

09/08/99

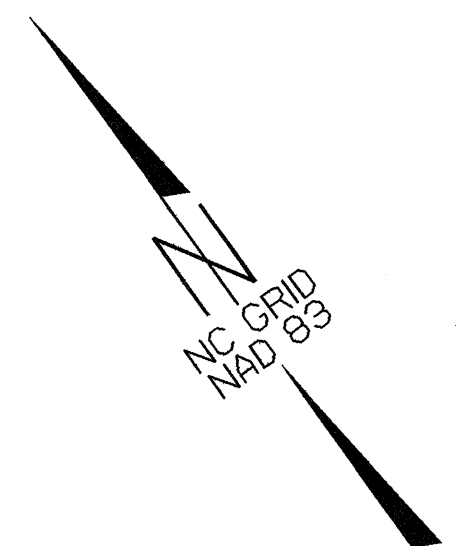
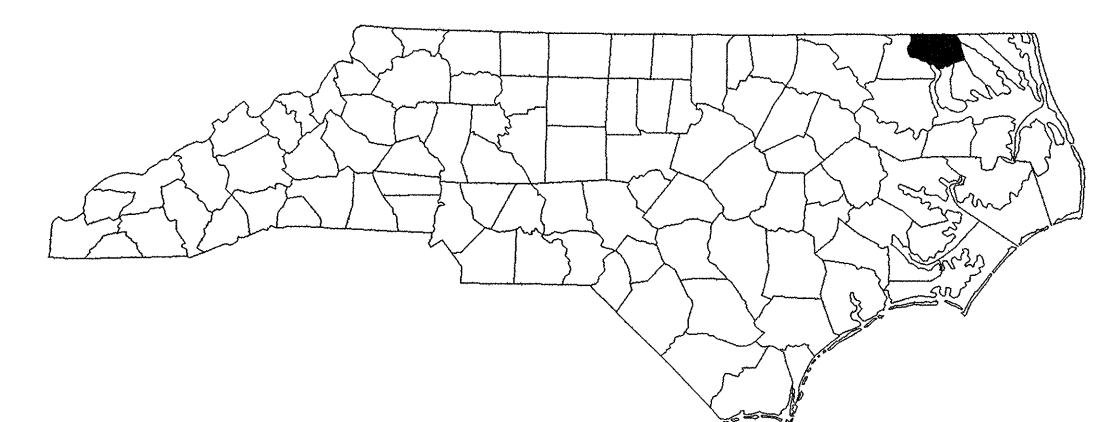
See Sheet 1-A For Index of Sheets
See Sheet 1-B For Conventional Symbols

STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

GATES COUNTY

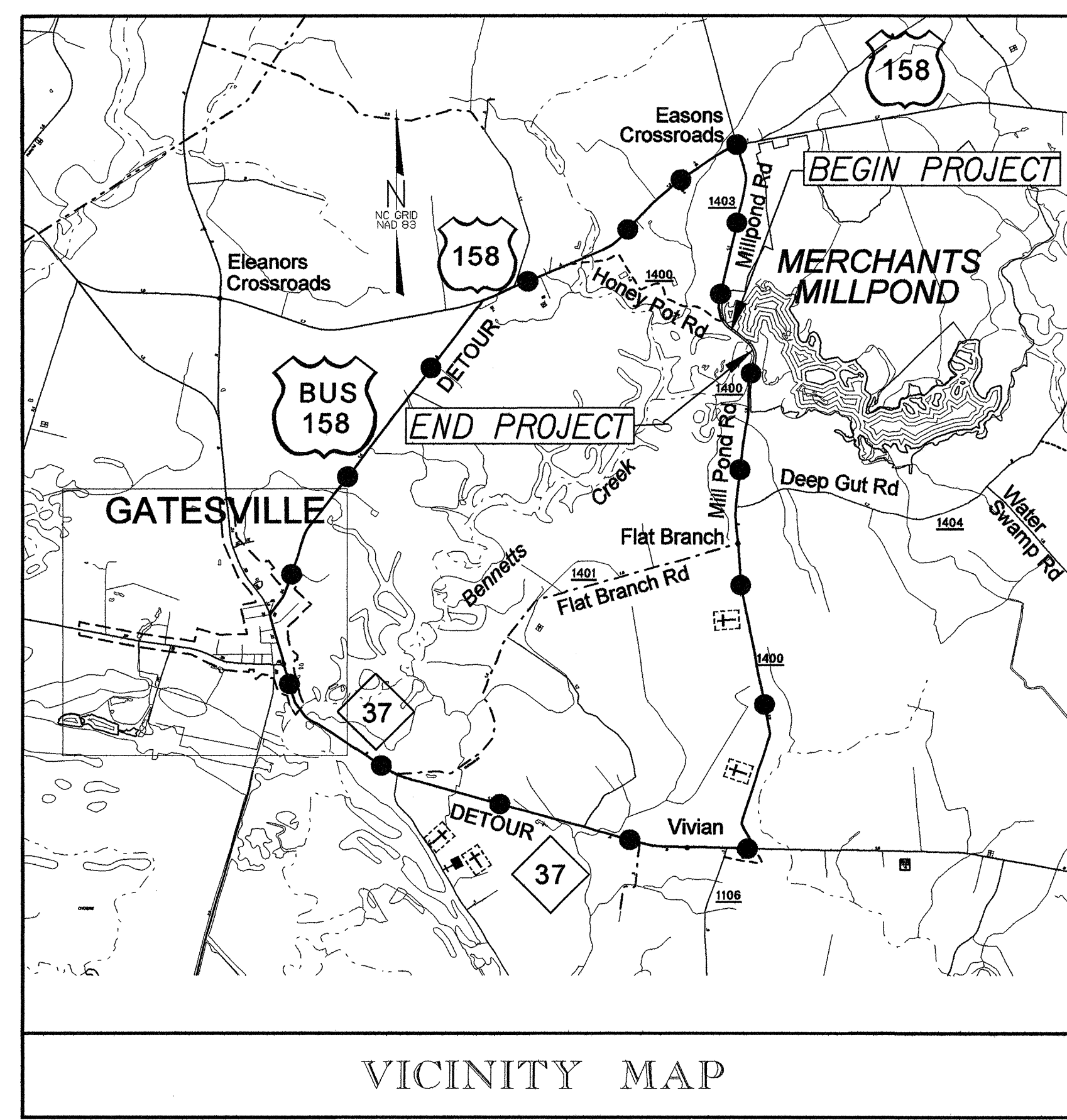
LOCATION: BRIDGE NO. 16 OVER MERCHANTS MILLPOND ON SR 1400
TYPE OF WORK: GRADING, PAVING, DRAINAGE, AND STRUCTURE

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-3640	1	
WBS NO.	F.A. PROJ. NO.	DESCRIPTION	
33188.1.1	BRZ-1400(4)	P.E.	
33188.2.1	BRZ-1400(4)	R/W UTILITIES	
33188.3.2	BRZ-1400(4)	CONSTRUCTION	



TIP: B-3640

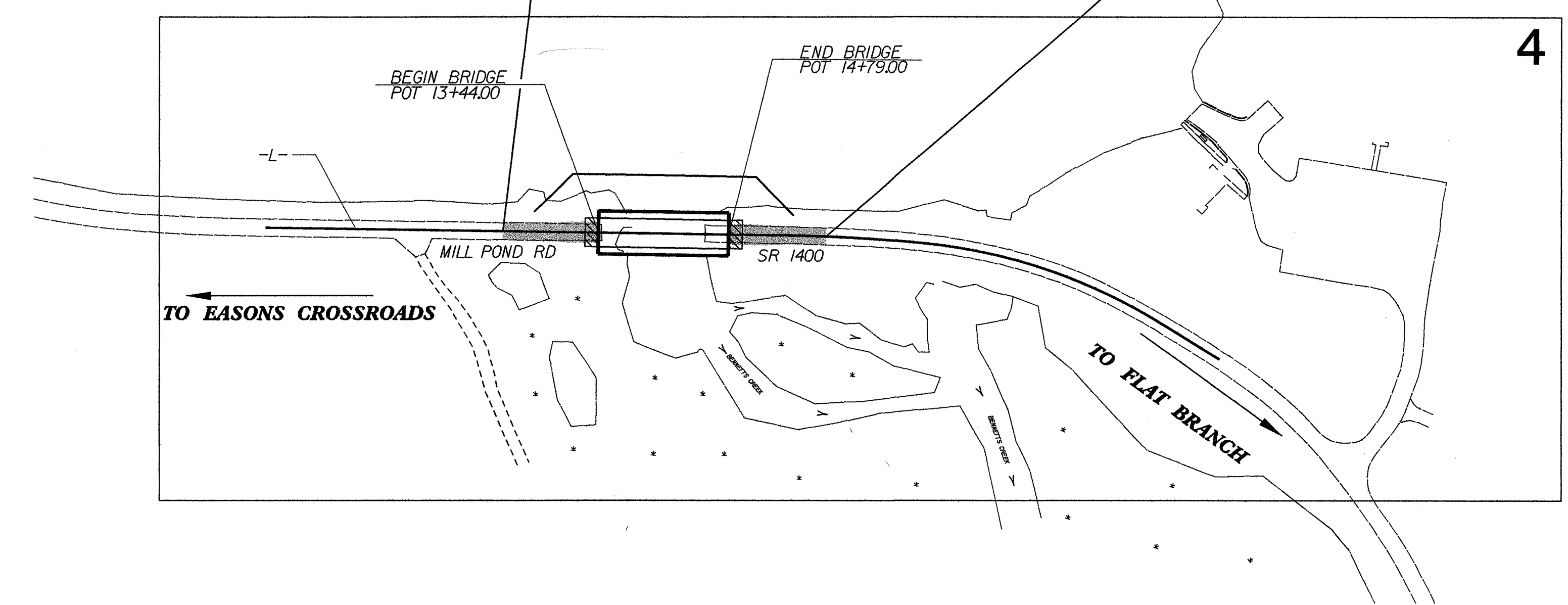
CONTRACT: C201471



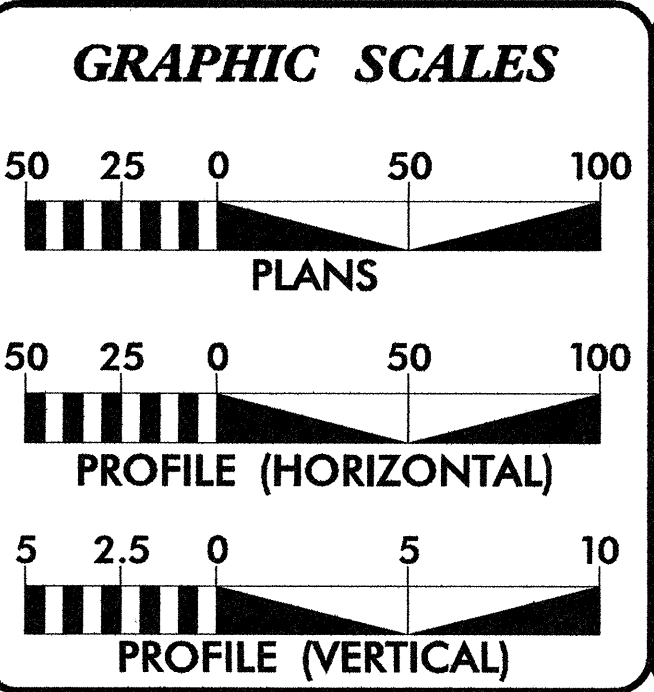
LEGEND: DETOUR ●—●—●—●

STA. 12+45.00 -L- BEGIN TIP PROJECT B-3640

STA. 15+80.00 -L- END TIP PROJECT B-3640



NCDOT CONTACT: CATHY HOUSER, P.E. - PROJECT ENGINEER - ROADWAY DESIGN - ENGINEERING COORDINATION



DESIGN DATA

ADT 2005 =	1000
ADT 2025 =	1600
DHV =	10 %
D =	55 %
T =	4 % *
V =	50 MPH
* TTST 1%	DUAL 3%

PROJECT LENGTH

LENGTH ROADWAY	
TIP PROJECT B-3640 =	0.037 MILES
LENGTH STRUCTURE	
TIP PROJECT B-3640 =	0.026 MILES
TOTAL LENGTH OF TIP PROJECT B-3640 =	0.063 MILES

Prepared in the Office of:
WILBUR SMITH ASSOCIATES
421 Fayetteville St., Suite 1303 Raleigh, NC 27601 Phone (919) 755-0583

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
MARCH 30, 2005

LETTING DATE:
SEPTEMBER 19, 2006

THOMAS E. TALLMAN, P.E.
PROJECT ENGINEER

R.D. ODELL, P.E.
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

5/16/06
SIGNATURE: _____ P.E.

ROADWAY DESIGN ENGINEER

R.D. ODELL
SIGNATURE: _____ P.E.

**DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA**

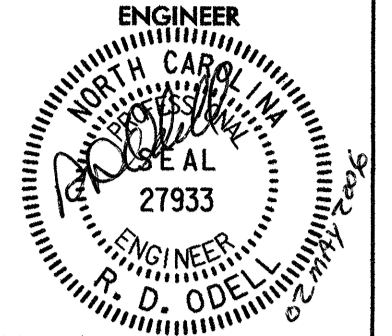


STATE DESIGN ENGINEER P.E.

**DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION**

APPROVED
DIVISION ADMINISTRATOR DATE

5/22/2006 2:24:44 PM r:\ncdot\B3640\Roadway\Proj\B3640_rdy_ish_01.dgn

8/17/99

PROJECT REFERENCE NO. B-3640	SHEET NO. 1A
RW SHEET NO.	
ROADWAY DESIGN ENGINEER 	HYDRAULICS ENGINEER
 421 Fayetteville Street Suite 1000 RALEIGH, N. C. 27601	 SUNGATE DESIGN GROUP, P.A. 105 JOHN FRANKLIN ROAD RALEIGH, NORTH CAROLINA 27601

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

SUMMARY OF QUANTITIES

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 PAVEMENT SCHEDULE, TYPICAL SECTIONS, WEDGING DETAILS, AND DETAIL OF CELLULAR SLOPE PROTECTION

3 SUMMARY OF QUANTITIES

3-A SUMMARY OF DRAINAGE QUANTITIES, GUARDRAIL SUMMARY, ASPHALT PAVEMENT REMOVAL SUMMARY, AND EARTHWORK SUMMARY

4 PLAN AND PROFILE SHEET

TCP-1 THRU TCP-3 TRAFFIC CONTROL PLANS

EC-1 THRU EC-2 EROSION CONTROL PLANS

UD-1 THRU UD-2 UTILITIES BY OTHERS PLANS

X-1 THRU X-3 CROSS-SECTIONS

S-1 THRU S-33 STRUCTURE PLANS

SP-1 THRU SP-3 SPILLWAY PLANS

EFF. 07-18-06

2006 ROADWAY 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
DIVISION 2 - EARTHWORK	
200.02	Method of Clearing - Method II
225.02	Guide for Grading Subgrade - Secondary and Local
225.04	Method of Obtaining Superlevation - Two Lane Pavement
DIVISION 3 - PIPE CULVERTS	
300.02	Method of Pipe Installation - Method 'B'
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	
840.00	Concrete Base Pad for Drainage Structures
840.14	Concrete Drop Inlet - 12" thru 30" Pipe
840.15	Brick Drop Inlet - 12" thru 30" Pipe
840.29	Frames and Narrow Slot Flat Grates
840.45	Precast Drainage Structure
840.66	Drainage Structure Steps
846.01	Concrete Curb, Gutter and Curb & Gutter
862.01	Guardrail Placement
862.02	Guardrail Installation
862.03	Structure Anchor Units
876.01	Rip Rap in Channels
876.02	Guide for Rip Rap at Pipe Outlets

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

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 II.

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.

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.

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
ROANOKE EMC
SPRINT
ANY RELOCATION OF EXISTING UTILITIES WILL BE ACCOMPLISHED BY OTHERS.

REVISIONS

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CONVENTIONAL SYMBOLS

*S.U.E = SUBSURFACE UTILITY ENGINEER

ROADS & RELATED ITEMS

Edge of Pavement	-----
Curb	-----
Prop. Slope Stakes Cut	----- C
Prop. Slope Stakes Fill	----- F
Prop. Woven Wire Fence	-----
Prop. Chain Link Fence	-----
Prop. Barbed Wire Fence	-----
Prop. Wheelchair Ramp	----- WCR
Curb Cut for Future Wheelchair Ramp	----- CCFR
Exist. Guardrail	-----
Prop. Guardrail	-----
Equality Symbol	-----
Pavement Removal	-----

RIGHT OF WAY

Baseline Control Point	-----
Existing Right of Way Marker	-----
Exist. Right of Way Line w/Marker	-----
Prop. Right of Way Line with Proposed RW Marker (Iron Pin & Cap)	-----
Prop. Right of Way Line with Proposed (Concrete or Granite) RW Marker	-----
Exist. Control of Access Line	-----
Prop. Control of Access Line	-----
Exist. Easement Line	-----
Prop. Temp. Construction Easement Line	-----
Prop. Temp. Drainage Easement Line	-----
Prop. Perm. Drainage Easement Line	-----

HYDROLOGY

Stream or Body of Water	-----
River Basin Buffer	-----
Flow Arrow	-----
Disappearing Stream	-----
Spring	-----
Swamp Marsh	-----
Shoreline	-----
Falls, Rapids	-----
Prop Lateral, Tail, Head Ditches	-----

STRUCTURES

MAJOR	
Bridge, Tunnel, or Box Culvert	----- CONC
Bridge Wing Wall, Head Wall and End Wall	----- CONC WW

MINOR	
Head & End Wall	----- CONC HW
Pipe Culvert	-----
Footbridge	-----
Drainage Boxes	----- CB
Paved Ditch Gutter	-----

UTILITIES

Exist. Pole	-----
Exist. Power Pole	-----
Prop. Power Pole	-----
Exist. Telephone Pole	-----
Prop. Telephone Pole	-----
Exist. Joint Use Pole	-----
Prop. Joint Use Pole	-----
Telephone Pedestal	-----
U/G Telephone Cable Hand Hold	-----
Cable TV Pedestal	-----
U/G TV Cable Hand Hold	-----
U/G Power Cable Hand Hold	-----
Hydrant	-----
Satellite Dish	-----
Exist. Water Valve	-----
Sewer Clean Out	-----
Power Manhole	-----
Telephone Booth	-----
Cellular Telephone Tower	-----
Water Manhole	-----
Light Pole	-----
H-Frame Pole	-----
Power Line Tower	-----
Pole with Base	-----
Gas Valve	-----
Gas Meter	-----
Telephone Manhole	-----
Power Transformer	-----
Sanitary Sewer Manhole	-----
Storm Sewer Manhole	-----
Tank; Water, Gas, Oil	-----
Water Tank With Legs	-----
Traffic Signal Junction Box	-----
Fiber Optic Splice Box	-----
Television or Radio Tower	-----
Utility Power Line Connects to Traffic Signal Lines Cut Into the Pavement	-----

Recorded Water Line	-----
Designated Water Line (S.U.E.*)	-----
Sanitary Sewer	-----
Recorded Sanitary Sewer Force Main	-----
Designated Sanitary Sewer Force Main(S.U.E.*)	-----
Recorded Gas Line	-----
Designated Gas Line (S.U.E.*)	-----
Storm Sewer	-----
Recorded Power Line	-----
Designated Power Line (S.U.E.*)	-----
Recorded Telephone Cable	-----
Designated Telephone Cable (S.U.E.*)	-----
Recorded U/G Telephone Conduit	-----
Designated U/G Telephone Conduit (S.U.E.*)	-----
Unknown Utility (S.U.E.*)	-----
Recorded Television Cable	-----
Designated Television Cable (S.U.E.*)	-----
Recorded Fiber Optics Cable	-----
Designated Fiber Optics Cable (S.U.E.*)	-----
Exist. Water Meter	-----
U/G Test Hole (S.U.E.*)	-----
Abandoned According to U/G Record	-----
End of Information	-----

BOUNDARIES & PROPERTIES

State Line	-----
County Line	-----
Township Line	-----
City Line	-----
Reservation Line	-----
Property Line	-----
Property Line Symbol	-----
Exist. Iron Pin	-----
Property Corner	-----
Property Monument	-----
Property Number	-----
Parcel Number	-----
Fence Line	-----
Existing Wetland Boundaries	-----
High Quality Wetland Boundary	-----
Medium Quality Wetland Boundaries	-----
Low Quality Wetland Boundaries	-----
Proposed Wetland Boundaries	-----
Existing Endangered Animal Boundaries	-----
Existing Endangered Plant Boundaries	-----

BUILDINGS & OTHER CULTURE

Buildings	-----
Foundations	-----
Area Outline	-----
Gate	-----
Gas Pump Vent or U/G Tank Cap	-----
Church	-----
School	-----
Park	-----
Cemetery	-----
Dam	-----
Sign	-----
Well	-----
Small Mine	-----
Swimming Pool	-----

TOPOGRAPHY

Loose Surface	-----
Hard Surface	-----
Change in Road Surface	-----
Curb	-----
Right of Way Symbol	-----
Guard Post	-----
Paved Walk	-----
Bridge	-----
Box Culvert or Tunnel	-----
Ferry	-----
Culvert	-----
Footbridge	-----
Trail, Footpath	-----
Light House	-----

VEGETATION

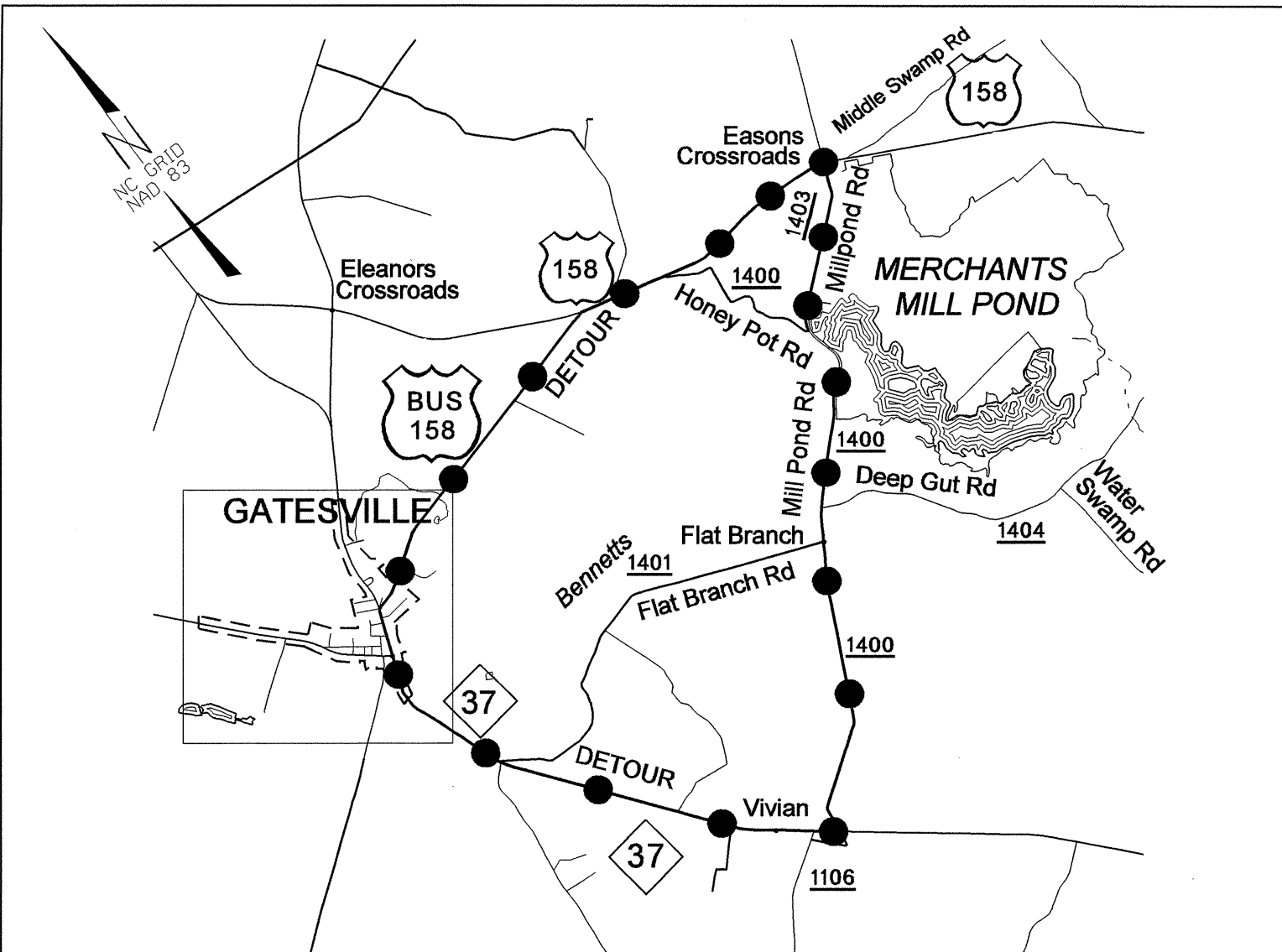
Single Tree	-----
Single Shrub	-----
Hedge	-----
Woods Line	-----
Orchard	-----
Vineyard	-----

RAILROADS

Standard Gauge	-----
RR Signal Milepost	-----
Switch	-----

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SURVEY CONTROL SHEET B-3640

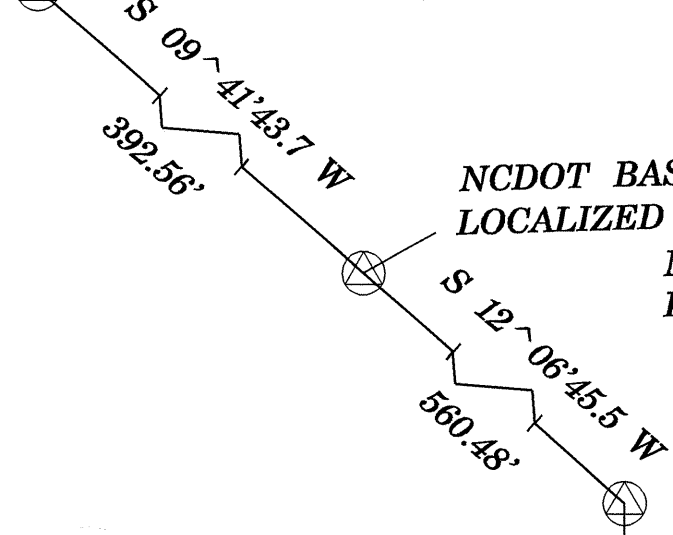


VICINITY MAP

CONTROL DATA

BL	POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
9		BL-9	985501.1020	2676071.3620	31.11'	OUTSIDE PROJECT LIMITS	
10		BL-10	985114.1530	2676005.2510	27.74'	OUTSIDE PROJECT LIMITS	
1		BL-1	984566.1500	2676122.8590	10.85'	OUTSIDE PROJECT LIMITS	
2		BL-2	984374.4728	2676302.4320	11.34'	OUTSIDE PROJECT LIMITS	
3		BL-3	984074.6790	2676700.5640	11.57'	13+38.24	12.63' RT
4		NCGS MON "COLEMAN"	983820.6668	2677080.6300	13.38'	17+87.02	36.64' LT
5		BL-5	983403.4400	2677225.3630	12.79'	OUTSIDE PROJECT LIMITS	
8		BL-8	982920.2860	2677115.2420	12.07'	OUTSIDE PROJECT LIMITS	

NCDOT BASELINE STATION "BL-9"
LOCALIZED PROJECT COORDINATES
N = 985,501.1020
E = 267,6071.3620



NCDOT BASELINE STATION "BL-10"
LOCALIZED PROJECT COORDINATES
N = 985,114.1530
E = 267,6005.2510

NCDOT BASELINE STATION "BL-1"
LOCALIZED PROJECT COORDINATES
N = 984,566.1500
E = 2,676,122.8590

STA. 12+45.00 -L- BEGIN TIP PROJECT B-3640

LOCALIZED PROJECT COORDINATES
N = 984,140.5512
E = 2,676,633.3765

TO EASONS CROSSROADS

NCDOT BASELINE STATION "BL-2"
LOCALIZED PROJECT COORDINATES
N = 984,374.4728
E = 2,676,302.4320

STA. 15+80.00 -L- END TIP PROJECT B-3640

LOCALIZED PROJECT COORDINATES
N = 983,939.8976
E = 2,676,901.6320

NCDOT BASELINE STATION "BL-3"
LOCALIZED PROJECT COORDINATES
N = 984,074.6790
E = 2,676,700.5640

NCGS STATION "COLEMAN"
LOCALIZED PROJECT COORDINATES
N = 983,820.6668
E = 2,677,080.6300

NCDOT BASELINE STATION "BL-5"
LOCALIZED PROJECT COORDINATES
N = 983,403.4400
E = 2,677,225.3630

NCDOT BASELINE STATION "BL-8"
LOCALIZED PROJECT COORDINATES
N = 982,920.2860
E = 2,677,115.2420

BENCHMARK DATA

BM 110 ELEVATION = 5.93'
N 984053 E 2676534
L STATION 12+17 130' RIGHT
BRIDGE NAIL IN 8" GUM

BM 111 ELEVATION = 15.88'
N 983636 E 2677261
L STATION 20+13
N 70° 13' 39.7" E DIST 110.98'
PK NAIL SET IN BST PARKING LOT,
NORTHERN CORNER OF CANOE ACCESS AREA

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NC GS FOR MONUMENT "COLEMAN" WITH NAD 83 STATE PLANE GRID COORDINATES OF NORTHING: 983820.6668(±) EASTING: 2677080.630(±) THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 1.0000847 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "COLEMAN" TO -L- STATION 12+45.00 IS N 54°25'36.9" W 549.87 ft ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES VERTICAL DATUM USED IS NGVD 29

NOTES:

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

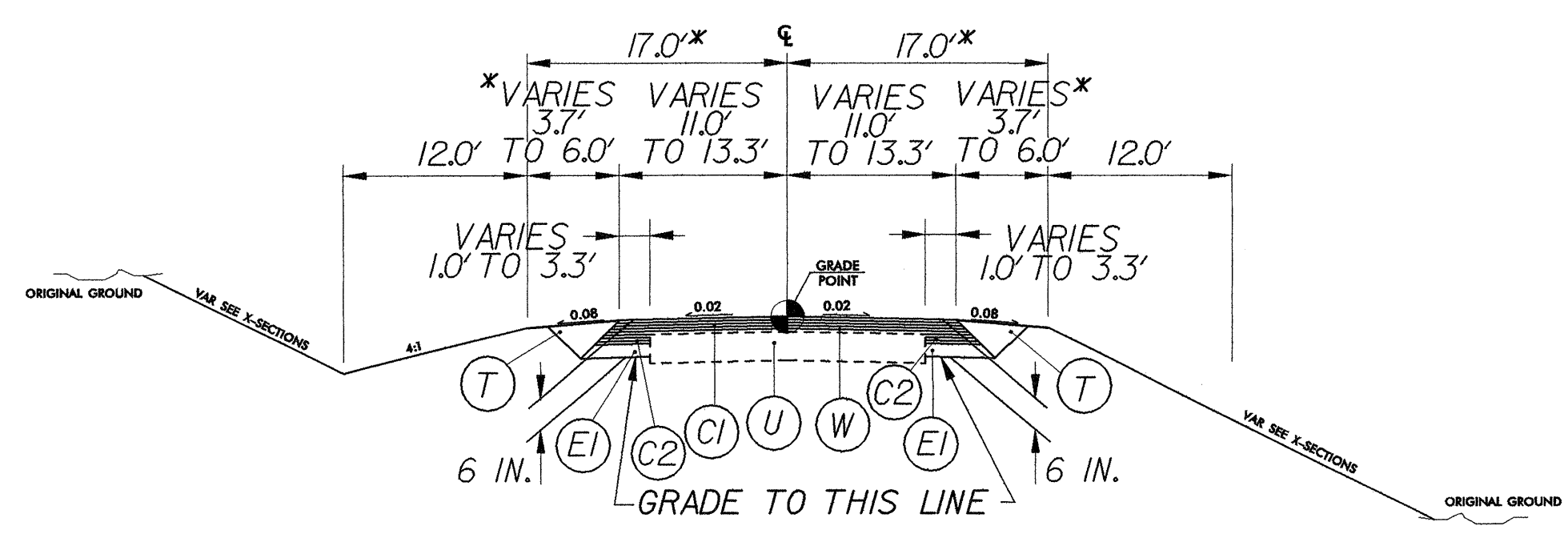
FILE: b3640_ls_control_051019.txt

SITE CALIBRATION PARAMETERS HAVE NOT BEEN DETERMINED FOR THIS PROJECT.

IF FURTHER INFORMATION IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.

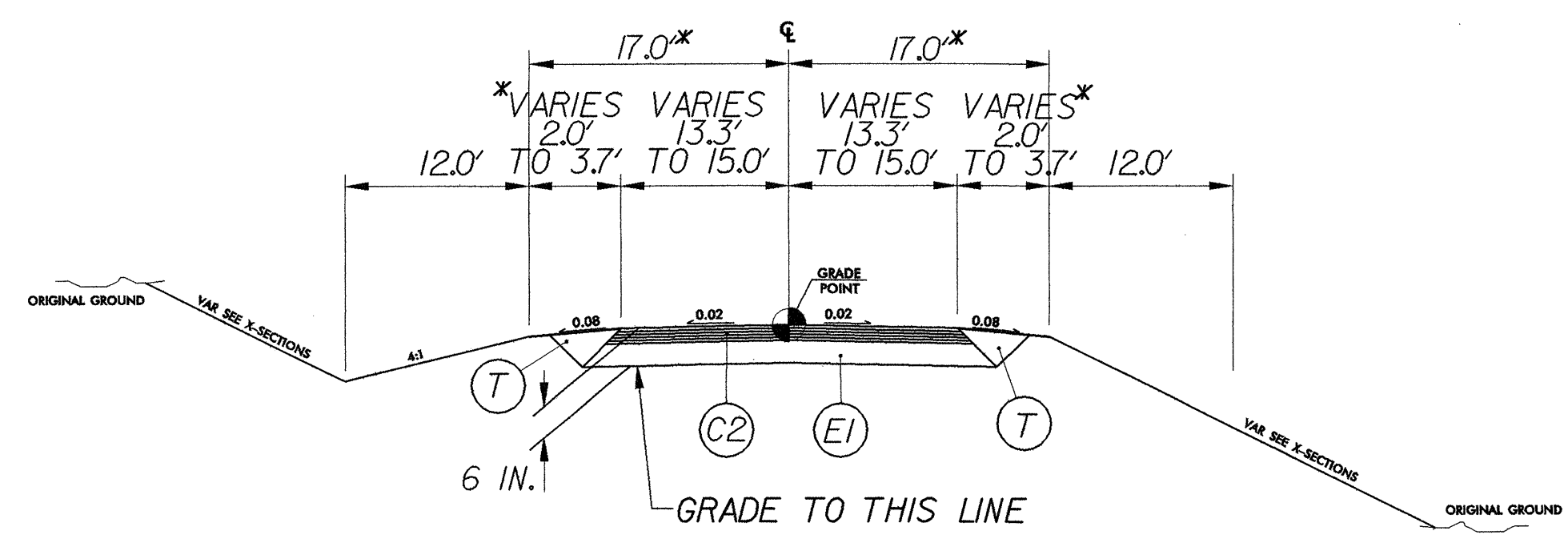
⊙ INDICATES GEODETIC CONTROL MONUMENTS USED OR SET FOR HORIZONTAL PROJECT CONTROL BY THE NCDOT LOCATION AND SURVEYS UNIT.

NOTE: DRAWING NOT TO SCALE



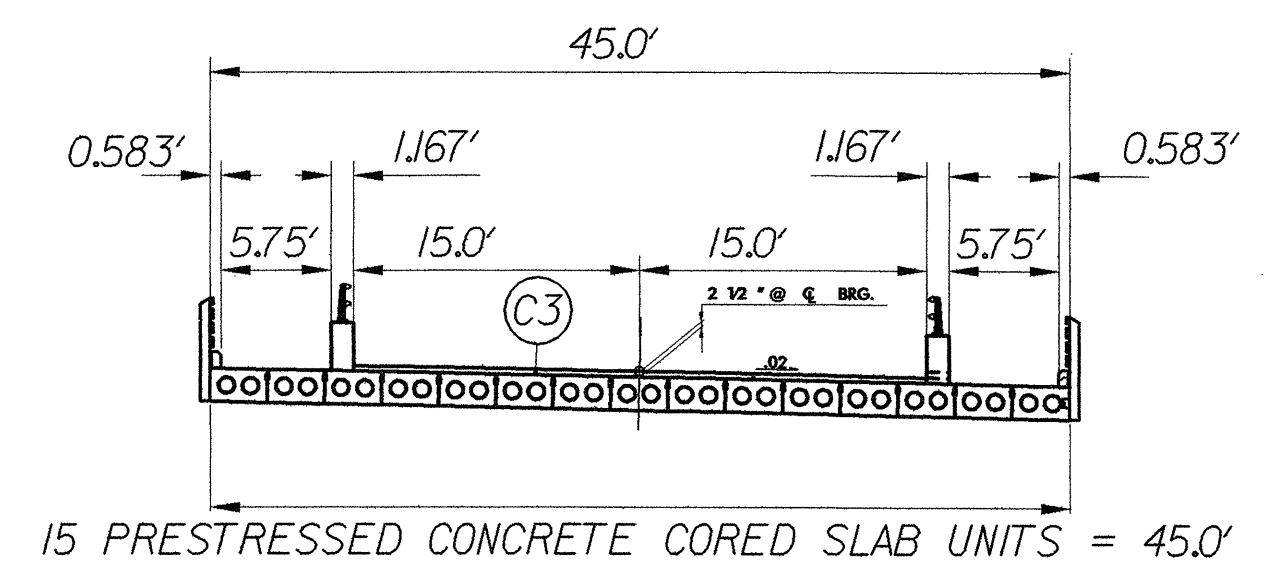
TYPICAL SECTION NO. 1

USE ON: -L-
 TRANSITION FROM EXIST. TO T.S. NO. 1 STA. 12+45.00 TO STA. 12+55.00
 STA. 12+55.00 TO STA. 13+05.00
 STA. 15+18.00 TO STA. 15+68.00
 TRANSITION FROM T.S. NO. 1 TO EXIST. STA. 15+68.00 TO STA. 15+80.00



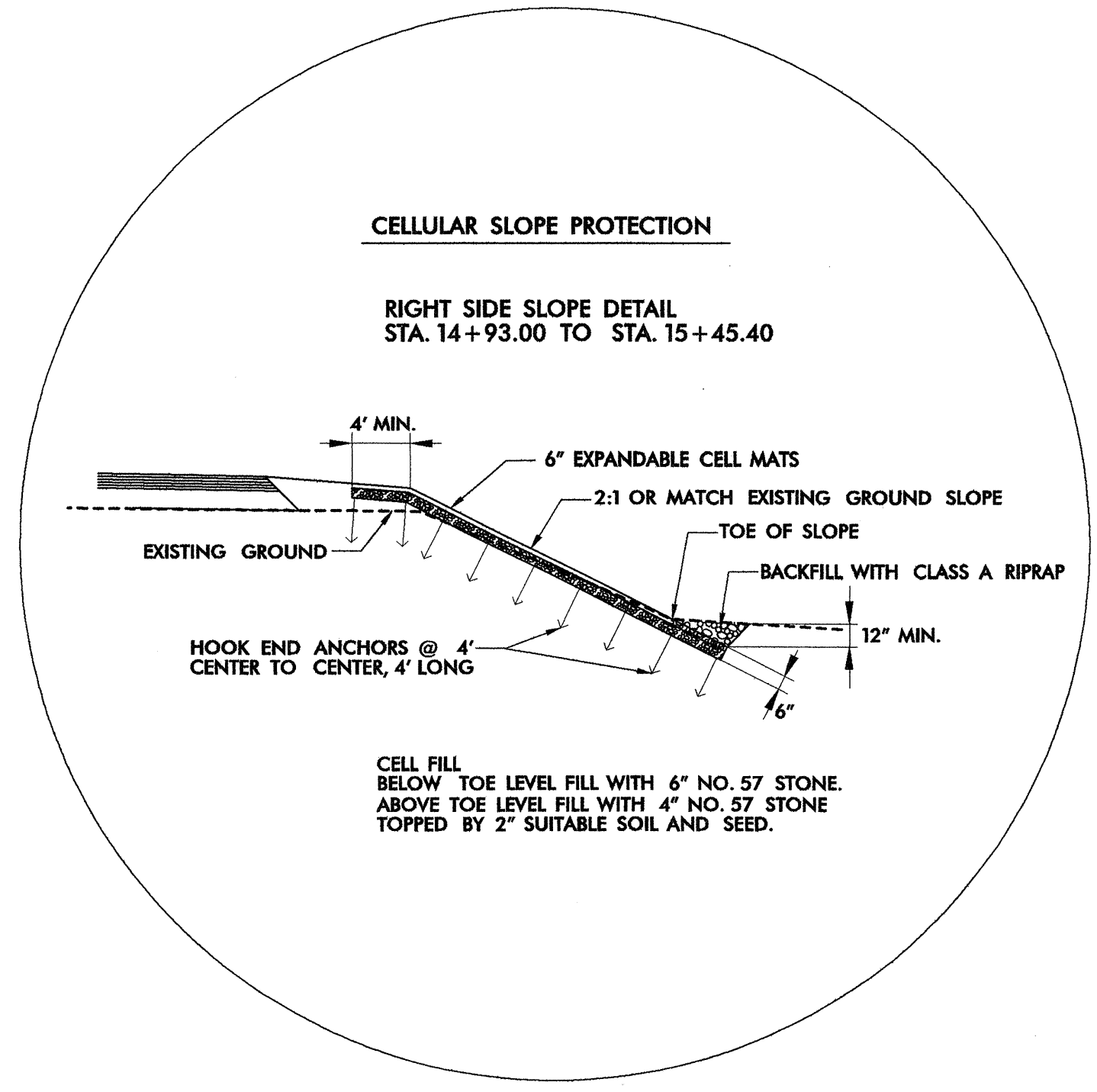
TYPICAL SECTION NO. 2

USE ON: -L-
 STA. 13+05.00 TO STA. 13+44.00 (BEGIN BRIDGE)
 STA. 14+79.00 (END BRIDGE) TO STA. 15+18.00



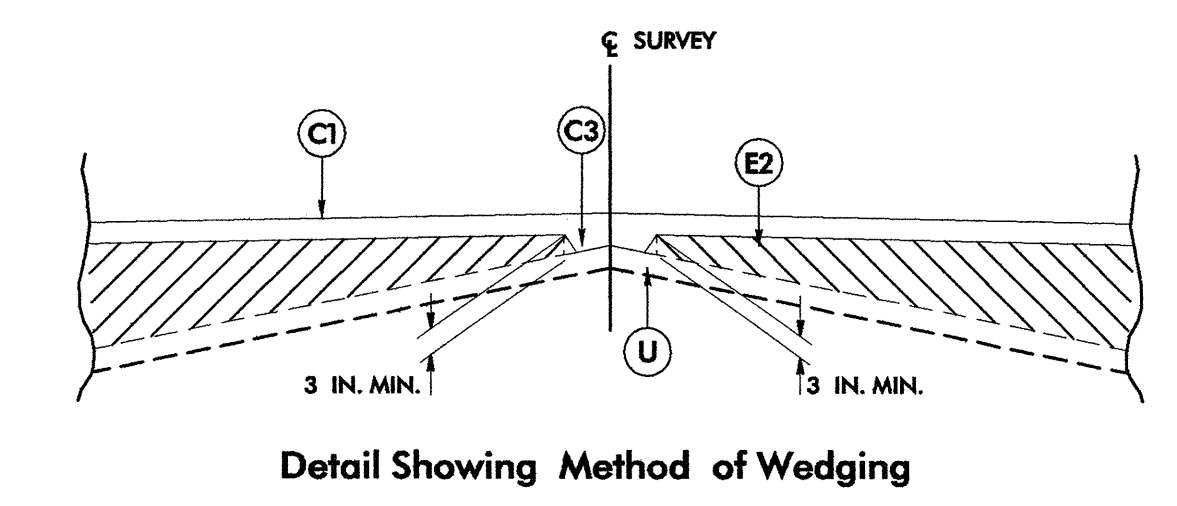
TYPICAL SECTION ON PROPOSED STRUCTURE

USE ON: -L-
 STA. 13+44.00 (BEGIN BRIDGE) TO STA. 14+79.00 (END BRIDGE)



NOTES:
 * TOTAL SHOULDER WIDTH TO BE INCREASED BY 1' WHERE GUARDRAIL IS USED.
 PAVEMENT EDGE SLOPES ARE 1:1 UNLESS OTHERWISE NOTED.

PAVEMENT SCHEDULE	
C1	PROPOSED APPROX. 1.25 IN. ASPHALT CONC. SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 137.5 LBS/SY.
C2	PROPOSED APPROX. 2.5 IN. ASPHALT CONC. SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 137.5 LBS/SY IN EACH OF TWO LAYERS.
C3	PROPOSED VAR. DEPTH. ASPHALT CONC. SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 110 LBS PER SY PER 1 IN. DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 1.0 IN. NOR GREATER THAN 1.5 IN. IN DEPTH.
E1	PROPOSED APPROX. 3.5 IN. ASPHALT CONC. BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 399 LBS/SY.
E2	PROPOSED VAR. DEPTH ASPHALT CONC. BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 114 LBS PER SY PER 1 IN. DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 3.0 IN. NOR GREATER THAN 5.5 IN. IN DEPTH.
T	EARTH MATERIAL
U	EXISTING PAVEMENT
W	WEDGING



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 REVISIONS
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8/17/99

REVISIONS

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DIVISION OF HIGHWAYS
 STATE OF NORTH CAROLINA

SUMMARY OF QUANTITIES

PROJECT REFERENCE NO. B-3640	SHEET NO. 3
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
 421 Fayetteville Street Suite 1202 RALEIGH, N. C. 27601	 SUNGATE DESIGN GROUP, P.A. 95 JONES FRENCH ROAD RALEIGH, N.C. 27604

STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS ROADWAY SUMMARY OF QUANTITIES FOR CONTRACT - C201471									
ItemNumber	Sec #	Quantity	Unit	Description	ItemNumber	Sec #	Quantity	Unit	Description
0000100000-N	800	Lump Sum		MOBILIZATION	4450000000-N	1150	240	HR	FLAGGER
0029000000-N	SP	Lump Sum		REINFORCED BRIDGE APPROACH FILL, STATION ***** (14+1.50)	6000000000-E	1605	600	LF	TEMPORARY SILT FENCE
0043000000-N	226	Lump Sum		GRADING	6006000000-E	1610	75	TON	STONE FOR EROSION CONTROL, CLASS A
0050000000-E	226	1	ACR	SUPPLEMENTARY CLEARING & GRUB- BING	6012000000-E	1610	5	TON	SEDIMENT CONTROL STONE
0318000000-E	300	2	TON	FOUNDATION CONDITIONING MATE- RIAL, MINOR STRS	6015000000-E	1615	0.5	ACR	TEMPORARY MULCHING
0660000000-E	310	18	LF	***BIT COAT CS PIPE CULVERTS, TYPE A ***** THICK (15", 0.064")	6018000000-E	1620	50	LB	SEED FOR TEMPORARY SEEDING
0680000000-E	310	2	EA	*** BIT COAT CS PIPE ELBOWS, TYPE A ***** THICK (15", 0.064")	6021000000-E	1620	0.25	TON	FERTILIZER FOR TEMPORARY SEED- ING
1489000000-E	610	95	TON	ASPHALT CONC BASE COURSE, TYPE B25.0B	6029000000-E	SP	600	LF	SAFETY FENCE
1525000000-E	610	115	TON	ASPHALT CONC SURFACE COURSE, TYPE SF9.5A	6030000000-E	1630	10	CY	SILT EXCAVATION
1560000000-E	620	12	TON	ASPHALT BINDER FOR PLANT MIX, GRADE PG 64-22	6036000000-E	1631	50	SY	MATTING FOR EROSION CONTROL
2286000000-N	840	1	EA	MASONRY DRAINAGE STRUCTURES	6042000000-E	1632	50	LF	1/4" HARDWARE CLOTH
2367000000-N	840	1	EA	FRAME WITH TWO GRATES, STD 840.29	6048000000-E	SP	225	SY	FLOATING TURBIDITY CURTAIN
2556000000-E	846	27	LF	SHOULDER BERM GUTTER	6084000000-E	1660	0.75	ACR	SEEDING & MULCHING
3150000000-N	862	5	EA	ADDITIONAL GUARDRAIL POSTS	6087000000-E	1660	0.5	ACR	MOWING
3435000000-N	SP	4	EA	GENERIC GUARDRAIL ITEM PAINTED ANCHOR UNITS, TYPE 350	6090000000-E	1661	50	LB	SEED FOR REPAIR SEEDING
3435000000-N	SP	4	EA	GENERIC GUARDRAIL ITEM PAINTED ANCHOR UNITS, TYPE III	6093000000-E	1661	0.25	TON	FERTILIZER FOR REPAIR SEEDING
3628000000-E	876	3	TON	RIP RAP, CLASS I	6096000000-E	1662	50	LB	SEED FOR SUPPLEMENTAL SEEDING
3642000000-E	876	8	TON	RIP RAP, CLASS A	6108000000-E	1665	0.5	TON	FERTILIZER TOPDRESSING
3656000000-E	876	6	SY	FILTER FABRIC FOR DRAINAGE	6114000000-N	SP	2	HR	SPECIALIZED HAND MOWING
3678000000-E	SP	1,800	SF	GENERIC EROSION CONTROL ITEM CELLULAR SLOPE PROTECTION	6117000000-N	SP	8	EA	RESPONSE FOR EROSION CONTROL
4410000000-E	1110	94	SF	WORK ZONE SIGNS (BARRICADE MOUNTED)					
4435000000-N	1135	30	EA	CONES					
4445000000-E	1145	96	LF	BARRICADES (TYPE III)					

COMPUTED BY: _____ DATE: _____
 CHECKED BY: _____ DATE: _____

PROJECT REFERENCE NO. B-3640		SHEET NO. 3A	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
421 Fayetteville Street Raleigh, N.C. 27601		SUNGATE DESIGN GROUP, P.A. 915 JAMES FRANKLIN ROAD RALEIGH, NORTH CAROLINA 27608	

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

SUMMARY OF EARTHWORK
IN CUBIC YARDS

LOCATION	UNCLASSIFIED EXCAVATION	UNDERCUT	EMBANKMENT + %	BORROW	WASTE
SUMMARY #1					
-L- 12+45.00 TO -L- 13+44.00	8		52	44	
SUBTOTAL: SUMMARY #1	8		52	44	
SUMMARY #2					
-L- 14+79.00 TO -L- 15+80.00	6		159	153	
SUBTOTAL: SUMMARY #2	6		159	153	
SUBTOTAL	14		211	197	
EST. TO REPLACE TOPSOIL ON BORROW PITS				10	
TOTAL	14		211	207	
SAY	20			220	

**EXISTING ASPHALT PAVEMENT
REMOVAL SUMMARY**

LINE	STATION TO STATION	LOCATION	SQUARE YARDS
-L-	Sta. 13+05.00 TO Sta. 13+48.60	LT & RT	97
-L-	Sta. 14+54.20 TO Sta. 15+18.00	LT & RT	142
		TOTAL	239
		SAY	250 SY

REVISIONS

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

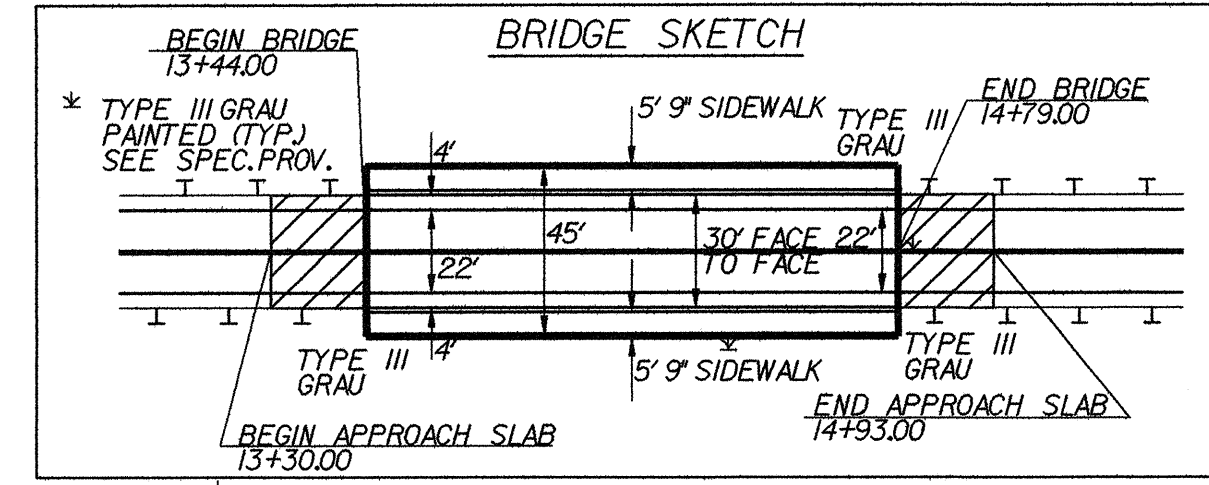
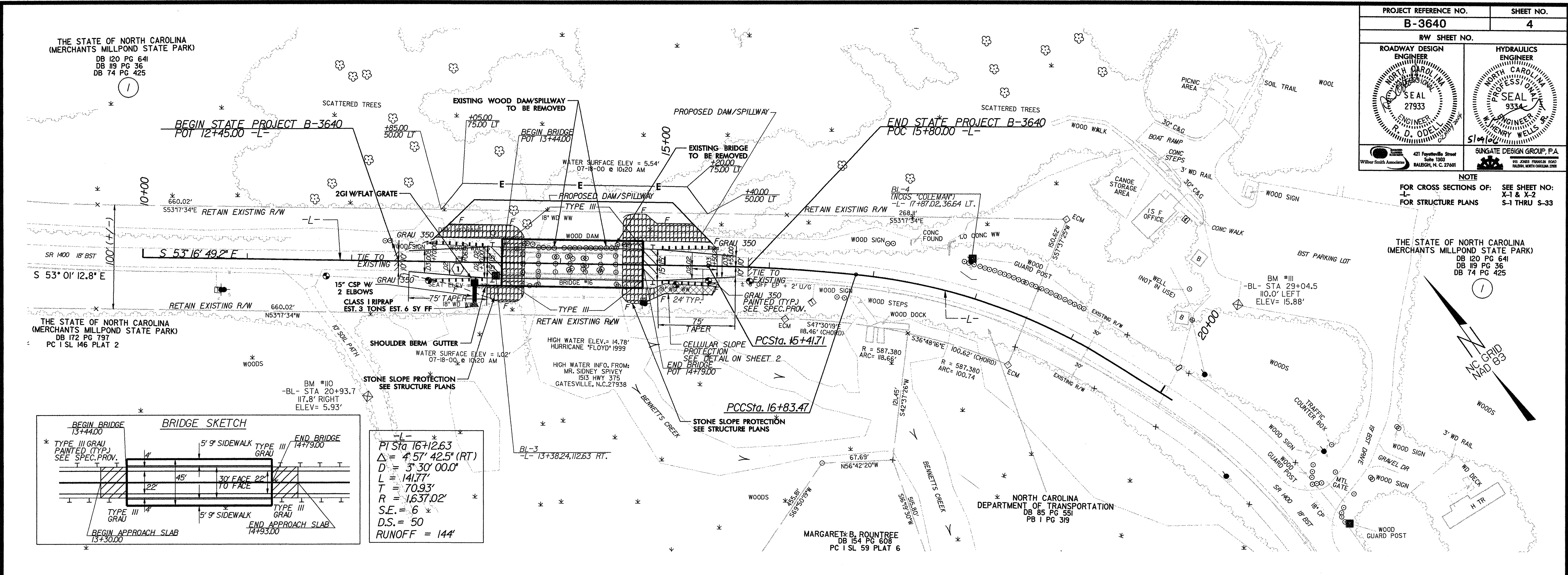
STATION	LOCATION (LT, RT, OR CL)	STRUCTURE NO.	TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	SLOPE CRITICAL	CLASS III R.C. PIPE (UNLESS NOTED OTHERWISE)									BITUMINOUS COATED C.S. PIPE TYPE B (UNLESS NOTED OTHERWISE)				ENDWALLS		CORR. STEEL ELBOWS NO. & SIZE	CONC. COLLARS CL. "B" C.Y. STD. 840.72	CONC. & BRICK PIPE PLUG, C.Y. STD. 840.71	PIPE REMOVAL LIN. FT.	REMARKS											
							15"	15"	18"	24"	30"	36"	12"	15"	18"	24"	30"	36"	42"	48"	15" SIDE DRAIN PIPE						18" SIDE DRAIN PIPE	24" SIDE DRAIN PIPE	R.C.P.	C.S.P.	STD. 838.01 OR STD. 838.11 (UNLESS NOTED OTHERWISE)	QUANTITIES FOR DRAINAGE STRUCTURES	TOTAL QUANTITY FOR PIPE COLLARS	TYPE OF GRATE	IN	F	G
-L- 13+18	RT	1	11.10	8.35	3.40																																
TOTAL							18																														

GUARDRAIL SUMMARY

SURVEY LINE	BEG. STA.	END STA.	LOCATION	LENGTH			WARRANT POINT		"N" DIST. FROM E.O.L.	TOTAL SHOULDER WIDTH	FLARE LENGTH		W		ANCHORS					IMPACT ATTENUATOR TYPE 350			SINGLE FACED CONCRETE BARRIERS	REMARKS											
				STRAIGHT	SHOP CURVED	DOUBLE FACED	APPROACH END	TRAILING END			APPROACH END	TRAILING END	APPROACH END	TRAILING END	PAINTED GRAU 350	CAT-1	AT-1	B-77	PAINTED TYPE III	EA	G	NG													
-L-	12+75.25	13+44.00	RT	68.75				13+44.00	4.0	7.0																									ANCHOR UNITS ONLY. PAINTED SEE SPEC. PROV.
-L-	12+75.25	13+44.00	LT	68.75					4.0	7.0																								ANCHOR UNITS ONLY. PAINTED SEE SPEC. PROV.	
-L-	14+79.00	15+47.75	RT	68.75					4.0	7.0																								ANCHOR UNITS ONLY. PAINTED SEE SPEC. PROV.	
-L-	14+79.00	15+47.75	LT	68.75					4.0	7.0																								ANCHOR UNITS ONLY. PAINTED SEE SPEC. PROV.	
SUBTOTAL				275																															
	LESS ANCHOR	DEDUCTIONS																																	
	PAINTED TYPE III	4 @ 18.75'	=	-75.00'																															
	PAINTED GRAU 350	4 @ 50'	=	-200.00'																															
TOTAL				0'																															
			SAY	0'																															5 EA. ADDITIONAL GUARDRAIL POSTS

\$ DATES
\$ FILES
\$ TIMES

NOTE
FOR CROSS SECTIONS OF: SEE SHEET NO: X-1 & X-2
FOR STRUCTURE PLANS: S-1 THRU S-33



PI Sta 16+12.63
 $\Delta = 4.57' 42.5" (RT)$
 $D = 3' 30' 00.0"$
 $L = 141.77'$
 $T = 70.93'$
 $R = 1,637.02'$
 $S.E. = .6$
 $D.S. = 50$
 $RUNOFF = 144'$

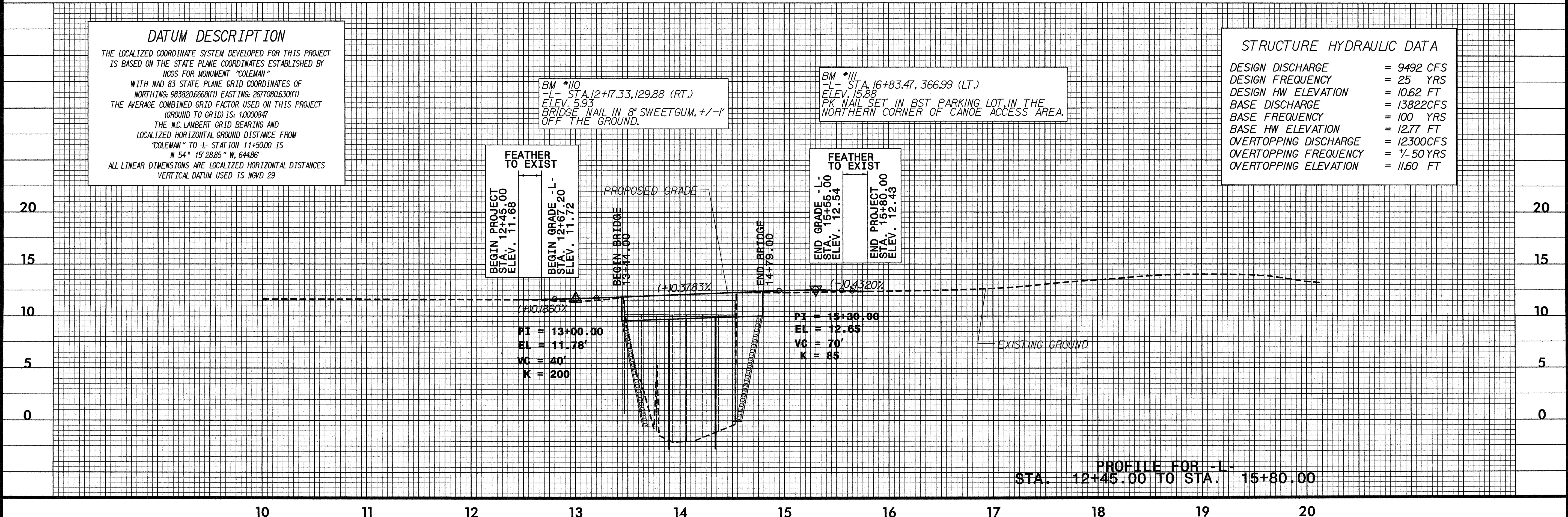
DATUM DESCRIPTION
 THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCGS FOR MONUMENT "COLEMAN" WITH MAD 83 STATE PLANE GRID COORDINATES OF NORTHING: 9838206668(11) EASTING: 2677080630(11) THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 1.0000847 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "COLEMAN" TO -L- STATION 11+50.00 IS N 54° 15' 28.85" W, 644.88' ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES VERTICAL DATUM USED IS NGVD 29

BM #110
 -L- STA. 12+77.33, 129.88 (RT.)
 ELEV. 9.93'
 BRIDGE NAIL IN 8" SWEETGUM, +/- 1' OFF THE GROUND.

BM #111
 -L- STA. 16+83.47, 366.99 (LT.)
 ELEV. 15.88'
 PK NAIL SET IN BST PARKING LOT IN THE NORTHERN CORNER OF CANOE ACCESS AREA.

STRUCTURE HYDRAULIC DATA

DESIGN DISCHARGE	= 9492 CFS
DESIGN FREQUENCY	= 25 YRS
DESIGN HW ELEVATION	= 10.62 FT
BASE DISCHARGE	= 13822 CFS
BASE FREQUENCY	= 100 YRS
BASE HW ELEVATION	= 12.77 FT
OVERTOPPING DISCHARGE	= 12300 CFS
OVERTOPPING FREQUENCY	= 7-50 YRS
OVERTOPPING ELEVATION	= 11.60 FT



8/17/99
 REVISIONS
 5/2/2006 2:24:45 PM
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