

**Value Engineering Study Report
Project –STP-0004-00(446)
Cobb County**



Lewis Road Corridor, P.I, 0004446
Preserve Roadway - Integrity – Serviceability – Safety

Value Management Team:



Design Team:
FOCUS Development and Engineering, Inc.

April 27, 2007



April 27, 2007

Ms. Lisa Myers
Design Review Engineer Manager
Georgia Department of Transportation
#2 Capitol Square, Room 266
Atlanta, GA 30334

RE: Submittal of the final Value Engineering Report
Project -STP-0004-00(446)
Cobb County
PI No.: 0004446
PBS&J Project Task Order No. 13

Dear Ms. Myers:

Please find enclosed four (4) hard copies and a CD of our final Value Engineering Report for the Lewis Road Corridor, Cobb County, as referenced above.

This Value Engineering Study, which was performed during the period April 9 through April 12, 2007, identified *36 Alternative Ideas* of which **12 are recommended for implementation**. The VE Team also identified *10 Design Suggestion Ideas* which are recommended for the Engineer to consider in his final design. We believe that the **12 Alternative Ideas** recommended may have a significant positive affect on the project.

We trust that you will find this report to be in proper order. It should be noted that the results of this workshop are volatile in that they can be overcome by the events that accompany the expeditious continuance of the design process. Accordingly, we encourage an equally expeditious implementation meeting to design the disposition of the contents of this report.

On behalf of our VE Team, we thank you very much for this opportunity to work with you and the hard working staff of the Georgia Department of Transportation.

Yours truly,

PBS&J

A handwritten signature in black ink that reads "Les M. Thomas".

Les M. Thomas, P.E., CVS-Life
VE Team Leader

Value Engineering Study Report

Project –STP-0004-00(446)

Cobb County

PI No.: 0004446

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Study Results

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Executive Summary

Executive Summary

INTRODUCTION

This report summarizes the analysis and conclusions by the PBS&J Value Engineering workshop team as they performed a VE Study during the period of April 9 through 12, 2007 in Atlanta, Georgia for the Georgia Department of Transportation. The subject of the Value Engineering study was Project –STP-0004-00(446) Cobb County, PI No.: 0004446. The design is being performed by FOCUS Development and Engineering, Inc.

PROJECT DESCRIPTION

This project consists of the realignment and reconstruction of the existing Lewis Road Corridor in the City of Powder Springs. The project will also replace a deficient bridge over Powder Springs Creek, construct a bridge over the existing N&S railroad, and improve adjoining local streets, while providing a multi-purpose trail to access an existing park.

More information about this project may be found in the tabbed section of this report entitled *Project Description*.

VALUE ENGINEERING PROCESS

The Value Engineering Team followed the Seven Step Value Engineering job plan as promulgated by Georgia Department of Transportation. This Seven Step Job Plan includes the following:

- Investigation
- Analysis
- Speculation
- Evaluation
- Development
- Recommendation
- Presentation

This report is a component of the Presentation Phase. As part of the VE workshop in Atlanta, the team made an informal presentation of their results on the last morning of the workshop. This report is intended to formalize the workshop results and set the stage for a formal implementation meeting in which alternatives and design

suggestions will typically be accepted, accepted with modifications, or rejected for cause. The worksheet that follows, along with the formally developed alternatives and design suggestions can be used as a "score sheet" for the implementation meeting. It is also included in this report to identify, on a summary basis, the results of the workshop. The reader is encouraged to visit the third tabbed section of this report entitled *Study Results* for a review of the details of the developed alternatives. The tabbed section *Project Description* includes information about the project itself and the tabbed section *Value Engineering Process* presents the detail process of the Value Engineering Study.

THE STUDY RESULTS

During the speculation phase the VE Team identified **36 Alternative Ideas** that appeared to hold potential for reducing the construction cost, improving the end product and/or reducing the difficulty and time of project construction.

After the evaluation phase was completed, **12 Alternative Ideas** and **10 Design Suggestions** remained for further consideration. These Alternative Ideas and Design Suggestions may be found, in their documented form, in the section of this report entitled *Study Results*. The following *Summary of Alternatives and Design Suggestions* coupled with the documentation of the developed alternatives should provide the reader with the information required to fully evaluate the merits of each of the alternatives.



SUMMARY OF ALTERNATIVES AND DESIGN SUGGESTIONS

Page 1 of 2				
PROJECT: STP-0004-00(446) COBB COUNTY				
P.I. NO. 0004446 LEWIS ROAD CORRIDOR				
Alternative Number	DESCRIPTION OF ALTERNATIVE	Initial Cost Savings	Implemented Cost Savings/Disposition	Final Disposition
2	Railroad Bridge – Eliminate end spans and use walled abutments.	\$ 1,040,031		
3	Railroad Bridge - Reduce raised median to four feet and sidewalks to five feet.	\$ 384,798		
4	Powder Springs Creek Bridge – Route bikes to multi-use trail and reduce multi-use trail to 10' width.	\$ 679,330		
7	Powder Springs Creek Bridge - Reduce raised median to four feet, and multi-use trail to 10'.	\$ 652,072		
10	Shift new Powder Springs Creek Bridge to the east 25' to 30'	DS		
12	Lower Grade from Sta. 78+00 to 91+00	DS		
13	Build new Powder Springs Creek Bridge for 100 yr. storm	DS		
16	Relocate the Bike paths to the proposed multi-use trail	\$ 307,565		
18	Selectively utilize the existing Marchman, Atlanta, Hotel and Long Street by milling and installing a new 1-1/2" surface course.	\$ 107,763		
19	Jack and Bore a new 48" pipe in-lieu of 2-36" pipes, grout fill the existing pipe to be abandoned.	\$ 51,756		
23	Retain County Access road as is and construct a right in right out at Lewis Road. Delete new county access road realignment.	\$ 154,366		
24	Retain existing intersection of Lewis Rd. and C.H. James Parkway (plans indicate that it is to be reconstructed)	DS		

SUMMARY OF ALTERNATIVES AND DESIGN SUGGESTIONS

PROJECT: STP-0004-00(446) COBB COUNTY P.I. NO. 0004446 LEWIS ROAD CORRIDOR		Page 2 of 2		
Alternative Number	DESCRIPTION OF ALTERNATIVE	Initial Cost Savings	Implemented Cost Savings/Disposition	Final Disposition
27	Between Sta. 86+00 and Sta. 95+00, provide a concrete barrier during construction to prevent ponding on the street.	DS		
28	During Stage I, install a temporary barrier from Sta. 67+50 to Sta. 71+00 to protect 1:1 slope in clear zone.	DS		
29	From Sta. 69+40 to Sta. 74+00 and from Sta. 76+00 to Sta. 80+00, review for possible drainage problems during staging.	DS		
30	Suggest offering culvert alternatives for the double 7' x 4' box culvert.	DS		
31	Consider use of buried curb and gutter in-lieu of header curbs.	DS		
32	Construct one (1) multi-use trail (10 foot) for both bikes and pedestrians – delete bike lanes from the roadway. Add a multi-use trail from Long St. and Lewis Road to end of project along easterly new road.	\$ 238,170		
33	From CH James Parkway to the Lewis Road/ Long Street intersection, construct two (2) multi-use trails (10 foot each) for both bikes and pedestrians – delete bike lanes from the roadway and delete the sidewalks. From the Lewis Road/ Long Street intersection delete the bike lanes add a multi-use trail to the end of the project along the east side of the new Lewis Road, and also along the easterly side of the new one way road to the end. Delete bike lanes from the southbound one way street and provide sidewalks on both sides. This should improve the safety in the downtown area.	\$ 142,230		
34	Powder Springs Creek Bridge – add a high multi-pipe railing.	DS		
35	From CH James Parkway to the Lewis Road/ Long Street intersection, delete the pedestrian lighting.	\$ 140,800		
36	Powder Springs Creek Bridge – use steel H piles in-lieu of drilled caissons.	\$ 317,024		

Study Results

Study Results

Introduction

This section includes the study results presented in the form of fully developed value engineering alternatives that include descriptions of the original design, description of the alternative design configurations, comments on the technical justifications, opportunities and risks associated with the alternatives, sketches, calculations and technical justification for these alternatives. For the most part, these fully developed alternatives represent an array of choices that clearly could have an impact on the eventual cost and performance of the finished project.

The documented alternatives also include Design Suggestions (DS). As their name implies, these are short write-ups making note of VE perspectives on technical issues and sharing some thoughts for consideration as the design moves forward.

This introductory sheet is followed by a *Summary of Alternatives & Design Suggestions* table. It should be noted that the alternatives that are included, which have cost estimates attached are not necessarily representative of the final cost outcome for each alternative. Some of these alternatives have components that are mutually exclusive so they may not be added together.

The users of this report are asked to consider these alternatives and design suggestions as a smorgasbord of choices for selection and use as the project moves forward. The following *Summary of Alternatives & Design Suggestions* may also be used as a “score sheet” within the bounds of an implementation meeting.

Cost Calculations

The cost calculations are intended only as a guide to the approximate results that might be expected from implementation of the alternatives. They should be helpful in making clear choices as to the pursuit of individual alternatives.

A composite mark-up of 10% for the construction cost comparisons was derived from the cost estimate for the project. This estimate can be found in the section of this report entitled *Project Description*.

SUMMARY OF ALTERNATIVES AND DESIGN SUGGESTIONS



PROJECT: STP-0004-00(446) COBB COUNTY P.I. NO. 0004446 LEWIS ROAD CORRIDOR					Page 1 of 2	
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18	Selectively utilize the existing Marchman, Atlanta, Hotel and Long Street by milling and installing a new 1-1/2" surface course.	\$107,763				
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SUMMARY OF ALTERNATIVES AND DESIGN SUGGESTIONS

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36	Powder Springs Creek Bridge – use steel H piles in-lieu of drilled caissons.	\$317,024		

Value Analysis Design Alternative



PROJECT: GEORGIA DEPARTMENT OF TRANSPORTATION STP-0004-00(446) Cobb County- P.I. Number: 0004446 Lewis Road Corridor	ALTERNATIVE NO.: 2
DESCRIPTION: RR BRIDGE - ELIMINATE END SPANS AND USE WALLED ABUTMENTS	SHEET NO.: 1 of 6

Original Design:

The original design calls for the construction of a 3-span bridge, 321' long with 89' end spans and a 143' intermediate span, over Norfolk Southern RR. The bridge is on a vertical curve and skewed 64°45'73" to the normal. The out-to-out width of the bridge is 62'-5" (approx. and varying). End spans 1 and 3 are comprised of six 89' Bulb Tee 54" PSC beams with Bulb Tee 74" PSC Fascia beams evenly spaced. Span 2 is comprised of eight Bulb Tee 74" PSC beams evenly spaced. The bridge accommodates a 6' raised sidewalk on each side, 2' buffer and 4' Bike Lane on both sides of the bridge, two 12' travel lanes in each direction, an 8' raised median with a 2' buffer on either side. The bents are made up of concrete caps and columns. All bents are founded on Steel H Piles. The barrier rail is per special design and includes a chain link fence.

Alternative Design:

The proposed alternative eliminates the 89' end spans and reduces the bridge length to 143'. This can be accomplished by providing walled abutments at the current Bent 2 and Bent 3 locations.

The alternative maintains the 25' vertical clearance to Norfolk Southern RR and other current geometry.

Opportunities:

- Cost savings by reducing bridge length
- Cost savings on slope paving
- Reduced construction time
- May provide an opportunity to not effect the property on the Northeast corner of the bridge

Risks:

- This configuration is typically used in Urban areas where availability of Right-Of-Way is limited.
- Re-design effort will require additional time

Technical Discussion:

Special design for MSE walls will be required. The horizontal clearance requirements for future Railroad expansion will be maintained. The same beam depth and configuration as in the original design can be used for the alternate.

COST SUMMARY	INITIAL COST	PRESENT WORTH RECURRING COSTS	PRESENT WORTH LIFE-CYCLE COST
ORIGINAL DESIGN	\$ 2,366,389	\$ 0	\$ 2,366,389
ALTERNATIVE	\$ 1,326,358	\$ 0	\$ 1,326,358
SAVINGS	\$ 1,040,031	\$ 0	\$ 1,040,031

Illustrations



PROJECT: **GEORGIA DEPARTMENT OF TRANSPORTATION**
STP-0004-00(446) Cobb County- P.I. Number: 0004446

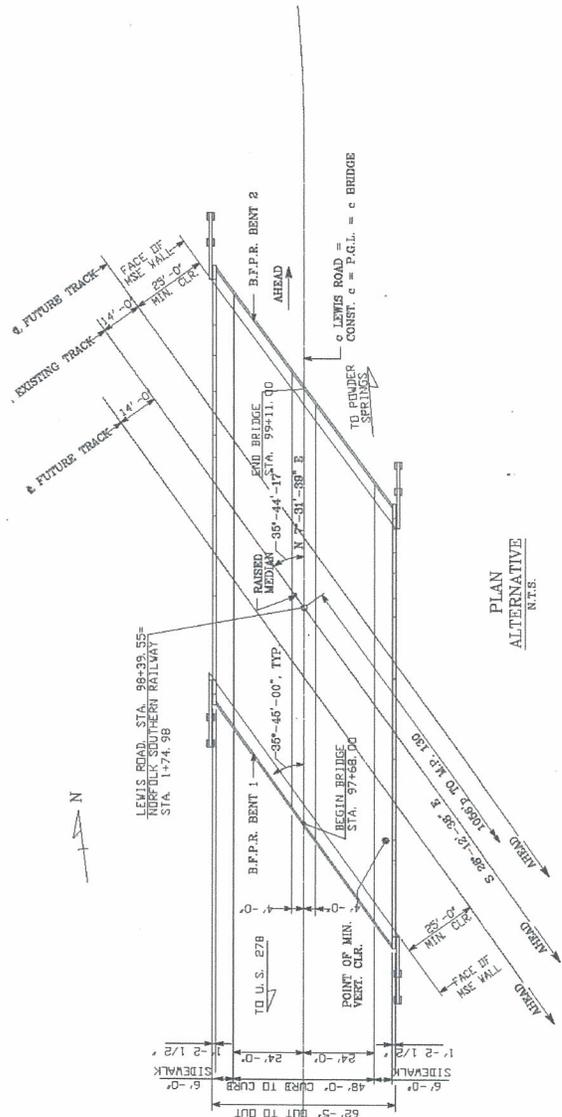
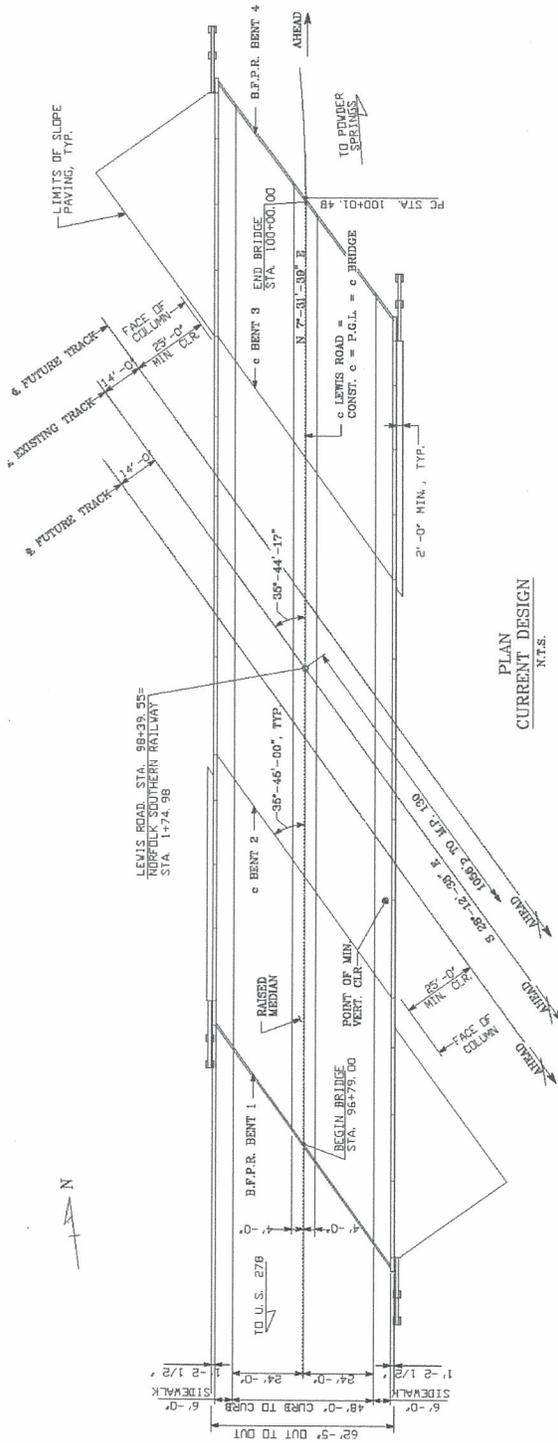
ALTERNATIVE NO.:

2

Lewis Road Corridor

DESCRIPTION: **RR BRIDGE - ELIMINATE END SPANS AND USE WALLED ABUTMENTS**

SHEET NO.: 2 of 6



Calculations



PROJECT: **GEORGIA DEPARTMENT OF TRANSPORTATION**
STP-0004-00(446) Cobb County– P.I. Number: 0004446
Lewis Road Corridor

ALTERNATIVE NO.:
2

DESCRIPTION: **RR BRIDGE: ELIMINATE END SPANS AND USE WALLED**
ABUTMENTS

SHEET NO.: 4 of 6

Current Design (3 Span – 321' Long)

Superstructure:

Deck Area = $321' * 62.42' \text{ (avg.)} = 20,037 \text{ SF}$

Volume of 7 1/2" thick Class AA Superstructure Deck concrete = $[20037 * (7.5''/12)]/27 = 463.82 \text{ CY}$

Volume of 6" thick Class AA Superstructure Sidewalk & Raised Median Concrete (average) =

$$[2 * (321' * 6''/12 * 6') + (321' * 6''/12 * 8')] / 27 = 118.89 \text{ CY}$$

Total volume of Class AA Superstructure Deck Concrete = $463.82 + 118.89 = 582.71 \text{ CY}$

Area of Grooved concrete (approx.) = $321' * 36' / 9 = 1,284 \text{ SY}$

Total length of BT-54 PPC Girders (approx.) = $2 * (89' * 6) = 1,068 \text{ LF}$

Total length of BT-74 PPC Girders (approx.) = $(143' * 8) + 2 * (89' * 2) = 1,500 \text{ LF}$

Total length of Barrier Rail (Special Design) = $2 * 321 = 642 \text{ LF}$

Area of 4" Sloped Paving (approx.) = 1674 SY

Substructure:

Volume of Class AA concrete (average dimensions of Caps, Columns & Pile Caps, Columns @ 28'):

Intermediate Bents: $4 * \{[(52' * 5.5' * 4.5') + (39.5' * 2.75' * 1.56')] + [2 * (4' * 4' * 28')] + [2 * (3.5' * 11.5' * 11.5')]\} / 27 = 485.66 \text{ CY}$

End Bents (approx.): $2 * \{[82.25' * 3' * 5'] + [2 * 28.5' * 3' * 2.5'] + [2 * 28.5' * 1' * 10']\} / 27 = 165.27 \text{ CY}$

Total Volume of Class AA concrete = 650.94 CY

Length of Steel HP 14X89 Piles (End Bents – 30 ft piles) = $2 * [8 * 30' + 4 * 15'] = 600 \text{ LF}$

Length of Steel HP 14X73 Piles (Intermediate Bents – 30 ft piles) = $4 * (2 * 7 * 30) = 1,680 \text{ LF}$

Calculations



PROJECT: **GEORGIA DEPARTMENT OF TRANSPORTATION**
STP-0004-00(446) Cobb County- P.I. Number: 0004446
Lewis Road Corridor

ALTERNATIVE NO.:
2

DESCRIPTION: **RR BRIDGE: ELIMINATE END SPANS AND USE WALLED**
ABUTMENTS

SHEET NO.: **5 of 6**

Alternative (Single Span – 143' Long)

Superstructure:

Deck Area = $143' * 62.42' \text{ (avg.)} = 8,926 \text{ SF}$

Volume of 7 1/2" thick Class AA Superstructure Deck concrete = $[8926 * (7.5"/12)]/27 = 206.621 \text{ CY}$

Volume of 6" thick Class AA Superstructure Sidewalk & Raised Median Concrete (average) =

$$[2 * (143' * 6"/12 * 6') + (143' * 6"/12 * 8')]/27 = 52.96 \text{ CY}$$

Total volume of Class AA Superstructure Deck Concrete = $206.621 + 52.96 = 259.58 \text{ CY}$

Area of Grooved concrete (approx.) = $143' * 36'/9 = 572 \text{ SY}$

Total length of BT-74 PPC Girders (approx.) = $(143' * 8) = 1,144 \text{ LF}$

Total length of Barrier Rail (Special Design) = $2 * 143 = 286 \text{ LF}$

Area of 4" Sloped Paving (approx.) = NONE

Substructure:

Volume of Class AA concrete (average dimensions of Caps, Columns & Pile Caps, Columns @ 28'):

End Bents (approx.): $2 * \{ [82.25' * 3' * 5'] + [2 * 28.5' * 3' * 2.5'] + [2 * 28.5' * 1' * 10'] \} / 27 = 165.27 \text{ CY}$

Length of Steel HP 14X89 Piles (End Bents – 30 ft piles) = $2 * [8 * 30' + 4 * 15'] = 600 \text{ LF}$

Area of MSE Walls (assume 30' high in front of abutments and 15' wrap around on each side of abutment at an average height of 15') = $2 * [(30' * 112') + (2 * 15' * 15')] = 7620 \text{ SF}$

Value Analysis Design Alternative



PROJECT: GEORGIA DEPARTMENT OF TRANSPORTATION
 STP-0004-00(446) Cobb County– P.I. Number: 0004446
 Lewis Road Corridor

ALTERNATIVE NO.:
3

DESCRIPTION: **RR BRIDGE - REDUCE RAISED MEDIAN TO 4' AND
 SIDEWALKS TO 5'**

SHEET NO.: 1 of 5

Original Design:

The original design calls for the construction of a 3-span bridge, 321' long with 89' end spans and a 143' intermediate span, over Norfolk Southern RR. The bridge is on a vertical curve and skewed 64°45'73" to the normal. The out-to-out width of the bridge is 62'-5" (approx. and varying). End spans 1 and 3 are comprised of six 89' Bulb Tee 54" PSC beams with Bulb Tee 74" PSC Fascia beams evenly spaced. Span 2 is comprised of eight Bulb Tee 74" PSC beams evenly spaced. The bridge accommodates a 6' raised sidewalk on each side, 2' buffer and 4' Bike Lane on both sides of the bridge, two 12' travel lanes in each direction, an 8' raised median with a 2' buffer on either side. The bents are made up of concrete caps and columns. All bents are founded on Steel H Piles. The barrier rail is per special design and includes a chain link fence.

Alternative Design:

The proposed alternative reduces the 8' median to 4' and the 6' sidewalks to 5'. The out-to-out bridge width is reduced to 56'-5" (approx.).

The alternative maintains the 25' vertical clearance to Norfolk Southern RR and other current geometry.

Opportunities:

- Cost savings by reducing bridge width
- Reduced construction time

Risks:

- Re-design effort will require additional time

Technical Discussion:

With reduction in the out-to-out width of the bridge to 56'-5" (approx.), one beam line along the length of the bridge may be eliminated. Therefore, Spans 1 & 3 may comprise of seven 89' Bulb Tee 54" PSC beams evenly spaced and Span 2 may comprise of seven Bulb Tee 74" PSC beams evenly spaced. The bridge will accommodate a 5' raised sidewalk on the East side, 2' buffer, 4' Bike Lane and 12' Travel Lane on each side, a 4' raised median with a 2' buffer on either side, a 2' buffer and 5' shoulder on the West side. The bents will be the same as in the current design but of reduced length.

See the next sheet for the calculation of the savings noted below.

COST SUMMARY	INITIAL COST	PRESENT WORTH RECURRING COSTS	PRESENT WORTH LIFE-CYCLE COST
ORIGINAL DESIGN	\$ 2,366,389	\$ 0	\$ 2,366,389
ALTERNATIVE	\$ 1,981,591	\$ 0	\$ 1,981,591
SAVINGS	\$ 384,798	\$ 0	\$ 384,798

Illustrations



PROJECT: **GEORGIA DEPARTMENT OF TRANSPORTATION
STP-0004-00(446) Cobb County- P.I. Number: 0004446**

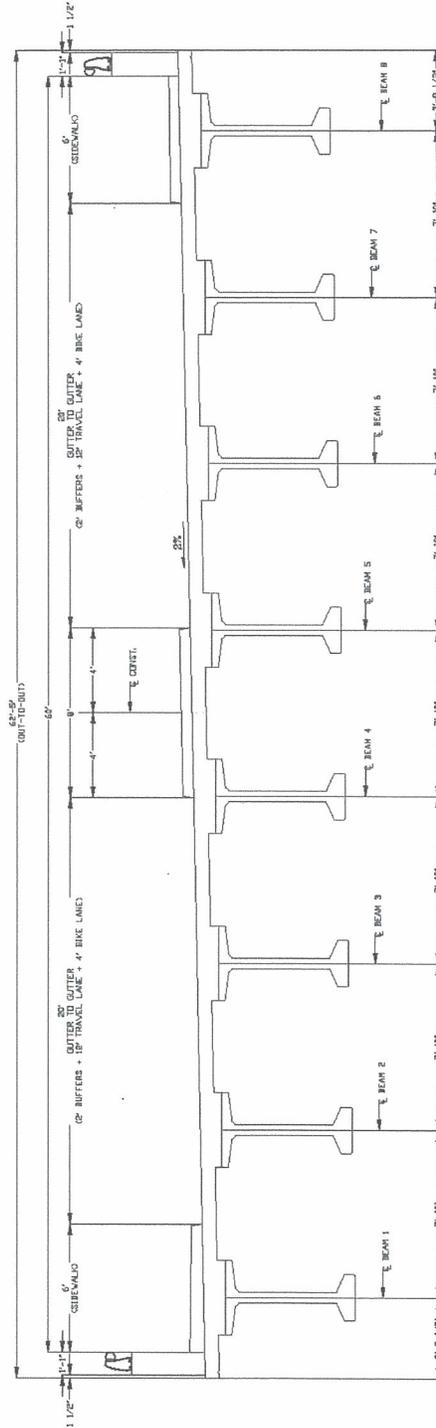
ALTERNATIVE NO.:

3

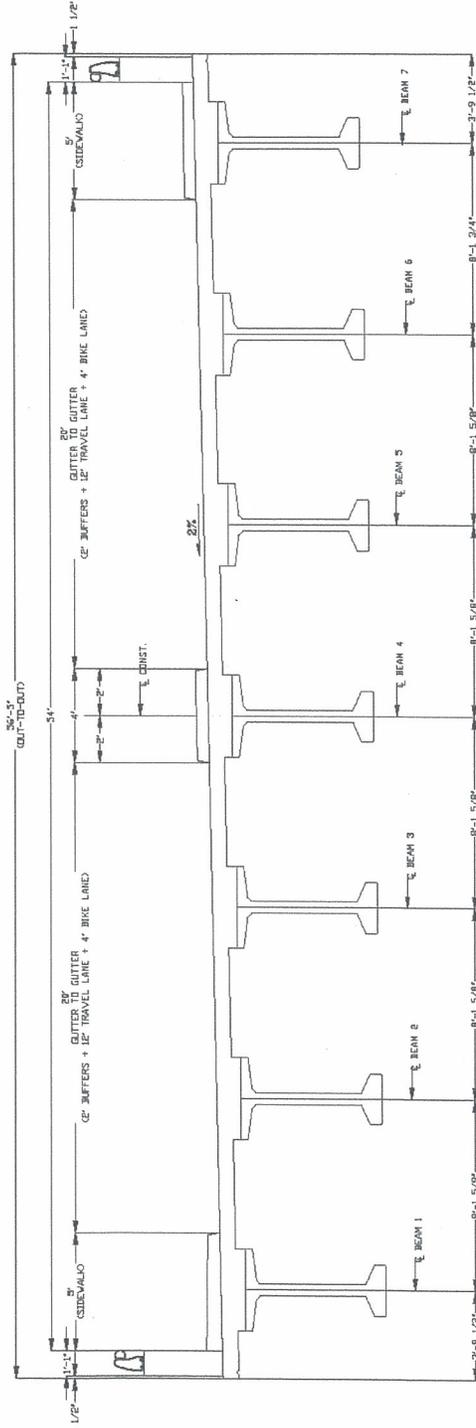
Lewis Road Corridor

DESCRIPTION: **RR BRIDGE - REDUCE RAISED MEDIAN TO 4' AND
SIDEWALKS TO 5'**

SHEET NO.: 2 of 5



CROSS SECTION
CURRENT
DESIGN



CROSS SECTION
ALTERNATIVE
DESIGN

Calculations



PROJECT: GEORGIA DEPARTMENT OF TRANSPORTATION
STP-0004-00(446) Cobb County– P.I. Number: 0004446
Lewis Road Corridor

ALTERNATIVE NO.:

3

DESCRIPTION: RR BRIDGE - REDUCE RAISED MEDIAN TO 4' AND
SIDEWALKS TO 5'

SHEET NO.: 3 of 5

Current Design (3 Span – 321' Long, 62'-5" Out-to-Out)

Superstructure:

Deck Area = $321' * 62.42' \text{ (avg.)} = 20,037 \text{ SF}$

Volume of 7 1/2" thick Class AA Superstructure Deck concrete = $[20037 * (7.5"/12)] / 27 = 463.82 \text{ CY}$

Volume of 6" thick Class AA Superstructure Sidewalk & Raised Median Concrete (average) =

$$[2 * (321' * 6" / 12 * 6') + (321' * 6" / 12 * 8')] / 27 = 118.89 \text{ CY}$$

Total volume of Class AA Superstructure Deck Concrete = $463.82 + 118.89 = 582.71 \text{ CY}$

Area of Grooved concrete (approx.) = $321' * 36' / 9 = 1,284 \text{ SY}$

Total length of BT-54 PPC Girders (approx.) = $2 * (89' * 6) = 1,068 \text{ LF}$

Total length of BT-74 PPC Girders (approx.) = $(143' * 8) + 2 * (89' * 2) = 1,500 \text{ LF}$

Total length of Barrier Rail (Special Design) = $2 * 321 = 642 \text{ LF}$

Area of 4" Sloped Paving (approx.) = 1674 SY

Substructure:

Volume of Class AA concrete (average dimensions of Caps, Columns & Pile Caps, Columns @ 28'):

Intermediate Bents: $4 * \{ [(52' * 5.5' * 4.5') + (39.5' * 2.75' * 1.56')] + [2 * (4' * 4' * 28')] + [2 * (3.5' * 11.5' * 11.5')] \} / 27 = 485.66 \text{ CY}$

End Bents (approx.): $2 * \{ [82.25' * 3' * 5'] + [2 * 28.5' * 3' * 2.5'] + [2 * 28.5' * 1' * 10'] \} / 27 = 165.27 \text{ CY}$

Total Volume of Class AA concrete = 650.94 CY

Length of Steel HP 14X89 Piles (End Bents – 30 ft piles) = $2 * [8 * 30' + 4 * 15'] = 600 \text{ LF}$

Length of Steel HP 14X73 Piles (Intermediate Bents – 30 ft piles) = $4 * (2 * 7 * 30) = 1,680 \text{ LF}$

Calculations



PROJECT: **GEORGIA DEPARTMENT OF TRANSPORTATION**
STP-F001-00(098) – Oconee County - P.I. Number: 0001098
Lewis Road Corridor

ALTERNATIVE NO.:

3

DESCRIPTION: **RR BRIDGE - REDUCE RAISED MEDIAN TO 4' AND**
SIDEWALKS TO 5'

SHEET NO.:

4 of 5

Alternative (3 Span – 321' Long, 56'-5" Out-to-Out)

Superstructure:

Deck Area = $321' * 56.42' \text{ (avg.)} = 18,111 \text{ SF}$

Volume of 7 1/2" thick Class AA Superstructure Deck concrete = $[18111 * (7.5"/12)] / 27 = 419.23 \text{ CY}$

Volume of 6" thick Class AA Superstructure Sidewalk & Raised Median Concrete (average) =

$$[2 * (321' * 6" / 12 * 5') + (321' * 6" / 12 * 4')] / 27 = 83.22 \text{ CY}$$

Total volume of Class AA Superstructure Deck Concrete = $419.23 + 83.22 = 502.45 \text{ CY}$

Area of Grooved concrete (approx.) = $321' * 36' / 9 = 1,284 \text{ SY}$

Total length of BT-54 PPC Girders (approx.) = $2 * (89' * 5) = 890 \text{ LF}$

Total length of BT-74 PPC Girders (approx.) = $(143' * 7) + 2 * (89' * 2) = 1,357 \text{ LF}$

Total length of Barrier Rail (Special Design) = $2 * 321 = 642 \text{ LF}$

Area of 4" Sloped Paving (approx.) = 1515 SY

Substructure:

Volume of Class AA concrete (average dimensions of Caps, Columns & Pile Caps, Columns @ 28'):

Intermediate Bents: $4 * \{ [(47' * 5.5' * 4.5') + (34' * 2.75' * 1.56')] + [2 * (4' * 4' * 28')] + [2 * (3.5' * 11.5' * 11.5')] \} / 27 = 463.83 \text{ CY}$

End Bents (approx.): $2 * \{ [75.89' * 3' * 5'] + [2 * 26.0' * 3' * 2.5'] + [2 * 28.5' * 1' * 10'] \} / 27 = 155.43 \text{ CY}$

Total Volume of Class AA concrete = 619.26 CY

Length of Steel HP 14X89 Piles (End Bents – 30 ft piles) = $2 * [7 * 30' + 4 * 15'] = 540 \text{ LF}$

Length of Steel HP 14X73 Piles (Intermediate Bents – 30 ft piles) = $4 * (2 * 7 * 30) = 1,680 \text{ LF}$

Value Analysis Design Alternative



PROJECT: GEORGIA DEPARTMENT OF TRANSPORTATION
 STP-0004-00(446) Cobb County– P.I. Number: 0004446
 Lewis Road Corridor

ALTERNATIVE NO.:

4

DESCRIPTION: **POWDER SPRINGS CREEK BRIDGE- ROUTE BIKE
 LANES TO MULTI USE TRAIL AND REDUCE MULTIUSE
 TRAIL TO 10' AND SIDEWALKS TO 5'**

SHEET NO.:

1 of 5

Original Design:

The original design calls for the construction of a 5-span bridge, 370' long with Spans 1, 2, 4 & 5 at 65' and Span 3 at 110', over Powder Springs Creek. The bridge is on a tangent and skewed 30° to the normal. The out-to-out width of the bridge is 68'-5" (approx.). Spans 1, 2, 4 & 5 are comprised of eight 65' Type III PSC beams evenly spaced. Span 3 is comprised of eight Bulb Tee 63" PSC beams evenly spaced. The bridge accommodates a 6' raised sidewalk on the East side, 2' buffer, 4' Bike Lane and 12' Travel Lane on each side, an 8' raised median with a 2' buffer on either side, a 2' buffer and 12' Multi-use trail on the West side. The bents are made up of concrete caps. While Bents 2, 3, 4 & 5 are founded on caissons, the end bents are founded on Steel H Piles. The barrier rail is per special design and includes a single pipe rail.

Alternative Design:

The proposed alternative routes the 4' Bike Lanes on to the Multi-use Trail. Additionally, the multi-use trail on the West side of the bridge is reduced to 10'. The out-to-out bridge width is reduced to 57'-5" (approx.).

The alternative maintains all other current geometry.

Opportunities:

- Cost savings by reducing bridge width
- Reduced construction time

Risks:

- Re-design effort will require additional time

Technical Discussion:

With reduction in the out-to-out width of the bridge to 57'-5" (approx.), one beam line along the length of the bridge may be eliminated. Therefore, Spans 1, 2, 4 & 5 may comprise of seven 65' Type III PSC beams evenly spaced and Span 3 may comprise of seven Bulb Tee 63" PSC beams evenly spaced. The bridge will accommodate a 5' raised sidewalk on the East side, 2' buffer, 12' Travel Lane on each side, an 8' raised median with a 2' buffer on either side, a 2' buffer and 10' Multi-use Trail (including Bike Lanes) on the West side. The bents will be the same as in the current design.

See the next sheet for the calculation of the savings noted below.

COST SUMMARY	INITIAL COST	PRESENT WORTH RECURRING COSTS	PRESENT WORTH LIFE-CYCLE COST
ORIGINAL DESIGN	\$ 2,511,367	\$ 0	\$ 2,511,367
ALTERNATIVE	\$ 1,832,037	\$ 0	\$ 1,832,037
SAVINGS	\$ 679,330	\$ 0	\$ 679,330

Illustrations



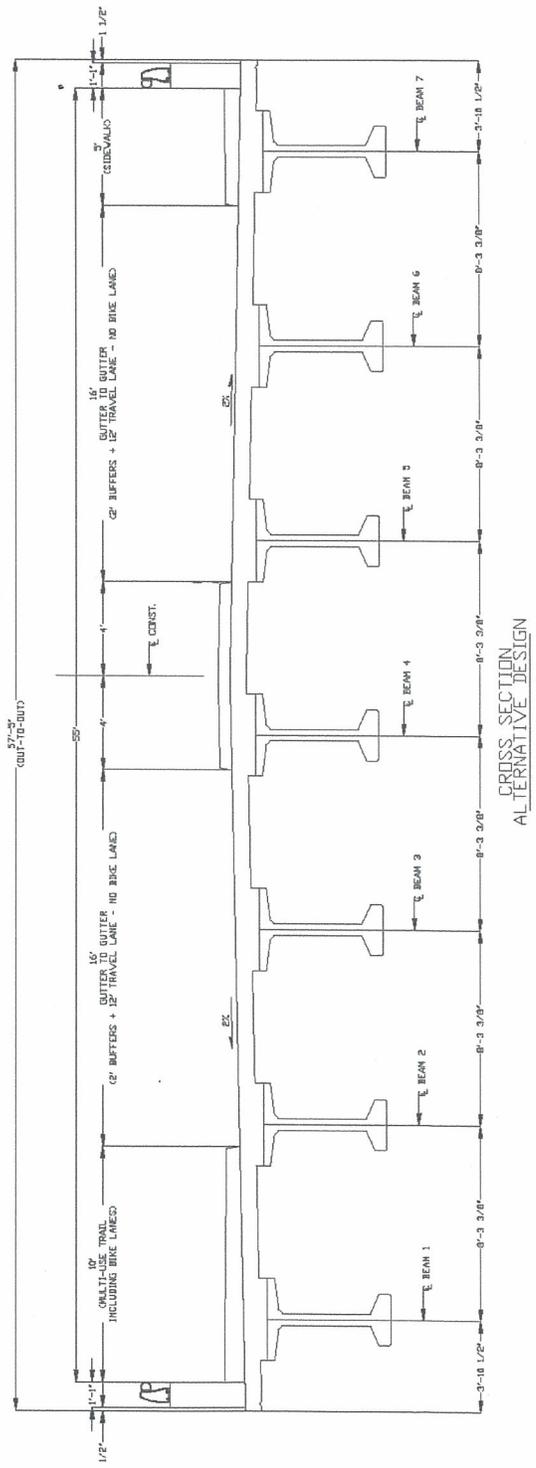
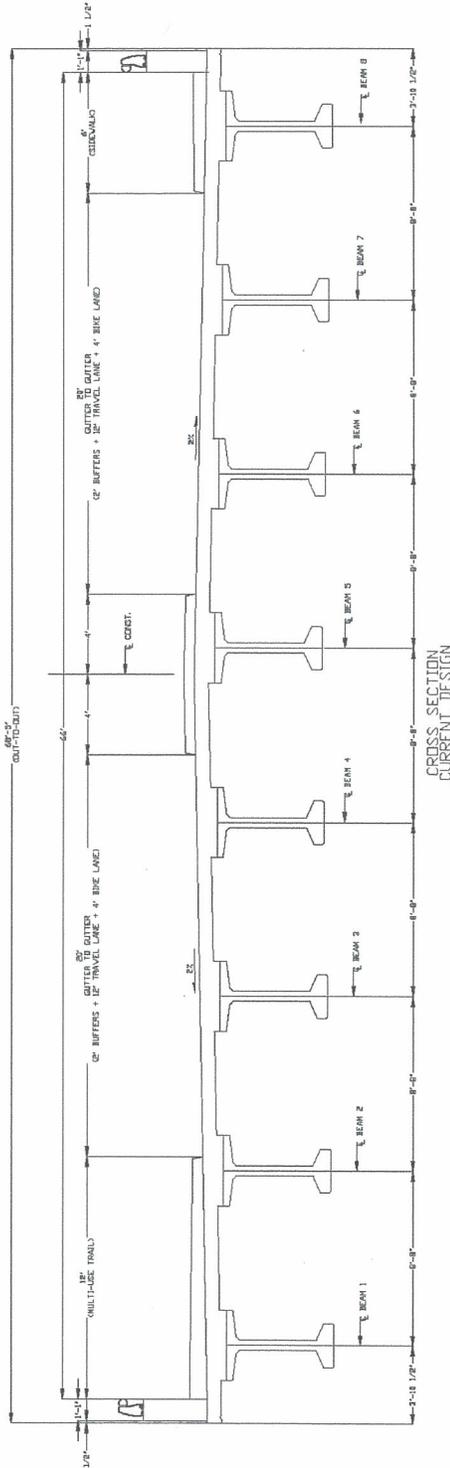
PROJECT: GEORGIA DEPARTMENT OF TRANSPORTATION
STP-0004-00(446) Cobb County- P.I. Number: 0004446

ALTERNATIVE NO.: 4

Lewis Road Corridor

DESCRIPTION: POWDER SPRINGS CREEK BRIDGE- ROUTE BIKE LANES
TO MULTI USE TRAIL AND REDUCE MULTI USE TRAIL
TO 10' AND SIDEWALKS TO 5'

SHEET NO.: 2 of 5



Calculations



PROJECT: GEORGIA DEPARTMENT OF TRANSPORTATION
STP-0004-00(446) Cobb County– P.I. Number: 0004446
Lewis Road Corridor

ALTERNATIVE NO.:
4

DESCRIPTION: POWDER SPRINGS CREEK BRIDGE- ROUTE BIKE LANES
TO MULTI USE TRAIL AND REDUCE MULTI USE TRAIL
TO 10' AND SIDEWALKS TO 5'

SHEET NO.: 3 of 5

Current Design (5 Span – 370' Long, 68'-5" Out-to-Out)

Superstructure:

Deck Area = $370' * 68.42' \text{ (avg.)} = 25,315.4 \text{ SF}$

Volume of 8 1/8" thick Class AA Superstructure Deck concrete = $[25315.4 * (8.125"/12)]/27 = 634.84 \text{ CY}$

Volume of 6" thick Class AA Superstructure Sidewalk & Raised Median Concrete (average) =

$$[(370' * 6"/12 * 6') + (370' * 6"/12 * 12') + (370' * 6"/12 * 8')]/27 = 178.15 \text{ CY}$$

Total volume of Class AA Superstructure Deck Concrete = $634.84 + 178.15 = 812.99 \text{ CY}$

Area of Grooved concrete (approx.) = $370' * 36'/9 = 1,480 \text{ SY}$

Total length of Type III PPC Girders (approx.) = $4 * (65' * 8) = 2,080 \text{ LF}$

Total length of BT-63 PPC Girders (approx.) = $110' * 8 = 880 \text{ LF}$

Total length of Barrier & Rail (Special Design) = $2 * 370 = 740 \text{ LF}$

Substructure:

Volume of Class AA concrete (average dimensions of Caps, Steel "H" Piles & Caissons at 30'):

Intermediate Bents (2 & 5): $2 * [(76' * 5.5' * 4')] / 27 = 123.85 \text{ CY}$

Intermediate Bents (3 & 4): $2 * \{[(76' * 4.5' * 4.5') + (76' * 1.75' * 2.083')]\} / 27 = 134.52 \text{ CY}$

End Bents (approx.): $2 * \{[79.5' * 3' * 2.5'] + [2 * 13.5' * 1' * 7.5']\} / 27 = 59.17 \text{ CY}$

Total Volume of Class AA concrete = 317.54 CY

Length of Steel HP 14X73 Piles (30 ft each – approx.) = $2 * [8 * 30' + 2 * 15'] = 540 \text{ LF}$

Length of 48" Diameter Drilled Caissons (30 ft each – approx.) = $4 * [3 * 30'] = 360 \text{ LF}$

Calculations



GEORGIA DEPARTMENT OF TRANSPORTATION

ALTERNATIVE NO.:

STP-0004-00(446) Cobb County– P.I. Number: 0004446
Lewis Road Corridor

4

DESCRIPTION: **POWDER SPRINGS CREEK BRIDGE- ROUTE BIKE LANES
TO MULTI USE TRAIL AND REDUCE MULTI USE TRAIL
TO 10' AND SIDEWALKS TO 5'**

SHEET NO.: 4 of 5

Alternative (5 Span – 370' Long, 68'-5" Out-to-Out)

Superstructure:

Deck Area = $370' * 57.42'$ (avg.) = 21,245.4 SF

Volume of 8 1/8" thick Class AA Superstructure Deck concrete = $[21245.4 * (8.125"/12)]/27 = 532.78$ CY

Volume of 6" thick Class AA Superstructure Sidewalk & Raised Median Concrete (average) =

$$[(370' * 6"/12 * 5') + (370' * 6"/12 * 10') + (370' * 6"/12 * 8')]/27 = 157.59 \text{ CY}$$

Total volume of Class AA Superstructure Deck Concrete = $532.78 + 157.59 = 690.37$ CY

Area of Grooved concrete (approx.) = $370' * 28'/9 = 1,151.11$ SY

Total length of Type III PPC Girders (approx.) = $4 * (65' * 7) = 1,820$ LF

Total length of BT-63 PPC Girders (approx.) = $110' * 7 = 770$ LF

Total length of Barrier & Rail (Special Design) = $2 * 370 = 740$ LF

Substructure:

Volume of Class AA concrete (average dimensions of Caps, Steel "H" Piles & Caissons at 30'):

Intermediate Bents (2 & 5): $2 * [(63.5' * 5.5' * 4')] / 27 = 103.48$ CY

Intermediate Bents (3 & 4): $2 * \{[(63.5' * 4.5' * 4.5') + (63.5' * 1.75' * 2.083')]\} / 27 = 112.40$ CY

End Bents (approx.): $2 * \{[67' * 3' * 2.5'] + [2 * 13.5' * 1' * 7.5']\} / 27 = 52.22$ CY

Total Volume of Class AA concrete = 268.1 CY

Length of Steel HP 14X73 Piles (30 ft each – approx.) = $2 * [7 * 30' + 2 * 15'] = 480$ LF

Length of 48" Diameter Drilled Caissons (30 ft each – approx.) = $4 * [3 * 30'] = 360$ LF

Value Analysis Design Alternative



PROJECT: GEORGIA DEPARTMENT OF TRANSPORTATION
 STP-0004-00(446) Cobb County- P.I. Number: 0004446
 Lewis Road Corridor

ALTERNATIVE NO.: **7**

DESCRIPTION: **POWDER SPRINGS CREEK BRIDGE- REDUCE RAISED
 MEDIAN TO 4' AND MULTI-USE TRAIL TO 10' AND
 SIDEWALK TO 5'**

SHEET NO.: 1 of 5

Original Design:

The original design calls for the construction of a 5-span bridge, 370' long with Spans 1, 2, 4 & 5 at 65' and Span 3 at 110', over Powder Springs Creek. The bridge is on a tangent and skewed 30° to the normal. The out-to-out width of the bridge is 68'-5" (approx.). Spans 1, 2, 4 & 5 are comprised of eight 65' Type III PSC beams evenly spaced. Span 3 is comprised of eight Bulb Tee 63" PSC beams evenly spaced. The bridge accommodates a 6' raised sidewalk on the East side, 2' buffer, 4' Bike Lane and 12' Travel Lane on each side, an 8' raised median with a 2' buffer on either side, a 2' buffer and 12' Multi-use trail on the West side. The bents are made up of concrete caps. While Bents 2, 3, 4 & 5 are founded on caissons, the end bents are founded on Steel H Piles. The barrier rail is per special design and includes a single pipe rail.

Alternative Design:

The proposed alternative reduces the 8' median to 4'. Additionally, the multi-use trail on the West side of the bridge is reduced to 10'. The out-to-out bridge width is reduced to 61'-5" (approx.).

The alternative maintains all other current geometry.

Opportunities:

- Cost savings by reducing bridge width
- Reduced construction time

Risks:

- Re-design effort will require additional time

Technical Discussion:

With reduction in the out-to-out width of the bridge to 62'-5" (approx.), one beam line along the length of the bridge may be eliminated. Therefore, Spans 1, 2, 4 & 5 may comprise of seven 65' Type III PSC beams evenly spaced and Span 3 may comprise of seven Bulb Tee 63" PSC beams evenly spaced. The bridge will accommodate a 5' raised sidewalk on the East side, 2' buffer, 4' Bike Lane and 12' Travel Lane on each side, a 4' raised median with a 2' buffer on either side, a 2' buffer and 10' Multi-use trail on the West side. The bents will be the same as in the current design.

COST SUMMARY	INITIAL COST	PRESENT WORTH RECURRING COSTS	PRESENT WORTH LIFE-CYCLE COST
ORIGINAL DESIGN	\$ 2,511,367	\$ 0	\$ 2,511,367
ALTERNATIVE	\$ 1,859,295	\$ 0	\$ 1,859,295
SAVINGS	\$ 652,072	\$ 0	\$ 652,072

Illustrations



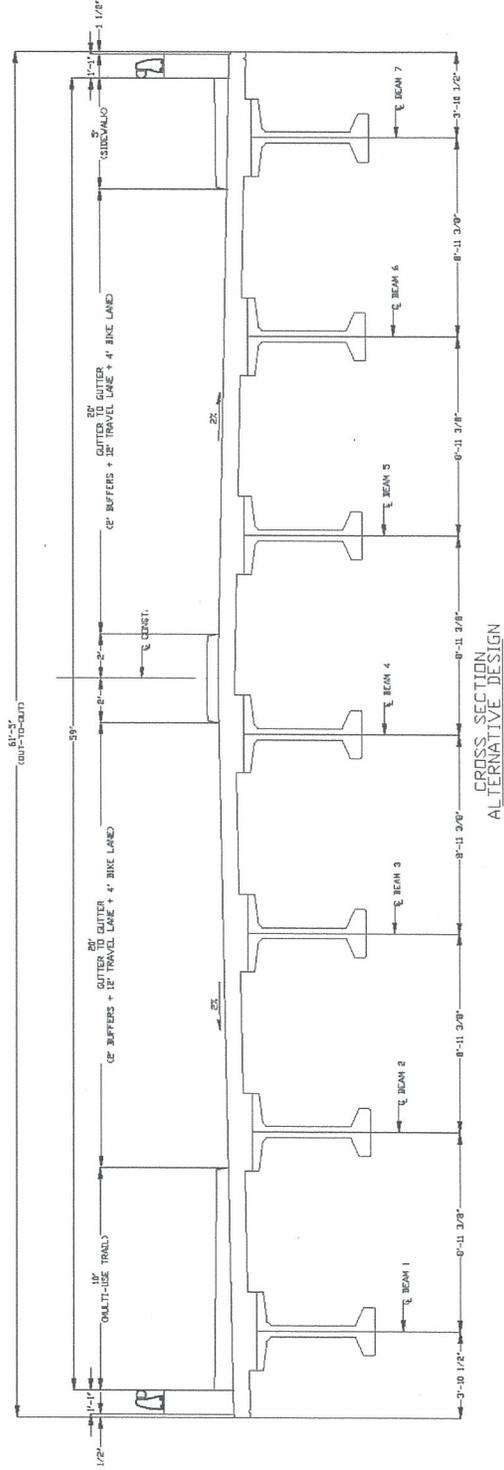
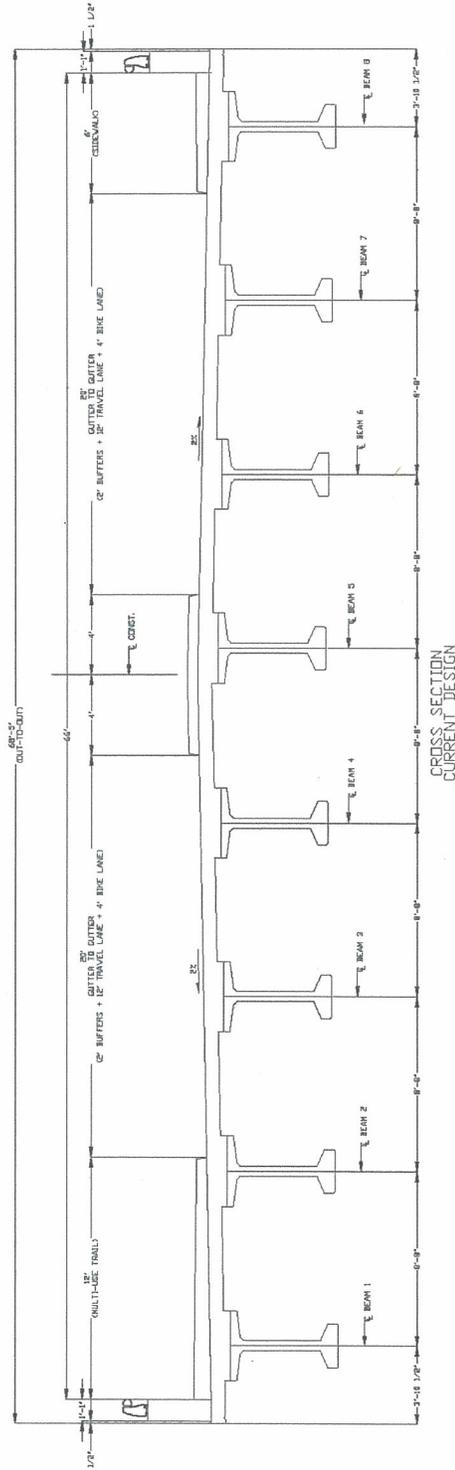
PROJECT: GEORGIA DEPARTMENT OF TRANSPORTATION
 STP-0004-00(446) Cobb County- P.I. Number: 0004446

ALTERNATIVE NO.: 7

Lewis Road Corridor

DESCRIPTION: POWDER SPRINGS CREEK BRIDGE- REDUCE RAISED
 MEDIAN TO 4' AND MULTI-USE TRAIL TO 10' AND
 SIDEWALK TO 5'

SHEET NO.: 2 of 5



Calculations



PROJECT: **GEORGIA DEPARTMENT OF TRANSPORTATION**
STP-0004-00(446) Cobb County- P.I. Number: 0004446
Lewis Road Corridor

ALTERNATIVE NO.:
7

DESCRIPTION: **POWDER SPRINGS CREEK BRIDGE- REDUCE RAISED**
MEDIAN TO 4' AND MULTI-USE TRAIL TO 10' AND
SIDEWALK TO 5'

SHEET NO.: 3 of 5

Current Design (5 Span – 370' Long, 68'-5" Out-to-Out)

Superstructure:

Deck Area = $370' * 68.42' \text{ (avg.)} = 25,315.4 \text{ SF}$

Volume of 8 1/8" thick Class AA Superstructure Deck concrete = $[25315.4 * (8.125"/12)] / 27 = 634.84 \text{ CY}$

Volume of 6" thick Class AA Superstructure Sidewalk & Raised Median Concrete (average) =

$$[(370' * 6"/12 * 6') + (370' * 6"/12 * 12') + (370' * 6"/12 * 8')] / 27 = 178.15 \text{ CY}$$

Total volume of Class AA Superstructure Deck Concrete = $634.84 + 178.15 = 812.99 \text{ CY}$

Area of Grooved concrete (approx.) = $370' * 36' / 9 = 1,480 \text{ SY}$

Total length of Type III PPC Girders (approx.) = $4 * (65' * 8) = 2,080 \text{ LF}$

Total length of BT-63 PPC Girders (approx.) = $110' * 8 = 880 \text{ LF}$

Total length of Barrier & Rail (Special Design) = $2 * 370 = 740 \text{ LF}$

Substructure:

Volume of Class AA concrete (average dimensions of Caps, Steel "H" Piles & Caissons at 30'):

Intermediate Bents (2 & 5): $2 * [(76' * 5.5' * 4')] / 27 = 123.85 \text{ CY}$

Intermediate Bents (3 & 4): $2 * \{ [(76' * 4.5' * 4.5') + (76' * 1.75' * 2.083')] \} / 27 = 134.52 \text{ CY}$

End Bents (approx.): $2 * \{ [79.5' * 3' * 2.5'] + [2 * 13.5' * 1' * 7.5'] \} / 27 = 59.17 \text{ CY}$

Total Volume of Class AA concrete = 317.54 CY

Length of Steel HP 14X73 Piles (30 ft each – approx.) = $2 * [8 * 30' + 2 * 15'] = 540 \text{ LF}$

Length of 48" Diameter Drilled Caissons (30 ft each – approx.) = $4 * [3 * 30'] = 360 \text{ LF}$

Calculations



PROJECT: GEORGIA DEPARTMENT OF TRANSPORTATION
STP-0004-00(446) Cobb County- P.I. Number: 0004446
Lewis Road Corridor

ALTERNATIVE NO.:
7

DESCRIPTION: POWDER SPRINGS CREEK BRIDGE- REDUCE RAISED
MEDIAN TO 4' AND MULTI-USE TRAIL TO 10' AND
SIDEWALK TO 5'

SHEET NO.: 4 of 5

Alternative (5 Span – 370' Long, 61'-5" Out-to-Out)

Superstructure:

Deck Area = $370' * 61.42' \text{ (avg.)} = 22,725.4 \text{ SF}$

Volume of 8 1/8" thick Class AA Superstructure Deck concrete = $[22725.4 * (8.125"/12)]/27 = 569.89 \text{ CY}$

Volume of 6" thick Class AA Superstructure Sidewalk & Raised Median Concrete (average) =

$$[(370' * 6"/12 * 5') + (370' * 6"/12 * 10') + (370' * 6"/12 * 4')]/27 = 130.19 \text{ CY}$$

Total volume of Class AA Superstructure Deck Concrete = $569.89 + 130.19 = 700.07 \text{ CY}$

Area of Grooved concrete (approx.) = $370' * 36'/9 = 1,480 \text{ SY}$

Total length of Type III PPC Girders (approx.) = $4 * (65' * 7) = 1,820 \text{ LF}$

Total length of BT-63 PPC Girders (approx.) = $110' * 7 = 770 \text{ LF}$

Total length of Barrier & Rail (Special Design) = $2 * 370 = 740 \text{ LF}$

Substructure:

Volume of Class AA concrete (average dimensions of Caps, Steel "H" Piles & Caissons at 30'):

Intermediate Bents (2 & 5): $2 * [(68' * 5.5' * 4')] / 27 = 110.82 \text{ CY}$

Intermediate Bents (3 & 4): $2 * \{[(68' * 4.5' * 4.5') + (68' * 1.75' * 2.083')]\} / 27 = 120.36 \text{ CY}$

End Bents (approx.): $2 * \{[72' * 3' * 2.5'] + [2 * 13.5' * 1' * 7.5']\} / 27 = 55 \text{ CY}$

Total Volume of Class AA concrete = 286.18 CY

Length of Steel HP 14X73 Piles (30 ft each – approx.) = $2 * [7 * 30' + 2 * 15'] = 480 \text{ LF}$

Length of 48" Diameter Drilled Caissons (30 ft each – approx.) = $4 * [3 * 30'] = 360 \text{ LF}$

Value Analysis Design Suggestion



PROJECT: **GEORGIA DEPARTMENT OF TRANSPORTATION**
STP-0004-00(446) Cobb County– P.I. Number: 0004446
Lewis Road Corridor

ALTERNATIVE NO.:
10

DESCRIPTION: **SHIFT NEW POWDER SPRINGS CREEK BRIDGE TO THE** SHEET NO.: 1 of 1
EAST 25' TO 30'

Original Design:

The original design called for a tangent section between curve 4 and curve 5 (as shown in the plans, see sheets 13-5 to 13-7)

Alternative:

It is suggested that this tangent section be moved 25' – 30' to the southeast to reduce impacts.

Opportunities:

- Reduce wetland impact
- Reduce required fill due to terrain – utilize old bridge approach
- Move confluence of minor streams out from under bridge

Risks:

- Care must be taken to avoid the Historic property in the vicinity (Major Ross)
- Construction phasing will be somewhat more restricted

Value Analysis Design Suggestion



PROJECT: GEORGIA DEPARTMENT OF TRANSPORTATION
STP-0004-00(446) Cobb County- P.I. Number: 0004446
Lewis Road Corridor

ALTERNATIVE NO.:
12

DESCRIPTION: LOWER GRADE FROM STA. 78+00 TO STA. 91+00

SHEET NO.: 1 of 1

Original Design:

Profile as shown in the plans.

(see Sheets 15 – 3&4)

Alternative:

The proposed Design Suggestion is to move PVI 88 + 70.48 back station in order to lower the roadway and flatten the grade.

Opportunities:

- Reduce required fill for a “borrow” job

Risks:

- Lowers the bridge closer to the 500 Year Storm

Value Analysis Design Suggestion



PROJECT: GEORGIA DEPARTMENT OF TRANSPORTATION
STP-0004-00(446) Cobb County- P.I. Number: 0004446
Lewis Road Corridor

ALTERNATIVE NO.:
13

DESCRIPTION: **BUILD NEW POWDER SPRINGS CREEK BRIDGE FOR
100 YR. STORM**

SHEET NO.: 1 of 1

Original Design:

Original design was to build the Powder Springs Creek Bridge to accommodate the 500 year design storm.

Alternative:

Evaluate the possibility of designing this structure for a 100 year storm event in-lieu of a 500 year storm event.

Opportunities:

- Reduces bridge length
- Lowers the profile
- Reduces span length/beam depth

Risks:

- Requires a design exception
- May require more detailed risk analysis
- Hydraulic design must be recalculated

Value Analysis Design Alternative



PROJECT: **GEORGIA DEPARTMENT OF TRANSPORTATION**
STP-0004-00(446) Cobb County- P.I. Number: 0004446
Lewis Road Corridor

ALTERNATIVE NO.:
16

DESCRIPTION: **RELOCATE THE BIKE PATHS TO THE PROPOSED MULTI-USE TRAIL**

SHEET NO.: 1 of 4

Original Design:

The original design calls for the construction of four foot bike lanes in each direction of travel. The bike lanes would be part of roadway pavement structure and would be constructed to the same pavement section as the travel lane.

Alternative Design:

This alternative design suggests to relocate the bike paths off the roadway and use the proposed multi-use trail as the facility for bike traffic.

Opportunities:

- Cost savings
- Increase safety by relocating bike traffic off of roadway

Risks:

- Change in concept as shown in public meetings
- No dedicated area for bike/pedestrian traffic, joint use required
- Minor redesign required

Technical Discussion:

The original design included a multi-use trail bike lanes in each direction and sidewalks in each direction. Non-motorized traffic could be accommodates on the sidewalks and multi-use trail. No bike lanes are in place outside the proposed project limits.

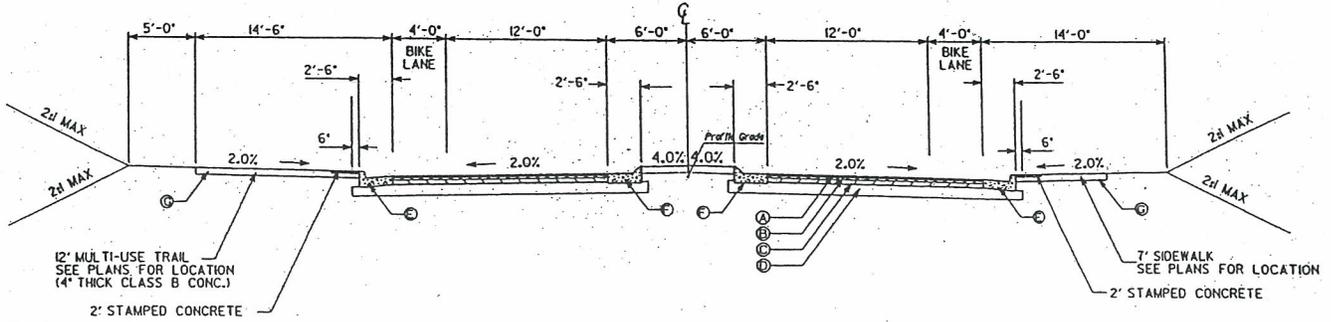
COST SUMMARY	INITIAL COST	PRESENT WORTH RECURRING COSTS	PRESENT WORTH LIFE-CYCLE COST
ORIGINAL DESIGN	\$ 1,859,099	\$ 0	\$ 1,859,099
ALTERNATIVE	\$ 1,591,534	\$ 0	\$ 1,591,534
SAVINGS	\$ 307,565	\$ 0	\$ 307,565

PROJECT: **GEORGIA DEPARTMENT OF TRANSPORTATION**
Project No.: STP-0004-00(446) Cobb County- P.I. Number: 0004446
Lewis Road Corridor

ALTERNATIVE NO.: **16**

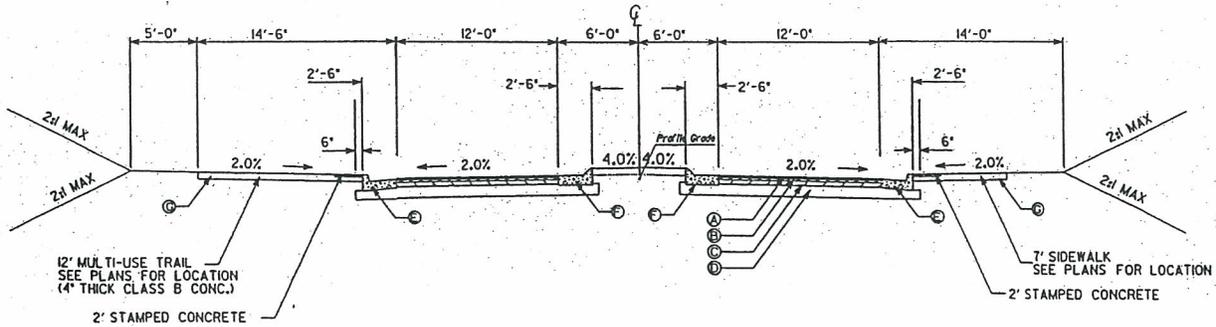
DESCRIPTION: Relocate the Bike paths to the proposed multi-use trail

SHEET NO.: **2** of **4**



ORIGINAL DESIGN TYPICAL SECTION

- REQUIRED FULL DEPTH PAVEMENT SECTION
- Ⓐ ASPH CONC 9.5 MM SUPERPAVE, (165 LB/SY)
 - Ⓑ ASPH CONC 19 MM SUPERPAVE, (220 LB/SY)
 - Ⓒ ASPH CONC 25 MM SUPERPAVE, (330 LB/SY)
 - Ⓓ GRADED AGGREGATE BASE COURSE, 12 IN
 - Ⓔ 8" X 30" CONC. CURB & GUTTER, GA. STD. 9032 B. TYPE 2
 - Ⓕ 4" CONC. SIDEWALK



ALTERNATE DESIGN TYPICAL SECTION

Calculations



PROJECT: GEORGIA DEPARTMENT OF TRANSPORTATION
 Project No.: STP-0004-00(446) Cobb County- P.I. Number: 0004446
 Lewis Road Corridor

ALTERNATIVE NO.: 16

DESCRIPTION: Relocate the Bike paths to the proposed multi-use trail

SHEET NO.: 3 of 4

BIKE LANE LOCATIONS

SOUTH BOUND LANE

STA 51+00 - STA 121+97 7097 LF

NORTH BOUND LANE

STA 51+00 - STA 121+29 7029 LF

BIKE LANE WIDTH 4 FT

BIKE LANE AREA

$$(7097 \text{ LF} + 7029 \text{ LF}) \times 4 \text{ FT} = 56504 \text{ SF} = 6278.54$$

TYPICAL SECTION

* 12.5 mm SUPERPAVE 165 #/402
 19 mm SUPERPAVE 220 #/402
 25 mm SUPERPAVE 330 #/402
 GAB 12" DEPTH

QUANTITY CALCULATION

12.5 mm SUPERPAVE

$$165 \# / 402 \times 6278.54 \text{ SF} \div 2000 = \underline{517 \text{ TN}}$$

19 mm SUPERPAVE

$$220 \# / 402 \times 6278.54 \text{ SF} \div 2000 = \underline{690 \text{ TN}}$$

25 mm SUPERPAVE

$$330 \# / 402 \times 6278.54 \text{ SF} \div 2000 = \underline{1035 \text{ TN}}$$

GAB

$$145 \# / \text{ft}^3 \times 56504 \text{ SF}^2 \times 1 \text{ FT} \div 2000 = \underline{4096 \text{ TN}}$$

* TYPICAL SECTION SPECIFIES 95mm. DETAILED ESTIMATE SPECIFIES 125mm

Value Analysis Design Alternative



PROJECT: **GEORGIA DEPARTMENT OF TRANSPORTATION**
STP-0004-00(446) Cobb County- P.I. Number: 0004446

ALTERNATIVE NO.:
18

Lewis Road Corridor

DESCRIPTION: **SELECTIVELY UTILIZE THE EXISTING MARCHMAN,
 ATLANTA, HOTEL AND LONG STREET BY MILLING
 AND INSTALLING A NEW 1-1/2" SURFACE COURSE**

SHEET NO.: 1 of 6

Original Design:

The original design calls for the construction of all surface arterials to be full depth construction which includes a surface course, intermediate course, and aggregate base course.

Alternative Design:

This alternative design suggests utilizing existing pavement in locations where the roadway remains in the same alignment. All improvements including the curb and gutters, drainage, sidewalk, etc. would be built per plan. The existing street could be milled and overlaid with 1-1/2" of 12.5mm superpave.

Opportunities:

- Less disruption to adjacent property owners
- Cost savings
- Ease of traffic maintenance

Risks:

- Minor redesign required
- Possible pavement problems around existing utilities
- Open cuts for drainage installation

Technical Discussion:

An on site review indicates no obvious problems with pavement. Core depths of the existing pavement were reported to be more than the proposed pavement depth.

COST SUMMARY	INITIAL COST	PRESENT WORTH RECURRING COSTS	PRESENT WORTH LIFE-CYCLE COST
ORIGINAL DESIGN	\$ 1,037,003	\$ 0	\$ 1,037,003
ALTERNATIVE	\$ 929,240	\$ 0	\$ 929,240
SAVINGS	\$ 107,763	\$ 0	\$ 107,763

Illustrations

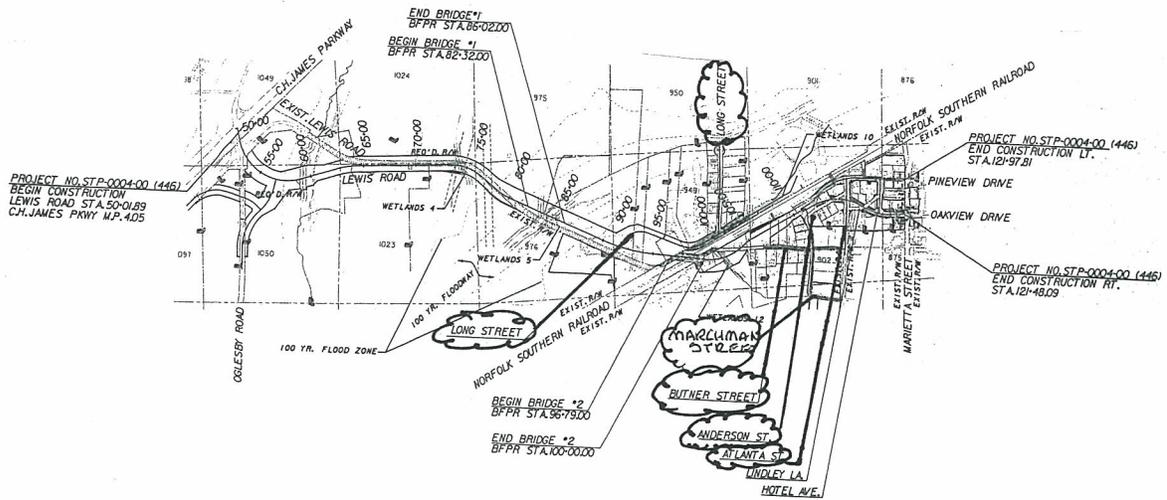


PROJECT: **GEORGIA DEPARTMENT OF TRANSPORTATION**
Project No.: STP-0004-00(446) Cobb County- P.I. Number: 0004446
Lewis Road Corridor

ALTERNATIVE NO.: 18

DESCRIPTION: Selectively utilize the existing Marchman, Atlanta, Hotel and Long Street by milling and installing a new 1-1/2" surface course.

SHEET NO.: 2 of 6



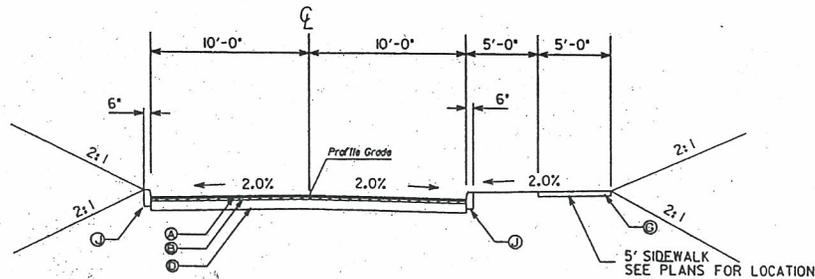
PLAN VIEW - STREETS TO BE
MILLED AND OVERLAID

PROJECT: **GEORGIA DEPARTMENT OF TRANSPORTATION**
Project No.: STP-0004-00(446) Cobb County- P.I. Number: 0004446
Lewis Road Corridor

ALTERNATIVE NO.: **18**

DESCRIPTION: Selectively utilize the existing Marchman, Atlanta, Hotel and Long Street by milling and installing a new 1-1/2" surface course.

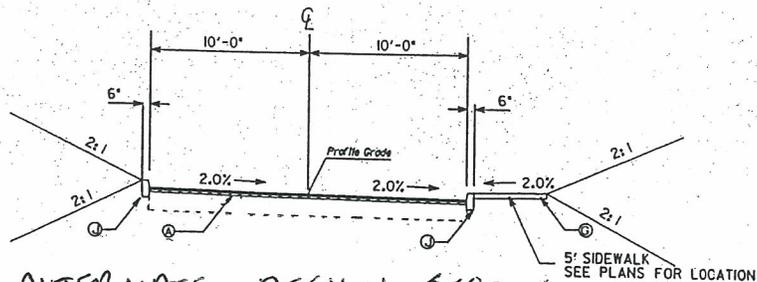
SHEET NO.: **3** of **6**



ORIGINAL DESIGN SECTION

- LONG ST - STA 18+95 - STA 20+50
- LONG ST (WEST) STA 2+41 - STA 9+34
- ATLANTA ST STA 12+91 - STA 17+13
- MARCHMAN ST STA 10+24 - STA 17+21
- ANDERSON ST STA 12+00 - STA 13+80
- BUTNER ST STA 11+00 - STA 14+65 & STA 14+89 - STA 17+79

- REQUIRED FULL DEPTH PAVEMENT SECTION
- ① ASPH CONC 9.5 MM SUPERPAVE, (165 LB/SY)
 - ② ASPH CONC 19 MM SUPERPAVE, (220 LB/SY)
 - ③ GRADED AGGREGATE BASE COURSE, 8 IN
 - ④ 8" X 30" CONC. CURB & GUTTER, GA. STD. 9032 B, TYPE 2
 - ⑤ 4" CONC. SIDEWALK



ALTERNATE DESIGN SECTION

- LONG ST STA 18+95 - STA 20+50
- LONG ST (WEST) STA 2+41 - STA 9+34
- ATLANTA ST STA 12+91 - STA 17+13
- MARCHMAN ST STA 10+24 - STA 17+21
- ANDERSON ST STA 12+00 - STA 13+80
- BUTNER ST STA 11+00 - STA 14+65 & STA 14+89 - STA 17+79

Calculations



PROJECT: GEORGIA DEPARTMENT OF TRANSPORTATION
Project No.: STP-0004-00(446) Cobb County- P.I. Number: 0004446
Lewis Road Corridor

ALTERNATIVE NO.: 18

DESCRIPTION: SELECTIVELY UTILIZE THE EXISTING MARCHEMAN ATLANTA HOTEL AND LONG STREETS BY MILLING & INSTALLING
SHEET NO.: 4 of 6
1/2"

QUANTITY CALCULATION

LONG ST. STA 18+95 - STA 20+50 22' WIDTH
 $155 \text{ FT} \times 22 \text{ FT} = 3410 \text{ SF} = 378 \text{ SY}$

LONG ST (WEST) STA 2+41 - STA 9+34 20' WIDTH
 $693 \text{ FT} \times 20 \text{ FT} = 13860 \text{ SF} = 1540 \text{ SY}$

ATLANTA ST STA 12+91 - STA 17+13 20' WIDTH
 $422 \text{ FT} \times 20 \text{ FT} = 8440 \text{ SF} = 937 \text{ SY}$

MARCHEMAN ST STA 16+24 - STA 17+21 20' WIDTH
 $697 \text{ FT} \times 20 \text{ FT} = 13940 \text{ SF} = 1548 \text{ SY}$

ANDERSON ST STA 12+00 - STA 13+80 20' WIDTH
 $180 \text{ FT} \times 20 \text{ FT} = 3600 \text{ SF} = 400 \text{ SY}$

* BUTNER ST STA 11+00 - STA 14+65 20' WIDTH
STA 14+89 - STA 17+79 20' WIDTH
 $655 \text{ FT} \times 20 \text{ FT} = 13100 \text{ SF} = 1455 \text{ SY}$

TYPICAL SECTION

12.5mm SUPERPAVE	165 #/yd ²
19mm SUPERPAVE	220 #/yd ²
GAB	8" DEPTH

* NO TYPICAL SECTION FOR BUTNER ST SHOWN IN PLANS

Calculations



PROJECT: GEORGIA DEPARTMENT OF TRANSPORTATION
Project No.: STP-0004-00(446) Cobb County- P.I. Number: 0004446
Lewis Road Corridor

ALTERNATIVE NO.: 18

DESCRIPTION: SELECTIVELY UTILIZE THE EXISTING MARSHMAN
ATLANTA HOTEL AND LONG STREETS BY MILLING AND INSTALLING OF 1 1/2" SHEET NO.: 5 6

TOTAL QUANTITIES FOR SIDE STREETS -
LONG ST, LONG ST (WEST), ATLANTA ST,
MARSHMAN ST, ANDERSON ST AND BUTNER ST

56350 SF
6258 SY

PAVEMENT QUANTITIES TO BE DELETED

19 mm SUPERPAVE

$$220 \# / yd^2 \times 6258 yd^2 \div 2000 = \underline{688 \text{ TN}}$$

GAP3

$$145 \# / ft^3 \times 56350 SF \times 0.67 FT \div 2000 = \underline{2737 \text{ TN}}$$

MILLING QUANTITY TO BE ADDED

6258 SY

Value Analysis Design Alternative



PROJECT: GEORGIA DEPARTMENT OF TRANSPORTATION
 STP-0004-00(446) Cobb County- P.I. Number: 0004446
 Lewis Road Corridor

ALTERNATIVE NO.: **19**

DESCRIPTION: **JACK AND BORE A NEW 48" PIPE IN-LIEU OF 2-36" PIPES, GROUT FILL THE EXISTING PIPE TO BE ABANDONED**

SHEET NO.: 1 of 3

Original Design:

The original design calls for the construction of 2-36" pipes between structures (R6) to (R12).

Alternative Design:

This alternative design suggests to construct a 48" pipe to replace the twin 36" piping from structures (R6) to (R10).

Opportunities:

- Eliminate 248' of dual 36" system
- Eliminate two jacking and borings under the railroad
- Eliminate inaccessible junction boxes
- Ease construction

Risks:

- 48" upper limit of jack and bore under railroad

Technical Discussion:

Additional replacement may be considered all the way to (R12) but cover may be an issue from (R10 to (R11). Hydraulics should allow further reduction in pipe size from 48". Existing pipe should be grout/filled in place and not removed.

COST SUMMARY	INITIAL COST	PRESENT WORTH RECURRING COSTS	PRESENT WORTH LIFE-CYCLE COST
ORIGINAL DESIGN	\$ 136,621	\$ 0	\$ 136,621
ALTERNATIVE	\$ 84,865	\$ 0	\$ 84,865
SAVINGS	\$ 51,756	\$ 0	\$ 51,756

Illustrations

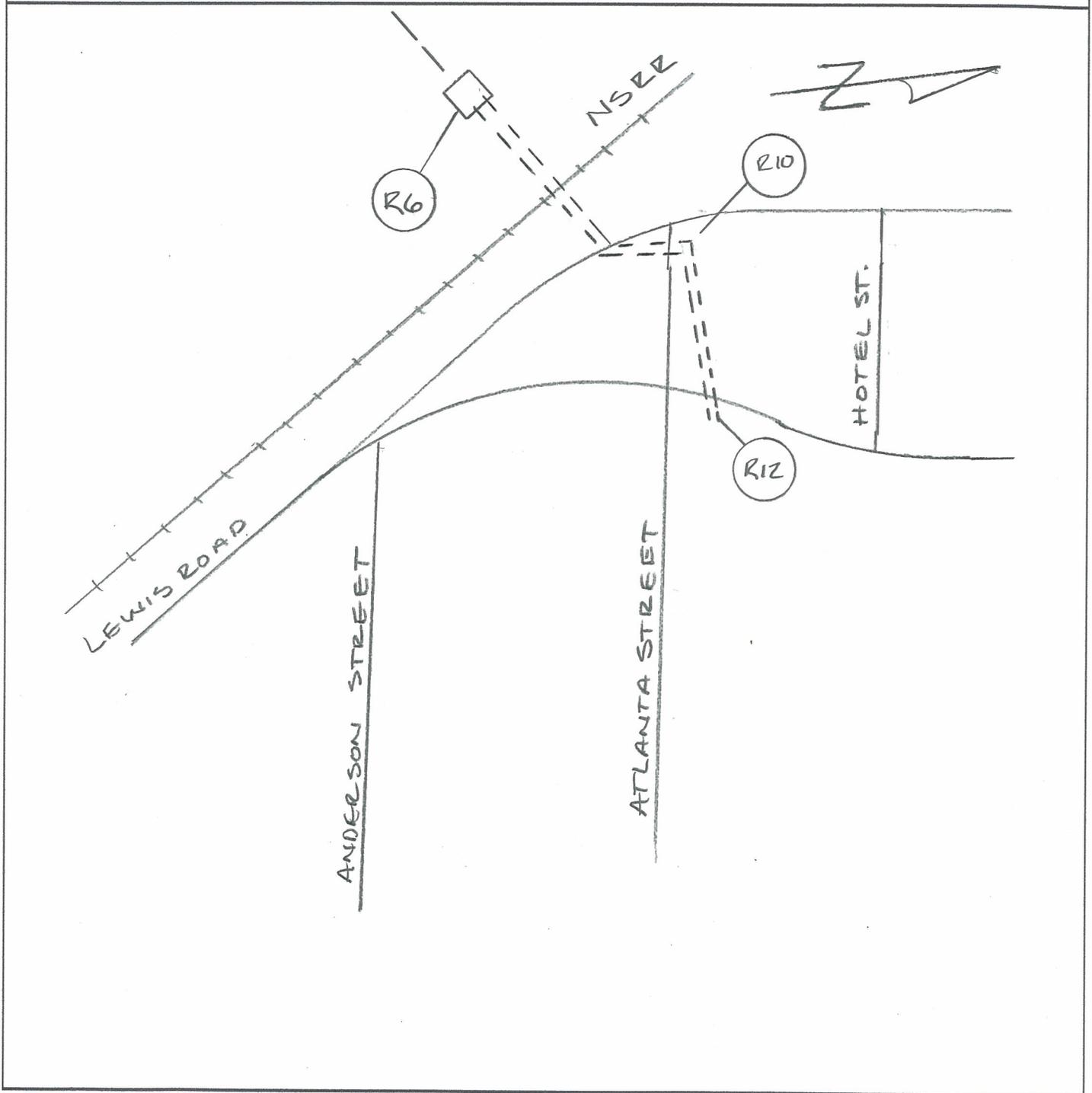


PROJECT: **GEORGIA DEPARTMENT OF TRANSPORTATION**
Project No.: STP-0004-00(446) Cobb County- P.I. Number: 0004446
Lewis Road Corridor

ALTERNATIVE NO.: 19

DESCRIPTION: Jack and Bore a new 48" pipe in-lieu of 2-36" pipes, grout fill the existing pipe to be abandoned.

SHEET NO.: 2 of 3



COST WORKSHEET



PROJECT: STP-0004-00(446) Cobb County

ALTERNATIVE NO.: 19

P.I. Number: 0004446 Lewis Road Corridor

***DESCRIPTION:** Jack and Bore a new 48" pipe in-lieu of 2-36" pipes, grout fill the existing pipe to be abandoned*

SHEET NO.: 3 of 3

CONSTRUCTION ITEM		ORIGINAL ESTIMATE			PROPOSED ESTIMATE		
Item Description	UNITS	NO. OF UNITS	COST/ UNIT	TOTAL	NO. OF UNITS	COST/ UNIT	TOTAL
550-1360	LF	391	90	35,190			
615-1000	LF	120	400	48,000			
668-5000	EA	2	5500	11,000			
668-4300	EA	6	2500	15,000			
668-4311	EA	6	320	1,920			
668-2100	EA	5	2500	12,500			
668-2100	EA	6	250	1,500			
550-1480	LF				190	140	26,600
615-1000	LF				60	950	27,000
668-4400	EA				3	3000	9,000
668-4411	EA				3	350	1,050
668-2200	EA				4	3000	12,000
668-2210	EA				5	300	1,500
Sub-total				\$125,110			\$77,150
Mark-up @ 10%				\$12,511			\$7,715
TOTAL				\$137,621			\$84,865

Value Analysis Design Alternative



PROJECT: GEORGIA DEPARTMENT OF TRANSPORTATION
 STP-0004-00(446) Cobb County- P.I. Number: 0004446
 Lewis Road Corridor

ALTERNATIVE NO.:
23

DESCRIPTION: **RETAIN COUNTY ACCESS ROAD AS IS AND
 CONSTRUCT A RIGHT IN/ RIGHT OUT AT LEWIS ROAD.
 DELETE NEW COUNTY ACCESS ROAD REALIGNMENT**

SHEET NO.: . 1 of 4

Original Design:

The original design calls for the construction of a relocated county access road and Oglesby Road. Oglesby Road would intersect with the new location of Lewis Road at Sta 56+63.01. Oglesby Road would have an intersection with the proposed county access road 310 feet from Lewis Road.

Alternative Design:

This alternative design suggests to create a right in / right out movement for the County access road at its present location. The new intersection would utilize the existing County access road and the abandoned Oglesby Road pavement for the proposed location.

Opportunities:

- Construction cost savings
- R/W cost savings

Risks:

- U-turn movement at Oglesby Road median opening on Lewis Road
- Minor redesign costs
-

Technical Discussion:

The County access road has no through traffic. No traffic is shown on the Plan Traffic Diagram and on-site observations indicated no traffic flow. Based on the low traffic volumes, the required u-turn movement to access C. H. James Parkway would be reasonable.

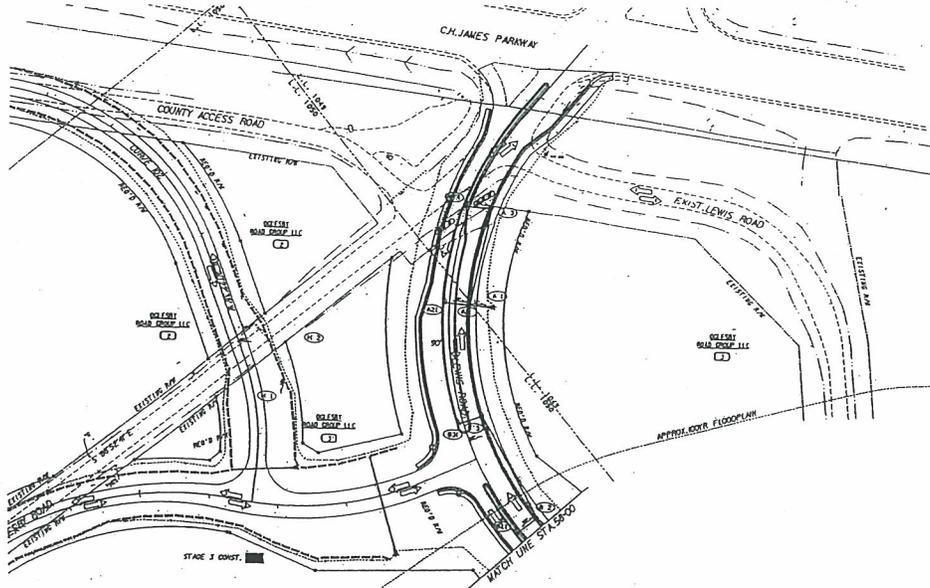
COST SUMMARY	INITIAL COST	PRESENT WORTH RECURRING COSTS	PRESENT WORTH LIFE-CYCLE COST
ORIGINAL DESIGN	\$ 5,435,175	\$ 0	\$ 5,435,175
ALTERNATIVE	\$ 5,280,809	\$ 0	\$ 5,280,809
SAVINGS	\$ 154,366	\$ 0	\$ 154,366

PROJECT: GEORGIA DEPARTMENT OF TRANSPORTATION
Project No.: STP-0004-00(446) Cobb County- P.I. Number: 0004446
Lewis Road Corridor

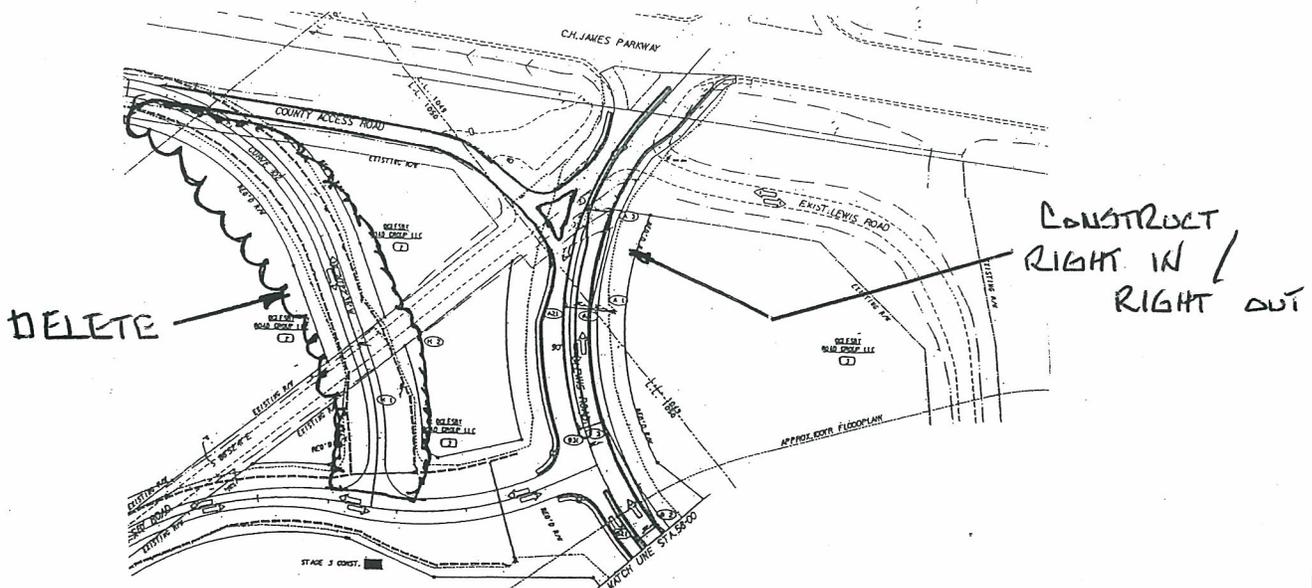
ALTERNATIVE NO.: 23

DESCRIPTION: Retain County Access road as is and construct a right in right out at Lewis Road. Delete new county access road realignment.

SHEET NO.: 2 of 4



ORIGINAL DESIGN
LEWIS RD / OGLESBY RD / COUNTY ACCESS RD



ALTERNATE DESIGN
LEWIS RD / OGLESBY RD / COUNTY ACCESS RD

Calculations



PROJECT: GEORGIA DEPARTMENT OF TRANSPORTATION

ALTERNATIVE NO.: 23

Project No.: STP-0004-00(446) Cobb County- P.I. Number: 0004446
Lewis Road Corridor

DESCRIPTION: RETAIN COUNTY ROAD ACCESS AS IS & SHEET NO.: 3 of 4
CONSTRUCT A RIGHT IN / RIGHT OUT AT LEWIS RD

COUNTY ACCESS ROAD

STA 2+43 - STA 9+54 WIDTH 24'

$$711 \times 24 = 17064 \text{ ft}^2 = 1896 \text{ yd}^2$$

TYPICAL SECTION

12.5 mm SUPERPAVE 165 #/yd²

19 mm SUPERPAVE 220 #/yd²

GMB 8" DEPTH

$$12.5 \text{ mm} \quad 165 \#/\text{yd}^2 \times 1896 \text{ yd}^2 \div 2000 = \underline{156 \text{ TN}}$$

$$19 \text{ mm} \quad 220 \#/\text{yd}^2 \times 1896 \text{ yd}^2 \div 2000 = \underline{208 \text{ TN}}$$

$$\text{GMB} \quad 145 \#/\text{ft}^3 \times 17064 \text{ ft}^2 \times 0.67 \text{ ft} \div 2000 = \underline{828 \text{ TN}}$$

ELIMINATE DRAINAGE SYSTEM U U TO DZ

75 LINEAL FEET 18" STORM DRAIN

2 18" FES

UNCLASSIFIED EXCAVATION

500 cu yd

RIGHT-OF-WAY

PARCEL 1&2

\$85,000

Value Analysis Design Suggestion



PROJECT: GEORGIA DEPARTMENT OF TRANSPORTATION
STP-0004-00(446) Cobb County- P.I. Number: 0004446
Lewis Road Corridor

ALTERNATIVE NO.:
24

DESCRIPTION: **RETAIN EXISTING INTERSECTION OF LEWIS RD. AND
C.H. JAMES PARKWAY (PLANS INDICATE THAT IT IS TO BE
RECONSTRUCTED)**

SHEET NO.: 1 of 1

Original Design:

Plans appear to indicate removal of all pavement on Lewis Road north of the thru lanes on C. H. James Parkway with the exception of the raised island.

(Sheet 13-1)

Alternative:

(In accordance with GDOT discussions at the Designers presentation, it is the intention of the department to retain, overlay, and widen the pavement from the beginning of the project to Sta 52+00 +/-.

Note: Extend shoulder on east side of proposed roadway to connect with shoulder on C. H. James Parkway.

Opportunities:

- Ease construction phasing in the intersection
- Reduce paving cost
- Increase safety by eliminating a "gap" in the shoulder

Risks:

- Existing intersection paving may be inadequate

Value Analysis Design Suggestion



PROJECT: GEORGIA DEPARTMENT OF TRANSPORTATION
STP-0004-00(446) Cobb County- P.I. Number: 0004446
Lewis Road Corridor

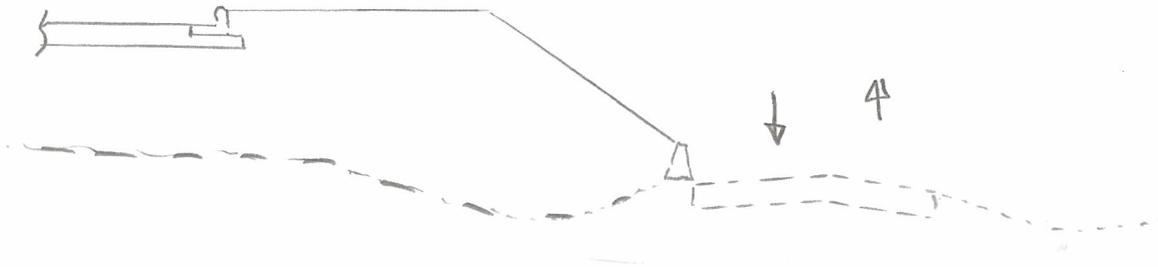
ALTERNATIVE NO.:
27

DESCRIPTION: BETWEEN STA. 86+00 AND STA. 95+00, PROVIDE A
CONCRETE BARRIER DURING CONSTRUCTION TO PREVENT
PONDING ON THE STREET.

SHEET NO.: 1 of 1

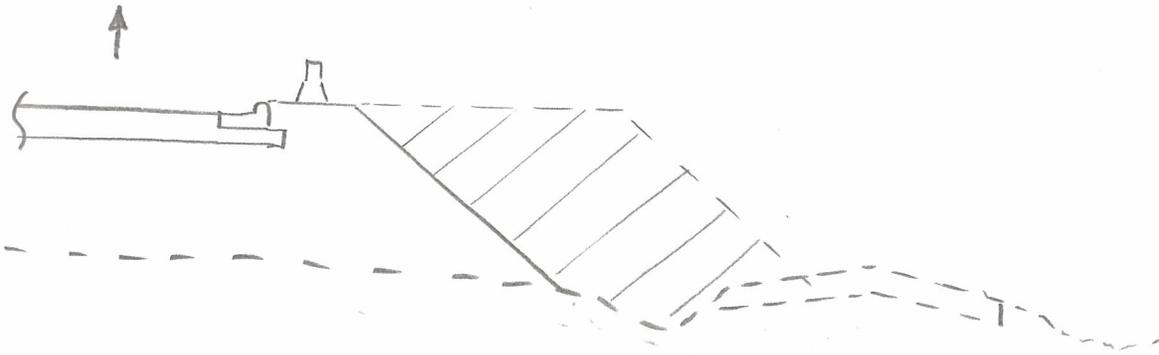
Original Design:

From Sta. 86+00 +/- to Sta. 93+00 +/- concrete barrier is utilized on the low side.



Alternative:

Use barrier on the high side and phase embankment.



Opportunities:

- Reduce ponding of water on existing road during construction
- Reduce potential for mud washing onto the roadway

Risks:

- Extra step during construction phasing

Value Analysis Design Suggestion



PROJECT: GEORGIA DEPARTMENT OF TRANSPORTATION
STP-0004-00(446) Cobb County- P.I. Number: 0004446
Lewis Road Corridor

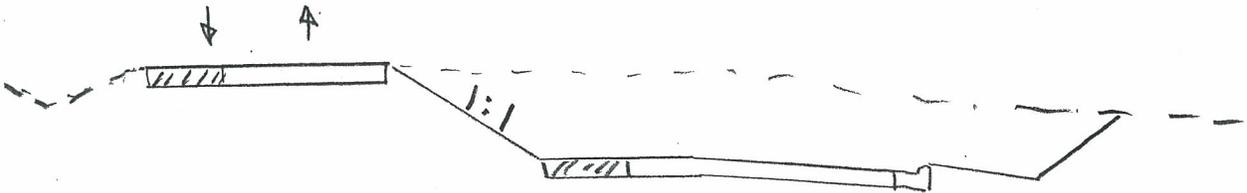
ALTERNATIVE NO.:
28

DESCRIPTION: During Stage I, install a temporary barrier from Sta. 67+50 to Sta. 71+00 to protect 1:1 slope in clear zone.

SHEET NO.: 1 of 1

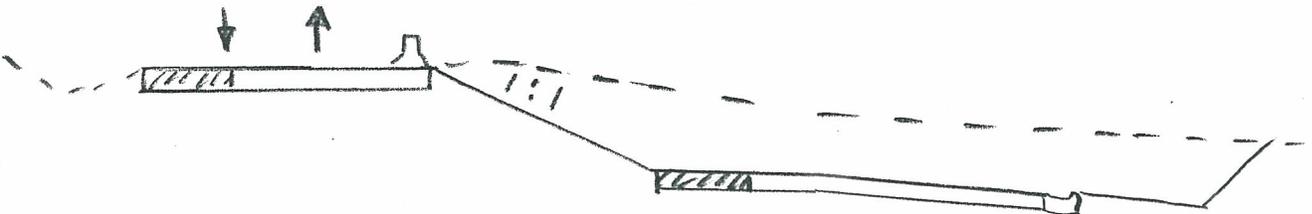
Original Design:

1:1 side slope in clear zone.



Alternative:

Utilize temporary barrier.



Opportunities:

- Protect work zone

Risks:

- None

Value Analysis Design Suggestion



PROJECT: **GEORGIA DEPARTMENT OF TRANSPORTATION**
STP-0004-00(446) Cobb County– P.I. Number: 0004446
Lewis Road Corridor

ALTERNATIVE NO.:
29

DESCRIPTION: **FROM STA. 69+40 TO STA. 74+00 AND FROM STA. 76+00**
TO STA. 80+00, REVIEW FOR POSSIBLE DRAINAGE
PROBLEMS DURING STAGING.

SHEET NO.: 1 of 1

Original Design:

As shown on the plans, trunk line is generally on the west side of the roadway.

(sheets 13-4&5)

Alternative:

Construct the trunk line on the east side of the roadway from Sta. 69+40 to Sta. 74+00.

Re-evaluate the storm drain from Sta. 76+00 to Sta. 80+00 to insure it can be staged with the roadway construction.

Opportunities:

- Improved hydraulics
- Elimination of water ponded on the roadway
- Improved construction stations

Risks:

- Potentially more costly

Value Analysis Design Suggestion



PROJECT: **GEORGIA DEPARTMENT OF TRANSPORTATION**
STP-0004-00(446) Cobb County– P.I. Number: 0004446
Lewis Road Corridor

ALTERNATIVE NO.:
30

DESCRIPTION: **SUGGEST OFFERING CULVERT ALTERNATIVES FOR**
THE DOUBLE 7'X 4' BOX CULVERT.

SHEET NO.: 1 of 1

Original Design:

Cast in place double 7'x4' box culvert.

Alternative:

Use hydraulic equivalent bottomless concrete arch pipe

Opportunities:

- Natural stream bottom aids in mitigation
- Speeds construction
- Reduces disturbed area in stream bed

Risks:

- Cost is unclear

Value Analysis Design Suggestion



PROJECT: GEORGIA DEPARTMENT OF TRANSPORTATION
STP-0004-00(446) Cobb County– P.I. Number: 0004446
Lewis Road Corridor

ALTERNATIVE NO.:
31

DESCRIPTION: CONSIDER USE OF BURIED CURB AND GUTTER IN-LIEU OF HEADER CURBS. SHEET NO.: 1 of 1

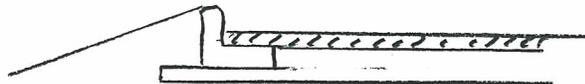
Original Design:

Header curbs with “no shoulder”



Alternative:

Bury curb and gutter



Opportunities:

- Gives curb the structural integrity to resist breaking
- Still eliminates joint in the wheel path

Risks:

- Additional upfront cost

Value Analysis Design Alternative



PROJECT: GEORGIA DEPARTMENT OF TRANSPORTATION
 STP-0004-00(446) Cobb County– P.I. Number: 0004446
 Lewis Road Corridor

ALTERNATIVE NO.:

32

DESCRIPTION: **CONSTRUCT ONE (1) MULTI-USE TRAIL (10 FOOT) FOR BOTH BIKES AND PEDESTRIANS – DELETE BIKE LANES FROM THE ROADWAY. ADD A MULTI-USE TRAIL FROM LONG ST. AND LEWIS ROAD TO END OF PROJECT ALONG EASTERLY NEW ROAD.**

SHEET NO.: 1 of 6

Original Design:

The original design calls for the construction of one (1) multi-use trail (12 foot) and provides a 4’ bike travel lane in the roadway for bikes and sidewalks for pedestrian.

Alternative Design:

This alternative design suggests to create one (1) multi-use trail (10 foot) for both bikes and pedestrians – deleting the bike lanes from the roadway. And proposes to add another 10’ multi-use trail from Long St. and Lewis Road to end of project along easterly new road to compensate for the removal of the bike lanes in this area of the project.

Opportunities:

- Cost Savings
- Enhance safety
- Eliminate design / R/W conflict

Risks:

- Minor redesign required

Technical Discussion:

The original design provided bike lanes in both directions including the left and right one way pair. A conflict exists with the R/W and typical section and implementation of this alternate will reduce pavement by four feet thereby eliminating this problem. Additionally, the multi-use trail will provide bike access from the Silver Comet Trail to downtown Powder Springs without utilizing bike lanes.

COST SUMMARY	INITIAL COST	PRESENT WORTH RECURRING COSTS	PRESENT WORTH LIFE-CYCLE COST
ORIGINAL DESIGN	\$ 2,696,352	\$ 0	\$ 2,696,352
ALTERNATIVE	\$ 2,458,181	\$ 0	\$ 2,458,181
SAVINGS	\$ 238,171	\$ 0	\$ 238,171

Illustrations

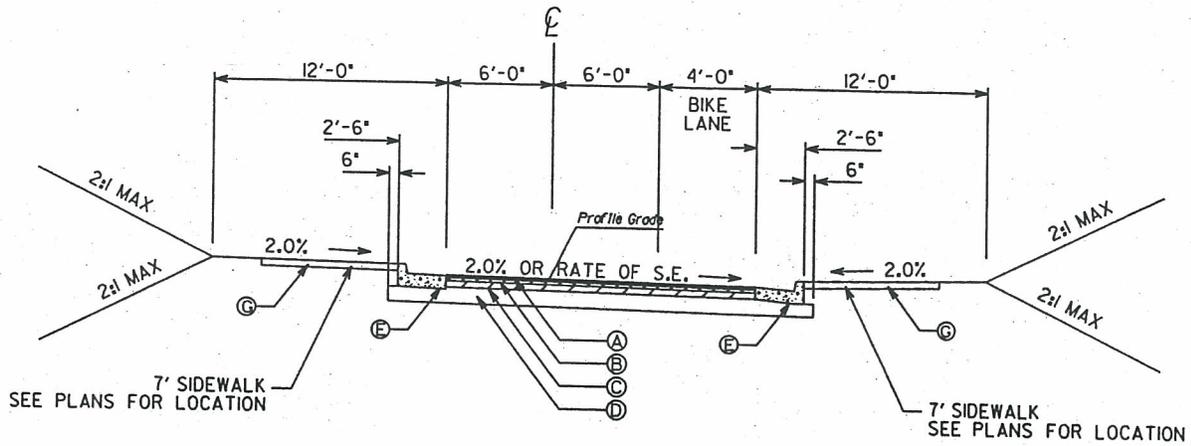


PROJECT: **GEORGIA DEPARTMENT OF TRANSPORTATION**
Project No.: STP-0004-00(446) Cobb County-P.I. Number: 0004446
Lewis Road Corridor

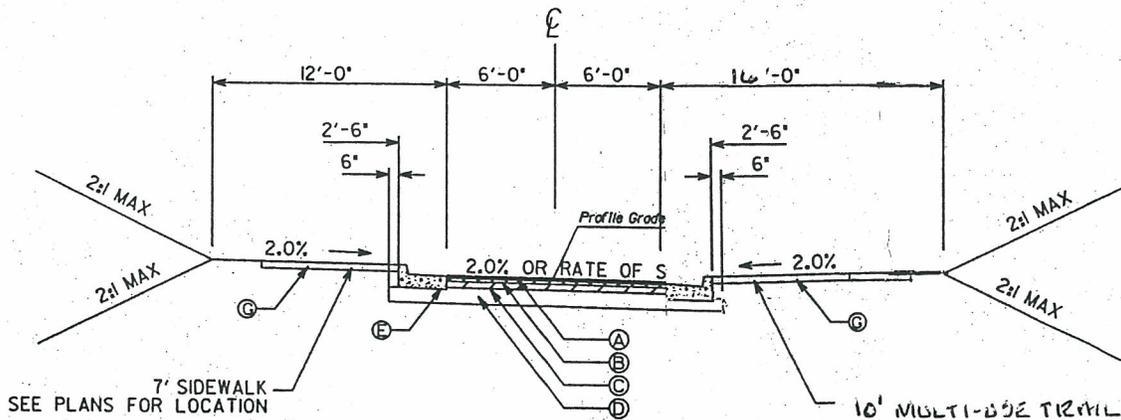
ALTERNATIVE NO.: 32

DESCRIPTION: Construct one (1) multi-use trail (10 foot) for both bikes and pedestrians – delete bike lanes from the roadway. Add a multi-use trail from Long St. and Lewis Road to end of project along easterly new road.

SHEET NO.: 2 of 6



ORIGINAL DESIGN TYPICAL SECTION
LEWIS ROAD ONE WAY PAIR RT



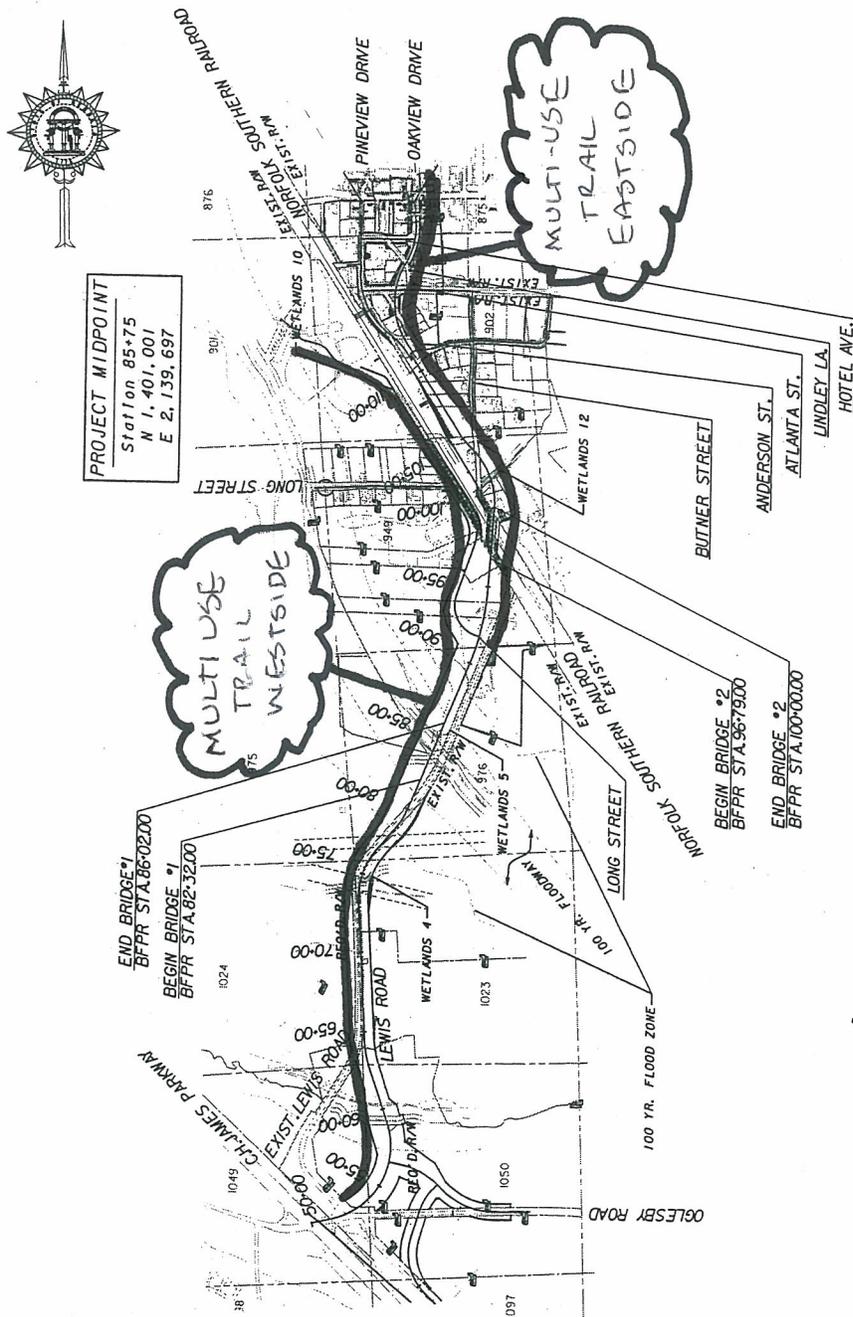
ALTERNATE DESIGN TYPICAL SECTION
LEWIS ROAD ONE WAY PAIR RT

PROJECT: **GEORGIA DEPARTMENT OF TRANSPORTATION**
Project No.: STP-0004-00(446) Cobb County- P.I. Number: 0004446
Lewis Road Corridor

ALTERNATIVE NO.: 32

DESCRIPTION: Construct one (1) multi-use trail (10 foot) for both bikes and pedestrians – delete bike lanes from the roadway. Add a multi-use trail from Long St. and Lewis Road to end of project along easterly new road.

SHEET NO.: 3 of 6



Calculations



PROJECT: GEORGIA DEPARTMENT OF TRANSPORTATION
 STP-0004-00(446) Cobb County - P.I. Number: 0004446
 Lewis Road Corridor

ALTERNATIVE NO.:
 32

DESCRIPTION: Construct one (1) multi-use trail (10') for both bikes and pedestrians - delete bike lanes from the roadway. Add a multi-use trail from Long St. and Lewis Rd. to end of project along easterly new road

SHEET NO.: 4 of 6

BIKE LANE LOCATIONS

SOUTHBOUND LANE

STA 51+00 - STA 121+97 7097 LF

NORTHBOUND LANE

STA 51+00 - STA 121+29 7029 LF

BIKE LANE WIDTH 4 FT

BIKE LANE AREA

$$(7097 \text{ LF} + 7029 \text{ LF}) \times 4 \text{ FT} = 56504 \text{ SF} = 6278.54$$

TYPICAL SECTION

* 12.5 mm SUPERPAVE	165 #/402
19 mm SUPERPAVE	220 #/402
25 mm SUPERPAVE	330 #/402
GAB	12" DEPTH

QUANTITY CALCULATION

12.5 mm SUPERPAVE

$$165 \# / 402 \times 6278.54 \div 2000 = \underline{517 \text{ TN}}$$

19 mm SUPERPAVE

$$220 \# / 402 \times 6278.54 \div 2000 = \underline{690 \text{ TN}}$$

25 mm SUPERPAVE

$$330 \# / 402 \times 6278.54 \div 2000 = \underline{1035 \text{ TN}}$$

GAB

$$145 \# / 43 \times 56504 \text{ SF} \times 1 \text{ FT} \div 2000 = \underline{4096 \text{ TN}}$$

* TYPICAL SECTION SPECIFIES 9.5mm - DETAILED ESTIMATE SPECIFIES 12.5mm

Calculations



GEORGIA DEPARTMENT OF TRANSPORTATION

ALTERNATIVE NO.:

STP-0004-00(446) Cobb County- P.I. Number: 0004446

32

Lewis Road Corridor

DESCRIPTION: Construct one (1) multi-use trail (10') for both bikes and pedestrians-delete bike lanes from the roadway. Add a multi-use trail from Long St. and Lewis Rd. to end of project along easterly new road

SHEET NO.: 5 of 6

ADDITIONAL COST TO INCREASE THE 5' SIDEWALK WITH 2' BUFFER TO A 10' MULTI USE TRAIL WITH 2' BUFFER FROM THE INTERSECTION OF LONG STREET AND LEWIS ROAD TO THE INTERSECTION OF LEWIS ROAD SPLIT RT AND MARIETTA STREET

STA 91+78- STA 121+29

2951 LF

$$2951 \text{ FT} \times 5 \text{ FT} = 14755 \text{ SF} = 1639 \text{ SY}$$

COST WORKSHEET



PROJECT: STP-0004-00(446) COBB COUNTY P.I. NO. 0004446 LEWIS ROAD CORRIDOR	ALTERNATIVE NO: 32	SHEET NO: 6 OF 6
---	---------------------------	-------------------------

DESCRIPTION: Construct one (1) multi-use trail (10 foot) for both bikes and pedestrians – delete bike lanes from the roadway. Add a multi-use trail from Long St. and Lewis Road to end of project along easterly new road.

CONSTRUCTION ITEM		ORIGINAL ESTIMATE			PROPOSED ESTIMATE		
ITEM	UNITS	NO. OF UNITS	COST/U NIT	TOTAL	NO. OF UNITS	COST/UNIT	TOTAL
310-1101 GR AGGR BASE	TN	24,910	19.00	473,290	20,814	19.00	395,466
402-3130 RECYCLED ASPH CONC 12.5MM	TN	3,913	90.00	352,170	3,396	90.00	305,640
402-3143 RECYCLED ASPH CONC 25MM	TN	4,391	90.00	395,190	3,356	90.00	302,040
402-3192 RECYCLED ASPH CONC 19MM	TN	5,216	90.00	469,440	4,526	90.00	407,340
441-0104 CONC SIDEWALK 4 IN	SY	19,775	38.49	761,139	21,414	38.49	824,224
SUB-TOTAL				2,451,229			2,234,710
MARK-UP AT				245,122			223,471
TOTAL				2,696,351			2,458,181

Value Analysis Design Alternative



PROJECT: GEORGIA DEPARTMENT OF TRANSPORTATION
 STP-0004-00(446) Cobb County– P.I. Number: 0004446
 Lewis Road Corridor

ALTERNATIVE NO.:
33

DESCRIPTION: FROM CH JAMES PARKWAY TO THE LEWIS ROAD/
 LONG STREET INTERSECTION, CONSTRUCT TWO (2) MULTI-USE
 TRAILS (10 FOOT EACH) FOR BOTH BIKES AND PEDESTRIANS –
 DELETE BIKE LANES FROM THE ROADWAY AND DELETE THE
 SIDEWALKS. FROM THE LEWIS ROAD/ LONG STREET
 INTERSECTION DELETE THE BIKE LANES ADD A MULTI-USE
 TRAIL TO THE END OF THE PROJECT ALONG THE EAST SIDE OF
 THE NEW LEWIS ROAD, AND ALSO ALONG THE EASTERLY SIDE
 OF THE NEW ONE WAY ROAD TO THE END. DELETE BIKE
 LANES FROM THE SOUTHBOUND ONE WAY STREET AND
 PROVIDE SIDEWALKS ON BOTH SIDES. THIS SHOULD IMPROVE
 THE SAFETY IN THE DOWNTOWN AREA.

SHEET NO.: 1 of 6

Original Design:

The original design calls for the construction of a two lane roadway with a 12’ travel lane and a 4’ bike lane in each direction. A 10’ multi-use trail with a 2’ buffer is located on the west shoulder. A 5’ sidewalk with a 2’ buffer is located on the east shoulder. The sidewalk continues on the one way pair section.

Alternative Design:

This alternative design suggests to relocate the bike lanes from the roadway to the multi-use trail. The existing multi-use trail would be utilized on the west shoulder. The sidewalk on the west shoulder would be increased in width by 5’ creating another multi-use trail for the entire length of the project. This would add a multi-use trail to the east side one way pair.

Opportunities:

- Cost savings
- Relocate bike traffic from travel lane

Risks:

- No separate facility for bikes/pedestrians

Technical Discussion:

The proposed bike lanes terminate at each end of the project and no other bike lanes exist to provide continuity. The west side multi-use trail connects to the Silver Comet Trail and provides additional opportunities for bike travel. Relocating bike traffic from the roadway and vehicular traffic enhances safety.

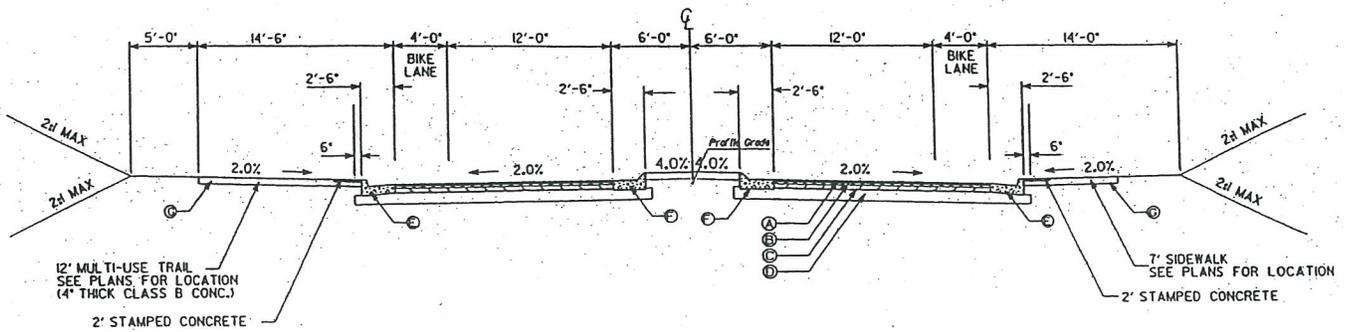
COST SUMMARY	INITIAL COST	PRESENT WORTH RECURRING COSTS	PRESENT WORTH LIFE-CYCLE COST
ORIGINAL DESIGN	\$ 2,696,351	\$ 0	\$ 2,696,351
ALTERNATIVE	\$ 2,554,121	\$ 0	\$ 2,554,121
SAVINGS	\$ 142,230	\$ 0	\$ 142,230

PROJECT: **GEORGIA DEPARTMENT OF TRANSPORTATION**
Project No.: STP-0004-00(446) Cobb County-P.I. Number: 0004446
Lewis Road Corridor

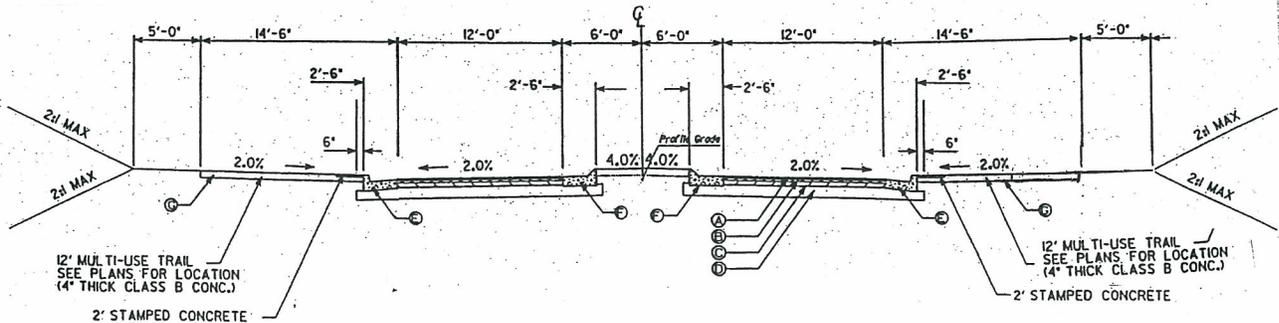
ALTERNATIVE NO.: **33**

DESCRIPTION: From CH James Parkway to the Lewis Road/ Long Street intersection, construct two (2) multi-use trails (10 foot each) for both bikes and pedestrians – delete bike lanes from the roadway and delete the sidewalks. From the Lewis Road/ Long Street intersection delete the bike lanes add a multi-use trail to the end of the project along the east side of the new Lewis Road, and also along the easterly side of the new one way road to the end. Delete bike lanes from the southbound one way street and provide sidewalks on both sides. This should improve the safety in the downtown area.

SHEET NO.: **2 of 6**



ORIGINAL DESIGN TYPICAL SECTION



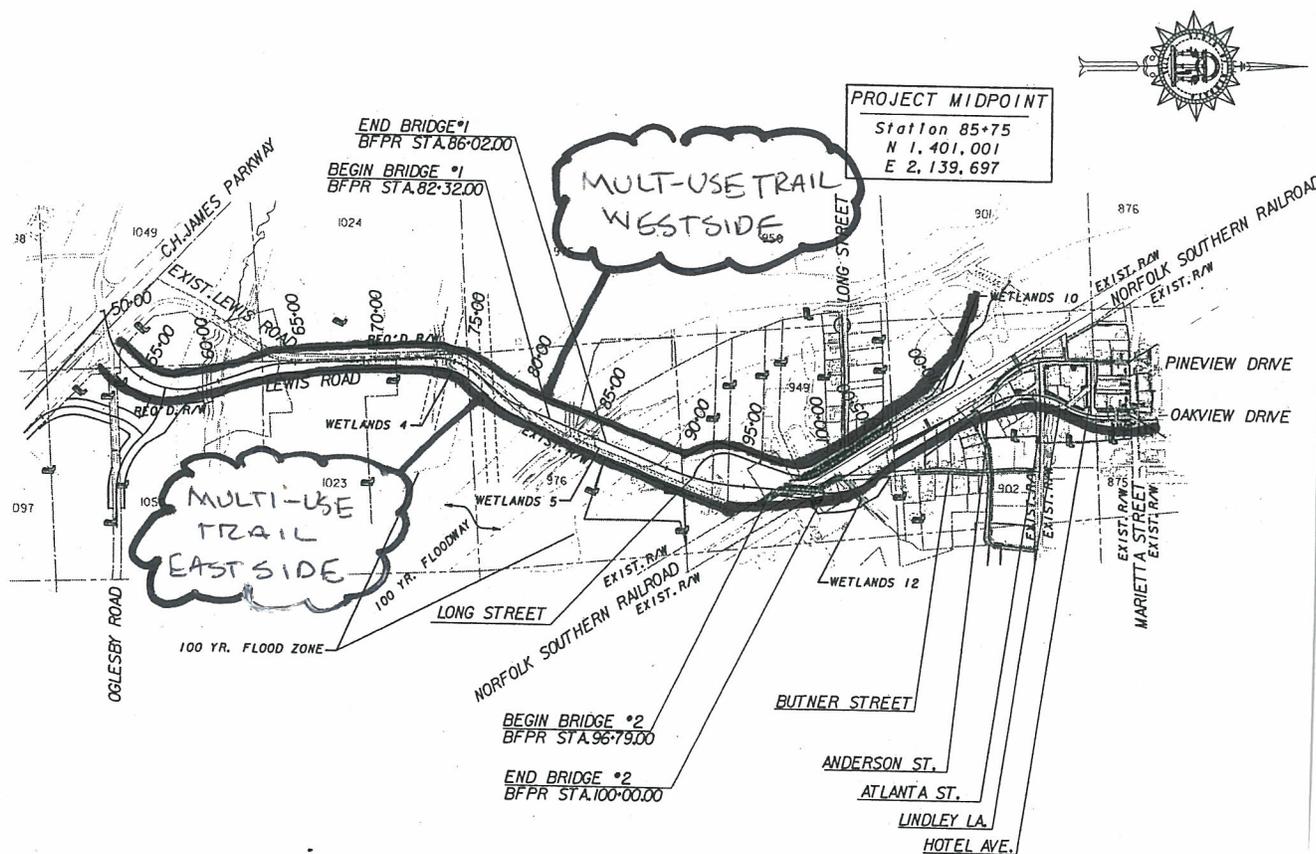
ALTERNATE DESIGN TYPICAL SECTION

PROJECT: **GEORGIA DEPARTMENT OF TRANSPORTATION**
Project No.: STP-0004-00(446) Cobb County- P.I. Number: 0004446
Lewis Road Corridor

ALTERNATIVE NO.: **33**

DESCRIPTION: From CH James Parkway to the Lewis Road/ Long Street intersection, construct two (2) multi-use trails (10 foot each) for both bikes and pedestrians – delete bike lanes from the roadway and delete the sidewalks. From the Lewis Road/ Long Street intersection delete the bike lanes add a multi-use trail to the end of the project along the east side of the new Lewis Road, and also along the easterly side of the new one way road to the end. Delete bike lanes from the southbound one way street and provide sidewalks on both sides. This should improve the safety in the downtown area.

SHEET NO.: **3** of **6**



Calculations



PROJECT: GEORGIA DEPARTMENT OF TRANSPORTATION
 Project No.: STP-0004-00(446) Cobb County- P.I. Number: 0004446
 Lewis Road Corridor

ALTERNATIVE NO.: 33

DESCRIPTION: RELOCATE BIKE LANES. CONSTRUCT 2 MULTI-USE TRAILS FROM CH JAMES TO LONG RD. ADD MULTI-USE ON EAST SIDE OF LEWIS RD. SHEET NO.: 5 of 6

BIKE LANE LOCATIONS

SOUTH BOUND LANE

STA 51+00 - STA 121+97 7097 LF

NORTH BOUND LANE

STA 51+00 - STA 121+29 7029 LF

BIKE LANE WIDTH 4 FT

BIKE LANE AREA

$$(7097 \text{ LF} + 7029 \text{ LF}) \times 4 \text{ FT} = 56504 \text{ SF} = 6278.54$$

TYPICAL SECTION

* 12.5 mm SUPERPAVE	165 #/402
19 mm SUPERPAVE	220 #/402
25 mm SUPERPAVE	330 #/402
GAB	12" DEPTH

QUANTITY CALCULATION

12.5 mm SUPERPAVE

$$165 \# / 402 \times 6278.54 \div 2000 = \underline{517 \text{ TN}}$$

19 mm SUPERPAVE

$$220 \# / 402 \times 6278.54 \div 2000 = \underline{690 \text{ TN}}$$

25 mm SUPERPAVE

$$330 \# / 402 \times 6278.54 \div 2000 = \underline{1035 \text{ TN}}$$

GAB

$$145 \# / 43 \times 56504 \text{ SF} \times 1 \text{ FT} \div 2000 = \underline{4096 \text{ TN}}$$

* TYPICAL SECTION SPECIFIES 9.5mm - DETAILED ESTIMATE SPECIFIES 12.5mm

Calculations



PROJECT: GEORGIA DEPARTMENT OF TRANSPORTATION
Project No.: STP-0004-00(446) Cobb County- P.I. Number: 0004446
Lewis Road Corridor

ALTERNATIVE NO.: 33

6 of 6

DESCRIPTION: RELOCATE BIKE LANES. CONSTRUCT 2 MULTI-USE TRAILS FROM CHAMBERS TO LONG RD. ADD MULTI-USE TRAIL TO EAST SIDE OF LEWIS RD. SHEET NO. of

ADDITIONAL COST REQUIRED TO INCREASE
5' SIDEWALK WITH 2' BUFFER TO A
10' MULTI-USE TRAIL WITH 2' BUFFER
ON EAST SIDE ONLY

NORTH BOOND LANE

STA 51400 - STA 121429 7029 LF

5' SIDEWALK INCREASED TO 10' MULTI-USE
TRAIL

$$5 \text{ FT} \times 7029 \text{ LF} = 35145 \text{ SF} = \underline{\underline{3905 \text{ SF}}}$$

Value Analysis Design Suggestion



PROJECT: GEORGIA DEPARTMENT OF TRANSPORTATION
STP-0004-00(446) Cobb County- P.I. Number: 0004446
Lewis Road Corridor

ALTERNATIVE NO.:
34

DESCRIPTION: POWDER SPRINGS CREEK BRIDGE – ADD A HIGH
MULTI-PIPE RAILING..

SHEET NO.: 1 of 1

Original Design:

STD 3626 one-pipe rail adjacent to multi-use trail

Alternative:

Use STD 3632 two-pipe rail

Opportunities:

- Enhanced safety for bike traffic

Risks:

- Increase cost

Value Analysis Design Alternative



PROJECT: **GEORGIA DEPARTMENT OF TRANSPORTATION**
STP-0004-00(446) Cobb County– P.I. Number: 0004446
Lewis Road Corridor

ALTERNATIVE NO.:
35

DESCRIPTION: **FROM C.H. JAMES PARKWAY TO THE LEWIS ROAD/LONG STREET INTERSECTION, DELETE PEDESTRIAN LIGHTING**

SHEET NO.: 1 of 3

Original Design:

The original design calls for the construction of street lighting and pedestrian lighting along the entire length of the project.

Alternative Design:

This alternative design suggests to eliminate the pedestrian lighting from C.H. James Parkway to Long Street. (Luminaires P1 to P32)

Opportunities:

- Reduce cost

Risks:

- Reduce Pedestrian safety

Technical Discussion:

In the less developed areas lower usage may not require both types of lighting.

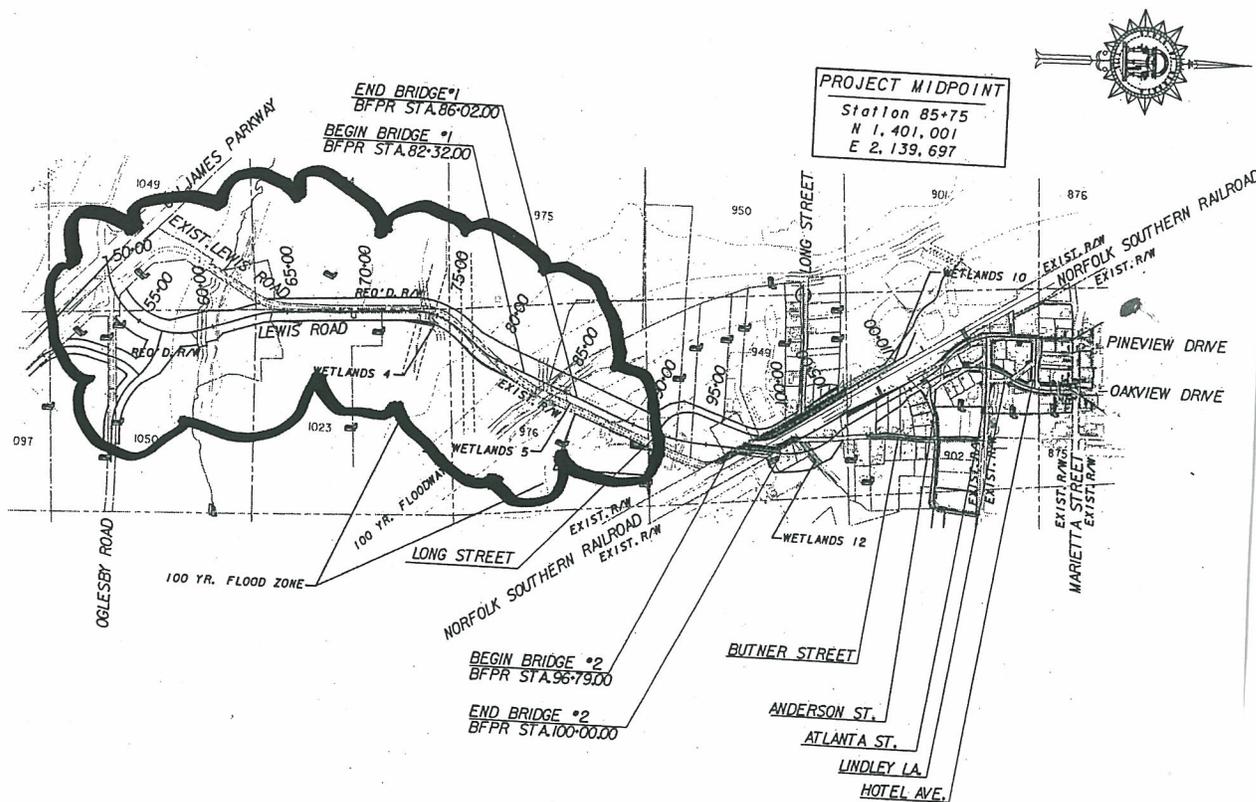
COST SUMMARY	INITIAL COST	PRESENT WORTH RECURRING COSTS	PRESENT WORTH LIFE-CYCLE COST
ORIGINAL DESIGN	\$ 140,800	\$ 0	\$ 140,800
ALTERNATIVE	\$ 0	\$ 0	\$ 0
SAVINGS	\$ 140,800	\$ 0	\$ 140,800

PROJECT: **GEORGIA DEPARTMENT OF TRANSPORTATION**
Project No.: STP-0004-00(446) Cobb County- P.I. Number: 0004446

ALTERNATIVE NO.: 35

Lewis Road Corridor

DESCRIPTION: From CH James Parkway to the Lewis Road/ Long Street SHEET NO.: 2 of 3
intersection, delete the pedestrian lighting.



Value Analysis Design Alternative



PROJECT: **GEORGIA DEPARTMENT OF TRANSPORTATION**
STP-0004-00(446) Cobb County– P.I. Number: 0004446
Lewis Road Corridor

ALTERNATIVE NO.:
36

DESCRIPTION: **POWDER SPRINGS CREEK BRIDGE - USE STEEL “H”**
PILES IN LIEU OF DRILLED CAISSONS

SHEET NO.: 1 of 6

Original Design:

The original design calls for the construction of a 5-span bridge, 370’ long with Spans 1, 2, 4 & 5 at 65’ and Span 3 at 110’, over Powder Springs Creek. The bridge is on a tangent and skewed 30° to the normal. The out-to-out width of the bridge is 68’-5” (approx.). Spans 1, 2, 4 & 5 are comprised of eight 65’ Type III PSC beams evenly spaced. Span 3 is comprised of eight Bulb Tee 63” PSC beams evenly spaced. The bridge accommodates a 6’ raised sidewalk on the East side, 2’ buffer, 4’ Bike Lane and 12’ Travel Lane on each side, an 8’ raised median with a 2’ buffer on either side, a 2’ buffer and 12’ Multi-use trail on the West side. The bents are made up of concrete caps. While Bents 2, 3, 4 & 5 are founded on caissons, the end bents are founded on Steel H Piles. The barrier rail is per special design and includes a single pipe rail.

Alternative Design:

The proposed alternative uses Steel “H” 14x73 (or as required per actual design) in lieu of 48” diameter Caissons at the intermediate bents.

The alternative maintains all other current geometry.

Opportunities:

- Cost savings by replacing Drilled Caissons with Steel H Piles
- Ease of Pile Placement as opposed to Drilled Caisson Construction
- Reduced construction time

Risks:

- Re-design effort will require additional time

Technical Discussion:

The intermediate bents maybe supported by Steel H piles under each of the Beam Centerlines.

Note: Two rows of battered Piles have been assumed at Bents 3 & 4. It is assumed that a single row of piles along the centerline of the Bents 2 & 5 will be sufficient.

See the next sheet for the calculation of the savings noted below.

COST SUMMARY	INITIAL COST	PRESENT WORTH RECURRING COSTS	PRESENT WORTH LIFE-CYCLE COST
ORIGINAL DESIGN	\$ 391,332	\$ 0	\$ 391,332
ALTERNATIVE	\$ 74,309	\$ 0	\$ 74,309
SAVINGS	\$ 317,024	\$ 0	\$ 317,024

Illustrations

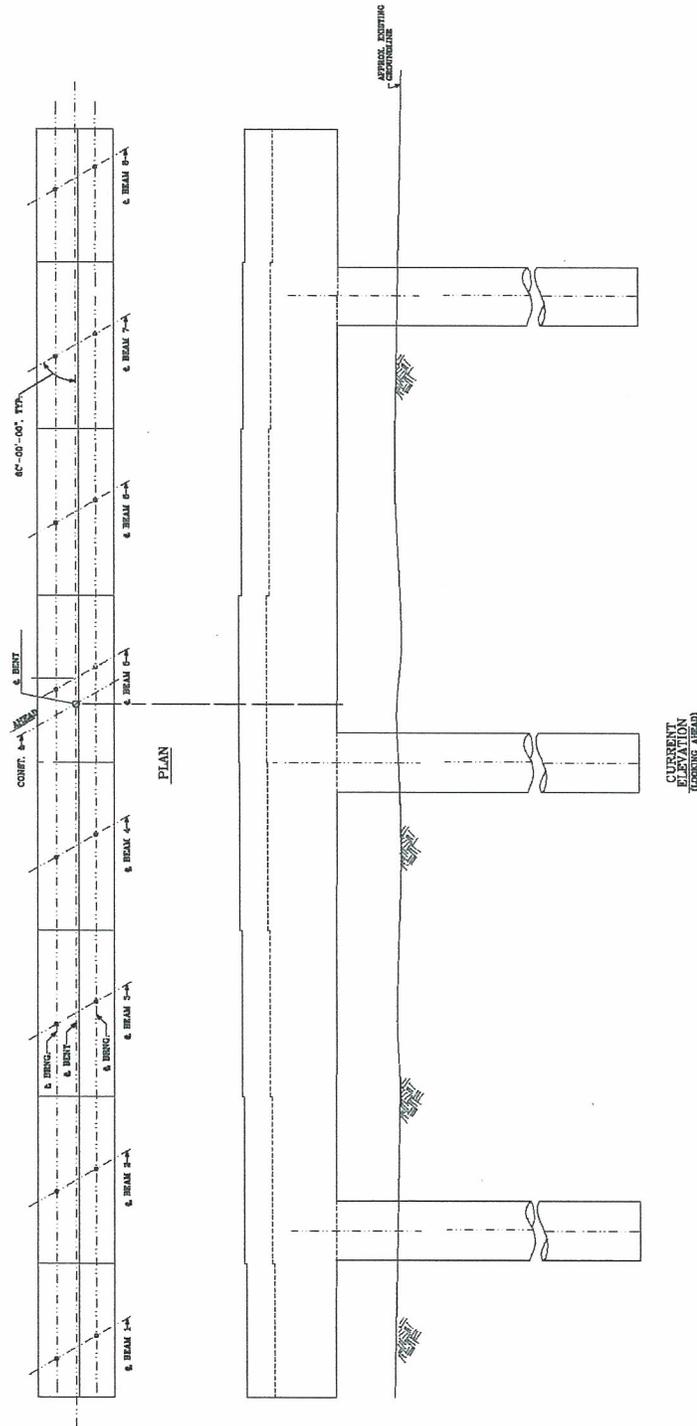


PROJECT: **GEORGIA DEPARTMENT OF TRANSPORTATION**
STP-0004-00(446) Cobb County- P.I. Number: 0004446
Lewis Road Corridor

ALTERNATIVE NO.: 36

DESCRIPTION: **POWDER SPRINGS CREEK BRIDGE - USE STEEL "H"**
PILES IN LIEU OF DRILLED CAISSONS

SHEET NO.: 2 of 6



Illustrations



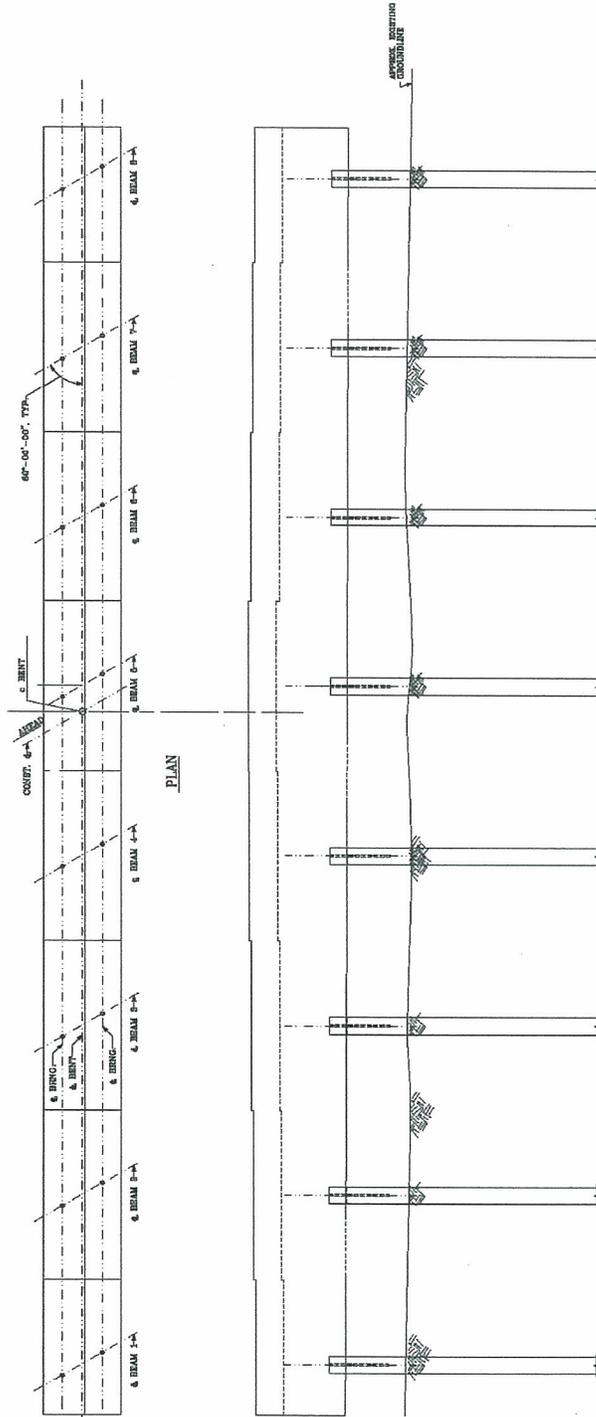
PROJECT: GEORGIA DEPARTMENT OF TRANSPORTATION
STP-0004-00(446) Cobb County- P.I. Number: 0004446

ALTERNATIVE NO.: 36

Lewis Road Corridor

DESCRIPTION: POWDER SPRINGS CREEK BRIDGE - USE STEEL "H"
PILES IN LIEU OF DRILLED CAISSONS

SHEET NO.: 3 of 6



ALTERNATIVE
ELEVATION
(TRADING PLAN)

Illustrations

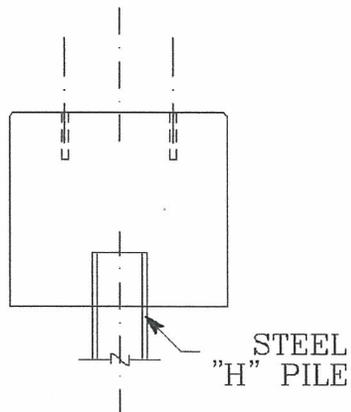


PROJECT: **GEORGIA DEPARTMENT OF TRANSPORTATION**
STP-0004-00(446) Cobb County- P.I. Number: 0004446
Lewis Road Corridor

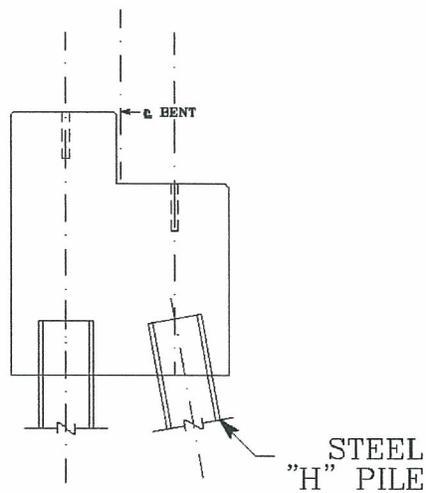
ALTERNATIVE NO.: 36

DESCRIPTION: **POWDER SPRINGS CREEK BRIDGE - USE STEEL "H" PILES IN LIEU OF DRILLED CAISSONS**

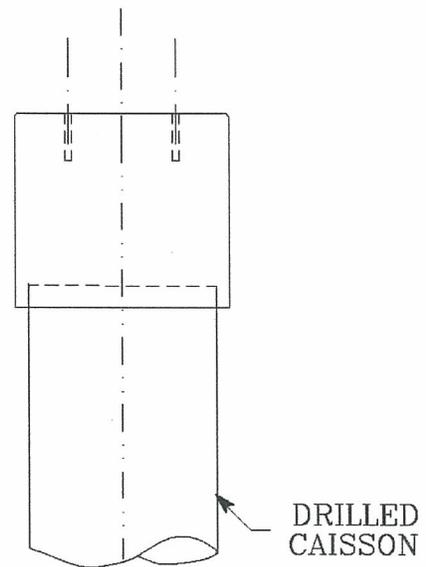
SHEET NO.: 4 of 6



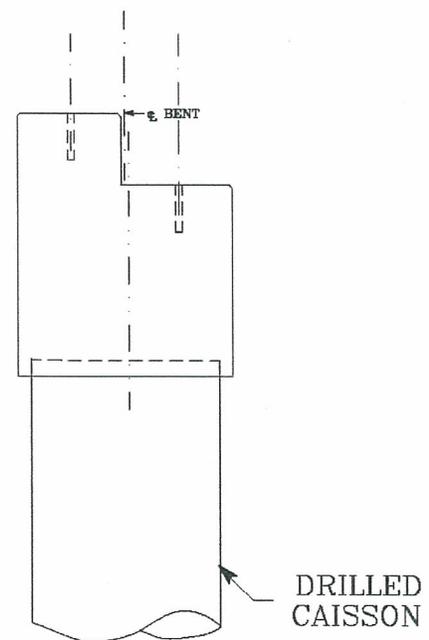
ALTERNATIVE
SECTION B-B
(BENTS 2 & 5)



ALTERNATIVE
SECTION B-B
(BENTS 3 & 4)



CURRENT
SECTION B-B
(BENTS 2 & 5)



CURRENT
SECTION B-B
(BENTS 3 & 4)

Calculations



PROJECT: **GEORGIA DEPARTMENT OF TRANSPORTATION**
STP-0004-00(446) Cobb County- P.I. Number: 0004446
Lewis Road Corridor

ALTERNATIVE NO.: **36**

DESCRIPTION: **POWDER SPRINGS CREEK BRIDGE - USE STEEL "H"**
PILES IN LIEU OF DRILLED CAISSONS

SHEET NO.: **5 of 6**

Current Design (5 Span – 370' Long, with Drilled Caissons at Bents 2, 3, 4 & 5)

Bents 2, 3, 4 & 5

Number of 48" diameter Drilled Caissons at each Bent = 3

Length of each Drilled Caisson = 32' (approx.)

Total length of Drilled Caissons = $4 \times 3 \times 32' = 384$ LF

Alternative Design (5 Span – 370' Long, with Steel "H" Piles at Bents 2, 3, 4 & 5)

Bents 2, 3, 4 & 5

Number of 14 X 73 Steel "H" Piles at each of Bents 2 & 5 = 8

Number of 14 X 73 Steel "H" Piles at each of Bents 3 & 4 (two rows, battered piles) = $2 \times 8 = 16$

Length of each 14 X 73 Steel "H" Pile = 32' (approx.)

Total length of 14 X 73 Steel "H" Piles = $32 \times (2 \times 8 + 2 \times 2 \times 8) = 1536$ LF

Cost Worksheet



PROJECT: **GEORGIA DEPARTMENT OF TRANSPORTATION**
STP-0004-00(446) Cobb County- P.I. Number: 0004446
Lewis Road Corridor

ALTERNATIVE NO.: 36

DESCRIPTION: **POWDER SPRINGS CREEK BRIDGE - USE STEEL "H"**
PILES IN LIEU OF DRILLED CAISSONS

SHEET NO.: 6 of 6

CONSTRUCTION ITEM		ORIGINAL ESTIMATE			PROPOSED ESTIMATE		
ITEM	UNITS	NO. OF UNITS	COST/UNIT	TOTAL	NO. OF UNITS	COST/UNIT	TOTAL
Steel H, HP 10X42	LF	0	43.98	0	1536	43.98	67,553
48" Diameter Drilled Caisson	LF	384	926.45	355,757	0	926.45	0
Sub-total				355,757			67,553
Mark-up at	10.00%			35,576			6,755
TOTAL				391,332			74,309

Project Description

Project Description

INTRODUCTION

This project consists of the realignment and reconstruction of the existing Lewis Road Corridor in the City of Powder Springs. The project will also replace a deficient bridge over Powder Springs Creek, construct a bridge over the existing N&S railroad, and improve adjoining local streets, while providing a multi-purpose trail to access an existing park.

At the time of this study, the estimated cost of this construction (attached), not including right-of-way purchase, was approximately \$17,613,078 dollars. The estimated cost of Right-of-way acquisition was estimated at \$3,000,000 dollars.

Please see the following enclosed documents:

- GDOT Cost Estimate
- Concept Plan for STP-0004-00(446) Cobb County, PI No.: 0004446

The VE Team utilized the supplied project materials noted above, along with the FOCUS Development and Engineering, Inc. Construction Drawings, and the GDOT current standard drawings, details and specifications, during the conduct of their work in the VE Study effort.

Estimate Report for file "Lewis Road 0004446_2007-03-07"

Section Roadway					
Item Number	Quantity	Units	Unit Price	Item Description	Cost
150-1000	1	LS	300000.00	TRAFFIC CONTROL -	300000.00
153-1300	1	EA	73569.88	FIELD ENGINEERS OFFICE TP 3	73569.88
201-1500	1	LS	1000000.00	CLEARING & GRUBBING -	1000000.00
205-0001	28500	CY	5.59	UNCLASS EXCAV	159315.00
206-0002	200000	CY	8.17	BORROW EXCAV, INCL MATL	1634000.00
207-0203	9500	CY	61.62	FOUND BKFILL MATL, TP II	585390.00
212-1000	0	CY	30.53	GRANULAR EMBANKMENT, INCL MATL & HAUL	0.00
310-1101	24910	TN	19.00	GR AGGR BASE CRS, INCL MATL	473290.00
402-1812	300	TN	90.00	RECYCLED ASPH CONC LEVELING, INCL BITUM MATL & H LIME	27000.00
402-3130	3913	TN	90.00	RECYCLED ASPH CONC 12.5 MM SUPERPAVE, GP 2 ONLY, INCL BITUM MATL & H LIME	352170.00
402-3143	4391	TN	90.00	RECYCLED ASPH CONC 25 MM SUPERPAVE, GP 1 OR 2, INCL BITUM MATL	395190.00
402-3192	5216	TN	90.00	RECYCLED ASPH CONC 19 MM SUPERPAVE, GP 1 OR 2, INCL BITUM MATL	469440.00
413-1000	29387	GL	1.98	BITUM TACK COAT	58186.26
432-5010	0	SY	2.55	MILL ASPH CONC PVMT, VARIABLE DEPTH	0.00
433-1000	1160	SY	136.37	REINF CONC APPROACH SLAB	158189.20
441-0016	200	SY	40.27	DRIVEWAY CONCRETE, 6 IN TK	8054.00
441-0104	19775	SY	38.49	CONC SIDEWALK, 4 IN	761139.75
441-0748	1500	SY	39.22	CONCRETE MEDIAN, 6 IN	58830.00
441-4020	300	SY	38.85	CONC VALLEY GUTTER, 6 IN	11655.00
441-4030	140	SY	41.91	CONC VALLEY GUTTER, 8 IN	5867.40
441-5002	7200	LF	16.04	CONCRETE HEADER CURB, 6 IN, TP 2	115488.00
441-6022	26400	LF	19.83	CONC CURB & GUTTER, 6 IN X 30 IN, TP 2	523512.00
441-6740	11300	LF	14.85	CONC CURB & GUTTER, 8 IN X 30 IN, TP 7	167805.00
444-1000	450	LF	5.43	SAWED JOINTS IN EXIST PAVEMENTS - PCC	2443.50
500-3101	366	CY	586.16	CLASS A CONCRETE	214534.56
500-3800	22	CY	899.11	CLASS A CONCRETE, INCL REINF STEEL	19780.42
500-9999	0	CY	199.31	CLASS B CONC, BASE OR PVMT WIDENING	0.00
511-1000	42354	LB	0.97	BAR REINF STEEL	41083.38
550-1180	5922	LF	41.05	STORM DRAIN PIPE, 18 IN, H 1-10	243098.10
550-1300	85	LF	69.27	STORM DRAIN PIPE, 30 IN, H 1-10	5887.95
550-1360	1334	LF	80.95	STORM DRAIN PIPE, 36 IN, H 1-10	107987.30
550-1364	217	LF	96.94	STORM DRAIN PIPE, 36 IN, H 25-30	21035.98
550-1480	656	LF	135.68	STORM DRAIN PIPE, 48 IN, H 1-10	89006.08
550-2180	98	LF	36.02	SIDE DRAIN PIPE, 18 IN, H 1-10	3529.96
550-3618	4	EA	754.72	SAFETY END SECTION 18 IN, SIDE DRAIN, 6:1 SLOPE	3018.88
550-4118	4	EA	620.75	FLARED END SECTION 18 IN, SIDE DRAIN	2483.00
550-4218	11	EA	683.48	FLARED END SECTION 18 IN, STORM DRAIN	7518.28
550-4236	7	EA	1251.04	FLARED END SECTION 36 IN, STORM DRAIN	8757.28
550-4418	5	EA	476.08	FLARED END SECTION, 18 IN, SLOPE DRAIN	2380.40
576-1018	210	LF	31.04	SLOPE DRAIN PIPE, 18 IN	6518.40
611-8055	2	EA	1488.01	ADJUST MINOR STRUCTURE TO GRADE	2976.02
634-1200	103	EA	108.46	RIGHT OF WAY MARKERS	11171.38
641-1100	0	LF	54.27	GUARDRAIL, TP T	0.00
641-1200	2713	LF	18.34	GUARDRAIL, TP W	49756.42
641-5001	2	EA	638.12	GUARDRAIL ANCHORAGE, TP 1	1276.24
641-5012	2	EA	1819.11	GUARDRAIL ANCHORAGE, TP 12	3638.22
668-1100	67	EA	2326.85	CATCH BASIN, GP 1	155898.95
668-1110	38	LF	237.07	CATCH BASIN, GP 1, ADDL DEPTH	9008.66

Number					
636-1020	732	SF	14.79	HIGHWAY SIGNS, TP 1 MATL, REFL SHEETING, TP 3	10826.28
636-2070	1743	LF	8.63	GALV STEEL POSTS, TP 7	15042.09
653-0110	31	EA	69.33	THERMOPLASTIC PVMT MARKING, ARROW, TP 1	2149.23
653-0120	31	EA	71.39	THERMOPLASTIC PVMT MARKING, ARROW, TP 2	2213.09
653-0130	2	EA	104.98	THERMOPLASTIC PVMT MARKING, ARROW, TP 3	209.96
653-0210	3	EA	113.41	THERMOPLASTIC PVMT MARKING, WORD, TP 1	340.23
653-1501	24596	LF	0.59	THERMOPLASTIC SOLID TRAF STRIPE, 5 IN, WHITE	14511.64
653-1502	18846	LF	0.59	THERMOPLASTIC SOLID TRAF STRIPE, 5 IN, YELLOW	11119.14
653-1504	312	LF	1.05	THERMOPLASTIC SOLID TRAF STRIPE, 12 IN, WHITE	327.60
653-1704	280	LF	5.20	THERMOPLASTIC SOLID TRAF STRIPE, 24 IN, WHITE	1456.00
653-1804	2100	LF	1.87	THERMOPLASTIC SOLID TRAF STRIPE, 8 IN, WHITE	3927.00
653-3501	1620	GLF	0.56	THERMOPLASTIC SKIP TRAF STRIPE, 5 IN, WHITE	907.20
653-6004	210	SY	2.73	THERMOPLASTIC TRAF STRIPING, WHITE	573.30
653-6006	145	SY	3.35	THERMOPLASTIC TRAF STRIPING, YELLOW	485.75
654-1001	174	EA	3.63	RAISED PVMT MARKERS TP 1	631.62
654-1003	60	EA	3.71	RAISED PVMT MARKERS TP 3	222.60
657-1085	4730	LF	6.37	PREFORMED PLASTIC SOLID PVMT MKG, 8 IN, CONTRAST (BLACK-WHITE), TP PB	30130.10
Section Sub Total:					\$95,072.83

Section Bridge 1

Item Number	Quantity	Units	Unit Price	Item Description	Cost
500-0100	1891	SY	4.26	GROOVED CONCRETE	8055.66
500-1006	1	LS	1248108.80	SUPERSTR CONCRETE, CL AA, BR NO -	1248108.80
500-3002	271	CY	692.53	CLASS AA CONCRETE	187675.63
507-9003	2031	LF	145.81	PSC BEAMS, AASHTO TYPE III, BR NO -	296140.11
507-9031	868	LF	191.29	PSC BEAMS, AASHTO, BULB TEE, 63 IN, BR NO -	166039.72
511-1000	53518	LB	0.96	BAR REINF STEEL	51377.28
511-3000	1	LS	191567.04	SUPERSTR REINF STEEL, BR NO -	191567.04
516-1100	726	LF	76.86	ALUM HANDRAIL, STD 3626	55800.36
520-1147	450	LF	58.69	PILING IN PLACE, STEEL H, HP 14 X 73	26410.50
520-4147	1	EA	63.95	LOAD TEST, STEEL H, HP 14 X 73	63.95
524-0010	524	LF	926.45	DRILLED CAISSON -	485459.80
540-1101	1	LS	125542.28	REMOVAL OF EXISTING BR, STA NO -	125542.28
603-2024	1440	SY	54.41	STN DUMPED RIP RAP, TP 1, 24 IN	78350.40
603-7000	1440	SY	5.04	PLASTIC FILTER FABRIC	7257.60
Section Sub Total:					\$2,927,849.13

Section Bridge 2

Item Number	Quantity	Units	Unit Price	Item Description	Cost
211-0200	748	CY	80.17	BRIDGE EXCAVATION, GRADE SEPARATION	59967.16
441-0004	1674	SY	52.70	CONC SLOPE PAV, 4 IN	88219.80
500-0100	1641	SY	4.26	GROOVED CONCRETE	6990.66
500-1006	1	LS	1026996.00	SUPERSTR CONCRETE, CL AA, BR NO -	1026996.00
500-3002	624	CY	692.53	CLASS AA CONCRETE	432138.72
507-9030	1023	LF	200.04	PSC BEAMS, AASHTO, BULB TEE, 54 IN, BR NO -	204640.92

668-2100	16	EA	4333.98	DROP INLET, GP 1	69343.68
668-2110	8	LF	277.64	DROP INLET, GP 1, ADDL DEPTH	2221.12
668-4300	14	EA	2246.96	STORM SEWER MANHOLE, TP 1	31457.44
668-4311	26	LF	287.81	STORM SEWER MANHOLE, TP 1, ADDL DEPTH, CL 1	7483.06
668-4400	5	EA	3260.83	STORM SEWER MANHOLE, TP 2	16304.15
668-4411	9	LF	384.40	STORM SEWER MANHOLE, TP 2, ADDL DEPTH, CL 1	3459.60
Section Sub Total:					\$8,481,149.90

Section Permanent Erosion Control

Item Number	Quantity	Units	Unit Price	Item Description	Cost
163-0240	174	TN	177.56	MULCH	30895.44
167-1000	2	EA	1323.90	WATER QUALITY MONITORING AND SAMPLING	2647.80
167-1500	30	MO	1078.76	WATER QUALITY INSPECTIONS	32362.80
603-2024	200	SY	54.35	STN DUMPED RIP RAP, TP 1, 24 IN	10870.00
603-2181	140	SY	48.74	STN DUMPED RIP RAP, TP 3, 18 IN	6823.60
603-7000	340	SY	5.04	PLASTIC FILTER FABRIC	1713.60
700-6910	12	AC	917.26	PERMANENT GRASSING	11007.12
700-7000	36	TN	59.55	AGRICULTURAL LIME	2143.80
700-7010	30	GL	19.21	LIQUID LIME	576.30
700-8000	11	TN	350.05	FERTILIZER MIXED GRADE	3850.55
700-8100	600	LB	2.10	FERTILIZER NITROGEN CONTENT	1260.00
Section Sub Total:					\$104,151.01

Section Temporary Erosion Control

Item Number	Quantity	Units	Unit Price	Item Description	Cost
163-0232	6	AC	574.21	TEMPORARY GRASSING	3445.26
163-0501	2	EA	924.07	CONSTRUCT AND REMOVE SILT CONTROL GATE, TP 1	1848.14
163-0502	2	EA	553.33	CONSTRUCT AND REMOVE SILT CONTROL GATE, TP 2	1106.66
163-0503	4	EA	569.81	CONSTRUCT AND REMOVE SILT CONTROL GATE, TP 3	2279.24
163-0521	65	EA	227.16	CONSTRUCT AND REMOVE TEMPORARY DITCH CHECKS	14765.40
163-0550	110	EA	301.53	CONSTRUCT AND REMOVE INLET SEDIMENT TRAP	33168.30
165-0010	1100	LF	0.93	MAINTENANCE OF TEMPORARY SILT FENCE, TP A	1023.00
165-0030	1800	LF	1.84	MAINTENANCE OF TEMPORARY SILT FENCE, TP C	3312.00
165-0040	135	EA	89.08	MAINTENANCE OF EROSION CONTROL CHECKDAMS/DITCH CHECKS	12025.80
165-0085	4	EA	313.22	MAINTENANCE OF SILT CONTROL GATE, TP 1	1252.88
165-0086	4	EA	255.67	MAINTENANCE OF SILT CONTROL GATE, TP 2	1022.68
165-0087	8	EA	199.53	MAINTENANCE OF SILT CONTROL GATE, TP 3	1596.24
165-0105	110	EA	112.96	MAINTENANCE OF INLET SEDIMENT TRAP	12425.60
171-0010	2200	LF	2.01	TEMPORARY SILT FENCE, TYPE A	4422.00
171-0030	3600	LF	4.03	TEMPORARY SILT FENCE, TYPE C	14508.00
716-2000	24800	SY	1.33	EROSION CONTROL MATS, SLOPES	32984.00
Section Sub Total:					\$141,185.20

Section Sign & Marking

Item	Quantity	Units	Unit Price	Item Description	Cost
------	----------	-------	------------	------------------	------

507-9033	1457	LF	252.27	PSC BEAMS, AASHTO, BULB TEE, 74 IN, BR NO -	367557.39
511-1000	84592	LB	0.96	BAR REINF STEEL	81208.32
511-3000	1	LS	154467.84	SUPERSTR REINF STEEL, BR NO -	154467.84
520-1147	1490	LF	58.69	PILING IN PLACE, STEEL H, HP 14 X 73	87448.10
520-1151	1270	LF	73.91	PILING IN PLACE, STEEL H, HP 14 X 89	93865.70
520-4147	1	EA	63.95	LOAD TEST, STEEL H, HP 14 X 73	63.95
520-4151	1	EA	67.48	LOAD TEST, STEEL H, HP 14 X 89	67.48
643-1152	616	LF	34.27	CH LK FENCE, ZC COAT, 6 FT, 9 GA	21110.32
Section Sub Total:					\$2,624,742.36

Section Landscape

Item Number	Quantity	Units	Unit Price	Item Description	Cost
702-XXXX	1	Lump Sum	331954.68	Lump Sum Landscaping	331954.68
Section Sub Total:					\$331,954.68

Section Signal 1

Item Number	Quantity	Units	Unit Price	Item Description	Cost
615-1200	179	LF	21.99	DIRECTIONAL BORE -	3936.21
639-3004	1	EA	15000.00	STEEL STRAIN POLE, TP IV w/ 60 FT MAST ARM	15000.00
647-1000	1	LS	35000.00	TRAFFIC SIGNAL INSTALLATION NO -	35000.00
682-6120	358	LF	15.98	CONDUIT, RIGID, 2 IN	5720.84
938-1100	4	EA	6681.33	INTERSECTION VIDEO DETECTION SYSTEM ASSEMBLY, TYPE A	26725.32
Section Sub Total:					\$86,382.37

Section Signal 2

Item Number	Quantity	Units	Unit Price	Item Description	Cost
647-1000	1	LS	5000.00	TRAFFIC SIGNAL INSTALLATION NO -	5000.00
Section Sub Total:					\$5,000.00

Section Lighting

Item Number	Quantity	Units	Unit Price	Item Description	Cost
682-XXXX	1	Lump Sum	1214402.40	Lump Sum Lighting	1214402.40
Section Sub Total:					\$1,214,402.40

Total Estimated Cost: \$16,011,889.88

Subtotal Construction Cost \$16,011,889.88

E&C Rate 10.0 % \$1,601,188.99

Inflation Rate 0.0 % @ 0.0 Years \$0.00

Total Construction Cost \$17,613,078.87

Right Of Way \$3,000,000.00

ReImb. Utilities \$0.00

Grand Total Project Cost \$20,613,078.87

Department of Transportation State of Georgia

Interdepartmental Correspondence

FILE R/W Cost Estimate **OFFICE** Atlanta
DB / GAM **DATE** October 11, 2005
FROM Don Brown, Right of Way Administrator
TO To: Babs Abubakari, P.E. State Consultant Design Engineer
Attention : Tom Cox
SUBJECT Preliminary Right of Way Cost Estimate
Project: EDS-545(40)McDuffie
P.I. No.: 222250
Description: SR 17 from SR 43 to West of CR 6

As per your request, attached is a copy of the approved Preliminary Right of Way Cost Estimates on the above referenced projects.

Please note the area of Required R/W was furnished with your request.
Please include total Required R/W areas for the entire corridor in all future requests.

If you have any questions, please contact Jerry Milligan at the West Annex Right of Way Office at (770) 986-1541.

DB:GAM:jm
Attachments

c: Brian Summers, Engineering Services
Wilhelmina Mueller, R/W
Windy Bickers, Financial Management
File

Preliminary Right of Way Cost Estimate

Date: September 30, 2005
 Project: EDS-545(40), McDuffie
 Existing/Required R/W: Varies/Varies
 Project Termini: SR 17 from SR 43 to West of CR. 6
 Project Description: 4 lane with median

P.I. Number: 222250
 No. Parcels: 59

Land:

	Small Tract Residential			
R/W	11	Ac.	@ \$ 6,000/ Ac.	= \$ 66,000
	Medium Tract Residential			
R/W	28	Ac.	@ \$ 3,000/Ac.	= \$ 84,000
	Large Tract			
R/W	50	Ac.	@ \$2,250 /Ac.	= \$ 112,500

Improvements: 1 House, 1Day Care, 1Church, 1 Store (vacant),
 Signs, Fencing and Site improvements = \$ 396,800

Relocation:

1 Residential @ \$ 20,000.00= \$ 20,000
 2 Business @ \$ 25,000.00= \$ 50,000 = \$ 70,000

Damages:

Proximity - 3 Parcels = \$ 58,000 = \$ 58,000

Net Cost		\$ 787,300
Scheduling Contingency	55 %	\$ 433,000
Adm/Court Cost	60 %	\$ 732,200
Inflation Factor	40 %	<u>\$ 781,000</u>
		\$ 2,733,500 Rd.

Total Cost \$ 2,733,500

Prepared By : Dean Williamson
 Dean Williamson

Approved : [Signature]
 GDOT R/W

McDuffie County Land Sales

EDS-545(40), McDuffie

<u>Highest & Best Use</u>	<u>Size (acres)</u>	<u>Value/sf./ ac.</u>	<u>Sales price</u>
Small Residential Lot	1.0	\$ 6,100/ac	\$ 6,100
	2.40	6,458/ac	15,500
	2.99	6,000/ac	18,000
Medium Residential	16.46	3,098/ac	51,000
	7.89	3,000/ac	23,700
	31.99	2,750/ac	88,000
Large Residential	170.1	2,233/ac	380,000
	109.5	2,175/ac	238,200
	105.97	1,916/ac	203,000

ORIGINAL TO GENERAL FILES

D.O.T. 66

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

INTERDEPARTMENT CORRESPONDENCE

FILE STP-0004-00(446) Cobb County **OFFICE** Preconstruction
P. I. No. 0004446
DATE March 1, 2004
FROM *Cyber Kauls* Margaret B. Pirkle, P.E., Assistant Director of Preconstruction
TO *for* SEE DISTRIBUTION

SUBJECT PROJECT CONCEPT REPORT APPROVAL

Attached for your files is the approval for subject project.

MBP/cj

Attachment

DISTRIBUTION:

David Mulling
Harvey Keeper
Jerry Hobbs
Percy Middlebrooks
Michael Henry
Phillip Allen
Joe Palladi (file copy)
Paul Liles
Brent Story
Buddy Gratton
BOARD MEMBER

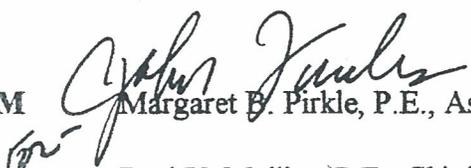
RECEIVED
MAR 3 - 2004

DISTRICT 7

**DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA**

INTERDEPARTMENT CORRESPONDENCE

FILE STP-0004-00(446) Cobb County **OFFICE** Preconstruction
P.I. No. 0004446 **DATE** January 28, 2004

FROM  Margaret B. Pirkle, P.E., Assistant Director of Preconstruction

TO  Paul V. Mullins, P.E., Chief Engineer

SUBJECT PROJECT CONCEPT REPORT

This project is the realignment and reconstruction of the existing Lewis Road Corridor in the City of Powder Springs. The project limits are from the existing intersection of C. H. James Parkway at Oglesby Road to Marietta Street near the city government complex and town square in Powder Springs. The total project length is 1.30 miles. The Lewis Road project will incorporate infrastructure improvements to an existing two lane roadway that is currently in need of several modifications to provide a safe, attractive, and community-friendly corridor, which will ultimately provide a much needed alternative entrance to the City of Powder Springs. The project will address the undesirable geometry along Lewis Road, replace a deficient bridge over Powder Springs Creek, eliminate a dangerous at-grade railroad crossing, and incorporate alternative transportation elements. The projected traffic along this corridor is 5,660 VPD in the base year 2006 and 14,000 VPD in the design year 2026.

The construction proposes to reconstruct and realign Lewis Road from C. H. James Parkway to Marietta Street to create a gateway entrance to the historic town center. The proposed roadway will consist of one 12' lane in each direction with a 20' raised median, 4' bicycle lanes in each direction, 30" curb and gutter, grassed shoulders, 12' multi-use trail on the west side and a 7' sidewalk on the east side. Other improvements will include a grade-separated crossing over Norfolk Southern Railroad, a replacement bridge over Powder Springs Creek, landscaped median, pedestrian lighting, and street furniture. North of the proposed railroad bridge, Lewis Road will be on new alignment, proceeding northeast toward the proposed South Square Redevelopment Area as a split alignment of one-way pairs. The project will end at Marietta Street, with the northbound intersection being coincident to the existing intersection of Oakview Drive, and the southbound intersection being an improvement of Murry Street. Traffic will be staged to maintain traffic during construction (portion north of the railroad), and the partial new alignment section will be closed except for local traffic.

Paul V. Mullins

Page 2

STP-0004-00(446) Cobb

January 28, 2004

Environmental concerns include requiring a COE 404 Permit; an Environmental Assessment will be prepared; environmental justices issues at Butler Street neighborhood; historic resources; a public hearing will be held; time saving procedures are not appropriate.

The estimated costs for this project are:

	<u>PROPOSED</u>	<u>APPROVED</u>	<u>PROG DATE</u>	<u>LET DATE</u>
Construction (includes E&C and inflation)	\$12,525,000	\$12,525,000	2005	2005
Right-of-Way & Utilities	Local	Local		

*City of Powder Springs signed PMA on 12-3-03 for right-of-way, utilities, and 20% of PE and construction.

The overall corridor of the improved Lewis Road will serve as a southern gateway and entrance route into the heart of Powder Springs. I recommend this project concept be approved.

MBP:JDQ/cj

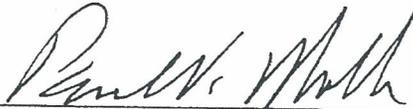
Attachment

CONCUR



Thomas L. Turner, P.E., Director of Preconstruction

APPROVE



Paul V. Mullins, P.E., Chief Engineer

**DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA**

INTERDEPARTMENTAL CORRESPONDENCE

FILE: STP-0004-00(446) Cobb
P.I. No.: 0004446
Lewis Road Realignment

OFFICE: Engineering Services

DATE: December 11, 2003

FROM: David Mulling, Project Review Engineer *REW*

TO: Meg Pirkle, Assistant Director of Preconstruction

SUBJECT: CONCEPT REPORT

We have reviewed the concept report submitted December 9, 2003 by the letter from Buddy Gratton, dated December 8, 2003 and have the following comment.

- Appropriate operational improvements should be included on Marietta Street and Lewis Road (one-way pairs) to handle the projected turning movements at the Marietta Street/Lewis Road (one-way pair) intersections. Projected traffic counts show a significant number of turning movements at these intersections.

The costs for the project are:

Construction	\$10,328,057
Inflation	\$1,058,624
E&C	\$1,138,668
Reimbursable Utilities	\$420,000 (Locals)
Right of Way	\$2,000,000 (Locals)

REW

c: Buddy Gratton, Attn.: Key Phillips

**DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA**

INTERDEPARTMENTAL CORRESPONDENCE

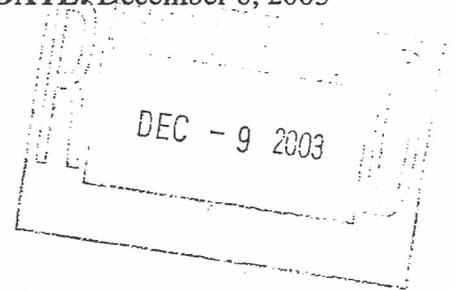
FILE: STP-0004-00(446), Cobb County
Lewis Road Realignment
City of Powder Springs
P.I. No. 0004446

OFFICE: Chamblee\Metro

DATE: December 8, 2003

FROM: Buddy Gratton, Metro District Engineer

TO: Meg Pirkle, Assistant Director of Preconstruction



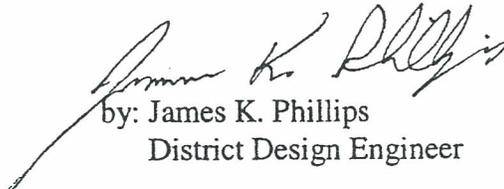
SUBJECT: PROJECT CONCEPT REPORT

Attached is the original Concept Report for your further handling for approval in accordance with the Plan Development Process.

By copy of this letter, additional copies are being distributed to the list of names below for review and comment. Please return signed cover sheet and any comments to Meg Pirkle for further processing.

If you have any questions concerning this report, please contact Key Phillips of this office at (770) 986-1050.

BGVJKP\rlm


by: James K. Phillips
District Design Engineer

Attachment

cc: Joe Palladi, w/attachment
Harvey Keepler, w/attachment
Phillip Allen, w/attachment
Paul Liles, w/attachment
Percy Middlebrooks, w/attachment
David Mulling, w/attachment
Jerry Harris, MAAI, w/attachment
File

SCORING RESULTS AS PER MOG 2440-2

Project Number: STP-0004-00(446)		County: Cobb		PI No.: 0004446	
Report Date: December 8, 2003		Concept By: DOT Office: District 7			
<input checked="" type="checkbox"/> Concept Stage		Consultant: W. K. Dickson & Co.			
Project Type: Choose One From Each Column		<input type="checkbox"/> Major <input checked="" type="checkbox"/> Minor	<input checked="" type="checkbox"/> Urban <input type="checkbox"/> Rural	<input type="checkbox"/> ATMS <input type="checkbox"/> Bridge Replacement <input type="checkbox"/> Building <input type="checkbox"/> Interchange Reconstruction <input type="checkbox"/> Intersection Improvement <input type="checkbox"/> Interstate <input type="checkbox"/> New Location <input checked="" type="checkbox"/> Widening & Reconstruction <input type="checkbox"/> Miscellaneous	
FOCUS AREAS	SCORE	RESULTS			
Presentation	100				
Judgement	100				
Environmental	100				
Right of Way	100				
Utility	100				
Constructability	100				
Schedule	100				

DEPARTMENT OF TRANSPORTATION

STATE OF GEORGIA

PROJECT CONCEPT REPORT

Project Number: STP-0004-00 (446)

County: Cobb County

P. I. Number: 0004446

Federal Route No.: n/a

State Route No.: n/a

LEWIS ROAD REALIGNMENT

Recommendation for approval:

DATE 12/08/03

[Signature]

Project Manager

DATE 12/08/03

[Signature]

District Engineer

This project concept is contained in the Regional Transportation Plan (RTP) and/ or in the State Transportation Improvement Program (STIP).

Date _____

State Transportation Planning Administrator

Date _____

Office of Financial Management Administrator

Date _____

State Environmental/ Location Engineer

Date _____

State Traffic Safety and Design Engineer

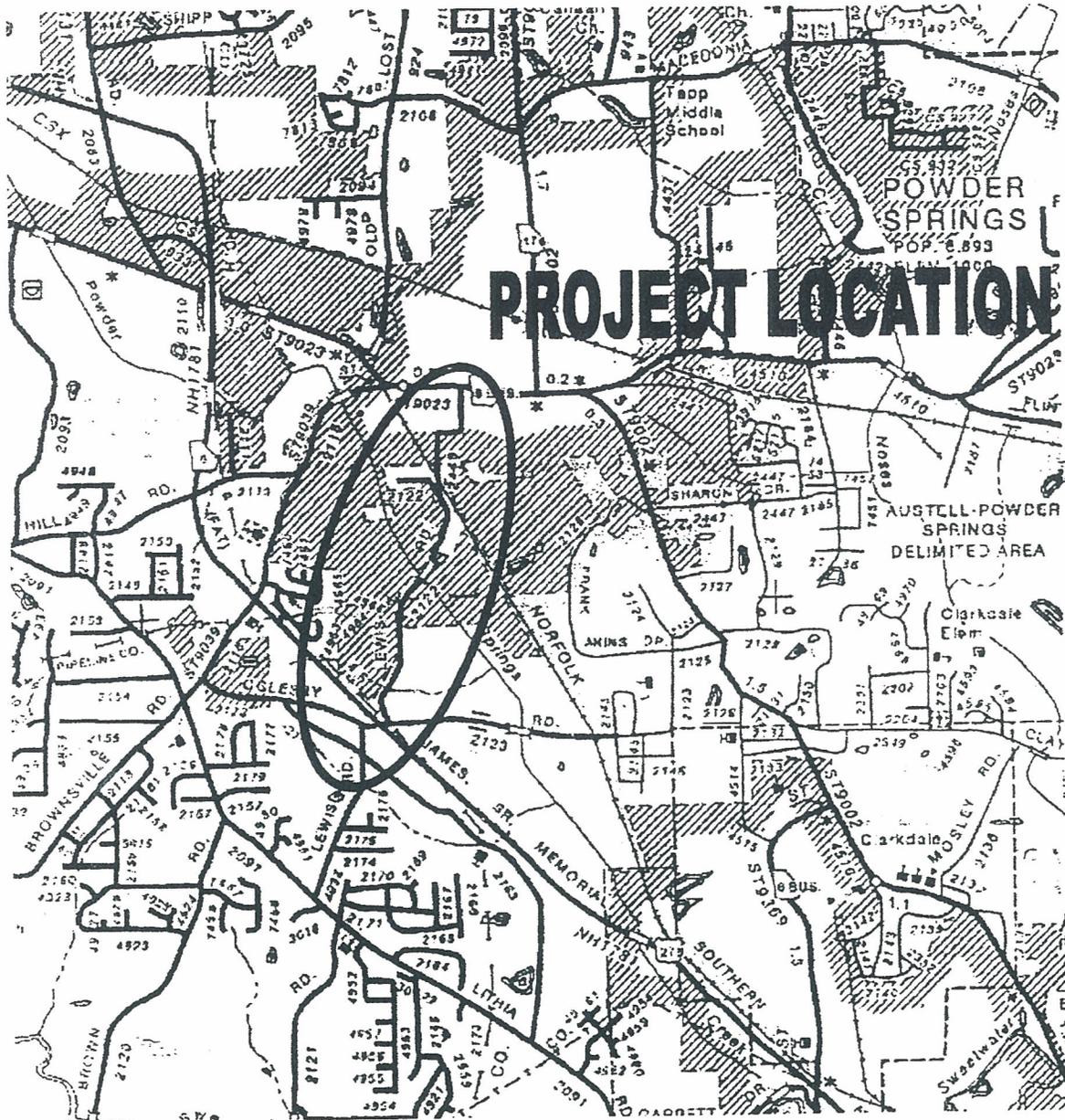
Date _____

State Bridge and Structural Design Engineer

Date _____

Project Review Engineer

Project Concept Report page 2
Project Number: STP-0004-00 (446)
P. I. Number: 0004446
County: Cobb County



SCALE: 1" = 3000'

LOCATION MAP
PROJECT: STP-0004-00 (446)
PI No.: 0004446

Project Concept Report page 3
Project Number: STP-0004-00 (446)
P. I. Number: 0004446
County: Cobb County

Description: Lewis Road / CR 2122 from C.H. James Parkway / S.R. 6 to Marietta Street in Powder Springs

NEED AND PURPOSE
PROJECT STP-0004-00 (446), COBB COUNTY
PI No. 0004446, ARC ID: CO 312B

The Lewis Road project will incorporate infrastructure improvements to an existing two-lane roadway that is currently in need of several modifications in order to provide a safe, attractive, and community-friendly corridor, which will ultimately provide a much needed alternative entrance to the City of Powder Springs.

- The project will address an undesirable geometry at the existing C.H. James Parkway / Oglesby Road / Lewis Road intersection by realigning Oglesby Road to intersect with a realigned Lewis Road about 450 feet from C.H. James Parkway.
- The project will replace a deficient bridge over Powder Springs Creek with a new bridge which meets GDOT and FEMA hydraulic and structural requirements.
- The project will eliminate a dangerous at-grade railroad crossing of Lewis Road at Norfolk Southern Railroad by providing a new overpass at this location.
- A relocation of the intersection of Long Street with Lewis Road will be provided to maintain access to existing residences west of the railroad, and an extension of Long Street, parallel to Norfolk Southern Railroad, into Powder Springs Park will provide more convenient access from areas south of the park.
- The project will also incorporate alternative transportation elements with the addition of bicycle lanes, multi-use trail, and sidewalks.
- The improvements will also include a gateway entrance feature, together with landscaped median and shoulders, which will promote its use as the southern entrance into Powder Springs, and encourage the development of underutilized properties along the corridor.
- The project will terminate north of the overpass, splitting into one-way pairs which ultimately line up across from Oakview and Pineview Drives on Marietta Street, providing improved access to the Powder Springs North Square, and opportunity for enhanced circulation within the downtown commercial district.
- The one-way pairs will have cross-street connections at Atlanta Street and a new cross street located near the existing intersection of Murray Street and Lindley Lane. These cross streets will provide two-way access between the northbound and southbound Lewis Road split alignment, enhancing circulation within the south square area.

Description of the proposed project: *The proposed project will be a realignment and reconstruction of the existing Lewis Road corridor located in the City of Powder Springs in Cobb County. The project limits are from the existing intersection of C.H. James Parkway at Oglesby Road to Marietta Street near the city government complex and town square in Powder Springs. The proposed typical section will be an urban section with two twelve-foot lanes divided by a raised 20-foot median, four-foot bicycle lanes in each direction, a seven-foot sidewalk on the east side, and a 12-foot multi-use trail on the west side. The proposed right-of-way will be 100' minimum, and the total length of the project is 1.3 miles.*

Concept Report page 4
Project Number: STP-0004-00 (446)
P. I. Number: 0004446
County: Cobb County

The projected traffic along this corridor is 5,660 ADT in the base year of 2006 and 14,000 ADT in the design year of 2026.

Existing

Lewis Road, to the east of C.H. James Parkway begins as a "T" intersection off of Oglesby Road. The existing Oglesby / Lewis Road intersection is a mere 125 feet east of the Oglesby Road / C.H. James Parkway, creating undesirable geometry and a potential safety hazard for vehicles attempting to negotiate the close proximity of the various turning movements.

Lewis Road continues northward through several undeveloped tracts and low density residential properties. It then crosses Powder Springs Creek over a substandard bridge, and continues northward toward an eventual at-grade crossing of Norfolk Southern Railroad. Lewis Road becomes Butner Street as it crosses Norfolk Southern, and Butner Street serves a residential area before ending at a "T" intersection with Atlanta Street. It is possible to access Marietta Street from the Butner Street / Atlanta Street area via several minor streets which include Lindley Avenue, Marchman Street, Broad Street and Murray Street. The area south of Marietta Street and north of Atlanta Street is made up of residential, commercial, and light industrial properties, and is currently being studied for potential improvements as the South Square Redevelopment Area. The area north of Marietta Street has been developed as the current town square and government center for the City of Powder Springs, along with several commercial and office spaces. This area currently suffers from poor accessibility from Marietta Street due to the heavy east-west traffic and no signalization to allow for safe turning movements into the town square.

Proposed

The overall corridor of the improved Lewis Road will serve as a southern gateway and entrance route into the heart of Powder Springs. The beginning of the project will be a realignment of the existing C.H. James Parkway / Oglesby Road / Lewis Road intersection. The east-west through movement will be changed from Oglesby Road to Lewis Road, and Oglesby Road will then be realigned to intersect northward on Lewis at a "T" intersection. A county access road will also be realigned to form a "T" intersection with the realigned Oglesby Road. The roadway will then go on new alignment along a curve to the left, eventually reconnecting back to existing Lewis Road. The improved facility will cross Powder Springs Creek over a new bridge, replacing the existing substandard structure. The proposed improvements will also include a grade separation bridge over Norfolk Southern Railroad eliminating the existing at-grade crossing at Lewis Road / Butner Street, just west of Powder Springs Elementary School. Currently, a majority of traffic entering and leaving Powder Springs from the south and west use the at-grade crossing at Brownsville Road. Long lines of traffic in both directions on Brownsville Road are common when trains block traffic. The new grade separation over the railroad will allow a safe, unrestricted crossing of the Norfolk Southern tracks, which are projected to incur a significant increase in train traffic due to the recent completion of the Norfolk Southern's intermodal facility just to the south in the city of Austell. Long Street, which runs parallel to the railroad and then westward, serves a residential area to the west of the project. Access to these residences will be provided by a new "T" intersection near the beginning of

Concept Report page 5
Project Number: STP-0004-00 (446)
P. I. Number: 0004446
County: Cobb County

the south approach of the proposed bridge over Norfolk Southern. Long Street will also be extended into Powder Springs Park, providing convenient access from areas to the south. North of the proposed railroad bridge, Lewis Road will be on new alignment, curving northwest through a residential area and then a light industrial area to the east of the railroad, and then proceed northeast toward the proposed South Square Redevelopment Area as a split alignment of one-way pairs. The project will end at Marietta Street, with the northbound intersection being coincident to the existing intersection of Oakview Drive, and the southbound intersection being an improvement of Murray Street, just across from Pineview Drive, which accesses the city government complex. The project will also include side-street intersections and the associated turn lanes and tapers at Marchman Street, Atlanta Street, and Butner Street. Also included is a two-lane roadway connecting existing Long Street with Powder Springs Park.

The logical termini for the project will be: to the south, C.H. James Parkway, where the existing intersection will be reconstructed with Lewis Road as the through movement to the northeast, and to the north, at Marietta Street where a split alignment of one-way pairs will end across from Pineview Drive and Oakview Drive.

Concept Report page 6
Project Number: STP-0004-00 (446)
P. I. Number: 0004446
County: Cobb County

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

PDP Classification: Major , Minor

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

Functional Classification: *Urban Collector*

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

State Route number(s): N/A

Traffic (AADT): Lewis Road / CR 2122

Current Year: (2006) 5,660 vpd

Design Year: (2026) 14,000 vpd

Existing design features:

- Typical Section: Two, 12' Lanes with grassed shoulders and ditches
- Posted Speed: 35 mph Maximum degree of curvature: N/A
- Maximum grade: 7.1% Mainline
- Width of right-of-way: 50'
- Major Structures:
 - 73' x 26' bridge over Powder Springs Creek*
 - Structure ID: 067-5225-0 Sufficiency Rating: 69.67*
- Major interchanges or intersections along the project: None
- Existing length of roadway segment: 1.33 miles
- Mile Post Reference: Begin M.P. 1.12; End M.P. 0.21 Lewis Road
Begin M.P. 0.48; End M.P. 0.00 Marietta Street

Proposed Design Features:

- Proposed typical section(s): *The proposed roadway will consist of one 12' lane in each direction with a 20' raised median, 4' bicycle lanes each direction, 30" curb and gutter, grassed shoulders, 12' multi-use trail on the west side, and a 7' sidewalk on the east side.*
- Proposed Design Speed Mainline 35 mph
- Proposed Maximum grade Mainline: 5.0% Maximum grade allowable: 6.5%
- Proposed Maximum grade Side Street: 5.0% Maximum grade allowable: N/A
- Proposed Maximum grade driveway: 15% Maximum grade allowable: 15%
- Proposed Maximum degree of curve: 12°15'00" Maximum degree allowable: 12°15'00"
- Right of Way
 - Width: Varies from 120 feet to 200 feet, minimum 12 feet from edge of pavement
 - Easements: Temporary (X), Permanent (X), Utility(X), Other().
 - Type of access control: Full(), Partial(), By Permit(X), Other().
 - Number of parcels: 40 Number of Displacements: 8
 - Residences: 4
 - Businesses: 4
- Structures:
 - Bridges: *The proposed bridge over Powder Springs Creek will be approximately 390' long and 73'-5" wide. The proposed bridge over Norfolk Southern Railroad will be 329' long and 62'-5" wide.*
 - Retaining walls:
- Major intersections and interchanges: *Reconstruction of eastern leg of C.H. James at Oglesby Road. Two new signalized intersections at Marietta St. at Pineview and Oakview Drives.*
- Traffic control during construction: *Partial new alignment facility, local traffic only south of railroad. Traffic at cross streets will be staged to maintain traffic during construction.*
- Design Exceptions to controlling criteria anticipated:

	<u>UNDETERMINED</u>	<u>YES</u>	<u>NO</u>
HORIZONTAL ALIGNMENT:	()	()	(X)
ROADWAY WIDTH:	()	()	(X)
SHOULDER WIDTH:	()	()	(X)
VERTICAL GRADES:	()	()	(X)
CROSS SLOPES:	()	()	(X)
STOPPING SIGHT DISTANCE:	()	()	(X)
SUPERELEVATION RATES:	()	()	(X)
HORIZONTAL CLEARANCE:	()	()	(X)
SPEED DESIGN:	()	()	(X)
VERTICAL CURVES:	()	()	(X)
BRIDGE WIDTH:	()	()	(X)
BRIDGE STRUCTURAL CAPACITY:	()	()	(X)

Project Concept Report page 8
Project Number: STP-0004-00 (446)
P. I. Number: 0004446
County: Cobb County

- Design Variances: *Median Opening Spacing for Oglesby Road Intersection*
- Environmental concerns: Wetlands impacts at Powder Springs Creek and tributary; Environmental Justice issues at Butner Street neighborhood; historic resources near Butner Street and Marietta Street residential and commercial areas.
- Level of environmental analysis: NEPA – Environmental Assessment/FONSI
 - Are Time Savings Procedures appropriate? Yes (), No (X)
 - Categorical exclusion Yes (), No (X)
 - Environmental Assessment/Finding of No Significant Impact Yes (X), No ()
 - ○ Environmental Impact Statement (EIS): Yes (), No (X)
- Utility involvements:
 - Telephone: *Owner to be determined*
 - Power: *Owner to be determined*
 - Water/Sewer: *Owner to be determined*
 - Cable TV: *Owner to be determined*
 - Gas: *Owner to be determined*
 - Other: *Colonial Pipeline, Georgia Power Transmission*

Project Responsibilities:

- Design: *W.K. Dickson & Co., Inc.*
- Right of way acquisition: *City of Powder Springs*
- Relocation of utilities: *City of Powder Springs*
- Letting of contract: *GDOT*
- Providing material pits: *Contractor*
- Providing detours: *W.K. Dickson will provide on-site staging / detour plan*

Coordination

- Concept meeting date and brief summary: *Feb. 20, 2003 (See attached minutes)*
- P. A. R. meetings, dates and results: *Sept. 15, 2003 (See attached P.A.R. Report)*
- FEMA and/ or TVA: *In progress*
- Public involvement: *One-on-one contacts with Butner Street/Long Street residents (Oct.-Nov. 2001), Project Open House (Oct. 2001) Public Information Meeting (Nov. 2001)*
- Local government comments: *Locals to do PE, ROW and utilities*
- Other projects in the area: *Marietta Street Streetscape Project; STP-9023 (5)*
- Other coordination to date: *Coordination with Norfolk Southern Railroad, Colonial Pipeline, FHWA, GDOT Office of Environment / Location, Atlanta Regional Commission, Senator Steve Thompson.*

Scheduling – Responsible Parties' Estimate

- Time to complete the environmental process: 12 months
- Time to complete preliminary construction plans: 4 months
- Time to complete right of way plans: 2 months
- Time to complete the Section 404 Permit: 3 months
- Time to complete final construction plans: 6 months

Project Concept Report page 9
Project Number: STP-0004-00 (446)
P. I. Number: 0004446
County: Cobb County

- Time to complete to purchase right of way: 18 months
- List other major items that will affect the project schedule: *None anticipated*

Other alternates considered:

Alternate 1 – *This alternate consists of more closely holding to the existing corridor north of the new overpass by widening Butner Street and continuing north to Marietta Street. This alternate was not chosen due to the significant impacts and displacements to residences along Butner Street.*

Alternate 2 – *This alternate consists of constructing the new railroad overpass at the existing at-grade crossing at Brownsville Road. This alternate was not chosen due to the major impacts to the western edge of the downtown business district caused by the eastern bridge approach.*

Alternate 3 – *This alternate consists of shifting the northbound one-way intersection to the west to avoid displacement of the commercial property at Marietta Street. This alternate was not chosen because of the creation of an undesirable offset intersection of Lewis Road across from Oakview Drive.*

Comments:

The Lewis Road Improvements Project is a roadway, bridge, bicycle and pedestrian project that proposes realignment of an existing 2-lane road from CH James Parkway to Marietta Street to create a gateway entrance directly to the historic town center. The enhanced road will include a grade-separated crossing over Norfolk Southern Railroad, a replacement bridge over Powder Springs Creek, on-road bike lanes, sidewalks, off-road path, landscaped median, pedestrian lighting and street furniture. Most importantly, the project will provide a safe crossing into downtown Powder Springs via the proposed bridge over Norfolk Southern Railroad. Additionally, the project will serve as an aesthetically pleasing, pedestrian and bicycle friendly corridor leading to downtown Powder Springs.

The project has been presented to the community during one-on-one meetings with citizens directly impacted in and around the Butner Street / Long Street neighborhoods, as well as at a Project Open House meeting, and a Public Information meeting. Coordination with utilities, Norfolk Southern Railroad, FHWA, GDOT, Powder Springs Elementary School, and other interested parties, has already occurred with mostly favorable feedback and will continue throughout the concept design.

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Project Number: STP-0004-00 (446)
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County: Cobb County

Attachments:

1. Concept Cost Estimates,
2. Traffic Diagrams,
3. Typical sections,
4. Bridge Inventory
5. Public Involvement Summary
6. Concept Team Meeting minutes
7. Location and Design Approval
8. PAR Report
9. Project Concept-Map

Approvals, _____

Concur: _____

Director of Preconstruction

Approve: _____

Chief Engineer

12/12/2003
[Signature]

CONCEPT COST ESTIMATES

Project Name: Lewis Road Project

Project No: STP-0004-00 (446)

PI No. 0004446

Project Description: Widening and reconstruction Lewis Road from C.H. James Parkway to Marietta Street

Project length: 1.4 miles

Typical Section: 2 lane 20' raised MED., 5' bike lanes each side, sidewalk, multi-use trail.

PROJECT COSTS

A.	RIGHT-OF-WAY		\$2,000,000
B.	REIMBURSABLE UTILITIES		
	1. RAILROAD		\$150,000
	2. TRANSMISSION LINES		\$250,000
	3. SERVICES		\$20,000
		SUBTOTAL	\$420,000
C.	MAJOR STRUCTURES		
	1. BRIDGE CROSSINGS		
	BRIDGE 1 (REPLACE EXIST. BRIDGE @ POWDER SPRINGS CK.)		
	25,740 SF @ \$88.57 / SF	\$2,279,792	
	BRIDGE 2 (NEW BRIDGE OVER NORFOLK SOUTHERN R.R.)		
	20,521 SF @ \$75.00 / SF	\$1,539,075	
	2. BOX CULVERTS		
	210 CY @ \$420.00 / CY	\$88,200	
		SUBTOTAL	\$3,907,067
D.	GRADING AND DRAINAGE		
	1. EARTHWORK		
	295,350 CY @ \$4.40 / CY	\$1,299,540	
	2. DRAINAGE		
	a. MINOR DRAINAGE		
	5,600 LF @ \$55.00 / LF	\$308,000	
	b. CURB AND GUTTER		
	32,000 LF @ \$12.00 32,000 LF @ \$12.00 / LF	\$384,000	
		SUBTOTAL	\$1,991,540
E.	BASE AND PAVING		
	1. GAB		
	25,000 TN @ \$14.87 / TN	\$371,750	
	2. ASPHALT PAVING		
	12.5 mm SUPERPAVE 3,100 TN @ \$42.09 / TN	\$130,479	
	19 mm SUPERPAVE 4,100 TN @ \$37.41 / TN	\$153,381	
	25 mm SUPERPAVE 4,940 TN @ \$34.54 / TN	\$170,628	
	3. SIDEWALK & MULTI-USE TRAIL		
	a. 4" CONC. S/W 3,478 SY @ \$36.03 / SY	\$125,312	
	b. 6" CONC. TRAIL 10,500 SY @ \$67.00 / SY	\$703,500	
		SUBTOTAL	\$1,655,050
F.	LUMP SUM ITEMS		

1. TRAFFIC CONTROL			\$180,000	
2. CLEARING AND GRUBBING			\$200,000	
3. LANDSCAPING			\$1,108,400	
4. EROSION CONTROL -			\$250,000	
				SUBTOTAL
				\$1,738,400

G. MISCELLANEOUS				
1. SIGNING/MARKING				
1.4	MI @	\$30,000.00 / MI	\$42,000	
2. SIGNALIZATION				
3	EA @	\$40,000.00 / EA	\$120,000	
3. GUARDRAIL				
6,000	LF @	\$14.00 / LF	\$84,000	
				SUBTOTAL
				\$246,000

H. SPECIAL FEATURES				
1. 12" Water line	1.4	MI @	\$200,000.00 / MI	\$280,000
2. 8" sewer line	0.7	MI @	\$300,000.00 / MI	\$210,000
3. Wetlands Mitigation			\$300,000.00	\$300,000
				SUBTOTAL
				\$790,000

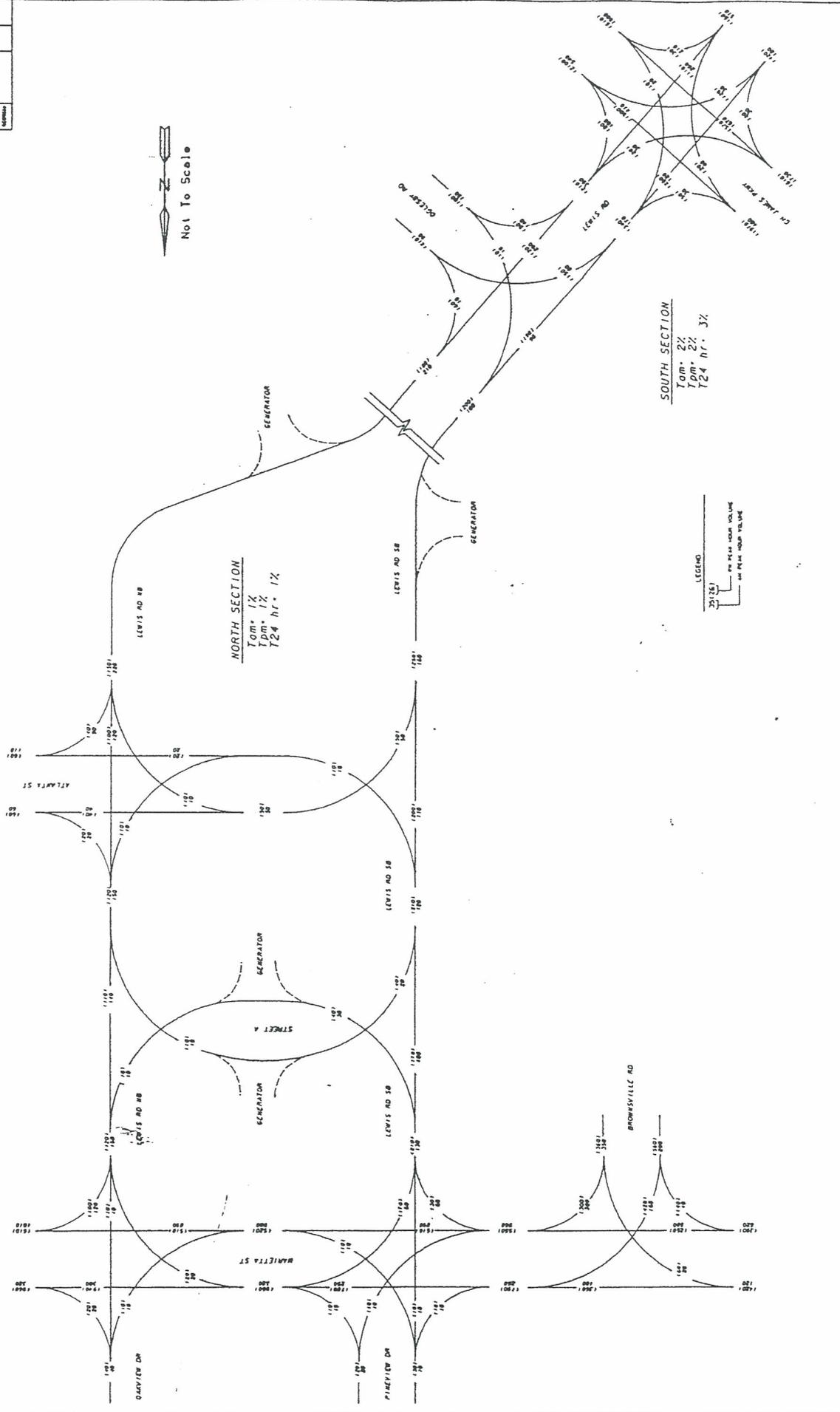
ESTIMATE SUMMARY

A. RIGHT OF WAY	\$2,000,000
B. REIMBURSABLE UTILITIES	\$420,000

CONSTRUCTION COST SUMMARY

C. MAJOR STRUCTURES	\$3,907,067
D. GRADING AND DRAINAGE	\$1,991,540
E. BASE AND PAVING	\$1,655,050
F. LUMP SUM ITEMS	\$1,738,400
G. MISCELLANEOUS	\$246,000
H. SPECIAL FEATURES	\$790,000
	SUBTOTAL CONSTRUCTION COST
	\$10,328,057
	INFLATION (2 YRS. @ 5% /YR)
	\$1,058,626
	E. & C. (10%)
	\$1,138,668
	TOTAL CONSTRUCTION COST
	\$12,525,351
	GRAND TOTAL PROJECT COST
	\$14,945,351
	(w/ ROW & UTILITIES)

DATE	PROJECT NUMBER	SHEET NUMBER	TOTAL SHEETS



SECTION	DATE	BY	CHKD

REVISIONS

DATE OF REVIEW: 1/13/03
 AUTHORIZED BY: WARD & ASSOCIATES, INC.

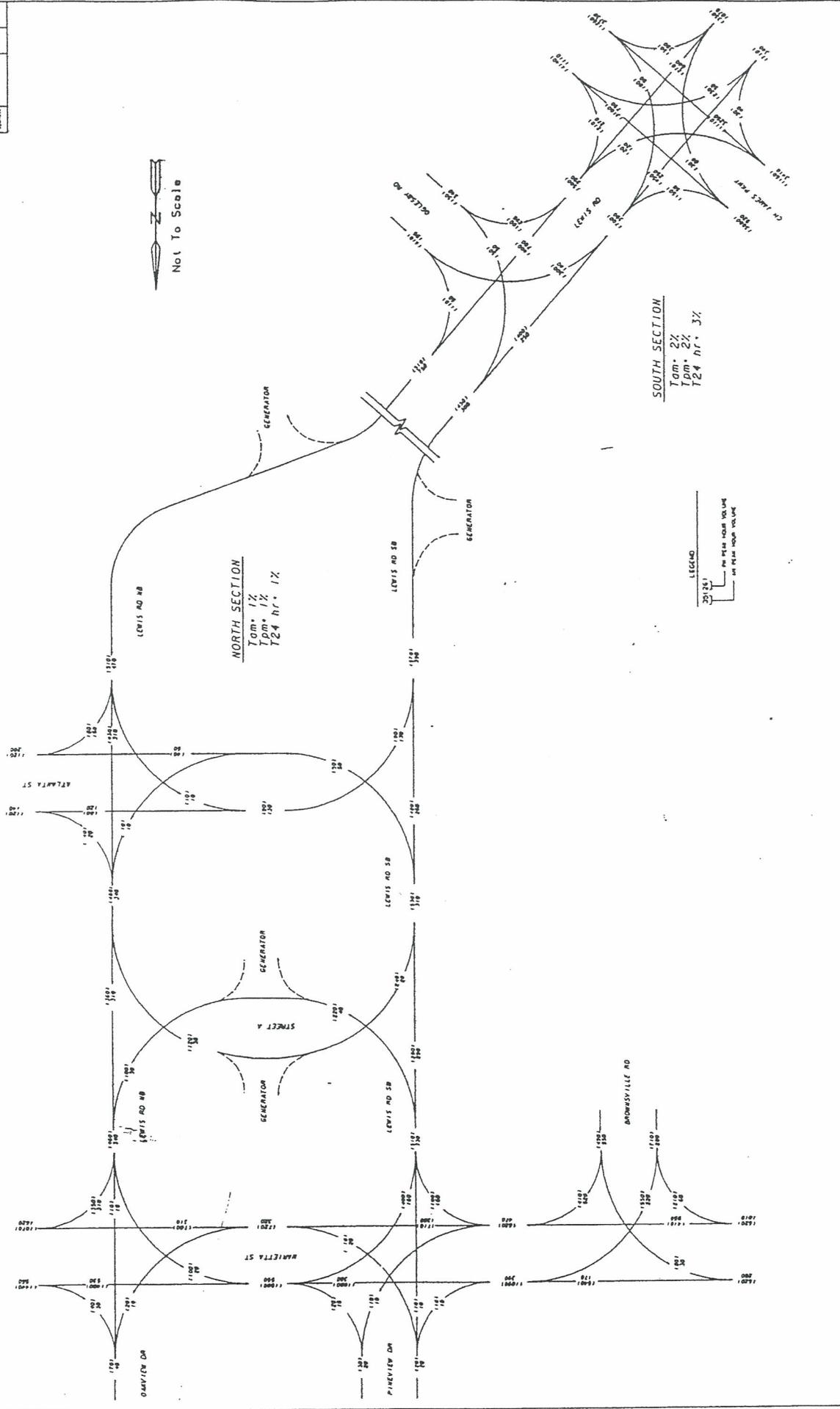
Ward & Associates, Inc.
 3300 SOUTH MOUNTAIN RD
 SUITE 100
 ATLANTA, GA 30339
 (404) 251-1600

LEWIS ROAD CONNECTOR

PROJECTED PEAK HOUR VOLUMES (Construction Year)
 YEAR 2006

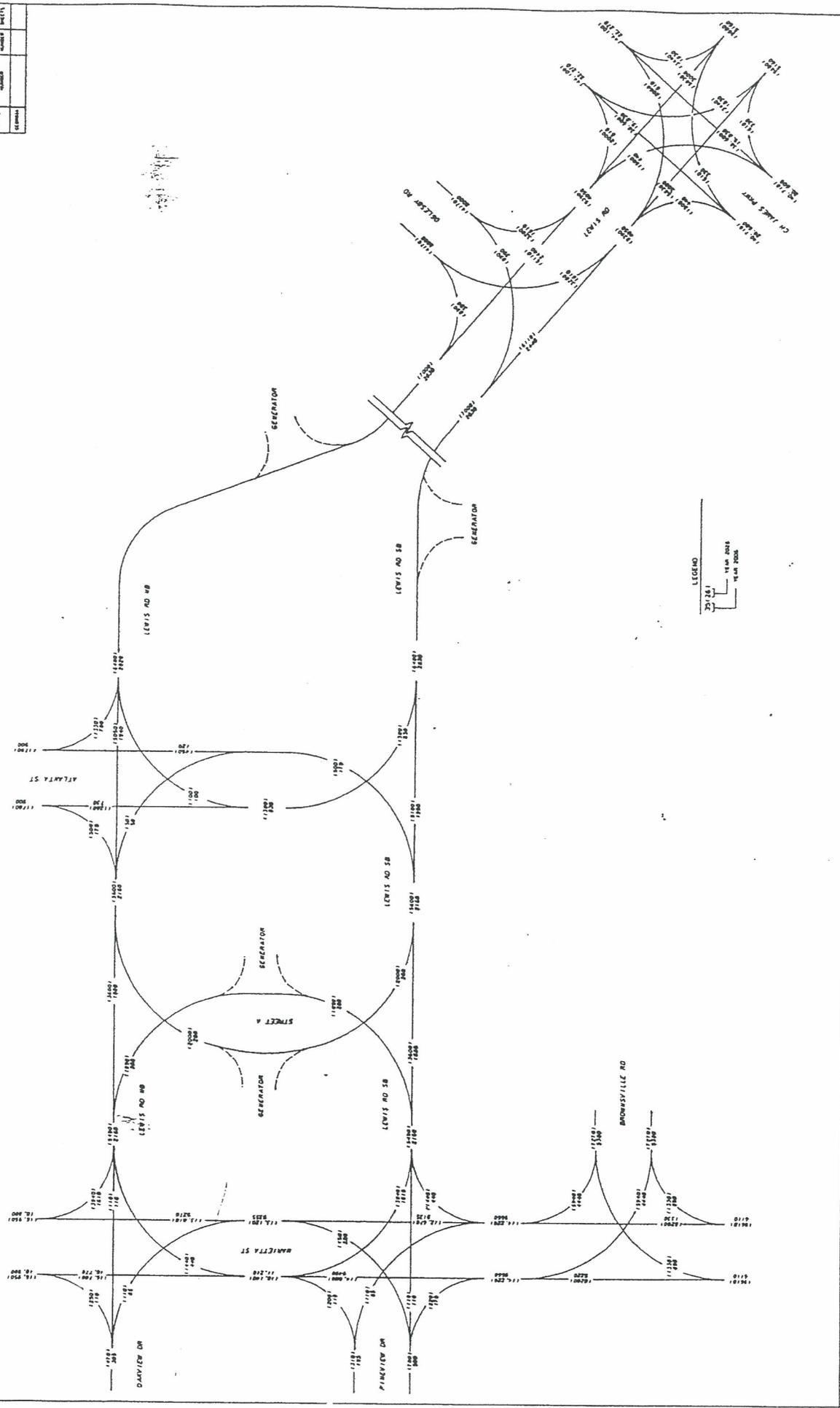
12

DATE	PROJECT NUMBER	SHEET NUMBER	TOTAL SHEETS
10/20/11	1000000	13	13



DESIGN HOUR VOLUMES (DHV) YEAR 2026		13	
LEWIS ROAD CONNECTOR		1/13/03	
WALTON ASSOCIATES, INC. 1000000		1/13/03	
WALTON ASSOCIATES, INC. 1000000		1/13/03	
REVISIONS		DATE	

DATE	PROJECT	SHEET	TOTAL
10/1/03	LEWIS ROAD CONNECTOR	14	14



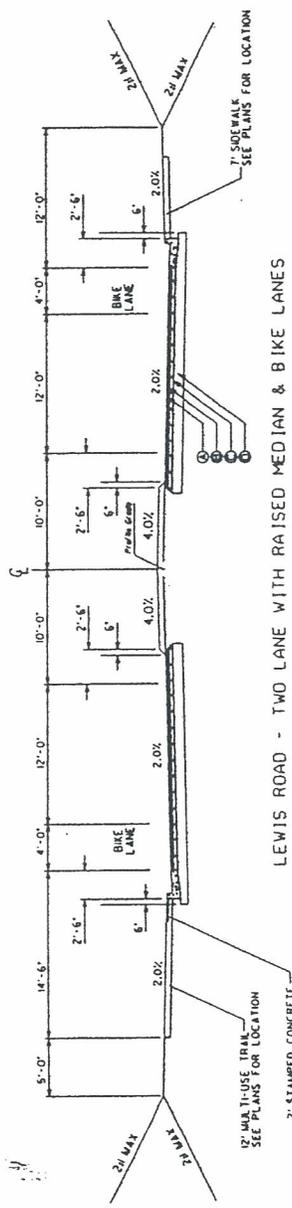
DATE	PROJECT	SHEET	TOTAL
10/1/03	LEWIS ROAD CONNECTOR	14	14

DATE	REVISION

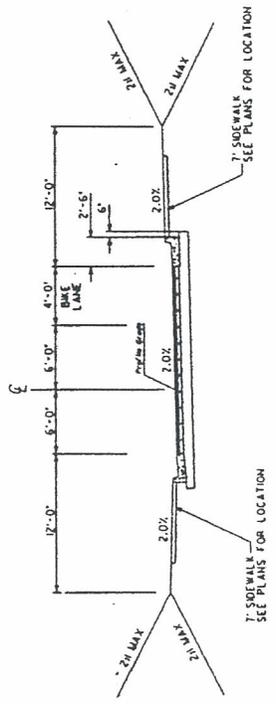
W Welton & Associates 1000 N. W. 10th St. Suite 100 Ft. Lauderdale, FL 33304 Phone: (954) 571-1111 Fax: (954) 571-1112	CITY OF MIAMI 1/13/03 PROJECT NO. 2003-001 CONTRACT NO. 2003-001
--	---

DESIGN ADT VOLUMES

STATE	PROJECT NUMBER	SHEET TOTAL
G.A.	STP-0004-00 14461	NO. SHEETS



LEWIS ROAD - TWO LANE WITH RAISED MEDIAN & BIKE LANES



LEWIS ROAD - ONE-WAY PAIR w/ BIKE LANES



GEORGIA
DEPARTMENT OF TRANSPORTATION
TYPICAL SECTION
PROJECT: LEWIS ROAD - STP-0004-00 (4461)
COUNTY: COBB / CITY OF POWDER SPRINGS
DATE: 2/20/03 SHEET 1 OF 2

DATE	REVISIONS	DATE	REVISIONS

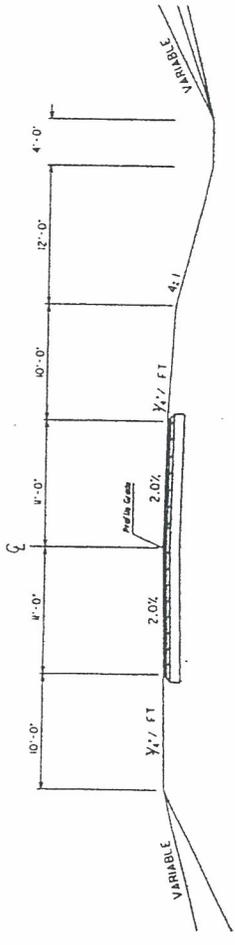
INTERNATIONAL ROAD
ATLANTA, GA 30303
(404) 521-1111

W.K. DICKSON
Engineers
Surveyors

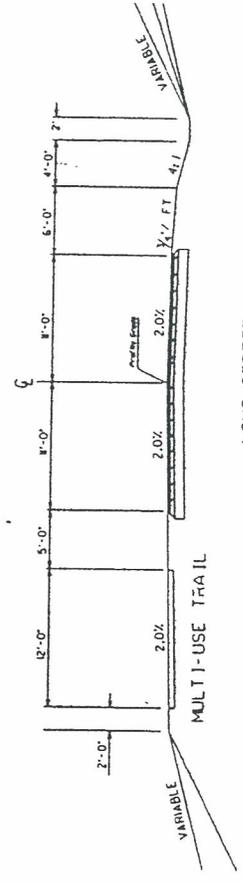
Atlanta, GA
Marietta, GA
Mableton, GA
Cumming, GA

PROPERTY AND EXISTING R/W LINE	.....	B/L
REQUIRED R/W LINE	.....	E/LA
CONSTRUCTION LIMITS	.....	.....
EASEMENT FOR CONSTR	.....	.....
& MAINTENANCE OF SLOPES	.....	.....
EASEMENT FOR CONSTR OF DRIVES	.....	.....

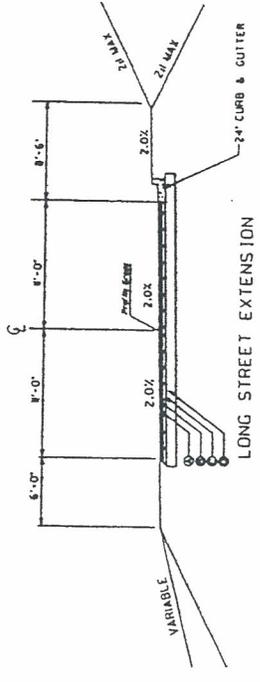
STATE	PROJECT NUMBER	SHEET TOTAL
G.A.	SIP-0004-00 (146)	OF 146



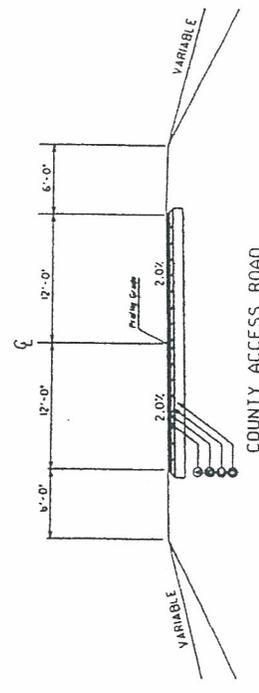
OGLESBY ROAD



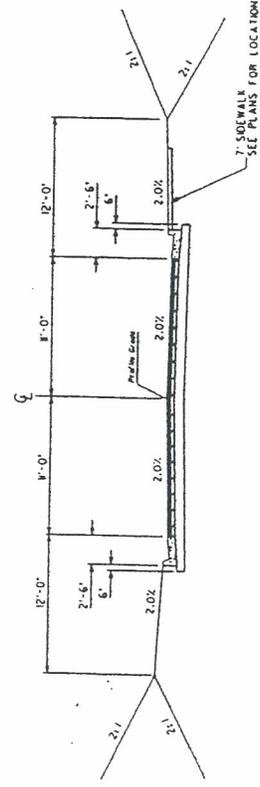
LONG STREET



LONG STREET EXTENSION



COUNTY ACCESS ROAD



MARCHMAN STREET, ATLANTA STREET, HOTEL AVE.

PROPERTY AND EXISTING SW LIME	RECV LIMIT OF ACCESS	BIA
REQUIRED SW LIME	END LIMIT OF ACCESS	ELA
CONSTRUCTION LIMITS	LIMIT OF ACCESS	
EASEMENT FOR CONSTR	PROP AND LIMIT OF ACCESS	
& MAINTENANCE OF SLOPES		
EASEMENT FOR CONSTR OF SLOPES		
EASEMENT FOR CONSTR OF DRIVES		

W.K. DICKSON
 ENGINEERS
 1115 PULPIT ROAD
 ATLANTA, GA 30304
 (404) 525-1111
 Atlanta, GA Tallahassee, FL
 Jacksonville, FL
 Miami, FL
 Orlando, FL
 Savannah, GA

DATE	REVISIONS	DATE	REVISIONS

GEORGIA
 DEPARTMENT OF TRANSPORTATION
 TYPICAL SECTION
 PROJECT: LEWIS ROAD - STP-0004-00 (146)
 COUNTY: COBB / CITY OF POWDER SPRINGS
 DATE: 2/20/03
 SHEET 2 OF 2

Location & Geography

* Structure I.D.No: 067-5225-0
 * 200 Bridge Information 07
 * 6A Feature Int: POWDER SPRINGS CREEK
 * 6B Critical Bridge: 0
 * 7A Route Number Carried: CR02122
 * 7B Facility Carried: LEWIS ROAD
 * 9 Location: 3.8 MI NW OF AUSTELL
 2 DO1 District: 7
 207 Year Photo: 2001
 * 91 Inspection Frequency: 24 Date: 11/06/2001
 92A Fract Crit Insp Freq: 00 Date: 02/01/1901
 92B Underwater Insp Freq: 00 Date: 02/01/1901
 92C Other Sp. Insp Freq: 00 Date: 02/01/1901
 * 4 Place Code: 00000
 * 5 Inventory Route (O/U): 1
 Type: 4
 Designation: 1
 Number: 02122
 Direction: 0
 * 16 Latitude: 33-51.0 MMS Prefix: 00
 * 17 Longitude: 84-41.0 MMS Suffix: 000 MP: 0.00
 98 Border Bridge: 000 %Shared: 00
 99 ID Number: 0000000000000000
 * 100 STRAHNET: 0
 12 Base Highway Network: 0
 13A LRS Inventory Route: 0
 13B Sub Inventory Route: 0
 * 101 Parallel Structure: N
 * 102 Direction of Traffic: 2
 * 264 Road Inventory Mile Post: 000.52
 * 208 Inspection Area: 09 Initials: JMC
 Engineer's Initial: ksb
 * Location I.D. No.: 067-02122X-000.52S

Signs & Attachments

* 104 Highway System: 0
 * 26 Functional Classification: 19
 * 204 Federal Route Type: 0 No.: 00000
 * 105 Federal Lands Highway: 0
 * 110 Truck Route: 0
 206 School Bus Route: 1
 217 Benchmark Elevation: 0000.00
 218 Datum: 0
 * 19 Bypass Length: 01
 * 20 Toll: 3
 * 21 Maintenance: 02
 * 22 Owner: 02
 * 31 Design Load: 2
 37 Historical Significance: 0
 205 Congressional District: 07
 27 Year Constructed: 1965
 106 Year Reconstructed: 0000
 33 Bridge Median: 0
 34 Skew: 00
 35 Structure Flared: 0
 38 Navigation Control: 0
 213 Special Steel Design: 0
 267 Type of Paint: 1
 * 42 Type of Service on: 1
 Under: 5
 214 Movable Bridge: 0
 203 Type Bridge: E-N-O-O
 259 Pile Encasement: 2
 * 43 Structure Type Main: 1 01
 45 No. Spans Main: 004
 44 Structure Type Appr: 0 00
 46 No. Spans Appr: 0000
 226 Bridge Curve Horz: 0 Vert: 0
 111 Pier Protection: 0
 107 Deck Structure Type: 1
 108 Wearing Surface Type: 1
 Membrane: 0
 Protection: 0

225 Expansion Joint Type: 00
 242 Deck Drains: 1
 243 Parapet Location: 0
 Height: 0.00
 Width: 0.00
 238 Curb: 238
 239 Handrail: 2 2
 * 240 Median Barrier Rail: 0
 241 Bridge Median Height: 0.00
 Width: 0.00
 * 230 Guardrail Loc Dir Rear: 3
 Fwd: 3
 Oppo Dir Rear: 0
 Fwd: 0
 244 Approach Slab: 0
 224 Retaining Wall: 1
 233 Posted Speed Limit: 45
 236 Warning Sign: 0
 234 Delineator: 0
 235 Hazard Boards: 0
 237 Utilities Gas: 21
 Water: 00
 Electric: 00
 Telephone: 00
 Sewer: 00
 247 Lighting Street: 0
 Navigaition: 0
 Aerial: 0
 * 248 County Continuity No.: 00

Programming Data

201 Project No.: COUNTY DESIGN
 202 Plans Available: 0
 249 Prop. Proj. No. 0000000000000000
 250 Approval Status: 0000
 251 P.I. No.: 00000000
 252 Contract Date: 02/01/1901
 260 Seismic No.: 00000
 75 Type Work: 00 0
 94 Bridge Imp. Cost: \$ 0
 95 Roadway Imp. Cost: \$ 0
 96 Total Imp Cost: \$ 0
 76 Imp. Length: 000000
 97 Imp. Year: 1990
 114 Future ADT: 002565 Year: 2017

Measurements

* 29 ADT: 001710 Year: 1998
 109 % Trucks: 1
 * 28 Lanes On: 02 Under: 00
 210 No. Tracks On: 00 Under: 00
 * 48 Max. Span Length: 0020
 * 49 Structure Length: 70
 51 Br. Rwdy. Width: 23.70
 52 Deck Width: 25.30
 * 47 Tot. Horz. Cl: 23.70
 50 Curb/Sdewlk Width: 0.00/0.00
 32 Approach Rdwy Width: 020
 * 229 Shoulder Width:
 Rear Lt: 5.00 Type: 8 Rt: 5.00
 Fwd Lt: 5.00 Type: 8 Rt: 5.00
 Pavement Width:
 Rear: 20.00 Type: 2
 Fwd: 20.00 Type: 2
 Intersection Rear: 0 Fwd: 0
 36 Safety Features Br. Rail:
 Transition: 0
 App. G. Rail: 1
 App. Rail End: 1
 53 Minimum Cl. Over:
 Under: N
 * 228 Min. Vertical Cl
 Act. Odm. Dir: 99 ' 99 "
 Oppo. Dir: 99 ' 99 "
 Posted Odm. Dir: 00 ' 00 "
 Oppo. Dir: 00 ' 00 "
 55 Lateral Undercl. Rt: N 99.90
 56 Lateral Undercl. Lt: 0.00
 * 10 Max Min Vert Cl: 99 ' 99 " Dir: 0
 39 Nav Vert Cl: 000 Horz: 0000
 116 Nav Vert Cl Closed: 000
 245 Deck Thickness Main: 4.00
 Deck Thick Approach: 0.00
 246 Overlay Thickness: 3.00
 212 Year Last Painted: Sup: 0000 Sub: 1965

Hydraulic Data

215 Waterway Data
 Highwater Elev.: 0000.0 Year: 0000
 Avg. Streambed Elev.: 0000.0 Freq.: 000
 Drainage Area: 00000
 Area Of Opening: 000000
 113 Scour Critical: 6
 2:5 Water Depth: 05.0 Br. Height: 12.3
 222 Slope Protection: 0
 221 Spur Dikes Rear: 0 Fwd: 0
 219 Fender System: 0
 220 Dolphin: 0
 223 Culvert Cover: 000
 Type: 0
 No. Barrels: 00
 Width: 0.00 Height: 0.00
 Length: 0 Apron: 0
 * 265 U/W Insp. Area: 0 Diver: ZZZ

* Location I.D. No.: 067-02122X-000.52S

Ratings

65 Inventory Rating Method: 2
 63 Inventory Rating Method: 2
 66 Inventory Type: 2 Rating: 25
 64 Operating Type: 2 Rating: 37
 231 Calculated Loads
 H-Modified: 17 0
 HS-Modified: 25 0
 Type 3: 21 0
 Type 3a2: 33 0
 Timber: 27 0
 Piggyback: 00 0
 261 H Inventory Rating: 14
 262 H Operating Rating: 20
 67 Structural Evaluation: 6
 58 Deck Condition: 7
 59 Superstructure Condition: 7
 * 227 Collision Damage: 0
 60A Substructure Condition: 7
 60B Scour Condition: 8
 60C Underwater Condition: N
 71 Waterway Adequacy: 9
 61 Channel Protection Cond: 7
 68 Deck Geometry: 3
 69 UnderClr. Horz/Vert: N
 72 Appr. Alignment: 7
 62 Culvert: N

Posting Data

70 Bridge Posting Required: 5
 41 Struct Open, Posted, Cl: A
 * 103 Temporary Structure: 0
 232 Posted Loads H-Modified: 00
 HS-Modified: 00
 Type 3: 00
 Type 3a2: 00
 Timber: 00
 Piggyback: 00
 253 Notification Date 02/01/1901
 253 Fed Notify Date: 02/01/1901 0

LEWIS ROAD PUBLIC ONVOLVEMENT SUMMARY

Open House, Powder Springs Senior Citizens Center, 10-30-01

Residents within and surrounding the project area were sent invitations to drop by the Senior Citizens Center to view the conceptual alternatives and voice their opinions and concerns related to the project. Of the eighteen responses, eleven were favorable to the current concept layout, three asked for modifications to the current alignment, one was against the project, and three were unsure or had no opinion. Some minor changes were incorporated into the current concept as a result of requests made during this session.

Public Information Meeting, Powder Springs Police Department Conference Room, 11-15-01

Advertisements in local newspapers as well as invitations to residents within and surrounding the project area notified the public of a project information meeting for the purpose of obtaining additional input from the community at large. City officials, Georgia DOT personnel, and the city's consultant were on hand to present the project and to field questions and hear concerns from those attending. A court reporter was on hand to record the session. Of nineteen responses, eight were positive, four were negative, three were unsure or had no opinion, and five offered potential changes that would minimize the impacts that the project would have on their property.

One-on-one meetings with residences and business owners, Powder Springs Methodist Church, May 6,8,13 & 21

Residents were invited to meet with city staff and the city's consultant to view the latest project layout and to obtain updates on the project progress and schedule. Thirty people attended at various times during the three meeting dates. Comments and questions varied, but general concerns were related to how soon construction would begin, when would negotiations for property acquisition occur, and whether they would be fairly compensated for their property.

CONCEPT TEAM MEETING MINUTES

Project: Lewis Road Project
Project No: STP-0004-00 (446), Cobb County, P.I. No. 0004446
Date: February 20, 2003
Time: 9:00 AM
Location: GDOT District 7 Conference Room

List of Attendees:

(attached below)

Discussions Items:

1. Key Phillips opened with a brief description of the project, and turned the meeting over to Andy Miller.
2. Mr. Miller provided an overview of the project using a concept display on aerial photography background.
3. Susan Thomas followed with a breakdown of the issues and progress relative to the environmental documentation.
4. Mr. Phillips noted that the intersection of Oglesby Road was less than the desired 600' minimum from C.H. James Parkway, and that a design variance would be required.
5. Traffic signals at the realigned Oglesby Road intersection and at the northbound Lewis Road / Marietta Street will be included in the project.
6. Scott Overbey of Norfolk Southern indicated that some modifications to the plans received by the railroad would be necessary to preserve enough room for the future expansion to an additional track on both sides of the existing rail line.
7. Mr. Miller responded that some modifications to the design were already in progress in anticipation of the railroads requirements.
8. Mr. Overbey also noted that access from Lewis Road to N/S facilities would need to be provided in a formal agreement between N/S and the city.
9. It was noted that Nikki Henderson would be the Department's liaison for environmental coordination.
10. A question was asked as to whether brochures outlining the process for R/W negotiations and acquisition was provided at any of the public involvement sessions. It was stated that the GDOT R/W booklets were not supplied at the previous two meetings.
11. Pam Conner advised that although the project was programmed for FY '04, that she had spoken with FHWA and learned that as long as a request for moving the project to a later program date was submitted by the appropriate deadline, there would not be a problem with losing funding.
12. Bobby Crawford asked when right-of-way would be ready to be acquired. The response was that the schedule for environmental clearance would dictate the timeline. It was noted that efforts were underway to accelerate the environmental schedule by early and on-going coordination with FHWA and OEL. Ms. Thomas indicated that the draft EA was scheduled to be reviewed and signed by Nov. 15, 2003. This would allow for a public open house to take place around January of 2004.
13. Clyde Cunningham provided a list of utility owners within the project area to Mr. Miller. Mr. Miller noted that early coordination with Colonial Pipeline had been done, and that he would provide correspondence to Mr. Cunningham.
14. Katie Mullins asked about the need for a raised median. Pam Conner responded that the intent of the project was to provide an aesthetically pleasing, pedestrian friendly, gateway corridor as the southern entrance into downtown Powder Springs. It was also noted that access concerns due to the potential for development within the southern part of the corridor might be better regulated by a raised median facility. Ms. Conner stressed it was the city's position that allowances be provided to ensure that the roadway remain a low-speed facility.
15. Ms. Mullins also raised a concern about using 11' lane widths and advised that 12' lanes would be recommended. It was decided to revise the typical section to provide 12' travel lanes and reduce the bicycle lanes to 4', which is acceptable to FHWA when curb and gutter is used.
16. Mr. Cunningham raised a concern about reserving the back five feet of R/W for utility placement. Currently, the multi-use trail would conflict with this location.
17. Mr. Miller followed that GDOT guidelines for multi-use trails allow for the elimination of a 5' separation from the roadway when bicycle lanes are used. This could potentially reduce the amount of R/W and environmental impacts.
18. Ms. Thomas also raised a concern regarding the acquisition of additional R/W to allow for a future widening to 4 lanes, since the project had not been modeled by ARC as a 4-lane facility.

19. After some discussion, it was decided that the typical section be reduced to eliminate the allowance for future widening, and that the multi-use trail would be located at the western back of curb.
20. Mr. Phillips advised that although the posted speed limit might be more suitable at 25mph north of the bridge over the railroad, that 35mph design speed would be required. Mr. Miller noted that in order to reduce impacts and right-of-way for side street tie-ins, that superelevation would not be used north of the railroad bridge. He suggested that AASHTO guidelines allow for non-superelevated roads in low-speed, urban areas.
21. Mr. Miller also noted that since the potential for side-streets being extended westward was prohibited by the railroad, the design of vertical tie-ins would not necessarily allow for open road conditions. Mr. Phillips stated that the side streets tie-ins would be looked at on a case-by-case basis.
22. Pam Conner advised that the allocation for TIP funding was incorrect, and that the PMA will need to be revised prior to executing the agreement.
23. A question regarding train traffic was posed to Norfolk Southern. A figure of approximately 50 trains per day at 40% capacity was given, but a future projection could not be made because demand was driven by economic conditions.
24. Steve Tiedemann asked a question regarding utilities to be placed on the bridge over N/S. N/S advised that there may be fees, but so long as vertical clearances were met, they would have no issue with utilities on the bridge.
25. A question was asked as to whether the N/S line was proposed as a high-speed commuter rail corridor, but N/S indicated that it was not.
26. Mr. Tiedemann also asked about information relative to the sanitary sewer main along Powder Springs Creek, and advised that he would need information to coordinate the placement of bridge piers for the new bridge at that location.

Action Items

WKD will provide minutes to be included in the revised concept report.

WKD will provide Edwards-Pitman a revised typical section as soon as possible.

GDOT will revise PMA according to the revised TIP funding allocation.

WKD will revise the project layout according to the new typical section and provide two copies to the city.

WKD will provide Norfolk Southern with revised design drawings for the Long Street Extension which allow room for an additional set of tracks on the west of the existing line.

ATTENDEES

Project:	Lewis Road Project
Project No:	STP-0004-00 (446), Cobb County
P.I. No.:	0004446
Date:	2-20-03
Time:	9:00 AM
Location:	GDOT District 7

NAME	REPRESENTING	TELEPHONE	E-MAIL
Key Phillips	GDOT	770-986-1050	Key.phillips@dot.state.ga.us
Robert Crawford	GDOT	770-986-1050	Robert.crawford@dot.state.ga.us
Clyde Cunningham	GDOT	770-986-1090	clyde.cunningham@dot.state.ga.us
Jeff Woodward	GDOT	770-528-3238	Jeff.woodward@dot.state.ga.us
Katie Mullins	GDOT	770-986-1073	Katie.mullins@dot.state.ga.us
Pam Black	GDOT	770-986-1113	Pam.black@dot.state.ga.us
Roxana Ene	GDOT	404-463-4377	Roxana.ene@dot.state.ga.us
Ralph Mellow, Jr.	GDOT	770-986-1050	Ralph.mellow@dot.state.ga.us
Pam Conner	City of Powder Springs	770-439-2500	planner@cityofpowdersprings.org
Scott Overbey	Norfolk Southern RR	404-582-5588	saoverbe@nscorp.com
John Bierkamp	Norfolk Southern RR	404-529-1398	John.bierkamp@nscorp.com

Andy Miller	W.K. Dickson	770-955-5574	amiller@wkdickson.com
Steve Tiedemann	JB Trimble	770-952-1022	stiedemann@jbtrimble.com
Femi Adesanya	JB Trimble	770-952-1022	fadesanya@jbtrimble.com
Susan Thomas	Edwards-Pitman	770-333-9484	sthomas@edwards-pitman.com
Linda Edwards	Edwards-Pitman	770-333-9484	ledwards@edwards-pitman.com

NOTICE OF LOCATION AND DESIGN APPROVAL

STP-0004-00 (446), Cobb County
P.1. NUMBER 0004446

Notice is hereby given in compliance with Georgia Code 22-2-109 that the Georgia Department of Transportation has approved the Location and Design of this project.

The date of location approval is MARCH 1, 2004.

The project is located in Cobb County between SR 6 / C.H. James Parkway and SR Business 6 / Marietta Street in the City of Powder Springs. The project is located in Land District 19 in Land Lots 875, 902, 949, 975, 976, 1023, 1024, 1049, and 1050.

The project consists of the widening and relocation of an existing rural 2-lane facility to an urban 2-lane facility with bicycle lanes, sidewalks, and a multi-use trail. The project also includes the replacement of an existing bridge over Powder Springs Creek, and a new grade separation bridge over Norfolk Southern Railroad.

Drawings or maps or plats of the proposed project, as approved, are on file and are available for public inspection at the Georgia Department of Transportation:

Mr. Jeff Woodward, Area Engineer
Georgia Department of Transportation
862 Barnes Mill Road
Marietta, GA 30062
Email: jeff.woodward@dot.state.ga.us
Tel: (770) 528-3238
Fax: (770) 528-5506

Any interested party may obtain a copy of the drawings or maps or plats or portions thereof by paying a nominal fee and requesting in writing to:

Mr. Ben Rabun, P.E., Project Manager
Georgia Department of Transportation
District 7
5025 New Peachtree Road
Chamblee, GA. 30041
Email: ben.rabun@dot.state.ga.us
Tel: (770) 986-1050
Fax: (770) 986-1022

Any written request or communication in reference to this project or notice MUST include the Project and P.I. Numbers as noted at the top of this notice.

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

PRACTICAL ALTERNATIVE REPORT

**STP-0004-00(446)
CITY OF POWDER SPRINGS
COBB COUNTY**

State Route No. Lewis Road

Date of Report: July 15, 2003

RECOMMENDATION FOR APPROVAL

Date Georgia Department of Transportation

Date U.S. Army Corps of Engineers

Date U.S. Fish and Wildlife Service

Date National Marine Fisheries

Date Environmental Protection Agency

PRACTICAL ALTERNATIVE REPORT

GENERAL PROJECT LOCATION/DESCRIPTION

The proposed project would be a realignment and reconstruction of the existing Lewis Road corridor located in the City of Powder Springs in Cobb County. The project limits are from the existing intersection of C.H. James Parkway at Oglesby Road to Marietta Street near the city government complex and town square in Powder Springs. The proposed typical section would be an urban section with one twelve-foot lane in each direction divided by a 20-foot raised median, four-foot bicycle lanes in each direction, 30" curb and gutter, grassed shoulders, 12' multi-use trail on the west side, and a 7' sidewalk on the east side. The proposed right-of-way would be 100' minimum, and the total length of the project is 1.3 miles.

NEED AND PURPOSE

The Lewis Road project would incorporate infrastructure improvements to an existing two-lane roadway that is currently in need of several modifications in order to provide a safe, attractive, and community-friendly corridor, which would ultimately provide a much needed alternative entrance to the City of Powder Springs.

- The project would address an undesirable geometry at the existing C.H. James Parkway / Oglesby Road / Lewis Road intersection by realigning Oglesby Road to intersect with a realigned Lewis Road about 450 feet from C.H. James Parkway.
- The project would replace a deficient bridge over Powder Springs Creek with a new bridge which meets GDOT and FEMA hydraulic and structural requirements.
- The project would eliminate a dangerous at-grade railroad crossing of Lewis Road at Norfolk Southern Railroad by providing a new overpass at this location.
- A relocation of the intersection of Long Street with Lewis Road would be provided to maintain access to existing residences west of the railroad, and an extension of Long Street, parallel to Norfolk Southern Railroad, into Powder Springs Park would provide more convenient access from areas south of the park.
- The project would also incorporate alternative transportation elements with the addition of bicycle lanes, multi-use trail, and sidewalks.
- The improvements would also include a gateway entrance feature, together with landscaped median and shoulders, which would promote its use as the southern entrance into Powder Springs, and encourage the development of underutilized properties along the corridor.
- The project would terminate north of the railroad overpass, splitting into one-way pairs which ultimately line up across from Oakview and Pineview Drives on Marietta Street, providing improved access to the Powder Springs North Square, and opportunity for enhanced circulation within the downtown commercial district.
- The one-way pairs would have cross-street connections at Atlanta Street and a new cross street located near the existing intersection of Murray Street and Lindley Lane. These cross streets would provide

two-way access between the northbound and southbound Lewis Road split alignment, enhancing circulation within the south square area.

EXISTING ROADWAY

POSTED SPEED	TYPICAL SECTION	RIGHT-OF-WAY WIDTH
35 mph	Two, 12' Lanes with grassed shoulders and ditches.	50'

EXISTING MAJOR STRUCTURES

FEATURES INTERSECTED/TYPE	LENGTH	WIDTH	SUFF. RATING	WETLAND/ STREAM AREA
Concrete bridge over Powder Springs Creek	73'	26'	69.67	Stream 6

PROPOSED ROADWAY

DESIGN SPEED	TYPICAL SECTION	RIGHT-OF-WAY WIDTH
35 mph	One 12' lane in each direction with a 20' raised median, 4' bicycle lanes each direction, 30" curb and gutter, grassed shoulders, 12' multi-use trail on the west side, and a 7' sidewalk on the east side.	100'

PROPOSED MAJOR STRUCTURES

FEATURES INTERSECTED/TYPE	LENGTH	WIDTH	WETLAND/ STREAM AREA
Proposed bridge over Powder Springs Creek	390'	73'-5	Stream 6
Proposed bridge over Norfolk Southern Railroad	329'	62''-5'	--

ALTERNATIVES CONSIDERED

PROPOSED ALTERNATIVE

(Best Fit)

Detailed Description and Reasons for Shifts: The overall corridor of the improved Lewis Road will serve as a southern gateway and entrance route into downtown Powder Springs. The beginning of the project will be a realignment of the existing C.H. James Parkway/Oglesby Road/Lewis Road intersection. The east-west through movement will be changed from Oglesby Road to Lewis Road, and Oglesby Road will then be realigned to intersect northward on Lewis Road at a "T" intersection. A county access road will also be realigned to form a "T" intersection with the realigned Oglesby Road. The roadway will then go on new alignment along a curve to the left, eventually reconnecting back to existing Lewis Road. The improved facility will cross Powder Springs Creek over a new bridge, replacing the existing substandard structure. The proposed improvements will also include a grade separation bridge over Norfolk Southern Railroad tracks, eliminating the existing at-grade crossing at Lewis Road/Butner Street, just west of Powder Springs Elementary School. Currently, a majority of traffic entering and leaving Powder Springs from the south and west use the at-grade crossing at Brownsville Road. Long lines of traffic in both directions on Brownsville Road are common when trains block traffic. The new grade separation over the railroad will allow a safe, unrestricted crossing of the Norfolk Southern tracks, which are projected to incur a significant increase in train traffic due to the recent completion of the Norfolk Southern's intermodal facility just to the south in the City of Austell. Long Street, which runs parallel to the railroad and then westward, serves a residential area to the west of the project. Access to these residences will be provided by a new "T" intersection near the beginning of the southern approach of the proposed bridge over the Norfolk Southern tracks. Long Street will also be extended into Powder Springs Park, providing convenient access from areas to the south. North of the proposed railroad bridge, Lewis Road will be on new alignment, curving northwest through a residential area and then a light industrial area to the east of the railroad, and then proceed northeast toward the proposed South Square Redevelopment Area as a split alignment of one-way pairs. The project will end at Marietta Street, with the northbound intersection being coincident to the existing intersection of Oakview Drive, and the southbound intersection being an improvement to Murray Street, just across from Pineview Drive, which accesses the city government complex. The project will also include side-street intersections and the associated turn lanes and tapers at Marchman Street, Atlanta Street, and Butner Street. Also included is a two-lane roadway connecting existing Long Street with Powder Springs Park.

The logical termini for the project will be: to the south, C.H. James Parkway, where the existing intersection will be reconstructed with Lewis Road as the through movement to the northeast, and to the north, at Marietta Street where a split alignment of one-way pairs will end across from Pineview Drive and Oakview Drive.

ALTERNATIVE I

Detailed Description and Reasons for Shifts: Alternative 1 consists of more closely holding to the existing corridor north of the new railroad overpass by widening Butner Street and continuing north to Marietta Street. Impacts to waters of the US would be the same as the proposed alternative. The difference between Alternative 1 and the Proposed Alternative is where the alignment traverses downtown Powder Springs; there are no existing waters of the US in this area. Nonetheless, Alternative 1 was not chosen due to the adverse effects to the Powder Springs Historic District, including the physical destruction of two significant contributing resources within the District. In addition, this alternative would displace approximately eight residences along Butner Street and two businesses along Marietta Street (the proposed alternative would displace four residences and four businesses).

ALTERNATIVE II

Detailed Description and Reasons for Shifts: Alternative 2 consists of improving existing Brownsville Road as the new gateway entrance to the City of Powder Springs, rather than utilizing Lewis Road. This alternative would widen and improve an existing two-lane roadway located north of Lewis Road and constructing the new railroad overpass at the existing at-grade crossing at Brownsville Road, near Marietta Street. This alternative would have fewer impacts to wetlands than the proposed alternative. However, Brownsville Road traverses an intact residential neighborhood that would experience substantial adverse impacts if Brownsville Road were to be developed as the primary gateway to and from downtown. This alternative was not chosen due to the major impacts to the western edge of the downtown business district that would result from an eastern bridge approach and it does not meet the need and purpose of the proposed project.

ALTERNATIVE III

Detailed Description and Reasons for Shifts: Alternative 3 consists of shifting the northbound one-way intersection of Lewis Road at Marietta Street to avoid displacement of the historic commercial property at Marietta Street. This alternative would have no avoidance or minimization of wetland impacts, as the only difference in the alignment occurs at Marietta Street. This alternative would have the same number of residential displacements and one less business displacement than the Proposed Alternative. However, this alternative was not chosen because it would create an undesirable and unsafe offset intersection of Lewis Road across from Oakview Drive.

***NOTE: WK Dickson & Co., Inc. in its representations of preliminary concepts, strives to show as nearly as possible the route and right-of-way requirements of projects. Because of the preliminary nature of these location studies, certain information cannot be finalized until completion of the design stage during the project development process. In areas where existing facilities are to be improved and are in need of vertical and/or horizontal realignment, WK Dickson & Co., Inc. tries to present a "worst case" of impacts, in anticipation of a reduction of these impacts and right-of-way requirements at the detailed design stage.**

PROPOSED ALTERNATIVE ANALYSIS CHART

FACTOR	PROPOSED ALTERNATIVE (See detailed Description)	INFO. SOURCE
Length	1.3 miles	Design Plan
Typical Section	Two 12' travel lanes separated with a 20' raised median. The shoulders would be urban with curb and gutter and 5' sidewalks.	
Displacements		
Residential	4	Field Survey
Commercial (Industrial)	4	Field Survey
Mobile Home	0	Field Survey
Historic	1	Field Survey
Misc.	0	Field Survey
Historic Impacts	3	Field Survey
Wetlands	2.40 acre	Field Survey
Stream Channel	678 linear feet	Field Survey
Cost Estimates		
Construction	\$12,525,351	Concept Report
Right-of-Way	\$ 2,000,000	Concept Report
Reimbursable Utilities	\$ 420,000	Concept Report
Total	\$14,945,351	

COMPARISON OF WETLAND & STREAM IMPACTS BY CROSSING								
SITE DESIGNATION	Proposed Alternative (acres/linear feet)		Alternative I (acres/linear feet)		Alternative II (acres/linear feet)		Alternative III (acres/linear feet)	
	Acres	Linear Feet	Acres	Linear Feet	Acres	Linear Feet	Acres	Linear Feet
Stream 1		178	NA	NA	NA	NA	NA	NA
Stream 2		75	NA	NA	NA	NA	NA	NA
Stream 3		125	NA	NA	NA	NA	NA	NA
Wetland 4	0.04		NA	NA	NA	NA	NA	NA
Wetland 5	1.44		NA	NA	NA	NA	NA	NA
Stream 6 (Powder Springs Creek)		0	NA	NA	NA	NA	NA	NA
Stream 7		0	NA	NA	NA	NA	NA	NA
Stream 8		0	NA	NA	NA	NA	NA	NA
Stream 9		80	NA	NA	NA	NA	NA	NA
Wetland 10	0.71		NA	NA	NA	NA	NA	NA
Stream 11		220	NA	NA	NA	NA	NA	NA
Wetland 12	0.21		NA	NA	NA	NA	NA	NA
TOTAL	2.40	678	NA	NA	NA	NA	NA	NA

Note: NA = Not Available

RECOMMENDATIONS: Proposed Alternative is recommended.

Attachments: Typical Sections

PREPARED BY: Jonathan A. Sell, EPEI

DEPARTMENT OF TRANSPORTATION

STATE OF GEORGIA

PROJECT CONCEPT REPORT

Project Number: STP-0004-00 (446)

County: Cobb County

P. I. Number: 0004446

Federal Route No.: n/a

State Route No.: n/a

LEWIS ROAD REALIGNMENT

Recommendation for approval:

DATE 12/03/03

B. J. R. [Signature]

Project Manager

DATE 12/08/03

Buddy Gatten [Signature]

District Engineer

This project concept is contained in the Regional Transportation Plan (RTP) and/ or in the State Transportation Improvement Program (STIP).

Date 12/18/03

Joseph P. [Signature]

State Transportation Planning Administrator

Date _____

Office of Financial Management Administrator

Date _____

State Environmental/ Location Engineer

Date _____

State Traffic Safety and Design Engineer

Date _____

State Bridge and Structural Design Engineer

Date _____

Project Review Engineer

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

PROJECT CONCEPT REPORT

Project Number: STP-0004-00 (446)
County: Cobb County
P. I. Number: 0004446

Federal Route No.: n/a
State Route No.: n/a

LEWIS ROAD REALIGNMENT

Recommendation for approval:

DATE 12/08/03

B. R. Carter

Project Manager

DATE 12/08/03

Bobby Gatter BSC

District Engineer

This project concept is contained in the Regional Transportation Plan (RTP) and/ or in the State Transportation Improvement Program (STIP).

Date _____

Date 12/08/03

State Transportation Planning Administrator

Roy Mitchell

Office of Financial Management Administrator

Date _____

State Environmental/ Location Engineer

Date _____

State Traffic Safety and Design Engineer

Date _____

State Bridge and Structural Design Engineer

Date _____

Project Review Engineer

DEPARTMENT OF TRANSPORTATION

STATE OF GEORGIA

PROJECT CONCEPT REPORT

Project Number: STP-0004-00 (446)

County: Cobb County

P. I. Number: 0004446

Federal Route No.: n/a

State Route No.: n/a

LEWIS ROAD REALIGNMENT

Recommendation for approval:

DATE 12/03/03

B. J. R. [Signature]

Project Manager

DATE 12/08/03

B. G. [Signature]

District Engineer

This project concept is contained in the Regional Transportation Plan (RTP) and/ or in the State Transportation Improvement Program (STIP).

Date _____

State Transportation Planning Administrator

Date _____

Office of Financial Management Administrator

Date _____

State Environmental/ Location Engineer

Date _____

State Traffic Safety and Design Engineer

Date 1/3/04

Paul V. [Signature]

State Bridge and Structural Design Engineer

Date _____

Project Review Engineer

Department of Transportation
State of Georgia

INTERDEPARTMENTAL CORRESPONDENCE

File: CM-0004-00(446) Cobb County
P.I. No. 0004446

Office: Traffic Safety & Design
Atlanta, Georgia
Date: December 19, 2003

From: ^{PMA/sz} Phillip M. Allen, State Traffic Safety and Design Engineer

To: Meg Pirkle, Assistant Director of Preconstruction

Subject: Project Concept Report Review

JAN - 8 2004

We have reviewed the above referenced concept report for the realignment & reconstruction of Lewis Road in the City of Powder Springs in Cobb County.

The Office of Traffic Safety & Design finds this report satisfactory for approval because it will improve safety and traffic operations within this area.

PMA/sz

Attachment (signature page)

Cc: Harvey Keepler, State Environment/Location Engineer
Buddy Gratton, District Engineer
Attn: Key Phillips
David Mulling, State Review Engineer, w/ attachment
Paul Liles, State Bridge & Structural Design Engineer
Joe Palladi, State Transportation Planning Administrator
Kathy Bailey, TMC
General Files
Office Files

DEPARTMENT OF TRANSPORTATION

STATE OF GEORGIA

PROJECT CONCEPT REPORT

Project Number: STP-0004-00 (446)

County: Cobb County

P. I. Number: 0004446

Federal Route No.: n/a

State Route No.: n/a

LEWIS ROAD REALIGNMENT

Recommendation for approval:

DATE 12/08/03

B. J. R. [Signature]

Project Manager

DATE 12/08/03

Buddy Gatten [Signature]

District Engineer

This project concept is contained in the Regional Transportation Plan (RTP) and/ or in the State Transportation Improvement Program (STIP).

Date _____

State Transportation Planning Administrator

Date _____

Office of Financial Management Administrator

Date _____

State Environmental/ Location Engineer

Date 12-28-03

Phillip M. Allen [Signature]

State Traffic Safety and Design Engineer

Date _____

State Bridge and Structural Design Engineer

Date _____

Project Review Engineer

DEPARTMENT OF TRANSPORTATION

STATE OF GEORGIA

PROJECT CONCEPT REPORT

Project Number: STP-0004-00 (446)

County: Cobb County

P. I. Number: 0004446

Federal Route No.: n/a

State Route No.: n/a

LEWIS ROAD REALIGNMENT

Recommendation for approval:

DATE 12/08/03 _____ B. J. R. [Signature]
Project Manager

DATE 12/08/03 _____ Buddy Gatten [Signature]
District Engineer

This project concept is contained in the Regional Transportation Plan (RTP) and/ or in the State Transportation Improvement Program (STIP).

Date _____
State Transportation Planning Administrator

Date _____
Office of Financial Management Administrator

Date _____
State Environmental/ Location Engineer

Date _____
State Traffic Safety and Design Engineer

Date _____
State Bridge and Structural Design Engineer

Date 12-11-03 _____ David J. Mulling [Signature]
Project Review Engineer

Value Engineering Process

VALUE ENGINEERING PROCESS

Introduction

This report summarizes the analysis and conclusions by the PBS&J Value Engineering team as they performed a VE Study during the period of April 9-12, 2007 in Atlanta, Georgia, for the Georgia Department of Transportation.

The Value Engineering Study team and its leadership were provided by PBS&J. This VE Team consisted of the following:

Les Thomas, P.E., CVS-Life	VE Team Leader
Ramesh Kalvakaalva, PE	Structural Engineer
Luke Clarke, P.E.	Highway Design Engineer
Gary King	Highway Construction Specialist

The Value Engineering Team followed the Seven Step Value Engineering job plan as promulgated by SAVE International. This Seven Step job plan includes the following:

- **Investigation/Information Phase** – during this phase of the VE Team’s work, the team received a briefing from the designers and project delivery team representatives of the Georgia Department of Transportation (GDOT). This briefing included discussions of the design intent behind the project and the cost concerns. Gary King visited the project site and provided the team with photos and his insight.
In the working session that followed, the VE Team developed cost models from the cost data provided by GDOT and the designers and familiarized themselves with the construction drawings and other data that was available to the team. Some of the representative project information (concept report and cost estimate,) may be found in the tabbed section of this report entitled *Project Description*. Following this current narrative, the reader will also find a cost model done in the Pareto fashion, i.e., identifying the highest costs down to the lowest costs for the larger construction cost elements. This cost model, developed by the VE Team, was used by the VE Team to help focus their week of work. The headings on the Pareto Chart also were used as headings for creative phase activities.
- **Analysis Phase** – during this phase the VE Team determined the “**Functions**” of the project. This was accomplished by reviewing the project from the simplest format in asking the questions of “What is the project suppose to do?”, and “How is it suppose to accomplish this purpose? In the Value Engineering vernacular, the answers to these questions are cast in the form of active verbs and measurable nouns. These verb/noun pairs form the basis of the function analysis which distinguishes a Value Engineering effort from a potentially damaging cost cutting exercise.

- Following that selection process, the VE Team used the following values as measures of whether or not an alternative had enough merit to be carried forward in the VE process:
 - Construction Cost Savings
 - Maintainability
 - Ability to Implement the Idea
 - General Acceptability of the Alternatives
 - Constructability

Based on these measurement sticks, the VE Team evaluated the alternatives and graded them from 5 (Excellent) down to 1 (Poor). Other notes about the alternatives are annotated at the bottom of the enclosed creative and evaluation sheets.

- **Development Phase** – During this phase, the VE Team developed each of the selected design alternatives. This effort included a detailed explanation of the idea with sketches as appropriate to clarify the idea from the original concept, advantages and disadvantages, a technical explanation and an estimation of the cost and resultant savings if implemented. (see the tabbed section – Study Results)
- **Recommendation Phase** – During this phase the VE Team reviews the alternative ideas to confirm which ones are appropriate for the project, have an opportunity for success and which will improve the value of the project if implemented.
- **Presentation Phase** – As noted earlier, the team made an informal “out-briefing” on the last day of the workshop, designed to inform the Owners and the Designers of the initial findings of the VE Study. This written report is intended to formalize those findings.

The VE team is enclosing a copy of the attendance sheets so that the reader can be informed about who participated in the workshop proceedings. The cost model developed in the information phase is also enclosed. This cost model is done in the Pareto Fashion. This means that it is intended to highlight the high cost items in the current working estimate for the construction of the project. These high cost items were then evaluated by the VE Team as to whether the team might be able to have an effect on these line items. Where it was felt that the team might affect the line items, they were typically used as the topics for the creative phase.

- The important functions of the project were identified as follows:
 - **Project Objective/Goals**
 - **Provide a Gateway Access to the town of Powder Springs**
 - **Improve Operations**
 - **Improve Line-of-Sight**
 - **Increase Load Capacity**
 - **Preserve Historic Areas**
 - **Improve Safety**
 - **Project Basic Functions**
 - **Provide Railroad Crossing Grade Separation**
 - **Replace Deficient Bridge**
 - **Provide Additional Multi-Use Trails**
 - **Provide Additional Turn Lanes**
 - **Provide Raised Median**
 - **Rehabilitate Existing Streets**
 - **Provide Park Access for Bikes and Pedestrians**

This function analysis is documented further through the inclusion of the Function Analysis and Cost –Worth worksheets. The Cost-Worth Ratios that are included helped the VE Team to identify areas of interest for the brainstorming session. When a function has a current cost-worth ratio of greater than 1.00 it is often found that there are opportunities for reducing the cost, thereby better matching its actual worth for the project.

- **Speculation Phase** - The VE team performed a brainstorming session to identify ideas that might help meet the project objectives:
 - Improve Safety
 - Improve Access
 - Improve Line-of-Sight
 - Increase Load Capacity
 - Separate Traffic

This brainstorming session initially identified numerous ideas that were then evaluated in the Judgment phase. The reader will find the creative worksheets enclosed. These same work sheets were also used to record the results of the Judgment/Evaluation Phase.

- **Evaluation Phase** – Once the VE Team identified the creative ideas, it was necessary to decide which alternatives should be carried forward. This is the work of the Evaluation or Judgment Phase. The VE Team reflected back on the project constraints and objectives shared with the team by the owner’s representatives, in the kick-off meeting on the first day of the workshop. From that guidance, the team selected ideas that they believed would improve the project by a vote process.



Function analysis and cost-worth

PROJECT: **Project No.: STP-0004-00(446) Cobb County- P.I. Number: 0004446**
Lewis Road Corridor

SHEET NO.: **1 of 2**

NO.	ELEMENT	FUNCTION			COST (000)	WORTH (000)	COMMENTS
		VERB	Noun	KIND			
	Roadway	Enhance	Safety	B	\$8,481	\$7,000	C/W Ratio = 1.2
		Support	Traffic	B			
		Route	Stormwater	RS			
		Expedite	Commerce	HO			
		Enhance	Access	HO			
		Improve	Connectivity	HO			
		Distribute	Traffic	S			
	Bridge 1 (Powder Springs Creek)	Cross	Creek	B	\$2,927	\$2,500	C/W Ratio = 1.1
		Support	Traffic	B			
		Allow	Flows	RS			
		Protect	Traffic	RS			
		Minimize	Erosion	RS			

Function defined as: **Action Verb**
Measurable Noun

Kind: B = Basic
 S = Secondary
 RS = Required Secondary
 HO = Higher Order
 LO = Lower Order
 U = Unwanted



Function analysis and cost-worth

PROJECT: **Project No.: STP-0004-00(446) Cobb County- P.I. Number: 0004446** SHEET NO.: **2 of 2**
Lewis Road Corridor

NO.	ELEMENT	FUNCTION			COST (000)	WORTH (000)	COMMENTS
		VERB	Noun	KIND			
	Bridge 2 (N&S Railroad)	Cross	Railroad	B	\$2,624	\$2,500	C/W Ratio = 1.04
		Support	Traffic	B			
		Allow	Flows	RS			
		Protect	Traffic	RS			
		Minimize	Erosion	RS			
	Landscape	Improve	Aesthetics	B	\$331	\$331	C/W Ratio = 1.0
	Signal 1	Improve	Safety	B	\$86	\$86	C/W Ratio = 1.0
	Signal 2 (Modification)	Improve	Safety	B	\$5	\$5	C/W Ratio = 1.0
	Lighting	Improve	Safety	B	\$1,214	\$1,214	C/W Ratio = 1.0
	Permanent Erosion Control	Minimize	Erosion	B	\$104	\$104	C/W Ratio = 1.0
	Temporary Erosion Control	Minimize	Erosion	B	\$141	\$141	C/W Ratio = 1.0
	Right-of-Way	Provide	Area	RS	\$3,000	\$3,000	C/W Ratio = 1.0

Function defined as: Action Verb
 Measurable Noun
 Kind: B = Basic HO = Higher Order
 S = Secondary LO = Lower Order
 RS = Required Secondary
 Cost/Worth Ratio =
 (Total Cost ÷ Basic Worth)

Designer's Presentation Attendance April 9, 2007



PROJECT: GEORGIA DEPARTMENT OF TRANSPORTATION
 STP-0004-00(446) Cobb County- P.I. Number: 0004446 Lewis Road Corridor

SHEET NO.: 1 of 1

NAME	EMPLOYEE ID NO.	DOT OFFICE OR COMPANY	PHONE NUMBER	EMAIL ADDRESS
Lisa Myers	00244168	GDOT - Engineering Services	404-651-7468	lisa.myers@dot.state.ga.us
Gary King		PBS&J	770-933-0280	grking@pbsj.com
Les Thomas		PBS&J	678-677-6420	LThomasPE@aol.com
Ramesh Kazvakaalva		CSI	404-685-8001	Rameshk@civilservicesinc.com
Luke W. Clarke		PBS&J	205-969-3776	lwclarke@pbsj.com
Ron Wishon		GDOT-OES	404-651-7470	ron.wishon@dot.state.ga.us
James Harry	00276732	GDOT D7 AZ	770-528-3238	James.harry@dot.state.ga.us
Mac Cranford	00869897	GDOT D7 Precon	770-986-1097	Mac.cranford@dot.state.ga.us
Mike Lobdell	00350181	GDOT	770-986-1257	Mike.lobdell@dot.state.ga.us
Clayton Bennett	00297327	GDOT	404-656-5283	Clayton.bennett@dot.state.ga.us
Lamu Chanthavong	00910522	GDOT OEL	404-699-4463	Lamu.Chanthavong@dot.state.ga.us
Andy Miller		FOCUS Development & Eng	678-787-2135	amiller@focuseng.net
Jerry Milligan		GDOT R/W	770-986-1541	Jerry.milligan@dot.state.ga.us
Amber Perkins	00850268	GDOT OEL	404-699-3471	Amber.perkins@dot.state.ga.us
Brian Summers	00208175	GDOT OES		Brian.summers@dot.state.ga.us

CREATIVE IDEA LIST and EVALUATION



PROJECT: GEORGIA DEPARTMENT OF TRANSPORTATION

SHEET NO.:

1 of 2

Project No.: STP-0004-00(446) **Cobb County-** P.I. Number: 0004446

Lewis Road Corridor

NO.	IDEA DESCRIPTION	RATING
1	Locate new railroad crossing north to Park Rd. and leave Lewis Rd. as is	1
2	Railroad Bridge – Eliminate end spans and use walled abutments	5
3	Railroad Bridge - Reduce raised median to four feet and sidewalks to five feet	5
4	Powder Springs Creek Bridge – Route bikes to multi-use trail and reduce multi-use trail to 10' width	5
5	Powder Springs Creek Bridge – Relocate bikes and pedestrians to other new structure	1
6	Railroad Bridge – Relocate bikes and pedestrians to other new structure	1
7	Powder Springs Creek Bridge - Reduce raised median to four feet, and multi-use trail to 10'	5
8	Widen Powder Springs Creek Bridge to the west and use reduced width	1
9	Build new Powder Springs Creek Bridge in same location as existing bridge	1
10	Shift new Powder Springs Creek Bridge to the east 25' to 30'	DS
11	Build twin bridges at Powder Springs Creek	1
12	Lower Grade from Sta. 78+00 to 91+00	DS
13	Build new Powder Springs Creek Bridge for 100 yr. Storm.	DS
14	Increase maximum grade to 6%	1
15	Build Lewis Road at Marietta Street using brick pavers	1
16	Relocate the Bike paths to the proposed multi-use trail	5
17	Build a new 2 lane road with a center lane in-lieu of raised median	1
18	Selectively utilize the existing Marchman, Atlanta, Hotel and Long Street by milling and installing a new 1-1/2" surface course	5
19	Jack and Bore a new 48" pipe in-lieu of 2-36" pipes, grout fill the existing pipe to be abandoned	5
20	Build new Powder Springs Creek Bridge for vehicles only in the existing location and provide a separate structure for pedestrians and bikes	1
21	Delete proposed new county access road, leave road as is and route using existing Oglesby road and tie-in at proposed new Oglesby location	1
22	Leave a right turn onto Oglesby Road at present location	1
23	Retain County Access road as is and construct a right in right out at Lewis Road. Delete new county access road realignment	5

Rating: 1→2 = Generally not acceptable; 3 = Little Opportunity for Positive Change; 4→5 = Most likely to be Developed;
 DS = Design Suggestion; ABD = Already Being Done

CREATIVE IDEA LIST and EVALUATION



PROJECT: GEORGIA DEPARTMENT OF TRANSPORTATION

SHEET NO.:

2 of 2

Project No.: STP-0004-00(446) Cobb County- P.I. Number: 0004446

Lewis Road Corridor

NO.	IDEA DESCRIPTION	RATING
24	Retain existing intersection of Lewis Rd. and C.H. James Parkway (plans indicate that it is to be reconstructed)	DS
25	Construct a multi-use trail from the intersection of Long Street and Lewis Road along the east side of the proposed new road, along the north bound one way street to the end of the project at Marietta Street. Relocate the bike path from the travel lanes onto the Multi-use Trail. Delete bike path from south bound one way street and provide sidewalks on both sides of street	1
26	Provide architectural lighting along multi-use trails only. Delete bike paths and sidewalks	1
27	Between Sta. 86+00 and Sta. 95+00, provide a concrete barrier during construction to prevent ponding on the street	DS
28	During Stage I, install a temporary barrier from Sta. 67+50 to Sta. 71+00 to protect 1:1 slope in clear zone	DS
29	From Sta. 69+40 to Sta. 74+00 and from Sta. 76+00 to Sta. 80+00, review for possible drainage problems during staging	DS
30	Suggest offering culvert alternatives for the double 7'x 4' box culvert	DS
31	Consider use of buried curb and gutter in-lieu of header curbs	DS
32	Construct one (1) multi-use trail (10 foot) for both bikes and pedestrians – delete bike lanes from the roadway. Add a multi-use trail from Long St. and Lewis Road to end of project along easterly new road	5
33	From CH James Parkway to the Lewis Road/ Long Street intersection, construct two (2) multi-use trails (10 foot each) for both bikes and pedestrians – delete bike lanes from the roadway and delete the sidewalks. From the Lewis Road/ Long Street intersection delete the bike lanes add a multi-use trail to the end of the project along the east side of the new Lewis Road, and also along the easterly side of the new one way road to the end. Delete bike lanes from the southbound one way street and provide sidewalks on both sides. This should improve the safety in the downtown area.	5
34	Powder Springs Creek Bridge – add a high multi-pipe railing	DS
35	From CH James Parkway to the Lewis Road/ Long Street intersection, delete the pedestrian lighting	4
36	Powder Springs Creek Bridge – use steel H piles in-lieu of drilled caissons	5

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