

**DEPARTMENT OF TRANSPORTATION  
STATE OF GEORGIA**

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**OFFICE OF DESIGN POLICY & SUPPORT  
INTERDEPARTMENTAL CORRESPONDENCE**

**FILE** P.I. # 422550-  
NH000-0006-02(055)  
Dougherty County  
GDOT District 4 - Tifton  
SR 3 @ SR 91 & N. Jefferson -  
Interchange Ramps

**OFFICE** Design Policy & Support

**DATE** October 4, 2012

**FROM**  Brent Story, State Design Policy Engineer

**TO** SEE DISTRIBUTION

**SUBJECT** APPROVED REVISED CONCEPT REPORT

Attached is the approved Revised Concept Report for the above subject project.

Attachment

**DISTRIBUTION:**

Bobby Hilliard, Program Control Administrator  
Genetha Rice-Singleton, State Program Delivery Engineer  
Glenn Bowman, State Environmental Administrator  
Cindy VanDyke, State Transportation Planning Administrator  
Ben Rabun, State Bridge Engineer  
Kathy Zahul, State Traffic Engineer  
Angela Robinson, Financial Management Administrator  
Lisa Myers, State Project Review Engineer  
Charles "Chuck" Hasty, State Materials Engineer  
Jeff Baker, State Utilities Engineer  
Ken Thompson, Statewide Location Bureau Chief  
Andy Casey, State Roadway Design Engineer  
Attn: Sam Woods, Design Group Manager  
Joe Sheffield, District Engineer  
Brent Thomas, District Preconstruction Engineer  
Tim Warren, District Utilities Engineer  
Albert Shelby, Project Manager  
BOARD MEMBER - 2nd Cong. District

**DEPARTMENT OF TRANSPORTATION  
STATE OF GEORGIA  
REVISED PROJECT CONCEPT REPORT**

Project Type: Interchange Reconstruction  
GDOT District: 4  
Federal Route Number: US 19, US 82

P.I. Number: 422550  
County: Dougherty  
State Route Number: SR 3, SR 520, SR 133, SR 91

The proposed Revised Concept Report would reduce the typical section width of SR 133/North Jefferson Street, Ramp A, Ramp B. The reduced width was recommended during the VE study and approved for implementation on July 22, 2011.

**Submitted for approval**

C. Andy Curry  
State Roadway Design Engineer

5/24/12  
DATE

Bobby Hilliard  
Office Head

6-11-2012  
DATE

Albert Shelby  
GDOT Project Manager

5/31/12  
DATE

**Recommendation for approval:**

GLENN BOWMAN\*/EKP  
State Environmental Administrator

8/20/12  
DATE

State Traffic Engineer

DATE

BEN ROBUN\*/EKP  
State Bridge Engineer

9/19/12  
DATE

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

CINDY VANDUKE\*/EKP  
State Transportation Planning Administrator

8/7/12  
DATE

*\* - RECOMMENDATION ON FILE*

## **PLANNING, APPROVED CONCEPT, & BACKGROUND DATA**

### **Background**

SR 3/Liberty Expressway is functionally classified as an urban expressway that provides a bypass around downtown Albany on the eastern and northern sides of the city. SR 3/Liberty Expressway has an existing interchange with SR 133/N. Jefferson Street directly north of downtown Albany. SR 133/N. Jefferson Street is the major north-south route through downtown Albany and is classified as an urban principal arterial. Philema Road, which is a northeast-southwest road extending into a high-growth area of Lee County, intersects with SR 133/N. Jefferson Street just north of the interchange. The close proximity of Philema Road to the interchange creates operational conflicts with the traffic on SR 133/N. Jefferson Street. In addition, there is a significant amount of traffic weaving occurring on westbound SR 3/Liberty Expressway in the area of the interchange, specifically around the entrance and exit ramps to SR 133/N. Jefferson Street. Land use surrounding the proposed project is mostly commercial.

### **Travel Demand and Operational Conditions and Safety**

Increasing traffic volumes during the morning and afternoon peak hours have caused this interchange's operations to deteriorate over time. The operational deficiency occurs at the two loop ramps (at SR 3/Liberty Expressway westbound to SR 133/N. Jefferson Street southbound, and at SR 133/N. Jefferson Street northbound & southbound to SR 3/Liberty Expressway westbound), which creates extensive weaving movements on the SR 3/Liberty Expressway mainline. These weaving movements decrease operations and capacity on SR 3/Liberty Expressway as well as contribute to accidents on this section of the freeway.

### **Traffic Volumes**

The existing and anticipated traffic volumes show an unacceptable level of service for the interchange. By the year 2005, total traffic volumes on SR 3/Liberty Expressway and SR 133/N. Jefferson Street are expected to be approximately 54,000 and 35,000 vehicles per day, respectively. This translates into a level-of-service of "F" for the interchange ramps and mainline, which is considered unacceptable traffic conditions.

By the year 2025, traffic volumes on SR 3/Liberty Expressway and SR133/N. Jefferson Street in the area of the interchange are expected to be approximately 87,000 and 59,000 vehicles per day, respectively. This is a level-of-service LOS "F," with motorists experiencing increased congestion, weaving, delay, and possibly more accidents.

### **Accident Data**

There were 113 accidents within the interchange limits between 1995-1997 and in 2001 (the latest years that complete accident data was available). At least 25 of these accidents were "rear-end" type accidents and 15 were "sideswipes" which suggests a weaving conflicts between: westbound 'through' vehicles on SR 3/Liberty Expressway, vehicles on westbound SR 3/Liberty Expressway that are exiting at SR 133/N. Jefferson Street, and vehicles entering westbound SR 3/Liberty Expressway from SR 133/N. Jefferson Street.

Accident data for the years 2000 and 2001, showed 23 and 45 accidents, respectively, that occurred specifically on SR 3/Liberty Expressway in the area of the interchange. Many of these accidents are indicative of conflicts between vehicles weaving off of, or onto, the westbound lanes of SR 3/Liberty Expressway. For the year 2000, 65% of the accidents were "rear-end" type

and 26% were “sideswipe” or “angle-intersecting.” Similarly, for year 2001 accident data 55% were “rear-end” and 31% was “sideswipe” or “angle-intersecting.”

### **Proposed Project**

The project proposed to improve the interchange is known as P.I. 422550. It should address and correct the existing safety and operational deficiencies in the area of SR 91/N. Jefferson Street, Philema Road, and SR 3/Liberty Expressway. This is important because the existing interchange has insufficient capacity for current and future volumes.

Specifically, the project proposed to relocate the westbound exit and entrance ramps directly across from Philema Road, which will create a four-leg intersection and require a new westbound entrance ramp and bridge over the Norfolk Southern Railroad. The project would also remove the existing SR 3/Liberty Expressway westbound entrance loop ramp from SR 133/N. Jefferson Street and the SR 3/Liberty Expressway exit ramp to SR 133/N. Jefferson Street, and widen SR 133/N. Jefferson Street from the SR 3/Liberty Expressway bridge to Philema Road. In addition, it would add left turn lanes at the Philema Road, SR 133/N. Jefferson Street intersection, add a second right turn lane on northbound SR 133/N. Jefferson Street to Philema Road, and add sidewalks/raised median/bike lanes to SR 133/N. Jefferson Street.

This project is listed in the locally-adopted Dougherty Area Regional Transportation Study (DARTS) Transportation Improvement Program and is a critical component of the DARTS year 2025 Transportation Plan. The project is not located on a designated State Bicycle Route.

### **Project Termini**

The eastern logical terminus for this project is on Philema Road at its intersection with Jewel Street. The project’s western logical terminus is SR 3/Liberty Expressway. The north and south termini is approximately one-half mile north and south of this interchange on SR 3/Liberty Expressway. These project termini are logical because the operational improvement being proposed does not require an additional project to accompany it, and the termini of the proposed project are limited by needing only enough distance to provide ample merging opportunities without causing weaving problems.

### **Other Programmed Projects**

There are two programmed projects in the area, which are also proposed interchange improvement projects on SR 3/Liberty Expressway. They are known as P.I. 422560 (SR 3/Liberty Parkway at Clark Avenue) and P.I. 422570 (SR 3/ Liberty Expressway at SR 133/Moultrie Road).

### **Need and Purpose**

The need exists to reduce congestion, improve operations, and improve safety on the area of the interchange of SR 3/Liberty Expressway interchange at SR 133/N. Jefferson Street interchange, as well as at the intersection of SR 133/N. Jefferson Street at Philema Road. These improvements are also needed for vehicles using the loop ramps to exit or enter westbound SR 3/Liberty Expressway at SR 133/N. Jefferson Street, as well as on SR 133/N. Jefferson Street up to Philema Road. The project’s purpose is to improve safety, reduce accidents, and improve the operation and level-of-service of the interchange and at a key intersection that is adjacent on the northern side.

**Description of the approved concept:** The proposed project would reconstruct the SR 3/Liberty Expressway interchange with SR133/North Jefferson Street in Albany. The proposed work would relocate the existing westbound entrance and exit ramps to align directly with SR/91Philema Road to create a four-leg intersection. The relocated westbound entrance and exit ramps would Bridge over Norfolk Southern Railroad and SR133/North Jefferson Street, respectively. The proposed work would reconstruct SR133/North Jefferson Street to add auxiliary turn lanes, sidewalks, bicycle lanes, and a raised median.

**PDP Classification:**     Major                       Minor  
**Federal Oversight:**     Full Oversight     Exempt     State Funded     Other

**Projected Traffic as shown in the approved Concept Report: ADT**

|                                    | Open Year (2005) | Design Year (2025) |
|------------------------------------|------------------|--------------------|
| Liberty Expressway (SR3/520)       | :53,840          | :87,260            |
| North Jefferson Street (SR 91/133) | :35,100          | :59,200            |

**Updated Traffic: ADT**

|                                    | Open Year (2016) | Design Year (2036) |
|------------------------------------|------------------|--------------------|
| Liberty Expressway (SR3/520)       | :46,625          | :70,250            |
| North Jefferson Street (SR 91/133) | :23,000          | :34,125            |

**Functional Classification (Mainline):**

SR 3/Liberty Expressway: Urban Freeway and Expressway  
SR133/North Jefferson Street: Urban Minor Arterial Street

**VE Study anticipated:**     No                       Yes                       Completed – Date: 4/14/2011

*\*Note A VE study was held April 11-14, 2011. See attachment for responses to the implementations recommendation. A VE reversal/revision was approved 6/8/12 and attached for reference.*

## PROPOSED REVISIONS

| Approved Features:   | Proposed Features:   |
|--|--|
| <p>Roadway typical section widths are revised based on recommendations from a Value Engineering Study. The approved typical section features to be changed include:</p> <ul style="list-style-type: none"> <li>• 16-foot wide urban shoulders on North Jefferson Street and Philema Road.</li> <li>• 12-foot through travel lanes, on North Jefferson St. and Philema Rd.</li> <li>• 12 foot total shoulder,10-foot paved outside shoulder along Ramps A and B,</li> <li>• Urban shoulder on North Jefferson Street from Station 123+00 to Station 133+20 Lt.</li> <li>• 6-foot sidewalks along with 4-foot bike lanes on North Jefferson Street and Philema Road</li> <li>• Ramp A width = 34 foot</li> <li>• Ramp B width = 42 foot</li> </ul> | <p>A VE Study was held April 11-14, 2011. Several recommendations were made by the VE team. All of the recommendations were analyzed by the design team and presented for approval to be included in the design. The following recommendations were approved through the VE implementation and the VE reversal/revision:</p> <ul style="list-style-type: none"> <li>• 12-foot wide urban shoulders along North Jefferson Street and Philema Road.</li> <li>• 11-foot wide inside through lanes along North Jefferson Street and Philema Rd.</li> <li>• 12 foot total shoulder,8-foot paved outside shoulders along Ramps A and Ramp B</li> <li>• Rural shoulder on North Jefferson Street from Station 123+00 to Station 133+20 Lt.</li> <li>• 5-foot sidewalks, 4-foot bike lanes along North Jefferson Street</li> <li>• Ramp A width = 28 foot</li> <li>• Ramp B width = 40 foot</li> </ul> |
| <p><b>Reason(s) for change:</b> Reduction in width of the typical sections for SR133/North Jefferson Street SR 91/Philema Road and Ramps A and B is a result of the approved VE study implementation dated April 25,201.</p>   |  |

## ENVIRONMENTAL

### Air Quality:

Is the project located in a PM 2.5 Non-attainment area?  No  Yes  
 Is the project located in an Ozone Non-attainment area?  No  Yes

**Potential environmental impacts of proposed revision:** Reduction of the project footprint along SR 133/ North Jefferson Street and SR 91/Philema Road will reduce potential environmental impacts. The changes will not adversely affect the environmental document schedule

Have proposed revisions been reviewed by environmental staff?  No  Yes

Environmental responsibilities (Studies/Documents/Permits): *GDOT*

## PROJECT COST & ADDITIONAL INFORMATION

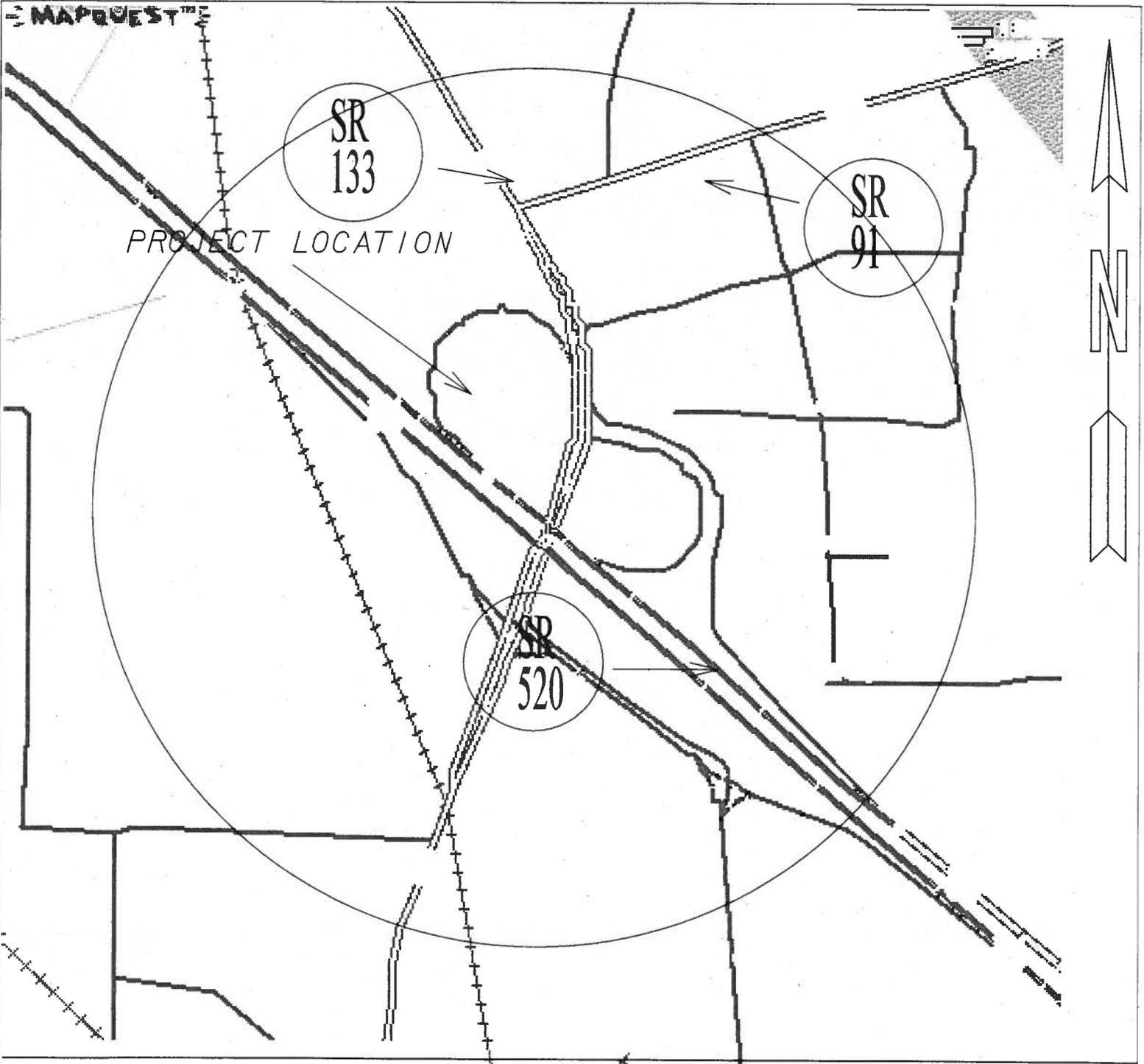
| Updated Cost Estimate           |                        | Date of Estimate  |
|---------------------------------|------------------------|-------------------|
| Base Construction Cost:         | \$10,096,242.63        | 4/26/2012         |
| Engineering and Inspection:     | \$504,812.13           | 4/26/2012         |
| Liquid AC Adjustment:           | \$319,806.78           | 4/26/2012         |
| <u>Total Construction Cost:</u> | \$10,920,861.54        |                   |
|                                 |                        |                   |
| Right-of-Way:                   | \$3,260,000.00         | Authorized 3-7-11 |
|                                 |                        |                   |
| Utilities (reimbursable costs): | \$65,000.00            | 7/11/2011         |
|                                 |                        |                   |
| Environmental Mitigation:       | N/A                    | N/A               |
|                                 |                        |                   |
| <b>TOTAL PROJECT COST:</b>      | <b>\$14,245,861.54</b> |                   |

### Highway Safety Manual Analysis:

The Highway Safety Manual (HSM) has been referenced for the availability of a Predictive Method analysis using a Safety Performance Function (SPF) with associated Crash Modification Factors (CMF)



MAPQUEST™



LOCATION SKETCH

P. I. # 422550

# DEPARTMENT OF TRANSPORTATION STATE OF GEORGIA

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## INTERDEPARTMENTAL CORRESPONDENCE

**FILE** NH-006-2(55), Dougherty County **OFFICE** Program Delivery  
SR 3/ Liberty Expressway @ North Jefferson St.  
P.I. No. 422550 **DATE** May 31, 2012

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

**TO** Lisa Myers, State Review Engineer  
**ATTN:** Matt Sanders

**SUBJECT** **Value Engineering Implementation Reversal / Revision Request**

The Office of Program Delivery has received a Value Engineering Implementation Reversal/Revision Request dated May 22, 2012 from the Office of Roadway Design (see attached). This Office concurs with the request. Please process the reversal for signatures.

If there are any questions or concerns, please contact the project manager, Albert Shelby, at 404-631-1758.

*S.H.*  
BKH:SH:avs  
Attachment

**DEPARTMENT OF TRANSPORTATION  
STATE OF GEORGIA**



**INTERDEPARTMENT CORRESPONDENCE**

**FILE** NH000-0006-02(055) **OFFICE** Roadway Design  
Dougherty County  
SR 3/Liberty Exwy @ SR 91 & **DATE** May 22, 2012  
N. Jefferson Interchange Ramps  
P.I. 422550-

**FROM**   
C. Andy Casey, P.E., State Roadway Design Engineer

**TO** Bobby Hilliard, State Program Delivery Engineer  
Attn: Albert Shelby, Project Manager

**SUBJECT** Value Engineering Implementation Reversal/Revision Request

The Office of Roadway Design requests a Value Engineering (VE) Study Implementation Reversal and Revision for PI 422550-. The VE Implementation letter was issued by the office of Engineering Services on July 22, 2011. This office requests to reverse the implementation of alternative R-10, and revise the implementation of alternatives S-1 and S-2.

Alternative R-10 recommends removing the dedicated bike lanes on both sides of N. Jefferson St. and providing a multi-use trail on one side of the road. The VE implementation letter states that this alternative will be implemented; this office requests to reverse the implementation of this alternative. Subsequent conversations with the State Bicycle & Pedestrian Coordinator have led to a reversal request for this alternative. N. Jefferson St. and some nearby intersecting streets are part of the proposed bike route network in the Dougherty Area Regional Transportation Study (DARTS). Dedicated bike lanes are desirable on bike routes such as this, and will provide continuity and connectivity with the nearby proposed system of bike lanes.

Alternatives S-1 and S-2 recommend reducing the bridge widths on Ramp A (from 34-ft to 30-ft) and Ramp B (from 42-ft to 38-ft) by narrowing the shoulders 2-ft on each side. The VE implementation letter states that these alternatives will be implemented; this office requests to revise the implementation of these alternatives. Recent discussions between Roadway Design and Bridge Design have led to a decision that the bridges should carry the full width of the ramp lane plus the width of the paved shoulders (guidance in AASHTO 2004 Green Book, pg. 506). Applying this guidance results in bridge widths of 28-ft and 40-ft for Ramps A and B respectively.

The bridge on Ramp A will carry a 16-ft travel lane, 4-ft paved inside shoulder, and 8-ft paved outside shoulder, for a total "gutter to gutter" bridge width of 28-ft. This width is 2-ft less than the VE study recommended. Based on the VE study calculations, a bridge width of 28-ft would result in a cost savings of approximately \$116,000 compared to the VE recommendation of 30-ft which showed a cost savings of approximately \$71,000.

The bridge on Ramp B will carry two 12-ft travel lanes, an 8-ft paved inside shoulder, and an 8-ft paved outside shoulder, for a total "gutter to gutter" bridge width of 40-ft. The resulting width is two feet greater than the VE study recommendation. The inside paved shoulder near Ramp B is 8-ft wide to accommodate a concrete barrier on top of a fill wall that will tie to the bridge barrier. The inside shoulder on the ramp bridge is 8-ft wide so the bridge barrier will align with concrete barrier on top of the wall without having to taper as it approaches the bridge. Based on the VE study calculations, a bridge width of 40-ft would result in a cost savings of approximately \$65,000, compared to the VE recommendation of 38-ft, which showed a cost savings of approximately \$130,000. The result of revising the implementation of Alternatives S-1 and S-2 is a total cost savings of \$181,000, compared to the VE cost savings of \$201,000.

If you have any questions about this request or need additional information, please contact the Design Phase Leader, Sam Woods, at 404-631-1628.

Approved: *Lisa L Myers* Date 6/1/12  
Lisa Myers, Project Review Engineer

Approved: *Russell R. McMurry* Date 6/6/12  
Russell R. McMurry, P.E., Director of Engineering

Approved: *Gerald M. Ross* Date 6/8/12  
Gerald M. Ross, P.E., Chief Engineer

Attachments: VE Alternatives S-1 and S-2, VE Implementation Letter,

CAC:CAH:saw

# VALUE ENGINEERING ALTERNATIVE



|                     |   |                          |
|---------------------|---|--------------------------|
| <b>PROJECT:</b>     | <b>SR 133/N. JEFFERSON ST. FROM SR 520/US 82 LIBERTY EXPRESSWAY TO SR 91/PHILEMA RD. INTERCHANGE RECONSTRUCTION</b><br><i>NH000-0006-25(055); PI No. 422550</i><br><i>Dougherty County, Georgia</i> | <b>ALTERNATIVE NO.:</b>  |
|                     |   | <b>S-1</b>               |
| <b>DESCRIPTION:</b> | <b>REDUCE THE RAMP A BRIDGE WIDTH FROM 34 FT. TO 30 FT.</b>   | <b>SHEET NO.: 1 of 3</b> |

**ORIGINAL DESIGN:** (sketch attached)

The original Ramp A Bridge width is 34 ft. from gutter to gutter including a 16 ft. travel lane, 12 ft. outside shoulder, and 6 ft. inside shoulder

**ALTERNATIVE:** (sketch attached)

Reduce the bridge width to ~~30 ft.~~ **28 ft.** from gutter to gutter including a 16 ft. travel lane, ~~10 ft.~~ **8 ft.** outside shoulder, and 4 ft. inside shoulder

**ADVANTAGES:**

- Reduces bridge deck width and associated material and labor requirements

**DISADVANTAGES:**

- Requires limited additional design effort since the bridge designs are currently preliminary

**DISCUSSION:**

Reducing the bridge width by 4 ft. allows it to match the paved shoulder sections and reduces associated labor and material requirements.

| COST SUMMARY                         | INITIAL COST                             | PRESENT WORTH RECURRING COSTS | PRESENT WORTH LIFE-CYCLE COST            |
|--------------------------------------|--|-------------------------------|--|
| ORIGINAL DESIGN                      | \$ 658,000                               | —                             | \$ 658,000                               |
| ALTERNATIVE                          | \$ <del>542,000</del> <del>587,000</del> | —                             | \$ <del>542,000</del> <del>587,000</del> |
| SAVINGS (Original minus Alternative) | \$ <del>116,000</del> <del>71,000</del>  | —                             | \$ <del>116,000</del> <del>71,000</del>  |

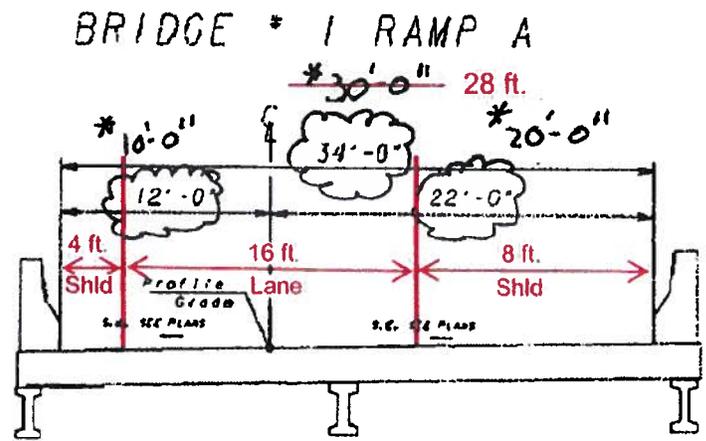
# SKETCH

PROJECT: **SR 133/N. JEFFERSON ST. FROM SR 520/US 82 LIBERTY EXPRESSWAY TO SR 91/PHILEMA RD. INTERCHANGE RECONSTRUCTION**  
*Dougherty County, Georgia*

ALTERNATIVE NO.: **S-1**

ORIGINAL DESIGN  ALTERNATIVE DESIGN  BOTH

SHEET NO.: **2 of 3**



## TYPICAL SECTION NO. 3

SUPER ELEVATION SECTION  
APPLIES TO STA. 213+10.44 TO STA. 214+87.44  
SEE DRAWING \*13-01

\* Reduced shoulder width by 2'-0" on each side.



# VALUE ENGINEERING ALTERNATIVE



**PROJECT:** SR 133/N. JEFFERSON ST. FROM SR 520/US 82 LIBERTY EXPRESSWAY TO SR 91/PHILEMA RD. INTERCHANGE RECONSTRUCTION  
 NH000-0006-25(055); PI No. 422550  
 Dougherty County, Georgia

ALTERNATIVE NO.:

**S-2**

**DESCRIPTION:** REDUCE THE RAMP B BRIDGE WIDTH FROM 42 FT. TO 38 FT.

SHEET NO.: 1 of 3

**ORIGINAL DESIGN:** (sketch attached)

The original Ramp B Bridge width is 42 ft. from gutter to gutter which includes two, 12 ft. through lanes, a 12 ft. outside shoulder, and a 6 ft. inside shoulder.

**ALTERNATIVE:** (sketch attached)

Reduce the bridge width to ~~38~~ <sup>40</sup> ft. from gutter to gutter including two 12 ft. through lanes, a ~~10~~ <sup>8</sup> ft. outside shoulder, and a ~~4~~ <sup>8</sup> ft. inside shoulder.

**ADVANTAGES:**

- Reduces bridge material and labor requirements

**DISADVANTAGES:**

- Requires limited additional design effort since the bridge designs are preliminary

**DISCUSSION:**

Reducing the bridge width by 4 ft. allows it to match up with the paved sections and reduces associated labor and material requirements.

| COST SUMMARY                         | INITIAL COST                              | PRESENT WORTH RECURRING COSTS | PRESENT WORTH LIFE-CYCLE COST             |
|--------------------------------------|---|-------------------------------|---|
| ORIGINAL DESIGN                      | \$ 1,465,000                              | —                             | \$ 1,465,000                              |
| ALTERNATIVE                          | <del>\$1,400,000</del> <sup>335,000</sup> | —                             | <del>1,400,000</del> <sup>1,335,000</sup> |
| SAVINGS (Original minus Alternative) | \$ <del>65,000</del> <sup>130,000</sup>   | —                             | \$ <del>65,000</del> <sup>130,000</sup>   |

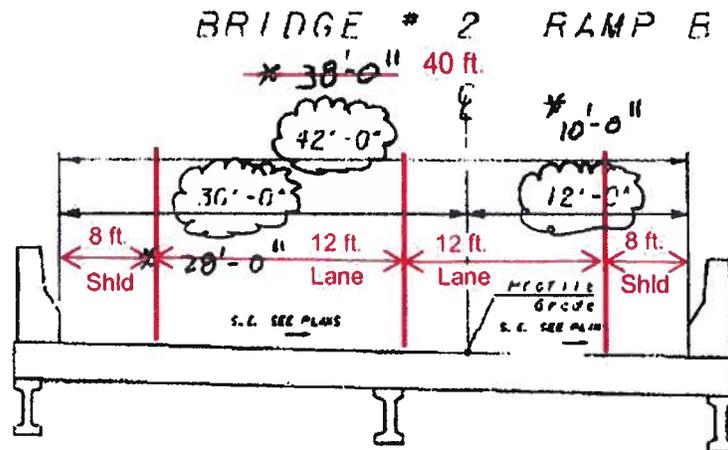
# SKETCH

PROJECT: **SR 133/N. JEFFERSON ST. FROM SR 520/US 82 LIBERTY EXPRESSWAY TO SR 91/PHILEMA RD. INTERCHANGE RECONSTRUCTION**  
 NH000-0006-25(055); PI No. 422550  
 Dougherty County, Georgia

ALTERNATIVE NO.:  
**S-2**

ORIGINAL DESIGN  ALTERNATIVE DESIGN  BOTH

SHEET NO.: **2 of 3**



TYPICAL SECTION NO. 4

SUPER ELEVATION SECTION

APPLIES TO STA. 306+66.57 TO STA. 309+91.07

SEE DRAWING \* 11-09

\* Reduce shoulder width by 2'-0" on each side.



**DEPARTMENT OF TRANSPORTATION  
STATE OF GEORGIA**

**INTERDEPARTMENT CORRESPONDENCE**

**FILE:** NH000-0006-02(055) Dougherty                      **OFFICE:** Engineering Services  
P.I. No.: 422550  
SR 91 & SR 520/US 82 Interchange                      **DATE:** July 22, 2011

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

**TO:** Bobby K. Hilliard, PE, State Program Delivery Engineer  
Attn.: Albert Shelby

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

The VE Study for the above project was held April 11-14, 2011. Responses were received on July 20, 2001. Recommendations for implementation of Value Engineering Study Alternatives are indicated in the table below. The Project Manager shall incorporate the VE alternatives recommended for implementation to the extent reasonable in the design of the project.

| ALT # | Description   | Potential Savings/LCC | Implement | Comments  |
|-------|---|-----------------------|-----------|---|
| R-2   | Use 12 ft wide shoulders in lieu of 16 ft wide shoulders on N. Jefferson St. and Philema Rd | \$120,000             | Yes       | This will be done.  |
| R-3   | Reduce the raised median island from 20 ft wide to 16 ft wide on N. Jefferson St            | \$34,000              | Yes       | This will be done.  |
| R-4   | Provide 11 ft wide travel lanes on N. Jefferson St. and Philema Rd                          | \$79,000              | No        | Construction of 11 ft wide lanes will not be done due to the high volume of truck traffic (9%) and the curvilinear alignments of North Jefferson Street and Philema Road. |
| R-5   | Provide 11 ft wide inside travel lanes on N. Jefferson St. and Philema Rd                   | \$63,000              | Yes       | This will be done.  |
| R-7   | Remove guardrail and anchorages on Ramp A from Sta. 223+25 to Sta. 224+50 Rt.               | Design Suggestion     | Yes       | This will be done.  |
| R-8   | Reduce the sidewalk width from 8 ft to 5 ft on the right side of N. Jefferson St            | \$15,000              | Yes       | This will be done.  |

|      |  |           |     |   |
|------|--|-----------|-----|---|
| R-9  | Provide a rural shoulder in lieu of an urban shoulder on the left side of N. Jefferson St. from Sta. 123+00 to Sta. 133+20 Lt.   | \$84,000  | Yes | This will be done.  |
| R-10 | Provide a 12 ft wide multi-use trail on the left side of N. Jefferson St and a 5 ft wide sidewalk on the right side in lieu of the 4 ft wide bicycle lanes on both sides and 5 ft wide sidewalk on the left and 8 ft sidewalk on the right | \$128,000 | Yes | This will be done.  |
| R-13 | Provide 8 ft paved outside shoulders in lieu of 10 ft paved outside shoulders on Ramps A and B   | \$148,000 | Yes | This will be done.  |
| S-1  | Reduce the ramp A bridge width from 34 ft to 30 ft by narrowing the shoulders 2 ft per side  | \$71,000  | Yes | This will be done.  |
| S-2  | Reduce the Ramp B bridge width from 42 ft to 38 ft by narrowing the shoulders 2 ft per side  | \$130,000 | Yes | This will be done.  |
| S-4  | Reduce the length of the Ramp B bridge by 52 ft by providing a retaining wall abutment on the east end   | \$172,000 | No  | A revised estimate indicates this alternative would have a cost increase of \$43,675. In addition, there are more maintenance issues with MSE walls and the approach roadway than there are with typical spill through abutments. MSE wall abutments limit the possibility of future expansion for both the road being carried as well as the facility beneath the structure. Due to sequence of construction, coordination with subcontractors and equipment, bridge costs and wall costs are higher than the general bridge and wall costs for separate structures. |

|     |   |                   |              |  |
|-----|---|-------------------|--------------|--|
| S-5 | Reduce the Ramp A bridge length by 37 ft  | \$109,000         | No           | A revised estimate indicates this alternative would have a cost increase of \$240. In addition, there are more maintenance issues with MSE walls and the approach roadway than there are with typical spill through abutments. MSE wall abutments limit the possibility of future expansion for both the road being carried as well as the facility beneath the structure. Due to sequence of construction, coordination with subcontractors and equipment, bridge costs and wall costs are higher than the general bridge and wall costs for separate structures. |
| S-7 | Provide a GDOT standard concrete side barrier for the wall at Ramp B from Sta. 309+50 to Sta. 313+00  | Design Suggestion | Yes          | This will be done. If the height of the retaining wall increases, than an MSE wall would be more economical.   |
| C-1 | Modify the sequencing of Stage 1 to include removing the raised median first and then shifting traffic on N. Jefferson St. and Philema Rd. during stage 1 of construction                   | Design Suggestion | Under Review | The stage construction plans will be further investigated to determine the feasibility of this alternative.  |
| C-3 | Use the existing WB Liberty Express exit ramp for right and left turns onto N. Jefferson St. during construction to enable earlier closure of the existing SB N. Jefferson St entrance ramp | Design Suggestion | Under Review | The stage construction plans will be further investigated to determine the feasibility of this alternative.  |
| G-1 | Reroute the 18 in RCP from the existing pipe through the proposed wingwall at Sta. 698+00   | Design Suggestion | Under Review | The drainage will be further investigated to determine the feasibility of this alternative.  |

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

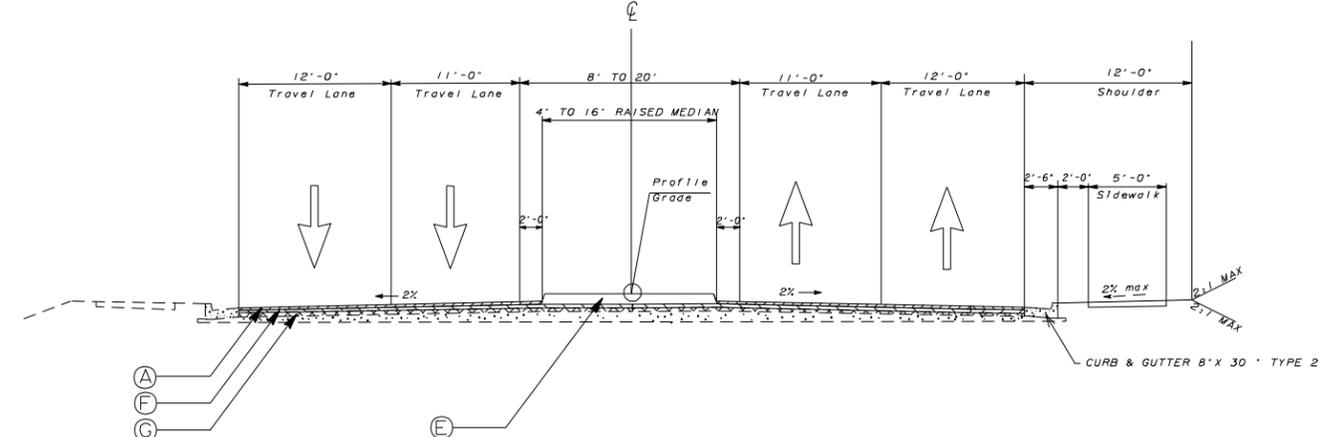
Approved:  Date: 7-22-11  
Gerald M. Ross, PE, Chief Engineer

REW/LLM

Attachments

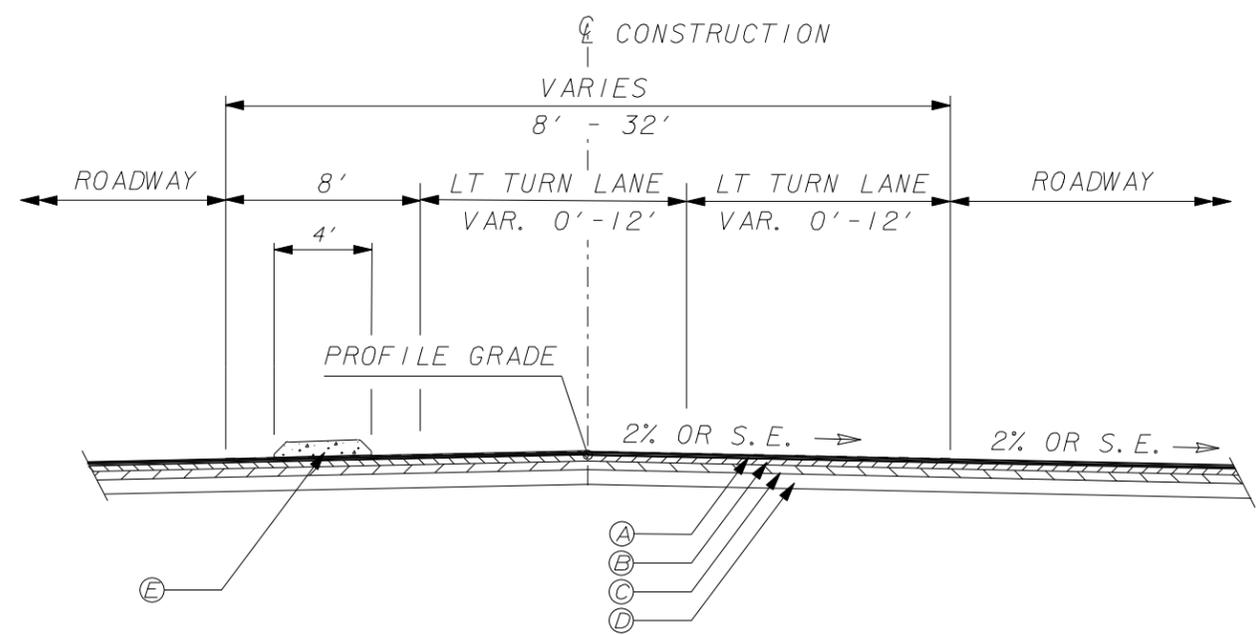
c: Russell McMurry  
Bobby Hilliard/Stanley Hill/Albert Shelby  
Russell McMurry/Chuck Hasty/Nicoe Alexander/Travis McDonald  
Paul Liles/Ben Rabun/Bill Duvall/Bill Ingalsbe  
Amber Phillips  
Joe Sheffield/Brent Thomas/Scott Chambers/Tony Cravey/Geno Hasty/Van Mason  
Ken Werho  
Lisa Myers  
Matt Sanders

### NORTH JEFFERSON STREET

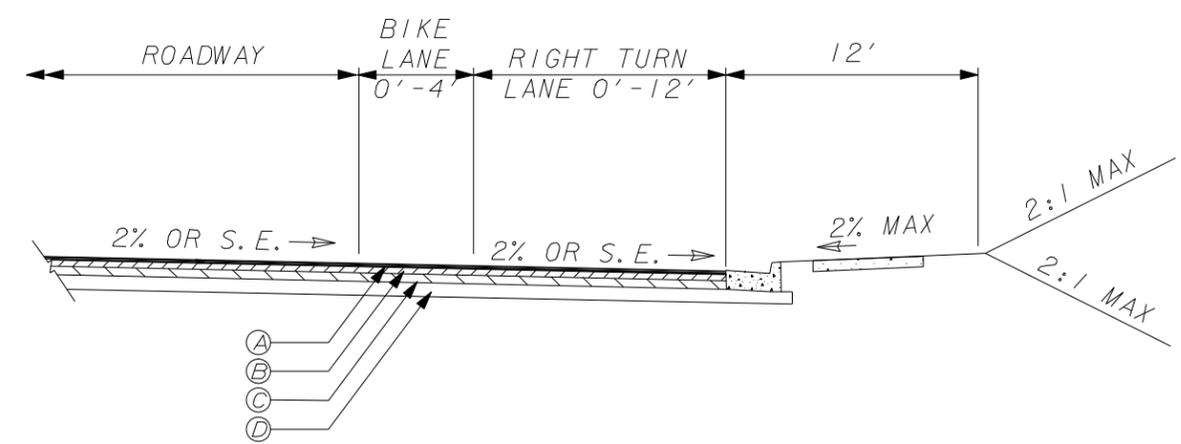


- REQUIRED PAVEMENT:
- A- 165 lbs/yd<sup>2</sup> RECYCLED ASPH CONC 12.5 MM SUPERPAVE GP 2 ONLY, INCL BITUM MATL AND H LIME
  - B- 220 lbs/yd<sup>2</sup> RECYCLED ASPH CONC 19 MM SUPERPAVE GP 1 OR 2, INCL BITUM MATL AND H LIME
  - C- 440 lbs/yd<sup>2</sup> RECYCLED ASPH CONC 25 MM SUPERPAVE GP 1 OR 2, INCL BITUM MATL AND H LIME
  - D- GR AGGR BASE CRS. 10 INCH, INCL MATL
  - E- 7½" CONCRETE MEDIAN w/Type 7 curb face
  - F- RECYCLED ASPH CONC LEVELING, INCL BITUM MATERIAL & H LIME
  - G- MILL ASPH CONC PVMT, VARIABLE DEPTH

**TYPICAL SECTION NO -1A**  
 TANGENT SECTION  
 OVERLAY  
 STA. 121+92 TO STA. 122+75  
 STA. 139+00 TO STA. 142+04.92



LEFT TURN LANE DETAIL  
SEE PLAN FOR LOCATION



RIGHT TURN LANE DETAIL  
SEE PLAN FOR LOCATION

**GEORGIA**  
DEPARTMENT  
OF  
TRANSPORTATION

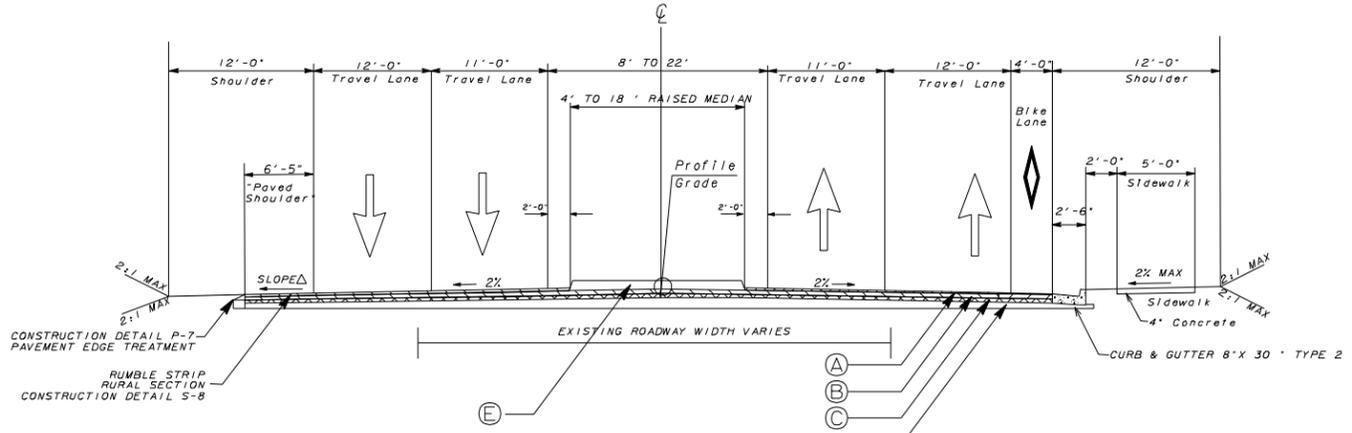
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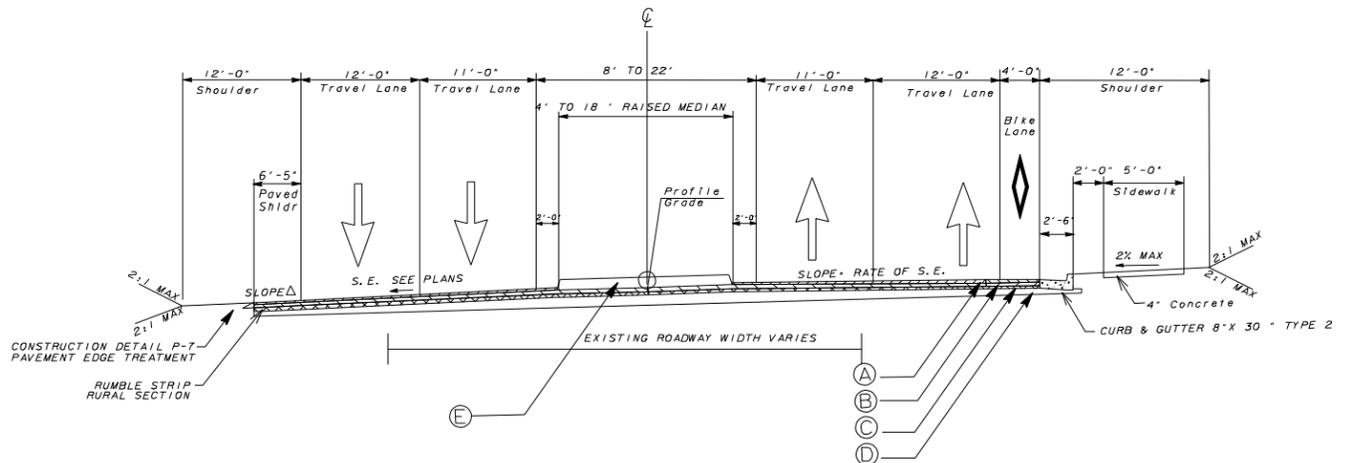
STATE OF GEORGIA  
DEPARTMENT OF TRANSPORTATION  
OFFICE: ROADWAY DESIGN  
TYPICAL SECTIONS  
N. JEFFERSON ST. AT LIBERTY EXPRESSWAY

DRAWING No.  
**5-01**

NORTH JEFFERSON STREET



FULL DEPTH  
 TYPICAL SECTION NO. -2A  
 TANGENT SECTION  
 STA. 122+75 TO STA. 133+33.63



FULL DEPTH  
 TYPICAL SECTION NO -2B  
 SUPERELEVATED SECTION

SLOPE Δ : SEE ROADWAY PLANS AND CROSS SECTIONS FOR SUPERELEVATIONS RATES AND TRANSITIONS.

- REQUIRED PAVEMENT:**
- A- 165 lbs/yd<sup>2</sup> RECYCLED ASPH CONC 12.5 MM SUPERPAVE GP 2 ONLY, INCL BITUM MATL AND H LIME
  - B- 220 lbs/yd<sup>2</sup> RECYCLED ASPH CONC 19 MM SUPERPAVE GP 1 OR 2, INCL BITUM MATL AND H LIME
  - C- 440 lbs/yd<sup>2</sup> RECYCLED ASPH CONC 25 MM SUPERPAVE GP 1 OR 2, INCL BITUM MATL AND H LIME
  - D- GR AGGR BASE CRS, 10 INCH, INCL MATL
  - E- 7½" CONCRETE MEDIAN w/Type 7 curb face

**GEORGIA**  
 DEPARTMENT  
 OF  
 TRANSPORTATION

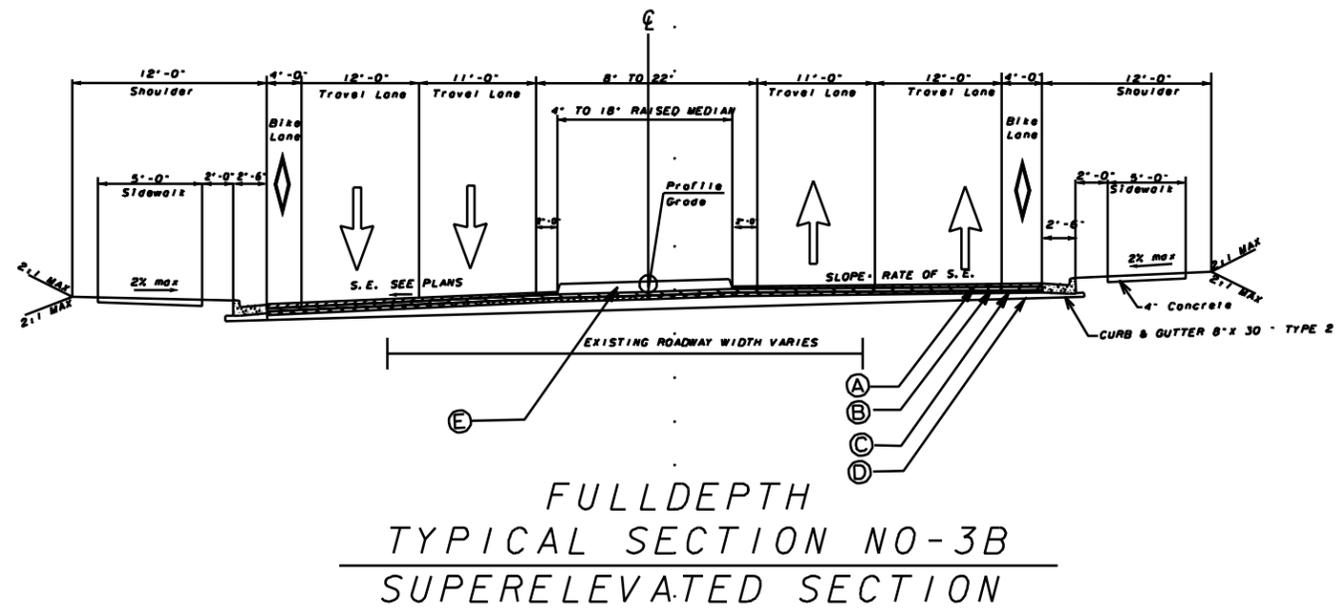
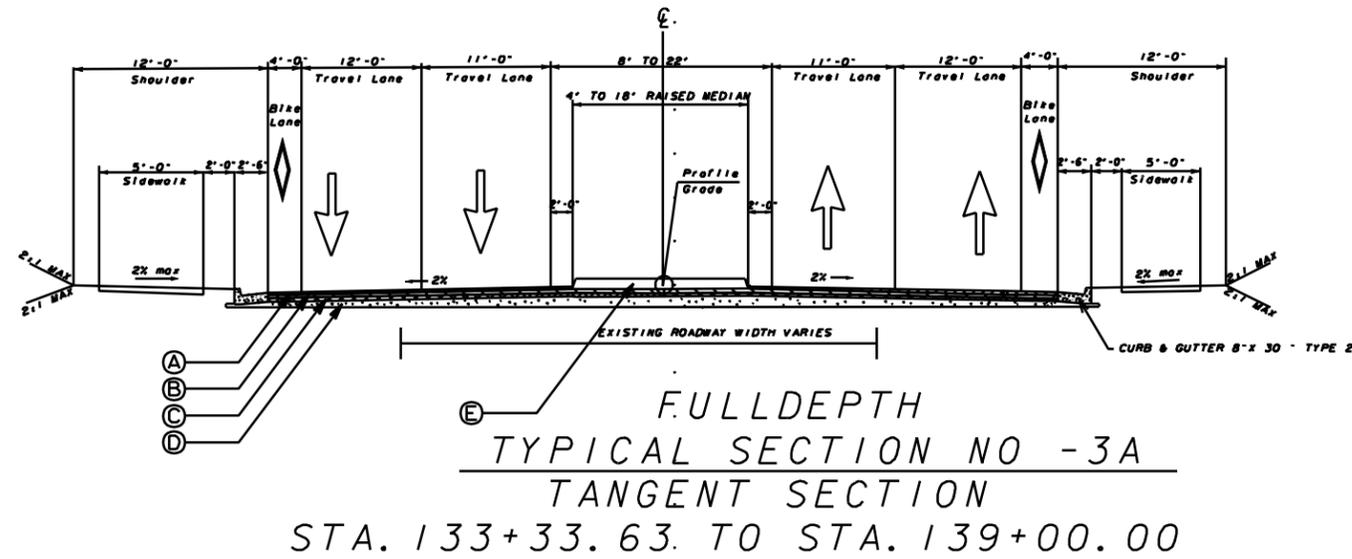
NOT TO SCALE

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STATE OF GEORGIA  
 DEPARTMENT OF TRANSPORTATION  
 OFFICE: ROADWAY DESIGN  
 TYPICAL SECTIONS  
 N. JEFFERSON AT LIBERTY EXPRESSWAY

DRAWING No.  
**5-02**

NORTH JEFFERSON STREET



- REQUIRED PAVEMENT:**
- A- 165 lbs/yd<sup>2</sup> RECYCLED ASPH CONC 12.5 MM SUPERPAVE GP 2 ONLY, INCL BITUM MATL AND H LIME
  - B- 220 lbs/yd<sup>2</sup> RECYCLED ASPH CONC 19 MM SUPERPAVE GP 1 OR 2, INCL BITUM MATL AND H LIME
  - C- 440 lbs/yd<sup>2</sup> RECYCLED ASPH CONC 25 MM SUPERPAVE GP 1 OR 2, INCL BITUM MATL AND H LIME
  - D- GR AGGR BASE CRS, 10 INCH, INCL MATL
  - E- 7½" CONCRETE MEDIAN w/Type 7 curb face

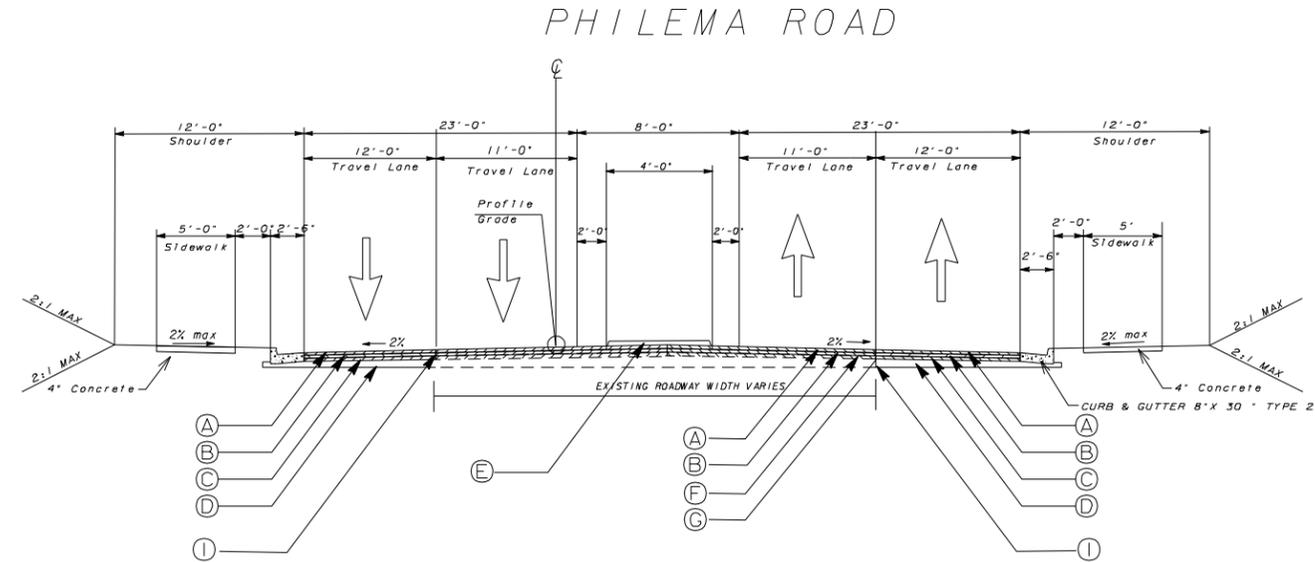
SLOPE Δ : SEE ROADWAY PLANS FOR SUPERELEVATIONS RATES AND TRANSITIONS

**GEORGIA**  
 DEPARTMENT  
 OF  
 TRANSPORTATION

NOT TO SCALE

| REVISION DATES |  |  |
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STATE OF GEORGIA  
 DEPARTMENT OF TRANSPORTATION  
 OFFICE: ROADWAY DESIGN  
 TYPICAL SECTIONS  
 N. JEFFERSON AT LIBERTY EXPRESSWAY  
 DRAWING No. 5-03



MILL & OVERLAY AND WIDENING  
 TYPICAL SECTION NO. -4

TANGENT SECTION  
 STA. 90+00 TO STA. 98+26

REQUIRED PAVEMENT:

- A- 165 lbs/yd<sup>2</sup> RECYCLED ASPH CONC 12.5 MM SUPERPAVE GP 2 ONLY, INCL BITUM MATL AND H LIME
- B- 220 lbs/yd<sup>2</sup> RECYCLED ASPH CONC 19 MM SUPERPAVE GP 1 OR 2, INCL BITUM MATL AND H LIME
- C- 440 lbs/yd<sup>2</sup> RECYCLED ASPH CONC 25 MM SUPERPAVE GP 1 OR 2, INCL BITUM MATL AND H LIME
- D- GR AGGR BASE CRS, 10 INCH, INCL MATL
- E- 7½" CONCRETE MEDIAN w/Type 7 curb face
- F- RECYCLED ASPH CONC LEVELING, INCL BITUM MATL & H LIME
- G- MILL ASPH CONC PVMT, 1½IN DEPTH
- I- PAVEMENT REINFORCEMENT FABRIC STRIP

**GEORGIA**  
 DEPARTMENT  
 OF  
 TRANSPORTATION

NOT TO SCALE

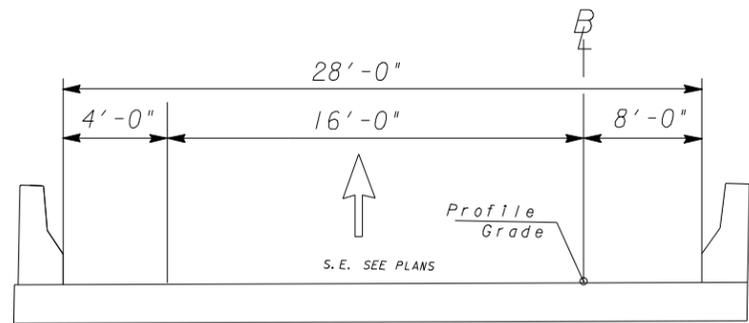
REVISION DATES

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STATE OF GEORGIA  
 DEPARTMENT OF TRANSPORTATION  
 OFFICE: ROADWAY DESIGN  
 TYPICAL SECTIONS  
 N. JEFFERSON AT LIBERTY EXPRESSWAY

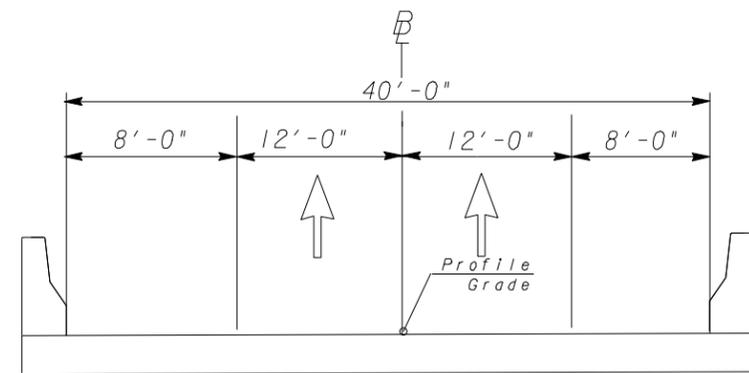
DRAWING No.  
**5-04**

RAMP A BRIDGE

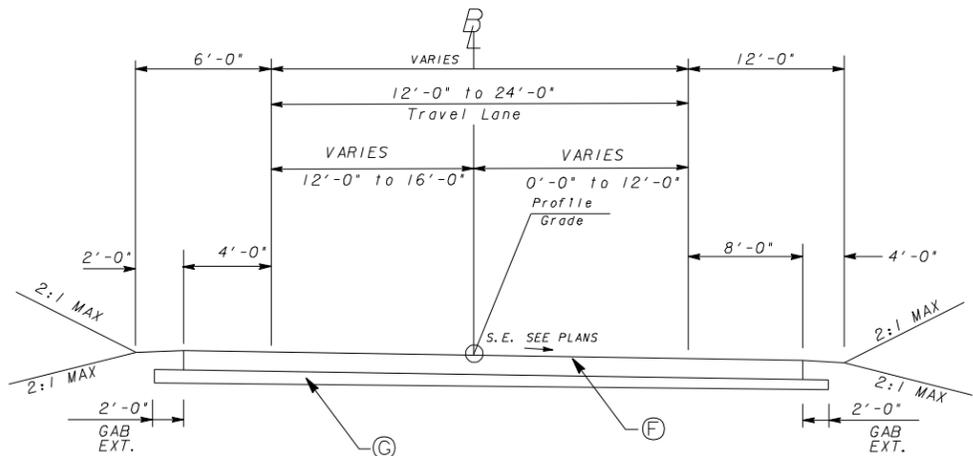


TYPICAL SECTION NO. -5 A  
 TANGENT SECTION  
 APPLIES TO STA. 214+40.00 TO STA. 216+18.00

RAMP B BRIDGE

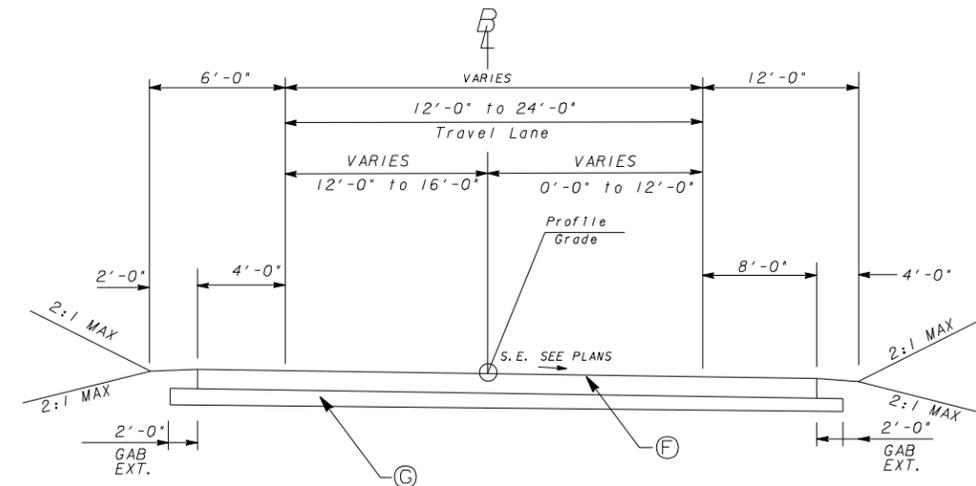


TYPICAL SECTION NO. -6A  
 TANGENT SECTION  
 APPLIES TO STA. 306+56.63 TO STA. 309+81.13



TYPICAL SECTION NO. -7  
 SR3\520-LIBERTY EXPRESSWAY WB  
 EXIT RAMP-A  
 FROM STA. 206+00.00 TO STA. 214+40.00  
 FROM STA. 216+18.00 TO STA. 228+90.77

REQUIRED PAVEMENT:  
 F- PLAIN PC CONC PVMT, CL 3 CONC, 10 INCH THK  
 G- GR AGGR BASE CRS, 8 INCH, INCL MATL



TYPICAL SECTION NO. -8  
 SR3\520-LIBERTY EXPRESSWAY WB  
 ENTRANCE RAMP-B  
 FROM STA. 300+00.00 TO STA. 306+56.63  
 FROM STA. 309+81.13 TO STA. 314+56.01

**GEORGIA**  
 DEPARTMENT  
 OF  
 TRANSPORTATION

NOT TO SCALE

REVISION DATES

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STATE OF GEORGIA  
 DEPARTMENT OF TRANSPORTATION  
 OFFICE: ROADWAY DESIGN  
 TYPICAL SECTIONS  
 N. JEFFERSON AT LIBERTY EXPRESSWAY

DRAWING No.  
**5-05**

SHEET 7 OF 8

GEORGIA DEPARTMENT OF TRANSPORTATION  
 OFFICE OF PLANNING

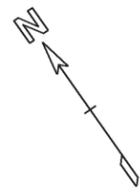
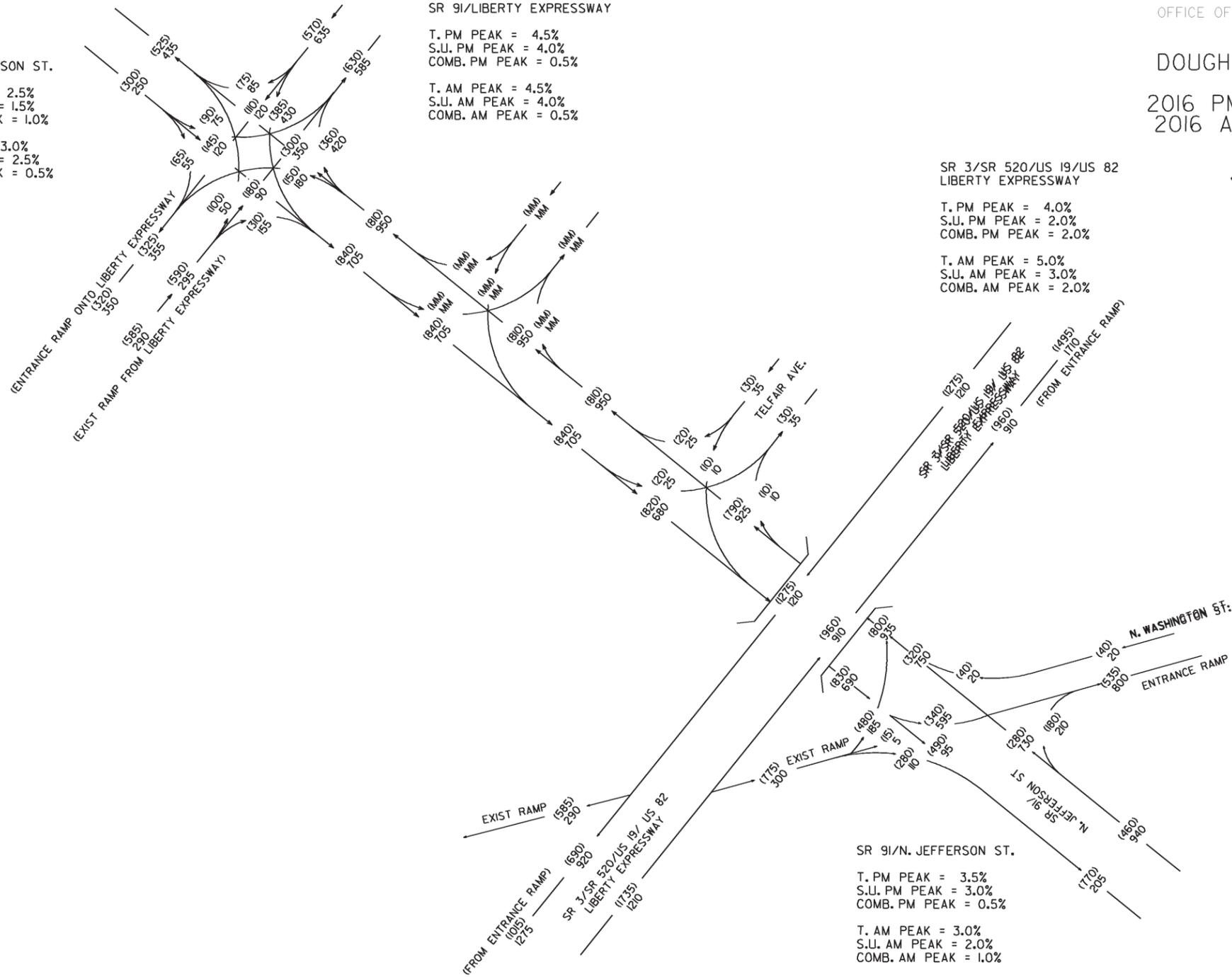
DOUGHERTY COUNTY  
 2016 PM DHV = (000)  
 2016 AM DHV = 000

SR 133/JEFFERSON ST.  
 T. PM PEAK = 2.5%  
 S.U. PM PEAK = 1.5%  
 COMB. PM PEAK = 1.0%  
 T. AM PEAK = 3.0%  
 S.U. AM PEAK = 2.5%  
 COMB. AM PEAK = 0.5%

SR 91/LIBERTY EXPRESSWAY  
 T. PM PEAK = 4.5%  
 S.U. PM PEAK = 4.0%  
 COMB. PM PEAK = 0.5%  
 T. AM PEAK = 4.5%  
 S.U. AM PEAK = 4.0%  
 COMB. AM PEAK = 0.5%

SR 3/SR 520/US 19/US 82  
 LIBERTY EXPRESSWAY  
 T. PM PEAK = 4.0%  
 S.U. PM PEAK = 2.0%  
 COMB. PM PEAK = 2.0%  
 T. AM PEAK = 5.0%  
 S.U. AM PEAK = 3.0%  
 COMB. AM PEAK = 2.0%

SR 91/N. JEFFERSON ST.  
 T. PM PEAK = 3.5%  
 S.U. PM PEAK = 3.0%  
 COMB. PM PEAK = 0.5%  
 T. AM PEAK = 3.0%  
 S.U. AM PEAK = 2.0%  
 COMB. AM PEAK = 1.0%



BUILD  
 NH000-0006-02(055)  
 P.I. # 422550  
 DOUGHERTY COUNTY  
 S.R. 3/LIBERTY EXWY @  
 S.R. 91 & N. JEFFERSON  
 INTERCHANGE RAMPS  
 2016 PM DHV = (000)  
 2016 AM DHV = 000

MTW  
 12/11

| REVISION DATES |  | STATE OF GEORGIA<br>DEPARTMENT OF TRANSPORTATION |              |
|----------------|--|--|--------------|
|                |  | OFFICE: ROADWAY DESIGN                           |              |
|                |  | <b>TRAFFIC DIAGRAM</b>                           |              |
|                |  | N. JEFFERSON ST. AT LIBERTY EXPRESSWAY           |              |
|                |  | ANNUAL DAILY TRAFFIC (ADT)                       |              |
|                |  | DESIGN HOUR VOLUME (DHV)                         |              |
|                |  | DRAWING No.                                      | <b>10-09</b> |



SHEET 6 OF 8

SR 133/JEFFERSON ST.  
 24 HOUR T. = 4.0%  
 S.U. = 3.0%  
 COMB. = 1.0%

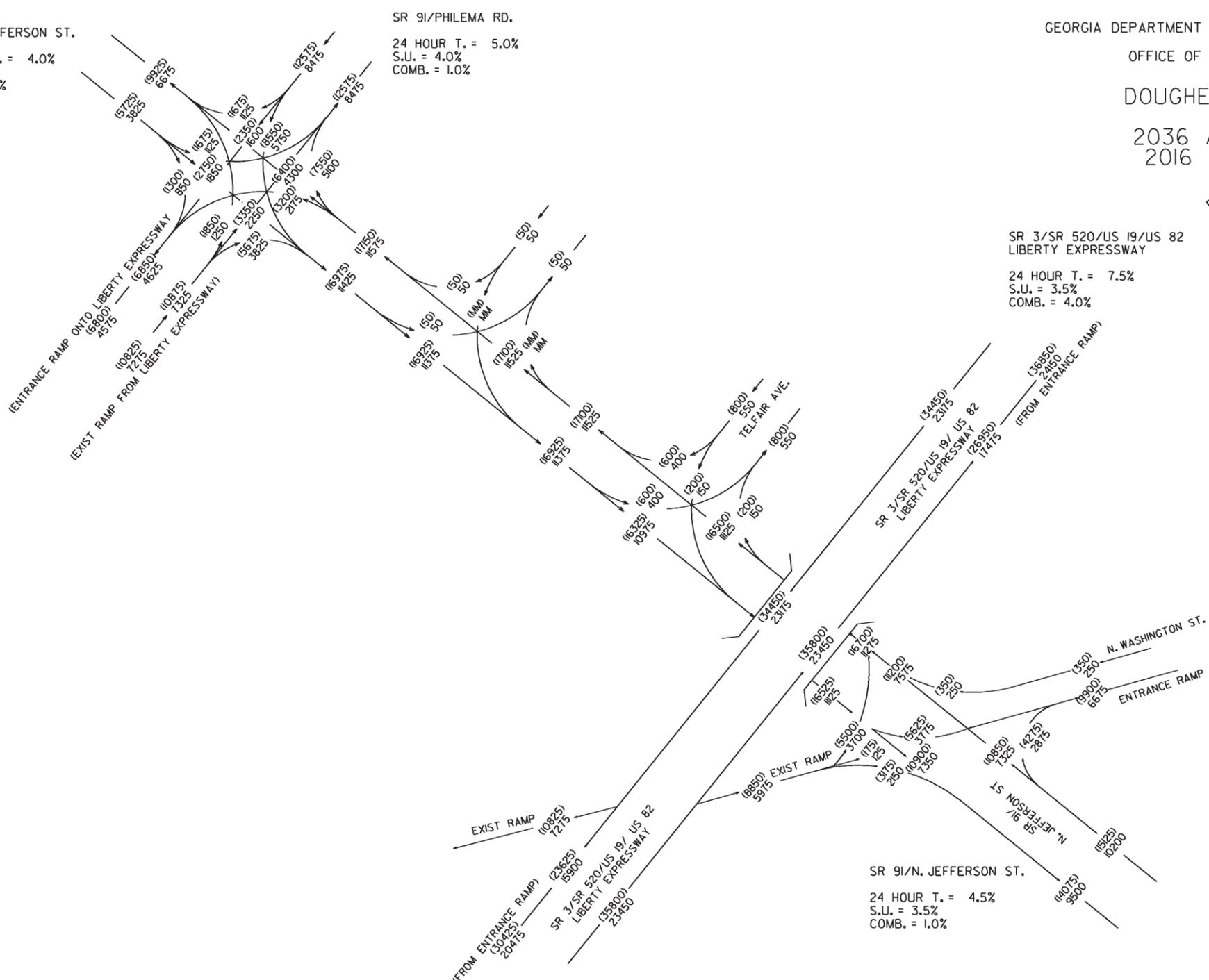
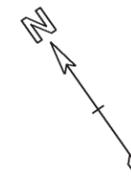
SR 91/PHILEMA RD.  
 24 HOUR T. = 5.0%  
 S.U. = 4.0%  
 COMB. = 1.0%

GEORGIA DEPARTMENT OF TRANSPORTATION  
 OFFICE OF PLANNING

DOUGHERTY COUNTY

2036 ADT = (000)  
 2016 ADT = 000

SR 3/SR 520/US 19/US 82  
 LIBERTY EXPRESSWAY  
 24 HOUR T. = 7.5%  
 S.U. = 3.5%  
 COMB. = 4.0%



BUILD  
 NH000-0006-02(055)  
 P.I. # 422550  
 DOUGHERTY COUNTY  
 S.R. 3/LIBERTY EXWY @  
 S.R. 91 & N. JEFFERSON  
 INTERCHANGE RAMP  
 2036 ADT = (000)  
 2016 ADT = 000

MTW  
 12/11

| REVISION DATES |  | STATE OF GEORGIA<br>DEPARTMENT OF TRANSPORTATION |  |
|----------------|--|--|--|
|                |  | OFFICE: ROADWAY DESIGN                           |  |
|                |  | <b>TRAFFIC DIAGRAM</b>                           |  |
|                |  | N. JEFFERSON ST. AT LIBERTY EXPRESSWAY           |  |
|                |  | ANNUAL DAILY TRAFFIC (ADT)                       |  |
|                |  | DESIGN HOUR VOLUME (DHV)                         |  |
|                |  | DRAWING No. 10-07                                |  |

# DETAILED COST ESTIMATE



**Job: 422550**

JOB NUMBER: 422550

FED/STATE PROJECT NUMBER

SPEC YEAR: 01

DESCRIPTION: SR 3/LIBERTY EXPRESSWAY @ SR91 & N. JEFFERSON ST.  
WIDENING

**ITEMS FOR JOB 422550**

**0010 - ROADWAY**

| Line Number                  | ITEM     | QUANTITY  | UNITS | PRICE          | DESCRIPTION                            | AMOUNT                |
|------------------------------|----------|-----------|-------|----------------|--|-----------------------|
| 0005                         | 150-1000 | 1.000     | LS    | \$1,900,000.00 | TRAFFIC CONTROL - NH-000-0006-02(055)  | \$1,900,000.00        |
| 0010                         | 150-5010 | 6.000     | EA    | \$9,346.67     | TRAF CTRL,PORABLE IMPACT ATTN          | \$56,080.03           |
| 0015                         | 153-1300 | 1.000     | EA    | \$54,092.39    | FIELD ENGINEERS OFFICE TP 3            | \$54,092.39           |
| 0020                         | 210-0100 | 1.000     | LS    | \$590,000.00   | GRADING COMPLETE - NH-000-0006-02(055) | \$590,000.00          |
| 0025                         | 310-1101 | 45090.000 | TN    | \$14.25        | GR AGGR BASE CRS, INCL MATL            | \$642,486.96          |
| 0030                         | 402-1812 | 100.000   | TN    | \$83.96        | RECYL AC LEVELING,INC BM&HL            | \$8,395.86            |
| 0035                         | 402-3121 | 8800.000  | TN    | \$61.79        | RECYL AC 25MM SP,GP1/2,BM&HL           | \$543,746.98          |
| 0039                         | 402-3130 | 3300.000  | TN    | \$70.09        | RECYL AC 12.5MM SP,GP2,BM&HL           | \$231,310.13          |
| 0040                         | 402-3190 | 4400.000  | TN    | \$72.30        | RECYL AC 19 MM SP,GP 1 OR 2 ,INC BM&HL | \$318,100.86          |
| 0045                         | 413-1000 | 5950.000  | GL    | \$3.01         | BITUM TACK COAT                        | \$17,902.30           |
| 0050                         | 433-1000 | 6859.000  | SY    | \$153.57       | REINF CONC APPROACH SLAB               | \$1,053,342.87        |
| 0054                         | 439-0022 | 24228.000 | SY    | \$56.00        | PLN PC CONC PVMT CL3 10" THK           | \$1,356,768.00        |
| 0055                         | 441-0104 | 2500.000  | SY    | \$32.22        | CONC SIDEWALK, 4 IN                    | \$80,555.13           |
| 0060                         | 441-0303 | 2.000     | EA    | \$1,823.44     | CONC SPILLWAY, TP 3                    | \$3,646.87            |
| 0065                         | 441-0748 | 2533.000  | SY    | \$39.75        | CONC MEDIAN, 6 IN                      | \$100,893.06          |
| 0070                         | 441-4020 | 150.000   | SY    | \$34.28        | CONC VALLEY GUTTER, 6 IN               | \$5,142.66            |
| 0075                         | 441-6222 | 4500.000  | LF    | \$19.45        | CONC CURB & GUTTER/ 8"X30"TP2          | \$87,512.27           |
| 0080                         | 500-2100 | 60.000    | LF    | \$56.08        | CONCRETE BARRIER                       | \$3,364.77            |
| 0085                         | 620-0100 | 2500.000  | LF    | \$15.94        | TEMP BARRIER, METHOD NO. 1             | \$39,847.68           |
| 0090                         | 634-1200 | 20.000    | EA    | \$103.94       | RIGHT OF WAY MARKERS                   | \$2,078.81            |
| 0095                         | 641-1100 | 240.000   | LF    | \$46.76        | GUARDRAIL, TP T                        | \$11,223.39           |
| 0100                         | 641-1200 | 7518.000  | LF    | \$14.09        | GUARDRAIL, TP W                        | \$105,950.72          |
| 0105                         | 641-5001 | 4.000     | EA    | \$630.92       | GUARDRAIL ANCHORAGE, TP 1              | \$2,523.70            |
| 0110                         | 641-5012 | 4.000     | EA    | \$1,736.89     | GUARDRAIL ANCHORAGE, TP 12             | \$6,947.55            |
| <b>SUBTOTAL FOR ROADWAY:</b> |          |           |       |                |  | <b>\$7,221,712.99</b> |

**0020 - DRAINAGE**

| Line Number                   | ITEM     | QUANTITY | UNITS | PRICE      | DESCRIPTION                    | AMOUNT              |
|-------------------------------|----------|----------|-------|------------|--------------------------------|---------------------|
| 0120                          | 550-1180 | 3257.000 | LF    | \$28.10    | STM DR PIPE 18",H 1-10         | \$91,516.13         |
| 0125                          | 550-1181 | 830.000  | LF    | \$33.97    | STM DR PIPE 18",H 10-15        | \$28,197.78         |
| 0130                          | 550-1240 | 450.000  | LF    | \$36.90    | STM DR PIPE 24",H 1-10         | \$16,605.97         |
| 0135                          | 550-1241 | 260.000  | LF    | \$41.10    | STM DR PIPE 24",H 10-15        | \$10,686.70         |
| 0140                          | 550-1242 | 45.000   | LF    | \$39.61    | STM DR PIPE 24",H 15-20        | \$1,782.24          |
| 0145                          | 550-4218 | 4.000    | EA    | \$487.12   | FLARED END SECT 18 IN, ST DR   | \$1,948.47          |
| 0150                          | 550-4224 | 2.000    | EA    | \$569.46   | FLARED END SECT 24 IN, ST DR   | \$1,138.91          |
| 0155                          | 668-1100 | 34.000   | EA    | \$1,804.93 | CATCH BASIN, GP 1              | \$61,367.59         |
| 0160                          | 668-1110 | 49.000   | LF    | \$189.82   | CATCH BASIN, GP 1, ADDL DEPTH  | \$9,301.27          |
| 0165                          | 668-2100 | 33.000   | EA    | \$1,766.23 | DROP INLET, GP 1               | \$58,285.70         |
| 0170                          | 668-2110 | 16.000   | LF    | \$216.20   | DROP INLET, GP 1, ADDL DEPTH   | \$3,459.17          |
| 0175                          | 668-4300 | 4.000    | EA    | \$1,807.60 | STORM SEW MANHOLE, TP 1        | \$7,230.40          |
| 0180                          | 668-4311 | 19.000   | LF    | \$170.98   | ST SEW MANHOLE,TP 1,A DEP,CL 1 | \$3,248.61          |
| <b>SUBTOTAL FOR DRAINAGE:</b> |          |          |       |            |                                | <b>\$294,768.84</b> |

**0030 - BRIDGE**

| Line Number                 | ITEM     | QUANTITY | UNITS | PRICE          | DESCRIPTION  | AMOUNT                |
|-----------------------------|----------|----------|-------|----------------|--|-----------------------|
| 0185                        | 500-0100 | 500.000  | SY    | \$6.68         | GROOVED CONCRETE   | \$3,342.25            |
| 0190                        | 543-9000 | 1.000    | LS    | \$601,800.00   | CONSTR OF BRIDGE COMPLETE - BRIDGE A (34' X 177') @ \$100/SQ FT.   | \$601,800.00          |
| 0195                        | 543-9000 | 1.000    | LS    | \$1,368,800.00 | CONSTR OF BRIDGE COMPLETE - BRIDGE B (42' X 324') @ \$100/ SQ. FT. | \$1,368,800.00        |
| 0200                        | 627-1020 | 3750.000 | SF    | \$41.40        | MSE WALL FACE, 20 - 30 FT HT, WALL NO - WALL #1 @ RAMP A           | \$155,233.69          |
| <b>SUBTOTAL FOR BRIDGE:</b> |          |          |       |                |  | <b>\$2,129,175.94</b> |

# DETAILED COST ESTIMATE



**Job: 422550**

**0040 - SIGNING & MARKING**

| Line Number                                | ITEM     | QUANTITY | UNITS | PRICE        | DESCRIPTION                         | AMOUNT              |
|--|----------|----------|-------|--------------|-------------------------------------|---------------------|
| 0205                                       | 636-1020 | 410.000  | SF    | \$12.72      | HWY SGN,TP1MAT,REFL SH TP3          | \$5,216.06          |
| 0210                                       | 636-1029 | 55.000   | SF    | \$14.28      | HWY SGN,TP2 MATL,REFL SH TP 3       | \$785.44            |
| 0215                                       | 636-1033 | 343.000  | SF    | \$18.69      | HWY SIGNS, TP1MAT,REFL SH TP 9      | \$6,410.88          |
| 0220                                       | 636-2070 | 150.000  | LF    | \$8.30       | GALV STEEL POSTS, TP 7              | \$1,245.29          |
| 0225                                       | 636-2080 | 150.000  | LF    | \$11.14      | GALV STEEL POSTS, TP 8              | \$1,671.59          |
| 0230                                       | 636-2090 | 100.000  | LF    | \$8.85       | GALV STEEL POSTS, TP 9              | \$885.45            |
| 0235                                       | 639-3002 | 2.000    | EA    | \$9,780.00   | STEEL STRAIN POLE, TP II            | \$19,560.00         |
| 0240                                       | 639-3004 | 6.000    | EA    | \$7,936.97   | STEEL STRAIN POLE, TP IV            | \$47,621.82         |
| 0245                                       | 647-1000 | 1.000    | LS    | \$100,000.00 | TRAF SIGNAL INSTALLATION NO - NO. 1 | \$100,000.00        |
| 0250                                       | 652-5301 | 2000.000 | LF    | \$0.14       | SOLID TRAF STRIPE, 6 IN, WHITE      | \$282.88            |
| 0255                                       | 652-5451 | 2000.000 | LF    | \$0.11       | SOLID TRAF STRIPE, 5 IN, WHITE      | \$226.84            |
| 0260                                       | 652-6301 | 1100.000 | GLF   | \$0.09       | SKIP TRAF STRIPE, 6 IN, WHITE       | \$96.27             |
| 0265                                       | 652-6501 | 1100.000 | GLF   | \$0.06       | SKIP TRAF STRIPE, 5 IN, WHITE       | \$63.11             |
| 0270                                       | 653-0140 | 1.000    | EA    | \$152.77     | THERM PVMT MARK, ARROW, TP 4        | \$152.77            |
| 0275                                       | 653-0210 | 10.000   | EA    | \$100.69     | THERM PVMT MARK, WORD, TP 1         | \$1,006.88          |
| 0280                                       | 653-1704 | 400.000  | LF    | \$3.61       | THERM SOLID TRAF STRIPE,24",WH      | \$1,444.95          |
| 0285                                       | 653-1706 | 254.000  | LF    | \$2.66       | THERM SLD TRAF STRP,24 IN,YLW       | \$675.99            |
| 0290                                       | 653-1804 | 665.000  | LF    | \$1.72       | THERM SOLID TRAF STRIPE, 8",WH      | \$1,143.53          |
| 0295                                       | 653-2501 | 3.000    | LM    | \$1,382.76   | THERMO SOLID TRAF ST, 5 IN, WH      | \$4,148.29          |
| 0300                                       | 653-2502 | 3.000    | LM    | \$1,294.10   | THERMO SOLID TRAF ST, 5 IN YE       | \$3,882.30          |
| 0305                                       | 653-4501 | 3.000    | GLM   | \$674.34     | THERMO SKIP TRAF ST, 5 IN, WHI      | \$2,023.01          |
| 0310                                       | 654-1001 | 120.000  | EA    | \$3.63       | RAISED PVMT MARKERS TP 1            | \$435.52            |
| 0315                                       | 654-1003 | 120.000  | EA    | \$3.35       | RAISED PVMT MARKERS TP 3            | \$401.93            |
| <b>SUBTOTAL FOR SIGNING &amp; MARKING:</b> |          |          |       |              |                                     | <b>\$199,380.80</b> |

**0050 - EROSION CONTROL - PERM**

| Line Number                                 | ITEM     | QUANTITY  | UNITS | PRICE    | DESCRIPTION                   | AMOUNT             |
|---|----------|-----------|-------|----------|-------------------------------|--------------------|
| 0320  | 603-2180 | 114.000   | SY    | \$53.29  | STN DUMPED RIP RAP, TP 3, 12" | \$6,074.49         |
| 0325  | 603-7000 | 114.000   | SY    | \$4.30   | PLASTIC FILTER FABRIC         | \$490.32           |
| 0330  | 700-6910 | 11.000    | AC    | \$622.14 | PERMANENT GRASSING            | \$6,843.49         |
| 0335  | 700-7000 | 32.000    | TN    | \$33.82  | AGRICULTURAL LIME             | \$1,082.32         |
| 0345  | 700-8000 | 10.000    | TN    | \$505.18 | FERTILIZER MIXED GRADE        | \$5,051.81         |
| 0350  | 700-8100 | 530.000   | LB    | \$2.85   | FERTILIZER NITROGEN CONTENT   | \$1,510.77         |
| 0355  | 710-9000 | 21472.000 | SY    | \$3.36   | PERM SOIL REINFORCING MAT     | \$72,140.55        |
| <b>SUBTOTAL FOR EROSION CONTROL - PERM:</b> |          |           |       |          |                               | <b>\$93,193.75</b> |

**0060 - EROSION CONTROL - TEMP**

| Line Number                                 | ITEM     | QUANTITY  | UNITS | PRICE      | DESCRIPTION                             | AMOUNT              |
|---|----------|-----------|-------|------------|---|---------------------|
| 0360  | 163-0232 | 11.000    | AC    | \$516.38   | TEMPORARY GRASSING                      | \$5,680.18          |
| 0365  | 163-0240 | 216.000   | TN    | \$166.15   | MULCH                                   | \$35,887.46         |
| 0370  | 163-0300 | 5.000     | EA    | \$1,107.92 | CONSTRUCTION EXIT                       | \$5,539.60          |
| 0375  | 163-0520 | 1000.000  | LF    | \$13.61    | CONSTR AND REMOVE TEMP PIPE SLOPE DRAIN | \$13,605.53         |
| 0380  | 163-0529 | 1668.000  | LF    | \$3.01     | CNST/REM TEMP SED BAR OR BLD STRW CK DM | \$5,012.42          |
| 0385  | 163-0550 | 67.000    | EA    | \$151.69   | CONS & REM INLET SEDIMENT TRAP          | \$10,163.26         |
| 0390  | 165-0010 | 7593.000  | LF    | \$0.58     | MAINT OF TEMP SILT FENCE, TP A          | \$4,388.15          |
| 0395  | 165-0071 | 834.000   | LF    | \$0.65     | MAINT OF SEDIMENT BARRIER - BALED STRAW | \$544.30            |
| 0400  | 165-0101 | 5.000     | EA    | \$340.42   | MAINT OF CONST EXIT                     | \$1,702.08          |
| 0405  | 165-0105 | 67.000    | EA    | \$32.37    | MAINT OF INLET SEDIMENT TRAP            | \$2,168.95          |
| 0410  | 167-1000 | 2.000     | EA    | \$415.51   | WATER QUALITY MONITORING AND SAMPLING   | \$831.02            |
| 0415  | 167-1500 | 18.000    | MO    | \$771.31   | WATER QUALITY INSPECTIONS               | \$13,883.65         |
| 0420  | 171-0010 | 15186.000 | LF    | \$1.87     | TEMPORARY SILT FENCE, TYPE A            | \$28,462.06         |
| 0425  | 700-7000 | 15.000    | TN    | \$34.43    | AGRICULTURAL LIME                       | \$516.51            |
| 0435  | 700-8000 | 2.000     | TN    | \$491.07   | FERTILIZER MIXED GRADE                  | \$982.14            |
| 0440  | 700-8100 | 30.000    | LB    | \$3.32     | FERTILIZER NITROGEN CONTENT             | \$99.63             |
| 0445  | 716-2000 | 21472.000 | SY    | \$1.33     | EROSION CONTROL MATS, SLOPES            | \$28,543.37         |
| <b>SUBTOTAL FOR EROSION CONTROL - TEMP:</b> |          |           |       |            |   | <b>\$158,010.31</b> |

**TOTALS FOR JOB 422550**

# DETAILED COST ESTIMATE



Job: 422550

|  |                 |
|--|-----------------|
| ITEMS COST:                              | \$10,096,242.63 |
| COST GROUP COST:                         | \$0.00          |
| ESTIMATED COST:                          | \$10,096,242.63 |
| CONTINGENCY PERCENT:                     | 0.00            |
| ENGINEERING AND INSPECTION:              | 0.00            |
| ESTIMATED COST WITH CONTINGENCY AND E&I: | \$10,096,242.63 |

**PROJ. NO.** NH000-0006-02(055)  
**P.I. NO.** 422550  
**DATE** 4/25/2012

**CALL NO.**

| INDEX (TYPE)  | DATE   | INDEX     |
|---------------|--------|-----------|
| REG. UNLEADED | Apr-12 | \$ 3.842  |
| DIESEL        |        | \$ 4.138  |
| LIQUID AC     |        | \$ 623.00 |

Link to Fuel and AC Index:  
<http://www.dot.ga.gov/doingbusiness/Materials/Pages/asphaltcementindex.aspx>

**LIQUID AC ADJUSTMENTS**

$PA = (((APM - APL) / APL)) \times TMT \times APL$

**Asphalt**

|  |          |     |    |               |    |                   |
|--|----------|-----|----|---------------|----|-------------------|
| Price Adjustment (PA)                                |          |     |    | <b>310254</b> | \$ | <b>310,254.00</b> |
| Monthly Asphalt Cement Price month placed (APM)      | Max. Cap | 60% | \$ | 996.80        |    |                   |
| Monthly Asphalt Cement Price month project let (APL) |          |     | \$ | 623.00        |    |                   |
| Total Monthly Tonnage of asphalt cement (TMT)        |          |     |    | <b>830</b>    |    |                   |

| ASPHALT    | Tons         | %AC  | AC ton     |
|------------|--------------|------|------------|
| 12.5 mm SP | 3300         | 5.0% | 165        |
| Leveling   | 100          | 5.0% | 5          |
| 19 mm SP   | 4400         | 5.0% | 220        |
| 25 mm SP   | 8800         | 5.0% | 440        |
|            | <b>16600</b> |      | <b>830</b> |

**BITUMINOUS TACK COAT**

|  |          |     |    |                    |    |                 |
|--|----------|-----|----|--------------------|----|-----------------|
| Price Adjustment (PA)                                |          |     |    | <b>9552.776912</b> | \$ | <b>9,552.78</b> |
| Monthly Asphalt Cement Price month placed (APM)      | Max. Cap | 60% | \$ | 996.80             |    |                 |
| Monthly Asphalt Cement Price month project let (APL) |          |     | \$ | 623.00             |    |                 |
| Total Monthly Tonnage of asphalt cement (TMT)        |          |     |    | <b>25.55585049</b> |    |                 |

| Bitum Tack | Gals | gals/ton | tons       |
|------------|------|----------|------------|
|            | 5950 | 232.8234 | 25.5558505 |

**BITUMINOUS TACK COAT (surface treatment)**

|                       |    |   |    |   |
|-----------------------|----|---|----|---|
| Price Adjustment (PA) | \$ | - | \$ | - |
|-----------------------|----|---|----|---|

PROJ. NO.

NH000-0006-02(055)

CALL NO.

P.I. NO.

422550

DATE

4/25/2012

|  |          |     |    |        |
|--|----------|-----|----|--------|
| Monthly Asphalt Cement Price month placed (APM)      | Max. Cap | 60% | \$ | 996.80 |
| Monthly Asphalt Cement Price month project let (APL) |          |     | \$ | 623.00 |
| Total Monthly Tonnage of asphalt cement (TMT)        |          |     |    | 0      |

| Bitum Tack         | SY | Gals/SY | Gals | gals/ton | tons |
|--------------------|----|---------|------|----------|------|
| Single Surf. Trmt. |    | 0.20    | 0    | 232.8234 | 0    |
| Double Surf.Trmt.  |    | 0.44    | 0    | 232.8234 | 0    |
| Triple Surf. Trmt  |    | 0.71    | 0    | 232.8234 | 0    |

|                                   |  |  |  |           |                   |
|-----------------------------------|--|--|--|-----------|-------------------|
| <b>TOTAL LIQUID AC ADJUSTMENT</b> |  |  |  | <b>\$</b> | <b>319,806.78</b> |
|-----------------------------------|--|--|--|-----------|-------------------|



**P.I. 422550 LIBERTY EXPRESSWAY**

**DATE 4/26/2012**

|                              |                        |
|------------------------------|------------------------|
| Construction Cost Estimate:  | \$10,096,242.63        |
| 5% E & I:                    | \$504,812.13           |
| Construction Contingency:    | \$403,849.71           |
| Total Fuel Price Adjustment: | \$225,448.09           |
| Total Liquid AC Adjustment:  | \$319,806.78           |
| TOTAL Const:                 | \$11,550,159.34        |
| Utility Cost Estimate:       | \$50,000.00            |
| Utility Contingency:         | \$15,000.00            |
| TOTAL Utility:               | \$65,000.00            |
| <b>PROJECT TOTAL:</b>        | <b>\$11,615,159.34</b> |

|                               |    |
|-------------------------------|----|
| CONSTRUCTION CONTINGENCY (%)= | 4  |
| UTILITY CONTINGENCY (%)=      | 30 |