

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4312	1	
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION	
33649.1.1	BRZ-1613(2)	P.E.	
33649.2.1	BRZ-1613(2)	RW, UTIL.	
33649.3.1	BRZ-1613(2)	CONST.	

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

# WARREN COUNTY

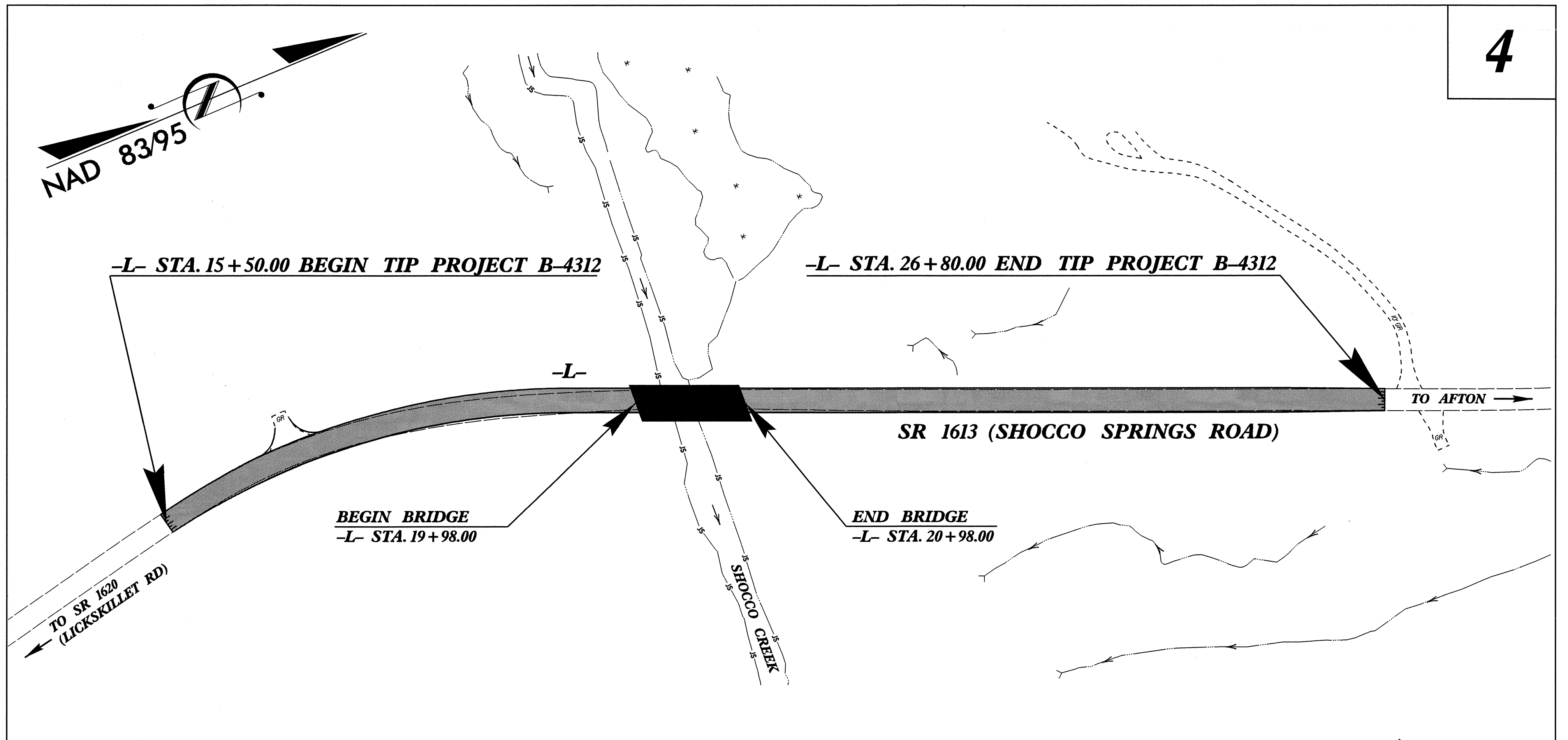
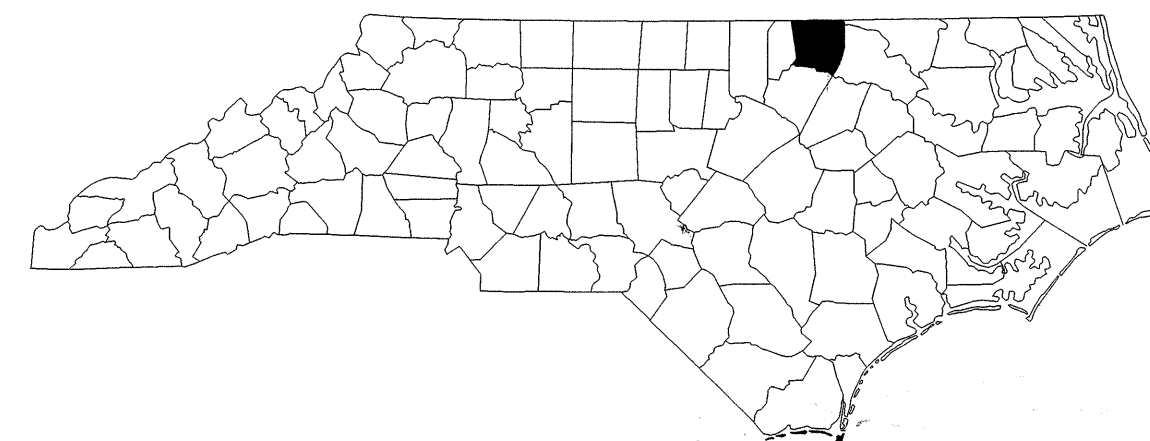
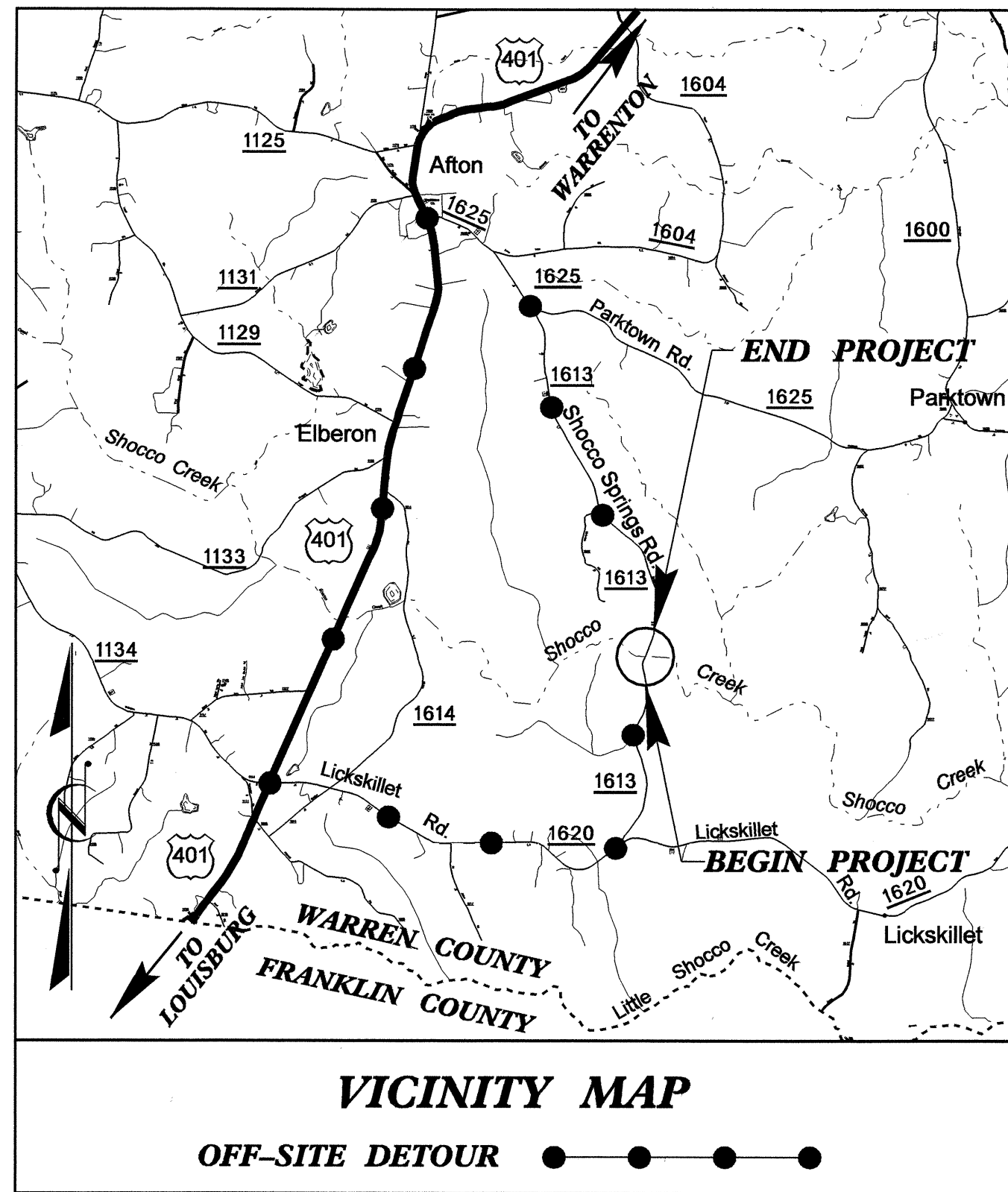
LOCATION: BRIDGE NO. 42 OVER SHOCCO CREEK AND APPROACHES ON SR 1613 (SHOCCO SPRINGS ROAD)

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

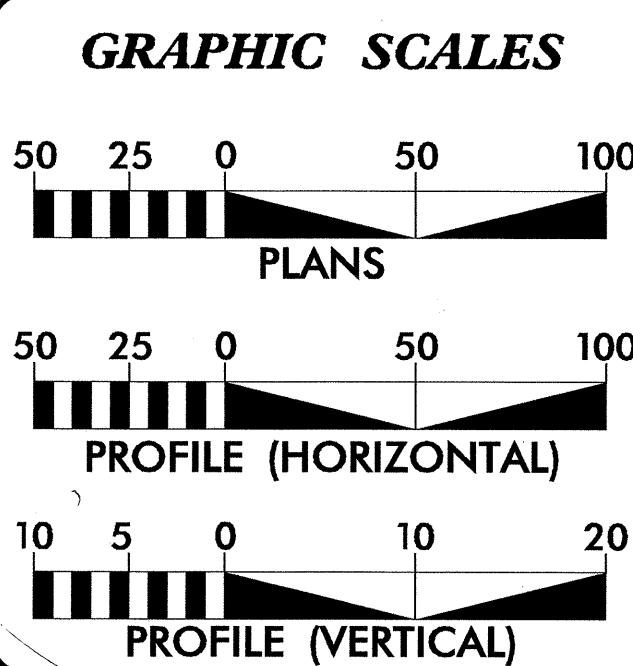
TIP PROJECT: B-4312

CONTRACT: C201874

See Sheet I-A For Index of Sheets  
See Sheet I-B for Conventional Symbols



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



DESIGN DATA

ADT 2008 =	400 VPD
ADT 2030 =	700 VPD
DHV =	14 %
D =	60 %
* T =	3 %
** V =	60 MPH
* (TTST 1 % + DUAL 2 %)	
FUNC. CLASS. =	RURAL LOCAL

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-4312	=	0.195 MILE
LENGTH STRUCTURE TIP PROJECT B-4312	=	0.019 MILE
TOTAL LENGTH TIP PROJECT B-4312	=	0.214 MILE

Prepared in the Office of:

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

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:	<b>GLENN W. MUMFORD, P.E.</b> PROJECT ENGINEER
LETTING DATE:	<b>JEFFREY L. TEAGUE, P.E.</b> PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

PAUL F. FISHER  
SEAL 12575  
ENGINEER  
4/25/08

SIGNATURE:

ROADWAY DESIGN ENGINEER

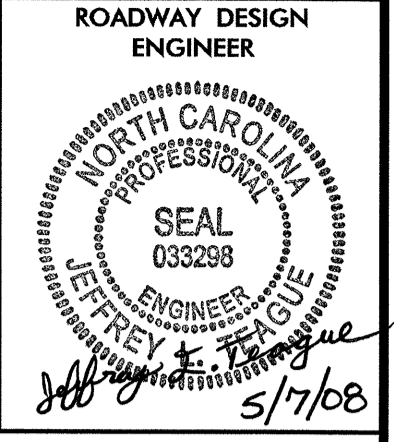
JEFFREY L. TEAGUE  
SEAL 03298  
ENGINEER  
4/25/08

SIGNATURE:

DIVISION OF HIGHWAYS  
STATE OF NORTH CAROLINA

Ant M. Miller  
P.E.  
STATE HIGHWAY DESIGN ENGINEER

08-APR-2008 08:42 P:\Roadway\proj\B4312\_rdy\_tsh.dgn \$\$\$USERNAME\$\$\$



**INDEX OF SHEETS**

SHEET NUMBER	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
2	FINAL PAVEMENT SCHEDULE, TYPICAL SECTIONS, AND WEDGING DETAIL
2-A	DETAIL OF ANCHORAGE FOR FRAMES
3	SUMMARY OF QUANTITIES
3-A	SUMMARY OF DRAINAGE QUANTITIES GUARDRAIL SUMMARY, SUMMARY OF EARTHWORK, AND ASPHALT PAVEMENT REMOVAL AND BREAKING SUMMARY
4	PLAN SHEET
5	PROFILE SHEET
TCP-1 THRU TCP-3	TRAFFIC CONTROL PLANS
SD-1	SPECIAL SIGN DESIGN
EC-1 THRU EC-5	EROSION CONTROL PLANS
RF-1	REFORESTATION DETAIL SHEET
SIGN-1 THRU SIGN-3	SIGNING PLANS
UO-1 THRU UO-2	UTILITIES BY OTHERS PLANS
X-1A	CROSS-SECTION SUMMARY
X-1 THRU X-5	CROSS-SECTIONS
S-1 THRU S-18	STRUCTURE PLANS

**GENERAL NOTES:**

2006 SPECIFICATIONS  
EFFECTIVE: 07-18-06  
REVISED: 07-18-06

2006 ROADWAY ENGLISH STANDARD DRAWINGS

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

**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 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 HALIFAX EMC AND EMBARQ.

**RIGHT-OF-WAY MARKERS:**

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

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 are considered a part of these plans:

STD.NO.	TITLE
<b>DIVISION 2 - EARTHWORK</b>	
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
<b>DIVISION 3 - PIPE CULVERTS</b>	
300.01	Method of Pipe Installation - Method 'A'
<b>DIVISION 4 - MAJOR STRUCTURES</b>	
422.10	Reinforced Bridge Approach Fills
<b>DIVISION 5 - SUBGRADE, BASES AND SHOULDERS</b>	
560.01	Method of Shoulder Construction - High Side of Superelevated Curve - Method I
<b>DIVISION 8 - INCIDENTALS</b>	
806.01	Concrete Right-of-Way Marker
806.02	Granite Right-of-Way Marker
815.03	Pipe Underdrain and Blind Drain
816.04	Markers for Drainage Structure and Concrete Pad
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 (Beg. January 2007 Let Use Detail in Lieu of Standard)
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
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
876.04	Drainage Ditches with Class 'B' Rip Rap

10/25/05

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	□ EDM
Parcel/Sequence Number	123
Existing Fence Line	-----
Proposed Woven Wire Fence	-----
Proposed Chain Link Fence	-----
Proposed Barbed Wire Fence	-----
Existing Wetland Boundary	-----
Proposed Wetland Boundary	-----
Existing Endangered Animal Boundary	-----
Existing Endangered Plant Boundary	-----

### BUILDINGS AND OTHER CULTURE:

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

### HYDROLOGY:

Stream or Body of Water	-----
Hydro, Pool or Reservoir	-----
Jurisdictional Stream	-----
Buffer Zone 1	-----
Buffer Zone 2	-----
Flow Arrow	-----
Disappearing Stream	-----
Spring	-----
Swamp Marsh	-----
Proposed Lateral, Tail, Head Ditch	-----
False Sump	-----

### RAILROADS:

Standard Gauge	-----
RR Signal Milepost	○
Switch	□
RR Abandoned	-----
RR Dismantled	-----

### RIGHT OF WAY:

Baseline Control Point	◆
Existing Right of Way Marker	△
Existing Right of Way Line	-----
Proposed Right of Way Line	-----
Proposed Right of Way Line with Iron Pin and Cap Marker	-----
Proposed Right of Way Line with Concrete or Granite Marker	-----
Existing Control of Access	○
Proposed Control of Access	○
Existing Easement Line	-----
Proposed Temporary Construction Easement	-----
Proposed Temporary Drainage Easement	-----
Proposed Permanent Drainage Easement	-----
Proposed Permanent Utility Easement	-----

### ROADS AND RELATED FEATURES:

Existing Edge of Pavement	-----
Existing Curb	-----
Proposed Slope Stakes Cut	-----
Proposed Slope Stakes Fill	-----
Proposed Wheel Chair Ramp	-----
Curb Cut for Future Wheel Chair Ramp	-----
Existing Metal Guardrail	-----
Proposed Guardrail	-----
Existing Cable Guiderail	-----
Proposed Cable Guiderail	-----
Equality Symbol	○
Pavement Removal	-----

### VEGETATION:

Single Tree	○
Single Shrub	○
Hedge	-----
Woods Line	-----
Orchard	-----
Vineyard	-----

### EXISTING STRUCTURES:

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

### UTILITIES:

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

### TELEPHONE:

Existing Telephone Pole	●
Proposed Telephone Pole	○
Telephone Manhole	○
Telephone Booth	□
Telephone Pedestal	□
Telephone Cell Tower	○
U/G Telephone Cable Hand Hole	□
Recorded U/G Telephone Cable	-----
Designated U/G Telephone Cable (S.U.E.*)	-----
Recorded U/G Telephone Conduit	-----
Designated U/G Telephone Conduit (S.U.E.*)	-----
Recorded U/G Fiber Optics Cable	-----
Designated U/G Fiber Optics Cable (S.U.E.*)	-----

### WATER:

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

### TV:

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

### GAS:

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

### SANITARY SEWER:

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

### MISCELLANEOUS:

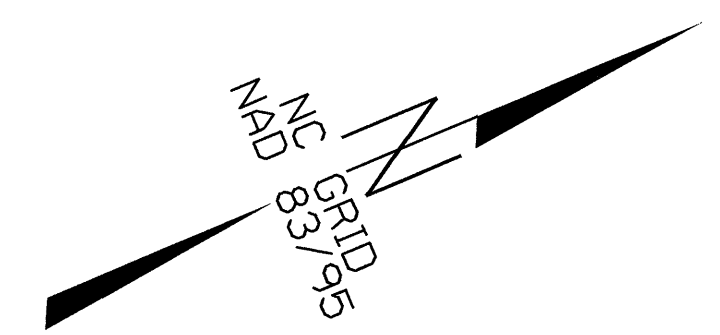
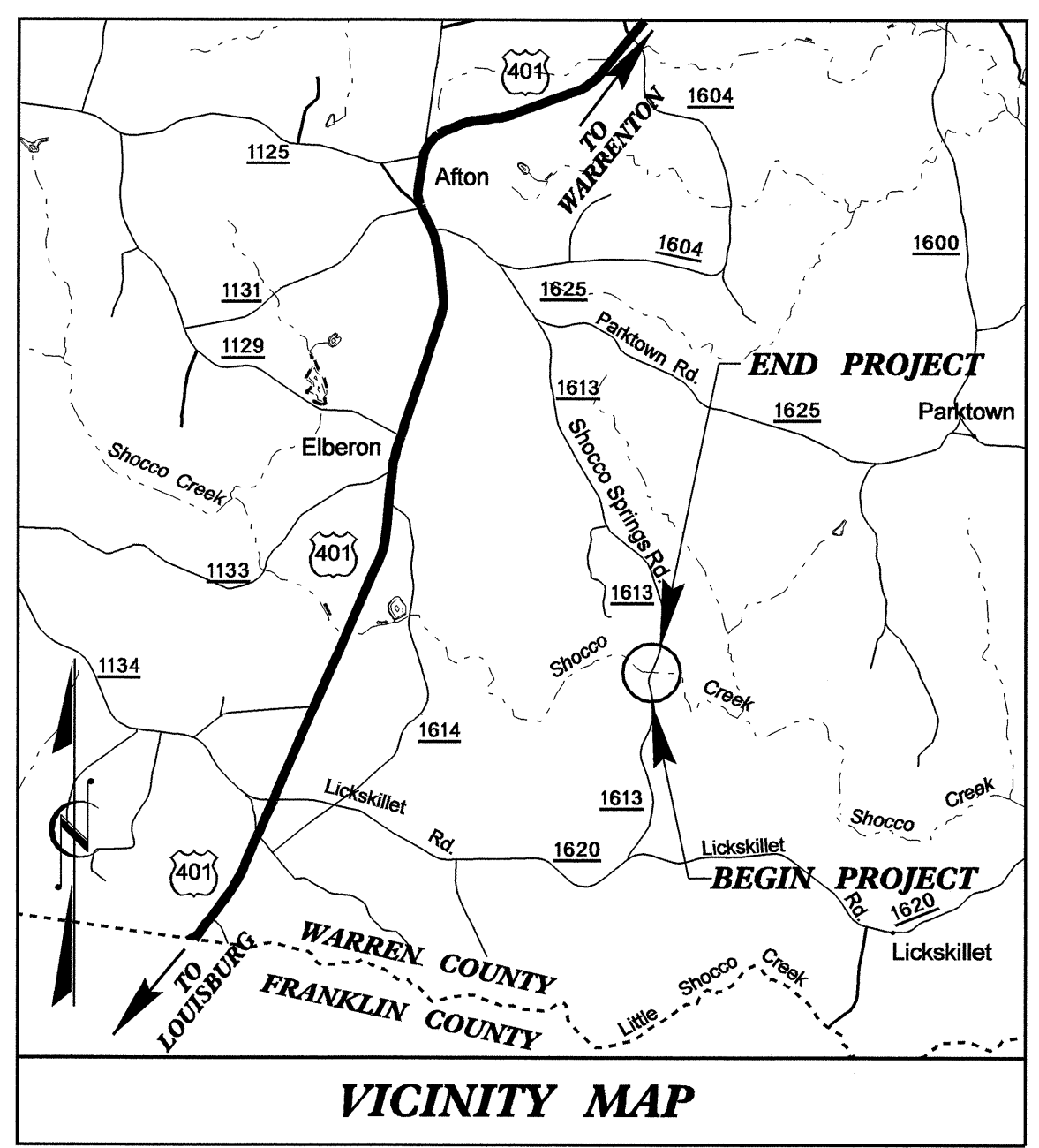
Utility Pole	●
Utility Pole with Base	□
Utility Located Object	○
Utility Traffic Signal Box	□
Utility Unknown U/G Line	-----
U/G Tank; Water, Gas, Oil	□
A/G Tank; Water, Gas, Oil	□
U/G Test Hole (S.U.E.*)	○
Abandoned According to Utility Records	AATUR
End of Information	E.O.I.

# SURVEY CONTROL SHEET B-4312

# WARREN COUNTY

LOCATION: BRIDGE NO. 42 OVER SHOCCO CREEK AND APPROACHES ON SR 1613 (SHOCCO SPRINGS ROAD)

B-4312



NCDOT GPS STATION B4312-2  
LOCALIZED PROJECT COORDINATES  
N=923216.2835  
E=2240206.0806

NCDOT GPS STATION B4312-1  
LOCALIZED PROJECT COORDINATES  
N=924221.3635  
E=2240008.8500

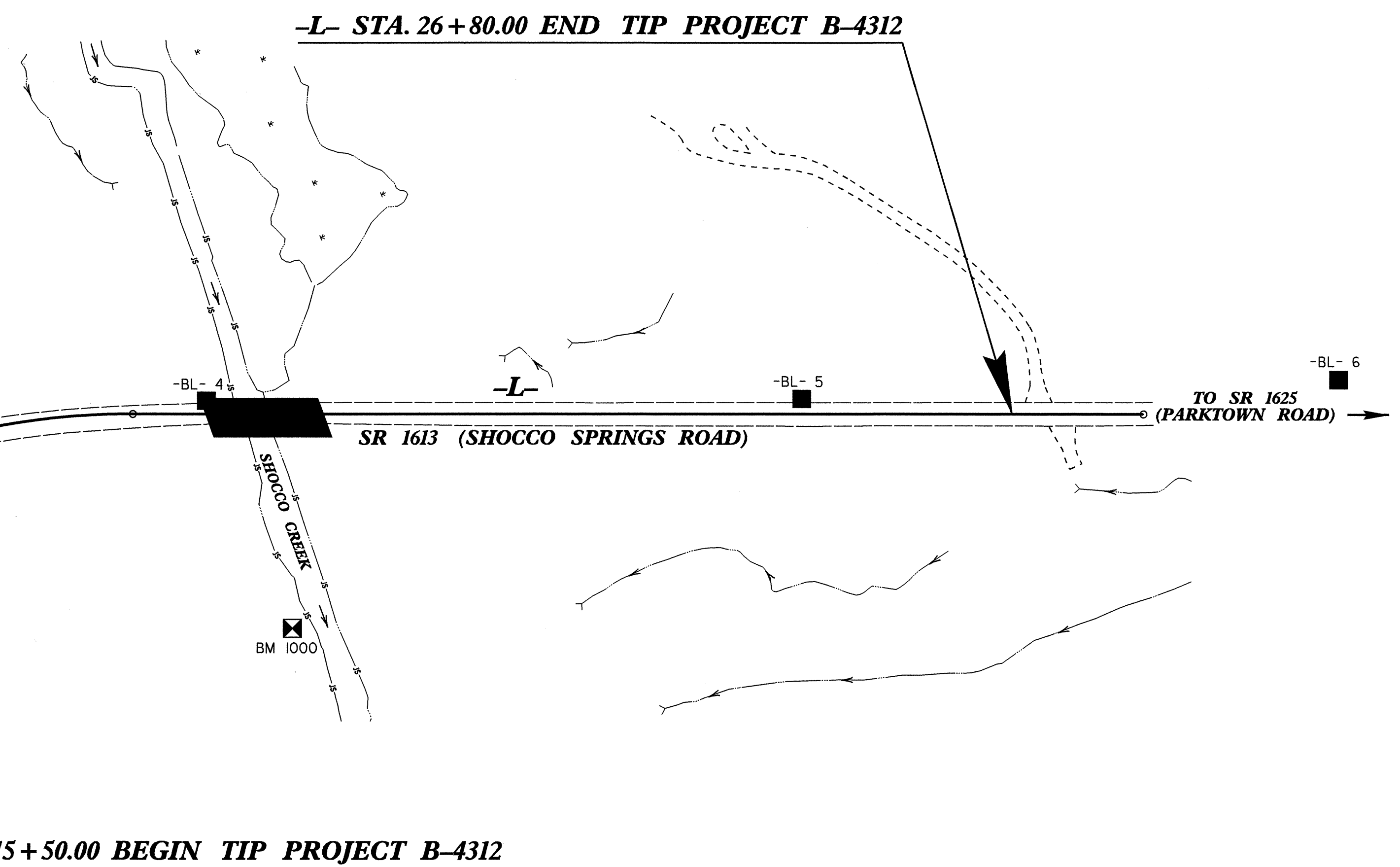
CONTROL DATA

BASELINE POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
3	BL-3	923629.1050	2240143.7062	275.78	10+27.22	15.00 LT
1	B4312-1	924221.3635	2240008.8500	258.54	16+31.00	27.87 LT
4	BL-4	924584.1709	2240099.0264	249.17	19+98.97	11.43 LT
5	BL-5	925048.8474	2240292.0724	259.97	25+02.15	13.09 LT
6	BL-6	925473.3941	2240452.4509	293.25		OUTSIDE PROJECT LIMITS
7	BL-7	925911.3973	2240484.2276	308.37		OUTSIDE PROJECT LIMITS

BENCHMARK DATA

BM 1000 ELEVATION = 245.46  
N 924577 E 2240305  
L STATION 20+72.181 RIGHT  
R/R SPIKE SET IN 12 INCH OAK

BM 1001 ELEVATION = 312.07  
N 925956 E 2240435  
L STATION 27+91  
N 1° 43' 09.1" E DIST 646.01  
R/R SPIKE SET IN 23 INCH PINE



**DATUM DESCRIPTION**

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "B4312-1"

WITH NAD 1983/95 STATE PLANE GRID COORDINATES OF  
NORTHING: 924221.3635(ft) EASTING: 2240008.8500(ft)  
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 1.00002716

THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "B4312-1" TO -L- STATION 15+50.00 IS  
S 26°21'19.0" E 87.24'

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

NOTE: DRAWING NOT TO SCALE

**NOTES:**

THE CONTROL DATA FOR THIS PROJECT CAN BE FOUND ELECTRONICALLY BY SELECTING PROJECT CONTROL DATA AT:  
[HTTP://WWW.DOH.DOT.STATE.NC.US/PRECONSTRUCTHIGHWAY/LOCATION/PROJECT/B4312\\_ls\\_control\\_060804.txt](http://www.doh.dot.state.nc.us/preconstruct/highway/location/project/B4312_ls_control_060804.txt)

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

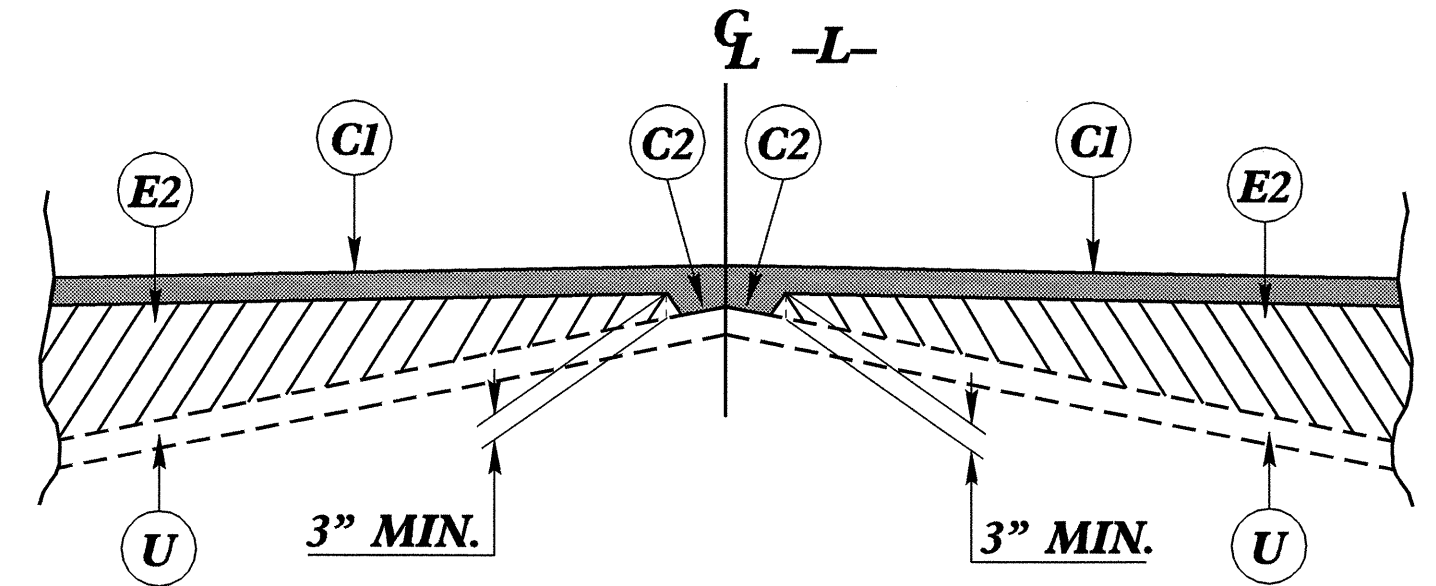
○ INDICATES GEODETIC CONTROL MONUMENTS USED OR SET FOR HORIZONTAL PROJECT CONTROL BY THE NCDOT LOCATION AND SURVEYS UNIT.

PROJECT CONTROL ESTABLISHED USING GLOBAL POSITIONING SYSTEM.  
NETWORK ESTABLISHED FROM NGS ONLINE POSITIONING SERVICE (OPUS)

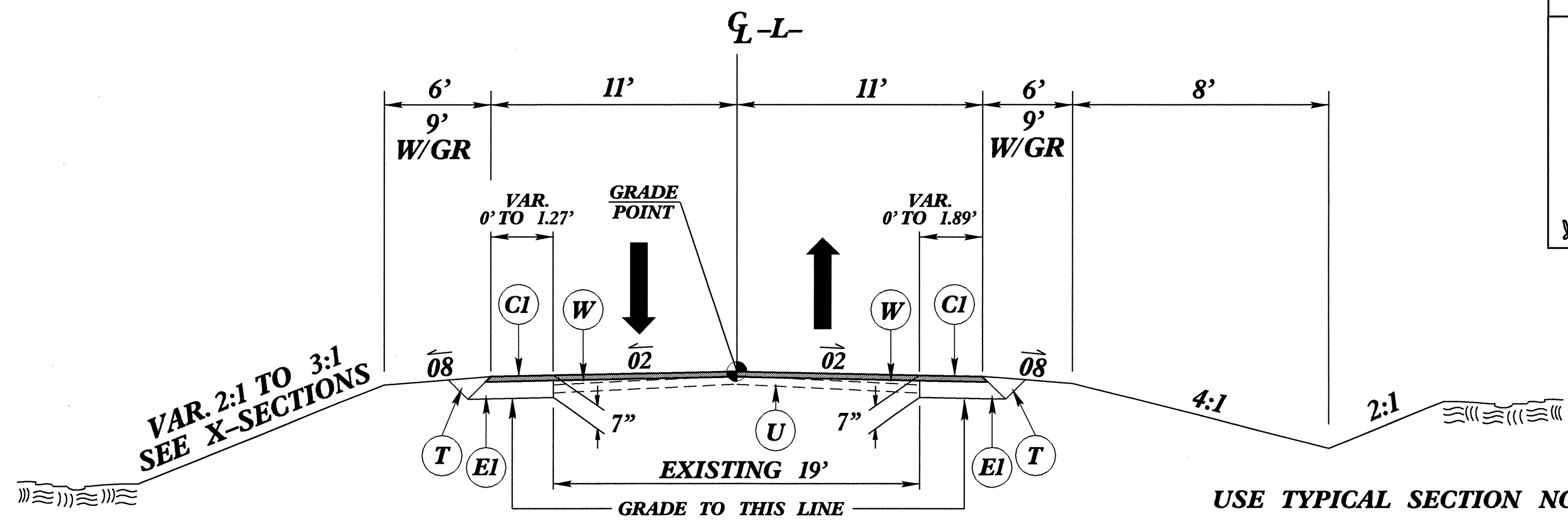
31-MAR-2008 10:57 4312-1s-1c\_060804.dgn

FINAL PAVEMENT SCHEDULE	
<b>C1</b>	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.
<b>C2</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 LESS THAN 1" IN DEPTH OR GREATER THAN 1 1/2" IN DEPTH.
<b>E1</b>	PROP. APPROX. 4 1/2" 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 5 1/2" IN DEPTH.
<b>T</b>	EARTH MATERIAL.
<b>U</b>	EXISTING PAVEMENT.
<b>W</b>	VARIABLE DEPTH ASPHALT PAVEMENT (SEE STANDARD WEDGING DETAIL).

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

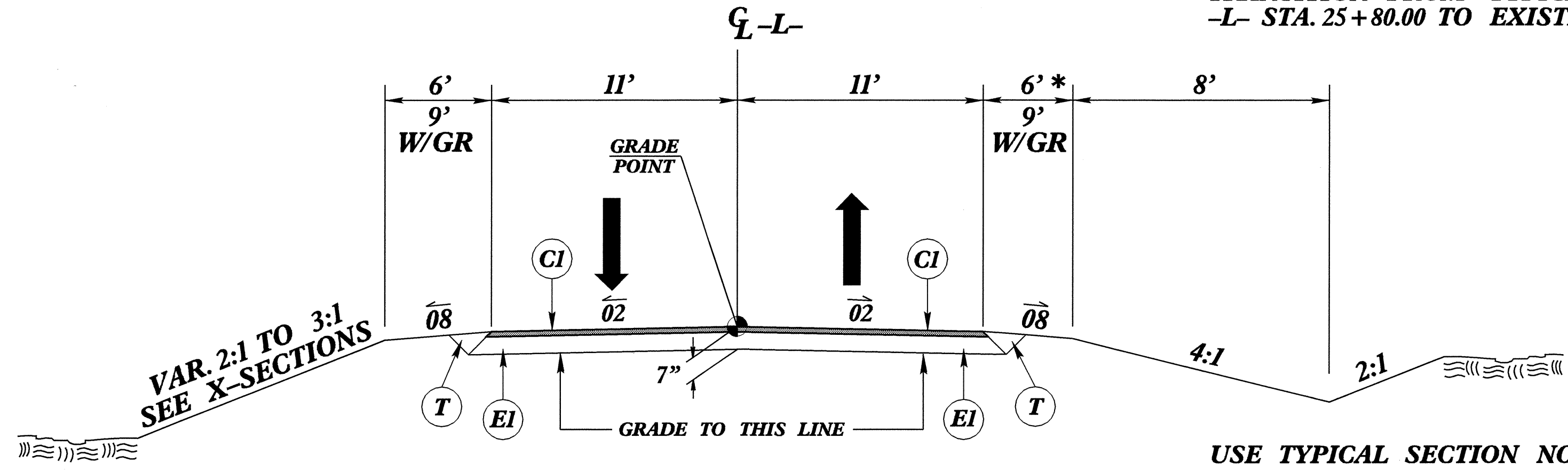


**DETAIL SHOWING METHOD OF WEDGING**  
USE IN CONJUNCTION WITH TYPICAL SECTION NO.1



**TYPICAL SECTION NO. 1**

USE TYPICAL SECTION NO.1 AT THE FOLLOWING LOCATIONS:  
 TRANSITION FROM EXISTING @ -L- STA.15+50.00 TO TYPICAL SECTION NO.1 @ -L- STA.16+50.00  
 -L- STA.16+50.00 TO STA.17+50.00  
 TRANSITION FROM TYPICAL SECTION NO.1 @ -L- STA.25+80.00 TO EXISTING @ -L- STA.26+80.00

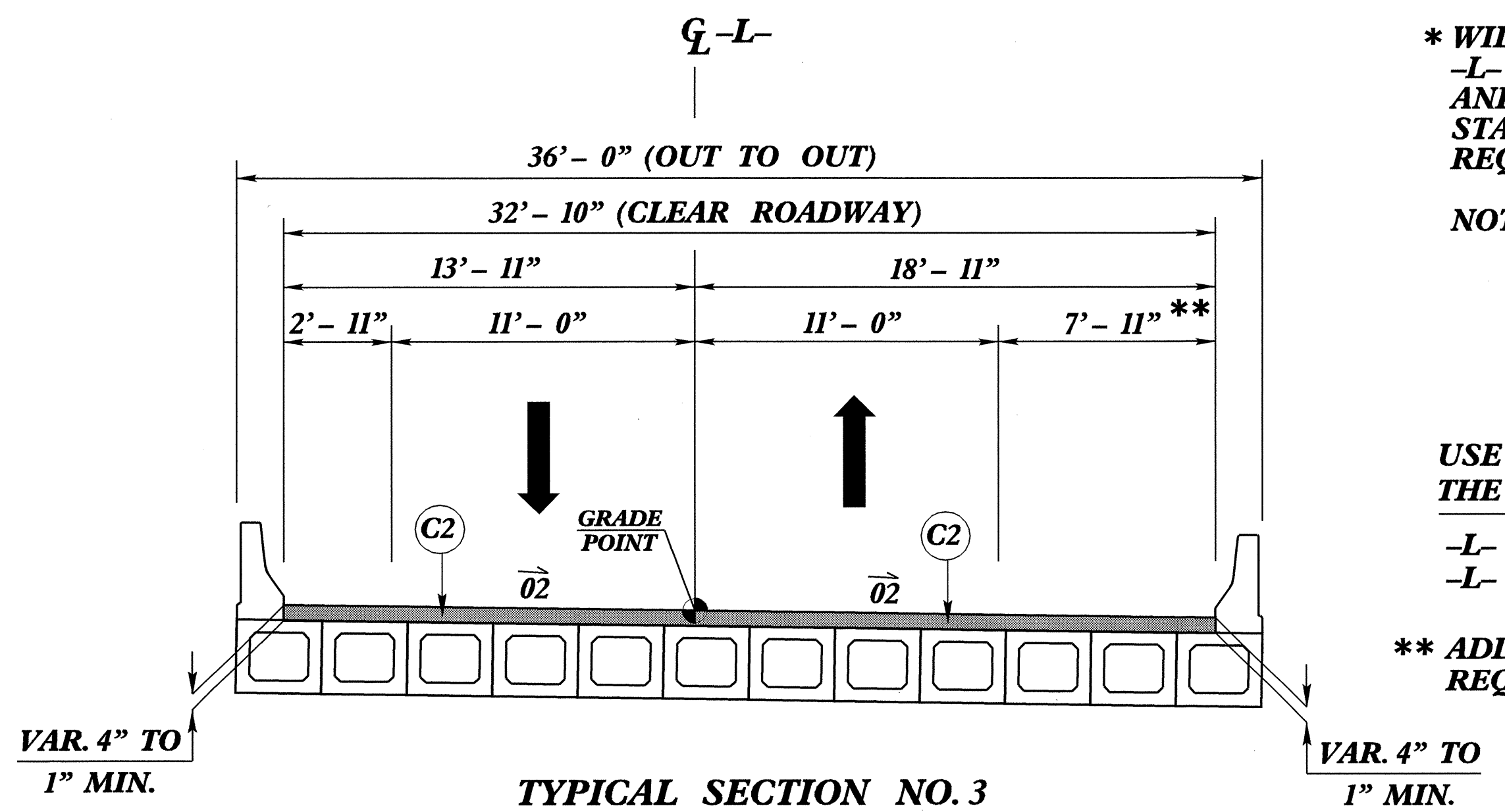


**TYPICAL SECTION NO. 2**

USE TYPICAL SECTION NO.2 AT THE FOLLOWING LOCATIONS:  
 -L- STA.17+50.00 TO STA.19+98.00 (BEGIN BRIDGE)  
 -L- STA.20+98.00 (END BRIDGE) TO STA.25+80.00

\* WIDEN SHOULDER TO 11' FROM RIGHT OF -L- STA.19+75.00 TO STA.19+98.00 (BEGIN BRIDGE) AND FROM -L- STA.20+98.00 (END BRIDGE) TO STA.22+10.00 DUE TO ADDITIONAL BRIDGE OFFSET REQUIRED FOR HYDRAULIC DESIGN

NOTE: USE 50:1 SHOULDER TRANSITION AT BRIDGE



**TYPICAL SECTION NO. 3**  
**BOX BEAM BRIDGE**  
SEE STRUCTURE PLANS

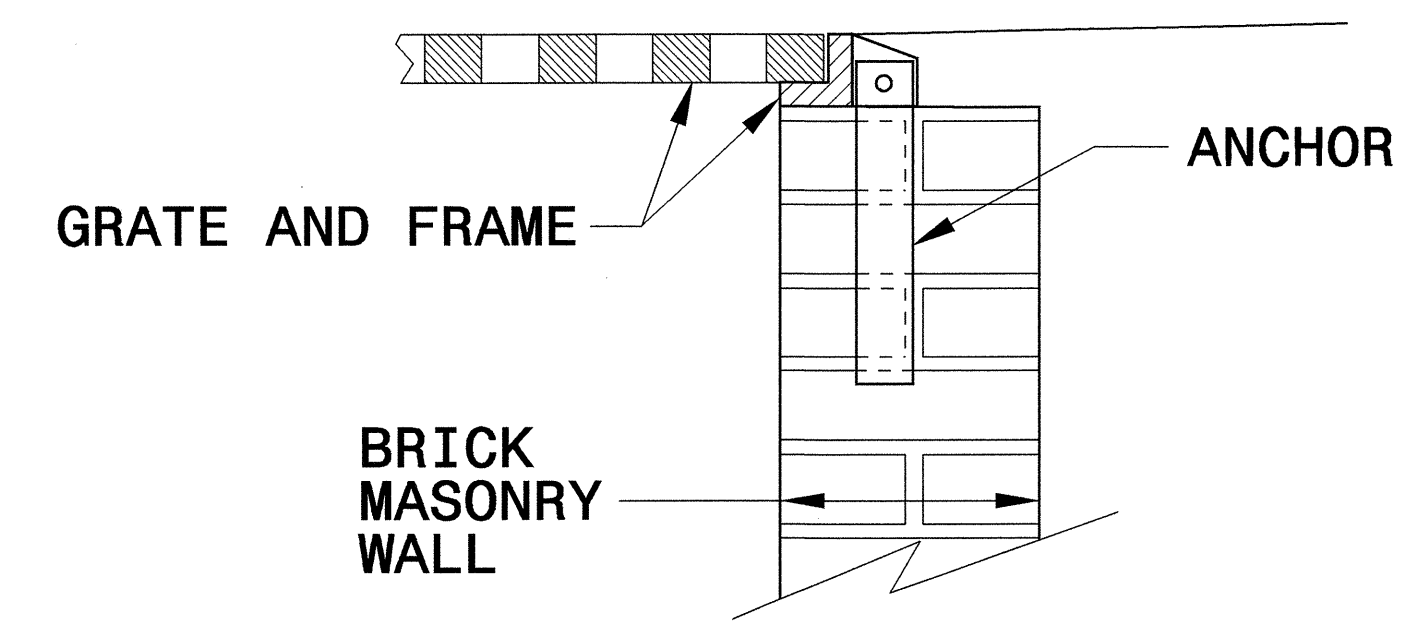
USE TYPICAL SECTION NO.3 AT THE FOLLOWING LOCATION:  
 -L- STA.19+98.00 (BEGIN BRIDGE) TO -L- STA.20+98.00 (END BRIDGE)

\*\* ADDITIONAL BRIDGE OFFSET WIDTH REQUIRED FOR HYDRAULIC DESIGN

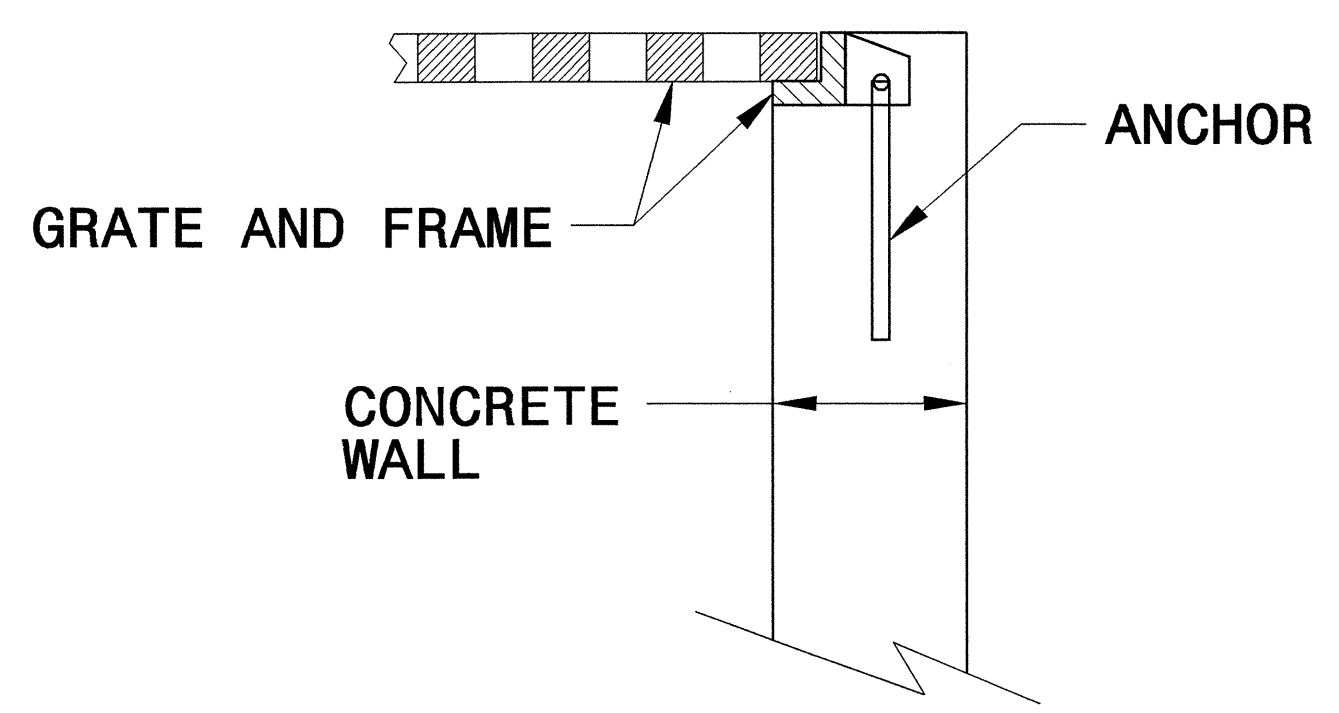
STATE OF NORTH CAROLINA  
DEPT. OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
RALEIGH, N.C.

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

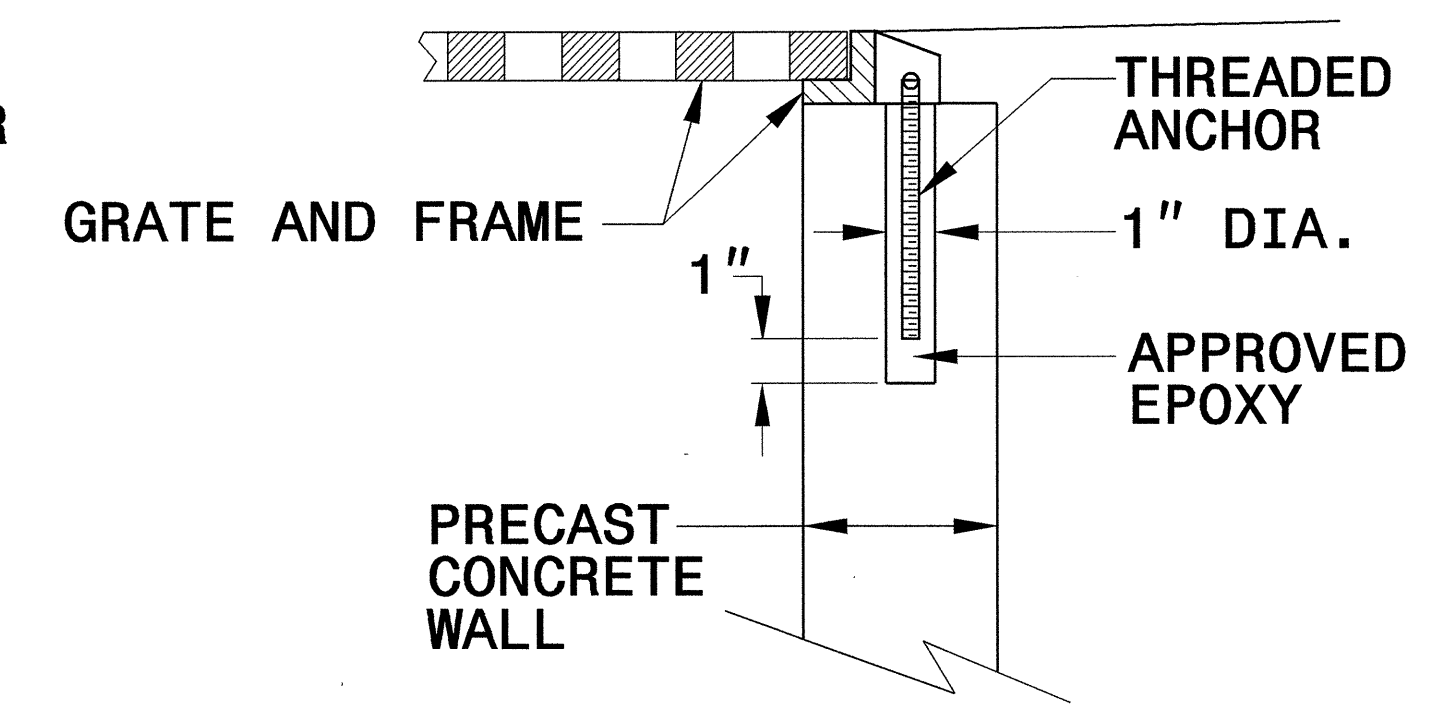
SHEET 1 OF 1  
**840D25**



**BRICK MASONRY CONSTRUCTION**



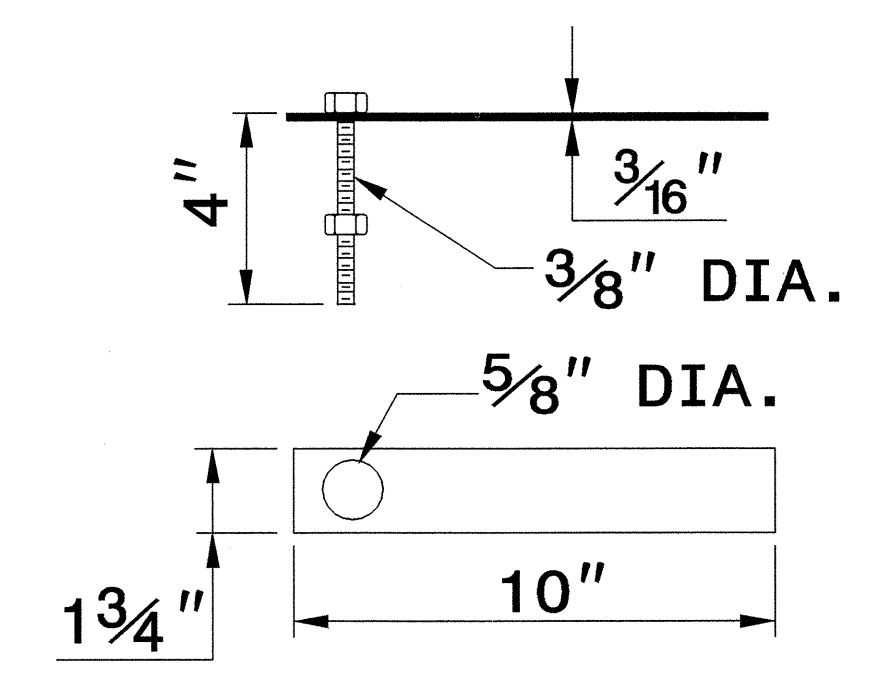
**CONCRETE CONSTRUCTION**



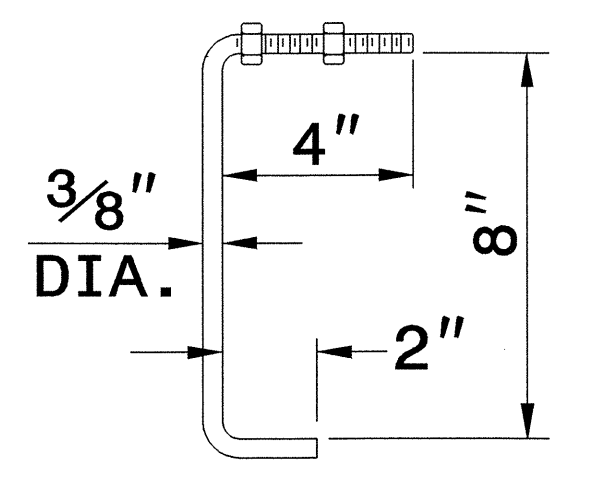
**PRECAST CONCRETE CONSTRUCTION**

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

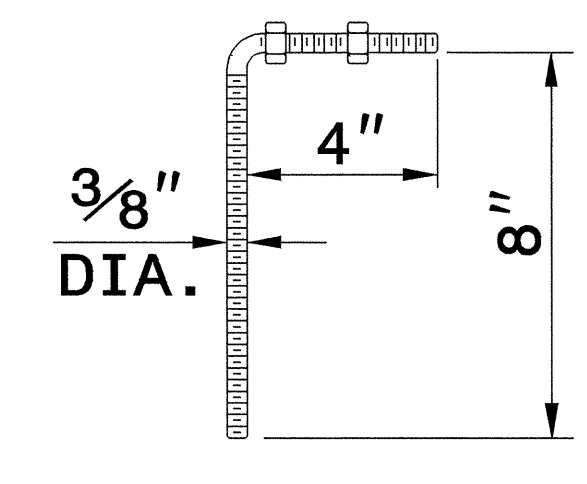
NOTE:  
CONSTRUCT GRATED DROP INLET TO COINCIDE WITH NORMAL OR SUPERELEVATED SHOULDER OR PAVEMENT SLOPE.



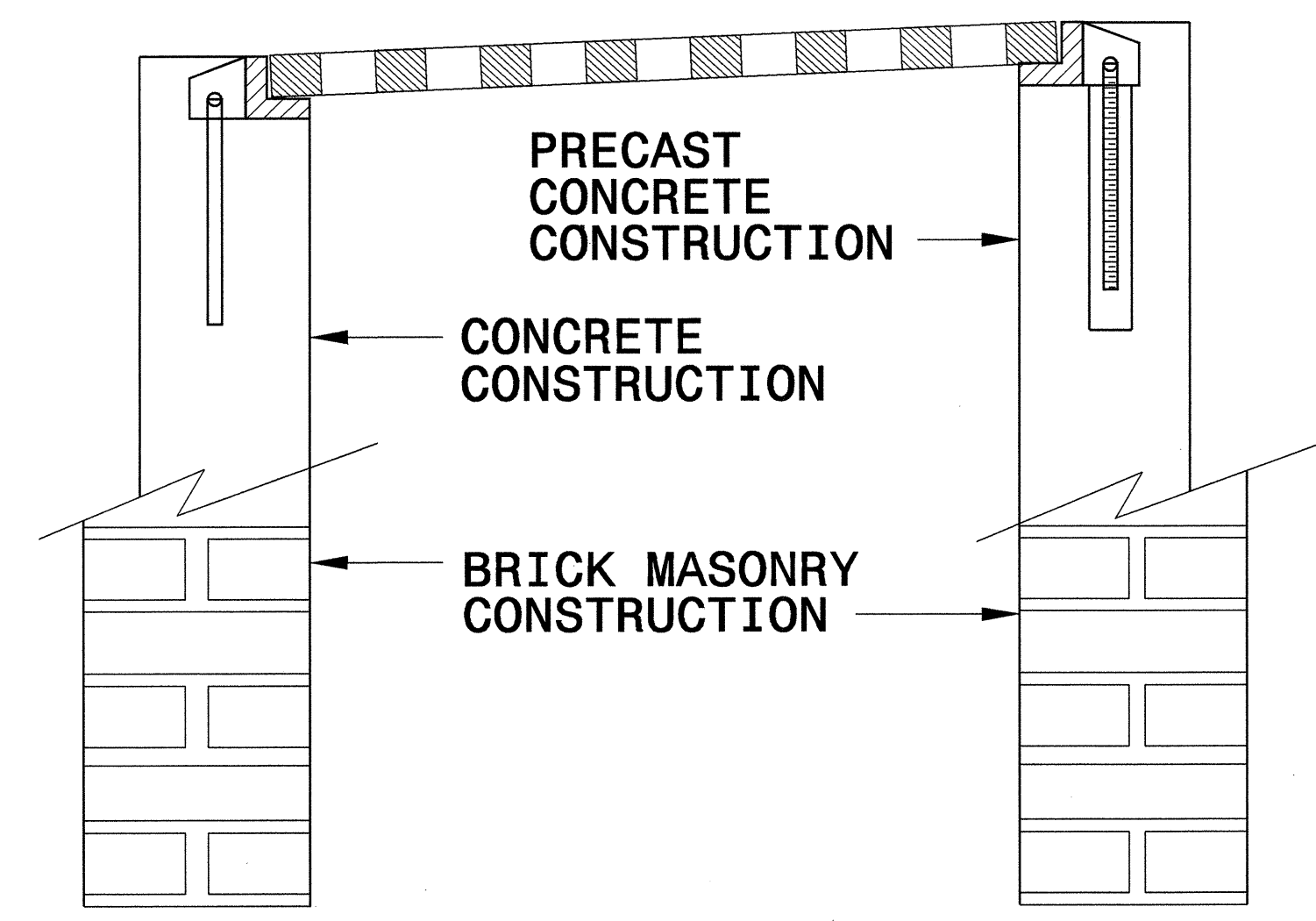
**MASONRY ANCHOR**  
3/8" DIA. BOLT WITH PLATE



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



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



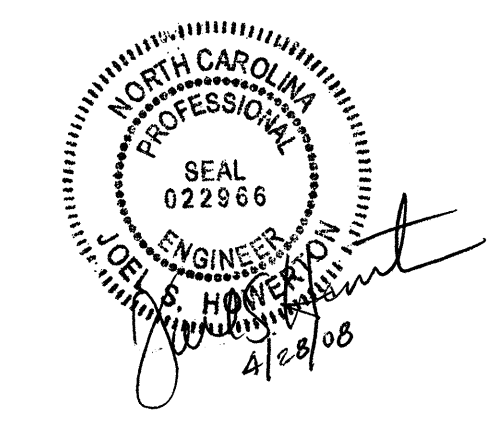
**FRAME AND GRATE INSTALLATION FOR NORMAL CROWN AND SUPERELEVATED SECTIONS**

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**

SYSTEMS CONDITIONED FOR PRINTING



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: DATE:  
FILE SPEC.:

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS  
**SUMMARY OF QUANTITIES**

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS  
ROADWAY SUMMARY OF QUANTITIES FOR CONTRACT - C201874

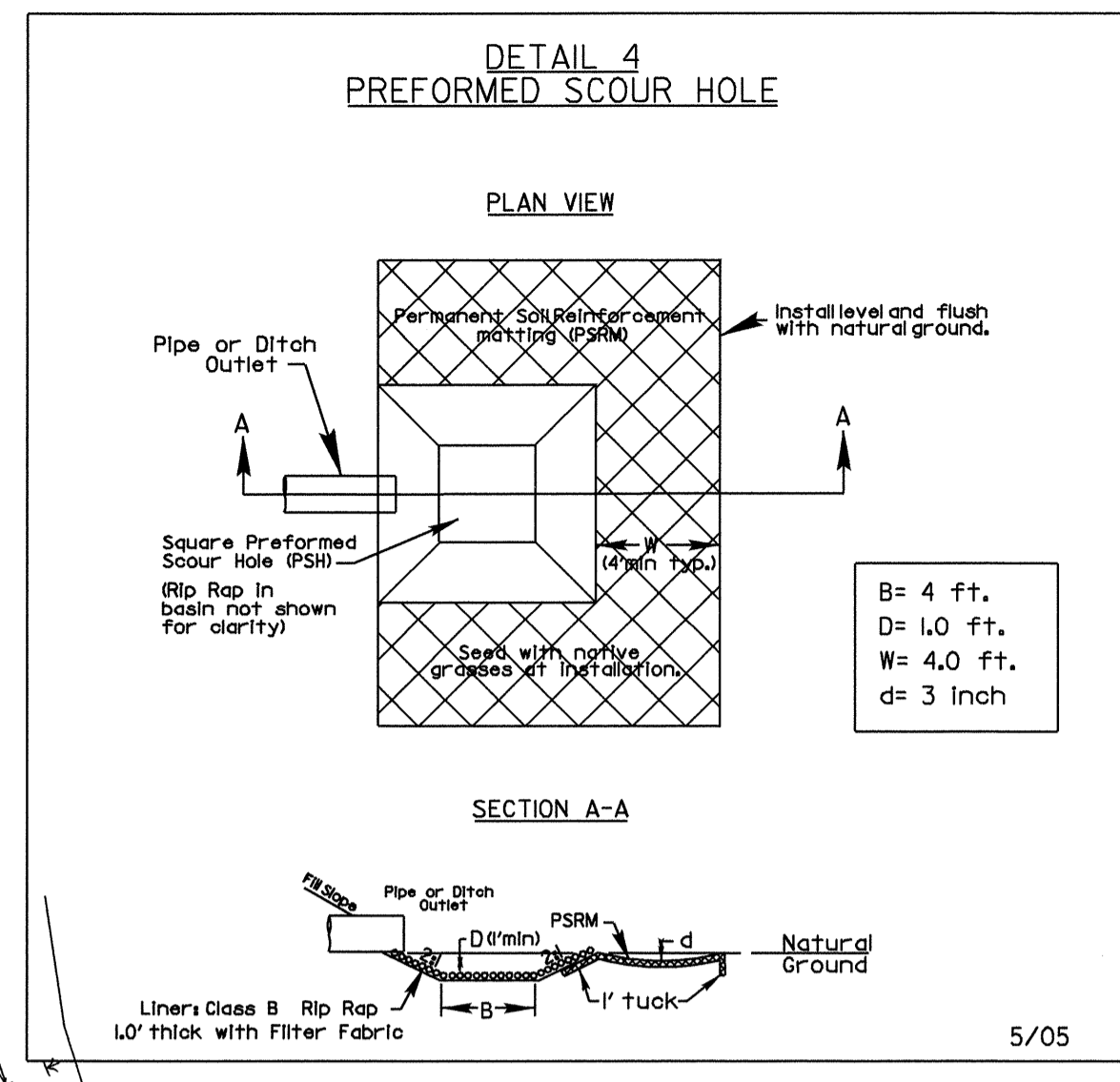
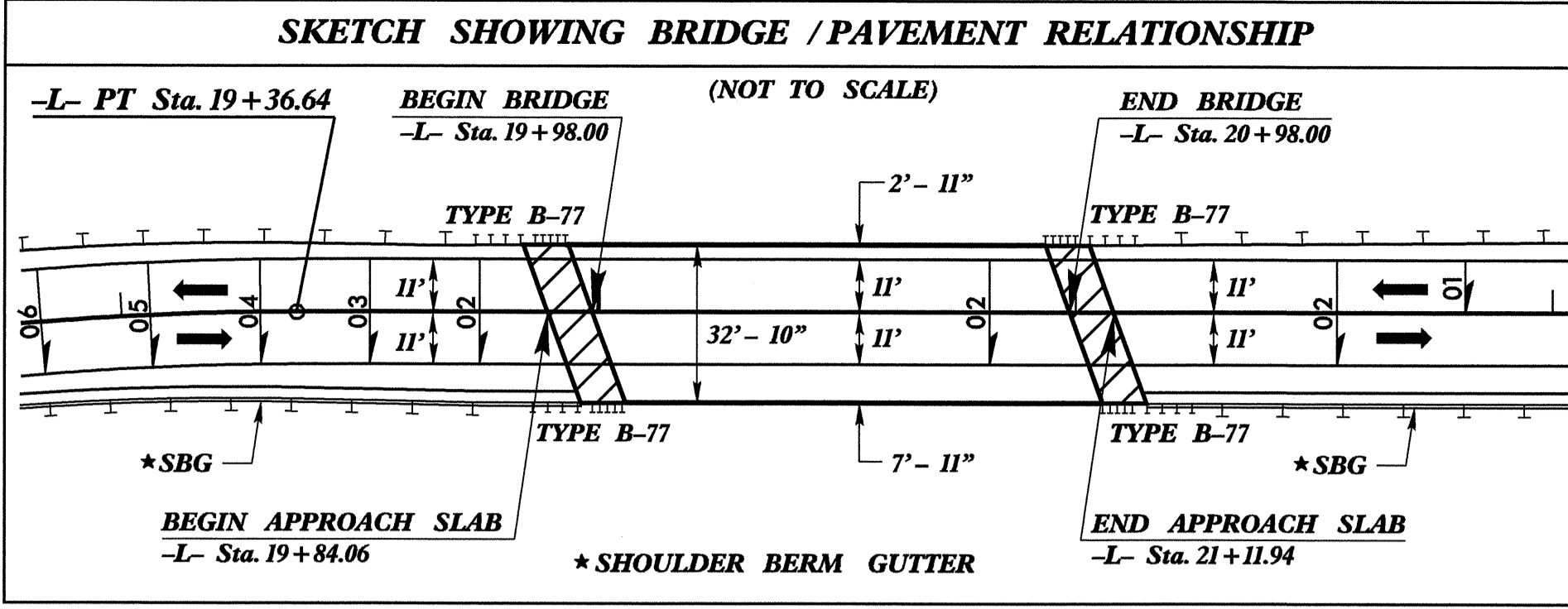
ItemNumber	Sec #	Quantity	Unit	Description	ItemNumber	Sec #	Quantity	Unit	Description	ItemNumber	Sec #	Quantity	Unit	Description
0000100000-N	800	Lump Sum		MOBILIZATION	2367000000-N	840	2	EA	FRAME WITH TWO GRATES, STD 840.29	6024000000-E	1622	200	LF	TEMPORARY SLOPE DRAINS
0000400000-N	801	Lump Sum		CONSTRUCTION SURVEYING	2556000000-E	846	345	LF	SHOULDER BERM GUTTER	6027000000-N	1622	4	EA	INLET PROTECTION AT TEMPORARY SLOPE DRAINS
0029000000-N	SP	Lump Sum		REINFORCED BRIDGE APPROACH FILL, STATION ***** (STATION 20+48.00)	3030000000-E	862	1,150	LF	STEEL BM GUARDRAIL	6029000000-E	SP	425	LF	SAFETY FENCE
0050000000-E	226	1	ACR	SUPPLEMENTARY CLEARING & GRUB-BING	3150000000-N	862	5	EA	ADDITIONAL GUARDRAIL POSTS	6030000000-E	1630	420	CY	SILT EXCAVATION
0057000000-E	226	200	CY	UNDERCUT EXCAVATION	3270000000-N	SP	4	EA	GUARDRAIL ANCHOR UNITS, TYPE 350	6036000000-E	1631	1,500	SY	MATTING FOR EROSION CONTROL
0063000000-N	SP	Lump Sum		GRADING	3317000000-N	862	4	EA	GUARDRAIL ANCHOR UNITS, TYPE B-77	6037000000-E	SP	25	SY	COIR FIBER MAT
0106000000-E	230	6,500	CY	BORROW EXCAVATION	3649000000-E	876	11	TON	RIP RAP, CLASS B	6038000000-E	SP	125	SY	PERMANENT SOIL REINFORCEMENT MAT
0195000000-E	265	200	CY	SELECT GRANULAR MATERIAL	3656000000-E	876	368	SY	FILTER FABRIC FOR DRAINAGE	6042000000-E	1632	275	LF	1/4" HARDWARE CLOTH
0196000000-E	270	200	SY	FABRIC FOR SOIL STABILIZATION	3659000000-N	SP	2	EA	PREFORMED SCOUR HOLES WITH LEVEL SPREADER APRON	6071030000-E	SP	175	LF	COIR FIBER BAFFLES
0318000000-E	300	5	TON	FOUNDATION CONDITIONING MATERIAL, MINOR STRS	4072000000-E	903	15	LF	SUPPORTS, 3-LB STEEL U-CHANNEL	6071050000-E	SP	4	EA	*** SKIMMER (1-1/2")
0708000000-E	310	28	LF	15" BIT COAT CS PIPE CULVERTS, TYPE B 0.064" THICK	4102000000-N	904	1	EA	SIGN ERECTION, TYPE E	6084000000-E	1660	3	ACR	SEEDING & MULCHING
0806000000-E	310	4	EA	15" BIT COAT CS PIPE ELBOWS, TYPE B 0.064" THICK	4155000000-N	907	9	EA	DISPOSAL OF SIGN SYSTEM, U-CHANNEL	6087000000-E	1660	2	ACR	MOWING
1220000000-E	545	100	TON	INCIDENTAL STONE BASE	4400000000-E	1110	322	SF	WORK ZONE SIGNS (STATIONARY)	6090000000-E	1661	50	LB	SEED FOR REPAIR SEEDING
1489000000-E	610	810	TON	ASPHALT CONC BASE COURSE, TYPE B25.0B	4410000000-E	1110	94	SF	WORK ZONE SIGNS (BARRICADE MOUNTED)	6093000000-E	1661	0.25	TON	FERTILIZER FOR REPAIR SEEDING
1525000000-E	610	540	TON	ASPHALT CONC SURFACE COURSE, TYPE SF9.5A	4430000000-N	1130	10	EA	DRUMS	6096000000-E	1662	75	LB	SEED FOR SUPPLEMENTAL SEEDING
1560000000-E	620	70	TON	ASPHALT BINDER FOR PLANT MIX, GRADE PG 64-22	4445000000-E	1145	80	LF	BARRICADES (TYPE III)	6108000000-E	1665	2	TON	FERTILIZER TOPDRESSING
2000000000-N	806	10	EA	RIGHT OF WAY MARKERS	4810000000-E	1205	9,200	LF	PAINT PAVEMENT MARKING LINES (4")	6114000000-N	SP	3	HR	SPECIALIZED HAND MOWING
2022000000-E	815	23	CY	SUBDRAIN EXCAVATION	4900000000-N	1251	19	EA	PERMANENT RAISED PAVEMENT MARKERS	6117000000-N	SP	12	EA	RESPONSE FOR EROSION CONTROL
2033000000-E	815	17	CY	SUBDRAIN FINE AGGREGATE	6000000000-E	1605	425	LF	TEMPORARY SILT FENCE	6123000000-E	1670	0.1	ACR	REFORESTATION
2044000000-E	815	100	LF	6" PERFORATED SUBDRAIN PIPE	6006000000-E	1610	165	TON	STONE FOR EROSION CONTROL, CLASS A					
2055000000-E	815	3	EA	6" SUBDRAIN PIPE WYES, TEES, & ELBOWS	6009000000-E	1610	110	TON	STONE FOR EROSION CONTROL, CLASS B					
2066000000-N	815	1	EA	CONCRETE PAD FOR SUBDRAIN PIPE OUTLET	6012000000-E	1610	115	TON	SEDIMENT CONTROL STONE					
2077000000-E	815	6	LF	6" OUTLET PIPE (SUBDRAINS)	6015000000-E	1615	2.5	ACR	TEMPORARY MULCHING					
2286000000-N	840	2	EA	MASONRY DRAINAGE STRUCTURES	6018000000-E	1620	100	LB	SEED FOR TEMPORARY SEEDING					
					6021000000-E	1620	1.5	TON	FERTILIZER FOR TEMPORARY SEEDING					

5/28/99

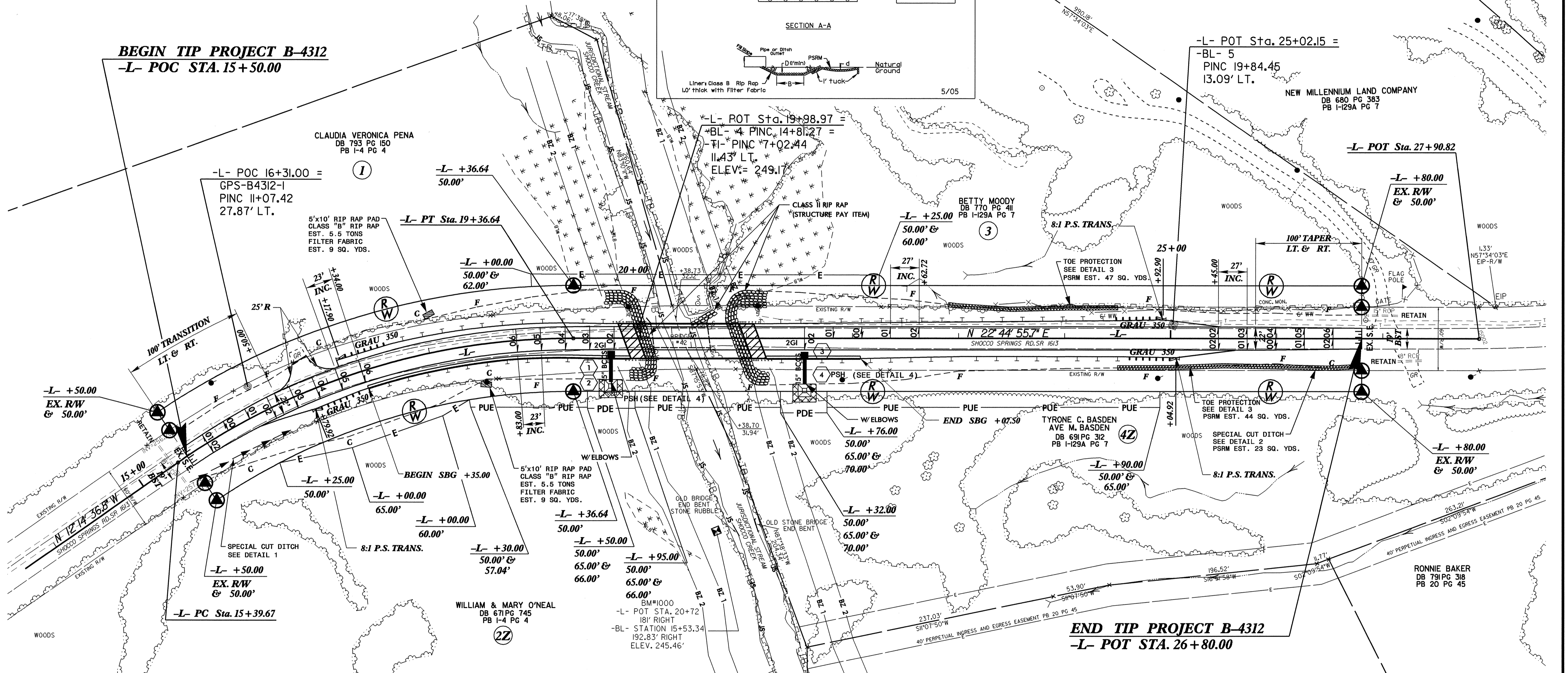
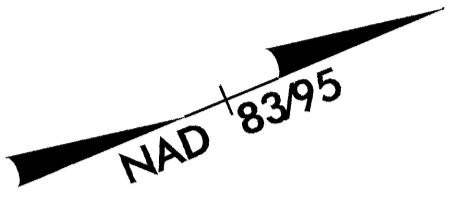
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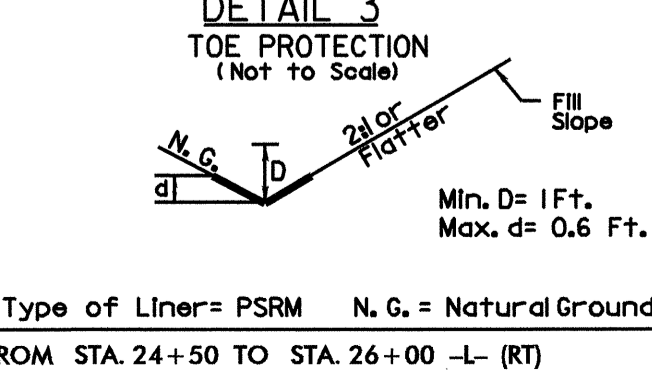
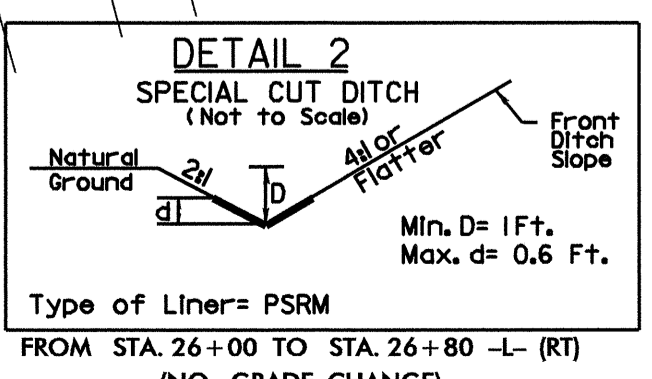
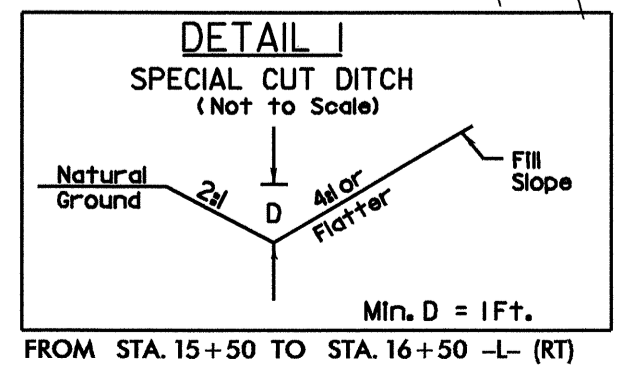
**\* DESIGN EXCEPTIONS FOR HORIZONTAL ALIGNMENT, HORIZONTAL STOPPING SIGHT DISTANCE, VERTICAL ALIGNMENT AND VERTICAL STOPPING SIGHT DISTANCE ARE REQUIRED.**



**BEGIN TIP PROJECT B-4312**  
-L- POC STA. 15+50.00

**END TIP PROJECT B-4312**  
-L- POT STA. 26+80.00

**-L-**  
\* PI Sta 17+44.56  
Δ = 34° 59' 32.5" (RT)  
D = 8' 48" 53.0"  
L = 396.98'  
T = 204.90'  
R = 650.00'  
SE = 0.06  
RO = SEE PLANS  
V<sub>g</sub> = 45 MPH



**NOTES:**  
1.) FOR -L- PROFILE SEE SHEET 5.  
2.) ALL DRIVEWAY RADII ARE 10' UNLESS NOTED OTHERWISE.  
3.) FOR STRUCTURE PLANS SEE SHEETS S-1 THRU S-18.

REVISIONS

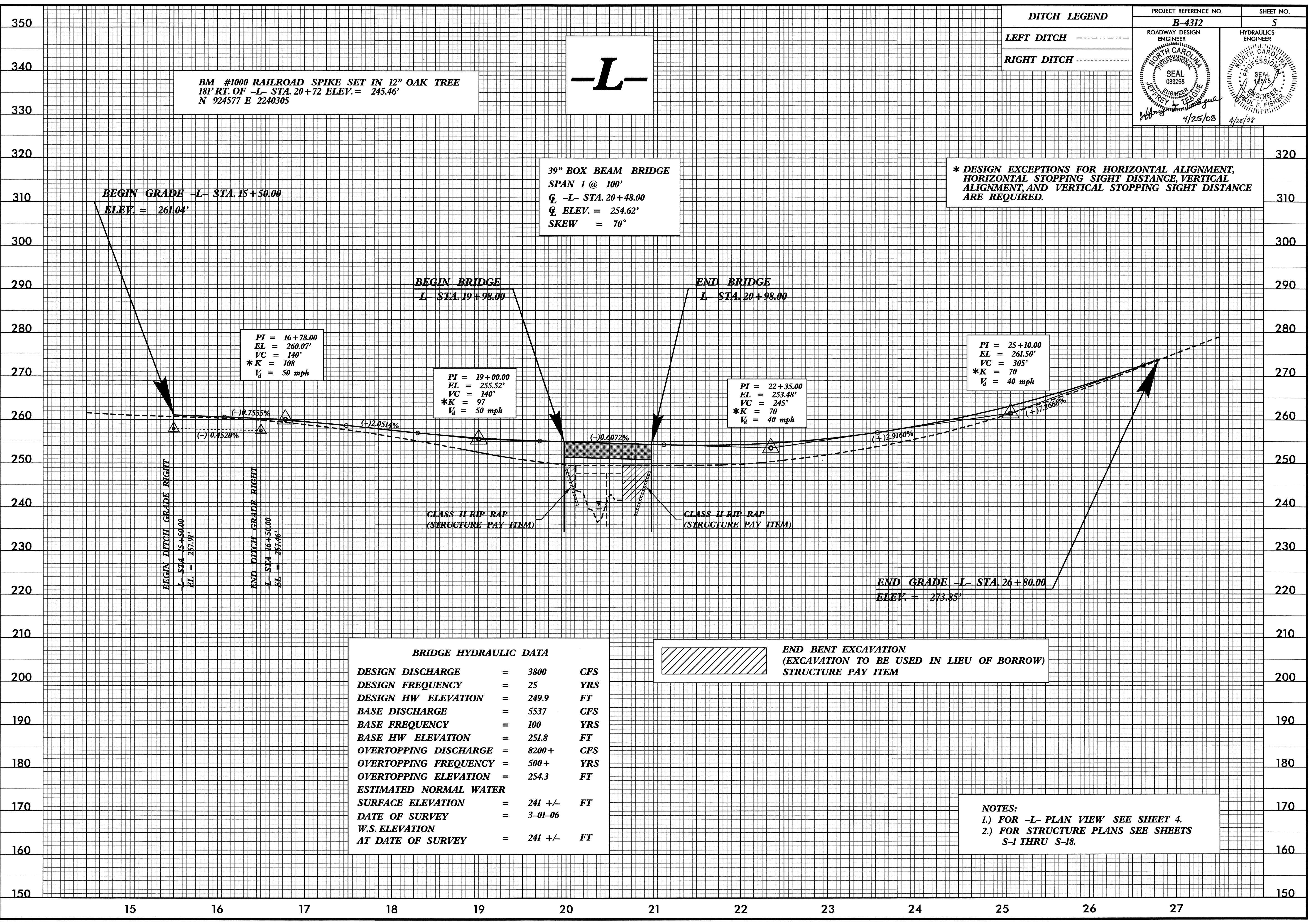
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5/14/99

<b>DITCH LEGEND</b>		PROJECT REFERENCE NO. <b>B-4312</b>	SHEET NO. <b>5</b>
LEFT DITCH	-----	ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
RIGHT DITCH	-----		

**BM #1000 RAILROAD SPIKE SET IN 12" OAK TREE**  
 181' RT. OF -L- STA. 20+72 ELEV. = 245.46'  
 N 924577 E 2240305

**-L-**



**39" BOX BEAM BRIDGE**  
 SPAN 1 @ 100'  
 Q -L- STA. 20+48.00  
 Q ELEV. = 254.62'  
 SKEW = 70°

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

PI = 16+78.00  
 EL = 260.07'  
 VC = 140'  
 \*K = 108  
 Va = 50 mph

PI = 19+00.00  
 EL = 255.52'  
 VC = 140'  
 \*K = 97  
 Va = 50 mph

PI = 22+35.00  
 EL = 253.48'  
 VC = 245'  
 \*K = 70  
 Va = 40 mph

PI = 25+10.00  
 EL = 261.50'  
 VC = 305'  
 \*K = 70  
 Va = 40 mph

CLASS II RIP RAP  
 (STRUCTURE PAY ITEM)

CLASS II RIP RAP  
 (STRUCTURE PAY ITEM)

END GRADE -L- STA. 26+80.00  
 ELEV. = 273.85'

BRIDGE HYDRAULIC DATA		
DESIGN DISCHARGE	=	3800 CFS
DESIGN FREQUENCY	=	25 YRS
DESIGN HW ELEVATION	=	249.9 FT
BASE DISCHARGE	=	5537 CFS
BASE FREQUENCY	=	100 YRS
BASE HW ELEVATION	=	251.8 FT
OVERTOPPING DISCHARGE	=	8200+ CFS
OVERTOPPING FREQUENCY	=	500+ YRS
OVERTOPPING ELEVATION	=	254.3 FT
ESTIMATED NORMAL WATER SURFACE ELEVATION	=	241 +/- FT
DATE OF SURVEY	=	3-01-06
W.S. ELEVATION AT DATE OF SURVEY	=	241 +/- FT

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

**NOTES:**  
 1.) FOR -L- PLAN VIEW SEE SHEET 4.  
 2.) FOR STRUCTURE PLANS SEE SHEETS S-1 THRU S-18.

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