

DEPARTMENT OF TRANSPORTATION  
STATE OF GEORGIA  
TIA PROJECT CONCEPT REPORT

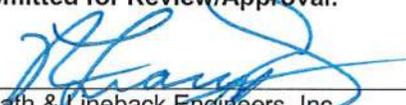
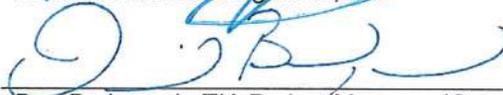
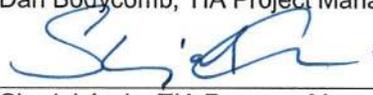
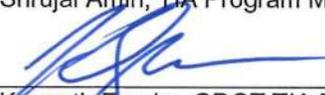
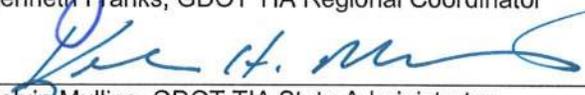


Project Type: Road Widening  
GDOT District: 4  
Federal Route Number: 280  
State Route Number: 30

P.I. Number: 422470  
County: Crisp  
Project Number: STP00-0030-02(029)  
Regional Project ID: RC08-000010

*This project proposes to widen and reconstruct US 280/SR 30 from East of Lake Blackshear to the SR 300 Connector West of Cordele. The project length is approximately 7.5 miles.*

Submitted for Review/Approval:

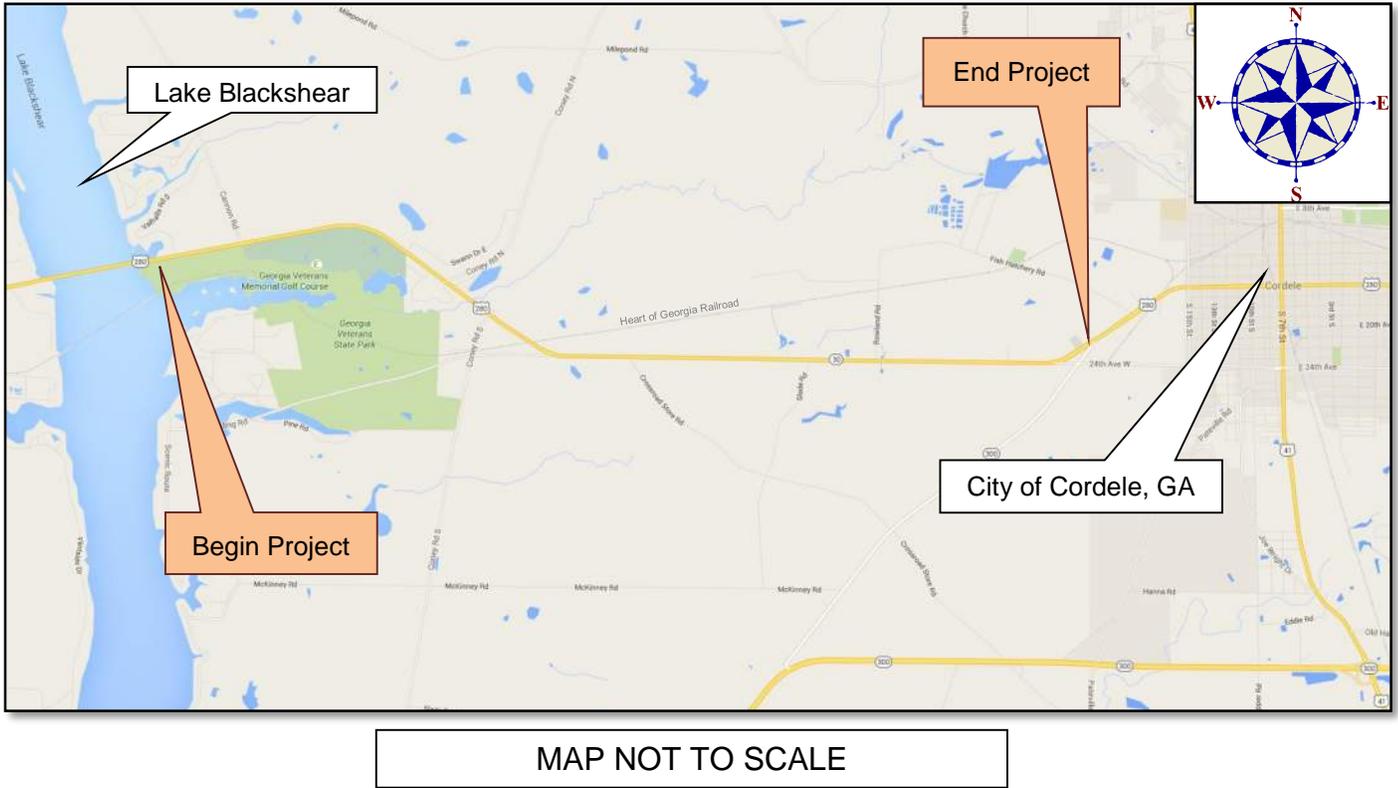
 Heath & Lineback Engineers, Inc.	<u>7/21/16</u> Date
 Dan Bodycomb, TIA Project Manager (Consultant)	<u>7/22/2016</u> Date
 Shrujal Amin, TIA Program Manager	<u>7/22/2016</u> Date
 Kenneth Franks, GDOT TIA Regional Coordinator	<u>7/22/16</u> Date
 Kelvin Mullins, GDOT TIA State Administrator	<u>08/01/2016</u> Date

Approval:

Concur:   
Hiral Patel, Director of Engineering 8/9/16  
Date

Approve:   
Meg Pirkle, GDOT Chief Engineer 8.10.16  
Date

### PROJECT LOCATION:



**Figure 1 – Project Location Map**

**PI No. 422470 – Crisp County  
Widening and Reconstructing US 280/SR 30 from east of Lake Blackshear to SR 300 Conn.**

County: Crisp

## PLANNING & BACKGROUND DATA

### Project Justification:

This project has been identified in the River Valley Region's constrained Transportation Investment Act (TIA) project list. This project was approved by the Region's voters and will widen and reconstruct US 280/SR 30 from east of Lake Blackshear, where it ties into TIA Project RC08-000012 (PI No. 0012578), to the SR 300 Connector west of Cordele. US 280/SR 30 is a major east-west corridor and is part of the Governor's Road Improvement Program (GRIP), which is a system of economic development highways targeted to connect 95% of Georgia cities with populations of 2500 or more to the Interstate Highway System. The GRIP system's goal is to place 98% of Georgia's population within 20 miles of a four-lane road.

US 280/SR 30 is Power Alley, which is one of the 19 GRIP corridors. Aimed at the development of infrastructure in the corridor, the Power Alley Initiative has been designed to facilitate growth in 43 counties of Georgia that are characterized by economic stagnation and decline despite a strong state economy. There are 16 of these counties that form a corridor along US 280/SR 30. The widening of US 280/SR 30 to 4 lanes is part of the infrastructure development for this corridor.

Although the main goal of the project is to improve economic development of the corridor, the widening and reconstruction of US 280/SR 30 would additionally improve the traffic operations of the roadway.

### Existing Conditions:

Within the project limits, US 280/SR 30 is a rural principal arterial which stretches from east of Lake Blackshear to the SR 300 Connector, west of the City of Cordele. The posted speed limit is 55 mph, and the maximum grade is 3%. The existing right-of-way width varies from 100 to 200 feet.

US 280/SR 30 consists of three different asphalt-paved sections from east to west:

- (a) 2-12-foot travel lanes for 3.57 miles
- (b) 2-12-foot travel lanes with an alternating 12-foot passing lane for 3.88 miles, and
- (c) 4-12-foot travel lanes where US 280/SR 30 ties to the SR 300 Connector for 0.37 miles.

Each of these sections has 10-foot rural shoulders with roadside ditches.

US 280/SR 30 crosses Gum Creek utilizing a 200-foot x 44-foot concrete T-beam bridge. In addition, US 280/SR 30 crosses the Heart of Georgia Railroad with an at-grade crossing. Additionally, US 280/SR 30 intersects SR 300 Connector and 24<sup>th</sup> Avenue at "Y" intersections.

### Other projects in the area:

Georgia Department of Transportation (GDOT) projects planned in the proposed project vicinity.

- PI 322770 - Widening and reconstruction of US 280/SR 30 from CS 311/Lamar Road to CS 500/Ferguson Street, east of Americus, Sumter County
- PI 322775 - Widening and reconstruction of US 280/SR 30 from CS 500/Ferguson Street to Lake Blackshear, east of Americus, Sumter County

Office of TIA project planned in the proposed project vicinity.

- PI 0012578 - US 280/SR 30 over Lake Blackshear Parallel Bridge Project

**TIA Regional Commission:** River Valley RC

**Congressional District(s):** 2

**Federal Oversight:**     Full Oversight         Exempt         State Funded         Other - TIA

County: Crisp

**Projected Traffic:** ADT 24 HR T: 23 %  
 Current Year (2016): 6,650 Open Year (2024): 7,500 Design Year (2044): 10,100  
 Traffic Projections Performed by: Wolverton & Associates, Inc.

**Functional Classification (Mainline):** Rural Principal Arterial

**Complete Streets - Bicycle, Pedestrian, and/or Transit Standards Warrants:**

Warrants met: None Bicycle Pedestrian Transit

**Is this a 3R (Resurfacing, Restoration, & Rehabilitation) Project:**  No  Yes

## DESIGN AND STRUCTURAL

**Description of Proposed Project:**

This project is in Band 3 of the TIA Program.

The proposed construction will begin east of the Lake Blackshear bridge and end east of the US 280/SR 30 and SR 300 Connector/Old Albany Road intersection. The project will consist of widening the existing two-lane US 280/SR 30 roadway to 2-12-foot travel lanes in each direction, with a 4-foot flush median. Right and left turn lanes will be provided as required. The existing pavement will be resurfaced and new lanes and shoulders will be added where necessary. Rural shoulders along US 280/SR 30 are proposed to be 10-foot wide with 4-foot paved shoulders. The shoulders will have roadside ditches.

At Gum Creek, the existing 200' x 47'-3" US 280/SR 30 bridge is proposed to be widened by 28'-3" to accommodate the eastbound travel lanes. A final determination is subject to the results of the requested bridge deck and condition survey.

A new at-grade crossing for the Heart of Georgia Railroad is proposed at the existing location. The crossing will be improved to meet current GDOT standards and AREMA Requirements.

Sideroads have been evaluated and in some cases will require minor realignment to meet GDOT requirements. The proposed sideroad typical sections are as follows:

- (a) SR 300 Conn: 12-foot lanes with 10-foot rural shoulders, 2-foot paved
- (b) 24<sup>th</sup> Ave: 12-foot lanes with 8-foot rural shoulders, 2-foot paved
- (c) Minor sideroads: 11-foot or 12-foot lanes with 8-foot rural shoulders, 2-foot paved

Drainage structures within the project corridor will be evaluated and either extended or reconstructed.

**Major Structures:**

Structure ID	Existing	Proposed
081-0071-0	200' x 47'-3" concrete T-Beam Bridge over Gum Creek, Sufficiency Rating: 96.40 (as of 2015), The bridge consists of five 40 ft spans.	Widen the Existing 200' x 47'-3" concrete T-Beam Bridge over Gum Creek by 28'-3". The existing span arrangement will be matched.

County: Crisp

**Mainline Design Features: US 280/SR 30**

Feature	Existing	Standard	US 280/SR 30
<b>Typical Section</b>			
<b>Number of Lanes and Lane Width(s)</b>	a) 3.4 mile section with 2 - 12' lanes b) 4.1 mile section with 2 - 12' Lanes with alternating 12' passing lanes c) 0.7 mile section with 4 - 12' lanes	11' - 12' Lanes	2 Lanes in each direction 12' Width
<b>Median Width &amp; Type</b>	a) N/A b) N/A c) Varies 0' to 10'	24' Raised 32' Depressed	4' Flush
<b>Outside Shoulder or Border Area Width</b>	10'-0" Rural Shoulders with roadside ditches	10'-0" Overall 6'-6" Paved	10'-0" Overall 4'-0" Paved with roadside ditches
<b>Outside Shoulder Slope</b>	Varies	6%	6%
<b>Inside Shoulder Width</b>	N/A	Overall 6'-0" 2'-0" Paved	N/A
<b>Auxiliary Lanes</b>	12' Passing Lanes	N/A	Not required with widening
<b>Bike Lanes</b>	N/A	4'-0" Incorporated into the Outside Shoulder	N/A
<b>Posted Speed</b>	55 mph	N/A	55 mph
<b>Design Speed</b>	N/A	55 mph	55 mph
<b>Min Horizontal Curve Radius</b>	1900'	1060'	1060'
<b>Maximum Superelevation Rate</b>	N/A	6%	6%
<b>Maximum Grade</b>	3%	4% (Level)	4%
<b>Access Control</b>	By Permit	By Permit	By Permit
<b>Design Vehicle</b>	N/A	WB-62	WB-62
<b>Pavement Type</b>	Asphalt	-	Asphalt

**Side Road Design Features: All Side Roads (Local Roadways)**

Feature	Existing	Standard 55 mph	Side Roads 55 mph	Standard 35/45 mph	Side Roads 35/45 mph
<b>Typical Section</b>					
<b>Number of Lanes and Lane Width(s)</b>	2 Lanes 10' to 12' Widths	11' - 12' Lanes	2 Lanes 11' - 12' Widths	11' - 12' Lanes	2 Lanes 11' - 12' Widths
<b>Median Width &amp; Type</b>	N/A	N/A	N/A	N/A	N/A
<b>Outside Shoulder or Border Area Width</b>	Width Varies with roadside ditches	10'-0" Overall 2'-0" Paved	10'-0" Overall 2'-0" Paved with roadside ditches	8'-0" Overall 2'-0" Paved	8'-0" Overall 2'-0" Paved with roadside ditches
<b>Outside Shoulder Slope</b>	Varies	6%	6%	6%	6%
<b>Inside Shoulder Width</b>	N/A	N/A	N/A	N/A	N/A
<b>Bike Lanes</b>	N/A	N/A	N/A	N/A	N/A

County: Crisp

<b>Posted Speed</b>	<b>Varies 35 to 55 mph</b>	<b>N/A</b>	<b>55 mph</b>	<b>N/A</b>	<b>Varies 35 to 45 mph</b>
<b>Design Speed</b>	<b>N/A</b>	<b>55 mph</b>	<b>55 mph</b>	<b>35/45 mph</b>	<b>35/45 mph</b>
<b>Min Horizontal Curve Radius</b>	<b>N/A</b>	<b>1060'</b>	<b>1060'</b>	<b>340' (35 mph) 643' (45 mph)</b>	<b>340' (35 mph) 643' (45 mph)</b>
<b>Maximum Superelevation Rate</b>	<b>N/A</b>	<b>6%</b>	<b>6%</b>	<b>6%</b>	<b>6%</b>
<b>Maximum Grade</b>	<b>3%</b>	<b>6% (Level)</b>	<b>6%</b>	<b>7% (Level)</b>	<b>7%</b>
<b>Access Control</b>	<b>N/A</b>	<b>-</b>	<b>None</b>	<b>-</b>	<b>None</b>
<b>Design Vehicle</b>	<b>N/A</b>	<b>SU</b>	<b>SU</b>	<b>S-BUS36</b>	<b>S-BUS36</b>
<b>Pavement Type</b>	<b>Asphalt/Dirt</b>	<b>-</b>	<b>Asphalt</b>	<b>-</b>	<b>Asphalt</b>

**Major Interchanges/Intersections:**

US 280/SR 30 ties into 24<sup>th</sup> Ave. The configuration of this intersection will remain.

**Lighting required:**  No  Yes

**Off-site Detours Anticipated:**  No  Undetermined  Yes

**Transportation Management Plan [TMP] Required:**  No  Yes

If Yes: Project classified as:  Non-Significant  Significant

TMP Components Anticipated:  TTC  TO  PI

**Will Context Sensitive Solutions procedures be utilized?**  No  Yes

A 4-foot flush median and 4-foot paved outside shoulders will be utilized to reduce costs and to reduce impacts to the Georgia Veterans Memorial State Park, residences and businesses along the project.

**Design Exceptions to FHWA/AASHTO controlling criteria anticipated:** No

**Design Variances to GDOT Standard Criteria anticipated:** Yes.

The proposed design will utilize a 4-foot flush median on US 280/SR 30 for the project length. The GDOT standard for a rural arterial at 55 mph would require either a raised 24-foot median or a 32-foot depressed median. The use of the 4-foot flush median will reduce cost and impacts to the State Park, residences, farms and businesses along the project.

The proposed design will utilize 4-foot paved shoulders on US 280/SR 30 for the project length. The GDOT standard for a four lane rural arterial at 55 mph would require a 6.5-foot paved outside shoulder. The use of the 4-foot paved shoulders will reduce costs.

**UTILITY AND PROPERTY**

**Temporary State Route Needed:**  No  Yes  Undetermined

**Railroad Involvement:** Yes

GDOT Office of Intermodal Programs and Heart of Georgia Railroad (HOG)

**Utility Involvements:** Yes

- Crisp County Power Commission
- BellSouth
- City of Cordele (Water/Sewer/Gas)
- Citizens Telephone
- Mediacom
- Heart of Georgia Railroad
- Plant Telephone
- MCI

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SUE Required:  No  Yes (Level D)Public Interest Determination Policy and Procedure recommended?  No  YesRight-of-Way: Existing width: 100 ft to 200 ft. Proposed width: 155 ft to 195 ft.  
Required Right-of-Way anticipated:  No  Yes  UndeterminedEasements anticipated:  None  Temporary  Permanent  Utility  Other

Anticipated total number of impacted parcels:	<u>70</u>
Displacements anticipated:	Businesses: <u>2</u>
	Residences: <u>3</u>
	Other: <u>0</u>
Total Displacements:	<u>5</u>

## ENVIRONMENTAL AND PERMITS

Anticipated Environmental Document:

GEPA:  NEPA:  CE  PCEMS4 Compliance – Is the project located in an MS4 area?  No  Yes

Environmental Permits, Variances, Commitments, and Coordination anticipated:

Air Quality:

Is the project located in a PM 2.5 Non-attainment area?  No  YesIs the project located in an Ozone Non-attainment area?  No  YesCarbon Monoxide hotspot analysis:  Required  Not Required  TBD

NEPA/GEPA Comments &amp; Information:

This project will have been permitted as part of the larger USACE 404 Permit associated with PI No. 0012578 (US 280 over Lake Blackshear); however, a permit modification will be required prior to Let. This project does not involve the use of federal funds and does not require a NEPA document; however, its use of TIA funding requires it to follow the current GEPA process. A public information open house will be held.

**Major stakeholders:** Crisp County Power Commission, Georgia State Parks, City of Cordele, Heart of Georgia Railroad and GDOT Office of Intermodal Programs.

## CONSTRUCTION

Issues potentially affecting constructability/construction schedule: N/A

Early completion incentives recommended for consideration:  No  Yes

County: Crisp

## COORDINATION, ACTIVITIES, RESPONSIBILITIES, AND COSTS

### Project Meetings:

Project Activity	Party Responsible for Performing Task(s)
Concept Development	Heath & Lineback Engineers, Inc.
Design	Heath & Lineback Engineers, Inc.
Right-of-Way Acquisition	GDOT/TIA
Utility Relocation	GDOT
Letting to Contract	GDOT
Construction Supervision	GDOT
Providing Material Pits	Construction Contractor
Providing Detours	N/A
Environmental Studies, Documents, & Permits	Heath & Lineback Engineers, Inc. Edwards-Pitman Environmental
Environmental Mitigation	GDOT/TIA
Construction Inspection & Materials Testing	GDOT

**Other coordination to date:** Kick-Off Meeting held on 8-12-2015  
Scheduling Meeting held on 2-23-2016  
Railroad Coordination Meeting held on 4-19-2016  
Alternatives Analysis Discussion Meeting held on 6-6-2016

### Project Cost Estimate and Funding Responsibilities:

	Breakdown of PE	Breakdown of ROW <sup>③</sup>	Breakdown of Reimbursable Utilities	Breakdown of CST <sup>②</sup>	Total Cost
TIA Programmed Budget					\$ 32,899,573
Funded By	TIA	TIA	TIA	TIA	
Date of Estimate	5-09-2016	7-18-2016	7-18-2016	7-18-2016	
Estimated Amount	\$ 3,250,000	\$ 3,050,700	\$ 3,076,989	\$ 20,755,027	
Budget Contingency <sup>①</sup>	\$ 212,500	\$ 611,764	\$ 0	\$ 1,972,200	
Total Estimated Cost	\$ 3,462,500	\$ 3,662,464	\$ 3,076,989	\$ 22,727,227	\$ 32,929,180

**NOTES:** ① Budget Contingency includes project contingency, program contingency, and program level of effort costs.  
② Construction Estimate includes Construction, 5.85% CEI, and Environmental Mitigation (as Applicable)  
③ The Preliminary ROW Cost Estimate dated 4-28-2016 has been adjusted per the reduced ROW area of the preferred alternative.

County: Crisp

## ALTERNATIVES DISCUSSION

### Gum Creek Bridge Crossing

- Retain Existing Bridge and Construct a new Parallel Bridge:** This option proposes to retain the existing US 280/SR 30 bridge over Gum Creek that was constructed in 1990 and has a sufficiency rating of 96.40 for the proposed westbound US 280/SR 30 travel lanes. This alternate would construct a new 200-foot long concrete parallel bridge measuring 39 feet 3 inches out-to-out, south of the existing bridge to carry the proposed eastbound US 280/SR 30 travel lanes. At the bridge, a short segment of a 24-foot median is required to facilitate a split profile to provide required free board over the flood stage elevations and to provide adequate construction clearance between the bridges. The parallel bridge and widened median requires guardrail and barrier in an otherwise unobstructed 4 ft median. This option required acceptance from the GDOT Bridge Office since the hydraulic opening causes substandard backwater conditions. The GDOT Drainage Manual states that bridge paralleling projects where the existing backwater is greater than 1 ft, the existing backwater is acceptable if there are no scour or flooding issues. Based on the available information and site visits, there are no scour or flooding issues. Acceptance from the GDOT Bridge Office has been obtained for substandard backwater. The new 200 ft bridge cost: \$ 902,750. **(This option was not selected because it results in a higher project cost).**
- Widening Existing Bridge:** This option proposes to widen the existing US 280/SR 30 bridge over Gum Creek to the south to provide 2-12 foot lanes in each direction and a 4-foot flush median. A 10 foot shoulder will remain on the westbound side while an 8 foot shoulder will be provided on the widened eastbound side. The new portion of the bridge will measure 28 feet 3 inches. Since the Bridge Office does not allow hydro-demolition of the bridge deck to relocate the crown point on T-beam bridges, the crown point on the widened bridge will remain at the center of the westbound lanes in the final configuration. Widening the existing bridge requires acceptable bridge and deck condition surveys. These surveys have been requested. The span arrangement for the T-beam bridge also requires an intermediate pile bent within the main channel of Gum Creek. This option required acceptance from the GDOT Bridge Office since the hydraulic opening causes substandard backwater conditions. The GDOT Drainage Manual states that bridge widenings where the existing backwater is greater than 1 ft, the existing backwater is acceptable if there are no scour or flooding issues. Based on the available information and site visits, there are no scour or flooding issues. Acceptance from the GDOT Bridge Office has been obtained for substandard backwater. The bridge widening cost is \$ 734,500. **(The bridge widening option has been selected because it is the lowest cost and retains the 4 ft median on the bridge without the need for guardrail and barrier.)**

**Preferred Alternative:** Proposes 2-12-foot travel lanes in each direction, with a 4-foot flush median and 4' paved, 10' overall shoulders from east of the Lake Blackshear Bridge to just east of the SR 300 Connector. Right and left turn lanes will be provided as required. This alternate proposes to follow the existing alignment of US 280/SR 30 and provide a new at-grade crossing for the Heart of Georgia Railroad. At Gum Creek, the existing bridge will be widened to accommodate the eastbound travel lanes.

<b>Estimated Property Impacts:</b>	<b>70</b>	<b>Estimated Total Cost:</b>	<b>\$ 32,899,277</b>
<b>Estimated ROW Cost<sup>1</sup>:</b>	<b>\$ 3,050,700</b>	<b>Estimated CST Time:</b>	<b>30 months</b>

**Rationale:** *This alternate was selected, because it provides the required operational improvements for vehicular traffic. The reduced right-of-way impacts and total project cost provide the optimum balance of the available TIA Budget and required operational improvements while providing an economic development benefit to the project corridor and region.*

County: Crisp

<b>No-Build Alternative:</b> This alternate uses the existing lane configurations and the existing rural shoulders on US 280/SR 30 and the side roads in the project corridor.			
<b>Estimated Property Impacts:</b>	<b>N/A</b>	<b>Estimated Total Cost:</b>	<b>N/A</b>
<b>Estimated ROW Cost:</b>	<b>N/A</b>	<b>Estimated CST Time:</b>	<b>N/A</b>
<b>Rationale:</b> This alternative does not provide operational improvements nor does it address the economic development benefit.			
<b>Alternative 1:</b> Proposes 2-11-foot travel lanes in each direction, with a 14-foot flush median and 2' paved, 10' overall shoulders from east of the Lake Blackshear Bridge to just east of the SR 300 Conn. Right turn lanes will be provided as required. This alternate proposes to follow the existing alignment of US 280/SR 30 and provide a new at-grade crossing for the Heart of Georgia Railroad. At Gum Creek, the existing bridge will be widened to accommodate the east bound travel lanes.			
<b>Estimated Property Impacts:</b>	<b>70</b>	<b>Estimated Total Cost:</b>	<b>\$ 34,027,695</b>
<b>Estimated ROW Cost<sup>1</sup>:</b>	<b>\$ 3,474,512</b>	<b>Estimated CST Time:</b>	<b>30 months</b>
<b>Rationale:</b> <i>This alternate provides the required operational improvements for vehicular traffic. However this alternate was not selected because the right-of-way impacts and total project cost is higher than the preferred construction alternate.</i>			

<b>Alternative 2:</b> Proposes 2-11-foot lanes in each direction with a 14-foot flush median from the beginning of the project to east of Carnes Road through the Georgia Veterans Memorial Park area. From Georgia Veterans Memorial Park area to the end of the project the alternative proposes 2-11-foot lanes in each direction with a 32-foot depressed median. Right and left turn lanes will be provided as required. This alternate proposes to follow the existing alignment of US 280/SR 30 and provide a new at-grade crossing for the Heart of Georgia Railroad. At Gum Creek a new 200-foot x 37-foot 3-inch bridge is proposed for the eastbound lanes parallel to the existing bridge. The existing bridge will be retained to carry the westbound US 280/SR 30 lanes.			
<b>Estimated Property Impacts:</b>	<b>75</b>	<b>Estimated Total Cost:</b>	<b>\$ 40,186,447</b>
<b>Estimated ROW Cost<sup>1</sup>:</b>	<b>\$ 4,849,425</b>	<b>Estimated CST Time:</b>	<b>30 months</b>
<b>Rationale:</b> <i>This alternate provides the required operational improvements for vehicular traffic. But it was not selected due to right-of-way impacts and total project cost being higher than the preferred construction alternate.</i>			

**Comments/Additional Information:**

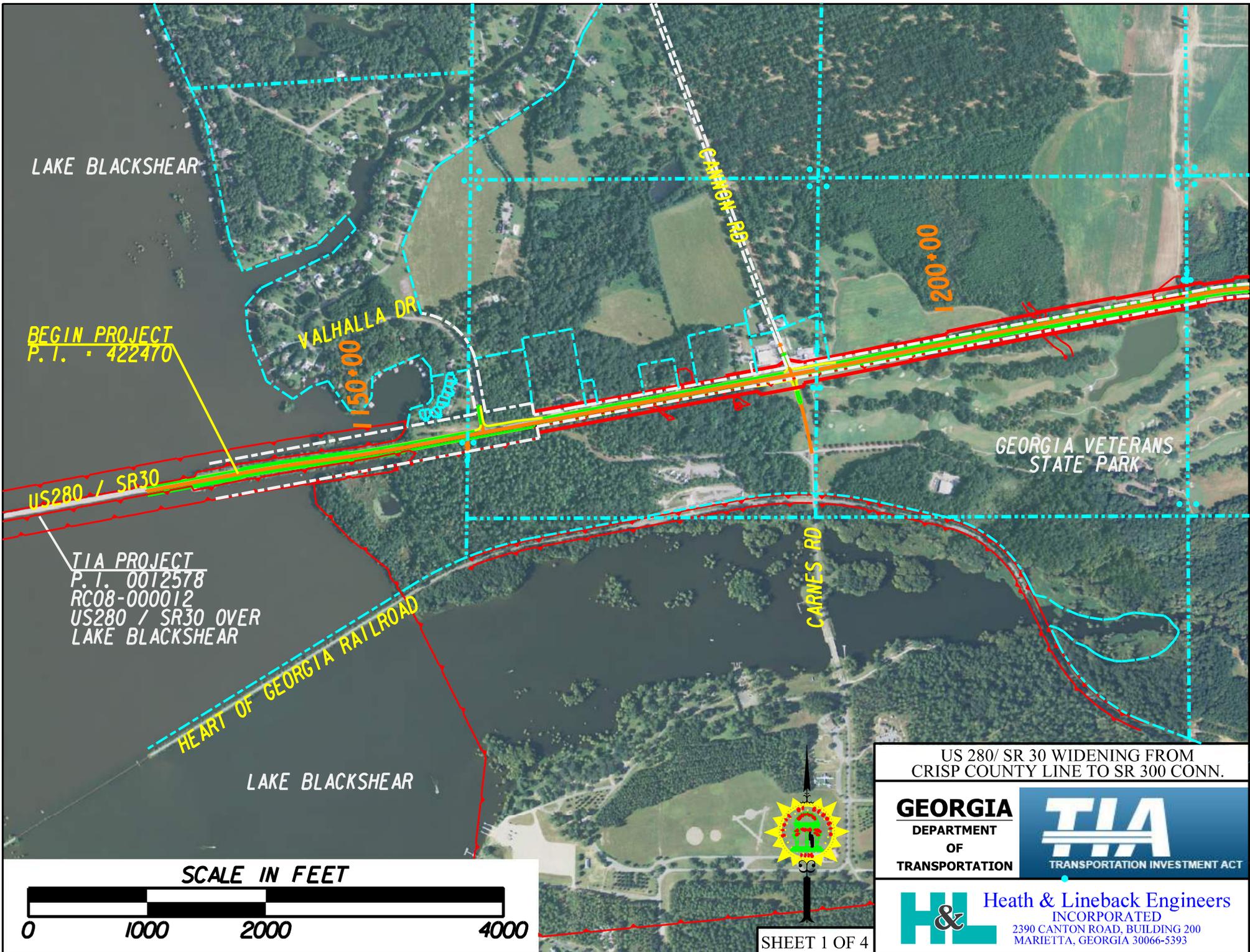
1. The Preliminary ROW Cost Estimate dated 4-28-2016 has been adjusted to reflect the actual impact for each alternate.
2. Additional Cost Savings: A Design Variance can be requested to provide a 2' paved, 6' overall shoulder width.

**LIST OF ATTACHMENTS/SUPPORTING DATA**

1. Concept Layouts
2. Typical Sections
3. Cost Estimates
  - Preferred Alternate Full Project Cost Estimate
  - Right-of-Way Cost Estimate
  - Utility Cost Estimate (pending)
4. Previous Alternatives and Options Considered
  - Concept Alternative Selection Summary
  - Options considered and Layouts

County: Crisp

- Summary of Cost for each Option
- Cost Reduction Alternates Addendum
- 5. Summary of TE Study, Signal Warrant Analysis, Traffic Projections and Approval Letter
- 6. Meeting Minutes for:
  - Kick-Off Meeting held on 8-12-2015
  - Scheduling Meeting held on 2-23-2016
  - Railroad Coordination Meeting held on 4-19-2016
  - Alternatives Analysis Discussion Meeting held on 6-6-2016
- 7. At-grade Crossing at Railroad
  - Recommendation letter sent to Intermodal 5-16-2016
  - Concurrence letter from Intermodal 6-6-2016
- 8. TIA Investment Project Sheet



LAKE BLACKSHEAR

BEGIN PROJECT  
P.I. - 422470

VALHALLA DR

150+00

1200+00

US280 / SR30

TIA PROJECT  
P.I. 0012578  
RC08-000012  
US280 / SR30 OVER  
LAKE BLACKSHEAR

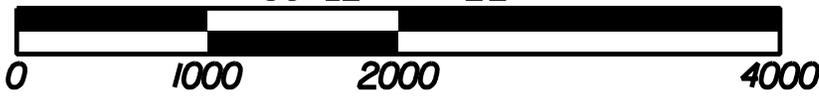
HEART OF GEORGIA RAILROAD

GEORGIA VETERANS  
STATE PARK

CARNES RD

LAKE BLACKSHEAR

SCALE IN FEET



SHEET 1 OF 4

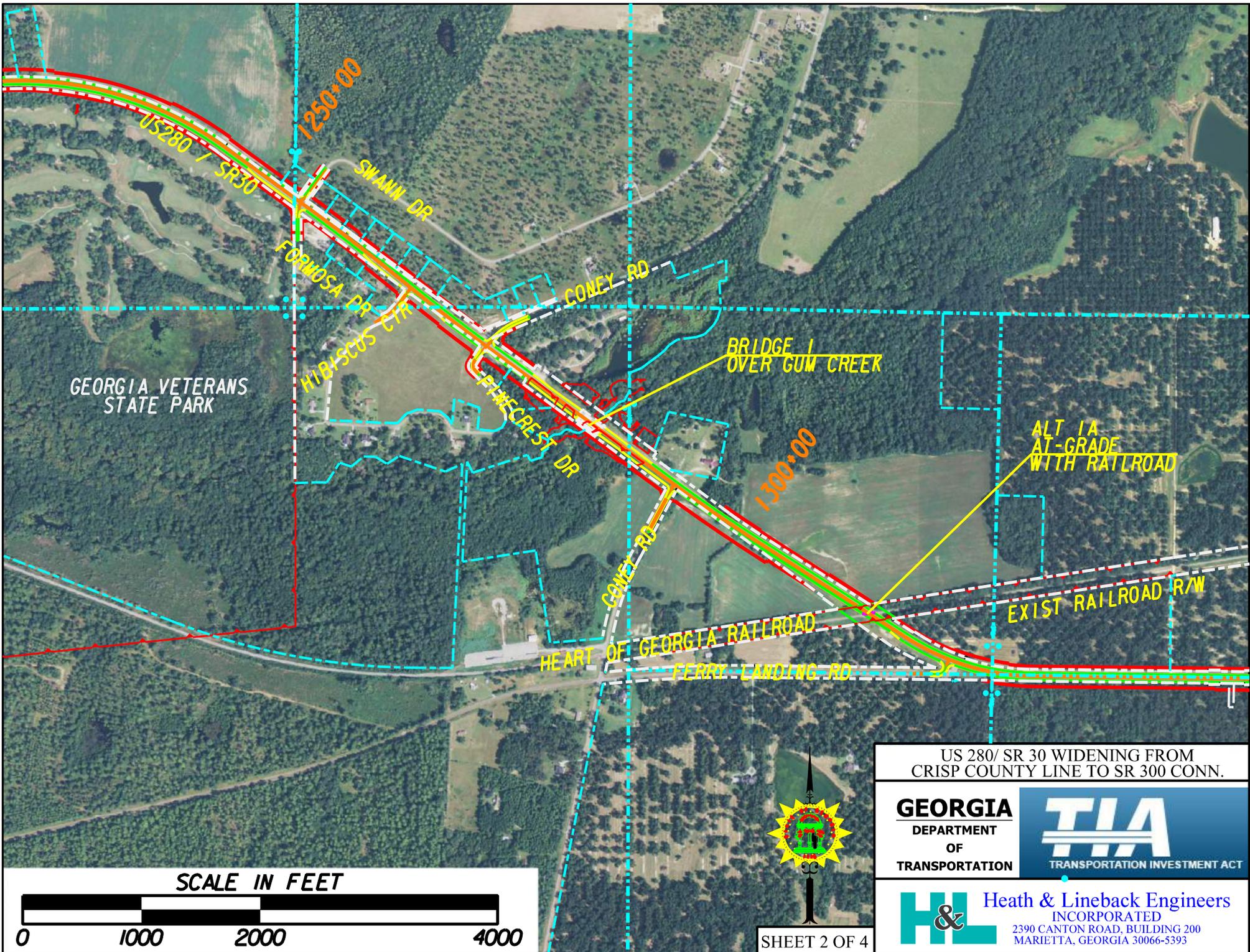
US 280/ SR 30 WIDENING FROM  
CRISP COUNTY LINE TO SR 300 CONN.

**GEORGIA**  
DEPARTMENT  
OF  
TRANSPORTATION

**TIA**  
TRANSPORTATION INVESTMENT ACT



**Heath & Lineback Engineers**  
INCORPORATED  
2390 CANTON ROAD, BUILDING 200  
MARIETTA, GEORGIA 30066-5393



GEORGIA VETERANS STATE PARK

SCALE IN FEET



SHEET 2 OF 4

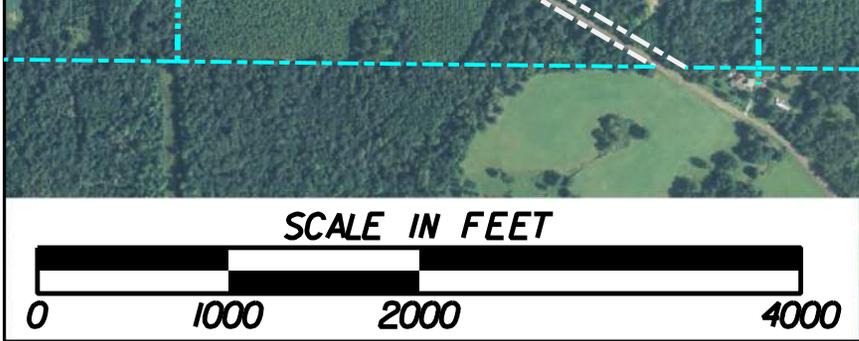
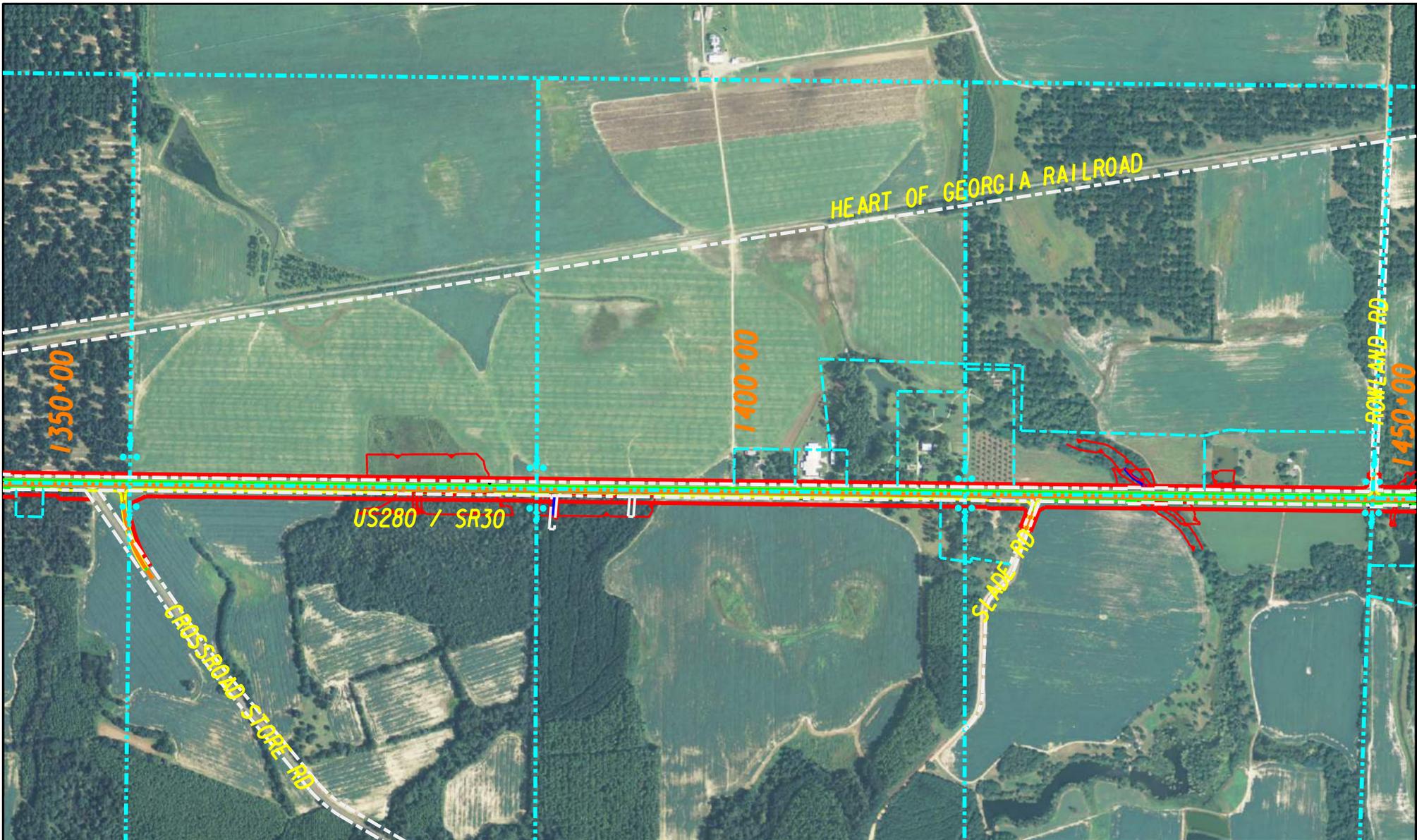
US 280/ SR 30 WIDENING FROM CRISP COUNTY LINE TO SR 300 CONN.

**GEORGIA**  
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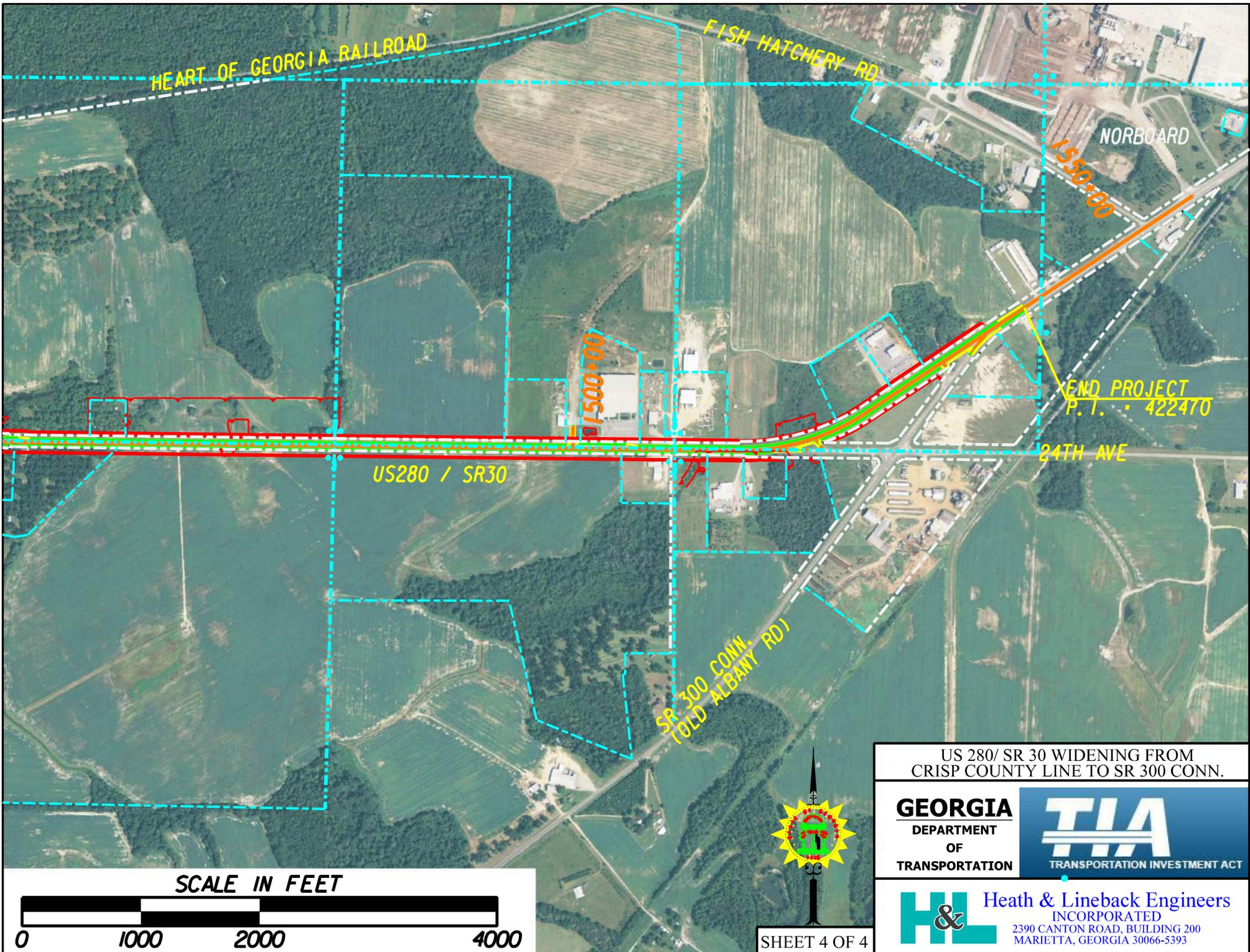


**Heath & Lineback Engineers**  
INCORPORATED  
2390 CANTON ROAD, BUILDING 200  
MARIETTA, GEORGIA 30066-5393



SHEET 3 OF 4

US 280/ SR 30 WIDENING FROM CRISP COUNTY LINE TO SR 300 CONN.	
<b>GEORGIA</b> DEPARTMENT OF TRANSPORTATION	 TRANSPORTATION INVESTMENT ACT
 <b>Heath &amp; Lineback Engineers</b> INCORPORATED 2390 CANTON ROAD, BUILDING 200 MARIETTA, GEORGIA 30066-5393	



HEART OF GEORGIA RAILROAD

FISH HATCHERY RD

NORBOARD

1550+00

17500+00

END PROJECT  
P.I. 422470

US280 / SR30

24TH AVE

SR 300 CONN.  
(OLD ALBANY RD)

SCALE IN FEET



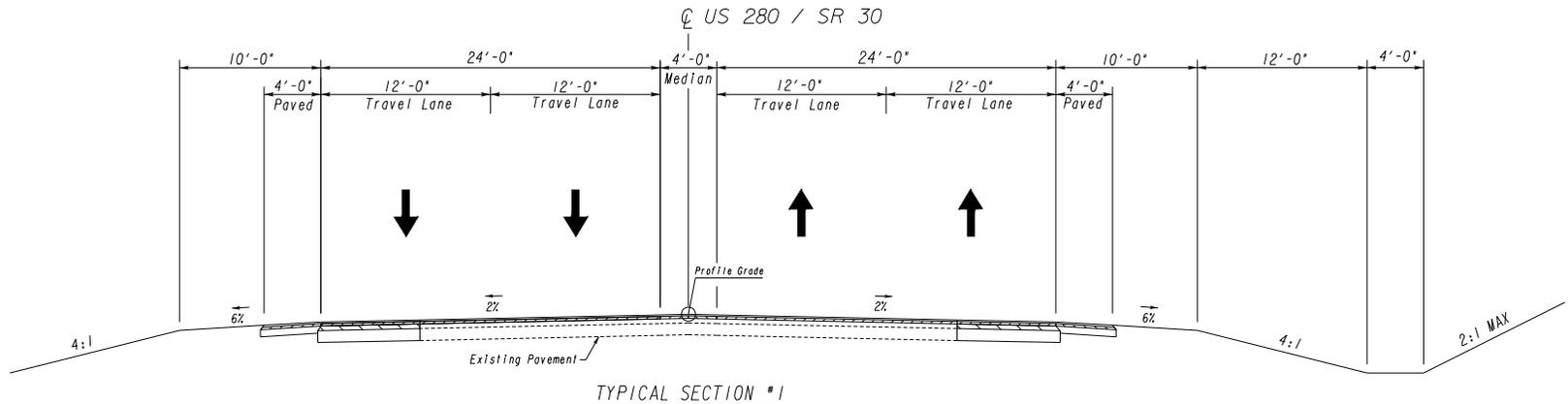
SHEET 4 OF 4

US 280/ SR 30 WIDENING FROM CRISP COUNTY LINE TO SR 300 CONN.

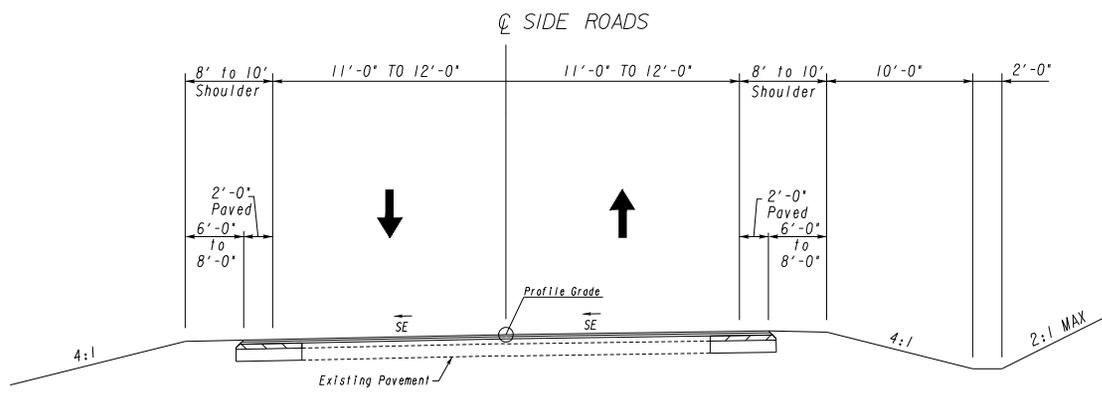
**GEORGIA**  
DEPARTMENT  
OF  
TRANSPORTATION

**TIA**  
TRANSPORTATION INVESTMENT ACT

**H&L** Heath & Lineback Engineers  
INCORPORATED  
2390 CANTON ROAD, BUILDING 200  
MARIETTA, GEORGIA 30066-5393



N. T. S.



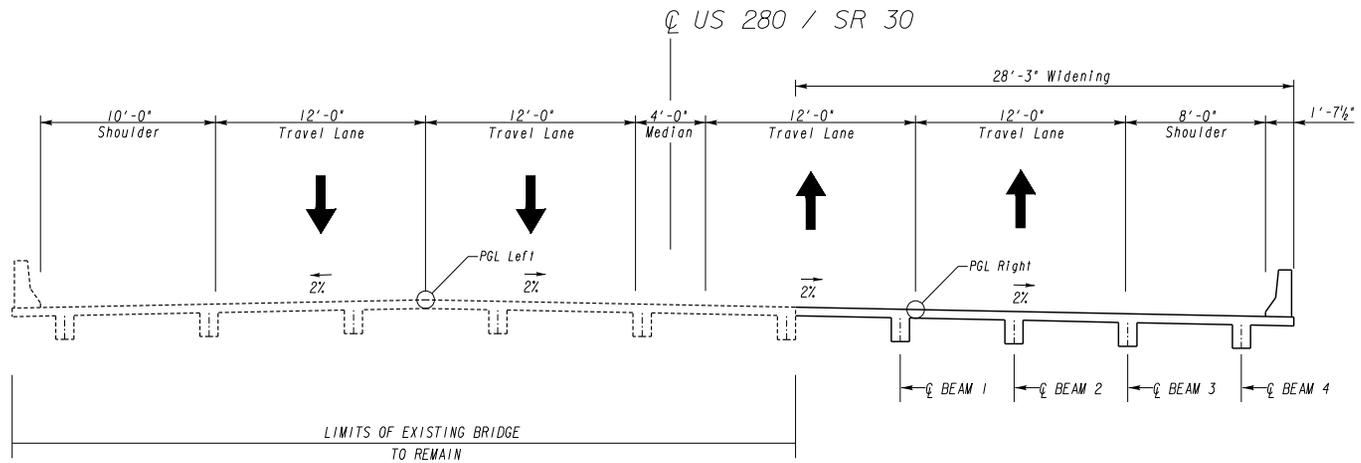
N. T. S.

**GEORGIA**  
DEPARTMENT  
OF  
TRANSPORTATION

**TIA**  
TRANSPORTATION INVESTMENT ACT

**HL** Heath & Lineback Engineers  
INCORPORATED  
2390 CANTON ROAD, BUILDING 200  
MARIETTA, GEORGIA 30066-5393

REVISION DATES		TYPICAL SECTIONS	
		US 280/ SR 30 WIDENING FROM CRISP COUNTY LINE TO SR 300 CONN.	
CHECKED:	DATE:	CHECKED:	DATE:
BACKCHECKED:	DATE:	CORRECTED:	DATE:
VERIFIED:	DATE:		
			DRAWING No. <b>5-0001</b>



TYPICAL SECTION #3  
N. T. S.  
BRIDGE OVER GUM CREEK

**GEORGIA**  
DEPARTMENT  
OF  
TRANSPORTATION

TRANSPORTATION INVESTMENT ACT

**Heath & Lineback Engineers**  
INCORPORATED  
2390 CANTON ROAD, BUILDING 200  
MARIETTA, GEORGIA 30066-5393

REVISION DATES		TYPICAL SECTIONS	
		US 280/ SR 30 WIDENING FROM CRISP COUNTY LINE TO SR 300 CONN.	
CHECKED:	DATE:	CHECKED:	DATE:
BACKCHECKED:	DATE:	CORRECTED:	DATE:
CORRECTED:	DATE:	VERIFIED:	DATE:
DRAWING No.			5-0002

**SUMMARY OF CONCEPT COST ESTIMATE**

*US 280/SR 30 Widening East of Lake Blackshear Bridge To SR 300 Connector*  
 At-Grade Railroad Crossing (Alt 1A) and No-Build Intersection at SR 300 Connector (Alt 2C)\_4 Ft Median

July 2016

Project No.: RC08-000010

Prepared By:

Heath & Lineback Engineers

**Concept Quantity Totals:**

	<u>Calculated Costs</u>	<u>Contingency/TIA Mangement Cost</u>	<u>Total Cost</u>
Project Estimate:	\$18,378,872		
Engineering and Inspection (5.85%):	\$1,075,164		
Mitigation Cost Estimate:	\$1,300,990		
<b>Construction Estimate Total:</b>	<b>\$20,755,027</b>	<b>\$1,972,200</b>	<b>\$22,727,227</b>
<b>TIA Right of Way Estimate:</b>	<b>\$3,050,700</b>	<b>\$611,764</b>	<b>\$3,662,464</b>
<b>Utility Relocation Estimate:</b>	<b>\$3,076,989</b>	<b>\$0</b>	<b>\$3,076,989</b>
<b>P &amp; E:</b>	<b>\$3,250,000</b>	<b>\$212,500</b>	<b>\$3,462,500</b>
<b>Total Project Cost:</b>	<b>\$30,132,716</b>	<b>-</b>	<b>\$32,929,180</b>



**CONCEPT COST ESTIMATE**

Prepared By: July 2016  
 Heath & Lineback Engineers, Inc.

**US 280/SR 30 Widening East of Lake Blackshear to SR 300 Connector - PI No. 422470**

At-Grade Railroad Crossing (Alt 1A) and No-Build Intersection at SR 300 Connector (Alt 2C)\_4 Ft Median

Item Code	Item Description	Qty.	Unit	Unit Price	Total	
	<b>At-grade Crossing at Heart of Georgia Railroad</b>					
999-9999	AT-GRADE CROSSING CONSTRUCTION	1	LS	\$ 750,000.00	\$ 750,000.00	<b>Sub Total</b>
						\$ 750,000.00
<b>PROJECT ESTIMATE =</b>						<b>\$ 18,378,872.47</b>
Engineering and Inspection (5.85%)						\$ 1,075,164.04
Environmental Mitigation Cost						\$ 1,300,990.00
<b>CONSTRUCTION ESTIMATE TOTAL =</b>						<b>\$ 20,755,026.51</b>
TIA Right of Way Cost Estimate						\$ 3,050,700.00
Utility Relocation Estimate						\$ 3,076,989.10
P&E						\$ 3,250,000.00
<b>PROJECT COST =</b>						<b>\$ 30,132,715.60</b>
<b>Contingencies/TIA Management Budget</b>						
Construction Contingency						\$ 1,972,200.00
Right of Way Contingency						\$ 611,764.00
Utility Contingency						\$ -
P&E Contingency						\$ 212,500.00
<b>PREFERRED ALTERNATE PROJECT COST =</b>						<b>\$ 32,929,179.60</b>

# Preliminary ROW Cost Estimate



PI No. 422470

Project Name: US280/SR30 Fm East of Lake Blackshear to SR 300 Connector

Date: Enter Date of Estimate (L 4/28/2016

Land and Improvements	Agriculture	Residential	Commercial	Industrial	Notes
Estimate (\$/ac)	\$4,500	\$11,800	\$50,000	\$0	Enter Cost / Acre
Fee Simple Area (ac)	58.63	15.70	19.89	0.00	Enter Acreage
Fee Simple Estimate	\$263,813	\$185,260	\$994,700	\$0	CALCULATED FIELD
Perm Easement Area (ac)	0.00	0.00	0.00	0.00	Enter Acreage
Perm Easement Factor	0%	50%	50%	0%	Adjust Percentage as Appropriate
Perm Easement Estimate	\$0	\$0	\$0	\$0	CALCULATED FIELD
Temp Easement Area (ac)	0.00	0.00	0.00	0.00	Enter Acreage
Temp Easement Factor	0%	25%	25%	0%	Adjust Percentage as Appropriate
Temp Easement Estimate	\$0	\$0	\$0	\$0	CALCULATED FIELD
City Land Available for Swap (ac)	0.00	0.00	0.00	0.00	Enter Acreage (If required)
City Land Available for Swap Estimate	\$0	\$0	\$0	\$0	Enter Estimated Value (If required)
Proximity Damages	\$0	\$50,000	\$0	\$0	Enter Fees and Provide Notes as Appropriate
Consequential Damages	\$0	\$0	\$0	\$0	Enter Fees and Provide Notes as Appropriate
Cost to Cures	\$0	\$0	\$150,000	\$0	Enter Fees and Provide Notes as Appropriate
Improvements	\$200,000	\$250,000	\$950,000	\$0	Enter Fees and Provide Notes as Appropriate
Trade Fixtures	\$0	\$0	\$250,000	\$0	Enter Fees and Provide Notes as Appropriate

**PROPERTY TYPE TOTALS**      **\$463,813**      **\$485,260**      **\$2,344,700**      **\$0**      CALCULATED FIELD

**Land and Improvements Sub Total**      **\$3,293,773**      CALCULATED FIELD

Relocation	Quantity	Estimated Cost	Totals	
Residential Tenant (Qty of Tenants)	1	\$30,000	\$30,000	Adjust Qty / Costs as required
Residential Owner	3	\$50,000	\$150,000	Adjust Qty / Costs as required
Business Displacement (Qty)	5	\$45,000	\$225,000	Adjust Qty / Costs as required
Pro Rata Taxes	70	\$1,000	\$70,000	Adjust Qty / Costs as required
Prop Pin Replacement	70	\$1,250	\$87,500	Adjust Qty / Costs as required

**PROPERTY TYPE TOTALS**      **149**      **\$562,500**      CALCULATED FIELD

**Relocation Sub Total**      **\$562,500**      CALCULATED FIELD

Valuation Services	Agriculture	Residential	Commercial	Industrial	
Appraisals (# of Parcels)	24	22	29	0	Adjust Parcels as required
Estimated Fee ( per Parcel)	\$1,000	\$1,200	\$1,500	\$0	Enter Estimated Fee per Parcel
Total Appraisals	\$24,000	\$26,400	\$43,500	\$0	CALCULATED FIELD
Specialty Reports	\$0	\$0	\$0	\$0	Enter Estimated Costs and Provide Notes
Estimated Fees	\$0	\$0	\$0	\$0	Enter Estimated Fees and Provide Notes

**PROPERTY TYPE TOTALS**      **\$24,000**      **\$26,400**      **\$43,500**      **\$0**      CALCULATED FIELD

**Valuation Services Sub Total**      **\$93,900**      CALCULATED FIELD

Legal Services	Parcels	Estimated Fees	Totals	
Meeting with Attorney	75	\$125	\$9,375	Adjust Parcels / Fees as required (using best judgement)
Preliminary Titles	75	\$200	\$15,000	Adjust Parcels / Fees as required
Closing and Final Title	75	\$300	\$22,500	Adjust Parcels / Fees as required
Recording Fees	75	\$50	\$3,750	Adjust Parcels / Fees as required
Condemnation	8	\$30,000	\$240,000	Adjust Parcels / Fees as required

**Legal Services Sub Total**      **\$290,625**      CALCULATED FIELD

Administrative	Parcels	Man Hours/Parcel	Totals	
Pre-Acquisition	75	40	\$150,000	Adjust Parcels / Fees as required
Acquisition	75	100	\$375,000	Adjust Parcels / Fees as required
Administrative Appeals	11	50	\$27,500	Calculates as 15% of Acq Parcel Count (Adjust if Necessary)

**Administrative Sub Total**      **\$552,500**      CALCULATED FIELD

Contingency			
Overall Contingency	20%	\$846,160	Enter Percentage for Contingency (Default = 20%)

**Total Estimated Costs**      **\$5,639,457**      CALCULATED FIELD

**CONCEPT UTILITY RELOCATION ESTIMATE**

Heath & Lineback Engineers, Inc.

*US 280/SR 30 Widening East of Lake Blackshear to SR 300 Connector*

Project No.: RC08-000010

PI No. 422470

ITEM	UNIT	QUANTITY	UNIT PRICE	COST	TOTAL COST
<b>POWER / PHONE / CABLE</b>					
REGULAR POLE	EA	147	\$10,000.00	\$1,470,000.00	<b>\$2,429,199.10</b>
LIGHT POLE	EA	13	\$5,000.00	\$65,000.00	
RELOCATE ATT MH'S	EA	2	\$50,000.00	\$100,000.00	
RELOCATE FIBER OPTIC CABLES	EA	34389	\$20.00	\$687,773.76	
RELOCATE 8-4" CONDUITS	LF	2129	\$50.00	\$106,425.34	
<b>WATER</b>					
8" DIP	LF	500	\$92.50	\$46,250.00	<b>\$638,250.00</b>
8" PVC	LF	18000	\$25.00	\$450,000.00	
6" PVC	LF	2000	\$20.00	\$40,000.00	
HYDRANTS	EA	5	\$4,500.00	\$22,500.00	
VALVES	EA	10	\$1,350.00	\$13,500.00	
16" STL CASING	LF	600	\$110.00	\$66,000.00	
<b>GAS</b>					
2" STL	LF	300	\$25.00	\$7,500.00	<b>\$9,540.00</b>
VALVES	EA	3	\$680.00	\$2,040.00	
<b>SEWER</b>					
RELOCATE 30" RCP	LF	0	\$109.00	\$0.00	<b>\$0.00</b>
RELOCATE SSMH'S	EA	0	\$3,500.00	\$0.00	
<b>TOTAL RELOCATION ESTIMATE:</b>					<b>\$3,076,989.10</b>

## Concept Alternative Selection Summary

The concept report for the project was developed based on previous work by GDOT/others. The previous work was validated by H&L and a preferred alternate was developed which provided the following:

- 2-11ft travel lanes in each direction with a 14 ft flush median in the area of the Georgia Veterans State Park.
- 2-11ft travel lanes in each direction with a 32 ft median east of the Georgia Veterans State Park area.
- 10ft shoulders with 6.5ft paved width to accommodate bike lanes.
- At Gum Creek, the existing bridge was to be retained for the westbound lanes and a new 200ft parallel bridge was to be provided for the eastbound lanes.
- A new at-grade crossing was to be provided for the Heart of Georgia Railroad proposed at the existing location.
- Reconfigured intersection at SR300 Connector and 24<sup>th</sup> to provide 90 degree stop control.

Several options were considered for the above and are documented following this summary.

The above concept cost was over the TIA project budget. Additional cost reduction alternatives were studied and a menu of options was presented to TIA and GDOT for review. These options included and are detailed in the Cost Reduction Addendum following this Summary.

- Reduced median to 14ft for the entire project length.
- Reduced median to 4ft for the entire project length.
- No median
- Reduced paved shoulders to 4ft
- Reduced paved shoulders to 2ft
- Eliminating the reconstruction of the SR300 Connector and 24<sup>th</sup> intersection.
- Reduced pavement section.

Coordination with TIA resulted in the following cost reduction options to bring the project within the budget of the TIA funding available.

- Reduced median to 14ft for the entire project length.
- Reduced paved shoulders to 2ft
- 11ft travel lanes
- Eliminated the reconstruction of the SR300 Connector and 24<sup>th</sup> intersection.

The final direction from TIA is as follows, which is presented in the Concept Report as the preferred alternative.

- Reduced median to 4ft for the entire project length. (Consequently, widening the Gum Creek Bridge is the preferred option)
- Reduced paved shoulders to 4ft
- 12ft travel lanes
- Eliminated the reconstruction of the SR300 Connector and 24<sup>th</sup> intersection.

## PREVIOUS CONCEPT ALTERNATIVES & OPTIONS

This concept report studies the entire project, however several alternates were studied at the following three locations. The first location is where US 280/SR 30 crosses the Heart of Georgia Railroad, while the second location is the area where US 280/SR 30 and intersects with the SR 300 Connector and 24<sup>th</sup> Avenue. A third location is at the bridge crossing Gum Creek. The improvement options for the various locations are as follows:

### Location 1 – Heart of Georgia Railroad Crossing

- **Option 1A** proposes to follow the existing alignment of US 280/SR 30 and provide a new at-grade crossing for the Heart of Georgia Railroad. See Appendix Option 1A.
- **Option 1B** proposes US 280/SR 30 crossing over the Heart of Georgia Railroad with single span parallel bridges, while following the existing alignment. The bridges will be 108-foot long concrete bridges measuring 37 feet 3 inches out-to-out. Bridge abutments will utilize MSE walls to minimize bridge length. The vertical alignment utilizes the maximum 4.00% grade to achieve the desired clearance over the railroad tracks. A temporary 2500-foot long detour road with a temporary railroad crossing will be constructed. The roadway will be stage constructed and parallel bridges built separately to minimize easements required for the detour. See Appendix Option 1B.
- **Option 1C** proposes US 280/SR 30 crossing over the Heart of Georgia Railroad with single span parallel bridges, while shifting the horizontal alignment to the north of the existing roadway so that it can be utilized during construction. The alignment shift requires only short tie-ins, but utilizes the existing railroad crossing during stage construction. The bridges will be 140-foot long, single-span concrete bridges measuring 37 feet 3 inches out-to-out. Bridge abutments will utilize MSE walls to minimize bridge length. The vertical alignment will utilize the maximum 4.00% grade to achieve the desired clearance over the railroad tracks. See Appendix Option 1C.

### Location 2 – Intersection of US 280/SR 30 with SR 300 Connector and 24<sup>th</sup> Avenue

- **Option 2A** proposes two stop controlled “T” intersections at this location. The existing intersection between US 280/SR 30 and SR 300 Conn would be closed. The intersection between US 280/SR 30 and 24<sup>th</sup> Avenue would be reconstructed to realign SR 300 Conn to a “T” intersection with US 280/SR 30. 24<sup>th</sup> Avenue would be reconstructed to realign to form another “T” intersection with SR 300 Conn approximately 300 feet south of US 280/SR 30. See Appendix Option 2A.
- **Option 2B** proposes a 68-foot radius, 4-legged, single lane conventional roundabout at the intersections of US 280/SR 30 with SR 300 Conn and 24<sup>th</sup> Avenue. US 280/SR 30 would be realigned to form the west and north legs of the roundabout. This allows SR 300 Conn to align as the southern leg and then 24<sup>th</sup> Avenue to align as the eastern leg of the roundabout. A by-pass lane is proposed between the two legs of US 280/SR 30 for the westbound direction. See Appendix Option 2B.
- **Option 2C** proposes to tie in to the existing roadway and lane configurations at the US 280/SR 30 intersection with the SR300 Connector and provide short tie-ins at the intersections with no additional improvements. See Appendix Option 2C.

### Location 3 - Gum Creek Bridge Crossing

- **Option 3A** proposes to retain the existing US 280/SR 30 bridge over Gum Creek that was constructed in 1990 and has a sufficiency rating of 96.40 for the proposed westbound US 280/SR 30 travel lanes. This alternate would construct a new 200-foot long concrete parallel bridge measuring 37 feet 3 inches out-to-out, south of the existing bridge to carry the proposed eastbound US 280/SR 30 travel lanes. At the bridge, a short segment of a 24-foot median is required to facilitate a split profile to provide required free board over the flood stage elevations and to provide adequate construction clearance between the bridges. The parallel bridge and widened median requires guardrail and barrier in an otherwise unobstructed 14 ft median. . This option required acceptance from the GDOT Bridge Office since the hydraulic opening causes substandard backwater conditions. The GDOT Drainage Manual states that bridge paralleling projects where the existing backwater is greater than 1 ft, the existing backwater is acceptable if there are no scour or flooding issues. Based on the available information and site visits, there are no scour or flooding issues. Acceptance from the GDOT Bridge Office has been obtained for substandard backwater. The new 200 ft bridge cost: \$ 856,750. **(Option 3A is the preferred alternate based on the above.)**
- **Option 3B** proposes demolishing the existing US 280/SR 30 bridge over Gum Creek that has a sufficiency rating of 96.40 and reconstructing new 360-foot long concrete parallel bridges measuring 37 feet 3 inches out-to-out. The 360-foot bridges are proposed to meet GDOT requirements including backwater. The new 360-foot parallel bridges cost: \$ 3,218,400.00. **(Option 3B is not included in the Alternates Selection Charts due to the cost being more than 3 times the cost of Option 3A).**
- **Option 3C** proposes to widen the existing US 280/SR 30 bridge over Gum Creek to the south to provide 2-11 foot lanes in each direction with 8-foot outside shoulders and a 14-foot flush median. A 10 foot shoulder will remain on the westbound side while an 8 foot shoulder will be provided on the widened eastbound side. The new portion of the bridge will measure 34 feet 3 inches. Since the Bridge Office does not allow hydro-demolition of the bridge deck to relocate the crown point on T-beam bridges, the crown point on the widened bridge will remain at the center of the westbound lanes in the final configuration. Widening the existing bridge requires acceptable bridge and deck condition surveys. These surveys have been requested. The span arrangement for the T-beam bridge also requires an intermediate pile bent within the main channel of Gum Creek. This option required acceptance from the GDOT Bridge Office since the hydraulic opening causes substandard backwater conditions. The GDOT Drainage Manual states that bridge widenings where the existing backwater is greater than 1 ft, the existing backwater is acceptable if there are no scour or flooding issues. Based on the available information and site visits, there are no scour or flooding issues. Acceptance from the GDOT Bridge Office has been obtained for substandard backwater. The bridge widening cost is \$ 890,500. **(Option 3C is not included in the Alternates Selection Charts because it has a higher cost than Option 1A.)**

**Preferred Alternative:** *This alternate combines Option 1A, Option 2C and Option 3A.*

<b>Pros for Option 1A</b>	<b>Pros for Option 2C</b>	<b>Pros for Option 3A</b>
<ul style="list-style-type: none"> <li>Minimal right-of-way impact</li> <li>Maximizes use of existing pavement</li> <li>Does not require detour construction</li> <li>Least cost option</li> <li>Two train crossings per day at off peak hours (approximate disruption to US 280/SR 30 traffic is 4 minutes per crossing)</li> </ul>	<ul style="list-style-type: none"> <li>No right-of-way impact</li> <li>Least cost option</li> </ul>	<ul style="list-style-type: none"> <li>Least cost</li> <li>Retains existing bridge</li> <li>No evidence of flooding</li> <li>Meets all other GDOT requirements</li> </ul>
<b>Cons for Option 1A</b>	<b>Cons for Option 2A</b>	<b>Cons for Option 3A</b>
<ul style="list-style-type: none"> <li>Widening at-grade crossing of railroad could cause train delays during construction</li> <li>Crashes may occur at the at-grade railroad crossing</li> </ul>	<ul style="list-style-type: none"> <li>No improvements for intersection crashes</li> <li>Skewed angle of intersections will remain</li> </ul>	<ul style="list-style-type: none"> <li>Causes substandard backwater (Requires acceptance from GDOT Bridge Department)</li> </ul>

<b>Estimated Property Impacts:</b>	<b>70</b>	<b>Estimated Total Cost<sup>2</sup>:</b>	<b>\$ 34,027,695</b>
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<b>Estimated ROW Cost<sup>1</sup>:</b>	<b>\$ 4,086,276</b>	<b>Estimated CST Time:</b>	<b>30 months</b>
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**Rationale:** *This alternate was selected, because it provides the required operational improvements for vehicular traffic. The right-of-way impacts and total project cost are the lowest of all construction alternates. Considering the impacts of all the other studied improvements, the economic development of the project corridor would benefit the most from this alternate as stated above.*

**No-Build Alternative:** *This alternate uses the existing lane configurations and the existing rural shoulders on US 280/SR 30 and the sideroads in the project corridor.*

<b>Estimated Property Impacts:</b>	<b>N/A</b>	<b>Estimated Total Cost:</b>	<b>N/A</b>
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<b>Estimated ROW Cost:</b>	<b>N/A</b>	<b>Estimated CST Time:</b>	<b>N/A</b>
----------------------------	------------	----------------------------	------------

**Rationale:** *This alternative does not provide operational improvements nor does it address the economic development benefit.*

<b>Alternative 1: This alternate combines Option 1A, Option 2A and Option 3A.</b>					
<b>Pros for Option 1A</b>		<b>Pros for Option 2A</b>		<b>Pros for Option 3A</b>	
<ul style="list-style-type: none"> <li>Minimal right-of-way impact</li> <li>Maximizes use of existing pavement</li> <li>Does not require detour construction</li> <li>Least cost option</li> <li>Two train crossings per day at off peak hours (approximate disruption to US 280/SR 30 traffic is 4 minutes per crossing)</li> </ul>		<ul style="list-style-type: none"> <li>Least right-of-way in the area of SR 300 Conn/24<sup>th</sup> Ave.</li> <li>Eliminates one intersection in the area of SR 300 Conn/24<sup>th</sup> Ave. and reduces conflict points.</li> <li>Maximizes use of existing pavement</li> <li>Simplified staging</li> <li>Least cost option</li> </ul>		<ul style="list-style-type: none"> <li>Least cost</li> <li>Retains existing bridge</li> <li>No evidence of flooding</li> <li>Meets all other GDOT requirements</li> </ul>	
<b>Cons for Option 1A</b>		<b>Cons for Option 2A</b>		<b>Cons for Option 3A</b>	
<ul style="list-style-type: none"> <li>Widening at-grade crossing of railroad could cause train delays during construction</li> <li>Crashes may occur at the at-grade railroad crossing</li> </ul>		<ul style="list-style-type: none"> <li>Potential for higher speeds and more severe crashes</li> </ul>		<ul style="list-style-type: none"> <li>Causes substandard backwater (Requires acceptance from GDOT Bridge Department)</li> </ul>	
<b>Estimated Property Impacts:</b>		<b>75</b>	<b>Estimated Total Cost<sup>2</sup>:</b>		<b>\$ 37,389,983</b>
<b>Estimated ROW Cost<sup>1</sup>:</b>		<b>\$ 4,849,425</b>	<b>Estimated CST Time:</b>		<b>30 months</b>
<p><b>Rationale:</b> This alternate was selected, because it provides the required operational improvements for vehicular and bicycle traffic. The right-of-way impacts and total project cost are the lowest of all construction alternates. Considering the impacts of all the other studied improvements, the economic development of the project corridor would benefit the most from this alternate as stated above.</p>					

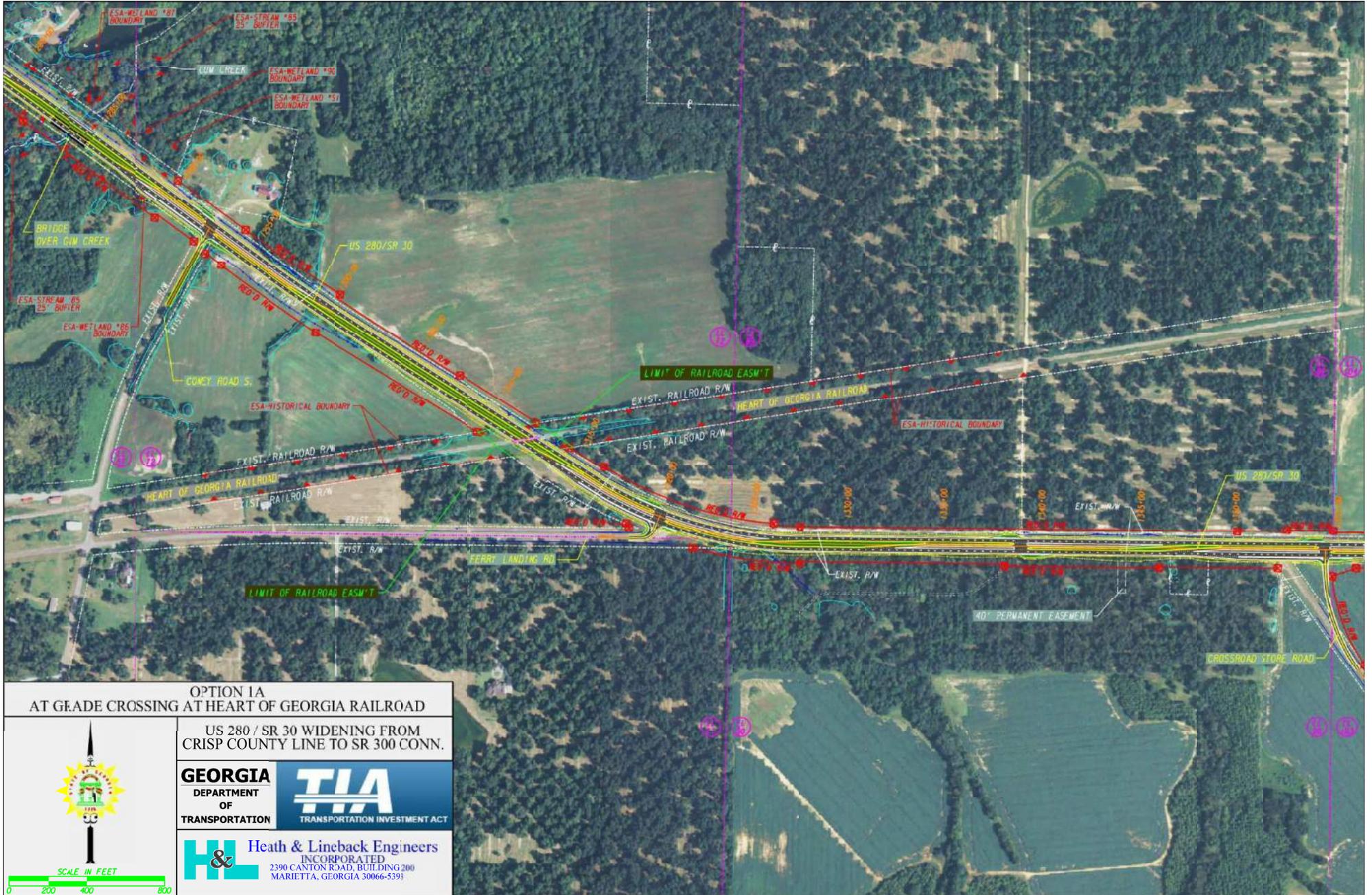
<b>Alternative 2: This alternate combines Option 1A, Option 2B and Option 3A.</b>					
<b>Pros for Option 1A</b>		<b>Pros for Option 2B</b>		<b>Pros for Option 3A</b>	
<ul style="list-style-type: none"> <li>Minimal right-of-way impact</li> <li>Maximizes use of existing pavement</li> <li>Does not require detour construction</li> <li>Least cost option</li> <li>Two train crossings per day at off peak hours (approximate disruption to US 280/SR 30 traffic is 4 minutes per crossing)</li> </ul>		<ul style="list-style-type: none"> <li>Improved traffic operations</li> <li>Eliminates two intersections in SR 300 Conn/24<sup>th</sup> Ave area and reduces conflict points</li> </ul>		<ul style="list-style-type: none"> <li>Least cost</li> <li>Retains existing bridge</li> <li>No evidence of flooding</li> <li>Meets all other GDOT requirements</li> </ul>	
<b>Cons for Option 1A</b>		<b>Cons for Option 2B</b>		<b>Cons for Option 3A</b>	
<ul style="list-style-type: none"> <li>Widening at-grade crossing of railroad could cause train delays during construction</li> <li>Crashes may occur at the at-grade railroad crossing</li> </ul>		<ul style="list-style-type: none"> <li>Stage construction of roundabout is more complicated</li> <li>Longer construction duration</li> <li>Eastbound traffic on US 280/SR 30 needs to go through roundabout</li> </ul>		<ul style="list-style-type: none"> <li>Causes substandard backwater (Requires acceptance from GDOT Bridge Department)</li> </ul>	
<b>Estimated Property Impacts:</b>		<b>72</b>	<b>Estimated Total Cost<sup>2</sup>:</b>		<b>\$ 37,498,384</b>
<b>Estimated ROW Cost<sup>1</sup>:</b>		<b>\$ 4,833,700</b>	<b>Estimated CST Time:</b>		<b>30 months</b>
<p><b>Rationale:</b> This alternate was not selected, because the total cost of the project was higher than the Preferred Alternative. In addition, this alternate would require additional design and reviews for the roundabout.</p>					

<b>Alternative 3:</b> <i>This alternate combines Option 1B, Option 2A and Option 3A.</i>			
<b>Pros for Option 1B</b>		<b>Pros for Option 2A</b>	
<ul style="list-style-type: none"> <li>Bridges eliminate at-grade crossing</li> <li>Overpass Bridges would eliminate disruptions to US 280/SR 30 traffic</li> <li>Minimal right-of-way impact</li> </ul>		<ul style="list-style-type: none"> <li>Least right-of-way in the area of SR 300 Conn/24<sup>th</sup> Ave.</li> <li>Eliminates one intersection in the area of SR 300 Conn/24<sup>th</sup> Ave. and reduces conflict points.</li> <li>Maximizes use of existing pavement</li> <li>Simplified staging</li> <li>Least cost option</li> </ul>	
<b>Cons for Option 1B</b>		<b>Cons for Option 2A</b>	
<ul style="list-style-type: none"> <li>Requires detour for US 280/SR 30 and an at-grade detour crossing of the railroad</li> <li>Requires detour easements</li> <li>Highest impacts to railroad during construction</li> <li>Higher cost</li> </ul>		<ul style="list-style-type: none"> <li>Potential for higher speeds and more severe crashes</li> </ul>	
<b>Pros for Option 3A</b>		<b>Cons for Option 3A</b>	
<ul style="list-style-type: none"> <li>Least cost</li> <li>Retains existing bridge</li> <li>No evidence of flooding</li> <li>Meets all other GDOT requirements</li> </ul>		<ul style="list-style-type: none"> <li>Causes substandard backwater (Requires acceptance from GDOT Bridge Department)</li> </ul>	
<b>Estimated Property Impacts:</b>		<b>75</b>	<b>Estimated Total Cost<sup>2</sup>:</b>
<b>Estimated ROW Cost<sup>1</sup>:</b>		<b>\$ 4,933,941</b>	<b>Estimated CST Time:</b>
			<b>\$ 41,309,864</b>
			<b>36 months</b>
<b>Rationale:</b> <i>This alternate was not selected, because the total cost of the project was higher than the Preferred Alternative.</i>			

<b>Alternative 4:</b> <i>This alternate combines Option 1B, Option 2B and Option 3A.</i>			
<b>Pros for Option 1B</b>		<b>Pros for Option 2B</b>	
<ul style="list-style-type: none"> <li>Bridges eliminate at-grade crossing</li> <li>Overpass Bridges would eliminate disruptions to US 280/SR 30 traffic</li> <li>Minimal right-of-way impact</li> </ul>		<ul style="list-style-type: none"> <li>Improved traffic operations</li> <li>Eliminates two intersections in SR 300 Conn/24<sup>th</sup> Ave area and reduces conflict points</li> </ul>	
<b>Cons for Option 1B</b>		<b>Cons for Option 2B</b>	
<ul style="list-style-type: none"> <li>Requires detour for US 280/SR 30 and an at-grade detour crossing of the railroad</li> <li>Requires detour easements</li> <li>Highest impacts to railroad during construction</li> <li>Higher cost</li> </ul>		<ul style="list-style-type: none"> <li>Stage construction of roundabout is more complicated</li> <li>Longer construction duration</li> <li>Eastbound traffic on US 280/SR 30 needs to go through roundabout</li> </ul>	
<b>Pros for Option 3A</b>		<b>Cons for Option 3A</b>	
<ul style="list-style-type: none"> <li>Least cost</li> <li>Retains existing bridge</li> <li>No evidence of flooding</li> <li>Meets all other GDOT requirements</li> </ul>		<ul style="list-style-type: none"> <li>Causes substandard backwater (Requires acceptance from GDOT Bridge Department)</li> </ul>	
<b>Estimated Property Impacts:</b>		<b>72</b>	<b>Estimated Total Cost<sup>2</sup>:</b>
<b>Estimated ROW Cost<sup>1</sup>:</b>		<b>\$ 4,918,216</b>	<b>Estimated CST Time:</b>
			<b>\$ 41,418,265</b>
			<b>36 months</b>
<b>Rationale:</b> <i>This alternate was not selected, because the total cost of the project was higher than the Preferred Alternative. In addition, this alternate would require additional design and reviews for the roundabout.</i>			

<b>Alternative 5: This alternate combines Option 1C, Option 2A and Option 3A.</b>			
<b>Pros for Option 1C</b>		<b>Pros for Option 2A</b>	
<ul style="list-style-type: none"> <li>Bridges eliminate at-grade crossing</li> <li>Overpass Bridges would eliminate disruptions to US 280/SR 30 traffic</li> <li>Existing at-grade crossing can be utilized during construction</li> <li>Least impact on railroad during construction</li> </ul>		<ul style="list-style-type: none"> <li>Least right-of-way in the area of SR 300 Conn/24<sup>th</sup> Ave.</li> <li>Eliminates one intersection in the area of SR 300 Conn/24<sup>th</sup> Ave. and reduces conflict points.</li> <li>Maximizes use of existing pavement</li> <li>Simplified staging</li> <li>Least cost option</li> </ul>	
<b>Cons for Option 1C</b>		<b>Cons for Option 2A</b>	
<ul style="list-style-type: none"> <li>Detour construction required at tie-ins</li> <li>Higher cost</li> </ul>		<ul style="list-style-type: none"> <li>Potential for higher speeds and more severe crashes</li> </ul>	
<b>Pros for Option 3A</b>		<b>Cons for Option 3A</b>	
<ul style="list-style-type: none"> <li>Least cost</li> <li>Retains existing bridge</li> <li>No evidence of flooding</li> <li>Meets all other GDOT requirements</li> </ul>		<ul style="list-style-type: none"> <li>Causes substandard backwater (Requires acceptance from GDOT Bridge Department)</li> </ul>	
<b>Estimated Property Impacts:</b>		<b>75</b>	<b>Estimated Total Cost<sup>2</sup>:</b>
<b>Estimated ROW Cost<sup>1</sup>:</b>		<b>\$ 5,523,039</b>	<b>Estimated CST Time:</b>
			<b>\$ 42,353,215</b>
			<b>36 months</b>
<b>Rationale:</b> This alternate was not selected, because the total cost of the project was higher than the preferred alternate, and the right-of-way impacts were the greatest of the alternates.			

<b>Alternative 6: This alternate combines Option 1C, Option 2B and Option 3A.</b>			
<b>Pros for Option 1C</b>		<b>Pros for Option 2B</b>	
<ul style="list-style-type: none"> <li>Bridges eliminate at-grade crossing</li> <li>Overpass Bridges would eliminate disruptions to US 280/SR 30 traffic</li> <li>Existing at-grade crossing can be utilized during construction</li> <li>Least impact on railroad during construction</li> </ul>		<ul style="list-style-type: none"> <li>Improved traffic operations</li> <li>Eliminates two intersections in SR 300 Conn/24<sup>th</sup> Ave area and reduces conflict points</li> </ul>	
<b>Cons for Option 1C</b>		<b>Cons for Option 2B</b>	
<ul style="list-style-type: none"> <li>Detour construction required at tie-ins</li> <li>Higher cost</li> </ul>		<ul style="list-style-type: none"> <li>Stage construction of roundabout is more complicated</li> <li>Longer construction duration</li> <li>Eastbound traffic on US 280/SR 30 needs to go through roundabout</li> </ul>	
<b>Pros for Option 3A</b>		<b>Cons for Option 3A</b>	
<ul style="list-style-type: none"> <li>Least cost</li> <li>Retains existing bridge</li> <li>No evidence of flooding</li> <li>Meets all other GDOT requirements</li> </ul>		<ul style="list-style-type: none"> <li>Causes substandard backwater (Requires acceptance from GDOT Bridge Department)</li> </ul>	
<b>Estimated Property Impacts:</b>		<b>72</b>	<b>Estimated Total Cost<sup>2</sup>:</b>
<b>Estimated ROW Cost<sup>1</sup>:</b>		<b>\$ 5,507,314</b>	<b>Estimated CST Time:</b>
			<b>\$ 42,461,616</b>
			<b>36 months</b>
<b>Rationale:</b> This alternate was not selected, because the total cost of the project was higher than the preferred alternate, and because the right-of-way impacts were one of the greatest of all alternates. In addition, this alternate would require additional design and revision for the roundabout.			



**OPTION 1A  
AT GRADE CROSSING AT HEART OF GEORGIA RAILROAD**

US 280 / SR 30 WIDENING FROM  
CRISP COUNTY LINE TO SR 300 CONN.



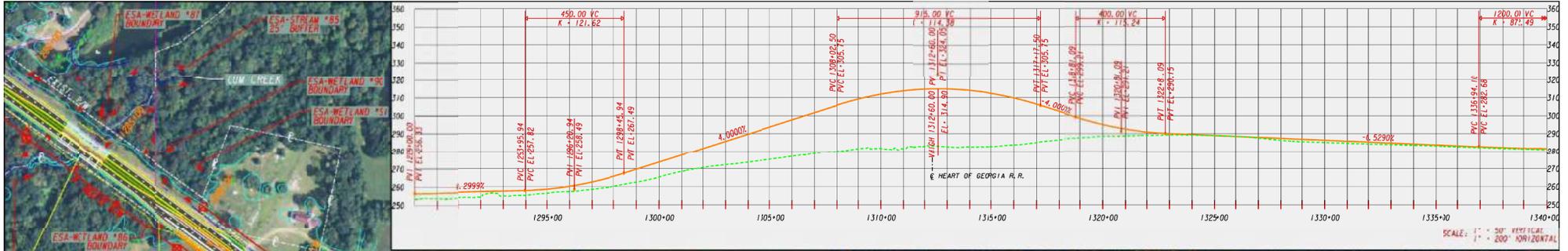
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**GEORGIA**  
DEPARTMENT  
OF  
TRANSPORTATION



**Heath & Lineback Engineers**  
INCORPORATED  
2390 CANTON ROAD, BUILDING 200  
MARIETTA, GEORGIA 30066-5391





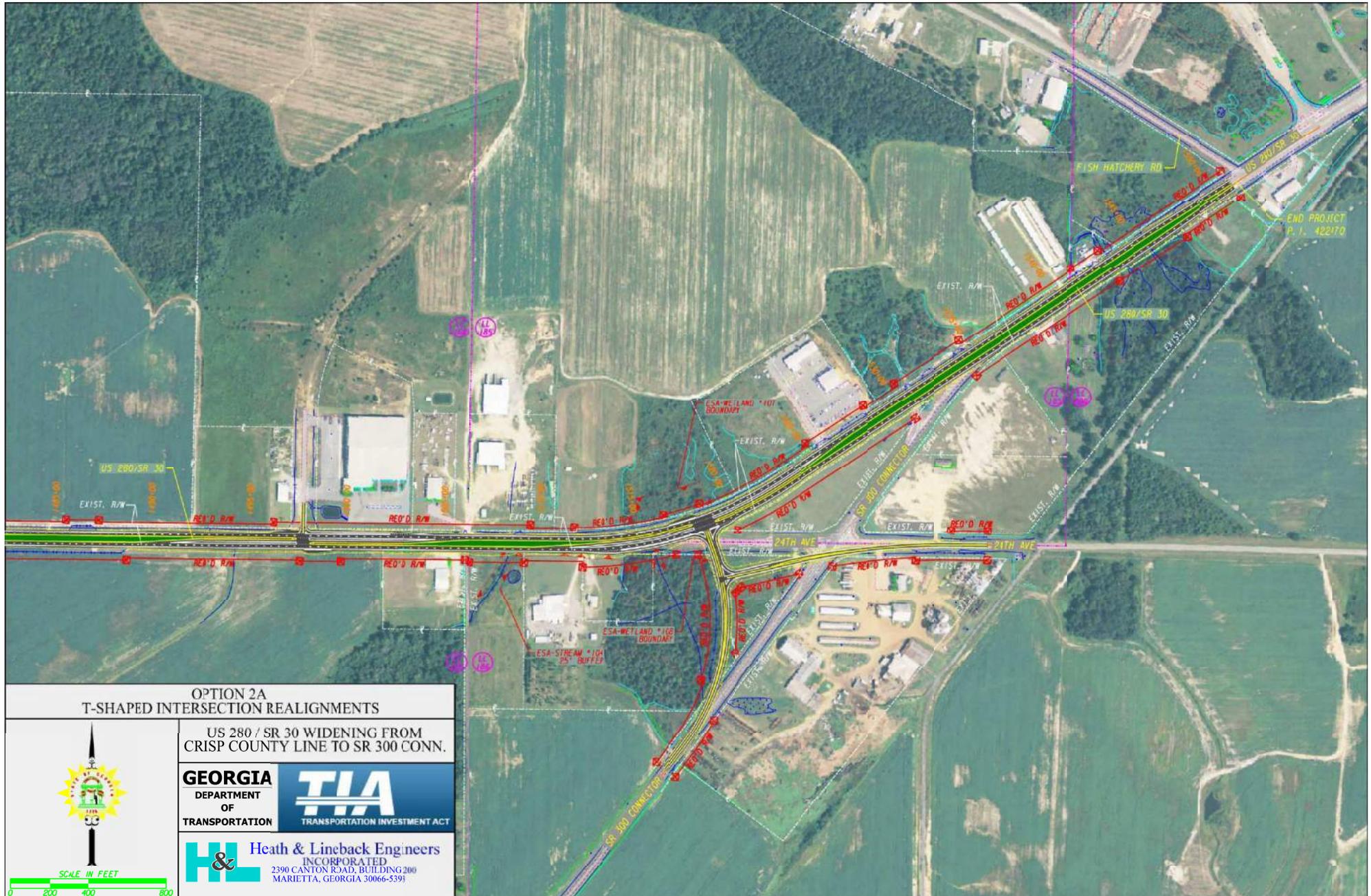
**OPTION 1C - OFFSET ALIGNMENT  
PARALLEL BRIDGES OVER HEART OF GEORGIA RAILROAD**

US 280 / SR 30 WIDENING FROM  
CRISP COUNTY LINE TO SR 300 CONN.



**Heath & Lineback Engineers**  
INCORPORATED  
2390 CANTON ROAD, BUILDING 200  
MARIETTA, GEORGIA 30066-5391

SCALE: 1" = 20' VERTICAL  
1" = 200' HORIZONTAL



**OPTION 2A  
T-SHAPED INTERSECTION REALIGNMENTS**

US 280 / SR 30 WIDENING FROM  
CRISP COUNTY LINE TO SR 300 CONN.

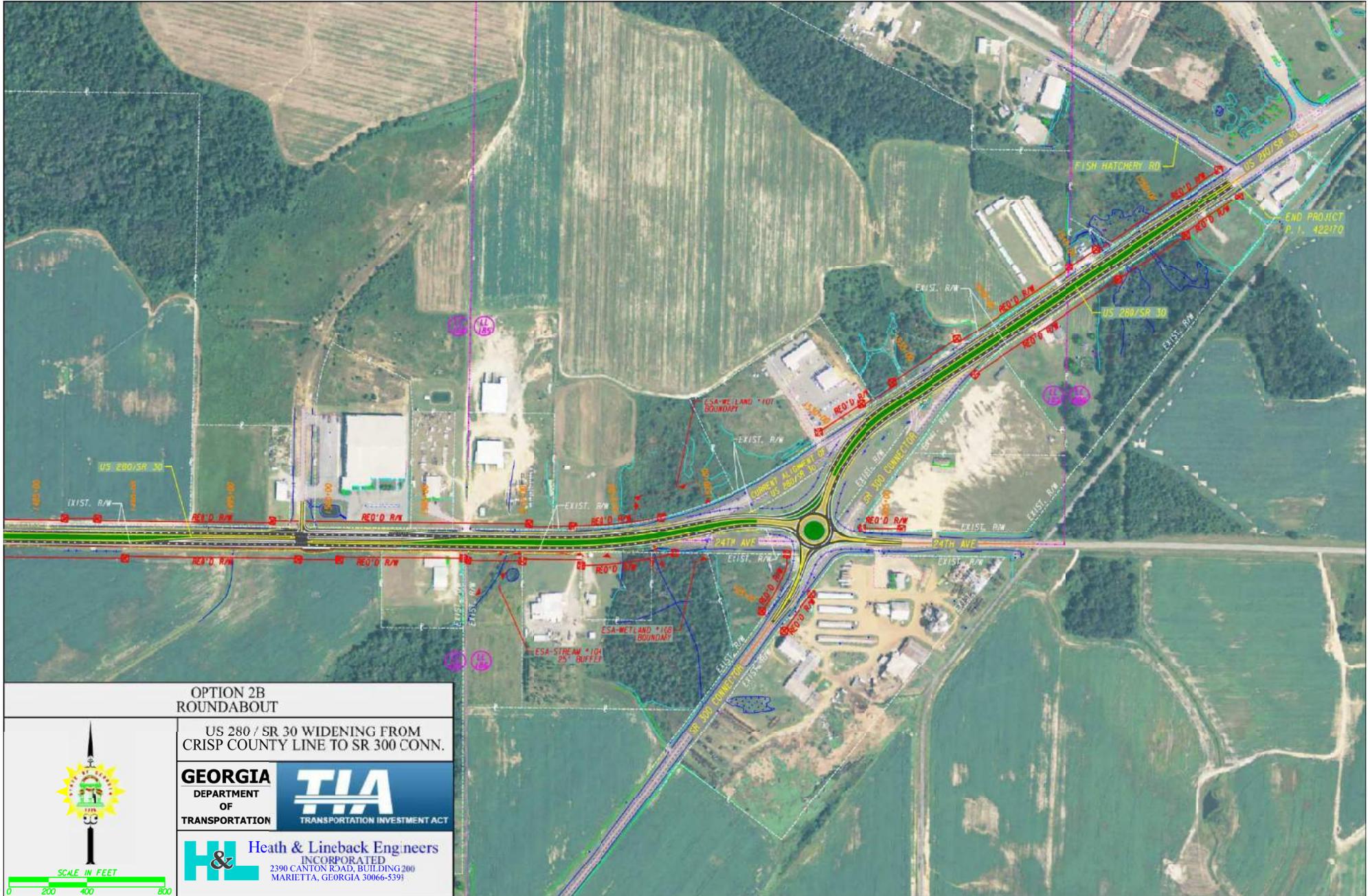
**GEORGIA**  
DEPARTMENT  
OF  
TRANSPORTATION

**TIA**  
TRANSPORTATION INVESTMENT ACT

**HL** Heath & Lineback Engineers  
INCORPORATED  
2390 CANTON ROAD, BUILDING 200  
MARIETTA, GEORGIA 30066-5391



SCALE IN FEET  
0 200 400 800



**OPTION 2B  
ROUNDBOUT**

US 280 / SR 30 WIDENING FROM  
CRISP COUNTY LINE TO SR 300 CONN.

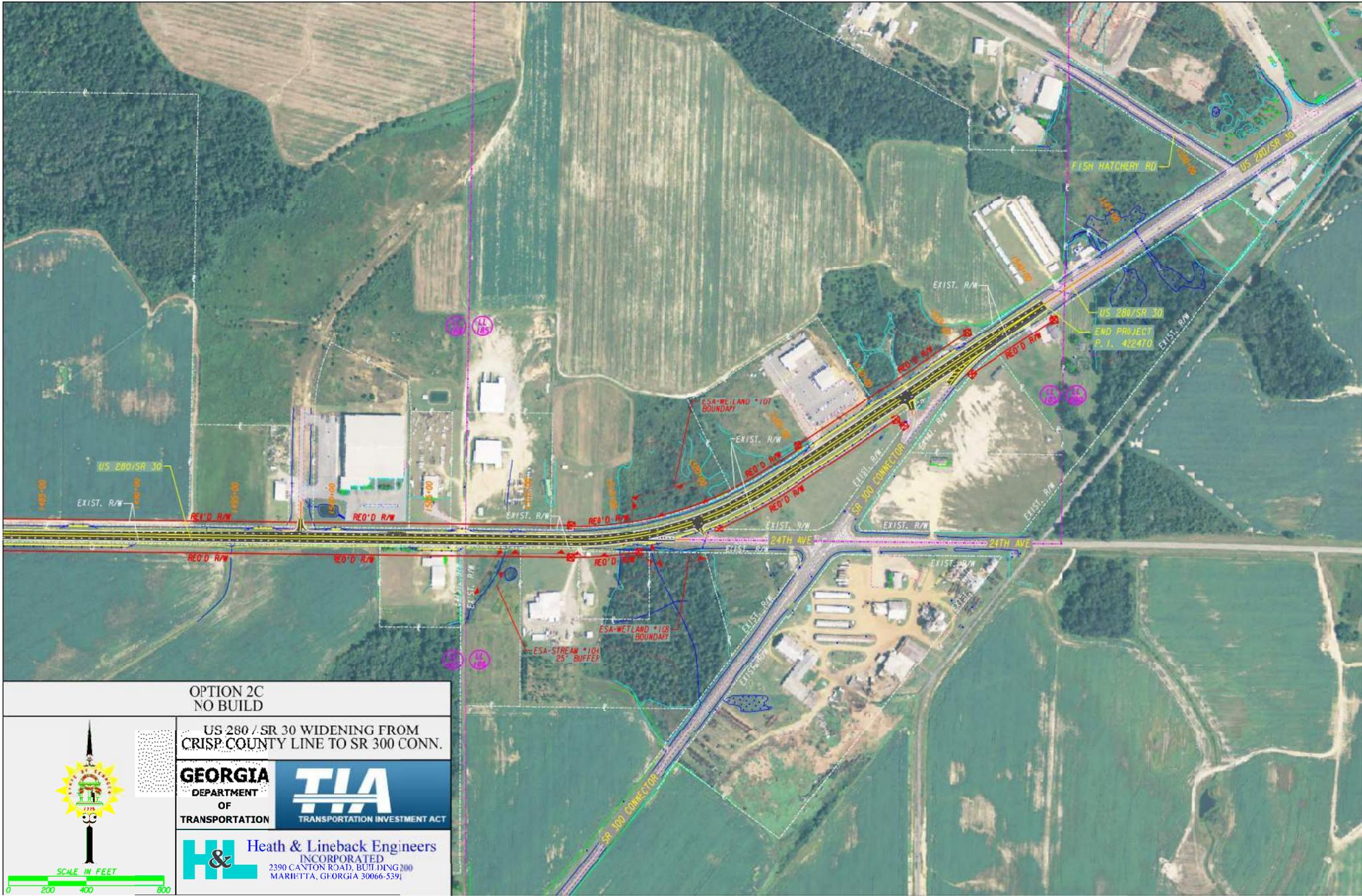


SCALE IN FEET  
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**GEORGIA**  
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OF  
TRANSPORTATION



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MARIETTA, GEORGIA 30066-5391



OPTION 2C  
NO BUILD

US 280 / SR 30 WIDENING FROM  
CRISP COUNTY LINE TO SR 300 CONN.

**GEORGIA**  
DEPARTMENT  
OF  
TRANSPORTATION

**TIA**  
TRANSPORTATION INVESTMENT ACT

**HL** Heath & Lineback Engineers  
INCORPORATED  
2390 CANTON ROAD, BUILDING 200  
MARIETTA, GEORGIA 30066-5391



GEORGIA DEPARTMENT OF TRANSPORTATION - OFFICE OF TIA  
 US 280/SR 30 Widening East of Lake Blackshear To SR 300 Connector - PI No. 422470

MAY 2016  
 Heath & Lineback Engineers, Inc.  
 TIA PROJECT NO. RC08-000010

Construction Cost Per Area

PROJECT AREA NUMBER	LOCATION (Approx. From Sta. to Sta.)		OPTION	APPROX. COST FOR OPTION	COMMENTS
1	1138+79	1295+00	N/A	\$ 8,956,589.23	
2	1295+00	1343+00	1A	\$ 3,060,107.38	At-grade RR crossing
			1B	\$ 6,683,503.64	Existing alignment path w/single span parallel bridges over RR
			1C	\$ 7,112,651.26	Parallel Bridges over RR with 8000' radius curve
3	1343+00	1511+56	N/A	\$ 9,247,521.73	
4	1511+56	1532+54	2A	\$ 1,535,256.94	Two T-type intersections
			2B	\$ 1,652,522.65	Roundabout
5	1532+54	1550+62	N/A	\$ 736,263.18	

	Options	Project Est.	CE&I (5.85%)	Env. Mitigation	Constr. Est.	TIA R/W Est.	Util. Relo. Est.	P&E	TOTAL COST*
Preferred Alternate	1A, 2A & 3A	\$23,535,738.46	\$ 1,376,840.70	\$ 1,300,990.00	\$ 26,213,569.16	\$ 4,849,425.14	\$ 3,076,989.10	\$ 3,250,000.00	\$ 37,389,983
Alternate 1	1A, 2B & 3A	\$23,653,004.17	\$ 1,383,700.74		\$ 26,337,694.91	\$ 4,833,700.45			\$ 37,498,384
Alternate 2	1B, 2A & 3A	\$27,159,134.72	\$ 1,588,809.38		\$ 30,048,934.10	\$ 4,933,940.79			\$ 41,309,864
Alternate 3	1B, 2B & 3A	\$27,276,400.43	\$ 1,595,669.42		\$ 30,173,059.85	\$ 4,918,216.10			\$ 41,418,265
Alternate 4	1C, 2A & 3A	\$27,588,282.34	\$ 1,613,914.52		\$ 30,503,186.86	\$ 5,523,039.00			\$ 42,353,215
Alternate 5	1C, 2B & 3A	\$27,705,548.05	\$ 1,620,774.56		\$ 30,627,312.61	\$ 5,507,314.31			\$ 42,461,616

\* Alternate Total Costs do not include Contingencies/TIA Management Costs

**Addendum - Cost Reduction Alternates**

*US 280/SR 30 Widening East of Lake Blackshear to SR 300 Connector*

Prepared By:  
Heath & Lineback Engineers, Inc.  
Page 1 of 3

June 9, 2016  
Regional Project ID: RC08-000010  
PI No.: 422470

	<b>Concept Report Preferred Alternate</b>	<b>Reduced Length Alternate</b>	<b>Reduced Section Alternate</b>
Project Length (Project End)	7.8 Miles (Fish Hatchery Road)	6.4 Miles (2000' W. of Indust. Dr.)	7.2 Miles (SR 300 Conn.)
<b>Features:</b>			
Median Width from Lake Blackshear to East of GA Veterans Park	14'	14'	4'
Median Width from East of Park to SR 300 Conn.	32'	32'	4'
Total Shoulder Width	10'	10'	6'
Paved Shoulder Width	6'-6"	6'-6"	2'
Pavement Design	10% Underdesign (10" GAB)	10% Underdesign (10" GAB)	17% Underdesign (8" GAB)
Improved SR 300 Conn./24th Ave. Intersection	Yes	No	No
Alternate Total	\$ 40,186,447	\$ 32,899,573	\$ 31,592,485

**Optional Project Add-Ons:**

14' Median Width from Lake Blackshear to East of GA Veterans Park	Included	Included	\$ 335,677
32' Median Width from East of Park to Project End	Included	Included	\$ 2,950,486
14' Median Width from East of Park to Project End	N/A	- \$ 850,954 (Project Savings)	\$ 2,099,533
10'-0" Total Shoulder Width, 6'-6" Paved Shoulder Width	Included	Included	\$ 1,290,609
10" GAB	Included	Included	\$ 774,654
Improved SR 300 Conn./24th Ave. Intersection	Included	\$ 2,770,138	\$ 2,770,138
Additional Roadway from Alternate End to Intersection of SR 300 Conn.	Included	\$ 4,516,736	Included



# TIA Plan Review

---

To: Kelvin Mullins, State TIA Administrator  
From: Shrujal Amin, TIA Program Manager  
Date: 05-12-2016  
PI: 422470, Crisp County

Submittal Description: Traffic Engineering Report dated 05/06/2016  
Project Description: SR 30/US 280 from Lake Blackshear to SR 300 Connector West of Cordele  
Submitted by: Wolverton & Associates  
Engineer of Record: Todd Devos, PE

The TIA Program Manager has reviewed the subject submittal and recommends:

- Acceptance as Submitted
- Acceptance with Comments provided
  - Below
  - Marked on plans
  - Provided under separate cover
- Returned to the submitter for correction and resubmission in accordance with our comments

**Comments:**

All comments have been addressed

**Recommendations:**

NA

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'France Campbell'.

---

France Campbell, PE, PTOE  
Reviewer



**TRAFFIC ENGINEERING REPORT**  
FOR  
PROPOSED ROADWAY IMPROVEMENTS

SR 30/US 280 FROM LAKE BLACKSHEAR  
TO SR 300 CONNECTOR WEST OF CORDELE

CRISP COUNTY, GEORGIA  
GDOT Project No. STP00-0030-02(029)  
P.I. No. 422470

W & A Project No. 16-TF-005

May 6, 2016

WOLVERTON & ASSOCIATES, INC.  
6745 SUGARLOAF PARKWAY  
SUITE 100  
DULUTH, GA 30097  
(770) 447-8999 PHONE  
(770) 447-9070 FAX  
[www.wolverton-assoc.com](http://www.wolverton-assoc.com)

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# 1. INTRODUCTION

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## SR 30/US 280 TRAFFIC ENGINEERING REPORT

The purpose of this report is to analyze concept improvements for the 7.6 mile SR 30/US 280 widening in Crisp County. The project will provide for a four-lane median divided roadway, starting at SR 30/US 280 east of Lake Blackshear and terminating at SR 300 Connector/Old Albany Highway just west of Cordele. The Opening Year is 2024, and the Design Year is 2044. The project is identified as follows:

- STP00-0030-02(029), P.I. No. 422470, widening and reconstruction of SR 30/US 280 to a five-lane section with a 14 foot flushed median from SR 30/US 280 east of Lake Blackshear through the Georgia Veterans Memorial State Park area, then transitioning to a four-lane section with a 44 foot depressed median. The project then transitions back into the existing five-lane section and ends at Fish Hatchery Road, just west of Cordele.

Figure 1 shows the location of the study intersections on SR 30/US 280.

These improvements are part of both the Georgia Department of Transportation's (GDOT) River Valley Transportation Investment Act (TIA) and Construction Work Program (CWP).

Three alternates were studied:

- Alternate 1 – SR 30/US 280 Widening Only
  - Only the widening improvements to SR 30/US 280 described above are considered.
  - All side street lane configurations and intersection control remain unchanged.
- Alternate 2 – Intersection Realignment
  - The improvements to SR 30/US 280 described above are also considered for Alternate 2.
  - The intersection of 24<sup>th</sup> Avenue and SR 300 Connector/Old Albany Highway becomes a “T” intersection. 24<sup>th</sup> Avenue forms the east leg of the “T” intersection. The intersection is relocated approximately 600 feet to the southwest.
  - 24<sup>th</sup> Avenue remains the side street stop with SR 300 Connector/Old Albany Highway, and SR 300 Connector/Old Albany Highway remains free flow.
  - The intersection of SR 30/US 280 and SR 300 Connector/Old Albany Highway is relocated approximately 1,000 feet to the west on SR 30/US 280.
  - SR 300 Connector/Old Albany Highway remains the side street stop with SR 30/US 280, and SR 30/US 280 remains free flow.
  - According to Heath & Lineback Engineers, Inc., who are the roadway design engineers on this project, Alternate 2 is considered to be the preferred alternate from a design and cost standpoint.
  - The concept layout is included in Appendix A.
- Alternate 3 – Roundabout
  - The intersection of SR 30/US 280 and Cannon Road/Carnes Road is reconstructed into a multi-lane roundabout.
  - The three intersections of SR 30/US 280 and 24<sup>th</sup> Avenue, SR 30/US 280 and SR 300 Connector/Old Albany Highway, and 24<sup>th</sup> Avenue and SR 300 Connector/Old Albany Highway are realigned into one intersection, a single-lane roundabout. The outside lanes of SR 30/US 280 approach the roundabout as right turn bypass lanes.

## Methodology

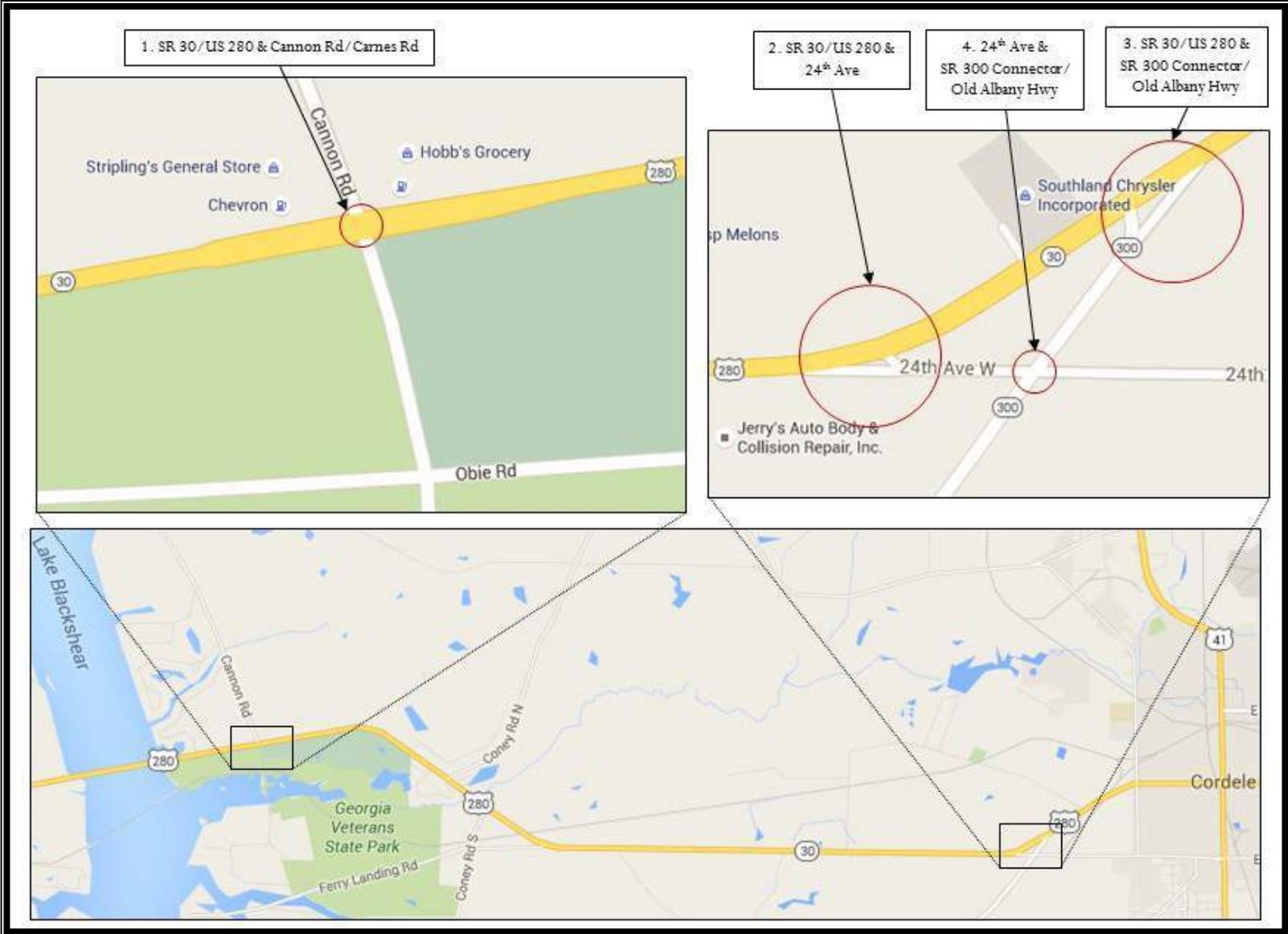
Initial evaluations were made to assess the current conditions along the corridor. Peak hour turning movement counts (TMC) were conducted at four study intersections along the corridor. In addition to the TMCs, 24-hour directional counts were taken at select locations along the corridor. Traffic projections for the corridor were developed for the Design Year 2044. Build models were developed and analyzed for the study intersections along the corridor for the Design Year 2044 for the three improvement alternates.

## Other Planned Improvements

In addition to the proposed project, the following projects will affect the SR 30/US 280 corridor:

- RC08-000012, PI No. 0012578. This project will construct a new parallel bridge south of the existing bridge over Lake Blackshear. The proposed pavement will tie into the existing pavement over a minimal distance from the ends of the proposed bridge. This project was originally part of the Governor's Road Improvement Program (GRIP), and it ties into the western end of PI No. 422470 east of Lake Blackshear. Its Opening Year is 2018, and its Design Year is 2038. This project is included in GDOT's TIA and CWP. The project ties two other projects together, PI No. 322775 in Sumter County and PI No. 422470 in Crisp County.
- STP00-0030-02(030), PI No. 322775. This project is a widening and reconstruction of SR 30/US 280 from CS 500/Ferguson Street to Lake Blackshear, Sumter County. This project is included in GDOT's GRIP and CWP. The total project length is 8.2 miles. The proposed construction will consist of widening SR 30/US 280 from its existing two lane section to a four lane roadway with turn lanes as needed. The project begins at Ferguson Street with a 14 foot flush median section with transitions to a 44 foot median section just outside the city of De Soto. The widening of the existing roadway shifts from one side to the other to avoid historic resources and property displacements. The proposed 44 foot median section transitions to a 20 foot raised median section prior to crossing Lake Blackshear and transitions further to a 14 foot flush median section after crossing Lake Blackshear. The 14 foot flush median section is maintained for the remainder of the project.

Figure 1 – Project Location Map



## 2. EXISTING CONDITIONS

---

### SR 30/US 280 TRAFFIC ENGINEERING REPORT

#### Intersections

The following are the study intersections along the corridor, all of which are unsignalized:

1. SR 30/US 280 and Cannon Road/Carnes Road
2. SR 30/US 280 and 24<sup>th</sup> Avenue
3. SR 30/US 280 and SR 300 Connector/Old Albany Highway
4. 24<sup>th</sup> Avenue and SR 300 Connector/Old Albany Highway

Figure 2 illustrates the associated geometry and operation control of the study intersections. As a general assumption for all figures in this report, SR 30/US 280 is considered to be east/west at all intersections.

#### Roadways

SR 30/US 280 is a two-lane undivided roadway with intermittent passing lanes in the study area. The roadway serves residential and light commercial developments in the vicinity of the study area. The roadway has a speed limit of 55 mph. SR 30/US 280 west of 24<sup>th</sup> Avenue is classified as a Rural Principal Arterial, and SR 30/US 280 east of 24<sup>th</sup> Avenue is classified as an Urban Principal Arterial. SR 30/US 280 runs west across Lake Blackshear into Sumter County, toward Americus, and runs east through downtown Cordele, across Interstate 75, with which it has an interchange, toward McRae.

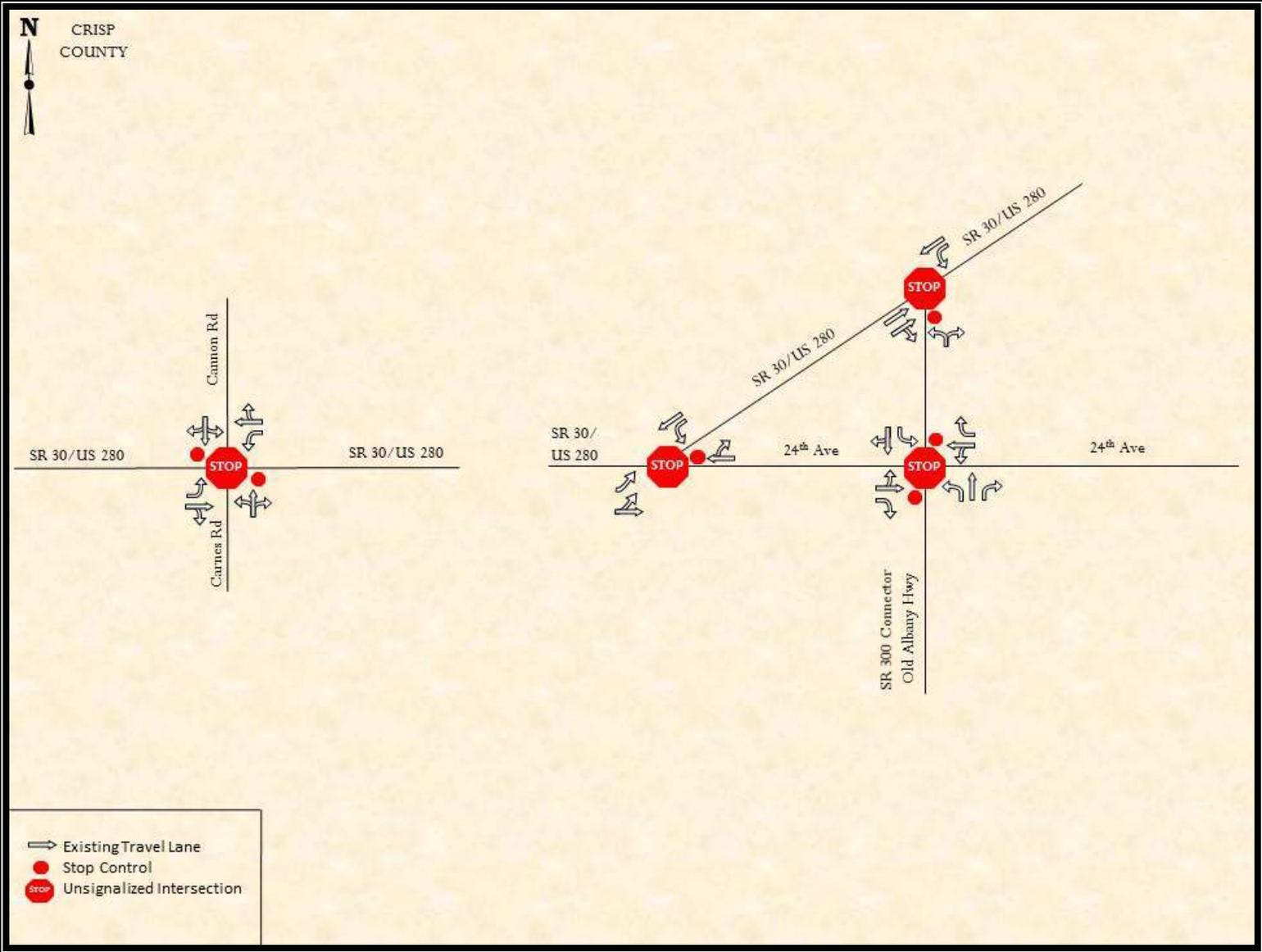
Cannon Road is a two-lane undivided roadway in the study area. The roadway serves residential and light commercial developments in the vicinity of the study area. The roadway has a speed limit of 55 mph. Cannon Road is classified as a Rural Major Collector. Cannon Road originates at SR 30/US 280 at its intersection with Carnes Road, and runs north toward SR 27. When Cannon Road crosses into Dooly County to the north, it becomes River Road.

Carnes Road is a two-lane undivided roadway in the study area. The roadway primarily serves the Georgia Veterans Memorial State Park area and residential developments in the vicinity of the study area. The roadway has a speed limit of 25 mph. Carnes Road is classified as a Rural Major Collector. Carnes Road originates at SR 30/US 280 at its intersection with Cannon Road, and runs south toward Clay Pit Road, where it terminates, just west of Ferry Landing Road.

SR 300 Connector/Old Albany Highway is a two-lane undivided roadway in the study area. The roadway serves light residential developments in the vicinity of the study area. The roadway has a speed limit of 55 mph. SR 300 Connector/Old Albany Highway is classified as a Rural Principal Arterial. SR 300 Connector/Old Albany Highway originates at SR 300 three miles southwest of its intersection with 24<sup>th</sup> Avenue, and runs northeast through its intersection with 24<sup>th</sup> Avenue and terminates at SR 30/US 280.

24<sup>th</sup> Avenue is a two-lane undivided roadway in the study area. The roadway serves residential, commercial, and institutional developments in the vicinity of the study area. The roadway has a speed limit of 45 mph. 24<sup>th</sup> Avenue is classified as an Urban Minor Arterial in the vicinity of the study area. 24<sup>th</sup> Avenue originates at SR 30/US 280, and runs east through its intersection with SR 300/Old Albany Highway, through the city limits of Cordele, and terminates at SR 90.

Figure 2 – Existing Travel Lanes and Traffic Control



### 3. TRAFFIC DATA

#### SR 30/US 280 TRAFFIC ENGINEERING REPORT

Turning movement counts (TMCs) were collected at the study intersections, and 24-hour directional volume counts were collected at select locations in the study area in January 2016. Printouts for TMCs and 24-hour counts are provided in Appendix B.

#### Truck Percentages

Table 1 below shows the truck percentages that will be used for this project. The percentages are weighted over both directions and are rounded to the nearest whole percent. The peak hour truck percentage is shown as the higher percentage of the two peak hours. In this case, the PM peak hour produced the higher truck percentage over the AM peak hour. More information on the truck percentages from the traffic count data can be found in Appendix B.

*Table 1 – Truck Percentages*

Count Location	24 Hour T%			Peak Hour T%		
	S.U.	Comb.	Total	S.U.	Comb.	Total
SR 30/US 280 west of Valhalla Rd (GDOT TC#0810060)	11%	12%	23%	9%	10%	19%
<b>SR 30/US 280 between Valhalla Rd &amp; Cannon Rd*</b>	<b>13%</b>	<b>10%</b>	<b>23%</b>	<b>19%</b>	<b>5%</b>	<b>24%</b>
SR 30/US 280 west of Rowland Rd (GDOT TC#0810061)	7%	2%	9%	9%	2%	11%
SR 30/US 280 east of SR 300 Conn/ Old Albany Hwy (GDOT TC#0810062)	8%	10%	18%	5%	7%	12%
SR 300 Conn/ Old Albany Hwy south of 24th Ave (GDOT TC#0810081)	5%	3%	8%	4%	2%	6%
SR 300 Conn/ Old Albany Hwy between SR 30/US 280 and 24th Ave (GDOT TC#0810082)	8%	6%	14%	5%	2%	7%

\* Collected by W&A in January 2016. These are the truck percentages which will be used for this project.

## Projected Average Daily Traffic (ADT) Volumes

Traffic on SR 30/US 280 is expected to increase as a result of continuing development in the region. The local GDOT count stations were used to develop an annual growth rate that was applied to the existing traffic. The GDOT count stations in the vicinity of the study corridor that were utilized were Stations 0810060, 0810061, 0810062, 0810081, 0810082, 0810138, 0810149, 0810152, and 0810163 in Crisp County. Linear regression analysis was performed to estimate the Existing Year 2016 and Design Year 2044 volumes at the count stations, and the growth rates per year were calculated. The average growth rate per year for these five count locations is 0.4% per year from 2016 to 2044. More information on historical traffic count data can be found in Appendix C.

Additional sources of growth rates were utilized to assist in developing the traffic growth rates.

The State of Georgia Office of Planning and Budget population model forecast data for the years 2010, 2015, 2020, 2025, and 2030 were reviewed. The model incorporates socio-economic factors and other pertinent contributing factors to determine future population figures. Table 2 below shows predicted Crisp County populations for the years 2015, 2020, 2025, and 2030.

*Table 2 – Crisp County Population Model Growth*

Years	Crisp County Population
2015	24,003
2020	25,383
2025	26,751
2030	28,335
% Growth 2015-30	1.1%

From Table 2, it can be seen that, per the population growth model, the growth rate from 2015 to 2030 is 1.1%. However, this data simply represents an estimate of future growth just before the 2010 census was conducted, as the State of Georgia Office of Planning and Budget released the data in March 2010. According to the U.S. Census Bureau, in 2010 the actual population of Crisp County was 23,439, which is slightly higher than the model's estimated 2010 figure of 22,615. The U.S. Census Bureau's 2014 estimate of the population of Crisp County was 22,934. More information on the State of Georgia Office of Planning and Budget population model forecast data can be found in Appendix D.

GDOT made available Regional Economic Models, Incorporated's (REMI) TranSight model for Georgia Regions, which includes updated regional population model forecast data for the River Valley region, which includes Crisp County, for every year from 2011 to 2060. Since the design year of the project has been set for 2044, data for the years 2016 and 2044 was reviewed. This model also incorporates socio-economic factors and other pertinent contributing factors to determine future population figures. Table 3 below shows the predicted River Valley region population for the years 2016 and 2044.

**Table 3 – River Valley Region Population Model Growth**

Years	River Valley Population
2016	143,424
2044	145,601
% Growth 2024-44	0.1%

From Table 3, it can be seen that, per the population growth model, the growth rate from 2016 to 2044 is 0.1%. More information on REMI’s TranSight Georgia Regions population model forecast data can be found in Appendix E.

United States census data for Crisp County and the City of Cordele was obtained for the years 2000 and 2010. Table 4 below shows the census data for Crisp County and the City of Cordele for the years 2000 and 2010.

**Table 4 – Census Data, Crisp County and City of Cordele**

Years	Crisp County Population	City of Cordele Population
2000	21,996	11,605
2010	23,439	11,147
% Growth 2000-2010	0.6%	-0.4%

From Table 4, it can be seen that, per the census data for Crisp County and the City of Cordele for the years 2000 and 2010, the growth rate is approximately 0.6% for Crisp County and -0.4% for the City of Cordele. More information on the census data for Crisp County and the City of Cordele for the years 2000 and 2010 can be found in Appendix F.

The proposed improvements (Build Scenario) consist of widening SR 30/US 280 from a two-lane undivided roadway with passing lanes in the vicinity of the project to a four-lane divided highway with a grass median. With the added capacity and mobility, the proposed improvements could potentially attract additional traffic to SR 30/US 280 relative to the scenario of the roadway remaining a two-lane section. Based upon the historical analysis and the regional population model forecast data available, a 1.5% growth rate was used for the Design Year 2044 Build scenario for this project.

The growth rate was applied to the Existing Year ADT numbers to project 24-hour traffic for the Opening Year 2024 and the Design Year 2044. Projections were developed for the Build Scenario. Table 5 shows the projected ADT volumes along the corridor for each scenario.

**Table 5 – SR 30/US 280 Projected Average Daily Traffic (ADT) Volumes**

Year	Scenario	ADT
2016	Existing Year	6,650
2024	Opening Year (Build)	7,500
2044	Design Year (Build)	10,100

### **Projected Design Hour Volumes (DHV)**

Using the 24-hour count, a peak-hour (K) factor and a directional (D) factor were calculated for both peak hours. The K factor is the proportion of daily traffic occurring during the peak hour. The K factor for SR 30/US 280 is 8% for the AM peak hour and 9% for the PM peak hour. The D factor is the proportion of directional traffic during the peak hour. The D factor for SR 30/US 280 is 60% in the primary eastbound direction for the AM peak hour and 56% in the primary westbound direction for the PM peak hour.

Design hour volumes (DHV) are obtained by applying the growth rate to the existing traffic volumes. Those projected hourly volumes are checked against the ADT projections using the K factors.

The Design Year 2044 Build Scenario traffic projections were developed for the project area corresponding to the TMC locations. The future year projections based on annual growth rates were developed for the corridor. The projected DHV for the Design Year 2044 are illustrated in Figures 3 through 5 for Alternates 1 through 3, respectively.

Figure 3 – Design Year 2044 Build DHV – Alternate 1 – SR 30/US 280 Widening Only

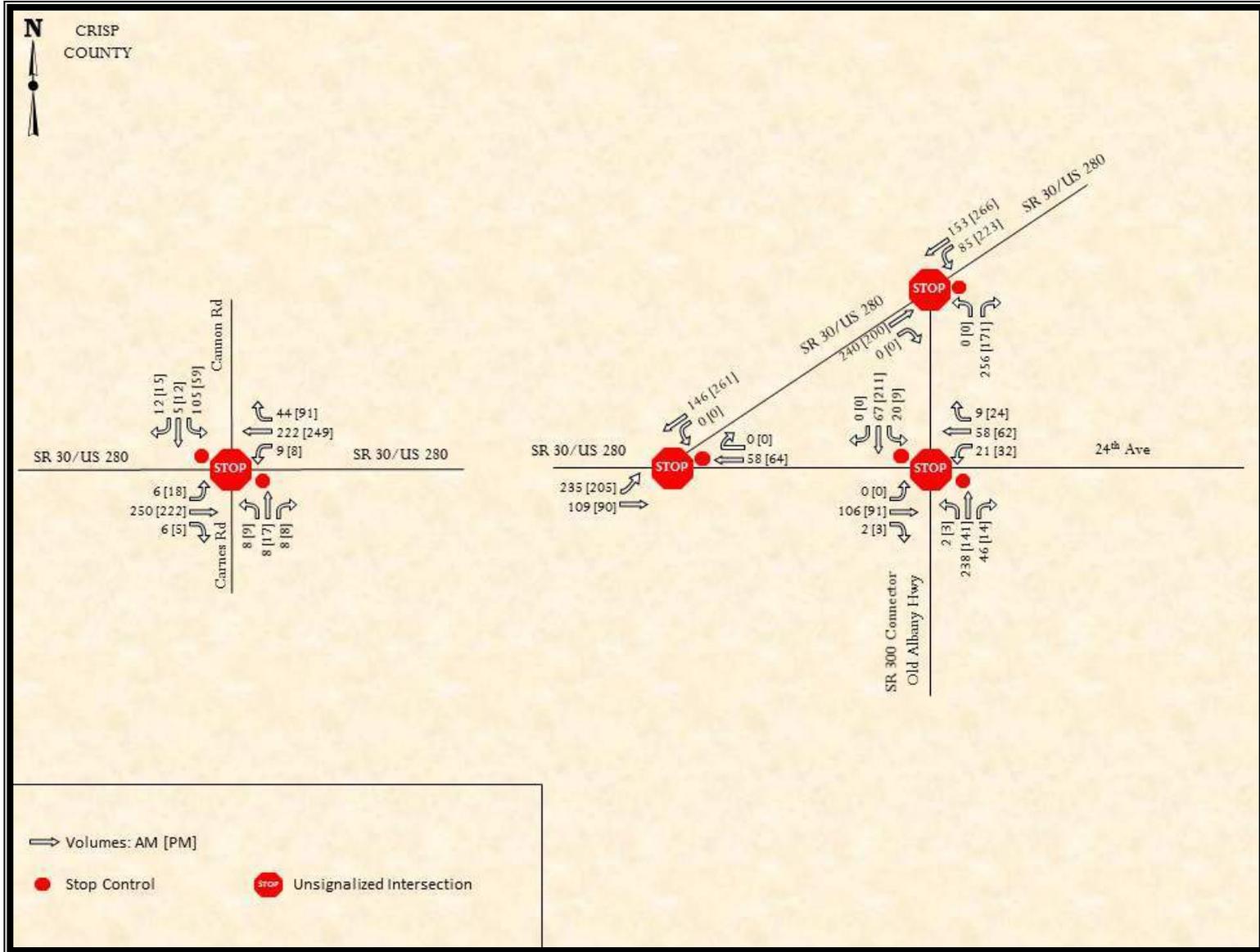


Figure 4 – Design Year 2044 Build DHV – Alternate 2 – Intersection Realignment

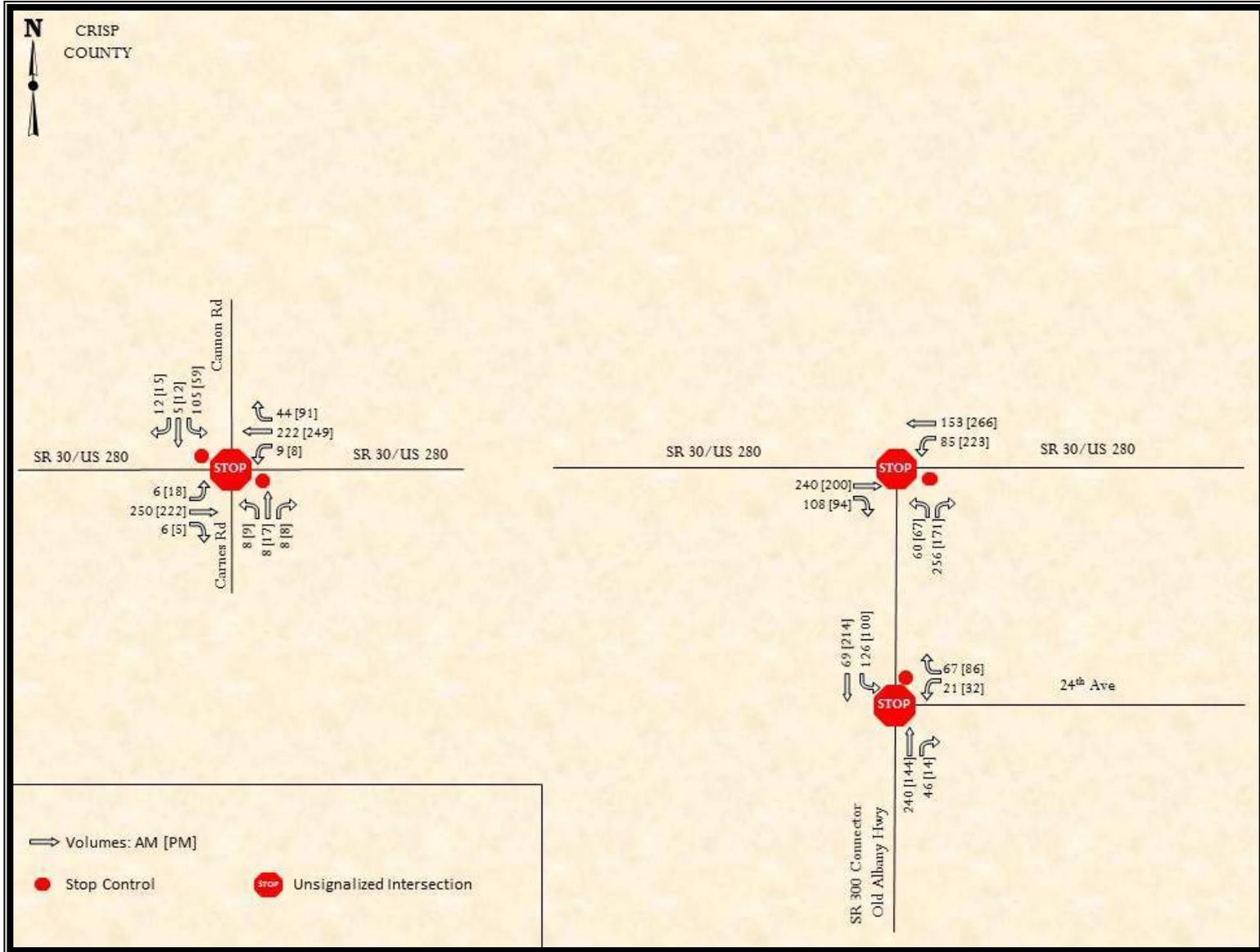
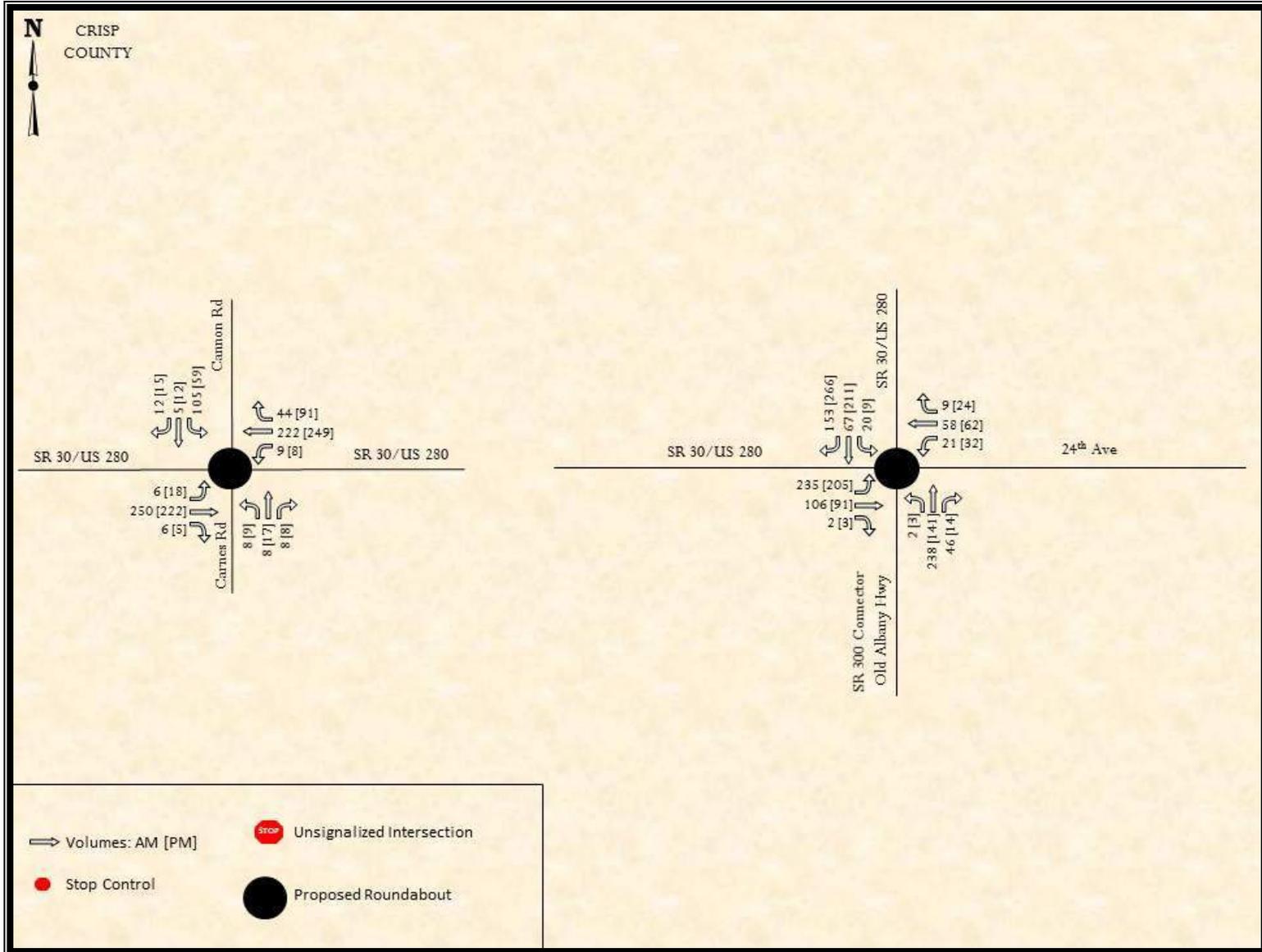


Figure 5 – Design Year 2044 Build DHV – Alternate 3 – Roundabout



## 4. DATA ANALYSIS

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### SR 30/US 280 TRAFFIC ENGINEERING REPORT

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Capacity analysis was used to evaluate the projected volumes at the study intersections along the corridor. This process was used to determine the geometry and traffic control needed at each intersection to result in adequate levels of service (LOS) for the Design Year 2044 Build Scenario.

*Synchro* (1) was used to conduct capacity analysis for signal controlled intersections and stop controlled intersections. *Synchro* implements the capacity methods of the *Highway Capacity Manual* (HCM) (2) for performing the industry standard evaluation of intersection performance. GDOT's *Roundabout Analysis Tool* (3) was used to perform the roundabout analysis.

The HCM defines LOS in terms of the amount of control delay, including initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay.

The LOS definitions for both stop controlled and signal controlled intersections are provided in Table 6. For the purposes of capacity analysis, roundabouts are considered to be stop controlled, so the LOS definition for a roundabout falls under that of a stop controlled intersection.

It should be noted that GDOT's *Roundabout Analysis Tool* provides two LOS, one for the Opening Year when drivers are unfamiliar with the roundabout, and one for the Design Year, when drivers are familiar with the roundabout. Therefore, it is not uncommon for the LOS to improve between the Opening Year and the Design Year because drivers have become accustomed to the roundabout. For the purposes of this study, the LOS for the Design Year was utilized.

*Table 6 – Level of Service Criteria*

LEVEL OF SERVICE	CONTROL DELAY PER VEHICLE (SEC)	
	WITH STOP-SIGN CONTROL	WITH SIGNAL CONTROL
A	$\leq 10$	$\leq 10$
B	$> 10$ and $\leq 15$	$> 10$ and $\leq 20$
C	$> 15$ and $\leq 25$	$> 20$ and $\leq 35$
D	$> 25$ and $\leq 35$	$> 35$ and $\leq 55$
E	$> 35$ and $\leq 50$	$> 55$ and $\leq 80$
F	$> 50$	$> 80$

Source: *Highway Capacity Manual*

GDOT has ranges of adequate LOS based on the area classification. Rural, sparsely developed areas have a minimum LOS of C. This is due to the expectancy of rural residents for relatively uncongested conditions and to design flexibility related to lower right of way costs. The minimum LOS for urban areas is D. This reflects the greater acceptance of delay and congestion by urban residents. Additionally, the increased density of developments makes right of way costs much higher in urban areas. The SR 30/US 280 project corridor west of 24<sup>th</sup> Avenue is classified as a Rural Principal Arterial; therefore, the SR 30/US 280 project corridor west of 24<sup>th</sup> Avenue has a minimum LOS requirement of C. The SR 30/US 280 project corridor east of 24<sup>th</sup> Avenue is classified as an Urban Principal Arterial; therefore, the SR 30/US 280 project corridor east of 24<sup>th</sup> Avenue has a minimum LOS requirement of D.

## Intersection Capacity Analysis Results

The Build Scenario consists of widening SR 30/US 280 to a five lane section with a 14 foot flush median from the western end of the project through the Georgia Veterans Memorial State Park area, then transitioning to a four lane section with a 44 foot depressed median. The project then transitions back into the existing five lane section and ends at Fish Hatchery Road, just west of Cordele.

At the intersection of SR 30/US 280 and Cannon Road/Carnes Road, traffic signal warrant analysis was performed. At the three intersections of SR 30/US 280 and 24<sup>th</sup> Avenue, SR 30/US 280 and SR 300 Connector/Old Albany Highway, and 24<sup>th</sup> Avenue and SR 300 Connector/Old Albany Highway, traffic signal warrant analysis was performed for the three intersections individually and for the possible realignment of these three intersections into one intersection. The analysis is discussed in Section 5. As will be seen in Section 5, a traffic signal is not expected to be warranted for any of these intersections for the Design Year 2044 Build Scenario.

Three alternates were studied. Figures 6 through 8 show the lane configurations and traffic control for Alternates 1 through 3, respectively.

- Alternate 1 – SR 30/US 280 Widening Only
  - Only the widening improvements to SR 30/US 280 described above are considered.
  - All side street lane configurations and intersection control remain unchanged.
- Alternate 2 – Intersection Realignment
  - The improvements to SR 30/US 280 described above are also considered for Alternate 2.
  - The intersection of 24<sup>th</sup> Avenue and SR 300 Connector/Old Albany Highway becomes a “T” intersection. 24<sup>th</sup> Avenue forms the east leg of the “T” intersection. The intersection is relocated approximately 600 feet to the southwest.
  - 24<sup>th</sup> Avenue remains the side street stop with SR 300 Connector/Old Albany Highway, and SR 300 Connector/Old Albany Highway remains free flow.
  - The intersection of SR 30/US 280 and SR 300 Connector/Old Albany Highway is relocated approximately 1,000 feet to the west on SR 30/US 280.
  - SR 300 Connector/Old Albany Highway remains the side street stop with SR 30/US 280, and SR 30/US 280 remains free flow.
  - According to Heath & Lineback Engineers, Inc., who are the roadway design engineers on this project, Alternate 2 is considered to be the preferred alternate from a design and cost standpoint.
  - The concept layout is included in Appendix A.
- Alternate 3 – Roundabout
  - The intersection of SR 30/US 280 and Cannon Road/Carnes Road is reconstructed into a multi-lane roundabout.
  - The three intersections of SR 30/US 280 and 24<sup>th</sup> Avenue, SR 30/US 280 and SR 300 Connector/Old Albany Highway, and 24<sup>th</sup> Avenue and SR 300 Connector/Old Albany Highway are realigned into one intersection, a single-lane roundabout. The outside lanes of SR 30/US 280 approach the roundabout as right turn bypass lanes.

Figure 6 – Alternate 1 – SR 30/US 280 Widening Only Lane Configurations and Traffic Control

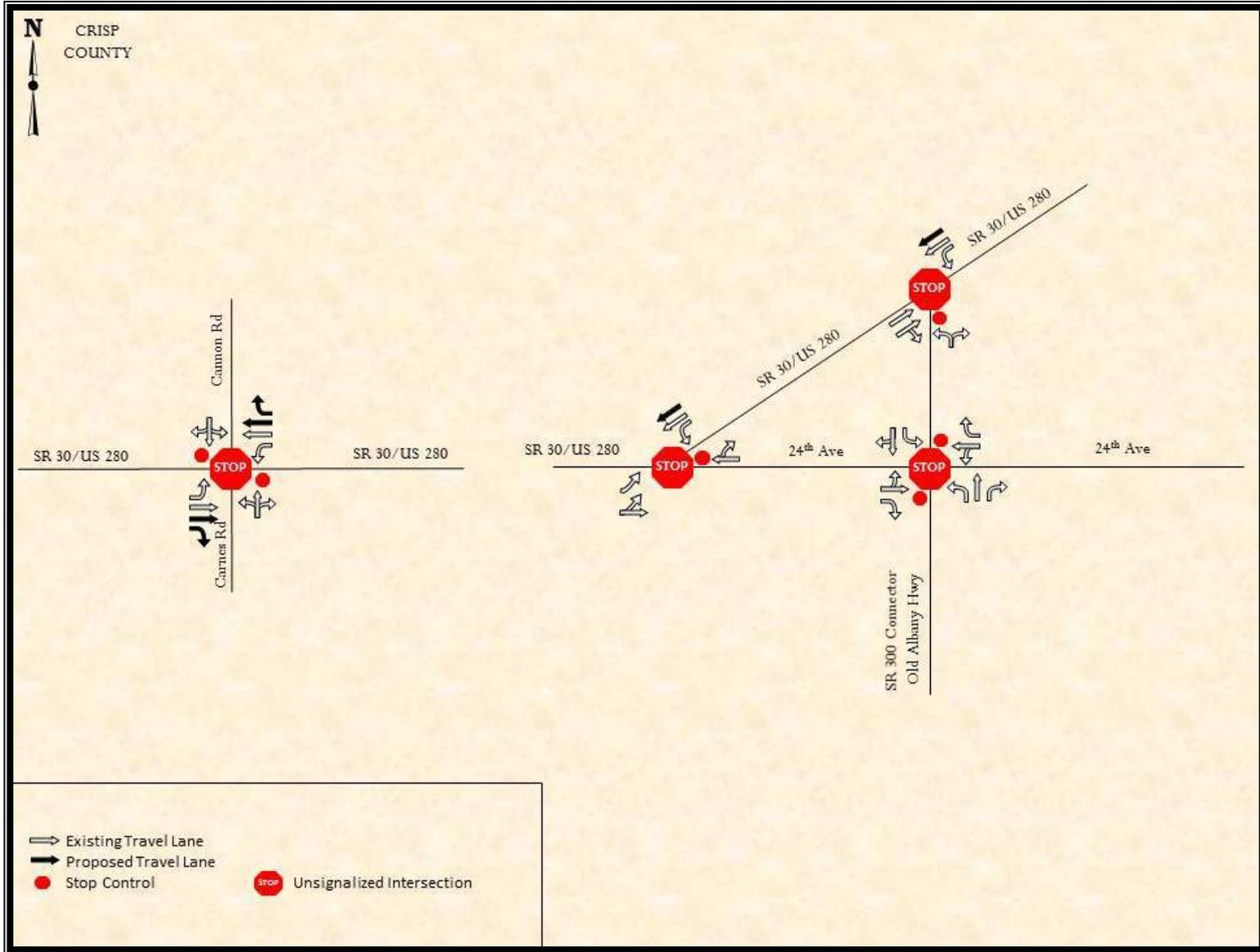


Figure 7 – Alternate 2 – Intersection Realignment Lane Configurations and Traffic Control

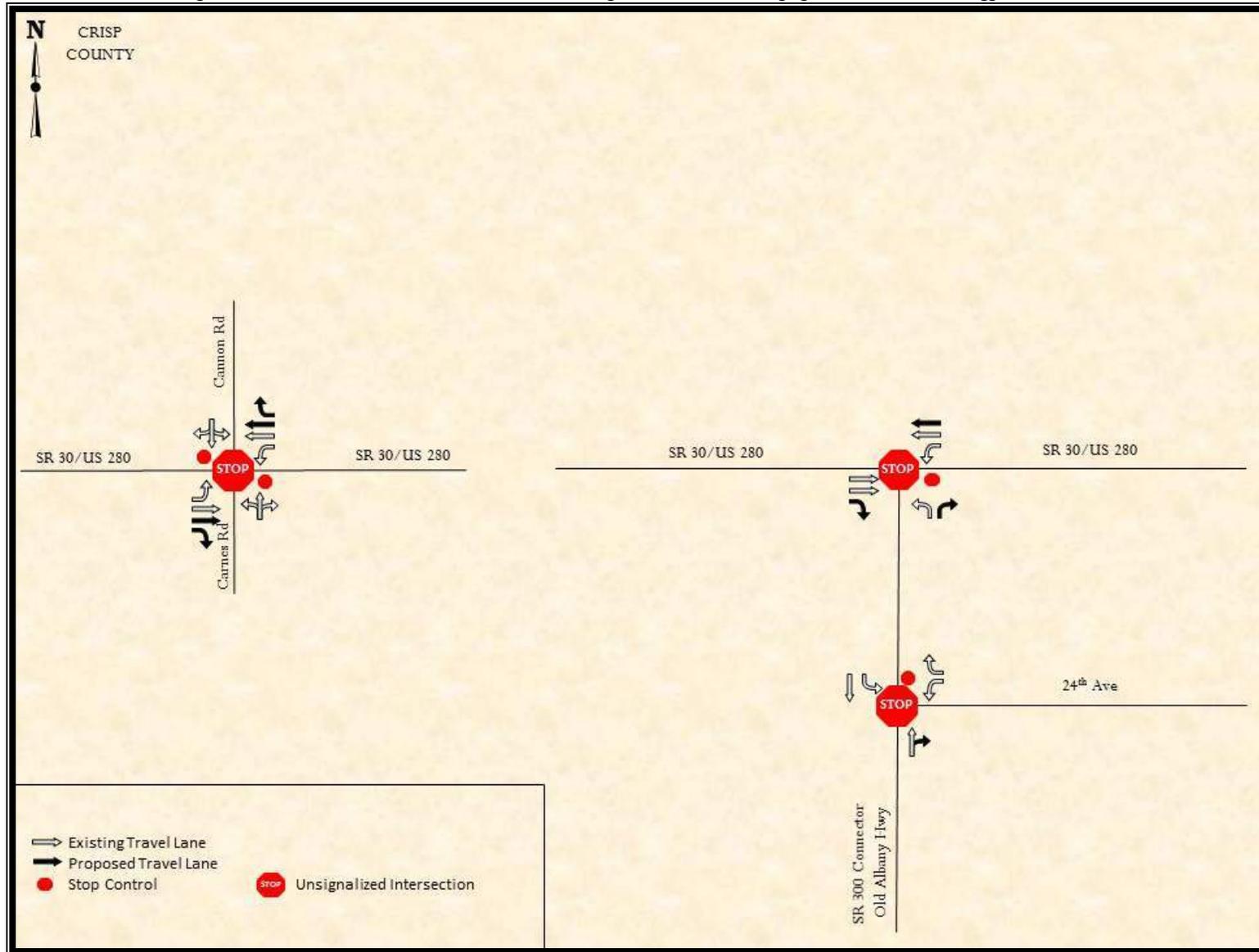


Figure 8 – Alternate 3 – Roundabout Lane Configurations and Traffic Control

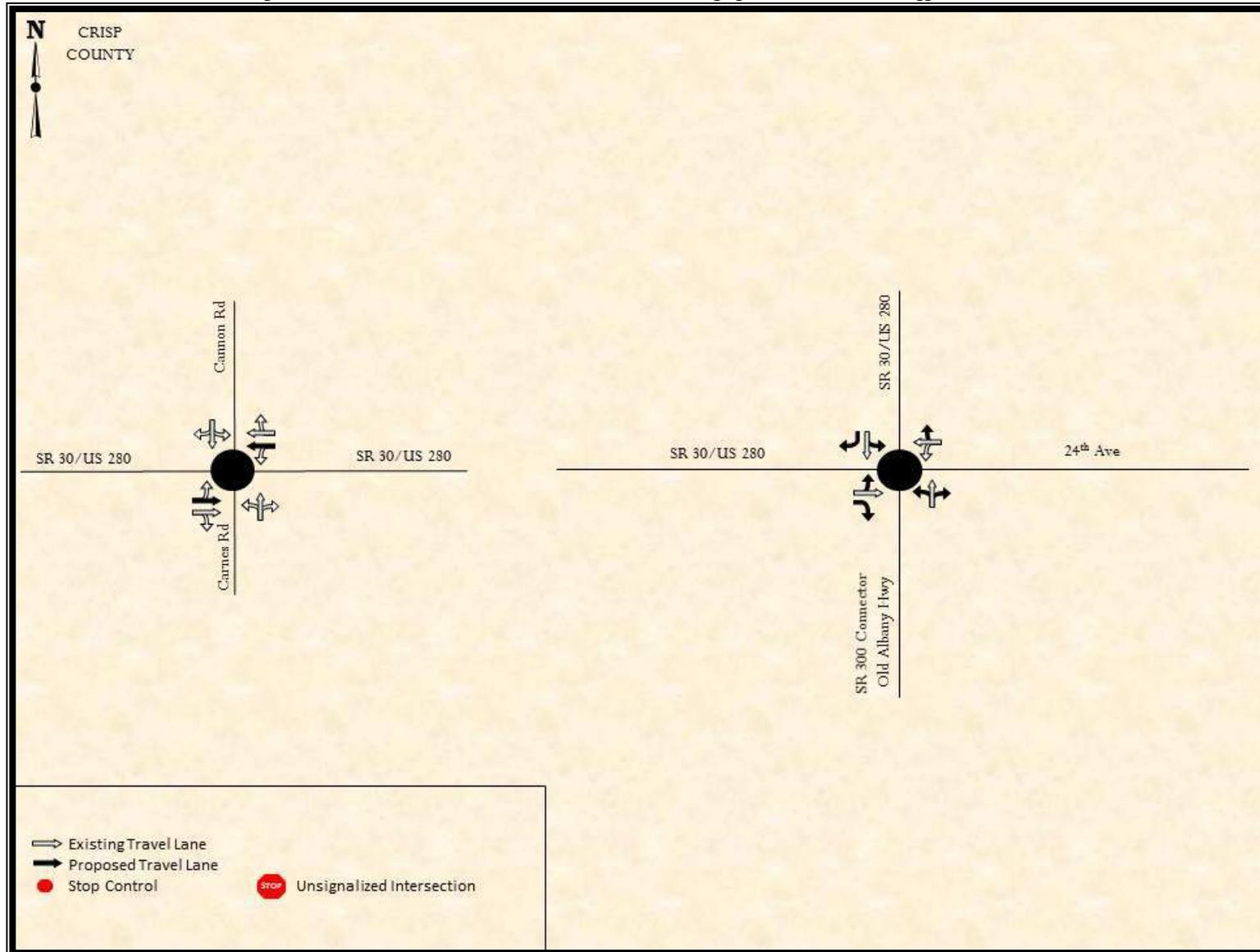


Table 7 shows the LOS of the study intersections for the Design Year 2044 for each alternate in the Build Scenario. The *Synchro* printouts for the Build Scenario are located in Appendix G of this report, and the roundabout analysis for the Build Scenario is included in Appendix H.

**Table 7 – Results of Capacity Analysis: Build**

Intersection		Alternate	Control	Movement	Design Year 2044			
					Build			
#	Name				AM	PM		
1	SR 30/US 280 & Cannon Rd/Carnes Rd	1 & 2	Side Street Stop	NBLTR	B (12.2)	B (13.0)		
				SBLTR	B (14.4)	B (14.6)		
				EBL	A (7.7)	A (7.8)		
				WBL	A (8.1)	A (7.7)		
		3	Roundabout			NBLTR	A (3.6)	A (3.3)
						SBLTR	A (3.8)	A (3.7)
						EBLT	A (3.6)	A (3.4)
						EBTR	A (3.5)	A (3.3)
						WBLT	A (3.1)	A (3.2)
						WBTR	A (3.3)	A (3.7)
2	SR 30/US 280 & 24th Avenue	1	Side Street Stop	NBLR	B (10.9)	B (11.3)		
				WBL	A (0.0)	A (0.0)		
3	SR 30/US 280 & SR 300 Connector/ Old Albany Hwy	1	Side Street Stop	NBLR	B (11.5)	B (10.2)		
				WBL	A (8.2)	A (8.4)		
		2	Side Street Stop	NBL	B (13.0)	C (20.9)		
				NBR	B (11.1)	B (10.1)		
				WBL	A (8.1)	A (8.4)		
4	SR 300 Connector/ Old Albany Hwy & 24th Ave	1	Side Street Stop	NBL	A (7.4)	A (7.7)		
				SBL	A (7.9)	A (7.6)		
				EBLT	B (14.4)	B (14.5)		
				EBR	A (8.7)	A (9.6)		
		2	Side Street Stop			WBLT	B (14.5)	C (16.0)
						WBR	A (9.8)	A (9.3)
						SBL	A (8.2)	A (7.8)
						WBL	C (15.6)	C (15.6)
3	SR 30/US 280 & 24th Ave & SR 300 Connector/ Old Albany Hwy (Roundabout)	3	Roundabout	NBLTR	A (8.0)	A (6.0)		
				SBLT	A (4.0)	A (5.0)		
				SBR	A (0.0)	A (0.0)		
				EBLT	A (7.0)	A (8.0)		
				EBR	A (3.8)	A (4.6)		
				WBLTR	A (6.0)	A (6.0)		

As can be seen in Table 7, all of the study intersections are expected to operate adequately for the Design Year 2044 Build Scenario with the assumed lane configurations and traffic control for each alternate.

## Storage Summary

Table 8 shows the expected 95<sup>th</sup> percentile queue lengths (the queue is expected to be this length or shorter 95% of the time) for the Build Scenario for each alternate for the Design Year 2044. See GDOT standards and details for bay taper and deceleration lengths.

*Table 8 – Storage Summary*

Intersection		Alternate	Control	Movement	Design Year 2044	
					Build	
Queues (feet)						
#	Name				AM	PM
1	SR 30/US 280 & Cannon Rd/Carnes Rd	1 & 2	Side Street Stop	NBLTR	25	25
				SBLTR	25	25
				EBL	0	0
				WBL	0	0
		3	Roundabout	NBLTR	25	25
				SBLTR	25	25
				EBLT	25	25
				EBR	25	25
				WBLT	25	25
				WBR	25	25
2	SR 30/US 280 & 24th Avenue	1	Side Street Stop	NBLR	25	25
				WBL	0	0
3	SR 30/US 280 & SR 300 Connector/ Old Albany Hwy	1	Side Street Stop	NBLR	43	25
				WBL	25	25
		2	Side Street Stop	NBL	25	25
				NBR	38	25
				WBL	25	25
4	SR 300 Connector/ Old Albany Hwy & 24th Ave	1	Side Street Stop	NBL	0	0
				SBL	25	0
				EBTL	25	25
				EBR	0	0
		2	Side Street Stop	WBTL	25	25
				WBR	0	25
				SBL	25	25
				WBL	25	25
				WBR	25	25
	SR 30/US 280 & 24th Ave & SR 300 Connector/ Old Albany Hwy (Roundabout)	3	Roundabout	NBLTR	47	25
				SBLT	25	25
				SBR	25	30
				EBLT	46	48
				EBR	0	0
				WBLTR	25	25

## 5. SIGNAL WARRANT ANALYSIS

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### SR 30/US 280 TRAFFIC ENGINEERING REPORT

The following four existing unsignalized intersections, as well as the possible four-way intersection of SR 30/US 280 and 24<sup>th</sup> Avenue and SR 300 Connector/Old Albany Highway, were evaluated for the installation of traffic signals:

1. SR 30/US 280 and Cannon Road/Carnes Road
2. SR 30/US 280 and 24<sup>th</sup> Avenue
3. SR 30/US 280 and SR 300 Connector/Old Albany Highway
4. 24<sup>th</sup> Avenue and SR 300 Connector/Old Albany Highway

The projected volumes of the intersections were evaluated using the guidelines given in the *Manual on Uniform Traffic Control Devices (MUTCD)* (4). The MUTCD establishes the following Warrants:

- Warrant 1, Eight-Hour Vehicular Volume,
- Warrant 2, Four-Hour Vehicular Volume,
- Warrant 3, Peak Hour,
- Warrant 4, Pedestrian Volume,
- Warrant 5, School Crossing,
- Warrant 6, Coordinated Signal System,
- Warrant 7, Crash Experience,
- Warrant 8, Roadway Network,
- Warrant 9, Intersection near a Grade Crossing.

The applicable warrants will be addressed for each intersection being analyzed. The MUTCD guidelines for warrants suggest that a traffic signal should not be installed unless one or more of the warrants are satisfied.

#### Hourly Volumes

Signal warrant studies typically study existing intersections and intersection configurations and involve the collection of hourly traffic data. However, this study is concerned with the analysis of the projected conditions that will occur in the Design Year 2044 Build Scenario. Therefore, twelve-hour volumes were used from the twelve-hour counts taken, and developed for the Design Year 2044 Build scenario using the 1.5% growth rate previously discussed. Right turn volumes were not included on any of the side street approaches. The twelve-hour volumes for the Design Year 2044 for the five intersections are shown in Appendix I.

#### Warrant 1 – Eight-Hour Vehicular Volume

The MUTCD gives minimum volumes required to meet the warrant based on the number of lanes on the major street, the number of lanes on the minor street, and the speed limit on the major street. The traffic volume requirements of Warrant 1, Conditions A and B are hourly volumes that must be met for a minimum of eight hours of an average day. The required volume for the major street is the total approach

volume (both directions). The required minor street volume is the heavier approach volume (one direction). If either Condition A or Condition B is met, then Warrant 1 is satisfied. If neither Condition A nor Condition B is met, but 80% of the volume requirements for Condition A are met for eight hours and 80% of the volume requirements for Condition B are met for eight hours, then Warrant 1 is satisfied; the eight hours satisfied for 80% of Condition A do not have to be the same eight hours satisfied for 80% of Condition B. Warrant 1 is intended to be applied as a single warrant; therefore, if Condition A is satisfied, Condition B is not evaluated, and if Condition A or Condition B is satisfied, the combination of Conditions A and B is not evaluated.

### **Warrant 2 – Four-Hour Vehicular Volume**

The Four-Hour Vehicular Volume Warrant is presented in the MUTCD using a graph of required side street volumes versus main street volumes. The traffic volume requirements of Warrant 2 must be met for a minimum of four hours on an average day.

### **Warrant 3 – Peak Hour**

The MUTCD states: “Support: The Peak Hour signal warrant is intended for use at a location where traffic conditions are such that for a minimum of 1 hour of an average day, the minor-street traffic suffers undue delay when entering or crossing the major street.”

Standard: This signal warrant shall be applied only in unusual cases, such as office complexes, manufacturing plants, industrial complexes, or high-occupancy vehicle facilities that attract or discharge large numbers of vehicles over a short time.”

Therefore, Warrant 3 is not applicable for any of the intersections evaluated.

### **Warrant 4 – Pedestrian Volume**

There is not excessive pedestrian volume in the area of the study. Therefore, Warrant 4 is not applicable for any of the intersections evaluated.

### **Warrant 5 – School Crossing**

The fact that schoolchildren are crossing the major street is not the principal reason to consider installing a traffic signal at any of the intersections evaluated. Therefore, Warrant 5 is not applicable for any of the intersections evaluated.

### **Warrant 6 – Coordinated Signal System**

Signalization is not expected to be needed in order to maintain proper platooning of vehicles. Therefore, Warrant 6 is not applicable for any of the intersections evaluated.

### Warrant 7 – Crash Experience

The severity and frequency of crashes are not the principal reasons to consider installing a traffic signal at any of the intersections evaluated. Therefore, Warrant 7 is not applicable for any of the intersections evaluated.

### Warrant 8 – Roadway Network

Signalization is not expected to be needed in order to encourage concentration and organization of traffic flow on the roadway network. Therefore, Warrant 8 is not applicable for any of the intersections evaluated.

### Warrant 9 – Intersection near a Grade Crossing

Proximity of the intersection to a grade crossing is not the principal reason to consider installing a traffic signal at any of the intersections evaluated. Therefore, Warrant 9 is not applicable for any of the intersections evaluated.

### Summary of Traffic Signal Warrant Analysis

Table 9 summarizes the traffic signal warrant analysis for the intersections along SR 30/US 280, using the Design Year 2044 Build volumes. The traffic signal warrant analyses are detailed in Appendix I. Based on the traffic signal warrant analysis, signalization is not expected to be warranted at any of the study intersections in the Design Year 2044 Build Scenario.

*Table 9 – Summary of Traffic Signal Warrant Analysis*

Int #	Intersection	Warrants Met
		Design Year 2044
		100% Threshold Volumes
1	SR 30/US 280 & Cannon Rd/Carnes Rd	None
2	SR 30/US 280 & 24th Ave	None
3	SR 30/US 280 & SR 300 Conn/Old Albany Hwy	None
4	24th Ave & SR 300 Conn/Old Albany Hwy	None
	SR 30/US 280 & 24th Ave & SR 300 Conn/Old Albany Hwy (Possible Realignment)	None

## 6. CONCLUSIONS

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### SR 30/US 280 TRAFFIC ENGINEERING REPORT

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Based on the analysis documented in this report, Wolverton and Associates, Inc. make the following conclusions.

The project consists of widening SR 30/US 280 to a five lane section with a 14 foot flush median from the western end of the project, near Lake Blackshear, through the Georgia Veterans Memorial State Park area, then transitioning to a four lane section with a 44 foot depressed median. The project then transitions back into the existing five lane section and ends at Fish Hatchery Road, just west of Cordele. The project spans 7.6 miles, starting at Lake Blackshear and ending at SR 300 Connector/Old Albany Highway.

The following are the study intersections along the corridor, all of which are unsignalized:

1. SR 30/US 280 and Cannon Road/Carnes Road
2. SR 30/US 280 and 24<sup>th</sup> Avenue
3. SR 30/US 280 and SR 300 Connector/Old Albany Highway
4. 24<sup>th</sup> Avenue and SR 300 Connector/Old Albany Highway

Three alternates were studied:

- Alternate 1 – SR 30/US 280 Widening Only
  - Only the widening improvements to SR 30/US 280 described above are considered.
  - All side street lane configurations and intersection control remain unchanged.
- Alternate 2 – Intersection Realignment
  - The improvements to SR 30/US 280 described above are also considered for Alternate 2.
  - The intersection of 24<sup>th</sup> Avenue and SR 300 Connector/Old Albany Highway becomes a “T” intersection. 24<sup>th</sup> Avenue forms the east leg of the “T” intersection. The intersection is relocated approximately 600 feet to the southwest.
  - 24<sup>th</sup> Avenue remains the side street stop with SR 300 Connector/Old Albany Highway, and SR 300 Connector/Old Albany Highway remains free flow.
  - The intersection of SR 30/US 280 and SR 300 Connector/Old Albany Highway is relocated approximately 1,000 feet to the west on SR 30/US 280.
  - SR 300 Connector/Old Albany Highway remains the side street stop with SR 30/US 280, and SR 30/US 280 remains free flow.
  - According to Heath & Lineback Engineers, Inc., who are the roadway design engineers on this project, Alternate 2 is considered to be the preferred alternate from a design and cost standpoint.
  - The concept layout is included in Appendix A.
- Alternate 3 – Roundabout
  - The intersection of SR 30/US 280 and Cannon Road/Carnes Road is reconstructed into a multi-lane roundabout.
  - The three intersections of SR 30/US 280 and 24<sup>th</sup> Avenue, SR 30/US 280 and SR 300 Connector/Old Albany Highway, and 24<sup>th</sup> Avenue and SR 300 Connector/Old Albany Highway are realigned into one intersection, a single-lane roundabout. The outside lanes of SR 30/US 280 approach the roundabout as right turn bypass lanes.

A traffic signal is not expected to be warranted for any of these intersections for the Design Year 2044 Build Scenario.

The SR 30/US 280 project corridor west of 24<sup>th</sup> Avenue is classified as a Rural Principal Arterial; therefore, the SR 30/US 280 project corridor west of 24<sup>th</sup> Avenue has a minimum LOS requirement of C. The SR 30/US 280 project corridor east of 24<sup>th</sup> Avenue is classified as an Urban Principal Arterial; therefore, the SR 30/US 280 project corridor east of 24<sup>th</sup> Avenue has a minimum LOS requirement of D.

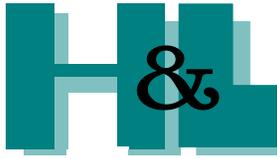
All of the study intersections are expected to operate at or better than the minimum LOS for the Design Year 2044 Build Scenario with the assumed lane configurations and traffic control for each alternate.

## REFERENCES

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### SR 30/US 280 TRAFFIC ENGINEERING STUDY

1. Synchro, Version 9, Trafficware Ltd., Sugar Land, TX, 2015.
2. Highway Capacity Manual, HCM 2010, Transportation Research Board, Washington, DC, 2010.
3. Roundabout Analysis Tool, v 2.1, Georgia Department of Transportation, Atlanta, GA, 2012.
4. Manual on Uniform Traffic Control Devices, 2009 Edition, Federal Highway Administration, Washington, DC, 2009.



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# Memo

To: File- 2014021

From: Rudolph Frampton, Heath and Lineback Engineers  
Russ Danser, Edwards-Pitman Environmental, Inc.  
Susan Thomas, Edwards-Pitman Environmental, Inc.

CC: All attendees

Date: 8-12-15

Re: **P.I. No. 422470, Sumter County**  
**US 280/SR 30 from East of Lake Blackshear Bridge to SR 300 Connector**  
**KICK OFF MEETING**

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The purpose of the meeting was to discuss the general direction of the project and open the discussion for the cost proposal.

## GENERAL DISCUSSION

- Kelvin Mullins (GDOT TIA) opened this discussion with a brief description of the proposed project.
- The proposed project is in Band 3 with a Let date that is post 2019.
- The project will involve the widening of US 280 from the SR 300 Conn, located just west of Cordele to the bridge over Lake Blackshear. The proposed typical section would be 4-lanes with a depressed median.
- Rudolph Frampton (Heath & Lineback) discussed what was to be constructed and a previous attempt at design for this project.
- Previously the project was designed with a 44-foot median which is not used on present projects. The maximum proposed median width would be 32-feet wide which will reduce previous impact estimates.
- The project also would require two sets of parallel bridges over Gum Creek and over the Heart of Georgia railroad.
- Rudolph proposed that the team consider eliminating the temporary pavement on the east side of the bridge project. The consensus was that due to the time delay between projects, that approach would not be favorable to the locals.

## PROJECT APPROACH AND SCOPE

Because this project has a recent history closely associated with the Section 404 permitting issues associated with GDOT Project 0012578 (US 280 Bridge over Lake Blackshear), the meeting was able to progress to some specific topics associated with project approach. The following topics were discussed:

1. In regards to the required Section 404 Individual Permit for impacted jurisdictional wetlands/streams, the approach discussed involved moving forward with the permitting of both projects (PI Nos. 422470 and 0012578) utilizing the design currently being prepared by Heath and Lineback for the bridge project. Rudolph noted that GIS data could be used to determine the concept limits needed to determine the impact acreage.
  - i. The goal is to have an IP prepared for US Army Corps of Engineers review by February 2016.
  - ii. This approach will allow the bridge project (PI No. 0012578) to move forward to let as a Band 2 project at the end of 2017. Laura Dawood noted that given the space of time between the two projects (PI 422470 would Let as Band 3 – post 2019), the permit should be prepared for a longer window of time to allow for the construction of both projects (for example, 10 years).
  - iii. This permit approach would help each project remain within their respective TIA Bands and on schedule for Let; however, it would result in the need for a permit modification for GDOT PI 422470 once final plans are prepared and exact area of impacts to waters of the US are known.
  - iv. Dawood noted that she will follow up with Edwards-Pitman to discuss the proper scoping of the permit activity prior to development of a draft contract. She requested that an approach be provided in writing for her consideration.
2. Susan Thomas (Edwards-Pitman Environmental) then asked the TIA team whether, based on previous experience with other TIA projects of this scope, the proposed widening project was of a type that has required an Environmental Effects Report (EER) under GEPA.
  - i. Dawood noted that some discussion had taken place on this topic regarding what degree of impacts might serve as a “tipping point” to require an EER.
  - ii. However, at this point, given our limited knowledge of the impacts associated with the project, it is safe to assume a GEPA Type B Letter should prove adequate to meet the requirements of GEPA.

- iii. If it is determined an EER is required, justification will be provided by EPEI to the TIA team as to the reasoning for the additional documentation/public involvement.
3. Kelvin and Dan Bodycomb noted that the scope needs to include agency coordination with the previous stakeholders associated with PI 0012578 (Crisp Power Commission. Georgia State Parks) as well as a Public Information Open House to solicit public feedback on the project.

## **CONTRACT DISCUSSION**

- Bobby asked if there was an advantage of doing a multi-phase contract or a lump sum. The consensus was to use a multi-phase contract to avoid having to do supplemental agreements and for better control of tasks.
- John suggested three task orders as follows:
  - Task Order 1: Including enough environmental to enable the construction of the bridge project.
  - Task Order 2: Including enough engineering to finalize the project footprint, better determine total project cost and finalize environmental.
  - Task Order 3: Final plans.
- Bobby and the team agreed that the task orders needed to allow for overlap between the tasks in order to keep the project moving forward.
- Bobby noted that the new cost proposal spreadsheet must be used for the cost proposals. And that Invoicing, overhead and payroll registers are all per typical TIA projects. The scope of the project will be generic. A strategy for ensuring that the Lake Blackshear project can advance pending NTP of Task Order 1 should be considered.

## **SCHEDULE**

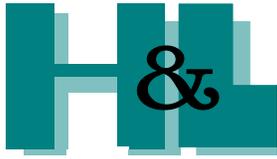
The contracting schedule was presented in the meeting agenda. The draft contract for review has been requested by the end of the month (28 August) with the proposal from Heath and Lineback due in mid-September (18 September). The target NTP is end of November (30 November 2015) which is subject to change. The team agreed that it would be in the best interest of the project to pull the NTP date back.

## **ACTION ITEMS**

1. HLE and Edwards Pitman will prepare a plan for all three task orders prior to preparing the cost proposal for Task Order 1.
2. Kelvin noted that we need to meet again with the stakeholders to update them on the new project and the status of the bridge project. A PIOH will also be needed.
3. Bobby to provide latest cost proposal spreadsheet and look at pulling back NTP date.

**ATTENDEES:**

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# Memo

**To:** File- 2015030.001

**From:** Rudolph Frampton

**CC:** All attendees

**Date:** 2-23-16

**Re:** TIA Project No.: RC08-000010, Crisp County  
P.I. No. 422470, US 280 from Lake Blackshear to SR 300 Connector  
SHEDULING MEETING

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This meeting replaced the traditional kick-off meeting. The project status, draft schedule, and budget was reviewed and project updates/upcoming tasks were discussed.

## PROJECT UPDATE/GENERAL DISCUSSION:

- Rudolph gave an update of the project. Since NTP on January 13, 2016, survey and mapping are in progress as well as SUE investigations. The traffic scope has been revised to remove volume diagrams and the traffic study is underway.
- There was some discussion about the need for a traffic report and the team was in agreement that a traffic report is required.
- Rudolph noted that the pavement evaluation report will be very important in getting a good handle on the project cost. The results of the report will determine the amount of existing pavement that can be retained. As a result, we need to start working on a Task Order # 2 within a few weeks that would include the pavement evaluation. A field visit, APE for permit area with USACE should be added to task order # 2.
- Railroad coordination will be handled through TIA. HLE direct coordination with Intermodal will not be required. Understanding the Railroad requirements is important to finalizing the concept report.
- Environmental studies are continuing and are tied to the Lake Blackshear Bridge project.

## **DRAFT SCHEDULE REVIEW:**

- The tasks for the submittal and approval of the traffic volume diagrams need to be removed due to the change in traffic scope. Only a traffic Report will be submitted for review.
- The team reviewed the review times for tasks and made the following comments:
  - a. Change review time for the traffic report to 2 weeks.
  - b. Change Railroad coordination time to 8 weeks.
  - c. Change right of way cost estimate request time to 2 weeks.
  - d. Change review of the concept report to 4 weeks.
- Laura noted that a task needs to be added to the schedule to address bridge impact calculations prior to the Ecology and IP submittal. Preferably after responses to the FPR to reduce the risk of something changing.
- Preliminary review of GEPA Type B but hold on approval until 2019...closer to the management let date.
- The Environmental Certification needs to go closer to the management Let date.
- The Permit Modification needs to be 12 months prior to the management let date. Therefore, November of 2019 for the permit modification and the buffer variance.
- Make the response to the FPR be a predecessor to the GEPA document submittal.
- Add a task for Ecology Addendum.
- Remove the let date and replace with a shelf date. The project management let date is June of 2021.

## **TIA PROJECT BUDGET:**

- Dan gave a brief description of the budget and how the cost was developed.
- The TIA team reiterated that the goal is to design to the TIA management budget.
- Rudolph noted that HLE has done a preliminary estimate of the project cost based on the 2007 design and the cost came up much higher than the TIA budget (32.5 million). The 2007 design is at approximately 44 million dollars. HLE is working on a design to reduce cost. The following design consideration to reduce cost are being studied:
  - a. Maximize the use of the existing pavement.
  - b. Use 11 foot lanes.
  - c. Use a 32 foot median rather than 44 foot.
  - d. Reduce the required right of way and utilize construction easements where possible.
  - e. Retain the existing Gum Creek Bridge with a sufficiency rating of over 90, eliminate the alignment shift, and provide a new parallel bridge.
  - f. Provide a grade crossing at the Railroad rather than grade separated bridges.
- Kelvin noted that with the HB170 funds, there may be other sources of dollars to construct overpass bridges at the Railroad.
- Kenneth noted that early acquisition of the right of way will result in a cost savings.
- Kelvin noted that an advance Utility Relocation project could be considered if that offers a cost savings.

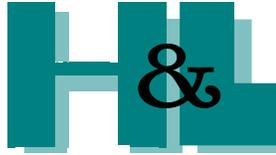
**UPCOMING REQUEST/ACTION ITEMS:**

1. HLE to provide TIA with a cost for the proposed project. A cost comparison of alternates at the railroad crossing should be provided.
2. HLE to provide TIA with the number and type of pipes existing, to determine the need for an existing pipe survey.
3. HLE to request right of way cost estimate.
4. HLE/Wolverton and Associates to prepare a utility cost estimate.
5. HLE/TIA to begin coordination with the Railroad. Critical items are grade crossing versus overpass bridges and the possibility of a future track.
6. HLE/Team to start working on task order # 2. A site visit for the APE permit area with the USACE needs to be added to this task order.

Attendees:

<b>NAME</b>	<b>COMPANY</b>	<b>EMAIL CONTACT</b>
Dan Bodycomb	TIA	<a href="mailto:dbodycomb@dot.ga.gov">dbodycomb@dot.ga.gov</a>
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# Memo

**To:** File- 2015030.008

**From:** Rudolph Frampton

**CC:** All attendees

**Date:** 4-19-16

**Re:** TIA Project No.: RC08-000010, Crisp County  
P.I. No. 422470, US 280 from Lake Blackshear to SR 300 Connector  
RAILROAD COORDINATION MEETING # 1

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This meeting begins the coordination between GDOT TIA Office/H&L (lead design), Atlantic Western Transportation/Heart of Georgia Railroad, to discuss potential options for improvements to the railroad at grade crossing on US280 just east of Lake Blackshear.

- Dan Bodycomb opened the meeting and introductions were made.
- The rail line and right of way is owned by the state and is overseen by the GADOT Office of Intermodal Programs. AW Transport has a long term lease on the line and they manage all operations related to the line. The Heart of Georgia Railroad is owned by AW Transport.
- Rudolph asked for information about the Railroad pertaining to train schedule, operation and speeds and Duane Broxterman provided the following information:
  - Trains travel at a speed of 25 mph.
  - 2 trains per day (1 each way), which includes freight and passenger trains.
  - Passenger trains run throughout the year except for January and February.
  - Short delays experienced by US 280 users when trains are crossing.
  - Existing rail is either a 115 or 132 pound rail; however, a 132 pound rail will be required for the proposed.
  - The required horizontal clearance is 15-20' from the centerline of track.

- The required vertical clearance is 22' from the top of high rail.
- Rudolph noted that the Railroad would need to provide H&L/TIA with any specific requirements that needed to be incorporated into the design. Further coordination will be required.
- The question as to whether the Railroad crossing improvements would be handled by a force account was discussed. The GDOT (Utility Office) will require for the installation of the Railroad Crossing Devices and draft a Force Account agreement which needs to be submitted to Heart of Georgia Railroad (HOG) for their review and execution. The funding for the Force Account agreement will be paid for by the project allotment. Railway-Highways Crossing (Section 130) will NOT be used with this Force Account. Chris Johnson with TIA will be the RR Liaison and he will be responsible for reviews and coordination. Michael Nash needs to be updated on proposed improvements so that he can properly document them in the GDOT system. Jill Franks will not be involved on TIA projects.
- Chris Johnson inquired as to whether there were any considerations for a future track and Duane responded that they/AW Transport, would need to discuss the possibility of a future track with the office of intermodal programs, before a decision could be made.
- Rudolph Frampton noted that there is a limited amount of funds for the project and the present estimate is in excess of that number. The funds available for construction is approximately 25 million dollars and the present project cost estimate is in excess of 40 million. All attempts need to be made to bring the project within budget. The at-grade crossing is estimated at a cost of approximately 3.5 million versus a grade separation, which is estimated at approximately 7.5 million. These estimates include a section of roadway, roughly 1500 feet on either side of the crossing.
- Heart of Georgia (HOG) Railroad prefers a grade separation; however, they would accept an at-grade crossing. Intermodal will need to approve the at-grade crossing. H&L will provide package to assist with this determination.
- John Heath asked who would provide the approval for the at-grade crossing and Lamu responded that Intermodal would provide an approval letter.
- Kenneth Franks asked if there was a standard request form for requesting the at grade crossing and Lamu directed that the package be put together on TIA letterhead and submitted through the TIA PM to the office of Intermodal and copied to HOG. The estimated response time will be within a week.
- Duane noted that typically GDOT office of Utilities handles railroad signals and future design at grade crossings.
- Once a decision is made concerning the crossing, this information needs to be coordinated with the TIA Utility Engineer/Nona Guilford.
- Duane believes that the railroad ROW is 75' from the centerline of track on either side. Rudolph noted that the surveyor would have obtained the railroad right of way from the Valuation maps; however, asked that they be verified by the Railroad.
- Duane asked if a median is proposed at the Railroad crossing and Rudolph noted that presently the concept design shows a median however the width of the median could be reduced if needed. Duane noted that the wider median was preferred by the Railroad.

- Chris asked if there were any special provisions and Duane responded that there were no special provisions and that the Railroad only needed a construction agreement. However, Duane noted that coordination between the construction manager and the Railroad will be required on a daily basis during construction.
- Lamu noted that any Railroad design needs to be in accordance with the AREMA requirements.

**ACTION ITEMS:**

1. H&L to provide a briefing package to TIA PM for submittal to the office of Intermodal and copied to HOG, for consideration of an at-grade crossing. The ADT along US 280 needs to be included.
2. GADOT/TIA/Intermodal to verify if a force account will be used for railroad crossing improvements.
3. AW Transport and the Office of Intermodal Programs to make a decision on whether the design needs to accommodate a future track and if so, the location of that track.
4. H&L to coordinate with the TIA Utility Engineer once a decision is made on the at-grade crossing.

**ATTENDEES:**

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Theodore Sparks	H&L	<a href="mailto:tsparks@heath-lineback.com">tsparks@heath-lineback.com</a>	770-424-1668



## Meeting Minutes

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**Subject:** US 280 Widening, PI 422470

**Date:** June 6, 2016

**Location:** 19<sup>th</sup> Floor Conference Room

**Attendees:** Kelvin Mullins, TIA Administrator  
Kenneth Franks, TIA Regional Coordinator  
Shrujal Amin, TIA Program Manager  
Dan Bodycomb, TIA Regional Project Manager  
Rudolph Frampton, H&L Project Manager  
Shawn Fleet, H&L Lead Road

---

### Alternatives Analysis Discussion

This meeting was setup to discuss the alternatives that were submitted with the concept report on May 26, 2016 and to develop a path forward for the project.

Dan started the meeting by stating that the concept report was submitted in draft format last week. The budget is a huge concern for this project.

The preferred alternative that was included in the concept report consist of the following:

- Two 11-ft. lanes in each direction with 14-ft. flush median through GA Verterans Memorial Park
- Two 11-ft. lanes in each direction with 32-ft. depressed median to just west of end of project
- Ten foot wide rural shoulders with 6.5-ft. paved
- New parallel bridge at Gum Creek
- A new at grade crossing at Heart of GA RR
- Improvements to SR 300 Conn and 24<sup>th</sup> Avenue

This alternative is \$7.2M over the \$32,899,573 budget. Some options were provided in the concept report to minimize the typical section. There was an option within budget which improved the SR 300 connector intersection and shortened the original project length by 0.3 miles; however, it consisted of a 4' flush median, 2' paved shoulders and a 17% underdesigned pavement (applies to widened sections) for the full length of the project.

Kelvin read the investment report description which states the project length along with the requirement of a grassy median. Since the alternative that matches the investment report is \$7M over the TIA budget, there was a discussion regarding the importance of matching the Grip Corridor typical section versus matching the intent to widen to four lanes for the full length regardless to the Grip Corridor Requirements.

The reduction of the 6-5-ft. shoulder to 2-ft was considered reasonable even though it will not provide accommodation for bicycles on this bike route. Bicycle accomodations could be made in the distant future. This option could save approximately \$837k.



The reduction of the depressed median with just a double yellow was discussed. This would require reducing the speed limit to 45mph which is not feasible. Using a 4-ft. flush or corrugated median was discussed. This would only require a design variance as AASHTO allows a 4-ft. median at 55mph. This could save over \$2M but goes against the described typical in the investment report. It was decided that this alternative should be progressed further. (see PI 0012574, SR 56 for example of DV.)

The other cost savings option that was proposed was the reduction of the GAB depth on the proposed pavement section. Dan stated that the TIA office wouldn't have an issue with a design of 16.95% under designed. Ruldolph said that once the pavement evaluation is completed, they would have a better handle on the cost savings associated with this option.

Widening the road with no overlay was also discussed and it was agreed that an overlay to allow for restriping is preferred.

It was decided that the budget would NOT allow for any improvements at the SR 300 Connector.

There was a brief discussion regarding the Gum Creek Bridge. A new parallel structure is proposed which is approximately \$1M. Although the backwater is approximately 1.8 feet, which is above the 1 foot required for new bridges, the existing bridge will be retained. Per the drainage manual, more than one foot of backwater is acceptable when widening, if there is no evidence of flooding upstream.

There was a brief discussion regarding the requirements of Logical Termini for the USACE Permit. This needs to be considered as we move forward with this project.

H&L is to look at the depressed median option with the potential reductions to the typical section to see where this project would end after exhausting the budget. They will need to provide an estimate cost to extend the project to the SR 300 Conn.

H&L is also to look at the 4-ft flush or corrugated median option. Hopefully this option will fit within the existing budget and extend to SR 300 Conn.

H&L should provide a menu of options that may be selected as add-ons to each of these alternatives as well as applicable typical sections for each alternate. For example, how much additional would it cost to provide a 6.5-ft. shoulder instead of the proposed 2-ft. shoulder. This menu of options will allow Kelvin the flexibility to talk with GDOT upper management with the possibility of requesting additional HB 170 funds to supplement the TIA Funds. This should be a standalone document. The draft concept report will be put on hold until the TIA office has been able to speak with upper management.

H&L will try to finalize the cost by the end of this week.

DEPARTMENT OF TRANSPORTATION  
STATE OF GEORGIA

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INTERDEPARTMENT CORRESPONDENCE

FILE: P.I. No. 422470-, Crisp County  
SR 30/US 280 FM LAKE BLACKSHEAR TO SR  
300 CONN W OF CORDELE-TIA

OFFICE: TIA

DATE: May 16, 2016

FROM:  Kelvin Mullins, State TIA Administrator

TO: Nancy Clayton Cobb, Intermodal Administrator

SUBJECT: **Recommendation for an at-grade Crossing**

Please find attached the request to maintain and improve the at-grade crossing(DOT# 635302H)of the Heart of Georgia Railroad.

If there are any questions please contact Kenneth Franks of this Office at (404) 631-1568.

KHM:KF  
Attachments

Cc:

**REQUEST TO MAINTAIN AND IMPROVE AT-GRADE CROSSING**  
**AT HEART OF GEORGIA RAILROAD**

TIA PROJECT No. RC08-000010  
Crisp County, PI No. 422470  
US 280/SR 30 Widening from Lake Blackshear to SR 300 Connector

May 2, 2016

**PROJECT DESCRIPTION:**

This project is the widening and reconstruction of SR 30/US 280 from east of Lake Blackshear, where it ties into project STP-030-2(30), to the SR 300 Connector west of Cordele. The total project length is 7.60 miles. In the vicinity of the at-grade railroad crossing (DOT# 635302H), the existing roadway has a two lane typical section with 12' travel lanes. The proposed construction will consist of widening SR 30/US 280 to a four lane roadway with a 32 foot depressed median, west and east of the crossing. The base year traffic (2012) is 7,950 VPD and the design year (2032) traffic is 11,650 VPD. The design speed on SR 30/US 280 is 55 MPH.

**PROJECT BUDGET:**

The available TIA budget for construction and right of way only, not including any contingencies is approximately 25 million dollars and the present estimated construction and right of way cost for the project, if overpass bridges are proposed at the railroad crossing, is approximately 37 million dollars. We attribute a significant portion of this increased cost to pay item price increases, in particular the increased cost of pavement.

**ALTERNATES CONSIDERED AT RAILROAD CROSSING:**

Grade separated alternates and an at-grade crossing were studied. Two alternates were studied for the grade separated option, a three span bridge with spill through abutments and a single span bridge with MSE walls. The construction and right of way cost for the grade separated alternates is estimated at approximately 7.5 million dollars. The grade separation alternates will require an on-site detour to facilitate the maintenance of traffic and staging during construction. The raised roadway profile required for the grade separation alternates also increased the project footprint requiring additional right of way. The third alternate studied is an at-grade crossing which includes a length of roadway of approximately 3000 feet, to match the roadway length used for the grade separated alternates. This alternate proposes a complete upgrade of the at-grade crossing and has an estimated construction and right of way cost of 3.5 million dollars. All alternates are compared using the same horizontal alignment, however; the at-grade crossing alternate

utilizes the existing pavement and requires minimal right of way. Neither of the alternates accommodate future tracks since the need for future tracks is unknown at this time. A comparison of the costs showed that the at-grade crossing construction and right of way cost, is approximately 4 million dollars less than the construction and right of way cost for a grade separation. See the attachments for cost estimate calculations.

### **CONCLUSION/RECOMMENDATION:**

All TIA projects are to be designed and constructed to the specified TIA budget and providing an at-grade crossing reduces the overall project cost by approximately 4 million dollars.

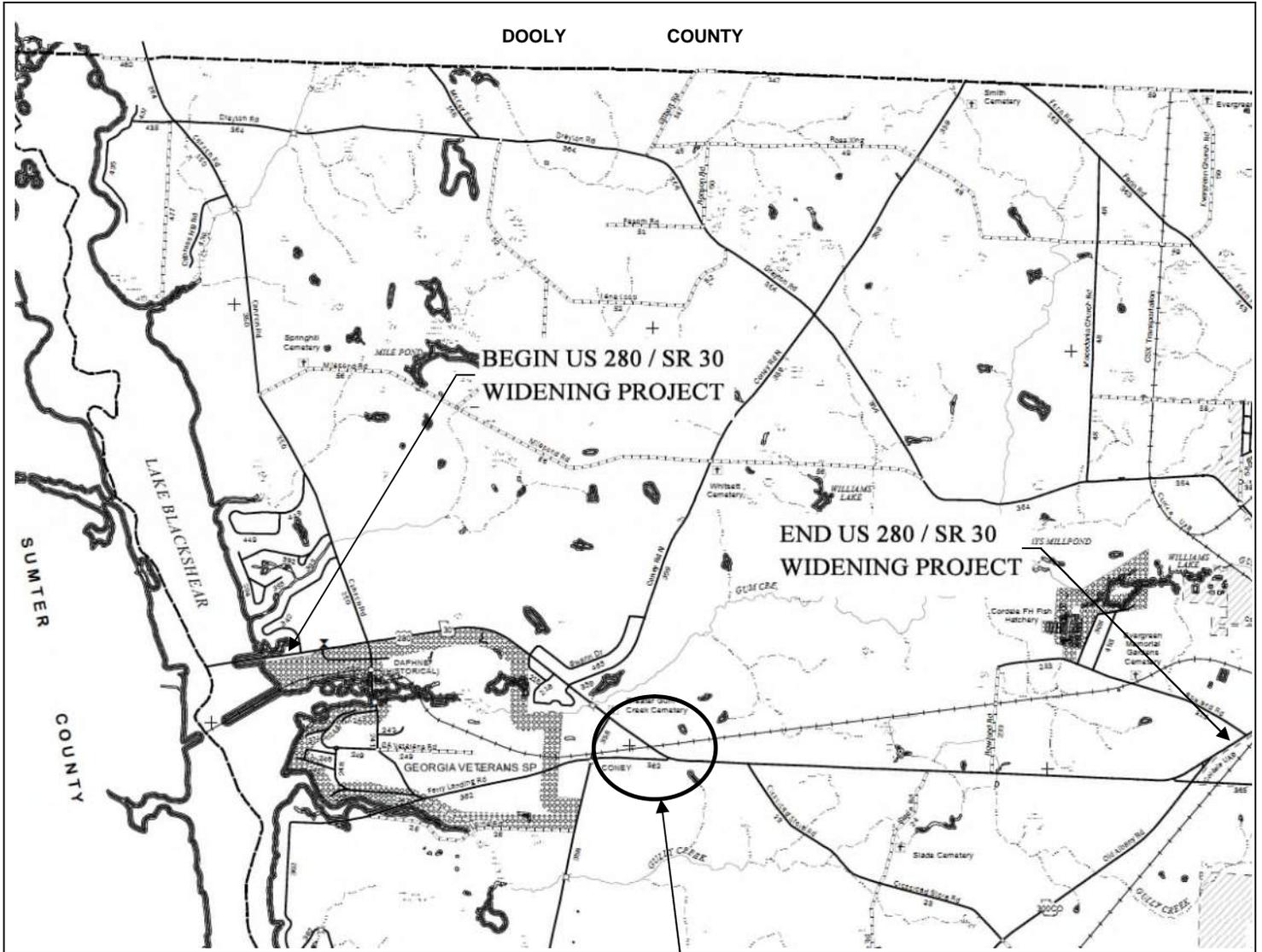
TIA/H&L recommend an at-grade crossing in an effort to bring the project within budget and ultimately to construction. Our recommendation is based on the low volume of train traffic (two trains per day/one in each direction) and the fact that the trains get through the crossing in approximately 3 to 4 minutes, from the time the gates go down to the time the gates are lifted back up. The trains also typically operate at off peak hours, 9:00 am through 11:00 am eastbound and 2:00 pm through 4:00 pm westbound. Safety at the proposed at-grade crossing will also be improved since the railroad crossing will be designed in accordance with the latest GADOT and AREMA requirements.

Due to the 12 million dollar construction and right of way budget shortfall, other areas of the project are being studied for innovative ways to bring the project cost within budget.

Please consider our recommendation for an at-grade crossing.

### **LIST OF ATTACHMENTS/SUPPORTING DATA**

1. Location Map
2. US 280/SR 30 Proposed Typical Section at Railroad Crossing
3. Concept Alternates and Bridge Option Layouts
4. Alternate Cost Estimates
5. Railroad Coordination Meeting # 1 Minutes

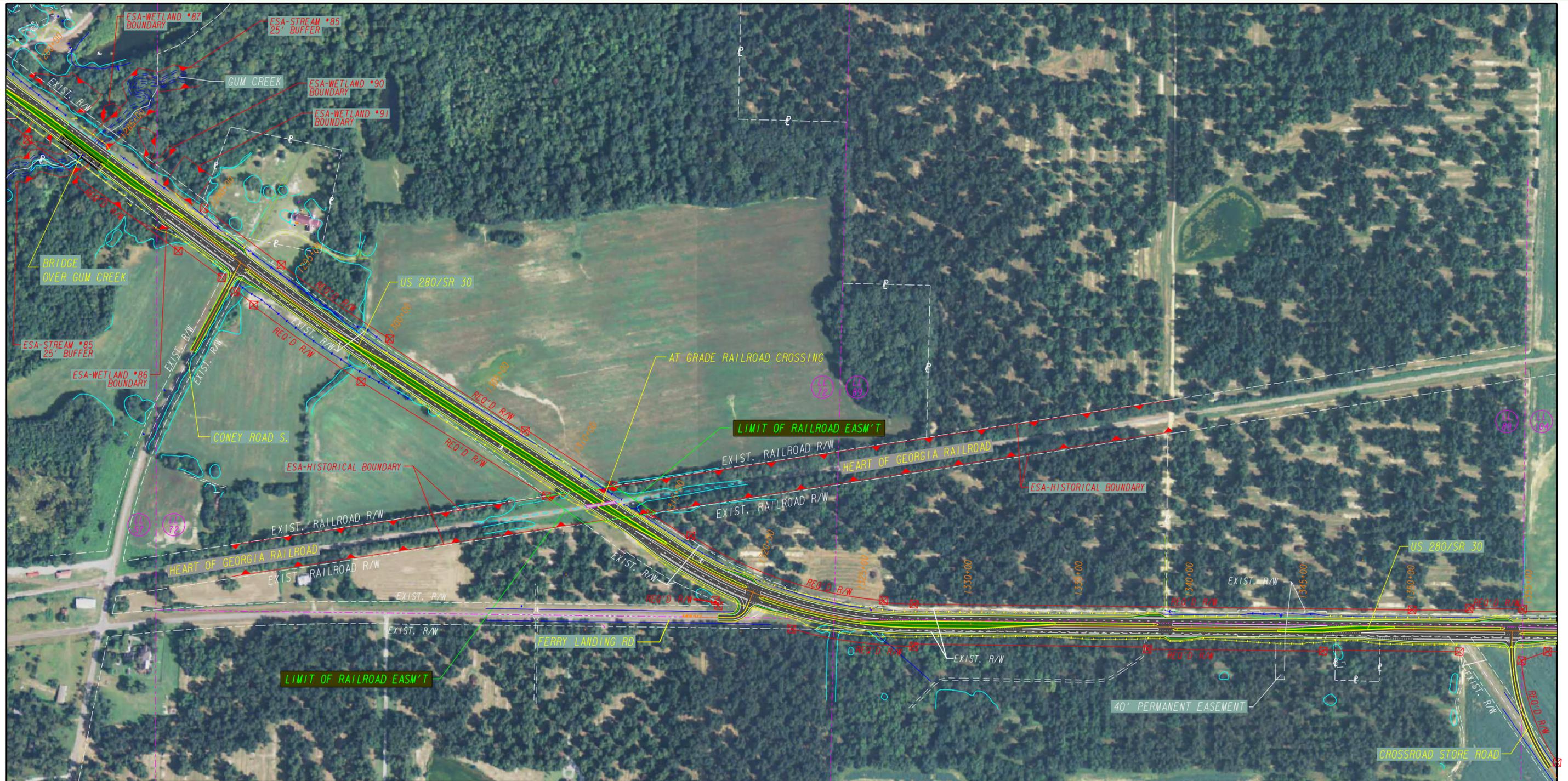


**RAILROAD CROSSING LOCATION**

**PROJECT LOCATION MAP**

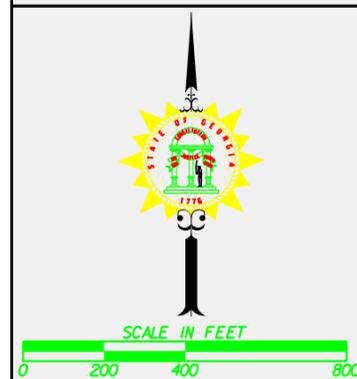
TIA PROJECT No. RC08-000010  
 Crisp County, PI No. 422470  
 US 280/SR 30 Widening from Lake Blackshear to SR 300 Connector





**AT GRADE CROSSING OPTION AT HEART OF GEORGIA RAILROAD**

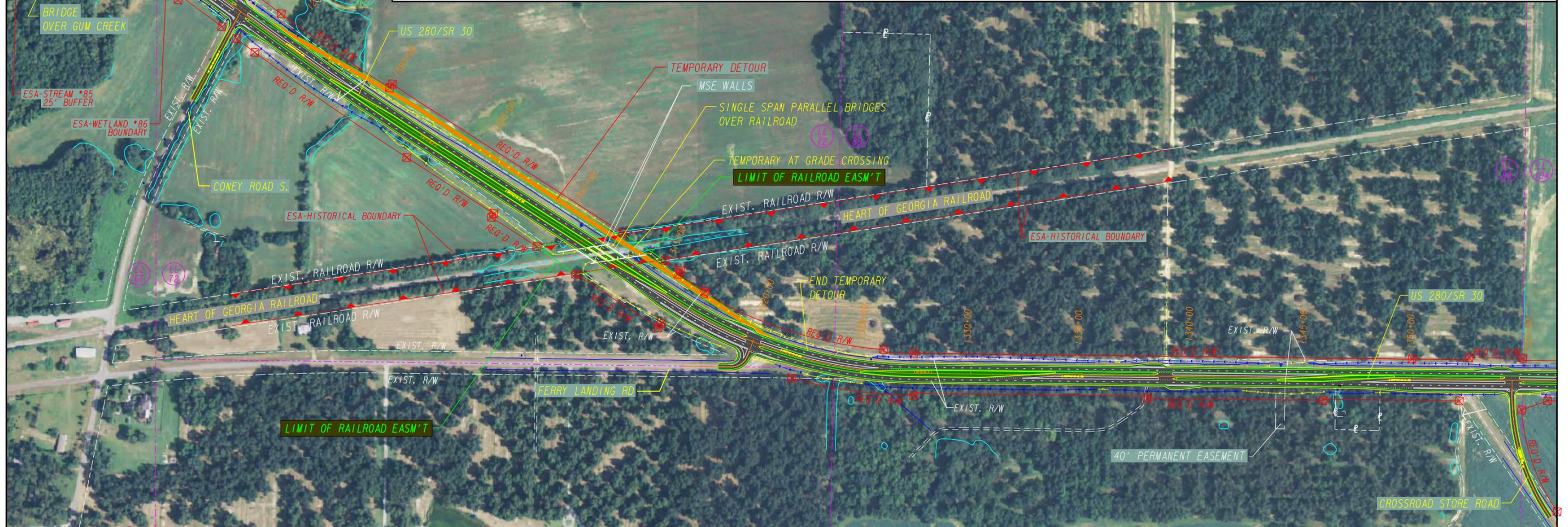
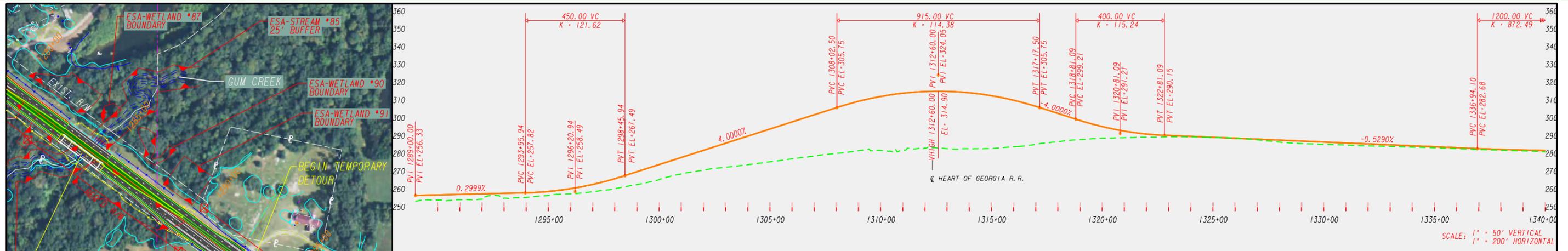
US 280 / SR 30 WIDENING EAST OF LAKE BLACKSHEAR TO SR 300 CONN.



**GEORGIA**  
DEPARTMENT  
OF  
TRANSPORTATION

**TIA**  
TRANSPORTATION INVESTMENT ACT

**HL** Heath & Lineback Engineers  
INCORPORATED  
2390 CANTON ROAD, BUILDING 200  
MARIETTA, GEORGIA 30066-5393



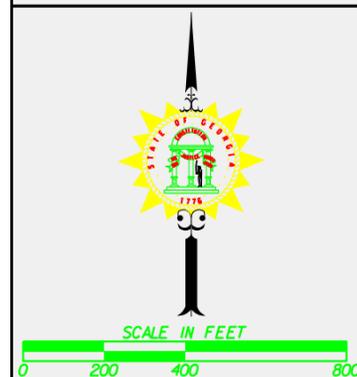
**GRADE SEPARATION - SINGLE SPAN BRIDGE OPTION  
AT HEART OF GEORGIA RAILROAD**

US 280 / SR 30 WIDENING EAST OF  
LAKE BLACKSHEAR TO SR 300 CONN.

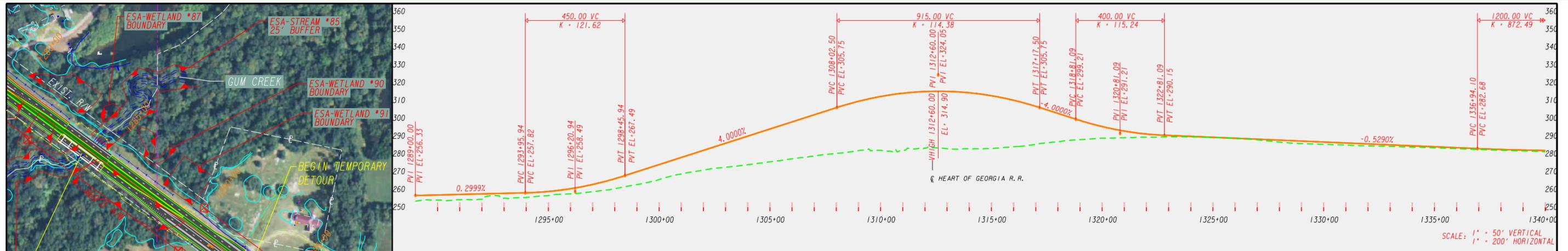
**GEORGIA**  
DEPARTMENT  
OF  
TRANSPORTATION

**TIA**  
TRANSPORTATION INVESTMENT ACT

**H&L** Heath & Lineback Engineers  
INCORPORATED  
2390 CANTON ROAD, BUILDING 200  
MARIETTA, GEORGIA 30066-5393



SCALE: 1" = 50' VERTICAL  
1" = 200' HORIZONTAL



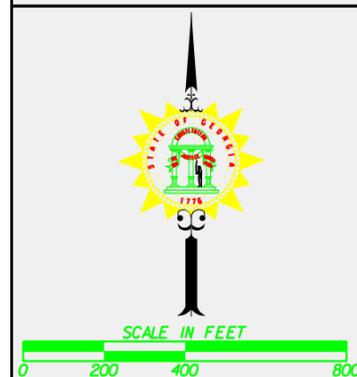
**GRADE SEPARATION - THREE SPAN BRIDGE OPTION  
AT HEART OF GEORGIA RAILROAD**

US 280 / SR 30 WIDENING EAST OF  
LAKE BLACKSHEAR TO SR 300 CONN.

**GEORGIA**  
DEPARTMENT  
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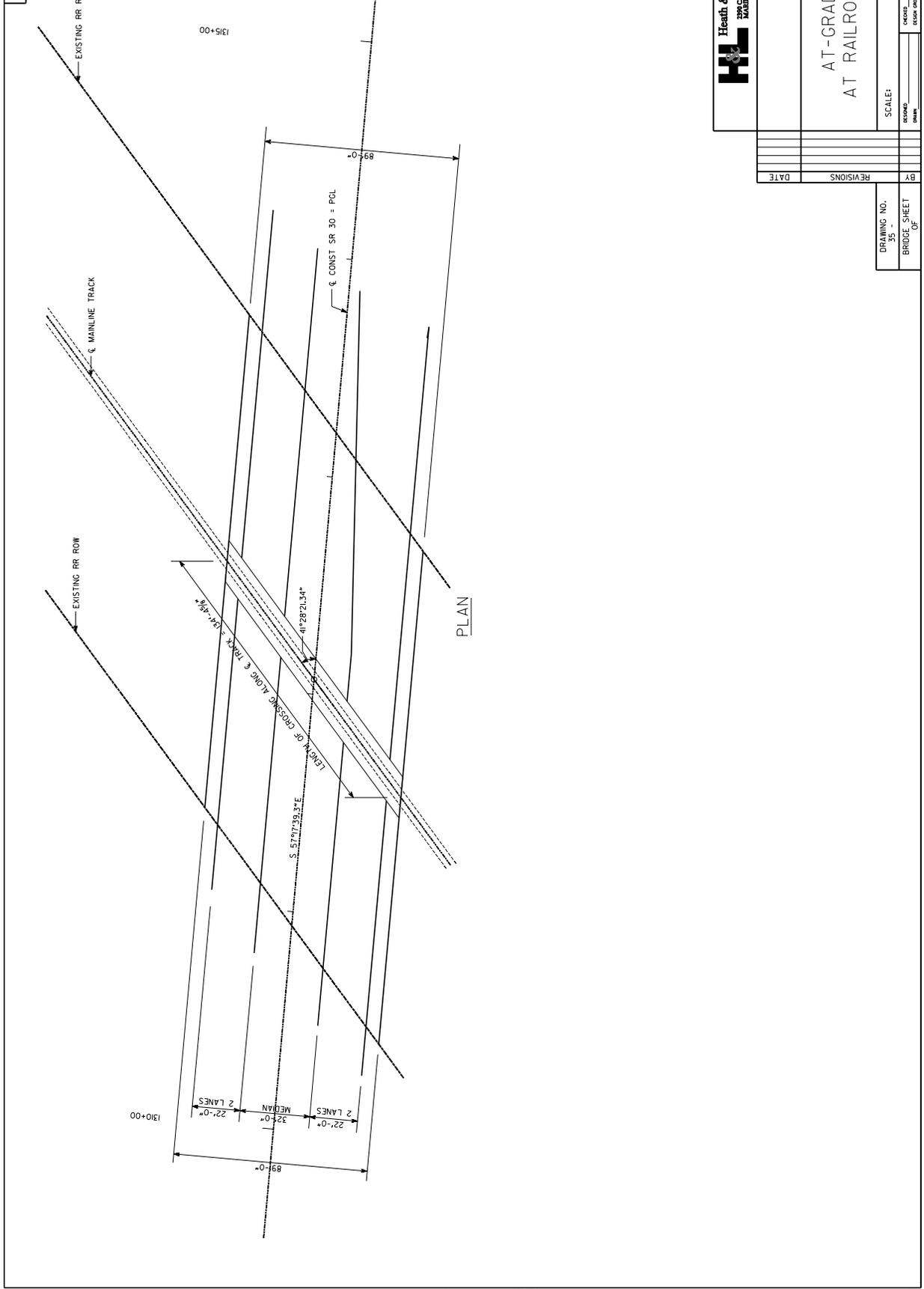
**TIA**  
TRANSPORTATION INVESTMENT ACT

**H&L** Heath & Lineback Engineers  
INCORPORATED  
2390 CANTON ROAD, BUILDING 200  
MARIETTA, GEORGIA 30066-5393



SCALE: 1" = 50' VERTICAL  
1" = 200' HORIZONTAL

P.L. NO.



PLAN



Heath & Linebeck Engineers  
INCORPORATED  
1400 W. 10TH AVENUE  
DENVER, CO 80202  
(303) 733-1555

DATE	REVISIONS	BY	DATE

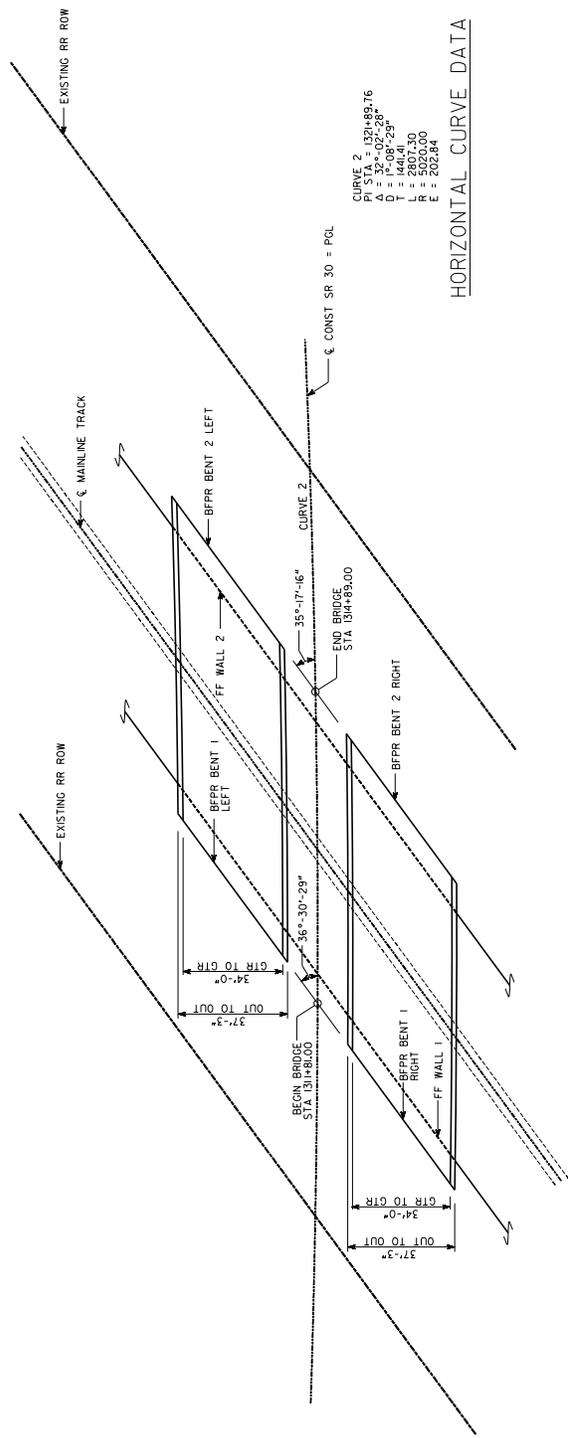
AT-GRADE OPTION  
AT RAILROAD CROSSING

DRAWING NO.	SCALE	DATE
35 -	AS SHOWN	APRIL 2016
BRIDGE SHEET		
OF		

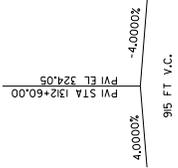
DESIGNED	CHECKED	IN CHARGE

1" = 40' (WHEN PRINTED FULL SIZE)

P.L. NO.



CURVE 2  
 PVI STA = 132+89.76  
 $\Delta = 32^{\circ}02'28''$   
 $D = 142.08'$   
 $L = 2807.30$   
 $R = 5020.00$   
 $E = 202.84$



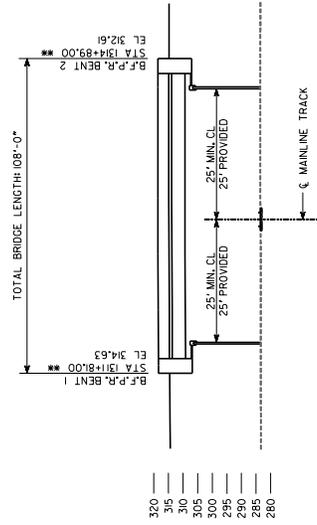
HORIZONTAL CURVE DATA

VERTICAL CURVE DATA

PLAN

NOTES:

1. \*\* STATIONS AND ELEVATIONS ARE ALONG PROFILE GRADE LINE AND THE INTERSECTION OF PROFILE GRADE LINE AND BFFR OR  $\xi$  BENT.
2. ANGLES ARE MEASURED TO THE TANGENT OF THE  $\xi$  CONSTRUCTION AT INTERSECTION WITH THE BFFR OR  $\xi$  BENT.



ELEVATION

**Health & Lineback Engineers**  
 INCORPORATED  
 1400 UNIVERSITY AVENUE, SUITE 200  
 PITTSBURGH, PA 15206  
 (724) 462-1668

SINGLE SPAN BRIDGE OPTION  
 AT RAILROAD CROSSING

SCALE: APRIL 2016

DATE	BY	REVISIONS

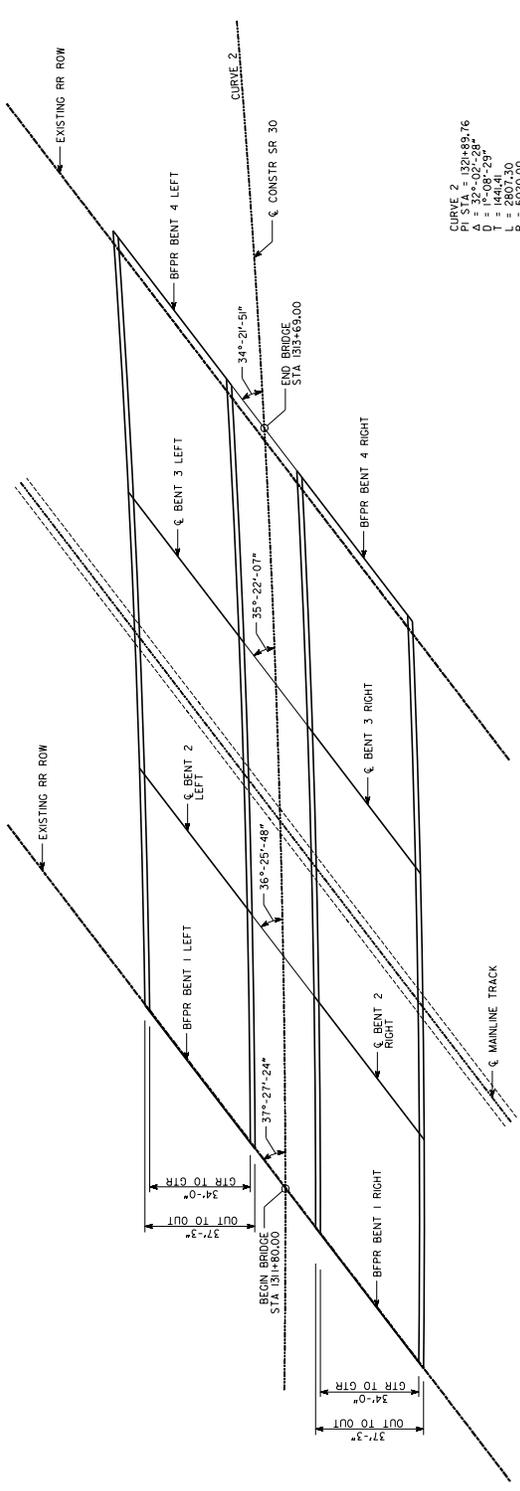
DRAWING NO. 35 -  
 BRIDGE SHEET OF

SCALE: APRIL 2016

DATE

1/8" = 1' INCH WHEN PRINTED FULL SIZE

P.L. NO.

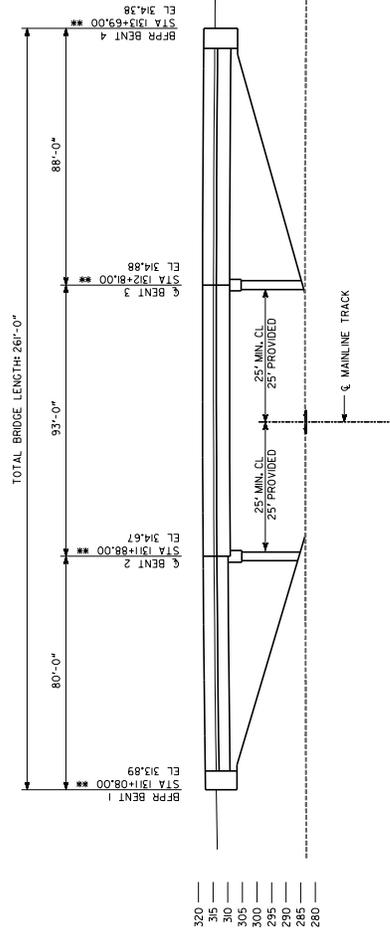


CURVE 2  
 PI STA = 132+89.76  
 PVI EL = 222.58  
 D = 12'-08"-25"  
 T = 144.41  
 R = 250.30  
 E = 202.84

4.0000%  
 915 FT V.C.  
 -4.0000%  
 PVI EL 324.05  
 STA 132+60.00

HORIZONTAL CURVE DATA  
 VERTICAL CURVE DATA

PLAN



ELEVATION

- NOTES:
1. \*\* STATIONS AND ELEVATIONS ARE ALONG PROFILE GRADE LINE AT THE INTERSECTION OF PROFILE GRADE LINE AND BFRP OR  $\phi$  BENT.
  2. ANGLES ARE MEASURED TO THE TANGENT OF THE  $\phi$  CONSTRUCTION AT INTERSECTION WITH THE BFRP OR  $\phi$  BENT.

BRIDGE OPTION NO. 1



3-SPAN BRIDGE OPTION  
 AT RAILROAD CROSSING

DATE	REVISIONS	DRAWING NO.	SCALE	APRIL 2016
		BRIDGE SHEET		
		OF		
BY	DATE	DESIGNED	CHECKED	APPROVED

1/8" = 1" WHEN PRINTED FULL SIZE

**TOTAL PROJECT CONSTRUCTION COST - INCLUDES 7.6 MILES OF ROADWAY WIDENING**

Prepared By:

*US 280/SR 30 Widening East of Lake Blackshear Bridge To SR 300 Connector*

Heath & Lineback Engineers

**PARALLEL SINGLE SPAN BRIDGES AT RAILROAD - ROUNDABOUT INTERSECTION AT SR 300 CONNECTOR**

<b>Roadway</b>							
150-1000	TRAFFIC CONTROL	1	LS	\$ 250,000.00	\$ 250,000.00		
153-1300	FIELD ENGINEERS OFFICE TP 3	1	EA	\$ 89,501.97	\$ 89,501.97		
201-1500	CLEARING AND GRUBBING	1	LS	\$ 466,969.70	\$ 466,969.70		
205-0001	UNCLASS EXCAV	164,577	CY	\$ 5.31	\$ 873,903.06		
206-0002	BORROW EXCAV, INCL MATL	560,361	CY	\$ 5.19	\$ 2,908,271.95		
212-1000	GRANULAR EMBANKMENT, INCL MATL & HAUL	66,556	CY	\$ 28.08	\$ 1,868,880.00		
436-1000	ASPHALTIC CONCRETE CURB	10,244	LF	\$ 11.17	\$ 114,429.72		
456-2015	INDENTATION RUMBLE STRIPS - GROUND-IN-PLACE (SKIP)	18	GLM	\$ 4,299.15	\$ 75,531.51		
433-1000	REINF CONC APPROACH SLAB	516	SY	\$ 169.31	\$ 87,363.96		
500-0100	GROOVED CONCRETE	516	SY	\$ 8.55	\$ 4,411.80		
620-0100	TEMPORARY BARRIER, METHOD NO. 1	7,519	LF	\$ 30.84	\$ 231,885.96		
641-1100	GUARDRAIL, TP T	318	LF	\$ 66.36	\$ 21,088.54		
641-1200	GUARDRAIL, TP W	10,018	LF	\$ 19.89	\$ 199,248.08		
641-5001	GUARDRAIL ANCHORAGE, TP 1	11	EA	\$ 963.94	\$ 10,603.34		
641-5012	GUARDRAIL ANCHORAGE, TP 12	10	EA	\$ 2,325.08	\$ 23,250.80		
634-1200	RIGHT OF WAY MARKERS	405	EA	\$ 122.71	\$ 49,700.00		
643-0010	FIELD FENCE WOVEN WIRE	12,205	LF	\$ 7.94	\$ 96,911.51		
643-8200	BARRIER FENCE (ORANGE), 4 FT	34,244	LF	\$ 1.85	\$ 63,350.79		
999-0043	SHEET PILING	350	LF	\$ 530.00	\$ 185,500.00		
						\$	7,620,802.69
<b>Pavement</b>							
310-1101	GR AGGR BASE CRS, INCL MATL	197,787	TN	\$ 26.94	\$ 5,328,379.65		
318-3000	AGGR SURF CRS	5,000	TN	\$ 27.43	\$ 137,150.00		
402-1812	RECYCLED ASPH CONC LEVELING, INCL BITUM MATL & H LIME	1,636	TN	\$ 89.04	\$ 145,698.23		
402-3121	RECYCLED ASPH CONC 25 MM SUPERPAVE, GP 1 OR 2, INCL BITUM MATL & H LIME	57,171	TN	\$ 78.29	\$ 4,475,891.49		
402-3130	RECYCLED ASPH CONC 12.5 MM SUPERPAVE, GP 2 ONLY, INCL BITUM MATL & H LIME	32,706	TN	\$ 93.27	\$ 3,050,445.63		
402-3190	RECYCLED ASPH CONC 19 MM SUPERPAVE, GP 1 OR 2, INCL BITUM MATL & H LIME	35,536	TN	\$ 85.60	\$ 3,041,884.46		
413-1000	BITUM TACK COAT	35,464	GL	\$ 3.45	\$ 122,351.77		
446-1100	PVMT REINF FABRIC STRIPS, TP 2, 18 INCH WIDTH	42,737	LF	\$ 4.91	\$ 209,838.67		
						\$	16,511,639.90
<b>Drainage</b>							
207-0203	FOUND BKILL MATL, TP II	235	CY	\$ 62.88	\$ 14,807.08		
441-0301	CONC SPILLWAY, TP 1	8	EA	\$ 1,799.38	\$ 14,395.04		
500-3200	CLASS B CONCRETE	2	CY	\$ 626.30	\$ 1,252.60		
500-3800	CLASS A CONCRETE, INCL REINF STEEL	66	CY	\$ 1,034.95	\$ 67,923.77		
550-1180	STORM DRAIN PIPE, 18 IN, H 1-10	16,240	LF	\$ 48.67	\$ 790,400.80		
550-1240	STORM DRAIN PIPE, 24 IN, H 1-10	1,352	LF	\$ 55.07	\$ 74,454.64		
550-1300	STORM DRAIN PIPE, 30 IN, H 1-10	206	LF	\$ 62.05	\$ 12,782.30		
550-1360	STORM DRAIN PIPE, 36 IN, H 1-10	1,942	LF	\$ 78.55	\$ 152,544.10		
550-1480	STORM DRAIN PIPE, 48 IN, H 1-10	345	LF	\$ 122.65	\$ 42,314.25		
550-1720	STORM DRAIN PIPE, 72 IN, H 1-10	268	LF	\$ 286.75	\$ 76,849.00		
550-2180	SIDE DRAIN PIPE, 18 IN, H 1-10	468	LF	\$ 32.55	\$ 15,233.40		
550-4118	FLARED END SECTION 18 IN, SIDE DRAIN	106	EA	\$ 492.54	\$ 52,209.24		
550-4218	FLARED END SECTION 18 IN, STORM DRAIN	28	EA	\$ 596.06	\$ 16,689.68		
550-4224	FLARED END SECTION 24 IN, STORM DRAIN	13	EA	\$ 753.94	\$ 9,801.22		
550-4230	FLARED END SECTION 30 IN, STORM DRAIN	4	EA	\$ 873.41	\$ 3,493.64		
550-4236	FLARED END SECTION 36 IN, STORM DRAIN	22	EA	\$ 1,187.74	\$ 26,130.28		
576-1018	SLOPE DRAIN PIPE, 18 IN	468	LF	\$ 40.30	\$ 18,860.40		
668-2100	DROP INLET, GP 1	88	EA	\$ 2,212.65	\$ 194,713.20		
						\$	1,584,854.63
<b>Erosion Control</b>							
	AVERAGED COST PER MILE	7.7	MI	\$ 300,000.00	\$ 2,310,000.00	\$	2,310,000.00
<b>Signing &amp; Marking</b>							
	AVERAGED COST PER MILE	7.7	MI	\$ 45,000.00	\$ 346,500.00	\$	346,500.00
<b>Parallel Bridge at Gum Creek</b>							
543-9000	CONSTRUCTION OF BRIDGE COMPLETE - 1 BRIDGE (3-SPANS) - 37.25 FT X 201 FT	1.0	LS	\$ 856,750.00	\$ 856,750.00	\$	856,750.00
<b>Parallel Bridges at Heart of Georgia Railroad</b>							
543-9000	CONSTRUCTION OF BRIDGE COMPLETE - 2 BRIDGES (SINGLE SPAN) - 37.25 FT X 108 FT	1.0	LS	\$ 990,480.00	\$ 990,480.00	\$	990,480.00
627-1010	MSE Walls	20,000	SF	\$ 60.00	\$ 1,200,000.00	\$	1,200,000.00
<b>Temporary At-Grade Crossing</b>							
	AT-GRADE CROSSING CONSTRUCTION	1.0	LS	\$ 250,000.00	\$ 250,000.00	\$	250,000.00
<b>PROJECT CONSTRUCTION COST =</b>						<b>\$</b>	<b>31,671,027.23</b>
<b>Right of Way Estimate (From TIA Project Estimate) =</b>						<b>\$</b>	<b>5,639,457.00</b>
<b>PROJECT COST (including ROW) =</b>						<b>\$</b>	<b>37,310,484.23</b>

TIA PROJECT NO. RC08-000010

APRIL 2016

**COST ESTIMATE FOR RAILROAD CROSSING - AT-GRADE ALTERNATE**

Prepared By:

From Approximately 1700' West of Railroad Bridge to 3.3 miles West of SR 300 Connector

**US 280/SR 30 Widening East of Lake Blackshear Bridge To SR 300 Connector**

Includes approx. 4800' of roadway

Heath & Lineback Engineers

Item Code	Item Description	Qty.	Unit	Unit Price	Total	
<b>Roadway</b>						
150-1000	TRAFFIC CONTROL	1	LS	\$ 50,000.00	\$ 50,000.00	
201-1500	CLEARING AND GRUBBING - 22.4 AC	1	LS	\$ 56,000.00	\$ 56,000.00	
205-0001	UNCLASS EXCAV	25,322	CY	\$ 5.31	\$ 134,461.59	
206-0002	BORROW EXCAV, INCL MATL	16,812	CY	\$ 5.19	\$ 87,254.16	
212-1000	GRANULAR EMBANKMENT, INCL MATL & HAUL	1,852	CY	\$ 28.08	\$ 52,000.00	
456-2015	INDENTATION RUMBLE STRIPS - GROUND-IN-PLACE (SKIP)	2	GLM	\$ 4,299.15	\$ 7,816.64	
620-0100	TEMPORARY BARRIER, METHOD NO. 1	1,915	LF	\$ 30.84	\$ 59,047.50	
634-1200	RIGHT OF WAY MARKERS	20	EA	\$ 122.71	\$ 2,454.20	
643-0010	FIELD FENCE WOVEN WIRE	9,600	LF	\$ 7.94	\$ 76,224.00	
643-8200	BARRIER FENCE (ORANGE), 4 FT	5,000	LF	\$ 1.85	\$ 9,250.00	
						\$ 534,508.08
<b>Pavement</b>						
310-1101	GR AGGR BASE CRS, INCL MATL	18,154	TN	\$ 26.94	\$ 489,067.99	
402-3121	RECYCLED ASPH CONC 25 MM SUPERPAVE, GP 1 OR 2, INCL BITUM MATL & H LIME	7,705	TN	\$ 78.29	\$ 603,216.87	
402-3130	RECYCLED ASPH CONC 12.5 MM SUPERPAVE, GP 2 ONLY, INCL BITUM MATL & H LIME	3,580	TN	\$ 93.27	\$ 333,947.04	
402-3190	RECYCLED ASPH CONC 19 MM SUPERPAVE, GP 1 OR 2, INCL BITUM MATL & H LIME	3,349	TN	\$ 85.60	\$ 286,635.79	
413-1000	BITUM TACK COAT	2,948	GL	\$ 3.45	\$ 10,170.88	
						\$ 1,723,038.57
<b>Drainage</b>						
550-1180	STORM DRAIN PIPE, 18 IN, H 1-10	2,244	LF	\$ 48.67	\$ 109,215.48	
550-1360	STORM DRAIN PIPE, 36 IN, H 1-10	423	LF	\$ 78.55	\$ 33,226.65	
550-2180	SIDE DRAIN PIPE, 18 IN, H 1-10	96	LF	\$ 32.55	\$ 3,124.80	
550-4118	FLARED END SECTION 18 IN, SIDE DRAIN	4	EA	\$ 492.54	\$ 1,970.16	
550-4236	FLARED END SECTION 36 IN, STORM DRAIN	4	EA	\$ 1,187.74	\$ 4,750.96	
668-2100	DROP INLET, GP 1	9	EA	\$ 2,212.65	\$ 19,913.85	
						\$ 172,201.90
<b>Erosion Control</b>						
	AVERAGED COST PER MILE	0.9	MI	\$ 300,000.00	\$ 273,000.00	\$ 273,000.00
<b>Signing &amp; Marking</b>						
	AVERAGED COST PER MILE	0.9	MI	\$ 45,000.00	\$ 40,950.00	\$ 40,950.00
<b>At-grade Crossing at Heart of Georgia Railroad</b>						
999-9999	AT-GRADE CROSSING CONSTRUCTION	1.0	LS	\$ 750,000.00	\$ 750,000.00	\$ 750,000.00
<b>PROJECT CONSTRUCTION COST (does not include contingency and utility costs) =</b>						<b>\$ 3,493,698.55</b>
<b>Right of Way Estimate - 2.21 AC (at \$45,000 per acre) =</b>						<b>\$ 99,450.00</b>
<b>PROJECT COST (including ROW) =</b>						<b>\$ 3,593,148.55</b>

TIA PROJECT NO. RC08-000010						APRIL 2016
COST ESTIMATE FOR RAILROAD CROSSING - SINGLE SPAN BRIDGE - GRADE SEPARATED ALTERNATE						Prepared By:
From Approximately 1700' West of Railroad Bridge to 3.3 miles West of SR 300 Connector						Heath & Lineback Engineers
US 280/SR 30 Widening East of Lake Blackshear Bridge To SR 300 Connector						
Includes approx. 4800' of roadway						
Item Code	Item Description	Qty.	Unit	Unit Price	Total	
<b>Roadway</b>						
150-1000	TRAFFIC CONTROL	1	LS	\$ 50,000.00	\$ 50,000.00	
201-1500	CLEARING AND GRUBBING - 23.7 AC	1	LS	\$ 59,125.00	\$ 59,125.00	
205-0001	UNCLASS EXCAV	22,897	CY	\$ 5.31	\$ 121,582.40	
206-0002	BORROW EXCAV, INCL MATL	290,099	CY	\$ 5.19	\$ 1,505,613.96	
212-1000	GRANULAR EMBANKMENT, INCL MATL & HAUL	1,852	CY	\$ 28.08	\$ 52,000.00	
456-2015	INDENTATION RUMBLE STRIPS - GROUND-IN-PLACE (SKIP)	2	GLM	\$ 4,299.15	\$ 7,816.64	
433-1000	REINF CONC APPROACH SLAB	520	SY	\$ 169.31	\$ 88,041.20	
500-0100	GROOVED CONCRETE	520	SY	\$ 8.55	\$ 4,446.00	
634-1200	RIGHT OF WAY MARKERS	23	EA	\$ 122.71	\$ 2,822.33	
643-0010	FIELD FENCE WOVEN WIRE	9,600	LF	\$ 7.94	\$ 76,224.00	
643-8200	BARRIER FENCE (ORANGE), 4 FT	5,000	LF	\$ 1.85	\$ 9,250.00	
						\$ 1,976,921.53
<b>Pavement</b>						
310-1101	GR AGGR BASE CRS, INCL MATL	18,852	TN	\$ 26.94	\$ 507,863.79	
402-3121	RECYCLED ASPH CONC 25 MM SUPERPAVE, GP 1 OR 2, INCL BITUM MATL & H LIME	8,067	TN	\$ 78.29	\$ 631,562.30	
402-3130	RECYCLED ASPH CONC 12.5 MM SUPERPAVE, GP 2 ONLY, INCL BITUM MATL & H LIME	3,166	TN	\$ 93.27	\$ 295,297.90	
402-3190	RECYCLED ASPH CONC 19 MM SUPERPAVE, GP 1 OR 2, INCL BITUM MATL & H LIME	3,455	TN	\$ 85.60	\$ 295,770.16	
413-1000	BITUM TACK COAT	3,910	GL	\$ 3.45	\$ 13,489.41	
<b>Temporary Detour Pavement</b>						
310-1101	GR AGGR BASE CRS, INCL MATL	3,500	TN	\$ 26.94	\$ 94,290.00	
402-3121	RECYCLED ASPH CONC 25 MM SUPERPAVE, GP 1 OR 2, INCL BITUM MATL & H LIME	2,053	TN	\$ 78.29	\$ 160,755.47	
402-3130	RECYCLED ASPH CONC 12.5 MM SUPERPAVE, GP 2 ONLY, INCL BITUM MATL & H LIME	513	TN	\$ 93.27	\$ 47,878.60	
402-3190	RECYCLED ASPH CONC 19 MM SUPERPAVE, GP 1 OR 2, INCL BITUM MATL & H LIME	684	TN	\$ 85.60	\$ 58,588.44	
413-1000	BITUM TACK COAT	871	GL	\$ 3.45	\$ 3,005.33	
						\$ 2,108,501.40
<b>Drainage</b>						
550-1180	STORM DRAIN PIPE, 18 IN, H 1-10	2,244	LF	\$ 48.67	\$ 109,215.48	
550-1360	STORM DRAIN PIPE, 36 IN, H 1-10	423	LF	\$ 78.55	\$ 33,226.65	
550-2180	SIDE DRAIN PIPE, 18 IN, H 1-10	96	LF	\$ 32.55	\$ 3,124.80	
550-4118	FLARED END SECTION 18 IN, SIDE DRAIN	4	EA	\$ 492.54	\$ 1,970.16	
550-4236	FLARED END SECTION 36 IN, STORM DRAIN	4	EA	\$ 1,187.74	\$ 4,750.96	
668-2100	DROP INLET, GP 1	9	EA	\$ 2,212.65	\$ 19,913.85	
						\$ 172,201.90
<b>Erosion Control</b>						
	AVERAGED COST PER MILE	0.9	MI	\$ 300,000.00	\$ 273,000.00	\$ 273,000.00
<b>Signing &amp; Marking</b>						
	AVERAGED COST PER MILE	0.9	MI	\$ 45,000.00	\$ 40,950.00	\$ 40,950.00
<b>Temporary At-Grade Crossing</b>						
	AT-GRADE CROSSING CONSTRUCTION	1.0	LS	\$ 250,000.00	\$ 250,000.00	\$ 250,000.00
<b>Bridge Crossing at Heart of Georgia Railroad</b>						
543-9000	CONSTRUCTION OF BRIDGE COMPLETE - 2 BRIDGES (SINGLE SPAN) - 37.25 FT X 108 FT	1.0	LS	\$ 990,480.00	\$ 990,480.00	\$ 990,480.00
627-1010	MSE Walls	20,000	SF	\$ 60.00	\$ 1,200,000.00	\$ 1,200,000.00
<b>PROJECT CONSTRUCTION COST (does not include contingency and utility costs) =</b>						<b>\$ 7,012,054.83</b>
<b>Right of Way Estimate - 8.90 AC (at \$45,000 per acre) =</b>						<b>\$ 400,500.00</b>
<b>PROJECT COST (including ROW) =</b>						<b>\$ 7,412,554.83</b>

TIA PROJECT NO. RC08-000010						APRIL 2016
COST ESTIMATE FOR RAILROAD CROSSING - THREE SPAN BRIDGE - GRADE SEPARATED ALTERNATE						Prepared By:
From Approximately 1700' West of Railroad Bridge to 3.3 miles West of SR 300 Connector						Heath & Lineback Engineers
US 280/SR 30 Widening East of Lake Blackshear Bridge To SR 300 Connector						
Includes approx. 4800' of roadway						
Item Code	Item Description	Qty.	Unit	Unit Price	Total	
<b>Roadway</b>						
150-1000	TRAFFIC CONTROL	1	LS	\$ 50,000.00	\$ 50,000.00	
201-1500	CLEARING AND GRUBBING - 23.7 AC	1	LS	\$ 59,125.00	\$ 59,125.00	
205-0001	UNCLASS EXCAV	22,897	CY	\$ 5.31	\$ 121,582.40	
206-0002	BORROW EXCAV, INCL MATL	259,730	CY	\$ 5.19	\$ 1,347,998.33	
212-1000	GRANULAR EMBANKMENT, INCL MATL & HAUL	1,852	CY	\$ 28.08	\$ 52,000.00	
456-2015	INDENTATION RUMBLE STRIPS - GROUND-IN-PLACE (SKIP)	2	GLM	\$ 4,299.15	\$ 7,816.64	
433-1000	REINF CONC APPROACH SLAB	520	SY	\$ 169.31	\$ 88,041.20	
500-0100	GROOVED CONCRETE	520	SY	\$ 8.55	\$ 4,446.00	
634-1200	RIGHT OF WAY MARKERS	20	EA	\$ 122.71	\$ 2,454.20	
643-0010	FIELD FENCE WOVEN WIRE	9,600	LF	\$ 7.94	\$ 76,224.00	
643-8200	BARRIER FENCE (ORANGE), 4 FT	5,000	LF	\$ 1.85	\$ 9,250.00	
						\$ 1,818,937.77
<b>Pavement</b>						
310-1101	GR AGGR BASE CRS, INCL MATL	18,204	TN	\$ 26.94	\$ 490,423.84	
402-3121	RECYCLED ASPH CONC 25 MM SUPERPAVE, GP 1 OR 2, INCL BITUM MATL & H LIME	7,787	TN	\$ 78.29	\$ 609,639.27	
402-3130	RECYCLED ASPH CONC 12.5 MM SUPERPAVE, GP 2 ONLY, INCL BITUM MATL & H LIME	3,078	TN	\$ 93.27	\$ 287,067.91	
402-3190	RECYCLED ASPH CONC 19 MM SUPERPAVE, GP 1 OR 2, INCL BITUM MATL & H LIME	3,338	TN	\$ 85.60	\$ 285,699.23	
413-1000	BITUM TACK COAT	3,776	GL	\$ 3.45	\$ 13,026.19	
<b>Temporary Detour Pavement</b>						
310-1101	GR AGGR BASE CRS, INCL MATL	3,500	TN	\$ 26.94	\$ 94,290.00	
402-3121	RECYCLED ASPH CONC 25 MM SUPERPAVE, GP 1 OR 2, INCL BITUM MATL & H LIME	2,053	TN	\$ 78.29	\$ 160,755.47	
402-3130	RECYCLED ASPH CONC 12.5 MM SUPERPAVE, GP 2 ONLY, INCL BITUM MATL & H LIME	3,078	TN	\$ 93.27	\$ 287,067.91	
402-3190	RECYCLED ASPH CONC 19 MM SUPERPAVE, GP 1 OR 2, INCL BITUM MATL & H LIME	684	TN	\$ 85.60	\$ 58,588.44	
413-1000	BITUM TACK COAT	871	GL	\$ 3.45	\$ 3,005.33	
						\$ 2,289,563.59
<b>Drainage</b>						
550-1180	STORM DRAIN PIPE, 18 IN, H 1-10	2,244	LF	\$ 48.67	\$ 109,215.48	
550-1360	STORM DRAIN PIPE, 36 IN, H 1-10	423	LF	\$ 78.55	\$ 33,226.65	
550-2180	SIDE DRAIN PIPE, 18 IN, H 1-10	96	LF	\$ 32.55	\$ 3,124.80	
550-4118	FLARED END SECTION 18 IN, SIDE DRAIN	4	EA	\$ 492.54	\$ 1,970.16	
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668-2100	DROP INLET, GP 1	9	EA	\$ 2,212.65	\$ 19,913.85	
						\$ 172,201.90
<b>Erosion Control</b>						
	AVERAGED COST PER MILE	0.9	MI	\$ 300,000.00	\$ 273,000.00	\$ 273,000.00
<b>Signing &amp; Marking</b>						
	AVERAGED COST PER MILE	0.9	MI	\$ 45,000.00	\$ 40,950.00	\$ 40,950.00
<b>Temporary At-Grade Crossing</b>						
	AT-GRADE CROSSING CONSTRUCTION	1.0	LS	\$ 250,000.00	\$ 250,000.00	\$ 250,000.00
<b>Bridge Crossing at Heart of Georgia Railroad</b>						
543-9000	CONSTRUCTION OF BRIDGE COMPLETE - 2 BRIDGES (3 SPAN) - 37.25 FT X 261 FT	1.0	LS	\$ 2,218,580.00	\$ 2,218,580.00	\$ 2,218,580.00
<b>PROJECT CONSTRUCTION COST (does not include contingency and utility costs) =</b>						<b>\$ 7,063,233.26</b>
<b>Right of Way Estimate - 8.90 AC (at \$45,000 per acre) =</b>						<b>\$ 400,500.00</b>
<b>PROJECT COST (including ROW) =</b>						<b>\$ 7,463,733.26</b>



Heath & Lineback Engineers, Incorporated  
(770) 424-1668  
(770) 424-2907 Fax  
2390 Canton Rd., Bldg. 200  
Marietta, Georgia 30066

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# Memo

**To:** File- 2015030.008

**From:** Rudolph Frampton

**CC:** All attendees

**Date:** 4-19-16

**Re: TIA Project No.: RC08-000010, Crisp County  
P.I. No. 422470, US 280 from Lake Blackshear to SR 300 Connector  
RAILROAD COORDINATION MEETING # 1**

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This meeting begins the coordination between GDOT TIA Office/H&L (lead design), Atlantic Western Transportation/Heart of Georgia Railroad, to discuss potential options for improvements to the railroad at grade crossing on US280 just east of Lake Blackshear.

- Dan Bodycomb opened the meeting and introductions were made.
- The rail line and right of way is owned by the state and is overseen by the GADOT Office of Intermodal Programs. AW Transport has a long term lease on the line and they manage all operations related to the line. The Heart of Georgia Railroad is owned by AW Transport.
- Rudolph asked for information about the Railroad pertaining to train schedule, operation and speeds and Duane Broxterman provided the following information:
  - Trains travel at a speed of 25 mph.
  - 2 trains per day (1 each way), which includes freight and passenger trains.
  - Passenger trains run throughout the year except for January and February.
  - Short delays experienced by US 280 users when trains are crossing.
  - Existing rail is either a 115 or 132 pound rail; however, a 132 pound rail will be required for the proposed.
  - The required horizontal clearance is 15-20' from the centerline of track.

- The required vertical clearance is 22' from the top of high rail.
- Rudolph noted that the Railroad would need to provide H&L/TIA with any specific requirements that needed to be incorporated into the design. Further coordination will be required.
- The question as to whether the Railroad crossing improvements would be handled by a force account was discussed. The GDOT (Utility Office) will require for the installation of the Railroad Crossing Devices and draft a Force Account agreement which needs to be submitted to Heart of Georgia Railroad (HOG) for their review and execution. The funding for the Force Account agreement will be paid for by the project allotment. Railway-Highways Crossing (Section 130) will NOT be used with this Force Account. Chris Johnson with TIA will be the RR Liaison and he will be responsible for reviews and coordination. Michael Nash needs to be updated on proposed improvements so that he can properly document them in the GDOT system. Jill Franks will not be involved on TIA projects.
- Chris Johnson inquired as to whether there were any considerations for a future track and Duane responded that they/AW Transport, would need to discuss the possibility of a future track with the office of intermodal programs, before a decision could be made.
- Rudolph Frampton noted that there is a limited amount of funds for the project and the present estimate is in excess of that number. The funds available for construction is approximately 25 million dollars and the present project cost estimate is in excess of 40 million. All attempts need to be made to bring the project within budget. The at-grade crossing is estimated at a cost of approximately 3.5 million versus a grade separation, which is estimated at approximately 7.5 million. These estimates include a section of roadway, roughly 1500 feet on either side of the crossing.
- Heart of Georgia (HOG) Railroad prefers a grade separation; however, they would accept an at-grade crossing. Intermodal will need to approve the at-grade crossing. H&L will provide package to assist with this determination.
- John Heath asked who would provide the approval for the at-grade crossing and Lamu responded that Intermodal would provide an approval letter.
- Kenneth Franks asked if there was a standard request form for requesting the at grade crossing and Lamu directed that the package be put together on TIA letterhead and submitted through the TIA PM to the office of Intermodal and copied to HOG. The estimated response time will be within a week.
- Duane noted that typically GDOT office of Utilities handles railroad signals and future design at grade crossings.
- Once a decision is made concerning the crossing, this information needs to be coordinated with the TIA Utility Engineer/Nona Guilford.
- Duane believes that the railroad ROW is 75' from the centerline of track on either side. Rudolph noted that the surveyor would have obtained the railroad right of way from the Valuation maps; however, asked that they be verified by the Railroad.
- Duane asked if a median is proposed at the Railroad crossing and Rudolph noted that presently the concept design shows a median however the width of the median could be reduced if needed. Duane noted that the wider median was preferred by the Railroad.

- Chris asked if there were any special provisions and Duane responded that there were no special provisions and that the Railroad only needed a construction agreement. However, Duane noted that coordination between the construction manager and the Railroad will be required on a daily basis during construction.
- Lamu noted that any Railroad design needs to be in accordance with the AREMA requirements.

**ACTION ITEMS:**

1. H&L to provide a briefing package to TIA PM for submittal to the office of Intermodal and copied to HOG, for consideration of an at-grade crossing. The ADT along US 280 needs to be included.
2. GADOT/TIA/Intermodal to verify if a force account will be used for railroad crossing improvements.
3. AW Transport and the Office of Intermodal Programs to make a decision on whether the design needs to accommodate a future track and if so, the location of that track.
4. H&L to coordinate with the TIA Utility Engineer once a decision is made on the at-grade crossing.

**ATTENDEES:**

NAME	COMPANY	EMAIL CONTACT	PHONE
Dan Bodycomb	TIA	<a href="mailto:dbodycomb@dot.ga.gov">dbodycomb@dot.ga.gov</a>	404-631-1715
Kenneth Franks	TIA	<a href="mailto:kfranks@dot.ga.gov">kfranks@dot.ga.gov</a>	404-631-1568
Lamu Chanthavong	GADOT/Intermodal	<a href="mailto:lchanthavong@dot.ga.gov">lchanthavong@dot.ga.gov</a>	404-631-1227
Chris Johnson	AECOM	<a href="mailto:Christopher.johnson@aecom.com">Christopher.johnson@aecom.com</a>	404-965-7049
Duane Broxterman	Atlantic Western Transport/Heart of Georgia Railroad	<a href="mailto:dbroxterman@awtransport.com">dbroxterman@awtransport.com</a>	229-924-7662
John Heath	H&L	<a href="mailto:jheath@heath-lineback.com">jheath@heath-lineback.com</a>	770-424-1668
Rudolph Frampton	H&L	<a href="mailto:rframpton@heath-lineback.com">rframpton@heath-lineback.com</a>	678-569-2469
Theodore Sparks	H&L	<a href="mailto:tsparks@heath-lineback.com">tsparks@heath-lineback.com</a>	770-424-1668

**DEPARTMENT OF TRANSPORTATION  
STATE OF GEORGIA**

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**INTERDEPARTMENT CORRESPONDENCE**

**DATE:** June 6, 2016  
**FROM:** Nancy C. Cobb, Intermodal Administrator  
**TO:** Kelvin Mullins, State TIA Administrator  
**SUBJECT: Recommendation for an at-grade crossing on HOG rail line at MP 670.8**

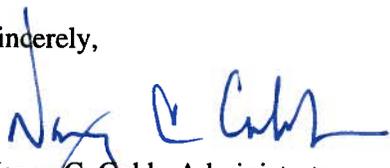
Intermodal Office has reviewed the submitted recommendation for an at-grade crossing of the TIA widening and reconstruction project on SR 30/US 280.

**Alternative #1 - Grade Separation:** Due to low base year (2012) and design year traffic (2032), a grade separation bridge is not warranted and would have a negative impact on the overall allotted budget for the entire project.

**Alternative #2 - At-grade Crossing:** By installing active warning signal devices at the crossing as recommended in the coordination meeting minutes dated April 19, 2016, this would be a more cost effective alternative.

After a thorough review and consideration of the financial costs and benefits, Intermodal Office concurs with the recommendation for an at-grade crossing alternative method (Alternative #2). If you have any questions regarding this matter, please contact Stanley K. Mack, Rail Program Manager.

Sincerely,

  
Nancy C. Cobb, Administrator  
Division of Intermodal

NCC:skm:lc

