

**DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA**

INTERDEPARTMENT CORRESPONDENCE

FILE P. I. No. 333172-, Butts/Newton Counties **OFFICE** Preconstruction
BRST0-0054-01(066)
SR 36 over South River -
Bridge Replacement **DATE** April 21, 2008

FROM  Genetha Rice-Singleton, Assistant Director of Preconstruction

TO ^{ra} 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
Angela Alexander
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Thomas Howell
David Millen
BOARD MEMBER

**DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA**

INTERDEPARTMENT CORRESPONDENCE

FILE **BRST-054-1(66) BUTTS/NEWTON COUNTY.** OFFICE Atlanta
SR 36 over South River
P.I. No. 333172

FROM *M. Babs Abubakari*
Babs Abubakari, State Consultant Design Engineer DATE March 6, 2008

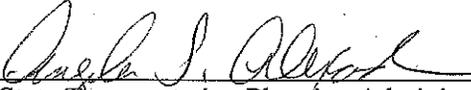
TO Genetha Rice-Singleton, Assistant Director of Preconstruction

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).

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

DATE 3/19/08



State Transportation Planning Administrator

Distribution:

Brian Summers, Project Review Engineer
Glenn Bowman, State Environmental/Location Engineer
Keith Golden, State Traffic Safety and Design Engineer
Angela Alexander, State Transportation Planning Administrator
State Transportation Financial Management Administrator
Thomas Howell, District Three Engineer
Paul Liles, State Bridge Design Engineer
Yun Tang, Consultant Design Office

April 10, 2008

Project Concept Report page 1

Project Number: BRST0-0054-01(066)

P.I. Number: 333172

County: Butts-Newton County

Department Of Transportation
State of Georgia

REVISED PROJECT CONCEPT REPORT REVISED 4/10/2008

Need and Purpose

The purpose of this project is to replace a structurally deficient bridge. The proposed improvement will improve the safe operation of SR 36 by providing a bridge that meets current AASHTO geometric design standards and will serve current and future traffic.

Background

Bridge Project BRST0-0054-01(066) will replace the structurally deficient bridge located on SR 36 over South River. The sufficiency rating for the bridge is 47.8. The sufficiency rating, a number from 0 to 100, is calculated based on four separate factors to obtain a numeric value that is indicative of a bridge's sufficiency to remain in service. The rating ranges from zero (0), which represents an entirely insufficient or deficient bridge to 100, which represents an entirely sufficient bridge. Based on FHWA guidelines, any bridge with a sufficiency rating less than 50 is classified as structurally deficient and should be replaced. Therefore, in order to upgrade this bridge both structurally and functionally, this bridge requires replacement.

Facility Overview and Operational Characteristics

The SR 36 Bridge over the South River was constructed in 1952. This section of SR 36 in Butts County is a two lane road having 12 foot lanes in each direction. This facility is classified as rural minor arterial and carried an Average Annual Daily Traffic (AADT) volume of 4,950 in 2003. Ten percent of the AADT is estimated to be trucks. This portion of Butts County is beginning to experience increasing residential growth due to its proximity to the Atlanta Metropolitan Area. This portion of SR 36 is also utilized as a school bus route. During the last 10 years, travel along SR 36 has increased at an average rate of 8% per year and traffic is projected to increase to as much as 8,400 AADT by the year 2029. The projected volumes approach the level of service that may require widening of SR 36 in the future and it is recommended that the bridge be constructed to accommodate a future widening.

Logical Termini

The proposed bridge replacement will tie in to the existing roadway and no additional roadway work is anticipated. The estimated length of the project is estimated to be 0.756 miles. There are no proposals to widen SR 36 in the vicinity of the bridge and the bridge replacement project is a stand-alone project.

April 10, 2008

Project Concept Report page 2

Project Number: BRST0-0054-01(066)

P.I. Number: 333172

County: Butts-Newton County

Department Of Transportation
State of Georgia

Safety

No accidents have been reported in the vicinity of the bridge during the years 2000, 2001 and 2002. However, the one mile section of SR 36 for which crash data was reviewed experienced accident rates that are higher than the statewide average. There were no fatalities along the link of SR 36 which includes the bridge. The table below shows accident information for this link of SR 36.

	2004	2005	2006
Total Accidents	9	6	4
Accidents per 100 MVMT	1122	532	440
Statewide Accidents Per 100 MVMT	258	186	197
Accident % Higher/Lower than Statewide Average	+335%	+186%	+123%

No accidents occurred in the immediate vicinity of the bridge and the majority of accidents did not involve another vehicle.

Community Characteristics

The project is located in Butts and Newton County at the Newton/Butts County line north of the City of Jackson. Butts County is not currently included in the Atlanta Metropolitan Region but it is included in the area designated to be in non-attainment for air quality. The Butts County 2000 census data show that the population for the county is 69.2% white, 28.2% black or African American and 2% other races. The Butts County income statistics indicate that 11.5% of the population is below the poverty level as compared to 13% for the State of Georgia as a whole.

Project Location:

This project is located on SR 36 over South River in Butts and Newton County at the Butts and Newton county line. The project begins at Mile Post 17.79 and ends at Mile Post 0.36. See attached location map.

Description of approved concept:

The sufficiency rating of the existing bridge is 47.8 out of 100. The total length of the project is

April 10, 2008

Project Concept Report page 3

Project Number: BRST0-0054-01(066)

P.I. Number: 333172

County: Butts-Newton County

approximately 1700 feet (0.32 miles). The purpose of the project is to replace the insufficient bridge while maintaining the existing horizontal alignment. An on-site detour will be utilized and will shift traffic 50 feet to the North of the existing bridge. The project will adequately handle future traffic needs within the existing typical section of two lanes. SR 36 is programmed as a two-lane roadway in the 2006-11 State Transportation Improvement Program (STIP), with a Right-of-Way Acquisition date of 2008, a Construction date of 2009, and a completion date of 2010.

PDP Classification: Major_ Minor

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

Functional Classification: Rural Minor Arterial

U. S. Route Number(s): N/A

State Route Number(s): SR 36

Traffic (AADT) for SR 36:

2006 AADT = 5300

2010 ADT (Base Year) = 6400

2030 ADT (Design Year) = 10000

Proposed feature to be revised:

Horizontal Alignment

Description of features to be revised:

After the initial concept approval of using the existing alignment and detour bridge, it was discovered (after the stream bed survey) that the stream crossing would require a bridge over 25' in height. Typically, a temporary bridge would be supported by H-pile bents (the most economical bridge type at approximately \$35/SF). However, pile bents have height limitations, and on this project those limitations would be exceeded. A concrete bent bridge at \$95 to \$140/SF would be required. If a detour bridge were to be used, it would cost approximately the same as the proposed bridge (\$1.6 to \$2.4 Million). Shortening of the detour bridge by end-filling or lowering is not an option at this location because boats need to navigate under the bridge to near-by Lake Jackson.

We propose building a new parallel bridge 50' to the West of the existing bridge. Traffic will be maintained on the existing bridge during the construction of the proposed bridge. This option would not require the construction and demolition of a detour bridge, resulting in a net savings of \$ 525,000. Table 2 below presents the cost comparison of both options.

Table 2: Cost Comparisons of Detour/No Detour Design.

	Detour Bridge Design	No Detour Bridge Design	Cost Savings
Roadway Const Cost	\$1,119,587.65	\$ 953,690.24	\$ 165,897.41
Bridge Const/Demo	\$ 3,961,920.00	\$ 2,337,200.00	\$ 1,624,720.00
Req'd Right of Way	\$ 450,000.00	\$ 1,894,350.00	-\$ 1,444,350.00
Total incl E&C, reimb. util.	\$ 6,089,658.42	\$ 5,564,329.26	\$ 525,329.16

April 10, 2008

Project Concept Report page 4

Project Number: BRST0-0054-01(066)

P.I. Number: 333172

County: Butts-Newton County

Department Of Transportation
State of Georgia

Programmed:

P.E. 2000

R/W: 2008 ✓

Construction: LR

VE Study Required:

Yes ()

No (X)

Revised Cost Estimate:

Construction cost including inflation and ~~E&C~~ ^{E&C}: \$3,619,979.26

Right of Way: \$1,894,350.00

Reimbursable Utilities: \$50,000.00

See attached revised cost estimate.

Is the project located in a Non-attainment area:

Yes()

No(X)

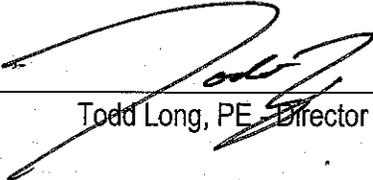
Recommendation:

We recommend that the proposed revision to the concept be approved for implementation.

Attachments:

1. Location Map
2. Cost Estimates including E&C, Right-of-Way, and Utilities
3. B/C analysis worksheet

Concur: _____

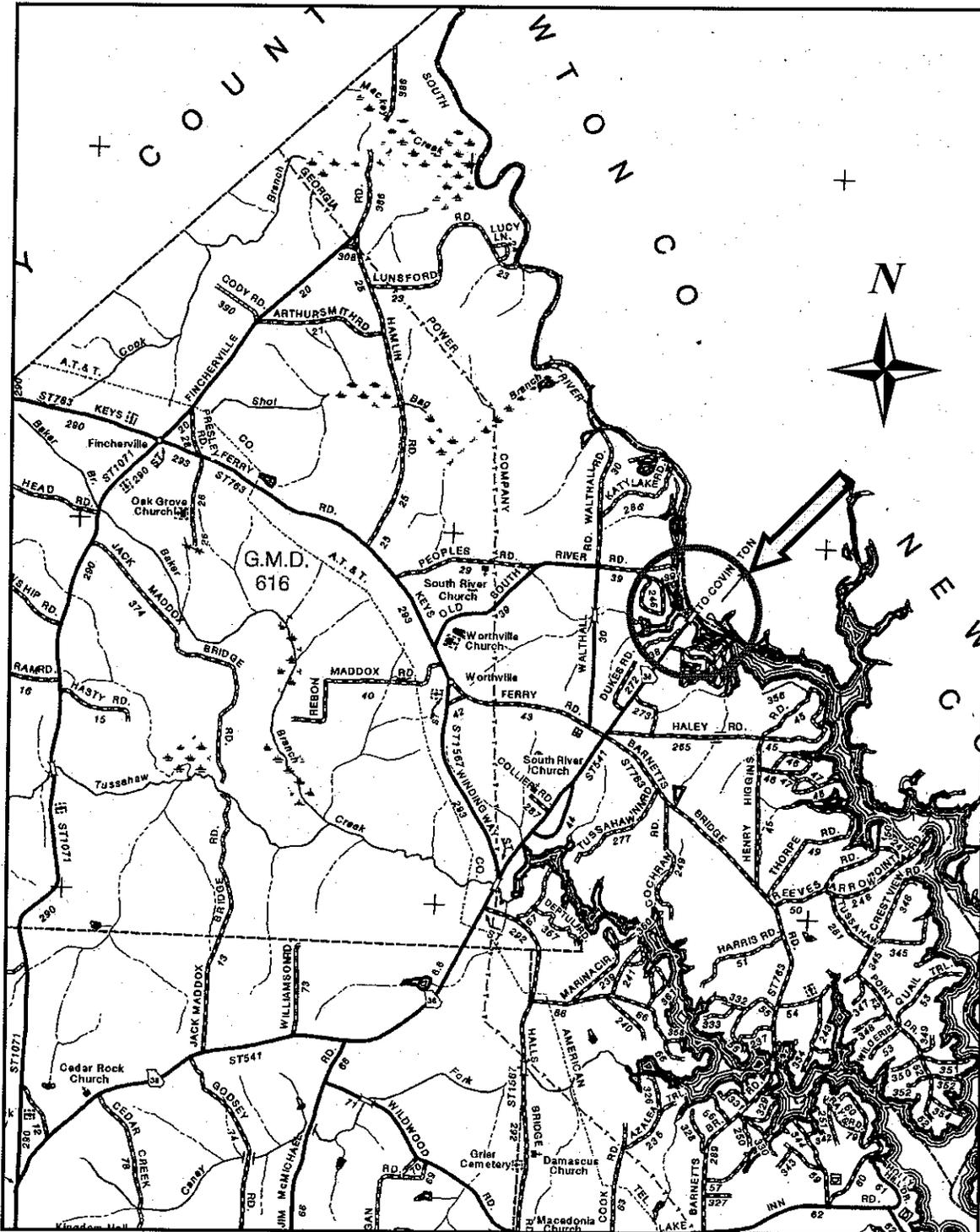

Todd Long, PE - Director of Preconstruction

Approve: _____


Gerald Ross, PE - Chief Engineer

April 10, 2008
Project Concept Report page 5
Project Number: BRST0-0054-01(066)
P.I. Number: 333172
County: Butts-Newton County

Department Of Transportation
State of Georgia



Scale: 1 inch = 1 mile

Location Map

Project: BRST0-0054-01(066) Butts-Newton County PI No.: 333172-
Description: SR 36 over South River at Butts-Newton County Line

April 10, 2008
 Project Concept Report page 6
 Project Number: BRST0-0054-01(066)
 P.I. Number: 333172
 County: Butts-Newton County

Department Of Transportation
 State of Georgia

Estimate Report for Revised Concept Report

Section Pavement

Item Number	Quantity	Units	Unit Price	Item Description	Cost
310-1101	100	TN	21.47	GR AGGR BASE CRS, INCL MATL	2147.00
402-3121	1700	TN	63.63	RECYCLED ASPH CONC 25 MM SUPERPAVE, GP 1 OR 2, INCL BITUM MATL & H LIME	108171.00
402-3131	1100	TN	66.40	RECYCLED ASPH CONC 9.5 MM SUPERPAVE, GP 2 ONLY, INCL BITUM MATL & H LIME	73040.00
402-3190	1600	TN	63.78	RECYCLED ASPH CONC 19 MM SUPERPAVE, GP 1 OR 2, INCL BITUM MATL & H LIME	102048.00
413-1000	1300	GL	1.93	BITUM TACK COAT	2509.00
Section Sub Total:					\$287,915.00

Section Bridge

Item Number	Quantity	Units	Unit Price	Item Description	Cost
540-1102	1	LS	366000.00	REMOVAL OF EXISTING BR, BR NO -	366000.00
543-0000	19712	SF	100.00	BRIDGE NO 1-448x44FT	1971200.00
Section Sub Total:					\$2,337,200.00

Section Roadway

Item Number	Quantity	Units	Unit Price	Item Description	Cost
150-1000	1	LS	253000.00	TRAFFIC CONTROL -	253000.00
153-1300	1	EA	76100.00	FIELD ENGINEERS OFFICE TP 3	76100.00
201-1500	1	LS	20000.00	CLEARING & GRUBBING -	20000.00
208-0100	2000	CY	4.90	IN PLACE EMBANKMENT	9800.00
208-0200	370	CY	30.88	ROCK EMBANKMENT	11425.60
433-1000	300	SY	153.79	REINF CONC APPROACH SLAB	46137.00
441-0014	1540	SY	37.82	DRIVEWAY CONCRETE, 4 IN TK	58242.80
441-0204	300	SY	34.13	PLAIN CONC DITCH PAVING, 4 IN	10239.00
550-1180	580	LF	44.93	STORM DRAIN PIPE, 18 IN, H 1-10	26059.40
550-2240	60	LF	37.70	SIDE DRAIN PIPE, 24 IN, H 1-10	2262.00
550-3318	32	EA	586.23	SAFETY END SECTION 18 IN, STORM DRAIN, 4:1 SLOPE	18759.36
550-3324	2	EA	954.09	SAFETY END SECTION 24 IN, STORM DRAIN, 4:1 SLOPE	1908.18
603-7000	800	SY	5.15	PLASTIC FILTER FABRIC	4120.00
634-1200	20	EA	103.93	RIGHT OF WAY MARKERS	2078.60
641-1200	375	LF	15.93	GUARDRAIL, TP W	5973.75
641-5001	3	EA	635.90	GUARDRAIL ANCHORAGE, TP 1	1907.70
641-5006	4	EA	388.51	GUARDRAIL ANCHORAGE, TP 6	1554.04
641-5012	3	EA	1775.69	GUARDRAIL ANCHORAGE, TP 12	5327.07
Section Sub Total:					\$554,894.50

Section Erosion Control

Item Number	Quantity	Units	Unit Price	Item Description	Cost
163-0232	5	AC	707.73	TEMPORARY GRASSING	3538.65
163-0240	140	TN	176.49	MULCH	24708.60
163-0300	2	EA	1700.55	CONSTRUCTION EXIT	3401.10

April 10, 2008
 Project Concept Report page 7
 Project Number: BRST0-0054-01(066)
 P.I. Number: 333172
 County: Butts-Newton County

Department Of Transportation
 State of Georgia

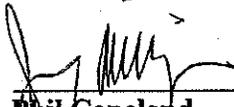
163-0503	3	EA	542.06	CONSTRUCT AND REMOVE SILT CONTROL GATE, TP 3	1626.18
163-0520	200	LF	17.60	CONSTRUCT AND REMOVE TEMPORARY PIPE SLOPE DRAIN	3520.00
163-0521	80	EA	212.99	CONSTRUCT AND REMOVE TEMPORARY DITCH CHECKS	17039.20
165-0010	1500	LF	0.82	MAINTENANCE OF TEMPORARY SILT FENCE, TP A	1230.00
165-0030	3000	LF	1.61	MAINTENANCE OF TEMPORARY SILT FENCE, TP C	4830.00
167-1000	1	EA	1175.47	WATER QUALITY MONITORING AND SAMPLING	1175.47
167-1500	18	MO	1027.27	WATER QUALITY INSPECTIONS	18490.86
170-1000	280	LF	13.11	FLOATING SILT RETENTION BARRIER	3670.80
171-0010	600	LF	1.83	TEMPORARY SILT FENCE, TYPE A	1098.00
171-0030	1000	LF	4.06	TEMPORARY SILT FENCE, TYPE C	4060.00
700-6910	9	AC	1066.58	PERMANENT GRASSING	9599.22
700-7000	27	TN	60.18	AGRICULTURAL LIME	1624.86
700-7010	34	GL	21.62	LIQUID LIME	735.08
700-8000	9	TN	295.93	FERTILIZER MIXED GRADE	2663.37
700-8100	675	LB	2.45	FERTILIZER NITROGEN CONTENT	1653.75
716-2000	550	SY	1.20	EROSION CONTROL MATS, SLOPES	660.00
Section Sub Total:					\$105,325.14

Section Signing and Marking					
Item Number	Quantity	Units	Unit Price	Item Description	Cost
636-1029	50	SF	16.21	HIGHWAY SIGNS, TP 2 MATL, REFL SHEETING, TP 3	810.50
636-2070	80	LF	7.99	GALV STEEL POSTS, TP 7	639.20
652-5451	7900	LF	0.20	SOLID TRAFFIC STRIPE, 5 IN, WHITE	1580.00
652-5452	7900	LF	0.20	SOLID TRAFFIC STRIPE, 5 IN, YELLOW	1580.00
654-1001	90	EA	3.11	RAISED PVMT MARKERS TP 1	279.90
654-1003	180	EA	3.70	RAISED PVMT MARKERS TP 3	666.00
Section Sub Total:					\$5,555.60

Total Estimated Cost: \$3,290,890.24

Subtotal Construction Cost	\$3,290,890.24
E&C Rate 10.0 %	\$329,089.02
Inflation Rate 0.0 % @ 0.0 Years	\$0.00
Total Construction Cost	\$3,619,979.26
Right Of Way	\$1,894,350.00
ReImb. Utilities	\$50,000.00
Grand Total Project Cost	\$5,564,329.26

Preliminary Right of Way Cost Estimate


Phil Copeland
 Right of Way Administrator
 By: Jerry Milligan

Date: March 4, 2008
Project: BRST-054-1(66)Butts/Newton
Existing/Required R/W: Varies/Varies
Project Termini : SR 36 over South River Bridge Replacement
Project Description: SR 36 Bridge Replacement

P.I. Number: 333172
No. Parcels: 26

Land: Ag/Res.R/W: 3.96 acres @ \$20,000/acre	\$	79,100	
Ag/Res Esmt.:0.65 acres @ \$ 20,000/acre @ 50%		<u>6,500</u>	\$ 85,600

Improvements : Barbecue, 1 story brick bldg., 2 story brick house, misc. site improvements			375,000
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Relocation: Commercial (1) Residential (1)			65,000
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Damage : Proximity (1) Cost to Cure (0)			<u>20,000</u>
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Net Cost			\$ 545,600
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Net Cost		\$	545,600
Scheduling Contingency	55 %		300,080
Adm/Court Cost	60		507,408
Market Appreciation	40 %		<u>541,235</u>
		\$	1,894,323

Total Cost **\$1,894,350**