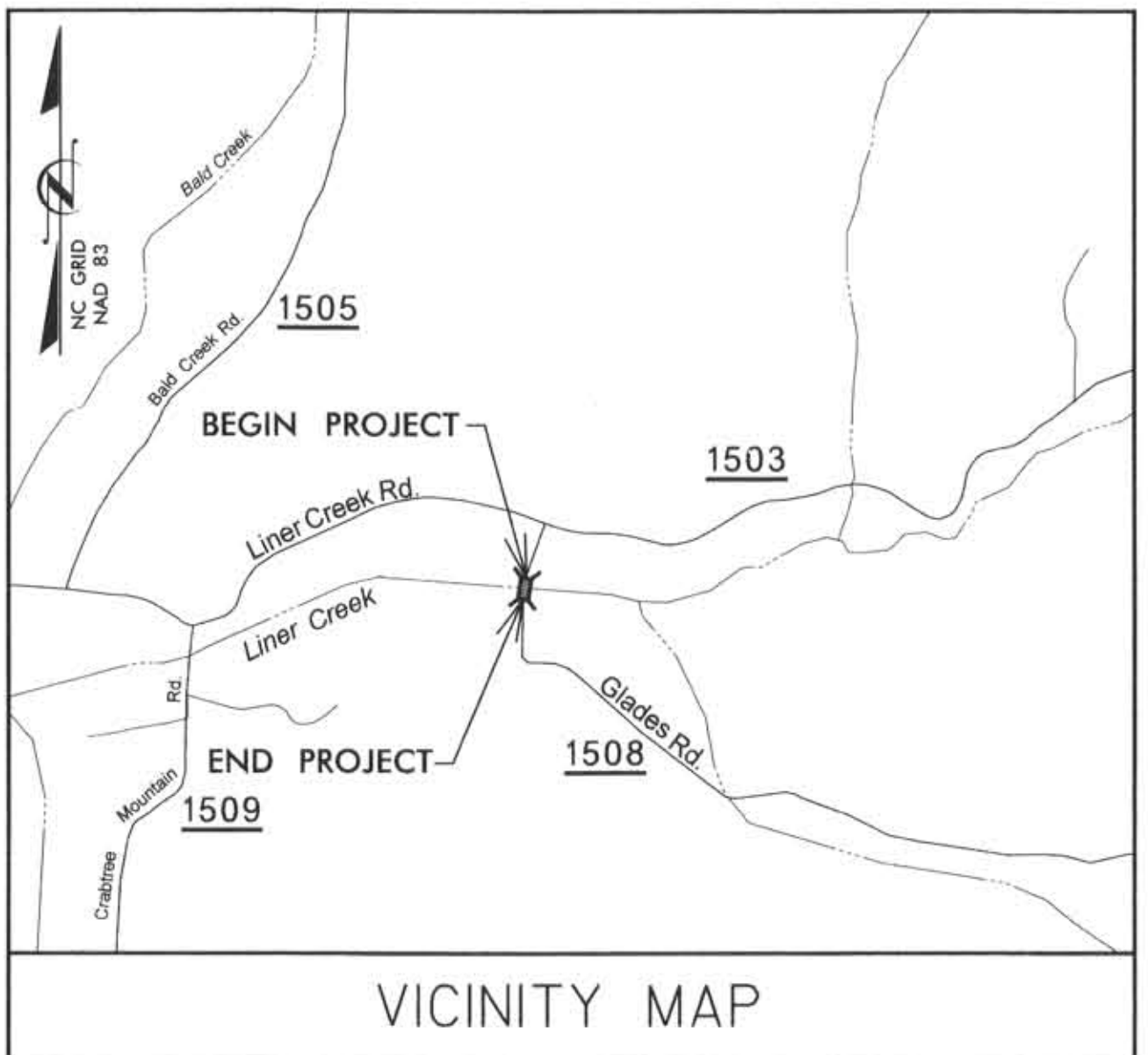


09/03/12
CONTRACT: DN00085
TIP PROJECT: BD-5114R
\$SYTIME\$\$\$\$\$DNCN\$\$\$\$\$SENANE\$\$\$\$\$

CONTRACT: DN00085
TIP PROJECT: BD-5114R

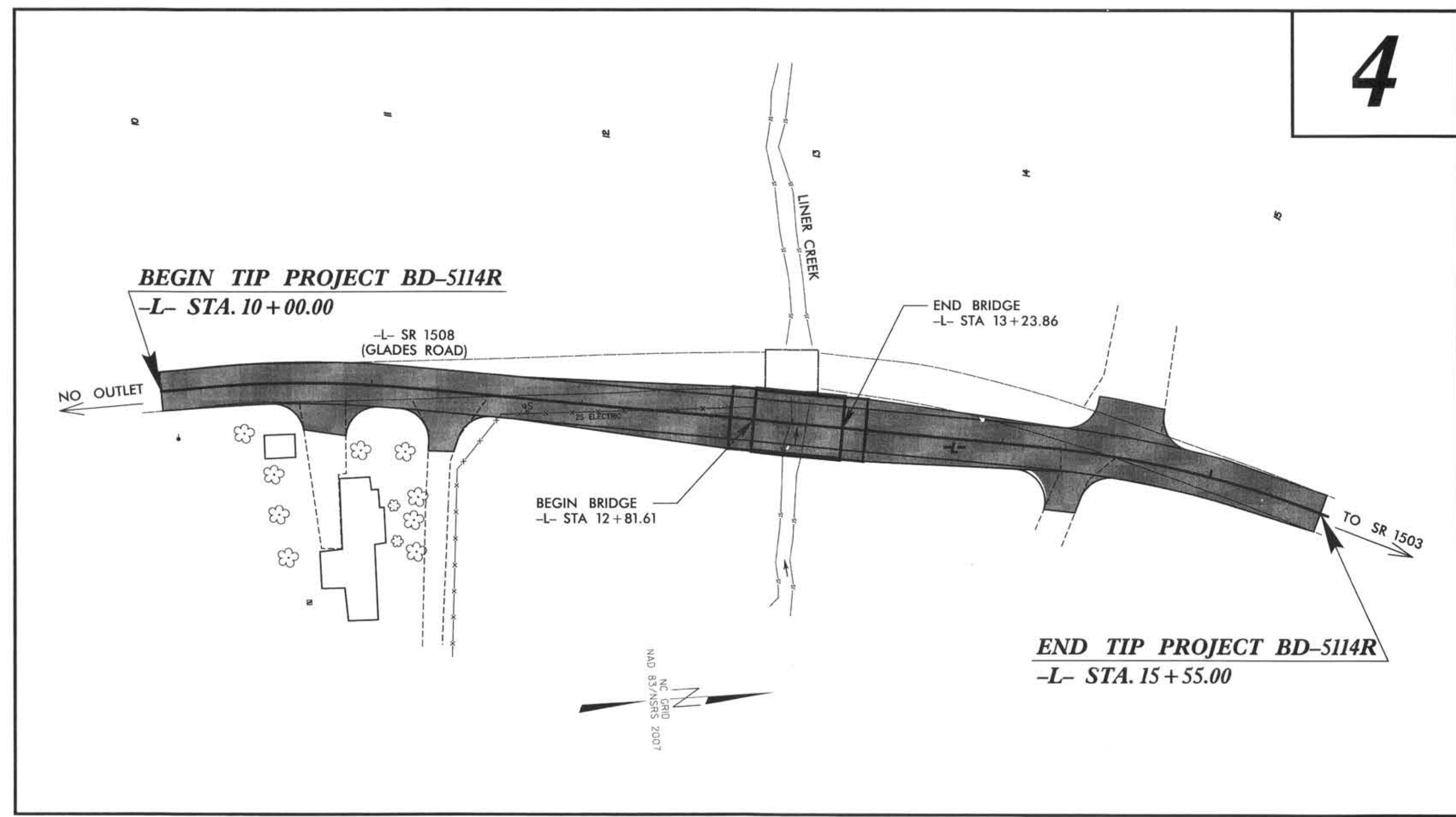


STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
HAYWOOD COUNTY

LOCATION: BRIDGE NO. 213 OVER LINER CREEK
ON SR 1508 (GLADES RD.)

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

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	BD-5114R	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
45360.1.18	BRZ-1508(7)	P.E.	
45360.2.18	BRZ-1508(7)	RW	
45360.3.18	BRZ-1508(7)	CONST.	

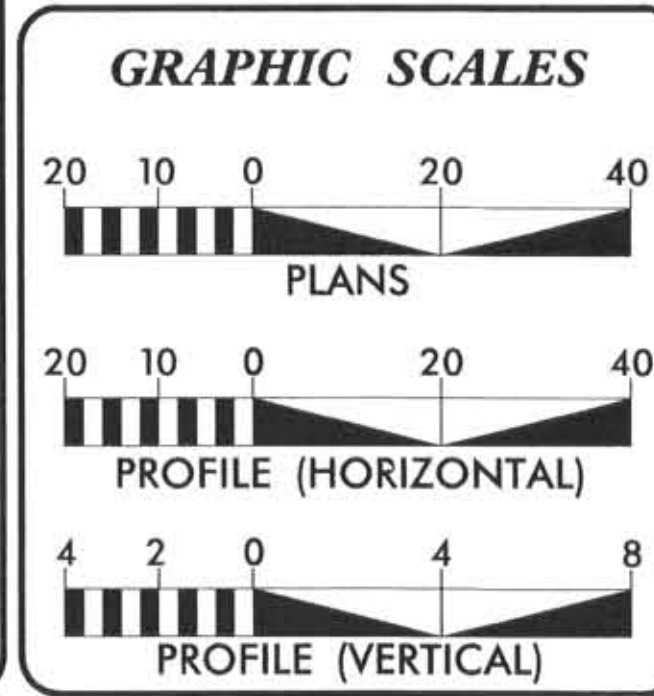


V&M
Vaughn & Melton
Consulting Engineers

Asheville, North Carolina
628-253-2796

Charlotte, North Carolina
704-357-0488
Tri-Cities, Tennessee
423-467-8401
Knoxville, Tennessee
865-546-5800
Middlesboro, Kentucky
606-348-6500
Spartanburg, South Carolina
864-514-4775

Copyright © 1994 Vaughn & Melton, Inc.
All Rights Reserved



DESIGN DATA

ADT 2000 =	160
ADT 2025 =	320
T =	6 %
V =	35 MPH
FUNC CLASS =	LOCAL

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT BD-5114R =	0.097 MI.
LENGTH STRUCTURE TIP PROJECT BD-5114R =	0.008 MI.
TOTAL LENGTH OF TIP PROJECT BD-5114R =	0.105 MI.

Prepared In the Office of:
VAUGHN & MELTON
1318-F PATTON AVE.
ASHEVILLE NC, 28806
FOR THE NORTH CAROLINA DIVISION OF HIGHWAYS

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
OCTOBER 21, 2011

LETTING DATE:
FEBRUARY 12, 2013

NCDOT CONTACT:
JOSH DEYTON, PE
PROJECT ENGINEER - ROADWAY DESIGN

HARDY WILLIS, PE
PROJECT ENGINEER

AARON CARVER, PE
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

12/7/12
Bradley S. Ridgour, PE
SIGNATURE: *Bradley S. Ridgour*

ROADWAY DESIGN ENGINEER

12/6/12
Josh DeYton, PE
SIGNATURE: *Josh DeYton*

PROFESSIONAL SEALS
NORTH CAROLINA
BRADLEY S. RIDGOUR
033023
NORTH CAROLINA
JOSH DEYTON
030453

**DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA**

PROJECT REFERENCE NO.	SHEET NO.
BD-5/14R	I-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 AND TYPICAL SECTIONS
2-A	MODIFIED CONCRETE FLUME DETAIL
3	SUMMARY OF QUANTITIES
3A	SUMMARY OF DRAINAGE QUANTITIES, SUMMARY OF GUARDRAIL, AND ASPHALT PAVEMENT REMOVAL SUMMARY
3B	EARTHWORK SUMMARY
4	PLAN AND PROFILE SHEET
TMP-1 THRU TMP-6	TRAFFIC MANAGEMENT PLANS
EC-1 THRU EC-3	EROSION CONTROL PLANS
UO-1 THRU UO-2	UTILITIES BY OTHERS
X-0	CROSS-SECTION SUMMARY
X-1 THRU X-3	CROSS-SECTIONS
S-0 THRU S-20	STRUCTURE PLANS
S-21	STRUCTURAL NOTES

GENERAL NOTES: 2012 SPECIFICATIONS
EFFECTIVE: 01-17-12

GRADE LINE:
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 ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD II.

SUPERELEVATION:

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

SHOULDER CONSTRUCTION:

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

UNDERDRAINS:

UNDERDRAINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STD. NO. 815.03 AT LOCATIONS DIRECTED BY THE ENGINEER.

GUARDRAIL:

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

TEMPORARY SHORING:

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

SUBSURFACE PLANS:

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

END BENTS:

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

UTILITIES:

UTILITY OWNERS ON THIS PROJECT ARE: AT&T

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 17, 2012 are applicable to this project and by reference hereby are considered a part of these plans:

STD.NO.	TITLE
DIVISION 2 - EARTHWORK	
200.02	Method of Clearing - Method II
225.02	Guide for Grading Subgrade - Secondary and Local
225.04	Method of Obtaining Superelevation - Two Lane Pavement
DIVISION 4 - MAJOR STRUCTURES	
422.11	Bridge Approach Fills
DIVISION 5 - SUBGRADE, BASES AND SHOULDERS	
560.01	Method of Shoulder Construction - High Side of Superelevated Curve - Method I
DIVISION 8 - INCIDENTALS	
815.03	Pipe Underdrain and Blind Drain
862.01	Guardrail Placement
862.02	Guardrail Installation
862.03	Structure Anchor Units
876.02	Guide for Rip Rap at Pipe Outlets

SYTIME\$DGN

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	
Property Corner	
Property Monument	
Parcel/Sequence Number	
Existing Fence Line	
Proposed Woven Wire Fence	
Proposed Chain Link Fence	
Proposed Barbed Wire Fence	
Existing Wetland Boundary	
Proposed Wetland Boundary	
Existing Endangered Animal Boundary	
Existing Endangered Plant Boundary	

BUILDINGS AND OTHER CULTURE:

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

HYDROLOGY:

Stream or Body of Water	
Hydro, Pool or Reservoir	
Jurisdictional Stream	
Buffer Zone 1	
Buffer Zone 2	
Flow Arrow	
Disappearing Stream	
Spring	
Swamp Marsh	
Proposed Lateral, Tail, Head Ditch	
False Sump	
Proposed Modified Concrete Flume (MCF)	

RAILROADS:

Standard Gauge	
RR Signal Milepost	
Switch	
RR Abandoned	
RR Dismantled	

RIGHT OF WAY:

Baseline Control Point	
Existing Right of Way Marker	
Existing Right of Way Line	
Proposed Right of Way Line	
Proposed Right of Way Line with Iron Pin and Cap Marker	
Proposed Right of Way Line with Concrete or Granite Marker	
Existing Control of Access	
Proposed Control of Access	
Existing Easement Line	
Proposed Temporary Construction Easement	
Proposed Temporary Drainage Easement	
Proposed Permanent Drainage Easement	
Proposed Permanent Utility Easement	

ROADS AND RELATED FEATURES:

Existing Edge of Pavement	
Existing Curb	
Proposed Slope Stakes Cut	
Proposed Slope Stakes Fill	
Proposed Wheel Chair Ramp	
Proposed Wheel Chair Ramp Curb Cut	
Curb Cut for Future Wheel Chair Ramp	
Existing Metal Guardrail	
Proposed Guardrail	
Existing Cable Guiderail	
Proposed Cable Guiderail	
Equality Symbol	
Pavement Removal	

VEGETATION:

Single Tree	
Single Shrub	
Hedge	
Woods Line	
Orchard	
Vineyard	

EXISTING STRUCTURES:

MAJOR:	
Bridge, Tunnel or Box Culvert	
Bridge Wing Wall, Head Wall and End Wall	
MINOR:	
Head and End Wall	
Pipe Culvert	
Footbridge	
Drainage Box: Catch Basin, DI or JB	
Paved Ditch Gutter	
Storm Sewer Manhole	
Storm Sewer	

UTILITIES:

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

TELEPHONE:

Existing Telephone Pole	
Proposed Telephone Pole	
Telephone Manhole	
Telephone Booth	
Telephone Pedestal	
Telephone Cell Tower	
U/G Telephone Cable Hand Hole	
Recorded U/G Telephone Cable	
Designated U/G Telephone Cable (S.U.E.*)	
Recorded U/G Telephone Conduit	
Designated U/G Telephone Conduit (S.U.E.*)	
Recorded U/G Fiber Optics Cable	
Designated U/G Fiber Optics Cable (S.U.E.*)	

WATER:

Water Manhole	
Water Meter	
Water Valve	
Water Hydrant	
Recorded U/G Water Line	
Designated U/G Water Line (S.U.E.*)	
Above Ground Water Line	

TV:

TV Satellite Dish	
TV Pedestal	
TV Tower	
U/G TV Cable Hand Hole	
Recorded U/G TV Cable	
Designated U/G TV Cable (S.U.E.*)	
Recorded U/G Fiber Optic Cable	
Designated U/G Fiber Optic Cable (S.U.E.*)	

GAS:

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

SANITARY SEWER:

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

MISCELLANEOUS:

Utility Pole	
Utility Pole with Base	
Utility Located Object	
Utility Traffic Signal Box	
Utility Unknown U/G Line	
U/G Tank; Water, Gas, Oil	
A/G Tank; Water, Gas, Oil	
U/G Test Hole (S.U.E.*)	
Abandoned According to Utility Records	
End of Information	

SURVEY CONTROL SHEET BD-5114R

BL	POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
1		-BL - 1	697579.9940	843063.9150	2666.78	10+55.24	13.47 LT
2		-BL - 2	697803.2750	843072.1430	2661.72	12+75.67	36.40 LT
3		-BL - 3	698063.8010	843153.3380	2664.41	15+43.74	12.90 LT

```
BM1          ELEVATION = 2661.72
N 697803     E 843072
BL STATION 7+23.00 0 RIGHT
30" REBAR WITH ALUMINUM CAP
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
```

NCDOT BASELINE MONUMENT (B-5114R BL-1)
 LOCALIZED PROJECT COORDINATES
 N=697,579.9940
 E=843,063.9150
 ELEV.=2,666.78'

NCDOT BASELINE MONUMENT (B-5114R BL-2)
 LOCALIZED PROJECT COORDINATES
 N=697,803.2750
 E=843,072.1430 BM1=2,661.72'
 ELEV.=2,661.72'

NCDOT BASELINE MONUMENT (B-5114R BL-3)
LOCALIZED PROJECT COORDINATES
N=698,063.8010
E=843,153.3380
ELEV.=2,664.41'

BEGIN TIP PROJECT BD-5114R
-L- STA. 10+00.00

FINAL -L-			
TYPE	STATION	NORTH	EAST
POT	10-00.00	697524.2488	843077.8898
PC	10-20.00	697544.2387	843077.2529
PT	11-13.62	697637.5466	843083.0241
PC	14-17.00	697937.2671	843129.9778
PT	15-51.99	698066.2121	843168.5106
POT	15-58.84	698072.4449	843171.3363

FINAL ROW MARKER IRON PIN AND CAP-E				
ALIGN	STATION	OFFSET	NORTH	EAST
L	10+00.00	-9.50	697523.9463	843068.3946
L	10+50.00	-25.00	697574.9378	843052.2073
L	11+50.00	-30.00	697678.1285	843059.0157
L	12+00.00	-23.43	697726.5091	843073.2451
L	13+11.75	-35.00	697838.7033	843079.1101
L	14+17.00	-35.00	697942.6851	843095.3997
L	14+17.00	-30.00	697941.9103	843100.3393
L	15+51.99	-30.00	698078.5919	843141.1841
L	15+55.00	-9.50	698072.8761	843161.1002
L	15+55.00	9.50	698065.0355	843178.4070
L	15+51.99	35.00	698051.7690	843200.3916
L	14+17.00	35.00	697931.8511	843164.5562
L	12+13.38	35.00	697730.6847	843133.0418
L	10+00.00	9.50	697524.5514	843087.3850

[illegible]

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT
IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY
NCGS FOR MONUMENT "430213-2"
WITH NAD 83/NSRS 2007 STATE PLANE GRID COORDINATES OF
NORTHING: 697803.275(±) EASTING: 843072.143(±)
ELEVATION: 2661.72(±)
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT
(GROUND TO GRID) IS: 0.999768806
THE N.C. LAMBERT GRID BEARING AND
LOCALIZED HORIZONTAL GRID DISTANCE FROM
"430213-2" TO -L- STATION 10+00.00 IS
S 01°10'47.6" E 279.09
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NAVD 88

NOTES:

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

THE FILES TO BE FOUND ARE AS FOLLOWS:
TIP BD-5114R LS CONTROL.TXT

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

 INDICATES GEODETIC CONTROL MONUMENTS USED OR SET FOR HORIZONTAL PROJECT CONTROL BY THE NCDOT LOCATION AND SURVEYS UNIT.

PROJECT CONTROL ESTABLISHED USING GLOBAL POSITIONING SYSTEM.

GEOIDAL MODEL – G09NC
NOTE: DRAWING NOT TO SCALE

8/17/99

8/17/99

PROJECT REFERENCE NO.
BD-5/14R

SHEET NO.
2

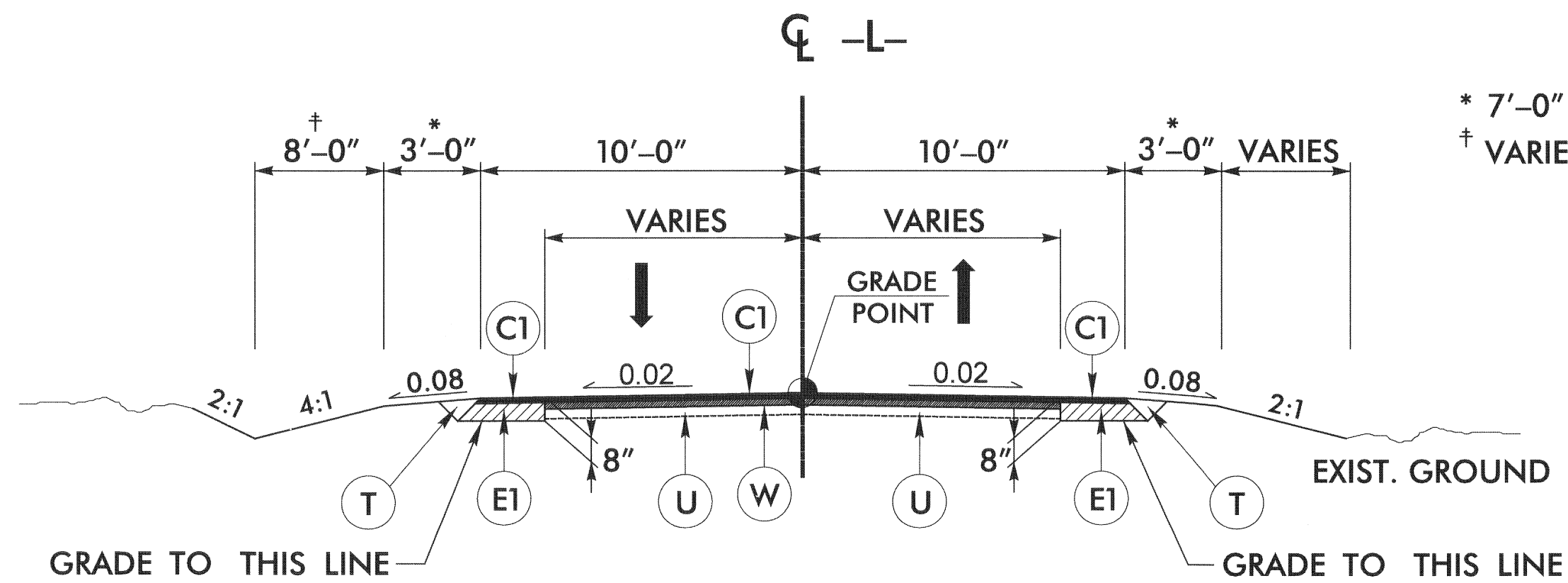
RW SHEET NO.

ROADWAY DESIGN
ENGINEER

HYDRAULICS
ENGINEER

12/6/12

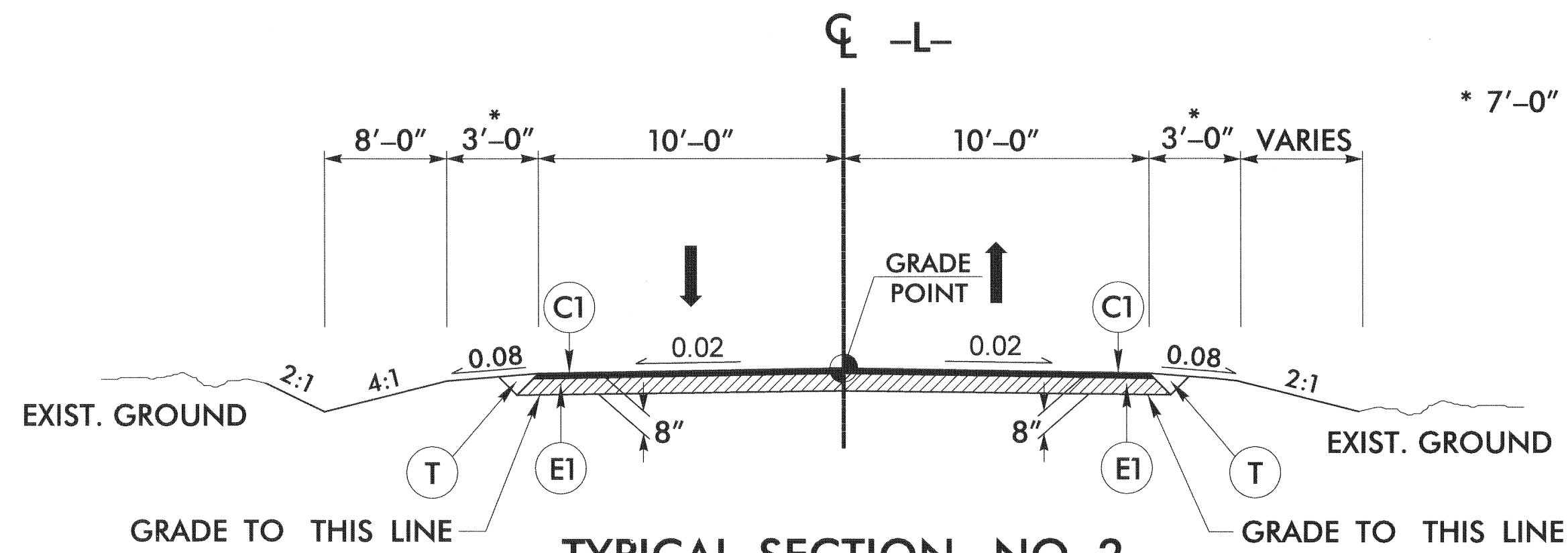
12/6/12



TYPICAL SECTION NO. 1

USE TYPICAL SECTION NO. 1

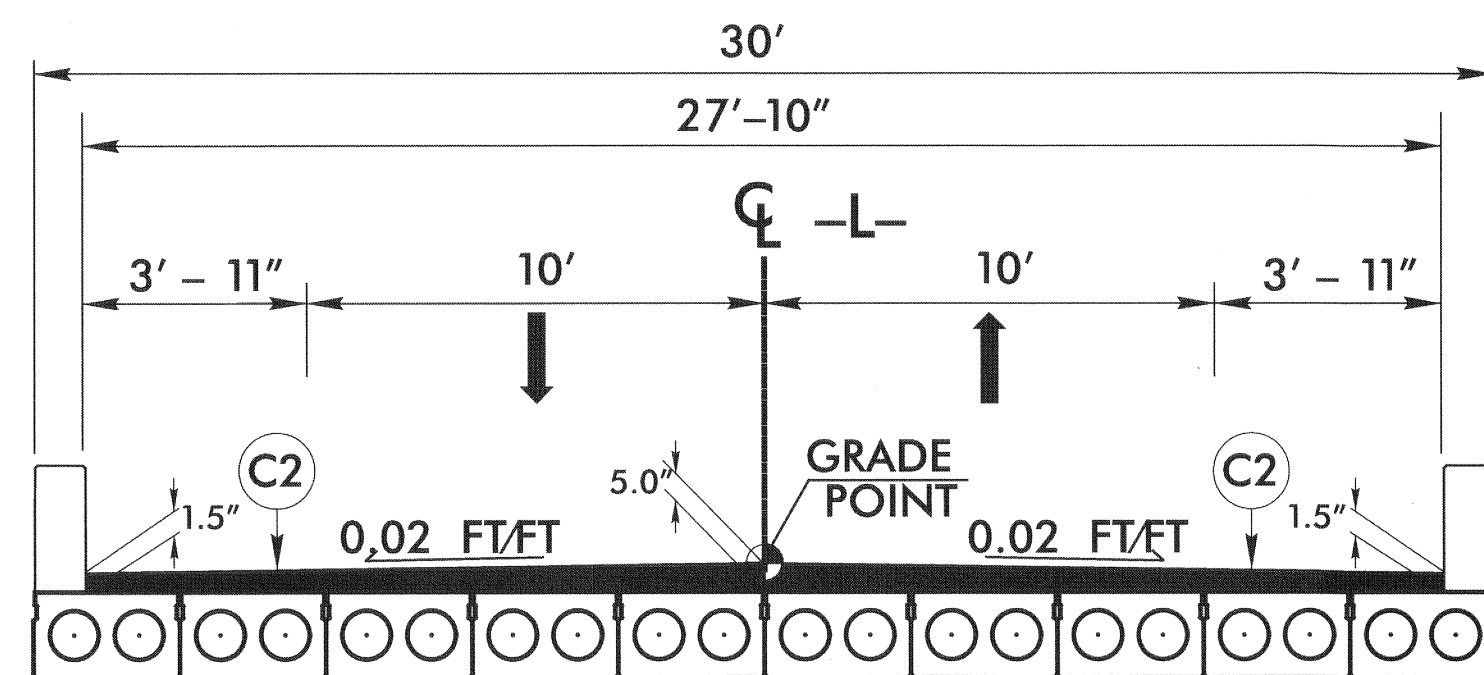
-L- STA. 10+00.00 (BEGIN PROJECT) TO STA. 11+60.93 (END WEDGING)
-L- STA. 14+51.64 (BEGIN WEDGING) TO STA. 15+55.00 (END PROJECT)



TYPICAL SECTION NO. 2

USE TYPICAL SECTION NO. 2

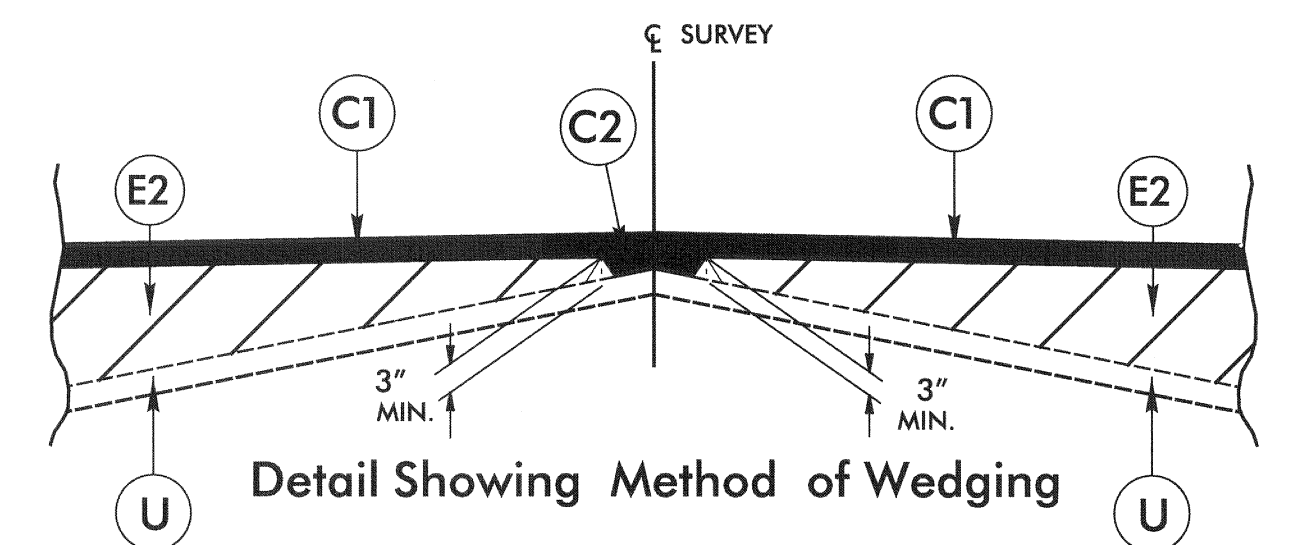
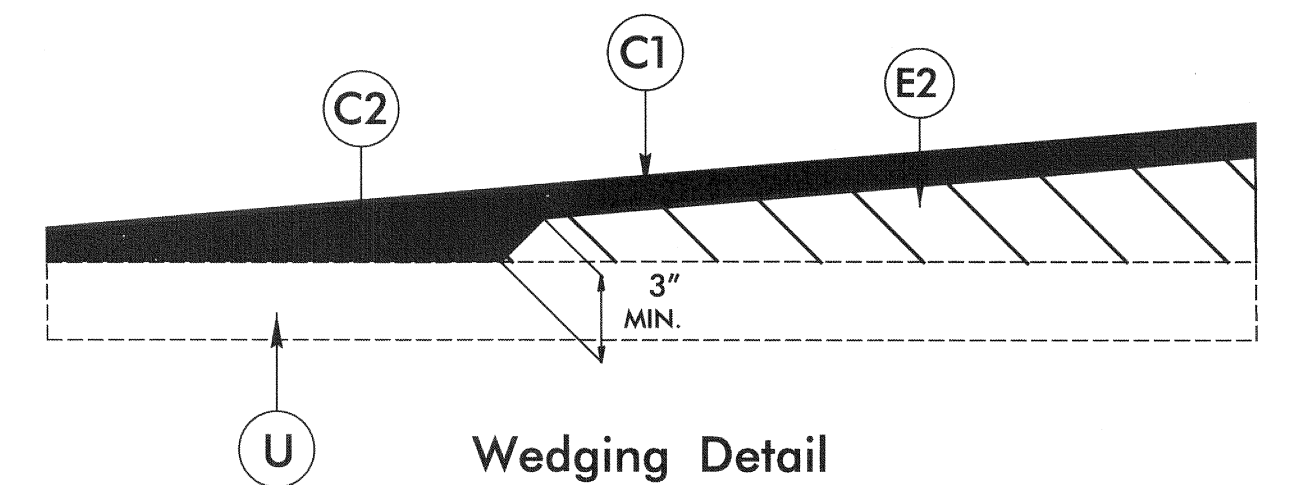
-L- STA. 11+60.93 (BEGIN FULL DEPTH) TO 12+81.61 (BEGIN BRIDGE)
-L- STA. 13+23.86 (END BRIDGE) TO STA. 14+51.64 (END FULL DEPTH)



TYPICAL SECTION NO. 3

USE TYPICAL SECTION NO. 3

-L- STA. 12+81.61 (BEGIN BRIDGE) TO STA. 13+23.86 (END BRIDGE)

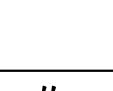


PAVEMENT SCHEDULE	
C1	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C2	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT TO EXCEED 1 1/2" IN DEPTH.
E1	PROP. APPROX. 5" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 570 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.
T	EARTH MATERIAL
U	EXISTING PAVEMENT
W	PROPOSED WEDGING (SEE APPROPRIATE DETAILS)

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



PLAN VIEW



RIP-RAP LINED DITCH

- CONSTRUCT MODIFIED CONCRETE FLUME AND SHOULDER BERM GUTTER IN ACCORDANCE WITH THIS DETAIL.
- CONSTRUCT CONCRETE DITCH IN ACCORDANCE WITH STD. DWG. NO. 850.01.
- CONSTRUCT RIP RAP LINED DITCH IN ACCORDANCE WITH THIS DETAIL, IF CALLED FOR IN PLANS.
- CONCRETE OR RIP RAP LINED DITCH SHALL BE THE TYPE AND LENGTH SPECIFIED BY THE ROADWAY PLANS. THE DITCH SHALL TERMINATE AS SHOWN ON THE PLANS. IF NO TERMINATION IS INDICATED PLACE RIP-RAP AT THE END OF THE DITCH AS INDICATED BY STD. DWG. 876.02 FOR AN 18" PIPE. TRANSITIONS FROM THE DITCH TO TERMINATION SHALL BE AS DIRECTED BY THE ENGINEER.
- MODIFICATIONS SHALL BE AS DICTATED BY SITE CONDITIONS AND DIRECTED BY THE ENGINEER.

MODIFIED CONCRETE FLUME

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
SUMMARY OF QUANTITIES

Line Item	Sec No.	Quantity	Unit	Description
0000100000-N	800	1	LS	Mobilization
0000400000-N	801	1	LS	Construction Surveying
0030000000-N	SP	1	LS	Reinforced Bridge Approach Fill - Sub Regional Tier
0043000000-N	226	1	LS	Grading
0057000000-E	226	50	CY	Undercut Excavation
0134000000-E	240	70	CY	Drainage Ditch Excavation
0195000000-E	265	50	CY	Select Granular Material
0196000000-E	270	50	SY	Geotextile for Soil Stabilization
0199000000-E	SP	55	SF	Temp Shoring
0318000000-E	300	20	Tons	Foundation Conditioning Material, Minor Strs
0320000000-E	300	60	SY	Foundation Conditioning Geotextile
0343000000-E	310	116	LF	15" Side Drain Pipe
0372000000-E	310	52	LF	18" RCP Class III
1099700000-E	505	50	Tons	Class IV Subgrade Stabilization
1121000000-E	520	70	Tons	Aggregate Base Coarse
1220000000-E	545	100	Tons	Incidental Stone Base
1489000000-E	610	260	Tons	Asphalt Conc Base Course Type B25.0B
1519000000-E	610	270	Tons	Asphalt Conc Surface Course Type S9.5B
1575000000-E	620	30	Tons	Asphalt Binder for Plant Mix
2570000000-N	SP	2	EA	Modified Concrete Flume
3030000000-E	862	100	LF	Steel BM Guardrail
3150000000-N	862	5	EA	Additional Guardrail Posts
3165000000-N	SP	4	EA	Guardrail Anchor Units, TYPE 350 TL-2
3215000000-N	862	4	EA	Guardrail Anchor Units, TYPE III
3380000000-E	862	50	LF	Temporary Steel Beam Guardrail
3389000000-N	SP	2	EA	Guardrail Anchor Unit, TL-2 Temporary
3580000000-E	867	150	LF	Fence Reset
3635000000-E	876	60	Tons	Rip Rap, Class II
3649000000-E	876	6	Tons	Rip Rap, Class B
3656000000-E	876	91	SY	Geotextile for Drainage
4410000000-E	1110	20	SF	Work Zone Signs (Barricade Mounted)
4430000000-N	1130	47	EA	Drums
4445000000-E	1145	32	LF	Barricades (Type III)
4450000000-N	1150	32	HR	Flagger (By Hour)
4465000000-N	1160	2	EA	Temporary Crash Cushions
4485000000-E	1170	50	LF	Portable Concrete Barrier
4810000000-E	1205	5,000	LF	Paint Pavement Marking Lines (4")
4850000000-E	1205	655	LF	Removal of Paint Pavement Marking Lines (4")
6000000000-E	1605	435	LF	Temporary Silt Fence
6009000000-E	1610	35	Tons	Erosion Control Stone, Class B
6012000000-E	1610	15	Tons	Sediment Control Stone
6015000000-E	1615	0.5	Acres	Temporary Mulching
6018000000-E	1620	50	Lbs	Seed For Temp. Seeding
6021000000-E	1620	0.25	Tons	Fertilizer For Temp. Seeding
6030000000-E	1630	50	CY	Silt Excavation
6036000000-E	1631	630	SY	Matting For Erosion Control
6042000000-E	1632	30	LF	1/4" Hardware Cloth
6071010000-E	SP	100	LF	Wattle
6071020000-E	SP	10	Lbs	Polyacrylamide (PAM)
6084000000-E	1660	0.3	Acres	Seeding and Mulching
6090000000-E	1661	50	Lbs	Seed For Repair Seeding
6093000000-E	1661	0.25	Tons	Fertilizer For Repair Seeding
6096000000-E	1662	50	Lbs	Seed For Supplemental Seeding
6108000000-E	1665	0.5	Tons	Fertilizer Topdressing
6123000000-E	1670	0.10	Acres	Reforestation
				STRUCTURAL ITEMS
8035000000-N	402	1.0	LS	Removal of Existing Structure
8121000000-E	412	1.0	LS	Unclassified Structure Excavation
8182000000-E	420	26.4	CY	Class A Concrete (Bridge)
8210000000-N	422	1.0	LS	Bridge Approach Slabs
8217000000-E	425	3,946.0	LBS	Reinforcing Steel (Bridge)
8365000000-E	450	150.0	LF	HP12X53 Steel Piles
8505000000-E	460	80.25	LF	Vertical Concrete Barrier Rail
8608000000-E	876	110.0	Tons	Rip Rap Class II (2'-0" Thick)
8622000000-E	876	123.0	SY	Geotextile For Drainage
8657000000-N	430	1.0	LS	Elastomeric Bearings
8762000000-E	430	400.0	LF	3'-0" X 1'-9" Prestressed Concrete Cored Slabs

PAVEMENT REMOVAL SUMMARY

PARCEL NO.	PROPERTY OWNERS NAMES	TOTAL ACREAGE	AREA TAKEN (sf)	AREA REMAINING RT. (Acre)	AREA REMAINING LT. (Acre)	CONST. EASE. (sf)	PERM. DRAIN. EASE. (sf)	TEMP. DRAIN. EASE. (sf)		IN SQUARE YARDS					
										LINE	LOCATION	ASPHALT REMOVAL	ASPHALT BREAK-UP	CONCRETE REMOVAL	CONCRETE REMOVAL
1	ARROWOOD ACRES LLC	20.992	2134		20.943										
2	BENNETT BEST	5.234	9408	4.485	.533					-L-	10 + 85 TO 12 + 85	228			
3	ROCK SPRINGS BAPTIST CHURCH	2.459	609		2.445	261				-L-	13 + 10 TO 15 + 55	284			
4	KENNETH W. BEST	2.833	9234	2.621											
5	RANDY & BEVERLY BEST	1.124	1873		1.081	43									
											TOTAL	512			
											SAY	520			

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".

***SUB-REGIONAL & REGIONAL
LIST OF PIPES, ENDWALLS, ETC. (FOR PIPES 48" & UNDER)***

[illegible]

"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

GUARDRAIL SUMMARY

[illegible]

```

$$$$SYTIME$$$$
$$$$$$$$DCN$$$$
$$$$USERNAME$$$$

```

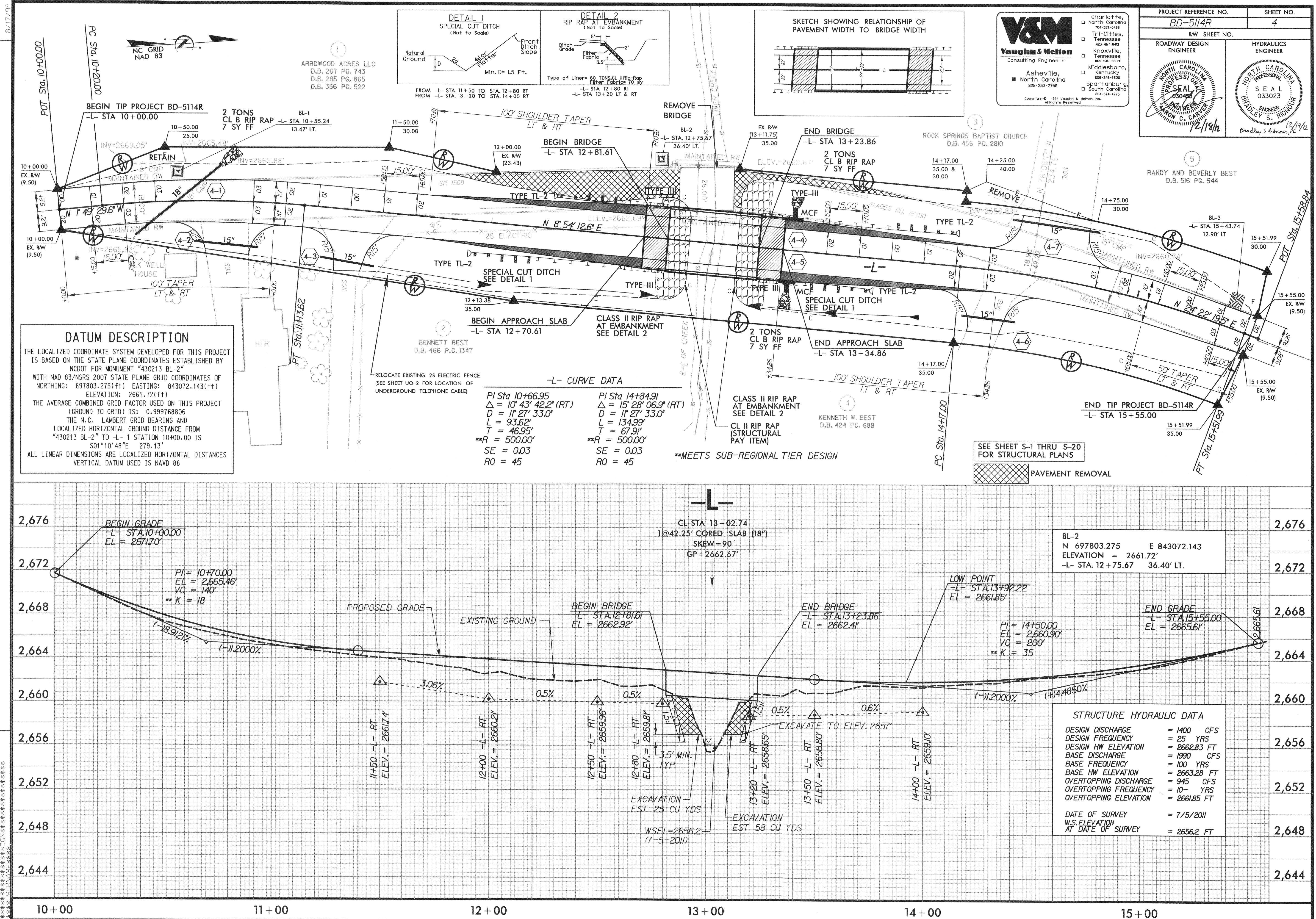

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

SUMMARY OF EARTHWORK
IN CUBIC YARDS

LOCATION	UNCLASSIFIED EXCAVATION	UNDERCUT	EMBT + %	BORROW	WASTE
SUMMARY NO.1					
-L- STA. 10 + 00.00 TO STA. 12 + 81.61 (BEG. BRIDGE)	101		156	55	
SUBTOTAL SUMMARY NO.1	101		156	55	
SUMMARY NO.2					
-L- STA. 13 + 23.86 (END BRIDGE) TO STA. 15 + 55.00	181		70		111
SUBTOTAL SUMMARY NO.2	181		70		111
PROJECT SUBTOTAL	282		226	55	111
WASTE IN LIEU OF BORROW				-55	-55
GRAND TOTAL	282		226		56
SAY	290				60
DDE=70 CY					
CLEARING AND GRUBBING=0.3 ACRES					

CONTINGENCY ITEMS:
INCIDENTAL STONE = 100 TONS
UNDERCUT EXCAVATION = 50 TONS
SELECT GRANULAR MATERIAL = 50 CY
CLASS IV SUBGRADE STABILIZATION = 50 TONS
GEOTEXTILE FOR SOIL STABILIZATION = 50 SY

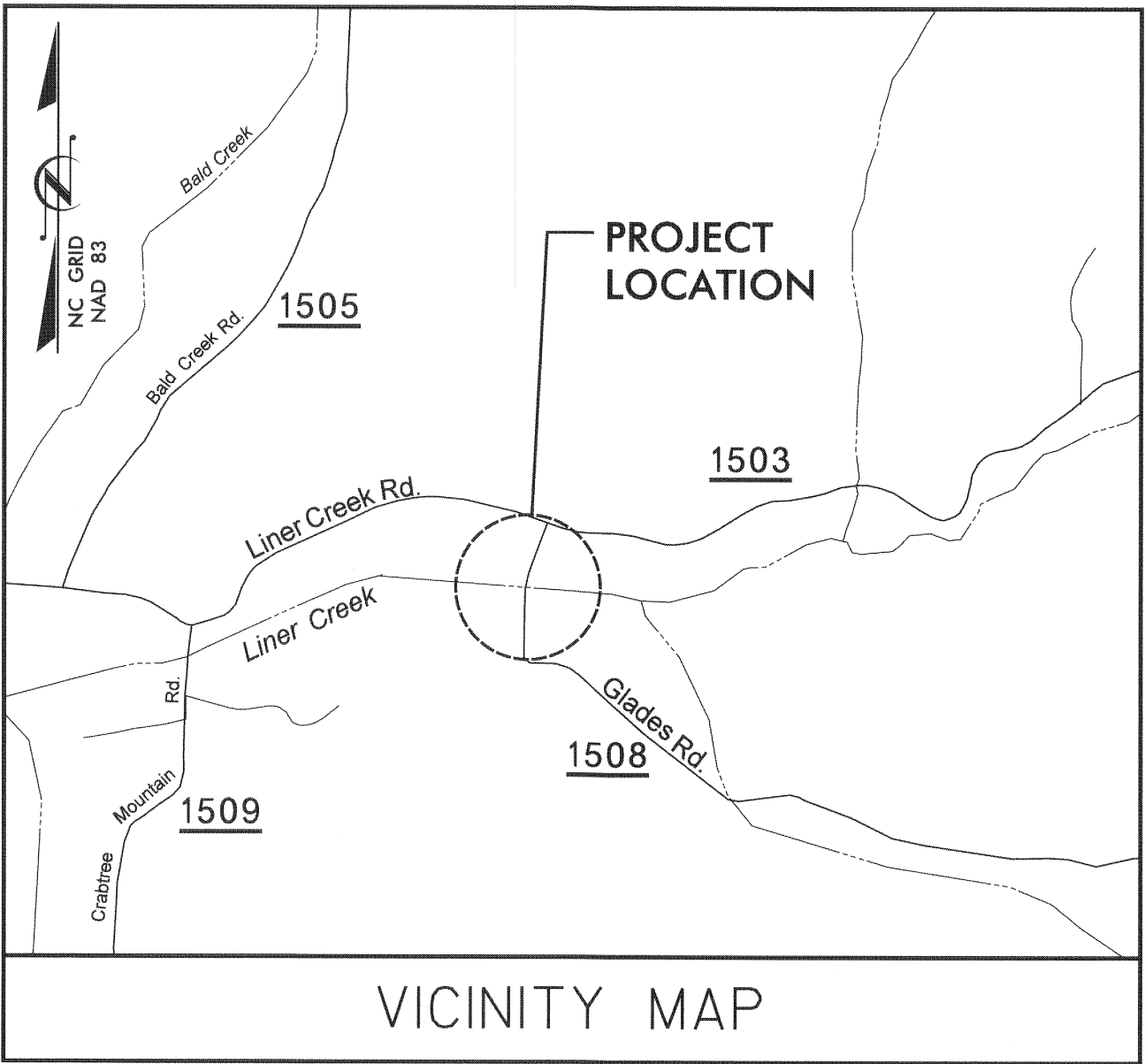
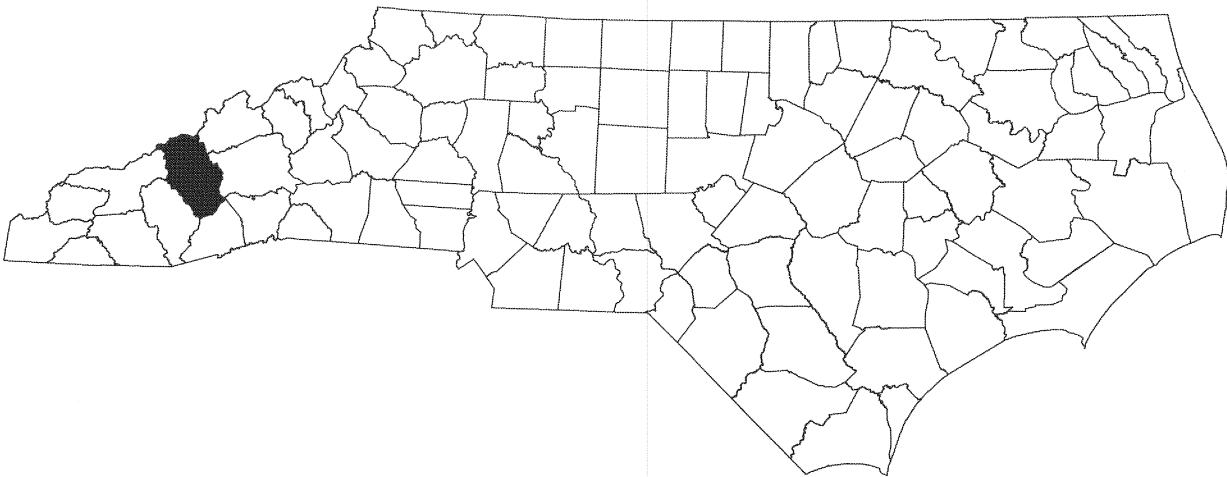
Approximate quantities only. Unclassified excavation, borrow excavation, fine grading, clearing and grubbing, and removal of existing pavement will be paid for at the contract lump sum price for "grading".



STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

TRANSPORTATION MANAGEMENT PLAN

HAYWOOD COUNTY
DIVISION 14



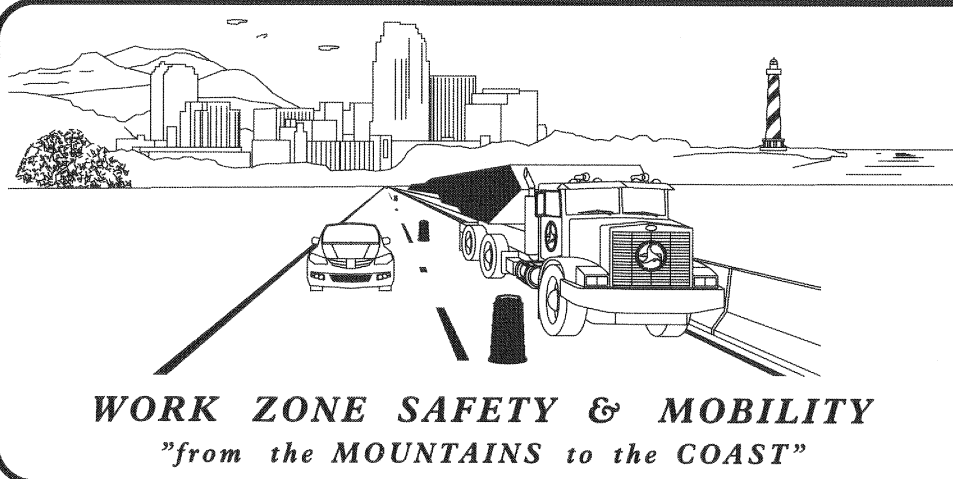
LOCATION: BRIDGE NO. 213 OVER LINER CREEK
ON SR 1508 (GLADES RD.)

INDEX OF SHEETS

SHEET NO.	TITLE
TMP-1	TITLE SHEET, AND INDEX OF SHEETS
TMP-1A	LIST OF APPLICABLE ROADWAY STANDARD DRAWINGS, LEGEND, AND TEMPORARY PAVEMENT MARKING
TMP-1B	TRANSPORTATION OPERATIONS PLAN: (MANAGEMENT STRATEGIES, GENERAL NOTES AND LOCAL NOTES)
TMP-2	PORTABLE CONCRETE BARRIER AT TEMPORARY SHORING LOCATIONS
TMP-3	TEMPORARY TRAFFIC CONTROL PHASING
TMP-4	TEMPORARY TRAFFIC CONTROL PHASE I DETAIL
TMP-5	TEMPORARY TRAFFIC CONTROL PHASE II DETAIL
TMP-6	PERMANENT TRAFFIC MARKING PLAN

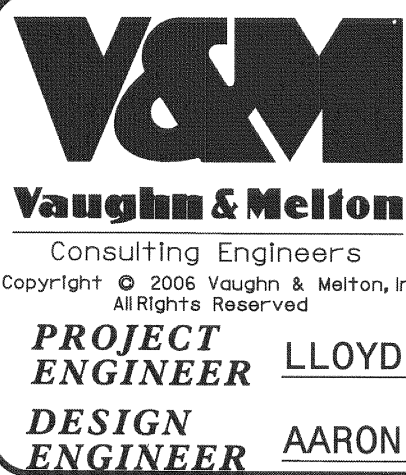
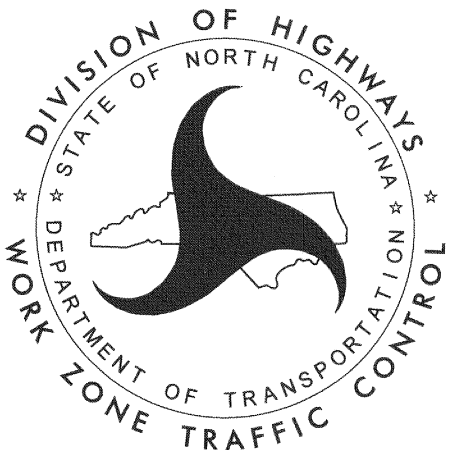
SHEET NO.
TMP-1

TIP PROJECT: BD-5114R



N.C.D.O.T. WORK ZONE TRAFFIC CONTROL
1580 MAIL SERVICE CENTER (MSC) RALEIGH, NC 27699-1580
1020 BIRCH RIDGE DRIVE, RALEIGH, NC 27610 (DELIVERY)
PHONE: (919) 250-4094 FAX: (919) 250-4098

J. S. BOURNE, P.E. STATE TRAFFIC MANAGEMENT ENGINEER
LLOYD D. BROWN, P.E. TRAFFIC CONTROL PROJECT ENGINEER
AARON CARVER, P.E. TRAFFIC CONTROL PROJECT DESIGN ENGINEER
AARON CARVER, P.E. TRAFFIC CONTROL DESIGN ENGINEER



Asheville, North Carolina
828-253-2796
Charlotte, North Carolina
704-357-0488

APPROVED: [Signature]
DATE: December 6, 2012

SEAL



PROJECT ENGINEER LLOYD D. BROWN, P.E.
DESIGN ENGINEER AARON CARVER, P.E.

\$\$\$\$\$SYTIME\$\$\$\$\$
\$\$\$\$\$CDN\$\$\$\$\$
\$\$\$\$\$USERNA\$\$\$\$\$

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 ADVANCE WARNING SIGNS
1101.02	TEMPORARY LANE CLOSURES
1101.03	TEMPORARY ROAD CLOSURES
1101.04	TEMPORARY SHOULDER CLOSURES
1101.05	WORK ZONE VEHICLE ACCESSES
1101.11	TRAFFIC CONTROL DESIGN TABLES
1110.01	STATIONARY WORK ZONE SIGNS
1110.02	PORTABLE WORK ZONE SIGNS
1115.01	FLASHING ARROW PANELS
1130.01	DRUMS
1135.01	CONES
1145.01	BARRICADES
1150.01	FLAGGING DEVICES
1160.01	TEMPORARY CRASH CUSHION
1165.01	TRUCK MOUNTED IMPACT ATTENUATOR
1170.01	PORTABLE CONCRETE BARRIER
1180.01	SKINNY-DRUM
1205.01	PAVEMENT MARKINGS - LINE TYPES & OFFSETS
1205.04	PAVEMENT MARKINGS - INTERSECTIONS
1205.12	PAVEMENT MARKINGS - BRIDGES
1261.01	GUARDRAIL & BARRIER DELINEATOR SPACING
1261.02	GUARDRAIL & BARRIER DELINEATOR TYPES
1262.01	GUARDRAIL END DELINEATION

PROJ. REFERENCE NO.	SHEET NO.
BD-5114R	TMP-1A

LEGEND

GENERAL

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

- WORK AREA
- TEMPORARY PAVEMENT

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
- PORTABLE TRAFFIC SIGNAL

PAVEMENT MARKINGS

- EXISTING LINES
- TEMPORARY LINES

PAVEMENT MARKERS

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

PAVEMENT MARKING SYMBOLS

- PAVEMENT MARKING SYMBOLS

TEMPORARY PAVEMENT MARKING SCHEDULE

SYMBOL	DESCRIPTION	FT
	PAINT (4")	
(PA)	WHITE EDGE LINE	1110
(PI)	YELLOW DOUBLE CENTER	555

PERMANENT PAVEMENT MARKING SCHEDULE

SYMBOL	DESCRIPTION	FT
	PAINT (4")	
(PA)	WHITE EDGE LINE	2220
(PI)	YELLOW DOUBLE CENTER	1110

Vaughn & Melton
Consulting Engineers

Charlotte,
North Carolina
704-357-0488

Tri-Cities,
Tennessee
423-467-8401

Knoxville,
Tennessee
865-546-5800

Asheville,
North Carolina
828-253-2796

Middlesboro,
Kentucky
606-248-6600

Spartanburg,
South Carolina
864-574-4775

Copyright © 2006 Vaughn & Melton, Inc.
All Rights Reserved

APPROVED: DATE: 12/4/12

SEAL

DIVISION OF HIGHWAYS

STATE OF NORTH CAROLINA

DEPARTMENT OF TRANSPORTATION

WORK ZONE TRAFFIC CONTROL

ROADWAY STANDARD
DRAWINGS & LEGEND

GENERAL NOTES / LOCAL NOTES

PROJ. REFERENCE NO.	SHEET NO.
BD-5114R	TMP-1B

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.

LANE AND SHOULDER CLOSURE REQUIREMENTS

- A) REMOVE LANE CLOSURE DEVICES FROM THE LANE WHEN WORK IS NOT BEING PERFORMED BEHIND THE LANE CLOSURE OR WHEN A LANE CLOSURE IS NO LONGER NEEDED OR AS DIRECTED BY THE ENGINEER.
- B) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN 15 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN SHOULDER USING ROADWAY STANDARD DRAWING NO. 1101.04 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL OR A LANE CLOSURE IS INSTALLED.
- C) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING ON THE SHOULDER ADJACENT TO AN UNDIVIDED FACILITY AND WITHIN 5 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN TRAVEL LANE USING ROADWAY STANDARD DRAWING NO. 1101.02 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL.
- WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING ON THE SHOULDER ADJACENT TO A DIVIDED FACILITY AND WITHIN 10 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN TRAVEL LANE USING ROADWAY STANDARD DRAWING NO. 1101.02 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL.
- D) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN A LANE OF TRAVEL OF AN UNDIVIDED OR DIVIDED FACILITY, CLOSE THE LANE ACCORDING TO THE TRANSPORTATION MANAGEMENT PLANS, ROADWAY STANDARD DRAWINGS, OR AS DIRECTED BY THE ENGINEER. CONDUCT THE WORK SO THAT ALL PERSONNEL AND/OR EQUIPMENT REMAIN WITHIN THE CLOSED TRAVEL LANE.
- E) DO NOT WORK SIMULTANEOUSLY WITHIN 15 FT ON BOTH SIDES OF AN OPEN TRAVELWAY, RAMP, OR LOOP WITHIN THE SAME LOCATION UNLESS PROTECTED WITH GUARDRAIL OR BARRIER.

PAVEMENT EDGE DROP OFF REQUIREMENTS

- F) BACKFILL AT A 6:1 SLOPE UP TO THE EDGE AND ELEVATION OF EXISTING PAVEMENT IN AREAS ADJACENT TO AN OPENED TRAVEL LANE THAT HAS AN EDGE OF PAVEMENT DROP-OFF AS FOLLOWS:
- BACKFILL DROP-OFFS THAT EXCEED 2 INCHES ON ROADWAYS WITH POSTED SPEED LIMITS OF 45 MPH OR GREATER.
- BACKFILL DROP-OFFS THAT EXCEED 3 INCHES ON ROADWAYS WITH POSTED SPEED LIMITS LESS THAN 45 MPH.
- BACKFILL WITH SUITABLE COMPACTED MATERIAL, AS APPROVED BY THE ENGINEER, AT NO EXPENSE TO THE DEPARTMENT.
- G) DO NOT EXCEED A DIFFERENCE OF 2 INCHES IN ELEVATION BETWEEN OPEN LANES OF TRAFFIC FOR NOMINAL LIFTS OF 1.5 INCHES. INSTALL ADVANCE WARNING "UNEVEN LANES" SIGNS (W8-11) 100 FT IN ADVANCE AND A MINIMUM OF EVERY HALF MILE THROUGHOUT THE UNEVEN AREA.

TRAFFIC PATTERN ALTERATIONS

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

SIGNING

- I) 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.
- J) ENSURE ALL NECESSARY SIGNING IS IN PLACE PRIOR TO ALTERING ANY TRAFFIC PATTERN.
- K) INSTALL BLACK ON ORANGE "DIP" SIGNS (W8-2) AND/OR "BUMP" SIGNS (W8-1) 100 FT IN ADVANCE OF THE UNEVEN AREA, OR AS DIRECTED BY THE ENGINEER.

TRAFFIC BARRIER

- L) INSTALL TEMPORARY CONCRETE BARRIER ACCORDING TO THE TRANSPORTATION MANAGEMENT PLANS A MAXIMUM OF TWO (2) WEEKS PRIOR TO BEGINNING WORK IN ANY LOCATION. ONCE TEMPORARY BARRIER IS INSTALLED AT ANY LOCATION PROCEED IN A CONTINUOUS MANNER TO COMPLETE THE PROPOSED WORK IN THAT LOCATION UNLESS OTHERWISE STATED IN THE TRANSPORTATION MANAGEMENT PLANS OR AS DIRECTED BY THE ENGINEER.

DO NOT PLACE BARRIER DIRECTLY ON ANY SURFACE OTHER THAN ASPHALT OR CONCRETE.

ONCE TEMPORARY BARRIER IS INSTALLED AT ANY LOCATION AND NO WORK IS PERFORMED BEHIND THE TEMPORARY BARRIER FOR A PERIOD LONGER THAN TWO (2) MONTHS, REMOVE / RESET TEMPORARY BARRIER AT NO COST TO THE DEPARTMENT UNLESS OTHERWISE STATED IN THE TRANSPORTATION MANAGEMENT PLANS, TEMPORARY BARRIER IS PROTECTING A HAZARD, OR AS DIRECTED BY THE ENGINEER.

INSTALL TEMPORARY BARRIER WITH THE TRAFFIC FLOW BEGINNING WITH THE UPSTREAM SIDE OF TRAFFIC. REMOVE TEMPORARY BARRIER AGAINST THE TRAFFIC FLOW BEGINNING WITH THE DOWNSTREAM SIDE OF TRAFFIC.

INSTALL AND SPACE DRUMS NO GREATER THAN TWICE THE POSTED SPEED LIMIT (MPH) TO CLOSE OR KEEP THE SECTION OF THE ROADWAY CLOSED UNTIL THE TEMPORARY BARRIER CAN BE PLACED OR AFTER THE TEMPORARY BARRIER IS REMOVED.

- M) PROTECT THE APPROACH END OF TEMPORARY CONCRETE BARRIER AT ALL TIMES DURING THE INSTALLATION AND REMOVAL OF THE BARRIER BY EITHER A TRUCK MOUNTED ATTENUATOR (MAXIMUM 72 HOURS) OR A TEMPORARY CRASH CUSHION.

PROTECT THE APPROACH END OF TEMPORARY CONCRETE BARRIER FROM ONCOMING TRAFFIC AT ALL TIMES BY A TEMPORARY CRASH CUSHION UNLESS THE APPROACH END OF TEMPORARY CONCRETE BARRIER IS OFFSET FROM ONCOMING TRAFFIC AS FOLLOWS OR AS SHOWN IN THE PLANS: (SEE ALSO ROADWAY STANDARD DRAWING 1101.05)

POSTED SPEED LIMIT	MINIMUM OFFSET
40 OR LESS	15 FT
45 - 50	20 FT
55	25 FT
60 MPH or HIGHER	30 FT

TRAFFIC CONTROL DEVICES

- N) SPACE CHANNELIZING DEVICES IN WORK AREAS NO GREATER IN FEET THAN TWICE THE POSTED SPEED LIMIT (MPH), EXCEPT 10 FT ON-CENTER IN RADII, AND 3 FT OFF THE EDGE OF AN OPEN TRAVELWAY WHEN LANE CLOSURES ARE NOT IN EFFECT . REFER TO STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES SECTIONS 1130 (DRUMS), 1135 (CONES) AND 1180 (SKINNY DRUMS) FOR ADDITIONAL REQUIREMENTS.
- O) PLACE TYPE III BARRICADES, WITH "ROAD CLOSED" SIGN R11-2 ATTACHED, OF SUFFICIENT LENGTH TO CLOSE ENTIRE ROADWAY.

PAVEMENT MARKINGS AND MARKERS

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

ROAD NAME	MARKING	MARKER
GLADES RD.	PAINT	NONE

- Q) PLACE ONE APPLICATION OF PAINT FOR TEMPORARY TRAFFIC PATTERNS. PLACE A SECOND APPLICATION OF PAINT SIX (6) MONTHS AFTER THE INITIAL APPLICATION AND EVERY SIX MONTHS AS DIRECTED BY THE ENGINEER.
- R) TIE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING LINES.
- S) REMOVE/REPLACE ANY CONFLICTING/DAMAGED PAVEMENT MARKINGS AND MARKERS BY THE END OF EACH DAY'S OPERATION.

MISCELLANEOUS

- T) IN THE EVENT A TIE-IN CANNOT BE MADE IN ONE DAY'S TIME, BRING THE TIE-IN AREA TO AN APPROPRIATE ROADWAY ELEVATION AS DETERMINED BY THE ENGINEER. PLACE BLACK ON ORANGE "LOOSE GRAVEL" SIGNS (W8-7) AND BLACK ON ORANGE "PAVEMENT ENDS" SIGNS (W8-3) 100 ft AND 200 FT RESPECTIVELY IN ADVANCE OF THE UNEVEN AREAS. USE DRUMS TO DELINEATE THE EDGE OF ROADWAY ALONG UNPAVED AREAS.

MANAGEMENT STRATEGIES

TRAFFIC WILL BE MAINTAINED ON EXISTING ROAD AS NEW ALIGNMENT IS CONSTRUCTED. A FLAGGING OPERATION WILL BE USED TO CONSTRUCT THE NEW TIE-INS AND TRAFFIC WILL BE SHIFTED ON TO THE NEW ROADWAY.



V&M
Vaughn & Melton
Consulting Engineers

Charlotte,
North Carolina
704-357-0488

Tri-Cities,
Tennessee
423-467-8401

Knoxville,
Tennessee
865-546-5800

Middlesboro,
Kentucky
606-248-6600

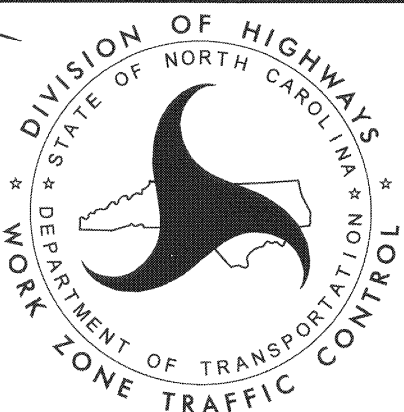
Spartanburg,
South Carolina
864-574-4775

Asheville,
North Carolina
828-253-2796

Copyright © 2006 Vaughn & Melton, Inc.
All Rights Reserved

APPROVED: [Signature] DATE: 12/1/2019

SEAL



TRANSPORTATION OPERATIONS
PLAN
(MANAGEMENT STRATEGIES & GENERAL NOTES)

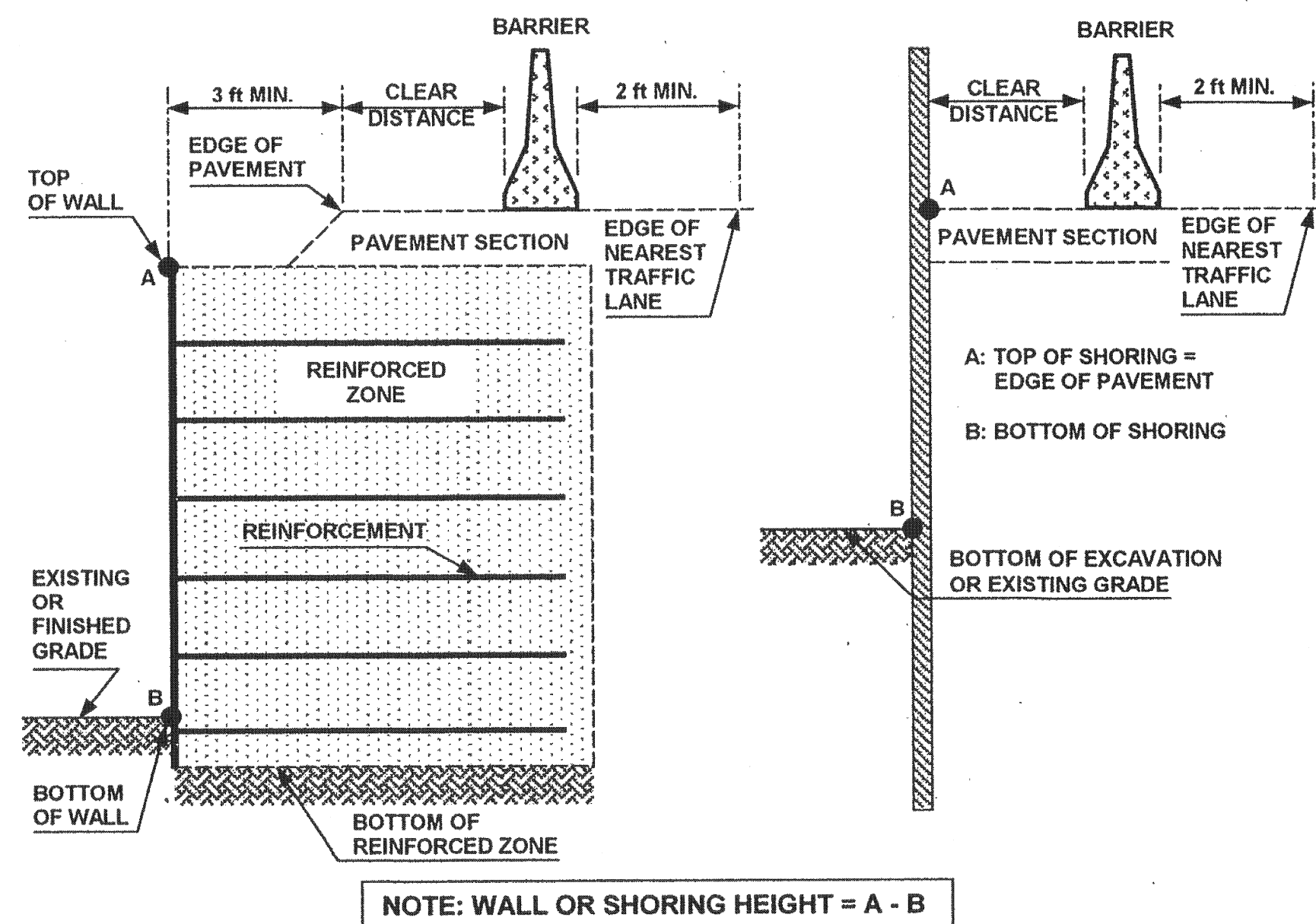


FIGURE A

NOTES

- 1- REFER TO THE TRAFFIC CONTROL PLANS FOR SHORING LOCATIONS AND SOIL PARAMETERS.
- 2- REFER TO THE "TEMPORARY SHORING" PROJECT SPECIAL PROVISION FOR MORE INFORMATION ABOUT TEMPORARY SHORING, MEASUREMENT AND PAYMENT.
- 3- PROVIDE PORTABLE CONCRETE BARRIER TO PROTECT TEMPORARY SHORING IF SHORING IS LOCATED WITHIN THE CLEAR ZONE AS DEFINED IN THE AASHTO ROADSIDE DESIGN GUIDE. DO NOT PLACE BARRIER DIRECTLY ON ANY SURFACE OTHER THAN ASPHALT OR CONCRETE. (CONTACT NCDOT PAVEMENT MANAGEMENT UNIT FOR APPLICABLE PAVEMENT DESIGN).
- 4- BASED ON THE CLEAR DISTANCE, OFFSET, DESIGN SPEED AND PAVEMENT TYPE, CHOOSE AN UNANCHORED PCB, ANCHORED PCB OR AN OREGON BARRIER FROM THE TABLE SHOWN IN FIGURE B. FOR TRAFFIC LANES AND PORTABLE CONCRETE BARRIER LOCATED ABOVE AND BEHIND TEMPORARY SHORING, THE FOLLOWING ARE DEFINED AS:

CLEAR DISTANCE - HORIZONTAL DISTANCE FROM THE BACK FACE OF THE BARRIER TO THE EDGE OF PAVEMENT FOR TEMPORARY MSE WALL OR TO THE FACE OF NON-ANCHORED TEMPORARY SHORING AS SHOWN IN FIGURE A.

OFFSET - HORIZONTAL DISTANCE FROM THE FRONT FACE OF THE BARRIER TO CENTERLINE OF THE FURTHEST TRAFFIC LANE AS SHOWN IN FIGURE B FOR 3 TRAFFIC LANES.
- 5- AT THE CONTRACTOR'S OPTION OR IF THE MINIMUM REQUIRED CLEAR DISTANCE IS NOT AVAILABLE, SET AN UNANCHORED PCB AGAINST THE TRAFFIC SIDE OF THE SHORING AND DESIGN SHORING FOR TRAFFIC IMPACT OR USE THE "SURCHARGE CASE WITH TRAFFIC IMPACT" FOR THE STANDARD TEMPORARY SHORING. DO NOT PLACE BARRIER DIRECTLY ON ANY SURFACE OTHER THAN ASPHALT OR CONCRETE. (CONTACT NCDOT PAVEMENT MANAGEMENT UNIT FOR APPLICABLE PAVEMENT DESIGN).
- 6- USE NCDOT PORTABLE CONCRETE BARRIER (PCB) IN ACCORDANCE WITH ROADWAY STANDARD DRAWING NO. 1170.01 AND SECTION 1170 OF THE STANDARD SPECIFICATIONS.
- 7- USE OREGON TALL F-SHAPE CONCRETE BARRIER IN ACCORDANCE WITH DETAIL DRAWING AND SPECIAL PROVISION OBTAINED FROM: WORK ZONE TRAFFIC CONTROL UNIT WEB PAGE.
- 8- UNLESS NOTED OTHERWISE ON THE PLANS, SET PORTABLE CONCRETE BARRIER WITH A MINIMUM DISTANCE OF 2 FT BETWEEN THE FRONT FACE OF THE BARRIER AND THE EDGE OF THE NEAREST TRAFFIC LANE AS SHOWN IN FIGURE A.
- 9- FOR PORTABLE CONCRETE BARRIER ABOVE AND BEHIND TEMPORARY MSE WALLS, PROVIDE A MINIMUM DISTANCE OF 3 FT BETWEEN THE EDGE OF PAVEMENT AND THE WALL FACE AS SHOWN IN FIGURE A. IF THESE MINIMUM REQUIRED DISTANCES ARE NOT AVAILABLE, CONTACT THE ENGINEER.
- 10- TABLE SHOWN IN FIGURE B IS BASED ON NCDOT RESEARCH PROJECT NO. 2005-010 WITH VEHICLE TYPE USED FOR NCHRP 350 CRASH TESTS. BARRIER DEFLECTIONS AND RESULTING MINIMUM REQUIRED CLEAR DISTANCES MIGHT VARY SIGNIFICANTLY FOR LARGER HEAVIER VEHICLES, RUNS OF BARRIER LESS THAN 200' IN LENGTH AND WET OR DRY PAVEMENT.

MINIMUM REQUIRED CLEAR DISTANCE, inches								
Barrier Type	Pavement Type	Offset * ft	Design Speed, mph					
			<30	31-40	41-50	51-60	61-70	71-80
Unanchored PCB	Asphalt	<8	24	26	29	32	36	40
		8-14	26	28	31	35	38	42
		14-20	27	29	34	36	39	43
		20-26	28	31	35	38	40	44
		26-32	29	32	36	39	42	45
		32-38	30	34	38	41	43	46
		38-44	31	34	41	43	45	48
		44-50	31	35	41	43	46	49
		50-56	32	36	42	44	47	50
	Concrete	>56	32	36	42	45	47	51
		<8	17	18	21	22	25	26
		8-14	19	20	23	25	26	29
		14-20	22	22	24	26	28	31
		20-26	23	24	26	27	30	34
		26-32	24	25	27	28	32	35
		32-38	24	26	27	30	33	36
		38-44	25	26	28	30	34	37
		44-50	26	26	28	32	35	37
		50-56	26	26	28	32	35	38
		>56	26	27	29	32	36	38
Anchored PCB or Oregon Barrier	Asphalt	All Offsets	24 for All Design Speeds					
Anchored PCB or Oregon Barrier	Concrete (including bridge approach slabs)	All Offsets	12 for All Design Speeds					

* See Figure Below

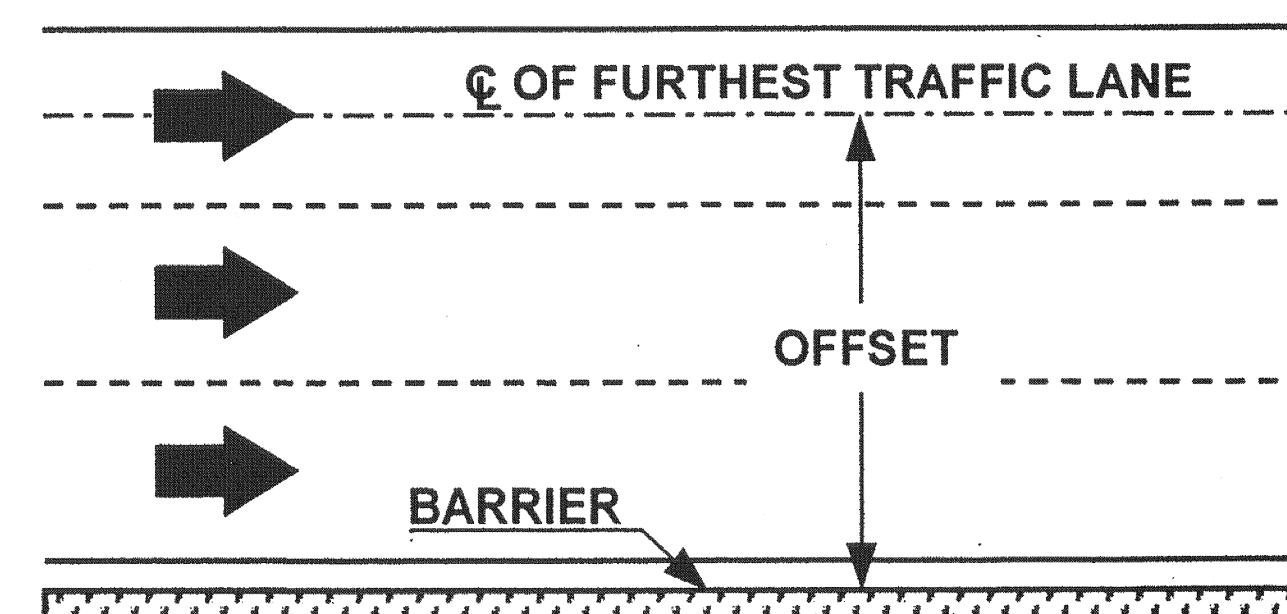


FIGURE B

APPROVED: _____ DATE: _____		PORTABLE CONCRETE BARRIER AT TEMPORARY SHORING LOCATIONS

PROJECT PHASING

NOTE: MAINTAIN TRAFFIC FOR ALL DRIVEWAYS THROUGHOUT THE PROJECT FOR THE DURATION OF THE PROJECT.

PHASE I

STEP 1:
PLACE ADVANCED WORK ZONE WARNING SIGNS PER ROADWAY STANDARD DRAWING NO. 1101.01.

STEP 2:
USING RDWY STD 1101.02 SHEET 1 OF 9 AND FLAGGERS AS NEEDED, CONSTRUCT TEMPORARY PAVEMENT AND PLACE TEMPORARY PORTABLE CONCRETE BARRIER AND CRASH CUSHIONS AS SHOWN ON TMP-4. INSTALL TEMPORARY SHORING FROM -L- STATION 12+70 TO -L- STATION 12+86 AND FROM -L- STATION 13+09 TO -L- STATION 13+40.

STEP 3:
USING RDWY STD 1101.02 SHEET 1 OF 9 AND FLAGGERS AS NEEDED, CONSTRUCT NEW ROADWAY AND BRIDGE UP TO BUT NOT INCLUDING FINAL LAYER OF SURFACE COURSE AS SHOWN ON TMP-4. INSTALL TEMPORARY GUARDRAIL LEFT SIDE FROM -L- STATION 12+53 TO -L- STATION 12+82 AND FROM -L- STATION 13+24 TO -L- STATION 13+53. -SEE TMP-4.

STEP 4:
USING RDWY STD 1101.02 SHEET 1 OF 9 AND FLAGGERS AS NEEDED, REMOVE TEMPORARY PORTABLE CONCRETE BARRIER AND CRASH CUSHIONS. USE TMIA TO PROTECT ENDS OF BRIDGE UNTIL TRAFFIC IS PLACED ONTO THE NEW BRIDGE.

PHASE II

STEP 1:
USING RDWY STD 1101.02 SHEET 1 OF 9 AND FLAGGERS AS NEEDED, CONSTRUCT TIE-IN OF NEW ROADWAY UP TO BUT NOT INCLUDING FINAL LAYER OF SURFACE COURSE AND PLACE TEMPORARY PAVEMENT MARKINGS AS SHOWN ON TMP-5. SHIFT TRAFFIC ONTO NEW ROADWAY.

STEP 2:
USING RDWY STD 1101.02 SHEET 1 OF 9 AND FLAGGERS AS NEEDED, COMPLETE DEMOLITION OF ROADWAY AND EXISTING BRIDGE AS SHOWN ON TMP-5 AND CONSTRUCTION PLANS. CONSTRUCT NEW ROADWAY AND BRIDGE, UP TO BUT NOT INCLUDING FINAL LAYER OF SURFACE COURSE, AS SHOWN ON TMP-5.

STEP 3:
USING RDWY STD 1101.02 SHEET 1 OF 9 AND FLAGGERS AS NEEDED, REMOVE TEMPORARY GUARDRAIL LEFT SIDE FROM -L- STATION 12+53 TO -L- 13+53, CONSTRUCT FINAL LAYER OF SURFACE COURSE, AND PLACE FINAL PAVEMENT MARKINGS, AS SHOWN ON TMP-6.

STEP 4:
REMOVE ALL TEMPORARY TRAFFIC CONTROL DEVICES.

V&M

Vaughn & Melton

Consulting Engineers

Asheville,
North Carolina
828-253-2796

Charlotte,
North Carolina
704-357-0488

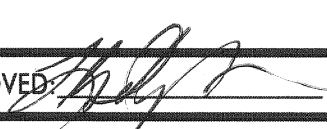
Tri-Cities,
Tennessee
423-467-8401

Knoxville,
Tennessee
865-546-5900

Middlesboro,
Kentucky
506-246-6600

Spartanburg,
South Carolina
864-574-4775

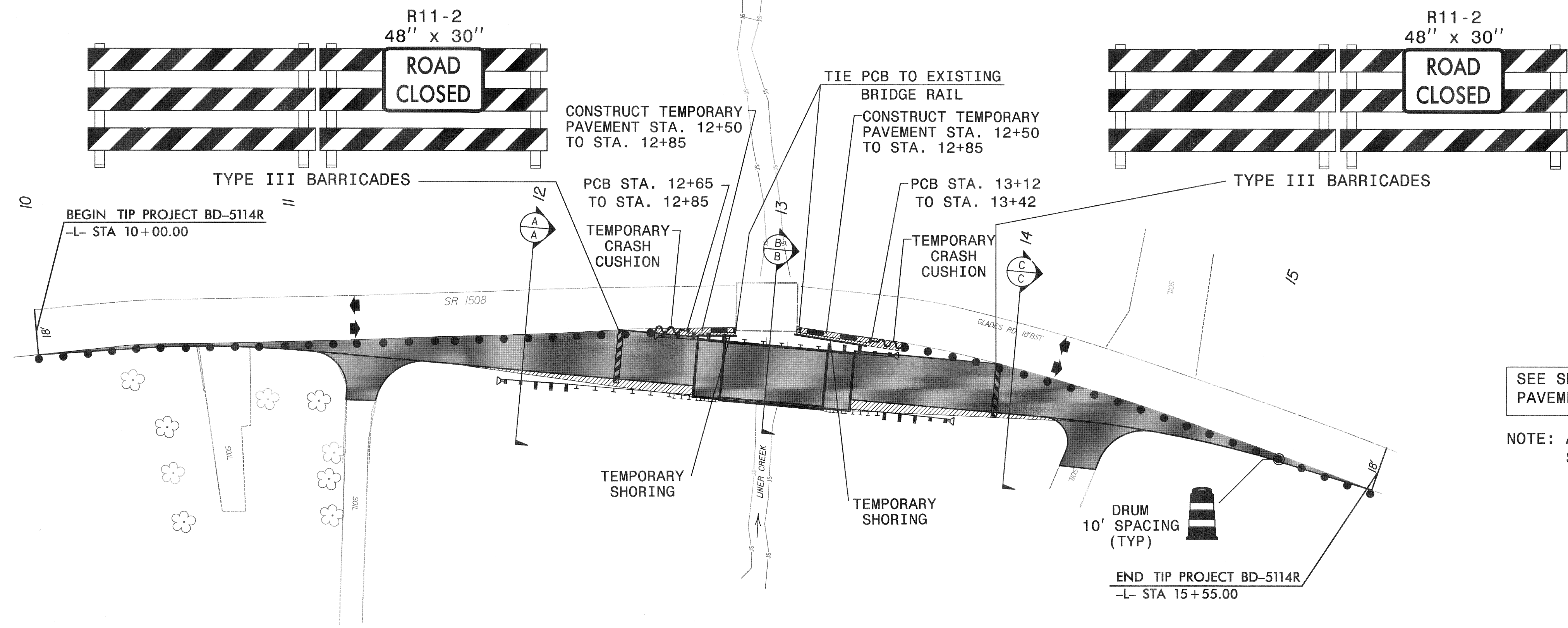
Copyright © 2006 Vaughn & Melton, Inc.
All Rights Reserved

APPROVED:  DATE: 12/6/12

SEAL

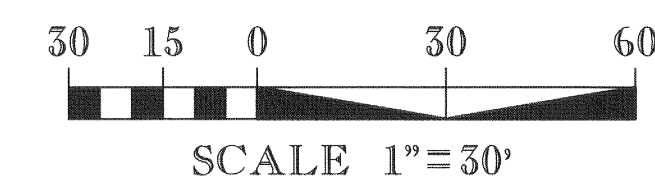


PHASING



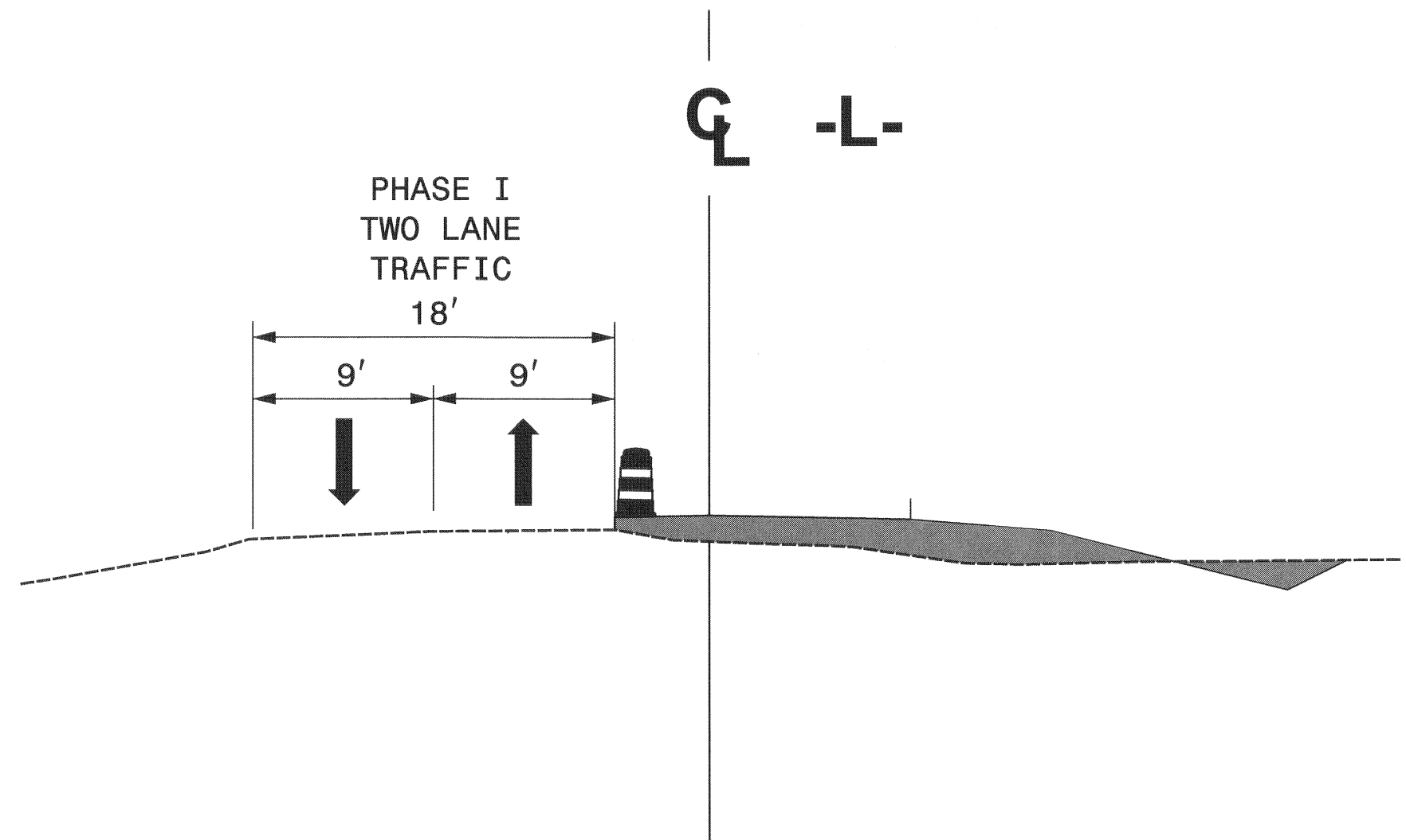
SEE SHEET TMP-1A FOR TEMPORARY PAVEMENT MARKING SCHEDULE

NOTE: ALL STATIONS AND DIMENSIONS SHOWN +/-



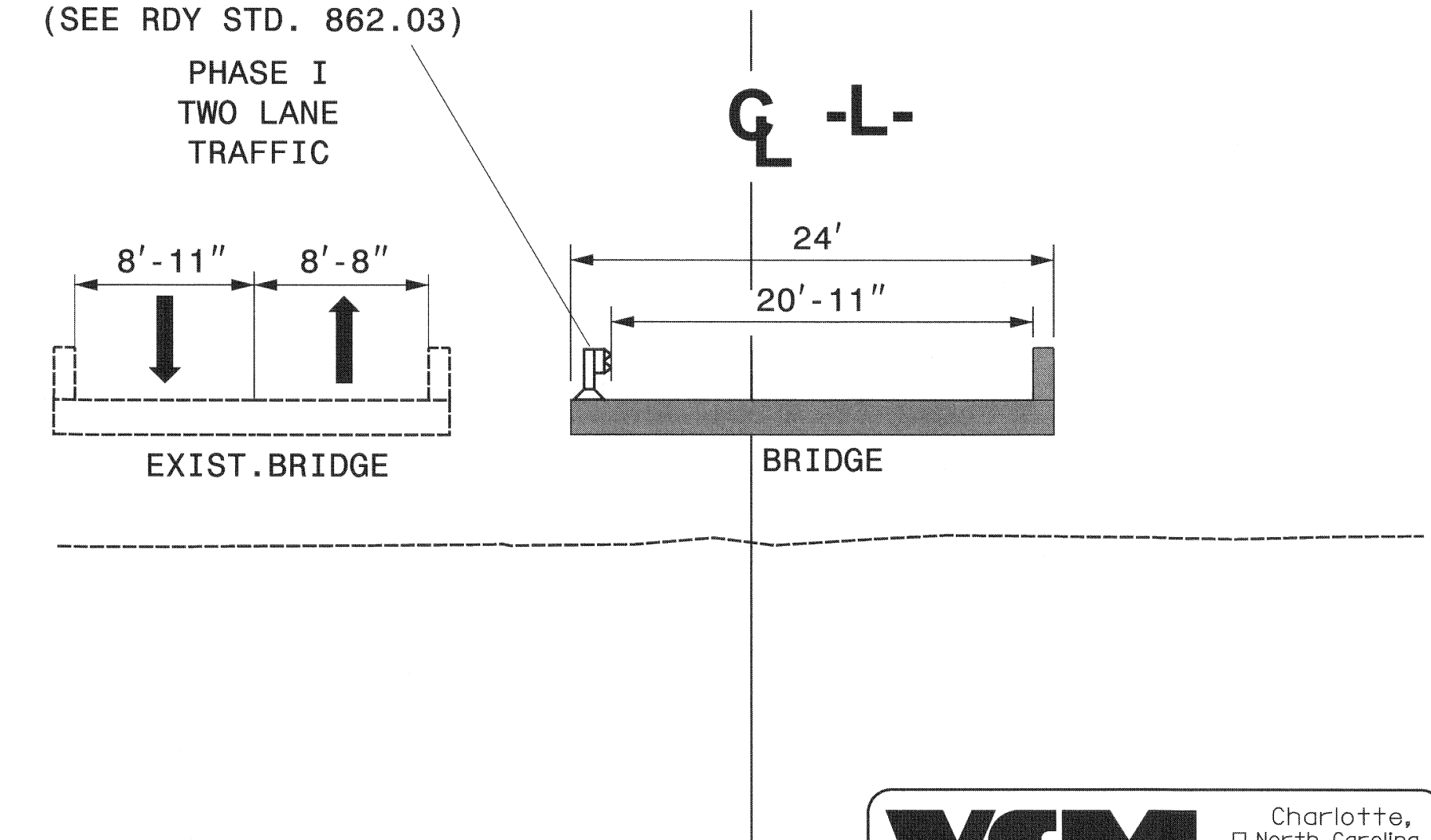
SECTION A-A

-L- STA 12+00



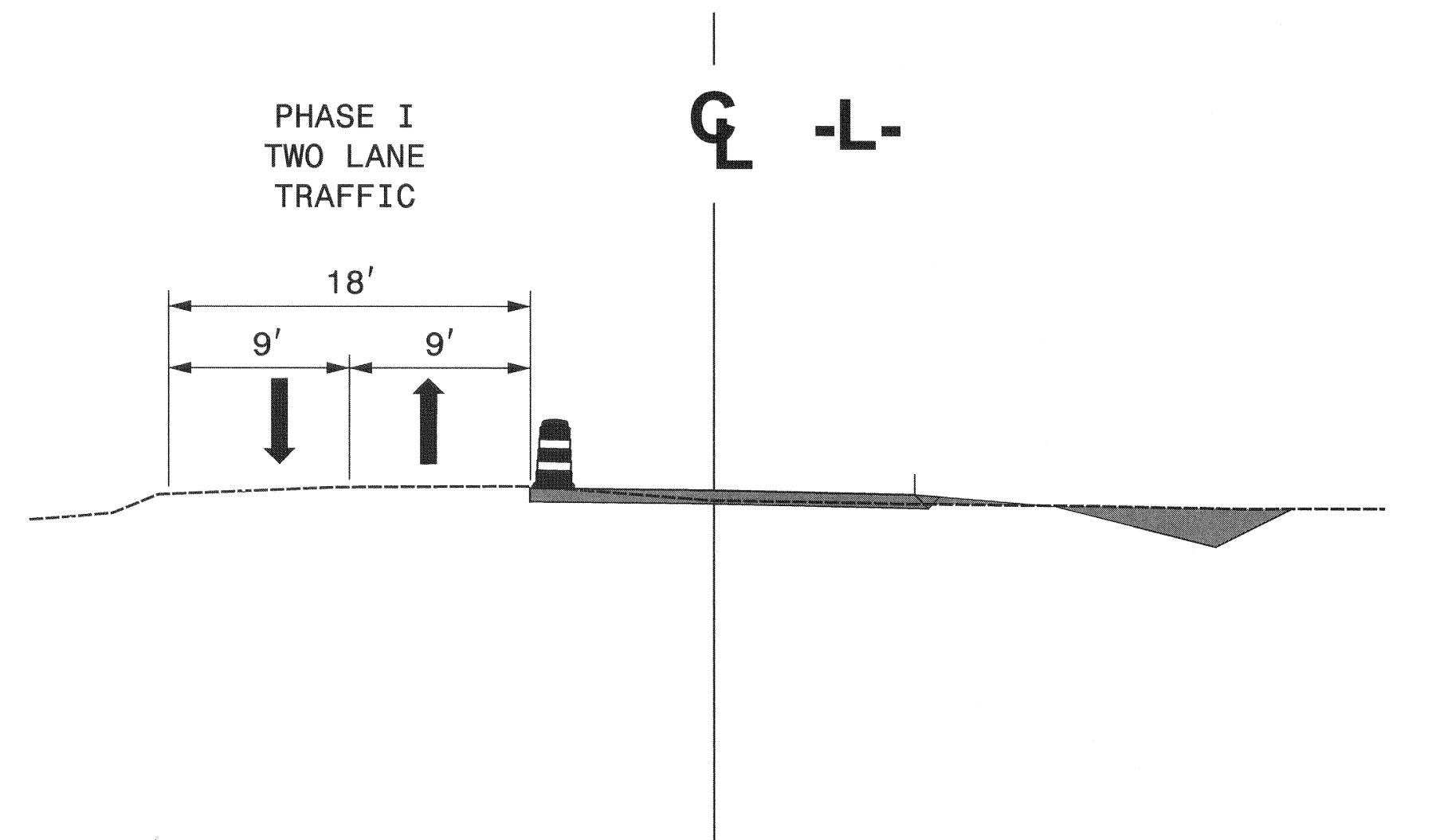
SECTION B-B

-L- STA 13+00



SECTION C-C

-L- STA 14+00



V&M
Vaughn & Melton
Consulting Engineers

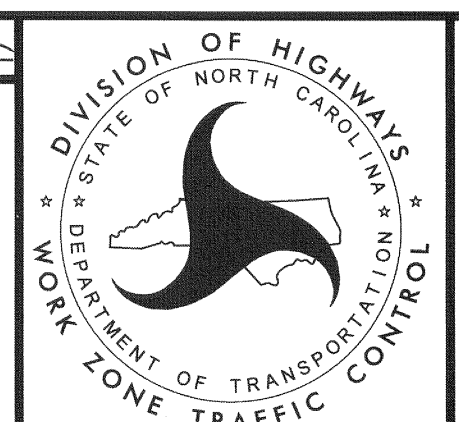
Asheville, North Carolina 828-253-2796

Charlotte, North Carolina 704-357-0488
Tri-Cities, Tennessee 423-467-8401
Knoxville, Tennessee 865-546-5800
Middlesboro, Kentucky 606-248-6600
Spartanburg, South Carolina 864-574-4775

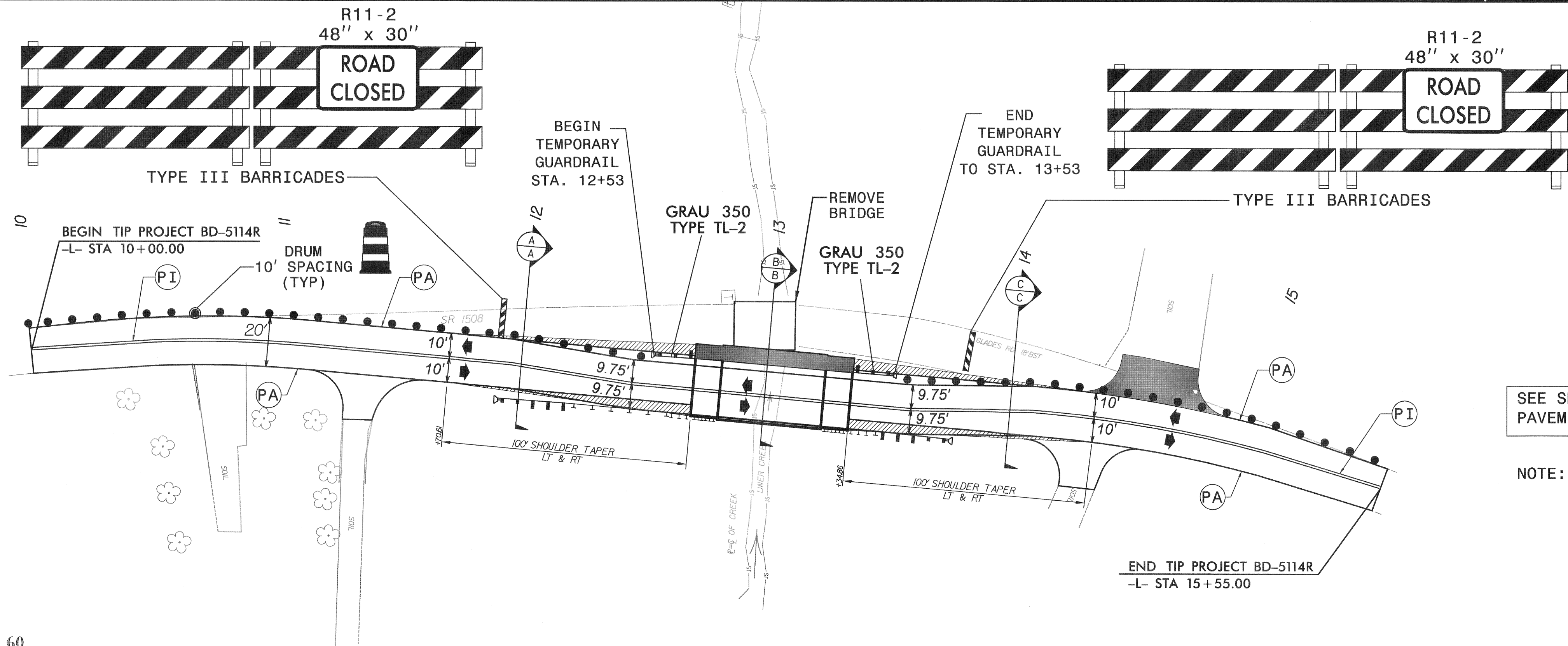
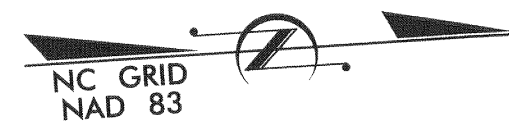
Copyright © 2006 Vaughn & Melton, Inc. All Rights Reserved

APPROVED: DATE: 12/6/19

SEAL
NORTH CAROLINA
PROFESSIONAL ENGINEER
LLOYD D. BROWN
20119

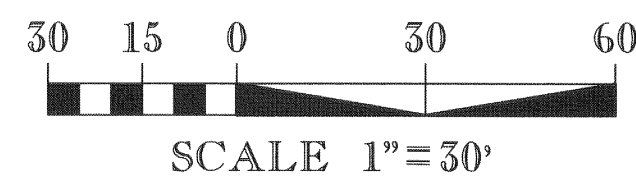


PHASE 1



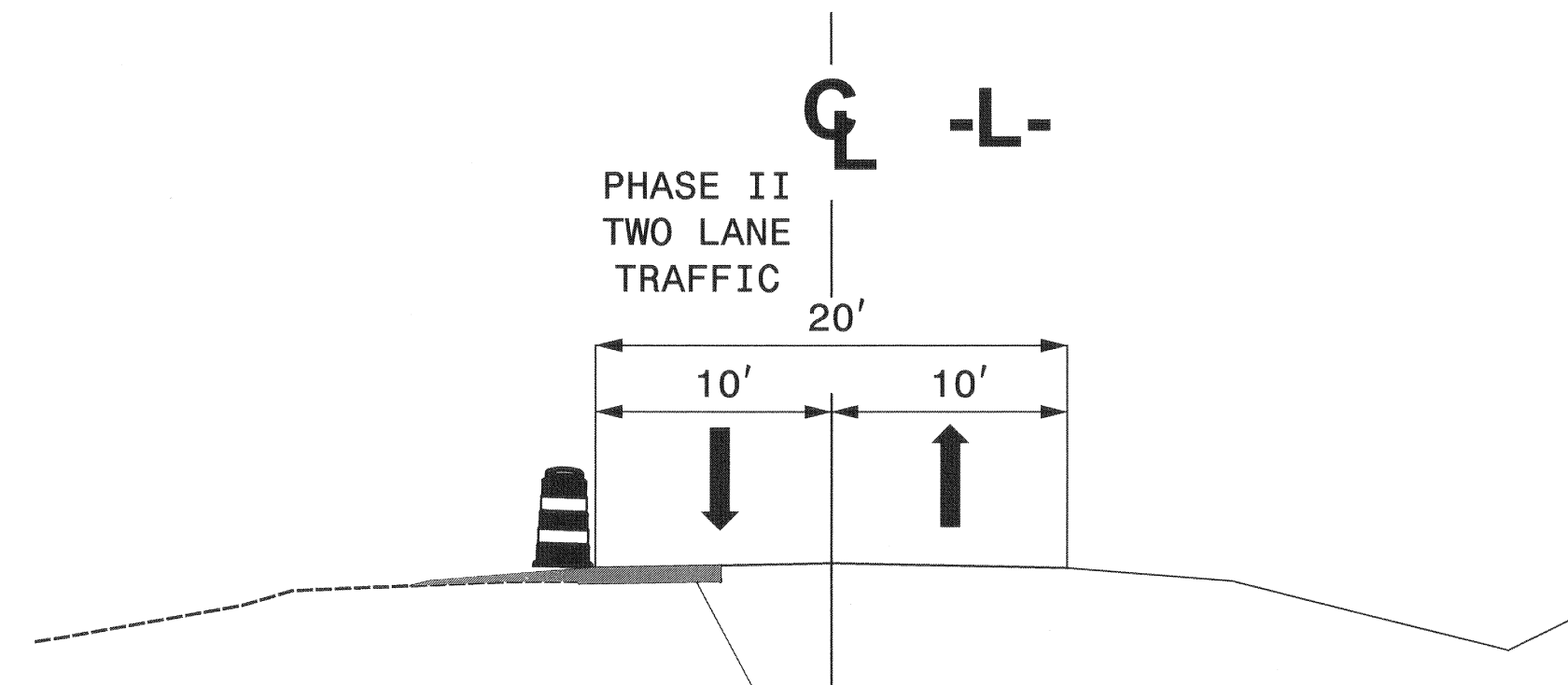
SEE SHEET TMP-1A FOR TEMPORARY PAVEMENT MARKING SCHEDULE

NOTE: ALL STATIONS AND DIMENSIONS SHOWN +/-



SECTION A-A

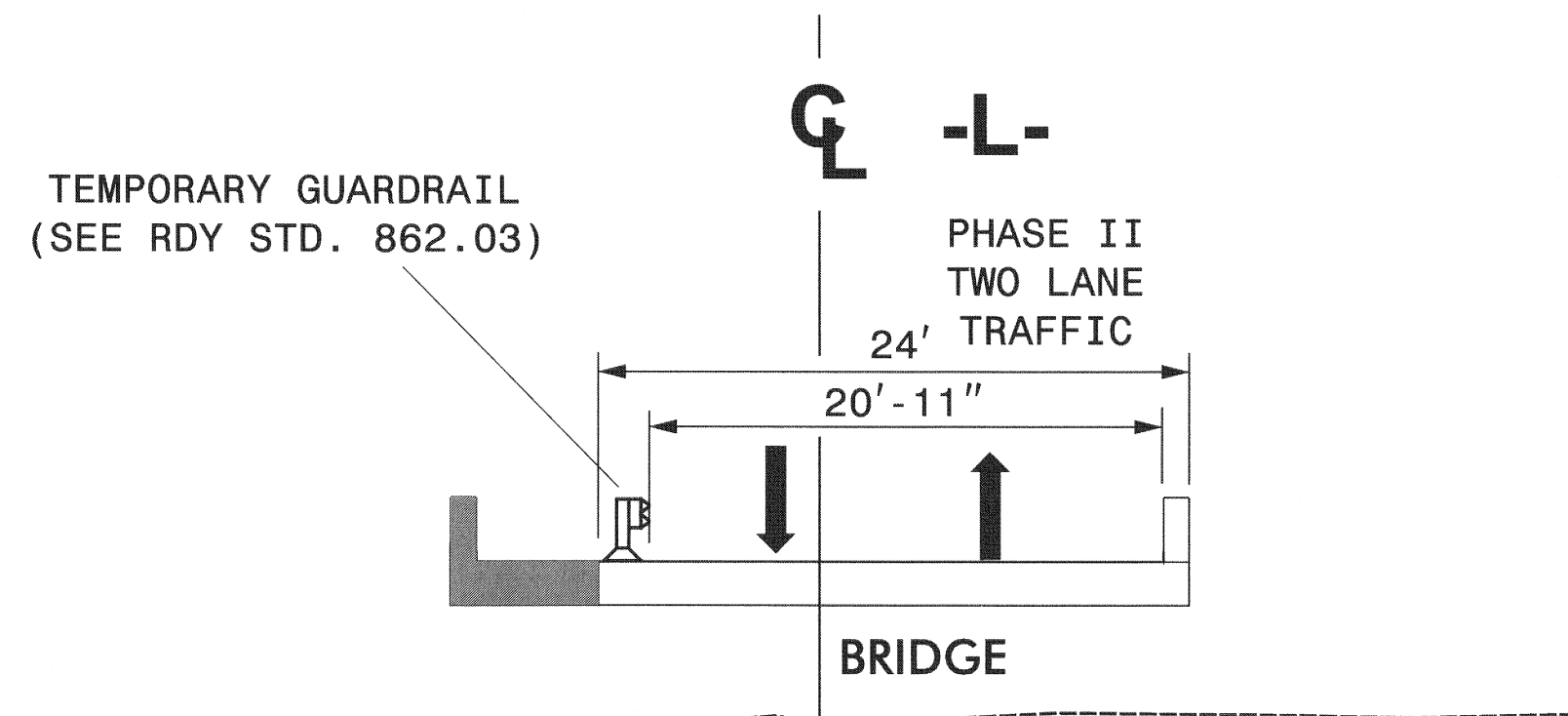
-L- STA 12+00



USING RDWY STD 1101.02 SHEET 1 OF 9 AND FLAGGERS, CONSTRUCT TIE-IN OF NEW ROADWAY UP TO, BUT NOT INCLUDING, FINAL LAYER OF SURFACE COURSE.

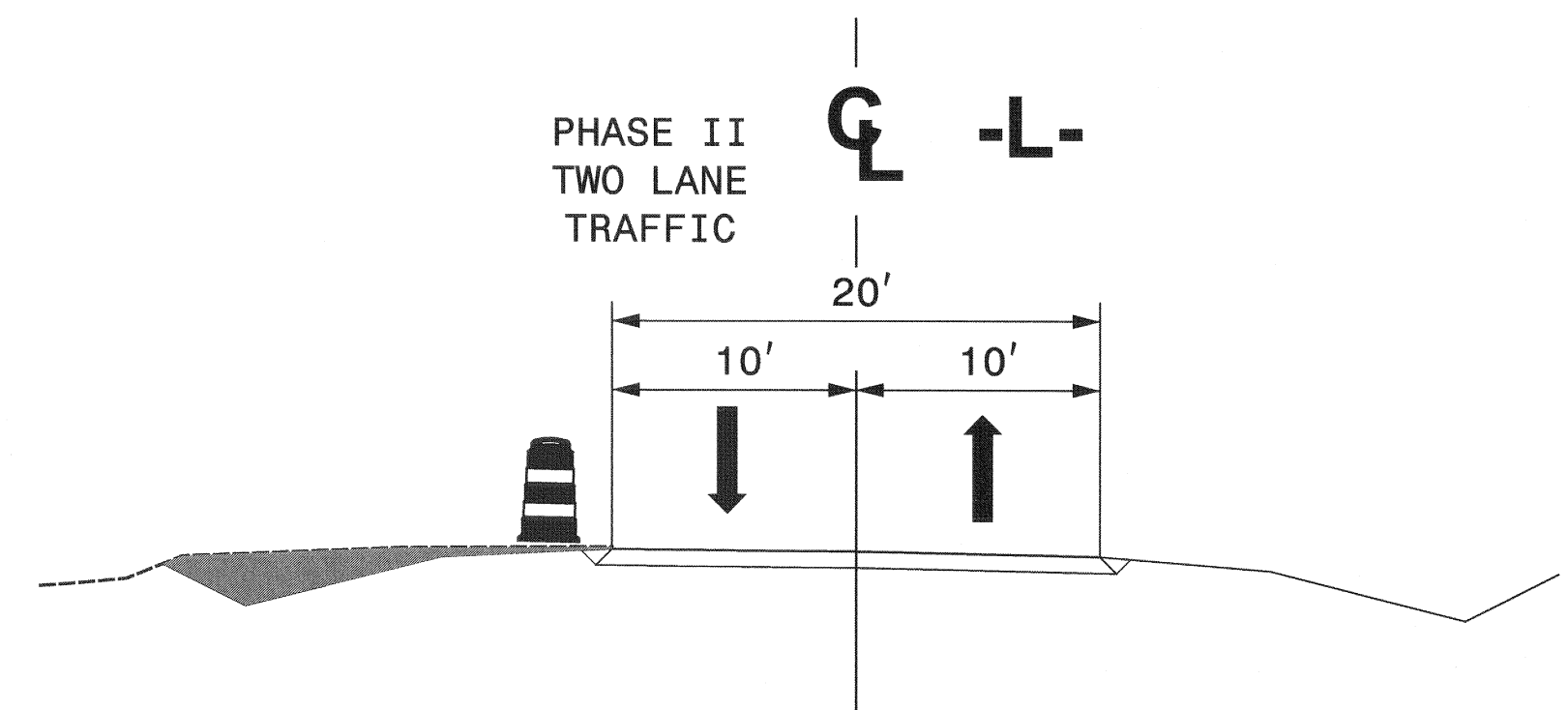
SECTION B-B

-L- STA 13+00



SECTION C-C

-L- STA 14+00



V&M
Vaughn & Melton
Consulting Engineers

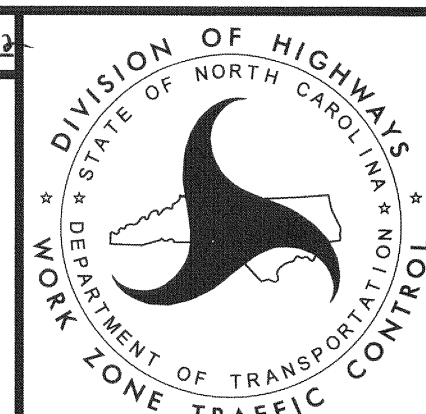
Charlotte, North Carolina 704-357-0488
Tri-Cities, Tennessee 423-467-8401
Knoxville, Tennessee 865-546-3800
Middlesboro, Kentucky 606-248-6600
Spartanburg, South Carolina 864-574-4775

Asheville, North Carolina 828-253-2796

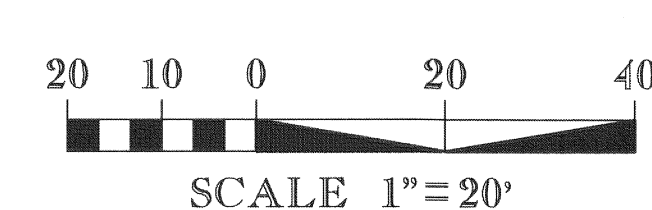
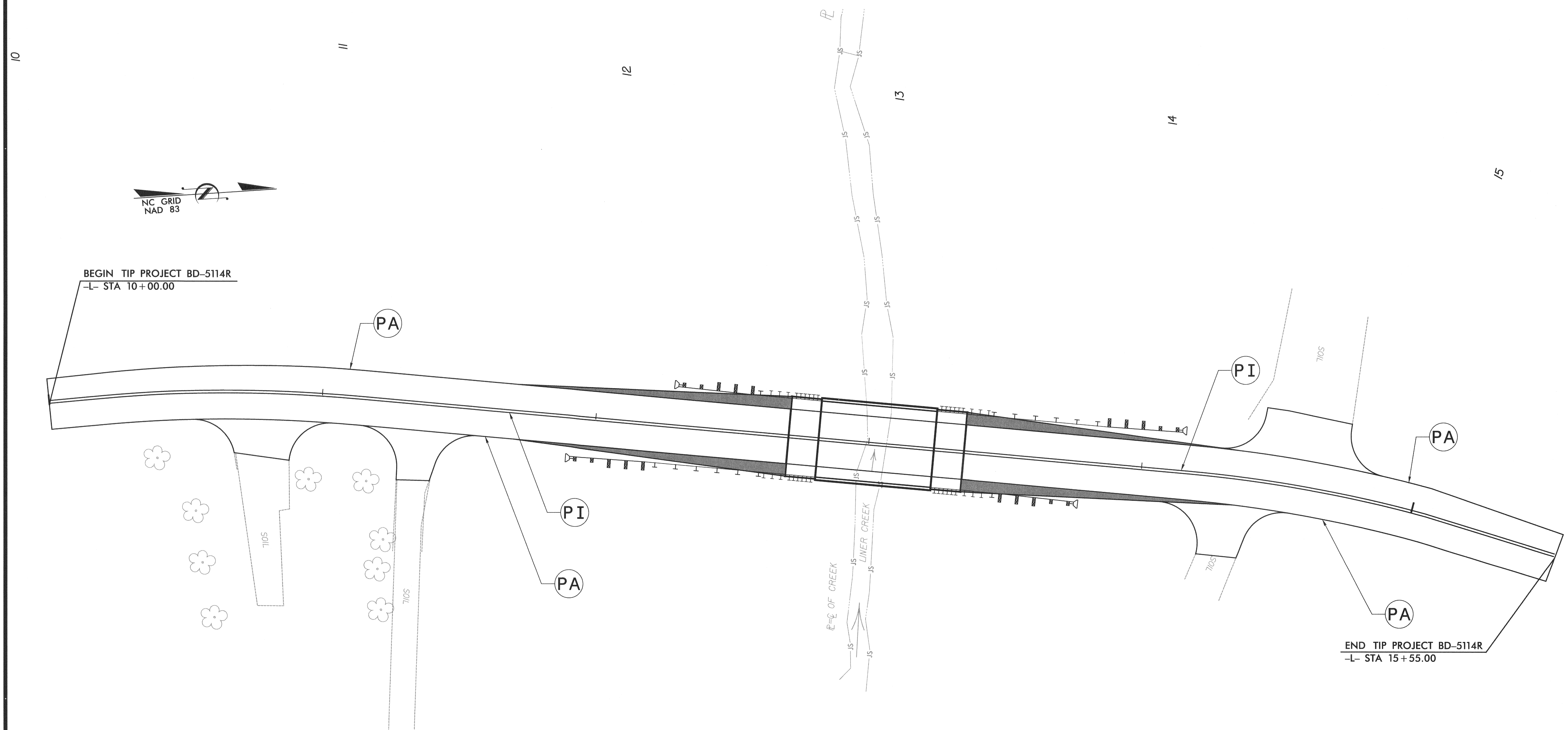
Copyright © 2006 Vaughn & Melton, Inc. All Rights Reserved

APPROVED: DATE: 12/6/2011

SEAL
NORTH CAROLINA
PROFESSIONAL ENGINEER
LLOYD D. BROWN
20119



PHASE 2



V&M
Vaughn & Mellon
 Consulting Engineers

Asheville, North Carolina 828-253-2796

Charlotte, North Carolina 704-357-0488

Tri-Cities, Tennessee 423-467-8401

Knoxville, Tennessee 865-546-5800

Middlesboro, Kentucky 606-249-6600

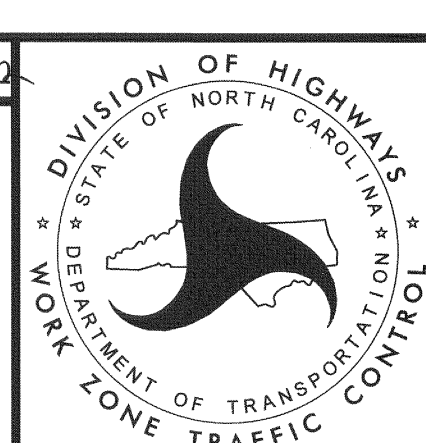
Spartanburg, South Carolina 864-574-4775

Copyright © 2006 Vaughn & Mellon, Inc. All Rights Reserved

APPROVED: *[Signature]* DATE: 12/6/2017

SEAL

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 20119 LLOYD D. BROWN



PERMANENT PAVEMENT MARKING PLAN

\$\$\$\$\$SYTIME\$\$\$\$\$
 \$\$\$USERNAVE\$\$\$

ROADSIDE ENVIRONMENTAL UNIT
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.
2006 STANDARD SPECIFICATIONS

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.

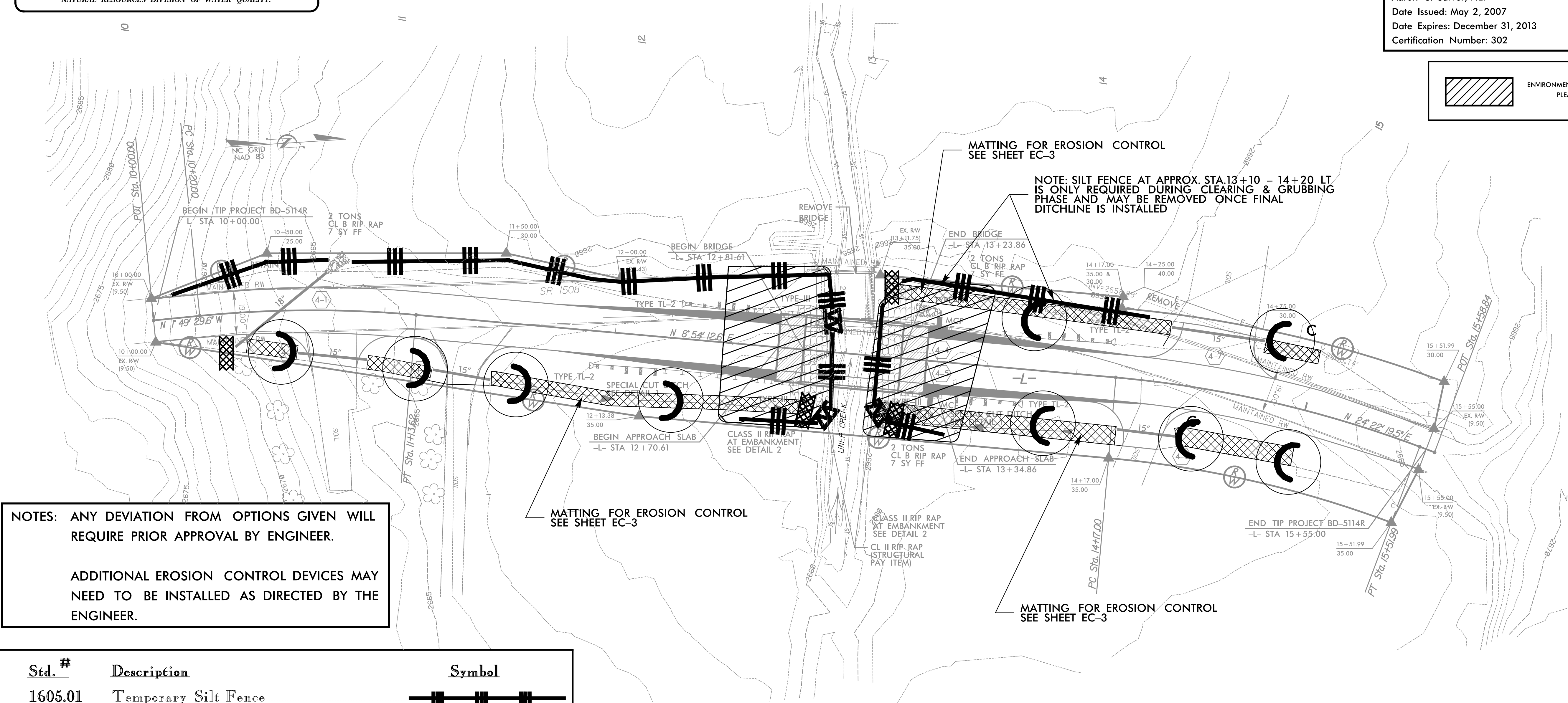
EROSION CONTROL PLAN

PROJECT REFERENCE NO.	SHEET NO.
BD-5114R	EC-1
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

Level III-A: Designer of Erosion and Sediment Control Plans

Aaron C. Carver, P.E.
Date Issued: May 2, 2007
Date Expires: December 31, 2013
Certification Number: 302

ENVIRONMENTALLY SENSITIVE AREA
PLEASE SEE NOTE



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

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

Std. #	Description	Symbol
1605.01	Temporary Silt Fence	
1606.01	Special Sediment Control Fence	
1632.03	Rock Inlet Sediment Trap Type C	
1633.01	Temporary Rock Silt Check Type-A	
	Wattle with Polyacrylamide (PAM)	
	Wattle	
	Temporary Rock Silt Check Type-B	

PROJECT NO. BD-5114R
COUNTY HAYWOOD
STATION: 13+02.74

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BRIDGE #213 ON SR 1508
OVER LINER CREEK

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

WATTLE WITH POLYACRYLAMIDE DETAIL

PROJECT REFERENCE NO.	SHEET NO.
BD-5/14R	EC-1A
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

WATTLES WITH POLYACRYLAMIDE (PAM):

Description

Wattles are tubular products consisting of excelsior fibers encased in synthetic netting. Wattles are used on slopes or channels to intercept runoff and act as a velocity break. Wattles are to be placed at locations shown on the plans or as directed. Installation shall follow the detail provided in the plans and as directed. Work includes furnishing materials, installation of wattles, matting installation, PAM application, and removing wattles.

Materials

Wattle shall meet the following specifications:

100% Curled Wood(Excelsior) Fibers
Minimum Diameter - 12 in.
Minimum Density - 2.6 lb/ft3 +/- 10%
Net Material - Synthetic
Net Openings - 1 in. x 1 in.
Net Configuration - Totally Encased
Minimum Weight - 20 lb. +/- 10% per 10 ft. length

anchors: Stakes shall be used as anchors.

Wooden Stakes:

Provide hardwood stakes a minimum of 2-ft. long with a 2 in. x 2 in. nominal square cross section. One end of the stake must be sharpened or beveled to facilitate driving down into the underlying soil.

Matting shall meet the requirements of section 1060-8 of the Standard Specifications, or shall meet specifications provided elsewhere in this contract.

Provide staples made of 0.125" diameter new steel wire formed into a u shape not less than 12" in length with a throat of 1" in width.

Polyacrylamide (PAM) shall be applied in powder form and shall be anionic or neutrally charged. Soil samples shall be obtained in areas where the wattles will be placed, and from offsite material used to construct roadway, and analyzed for the appropriate PAM flocculant to be utilized with each wattle.

Construction Methods

Wattles shall be secured to the soil by wire staples approximately every 1 linear foot and at the end of each section of wattle. A minimum of 4 stakes shall be installed on the downstream side of the wattle with a maximum spacing of 2 linear feet along the wattle, and according to the detail. Install a minimum of 2 stakes on the upstream side of the wattle according to the detail provided in the plans. Stakes shall be driven into the ground a minimum of 10 in. with no more than 2 in. projecting from the top of the wattle. Drive stakes at an angle according to the detail provided in the plans.

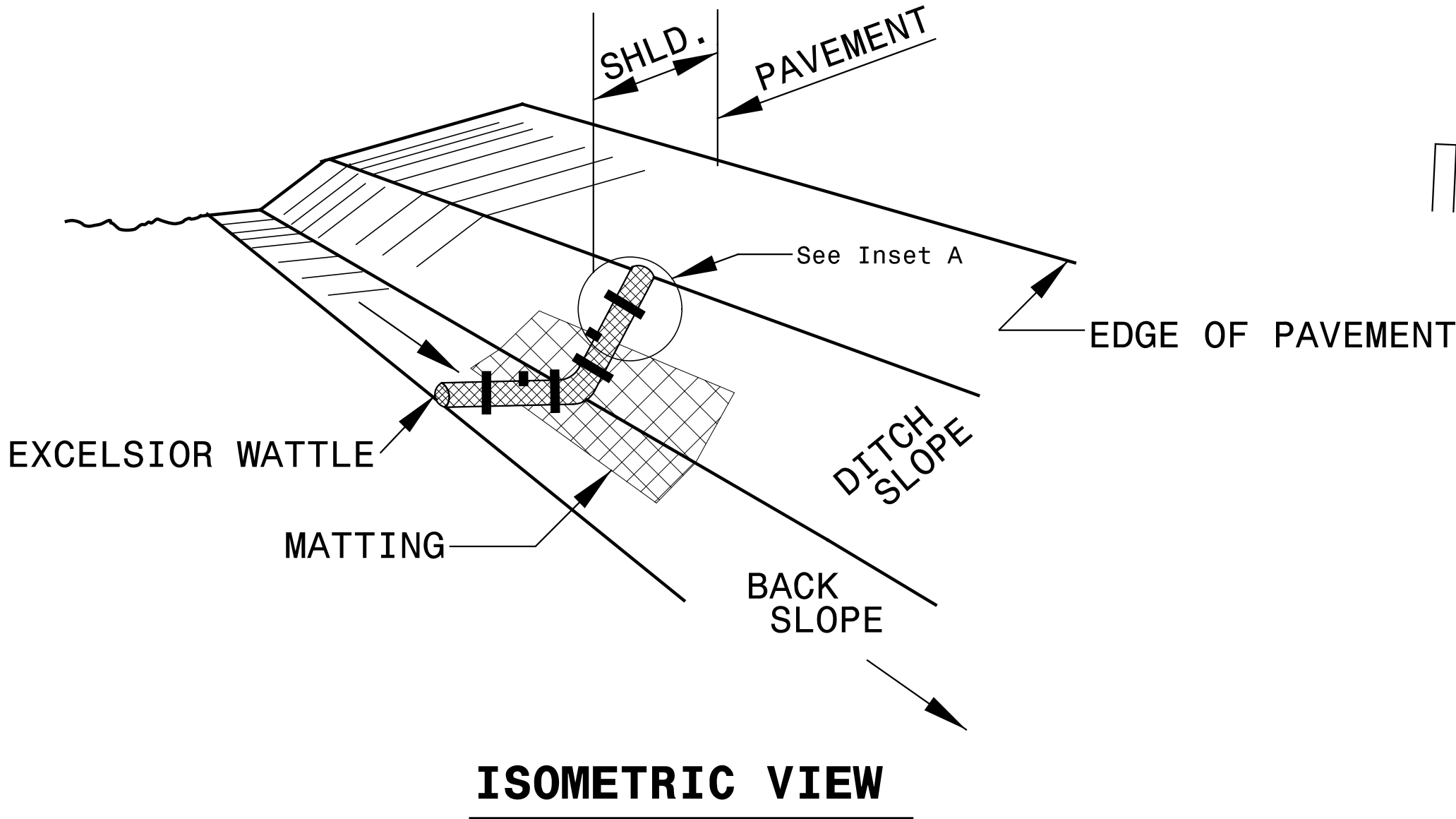
Install wattles to the top of the ditch according to the detail provided in the plans. Overlap adjoining sections of wattles a minimum of 6 in.

Installation of matting shall be in accordance with the detail provided in the plans, and in accordance with section 1631-3(B) of the Standard Specifications, or in accordance with specifications provided elsewhere in this contract.

Apply PAM over the lower center portion of the wattle where the water is going to flow over at a rate of 3.5 ounces per wattle. PAM applications shall be done during construction activities after every rainfall event that is equal to or exceeds 0.50 in.

The Contractor shall maintain the wattles until the project is accepted or until the wattles are removed, and shall remove and dispose of silt accumulations at the wattles when so directed in accordance with the requirements of Section 1630 of the Standard Specifications.

The quantity of wattle(s), wooden stakes, staples, matting and PAM as measured above will be paid for at contract price for "Lump Sum for Erosion Control". Such price and payment will be full compensation for all work covered by this provision, including but not limited to, furnishing all materials, placing and maintaining the wattle(s), and removal and disposal of silt accumulations and wattle.



NOTES:

USE MINIMUM 12 IN. DIAMETER EXCELSIOR WATTLE.

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

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

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

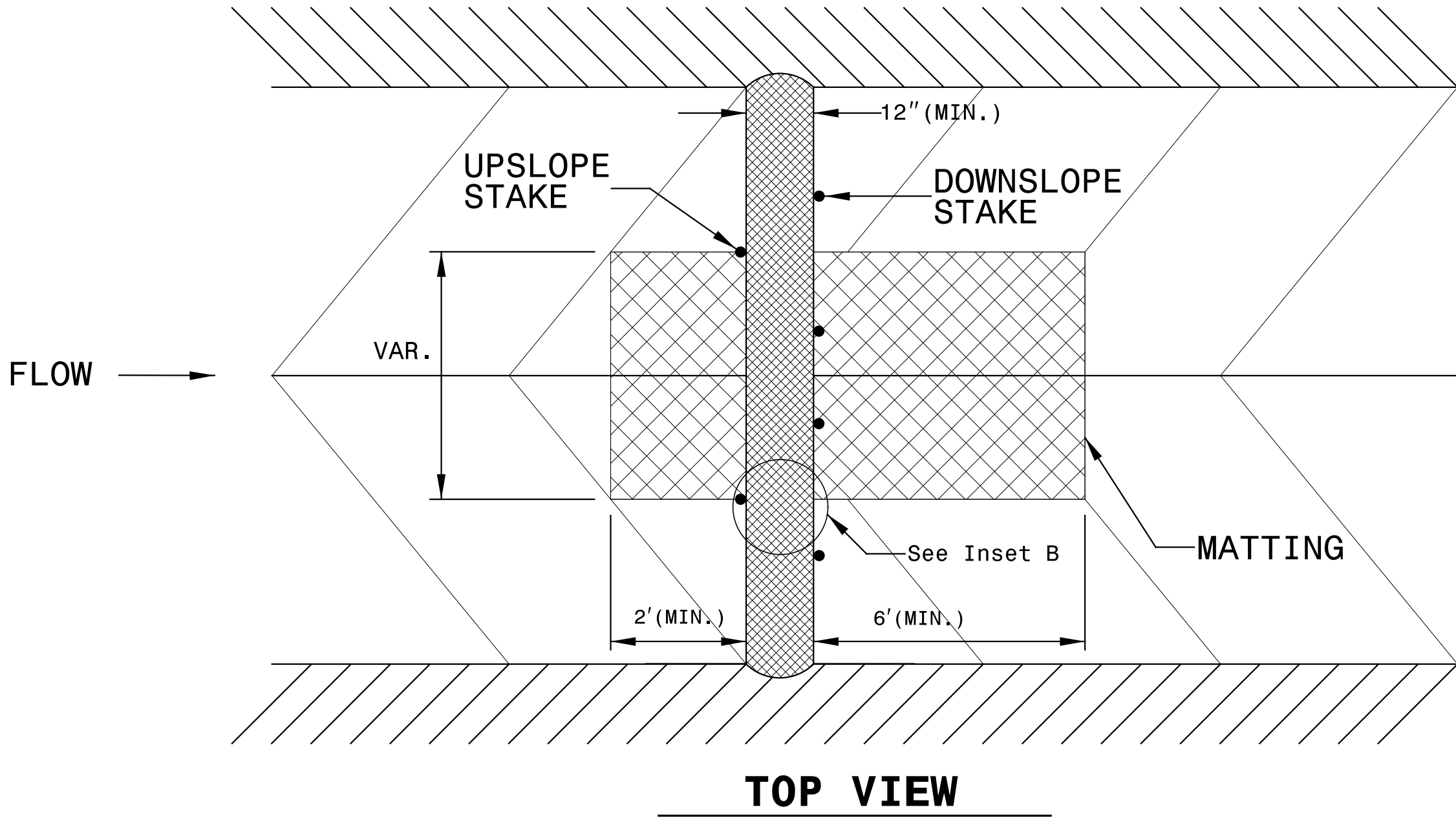
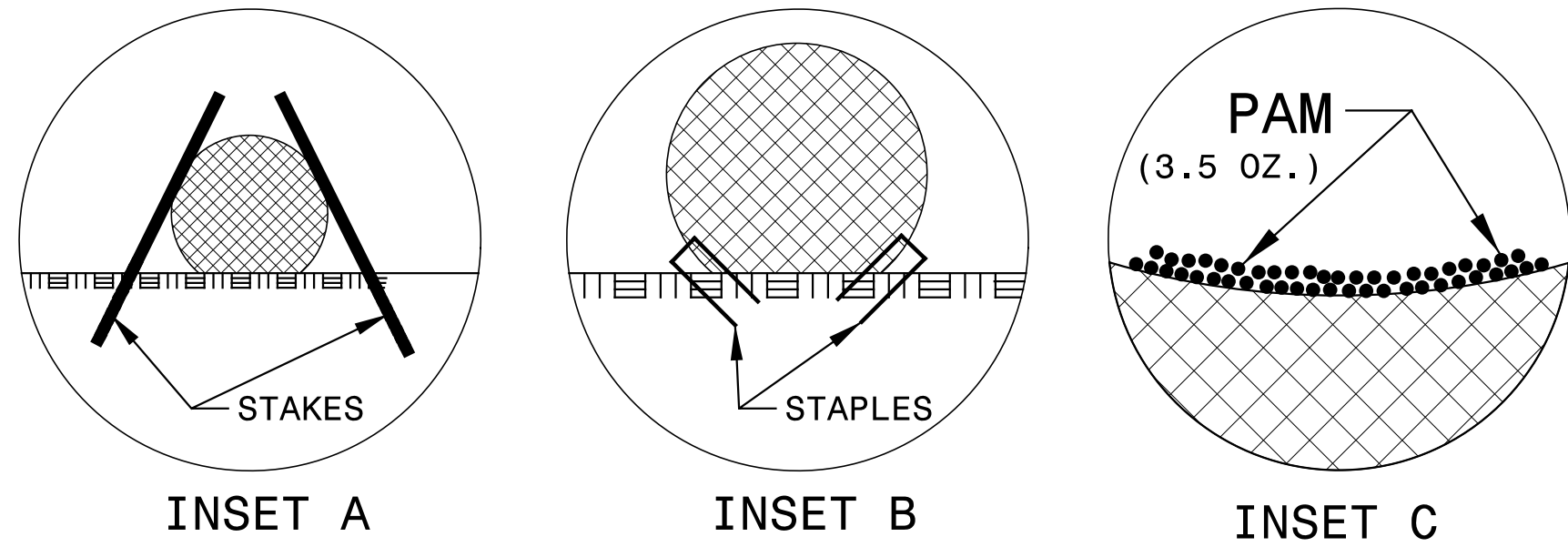
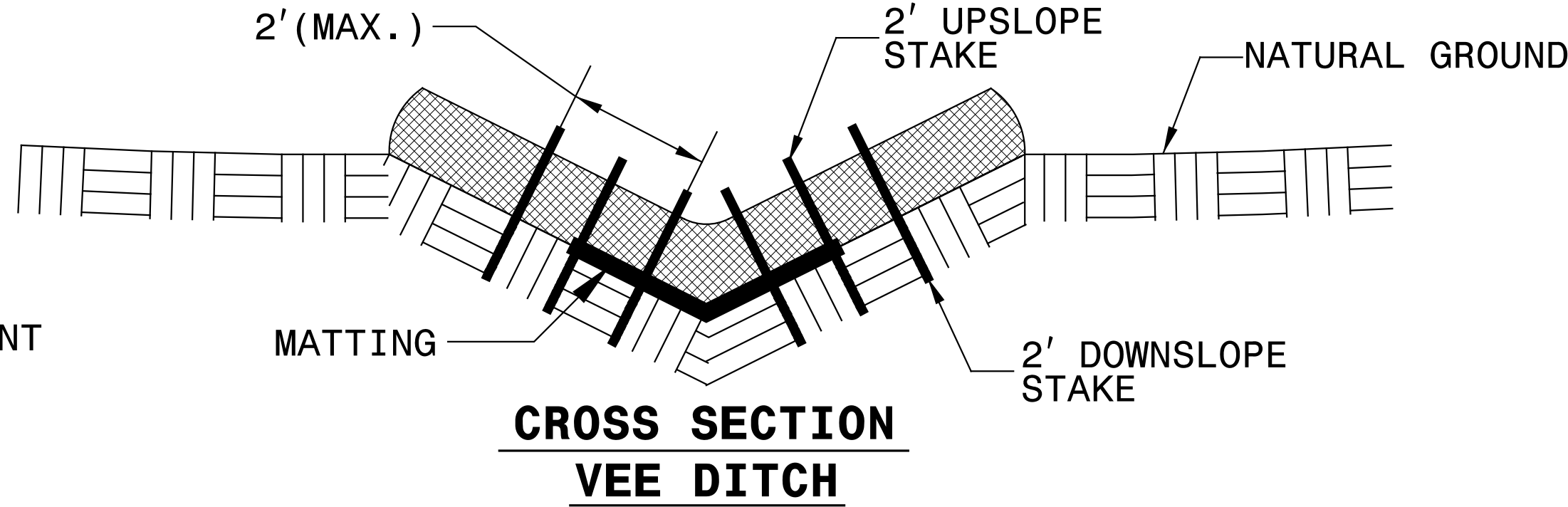
PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12" IN LENGTH.

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

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

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

INITIALLY APPLY 3.5 OUNCES OF ANIONIC OR NEUTRALLY CHARGED POLYACRYLAMIDE (PAM) OVER WATTLE WHERE WATER WILL FLOW AND AFTER EVERY RAINFALL EVENT THAT IS EQUAL TO OR EXCEEDS 0.50 IN.



PROJECT REFERENCE NO.	SHEET NO.
BD-5114R	EC-2
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

SOIL STABILIZATION TIMEFRAMES

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

09/08/99
\$\$\$\$\$SYTIME\$\$\$\$\$DON\$\$\$\$\$USERNAME\$\$\$\$\$

TIP PROJECT: BD-5114R

CONTRACT: DN00085

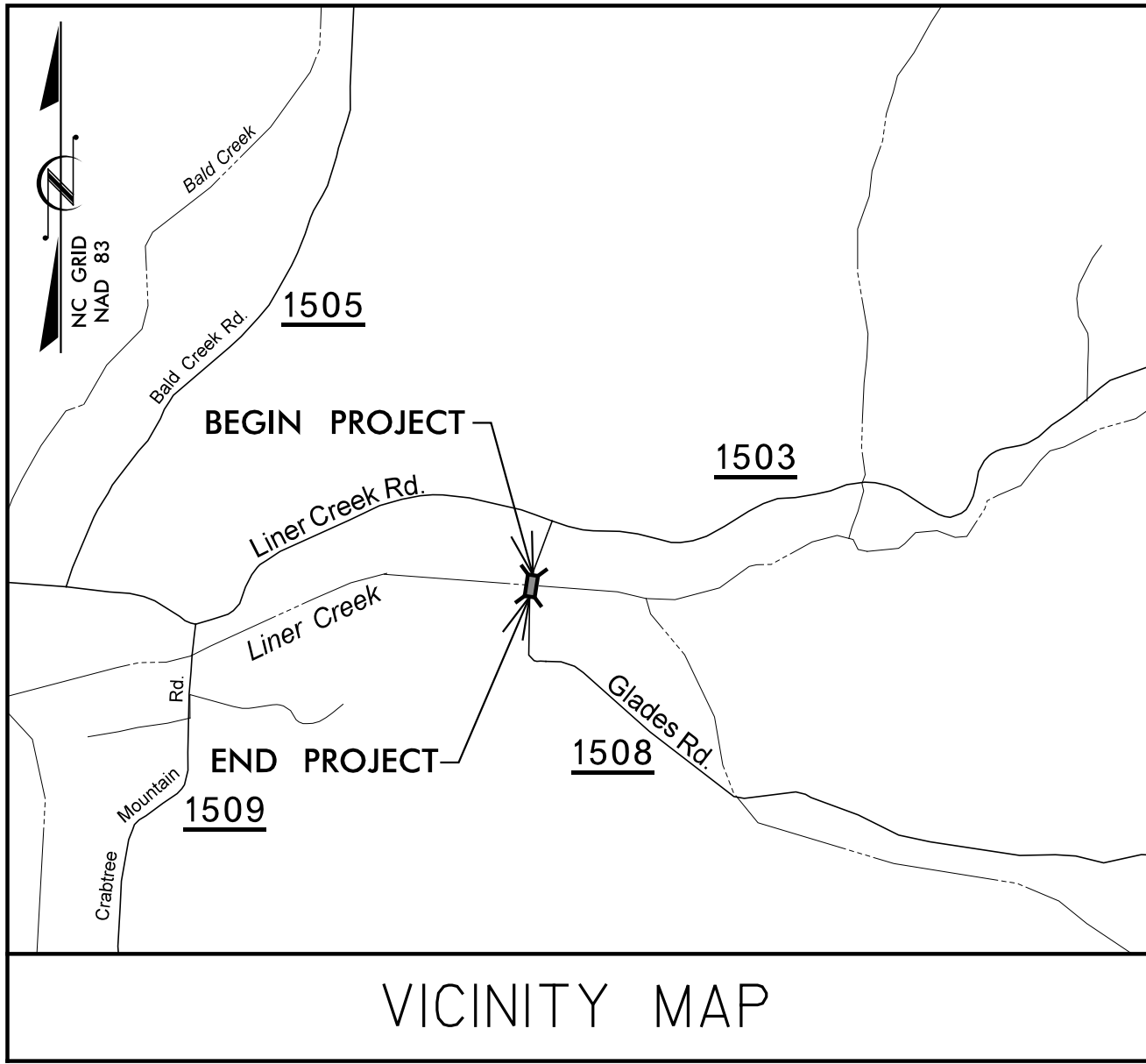
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

T.I.P. NO.	SHEET NO.
BD-5114R	UO-1

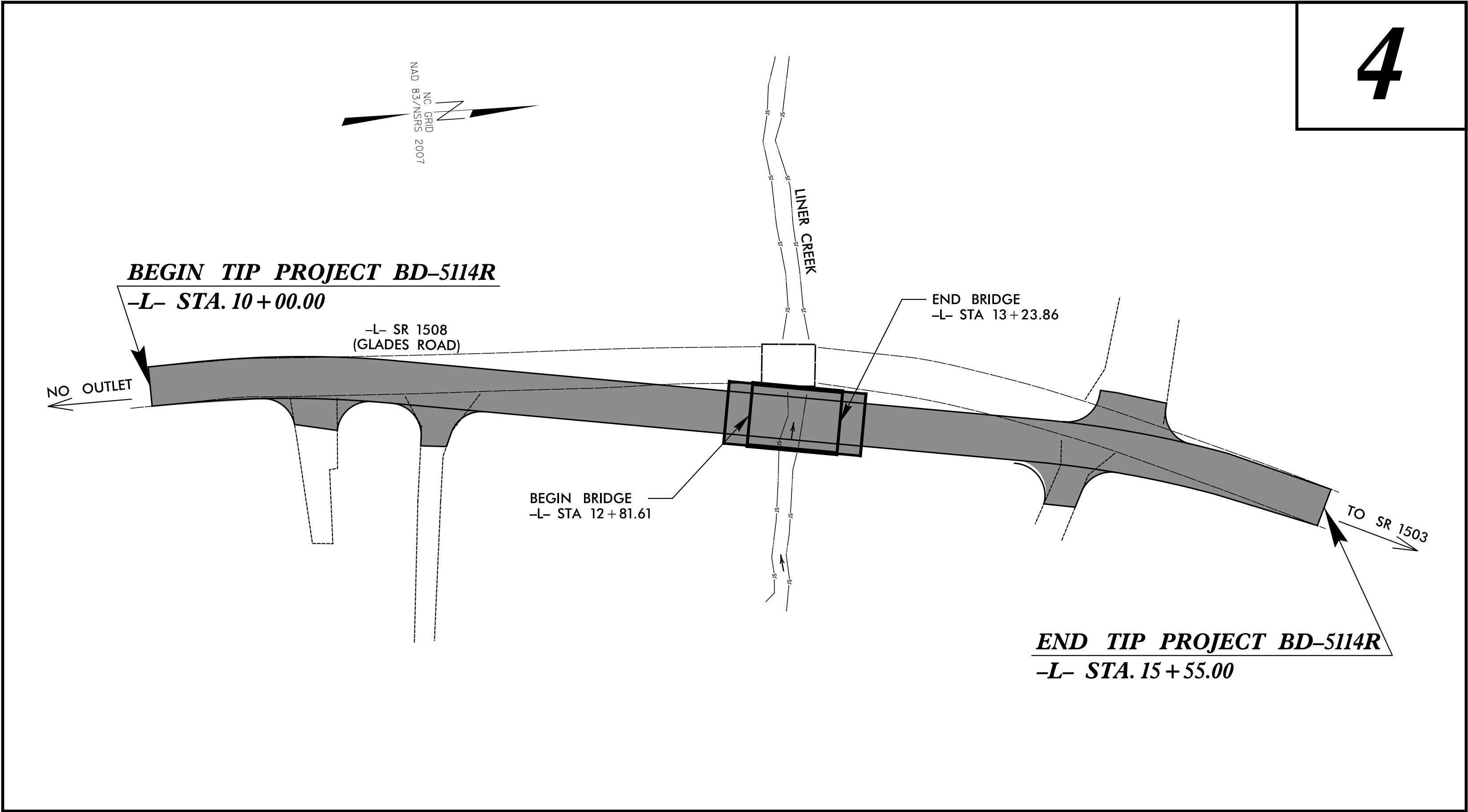
UTILITIES BY OTHERS PLANS
HAYWOOD COUNTY

LOCATION: BRIDGE NO. 213 OVER LINER CREEK
ON SR 1508 (GLADES RD.)

TYPE OF WORK: TELEPHONE



VICINITY MAP



4

V&M
Vaughn & Mellon
Consulting Engineers

Charlotte,
North Carolina
704-357-0488

Tri-Cities,
Tennessee
423-467-8401

Knoxville,
Tennessee
865-546-5800

Middlesboro,
Kentucky
606-240-6500

Spartanburg,
South Carolina
864-574-4775

Asheville,
North Carolina
828-253-2796

Copyright © 1994 Vaughn & Mellon, Inc.
All Rights Reserved.

GRAPHIC SCALES



INDEX OF SHEETS

<u>SHEET NO.</u>	<u>DESCRIPTION</u>
UO-1	TITLE SHEET
UO-2	UTILITY BY OTHERS PLAN SHEETS

UTILITY OWNERS ON PROJECT

(1) TELEPHONE - AT&T

SEAL
NORTH CAROLINA
PROFESSIONAL
ENGINEER
REECE M. SCHULER
26360
12/4/12

V&M
Vaughn & Mellon
Consulting Engineers
3089-L Beam Road
Charlotte, NC 28217
704-357-0488



PREPARED FOR THE OFFICE OF:
DIVISION OF HIGHWAYS
UTILITIES ENGINEERING
SECTION

1591 MAIL SERVICES CENTER
RALEIGH, NC 27699-1591
PHONE (919) 250-4128
FAX (919) 250-4119

<u>Roger Worthington, P.E.</u>	UTILITIES SECTION ENGINEER
<u>Xxxxx Xxxxx, P.E.</u>	UTILITIES SQUAD LEADER PROJECT ENGINEER
<u>Reece Schuler, PE</u>	UTILITIES PROJECT DESIGNER

UTILITIES BY OTHERS

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

V&M
Vaughn & Melton
Consulting Engineers

Asheville,
North Carolina
888-531-7186

Tri-Cities,
Tennessee
423-467-8461

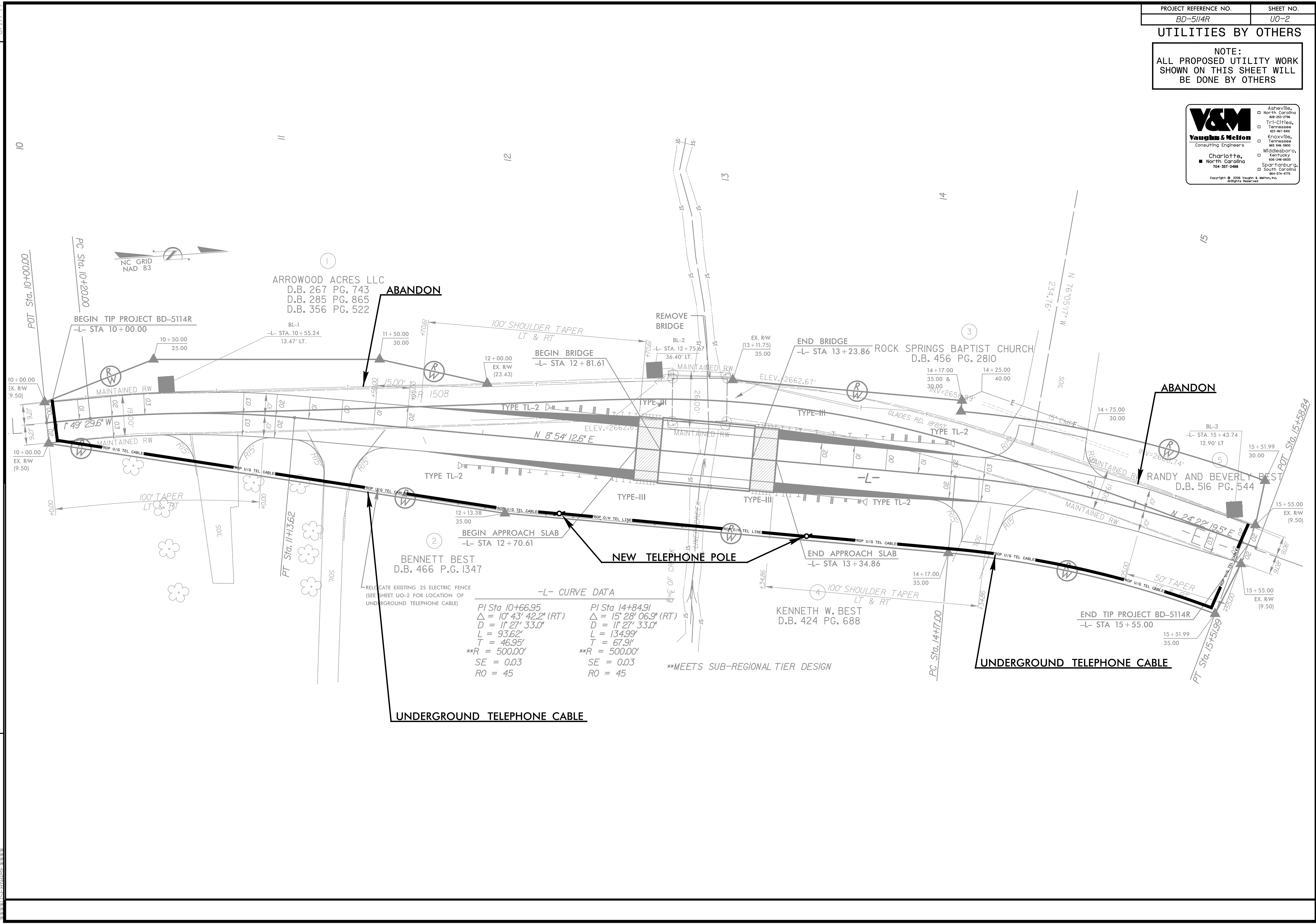
Knoxville,
Tennessee
865-546-5800

Middlesboro,
Kentucky
606-248-4800

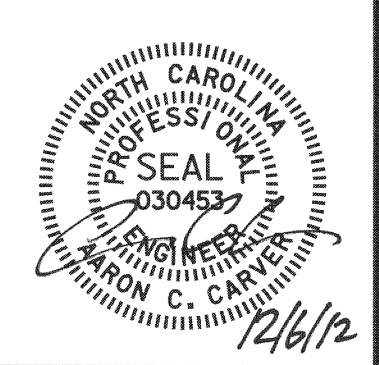
Spokane, WA
509-325-4775

South Carolina
864-574-4775

Copyright © 2006 Vaughn & Melton, Inc.
All Rights Reserved



REVISIONS



DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

CROSS SECTION SUMMARY

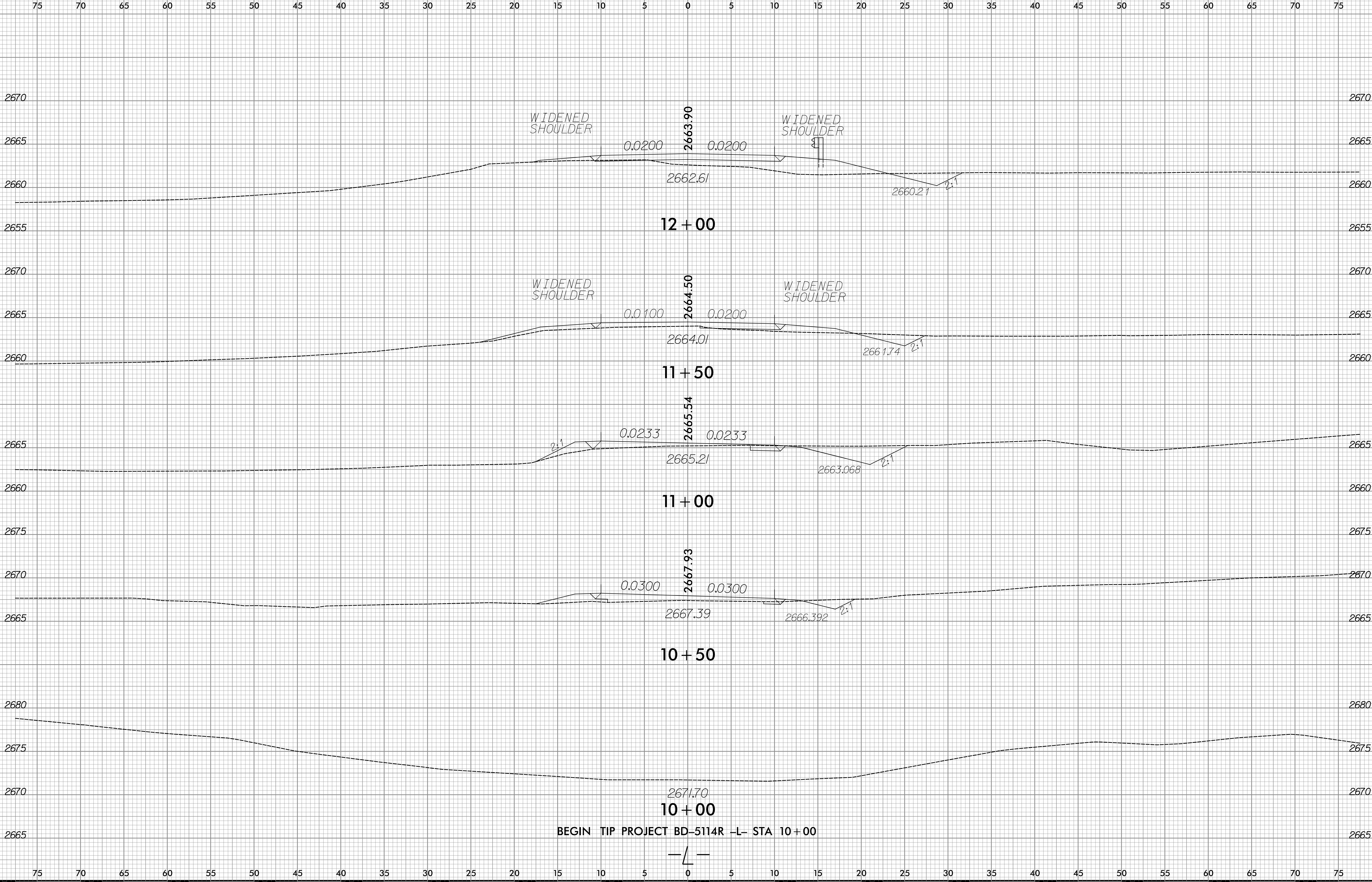
IN CUBIC YARDS

-L- LOCATION	UNCLASSIFIED EXCAVATION	EMBT
10 + 00	0	0
10 + 50	19	5
11 + 00	38	9
11 + 50	24	14
12 + 00	11	23
12 + 50	7	44
12 + 81.61 BEGIN BRIDGE	2	40
13 + 23.86 END BRIDGE	0	0
13 + 50	20	22
14 + 00	70	12
14 + 50	52	4
15 + 00	29	11
15 + 50	10	11
15 + 55	0	0

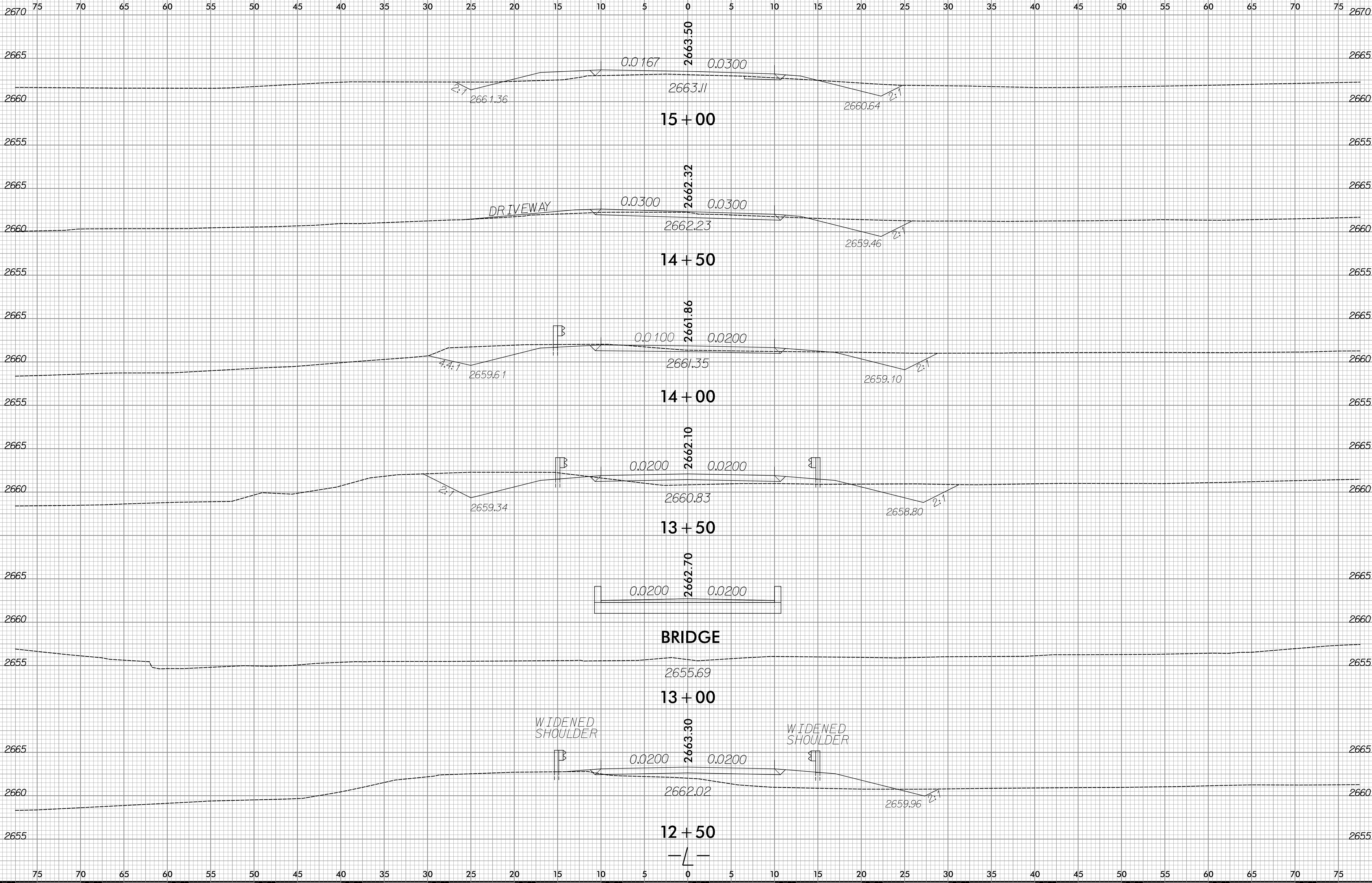
NOTE: EMBANKMENT COLUMN DOES NOT INCLUDE BACKFILL FOR UNDERCUT.

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".

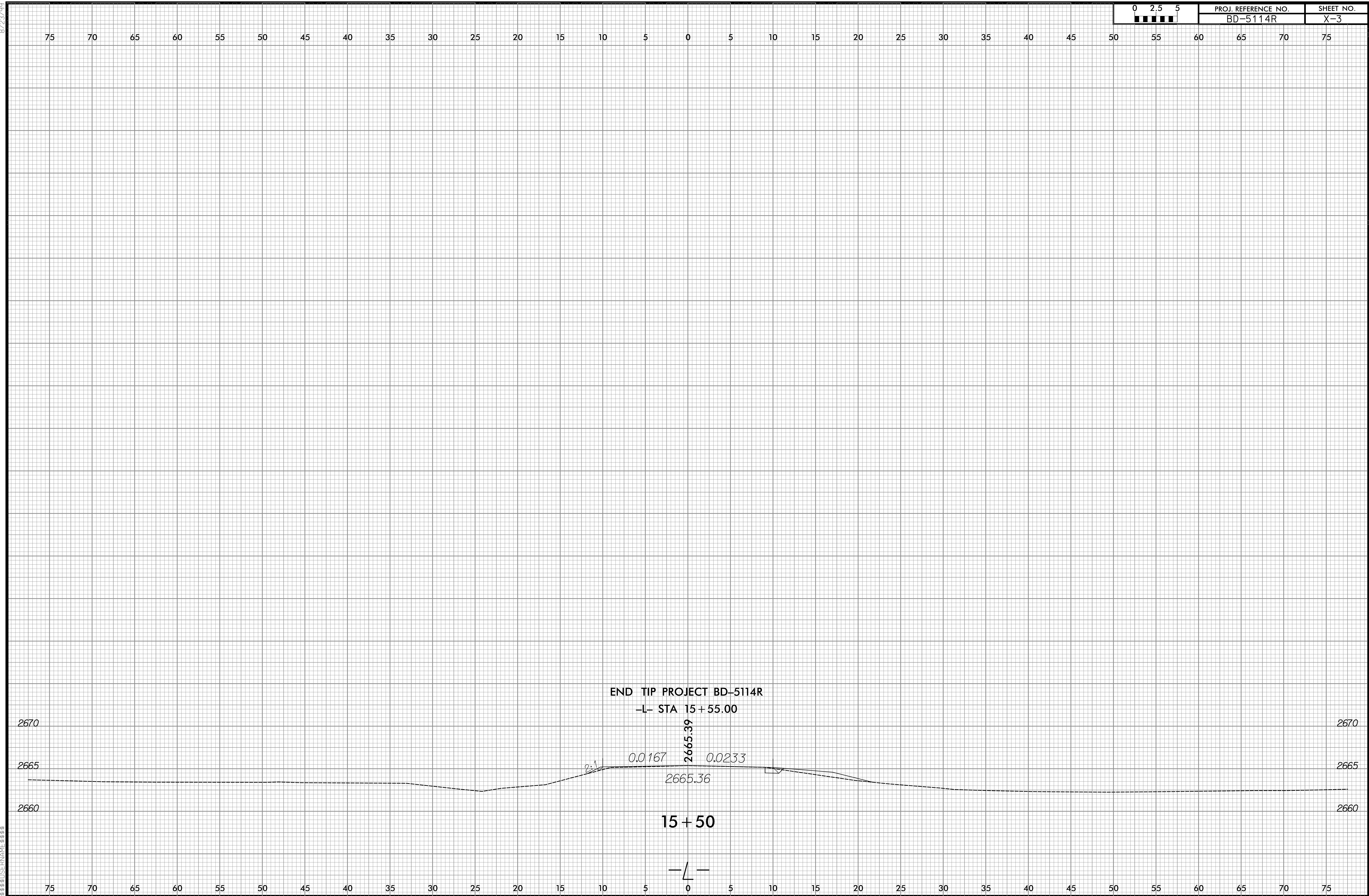
8/23/99



8/23/99



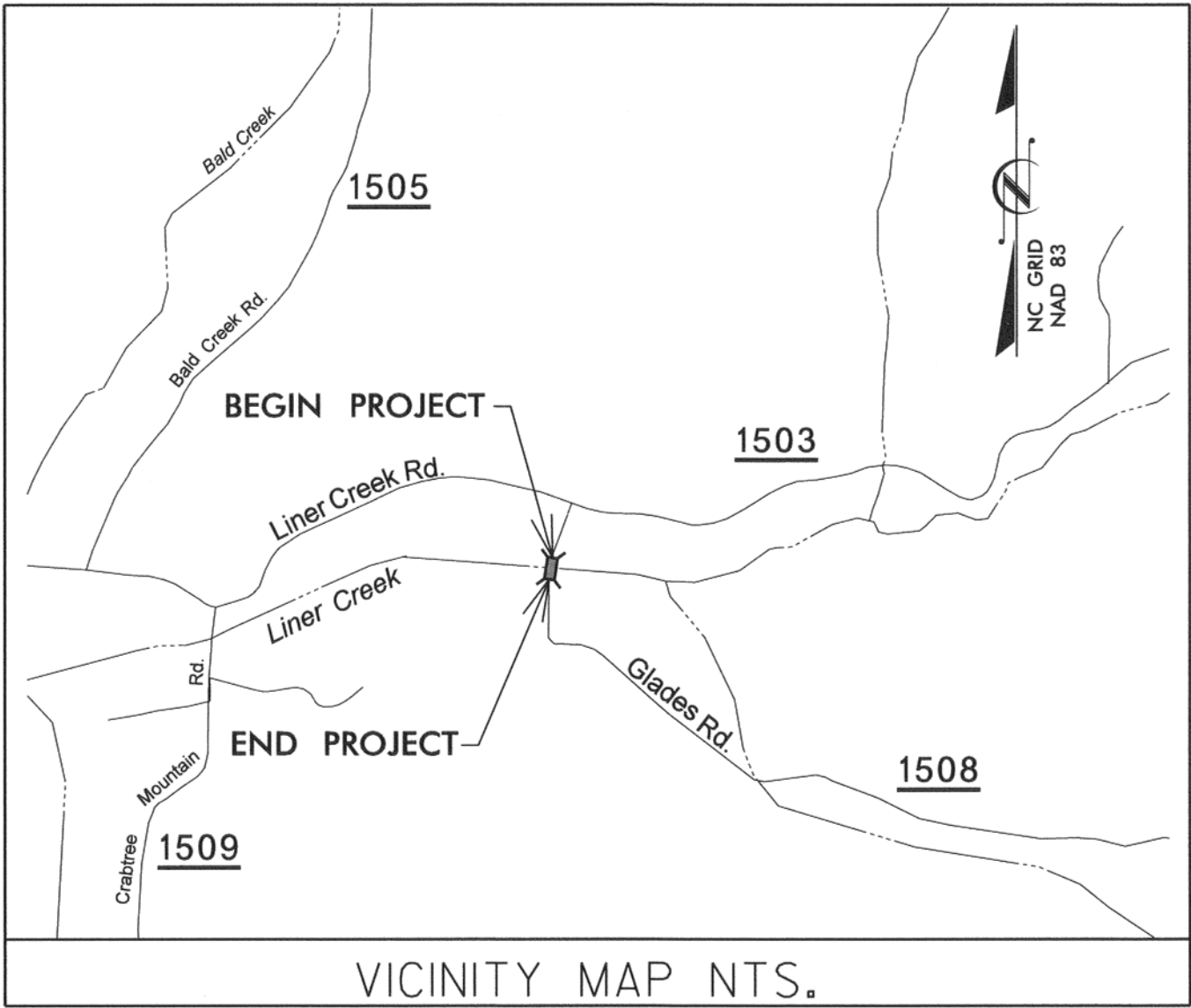
\$\$\$\$SYTIME\$\$\$\$\$
 \$\$\$\$DGN\$\$\$\$\$
 \$\$\$\$USERNAME\$\$\$



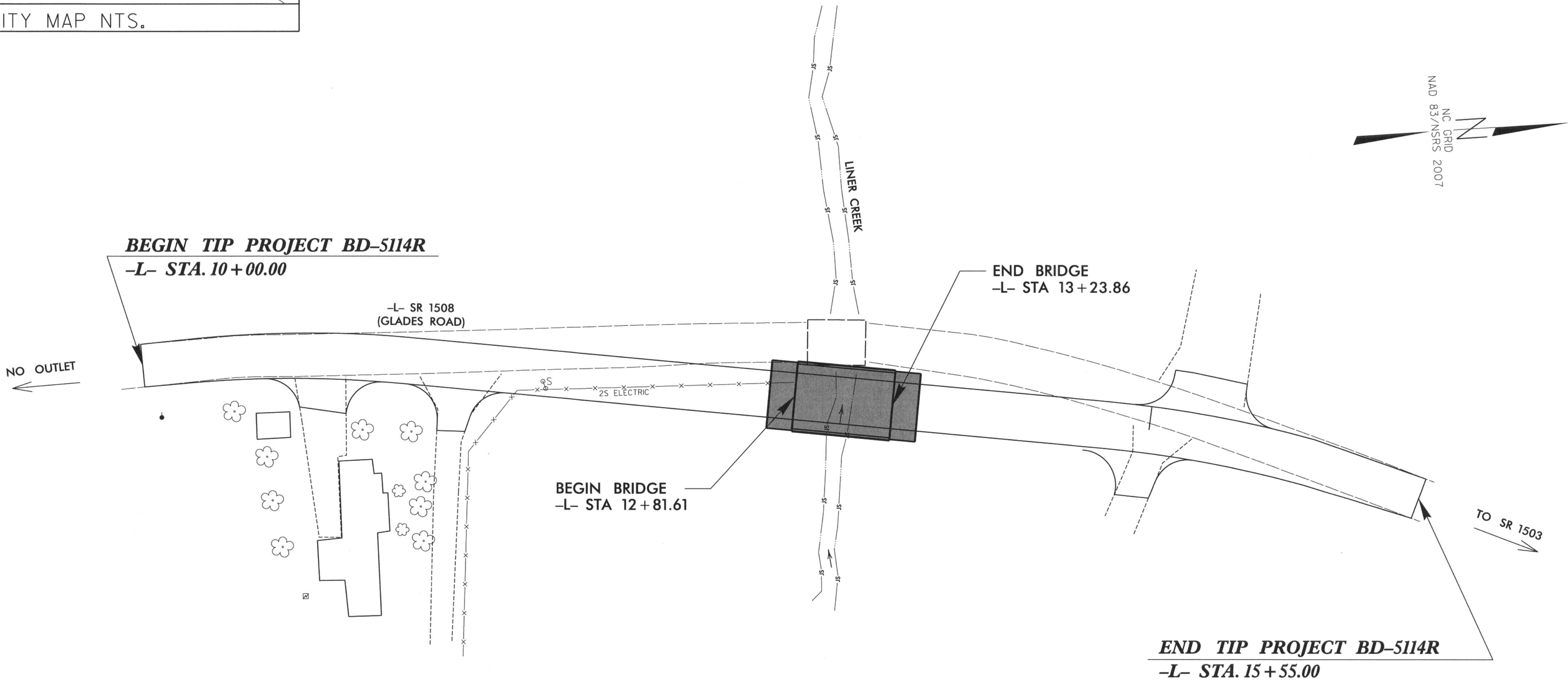
TIP NO: BD-5114R

CONTRACT: DN00085

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	BD-5114R	0	20
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
45360.1.18	BRZ-1508(7)	P.E.	
45360.2.18	BRZ-1508(7)	RW	
45360.3.18	BRZ-1508(7)	CONST.	



VICINITY MAP NTS.



STRUCTURES



V&M
Vaughn & Melton
Consulting Engineers

Charlotte,
North Carolina
704-357-0488

Tri-Cities,
Tennessee
423-467-8401

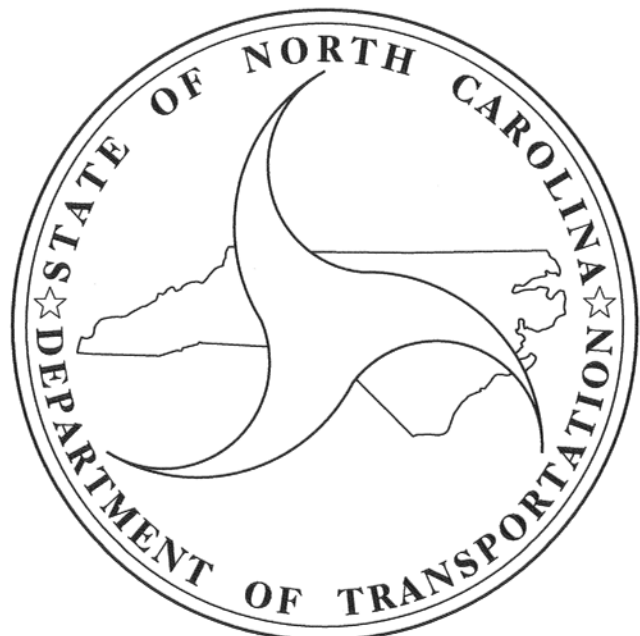
Knoxville,
Tennessee
865-546-5800

Middlesboro,
Kentucky
606-248-6600

Spartanburg,
South Carolina
864-574-4775

Asheville,
North Carolina
828-253-2796

Copyright © 2006 Vaughn & Melton, Inc.
All Rights Reserved



DESIGN DATA

ADT 2000 = 160
ADT 2025 = 320

T = 6 %
V = 35 MPH

FUNC CLASS = LOCAL

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT BD-5114R = 0.097 MI.
LENGTH STRUCTURE TIP PROJECT BD-5114R = 0.008 MI.
TOTAL LENGTH OF TIP PROJECT BD-5114R = 0.105 MI.

Prepared in the Office of:
VAUGHN & MELTON
1318-F PATTON AVE.
ASHEVILLE, NC, 28806

FOR THE NORTH CAROLINA DIVISION OF HIGHWAYS

2012 STANDARD SPECIFICATIONS

LETTING DATE :

FEBRUARY 12, 2013

HARDY WILLIS, PE
PROJECT ENGINEER

AARON CARVER, PE
PROJECT DESIGN ENGINEER

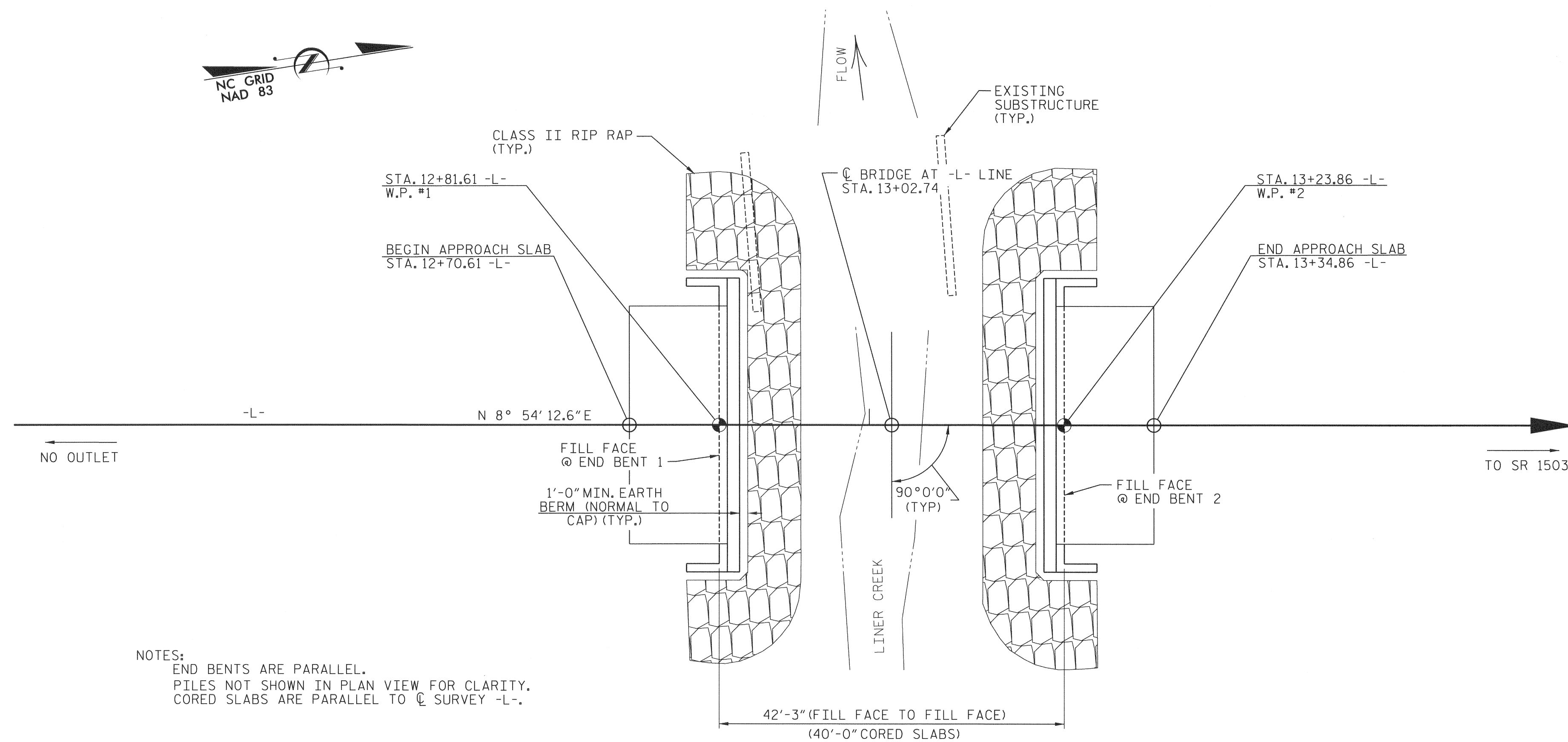
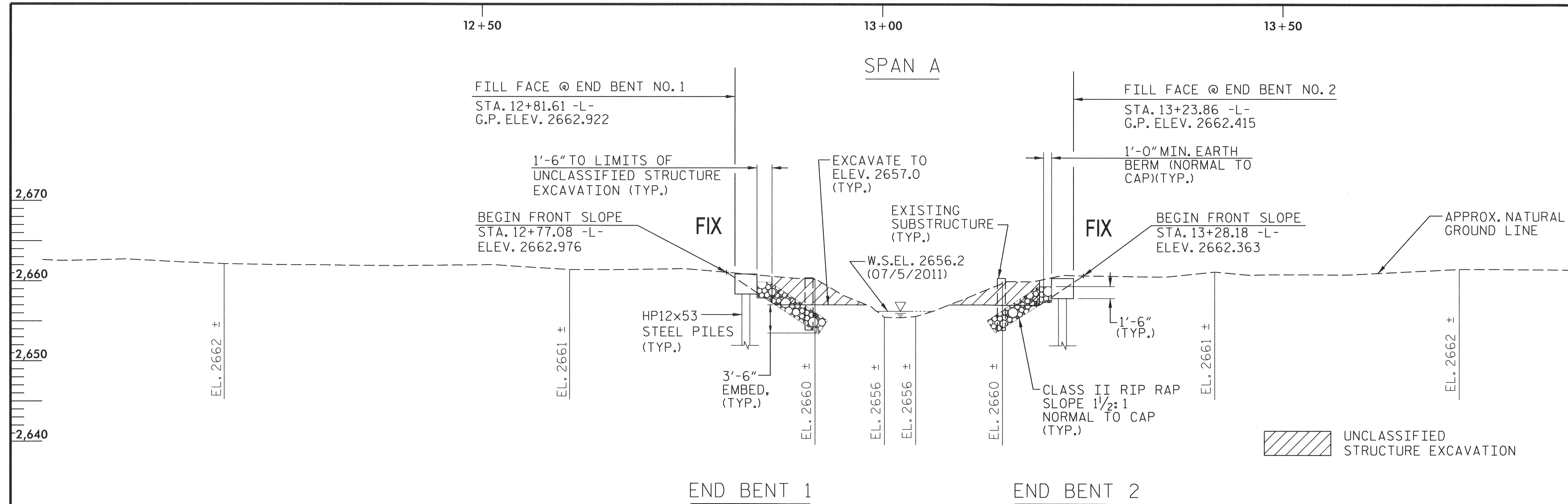
STRUCTURES MANAGEMENT UNIT
1000 BIRCH RIDGE DR.
RALEIGH, N.C. 27610

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

JOSH DEYTON, PE P.E.
STATE DESIGN ENGINEER

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED
DIVISION ADMINISTRATOR DATE



NOTES:
END BENTS ARE PARALLEL.
PILES NOT SHOWN IN PLAN VIEW FOR CLARITY.
CORED SLABS ARE PARALLEL TO C SURVEY -L-.



PROJECT NO. BD-5114R

HAYWOOD COUNTY

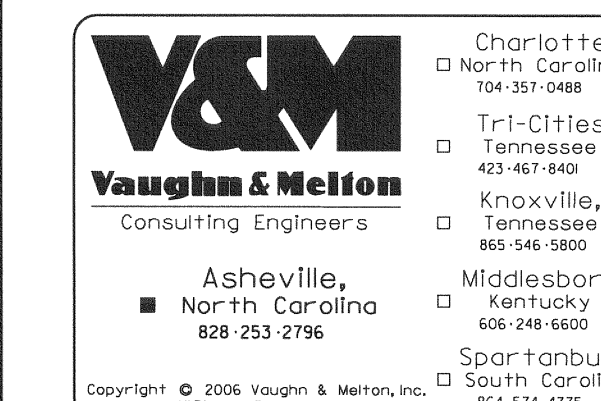
STATION: 13+02.74 -L-

SHEET 1 OF 2 REPLACES BRIDGE NO. 213

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING
FOR BRIDGE on SR 1508 (GLADES RD.)
over LINER CREEK
BETWEEN END OF ROAD & SR 1503

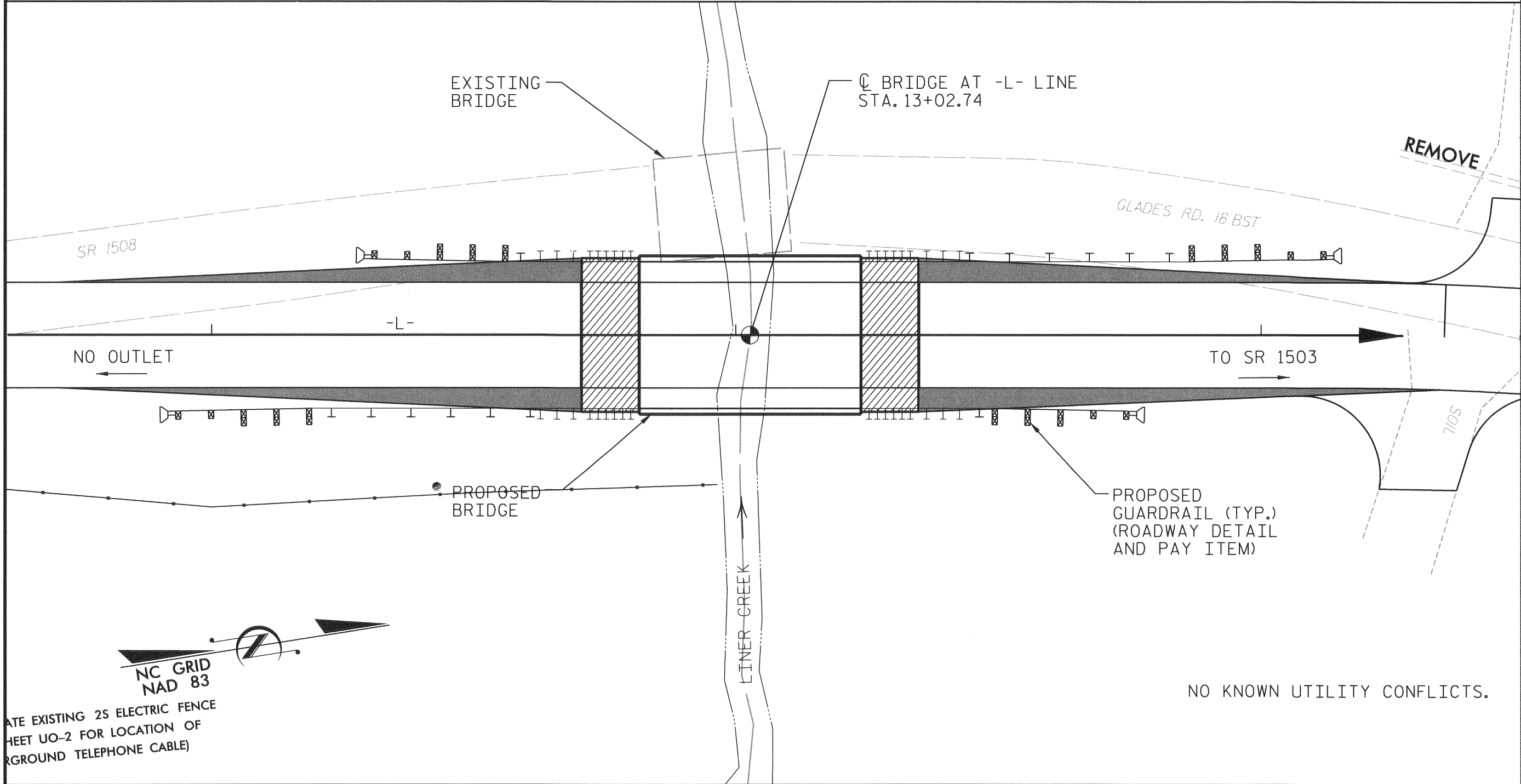
SEPT. 2012



DRAWN BY: CBC DATE: SEPT. 2012
CHECKED BY: HLW DATE: SEPT. 2012

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S-1
2			4			TOTAL SHEETS 20

BM#1 (BL-1) - N 697,579.994 E 843,063.915, -L- STA. 10+55.24 13.47' LT., ELEV. 2666.78'



LOCATION SKETCH

GENERAL NOTES:

ASSUMED LIVE LOAD = HL-93 OR ALTERNATE LOADING.

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

THIS BRIDGE IS LOCATED IN SEISMIC ZONE 1.

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

FOR EROSION CONTROL MEASURES, SEE EROSION CONTROL PLANS.

THE EXISTING STRUCTURE, CONSISTING OF A ONE-SPAN, 25-FOOT LONG TIMBER DECK ON STEEL I-BEAMS, 20.0 FEET WIDE, ON TIMBER VERTICAL ABUTMENTS, AND LOCATED AT THE PROPOSED STRUCTURE, SHALL BE REMOVED. THE EXISTING BRIDGE IS PRESENTLY POSTED BELOW THE LEGAL LOAD LIMIT. SHOULD THE STRUCTURAL INTEGRITY OF THE BRIDGE FURTHER DETERIORATE, THIS LOAD LIMITATION MAY BE REDUCED AS FOUND NECESSARY DURING THE LIFE OF THE PROJECT.

REMOVAL OF THE EXISTING BRIDGE SHALL BE PERFORMED 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.

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", MAY 2001.

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.

THE MATERIAL SHOWN IN THE CROSS-HATCHED AREA SHALL BE EXCAVATED FOR A DISTANCE OF 25 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.

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

THE CONTRACTOR SHALL PROVIDE INDEPENDENT ASSURANCE SAMPLES OF REINFORCING STEEL AS FOLLOWS: FOR PROJECTS REQUIRING UP TO 400 TONS OF REINFORCING STEEL, ONE 30 INCH SAMPLE OF EACH SIZE BAR USED. THE BARS FROM WHICH THE SAMPLES ARE TAKEN MUST THEN BE SPICED WITH REPLACEMENT BARS OF THE SIZE AND LENGTH OF THE SAMPLE, PLUS A MINIMUM LAP SPlice OF 30 BAR DIAMETERS. PAYMENT FOR THE SAMPLES OF REINFORCING STEEL SHALL BE CONSIDERED INCIDENTAL TO VARIOUS PAY ITEMS.

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+02.74."

FOUNDATION NOTES:

FOR PILES, SEE SECTION 450 OF THE STANDARD SPECIFICATIONS.

PILES AT END BENT NO.1 ARE DESIGNED FOR A FACTORED RESISTANCE OF 70 TONS PER PILE.

DRIVE PILES AT END BENT NO.1 TO A REQUIRED DRIVING RESISTANCE OF 117 TONS PER PILE.

PILES AT END BENT NO.2 ARE DESIGNED FOR A FACTORED RESISTANCE OF 70 TONS PER PILE.

DRIVE PILES AT END BENT NO.2 TO A REQUIRED DRIVING RESISTANCE OF 117 TONS PER PILE.

THE SUBSURFACE INVESTIGATION WAS SURVEYED USING A TEMPORARY BENCHMARK WITH AN ASSUMED ELEVATION OF 100 FEET. THE ACTUAL ELEVATION OF BENCH MARK #1 IS EL. 2666.78 FROM THE BSR REPORT.

HYDROGRAPHIC DATA

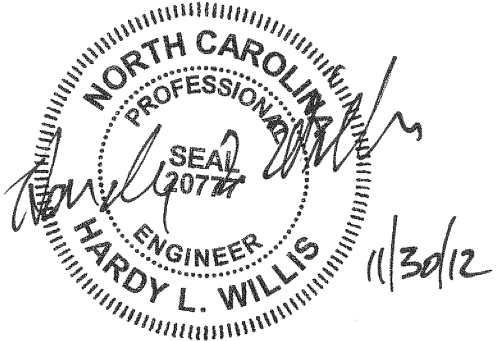
DESIGN DISCHARGE	=	1400	CFS
DESIGN FREQUENCY	=	25	YRS
DESIGN HW ELEVATION	=	2662.83	FT
BASE DISCHARGE	=	1990	CFS
BASE FREQUENCY	=	100	YRS
BASE HW ELEVATION	=	2663.28	FT

OVERTOPPING FLOOD DATA

OVERTOPPING DISCHARGE	=	945	CFS
OVERTOPPING FREQUENCY	=	10 (-)	YRS
OVERTOPPING ELEVATION	=	2661.85	FT

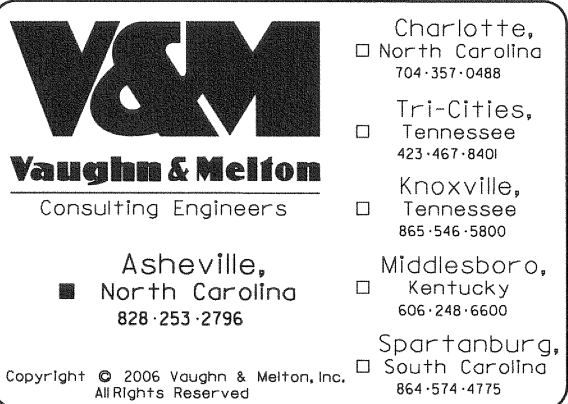
TOTAL BILL OF MATERIAL

	REMOVAL OF EXISTING STRUCTURE	UNCLASSIFIED STRUCTURE EXCAVATION	CLASS A CONCRETE	BRIDGE APPROACH SLABS	REINFORCING STEEL	HP 12 X 53 STEEL PILES		VERTICAL CONCRETE BARRIER RAIL	RIP RAP CLASS II (2'-0" THICK)	GEOTEXTILE FOR DRAINAGE	ELASTOMERIC BEARINGS	3'-0" x 1'-9" PRESTRESSED CONCRETE CORED SLAB UNIT	
	LUMP SUM	LUMP SUM	CU. YARDS	LUMP SUM	LBS.	NO.	LIN. FT.	LIN. FT.	TONS	SQ. YARDS	LUMP SUM	NO.	LIN. FT.
SUPERSTRUCTURE				LUMP SUM				80.25			LUMP SUM	10	400.0
END BENT 1		LUMP SUM	13.2		1,973	5	75		60	67			
END BENT 2		LUMP SUM	13.2		1,973	5	75		50	56			
TOTAL	LUMP SUM	LUMP SUM	26.4	LUMP SUM	3,946	10	150	80.25	110	123	LUMP SUM	10	400.0



PROJECT NO. BD-5114R
HAYWOOD COUNTY
STATION: 13+02.74 -L-

SHEET 2 OF 2



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

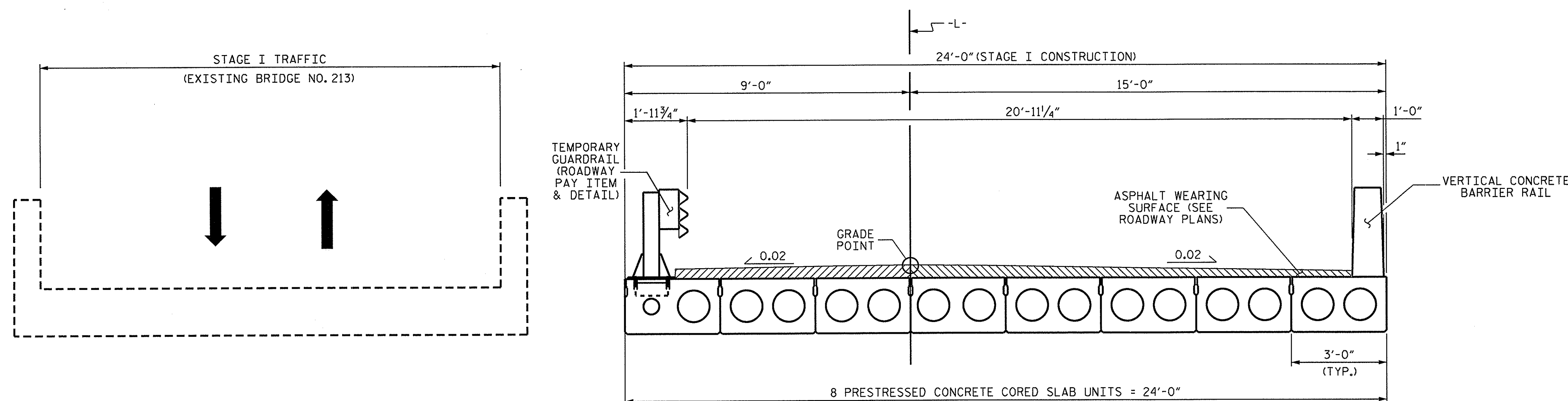
GENERAL DRAWING
FOR BRIDGE on SR 1508 (GLADES RD.)
over LINER CREEK
BETWEEN END OF ROAD & SR 1503

REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	S-2	
1			3			TOTAL SHEETS 20	
2			4				

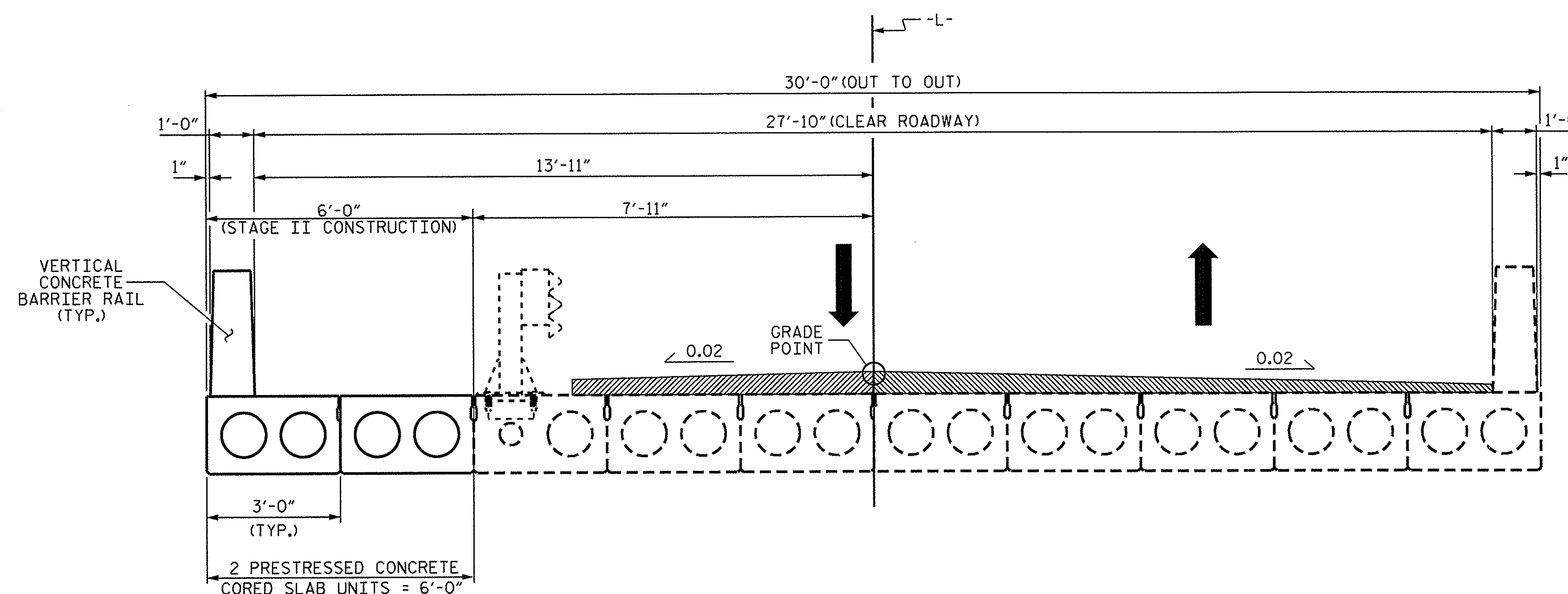
DRAWN BY: CBC DATE: SEPT. 2012
CHECKED BY: HLW DATE: SEPT. 2012

NOTES

FOR TEMPORARY GUARDRAIL DETAILS AND PAY ITEM, SEE ROADWAY PLANS.



STAGE I



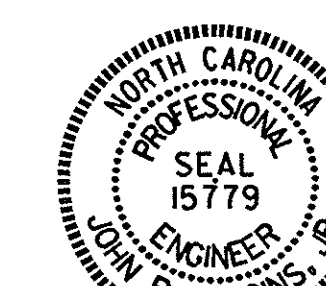
STAGE II

STAGING SEQUENCE

PROJECT NO. BD-5114R
HAYWOOD COUNTY
 STATION: 13+02.74 -L-

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

CONSTRUCTION
 STAGING



11/28/12

DRAWN BY : A. SORSENGINH DATE : 10/25/11
 CHECKED BY : B. MATHEW DATE : 12/2011

28-NOV-2012 14:28
 S:\DPC4\John\LIBR.Files\BD-5114R\Final Plans\BD-5114R_S0_PC.dgn
 jduggins

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S-3
2			4			
TOTAL SHEETS						20

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

LEVEL		VEHICLE	WEIGHT (W) (TONS)	CONTROLLING LOAD RATING	MINIMUM RATING FACTORS (RF)	TONS = W X RF	STRENGTH I LIMIT STATE										SERVICE III LIMIT STATE						COMMENT NUMBER		
							LIVELOAD FACTORS	MOMENT					SHEAR					LIVELOAD FACTORS	MOMENT						
								DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)		DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION		DISTANCE FROM LEFT END OF SPAN (ft)	
DESIGN LOAD RATING		HL-93(Inv)	N/A	1	1.319	--	1.75	0.278	1.76	40'	EL	19.5	0.549	1.32	40'	EL	1.95	0.80	0.278	1.55	40'	EL	19.5		
		HL-93(OPr)	N/A	--	1.709	--	1.35	0.278	2.28	40'	EL	19.5	0.549	1.71	40'	EL	1.95	N/A	--	--	--	--	--		
		HS-20(Inv)	36.000	2	1.540	55.449	1.75	0.278	2.21	40'	EL	19.5	0.549	1.54	40'	EL	1.95	0.80	0.278	1.94	40'	EL	19.5		
		HS-20(OPr)	36.000	--	1.997	71.878	1.35	0.278	2.86	40'	EL	19.5	0.549	2	40'	EL	1.95	N/A	--	--	--	--	--		
LEGAL LOAD RATING		SV	SNSH	13.500	--	3.606	48.687	1.4	0.278	5.1	40'	EL	19.5	0.549	4.13	40'	EL	1.95	0.80	0.278	3.61	40'	EL	19.5	
			SNGARBS2	20.000	--	2.964	59.289	1.4	0.278	4.19	40'	EL	15.6	0.549	3.07	40'	EL	1.95	0.80	0.278	2.96	40'	EL	19.5	
			SNAGRIS2	22.000	--	2.906	63.929	1.4	0.278	4.09	40'	EL	15.6	0.549	2.91	40'	EL	1.95	0.80	0.278	2.92	40'	EL	15.6	
			SNCOTTS3	27.250	--	1.803	49.125	1.4	0.278	2.55	40'	EL	19.5	0.549	2.07	40'	EL	1.95	0.80	0.278	1.80	40'	EL	19.5	
			SNAGGRS4	34.925	--	1.623	56.667	1.4	0.278	2.29	40'	EL	19.5	0.549	1.82	40'	EL	1.95	0.80	0.278	1.62	40'	EL	19.5	
			SNS5A	35.550	--	1.578	56.107	1.4	0.278	2.23	40'	EL	19.5	0.549	1.9	40'	EL	1.95	0.80	0.278	1.58	40'	EL	19.5	
			SNS6A	39.950	--	1.502	59.992	1.4	0.278	2.12	40'	EL	19.5	0.549	1.77	40'	EL	1.95	0.80	0.278	1.50	40'	EL	19.5	
			SNS7B	42.000	3	1.432	60.149	1.4	0.278	2.02	40'	EL	19.5	0.549	1.81	40'	EL	1.95	0.80	0.278	1.43	40'	EL	19.5	
		TTST	TNAGRIT3	33.000	--	1.848	60.976	1.4	0.278	2.61	40'	EL	19.5	0.549	2.08	40'	EL	1.95	0.80	0.278	1.85	40'	EL	19.5	
			TNT4A	33.075	--	1.872	61.901	1.4	0.278	2.65	40'	EL	19.5	0.549	1.98	40'	EL	1.95	0.80	0.278	1.87	40'	EL	19.5	
			TNT6A	41.600	--	1.587	66.032	1.4	0.278	2.24	40'	EL	19.5	0.549	1.94	40'	EL	1.95	0.80	0.278	1.59	40'	EL	19.5	
			TNT7A	42.000	--	1.627	68.354	1.4	0.278	2.3	40'	EL	19.5	0.549	1.79	40'	EL	1.95	0.80	0.278	1.63	40'	EL	19.5	
			TNT7B	42.000	--	1.664	69.888	1.4	0.278	2.35	40'	EL	19.5	0.549	1.72	40'	EL	1.95	0.80	0.278	1.66	40'	EL	19.5	
			TNAGRIT4	43.000	--	1.619	69.61	1.4	0.278	2.28	40'	EL	15.6	0.549	1.65	40'	EL	1.95	0.80	0.278	1.62	40'	EL	19.5	
TNAGT5A	45.000	--	1.498	67.412	1.4	0.278	2.12	40'	EL	19.5	0.549	1.71	40'	EL	1.95	0.80	0.278	1.50	40'	EL	19.5				
TNAGT5B	45.000	--	1.455	65.486	1.4	0.278	2.06	40'	EL	19.5	0.549	1.56	40'	EL	1.95	0.80	0.278	1.46	40'	EL	19.5				

LOAD FACTORS:

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

NOTES:

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

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

COMMENTS:

-
-
-
-

CONTROLLING LOAD RATING

1 DESIGN LOAD RATING (HL-93)

2 DESIGN LOAD RATING (HS-20)

3 LEGAL LOAD RATING **

** SEE CHART FOR VEHICLE TYPE

GIRDER LOCATION

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

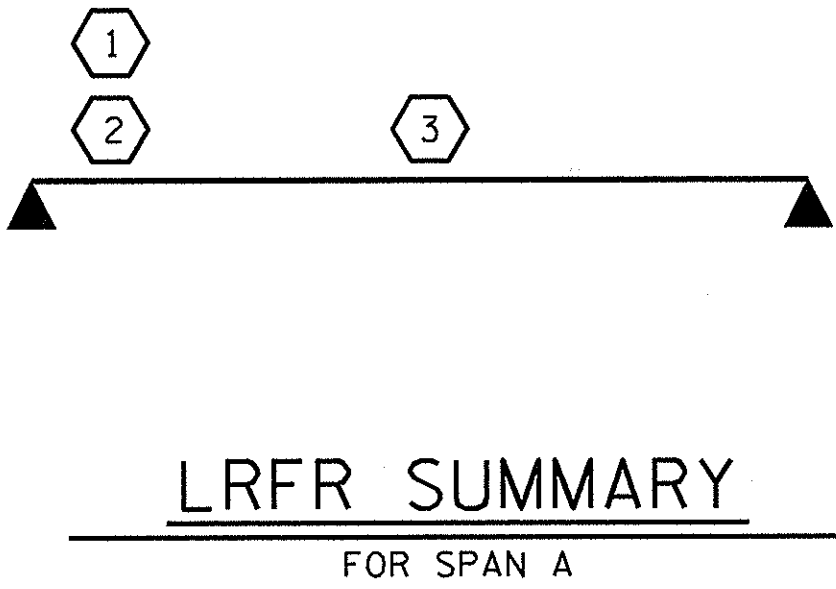
PROJECT NO. BD-5114R
HAYWOOD COUNTY
STATION: 13+02.74 -L-

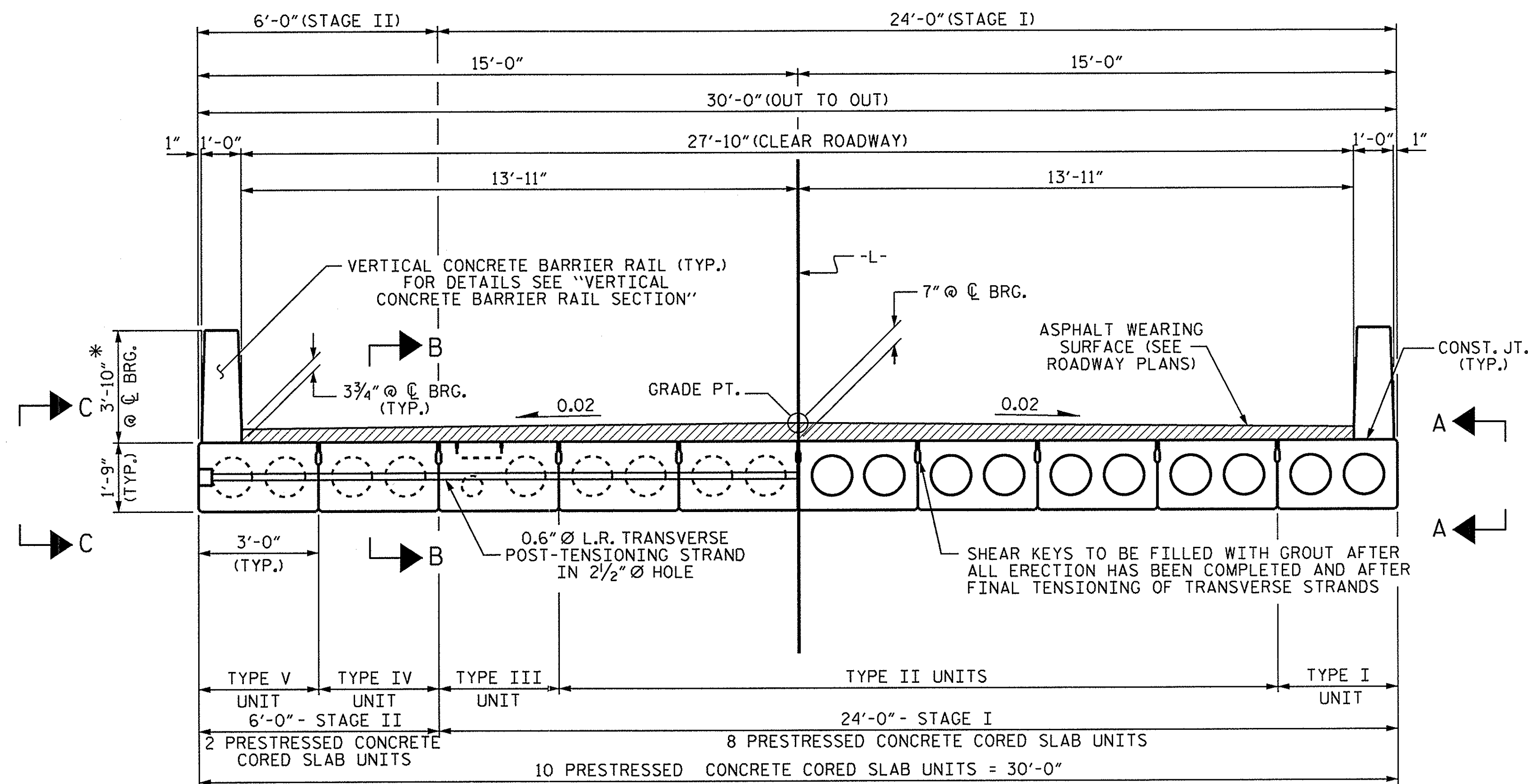
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD
LRFR SUMMARY FOR
40' CORED SLAB UNIT
90° SKEW
(NON-INTERSTATE TRAFFIC)

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S-4
2			4			TOTAL SHEETS 20

ASSEMBLED BY : A. SORSENGINH DATE : 10/2011
CHECKED BY : B. MATHEW DATE : 12/2011
DRAWN BY : CVC 6/10
CHECKED BY : DNS 6/10



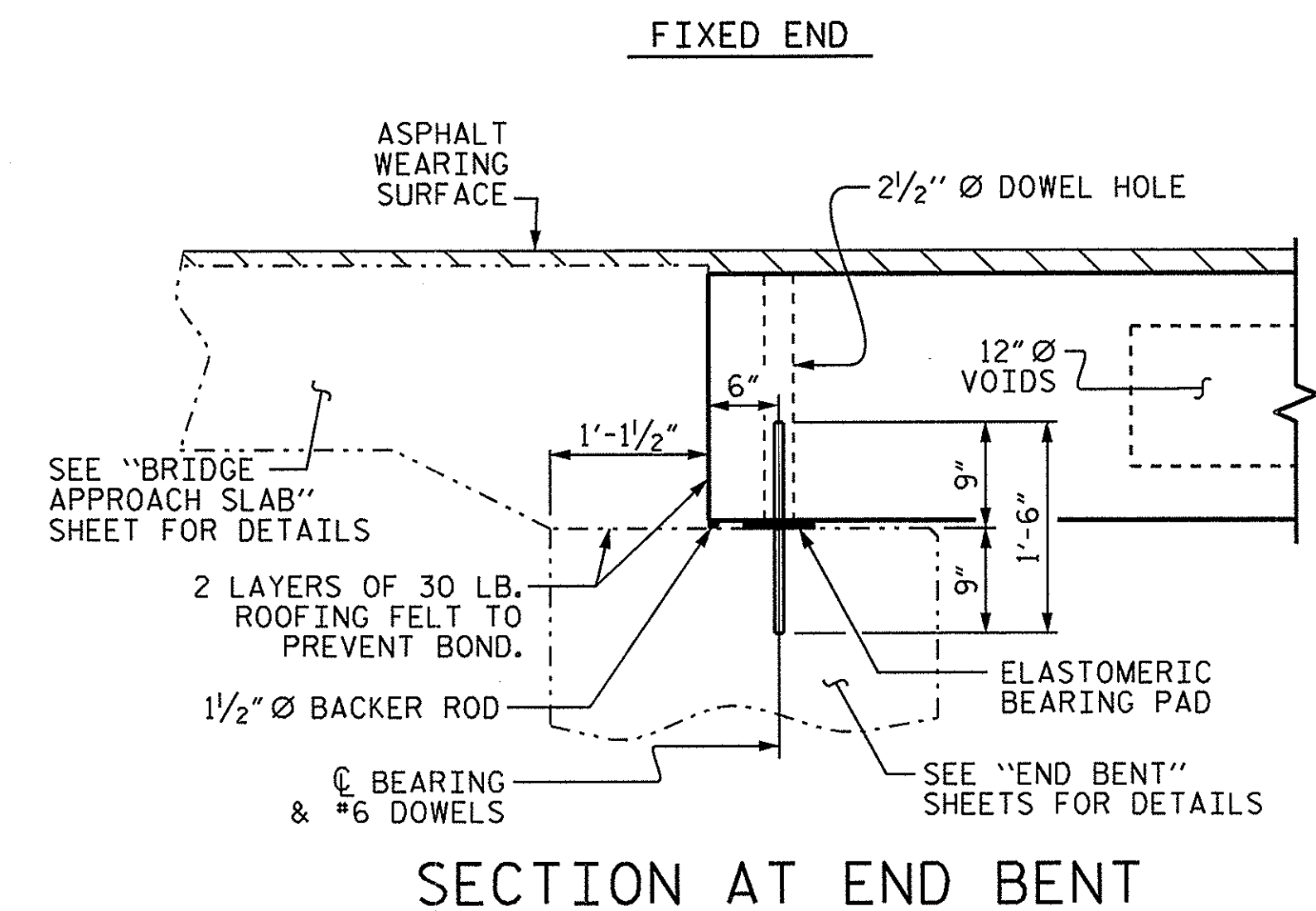


HALF SECTION
AT INTERMEDIATE DIAPHRAGMS

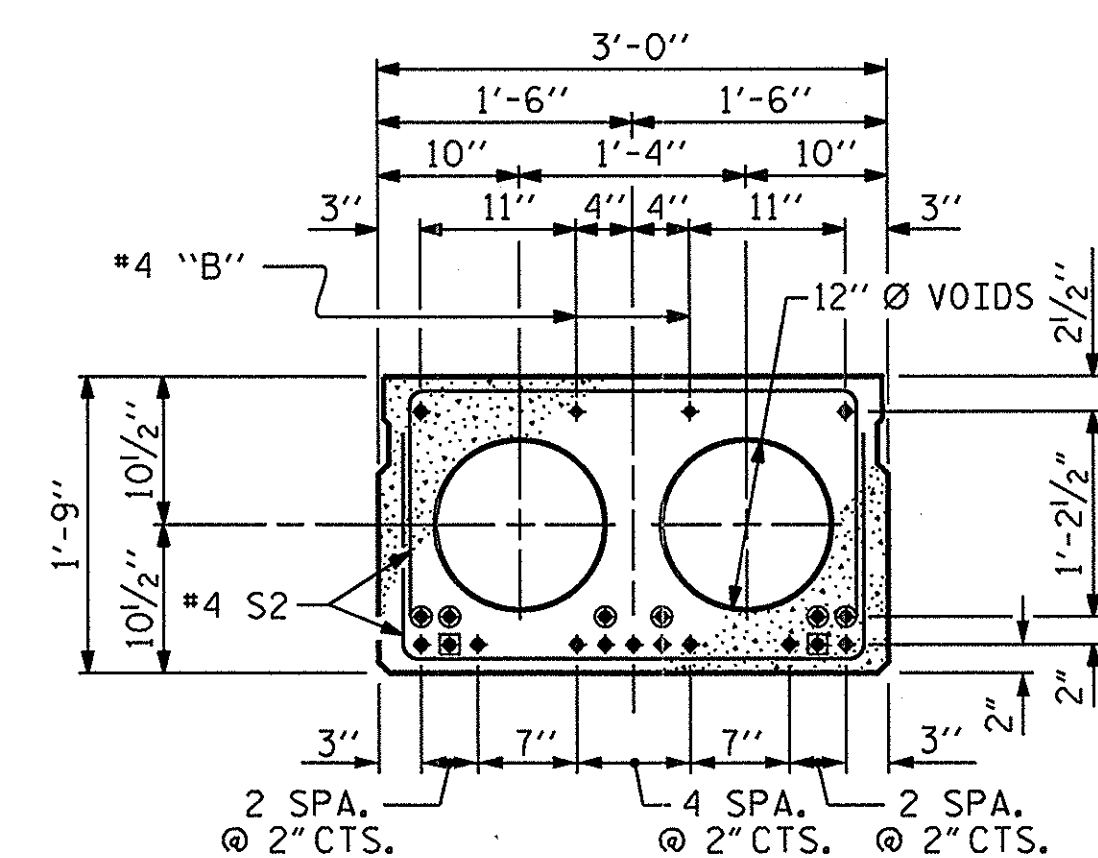
HALF SECTION
THROUGH VOIDS

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.



SECTION AT END BENT



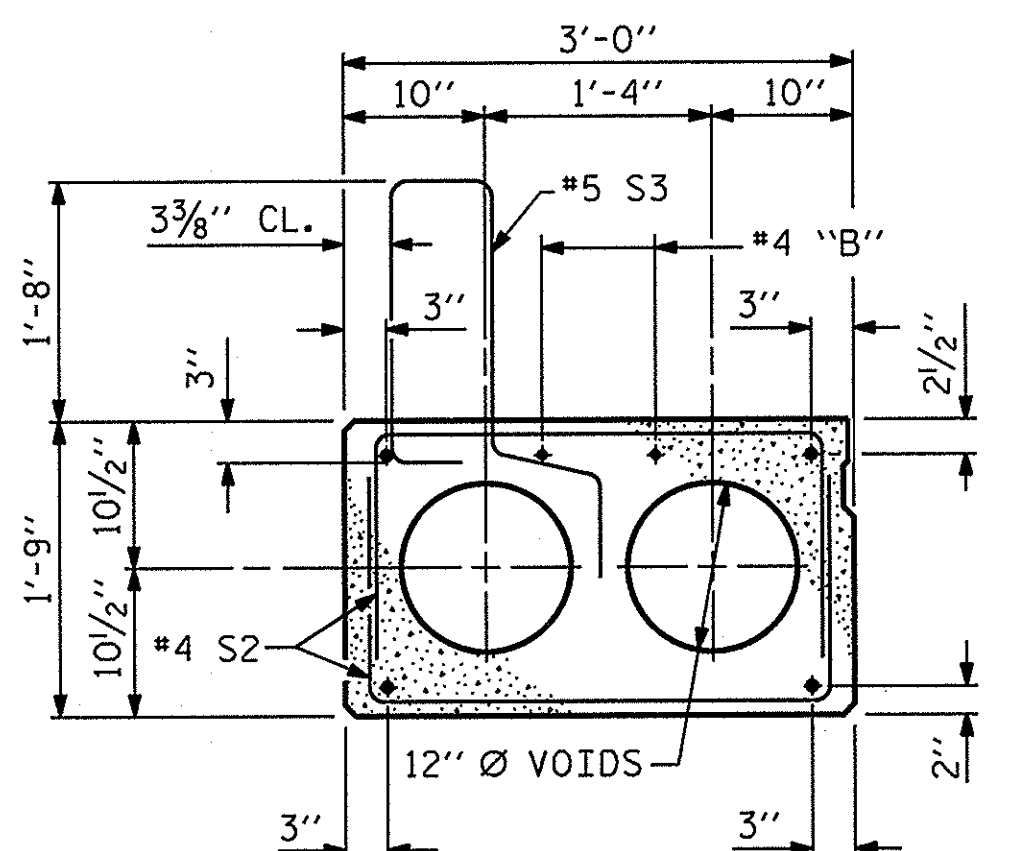
STRAND LAYOUT FOR 40' UNIT

TYPE II & IV (13 STRANDS REQUIRED)

INTERIOR SLAB SECTION 0.6" Ø LOW RELAXATION

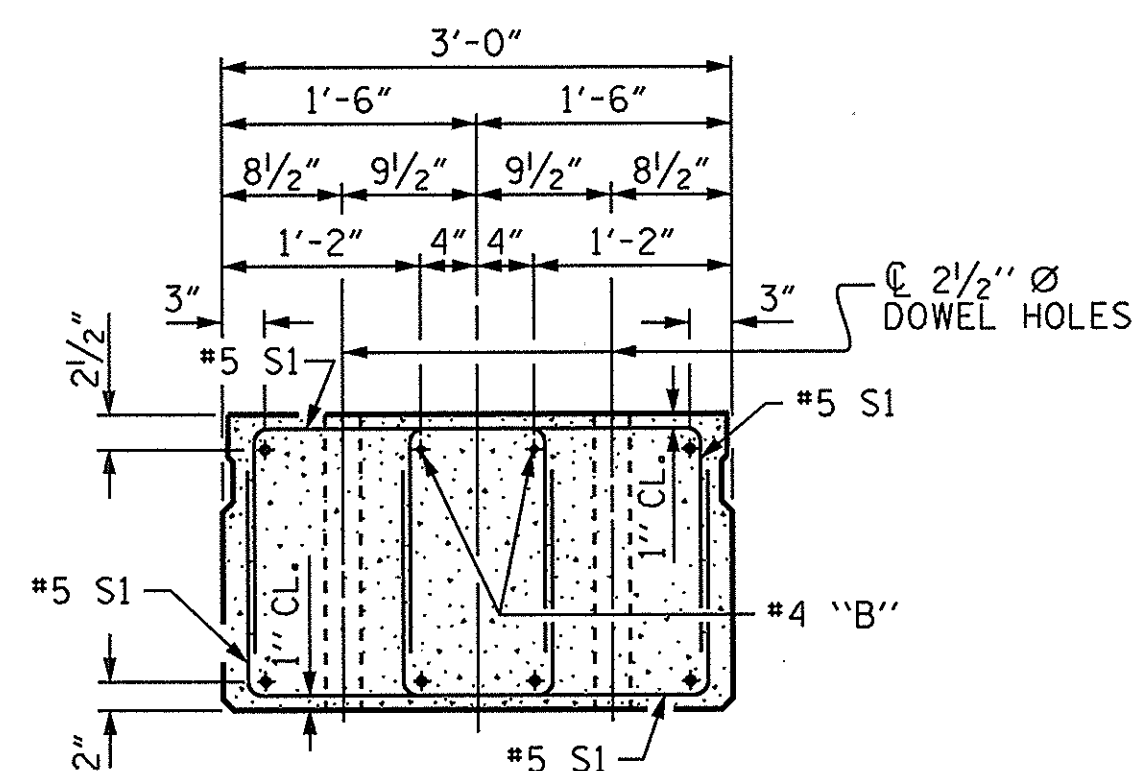
- ☐ BOND SHALL BE BROKEN ON THESE STRANDS FOR A DISTANCE OF 2'-0" FROM END OF CORED SLAB UNIT. SEE STANDARD SPECIFICATIONS, ARTICLE 1078-7.
- OPTIONAL FULL LENGTH DEBONDED STRANDS. THESE STRANDS ARE NOT REQUIRED. IF THE FABRICATOR CHOOSES TO INCLUDE THESE STRANDS IN THE CORED SLAB UNIT, THE STRANDS SHALL BE DEBONDED FOR THE FULL LENGTH OF THE UNIT AT NO ADDITIONAL COST. SEE STANDARD SPECIFICATIONS, ARTICLE 1078-7.

DEBONDING LEGEND



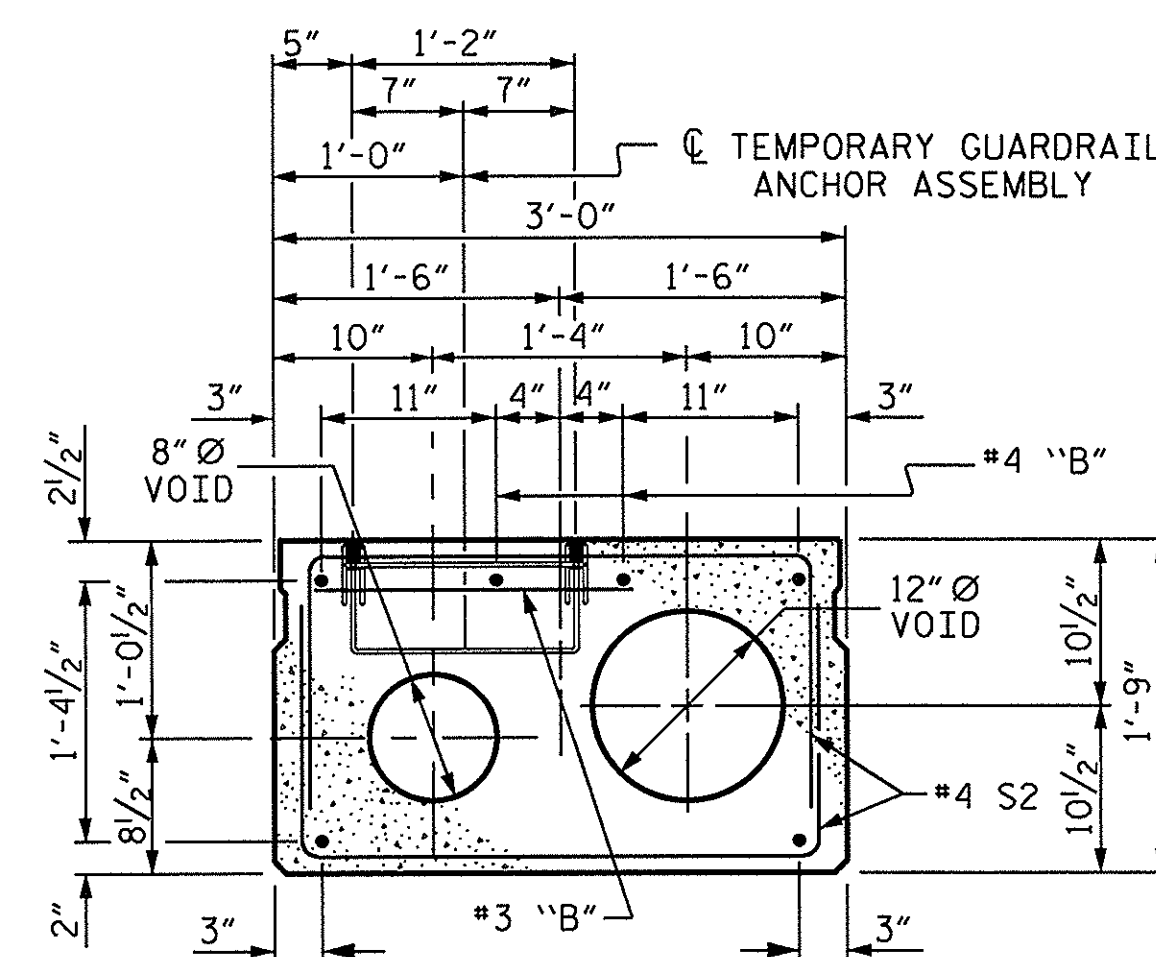
EXTERIOR SLAB SECTION

TYPE I & V
(FOR PRESTRESSED STRAND LAYOUT, SEE INTERIOR SLAB SECTION - TYPE II & IV)



END ELEVATION

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



INTERIOR SLAB SECTION

TYPE III
(FOR PRESTRESSED STRAND LAYOUT, SEE "INTERIOR SLAB SECTION - TYPE II & IV")

FOR TEMPORARY GUARDRAIL ANCHOR ASSEMBLY LOCATION, SEE SECTION OF ANCHOR ASSEMBLY LOCATION ON "ANCHORAGE DETAILS FOR TEMPORARY GUARDRAIL ANCHOR ASSEMBLY FOR TYPE III CORED SLAB UNIT" SHEET.

ASSEMBLED BY :	A. SORSENGINH	DATE :	10/2011
CHECKED BY :	B. MATHEW	DATE :	12/2011
DRAWN BY :	DGE	6/09	
CHECKED BY :	BCH	6/09	

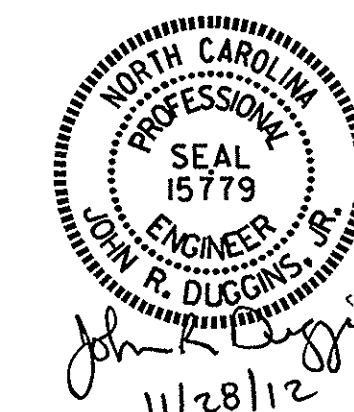
PROJECT NO. BD-5114R
HAYWOOD COUNTY
STATION: 13+02.74 -L-

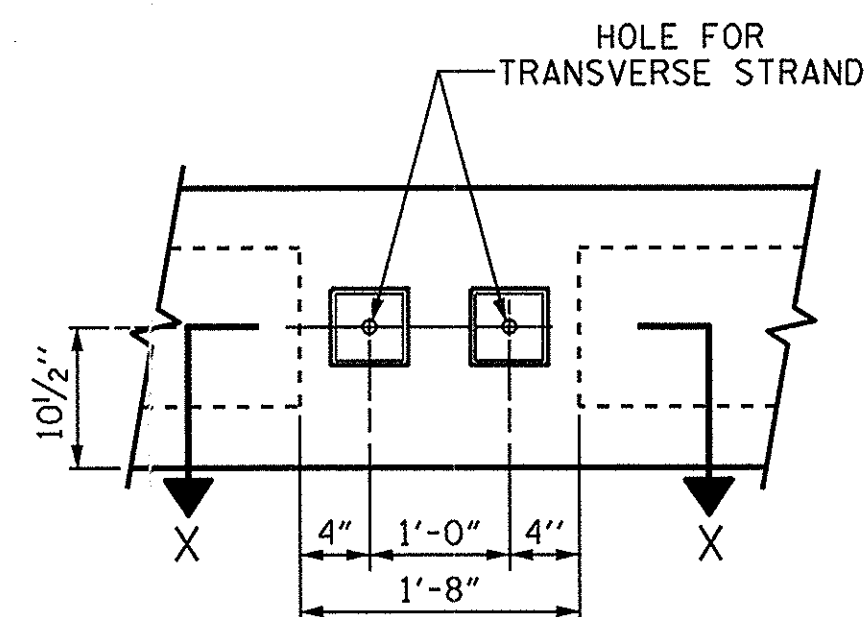
SHEET 1 OF 5

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

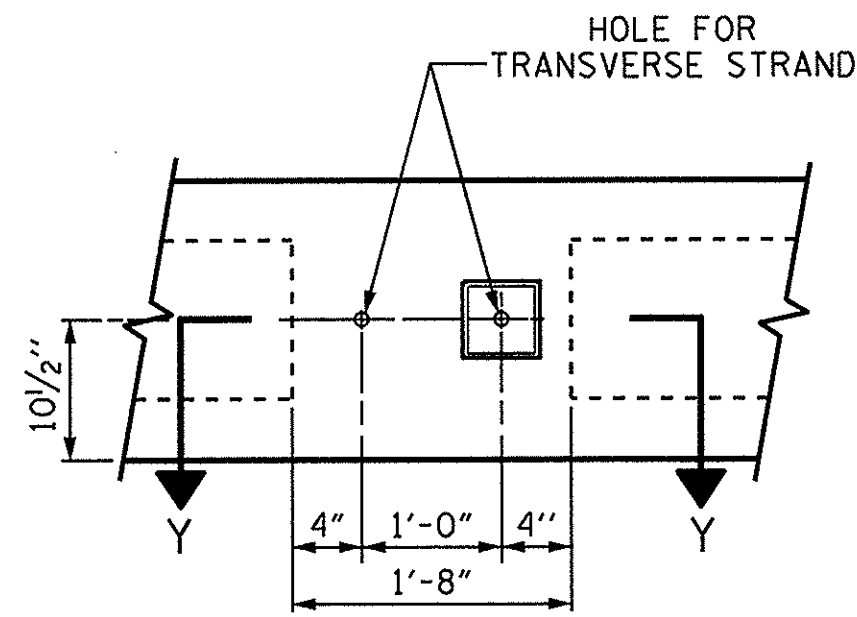
3'-0" X 1'-9"
PRESTRESSED CONCRETE
CORED SLAB UNIT
90° SKEW

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			9-5
2			4			TOTAL SHEETS 20

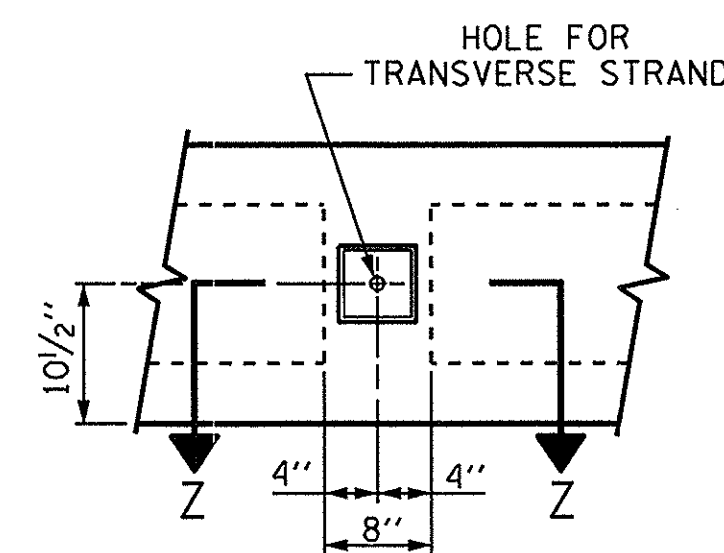




VIEW A-A
SEE SHEET 1 OF 5

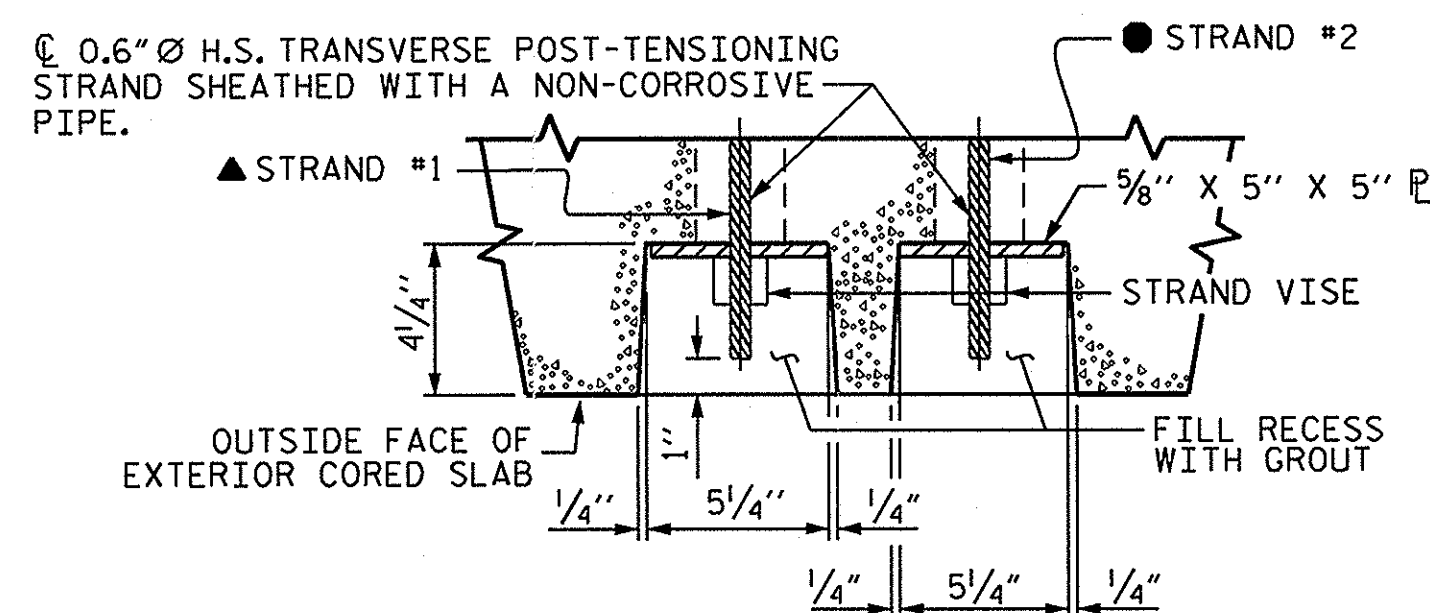


VIEW B-B
SEE SHEET 1 OF 5



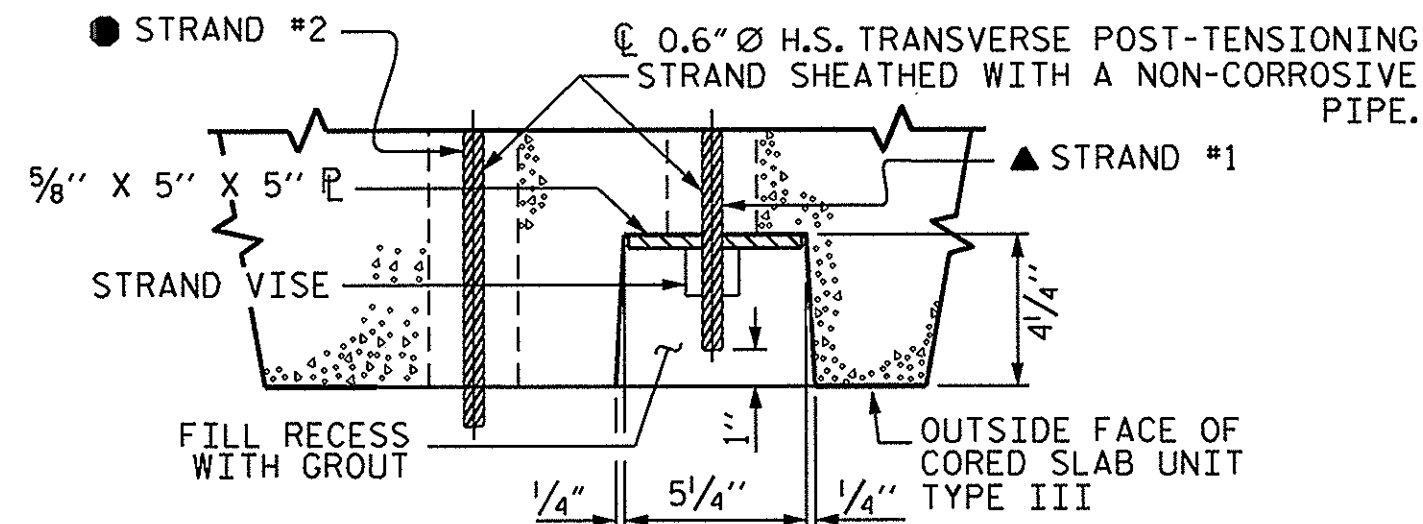
VIEW C-C
SEE SHEET 1 OF 5

- ▲ STRAND #1 GOES THRU 8 CORED SLAB UNITS (TO BE TENSIONED DURING STAGE I CONSTRUCTION)
- STRAND #2 GOES THRU ALL 10 CORED SLAB UNITS (TO BE TENSIONED DURING STAGE II CONSTRUCTION)



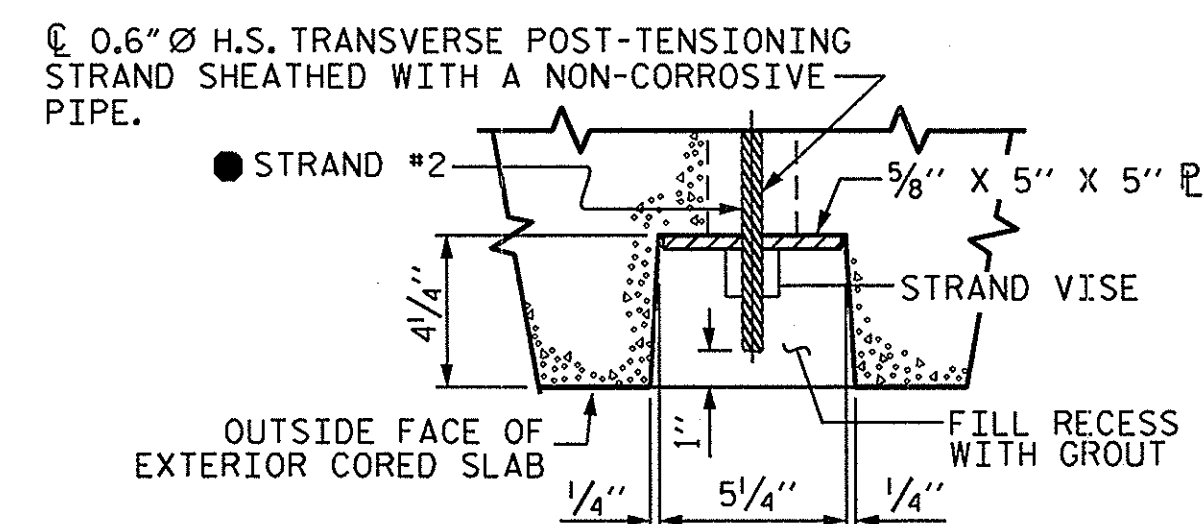
SECTION X-X
(TYPE I UNIT)

UP STATION →



SECTION Y-Y
(TYPE III UNIT)

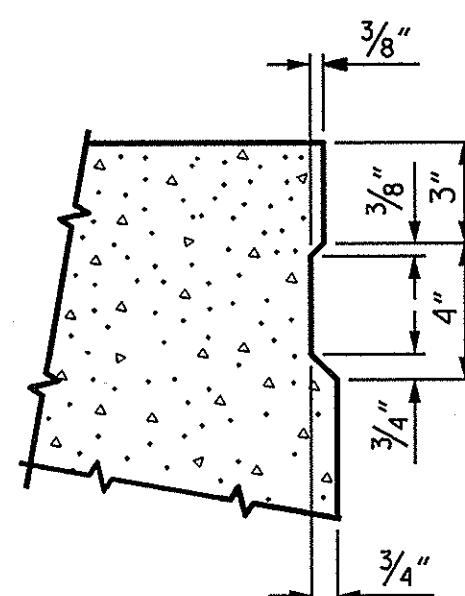
UP STATION →



SECTION Z-Z
(TYPE V UNIT)

UP STATION →

GROUTED RECESS AT END OF POST-TENSIONED STRAND



SHEAR KEY DETAIL

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

DRAWN BY : A. SORSENGINH DATE : 10/18/11
CHECKED BY : B. MATHEW DATE : 12/20/11

27-NOV-2012 15:15
S:\DPC4\John\LIBR.Files\BD-5114R\Final Plans\BD-5114R_SD_5*.dgn
jduggins

PROJECT NO. BD-5114R
HAYWOOD COUNTY
STATION: 13+02.74 -L-

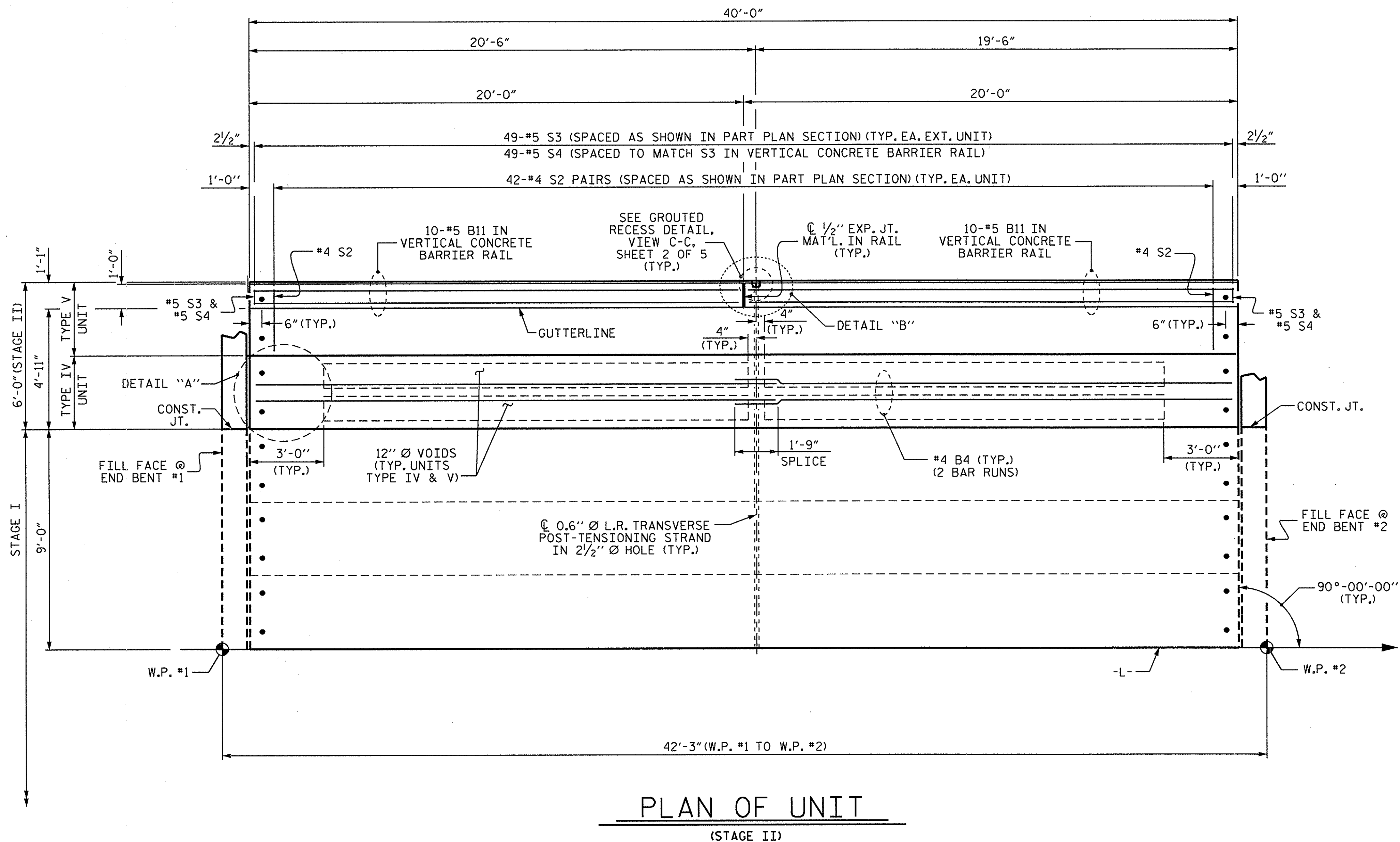
SHEET 2 OF 5

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

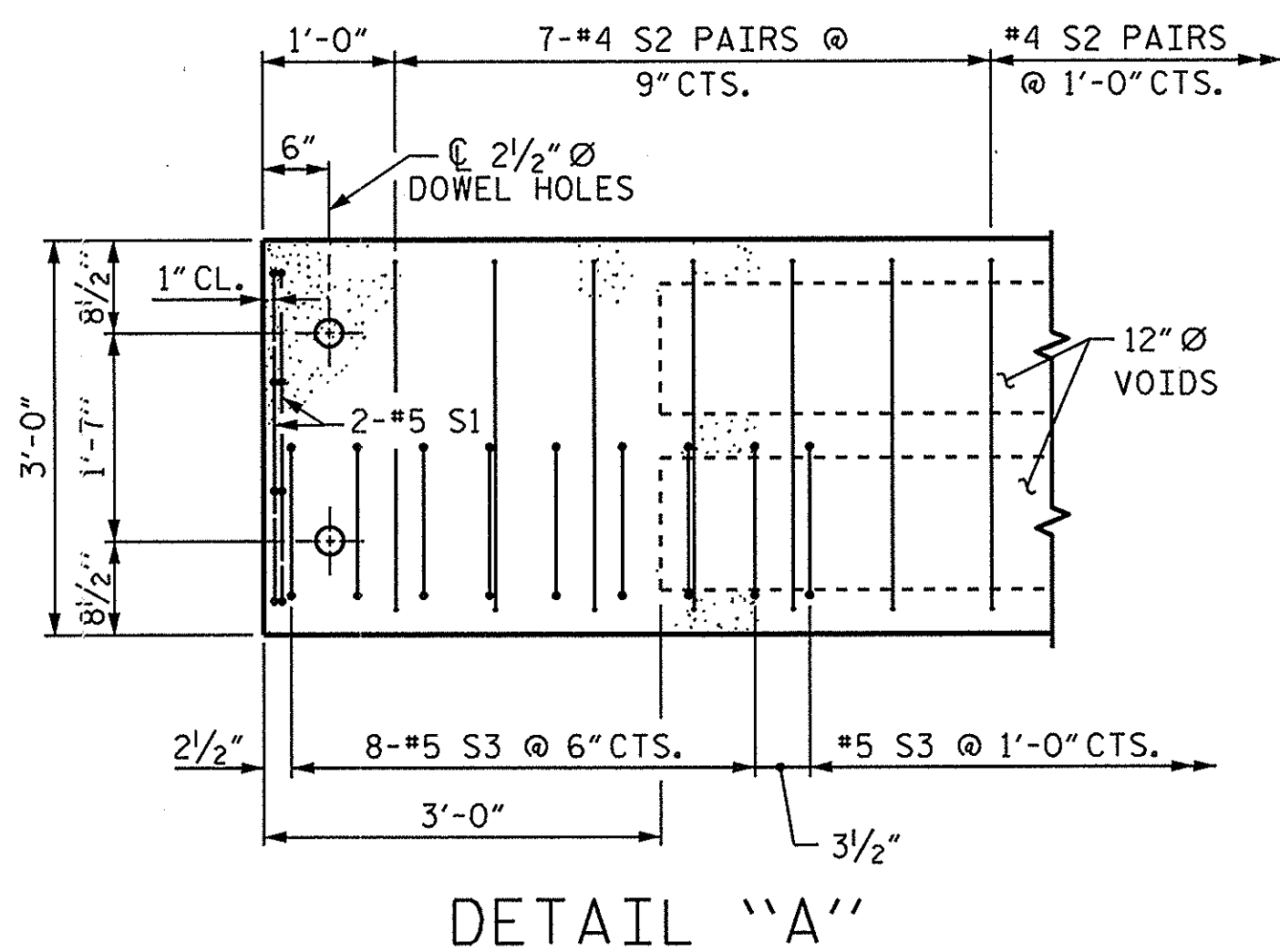
SUPERSTRUCTURE
3'-0" X 1'-9"
PRESTRESSED CONCRETE
CORED SLAB UNIT

REVISIONS						SHEET NO. 5-6
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 20
2			4			

NORTH CAROLINA
PROFESSIONAL
SEAL
15779
ENGINEER
JOHN R. DUGGINS, JR.
11/28/12

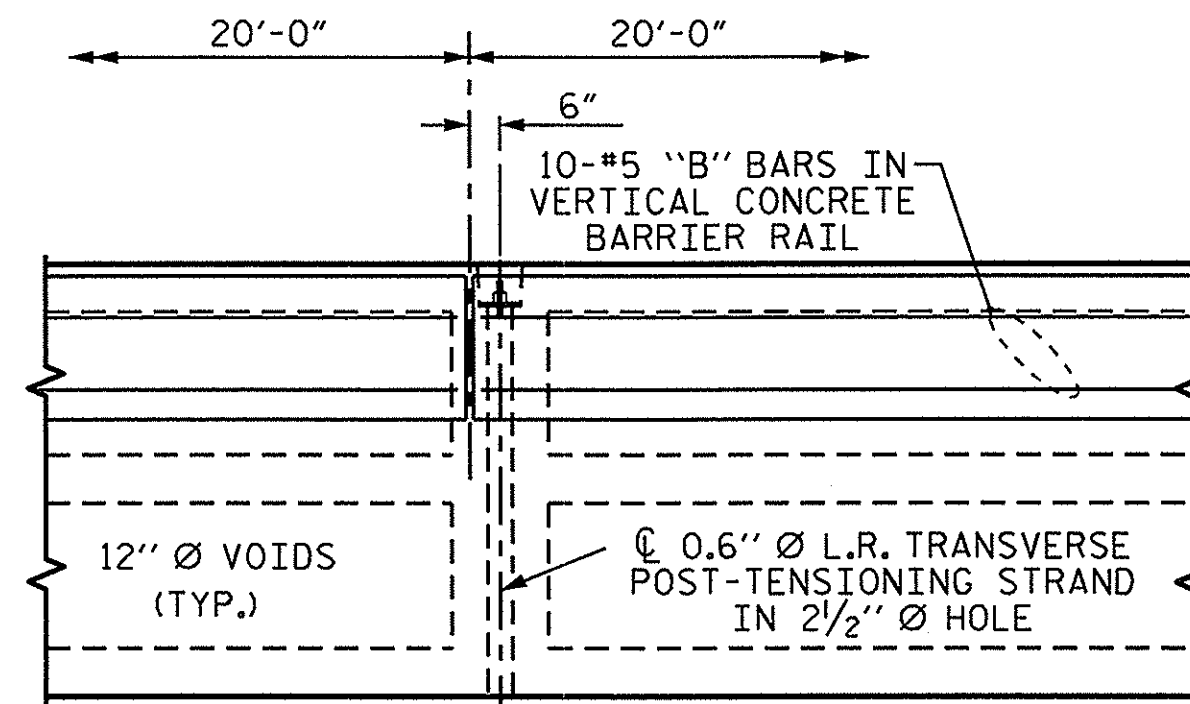


PLAN OF UNIT
(STAGE II)



DETAIL "A"

NOTE: EXTERIOR SECTION SHOWN-INTERIOR SECTION
SIMILAR EXCEPT OMIT S3 BARS



DETAIL "B"

#4 S2 BARS MAY BE SHIFTED AS NECESSARY
TO MAINTAIN 1" CLEAR TO GROUDED RECESS AND
2 1/2" Ø TRANSVERSE POST-TENSIONING STRAND HOLES

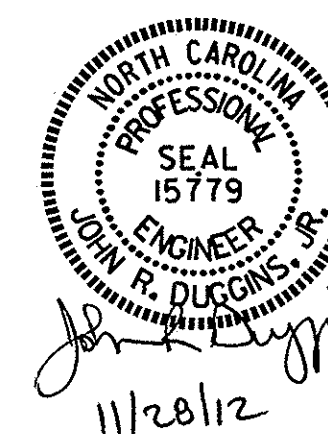
PROJECT NO. BD-5114R
HAYWOOD COUNTY
STATION: 13+02.74 -L-

SHEET 4 OF 5

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE
PLAN OF 40' UNIT
STAGE II

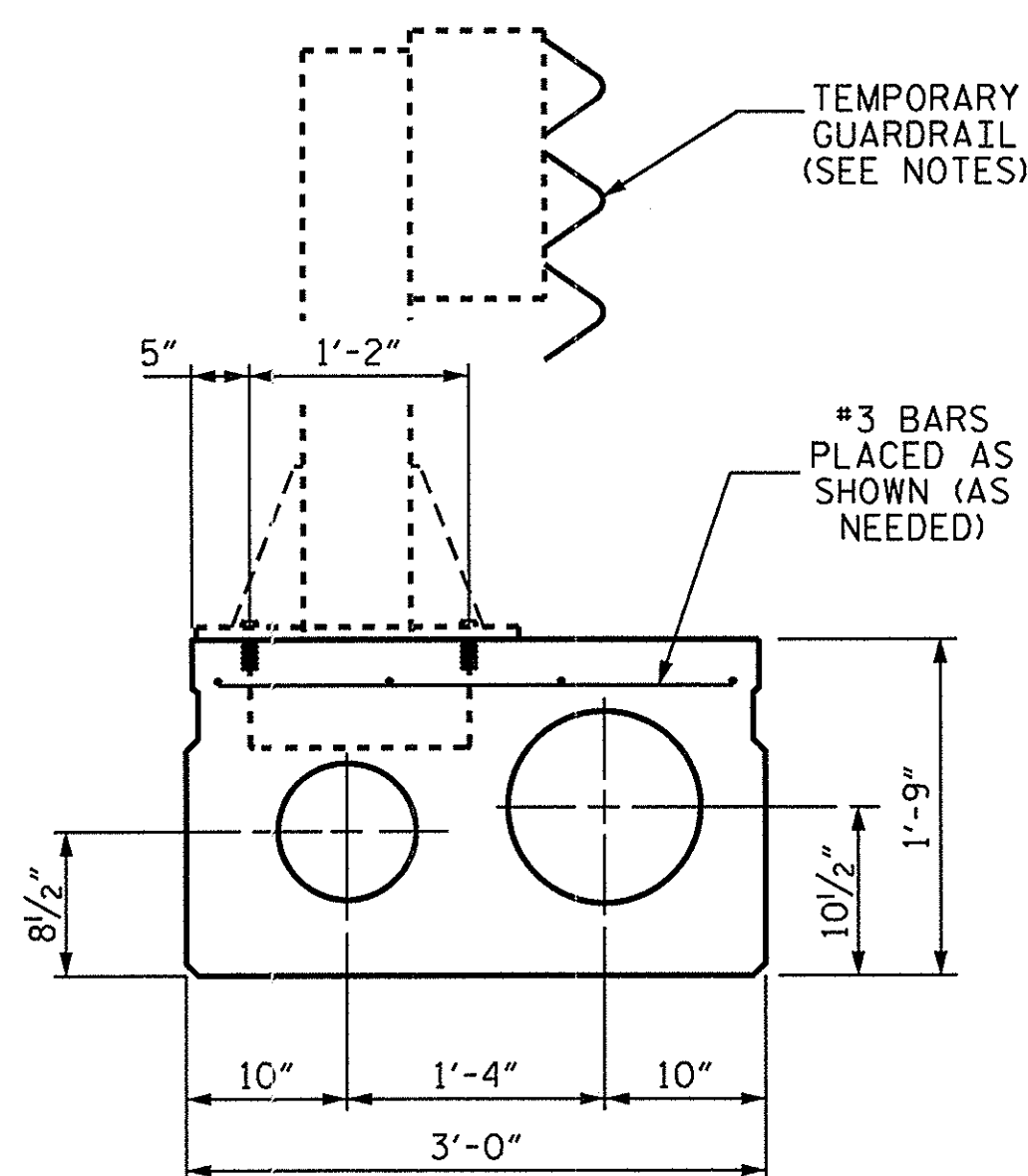
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S-8
2			4			TOTAL SHEETS 20



DRAWN BY : A. SORSENGINH DATE : 10/18/11
CHECKED BY : B. MATHEW DATE : 12/20/11

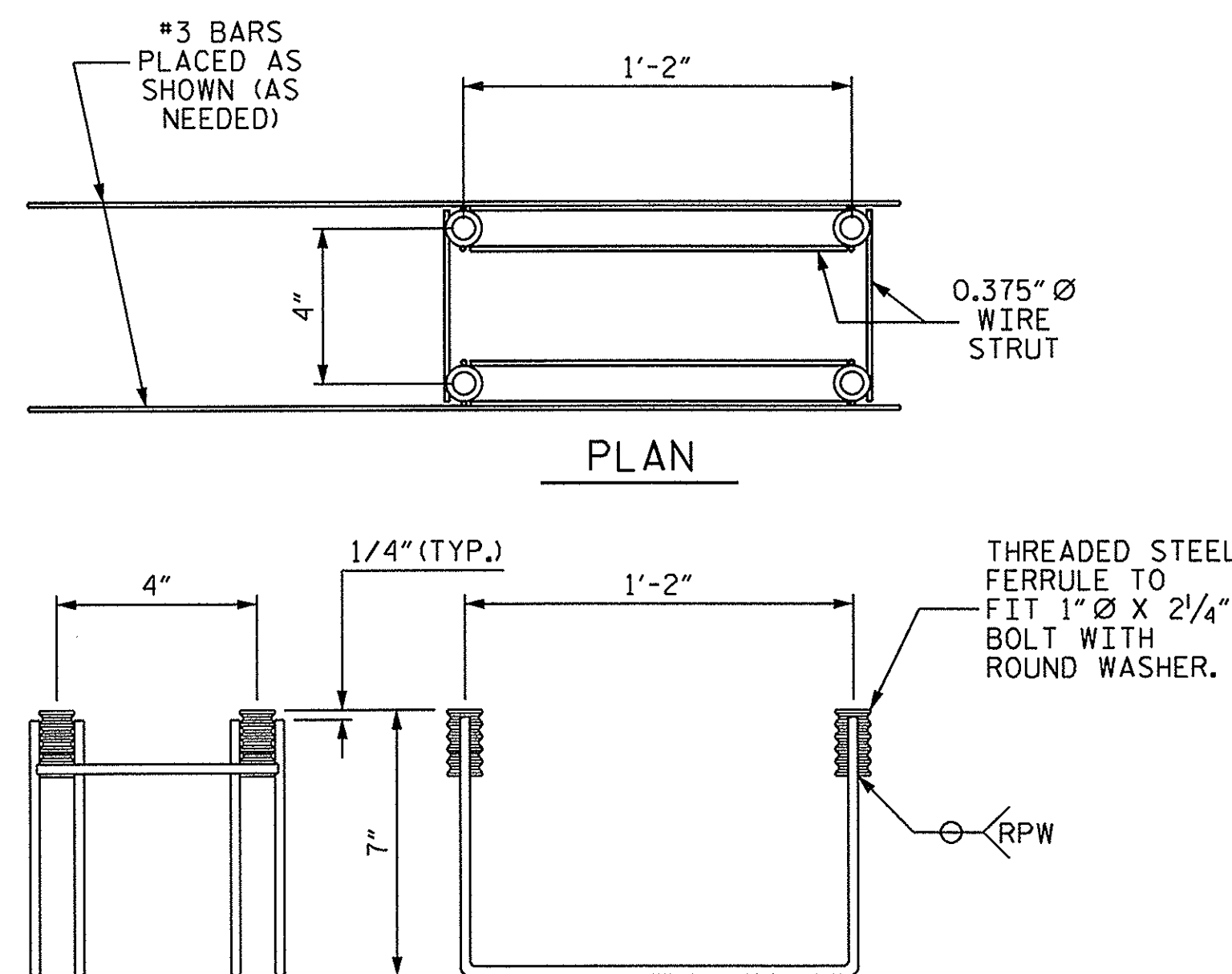
27-NOV-2012 15:14
S:\DPG4\John\LIBR.Files\BD-5114R\Final Plans\BD-5114R_S0.S*.dgn
jduggins

NC005



SECTION OF ANCHOR ASSEMBLY LOCATION

(TYPE III UNIT OF STAGE I)
THE #3 BARS ARE INCIDENTAL AND THEIR COST SHALL BE INCLUDED IN THE PRICE BID FOR THE PRESTRESSED CONCRETE CORED SLABS.



TEMPORARY GUARDRAIL ANCHOR ASSEMBLY

(8 ASSEMBLIES REQUIRED IN THE TYPE III CORED SLAB UNITS)
(4 ASSEMBLIES REQUIRED IN THE APPROACH SLABS)

NOTES

THE TEMPORARY GUARDRAIL ANCHOR ASSEMBLY SHALL CONSIST OF THE FOLLOWING COMPONENTS:

- A. FERRULES SHALL BE MADE FROM STEEL MEETING THE REQUIREMENTS OF AASHTO M169, GRADE 12L14 AND SHALL HAVE A MINIMUM LENGTH OF THREADS OF 2 1/2".
- B. 4 - 1" $\varnothing$ X 2 1/4" BOLTS WITH WASHERS. BOLTS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A307. BOLTS AND WASHERS SHALL BE GALVANIZED. (AT THE CONTRACTOR'S OPTION, STAINLESS STEEL BOLTS AND WASHERS MAY BE USED AS AN ALTERNATE FOR THE 1" $\varnothing$ X 2 1/4" GALVANIZED BOLTS 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.
- C. WIRE STRUTS SHOWN IN THE TEMPORARY GUARDRAIL ANCHOR ASSEMBLY DETAIL ARE THE MINIMUM ALLOWABLE SIZE AND SHALL HAVE A MINIMUM TENSILE STRENGTH OF 100,000 PSI.

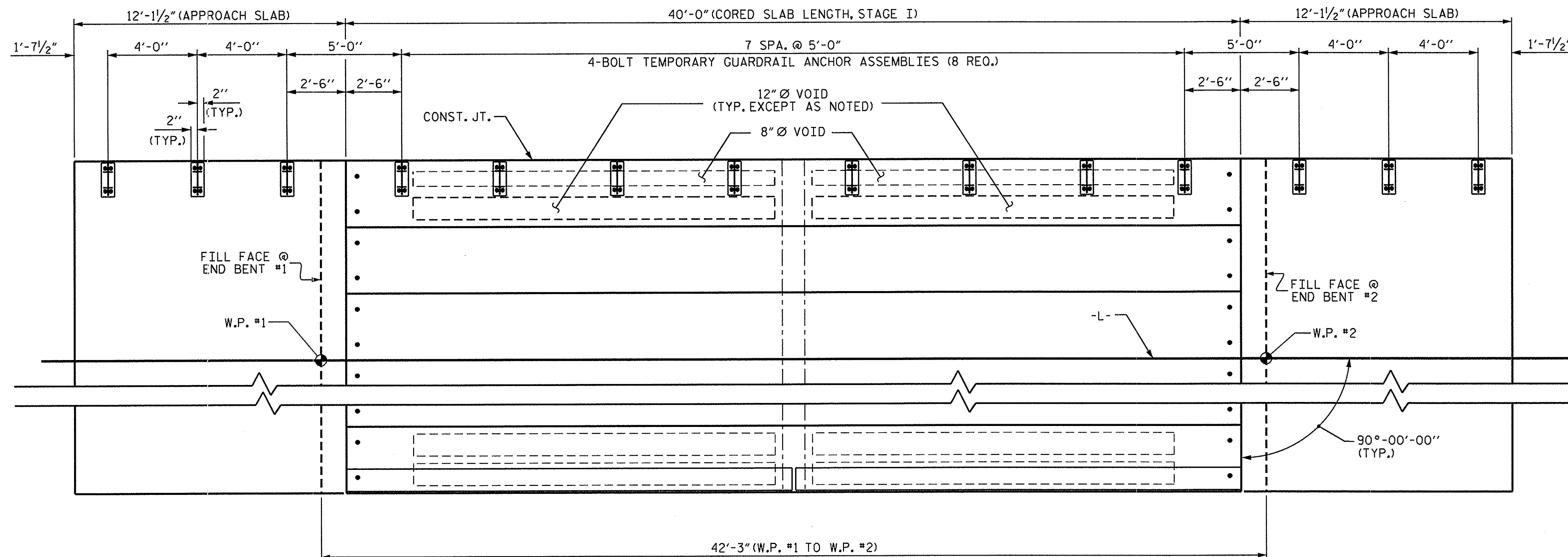
TEMPORARY GUARDRAIL ANCHOR ASSEMBLY WITH BOLTS SHALL BE ASSEMBLED IN THE SHOP. BOLT THREADS MAY BE RECUT AS NECESSARY TO INSURE FIT.

THE COST OF THE TEMPORARY GUARDRAIL ANCHOR ASSEMBLY COMPLETE IN PLACE, SHALL BE INCLUDED, AS APPLICABLE, IN THE UNIT CONTRACT PRICE BID FOR 3'-0" X 1'-9" PRESTRESSED CONCRETE CORED SLAB OR LUMP SUM PRICE BID FOR APPROACH SLABS.

FERRULES TO BE PLUGGED DURING CASTING OF THE CORED SLAB UNITS OR POURING OF APPROACH SLAB AS RECOMMENDED BY THE MANUFACTURER.

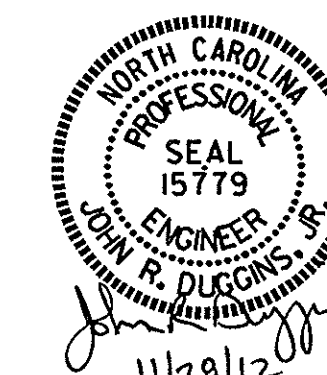
AT THE CONTRACTOR'S OPTION, FERRULES WITH OPEN OR CLOSED ENDS MAY BE USED.

PAYMENT FOR TEMPORARY GUARDRAIL IS INCLUDED IN ROADWAY PAY ITEMS.



RAIL POST SPACING FOR TEMPORARY GUARDRAIL - STAGE I

PROJECT NO. BD-5114R
HAYWOOD COUNTY
STATION: 13+02.74 -L-



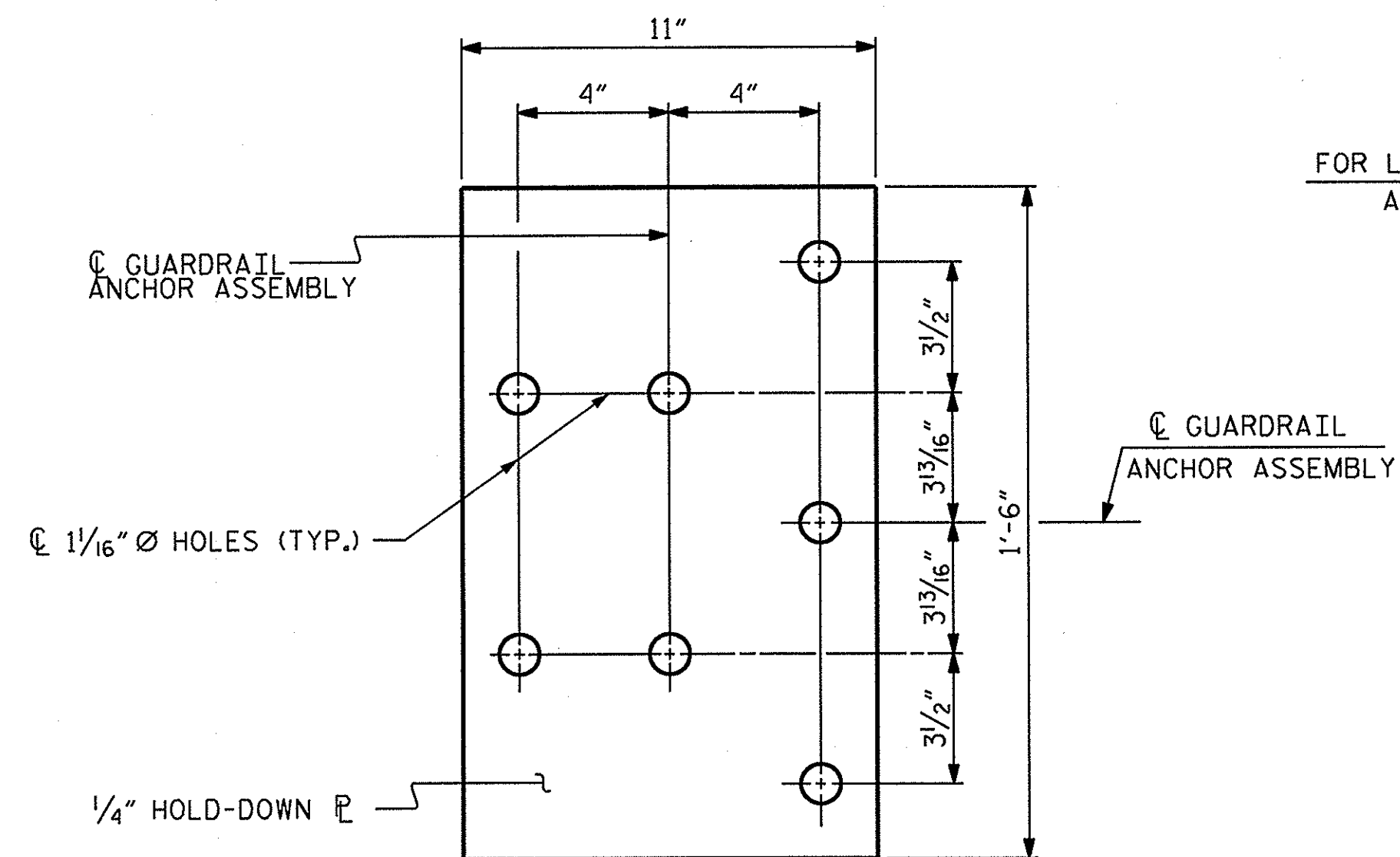
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

ANCHORAGE DETAILS FOR
TEMPORARY GUARDRAIL
ANCHOR ASSEMBLY FOR
TYPE III CORED
SLAB UNIT STAGE I

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

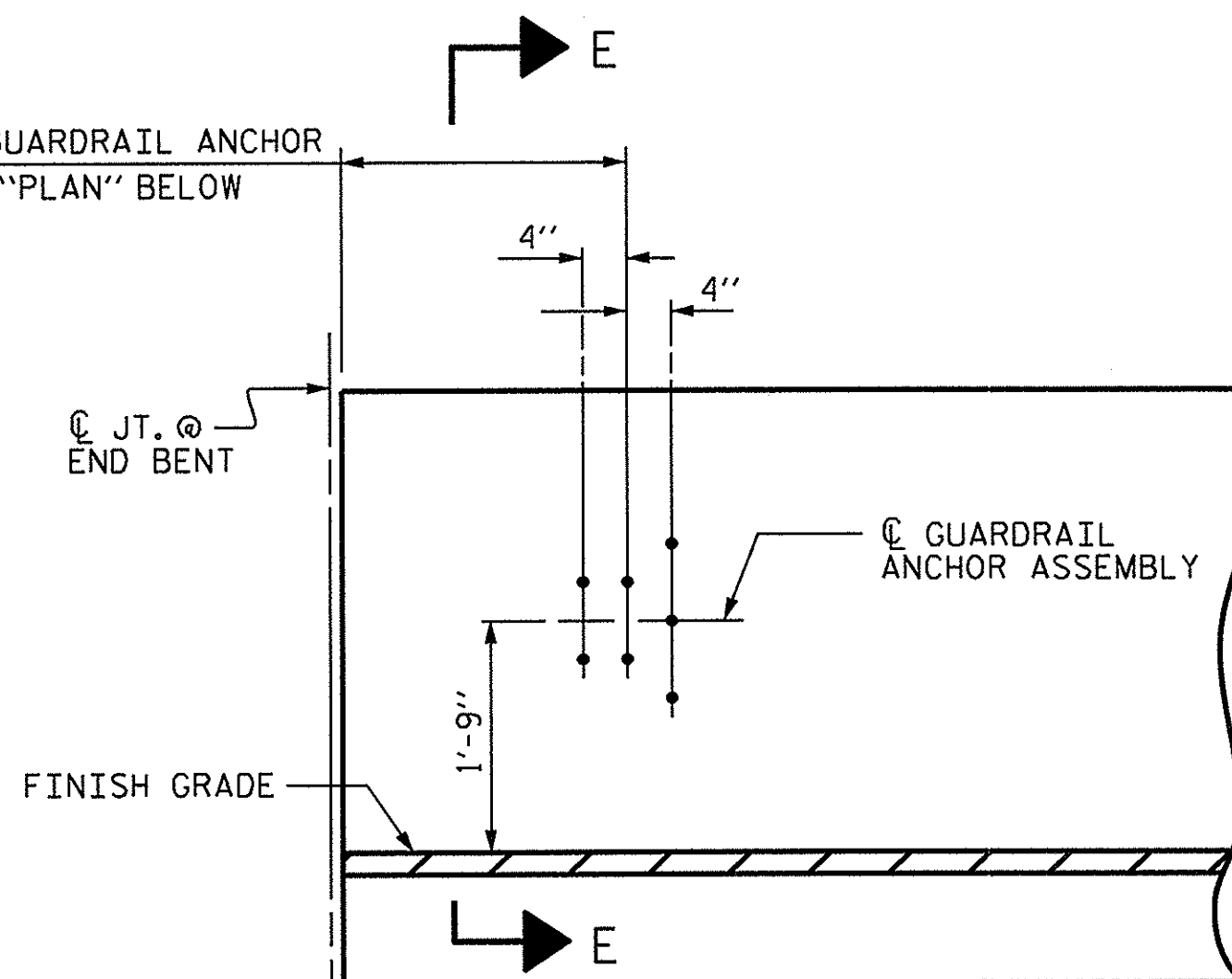
TOTAL
SHEETS
20

DRAWN BY: A. SORSENGINH DATE: 10/20/11
CHECKED BY: B. MATHEW DATE: 12/20/11

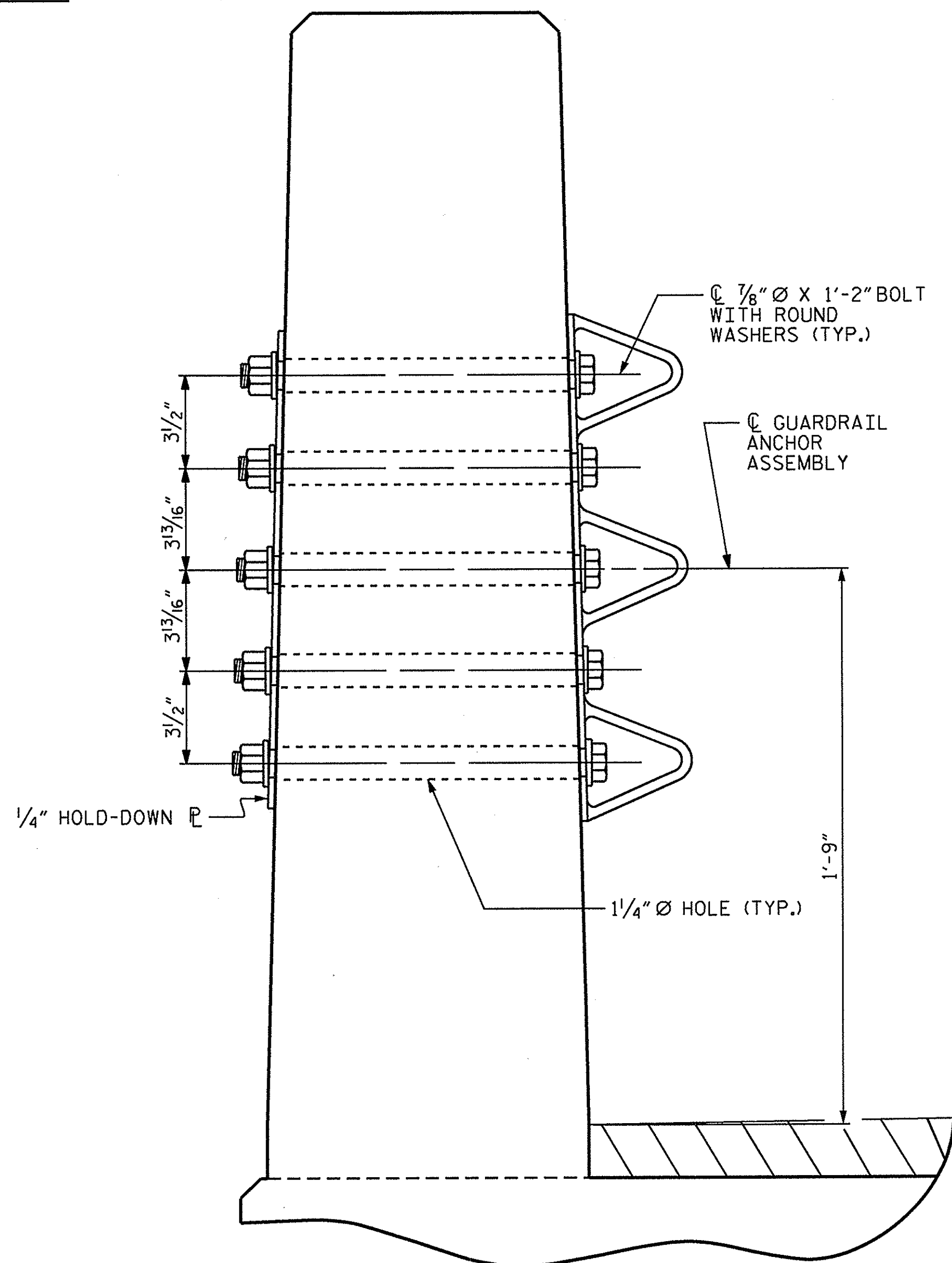


PLAN

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

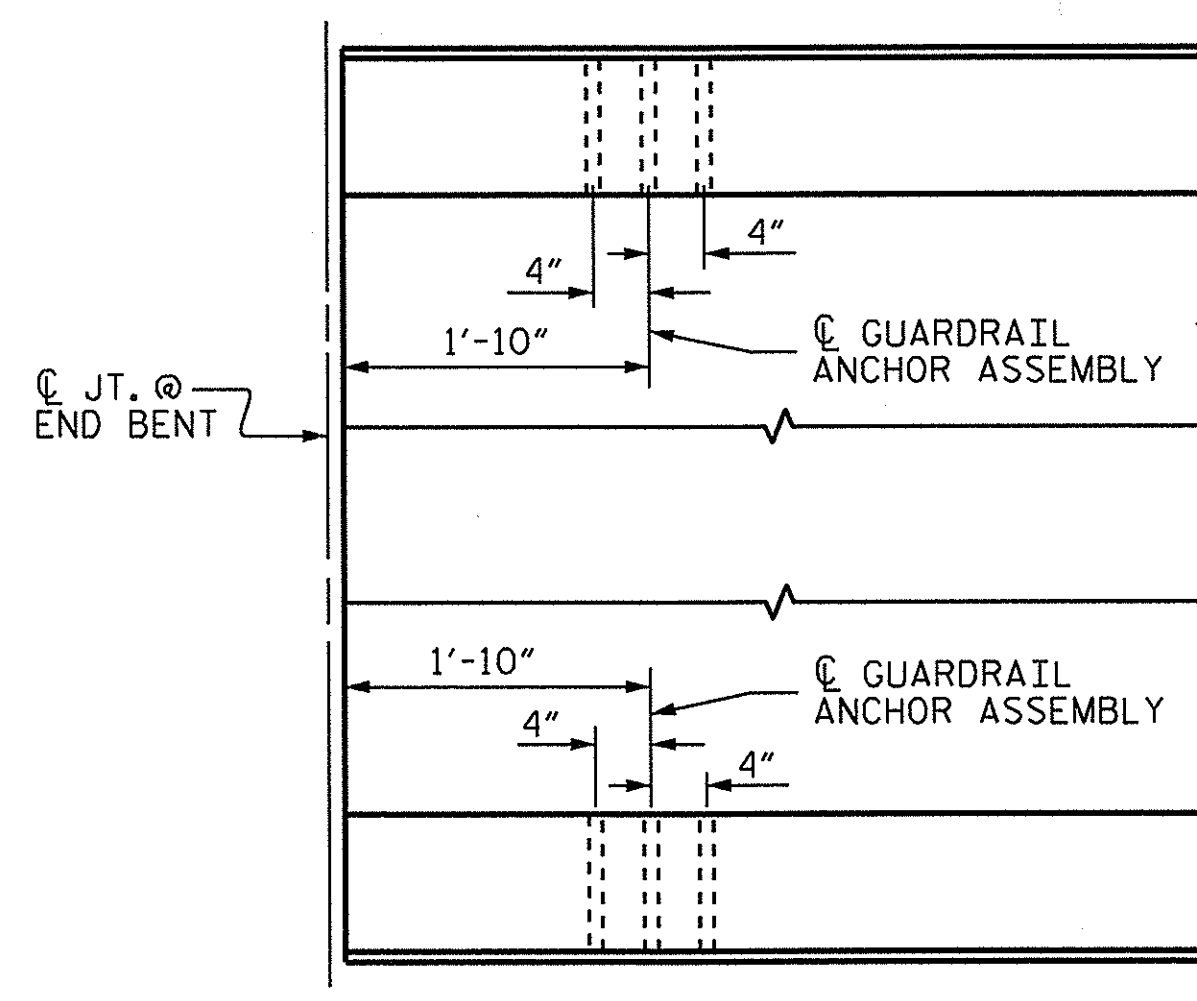


ELEVATION



SECTION E-E

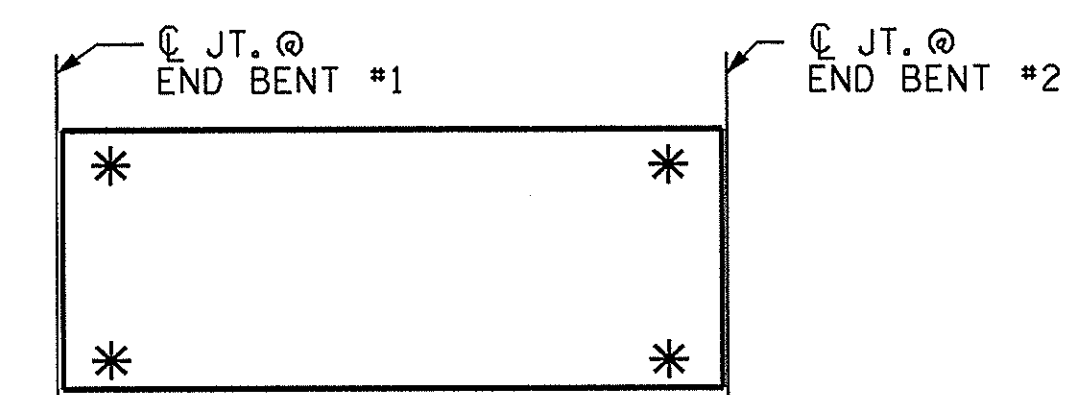
GUARDRAIL ANCHOR ASSEMBLY DETAILS



PLAN

LOCATION OF ANCHORS FOR GUARDRAIL

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



SKETCH SHOWING POINTS OF ATTACHMENT

* DENOTES GUARDRAIL ANCHOR ASSEMBLY

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.

PROJECT NO. BD-5114R
HAYWOOD COUNTY
 STATION: 13+02.74 -L-

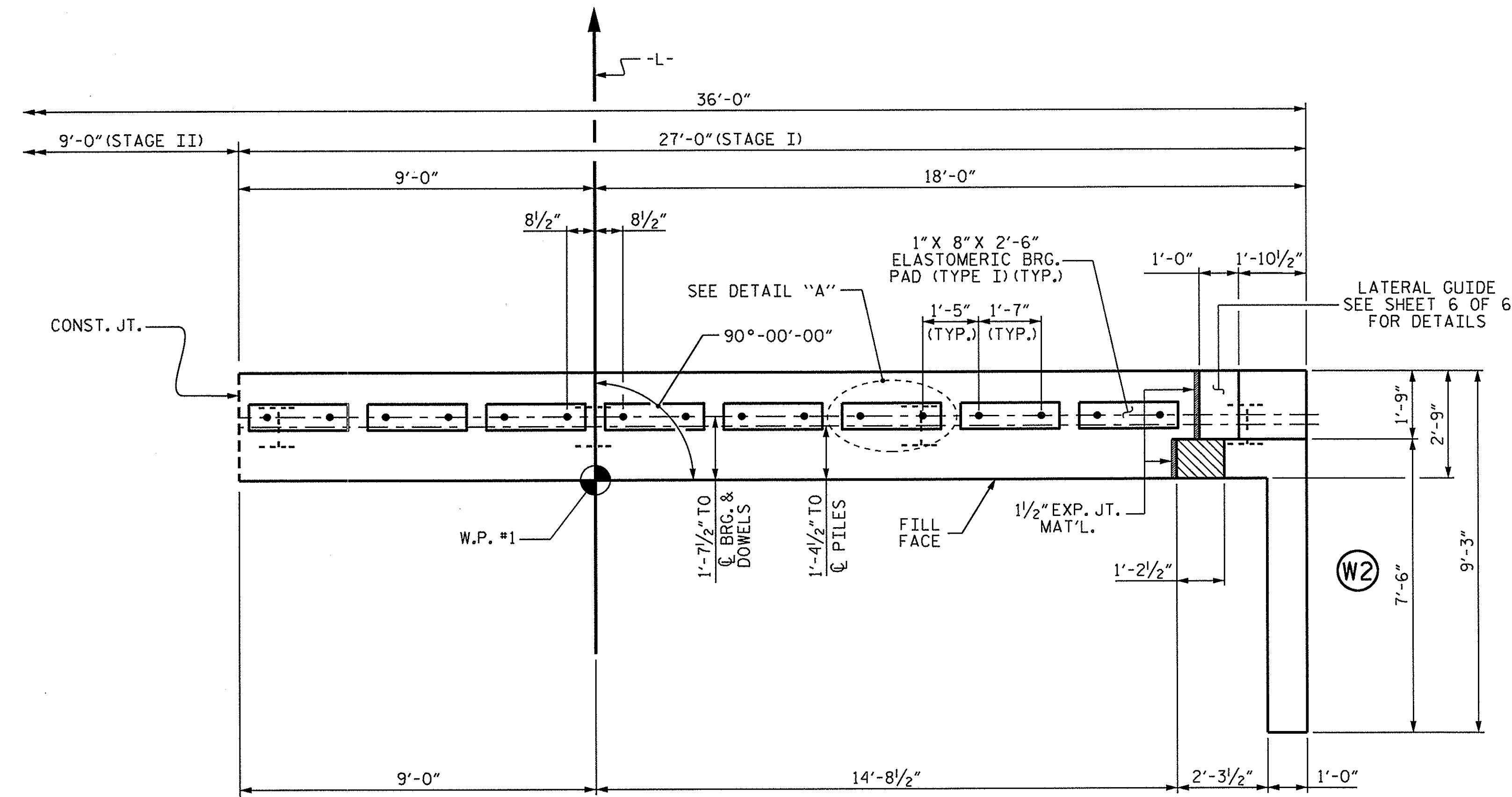
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 STANDARD
 GUARDRAIL ANCHORAGE
 FOR VERTICAL CONCRETE
 BARRIER RAIL



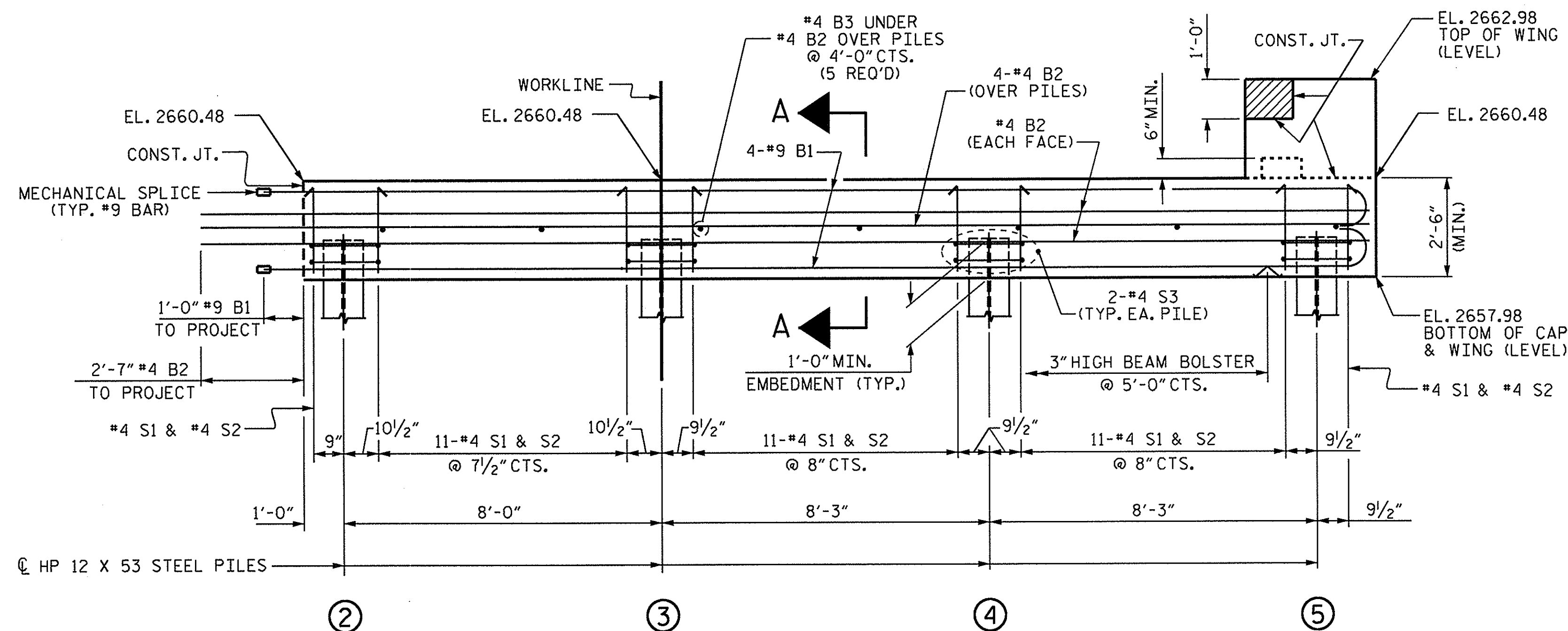
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S-11
2			4			

TOTAL
SHEETS
20

ASSEMBLED BY : A. SORSENGINH	DATE : 10/20/11
CHECKED BY : B. MATHEW	DATE : 12/20/11
DRAWN BY : MAA 5/10	ADDED 5/6/10
CHECKED BY : GM 5/10	REV. 10/1/11
	REV. 12/5/11
	MAA/GM



PLAN



ELEVATION

FOR SECTION A-A, SEE SHEET 6 OF 6.
WINGS NOT SHOWN FOR CLARITY.
CONCRETE COLLARS FOR STEEL PILES NOT SHOWN IN PLAN AND ELEVATION VIEWS FOR CLARITY.
SEE "CORROSION PROTECTION FOR STEEL PILES DETAIL", SHEET 6 OF 6.

NOTES

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

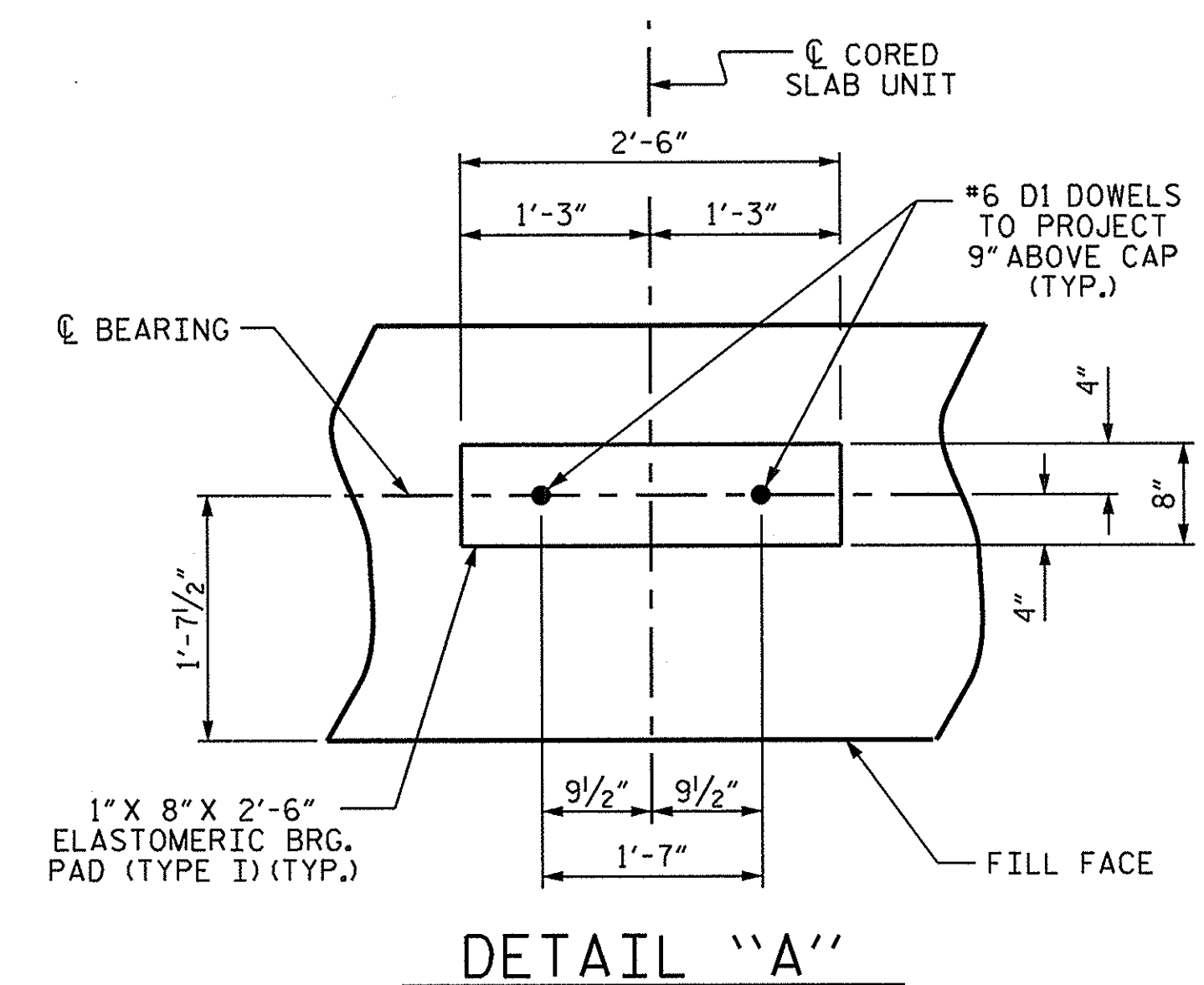
THE LATERAL GUIDES ARE NOT TO BE POURED UNTIL AFTER THE CORED SLAB UNITS ARE IN PLACE.

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 6 OF 6.

FOR WING DETAILS, SEE SHEET 5 OF 6.

THE CONTRACTOR HAS THE OPTION TO OMIT THE LATERAL GUIDE IF APPROVED BY THE ENGINEER.



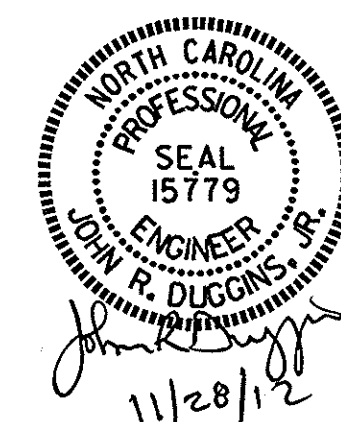
DETAIL "A"

PROJECT NO. BD-5114R
HAYWOOD COUNTY
STATION: 13+02.74 -L-

SHEET 1 OF 6

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

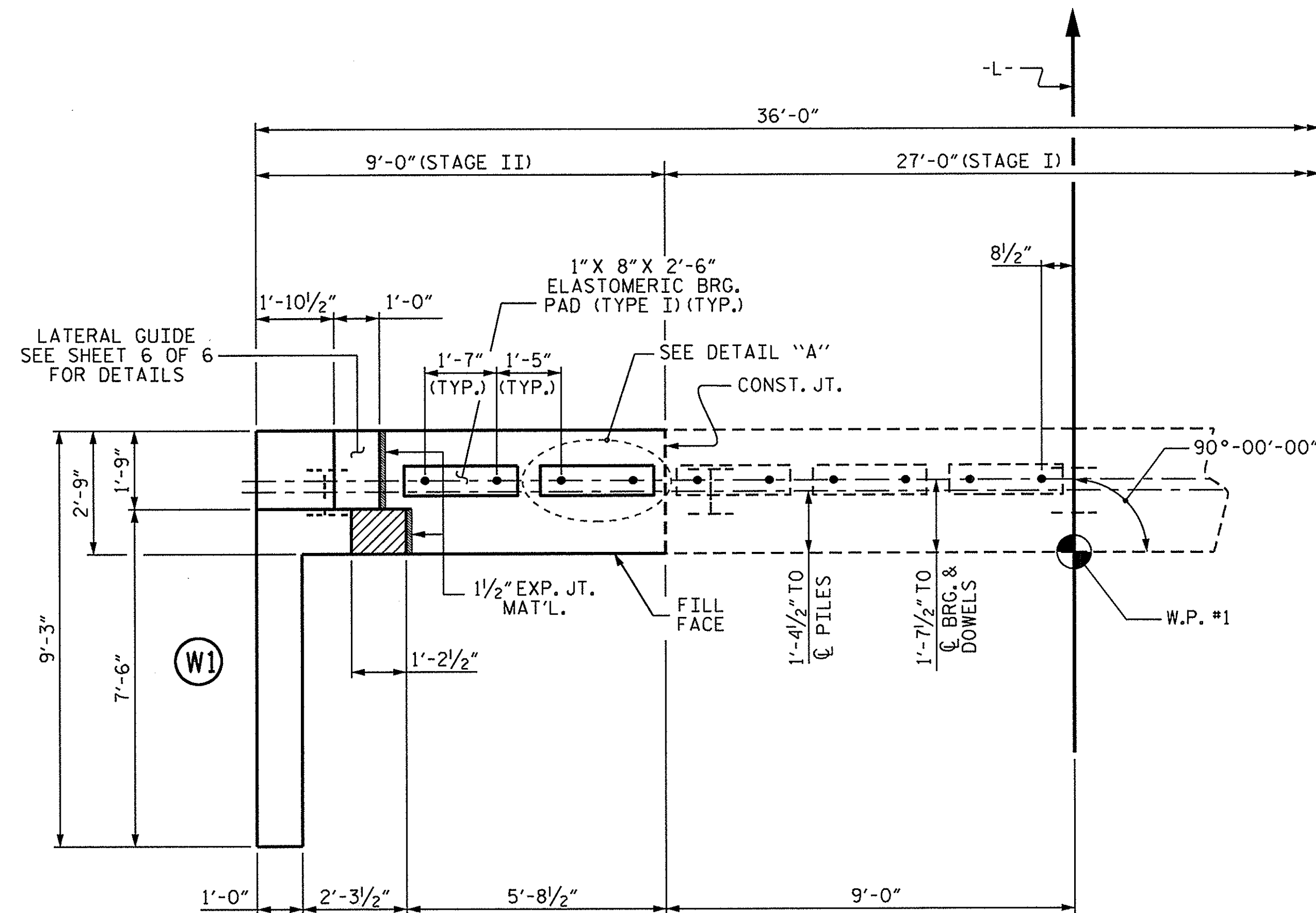
SUBSTRUCTURE
END BENT No. 1
STAGE I



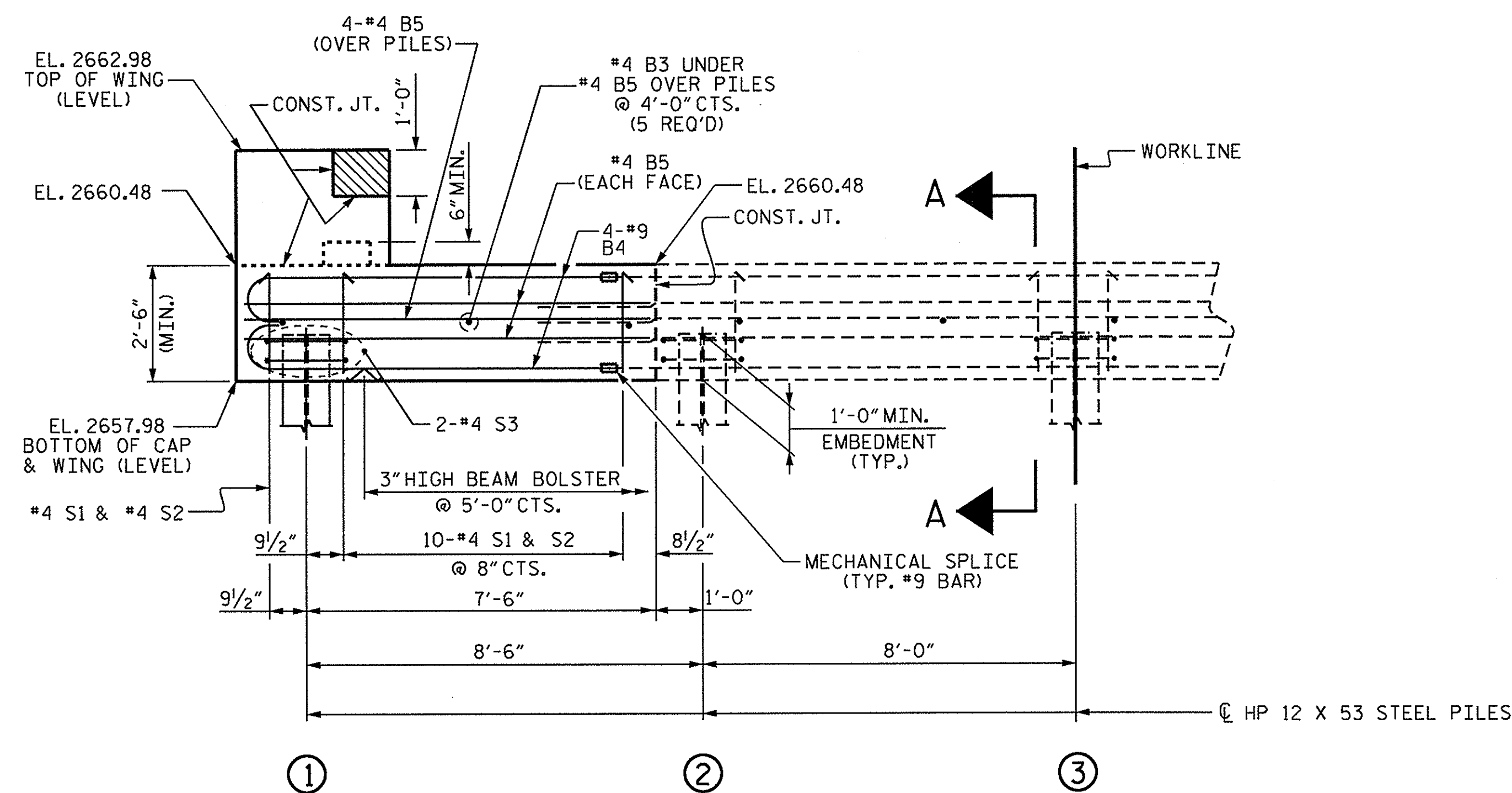
ASSEMBLED BY : A. SORSENGNH DATE : 10/20/2011
CHECKED BY : B. MATHEW DATE : 12/20/11
DRAWN BY : DGE 02/10
CHECKED BY : MKT 02/10

28-NOV-2012 14:32
S:\DPC4\John\11BR_Files\BD-5114R\Final Plans\BD-5114R_SD.E*.dgn
jduggins

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			5-12
2			4			TOTAL SHEETS 20

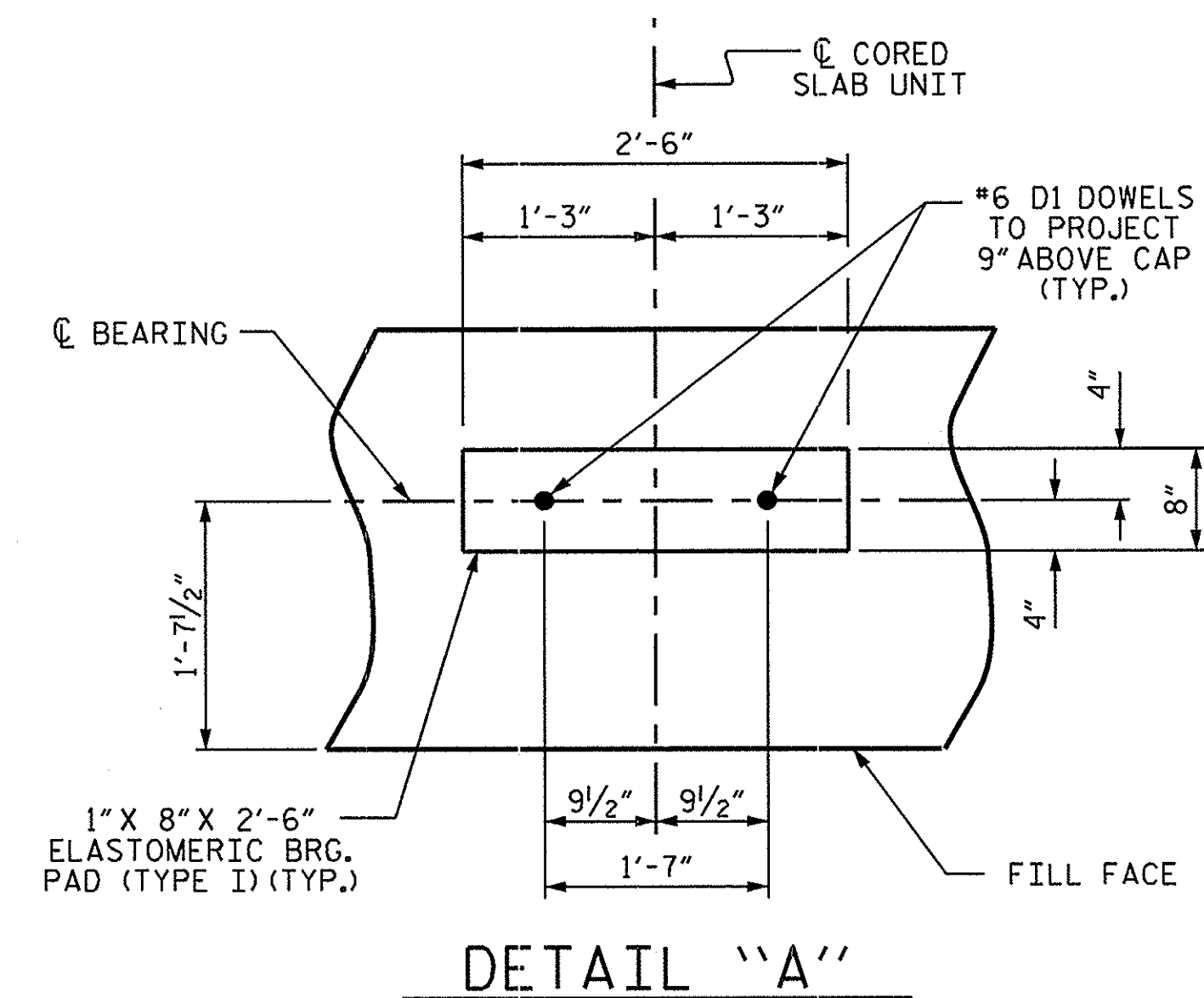


PLAN



ELEVATION

FOR SECTION A-A, SEE SHEET 6 OF 6.
WINGS NOT SHOWN FOR CLARITY.
CONCRETE COLLARS FOR STEEL PILES NOT SHOWN IN PLAN AND ELEVATION VIEWS FOR CLARITY.
SEE "CORROSION PROTECTION FOR STEEL PILES DETAIL", SHEET 6 OF 6.

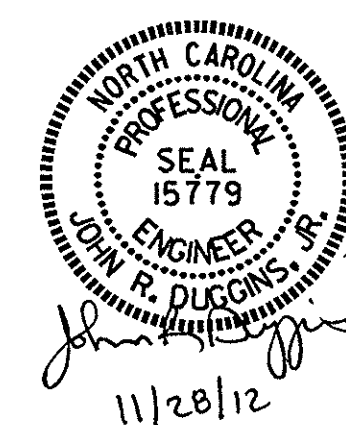


PROJECT NO. BD-5114R
HAYWOOD COUNTY
STATION: 13+02.74 -L-

SHEET 2 OF 6

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE
END BENT No. 1
STAGE II



ASSEMBLED BY : A. SORSENGINH DATE : 10/21/2011
CHECKED BY : B. MATHEW DATE : 12/20/11
DRAWN BY : DGE 02/10
CHECKED BY : MKT 02/10

27-NOV-2012 15:12
S:\DPG4\John\LIBR.Files\BD-5114R\Final Plans\BD-5114R_SD.E*.dgn
jduggins

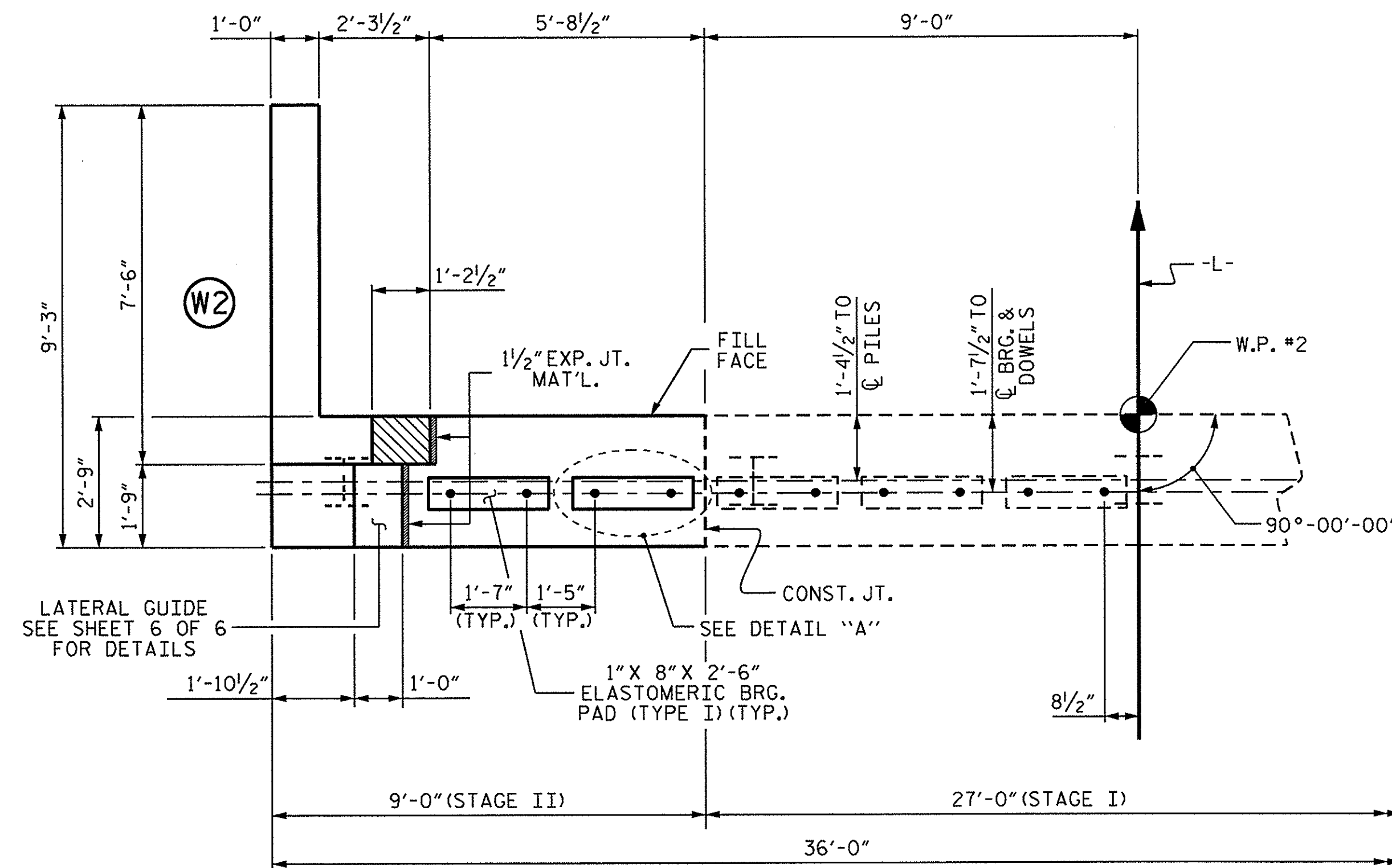
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			5-13
2			4			TOTAL SHEETS 20

THE CONTRACTOR HAS THE OPTION TO OMIT THE LATERAL GUIDE IF APPROVED BY THE ENGINEER.

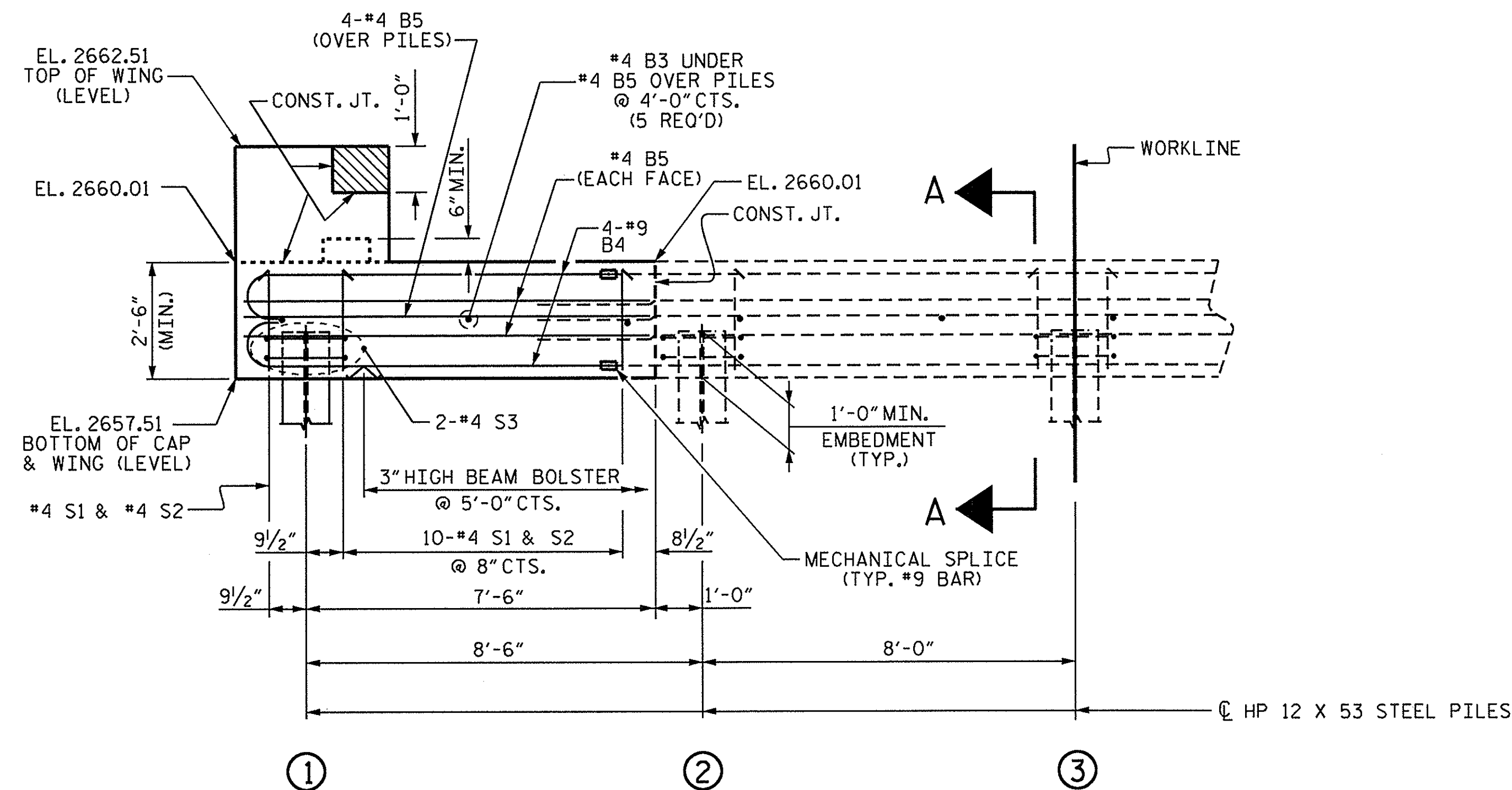


FOR SECTION A-A, SEE SHEET 6 OF 6.
WINGS NOT SHOWN FOR CLARITY.
CONCRETE COLLARS FOR STEEL PILES NOT SHOWN IN PLAN AND ELEVATION VIEWS FOR CLARITY.
SEE "CORROSION PROTECTION FOR STEEL PILES DETAIL", SHEET 6 OF 6.

27-NOV-2012 15:12
S:\DPCG4\John\LIBR.Files\BD-5114R\Final Plans\BD-5114R_SD_E*.dgn
jduggins

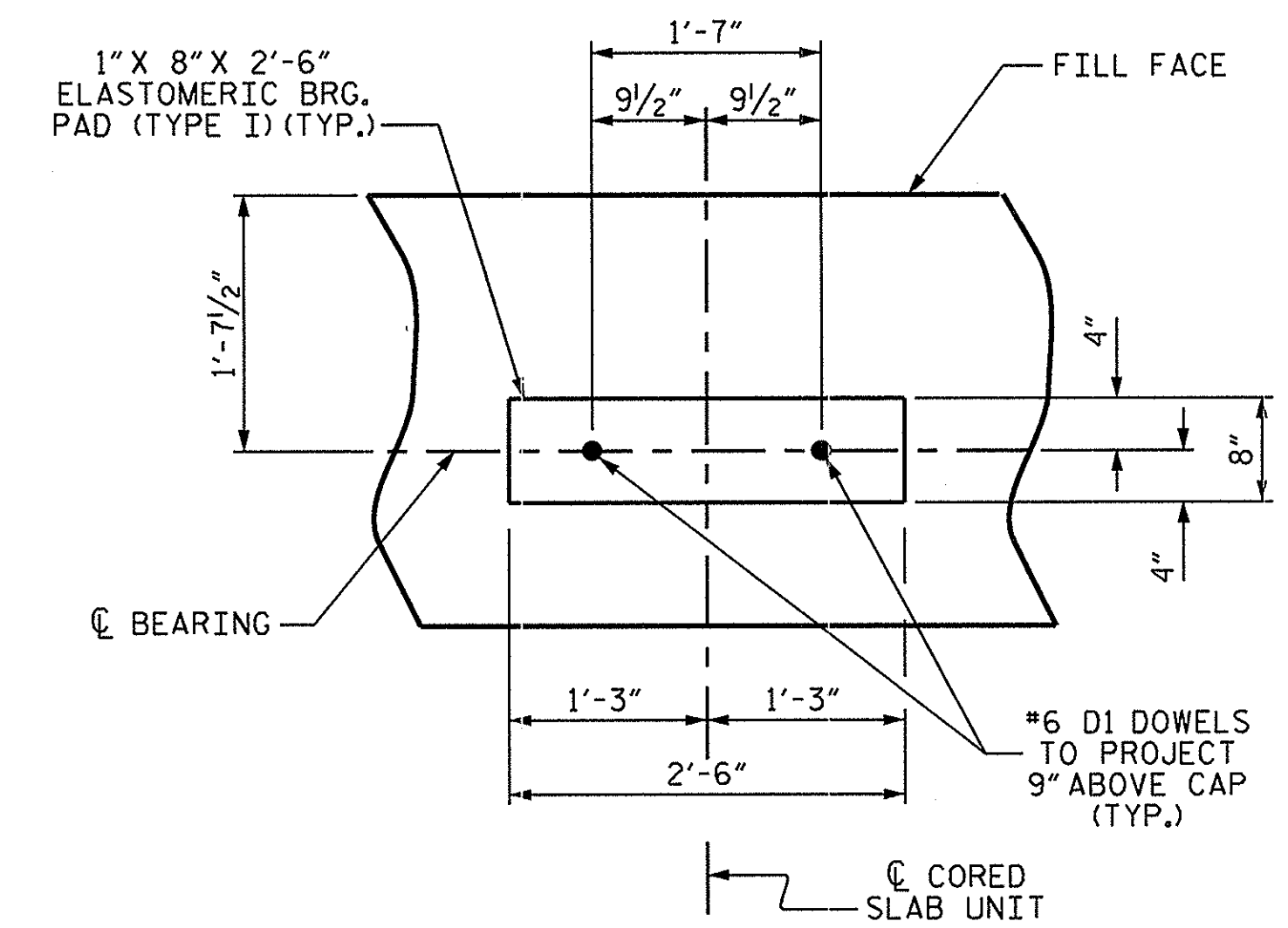


PLAN



ELEVATION

FOR SECTION A-A, SEE SHEET 6 OF 6.
WINGS NOT SHOWN FOR CLARITY.
CONCRETE COLLARS FOR STEEL PILES NOT SHOWN IN PLAN AND ELEVATION VIEWS FOR CLARITY.
SEE "CORROSION PROTECTION FOR STEEL PILES DETAIL", SHEET 6 OF 6.



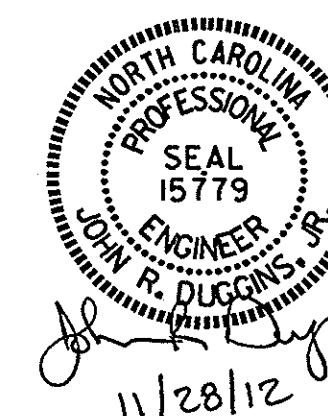
DETAIL "A"

PROJECT NO. BD-5114R
HAYWOOD COUNTY
STATION: 13+02.74 -L-

SHEET 4 OF 6

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE
END BENT No. 2
STAGE II

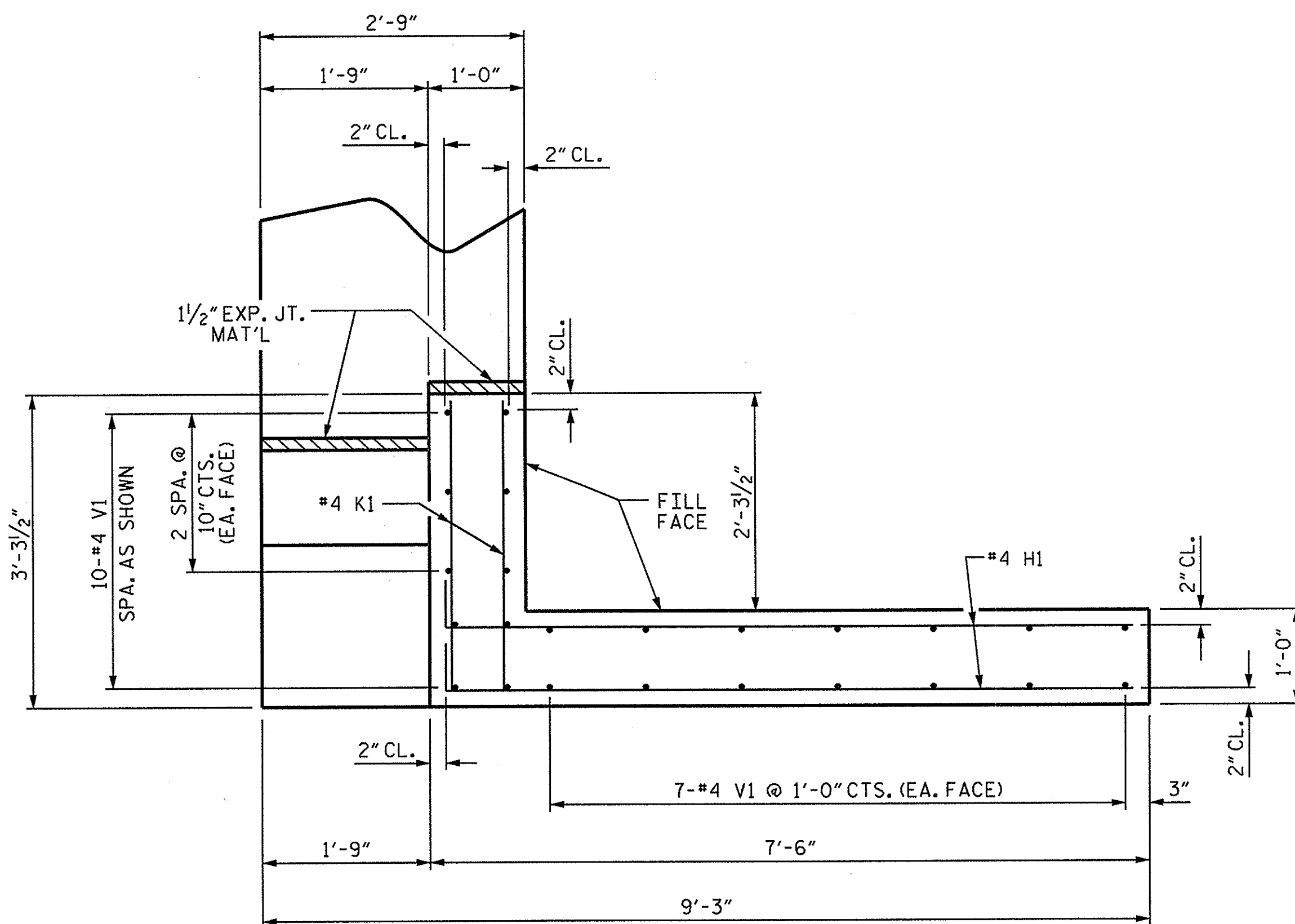


ASSEMBLED BY : A. SORSENGH DATE : 10/21/2011
CHECKED BY : B. MATHEW DATE : 12/20/11
DRAWN BY : DGE 02/10
CHECKED BY : MKT 02/10

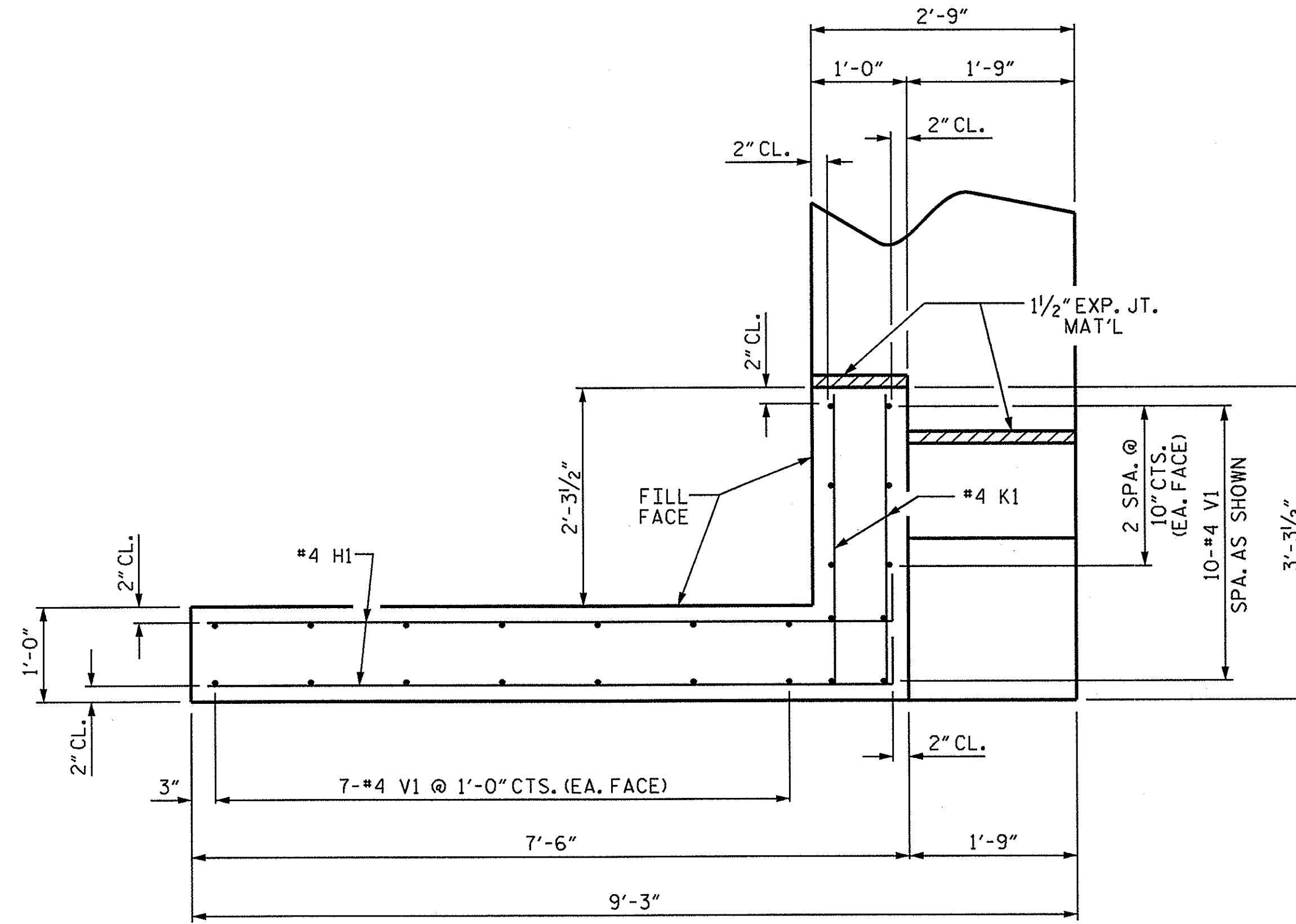
27-NOV-2012 15:11
S:\DPG4\John\LIBR_Files\BD-5114R\Final Plans\BD-5114R_S0.E*.dgn
jduggins

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

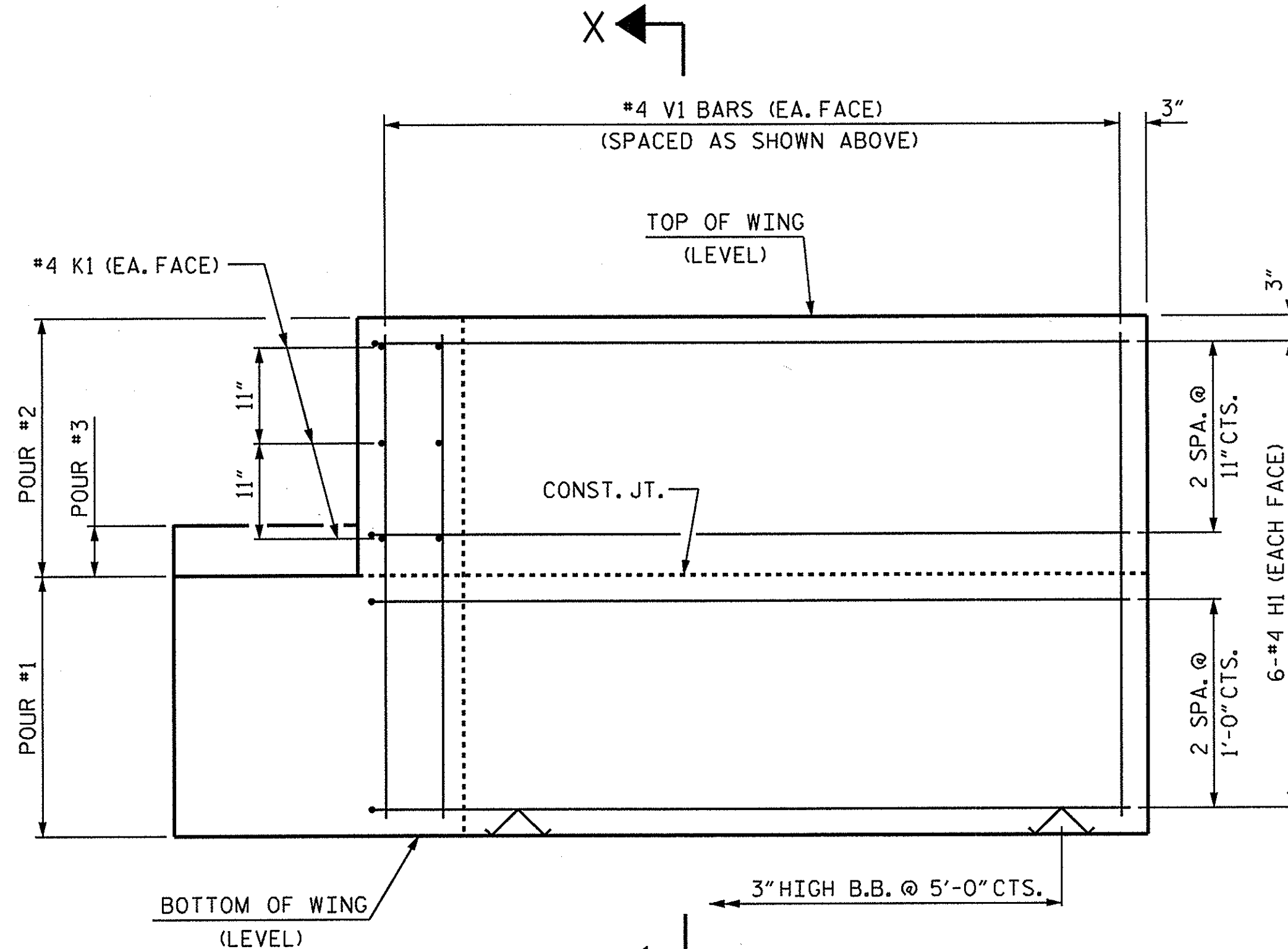
TOTAL SHEETS
20



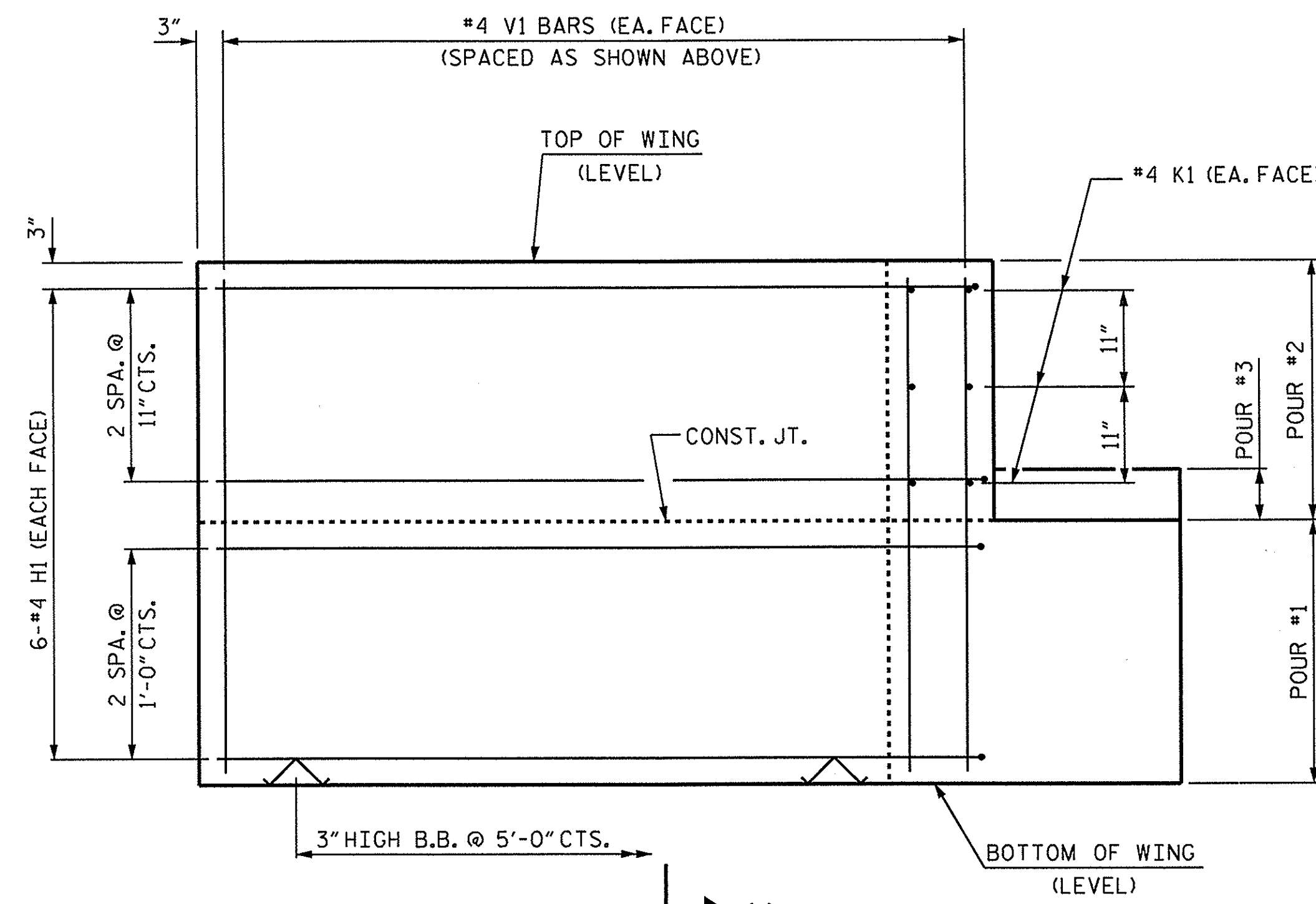
PLAN OF WING (W1)



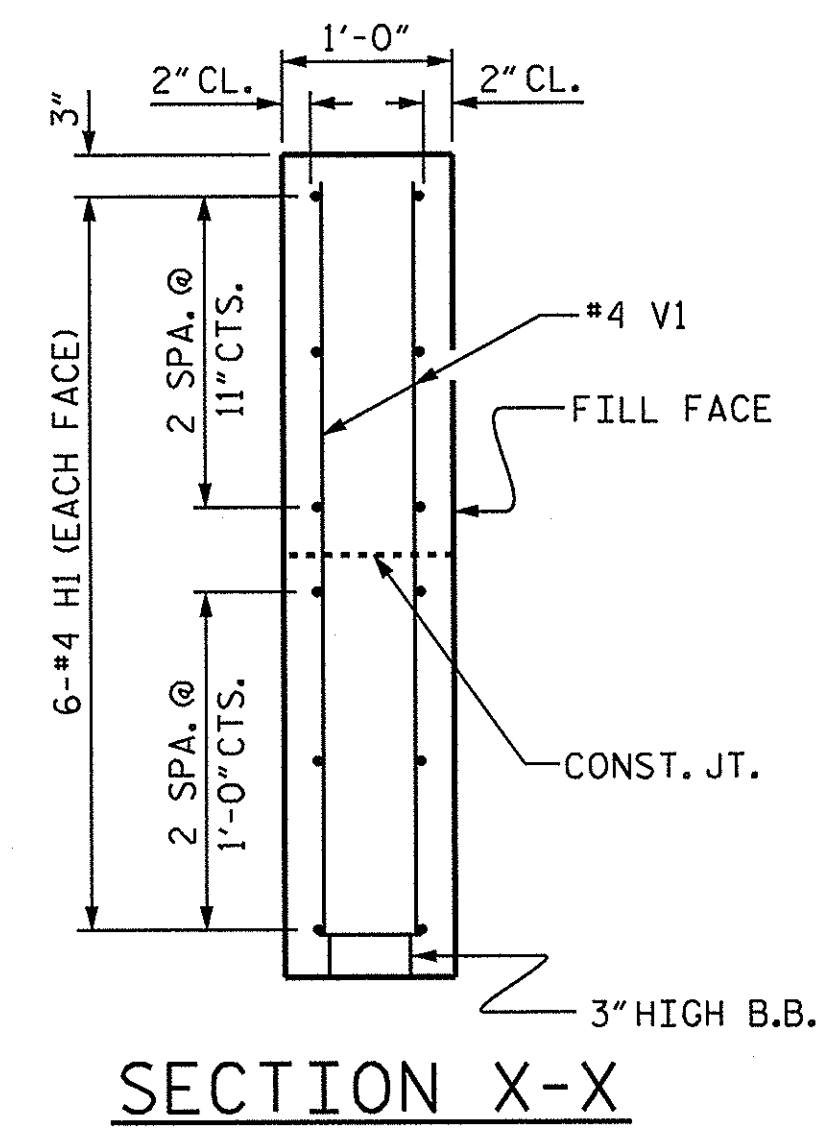
PLAN OF WING (W2)



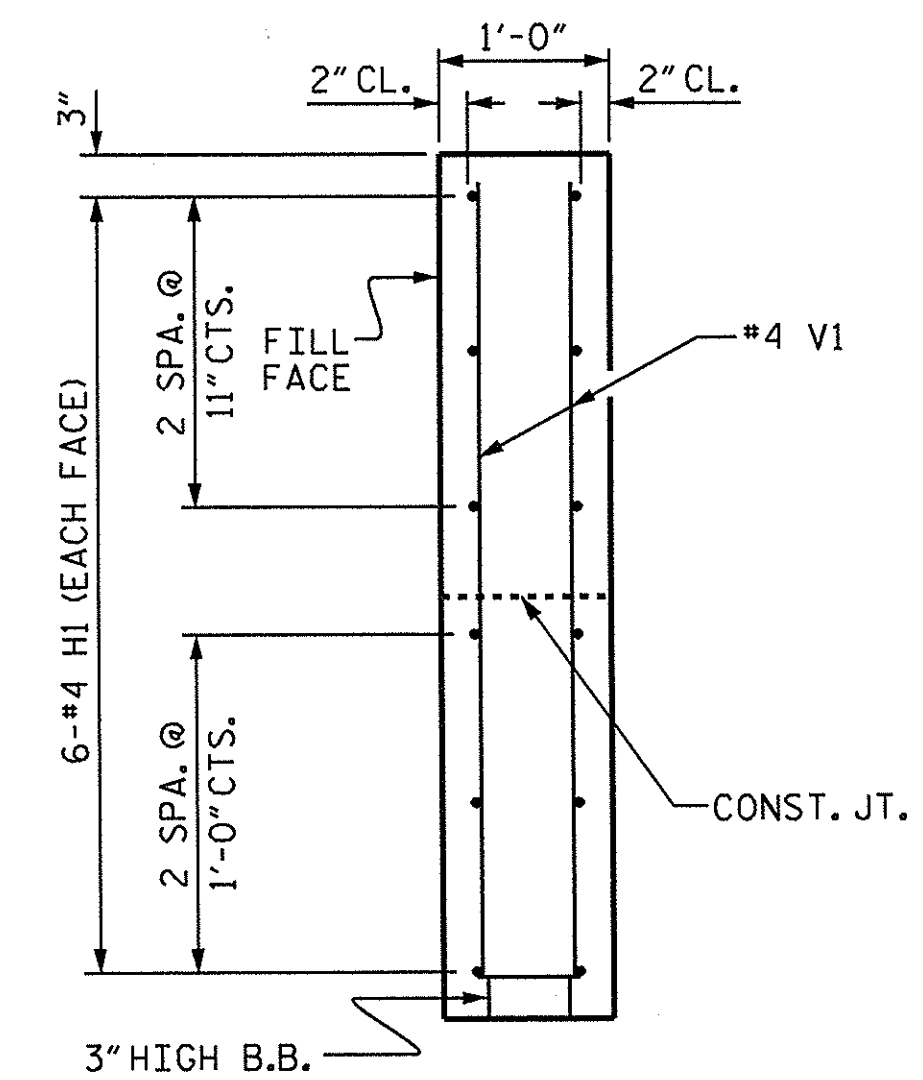
ELEVATION OF WING (W1)



ELEVATION OF WING (W2)



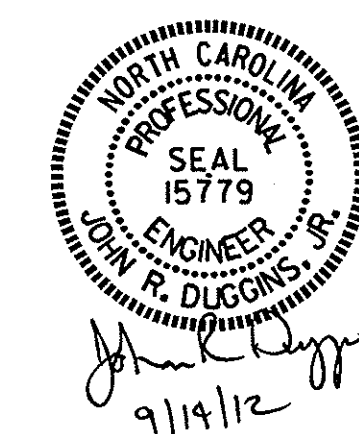
SECTION X-X



SECTION Y-Y

PROJECT NO. BD-5114R
HAYWOOD COUNTY
 STATION: 13+02.74 -L-

SHEET 5 OF 6



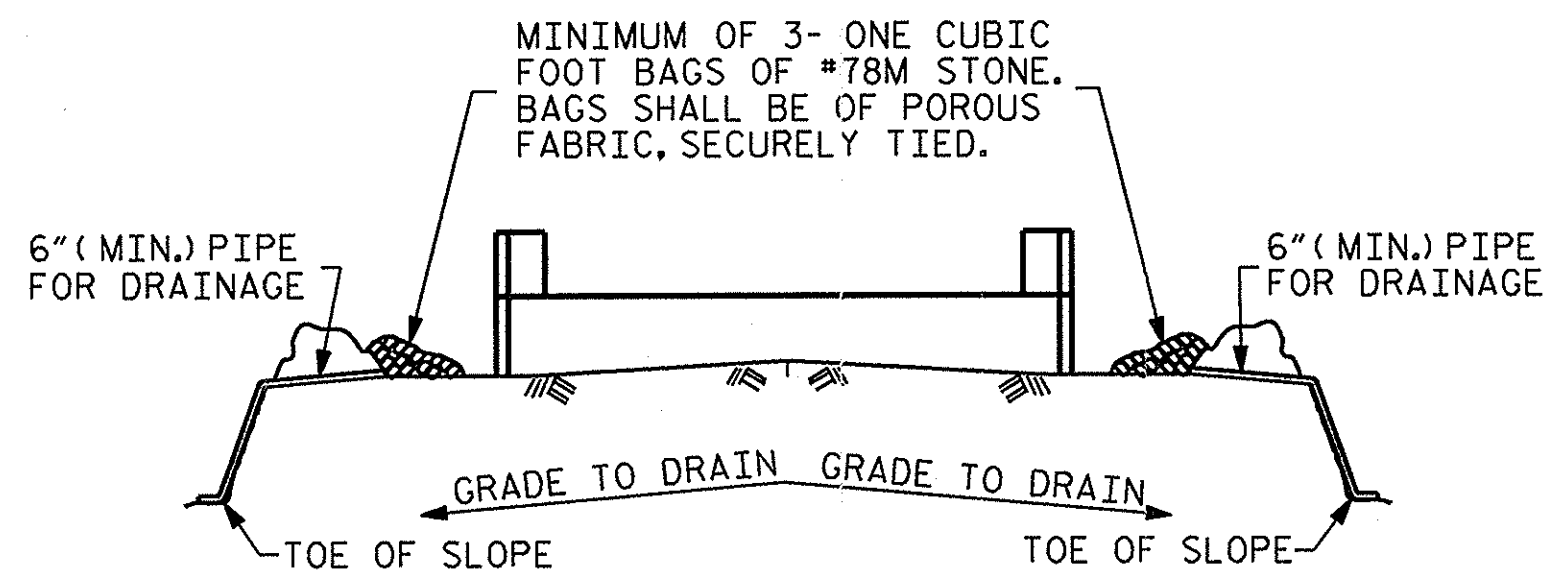
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUBSTRUCTURE
 END BENT
 WING DETAILS

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			3-16
2			4			TOTAL SHEETS 20

ASSEMBLED BY: A. SORSENGINH DATE: 10-21-11
 CHECKED BY: MATHEW DATE: 12/20/11
 DRAWN BY: DGE 02/10
 CHECKED BY: MKT 02/10

WING DETAILS

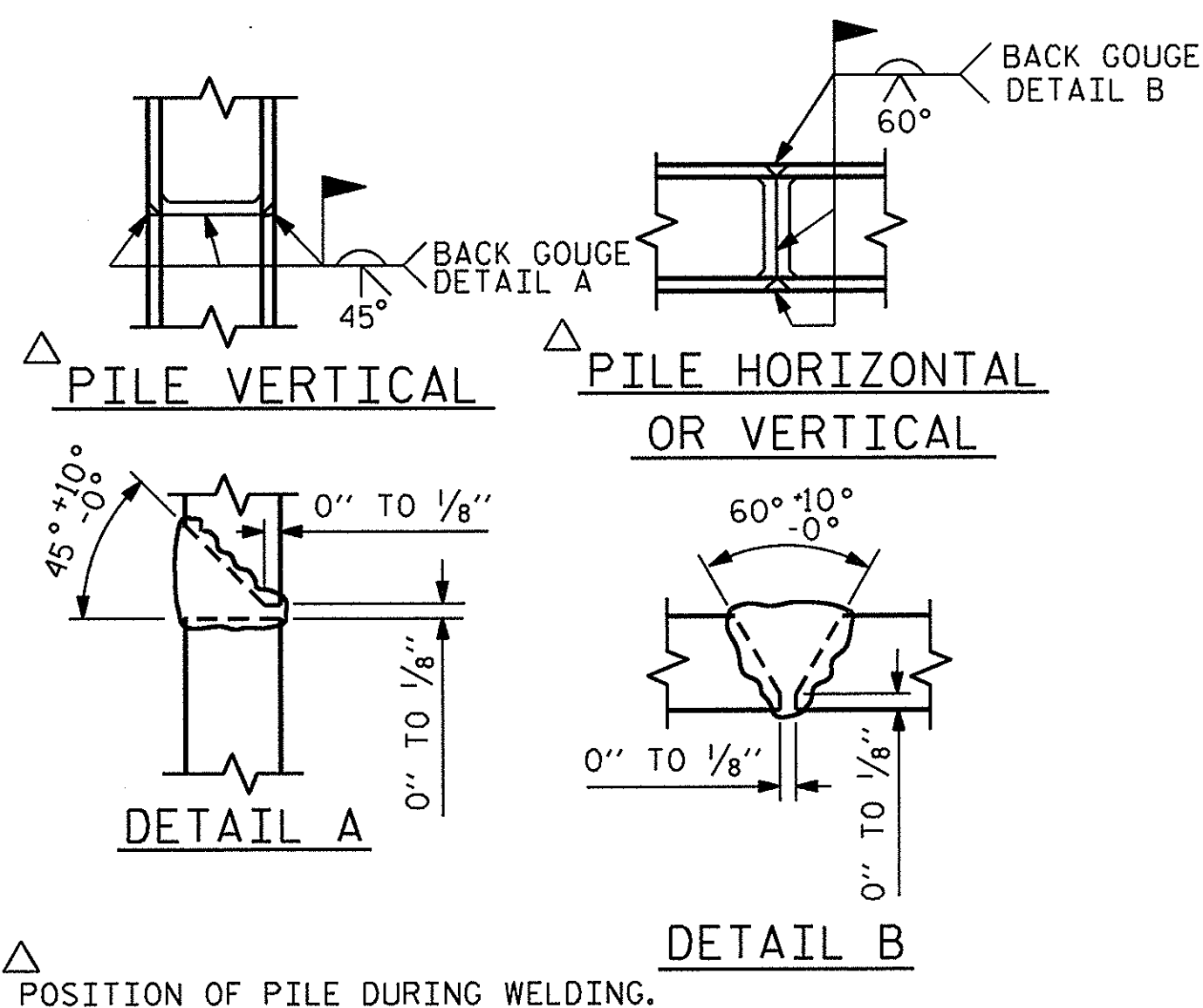


BAGGED STONE AND PIPE SHALL BE PLACED IMMEDIATELY AFTER COMPLETION OF END BENT EXCAVATION. PIPE MAY BE EITHER CONCRETE, CORRUGATED STEEL, CORRUGATED ALUMINUM ALLOY, OR CORRUGATED PLASTIC. PERFORATED PIPE WILL NOT BE ALLOWED.

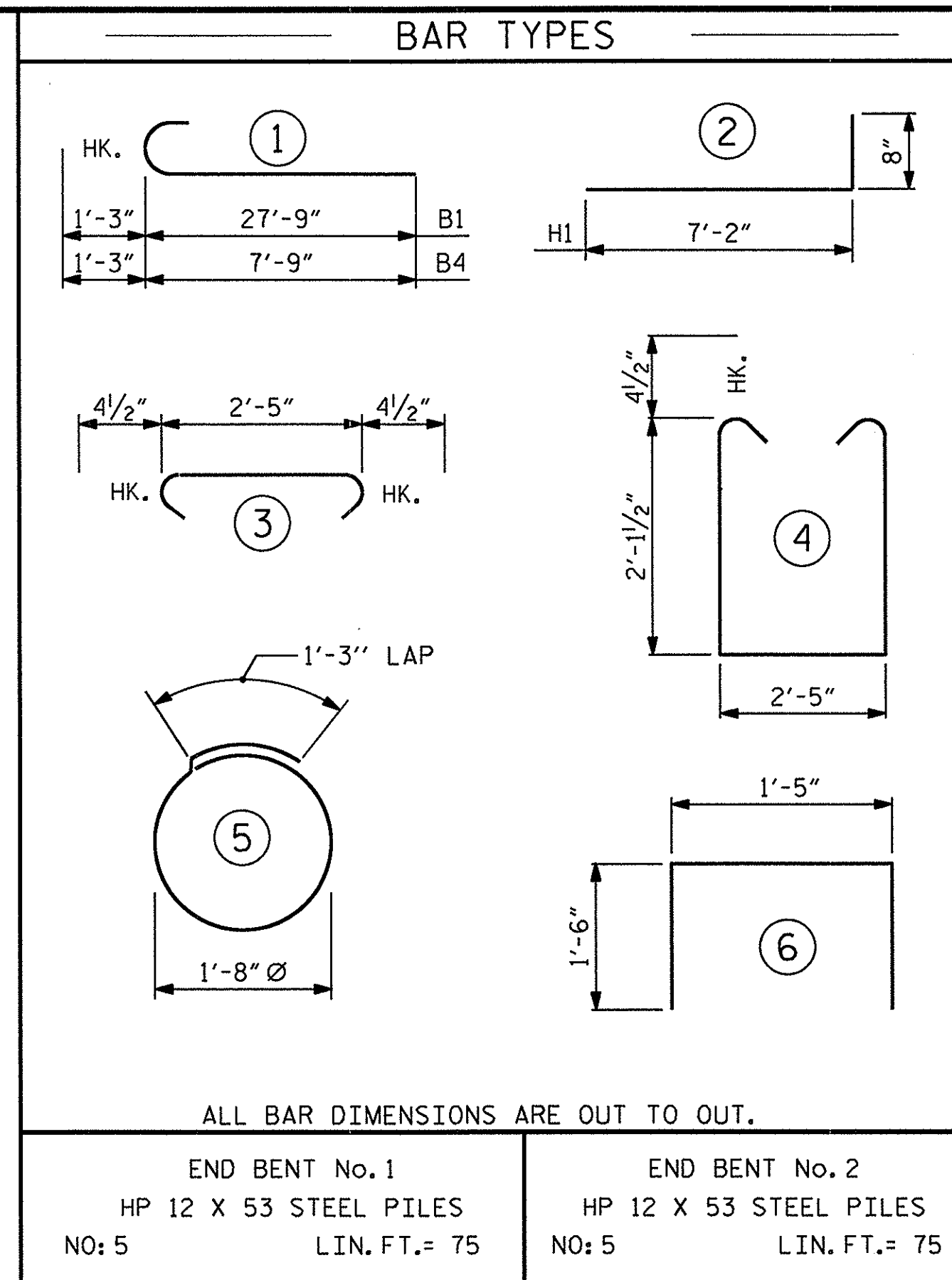
BAGGED STONE SHALL REMAIN IN PLACE UNTIL THE ENGINEER DIRECTS THAT IT BE REMOVED. THE CONTRACTOR SHALL REMOVE AND DISPOSE OF SILT ACCUMULATIONS AT BAGGED STONE WHEN SO DIRECTED BY THE ENGINEER. BAGS SHALL BE REMOVED AND REPLACED WHENEVER THE ENGINEER DETERMINES THAT THEY HAVE DETERIORATED AND LOST THEIR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

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

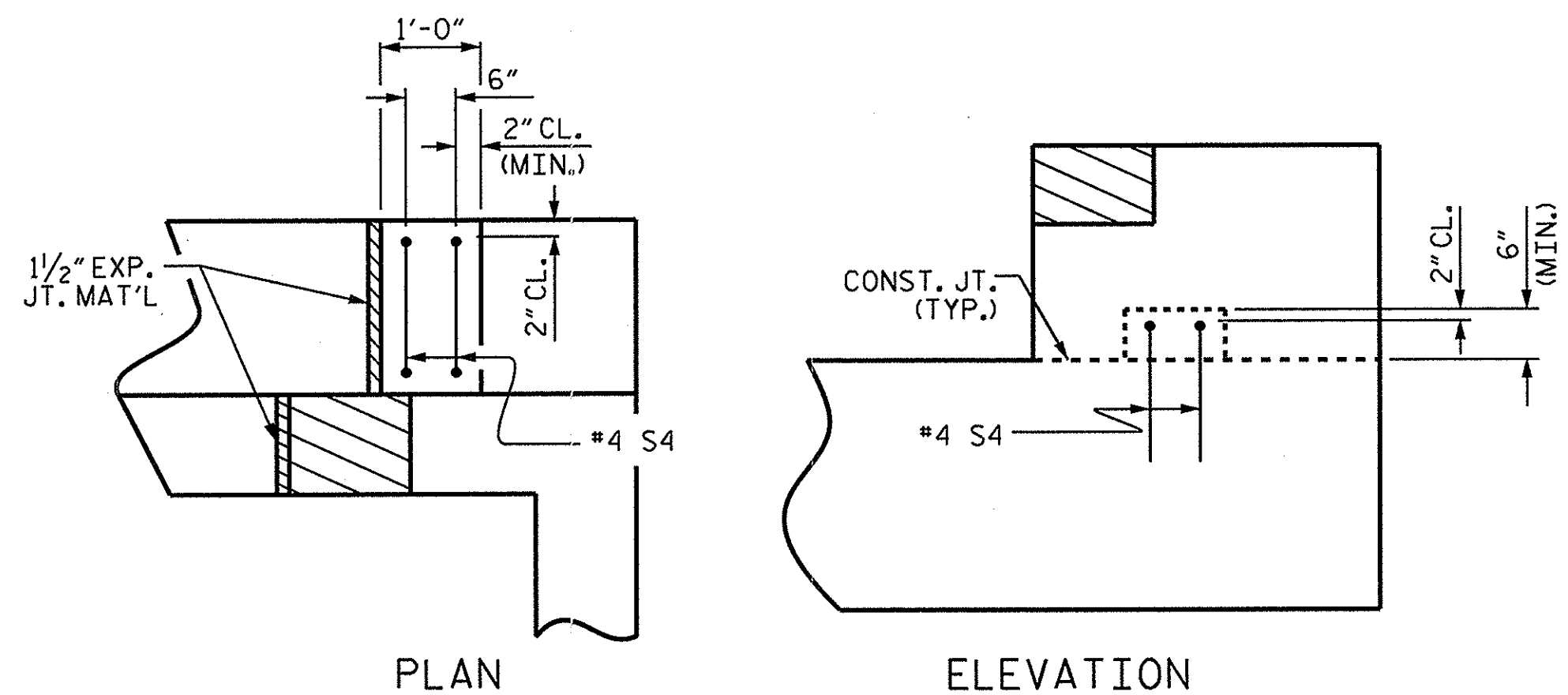
TEMPORARY DRAINAGE AT END BENT



PILE SPLICE DETAILS

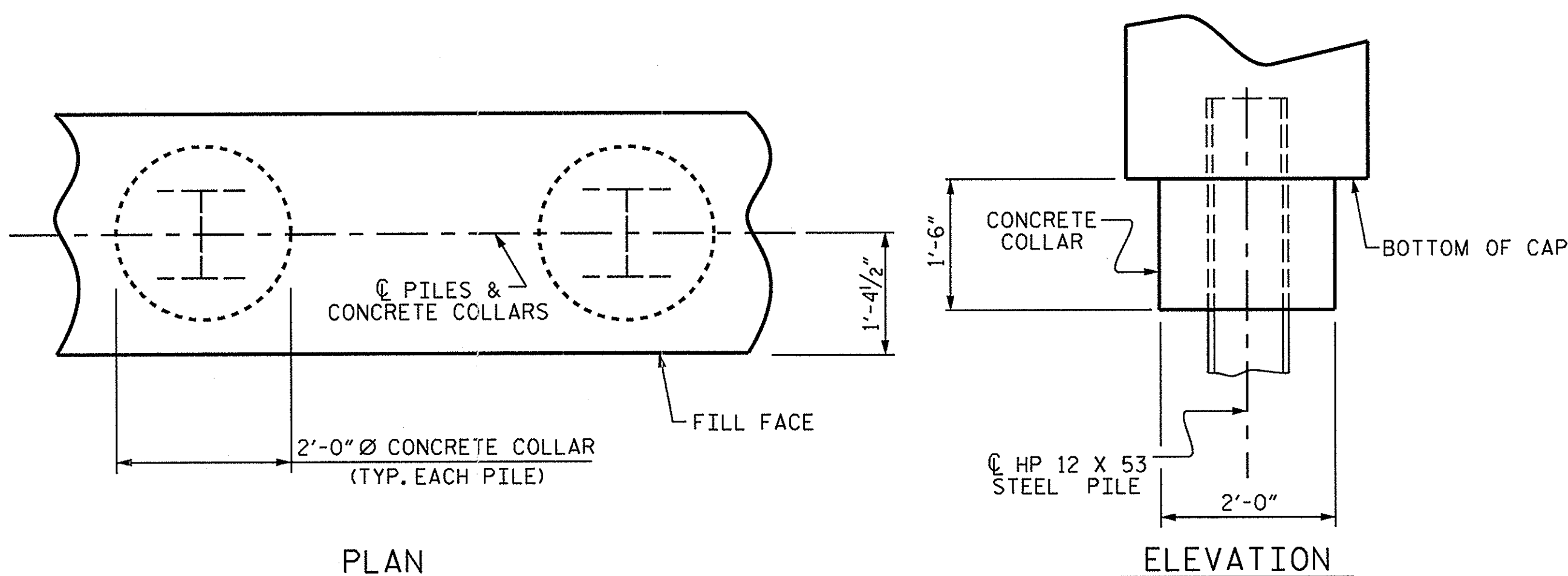


BILL OF MATERIAL FOR ONE END BENT									
STAGE I					STAGE II				
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	BAR	NO.	SIZE	TYPE
B1	8	#9	1	29'-0"	789	B4	8	#9	1
B2	8	#4	STR	29'-5"	158	B5	8	#4	STR
B3	7	#4	STR	2'-5"	11	B3	3	#4	STR
D1	16	#6	STR	1'-6"	37	D1	4	#6	STR
H1	12	#4	2	7'-10"	63	H1	12	#4	3
K1	6	#4	STR	2'-11"	12	K1	6	#4	STR
S1	35	#4	4	7'-5"	173	S1	11	#4	4
S2	35	#4	3	3'-2"	74	S2	11	#4	3
S3	8	#4	5	6'-6"	35	S3	2	#4	5
S4	2	#4	6	4'-5"	6	S4	2	#4	6
V1	24	#4	STR	4'-8"	75	V1	24	#4	STR
REINFORCING STEEL					1433 LBS.	REINFORCING STEEL			
CLASS A CONCRETE BREAKDOWN						CLASS A CONCRETE BREAKDOWN			
POUR #1 CAP, LOWER PART OF WINGS & COLLARS					8.2 C.Y.	POUR #1 CAP, LOWER PART OF WINGS & COLLARS			
POUR #2 UPPER PART OF WINGS					0.9 C.Y.	POUR #2 UPPER PART OF WINGS			
POUR #3 LATERAL GUIDES					0.1 C.Y.	POUR #3 LATERAL GUIDES			
TOTAL CLASS A CONCRETE					9.2 C.Y.	TOTAL CLASS A CONCRETE			



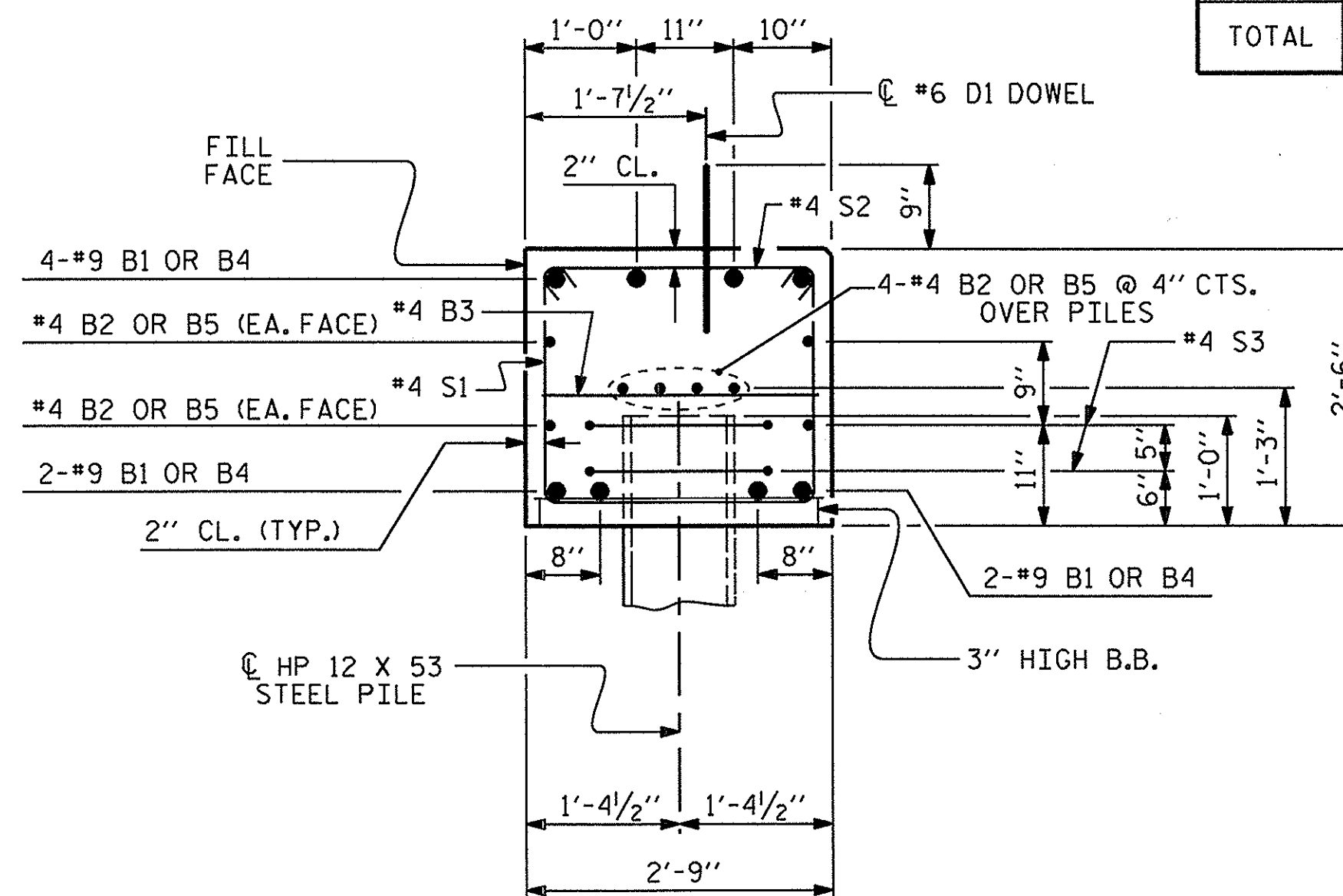
LATERAL GUIDE DETAILS

(RIGHT LATERAL GUIDE SHOWN, LEFT END SIMILAR)



CORROSION PROTECTION FOR STEEL PILES DETAIL

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



SECTION A-A

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

TOTAL BILL OF MATERIAL

	CLASS A CONCRETE CU. YDS.	REINFORCING STEEL LBS.	HP 12 X 53 STEEL PILES	
			NO.	LIN. FT.
E. BT. #1	13.2	1980	5	75
E. BT. #2	13.2	1980	5	75
TOTAL	26.4	3960	10	150

PROJECT NO. BD-5114R
HAYWOOD COUNTY
 STATION: 13+02.74 -L-

SHEET 6 OF 6

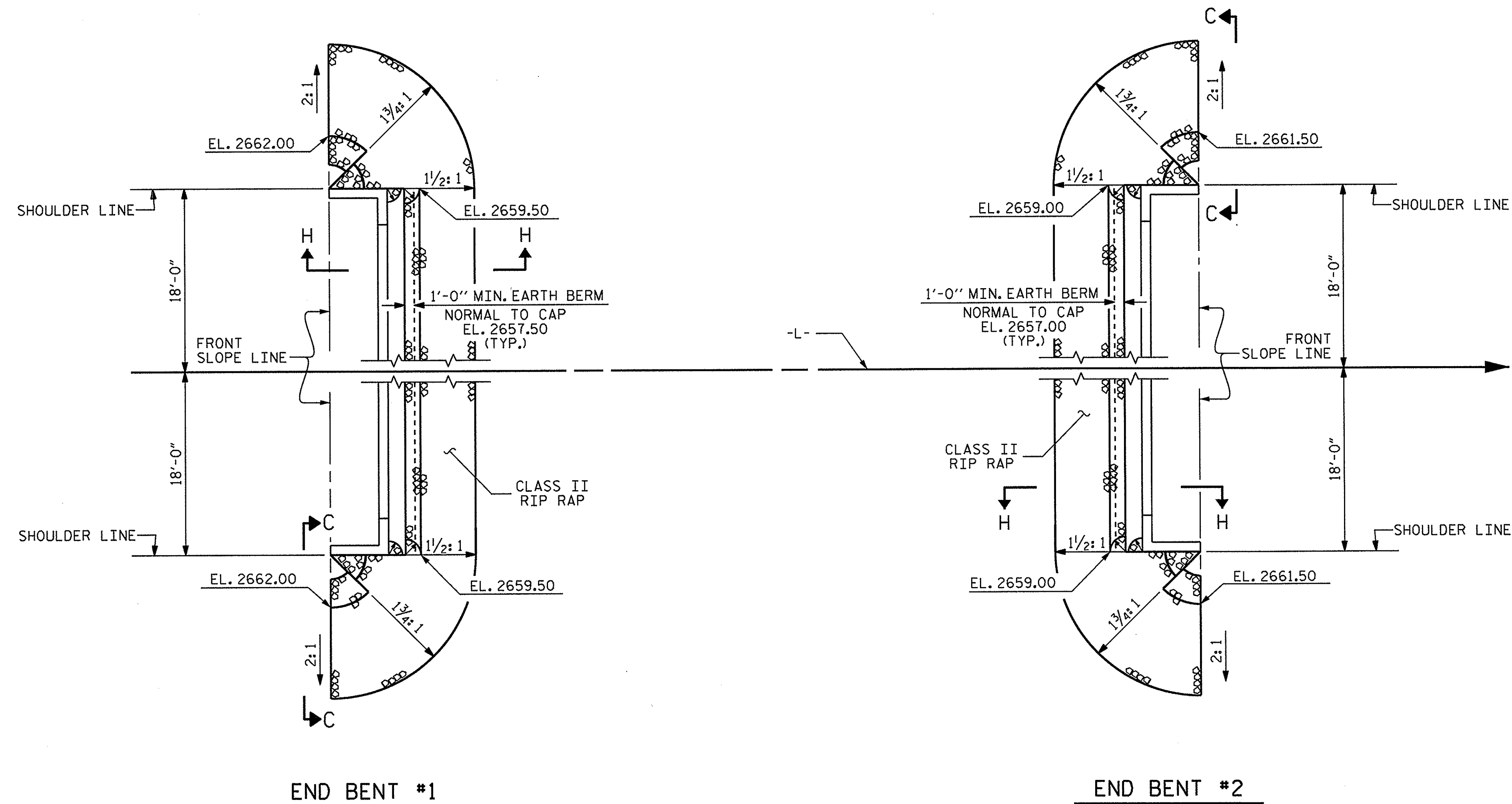
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUBSTRUCTURE

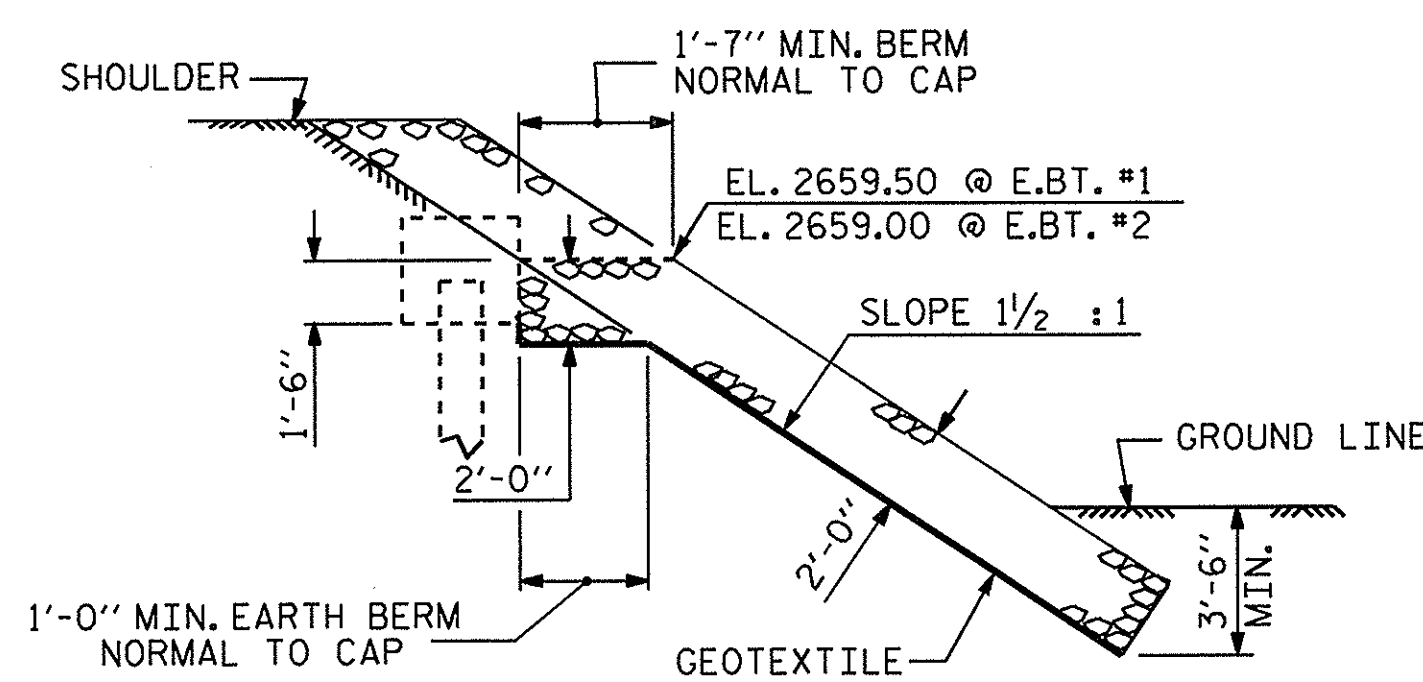
END BENT No. 1 & 2
 DETAILS

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			3-17
2			4			TOTAL SHEETS 20

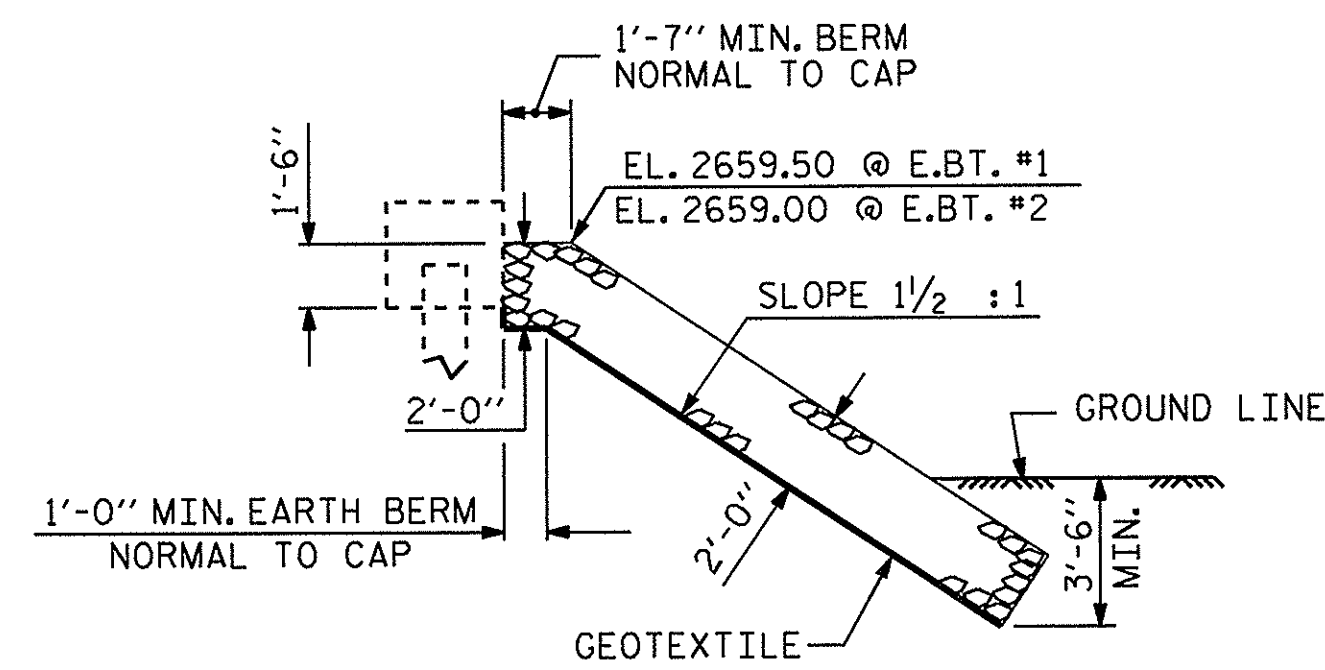
ASSEMBLED BY :	A. SORSENGINH	DATE :	10/21/2011
CHECKED BY :	B. MATHEW	DATE :	12/20/11
DRAWN BY :	DGE	12/09	
CHECKED BY :	MKT	01/10	



ESTIMATED QUANTITIES		
BRIDGE @ STA. 13+02.74 -L-	RIP RAP CLASS II (2'-0" THICK)	GEOTEXTILE FOR DRAINAGE
	TONS	SQUARE YARDS
END BENT 1	60	67
END BENT 2	50	56

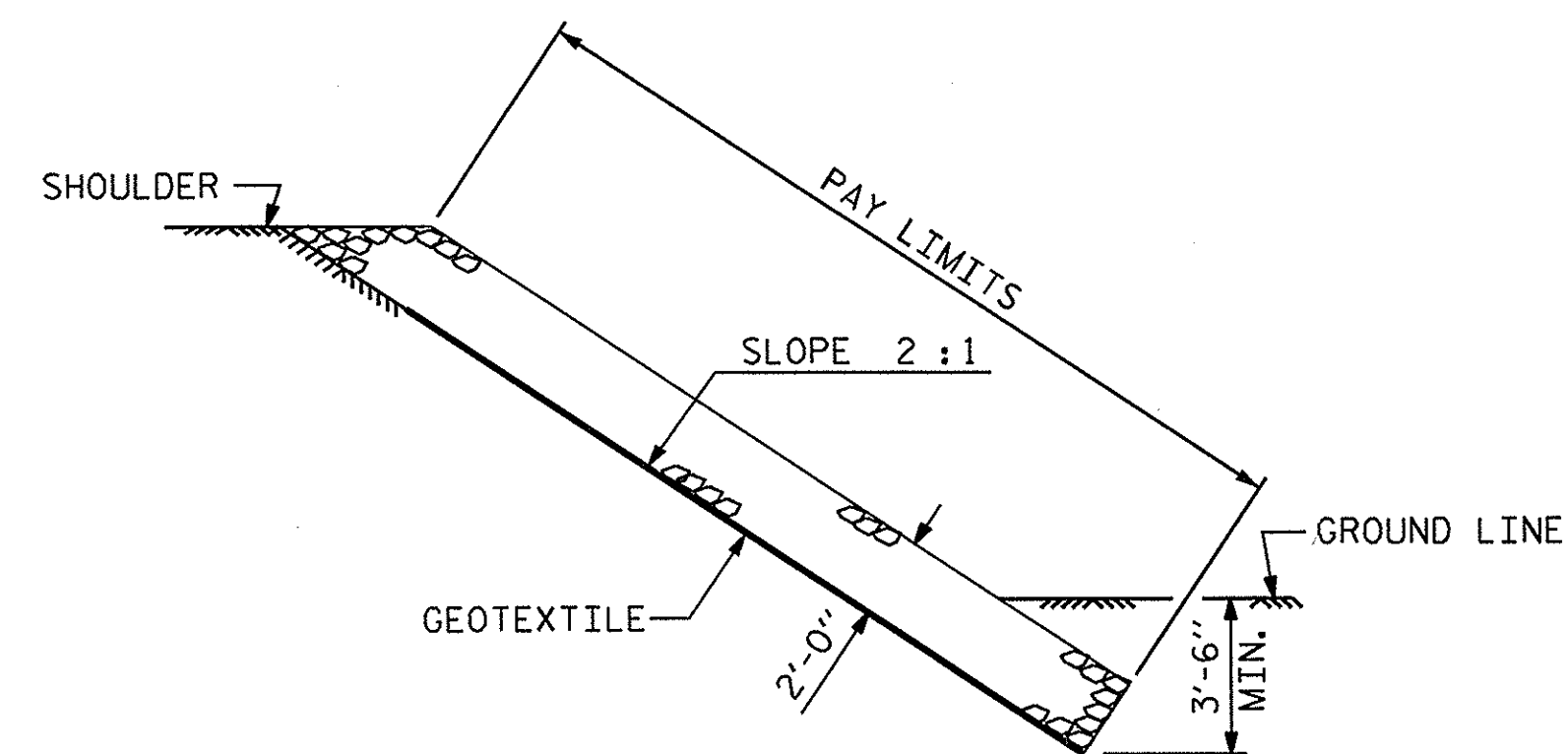


SECTION H-H



SECTION C-C

BERM RIP RAPPED

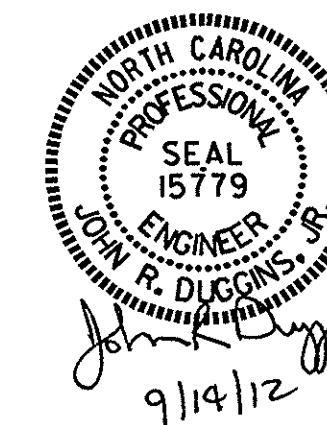


SECTION C-C

PROJECT NO. BD-5114R
HAYWOOD COUNTY
 STATION: 13+02.74 -L-

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

STANDARD
 = RIP RAP DETAILS =

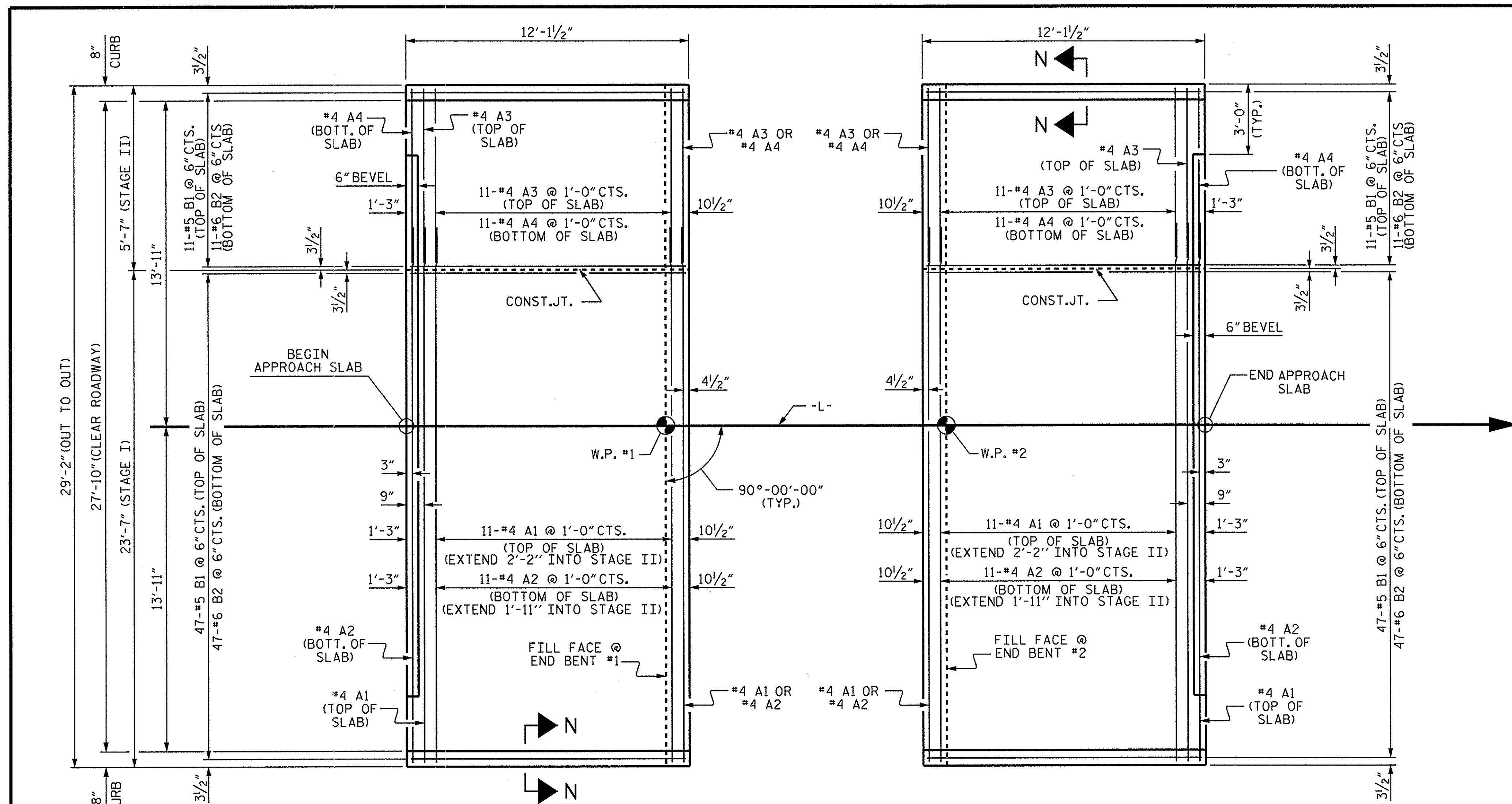


ASSEMBLED BY : A. SORSENGINH DATE : 10/2011
 CHECKED BY : J.R. DUGGINS DATE : 9/12
 DRAWN BY : FCJ 2/88
 CHECKED BY : ARB 8/88

REV. 8/16/99 RWW/LES
 REV. 10/17/00 RWW/LES
 REV. 5/1/06R TLA/GM

14-SEP-2012 13:45
 S:\DPC4\John R. Duggins\18R_Files\BD-5114R\Final Plans\BD-5114R_SD_RR.dgn
 jduggins

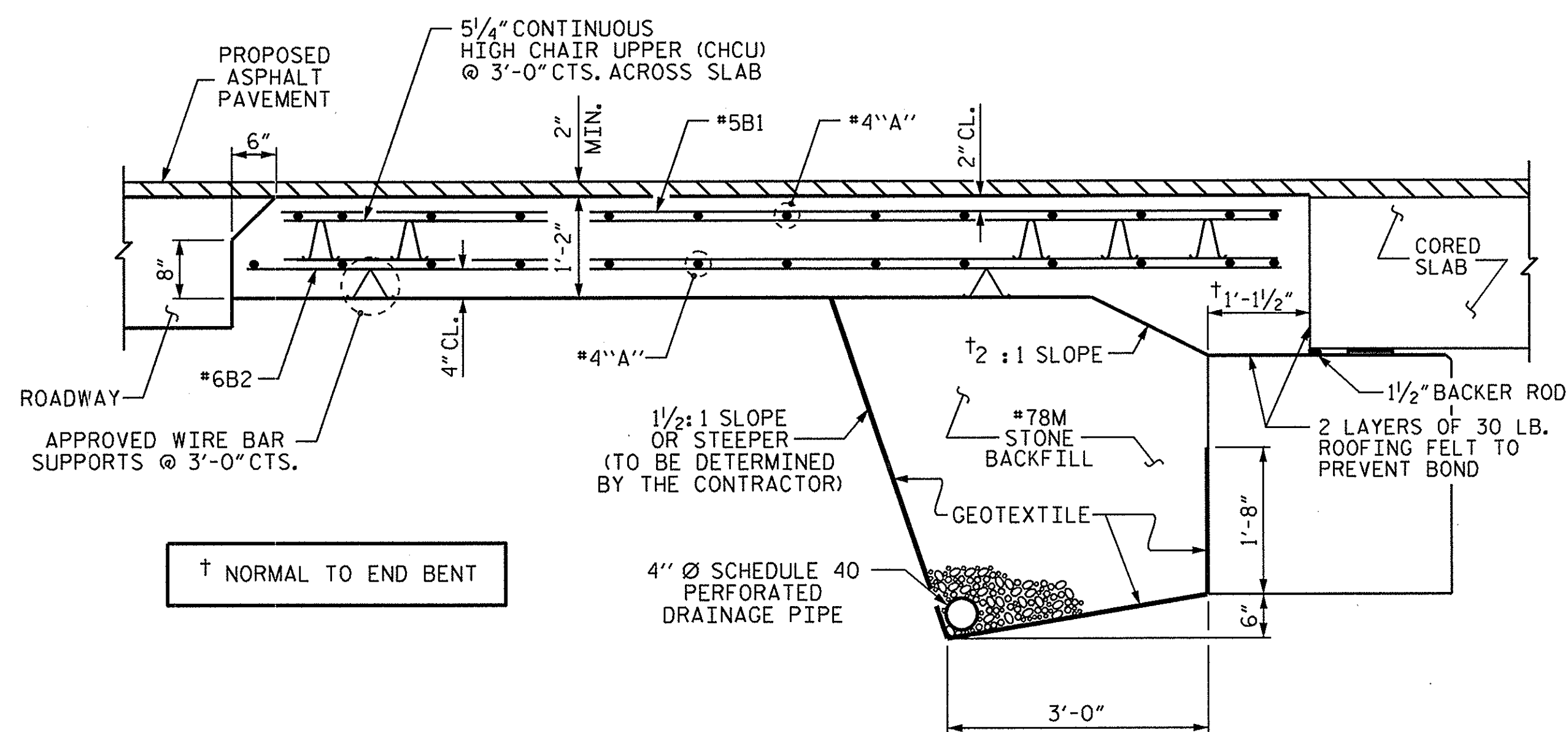
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S-18
2			4			TOTAL SHEETS 20



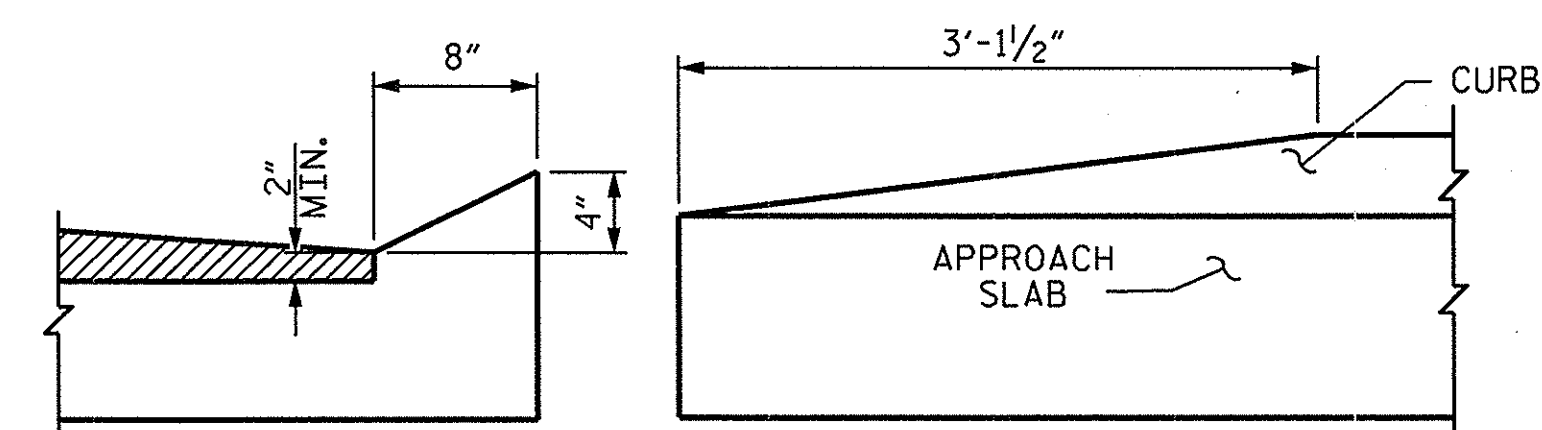
PLAN @ END BENT #1

PLAN @ END BENT #2

DIMENSIONS SHOWN ARE TYPICAL FOR BOTH APPROACH SLABS



SECTION THRU SLAB



CURB DETAILS

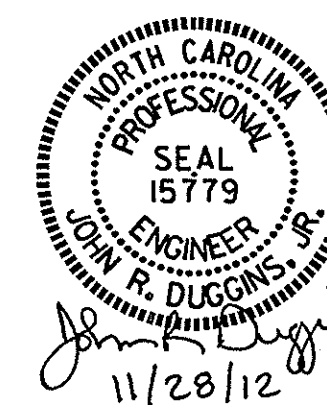
BILL OF MATERIAL													
APPROACH SLAB AT E.BT. 1 STAGE I							APPROACH SLAB AT E.BT. 2 STAGE I						
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT		BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	
*A1	13	#4	STR	25'-7"	222		*A1	13	#4	STR	25'-7"	222	
A2	13	#4	STR	25'-4"	220		A2	13	#4	STR	25'-4"	220	
*B1	47	#5	STR	11'-2"	548		*B1	47	#5	STR	11'-2"	548	
B2	47	#6	STR	11'-8"	823		B2	47	#6	STR	11'-8"	823	
REINFORCING STEEL					LBS.	1043	REINFORCING STEEL					LBS.	1043
*EPOXY COATED REINFORCING STEEL					LBS.	770	*EPOXY COATED REINFORCING STEEL					LBS.	770
CLASS AA CONCRETE					C. Y.	13.7	CLASS AA CONCRETE					C. Y.	13.7
APPROACH SLAB AT E.BT. 1 STAGE II							APPROACH SLAB AT E.BT. 2 STAGE II						
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT		BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	
*A3	13	#4	STR	5'-3"	46		*A3	13	#4	STR	5'-3"	46	
A4	13	#4	STR	5'-3"	46		A4	13	#4	STR	5'-3"	46	
*B1	11	#5	STR	11'-2"	128		*B1	11	#5	STR	11'-2"	128	
B2	11	#6	STR	11'-8"	193		B2	11	#6	STR	11'-8"	193	
REINFORCING STEEL					LBS.	239	REINFORCING STEEL					LBS.	239
*EPOXY COATED REINFORCING STEEL					LBS.	174	*EPOXY COATED REINFORCING STEEL					LBS.	174
CLASS AA CONCRETE					C. Y.	3.3	CLASS AA CONCRETE					C. Y.	3.3

* THESE BARS ARE EPOXY COATED

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

PROJECT NO. BD-5114R
HAYWOOD COUNTY
 STATION: 13+02.74 -L-

SHEET 1 OF 2



STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
STANDARD BRIDGE APPROACH SLAB FOR PRESTRESSED CONCRETE CORED SLAB UNIT (SUB-REGIONAL TIER)					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
					SHEET NO. S-19
					TOTAL SHEETS 20

ASSEMBLED BY : A. SORSENGINH DATE : 10/2011
 CHECKED BY : B. MATHEW DATE : 12/2011

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.

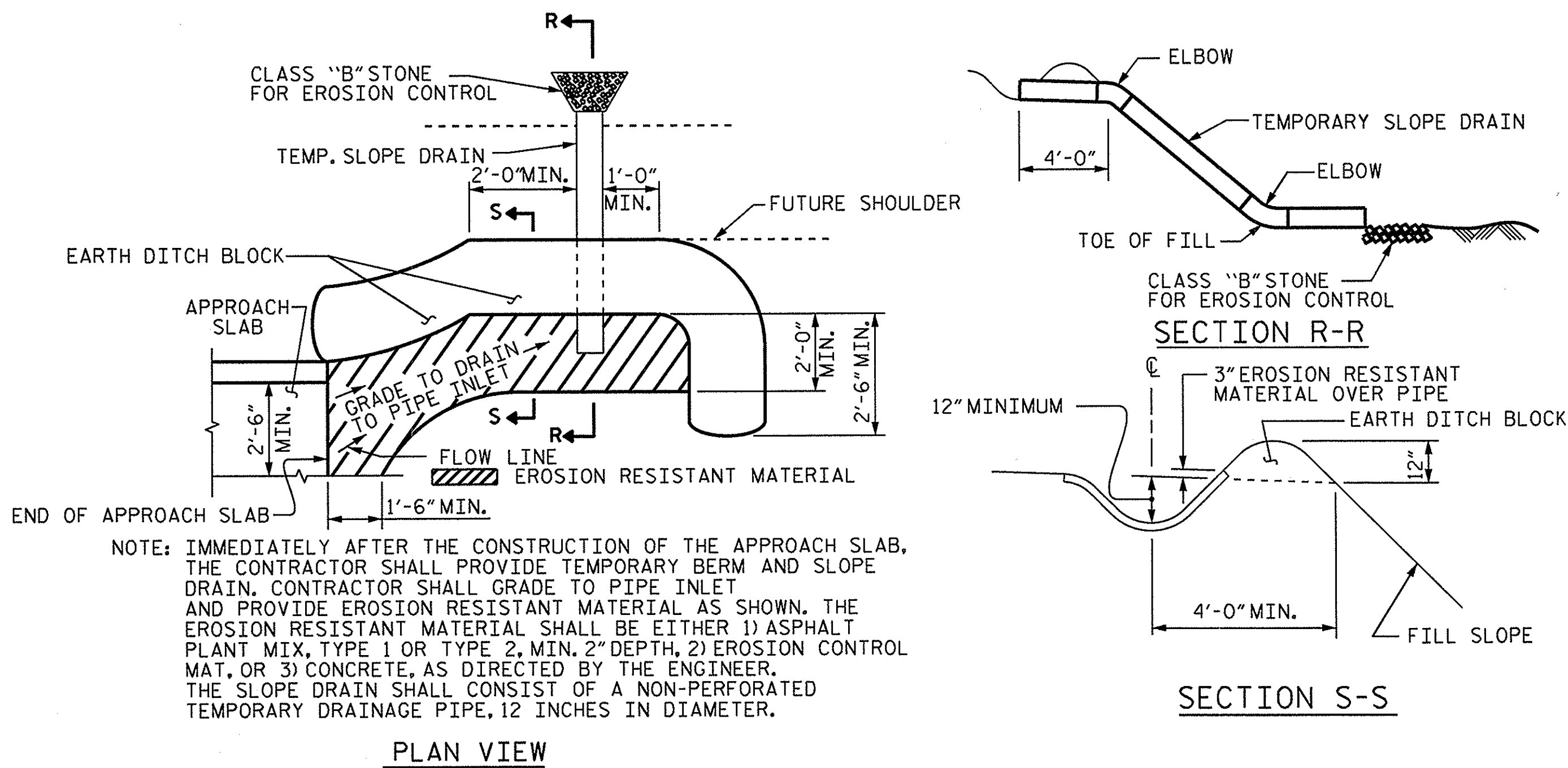
*78M STONE BACKFILL (CLASS V SELECT MATERIAL) SHALL BE IN ACCORDANCE WITH STANDARD SPECIFICATIONS SECTION 1016.

*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.

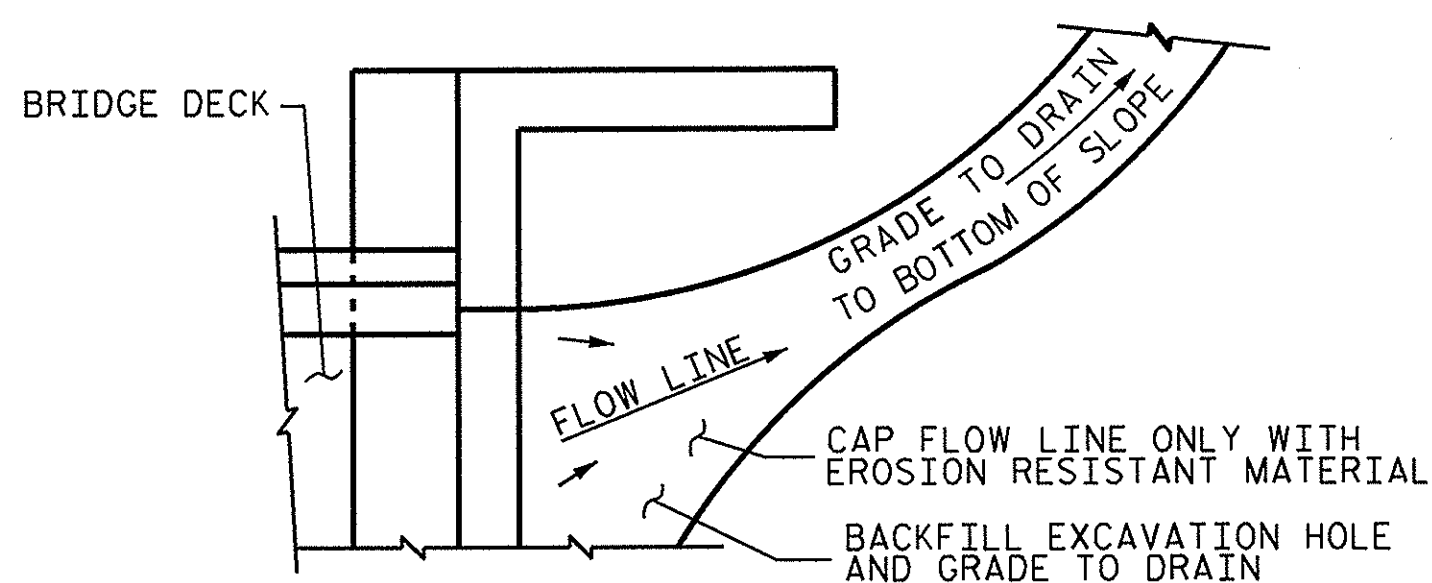
AREA BETWEEN THE WINGWALL AND APPROACH SLAB SHALL BE GRADED TO DRAIN THE WATER AWAY FROM THE FILL FACE OF THE BRIDGE AND SHALL BE PAVED. SEE ROADWAY PLANS.

APPROACH SLAB GROOVING IS NOT REQUIRED.



TEMPORARY BERM AND SLOPE DRAIN DETAILS

(TO BE USED WHEN SHOULDER BERM GUTTER IS REQUIRED)



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

TEMPORARY DRAINAGE DETAIL

PROJECT NO. BD-5114R
HAYWOOD COUNTY
STATION: 13+02.74 -L-

SHEET 2 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BRIDGE APPROACH
SLAB DETAILS

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S-20
2			4			

ASSEMBLED BY : A. SORSENGINH DATE : 10/2011
CHECKED BY : B. MATHEW DATE : 12/2011

STANDARD NOTES

DESIGN DATA:

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

MATERIAL AND WORKMANSHIP:

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

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

CONCRETE:

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

CONCRETE CHAMFERS:

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

DOWELS:

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

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

BRIDGES SHALL BE BUILT ON THE GRADE OR VERTICAL CURVE SHOWN ON PLANS. SLABS, CURBS AND PARAPETS SHALL CONFORM TO THE GRADE OR CURVE. ALL DIMENSIONS WHICH ARE GIVEN IN SECTION AND ARE AFFECTED BY DEAD LOAD DEFLECTIONS ARE DIMENSIONS AT CENTER LINE OF BEARING UNLESS OTHERWISE NOTED ON PLANS. IN SETTING FORMS FOR STEEL BEAM BRIDGES AND PRESTRESSED CONCRETE GIRDER BRIDGES, ADJUSTMENTS SHALL BE MADE DUE TO THE DEAD LOAD DEFLECTIONS FOR THE ELEVATIONS SHOWN. WHERE BLOCKS ARE SHOWN OVER BEAMS FOR BUILDING UP TO THE SLAB, THE VERTICAL DIMENSIONS OF THE BLOCKS SHALL BE ADJUSTED BETWEEN BEARINGS TO COMPENSATE FOR DEAD LOAD DEFLECTIONS, VERTICAL CURVE ORDINATE, AND ACTUAL BEAM CAMBER. WHERE BOTTOM OF SLAB IS IN LINE WITH BOTTOM OF TOP FLANGES, DEPTH OF SLAB BETWEEN BEARINGS SHALL BE ADJUSTED TO COMPENSATE FOR DEAD LOAD DEFLECTION, VERTICAL CURVE ORDINATE, AND ACTUAL BEAM CAMBER. IN SETTING FALSEWORK AND FORMS FOR REINFORCED CONCRETE SPANS, AN ALLOWANCE SHALL BE MADE FOR DEAD LOAD DEFLECTIONS, SETTLEMENT OF FALSEWORK, AND PERMANENT CAMBER WHICH SHALL BE PROVIDED FOR IN ADDITION TO THE ELEVATIONS SHOWN. AFTER REMOVAL OF THE FALSEWORK, THE FINISHED STRUCTURES SHALL CONFORM TO THE PROFILE AND ELEVATIONS SHOWN ON THE PLANS AND CONSTRUCTION ELEVATIONS FURNISHED BY THE ENGINEER. DETAILED DRAWINGS FOR FALSEWORK OR FORMS FOR BRIDGE SUPERSTRUCTURE AND ANY STRUCTURE OR PARTS OF A STRUCTURE AS NOTED ON THE PLANS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL BEFORE CONSTRUCTION OF THE FALSEWORK OR FORMS IS STARTED.

REINFORCING STEEL:

ALL REINFORCING STEEL SHALL BE DEFORMED. DIMENSIONS RELATIVE TO PLACEMENT OF REINFORCING ARE TO CENTERS OF BARS UNLESS OTHERWISE INDICATED IN THE PLANS. DIMENSIONS ON BAR DETAILS ARE TO CENTERS OF BARS OR ARE OUT TO OUT AS INDICATED ON PLANS. WIRE BAR SUPPORTS SHALL BE PROVIDED FOR REINFORCING STEEL WHERE INDICATED ON THE PLANS. WHEN BAR SUPPORT PIECES ARE PLACED IN CONTINUOUS LINES, THEY SHALL BE SO PLACED THAT THE ENDS OF THE SUPPORTING WIRES SHALL BE LAPPED TO LOCK LEGS ON ADJOINING PIECES.

STRUCTURAL STEEL:

AT THE CONTRACTOR'S OPTION, HE MAY SUBSTITUTE 7/8"Ø SHEAR STUDS FOR THE 3/4"Ø STUDS SPECIFIED ON THE PLANS. THIS SUBSTITUTION SHALL BE MADE AT THE RATE OF 3 - 7/8"Ø STUDS FOR 4 - 3/4"Ø STUDS, AND STUD SPACING CHANGES SHALL BE MADE AS NECESSARY TO PROVIDE THE SAME EQUIVALENT NUMBER OF 7/8"Ø STUDS ALONG THE BEAM AS SHOWN FOR 3/4"Ø STUDS BASED ON THE RATIO OF 3 - 7/8"Ø STUDS FOR 4 - 3/4"Ø STUDS. STUDS OF THE LENGTH SPECIFIED ON THE PLANS MUST BE PROVIDED. THE MAXIMUM SPACING SHALL BE 2'-0". EXCEPT AT THE INTERIOR SUPPORTS OF CONTINUOUS BEAMS WHERE THE COVER PLATE IS IN CONTACT WITH BEARING PLATE, THE CONTRACTOR MAY, AT HIS OPTION, SUBSTITUTE FOR THE COVER PLATES DESIGNATED ON THE PLANS COVER PLATES OF THE EQUIVALENT AREA PROVIDED THESE PLATES ARE AT LEAST 5/16" IN THICKNESS AND DO NOT EXCEED A WIDTH EQUAL TO THE FLANGE WIDTH LESS 2" OR A THICKNESS EQUAL TO 2 TIMES THE FLANGE THICKNESS. THE SIZE OF FILLET WELDS SHALL CONFORM TO THE REQUIREMENTS OF THE CURRENT ANSI/AASHTO/AWS "BRIDGE WELDING CODE". ELECTROSLAG WELDING WILL NOT BE PERMITTED. WITH THE SOLE EXCEPTION OF EDGES AT SURFACES WHICH BEAR ON OTHER SURFACES, ALL SHARP EDGES AND ENDS OF SHAPES AND PLATES SHALL BE SLIGHTLY ROUNDED BY SUITABLE MEANS TO A RADIUS OF APPROXIMATELY 1/16 INCH OR EQUIVALENT FLAT SURFACE AT A SUITABLE ANGLE PRIOR TO PAINTING, GALVANIZING, OR METALLIZING.

HANDRAILS AND POSTS:

METAL STANDARDS AND FACES OF THE CONCRETE END POSTS FOR THE METAL RAIL SHALL BE SET NORMAL TO THE GRADE OF THE CURB, UNLESS OTHERWISE SHOWN ON PLANS. THE METAL RAIL AND TOPS OF CONCRETE POSTS USED WITH THE ALUMINUM RAIL SHALL BE BUILT PARALLEL TO THE GRADE OF THE CURB. METAL HANDRAILS SHALL BE IN ACCORDANCE WITH THE PLANS. RAILS SHALL BE AS MANUFACTURED FOR BRIDGE RAILING. CASTINGS SHALL BE OF A UNIFORM APPEARANCE. FINIS AND OTHER DEFORMATIONS RESULTING FROM CASTING OR OTHERWISE SHALL BE REMOVED IN A MANNER SO THAT A UNIFORM COLORING OF THE COMPLETED CASTING SHALL BE OBTAINED. CASTINGS WITH DISCOLORATIONS OR OF NON-UNIFORM COLORING WILL NOT BE ACCEPTED. CERTIFIED MILL REPORTS ARE REQUIRED FOR METAL RAILS AND POSTS.

SPECIAL NOTES:

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