

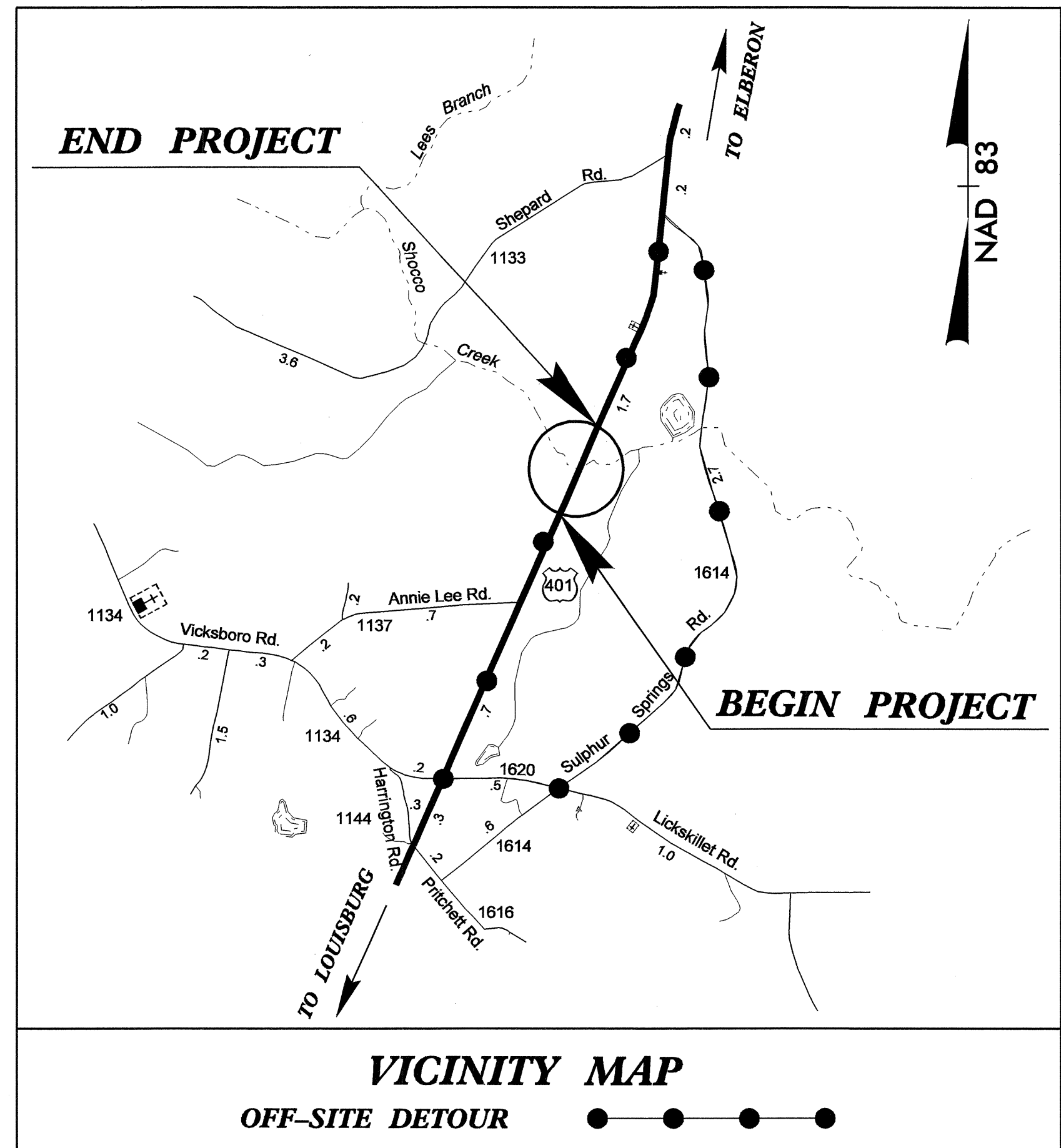
09/28/09

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

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4307	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
33644.1.1	BRSTP-401(145)	P.E.	
33644.2.1	BRSTP-401(145)	RW & UTIL.	
33644.3.1	BRSTP-401(145)	CONST.	

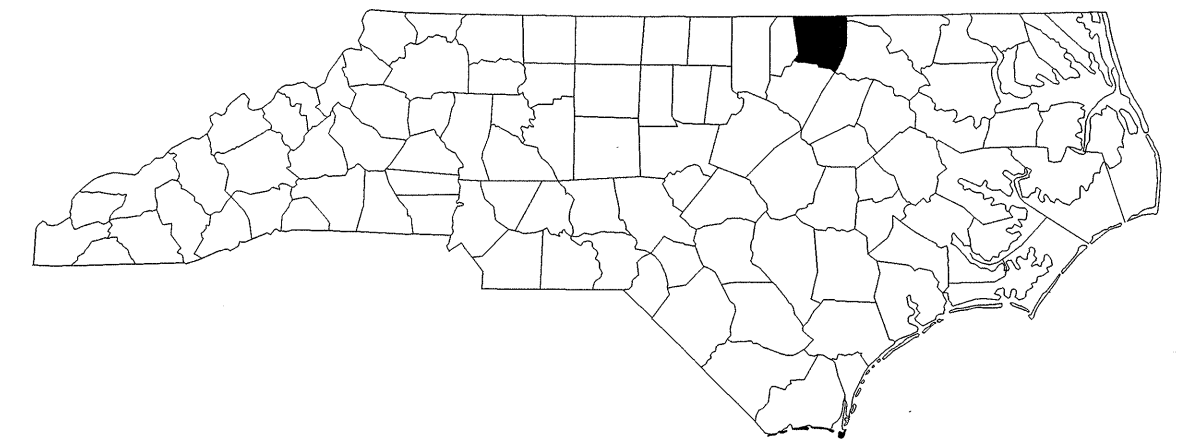
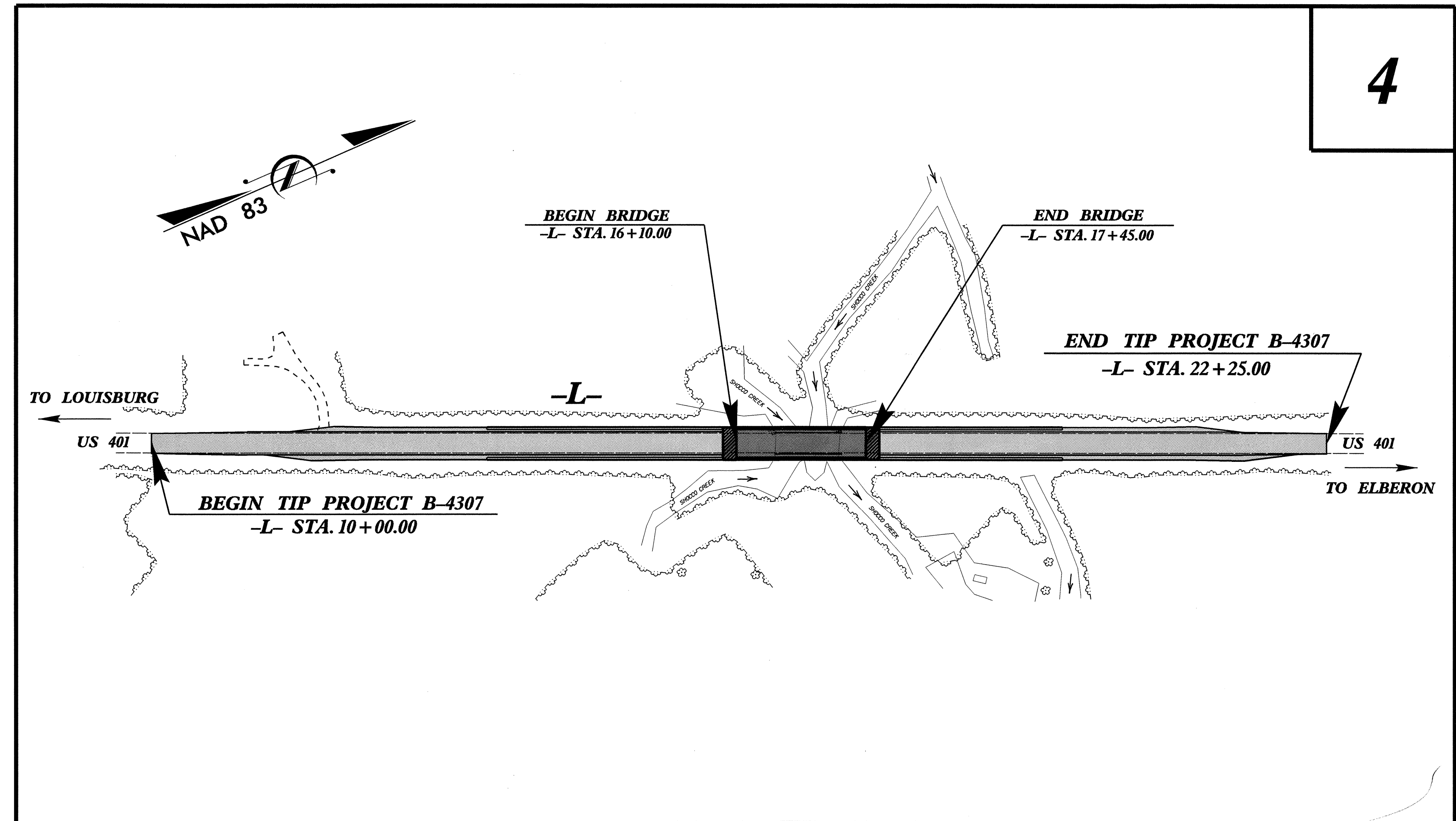
TIP PROJECT: B-4307



WARREN COUNTY

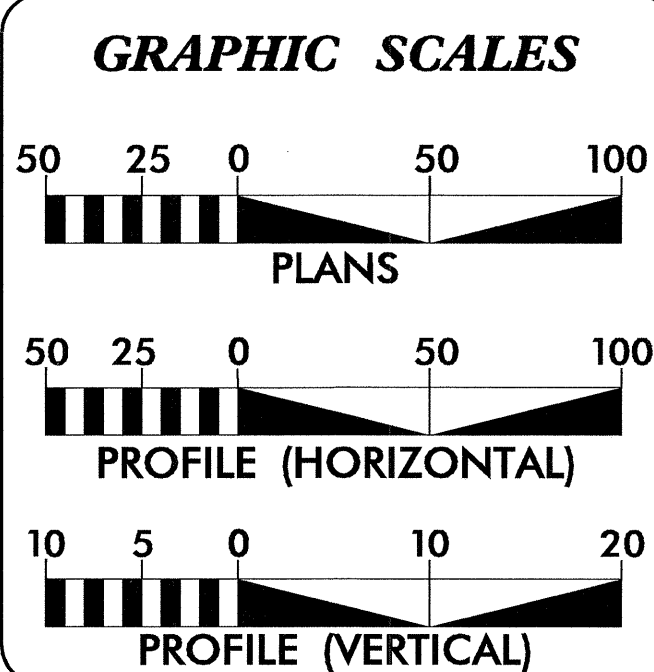
LOCATION: BRIDGE NO. 4 OVER SHOCCO CREEK AND APPROACHES ON US 401

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



** DESIGN EXCEPTIONS FOR VERTICAL ALIGNMENT AND VERTICAL STOPPING SIGHT DISTANCE ARE REQUIRED.

CONTRACT: C202124



DESIGN DATA

ADT 2009 =	2250
ADT 2030 =	3800
DHV =	10 %
D =	60 %
T =	5 % *
**V =	60 MPH
* (TTST 2% + DUAL 3%)	
FUNC. CLASS. =	RURAL COLLECTOR

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-4307 =	0.206 MILE
LENGTH STRUCTURE TIP PROJECT B-4307 =	0.026 MILE
TOTAL LENGTH TIP PROJECT B-4307 =	0.232 MILE

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

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: JUNE 26, 2008	GLENN W. MUMFORD, P.E. PROJECT ENGINEER
LETTING DATE: JUNE 16, 2009	TATIA L. WHITE, P.E. PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: _____ P.E.

ROADWAY DESIGN ENGINEER

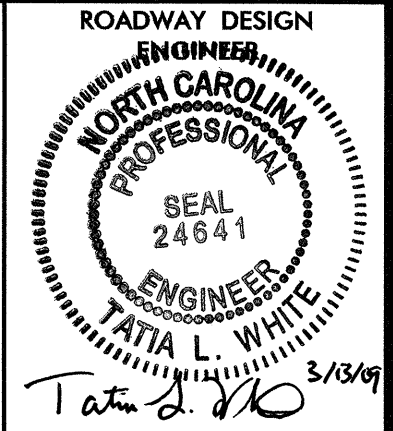
SIGNATURE: _____ P.E.

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

cut miller P.E.
STATE HIGHWAY DESIGN ENGINEER

13-MAR-2009 12:02
C:\p02\dwg\proj\01\p4307_rdy_tsh.dgn
\$\$\$\$\$USERNAME\$\$\$\$\$

STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS



INDEX OF SHEETS

SHEET NUMBER	SHEET
1	TITLE SHEET - B-4307
1-A	INDEX OF SHEETS, GENERAL NOTES & LIST OF STANDARDS (2006 SPECIFICATIONS)
1-B	CONVENTIONAL SYMBOLS
1-C	SURVEY CONTROL SHEET
2	TYPICAL SECTIONS AND PAVEMENT SCHEDULE
2-A	DETAIL OF ANCHORAGE FOR FRAMES
3	SUMMARY OF QUANTITIES
3-A	SUMMARY OF DRAINAGE QUANTITIES, GUARDRAIL SUMMARY
3-B	SUMMARY OF EARTHWORK, SUMMARY OF EXISTING ASPHALT PAVEMENT REMOVAL AND BREAKING, SUMMARY OF SHOULDER BERM GUTTER PLAN SHEET
4	PROFILE SHEET
TCP-1 THROUGH TCP-5	TRAFFIC CONTROL PLANS
EC-1 THROUGH EC-5	EROSION CONTROL PLANS
SIGN-1 THROUGH SIGN-3	SIGNING PLANS
UC-1 THROUGH UC-3	UTILITY CONSTRUCTION PLANS
U0-1 THROUGH U0-2	UTILITIES BY OTHERS PLANS
X-A	CROSS-SECTION SUMMARY SHEET
X-1 THROUGH X-6	CROSS-SECTIONS
S-1 THROUGH S-20	STRUCTURE PLANS

2006 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 July 18, 2006 are applicable to this project and by reference hereby 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
DIVISION 3 - PIPE CULVERTS	
300.01	Method of Pipe Installation - Method 'A'
310.10	Driveway Pipe Construction
DIVISION 4 - MAJOR STRUCTURES	
422.10	Reinforced Bridge Approach Fills
DIVISION 5 - SUBGRADE, BASES AND SHOULDERS	
560.01	Method of Shoulder Construction - High Side of Superelevated Curve - Method I
DIVISION 8 - INCIDENTALS	
806.01	Concrete Right-of-Way Marker
806.02	Granite Right-of-Way Marker
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
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
862.04	Anchoring End of Guardrail - B-77 and B-83 Anchor Units
876.01	Rip Rap in Channels
876.02	Guide for Rip Rap at Pipe Outlets
876.04	Drainage Ditches with Class 'B' Rip Rap

EFF. 07-18-06
REV. 01-02-07

GENERAL NOTES: 2006 SPECIFICATIONS EFFECTIVE: 07-18-06
REVISED: 07-30-08

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 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.

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

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

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

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

UTILITIES:
UTILITY OWNERS ON THIS PROJECT ARE EMBARQ - TELEPHONE
WARREN COUNTY PUBLIC UTILITIES
ANY RELOCATION OF EXISTING UTILITIES WILL BE ACCOMPLISHED BY OTHERS, EXCEPT AS SHOWN ON THE PLANS.

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

Note: Not to Scale

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

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CONVENTIONAL PLAN SHEET SYMBOLS

BOUNDARIES AND PROPERTY:

State Line	-----
County Line	-----
Township Line	-----
City Line	-----
Reservation Line	-----
Property Line	-----
Existing Iron Pin	○ EP
Property Corner	-----
Property Monument	□ ECM
Parcel/Sequence Number	(23)
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 ---

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	-----
False Sump	▽

RAILROADS:

Standard Gauge	-----
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 Marker	○ R/W ▲
Existing Control of Access	○ CA
Proposed Control of Access	○ CA
Existing Easement Line	--- E ---
Proposed Temporary Construction Easement	--- E ---
Proposed Temporary Drainage Easement	--- TDE ---
Proposed Permanent Drainage Easement	--- PDE ---
Proposed Permanent Utility Easement	--- PUE ---
Proposed Temporary Utility Easement	--- TUE ---
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 Wheel Chair Ramp	WCR
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	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	-----

UTILITIES:

POWER:	
Existing Power Pole	●
Proposed Power Pole	○
Existing Joint Use Pole	●
Proposed Joint Use Pole	○
Power Manhole	○ P
Power Line Tower	□
Power Transformer	▣
U/G Power Cable Hand Hole	□ PH
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	○ T
Telephone Booth	□
Telephone Pedestal	□
Telephone Cell Tower	○
U/G Telephone Cable Hand Hole	□ PH
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	○ W
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	□ PH
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 ---

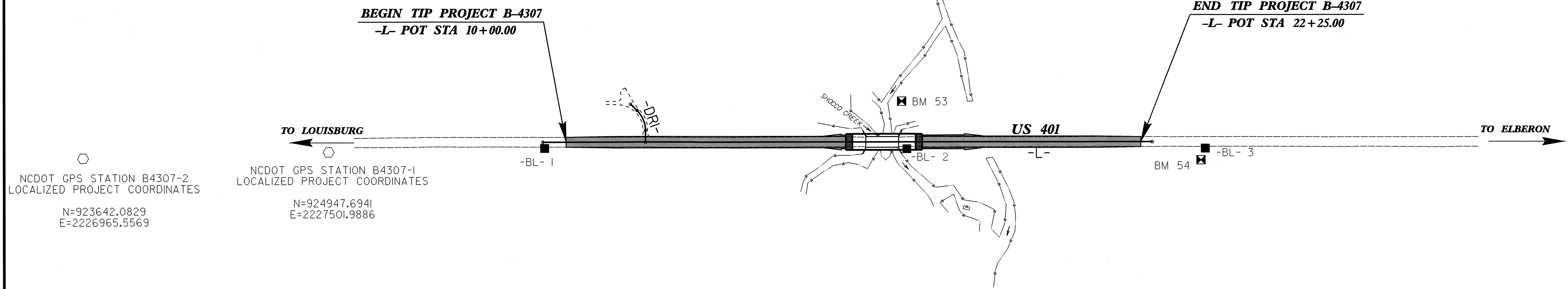
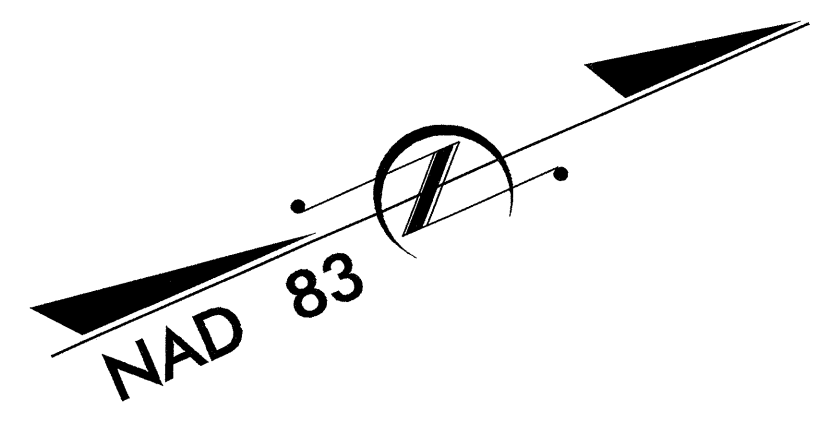
MISCELLANEOUS:

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	□
A/G Tank; Water, Gas, Oil	□
U/G Test Hole (S.U.E.*)	○
Abandoned According to Utility Records	AATUR
End of Information	E.O.I.

SURVEY CONTROL SHEET B-4307

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "B4307-1" WITH NAD 83 STATE PLANE GRID COORDINATES OF NORTHING: 924947.6941(ft) EASTING: 2227501.9886(ft) THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 1.00003584 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "B4307-1" TO -L- STATION 9+50.00 IS N 21°05'12.0" E 457.47' ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES VERTICAL DATUM USED IS NAVD 88



BASELINE DATA

BASELINE POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
1	BL-1	925373.0769	2227680.0418	303.38	9+54.10	12.91 RT
2	BL-2	926078.8755	2227993.2904	271.42	17+26.29	14.66 RT
3	BL-3	926661.8714	2228249.2097	295.77	OUTSIDE PROJECT LIMITS	

BENCHMARK DATA

```

*****
BM53      ELEVATION = 267.75
N 926110  E 2227895
L STATION 17+15 87 LEFT
R/R SPIKE SET IN TWIN 18' MAPLE TREE
*****
BM54      ELEVATION = 297.91
N 926643  E 2228268
L STATION 22+50
L 44° 14' 41.2" E DIST 110.46
R/R SPIKE SET IN A 16" HICKORY TREE
*****

```

NOTES:

- 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/B4307_ls_control_060410.txt](http://www.doh.dot.state.nc.us/preconstruct/highway/location/project/B4307_ls_control_060410.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)

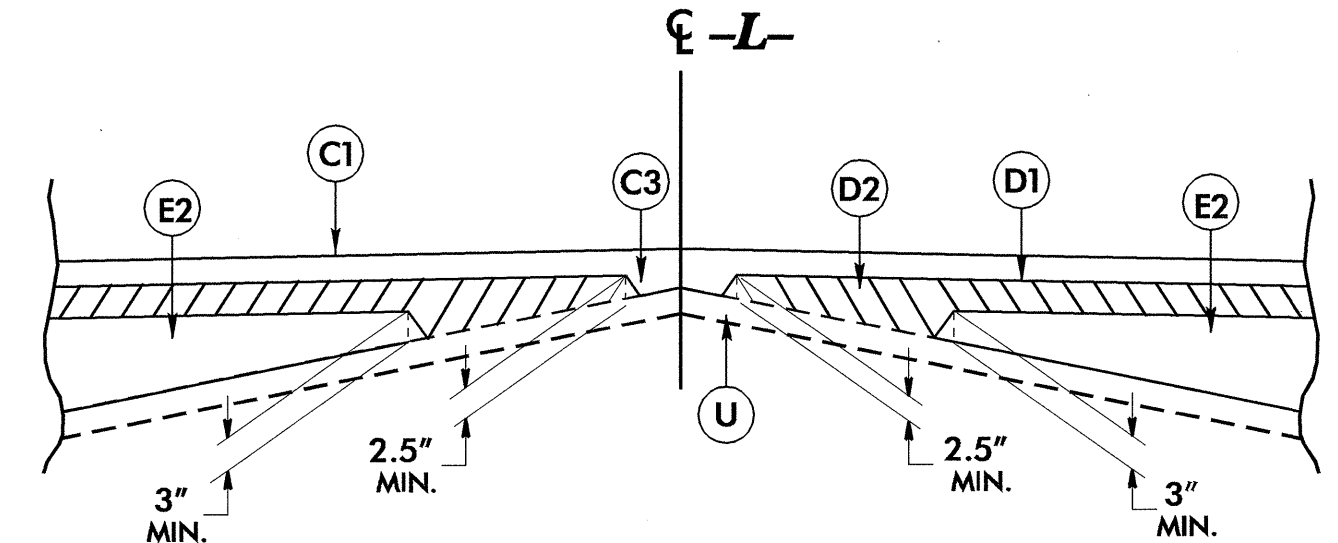
NOTE: DRAWING NOT TO SCALE

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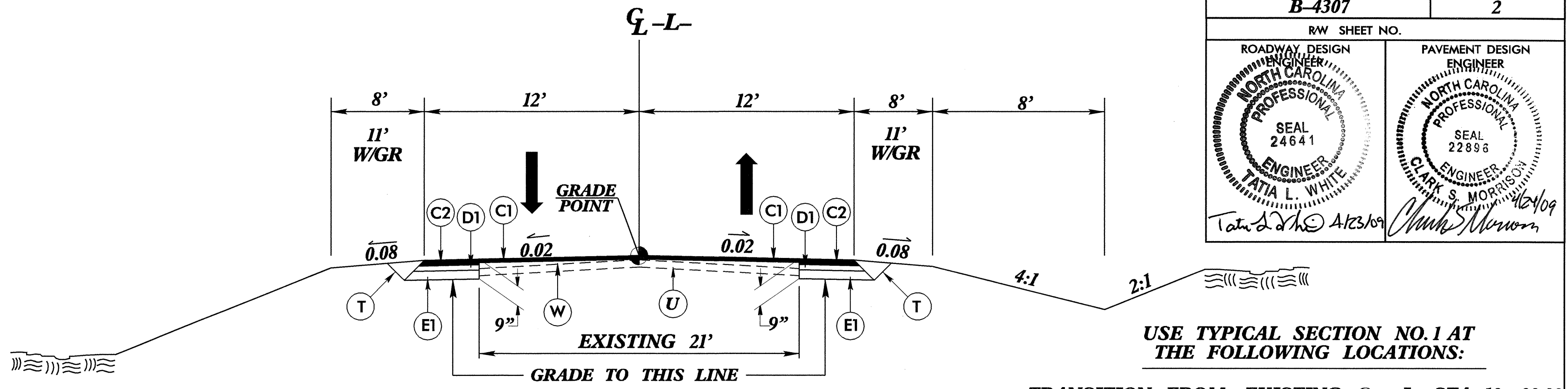
PROJECT REFERENCE NO. B-4307	SHEET NO. 2
RW SHEET NO.	
ROADWAY DESIGN ENGINEER TATIA L. WHITE SEAL 24641	PAVEMENT DESIGN ENGINEER CLARK S. MORRISON SEAL 22896

FINAL PAVEMENT SCHEDULE	
C1	PROP. APPROX. 1 1/4" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 137.5 LBS. PER SQ. YD.
C2	PROP. APPROX. 2 1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 137.5 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C3	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.
D1	PROP. APPROX. 2 1/2" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 285 LBS. PER SQ. YD.
D2	PROP. VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 2 1/2" IN DEPTH OR GREATER THAN 4" IN DEPTH.
E1	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 456 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.
S	SHOULDER RECONSTRUCTION.
T	EARTH MATERIAL.
U	EXISTING PAVEMENT.
W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE DETAIL SHOWING METHOD OF WEDGING)

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



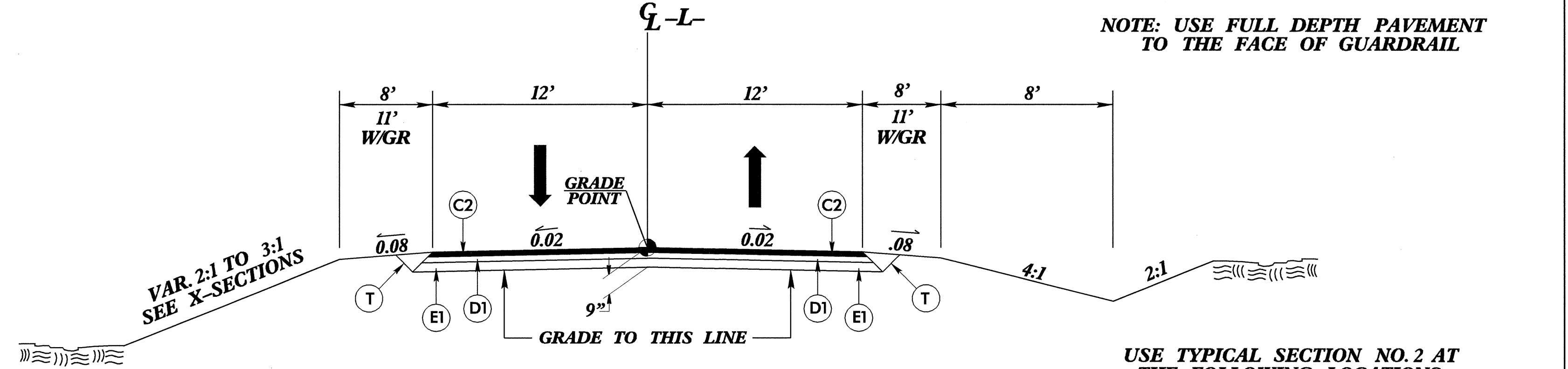
DETAIL SHOWING METHOD OF WEDGING
USE IN CONJUNCTION WITH TYPICAL SECTION NO. 1



TYPICAL SECTION NO. 1

USE TYPICAL SECTION NO. 1 AT THE FOLLOWING LOCATIONS:
 TRANSITION FROM EXISTING @ -L- STA 10+00.00 TO TYPICAL SECTION NO. 1 @ -L- STA 11+00.00 -L- STA 21+00 TO 21+25.00
 TRANSITION FROM TYPICAL SECTION NO. 1 @ -L- STA 21+25.00 TO EXISTING @ -L- STA 22+25.00

NOTE: USE FULL DEPTH PAVEMENT TO THE FACE OF GUARDRAIL

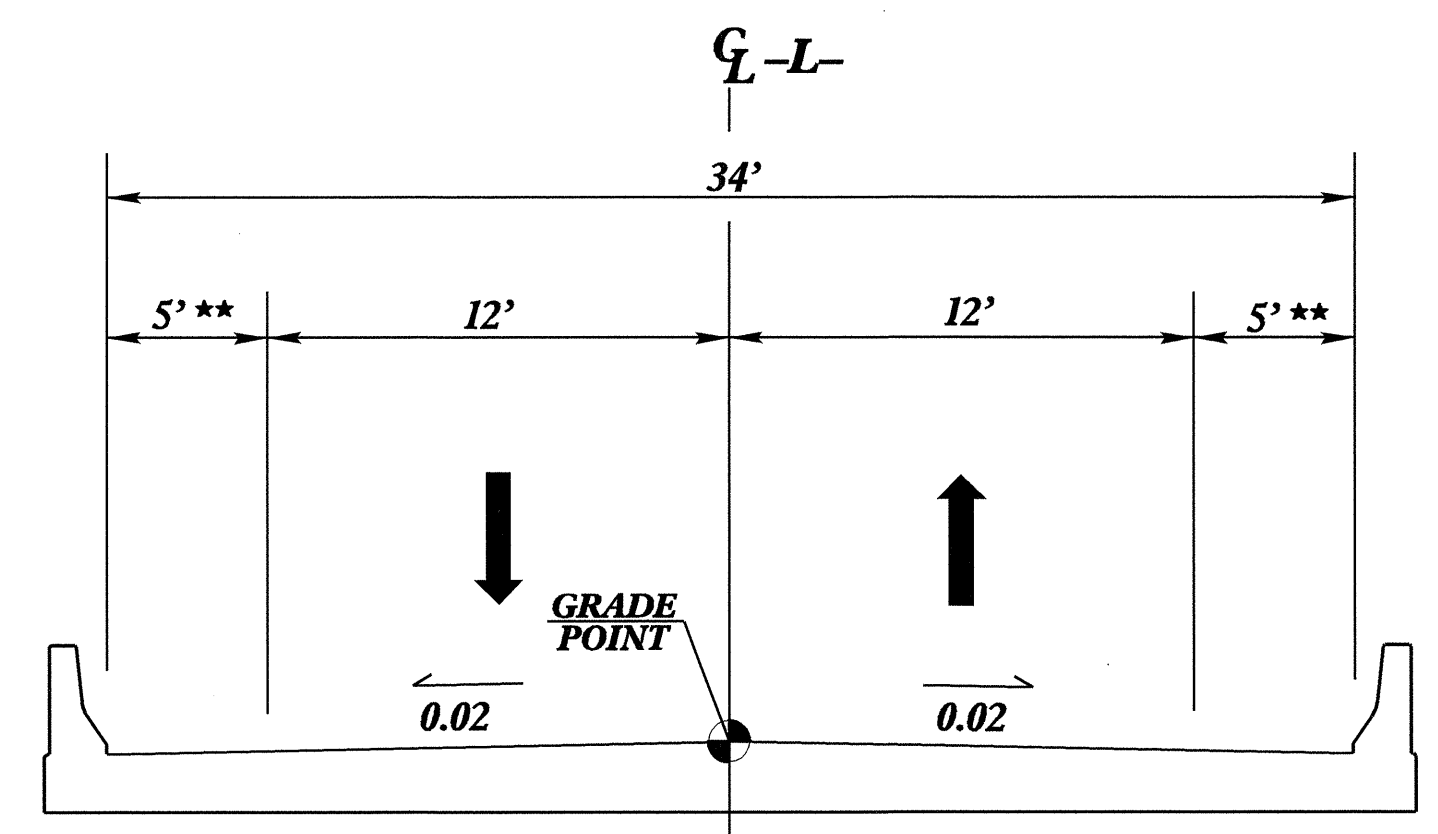


TYPICAL SECTION NO. 2

USE TYPICAL SECTION NO. 2 AT THE FOLLOWING LOCATIONS:

-L- STA 11+00.00 TO 16+10.00 (BEGIN BRIDGE)
 -L- STA 17+45.00 (END BRIDGE) TO 21+00.00

NOTE: USE FULL DEPTH PAVEMENT TO THE FACE OF GUARDRAIL

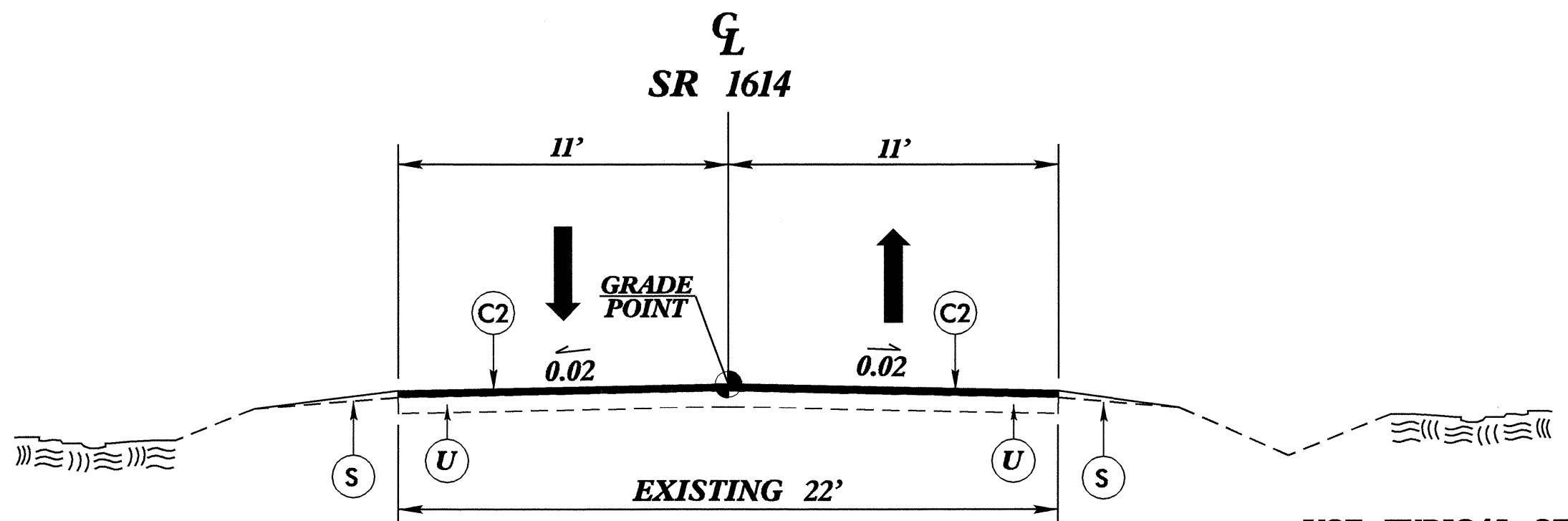


TYPICAL SECTION NO. 3

USE TYPICAL SECTION NO. 3 AT THE FOLLOWING LOCATION:

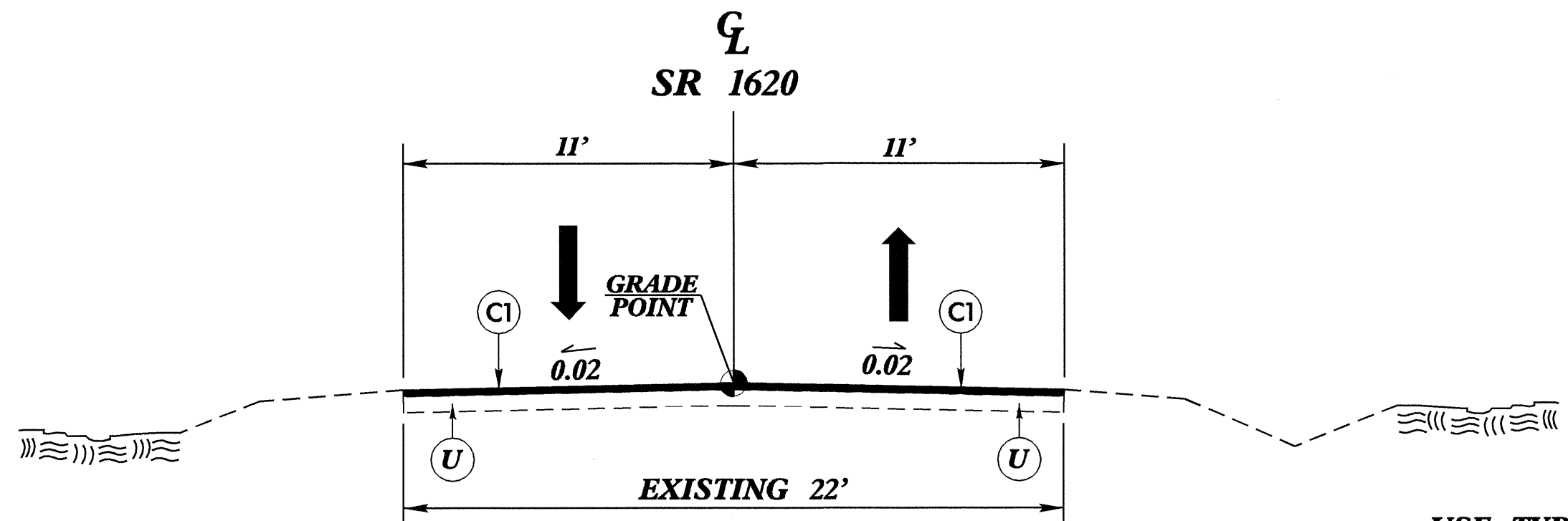
-L- STA 16+10.00 (BEGIN BRIDGE) TO -L- STA 17+45.00 (END BRIDGE)

** ADDITIONAL BRIDGE OFFSET WIDTH REQUIRED FOR HYDRAULIC DESIGN



TYPICAL SECTION NO. 4

USE TYPICAL SECTION NO. 4 AT THE FOLLOWING LOCATION:
 PORTIONS OF SR 1614 BEING USED FOR THE OFFSITE DETOUR SEE VICINITY MAP FOR LIMITS



TYPICAL SECTION NO. 5

USE TYPICAL SECTION NO. 5 AT THE FOLLOWING LOCATION:
 PORTIONS OF SR 1620 BEING USED FOR THE OFFSITE DETOUR SEE VICINITY MAP FOR LIMITS

SUMMARY OF QUANTITIES

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
ROADWAY SUMMARY OF QUANTITIES FOR CONTRACT - C202124

ItemNumber	Sec #	Quantity	Unit	Description
0000100000-N	800	Lump Sum		MOBILIZATION
0000400000-N	801	Lump Sum		CONSTRUCTION SURVEYING
0029000000-N	SP	Lump Sum		REINFORCED BRIDGE APPROACH FILL, STATION ***** (16+77.50)
0036000000-E	225	200	CY	UNDERCUT EXCAVATION
0050000000-E	226	1	ACR	SUPPLEMENTARY CLEARING & GRUB-BING
0063000000-N	SP	Lump Sum		GRADING
0106000000-E	230	11,100	CY	BORROW EXCAVATION
0134000000-E	240	70	CY	DRAINAGE DITCH EXCAVATION
0195000000-E	265	500	CY	SELECT GRANULAR MATERIAL
0196000000-E	270	200	SY	FABRIC FOR SOIL STABILIZATION
0318000000-E	300	26	TON	FOUNDATION CONDITIONING MATERIAL, MINOR STRS
0343000000-E	310	16	LF	15" SIDE DRAIN PIPE
0366000000-E	310	72	LF	15" RC PIPE CULVERTS, CLASS III
0708000000-E	310	68	LF	15" BIT COAT CS PIPE CULVERTS, TYPE B 0.064" THICK
0806000000-E	310	4	EA	15" BIT COAT CS PIPE ELBOWS, TYPE B 0.064" THICK
0995000000-E	340	21	LF	PIPE REMOVAL
1220000000-E	545	160	TON	INCIDENTAL STONE BASE
1245000000-E	SP	5.4	SMI	SHOULDER RECONSTRUCTION
1489000000-E	610	960	TON	ASPHALT CONC BASE COURSE, TYPE B25.0B
1498000000-E	610	580	TON	ASPHALT CONC INTERMEDIATE COURSE, TYPE 119.0B
1525000000-E	610	5,810	TON	ASPHALT CONC SURFACE COURSE, TYPE SF9.5A
1560000000-E	620	450	TON	ASPHALT BINDER FOR PLANT MIX, GRADE PG 64-22
2000000000-N	806	8	EA	RIGHT OF WAY MARKERS
2286000000-N	840	4	EA	MASONRY DRAINAGE STRUCTURES
2367000000-N	840	4	EA	FRAME WITH TWO GRATES, STD 840.29
2556000000-E	846	875	LF	SHOULDER BERM GUTTER
3030000000-E	862	1,325	LF	STEEL BM GUARDRAIL
3150000000-N	862	5	EA	ADDITIONAL GUARDRAIL POSTS
3270000000-N	SP	4	EA	GUARDRAIL ANCHOR UNITS, TYPE 350
3317000000-N	862	4	EA	GUARDRAIL ANCHOR UNITS, TYPE B-77
3635000000-E	876	3,000	TON	RIP RAP, CLASS II
3649000000-E	876	170	TON	RIP RAP, CLASS B
3656000000-E	876	2,350	SY	FILTER FABRIC FOR DRAINAGE
4072000000-E	903	27	LF	SUPPORTS, 3-LB STEEL U-CHANNEL
4102000000-N	904	2	EA	SIGN ERECTION, TYPE E
4155000000-N	907	8	EA	DISPOSAL OF SIGN SYSTEM, U-CHANNEL
4158000000-N	907	2	EA	DISPOSAL OF SIGN SYSTEM, WOOD
4400000000-E	1110	566	SF	WORK ZONE SIGNS (STATIONARY)
4405000000-E	1110	288	SF	WORK ZONE SIGNS (PORTABLE)
4410000000-E	1110	94	SF	WORK ZONE SIGNS (BARRICADE MOUNTED)
4435000000-N	1135	30	EA	CONES
4445000000-E	1145	64	LF	BARRICADES (TYPE III)
4455000000-N	1150	28	MD	FLAGGER
4685000000-E	1205	35,503	LF	THERMOPLASTIC PAVEMENT MARKING LINES (4", 90 MILS)
4686000000-E	1205	35,502	LF	THERMOPLASTIC PAVEMENT MARKING LINES (4", 120 MILS)
4710000000-E	1205	40	LF	THERMOPLASTIC PAVEMENT MARKING LINES (24", 120 MILS)
4900000000-N	1251	221	EA	PERMANENT RAISED PAVEMENT MARKERS
5325600000-E	1510	100	LF	6" WATER LINE
5540000000-E	1515	1	EA	6" VALVE

ItemNumber	Sec #	Quantity	Unit	Description
5672000000-N	1515	1	EA	RELOCATE FIRE HYDRANT
6000000000-E	1605	1,500	LF	TEMPORARY SILT FENCE
6006000000-E	1610	180	TON	STONE FOR EROSION CONTROL, CLASS A
6009000000-E	1610	155	TON	STONE FOR EROSION CONTROL, CLASS B
6012000000-E	1610	85	TON	SEDIMENT CONTROL STONE
6015000000-E	1615	5.5	ACR	TEMPORARY MULCHING
6018000000-E	1620	150	LB	SEED FOR TEMPORARY SEEDING
6021000000-E	1620	1.75	TON	FERTILIZER FOR TEMPORARY SEEDING
6024000000-E	1622	375	LF	TEMPORARY SLOPE DRAINS
6027000000-N	1622	4	EA	INLET PROTECTION AT TEMPORARY SLOPE DRAINS
6029000000-E	SP	950	LF	SAFETY FENCE
6030000000-E	1630	425	CY	SILT EXCAVATION
6036000000-E	1631	2,400	SY	MATting FOR EROSION CONTROL
6037000000-E	SP	25	SY	COIR FIBER MAT
6038000000-E	SP	1,150	SY	PERMANENT SOIL REINFORCEMENT MAT
6042000000-E	1632	200	LF	1/4" HARDWARE CLOTH
6071030000-E	SP	200	LF	COIR FIBER BAFFLES
6071050000-E	SP	4	EA	*** SKIMMER (1-1/2")
6084000000-E	1660	10	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	125	LB	SEED FOR SUPPLEMENTAL SEEDING
6108000000-E	1665	3.5	TON	FERTILIZER TOPDRESSING
6114000000-N	SP	5	HR	SPECIALIZED HAND MOWING
6117000000-N	SP	12	EA	RESPONSE FOR EROSION CONTROL

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STATE OF NORTH CAROLINA
 DIVISION OF HIGHWAYS

*** SUMMARY OF EARTHWORK
 IN CUBIC YARDS**

LOCATION	UNCLASSIFIED EXCAVATION	UNDERCUT	EMBT + %	BORROW	WASTE
-L- STA. 10+00.00 TO 16+10.00 (BEGIN BRIDGE)	926	0	8,087	7,161	0
END BENT 1	0	0	0	0	0
END BENT 2	0	0	0	0	0
-L- STA. 17+45.00 (END BRIDGE) TO 22+25.00	1,061	0	4,868	3,807	0
TOTALS	1,987	0	12,955	10,968	0
UNCLASSIFIED STRUCTURE EXCAVATION IN LIEU OF BORROW (QUANTITY IS FROM STRUCTURE PLANS)				-434	
PROJECT TOTALS	1,987	0	12,955	10,534	
ESTIMATED 5% TO REPLACE TOPSOIL ON BORROW PIT				527	
GRAND TOTALS	1,987			11,061	
SAY	2,000			11,100	

EST. DRAINAGE DITCH EXCAVATION = 70 CY
 EST. UNDERCUT EXCAVATION = 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.

*** SUMMARY OF ASPHALT PAVEMENT
 REMOVAL AND BREAKING
 IN SQUARE YARDS**

LINE	STATION TO STATION	LOCATION	REMOVAL	BREAKING
-L-	11+00.00 TO 12+00.00	EXISTING ROADBED	233	
-L-	15+96.00 TO 16+39.00	EXISTING ROADBED	100	
-L-	17+08.00 TO 17+59.00	EXISTING ROADBED	119	
-L-	12+00.00 TO 15+96.00	EXISTING ROADBED		924
-L-	17+59.00 TO 21+00.00	EXISTING ROADBED		679
	TOTAL		452	1603
	SAY		460	1650

**SUMMARY OF SHOULDER BERM GUTTER
 IN FEET**

LINE	STATION TO STATION	LOCATION	LENGTH
-L-	13+50.00 TO 15+95.83	LT	245.83
-L-	13+50.00 TO 15+95.83	RT	245.83
-L-	17+59.17 TO 19+50.00	LT	190.83
-L-	17+59.17 TO 19+50.00	RT	190.83
	TOTAL		873.32
	SAY		875

*** APPROXIMATE QUANTITIES ONLY. UNCLASSIFIED EXCAVATION, FINE GRADING, CLEARING AND GRUBBING, BREAKING OF EXISTING PAVEMENT AND REMOVAL OF EXISTING PAVEMENT WILL BE PAID FOR AT THE CONTRACT LUMP SUM PRICE FOR "GRADING".
 NOTE: BORROW EXCAVATION WILL BE PAID FOR AS A SEPARATE PAY ITEM.**

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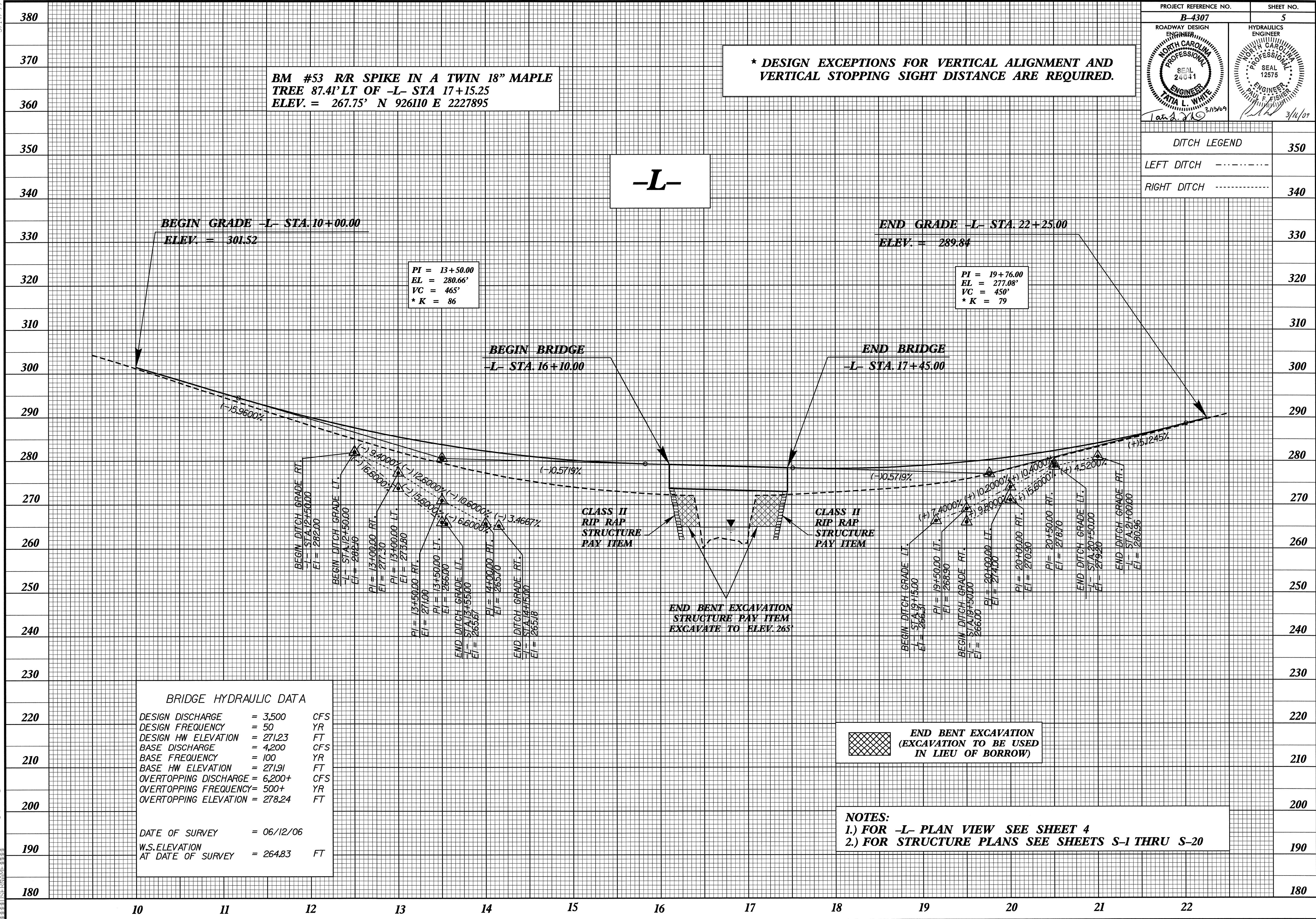
PROJECT REFERENCE NO. B-4307	SHEET NO. 5
ROADWAY DESIGN ENGINEER TATIA L. WHITE SEAL 24041 3/12/09	HYDRAULICS ENGINEER PAUL F. FISHER SEAL 12575 3/14/07

*** DESIGN EXCEPTIONS FOR VERTICAL ALIGNMENT AND VERTICAL STOPPING SIGHT DISTANCE ARE REQUIRED.**

**BM #53 R/R SPIKE IN A TWIN 18" MAPLE TREE 87.41' LT OF -L- STA 17+15.25
ELEV. = 267.75' N 926110 E 2227895**

-L-

DITCH LEGEND	
LEFT DITCH	-----
RIGHT DITCH	-----



PI = 13+50.00
EL = 280.66'
VC = 465'
* K = 86

PI = 19+76.00
EL = 277.08'
VC = 450'
* K = 79

BEGIN BRIDGE
-L- STA. 16+10.00

END BRIDGE
-L- STA. 17+45.00

CLASS II RIP RAP STRUCTURE PAY ITEM

CLASS II RIP RAP STRUCTURE PAY ITEM

**END BENT EXCAVATION STRUCTURE PAY ITEM
EXCAVATE TO ELEV. 265'**

BRIDGE HYDRAULIC DATA		
DESIGN DISCHARGE	= 3,500	CFS
DESIGN FREQUENCY	= 50	YR
DESIGN HW ELEVATION	= 271.23	FT
BASE DISCHARGE	= 4,200	CFS
BASE FREQUENCY	= 100	YR
BASE HW ELEVATION	= 271.91	FT
OVERTOPPING DISCHARGE	= 6,200+	CFS
OVERTOPPING FREQUENCY	= 500+	YR
OVERTOPPING ELEVATION	= 278.24	FT
DATE OF SURVEY	= 06/12/06	
W.S. ELEVATION AT DATE OF SURVEY	= 264.83	FT

END BENT EXCAVATION (EXCAVATION TO BE USED IN LIEU OF BORROW)

NOTES:
1.) FOR -L- PLAN VIEW SEE SHEET 4
2.) FOR STRUCTURE PLANS SEE SHEETS S-1 THRU S-20