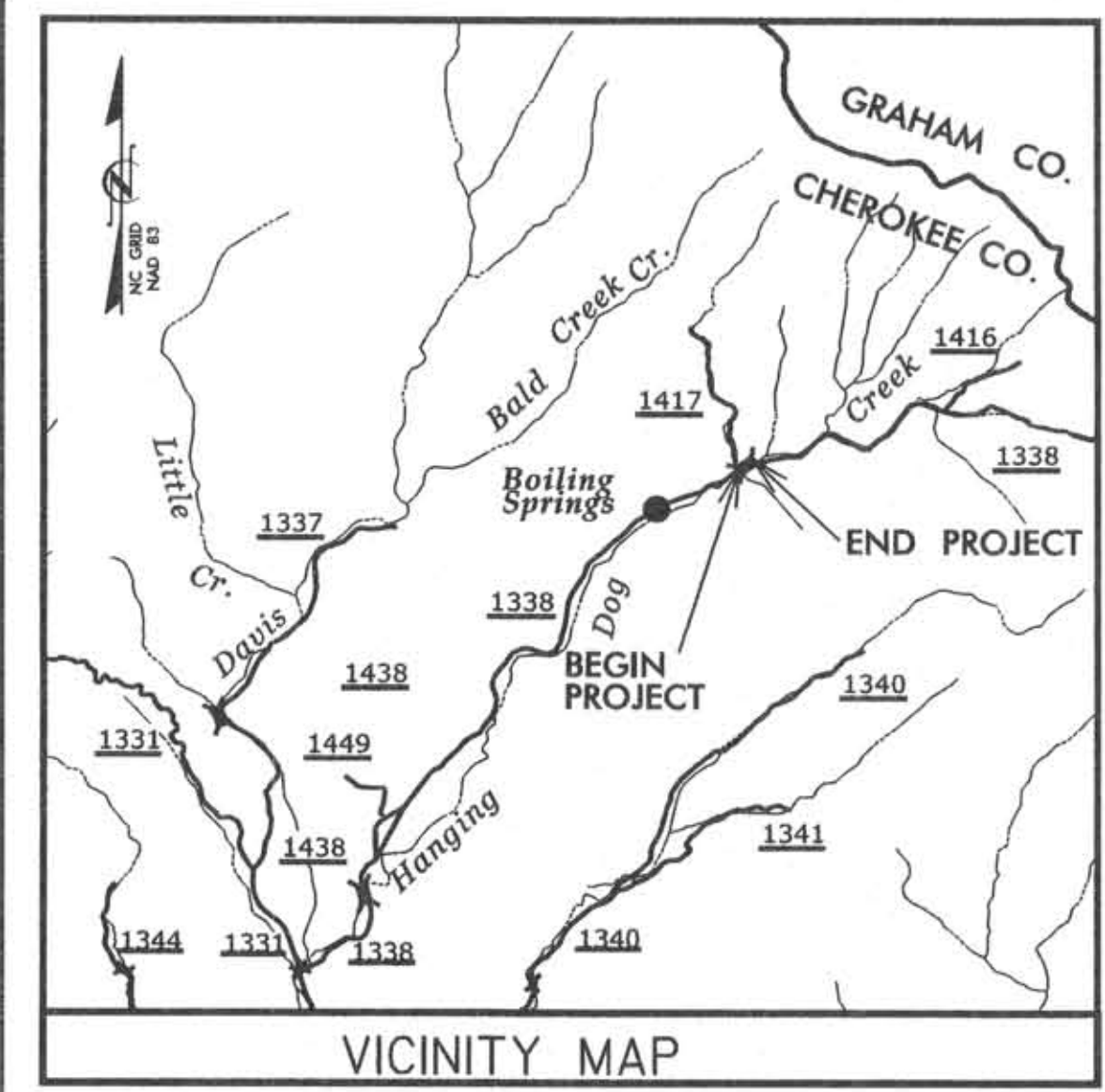


STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	BD-5114K	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
45360.1.11	BRZ-1338(4)	PE	
45360.2.11	BRZ-1338(4)	R/W	
45360.3.11	BRZ-1338(4)	CONST.	

09/08/99
SYSTEM\$\$\$\$\$DGN\$\$\$\$\$SUBNAME\$\$\$\$\$

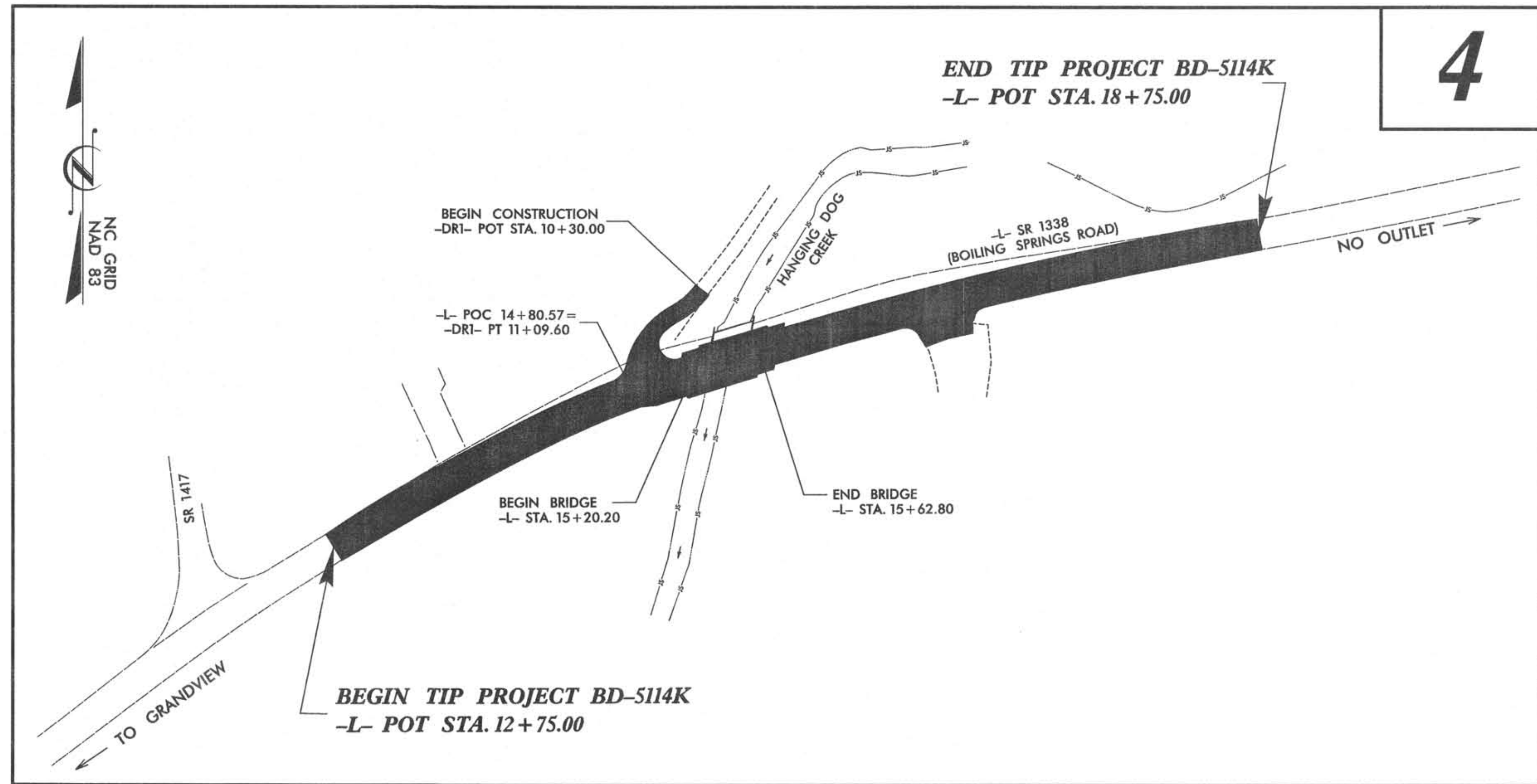
CONTRACT: DN00078
TIP PROJECT: BD-5114K



STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
CHEROKEE COUNTY

LOCATION: BRIDGE NO. 42 OVER HANGING DOG CREEK
ON SR 1338 (BOILING SPRINGS ROAD)

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



Vaughn & Melton
Consulting Engineers

Asheville, North Carolina
828-253-2796

Charlotte, North Carolina
704-351-0468

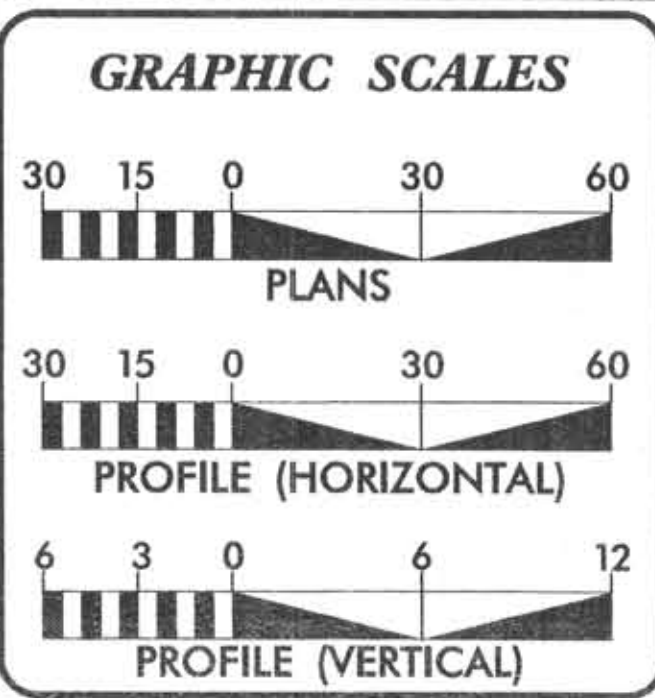
Tri-Cities, Tennessee
423-467-8401

Knoxville, Tennessee
865-646-6800

Middlesboro, Kentucky
606-248-6600

Spartanburg, South Carolina
864-574-4775

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



DESIGN DATA

ADT 1997 =	250
ADT 2025 =	500
T =	6 %
V =	55 MPH
FUNC CLASS =	RURAL LOCAL

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT BD-5114K =	0.106 MI
LENGTH STRUCTURE TIP PROJECT BD-5114K =	0.008 MI
TOTAL LENGTH OF TIP PROJECT BD-5114K =	0.114 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
DIVISION 14 BRIDGE MANAGEMENT ENGINEER

REECE SCHULER, PE
PROJECT ENGINEER

AARON CARVER, PE
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

Reece Schuler
SIGNATURE

ROADWAY DESIGN ENGINEER

Josh Deyton
SIGNATURE

8/6/12

P.E.

**DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA**

PROJECT REFERENCE NO.
BD-5114K

SHEET NO.
1-A

ROADWAY DESIGN
ENGINEER

NORTH CAROLINA
REGISTERED
ENGINEER
J. REECE M. SCHULER
25960

8/1/12

INDEX OF SHEETS		GENERAL NOTES:		2012 SPECIFICATIONS EFFECTIVE: 01-17-12	2012 ROADWAY ENGLISH STANDARD DRAWINGS
SHEET NUMBER	SHEET				
1	TITLE SHEET	GRADE LINE:			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:
1-A	INDEX OF SHEETS, GENERAL NOTES, AND LIST OF STANDARD DRAWINGS	GRADING AND SURFACING OR RESURFACING AND WIDENING:			
1-B	CONVENTIONAL SYMBOLS	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.			
1-C	SURVEY CONTROL SHEET	CLEARING:			STD.NO. TITLE
2	PAVEMENT SCHEDULE, TYPICAL SECTIONS, AND WEDGING DETAILS	CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD II.			DIVISION 2 - EARTHWORK
2-A	MODIFIED CONCRETE FLUME DETAIL	SUPERELEVATION:			200.02 Method of Clearing - Method II
3	SUMMARY OF QUANTITIES	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.			225.02 Guide for Grading Subgrade - Secondary and Local
3A	SUMMARY OF DRAINAGE QUANTITIES, SUMMARY OF GUARDRAIL, AND ASPHALT PAVEMENT REMOVAL SUMMARY	SHOULDER CONSTRUCTION:			225.04 Method of Obtaining Superelevation - Two Lane Pavement
3B	EARTHWORK SUMMARY	ASPHALT, EARTH, AND CONCRETE SHOULDER CONSTRUCTION ON THE HIGH SIDE OF SUPERELEVATED CURVES SHALL BE IN ACCORDANCE WITH STD. NO. 560.01.			DIVISION 3 - PIPE CULVERTS
4	PLAN AND PROFILE SHEET	UNDERDRAINS:			300.01 Method of Pipe Installation - Method 'A'
TMP 1 THRU TMP-4	TRAFFIC MANAGEMENT PLANS	GUARDRAIL:			DIVISION 4 - MAJOR STRUCTURES
SIG-1	SIGNAL PLAN	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.			422.11 Bridge Approach Fills
EC-1 THRU EC-3	EROSION CONTROL PLANS	UTILITIES:			DIVISION 5 - SUBGRADE, BASES AND SHOULDERS
UO-1 THRU UO-2	UTILITIES BY OTHERS	UTILITY OWNERS ON THIS PROJECT ARE BLUE RIDGE MOUNTAIN EMC AND FRONTIER COMMUNICATIONS.			560.01 Method of Shoulder Construction - High Side of Superelevated Curve - Method I
X-0	CROSS-SECTION SUMMARY	RIGHT-OF-WAY MARKERS:			DIVISION 8 - INCIDENTALS
X-1 THRU X-7	CROSS-SECTIONS	ALL RIGHT-OF-WAY MARKERS ON THIS PROJECT SHALL BE PLACED BY OTHERS.			815.03 Pipe Underdrain and Blind Drain
S-1 THRU S-20	STRUCTURE PLANS				840.25 Anchorage for Frames
					840.29 Frames and Narrow Slot Flat Grates
					840.35 Traffic Bearing Grated Drop Inlet - for Cast Iron Double Frame and Grates
					840.46 Traffic Bearing Precast Drainage Structure
					840.66 Drainage Structure Steps
					846.01 Concrete Curb, Gutter and Curb & Gutter
					846.04 Drop Inlet Installation in Shoulder Berm Gutter
					862.01 Guardrail Placement
					862.02 Guardrail Installation
					862.03 Structure Anchor Units
					876.02 Guide for Rip Rap at Pipe Outlets

Note: Not to Scale

**S.U.E. = Subsurface Utility Engineering*

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PROJECT REFERENCE NO.	SHEET NO.
BD-5/14K	I-B

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	

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	

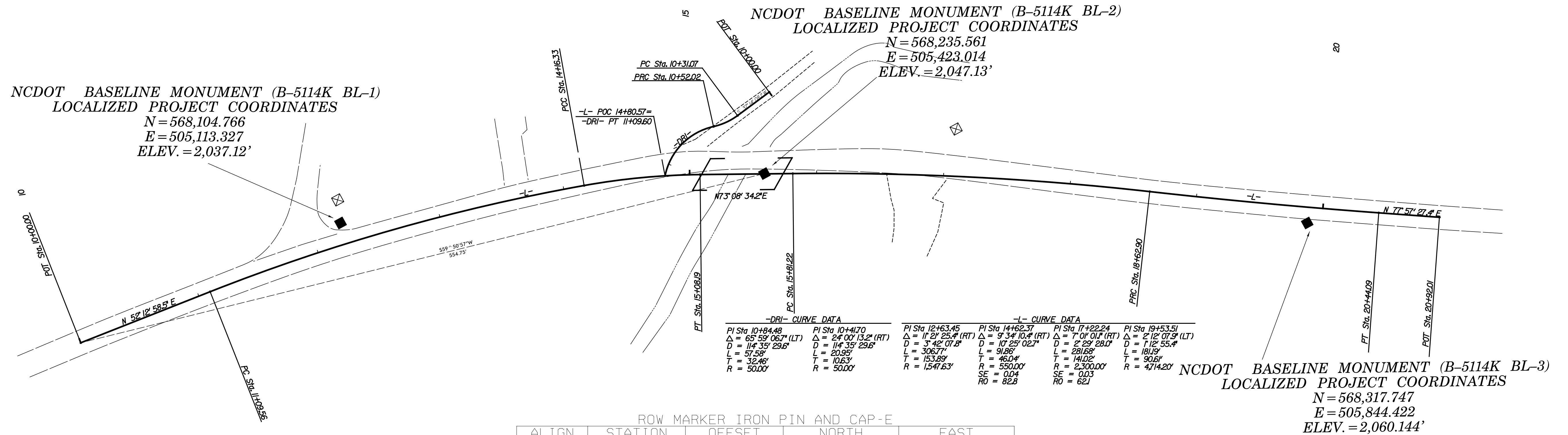
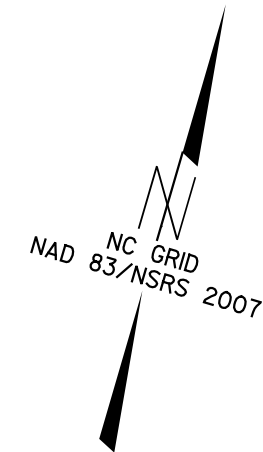
SURVEY CONTROL SHEET BD-5114K

BL	POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
1		BL - 1	568104.7660	505113.3270	2037.12	12+23.80	16.94 LT
2		BL - 2	568235.5610	505423.0140	2047.13	15+58.82	0.23 LT
3		BL - 3	568317.7470	505844.4220	2060.44	19+88.60	12.46 RT

```
BM1          ELEVATION = 2040.08  
N 568122      E 505106  
L STATION 12+27.00 35 LEFT  
8' SPIKE IN BASE OF PINE TREE  
  
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX  
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX  
BM2          ELEVATION = 2051.64  
N 568312      E 505558  
L STATION 17+08.00 37 LEFT  
8' SPIKE IN BASE OF POWER POLE  
  
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
```

L			
TYPE	STATION	NORTH	EAST
POT	10+00.00	567956.9207	504943.3161
PC	11+09.56	568024.0456	505029.9036
PCC	14+16.33	568186.8189	505289.3340
PT	15+08.19	568220.6583	505374.6202
PC	15+81.22	568241.8370	505444.5154
PRC	18+62.90	568306.8294	505718.4130
PT	20+44.09	568341.2181	505896.3003
POT	20+92.01	568351.2147	505943.1605

DR1			
TYPE	STATION	NORTH	EAST
POT	10+00.00	568298.2722	505408.7229
PC	10+31.07	568273.5353	505389.9224
PRC	10+52.02	568259.9582	505374.1723
PT	11+09.60	568211.9895	505348.4014



ROW MARKER IRON PIN AND CAP-E				
ALIGN	STATION	OFFSET	NORTH	EAST
L	14+13.28	27.22	568161.1028	505298.7670
L	15+25.00	35.00	568192.0373	505400.8589
L	15+25.00	40.00	568187.2522	505402.3088
L	15+75.00	40.00	568201.7515	505450.1603
L	16+45.00	30.00	568230.5421	505513.7018
L	18+49.18	30.00	568274.9159	505710.2003

DATUM	DESCRIPTION
1	10/1/2010
2	10/1/2010
3	10/1/2010
4	10/1/2010
5	10/1/2010
6	10/1/2010
7	10/1/2010
8	10/1/2010
9	10/1/2010
10	10/1/2010
11	10/1/2010
12	10/1/2010
13	10/1/2010
14	10/1/2010
15	10/1/2010
16	10/1/2010
17	10/1/2010
18	10/1/2010
19	10/1/2010
20	10/1/2010
21	10/1/2010
22	10/1/2010
23	10/1/2010
24	10/1/2010
25	10/1/2010
26	10/1/2010
27	10/1/2010
28	10/1/2010
29	10/1/2010
30	10/1/2010
31	10/1/2010
32	10/1/2010
33	10/1/2010
34	10/1/2010
35	10/1/2010
36	10/1/2010
37	10/1/2010
38	10/1/2010
39	10/1/2010
40	10/1/2010
41	10/1/2010
42	10/1/2010
43	10/1/2010
44	10/1/2010
45	10/1/2010
46	10/1/2010
47	10/1/2010
48	10/1/2010
49	10/1/2010
50	10/1/2010
51	10/1/2010
52	10/1/2010
53	10/1/2010
54	10/1/2010
55	10/1/2010
56	10/1/2010
57	10/1/2010
58	10/1/2010
59	10/1/2010
60	10/1/2010
61	10/1/2010
62	10/1/2010
63	10/1/2010
64	10/1/2010
65	10/1/2010
66	10/1/2010
67	10/1/2010
68	10/1/2010
69	10/1/2010
70	10/1/2010
71	10/1/2010
72	10/1/2010
73	10/1/2010
74	10/1/2010
75	10/1/2010
76	10/1/2010
77	10/1/2010
78	10/1/2010
79	10/1/2010
80	10/1/2010
81	10/1/2010
82	10/1/2010
83	10/1/2010
84	10/1/2010
85	10/1/2010
86	10/1/2010
87	10/1/2010
88	10/1/2010
89	10/1/2010
90	10/1/2010
91	10/1/2010
92	10/1/2010
93	10/1/2010
94	10/1/2010
95	10/1/2010
96	10/1/2010
97	10/1/2010
98	10/1/2010
99	10/1/2010
100	10/1/2010

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT
IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY
NCGS FOR MONUMENT "BL-2"
WITH NAD 83/NSRS 2007 STATE PLANE GRID COORDINATES OF
NORTHING: 568,235.561(±) EASTING: 505,423.014(±)
ELEVATION: 2,047.13(±)
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT
(GROUND TO GRID) IS:
THE N.C. LAMBERT GRID BEARING AND
LOCALIZED HORIZONTAL GRID DISTANCE FROM
"BL-2" TO -L- STATION 10+00 IS
S 59° 50' 57" W 554.75'
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NAVD 88

GEOIDAL MODEL – G09NC

NOTE: DRAWING NOT TO SCALE

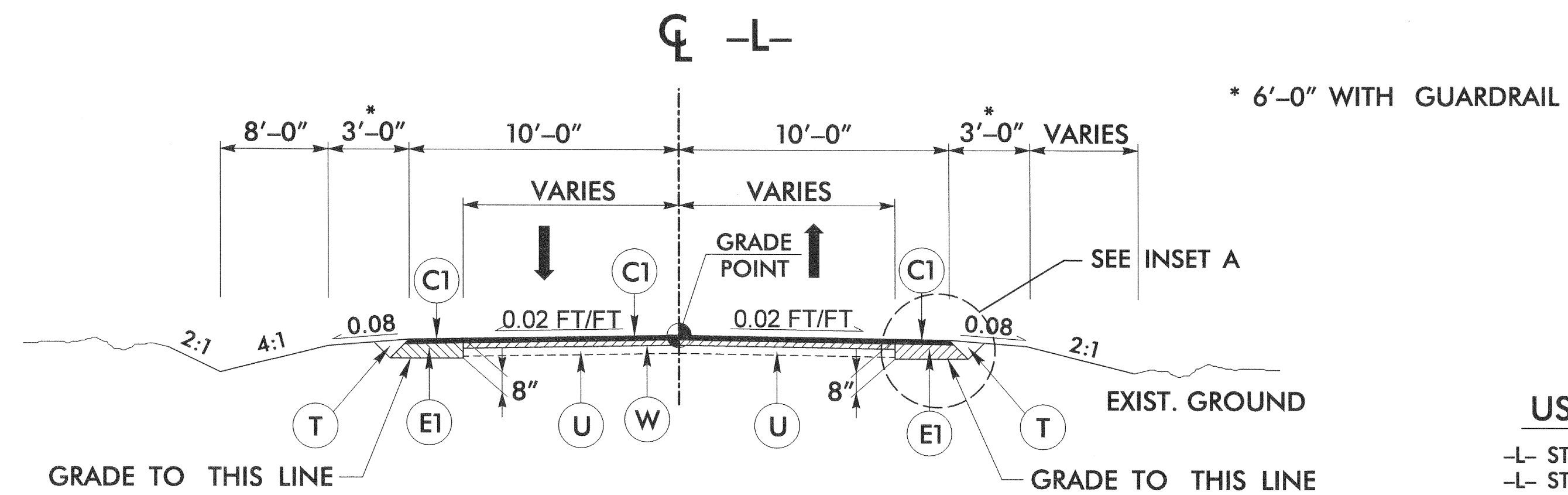
NOTES:

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-5114K_LS_CONTROL_DATE.HTML

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

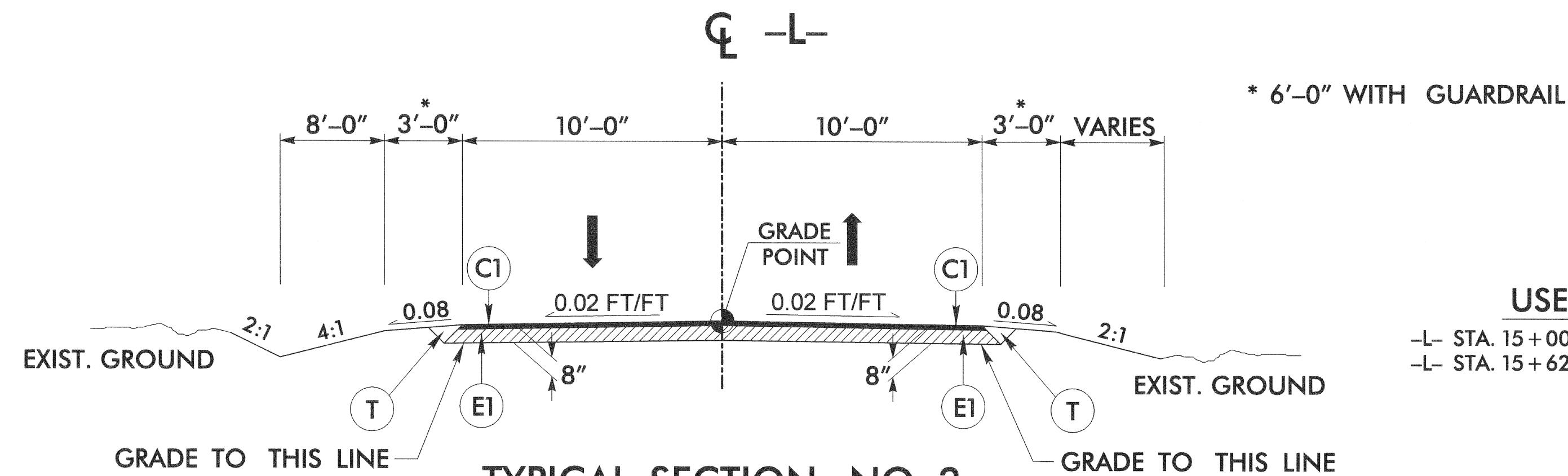
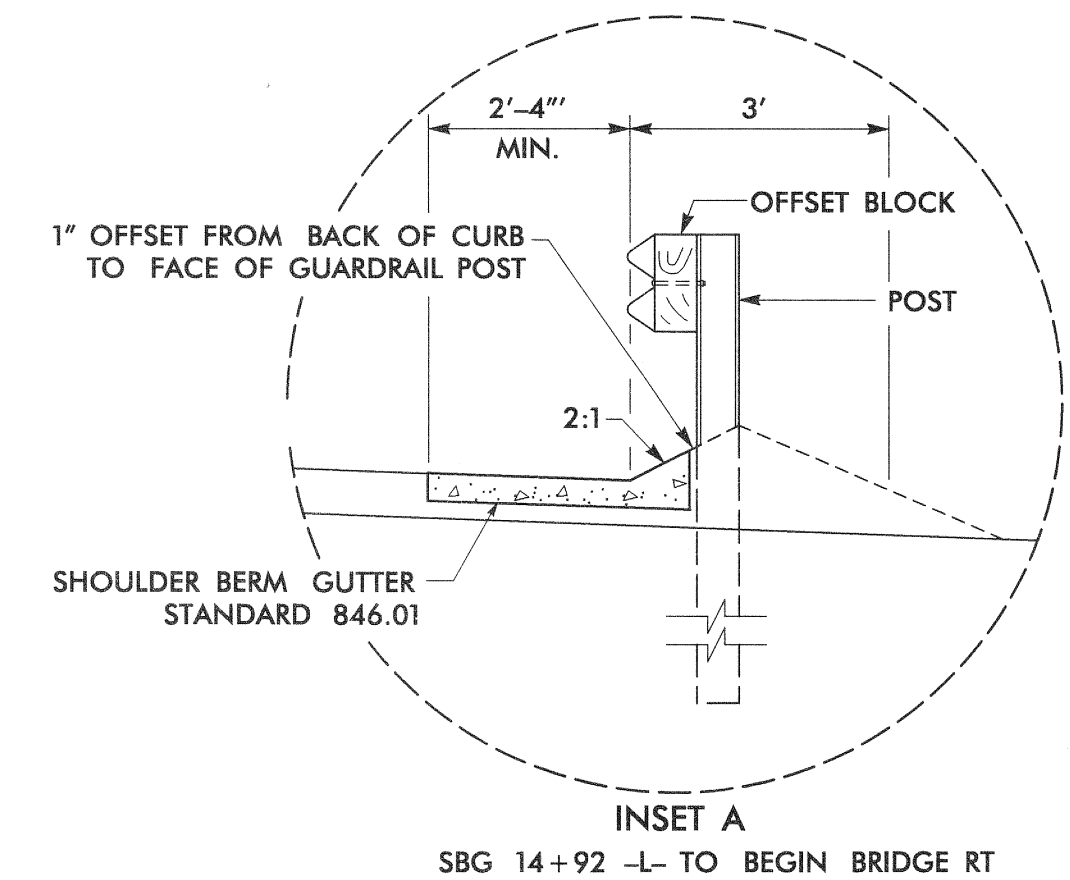
PROJECT CONTROL ESTABLISHED USING GLOBAL POSITIONING SYSTEM.



TYPICAL SECTION NO. 1

USE TYPICAL SECTION NO. 1

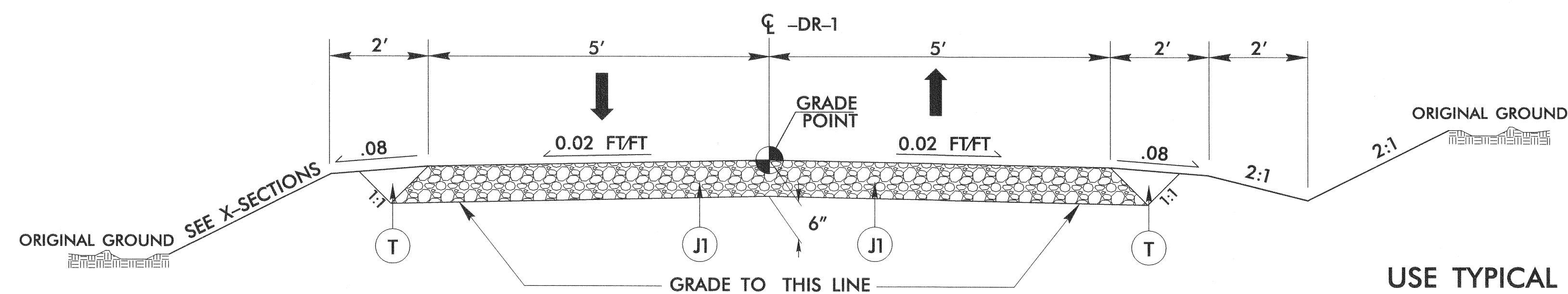
-L- STA. 12+75.00 (BEGIN PROJECT) TO STA. 15+00.00 (END WEDGING)
-L- STA. 16+25.00 (BEGIN WEDGING) TO STA. 18+75.00 (END PROJECT)



TYPICAL SECTION NO. 2

USE TYPICAL SECTION NO. 2

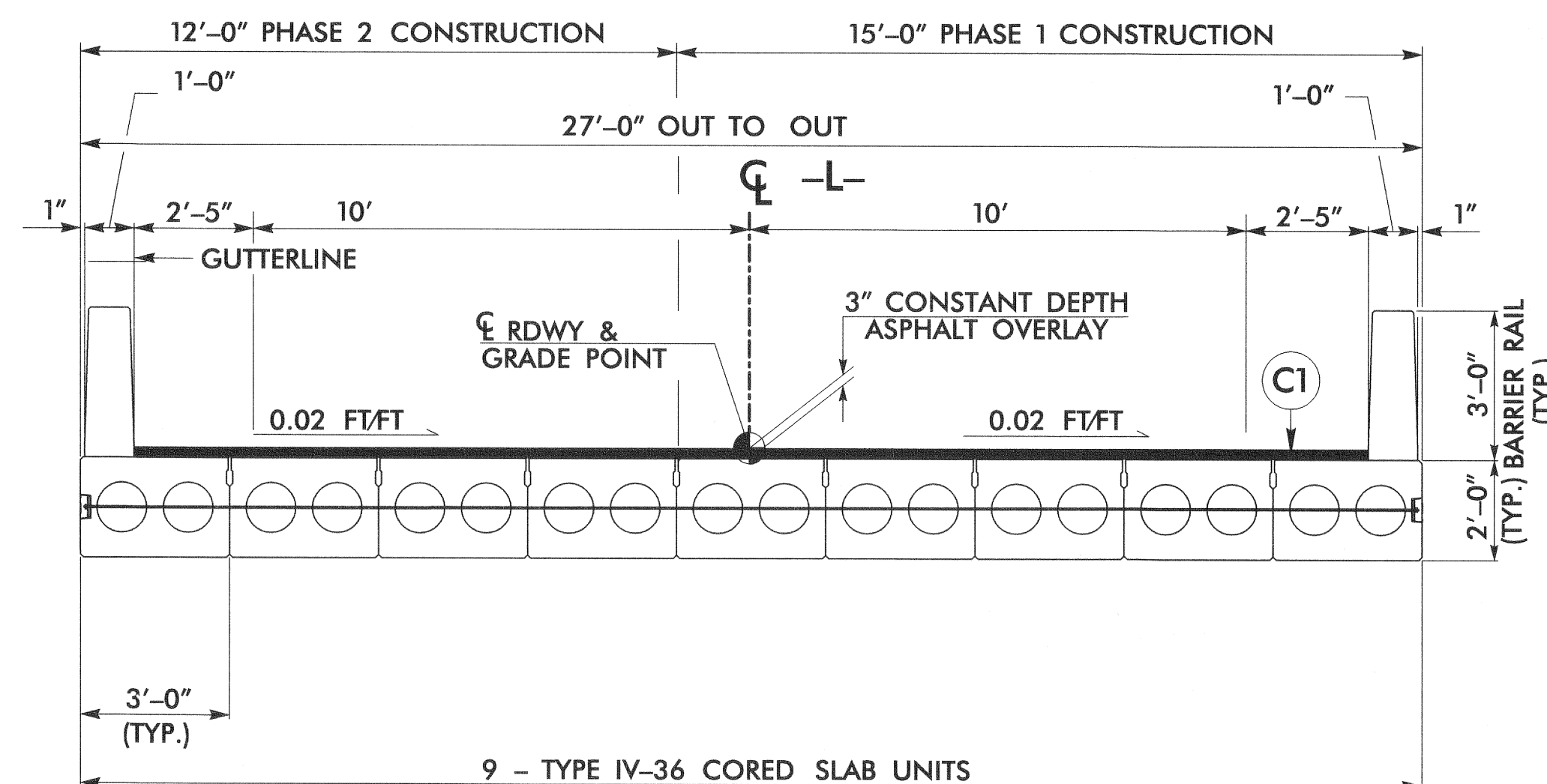
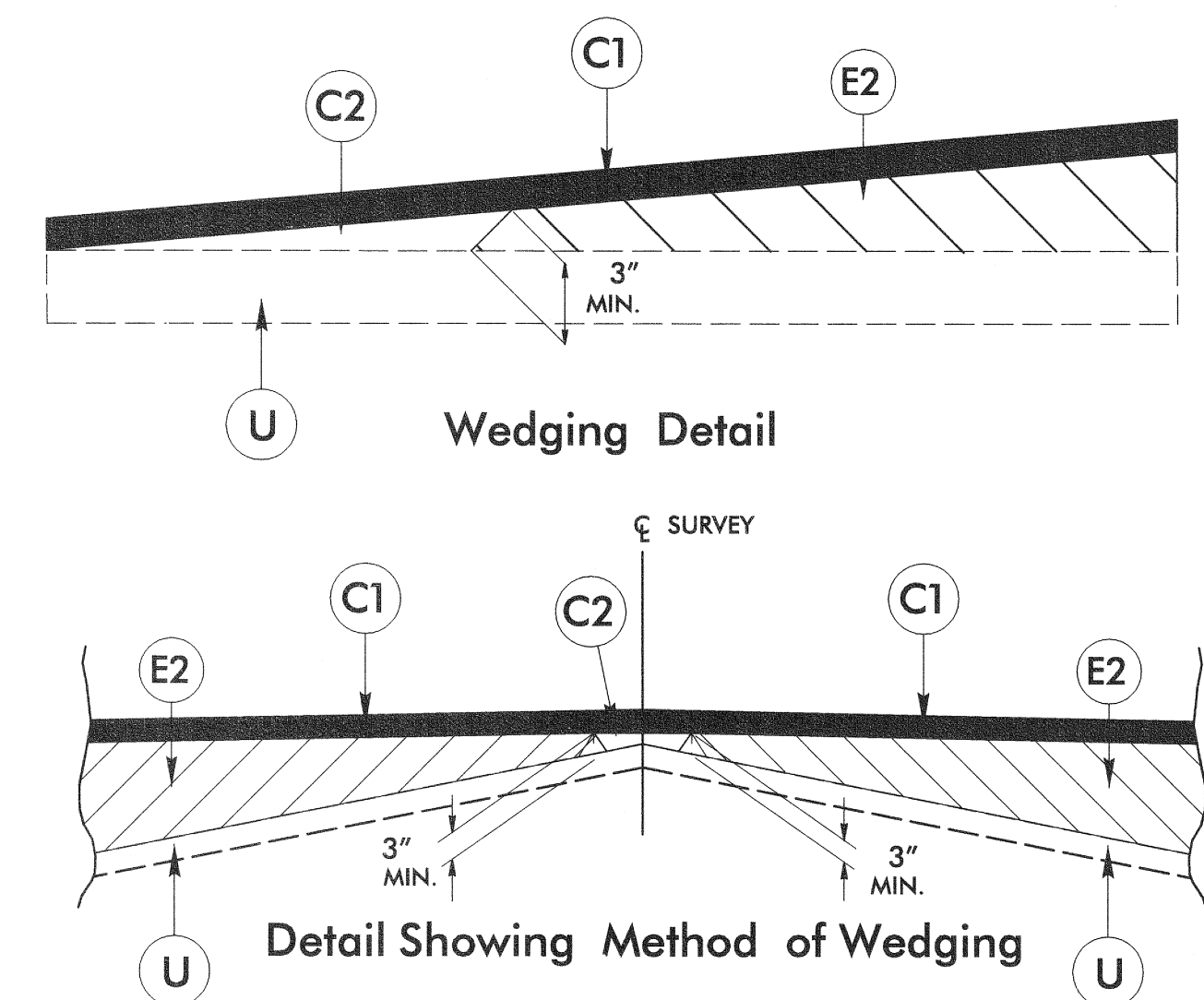
-L- STA. 15+00.00 (BEGIN FULL DEPTH) TO 15+20.20 (BEGIN BRIDGE)
-L- STA. 15+62.80 (END BRIDGE) TO STA. 16+25.00 (END FULL DEPTH)



TYPICAL SECTION NO. 3

USE TYPICAL SECTION NO. 3

-DR-1- STA. 10+30 TO STA. 10+98.87

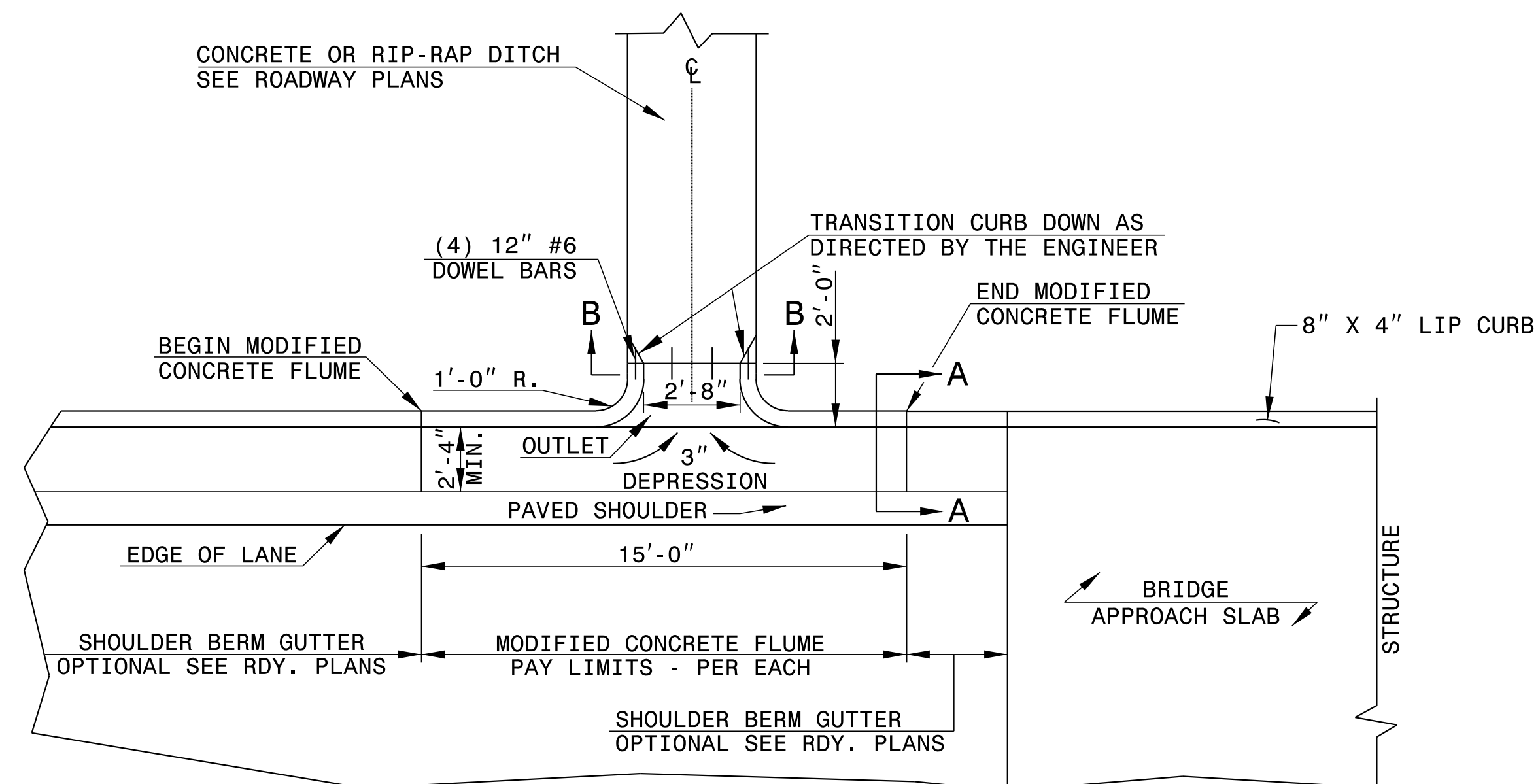


TYPICAL SECTION NO. 4

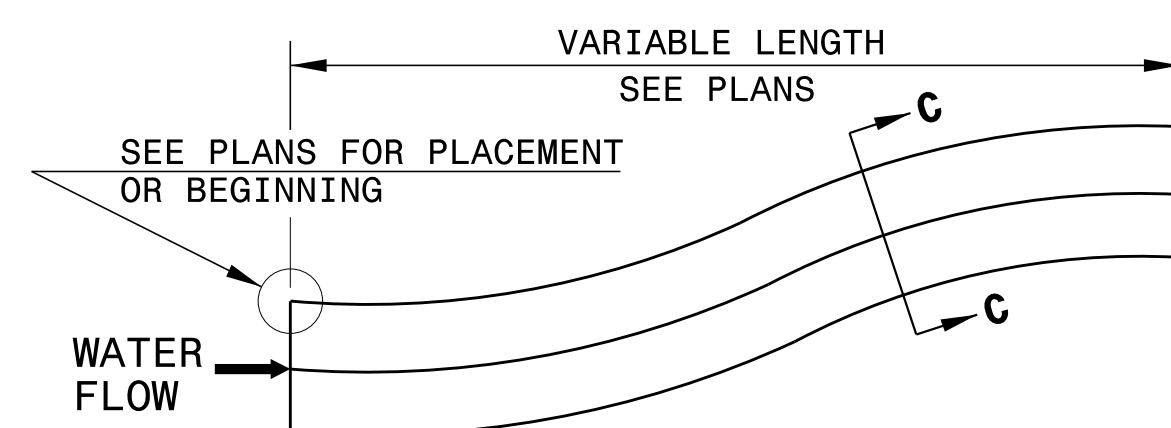
NOTE: SEE TRAFFIC CONTROL PLANS FOR FURTHER INFORMATION REGARDING THE PHASES FOR CONSTRUCTION

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 1½" 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 5½" IN DEPTH.
J1	6" AGGREGATE BASE COURSE
T	EARTH MATERIAL
U	EXISTING PAVEMENT
W	PROPOSED WEDGING (SEE APPROPRIATE DETAILS)

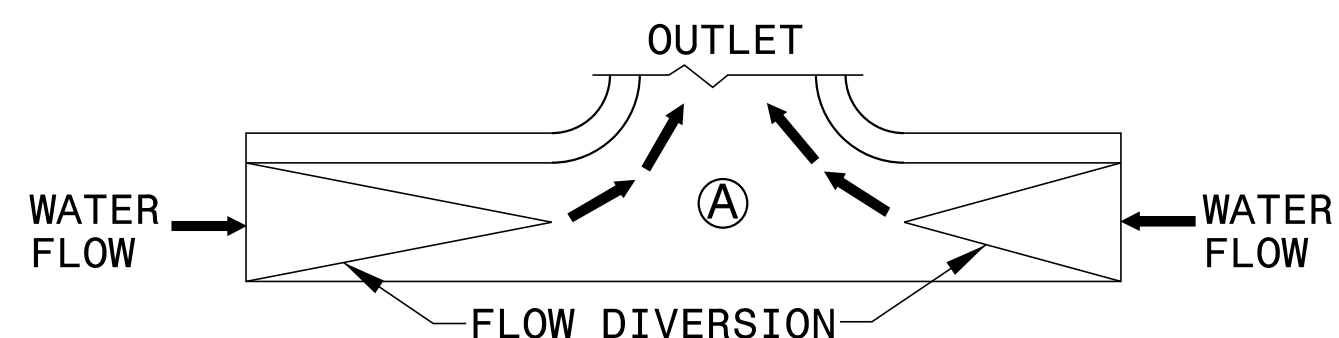
NOTE: ALL PAVEMENT SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.



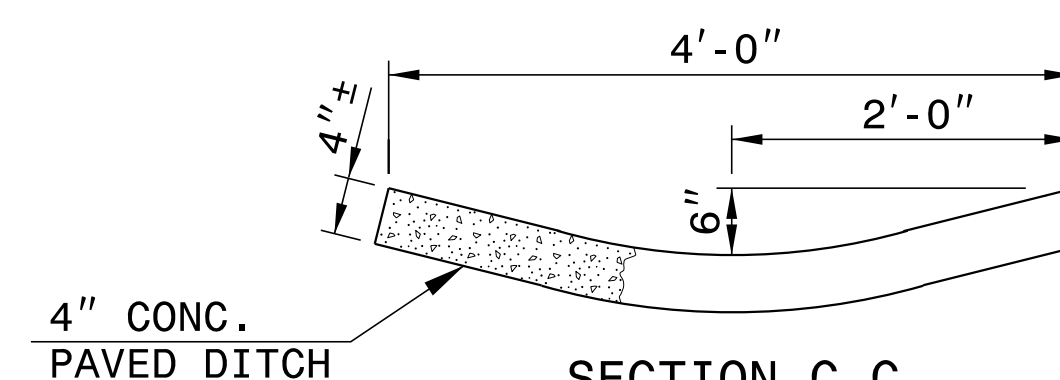
PLAN VIEW



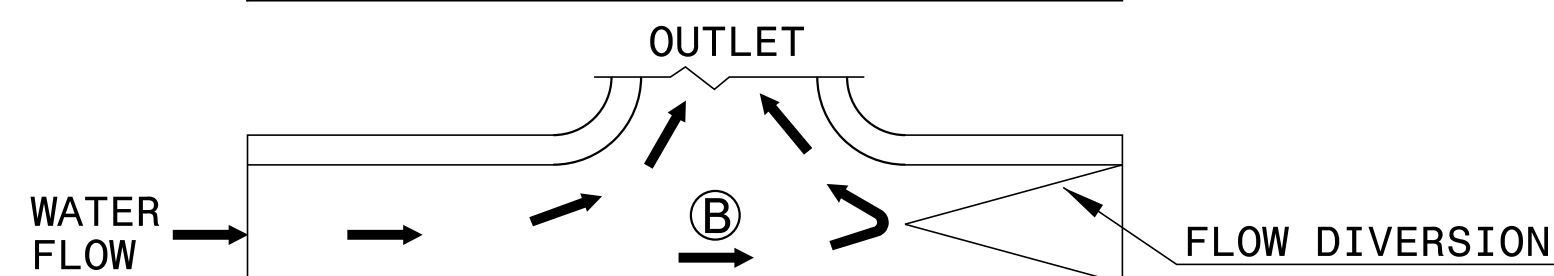
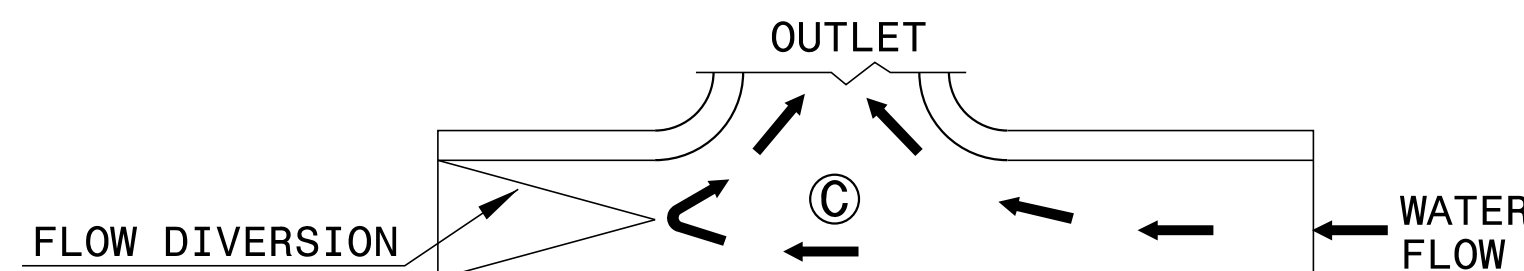
DOWNGRADE OR SAG



SAG

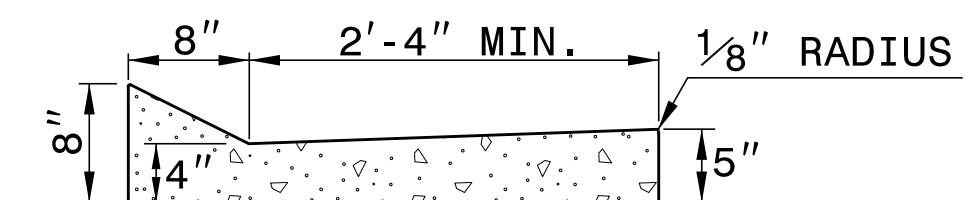


SECTION C-C

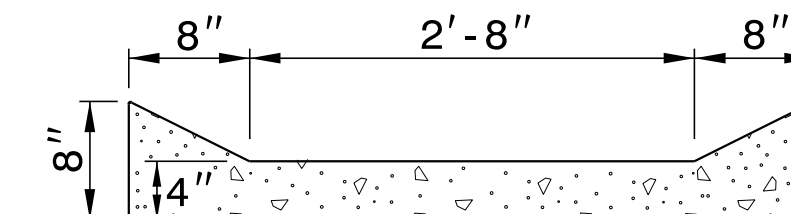


DOWN GRADE

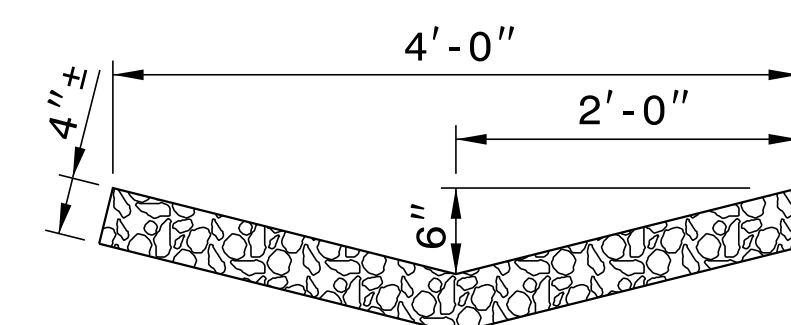
FLOW DIVERSION EXAMPLES



SECTION A-A



SECTION B-B



RIP-RAP LINED DITCH

- NOTES:

- 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	10	CY	Drainage Ditch Excavation
0195000000-E	265	50	CY	Select Granular Material
0196000000-E	270	50	SY	Geotextile for Soil Stabilization
0199000000-E	SP	540	SF	Temporary Shoring
0318000000-E	300	10	Tons	Foundation Conditioning Material, Minor Strs
0343000000-E	310	80	LF	15" Side Drain Pipe
0995000000-E	340	140	LF	Pipe Removal
1099700000-E	505	50	Tons	Class IV Subgrade Stabilization
1121000000-E	520	40	Tons	Aggregate Base Course
1220000000-E	545	40	Tons	Incidental Stone Base
1489000000-E	610	130	Tons	Asphalt Conc Base Course Type B25.0B
1519000000-E	610	230	Tons	Asphalt Conc Surface Course Type S9.5B
1575000000-E	620	20	Tons	Asphalt Binder for Plant Mix
2570000000-N	SP	1	EA	Modified Concrete Flume
3030000000-E	862	25	LF	Steel BM Guardrail
3150000000-N	862	5	EA	Additional Guardrail Posts
3180000000-N	862	1	EA	Guardrail Anchor Units, TYPE III (SHOP CURVED)
3195000000-N	862	1	EA	Guardrail Anchor Units, AT-1
3215000000-N	862	3	EA	Guardrail Anchor Units, TYPE III
3270000000-N	SP	3	EA	Guardrail Anchor Units, Type 350
3380000000-E	862	87.5	LF	Temporary Steel Beam Guardrail
3389000000-N	SP	4	EA	Guardrail Anchor Units, TL-2 Temporary
3575000000-E	SP	100	LF	Generic Fencing Item
3649000000-E	876	5	Tons	Rip Rap, Class B
3656000000-E	876	14	SY	Geotextile for Drainage
4400000000-E	1110	164	SF	Stationary Work Zone Signs
4410000000-E	1110	40	SF	Barricade Mounted Work Zone Signs
4430000000-E	1130	50	EA	Drums
4445000000-E	1145	32	LF	Barricades (Type III)
4450000000-E	1150	16	HR	Flagger (By Hour)
4810000000-E	1205	4,800	LF	Paint (4")
4835000000-E	1205	20	LF	Paint (24")
4870000000-E	1205	20	LF	Removal of Pavement Marking (24")
6000000000-E	1605	490	LF	TEMP SILT FENCE
6006000000-E	1610	20	TON	STONE FOR EROS CNTRL, A
6009000000-E	1610	25	TON	EROSION CONTROL STONE, CLASS B
6012000000-E	1610	20	TON	SEDIMENT CONTROL STONE
6015000000-E	1615	0.50	ACRES	TEMPORARY MULCHING
6018000000-E	1620	50	LBS	SEED FOR TEMP SEEDING
6021000000-E	1620	0.25	TON	FERTILIZER FOR TEMP SEED
6030000000-E	1630	40	CY	SILT EXCA VATION
6036000000-E	1631	450	SYD	MATTING FOR EROS CNTRL
6042000000-E	1632	30	LF	1/4" HARDWARE CLOTH
6048000000-E	SP	145	SYD	FLOATING TURBIDITY CURTAIN
6084000000-E	1660	0.50	Acre	SEEDING & MULCHING
6090000000-E	1661	50	lb	SEED FOR REPAIR SEEDING
6093000000-E	1661	0.25	Ton	FERTILIZER FOR REPAIR SEEDING
6096000000-E	1662	50	lb	SEED FOR SUPPLEMENTAL SEEDING
6108000000-E	1665	0.25	Ton	FERTILIZER TOPDRESSING
6117000000-N	SP	4	EA	RESPONSE FOR EROSION CONTROL
7980000000-N	SP	1	EA	Portable Traffic Signal System (2 Head)
				STRUCTURAL ITEMS
8035000000-N	402	1	LS	REMOVAL OF EXISTING STRUCTURE
8096000000-E	450	6	LF	PILE EXCA VATION IN SOIL
8097000000-E	450	50	LF	PILE EXCA VATION NOT IN SOIL
8121000000-N	412	1	LS	UNCLASSIFIED STRUCTURE EXCA VATION
8182000000-E	420	49.60	CY	CLASS A CONCRETE (BRIDGE)
8210000000-N	422	1	LS	BRIDGE APPROACH SLABS
8217000000-E	425	6,162	LBS	REINFORCING STEEL (BRIDGE)
8365000000-E	450	100	LF	HP12X53 STEEL PILES
8505000000-E	460	80.29	LF	VERTICAL CONC BARR RAIL
8608000000-E	876	100.00	TONS	RIP RAP CLASS II (2'-0" THICK)
8622000000-E	876	112.00	SY	GEOTEXTILE FOR DRAINAGE
8657000000-N	430	1	LS	ELASTOMERIC BEARINGS
8762000000-E	430	360.00	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)	TEMP. UTIL. EASE. (sf)	TEMP. DRAIN. EASE. (sf)	IN SQUARE YARDS					
									LINE	LOCATION	ASPHALT REMOVAL	ASPHALT BREAK-UP	CONCRETE REMOVAL	CONCRETE REMOVAL
1	ROBERT LEEPER	8.520			8.520	112								
2	WAIDE J. FLEMING	106.474	4012	106.382			11,341							
4	HERMAN L. & MARTIN L. DOCKERY	21.250			21.250	343								
									TOTAL		360			

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]

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

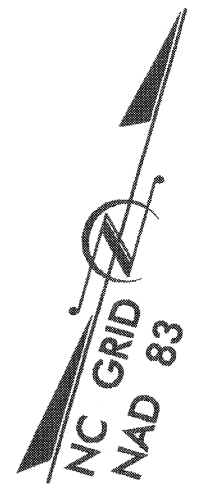
SUMMARY OF EARTHWORK
IN CUBIC YARDS

LOCATION	UNCLASSIFIED EXCAVATION	UNDERCUT	EMBT + %	BORROW	WASTE
SUMMARY NO.1					
-L- STA. 12+75.00 TO STA. 15+20.20 (BEG. BRIDGE)	33		41	8	
SUBTOTAL SUMMARY NO.1	33		41	8	
SUMMARY NO.2					
-DR1- STA. 10+00.00 TO STA. 10+98.87	17		0		17
SUBTOTAL SUMMARY NO.2	17		0		17
SUMMARY NO.3					
-L- STA. 15+62.80 (END BRIDGE) TO STA. 18+75.00	361		28		333
SUBTOTAL SUMMARY NO.3	361		28		333
PROJECT SUBTOTAL	411		69	8	350
BORROW IN LIEU OF WASTE				-8	-8
GRAND TOTAL	411		69		342
SAY	415				350
EST. DDE = 10 CY					

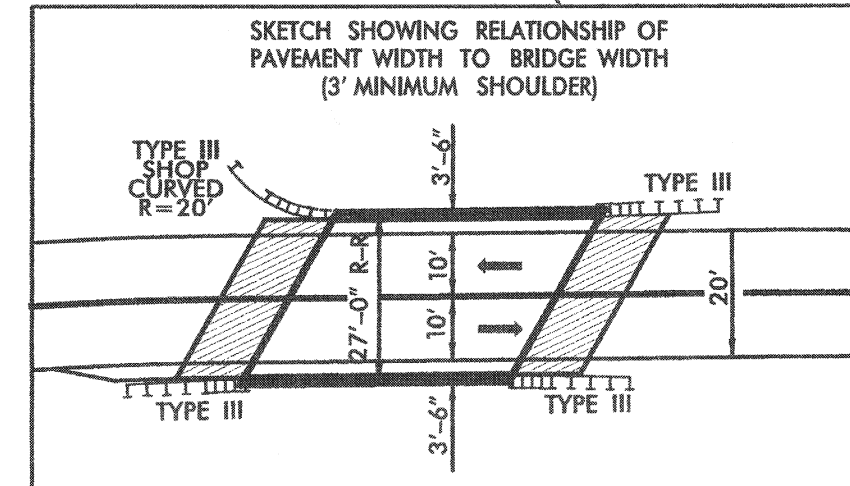
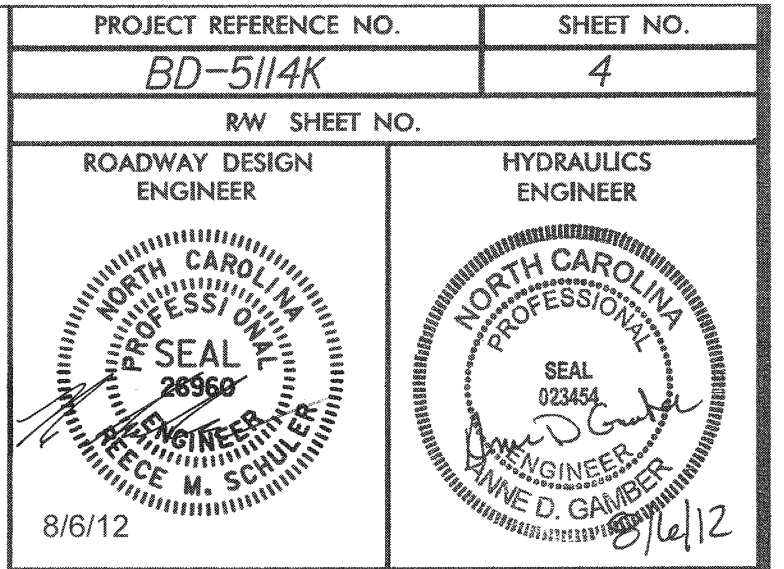
CONTINGENCY ITEMS:
INCIDENTAL STONE = 40 TONS
UNDERCUT EXCAVATION = 50 CY
SELECT GRANULAR MATERIAL = 50 CY
CLASS IV SUBGRADE STABILIZATION = 50 TONS
GEOTEXTILE FOR SOIL STABILIZATION = 50 SY

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".

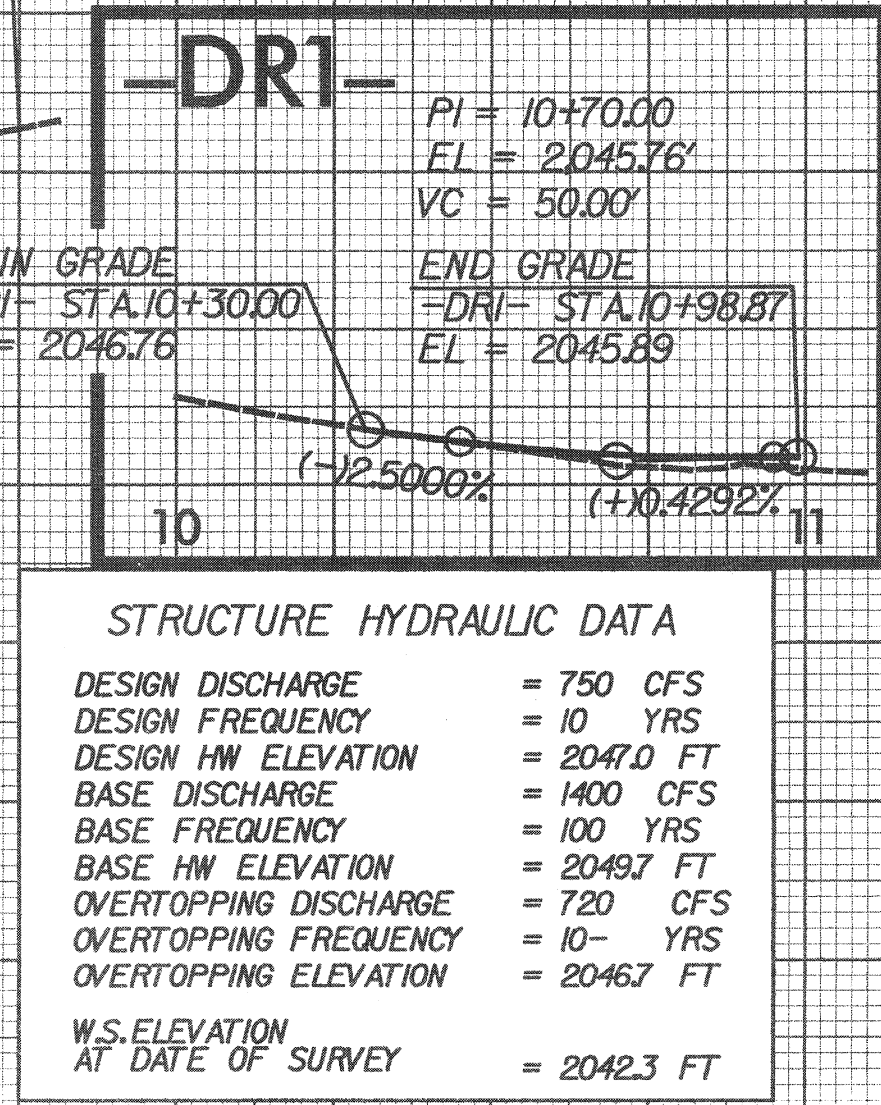
THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT
IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY
NCGS FOR MONUMENT "BL-2"
WITH NAD 83/NSRS 2007 STATE PLANE GRID COORDINATES OF
NORTHING: 568235.561(±ft) EASTING: 505423.014(±ft)
ELEVATION: 2047.13(±ft)
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT
(GROUND TO GRID) IS:
THE N.C. LAMBERT GRID BEARING AND
LOCALIZED HORIZONTAL GROUND DISTANCE FROM
"BL-2" TO U-1 STATION 12+75 IS
S 65°28'42" W 282.69'
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NAVD 88



Dockery, Herman L & Martin L
DB 526/PG 23



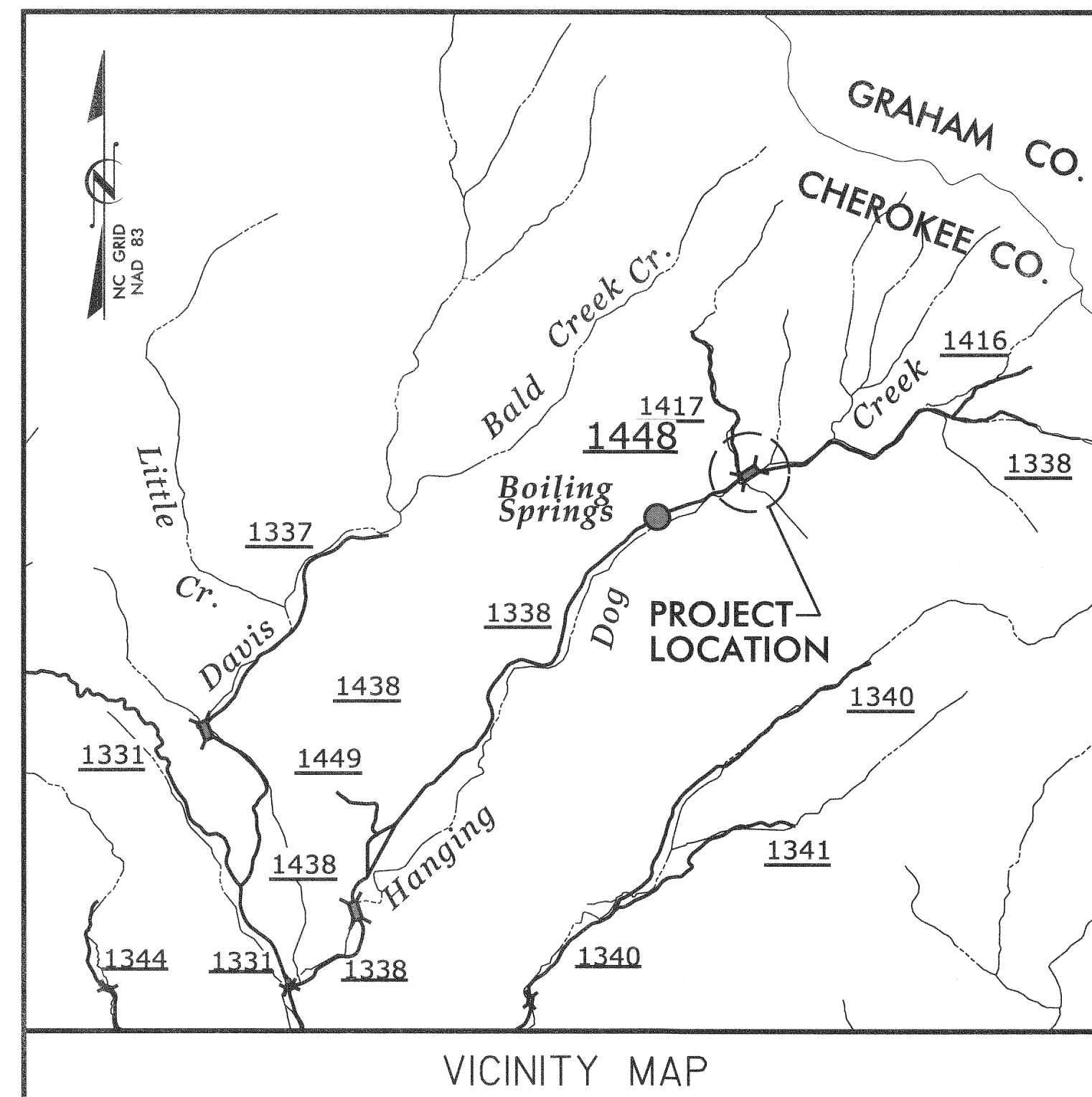
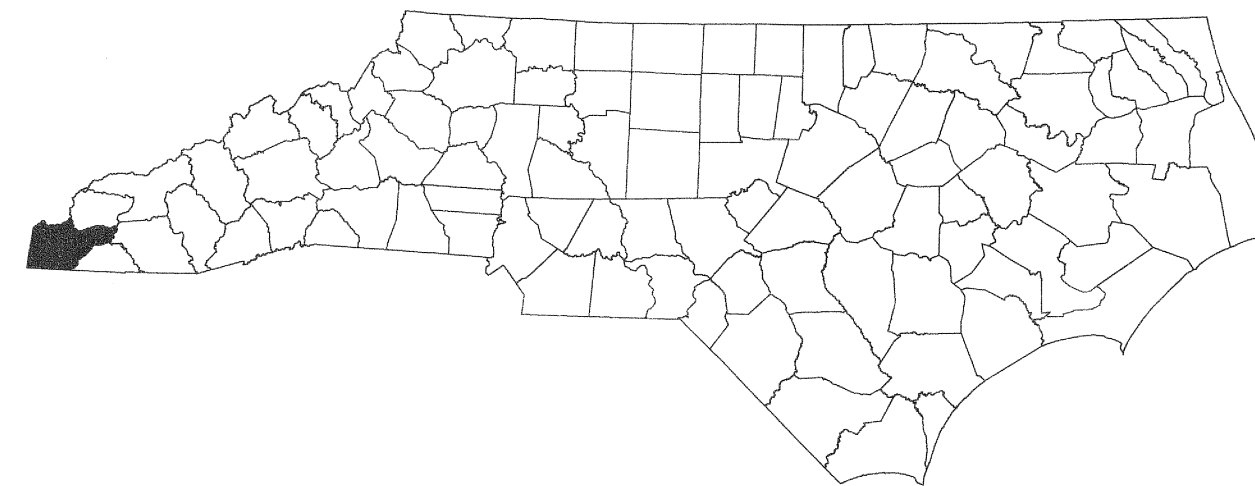
-DRI- CURVE DATA		-L- CURVE DATA			
Δ Sta 10+84.48	Δ Sta 10+41.70	Δ Sta 12+63.45	Δ Sta 14+62.37	Δ Sta 17+22.24	Δ Sta 19+53.51
$\Delta = 65^\circ 59' 06.7''$ (LT)	$\Delta = 24^\circ 00' 13.2''$ (RT)	$\Delta = 1^\circ 21' 25.4''$ (RT)	$\Delta = 9^\circ 34' 10.4''$ (RT)	$\Delta = 7^\circ 01' 01.7''$ (RT)	$\Delta = 2^\circ 12' 07.9''$ (LT)
$D = 114^\circ 35' 29.6''$	$D = 114^\circ 35' 29.6''$	$D = 3^\circ 42' 07.8''$	$D = 10^\circ 25' 02.7''$	$D = 2^\circ 29' 28.0''$	$D = 1^\circ 12' 55.4''$
$L = 57.58'$	$L = 20.95'$	$L = 306.77'$	$L = 91.86'$	$L = 281.68'$	$L = 181.19'$
$T = 32.46'$	$T = 10.63'$	$T = 153.89'$	$T = 46.04'$	$T = 141.02'$	$T = 90.61'$
$R = 50.00'$	$R = 50.00'$	$R = 1,547.63'$	$R = 550.00'$	$R = 2,300.00'$	$R = 4,714.20'$
		$SE = 0.028$	$SE = 0.04$	$SE = 0.03$	$SE = 0.03$
		$RO = 56.7$	$RO = 82.8$	$RO = 62.1$	$RO = 62.1$



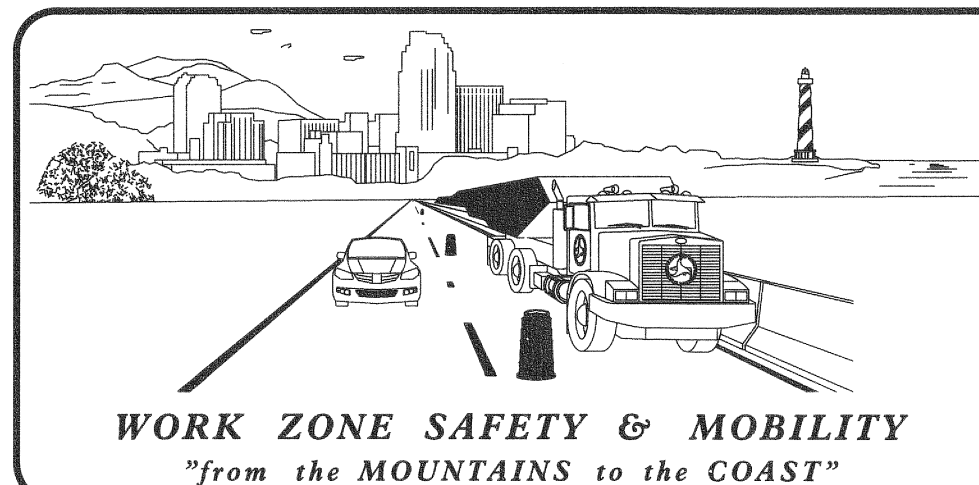
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

TRANSPORTATION MANAGEMENT PLAN

CHEROKEE COUNTY
DIVISION 14

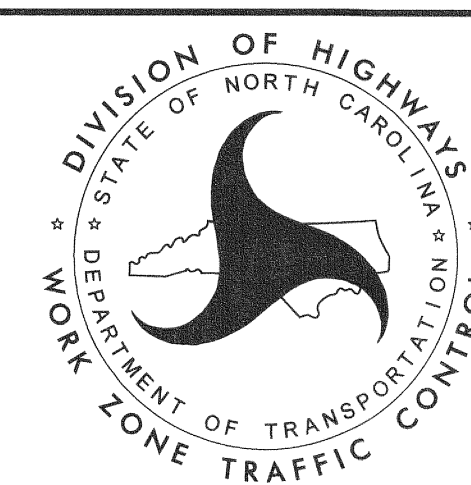


LOCATION: BRIDGE NO. 42 OVER HANGING DOG CREEK
ON SR 1338 (BOILING SPRINGS RD)



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 C. CARVER, P.E. TRAFFIC CONTROL PROJECT DESIGN ENGINEER
AARON C. CARVER, P.E. TRAFFIC CONTROL DESIGN ENGINEER



V&M
Vaughn & Melton
Consulting Engineers
Copyright © 2006 Vaughn & Melton, Inc.
All Rights Reserved

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

APPROVED:
DATE: August 6, 2012

SEAL

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

SHEET NO.
TMP-1

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	TEMPORARY TRAFFIC CONTROL PHASING
TMP-3	TEMPORARY TRAFFIC CONTROL PHASE I DETAIL
TMP-4	TEMPORARY TRAFFIC CONTROL PHASE II DETAIL
SIG-1	TEMPORARY TRAFFIC SIGNAL PLAN

TIP PROJECT: BD-5114K

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
1205.08	PAVEMENT MARKINGS - SYMBOLS & WORD MESSAGES
1205.12	PAVEMENT MARKINGS - BRIDGES
1261.01	GUARDRAIL & BARRIER DELINEATOR SPACING
1261.02	GUARDRAIL & BARRIER DELINEATOR TYPES
1262.01	GUARDRAIL END DELINEATION

LEGEND

GENERAL

- DIRECTION OF TRAFFIC FLOW
- DIRECTION OF PEDESTRIAN TRAFFIC FLOW
- EXIST. PVMT.
- NORTH ARROW
- PROPOSED PVMT.
- WORK AREA
- TEMPORARY PAVEMENT

TEMPORARY PAVEMENT MARKING

SYMBOL	DESCRIPTION
	PAINT
PA	WHITE EDGE LINE (4")
PI	YELLOW DOUBLE CENTER (4")
P4	STOP BAR (24"WHITE)

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 MARKING SYMBOLS

- PAVEMENT MARKING SYMBOLS

Vaughn & Melton
Consulting Engineers

Charlotte,
North Carolina
704-357-0488

Tri-Cities,
Tennessee
423-467-8401

Knoxville,
Tennessee
865-546-5800

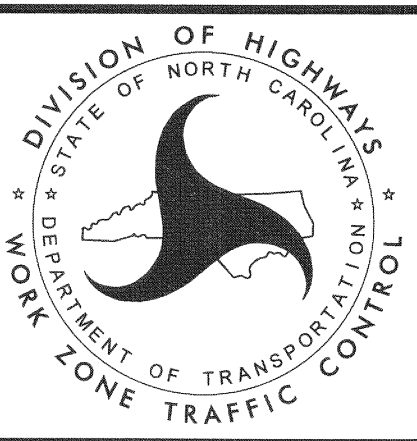
Middlesboro,
Kentucky
606-248-6600

Spartanburg,
South Carolina
864-574-4775

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

APPROVED: DATE: 8/6/12

SEAL



ROADWAY STANDARD
DRAWINGS & LEGEND

GENERAL NOTES / LOCAL NOTES

PROJ. REFERENCE NO.	SHEET NO.
BD5114-K	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 UNDESIRE

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 TRAFFIC CONTROL 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) 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 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 MOVABLE/PORTABLE 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 MOVABLE/PORTABLE CONCRETE BARRIER FROM ONCOMING TRAFFIC AT ALL TIMES BY A TEMPORARY CRASH CUSHION UNLESS THE APPROACH END OF MOVABLE/PORTABLE CONCRETE BARRIER IS OFFSET FROM ONCOMING TRAFFIC AS FOLLOWS OR AS SHOWN IN THE PLANS: (SEE ALSO 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) WHEN LANE CLOSURES ARE NOT IN EFFECT 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. 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 MARKING

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

ROAD NAME	MARKING	MARKER
SR 1338 (BOILING SPRINGS ROAD)	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 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 THE EXISTING ROAD, BUT REDUCED TO ONE LANE USING TEMPORARY SIGNALS AND PAVEMENT MARKINGS AS NEW ALIGNMENT IS CONSTRUCTED. PHASE 2 SHOWS TRAFFIC SHIFTED TO ONE LANE ON THE NEW ALIGNMENT USING TEMPORARY SIGNALS AND PAVEMENT MARKINGS WHILE THE REMAINDER IS CONSTRUCTED. A FLAGGING OPERATION WILL BE USED TO CONSTRUCT THE NEW TIE-INS.

LOCAL NOTES:

- 1) EMERGENCY VEHICLE ACCESS MUST BE MAINTAINED AT ALL TIMES.
- 2) NOTIFY THE CHEROKEE COUNTY SCHOOL BOARD 30 DAYS BEFORE ANY LANE CLOSURES.

V&M
Vaughn & Melton
Consulting Engineers

Asheville,
North Carolina
828-253-2796

Charlotte,
North Carolina
704-357-0488

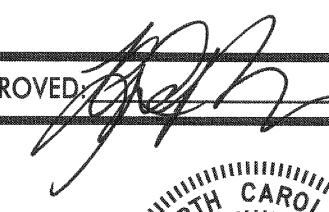
Tri-Cities,
Tennessee
423-467-8403

Knoxville,
Tennessee
865-546-5800

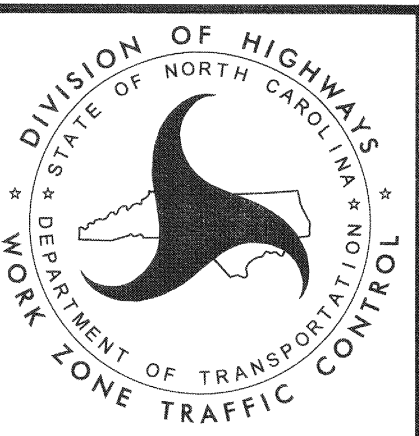
Middlesboro,
Kentucky
806-245-6600

Spartanburg,
South Carolina
864-574-4775

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

APPROVED:  DATE: 8/6/12

SEAL

TRANSPORTATION OPERATIONS
PLAN
(MANAGEMENT STRATEGIES & GENERAL NOTES)

PROJECT PHASING

PHASE I

- STEP 1: - ERECT WORK ZONE ADVANCED WARNING SIGNS USING DETAIL DRAWINGS FOR WORK ZONE SIGNS. (SEE RDWY STD. 1101.01)
- INSTALL PORTABLE TRAFFIC SIGNALS AS REQUIRED IN THE SIGNAL PLANS (SEE SHEET SIG-1).

NOTE: STEP 2 SHALL BE COMPLETED IN A CONTINUOUS OPERATION.

- STEP 2: USING RDWY STD 1101.02 SHEET 1 OF 15, PERFORM THE FOLLOWING ON SR 1338:
- REMOVE AS NECESSARY EXISTING PAVEMENT MARKINGS, AND PLACE TEMPORARY PAVEMENT MARKINGS (PAINT), FROM -L- STA. 11+95 +/- TO -L- STA. 19+50 +/- . (SEE TMP-3)
- REMOVE EXISTING BRIDGE RAIL (RIGHT SIDE), SAW CUT AND REMOVE RIGHT SIDE OF EXISTING BRIDGE TO LIMIT SHOWN (SEE SECTION B-B, TMP-3) AND INSTALL TEMPORARY GUARDRAIL FROM -L- STA. 14+90 +/- TO -L- STA. 16+00 +/- .(SEE TMP-3)
- ACTIVATE PORTABLE TRAFFIC SIGNALS AND DIRECT SR 1338 (BOILING SPRINGS ROAD) TRAFFIC INTO A ONE LANE, TWO WAY PATTERN IN THE EXISTING WESTBOUND LANE OF SR 1338 (BOILING SPRINGS ROAD). (SEE TMP-3)
- STEP 3: - REMOVE EASTBOUND SIDE OF EXISTING STRUCTURE (SEE STRUCTURE PLANS).
- INSTALL TEMPORARY SHORING AS FOLLOWS:
- INSTALL TEMPORARY SHORING NO. 1 BEHIND TEMPORARY GUARDRAIL FROM -L- STA. 15+05 +/- TO -L- STA. 15+30 +/- . (SEE TMP-3)
- INSTALL TEMPORARY SHORING NO. 2 BEHIND TEMPORARY GUARDRAIL FROM -L- STA. 15+55 +/- TO -L- STA. 15+75 +/- . (SEE TMP-3)
- STEP 4: - CONSTRUCT -L- (SR 1338 BOILING SPRINGS ROAD) FROM STA 12+75 TO STA 18+75 EASTBOUND LANE EXCLUDING FINAL PAVEMENT LAYER.
- CONSTRUCT STRUCTURES PER THE STRUCTURE PLANS STAGE 1.

PHASE II

NOTE: STEP 1 SHALL BE COMPLETED IN A CONTINUOUS OPERATION.

- STEP 1: USING RDWY STD 1101.02 SHEET 1 OF 15, PERFORM THE FOLLOWING ON SR 1338:
- REMOVE, AS NECESSARY, PAVEMENT MARKINGS PLACED IN STEP 2, PHASE I AND PLACE TEMPORARY PAVEMENT MARKINGS (PAINT) FROM -L- STA. 11+95 +/- TO -L- STA. 19+50 +/- . (SEE TMP-4)
- INSTALL TEMPORARY GUARDRAIL FROM -L- STA. 14+80 +/- TO -L- STA. 16+05 +/- (SEE SECTION DETAILS AND PLAN, TMP-4) AND REMOVE GUARDRAIL PLACED IN STEP 2, PHASE I.
- ACTIVATE PORTABLE TRAFFIC SIGNALS AND DIRECT SR 1338 (BOILING SPRINGS ROAD) TRAFFIC INTO A ONE LANE, TWO-WAY PATTERN IN THE EASTBOUND LANE OF SR 1338 (BOILING SPRINGS ROAD). (SEE TMP-4)
- STEP 2: - REMOVE WESTBOUND SIDE OF EXISTING STRUCTURE (SEE STRUCTURE PLANS).
- REMOVE TEMPORARY SHORING PLACED IN STEP 3, PHASE I.
- STEP 3: - CONSTRUCT -L- (SR 1338 BOILING SPRINGS ROAD) FROM STA 12+75 TO STA 18+75 WESTBOUND LANE EXCLUDING FINAL PAVEMENT LAYER.
- CONSTRUCT STRUCTURES PER THE STRUCTURE PLANS STAGE 2.
- CONSTRUCT DR-1. MAINTAIN DRIVEWAY ACCESS THROUGHOUT CONSTRUCTION.
- STEP 4: - USING RDWY STD 1101.02 SHEET 1 OF 15, CONSTRUCT GUARDRAIL, REMOVE TEMPORARY GUARDRAIL PLACED IN STEP 1, PHASE II, PLACE THE FINAL LAYER OF SURFACE COURSE, AND THE FINAL PAVEMENT MARKINGS (PAINT) ON THE ENTIRE PROJECT.
- STEP 5: - REMOVE ALL TEMPORARY TRAFFIC CONTROL DEVICES.
- OPEN SR 1338 (BOILING SPRINGS ROAD) TO 2-LANE, 2-WAY TRAFFIC.

\$\$\$\$\$SYTIME\$\$\$\$\$
\$\$\$\$\$DGN\$\$\$\$\$
\$\$\$\$\$SERVAVES\$\$\$\$\$

V&M
Vaughn & Melton
Consulting Engineers

Asheville,
North Carolina
828-253-2796

Charlotte,
North Carolina
704-351-0488

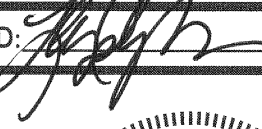
Tri-Cities,
Tennessee
423-451-9400

Knoxville,
Tennessee
865-546-5800

Middlesboro,
Kentucky
606-246-6600

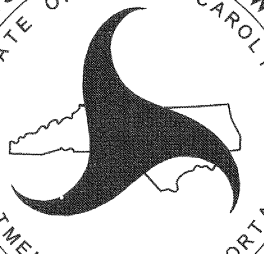
Spartanburg,
South Carolina
864-574-4775

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

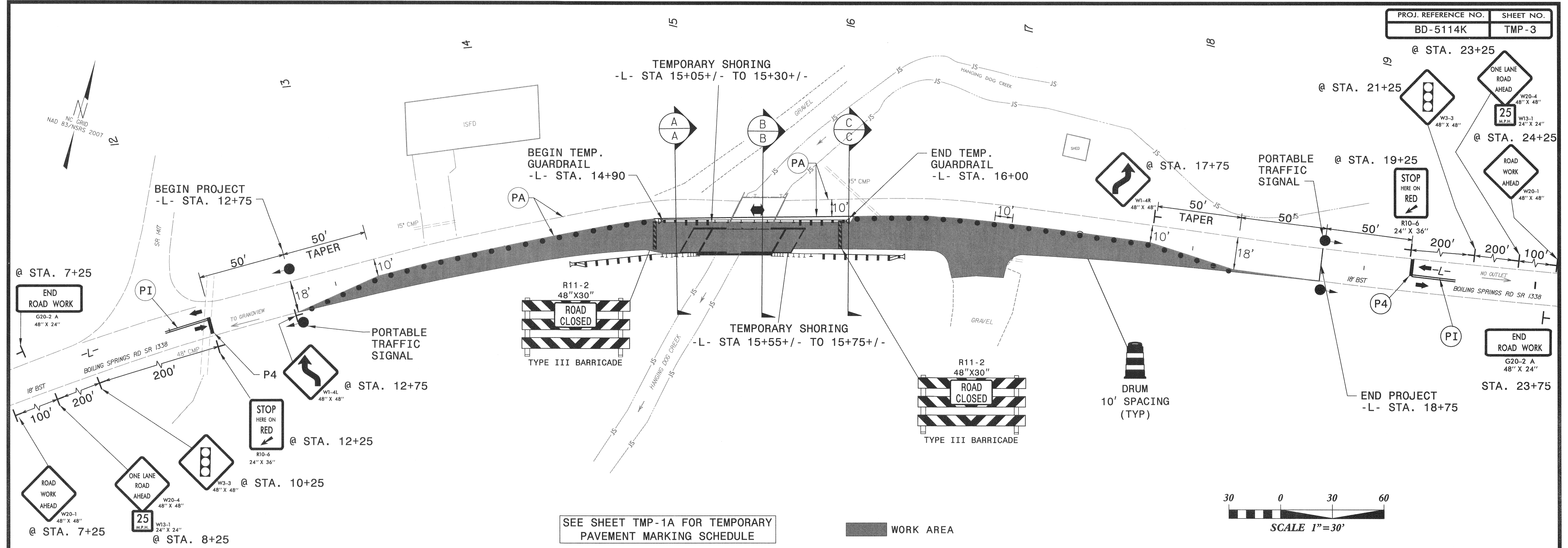
APPROVED:  DATE: 8/4/12

SEAL



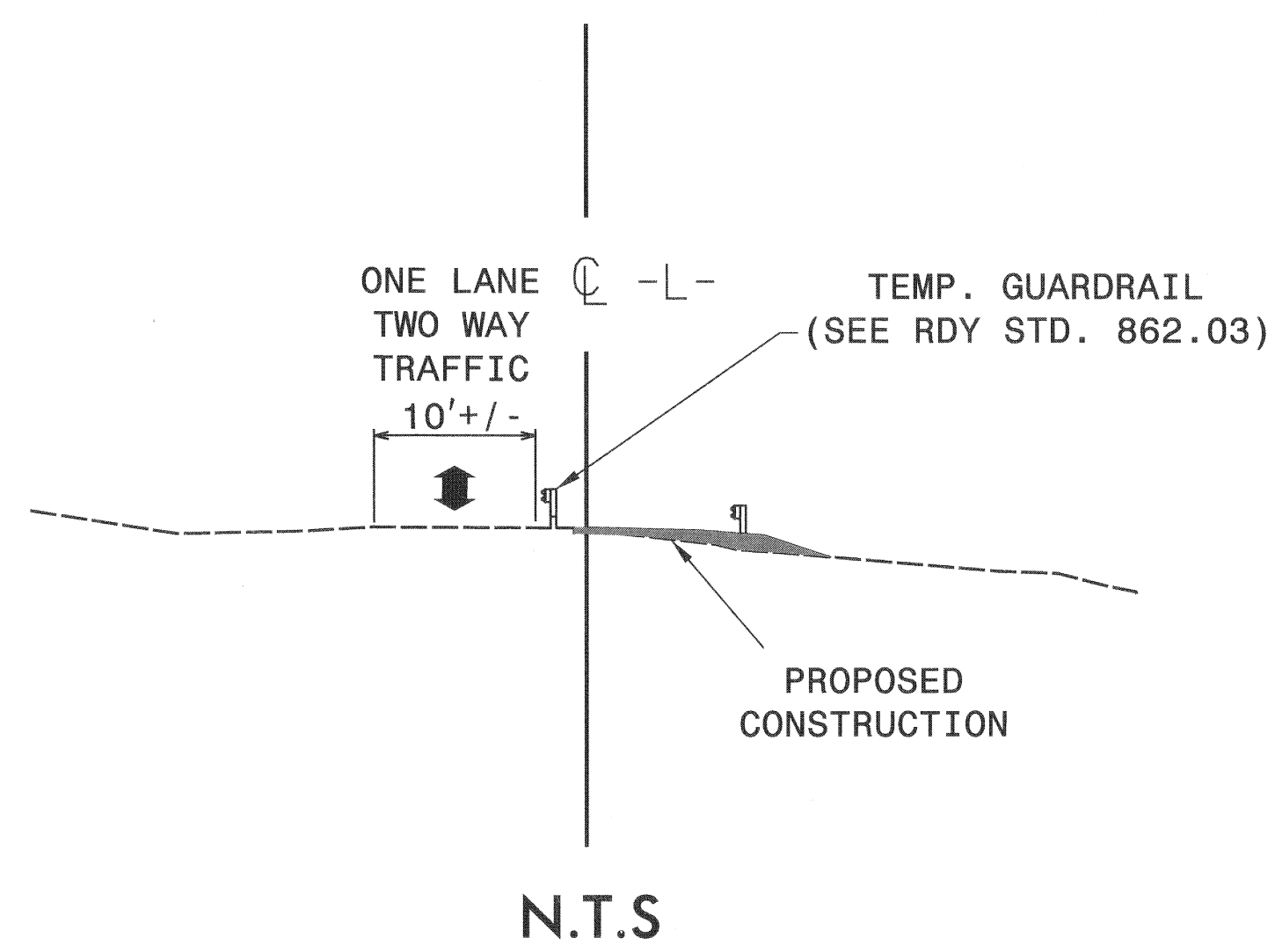

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
WORK ZONE TRAFFIC CONTROL

PHASING



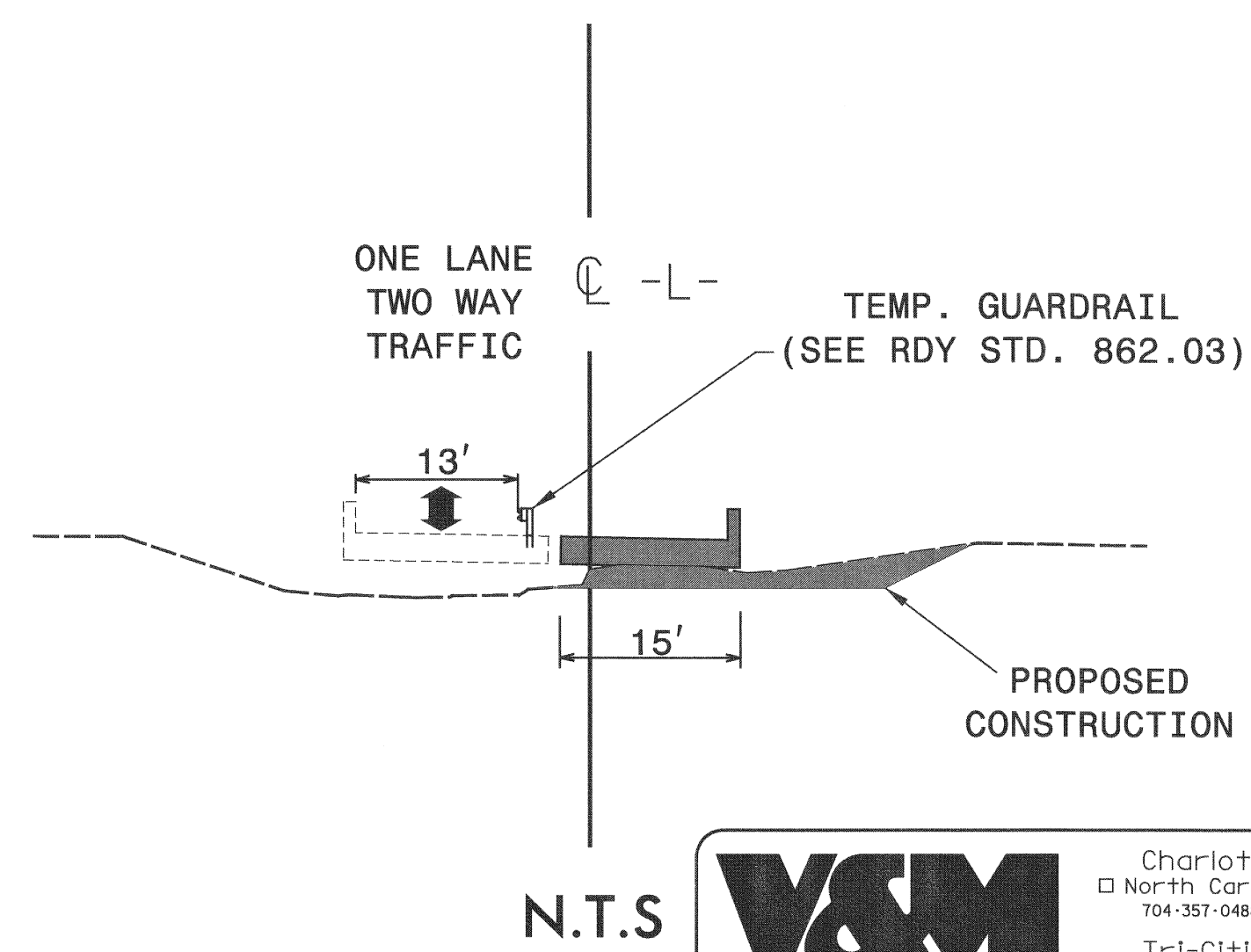
SECTION A-A

-L- STA 15+00



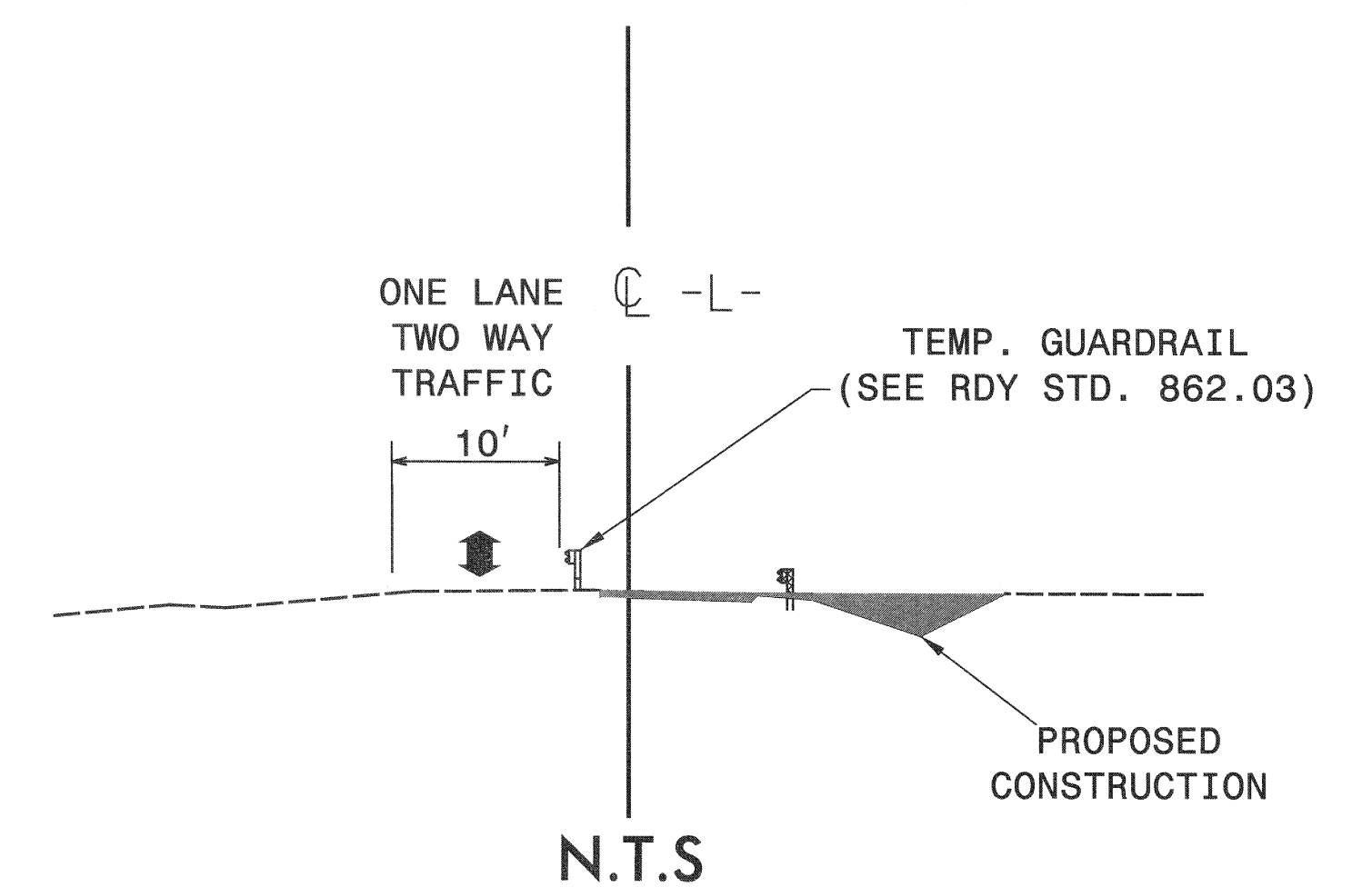
SECTION B-B

-L- STA 15+50



SECTION C-C

-L- STA 16+00



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

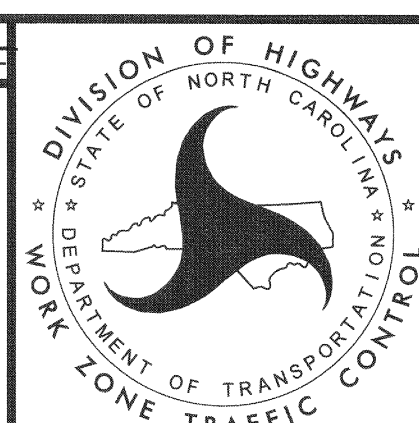
Asheville, North Carolina 828-253-2796

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

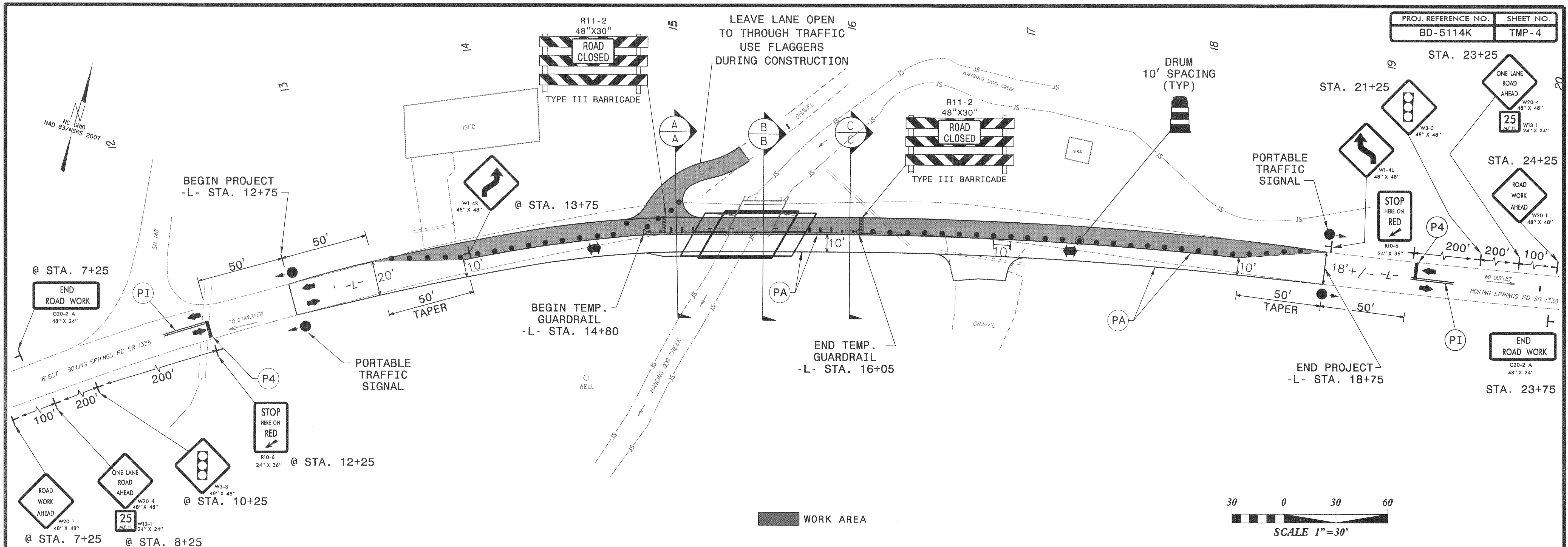
APPROVED: [Signature] DATE: 7/1/12

SEAL

NORTH CAROLINA PROFESSIONAL ENGINEER
LLOYD D. BROWN
2019

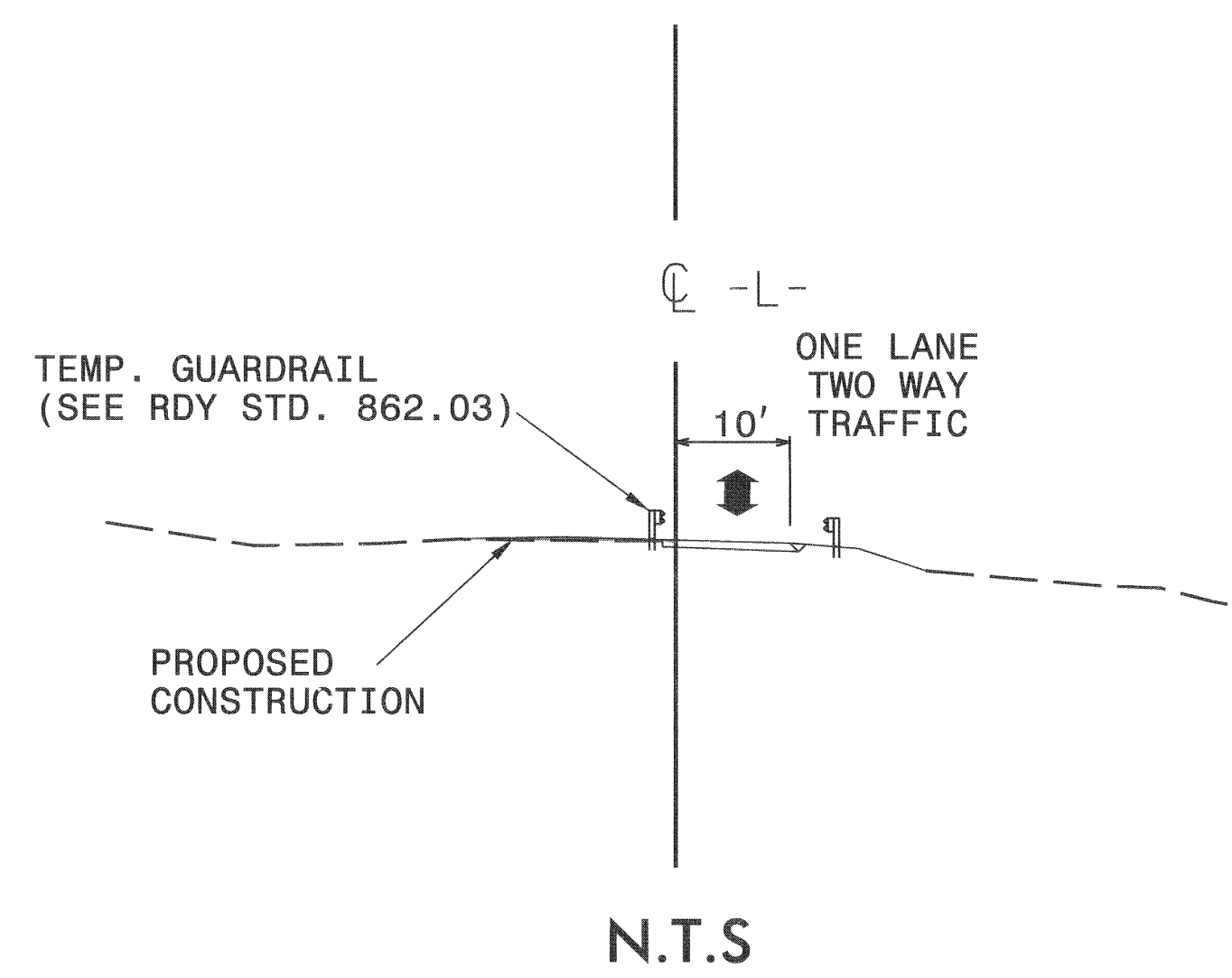


PHASE 1



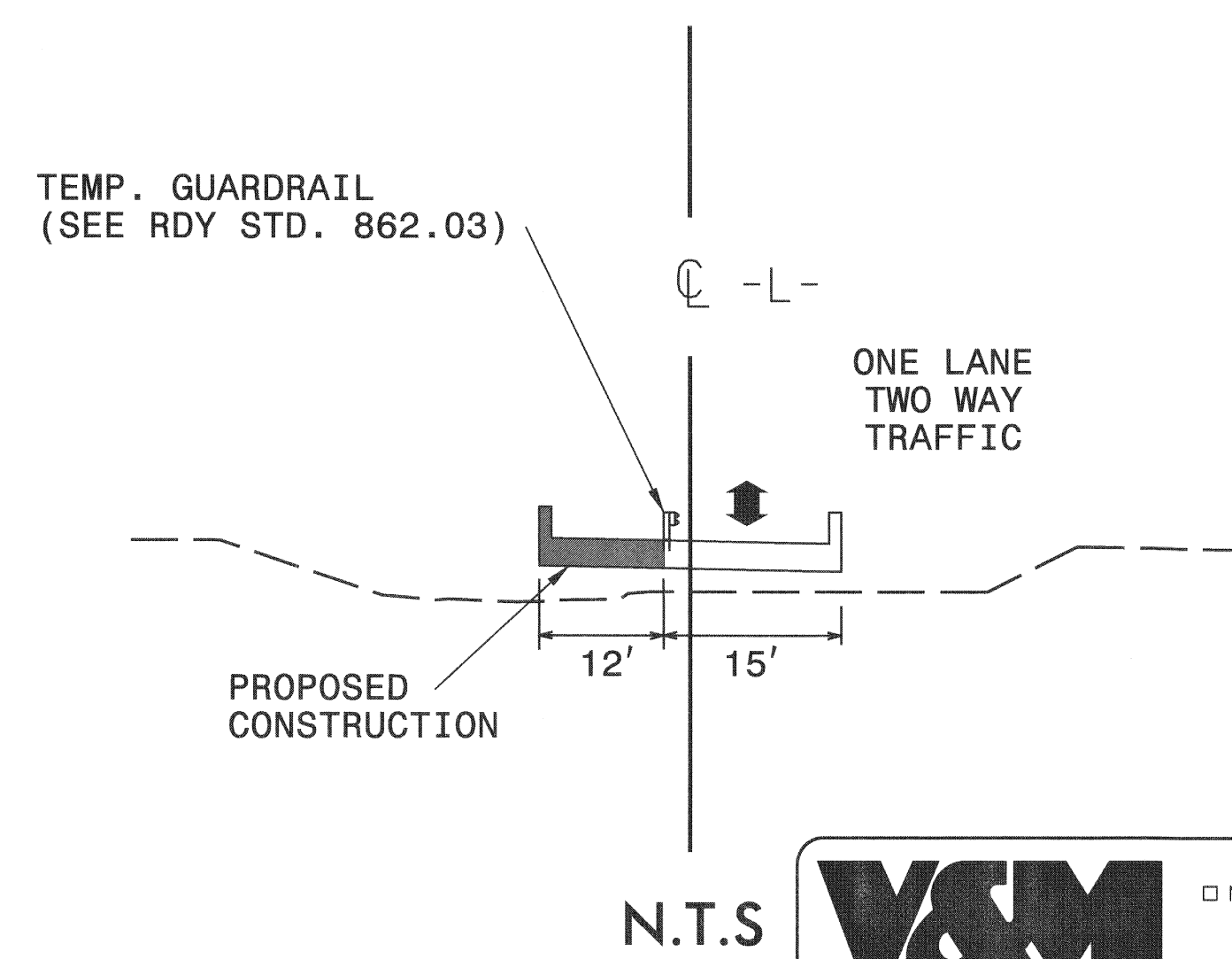
SECTION A-A

-L- STA 15+00



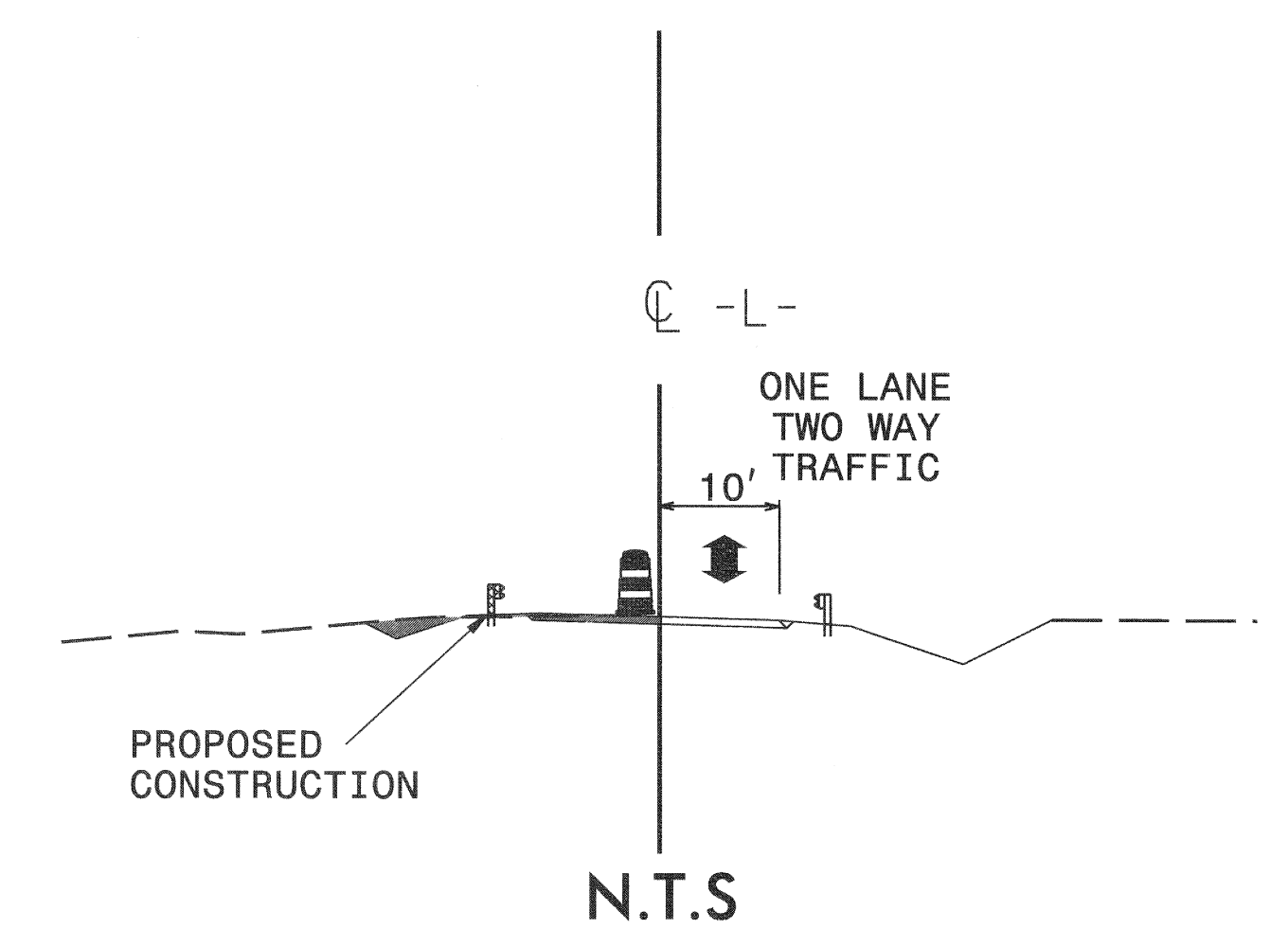
SECTION B-B

-L- STA 15+50



SECTION C-C

-L- STA 16+00



V&M
Vaughn & Melton
Consulting Engineers

Charlotte, North Carolina 704-357-0488
Tri-Cities, Tennessee 423-467-8401
Knoxville, Tennessee 865-546-5900
Middlesboro, Kentucky 606-248-6600
Spartanburg, South Carolina 864-574-4775

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

APPROVED: *[Signature]* DATE: 8/16/12

SEAL

NORTH CAROLINA
PROFESSIONAL
ENGINEER
20119
LLOYD D. BROWN

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

PHASE 2

PHASING DIAGRAM

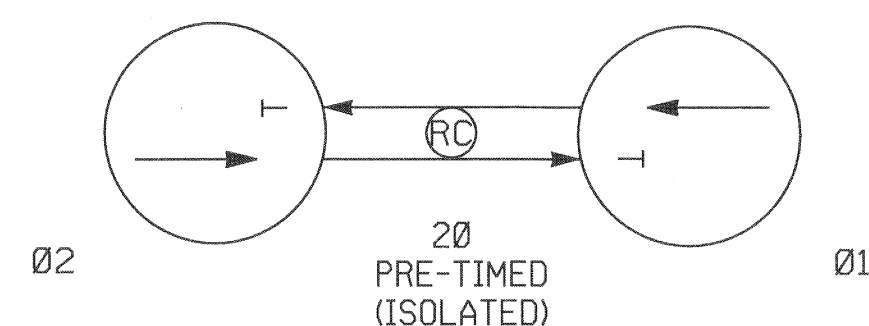
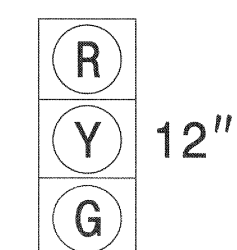


TABLE OF OPERATION

SIGNAL FACE	Ø2			Ø1			FLASH
	R/ W	CLEAR		R/ W	CLEAR		
		Ø1			Ø2		
		1	2		1	2	
11,12	R	R	R	G	Y	R	R
21,22	G	Y	R	R	R	R	R

SIGNAL FACE I.D.

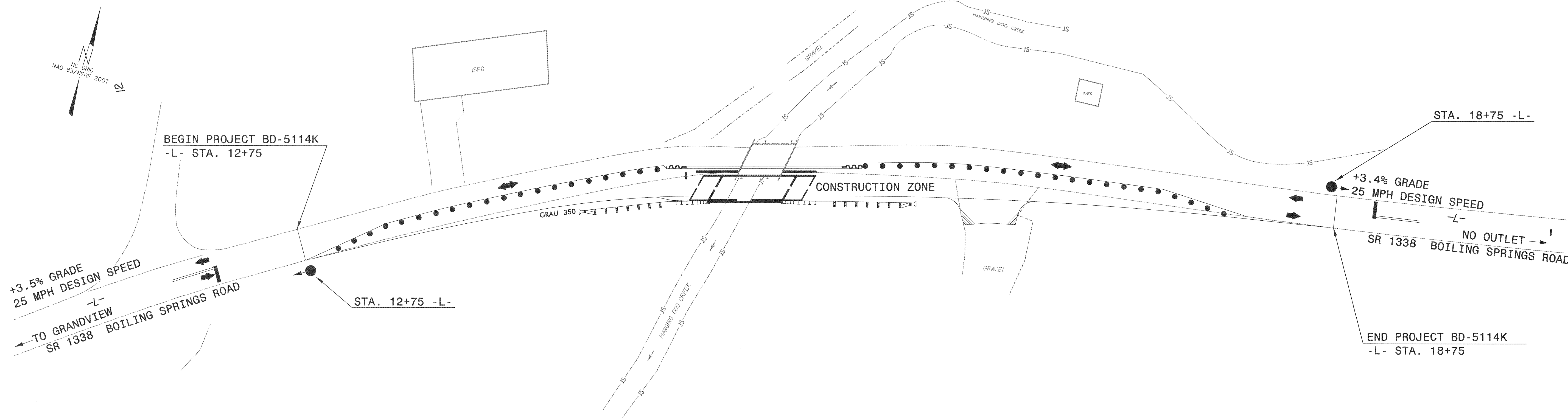
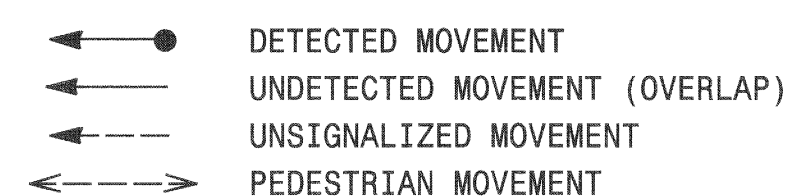


11, 12
21, 22

NOTES

1. PORTABLE TEMPORARY INSTALLATION.
2. SIGNAL HEADS SHALL BE NO CLOSER THAN 40 FEET FROM THE STOPLINE.
3. NO COUNTS AVAILABLE.
4. CONTRACTOR TO UTILIZE NCDOT PRE-APPROVED PORTABLE TRAFFIC SIGNAL MANUFACTURER AND MODEL.

PHASING DIAGRAM DETECTION LEGEND



TIMING CHART

PHASE	Ø1	Ø2
MINIMUM GREEN	40 SEC.	40 SEC.
PASSAGE/GAP	0 SEC.	0 SEC.
YELLOW CHANGE INT.	4.0 SEC.	4.0 SEC.
RED CLEARANCE	24 SEC.	24 SEC.
MAX. 1	40 SEC.	40 SEC.
RECALL POSITION	MAX. RECALL	MAX. RECALL
VEHI. CALL MEMORY	—	—

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

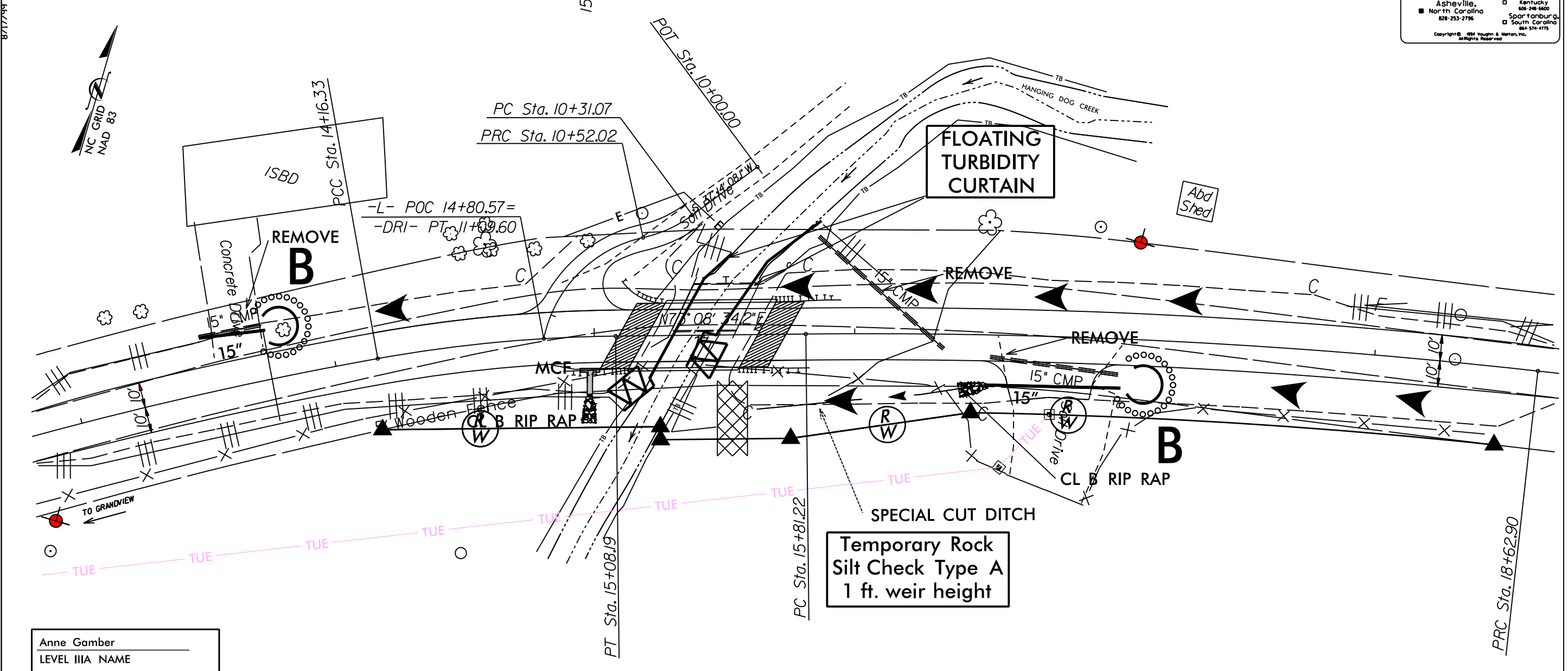
PROJECT REFERENCE NO.
BD-5114K

SHEET NO.
EC-1

Charlotte, NC 28205
Tri-Cities, Tennessee 423-487-8400
Knoxville, Tennessee 605-546-5600
Middlesboro, Kentucky 606-248-6600
Spartanburg, South Carolina 864-514-4715

Asheville, North Carolina 828-253-2796

Copyright © 1991 Vaughn & Melton, Inc. All Rights Reserved



Anne Gamber
LEVEL IIIA NAME

3022
LEVEL IIIA CERTIFICATION NO.

Std. #	Description	Symbol
1605.01	Temporary Silt Fence	
1606.01	Special Sediment Control Fence	
1633.01	Temporary Rock Silt Check Type-A	
1633.02	Temporary Rock Silt Check Type-B	

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.

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

2012 STANDARD SPECIFICATIONS

2012 STANDARD DRAWINGS			
1604.01	Railroad Erosion Control Detail	1632.01	Rock Inlet Sediment Trap Type A
1605.01	Temporary Silt Fence	1632.02	Rock Inlet Sediment Trap Type B
1606.01	Special Sediment Control Fence	1632.03	Rock Inlet Sediment Trap Type C
1607.01	Gravel Construction Entrance	1633.01	Temporary Rock Silt Check Type A
1622.01	Temporary Berms and Slope Drains	1633.02	Temporary Rock Silt Check Type B
1630.01	Riser Basin	1634.01	Temporary Rock Sediment Dam Type A
1630.02	Silt Basin Type B	1634.02	Temporary Rock Sediment Dam Type B
1630.03	Temporary Silt Ditch	1635.01	Rock Pipe Inlet Sediment Trap Type A
1630.04	Stilling Basin	1635.02	Rock Pipe Inlet Sediment Trap Type B
1630.05	Temporary Diversion	1640.01	Coin Fiber Baffle
1630.06	Special Stilling Basin	1645.01	Temporary Stream Crossing
1631.01	Matting Installation		

REVISIONS

9:44:04 AM
P:\2011\Division 14_Vaughn_Melton\2\Cherokee 2.BD-5114K\Erosion Control\Bd5114k-EC_psh.dgn
5/11/2012

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

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.

DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA

PROJECT REFERENCE NO.	SHEET NO.
<i>BD-511K</i>	<i>EC-3</i>
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

SOIL STABILIZATION SUMMARY SHEET

MATTING FOR EROSION CONTROL (DITCHES)

[illegible]

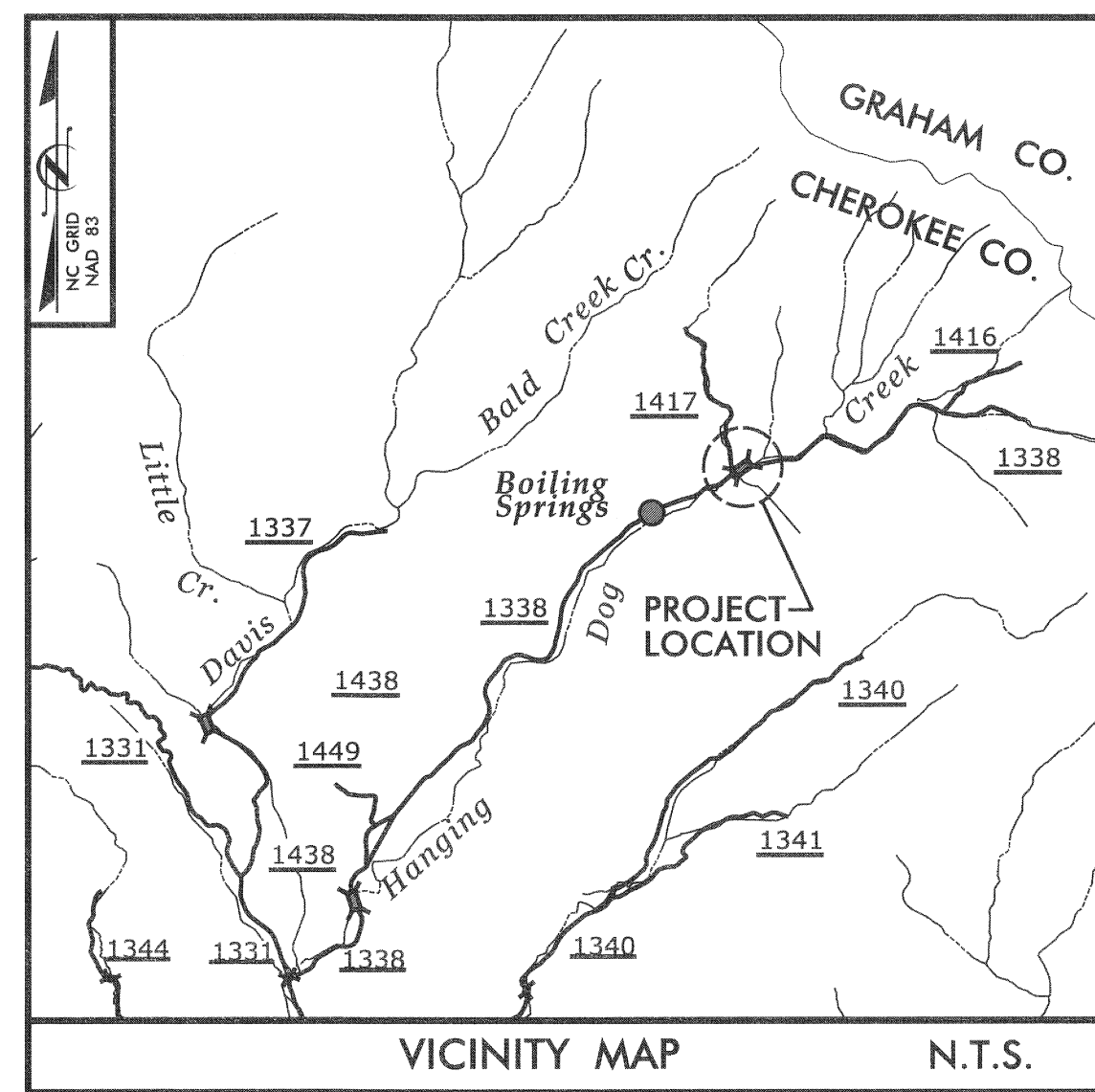
MATTING FOR EROSION CONTROL

[illegible]

09/08/99

TIP PROJECT: BD-5114K

See Sheet 1A For Index of Sheets
See Sheet 1B For Standard Symbology Sheet



STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

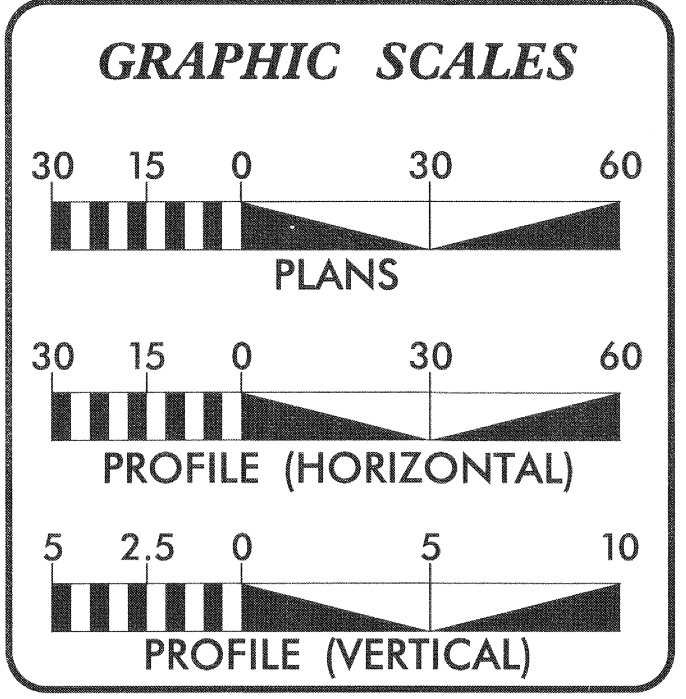
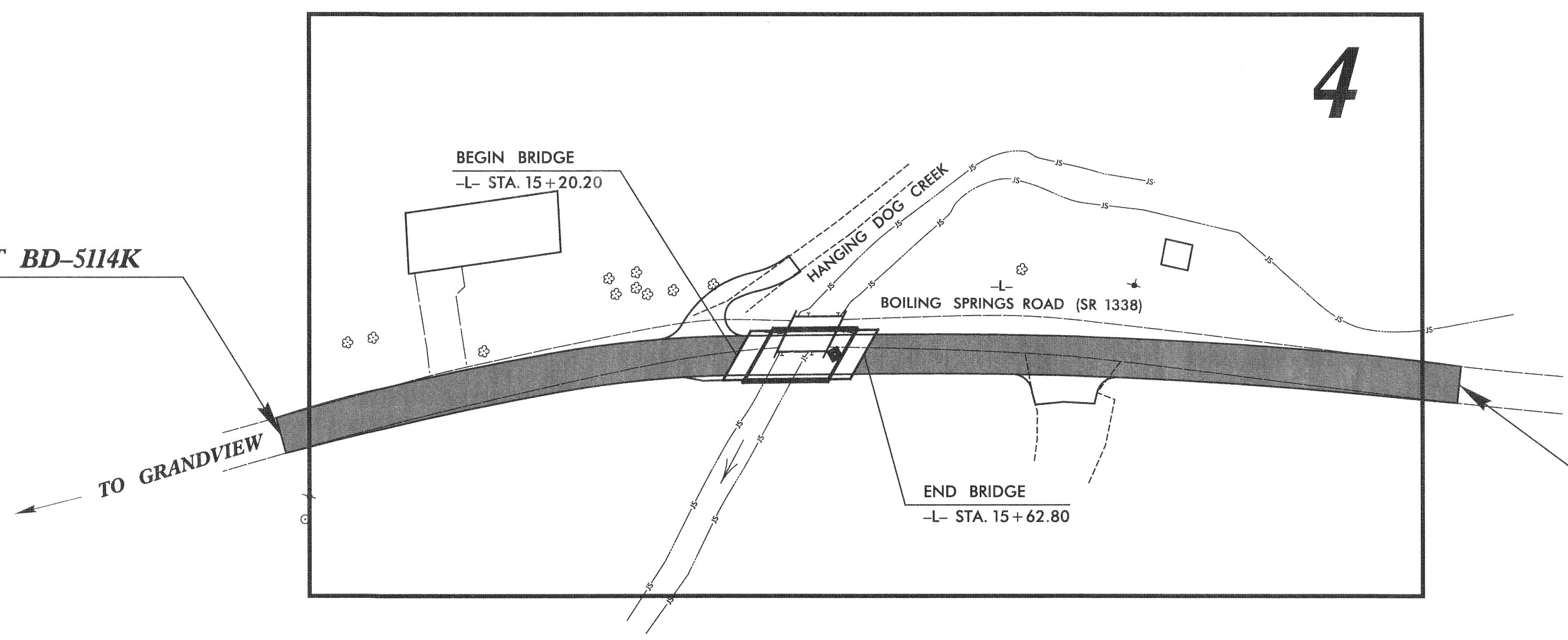
UTILITIES BY OTHERS PLANS CHEROKEE COUNTY

LOCATION: BRIDGE NO. 42 OVER HANGING DOG CREEK
ON SR 1338 (BOILING SPRINGS ROAD)

TYPE OF WORK: AERIAL TELEPHONE & POWER

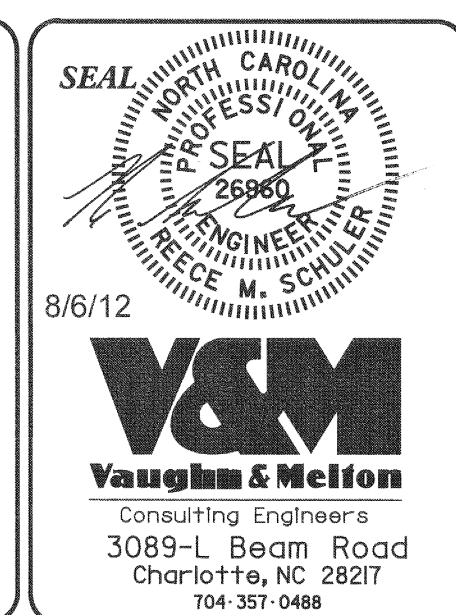
T.I.P. NO.	SHEET NO.
BD-5114K	UO-1

BEGIN TIP PROJECT BD-5114K
-L- STA. 12 + 75.00



INDEX OF SHEETS	
SHEET NO.	DESCRIPTION
UO-1	TITLE SHEET
UO-2	UTILITY BY OTHERS PLAN SHEETS

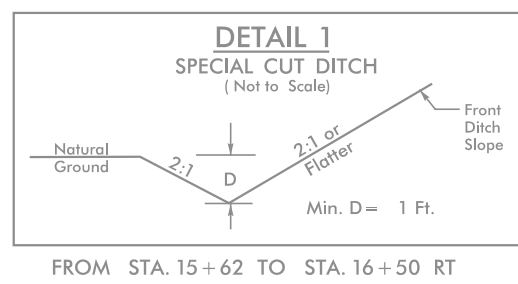
UTILITY OWNERS ON PROJECT	
(1) TELEPHONE - FRONTIER COMMUNICATIONS	
(2) POWER DISTRIBUTION - BLUE RIDGE MTN. E.M.C.	



PREPARED IN 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	
Roger Worthington, P.E.	UTILITIES SECTION ENGINEER
Xxxxx Xxxxx, P.E.	UTILITIES SQUAD LEADER PROJECT ENGINEER
Reece Schuler, PE	UTILITIES PROJECT DESIGNER

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCOS FOR MONUMENT "BL-2" WITH NAD 83/NSRS 2007 STATE PLANE GRID COORDINATES OF NORTHING: 568235.561(±) EASTING: 505423.014(±) ELEVATION: 2047.13(±) THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "BL-2" TO L- STATION 12+75 IS S 65°28'42" W 282.69' ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES VERTICAL DATUM USED IS NAVD 88



PROJECT REFERENCE NO.	SHEET NO.
BD-5114K	U0-2

UTILITIES BY OTHERS

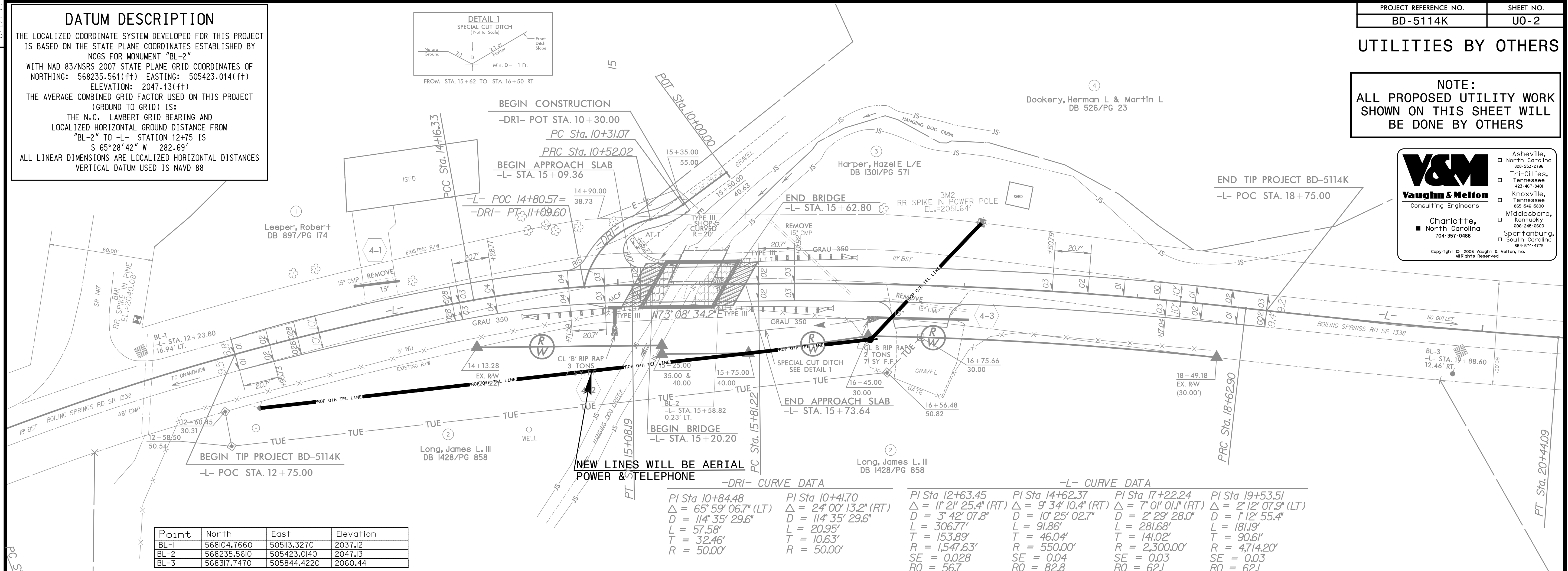
NOTE:
ALL PROPOSED UTILITY WORK SHOWN ON THIS SHEET WILL BE DONE BY OTHERS

V&M
Vaughn & Melton
Consulting Engineers

Charlotte,
North Carolina
704-357-0488

Asheville, North Carolina 828-253-2796
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



Point	North	East	Elevation
BL-1	568104.7660	505113.3270	2037.12
BL-2	568235.5610	505423.0140	2047.13
BL-3	568317.7470	505844.4220	2060.44

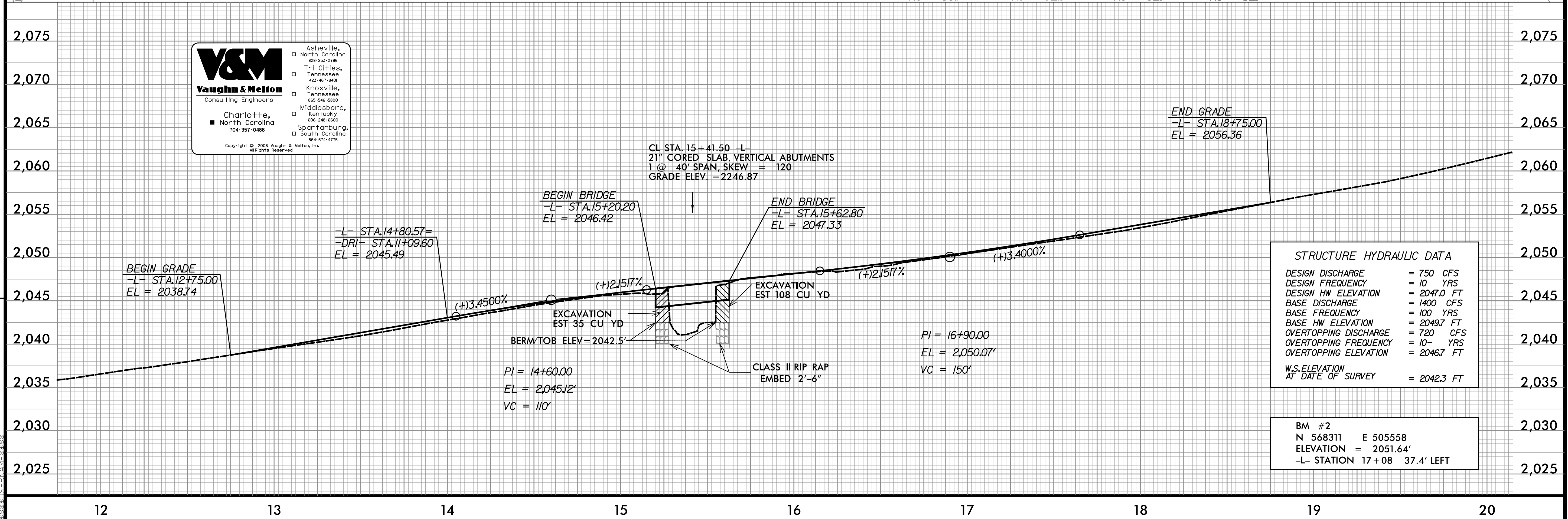
NEW LINES WILL BE AERIAL
POWER & TELEPHONE

-DRI- CURVE DATA

PI Sta 10+84.48 Δ = 65° 59' 06.7" (LT) D = 114° 35' 29.6" L = 57.58' T = 32.46' R = 50.00'	PI Sta 10+41.70 Δ = 24° 00' 13.2" (RT) D = 114° 35' 29.6" L = 20.95' T = 10.63' R = 50.00'
---	---

-L- CURVE DATA

PI Sta 12+63.45 Δ = 11° 21' 25.4" (RT) D = 3° 42' 07.8" L = 306.77' T = 153.89' R = 1,547.63' SE = 0.028 RO = 56.7	PI Sta 14+62.37 Δ = 9° 34' 10.4" (RT) D = 10° 25' 02.7" L = 91.86' T = 46.04' R = 550.00' SE = 0.04 RO = 82.8	PI Sta 17+22.24 Δ = 7° 01' 01.8" (RT) D = 2° 29' 28.0" L = 281.68' T = 141.02' R = 2,300.00' SE = 0.03 RO = 62.1	PI Sta 19+53.51 Δ = 2° 12' 07.9" (LT) D = 1° 12' 55.4" L = 181.19' T = 90.61' R = 4,714.20' SE = 0.03 RO = 62.1
---	--	---	--



V&M
Vaughn & Melton
Consulting Engineers

Charlotte,
North Carolina
704-357-0488

Asheville, North Carolina 828-253-2796
Tri-Cities, Tennessee 423-467-8401
Knoxville, Tennessee 865-546-5800
Middlesboro, Kentucky 606-248-6600
Spartanburg, South Carolina 864-574-4775

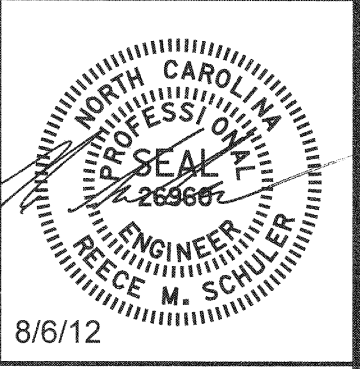
Copyright © 2006 Vaughn & Melton, Inc. All Rights Reserved

STRUCTURE HYDRAULIC DATA

DESIGN DISCHARGE	= 750 CFS
DESIGN FREQUENCY	= 10 YRS
DESIGN HW ELEVATION	= 2047.0 FT
BASE DISCHARGE	= 1400 CFS
BASE FREQUENCY	= 100 YRS
BASE HW ELEVATION	= 2049.7 FT
OVERTOPPING DISCHARGE	= 720 CFS
OVERTOPPING FREQUENCY	= 10- YRS
OVERTOPPING ELEVATION	= 2046.7 FT

W.S. ELEVATION
AT DATE OF SURVEY = 2042.3 FT

BM #2
N 568311 E 505558
ELEVATION = 2051.64'
-L- STATION 17+08 37.4' LEFT



DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

CROSS SECTION SUMMARY
IN CUBIC YARDS

-L- LOCATION	UNCLASSIFIED EXCAVATION	EMBT
12 + 75	0	0
13 + 00	1	1
13 + 25	1	3
13 + 50	1	3
13 + 75	4	2
14 + 00	6	2
14 + 25	4	2
14 + 50	5	4
14 + 75	6	5
15 + 00	4	8
15 + 20.20 BEGIN BRIDGE	1	5
15 + 62.80 END BRIDGE	66	0
15 + 75	29	0
16 + 00	57	1
16 + 25	39	1
16 + 50	29	4
16 + 75	29	4
17 + 00	24	2
17 + 25	21	2
17 + 50	20	2
17 + 75	18	2
18 + 00	13	2
18 + 25	8	2
18 + 50	6	1
18 + 75	2	1

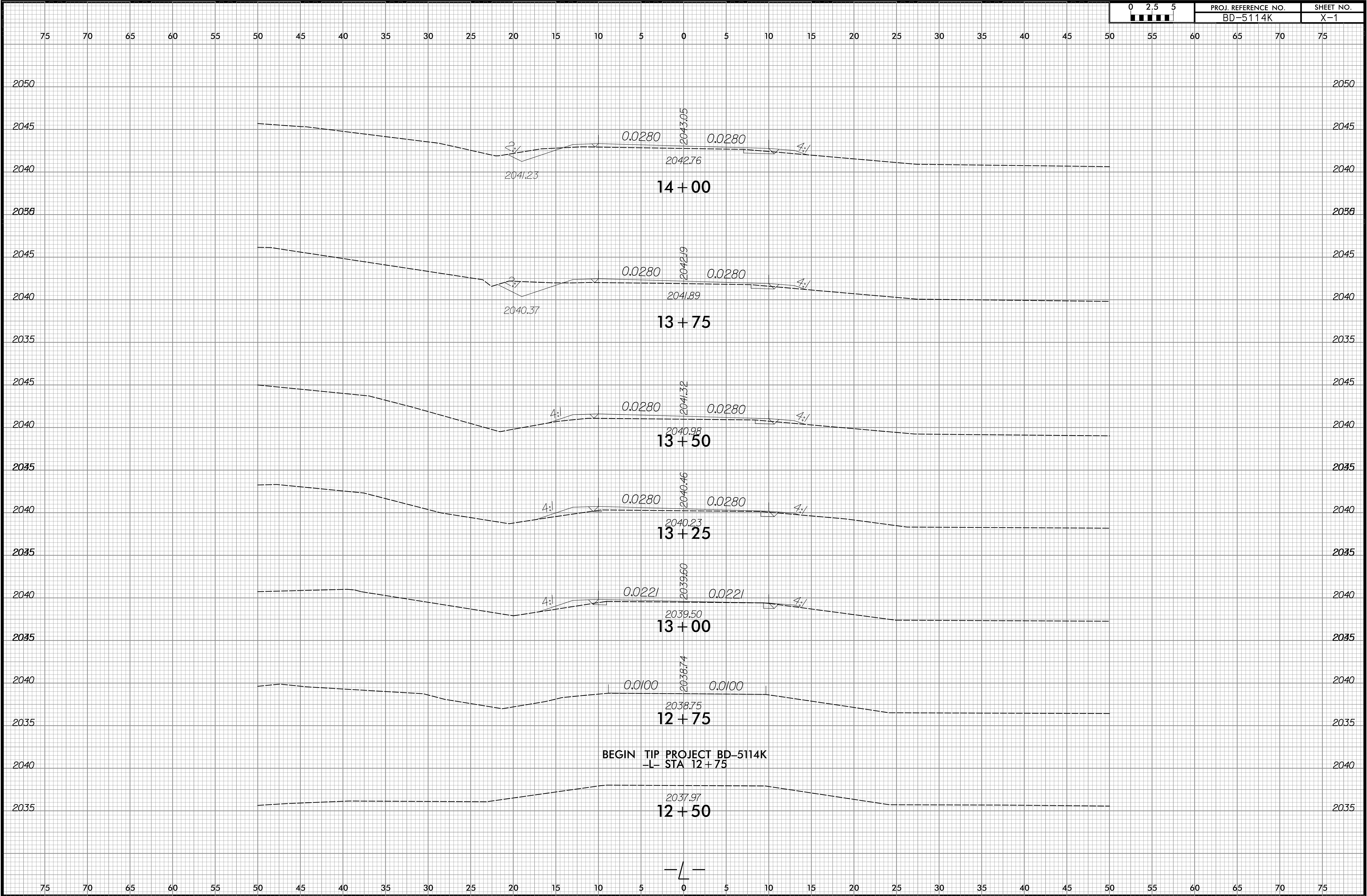
-DR-1- LOCATION	UNCLASSIFIED EXCAVATION	EMBT
10 + 00	0	0
10 + 10	0	0
10 + 20	0	0
10 + 30	0	0
10 + 40	2	0
10 + 50	2	0
10 + 60	2	0
10 + 70	1	0
10 + 80	3	0
10 + 90	4	0
10 + 98.87	3	0

NOTE: EMBANKMENT COLUMN DOES NOT INCLUDE BACKFILL FOR UNDERCUT.

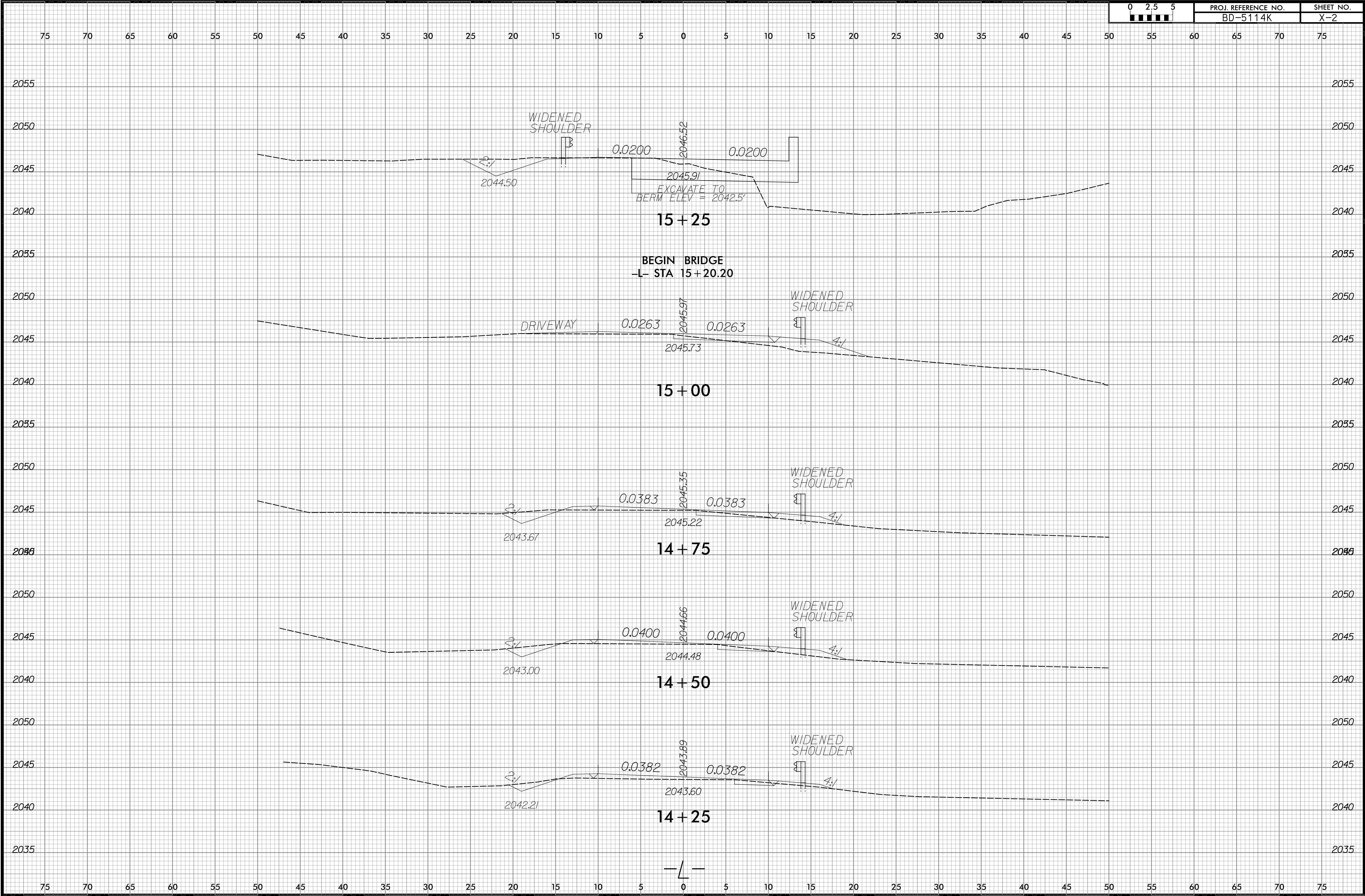
Approximate quantities only. Unclassified excavation, borrow excavation, fine grading, clearing and grubbing, and removal of existing pavement will be paid for at the contract lump sum price for "grading".

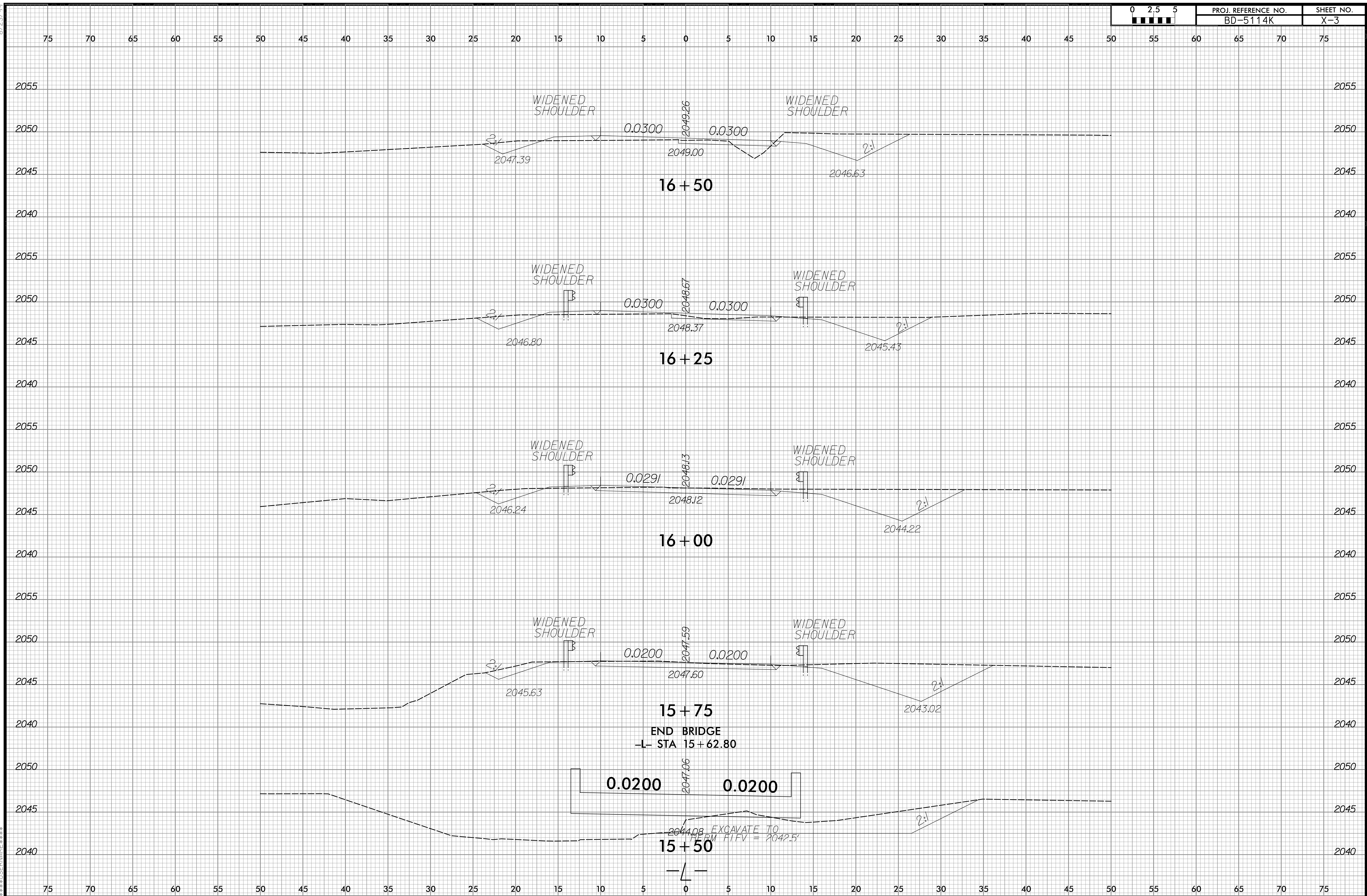
8/23/99

SYTIME\$UN\$



8/23/99

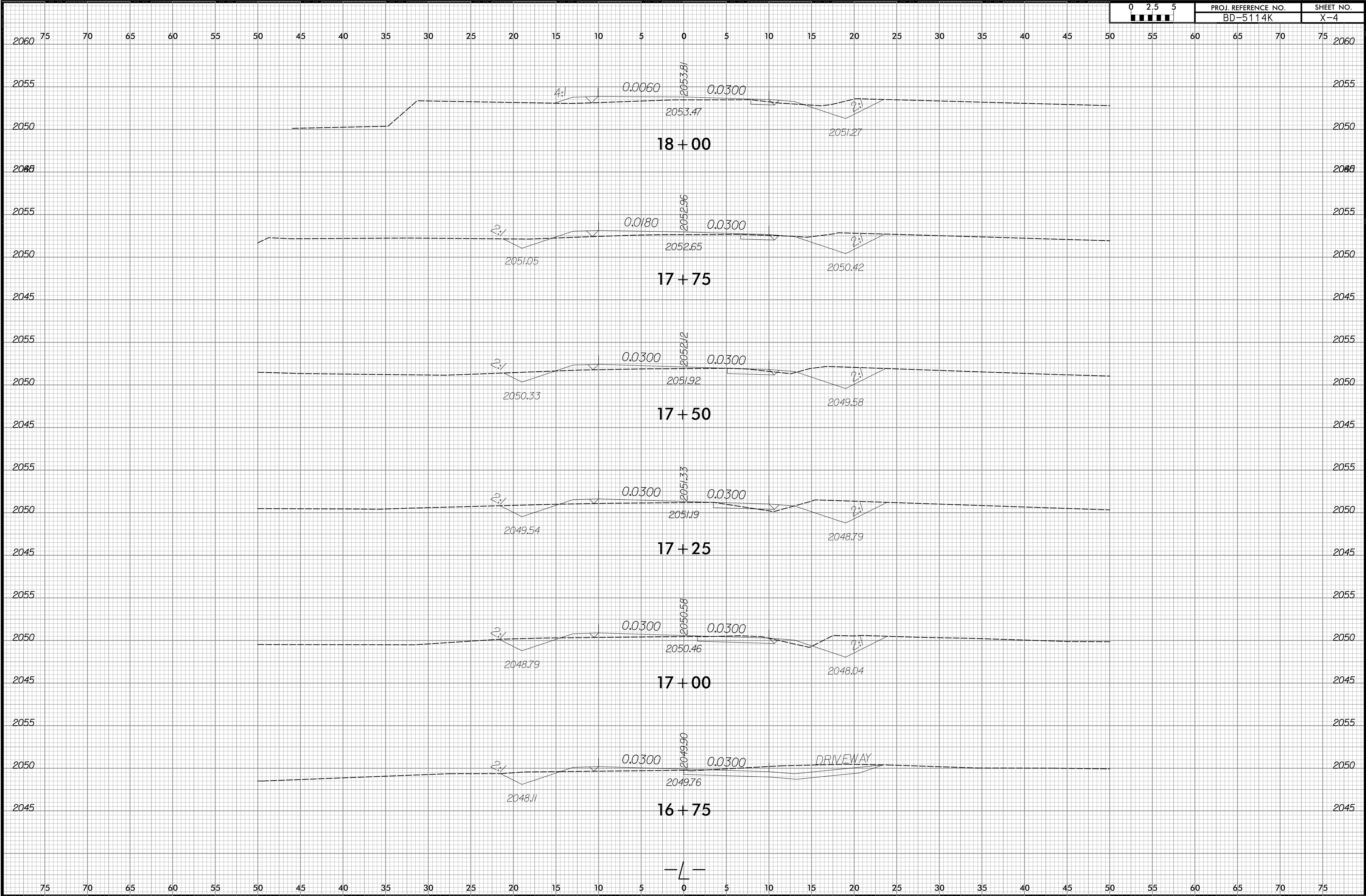




8/23/99

SYTIME
C:\SYTIME\SYTIME.DWG
8/23/99 10:00 AM

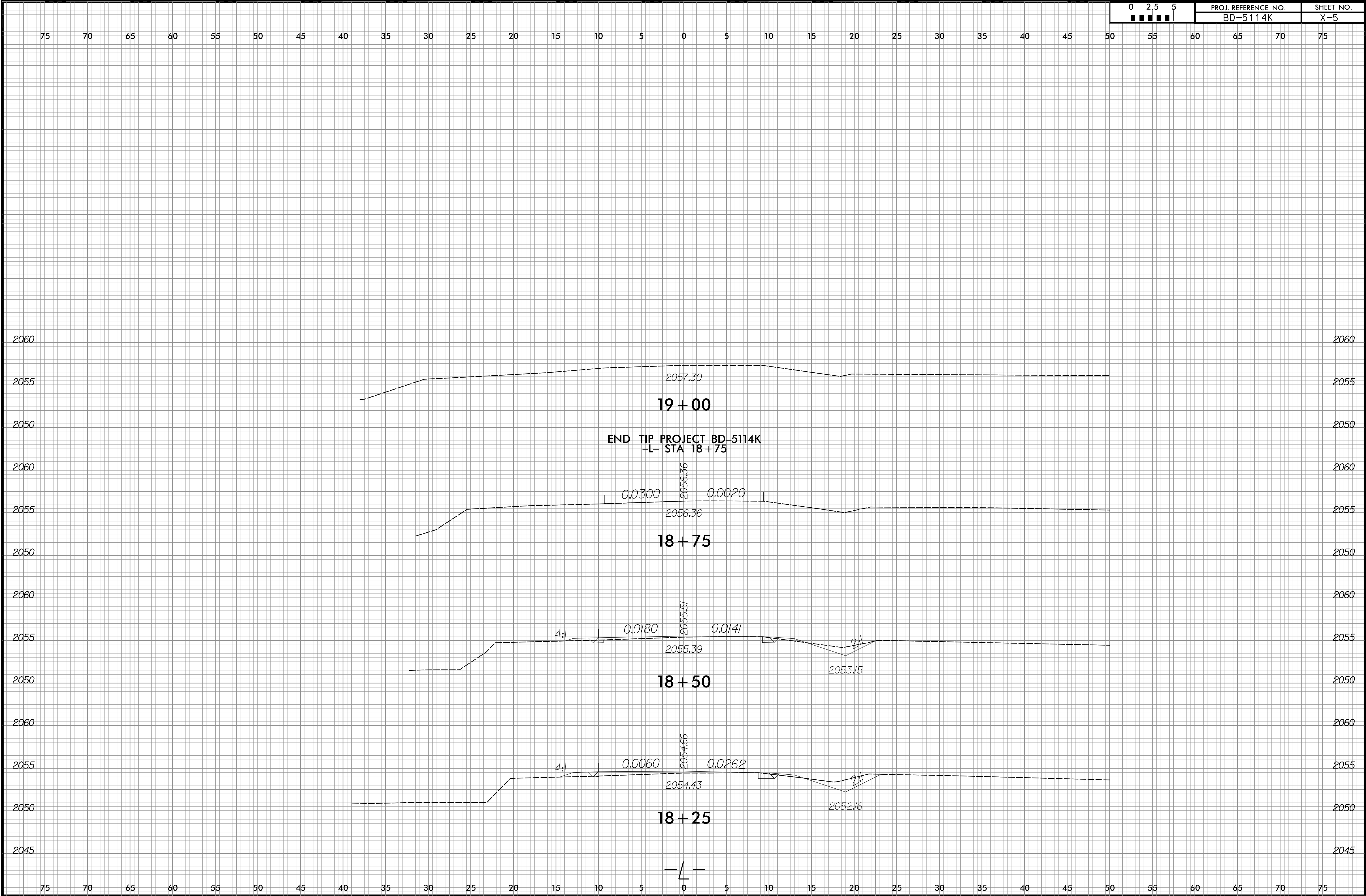
0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	BD-5114K	X-4



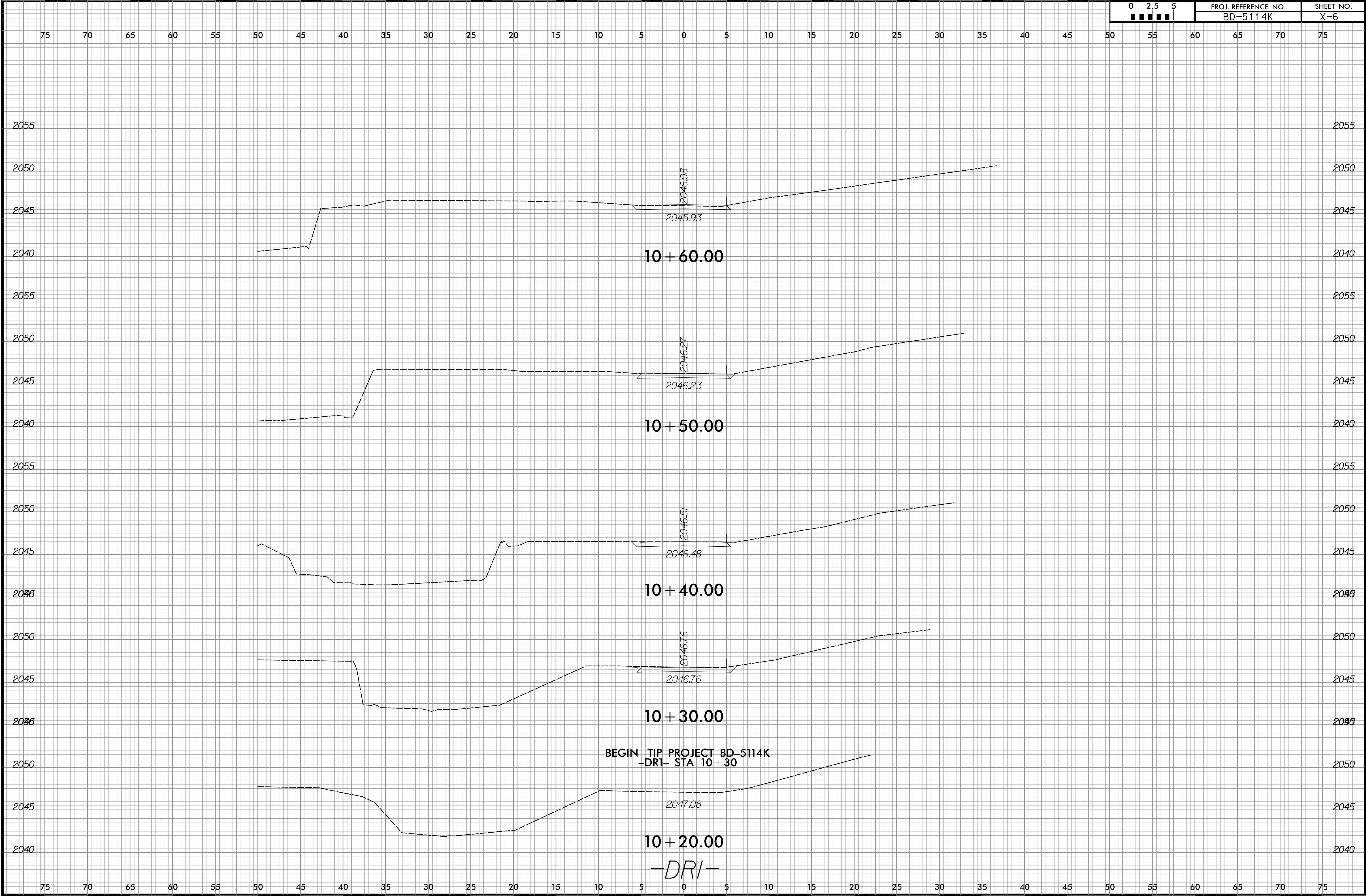
8/23/99

SYTIME\$UN\$

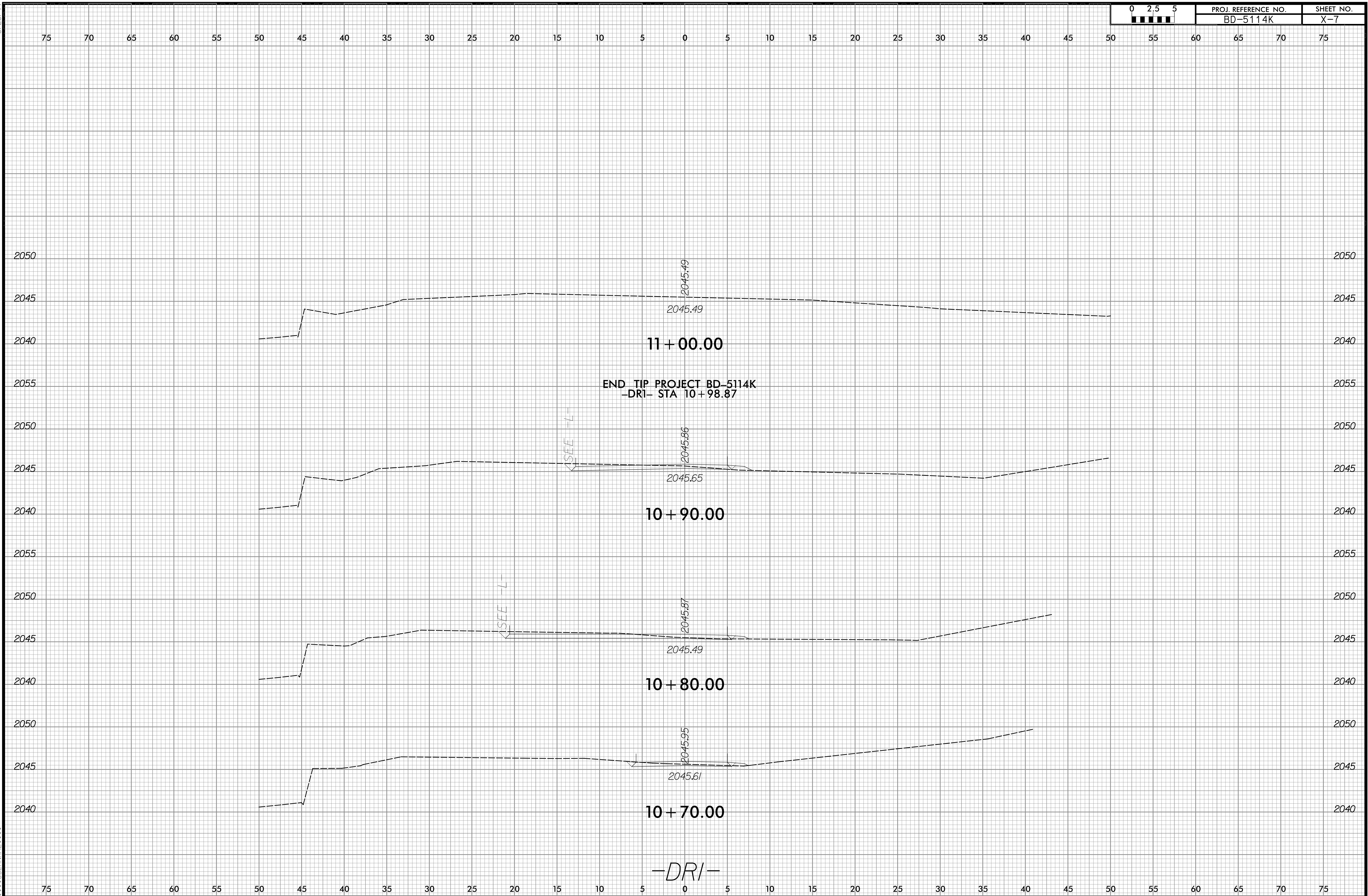
0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	BD-5114K	X-5



8/23/99



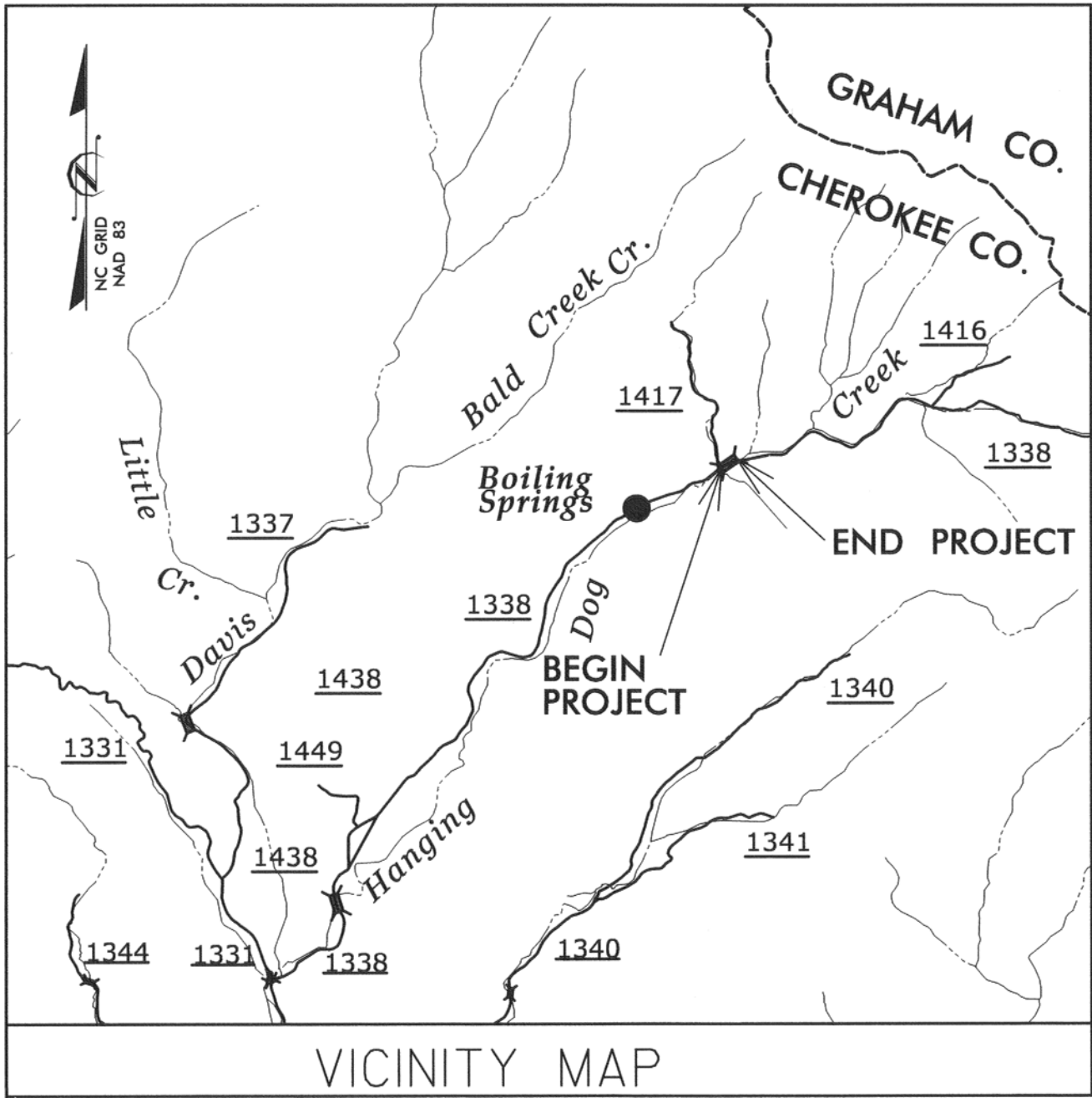
8/23/99



TIP NO: BD-5114K

CONTRACT: DN00078

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	BD-5114K		
STATE PROJ.NO.	F.A.PROJ.NO.	DESCRIPTION	
45360.1.11	BRZ-1338(4)	PE	
45360.2.11		RW	
45360.3.11		CONST.	



STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
CHEROKEE COUNTY

BEGIN TIP PROJECT BD-5114K
-L- STA. 12 + 75.00

END TIP PROJECT BD-5114K
-L- STA. 18 + 75.00

BEGIN BRIDGE
-L- STA. 15 + 20.20

END BRIDGE
-L- STA. 15 + 62.80

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 1997 = 250
ADT 2025 = 500

T = 6 %
V = 55 MPH

FUNC CLASS =
RURAL LOCAL

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT BD-5114K = 0.106 MI.
LENGTH STRUCTURE TIP PROJECT BD-5114K = 0.008 MI.
TOTAL LENGTH OF TIP PROJECT BD-5114K = 0.114 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

REECE SCHULER, PE
PROJECT ENGINEER

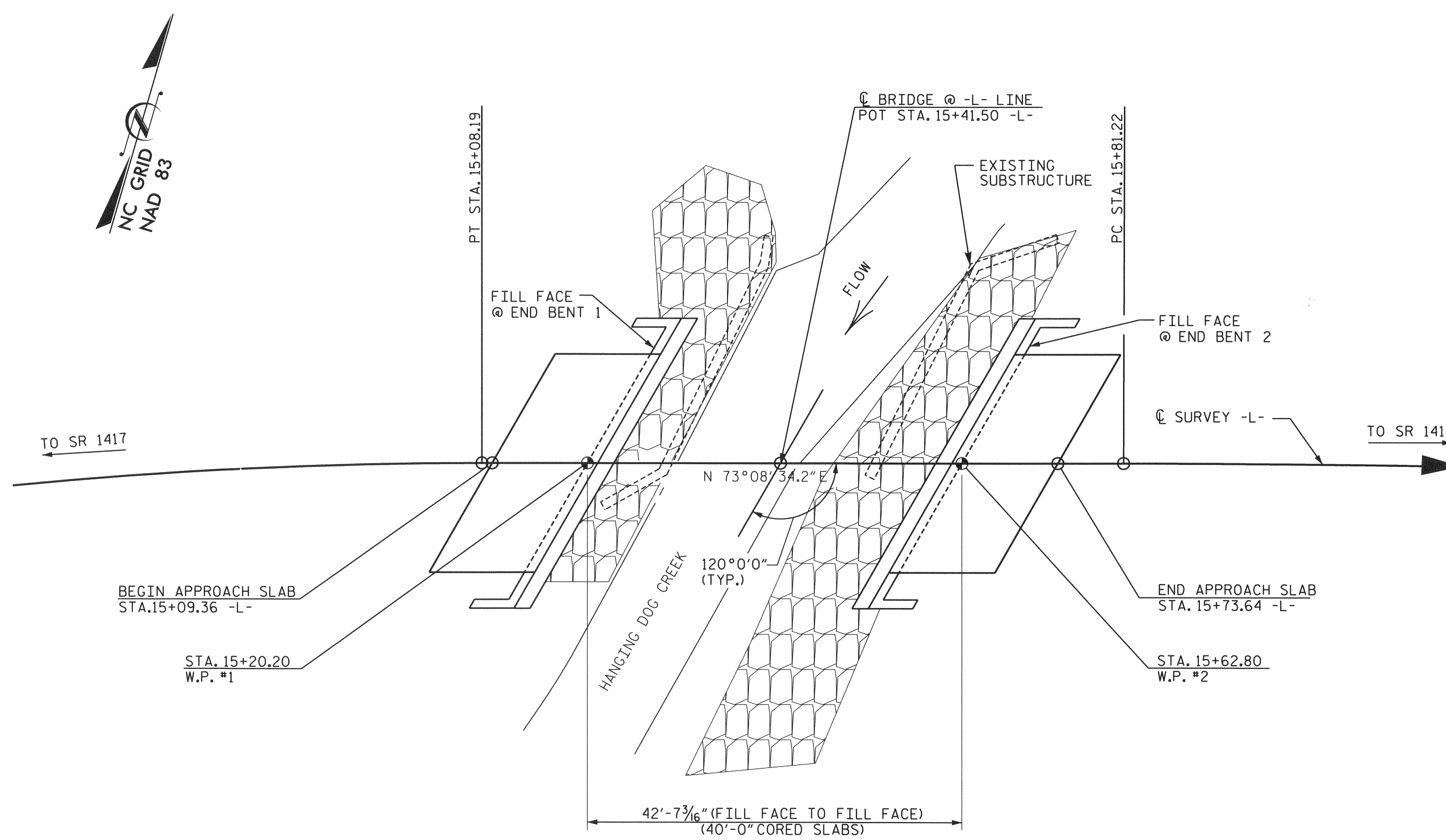
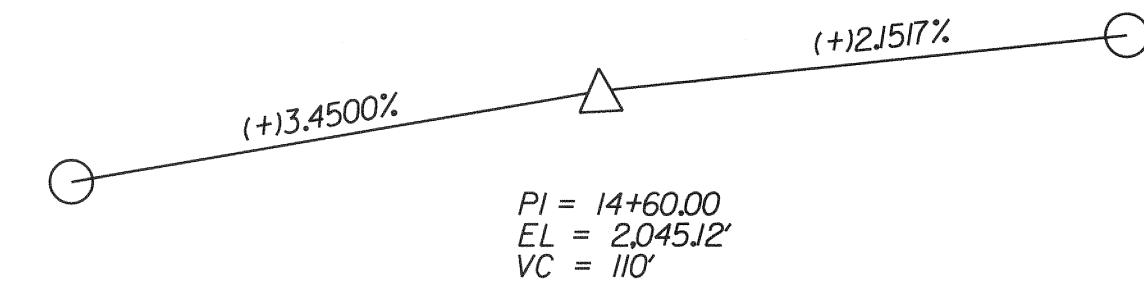
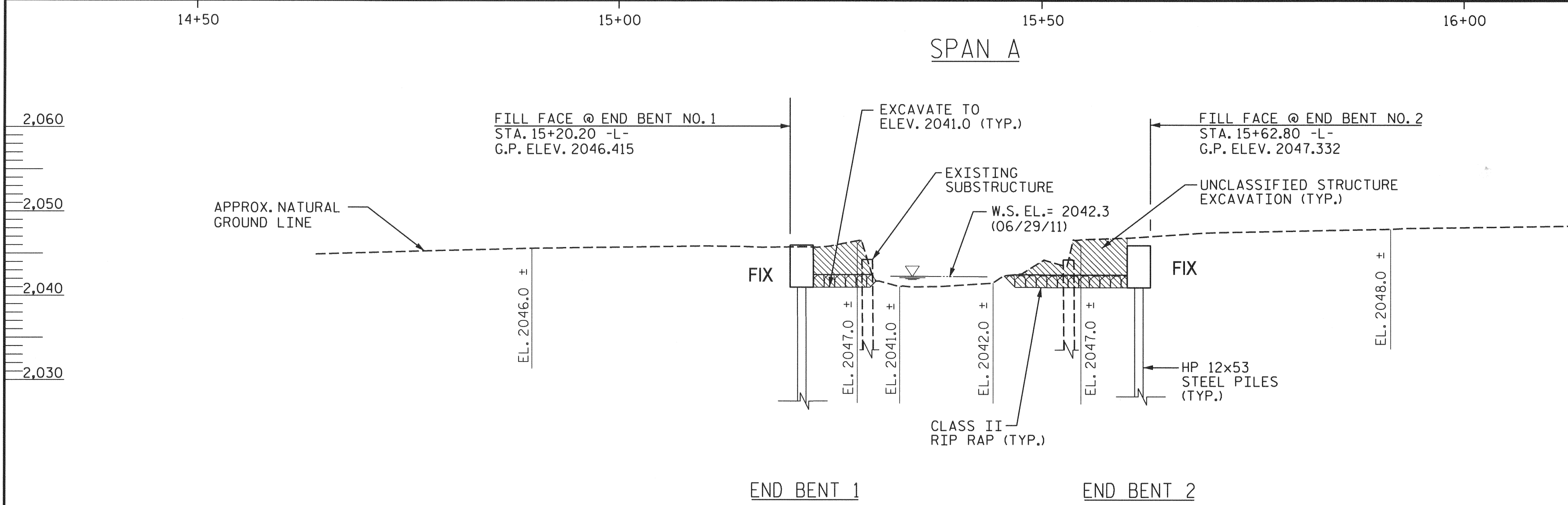
HARDY WILLIS, PE
PROJECT DESIGN ENGINEER

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

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

JOSH DEYTON P.E.
STATE DESIGN ENGINEER
DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED
DIVISION ADMINISTRATOR DATE

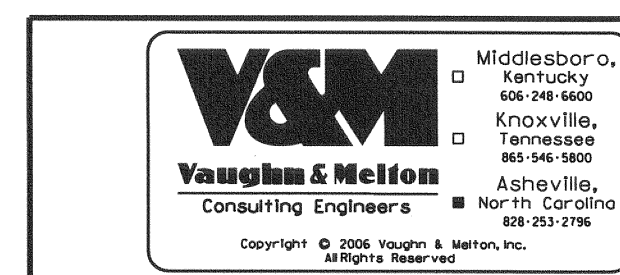


PI Sta 14+62.37
Δ = 9' 34' 10.4" (RT)
D = 10' 25' 02.7"
L = 91.86'
T = 46.04'
R = 550.00'

PI Sta 17+22.24
Δ = 7' 0' 01.1" (RT)
D = 2' 29' 28.0"
L = 281.68'
T = 141.02'
R = 2,300.00'

HORIZONTAL CURVE DATA -L-

NOTES:
END BENTS ARE PARALLEL.
PILES NOT SHOWN IN PLAN VIEW FOR CLARITY.



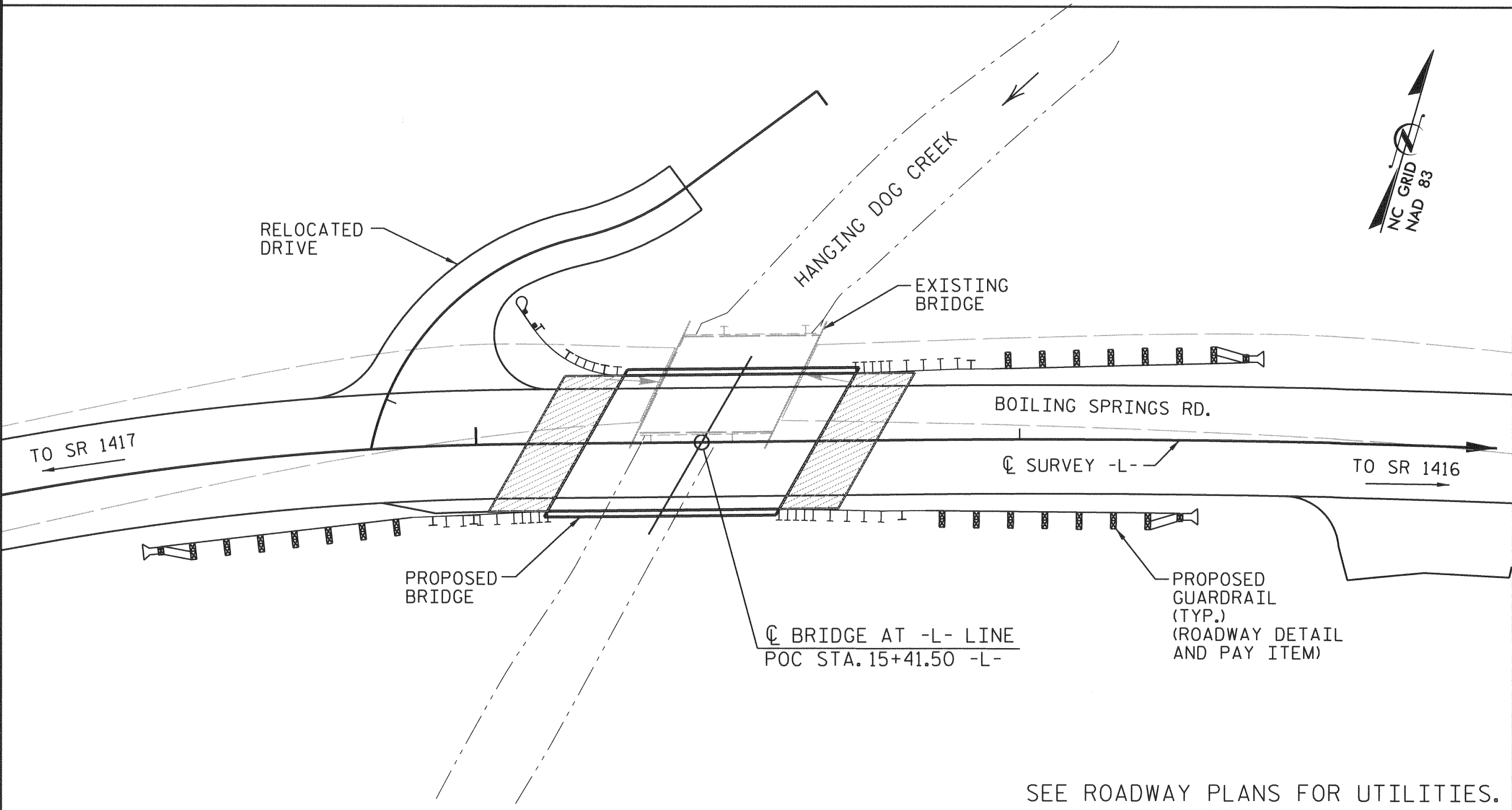
DRAWN BY: WCC DATE: JUL. 2012
CHECKED BY: HLW DATE: JUL. 2012

PROJECT NO. BD-5114K
CHEROKEE COUNTY
STATION: 15+41.50 -L-

SHEET 1 OF 2 REPLACES BRIDGE NO. 42

STATE OF NORTH CAROLINA						
DEPARTMENT OF TRANSPORTATION						
RALEIGH						
GENERAL DRAWING						
FOR BRIDGE on SR 1338						
(Boiling Springs Road)						
over HANGING DOG CREEK						
Between SR 1417 AND SR 1416						
JULY			2012			
REVISIONS						SHEET NO. S-1 TOTAL SHEETS 20
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			
2			4			

BM2 N 568311.5475 E 505558.1889 ELEV. 2051.64' -L- STA. 17+08.23 37.31 FT. LT



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 PERFORMANCE ZONE 1. NO DETAILED SEISMIC DESIGN IS REQUIRED.

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 SINGLE SPAN, 26 FOOT LONG TIMBER DECK ON STEEL I-BEAMS, 18-FEET WIDE, ON TIMBER POSTS AND SILLS, 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, AND FOR PROJECTS REQUIRING OVER 400 TONS OF REINFORCING STEEL, TWO 30 INCH SAMPLES OF EACH SIZE BAR USED. THE BARS FROM WHICH THE SAMPLES ARE TAKEN MUST THEN BE SPLICED WITH REPLACEMENT BARS OF THE SIZE AND LENGTH OF THE SAMPLE, PLUS A MINIMUM LAP SPLICE OF THIRTY BAR DIAMETERS.

INASMUCH AS THE PAINT SYSTEM ON THE EXISTING STRUCTURAL STEEL CONTAINS LEAD, THE CONTRACTOR'S ATTENTION IS DIRECTED TO ARTICLE 107-1 OF THE STANDARD SPECIFICATIONS. ANY COSTS RESULTING FROM COMPLIANCE WITH APPLICABLE STATE OR FEDERAL REGULATIONS PERTAINING TO HANDLING OF MATERIALS CONTAINING LEAD BASED PAINT SHALL BE INCLUDED IN THE BID PRICE FOR "REMOVAL OF EXISTING STRUCTURE AT STATION 15+41.50."

HYDRAULIC DATA

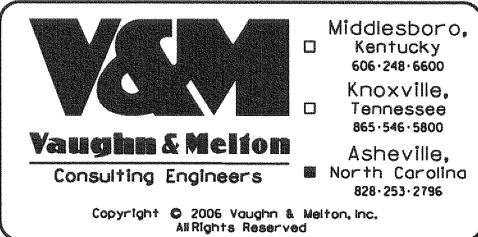
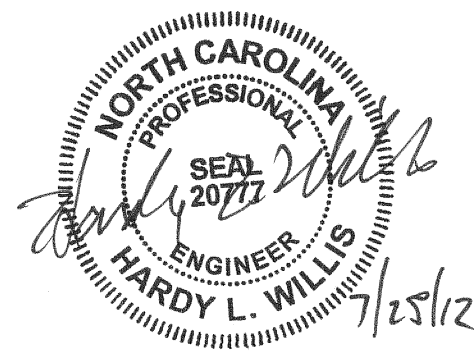
DESIGN DISCHARGE = 750 CFS
DESIGN FREQUENCY = 10 YRS
DESIGN HW ELEVATION = 2047.0 FT
BASE DISCHARGE = 1400 CFS
BASE FREQUENCY = 100 YRS
BASE HW ELEVATION = 2049.7 FT

OVERTOPPING FLOOD DATA

OVERTOPPING DISCHARGE = 720 CFS
OVERTOPPING FREQUENCY = 10 (-) YRS
OVERTOPPING ELEVATION = 2046.7 FT
DRAINAGE AREA = 3.5 SQ. MI.

TOTAL BILL OF MATERIAL

	REMOVAL OF EXISTING STRUCTURE	PILE EXCAVATION IN SOIL	PILE EXCAVATION NOT IN SOIL	UNCLASSIFIED STRUCTURE EXCAVATION	CLASS A CONCRETE	BRIDGE APPROACH SLABS	REINFORCING STEEL	HP 12 X 53 STEEL PILES		RIP RAP CLASS II (2'-0" THICK)	GEOTEXTILE FOR DRAINAGE	VERTICAL CONCRETE BARRIER RAIL	ELASTOMERIC BEARINGS	3'-0" x 1'-9" PRESTRESSED CONCRETE CORED SLAB UNIT	
								NO.	LIN. FT.	TONS				NO.	LIN. FT.
SUPERSTRUCTURE	LUMP SUM	LIN. FT.	LIN. FT.	LUMP SUM	CU. YARDS	LUMP SUM	LBS.								
						LUMP SUM						80.29	LUMP SUM	9	360.0
END BENT 1			25		24.8		3,081	5	50	40	45				
END BENT 2		6	25		24.8		3,081	5	50	60	67				
TOTAL	LUMP SUM	6	50	LUMP SUM	49.6	LUMP SUM	6,162	10	100	100	112	80.29	LUMP SUM	9	360.0



DRAWN BY: WCC DATE: JUL. 2012
CHECKED BY: HLW DATE: JUL. 2012

PROJECT NO. BD-5114K
CHEROKEE COUNTY
STATION: 15+41.50 -L-

SHEET 2 OF 2

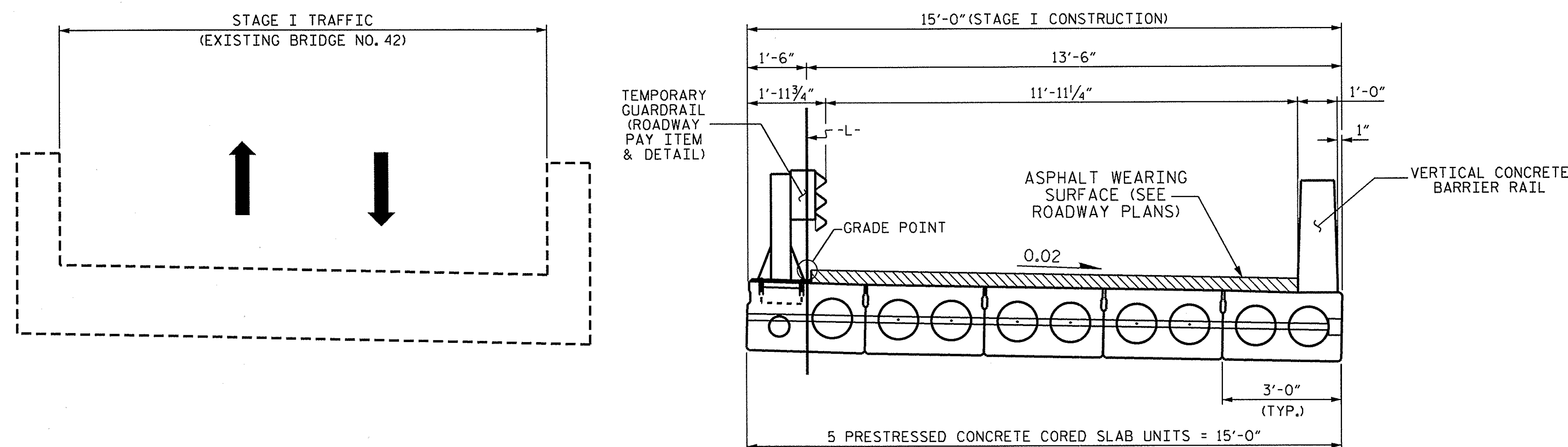
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING
FOR BRIDGE on SR 1338
(Boiling Springs Road)
over HANGING DOG CREEK
Between SR 1417 AND SR 1416

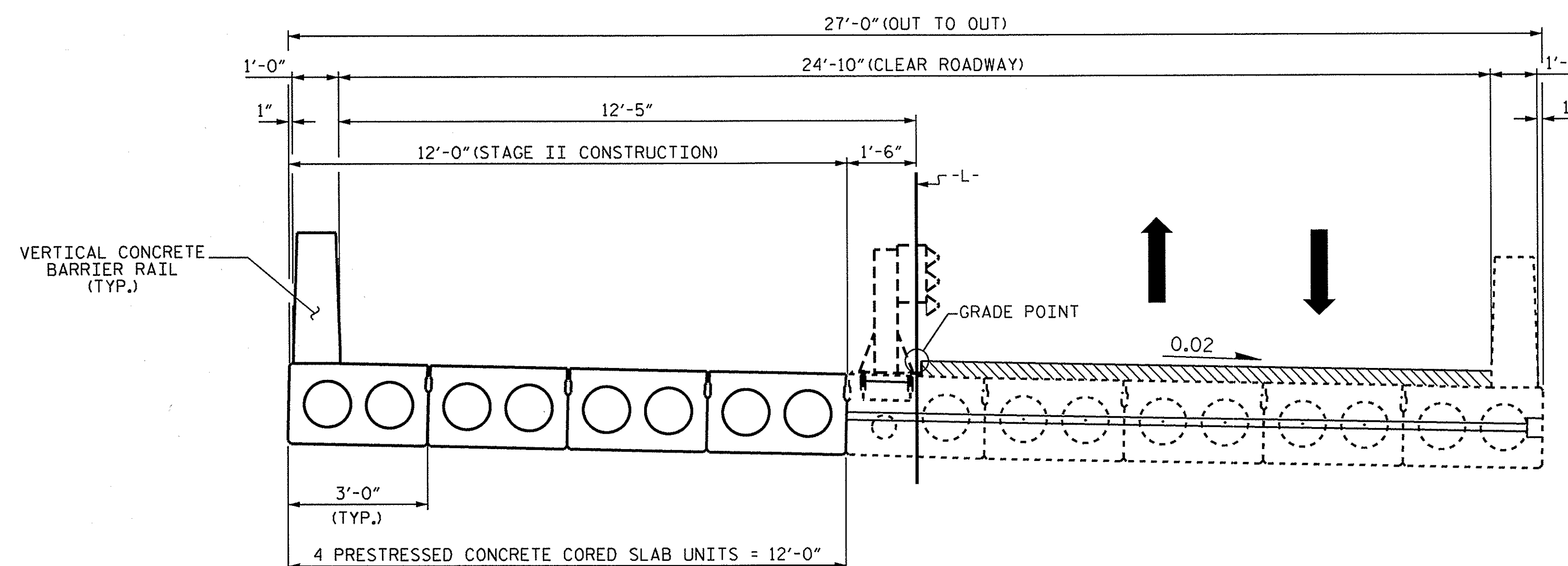
REVISIONS						SHEET NO. S-2
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 20
2			4			

NOTES

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



STAGE I



STAGE II

STAGING SEQUENCE

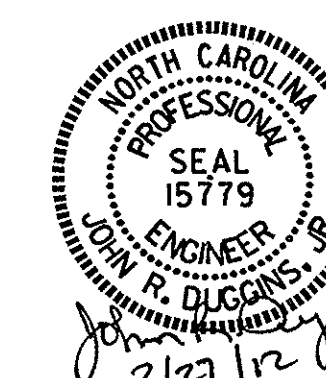
PROJECT NO. BD-5114K
CHEROKEE COUNTY
 STATION: 15+41.50 -L-

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

CONSTRUCTION STAGING

DRAWN BY : A. SORSENGINH DATE : 10/21/11
 CHECKED BY : B. MATHEW DATE : 12/20/11

27-FEB-2012 14:57
 S:\DPC4\John\LIBR_Files\BD-5114K\Final Plans\BD-5114R_SD_PC.dgn
 jduggins



REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			3-3
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	1.352	--	1.75	0.252	1.95	40'	EL	19.423	0.653	1.35	40'	EL	7.769	0.80	0.252	1.72	40'	EL	19.423		
		HL-93(0pr)	N/A	--	1.753	--	1.35	0.252	2.52	40'	EL	19.423	0.653	1.75	40'	EL	7.769	N/A	--	--	--	--	--		
		HS-20(Inv)	36.000	2	1.544	55.583	1.75	0.252	2.45	40'	EL	19.423	0.653	1.54	40'	EL	7.769	0.80	0.252	2.14	40'	EL	19.423		
		HS-20(0pr)	36.000	--	2.001	72.053	1.35	0.252	3.17	40'	EL	19.423	0.653	2	40'	EL	7.769	N/A	--	--	--	--	--		
LEGAL LOAD RATING		SV	SNSH	13.500	--	3.929	53.037	1.4	0.252	5.64	40'	EL	19.423	0.653	3.93	40'	EL	7.769	0.80	0.252	3.99	40'	EL	19.423	
			SNGARBS2	20.000	--	2.985	59.708	1.4	0.252	4.63	40'	EL	15.538	0.653	2.99	40'	EL	7.769	0.80	0.252	3.28	40'	EL	19.423	
			SNAGRIS2	22.000	--	2.852	62.746	1.4	0.252	4.53	40'	EL	15.538	0.653	2.85	40'	EL	7.769	0.80	0.252	3.23	40'	EL	15.538	
			SNCOTTS3	27.250	--	1.98	53.947	1.4	0.252	2.82	40'	EL	19.423	0.653	1.98	40'	EL	7.769	0.80	0.252	1.99	40'	EL	19.423	
			SNAGGRS4	34.925	--	1.782	62.222	1.4	0.252	2.54	40'	EL	19.423	0.653	1.78	40'	EL	7.769	0.80	0.252	1.79	40'	EL	19.423	
			SNS5A	35.550	--	1.746	62.059	1.4	0.252	2.47	40'	EL	19.423	0.653	1.89	40'	EL	7.769	0.80	0.252	1.75	40'	EL	19.423	
			SNS6A	39.950	--	1.662	66.381	1.4	0.252	2.35	40'	EL	19.423	0.653	1.79	40'	EL	7.769	0.80	0.252	1.66	40'	EL	19.423	
			SNS7B	42.000	--	1.585	66.556	1.4	0.252	2.24	40'	EL	19.423	0.653	1.86	40'	EL	7.769	0.80	0.252	1.58	40'	EL	19.423	
		TTST	TNAGRIT3	33.000	--	2.045	67.476	1.4	0.252	2.89	40'	EL	19.423	0.653	2.07	40'	EL	7.769	0.80	0.252	2.04	40'	EL	19.423	
			TNT4A	33.075	--	1.951	64.52	1.4	0.252	2.93	40'	EL	19.423	0.653	1.95	40'	EL	7.769	0.80	0.252	2.07	40'	EL	19.423	
			TNT6A	41.600	--	1.757	73.106	1.4	0.252	2.49	40'	EL	19.423	0.653	1.91	40'	EL	7.769	0.80	0.252	1.76	40'	EL	19.423	
			TNT7A	42.000	--	1.795	75.386	1.4	0.252	2.55	40'	EL	19.423	0.653	1.79	40'	EL	7.769	0.80	0.252	1.80	40'	EL	19.423	
			TNT7B	42.000	--	1.729	72.638	1.4	0.252	2.61	40'	EL	19.423	0.653	1.73	40'	EL	7.769	0.80	0.252	1.84	40'	EL	19.423	
			TNAGRIT4	43.000	--	1.661	71.441	1.4	0.252	2.53	40'	EL	15.538	0.653	1.66	40'	EL	7.769	0.80	0.252	1.79	40'	EL	19.423	
			TNAGT5A	45.000	--	1.659	74.644	1.4	0.252	2.35	40'	EL	19.423	0.653	1.77	40'	EL	7.769	0.80	0.252	1.66	40'	EL	19.423	
			TNAGT5B	45.000	3	1.568	70.561	1.4	0.252	2.28	40'	EL	19.423	0.653	1.57	40'	EL	7.769	0.80	0.252	1.61	40'	EL	19.423	

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	

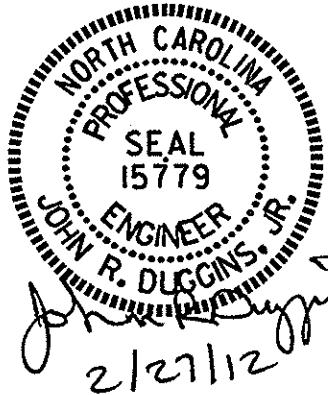


LRFR SUMMARY
FOR SPAN A

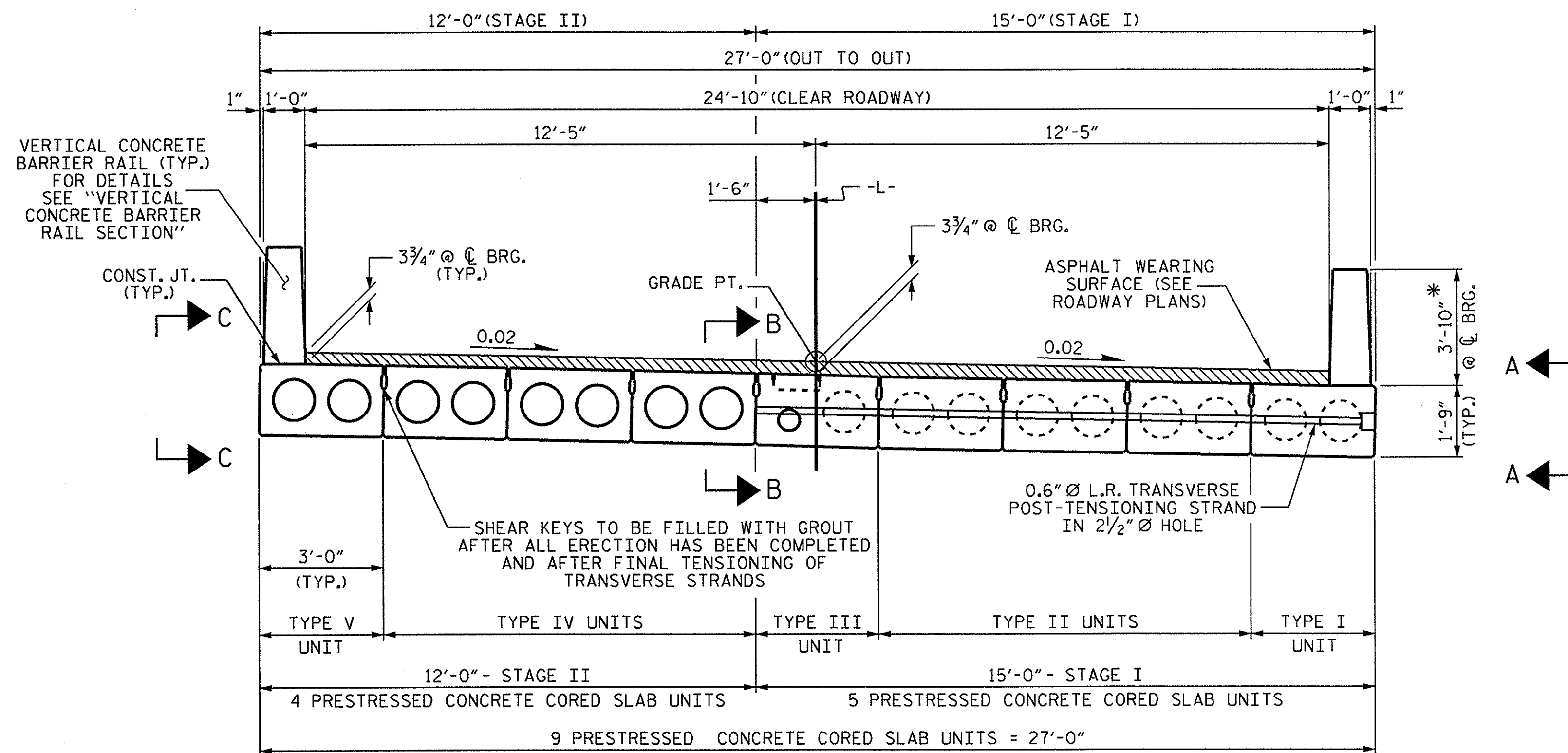
PROJECT NO. BD-5114K
CHEROKEE COUNTY
STATION: 15+41.50 -L-

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

27-FEB-2012 14:55
S:\DPG4\John\LIBR_Files\BD-5114K\Final_Plans\BD-5114K_SD_LRFR.dgn
jduggins



STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
STANDARD LRFR SUMMARY FOR 40' CORED SLAB UNIT 120° SKEW (NON-INTERSTATE TRAFFIC)					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
SHEET NO. S-4					TOTAL SHEETS 20

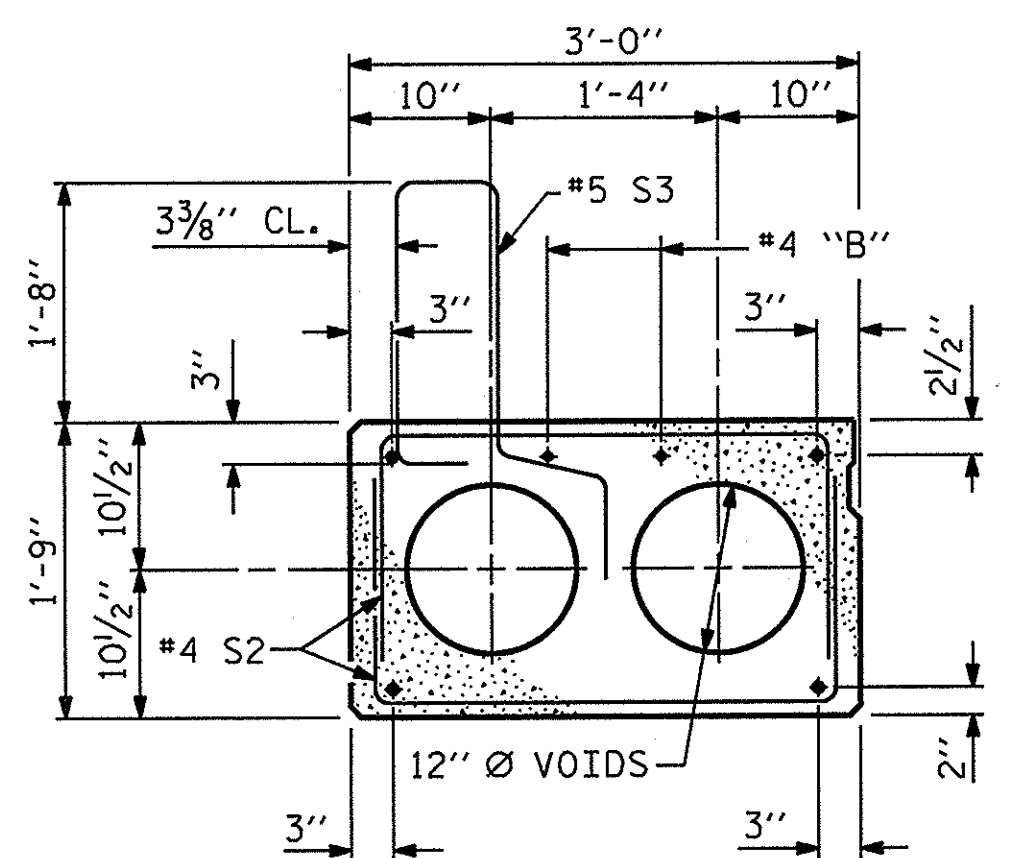


HALF SECTION AT VOIDS

HALF SECTION AT INTERMEDIATE DIAPHRAGM

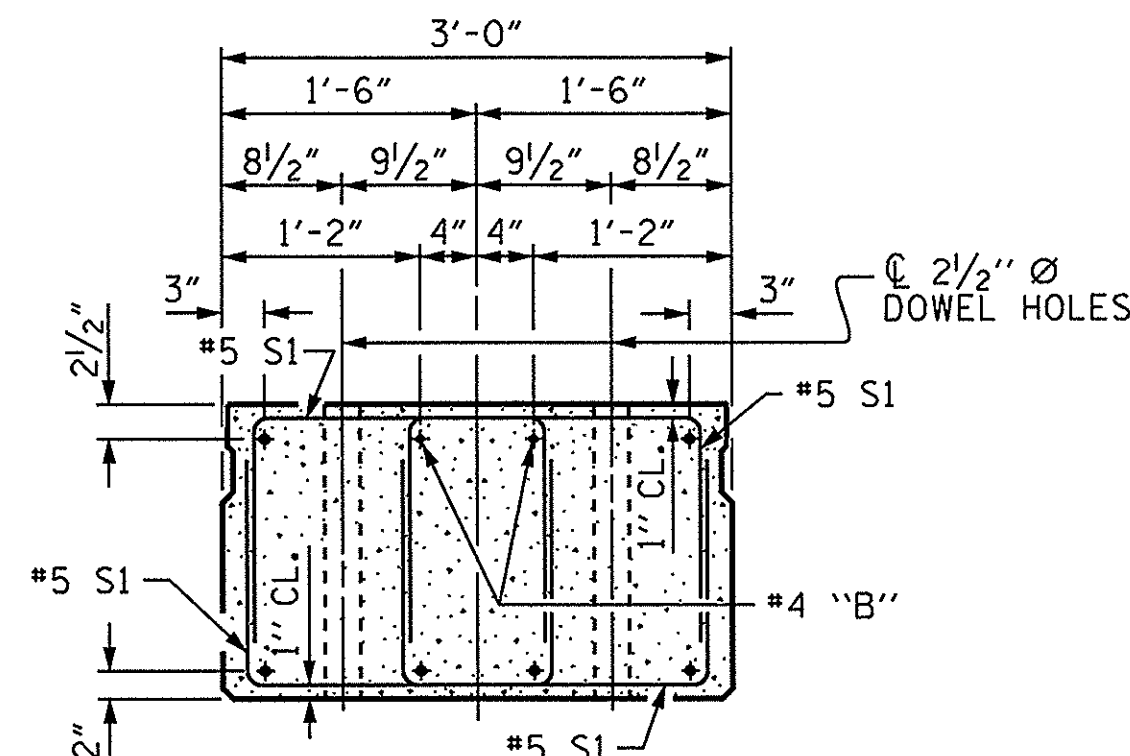
TYPICAL SECTION

* - 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.



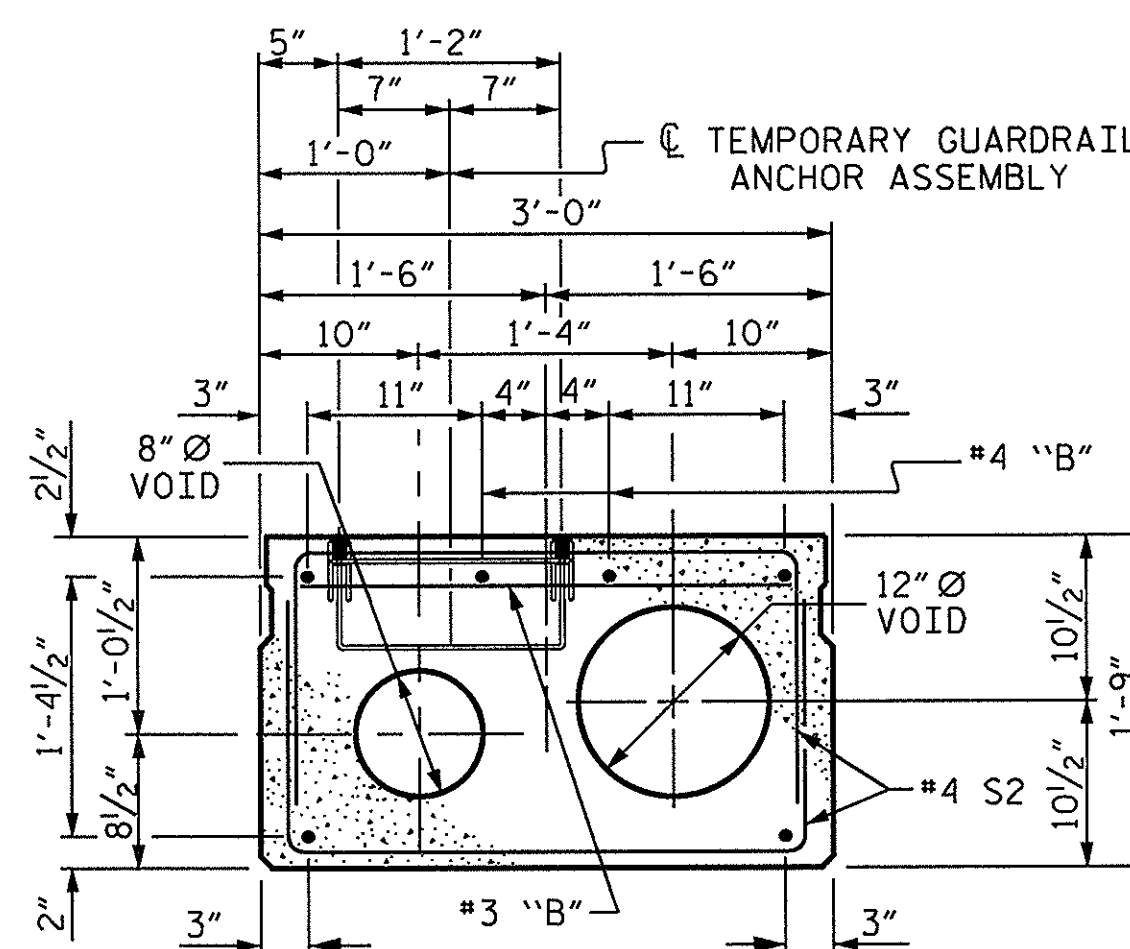
EXTERIOR SLAB SECTION

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



END ELEVATION

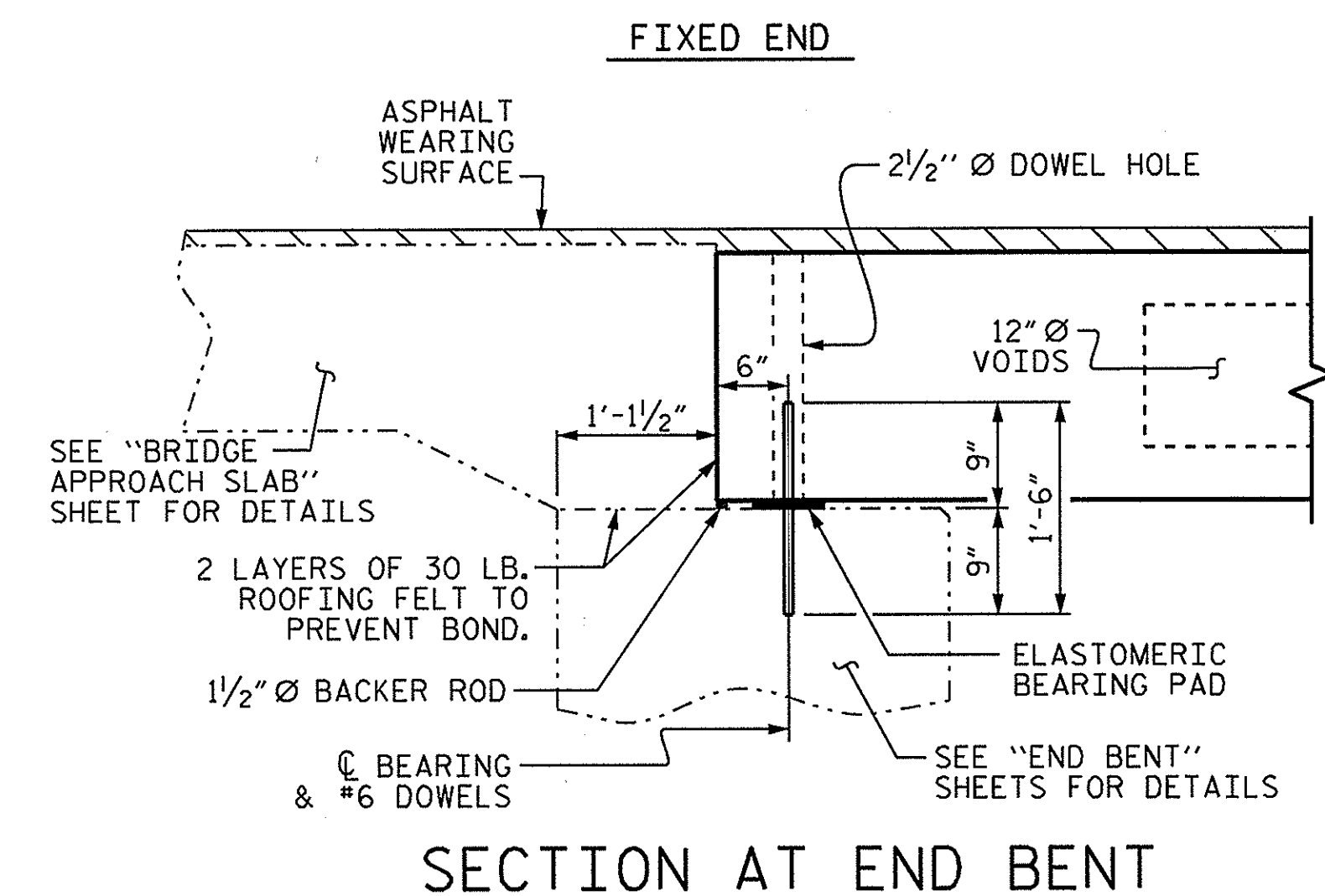
SHOWING PLACEMENT OF DOUBLE STIRRUPS
AND LOCATION OF DOWEL HOLES.
(STRAND LAYOUT NOT SHOWN.)
INTERIOR SLAB UNIT SHOWN-EXTERIOR SLAB
UNIT SIMILAR EXCEPT SHEAR KEY LOCATION.



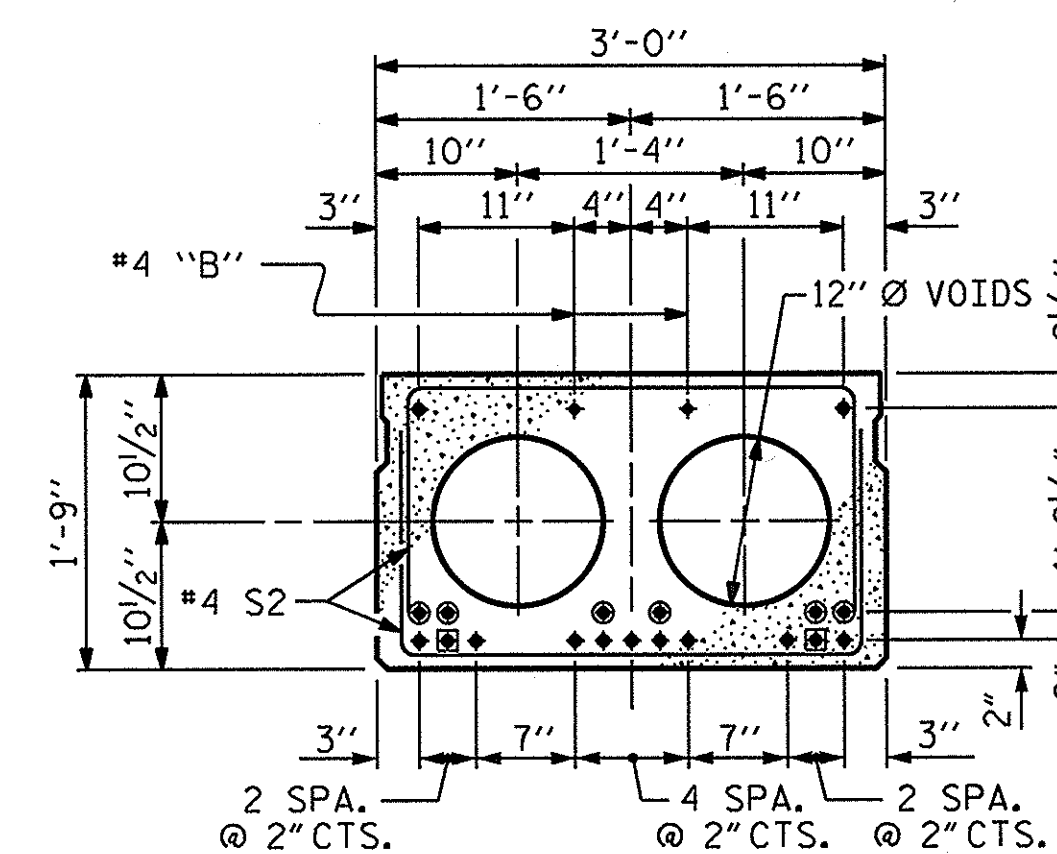
INTERIOR SLAB SECTION

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.



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 6'-0" FROM END OF CORED SLAB UNIT. SEE STANDARD SPECIFICATIONS, ARTICLE 1078-7.
- 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

PROJECT NO. BD-5114K
CHEROKEE COUNTY
STATION: 15+41.50 -L-

SHEET 1 OF 5

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

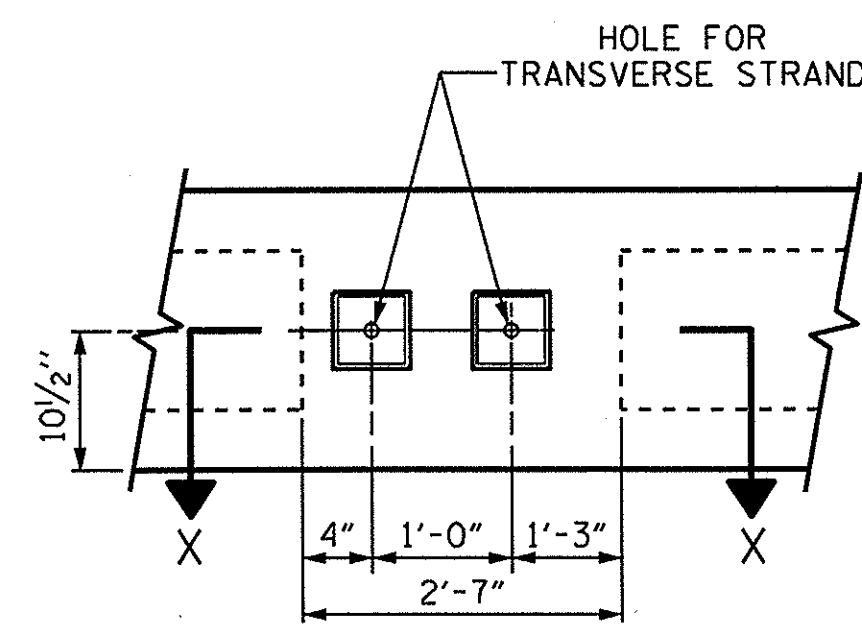
3'-0" X 1'-9"
PRESTRESSED CONCRETE
CORED SLAB UNIT

ASSEMBLED BY: A. SORSENGINH DATE: 9/2011
CHECKED BY: B. MATHEW DATE: 12/2011

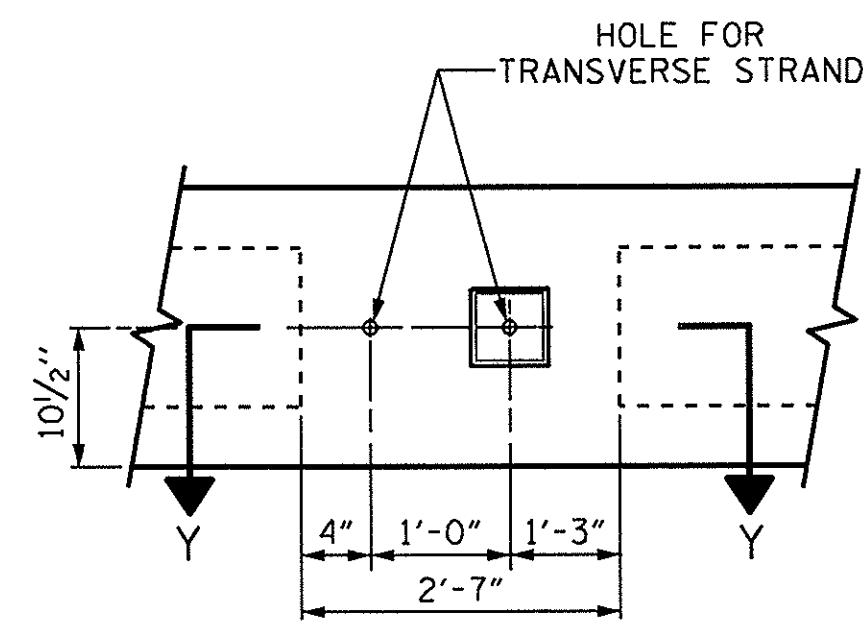
DRAWN BY: DGE 6/09
CHECKED BY: BCH 6/09



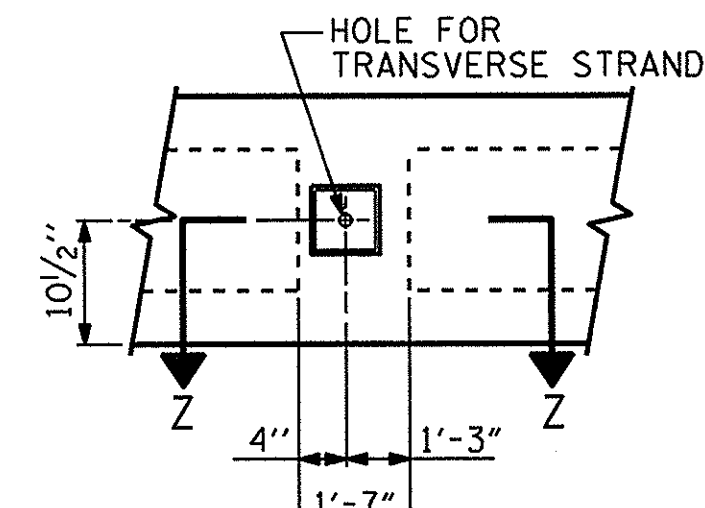
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			5-5
2			4			TOTAL SHEETS 20



VIEW A-A
SEE SHEET 1 OF 5

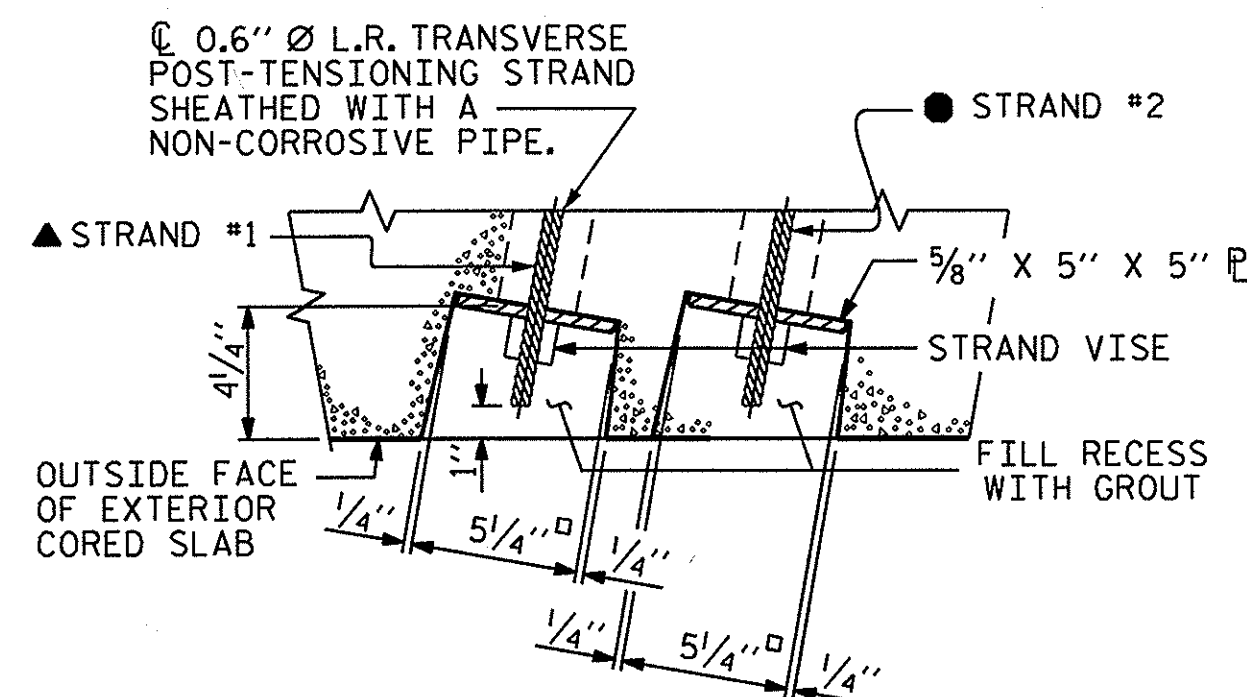


VIEW B-B
SEE SHEET 1 OF 5

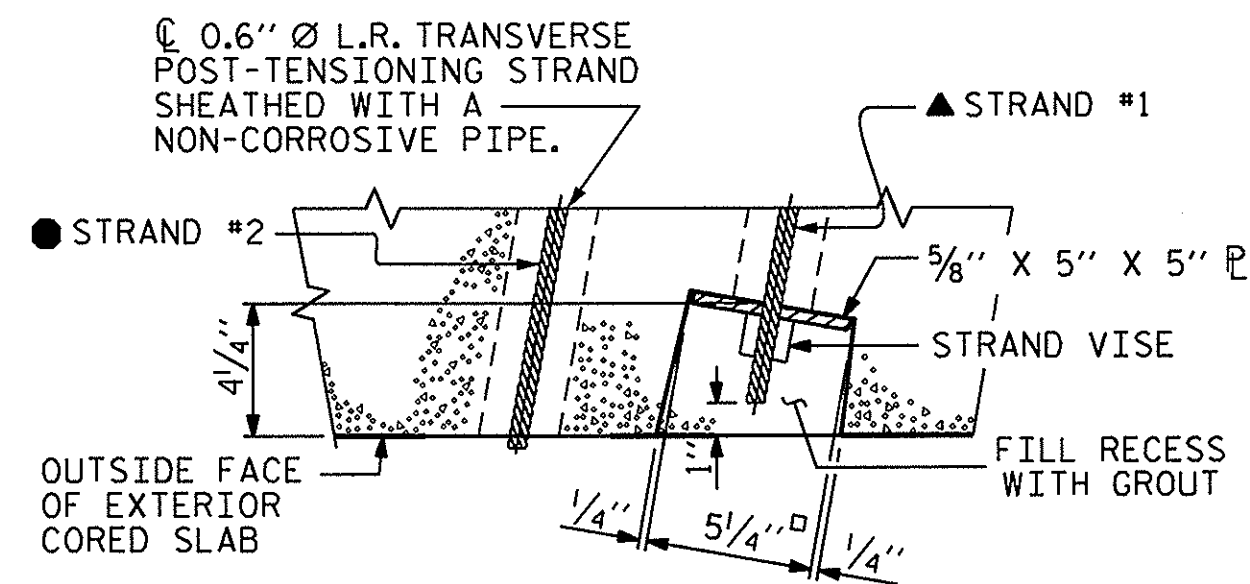


VIEW C-C
SEE SHEET 1 OF 5

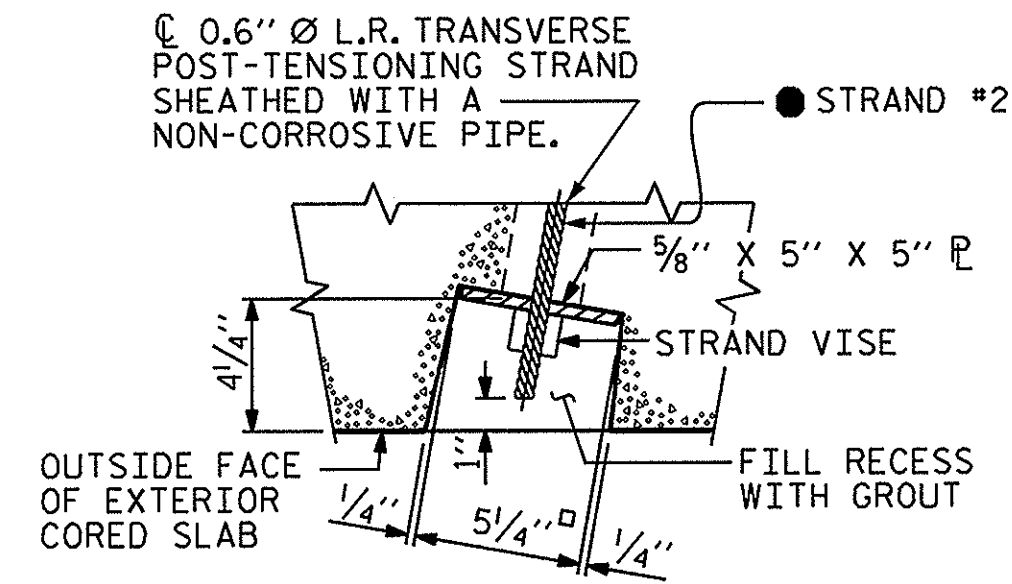
- ▲ STRAND #1 GOES THRU 5 CORED SLAB UNITS (TO BE TENSIONED DURING STAGE I CONSTRUCTION)
- STRAND #2 GOES THRU ALL 9 CORED SLAB UNITS (TO BE TENSIONED DURING STAGE II CONSTRUCTION)



SECTION X-X
(TYPE I UNIT)

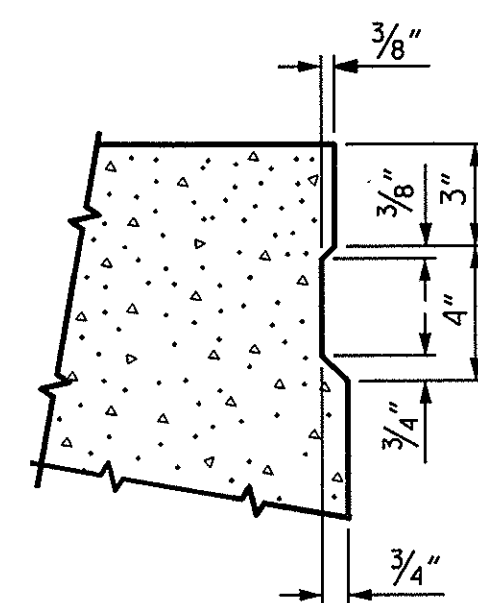


SECTION Y-Y
(TYPE III UNIT)



SECTION Z-Z
(TYPE V UNIT)

GROUTED RECESS AT END OF POST-TENSIONED STRAND



SHEAR KEY DETAIL

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

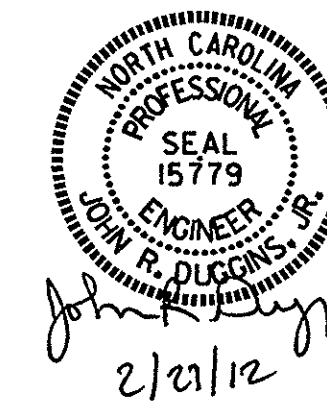
PROJECT NO. BD-5114K
CHEROKEE COUNTY
 STATION: 15+41.50 -L-

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



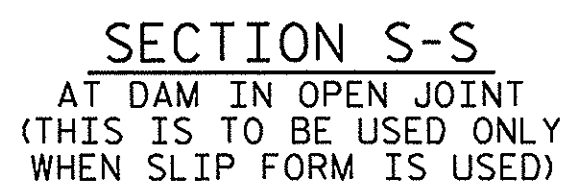
DRAWN BY: A. SORSENGIN DATE: 10/3/11
 CHECKED BY: B. MATHEW DATE: 12/20/11



✱ INCLUDES FUTURE WEARING SURFACE



ELASTOMER IN ALL BEARINGS SHALL BE 50 DUROMETER HARDNESS.



ASSEMBLED BY :	A. SORSENGINH	DATE :	9/2011
CHECKED BY :	B. MATHEW	DATE :	12/2011
DRAWN BY :	DGE	5/09	
CHECKED BY :	BCH	6/09	

BILL OF MATERIAL FOR VERTICAL CONCRETE BARRIER RAIL						
BAR	BARS PER PAIR OF EXTERIOR UNITS	TOTAL NO.	SIZE	TYPE	LENGTH	WEIGHT
	40' UNIT					
* B11	80	80	#5	STR	11'-9"	980
* S4	98	98	#5	2	7'-2"	733
* EPOXY COATED REINFORCING STEEL				LBS.		1713
CLASS AA CONCRETE				CU.YDS.		10.5
TOTAL VERTICAL CONCRETE BARRIER RAIL				LN. FT.		80.25

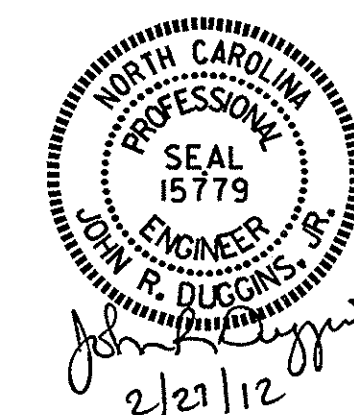
CONCRETE RELEASE STRENGTH	
UNIT	PSI
40' UNIT	4000

CORED SLABS REQUIRED			
	NUMBER	LENGTH	TOTAL LENGTH
40' UNIT			
EXTERIOR C.S.	2	40'-0"	80'-0"
INTERIOR C.S.	7	40'-0"	280'-0"
TOTAL	9		360'-0"

SHEET 5 OF 5

3'-0" X 1'-9"
PRESTRESSED CONCRETE
CORED SLAB UNIT
120° SKEW

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS 30
1			3			
2			4			





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.)

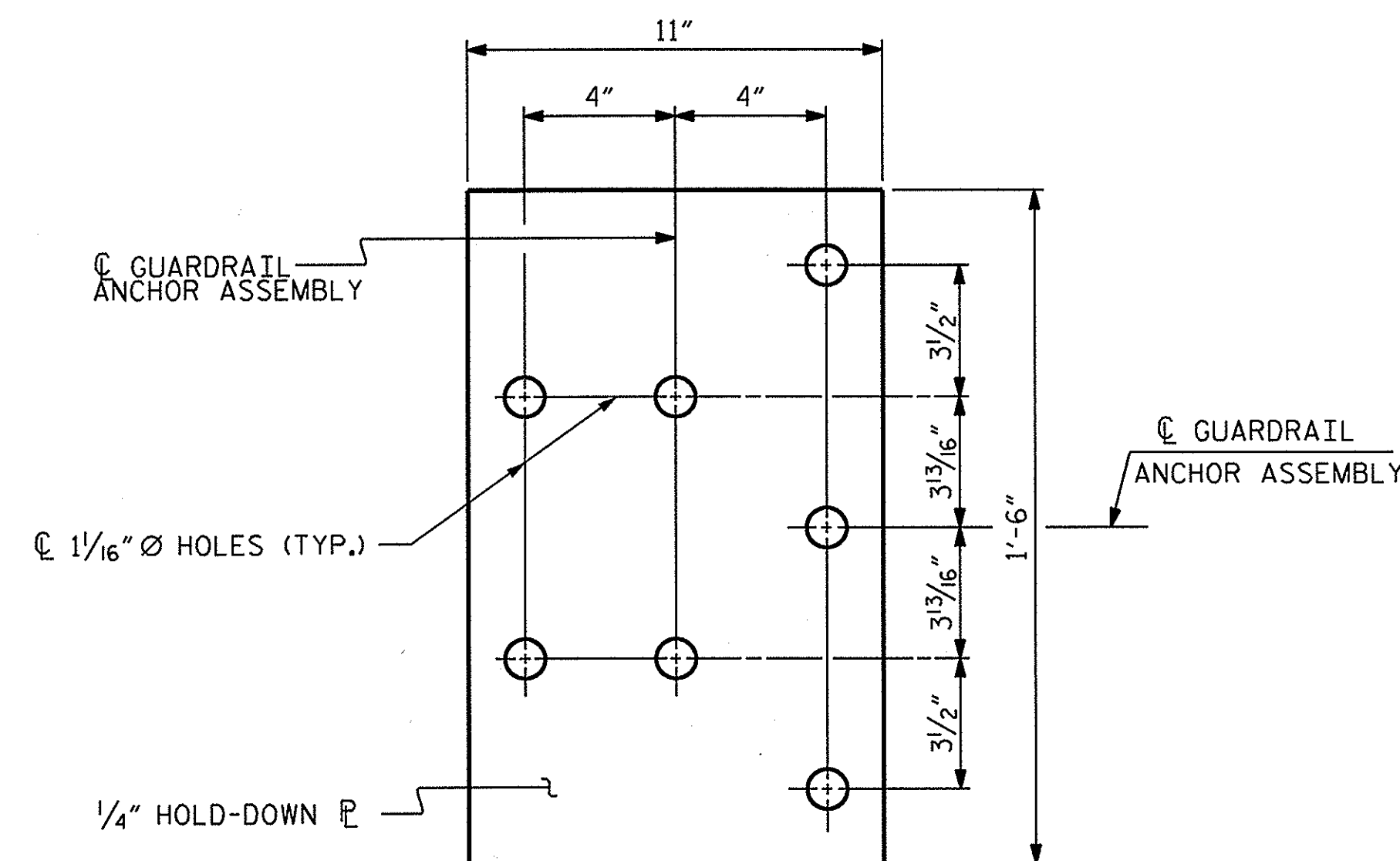
THE GUARDRAIL ANCHOR ASSEMBLY IS REQUIRED AT ALL POINTS WHERE APPROACH GUARDRAIL IS TO BE ATTACHED TO THE END OF BARRIER RAIL. FOR POINTS OF ATTACHMENT, SEE SKETCH.

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

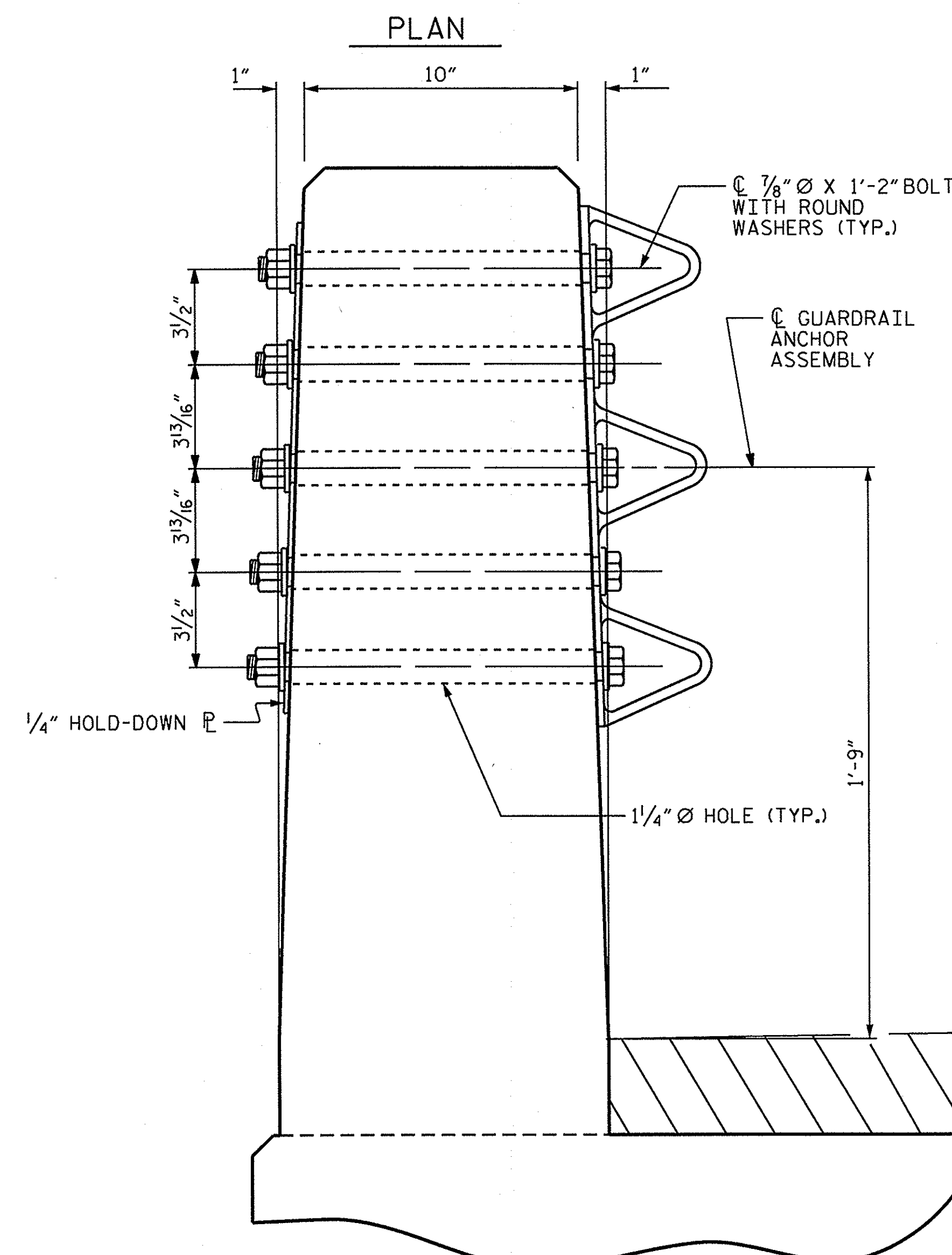
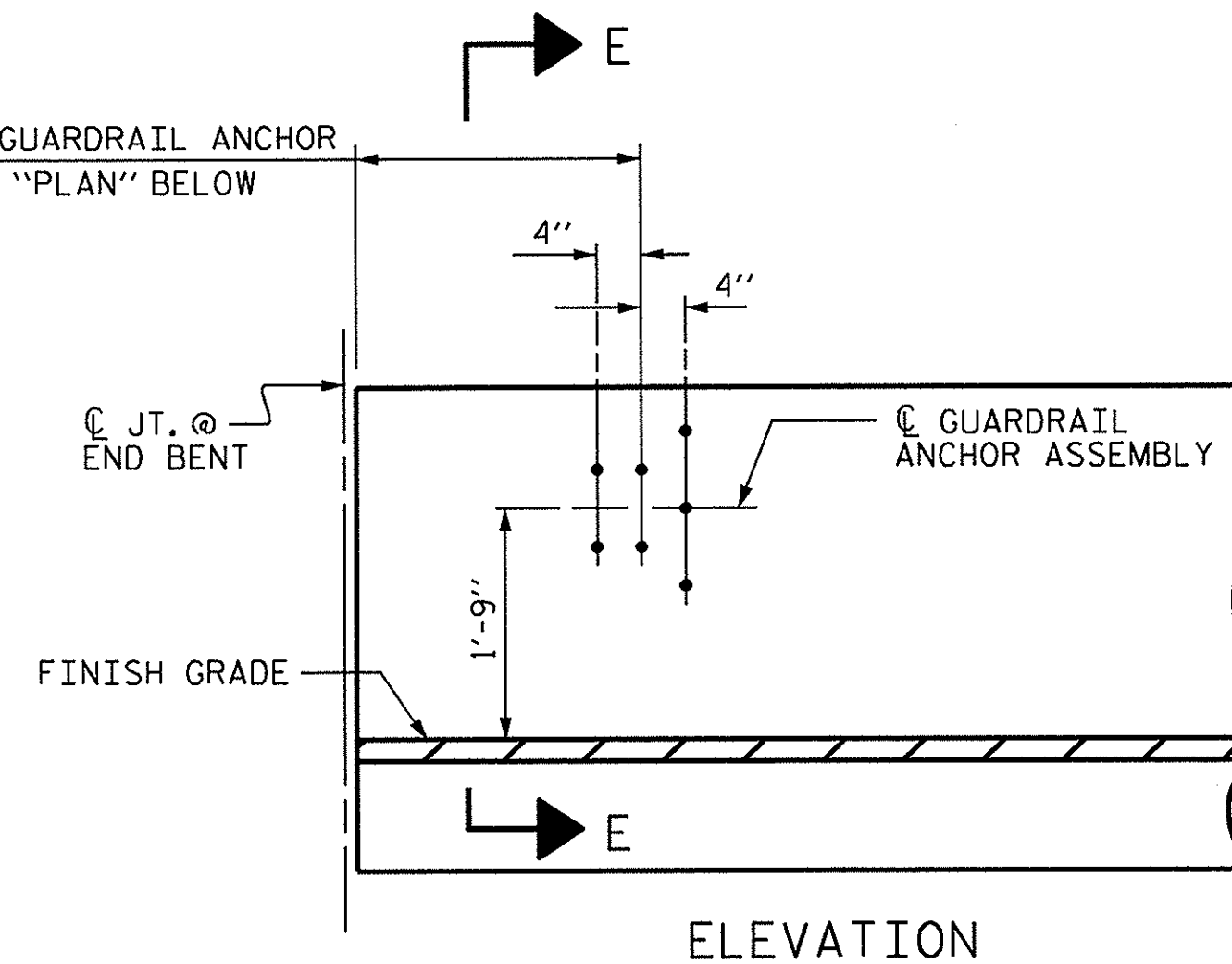
THE COST OF THE GUARDRAIL ANCHOR ASSEMBLY SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR VERTICAL CONCRETE BARRIER RAIL.

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

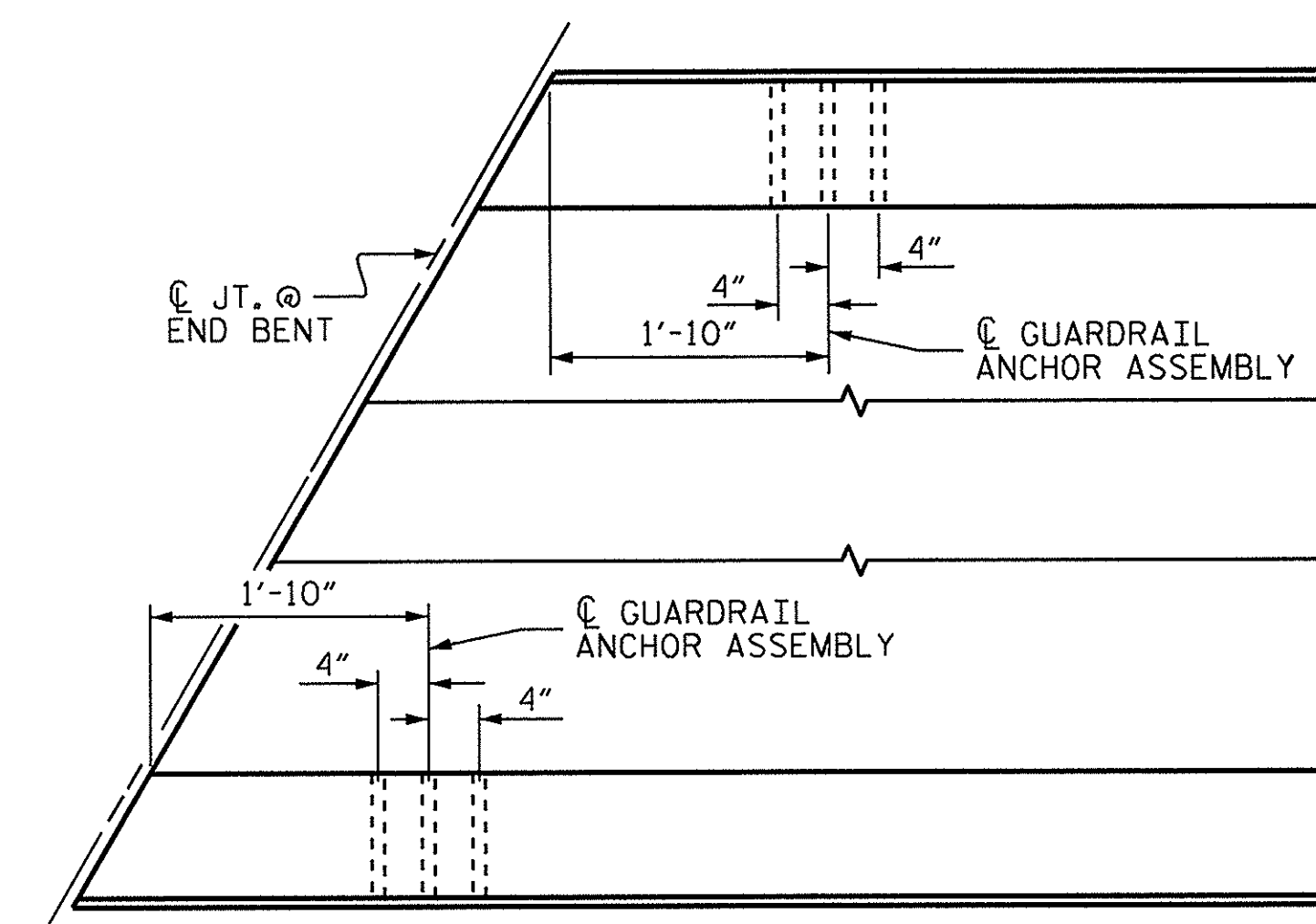
THE 1 1/4" Ø HOLES SHALL BE FORMED OR DRILLED WITH A CORE BIT. IMPACT TOOLS WILL NOT BE PERMITTED. ANY CONCRETE DAMAGED BY THIS WORK SHALL BE REPAIRED TO THE SATISFACTION OF THE ENGINEER.



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



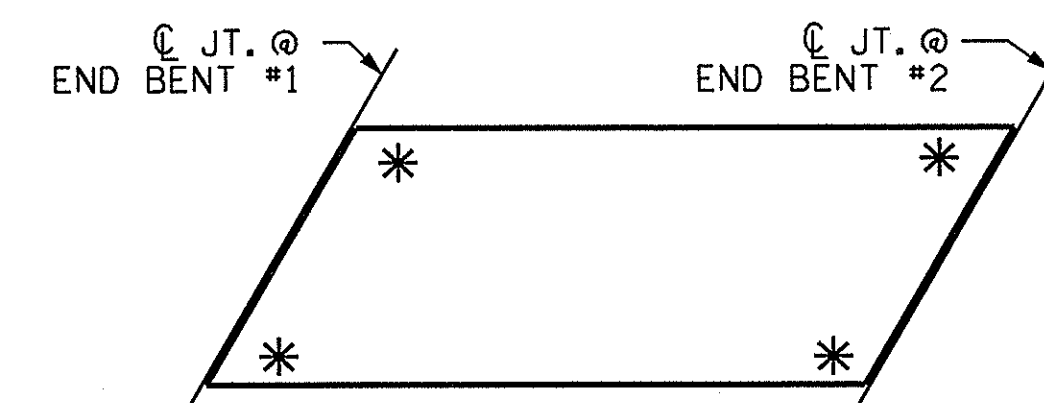
SECTION E-E
GUARDRAIL ANCHOR ASSEMBLY DETAILS



PLAN

LOCATION OF ANCHORS FOR GUARDRAIL

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



SKETCH SHOWING POINTS OF ATTACHMENT

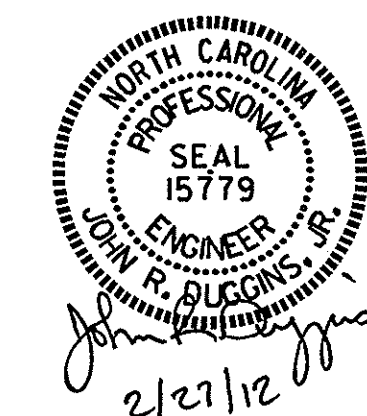
* DENOTES GUARDRAIL ANCHOR ASSEMBLY

PROJECT NO. BD-5114K
CHEROKEE COUNTY
STATION: 15+41.50 -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 : 10/2011
CHECKED BY : B. MATHEW DATE : 12/2011
DRAWN BY : MAA 5/10
CHECKED BY : GM 5/10

ADDED 5/6/10

27-FEB-2012 14:50
S:\DPC4\John\LIBR_Files\BD-5114K\Final_Plans\BD-5114K_SD_BR.dgn
jduggins

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.

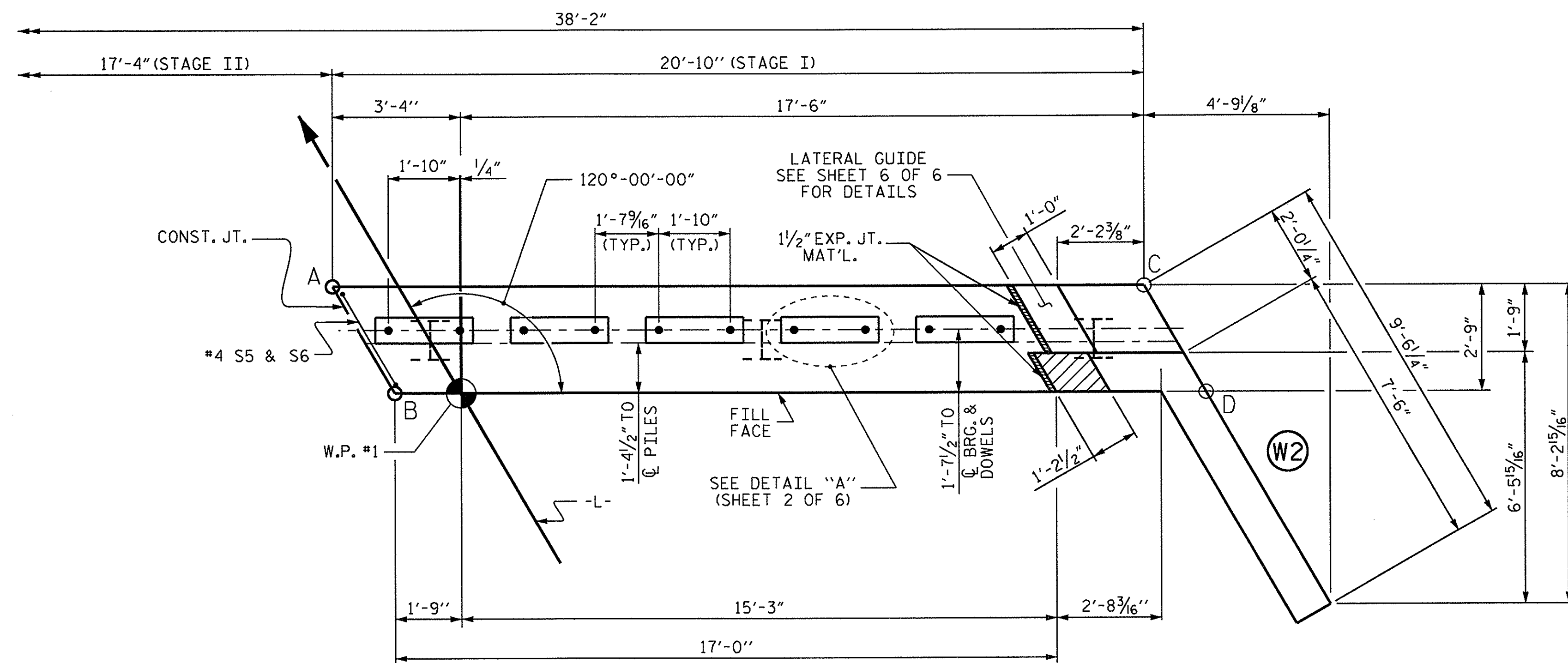
FOR PILE SPLICE DETAILS, SEE SHEET 6 OF 6.

FOR WING DETAILS, SEE SHEET 5 OF 6.

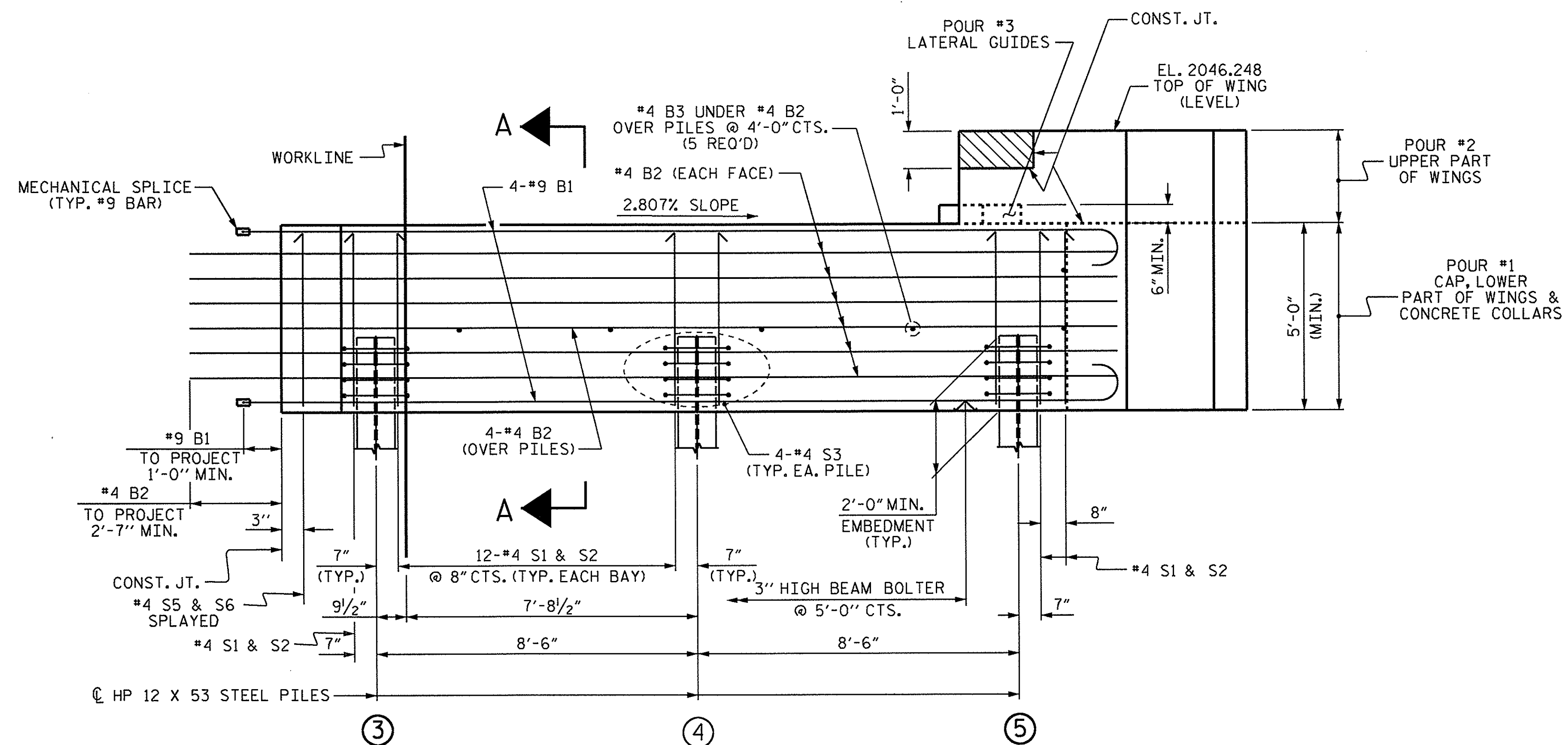
THE CONTRACTOR HAS THE OPTION TO OMIT THE LATERAL GUIDE IF APPROVED BY THE ENGINEER.

ELEVATIONS OF NOTED POINTS		
	TOP OF CAP	BOTTOM OF CAP
POINT A	2044.377	2039.377
POINT B	2044.333	2039.333
POINT C	2043.792	2038.792
POINT D	2043.748	2038.748

TOP OF PILE ELEVATIONS	
③	2041.320
④	2041.082
⑤	2040.843



PLAN



ELEVATION

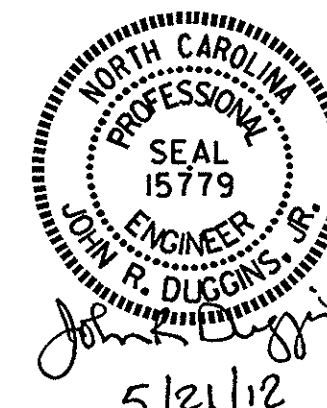
FOR SECTION A-A, SEE SHEET 2 OF 6.
CONCRETE COLLARS FOR STEEL PILES NOT SHOWN IN PLAN AND ELEVATION VIEWS FOR CLARITY.
SEE "CORROSION PROTECTION FOR STEEL PILES DETAIL", SHEET 6 OF 6.

PROJECT NO. BD-5114K
CHEROKEE COUNTY
STATION: 15+41.50 -L-

SHEET 1 OF 6

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

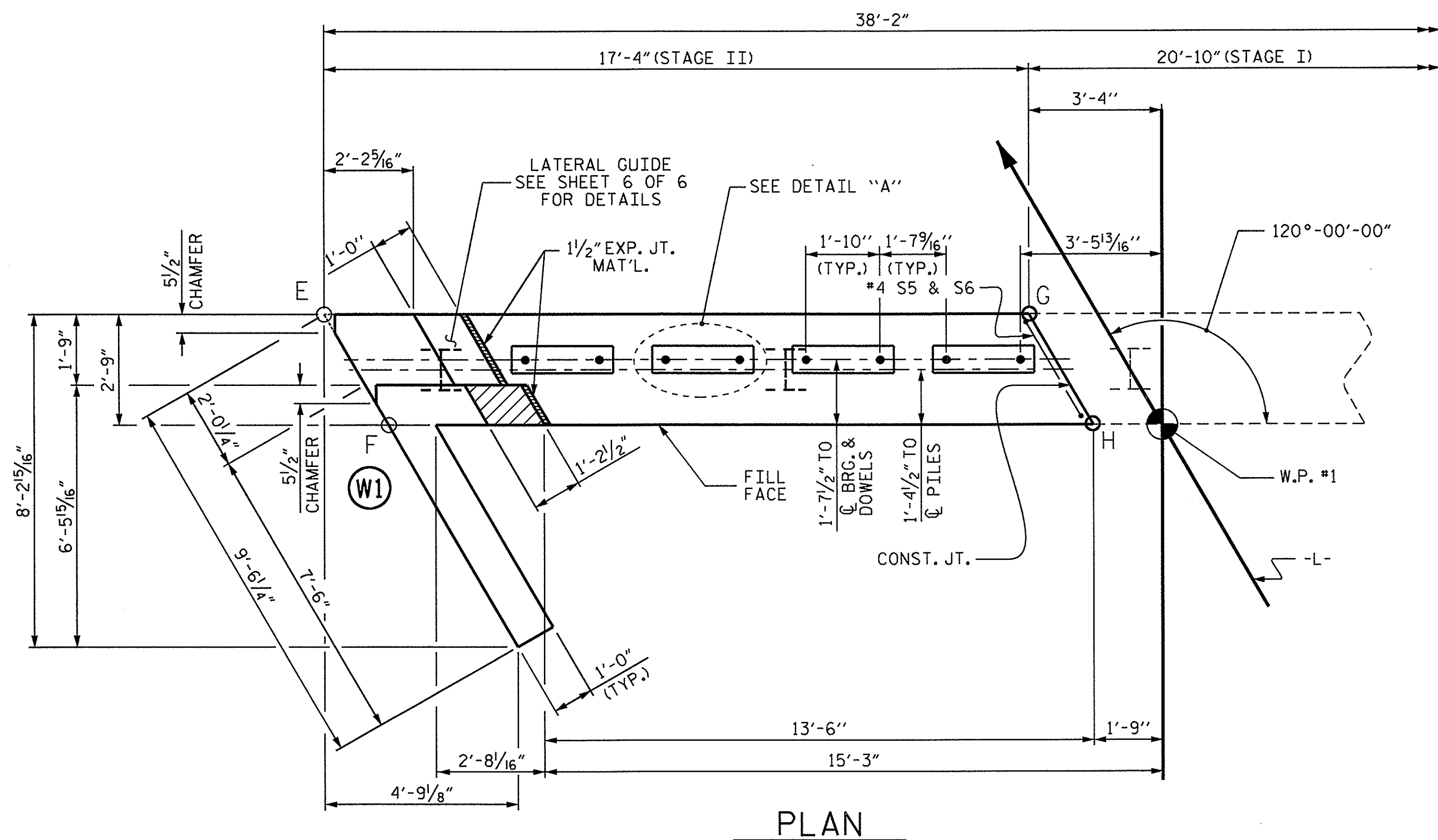
SUBSTRUCTURE
END BENT No. 1
STAGE I



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

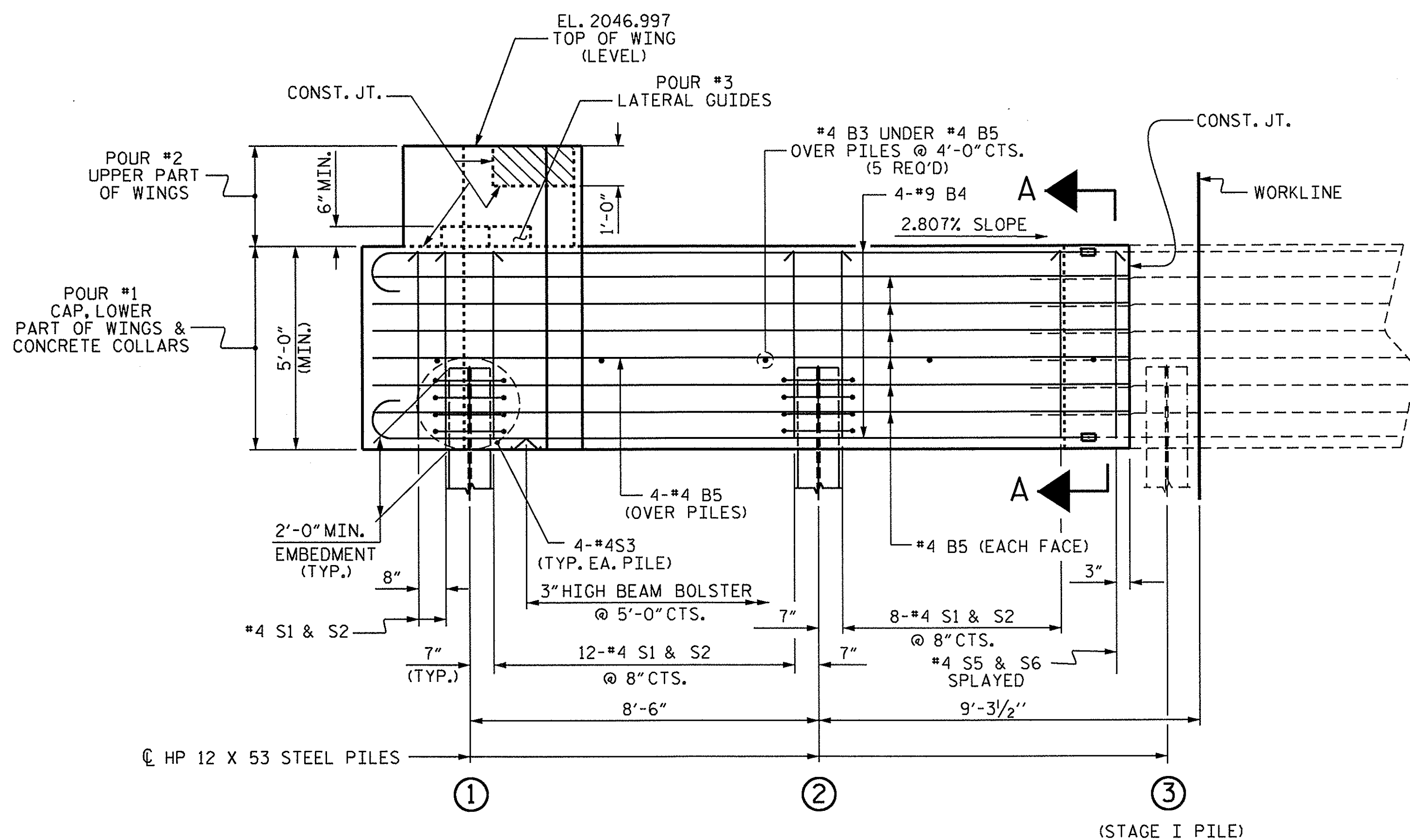
21-MAY-2012 14:21
S:\DPC4\John\LIBR.Files\BD-5114K\Final Plans\BD-5114K_SD_E*.dgn
jduggins

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



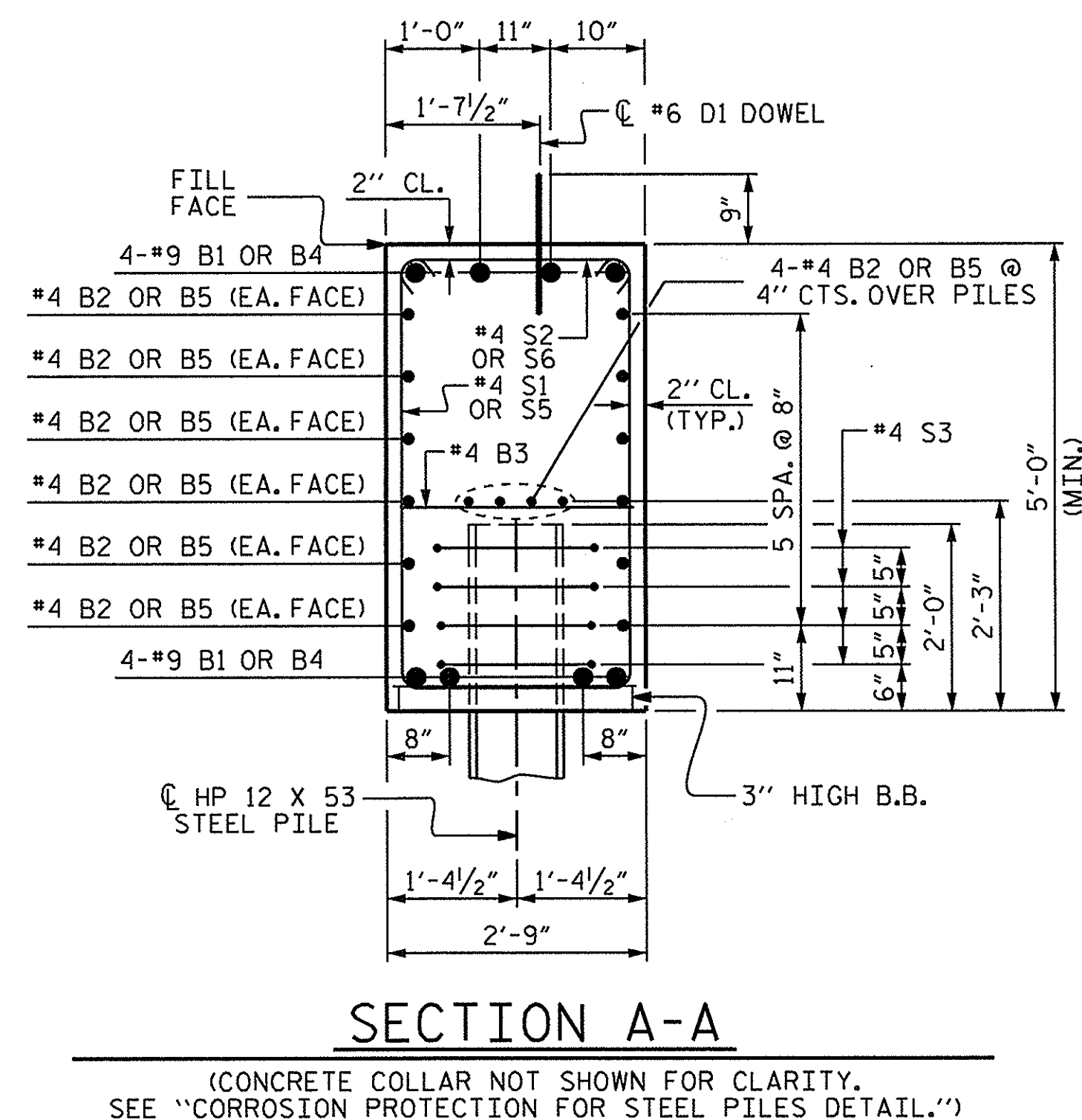
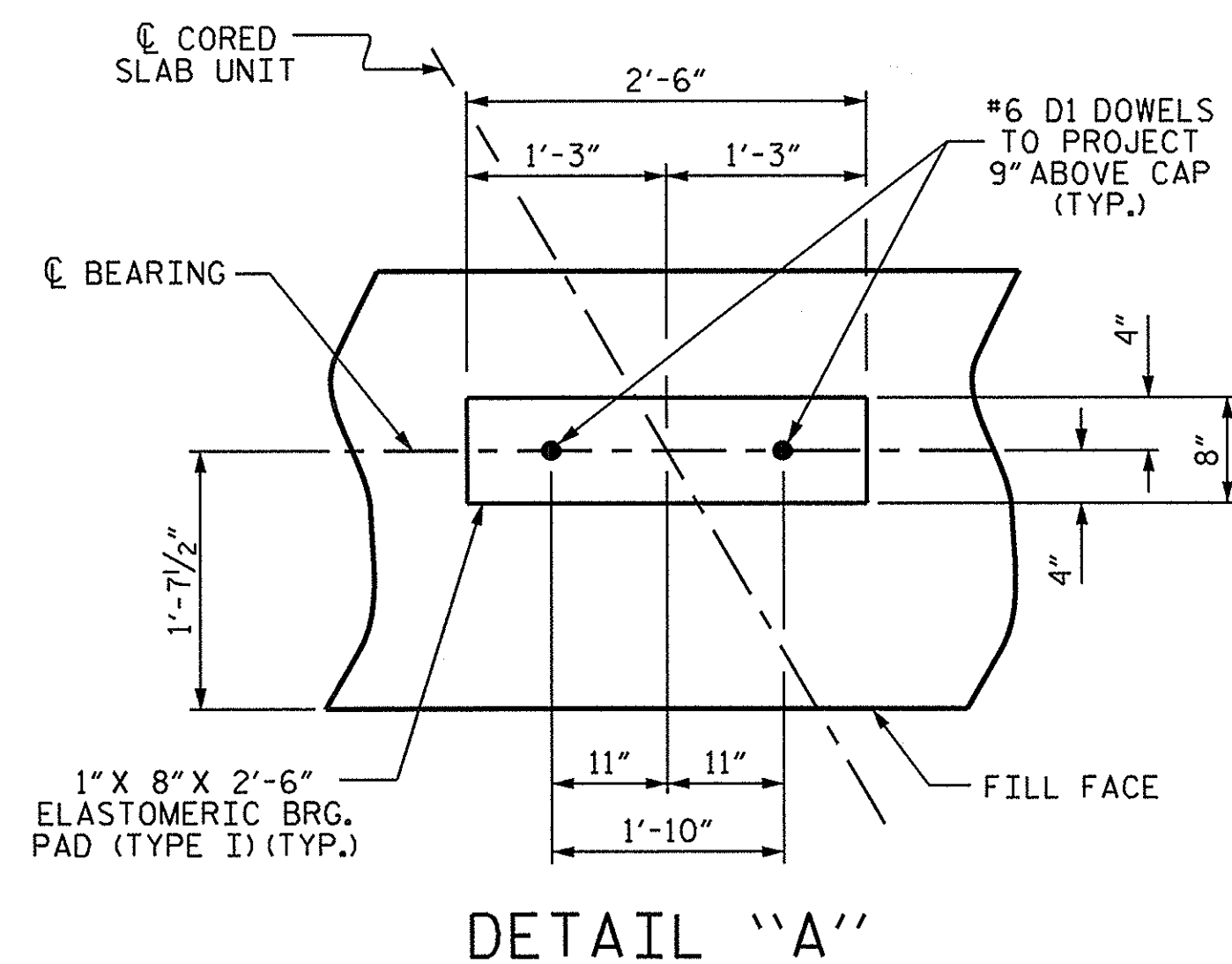
ELEVATIONS OF NOTED POINTS		
	TOP OF CAP	BOTTOM OF CAP
POINT E	2044.864	2039.864
POINT F	2044.819	2039.819
POINT G	2044.377	2039.377
POINT H	2044.333	2039.333

TOP OF PILE ELEVATIONS	
①	2041.798
②	2041.559



ELEVATION

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-5114K
CHEROKEE COUNTY
 STATION: 15+41.50 -L-

SHEET 2 OF 6

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUBSTRUCTURE
 END BENT No. 1
 STAGE II



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

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

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.

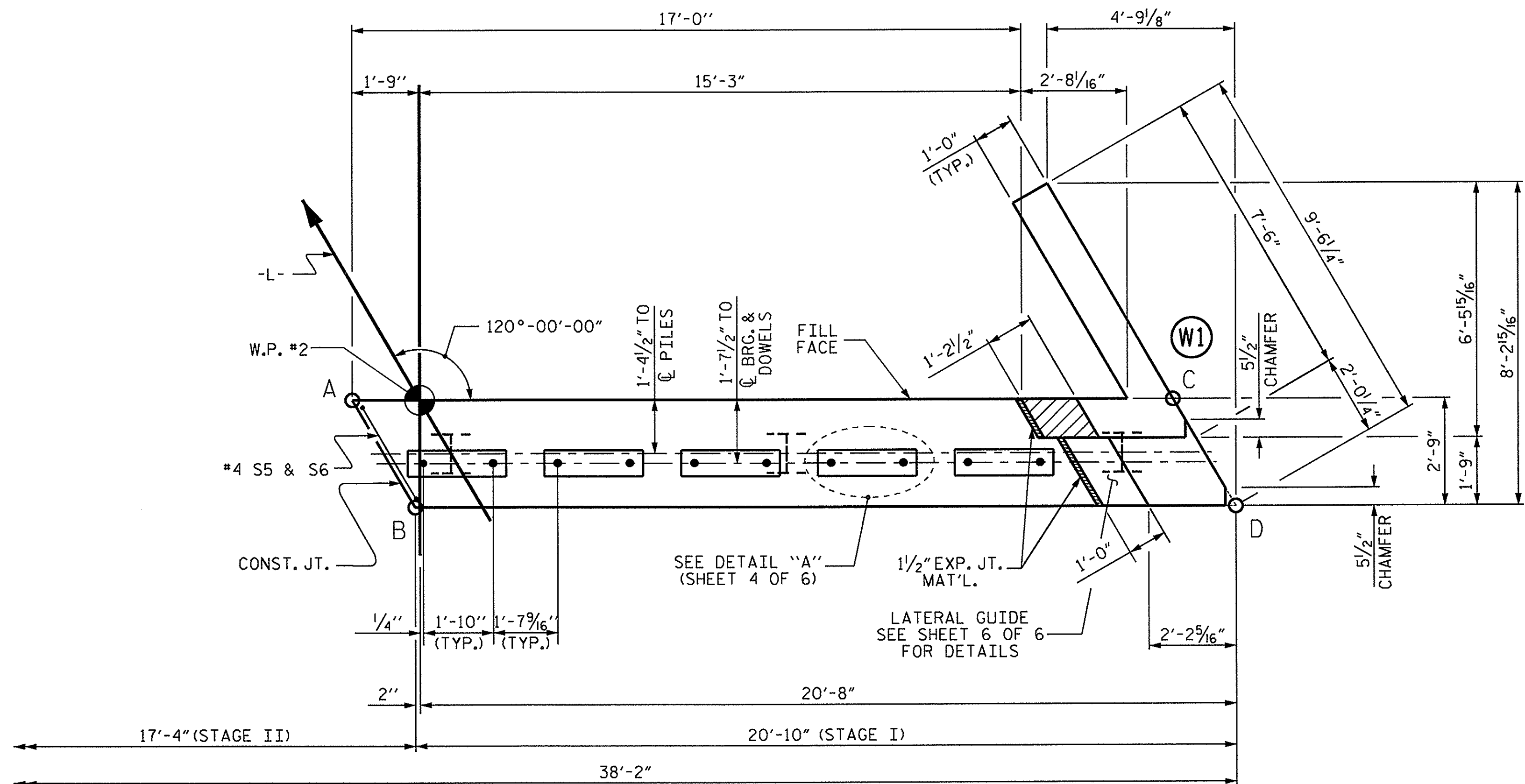
FOR PILE SPLICE DETAILS, SEE SHEET 6 OF 6.

FOR WING DETAILS, SEE SHEET 5 OF 6.

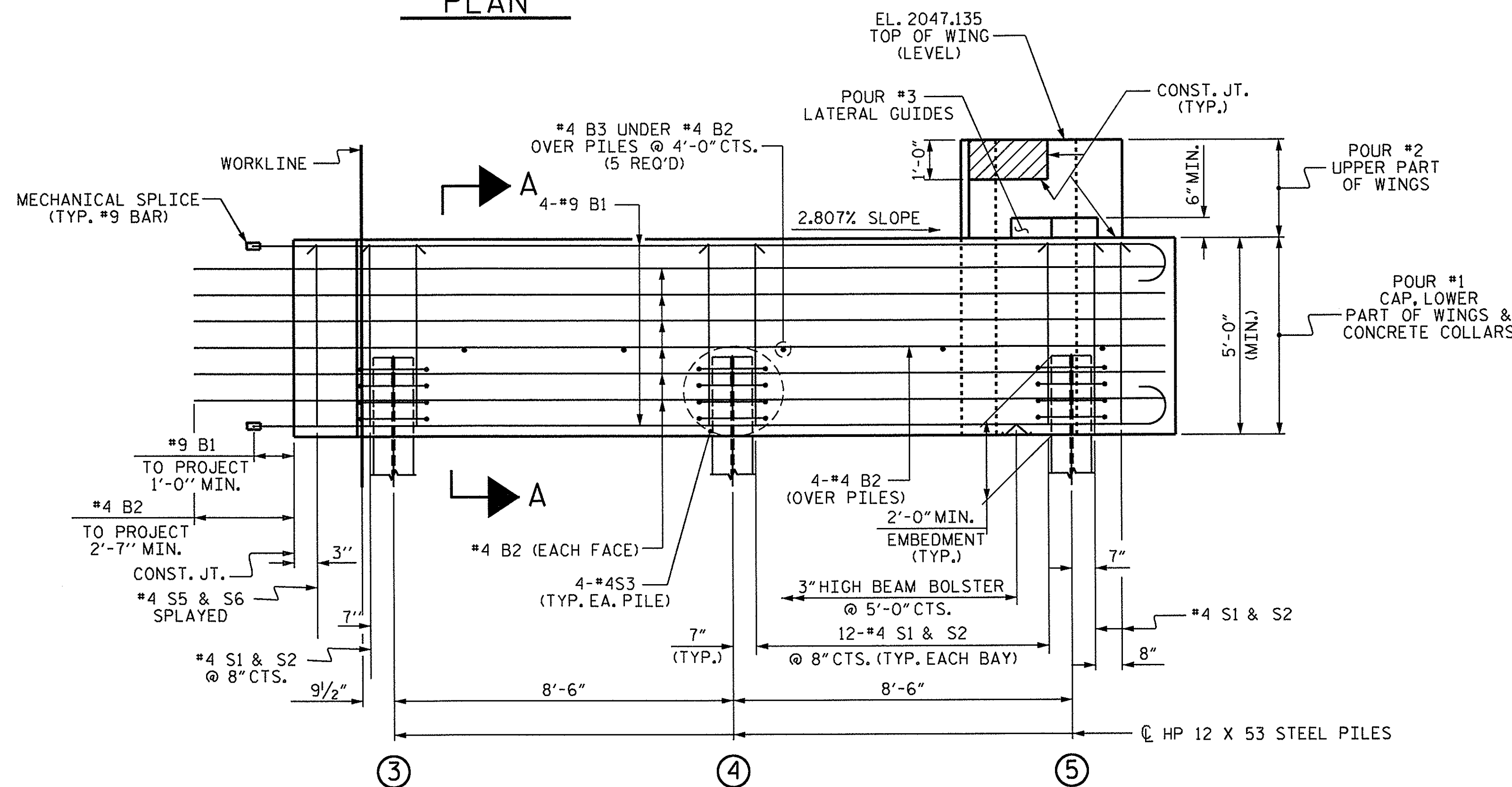
THE CONTRACTOR HAS THE OPTION TO OMIT THE LATERAL GUIDE IF APPROVED BY THE ENGINEER.

ELEVATIONS OF NOTED POINTS		
	TOP OF CAP	BOTTOM OF CAP
POINT A	2045.222	2040.222
POINT B	2045.177	2040.177
POINT C	2044.635	2039.635
POINT D	2044.590	2039.590

TOP OF PILE ELEVATIONS	
③	2042.160
④	2041.924
⑤	2041.685



PLAN



ELEVATION

FOR SECTION A-A, SEE SHEET 4 OF 6.
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.

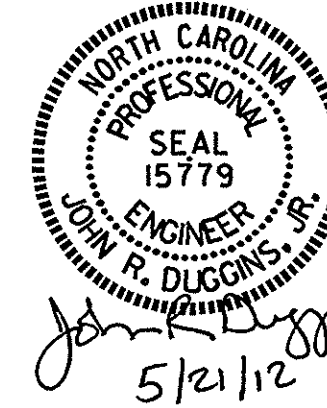
PROJECT NO. BD-5114K
CHEROKEE COUNTY
STATION: 15+41.50 -L-

SHEET 3 OF 6

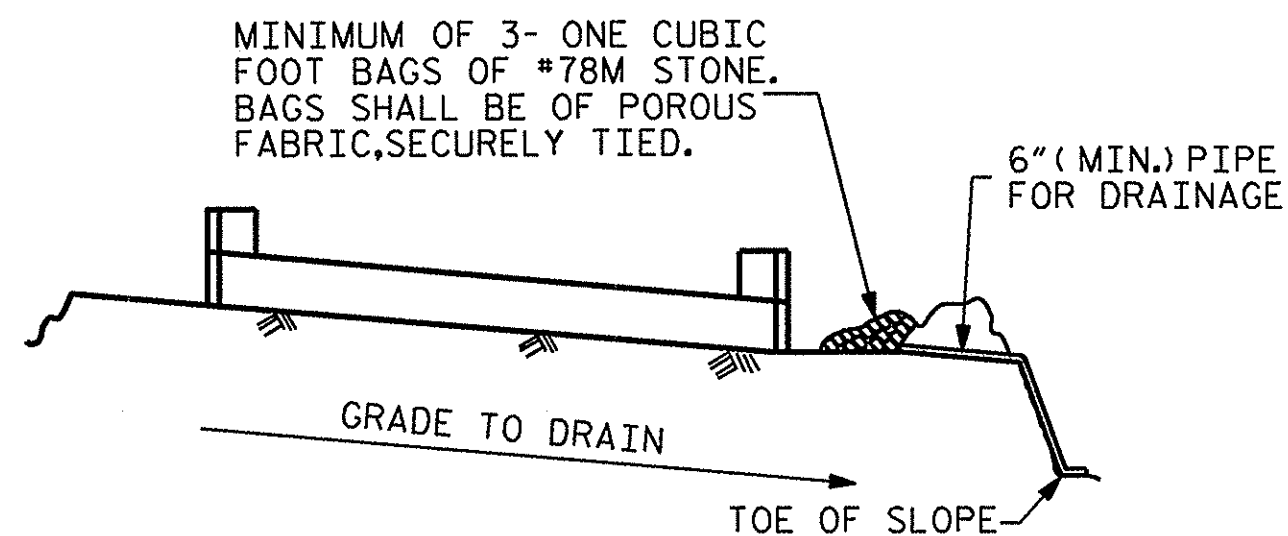
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE
END BENT No. 2
STAGE I

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S-14
2			4			TOTAL SHEETS 20



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

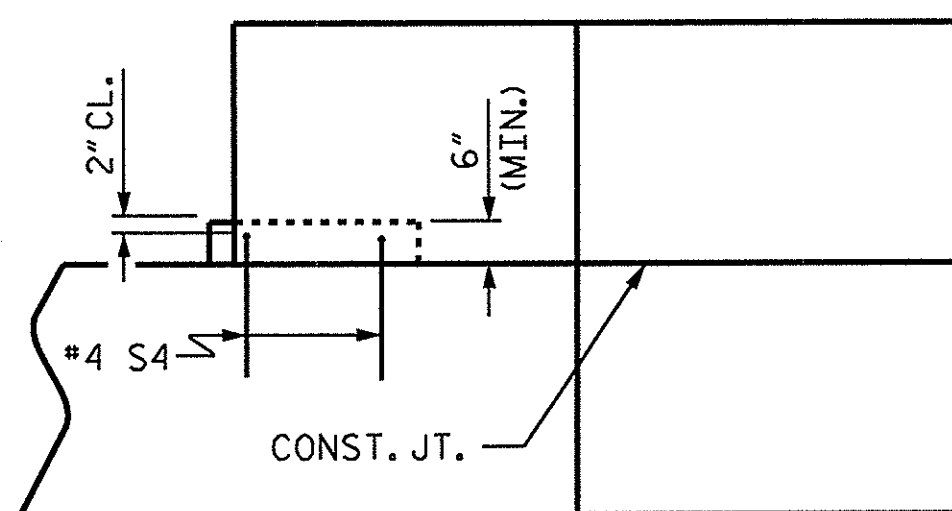


BAGGED STONE AND PIPE SHALL BE PLACED IMMEDIATELY AFTER COMPLETION OF END BENT EXCAVATION. PIPE MAY BE EITHER CONCRETE, CORRUGATED STEEL, CORRUGATED ALUMINUM ALLOY, OR CORRUGATED PLASTIC. PERFORATED PIPE WILL NOT BE ALLOWED.

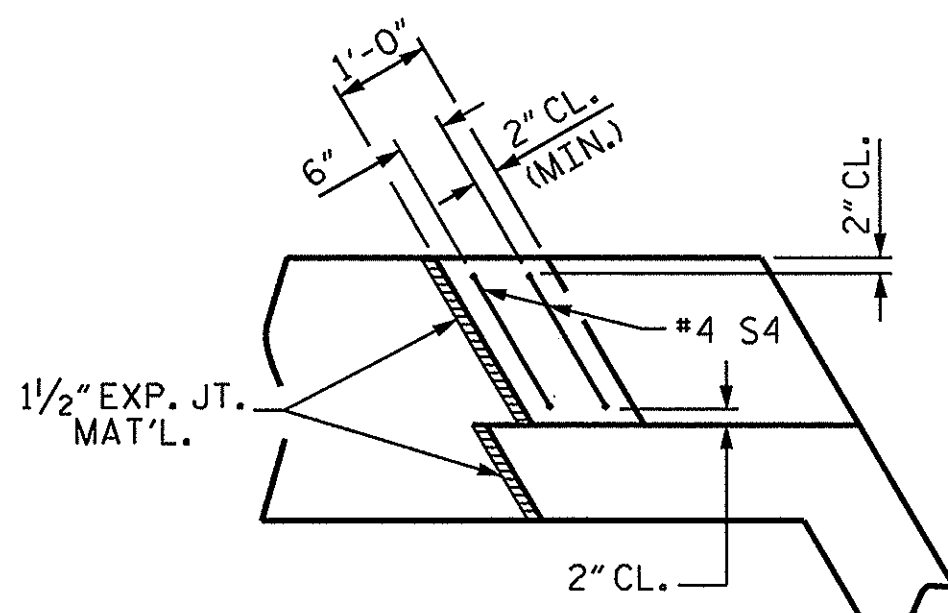
BAGGED STONE SHALL REMAIN IN PLACE UNTIL THE ENGINEER DIRECTS THAT IT BE REMOVED. THE CONTRACTOR SHALL REMOVE AND DISPOSE OF SILT ACCUMULATIONS AT BAGGED STONE WHEN SO DIRECTED BY THE ENGINEER. BAGS SHALL BE REMOVED AND REPLACED WHENEVER THE ENGINEER DETERMINES THAT THEY HAVE DETERIORATED AND LOST THEIR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



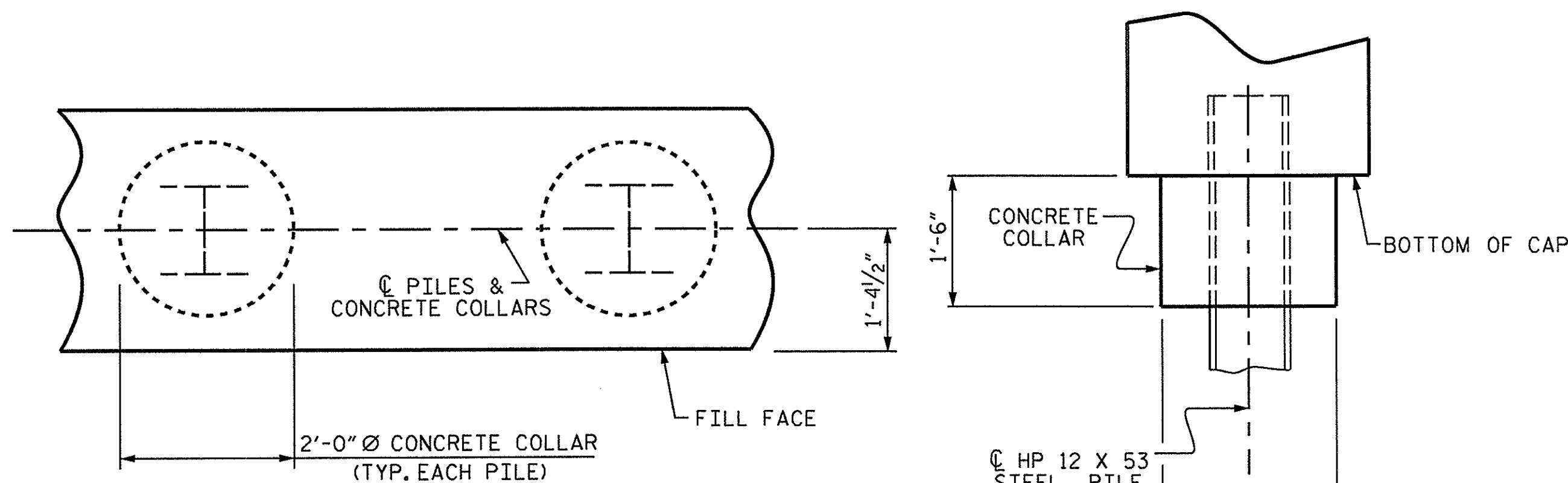
PLAN



ELEVATION

LATERAL GUIDE DETAILS

(END BENT No. 1, RIGHT LATERAL GUIDE SHOWN, LEFT END SIMILAR)
(END BENT No. 2 SIMILAR BY ROTATION)



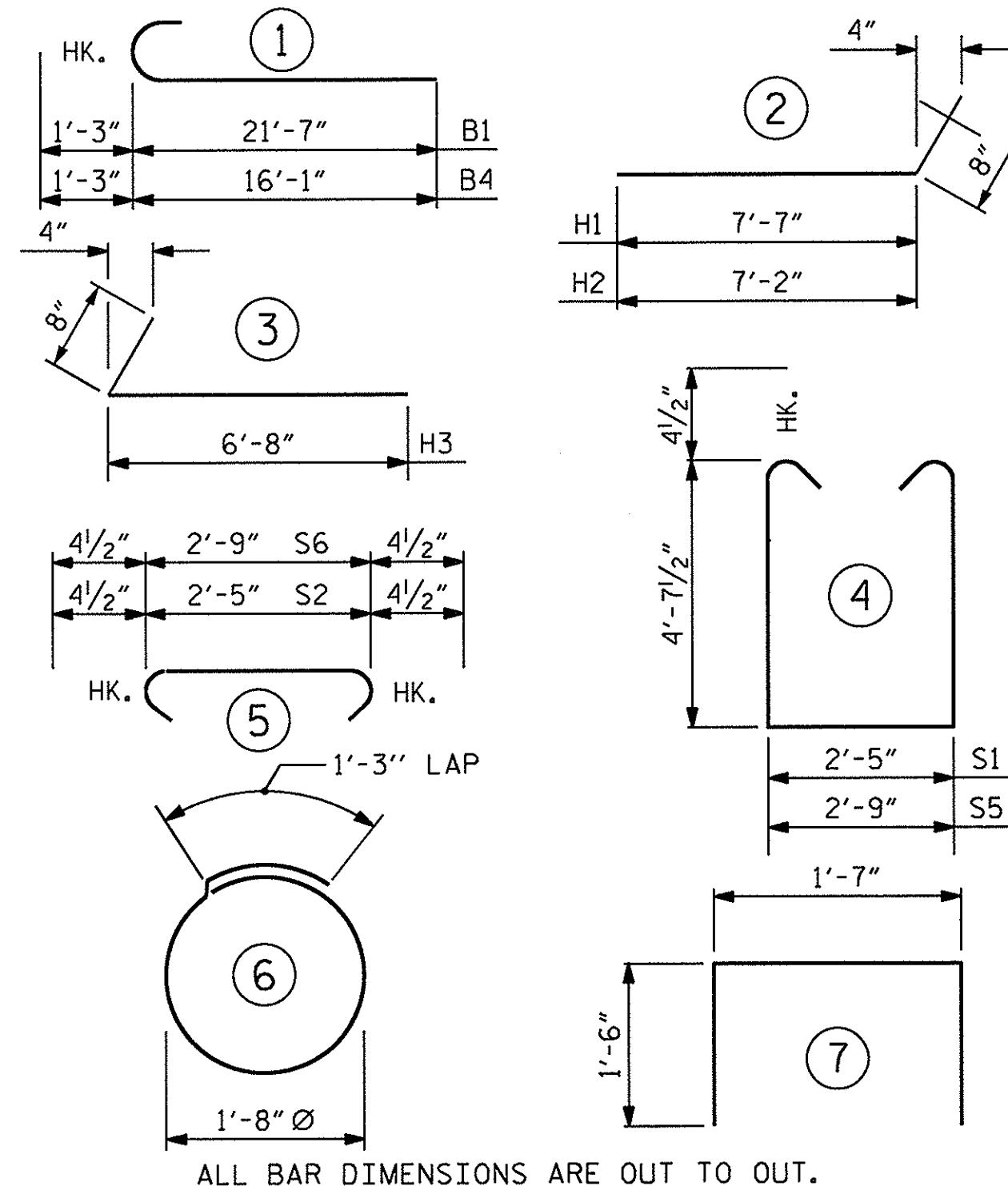
PLAN

ELEVATION

CORROSION PROTECTION FOR STEEL PILES DETAIL

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

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

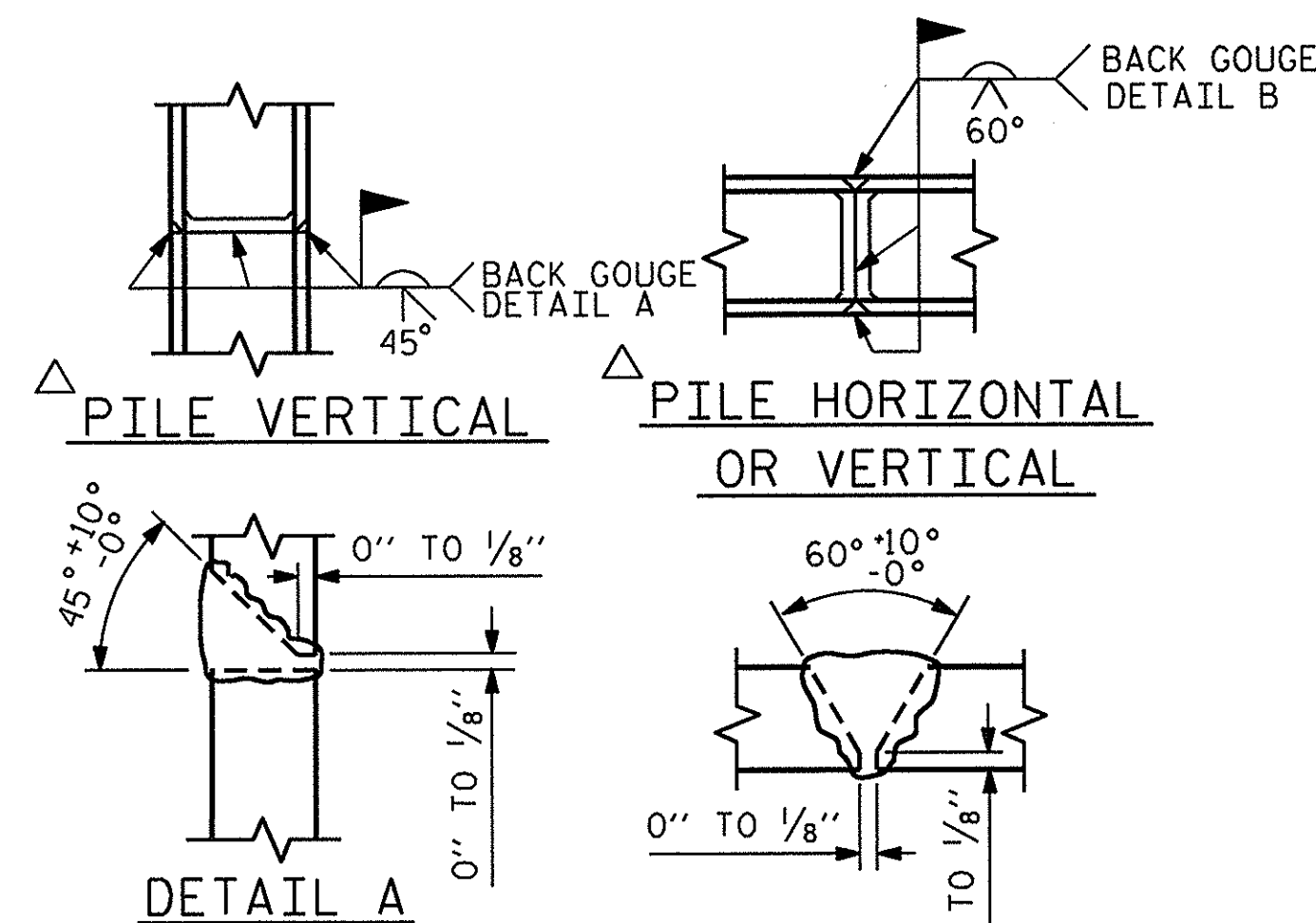
END BENT No. 1		END BENT No. 2	
HP 12 X 53 STEEL PILES		HP 12 X 53 STEEL PILES	
NO: 5		NO: 5	
LIN. FT.= 50		LIN. FT.= 50	
PILE EXCAVATION		PILE EXCAVATION	
IN SOIL		IN SOIL	
NOT IN SOIL		NOT IN SOIL	
0 LIN. FT.		6 LIN. FT.	
25 LIN. FT.		25 LIN. FT.	

BILL OF MATERIAL FOR ONE END BENT

STAGE I							STAGE II						
	BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT		BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
	B1	8	#9	1	22'-10"	621		B4	8	#9	1	17'-4"	471
	B2	16	#4	STR	23'-3"	248		B5	16	#4	STR	16'-11"	181
	B3	5	#4	STR	2'-5"	8		B3	5	#4	STR	2'-5"	8
	D1	10	#6	STR	1'-6"	23		D1	8	#6	STR	1'-6"	18
E. BT. #1	H1	9	#4	2	8'-3"	50	E. BT. #2	H1	9	#4	2	8'-3"	50
	H2	9	#4	2	7'-10"	47		H2	9	#4	2	7'-10"	47
	H3	18	#4	3	7'-4"	88		H3	18	#4	3	7'-4"	88
E. BT. #2	K1	6	#4	STR	3'-3"	13	E. BT. #1	K1	6	#4	STR	3'-3"	13
E. BT. #1	K2	6	#4	STR	3'-3"	13	E. BT. #2	K2	6	#4	STR	3'-3"	13
	S1	27	#4	4	12'-5"	224		S1	22	#4	4	12'-5"	182
	S2	27	#4	5	3'-2"	57		S2	22	#4	5	3'-2"	47
	S3	12	#4	6	6'-6"	52		S3	8	#4	6	6'-6"	35
	S4	2	#4	7	4'-7"	6		S4	2	#4	7	4'-7"	6
	S5	1	#4	4	12'-9"	9		S5	1	#4	4	12'-9"	9
	S6	1	#4	5	3'-6"	2		S6	1	#4	5	3'-6"	2
E. BT. #2	V1	23	#4	STR	7'-2"	110	E. BT. #1	V1	23	#4	STR	7'-2"	110
E. BT. #1	V2	24	#4	STR	7'-2"	115	E. BT. #2	V2	24	#4	STR	7'-2"	115
E. BT.#1 REINFORCING STEEL 1475 LBS.							E.BT.#1 REINFORCING STEEL 1170 LBS.						
E. BT.#2 REINFORCING STEEL 1461 LBS.							E.BT.#2 REINFORCING STEEL 1184 LBS.						
CLASS A CONCRETE BREAKDOWN							CLASS A CONCRETE BREAKDOWN						
POUR #1 CAP, LOWER PART OF WINGS & COLLARS					12.3 C.Y.		POUR #1 CAP, LOWER PART OF WINGS & COLLARS					10.4 C.Y.	
POUR #2 UPPER PART OF WINGS					1.0 C.Y.		POUR #2 UPPER PART OF WINGS					0.9 C.Y.	
POUR #3 LATERAL GUIDES					0.1 C.Y.		POUR #3 LATERAL GUIDES					0.1 C.Y.	
TOTAL CLASS A CONCRETE					13.4 C.Y.		TOTAL CLASS A CONCRETE					11.4 C.Y.	

TOTAL BILL OF MATERIAL

	CLASS A CONCRETE CU. YDS.	REINFORCING STEEL LBS.	HP 12X53 STEEL PILES NO.	STEEL PILES LIN. FT.	PILE EXCAVATION IN SOIL LIN. FT.	PILE EXCAVATION NOT IN SOIL LIN. FT.
E. BT. #1	24.8	2645	5	50	0	25
E. BT. #2	24.8	2645	5	50	6	25
TOTAL	49.6	5290	10	100	6	50



POSITION OF PILE DURING WELDING.

PILE SPLICE DETAILS

PROJECT NO. BD-5114K
CHEROKEE COUNTY
STATION: 15+41.50 -L-

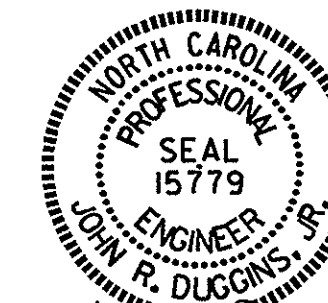
SHEET 6 OF 6

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

END BENT No. 1 & 2
DETAILS

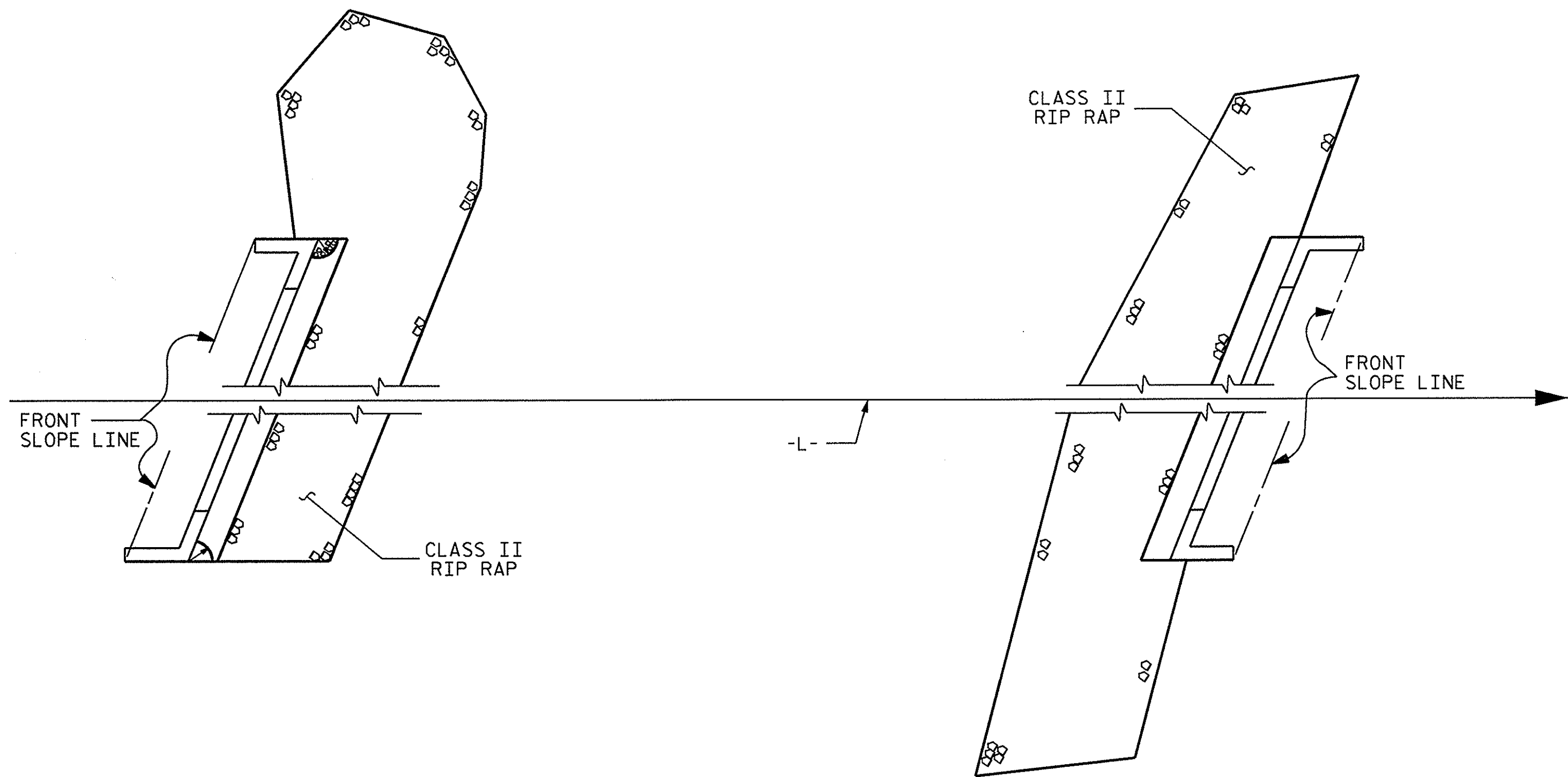
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S-17
2			4			TOTAL SHEETS 20



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

NOTES :
PLACE RIP RAP ON ALL EXCAVATED AREAS

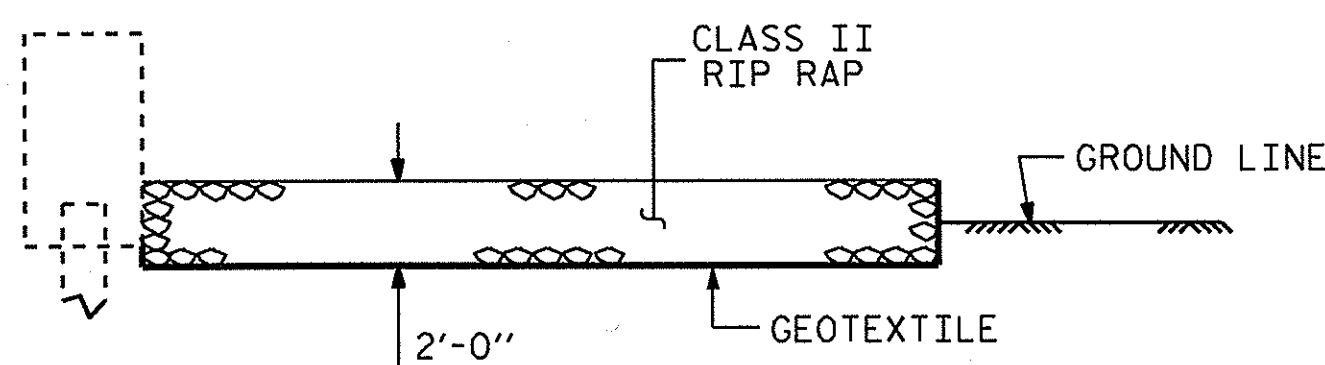
ESTIMATED QUANTITIES		
BRIDGE @ STA. 15+41.50	RIP RAP CLASS II (2'-0" THICK)	GEOTEXTILE FOR DRAINAGE
	TONS	SQUARE YARDS
END BENT 1	40	45
END BENT 2	60	67



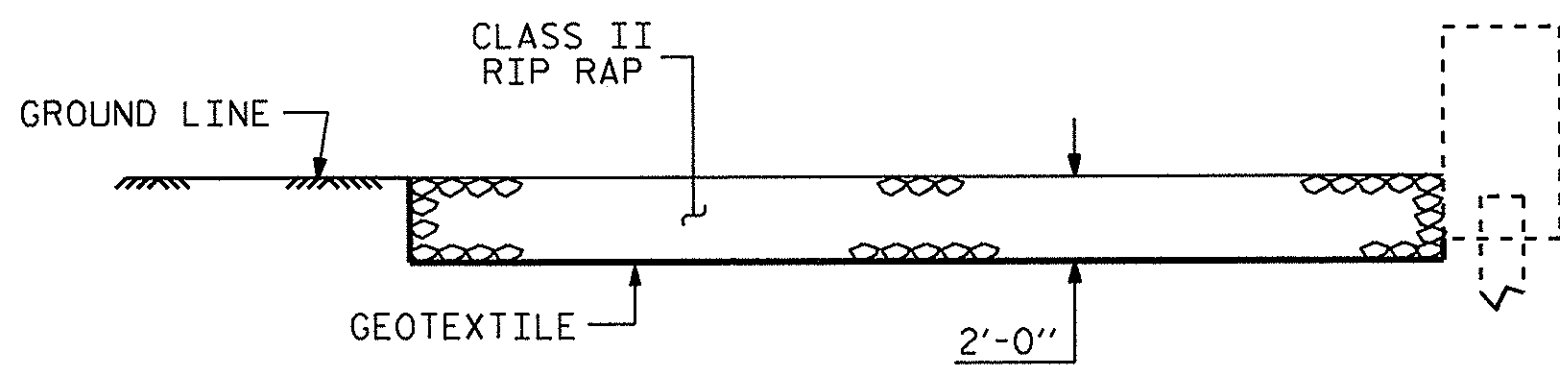
END BENT #1

END BENT #2

PLAN



SECTION @ END BENT #1



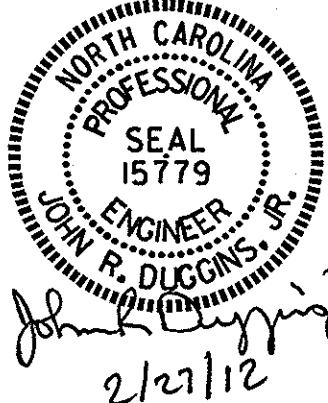
SECTION @ END BENT #2

BERM RIP RAPPED

PROJECT NO. BD-5114K
CHEROKEE COUNTY
STATION: 15+41.50 -L-

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

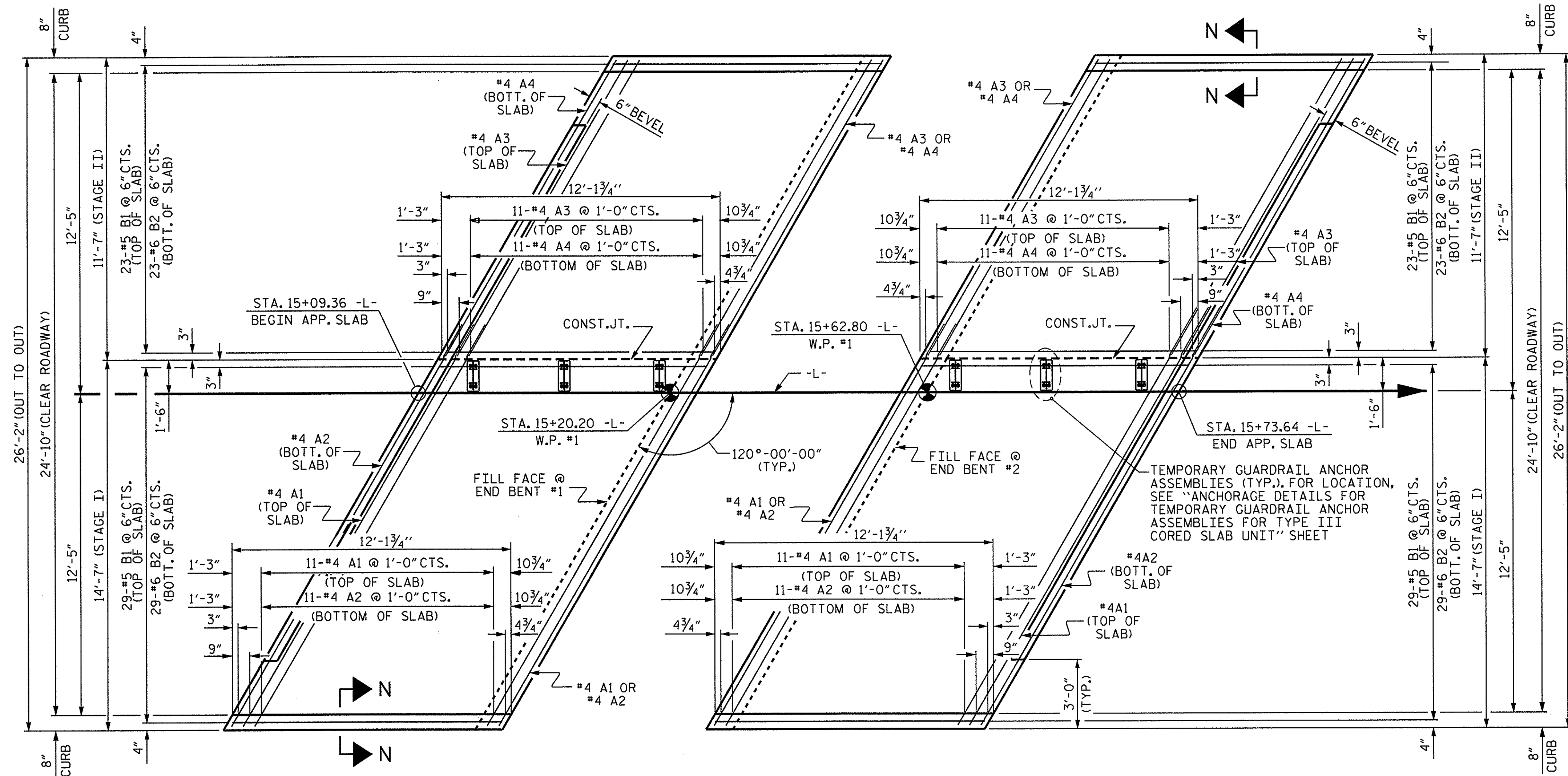
== RIP RAP DETAILS ==



ASSEMBLED BY : A. SORSENGINH	DATE : 10/2011
CHECKED BY : J. R. DUGGINS	DATE : 2/12
DRAWN BY : REK 1/84	REV. 8/16/99 RWW/LES
CHECKED BY : RDU 1/84	REV. 10/17/00 RWW/LES
	REV. 5/1/06R TLA/GM

27-FEB-2012 15:22
S:\DPG4\John\LIBR_Files\BD-5114K\Final_Plans\BD-5114K_SD_RR.dgn
jduggins

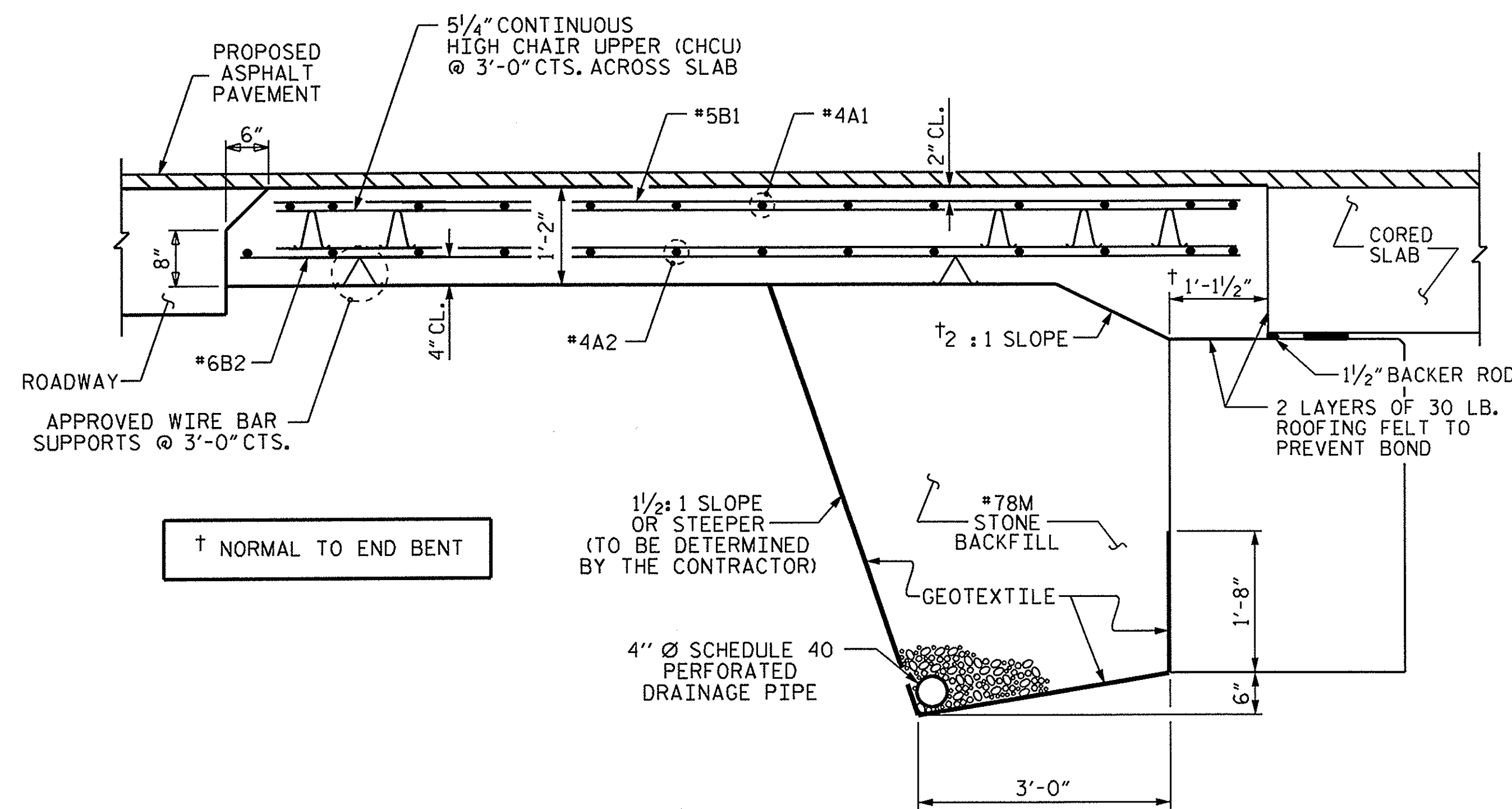
REVISIONS						SHEET NO. 5-18
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 20
2			4			



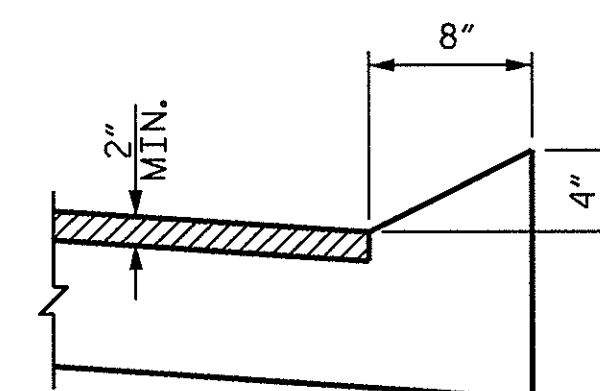
PLAN @ END BENT #1

PLAN @ END BENT #2

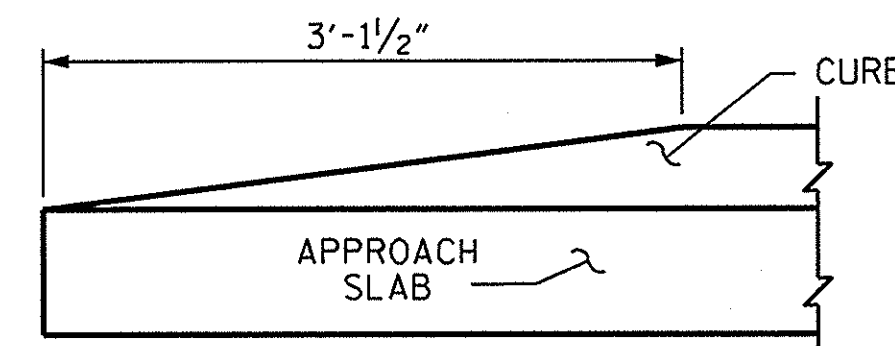
DIMENSIONS SHOWN ARE TYPICAL FOR BOTH APPROACH SLABS



SECTION THRU SLAB



SECTION N-N



END OF CURB WITHOUT SHOULDER BERM GUTTER

CURB DETAILS

BILL OF MATERIAL											
APPROACH SLAB AT E.B.T. 1 STAGE I						APPROACH SLAB AT E.B.T. 2 STAGE I					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
*A1	13	#4	STR	18'-10"	164	*A1	13	#4	STR	18'-10"	164
A2	13	#4	STR	18'-7"	161	A2	13	#4	STR	18'-7"	161
*B1	29	#5	STR	11'-1"	335	*B1	29	#5	STR	11'-1"	335
B2	29	#6	STR	11'-7"	504	B2	29	#6	STR	11'-7"	504
REINFORCING STEEL					LBS. 665	REINFORCING STEEL					LBS. 665
*EPOXY COATED REINFORCING STEEL					LBS. 499	*EPOXY COATED REINFORCING STEEL					LBS. 499
CLASS AA CONCRETE					C. Y. 8.6	CLASS AA CONCRETE					C. Y. 8.6
APPROACH SLAB AT E.B.T. 1 STAGE II						APPROACH SLAB AT E.B.T. 2 STAGE II					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
*A3	13	#4	STR	13'-1"	114	*A3	13	#4	STR	13'-1"	114
A4	13	#4	STR	13'-1"	114	A4	13	#4	STR	13'-1"	114
*B1	23	#5	STR	11'-1"	266	*B1	23	#5	STR	11'-1"	266
B2	23	#6	STR	11'-7"	400	B2	23	#6	STR	11'-7"	400
REINFORCING STEEL					LBS. 514	REINFORCING STEEL					LBS. 514
*EPOXY COATED REINFORCING STEEL					LBS. 380	*EPOXY COATED REINFORCING STEEL					LBS. 380
CLASS AA CONCRETE					C. Y. 6.8	CLASS AA CONCRETE					C. Y. 6.8

* 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-5114K
CHEROKEE COUNTY
STATION: 15+41.50 -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						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			3-19
2			4			TOTALS 20

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

27-FEB-2012 14:42
S:\DPG4\John\LIBR_Files\BD-5114K\Final Plans\BD-5114K_SD_AS.dgn
jduggins

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.

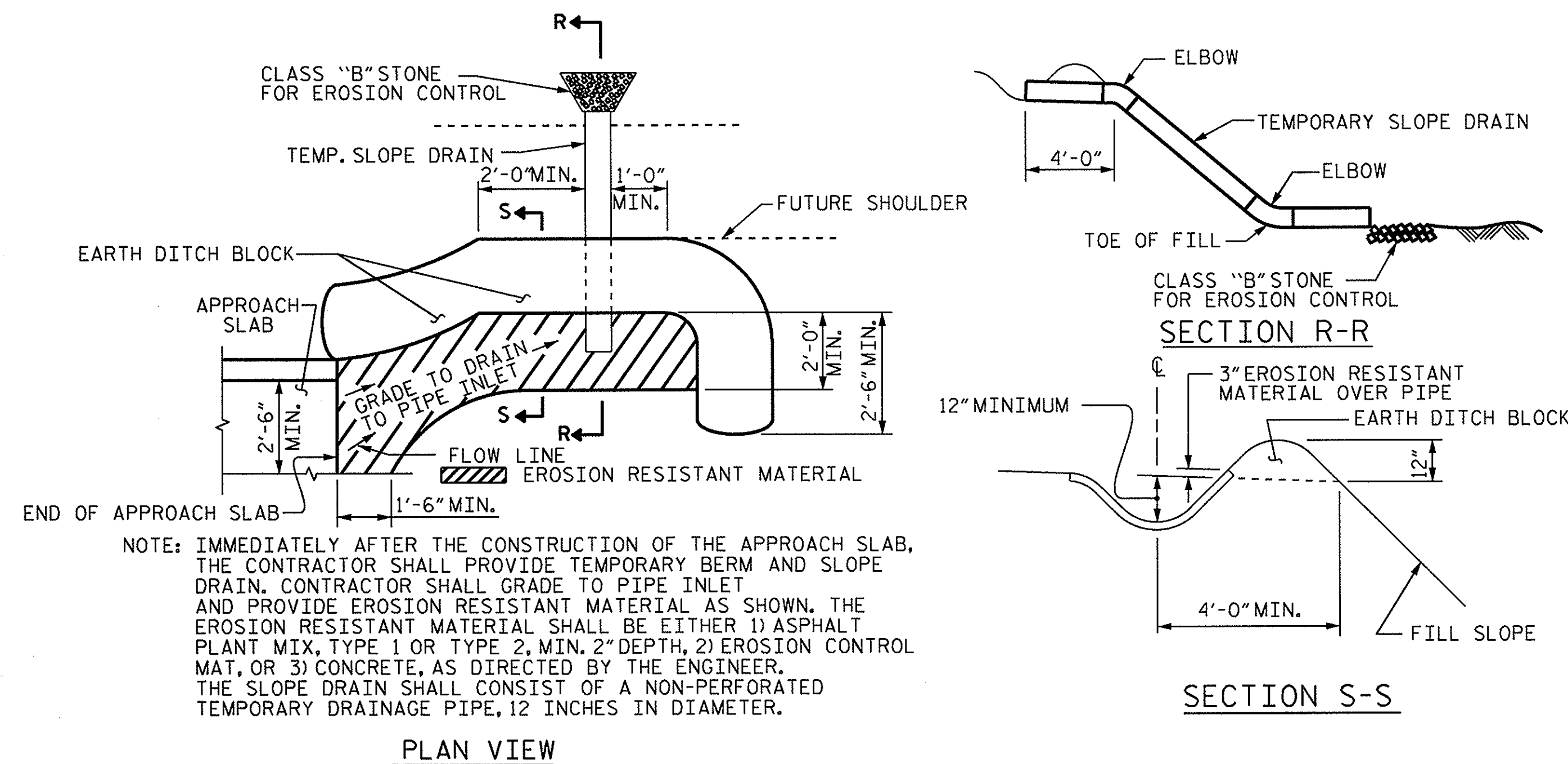
#78M STONE BACKFILL (CLASS V SELECT MATERIAL) SHALL BE IN ACCORDANCE WITH STANDARD SPECIFICATIONS SECTION 1016.

#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.

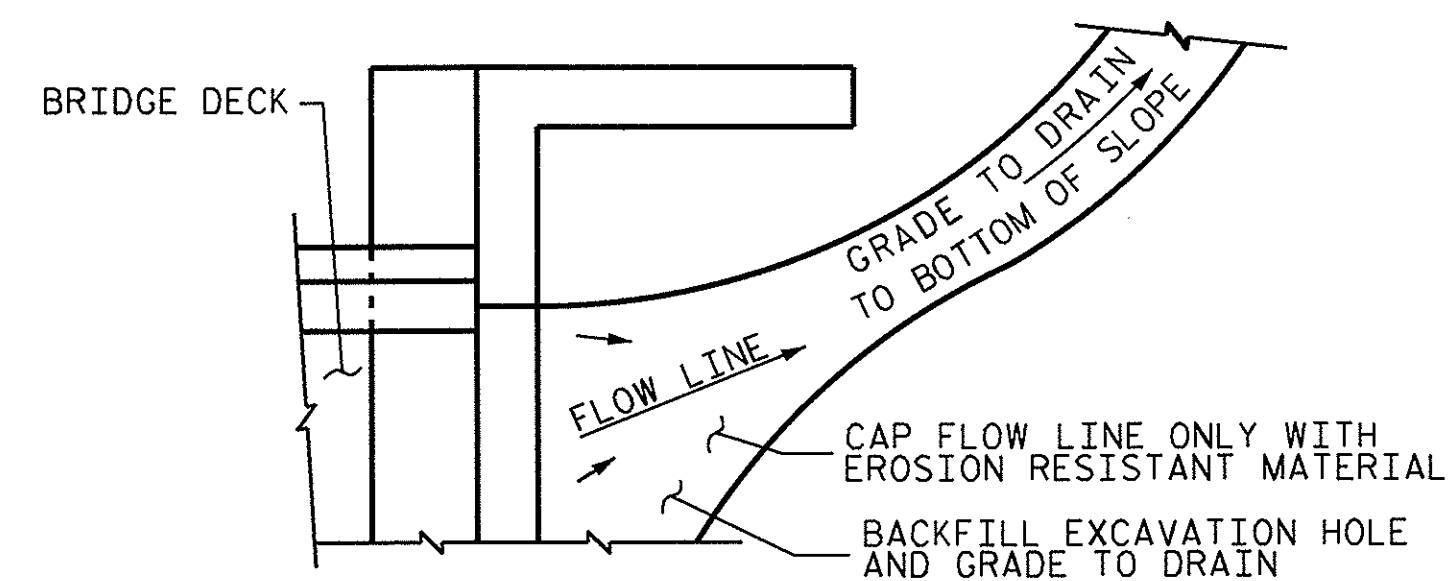
AREA BETWEEN THE WINGWALL AND APPROACH SLAB SHALL BE GRADED TO DRAIN THE WATER AWAY FROM THE FILL FACE OF THE BRIDGE AND SHALL BE PAVED. SEE ROADWAY PLANS.

APPROACH SLAB GROOVING IS NOT REQUIRED.



TEMPORARY BERM AND SLOPE DRAIN DETAILS

(TO BE USED WHEN SHOULDER BERM GUTTER IS REQUIRED)



PROJECT NO. BD-5114K
CHEROKEE COUNTY
 STATION: 15+41.50 -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:	TOTAL SHEETS
1			3			20
2			4			20



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

27-FEB-2012 14:41
 S:\DPC4\John\LIBR_Files\BD-5114K\FinalPlans\BD-5114K_SD_AS.dgn
 jduggins

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.