ORIGINAL TO GENERAL FILES

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

INTERDEPARTMENT CORRESPONDENCE

FILE P. I. No. 0000303, Towns County
BR-0000-00(303)
SR 2/US 76 over Hightower Creek-
Bridge Replacement

OFFICE Preconstruction

DATE August 17, 2007

FROM for Genetha Rice-Singleton, Assistant Director of Preconstruction

TO SEE DISTRIBUTION

SUBJECT APPROVED REVISED PROJECT CONCEPT REPORT

Attached for your files is the approval for subject project.

Attachment

DISTRIBUTION:

Brian Summers
Glenn Bowman
Ken Thompson
Michael Henry
Keith Golden
Russell McMurry
Angela Alexander
Paul Liles
Babs Abubakari
BOARD MEMBER

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

INTERDEPARTMENT CORRESPONDENCE

FILE BR-0000-00(303) Towns County
SR 2/US 76 @ Hightower Creek
6.1 miles east of Hiawassee
P.I. 0000303

OFFICE Atlanta

DATE July 17, 2007

FROM: Mohammed (Babs) Abubakari, P.E.
State Consultant Design & Program Delivery Engineer

TO: Genetha Rice-Singleton, Assistant Director of Preconstruction

SUBJECT: Revised Project Concept Report

Attached is the original copy of the Revised Concept Report for your further handling for approval in accordance with the Plan Development Process (PDP).

In order to meet the required 50 ft. trout stream buffer, it was necessary to shift the mainline alignment of S.R. 2 / U.S. 76 an additional 50 ft. from the existing horizontal alignment.

The revised concept as presented herein and submitted for approval is consistent with that which is included in the Regional Transportation Program (RTP) and/or the State Transportation Improvement Program (STIP).

DATE 8/9/07

Angela T. Alexander
State Transportation Planning Administrator

Pending corrected cost estimate sheet.
ESTIMATE REVISED 8/13/07

Distribution:

Brian Summers, State Project Review Engineer
Glenn Bowman, State Environmental/Location Engineer
Keith Golden, State Traffic Safety and Design Engineer
Angela T.Alexander, State Transportation Planning Administrator
Jamie Simpson, Office of Financial Management Administrator
Russell McMurry, District 1 Engineer
Paul Liles, State Bridge Design Engineer

REVISED PROJECT CONCEPT REPORT

Need and Purpose:

S.R. 2 / U.S. 76 is a major connector route from the Hiawassee area to points east in the Rabun County area which are heavy recreation and work destinations. S.R. 2 / U.S. 76 is the only connector route between Towns and Rabun Counties.

The existing bridge crossing over Hightower Creek in Towns County has a sufficiency rating of 48.32, as classified by the Bridge Inventory Data Listing. This bridge is listed in the Highway Bridge Replacement and Rehabilitation Program (HBRRP) and has been recommended for replacement in accordance with the criteria set forth in Policy 2405-1, which states that an existing bridge on the state route system which has a current Load Rating of less than HS-20 shall be replaced. The SR 2 / US 76 Bridge over Hightower Creek has a load rating of H-15.

The Structure ID is 281-0008-0 and the Location ID is 281-00002D-017.73E.

Project location: Project BR-0000-00(303) is located in Towns County on SR 2/US 76 crossing over Hightower Creek and is located 6.1 miles east of Hiawassee. The project length is 0.57 miles. The project begins at milepost 17.66 and ends at milepost 18.23

Description of the approved concept: The approved concept proposes a new 110' x 40' concrete bridge crossing over Hightower Creek at its existing bridge site. The roadway approaches will consist of two 12-ft lanes with 8' rural shoulders (2-ft paved). The construction will be staged with one lane maintained (with temporary signal) on the existing bridge while a part of the bridge is built. Traffic will be redirected onto part of the new bridge while the old bridge is removed and the remaining new bridge is constructed.

PDP Classification: Minor/ Existing

Federal Oversight: Full Oversight ( ), Exempt (X), State Funded ( ), or Other ( )

Functional Classification: Principal Arterial

U. S. Route Number(s): 76

State Route Number(s): 2

Traffic (AADT) as shown in the approved concept:

Current Year: 1,400 (2007) Design Year: 2,250 (2027)

Proposed features to be revised:

Due to the 50-ft. cold water stream buffer impact, the approved concept has been amended as follows:

1. Hightower Creek is designated as a coldwater trout stream, and therefore the tributary running parallel to SR 2/US 76 automatically becomes a trout stream. A 50 ft. buffer must be maintained to the stream to avoid a stream buffer variance for longitudinal impacts. The proposed bridge is wider and higher than the existing bridge, and will cause endroll encroachment within the 50 ft. buffer zone of the tributary creek, if kept on the original alignment. A 3-span bridge would require intermediate bents to be constructed at a minimum of 10 ft. clear of the tops of creek banks, resulting in very short end spans for the minimum required total bridge length. A single span bridge is therefore the most desirable option.

2. The proposed horizontal alignment will be shifted approximately 50 ft. to the north side of the existing alignment to maintain the required 50 ft. stream buffer.

3. The right of way width will be increased from 100 ft. with temporary easements to 150 ft. with permanent easements due to the shift in horizontal alignment.

4. The project length has been increased from approximately 0.22 miles to approximately 0.57 miles which requires longer proposed roadway tie-ins to the existing roadway due to the alignment shift.

5. The bridge length has been increased from 110 ft. to 120 ft. as a result of the shift in horizontal alignment.

6. Traffic will be maintained on SR 2/US 76 using the existing bridge while the new bridge is being constructed.

Describe the revised feature(s) to be approved:

1. The horizontal alignment will be shifted.

2. The right of way width will be increased.

3. The project length will be increased.

4. The bridge length will be increased.

Updated traffic data (AADT):
Current Year: 2,000 (2009) Design Year: 3,000 (2029)

Programmed/Schedule:

P.E.: 2001 R/W: 2008 Construction: ~~2012~~ LR 2010

VE Study Required Yes ( ) No (X)

Revised cost estimates:

Construction (Infl., E & C)	$ 1,744,000	
Right-of-Way	$ 69,000	Acquired by LGPA and GDOT
Utilities	$ N/A	Adjusted LPGA and GDOT

Is the project located in a Non-attainment area? _____ Yes ___X__ No.

Recommendation:
It is recommended that the proposed revisions to the concept be approved for implementation in order to meet environmental requirements and the project estimate be adjusted to reflect these changes.

Attachments:
1. Revised Cost Estimate:
2. Typical sections
3. Location Map

- **Exempt projects**

Concur: _____
Director of Preconstruction

Approve: _____
Chief Engineer

PROJECT NO. BR-0000-00(303)
P.I. # 0000303

Section ROADWAY					
Item Number	**Quantity**	**Units**	**Unit Price**	**Item Description**	**Cost**
150-1000	1	LS	150000.00	TRAFFIC CONTROL -	150000.00
150-5010	6	EA	11119.29	TRAFFIC CONTROL, PORTABLE IMPACT ATTENUATOR	66715.74
163-0232	2	AC	519.89	TEMPORARY GRASSING	1039.78
163-0240	18	TN	203.83	MULCH	3668.94
163-0300	3	EA	1810.59	CONSTRUCTION EXIT	5431.77
163-0530	1800	LF	3.02	CONSTRUCT AND REMOVE BALED STRAW EROSION CHECK	5436.00
167-1000	2	EA	1560.81	WATER QUALITY MONITORING AND SAMPLING	3121.62
167-1500	12	MO	926.02	WATER QUALITY INSPECTIONS	11112.24
171-0030	2000	LF	3.31	TEMPORARY SILT FENCE, TYPE C	6620.00
201-1500	1	LS	5000.00	CLEARING & GRUBBING -	5000.00
206-0002	4330	CY	7.00	BORROW EXCAV, INCL MATL	30310.00
310-5060	667	SY	7.47	GR AGGR BASE CRS, 6 INCH, INCL MATL	4982.49
310-5120	9334	SY	15.34	GR AGGR BASE CRS, 12 INCH, INCL MATL	143183.56
402-3121	3520	TN	90.00	RECYCLED ASPH CONC 25 MM SUPERPAVE, GP 1 OR 2, INCL BITUM MATL & H LIME	316800.00
402-3130	770	TN	95.00	RECYCLED ASPH CONC 12.5 MM SUPERPAVE, GP 2 ONLY, INCL BITUM MATL & H LIME	73150.00
402-3190	1027	TN	88.00	RECYCLED ASPH CONC 19 MM SUPERPAVE, GP 1 OR 2,INCL BITUM MATL & H LIME	90376.00
413-1000	1014	GL	1.75	BITUM TACK COAT	1774.50
433-1000	294	SY	151.25	REINF CONC APPROACH SLAB	44467.50
550-1180	500	LF	34.88	STORM DRAIN PIPE, 18 IN, H 1-10	17440.00
550-4218	16	EA	547.28	FLARED END SECTION 18 IN, STORM DRAIN	8756.48
620-0100	1000	LF	38.40	TEMPORARY BARRIER, METHOD NO. 1	38400.00
641-1100	60	LF	35.99	GUARDRAIL, TP T	2159.40
641-1200	1000	LF	15.63	GUARDRAIL, TP W	15630.00
641-5001	3	EA	542.48	GUARDRAIL ANCHORAGE, TP 1	1627.44
641-5012	3	EA	1688.00	GUARDRAIL ANCHORAGE, TP 12	5064.00
653-1501	6000	LF	0.30	THERMOPLASTIC SOLID TRAF STRIPE, 5 IN, WHITE	1800.00
653-1502	6000	LF	0.29	THERMOPLASTIC SOLID TRAF STRIPE, 5 IN, YELLOW	1740.00
653-1704	12	LF	3.80	THERMOPLASTIC SOLID TRAF STRIPE, 24 IN, WHITE	45.60
654-1001	76	EA	3.58	RAISED PVMT MARKERS TP 1	272.08
657-1054	240	LF	3.56	PREFORMED PLASTIC SOLID PVMT MKG, 5 IN, WHITE, TP PB	854.40
657-6054	240	LF	3.78	PREFORMED PLASTIC SOLID PVMT MKG, 5 IN, YELLOW, TP PB	907.20
700-6910	4	AC	831.15	PERMANENT GRASSING	3324.60
700-7000	4	TN	58.94	AGRICULTURAL LIME	235.76
700-7010	10	GL	18.60	LIQUID LIME	186.00
700-8000	1	TN	287.59	FERTILIZER MIXED GRADE	287.59
700-8100	200	LB	1.68	FERTILIZER NITROGEN CONTENT	336.00
716-2000	17500	SY	1.12	EROSION CONTROL MATS, SLOPES	19600.00
XXX-XXX	1	Lump Sum	3500.00	HIGHWAY SIGNS	3500.00
XXX-XXX	1	Lump Sum	130000.00	EXIST. BRIDGE REMOVAL	130000.00
XXX-XXX	5280	SF	70.00	NEW BRIDGE	369600.00
				Section Sub Total:	**$1,584,956.69**

Subtotal: $1,584,956.69

Subtotal Construction Cost : $1,584,956.69

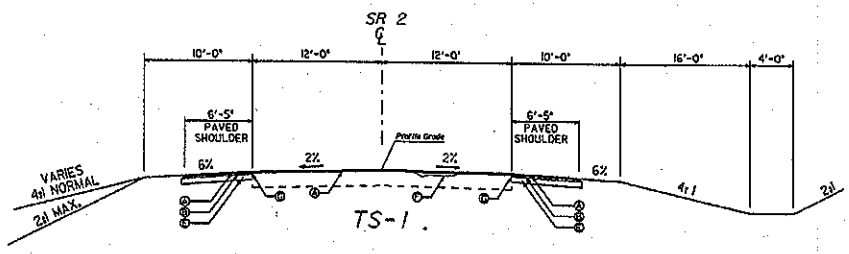
E&C Rate 10.0 % : $158,495.67

Total Construction Cost : $1,743,452.36

TYPICAL SECTIONS

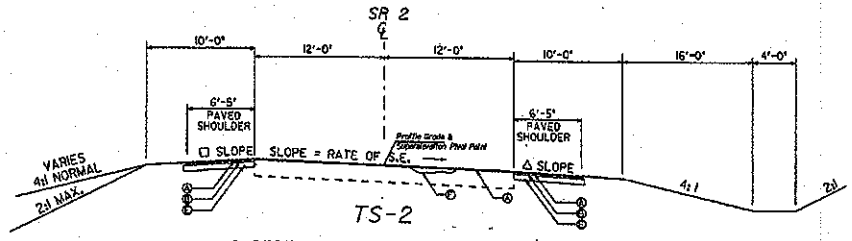
S.R. 2 / U.S. 76

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.	BR-0000-00(303)		



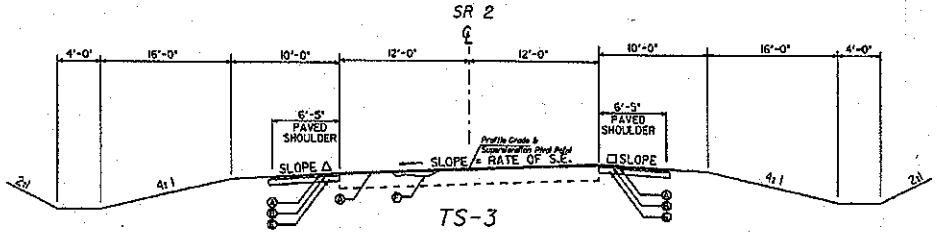
TS-1

TANGENT OVERLAY SECTION



TS-2

SUPERELEVATED OVERLAY SECTION



TS-3

SUPERELEVATED OVERLAY SECTION

Ⓐ RECYCLED ASPHALTIC CONCRETE 12.5 mm SUPERPAVE, GP 2 ONLY, INCL BITUM MATL & H LINE - 165#/SY
Ⓑ RECYCLED ASPHALTIC CONCRETE 19 mm SUPERPAVE, GP 1 OR 2, INCL BITUM MATL & H LINE - 220#/SY
Ⓒ RECYCLED ASPHALTIC CONCRETE 25 mm SUPERPAVE, GP 1 OR 2, INCL BITUM MATL & H LINE - 660#/SY
Ⓓ GRADED AGGREGATE BASE COURSE, 12", INCLUDING MATERIAL
Ⓔ GRADED AGGREGATE BASE COURSE, 6", INCLUDING MATERIAL
Ⓕ RECYCLED ASPHALTIC CONCRETE LEVELING INCL BITUM MATL & H LINE, AS REQ'D
Ⓖ SAW CUT AND REMOVE EXISTING SHOULDER

ALLOWABLE RANGES TABLE

FOR THIS PROJECT, CROSS SLOPES THAT ARE ADJUSTED TO "BEST FIT" EXISTING PAVEMENT SLOPES ARE SUBJECT TO THE FOLLOWING LIMITS:

A. NORMAL CROWN

SECTION WITH GRADES 0.5% OR GREATER	SECTION WITH GRADES LESS THAN 0.5%
0.0150 FT/FT - MINIMUM	0.0136 FT/FT - MINIMUM
0.0200 FT/FT - DESIRABLE	0.0200 FT/FT - DESIRABLE
0.0250 FT/FT - MAXIMUM	0.0300 FT/FT - MAXIMUM

B. SUPERELEVATION RATE

S.E. RATE SHOWN ON PLANS OR SE RATE EXISTING IN FIELD, WHICHEVER IS GREATER.

C. SUPERELEVATION TRANSITION LENGTH (LENGTH FROM FLAT POINT TO FULL SE)

	RATE OF CHANGE	CORRESPONDING DIFFERENCE IN GRADE BETWEEN PIVOT POINT AND EDGE OF PAVEMENT
MINIMUM	1:150	0.67%
DESIRABLE	1:200	0.50%
MAXIMUM	1:300	0.33%

LENGTH SHALL BE SET TO AVOID CREATING A FLAT GUTTER GRADE ON LOW SIDE AND TO AVOID FLAT CROSS SLOPES AT OR NEAR THE LOW POINT OF VERTICAL CURVES.

D. POSITIONING OF SUPERELEVATION TRANSITION LENGTH ON SIMPLE CURVES

50% OF TRANSITION INSIDE CURVE - MAXIMUM
33% OF TRANSITION INSIDE CURVE - DESIRABLE
20% OF TRANSITION INSIDE CURVE - MINIMUM

NOTE: CROWN WIPE-OUT SHALL BE AT THE SAME RATE AS THE SE TRANSITION.

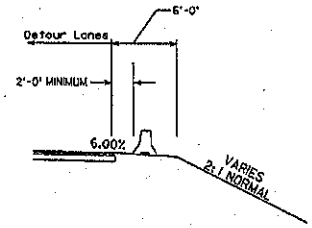
E. SMOOTHING OF BREAKS IN EDGE PROFILE AT BEGIN AND END OF TRANSITION SHALL BE ACCOMPLISHED BY VERTICAL CURVE WITH A MINIMUM LENGTH (IN FEET) EQUAL TO THE SPEED DESIGN (IN MPH).

SLOPE CONTROLS		
SLOPE	CUT	FILL
4:1	ALL	UNDER 10'
3:1	--	--
*2:1	--	10' & OVER*
* REQUIRES GUARDRAIL		

△ SLOPE 6% OR RATE OF S.E. WHICHEVER IS GREATER

□ SLOPE AS FOLLOWS:
S.E. RATE OF 2% OR LESS, USE 6%
S.E. RATE OF 3%, USE 5%
S.E. RATE OF 4%, USE 4%
S.E. RATE OF 5%, USE 3%
S.E. RATE OF 3%, USE 0%

ALGEBRAIC DIFFERENCE IN PAVING AND SHOULDER SLOPES NOT TO EXCEED 8%

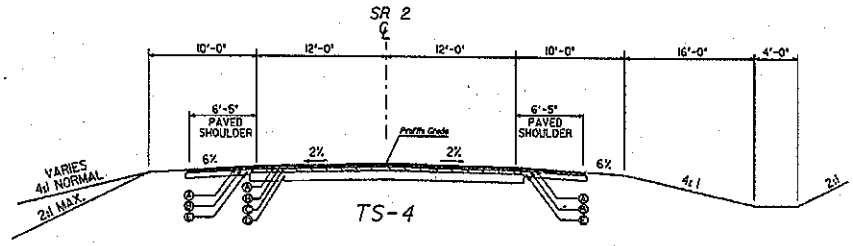


CONCRETE BARRIER SECTION
SEE PLANS FOR LOCATION

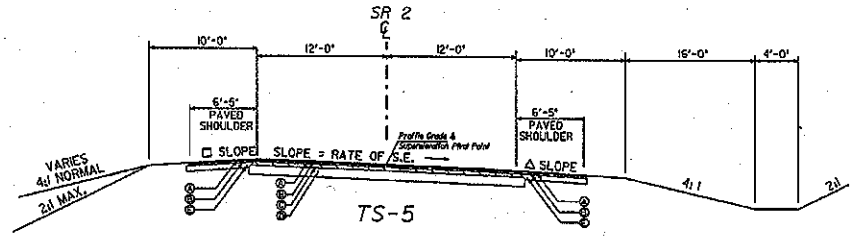
TYPICAL SECTIONS

S.R. 2 / U.S. 76

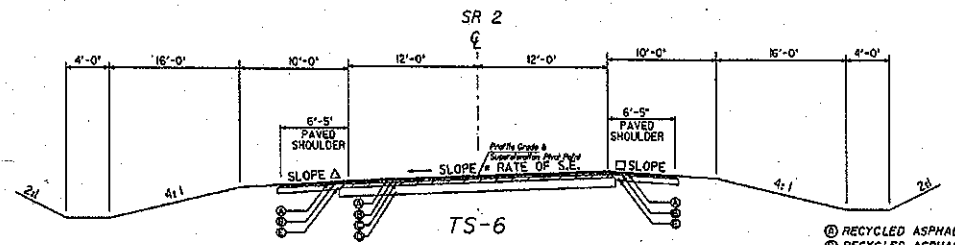
STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.	BR-0000-00(303)		



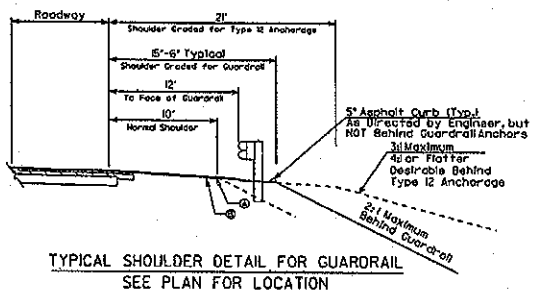
TANGENT FULL-DEPTH SECTION



SUPERELEVATED FULL-DEPTH SECTION

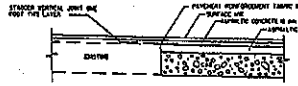


SUPERELEVATED FULL-DEPTH SECTION

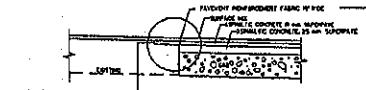


TYPICAL SHOULDER DETAIL FOR GUARDRAIL
SEE PLAN FOR LOCATION

TYPICAL SECTION DETAIL TO BE USED WHEN EXISTING PAVEMENT IS TO BE RESURFACED WITH TWO INCHES OR MORE OF ASPHALTIC CONCRETE



TYPICAL SECTION DETAIL TO BE USED WHEN EXISTING PAVEMENT IS TO BE RESURFACED WITH LESS THAN TWO INCHES OF ASPHALTIC CONCRETE



MILL EXISTING LANE ONE FOOT WIDE TO DEPTH OF ADJOINING LAYER TO BE PLACED. COST OF MILLING FOR THIS WORK TO BE INCLUDED IN THE UNIT PRICE BID FOR PAVEMENT REINFORCING FABRIC.

SLOPE CONTROLS		
SLOPE	CUT	FILL
4:1	ALL	UNDER 10'
3:1	--	--
*2:1	--	10' & OVER*
* REQUIRES GUARDRAIL		

Δ SLOPE 6% OR RATE OF S.E. WHICHEVER IS GREATER

□ SLOPE AS FOLLOWS:
S.E. RATE OF 2% OR LESS, USE 6%
S.E. RATE OF 3%, USE 5%
S.E. RATE OF 4%, USE 4%
S.E. RATE OF 5%, USE 3%
S.E. RATE OF 7%, USE 1%

ALGEBRAIC DIFFERENCE IN PAVING AND SHOULDER SLOPES NOT TO EXCEED 6%

Ⓐ RECYCLED ASPHALTIC CONCRETE 12.5 mm SUPERPAVE, GP 2 ONLY, INCL BITUM MATL & H LIME - 165#/SY
Ⓑ RECYCLED ASPHALTIC CONCRETE 19 mm SUPERPAVE, GP 1 OR 2, INCL BITUM MATL & H LIME - 220#/SY
Ⓒ RECYCLED ASPHALTIC CONCRETE 25 mm SUPERPAVE, GP 1 OR 2, INCL BITUM MATL & H LIME - 880#/SY
Ⓓ GRADED AGGREGATE BASE COURSE, 12", INCLUDING MATERIAL
Ⓔ GRADED AGGREGATE BASE COURSE, 6", INCLUDING MATERIAL

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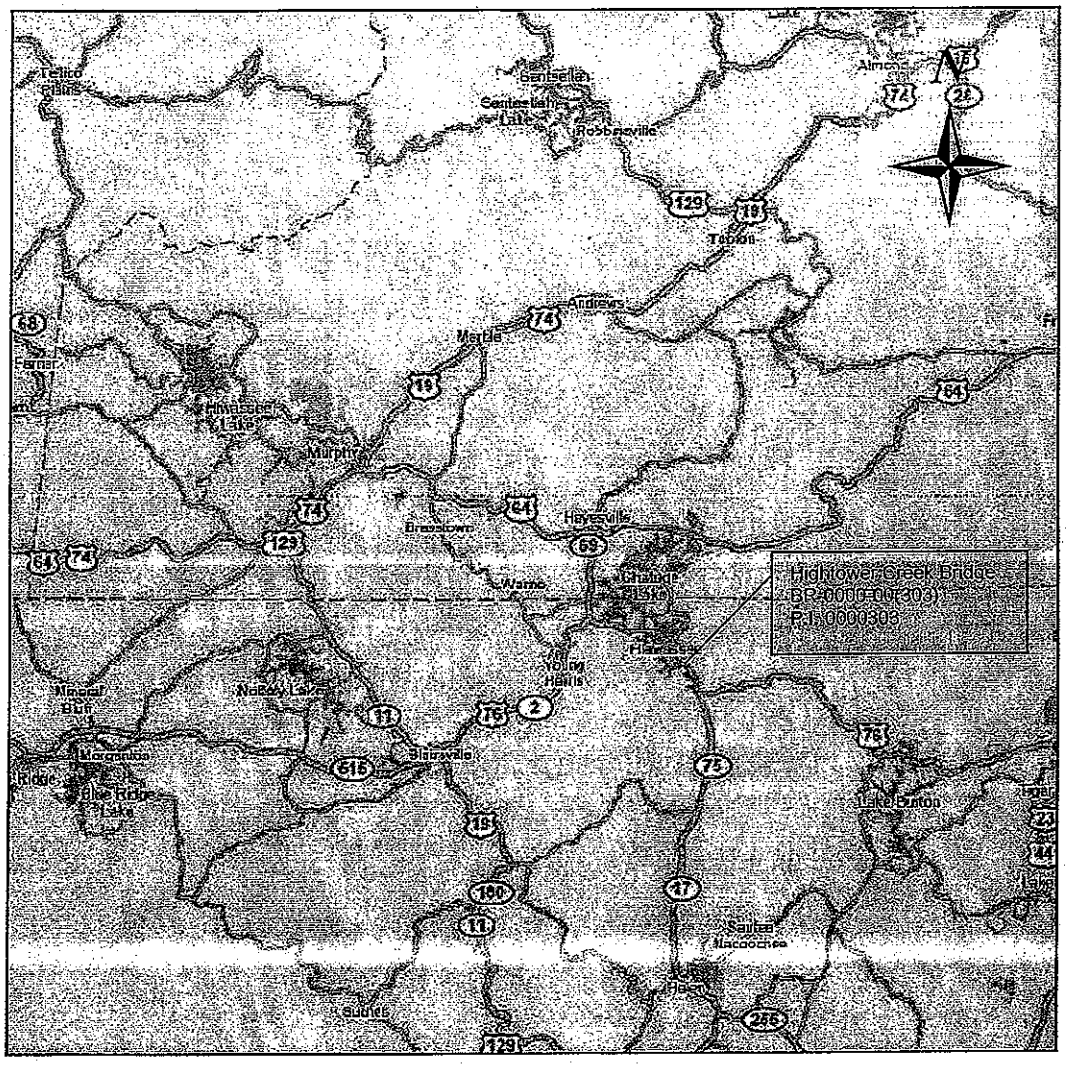
Wed Jun 18 14:41:51 2007

Project Location Map



BR-0000-00(303); P.I. # 0000303
SR 2/US 76 over Hightower Creek – Towns County

scale: 1" = 5 miles