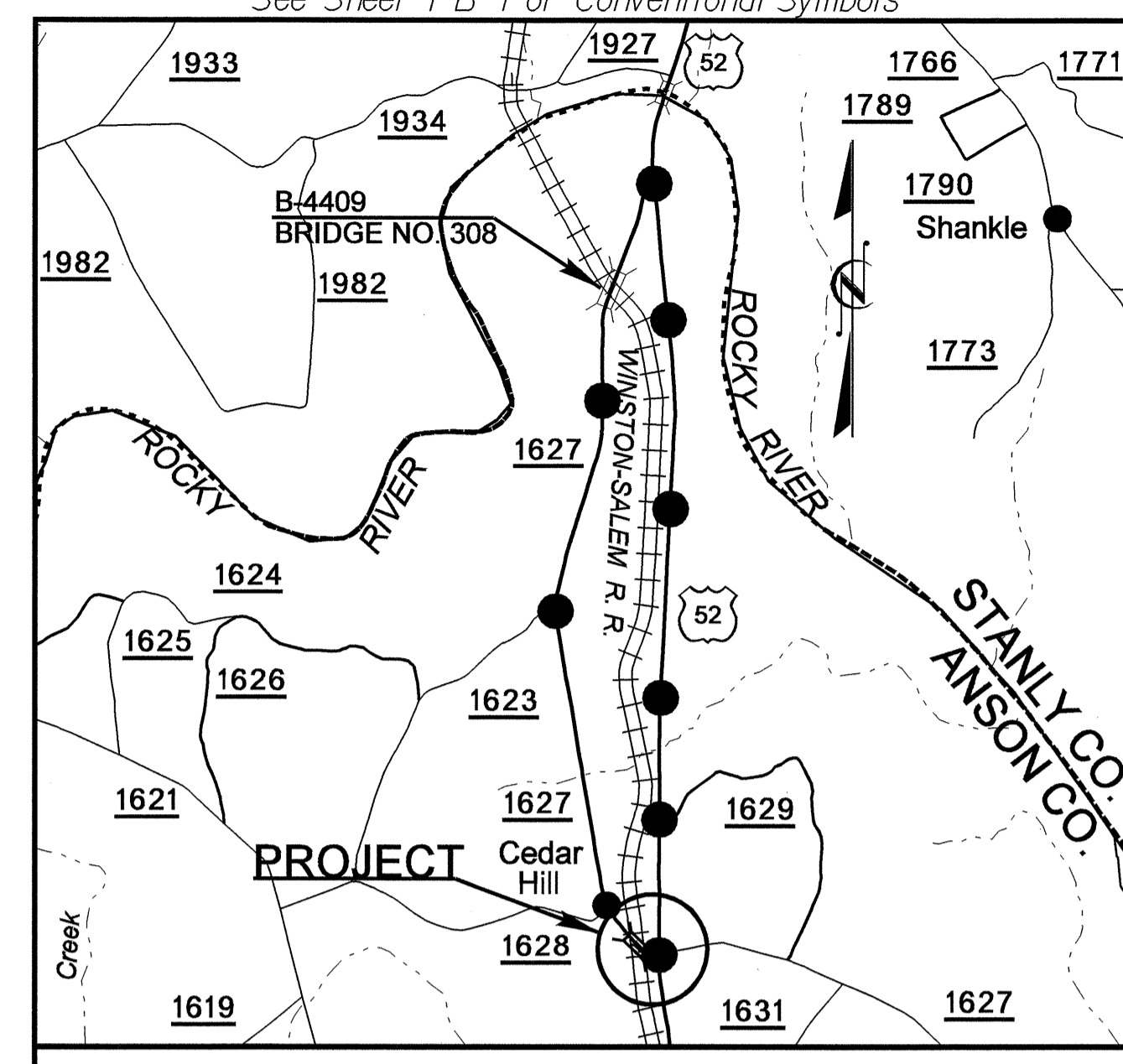


05/08/09

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



VICINITY MAP  
●—●—●— DETOUR ROUTE

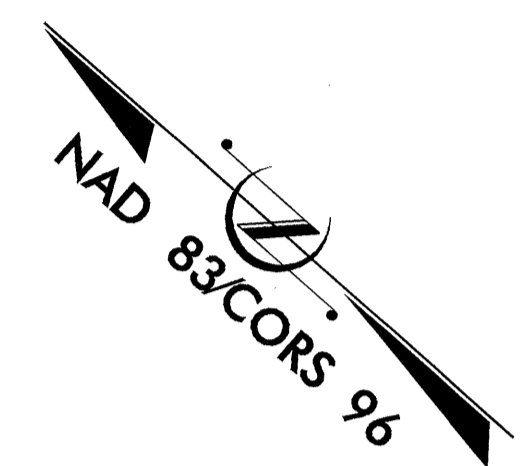
STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

**ANSON COUNTY**

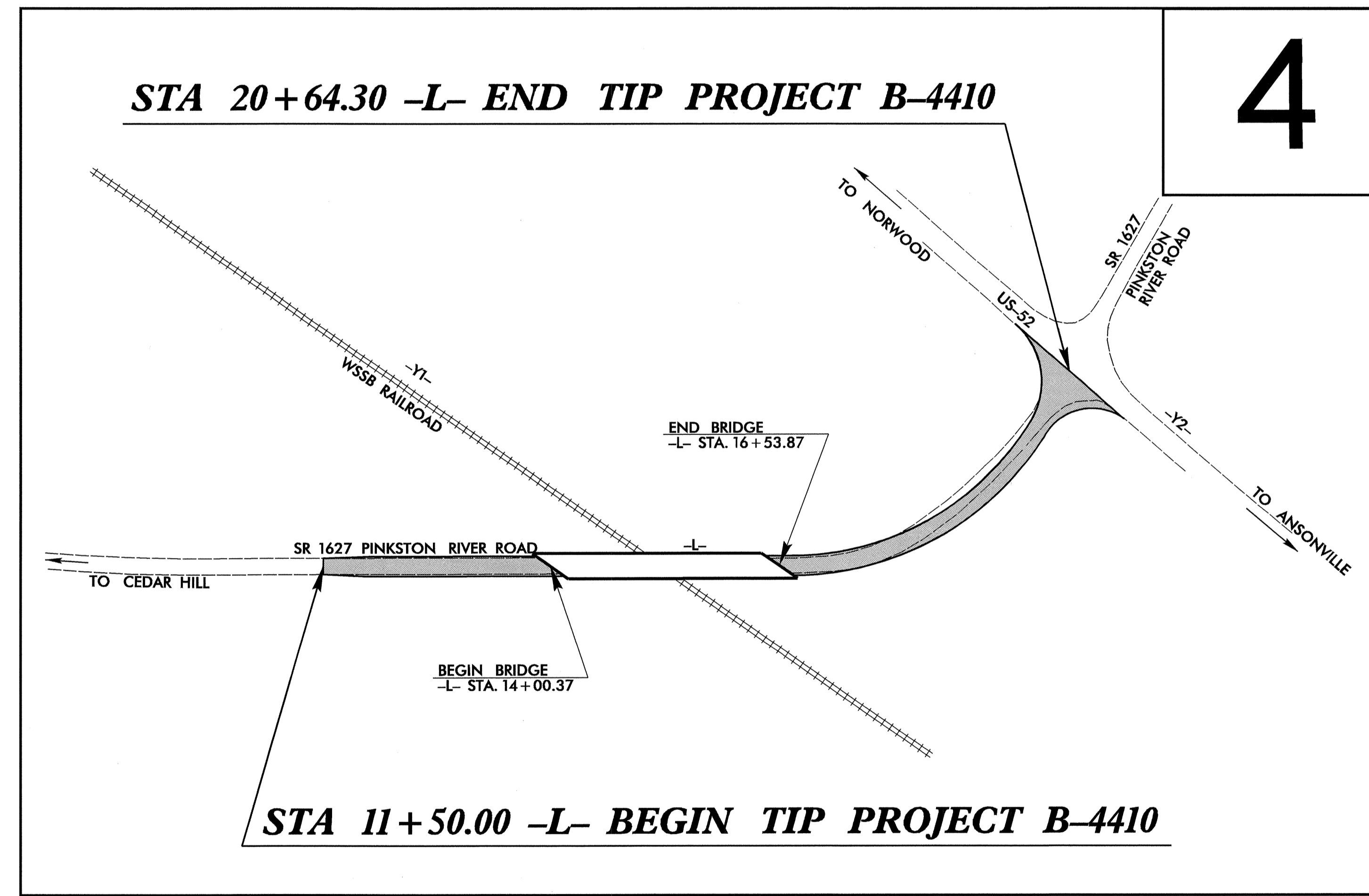
**LOCATION: BRIDGE NO. 307 OVER THE WINSTON-SALEM SOUTH BOUND RAILROAD ON SR 1627 (PINKSTON RIVER ROAD)**

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

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4410	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
33688.1.1	BRZ-1627(4)	PE	
33688.2.1	BRZ-1627(4)	RW & UTIL	
33688.3.STI	STM-1627(8)	CONST.	



**CONTRACT: TIP PROJECT: B-4410**

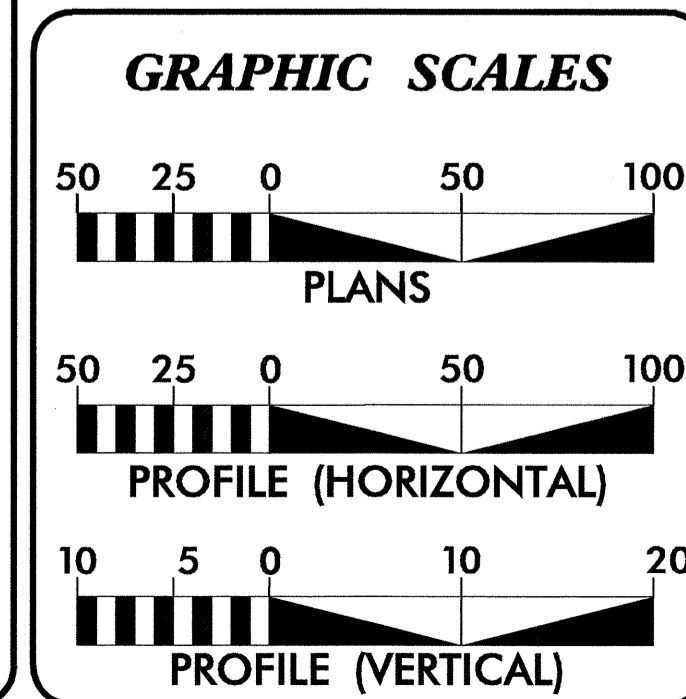


4

**PART II**

\*\* DESIGN EXCEPTION REQUIRED FOR MINIMUM HORIZONTAL CURVE RADIUS OF 320' AND HORIZONTAL STOPPING SIGHT DISTANCE OF 238'.

**CONTRACT:**



**DESIGN DATA**

ADT 2009 =	344
ADT 2029 =	493
DHV =	10 %
D =	60 %
T =	4 % *
** V =	60 MPH
* TTST 2	DUAL 2
FUNC. CLASS =	RURAL LOCAL

**PROJECT LENGTH**

LENGTH ROADWAY TIP PROJECT B-4410 =	0.125 MILES
LENGTH STRUCTURE TIP PROJECT B-4410 =	0.048 MILES
TOTAL LENGTH TIP PROJECT B-4410 =	0.173 MILES

Prepared In the Office of:

**DIVISION OF HIGHWAYS**  
1000 Birch Ridge Dr., Raleigh NC, 27610

2006 STANDARD SPECIFICATIONS

<b>RIGHT OF WAY DATE:</b> JULY 16, 2007	<b>GARY LOVERING, P.E.</b> PROJECT ENGINEER
<b>LETTING DATE:</b> JULY 21, 2009	<b>RON McCOLLUM, P.E.</b> PROJECT DESIGN ENGINEER

**HYDRAULIC ENGINEER**

Signature: *Mark T. Shown* 1-23-09 P.E.

**ROADWAY DESIGN ENGINEER**

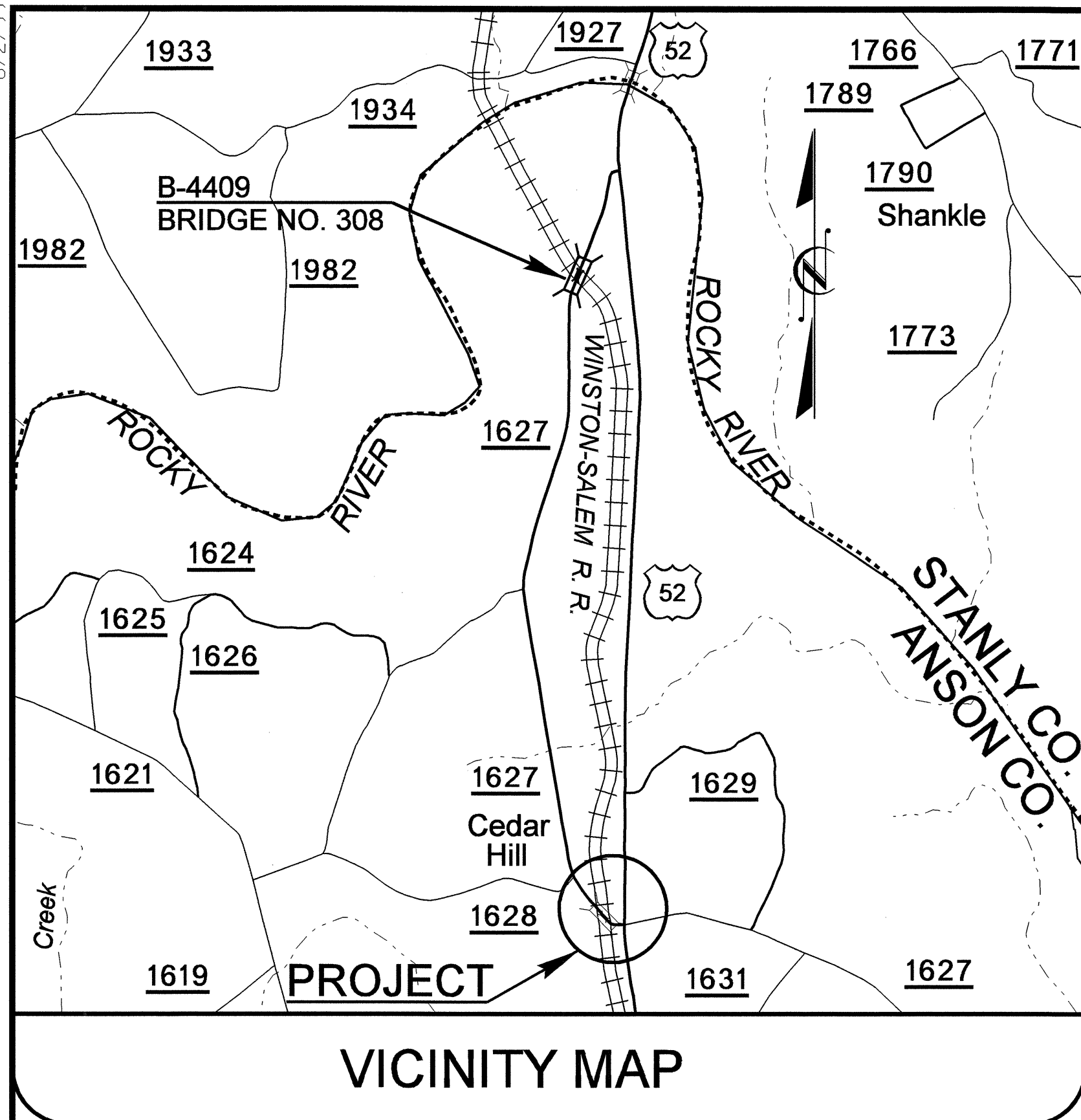
Signature: *Ronald E. McCollum* 4/24/09 P.E.

**DIVISION OF HIGHWAYS**  
STATE OF NORTH CAROLINA

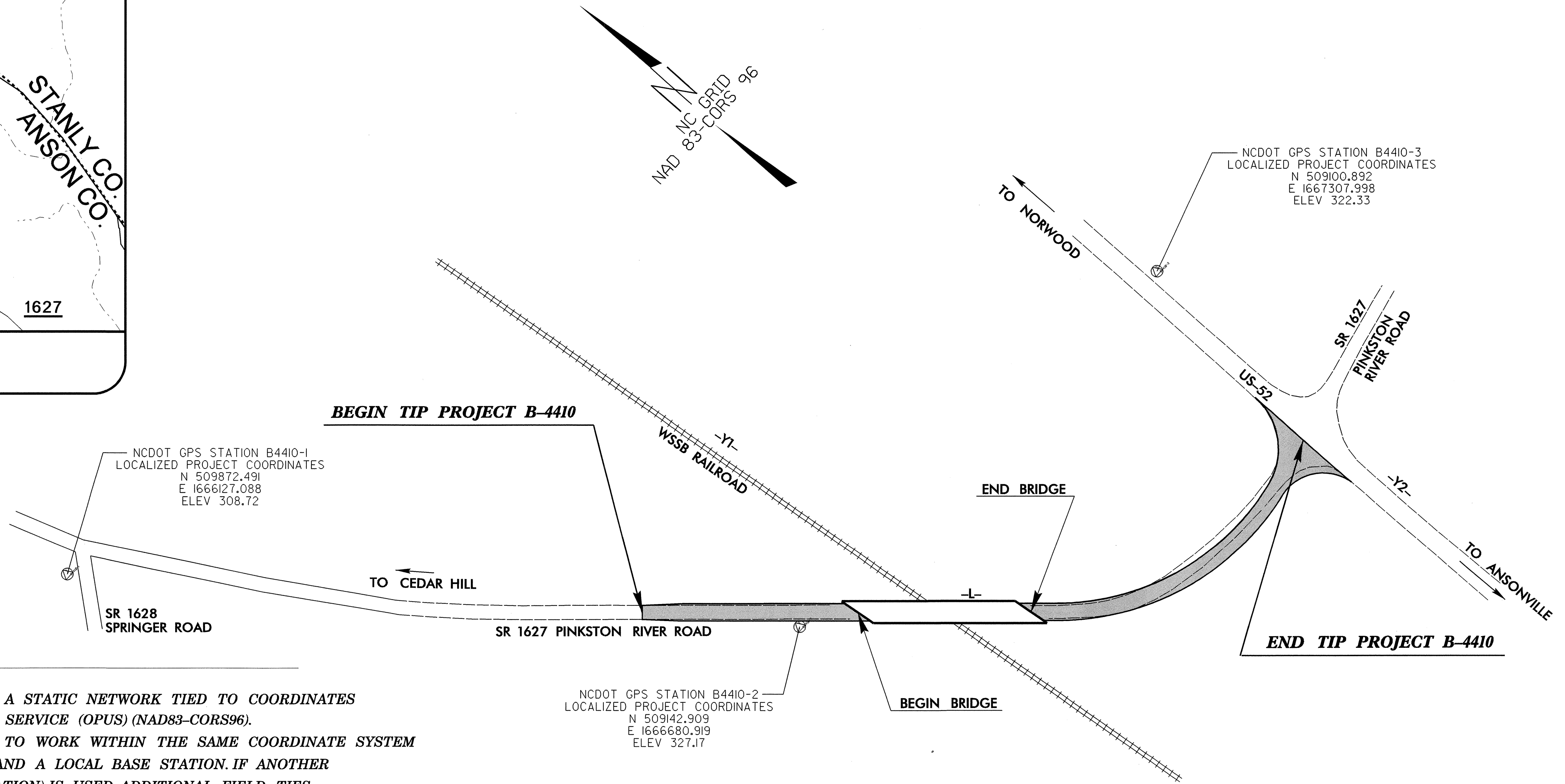
*cut smillan* P.E.  
STATE HIGHWAY DESIGN ENGINEER

22-APR-2009 14:50  
C:\p000000\proj\01-b-4410-rdy-tsh.dgn  
\$\$\$\$USERNAME\$\$\$\$

# SURVEY CONTROL SHEET B-4410



**VICINITY MAP**



**NOTES:**

1. THE SITE CALIBRATION SHOWN IS BASED UPON A STATIC NETWORK TIED TO COORDINATES OBTAINED FROM THE NGS ONLINE POSITIONING SERVICE (OPUS) (NAD83-CORS96). THIS CALIBRATION WILL ALLOW THE END USER TO WORK WITHIN THE SAME COORDINATE SYSTEM WHEN USING RTK (REAL TIME KINEMATIC) GPS AND A LOCAL BASE STATION. IF ANOTHER SYSTEM SUCH AS VRS (VIRTUAL REFERENCE STATION) IS USED, ADDITIONAL FIELD TIES MAY BE NEEDED TO REDUCE POSSIBLE ERRORS, OR BIASES.

2. THE CONTROL DATA FOR THIS PROJECT CAN BE FOUND ELECTRONICALLY BY SELECTING PROJECT CONTROL DATA AT:  
[HTTP://WWW.DOH.DOT.STATE.NC.US/PRECONSTRUCT/HIGHWAY/LOCATION/PROJECT/](http://www.doh.dot.state.nc.us/preconstruct/highway/location/project/)

THE FILES TO BE FOUND ARE AS FOLLOWS:

- B4410\_LS\_GPSCALIB\_061120.HTML
- B4410\_LS\_WGS84\_061120.TXT
- B4410\_LS\_LOCAL\_061120.TXT
- B4410\_LS\_CONTROL\_061120.TXT

THE WGS84 AND LOCAL FILES ARE COMMA DELIMITED AND CAN BE USED TO REPRODUCE THE SITE CALIBRATION FOR THE END USER'S GPS EQUIPMENT. 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.

**DATUM DESCRIPTION**

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "B4410-1" WITH NAD 83/CORS 96 STATE PLANE GRID COORDINATES OF NORTHING: 509872.491(ft) EASTING: 1666127.088(ft) THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99986400 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "B4410-1" TO -L- STATION 10+00.00 IS S 36°27'34.5" E 569.173 ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES VERTICAL DATUM USED IS NAVD 88

NOTE: DRAWING NOT TO SCALE

06-APR-2009 08:40 C:\COURT\PROJECTS\B4410\1s-1c.dgn

# SURVEY CONTROL SHEET B-4410

PROJECT REFERENCE NO. B-4410	SHEET NO. 1-D
Location and Surveys	

BL	POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
1	B4410-1		509872.4910	1666127.0880	308.72	OUTSIDE PROJECT LIMITS	
4	BL-4		509641.5630	1666276.7040	314.91	OUTSIDE PROJECT LIMITS	
2	B4410-2		509142.9090	1666680.9190	327.17	13+46.46	18.16 RT
5	BL-5		509089.3410	1666734.0890	328.01	14+21.80	13.72 RT
6	BL-6		509002.1330	1666813.0490	301.08	15+39.44	12.21 RT
7	BL-7		508928.5550	1666875.7150	327.91	16+36.07	13.90 RT
8	BL-8		508780.7460	1667246.2380	320.87	20+31.12	38.17 RT
9	BL-9		508890.8820	1667509.4160	320.17	OUTSIDE PROJECT LIMITS	

```

.....
BM1  ELEVATION = 316.08
N 509725  E 1666282
L STATION 10+00
N 30° 35' 56.1" W DIST 360.93
RR SPIKE IN 12IN POPLAR
.....
BM2  ELEVATION = 322.17
N 509069  E 1666690
L STATION 14+08 60 RIGHT
RR SPIKE IN 48IN OAK
.....
BM3  ELEVATION = 316.08
N 508735  E 1667344
L STATION 21+16 104 RIGHT
RR SPIKE IN 24IN PINE
.....
    
```

BY1	POINT	DESC.	NORTH	EAST	ELEVATION	Y1 STATION	OFFSET
10	BY-10		509355.9210	1666773.0030	299.07	14+31.56	0.17 RT
E06	BL-6		509002.1330	1666813.0490	301.08	17+87.60	0.07 LT
11	BY-11		508683.6790	1666848.7780	302.53	21+08.06	0.02 RT

BY2	POINT	DESC.	NORTH	EAST	ELEVATION	Y2 STATION	OFFSET
3	B4410-3		509100.8920	1667307.9980	322.33	OUTSIDE PROJECT LIMITS	
12	CEDAR HILL		508897.3410	1667244.3520	323.48	11+40.21	38.85 RT
E08	BL-8		508780.7460	1667246.2380	320.87	12+56.81	37.25 RT
13	BY1-13		508569.9220	1667262.2020	314.81	14+67.06	23.06 RT

**NOTES:**

1. THE SITE CALIBRATION SHOWN IS BASED UPON A STATIC NETWORK TIED TO COORDINATES OBTAINED FROM THE NGS ONLINE POSITIONING SERVICE (OPUS) (NAD83-CORS96). THIS CALIBRATION WILL ALLOW THE END USER TO WORK WITHIN THE SAME COORDINATE SYSTEM WHEN USING RTK (REAL TIME KINEMATIC) GPS AND A LOCAL BASE STATION. IF ANOTHER SYSTEM SUCH AS VRS (VIRTUAL REFERENCE STATION) IS USED, ADDITIONAL FIELD TIES MAY BE NEEDED TO REDUCE POSSIBLE ERRORS, OR BIASES.
  
2. THE CONTROL DATA FOR THIS PROJECT CAN BE FOUND ELECTRONICALLY BY SELECTING PROJECT CONTROL DATA AT:  
[HTTP://WWW.DOHDOT.STATE.NC.US/PRECONSTRUCT/HIGHWAY/LOCATION/PROJECT/](http://www.doh.dot.state.nc.us/preconstruct/highway/location/project/)  
  
 THE FILES TO BE FOUND ARE AS FOLLOWS:  
 B4410\_LS\_GPSCALIB\_061120.HTML  
 B4410\_LS\_WGS84\_061120.TXT  
 B4410\_LS\_LOCAL\_061120.TXT  
 B4410\_LS\_CONTROL\_061120.TXT  
  
 THE WGS84 AND LOCAL FILES ARE COMMA DELIMITED AND CAN BE USED TO REPRODUCE THE SITE CALIBRATION FOR THE END USER'S GPS EQUIPMENT. 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.

**DATUM DESCRIPTION**

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "B4410-1"  
 WITH NAD 83/CORS 96 STATE PLANE GRID COORDINATES OF  
 NORTHING: 509872.491(++) EASTING: 1666127.088(++)  
 THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT  
 (GROUND TO GRID) IS: 0.99986400  
 THE N.C. LAMBERT GRID BEARING AND  
 LOCALIZED HORIZONTAL GROUND DISTANCE FROM  
 "B4410-1" TO -L- STATION 10+00.00 IS  
 S 36°27'34.5" E 569.173  
 ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES  
 VERTICAL DATUM USED IS NAVD 88

# SURVEY CONTROL SHEET B-4410

PROJECT REFERENCE NO.	SHEET NO.
B-4410	1-E
Location and Surveys	

GPS CALIBRATION REPORT  
PROJECT : B4410 CALIB

TIP NUMBER B-4410  
 USER NAME JJEFFREYS DATE & TIME 11:52:27 AM 11/20/2006  
 COORDINATE SYSTEM US STATE PLANE 1983 ZONE NORTH CAROLINA 3200  
 HORIZONTAL DATUM NAD 1983 (CONUS)  
 VERTICAL DATUM NAVD-88 GEOID MODEL GEOID03 (CONUS) NC SUB GRID  
 COORDINATE UNITS US SURVEY FEET  
 DISTANCE UNITS US SURVEY FEET  
 HEIGHT UNITS US SURVEY FEET

LOCAL SITE INFORMATION  
 LOCALIZED AROUND B4410-1  
 LATITUDE N/A  
 LONGITUDE N/A  
 SITE SCALE FACTOR N/A  
 HEIGHT N/A

DATUM TRANSFORMATION PARAMETERS

METHODTHREE PARAMETER  
 TRANSLATION ALONG X AXIS 14.156 SFT  
 TRANSLATION ALONG Y AXIS -80.771 SFT  
 TRANSLATION ALONG Z AXIS 57.646 SFT

UPDATED DEFAULT PROJECTION (TRANSVERSE MERCATOR) DEFINITION

UPDATED DEFAULT PROJECTION NOT REQUESTED

HORIZONTAL ADJUSTMENT PARAMETERS

NORTHING COORDINATE OF ROTATION CENTER 509372.097SFT  
 EASTING COORDINATE OF ROTATION CENTER 1666705.335SFT  
 ROTATION ABOUT THE CENTER POINT 0.00'00"  
 TRANSLATION NORTH 0.000SFT  
 TRANSLATION EAST 0.000SFT  
 SCALE FACTOR 1.00014038

VERTICAL ADJUSTMENT PARAMETERS

NORTHING COORDINATE OF ORIGIN POINT 509872.491SFT  
 EASTING COORDINATE OF ORIGIN POINT 1666127.088SFT  
 VERTICAL SEPARATION AT ORIGIN 0.161SFT  
 SLOPE NORTH 133.681PPM  
 SLOPE EAST 78.344PPM

GEOID MODEL DEFINITION

GEOID03 (CONUS) NC SUB GRID

RESIDUAL DIFFERENCES BETWEEN GPS (WGS84) AND LOCAL COORDINATES

SUMMARY	MAXIMUM ERROR	ROOT MEAN SQUARE ERROR	POINT
HORIZONTAL	0.001SFT	0.000	B4410-2 GPS
VERTICAL	0.000SFT	0.000	B4410-1 GPS
THREE-DIMENSIONAL	0.001SFT	0.000	B4410-2 GPS

POINT RESIDUALS

WGS84 COORDINATES	CALCULATED POINT FOR DISPLAY ONLY	LOCAL COORDINATES
POINT B4410-1 GPS LATITUDE 35°08'44.91121"N LONGITUDE 80°07'00.88146"W HEIGHT 208.470SFT	NORTHING 509872.491SFT EASTING 1666127.088SFT ELEVATION 308.720SFT HORZ ERROR 0.000SFT VERT ERROR 0.000SFT 3D ERROR 0.000SFT	POINT B4410-1 NORTHING 509872.491SFT EASTING 1666127.088SFT ELEVATION 308.720SFT UTILIZED HORZ AND VERT SURVEY QUALITY
POINT B4410-2 GPS LATITUDE 35°08'37.75740"N LONGITUDE 80°06'54.11439"W HEIGHT 226.964SFT	NORTHING 509142.910SFT EASTING 1666680.919SFT ELEVATION 327.170SFT HORZ ERROR 0.001SFT VERT ERROR 0.000SFT 3D ERROR 0.001SFT	POINT B4410-2 NORTHING 509142.909SFT EASTING 1666680.919SFT ELEVATION 327.170SFT UTILIZED HORZ AND VERT SURVEY QUALITY
POINT B4410-3 GPS LATITUDE 35°08'37.41144"N LONGITUDE 80°06'46.55855"W HEIGHT 222.074SFT	NORTHING 509100.892SFT EASTING 1667307.998SFT ELEVATION 322.330SFT HORZ ERROR 0.000SFT VERT ERROR 0.000SFT 3D ERROR 0.000SFT	POINT B4410-3 NORTHING 509100.892SFT EASTING 1667307.998SFT ELEVATION 322.330SFT UTILIZED HORZ AND VERT SURVEY QUALITY

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 S 36°27'34.5" E 569.173  
 ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES  
 VERTICAL DATUM USED IS NAVD 88

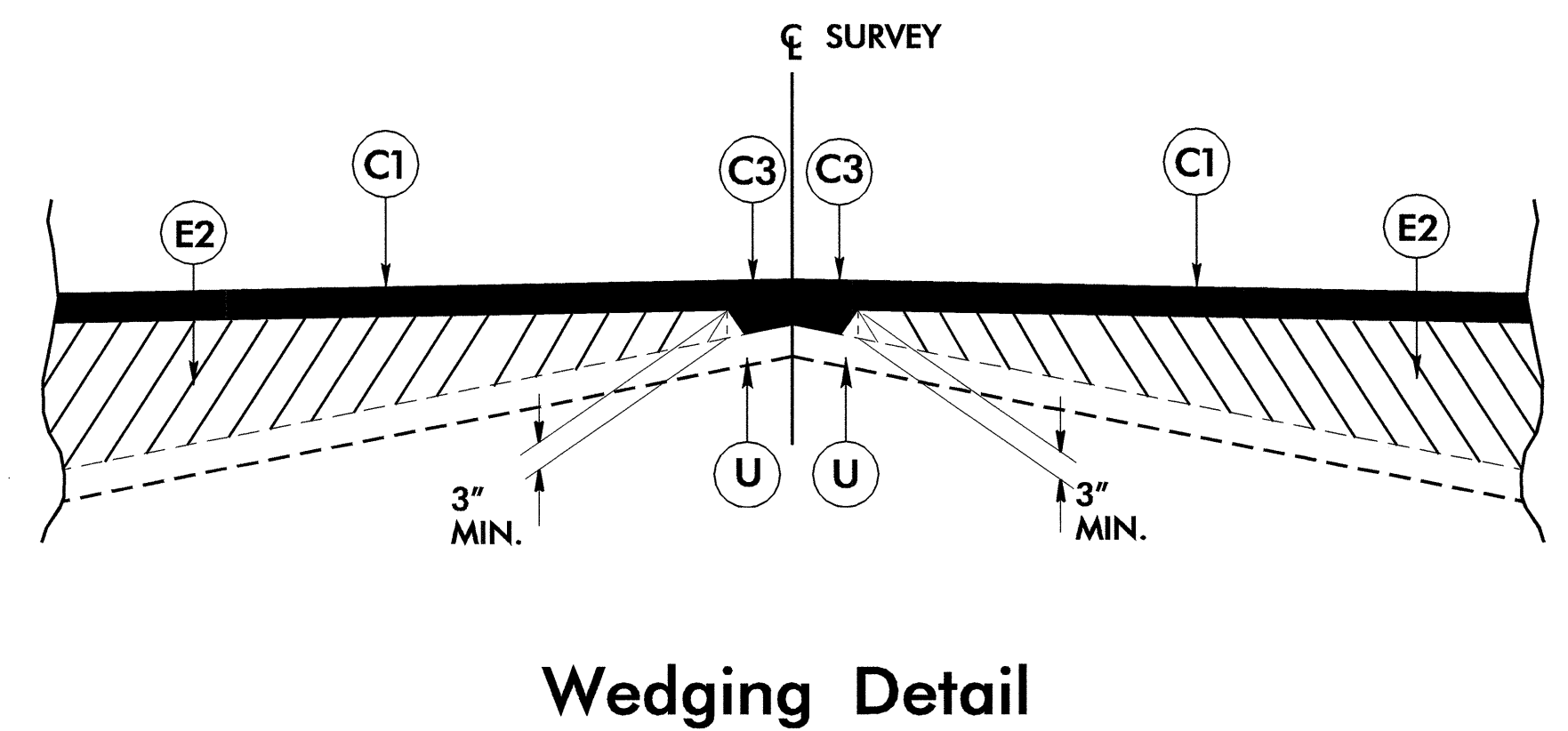
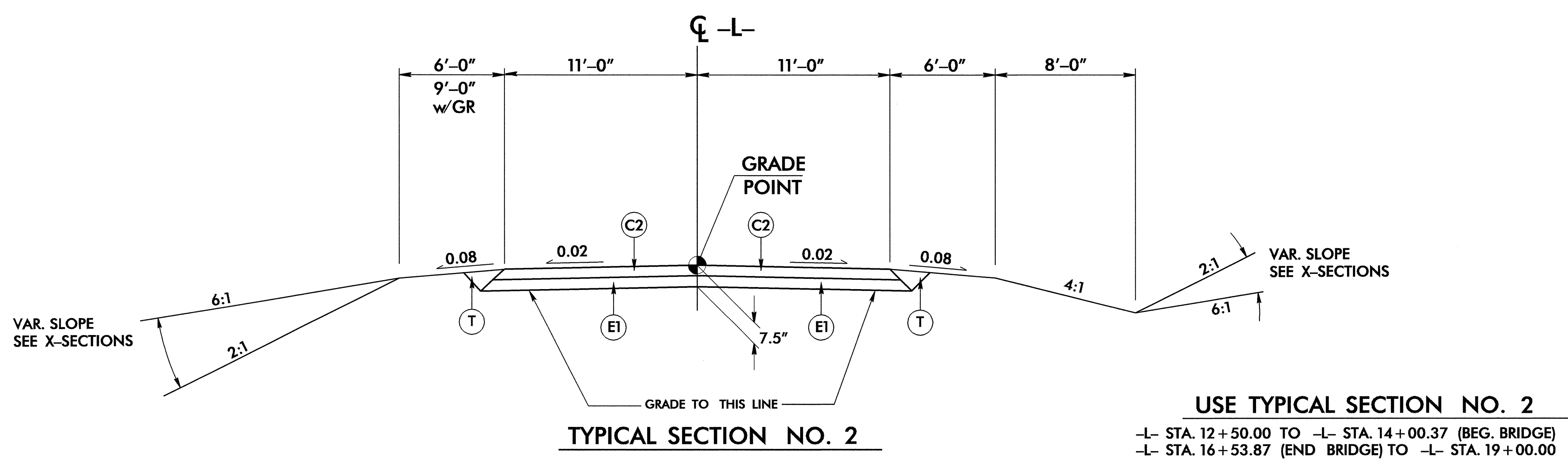
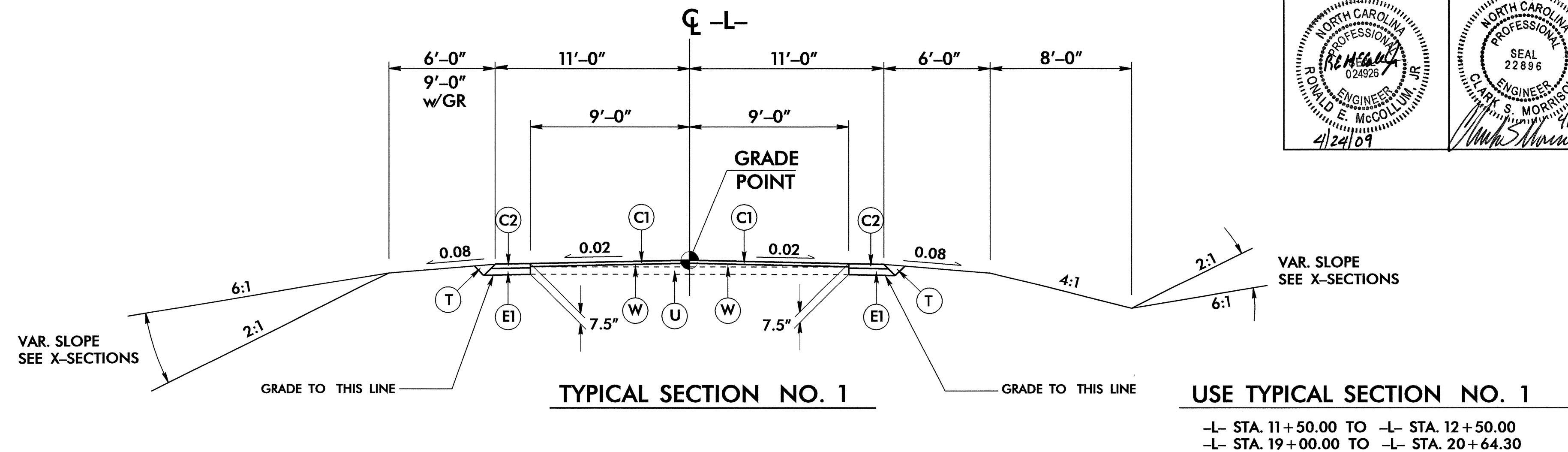
6/2/99

**PAVEMENT SCHEDULE  
FINAL DESIGN**

<b>C1</b>	PROP. APPROX. 1½" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD.
<b>C2</b>	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
<b>C3</b>	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.
<b>E1</b>	PROP. APPROX. 4½" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 513 LBS. PER SQ. YD.
<b>E2</b>	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.
<b>T</b>	EARTH MATERIAL.
<b>U</b>	EXISTING PAVEMENT.
<b>W</b>	VARIABLE DEPTH ASPHALT PAVEMENT (SEE WEDGING DETAIL)

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

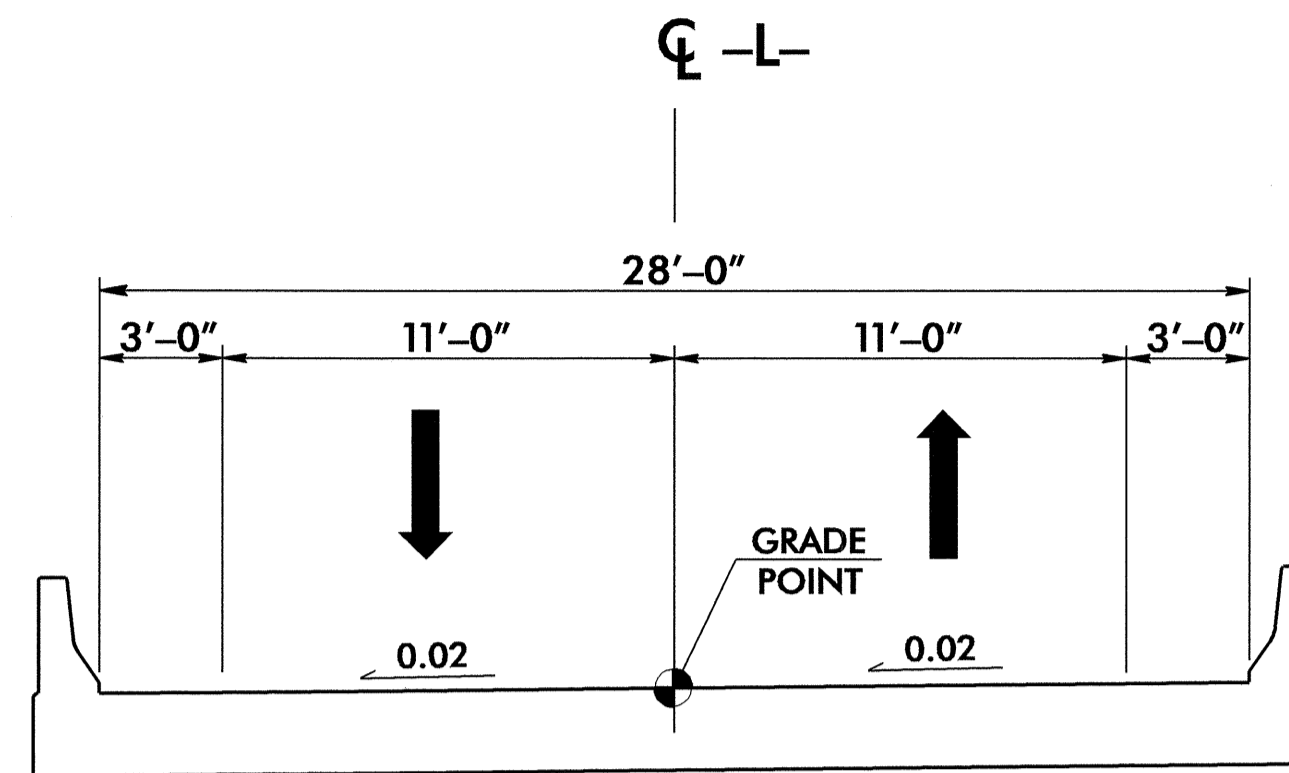
PROJECT REFERENCE NO. B-4410	SHEET NO. 2
ROADWAY DESIGN ENGINEER RONALD E. MCCOLLUM 4/24/09	PAVEMENT DESIGN ENGINEER CLARK S. MORRISON 4/24/09



06-APR-2009 08:40  
r:\cadd\work\pccol\4410-r.dwg - typ.dgn



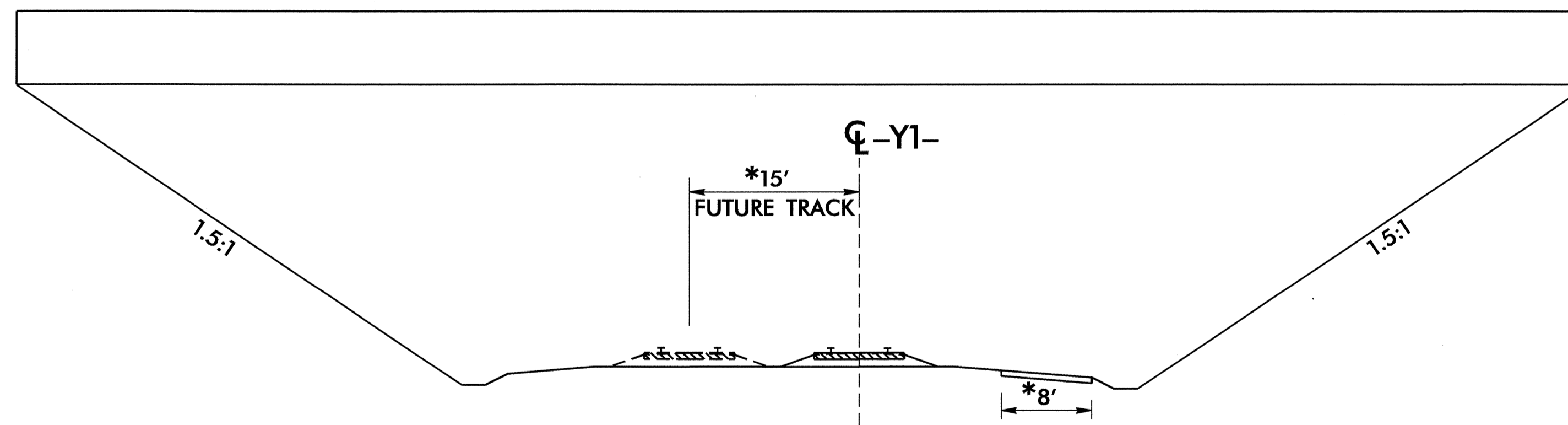
MINIMUM VERTICAL CLEARANCE = 23'-11"



TYPICAL SECTION ON STRUCTURE

USE TYPICAL SECTION ON STRUCTURE

-L- STA. 14+00.37 TO -L- STA. 16+53.87



TYPICAL SECTION UNDER STRUCTURE

\* 8' EQUIPMENT ROAD AND FUTURE TRACK FOR DETERMINING SPAN LENGTH ONLY.  
TO BE CONSTRUCTED BY RAILROAD.

6/2/99

20-APR-2009 11:37  
B:\4410-rdy-tyr.dgn

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

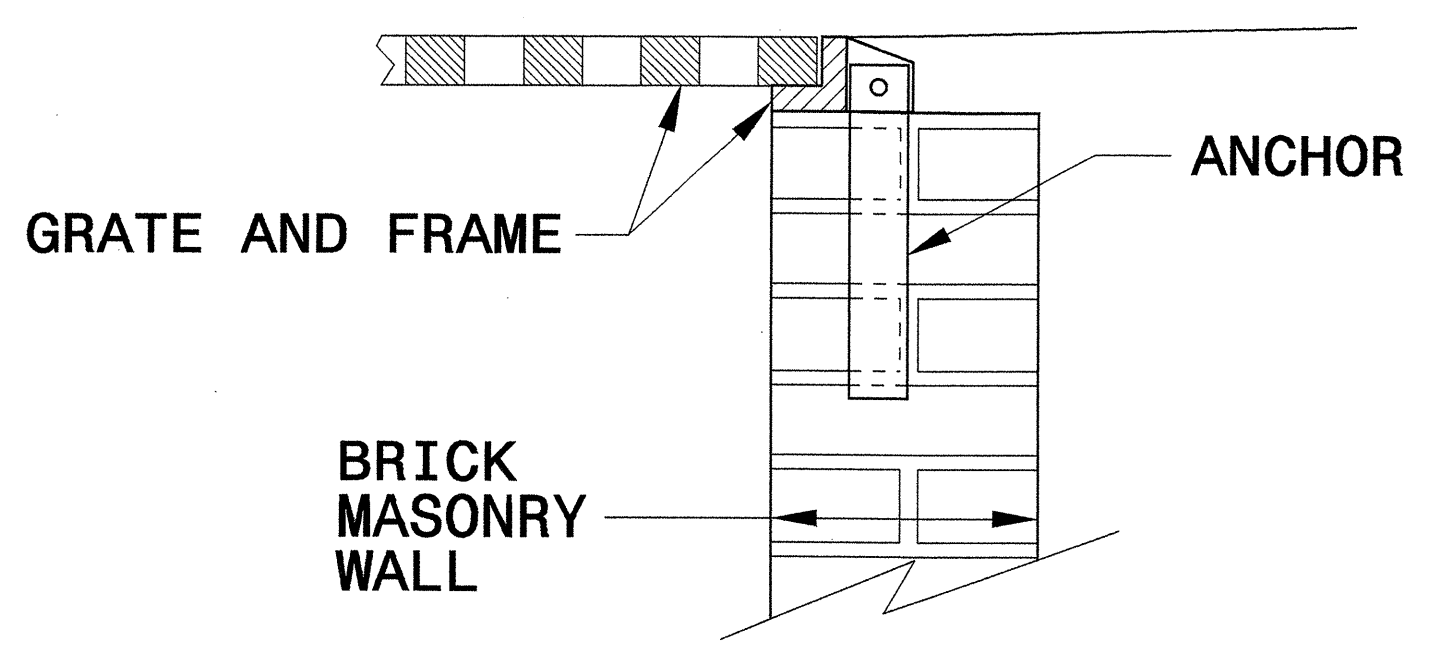
ENGLISH DETAIL DRAWING FOR  
**ANCHORAGE FOR FRAMES**  
BRICK/CONCRETE/PRECAST CONCRETE

SHEET 1 OF 1  
**840D25**

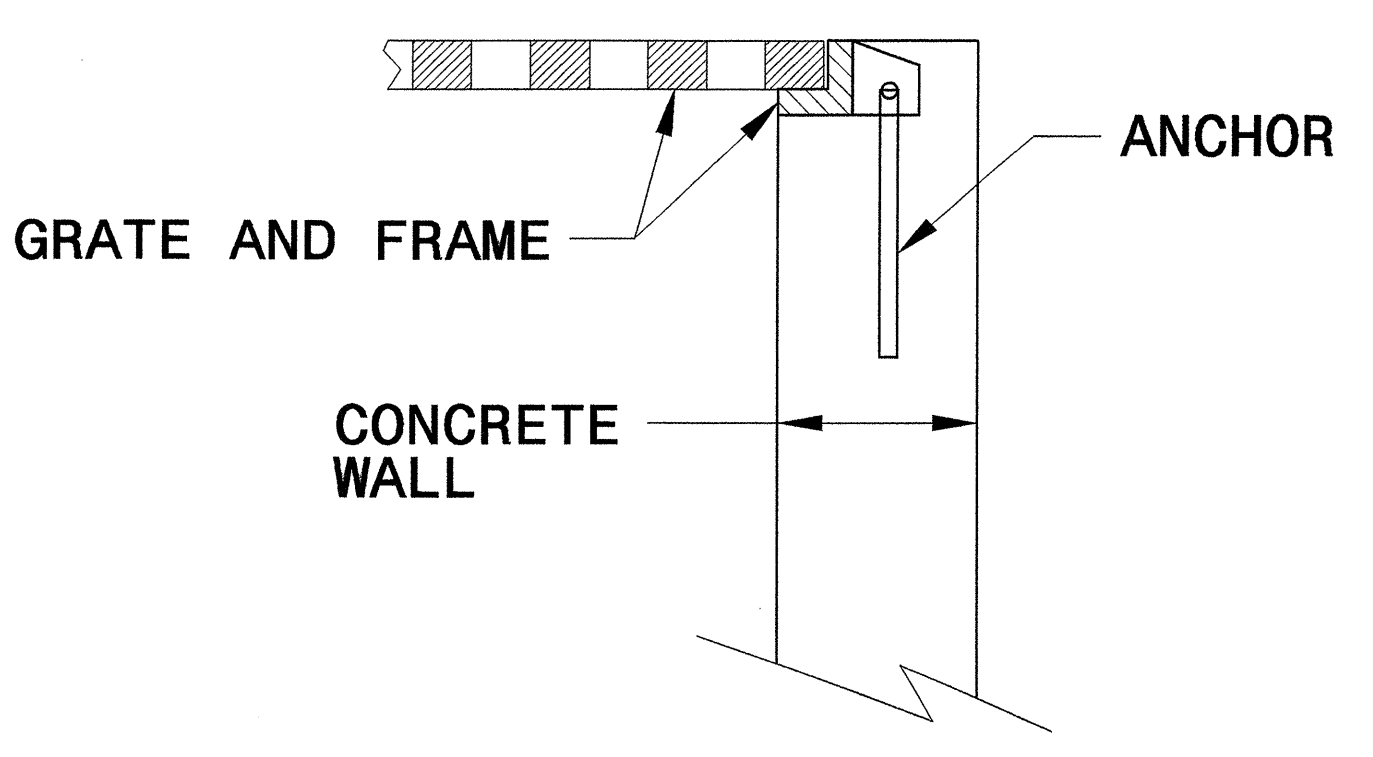
STATE OF NORTH CAROLINA  
DEPT. OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
RALEIGH, N.C.

ENGLISH DETAIL DRAWING FOR  
**ANCHORAGE FOR FRAMES**  
BRICK/CONCRETE/PRECAST CONCRETE

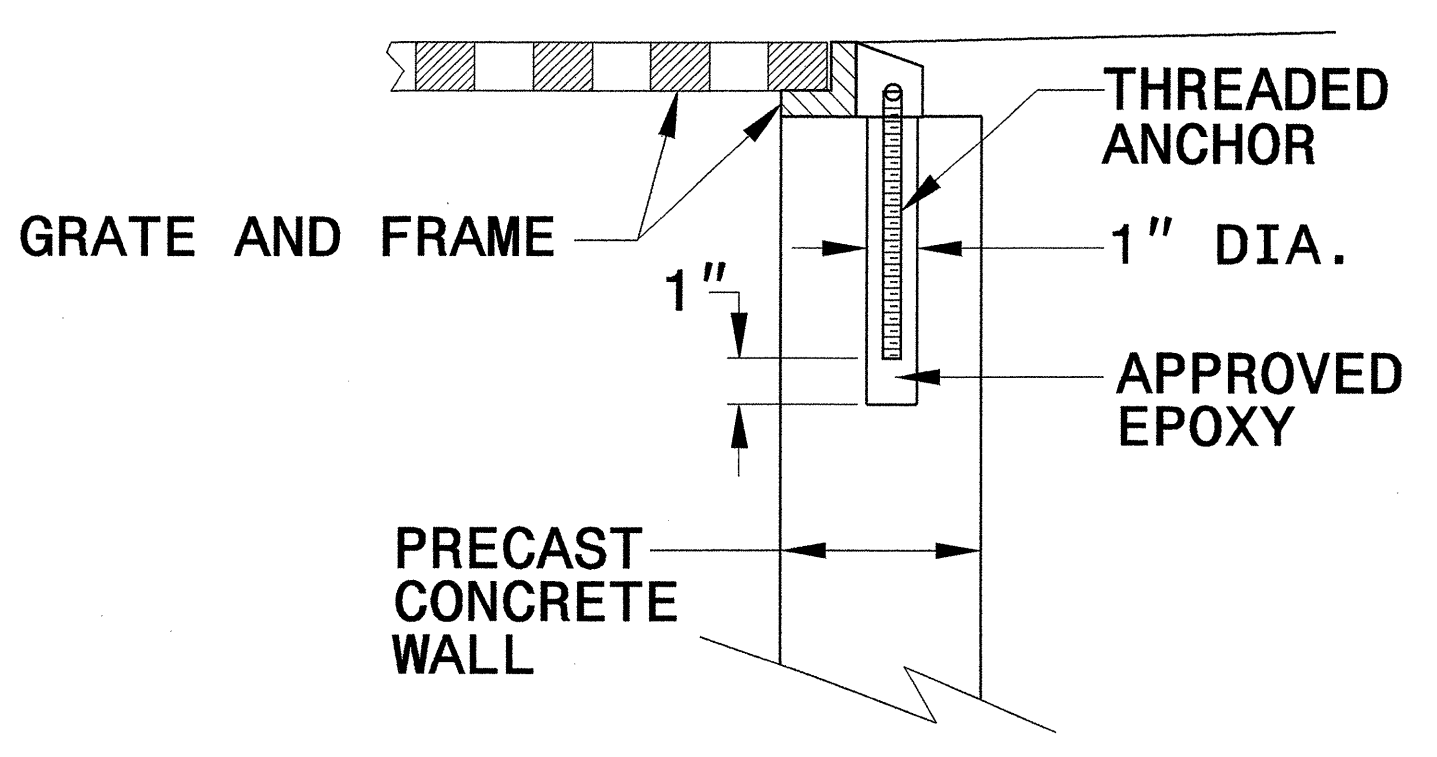
SHEET 1 OF 1  
**840D25**



**BRICK MASONRY CONSTRUCTION**



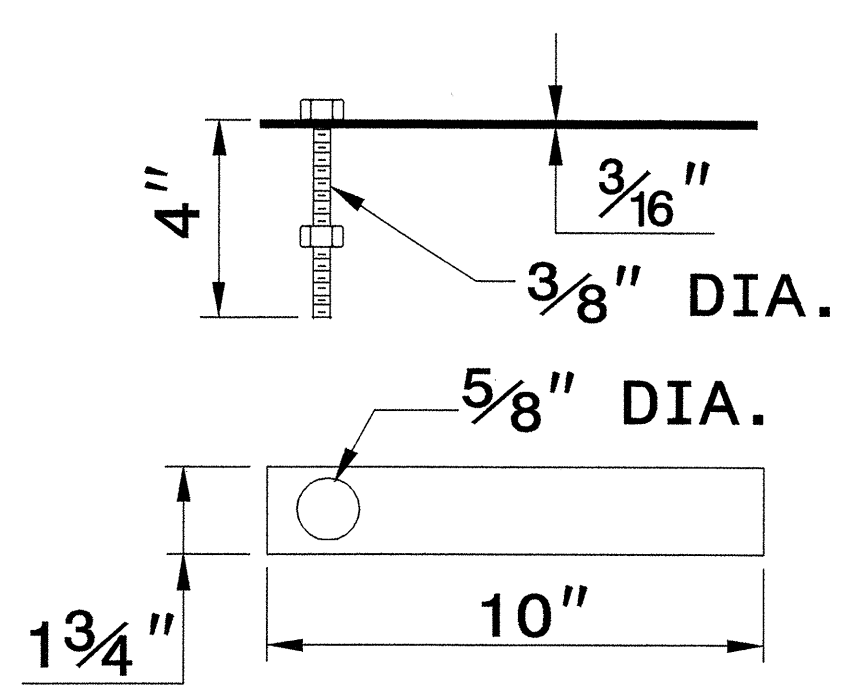
**CONCRETE CONSTRUCTION**



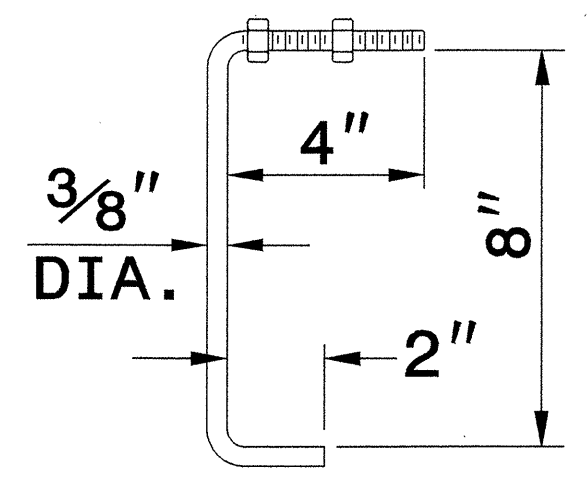
**PRECAST CONCRETE CONSTRUCTION**

**DETAIL SHOWING ANCHORAGE OF FRAME FOR GRATED DROP INLET**

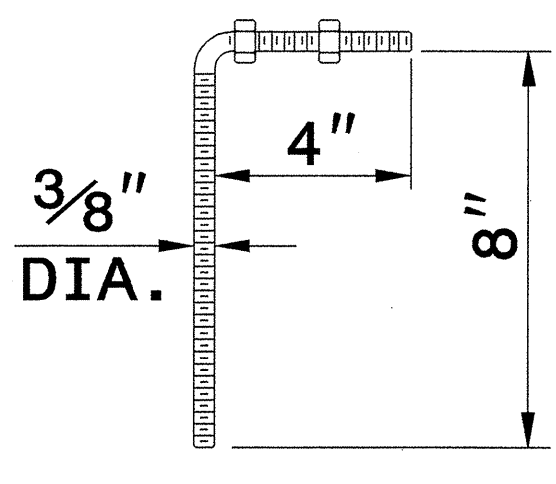
NOTE:  
CONSTRUCT GRATED DROP INLET TO COINCIDE WITH NORMAL OR SUPERELEVATED SHOULDER OR PAVEMENT SLOPE.



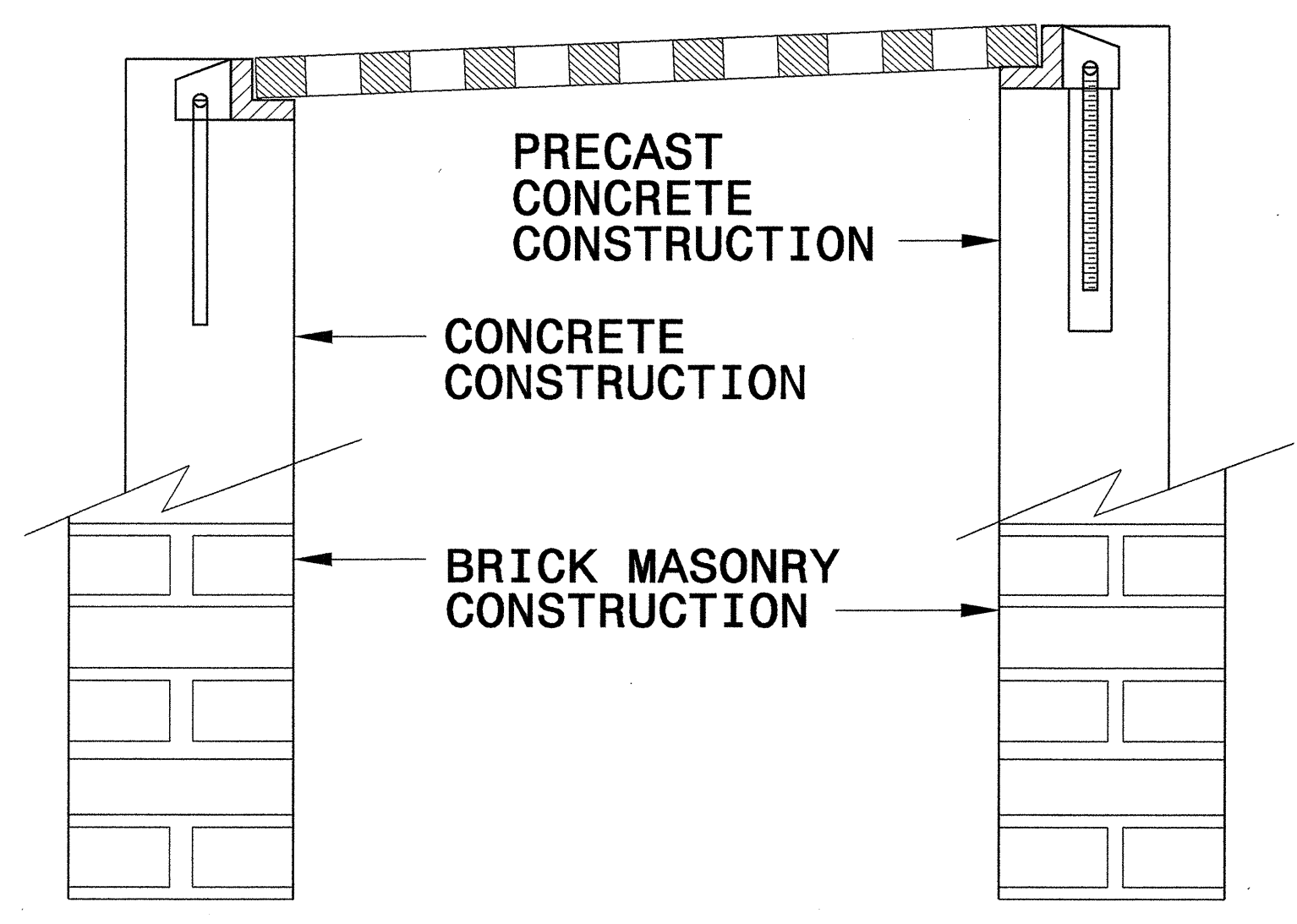
**MASONRY ANCHOR**  
3/8" DIA. BOLT WITH PLATE



**CONCRETE ANCHOR**  
3/8" DIA. BENT BAR

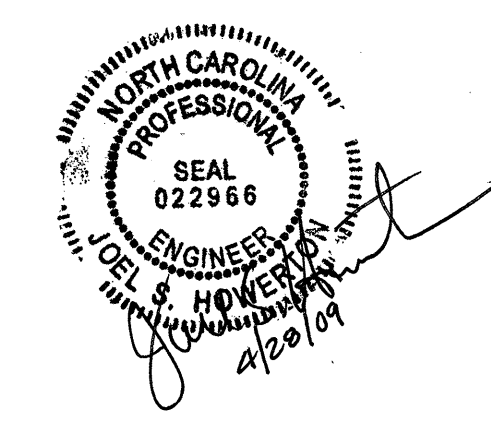


**PRECAST CONCRETE ANCHOR**  
3/8" DIA. BENT BAR



**FRAME AND GRATE INSTALLATION FOR NORMAL CROWN AND SUPERELEVATED SECTIONS**

SYSTEMS  
USE  
NAME



**PROJECT SERVICES UNIT**  
**STANDARDS AND SPECIAL DESIGN**  
Office 919-250-4128 FAX 919-250-4119

**SEE PLATE FOR TITLE**

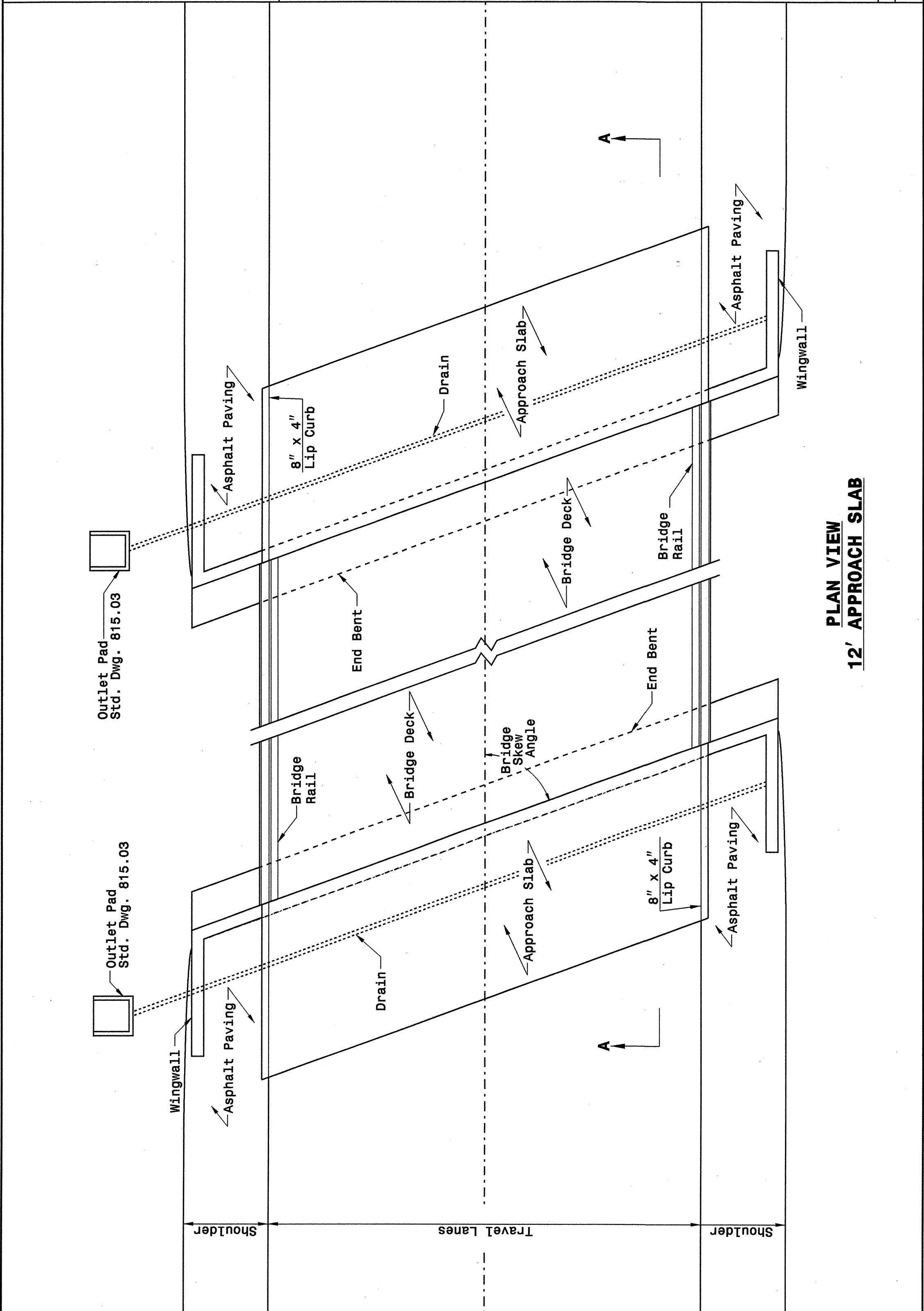
ORIGINAL BY: 2006 STD 840.25	DATE: 07/18/06
MODIFIED BY: E.E. WARD	DATE: 9/25/06
CHECKED BY: <i>[Signature]</i>	DATE: 4/13/08
FILE SPEC.:	

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

ENGLISH DETAIL DRAWING FOR  
**BRIDGE APPROACH FILLS**

SUB REGIONAL TIER

SHEET 1 OF 2  
**422D11**



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

ENGLISH DETAIL DRAWING FOR  
**BRIDGE APPROACH FILLS**

SUB REGIONAL TIER

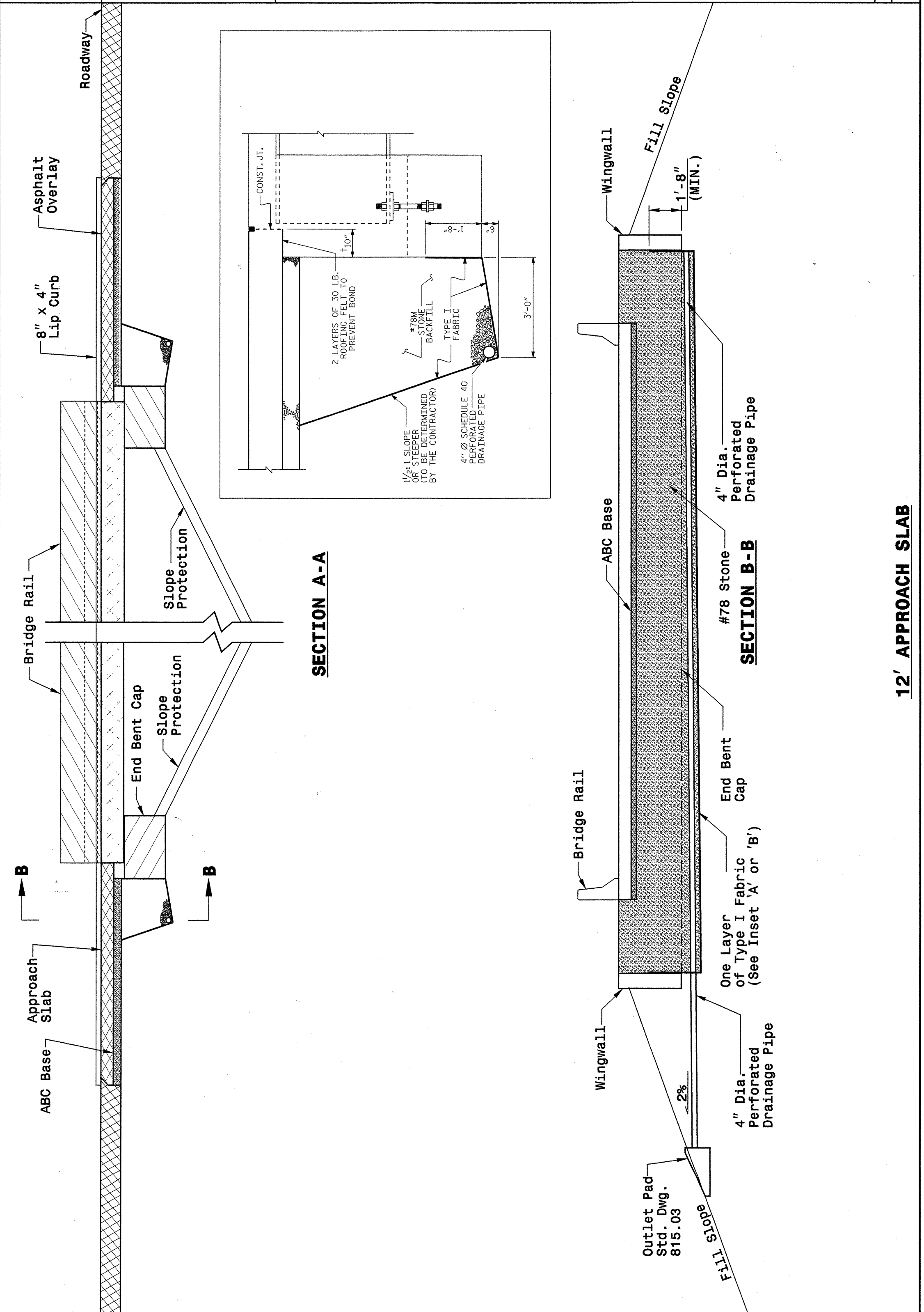
SHEET 1 OF 2  
**422D11**

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

ENGLISH DETAIL DRAWING FOR  
**BRIDGE APPROACH FILLS**

SUB REGIONAL TIER

SHEET 2 OF 2  
**422D11**



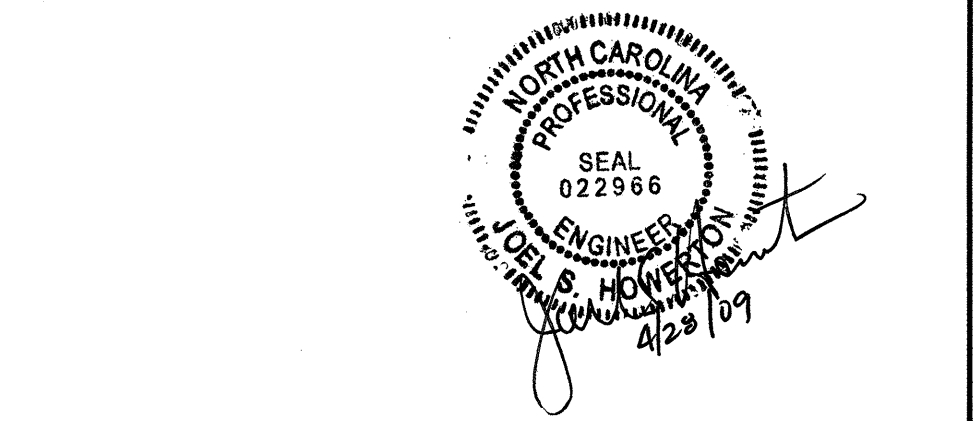
STATE OF NORTH CAROLINA  
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ENGLISH DETAIL DRAWING FOR  
**BRIDGE APPROACH FILLS**

SUB REGIONAL TIER

SHEET 2 OF 2  
**422D11**

\$\$\$\$\$SYTIME\$\$\$\$\$  
\$\$\$\$\$USER\$\$\$\$\$  
\$\$\$\$\$SYTIME\$\$\$\$\$



**PROJECT SERVICES UNIT  
STANDARDS AND SPECIAL DESIGN**  
Office 919-250-4128 FAX 919-250-4119

**BRIDGE APPROACH FILLS**

SUB REGIONAL TIER

ORIGINAL BY: K. A. Kempf DATE: 6-10-08  
MODIFIED BY: DATE:  
CHECKED BY: DATE:  
FILE SPEC.: kkempf\english\bridge approach fills.dgn





STATE OF NORTH CAROLINA  
 DIVISION OF HIGHWAYS

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

**SUMMARY OF SHOULDER  
 BERM GUTTER**

LINE	STATION TO STATION	LOCATION	LENGTH FT.
-L-	12+22 TO 13+70.12	LT	148.12
-L-	16+44.14 TO 16+55.27	LT	11.13
	PROJECT TOTAL		159.25
	SAY		160

**SUMMARY OF REMOVAL OR BREAKING OF  
 EXISTING ASPHALT PAVEMENT**

STATION TO STATION	LOCATION	ASPHALT REMOVAL AREA S.Y.	ASPHALT BREAK-UP AREA S.Y.
-L- STA. 12+50.00 TO -L- STA. 14+28.61	CL	325	
-L- STA. 15+93.46 TO -L- STA. 16+90.87	CL	155	
-L- STA. 17+88.51 TO -L- STA. 19+00.00	CL	228	
-L- STA. 19+00.00 TO -L- STA. 20+27.00	LT	83	
-L- STA. 16+90.87 TO -L- STA. 17+88.51	CL		204
TOTAL		791	204
SAY		800	210

**SUMMARY OF EARTHWORK  
 IN CUBIC YARDS**

LOCATION	TOTAL UNCLASS. EXCAV.	UNDERCUT	EMBANKMENT + %	BORROW	TOTAL WASTE
-L- 11+50.00 TO 14+00.37 (BEG. BRIDGE)	66		716	650	
-L- 16+53.87 (END BRIDGE) TO 20+64.30	682		1103	421	
PROJECT SUBTOTALS	748		1819	1071	
LOSS DUE TO CLEARING & GRUBBING	-100			100	
PROJECT SUBTOTALS	648			1171	
EST. 5% TO REPLACE TOPSOIL ON BORROW PIT				59	
PROJECT TOTALS	648		1819	1230	
SAY	650			1230	

UNDERCUT EXCAVATION = 100 CY

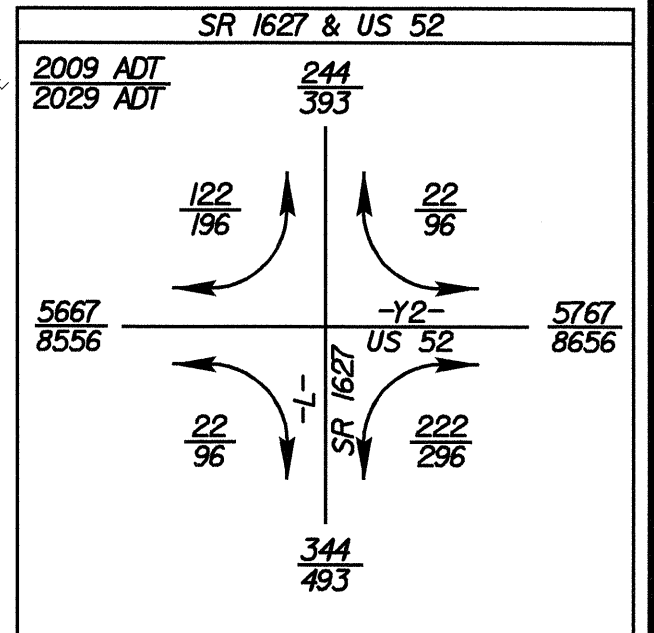
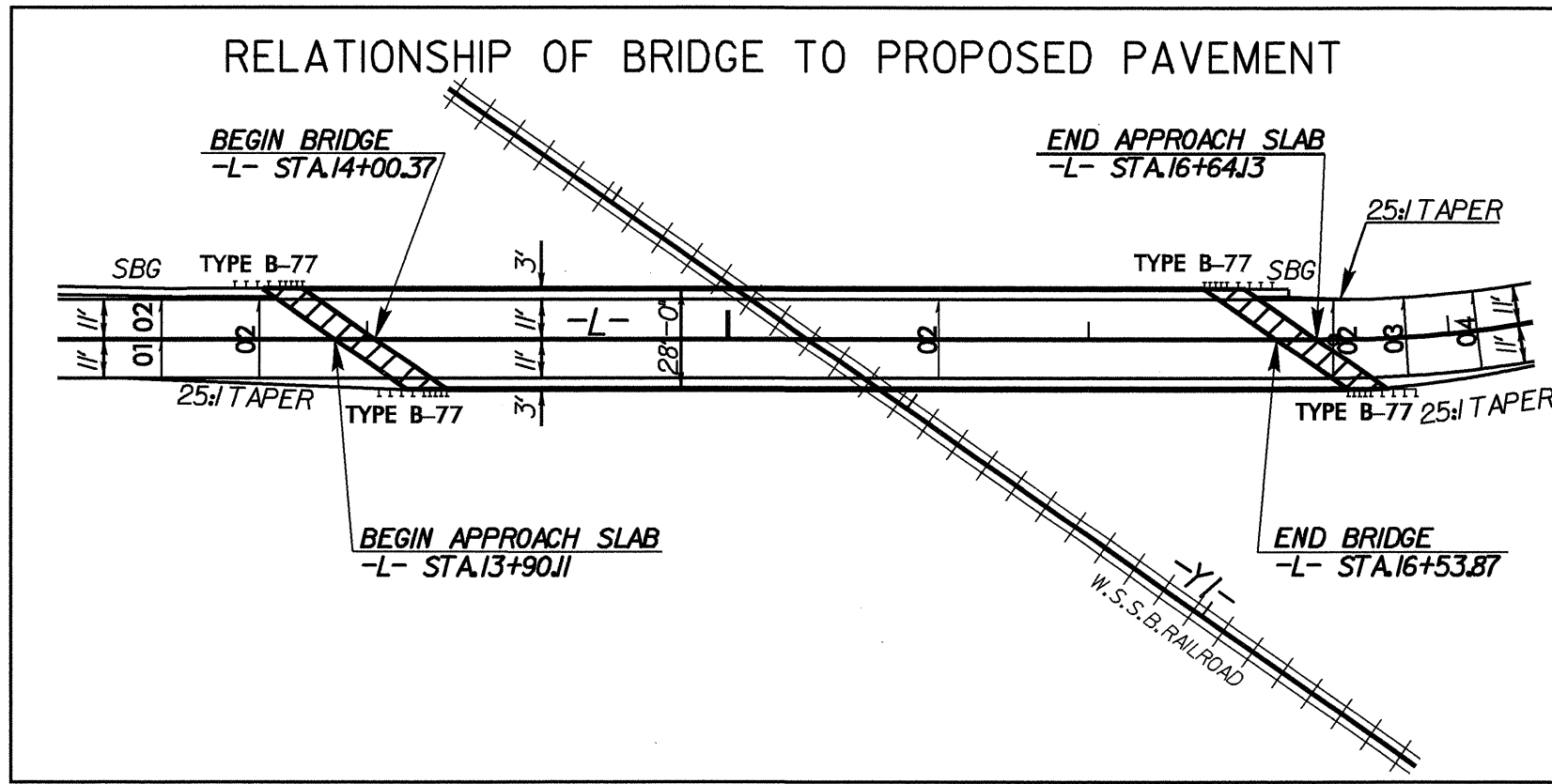
Earthwork quantities are calculated by the Roadway Design Unit. These earthwork quantities are based in part on subsurface data provided by the Geotechnical Engineering Unit.

**SUMMARY OF HYDRAULIC  
 RIP RAP & DDE QUANTITIES**

CHAIN	STATION	STATION	LOCATION	RIP RAP CLASS (TONS)				FF (SY)	DDE (CY)	DETAIL	COMMENT
				I	II	A	B				
-L-	12+25		LT				1	5			AT OUTLET, W/O DITCH, 15" PIPE
-L-	16+24		LT				1	5			AT OUTLET, W/O DITCH, 15" PIPE
			TOTAL				2	10			

**ABBREVIATIONS**

CY CUBIC YARD  
 DDE DRAINAGE DITCH EXCAVATION  
 FF FILTER FABRIC  
 RR RIP RAP  
 SY SQUARE YARD



**STA 20+64.30 -L- END TIP PROJECT B-4410**

**STA 11+50.00 -L- BEGIN TIP PROJECT B-4410**

**\*\* DESIGN EXCEPTION REQUIRED FOR MINIMUM HORIZONTAL CURVE RADIUS OF 320' AND HORIZONTAL STOPPING SIGHT DISTANCE OF 238'.**

-L-	-Y2-
PI Sta 18+56.41	PI Sta 16+24.51
$\Delta = 61^{\circ} 01' 42.2''$ (LT)	$\Delta = 8^{\circ} 24' 26.2''$ (LT)
D = 17' 54' 17.8"	D = 1' 41' 06.6"
L = 340.85'	L = 498.90'
T = 188.60'	T = 249.90'
R = 320.00'	R = 3,400.00'
SE = SEE PLANS	
** DS = 34 MPH	

FOR -L- PROFILE SEE SHEET 5

BRIDGE APPROACH SLAB

SEE SHEETS S-36 THRU S-70 FOR STRUCTURE PLANS

REVISIONS

8/17/09  
21-APR-2009 08:22  
F:\roadwork\pco\4410\_rdy\_psh04.dgn

5/14/99

PROJECT REFERENCE NO. B-4410	SHEET NO. 5
ROADWAY DESIGN ENGINEER DONALD E. MCCOLLUM 4/24/09	HYDRAULICS ENGINEER WILLIAM T. SHOWN 4-23-09

-L-

BM \*1 RR SPIKE IN 12" POPLAR  
-L- STA. 10+00  
N 30°35'56.1" W DIST. 360.93'  
ELEV. = 316.08'

BM \*2 RR SPIKE IN 48" OAK  
-L- STA. 14+08, 60' RIGHT  
ELEV. = 322.17'

BM \*3 RR SPIKE IN 24" PINE  
-L- STA. 21+16, 104' RIGHT  
ELEV. = 316.08'

BEGIN GRADE -L- STA. 11+50.00  
ELEV. 325.07'

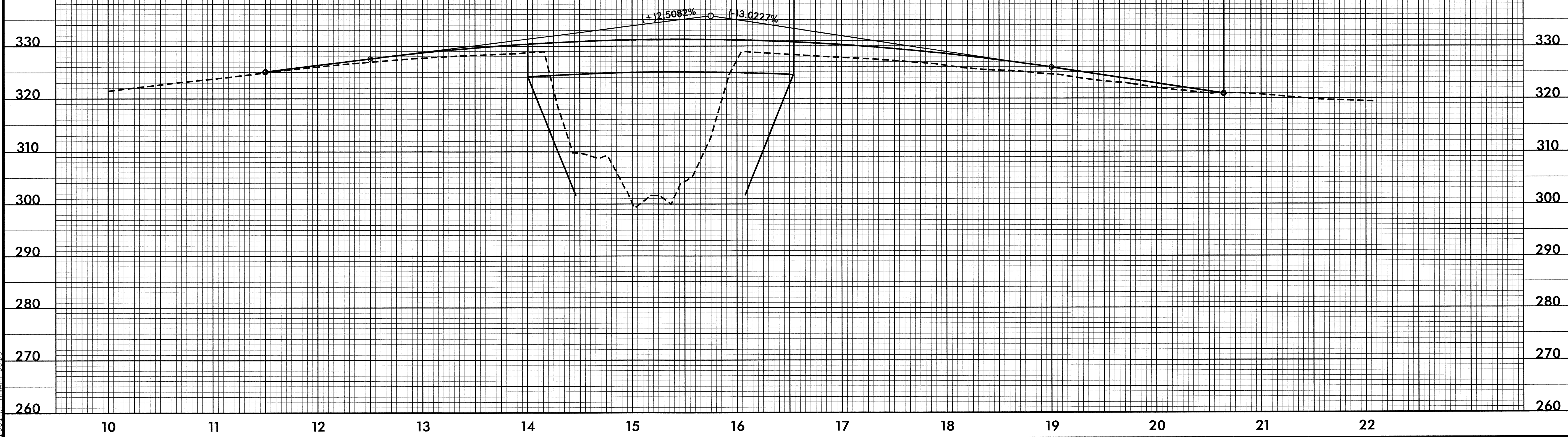
BEGIN BRIDGE -L- 14+00.37

-L- STA. 15+21.87  
-VI- STA. 17+66.2

END BRIDGE -L- 16+53.87

END GRADE -L- STA. 20+64.30  
ELEV. 320.94'

PI = 15+75.00  
EL = 335.73'  
VC = 650'  
K = 118



06-APR-2009 08:40  
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USER:RDM