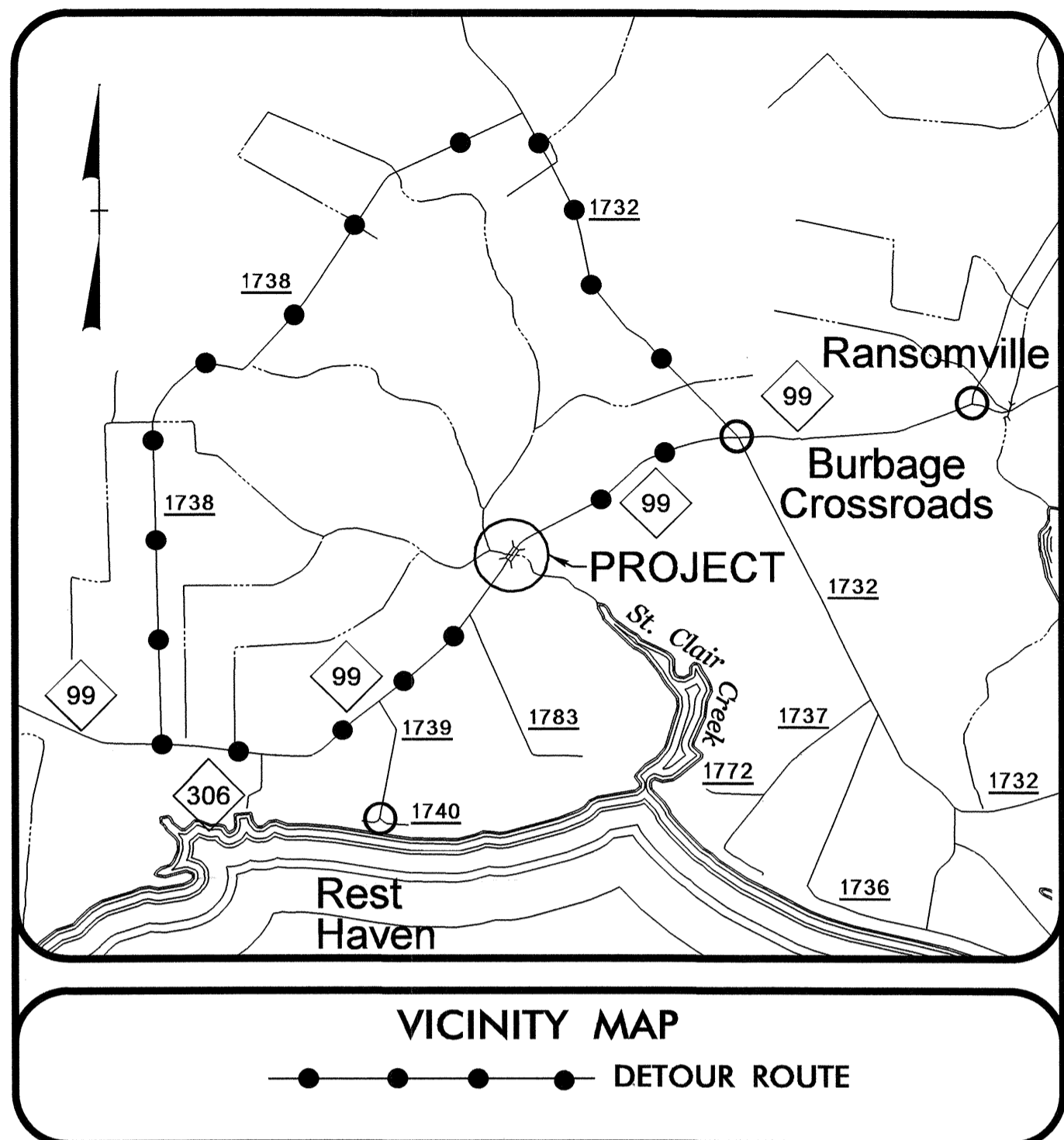


09.08/09

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



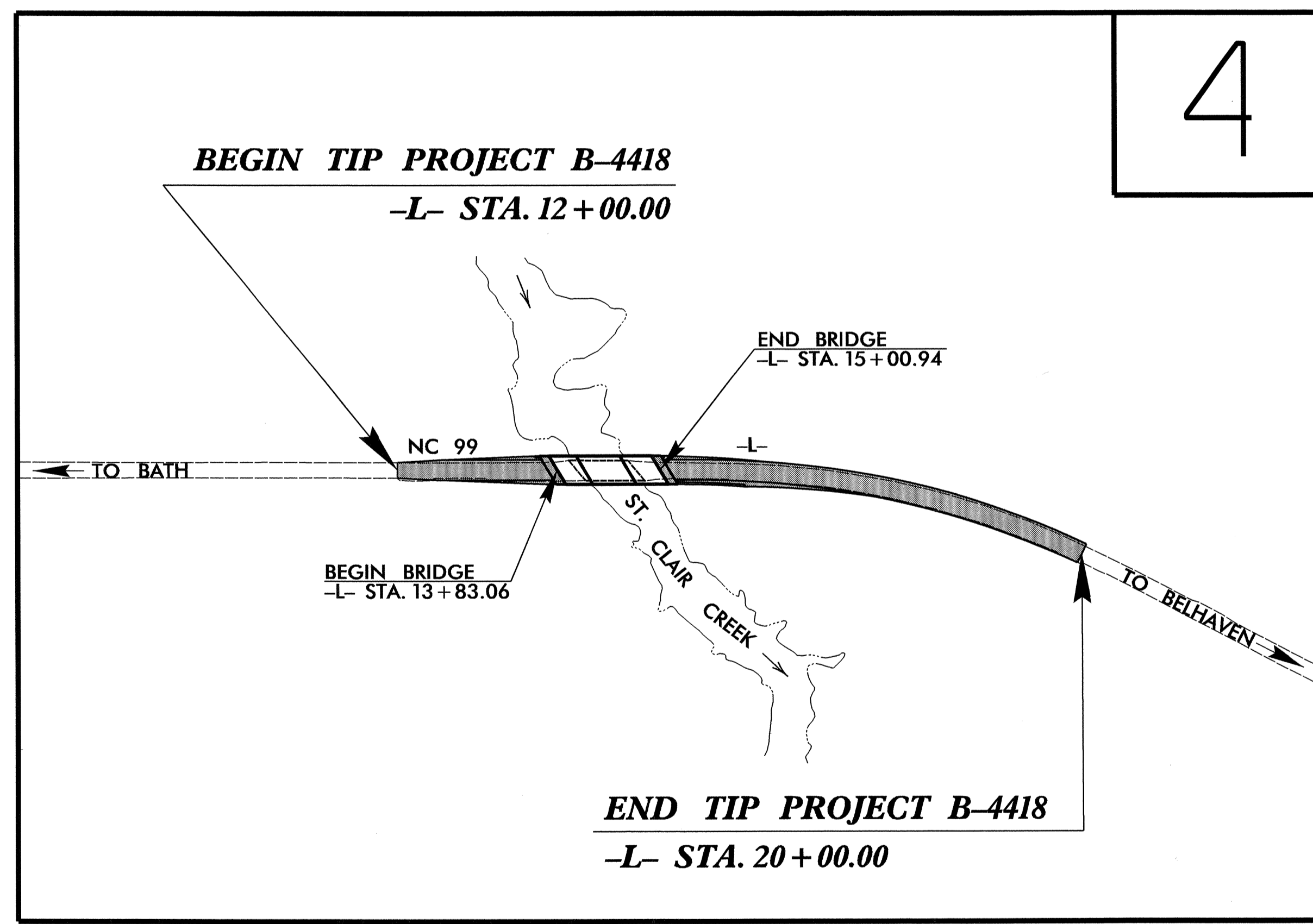
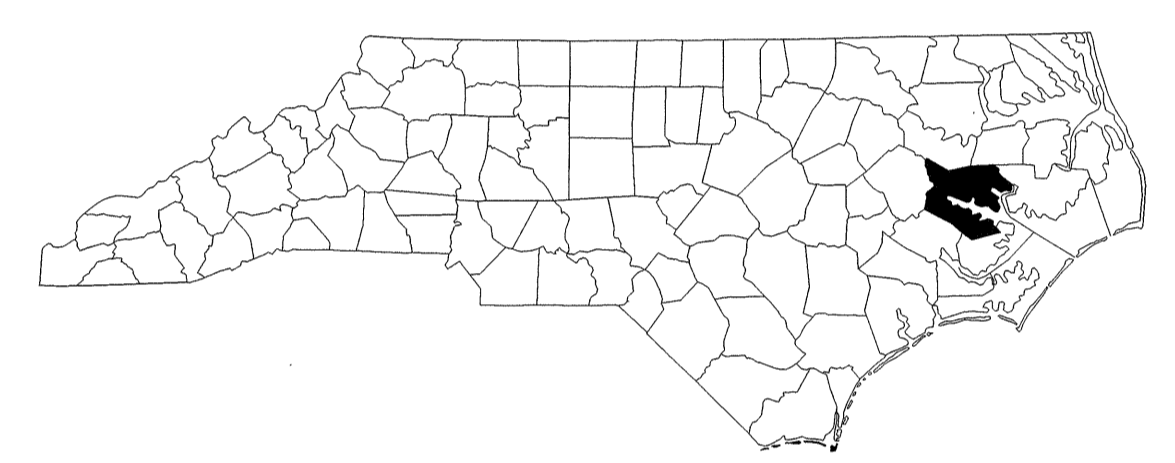
STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

# BEAUFORT COUNTY

LOCATION: BRIDGE NO. 54 OVER ST. CLAIR CREEK ON NC 99

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

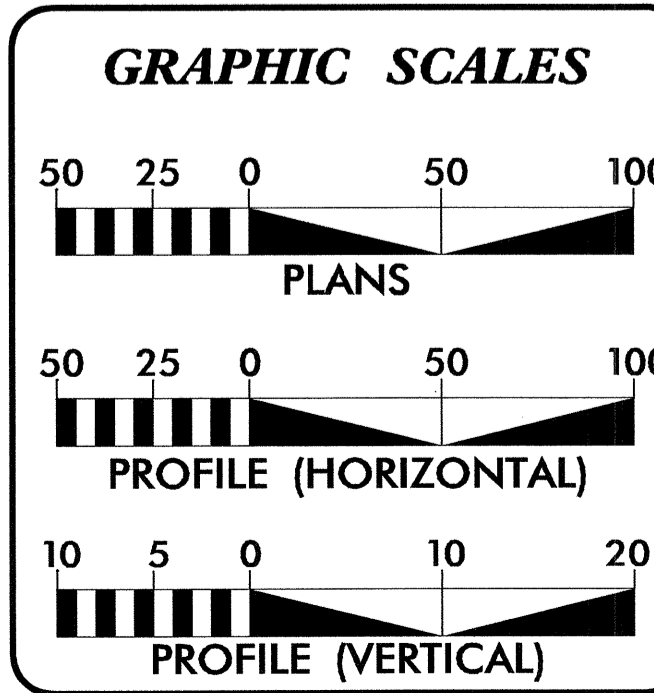
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4418	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
38359.1.1	BRSTP-0099(5)	PE	
38359.2.1	BRSTP-0099(5)	RW, UTIL.	
38359.3.1	BRSTP-0099(5)	CONST.	



TIP PROJECT: B-4418

CONTRACT: C202882

\*\*DESIGN EXCEPTION REQUIRED FOR HORIZONTAL STOPPING SIGHT DISTANCE OF 443'.



**DESIGN DATA**

ADT 2012 =	1,475
ADT 2032 =	2,200
DHV =	13%
D =	55%
T =	11% *
**V =	60 MPH
* (TTST 4% + DUALS 7%)	
FUNC CLASS =	MAJOR COLLECTOR
REGIONAL TIER	

**PROJECT LENGTH**

LENGTH ROADWAY TIP PROJECT B-4418	=	0.130 MILES
LENGTH STRUCTURE TIP PROJECT B-4418	=	0.022 MILES
TOTAL LENGTH TIP PROJECT B-4418	=	0.152 MILES

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

2012 STANDARD SPECIFICATIONS	
RIGHT OF WAY DATE: SEPTEMBER 23, 2011	GARY LOVERING, PE PROJECT ENGINEER
LETTING DATE: SEPTEMBER 18, 2012	SUSAN C. LANCASTER, PE PROJECT DESIGN ENGINEER

**HYDRAULICS ENGINEER**

SIGNATURE: *W. Stalton Cail*

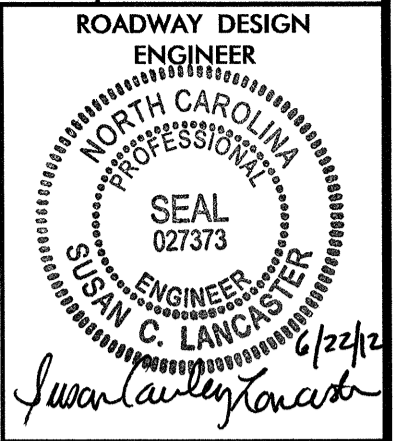
**ROADWAY DESIGN ENGINEER**

SIGNATURE: *Susan C. Lancaster*



21-JUN-2012 16:26  
R:\Roadway\Proj\B4418\_Rdy-fsh.dgn  
\$\$\$\$\$USERNAME\$\$\$\$\$

# STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS



INDEX OF SHEETS:

1	TITLE SHEET
1-A	"INDEX OF SHEETS, GENERAL NOTES AND LIST OF STANDARDS"
1-B	CONVENTIONAL SYMBOLS
1-C	SURVEY CONTROL SHEET
2	PAVEMENT SCHEDULE AND TYPICAL SECTIONS
3	SUMMARY OF QUANTITIES
3-A	"SUMMARIES OF DRAINAGE QUANTITIES, GUARDRAIL, EARTHWORK, REMOVAL OF EXISTING ASPHALT PAVEMENT, SHOULDER BERM GUTTER, RIP RAP & DDE QUANTITIES, AND PARCEL INDEX TABLE"
4	PLAN SHEET
5	PROFILE SHEET
TMP-1 THROUGH TMP-1B	TRANSPORTATION MANAGEMENT PLAN
PM-1 THROUGH PM-2	PAVEMENT MARKING PLANS
EC-1 THROUGH EC-4	EROSION CONTROL PLANS
RF-1	REFORESTATION PLANS
UC-1 THROUGH UC-7	UTILITY CONSTRUCTION PLANS
UO-1 THROUGH UO-2	UTILITIES BY OTHER PLANS
X-1A	CROSS-SECTION SUMMARY SHEET
X-1 THROUGH X-3	CROSS-SECTIONS
S-1 THROUGH S-29	STRUCTURE PLANS

2012 ROADWAY ENGLISH STANDARD DRAWINGS

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

STD.NO.	TITLE
DIVISION 2 - EARTHWORK	
200.03	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
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	
815.03	Pipe Underdrain and Blind Drain
840.00	Concrete Base Pad for Drainage Structures
840.25	Anchorage for Frames - Brick or Concrete or Precast
840.29	Frames and Narrow Slot Flat Grates
840.35	Traffic Bearing Grated Drop Inlet - for Cast Iron Double Frame and Grates
840.46	Traffic Bearing Precast Drainage Structure
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
876.02	Guide for Rip Rap at Pipe Outlets

GENERAL NOTES: 2012 SPECIFICATIONS

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

GRADING AND SURFACING OR RESURFACING AND WIDENING:

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

CLEARING:

CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD 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 Tideland EMC (power)

TriCounty Telecom (Telephone)

Beaufort County (water line)

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 OTHERS.

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

Note: Not to Scale

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

# 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	⑩ 23
Existing Fence Line	-----
Proposed Woven Wire Fence	○
Proposed Chain Link Fence	□
Proposed Barbed Wire Fence	◇
Existing Wetland Boundary	----- WLB
Proposed Wetland Boundary	----- WLB
Existing Endangered Animal Boundary	----- EAB
Existing Endangered Plant Boundary	----- EPB
Known Soil Contamination: Area or Site	☠ ☠
Potential Soil Contamination: Area or Site	❓ ❓

## BUILDINGS AND OTHER CULTURE:

Gas Pump Vent or U/G Tank Cap	○
Sign	○ 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	○ CSX TRANSPORTATION 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	----- RW
Proposed Right of Way Line with Iron Pin and Cap Marker	----- RW
Proposed Right of Way Line with Concrete or Granite RW Marker	----- RW
Proposed Control of Access Line with Concrete C/A Marker	----- C/A
Existing Control of Access	-----
Proposed Control of Access	-----
Existing Easement Line	----- E
Proposed Temporary Construction Easement	----- E
Proposed Temporary Drainage Easement	----- TDE
Proposed Permanent Drainage Easement	----- PDE
Proposed Permanent Drainage / Utility Easement	----- DUE
Proposed Permanent Utility Easement	----- PUE
Proposed Temporary Utility Easement	----- TUE
Proposed Aerial Utility Easement	----- AUE
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 Curb Ramp	----- CR
Existing Metal Guardrail	-----
Proposed Guardrail	-----
Existing Cable Guiderail	-----
Proposed Cable Guiderail	-----
Equality Symbol	⊕
Pavement Removal	-----
VEGETATION:	
Single Tree	○
Single Shrub	○
Hedge	-----
Woods Line	-----

Orchard	-----
Vineyard	-----

## EXISTING STRUCTURES:

MAJOR:	
Bridge, Tunnel or Box Culvert	----- 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	-----
Designated U/G Water Line (S.U.E.*)	-----
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	-----
Designated U/G Gas Line (S.U.E.*)	-----
Above Ground Gas Line	----- A/G Gas

## SANITARY SEWER:

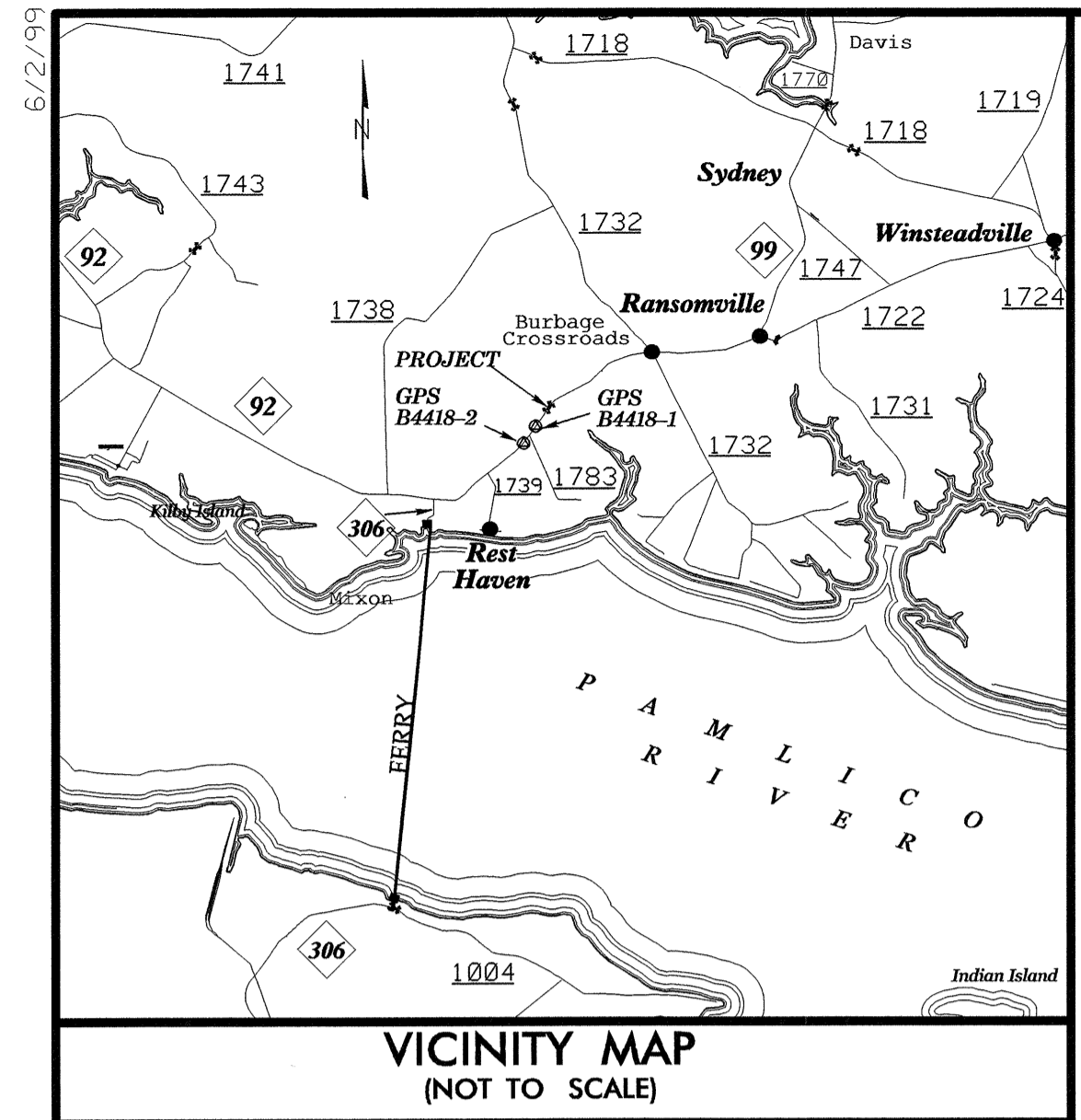
Sanitary Sewer Manhole	⊕
Sanitary Sewer Cleanout	⊕
U/G Sanitary Sewer Line	----- SS
Above Ground Sanitary Sewer	----- A/G Sanitary Sewer
Recorded SS Forced Main Line	----- FSS
Designated SS Forced Main Line (S.U.E.*)	----- FSS

## 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	□
Underground Storage Tank, Approx. Loc.	⊕
A/G Tank; Water, Gas, Oil	□
Geoenvironmental Boring	⊗
U/G Test Hole (S.U.E.*)	⊗
Abandoned According to Utility Records	AATUR
End of Information	E.O.I.

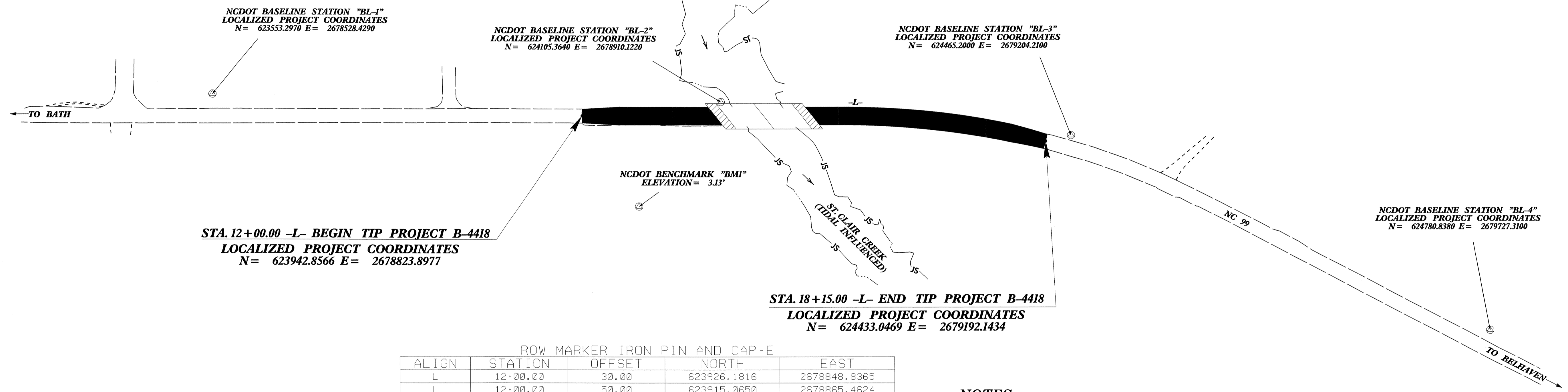
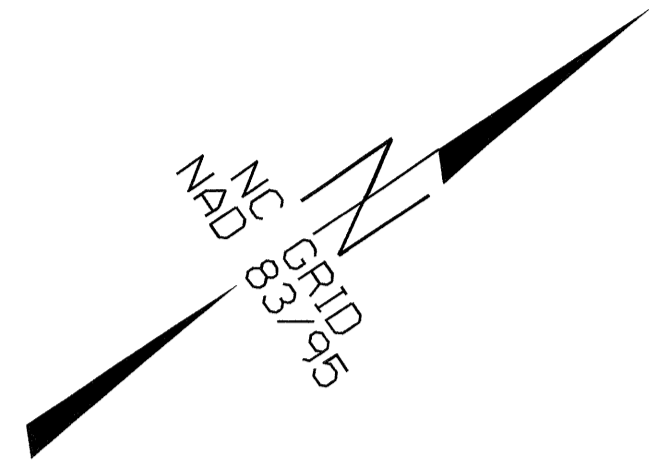


# SURVEY CONTROL SHEET B-4418



BL	POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
	1	BL-1	623553.2970	2678528.4290	7.52	OUTSIDE PROJECT LIMITS	
	2	BL-2	624105.3640	2678910.1220	3.56	13+83.02	18.65 LT
	3	BL-3	624465.2000	2679204.2100	2.93	18+44.88	16.48 LT
	4	BL-4	624780.8380	2679727.3100	5.74	OUTSIDE PROJECT LIMITS	
	GPS1	B4418-1	623214.3500	2678313.0850	6.37	OUTSIDE PROJECT LIMITS	
	GPS2	B4418-2	622368.7140	2677722.9810	6.55	OUTSIDE PROJECT LIMITS	

.....  
 BMI ELEVATION = 3.13  
 N 623939 E 2678965  
 L STATION 12+75.00 120 RIGHT  
 R/R SPIKE SET IN 14" PINE  
 .....



ROW MARKER IRON PIN AND CAP-E

ALIGN	STATION	OFFSET	NORTH	EAST
L	12+00.00	30.00	623926.1816	2678848.8365
L	12+00.00	50.00	623915.0650	2678865.4624
L	12+00.00	-30.00	623959.5316	2678798.9588
L	12+00.00	-50.00	623970.6482	2678782.3329
L	15+43.63	-50.00	624256.3087	2678973.3355
L	15+43.63	50.00	624200.7255	2679056.4649
L	17+29.32	-50.00	624407.8330	2679094.3129
L	17+29.32	50.00	624339.0738	2679166.9225
L	18+15.00	30.00	624410.6171	2679212.0659
L	18+15.00	-30.00	624455.4767	2679172.2210

ROW MARKER PERMANENT EASEMENT-E

ALIGN	STATION	OFFSET	NORTH	EAST
L	15+43.63	65.00	624192.3880	2679068.9343
L	12+00.00	65.00	623906.7275	2678877.9318

TYPE	STATION	NORTH	EAST
POT	10+00.00	623776.5977	2678712.7312
PC	15+43.63	624228.5171	2679014.9002
PCC	17+29.32	624373.4534	2679130.6177
PT	20+42.58	624563.4242	2679378.0618

- NOTES:**
- THE CONTROL DATA FOR THIS PROJECT CAN BE FOUND ELECTRONICALLY BY SELECTING PROJECT CONTROL DATA AT:  
[HTTP://WWW.NCDOT.ORG/DOH/PRECONSTRUCT/HIGHWAY/LOCATION/PROJECT/](http://www.ncdot.org/doh/preconstruct/highway/location/project/)  
 THE FILES TO BE FOUND ARE AS FOLLOWS:  
 B4418\_LS\_CONTROL.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)

**DATUM DESCRIPTION**

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "GPS B4418-1" WITH NAD 83/95 STATE PLANE GRID COORDINATES OF NORTHING: 623214.3500(ft) EASTING: 2678313.0850(ft) ELEVATION: 6.37(ft)

THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.999883540

THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "GPS B4418-1" TO -L- STATION 12+00.00 IS N 35°02'14.2" E 889.748(ft)

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

NOTE: DRAWING NOT TO SCALE

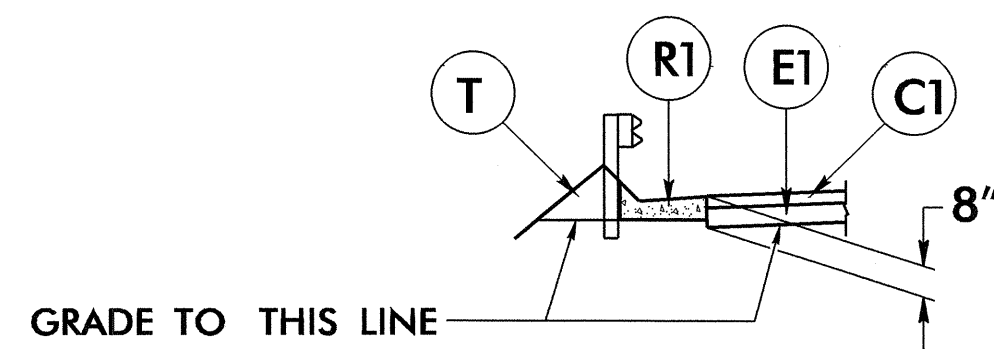
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6/2/09

**PAVEMENT SCHEDULE**  
FINAL PAVEMENT DESIGN

C1	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C2	PROP. APPROX. 1.5" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD..
C3	PROP. APPROX. 2" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 224 LBS. PER SQ. YD..
<del>C4</del>	<del>PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT TO EXCEED 2" IN DEPTH.</del>
E1	PROP. APPROX. 5" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 570 LBS. PER SQ. YD.
R1	SHOULDER BERM GUTTER.
T	EARTH MATERIAL.
U	EXISTING PAVEMENT.

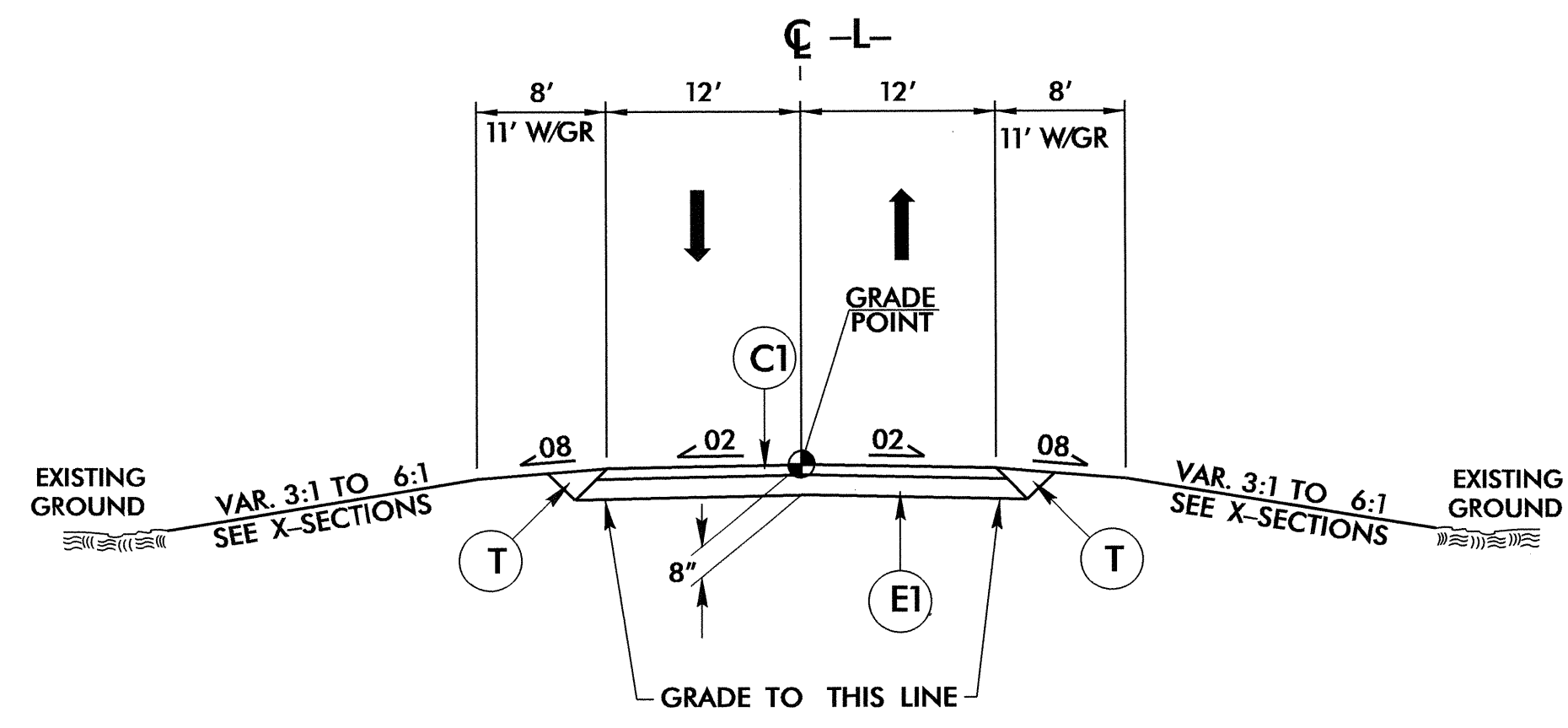
NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.



**DETAIL SHOWING SHOULDER BERM GUTTER ON TOP OF SUBGRADE**

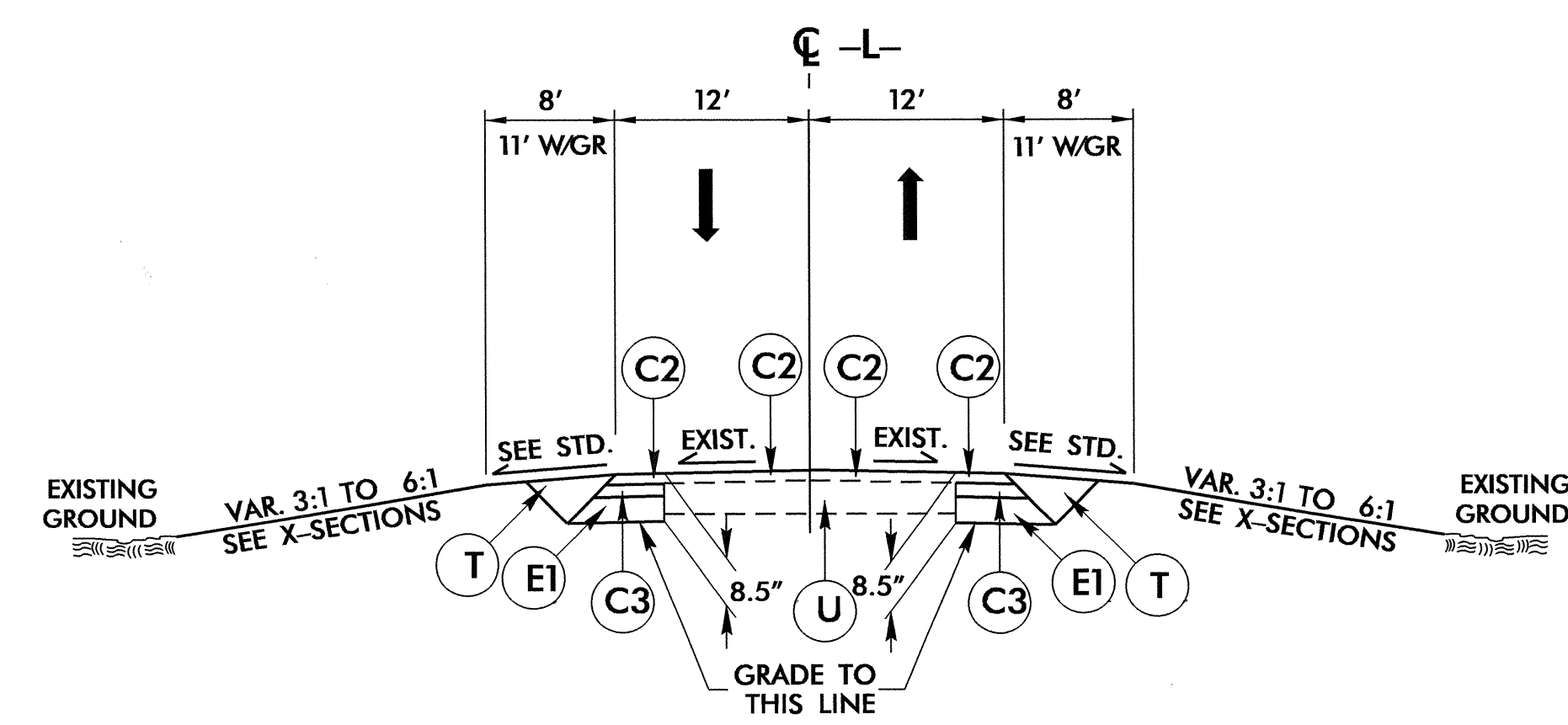
- L- STA. 13+57.55 TO -L- STA. 13+61.55 (LT)
- L- STA. 13+76.89 TO -L- STA. 13+80.89 (RT)
- L- STA. 15+02.11 TO -L- STA. 15+06.11 (LT)
- L- STA. 15+21.45 TO -L- STA. 16+00.00 (RT)

PROJECT REFERENCE NO. B-4418	SHEET NO. 2
ROADWAY DESIGN ENGINEER SUSAN C. LANCASTER SEAL 027373 6/22/12	PAVEMENT DESIGN ENGINEER CLARK S. MORRISON SEAL 22896 6/22/12



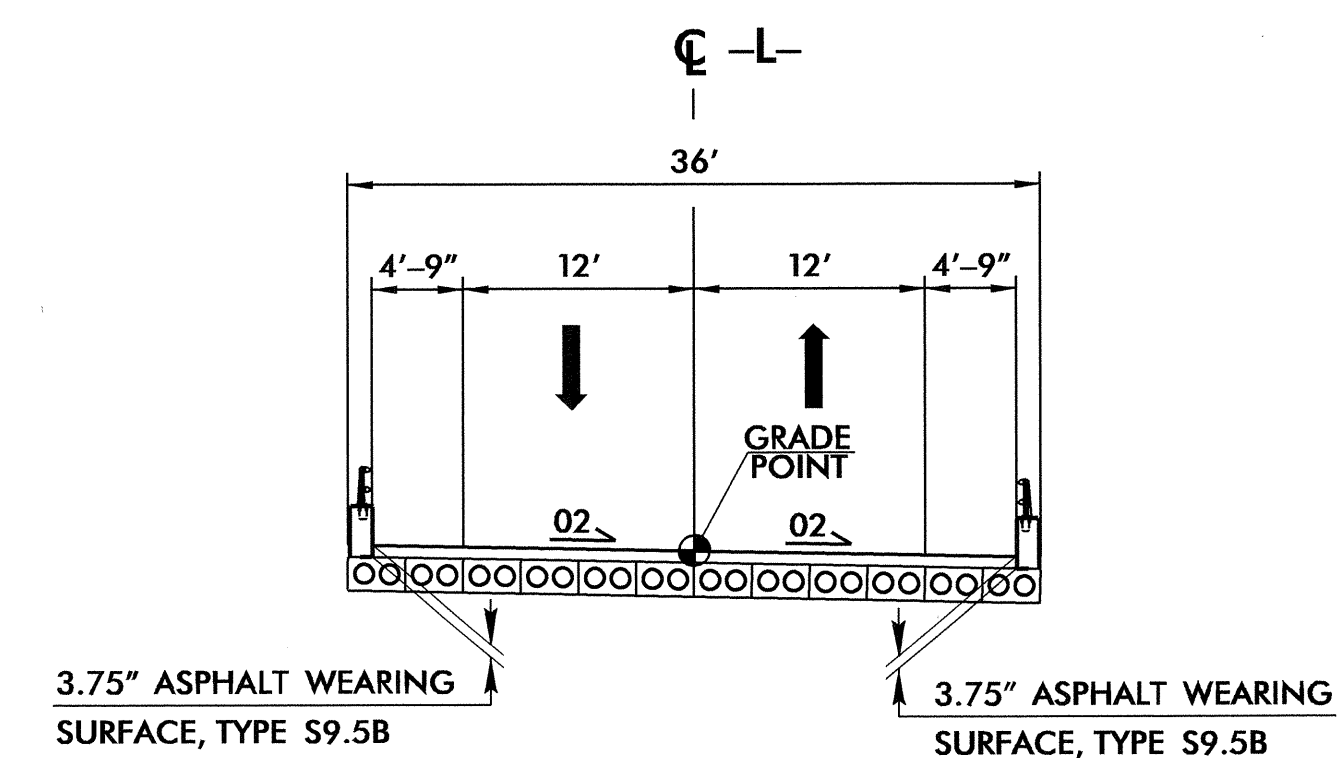
**TYPICAL SECTION NO. 1**

USE TYPICAL SECTION NO. 1  
-L- STA. 12+00.00 TO -L- STA. 13+83.06 (BEGIN BRIDGE)  
-L- STA. 15+00.94 (END BRIDGE) TO -L- STA. 18+15.00



**TYPICAL SECTION NO. 2**

USE TYPICAL SECTION NO. 2  
-L- STA. 18+15.00 TO -L- STA. 20+00.00



**TYPICAL SECTION NO. 3**

USE TYPICAL SECTION NO. 3  
-L- STA. 13+83.06 (BEGIN BRIDGE) TO  
-L- STA. 15+00.94 (END BRIDGE)

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

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS  
ROADWAY SUMMARY OF QUANTITIES FOR CONTRACT - C202882

ItemNumber	Sec #	Quantity	Unit	Description
0000100000-N	800	Lump Sum		MOBILIZATION
0000400000-N	801	Lump Sum		CONSTRUCTION SURVEYING
0000910000-N	SP	375	HR	GENERIC MISCELLANEOUS ITEM WATER TRUCK FOR DUST CONTROL
0029000000-N	SP	Lump Sum		REINFORCED BRIDGE APPROACH FILL, STATION ***** (14+42)
0043000000-N	226	Lump Sum		GRADING
0050000000-E	226	1	ACR	SUPPLEMENTARY CLEARING & GRUB-BING
0057000000-E	226	1,200	CY	UNDERCUT EXCAVATION
0195000000-E	265	1,200	CY	SELECT GRANULAR MATERIAL
0196000000-E	270	1,200	SY	GEOTEXTILE FOR SOIL STABILIZATION
0318000000-E	300	50	TON	FOUNDATION CONDITIONING MATERIAL, MINOR STRUCTURES
0320000000-E	300	255	SY	FOUNDATION CONDITIONING GEOTEXTILE
0448200000-E	310	88	LF	15" RC PIPE CULVERTS, CLASS IV
1220000000-E	545	5,100	TON	INCIDENTAL STONE BASE
1489000000-E	610	450	TON	ASPHALT CONC BASE COURSE, TYPE B25.0B
1519000000-E	610	410	TON	ASPHALT CONC SURFACE COURSE, TYPE S9.5B
1575000000-E	620	45	TON	ASPHALT BINDER FOR PLANT MIX
2022000000-E	815	112	CY	SUBDRAIN EXCAVATION
2033000000-E	815	84	CY	SUBDRAIN FINE AGGREGATE
2044000000-E	815	500	LF	6" PERFORATED SUBDRAIN PIPE
2070000000-N	815	1	EA	SUBDRAIN PIPE OUTLET
2077000000-E	815	6	LF	6" OUTLET PIPE
2286000000-N	840	2	EA	MASONRY DRAINAGE STRUCTURES
2367000000-N	840	2	EA	FRAME WITH TWO GRATES, STD 840.29
2556000000-E	846	95	LF	SHOULDER BERM GUTTER
3030000000-E	862	475	LF	STEEL BM GUARDRAIL

ItemNumber	Sec #	Quantity	Unit	Description
3150000000-N	862	5	EA	ADDITIONAL GUARDRAIL POSTS
3215000000-N	862	4	EA	GUARDRAIL ANCHOR UNITS, TYPE III
3270000000-N	SP	4	EA	GUARDRAIL ANCHOR UNITS, TYPE 350
3649000000-E	876	1	TON	RIP RAP, CLASS B
3656000000-E	876	455	SY	GEOTEXTILE FOR DRAINAGE
4400000000-E	1110	379	SF	WORK ZONE SIGNS (STATIONARY)
4405000000-E	1110	96	SF	WORK ZONE SIGNS (PORTABLE)
4410000000-E	1110	94	SF	WORK ZONE SIGNS (BARRICADE MOUNTED)
4445000000-E	1145	80	LF	BARRICADES (TYPE III)
4455000000-N	1150	10	DAY	FLAGGER
4685000000-E	1205	1,600	LF	THERMOPLASTIC PAVEMENT MARKING LINES (4", 90 MILS)
4686000000-E	1205	1,600	LF	THERMOPLASTIC PAVEMENT MARKING LINES (4", 120 MILS)
4900000000-N	1251	12	EA	PERMANENT RAISED PAVEMENT MARKERS
5325600000-E	1510	674	LF	6" WATER LINE
5540000000-E	1515	2	EA	6" VALVE
5648000000-N	1515	1	EA	RELOCATE WATER METER
5800000000-E	1530	660	LF	ABANDON 6" UTILITY PIPE
5871400000-E	1550	504	LF	TRENCHLESS INSTALLATION OF 6" IN SOIL
5871410000-E	1550	56	LF	TRENCHLESS INSTALLATION OF 6" NOT IN SOIL
6000000000-E	1605	2,220	LF	TEMPORARY SILT FENCE
6006000000-E	1610	225	TON	STONE FOR EROSION CONTROL, CLASS A
6009000000-E	1610	25	TON	STONE FOR EROSION CONTROL, CLASS B
6012000000-E	1610	60	TON	SEDIMENT CONTROL STONE
6015000000-E	1615	1.5	ACR	TEMPORARY MULCHING
6018000000-E	1620	50	LB	SEED FOR TEMPORARY SEEDING

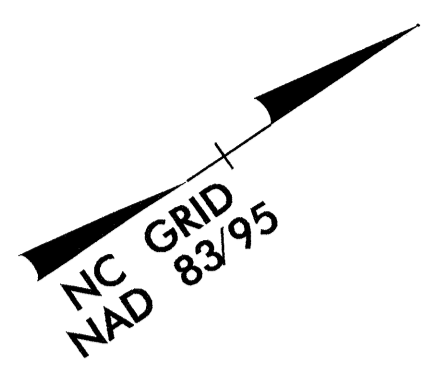
ItemNumber	Sec #	Quantity	Unit	Description
6021000000-E	1620	0.25	TON	FERTILIZER FOR TEMPORARY SEEDING
6024000000-E	1622	200	LF	TEMPORARY SLOPE DRAINS
6029000000-E	SP	1,000	LF	SAFETY FENCE
6030000000-E	1630	100	CY	SILT EXCAVATION
6036000000-E	1631	1,500	SY	MATTING FOR EROSION CONTROL
6042000000-E	1632	265	LF	1/4" HARDWARE CLOTH
6048000000-E	SP	275	SY	FLOATING TURBIDITY CURTAIN
6084000000-E	1660	1.5	ACR	SEEDING & MULCHING
6087000000-E	1660	1	ACR	MOWING
6090000000-E	1661	50	LB	SEED FOR REPAIR SEEDING
6093000000-E	1661	0.25	TON	FERTILIZER FOR REPAIR SEEDING
6096000000-E	1662	50	LB	SEED FOR SUPPLEMENTAL SEEDING
6108000000-E	1665	1	TON	FERTILIZER TOPDRESSING
6114500000-N	1667	10	MHR	SPECIALIZED HAND MOWING
6117000000-N	SP	25	EA	RESPONSE FOR EROSION CONTROL
6123000000-E	1670	0.1	ACR	REFORESTATION

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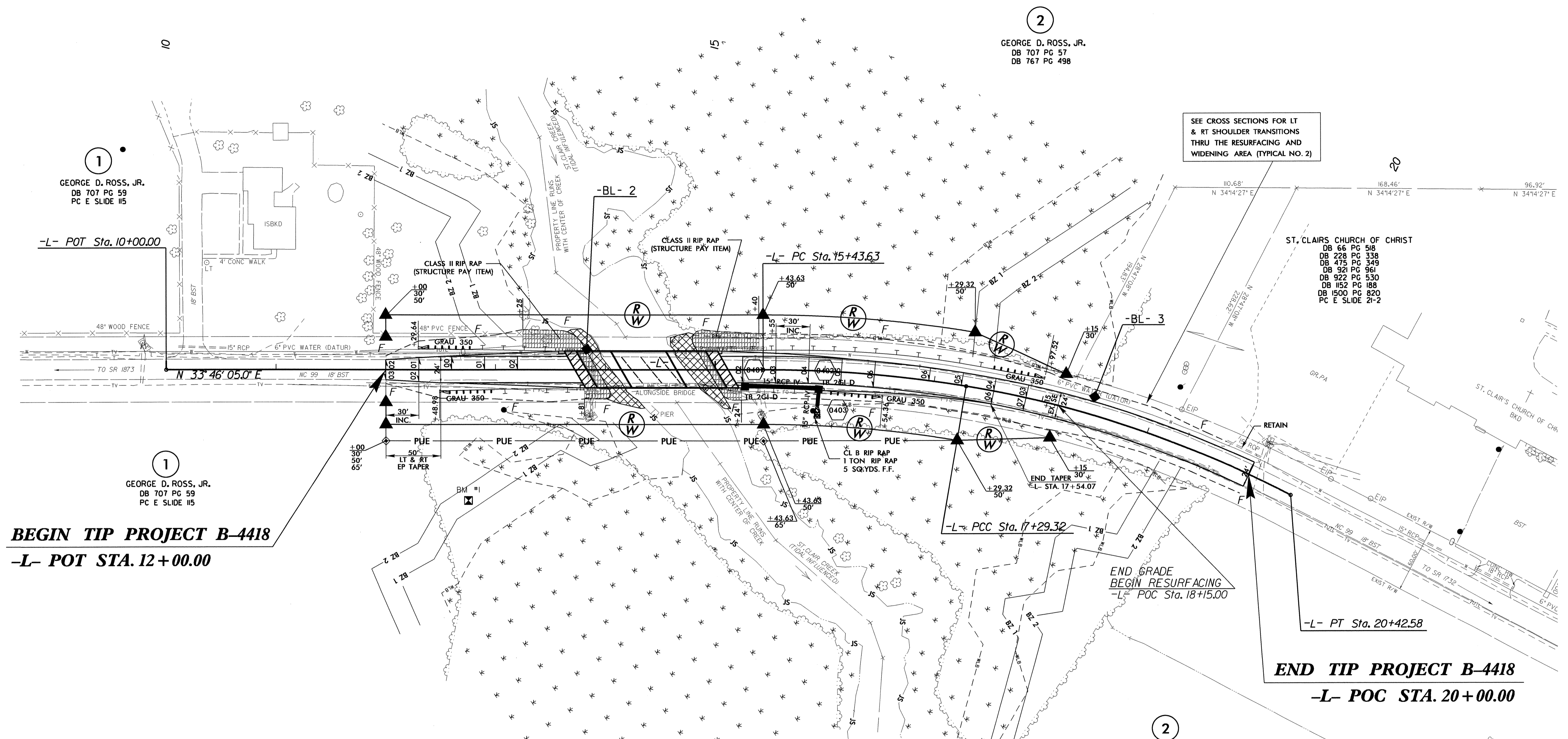




-L- CURVE DATA

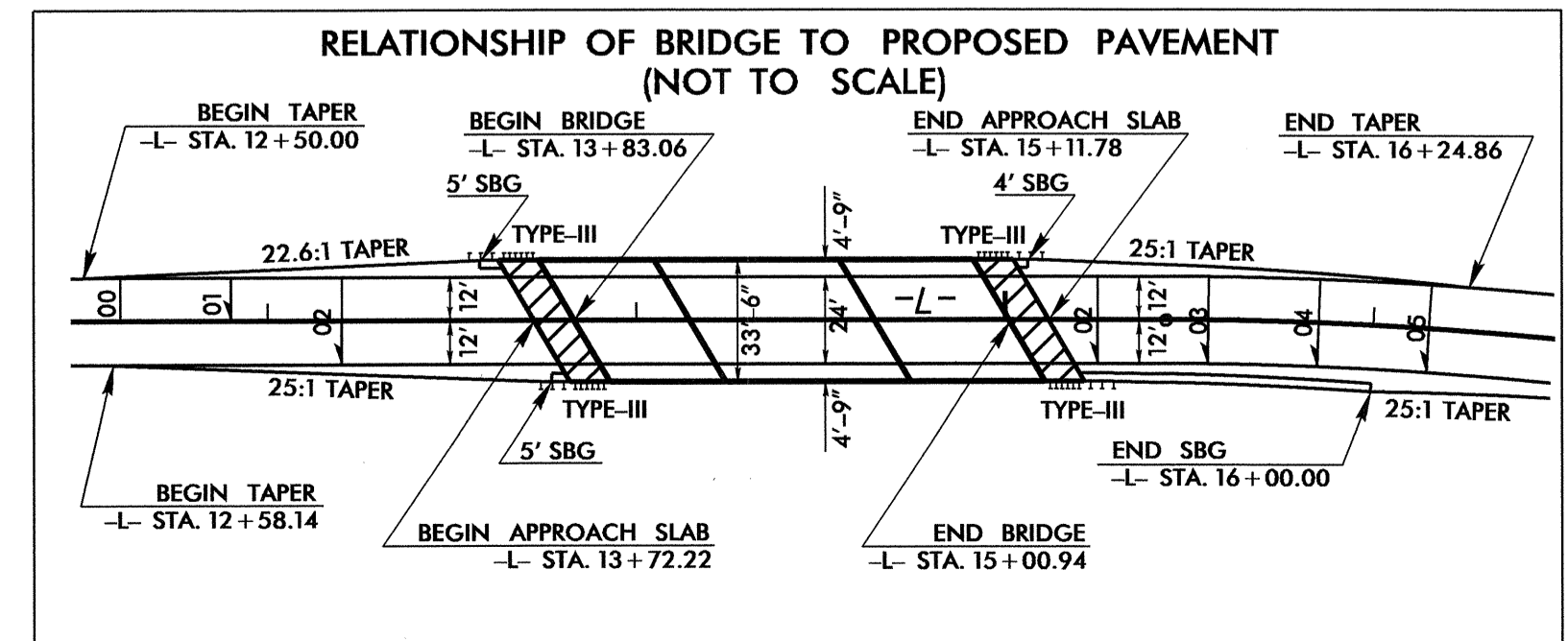
**PI Sta 16+36.70	PI Sta 18+87.26
$\Delta = 9^{\circ} 40' 18.4" (RT)$	$\Delta = 18^{\circ} 05' 28.0" (RT)$
$D = 5^{\circ} 12' 31.3"$	$D = 5^{\circ} 46' 30.6"$
$L = 185.68'$	$L = 313.26'$
$T = 93.06'$	$T = 157.94'$
$R = 1,000.00'$	$R = 992.11'$

**\*\*DESIGN EXCEPTION REQUIRED FOR HORIZONTAL STOPPING SIGHT DISTANCE OF 443'.**



**BEGIN TIP PROJECT B-4418**  
-L- POT STA. 12+00.00

**END TIP PROJECT B-4418**  
-L- POC STA. 20+00.00



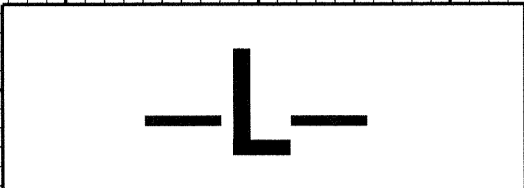
FOR -L- PROFILE, SEE SHEET 5  
 BRIDGE APPROACH SLAB  
 FOR STRUCTURE PLANS, SEE SHEETS S-1 THROUGH S-29

8/17/99  
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5/14/99

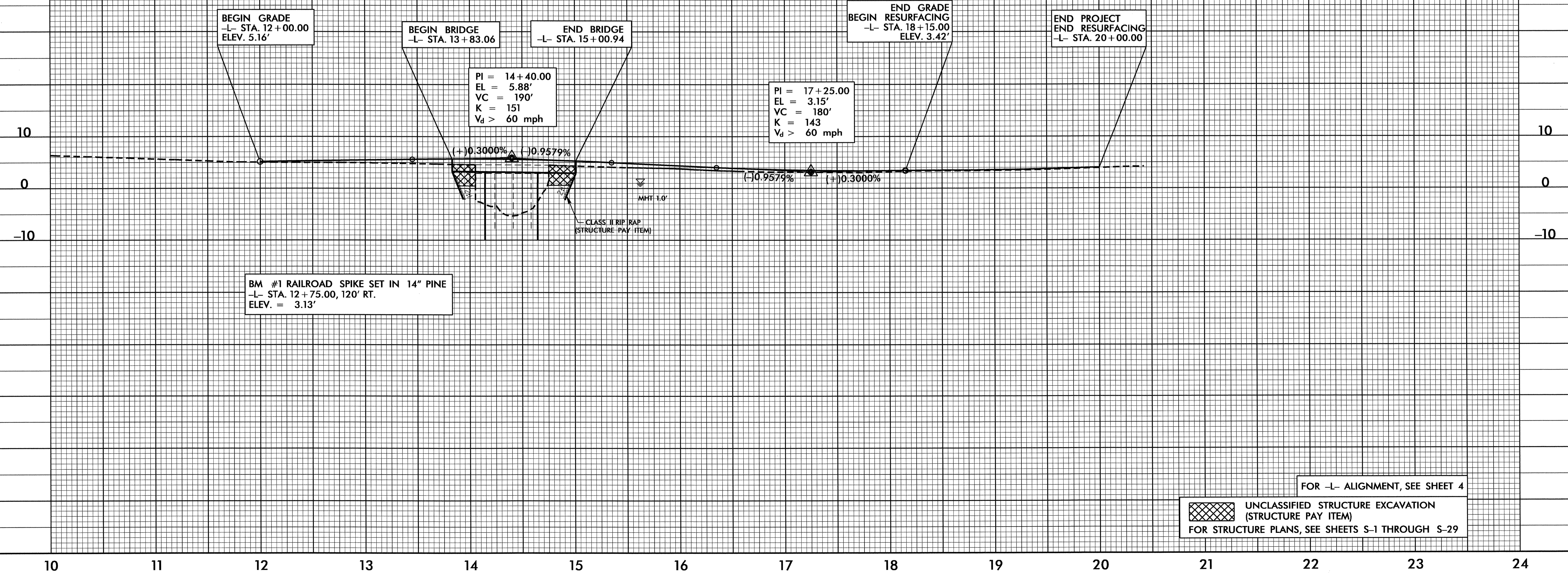
PROJECT REFERENCE NO. B-4418	SHEET NO. 5
ROADWAY DESIGN ENGINEER NORTH CAROLINA PROFESSIONAL SEAL 027373 SUSAN C. LANCASTER	HYDRAULICS ENGINEER NORTH CAROLINA PROFESSIONAL SEAL 020004 W. GALEN CALDWELL



**BRIDGE HYDRAULIC DATA**

DESIGN DISCHARGE	= 1000	CFS
DESIGN FREQUENCY	= 50	YRS
BASE DISCHARGE	= 1200	CFS
BASE FREQUENCY	= 100	YRS
OVERTOPPING DISCHARGE	= 2300	CFS
OVERTOPPING FREQUENCY	= +100	YRS
OVERTOPPING ELEVATION	= 3.5	FT
DATE OF SURVEY	= June 30, 2010	
W.S. ELEVATION AT DATE OF SURVEY	= 1.0	FT

21" CORED SLAB  
 3 SPANS = (1 @ 30', 1 @ 50', 1 @ 35')  
 CL -L- STA 14+42.00  
 CL ELEV = 5.57'  
 SKEW = 60°



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