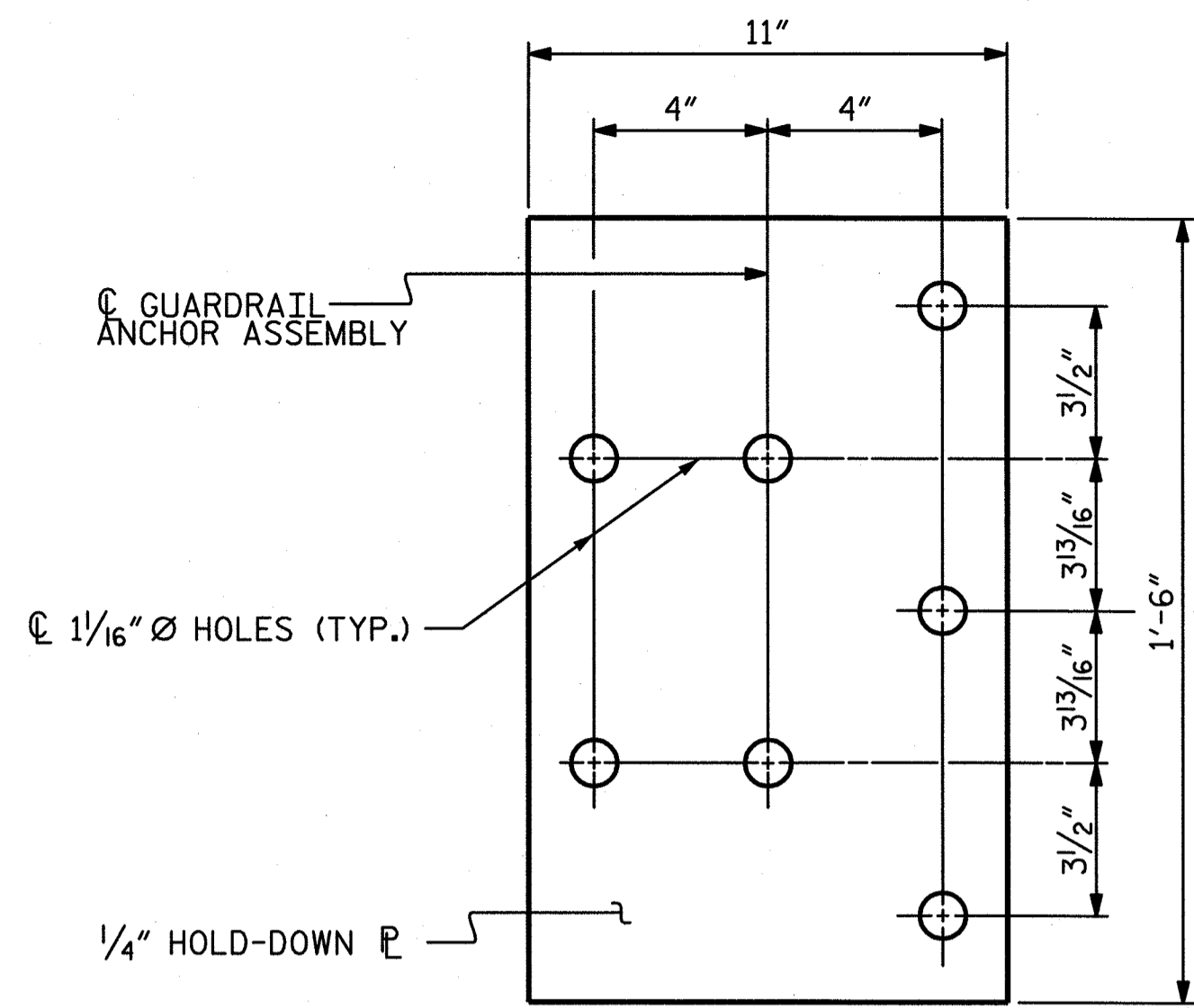
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-9
1			3			TOTAL SHEETS
2			4			16

ASSEMBLED BY :	MAH	DATE :	08/12
CHECKED BY :	NAP	DATE :	08/12
DRAWN BY :	DGE II/II		
CHECKED BY :	TMG II/II		

8/30/2013
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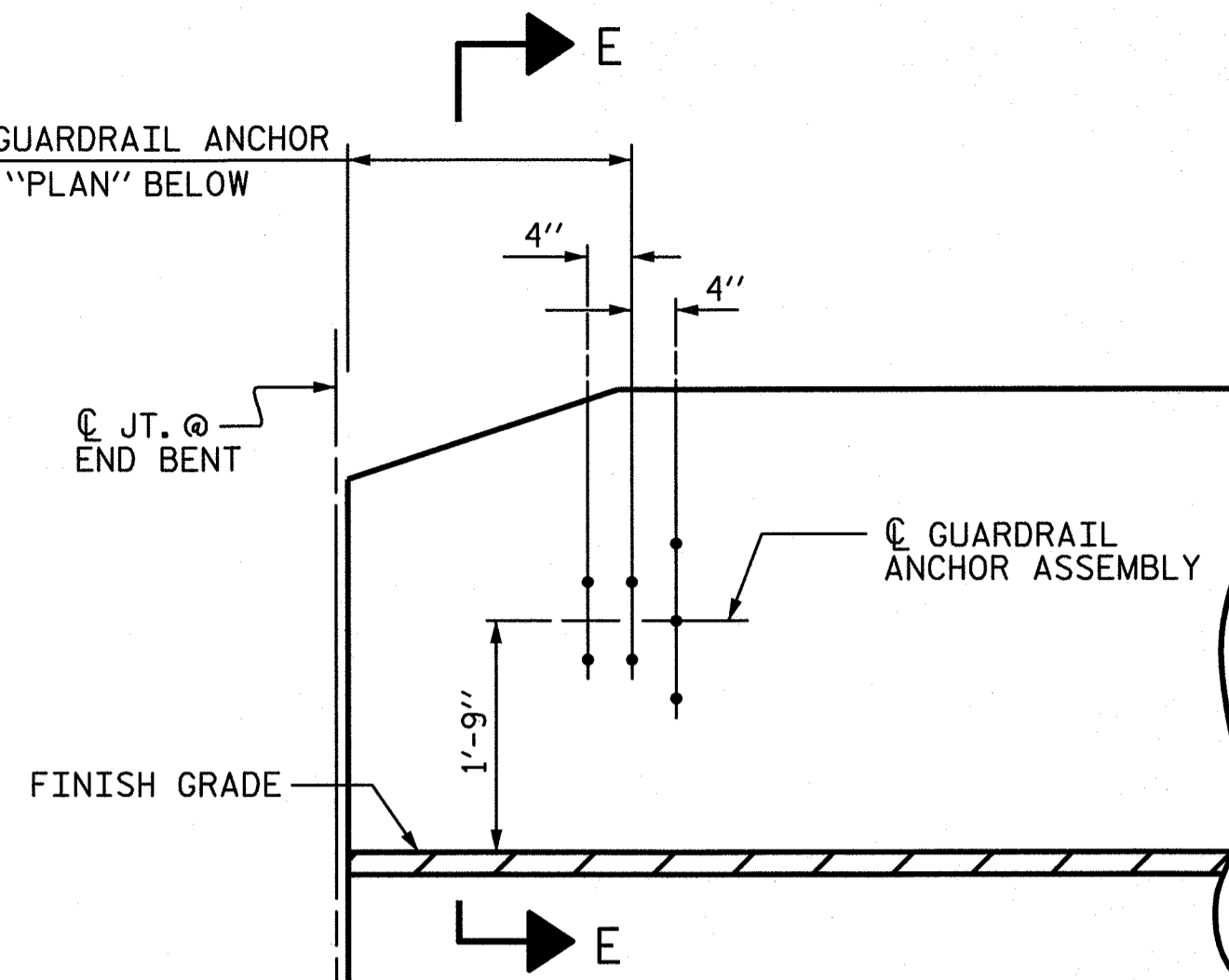
NOTES

- 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.

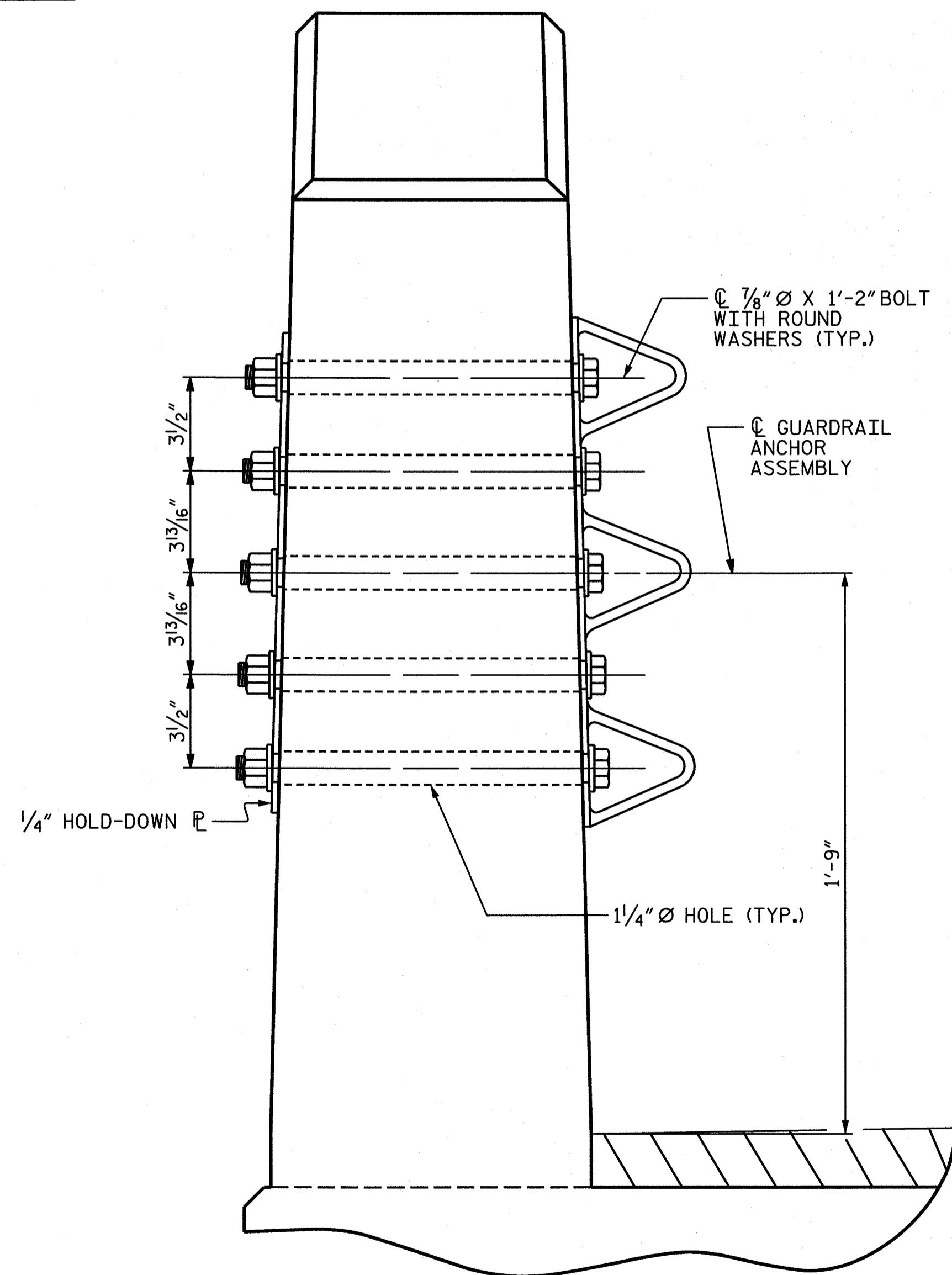


PLAN

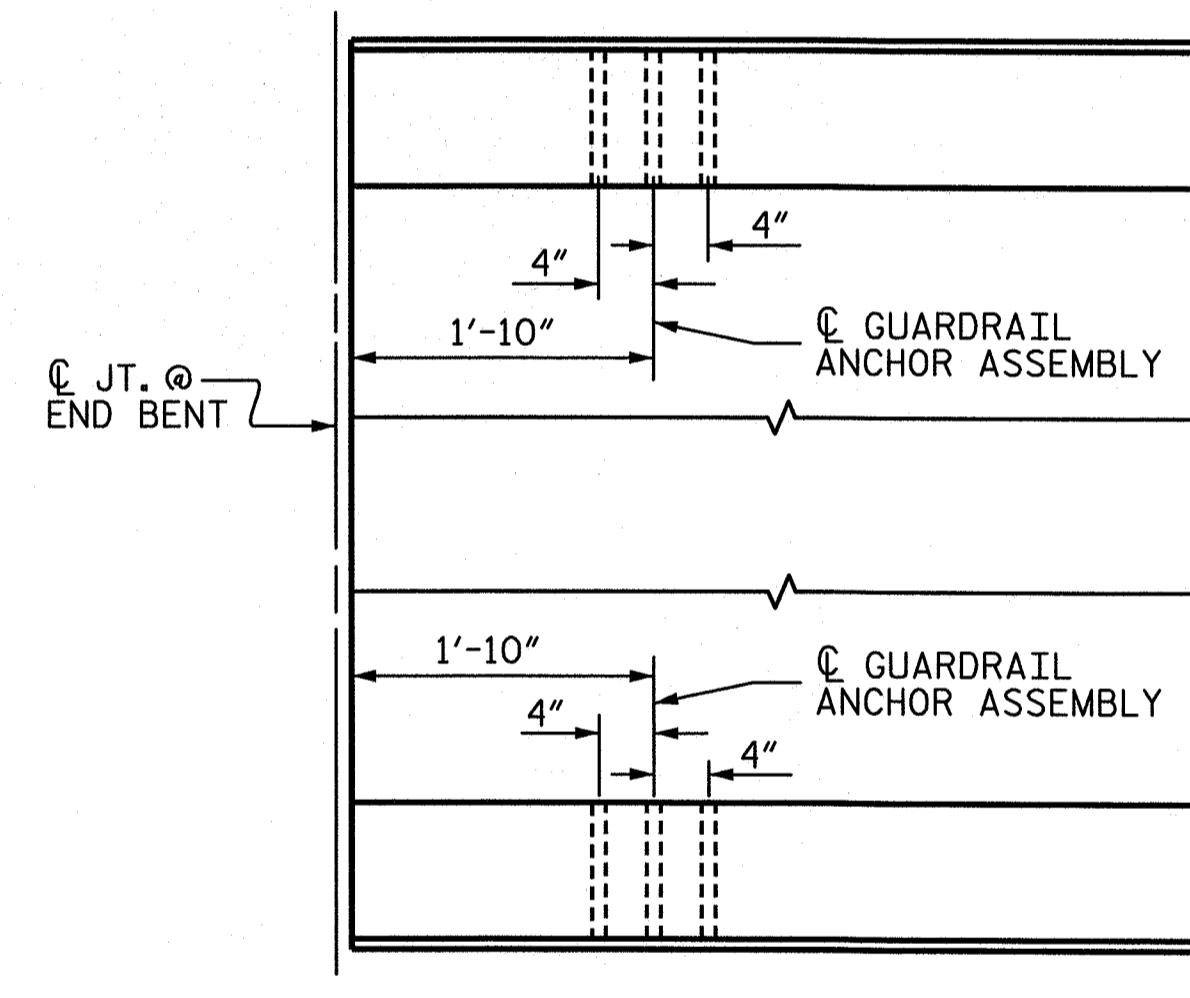
FOR LOCATION OF GUARDRAIL ANCHOR ASSEMBLY, SEE "PLAN" BELOW



ELEVATION

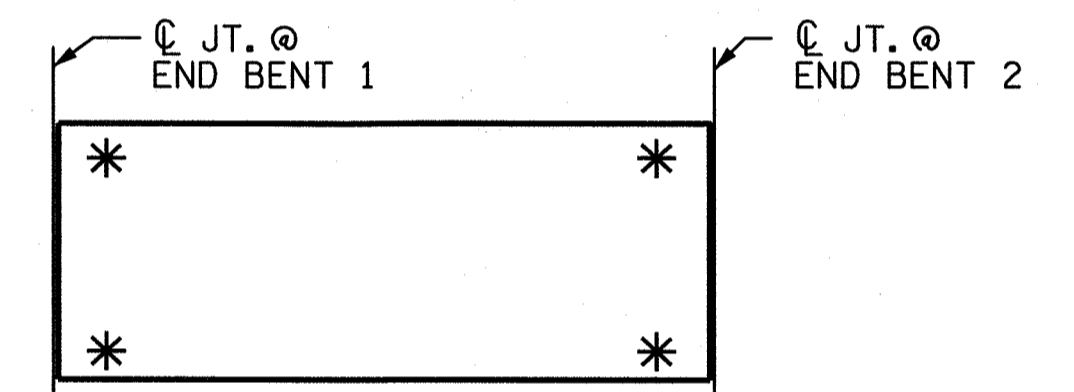


SECTION E-E
GUARDRAIL ANCHOR ASSEMBLY DETAILS



LOCATION OF ANCHORS FOR GUARDRAIL

END BENT 1 SHOWN, END BENT 2 SIMILAR.



SKETCH SHOWING POINTS OF ATTACHMENT

* DENOTES GUARDRAIL ANCHOR ASSEMBLY

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

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-10
1			3			TOTAL SHEETS 16
2			4			

ASSEMBLED BY : MAH	DATE : 01/13
CHECKED BY : NAP	DATE : 01/13
DRAWN BY : MAA 5/10	ADDED 5/6/10
CHECKED BY : GM 5/10	REV. 10/1/11 MAA/GM
	REV. 12/5/11 MAA/GM

8/30/2013
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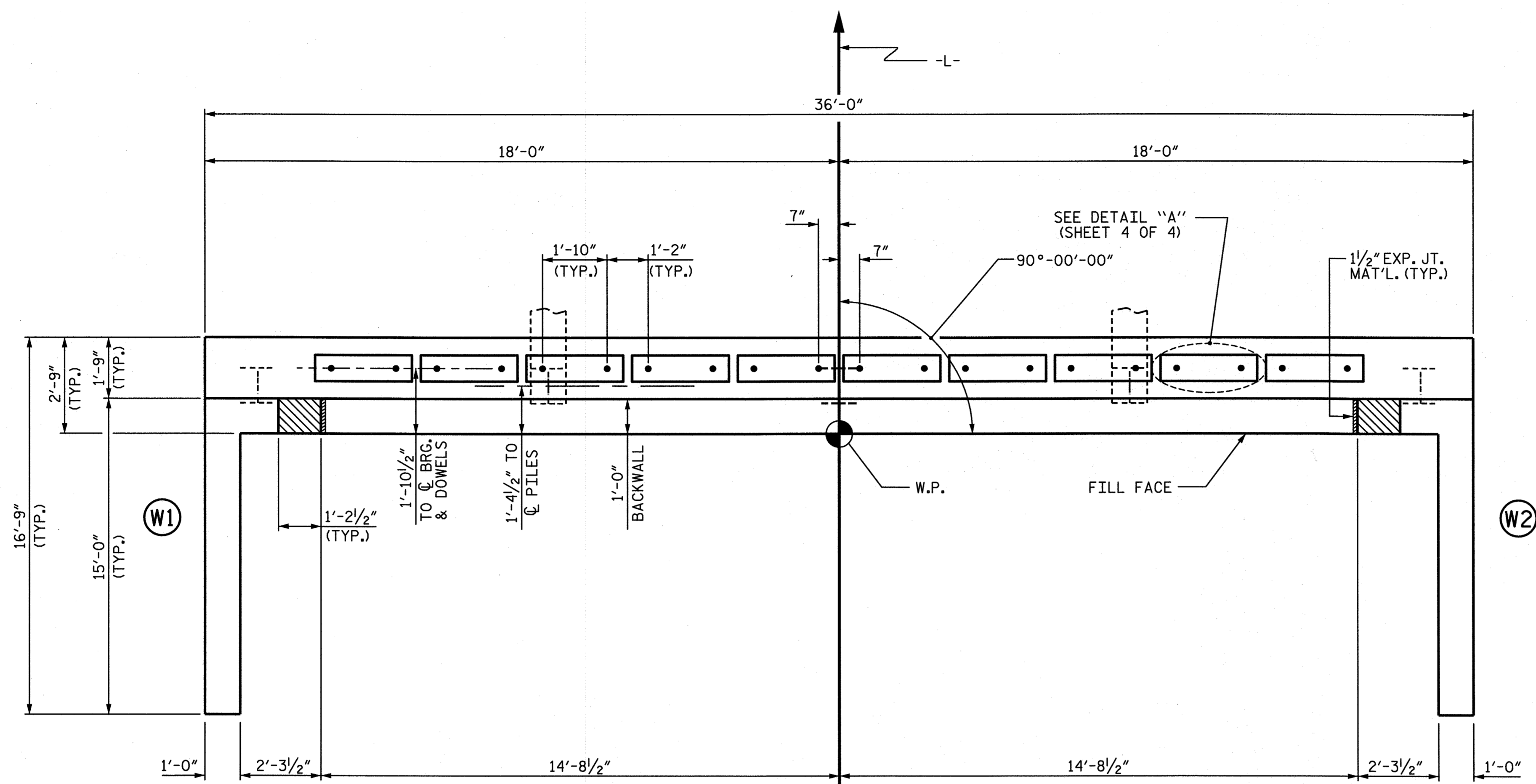
NOTES

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

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

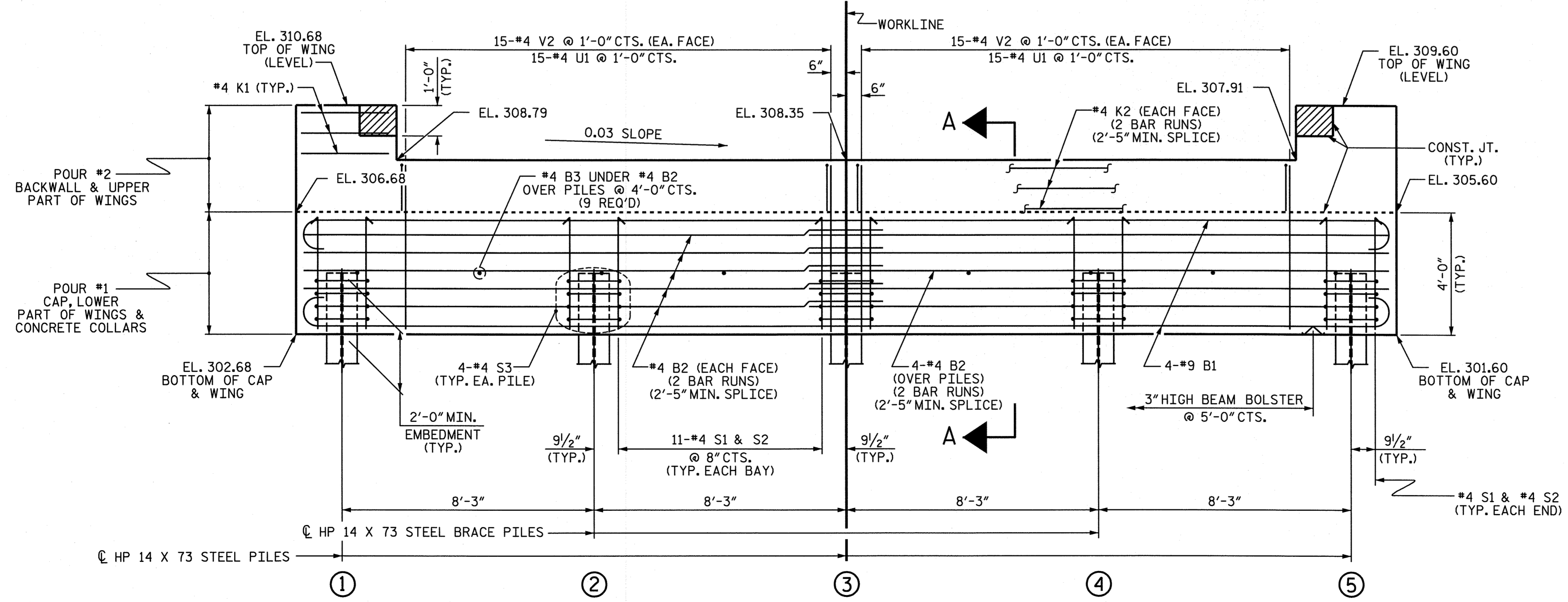
FOR PILE SPLICE DETAILS, SEE SHEET 4 OF 4.

FOR WING DETAILS, SEE SHEET 3 OF 4.



PLAN

TOP OF PILE ELEVATIONS	
①	304.65
②	304.40
③	304.16
④	303.91
⑤	303.66



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. 17BP.8.R.29
MOORE COUNTY
STATION: 13+96.00 -L-

SHEET 1 OF 4

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH						SHEET NO. S-11 TOTAL SHEETS 16
SUBSTRUCTURE END BENT 1						
REVISIONS						
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			
2			4			

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DRAWN BY : WJH	12/11
CHECKED BY : AAC	12/11

8/30/2013
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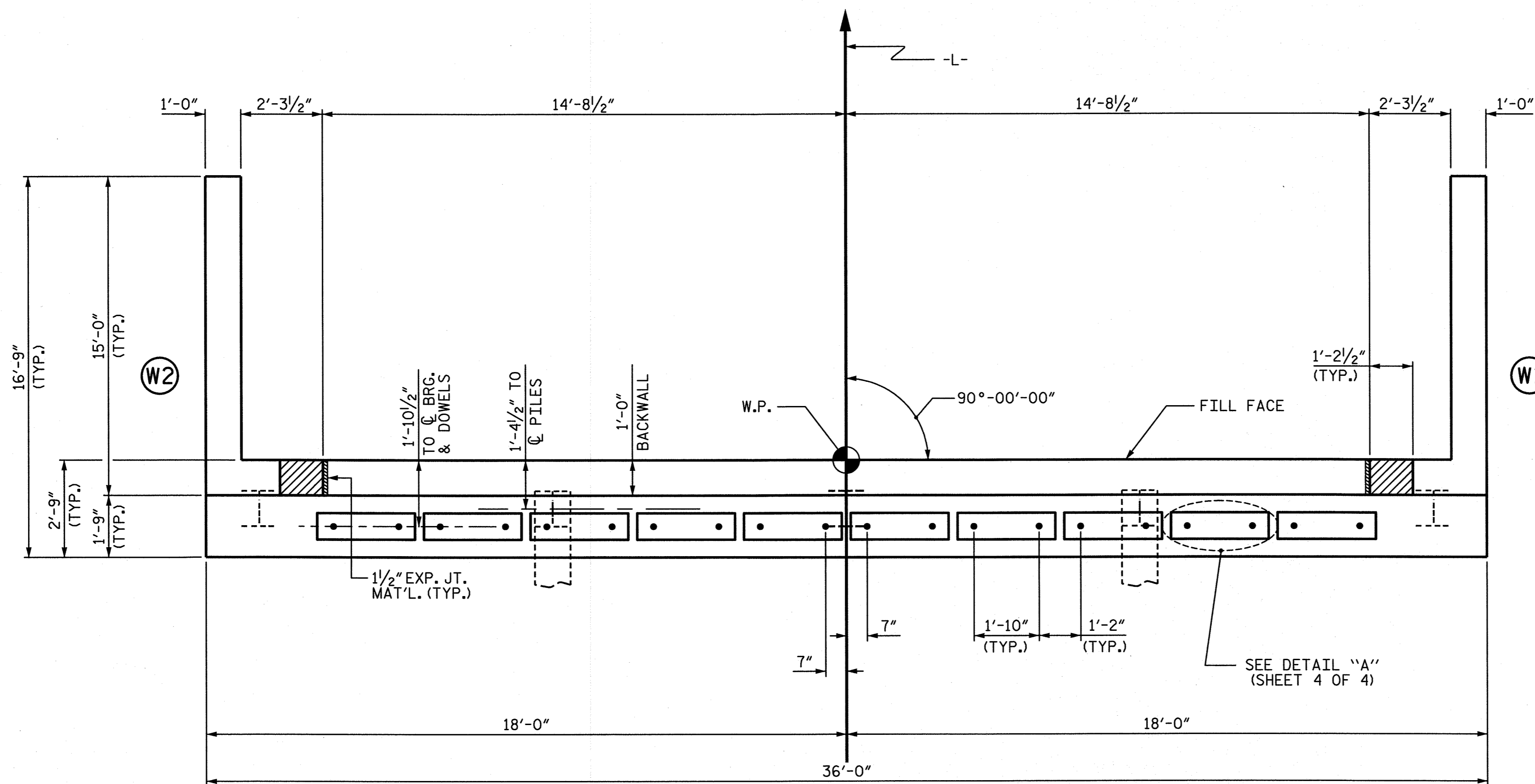
NOTES

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

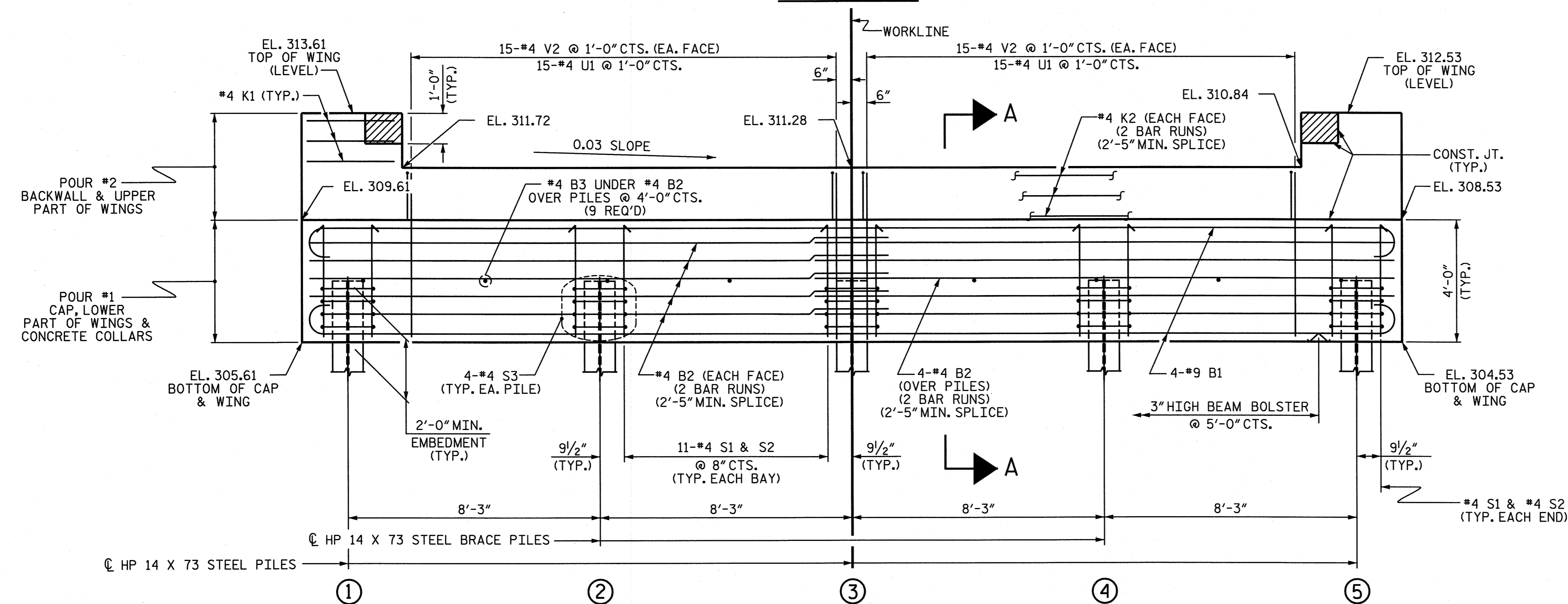
THE CONCRETE IN THE SHADED AREA OF THE WING SHALL BE POURED AFTER THE VERTICAL CONCRETE BARRIER RAIL IS CAST IF SLIP FORMING IS USED.

FOR PILE SPLICE DETAILS, SEE SHEET 4 OF 4.

FOR WING DETAILS, SEE SHEET 3 OF 4.



PLAN



ELEVATION

TOP OF PILE ELEVATIONS	
①	307.58
②	307.33
③	307.09
④	306.84
⑤	306.59

PROJECT NO. 17BP.8.R.29

MOORE COUNTY

STATION: 13+96.00 -L-

SHEET 2 OF 4



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 RALEIGH

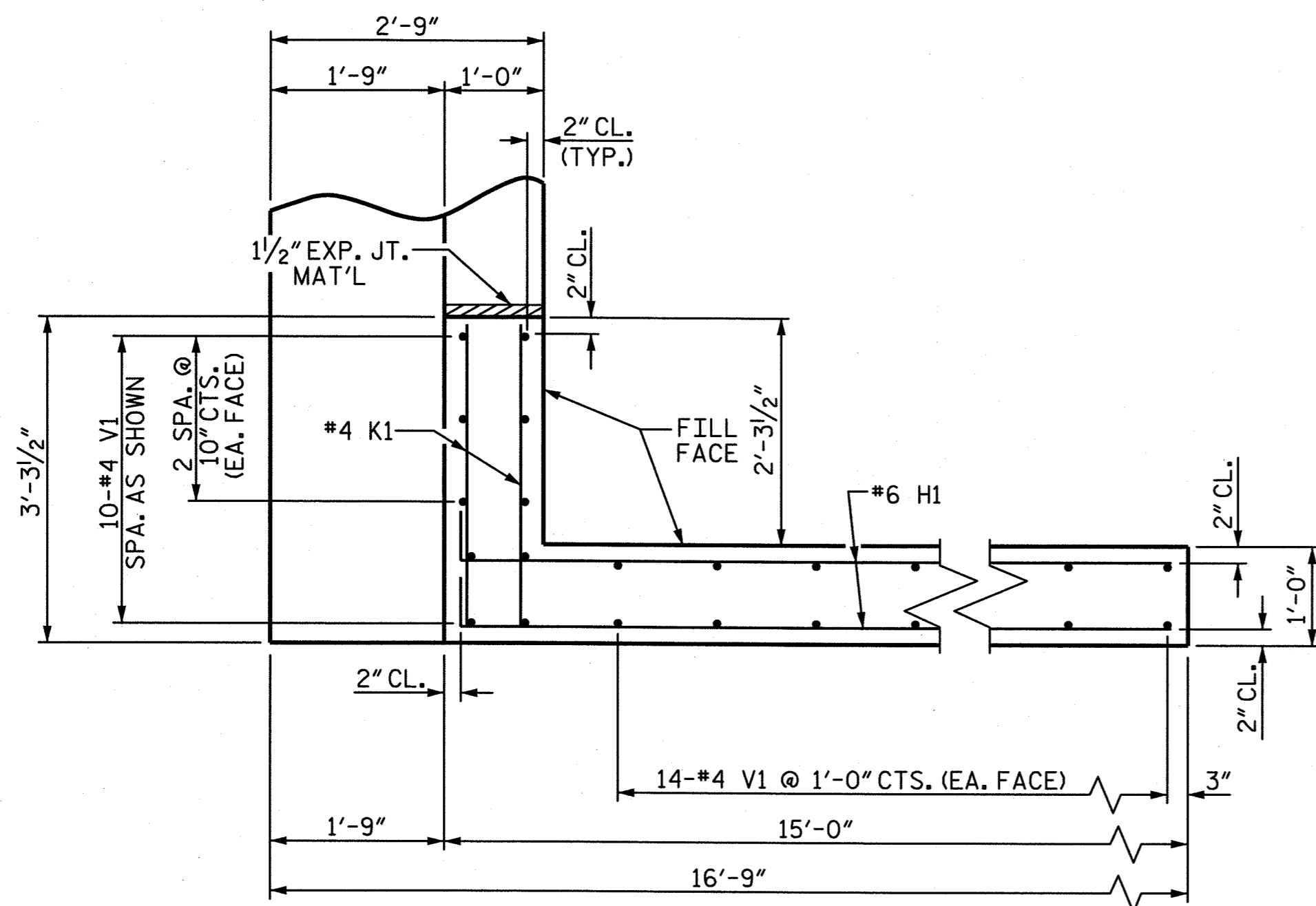
SUBSTRUCTURE

END BENT 2

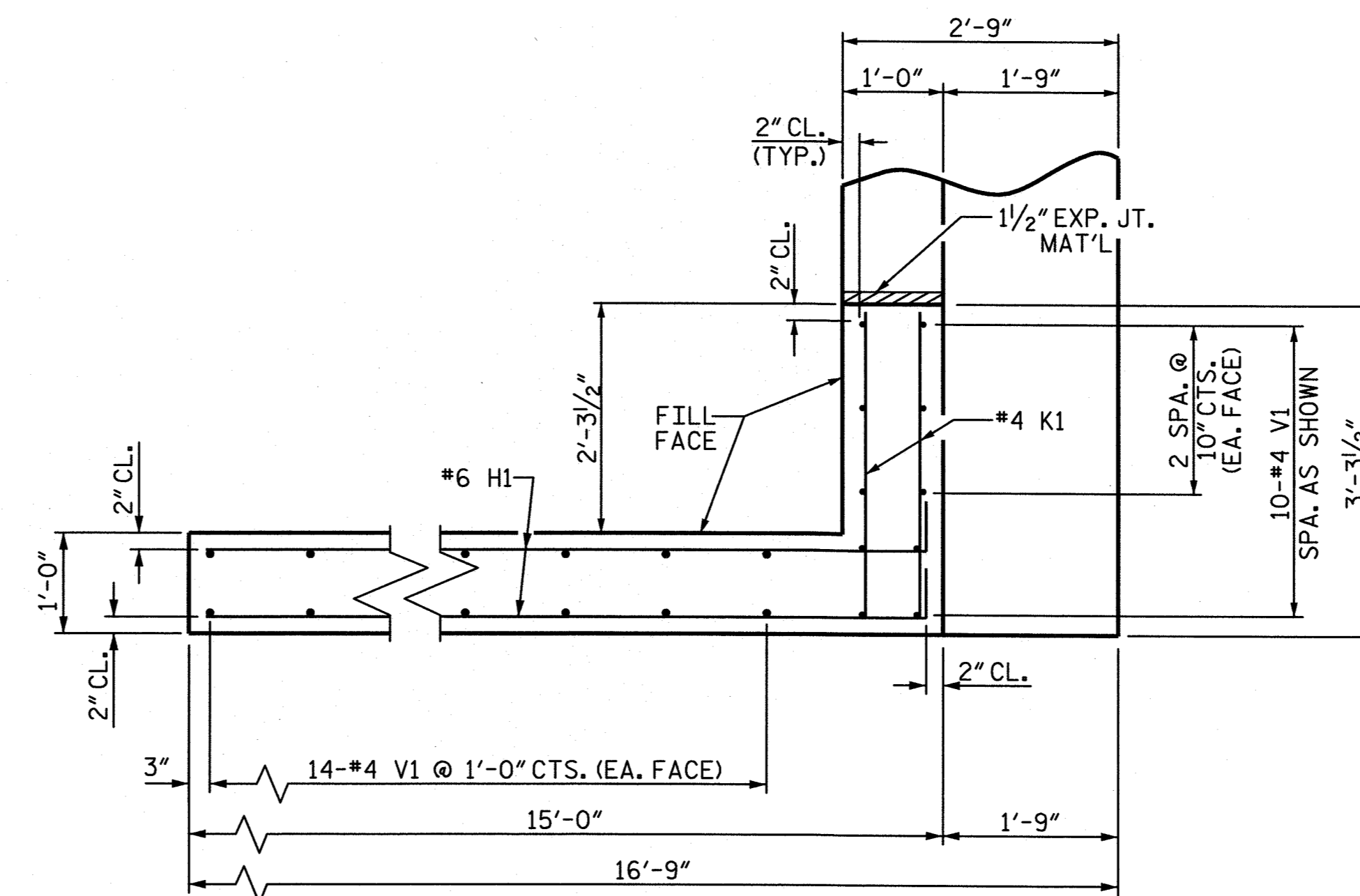
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-12
1			3			TOTAL SHEETS
2			4			16

ASSEMBLED BY : MAH	DATE : 08/12
CHECKED BY : NAP	DATE : 08/12
DRAWN BY : WJH 12/11	
CHECKED BY : AAC 12/11	

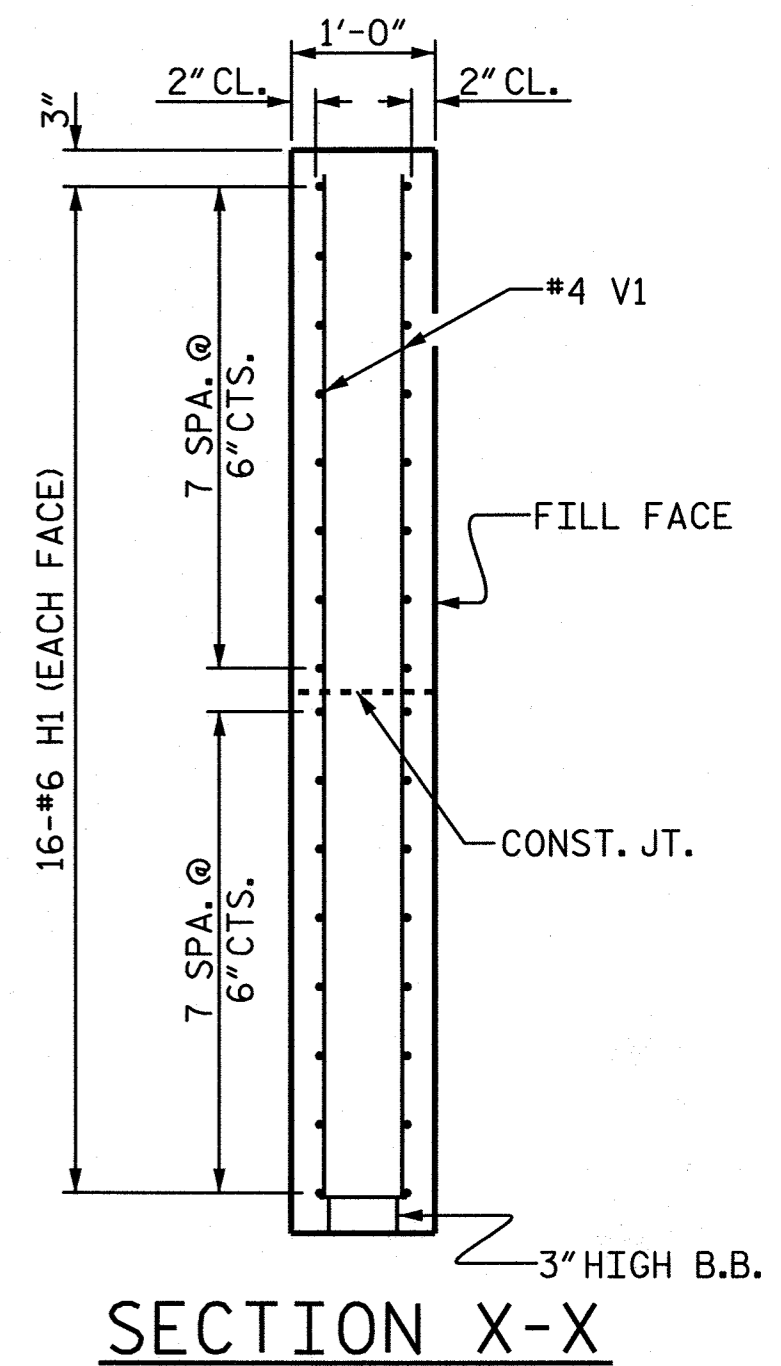
WINGS NOT SHOWN FOR CLARITY.
 FOR SECTION A-A, SEE SHEET 4 OF 4.
 CONCRETE COLLARS FOR STEEL PILES NOT SHOWN IN PLAN AND ELEVATION VIEWS FOR CLARITY.
 SEE "CORROSION PROTECTION FOR STEEL PILES DETAIL", SHEET 4 OF 4.



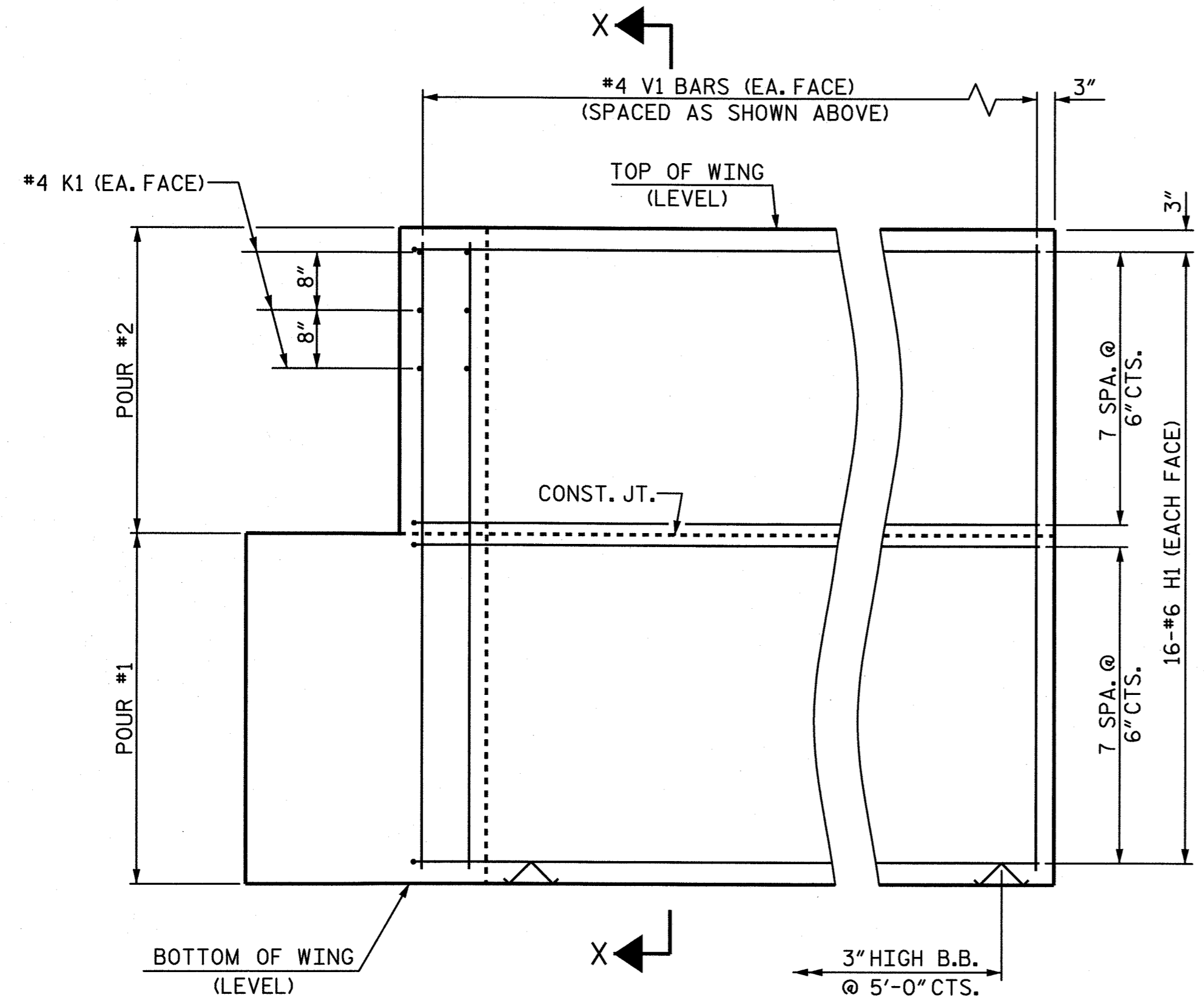
PLAN OF WING (W1)



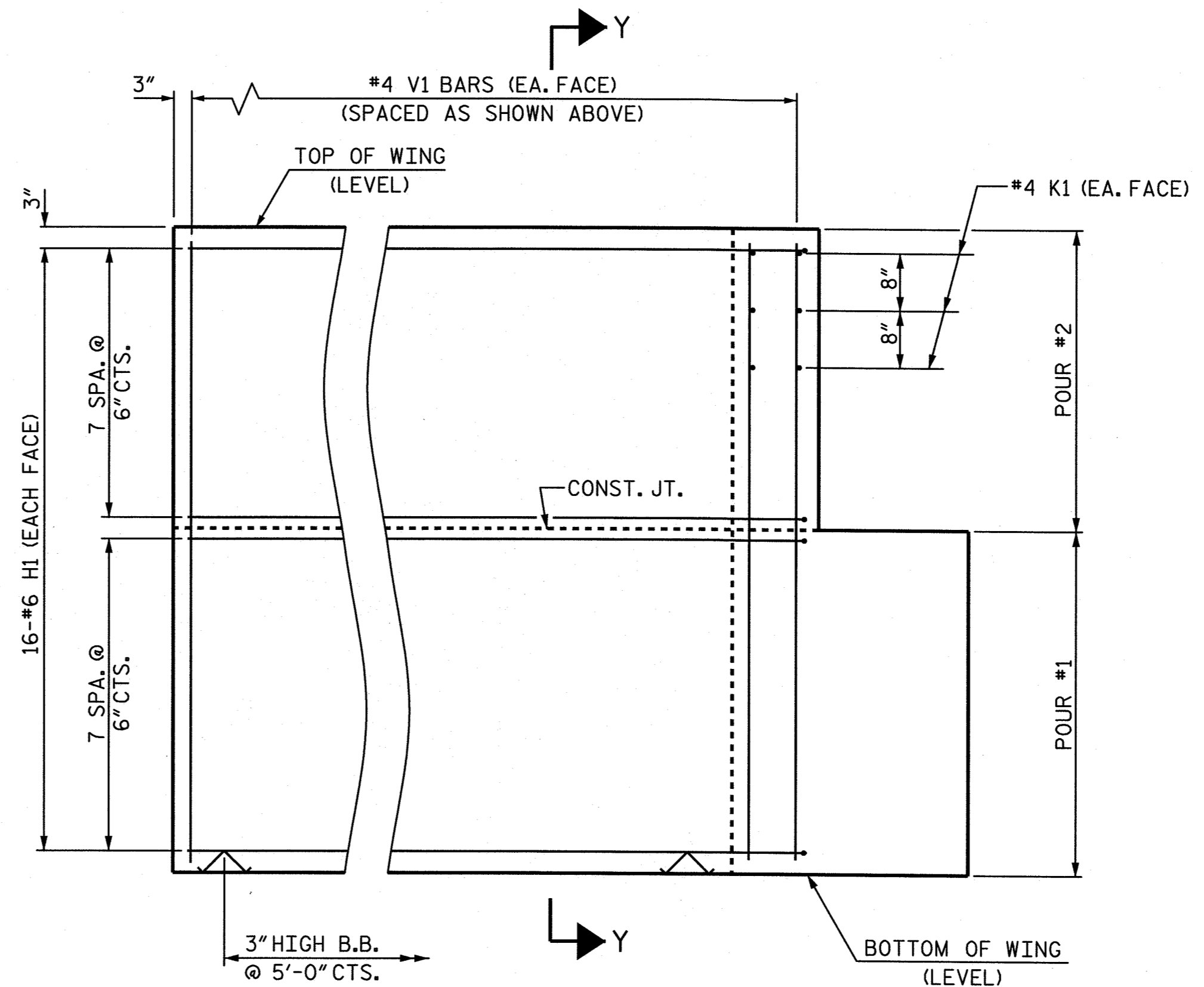
PLAN OF WING (W2)



SECTION X-X

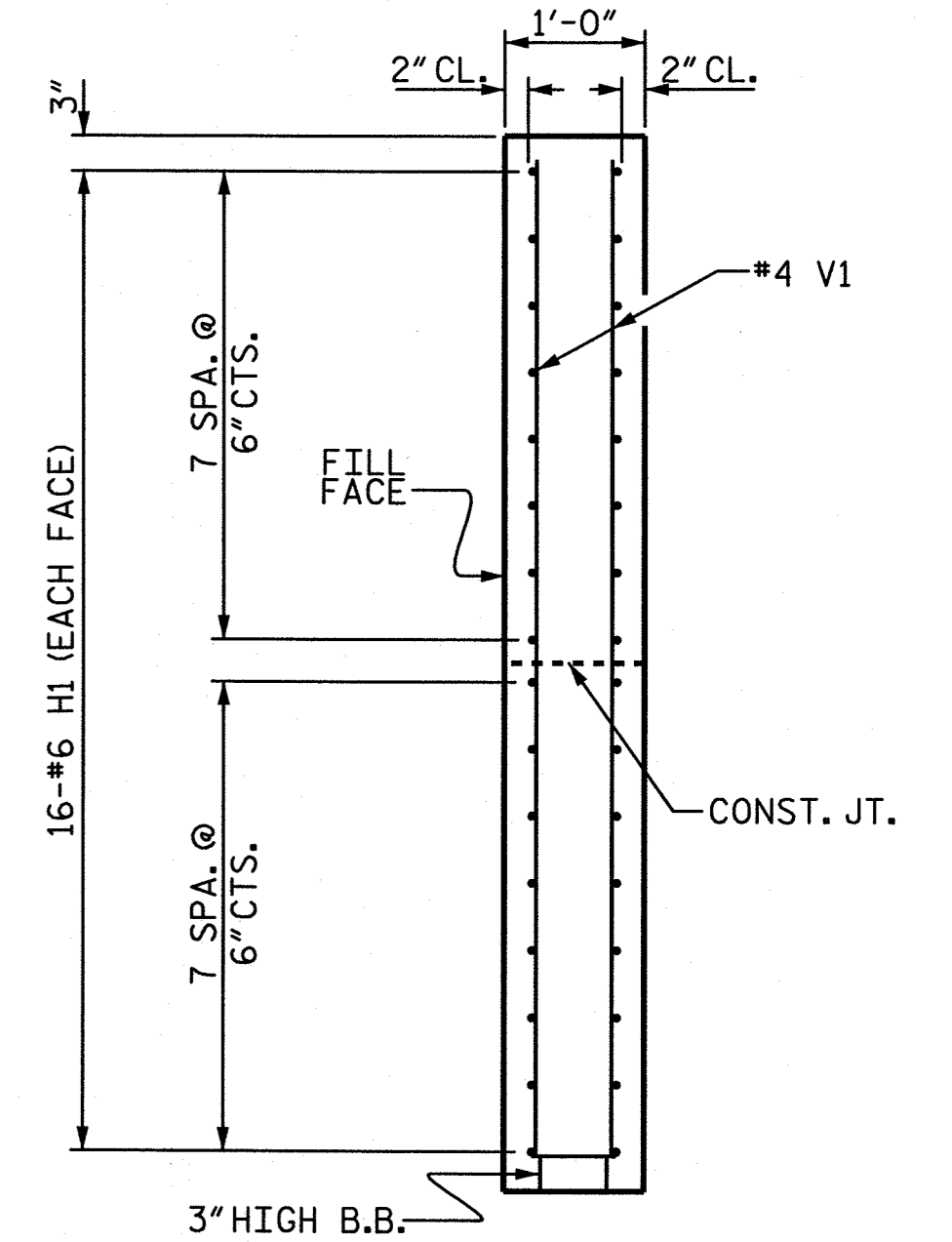


ELEVATION OF WING (W1)



ELEVATION OF WING (W2)

WING DETAILS



SECTION Y-Y

PROJECT NO. 17BP.8.R.29
 MOORE COUNTY
 STATION: 13+96.00 -L-

SHEET 3 OF 4

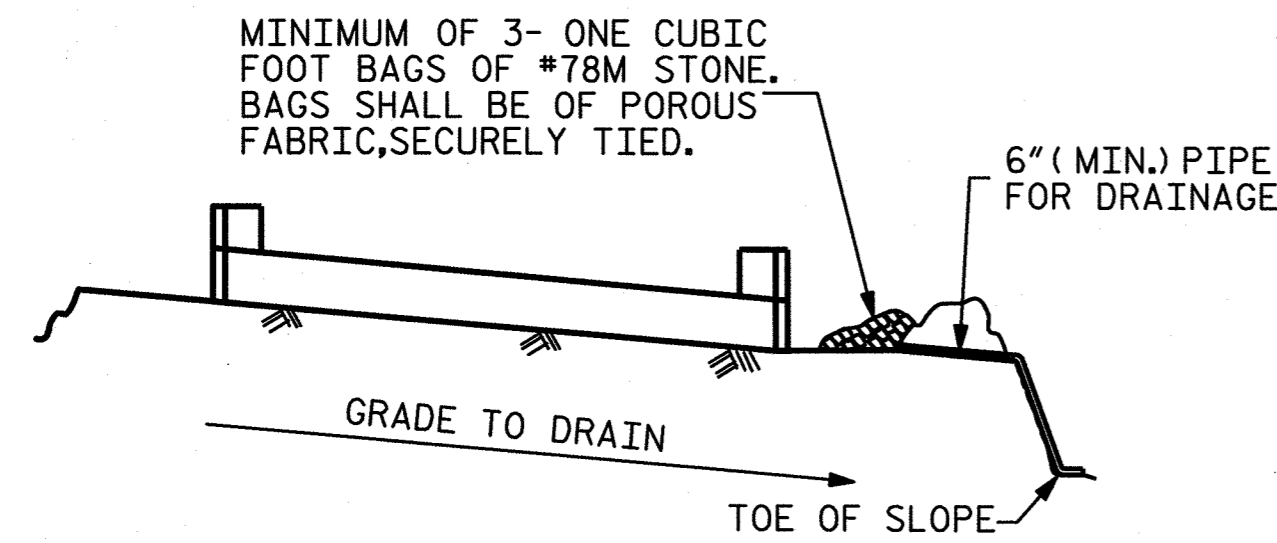


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REVISIONS						SHEET NO.
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1			3			TOTAL SHEETS
2			4			16

ASSEMBLED BY : MAH	DATE : 01/13
CHECKED BY : NAP	DATE : 01/13
DRAWN BY : WJH 12/11	
CHECKED BY : AAC 12/11	

8/30/2013
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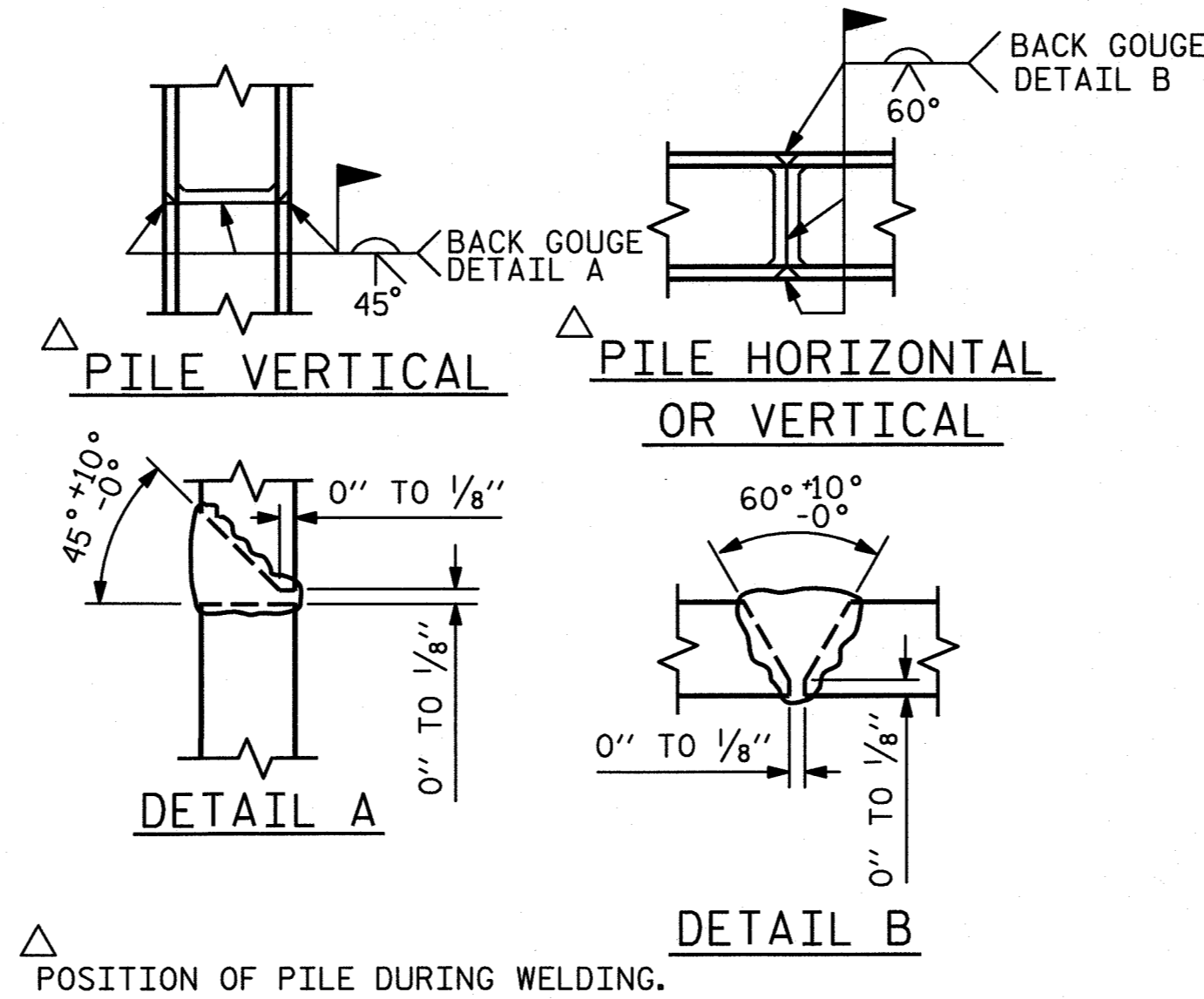


BAGGED STONE AND PIPE SHALL BE PLACED IMMEDIATELY AFTER COMPLETION OF END BENT EXCAVATION. PIPE MAY BE EITHER CONCRETE, CORRUGATED STEEL, CORRUGATED ALUMINUM ALLOY, OR CORRUGATED PLASTIC. PERFORATED PIPE WILL NOT BE ALLOWED.

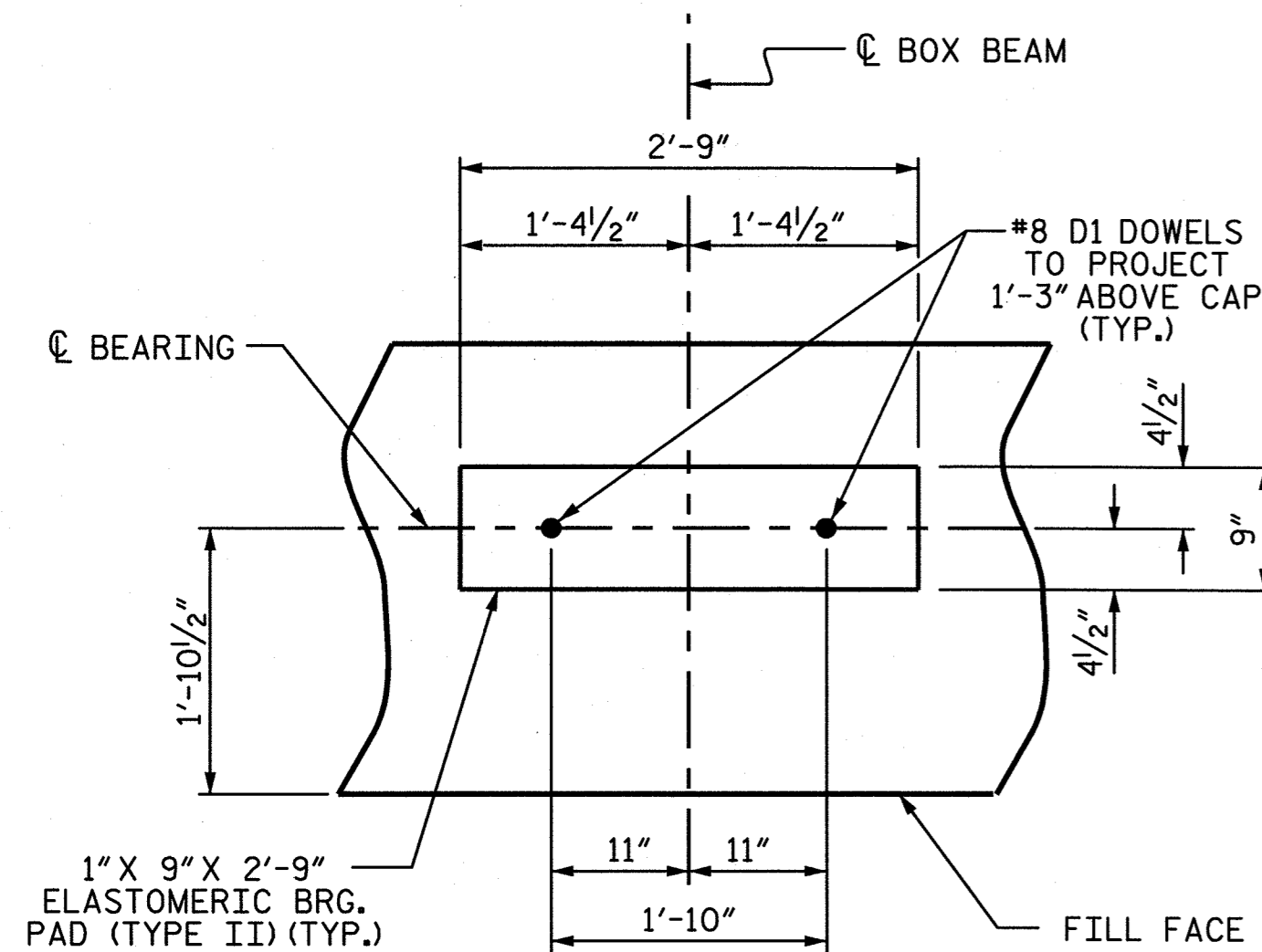
BAGGED STONE SHALL REMAIN IN PLACE UNTIL THE ENGINEER DIRECTS THAT IT BE REMOVED. THE CONTRACTOR SHALL REMOVE AND DISPOSE OF SILT ACCUMULATIONS AT BAGGED STONE WHEN SO DIRECTED BY THE ENGINEER. BAGS SHALL BE REMOVED AND REPLACED WHENEVER THE ENGINEER DETERMINES THAT THEY HAVE DETERIORATED AND LOST THEIR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

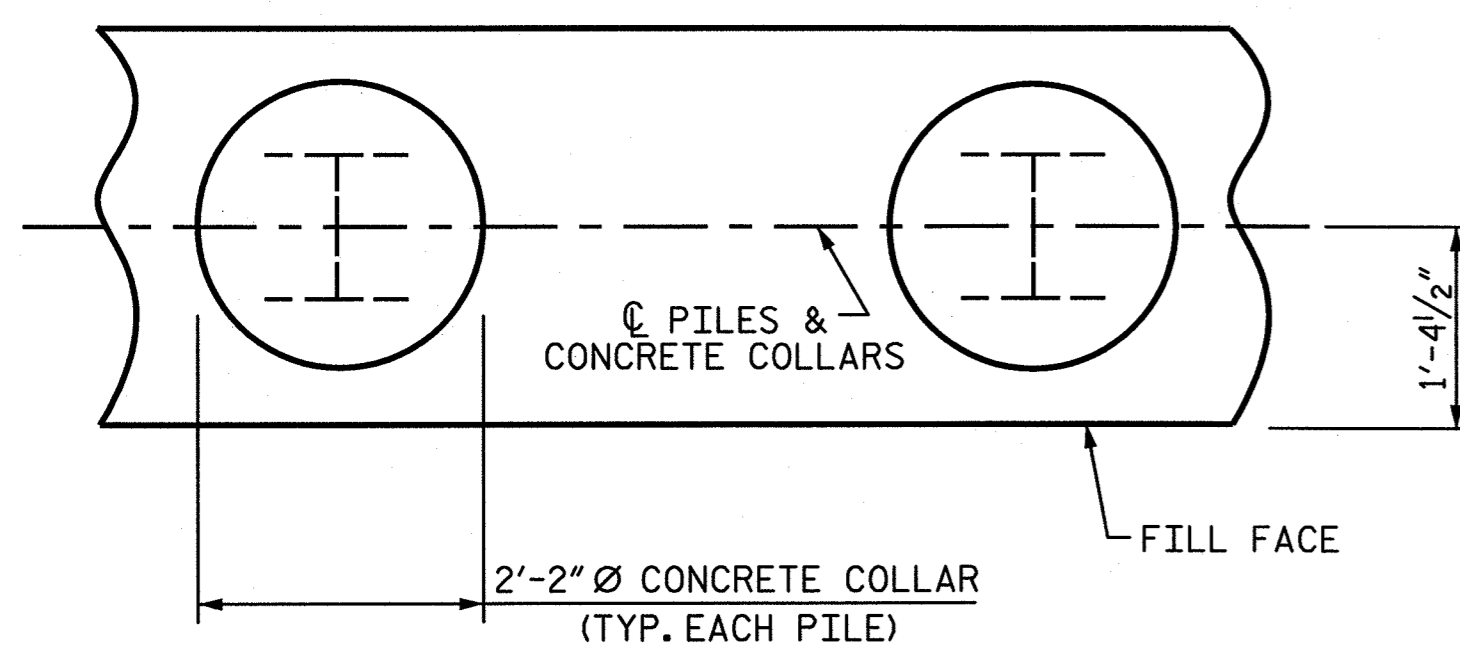


PILE SPLICE DETAILS



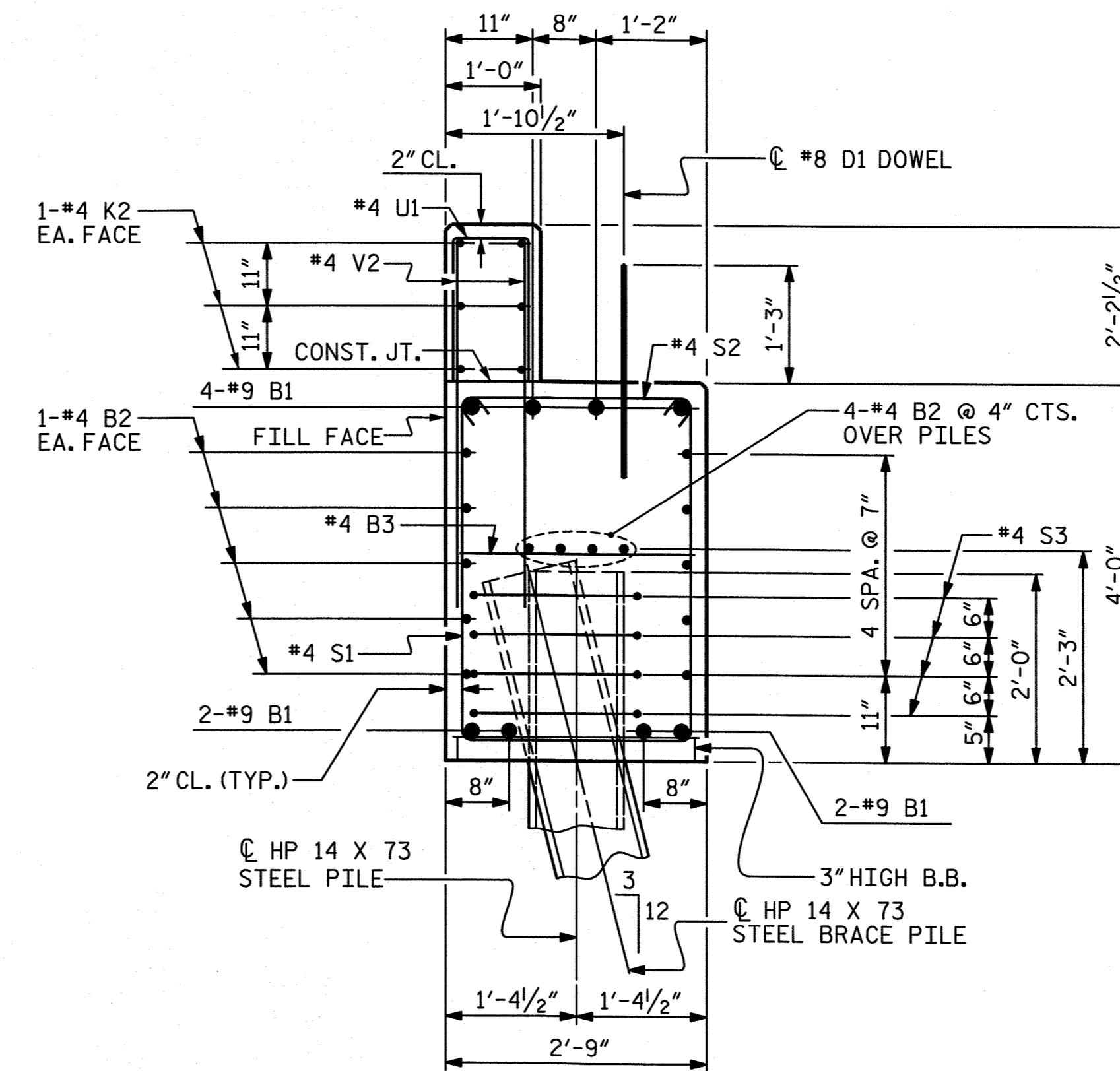
DETAIL "A"

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



CORROSION PROTECTION FOR STEEL PILES DETAIL

(END BENT 1 SHOWN, END BENT 2 SIMILAR BY ROTATION)



SECTION A-A

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

BAR TYPES	
①	②
③	④
⑤	⑥

ALL BAR DIMENSIONS ARE OUT TO OUT.

END BENT 1		END BENT 2	
HP 14 X 73 STEEL PILES	NO: 5	HP 14 X 73 STEEL PILES	NO: 5
STEEL PILE POINTS	EA. = 5	STEEL PILE POINTS	EA. = 5
LIN. FT. = 75		LIN. FT. = 100	

BILL OF MATERIAL FOR ONE END BENT					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	8	#9		38'-0"	1034
B2	28	#4	STR	19'-1"	357
B3	9	#4	STR	2'-5"	15
D1	20	#8	STR	2'-3"	120
H1	64	#6		15'-4"	1474
K1	12	#4	STR	2'-11"	23
K2	12	#4	STR	19'-1"	153
S1	46	#4	3	10'-5"	320
S2	46	#4	4	3'-2"	97
S3	20	#4	5	7'-7"	101
U1	30	#4	6	3'-8"	73
V1	76	#4	STR	7'-8"	389
V2	60	#4	STR	5'-10"	234
REINFORCING STEEL (FOR ONE END BENT)					4390 LBS.
CLASS A CONCRETE BREAKDOWN (FOR ONE END BENT)					
POUR #1 CAP, LOWER PART OF WINGS & COLLARS					19.9 C.Y.
POUR #2 BACKWALL & UPPER PART OF WINGS					7.5 C.Y.
TOTAL CLASS A CONCRETE					27.4 C.Y.

ASSEMBLED BY : MAH	DATE : 08/12
CHECKED BY : NAP	DATE : 08/12
DRAWN BY : WJH	12/11
CHECKED BY : AAC	12/11

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 MOORE COUNTY
 STATION: 13+96.00 -L-

SHEET 4 OF 4

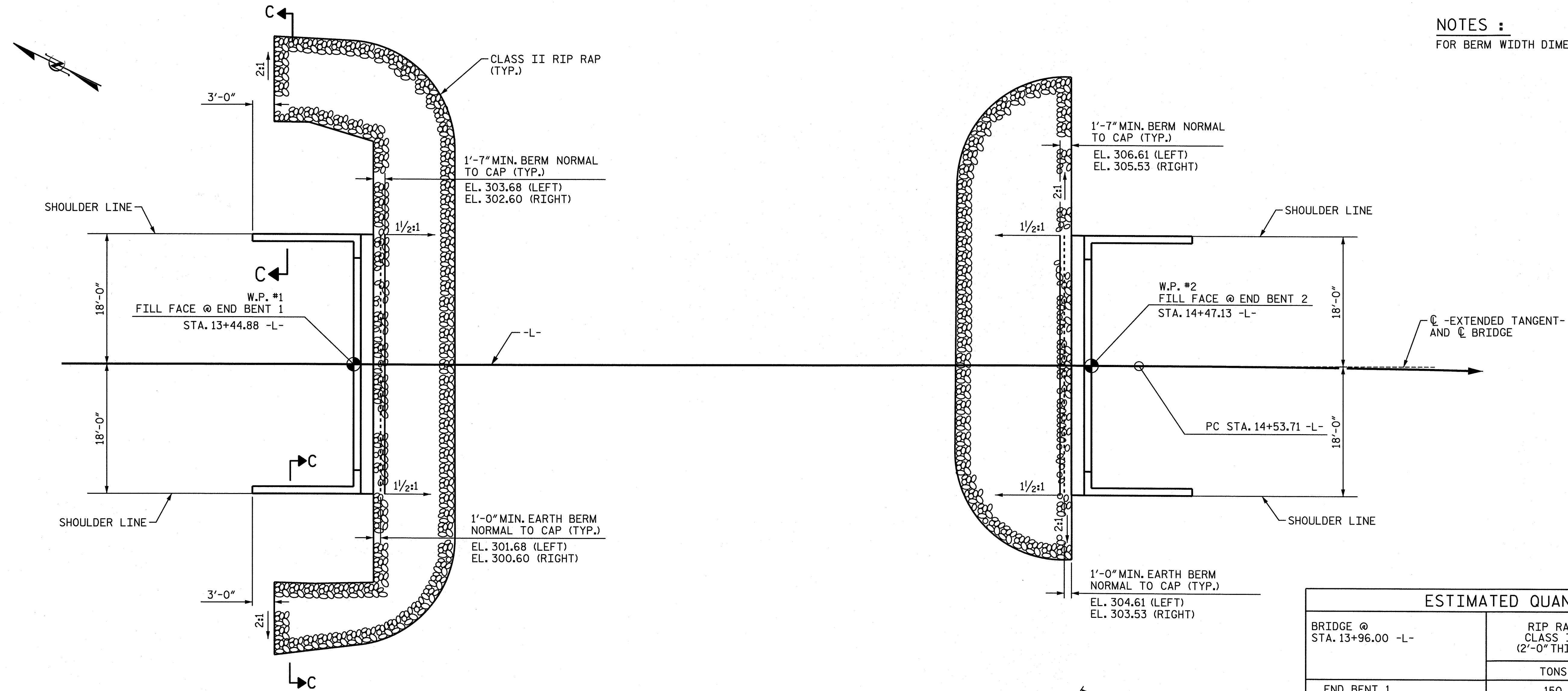
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUBSTRUCTURE
 END BENT 1 & 2
 DETAILS

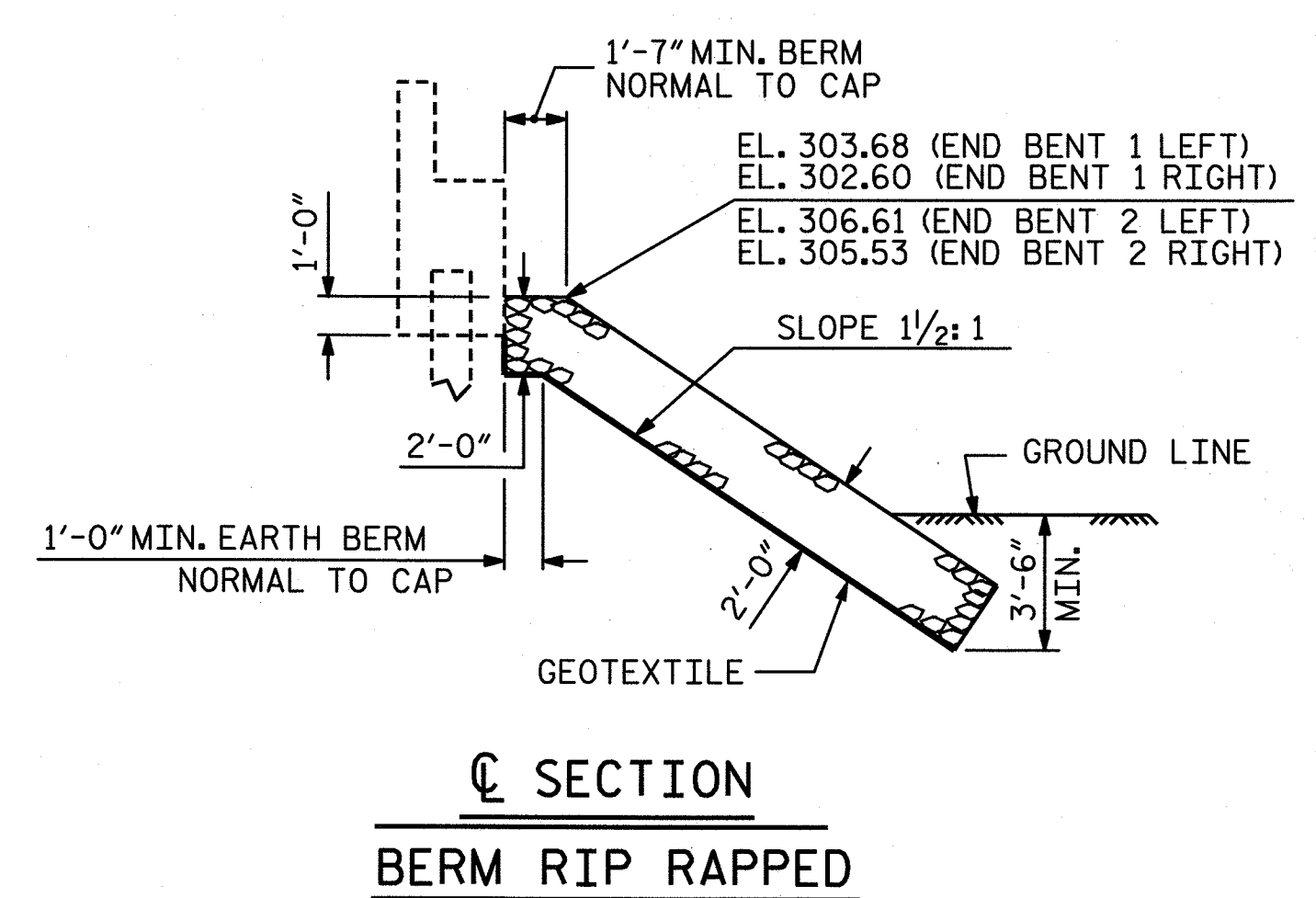
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			S-14
2			4			16

STD. NO. EB_30_90S4_39BB

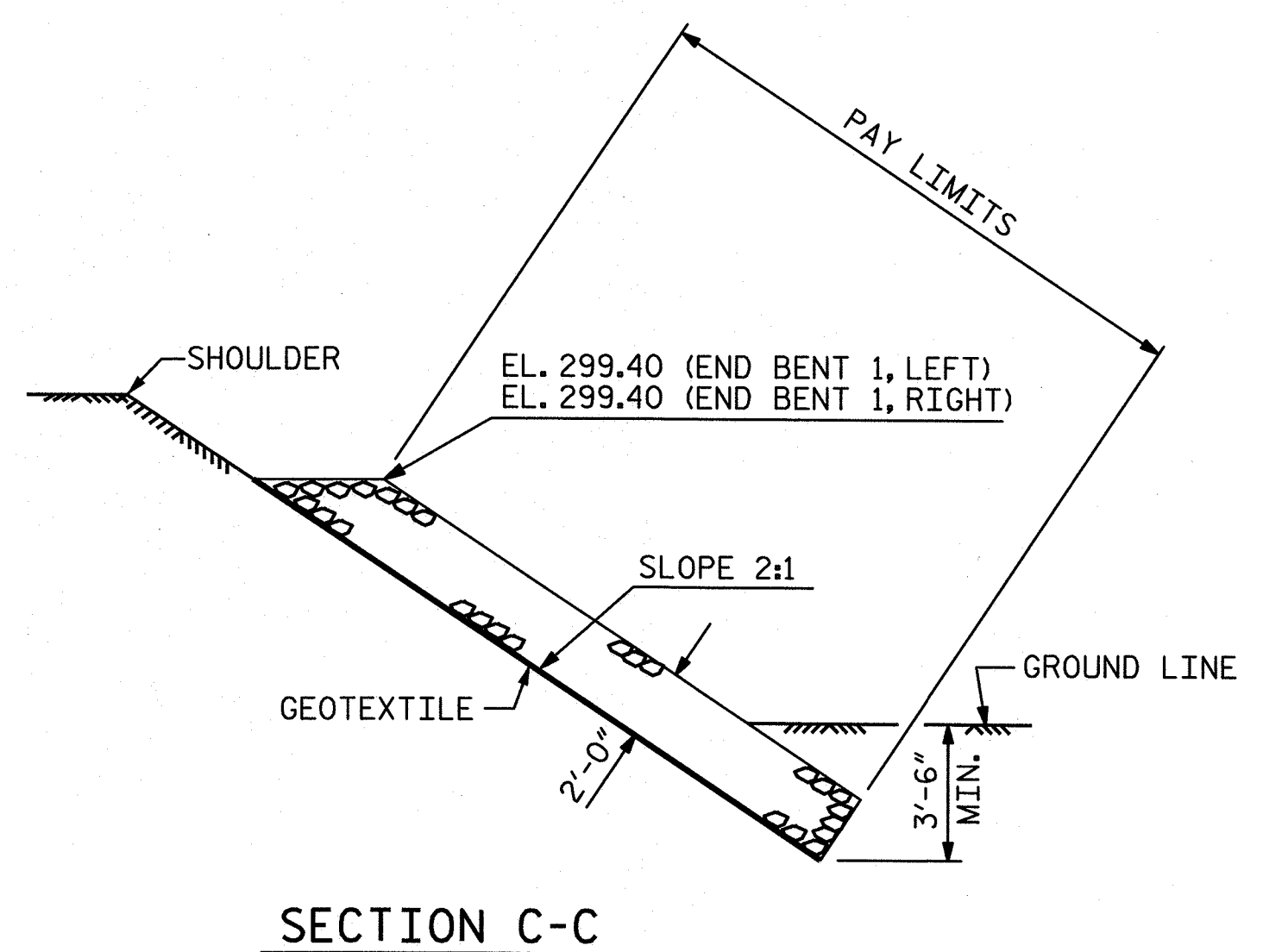
NOTES :
FOR BERM WIDTH DIMENSIONS, SEE GENERAL DRAWING.



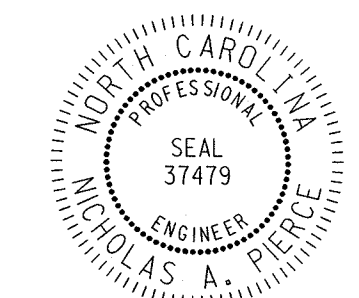
ESTIMATED QUANTITIES		
BRIDGE @ STA. 13+96.00 -L-	RIP RAP CLASS II (2'-0" THICK)	GEOTEXTILE FOR DRAINAGE
	TONS	SQUARE YARDS
END BENT 1	150	166
END BENT 2	118	131



SECTION
BERM RIP RAPPED



SECTION C-C



DESIGN ENGINEER OF RECORD:
DATE: 08/20/13

PROJECT NO. 17BP.8.R.29
MOORE COUNTY
STATION: 13+96.00 -L-

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

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-15
1			3			TOTAL SHEETS
2			4			16

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ASSEMBLED BY : MAH	DATE : 08/12
CHECKED BY : NAP	DATE : 08/12
DRAWN BY : REK 1/84	REV. 5/1/06R TLA/GM
CHECKED BY : RDU 1/84	REV. 10/1/11 MAA/GM
	REV. 12/2/11 MAA/GM

NOTES

FOR BRIDGE APPROACH FILL INCLUDING GEOTEXTILE, 4" Ø DRAINAGE PIPE, AND #78M STONE BACKFILL, SEE ROADWAY PLANS.

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

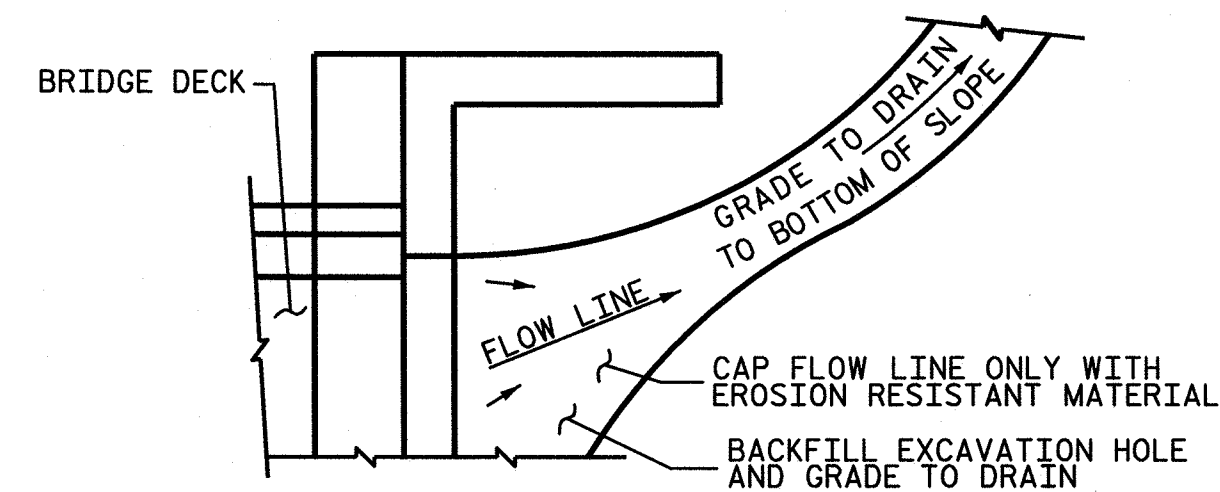
#78M STONE BACKFILL (CLASS V SELECT MATERIAL) SHALL BE IN ACCORDANCE WITH STANDARD SPECIFICATIONS SECTION 1016.

#78M STONE BACKFILL IS TO BE CONTINUOUS ALONG FILL FACE OF BACKWALL FROM OUTSIDE EDGE TO OUTSIDE EDGE OF APPROACH SLAB.

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

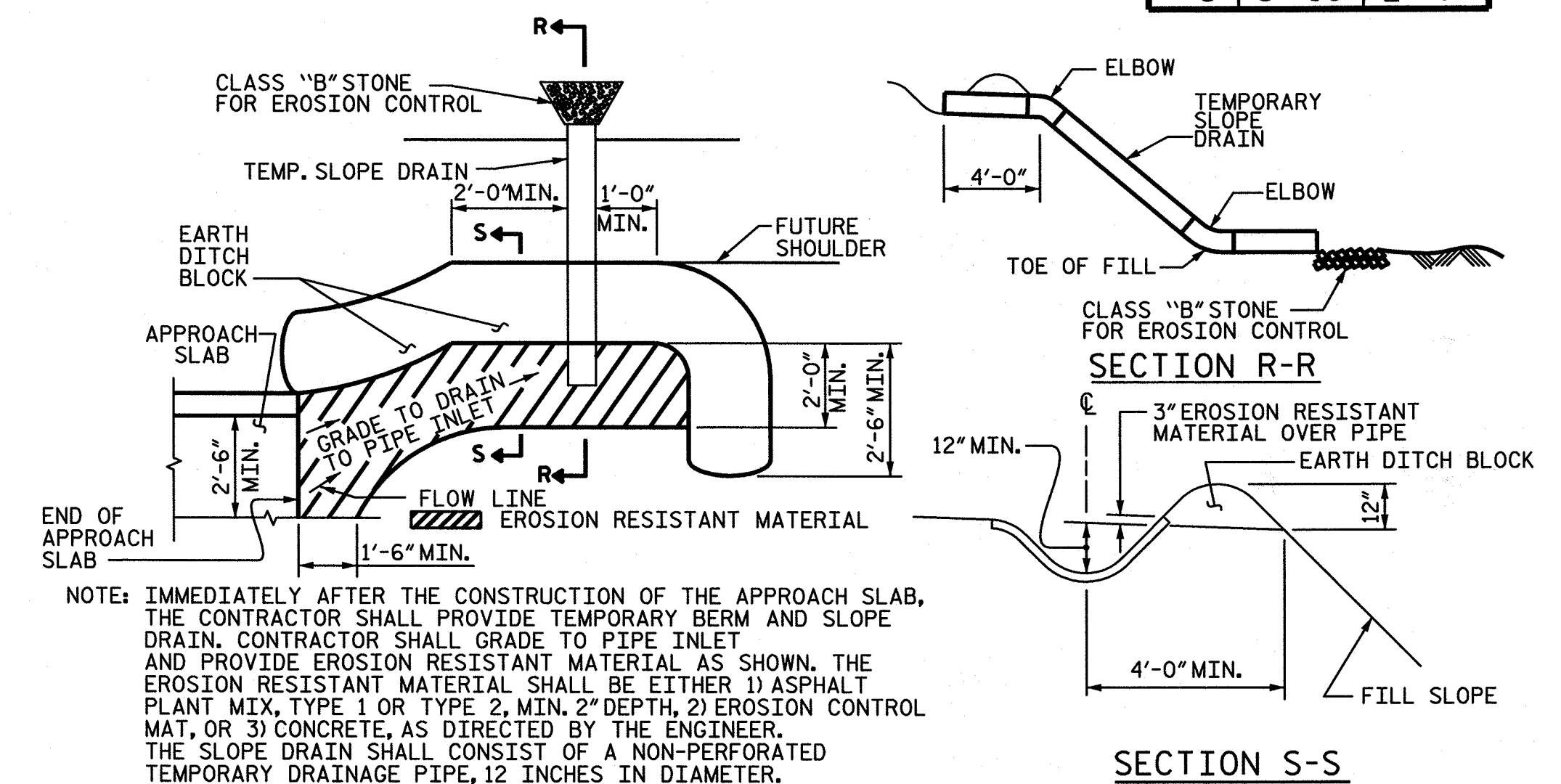
AREA BETWEEN THE WINGWALL AND APPROACH SLAB SHALL BE GRADED TO DRAIN THE WATER AWAY FROM THE FILL FACE OF THE BRIDGE AND SHALL BE PAVED. SEE ROADWAY PLANS.

APPROACH SLAB GROOVING IS NOT REQUIRED.

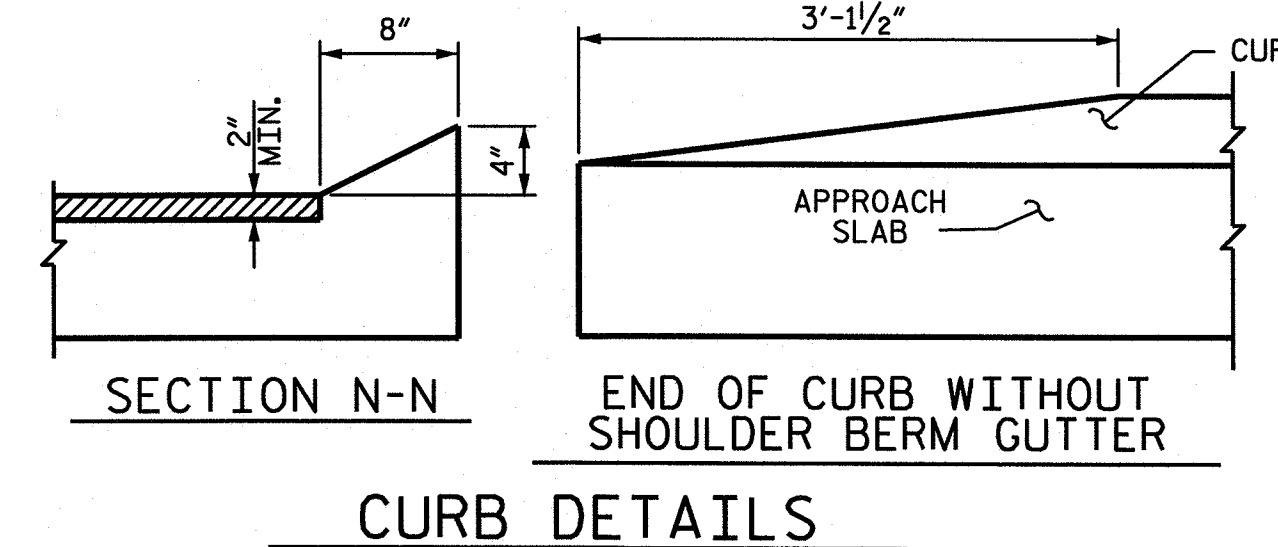


NOTE: IF THE APPROACH SLAB IS NOT CONSTRUCTED IMMEDIATELY AFTER THE BACKFILLING OF THE END BENT EXCAVATION, GRADE TO DRAIN TO THE BOTTOM OF THE SLOPE AND PROVIDE EROSION RESISTANT MATERIAL, SUCH AS FIBERGLASS ROVING OR AS DIRECTED BY THE ENGINEER TO PREVENT SOIL EROSION AND TO PROTECT THE AREA ADJACENT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

TEMPORARY DRAINAGE DETAIL

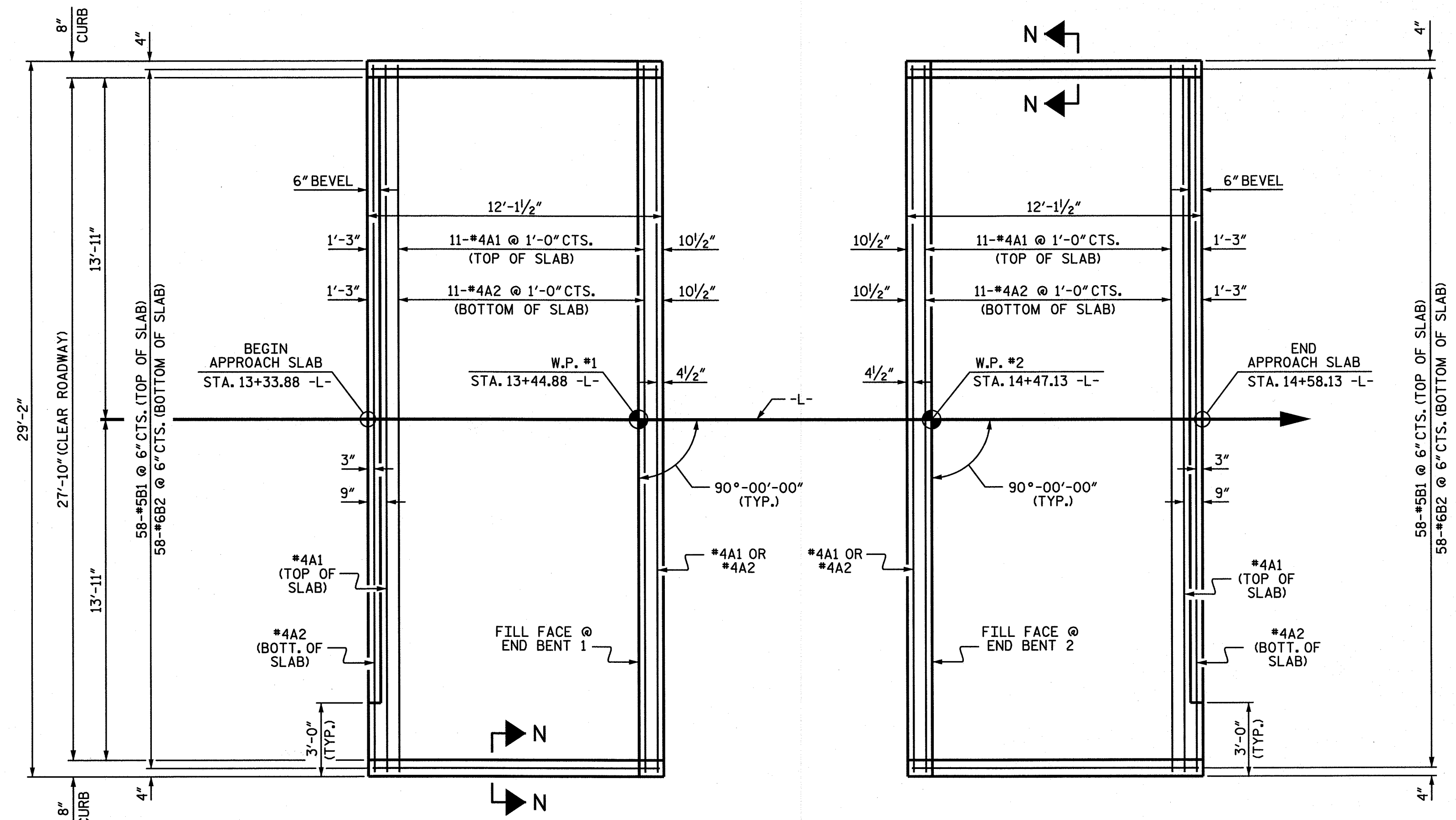


TEMPORARY BERM AND SLOPE DRAIN DETAILS
(TO BE USED WHEN SHOULDER BERM GUTTER IS REQUIRED)

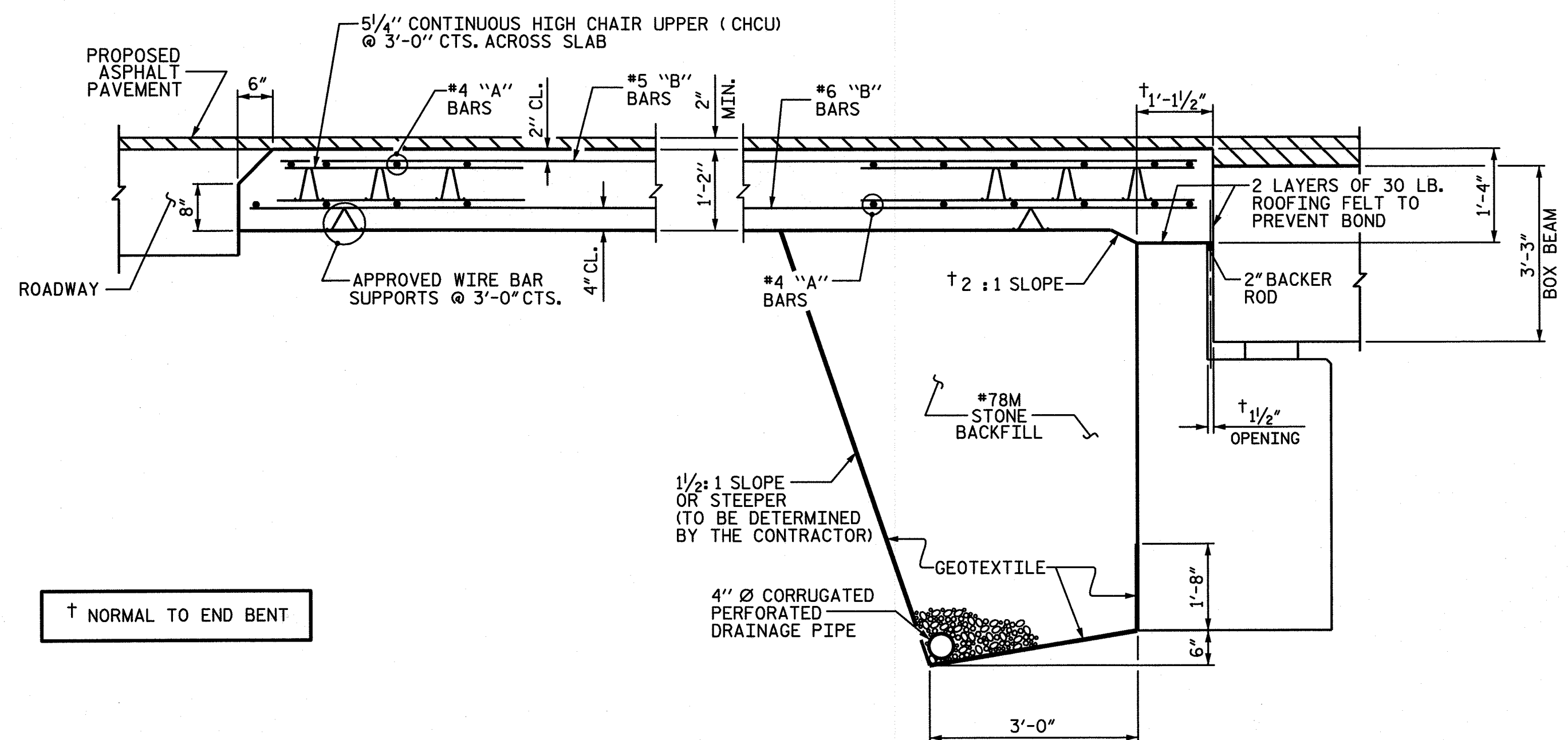


BILL OF MATERIAL						
APPROACH SLAB AT EB 1						
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	
*A1	13	#4	STR	28'-10"	250	
A2	13	#4	STR	28'-10"	250	
*B1	58	#5	STR	11'-2"	676	
B2	58	#6	STR	11'-8"	1016	
REINFORCING STEEL					LBS.	1266
* EPOXY COATED REINFORCING STEEL					LBS.	926
CLASS AA CONCRETE					C. Y.	15.6
APPROACH 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.	15.6

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

ASSEMBLED BY :	MAH	DATE :	08/12
CHECKED BY :	NAP	DATE :	08/12
DRAWN BY :	MAA	11/11	
CHECKED BY :	AAC	11/11	

8/30/2013
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usmh04386

PROJECT NO. 17BP.8.R.29
MOORE COUNTY
STATION: 13+96.00 -L-

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
STANDARD
BRIDGE APPROACH SLAB
FOR PRESTRESSED CONCRETE
BOX BEAM UNIT
(SUB-REGIONAL TIER)
90° SKEW

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

STD. NO. BAS_BB_30_90S

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. FINS 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