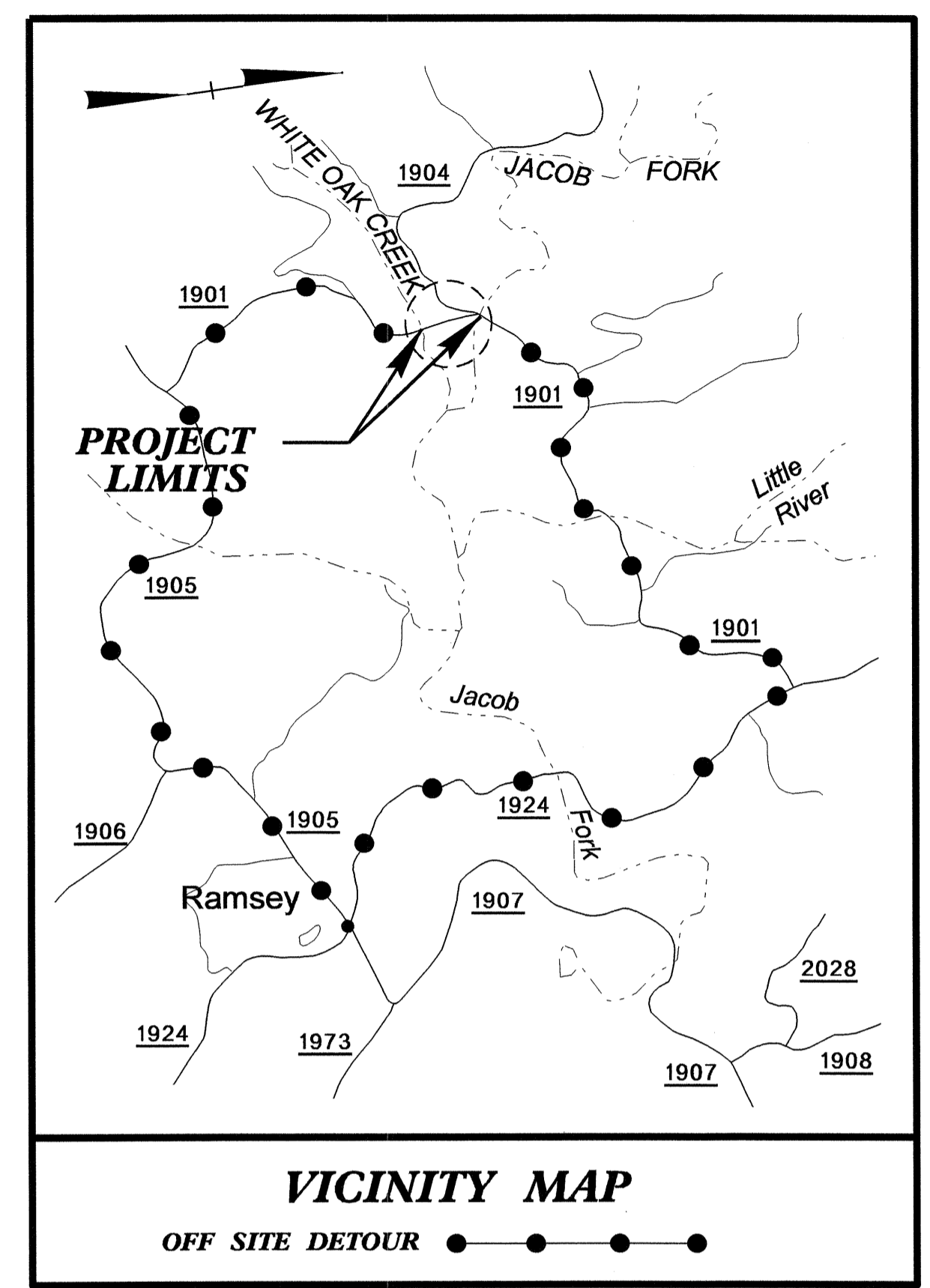


09/08/99

TIP PROJECT: B-4046

CONTRACT: C202809

See Sheet 1-A For Index of Sheets  
See Sheet 1-B for Symbology Sheet  
See Sheet 1-C for Control Sheet

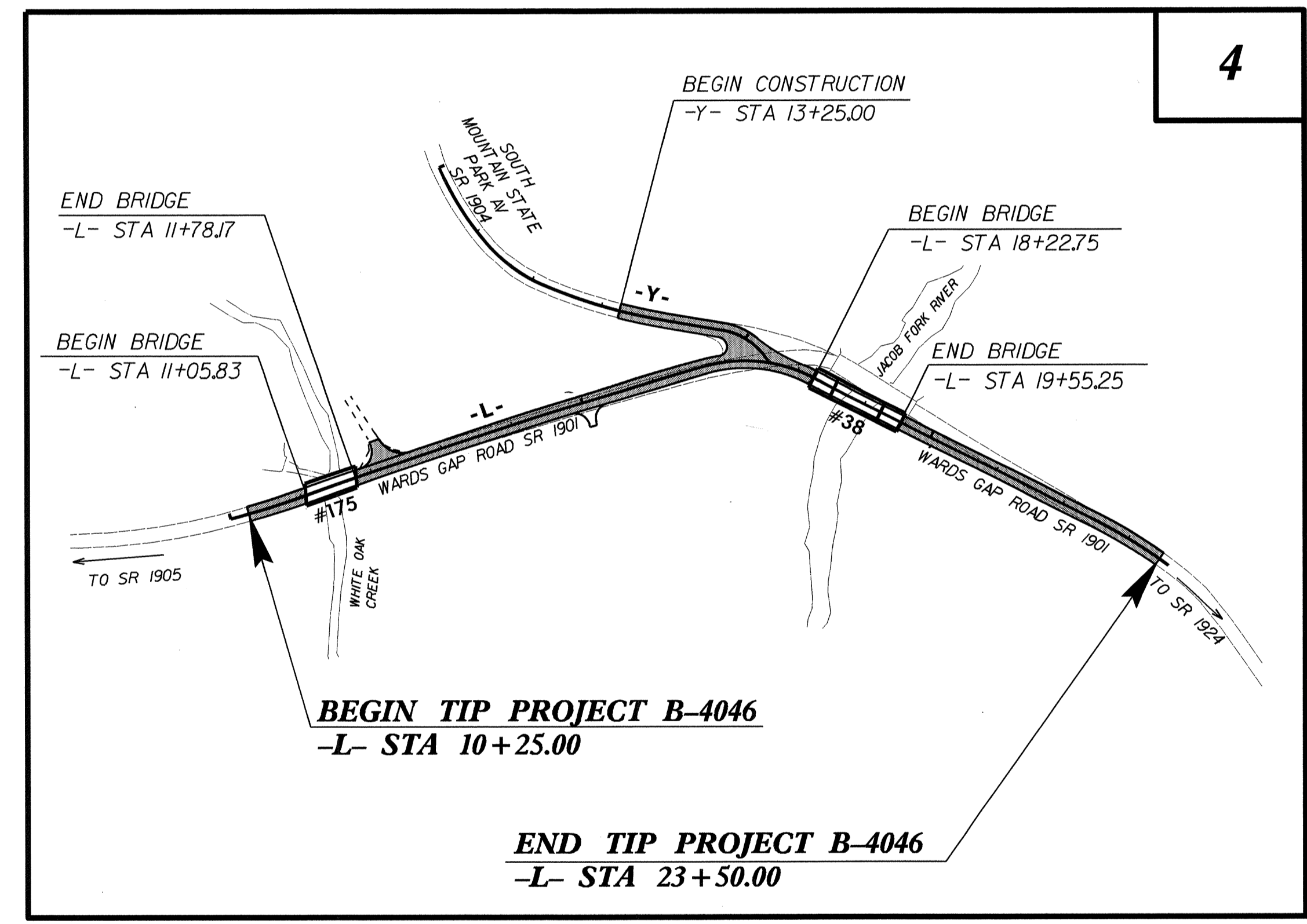
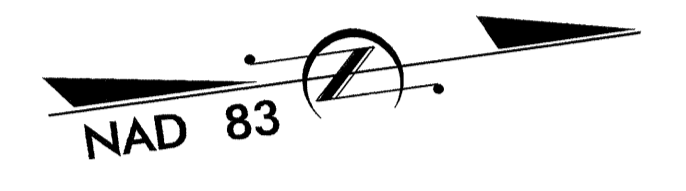


STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

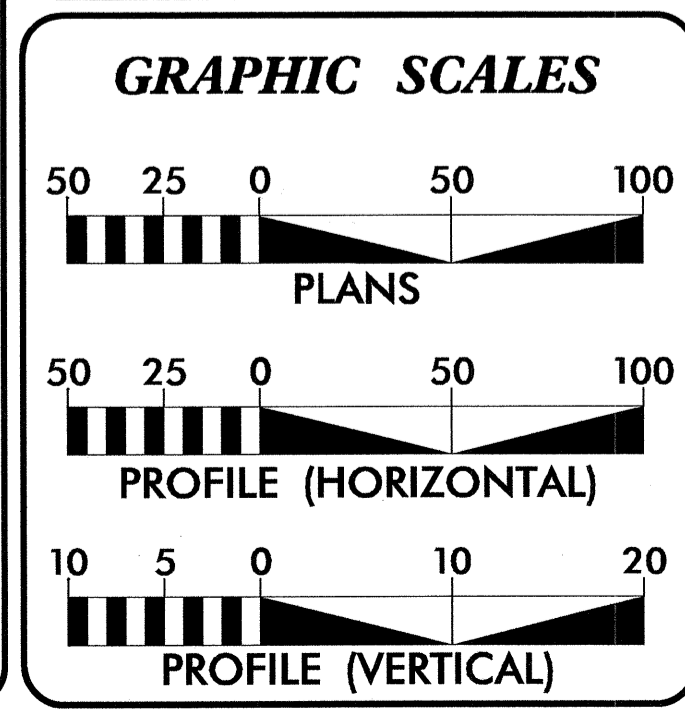
**BURKE COUNTY**

**LOCATION: BRIDGE NO. 175 OVER WHITE OAK CREEK  
AND BRIDGE NO. 38 OVER JACOB FORK RIVER  
ON SR 1901 (WARDS GAP ROAD)**  
**TYPE OF WORK: GRADING, DRAINAGE, STRUCTURES AND PAVING**

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4046	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
33412.1.1	BRZ-1901(2)	PE	
33412.2.1	BRZ-1901(2)	ROW & UTIL.	
33412.3.1	BRZ-1901(2)	CONST.	



NOTES:  
1. THIS PROJECT WILL HAVE A DESIGN EXCEPTION FOR MINIMUM HORIZONTAL CURVE RADIUS (200') AND HORIZONTAL SSD (130').



**DESIGN DATA**

ADT 2012	=	774
ADT 2032	=	1122
DHV	=	12 %
D	=	55 %
T	=	3 % *
V	=	40 MPH
CLASSIFICATION: RURAL LOCAL		
* TTST	1% DUAL 2%	SUB-REGIONAL TIER

**PROJECT LENGTH**

LENGTH OF ROADWAY PROJECT B-4046	=	0.212 MILES
LENGTH OF STRUCTURES PROJECT B-4046	=	0.039 MILES
TOTAL LENGTH OF PROJECT B-4046	=	0.251 MILES

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

2012 STANDARD SPECIFICATIONS

**RIGHT OF WAY DATE:**  
APRIL 14, 2011

**LETTING DATE:**  
APRIL 17, 2012

**GARY LOVERING, PE**  
PROJECT ENGINEER

**ANTHONY C. WEST**  
PROJECT DESIGN ENGINEER

**HYDRAULICS ENGINEER**

*Ray D. Longgood*  
SIGNATURE: P.E. 12 JAN 2012

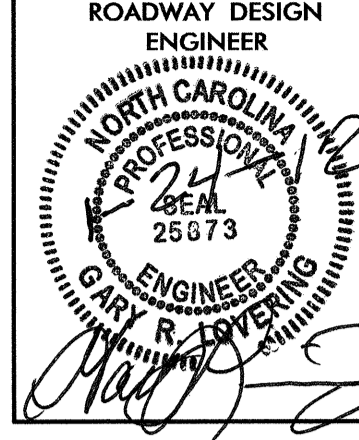
**ROADWAY DESIGN ENGINEER**

*Anthony C. West*  
SIGNATURE: P.E.

**DIVISION OF HIGHWAYS**  
STATE OF NORTH CAROLINA

STATE HIGHWAY DESIGN ENGINEER

01-DEC-2011 11:29 R:\Roadway\Projects\B4046\_rdy\_tsh.dgn \$\$\$USERNAME\$\$\$



SHEET NUMBER	INDEX OF SHEETS SHEET
1	TITLE SHEET
1-A	INDEX OF SHEETS, GENERAL NOTES, AND LIST OF STANDARD DRAWINGS
1-B	CONVENTIONAL SYMBOLS
1-C	SURVEY CONTROL SHEET
1-D	SURVEY CONTROL SHEET
2	PAVEMENT SCHEDULE, TYPICAL SECTIONS, AND WEDGING DETAILS
3	SUMMARY OF QUANTITIES
3A	SUMMARY OF DRAINAGE QUANTITIES
3B	SUMMARY OF EARTHWORK, SUMMARY OF PAVEMENT REMOVAL, SUMMARY OF SHOULDER BERM GUTTER AND GUARDRAIL SUMMARY
4	PLAN SHEET
5	PROFILE SHEET
TMP-1 THRU TMP-7	TRAFFIC MANAGEMENT PLANS
SD-1	SPECIAL SIGN DESIGN
PMP-1 THRU PMP-2	PAVEMENT MARKING PLANS
SIGN-1 THRU SIGN-4	SIGNING PLANS
EC-1 THRU EC-5	EROSION CONTROL PLANS
RF-1	REFORESTATION DETAIL
UO-1 THRU UO-2	UTILITIES PLANS BY OTHERS
X-0	CROSS-SECTIONS SUMMARY SHEET
X-1 THRU X-9	-L- CROSS-SECTIONS
X-10 THRU X-14	-Y- CROSS-SECTIONS
S-1 THRU S-31	STRUCTURE PLANS

**GENERAL NOTES:**

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

**GRADING AND SURFACING OR RESURFACING AND WIDENING:**

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

**CLEARING:**

CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD 11.

**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 WILL BE PAID FOR AS "EXTRA WORK" IN ACCORDANCE WITH SECTION 104-7.

**END BENTS:**

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

**UTILITIES:**

UTILITY OWNERS ON THIS PROJECT ARE AT&T and Rutherford EMC

**RIGHT-OF-WAY MARKERS:**

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

**2012 ROADWAY ENGLISH STANDARD DRAWINGS**

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

STD. NO.	TITLE
DIVISION 2 - EARTHWORK	
200.02	Method of Clearing - Method 11
225.02	Guide for Grading Subgrade - Secondary and Local
225.04	Method of Obtaining Super-elevation - Two Lane Pavement
DIVISION 3 - PIPE CULVERTS	
300.01	Method of Pipe Installation
DIVISION 4 - MAJOR STRUCTURES	
422.11	Reinforced Bridge Approach Fills - Sub Regional Tier
DIVISION 5 - SUBGRADE, BASES AND SHOULDERS	
560.01	Method of Shoulder Construction - High Side of Super-elevated Curve - Method 1
DIVISION 6 - ASPHALT BASES AND PAVEMENTS	
654.01	Pavement Repairs
DIVISION 8 - INCIDENTALS	
806.01	Concrete Right-of-Way Marker
806.02	Granite Right-of-Way Marker
815.03	Pipe Underdrain and Blind Drain
840.00	Concrete Base Pad for Drainage Structures
840.25	Anchorage for Frames - Brick or Concrete or Precast
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

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

# CONVENTIONAL PLAN SHEET SYMBOLS

Note: Not to Scale

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

### BOUNDARIES AND PROPERTY:

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

### BUILDINGS AND OTHER CULTURE:

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

### HYDROLOGY:

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

### RAILROADS:

Standard Gauge	-----
RR Signal Milepost	○
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 Drainage / Utility Easement	-----
Proposed Permanent Utility Easement	-----
Proposed Temporary Utility Easement	-----
Proposed Aerial Utility Easement	-----

### 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	-----

### 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	□ CB
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	-----

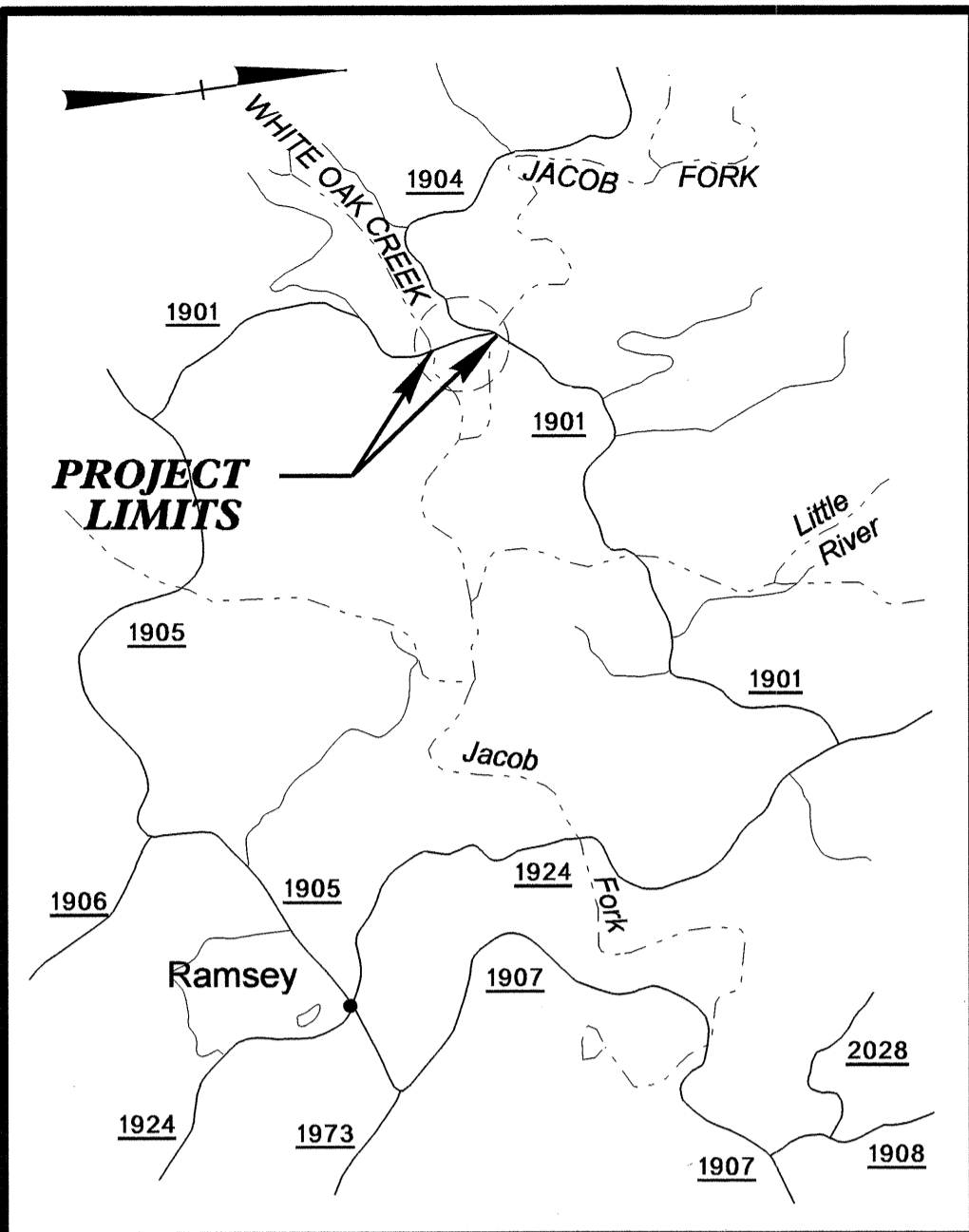
### SANITARY SEWER:

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	□
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-4046



**VICINITY MAP**

**DATUM DESCRIPTION**

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "B4046-1" WITH NAD 83 STATE PLANE GRID COORDINATES OF NORTHING: 678537.9539(±) EASTING: 1231378.7249(±) ELEVATION: 1141.69(±)

THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.9998258

THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "B4046-1" TO -L- STATION 10+00.00 IS N 6°15'43" W 176.19'

ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES VERTICAL DATUM USED IS NGVD 29

BL POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
BL3	BL-3	678248.0570	1231132.2170	1149.19	OUTSIDE PROJECT LIMITS	
BL4	BL-4	678315.2270	1231313.7610	1145.70	OUTSIDE PROJECT LIMITS	
GPS1	B4046-1	678537.9530	1231378.7240	1141.69	OUTSIDE PROJECT LIMITS	
GPS2	B4046-2	679449.2110	1231263.6420	1149.37	17+50.14	13.76 RT
BL5	BL-5	679667.8750	1231341.9130	1145.09	19+80.55	35.30 LT
BL6	BL-6	680053.2770	1231772.9430	1164.91	OUTSIDE PROJECT LIMITS	

BY POINT	DESC.	NORTH	EAST	ELEVATION	Y STATION	OFFSET
BY1		679126.6730	1231084.4640	1189.52	11+66.89	13.05 RT
YGPS2	B4046-2	679449.2110	1231263.6420	1149.37	OUTSIDE PROJECT LIMITS	

\*\*\*\*\*

BM1 ELEVATION = 1158.05  
 N 678142 E 1230916  
 L STATION 10+00  
 S 37° 49' 26.0" W DIST 722.45  
 RAILROAD SPIKE IN 18 INCH POPLAR

\*\*\*\*\*

BM2 ELEVATION = 1140.84  
 N 678868 E 1231214  
 L STATION 11+80 116 LEFT  
 RAILROAD SPIKE IN POWER POLE

\*\*\*\*\*

BM3 ELEVATION = 1146.82  
 N 679560 E 1231251  
 L STATION 18+40 48 LEFT  
 CHISLED X TOP OF EXISTING BRIDGE WING WALL

\*\*\*\*\*

BM4 ELEVATION = 1168.99  
 N 680086 E 1231851  
 L STATION 23+65  
 N 62° 57' 01.8" E DIST 283.40  
 RAILROAD SPIKE IN 18" OAK

\*\*\*\*\*

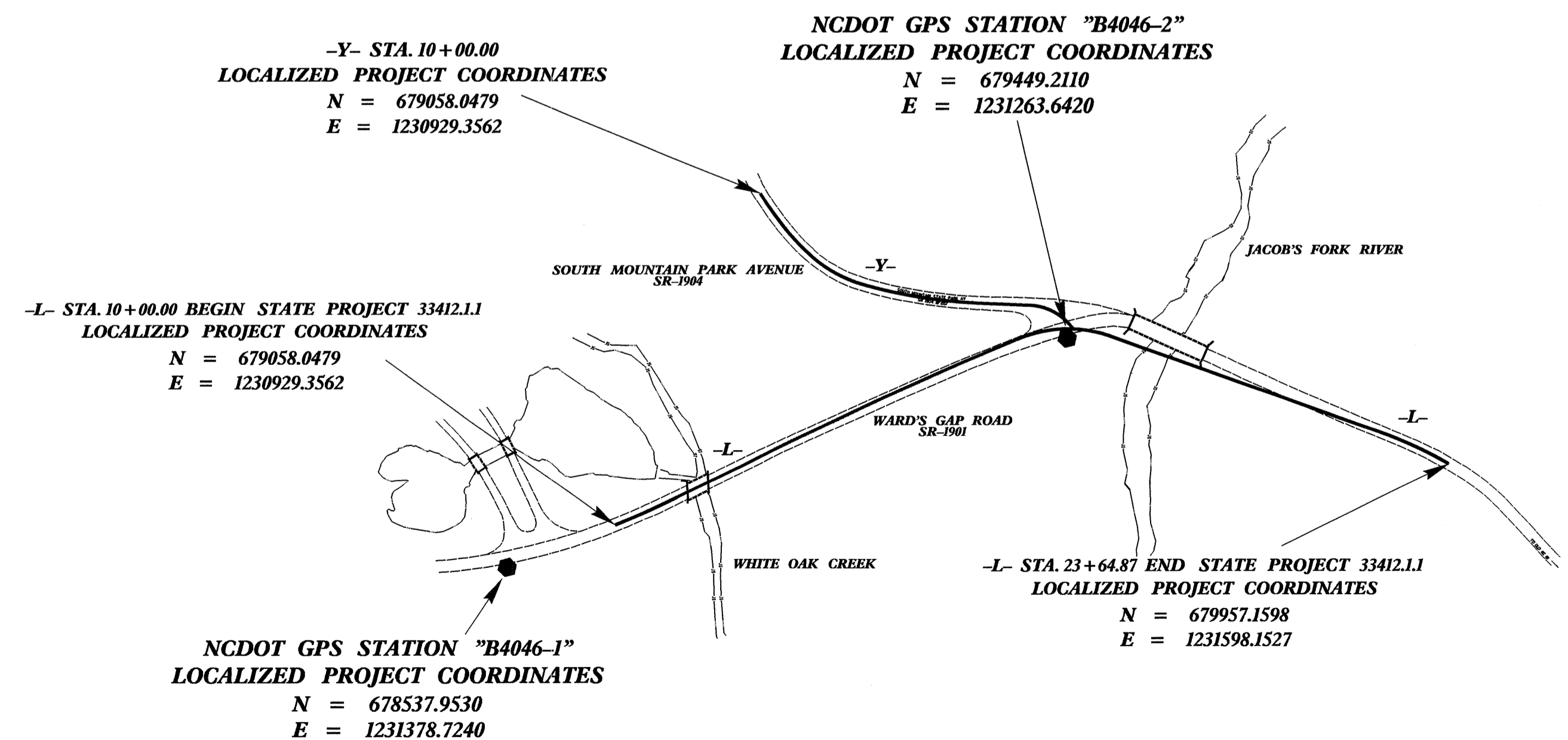
BM5 ELEVATION = 1186.65  
 N 679143 E 1231106  
 Y STATION 11+91 19 RIGHT  
 RAILROAD SPIKE IN 18" GUM

\*\*\*\*\*



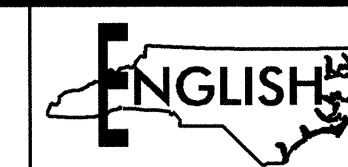
**NOTES:**

- 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:  
 B4046\_LS\_CONTROL\_090824.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.  
 NETWORK ESTABLISHED FROM NGS ONLINE POSITIONING SERVICE (OPUS)



NOTE: DRAWING NOT TO SCALE

6/2/99  
 24-OCT-2011 11:59  
 R:\V\ncdot\p\loc\B4046-1s-1c-090824.dgn



# SURVEY CONTROL SHEET B-4046

## (DESIGN ALIGNMENTS)

L				
TYPE	STATION	NORTH	EAST	
PC	10+00.00	678713.0937	1231359.5056	
PT	11+02.90	678814.6381	1231342.9791	
PC	12+66.36	678974.9985	1231311.3044	
PCC	16+72.67	679375.8664	1231245.4749	
PT	18+20.07	679515.8976	1231279.4460	
PC	22+41.09	679861.8208	1231519.4285	
PT	23+64.87	679957.1598	1231598.1527	

Y				
TYPE	STATION	NORTH	EAST	
POT	10+00.00	679058.0479	1230929.3562	
PC	10+14.35	679062.3433	1230943.0440	
PCC	11+17.09	679104.8191	1231036.3094	
PCC	12+11.88	679171.1672	1231102.7995	
PT	13+87.53	679330.4168	1231175.8643	
PC	14+67.97	679407.0827	1231200.2135	
PT	15+36.92	679457.8152	1231244.0968	
POT	15+46.90	679462.1742	1231253.0737	

## (ROW MARKERS)

ROW MARKER CONCRETE OR GRANITE-E					
ALIGN	STATION	OFFSET	NORTH	EAST	
L	11+02.90	-30.00	678808.8247	1231313.5477	
L	11+02.90	-40.00	678806.8869	1231303.7373	
L	12+66.36	-40.00	678967.2474	1231272.0626	
L	15+44.27	-40.00	679242.7278	1231223.9360	
L	16+72.67	37.14	679380.7002	1231282.2999	
L	16+72.67	55.00	679383.0245	1231300.0071	
L	18+19.45	-57.52	679548.0248	1231231.7291	
L	18+20.07	55.00	679484.5472	1231324.6361	
L	18+63.47	-60.37	679585.9657	1231254.5803	
L	20+60.00	55.00	679681.6806	1231461.3965	
L	20+64.38	-43.25	679741.2827	1231383.1671	
L	21+86.08	-34.51	679836.2943	1231459.7182	
L	21+90.00	25.82	679805.1285	1231511.5194	
L	22+84.15	-30.00	679914.9730	1231521.3780	
L	22+84.15	30.00	679877.9607	1231568.6018	
L	23+64.87	30.00	679936.1908	1231619.6073	
L	23+64.87	-30.00	679978.1288	1231576.6981	

ROW MARKER CONCRETE OR GRANITE-E					
ALIGN	STATION	OFFSET	NORTH	EAST	
Y	13+25.00	25.00	679262.1049	1231177.4367	
Y	13+25.00	-25.00	679281.3377	1231131.2837	
Y	13+87.53	-25.00	679337.9843	1231152.0371	
Y	14+67.34	-25.00	679414.0496	1231176.1956	

## (PERMANENT EASEMENTS)

ROW MARKER PERMANENT EASEMENT-E					
ALIGN	STATION	OFFSET	NORTH	EAST	
L	10+60.00	30.00	678777.4248	1231380.2842	
L	10+60.00	55.00	678781.5789	1231404.9360	
L	10+95.00	55.00	678817.2626	1231398.5021	
L	10+95.00	30.00	678812.5450	1231373.9512	
L	17+71.00	-62.00	679494.4739	1231198.6763	
L	17+94.00	-63.00	679522.4450	1231210.0295	
L	17+94.00	-52.71	679517.7307	1231219.1704	
L	17+71.00	-51.97	679490.9289	1231208.0616	

### DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "B4046-1" WITH NAD 83 STATE PLANE GRID COORDINATES OF NORTHING: 678537.9539(ft) EASTING: 1231378.7249(ft) ELEVATION: 1141.69(ft)

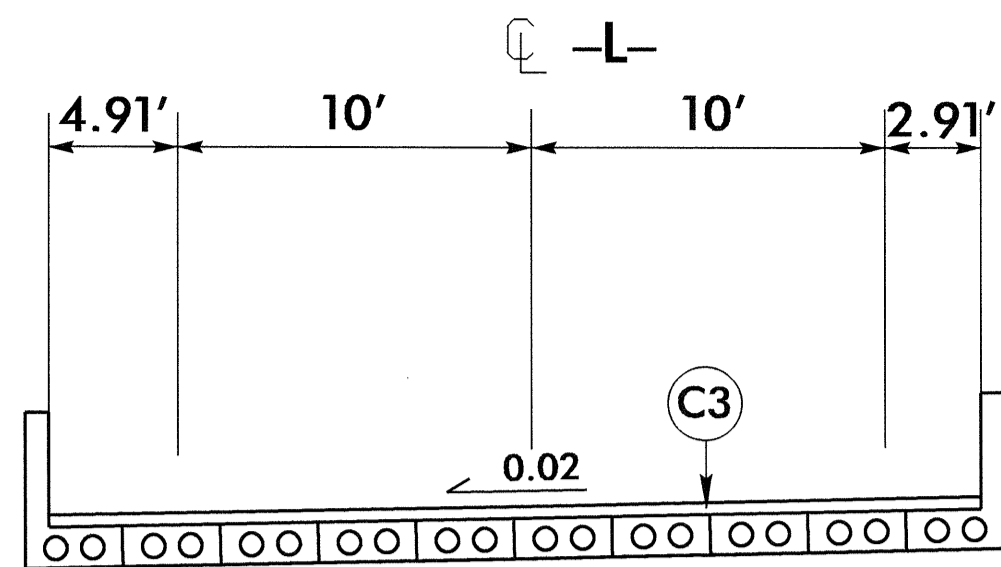
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.9998258

THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "B4046-1" TO -L- STATION 10+00.00 IS N 6°15'43" W 176.19'

ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES VERTICAL DATUM USED IS NGVD 29

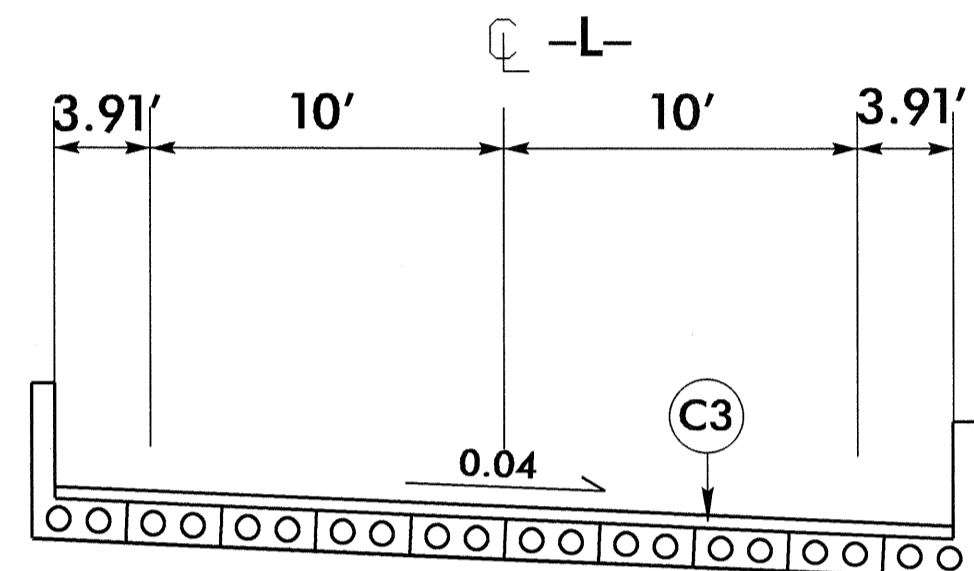
FINAL PAVEMENT SCHEDULE	
C1	PROP. APPROX. 1 1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD.
C2	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD. PLACED IN 2 LAYERS
C3	PROP. APPROX. 3 1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT TO EXCEED 1 1/2" IN DEPTH.
C4	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT TO EXCEED 1 1/2" IN DEPTH.
E1	PROP. APPROX. 4 1/2" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 513 LBS. PER SQ. YD.
E2	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 3" IN DEPTH OR GREATER THAN 5 1/2" IN DEPTH.
T	EARTH MATERIAL.
U	EXISTING PAVEMENT.
W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE STANDARD WEDGING DETAIL)

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



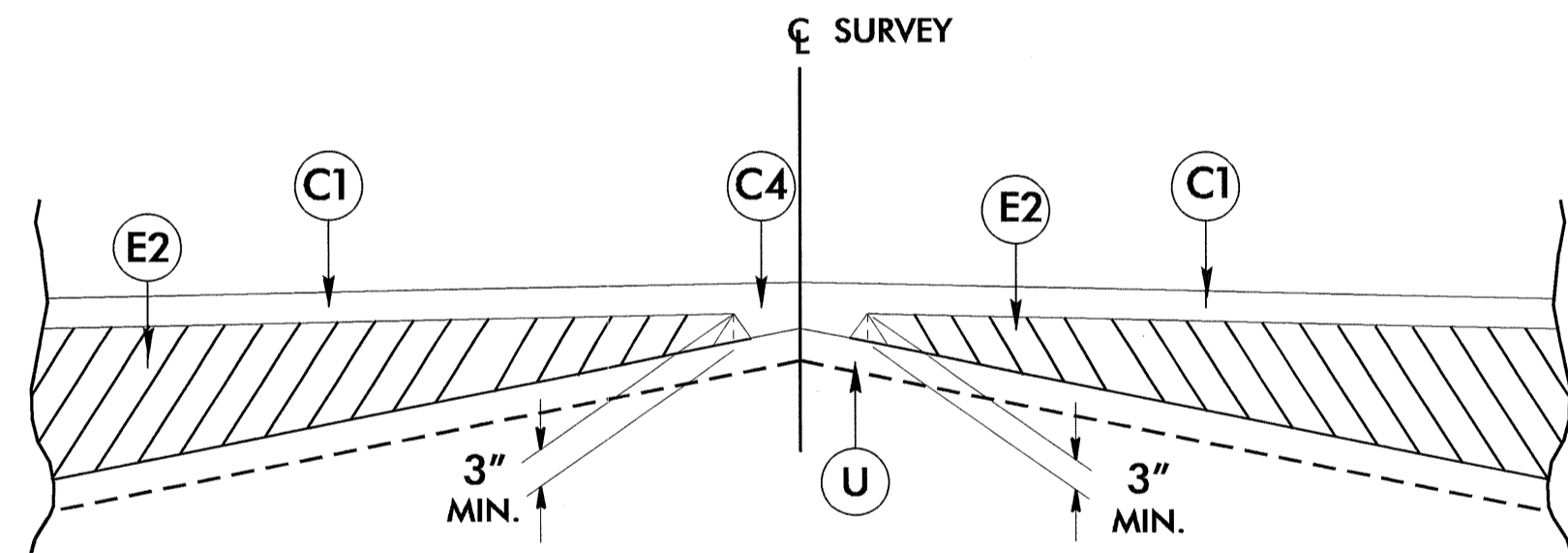
**BRIDGE TYPICAL**

BRIDGE #175 -L- STA 11+05.83 TO STA 11+78.17

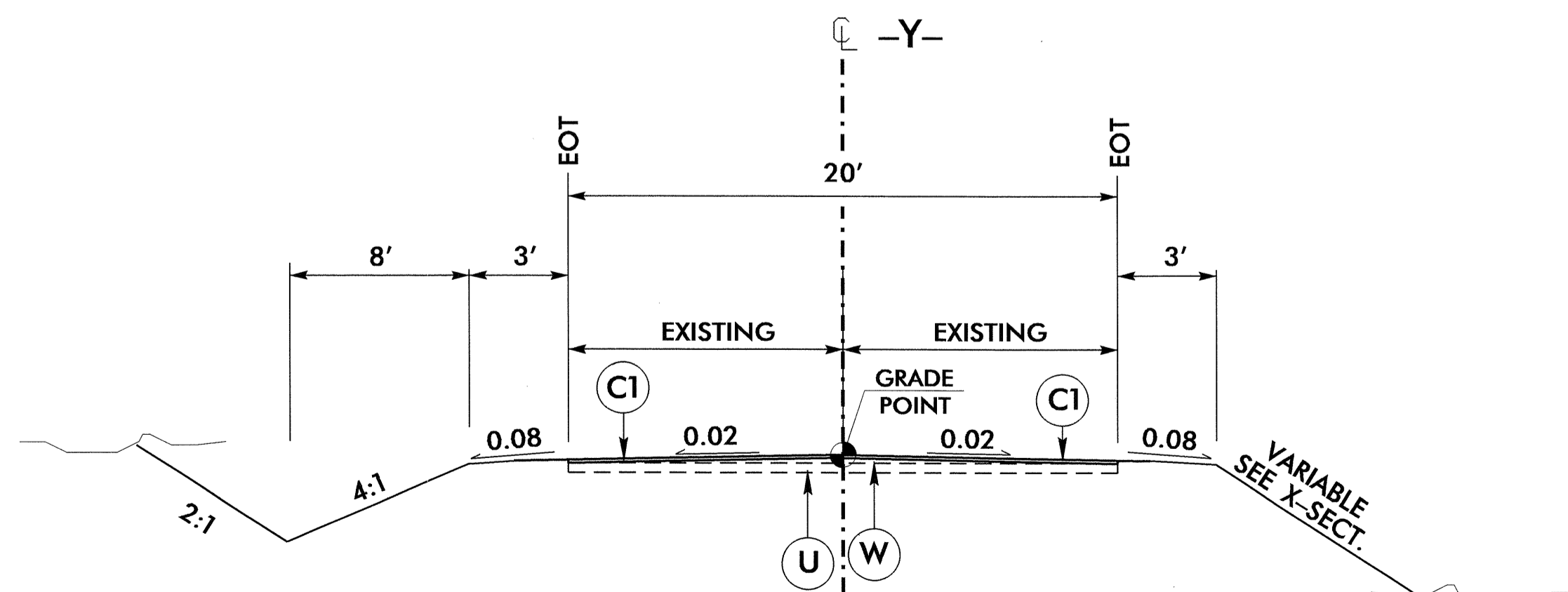


**BRIDGE TYPICAL**

BRIDGE #38 -L- STA 18+22.75 TO STA 19+55.25

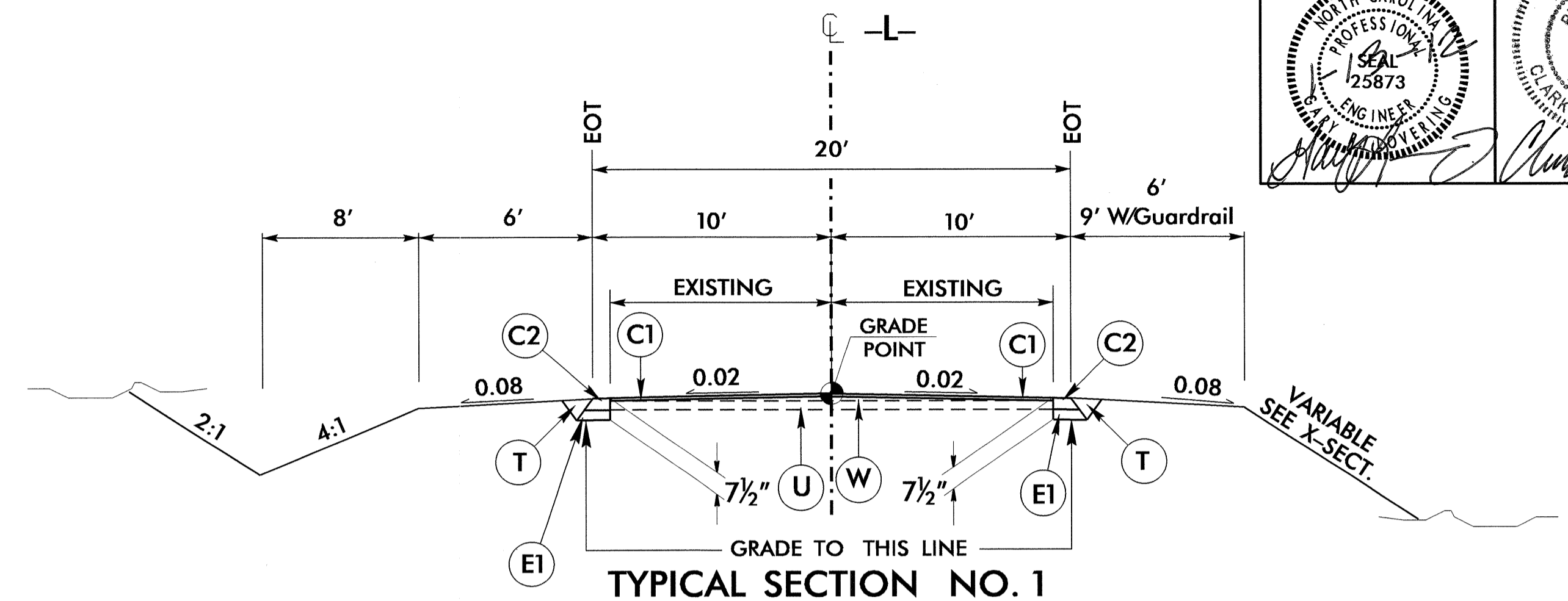


**Detail Showing Method of Wedging**



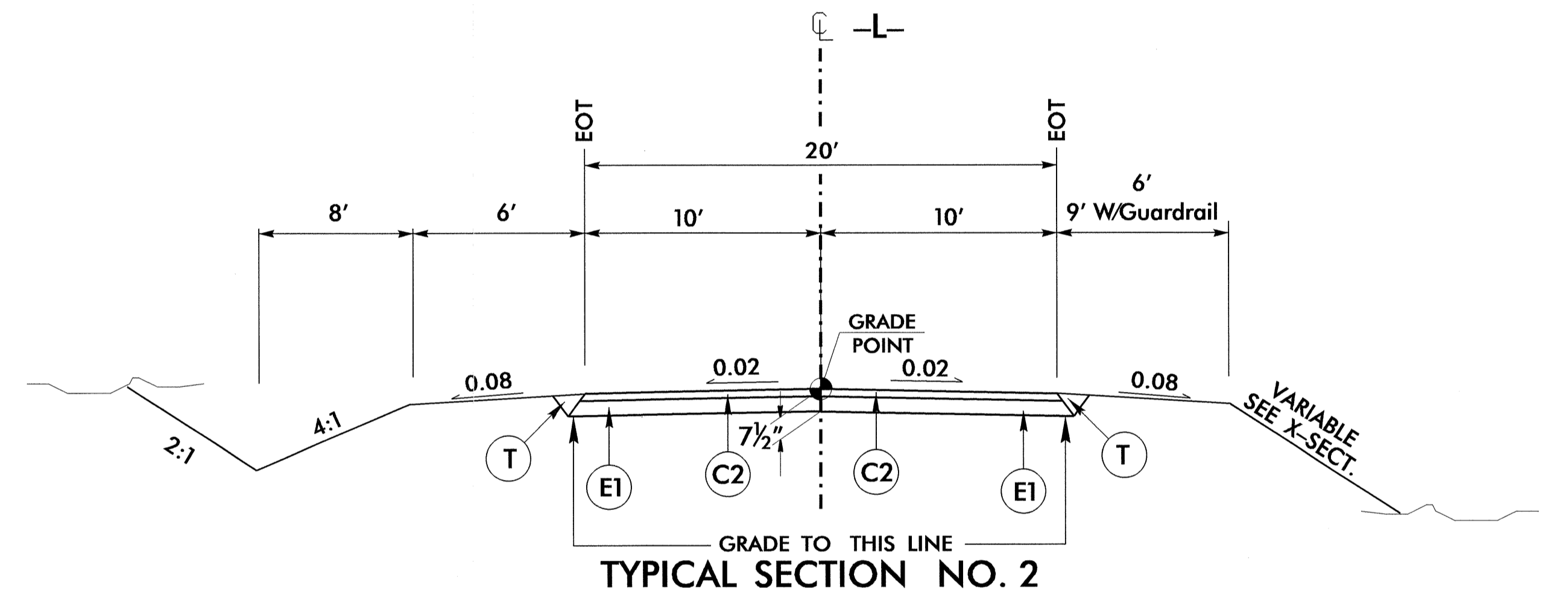
**TYPICAL SECTION NO. 3**

-Y- STA 13+25.00 TO STA 14+50.00



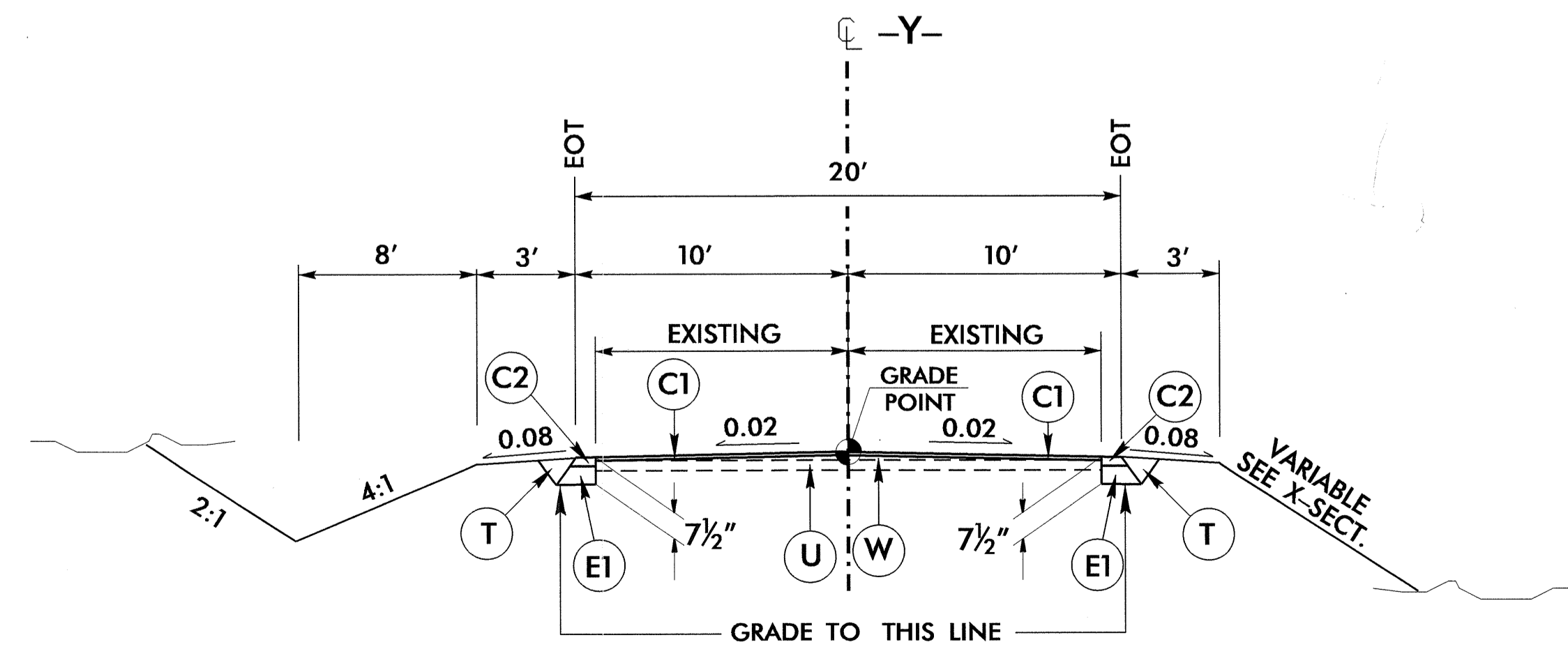
**TYPICAL SECTION NO. 1**

-L- STA 10+25.00 TO STA 11+05.83 (BEGIN BRIDGE)  
-L- STA 11+78.17 (END BRIDGE) TO STA 17+50.00  
-L- STA 21+50.00 TO STA 23+50.00



**TYPICAL SECTION NO. 2**

-L- STA 17+50.00 TO STA 18+22.75 (BEGIN BRIDGE)  
-L- STA 19+55.25 (END BRIDGE) TO STA 21+50.00



**TYPICAL SECTION NO. 4**

-Y- STA 14+50.00 TO STA 15+33.35

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

# SUMMARY OF QUANTITIES

STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS ROADWAY SUMMARY OF QUANTITIES FOR CONTRACT - C202809				
ItemNumber	Sec #	Quantity	Unit	Description
0000100000-N	800	Lump Sum		MOBILIZATION
0000400000-N	801	Lump Sum		CONSTRUCTION SURVEYING
0030000000-N	SP	Lump Sum		BRIDGE APPROACH FILL - SUB REGIONAL TIER, STATION ***** (11+42.00-L)
0030000000-N	SP	Lump Sum		BRIDGE APPROACH FILL - SUB REGIONAL TIER, STATION ***** (18+89.00-L)
0043000000-N	226	Lump Sum		GRADING
0050000000-E	226	1	ACR	SUPPLEMENTARY CLEARING & GRUBBING
0057000000-E	226	50	CY	UNDERCUT EXCAVATION
0134000000-E	240	12	CY	DRAINAGE DITCH EXCAVATION
0195000000-E	265	100	CY	SELECT GRANULAR MATERIAL
0196000000-E	270	220	SY	GEOTEXTILE FOR SOIL STABILIZATION
0318000000-E	300	30	TON	FOUNDATION CONDITIONING MATERIAL, MINOR STRUCTURES
0320000000-E	300	90	SY	FOUNDATION CONDITIONING GEOTEXTILE
0335200000-E	305	52	LF	15" DRAINAGE PIPE
0335300000-E	305	148	LF	18" DRAINAGE PIPE
0448200000-E	310	48	LF	15" RC PIPE CULVERTS, CLASS IV
0995000000-E	340	76	LF	PIPE REMOVAL
1099500000-E	505	50	CY	SHALLOW UNDERCUT
1099700000-E	505	100	TON	CLASS IV SUBGRADE STABILIZATION
1220000000-E	545	50	TON	INCIDENTAL STONE BASE
1489000000-E	610	730	TON	ASPHALT CONC BASE COURSE, TYPE B25.0B
1525000000-E	610	630	TON	ASPHALT CONC SURFACE COURSE, TYPE SF9.5A
1575000000-E	620	75	TON	ASPHALT BINDER FOR PLANT MIX
1693000000-E	654	25	TON	ASPHALT PLANT MIX, PAVEMENT REPAIR
2000000000-N	806	21	EA	RIGHT OF WAY MARKERS
2022000000-E	815	25	CY	SUBDRAIN EXCAVATION
2033000000-E	815	20	CY	SUBDRAIN FINE AGGREGATE
2044000000-E	815	100	LF	6" PERFORATED SUBDRAIN PIPE
2070000000-N	815	1	EA	SUBDRAIN PIPE OUTLET
2077000000-E	815	6	LF	6" OUTLET PIPE
2286000000-N	840	4	EA	MASONRY DRAINAGE STRUCTURES
2367000000-N	840	4	EA	FRAME WITH TWO GRATES, STD 840.29
2556000000-E	846	220	LF	SHOULDER BERM GUTTER
3030000000-E	862	187.5	LF	STEEL BM GUARDRAIL
3045000000-E	862	25	LF	STEEL BM GUARDRAIL, SHOP CURVED
3150000000-N	862	5	EA	ADDITIONAL GUARDRAIL POSTS
3165000000-N	SP	7	EA	GUARDRAIL ANCHOR UNITS, TYPE ***** (350 TL-2)
3195000000-N	862	1	EA	GUARDRAIL ANCHOR UNITS, TYPE AT-1
3215000000-N	862	8	EA	GUARDRAIL ANCHOR UNITS, TYPE III
3628000000-E	876	5	TON	RIP RAP, CLASS I
3656000000-E	876	1,570	SY	GEOTEXTILE FOR DRAINAGE
3659000000-N	SP	4	EA	PREFORMED SCOUR HOLES WITH LEVEL SPREADER APRON
4072000000-E	903	249	LF	SUPPORTS, 3-LB STEEL U-CHANNEL
4096000000-N	904	6	EA	SIGN ERECTION, TYPE D
4102000000-N	904	3	EA	SIGN ERECTION, TYPE E
4155000000-N	907	14	EA	DISPOSAL OF SIGN SYSTEM, U-CHANNEL
4158000000-N	907	1	EA	DISPOSAL OF SIGN SYSTEM, WOOD
4400000000-E	1110	632	SF	WORK ZONE SIGNS (STATIONARY)
4405000000-E	1110	96	SF	WORK ZONE SIGNS (PORTABLE)
4410000000-E	1110	156	SF	WORK ZONE SIGNS (BARRICADE MOUNTED)

ItemNumber	Sec #	Quantity	Unit	Description
4430000000-N	1130	30	EA	DRUMS
4435000000-N	1135	25	EA	CONES
4445000000-E	1145	112	LF	BARRICADES (TYPE III)
4455000000-N	1150	59	DAY	FLAGGER
4507000000-E	1170	90	LF	WATER FILLED BARRIER
4508000000-E	1170	90	LF	RESET WATER FILLED BARRIER
4650000000-N	1251	61	EA	TEMPORARY RAISED PAVEMENT MARKERS
4810000000-E	1205	22,687	LF	PAINT PAVEMENT MARKING LINES (4")
4835000000-E	1205	136	LF	PAINT PAVEMENT MARKING LINES (24")
4850000000-E	1205	480	LF	REMOVAL OF PAVEMENT MARKING LINES (4")
4870000000-E	1205	35	LF	REMOVAL OF PAVEMENT MARKING LINES (24")
6000000000-E	1605	2,000	LF	TEMPORARY SILT FENCE
6006000000-E	1610	360	TON	STONE FOR EROSION CONTROL, CLASS A
6009000000-E	1610	175	TON	STONE FOR EROSION CONTROL, CLASS B
6012000000-E	1610	450	TON	SEDIMENT CONTROL STONE
6015000000-E	1615	4	ACR	TEMPORARY MULCHING
6018000000-E	1620	150	LB	SEED FOR TEMPORARY SEEDING
6021000000-E	1620	1.5	TON	FERTILIZER FOR TEMPORARY SEEDING
6024000000-E	1622	200	LF	TEMPORARY SLOPE DRAINS
6029000000-E	SP	500	LF	SAFETY FENCE
6030000000-E	1630	480	CY	SILT EXCAVATION
6036000000-E	1631	7,000	SY	MATTING FOR EROSION CONTROL
6037000000-E	SP	20	SY	COIR FIBER MAT
6042000000-E	1632	675	LF	1/4" HARDWARE CLOTH
6070000000-N	1639	12	EA	SPECIAL STILLING BASINS
6071010000-E	SP	300	LF	WATTLE
6071020000-E	SP	100	LB	POLYACRYLAMIDE (PAM)
6071030000-E	1640	135	LF	COIR FIBER BAFFLE
6071050000-E	SP	2	EA	*** SKIMMER (1-1/2")
6084000000-E	1660	3	ACR	SEEDING & MULCHING
6087000000-E	1660	3	ACR	MOWING
6090000000-E	1661	50	LB	SEED FOR REPAIR SEEDING
6093000000-E	1661	0.25	TON	FERTILIZER FOR REPAIR SEEDING
6096000000-E	1662	100	LB	SEED FOR SUPPLEMENTAL SEEDING
6108000000-E	1665	2.5	TON	FERTILIZER TOPDRESSING
6114500000-N	1667	10	MHR	SPECIALIZED HAND MOWING
6117000000-N	SP	18	EA	RESPONSE FOR EROSION CONTROL
6123000000-E	1670	0.2	ACR	REFORESTATION

5/28/99

C:\PCT-2011\02  
B-4046-Rdy-sum.dgn





COMPUTED BY:	BCS	DATE:	12/4/11
CHECKED BY:	ACW	DATE:	01/05/12

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

PROJECT REFERENCE NO.	SHEET NO.
B-4046	3-B

**SUMMARY OF EARTHWORK**  
IN CUBIC YARDS

STATION	STATION	UNCL. EXCAV.	EMBANK. +%	BORROW	WASTE
-L-					
10+25.00	11+05.83 BEGIN BRIDGE	1	75	74	
11+78.17 END BRIDGE	18+22.75 BEGIN BRIDGE	876	811		65
19+55.25 END BRIDGE	23+50	1651	1529		122
SUBTOTALS:		2528	2415	74	187
-Y-					
13+25	15+33.35	8	106	98	
SUBTOTALS:		8	106	98	
TOTALS:		2536	2521	172	187
LOSS DUE TO CLEARING AND GRUBBING		-325			-325
WASTE IN LIEU OF BORROW				138	-138
PROJECT TOTALS:		2211	2521	310	0
EST. 5% TO REPLACE TOP SOIL ON BORROW PIT			16	16	
GRAND TOTALS:		2211	2537	326	0
SAY:		2300		350	0
DDE: 12 CY					
UNDERCUT: 50 CY					
SHALLOW UNDERCUT (CONTINGENCY): 50 CY					

**PAVEMENT REMOVAL SUMMARY**

SURVEY LINE	STATION	STATION	LOCATION LT/RT/CL	YD <sup>2</sup>
-L-	10+55	11+20	CL	142.48
	11+55	12+28	CL	159.91
	13+05	17+50	RT	125.87
	17+50	18+39	LT	415.77
	19+60	22+41	LT	421.11
TOTAL:				1265.14
SAY:				1300

**SHOULDER BERM GUTTER SUMMARY**

SURVEY LINE	STATION	STATION	LENGTH
-L-LT	10+75	10+99.98	24.98'
-L-RT	16+72.67	18+13.00	140.33'
-L-RT	19+65.00	20+05	40.00'
-L-RT	10+89.00	10+91.00	2'
-L-RT	11+85.67	11+87.67	2'
-L-LT	11+93.13	11+95.13	2'
-L-LT	18+09.75	18+11.75	2'
-L-LT	19+66.25	19+68.25	2'
TOTAL:			215.31'
SAY:			220.00'

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:**

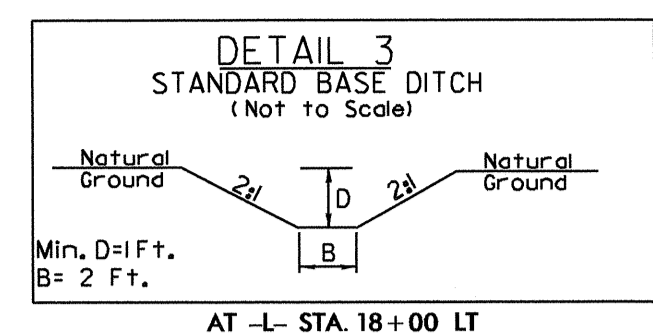
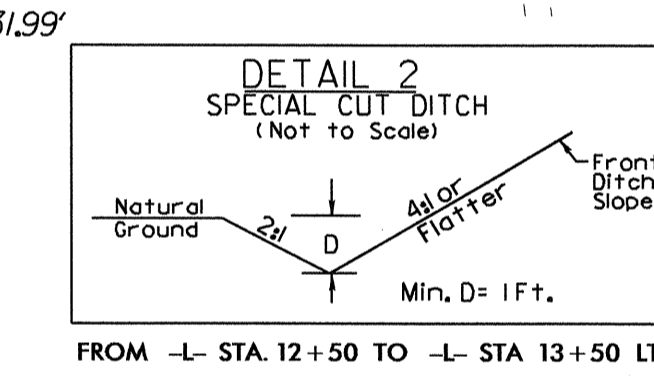
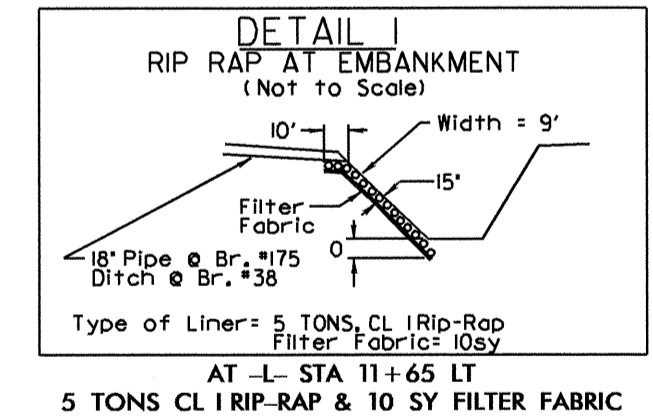
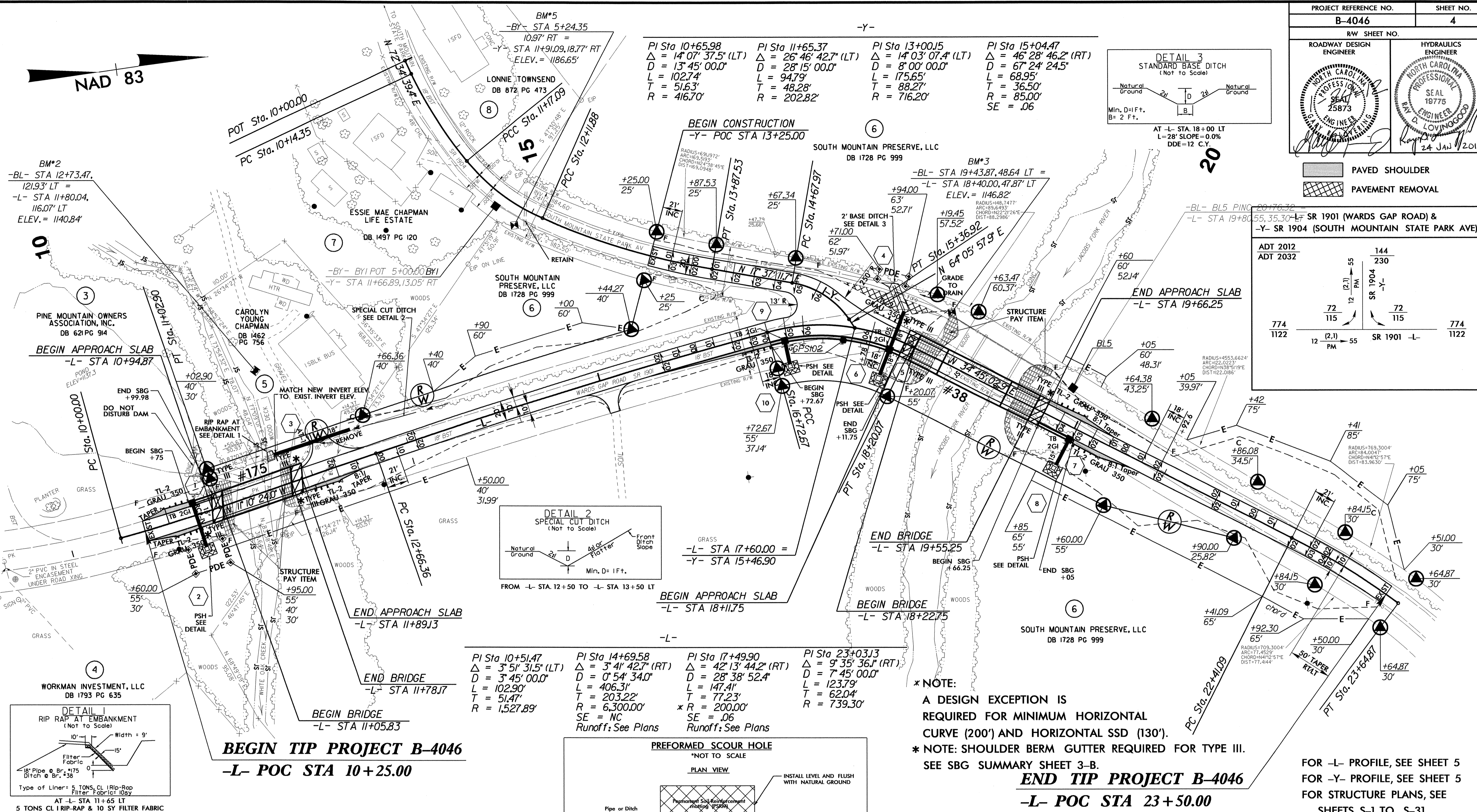
APPROXIMATE QUANTITIES ONLY. UNCLASSIFIED EXCAVATION, BORROW EXCAVATION, FINE GRADING, CLEARING AND GRUBBING, AND REMOVAL OF EXISTING PAVEMENT WILL BE PAID FOR AT THE LUMP SUM PRICE FOR "GRADING".

"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**

SURVEY LINE	BEG. STA.	END STA.	LOCATION	LENGTH			WARRANT POINT		"N" DIST. FROM E.O.L.	TOTAL SHOUL. WIDTH	FLARE LENGTH		W		ANCHORS										IMPACT ATTENUATOR TYPE 350			SINGLE FACED GUARDRAIL	REMOVE EXISTING GUARDRAIL	REMOVE AND STOCKPILE EXISTING GUARDRAIL	REMARKS	
				STRAIGHT	SHOP CURVED	DOUBLE FACED	APPROACH END	TRAILING END			APPROACH END	TRAILING END	APPROACH END	TRAILING END	XI MOD	XI	TL-2 GRAU 350	TYPE III	XIII	CAT-1	VI MOD	BIC	AT-1	EA	G	NG						
-L-	10+52.35	11+02.35 (BEGIN BRIDGE)	RT	50'			11+02.35(BRIDGE)		3'	9'	31.25'		0.62'						1	1												
	10+46.85	11+09.85 (BEGIN BRIDGE)	LT	63'			11+09.85(BRIDGE)		5'	9'		28'		0.56'					1	1												
	11+74.71 (END BRIDGE)	12+24.71	RT	50'			11+74.69(BRIDGE)		3'	9'		31.25'		0.62'					1	1												
	11+82.17	12+07.00	LT	14'	25'		11+82.19(BRIDGE)		5'	9'	0'		0'									1										
	16+42.75	18+22.75 (BEGIN BRIDGE)	RT	180'			18+22.75(BRIDGE)		4'	9'	28'		0.56'						1	1												
	17+72.75	18+22.75 (BEGIN BRIDGE)	LT	50'			18+22.75(BRIDGE)		4'	9'		28'		0.56'					1	1												
	19+55.25 (END BRIDGE)	20+35.25	RT	80'			19+55.25(BRIDGE)		4'	9'		28'		0.56'					1	1												
	19+55.25 (END BRIDGE)	20+05.25	LT	50'			19+55.25(BRIDGE)		4'	9'	28'		0.56'						1	1												
SUBTOTAL:				537'	25'																											
LESS ANCHOR DEDUCTIONS:				352.25																												
TOTAL:				184.75'	25'																											
SAY:				187.50'	25'																											
ADDITIONAL POST:				5																												
														ANCHOR DEDUCTIONS:				TL-2 GRAU: 7@28' = 196'			TYPE III: 8@18.75' = 150'			AT-1: 1@6.25' = 6.25'			TOTAL: 352.25'					

5/14/95  
20 JAN 2012 10:53 b4046-rdy-psh-4.dgn

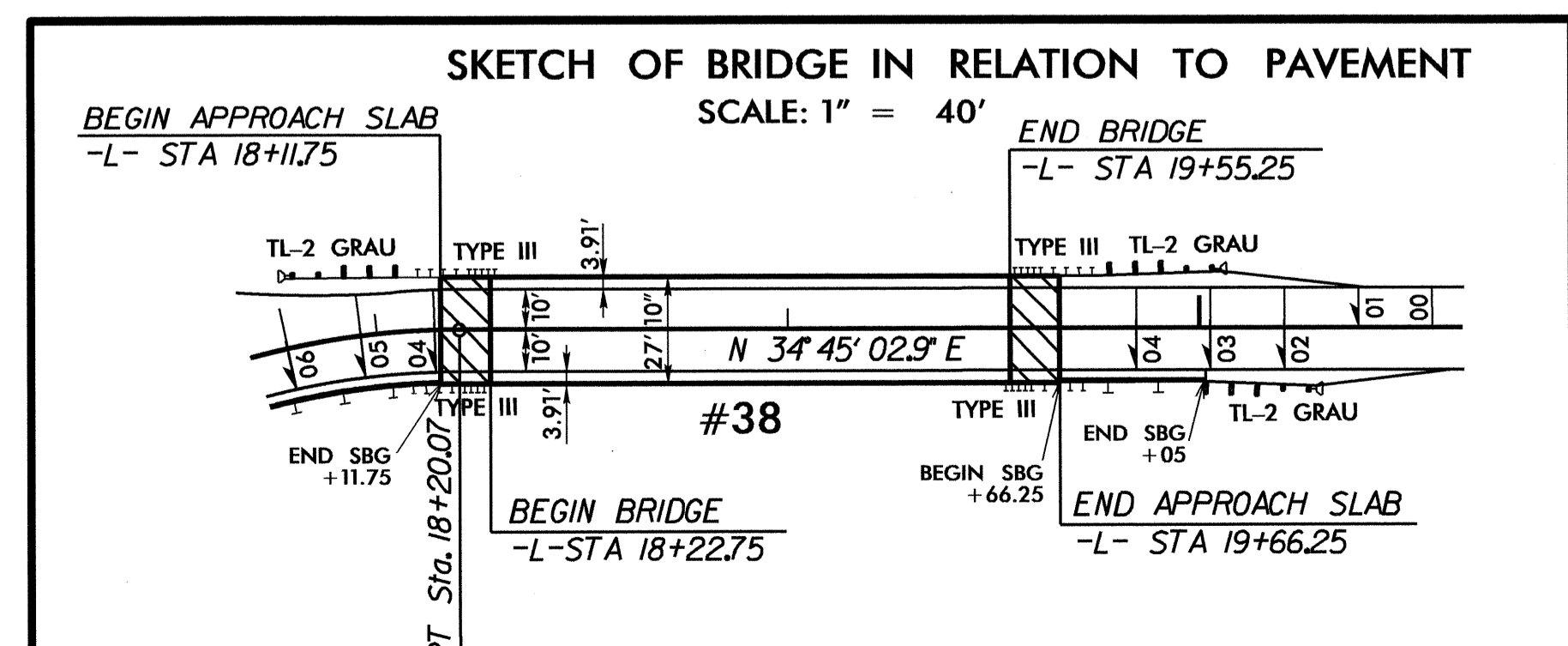
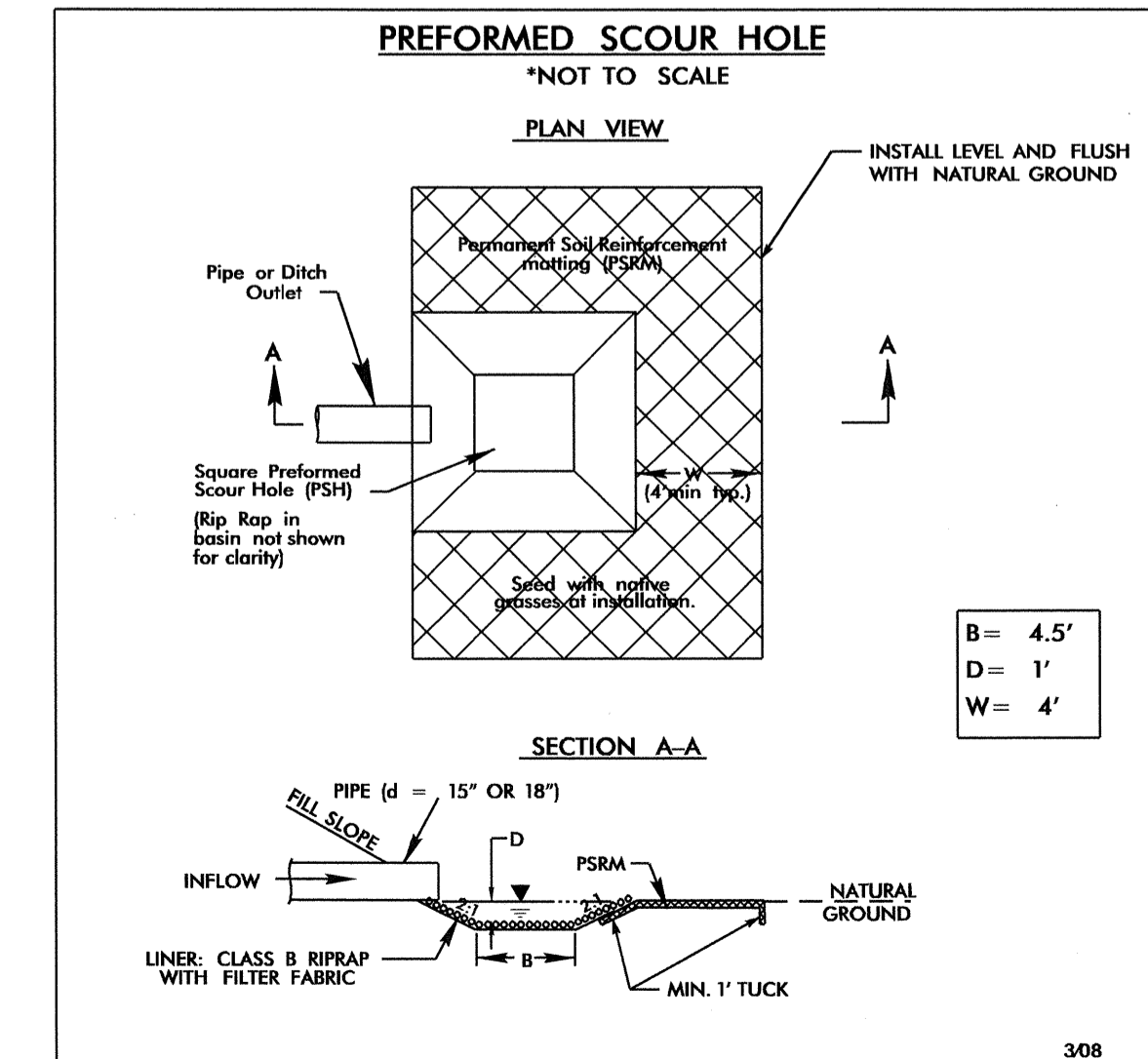
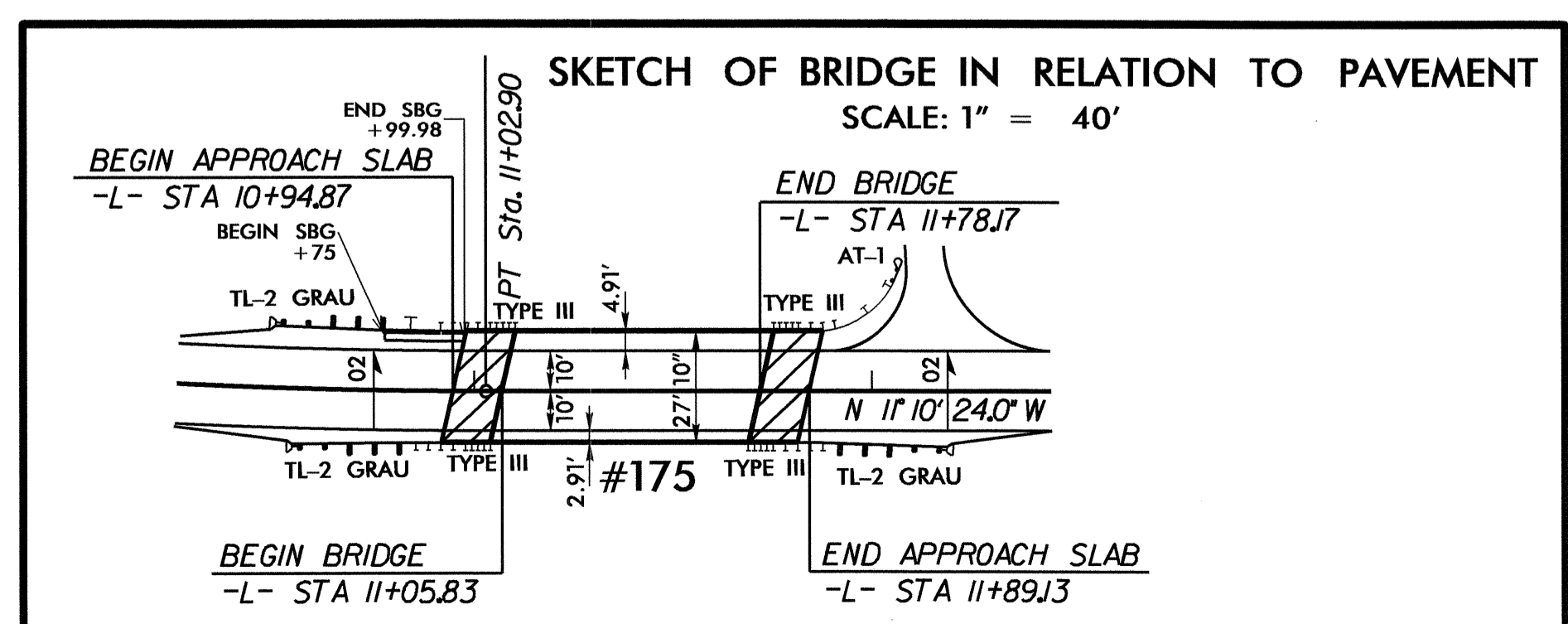


<p>PI Sta 10+51.47  <math>\Delta = 3^{\circ} 51' 31.5''</math> (LT)  <math>D = 3^{\circ} 45' 00.0''</math>  <math>L = 102.90'</math>  <math>T = 51.47'</math>  <math>R = 1,527.89'</math></p>	<p>PI Sta 14+69.58  <math>\Delta = 3^{\circ} 41' 42.7''</math> (RT)  <math>D = 0^{\circ} 54' 34.0''</math>  <math>L = 406.31'</math>  <math>T = 203.22'</math>  <math>R = 6,300.00'</math>  <math>SE = NC</math>          Runoff: See Plans</p>	<p>PI Sta 17+49.90  <math>\Delta = 42^{\circ} 13' 44.2''</math> (RT)  <math>D = 28^{\circ} 38' 52.4''</math>  <math>L = 147.41'</math>  <math>T = 77.23'</math>  <math>R = 200.00'</math>  <math>SE = .06</math>          Runoff: See Plans</p>	<p>PI Sta 23+03.13  <math>\Delta = 9^{\circ} 35' 36.1''</math> (RT)  <math>D = 7^{\circ} 45' 00.0''</math>  <math>L = 123.79'</math>  <math>T = 62.04'</math>  <math>R = 739.30'</math></p>
---	---	---	---

\* NOTE:  
 A DESIGN EXCEPTION IS REQUIRED FOR MINIMUM HORIZONTAL CURVE (200') AND HORIZONTAL SSD (130').  
 \* NOTE: SHOULDER BERM GUTTER REQUIRED FOR TYPE III.  
 SEE SBG SUMMARY SHEET 3-B.

**END TIP PROJECT B-4046**  
 -L- POC STA 23+50.00

FOR -L- PROFILE, SEE SHEET 5  
 FOR -Y- PROFILE, SEE SHEET 5  
 FOR STRUCTURE PLANS, SEE SHEETS S-1 TO S-31



AT -L- STA. 10+78 RT  
 AT -L- STA. 16+88 RT  
 AT -L- STA. 18+00 RT  
 AT -L- STA. 20+00 RT

5/28/99

PROJECT REFERENCE NO. <b>B-4046</b>	SHEET NO. <b>5</b>
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

**BRIDGE #175 HYDRAULIC DATA**

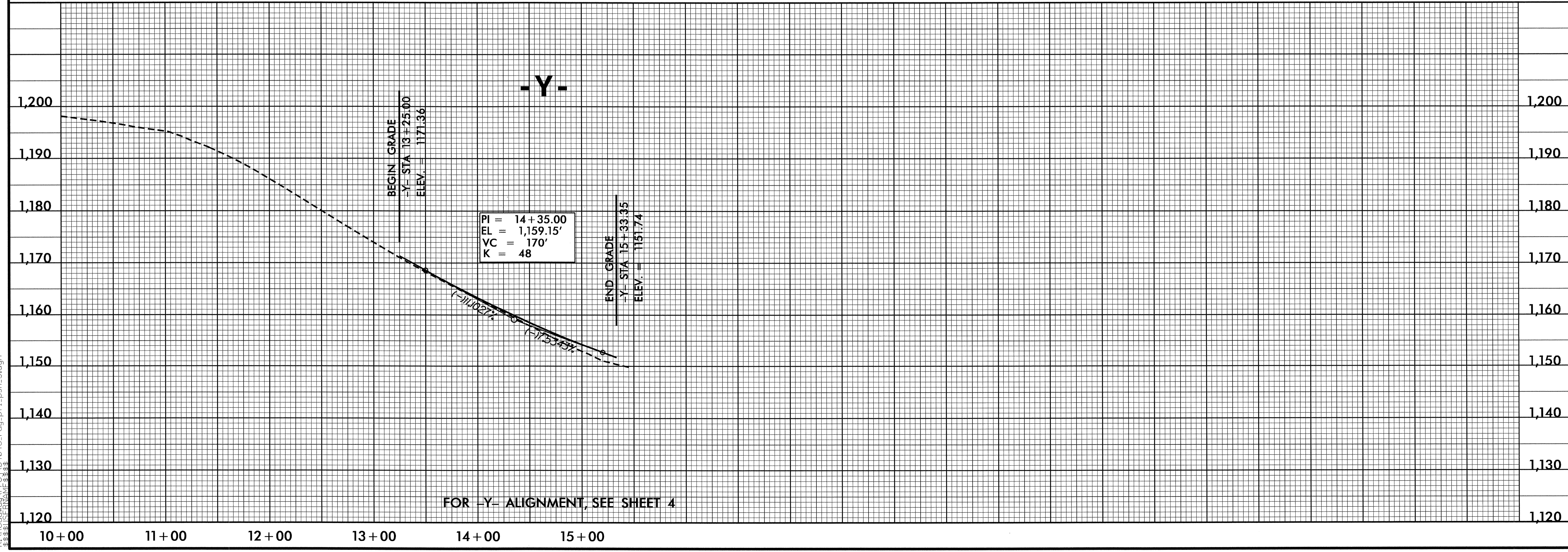
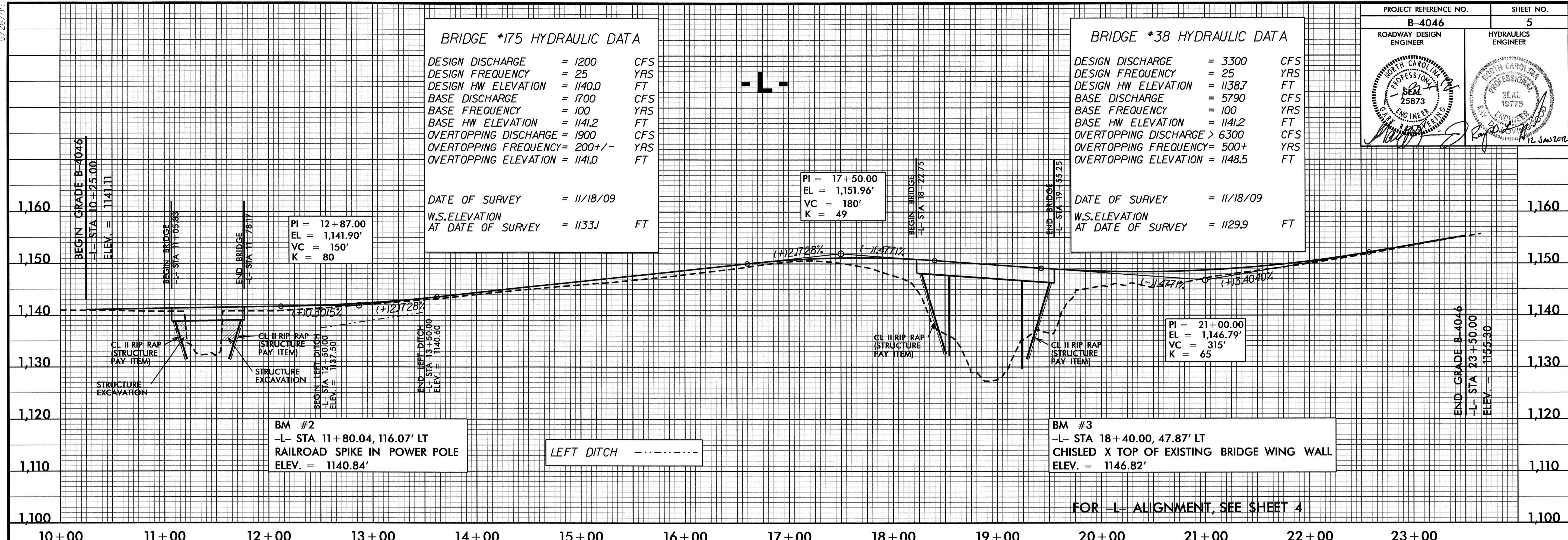
DESIGN DISCHARGE = 1200 CFS  
 DESIGN FREQUENCY = 25 YRS  
 DESIGN HW ELEVATION = 1140.0 FT  
 BASE DISCHARGE = 1700 CFS  
 BASE FREQUENCY = 100 YRS  
 BASE HW ELEVATION = 1141.2 FT  
 OVERTOPPING DISCHARGE = 1900 CFS  
 OVERTOPPING FREQUENCY = 200+/- YRS  
 OVERTOPPING ELEVATION = 1141.0 FT

DATE OF SURVEY = 11/18/09  
 W.S. ELEVATION AT DATE OF SURVEY = 1133.1 FT

**BRIDGE #38 HYDRAULIC DATA**

DESIGN DISCHARGE = 3300 CFS  
 DESIGN FREQUENCY = 25 YRS  
 DESIGN HW ELEVATION = 1138.7 FT  
 BASE DISCHARGE = 5790 CFS  
 BASE FREQUENCY = 100 YRS  
 BASE HW ELEVATION = 1141.2 FT  
 OVERTOPPING DISCHARGE > 6300 CFS  
 OVERTOPPING FREQUENCY = 500+ YRS  
 OVERTOPPING ELEVATION = 1148.5 FT

DATE OF SURVEY = 11/18/09  
 W.S. ELEVATION AT DATE OF SURVEY = 1129.9 FT



QI-DEC-2011129  
R:\Roadway\B-4046-rdy-p1.psh\_5.dgn