

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

Project Type: Widening
GDOT District: 5
Federal Route Number: N/A

P.I. Number: 0008276
County: Chatham
State Route Number: N/A

Original project was for intersection improvements of Gulfstream Road at Robert B. Miller Road. Per request of Chatham County and Gulfstream Aviation, the scope of the project was increased to include widening of both Gulfstream Road and Robert B. Miller Road from two lanes to three lanes (center two-way turn lane)

Submitted for approval: (email to "Concept Reports"; delete any inapplicable signature lines)

S. Sajid Iqbal

S. Sajid Iqbal, P.E., PARSONS

Consultant Designer and Firm or GDOT Concept/Design Phase Office Head & Office

12 19 11

DATE

Bobby Hilliard

Bobby Hilliard, P.E., State Program Delivery Engineer

Office Head (GDOT Office of Program Delivery)

12/20/2011

DATE

Brent Moseley

Brent Moseley

GDOT Project Manager

12-19-11

DATE

Recommendation for approval:

*Glenn Bowman **

State Environmental Administrator (recommendation required)

1-27-2012

DATE

*Kathy Zahul **

State Traffic Engineer (if applicable - recommendation required for roundabout)

1-31-2012

DATE

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

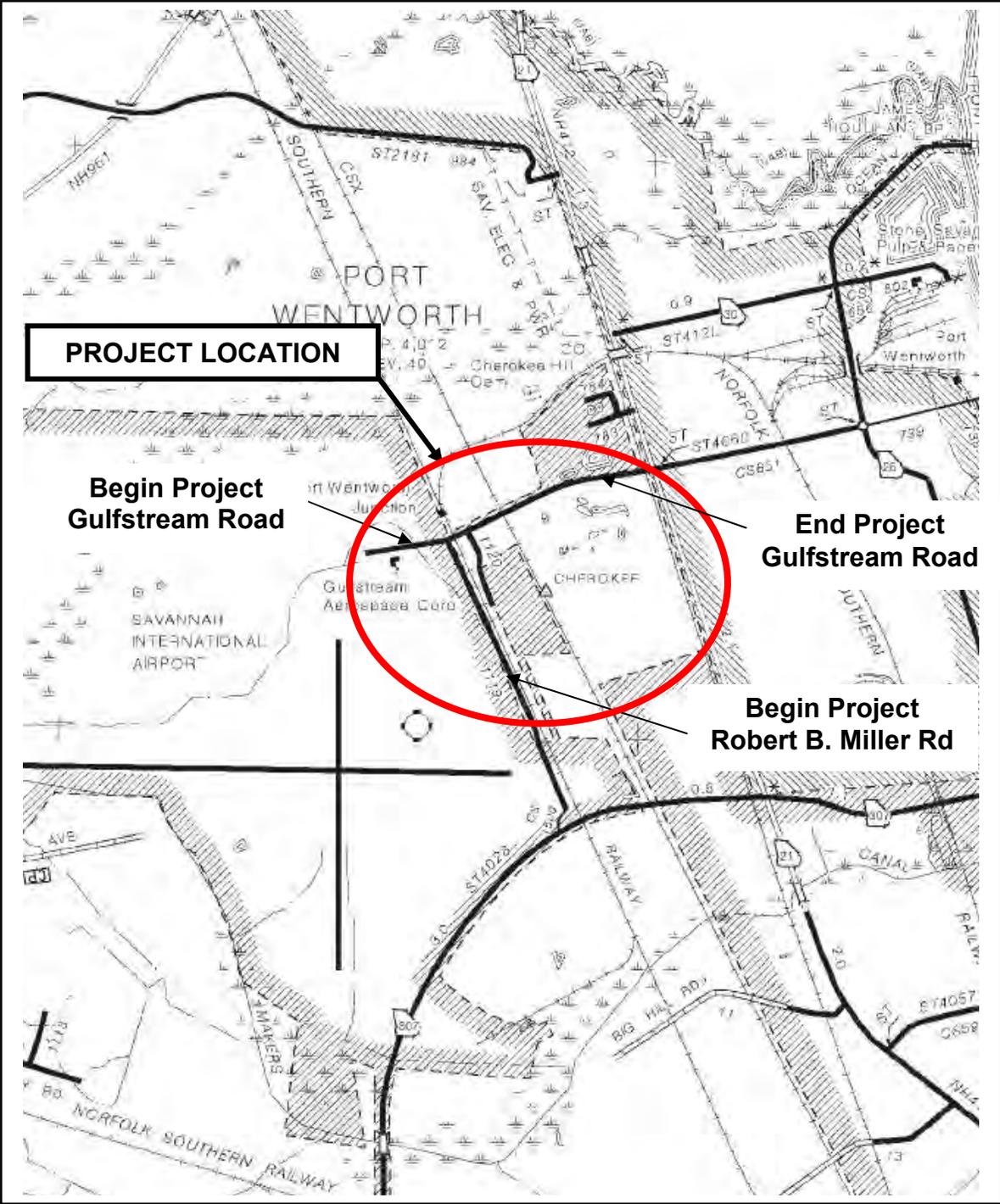
*Mertz Kaycee for Cindy Vandyke **

State Transportation Planning Administrator (recommendation required)

2-1-2012

DATE

** Recommendation on file*



PROJECT LOCATION MAP
Project No. CSMLP-0008-00(276), P. I. No. 0008276
Gulfstream Road and Robert B. Miller Road Widening

PLANNING, APPROVED CONCEPT, & BACKGROUND DATA

Project Justification Statement:

Gulfstream Road/CR 9 and Robert B. Miller Road/CR 1119 are located in an urbanized area approximately seven miles northwest of central Savannah and on the eastern edge of the Savannah/Hilton Head International Airport. The land use within the project area is primarily industrial with artificial ponds, borrow pits, mixed pine and hardwood trees. The Gulfstream Aerospace Corporation facility located in the southwest quadrant of the intersection is one of the largest industrial facilities in Chatham County, and it is a major traffic generator within the project area. The Coastal State Prison located in the southeast quadrant of the intersection is another traffic generator within the project area.

Currently both Gulfstream Road/CR 9 and Robert B. Miller Road/CR 1119 are functionally classified as Urban Collector Roadways. Gulfstream Road is a two-way two-lane road with an exclusive eastbound right-turn lane at the intersection with Robert B. Miller Road. The posted speed limit is 35 miles per hour (mph) for both directions. Robert B. Miller Road is also a county road, and approaches Gulfstream Road from the South (SR 307), terminating at the intersection with Gulfstream Road. Robert B. Miller Road is a two-way two-lane road without exclusive turn lanes at the intersection with Gulfstream Road, and the posted speed limit is 40 mph for both directions. There are two existing at-grade railroad crossings on Gulfstream Road including Norfolk Southern Railroad (NSR) and CSX Railroad, located approximately 140 feet and 1,250 feet east of the Robert B. Miller Road intersection, respectively.

Both Gulfstream Road and Robert B. Miller Road become congested during peak hours, especially during shift changes at both the Gulfstream facility and the Coastal State Prison, located southeast of the intersection. Based on the traffic volume forecasts and the large turning movements, an already heavily congested area is expected to worsen. In a letter dated December 12, 2005, the Commissioner of the Georgia Department of Transportation stated that the Department would cooperate with Chatham County with their economic development needs at this intersection. So, this project was added to the GDOT work program on May 1, 2006. On February 7, 2007, the Commissioner stated that there would no longer be County involvement and the project would be programmed and let by the State Department of Transportation.

Additionally, by the year 2035, roadway level-of-service on Gulfstream Road and Robert B. Miller Road is projected to decline to near failing conditions and multiple intersection approaches in the project area are projected to operate at LOS "D", "E", and "F". This capacity analysis indicates unacceptable level of congestion as defined by performance measures in the "2035 Statewide Transportation Plan". Past crash rates in the project area range from 349 to 649 crashes per 100 million vehicle miles (MVM). Therefore, there exists a need to improve both Gulfstream Road and Robert B. Miller Road in order to accommodate future traffic growth due to industrial and airport activity, improve the operation of the intersection at Gulfstream Road and Robert B. Miller Road, and to reduce the frequency and severity of crashes. The proposed project limits along Gulfstream Road both east and west end and along Robert B. Miller Road at north and south end will meet the need and purpose of the project.

Description of the approved concept:

The intersection of Gulfstream Road at Robert B. Miller Road is located northwest of Savannah in Chatham County. The project begins 872 feet west of the intersection along Gulfstream Road and extends to 753 feet east of the intersection. Along Robert Miller Jr. Road, the project extends to 1134 feet south of the intersection.

The project included the addition of an exclusive left-turn lane to westbound approach of Gulfstream Road, the extension of the existing right-turn lane on eastbound approach of Gulfstream Road, conversion of the existing northbound lane to an exclusive left-turn lane and the addition of an exclusive right-turn lane to northbound approach of Robert B. Miller Road. The existing traffic signal will be upgraded as well.

PDP Classification: Major Minor

Federal Oversight: Full Oversight Exempt ^{EXP} State Funded Other

Projected Traffic ADT as shown in the approved Concept Report:

<u>Gulfstream Road/CR 9</u>	
Open Year (2014): 14,580	Design Year (2034): 19,340
<u>Robert Miller Road/CR 1119</u>	
Open Year (2014): 10,140	Design Year (2034): 13,200

Updated Traffic ADT:

<u>Gulfstream Road/CR 9</u>	
Open Year (2015): 10,350	Design Year (2035): 14,000
<u>Robert Miller Road/CR 1119</u>	
Open Year (2015): 7,150	Design Year (2035): 9,650

Functional Classification (Mainline): Urban Collector Street

VE Study anticipated: No Yes Completed – Date: [Click here to enter a date](#)

PROPOSED REVISIONS

Approved Features	Proposed Features
<ul style="list-style-type: none"> • <u>Typical Section</u> <i>C.R. 9/Gulfstream Road:</i> One 12 foot wide lane in each direction with 6.5 foot paved shoulder. <i>C.R. 1119/Robert B. Miller Road:</i> One 12 foot wide lane in each direction with 6.5 foot paved shoulder. 	<ul style="list-style-type: none"> • <u>Typical Section</u> <i>C.R. 9/Gulfstream Road:</i> One 12 foot wide lane in each direction with 14-foot two way turn lane and 4-foot paved outside shoulder. <i>C.R. 1119/Robert B. Miller Road:</i> One 12 foot wide lane in each direction with 4-foot paved outside shoulder.

Approved Features	Proposed Features
<ul style="list-style-type: none"> • <u>Project Termini</u> The project begins 872 feet west of the intersection along Gulfstream Road and extends to 753 feet east of the intersection. Along Robert Miller Jr. Road, the project extends to 1134 feet south of the intersection. • <u>Changes in right-of-way limits which may affect the analyses of historic resources, endangered species, air quality, or noise studies</u> <ol style="list-style-type: none"> a) The approved concept resulted in the right-of-way impacts to two commercial/ industrial properties; the Savannah Airport Commission and Gulfstream Aerospace Corporation. This resulted in total right-of-way taking of 23,250 SF. b) The approved concept also caused temporary impact to the Historic Norfolk Southern Railroad property in the south-west quadrant. c) The approved concept did not impact any Archaeological resources, wetland or open waters, streams or their buffers. d) The approved concept required air quality and noise studies. 	<ul style="list-style-type: none"> • <u>Project Termini</u> This project will start 575 feet west of the existing intersection of Gulfstream Road and Robert B. Miller Road and continue east along Gulfstream Road for a distance of 4,200 feet to a point 3,625 feet east of the existing intersection with Robert B. Miller Road. Begin and end mile point on Gulfstream Road is 0.25 and 1.05 respectively. On Robert B. Miller Road, the project will begin 2,994 feet south of the existing intersection of Gulfstream Road and Robert B. Miller Road and continue north along Robert B. Miller Road up to the intersection. Begin and end mile point on Robert B. Miller Road is 0.57 and 0.00 respectively. • <u>Changes in right-of-way limits which may affect the analyses of historic resources, endangered species, air quality, or noise studies</u> <ol style="list-style-type: none"> a) The revised concept will result in the right-of-way impact of thirteen commercial/ industrial properties with total right-of-way taking of 171,062 SF. <ol style="list-style-type: none"> i. There will be impacts to the Savannah Airport Commission, Gulfstream Aerospace Corporation, and Bouy Hall Howard Enterprises properties along Robert B. Miller Road. ii. Additionally, there will be impacts to the following properties; Savannah Airport Commission, State of Georgia Coastal Prison, Southern Region Industrial Realty Inc., Duke Secured Financing, Duke Realty LTD Partnership, William Brothers Trucking Inc. Mayor & Aldermen of Savannah, Georgia Power Company, PSG Terminals LLC, and SAPP Capital Management LLC along Gulfstream Road. b) The revised concept also causes temporary impact to both Historic Norfolk Southern Railroad and Historic CSX Railroad property

Approved Features	Proposed Features
<p>• <u>Revised Alignment</u></p> <p>The approved concept includes intersection improvement of Gulfstream Road and Robert B. Miller Road with addition of an exclusive left-turn lane to westbound approach of Gulfstream Road, the extension of the existing exclusive right-turn lane on eastbound approach of Gulfstream Road. Robert B. Miller Road will be widened at the intersection with Gulfstream by converting the existing northbound lane to an exclusive left-turn lane and the addition of an exclusive right-turn lane to northbound approach of Robert Miller Jr. Road. Both Gulfstream Road and Robert B. Miller Road will maintain one lane in each direction.</p>	<p>along Gulfstream Road within in the project limits.</p> <p>c) The revised concept does not impact any Archaeological resources; however it impacts both wetland and open waters within the project limits.</p> <p>Based on the increased scope of improvement to be performed for the revised concept on both Gulfstream Road and Robert B. Miller Road, the project will require revised air quality and noise studies.</p> <p>• <u>Revised Alignment</u></p> <p>The revised concept includes intersection improvement of Gulfstream Road and Robert B. Miller Road with addition of an exclusive left-turn lane to westbound approach of Gulfstream Road and the extension of the existing exclusive right-turn lane on eastbound approach of Gulfstream Road. Robert B. Miller Road will be widened at the intersection with Gulfstream by converting the existing northbound lane to an exclusive left-turn lane and the addition of an exclusive right-turn lane to northbound approach of Robert B. Miller Road.</p> <p>Additionally, roundabouts will be added at two of the driveways along Robert B. Miller Road, the North entrance driveway to the Gulfstream facility and the South entrance driveway to the Gulfstream facility, near Bouy Hall Howard Enterprises, to accommodate eastbound left turn movements from the driveways and reducing the frequency and severity of crashes. The central entrance driveway to Gulfstream Aviation will not be converted into roundabout due to impact on open waters and its vegetative buffers and</p>

Approved Features	Proposed Features
<ul style="list-style-type: none"> • <u>Access Control</u> No access control issues were anticipated for the approved concept • <u>Controlling Criteria</u> No design exceptions or variances were anticipated for this project. 	<p>additional right-of-way impacts. WB-67 was considered as an appropriate design vehicle for the roundabout design. However, a design analysis for a larger vehicle than WB-67, which is occasionally used for delivery at Gulfstream Corporation, will be performed during Preliminary Design. Also, Robert B. Miller Road will be widened to accommodate an exclusive left turn lane for northbound traffic and an exclusive right turn lane for southbound traffic into the central driveway. Gulfstream Road will be widened to provide one through lane in each direction and a center turn lane.</p> <ul style="list-style-type: none"> • <u>Access Control</u> No access control issues are anticipated for the revised concept. • <u>Controlling Criteria</u> No design exceptions or variances are anticipated for this project.
<p>Reason for Change: <i>The original scope included the intersection improvements of Gulfstream Road at Robert B. Miller Road. Per request of Chatham County and Gulfstream Aviation, the scope of the project was increased to include widening of both Gulfstream Road and Robert B. Miller Road from two lanes to three lanes (center two-way turn lane)</i></p>	

ENVIRONMENTAL

Air Quality:

Is the project located in a PM 2.5 Non-attainment area?
 Is the project located in an Ozone Non-attainment area?

No Yes
 No Yes

Potential environmental impacts of proposed revision: The revised concept report recommends widening of Gulfstream Road from a two lane roadway to a three lane roadway for total length of 0.8 miles and Robert B. Miller Road will be improved for total length of 0.57 miles. Additionally two roundabouts will be constructed at the north and south entrance driveways to Gulfstream Aerospace Inc. from Robert B. Miller Road. This increased scope of improvement will temporarily impact additional historic resources of CSX Railroad compared to the approved concept. There are no anticipated archeological impacts; however, there will be impacts to ecological resources of wetlands and open waters due to the increased footprint and length of the project. In addition,

there are no anticipated significant effects to the environmental and/or project schedule due to proposed concept revision.

Have proposed revisions been reviewed by environmental staff? No Yes

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

Environmental impacts by section:

NEPA: *The environmental document needs to be reevaluated due to the proposed concept changes*

Ecology: *Additional surveys for protected species and waters of the US are required. The project will require USFWS Section 7 consultation due to suitable habitat for the federally protected wood stork in the project vicinity. There are no seasonal survey requirements that would affect the project schedule. Impacts to wetlands are estimated to be 0.05 ac. of permanent impact and 0.01 ac. of temporary impact.*

Archeology: *Additional surveys are required and have already been conducted. No archaeological sites were found.*

History: *Additional surveys are required and have already been conducted. No adverse impacts to historic resources are anticipated.*

Air & Noise: *Additional air and noise modeling is required to comply with current guidelines.*

Public Involvement: *Public outreach is not required or planned.*

PROJECT COST & ADDITIONAL INFORMATION

Updated Cost Estimate		Date of Estimate
Base Construction Cost:	\$ 5,334,877.31	01-30-12
Engineering and Inspection:	\$ 266,743.87	01-30-12
Liquid AC Adjustment:	\$ 323,777.85	01-30-12
<u>Total Construction Cost:</u>	<u>\$ 5,925,399.03</u>	<u>01-30-12</u>
Right-of-Way:	\$ 1,415,000.00	08-11-11
Utilities (reimbursable costs):	\$ 650,000.00	08-09-11
Environmental Mitigation:	NA	
TOTAL PROJECT COST:	\$ 7,990,399.03	01-30-12

Recommendation: Recommend that the proposed revision to the concept be approved for implementation.

Comments: Since roundabouts are proposed as part of improvements for this project, roundabout design peer review will be performed during preliminary design. Additionally, GDOT will enter into a lighting agreement with Local Government authority, where the local government will be responsible for paying of energy bills, operation and maintenance of lighting installed at the roundabout locations.

Attachments:

1. Sketch Map
2. Detailed Cost Estimates:
 - a. Construction including Engineering and Inspection.
 - b. Completed Fuel & Asphalt Price Adjustment forms.
 - c. Right-of-Way Cost Estimate.
 - d. Utility Cost Estimate.
3. Approved Need and Purpose Statement
4. Approved Concept Report.
5. Typical Sections.
6. Revised Concept Layouts.
7. Crash Analysis.
8. Traffic Diagrams.
9. Capacity analysis summary.
10. Roundabout Meeting Minutes.
11. Concept Team Meeting Minutes.

APPROVALS

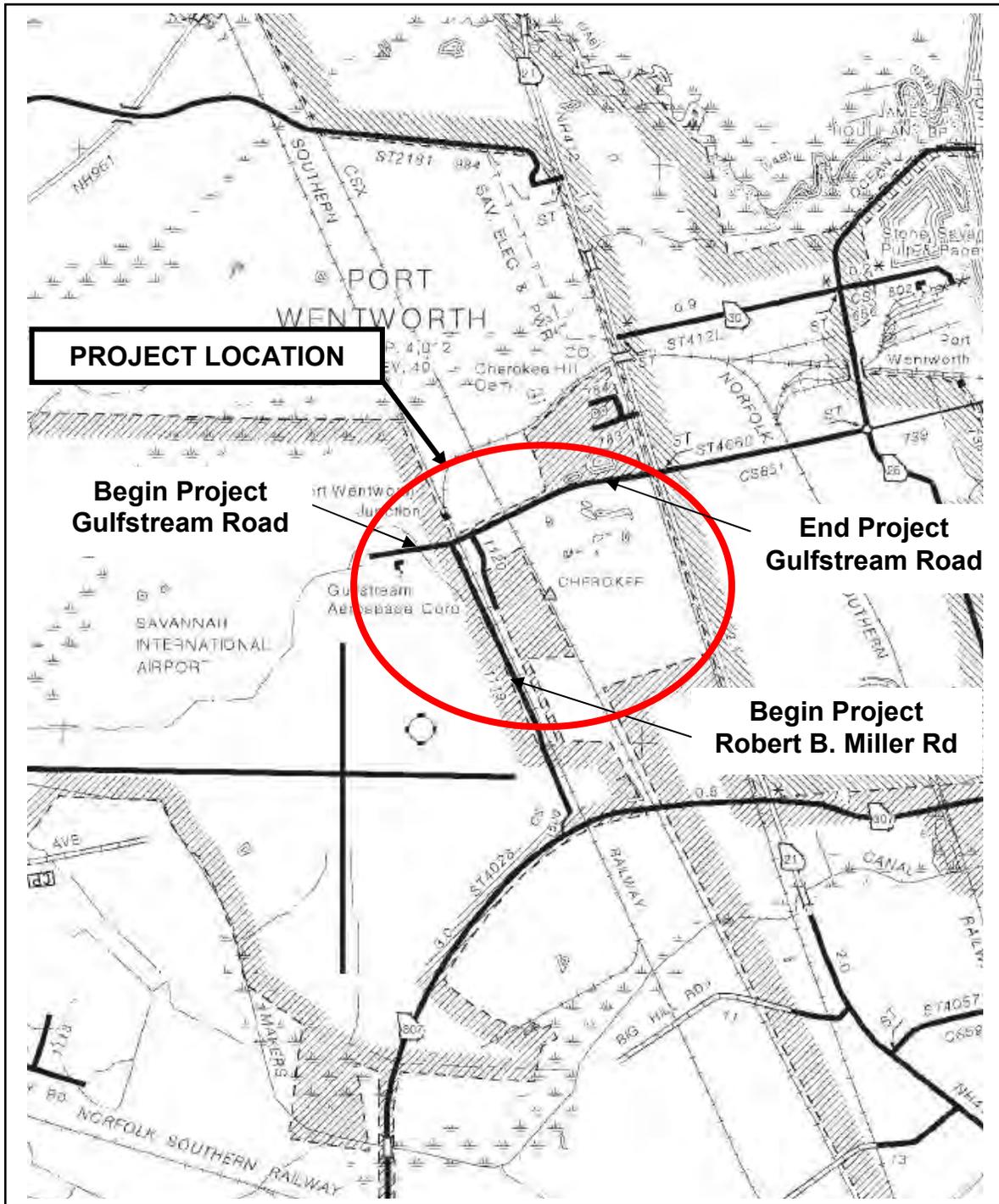
Exempt Projects

Concur: 
Director of Engineering

Approve: 
Chief Engineer

2-17-12
Date

ATTACHMENT 1
SKETCH MAP



PROJECT LOCATION MAP
Project No. CSMLP-0008-00(276), P. I. No. 0008276
Gulfstream Road and Robert B. Miller Road Widening

ATTACHMENT 2
DETAILED COST ESTIMATE

DEPARTMENT OF TRANSPORTATION STATE OF GEORGIA

INTERDEPARTMENT CORRESPONDENCE

FILE PROJECT No. , **OFFICE**

DATE

P.I. No.

FROM

TO Ronald E. Wishon, Project Review Engineer

SUBJECT REVISIONS TO PROGRAMMED COSTS

PROJECT MANAGER

MNGT LET DATE

MNGT R/W DATE

PROGRAMMED COST (TPro W/OUT INFLATION)

LAST ESTIMATE UPDATE

CONSTRUCTION \$

RIGHT OF WAY \$

UTILITIES \$

DATE

DATE

DATE

REVISED COST ESTIMATES

CONSTRUCTION* \$

RIGHT OF WAY \$

UTILITIES** \$

* Costs contain % Engineering and Inspection and % Construction Contingencies.

** Costs contain % contingency.

REASON FOR COST INCREASE

Scope revision from intersection improvement to widening project.

CONTINGENCY SUMMARY

Construction Cost Estimate:	\$ <input type="text" value="5,334,877.31"/>	(Base Estimate)
Engineering and Inspection:	\$ <input type="text" value="266,743.87"/>	(Base Estimate x <input type="text" value="5"/> %)
Construction Contingency:	\$ <input type="text" value="-----"/>	(Base Estimate x <input type="text" value="--"/> %)
		(The Construction Contingency is based on the Project Improvement Type in TPro.)
Total Fuel Adjustment	\$ <input type="text" value="-----"/>	(From attached worksheet)
Total Liquid AC Adjustment	\$ <input type="text" value="323,777.85"/>	(From attached worksheet)
Construction Total:	\$ <input type="text" value="5,925,399.03"/>	
Utility Cost Estimate:	\$ <input type="text" value="650,000.00"/>	
Utility Contingency:	\$ <input type="text" value="-----"/>	<input type="text" value="--"/> %
Utility Total:	\$ <input type="text" value="650,000.00"/>	

REIMBURSABLE UTILITY COST

Utility Owner	Reimbursable Cost
Georgia Power Transmission	100,000.00
Georgia Power Distribution	550,000.00
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Attachments

c: Genetha Rice-Singleton, State Program Control Administrator

STATE HIGHWAY AGENCY

DATE : 01/30/2012
PAGE : 1

JOB ESTIMATE REPORT

JOB NUMBER : 0008276 FN SPEC YEAR: 01
DESCRIPTION: GULFSTREAM ROAD AND ROBERT B. MILLER ROAD
 WIDENING AND INTERSECTION IMPROVEMENT PROJECT

ITEMS FOR JOB 0008276_FN

LINE	ITEM	ALT	UNITS	DESCRIPTION	QUANTITY	PRICE	AMOUNT
0005	206-0002		CY	BORROW EXCAV, INCL MATL	15000.000	8.34	125107.20
0010	210-0100		LS	GRADING COMPLETE - CSMLP-0008-00(276)	1.000	250000.00	250000.00
0015	310-1101		TN	GR AGGR BASE CRS, INCL MATL	29520.000	21.81	643859.54
0020	318-3000		TN	AGGR SURF CRS	2000.000	36.11	72229.44
0025	400-3130		TN	ASPH CONC 12.5 MM SP, GP1OR2, INCL PMBM&HL	3530.000	104.29	368143.70
0030	400-3605		TN	ASPH CONC 19MM SUPERPAVE GP1 OR 2 MOD	4706.000	80.34	378080.04
0035	402-3121		TN	RECYL AC 25MM SP, GP1/2, BM&HL	9412.000	70.52	663734.24
0040	402-1812		TN	RECYL AC LEVELING, INC BM&HL	1000.000	72.33	72330.00
0045	413-1000		GL	BITUM TACK COAT	4500.000	2.74	12330.00
0050	627-1000		SF	MSE WALL FACE, 0 - 10 FT HT, WALL NO - CSMLP-0008-00(276)	2500.000	43.61	109041.08
0055	432-0350		SY	MICRO-MILL ASPH CONC PVMT, VARB DEPTH	49284.000	1.79	88218.36
0060	446-1100		LF	PVMT REF FAB STRIPS, TP2, 18 INCH WIDTH	14476.000	3.80	55025.16
0065	441-6222		LF	CONC CURB & GUTTER/ 8"X30"TP2	1000.000	16.96	16961.38
0070	441-0204		SY	PLAIN CONC DITCH PAVING, 4 IN	2000.000	44.64	89280.72
0075	441-0740		SY	CONC MEDIAN, 4 IN	1000.000	35.90	35905.83
0080	441-0104		SY	CONC SIDEWALK, 4 IN	500.000	59.42	29711.21
0085	500-9999		CY	CL B CONC, BASE OR PVMT WIDEN	250.000	218.17	54544.75
0090	634-1200		EA	RIGHT OF WAY MARKERS	50.000	92.41	4620.55
0095	441-0050		SY	CONC SLOPE DRAIN	250.000	59.57	14894.86
0100	441-0303		EA	CONC SPILLWAY, TP 3	10.000	2342.31	23423.17
0105	550-1180		LF	STM DR PIPE 18", H 1-10	1000.000	37.95	37958.96
0110	550-1240		LF	STM DR PIPE 24", H 1-10	500.000	48.81	24405.68
0111	550-2180		LF	SIDE DR PIPE 18", H 1-10	2000.000	26.35	52711.84
0112	550-2240		LF	SIDE DR PIPE 24", H 1-10	1500.000	35.74	53610.75
0115	550-4218		EA	FLARED END SECT 18 IN, ST DR	20.000	649.97	12999.49
0120	550-4224		EA	FLARED END SECT 24 IN, ST DR	10.000	734.75	7347.57
0125	668-1100		EA	CATCH BASIN, GP 1	20.000	2215.38	44307.63
0130	668-1110		LF	CATCH BASIN, GP 1, ADDL DEPTH	10.000	236.31	2363.11
0135	668-2100		EA	DROP INLET, GP 1	50.000	2380.66	119033.26
0140	668-2110		LF	DROP INLET, GP 1, ADDL DEPTH	25.000	263.37	6584.49
0145	668-4300		EA	STORM SEW MANHOLE, TP 1	20.000	2227.19	44543.83
0150	668-4311		LF	ST SEW MANHOLE, TP 1, A DEP, CL 1	10.000	272.90	2729.04
0155	163-0232		AC	TEMPORARY GRASSING	15.000	555.39	8330.85
0160	163-0240		TN	MULCH	216.000	272.88	58942.66
0165	163-0300		EA	CONSTRUCTION EXIT	12.000	1772.68	21272.23
0170	163-0503		EA	CONSTR AND REMOVE SILT CONTROL GATE, TP 3	20.000	544.40	10888.15
0175	163-0541		EA	CONSTR & REM ROCK FILTER DAMS	25.000	308.81	7720.25
0180	165-0110		EA	MAINT OF ROCK FILTER DAM	25.000	152.17	3804.25

STATE HIGHWAY AGENCY

DATE : 01/30/2012

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JOB ESTIMATE REPORT

Item No	Code	Description	Estimate	Actual	Balance
0185	163-0527	EA CNST/REM RIP RAP CKDM,STN P RIPRAP/SN BG	250.000	227.93	56982.50
0190	165-0050	LF MAINT OF SILT RETENTION BARRIER	5000.000	8.61	43069.80
0195	170-2000	LF STAKED SILT RETENTION BARRIER	5000.000	6.76	33811.80
0200	163-0529	LF CNST/REM TEMP SED BAR OR BLD STRW CK DM	5000.000	3.43	17150.00
0205	165-0071	LF MAINT OF SEDIMENT BARRIER - BALED STRAW	2500.000	0.90	2250.00
0210	163-0540	EA CONST AND REM RETROFIT, STA NO - CSMLP-0008-00(276)	10.000	980.21	9802.10
0215	165-0095	EA MAINT OF RETROFIT, STA NO - CSMLP-0008-00(276)	10.000	516.95	5169.50
0220	163-0550	EA CONS & REM INLET SEDIMENT TRAP	75.000	266.20	19965.05
0225	165-0087	EA MAINT OF SILT CONTROL GATE, TP 3	20.000	136.80	2736.17
0230	165-0030	LF MAINT OF TEMP SILT FENCE, TP C	11250.000	1.61	18217.58
0235	165-0041	LF MAINT OF CHECK DAMS - ALL TYPES	1250.000	2.12	2650.00
0240	165-0101	EA MAINT OF CONST EXIT	12.000	973.18	11678.16
0245	165-0105	EA MAINT OF INLET SEDIMENT TRAP	75.000	77.33	5800.45
0250	167-1000	EA WATER QUALITY MONITORING AND SAMPLING	6.000	993.07	5958.44
0255	167-1500	MO WATER QUALITY INSPECTIONS	24.000	1484.57	35629.86
0260	643-8200	LF BARRIER FENCE (ORANGE), 4 FT	14476.000	2.32	33684.64
0265	171-0030	LF TEMPORARY SILT FENCE, TYPE C	22500.000	3.89	87737.18
0270	603-2181	SY STN DUMPED RIP RAP, TP 3, 18"	2025.000	45.13	91406.09
0275	603-7000	SY PLASTIC FILTER FABRIC	2025.000	6.63	13436.46
0280	700-6910	AC PERMANENT GRASSING	20.000	831.06	16621.21
0285	700-7000	TN AGRICULTURAL LIME	40.000	56.70	2268.15
0290	700-8000	TN FERTILIZER MIXED GRADE	16.000	411.22	6579.55
0295	700-8100	LB FERTILIZER NITROGEN CONTENT	1936.000	3.32	6429.92
0300	636-1020	SF HWY SGN,TP1MAT,REFL SH TP3	552.000	15.51	8565.05
0305	636-1033	SF HWY SIGNS, TP1MAT,REFL SH TP 9	399.000	20.47	8170.01
0310	636-1029	SF HWY SGN,TP2 MATL,REFL SH TP 3	36.000	11.70	421.53
0315	636-2070	LF GALV STEEL POSTS, TP 7	1827.000	8.97	16392.96
0320	636-2080	LF GALV STEEL POSTS, TP 8	210.000	8.53	1791.96
0325	653-0100	EA THERM PVMT MARK, RR/HWY X SYM	21.000	360.08	7561.78
0330	653-0210	EA THERM PVMT MARK, WORD, TP 1	24.000	99.80	2395.25
0335	653-0110	EA THERM PVMT MARK, ARROW, TP 1	12.000	93.13	1117.59
0340	653-0120	EA THERM PVMT MARK, ARROW, TP 2	99.000	62.04	6142.60
0345	653-1501	LF THERMO SOLID TRAF ST 5 IN, WHI	28860.000	0.29	8645.01
0350	653-1502	LF THERMO SOLID TRAF ST, 5 IN YEL	17310.000	0.31	5371.47
0355	653-1704	LF THERM SOLID TRAF STRIPE,24",WH	468.000	3.31	1550.80
0360	653-1804	LF THERM SOLID TRAF STRIPE, 8",WH	5895.000	2.12	12531.65
0365	653-3501	GLF THERMO SKIP TRAF ST, 5 IN, WHI	19635.000	0.16	3157.31
0370	653-6004	SY THERM TRAF STRIPING, WHITE	3846.000	3.74	14411.62
0375	653-6006	SY THERM TRAF STRIPING, YELLOW	1185.000	2.92	3466.76
0380	654-1001	EA RAISED PVMT MARKERS TP 1	225.000	3.70	832.54
0385	654-1003	EA RAISED PVMT MARKERS TP 3	1572.000	4.66	7326.68
0390	647-1000	LS TRAF SIGNAL INSTALLATION NO - CSMLP-0008-00(276)	1.000	125900.00	125900.00
0395	631-8000	LS TESTING	1.000	6460.00	6460.00
0400	631-8500	LS TRAINING	1.000	1250.00	1250.00
0405	636-1041	SF HWY SIGNS,TP 2MAT,REFL SH TP 9	93.000	28.76	2675.46
0410	639-2001	LF STEEL WIRE STRAND CABLE, 1/4"	1500.000	2.65	3985.13
0415	639-4004	EA STRAIN POLE, TP IV	4.000	5181.20	20724.82

STATE HIGHWAY AGENCY

DATE : 01/30/2012
PAGE : 3

JOB ESTIMATE REPORT

0420	615-1200	LF	DIRECTIONAL BORE - 3"	515.000	21.01	10822.25
0425	682-6233	LF	CONDUIT, NONMETL, TP 3, 2 IN	600.000	8.35	5015.98
0430	682-6120	LF	CONDUIT, RIGID, 2 IN	100.000	10.02	1002.16
0435	927-0300	EA	2070 MNT SPRD SPEC WIRE. TRANS. W/ RS	1.000	3483.99	3484.00
0440	927-0500	EA	DIRECTIONAL RADIO ANT AND CONNECT CABLE	2.000	1084.97	2169.95
0445	927-0700	EA	ANTENNA POWER DIVIDER	1.000	410.00	410.00
0450	927-0800	EA	SPREAD SPECTRUM WIRELESS RADIO SURVEY	1.000	6531.80	6531.80
0455	681-0000	S	SEC 681 LIGHTING STANDARDS	1.000	200000.00	200000.00
0460	150-1000	LS	TRAFFIC CONTROL - CSMLP-0008-00(276)	1.000	150000.00	150000.00
0465	153-1300	EA	FIELD ENGINEERS OFFICE TP 3	1.000	78563.35	78563.35
0470	900-0000	S	SEC 900 MISCELLANEOUS 3 AT-GRADE RAILROAD CROSSINGS	1.000	450000.00	450000.00
ITEM TOTAL						5334877.31
INFLATED ITEM TOTAL						5334877.31
TOTALS FOR JOB 0008276_FN						
ESTIMATED COST:						5334877.35
CONTINGENCY PERCENT (0.0):						0.00
ESTIMATED TOTAL:						5334877.35

PROJ. NO.

CSMLP-0008-00(276) - Gulfstream and Robert B. Miller Rd. Widening

CALL NO.

P.I. NO.

0008276

DATE

1/30/2012

INDEX (TYPE)

DATE INDEX

REG. UNLEADED

Jan-12 \$ 3.209

DIESEL

\$ 3.863

LIQUID AC

\$ 567.00

Link to Fuel and AC Index:

<http://www.dot.ga.gov/doingbusiness/Materials/Pages/asphaltcementindex.aspx>

LIQUID AC ADJUSTMENTS

PA=[((APM-APL)/APL)]xTMTxAFL

Asphalt

Price Adjustment (PA)				317202.48	\$	317,202.48
Monthly Asphalt Cement Price month placed (APM)	Max. Cap	60%	\$	907.20		
Monthly Asphalt Cement Price month project let (APL)			\$	567.00		
Total Monthly Tonnage of asphalt cement (TMT)				932.4		

ASPHALT	Tons	%AC	AC ton
Leveling	1000	5.0%	50
12.5 OGFC		5.0%	0
12.5 mm	3530	5.0%	176.5
9.5 mm SP		5.0%	0
25 mm SP	9412	5.0%	470.6
19 mm SP	4706	5.0%	235.3
	18648		932.4

BITUMINOUS TACK COAT

Price Adjustment (PA)				\$	6,575.37	\$	6,575.37
Monthly Asphalt Cement Price month placed (APM)	Max. Cap	60%	\$	907.20			
Monthly Asphalt Cement Price month project let (APL)			\$	567.00			
Total Monthly Tonnage of asphalt cement (TMT)				19.32795415			

Bitum Tack

Gals	gals/ton	tons
4500	232.8234	19.3279541

PROJ. NO.

CSMLP-0008-00(276) - Gulfstream and Robert B. Miller Rd. Widening

CALL NO.

P.I. NO.

0008276

DATE

1/30/2012

BITUMINOUS TACK COAT (surface treatment)

Price Adjustment (PA)					0	\$	-
Monthly Asphalt Cement Price month placed (APM)		Max. Cap	60%	\$	907.20		
Monthly Asphalt Cement Price month project let (APL)				\$	567.00		
Total Monthly Tonnage of asphalt cement (TMT)					0		

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

TOTAL LIQUID AC ADJUSTMENT						\$	323,777.85
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Georgia Department of Transportation
Preliminary ROW Cost Estimate Worksheet

Project/County/PI CSMSL-0008-00(276) Chatham County 0008276

	A	B	C	D
Land and Improvements	Agriculture	Residential	Commercial	Industrial
1 Estimate Low (ac)	\$0.00	\$0.00	\$90,000.00	\$85,000.00
2 Estimate High (ac)	\$0.00	\$0.00	\$180,000.00	\$150,000.00
3 Estimate Used (ac)	\$0.00	\$0.00	\$180,000.00	\$130,000.00
4 Fee Simple Area (ac)	0.00	0.00	2.77	1.16
5 Fee Simple Estimate	\$0.00	\$0.00	\$498,600.00	\$150,800.00
6 Perm Esmt Area (ac)	0.00	0.00	0.00	0.00
7 Perm Esmt Factor	0%	0%	0%	0%
8 Perm Esmt Estimate	\$0.00	\$0.00	\$0.00	\$0.00
9 Temp Esmt Area (ac)	0.00	0.00	0.00	0.00
10 Temp Esmt Factor	0%	0%	0%	0%
11 Temp Esmt Estimate	\$0.00	\$0.00	\$0.00	\$0.00
12 Proximity Damages	\$0.00	\$0.00	\$0.00	\$0.00
13 Consequential Damages	\$0.00	\$0.00	\$0.00	\$0.00
14 Cost to Cures	\$0.00	\$0.00	\$0.00	\$0.00
15 Improvements	\$0.00	\$0.00	\$75,000.00	\$55,000.00
16 Trade Fixtures	\$0.00	\$0.00	\$0.00	\$0.00
17				
18 PROPERTY TYPE TOTALS	\$0.00	\$0.00	\$573,600.00	\$205,800.00
19	SUB TOTAL PROPERTY TYPES			\$779,400.00
20	Counter Offers and Condemnation Increases			\$389,700.00
21				
22	GRAND TOTAL LANDS AND IMPROVEMENTS			\$1,169,100.00

Georgia Department of Transportation
Preliminary ROW Cost Estimate Worksheet

Project/County/PI CSMSL-0008-00(276) Chatham County 0008276

	A	B	C	D
Valuation Services	Agriculture	Residential	Commercial	Industrial
1 Appraisals (# of Parcels)	0	0	7	6
2 Estimated Fees (per Parcel)	\$0.00	\$0.00	\$2,000.00	\$1,000.00
3 TOTAL APPRAISALS	\$0.00	\$0.00	\$14,000.00	\$6,000.00
4 Sign Estimates	0	0	0	0
5 Estimated Fees	\$0.00	\$0.00	\$0.00	\$0.00
6 TOTAL SIGN ESTIMATES	\$0.00	\$0.00	\$0.00	\$0.00
7 Specialty Reports	0	0	0	0
8 Estimated Fees	\$0.00	\$0.00	\$0.00	\$0.00
9 TOTAL SPECIALTY REPORTS	\$0.00	\$0.00	\$0.00	\$0.00
10 Septic/Well Reports	0	0	0	0
11 Estimated Fees	\$0.00	\$0.00	\$0.00	\$0.00
12 TOTAL SEPTIC/WELL REPORTS	\$0.00	\$0.00	\$0.00	\$0.00
13				
14				
15				
16 TOTAL VALUATION FEES	\$0.00	\$0.00	\$14,000.00	\$6,000.00
17	SUB TOTAL VALUATION SERVICES			\$20,000.00
18	Updates and Incidentals (Min \$2,500 or 25%)			\$5,000.00
19	GRAND TOTAL VALUATION SERVICES			\$25,000.00

Georgia Department of Transportation
Preliminary ROW Cost Estimate Worksheet

Project/County/PI CSMSL-0008-00(276) Chatham County 0008276

	A	B	C	D
	Parcels	Estimated Fees		TOTALS
1	Meeting with Attorney	13	\$125.00	\$1,625.00
2	Preliminary Titles	13	\$200.00	\$2,600.00
3	Closing and Final Title	13	\$300.00	\$3,900.00
4	Recording Fees	13	\$50.00	\$650.00
5	Condemnation Filing	2	\$5,000.00	\$10,000.00
6	Litigation Costs	2	\$25,000.00	\$50,000.00
7	Updates and Incidentals	2	\$7,500.00	\$15,000.00
8				
9				
10				
11				
12				
13				
14				
15				
16				
17	GRAND TOTAL LEGAL SERVICES			\$83,775.00

Georgia Department of Transportation
Preliminary ROW Cost Estimate Worksheet

Project/County/PI CSMSL-0008-00(276) Chatham County 0008276

	A	B	C	D
	Relocation	Displacements	Estimated Costs	TOTALS
1	Business Displacement		\$15,000.00	\$0.00
2	Residential Tenant		\$20,000.00	\$0.00
3	Residential Owner		\$40,000.00	\$0.00
4	Pro-Rata Taxes	13	\$1,000.00	\$13,000.00
5	Property Pin Replacement	13	\$1,000.00	\$13,000.00
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17	GRAND TOTAL RELOCATION			\$26,000.00

Georgia Department of Transportation
Preliminary ROW Cost Estimate Worksheet

Project/County/PI CSMSL-0008-00(276) Chatham County 0008276

	A	B	C	D
	Demolition	Items/Improvements	Estimated Costs	TOTALS
1	Residential Structures		\$15,000.00	\$0.00
2	Commercial Structures		\$25,000.00	\$0.00
3	Hotels/Apartments		\$60,000.00	\$0.00
4	UST's - Dispensers		\$50,000.00	\$0.00
5	Billboards		\$8,000.00	\$0.00
6	Signs - Light Standards		\$1,500.00	\$0.00
7	Water Vaults		\$15,000.00	\$0.00
8	Gas/Water Service Separation		\$2,500.00	\$0.00
9				
10				
11				
12				
13				
14				
15				
16				
17	GRAND TOTAL DEMOLITION			\$0.00

Georgia Department of Transportation
Preliminary ROW Cost Estimate Worksheet

Project/County/PI CSMSL-0008-00(276) Chatham County 0008276

	A	B	C	D
	Parcels	Man hours per Parcel		TOTALS
1	Pre-Acquisition	13	40	\$26,000.00
2	Acquisition	13	100	\$65,000.00
3	Relocation		50	\$0.00
4	Administrative Appeals	4	50	\$10,000.00
5	Post-Acquisition	2	100	\$10,000.00
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17	GRAND TOTAL INHOUSE			\$111,000.00

DEPARTMENT OF TRANSPORTATION STATE OF GEORGIA

INTERDEPARTMENT CORRESPONDENCE

FILE

P.I. #0008276 Chatham

CR #9/ Crossgate Road/Gulfstream Road @ CR #119/Robert B. Miller Road

OFFICE Jesup

DATE 8/09/2011

FROM Stephen Thomas, Asst. District Utilities Engineer

TO Rajeev Shah, Parsons Transportation

SUBJECT PRELIMINARY UTILITY COST (ESTIMATE)

As requested by your office, we are furnishing you with a Preliminary Utility Cost estimate of each utility with facilities potentially located within the above project limits.

Facility Owner	Non-Reimbursable	Reimbursable	Comments
Atlanta Gas Light (AGL)	\$ 70,000	\$ 0.00	*
ATT/Bellsouth	\$ 32,000	\$ 0.00	
City of Savannah	\$ 436,000	\$ 0.00	
Georgia Power Distribution	\$ 0	\$ 550,000	
Hargray	\$16,000	\$0	
Verizon	\$0	\$0	#
Qwest	\$0	\$0	#
Level 3	\$20,000	\$0	
Georgia Power-Trans.	\$600,000	\$100,000	\$
Totals	\$ 1,174,000	\$ 650,000	*
Total Reimbursement		\$ 650,000	

*This estimate assumes that the gas risers located at the intersection will not be impacted as shown by the most recent plan sheets.

These facilities run parallel w/ RR tracks along RR right of way

\$ Based upon plans transmission structures appear to primarily be on existing R/W

CC: Angie Robinson, Office of Financial Management;

Terry Brigman, Assistant State Utilities Engineer

District Office File

Utilities Office File

ATTACHMENT 3
APPROVED NEED AND PURPOSE STATEMENT

Need and Purpose

1. Project Background

Gulfstream Road/CR 9 and Robert B. Miller Road/CR 1119 are located 7 miles northwest of Savannah in Chatham County in the State of Georgia. Gulfstream Road is a county road that begins at the Savannah International Airport and extends east to SR 21. Currently Gulfstream Road is a two-way two-lane road with an exclusive eastbound right-turn lane at the intersection with Robert B. Miller Road, and the posted speed limit is 35 miles per hour (mph) for both directions. Robert B. Miller Road is also a county road, and approaches Gulfstream Road from the South (SR 307), terminating at the intersection with Gulfstream Road. Robert B. Miller Road is a two-way two-lane road without exclusive turn lanes at the intersection with Gulfstream Road, and the posted speed limit is 40 mph for both directions. There are two existing at-grade railroad crossings on Gulfstream Road including Norfolk Southern Railroad (NSR) and CSX Railroad, located approximately 140 feet and 1,250 feet east of the Robert B. Miller Road intersection, respectively.

The Gulfstream Aerospace Corporation facility located in the southwest quadrant of the intersection of Gulfstream Road and Robert B. Miller Road is the major traffic generator in the vicinity, and it has entrances on both intersecting roads. Currently, both Gulfstream Road and Robert B. Miller Road become congested during peak hours, especially during shift changes at both the Gulfstream facility and the Coastal State Prison, located southeast of the intersection. Based on the traffic volume forecasts and the large turning movements, an already heavily congested area is expected to worsen. In a letter dated December 12, 2005, the Commissioner of the Georgia Department of Transportation stated that the Department would cooperate with Chatham County with their economic development needs at this intersection. On February 7, 2007, the Commissioner stated that there would no longer be County involvement and the project would be programmed and let by the State Department of Transportation.

2. Traffic Operation

The existing average daily traffic (ADT) for Gulfstream Road is 9,750 and 6,800 vehicles per day (vpd) west and east of Robert B. Miller Road, respectively. The existing ADT for Robert B. Miller Road is 6,750 vpd. Capacity analysis was conducted for existing (2011) conditions, opening year (2015) and design year (2035) no-build condition for the project. Synchro (SIM TRAFFIC Version 7) was used for the capacity analysis of the existing and future no-build conditions. The analysis results are summarized in Tables 1 and 2.

Capacity analysis indicates that currently, the signalized intersection of Gulfstream Road at Robert B. Miller Road, the critical movements at all other unsignalized intersections, and the roadways within the project limits operate at level of service (LOS) D or better during both a.m. and p.m. peak hours. Travel speed for Gulfstream Road west and east of Robert B. Miller Road is 14.7 mph and 27.0 mph, respectively. The travel speed for Robert B. Miller Road is 28.4 mph.

In design year (2035), the signalized intersection of Gulfstream Road at Robert B. Miller Road would operate at LOS D with an average delay of 50.6 seconds per vehicle. The eastbound left-turn movement for all three driveways for Gulfstream Facility would operate at LOS E or F during the p.m. peak hour with high delay especially at the south driveway. The critical movements at other intersections would operate at acceptable LOS.

Gulfstream Road would operate at LOS E with a travel speed of 11.2 mph and LOS C with a travel speed of 20.7 mph west and east of Robert B. Miller Road, respectively. Robert B. Miller Road would operate at LOS D with a travel speed of 17.6 mph.

Table 1 - Capacity Analysis Results for Intersections

Intersection	Approach/ Movement	2011				2015 No-Build				2035 No-Build			
		AM		PM		AM		PM		AM		PM	
		Delay (sec/veh)	LOS										
Gulfstream Road at Robert B. Miller Road	-	6.9	A	16.9	B	7.0	A	19.1	B	9.8	A	50.6	D
Gulfstream Road at Coastal Correctional Ins. Depote Road	Westbound Approach	1.1	A	0.6	A	1.1	A	0.6	A	1.4	A	0.8	A
	Northbound Approach	11.0	B	11.4	B	11.2	B	11.8	B	13.7	B	14.7	C
Gulfstream Road at Driveway 1 (West)	Westbound Approach	0.1	A	0.1	A	0.1	A	0.1	A	0.2	A	0.2	A
	Northbound Approach	13.1	B	15.4	C	13.7	B	16.4	C	18.1	C	25.9	D
Gulfstream Road at Driveway 2 (East)	Westbound Approach	0.4	A	1.1	A	0.4	A	1.0	A	0.5	A	1.4	A
	Northbound Approach	11.0	B	12.2	B	11.3	B	12.5	B	13.4	B	16.3	C
Gulfstream Road at Mincey Boulevard	Westbound Approach	0.6	A	0.4	A	0.6	A	0.4	A	0.7	A	0.6	A
	Northbound Approach	13.2	B	12.3	B	13.7	B	12.7	B	18.0	C	17.1	C
Gulfstream Road at Water Reclamation Facility Driveway	Eastbound Approach	0.2	A	0.1	A	0.2	A	0.1	A	0.3	A	0.1	A
	Southbound Approach	12.6	B	14.1	B	13.1	B	14.8	C	16.7	C	20.2	C
Robert B. Miller Road at Gulfstream Facility Driveway 1 (North)	Eastbound Left-turn	12.9	B	19.9	C	13.3	B	22.3	C	16.6	C	68.8	F
	Eastbound Right-turn	10.8	B	9.2	A	11.0	B	9.3	A	12.5	B	9.7	A
	Northbound Left-turn	8.3	A	7.6	A	8.3	A	7.7	A	8.8	A	7.8	A
Robert B. Miller Road at Gulfstream Facility Driveway 2 (Middle)	Eastbound Left-turn	14.8	B	17.8	C	15.6	C	19.2	C	21.8	C	41.1	E
	Eastbound Right-turn	10.8	B	10.4	B	11.0	B	10.6	B	12.5	B	12.2	B
	Northbound Left-turn	8.4	A	7.7	A	8.5	A	7.7	A	9.1	A	7.9	A
Robert B. Miller Road at Gulfstream Facility Driveway 3 (South)	Eastbound Left-turn	14.5	B	25.2	D	15.2	C	30.4	D	20.6	C	186.4	F
	Eastbound Right-turn	10.4	B	13.0	B	10.6	B	13.6	B	11.8	B	19.8	C
	Northbound Approach	2.4	A	0.5	A	2.6	A	0.5	A	2.9	A	0.7	A

Note:

1. The intersection of Gulfstream Road at Robert B. Miller Road is an signalized intersection and all other intersections are unsignalized.

5. Crash History

Historical crash data were obtained from Georgia DOT Office of Traffic Safety and Design for the latest available 3 years (2006-2008) for both Gulfstream Road and Robert B. Miller Road. The beginning and ending mile points used for crash analysis of Gulfstream Road are 0.25 and 1.04 respectively. The project limits for crash analysis of Robert B. Miller Road is from mile point 0.00 (at intersection of Gulfstream Rd) to mile point 0.59. During the three year period of 2006 through 2008 there were 34 crashes on Gulfstream Road and 20 crashes on Robert B. Miller Road. Of all the crashes on Gulfstream Road, rear end collisions accounted for 38 percent while angle collisions accounted for 26 percent of all crashes. Rear-end and angle collisions are the two most predominant collision types on Gulfstream Road and are caused due to congestion, especially during shift change at Gulfstream Aviation and the Prison complex. High left turning volume from the westbound Gulfstream Road to southbound Robert B. Miller Road without an exclusive left-turn lane is a potential contributing factor for angle collisions on Gulfstream Road. Of all crashes on Robert B. Miller Road, angle and rear end collisions accounted for 35 and 30 percent respectively. The shift change at Gulfstream Aviation creates high turning movements at the three driveway/intersections on Robert B. Miller Road. These high turning volumes and congestion are the cause for the high angle and rear-end collisions on Robert B. Miller Road. Crash history by crash type for Gulfstream Road and Robert B. Miller Road are summarized in Tables 3 and 4, respectively.

Table 3 - Crash History by Crash Type (Gulfstream Road)

Year	Rear End	Angle	Struck Object	Run off Road	Head On	Sideswipe	Total
2006	6	3	3	3	1	0	16
2007	1	4	1	0	1	2	9
2008	6	2	1	0	0	0	9
Total	13	9	5	3	2	2	34
%	38%	26%	15%	9%	6%	6%	100%

Table 4 - Crash History by Crash Type (Robert B. Miller Road)

Year	Angle	Rear End	Struck Object	Run off Road	Head On	Sideswipe	Total
2006	2	0	1	2	1	0	6
2007	3	2	0	0	1	1	7
2008	2	4	1	0	0	0	7
Total	7	6	2	2	2	1	20
%	35%	30%	10%	10%	10%	5%	100%

Crash rates were calculated for Gulfstream Road and Robert B. Miller Road and were compared with the statewide averages of state highways with the same functional classification, as shown in Tables 5 and 6, respectively. Both Gulfstream Road and Robert B. Miller Road are classified as Urban Collector Streets.

Table 5 shows crash history and comparison with statewide averages for crashes that occurred on Gulfstream Road within the project limit. The historical crash data indicated that 16, 9, and 9 crashes occurred on Gulfstream Road in 2006, 2007, and 2008, respectively. The data show that

the overall crash rate for 2006 was 1.3 times higher than the statewide average rate while the overall crash rates for 2007 and 2008 were lower than the statewide average rates for the same functional classification of roads. A total of 9 injuries were involved in the three years, including 5, 1, and 3 injuries reported for

Table 2 - Roadway Capacity Analysis Results

Roadway	Posted Speed Limit (mph)	2011				2015 No-Build				2035 No-Build			
		AM		PM		AM		PM		AM		PM	
		Travel Speed (mph)	LOS										
Gulfstream Road West of Robert B. Miller Road	35	22.6	C	14.7	D	22.6	C	13.8	E	21.8	C	11.2	E
Gulfstream Road East of Robert B. Miller Road	35	31.5	A	27.0	B	31.4	A	26.1	B	29.7	B	20.7	C
Robert B. Miller Road South of Gulfstream Road	40	30.8	B	28.4	B	30.1	B	27.5	C	24.8	C	17.6	D

Note: The travel speed and LOS are for the direction approaching the signalized intersection of Gulfstream Road at Robert B. Miller Road, which are affected by the operation of the signal.

3. Land Use

Chatham County is one of the easternmost counties in Georgia with the state’s fourth largest city, Savannah, located in the northeastern part of the county. The project is located in an urbanized area approximately seven miles northwest of central Savannah and on the eastern edge of the Savannah/Hilton Head International Airport. The land use within the project area is primarily industrial with artificial ponds, borrow pits, mixed pine and hardwood trees, and the Norfolk Southern and CSX Railroad crossings east of the intersection of Gulfstream Road and Robert B. Miller Road. The Gulfstream Aerospace Corporation facility located in the southwest quadrant of the intersection is one of the largest industrial facilities in Chatham County, and it is a major traffic generator within the project area. The Coastal State Prison located in the southeast quadrant of the intersection is another traffic generator within the project area.

According to the Chatham County Comprehensive Plan (adopted in November 2006 as required by the Department of Community Affairs), the future land use of the project area is designated “light industrial” and “transportation/communication/utilities”.

4. Relationship to Statewide and Local Transportation Plans

The intersection of Gulfstream Road and Robert B. Miller Road is included in the FY 2012 - 2015 Transportation Improvement Program (TIP) with TIP No. 2007-H-06. Related proposed projects in the vicinity of the project include the following:

- CR 9/Gulfstream Road at NSR Track NS#620021E (P.I. No.0008851): Installation of train activated warning devices in the form of inter-connect and pre-emption circuitry for the at-grade crossing of Gulfstream Road/CR 9 and Norfolk Southern Railroad (Inv. No. 620021E) in the City of Savannah in Chatham County.
- SR 21 at CR 9/Crossgate Road/Gulfstream Road (P.I. No. 0008275): Intersection improvements which was previously identified as P.I. No. 0007141.
- Jimmy Deloach Connector from State Route 21 near Smith Avenue to State Route 21 near Interstate 95 (P.I. No. 0008690) – This project is sponsored by the Georgia Ports Authority and will provide enhanced roadway connection from the Ports area to I-95.

The installation of train activated warning devices for the at-grade crossing of Gulfstream Road/CR 9 and Norfolk Southern Railroad would be connected to the traffic signal for Gulfstream Road at Robert B. Miller Road intersection. The SR 21 at CR 9/Crossgate Road/Gulfstream Road intersection improvements would not have any impact on this project.

2006, 2007, and 2008, respectively. The injury rate for 2006 was 1.7 times higher than the statewide average rate while the injury rates for 2007 and 2008 were lower than the statewide average rates. During the three years period, no fatal crashes occurred on Gulfstream Road.

Table 5 - Crash History and Comparison with Statewide Average (Gulfstream Road)

Year	No. of			All Crashes		Injuries		Fatalities	
	Crashes	Injuries	Fatalities	Rate (100MVM)	Statewide Average	Rate (100MVM)	Statewide Average	Rate (100MVM)	Statewide Average
2006	16	5	0	649	510	203	123	0	1.70
2007	9	1	0	360	475	40	114	0	1.33
2008	9	3	0	354	443	118	105	0	1.12
Total	34	9	0						

Table 6 shows crash history and comparison with statewide averages for crashes that occurred on Robert B. Miller Road within the project limit. The historical crash data indicated that 6, 7, and 7 crashes occurred on Robert B. Miller Road in 2006, 2007, and 2008, respectively. The data show that the overall crash rates for the three years were slightly lower than the statewide average rates for the same functional classification of roads. A total of 3 injuries were involved in the three years, including 2 injuries reported in 2006 and 1 injury reported for 2007. The injury rates for the three years were lower than the statewide average rate. During the three years period, no fatal crash occurred on Robert B. Miller Road.

Table 6 - Crash History and Comparison with Statewide Average (Robert B. Miller Road)

Year	No. of			All Crashes		Injuries		Fatalities	
	Crashes	Injuries	Fatalities	Rate (100MVM)	Statewide Average	Rate (100MVM)	Statewide Average	Rate (100MVM)	Statewide Average
2006	6	2	0	349	510	116	123	0	1.70
2007	7	1	0	402	475	57	114	0	1.33
2008	7	0	0	396	443	0	105	0	1.12
Total	20	3	0						

6. Need and Purpose Statement

By the year 2035, roadway level-of-service on Gulfstream Road and Robert B. Miller Road is projected to decline to near failing conditions and multiple intersection approaches in the project area are projected to operate at LOS “D”, “E”, and “F”. Past crash rates in the project area range from 349 to 649 crashes per 100 million vehicle miles (MVM). A project is needed to accommodate future traffic growth due to industrial and airport activity, improve the operation of the intersection at Gulfstream Road and Robert B Miller Road, and to reduce the frequency and severity of crashes.

ATTACHMENT 4
APPROVED CONCEPT REPORT

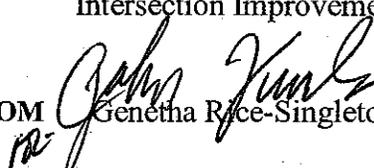
**DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA**

INTERDEPARTMENT CORRESPONDENCE

FILE P.I. No. 0008276, Chatham County
CSMLP-0008-00(276)
CR 9/Gulfstream Road at CR 1119/Robert Miller Road-
Intersection Improvements

OFFICE: Program Control

DATE: September 29, 2009

FROM  Genetha Rice-Singleton, Program Control Administrator

TO SEE DISTRIBUTION

SUBJECT APPROVED PROJECT CONCEPT REPORT

Attached for your files is the approval for subject project.

Attachment

DISTRIBUTION:

Ron Wishon
Glenn Bowman
Ken Thompson
Michael Henry
Keith Golden
Glenn Durrence
Paul Liles
Brad Saxon
Dennis Odom
Keith Stewart
BOARD MEMBER

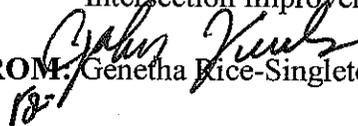
**DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA**

INTERDEPARTMENTAL CORRESPONDENCE

FILE: P.I. No. 0008276, Chatham County
CSMLP-0008-00(276)
CR 9/Gulfstream Road at CR 1119/Robert Miller Road-
Intersection Improvements

OFFICE: Program Control

DATE: August 27, 2009

FROM:  Genetha Rice-Singleton, Program Control Administrator

TO: Gerald M. Ross, P.E., Chief Engineer

SUBJECT: PROJECT CONCEPT REPORT

This project is the intersection improvements of Gulfstream Road at Robert Miller Road located northwest of Savannah in Chatham County. Gulfstream Road is a two lane roadway with an exclusive eastbound right turn lane at this intersection. The posted speed is 35 MPH in both directions. Robert Miller Road is a two lane road without exclusive turn lanes at the intersection, and the posted speed is 40 mph. There is an existing at-grade Norfolk Southern Railroad (NSR) crossing on Gulfstream Road located approximately 120' east of the Robert Miller Road intersection. The Gulfstream Aerospace Corporation facility located in the southwest quadrant of the intersection is the major traffic generator in the vicinity, and it has entrances on both intersecting roads. The existing (2007) average daily traffic (ADT) for Gulfstream Road is 12,400 and 8,680 vehicles per day for west and east of the intersection respectively, and the existing ADT for Robert Miller Road is 7,960 vehicles per day. For the design year (2034), the ADT for Gulfstream Road is projected to be 19,340 and 13,740 VPD for west and east of the intersection respectively, and the projected traffic for Robert Miller Road will be 13,200 VPD. This intersection was under stop sign control, and recently a temporary traffic signal has been installed and activated. Currently the intersection operates at a level of service (LOS) "D" and "E". Without improvements, the intersection will operate at LOS "F". With the proposed improvements, the intersection will operate at LOS "B" and "D" in the design year.

The proposed project consists of adding an exclusive left-turn lane to the westbound approach of Gulfstream Road, the extension of the existing exclusive right turn lane on the eastbound approach of Gulfstream Road, converting the existing northbound lane to an exclusive left-turn lane and the addition of an exclusive right-turn lane to northbound approach of Robert Miller Road. The project will also upgrade the existing traffic signal. Traffic will be maintained at all times via stage construction.

Environmental concerns include requiring a Categorical Exclusion be prepared; a public hearing is not required; time saving procedures are appropriate.

The estimated costs for this project are:

	<u>PROPOSED</u>	<u>APPROVED</u>	<u>FUNDING</u>	<u>PROG DATE</u>
Construction (includes E&C)	\$1,683,506	\$2,680,191	L240	2012(proposed)
Right-of-way	\$192,850	\$262,159	L240	2011(proposed)
Utilities	\$136,500			

* Notification letter sent to Chatham and Savannah 5-19-2006.

I recommend this project concept be approved and the description be revised to reflect the project herein.

GRS: JDQ
Attachment

CONCUR

Herbert Rice, Jr. ^{for Rink}

Director of Preconstruction

APPROVED

GMR

Gerald M. Ross, P.E., Chief Engineer

PRECONSTRUCTION STATUS REPORT FOR PI:0008275,0008276

PROJ ID: 0008276
 COUNTY: Chatham
 LENGTH (MI): 0.54
 PROJ NO.: CSMLP-0008-09(276)
 PROJ MGR: Odum, Dennis
 AOHD Initials: 2KS/KS
 OFFICE: District 5
 CONSULTANT: Consultant Design (DOT contract)
 SPONSOR: GDOT
 DESIGN FIRM: Parsons Transportation Group, Inc.

CR-1119 ROBERT B MILLER RD PMS OF CR-9 TO GULFSTREAM RD
 TEMP SR 1181 / GULFSTREAM ROAD AT CL 1119 / ROBERT MILLER ROAD
 MPO: Savannah TMA
 TIP #: 5
 MODEL YR: 12
 TYPE WORK: Turn Lanes
 CONCEPT: INTERSECT IMP
 PROV. FOR ITS: Reconstruction/Rehabilitation
 BOND PROJ: N

MGMT LET DATE: 12/15/2011
 MGMT ROW DATE: 12/15/2010
 SCHED LET DATE: 5/31/2012
 WHO LETS?: GDOT Let
 LET WITH: 0008275

SCHED START	SCHED FINISH	TASKS	ACTUAL START	ACTUAL FINISH	%	PROGRAMMED FUNDS				Date Auth		
						Activity	Approved	Proposed	Cost		Fund	Status
10/8/2009	10/8/2009	Concept Development	3/13/2007	5/13/2009	45	PE	2008	2008	466,873.96	L240	AUTHORIZED	12/17/2007
8/28/2009	10/8/2009	Concept Meeting	5/13/2009	5/13/2009	100	ROW	2010	2011	262,159.20	L240	PRECST	
10/8/2009	10/8/2009	PM Submit Concept Report	6/23/2009	6/23/2009	100	CST	2009	2012	2,680,191.28	L240	PRECST	
10/23/2009	10/23/2009	Receive Preconstruction Concept Approval			0							
10/23/2009	10/23/2009	Management Concept Approval Complete			0							
10/23/2009	10/23/2009	Public Information Open House Held			0							
9/18/2009	10/1/2009	Environmental Approval	1/11/2007		20							
10/26/2009	10/1/2009	Mapping			0							
11/17/2009	11/13/2009	Field Surveys/SDE			0							
11/17/2009	6/14/2010	Preliminary Plans			0							
10/9/2009	2/18/2010	Underground Storage Tanks			0							
3/7/2011	6/17/2011	404 Permit Obtainment			0							
12/10/2010	12/13/2010	PFPR Inspection			0							
12/14/2010	2/21/2011	R/W Plans Preparation			0							
2/22/2011	4/18/2011	R/W Plans Final Approval			0							
1/19/2011	1/21/2011	L & D Approval			0							
4/19/2011	3/30/2012	R/W Acquisition			0							
7/26/2011	8/8/2011	Stake R/W			0							
1/24/2011	1/2/2012	Soil Survey	7/23/2007	11/14/2007	100	PE Cost Est Amt:	466,873.96	Date:	5/11/2006	Activity	Cost	Fund
1/24/2012	1/25/2012	Final Design			0	ROW Cost Est Amt:	200,000.00	Date:	6/21/2007	PE	100,000.00	L240
2/8/2012	2/21/2012	FFPR Inspection			0	CST Cost Est Amt:	2,100,000.00	Date:	6/21/2007	ROW	245,008.60	L240
2/8/2012	2/21/2012	Submit FFPR Responses (OES)			0					CST	0.00	L240

OK TEMP STATE ROUTE

STIP AMOUNTS

Activity	Cost	Fund
PE	100,000.00	L240
ROW	245,008.60	L240
CST	0.00	L240

District Comments

ADO/08-06-09/Annual cost estimates submitted 05-27-09 but not updated due to balancing and STIP.

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

Cond. Filed:
 Relocations:
 Acquired:

Total Parcel in ROW System: 2

Options - Pending:
 Condemnations- Pend:

DEEDS CT:

**DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA**

INTERDEPARTMENT CORRESPONDENCE

FILE: P.I. No. 0008276

OFFICE: Environment/Location

**PROJECT No. CSMLP-0008-00(276) / CHATHAM
County**

DATE: 7/24/09

Intersection of Gulfstream Road at Robert Miller Road

FROM: 
Glenn Bowman, P.E., State Environmental/Location Engineer

TO: Genetha Rice-Singleton, Assistant Director of Preconstruction

SUBJECT: PROJECT CONCEPT REPORT REVIEW

The Concept Report for the above project has been reviewed and appears satisfactory subject to the following comments:

1. Please list who is responsible for the environmental work in the Project Responsibilities section.
2. In the Environmental Concerns section under NEPA, the report notes that FAA coordination is required. This issue should be addressed elsewhere in the report.
3. There is an eligible historic resource (Norfolk Southern Railroad) in the project corridor. If significant impacts (adverse) to this historic 4(f) resource cannot be avoided, then the proposed environmental schedule must be revised significantly.

If you have any questions, please contact Glenn Bowman at (404) 699-4401.

GB:lc

cc: Ron Wishon
Angela Whitworth
Keith Golden
Angela Alexander
Glenn Durrence
Paul Liles

**DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA**

District 5

PROJECT CONCEPT REPORT

Project Number: CSMLP-0008-00(276)

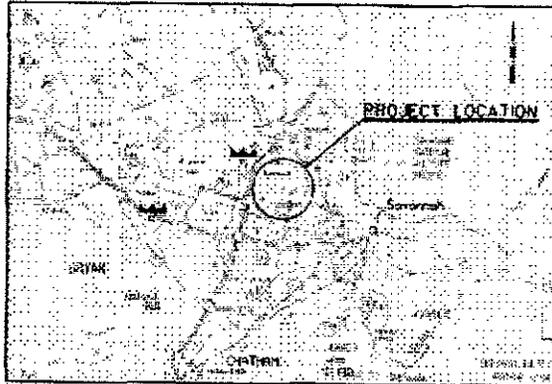
County: Chatham

P. I. Number: 0008276

Federal Route Number: N/A

State Route Number: N/A

Intersection of Gulfstream Road at Robert Miller Road



Recommendation for approval:

DATE 6-17-09

Dennis Adams

DATE 6-23-09

Bradford W. Anderson

District 5 Preconstruction Engineer



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

DATE 8/31/09

Angela J. Alward

State Transportation Planning Administrator

DATE _____

State Transportation Financial Management Administrator

DATE 7/24/09

[Signature]

State Environment/Location Engineer

DATE _____

DATE 8/23/09

State Traffic Safety and Design Engineer

[Signature]

District Engineer

DATE _____

Project Review Engineer

★ The project description in the LRTP/TIP/STIP as appropriate may be modified to reflect the revised concept report following consultation with the MPO and approval by the Director of Planning.

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

MEMORANDUM

FILE CSMLP – 0008-00(276) Chatham County OFFICE Planning
P.I. 0008276
DATE 6/25/09

FROM 
Angela T. Alexander, State Transportation Planning Administrator

TO Genetha Rice-Singleton, Assistant Director of Preconstruction

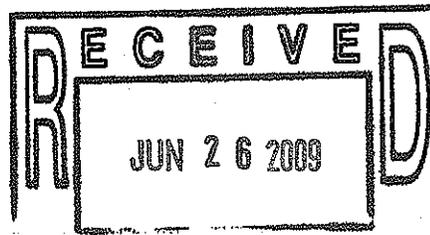
SUBJECT Project Concept Report – Intersection of Gulfstream Rd at Robert Miller Rd
CSMLP – 0008-00(276), P.I. 0008276

The Planning Office was requested by Preconstruction to verify if the subject project was identified in the current FY 08-11 Chatham County MPO TIP. PE was authorized in 2008 for P.I. 221875. The Right-of-Way phase is proposed for FY 11 and Construction phase for FY 12. This project as defined in this revised concept report, is currently not consistent with the project description which appears in the current FY 08-11 TIP. However, during the development of the FY 10-13 TIP, the Office of Planning will request that project description in TPRO to concur with the revised concept report which indicates an intersection improvement project.

ATA:kbm

Attachment

CC: Matthew Fowler
Radney Simpson
Keith Stewart



Date:

6/26/09


State Transportation Planning Administrator

**DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA**

District 5

PROJECT CONCEPT REPORT

Project Number: CSMLP-0008-00(276)

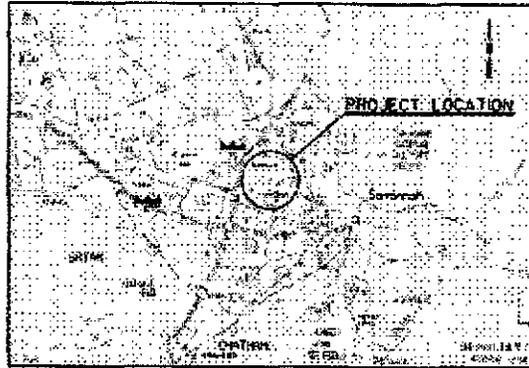
County: Chatham

P. I. Number: 0008276

Federal Route Number: N/A

State Route Number: N/A

Intersection of Gulfstream Road at Robert Miller Road



Recommendation for approval:

DATE 6-17-09

Dennis Adams

DATE 6-23-09

Bradford W. Hark

District 5 Preconstruction Engineer

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

DATE _____

State Transportation Planning Administrator

DATE _____

State Transportation Financial Management Administrator

DATE _____

Shirley G. Goble

State Environment/Location Engineer

DATE 7-20-09

State Traffic Safety and Design Engineer

DATE 8/23/09

[Signature]

District Engineer

DATE _____

Project Review Engineer

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

District 5

PROJECT CONCEPT REPORT

Project Number: CSMLP-0008-00(276)

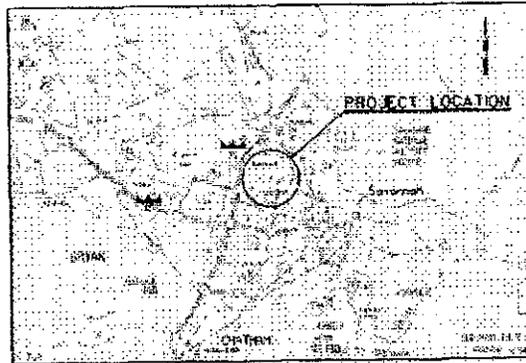
County: Chatham

P. I. Number: 0008276

Federal Route Number: N/A

State Route Number: N/A

Intersection of Gulfstream Road at Robert Miller Road



Recommendation for approval:

DATE 6-17-09

Dennis Adams

DATE 6-23-09

Bradford W. Anderson

District 5 Preconstruction Engineer

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

DATE _____

State Transportation Planning Administrator

DATE 6-29-09

Angela D. Whitaker

Financial Management Administrator

DATE _____

State Environment/Location Engineer

DATE _____

State Traffic Safety and Design Engineer

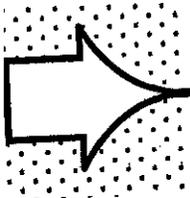
DATE 6/23/09

[Signature]

District Engineer

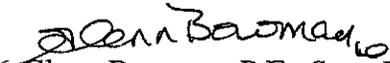
DATE _____

Project Review Engineer



**DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA**

INTERDEPARTMENT CORRESPONDENCE

FILE: P.I. No. 0008276 **OFFICE:** Environment/Location
DATE: 7/6/09
FROM: 
Glenn Bowman, P.E., State Environmental/Location Engineer
TO: Genetha-Rice Singleton, Assistant Director of Preconstruction
SUBJECT: **PROJECT CONCEPT REPORT REVIEW**
CSMLP-0008-00(276) / Chatham County
Intersection of Gulfstream Road at Robert Miller Road

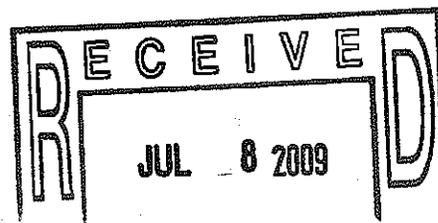
The Concept Report for the above project has been reviewed and appears satisfactory subject to the following comments:

1. Possible need for Informal Section 7 due to wood stork habitat. However, since ROW is scheduled for December 2010, it should not impact the schedule.
2. Please list who is responsible for Environmental in the Project Responsibilities section.
3. In the Environmental Concerns section, you note that FAA coordination is needed under NEPA. I would think this is more of a design concern than NEPA requirement.
4. Eligible RxR (Norfolk Southern Railroad) in project corridor. If significant impacts (adverse) to this historic 4(f) resource cannot be avoided, then the proposed environmental schedule must be revised significantly.

If you have any questions, please contact Glenn Bowman at (404) 699-4401.

GB:lc

cc: Ron Wishon
Angela Whitworth
Keith Golden
Angela Alexander
Glenn Durrence
Paul Liles



**DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA**

District 5

PROJECT CONCEPT REPORT

Project Number: CSMLP-0008-00(276)

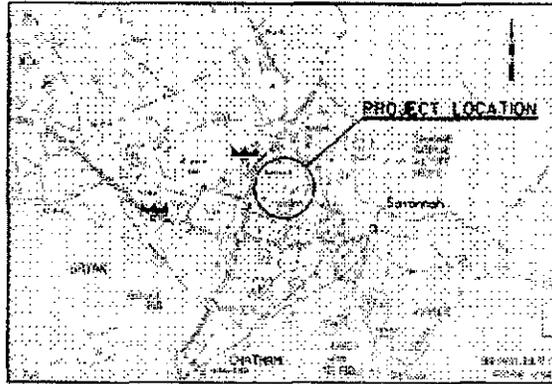
County: Chatham

P. I. Number: 0008276

Federal Route Number: N/A

State Route Number: N/A

Intersection of Gulfstream Road at Robert Miller Road



Recommendation for approval:

DATE 6-17-09

DATE 6-23-09

Dennis Johnson

Project Manager
Bradford W. Ashe

District 5 Preconstruction Engineer

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

DATE _____

State Transportation Planning Administrator

DATE _____

State Transportation Financial Management
Administrator

DATE July 6, 2009

Kenn Bowman

State Environment/Location Engineer

DATE _____

State Traffic Safety and Design Engineer

DATE 6/23/09

[Signature]
District Engineer

DATE _____

Project Review Engineer

**DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA**

INTERDEPARTMENT CORRESPONDENCE

FILE	Project #CSMLP-0008-00(276) Chatham County Description: Intersection of Gulfstream Rd @ Robert Miller Road P. I. No. 0008276	OFFICE	Jesup, Design
		DATE	6/23/2009
FROM	Glenn W. Durrence, P.E., District Engineer <i>(GWS ADO)</i>		
TO	Genetha Rice-Singleton, Assistant Director of Preconstruction		
SUBJECT	Project Concept Report		

Attached is the original copy of the Concept Report for your further handling for approval in accordance with the Plan Development Process (PDP).

The intersection of Gulfstream Road at Robert Miller Jr. Road is located northwest of Savannah in Chatham County. The project begins 872 feet west of the intersection along Gulfstream Road and extends to 753 feet east of the intersection. Along Robert Miller Jr. Road, the project extends to 1134 feet south of the intersection. The project includes the addition of an exclusive left-turn lane to westbound approach of Gulfstream Road, the extension of the existing exclusive right-turn lane on eastbound approach of Gulfstream Road, converting the existing northbound lane to an exclusive left-turn lane and the addition of an exclusive right-turn lane to northbound approach of Robert Miller Jr. Road. The existing traffic signal will be upgraded as well.

Should you have any questions or need any additional information, please contact the Project Manager, Keith Stewart at 912-427-5863.

GWD:ADO: krs
Attachments

cc:

General File Unit, Atlanta
Glenn Bowman, Office of Environment / Location
Angela Alexander, Office of Planning
Ron Wishon, Office of Engineering Services
Paul Liles, Office of Bridge Design
Angela Whitworth, Office of Financial Management
Keith Golden, Office of Traffic Safety and Design
Teresa Scott, District Planning and Programming
Jesup Files

**DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA**

District 5

PROJECT CONCEPT REPORT

Project Number: CSMLP-0008-00(276)

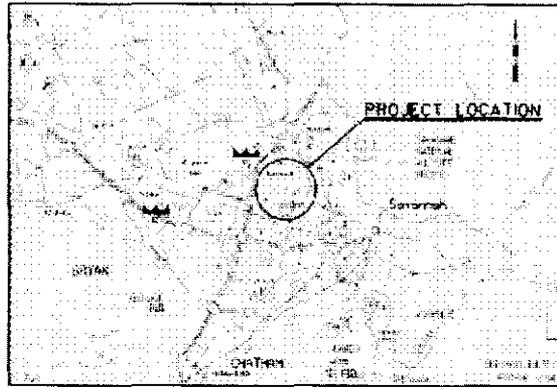
County: Chatham

P. I. Number: 0008276

Federal Route Number: N/A

State Route Number: N/A

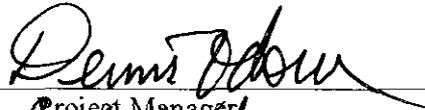
Intersection of Gulfstream Road at Robert Miller Road



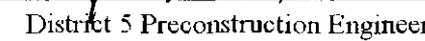
Recommendation for approval:

DATE 6-17-09

DATE 6-23-09



Project Manager



District 5 Preconstruction Engineer

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

DATE _____

State Transportation Planning Administrator

DATE _____

State Transportation Financial Management Administrator

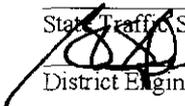
DATE _____

State Environment/Location Engineer

DATE _____

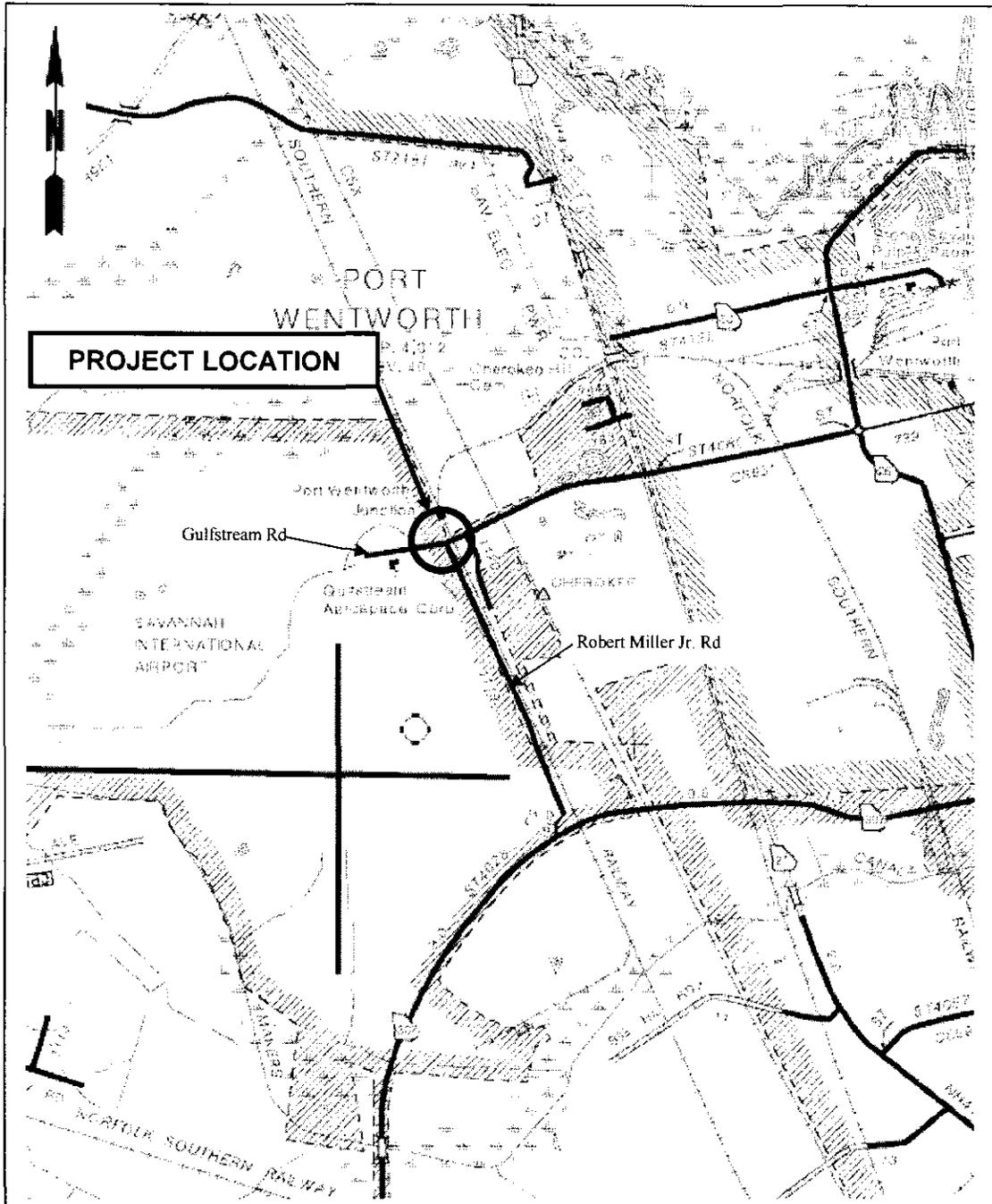
State Traffic Safety and Design Engineer

DATE 6/23/09


District Engineer

DATE _____

Project Review Engineer



PROJECT LOCATION MAP

Project No. CSMLP-0008-00(275), P. I. No. 0008275
Chatham County, Georgia
Intersection of Gulfstream Road at Robert Miller Road

Need and Purpose

The purpose of the project is to alleviate congestion and improve traffic operation at this intersection by adding additional turn lanes as well as upgrading the traffic signal accordingly. Also, the signal with appropriate phasing and timing will be beneficial for reducing the occurrence of angle type accidents and improve safety.

The existing (2007) average daily traffic (ADT) for Gulfstream Road is 12,400 and 8,680 vehicles per day for west and east of the intersection, respectively, and the existing ADT for Robert Miller Jr. Road is 7,960 vehicles per day. It is estimated that for design year (2034), the ADT for Gulfstream Road will be 19,340 and 13,740 vehicles per day for west and east of the intersection, respectively, and the ADT for Robert Miller Jr. Road will be 13,200 vehicles per day.

This intersection was under stop sign control, and recently a temporary traffic signal has been installed and activated. Currently the intersection operates at LOS D with 49.5 seconds per vehicle delay and E with 61.4 seconds per vehicle delay during the a.m. and p.m. peak hour, respectively. Without improvements, the intersection would operate at LOS F during both peak hours with significantly high vehicle delay in the design year.

An exclusive left-turn lane will be provided for Gulfstream Road westbound approach and an exclusive left-turn lane and an exclusive right-turn lane will be provided for Robert Miller Jr. Road northbound approach. The existing right-turn lane for Gulfstream Road eastbound approach will be extended as well to accommodate the traffic queue. Traffic signal will be upgraded for the new intersection configurations. With the proposed improvements, the intersection would operate at LOS B and D during the a.m. and p.m. peak hour, respectively, in the design year. Each individual movement would operate at LOS D or better.

Historical accident data indicates that a total of 10, 6 and 4 accidents occurred in 2005, 2006 and 2007 with an accident rate of 194, 115, and 75 accidents per 100 million entering vehicles, respectively. (Georgia DOT does not maintain average/critical accident rate for intersections, so no comparison with statewide average rate was performed.) A total of 4 injuries and no fatalities occurred during the three year period. Among the total of 20 accidents that occurred in the three years, 9 of them were angle type accidents which was 45 percent of the total, and 7 of the angle type accidents involved left-turn vehicles.

Description of the proposed project

The intersection of Gulfstream Road at Robert Miller Jr. Road is located northwest of Savannah in Chatham County. The project begins 872 feet west of the intersection along Gulfstream Road and extends to 753 feet east of the intersection. Along Robert Miller Jr. Road, the project extends to 1134 feet south of the intersection.

The project includes the addition of an exclusive left-turn lane to westbound approach of Gulfstream Road, the extension of the existing exclusive right-turn lane on eastbound approach of Gulfstream Road, converting the existing northbound lane to an exclusive

Project Concept Report page 4
 Project Number: CSMLP-0008-00(276)
 P. I. Number: 0008276
 County: Chatham

left-turn lane and the addition of an exclusive right-turn lane to northbound approach of Robert Miller Jr. Road. The existing traffic signal will be upgraded as well.

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

PDP Classification: Major Minor

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

Functional Classification: Urban Collector Street

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

Traffic (AADT):

Current and Design Year ADT (Vehicles/Day)

	Current Year (2007)	Design Year (2034)
Gulfstream Road	12,400	19,340
Robert Miller Jr. Road	7,960	13,200

Existing design features

Gulfstream Road

- Typical Section: One 12 ft. wide lane in each direction with an exclusive eastbound right-turn lane at Robert Miller Jr. Road intersection. No curb, gutter, and sidewalk present.
- Posted speed: 35 mph
- Minimum radius for curve: 1900 ft.
- Maximum super-elevation rate for curve: 4%
- Maximum grade: 2%
- Width of right-of-way: 100 ft. +/-
- Major structures: None
- Major interchanges or intersections along the project: The intersection at Robert Miller Jr. Road
- Existing length of roadway segment and the beginning mile logs for each county segment: 1625 ft.

Robert Miller Jr. Road

- Typical Section: One 12 ft. wide lane in each direction without turn lanes. No curb, gutter and sidewalk present.
- Posted speed: 40 mph
- Minimum radius for curve: 5500 ft.
- Maximum super-elevation rate for curve: 4%

Project Concept Report page 5
Project Number: CSMLP-0008-00(276)
P. I. Number: 0008276
County: Chatham

- Maximum grade: 1%
- Width of right-of-way: 75 ~ 80 ft. +/-
- Major structures: None
- Major interchanges or intersections along the project: The intersection at Gulfstream Road
- Existing length of roadway segment and the beginning mile logs for each county segment: 1134 ft.

Proposed Design Features

Gulfstream Road

- Proposed typical section(s): One 12 ft. wide lane in each direction with an exclusive eastbound right-turn lane and an exclusive westbound left-turn lane at Robert Miller Jr. Road intersection without curb, gutter, and sidewalk.
- Proposed Design Speed: 45 mph
- Proposed Maximum grade Mainline 1.26% Maximum grade allowable 8%
- Proposed Maximum grade Side Street 7% Maximum grade allowable 7%
- Proposed Maximum grade driveway 10%
- Proposed Maximum degree of curve 8.063 Maximum degree allowable 8.063
- Right-of-Way
 - Width 100 ft.
 - Easements: Temporary (), Permanent (), Utility (), Other (X).
 - Type of access control: Full (), Partial (), By Permit (), Other (X).
 - Number of parcels: 1 Number of displacements:
 - Business: 0
 - Residences: 0
 - Mobile homes: 0
 - Other: 0
- Structures:
 - Bridges: N/A
 - Retaining walls: N/A

Robert Miller Jr. Road

- Proposed typical section(s): One 12 ft. wide lane in each direction with an exclusive northbound left-turn lane and an exclusive right-turn lane at Gulfstream Road intersection without curb, gutter and sidewalk.
- Proposed Design Speed: 40 mph
- Proposed Maximum grade Mainline 0.54% Maximum grade allowable 9%
- Proposed Maximum grade Side Street N/A Maximum grade allowable N/A
- Proposed Maximum grade driveway N/A
- Proposed Maximum degree of curve 10.755 Maximum degree allowable 10.755
- Right-of-Way
 - Width 100 ~ 115 ft.
 - Easements: Temporary (), Permanent (), Utility (), Other (X).

- Type of access control: Full (), Partial (), By Permit (), Other (X).
- Number of parcels: 1 Number of displacements:
 - Business: 0
 - Residences: 0
 - Mobile homes: 0
 - Other: 0
- Structures:
 - Bridges: N/A
 - Retaining walls: N/A

Gulfstream Road and Robert Miller Jr. Road

- Major intersections and interchanges
The intersection of Gulfstream Road at Robert Miller Jr. Road: This intersection will be improved by adding an exclusive left-turn lane to Gulfstream Road westbound approach and an exclusive left-turn and an exclusive right-turn lane to Robert Miller Jr. Road northbound approach, and extending the existing exclusive right-turn lane for Gulfstream Road eastbound approach.
- Traffic control during construction: Two-way two-lane traffic will be maintained at all times. Construction of the intersection will be performed in three stages.
- Design Exceptions to controlling criteria anticipated:

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

- Design Variances: No variances are anticipated.
- Environmental concerns:
 - Air: CO analysis required.
 - Archaeology: short form for negative findings.
 - Ecology: USACE 404 Nationwide Permit 23 with Preconstruction Notification required for impacts to Waters of the US; no stream buffer variance.
 - History: Assessment of Effects required for railroad. No adverse effect anticipated.
 - NEPA: FAA coordination required.
 - Noise: not required.

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Project Number: CSMLP-0008-00(276)
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County: Chatham

- Level of environmental analysis:
 - Are Time Savings Procedures appropriate? Yes (X), No (),
 - Categorical exclusion (X),
 - Environmental Assessment/Finding of No Significant Impact (FONSI) (), or
 - Environmental Impact Statement (EIS) ().

- Utility involvements:
 - Communications:
 - ⇒ Telephone - AT&T
Hargray
Qwest Communications
Verizon Business Technology MCI
 - ⇒ Cable - Comcast
 - Power: Georgia Power
 - Gas: Atlanta Gas and Light
 - Water: City of Savannah
 - Petroleum: N/A
 - ITS: N/A
 - Railroads: Norfolk Southern Railroad

- VE Study Required Yes() No(X)

Project responsibilities:

- Design: Consultant
- Right-of-Way Acquisition: GDOT
- Relocation of Utilities: GDOT
- Letting to contract: GDOT
- Supervision of construction: GDOT
- Providing material pits: Contractor
- Providing detours: N/A

Coordination

- Initial Concept Meeting date and brief summary: To be added.
- Concept meeting date and brief summary: To be added.
- P A R meetings, dates and results: Not anticipated.
- FEMA, USCG, and/or TVA: Not anticipated.
- Public involvement: Not required.
- Local government comments: Not anticipated.
- Other projects in the area
 - CR 9/Gulfstream Road at NSR Track NS#620021E (P.I. No.0008851):
Installation of train activated warning devices in the form of inter-connect and pre-emption circuitry for the at-grade crossing of Gulfstream Road/CR 9 and NSR (Inv. No.620021E) in the City of Savannah in Chatham County.

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County: Chatham

- SR 21 at CR 9/Crossgate Road/Gulfstream Road (P.I. No. 0008275):
Intersection improvements which was previously identified as P.I. No. 0007141.
- Railroads
There is an existing at-grade Norfolk Southern Railroad (NSR) crossing on Gulfstream Road located approximately 120 feet east of the Robert Miller Jr. Road intersection.
- Other coordination to date: To be added.

Scheduling – Responsible Parties’ Estimate

- Time to complete the environmental process: 14 Months.
- Time to complete preliminary construction plans: 12 Months.
- Time to complete right-of-way plans: 3 Months.
- Time to complete the Section 404 Permit: 3 Months.
- Time to complete final construction plans: 15 Months.
- Time to complete to purchase right-of-way: 5 Months.
- List other major items that will affect the project schedule: N/A Months.

Other alternates considered:

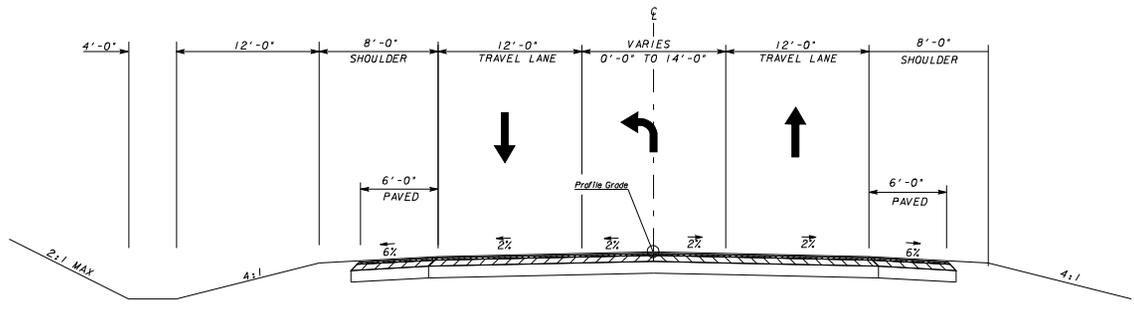
1. Build alternative with dual northbound left-turn lanes: For this alternative, the intersection would operate at better level of service comparing to the preferred alternative. However, more right-of-way would be required and construction cost would be higher.
2. No-Build Alternative: This alternative does not address the safety and operation needs of the intersection.

Comments: To be added as applicable.

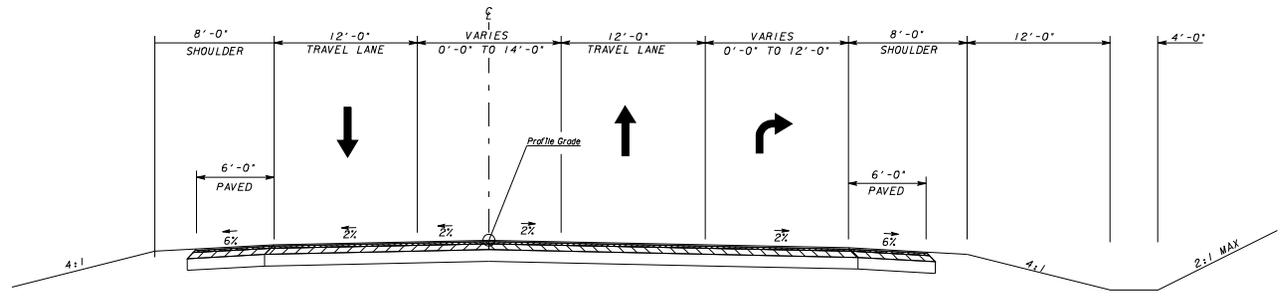
Attachments:

1. Cost Estimates:
 - a. Construction including E&C
 - b. Right-of-Way, and
 - c. Utilities
2. Sketch location map
3. Typical sections
4. Need and Purpose
5. Preferred alternate layout
6. Accident summaries
7. Capacity analysis
8. Minutes of Initial Concept and Concept meeting

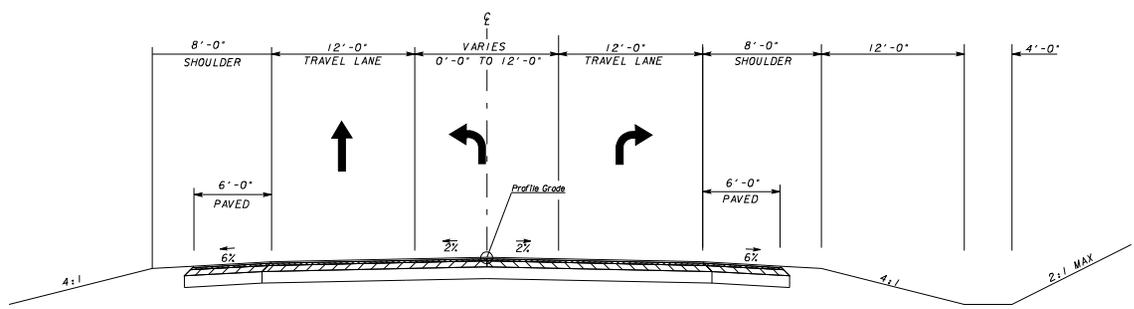
ATTACHMENT 5
TYPICAL SECTIONS



TYPICAL SECTION
GULFSTREAM ROAD
WESTBOUND APPROACH



TYPICAL SECTION
GULFSTREAM ROAD
EASTBOUND APPROACH



TYPICAL SECTION
ROBERT MILLER JR. ROAD
NORTHBOUND APPROACH



NOT TO SCALE



REVISION DATES		

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: DISTRICT 5, JESUP, GA
TYPICAL SECTIONS
ROBERT B. MILLER ROAD & GULFSTREAM ROAD
ROBERT B. MILLER ROAD AND
GULFSTREAM ROAD WIDENING

DRAWING NO.
5-01

ATTACHMENT 6
REVISED CONCEPT LAYOUTS



BEGIN PROJECT
BEGIN CONSTRUCTION
GULFSTREAM ROAD
STA. 27+41.15

GULFSTREAM ROAD
STA. 33+16.61 =
ROBERT MILLER JR. ROAD
STA. 132+94.08

RAIL ROAD AT GRADE
INTERSECTION
STA. 34+76.87

RAIL ROAD AT GRADE
INTERSECTION
STA. 35+51.86

RAILROAD AT GRADE
INTERSECTION
STA. 46+89.14

END PROJECT
END CONSTRUCTION
GULFSTREAM ROAD
STA. 69+40.73

SEE ROBERT MILLER JR. ROAD
WIDENING ALTERNATE 1

LEGEND	
EXISTING PROPERTY/RIGHT-OF-WAY LINE	---
PROPOSED RIGHT-OF-WAY LINE	—
EASEMENTS	▨
ESA-HISTORICAL BOUNDARY	—
WETLAND AREAS	▨
OPEN WATER	▨

PARSONS
3577 PARKWAY LANE, BUILDING V
SUITE 100, NORCROSS, GA 30092

SCALE IN FEET
0 50 100 200

CONCEPT ALTERNATE
GULFSTREAM ROAD WIDENING
CSMLP-0008-00(276), P.I. NO 0008276
CHATHAM COUNTY

SAVANNAH AIRPORT
COMMISSION

SAVANNAH AIRPORT
COMMISSION

SAVANNAH AIRPORT
COMMISSION

ROBERT MILLER
JR. ROAD

STATE OF GEORGIA
COASTAL STATE PRISON

DUKE SECURED
FINANCING LLC

DUKE REALTY
LIMITED PARTNERSHIP

DUKE REALTY
LIMITED PARTNERSHIP

WILLIAMS BROTHERS
TRUCKING INC.

GEORGIA POWER
COMPANY

PSG TERMINALS
LLC

SAPP CAPITAL
MANAGEMENT LLC

SOUTHERN REGION
INDUSTRIAL
REALTY INC.

MAYOR & ALDERMEN
OF SAVANNAH

SEE GULFSTREAM ROAD WIDENING CONCEPT ALTERNATE

DUKE SECURED FINANCING LLC

STATE OF GEORGIA COASTAL STATE PRISON

STATE OF GEORGIA COASTAL STATE PRISON

RAIL ROAD AT GRADE INTERSECTION STA. 35+51.86

RAIL ROAD AT GRADE INTERSECTION STA. 34+76.87

GULFSTREAM ROAD STA. 33+16.61
ROBERT MILLER JR. ROAD STA. 132+94.08

SAVANNAH AIRPORT COMMISSION

BEGIN PROJECT
BEGIN CONSTRUCTION
GULFSTREAM ROAD
STA. 27+41.15

SAVANNAH AIRPORT COMMISSION

SAVANNAH AIRPORT COMMISSION

SAVANNAH AIRPORT COMMISSION

BEGIN CONSTRUCTION
ROBERT MILLER JR. ROAD
STA. 103+00.00

BOUY HALL HOWARD ENTERPRISES

LEGEND

EXISTING PROPERTY/RIGHT-OF-WAY LINE	---
PROPOSED RIGHT-OF-WAY LINE	---
EASEMENTS	[Green Hatched Box]
ESA-HISTORICAL BOUNDARY	[Purple Dashed Line]
WETLAND AREAS	[Yellow Dotted Area]
OPEN WATER	[Yellow Hatched Area]



CONCEPT ALTERNATE 3
ROBERT MILLER JR. ROAD WIDENING
CSMLP-0008-00(276), P.I. NO 0008276
CHATHAM COUNTY

ATTACHMENT 7
CRASH ANALYSIS

1. Crash Analysis

Historical crash data were obtained from Georgia DOT Office of Traffic Safety and Design for the available most recent three years (2006-2008) for both Gulfstream Road and Robert B. Miller Road within the project limits. Crash history by crash type for Gulfstream Road and Robert B. Miller Road are summarized in Tables 1 and 2, respectively.

Table 1 Crash History by Crash Type (Gulfstream Road)

Year	Rear End	Angle	Struck Object	Run off Road	Head On	Sideswipe	Total
2006	6	3	3	3	1	0	16
2007	1	4	1	0	1	2	9
2008	6	2	1	0	0	0	9
Total	13	9	5	3	2	2	34
Percentage	38%	26%	15%	9%	6%	6%	100%

Table 2 Crash History by Crash Type (Robert B. Miller Road)

Year	Angle	Rear End	Struck Object	Run off Road	Head On	Sideswipe	Total
2006	2	0	1	2	1	0	6
2007	3	2	0	0	1	1	7
2008	2	4	1	0	0	0	7
Total	7	6	2	2	2	1	20
Percentage	35%	30%	10%	10%	10%	5%	100%

The historical crash data indicated that 16, 9, and 9 crashes occurred on Gulfstream Road in 2006, 2007, and 2008, respectively, and 6, 7, and 7 crashes occurred on Robert B. Miller Road in 2006, 2007, and 2008, respectively. In total, 34 crashes occurred on Gulfstream Road during the 3 years period and 20 crashes occurred on Robert B. Miller Road. For the crashes on Gulfstream Road, rear end collisions accounted for 38 percent of the crashes while angle collisions accounted for 26 percent of all crashes. For the crashes on Robert B. Miller Road, angle and rear end collisions accounted for 35 and 30 percent of all crashes, respectively. The high percentage of rear-end crashes and angle crashes is an indication of congestion and high turning movements at an intersections.

Crash rates were calculated for Gulfstream Road and Robert B. Miller Road and compared with the statewide averages rate for urban collector street, as shown in Tables 3 and 4, respectively.

Table 3 Crash History by Rate and Comparison with Statewide Average (Gulfstream Road)

Year	No. of Crashes			All Crashes		Injuries		Fatalities	
	Crashes	Injuries	Fatalities	Rate (100MVM)	Statewide Average Rate (100MVM)	Rate (100MVM)	Statewide Average Rate (100MVM)	Rate (100MVM)	Statewide Average Rate (100MVM)
2006	16	5	0	649	510	203	123	0	1.70
2007	9	1	0	360	475	40	114	0	1.33
2008	9	3	0	354	443	118	105	0	1.12

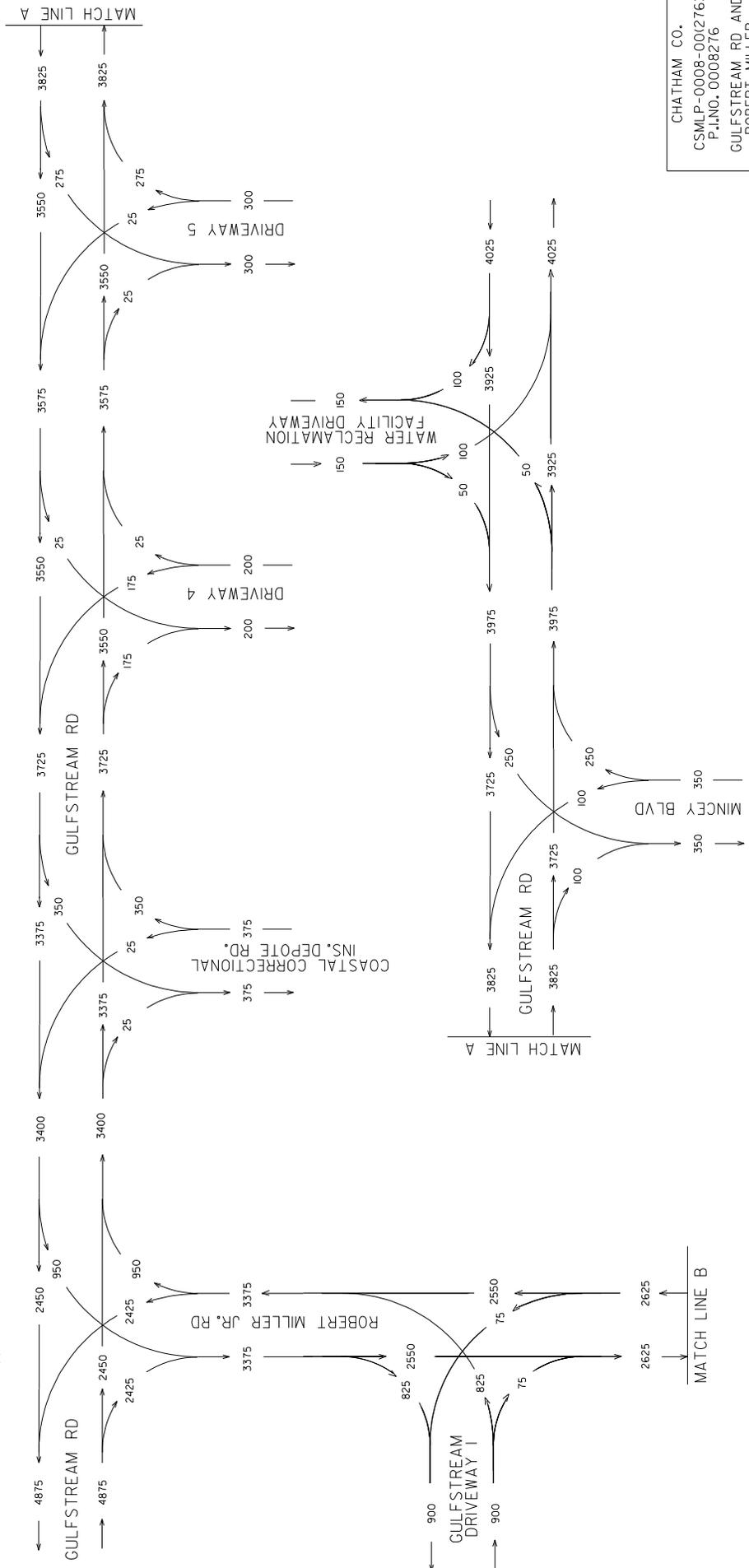
Table 4 Crash History by Rate and Comparison with Statewide Average (Robert B. Miller Road)

Year	No. of Crashes			All Crashes		Injuries		Fatalities	
	Crashes	Injuries	Fatalities	Rate (100MVM)	Statewide Average Rate (100MVM)	Rate (100MVM)	Statewide Average Rate (100MVM)	Rate (100MVM)	Statewide Average Rate (100MVM)
2006	6	2	0	349	510	116	123	0	1.70
2007	7	1	0	402	475	57	114	0	1.33
2008	7	0	0	396	443	0	105	0	1.12

The crash rate information shown in Table 3 indicated that the overall crash rate for Gulfstream Road was higher than statewide average in 2006 but lower than statewide average in both 2007 and 2008. The injury rate was higher than statewide average in 2006 and 2008 but lower in 2007. No fatality crash occurred on Gulfstream Road in these three years.

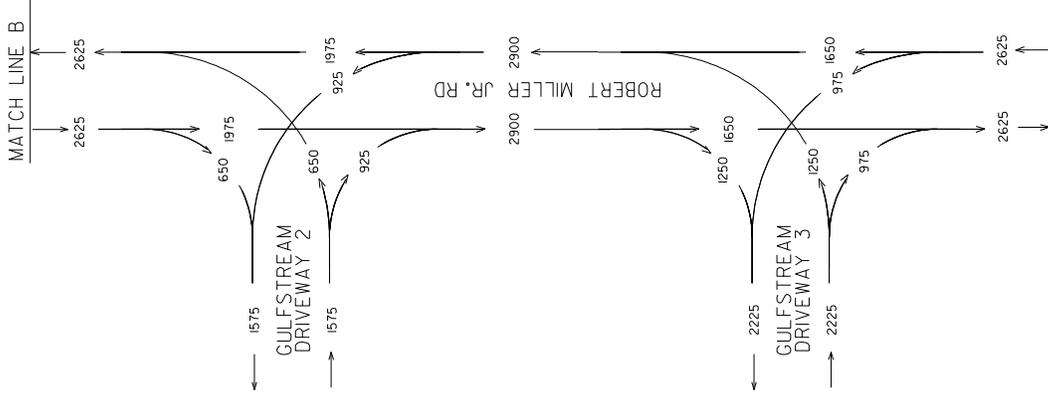
The crash rate information shown in Table 4 indicated that the overall crash rate and injury rate for Robert B. Miller Road were lower than statewide average in all three years. No fatality crash occurred on Robert B. Miller Road in these three years.

ATTACHMENT 8
TRAFFIC DIAGRAMS



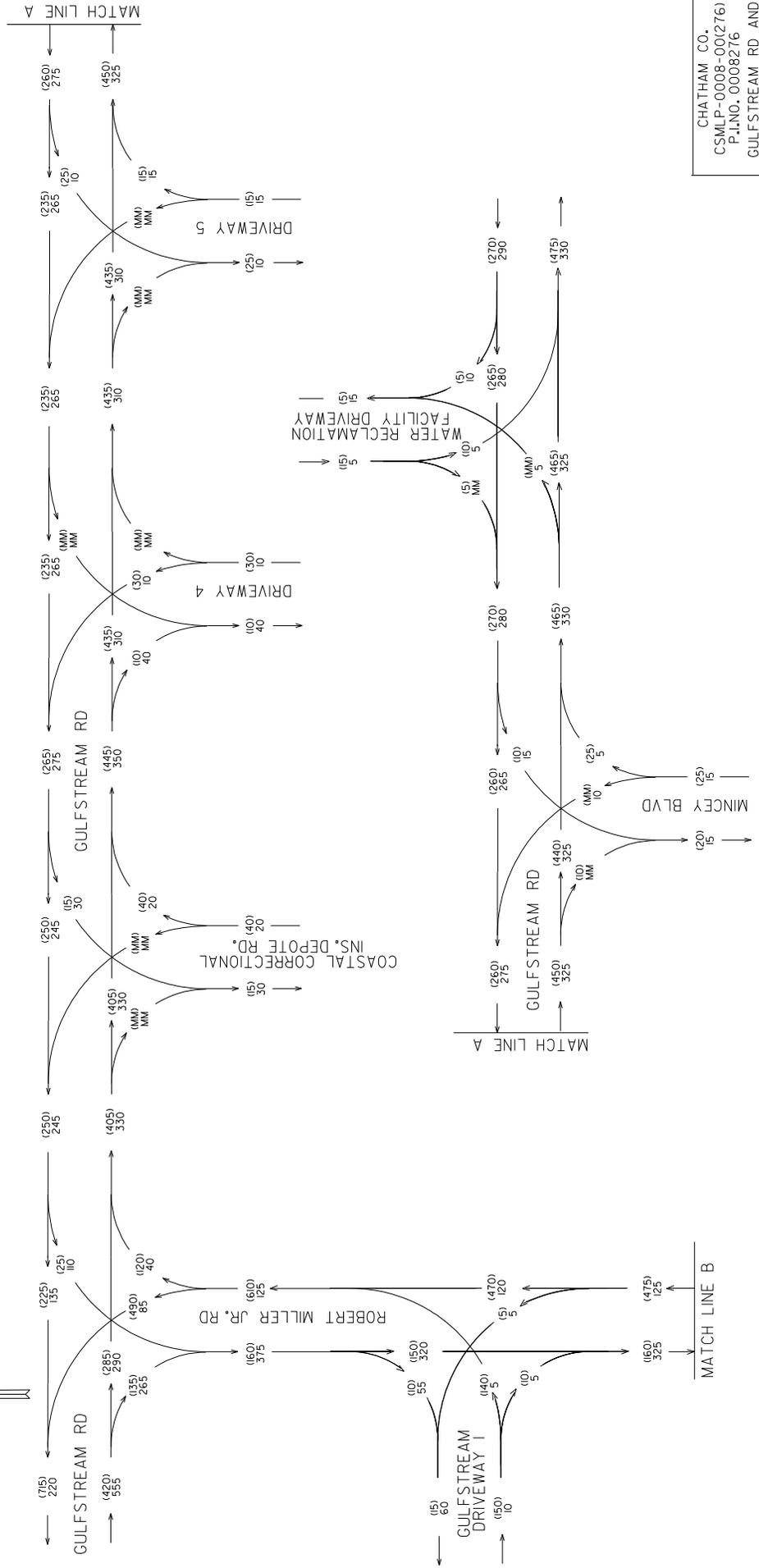
CHATHAM CO.
 CSMLP-0008-00(276)
 P.L.NO. 0008276
 GULFSTREAM RD AND
 ROBERT MILLER
 JR. RD WIDENING
 2011 ADT = 000
 24-HOUR T = 9%
 S_uL = 6%
 COMB = 3%
 04/2011

NOTES: DRAWING IS NOT TO SCALE.



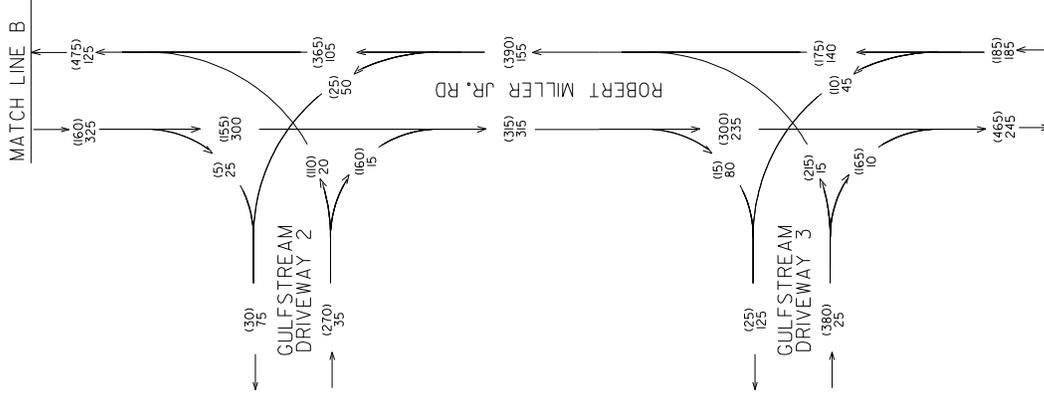
CHATHAM CO.
 CSMLP-0008-00(276)
 P.I.NO. 0008276
 GULFSTREAM RD AND
 ROBERT MILLER
 JR. RD WIDENING
 2011 ADT = 000
 24-HOUR T = 9%
 S.U. = 6%
 COMB = 3%
 04/2011

NOTES: DRAWING IS NOT TO SCALE.



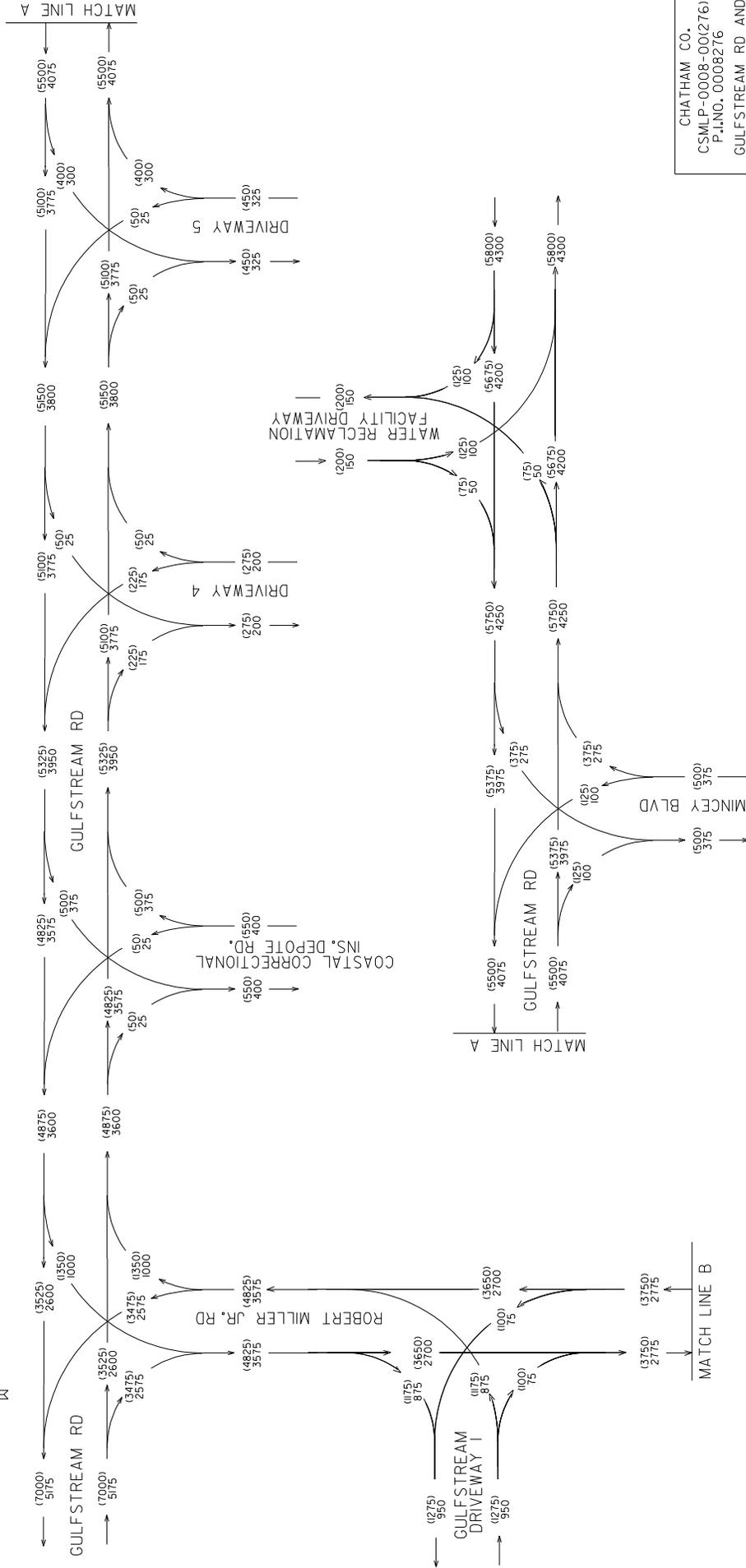
CHATHAM CO.
CSMLP-0008-00(276)
P.LNO. 0008276
GULFSTREAM RD AND
ROBERT MILLER
JR. RD WIDENING
2011 PM DHV = (000)
2011 AM DHV = 000
T = 8%
S.U.J. = 5%
COMB = 3% 04/2011

NOTES: DRAWING IS NOT TO SCALE.



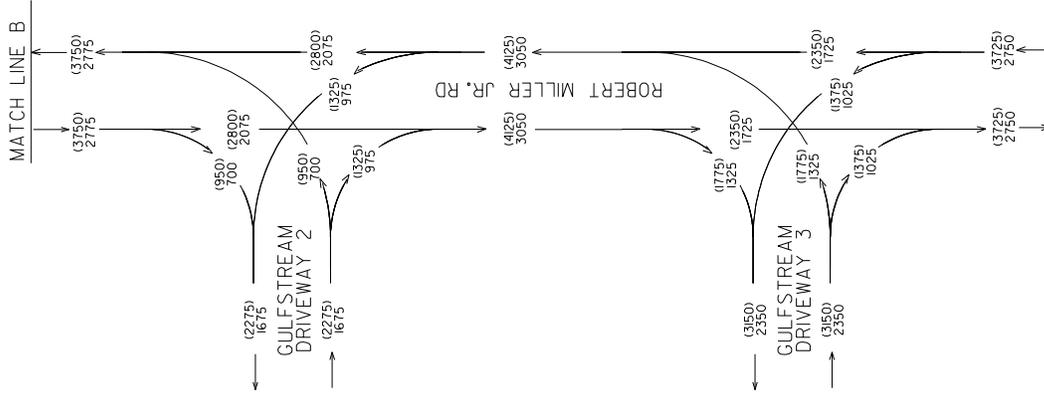
CHATHAM CO.
CSMLP-0008-00(276)
P.I.NO. 0008276
GULFSTREAM RD AND
ROBERT MILLER
JR. RD WIDENING
2011 PM DHV = (000)
2011 AM DHV = 000
T = 8%
S.U. = 5%
COMB = 3% 04/2011

NOTES: DRAWING IS NOT TO SCALE.



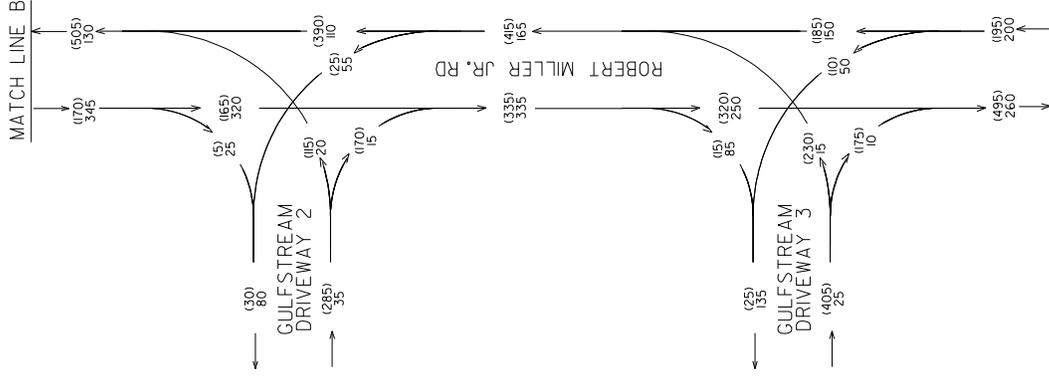
CHATHAM CO.
CSMLP-0008-00(276)
P.I.NO. 0008276
GULFSTREAM RD AND
ROBERT MILLER
JR. RD WIDENING
2035 NO-BUILD ADT = (000)
2015 NO-BUILD ADT = 000
24-HOUR T = 9%
S.U. = 6%
COMB = 3% 04/2011

NOTES: DRAWING IS NOT TO SCALE.



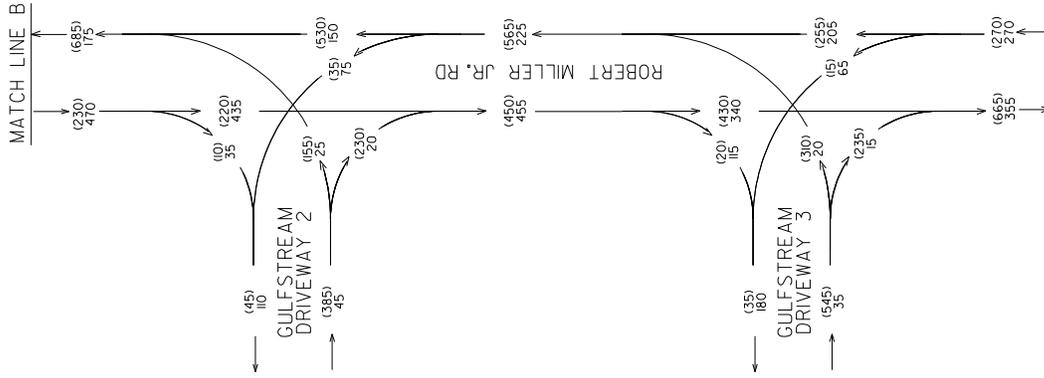
CHATHAM CO.
 CSMLP-0008-00(276)
 P.I.NO. 0008276
 GULFSTREAM RD AND
 ROBERT MILLER
 JR. RD WIDENING
 2035 NO-BUILD ADT = (000)
 2015 NO-BUILD ADT = 000
 24-HOUR T = 9%
 S.U. = 6%
 COMB = 3% 04/2011

NOTES: DRAWING IS NOT TO SCALE.



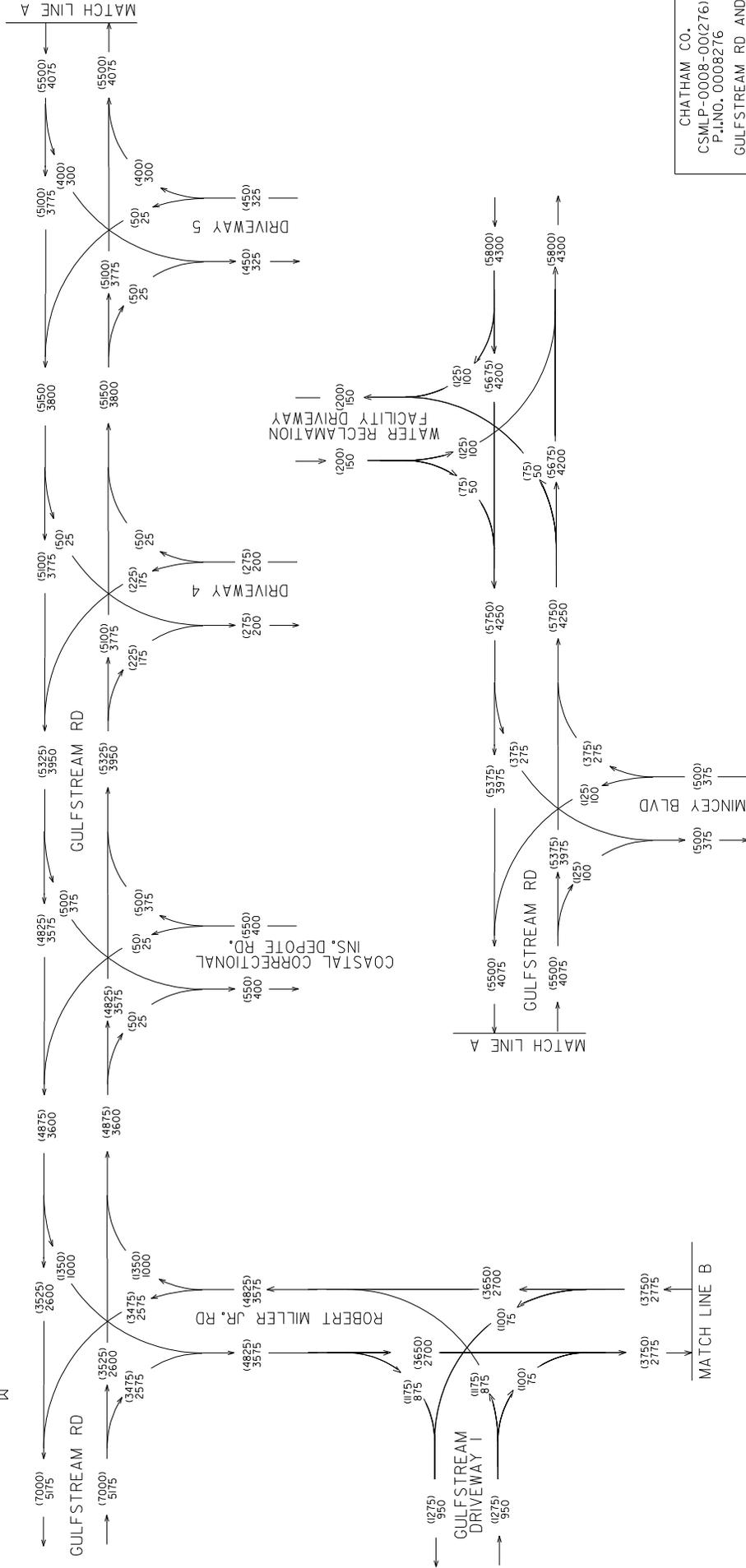
CHATHAM CO.
 CSMLP-0008-00(276)
 P.I.NO. 0008276
 GULFSTREAM RD AND
 ROBERT MILLER
 JR. RD WIDENING
 2015 PM NO-BUILD DRIV = 000
 2015 AM NO-BUILD DRIV = 000
 T = 8%
 S.U. = 5%
 COMB = 3%
 04/2011

NOTES: DRAWING IS NOT TO SCALE.



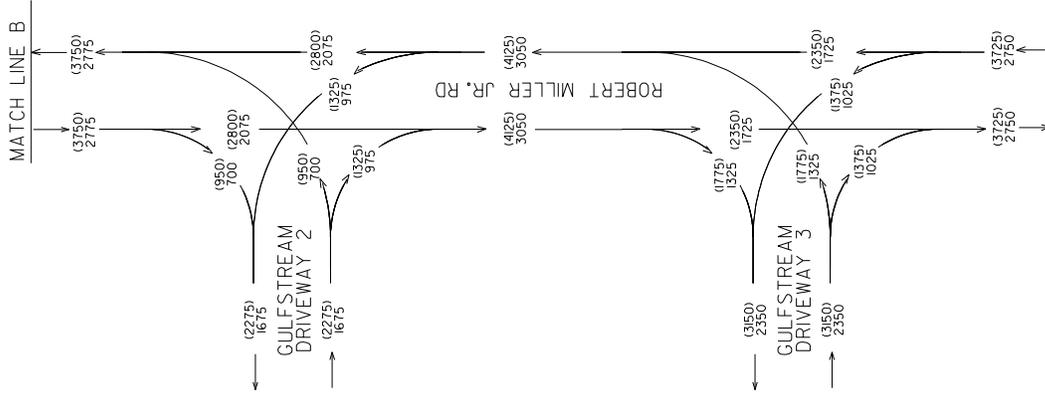
CHATHAM CO.
 CSMLP-0008-00(276)
 P.I.NO. 0008276
 GULFSTREAM RD AND
 ROBERT MILLER
 JR. RD WIDENING
 2035 PM NO-BUILD DHV = 1000)
 2035 AM NO-BUILD DHV = 000
 T = 8%
 S.L.U. = 5%
 COMB = 3% 04/2011

NOTES: DRAWING IS NOT TO SCALE.



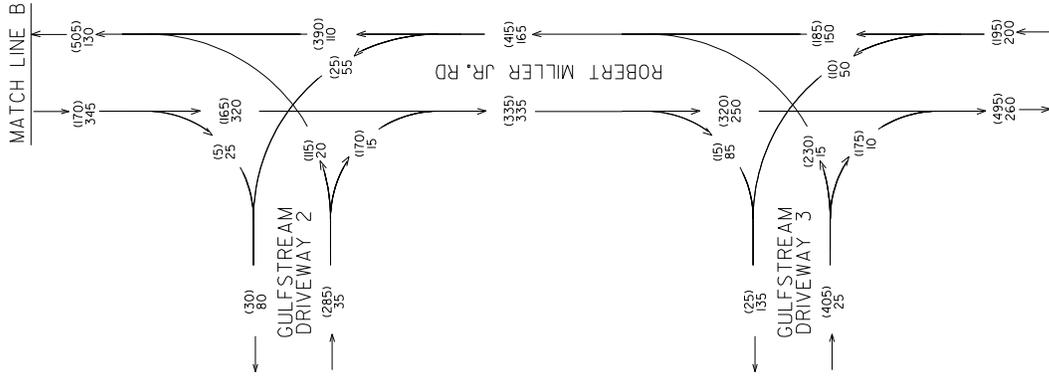
CHATHAM CO.
CSMLP-0008-00(276)
P.I.NO. 0008276
GULFSTREAM RD AND
ROBERT MILLER
JR. RD WIDENING
2035 BUILD ADT = (000)
2015 BUILD ADT = 000
24-HOUR T = 9%
S.U. = 6%
COMB = 3% 04/2011

NOTES: DRAWING IS NOT TO SCALE.



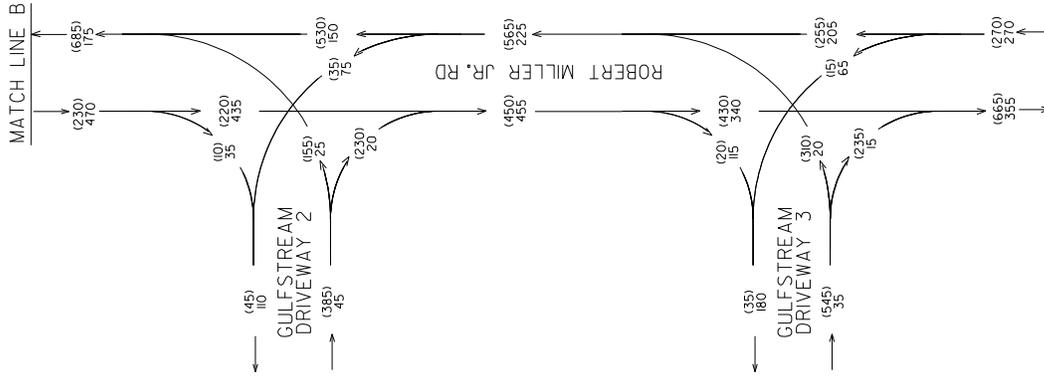
CHATHAM CO.
 CSMLP-0008-00(276)
 P.L.NO. 0008276
 GULFSTREAM RD AND
 ROBERT MILLER
 JR. RD WIDENING
 2035 BUILD ADT = (000)
 2015 BUILD ADT = 000
 24-HOUR T = 9%
 S.U. = 6%
 COMB = 3% 04/2011

NOTES: DRAWING IS NOT TO SCALE.



CHATHAM CO.
 CSMLP-0008-00(276)
 P.I.NO. 0008276
 GULFSTREAM RD AND
 ROBERT MILLER
 JR. RD WIDENING
 2015 PM BUILD DHV = (000)
 2015 AM BUILD DHV = 000
 T = 8%
 S.U. = 5%
 COMB = 3% 04/2011

NOTES: DRAWING IS NOT TO SCALE.



CHATHAM CO.
 CSMIP-0008-00(276)
 P.I.NO. 0008276
 GULFSTREAM RD AND
 ROBERT MILLER
 JR. RD WIDENING
 2035 PM BUILD DHV = (000)
 2035 AM BUILD DHV = 000
 T = 8%
 S.U. = 5%
 COMB = 3% 04/2011

NOTES: DRAWING IS NOT TO SCALE.

ATTACHMENT 9
CAPACITY ANALYSIS

1. Capacity Analysis

Capacity analysis is a set of procedures for estimating traffic-carrying ability of facilities over a range of defined operational conditions. It provides tools to assess facilities and to plan and design improved facilities [Highway Capacity Manual 2000]. Level of service (LOS) is a quality measure describing operational conditions, which is represented by six letters, from A to F, with LOS A representing the best operating conditions and LOS F the worst. For intersections capacity analysis, control delay is the measure of effectiveness (MOE) determining LOS. The LOS criteria for signalized and unsignalized intersections and urban arterials defined in Highway Capacity Manual 2000 are included in Table 1, 2 and 3, respectively.

Table 1 LOS Criteria for Signalized Intersections

Level of Service	Control Delay Per Vehicle (sec/veh)
A	<=10
B	>10-20
C	>20-35
D	>35-55
E	>55-80
F	>80

Table 2 LOS Criteria for Unsignalized Intersections

Level of Service	Control Delay Per Vehicle (sec/veh)
A	0-10
B	>10-15
C	>15-25
D	>25-35
E	>35-50
F	>50

Table 3 Urban Street LOS by Class

Urban Street Class	I	II	III	IV
Range of Free-Flow Speed	55 - 45 mph	45 - 35 mph	35 - 30 mph	35 - 25 mph
Typical FFS	50 mph	40 mph	35 mph	30 mph
LOS	Average Travel Speed (mph)			
A	> 42	> 35	> 30	> 25
B	> 34 - 42	> 28 - 35	> 24 - 30	> 19 - 25
C	> 27 - 34	> 22 - 28	> 18 - 24	> 13 - 19
D	> 21 - 27	> 17 - 22	> 14 - 18	> 9 - 13
E	> 16 - 21	> 13 - 17	> 10 - 14	> 7 - 9
F	<= 16	<= 13	<= 10	<= 7

Capacity analysis was performed for a.m. and p.m. peak hours for existing (2011) condition, opening year (2015) and design year (2035) no-build and build conditions in this study. *Synchro plus SimTraffic 7* software was used for analyzing intersections and roadway, and *SIDRA intersection 3.2* software was used for analyzing roundabouts.

5.1 Existing Condition

Capacity analysis was performed for the existing conditions and the analysis results are included in Tables 4 and 5.

Table 4 Capacity Analysis Results for Intersections (Existing 2011)

Intersection	Approach/Movement	AM		PM	
		Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
Gulfstream Road at Robert B. Miller Road	-	6.9	A	16.9	B
Gulfstream Road at Coastal Correctional Ins. Depote Road	Westbound Approach	1.1	A	0.6	A
	Northbound Approach	11.0	B	11.4	B
Gulfstream Road at Driveway 1 (West)	Westbound Approach	0.1	A	0.1	A
	Northbound Approach	13.1	B	15.4	C
Gulfstream Road at Driveway 2 (East)	Westbound Approach	0.4	A	1.1	A
	Northbound Approach	11.0	B	12.2	B
Gulfstream Road at Mincey Boulevard	Westbound Approach	0.6	A	0.4	A
	Northbound Approach	13.2	B	12.3	B
Gulfstream Road at Water Reclamation Facility Driveway	Eastbound Approach	0.2	A	0.1	A
	Southbound Approach	12.6	B	14.1	B
Robert B. Miller Road at Gulfstream Facility Driveway 1 (North)	Eastbound Left-turn	12.9	B	19.9	C
	Eastbound Right-turn	10.8	B	9.2	A
	Northbound Left-turn	8.3	A	7.6	A
Robert B. Miller Road at Gulfstream Facility Driveway 2 (Middle)	Eastbound Left-turn	14.8	B	17.8	C
	Eastbound Right-turn	10.8	B	10.4	B
	Northbound Left-turn	8.4	A	7.7	A
Robert B. Miller Road at Gulfstream Facility Driveway 3 (South)	Eastbound Left-turn	14.5	B	25.2	D
	Eastbound Right-turn	10.4	B	13.0	B
	Northbound Approach	2.4	A	0.5	A

Table 5 Roadway Capacity Analysis Results (Existing 2011)

Roadway	Posted Speed Limit (mph)	AM		PM	
		Travel Speed (mph)	LOS	Travel Speed (mph)	LOS
Gulfstream Road Eastbound	35	30	B	26	B
Gulfstream Road Westbound	35	30	B	28	B
Robert B. Miller Road Northbound	40	29	B	28	B
Robert B. Miller Road Southbound	40	34	B	35	B

The analysis indicates that currently, the signalized intersection of Gulfstream Road at Robert B. Miller Road operates at LOS B or better during both a.m. and p.m. peak hours, and the critical movements at all unsignalized intersections within the project limits operate at LOS D or better. All roadways sections within the project limits operate at LOS B during both a.m. and p.m. peak hours.

5.2 No-Build Condition

Capacity analysis was performed for the no-build conditions for the opening year (2015) and design year (2035). The analysis results are included in Tables 6 and 7.

Table 6 Capacity Analysis Results for Intersections (No-Build)

Intersection	Approach/Movement	2015				2035			
		AM		PM		AM		PM	
		Delay (sec/veh)	LOS						
Gulfstream Road at Robert B. Miller Road	-	7.0	A	19.1	B	9.8	A	50.6	D
Gulfstream Road at Coastal Correctional Ins. Depote Road	Westbound Approach	1.1	A	0.6	A	1.4	A	0.8	A
	Northbound Approach	11.2	B	11.8	B	13.7	B	14.7	C
Gulfstream Road at Driveway 1 (West)	Westbound Approach	0.1	A	0.1	A	0.2	A	0.2	A
	Northbound Approach	13.7	B	16.4	C	18.1	C	25.9	D
Gulfstream Road at Driveway 2 (East)	Westbound Approach	0.4	A	1.0	A	0.5	A	1.4	A
	Northbound Approach	11.3	B	12.5	B	13.4	B	16.3	C
Gulfstream Road at Mincey Boulevard	Westbound Approach	0.6	A	0.4	A	0.7	A	0.6	A
	Northbound Approach	13.7	B	12.7	B	18.0	C	17.1	C
Gulfstream Road at Water Reclamation Facility Driveway	Eastbound Approach	0.2	A	0.1	A	0.3	A	0.1	A
	Southbound Approach	13.1	B	14.8	C	16.7	C	20.2	C
Robert B. Miller Road at Gulfstream Facility Driveway 1 (North)	Eastbound Left-turn	13.3	B	22.3	C	16.6	C	68.8	F
	Eastbound Right-turn	11.0	B	9.3	A	12.5	B	9.7	A
	Northbound Left-turn	8.3	A	7.7	A	8.8	A	7.8	A
Robert B. Miller Road at Gulfstream Facility Driveway 2 (Middle)	Eastbound Left-turn	15.6	C	19.2	C	21.8	C	41.1	E
	Eastbound Right-turn	11.0	B	10.6	B	12.5	B	12.2	B
	Northbound Left-turn	8.5	A	7.7	A	9.1	A	7.9	A
Robert B. Miller Road at Gulfstream Facility Driveway 3 (South)	Eastbound Left-turn	15.2	C	30.4	D	20.6	C	186.4	F
	Eastbound Right-turn	10.6	B	13.6	B	11.8	B	19.8	C
	Northbound Approach	2.6	A	0.5	A	2.9	A	0.7	A

Table 7 Roadway Capacity Analysis Results (No-Build)

Roadway	Posted Speed Limit (mph)	2015 No-Build				2035 No-Build			
		AM		PM		AM		PM	
		Travel Speed (mph)	LOS						
Gulfstream Road Eastbound	35	30	B	25	B	29	B	18	D
Gulfstream Road Westbound	35	30	B	26	B	26	B	11	E
Robert B. Miller Road Northbound	40	29	B	27	C	25	C	13	F
Robert B. Miller Road Southbound	40	34	B	35	B	33	B	34	B

In the opening year, the signalized intersection of Gulfstream Road at Robert B. Miller Road would operate at LOS A and B during a.m. and p.m. peak hour, respectively. The critical movements at all unsignalized intersections would operate at LOS D or better. All roadway sections within the project limits operate at LOS C or better during both a.m. and p.m. peak hours.

In the design year, the signalized intersection of Gulfstream Road at Robert B. Miller Road would operate at LOS D or better during both a.m. and p.m. peak hours. However, the northbound queue length would be approximately 1,400 feet during the p.m. peak hour, which would block the first (north) driveway to Gulfstream Facility on Robert B. Miller Road. The critical movements at all unsignalized intersections would operate at LOS D or better except that the eastbound left-turn movement at the intersections of Robert B. Miller Road at Gulfstream Facility Driveway 1 (north), 2 (middle) and 3 (south) would operate at LOS F, E and F during the p.m. peak hour, respectively. All roadway sections within the project limits operate at LOS D or better except that Gulfstream Road westbound and Robert B. Miller Road northbound would operate at LOS E and F, respectively, during the p.m. peak hour.

The analysis indicated that improvements are needed for 1) the signalized intersection of Gulfstream Road at Robert B. Miller Road in order to reduce the northbound queue and improve the operation of westbound Gulfstream Road and northbound Robert B. Miller Road; and 2) the intersections of Robert B.

Miller Road at Gulfstream Facility Driveway 1 (north) and 2 (south) in order to improve the operation of the eastbound left-turn movement.

5.3 Build Condition

Two build alternatives were considered in this study. Alternative 1 includes 1) the addition of an exclusive left-turn lane on Gulfstream westbound approach, the addition of an exclusive right-turn lane on Robert B. Miller Road northbound approach, and an extension of the Gulfstream Road eastbound right-turn lane at the Gulfstream Road and Robert B. Miller Road intersection; 2) the addition of an exclusive left-turn lane at all T-intersections on Gulfstream Road within the project limits; and 3) the addition of southbound right-turn lane and northbound left-turn lane at the intersection of Robert B. Miller Road at Gulfstream Facility Driveway 3 (south).

Alternative 2 includes 1) the same improvements to the intersection of Gulfstream Road at Robert B. Miller Road and the T-intersections on Gulfstream Road as Alternative 1; and 2) a proposed roundabout at the intersections of Robert B. Miller Road at Gulfstream Facility Driveway 1 (north) and Driveway 3 (south).

Capacity analysis was performed for both alternatives and the analysis results are summarized in Tables 8 and 9 for Alternative 1 and Tables 10 and 11 for Alternative 2.

The analysis results indicate that for Alternative 1 in the opening year, the signalized intersection of Gulfstream Road at Robert B. Miller Road would operate at LOS B during both a.m. and p.m. peak hours. The critical movements at all unsignalized intersections would operate at LOS D or better. All roadway sections within the project limits operate at LOS C or better during both a.m. and p.m. peak hours.

In the design year, the signalized intersection of Gulfstream Road at Robert B. Miller Road would operate at LOS C or better during both a.m. and p.m. peak hours. The northbound queue length would be approximately 600 feet which is significantly reduced compared to no-build condition and it would not block the first (north) driveway to Gulfstream Facility on Robert B. Miller Road. The critical movements at all unsignalized intersections would operate at LOS D or better except that the eastbound left-turn movement at the intersections of Robert B. Miller Road at Gulfstream Facility Driveway 1 (north), 2 (middle) and 3 (south) would operate at LOS F, E and F, respectively, during the p.m. peak hour. All roadway sections within the project limits operate at LOS C or better during both a.m. and p.m. peak hours.

Table 8 Capacity Analysis Results for Intersections (Build - Alternative 1)

Intersection	Approach/ Movement	2015				2035			
		AM		PM		AM		PM	
		Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
Gulfstream Road at Robert B. Miller Road	-	10.2	B	19.5	B	12.5	B	32.8	C
Gulfstream Road at Coastal Correctional Ins. Depote Road	Westbound Left-turn	8.3	A	8.5	A	8.9	A	9.3	A
	Northbound Approach	11.0	B	11.7	B	13.5	B	14.6	B
Gulfstream Road at Driveway 1 (West)	Westbound Left-turn	8.3	A	8.6	A	8.8	A	9.5	A
	Northbound Approach	13.5	B	16.4	C	18.2	C	26.1	D
Gulfstream Road at Driveway 2 (East)	Westbound Left-turn	8.2	A	8.7	A	8.6	A	9.6	A
	Northbound Approach	11.2	B	12.5	B	13.2	B	16.3	C
Gulfstream Road at Mincey Boulevard	Westbound Left-turn	8.2	A	8.6	A	8.7	A	9.3	A
	Northbound Approach	13.7	B	12.7	B	18.0	C	17.1	C
Gulfstream Road at Water Reclamation Facility Driveway	Eastbound Left-turn	8.1	A	8.0	A	8.4	A	8.3	A
	Southbound Approach	13.1	B	14.8	B	16.7	C	20.2	C
Robert B. Miller Road at Gulfstream Facility Driveway 1 (North)	Eastbound Left-turn	13.3	B	22.3	C	16.6	C	68.8	F
	Eastbound Right-turn	11.0	B	9.3	A	12.5	B	9.7	A
	Northbound Left-turn	8.3	A	7.7	A	8.8	A	7.8	A
Robert B. Miller Road at Gulfstream Facility Driveway 2 (Middle)	Eastbound Left-turn	15.6	C	19.2	C	21.8	C	41.1	E
	Eastbound Right-turn	11.0	B	10.6	B	12.5	B	12.2	B
	Northbound Left-turn	8.5	A	7.7	A	9.1	A	7.9	A
Robert B. Miller Road at Gulfstream Facility Driveway 3 (South)	Eastbound Left-turn	14.5	B	29.5	D	19.0	C	177.1	F
	Eastbound Right-turn	10.2	B	13.4	B	11.2	B	19.3	C
	Northbound Left-Turn	8.5	A	8.2	A	9.1	A	8.6	A

Table 9 Roadway Capacity Analysis Results (Build - Alternative 1)

Roadway	Posted Speed Limit (mph)	2015				2035			
		AM		PM		AM		PM	
		Travel Speed (mph)	LOS						
Gulfstream Road Eastbound	35	29	B	25	B	27	B	19	C
Gulfstream Road Westbound	35	33	A	29	B	32	A	26	B
Robert B. Miller Road Northbound	40	29	B	25	C	28	C	24	C
Robert B. Miller Road Southbound	40	35	A	39	A	34	B	34	B

Table 10 Capacity Analysis Results for Intersections (Build - Alternative 2)

Intersection	Approach/ Movement	2015				2035			
		AM		PM		AM		PM	
		Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
Gulfstream Road at Robert B. Miller Road	-	10.2	B	19.5	B	12.5	B	32.8	C
Gulfstream Road at Coastal Correctional Ins. Depote Road	Westbound Left-turn	8.3	A	8.5	A	8.9	A	9.3	A
	Northbound Approach	11.0	B	11.7	B	13.5	B	14.6	B
Gulfstream Road at Driveway 1 (West)	Westbound Left-turn	8.3	A	8.6	A	8.8	A	9.5	A
	Northbound Approach	13.5	B	16.4	C	18.2	C	26.1	D
Gulfstream Road at Driveway 2 (East)	Westbound Left-turn	8.2	A	8.7	A	8.6	A	9.6	A
	Northbound Approach	11.2	B	12.5	B	13.2	B	16.3	C
Gulfstream Road at Mincey Boulevard	Westbound Left-turn	8.2	A	8.6	A	8.7	A	9.3	A
	Northbound Approach	13.7	B	12.7	B	18.0	C	17.1	C
Gulfstream Road at Water Reclamation Facility Driveway	Eastbound Left-turn	8.1	A	8.0	A	8.4	A	8.3	A
	Southbound Approach	13.1	B	14.8	B	16.7	C	20.2	C
Robert B. Miller Road at Gulfstream Facility Driveway 1 (North)	Roundabout	5.8	A	8.1	A	5.9	A	11.1	B
Robert B. Miller Road at Gulfstream Facility Driveway 2 (Middle)	Eastbound Left-turn	15.6	C	19.2	C	21.8	C	41.1	E
	Eastbound Right-turn	11.0	B	10.6	B	12.5	B	12.2	B
	Northbound Left-turn	8.5	A	7.7	A	9.1	A	7.9	A
Robert B. Miller Road at Gulfstream Facility Driveway 3 (South)	Roundabout	6.2	A	9.7	A	6.4	A	15.8	B

Table 11 Roadway Capacity Analysis Results (Build - Alternative 2)

Roadway	Posted Speed Limit (mph)	2015				2035			
		AM		PM		AM		PM	
		Travel Speed (mph)	LOS						
Gulfstream Road Eastbound	35	29	B	24	C	27	B	19	C
Gulfstream Road Westbound	35	32	A	28	B	32	A	26	B
Robert B. Miller Road Northbound	40	23	C	24	C	22	D	18	D
Robert B. Miller Road Southbound	40	28	C	27	C	26	C	27	C

The analysis results indicate that for Alternative 2 in the opening year, the signalized intersection of Gulfstream Road at Robert B. Miller Road would operate at LOS B during both a.m. and p.m. peak hours. The critical movements at all unsignalized intersections would operate at LOS C or better. The two roundabouts at Gulfstream Facility north and south driveways on Robert B. Miller Road would operate at LOS A during both a.m. and p.m. peak hours. All roadways sections within the project limits operate at LOS C or better.

In the design year, the signalized intersection of Gulfstream Road at Robert B. Miller Road would operate at LOS C or better during both a.m. and p.m. peak hours. The northbound queue length would be approximately 700 feet which is significantly reduced compared to no-build condition and it would not block the first (north) driveway to Gulfstream Facility on Robert B. Miller Road. The critical movements at all unsignalized intersections would operate at LOS D or better except that the eastbound left-turn movement at the intersections of Robert B. Miller Road at Gulfstream Facility Driveway 2 (middle) would operate at LOS E during the p.m. peak hour. The two roundabouts at Gulfstream Facility north and south driveways on Robert B. Miller Road would operate at LOS B or better during both a.m. and p.m. peak hours. All roadway sections within the project limits operate at LOS D or better.

The recommended improvements to the intersections are summarized in Table 12 for the two Build Alternatives.

Table 12 Summary of Intersection Improvements

Intersection	Improvement
Alternative 1	
Gulfstream Road at Robert B. Miller Jr. Road	Extend eastbound right-turn lane to a full width lane length of 200 ft Add a westbound left-turn lane with a full width lane length of 150 ft Add a northbound left-turn lane with a full width lane length of 600 ft
Gulfstream Road at Coastal Correctional Ins. Depote Road	Add a westbound left-turn lane with a full width lane length of 100 ft
Gulfstream Road at Driveway 1 (West)	Add a westbound left-turn lane with a full width lane length of 50 ft
Gulfstream Road at Driveway 2 (East)	Add a westbound left-turn lane with a full width lane length of 50 ft
Gulfstream Road at Mincey Boulevard	Add a westbound left-turn lane with a full width lane length of 50 ft
Gulfstream Road at Water Reclamation Facility Driveway	Add a eastbound left-turn lane with a full width lane length of 50 ft
Robert B. Miller Jr. Road at Gulfstream Facility Driveway 1 (North)	N/A
Robert B. Miller Jr. Road at Gulfstream Facility Driveway 2 (Middle)	N/A
Robert B. Miller Jr. Road at Gulfstream Facility Driveway 3 (South)	Add a southbound right-turn lane with a full width lane length of 50 ft Add a northbound left-turn lane with a full width lane length of 50 ft
Alternative 2	
Gulfstream Road at Robert B. Miller Jr. Road	Extend eastbound right-turn lane to a full width lane length of 200 ft Add a westbound left-turn lane with a full width lane length of 150 ft Add a northbound left-turn lane with a full width lane length of 700 ft
Gulfstream Road at Coastal Correctional Ins. Depote Road	Add a westbound left-turn lane with a full width lane length of 50 ft
Gulfstream Road at Driveway 1 (West)	Add a westbound left-turn lane with a full width lane length of 50 ft
Gulfstream Road at Driveway 2 (East)	Add a westbound left-turn lane with a full width lane length of 50 ft
Gulfstream Road at Mincey Boulevard	Add a westbound left-turn lane with a full width lane length of 50 ft
Gulfstream Road at Water Reclamation Facility Driveway	Add a eastbound left-turn lane with a full width lane length of 50 ft
Robert B. Miller Jr. Road at Gulfstream Facility Driveway 1 (North)	Install a roundabout with 94 ft island diameter and one 18 ft wide circulating lane
Robert B. Miller Jr. Road at Gulfstream Facility Driveway 2 (Middle)	N/A
Robert B. Miller Jr. Road at Gulfstream Facility Driveway 3 (South)	Install a roundabout with 114 ft island diameter and one 18 ft wide circulating lane

6. Conclusion

Traffic analysis indicates that for Build Alternative 1, all intersections/critical movements and roadway sections would operate at an acceptable LOS D or better with the following exceptions: the eastbound left-turn movement at the intersection of Robert B. Miller Road at Gulfstream Facility Driveway 1 (north) would operate at LOS F; the eastbound left-turn movement at the intersection of Robert B. Miller Road at Gulfstream Facility Driveway 2(middle) would operate at LOS E; and the eastbound left-turn movement at the intersection of Robert B. Miller Road at Gulfstream Facility Driveway 3 (south) would operate at

LOS F; For Alternative 2, all intersections/critical movements including the two roundabouts and roadway sections would operate at acceptable LOS D or better except that the eastbound left-turn movement at the intersection of Robert B. Miller Road at Gulfstream Facility Driveway 2 (middle) would operate at LOS E. Compared to Alternative 1, the two intersections of Robert B. Miller Road at Gulfstream Facility Driveway 1 (north) and Driveway 3 (south) would operate better for Alternative 2, but travel speed on Robert B, Miller Road would be lower due to the installation of the roundabouts

ATTACHMENT 10
ROUNDBOUT MEETING MINUTES

Meeting Summary

PURPOSE: Roundabout Design Review/Co-ordination Meeting

PROJECT: CSMLP-0008-00(276), PI 0008276, Chatham County
Widening of Gulfstream Road and Robert B. Miller Road

DATE: November 14, 2011

TIME: 2:00 PM

PLACE: GDOT Office of Design Policy
26th Floor Conference Room
600 West Peachtree Street
Atlanta, GA 30308

RECORD BY: Rajeev Shah

DISCUSSIONS:

A meeting was held on November 14, 2011 at the Georgia Department of Transportation One Georgia Center at the request of Mr. Pass. The purpose of the meeting was to discuss informal review comments provided by GDOT relating to the roundabouts proposed for Robert B. Miller Road and a recent request by Gulfstream to accommodate a larger design vehicle. Please see Attachment A a summary of informal review comments and responses provided by Parsons. A list of meeting attendees is attached to these meeting minutes.

Notes below summarize discussions and decisions from the meeting.

- Mr. Iqbal indicated that this project was originally scoped to include widening of Gulfstream Road and Robert B. Miller Road without reconstruction of Gulfstream driveway intersections as roundabouts.
- Mr. Iqbal explained that Robert Miller Road is functionally classified as Urban Collector and that the GDOT Design Policy Manual (DPM) lists the minimum design vehicle for this type of roadway as BUS-40 or SU. Current design of roundabouts on Robert B. Miller Road accommodates both SU and BUS-40 within its circulatory roadway without tracking over the truck apron. Additionally, the current roundabout design would also accommodate a WB-50 with slight tracking over the truck apron.

Mr. Pass referred Parson to text within the DPM which states that *“In the design of any roadway facility, the designer should consider the largest design vehicle that is likely to use that facility with considerable frequency or a design vehicle with special characteristics appropriate to a particular location in selecting design vehicles.”* Mr. Moseley added that Gulfstream has requested that a larger vehicle (larger than a BUS-40 or SU) be accommodated. Mr. Zehngraff explained that for the design of a roundabout even the very

infrequent vehicle must be accommodated. In summary, Mr. Pass referred Parsons to the Entirety of **Section 3.2 Design Vehicle** of the DPM as well as Section 8.3.2.

The consensus of the attendees was that the appropriate design vehicle should be a WB-67, at minimum. It was further agreed that Mr. Moseley would submit the dimensions of a WB-67 to Gulfstream Aviation for their agreement, or identification of a different design vehicle if that vehicle would be more restrictive than a WB-67.

- A PIOH has not been held for this project. Mr. Pass stated that a PIOH would be required unless there was a another nearby well-functioning roundabout, consistent with Section 8.2.5 of the DPM. He specifically recommended that the decision to hold or not to hold a PIOH be decided by the GDOT NEPA specialist for the project.
- Mr. Moseley will send a request to Mr. Brad Ehrman, the GDOT Statewide Lighting Engineer, to set up a lighting agreement between GDOT and Chatham County. Mr. Erhman will also verify whether or not the design of lighting for the roundabout can be performed by GDOT.
- Mr. Iqbal stated that Parsons will provide a brief summary of the anticipated staging sequence for construction of roundabouts as part of the Roundabout Feasibility Report. This was requested by Mr. Pass as part of informal review comments.
- Mr. Iqbal stated that Parsons will reevaluate the selection of Alternate 3 (with two roundabouts) as the preferred alternative and provide explanation why Alternate 2 was not selected. Alternate 2 can be expected to provide better operation performance but may result in greater impacts.
- Mr. Pass confirmed the need for a peer review of roundabouts proposed for this project and will provide a task order template to Mr. Moseley for this work to be performed under the Parsons Task Order Service Contract.
- Mr. Pass referred Parsons to a new Roundabout Landscaping construction detail which can be used as a design of landscaping for the roundabout.
- Mr. Zehngraff recommended that curb and gutter be provided. Please refer to Section 9.3.8 of the GDOT DPM. He also, recommended that appropriate drainage structures be provided and to avoid locating these structures on the approach and exit radii – structures may be located near the end of the curb radius, near the tangent. Please refer to Section 8.3.8 of the DPM.

Action Items

- Parsons will submit WB-67 design vehicle dimensions to Mr. Moseley for onward submission to Gulfstream Aviation for their concurrence of design vehicle.
- Parsons will update the concept report and roundabout feasibility report to address decisions agreed upon at this meeting.
- Mr. Moseley will contact Mr. Ehrman regarding lighting, the project NEPA specialist regarding a PIOH, and submit a request for a task order for peer review ASAP.

Meeting Attendees:

Name	Organization	Phone	Email
Scott E. Zehngraff	GDOT Traffic Ops	404-635-8127	szehngraff@dot.ga.gov
Paul DeNard	GDOT Traffic Ops	404-635-8278	pdenard@dot.ga.gov
Brent Moseley	GDOT OPD	912-427-5751	bmoseley@dot.ga.gov
Daniel Pass	GDOT Office of Design Policy and Support	404-631-1651	dpass@dot.ga.gov
Sajid Iqbal	Parsons	678-969-2368	Sajid.Iqbal@parsons.com
Sunita Nadella	Parsons	678-969-2304	Sunita.Nadella@parsons.com
Rajeev Shah	Parsons	678-969-2481	Rajeev.Shah@parsons.com

ATTACHMENT A

Project No. CSMLP-0008-00(276), P.I. No. 0008276 Gulfstream Road and Robert Miller Road Widening, Chatham County

Response to comments from Daniel G. Pass of Design Policy & Support on Roundabout Design <i>Blue – Parsons response; Green - GDOT reply to Parsons responses.</i>		
No.	Comment	Response
1.	Desirable LOS: This should be identified, C or D based on functional classification and DPM Table 6.5.	<i>Desirable LOS for Robert Miller Road is C. The report has been updated to reflect this comment. OK.</i>
2.	Capacity analyses: For roundabout analyses, please report results by lane group and include v/c and 95 percentile queue (in addition to delay and LOS). It is noted that the design LOS for Driveway 2 as one-way stop control is E with a delay of 41 seconds. This is significantly worse than what can be achieved with a roundabout (i.e., LOS A, delay of less than 10 seconds). In addition, the operational performance of three roundabouts in series can be expected to be better than having a stop control in the middle. A roundabout on either side of the stop controlled intersection would tend to eliminate gaps necessary for left turns from the middle drive. Finally, overall driver familiarity and corresponding operational performance may increase with time, as a comparatively high portion of the traffic would be repeat users of the roundabouts.	<p><i>As requested the tables in the report have been updated to show v/c and queue lengths for all approaches of the intersection. OK.</i></p> <p><i>For the Driveway 2 LOS E is for the traffic making left on Robert Miller Road from the Gulfstream Aviation facility. The Robert Miller Road (main line) at this Driveway 2 would operate at LOS B or better during design year peak hours. Since all three driveways on Robert Miller Road provide access to the same Gulfstream Aviation Facility it was deemed not necessary to convert this driveway intersection into a roundabout. Section 8 of the Feasibility Study states that “Providing a traditional three-way stop controlled intersection...will address the operational issues” and “A roundabout at this location will not serves the operational deficits at the intersection due to heavy right turning movement coming out of the side street”. In fact, the results of operational analyses presented indicates that a roundabout would operate at a LOS of A as compared to LOS of E for stop control.</i></p> <p><i>Please update Sections 6 and 8 of the feasibility study to be consistent with the results on the operational analyses presented. Additionally, the concern expressed in Section 6 about “increased driver confusion” needs to be better supported. This is counterintuitive and not consistent with GDOTs understanding of the performance of roundabouts in series.</i></p>
3.	Cost Comparison: The increased safety benefit for the roundabout should be considered. Clarify why the cost for Alt 2 is so much higher than for Alt 3, specifically why the	<i>The drainage cost for Alt. 2 was higher due to an ‘EXCEL’ formula error, which has been corrected. Additionally, the cost comparison</i>

	higher reported drainage costs of Alt. 2 (\$1.5M) as compared to Alt. 3 (\$0.28M). Lighting costs for the roundabout should also be considered.	<i>table for all three alternates have been updated to show the corrected drainage costs for Alt. 2, lighting costs for roundabouts, right-of-way acquisitions cost, and utility impact cost. OK.</i>
4.	Alternate Selection: the selection of Alternate 2 should be considered based on better operational performance and corrected costs (with inclusion of safety benefits). Please clarify differing information provided on the Alternate Matrix in the concept report - this indicates a lower cost for Alternate 2, better operational performance, and less utility impacts – albeit more open water impact.	<i>Alternate 2 Cost will be updated to reflect cost due to ROW Acquisition, Utility Impacts, and Lighting Costs for roundabouts. Utility impact for Alternate 2 is lower than other two alternates but the open water impact is greater than other two alternates. OK. Please address the first part of the comment.</i>
5.	Engineering studies: Studies to verify the layout of the roundabout need to be performed. Specifically, this includes fastest path and truck turning swept path studies – also, a design vehicle needs to be identified.	<i>Design vehicle is Single-Unit Truck (SU). We have checked the roundabout design for WB-67 and WB-50. Turning path for these vehicles slightly intrude in to the truck apron. The traffic diagrams included in the concept report indicate 3% combination trucks. The nature of the surrounding development also suggests a larger design vehicle than a SU. In addition, please provide fastest path and truck turning swept path studies.</i>
6.	Lighting: Lighting of the roundabouts needs to be addressed. Refer to Section 8.2.4 of the DPM.	<i>Roundabouts should be lighted. Lighting design is not included in consultant’s current scope of work. The PM can request that the GDOT Lighting Group set up a task order for this design if lighting design is not added to Parson’s scope of work.</i>
7.	Staging: A discussion of how the roundabouts will be constructed should be provided, at least at some level.	<i>Staging notes and plans will be included as part of PFPR submission. Nonetheless, the anticipated approach to staging should be addressed in some form. Parsons must have some understanding of how these roundabout will be built. (e.g., temporary pavement, offsite detour, under traffic...).</i>
8.	Landscaping: May be helpful, but is not required.	<i>Ok, not required. OK. Though not required, landscaping may still be considered to improve visibility and operations. GDOT now has a roundabout landscaping Construction Detail (RA-1).</i>
9.	Public Outreach: A PIOH was not mentioned in the draft concept report. When will a PIOH be held?	<i>GDOT District 5 deemed a PIOH may not be needed for this project. If a PIOH is needed and scheduled concept report will be updated. The PM can verify with the Office of Environmental Services what level of public involvement will be appropriate.</i>
10.	Peer Review: Recommend review of the feasibility study be completed as early as possible – early preliminary design is OK. Peer review of PFPR (or FFPR) plans should also be performed.	<i>GDOT PM to arrange peer review. OK.</i>

ATTACHMENT 11
CONCEPT TEAM MEETING MINUTES

Meeting Summary

PURPOSE: Initial Concept Team Meeting

PROJECT: CSMLP-0008-00(276), PI 0008276, Chatham County
Widening of Gulfstream Road and Robert B. Miller Road

DATE: July 27, 2011

TIME: 2:00 PM

PLACE: GDOT Area 5 Office
630 West Boundary Street
Savannah, GA 31402

RECORD BY: Rajeev Shah

DISCUSSIONS:

An Initial Concept Team meeting was held on July 27, 2011 at the Georgia Department of Transportation Area 5 Savannah Office to review the need and purpose statement and draft project concept report of the subject project. A list of meeting attendees is attached to these meeting minutes.

The purpose of the meeting was:

- Present project need and purpose, concept alternates and draft concept report
- Obtain feedback and identify any issues
- Determine next steps

Dennis Odom conducted the meeting, and opened the meeting by providing a brief description of the project and by asking everyone to introduce themselves. Parsons Team gave a brief overview of the proposed project describing the need, location, scope of work to be performed and schedule for the project. Concept alternates considered for the project were presented, along with the reasons for the selection of the preferred alternate. Additionally, Parsons Team presented a traffic simulation of the preferred alternate for the design year 2035 traffic condition for the proposed project.

Notes below summarize discussions and decisions from the meeting.

- GDOT Preconstruction Engineer, Brad Saxon inquired whether or not the speed of through traffic on Robert B. Miller Road for the preferred alternate will be reduced due to the proposed roundabouts. Parsons team responded that average speed for the preferred alternate is approximately 15 percent lower than the alternate without roundabouts.

- Gulfstream Inc.'s Representative Joe Drake, enquired if the revised expansion plan has been incorporated in the traffic forecast. GDOT responded that they will verify whether the second phase expansion plan was incorporated in the traffic forecast.
- Gulfstream Inc. requested for Synchro simulation files to be presented to the decision makers at the Gulfstream Aviation to show future traffic operations of the proposed roundabouts. Parsons team indicated that it will provide Synchro files to GDOT PM for onward submission to Gulfstream Inc.
- It was noted by GDOT Utilities representative that there is an existing gas regulator near southeast quadrant of intersection of the Gulfstream Road and Robert B. Miller Road, which seems to be impacted by the preferred alternate. Parsons Team indicated that while developing the alternate care was taken to avoid any impact to the gas regulator. Parsons will verify the impact and submit a large scaled plan blow-up to GDOT showing the location of the gas regulator and its proximity to the proposed improvements.
- The need of lighting agreement with the County for the proposed roundabouts was discussed during the meeting. As per Chapter 8 of GDOT Design Policy Manual, in order for the design of a roundabout to move forward to preliminary design after concept approval, a written commitment must be received from the local government to share the cost of lighting by funding the energy, operation and maintenance cost for the lighting system or variance needs to be approved to waive lighting at the proposed roundabout locations. GDOT PM will obtain the required approval.
- GDOT representative, Robert McCull inquired about the train speed at the existing at-grade crossing of Norfolk Southern Railroad and CSX Railroad. Parsons team responded that average train speed at Norfolk Southern crossing is 49 mph and at CSX Railroad crossing it is 74 mph.
- Chatham County - Savannah Metropolitan Planning Commission representative, Wykoda Wang inquired regarding the schedule of concept approval date and right-of-way date and whether the schedule of right-of-way can be still maintained for the year 2013. GDOT PM responded that concept report will be approved in approximately 2 months and after which a schedule for future activities will be revised based on the concept report approval date. However, a right-of-way schedule can still be maintained for the year 2013.
- Georgia Power representative indicated that there is distribution line recently installed long the Westside of Robert B. Miller Road, which will require potential relocation.

Action Items

- Parsons will provide to GDOT Synchro simulation files and layout showing location of existing gas regulator and its impact due to the preferred layout.
- Parsons will update the concept report to incorporate the comments made during the initial concept team meeting.
- A final concept report will be submitted to GDOT for approval.
- GDOT will verify, whether traffic forecast included the second phase expansion plan of Gulfstream Inc.

Meeting Attendees:

Name	Organization	Phone	Email
Keith Stewart	GDOT	912-427-5864	KStewart@dot.ga.gov
Stephen Thomas	GDOT Utilities	912-427-5779	SThomas@dot.ga.gov
Dennis Odom	GDOT	912-427-5716	DOdom@dot.ga.gov
Brad Saxon	GDOT Preconstruction	912-427-5715	BSaxon@dot.ga.gov
Bryan Wingate	GDOT ROW	912-427-1983	BWingate@dot.ga.gov
Teresa Scott	GDOT Preconstruction	912-427-5788	TScott@dot.ga.gov
Troy Pittman	GDOT Construction	912-651-2144	TPittman@dot.ga.gov
Slade Cole	GDOT Construction	912-651-2144	SCole@dot.ga.gov
Wykoda Wang	The Chatham-Savannah Metropolitan Planning Commission	912-651-1452	wangw@thempc.org
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PARSONS

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Meeting Sign-In Sheet INITIAL CONCEPT MEETING		
Title: 0008276 CLATHAM CO. CSMLP-0008-00 (276) WIDE, DL GULFSTREAM RD. & ROBERT B. MILLER RD.		Meeting Date: 7/27/11
Location: Jesup District Office SW. AREA OFFICE -204 N. Hwy 301 -Jesup, GA 31546		Time: 2:00 P.M. Room: _____

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