

**DEPARTMENT OF TRANSPORTATION  
STATE OF GEORGIA**

**INTERDEPARTMENT CORRESPONDENCE**

**FILE:** BRMLB-9004(8) Cobb  
P. I. No.: 752630  
Canton Road & RR Bridge over U.S. 41/Cobb Parkway

**OFFICE:** Engineering Services

**DATE:** June 19, 2008

**FROM:** Brian Summers, P.E., Project Review Engineer *RSW*

**TO:** James B Buchan, P.E. State Urban Design Engineer

**SUBJECT:** IMPLEMENTATION OF VALUE ENGINEERING STUDY ALTERNATIVES

Recommendations for implementation of Value Engineering Study Alternatives are indicated in the table below. Incorporate alternatives recommended for implementation to the extent reasonable in the design of the project.

ALT No.	Description	Savings PW & LCC	Implement	Comments
<b>Canton Road/Industrial Park Drive/Elizabeth Street</b>				
C-2	Shift Canton Road 6' to eliminate overlap of bridges	-\$42,000 (cost increase)	No	After meeting with the Railroad (GNRR), it was agreed to swap the alignment of the railroad and Canton Road so this VE Alternative is no longer feasible.
P-1	Shift the alignment of Elizabeth Street, Industrial Park Drive, and Canton Road to avoid four electric tower relocations	\$660,000	Yes	This should be done.
P-3	Use a Roundabout Intersection at Canton Road/Industrial Park Drive/Elizabeth Street	\$1,045,000	No	This results in additional Right of Way impacts. In addition, the Utility tower would most likely still be in conflict.
I-4	Eliminate Cross Hatched Pavement on Industrial Park Drive	\$55,000	No	The turn lane tapers would still require that a big portion of the pavement be constructed.

ALT No.	Description	Savings PW & LCC	Implement	Comments
<b>Bridges</b>				
RR-2	Truss Bridge for Railroad	\$220,000	No	This would be more difficult to construct and the life cycle maintenance costs would end up minimizing or negating this savings.
CRB-3	Steel Girder Bridge for Canton Road	-\$170,000 (cost increase)	No	This results in a significant cost increase and would also increase the future maintenance costs associated with Steel Girders as opposed to the Concrete Beams that were proposed.
<b>U.S. 41 Reconstruction</b>				
U-5	Minimize reconstruction depth and width; defer walls to the future	Design Suggestion	Yes	This should be done.

A meeting was held on June 18, 2008 to discuss the above recommendations. Keith Kunst and Shamir Poudel with Arcadis, Butch Welch, Andrew Hoenig, and Marcela Coll with Urban Design and Brian Summers, Ron Wishon and Lisa Myers with Engineering Services were in attendance.

Additional information was provided on June 19, 2008

Approved:  Date: 6/26/08  
Gerald M. Ross, P. E., Chief Engineer

BKS/REW

Attachments

- c: Gus Shanine
- R. Wayne Fedora
- Todd Long
- Ben Buchan
- Darrell Richardson

**BRMLB-9004(8) Cobb**  
**P.I. No. 752630**  
**VE Study Implementation**  
**Page 3.**

Butch Welch  
Marcela Coll  
Andrew Hoenig  
Paul Liles  
Bill Ingalsbe  
Bill DuVall  
Clayton Bennett  
James Magnus  
Melissa Harper  
Mickey McGee  
Ken Werho  
Nabil Raad  
Paul Condit  
Lisa Myers



# Preconstruction Status Report By PI Number

Print Date: 06/16/2008

PROJ ID	COUNTY	DESCRIPTION	MGMT. ROW DATE	SCHED DATE	MGMT. LET DATE
752630-	Cobb	CR 4455/CANTON ROAD & RR BR OVER SR 3/US 41 N OF MARIETTA	Jun-05	Jan-10	Feb-09

BRMLB-9004-00(008) **FIELD DIST:** 7  
**TIP #:** CO-272 **TWIN:** **US:**  
**MPO:** Atlanta TMA **EST DATE:** 12/7/2007  
**MODEL YR:** 2010  
**PROJ MGR:** Welch, Albert **PROJ LENGTH:** 0.41  
**PROG** Replacement **TYPE** Bridges  
**TYPE:** **WORK:**  
**CONCEPT:** BR REPL **LET RESP:** DOT Congressional 11

Phase	Approved	Proposed	Cost	Fund	Status
PE	1998	1998	565,455.56	Q10	AUTHORIZED
ROW	2005	2005	10,906,000.00	Q10	AUTHORIZED
CST	2008	2009	7,743,729.60	L1C0	PRECST
CST	2008	2009	3,989,088.00	L240	PRECST

SCHED START	SCHED FINISH	ACTIVITY	ACTUAL START	ACT/EST FINISH	PCT	DISTRICT COMMENTS
		Define Project Concept	12/28/1998	10/18/1999	100	COORDINATE W/731590
		Concept Meeting	9/14/1999	9/14/1999	100	ARCADIS (3-20-01) P.I.M.
		Concept Submittal and Review	10/18/1999	10/18/1999	100	HELD 2-8-01. (1-10-03)
		Receive Preconstruction Concept Approval	10/27/1999	11/9/1999	100	UTILITY ISSUES. LGPA TO BE
		<b>Management Concept Approval Complete</b>	<b>1/4/2000</b>	<b>1/25/2000</b>	<b>100</b>	REVISED. PLANS READY FOR
6/25/2008	7/1/2008	Value Engineering Study	7/23/2007		97	PFPR. NEED BRIDGE PLANS.
		Public Information Open House Held	2/8/2001	2/8/2001	100	(9/8/03) R/R INVOLVEMENT.
		Environmental Approval	4/1/2000	5/30/2002	100	R/W NOT ACQUIRED. MOVED
		Field Surveys/SDE	6/6/2002	6/30/2002	100	TO 06 CST. (3/10/04) R/W
		<b>Preliminary Plans</b>	<b>10/1/2000</b>	<b>4/30/2003</b>	<b>100</b>	PLANS SUBMITTED FOR
6/20/2008	6/20/2008	Preliminary Bridge Design	5/6/2002		100	APPVL. MAJOR UTILITY
		Underground Storage Tanks	9/28/2004	4/6/2005	100	COSTS. (11/15/04) WILL BE
		PFPR Inspection	6/24/2003	6/24/2003	100	RE-EVAL. (4/15/05) R/W PLANS
		R/W Plans Preparation	8/19/2003	11/10/2003	100	APPVD; PUBLIC MEETING
		<b>R/W Plans Final Approval</b>	<b>12/10/2003</b>	<b>7/16/2004</b>	<b>100</b>	HOLD IN MAR. BY LOCALS.
		L & D Report Development and Approval	9/5/2002	9/9/2002	100	(03/09/07) SIGNED RR
11/20/2009	11/24/2009	R/W Acquisition	3/6/2006		62	AGREEMENT; NEED
		Stake R/W	1/19/2006	2/1/2006	100	CONSULTANT TASK ORDER
		Soil Survey	8/20/2004	10/1/2004	100	GO ROW Comments:
		Bridge Foundation Investigation	8/16/2004	11/19/2004	100	11-30-07 4 bridge parcels on
6/20/2008	3/24/2009	<b>Final Design</b>	<b>7/17/2004</b>		84	hold for revisions; Design to add
7/16/2008	12/30/2008	Final Bridge Plans Preparation			0	on 3 "A" parcels and will need new
4/15/2009	4/16/2009	FFPR Inspection			0	appraisals and offers made
4/30/2009	5/13/2009	FFPR Response			0	

**BIKE PROVISIONS INCLUDED?:** Y **MEASUREMENT SYSTEM:** E **CONSULTANT:** C **UT EST:** \$ 46,084.00

**PDD:** [01R] W/O CONTRACT FOR CONCEPT. \$2.5M MEAG issues.9/16/03. Maintenance needs this. 3/10/04.  
**Bridge:** WMD 5/02/08 CONSUL-ARC  
**Design:** MGC:ARC: Expecting Rev ROW Plans by May 23: 05-16-08  
**EIS:** CEIAPvd5-30-02IReev4-19-05[Not on Sched CSTIMyrthil  
**LGPA:** COBB REF DO UTIL 6-18-02|MARIETTA SGN P UTIL 9-95|RESCISSION LETTER SENT TO COBB & MARIETTA 6-3-05.  
**Planning:** CR 4455/Canton Rd. & RR bridge over SR 3/US 41 N of Marietta is on the ARC Bike Trans and Ped Walkways Plan, pg 63 & 92  
**Programming:** PR2/P=9-3-97|#1 10-03|#2 6-06|TEMP SR 1129 & 1129TA|#3 1-07|#4 4-07|#5 5-07|#6 5-07|#7 6-07|#8 8-07  
**ROW:** Pre-Acq.Moonshower; Acq. Debbie Gnusse; (CC) M. Rubio  
**Railroad:** GNE  
**Traffic Op:** RJC:REVWD PFPR PLNS/COMNTS TO SCOTT 5/14/03 \$+  
**Utility:** CC: NEED REVISED PLANS (R/R ALIGN) 10/07; RESUBMIT TO UTS  
**EMG:** BRIDGE REPLACEMENT (WO#62)

**R/W INFORMATION:**  
**PREL PARCEL CT:** 24 **TOTAL PARCEL CT:** 26 **ACQUIRED BY:** DOT **ACQ MGR:** Gnuse, Debbie (C)  
**UNDER-REVIEW CT:** 0 **RELEASED CT:** 25 **OPT-PEND CT:** 1 **DEEDS CT:** 16 **COND-PEND CT:** 0 **COND-FILED CT:** 5  
**RW CERT DT:** **ACQUIRED CT:** 21 **RELOCATION CT:** 3

Monday, June 16, 2008

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DEPARTMENT OF TRANSPORTATION  
STATE OF GEORGIA

INTERDEPARTMENTAL CORRESPONDENCE



**FILE** BRMLB-9004(8), Cobb County  
Canton Road & RR Bridge  
Over US 41/Cobb Parkway  
P. I. No: 752630

**OFFICE** Urban Design

**DATE** May 28, 2008

**FROM**  James B. Buchan, P.E., State Urban Design Engineer

**TO** Brian Summers, P.E., State Project Review Engineer

**SUBJECT** Value Engineering Study - Responses

Reference is made to the recommendations that were contained in the Value Engineering Study – Final Report dated October 4, 2007 for the above referenced project. Our responses and recommendations are as follows:

**1. Value Engineering Alternative C-2: Shift Canton Road 6' North – *Not Recommended***

Recommendation of Alternative C-2 is not recommended for implementation by the Department.

- This recommendation was suggested by Melissa Harper of the GDOT Construction Office to allow the roadway bridge to be constructed in a single phase. The original bridge layout was located as far to the north as permitted by the Right-Of-Way in order to facilitate the staged construction.
- A revised railroad alignment which showed the Canton roadway bridge to the *south/east* of the railroad bridge was sent to GNRR on December 6, 2007. This new alignment is in contrast to the alignment shown at the VE study meeting where the roadway bridge was located to the *north/west* of the railroad bridge. The re-positioning of alignments made this recommendation not feasible because it would mean moving the roadway bridge toward the railroad bridge.
- Although moving Canton Road to the north is now infeasible, the design team has separated the two bridges so that two-way roadway traffic will be maintained throughout construction. A single phase will not be possible but a temporary closure of Canton Road – which was discussed - will not be necessary based on the new alignments.

**2. Value Engineering Alternative I-2: Shift Canton Road, Industrial Park Drive and Elizabeth Street to avoid the power transmission towers – *Recommended***

Recommendation of Alternative I-2 is subject to the ongoing development of a satisfactory alignment for Georgia Northeast Railroad. This alternative is feasible and is being further investigated.

- The cost of the transmission towers is considered to be extremely high and is the reason for this recommendation. The existing design is laid out to meet a 45 mph design speed for Canton Road and US41/ Cobb Parkway. The roadway alignments must also be located away from the proposed at-grade rail crossing to allow the intersection of Canton Road & Relocated Industrial Park Drive/ Elizabeth Street to function properly. The VE Study recommends investigating changing the alignment to miss several of the towers. By moving the Canton Road alignment south and re-aligning Elizabeth Street with a tighter radius, the intersection could be moved further to the east. This new layout will meet a design speed of at least 30 mph for Elizabeth Street and will require guardrail protection but will miss most of the transmission towers as suggested.

### **3. Value Engineering Alternative P-3: Replace the Signalized Intersection with a Roundabout – *Not Recommended***

Approval of Alternative P-3 is not recommended for implementation by the Department.

- This recommendation will require a significant amount of Right-Of-Way to construct in a relatively restrictive area.
- The Utility referred to in item #2 will have further impacts due to this Alternative.
- The efficient operation of the roundabout will be negatively affected by the presence of the railroad crossing on Canton Road due to the number of trains that cross each day.

### **4. Value Engineering Alternative I-4: Eliminate the Center Lane on Industrial Park Drive – *Not Recommended***

Recommendation of Alternative I-4 is subject to the ongoing layout of a satisfactory alignment for Georgia Northeast Railroad. However, this alternative is not recommended.

- This alternative is meant to eliminate the center lane along 400 feet of Industrial Park Drive. The existing alignment is a three lane cross-section which includes a turn lane either at the intersections or for the driveway between Stations 108+00 and 112+00.
- Right-of-Way has already been acquired.
- The roadway width on Industrial Park Drive will be investigated further as part of the development of the revised final alignments.

### **5. Value Engineering Alternative RR-2: Use a Truss Bridge for the Railroad Overpass – *Not Recommended***

Approval of Alternative RR-2 is not recommended for implementation by the Department.

- The VE study recommendation discusses the reduced wind area and lower costs as well as the improved aesthetics of such a structure as justifications for this alternative. Wind loading is not a major concern in this location due to the relatively low profile of the structure, the project location, and the fact that the structure is a single span with no intermediate bents.
- This bridge will be more difficult to construct than the proposed plate girder bridge and will cost more to maintain due to the numerous intersecting members that will collect dirt and debris and be prone to corrosion.

- The study does not add the projected life cycle cost associated with the maintenance of such a structure even though it does acknowledge that it will be more than the proposed structure.

#### **6. Value Engineering Alternative CRB-3: Use Steel Girder Bridge for Canton Road – *Not Recommended***

Approval of VE Alternative CRB-3 is not recommended for implementation by the Department.

- The study recommends using steel due to the length of beam and the difficulty of construction and shipping. Concrete beams are more desirable from a maintenance standpoint. The shipping length issues would be a concern if the location was rural and difficult to access, but this site is quite easy to access by interstate and state routes. Construction of the long spans required are being performed regularly and in this case it is desirable to construct the beams in a single pick without the need for welders and false work to temporarily support the steel beams.
- This recommendation does not consider the future maintenance costs associated with steel bridge beams.

#### **7. Value Engineering Alternative U-5: Minimize US41 Reconstruction - *Recommended***

Recommendation of Alternative U-5 is subject to the ongoing development of a satisfactory alignment for Georgia Northeast Railroad. This alternative may be feasible and is being further investigated.

- This alternative addresses the proposed width of US41 as well as the need to lower the profile to meet the vertical clearance requirements.
- There does appear to be a possibility of raising the profiles of each crossing over US41. The roadway and rail profiles will be investigated as part of the development of the revised alignment of the project.

#### **8. Value Engineering Study Design Considerations**

The final rail alignment was still under development at the time the VE Study was performed and at the time the VE Study responses were written. The GNRR was not satisfied that the railroad alignment proposed in the design would meet their current and future needs for freight and potential passenger traffic through this location. Several coordination meetings have been held between the consultant, the Department, and GNRR to discuss this issue. Each design consideration will be further studied to verify cost savings to the project.

#### **9. Design Consideration 4; re-align the railroad to the north of Canton Road**

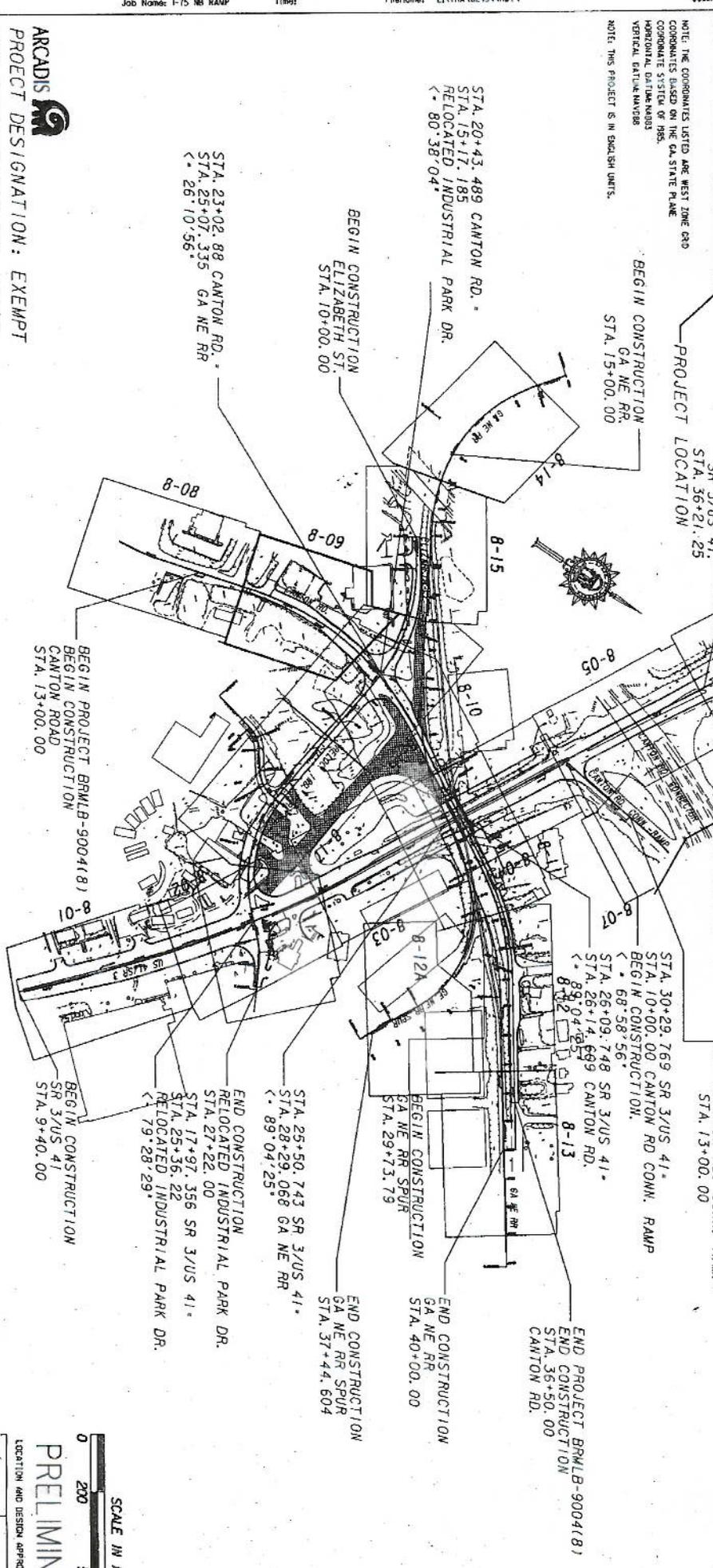
This consideration is recommended by the design team. As mentioned previously, the re-alignment of Canton Road to the south/west of the railroad was included in the submittal for approval made to GNRR on December 6, 2007. This will allow railroad operations to continue at their existing speed with lower maintenance costs by eliminating the numerous curves on the mainline alignment. This alternative will also allow both bridges to be constructed with minimal disruption to traffic on Canton Road and will have significant positive impact on Right-Of-Way for parcel 9.

M/DPOINT COORDINATE  
 N 1446491.7750  
 E 2181045.0780

# DEPARTMENT OF TRANSPORTATION STATE OF GEORGIA

## PLAN AND PROFILE OF PROPOSED CANTON RD & RR BRIDGE OVER SR 3/US 41

FEDERAL AID PROJECT  
 BRMLB-9004(8)  
 PI NO. 752630



NOTE: THE COMPONENTS LISTED ARE WEST ZONE 830 COORDINATES BASED ON THE GA STATE PLANE. HORIZONTAL DATUM: NAD83 VERTICAL DATUM: NAVD83

NOTE: THIS PROJECT IS IN ENGLISH UNITS.

ARCADIS

PROJECT DESIGNATION: EXEMPT  
 PDP CLASSIFICATION: MAJOR  
 FUNCTIONAL CLASSIFICATION: URBAN MINOR ARTERIAL

NOTE:  
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SEE SHEET 2 FOR MORE

BRMLB-9004 (8) COBB COUNTY

DESIGN DATA

TRAFFIC A.D.T.: (2008)	CANTON RD.	SR 3	US 41
TRAFFIC D.H.V.: (2008)	15,134	7,982	6,068
DIRECTIONAL DIST.:	1390	9887	50%
% TRUCKS: 5%			
SPEED DESIGN: 5% CANTON ROAD - 45 mph			

PROJECT NUMBER: BRMLB-9004(8)  
 COUNTY: COBB  
 COUNTY NO.: 752630

NET LENGTH OF ROADWAY	NET LENGTH OF BRIDGES	NET LENGTH OF EXCEPTS	CROSS LENGTH OF PROJECT	NET LENGTH OF PROJECT	PERCENTAGE	PERCENTAGE	PERCENTAGE	TOTAL
0.465	0.000	0.000	0.473	0.465	0.000	0.228	0.000	1.36
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
0.465	0.000	0.000	0.473	0.465	0.000	0.228	0.000	1.36
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
0.465	0.000	0.000	0.473	0.465	0.000	0.228	0.000	1.36

SCALE IN FEET

0 200 500 800

PRELIMINARY

LOCATION AND DESIGN APPROVAL DATE: September 9, 2008

DATE	STATE URBAN DESIGN ENGINEER
DATE	CHIEF ENGINEER
DATE	PRELIMINARY FIELD PLAN REVIEW
DATE	FINAL FIELD PLAN REVIEW
DATE	REVISION DATES: