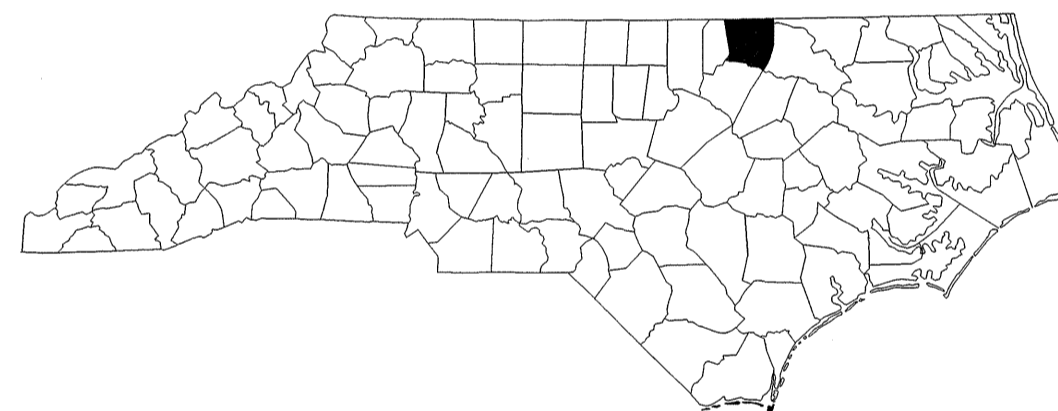
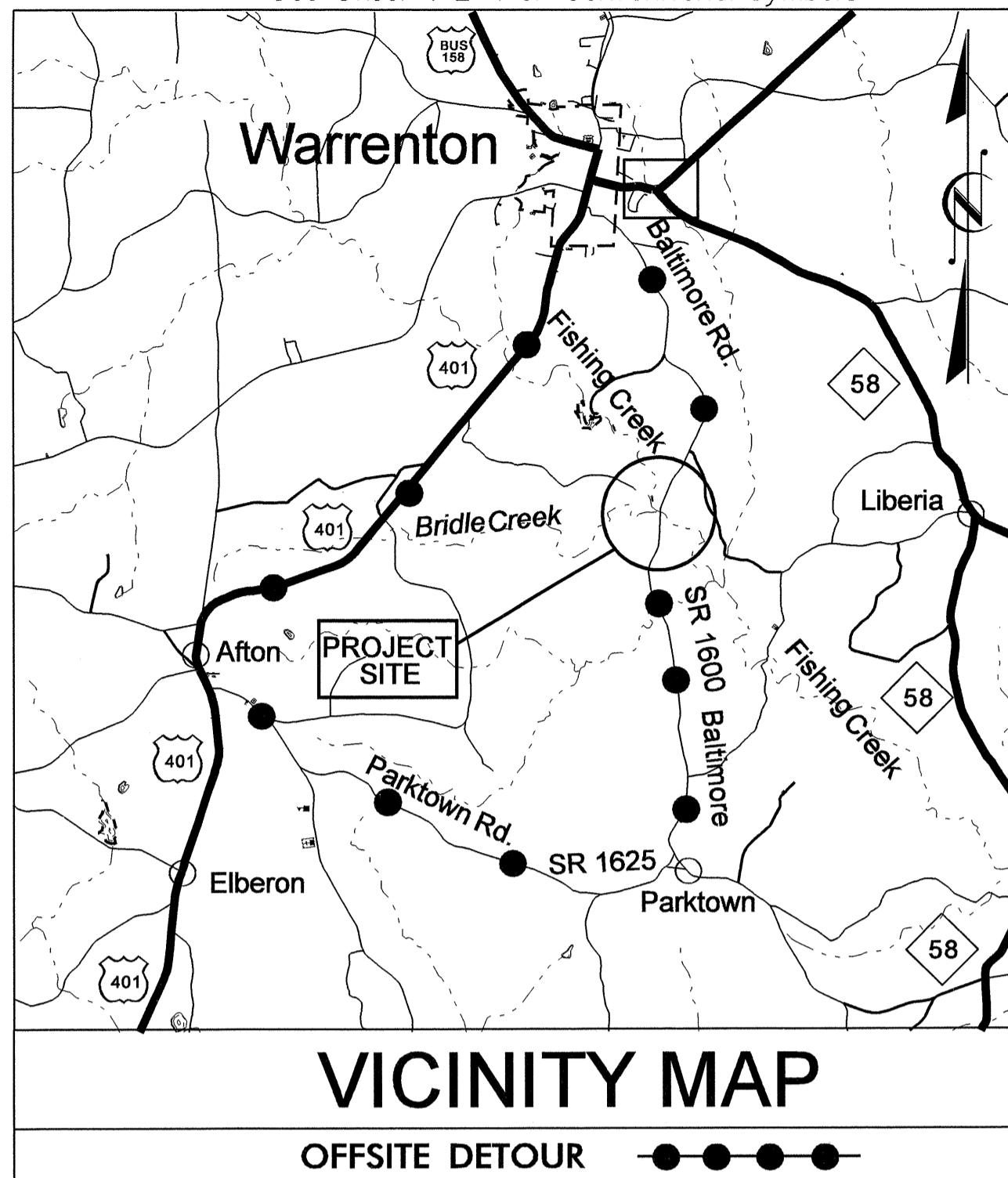


09/08/09

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



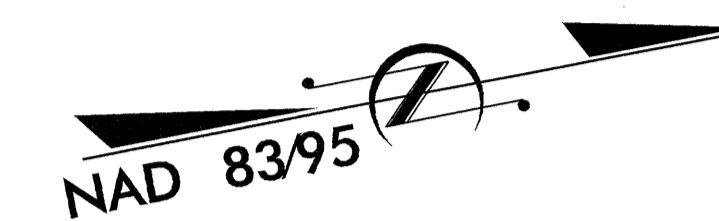
STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

# WARREN COUNTY

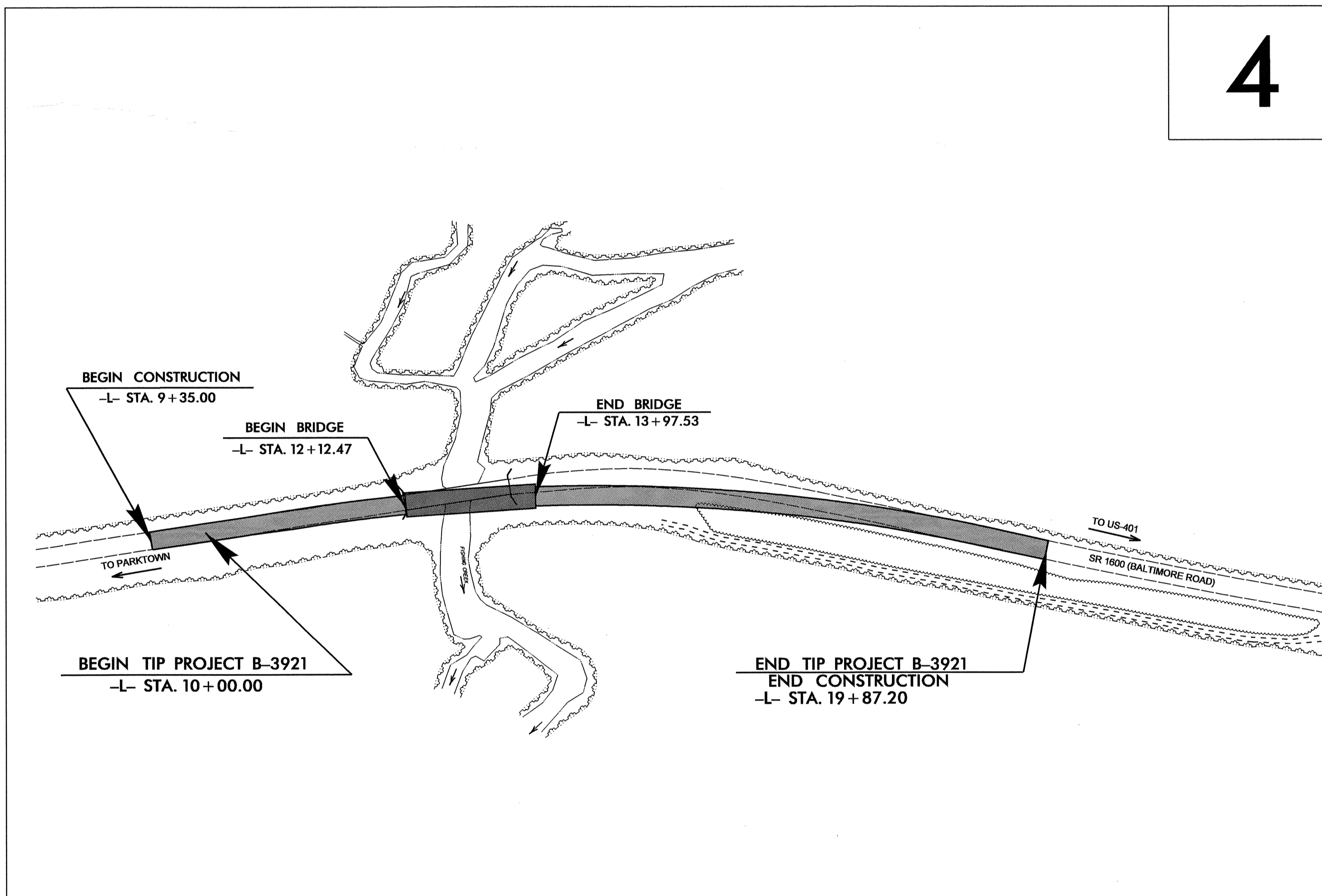
**LOCATION: BRIDGE NO. 45 OVER FISHING CREEK AND  
APPROACHES ON SR 1600 (BALTIMORE ROAD)**

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

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-3921	1	
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION	
33355.1.1	BRZ-1600(7)	PE	
33355.2.2	BRZ-1600(7)	RW & UTIL.	
33355.3.1	BRZ-1600(7)	CONST.	

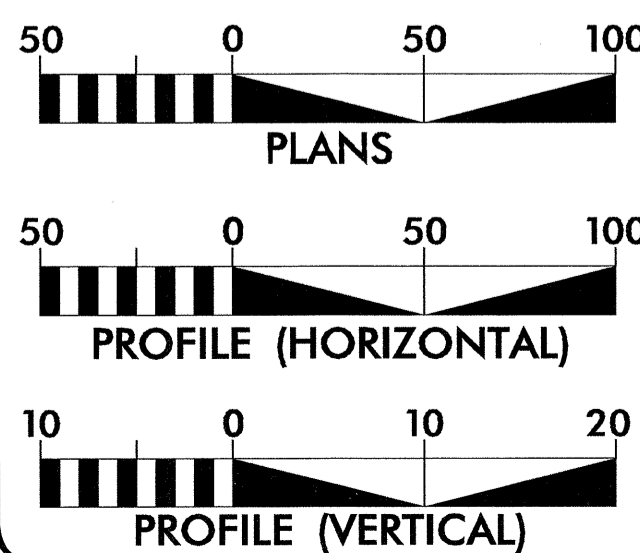


4



\* DESIGN EXCEPTION REQUIRED FOR VERTICAL ALIGNMENT, VERTICAL STOPPING SIGHT DISTANCE AND MAXIMUM GRADE.

**GRAPHIC SCALES**



**DESIGN DATA**

ADT 2009 = 950  
ADT 2030 = 1450  
DHV = 14 %  
D = 60 %  
T = 3 % \*\*  
V = 60 MPH \*  
\*\* TTST 1 % & DUAL 2 %  
FUNC CLASS = RURAL LOCAL

**PROJECT LENGTH**

LENGTH ROADWAY TIP PROJECT B-3921 = 0.152 MI  
LENGTH STRUCTURES TIP PROJECT B-3921 = 0.035 MI  
TOTAL LENGTH TIP PROJECT B-3921 = 0.187 MI

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

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:  
JUNE 20, 2008

LETTING DATE:  
JUNE 16, 2009

GLENN W. MUMFORD, PE  
PROJECT ENGINEER

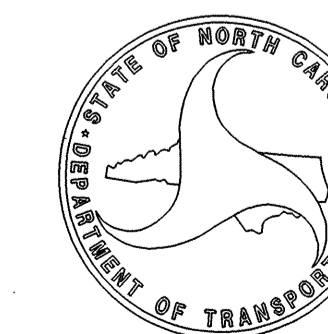
SUSAN C. LANCASTER, PE  
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: *[Signature]*  
ROADWAY DESIGN ENGINEER

SIGNATURE: *[Signature]*

DIVISION OF HIGHWAYS  
STATE OF NORTH CAROLINA



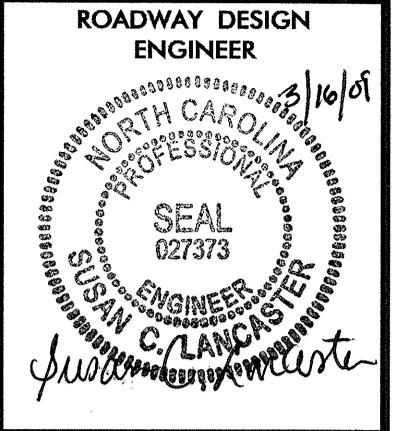
*[Signature]* P.E.  
STATE HIGHWAY DESIGN ENGINEER

13-MAR-2009 11:52  
F:\atogdway\proj\133921\rdy\_tsh.dgn  
\$\$\$\$\$USERNAME\$\$\$\$\$

TIP PROJECT: B-3921

CONTRACT: C202123

# STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS



**INDEX OF SHEETS**

SHEET NUMBER	SHEET
1	TITLE SHEET - B-3921
1-A	INDEX OF SHEETS, GENERAL NOTES & LIST OF STANDARDS (2006 SPECIFICATIONS)
1-B	CONVENTIONAL SYMBOLS
1-C	SURVEY CONTROL SHEET
2	PAVEMENT SCHEDULE AND TYPICAL SECTIONS
2-A	DETAIL OF ANCHORAGE FOR FRAMES
3	SUMMARY OF QUANTITIES
3-A	SUMMARY OF DRAINAGE QUANTITIES, GUARDRAIL SUMMARY, SUMMARY OF EXISTING ASPHALT PAVEMENT BREAKING, EARTHWORK SUMMARY, AND SUMMARY OF EXISTING ASPHALT PAVEMENT REMOVAL
4	PLAN SHEET
5	PROFILE SHEET
TCP-1 THROUGH TCP-2	TRAFFIC CONTROL PLANS
SD-1	SPECIAL SIGN DESIGN
EC-1 THROUGH EC-5	EROSION CONTROL PLANS
RF-1	REFORESTATION DETAIL SHEET
UC-1 THROUGH UC-3	UTILITIES CONSTRUCTION PLANS
UO-1 THROUGH UO-2	UTILITIES BY OTHERS PLANS
X-A	CROSS-SECTION SUMMARY SHEET
X-1 THROUGH X-7	CROSS-SECTIONS
S-1 THROUGH S-25	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 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
840.00	Concrete Base Pad for Drainage Structures
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
854.01	Double Faced Concrete Barrier - Types I, II, III and IV
862.01	Guardrail Placement
862.02	Guardrail Installation
862.03	Structure Anchor Units
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.

**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 EMBARQ - TELEPHONE  
HALIFAX ELECTRIC MEMBERSHIP CORPORATION  
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.

3/15/06

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	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

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

### RIGHT OF WAY:

Baseline Control Point	◆
Existing Right of Way Marker	△
Existing Right of Way Line	-----
Proposed Right of Way Line	-----
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	○ 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

### 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	----- Vineyard

### EXISTING STRUCTURES:

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

### UTILITIES:

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

### TELEPHONE:

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

### WATER:

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

### TV:

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

### GAS:

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

### SANITARY SEWER:

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

### MISCELLANEOUS:

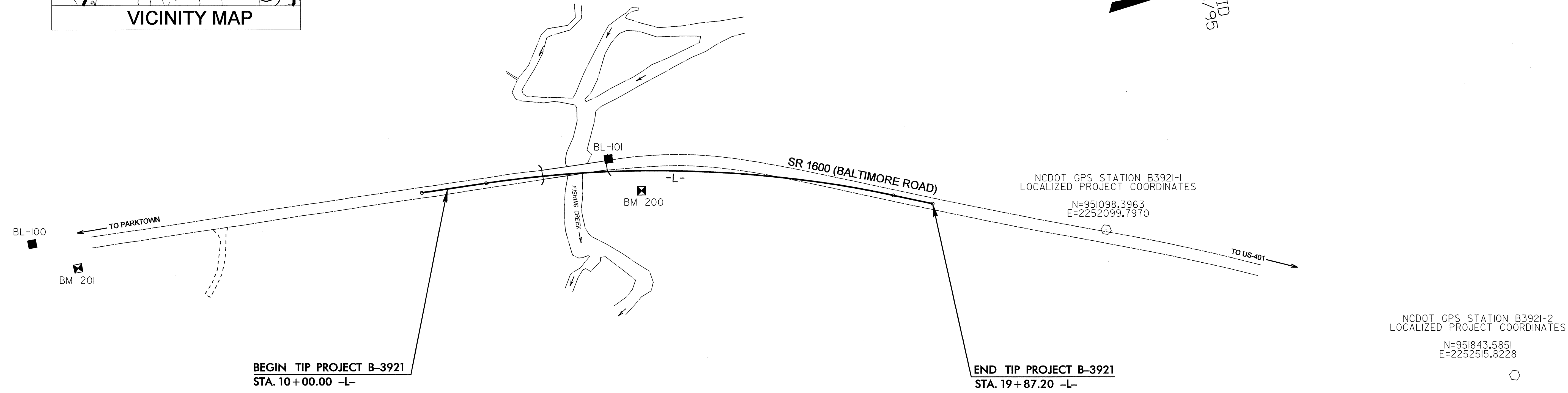
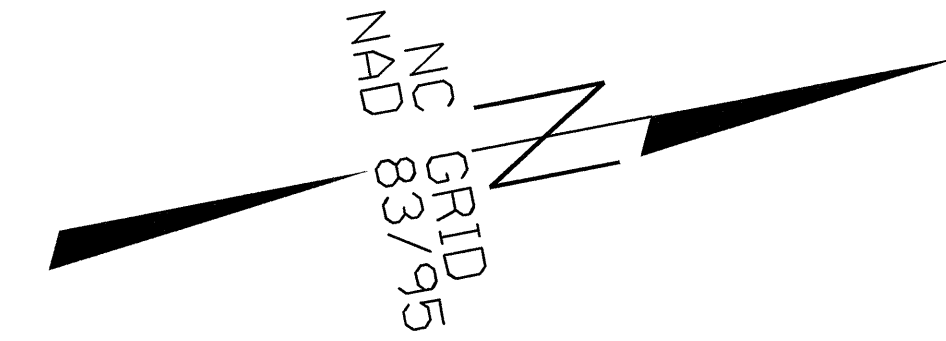
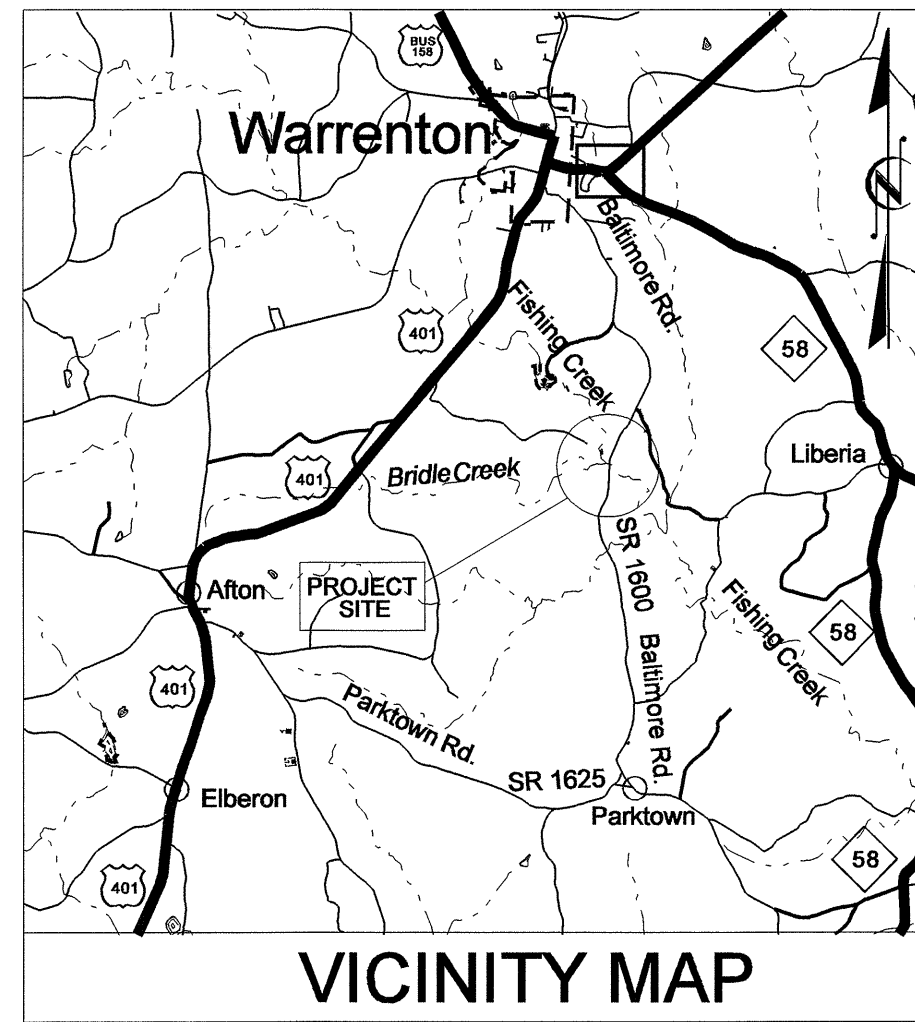
Utility Pole	●
Utility Pole with Base	□
Utility Located Object	○
Utility Traffic Signal Box	⊕
Utility Unknown U/G Line	----- TUTL
U/G Tank; Water, Gas, Oil	□
A/G Tank; Water, Gas, Oil	□
U/G Test Hole (S.U.E.*)	⊕
Abandoned According to Utility Records	AATUR
End of Information	E.O.I.

# SURVEY CONTROL SHEET B-3921

## WARREN COUNTY

LOCATION: BRIDGE NO. 45 OVER FISHING CREEK AND APPROACHES ON SR 1600 (BALTIMORE ROAD)

B-3921



BEGIN TIP PROJECT B-3921  
STA. 10+00.00 -L-

END TIP PROJECT B-3921  
STA. 19+87.20 -L-

BASELINE POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
100	BL-100	949071.1360	2251737.9420	264.07	OUTSIDE PROJECT LIMITS	
101	BL-101	950187.3470	2251785.9010	236.47	13+61.91	24.53 LT
1	B3921-1	951098.3963	2252099.7970	291.96	OUTSIDE PROJECT LIMITS	
2	B3921-2	951843.5851	2252515.8228	313.38	OUTSIDE PROJECT LIMITS	

```

BM 200    ELEVATION = 231.99
N 950238    E 2251858
L STATION 14+24.38 RIGHT
R/R SPIKE IN 18" ELM
*****
BM 201    ELEVATION = 258.43
N 949149    E 2251800
L STATION 10+00.00
S 1° 29' 34.6" E DIST 674.32
R/R SPIKE IN 18" ELM
*****

```

### DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "B3921-1"

WITH NAD 1983/95 STATE PLANE GRID COORDINATES OF  
 NORTHING: 951098.3963(±) EASTING: 2252099.7970(±)  
 THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 1.000051049

THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "B3921-1" TO -L- STATION 10+00.00 IS  
 S 13°58'28.1" W 1314.20'

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

### NOTES:

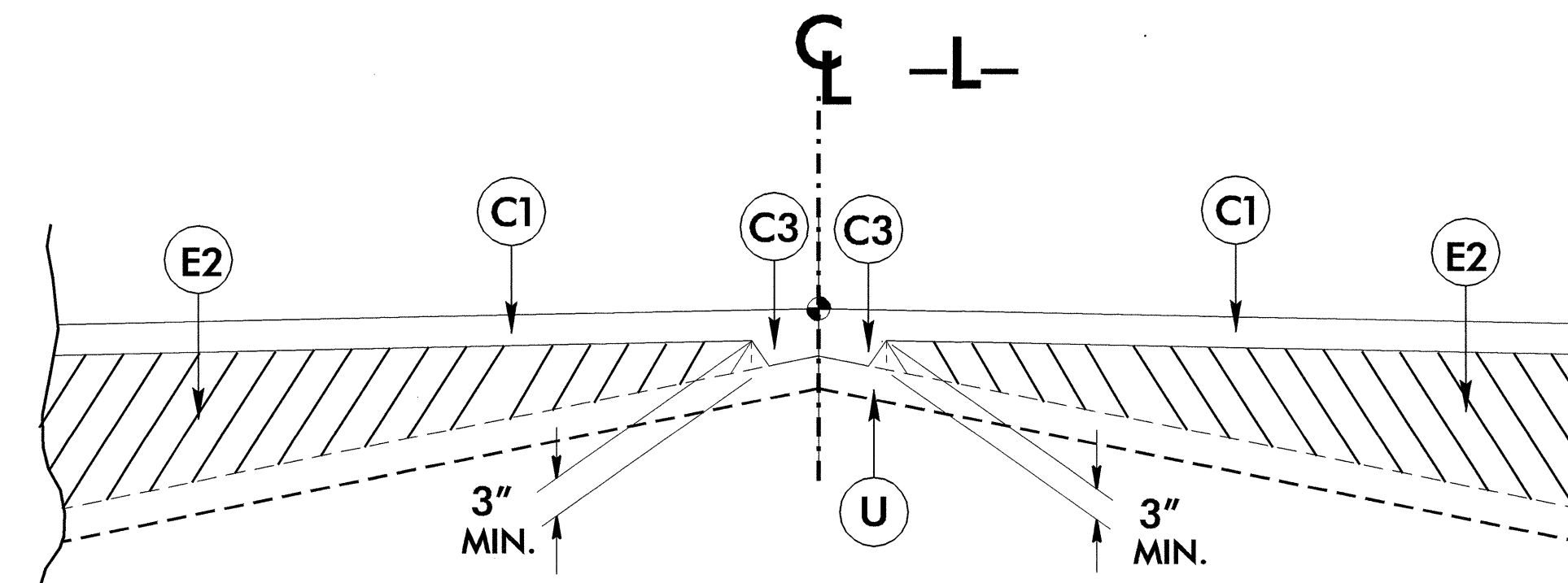
- THE CONTROL DATA FOR THIS PROJECT CAN BE FOUND ELECTRONICALLY BY SELECTING PROJECT CONTROL DATA AT:  
[HTTP://WWW.DOH.DOT.STATE.NC.US/PRECONSTRUCT/HIGHWAY/LOCATION/PROJECT/B-3921\\_ls\\_control\\_060316.txt](http://www.doh.dot.state.nc.us/preconstruct/highway/location/project/B-3921_ls_control_060316.txt)
- 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

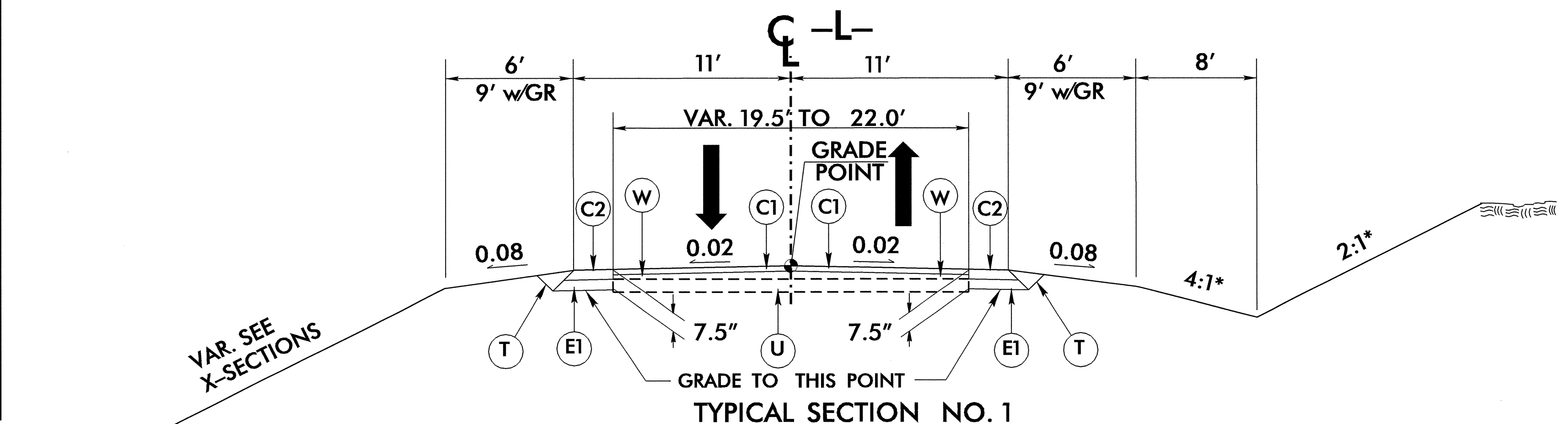
6/2/99  
 I:\FEB-2009\4:35  
 1:34:50 PM  
 I:\GIS\PROJECTS\B3921\1s\_1c\_060316.dgn

FINAL PAVEMENT SCHEDULE	
C1	PROP. APPROX. 1.25" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 137.50 LBS. PER SQ. YD.
C2	PROP. APPROX. 2.5" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 137.50 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 1.5" IN DEPTH.
E1	PROP. APPROX. 5" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 570 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 5.5" IN DEPTH.
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



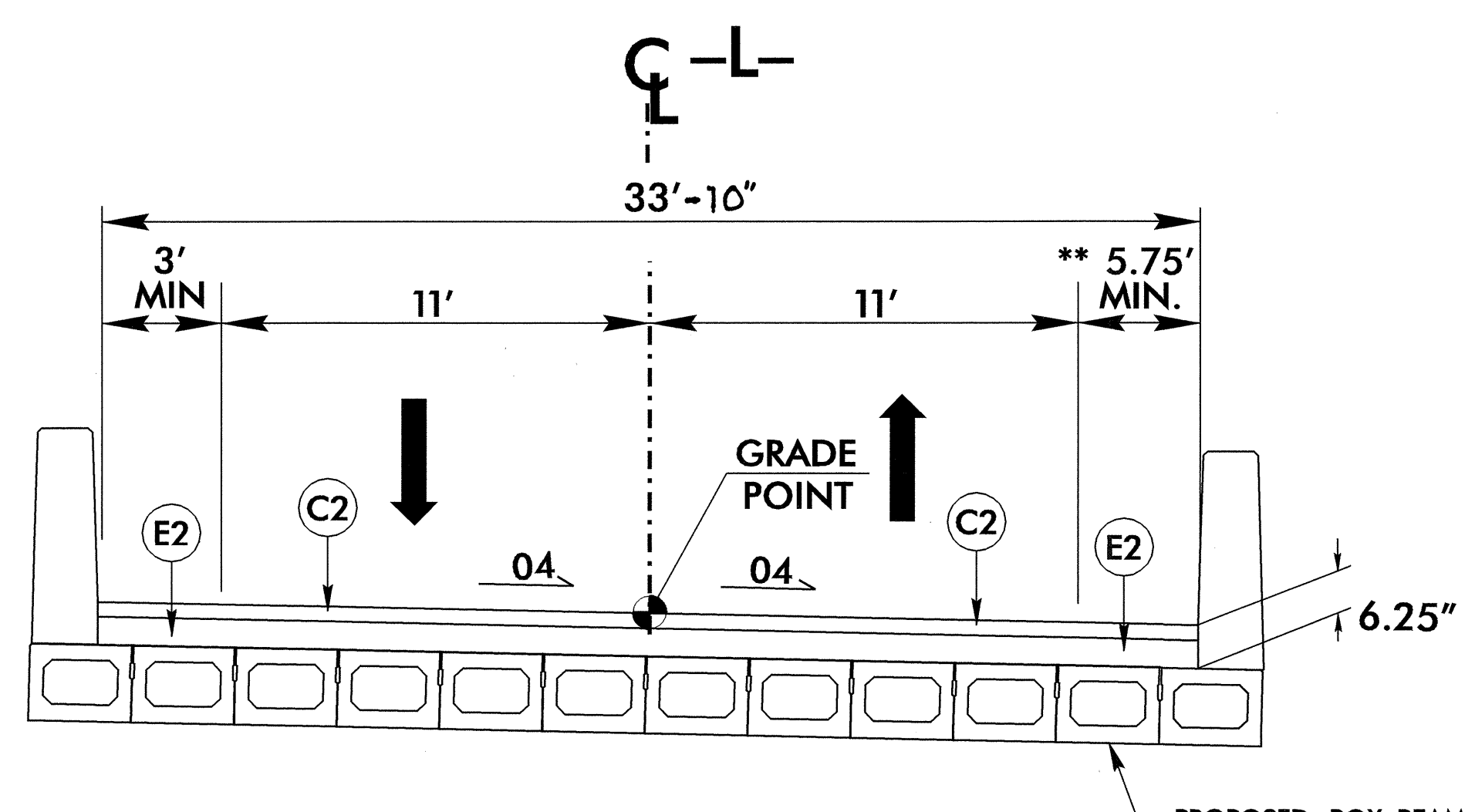
USE TYPICAL SECTION NO. 1 AT THE FOLLOWING LOCATIONS:

-L- STA. 18+25.00 TO -L- STA. 19+37.20

TRANSITION FROM EXISTING @ -L- STA. 10+50.00 TO TYPICAL SECTION NO.1 @ -L- STA. 11+00.00

TRANSITION FROM TYPICAL SECTION NO. 1 @ -L- STA. 19+37.20 TO EXISTING @ -L- STA. 19+87.20

NOTE: OVERLAY EXISTING WITH 1.25" SF9.5A FROM -L- STA. 9+35.00 TO -L-STA 10+50.00

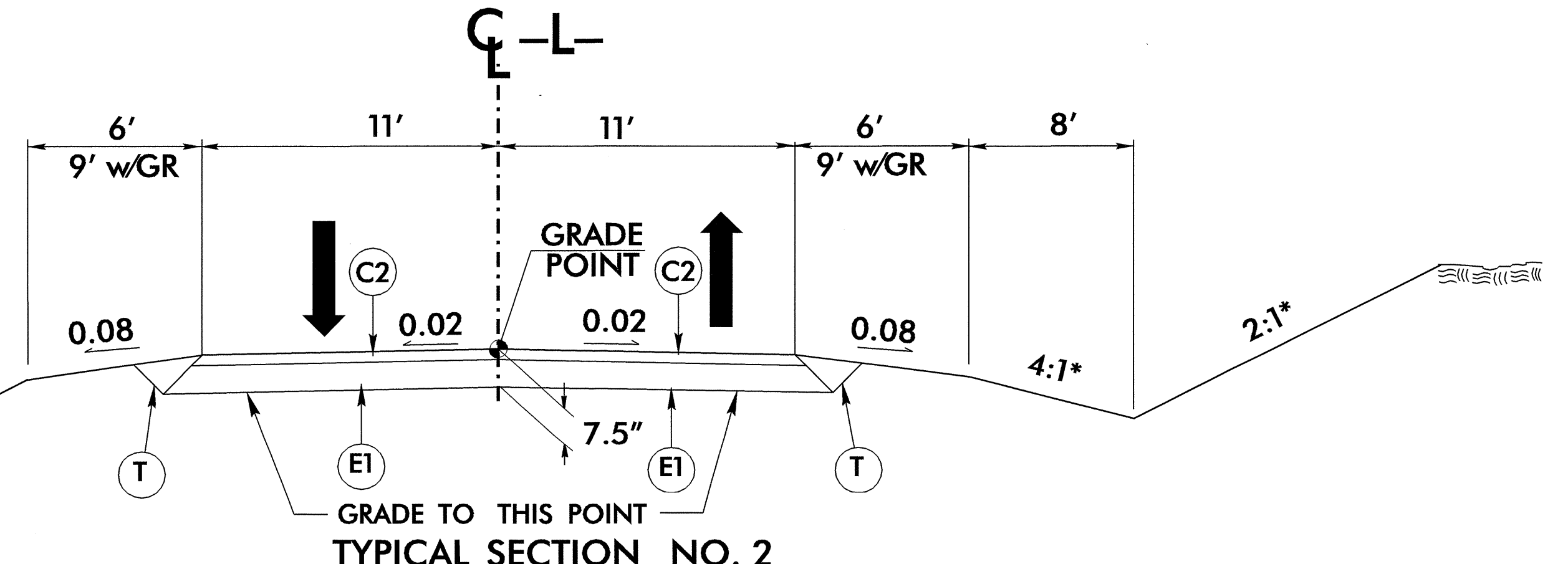


TYPICAL SECTION NO. 3

USE TYPICAL SECTION NO. 3 AT THE FOLLOWING LOCATION:

-L- STA. 12+12.47 TO -L- STA. 13+97.53

\*\*WIDEN FOR HYDRAULIC DESIGN



USE TYPICAL SECTION NO. 2 AT THE FOLLOWING LOCATIONS:

-L- STA. 11+00.00 TO -L- STA. 12+12.47 (BEGIN BRIDGE)

-L- STA. 13+97.53 (END BRIDGE) TO -L- STA. 18+25.00

\* USE 2:1 OR FLATTER ON FRONT AND BACK DITCH SLOPES (SEE CROSS SECTIONS)

-L- STA. 15+00.00 TO -L- STA. 18+00.00 RT

-L- STA. 17+00.00 TO -L- STA. 19+50.00 LT

12-MAR-2009 15:58  
 C:\work\pco\B3921\l\_r.dwg\_tup.dgn  
 6/2/09



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

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS  
ROADWAY SUMMARY OF QUANTITIES FOR CONTRACT - C202123

ItemNumber	Sec #	Quantity	Unit	Description
000100000-N	800	Lump Sum		MOBILIZATION
000400000-N	801	Lump Sum		CONSTRUCTION SURVEYING
002900000-N	SP	Lump Sum		REINFORCED BRIDGE APPROACH FILL, STATION ***** (13+05.00)
003600000-E	225	250	CY	UNDERCUT EXCAVATION
004300000-N	226	Lump Sum		GRADING
005000000-E	226	1	ACR	SUPPLEMENTARY CLEARING & GRUBBING
019500000-E	265	250	CY	SELECT GRANULAR MATERIAL
019600000-E	270	250	SY	FABRIC FOR SOIL STABILIZATION
031800000-E	300	54	TON	FOUNDATION CONDITIONING MATERIAL, MINOR STRS
070800000-E	310	20	LF	15" BIT COAT CS PIPE CULVERTS, TYPE B 0.064" THICK
080600000-E	310	2	EA	15" BIT COAT CS PIPE ELBOWS, TYPE B 0.064" THICK
122000000-E	545	200	TON	INCIDENTAL STONE BASE
148900000-E	610	780	TON	ASPHALT CONC BASE COURSE, TYPE B25.0B
152500000-E	610	430	TON	ASPHALT CONC SURFACE COURSE, TYPE SF9.5A
156000000-E	620	62	TON	ASPHALT BINDER FOR PLANT MIX, GRADE PG 64-22
200000000-N	806	12	EA	RIGHT OF WAY MARKERS
202200000-E	815	22.4	CY	SUBDRAIN EXCAVATION
203300000-E	815	16.8	CY	SUBDRAIN FINE AGGREGATE
204400000-E	815	100	LF	6" PERFORATED SUBDRAIN PIPE
205500000-E	815	3	EA	6" SUBDRAIN PIPE WYES, TEES, & ELBOWS
206600000-N	815	1	EA	CONCRETE PAD FOR SUBDRAIN PIPE OUTLET
207700000-E	815	6	LF	6" OUTLET PIPE (SUBDRAINS)
228600000-N	840	1	EA	MASONRY DRAINAGE STRUCTURES
236700000-N	840	1	EA	FRAME WITH TWO GRATES, STD 840.29

ItemNumber	Sec #	Quantity	Unit	Description
255600000-E	846	95	LF	SHOULDER BERM GUTTER
303000000-E	862	475	LF	STEEL BM GUARDRAIL
315000000-N	862	5	EA	ADDITIONAL GUARDRAIL POSTS
321500000-N	862	4	EA	GUARDRAIL ANCHOR UNITS, TYPE III
327000000-N	SP	4	EA	GUARDRAIL ANCHOR UNITS, TYPE 350
364900000-E	876	5	TON	RIP RAP, CLASS B
365600000-E	876	830	SY	FILTER FABRIC FOR DRAINAGE
440000000-E	1110	373	SF	WORK ZONE SIGNS (STATIONARY)
441000000-E	1110	231	SF	WORK ZONE SIGNS (BARRICADE MOUNTED)
444500000-E	1145	112	LF	BARRICADES (TYPE III)
468500000-E	1205	1,600	LF	THERMOPLASTIC PAVEMENT MARKING LINES (4", 90 MILS)
468600000-E	1205	1,600	LF	THERMOPLASTIC PAVEMENT MARKING LINES (4", 120 MILS)
477000000-E	1205	760	LF	COLD APPLIED PLASTIC PAVEMENT MARKING LINES, TYPE ** (4") (III)
490000000-N	1251	20	EA	PERMANENT RAISED PAVEMENT MARKERS
532560000-E	1510	1,050	LF	6" WATER LINE
587140000-E	1550	80	LF	TRENCHLESS INSTALLATION OF 6" IN SOIL
587141000-E	1550	80	LF	TRENCHLESS INSTALLATION OF 6" NOT IN SOIL
600000000-E	1605	900	LF	TEMPORARY SILT FENCE
600600000-E	1610	115	TON	STONE FOR EROSION CONTROL, CLASS A
600900000-E	1610	110	TON	STONE FOR EROSION CONTROL, CLASS B
601200000-E	1610	210	TON	SEDIMENT CONTROL STONE
601500000-E	1615	4.5	ACR	TEMPORARY MULCHING
601800000-E	1620	150	LB	SEED FOR TEMPORARY SEEDING
602100000-E	1620	1.5	TON	FERTILIZER FOR TEMPORARY SEEDING

ItemNumber	Sec #	Quantity	Unit	Description
602400000-E	1622	70	LF	TEMPORARY SLOPE DRAINS
602700000-N	1622	1	EA	INLET PROTECTION AT TEMPORARY SLOPE DRAINS
602900000-E	SP	500	LF	SAFETY FENCE
603000000-E	1630	485	CY	SILT EXCAVATION
603600000-E	1631	1,950	SY	MATTING FOR EROSION CONTROL
603700000-E	SP	20	SY	COIR FIBER MAT
603800000-E	SP	900	SY	PERMANENT SOIL REINFORCEMENT MAT
604200000-E	1632	35	LF	1/4" HARDWARE CLOTH
607000000-N	SP	8	EA	SPECIAL STILLING BASINS
607101000-E	SP	120	LF	WATTLE
607102000-E	SP	45	LB	POLYACRYLAMIDE (PAM)
607103000-E	SP	230	LF	COIR FIBER BAFFLES
607105000-E	SP	3	EA	*** SKIMMER (1-1/2")
608400000-E	1660	5	ACR	SEEDING & MULCHING
608700000-E	1660	2	ACR	MOWING
609000000-E	1661	50	LB	SEED FOR REPAIR SEEDING
609300000-E	1661	0.25	TON	FERTILIZER FOR REPAIR SEEDING
609600000-E	1662	75	LB	SEED FOR SUPPLEMENTAL SEEDING
610800000-E	1665	2	TON	FERTILIZER TOPDRESSING
611400000-N	SP	5	HR	SPECIALIZED HAND MOWING
611700000-N	SP	12	EA	RESPONSE FOR EROSION CONTROL
612300000-E	1670	0.1	ACR	REFORESTATION

5/28/99

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

**LIST OF PIPES, ENDWALLS, ETC. (FOR PIPES 48" & UNDER)**

COMPUTED BY: E.M. SYKES DATE: 04/23/2008  
CHECKED BY: S.A. TANKERSLEY DATE: 09/15/2009

STATION	LOCATION (L/RT OR CJ)	STRUCTURE NO.	TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	SLOPE CRITICAL	CLASS III R.C. PIPE (UNLESS NOTED OTHERWISE)								BITUMINOUS COATED C.S. PIPE TYPE B (UNLESS NOTED OTHERWISE)				CLASS III R.C. PIPE OR ALUMINIZED C.S. PIPE, TYPE IR OR HDPE PIPE, TYPE S OR D				ENDWALLS STD. 838.01 OR STD. 838.11 OR STD. 838.80 (UNLESS NOTED OTHERWISE)	QUANTITIES FOR DRAINAGE STRUCTURES * TOTAL L.F. FOR PAY QUANTITY SHALL BE COL. 'A' + 'B' + 'C'	FRAME, GRATES AND HOOD STANDARD 840.03	TYPE OF GRATE			T.B.D.I. STD. 840.35	D.I. STD. 840.14 OR STD. 840.15	D.I. FRAME & GRATE STD. 840.16	G.D.I. TYPE 'A' STD. 840.17 OR 840.26	G.D.I. TYPE 'B' STD. 840.18 OR 840.27	G.D.I. TYPE 'D' STD. 840.19 OR 840.28	G.D.I. FRAME WITH GRATE STD. 840.22	G.D.I. FRAME WITH TWO GRATES STD. 840.29	G.D.I. (N.S.) FRAME WITH GRATE STD. 840.29	J.B. STD. 840.31 OR 840.32	ROD & LUG W/SLEEVE GASKET	BIT. COAT. C.S. PIPE, TYPE B ELBOWS NO. & SIZE	CONC. COLLARS CL. "B" C.Y. STD 840.72	CONC. & BRICK PIPE PLUG, C.Y. STD. 840.71	PIPE REMOVAL LIN.FT.	REMARKS		
							12"	15"	18"	24"	30"	36"	42"	48"	12"	15"	18"	24"	30"	36"	42"	48"				12"	15"	18"																24"	15" SIDE DRAIN PIPE	18" SIDE DRAIN PIPE
-L- 11+03.54	RT	1	235.6	232.9	229.0																																									
PROJECT TOTAL																																														

COMPUTED BY: S.A. TANKERSLEY DATE: 09/15/2009  
CHECKED BY: SCL DATE: 03/05/2009

"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 SHOULDER WIDTH	FLARE LENGTH		W		GRAU 350	TYPE III	ANCHORS	IMPACT ATTENUATOR TYPE 350	REMARKS
				STRAIGHT	SHOP CURVED	DOUBLE FACED	APPROACH END	TRAILING END			APPROACH END	TRAILING END	APPROACH END	TRAILING END					
L	10+73.60	12+17.35	LT	143.75					6	9		50	1		1	1			
L	10+00.95	12+07.20	RT	206.25					6	9	50		1		1	1			
L	13+93.69	15+87.44	RT	193.75					6	9	50		1		1	1			
L	14+01.06	15+82.31	LT	181.25					6	9	50		1		1	1			
			SUBTOTAL	725									TOTALS	4	4				
DEDUCTIONS FOR ANCHOR UNITS																			
GRAU 350: 4 @ 50 FT =				-200															
TYPE III: 4 @ 18.75 FT =				-75															
TOTAL				450															
SAY				475															

5 ADDITIONAL GUARDRAIL POSTS

**\* SUMMARY OF EXISTING ASPHALT PAVEMENT BREAKING IN SQUARE YARDS**

LINE	Station	Station	LOC LT/RT/CL	YD <sup>2</sup>
-L-	14+30.00	17+50.00	LT/RT	320.70
			TOTAL:	320.70
			SAY:	330

**\* SUMMARY OF EARTHWORK IN CUBIC YARDS**

LOCATION	UNCLASSIFIED EXCAVATION	UNDERCUT	EMBT +%	BORROW	WASTE
STAGE 1					
9+36.17	12+12.47	121	0	728	607
	BEGIN BRIDGE				
13+97.53	19+87.20	3532	0	3814	282
	END BRIDGE				
<b>PROJECT SUBTOTAL:</b>		3653	0	4542	889
LOSS DUE TO CLEARING & GRUBBING		-100	0	0	100
<b>PROJECT TOTAL:</b>		3553	0	4542	989
EST 5% TO REPLACE TOP SOIL ON BORROW PIT			0	0	49
<b>GRAND TOTAL:</b>		3553		1038	0
SAY:		3600		1100	

ESTIMATED UNDERCUT EXCAVATION = 250 CY

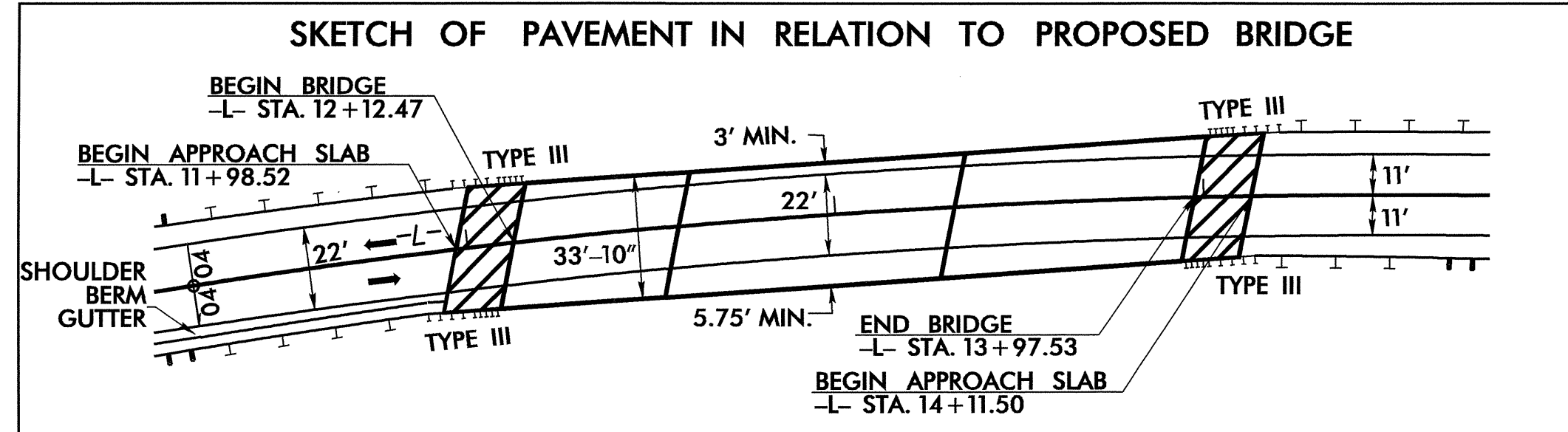
**\* SUMMARY OF EXISTING ASPHALT PAVEMENT REMOVAL IN SQUARE YARDS**

LINE	Station	Station	LOC LT/RT/CL	YD <sup>2</sup>
-L-	11+00.00	12+33.52	LT/RT	290.72
-L-	13+56.78	14+30.00	LT	162.65
-L-	14+30.00	17+50.00	LT	446.46
-L-	17+50.00	18+25.00	LT/RT	180.85
			TOTAL:	1080.68
			SAY:	1090

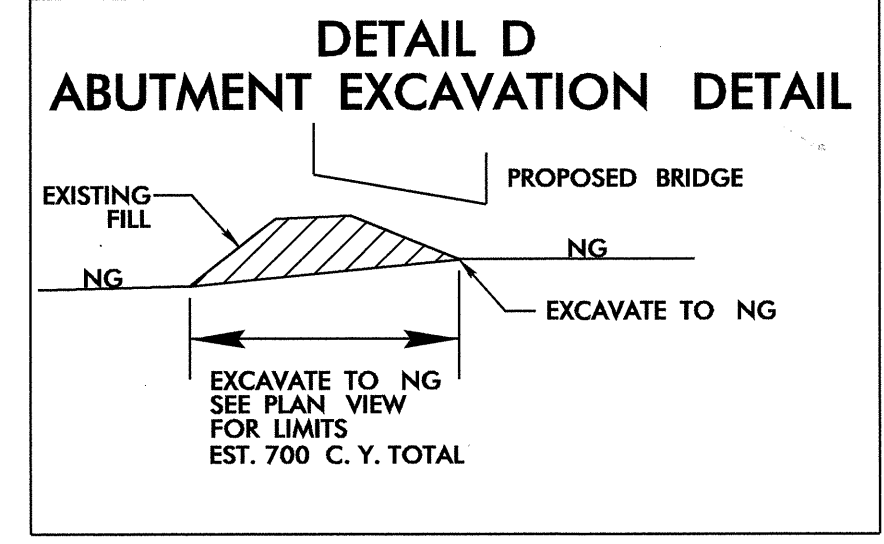
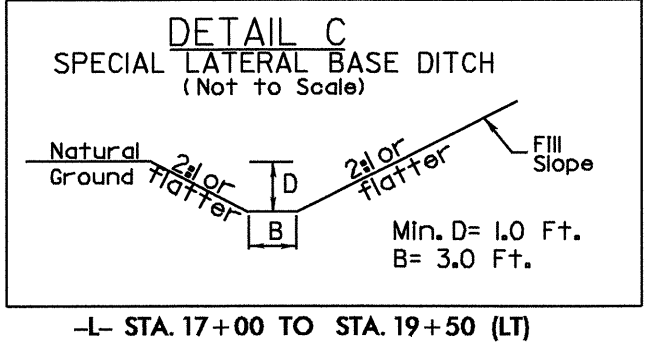
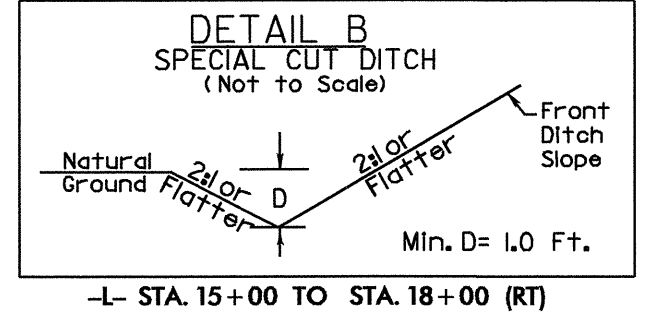
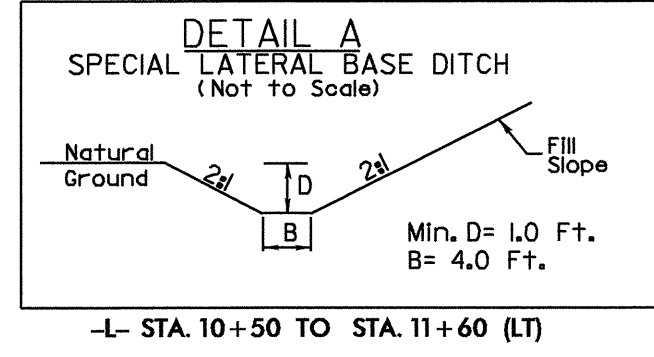
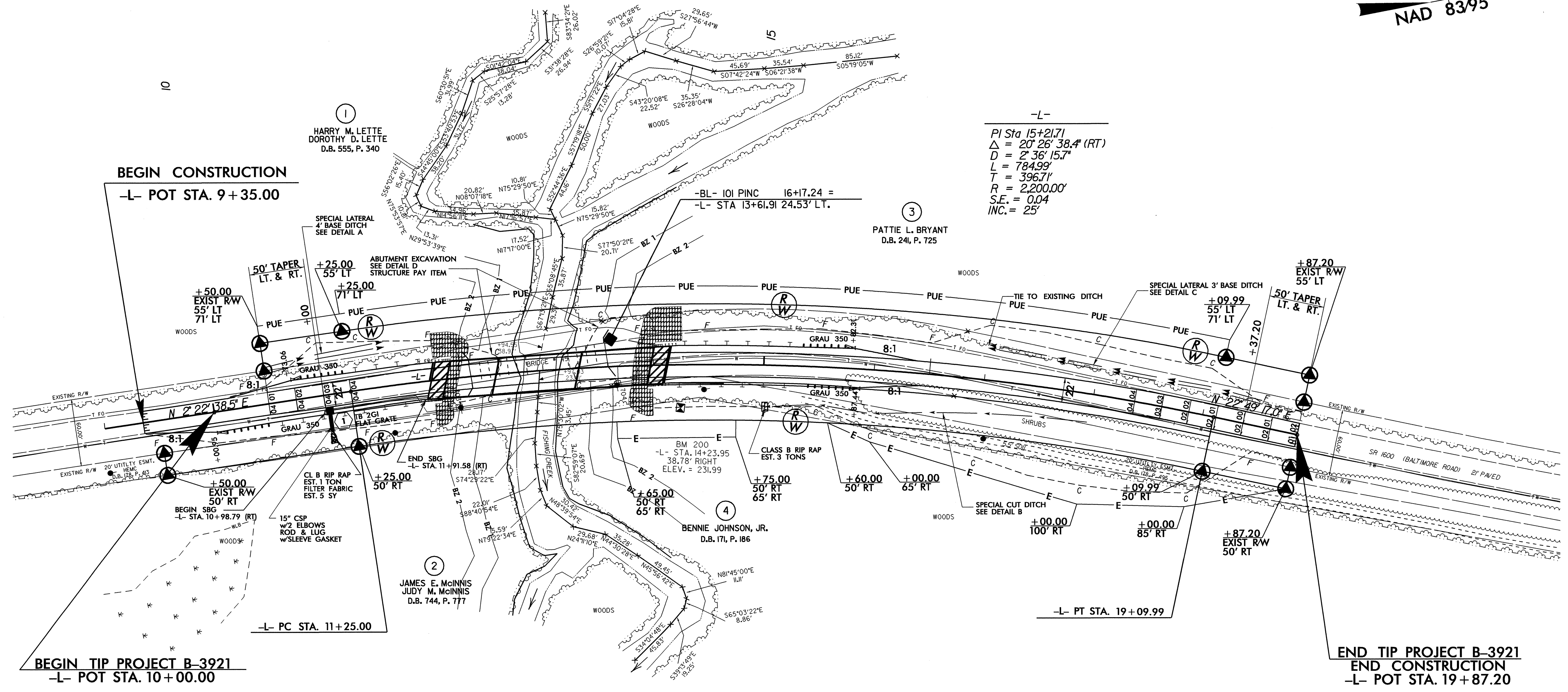
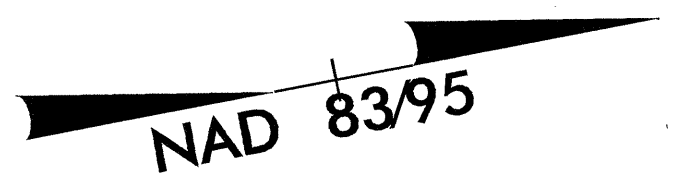
NOTE: Earthwork quantities are calculated by the Roadway Design Unit. These earthwork quantities are based in part on subsurface data provided by the Geotechnical Engineering Unit.

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





\*DESIGN EXCEPTION REQUIRED FOR VERTICAL ALIGNMENT, VERTICAL STOPPING SIGHT DISTANCE AND MAXIMUM GRADE.



NOTES:  
 1) SEE SHEET 5 FOR -L- PROFILE  
 2) SEE SHEETS S-1 THROUGH S-25 FOR STRUCTURE PLANS

REVISIONS

16-MAR-2009 15:12 b3921.rdy.psh.04.dgn

5/14/99

PROJECT REFERENCE NO. <b>B-3921</b>	SHEET NO. <b>5</b>
ROADWAY DESIGN ENGINEER <i>[Signature]</i> SEAL 027373 SUSAN C. LANCASTER	HYDRAULICS ENGINEER <i>[Signature]</i> SEAL 19880 PAUL ATWOOD

\*DESIGN EXCEPTION REQUIRED FOR VERTICAL ALIGNMENT, VERTICAL STOPPING SIGHT DISTANCE AND MAXIMUM GRADE.

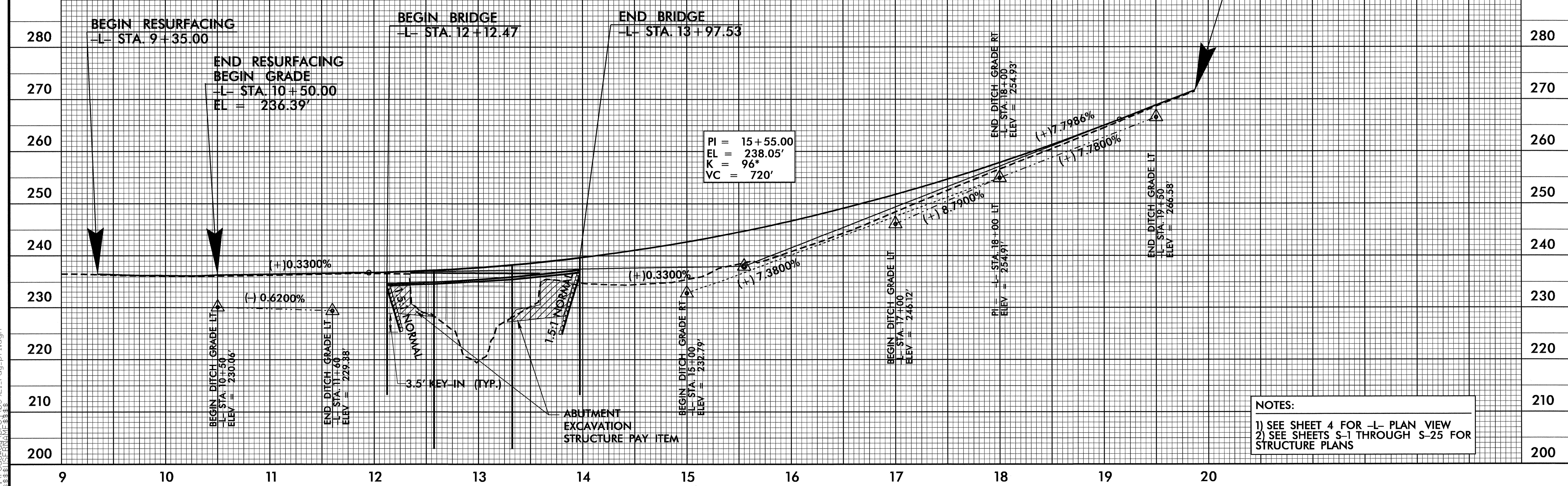
**PROPOSED 27" PRESTRESSED CONCRETE BOX BEAM BRIDGE**  
 1 SPAN @ 45'  
 1 SPAN @ 75'  
 1 SPAN @ 65'  
 L- STA 13+05.00  
 SKEW = 105°

**STRUCTURE HYDRAULIC DATA**

DESIGN DISCHARGE	= 4,700	CFS
DESIGN FREQUENCY	= 10	YR
DESIGN HW ELEVATION	= 234.9	FT
BASE DISCHARGE	= 9,100	CFS
BASE FREQUENCY	= 100	YR
BASE HW ELEVATION	= 239.1	FT
OVERTOPPING DISCHARGE	= 6,100	CFS
OVERTOPPING FREQUENCY	= 25+/-	YR
OVERTOPPING ELEVATION	= 236.3	FT

L-

BM #200 RAILROAD SPIKE IN 18" ELM  
 38.78' RT. OF L- STA. 14+23.95  
 ELEV. = 231.99'  
 N 950238 E 2251858



**NOTES:**  
 1) SEE SHEET 4 FOR L- PLAN VIEW  
 2) SEE SHEETS S-1 THROUGH S-25 FOR STRUCTURE PLANS

17-FEB-2009 10:28  
S:\PROJECTS\B3921\rdy.pfl.dgn