

09/08/99

See Sheet 1-A For Index of Sheets
See Sheet 1-B For Conventional Symbols
See Sheet 1-C For Survey Control Sheet

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

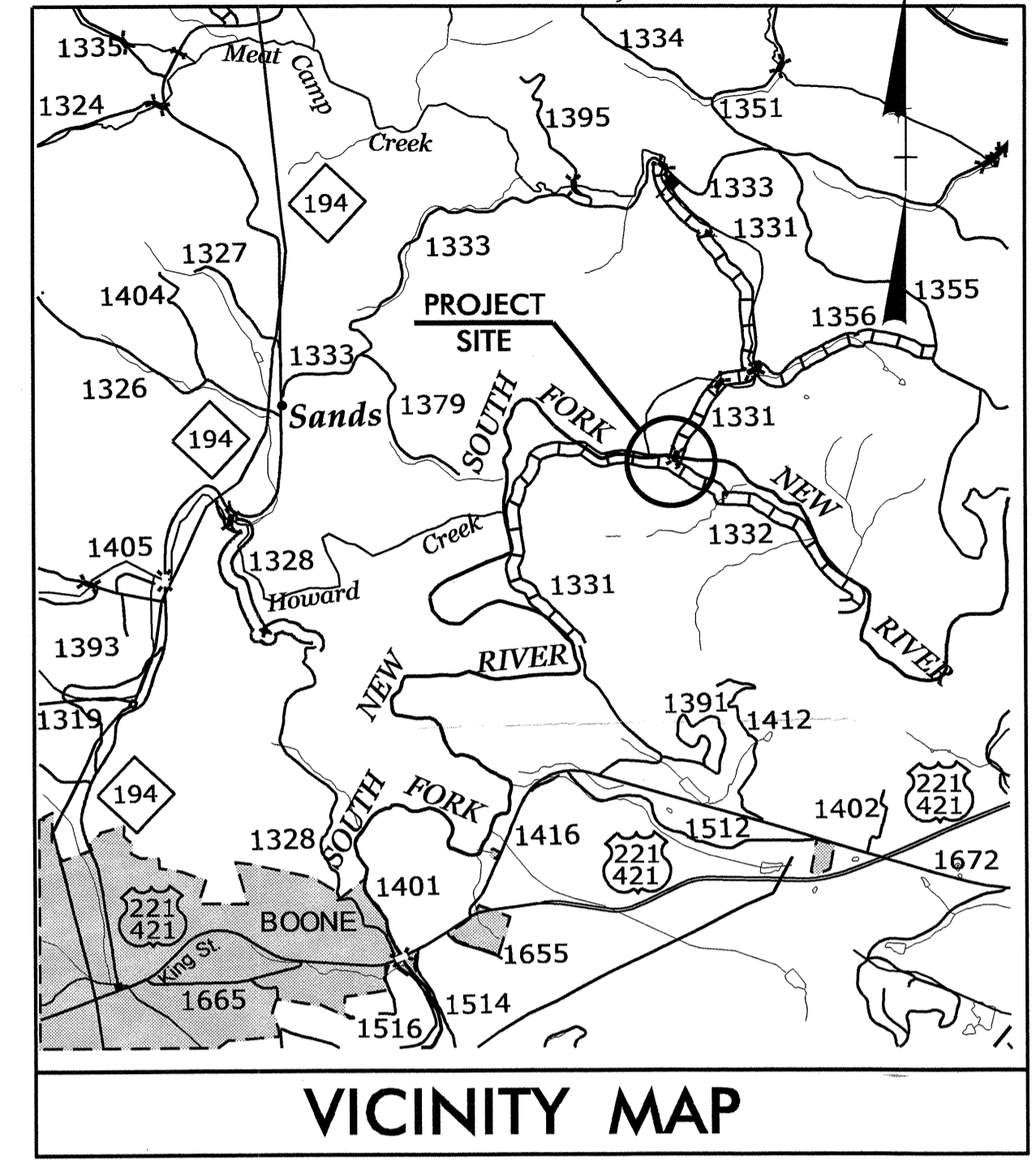
WATAUGA COUNTY

LOCATION: BRIDGE NO. 59 OVER THE SOUTH FORK
OF THE NEW RIVER ON SR 1331

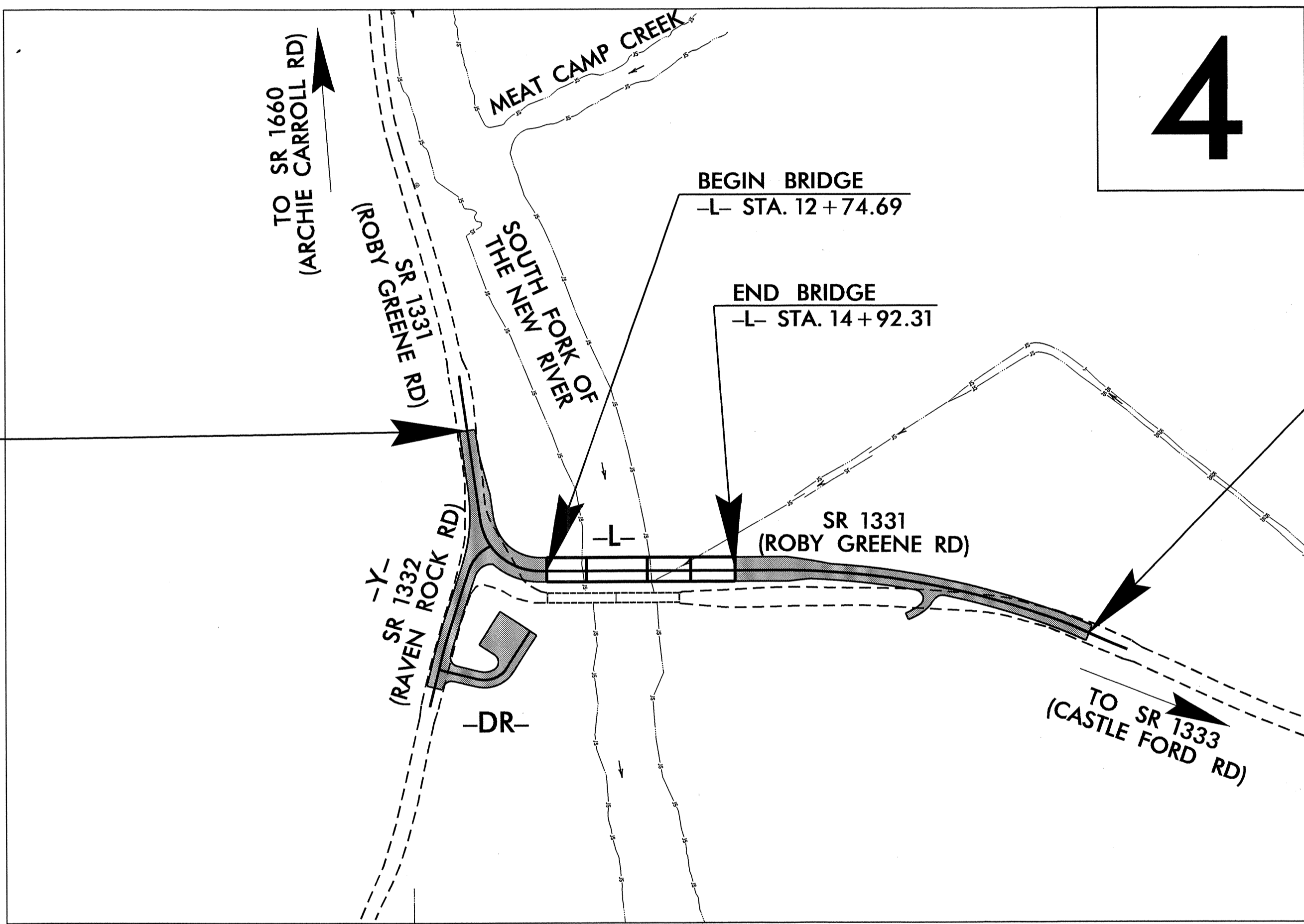
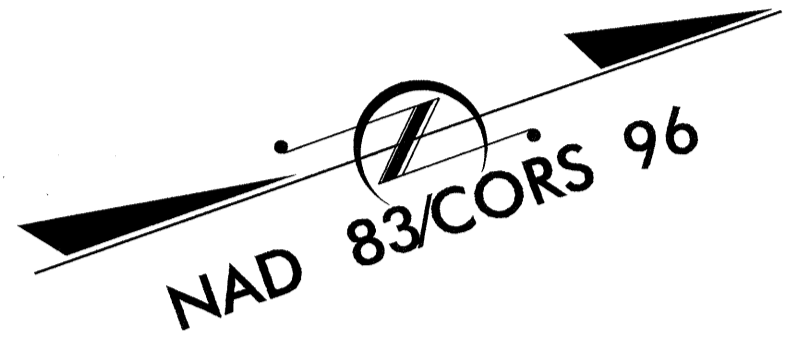
TYPE OF WORK: GRADING, DRAINAGE, PAVING, AND STRUCTURE

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4836	1	
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION	
38606.1.1	BRZ-1331(12)	P.E.	
38606.2.1	BRZ-1331(12)	RW & UTIL.	
38606.3.1	BRZ-1331(12)	CONST.	

TIP PROJECT: B-4836



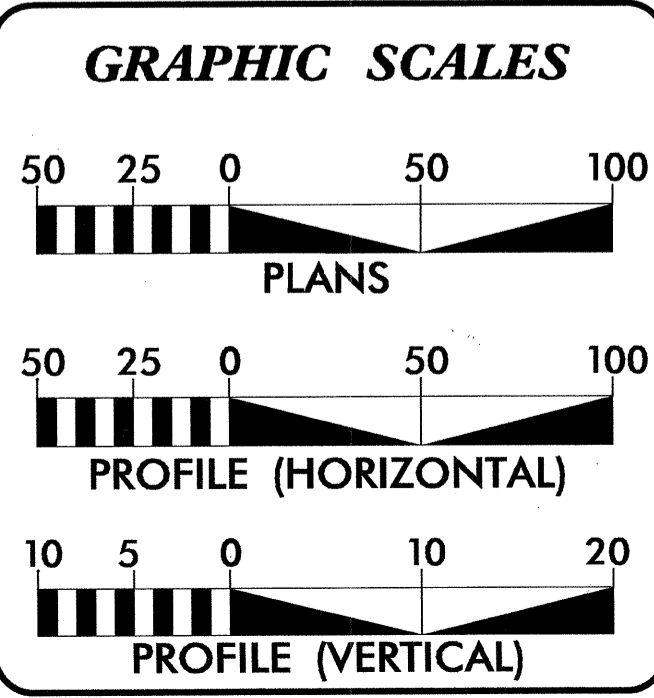
VICINITY MAP



BEGIN TIP PROJECT B-4836
-L- STA. 10+65.00

END TIP PROJECT B-4836
-L- STA. 19+10.00

CONTRACT: C203034



DESIGN DATA

ADT 2013 =	115
ADT 2033 =	195
DHV =	10 %
D =	60 %
T =	5 % *
V =	20 MPH
* (TTST = 2% + DUAL 3%)	
FUNC CLASS =	RURAL LOCAL
SUBREGIONAL TIER	

PROJECT LENGTH

LENGTH OF ROADWAY TIP PROJECT B-4836 =	0.119 MI
LENGTH OF STRUCTURES TIP PROJECT B-4836 =	0.041 MI
TOTAL LENGTH OF TIP PROJECT B-4836 =	0.160 MI

Prepared In the Office of:
DIVISION OF HIGHWAYS
1000 Birch Ridge Dr., Raleigh NC, 27610

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: DECEMBER 19, 2011

LETTING DATE: JANUARY 15, 2013

BRENDA MOORE, PE
PROJECT ENGINEER

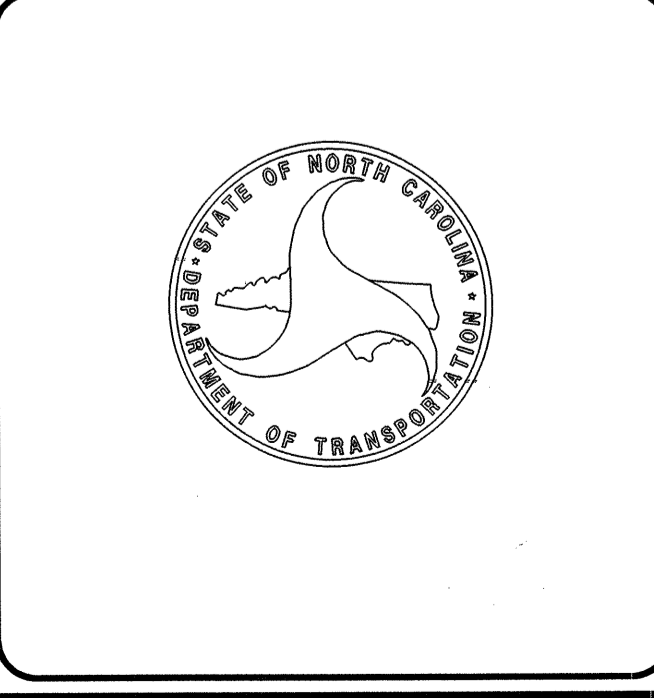
TATIA L. WHITE, PE
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

Paul A. White
10/22/11

ROADWAY DESIGN ENGINEER

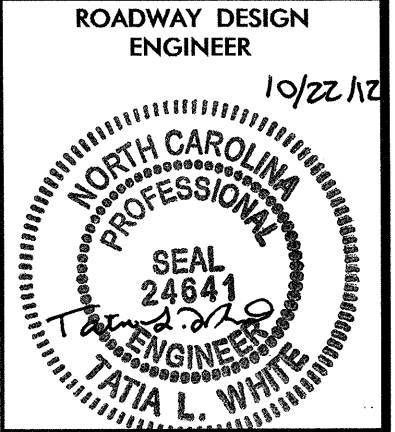
Tatiana L. White
10/22/11



08-OCT-2012 14:12 P:\PROJECTS\B4836_Rdy_tsh.dgn

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PROJECT REFERENCE NO.	SHEET NO.
B-4836	1-A
RW SHEET NO.	



INDEX OF SHEETS

SHEET NUMBER	SHEET
1	TITLE SHEET
1-A	INDEX OF SHEETS, GENERAL NOTES, & LIST OF STANDARD DRAWINGS
1-B	CONVENTIONAL SYMBOLS
1-C THROUGH 1-D	SURVEY CONTROL SHEETS
1-E	CENTERLINE COORDINATE LIST
2	PAVEMENT SCHEDULE & TYPICAL SECTIONS
2-A	RECREATION ACCESS AREA (-DR-) DETAIL
2-B	TEMPORARY SHORING & TEMPORARY GUARDRAIL DETAIL
2-C	TEMPORARY W-BEAM ANCHOR DETAIL
2-D	TYPE III- SHOP CURVED STRUCTURE ANCHOR UNIT
2-E	TEMPORARY SHORING DETAILS
3	SUMMARY OF QUANTITIES
3-A	DRAINAGE SUMMARY
3-B	EARTHWORK SUMMARY, GUARDRAIL SUMMARY, & SHOULDER BERM GUTTER SUMMARY
4	PLAN SHEET
5	PROFILE SHEET
TMP-1 THROUGH TMP-5	TRAFFIC MANAGEMENT PLANS
PM-1 THROUGH PM-2	PAVEMENT MARKING PLANS
EC-1 THROUGH EC-6	EROSION CONTROL PLANS
RF-1 THROUGH RF-3	REFORESTATION DETAILS
SIGN-1 THROUGH SIGN-4	SIGNING PLANS
X-1 THROUGH X-13	CROSS-SECTIONS
S-1 THROUGH S-27	STRUCTURE PLANS

STANDARD DRAWINGS

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

STD.NO.	TITLE
DIVISION 2 - EARTHWORK	
200.03	Method of Clearing - Method III
225.02	Guide for Grading Subgrade - Secondary and Local
225.04	Method of Obtaining Superelevation - Two Lane Pavement
225.06	Method of Grading Sight Distance at Intersections
DIVISION 3 - PIPE CULVERTS	
300.01	Method of Pipe Installation
310.10	Driveway Pipe Construction
DIVISION 4 - MAJOR STRUCTURES	
422.11	Reinforced Bridge Approach Fills - Sub Regional Tier
DIVISION 5 - SUBGRADE, BASES AND SHOULDERS	
560.01	Method of Shoulder Construction - High Side of Superelevated Curve - Method I
DIVISION 8 - INCIDENTALS	
815.03	Pipe Underdrain and Blind Drain
840.00	Concrete Base Pad for Drainage Structures
840.18	Concrete Grated Drop Inlet Type 'B' - 12" thru 36" Pipe
840.25	Anchorage for Frames - Brick or Concrete or Precast
840.27	Brick Grated Drop Inlet Type 'B' - 12" thru 36" Pipe
840.29	Frames and Narrow Slot Flat Grates
840.45	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
876.01	Rip Rap in Channels
876.02	Guide for Rip Rap at Pipe Outlets

GENERAL NOTES

EFFECTIVE: 01-17-12
REVISED: 07-30-12

GRADE LINE:
GRADING AND SURFACING:

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

CLEARING:

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

SUPERELEVATION:

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

SHOULDER CONSTRUCTION:

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

SIDE ROADS:

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

UNDERDRAINS:

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

GUARDRAIL:

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

TEMPORARY SHORING:

SHORING REQUIRED FOR THE MAINTENANCE OF TRAFFIC NOT SHOWN ON THE PLANS WILL BE PAID FOR AT THE CONTRACT PRICE FOR "TEMPORARY SHORING".

SUBSURFACE PLANS:

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

END BENTS:

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

UTILITIES:

UTILITY OWNERS ON THIS PROJECT ARE:

* Blue Ridge EMC

* Southern Bell

RIGHT-OF-WAY MARKERS:

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

Note: Not to Scale

*S.U.E. = Subsurface Utility Engineering

CONVENTIONAL PLAN SHEET SYMBOLS

BOUNDARIES AND PROPERTY:

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

BUILDINGS AND OTHER CULTURE:

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

HYDROLOGY:

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

RAILROADS:

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

RIGHT OF WAY:

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

ROADS AND RELATED FEATURES:

Existing Edge of Pavement	-----
Existing Curb	-----
Proposed Slope Stakes Cut	----- C
Proposed Slope Stakes Fill	----- F
Proposed Curb Ramp	----- CR
Existing Metal Guardrail	-----
Proposed Guardrail	-----
Existing Cable Guiderail	-----
Proposed Cable Guiderail	-----
Equality Symbol	⊕
Pavement Removal	-----

VEGETATION:

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

Orchard	-----
Vineyard	----- Vineyard

EXISTING STRUCTURES:

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

UTILITIES:

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

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	----- T
Designated U/G Telephone Cable (S.U.E.*)	----- T
Recorded U/G Telephone Conduit	----- TC
Designated U/G Telephone Conduit (S.U.E.*)	----- TC
Recorded U/G Fiber Optics Cable	----- T FO
Designated U/G Fiber Optics Cable (S.U.E.*)	----- T FO

WATER:

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

TV:

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

GAS:

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

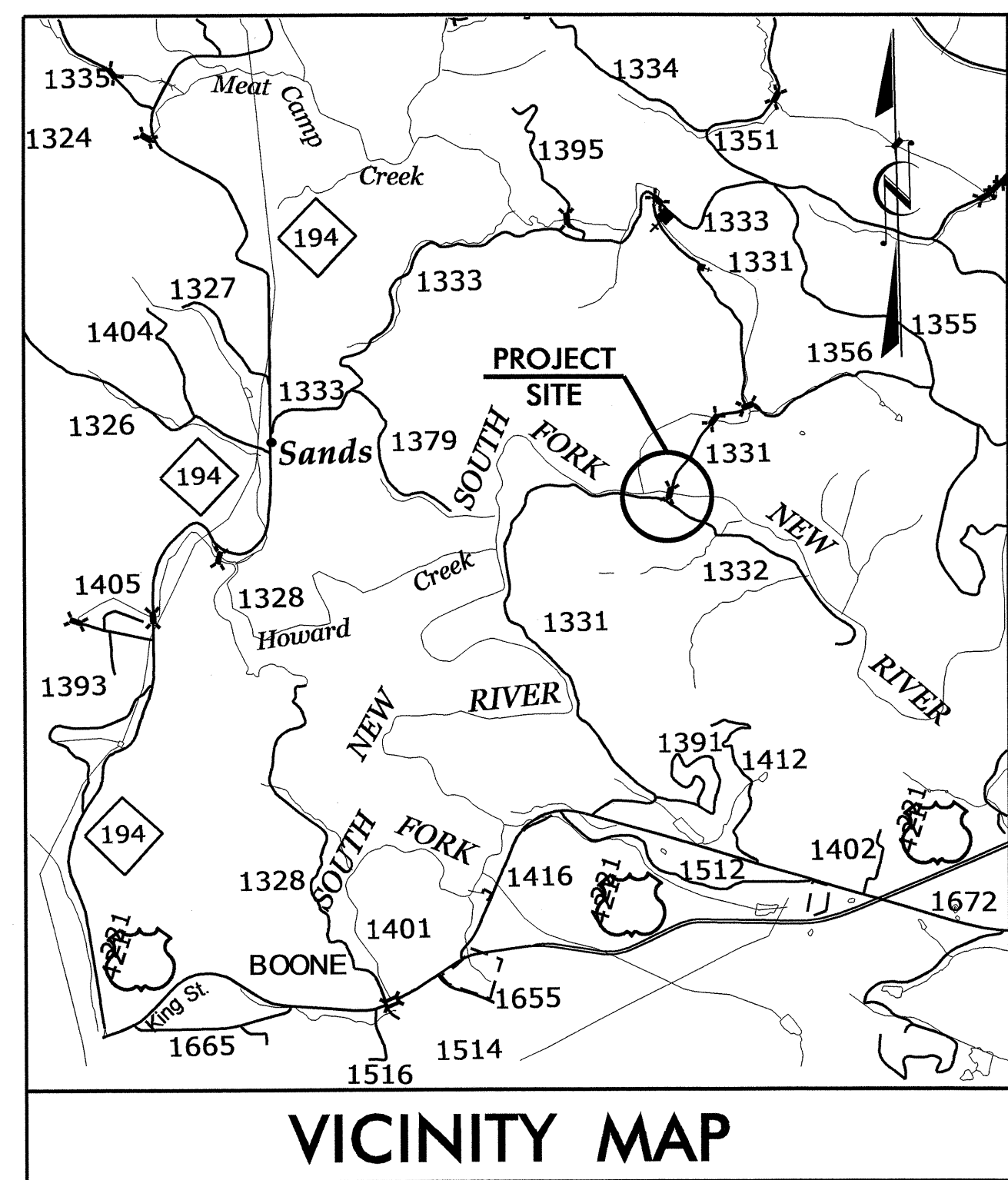
SANITARY SEWER:

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

MISCELLANEOUS:

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

SURVEY CONTROL SHEET B-4836



VICINITY MAP

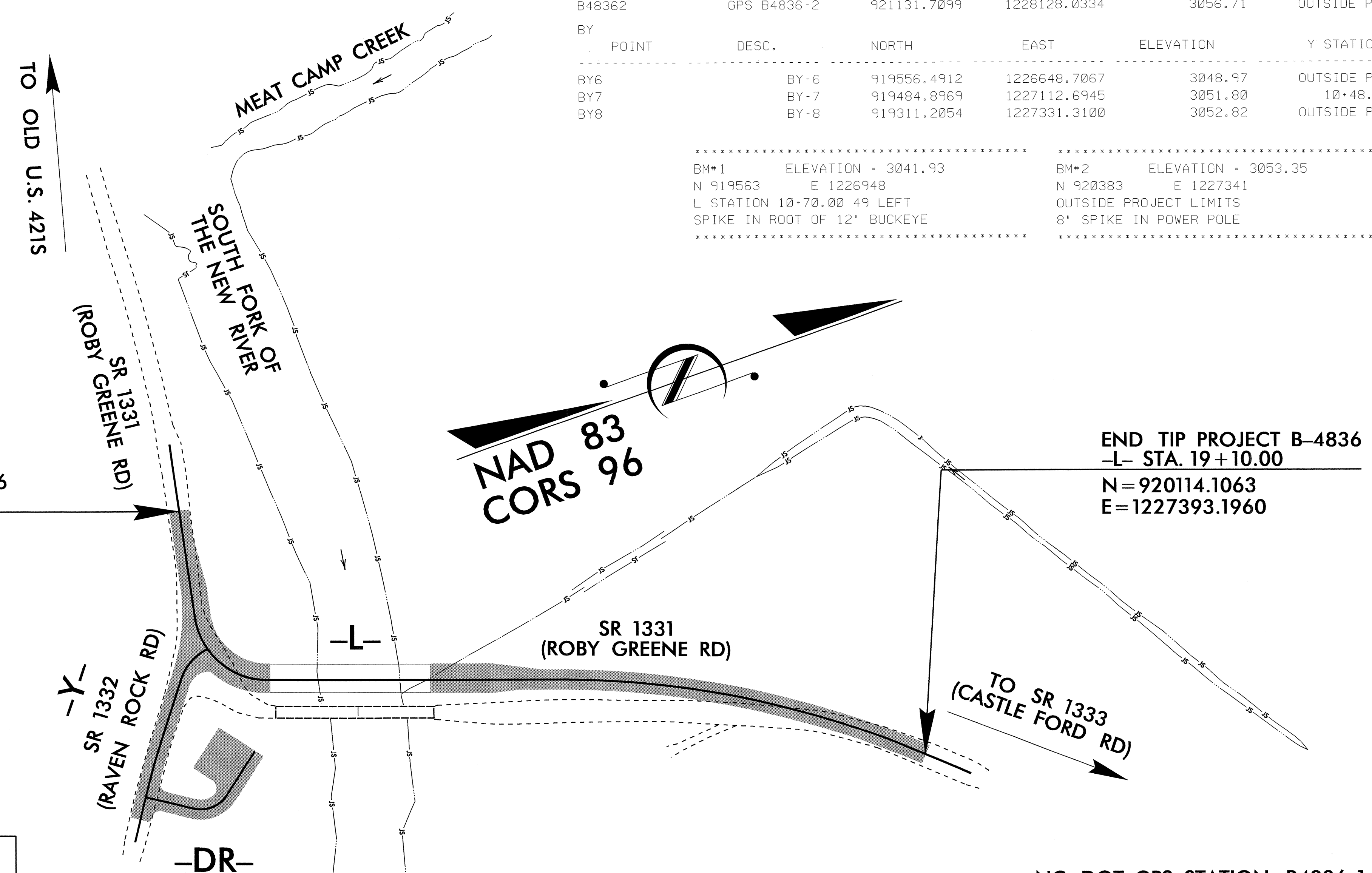
BL POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
BL3	BL-3	919484.8969	1227112.6945	3051.80	12+28.71	32.81 RT
BL4	BL-4	920056.8816	1227336.5036	3064.72	18+29.98	6.53 LT
BL5	BL-5	920339.6964	1227621.0115	3080.29		OUTSIDE PROJECT LIMITS
B48361	GPS B4836-1	920667.1219	1227753.7223	3069.62		OUTSIDE PROJECT LIMITS
B48362	GPS B4836-2	921131.7099	1228128.0334	3056.71		OUTSIDE PROJECT LIMITS

BY POINT	DESC.	NORTH	EAST	ELEVATION	Y STATION	OFFSET
BY6	BY-6	919556.4912	1226648.7067	3048.97		OUTSIDE PROJECT LIMITS
BY7	BY-7	919484.8969	1227112.6945	3051.80	10+48.03	33.02 LT
BY8	BY-8	919311.2054	1227331.3100	3052.82		OUTSIDE PROJECT LIMITS

```

*****
BM*1      ELEVATION = 3041.93      BM*2      ELEVATION = 3053.35
N 919563  E 1226948                N 920383  E 1227341
L STATION 10+70.00 49 LEFT        OUTSIDE PROJECT LIMITS
SPIKE IN ROOT OF 12" BUCKEYE     8" SPIKE IN POWER POLE
*****

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BEGIN TIP PROJECT B-4836
-L- STA. 10+65.00
N=919516.2294
E=1226934.0077

END TIP PROJECT B-4836
-L- STA. 19+10.00
N=920114.1063
E=1227393.1960

NC DOT GPS STATION B4836-1
LOCALIZED COORDINATES
N=920667.1219
E=1227753.7223

NC DOT GPS STATION B4836-2
LOCALIZED COORDINATES
N=921131.7099
E=1228128.0334

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "B4836-1"

WITH NAD 83/CORS 96 STATE PLANE GRID COORDINATES OF
 NORTHING: 920667.1219(±) EASTING: 1227753.7223(±)
 ELEVATION: 3069.62(±±)

THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.9998836935

THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "B4836-1" TO -L- STATION 10+65.00 IS
 S 35°27'36" W 1412.97

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

NOTES:

- 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:
 B-4836_LS_CONTROL_110203.TXT
- SITE CALIBRATION INFORMATION HAS NOT BEEN PROVIDED FOR THIS PROJECT. IF FURTHER INFORMATION IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.
- ⊙ INDICATES GEODETIC CONTROL MONUMENTS USED OR SET FOR HORIZONTAL PROJECT CONTROL BY THE NCDOT LOCATION AND SURVEYS UNIT.
 PROJECT CONTROL ESTABLISHED USING GLOBAL POSITIONING SYSTEM.
 SEE GPS CALIBRATION SHEET FOR HORIZONTAL AND VERTICAL COORDINATE VALUES.

NOTE: DRAWING NOT TO SCALE

6/2/99
 15 OCT 2012 10:08 AM A:\4836_1s_1-C.dgn
 11:33:00

SURVEY CONTROL SHEET B-4836

L

TYPE	STATION	NORTH	EAST
POT	10+00.00	919528.9398	1226870.2625
PC	11+67.35	919496.2146	1227034.3856
PT	12+67.36	919541.5881	1227114.0909
PC	15+45.36	919803.7729	1227206.5272
PT	19+08.81	920113.2278	1227392.3894
POT	19+58.40	920149.7550	1227425.9288

Y

TYPE	STATION	NORTH	EAST
PC	10+00.00	919497.5687	1227067.3465
PT	10+40.55	919463.1995	1227086.7015
PC	11+08.37	919422.0215	1227140.5937
PT	11+44.93	919400.9079	1227170.4264
POT	12+02.61	919369.3287	1227218.6961

ROW MARKER IRON PIN AND CAP-E

ALIGN	STATION	OFFSET	NORTH	EAST
L	11+50.00	-50.00	919548.6428	1227027.1440
L	12+80.00	75.00	919528.5716	1227189.0265
L	15+45.36	43.38	919789.3474	1227247.4374
L	15+45.36	75.00	919778.8353	1227277.2599
L	15+65.00	-85.00	919852.2258	1227133.7303
L	16+35.00	-41.92	919904.4894	1227202.5341
L	17+25.00	-35.00	919984.0773	1227252.6670
L	17+85.36	20.00	920005.4776	1227331.8260
L	19+08.81	-30.00	920133.5181	1227370.2917
L	19+08.81	-12.50	920121.6821	1227383.1820
L	19+10.00	12.50	920105.6521	1227402.4033
L	19+10.00	20.00	920100.5795	1227407.9278
L	10+65.00	-50.00	919565.2641	1226943.7849
L	10+65.00	-25.00	919540.7467	1226938.8963
L	11+81.19	30.00	919464.8633	1227048.1513
L	13+20.00	75.00	919566.2957	1227202.3266

ROW MARKER IRON PIN AND CAP-E

ALIGN	STATION	OFFSET	NORTH	EAST
Y	10+65.00	-30.00	919472.1906	1227124.3465
Y	11+80.00	25.00	919360.7853	1227186.0905
Y	11+80.00	11.00	919372.5008	1227193.7551
Y	11+80.00	-11.00	919390.9110	1227205.7995
Y	11+80.00	-30.00	919406.8106	1227216.2014
Y	11+80.00	-95.00	919461.2042	1227251.7871

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ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
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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/)

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 SEE GPS CALIBRATION SHEET FOR HORIZONTAL AND VERTICAL COORDINATE VALUES.

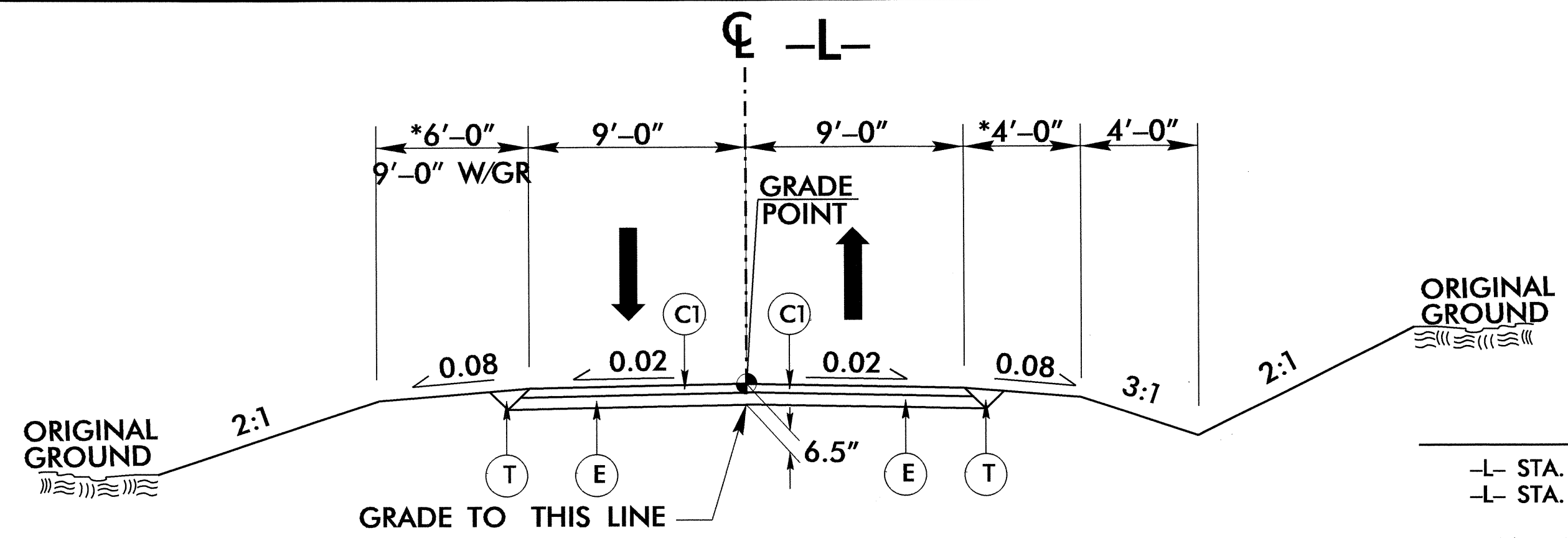
6/2/09

FINAL PAVEMENT SCHEDULE

C1	PROP. APPROX. 2.5" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 137.5 LBS. PER SQ. YD IN EACH OF TWO LAYERS.
C2	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT TO EXCEED 1½" IN DEPTH.
E	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
J	PROP. 6" AGGREGATE BASE COURSE.
P	PRIME COAT AT THE RATE OF 0.35 GAL. PER SQ. YD.
T	EARTH MATERIAL

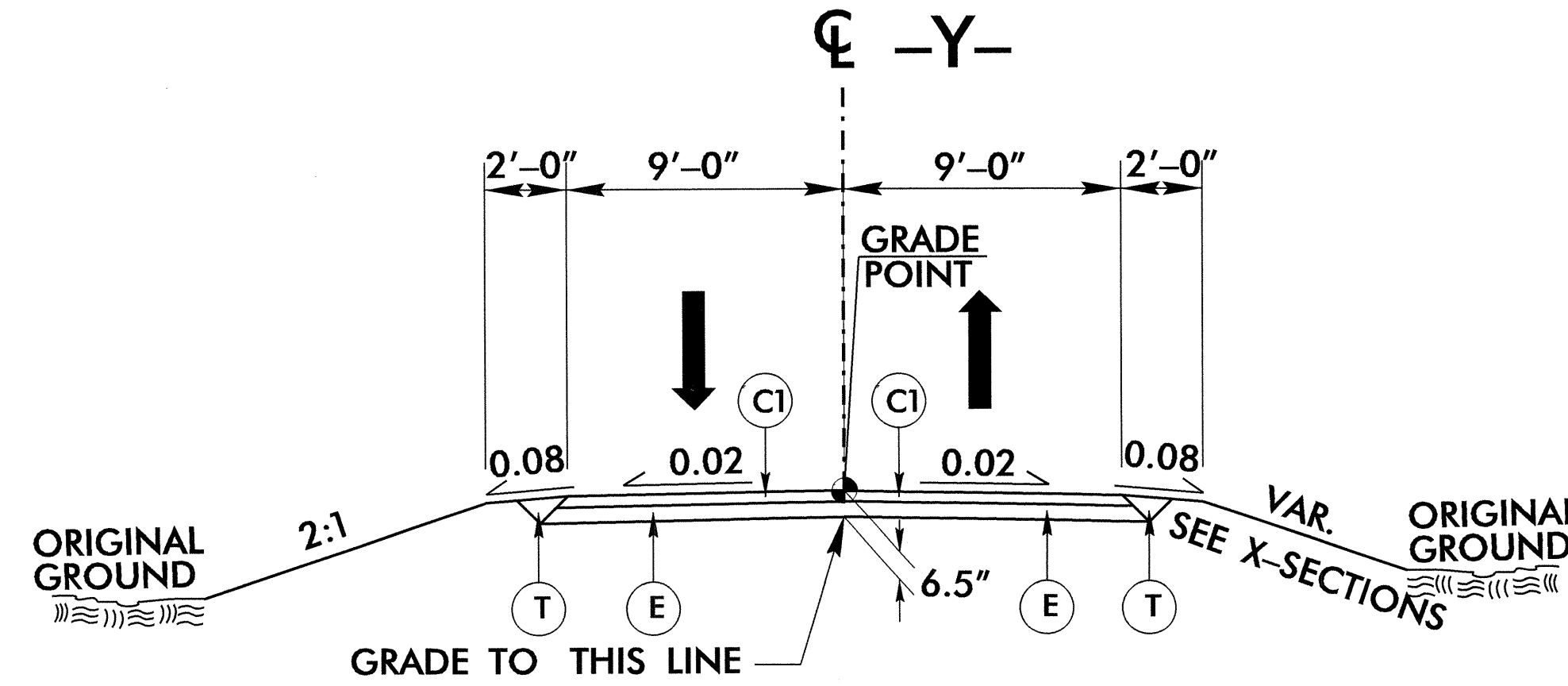
NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.

PROJECT REFERENCE NO. B-4836	SHEET NO. 2
ROADWAY DESIGN ENGINEER <i>[Signature]</i> SEAL 24641 TATA L. WHITE	PAVEMENT DESIGN ENGINEER <i>[Signature]</i> SEAL 22893 CLARK S. MORRISON



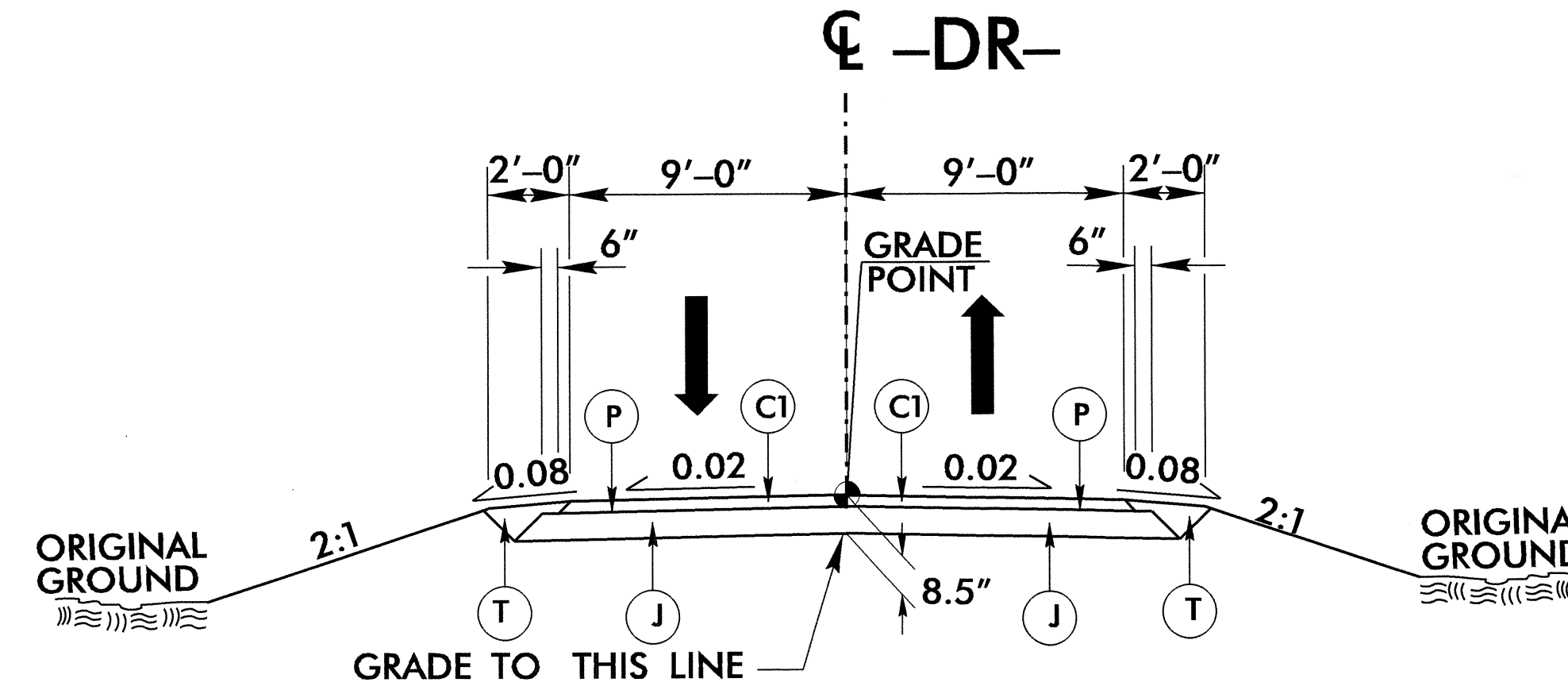
TYPICAL SECTION NO. 1

USE TYPICAL SECTION NO. 1 AT THE FOLLOWING LOCATIONS:
 -L- STA. 10+65.00 TO -L- STA. 12+74.69 (BEGIN BRIDGE)
 -L- STA. 14+92.31 (END BRIDGE) TO 19+10.00
 * PAVE TO THE FACE OF GUARDRAIL



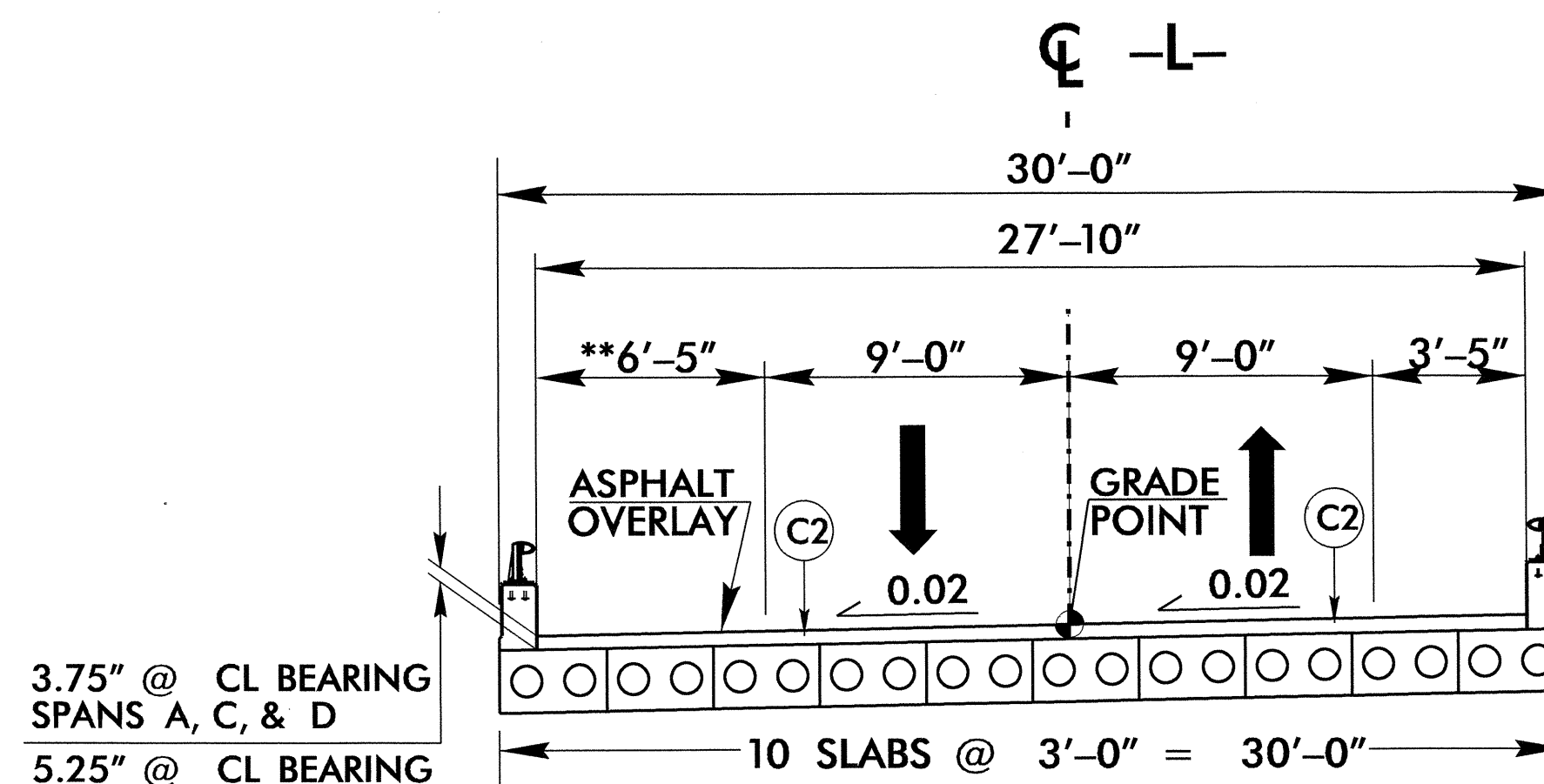
TYPICAL SECTION NO. 2

USE TYPICAL SECTION NO. 2 AT THE FOLLOWING LOCATIONS:
 -Y- STA. 10+09.04 TO -Y- STA. 11+80.00



TYPICAL SECTION NO. 3

USE TYPICAL SECTION NO. 3 AT THE FOLLOWING LOCATIONS:
 -DR- STA. 10+09.00 TO -DR- STA. 11+34.50
 NOTE: USE THE SAME PAVEMENT FOR PARKING AREA




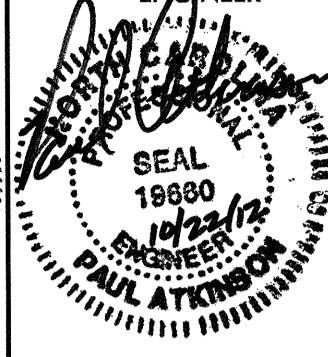
TYPICAL SECTION ON STRUCTURE

USE TYPICAL SECTION ON STRUCTURE AT THE FOLLOWING LOCATIONS:
 -L- STA. 12+74.69 (BEGIN BRIDGE) TO -L- STA. 14+92.31 (END BRIDGE)

** ADDITIONAL WIDTH FOR HYDRAULIC SPREAD

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DETAIL OF PROPOSED CONSTRUCTION AND RIGHT OF WAY FOR RECREATIONAL ACCESS AREA

PROJECT REFERENCE NO. B-4836	SHEET NO. 2-A
RAW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
	

AVERY MORETZ
DB 56 PG 270

1

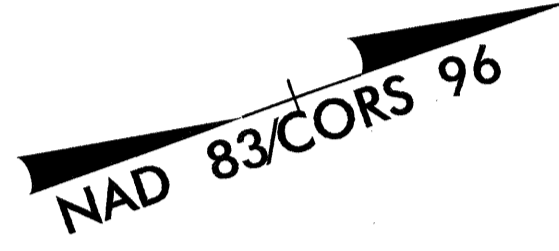
-L- PC Sta. 11+67.35

-L- POC Sta. 12+00.66 =

-Y- PC Sta. 10+00.00

-Y- PT Sta. 10+40.55

-L- PT Sta. 12+67.36



-DR-

PI Sta 10+68.25
 $\Delta = 71^{\circ} 04' 45.5''$ (LT)
 $D = 190^{\circ} 59' 09.4''$
 $L = 37.22'$
 $T = 21.43'$
 $R = 30.00'$
 ① N $33^{\circ} 11' 37.4''$ E
 ② N $37^{\circ} 53' 08.1''$ W

-Y- PC Sta. 11+08.37

-Y- PT Sta. 11+44.93

-Y- POT Sta. 11+58.43 =

-DR- POT Sta. 10+00.00

END CONSTRUCTION
-Y- POT Sta. 11+90.00

-Y- POT Sta. 12+02.61

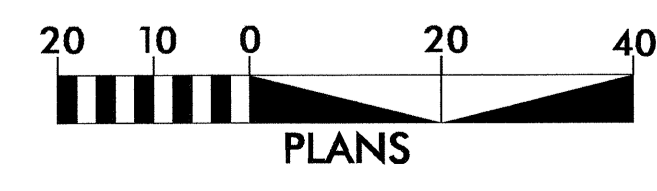
-DR- PC Sta. 10+46.82

1

AVERY MORETZ
DB 56 PG 270

1
 PROPOSED RIGHT OF WAY
AND EASEMENT LIMITS
FOR ROADWAY PROJECT

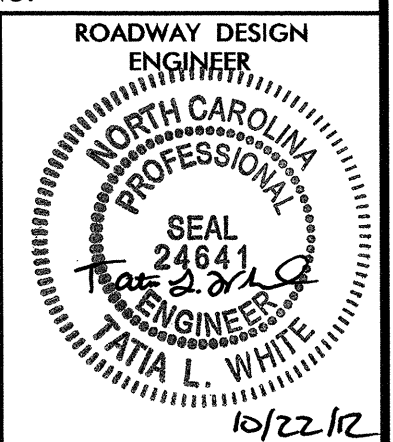
NOTE:
 SEE SHEET 5 FOR -DR- PROFILE.



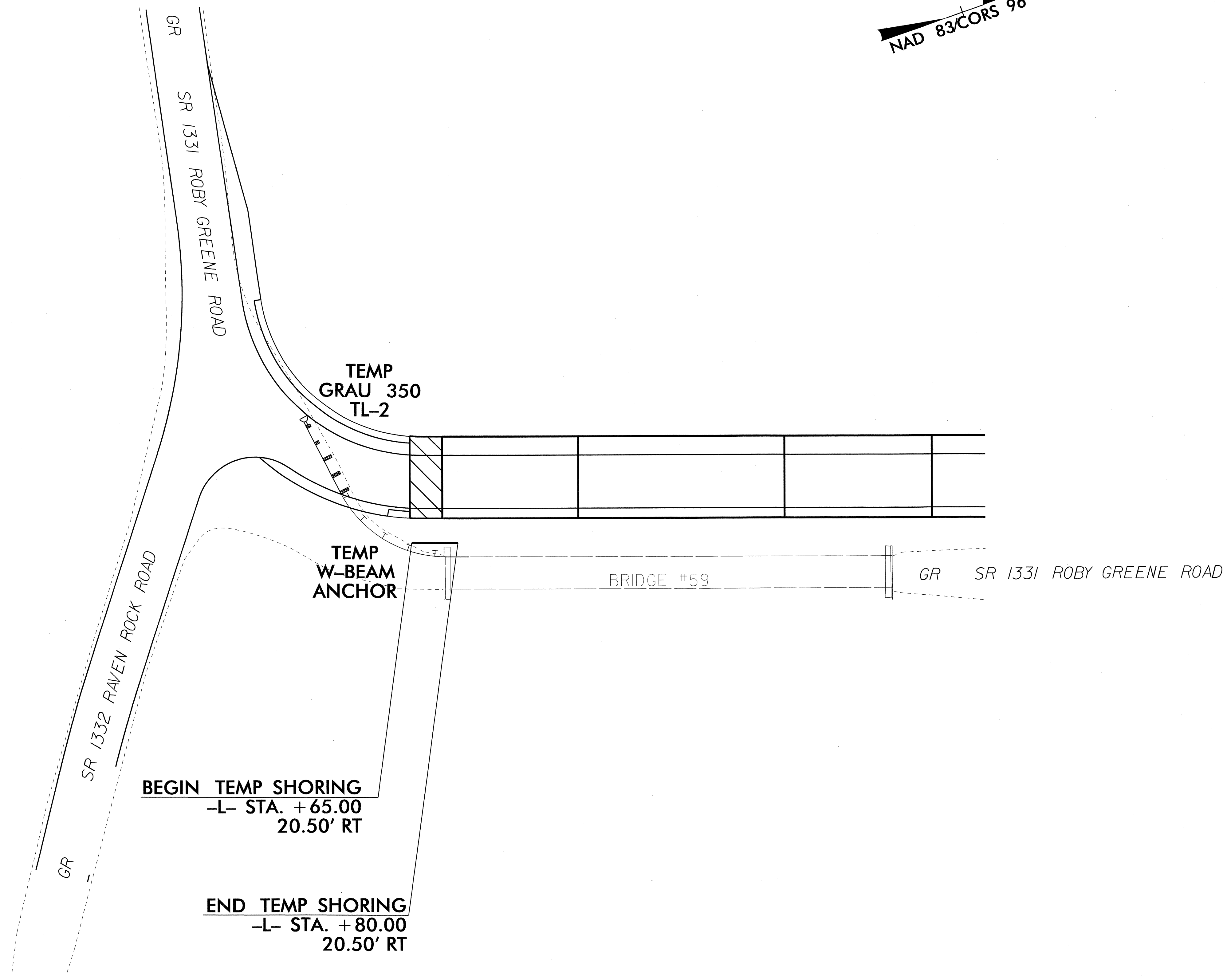
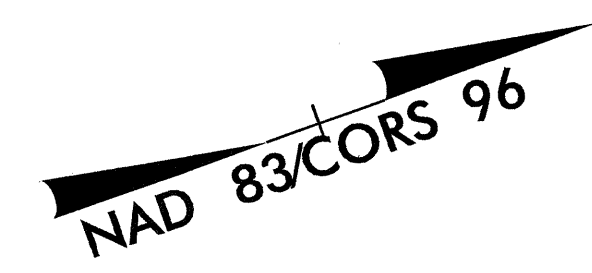
REVISIONS

8/17/99

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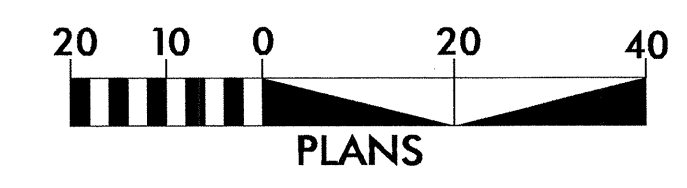


DETAIL OF TEMPORARY SHORING & GUARDRAIL

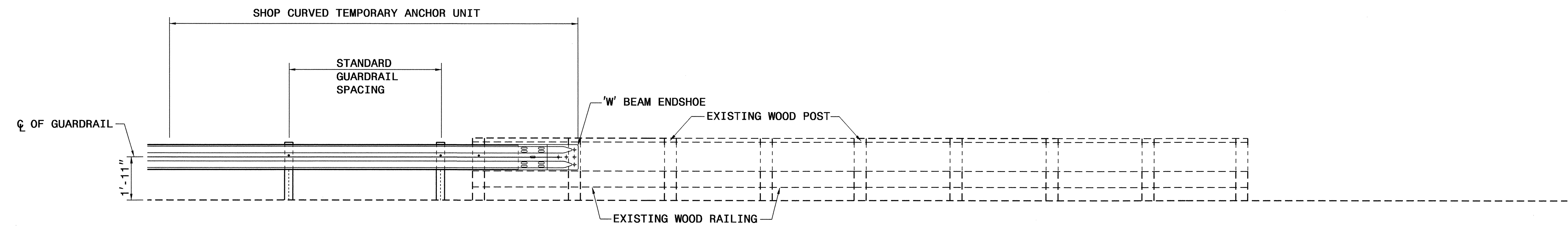


REVISIONS

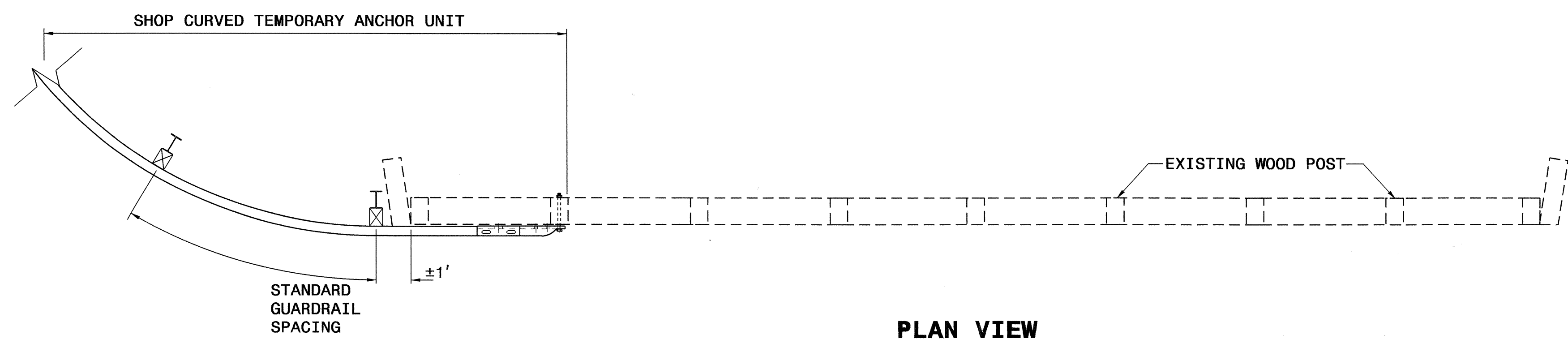
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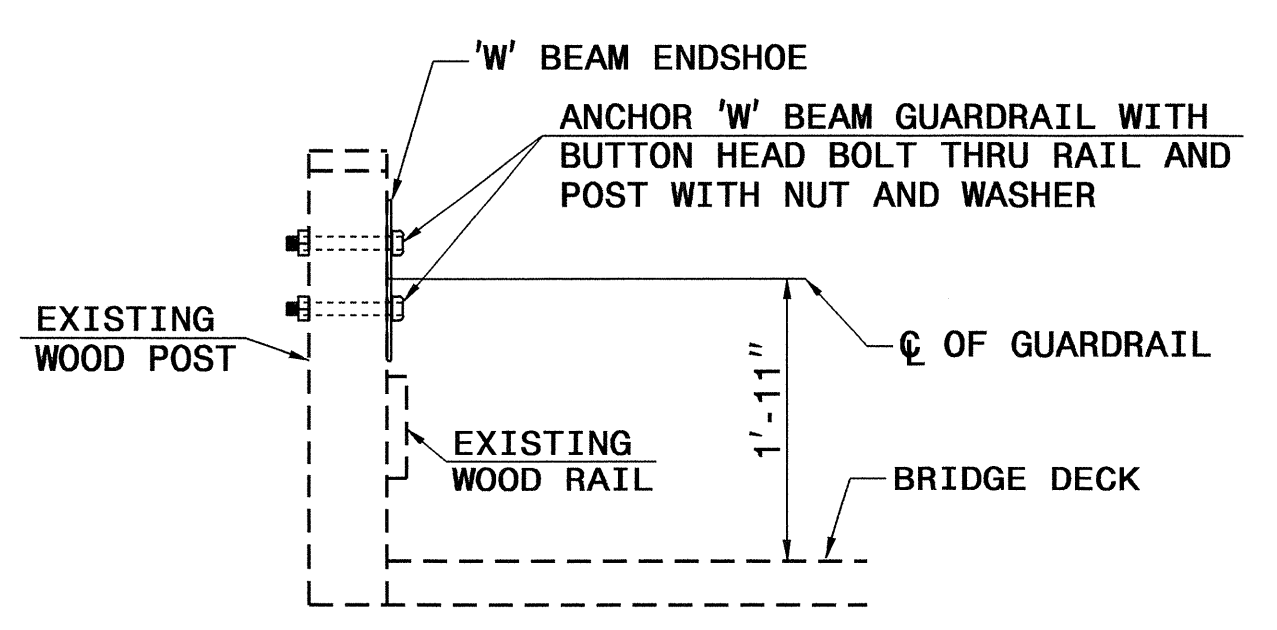
- NOTES:**
- SEE SHEET 2-C FOR TEMP. GUARDRAIL ANCHOR UNIT DETAIL.
 - SEE SHEETS TMP-1 THROUGH TMP-5 FOR TEMP. SHORING DETAILS.



ELEVATION VIEW



PLAN VIEW

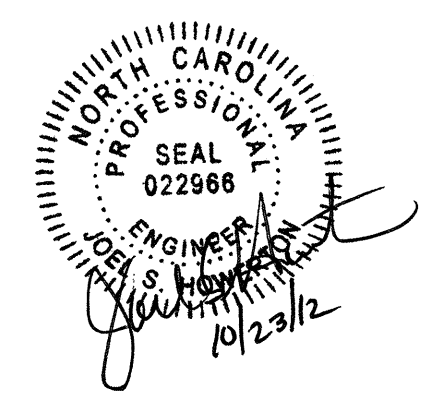


SECTION VIEW

GUARDRAIL ATTACHMENT TO WOOD POST

NOTES:

SEE ROADWAY PLANS FOR LOCATION AND RADIUS OF SHOP CURVE.



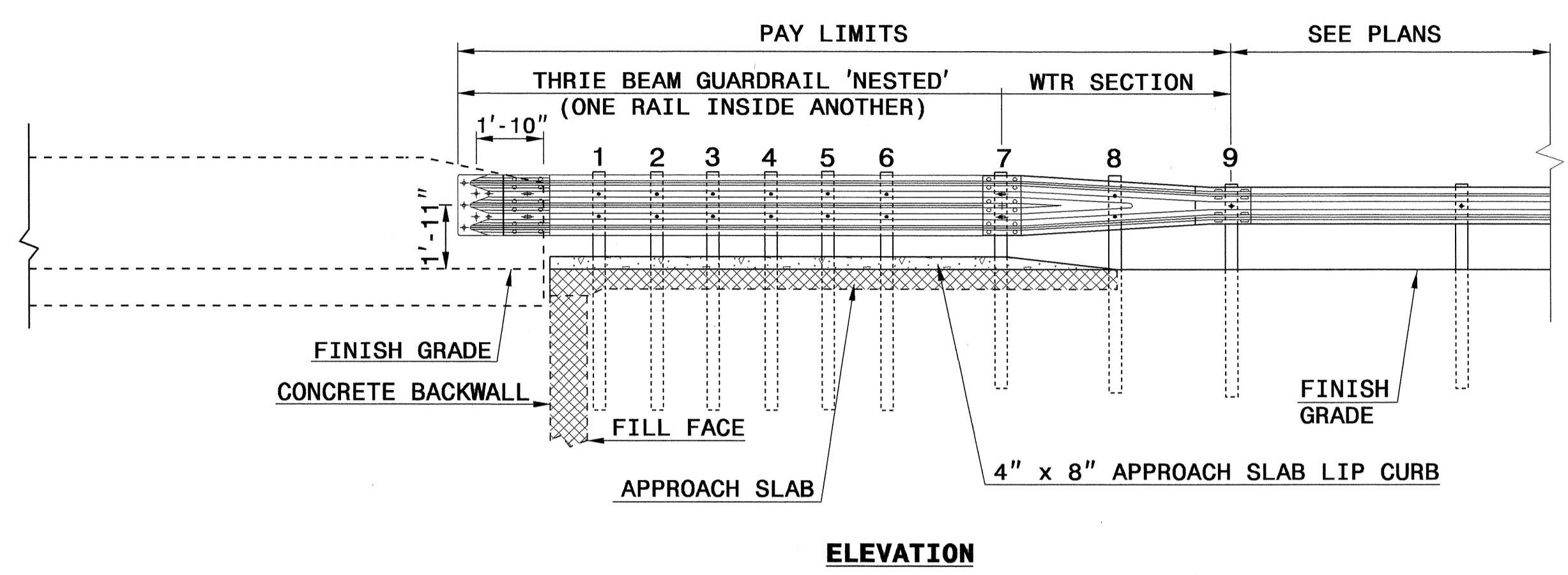
CONTRACT STANDARDS AND DEVELOPMENT UNIT	
Office 919-707-6950	FAX 919-250-4119
DETAIL OF TEMPORARY GUARDRAIL ANCHOR UNIT TO WOOD STRUCTURE	
ORIGINAL BY: E.E. WARD	DATE: 10-04
MODIFIED BY: K.A. KEMPF	DATE: 10-12
CHECKED BY: <i>[Signature]</i>	DATE: 10/10/12
FILE SPEC.: /usr/details/stand/bp.dgn	

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

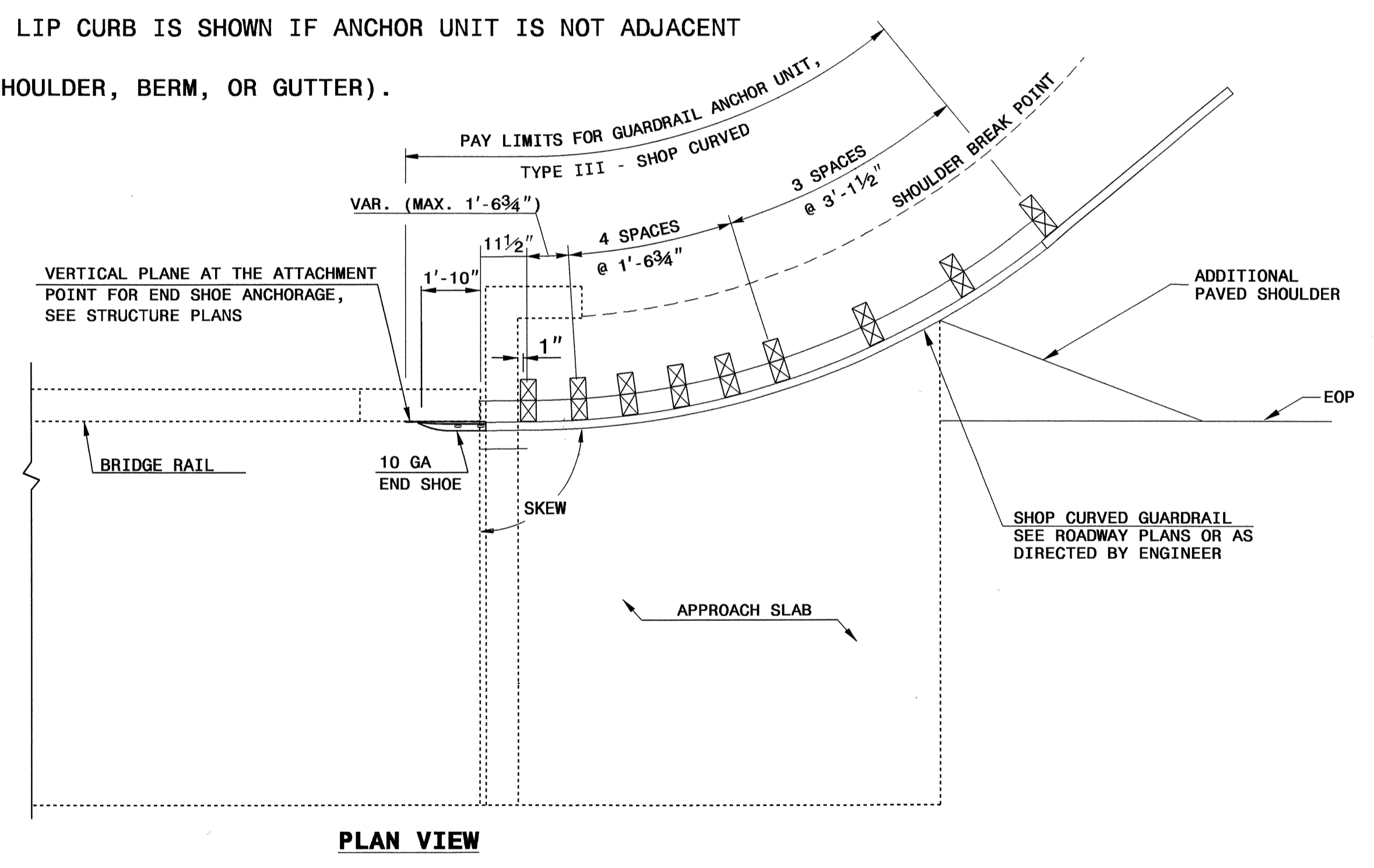
ENGLISH DETAIL DRAWING FOR
**TYPE III - SHOP CURVED
STRUCTURE ANCHOR UNIT**

SHEET 1 OF 1
TYPE III SC



SEE ROADWAY PLANS FOR END TREATMENT

- NOTE:**
- **POST NOT REQUIRED FOR SKEW ANGLES GREATER THAN 150° OR LESS THAN 30° UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
 - *THE DISTANCE FROM END OF BRIDGE RAIL TO CENTER LINE OF THE FIRST POST SHOULD BE 11½" IF CONCRETE BACKWALL IS NOT PRESENT.
 - SHOULDER BERM GUTTER MUST BE INSTALLED TO THE LIMITS 8" x 4" LIP CURB IS SHOWN IF ANCHOR UNIT IS NOT ADJACENT TO AN APPROACH SLAB.
 - MEASURE GUARDRAIL HEIGHT FROM THE TOP OF ADJACENT SURFACE (SHOULDER, BERM, OR GUTTER).
 - USE NO STEEL POSTS WITHIN THE GUARDRAIL ANCHOR UNIT LIMITS.
 - LAP JOINTS IN THE DIRECTION OF TRAFFIC FLOW.
 - SEE STANDARD 862.03 SHEET 4 FOR POST SECTIONS 1 THRU 9.



**GUARDRAIL ANCHOR UNIT, TYPE III - SHOP CURVED
FOR ATTACHMENT TO RAIL ON BRIDGE**

ENGLISH DETAIL DRAWING FOR
**TYPE III - SHOP CURVED
STRUCTURE ANCHOR UNIT**

SHEET 1 OF 1
TYPE III SC

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

SEE PLATE FOR TITLE

ORIGINAL BY: E.E. Ward DATE: 4-4-02
 MODIFIED BY: J.S. Spill DATE: 5-29-09
 CHECKED BY: *J.S. Spill* DATE: 10/12/12
 FILE SPEC: *ward:\usr\details\stand\862stds\typeiiisc.dgn*



5/14/99

GEOTECHNICAL ENGINEER ENGINEER

Scott A. Hadden 8/10/12

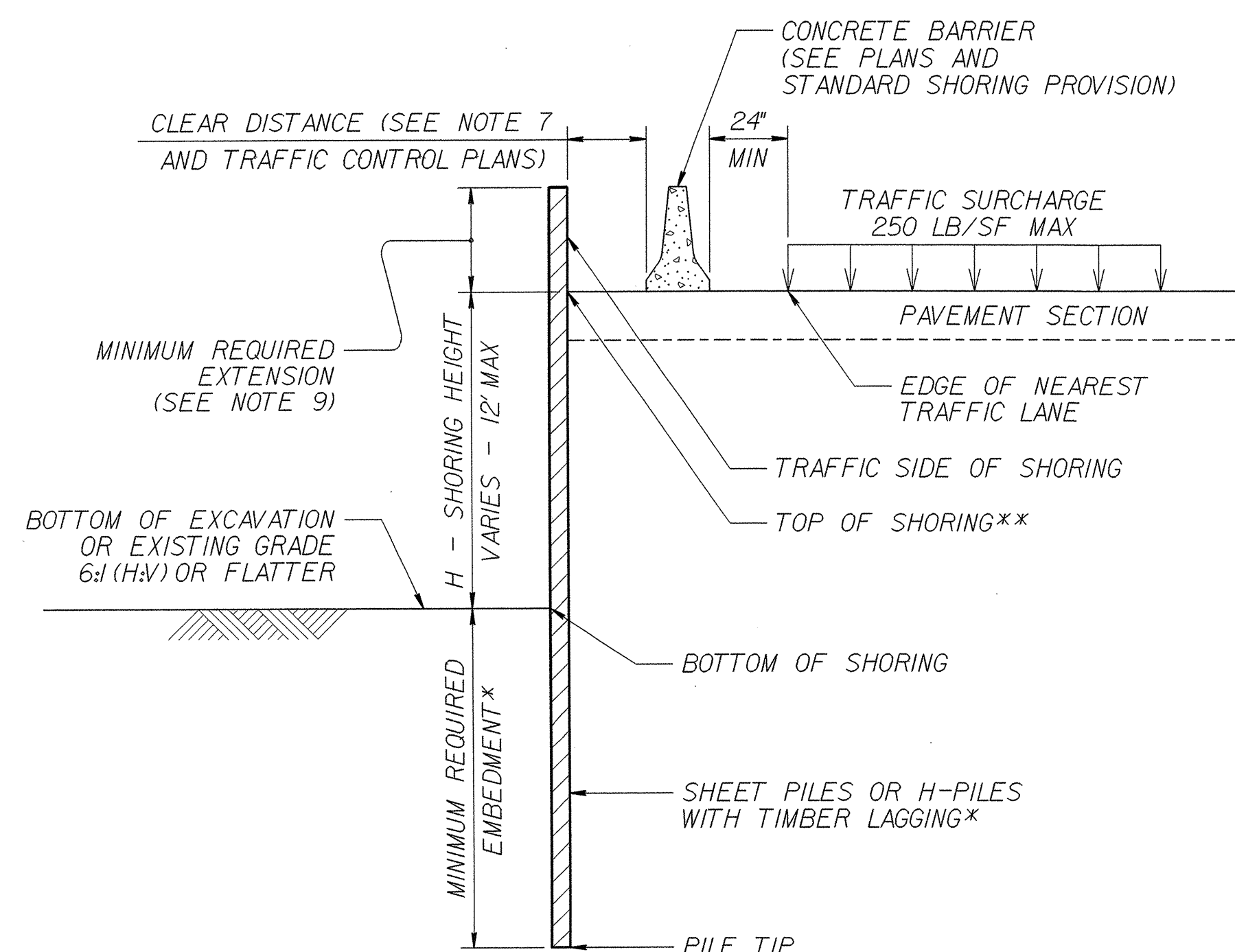
GROUNDWATER CONDITION (SEE NOTE 6)	H SHORING HEIGHT (FT)	SLOPE OR SURCHARGE CASE WITH NO TRAFFIC IMPACT						SURCHARGE CASE WITH TRAFFIC IMPACT					
		SHEET PILES		H-PILES WITH TIMBER LAGGING				SHEET PILES		H-PILES WITH TIMBER LAGGING			
		MINIMUM REQUIRED EMBEDMENT (FT)	MINIMUM REQUIRED SECTION MODULUS (IN ³ /FT)	MINIMUM REQUIRED EMBEDMENT* (FT) (SEE NOTE 10)			MINIMUM REQUIRED EMBEDMENT (FT)	MINIMUM REQUIRED SECTION MODULUS (IN ³ /FT)	MINIMUM REQUIRED EMBEDMENT* (FT) (SEE NOTE 10)				
				HP 10x42	HP 12x53	HP 14x73			HP 10x42	HP 12x53	HP 14x73		
GROUNDWATER ELEVATION BETWEEN BOTTOM OF SHORING AND PILE TIP	< 6	11.5	4.5	11.5	11.5	11.5	16.0	12.0	13.0	13.0	13.0		
	7	13.0	7.0	13.0	13.0	13.0	17.0	14.5	14.5	14.5	14.5		
	8	15.0	10.0	--	15.0	15.0	18.0	17.0	--	15.5	15.5		
	9	17.0	14.0	--	17.0	17.0	19.0	20.0	--	17.0	17.0		
	10	18.5	19.5	--	--	18.5	20.0	23.5	--	--	18.5		
	11	20.5	26.0	--	--	--	21.0	28.0	--	--	20.0		
12	22.5	33.0	--	--	--	22.0	33.0	--	--	21.5			
GROUNDWATER ELEVATION BELOW PILE TIP	< 6	7.5	3.0	8.0	8.0	8.0	11.0	10.0	9.5	9.5	9.5		
	7	8.5	4.5	9.5	9.5	9.5	12.0	12.0	10.5	10.5	10.5		
	8	10.0	6.5	10.5	10.5	10.5	12.5	14.0	11.5	11.5	11.5		
	9	11.0	9.5	--	12.0	12.0	13.5	16.5	--	12.5	12.5		
	10	12.5	13.0	--	--	13.5	14.0	19.5	--	13.5	13.5		
	11	13.5	17.0	--	--	14.5	15.0	22.5	--	--	14.5		
12	15.0	21.5	--	--	16.0	16.0	25.5	--	--	15.5			

NOTES:

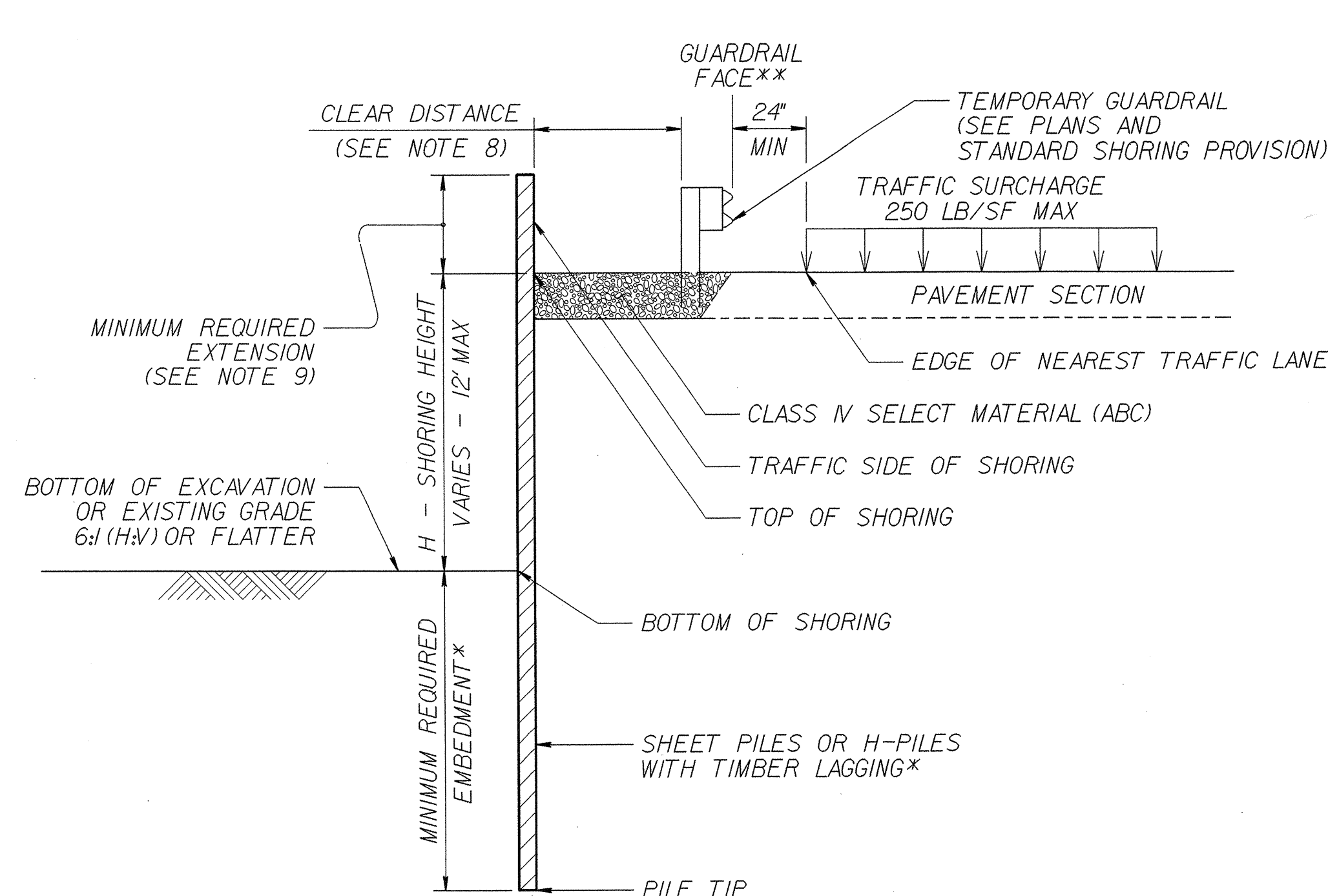
- AT THE CONTRACTOR'S OPTION, USE STANDARD TEMPORARY SHORING AS NOTED IN THE PLANS.
- FOR STANDARD TEMPORARY SHORING, SEE STANDARD SHORING PROVISION.
- STANDARD TEMPORARY SHORING IS BASED ON THE FOLLOWING IN-SITU ASSUMED SOIL PARAMETERS:
UNIT WEIGHT, $\gamma = 120$ LB/CF
FRICTION ANGLE, $\phi = 30$ DEGREES
COHESION, $c = 0$ LB/SF
- DO NOT USE STANDARD TEMPORARY SHORING IF ASSUMED SOIL PARAMETERS ARE NOT APPLICABLE.
- DO NOT USE STANDARD TEMPORARY SHORING WHEN VERY LOOSE OR SOFT SOIL OR MUCK IS WITHIN THE EMBEDMENT DEPTH.
- USE GROUNDWATER ELEVATION NOTED IN THE PLANS. IF NO GROUNDWATER ELEVATION IS SHOWN IN THE PLANS, USE "GROUNDWATER ELEVATION BETWEEN BOTTOM OF SHORING AND PILE TIP" FOR GROUNDWATER CONDITION. DO NOT USE STANDARD TEMPORARY SHORING IF GROUNDWATER IS ABOVE BOTTOM OF SHORING.
- AT THE CONTRACTOR'S OPTION OR IF AVAILABLE CLEAR DISTANCE IS LESS THAN THE MINIMUM REQUIRED FOR CONCRETE BARRIER, SET BARRIER NEXT TO AND UP AGAINST TRAFFIC SIDE OF PILES AND USE "SURCHARGE CASE WITH TRAFFIC IMPACT".
- AT THE CONTRACTOR'S OPTION OR IF AVAILABLE CLEAR DISTANCE IS LESS THAN 4' FOR TEMPORARY GUARDRAIL, ATTACH GUARDRAIL TO TRAFFIC SIDE OF PILES AS SHOWN IN THE PLANS AND USE "SURCHARGE CASE WITH TRAFFIC IMPACT".
- MINIMUM REQUIRED EXTENSION IS 6" FOR "SLOPE OR SURCHARGE CASE WITH NO TRAFFIC IMPACT" AND 32" FOR "SURCHARGE CASE WITH TRAFFIC IMPACT".
- MINIMUM REQUIRED EMBEDMENT FOR H-PILES WITH TIMBER LAGGING IS BASED ON DRIVEN H-PILES AT MAXIMUM 6' SPACING. AT THE CONTRACTOR'S OPTION, EMBEDMENT DEPTHS MAY BE REDUCED BY 25% FOR DRILLED-IN H-PILES.
- SUBMIT A "STANDARD TEMPORARY SHORING SELECTION FORM" AT LEAST 7 DAYS BEFORE STARTING TEMPORARY SHORING CONSTRUCTION. UP TO 3 SHORING LOCATIONS MAY BE INCLUDED ON EACH FORM.
- CONTACT THE ENGINEER IF PILES DO NOT ATTAIN THE MINIMUM REQUIRED EMBEDMENT.

MINIMUM REQUIRED EMBEDMENT AND SECTION MODULUS

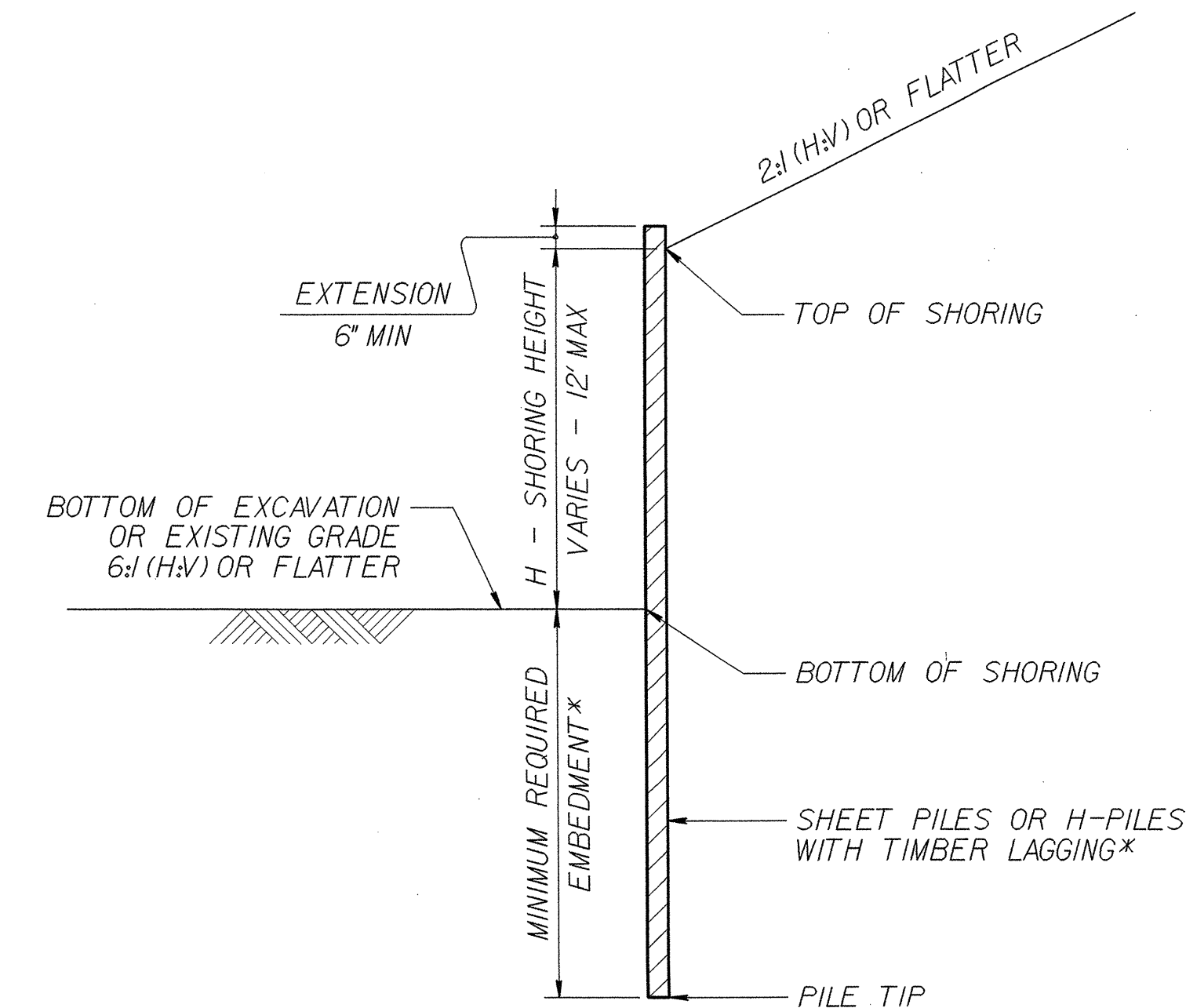
*DO NOT USE H-PILES WITH TIMBER LAGGING FOR GROUNDWATER CONDITION, SHORING HEIGHT AND H-PILE SIZE SHOWN IF MINIMUM REQUIRED EMBEDMENT IS "--".



CONCRETE BARRIER
**TOP OF SHORING =
EDGE OF PAVEMENT

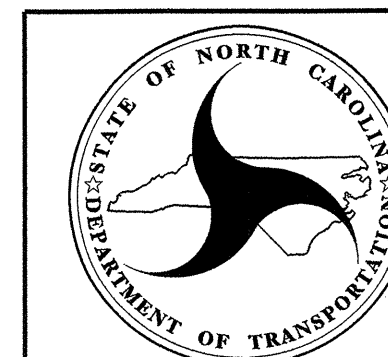


TEMPORARY GUARDRAIL
**GUARDRAIL FACE =
EDGE OF PAVEMENT



STANDARD TEMPORARY SHORING
(SLOPE CASE)
*SEE TABLE ABOVE.

STANDARD TEMPORARY SHORING
(SURCHARGE CASE)
*SEE TABLE ABOVE.



GEOTECHNICAL ENGINEERING UNIT
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD DRAWING NO. 1801.01

STANDARD TEMPORARY SHORING

DATE: 11-20-12

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
SUMMARY OF QUANTITIES

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
ROADWAY SUMMARY OF QUANTITIES FOR CONTRACT - C203034

ItemNumber	Sec #	Quantity	Unit	Description	ItemNumber	Sec #	Quantity	Unit	Description	ItemNumber	Sec #	Quantity	Unit	Description
0000100000-N	800	Lump Sum		MOBILIZATION	1525000000-E	610	460	TON	ASPHALT CONC SURFACE COURSE, TYPE SF9.5A	4102000000-N	904	9	EA	SIGN ERECTION, TYPE E
0030000000-N	SP	Lump Sum		BRIDGE APPROACH FILL - SUB REGIONAL TIER, STATION ***** (13+83.50)	1575000000-E	620	50	TON	ASPHALT BINDER FOR PLANT MIX	4155000000-N	907	8	EA	DISPOSAL OF SIGN SYSTEM, U-CHANNEL
0050000000-E	226	1	ACR	SUPPLEMENTARY CLEARING & GRUB-BING	2022000000-E	815	22.4	CY	SUBDRAIN EXCAVATION	4400000000-E	1110	76	SF	WORK ZONE SIGNS (STATIONARY)
0057000000-E	226	200	CY	UNDERCUT EXCAVATION	2033000000-E	815	16.8	CY	SUBDRAIN FINE AGGREGATE	4405000000-E	1110	144	SF	WORK ZONE SIGNS (PORTABLE)
0063000000-N	SP	Lump Sum		GRADING	2044000000-E	815	100	LF	6" PERFORATED SUBDRAIN PIPE	4410000000-E	1110	20	SF	WORK ZONE SIGNS (BARRICADE MOUNTED)
0106000000-E	230	4,100	CY	BORROW EXCAVATION	2070000000-N	815	1	EA	SUBDRAIN PIPE OUTLET	4430000000-N	1130	77	EA	DRUMS
0134000000-E	240	466	CY	DRAINAGE DITCH EXCAVATION	2077000000-E	815	6	LF	6" OUTLET PIPE	4435000000-N	1135	77	EA	CONES
0195000000-E	265	100	CY	SELECT GRANULAR MATERIAL	2286000000-N	840	2	EA	MASONRY DRAINAGE STRUCTURES	4445000000-E	1145	36	LF	BARRICADES (TYPE III)
0196000000-E	270	400	SY	GEOTEXTILE FOR SOIL STABILIZATION	2367000000-N	840	2	EA	FRAME WITH TWO GRATES, STD 840.29	4455000000-N	1150	270	DAY	FLAGGER
0199000000-E	SP	75	SF	TEMPORARY SHORING	2556000000-E	846	130	LF	SHOULDER BERM GUTTER	4650000000-N	1251	22	EA	TEMPORARY RAISED PAVEMENT MARKERS
0318000000-E	300	30	TON	FOUNDATION CONDITIONING MATERIAL, MINOR STRUCTURES	3030000000-E	862	50	LF	STEEL BM GUARDRAIL	4810000000-E	1205	8,926	LF	PAINT PAVEMENT MARKING LINES (4")
0320000000-E	300	70	SY	FOUNDATION CONDITIONING GEOTEXTILE	3045000000-E	862	100	LF	STEEL BM GUARDRAIL, SHOP CURVED	6000000000-E	1605	2,050	LF	TEMPORARY SILT FENCE
0335200000-E	305	32	LF	15" DRAINAGE PIPE	3150000000-N	862	5	EA	ADDITIONAL GUARDRAIL POSTS	6006000000-E	1610	225	TON	STONE FOR EROSION CONTROL, CLASS A
0335300000-E	305	104	LF	18" DRAINAGE PIPE	3165000000-N	SP	4	EA	GUARDRAIL ANCHOR UNITS, TYPE ***** (350 TL-2)	6009000000-E	1610	165	TON	STONE FOR EROSION CONTROL, CLASS B
0335850000-E	305	2	EA	*** DRAINAGE PIPE ELBOWS (15")	3180000000-N	862	2	EA	GUARDRAIL ANCHOR UNITS, TYPE ***** (III SHOP CURVED)	6012000000-E	1610	345	TON	SEDIMENT CONTROL STONE
0335850000-E	305	2	EA	*** DRAINAGE PIPE ELBOWS (18")	3215000000-N	862	2	EA	GUARDRAIL ANCHOR UNITS, TYPE III	6015000000-E	1615	2	ACR	TEMPORARY MULCHING
0354000000-E	310	72	LF	**** RC PIPE CULVERTS, CLASS ***** (18", V)	3380000000-E	862	12.5	LF	TEMPORARY STEEL BM GUARDRAIL	6018000000-E	1620	100	LB	SEED FOR TEMPORARY SEEDING
0995000000-E	340	33	LF	PIPE REMOVAL	3382000000-E	862	62.5	LF	TEMPORARY STEEL BM GUARDRAIL (SHOP CURVED)	6021000000-E	1620	1.25	TON	FERTILIZER FOR TEMPORARY SEEDING
1099500000-E	505	100	CY	SHALLOW UNDERCUT	3387000000-N	862	1	EA	TEMPORARY GUARDRAIL ANCHOR UNITS, TYPE ***** (W-BEAM, SHOP CURVED)	6024000000-E	1622	260	LF	TEMPORARY SLOPE DRAINS
1099700000-E	505	189	TON	CLASS IV SUBGRADE STABILIZATION	3389000000-N	SP	1	EA	TEMPORARY GUARDRAIL ANCHOR UNITS, TYPE ***** (350 TL-2)	6029000000-E	SP	700	LF	SAFETY FENCE
1121000000-E	520	180	TON	AGGREGATE BASE COURSE	3628000000-E	876	62	TON	RIP RAP, CLASS I	6030000000-E	1630	470	CY	SILT EXCAVATION
1220000000-E	545	100	TON	INCIDENTAL STONE BASE	3649000000-E	876	7	TON	RIP RAP, CLASS B	6036000000-E	1631	4,000	SY	MATTING FOR EROSION CONTROL
1275000000-E	600	160	GAL	PRIME COAT	3656000000-E	876	1,385	SY	GEOTEXTILE FOR DRAINAGE	6037000000-E	SP	950	SY	COIR FIBER MAT
1489000000-E	610	430	TON	ASPHALT CONC BASE COURSE, TYPE B25.0B	4072000000-E	903	86	LF	SUPPORTS, 3-LB STEEL U-CHANNEL	6038000000-E	SP	250	SY	PERMANENT SOIL REINFORCEMENT MAT
										6042000000-E	1632	150	LF	1/4" HARDWARE CLOTH
										6070000000-N	1639	12	EA	SPECIAL STILLING BASINS
										6071010000-E	SP	350	LF	WATTLE
										6071012000-E	SP	75	LF	COIR FIBER WATTLE
										6071020000-E	SP	105	LB	POLYACRYLAMIDE (PAM)
										6071030000-E	1640	170	LF	COIR FIBER BAFFLE
										6071050000-E	SP	3	EA	*** SKIMMER (1-1/2")
										6084000000-E	1660	3	ACR	SEEDING & MULCHING
										6087000000-E	1660	1.5	ACR	MOWING
										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	1.5	TON	FERTILIZER TOPDRESSING
										6114500000-N	1667	15	MHR	SPECIALIZED HAND MOWING
										6117000000-N	SP	25	EA	RESPONSE FOR EROSION CONTROL
										6123000000-E	1670	0.25	ACR	REFORESTATION
										6126000000-E	SP	0.14	ACR	STREAMBANK REFORESTATION

5/14/99
P25-SEP-2010 14:08
C:\Users\p25\Documents\Projects\2010\1408\B-4836-Roadway-Summary.dgn

COMPUTED BY: PJS DATE: OCT. 2012
 CHECKED BY: TEM DATE: OCT. 2012

PROJECT NO. SHEET NO.
 B-4836 3-B

**STATE OF NORTH CAROLINA
 DIVISION OF HIGHWAYS**

SUMMARY OF EARTHWORK

IN CUBIC YARDS

STATION	STATION	UNCL. EXCAV.	UNDERCUT	EMBANK. +%	BORROW	WASTE
PHASE 1						
-L- 12+50.00	-L- 12+74.69			555	555	
-L- 14+00.00	-L- 17+00.00			2,760	2,760	
SUBTOTALS:				3,315	3,315	
PHASE 2						
-L- 10+65.00	-L- 12+74.69	173		669	496	
-L- 14+28.00	-L- 19+10.00	1,217		105		1,112
-Y- 10+09.04	-Y- 11+80.00	27		56	29	
-DR- 10+09.00	-DR- 11+34.50			592	592	
SUBTOTALS:		1,417		1,422	1,117	1,112
TOTALS:		1,417		4,737	4,432	1,112
LOSS DUE TO CLEARING AND GRUBBING		-45			45	
EARTH WASTE IN LIEU OF BORROW					-621	-621
PROJECT TOTALS:		1,372		4,737	3,856	491
EST. 5% TO REPLACE TOP SOIL ON BORROW PIT					193	
GRAND TOTALS:		1,372		4,737	4,049	491
SAY:		1,400		4,100		

SUMMARY OF SHOULDER BERM GUTTER

LINE	STATION	STATION	LOC. LT/RT/CL	LF
-L-	11+68.00	12+62.65	LT	94.65
-L-	12+57.76	12+64.24	RT	6.48
-L-	15+03.31	15+20.75	LT	17.44
-L-	15+03.31	15+10.94	RT	7.63
TOTAL:				126.20
SAY:				130

EST. DDE = 466 CY

PER GEOTECH. REC'S. (12/09/10)
 EST. SHALLOW UNDERCUT = 100 CY
 EST. UNDERCUT = 200 CY

Note: Earthwork quantities are calculated by the Roadway Design Unit. These earthwork quantities are based in part on subsurface data provided by the Geotechnical Engineering Unit.

Note: Approximate quantities only. Unclassified excavation, fine grading and clearing and grubbing will be paid for at the lump sum price for "Grading".

"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

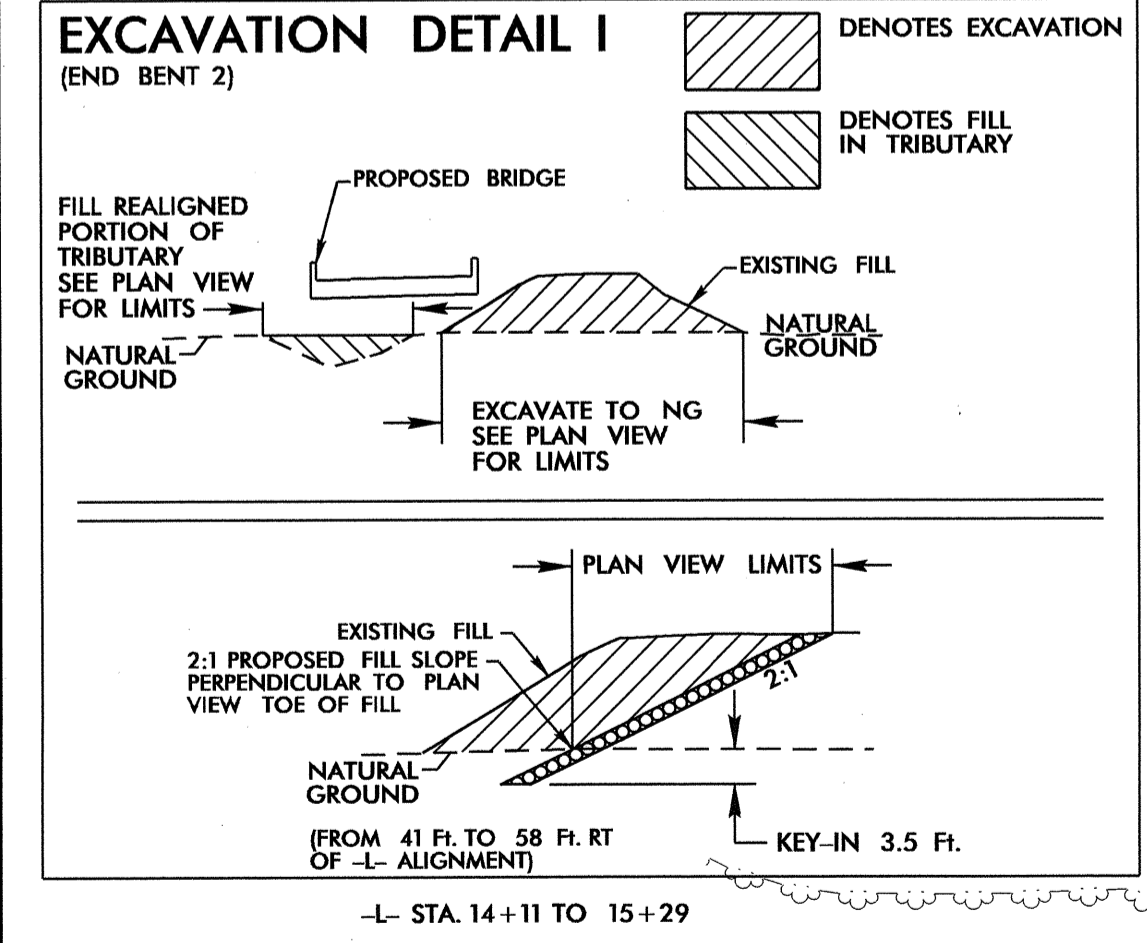
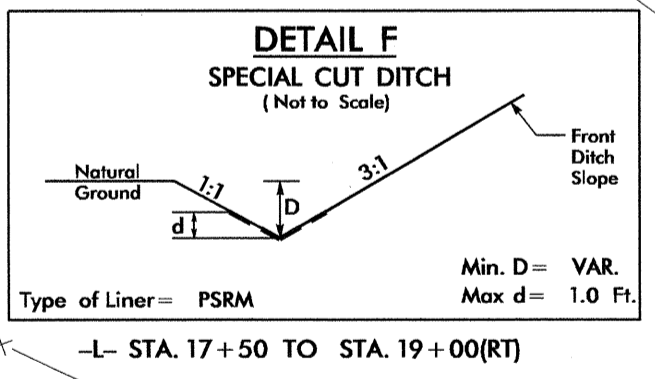
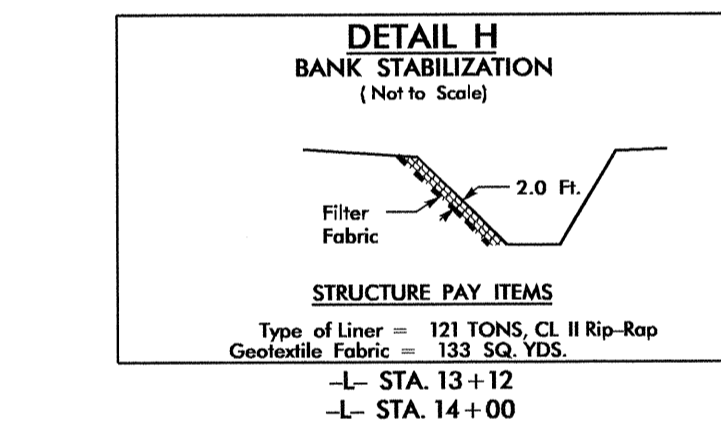
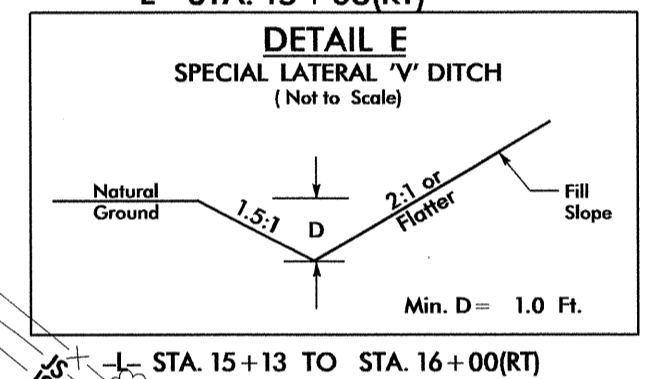
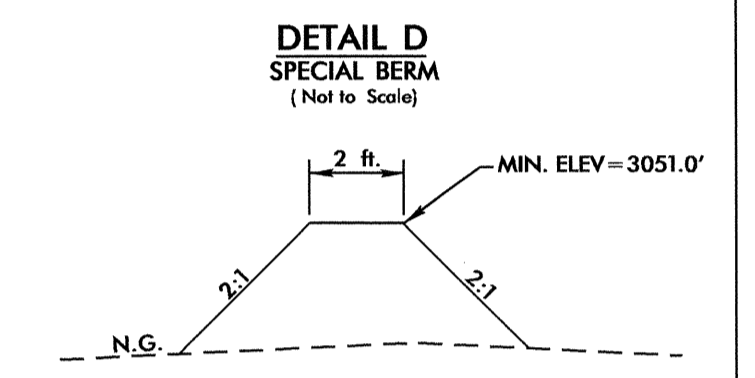
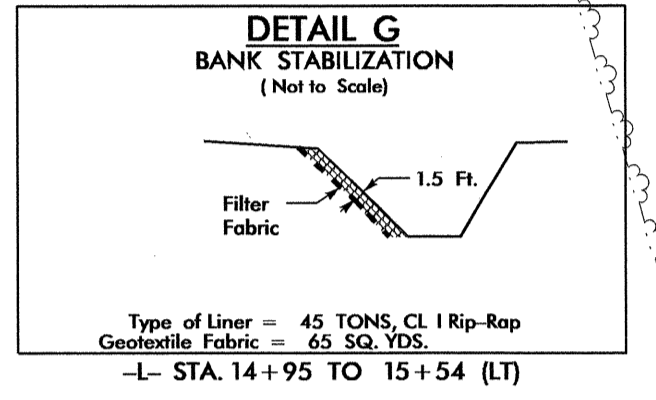
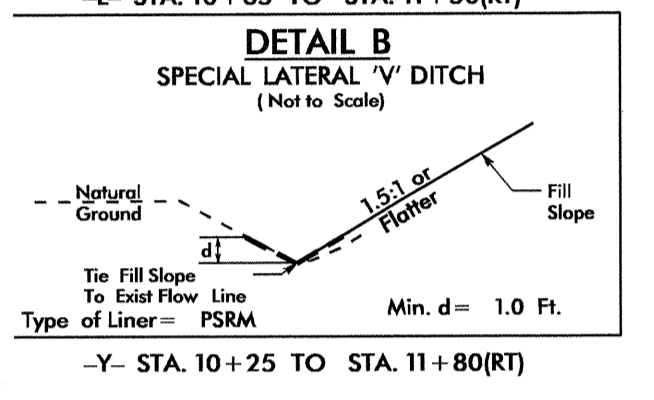
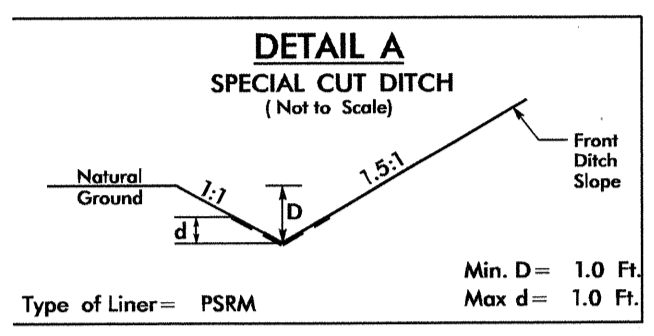
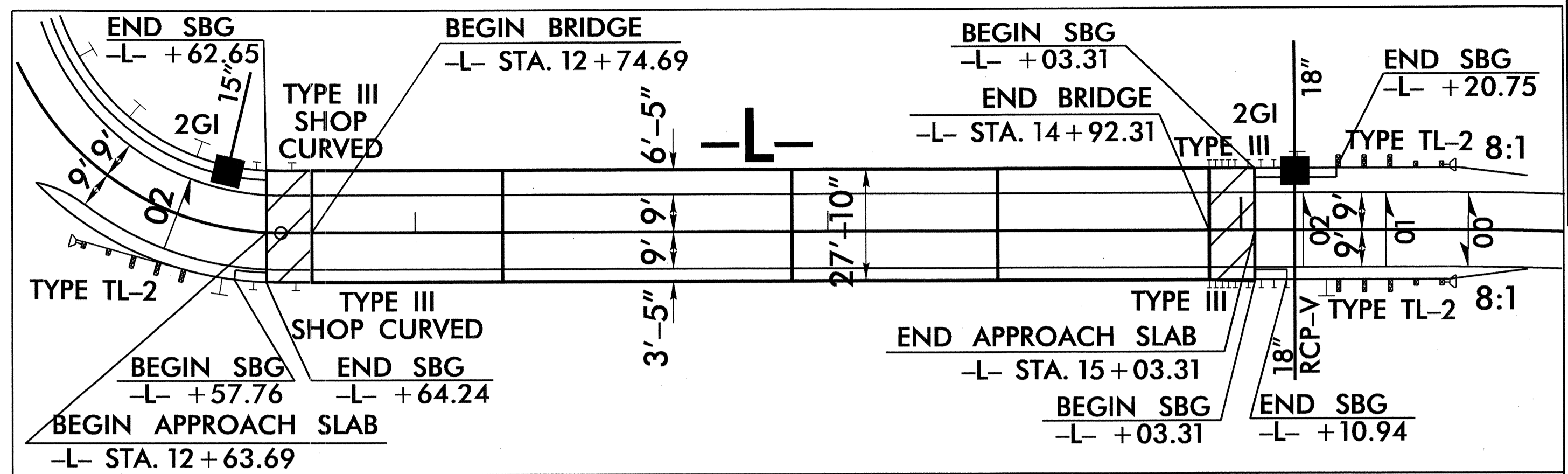
LINE	BEG. STA.	END STA.	LOC.	LENGTH			WARRANT POINT		"N" DIST. FROM E.O.L.	TOTAL SHLDR WIDTH	FLAIR LENGTH		W		ANCHORS						IMP. ATTN. TYPE 350			REMOVE EXISTING GRDRAIL	TEMP W-BEAM ANCHOR (DETAIL 2-C)	REMARKS										
				STRAIGHT	SHOP CURVED	DOUBLE FACED	APPR. END	TRAIL. END			APPR. END	TRAIL. END	APPR. END	TRAIL. END	TL-2	TYPE III SHOP CURVED	TYPE III	M-350	XII	CAT-1	VI MOD	EA	G				NG									
-L-	12+74.69	11+37.31	LT	25.00	85.43				6.42	9.00	25.00	25.00	0.50	0.50	1	1																				
-L-	12+74.69	12+24.55	RT	25.00	30.21			12+74.69	3.42	7.00	25.00		0.50		1	1																				
-L-	14+92.31	15+51.79	LT	59.48				14+92.31	6.42	9.00	25.00		0.50		1	1																				
-L-	14+92.31	15+52.00	RT	59.69				14+92.31	3.42	7.00		25.00		0.50	1	1																				
SUBTOTALS:				169.17	115.64										4	2	2																			
ANCHOR DEDUCTIONS:																																				
TL-2 4 @ 25.00 =				100.00																																
TYPE III 2 @ 18.75 =				37.50																																
TYPE III SHOP CURVED 2 @ 18.75 =				37.50																																
GRAND TOTALS:				31.67	78.14										4	2	2																			
SAY:				50.00	100.00										4	2	2																			

TEMPORARY GUARDRAIL

-L-	12+75.70	12+18.48	RT	25.00	43.75			12+75.70	+/- 1	+/- 4		25.00	0.50	1																				1	
SUBTOTALS:				25.00	43.75										1																			1	
ANCHOR DEDUCTIONS:																																			
TL-2 1 @ 25.00 =				25.00																															
GRAND TOTALS:					43.75										1																				1
SAY:				12.50	62.50										1																			1	

(6 ADDITIONAL GUARDRAIL POSTS)

$PI\ Sta\ 12+28.05$ $\Delta = 8^{\circ} 51' 21.1" (LT)$ $D = 8^{\circ} 51' 04.0"$ $L = 100.0'$ $T = 60.70'$ $R = 70.00'$ $SE = 02$ $DS < 15\ MPH$	$PI\ Sta\ 17+29.60$ $\Delta = 23^{\circ} 08' 15.5" (RT)$ $D = 6^{\circ} 21' 58.3"$ $L = 363.45'$ $T = 184.23'$ $R = 900.00'$ $SE = 04$ $DS = 45\ MPH$
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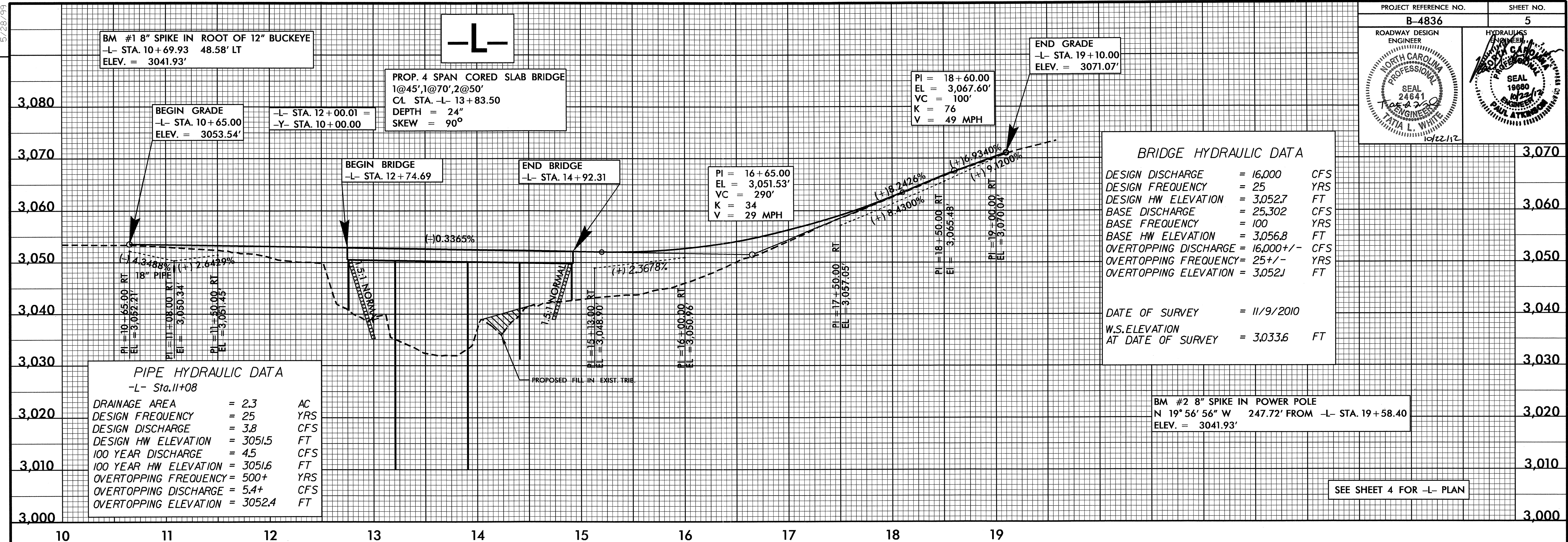


$PI\ Sta\ 10+21.46$ $\Delta = 46^{\circ} 27' 45.0" (LT)$ $D = 11^{\circ} 35' 29.6"$ $L = 40.55'$ $T = 21.46'$ $R = 50.00'$ $SE = SEE\ PLANS$	$PI\ Sta\ 11+26.66$ $\Delta = 4^{\circ} 11' 20.6" (LT)$ $D = 11^{\circ} 27' 33.0"$ $L = 36.56'$ $T = 18.29'$ $R = 500.00'$ $SE = SEE\ PLANS$
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- NOTES:**
1. SEE SHEET 5 FOR -L- AND -Y- PROFILES.
 2. SEE SHEETS S-1 THROUGH S-27 FOR STRUCTURE PLANS.
 3. DRIVEWAY RADII ARE 10' UNLESS OTHERWISE NOTED.
 4. SEE SHEET 2-A FOR RECREATIONAL ACCESS AREA (-DR-).
 5. SEE SHEET 2-B FOR TEMP. SHORING & TEMP. G/R LOCATIONS.

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REVISIONS



BRIDGE HYDRAULIC DATA

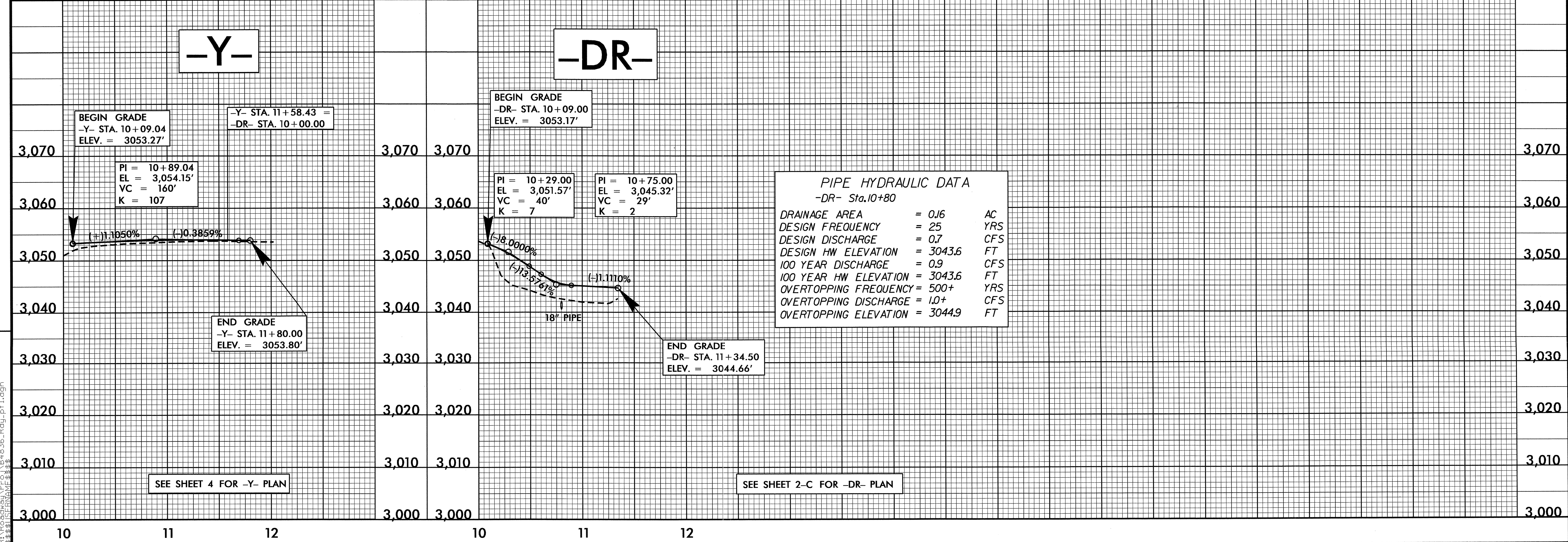
DESIGN DISCHARGE	= 16,000	CFS
DESIGN FREQUENCY	= 25	YRS
DESIGN HW ELEVATION	= 3,052.7	FT
BASE DISCHARGE	= 25,302	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 3,056.8	FT
OVERTOPPING DISCHARGE	= 16,000 +/-	CFS
OVERTOPPING FREQUENCY	= 25 +/-	YRS
OVERTOPPING ELEVATION	= 3,052.1	FT
DATE OF SURVEY	= 11/9/2010	
W.S. ELEVATION AT DATE OF SURVEY	= 3,033.6	FT

PIPE HYDRAULIC DATA
-L- Sta. 11+08

DRAINAGE AREA	= 2.3	AC
DESIGN FREQUENCY	= 25	YRS
DESIGN DISCHARGE	= 3.8	CFS
DESIGN HW ELEVATION	= 3051.5	FT
100 YEAR DISCHARGE	= 4.5	CFS
100 YEAR HW ELEVATION	= 3051.6	FT
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING DISCHARGE	= 5.4+	CFS
OVERTOPPING ELEVATION	= 3052.4	FT

BM #2 8" SPIKE IN POWER POLE
 N 19° 56' 56" W 247.72' FROM -L- STA. 19+58.40
 ELEV. = 3041.93'

SEE SHEET 4 FOR -L- PLAN



PIPE HYDRAULIC DATA
-DR- Sta. 10+80

DRAINAGE AREA	= 0.16	AC
DESIGN FREQUENCY	= 25	YRS
DESIGN DISCHARGE	= 0.7	CFS
DESIGN HW ELEVATION	= 3043.6	FT
100 YEAR DISCHARGE	= 0.9	CFS
100 YEAR HW ELEVATION	= 3043.6	FT
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING DISCHARGE	= 1.0+	CFS
OVERTOPPING ELEVATION	= 3044.9	FT

SEE SHEET 4 FOR -Y- PLAN

SEE SHEET 2-C FOR -DR- PLAN

5/28/99

REVISIONS

22-OCT-2012 14:44
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 TATIA L. WHITE