

**DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA**

INTERDEPARTMENT CORRESPONDENCE

FILE: BRST0-0005-05(047) Bryan Effingham **OFFICE:** Engineering Services
P.I. No.: 533145
SR 26/US 80 @ Ogeechee River **DATE:** June 22, 2010

FROM: Ronald E. Wishon, State Project Review Engineer *REW*

TO: Bobby K. Hilliard, PE, State Program Delivery Engineer
Attn.: Aghdas Ghazi

SUBJECT: IMPLEMENTATION OF VALUE ENGINEERING STUDY ALTERNATIVES

The VE Study for the above project was held March 29-April 1, 2010. Responses were received on June 22, 2010. Recommendations for implementation of Value Engineering Study Alternatives are indicated in the table below. The Project Manager shall incorporate the VE alternatives recommended for implementation to the extent reasonable in the design of the project.

ALT #	Description	Potential Savings/LCC	Implement	Comments
A-1	Construct only the new Ogeechee River Main Channel bridge on the existing roadway alignment	\$3,553,000	No	The overflow bridge is functionally obsolete. The bridge is not suitable for widening. Not replacing the overflow bridge with the river crossing would increase the cost of the bridge significantly as a stand-alone project and would cause additional construction delays to the travelling public.
A-1.1	Construct both the new Ogeechee River Main Channel bridge and its Overflow bridge on the existing alignment	\$2,802,000	No	The two bridges cannot be removed and replaced simultaneously due to a singular access point provided to residents between the two structures. There is no alternate access for these residents. The time needed to replace each structure independently will far exceed the 12 months proposed by the VE Team. Additionally, with the proposed design, any future widening can be accomplished within the required ROW, eliminating any future ROW acquisition.

A-1.2	Construct both new bridges (just north of the existing bridge) in two stages while maintaining two-way traffic on the existing bridges	\$1,397,000	No	Although it is possible to stage construct the bridges as proposed, it is not practical at this site. Stage construction would be suitable for locations where the ROW is costly or there are geometric constrains, such as buildings or railroads. The piers within the river would have to be constructed as single column bents for each stage, losing the benefit of frame action. This would substantially increase the size of the caps, columns, and footings/caissons. Stage construction would increase construction time by 16 months, which would increase the cost approximately \$2,400,000.
A-1.3	Construct both bridges on new alignment but reduce the 60 ft northern roadway alignment shift by 20 ft	\$346,000	No	The proposed shoulder break point will be approximately 4 ft from the existing edge of paving (see attached staging cross section). There will be insufficient room for drainage storage between the roadways during Stage 1. The 60 ft separation alignment was chosen to accommodate staging drainage.
A-4	Construct the four main river crossing bridge piers using caissons in lieu of pile footings and cofferdams	\$231,000	No	At this stage of design, the preliminary layout is complete and the four river piers are shown as concrete. The BFI indicates that these intermediate bents will be constructed with pile footings; however, the BFI recommends Steel H-Piles as opposed to the PSC piles assumed by the VE Team. The depths of the caissons assumed by the VE Team appear to be very shallow. During the design, the design team will evaluate the use of caissons and make the appropriate changes to the plans if required.
A-12 & C-3	Reduce the shoulder width from 10 ft to 8 ft on the Ogeechee River Main Channel bridge and the Overflow bridge	\$454,000	Yes	This will be done.

The Office of Engineering Services concurs with the Project Manager's responses.

Approved:  Date: 6-24-10
Gerald M. Ross, PE, Chief Engineer

REW/LLM

Attachments

c: Ben Buchan
Bobby Hilliard/Stanley Hill/Aghdas Ghazi
Brad Saxon/Teresa Scott/Dennis Odom/Travis Dent
Paul Liles/Bill Duvall/Bill Ingalsbe/Shawn L. Williams
Funmi Adesesan
Will Murphy
Ken Werho
Lisa Myers
Matt Sanders

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA



INTERDEPARTMENT CORRESPONDENCE

FILE BRST-0005-05(047), Bryan/Effingham **DATE** June 18, 2010
SR 26/US 80 over Ogeechee River & Overflow
P.I. No. 533145

FROM Bobby K. Hilliard, P.E., State Program Delivery Engineer *B.K.H.*

TO Ronald E. Wishon, State Project Review Engineer
Attn: Lisa Myers

SUBJECT VALUE ENGINEERING STUDY REPORT RESPONSE

Attached, please find the concurrence letters, from the District-Five, Design Leader and the Bridge Office to the Value Engineering Study Report recommendations. The Office of Program Delivery concurs with these offices implementation recommendations.

If you have any questions, please contact Aghdas Ghazi of this Office at (912)271-7027.

S.H.
BKH: SH: ASG

Attachments

cc: Ben Buchan, Director of Engineering
Paul Liles, Bridge Office Attend: Bill DuVall
Project File

**DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA**

INTERDEPARTMENT CORRESPONDENCE

FILE BRST-0005-05(047), Bryan/Effingham **DATE** June 10, 2010
PI: 533145-

FROM Bradford W. Saxon, P.E., District Preconstruction Engineer

TO Bobby Hilliard, P.E., State Program Delivery Engineer
Attn: Aghdas Ghazi

SUBJECT VALUE ENGINEERING RESPONSE

The value engineering study for the above referenced project dated April 8, 2010 contained six recommendations requiring responses. Attached please find the Bridge Office's response to the study, which have been reviewed and considered in the responses below. Below are this office's recommendations for these alternatives:

Idea A-1: Construct only the new Ogeechee Main River Channel Bridge on the existing roadway alignment.

Recommendation: **Do Not Implement.** The overflow bridge is functionally obsolete, was designed for the H15 truck loading and is 66 years old. This bridge is not suitable for widening. Not replacing the overflow bridge with river crossing would increase the cost of the bridge significantly as a stand-alone project and would cause additional construction delays to the public.

Idea A-1.1: ALTERNATIVE TO A-1 Construct both the new Ogeechee Main River Channel Bridge and its Overflow Bridge on the existing roadway alignment.

Recommendation: **Do Not Implement.** The two bridges cannot be removed and replaced simultaneously due to a singular access point provided to residents between the two structures. There is no alternate access for these residents. The time needed to replace each structure independently will far exceed the 12 months as anticipated in the VE alternate, and subsequently the benefit of closing the road versus the proposed design will be reduced. Other factors that have been considered are the length of detour, percentage of trucks, costs of right of way, and future widening considerations. The signed detour would be 23.51 miles in length. SR 26/US 80 is classified as a rural minor arterial, with an ADT of 8400, with 13% 24 hour trucks. The benefit of ROW savings (\$263,750) under this alternate will not be fully realized when the route is widened in the future. The current Ogeechee River structure is centered on 200-ft of ROW. With the current design, any future widening can be accomplished within the required ROW, eliminating any future ROW acquisition.

Idea A-1.2: ALTERNATIVE TO A-1 Construct both the new bridges (just north of the existing bridge) in two stages while maintaining two-way traffic on the existing bridges.

Recommendation: **Do Not Implement.** Although it is possible to stage construct the bridges as proposed, it is not practical at this site. Stage construction would be suitable for locations where the ROW is costly or there are geometric constraints, such as adjacent buildings or railroads. The piers within the river would have to be constructed as single column bents for each stage, losing the benefit of frame action. This would substantially increase the size of the caps, columns and footings/caissons. Stage construction would increase construction time by 16 months, which would increase the cost approximately \$2,400,000.

When looking at the roadway staging for this alternate, there will be concerns with the vertical grades and drainage between the two roads during staging. The proposed right edge of mainline paving and the left edge of the existing travel lane are both offset 12 foot from the proposed centerline (see attached cross section). The cross section shows that the proposed grades would have to be raised in order to construct the proposed road adjacent to the existing travel lane. This in turns means that the bridges would need to be raised, which will increase the cost of the project.

Idea A-1.3: Construct both the new bridges on new alignment but reduce the 60-foot northern roadway alignment by 20 feet

Recommendation: Do Not Implement. The issues with this alternate lie with the staging of the roadway and the drainage between the roadways. The proposed shoulder break point will be approximately 4 feet from the existing edge of paving (see attached staging cross section). Even if you wait to install the right paved shoulder under Stage 2 adjacent to traffic and under a flagging operation, there will be insufficient room for drainage storage between the roadways during Stage 1. The 60-foot alignment was chosen with the staging drainage in mind. The drainage between the roadways has to be directed via a ditch to each bridge end. The bridges are approximately 1000 feet apart and the existing grades are very flat.

Idea A-4: Construct the four main channel crossing bridge piers using caissons in lieu [of] pile footings.

Recommendation: Do Not Implement. This alternate should have been a design suggestion. At this stage in the design, the preliminary layout is complete and the four river piers are shown as concrete. The Bridge Foundation Investigation indicates that these intermediate bents will be constructed with pile footings. However, the BFI recommends Steel H-Piles as opposed to the PSC piles assumed in the VE study. The depths of the caissons assumed by the VE team appear to be very shallow. During the design, it would be prudent for the design team to evaluate the use of caissons, and if the caisson foundation is determined to be more cost effective, either change to caissons or provide an alternate design in the final plans.

Idea A-12: Reduce the shoulder width of the Ogeechee River Main Channel Bridge and the Overflow Bridge from 10 feet to 8 feet.

Recommendation: Implement

If you have any questions and/or comments, please contact Brad Saxon at (912)427-5715 or bsaxon@dot.ga.gov.

BWS:ADO:TD:bws

Attachments

Copy: Bill Duvall, Bridge Office
Project File

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

INTERDEPARTMENT CORRESPONDENCE

FILE BRST0-0005-05(047) BRYAN-EFFINGHAM **DATE** June 3, 2010
P.I No. 533145

FROM  Paul V. Liles, Jr., P.E., State Bridge Engineer

TO Bobby Hilliard, P.E., State Program Delivery Engineer
Attn: Aghdas Ghazi

SUBJECT BRIDGE DESIGN VALUE ENGINEERING RESPONSE

The Value Engineering Study for the above referenced project dated April 8, 2010 contained five VE Alternatives requiring response from the Bridge Office including A-1, A-1.2, A-1.3, A-4 and A-12. Below are our recommendations for these alternatives.

A-1 VE Alternative – “Construct only the new Ogeechee Main River Channel Bridge on the existing roadway alignment.”

Recommendation: **Do Not Implement.** The overflow bridge is functionally obsolete, was designed for the H15 truck loading and is 66 years old. This bridge is not suitable for widening. Not replacing the overflow bridge with the river crossing would increase the cost of the bridge significantly as a stand-alone project and would cause additional construction delays to the public.

A-1.2 VE Alternative – “Construct both new bridges (just north of the existing bridge) in two stages while maintaining two-way traffic on the existing bridge.”

Recommendation: **Do Not Implement.** Although it is possible to stage construct the bridges as proposed, it is not practical at this site. Stage construction would be suitable for locations where the ROW is costly or there are other geometric constraints such as adjacent buildings or railroads. The piers within the river would have to be constructed as single column bents for each stage losing the benefit of frame action. This would substantially increase the size of the caps, columns and footing/caissons. Stage construction would increase construction time by 16 months which would increase the cost approximately \$2,400,000.

A-1.3 VE Alternative – “Construct both bridges on new alignment but reduce the 60-foot northern roadway alignment shift by 20 feet.”

Recommendation: **Possible Implementation.** Structurally, the proposed bridges could be constructed adjacent to the existing bridges with as little clearance as 3'-6" as proposed in the VE Alternative. Other issues must be considered by the Road Designer including shoring, stage construction, drainage, etc.

A-4 VE Alternative – “Construct the four main channel crossing bridge piers using caissons in-lieu [of] pile footings.”

Recommendation: **Do Not Implement.** This alternative should have been a Design Suggestion. At this stage in the design the preliminary layout is complete and the four river piers are shown as concrete. The Bridge Foundation Investigation indicates that these intermediate bents will be constructed with pile footings, however the BFI recommends Steel H-Piles as opposed to PSC piles as was assumed in the VE Study. The depths of caissons assumed by the VE Team appear to be very shallow. During the design, it would be prudent for the design team to evaluate the use of caissons and if the caisson foundation is determined to be more cost effective either change to caissons or provide an alternate design in the final plans.

A-12 VE Alternative – “Reduce the shoulder width[s] of the Ogeechee River Main Channel Bridge and the Overflow Bridge from 10 feet to 8 feet.”

Recommendation: **Implement.**

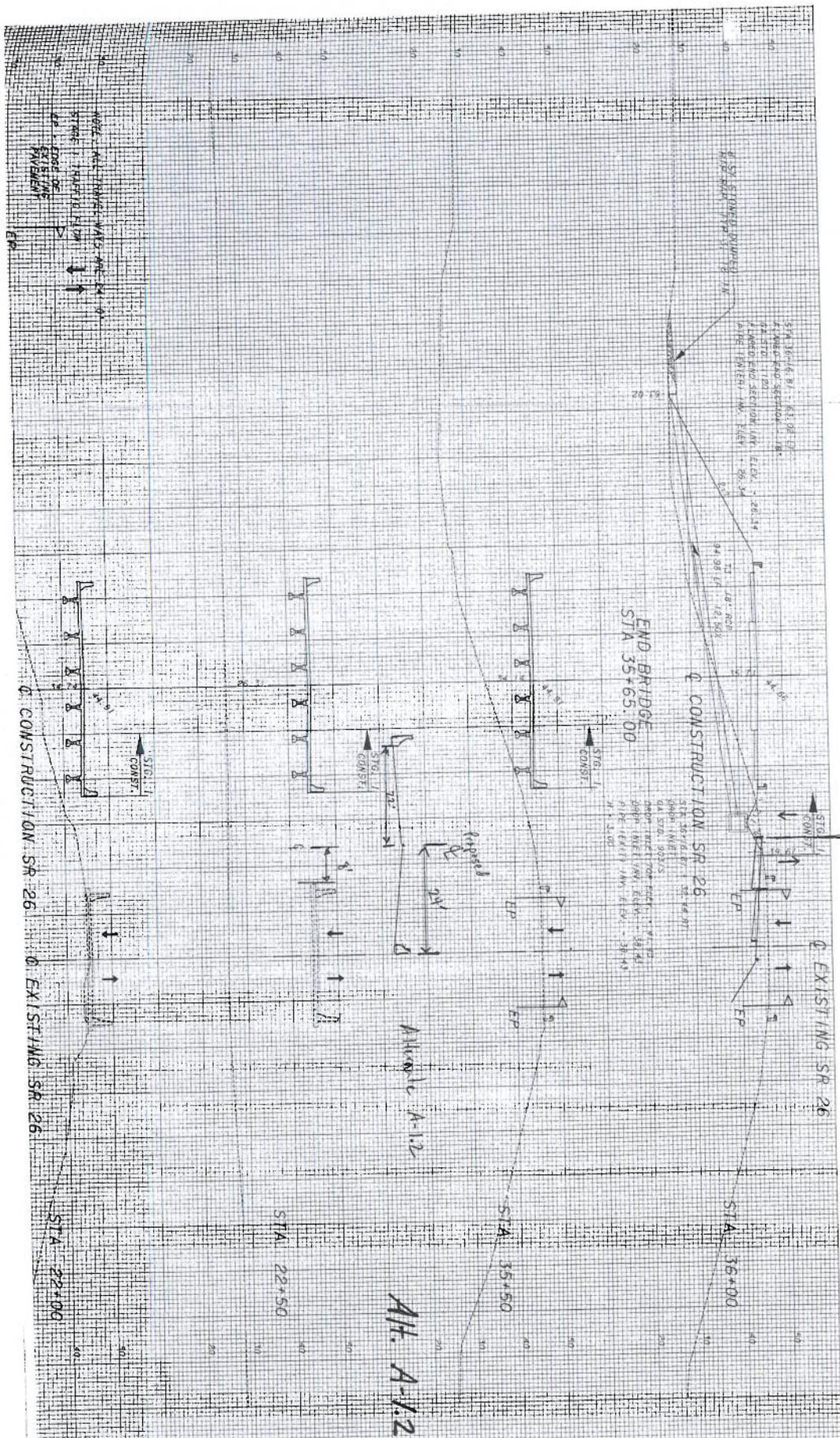
If you have any questions and/or comments, please contact Bill DuVall of the Bridge Design Office at (404) 631-1883 or at email address bduvall@dot.ga.gov.

PVL/WMD

cc: Ron Wishon, Engineering Services
Glenn Durrence, District Engineer – Jesup, Attn: Brad Saxon
Bill DuVall, Bridge Office

District # 8
Jesup
Date: 6-7-10

_____	Dist. Engr.
_____	Personnel
_____	Contracts GJC
_____	Dist. Set.
_____	M/A Test
_____	Const.
_____	Progr. & P.I.
_____	Pre-Const.
_____	Local Gov./B.W.
_____	Design A.O.
_____	State Aid
_____	Right of Way
_____	S.D. O. & Tr.
_____	Employee City
_____	Traffic Sign
_____	Utilities
_____	Adm. Office
_____	Purchasing
_____	Maintenance
_____	Fire Room



Proposed

Alternate A-1.2

Smith & Lineback Engineers
INCORPORATED
POWDER SPRINGS STREET, SUITE 240
ALICHA, GEORGIA 30004

STAGE I CROSS SECTIONS
STA 22+00 - 36+00

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.	BRST-005-51471	34	135

PRECONSTRUCTION STATUS REPORT FOR PI-533145-

SR 26/US 80 @ OGEECHEE RIVER & OVERFLOW 9 MILES OF GUYTON
 MGMT LET DATE :
 MGMT ROW DATE :
 BASELINE LET DATE :
 SCHED LET DATE : 12/21/2011
 WHO LETS?: GDOT Let
 LET WITH :

PRIORITY CODE:
 DOT DIST: 5
 CONG. DIST: 1
 BIKE: Y
 MEASURE: E
 NEEDS SCORE: 06
 BRIDGE SUFF: 39.45, 55.48

MPO: Not Urban
 TIP #: 0.63
 MODEL YR :
 TYPE WORK: Bridges
 CONCEPT: BRIDGE
 PROG TYPE: Replacement
 Prov. for ITS: N
 BOND PROJ.:

PROJ ID : 533145-
 COUNTY : Bryan, Effingham
 LENGTH (MI) : 0.63
 PROJ NO.: BRST0-0005-05(047)
 PROJ MGR: Ghazi, Aghdas Soolodeh
 AOH Initials: 1TD/MA
 OFFICE : Program Delivery
 CONSULTANT: No Consultant, GDOT In-House Design
 SPONSOR : GDOT
 DESIGN FIRM: GDOT D5 Design Office

BASE START FINISH LATE START LATE FINISH TASKS % ACTUAL START ACTUAL FINISH
 Concept Development 100
 Concept Meeting 9/17/2004 9/28/2005
 PM Submit Concept Report 6/2/2005 6/2/2005
 Receive Preconstruction Concept Approval 8/25/2005 8/25/2005
 Management Concept Approval Complete 9/12/2005 9/9/2005
 Value Engineering Study 11/6/2009 9/28/2005
 Environmental Approval 1/15/2010 83
 Preliminary Plans 23
 Preliminary Bridge Design 6/2/2005 67
 404 Permit Obtainment 3/16/2006 100
 PPR Inspection 0
 R/W Plans Preparation 0
 L & D Approval 0
 R/W Authorization 0
 Shake R/W 0
 Soil Survey 0
 Bridge Foundation Investigation 100
 Final Design 9/6/2011 100
 Final Bridge Plans Preparation 6/30/2011 0
 PPR Inspection 9/28/2011 0
 Submit PPR Responses (OES) 10/13/2011 0

Activity	Approved	Proposed	Cost	Fund	Status	Date Auth
PE	2000	2000	75,000.00	Q10	AUTHORIZED	10/25/1999
ROW	LR	2013	296,682.88	LIC0	PRECAST	
CST	LR	2015	10,056,907.64	LIC0	PRECAST	
CST	LR	2015	792,000.00	L.Y60	PRECAST	

Activity	Approved	Proposed	Cost	Fund	Status	Date Auth
PE Cost Est. Amt	75,000.00					
ROW Cost Est. Amt	263,750.00					
CST Cost Est. Amt	8,266,045.00					
CST Cost Est. Amt	792,000.00					

Activity	Approved	Proposed	Cost	Fund	Status	Date Auth
PE Cost Est. Amt	75,000.00					
ROW Cost Est. Amt	263,750.00					
CST Cost Est. Amt	8,266,045.00					
CST Cost Est. Amt	792,000.00					

STIP AMOUNTS
 Activity Cost Fund
 PE 0.00 Q10
 ROW 17,000.00 LIC0
 CST 0.00 LIC0
 CST 0.00 L.Y60

District Comments
 will nd variance for curve- cross sections on side roads may have probs-nd to add lots of notes TR 6-0
 AG/OPD/9-2-09, Transition Meeting
 AADT Current year(2008)=8,500 & Design year (2023)=14,500
 2-10-10, PCRf submitted.
 3-29-10, VE Study
 Man Hours estimate will be submitted after VE Study

PDD: Should include main channel. 9/30/03.
Bridge: WEI 4/03/06 - 100% P.L.
Design: HL 2-75. Need CE Ct expired; D5 designing. TR 4-09
EIS: CE\NotApp\NotOnSched\RW\Upd3-19-10\Adesasan
LGPA: BRYAN SGN UTIL 8-20-99\REQ EFFINGHAM DO UTIL 8-3-99\RECISSION LETTER SENT TO BRYAN & EFFINGHAM 2-25-05
Programming: PI# 0007026 WAS COMBINED INTO THIS PROJECT#1 12-09#2 6-2010
Traffic Op: C A\H\BR REPL PRCTJS&M PLNS N\R\032801\5
Utility: 1st subm to design. 6 of 6. 12/13/2005 ready for PPR 1-14-08
EMG: BRIDGE REPLACEMENT

Acquired by: DOT
Acquisition MGR:
R/W Cert Date:

Cond. Filed:
Relocations:
Acquired:

Pre. Parcel CT: 4 **Total Parcel in ROW System:**
Under Review: **Options - Pending:**
Released: **Condemnations- Pend:**

STATE	PROJECT NUMBER	SHEET TOTAL
GA.	BRST-005-5(47)	1

DEPARTMENT OF TRANSPORTATION STATE OF GEORGIA

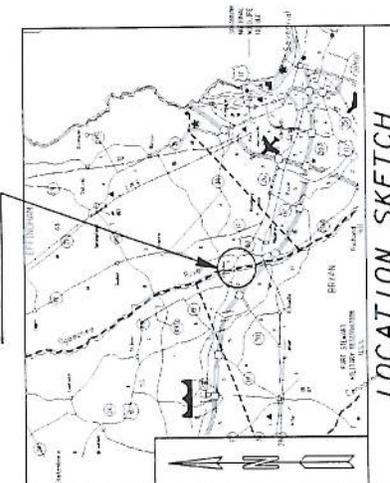
PLAN AND PROFILE OF PROPOSED
BRIDGE REPLACEMENT ON
SR 26/US 80 OVER OGEECHEE RIVER
EFFINGHAM & BRYAN COUNTIES
FEDERAL AID PROJECT
BRST-005-5(47)

FEDERAL ROUTE • 80
STATE ROUTE • 26
P. I. NO. 533145

COUNTY LINE
M.P. 5.78 BRYAN COUNTY
M.P. 0.00 EFFINGHAM COUNTY
STA. 26+57.11
STA. 28+026.51
E. 888411.1762

PROJECT MIDPOINT COORDINATE
STA. 35+50.00
M.P. 0.17
M. N. 797975.5661
E. 889302.6022

STA. 43+29.76 SR 26
STA. 1+00.00 OLD JENCKS TURNPIKE ROAD



LOCATION SKETCH

STA. 17+77.56 SR 26
STA. 1+00.00 DASHERS
LANDING ROAD

TO BLITCHTON'S 72+58 SR 26

EXISTING R/W

TO BLITCHTON'S 72+58 SR 26

EXISTING R/W

TO BLITCHTON'S 72+58 SR 26

EXISTING R/W

TO BLITCHTON'S 72+58 SR 26

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