DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA
PROJECT CONCEPT REPORT

Project Type:	TIA-Roadway Widening	P.I. Number:	0011438
GDOT District:	District 3-Thomaston	County:	Sumter
Federal Route Number:	N/A	MPO ID Number:	N/A
State Route Number:	N/A		

Improve South Georgia Tech Parkway from US 19 to SR 49. Improvements to the corridor will include shoulder widening, addition of right and left-turn lanes, and pavement rehabilitation.

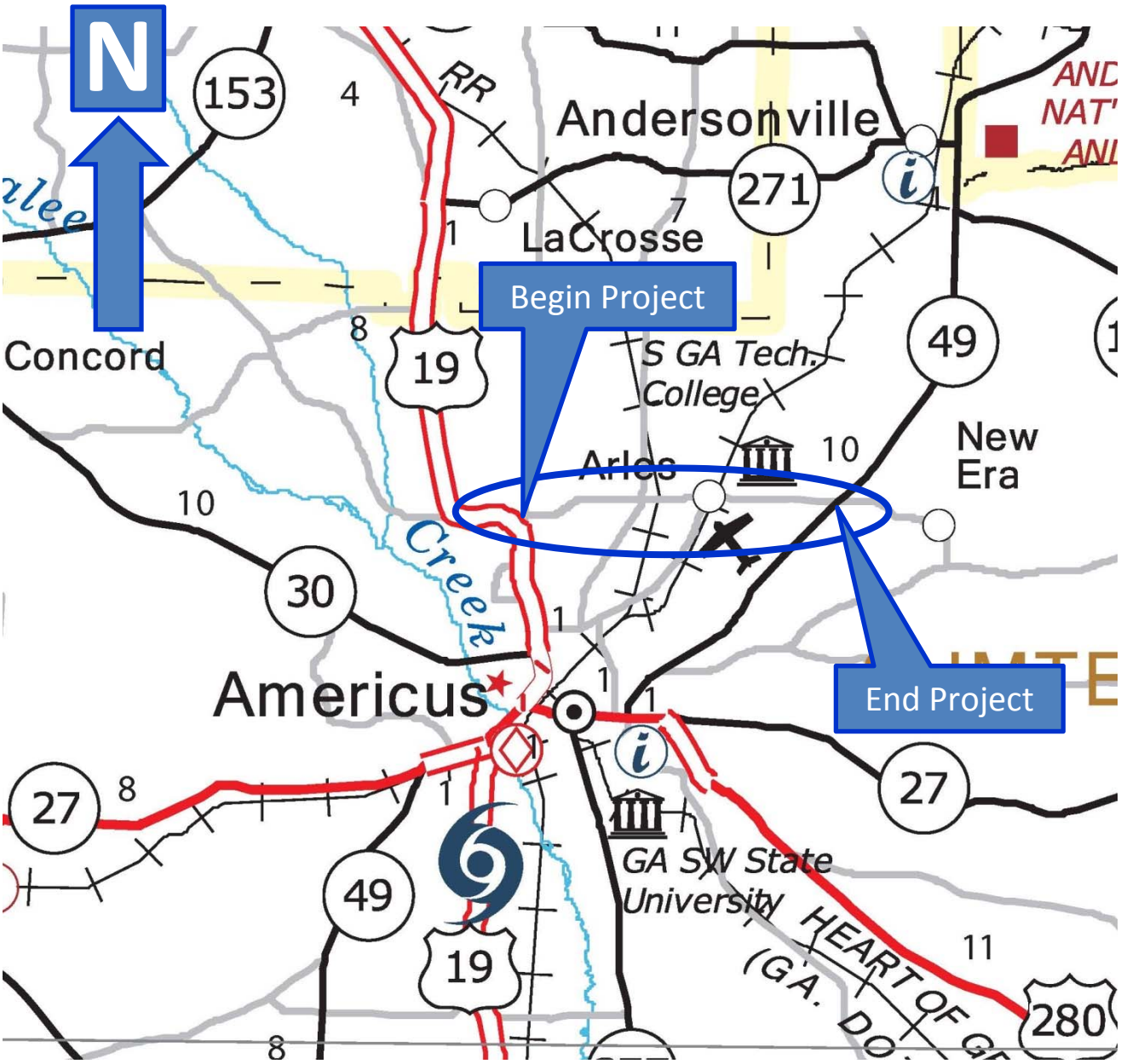
Submitted for approval:

Consultant & Firm: Michael Baker Jr., Inc.	5/2/2014 DATE
TIA Project Manager	5/4/14 DATE
TIA Program Manager	5/6/14 DATE
GDOT TIA Regional Coordinator	05/13/2014 DATE
GDOT State TIA Administrator	5/21/2014 DATE

Approval:

Concur:	GDOT Director of Engineering	5/28/14 DATE
Approve:	GDOT Chief Engineer	6/1/14 DATE

PROJECT LOCATION MAP



PLANNING AND BACKGROUND

Project Justification Statement:

The project consists of proposed corridor improvements along South Georgia Tech Parkway/Southerfield Road from US 19 to Highway 49 in Americus, Georgia. The project has been identified in the River Valley Region's constrained Transportation Investment Act project list and approved by the Region's voters. Within the project limits, South Georgia Tech Parkway is an east-west connector between major thoroughfares of US 19 and Highway 49 and classified as a rural minor arterial roadway. The existing roadway provides a two-lane roadway section with graded rural shoulders. Residential and commercial growth as well as land use changes along South Georgia Tech Parkway has reflected an increase in vehicular and truck traffic. Currently, turn lanes do not exist for South Georgia Technical College. In the future, the addition of the Georgia International Raceway Park across from South Georgia Technical College will cause the current level of service and operational conditions to deteriorate without the addition of additional lanes. The purpose of the project is to improve the operations South Georgia Tech Parkway, potentially reduce the frequency and severity of crashes, and reduce heavy truck traffic in historic downtown Americus.

Existing conditions:

South Georgia Tech Parkway/Southerfield Road from US 19 to Highway 49 in its existing condition generally has two 11-foot travel lanes with two-foot outside rural paved shoulders. The posted speed limit west of Southerfield Road is 55 mph, and to the east it is 45 mph. No sidewalks or bike lanes are currently present along the corridor. Railroad tracks owned by Norfolk Southern run across the project. There are two existing bridges on South Georgia Tech Parkway that are to the west of the railroad tracks.

Other projects in the area:

PI No. 322420 – US 19/SR 3 Improvements from Angelica Creek to SR 271
PI No. 0005939 – SR 49 at CR 12/District Line Road and CR 366/South Georgia Tech Parkway, and SR 49 at CR 13/New Era Road Intersection Improvements
PI No. 0011439 – CR 12/District Line Road Improvements from US 280 to SR 49

MPO: N/A - Project not in MPO **MPO Project ID**: N/A

Regional Commission: River Valley RC **RC Project ID:** RC08-000084

Congressional District(s): 2

Federal Oversight: ☐ Full Oversight ☒ Exempt ☒ TIA Funded ☐ Other

Projected Traffic: AADT

Current Year (2014): 2,840 Open Year (2016): 2,840 Design Year (2036): 3,930
Traffic Projections Performed by: Michael Baker Jr., Inc.

Functional Classification (Mainline): Rural Minor Arterial

County: Sumter

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

Warrants met: ☐ None ☒ Bicycle ☒ Pedestrian ☐ Transit

Is this a 3R (Resurfacing, Restoration, & Rehabilitation) Project? ☒ No ☐ Yes

Pavement Evaluation and Recommendations

Preliminary Pavement Evaluation Summary Report Required? ☐ No ☒ Yes

Preliminary Pavement Type Selection Report Required? ☒ No ☐ Yes

Feasible Pavement Alternatives: ☒ HMA ☐ PCC ☐ HMA & PCC

DESIGN AND STRUCTURAL

Description of the proposed project:

This project consists of proposed corridor improvements along South Georgia Tech Parkway/Southerfield Road from US 19 to Highway 49 in Americus, Georgia located in Sumter County. The corridor has a design speed of 55 mph from US 19 to Southerfield Road and 45 mph from Southerfield Road to Highway 49. The total project length is approximately 4.99 miles. The first segment of the project is from approximately 600-ft east of US 19 to the Norfolk Southern railroad tracks for a length of 2.99 miles and consists of overlaying the existing travel lanes and shoulder widening to including 6.5-ft paved shoulder widths. The next segment of the project is between the Norfolk Southern railroad tracks and the approximate eastern property limit of the proposed Georgia International Raceway Park for a length of 0.85 miles consists of five lanes of full depth pavement construction with bicycle lanes and urban shoulders including curb and gutter and sidewalk. The next segment of 0.92 miles is from the approximate eastern property limit of the proposed Georgia International Raceway Park to approximately 230-ft west of Highway 49 and consists of three lanes of full depth pavement construction with standard rural shoulders including 6.5-ft paved shoulder widths. The final segment of 0.23 miles consists of the realignment of South Georgia Tech Parkway and District Line Road with each other and placing a roundabout at their intersection with Highway 49.

Approved investment list stated benefits:

Ensuring Safety and Security: This project would benefit the public by potentially reducing the incidence of crashes along this corridor. This benefit will be realized by upgrading the existing shoulders to current standards, improving operations by providing auxiliary turn lanes, and a by separating two-way traffic with a flush median.

Maximizing the value of Georgia's Assets: The utility of the South Georgia Tech Parkway corridor will be improved by rehabilitating and preserving the existing pavement. The rehabilitation of the pavement will extend its useful life and will reduce long-term maintenance costs for the corridor.

Supporting Economic Growth/Competitiveness: The introduction of the turn-lanes and flush median in the segment of roadway by the South Georgia Technical College and future motorsports complex will improve the free-flow movement of freight along the corridor between U.S. 19 and S.R. 49. The improved operations of the corridor will make the corridor more efficient and reliable for the transport of goods and motorists in general. The improvements will also support the development of the proposed motorsports complex by helping to improve traffic flow during peak times. The successful development of the motorsports complex will support the tourism industry for this part of Georgia.

Additional Benefits: In addition to the benefits previously stated, the proposed improvements will also have several additional benefits. 1) The roadway will better accommodate pedestrians and bicyclists utilizing the corridor due to the addition of paved shoulders and sidewalks. 2) The increased capacity and reliability of the corridor will help convey the additional traffic expected from the development of the Inland Port in Crisp County. 3) The increased capacity of the corridor may also result in a decrease in heavy truck traffic through historic downtown Americus by providing a reliable alternative route for trucks to use in the region.

Major Structures:

Structure	Existing	Proposed
261-5044-0 Angelica Creek	160-ft long, 4-span concrete superstructure with two 12-ft lanes and 10-ft shoulders and sufficiency rating of 99.91	N/A
261-5045-0 Norfolk Southern Railroad	171-ft long, 3-span concrete superstructure with two 12-ft lanes and 10-ft shoulders and sufficiency rating of 99.91	N/A

Mainline Design Features: South Georgia Tech Parkway (Rural Minor Arterial)

Feature	Existing	Standard*	Proposed
Typical Section			
- Number of Lanes	**2**	**2**	**Varies: 2-5**
- Lane Width(s)	**11**	**11-12-ft**	**11-ft Travel Lanes 12-ft Center Turn Lane**
- Median Width & Type	**None**	**N/A**	**None**
- Outside Shoulder or - Border Area Width	**10-ft Total 2-ft Paved**	**10-ft Total 6.5-ft Paved**	**10-ft Total 6.5-ft Paved**
- Urban Shoulder Section	**None**	**N/A**	**10-ft Total 2.5-ft Curb & Gutter 5-ft Sidewalk**
- Outside Shoulder Slope	**6.00%**	**6.00%**	**6.00%**
- Inside Shoulder Width	**None**	**N/A**	**None**
- Sidewalks	**None**	**N/A**	**5-ft**
- Auxiliary Lanes	**None**	**N/A**	**None**
- Bike Lanes	**None**	**N/A**	**4-ft (Urban Section)**
Posted Speed	**55/45**		**55 (W of Southerfield Rd) 45 (E of Southerfield Rd)**
Design Speed		**45/55**	**55 (W of Southerfield Rd) 45 (E of Southerfield Rd)**
Min Horizontal Curve Radius	**1100-ft**	**1060-ft**	**650-ft**
Maximum Superelevation Rate	**6.00%**	**6.00%**	**6.00%**
Maximum Grade	**5.00%**	**5.00%**	**5.00%**
Access Control	**N/A**	**N/A**	**N/A**
Design Vehicle	**SU**	**SU**	**WB-67**
Pavement Type	**Asphalt**	**Asphalt**	**Asphalt**

*According to current GDOT design policy if applicable

Major Interchanges/Intersections:

The two major intersections of the project are at each end of South Georgia Tech Parkway which intersects at US 19 and Highway 49. At US 19 it is a T-intersection with a stop sign for only South Georgia Tech Parkway. There are no improvements being proposed for this intersection. At Highway 49 there is an existing four-way intersection with stop signs only for South Georgia Tech Parkway and New Era Road. Approximately 660-ft south of South Georgia Tech Parkway along Highway 49 is District Line Road which is an existing T-intersection with a stop sign only for District Line Road. Both of the existing intersections along Highway 49 have substandard skew angles. South Georgia Tech Parkway and District Line Road will be realigned so that they line up with each other and a roundabout will be added at their intersection with Highway 49. New Era Road will also be realigned so that the intersecting skew angle with Highway 49 will meet the current GDOT standards.

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

Design Exceptions to FHWA/AASHTO controlling criteria anticipated:

FHWA/AASHTO Controlling Criteria	No	Undeter-mined	Yes	Appvl Date (if applicable)
1. Design Speed	☒	☐	☐	
2. Lane Width	☒	☐	☐	
3. Shoulder Width	☒	☐	☐	
4. Bridge Width	☒	☐	☐	
5. Horizontal Alignment	☒	☐	☐	
6. Superelevation	☒	☐	☐	
7. Vertical Alignment	☒	☐	☐	
8. Grade	☒	☐	☐	
9. Stopping Sight Distance	☒	☐	☐	
10. Cross Slope	☒	☐	☐	
11. Vertical Clearance	☒	☐	☐	
12. Lateral Offset to Obstruction	☒	☐	☐	
13. Bridge Structural Capacity	☒	☐	☐	

Design Variances to GDOT Standard Criteria anticipated:

GDOT Standard Criteria	Reviewing Office	No	Undeter--mined	Yes	Appvl Date (if applicable)
1. Access Control/Median Openings	DP&S	☒	☐	☐	
2. Intersection Sight Distance	DP&S	☒	☐	☐	
3. Intersection Skew Angle	DP&S	☒	☐	☐	
4. Lateral Offset to Obstruction	DP&S	☒	☐	☐	
5. Rumble Strips	DP&S	☒	☐	☐	
6. Safety Edge	DP&S	☒	☐	☐	
7. Median Usage	DP&S	☒	☐	☐	
8. Roundabout Illumination Levels	DP&S	☐	☐	☒	
9. Complete Streets	DP&S	☒	☐	☐	
10. ADA & PROWAG	DP&S	☒	☐	☐	
11. GDOT Construction Standards	DP&S	☒	☐	☐	
12. GDOT Drainage Manual	DP&S	☒	☐	☐	
13. GDOT Bridge & Structural Manual	Bridges	☒	☐	☐	

The GDOT Design Policy Manual requires that roundabouts be lit to the levels shown in Table 1 of the Illuminating Engineering Society *Guide for Roundabout Lighting*. Lighting will not be provided at the roundabout. Mitigations for not providing lighting will include advanced warning signs, extended raised splitter islands, and shoulders with curb and gutter. Additional mitigations will be considered.

VE Study anticipated: ☒ No ☐ Yes ☐ Completed – Date:

UTILITY AND PROPERTY

Temporary State Route needed: ☒ No ☐ Yes ☐ Undetermined

Railroad Involvement:

There is a railroad crossing owned by Norfolk Southern in the project area. Coordination with Norfolk Southern will be needed due to the widening for additional lanes on South Georgia Tech Parkway. There has been no coordination to this date but the process will begin as early as practical.

Utility Involvements:

Phone – AT&T
Water – City of Americus
Sewer – Americus-Mill Creek WPCP
Power – Georgia Power Company
Gas – City of Americus

SUE Required: ☒ No ☐ Yes ☐ Undetermined

Public Interest Determination Policy and Procedure recommended (Utilities)? ☒ No ☐ Yes

County: Sumter

Right-of-Way (ROW): Existing width: 50-ft Proposed width: Varies

Required Right-of-Way anticipated: ☐ None ☒ Yes ☐ Undetermined

Easements anticipated: ☐ None ☒ Temporary ☒ Permanent ☒ Utility ☒ Other

Anticipated total number of impacted parcels:		23
Displacements anticipated:	Businesses:	0
	Residences:	0
	Other:	0
	Total Displacements:	0

Location and Design approval: ☐ Not Required ☒ Required

ROUNDABOUTS

Roundabout Lighting Agreement/Commitment Letter received: ☒ No ☐ Yes

Roundabout Planning Level Assessment:

A roundabout was evaluated at this location to serve the needs of the area and the projected future traffic requirements. The following items were examined: Safety, Growth, Traffic Capacity, and Public Perception.

Safety: A five-year crash history of SR 49 and South Georgia Tech Parkway was derived from the GEARS website. It demonstrated there was no significant crash history at the intersection. Only two (2) of twenty-five (25) collisions occurred at the intersection.

Growth: Growth is expected to be steady at approximately 1.5% annually from 2016 to 2036. The existing traffic patterns are primarily north/south and east-to-north/south at this time, however with the anticipated relocation of New Era Road and the attachment of District Line Road to the roundabout, further growth in through traffic for trucks is anticipated. They would use this route instead of a more congested route through downtown Americus. The anticipated growth in truck traffic would be for traffic moving east/west along South Georgia Tech Parkway.

Traffic Capacity: A series of analyses was conducted to show the operational implications of a roundabout vs. a standard two-way-stop-controlled (TWSC) intersection. The results show that while the intersection would operate acceptably under TWSC (LOS C/B, AM/PM) it would operate at LOS A in the AM and PM peak hours of 2036 with a roundabout. A roundabout will also be more responsive to peak traffic flows that are not anticipated by HCS analysis.

Public Perception: All stakeholders on the South Georgia Tech Parkway project are in support of a roundabout to meet the needs of the area.

Roundabout Feasibility Study: N/A

Roundabout Peer Review Required: ☒ No ☐ Yes ☐ Completed – Date:

CONTEXT SENSITIVE SOLUTIONS

Issues of Concern: None

Context Sensitive Solutions Proposed: N/A

ENVIRONMENTAL & PERMITS

Anticipated Environmental Document:

GEPA: ☒ **NEPA:** ☐ CE ☐ EA/FONSI ☐ EIS

MS4 Permit Compliance – Is the project located in a MS4 area? ☒ No ☐ Yes

Environmental Permits/Variances/Commitments/Coordination anticipated:

Permit/ Variance/ Commitment/ Coordination Anticipated	No	Yes	Remarks
1. U.S. Coast Guard Permit	☒	☐	
2. Forest Service/Corps Land	☒	☐	
3. CWA Section 404 Permit	☐	☒	Nationwide 14 anticipated
4. Tennessee Valley Authority Permit	☒	☐	
5. Buffer Variance	☐	☒	
6. Coastal Zone Management Coordination	☒	☐	
7. NPDES	☐	☒	
8. FEMA	☒	☐	
9. Cemetery Permit	☒	☐	
10. Other Permits	☒	☐	
11. Other Commitments	☒	☐	
12. Other Coordination	☒	☐	

Is a PAR required? ☒ No ☐ Yes ☐ Completed – Date:

Environmental Comments and Information:

NEPA/GEPA: The proposed project is being documented under GEPA because it is locally funded through the state's TIA program. Early coordination letters have been sent to the resource agencies and potential stakeholders.

Ecology: An Ecology Resources Survey and Assessment of Effects Report will be completed for the proposed project. An aquatic survey for protected fish and mussel species will be conducted, if the results of the ecology survey determine that one is necessary.

History: A Phase I Cultural Resources Survey will be conducted for the project. If properties that are recommended as eligible for listing on the National Register of Historic Places (NRHP) are discovered within the project's Area of Potential Effect (APE), then an Assessment of Effects (AOE) document will be completed. All documents, resource eligibility recommendations, and effects determinations will be reviewed and approved by the Georgia State Historic Preservation Officer (SHPO).

Archeology: A Phase I Archaeological Survey will be completed for the proposed project. If archaeological sites that are recommended as eligible for listing on the NRHP are discovered within the project's APE, then an AOE document will be completed. All documents, resource

eligibility recommendations, and effects determinations will be reviewed and approved by the Georgia SHPO.

Air Quality:

Is the project located in a PM 2.5 Non-attainment area?	☒ No	☐ Yes
Is the project located in an Ozone Non-attainment area?	☒ No	☐ Yes
Is a Carbon Monoxide hotspot analysis required?	☒ No	☐ Yes

The proposed project is located in an area that is in attainment for both ozone and PM 2.5. An assessment will be required for the project to address the potential for the proposed project to result in air quality impacts associated with carbon monoxide and Mobile Source Air Toxics (MSATs).

Noise Effects: A noise impact analysis is not required under GEPA.

Public Involvement: Public involvement is not required as part of the GEPA assessment.

Major stakeholders: In addition to the traveling public, the major stakeholders for this project include South Georgia Technical College, Georgia International Raceway Park, Sumter County, and Norfolk Southern.

CONSTRUCTION

Issues potentially affecting constructability/construction schedule: None

Early Completion Incentives recommended for consideration: ☒ No ☐ Yes

COORDINATION, ACTIVITIES, RESPONSIBILITIES, AND COSTS

Initial Concept Meeting: N/A

Concept Meeting: February 27, 2014 a meeting was held at South Georgia Technical Collage to receive input from the project stakeholders.

Other coordination to date: None

Project Activity	Party Responsible for Performing Task(s)
Concept Development	Michael Baker Jr., Inc.
Design	Michael Baker Jr., Inc.
Right-of-Way Acquisition	TIA Program Manager
Utility Relocation	TIA Program Manager
Letting to Contract	TIA Program Manager
Construction Supervision	TIA Program Manager
Providing Material Pits	Contractor
Providing Detours	Contractor
Environmental Studies, Documents, & Permits	Michael Baker Jr., Inc.
Environmental Mitigation	Michael Baker Jr., Inc.
Construction Inspection & Materials Testing	TIA Program Manager

Project Cost Estimate Summary and Funding Responsibilities:

	Breakdown of PE	ROW	Reimbursable Utility	CST*	Environmental Mitigation	Total Cost
Funded By	TIA	TIA	TIA	TIA	N/A	
$ Amount	$1,000,000	$3,000,000	$1,000,000	$7,421,117	N/A	$12,421,117
Date of Estimate	12/17/2012	12/17/2012	12/17/2012	4/16/2014	N/A	
TIA Investment List Amount	$1,000,000	$3,000,000	$1,000,000	$10,000,000	N/A	$15,000,000

*CST Cost includes: Construction, Engineering and Inspection.

ALTERNATIVES DISCUSSION

Alternative selection:

Preferred Alternative: South Georgia Tech Parkway Improvements			
Estimated Property Impacts:	**23**	**Estimated Total Cost:**	**$12,421,117**
Estimated ROW Cost:	**$3,000,000**	**Estimated CST Time:**	**12 Months**
Rationale: This alternative was chosen because it provides the needed operational improvements necessary due to the residential and commercial growth as well as land use changes along South Georgia Tech Parkway. Other advantages include potentially reducing the frequency and severity of crashes, reducing heavy truck traffic in historic downtown Americus, and the replacement of deteriorating pavement.			

No-Build Alternative: South Georgia Tech Parkway			
Estimated Property Impacts:	**None**	**Estimated Total Cost:**	**$0**
Estimated ROW Cost:	**$0**	**Estimated CST Time:**	**None**
Rationale: This alternative was not chosen because the addition of the Georgia International Raceway Park across from South Georgia Technical College as well as other growth will cause the current level of service and operational conditions to deteriorate without the addition of turn lanes, and pavement in poor condition will not be improved or replaced.			

Comments: None

LIST OF ATTACHMENTS/SUPPORTING DATA

1. Concept Layout
2. Typical sections
3. Detailed Cost Estimate
4. South Georgia Tech Parkway Traffic Information Summary Memo
5. Minutes of Concept meeting
6. TIA Project Sheet

15-MAY-2014 16:39	4:39:07 PM	CON_001	R:\138539\0011438\DGN\Concept\CON_001.dgn	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
Ben.Clopper		GDOT_11x17.pen		GA	P.I. No. 0011438	1	19

TIA TRANSPORTATION INVESTMENT ACT

Baker
3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

SCALE IN FEET
0 50 100 200

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION

OFFICE:

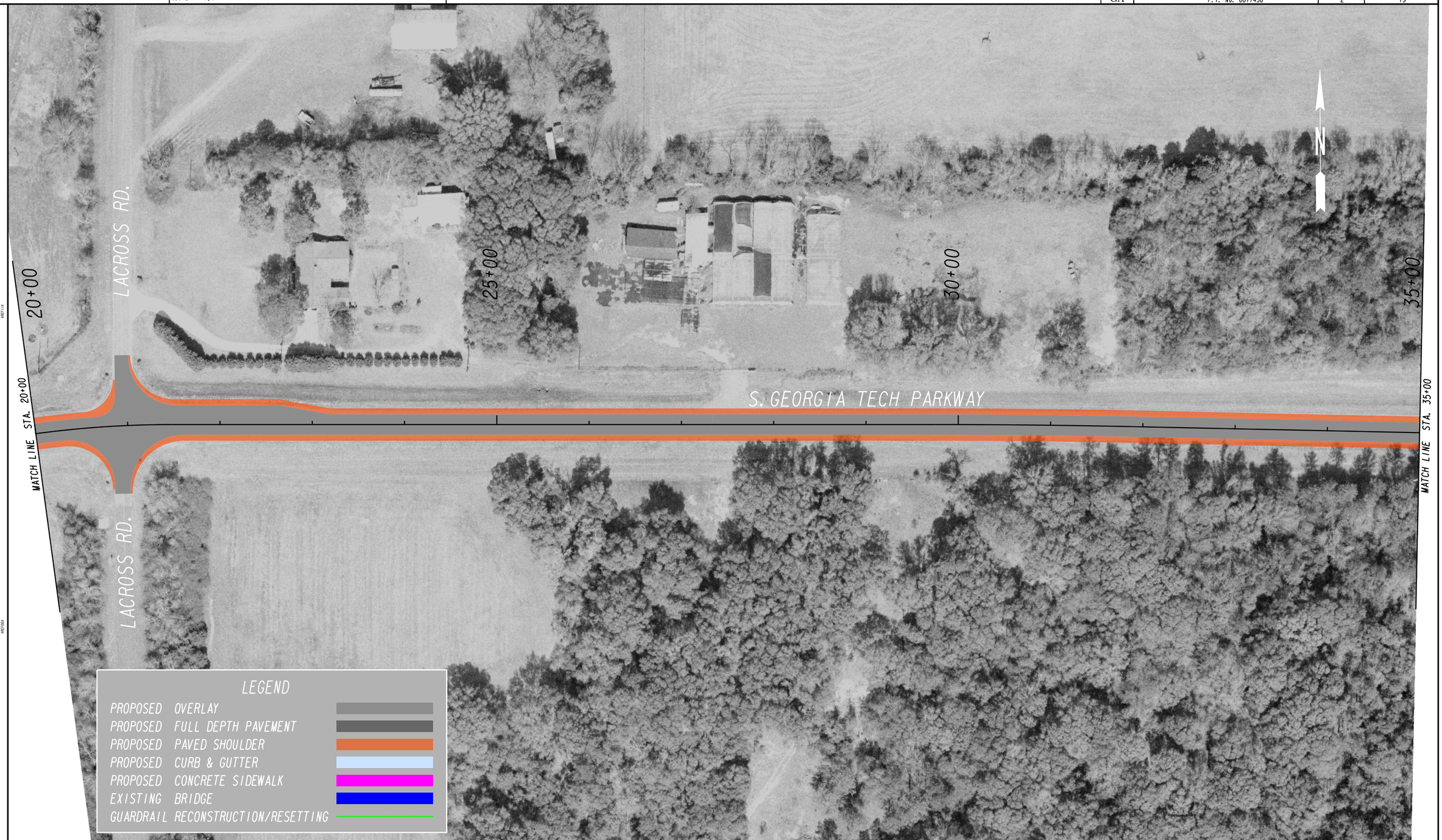
CONCEPT LAYOUT

SOUTH GEORGIA TECH PARKWAY
BEGIN PROJECT TO STA. 20+00

DRAWING No. 001

12/14/2012 GPLN

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	P.I. No. 0011438	2	19



TIA TRANSPORTATION INVESTMENT ACT

Baker
3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

SCALE IN FEET
0 50 100 200

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION

OFFICE:

CONCEPT LAYOUT

SOUTH GEORGIA TECH PARKWAY
STA. 20+00 TO STA. 35+00

DRAWING No. 002

12/14/2012 GPLN

TIA TRANSPORTATION INVESTMENT ACT

Baker
3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

SCALE IN FEET
0 50 100 200

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION

OFFICE:

CONCEPT LAYOUT

SOUTH GEORGIA TECH PARKWAY
STA. 35+00 TO STA. 50+00

DRAWING No. 003

12/14/2012 GPLN

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	P.I. No. 0011438	4	19

TIA TRANSPORTATION INVESTMENT ACT

Baker
3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

SCALE IN FEET
0 50 100 200

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE:

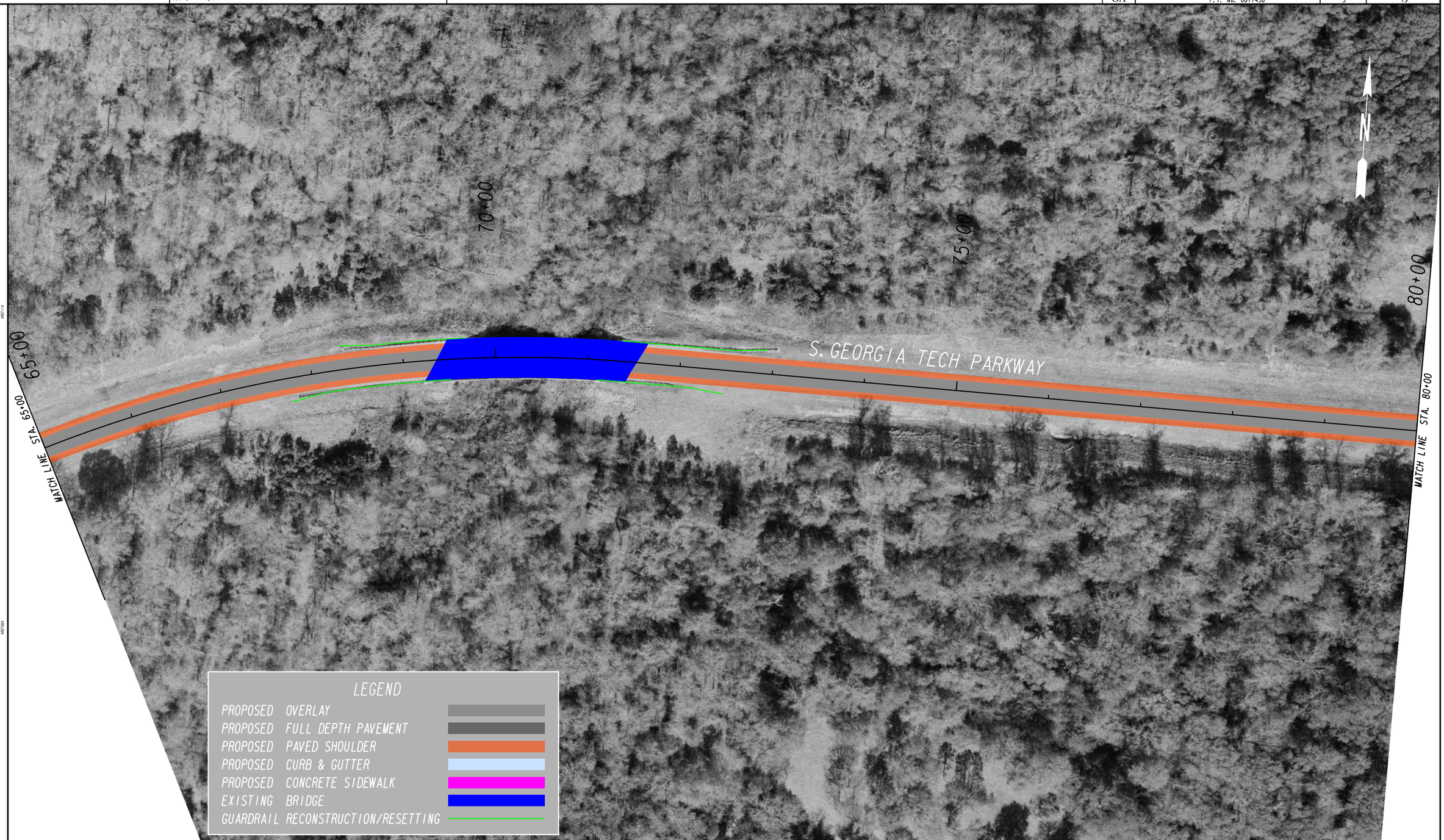
CONCEPT LAYOUT

SOUTH GEORGIA TECH PARKWAY
STA. 50+00 TO STA. 65+00

DRAWING No. 004

12/14/2012 GPLN

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	P.I. No. 0011438	5	19



TIA TRANSPORTATION INVESTMENT ACT

Baker
3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

SCALE IN FEET
0 50 100 200

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION

OFFICE:

CONCEPT LAYOUT

SOUTH GEORGIA TECH PARKWAY
STA. 65+00 TO STA. 80+00

DRAWING No. 005

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	P.I. No. 0011438	6	19

TIA TRANSPORTATION INVESTMENT ACT

Baker
3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

SCALE IN FEET
0 50 100 200

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE:

CONCEPT LAYOUT

SOUTH GEORGIA TECH PARKWAY
STA. 80+00 TO STA. 95+00

DRAWING No. 006

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
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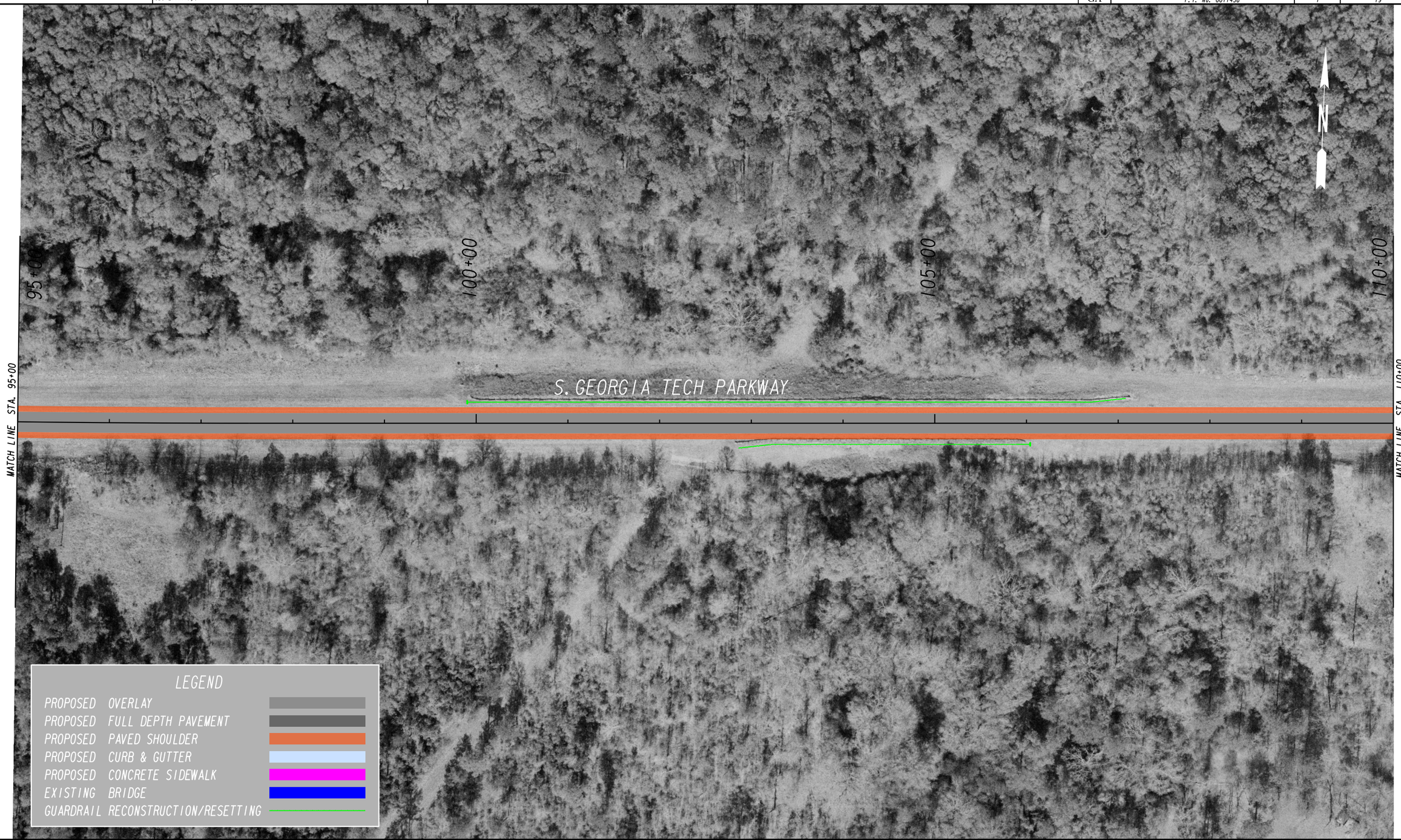


TIA TRANSPORTATION INVESTMENT ACT

Baker
3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

SCALE IN FEET
0 50 100 200

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION

OFFICE:

CONCEPT LAYOUT

SOUTH GEORGIA TECH PARKWAY
STA. 95+00 TO STA. 110+00

DRAWING No. 007

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	P.I. No. 0011438	8	19

TIA TRANSPORTATION INVESTMENT ACT

Baker
3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

SCALE IN FEET
0 50 100 200

REVISION DATES

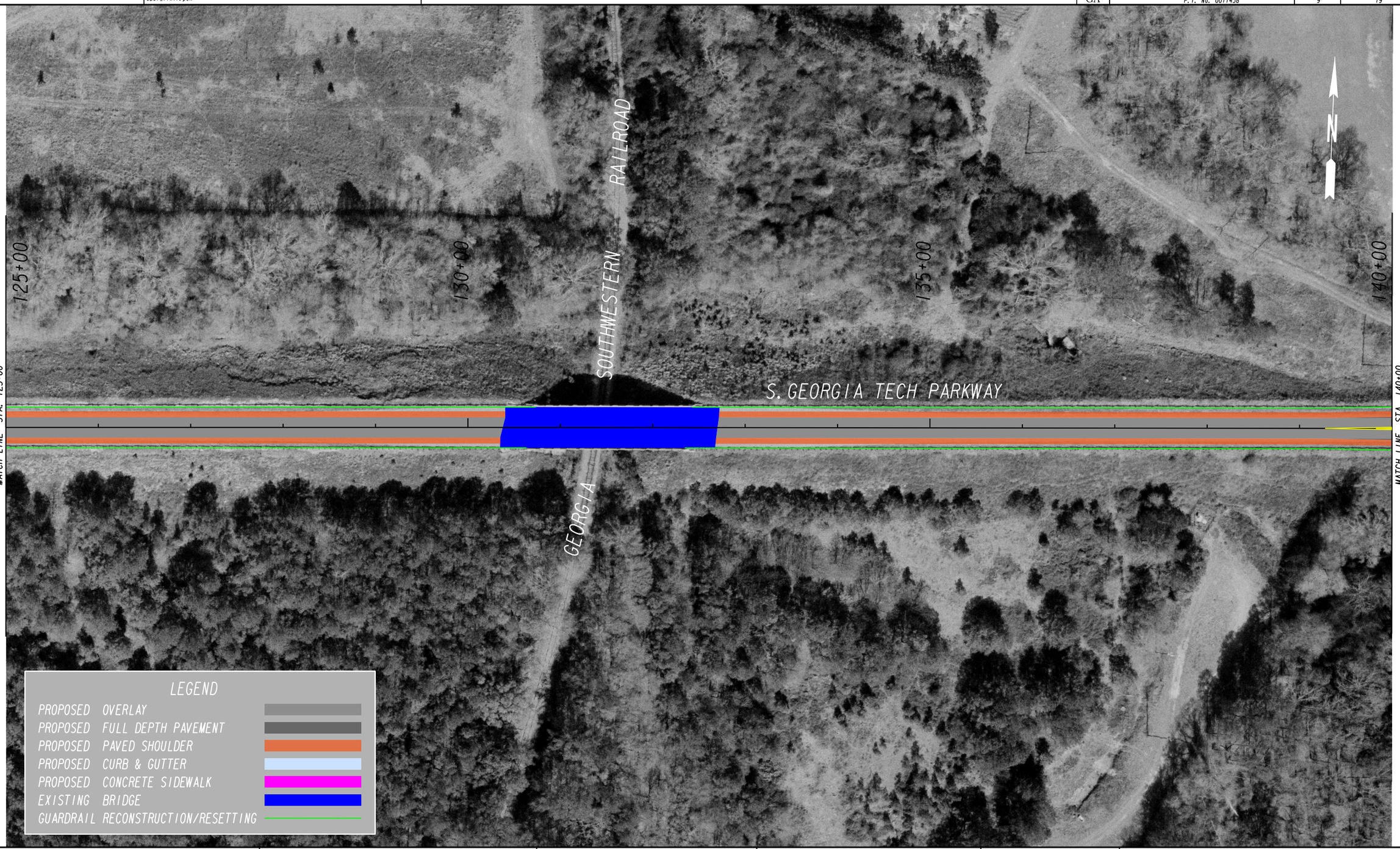
STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE:

CONCEPT LAYOUT

SOUTH GEORGIA TECH PARKWAY
STA. 110+00 TO STA. 125+00

DRAWING No. 008

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	P.I. No. 0011438	9	19



TIA TRANSPORTATION INVESTMENT ACT

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3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

SCALE IN FEET
0 50 100 200

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION

OFFICE:

CONCEPT LAYOUT

SOUTH GEORGIA TECH PARKWAY
STA. 125+00 TO STA. 140+00

DRAWING No. 009

12/14/2012 GPLN

TIA TRANSPORTATION INVESTMENT ACT

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3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

SCALE IN FEET
0 50 100 200

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION

OFFICE:

CONCEPT LAYOUT

SOUTH GEORGIA TECH PARKWAY
STA. 140+00 TO STA. 155+00

DRAWING No. 010

12/14/2012 GPLN

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	P.I. No. 0011438	11	19

TIA TRANSPORTATION INVESTMENT ACT

Baker
3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

SCALE IN FEET
0 50 100 200

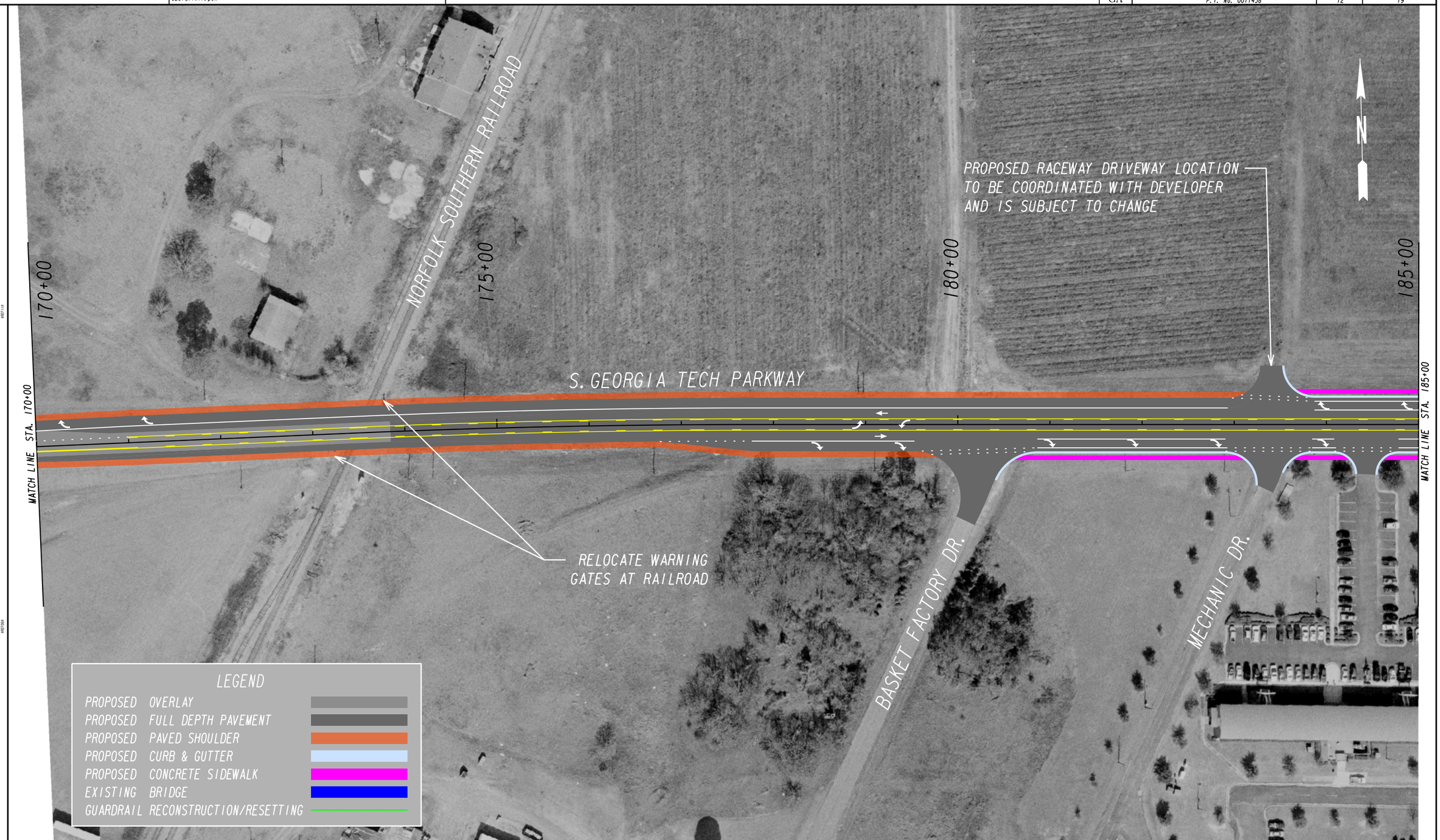
REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE:

CONCEPT LAYOUT

SOUTH GEORGIA TECH PARKWAY
STA. 155+00 TO STA. 170+00

DRAWING No. 011



TIA TRANSPORTATION INVESTMENT ACT

Baker
3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

SCALE IN FEET
0 50 100 200

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE:

CONCEPT LAYOUT

SOUTH GEORGIA TECH PARKWAY
STA. 170+00 TO STA. 185+00

DRAWING No. 012

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	P.I. No. 0011438	13	19

TIA TRANSPORTATION INVESTMENT ACT

Baker
3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

SCALE IN FEET
0 50 100 200

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE:

CONCEPT LAYOUT

SOUTH GEORGIA TECH PARKWAY
STA. 185+00 TO STA. 200+00

DRAWING No. 013

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	P.I. No. 0011438	14	19

TIA TRANSPORTATION INVESTMENT ACT

Baker
3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

SCALE IN FEET
0 50 100 200

REVISION DATES

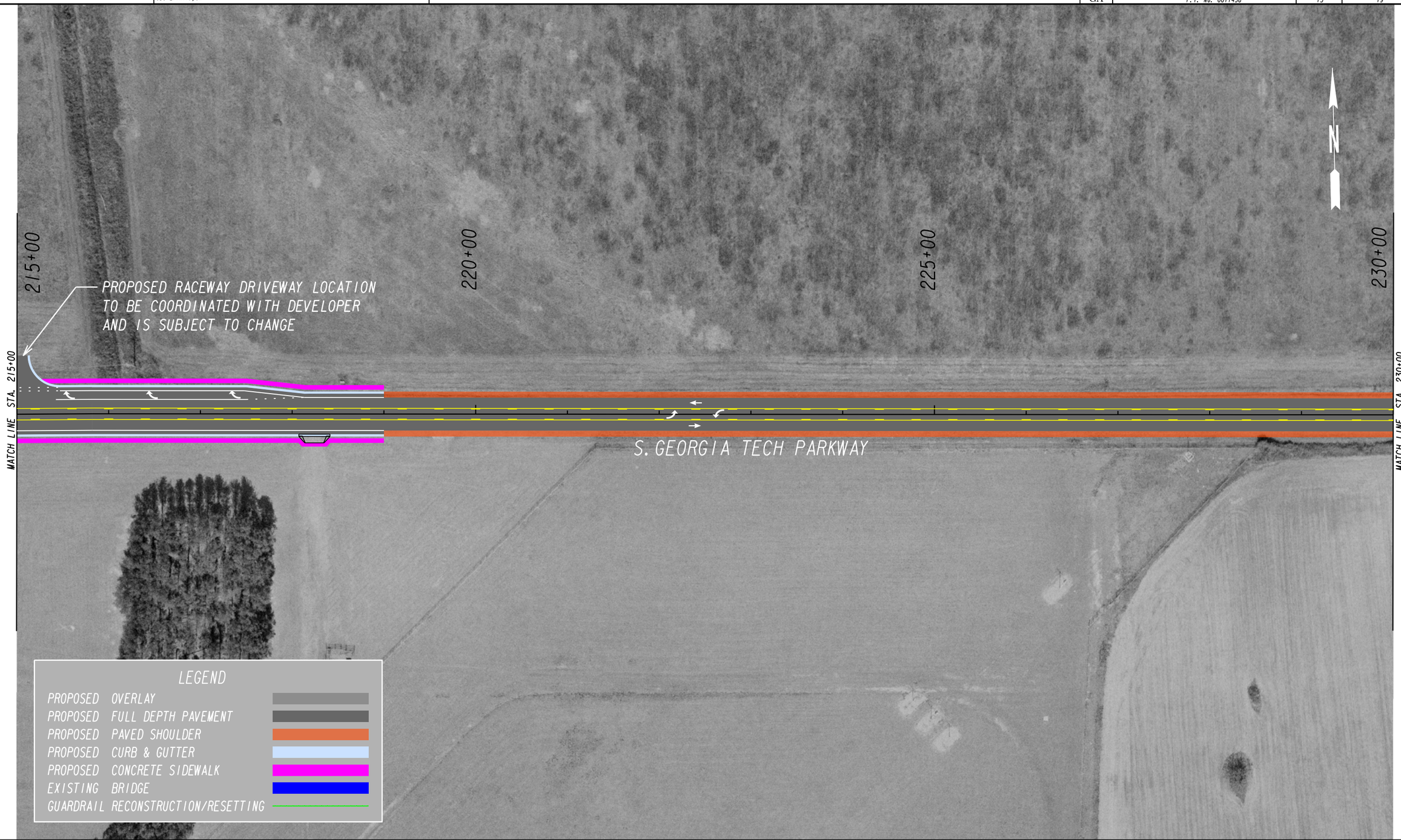
STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE:

CONCEPT LAYOUT

SOUTH GEORGIA TECH PARKWAY
STA. 200+00 TO STA. 215+00

DRAWING No. 014

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	P.I. No. 0011438	15	19



TIA TRANSPORTATION INVESTMENT ACT

Baker
3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

SCALE IN FEET
0 50 100 200

REVISION DATES

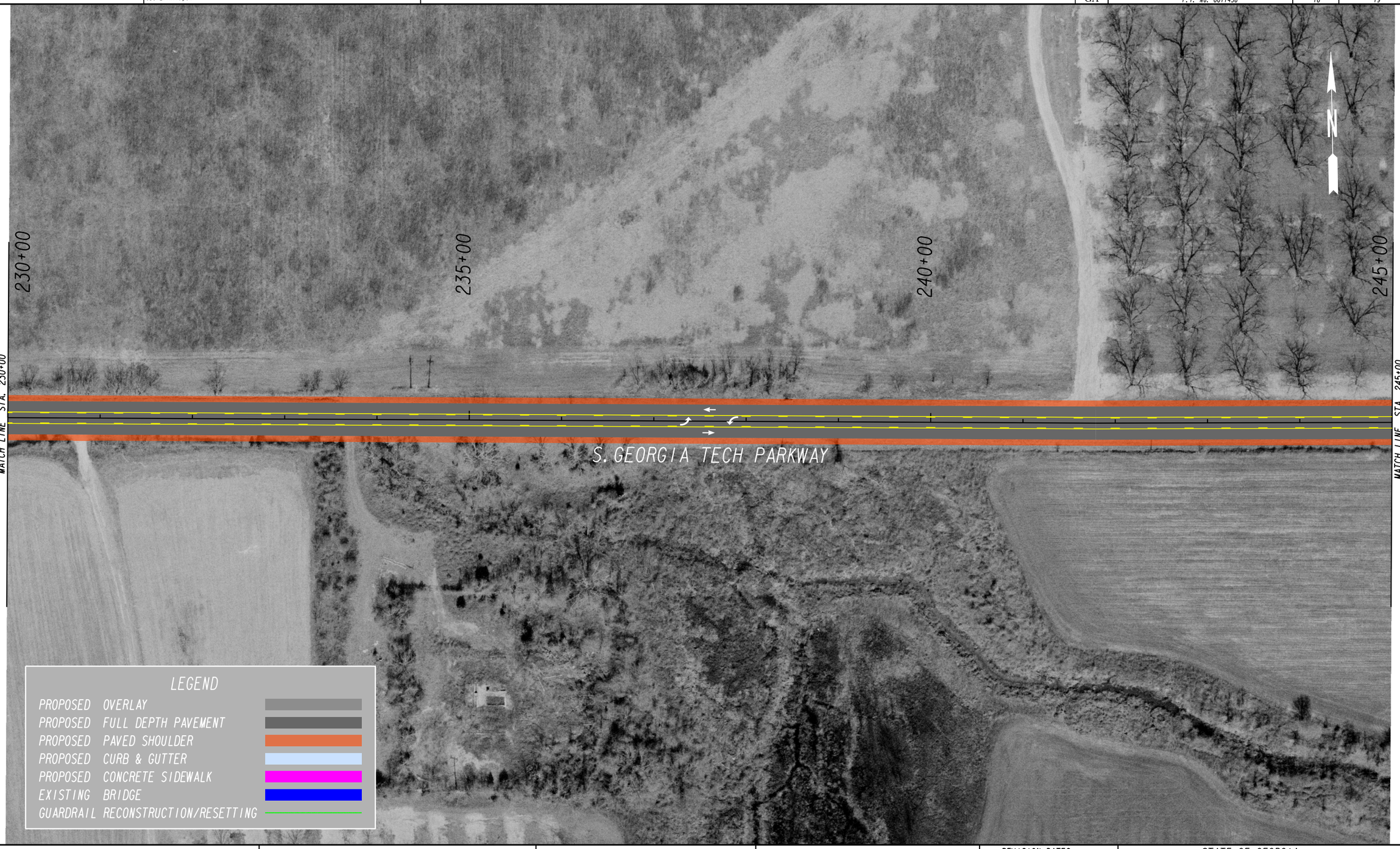
STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE:

CONCEPT LAYOUT

SOUTH GEORGIA TECH PARKWAY
STA. 215+00 TO STA. 230+00

DRAWING No. 015

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	P.I. No. 0011438	16	19



TIA TRANSPORTATION INVESTMENT ACT

Baker
3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

SCALE IN FEET
0 50 100 200

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION

OFFICE:

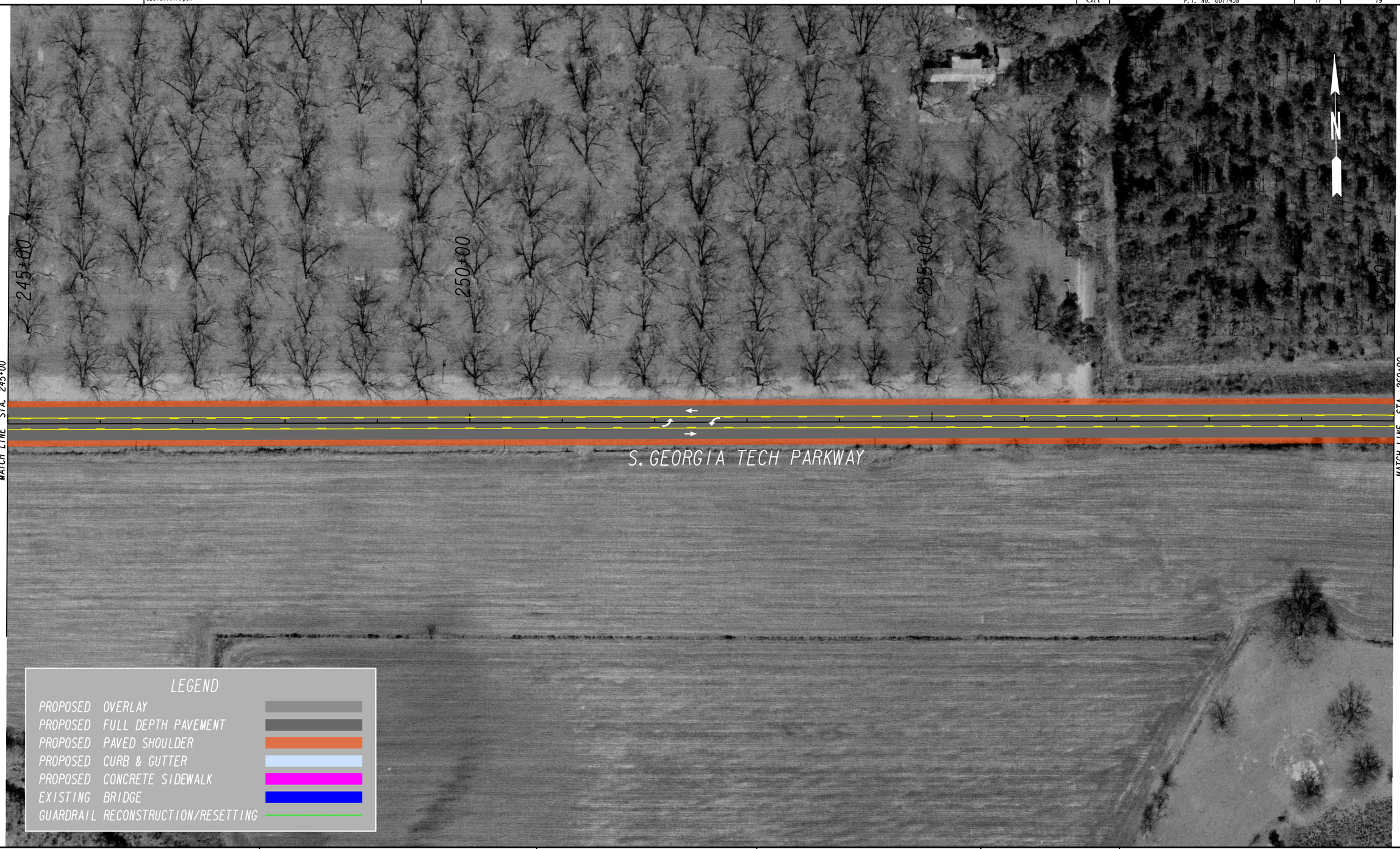
CONCEPT LAYOUT

SOUTH GEORGIA TECH PARKWAY
STA. 230+00 TO STA. 245+00

DRAWING No. 016

12/14/2012 GPLN

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	P.I. No. 0011438	17	19



TIA TRANSPORTATION INVESTMENT ACT

Baker
3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

SCALE IN FEET
0 50 100 200

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION

OFFICE:

CONCEPT LAYOUT

SOUTH GEORGIA TECH PARKWAY
STA. 245+00 TO STA. 260+00

DRAWING No. 017

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	P.I. No. 0011438	18	19

TIA TRANSPORTATION INVESTMENT ACT

Baker
3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

SCALE IN FEET
0 50 100 200

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION

OFFICE:

CONCEPT LAYOUT

SOUTH GEORGIA TECH PARKWAY
STA. 260+00 TO STA. 274+00

DRAWING No. 018

12/14/2012 GPLN

TIA TRANSPORTATION INVESTMENT ACT

Baker
3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

SCALE IN FEET
0 50 100 200

REVISION DATES

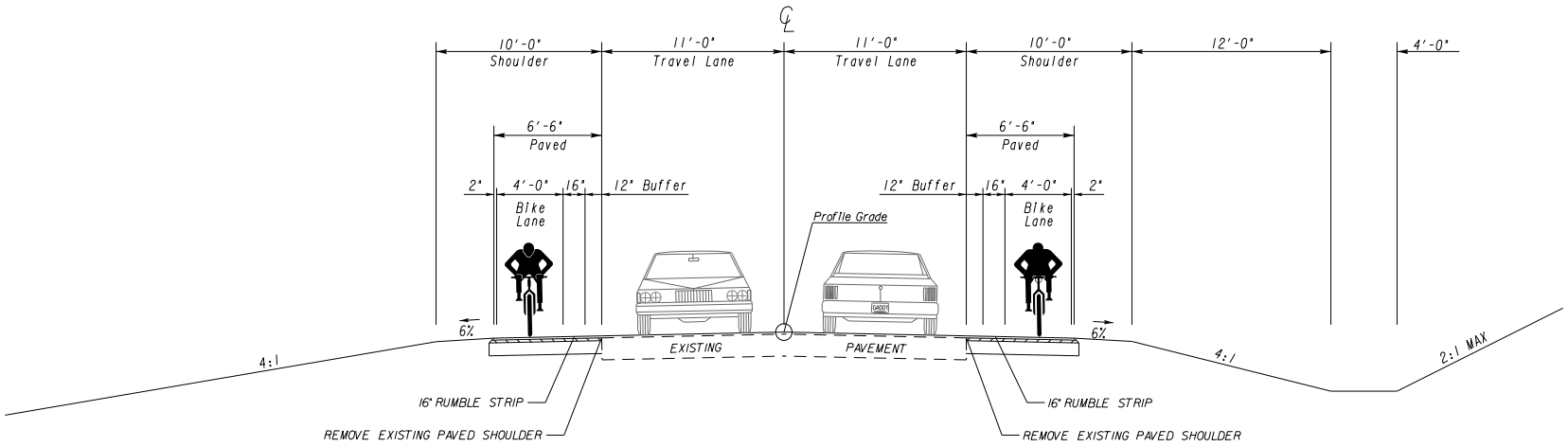
STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION

OFFICE:

CONCEPT LAYOUT

SOUTH GEORGIA TECH PARKWAY
STA. 274+00 TO END PROJECT

DRAWING No. 019

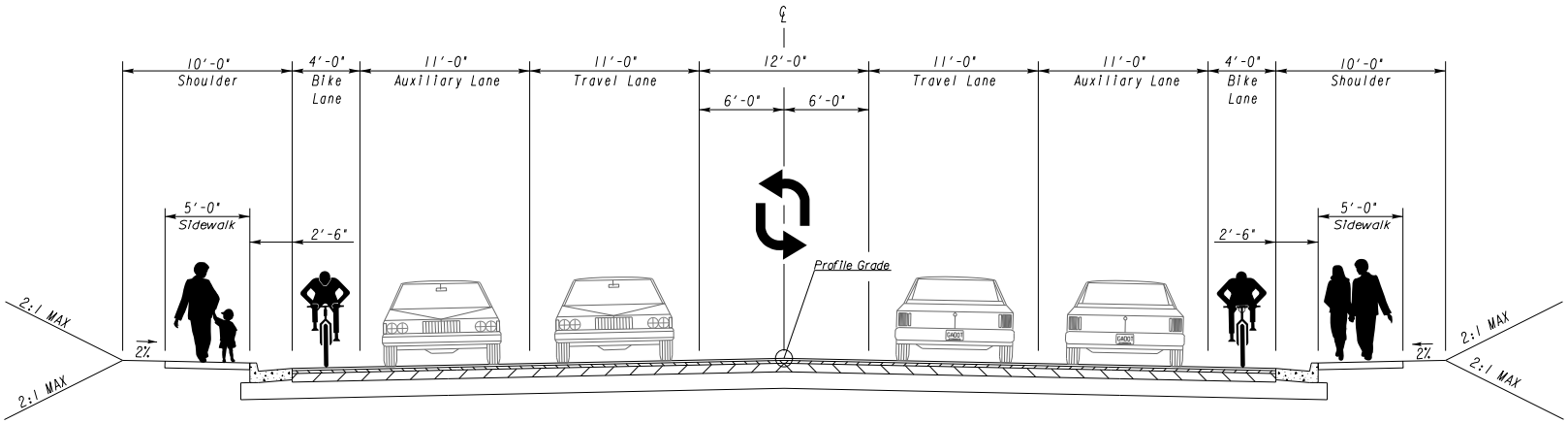


OVERLAY AND SHOULDER RECONSTRUCTION TYPICAL

Baker
3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

NOT TO SCALE

TYPICAL SECTION
SOUTH GEORGIA TECH PARKWAY IMPROVEMENTS
SUMTER COUNTY
P.I. NO. 0011438

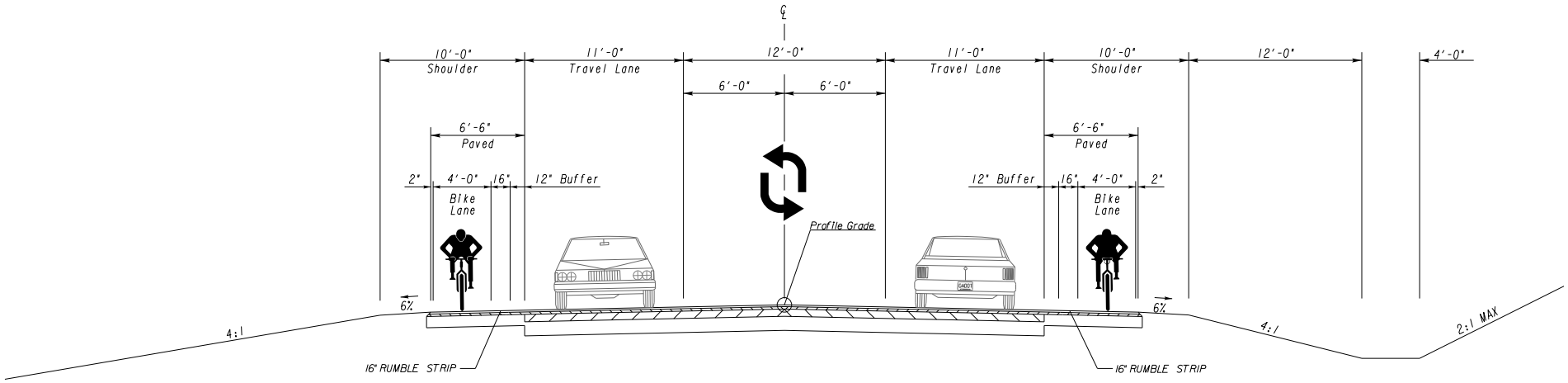


THREE LANES WITH AUXILIARY TURN LANES & URBAN SHOULDERS
FULL DEPTH CONSTRUCTION TYPICAL

Baker
3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

NOT TO SCALE

TYPICAL SECTION
SOUTH GEORGIA TECH PARKWAY IMPROVEMENTS
SUMTER COUNTY
P.I. NO. 0011438



THREE LANES WITH RURAL SHOULDERS
FULL DEPTH CONSTRUCTION TYPICAL

Baker
3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

NOT TO SCALE

TYPICAL SECTION
SOUTH GEORGIA TECH PARKWAY IMPROVEMENTS
SUMTER COUNTY
P.I. NO. 0011438

5/2/2014

Construction Cost Estimate - South Georgia Tech Parkway Improvements

Section ROADWAY					
Item Number	*Item Description*	*Units*	*Unit Price*	*Quantity*	*Cost*
150-1000	TRAFFIC CONTROL	LS	$250,000.00	1	$250,000
153-1300	FIELD ENGINEERS OFFICE TP 3	EA	$70,000.00	1	$70,000
210-0100	GRADING COMPLETE	LS	$750,000.00	1	$750,000
232-0001	RAILROAD CONSTRUCTION (INCLUDES FLAGGING)	LS	$300,000.00	1	$300,000
310-1101	GR AGGR BASE CRS, INCL MATL	TN	$20.00	49,700	$994,000
318-3000	AGGR SURF CRS	TN	$20.00	1,000	$20,000
402-1812	RECYCLED ASPH CONC LEVELING, INCL BITUM MATL & H LIME	TN	$70.00	2,600	$182,000
402-3121	RECYCLED ASPH CONC 25 MM SUPERPAVE, GP 1 OR 2, INCL BITUM MATL & H LIME	TN	$67.00	13,075	$876,025
402-3130	RECYCLED ASPH CONC 12.5 MM SUPERPAVE, GP 2 ONLY, INCL BITUM MATL & H LIME	TN	$67.00	11,060	$741,020
402-3190	RECYCLED ASPH CONC 19 MM SUPERPAVE, GP 1 OR 2,INCL BITUM MATL & H LIME	TN	$67.00	9,910	$663,970
413-1000	BITUM TACK COAT	GL	$3.00	9,400	$28,200
441-0104	CONC SIDEWALK, 4 IN	SY	$25.00	4,000	$100,000
441-0303	CONC SPILLWAY, TP 3	EA	$1,600.00	2	$3,200
441-4020	CONC VALLEY GUTTER, 6 IN	SY	$35.00	60	$2,100
441-4030	CONC VALLEY GUTTER, 8 IN	SY	$45.00	30	$1,350
441-6222	CONC CURB & GUTTER, 8 IN X 30 IN, TP 2	LF	$20.00	7,600	$152,000
446-1100	PVMT REINF FABRIC STRIPS, TP 2, 18 INCH WIDTH	LF	$4.00	31,600	$126,400
456-2015	INDENTATION RUMBLE STRIPS - GROUND-IN-PLACE (SKIP)	GLM	$900.00	9	$8,100
500-3201	CLASS B CONCRETE, RETAINING WALL	CY	$500.00	50	$25,000
550-1180	STORM DRAIN PIPE, 18 IN, H 1-10	LF	$35.00	7,500	$262,500
550-2180	SIDE DRAIN PIPE, 18 IN, H 1-10	LF	$30.00	250	$7,500
550-3418	SAFETY END SECTION 18 IN, SIDE DRAIN, 4:1 SLOPE	EA	$400.00	25	$10,000
550-4218	FLARED END SECTION 18 IN, STORM DRAIN	EA	$600.00	10	$6,000
611-5300	RESET GUARDRAIL	LF	$15.00	6,725	$100,875
634-1200	RIGHT OF WAY MARKERS	EA	$100.00	25	$2,500
641-1100	GUARDRAIL, TP T	LF	$50.00	50	$2,500
641-1200	GUARDRAIL, TP W	LF	$20.00	200	$4,000
641-5001	GUARDRAIL ANCHORAGE, TP 1	EA	$750.00	10	$7,500
641-5012	GUARDRAIL ANCHORAGE, TP 12	EA	$2,000.00	15	$30,000
668-1100	CATCH BASIN, GP 1	EA	$2,200.00	30	$66,000
668-4300	STORM SEWER MANHOLE, TP 1	EA	$1,800.00	5	$9,000
	Section Sub Total:				**$5,801,740**
Section TEMPORARY EROSION CONTROL					
Item Number	*Item Description*	*Units*	*Unit Price*	*Quantity*	*Cost*
163-0232	TEMPORARY GRASSING	AC	$300.00	6	$1,800
163-0240	MULCH	TN	$150.00	250	$37,500
163-0300	CONSTRUCTION EXIT	EA	$1,200.00	10	$12,000
163-0503	CONSTRUCT AND REMOVE SILT CONTROL GATE, TP 3	EA	$350.00	20	$7,000
163-0520	CONSTRUCT AND REMOVE TEMPORARY PIPE SLOPE DRAIN	LF	$15.00	500	$7,500
163-0528	CONSTRUCT AND REMOVE FABRIC CHECK DAM - TYPE C SILT FENCE	LF	$4.00	3,000	$12,000
163-0550	CONSTRUCT AND REMOVE INLET SEDIMENT TRAP	EA	$150.00	35	$5,250
165-0030	MAINTENANCE OF TEMPORARY SILT FENCE, TP C	LF	$0.75	51,000	$38,250
165-0101	MAINTENANCE OF CONSTRUCTION EXIT	EA	$500.00	10	$5,000
165-0105	MAINTENANCE OF INLET SEDIMENT TRAP	EA	$50.00	35	$1,750
167-1000	WATER QUALITY MONITORING AND SAMPLING	EA	$600.00	2	$1,200
167-1500	WATER QUALITY INSPECTIONS	MO	$710.00	12	$8,520
171-0030	TEMPORARY SILT FENCE, TYPE C	LF	$3.00	51,000	$153,000
573-2006	UNDDR PIPE INCL DRAINAGE AGGR, 6 IN	LF	$15.00	1,000	$15,000
	Section Sub Total:				**$305,770**

Section PERMANENT EROSION CONTROL					
Item Number	*Item Description*	*Units*	*Unit Price*	*Quantity*	*Cost*
603-2182	STN DUMPED RIP RAP, TP 3, 24 IN	SY	$50.00	300	$15,000
603-7000	PLASTIC FILTER FABRIC	SY	$4.00	300	$1,200
700-6910	PERMANENT GRASSING	AC	$800.00	12	$9,600
700-7000	AGRICULTURAL LIME	TN	$65.00	55	$3,575
700-8000	FERTILIZER MIXED GRADE	TN	$500.00	5	$2,500
700-8100	FERTILIZER NITROGEN CONTENT	LB	$3.00	600	$1,800
716-2000	EROSION CONTROL MATS, SLOPES	SY	$1.00	300	$300
	Section Sub Total:				**$33,975**

Section SIGNING & MARKING					
Item Number	*Item Description*	*Units*	*Unit Price*	*Quantity*	*Cost*
636-1020	HIGHWAY SIGNS, TP 1 MATL, REFL SHEETING, TP 3	SF	$14.00	500	$7,000
636-1033	HIGHWAY SIGNS, TP 1 MATL, REFL SHEETING, TP 9	SF	$18.00	100	$1,800
636-1041	HIGHWAY SIGNS, TP 2 MATL, REFL SHEETING, TP 9	SF	$32.00	100	$3,200
636-2070	GALV STEEL POSTS, TP 7	LF	$10.00	1,500	$15,000
653-0100	THERMOPLASTIC PVMT MARKING, RR/HWY CROSSING SYMBOL	EA	$500.00	2	$1,000
653-0120	THERMOPLASTIC PVMT MARKING, ARROW, TP 2	EA	$75.00	50	$3,750
653-0210	THERMOPLASTIC PVMT MARKING, WORD, TP 1	EA	$115.00	10	$1,150
653-1501	THERMOPLASTIC SOLID TRAF STRIPE, 5 IN, WHITE	LF	$0.50	59,000	$29,500
653-1502	THERMOPLASTIC SOLID TRAF STRIPE, 5 IN, YELLOW	LF	$0.50	51,500	$25,750
653-1704	THERMOPLASTIC SOLID TRAF STRIPE, 24 IN, WHITE	LF	$6.00	400	$2,400
653-1804	THERMOPLASTIC SOLID TRAF STRIPE, 8 IN, WHITE	LF	$2.00	1,700	$3,400
653-3501	THERMOPLASTIC SKIP TRAF STRIPE, 5 IN, WHITE	GLF	$0.50	800	$400
653-3502	THERMOPLASTIC SKIP TRAF STRIPE, 5 IN, YELLOW	GLF	$0.50	18,800	$9,400
653-6004	THERMOPLASTIC TRAF STRIPING, WHITE	SY	$3.00	1,000	$3,000
653-6006	THERMOPLASTIC TRAF STRIPING, YELLOW	SY	$3.00	400	$1,200
654-1001	RAISED PVMT MARKERS TP 1	EA	$5.00	700	$3,500
654-1003	RAISED PVMT MARKERS TP 3	EA	$5.00	400	$2,000
999-3015	TIA SIGN INSTALLATION, HARDWARE, POSTS	EA	$100.00	6	$600
	Section Sub Total:				**$114,050**

Section ROUNDABOUT & DISTRICT LINE ROAD REALIGNMENT					
Item Number	*Item Description*	*Units*	*Unit Price*	*Quantity*	*Cost*
210-0100	GRADING COMPLETE	LS	$150,000.00	1	$150,000
310-1101	GR AGGR BASE CRS, INCL MATL	TN	$20.00	5,400	$108,000
402-1812	RECYCLED ASPH CONC LEVELING, INCL BITUM MATL & H LIME	TN	$70.00	110	$7,700
402-3121	RECYCLED ASPH CONC 25 MM SUPERPAVE, GP 1 OR 2, INCL BITUM MATL & H LIME	TN	$67.00	1,750	$117,250
402-3130	RECYCLED ASPH CONC 12.5 MM SUPERPAVE, GP 2 ONLY, INCL BITUM MATL & H LIME	TN	$67.00	810	$54,270
402-3190	RECYCLED ASPH CONC 19 MM SUPERPAVE, GP 1 OR 2,INCL BITUM MATL & H LIME	TN	$67.00	875	$58,625
413-1000	BITUM TACK COAT	GL	$3.00	700	$2,100
439-0022	PLAIN PC CONC PVMT, CL 3 CONC, 10 INCH THK	SY	$65.00	700	$45,500
441-0740	CONCRETE MEDIAN, 4 IN	SY	$25.00	1,200	$30,000
441-0748	CONCRETE MEDIAN, 6 IN	SY	$40.00	1,400	$56,000
441-5008	CONCRETE HEADER CURB, 6 IN, TP 7	LF	$15.00	375	$5,625
441-5025	CONCRETE HEADER CURB, 4 IN, TP 9	LF	$15.00	475	$7,125
441-6222	CONC CURB & GUTTER, 8 IN X 30 IN, TP 2	LF	$20.00	2,100	$42,000
446-1100	PVMT REINF FABRIC STRIPS, TP 2, 18 INCH WIDTH	LF	$4.00	1,000	$4,000
500-3201	CLASS B CONCRETE, RETAINING WALL	CY	$500.00	50	$25,000
550-1180	STORM DRAIN PIPE, 18 IN, H 1-10	LF	$35.00	2,000	$70,000
550-4218	FLARED END SECTION 18 IN, STORM DRAIN	EA	$600.00	4	$2,400
634-1200	RIGHT OF WAY MARKERS	EA	$100.00	10	$1,000
668-1100	CATCH BASIN, GP 1	EA	$2,200.00	10	$22,000

668-4300	STORM SEWER MANHOLE, TP 1	EA	$1,800.00	2	$3,600
	Section Sub Total:				**$812,195**

Total Estimated Cost:	**$7,067,730.00**
Subtotal Construction Cost	$7,067,730.00
Liquid AC Cost Adjustment	$0.00
CEI Rate 5%	$353,386.50
Inflation Rate 0.0 % @ 0 Years	$0.00
Total Construction Cost	**$7,421,116.50**
Right Of Way	$3,000,000.00
ReImb. Utilities (subject to prior rights claim)	$1,000,000.00
Total Project Cost	**$11,421,116.50**

EXISTING PAVEMENT EVALUATION REPORT
Improvements to South Georgia Tech Parkway
PI No. 0011438
Sumter County, Georgia

WILLMER ENGINEERING INC.
Willmer Project No. 71.3945

Prepared For

Michael Baker Jr., Inc.
Norcross, Georgia

Prepared By

WILLMER ENGINEERING INC.
3772 Pleasantdale Road
Suite 165
Atlanta, Georgia 30340-4270
770.939.0089

WILLMER ENGINEERING INC. | WE

March 26, 2014

VIA EMAIL/U.S. MAIL

Richard E. Strickland, PE
Project Manager
Michael Baker Jr., Inc.
3595 Engineering Drive
Norcross, Georgia 30092

SUBJECT: **Existing Pavement Evaluation Report**
Improvements to South Georgia Tech Parkway
PI No. 0011438
Sumter County, Georgia
Willmer Project No. 71.3945

Dear Mr. Strickland:

Willmer Engineering Inc. (Willmer) is pleased to provide this Existing Pavement Evaluation report for the proposed improvements to South Georgia Tech Parkway in Sumter County, Georgia. The Existing Pavement Evaluation was performed based on a set of plans provided to us by Michael Baker Jr., Inc. (Baker) in January 2014, and in general accordance with our subcontract with Baker dated January 3, 2014 and the Georgia Department of Transportation (GDOT) guidance documents for existing pavement evaluation.

The attached summary presents the existing pavement conditions along the project alignment and our recommendations for pavement design. The pavement design is based on traffic data provided to us by Baker via emails on February 12 and March 20, 2014. The GDOT Pavement Design Tool Version 2.0 computer program was used for the asphalt pavement design.

We appreciate the opportunity to be of service to you on this project and look forward to a continuing relationship. Please contact us if you have any questions concerning this report or require further assistance.

Sincerely,

WILLMER ENGINEERING INC.

Bradford Drew, EIT
Staff Engineer

James L. Willmer, P.E.
Executive Vice President/Principal Consultant

Sujit K. Bhowmik, PhD, PE
Chief Engineer

This original document was signed and sealed by James L. Willmer, PE Registration No. 10780 on March 26, 2014

THIS REPRODUCTION IS NOT A CERTIFIED DOCUMENT

BD/SKB/JLW
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Attachments: **Existing Pavement Evaluation Summary**

Tables

Table 1A Summary of Pavement Conditions
Table 1B Summary of Pavement Conditions
Table 2 Summary of Pavement Core, Rut Depth, and Crack Depth Information

Figures

Figure 1 Project Location Map
Figure 2 Project Alignment Plan
Figure 3 Proposed Roundabout Plan

Appendices

Appendix I Site Photographs
Appendix II Pavement Core Photographs
Appendix III Asphalt Pavement Design Calculations

1. Location / Description

This project consists of improvements to South Georgia Tech Parkway in Sumter County, Georgia. The proposed improvements consist of shoulder reconstruction and widening of South Georgia Tech Parkway and the construction of a roundabout that will connect South Georgia Tech Parkway, SR 49, District Line Road, and New Era Road. District Line Road and New Era Road will be realigned to connect to the roundabout. The project begins at the intersection of South Georgia Tech Parkway and US 19 (Station 10+00) and ends at the intersection of South Georgia Tech Parkway and SR 49 (Station 270+00).

The length of the project is about 4.9 miles. A project location map is presented in Figure 1, and a project alignment plan is presented in Figure 2.

This existing pavement evaluation involves the entire length of South Georgia Tech Parkway (excluding the existing bridges over Angelica Creek and Georgia Southwestern Railroad) and a 2000-foot segment of SR 49 at its intersection with South Georgia Tech Parkway. For the purpose of this evaluation, the project length was divided into the following eight rating segments:

- South Georgia Tech Parkway:
    - Station 10+00 to 16+15
    - Station 16+15 to 69+35
    - Station 71+55 to 130+40
    - Station 132+70 to 175+60
    - Station 175+60 to 200+00
    - Station 200+00 to 237+50
    - Station 237+50 to 270+00
- SR 49 – 1000 feet north to 1000 feet south of South Georgia Tech Parkway

The existing South Georgia Tech Parkway is a two-lane undivided highway with rural shoulders. The proposed improvements to South Georgia Tech Parkway include shoulder reconstruction from US 19 to Norfolk Southern Railroad (Station 10+00 to 175+60), construction of a five-lane undivided highway with curb and gutter from Norfolk Southern Railroad to Lindbergh Drive (Station 175+60 to 205+00), just east of South Georgia Technical College, and construction of a three-lane undivided highway with rural shoulders from Lindbergh Drive to SR 49 (Station 205+00 to 270+00).

The existing SR 49 is a two-lane undivided highway with rural shoulders. The existing District Line Road and New Era Road are two-lane roads with rural shoulders. The proposed improvements to the intersection of South Georgia Tech Parkway and SR 49 consists of constructing a roundabout that connects South Georgia Tech Parkway, SR 49, New Era Road, and District Line Road. The approaches to the roundabout will have curb and gutter shoulders.

2. Historical Data

A historical data search was performed during this study. The GDOT TransPI website was searched for available existing pavement data for South Georgia Tech Parkway. No pavement as-built or maintenance data was found in this search.

3. Traffic Data

Traffic data for South Georgia Tech Parkway was provided to us by Baker in an email. The following traffic data was used for the pavement design:

Station 10+00 to 175+60

Design Period	2016 to 2036
One-Way AADT in 2016	2,130 vpd
One-Way AADT in 2036	2,970 vpd
Lane Distribution Factor	1.0
24-hour Truck Percentage	30% (27% SU and 3% MU)

Station 175+60 to 205+00

Design Period	2016 to 2036
One-Way AADT in 2016	2,840 vpd
One-Way AADT in 2036	3,930 vpd
Lane Distribution Factor	0.8
24-hour Truck Percentage	30% (27% SU and 3% MU)

Station 205+00 to 270+00 and District Line Road

Design Period	2016 to 2036
One-Way AADT in 2016	2,840 vpd
One-Way AADT in 2036	3,930 vpd
Lane Distribution Factor	1.0
24-hour Truck Percentage	30% (27% SU and 3% MU)

SR 49 Roundabout Approach

Design Period	2016 to 2036
One-Way AADT in 2016	4,000 vpd
One-Way AADT in 2036	5,400 vpd
Lane Distribution Factor	1.0
24-hour Truck Percentage	10% (4.5% SU and 5.5% MU)

4. Field Photographs

Photographs were taken at the time of our fieldwork to record the existing pavement conditions. These photographs are included in Appendix I.

5. Drainage Survey

Based on our field reconnaissance, the roadway drainage was in good condition. No standing water or other drainage problems were observed during this survey.

6. Non-destructive Field Testing	No non-destructive tests were performed.
7. Rutting	Rutting was observed along South Georgia Tech Parkway and SR 49 and the locations and rut depths are shown in Table 2.
8. Load Cracking	As indicated earlier, the project is divided into eight rating segments for the purpose of conducting the pavement condition survey. Level 1 and 2 load cracking was observed along South Georgia Tech Parkway and level 1 load cracking was observed along SR 49. The load cracking percentages for each rating segment are summarized in Table 1A.
9. Block/ Transverse Cracking	Level 1 block/transverse cracking was observed along South Georgia Tech Parkway. The location and block/transverse cracking percentage is shown in Table 1A.
10. Reflection Cracking	No reflection cracking was observed.
11. Raveling	Level 1 raveling was observed along South Georgia Tech Parkway and SR 49. The locations, level, and percentages of raveling are presented in Table 1B.
12. Edge Distress	Level 1 edge distress was observed on South Georgia Tech Parkway and SR 49. The edge distress locations and percentages are summarized in Table 1B.
13. Bleeding or Flushing	No bleeding or flushing was observed.
14. Corrugation or Pushing	No corrugation or pushing was observed.
15. Loss of Section	No loss of section was observed.
16. Patches, Potholes, and Local Base Failures	No patches, potholes, or local base failures were observed.

17. Cores

The existing pavement was cored at 15 locations within the project limits of South Georgia Tech Parkway. Two additional cores were performed on SR 49. The type and thickness of existing pavement and base materials were determined at each location.

The thickness of asphaltic concrete on South Georgia Tech Parkway between US 19 and Norfolk Southern (NFS) railroad ranged from 8 to 9 inches with an average of 8.4 inches and a standard deviation of 0.3 inches.

The thickness of asphaltic concrete on South Georgia Tech Parkway between NFS railroad and SR 49 ranged from 4 to 5 inches with an average of 4.6 inches and a standard deviation of 0.4 inches.

The thickness of asphaltic concrete on SR 49 ranged from 11 to 11 ½ inches with an average of 11 ¼ inches and a standard deviation of 0.3 inches.

The base course (GAB) thickness on South Georgia Tech Parkway between US 19 and NFS railroad ranged from 10 to 12 inches, with an average thickness of 10.4 inches and a standard deviation of 0.7 inches. No base course was encountered on South Georgia Tech Parkway between NFS railroad and SR 49 or on SR 49.

The core information is summarized in Table 2 and core sample photographs are included in Appendix II.

18. Pavement Condition Summary

The pavement surface condition rating for this project was performed in accordance with GDOT Pavement Condition Evaluation System (PACES), and the PACES-based ratings are summarized below:

Rating Segments	Surface Condition Rating (PACES-based)
10+00 to 16+15 (South Georgia Tech Parkway)	94
16+15 to 69+35 (South Georgia Tech Parkway)	85
71+55 to 130+40 (South Georgia Tech Parkway)	79
132+70 to 175+60 (South Georgia Tech Parkway)	79
175+60 to 200+00 (South Georgia Tech Parkway)	65
200+00 to 237+50 (South Georgia Tech Parkway)	41
237+50 to 270+00 (South Georgia Tech Parkway)	59
SR 49; 1000 feet north to 1000 feet south of South Georgia Tech Parkway	73

Based on the above surface condition ratings, the existing pavement between US 19 and Norfolk Southern Railroad (Station 10+00 to 175+60) is in excellent to fair condition, the existing pavement between Norfolk Southern Railroad and SR 49 (Station 175+60 to 270+00) is in poor to bad condition, and the existing pavement on SR 49 is in fair condition.

19. Asphalt Pavement Design

Based on our evaluation of the existing pavement surface conditions and pavement core data, the existing pavement in the segment between Station 10+00 and 175+60 (i.e., between US 19 and NFS railroad) is in fair to excellent condition and is suitable for direct overlay without milling. The existing pavement on SR 49 is in fair condition and is also suitable for direct overlay without milling. Prior to overlay construction, all visible cracks and construction joints in the existing pavement should be filled with Type M crack sealant. This work should be performed in accordance with Section 407 of the GDOT Standard Specifications.

19. Asphalt Pavement Design (cont'd)

The existing pavement between Station 175+60 and 270+00 (i.e., between NFS railroad and SR 49) is not suitable for overlay because of poor to bad surface conditions with significant load/block cracking, inadequate pavement thickness, and the absence of any base course material. We recommend that the existing pavement be removed and new full-depth pavement be constructed in this roadway segment. The asphalt from the existing pavement may be recycled and reused in overlay or new construction.

The recommended overlay and full-depth pavement designs are provided in the following tables. The GDOT Pavement Design Tool Version 2.0 computer program was used in the pavement design calculations. The output from the computer program are included in Appendix III.

Overlay Asphalt Pavement: Station 10+00 to 175+60			
Pay Item	**Course**	**Material**	**Thickness (inches)**
402-3130	Asphalt Surface	12.5 mm Superpave	1.5

Overlay Asphalt Pavement: SR 49 Roundabout Approach			
Pay Item	**Course**	**Material**	**Thickness (inches)**
402-3130	Asphalt Surface	12.5 mm Superpave	1.5
402-3190	Asphalt Intermediate	19 mm Superpave	2

Full-Depth Asphalt Pavement: Station 175+60 to 270+00 and District Line Rd			
Pay Item	**Course**	**Material**	**Thickness (inches)**
402-3130	Asphalt Surface	12.5 mm Superpave	1.5
402-3190	Asphalt Intermediate	19 mm Superpave	2
402-3121	Asphalt Base	25 mm Superpave	4
--	Base	Graded Aggregate Base	10

20. Life Cycle Cost Analysis

No Life Cycle Cost Analysis was performed.

Reported By: **Bradford Drew, EIT / Sujit K. Bhowmik, PhD, PE**

Reviewed By: **James L. Willmer, PE**

TABLES

Table 1A
Summary of Pavement Conditions
Improvements to South Georgia Tech Parkway
PI No. 0011438
Willmer Project No. 71.3945

Rating Segment (South Georgia Tech Parkway)	Sample Section	Load Cracking (%)				Block/Transverse Cracking (%)			Reflection Cracking
		Level 1	Level 2	Level 3	Level 4	Level 1	Level 2	Level 3	
10+00 to 16+15	14+50 to 15+50 (Eastbound)	0	0	0	0	0	0	0	None
16+15 to 69+35	51+50 to 52+50 (Eastbound)	25	0	0	0	0	0	0	None
71+55 to 130+40	106+25 to 107+25 (Eastbound)	50	0	0	0	0	0	0	None
132+70 to 175+60	153+75 to 154+75 (Eastbound)	50	0	0	0	0	0	0	None
175+60 to 200+00	188+25 to 189+25 (Eastbound)	0	100	0	0	0	0	0	None
200+00 to 237+50	209+00 to 210+00 (Westbound)	0	100	0	0	100	0	0	None
237+50 to 270+00	250+50 to 251+50 (Westbound)	0	100	0	0	0	0	0	None
SR 49 (1000 feet north and 1000 feet south of S. Georgia Tech Parkway)	500 feet south to 600 feet south of S. Georgia Tech Parkway (Southbound)	75	0	0	0	0	0	0	None

Table 1B
Summary of Pavement Conditions
Improvements to South Georgia Tech Parkway
PI No. 0011438
Willmer Project No. 71.3945

Rating Segment (South Georgia Tech Parkway)	Raveling (%)			Edge Distress	Bleeding & Flushing	Corrugation & Pushing	Loss of Section	Patches & Potholes
	Level 1	Level 2	Level 3					
10+00 to 16+15	25	0	0	None	None	None	None	0
16+15 to 69+35	25	0	0	None	None	None	None	0
71+55 to 130+40	25	0	0	None	None	None	None	0
132+70 to 175+60	25	0	0	None	None	None	None	0
175+60 to 200+00	10	0	0	None	None	None	None	0
200+00 to 237+50	10	0	0	5%, Level 1	None	None	None	0
237+50 to 270+00	10	0	0	5%, Level 1	None	None	None	0
SR 49 (1000 feet north and 1000 south of S. Georgia Tech Parkway)	25	0	0	5%, Level 1	None	None	None	0

Table 2
Summary of Pavement Core, Rut Depth, and Crack Depth Information
Improvements to South Georgia Tech Parkway
PI No. 0011438
Willmer Project No. 71.3945

Core No.	Location			Asphalt Pavement Thickness (in)	Base (GAB) Thickness (in)	Rut Depth (in)	Crack Depth (in)	Comments
	Station	Traffic Direction	Lane/ Shoulder					
South Georgia Tech Parkway from US 19 to Norfolk Southern Railroad								
C-1	15+00	EB	Lane	8 ½	10	--	--	--
C-2	51+75	EB	Lane	9	10	--	4	--
C-3	51+75	EB	Shoulder	3 ¾	8	--	--	--
C-4	57+25	WB	Lane	8	10	--	5 ½	--
C-5	88+50	WB	Lane	8 ½	10	--	1	--
C-6	88+50	WB	Shoulder	4 ½	6	--	--	--
C-7	107+00	EB	Lane	8 ½	10	--	8 ½	--
C-8	148+00	WB	Lane	8	11	--	3	--
C-9	153+90	EB	Lane	8	12	--	3	--

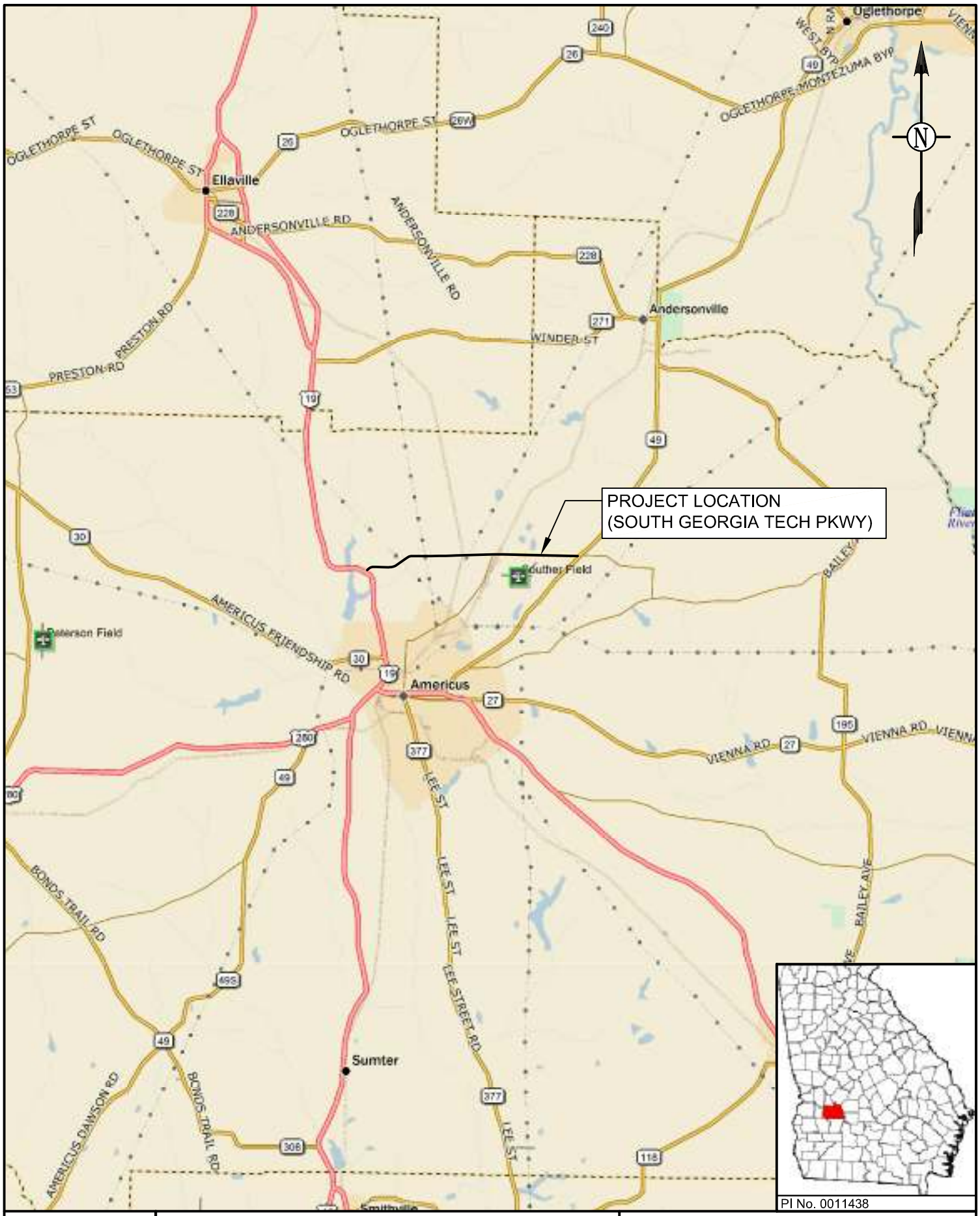
GAB = Graded Aggregate Base
EB = Eastbound
WB = Westbound

Table 2
Summary of Pavement Core, Rut Depth, and Crack Depth Information
Improvements to South Georgia Tech Parkway
PI No. 0011438
Willmer Project No. 71.3945

Core No.	Location			Asphalt Pavement Thickness (in)	Base (GAB) Thickness (in)	Rut Depth (in)	Crack Depth (in)	Comments
	Station	Traffic Direction	Lane/ Shoulder					
South Georgia Tech Parkway from Norfolk Southern Railroad to SR 49								
C-10	181+00	WB	Lane	5	--	--	5	--
C-11	189+00	EB	Lane	5	--	--	2	Core separated horizontally into 2” and 3” layers
C-12	201+00	EB	Lane	4 ½	--	¼	4 ½	Core separated horizontally into 1.75” and 2.75” layers
C-13	210+00	WB	Lane	5	--	¼	5	Core separated horizontally into two 1.5” layers and one 2” layer
C-14	251+00	EB	Lane	4 ¼	--	¼	1 ¼	Core separated horizontally into 1.25” and 3” layers
C-15	258+00	WB	Lane	4	--	¼	4	Core separated horizontally into two 2” layers
SR 49								
C-16	1000’ S of S. Georgia Tech Pkwy	SB	Lane	11	--	⅛	5 ½	Core separated horizontally into 3.5” and 7.5” layers
C-17	1000’ N of S. Georgia Tech Pkwy	SB	Lane	11 ½	--	¼	11 ½	Core separated horizontally into 3.5” and 8” layers

GAB = Graded Aggregate Base
EB = Eastbound
WB = Westbound
SB = Southbound

FIGURES



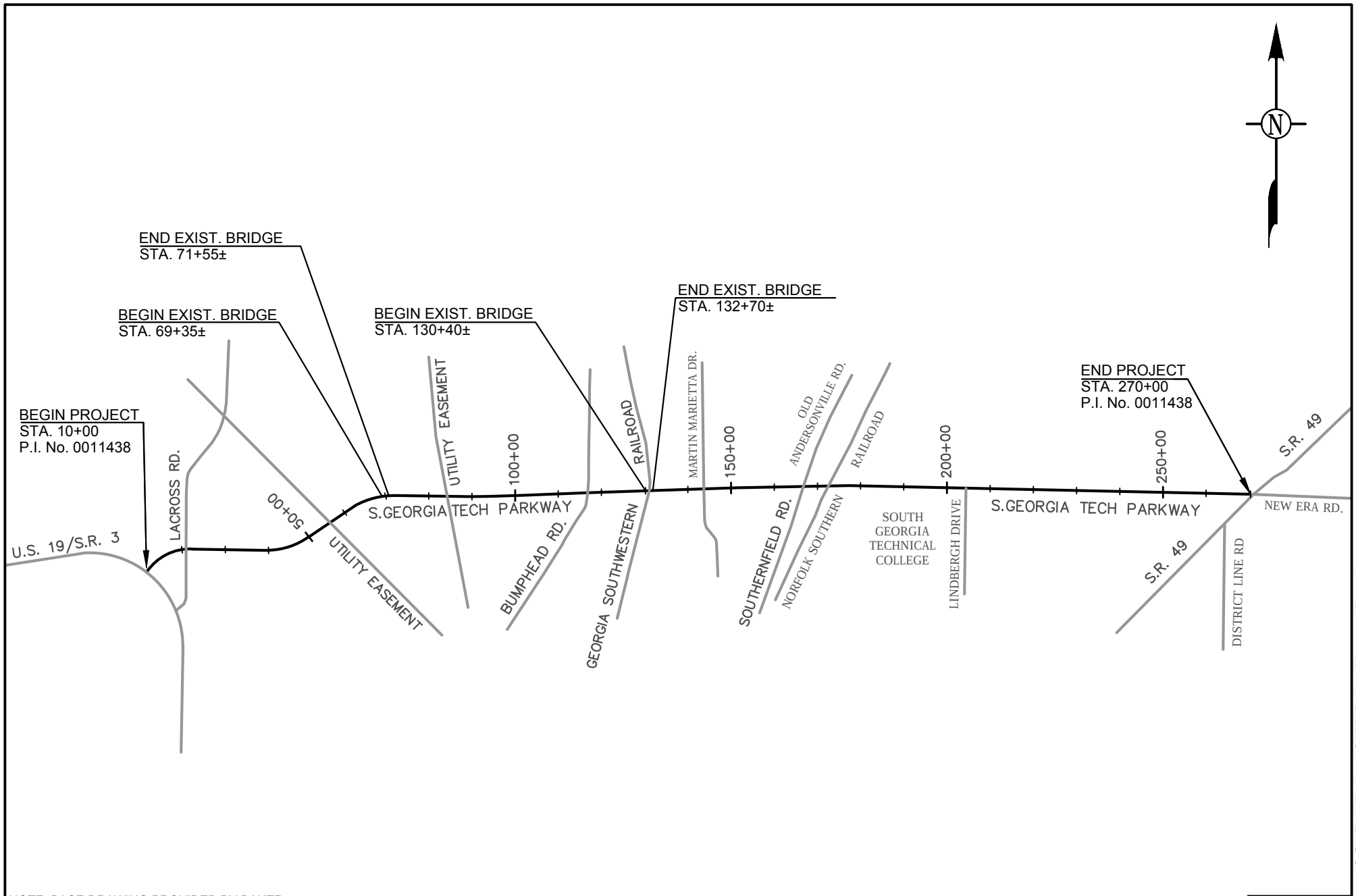
PI No. 0011438

SCALE: 1" = 15000'	
DATE: 2/17/2014	
DRAWN BY: ZMH	
REVIEWED BY: BD	

GEOTECHNICAL ENGINEERING
CONSTRUCTION SERVICES
ENVIRONMENTAL SERVICES AND ENGINEERING
3772 PLEASANTDALE ROAD - SUITE 165
ATLANTA, GA 30340-4270

FIGURE 1
PROJECT LOCATION MAP
EXISTING PAVEMENT EVALUATION
IMPROVEMENTS TO SOUTH GEORGIA TECH PARKWAY
SUMTER COUNTY, GEORGIA
WILLMER PROJECT No. 71.3945

P:\3945 Improvements to S GA Tech Parkway\CADD\Project Location Map.dwg



NOTE: BASE DRAWING PROVIDED BY BAKER.

PI No. 0011438

SCALE: 1" = 3000'	WILLMER ENGINEERING INC. WE	GEOTECHNICAL ENGINEERING ¤ CONSTRUCTION SERVICES ENVIRONMENTAL SERVICES AND ENGINEERING 3772 PLEASANTDALE ROAD - SUITE 165 ATLANTA, GA 30340-4270	FIGURE 2 PROJECT ALIGNMENT PLAN EXISTING PAVEMENT EVALUATION IMPROVEMENTS TO SOUTH GEORGIA TECH PKWY SUMTER COUNTY, GEORGIA WILLMER PROJECT No. 71.3945
DATE: 3/26/2014			
DRAWN BY: ZMH			
REVIEWED BY: BD			

P:\3945 Improvements to S GA Tech Parkway\CADD\Project Alignment Plan.dwg

NOTE: BASE DRAWING PROVIDED BY BAKER.

PI No. 0011438

SCALE: 1" = 150'	WILLMER ENGINEERING INC.	GEOTECHNICAL ENGINEERING ¤ CONSTRUCTION SERVICES ENVIRONMENTAL SERVICES AND ENGINEERING 3772 PLEASANTDALE ROAD - SUITE 165 ATLANTA, GA 30340-4270	FIGURE 3 PROPOSED ROUNDABOUT PLAN EXISTING PAVEMENT EVALUATION IMPROVEMENTS TO SOUTH GEORGIA TECH PKWY SUMTER COUNTY, GEORGIA WILLMER PROJECT No. 71.3945
DATE: 3/26/2014			
DRAWN BY: ZMH			
REVIEWED BY: BD			

P:\3945 Improvements to S GA Tech Parkway\CADD\Proposed Roundabout Plan.dwg

APPENDIX I

South Georgia Tech Parkway; Station 14+50; Looking East

South Georgia Tech Parkway; Station 15+50; Looking West

South Georgia Tech Parkway; Station 51+50; Looking East

South Georgia Tech Parkway; Station 52+50; Looking West

South Georgia Tech Parkway; Station 106+25; Looking East

South Georgia Tech Parkway; Station 107+25; Looking West

South Georgia Tech Parkway; Station 153+75; Looking East

South Georgia Tech Parkway; Station 154+75; Looking West

South Georgia Tech Parkway; Station 188+25; Looking East

South Georgia Tech Parkway; Station 189+25; Looking West

South Georgia Tech Parkway; Station 209+00; Looking East

South Georgia Tech Parkway; Station 210+00; Looking West

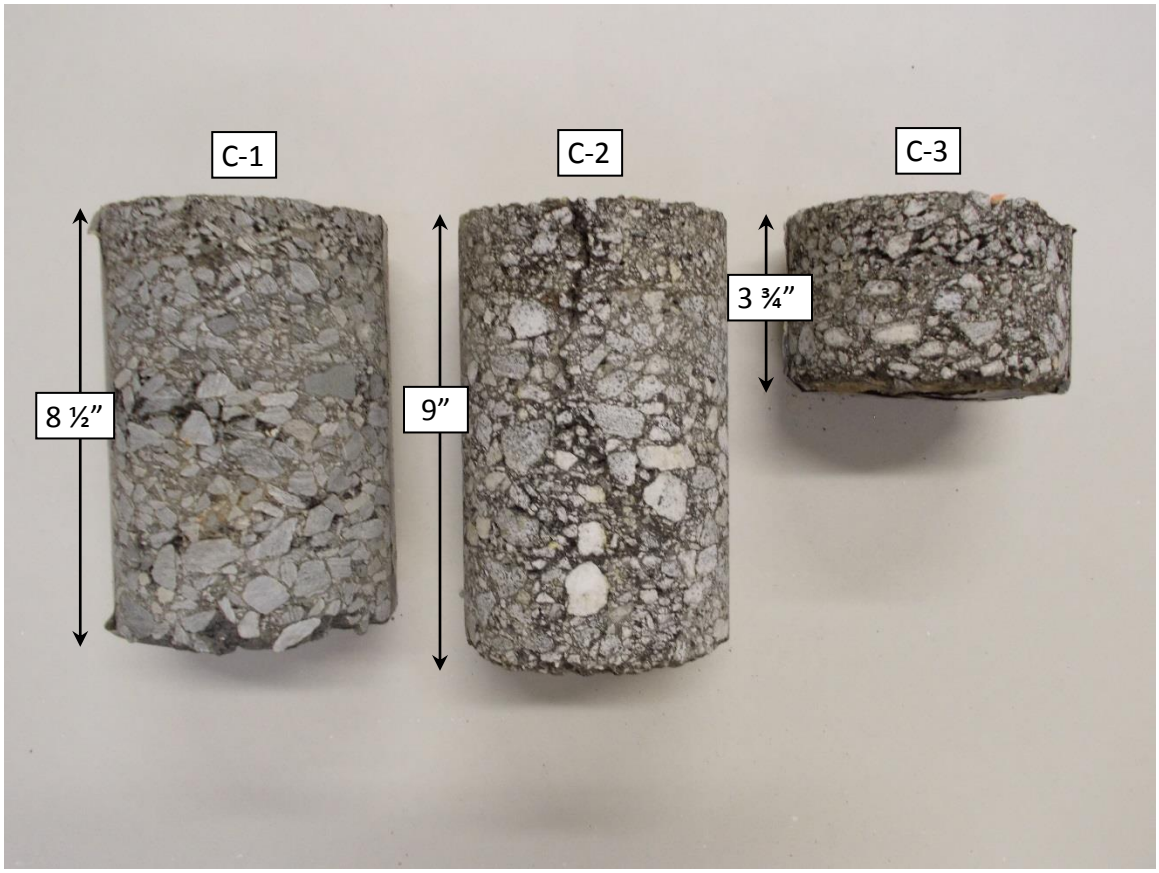
South Georgia Tech Parkway; Station 250+50; Looking East

South Georgia Tech Parkway; Station 251+50; Looking West

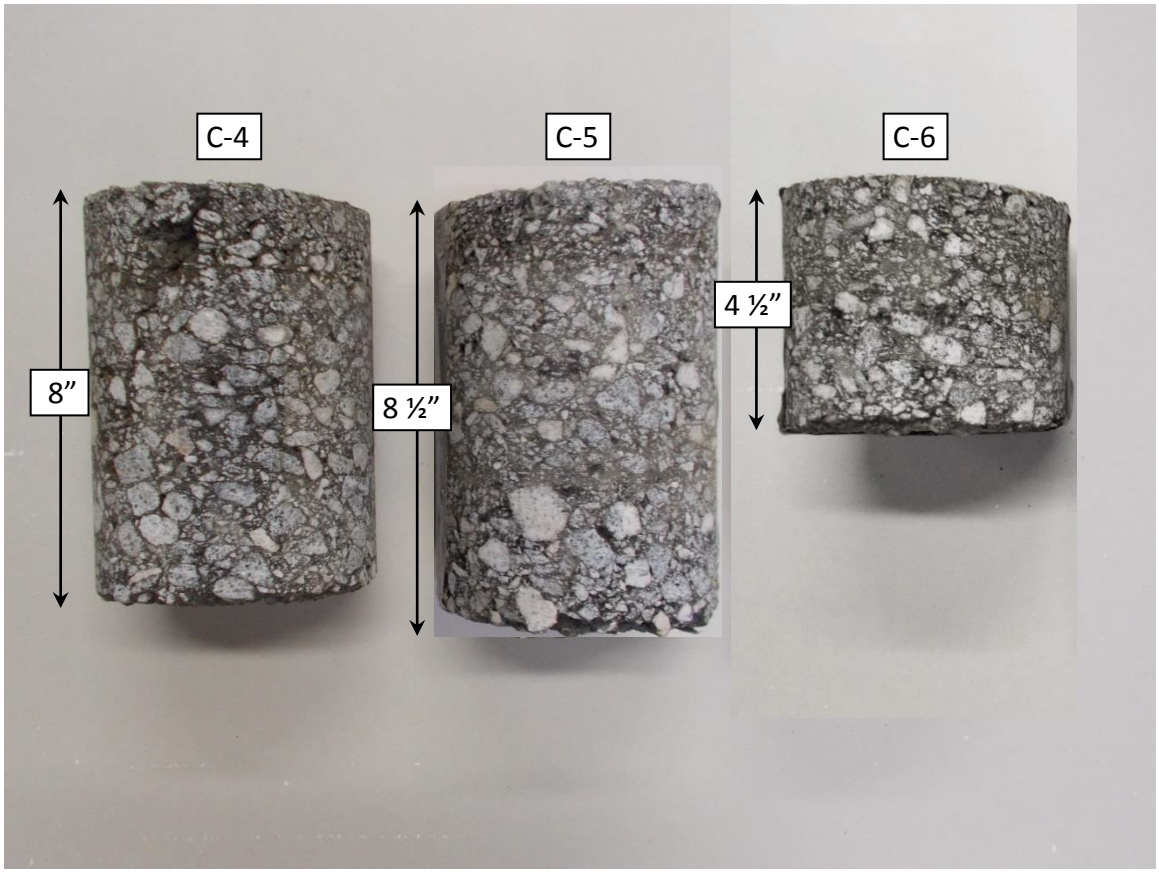
SR 49; 500 feet southwest of South Georgia Tech Parkway; Looking Southwest

SR 49; 600 feet southwest of South Georgia Tech Parkway; Looking Northeast

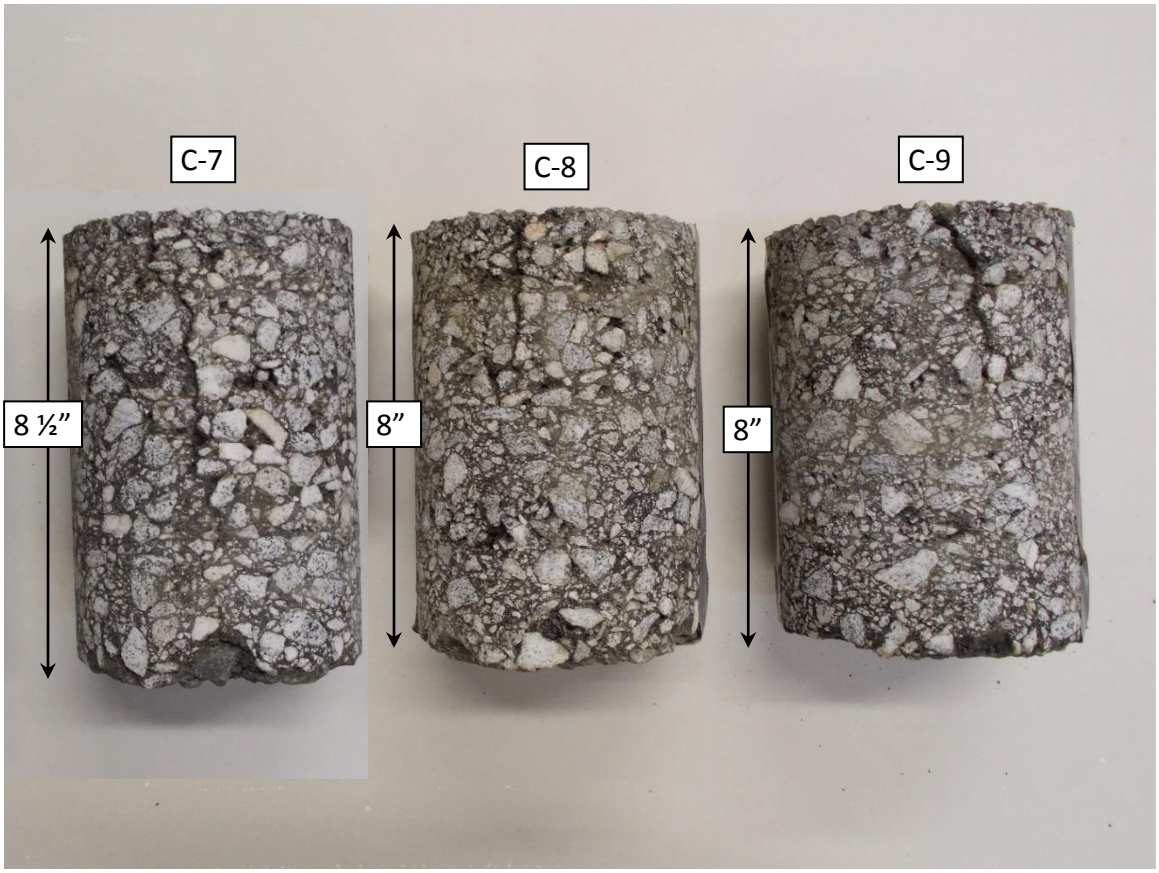
APPENDIX II



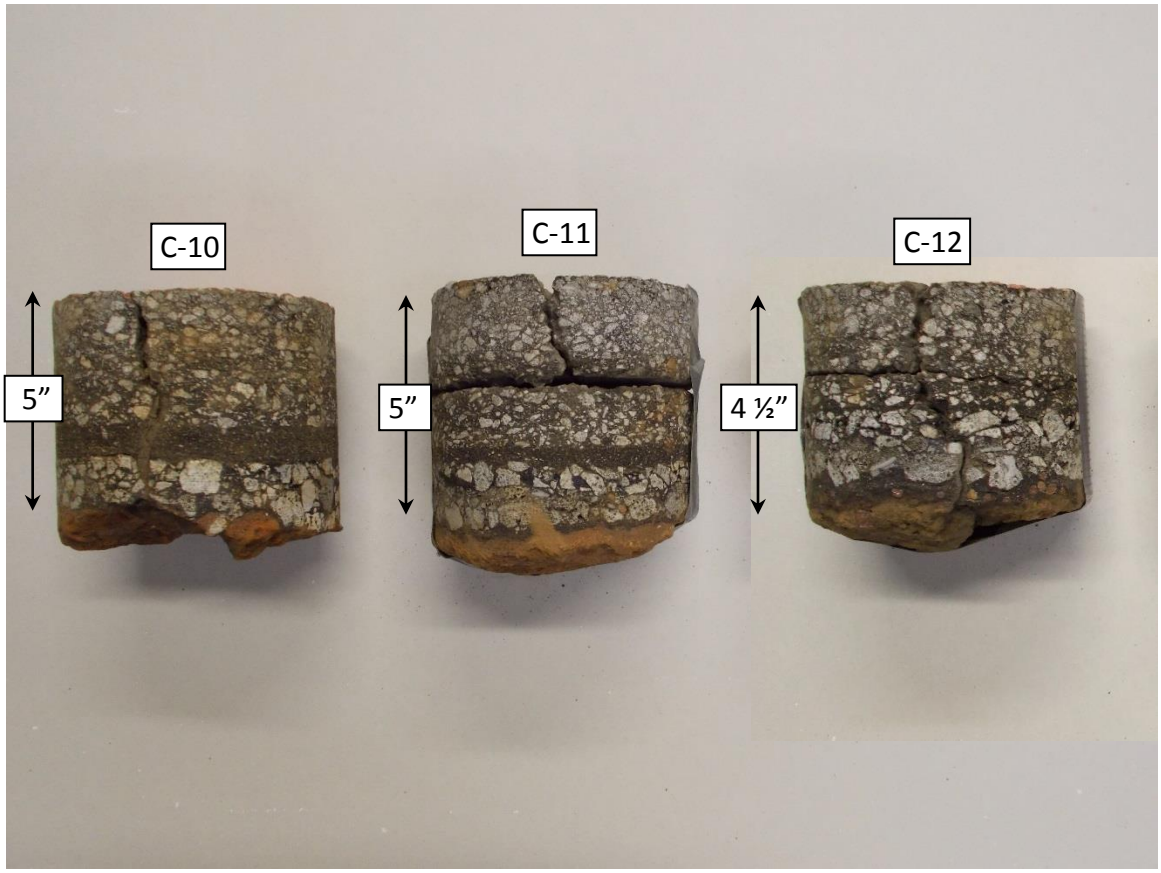
Core No.	Location	Station	Traffic Direction	Lane/Shoulder
C-1	S. Georgia Tech Pkwy	15+00	Eastbound	Lane
C-2		51+75	Eastbound	Lane
C-3		51+75	Eastbound	Shoulder



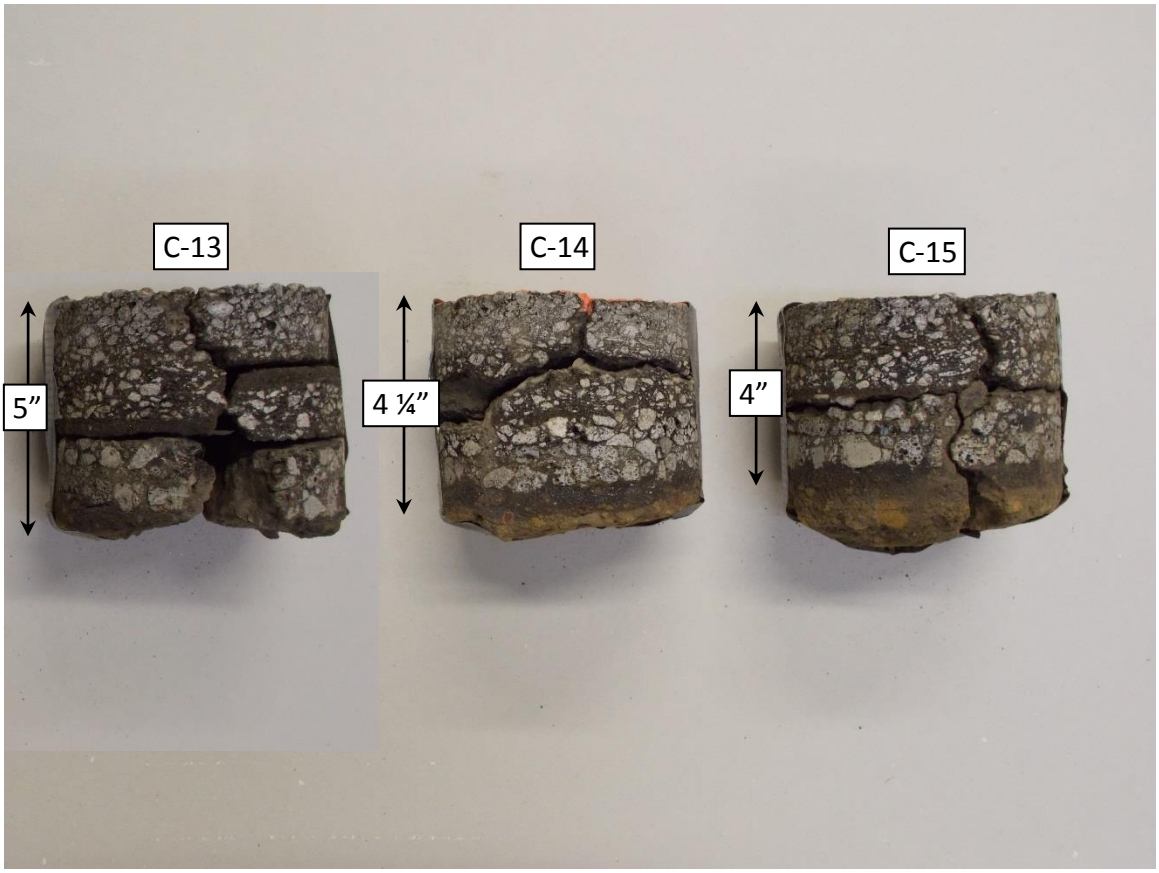
Core No.	Location	Station	Traffic Direction	Lane/Shoulder
C-4	S. Georgia Tech Pkwy	57+25	Westbound	Lane
C-5		88+50	Westbound	Lane
C-6		88+50	Westbound	Shoulder



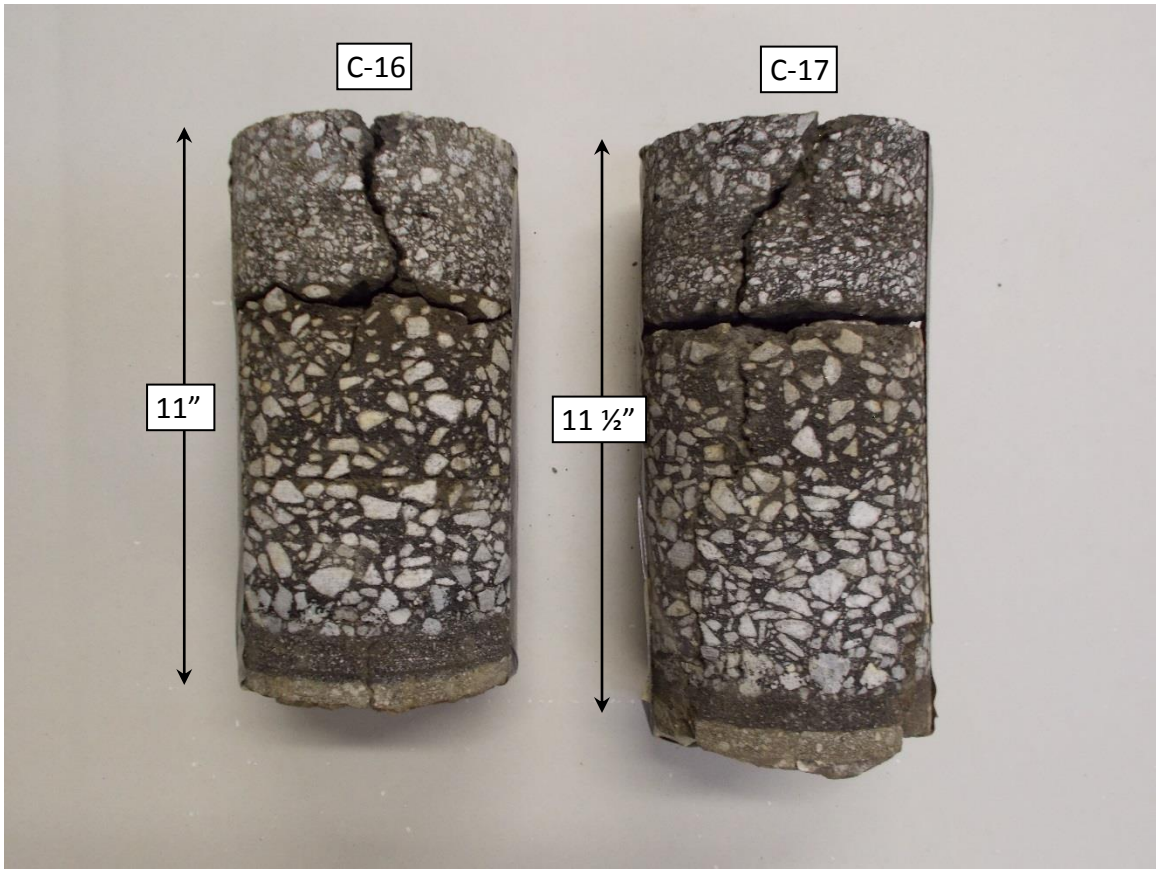
Core No.	Location	Station	Traffic Direction	Lane/Shoulder
C-7	S. Georgia Tech Pkwy	107+00	Eastbound	Lane
C-8		148+00	Westbound	Lane
C-9		153+90	Eastbound	Lane



Core No.	Location	Station	Traffic Direction	Lane/Shoulder
C-10	S. Georgia Tech Pkwy	181+00	Westbound	Lane
C-11		189+00	Eastbound	Lane
C-12		201+00	Eastbound	Lane



Core No.	Location	Station	Traffic Direction	Lane/Shoulder
C-13	S. Georgia Tech Pkwy	210+00	Westbound	Lane
C-14		251+00	Eastbound	Lane
C-15		258+00	Westbound	Lane



Core No.	Location	Station	Traffic Direction	Lane/Shoulder
C-16	SR 49; 1000 feet south of S. Georgia Tech Pkwy	--	Southbound	Lane
C-17	SR 49; 1000 feet north of S. Georgia Tech Pkwy	--	Southbound	Lane

APPENDIX III

Flexible Pavement Design Analysis

PI Number	0011438	**County(s)**	Sumter
Project Number	NA	**Design Name**	Station 10+00 to 175+60
Project Description	Improvements to South Georgia Tech Parkway		

Traffic Data (AADTs are one-way)						**Miscellaneous Data**	
Initial Design Year	2016	**Initial AADT, VPD**	2,130	**24 Hour Truck %**	30.00	**Lanes in one direction**	1
Final Design Year	2036	**Final AADT, VPD**	2,970	**SU Truck %**	27.00	**Curb & Gutter/Barrier**	No
		Mean AADT, VPD	2,550	**MU Truck %**	3.00	**Milling Depth (inches)**	0.00

Design Data					
Lane Distribution Factor (%)	100.00	**Soil Support Value**	3.50	**Single Unit ESAL**	0.40
Terminal Serviceability Index	2.50	**Regional Factor**	1.50	**Multiple Unit ESAL**	1.50
		User Defined 18-KIP ESAL	0.00	**Calculated 18-KIP ESAL**	0.51
Non-Standard Value Comment					

Design Loading (Calculated 18-KIP ESAL)					
Mean AADT, VPD	**LDF (%)**	**Vehicle Type**	**Volume (%)**	**ESAL Factor**	**Daily ESAL**
2,550	100.00	Single Unit Truck	27.00	0.40	276
		Multi Unit Truck	3.00	1.50	115
				Total Daily ESALs	391
				Total Design Period ESALs	2,854,300

Proposed Flexible Overlay Pavement Structure				
Course	**Material**	**Thickness (inches)**	**Structural Coefficient**	**Structural Value**
Overlay 1	12.5 mm Superpave	1.50	0.4400	0.66
Existing 1	Asphaltic Concrete	8.00	0.3000	2.40
Existing 2	Graded Aggregate Base	9.75	0.1600	1.56
Required SN	4.63	**Proposed pavement is 0.12% Underdesigned**	**Proposed SN**	4.62

Design Remarks	Overlay Design - Station 10+00 to 175+60

Prepared By 2/20/2014 4:35 PM

Bradford Drew, EIT / Sujit K. Bhowmik, PhD, PE **Date**

Recommended By

Consultant Design Phase Leader **Date**

Approved By

State Pavement Engineer **Date**

Filename: P:\3945 Improvements to S GA Tech Parkway\Working Data\Pavement Design.xlsm

GDOT Pavement Design Tool - Version 2.0

Flexible Pavement Design Analysis

PI Number	0011438	**County(s)**	Sumter
Project Number	NA	**Design Name**	Station 175+60 to 205+00
Project Description	Improvements to South Georgia Tech Parkway		

Traffic Data (AADTs are one-way)						**Miscellaneous Data**	
Initial Design Year	2016	**Initial AADT, VPD**	2,840	**24 Hour Truck %**	30.00	**Lanes in one direction**	2
Final Design Year	2036	**Final AADT, VPD**	3,930	**SU Truck %**	27.00	**Curb & Gutter/Barrier**	Yes
		Mean AADT, VPD	3,385	**MU Truck %**	3.00		

Design Data					
Lane Distribution Factor (%)	80.00	**Soil Support Value**	3.50	**Single Unit ESAL**	0.40
Terminal Serviceability Index	2.50	**Regional Factor**	1.50	**Multiple Unit ESAL**	1.50
		User Defined 18-KIP ESAL	0.00	**Calculated 18-KIP ESAL**	0.51
Non-Standard Value Comment					

Design Loading (Calculated 18-KIP ESAL)					
Mean AADT, VPD	**LDF (%)**	**Vehicle Type**	**Volume (%)**	**ESAL Factor**	**Daily ESAL**
3,385	80.00	Single Unit Truck	27.00	0.40	293
		Multi Unit Truck	3.00	1.50	122
				Total Daily ESALs	415
				Total Design Period ESALs	3,029,500

Proposed Flexible Full Depth Pavement Structure				
Course	**Material**	**Thickness (inches)**	**Structural Coefficient**	**Structural Value**
Course 1	12.5 mm Superpave	1.50	0.4400	0.66
Course 2	19 mm Superpave	2.00	0.4400	0.88
Course 3	25 mm Superpave	1.00	0.4400	0.44
		3.00	0.3000	0.90
Course 4	Graded Aggregate Base	10.00	0.1600	1.60

Required SN	4.66	**Proposed pavement is 3.89% Underdesigned**	**Proposed SN**	4.48

Design Remarks	Full-Depth Design - Station 175+60 to 205+00

Prepared By 2/20/2014 4:34 PM

Bradford Drew, EIT / Sujit K. Bhowmik, PhD, PE **Date**

Recommended By

Consultant Design Phase Leader **Date**

Approved By

State Pavement Engineer **Date**

Filename: P:\3945 Improvements to S GA Tech Parkway\Working Data\Pavement Design.xlsm

GDOT Pavement Design Tool - Version 2.0

Flexible Pavement Design Analysis

PI Number	0011438	**County(s)**	Sumter
Project Number	NA	**Design Name**	Station 205+00 to 270+00
Project Description	Improvements to South Georgia Tech Parkway		

Traffic Data (AADTs are one-way)						**Miscellaneous Data**	
Initial Design Year	2016	**Initial AADT, VPD**	2,840	**24 Hour Truck %**	30.00	**Lanes in one direction**	1
Final Design Year	2036	**Final AADT, VPD**	3,930	**SU Truck %**	27.00	**Curb & Gutter/Barrier**	No
		Mean AADT, VPD	3,385	**MU Truck %**	3.00		

Design Data					
Lane Distribution Factor (%)	100.00	**Soil Support Value**	3.50	**Single Unit ESAL**	0.40
Terminal Serviceability Index	2.50	**Regional Factor**	1.50	**Multiple Unit ESAL**	1.50
		User Defined 18-KIP ESAL	0.00	**Calculated 18-KIP ESAL**	0.51
Non-Standard Value Comment					

Design Loading (Calculated 18-KIP ESAL)					
Mean AADT, VPD	**LDF (%)**	**Vehicle Type**	**Volume (%)**	**ESAL Factor**	**Daily ESAL**
3,385	100.00	Single Unit Truck	27.00	0.40	366
		Multi Unit Truck	3.00	1.50	153
				Total Daily ESALs	519
				Total Design Period ESALs	3,788,700

Proposed Flexible Full Depth Pavement Structure				
Course	**Material**	**Thickness (inches)**	**Structural Coefficient**	**Structural Value**
Course 1	12.5 mm Superpave	1.50	0.4400	0.66
Course 2	19 mm Superpave	2.00	0.4400	0.88
Course 3	25 mm Superpave	1.00	0.4400	0.44
		3.00	0.3000	0.90
Course 4	Graded Aggregate Base	10.00	0.1600	1.60

Required SN	4.82	**Proposed pavement is 7.02% Underdesigned**	**Proposed SN**	4.48

Design Remarks	Full-Depth Design - Station 205+00 to 270+00

Prepared By 2/20/2014 4:34 PM

Bradford Drew, EIT / Sujit K. Bhowmik, PhD, PE **Date**

Recommended By

Consultant Design Phase Leader **Date**

Approved By

State Pavement Engineer **Date**

Filename: P:\3945 Improvements to S GA Tech Parkway\Working Data\Pavement Design.xlsm

GDOT Pavement Design Tool - Version 2.0

Flexible Pavement Design Analysis

PI Number	0011438	**County(s)**	Sumter
Project Number	NA	**Design Name**	SR 49 Roundabout Approach
Project Description	Improvements to South Georgia Tech Parkway		

Traffic Data (AADTs are one-way)						**Miscellaneous Data**	
Initial Design Year	2016	**Initial AADT, VPD**	4,000	**24 Hour Truck %**	10.00	**Lanes in one direction**	1
Final Design Year	2036	**Final AADT, VPD**	5,400	**SU Truck %**	4.50	**Curb & Gutter/Barrier**	Yes
		Mean AADT, VPD	4,700	**MU Truck %**	5.50	**Milling Depth (inches)**	1.00

Design Data					
Lane Distribution Factor (%)	100.00	**Soil Support Value**	3.50	**Single Unit ESAL**	0.40
Terminal Serviceability Index	2.50	**Regional Factor**	1.50	**Multiple Unit ESAL**	1.50
		User Defined 18-KIP ESAL	0.00	**Calculated 18-KIP ESAL**	1.01
Non-Standard Value Comment					

Design Loading (Calculated 18-KIP ESAL)					
Mean AADT, VPD	**LDF (%)**	**Vehicle Type**	**Volume (%)**	**ESAL Factor**	**Daily ESAL**
4,700	100.00	Single Unit Truck	4.50	0.40	85
		Multi Unit Truck	5.50	1.50	388
				Total Daily ESALs	473
				Total Design Period ESALs	3,452,900

Proposed Flexible Overlay Pavement Structure				
Course	**Material**	**Thickness (inches)**	**Structural Coefficient**	**Structural Value**
Overlay 1	12.5 mm Superpave	1.50	0.4400	0.66
Overlay 2	19 mm Superpave	2.00	0.4400	0.88
Existing 1	Asphaltic Concrete	11.00	0.3000	3.30
Required SN	4.76	**Proposed pavement is 1.72% Overdesigned**	**Proposed SN**	4.84

Design Remarks	SR 49 Roundabout Approach Overlay Design

Prepared By 3/26/2014 11:58 AM

Bradford Drew, EIT / Sujit K. Bhowmik, PhD, PE **Date**

Recommended By

Consultant Design Phase Leader **Date**

Approved By

State Pavement Engineer **Date**

Filename: P:\3945 Improvements to S GA Tech Parkway\Working Data\Pavement Design.xlsm

GDOT Pavement Design Tool - Version 2.0

MEETING MINUTES

Meeting Date	February 27, 2014
Meeting Time	10:30 am
Meeting Location	South Georgia Technical Collage – Americus, GA
Facilitator	Frank Whitaker
Minutes Prepared By:	Tim Lewis – Baker
Topic	South Georgia Tech Parkway Improvements

Attendees	Representing	Email Address
Shrujal Amin	GDOT/TIA	Samin@dot.ga.gov
Kelvin Mullins	GDOT/TIA	Kemullins@dot.ga.gov
Patti Cullen	River Valley RC	pcullen@rivervalleyrc.org
Gerald Mixon	River Valley RC	gmixon@rivervalleyrc.org
Clay Jones	Sumter Co. Commissioner	jonesbuildersinc@att.net
Mike Sudduth	Sumter Co. P & Z	msudduth@sumtercountyga.us
Todd Reaves	Sumter Co. P.W.	treaves@sumtercountyga.us
Frank Whitaker	Sumter Co. P.W.	fwhitaker@sumtercountyga.us
Jackie Bryce	Ga. Intl/Star Racing	Jackie@starracing.com
Don Smith	South GA Tech	dsmith@southgatech.edu
Bill Twomey	Sumter Co. Comm. (Admin)	btwomey@sumtercountyga.us
Gary Harrell	Harrell & Jackson	gharrell@harrelljacksoninc.com
Terrell Templin	Am.–Sum. Airport Authority	Templin@soweg.net
Randy Howard	Sumter Co. BOC	Rhoward.district4@yahoo.com
Wally Summers	SGTC	wsummers@southgatech.edu
Barbara Grogan	Am.Sum. Payroll Dev. Auth.	bgrogan@aspda.com
Rick Strickland	Baker	Rick.strickland@mbakercorp.com
Tim Lewis	Baker	TJLewis@mbakercorp.com

South Georgia Tech Parkway is broken into three different segments, and four different alternates were given for improving the intersection of South Georgia Tech Parkway at S.R. 49.

I. **Segment 1: Between U.S. 19 and Norfolk Southern railroad tracks**
   - The proposed construction for this segment includes overlaying the existing travel lanes and widening the existing paved shoulders from 2-ft to 6.5-ft to meet the current GDOT standards while also providing bike lanes.
   - The pavement in this segment is in good shape which is the reason the existing travel lanes do not need to be reconstructed.
   - If the project cost becomes an issue it may be possible to save money by not overlaying the existing travel lanes.
   - It was asked if existing slope failures will be fixed with this project. More information is needed and the consultant will evaluate ways to mitigate the issues found that may be able to fit within the parameters of the approved project description.
   - Left turn lanes are being added at the Bumphead Rd, Martin Marietta St, and Old Andersonville Road intersections.
   - Improvements through the segment will be ended at the railroad right of way.
   - It was asked by several attendees if the proposed turn lanes at Old Andersonville can be extended through the existing railroad crossing. This is likely not possible due to the TIA time and economic constraints of the project. Coordination with the railroad is being avoided due to the negative impacts to the schedule and budget that would result.

II. **Segment 2: Between the Norfolk Southern railroad tracks and the approximate eastern property limit of the proposed Americus Motorsports Complex**

- The proposed construction for this segment consists of three lanes with two auxiliary (right turn) lanes of full depth pavement and urban shoulders including curb and gutter and sidewalk.
- The lane configuration consists of a center turn lane, a through lane in each direction, and a right turn lane in each direction.
- Because of its poor condition, the existing pavement will need to be reconstructed.
- The auxiliary lanes begin on the west at Basket Factory Drive and end on the east at the final opening for the proposed racetrack.
- The proposed driveway locations shown on the layout for the racetrack are subject to change, and the locations will be coordinated with the developer.
- The project does not include any lighting or landscaping.
- The existing right-of-way is approximately 60-ft and there is a jog in it in front of the school.
- Bike lanes from the previous and next segments will be looked at here. There are numerous striping options that will be looked at but they will likely end up sharing the auxiliary lanes with the motorists turning right.
- The design will try to avoid existing trees and lighting in front of the school, but the brick monuments may need to be relocated after the final design is complete.

III. **Segment 3: Between the approximate eastern property limit of the proposed Americus Motorsports Complex and S.R. 49**

- The proposed construction for this segment consists of three lanes of full depth pavement with standard rural shoulders including 6.5-ft paved shoulder widths which provide bike lanes.
- The lane configuration consists of a center turn lane and a through lane in each direction.
- Because of its poor condition, the existing pavement will need to be reconstructed.
- Widening is currently planned to be symmetrical but may need to be shifted a few feet to the north to avoid the airport.
- The first row of pecan trees will likely be lost due to the proposed construction.

IV. **S.R. 49 Intersection Alternate 1**

- This option keeps the existing alignments with widening on South Georgia Tech Parkway and New Era Road.
- The existing intersection does not meet the current GDOT standards.

V. **S.R. 49 Intersection Alternate 2**

- This option adjusts the intersection skews of S.R. 49 with District Line Road, South Georgia Tech Parkway, and New Era Road to meet the current GDOT standards.
- A turn lane on S.R. 49 was not considered because it is out of the scope of this project.
- Attendees said that this intersection has been looked at for 15-20 years now and asked if GDOT would do this intersection separately. They were told this would not become an additional GDOT project. Improvements should be handled in the TIA project.

VI. **S.R. 49 Intersection Alternate 3**

- This option aligns District Line Road with South Georgia Tech Parkway making a four way intersection with S.R. 49. The skew of New Era Road is also improved.
- A signal warrant will be looked at and if a signal is not warranted then stop signs will be placed at District Line Road and South Georgia Tech Parkway while S.R. 49 will continue in its current condition and not require a stop.

VII. **S.R. 49 Intersection Alternate 4**

- This option takes the alignment from Alternate 3 and adds a roundabout.
- Attendees were worried about trucks navigating the roundabout.

- It will be looked at if the schools sign with an airplane on top could possibly be put in the center island.
- Existing graves in the area will be avoided.
- Roundabouts are proven to have fewer accidents.
- There is concern that the added price for the roundabout will take away from the budget of the rest of the project.

VIII. Other Issues and Concerns

- There is another TIA project for District Line Road, and it may be possible to shift some of the scope from that and put into this project for the intersection improvements.
- Utilities are to be relocated in kind.
- Holding ponds for the project have not been identified yet, and it hasn't been determined if there are going to be any.
- There has been more truck traffic recently along South Georgia Tech Parkway.
- This project is being designed to get trucks out of downtown.
- This project is anticipated to go to construction in late 2015.
- The let date will be no later than December 2015.
- Construction is estimated to be approximately 18 months.
- There will be four big events a year at the new racetrack with every weekend having something.
- GDOT will begin right-of-way negotiations once there is a design in place.
- The widened paved shoulders aren't just for bikes, but are better for drivers and are safer.
- The best way for stakeholders to communicate is through Frank Whitaker.

Action Items:

• Shrujal Amin is to follow-up with Frank Whitaker in to get a consensus of the group.

• Frank Whitaker will communicate with the Stakeholders to determine a consensus on what the group wants for the intersection of SR 49.

Project Sheet

Project Number: RC08-000084 ***Project Name:*** Improvements to South Georgia Tech Parkway

GDOT ID: 0011438

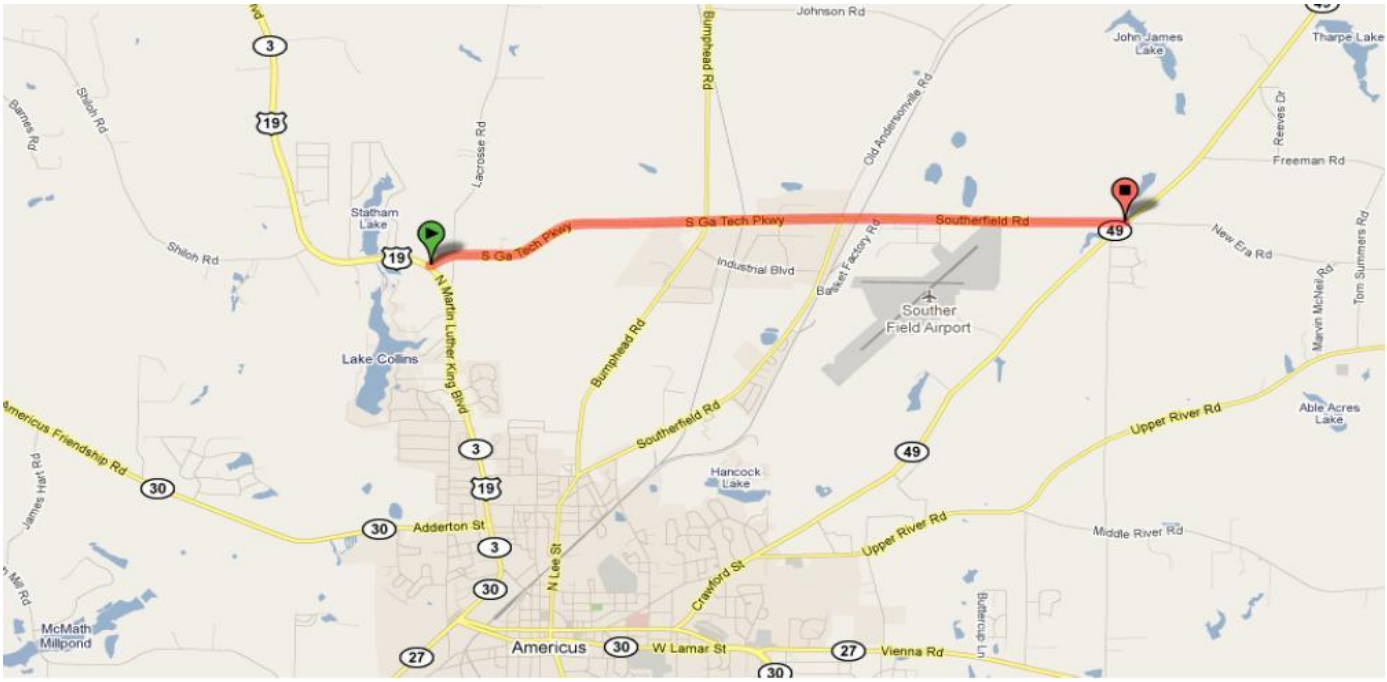
Project Description: This project consists of improvements on South Georgia Tech Parkway/Southerfield Road from Hwy 49 (east terminus) to US 19 (west terminus).

Regional Commission: River Valley

County: Sumter County

Phase	Total Project Cost	Total TIA Amount
PE	$1,000,000	$1,000,000
ROW	$3,000,000	$3,000,000
CST	$10,000,000	$10,000,000
UTL	$1,000,000	$1,000,000
Total	**$15,000,000**	**$15,000,000**

Comments (Please note all cost estimates are in 2011 dollars and actual costs for all phases at year of expenditure will be higher):

Public Benefit	Notes
Ensuring Safety and Security	This project would benefit the public by potentially reducing the incidence of crashes along this roadway segment, corridor, and/or intersection.
Maximizing the value of Georgia's Assets	This project could potentially maximize the full utility of an existing transportation facility(s). In some cases, bypasses will be necessary. Example benefits could be: mitigating congestion (e.g. operational improvements) and optimizing capital asset management (e.g. resurfacing, rehabilitation). The impacts would apply to this roadway segment, corridor, and/or intersection.
Supporting Economic Growth/Competitiveness	This project could assist in having a positive impact on the economic vitality for this region, and in some cases possibly for the entire state. Its impact could also be observed along the roadway segment, corridor, and/or intersection. Example benefits could be: improved access to jobs; improved travel times for drivers; increased lane capacity; improved efficiency and reliability for freight cargo/goods movement; providing border to border and inter-regional connectivity; and improve local connectivity to statewide transportation network.
Additional Benefits	Improvements to this corridor will make it much safer for vehicular, pedestrian, bicycle and truck traffic. Should reduce heavy truck traffic in historic downtown Americus. Would facilitate additional expected traffic from Inland Port opening in Crisp County. Will greatly facilitate the development of Star Racing Race Track near South Ga. Technical College. Commodity and raw materials movement would be enhanced. Tourism industries would benefit as well as accessibility to recreation and historic sites. Site of National Historic Site – Andersonville. Widening will allow for much safer bicycling and pedestrian passage on the roadway. Facilitate Rail traffic from Inland Port in Cordele.

Project Location