ORIGINAL TO GENERAL FILES

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

OFFICE OF DESIGN POLICY & SUPPORT
INTERDEPARTMENTAL CORRESPONDENCE

FILE P.I. # 0008884 **OFFICE** Design Policy & Support

GDOT District 3 - Thomaston
Monroe County **DATE** 4/13/2011
SR 18 @ SR 87 Intersection Improvements

FROM for Brent Story, State Design Policy Engineer

TO SEE DISTRIBUTION

SUBJECT **APPROVED CONCEPT REPORT**

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

Attachment

DISTRIBUTION:

Genetha Rice-Singleton, Program Control Administrator
Bobby Hilliard, State Program Delivery Engineer
Cindy VanDyke, State Transportation Planning Administrator
Angela Robinson, Financial Management Administrator
Glenn Bowman, State Environmental Administrator
Kathy Zahul, State Traffic Engineer
Georgene Geary, State Materials & Research Engineer
Ron Wishon, State Project Review Engineer
Jeff Baker, State Utilities Engineer
Ken Thompson, Statewide Location Bureau Chief
David Millen, District Engineer
Bill Rountree, District Preconstruction Engineer
Kerry Gore, District Utilities Engineer
Derrick Cameron, Project Manager
BOARD MEMBER - 8th Congressional District

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

Office of Traffic Operations

PROJECT CONCEPT REPORT

Project Number: CSSFT-0008-00(884)
County: Monroe
P. I. Number: 0008884
Federal Route Number: US 23
State Route Number: SR 18/ SR 87

Roundabout at State Route 18 / Dames Ferry Road and State Route 87

Submitted for approval:

DATE 2/18/11 — Gresham Smith & Partners
Design Consultant Name and Firm Name

DATE 2-21-11 — Kathrene Zabrul
Office Head (Traffic Operations)

DATE 21 Feb 2011 — [signature]
Project Manager

Recommendation for approval:

DATE 3/10/11 — GENETHA RICE-SINGLETON*
Program Control Administrator

DATE 3/17/11 — GLENN BOWMAN*
State Environmental Administrator

DATE 3/1/11 — RON WISHON*
Project Review Engineer

DATE 3/1/11 — FOR SAL PIRZAD*
State Utilities Engineer

DATE _____ — _____
District Engineer

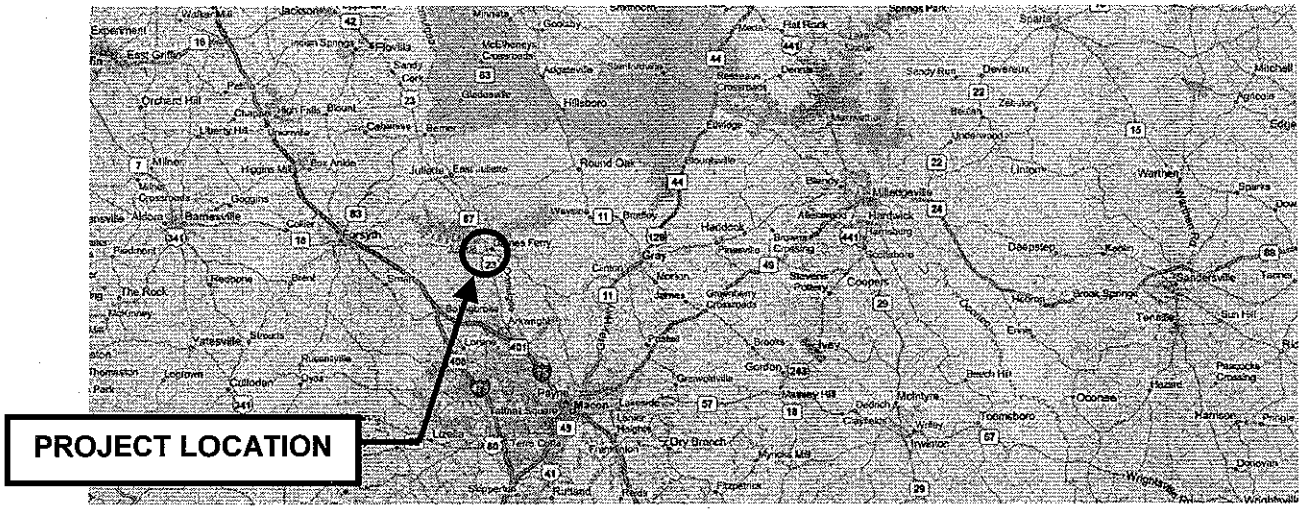
DATE _____ — _____
State Transportation Financial Management Administrator

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

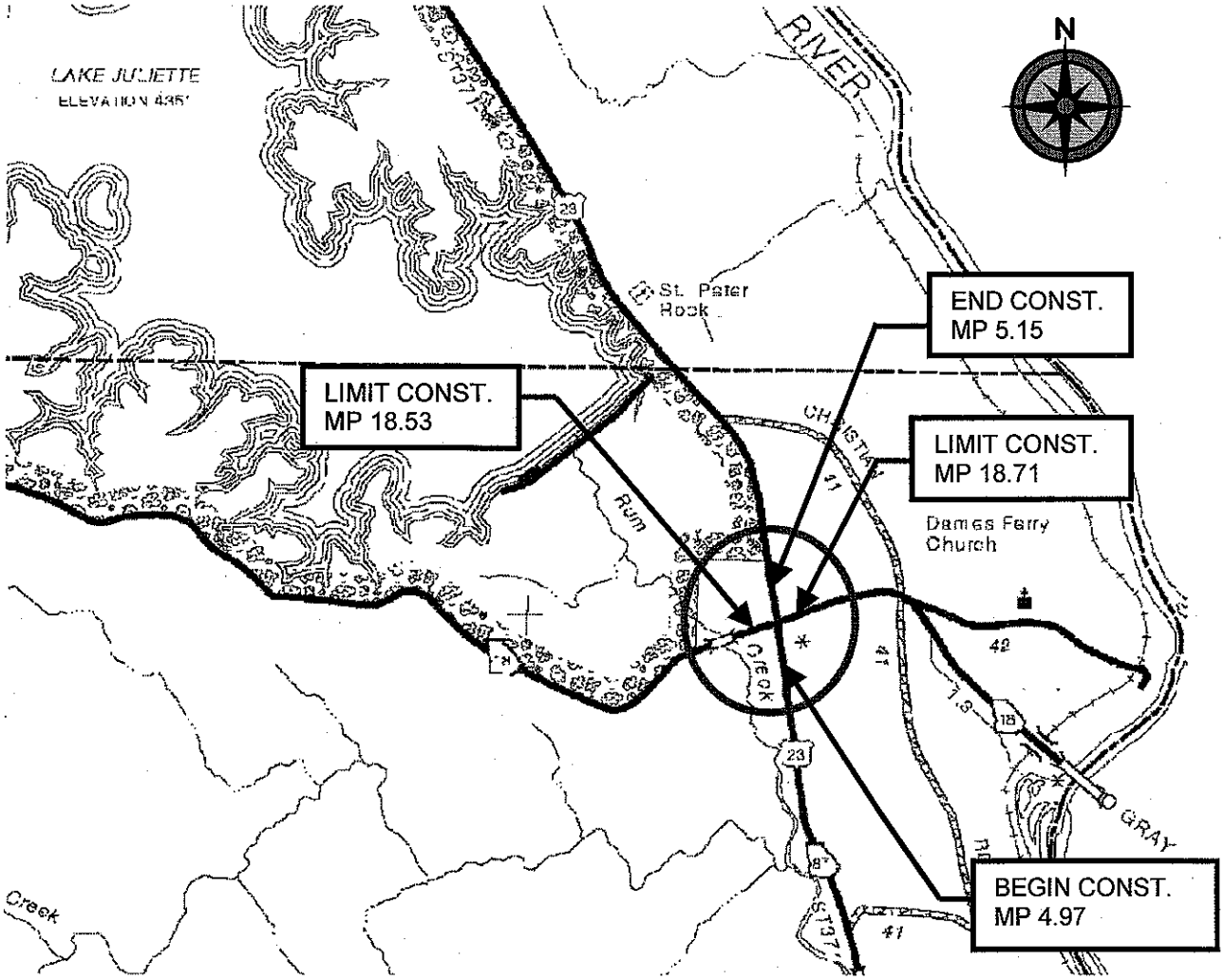
DATE 3/2/11 — CYNTHIA VANDYKE*
State Transportation Planning Administrator

* - RECOMMENDATION ON FILE

Project Overview Map



Project Location Map



Need and Purpose:
The purpose of this project is to reduce crash frequency and severity and the increase capacity of the intersection by constructing a single-lane roundabout. The need for these improvements is based on the fact that 167 crashes have occurred along State Route 87 and State Route 18 over the last nine years. All of the crashes occurred within one-half mile of the intersection. Sixty-five of the 167 crashes have occurred at the intersection of State Route 87 and State Route 18, with four involving fatalities. Of the sixty-five crashes at the intersection, 70% of the crashes were angle crashes. Based on anticipated future traffic, the State Route 87 at State Route 18 intersection will operate at a level of service C/F for the AM/PM peaks.

Background
The intersection of State Route 87 at State Route 18 currently functions as a four-way stop controlled intersection. State Route 87 is a two-lane roadway with rural shoulders and is classified as a Rural Minor Arterial. State Route 18 is a two-lane roadway with rural shoulders and is classified as a Rural Major Collector. The posted speed of both roads is 55 mph. Land use in the area consists of moderate residential use with mostly single family homes off of the state routes. The northeast quadrant has an Exxon gas/convenience store with access from both state routes.

Safety
Crash data at the intersection the State Route 87 at State Route 18 was obtained from the Department for the period between January 1, 2000 and December 31, 2008. The traffic crash history summarized by type and severity Tables 1 and 2, respectively.

Table 1. Summary of Traffic Crash History by Type at the SR 87 and SR 18 Intersection

	Type						
Year	Angle	Head On	Rear End	Sideswipe - Same Direction	Sideswipe - Opposite Direction	Other (Single-Vehicle)	Total
2000	4	0	2	0	0	0	6
2001	5	0	1	0	0	1	7
2002	7	0	0	1	0	0	8
2003	4	0	1	0	0	1	6
2004	7	0	0	1	1	1	10
2005	2	0	0	0	0	0	2
2006	8	0	2	1	0	0	11
2007	6	2	0	0	0	0	8
2008	3	1	0	1	0	2	7
Total	46	3	6	4	1	5	65

Table 2. Summary of Traffic Crash History by Severity at the SR 87 and SR 18 Intersection

Year	Severity			Total
	PDO	Injury	Fatal	
2000	4	2	0	6
2001	3	4	0	7
2002	4	4	0	8
2003	4	2	0	6
2004	5	3	2	10
2005	1	1	0	2
2006	6	5	0	11
2007	2	4	2	8
2008	7	0	0	7
Total	36	25	4	65

As shown in Table 1, there were sixty-five total crashes at this intersection between 2000 and 2008. The majority of the crashes recorded were angle type, which accounted for over 70% of the total number of crashes. Per Table 2, over 35% of the crashes which occurred at the State Route 87 and the State Route 18 intersection were injury crashes. There were also four fatal crashes recorded at this intersection (three of which were angle crashes).

Operational Analysis

During the analysis A.M. and P.M. peak hour turning movement counts and 24-hour approach counts were obtained at the State Route 87 and State Route 18 intersection by All Traffic Data, Inc. on October 14, 2009. These "short-term" traffic counts were adjusted using day of the week, month of the year and axle adjustment factors (obtained from THE DEPARTMENT) to develop annual average daily traffic (AADT) volumes. The directional distribution for both State Route 87 and State Route is 60%-40% for the peak hour. The Department's traffic count stations on State Route 87 reported 22% and 18% daily truck traffic (TC 212 and TC 208 respectively). Based on the actual peak hour turning movement counts, the peak hour truck traffic on State Route 87 and State Route 18 are estimated to be 3.30% and 1.30% respectively.

The operational analysis was completed assuming that the opening year for this project is 2014 and that the design year is 2034. The 2014 Opening Year and the 2034 Design Year AADT were calculated by applying an annual growth rate to the existing AADT. The growth rate used in the traffic growth projections was calculated (1.80%) based on the historical AADT volumes at several traffic count locations (TC 297, TC 295, TC 212, TC 210, TC 208) which were located in the vicinity of the State Route 87 and State Route 18 intersection. The existing and anticipated AADT near the State Route 87 and State Route 18 intersection are presented in Table 5.

Table 5. Existing and Anticipated AADT

Roadway Segment	2009 "Existing Year" AADT	2014 "Opening Year" AADT	2034 "Design Year" AADT
SR 87 North of SR 18	5,150	5,700	8,100
SR 87 South of SR 18	6,700	7,400	10,500
SR 18 East of SR 87	3,350	3,700	5,300
SR 18 West of SR 87	1,600	1,800	2,550

Capacity Analysis and Intersection Levels of Service
A capacity analysis was conducted at the State Route 87 and State Route 18 intersection to determine the operational characteristics based on the existing and anticipated future conditions. The capacity analysis was performed using the methodologies outlined in the Highway Capacity manual (HCM) and the Synchro 7.0 software program.

For the existing and no-build conditions, the HCM determines LOS for the whole intersection by computing the control delay at the intersection. The results of the capacity analysis for the no-build existing and anticipated future conditions are summarized in Table 6.

Table 6. No-Build Existing and Anticipated Future Level of Service

Intersection	Traffic Control	Level of Service (AM/PM)		
		2009	2014 No-Build	2034 No-Build
SR 87 @ SR 18	All-Way Stop	B/C	B/D	C/F

The capacity analysis at the proposed roundabout was conducted using the HCM methodology, the Department's Roundabout Analysis Tool and the SIDRA software package. The HCM methodology is based on gap-acceptance and computes a volume to capacity ratio range for each approach and the roundabout. The HCM methodology does not report a LOS for the roundabout analyzed. The Department's Roundabout Analysis Tool is used to determine the LOS. The Department's Roundabout Analysis Tool is built upon two influential documents in roundabout analysis and design in the United States, *Roundabouts: An Informational Guide* written by the FHWA, and *NCHRP Report 572: Roundabouts in the United States*. Using this tool, capacity, delay and queue can be calculated for each approach leg of a roundabout. This tool also reports LOS for each approach legs of the roundabout, even though LOS for the whole roundabout is not reported. The SIDRA software is based on methodology developed in Australia and also uses a gap-acceptance approach to model roundabout operations. The SIDRA software calculates capacity, delay and queue for each approach leg of a roundabout and also for the entire roundabout. SIDRA also reports LOS for each approach leg of the roundabout and also for the roundabout as a whole.

The capacity analysis reveals that the current (2009) LOS of the intersection is a B/C for the AM and PM peaks. Construction of the roundabout at the intersection would provide an anticipated level of service of B/B for 2014 and 2034 for the AM and PM peaks. The results of the capacity analysis for the proposed roundabout for the anticipated future are summarized in Table 7.

Table 7. Roundabout Anticipated Future Intersection Level of Service

Highway Capacity Analysis	Volume to Capacity Ratio (AM/PM)	
	2014 Build	2034 Design
SR 87 @ SR 18	0.27 to 0.33/ 0.47 to 0.57	0.42 to 0.52/ 0.71 to 0.86
GDOT's Roundabout Analysis Tool	**LOS (AM/PM)**	
	2014 Build	**2034 Design**
SR 87 @ SR 18		
Southbound Approach Leg	A/A	B/D
Westbound Approach Leg	A/A	A/A
Northbound Approach Leg	A/A	A/C
Eastbound Approach Leg	A/A	A/B
SIDRA Analysis	**LOS (AM/PM)**	
	2014 Build	**2034 Design**
SR 87 @ SR 18	B/B	B/B

Table 8. Intersection Level of Service (AM/ PM Peak)

Traffic Signal - Synchro Analysis Level of Service by Approaches				
	North	**East**	**South**	**West**
2014	A/A	A/C	B/B	B/B
2034	B/A	B/C	B/B	B/B

Project Description:
The project is located in Monroe County, Georgia, approximately ten miles east of the city of Forsyth. This project consists of constructing a single-lane roundabout at the intersection of State Route 87/US 23 and State Route 18. The project limits on State Route 18 would extend approximately 520 feet east (MP 18.51) and 520 feet west (MP 18.70) of the intersection. The project limits on State Route 87/US 23 would extend approximately 560 feet north (MP 5.15) and 460 feet south (MP 4.97) of the intersection. The total project length is approximately 2,060 feet (0.4 mile). The existing right-of-way (ROW) along State Route 87/ US 23 is 200 feet, and construction would be within the existing ROW. The existing ROW along State Route 18 is 80 feet and the majority of the construction would be within the 80 foot ROW. The additional ROW required beyond the State Route 18 ROW would be approximately 17 to 24 feet. The project would also require ROW miters at each corner. Lighting is also being proposed for the roundabout.

Portions of this project lie in Flood Zone "A" where "No Base Flood Elevations determined" per FIRM Map No. 13207C0175D, dated September 28, 2008. This impact is due to the Rum Creek Flood Plain. Rum Creek flows in a southerly direction and is located west of this project. This project does not lie within 1 mile of a Biota Impaired Stream.

State Route 18 is a designated bike route so bicycle accessibility will be provided for all legs of the intersection.

Is the project located in a PM 2.5 Non-attainment area? _____Yes __X__No

Is the project located in an Ozone Non-attainment area? _____Yes __X__No

PDP Classification: Major_____ Minor __X___

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

Functional Classification: Rural Minor Arterial (SR 87), Rural Major Collector (SR 18)

U. S. Route Number(s): US 23 **State Route Number(s):** SR 87 and SR 18

Traffic (AADT):

SR 87 Base Year: (2014) 7,400 Design Year: (2034) 10,500
SR 18 Base Year: (2014) 3,700 Design Year: (2034) 5,300

Existing design features:

- Typical Section: Rural section with two 12-foot wide travel lanes and a varying shoulder width from five to eight feet of which approximately two feet is paved on both roadways.
- Posted speed: 55 mph (Both Roads) Maximum radius of curve: 3,200'
- Maximum super-elevation rate for curve: NC
- Maximum grade: SR 87: 5.2%
  SR 18: 4.6%
  Driveways: 7.4%
- Width of right-of-way: SR 87 – 200 feet, SR 18 – 80 feet
- Major structures: None (Only box culverts)(6-foot x 3-foot CBC south of intersection, 6-foot x 5-foot north of intersection and 6 foot x 6 foot west of intersection).
- Major interchanges or intersections along the project: None
- The existing roadway is entirely within Monroe County, GA. The intersection is located at MP 5.05 on SR 87 and at MP 18.60 on SR 18.

Proposed Design Features:

- Proposed typical section: The outer approaches consist of two 12-foot lanes with a 10-foot shoulder (2.5-foot curb and gutter, 7.5-foot grass) leading to 16-foot lanes in the speed reduction curves and then to a 20-foot single-lane roundabout with a 55-foot internal radius with a 10-foot truck apron. A 4-foot bicycle lane will be provided on all four approach legs, and ramps will be provided prior to the roundabout so that bicycles can navigate the roundabout via crosswalks. Lighting is proposed for the project.
- Proposed Approach Design Speed: 55 mph
- Proposed Entry Design Speed: 20 mph
- Computed Fastest Path: Approximately 18 mph
- Proposed Maximum grade Mainline: SR 87: 5.2% SR 18: 4.6%
- Maximum grade allowable: SR 87: 6% SR 18: 8%
- Proposed Maximum grade driveways: 7.4%
- Proposed Minimum radius of curve: N/A
- Minimum radius allowable: N/A

- Proposed Maximum super-elevation: NC
- Proposed Design Vehicle: WB-67
- Right-of-Way:
  - Width: SR 87 – Utilize existing, SR 18 – 125 feet
  - Easements: Temporary (X) Permanent (X) Utility ( ) Other ( )
  - Type of access control: Full ( ) Partial ( ) By Permit (X) Other ( )
  - Number of parcels: 4 Number of displacements: 0
    - Business: _____
    - Residences: _____
    - Mobile homes: _____
    - Other: _____
- Structures:
  - Bridges: None
  - Retaining walls: None
  - Box Culverts: 6'x3' CBC south of intersection, 6'x5' north of intersection and 6'x6' west of intersection
- Major intersections, interchanges, median openings and signal locations: None.
- Transportation Management Plan Anticipated: Yes ( ) No (X)
- Design Exceptions to controlling criteria anticipated:

	YES	NO	UNDETERMINED
HORIZONTAL ALIGNMENT:	( )	(X)	( )
LANE WIDTH:	( )	(X)	( )
SHOULDER WIDTH:	( )	(X)	( )
VERTICAL GRADES:	( )	(X)	( )
CROSS SLOPES:	( )	(X)	( )
STOPPING SIGHT DISTANCE:	( )	(X)	( )
SUPERELEVATION RATES:	( )	(X)	( )
VERTICAL ALIGNMENT:	( )	(X)	( )
SPEED DESIGN:	( )	(X)	( )
VERTICAL CLEARANCE:	( )	(X)	( )
BRIDGE WIDTH:	( )	(X)	( )
BRIDGE STRUCTURAL CAPACITY:	( )	(X)	( )
LATERAL OFFSET TO OBSTRUCTION	( )	(X)	( )

- Design Variances: None
- Environmental concerns: Potential wetlands in area. Nationwide permit anticipated.
- Level of environmental analysis:
  - o Are Time Savings Procedures appropriate? Yes (X), No ( ),
  - o Categorical Exclusion anticipated (X),
  - o Environmental Assessment/Finding of No Significant Impact (FONSI) ( ), or
  - o Environmental Impact Statement (EIS) ( ).
- Utility involvements:
  - *AT&T*
  - *Central GA EMC*

- VE Study Anticipated: Yes ( ) No (X)
- Benefit/Cost Ratio 6.46

Project Cost Estimate and Funding Responsibilities:

	PE	ROW	UTILITY	CST	MITIGATION
By Whom	GDOT	GDOT	GDOT	GDOT	N/A
$ Amount	$250,000	$72,000	$280,000	**$1,478,335	$0

****Cost includes Fuel Price Adjustment.

Project Activities Responsibilities:

- Design – GS&P with GDOT Review
- Right-of-Way Acquisition – GDOT
- Right-of-Way funding (real property) - GDOT
- Relocation of Utilities - GDOT
- Letting to contract - GDOT
- Supervision of construction – GDOT
- Providing material pits – GDOT/Contractor
- Providing detours – N/A
- Environmental Studies/Documents – Edwards Pittman Environmental, Inc. with GDOT Review
- Environmental Mitigation – GDOT
- Lighting – Monroe County

Coordination

- Initial Concept Meeting date and brief summary. *N/A*
- Concept Team Meeting March 16, 2010. *See attachments*
- P A R meetings, dates and results. *N/A*
- Other projects in the area. *None*
- Other coordination to date. Section 8.3 of the *GDOT Roundabout Policy* states that public outreach is required for all single lane roundabouts where there is are no other well-functioning roundabouts in the locality or along the nearby corridor. It has been decided (OES concurs) that this project will require no public outreach because there is another well-functioning roundabout designed by GDOT that is in very close proximity to the one proposed for this project.

Scheduling – Responsible Parties' Estimate

- Time to complete the environmental process: Jan 2010 to April 2011
- Time to complete preliminary construction plans: Feb 2010 to April 2011
- Time to complete right-of-way plans: May 2011 to July 2011
- Time to complete the Section 404 Permit: Sept 2011 to March 2012
- Time to complete final construction plans: June 2011 to Jan 2012
- Time to complete to purchase right-of-way: July 2011 to July 2012
- List other major items that will affect the project schedule: N/A

Other alternates considered: Signalized intersection. No build.

- No Build: This would not reduce crash frequency and severity or increase capacity of this intersection and would therefore not be considered a viable alternative for the intersection,
- Signalized Intersection: A signalized intersection with left and right-turn lanes on all four approaches was considered at this location. The level of service is less favorable and construction costs are more expensive for the traffic signal with turn lanes in comparison to the roundabout. The roundabout is the preferable option because of the added safety benefit. Roundabouts have been proven to reduce the number and severity of crashes when compared to a signalized intersection. A roundabout has less conflicts points when compared with a signalized intersection which results in fewer crashes. Also, the operating speed through the intersection is lower with a roundabout when compared to a signalized intersection. The lower operating speed allows drivers more time to react to potential conflicts which results in fewer crashes and reduced severity of the crashes

Comments: *None*

Attachments:

1. Detailed Cost Estimates:
    a. Construction including, Engineering and Inspection.
    b. Completed Fuel/Asphalt price adjustment form.
    c. Right of Way.
    d. Utilities.
2. Concept Layout plan of Improvements.
3. Typical sections.
4. Accident Summaries. *Included in Report.*
5. Traffic Diagrams.
6. Capacity analysis summary. *Included in Report.*
7. Minutes of Concept Team Meeting.
8. Benefit Cost Analysis.
9. Bike Lane Correspondence.
10. Lighting Agreement Request to Monroe County.
11. Lighting Agreement Response from Monroe County.
12. Peer Review email.

Exempt Projects

Concur: _____
Director of Engineering

Approve: _____ Date: 4/12/2011
Chief Engineer

Georgia Department of Transportation

DETAILED COST ESTIMATE

JOB NUMBER: *0008884*

FED/STATE PROJECT NUMBER *CSSFT-0008-00(884)*

SPEC YEAR: *01*

ENGINEERING AND INSPECTION: *5*

DESCRIPTION: *SR 18 @ 87*
ROUNDABOUT

ITEMS FOR JOB 0008884

0010 - DRAINAGE

LINE	ITEM	QUANTITY	UNITS	PRICE	DESCRIPTION	AMOUNT
0005	500-3101	84.000	CY	$352.47	CLASS A CONCRETE	$29,607.48
0010	511-1000	4594.000	LB	$0.62	BAR REINF STEEL	$2,848.28
0015	550-1180	300.000	LF	$28.35	STM DR PIPE 18",H 1-10	$8,505.00
0020	668-1100	4.000	EA	$2,120.39	CATCH BASIN, GP 1	$8,481.56
					Total for DRAINAGE	**$49,442.32**

0020 - EROSION CONTROL

LINE	ITEM	QUANTITY	UNITS	PRICE	DESCRIPTION	AMOUNT
0060	163-0232	4.000	AC	$283.37	TEMPORARY GRASSING	$1,133.48
0065	163-0240	20.000	TN	$129.90	MULCH	$2,598.00
0070	163-0523	200.000	EA	$143.27	CONSTR AND REM TEMP DCH CK - TP C SLT FN	$28,654.00
0075	163-0527	4.000	EA	$160.76	CNST/REM RIP RAP CKDM,STN P RIPRAP/SN BG	$643.04
0080	165-0030	6000.000	LF	$0.66	MAINT OF TEMP SILT FENCE, TP C	$3,960.00
0085	165-0040	204.000	EA	$56.18	MAINT OF EROSION CTRL CHKDAMS/DITCH CHKS	$11,460.72
0090	167-1000	2.000	EA	$460.30	WATER QUALITY MONITORING AND SAMPLING	$920.60
0095	167-1500	8.000	MO	$685.80	WATER QUALITY INSPECTIONS	$5,486.40
0100	171-0010	4000.000	LF	$1.33	TEMPORARY SILT FENCE, TYPE A	$5,320.00
0105	171-0030	6000.000	LF	$2.95	TEMPORARY SILT FENCE, TYPE C	$17,700.00
0025	603-2024	180.000	SY	$42.57	STN DUMPED RIP RAP, TP 1, 24"	$7,662.60
0250	603-2181	80.000	SY	$33.11	STN DUMPED RIP RAP, TP 3, 18"	$2,648.80
0030	603-7000	260.000	SY	$3.27	PLASTIC FILTER FABRIC	$850.20
0035	700-6910	4.000	AC	$674.07	PERMANENT GRASSING	$2,696.28
0040	700-7000	8.000	TN	$60.51	AGRICULTURAL LIME	$484.08
0045	700-7010	12.000	GL	$20.53	LIQUID LIME	$246.36
0050	700-8000	4.000	TN	$409.57	FERTILIZER MIXED GRADE	$1,638.28
0110	700-8000	4.000	TN	$409.57	FERTILIZER MIXED GRADE	$1,638.28
0245	700-8100	200.000	LB	$2.30	FERTILIZER NITROGEN CONTENT	$460.00
0255	700-8100	200.000	LB	$2.30	FERTILIZER NITROGEN CONTENT	$460.00
0055	716-2000	1400.000	SY	$0.95	EROSION CONTROL MATS, SLOPES	$1,330.00
					Total for EROSION CONTROL	**$97,991.12**

0030 - SIGNING/MARKING

LINE	ITEM	QUANTITY	UNITS	PRICE	DESCRIPTION	AMOUNT
0115	636-1020	300.000	SF	$16.67	HWY SGN,TP1MAT,REFL SH TP3	$5,001.00
0120	653-0296	4.000	EA	$198.44	THERMO PVMT MARKING,WORD,TP 15	$793.76
0125	653-1501	4000.000	LF	$0.44	THERMO SOLID TRAF ST 5 IN, WHI	$1,760.00
0130	653-1502	4000.000	LF	$0.45	THERMO SOLID TRAF ST, 5 IN YEL	$1,800.00
0135	653-1804	1000.000	LF	$1.68	THERM SOLID TRAF STRIPE, 8",WH	$1,680.00
0140	653-3501	200.000	GLF	$0.33	THERMO SKIP TRAF ST, 5 IN, WHI	$66.00
0145	653-6004	500.000	SY	$2.71	THERM TRAF STRIPING, WHITE	$1,355.00
0150	653-6006	40.000	SY	$2.63	THERM TRAF STRIPING, YELLOW	$105.20
0155	654-1001	50.000	EA	$3.04	RAISED PVMT MARKERS TP 1	$152.00
0160	654-1002	6.000	EA	$2.85	RAISED PVMT MARKERS TP 2	$17.10
					Total for SIGNING/MARKING	**$12,730.06**

0040 - ROADWAY

File Location: Div of Preconstruction > CES

Georgia Department of Transportation

DETAILED COST ESTIMATE

LINE	ITEM	QUANTITY	UNITS	PRICE	DESCRIPTION	AMOUNT
0165	150-1000	1.000	LS	$100,000.00	TRAFFIC CONTROL - CSSTP-0008-00(884)	$100,000.00
0170	210-0100	1.000	LS	$75,000.00	GRADING COMPLETE - CSSTP-0008-00(884)	$75,000.00
0275	310-1101	6798.000	TN	$18.13	GR AGGR BASE CRS, INCL MATL	$123,247.13
0280	402-3121	3101.000	TN	$62.20	RECYL AC 25MM SP,GP1/2,BM&HL	$192,879.63
0270	402-3130	1550.000	TN	$70.70	RECYL AC 12.5MM SP,GP2,BM&HL	$109,585.85
0190	402-3190	1550.000	TN	$67.24	RECYL AC 19 MM SP,GP 1 OR 2 ,INC BM&HL	$104,228.90
0195	413-1000	256.000	GL	$2.00	BITUM TACK COAT	$512.00
0200	439-0056	349.000	SY	$295.00	PLN PC CONC PVMT CL HES 12"THK	$102,955.00
0205	441-0748	960.000	SY	$29.58	CONC MEDIAN, 6 IN	$28,396.80
0210	441-6022	3600.000	LF	$11.90	CONC CURB & GUTTER, 6"X30"TP2	$42,840.00
0215	441-6740	282.000	LF	$13.12	CONC CURB & GUTTER/ 8"X30" TP7	$3,699.84
0220	446-1100	258.000	LF	$4.57	PVMT REF FAB STRIPS, TP2,18 INCH WIDTH	$1,179.06
0225	632-0003	4.000	EA	$3,000.00	CHANGEABLE MESS SIGN,PORT,TP 3	$12,000.00
0230	634-1200	12.000	EA	$93.93	RIGHT OF WAY MARKERS	$1,127.16
					Total for ROADWAY	**$897,651.37**

0050 - LIGHTING

LINE	ITEM	QUANTITY	UNITS	PRICE	DESCRIPTION	AMOUNT
0260	681-4220	14.000	EA	$1,717.28	LT STD, 40' MH, POST TOP	$24,041.97
0265	681-6464	14.000	EA	$880.32	LUMINAIRE,TP 4, 400W,M HALIDE	$12,324.51
					Total for LIGHTING	**$36,366.48**

0060 - LANDSCAPING

LINE	ITEM	QUANTITY	UNITS	PRICE	DESCRIPTION	AMOUNT
0240	009-2000	1.000	LS	$5,000.00	LANDSCAPING WITH IRRIGATION	$5,000.00
					Total for LANDSCAPING	**$5,000.00**

GRAND TOTAL FOR JOB 0008884 **$1,099,181.35**

TOTALS FOR JOB 0008884

ESTIMATED COST:	**$1,099,181.35**
CONTINGENCY PERCENT (0.0):	**0.00**
ENGINEERING AND INSPECTION (0.0	**0.05**
ESTIMATED TOTAL	**$1,154,140.42**

Date 3/16/2011

P.I. Number #0008884 County Monroe

Project Number CSSFT-0008-00(884)

Special Provision, Section 109-Measurement and Payment

FUEL PRICE ADJUSTMENT *(ENGLISH 125% MAX)*

ENTER FPL DIESEL	3.669
ENTER FPM DIESEL	8.256

ENTER FPL UNLEADED	3.314
ENTER FPM UNLEADED	7.4565

INCREASE ADJUSTMENT
125.00%

INCREASE ADJUSTMENT
125.00%

ROADWAY ITEMS	QUANTITY	DIESEL FACTOR	GALLONS DIESEL	UNLEADED FACTOR	GALLONS UNLEADED	REMARKS
Excavations paid as specified by Sections 205 **(CUBIC YARD)**		0.29		0.15		
Excavations paid as specified by Sections 206 **(CUBIC YARD)**		0.29		0.15		
GAB paid as specified by the ton under Section 310 **(TON)**	6798.000	0.29	1971.42	0.24	1631.52	
Hot Mix Asphalt paid as specified by the ton under Sections 400 **(TON)**		2.90		0.71		
Hot Mix Asphalt paid as specified by the ton under Sections 402 **(TON)**	6201.000	2.90	17982.90	0.71	4402.71	
PCC Pavement paid as specified by the square yard under Section 430 **(SY)**	349.000	0.25	87.25	0.20	69.80	

BRIDGE ITEMS	Quantity	Unit Price	QF/1000	Diesel Factor	Gallons Diesel	Unleaded Factor	Gallons Unleaded	REMARKS
Bridge Excavation (CY) Section 211				8.00		1.50		
Class __Concrete (CY) Section 500		352.47		8.00		1.50		
Class __Concrete (CY) Section 500				8.00		1.50		
Class __Concrete (CY) Section 500				8.00		1.50		
Superstru Con Class__(CY) Section 500				8.00		1.50		
Superstru Con Class__(CY) Section 500				8.00		1.50		
Superstru Con Class__(CY) Section 500				8.00		1.50		
Concrete Handrail (LF) Section 500				8.00		1.50		
Concrete Barrier (LF) Section 500				8.00		1.50		

BRIDGE ITEMS	Quantity	Unit Price	QF/1000	Diesel Factor	Gallons Diesel	Unleaded Factor	Gallons Unleaded	REMARKS
Stru Steel Plan Quantity (LB) Section 501				8.00		1.50		
Stru Steel Plan Quantity (LB) Section 501				8.00		1.50		
PSC Beams_____ (LF) Section 507				8.00		1.50		
PSC Beams_____ (LF) Section 507				8.00		1.50		
PSC Beams_____ (LF) Section 507				8.00		1.50		
Stru Reinf Plan Quantity(LB) Section 511		0.62		8.00		1.50		
Stru Reinf Plan Quantity(LB) Section 511				8.00		1.50		
Bar Reinf Steel (LB) Section 511				8.00		1.50		
Piling___inch (LF) Section 520				8.00		1.50		
Piling___inch (LF) Section 520				8.00		1.50		
Piling___inch (LF) Section 520				8.00		1.50		
Piling___inch (LF) Section 520				8.00		1.50		
Piling___inch (LF) Section 520				8.00		1.50		
Piling___inch (LF) Section 520				8.00		1.50		
Drilled Caisson,___ (LF) Section 524				8.00		1.50		
Drilled Caisson,___ (LF) Section 524				8.00		1.50		
Drilled Caisson,___ (LF) Section 524				8.00		1.50		
Pile Encasement,___(LF) Section 547				8.00		1.50		
Pile Encasement,___(LF) Section 547				8.00		1.50		

SUM OF DIESEL=	20041.57	SUM OF UNLEADED=	6104.03

DIESEL PRICE ADJUSTMENT($)	$84,562.40
UNLEADED PRICE ADJUSTMENT($)	$23,263.07

ASPHALT CEMENT PRICE ADJUSTMENT
(BITUMINOUS TACK COAT 125% MAX)

APPLICABLE TO CONTRACTS/PROJECTS CONTAINING THE 413 SPECIFICATION, SECTION 413.5.01 ADJUSTMENTS ASPHALT PRICE ADJUSTMENT FOR BITUMINOUS TACK COAT

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

ENTER APL	494	ENTER APM	1111.5

125.00%	INCREASE ADJUSTMENT

L.I.N.	TYPE	TACK (GALLONS)	TACK (TONS)	REMARKS
413-1000		256	1.0995	

TMT = 1.0995

PRICE ADJUSTMENT($)	$651.81

400 / 402 ASPHALT CEMENT PRICE ADJUSTMENT 125% MAX

ENTER APL	500	ENTER APM	1125

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

125.00%	INCREASE ADJUSTMENT

L.I.N. / Spec Number	MIX TYPE	HMA	JMF AC%	AC	REMARKS
			5.00		Leveling
402-3121	25 mm SP	3101	5.00	155.05	
402-3130	12.5 mm SP	1550	5.00	77.50	
402-3192	19 mm SP	1550	5.00	77.50	
			5.00		
			5.00		
			5.00		
			5.00		
			5.00		
			5.00		
			5.00		
			5.00		
			5.00		
			5.00		
			5.00		
			5.00		
			5.00		
			TMT =	310.05	

PRICE ADJUSTMENT($)	$186,030.00

ASPHALT CEMENT PRICE ADJUSTMENT FOR BITUMINOUS TACK COAT(Surface Treatment 125% MAX)

APPLICABLE TO CONTRACTS CONTAINING THE 413 SPEC. SECTION 413.5.01 ADJUSTMENTS ASPHALT PRICE ADJUSTMENT FOR BITUMINOUS TACK COAT

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

ENTER APL 426

ENTER APM 958.5

125.00%	INCREASE ADJUSTMENT

Use this side for Asphalt Emulsion Only		
L.I.N.	TYPE	ASPHALT EMULSION (GALLONS)

TMT =

REMARKS:

Use this side for Asphalt Cement Only		
L.I.N.	TYPE	TACK (GALLONS)

TMT =

REMARKS:

MONTHLY PRICE ADJUSTMENT($)	

ADJUSTMENT SUMMARY

FUEL PRICE ADJUSTMENT (*ENGLISH 125% MAX*)

DIESEL PRICE ADJUSTMENT($)	$84,562.40
UNLEADED PRICE ADJUSTMENT($)	$23,263.07
ASPHALT CEMENT PRICE ADJUSTMENT (BITUMINOUS TACK COAT 125% MAX)	$651.81
400 / 402 ASPHALT CEMENT PRICE ADJUSTMENT 125% MAX	$186,030.00
ASPHALT CEMENT PRICE ADJUSTMENT FOR BITUMINOUS TACK COAT(Surface Treatment 125% MAX)	

REMARKS:

TOTAL ADJUSTMENTS	$294,507.28

DWM 10/08

Preliminary Right of Way Cost Estimate

Phil Copeland
Right of Way Administrator
By: LaShone Alexander

Date: March 3, 2011
Project: CSSFT-0008-00(884)Monroe
Existing/Required R/W: Varies/Varies
Project Termini : SR 18 @ SR 87
Project Description: SR 18 @ SR 87 Roundabout

P.I. Number: 0008884
No. Parcels: 4

Land: Residential/Agriculture R/W: 0.35 @ $ 40,000/ac	$	14,000
Improvements : misc. site improvements		15,000
Relocation: Commercial (0) Residential (0)		0
Damage : Proximity Consequential Cost to Cure (0)		,000
Net Cost	$	29,000

Net Cost		$	29,000
Scheduling Contingency	55 %		15,950
Adm/Court Cost	60 %		26,970
		$	71,920

Total Cost $72,000

Note: The Market Appreciation (40%) is not included in the updated Preliminary Cost Estimate.

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

INTERDEPARTMENT CORRESPONDENCE

FILE **CSSFT-0008-00(884), Monroe County, P.I. # 0008884**
Roundabout SR-18 @ SR-87

OFFICE Thomaston

DATE March 11, 2011

FROM Kerry Gore, District Utilities Engineer

TO Keith Posey, Location Engineer, Office of Design
Attn: Derrick Cameron , Project Manager

SUBJECT **PRELIMINARY UTILITY COST (ESTIMATE)**

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

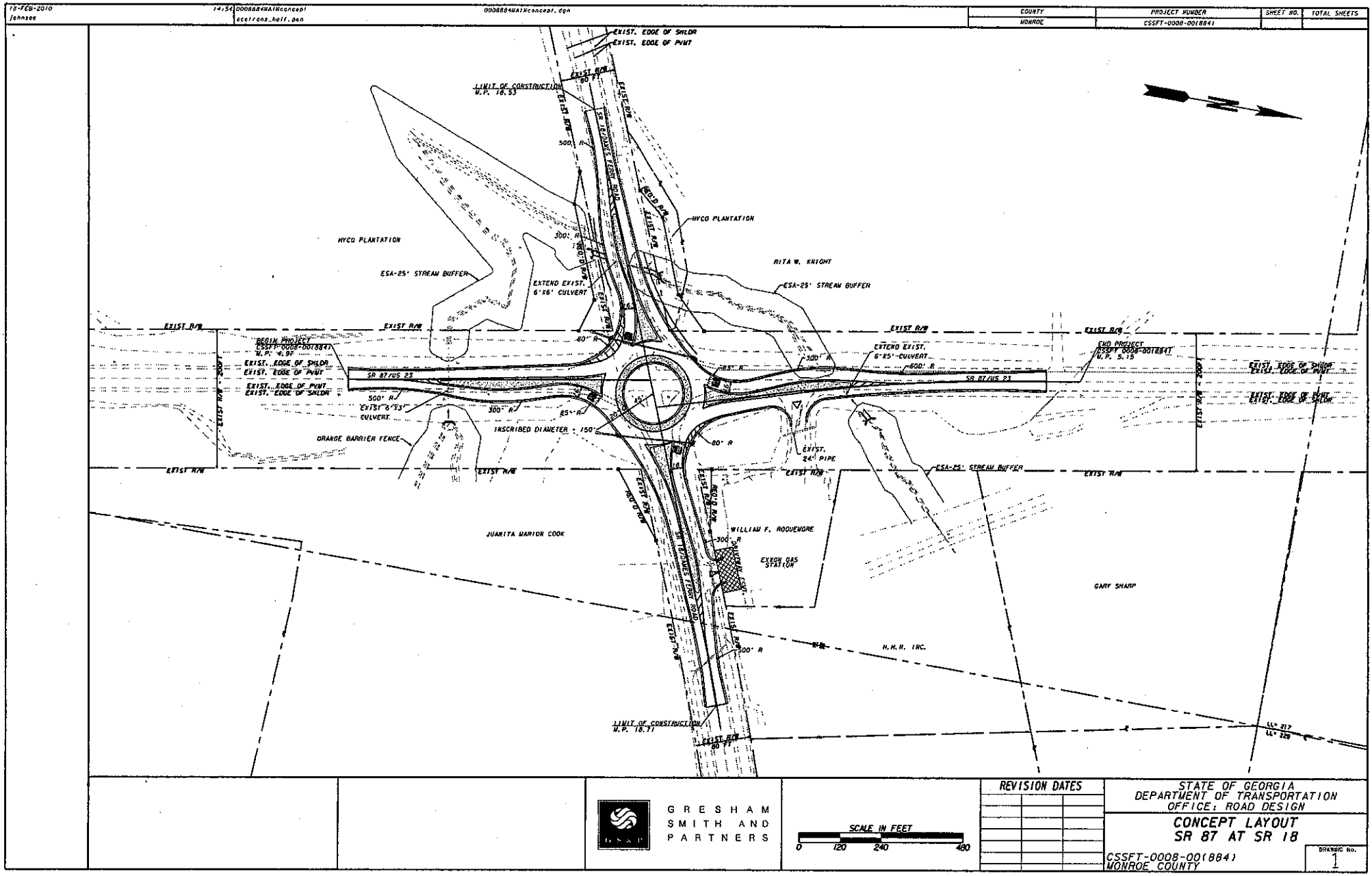
FACILITY OWNER	NON-REIMBURSABLE	REIMBURSABLE
BellSouth d/b/a AT&T	20,000	200,000
Central GA EMC	20,000	40,000
TOTALS	**$40,000**	**$240,000**

Total Preliminary Utility Cost Estimate $280,000.

If you have any questions, please contact Harland Smith at (706) 646-6696.

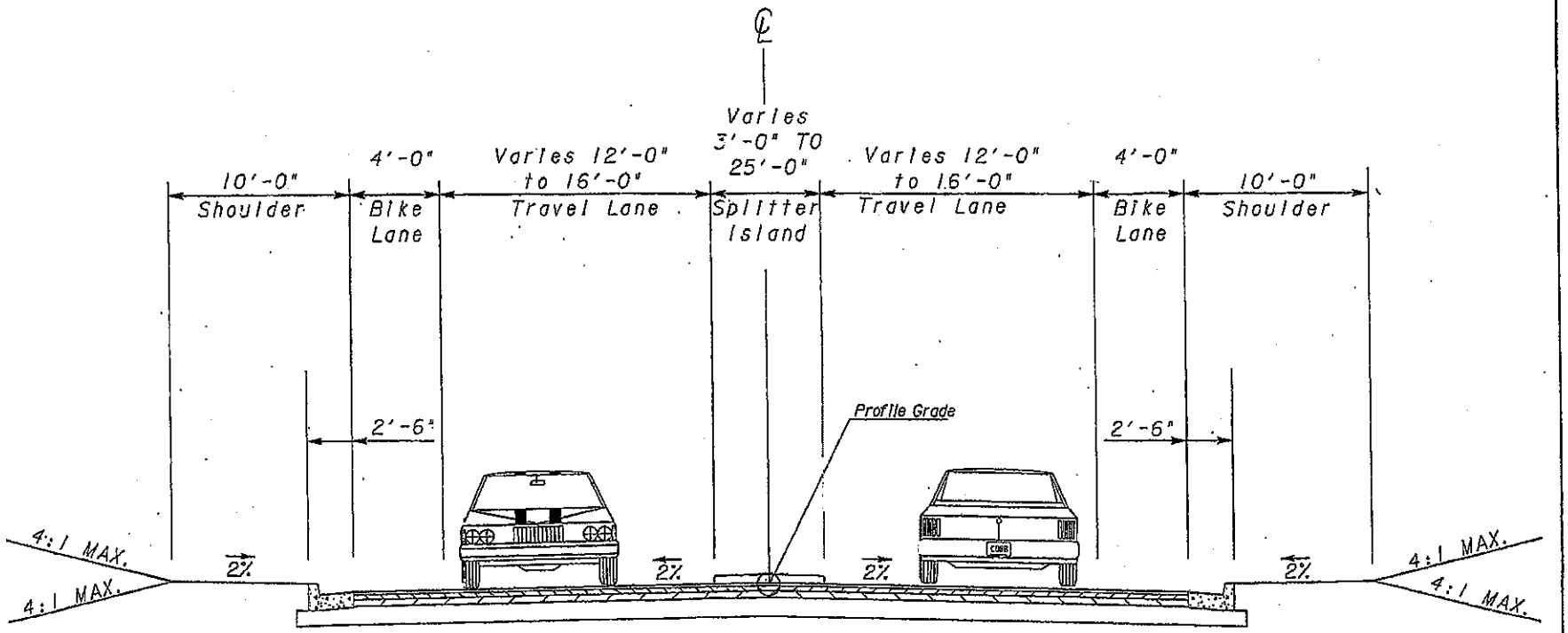
KG/pls

cc: Jeff Baker, P.E., State Utilities Engineer *(via: e-mail)*
Angela Robinson, Office of Financial Management *(via: e-mail)*
Kevin Ellis, Assistant Area Engineer *(via: e-mail)*


18-FEB-2010 14:54
johnsee
0008884WAIconcept
acetrans_half.pen
0008884WAIconcept.dgn
COUNTY
MONROE
PROJECT NUMBER
CSSFT-0008-00(884)
SHEET NO.
TOTAL SHEETS
EXIST. EDGE OF SHLDR
EXIST. EDGE OF PVMT
LIMIT OF CONSTRUCTION
U.P. 18.53
EXIST R/W
80 FT
SR 18/JONES FERRY ROAD
500' R
HYCO PLANTATION
300' R
ESA-25' STREAM BUFFER
EXTEND EXIST.
6'X6' CULVERT
RITA W. KNIGHT
BEGIN PROJECT
CSSFT-0008-00(884)
U.P. 4.97
EXIST. EDGE OF SHLDR
EXIST. EDGE OF PVMT
SR 87/US 23
200' R
EXIST 6'X3'
CULVERT
85' R
INSCRIBED DIAMETER = 150'
ORANGE BARRIER FENCE
80' R
EXTEND EXIST.
6'X5' CULVERT
600' R
END PROJECT
CSSFT-0008-00(884)
U.P. 5.15
EXIST. 24" PIPE
JUANITA MARION COOK
WILLIAM F. ROQUEMORE
EXXON GAS
STATION
GARY SHARP
H.H.R. INC.
LIMIT OF CONSTRUCTION
U.P. 18.71
LL= 217
LA= 220
GRESHAM
SMITH AND
PARTNERS
SCALE IN FEET
0 120 240 480
REVISION DATES
STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: ROAD DESIGN
CONCEPT LAYOUT
SR 87 AT SR 18
CSSFT-0008-00(884)
MONROE COUNTY
DRAWING No.
1

05-APR-2010 | 17:09 | 0006884sp | 0006884MAINconcpt.dgn
sheltol | scetrans_half.pen

COUNTY	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
MONROE	CSSFT-0008-00(884)		



TYPICAL SECTION
SR 18 AT SR 87
NOT TO SCALE

GRESHAM SMITH AND PARTNERS

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: ROAD DESIGN

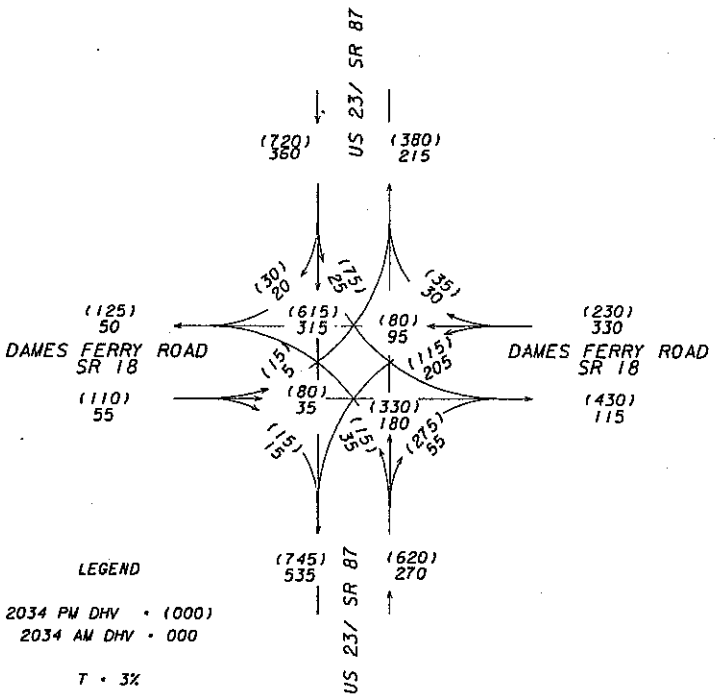
CONCEPT TYPICAL SECTION
SR 87 AT SR 18

CSSFT-0008-00(884)
MONROE COUNTY

DRAWING No. 2

18-FEB-2010	14:55	0008884TRG1	0008884THR1.dgn	COUNTY	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
johnses		scottsns_sgif.pen		MONROE	CSSFT-0008-00(884)		

2034 DESIGN YEAR NO BUILD AM AND PM PK HR TRAFFIC VOLUMES

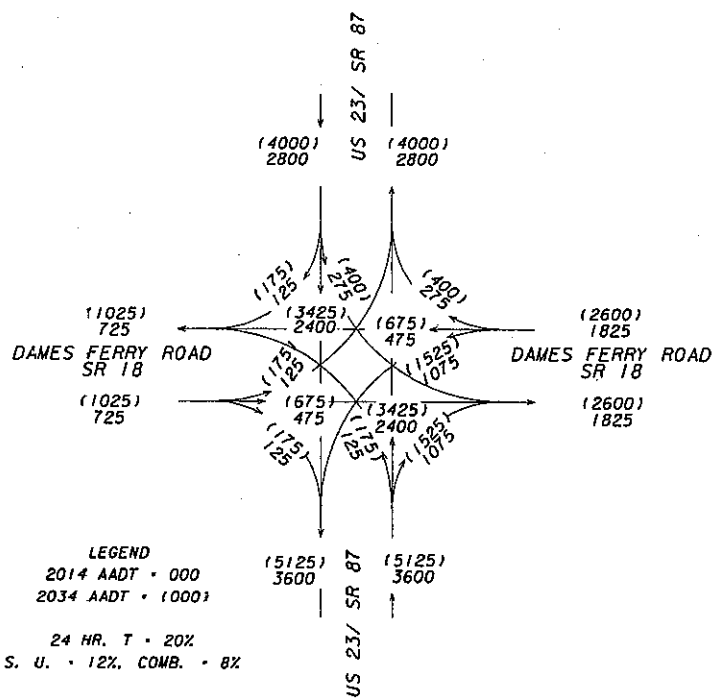


LEGEND

2034 PM DHV • (000)
2034 AM DHV • 000

T • 3%

2014 OPENING YEAR & 2034 DESIGN YEAR NO BUILD AADT TRAFFIC VOLUMES



LEGEND
2014 AADT • 000
2034 AADT • (000)

24 HR. T • 20%
S. U. • 12%, COMB. • 8%

GRESHAM SMITH AND PARTNERS

NOT TO SCALE

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: ROAD DESIGN

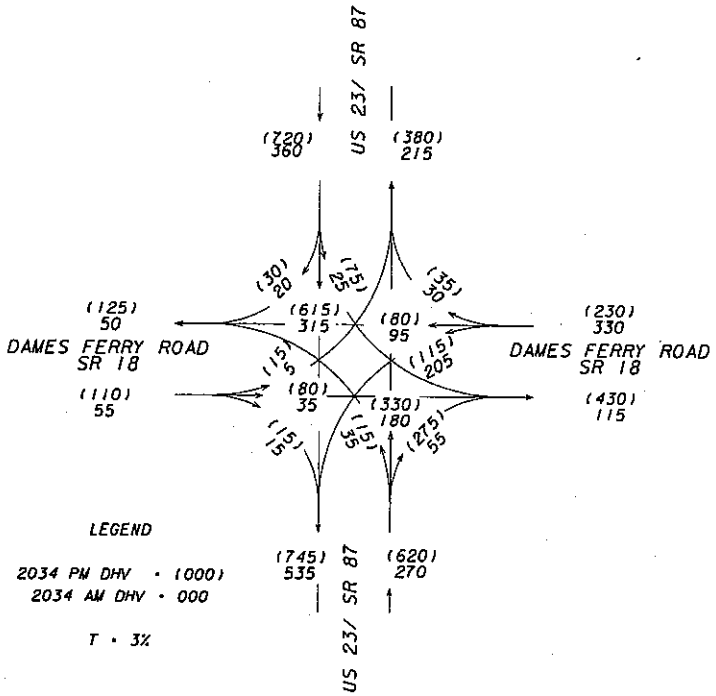
TRAFFIC DIAGRAM

CSSFT-0008-00(884)
MONROE COUNTY

DRAWING No. 03

18-FEB-2010	14:55	0008884TR02	0008884TR01.dgn	COUNTY	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
johnsaw		ocelrans_half.pen		MONROE	CSSFT-0008-00(884)		

2034 DESIGN YEAR BUILD AM AND PM PK HR TRAFFIC VOLUMES

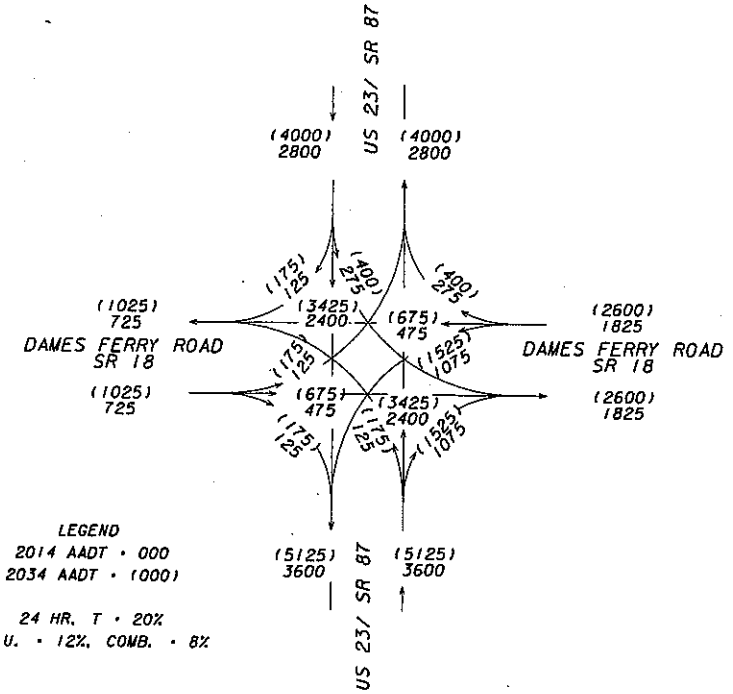


LEGEND

2034 PM DHV • (000)
2034 AM DHV • 000

T • 3%

2014 OPENING YEAR & 2034 DESIGN YEAR BUILD AADT TRAFFIC VOLUMES



LEGEND

2014 AADT • 000
2034 AADT • (000)

24 HR. T • 20%
S. U. • 12%, COMB. • 8%

GRESHAM SMITH AND PARTNERS

NOT TO SCALE

REVISION DATES		

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: ROAD DESIGN

TRAFFIC DIAGRAM

CSSFT-0008-00(884)
MONROE COUNTY

DRAWING No. 04

GRESHAM
SMITH AND
PARTNERS

March 18, 2010

MEETING MINUTES

SR 18 AT SR 87 Intersection Safety Improvements
Concept Team Meeting
CSSFT-0008-00(884), Monroe County, PI No. 0008884
GS&P Project No. 26340.07

MEETING DATE: March 16, 2010

PARTICIPANTS: See attached list

DISCUSSION: PROJECT TEAM CONCEPT MEETING

A concept team meeting was held on March 16, 2010 for the SR 87 at SR 18 Intersection Improvement Project in Monroe County. The Project is proposed as a single lane modern roundabout, schedule for letting in May, 2012. GS&P began by discussing the proposed concept layout and the content of the draft concept report.

GDOT District 3 commented that the 22% to 18% truck traffic is high and warrants consideration of using concrete pavement for the project. Staging the construction will be more difficult and costly if concrete pavement is used. District 3 stated that the roundabout circle could be concrete and the approaches asphalt based on their past experience with roundabout staging. If concrete is used in the roundabout, the center truck apron should be red concrete to contrast with the travel lane. The GDOT OMR will be asked for a recommendation of pavement material.

Truck volumes should include Georgia Power's 10 year construction project at nearby Plant Scherer and should be contacted for number of and types of vehicle this construction will add to the intersection.

Curb and gutter are proposed for the roundabout and each leg. The concept design does not accommodate pedestrian movements however may be added to the design. If sidewalks are added to the roundabout, it was also recommended to add sidewalk from the roundabout to the Exxon gas station driveway on SR 18 to serve the community east of the gas station.

The eastbound to southbound movement and the westbound to northbound movement both have striped pavement to accommodate trucks. A bypass lane was discussed for both movements to avoid the striped areas but the team determined bypass lanes would cause additional impacts. Instead the District requested a 4" concrete apron be added in these striped areas and that the radii be increased from 80' to 100'. Drainage will be adjusted in these areas to accommodate the aprons.

District Utilities stated there are existing utility cabinets in the northeast quadrant of the intersection. It was recommended that the east leg of the intersection be shifted south to avoid or minimize impacts.

District 3 recommended adjusting the SR 87 Exxon driveway to increase the curb radii and to widen to accommodate larger vehicles.

The two state routes in the intersection could be planned bicycle routes. The design team will determine and add if necessary.

District 3 recommended adding lighting to the project and stated that it is now policy that all roundabout shall have street lighting. It was also stated that it is the local government's responsibility for operation and maintenance of street lighting. GDOT will send a lighting agreement to Monroe County. Lighting should be added to the project description and to the Project Activities Responsibilities list in the concept report.

Monroe County asked if crashes have increased or decreased since the intersection was made a four way stop. Traffic Operations will research and respond back to the County.

District 3 requested the pond limits be added to the project. The design team will use internet mapping to approximate the limits. If additional survey is needed for another reason, the District can survey these limits. The District also requested the design team ensure the erosion control plans include healthy BMPs and quantities.

The approaches to the roundabout are currently posted at 55 mph. There was discussion about a recent crash at the intersection where excessive speed was thought to be a contributing factor and that rumble strips should be considered on the approaches. The design team stated the curb and gutter and proposed curves on the approaches were intended to reduce speeds prior to the roundabout per guidance from the FHWA roundabout manual.

A public information open house (PIOH) is not required to meet the environmental process however may be requested by the local government. Monroe County will inform the Project Manager within two weeks of their desire for a public meeting. A property owner meeting may also be held instead of a PIOH.

The required r/w for the Hyco Plantation property leaves such a small remainder, it is recommended this be a total take.

This represents our understanding of the items discussed at this meeting. If you have any questions or comments concerning any of the information contained herein, please contact me.

Prepared by: Jody Braswell, PE
Project Manager

Copy File, Attendees

CTM March 16, 2010 10:00am
CSSFT-0008-00(884)

Sign In Sheet

Name	Company	Phone	Email
Michael Bywalete	GS&P	678-518-3685	Michael.bywalete@GSPnet.com
David Millen	GDOT	706-646-6900	dmillen@dot.ga.gov
Bill Rountree	GDOT	706-646-6487	brountree@"
Mike England	GDOT	706-646-6676	mengland@dot.ga.gov
Bob Rychel,	MGRC	478-751-6160	RRychel@mg-rc.org
Sid Banks	Monroe Co.	478-994-7029	
Anita Boice	Monroe Co	478 994-7000	aboice@monroecountygeorgia.com
Kerry Gore	GDOT	706-646-6692	Kgore@dot.ga.gov
Harland Smith	GDOT	706-646-6696	hasmith@dot.ga.gov
Charity Belford	GDOT	4)635-8154	
Derrick Cameron	GDOT	404-635-8153	DCAMERON@DOT.GA.GOV
Tom Quinn	GDOT	706 646 6982	tquinn@dot.ga.gov
Glenn Tyson	GDOT	706-646-6971	Gtyson@dot.ga.gov
Jody Braswell	GS&P	678-518-3655	jody_braswell@gspnet.com

4/2/2010

BENEFIT COST ANALYSIS WORKSHEET

P.I. 0008884

SR 18 at SR 87 Safety Intersection Improvement)

Monroe County, Georgia

ACCIDENT DATA

Description	Symbol	Value
Property Damage Accidents (no fatality or injury)	P	1
Fatalities	F	0.2
Injuries	I	1

FIXED VALUES

Description	Symbol	Value
Fatality Cost	Fc	$5,800,000
Injury Cost	Ic	$333,500
Property Damage Cost	Pc	$4,400
Maintenance/Operating Cost	Cm	$20,000

TABLE VALUES

Description	Symbol	Value
Reduction Factor (fatalities and injuries) (Appendix E)	R	0.8
Reduction Factor (property damage) (Appendix E)	Rp	0.65
Capital Recovery Factor (Appendix E)	Ek	0.087
Initial Improvement Cost (Itemized Cost Estimate)	Ci	$1,900,000.00

Q = Weighted cost of fatal and injury collisions

$$Q = \frac{(Fc \times F) + (Ic \times I)}{F + I}$$

Q = 1244583.333

B = Benefit

B = Q (F + I) (R) + Pc (P) (Rp)

B = 1197660

C = Cost

C = Ek (Ci) + Cm

C = 185300

B/C = Benefit/Cost Ratio

B/C = 6.463356719

BENEFIT/COST RATIO: 6.46

BENEFIT COST ANALYSIS FACTOR DEFINITIONS

F: annual number of collisions involving fatalities during study period

I: average annual number of collisions involving injured people for the period of the study

P: average annual number of collisions involoving only property damage for the period of the study

R: reduction of fatal and injury collisions by type (from Table A - Appendix E)

R_p: reduction of property damage only collisions by type (from Table A - Appendix E)

P_c: average cost, in thousands of $, per property damage only collision

Q: weighted cost, in thousands of $, of fatal and injury collisions

I_c: average cost per injury in thousands of $

F_c: average cost per fatality in thousands of $

Ek: capital recovery factor based on countermeasure life (from Table B - Appendix E)

Ci: estimated intial cost of the countermeasure (cost of the improvement including r/w) in thousands of $

C_m: estimated annual maintenance and operating cost of the countermeasure in thousands of $

From: Rushing, Byron [brushing@dot.ga.gov]
Sent: Thursday, April 01, 2010 2:33 PM
To: Bywaletz, Michael
Cc: Belford, Charity
Subject: RE: Pi No 0008884 Roundabout SR 87 @ SR 18

Looks like the bike route is on SR 18; I think it's only a designated route, I don't know if there are currently bike lanes on that portion of the road. However since bikes are permitted on both roadways, all four legs of the intersection should be equally accessible by bike.

--

Byron Rushing
State Bicycle & Pedestrian Coordinator
Georgia Department of Transportation

From: Bywaletz, Michael [mailto:michael_bywaletz@gspnet.com]
Sent: Tuesday, March 30, 2010 5:30 PM
To: Rushing, Byron
Cc: Belford, Charity
Subject: RE: Pi No 0008884 Roundabout SR 87 @ SR 18

Byron,

I have been working with Charity on this roundabout. Are both legs of this intersection on the bike route or is it just one of the legs.

Michael Bywaletz, P.E.

GRESHAM, SMITH AND PARTNERS
Florida Cert. No. AAP000034 / CA3806 / IB26000797 / LC26000381
[P] 678.518.3685
[M] 770.540.9922
[F] 877.275.5854

From: Rushing, Byron
Sent: Tuesday, March 30, 2010 4:46 PM
To: Belford, Charity
Cc: Zahul, Kathy
Subject: RE: Pi No 0008884 Roundabout SR 87 @ SR 18

Charity, this question has come up with several new roundabout projects. If the box is checked then the intersection is located on a bike route.

Bicyclists should not be routed on a shoulder and bike lanes should never be included in a roundabout – that sets up a dangerous conflict when a bicyclist is continuing into the path of an exiting motor vehicle. Generally on single-lane, low volume, low speed roundabouts no extra bike provision is needed within the circle. For multi-lane, high volume, or higher speed roundabouts cyclists should be given the opportunity to exit and use a shared-use path around the intersection; in this case there would need to be a

wider path around the outside of travel lanes and careful consideration of cyclist movements at each crosswalk.

For both low and high speed roundabouts, bicycle lanes should be tapered leading up to the roundabout, likely ending somewhat before the crosswalk. In some cases an "on ramp" is provided in line with the ending bike lane to allow cyclists to travel up and merge into a path facility.

The "Applied Roundabout Design" course material (section 8) and "Roundabouts: An Informational Guide" (http://www.tfhrc.gov/safety/00068.htm, pg 34) both have good detailed information about bicycle and pedestrian accommodation in roundabouts.

—

Byron Rushing
State Bicycle & Pedestrian Coordinator
Georgia Department of Transportation

From: Belford, Charity
Sent: Tuesday, March 30, 2010 2:10 PM
To: Rushing, Byron
Subject: PI No 0008884 Roundabout SR 87 @ SR 18

Byron,

This location is has a 'Y' by the bike provision in Tpro. What does this entail? Can it just be a 4 foot shoulder? Is this an official bike route? Please explain.

Charity Belford
Traffic Design Supervisor
Office of Traffic Operations
935 E. Confederate Avenue, Building 24
Atlanta, Georgia 30316
404-635-8154
404-635-8116 (fax)
cbelford@dot.ga.gov

Vance C. Smith, Jr., Commissioner

GEORGIA DEPARTMENT OF TRANSPORTATION

One Georgia Center, 600 West Peachtree Street, NW
Atlanta, Georgia 30308
Telephone: (404) 631-1000

December 13, 2010

Ms. Anita Buice, County Administrator
Monroe County
P.O. Box 189
Forsyth, GA 31029-0189

RE: Lighting required for roundabout project – SR 18 @ SR 87
GDOT Project CSSFT-0008-00(884) Monroe County P.I. No. 0008884

Dear Ms. Buice,

The above-referenced project is now in the Concept Development stage of GDOT's Plan Development Process. The Project Concept Report is nearing approval.

For this project, roundabout lighting is both a necessary design component and requirement. The warranting conditions for lighting, based on Illuminating Engineering Society of North America (IESNA) and American Association of State Highway and Transportation Officials (AASHTO) guidelines, have been met.

In order for this project to move forward, the Department is requesting a written commitment from Monroe County. This commitment should state that Monroe County is willing to share in the costs of the Lighting by funding the Energy, Operation and Maintenance of the installed Lighting system. The Department will fund the design and construction costs, including all materials. Currently, the Department estimates the monthly cost to power the roundabout lighting to be approximately $300 - $500 per month, depending on local power rates.

If Monroe County agrees to share in the costs for the installed Lighting system, please reply to Mr. Scott MacLean, Office of Design Policy & Support, within the next 30 days. If the Department does not receive a written response, it will be assumed that Monroe County cannot fund or participate in the energy, operation and maintenance costs of the installed Lighting system. In the event that Monroe County does not commit to funding the energy, operation and maintenance of the installed Lighting system, the Department may elect to change the scope of the project and/or suspend further development of the project Concept.

Thank you for your cooperation. Should you have any questions or need any additional assistance, please contact Scott MacLean at (404) 631-1551.

Sincerely,

Brent A. Story, P.E.
State Design Policy Engineer

BAS:BRE:sam

cc: Jim Cole, Transportation Board Member, Congressional District 8
David Millen, District Engineer

Monroe County
Board of Commissioners
Anita S. Buice, County Administrator
Sid Banks, Road Superintendent

James A. Vaughn, Chairman
James C. Peters, Vice Chairman
Larry C. Evans, District 1
James V. Ham, District 2
Michael D. Bilderback, District 3

38 West Main Street • P. O. Box 189 • Forsyth, Georgia 31029 • Phone (478) 994-7000 • Fax (478) 994-7294
www.monroecountygeorgia.com

December 27, 2010

Scott MacLean
Office of Design Policy & Support
Georgia Department of Transportation
600 West Peachtree Street NW
Atlanta, GA 30308

RE: Lighting required for roundabout project – SR 18 @ SR 87
GDOT Project CSSFT-0008-00(884) Monroe County P.I. No. 0008884

Dear Mr. MacLean:

The Monroe County Board of Commissioners unanimously approved to share in the costs of the lighting system for the above referenced project. The safety provided by the roundabout will be a benefit to all tax payers in Monroe County. We look forward to working with the Department of Transportation and anticipate the completion of this project.

If you have any questions, or if I can be of any further help, please do not hesitate to contact me.

Sincerely,

Anita Buice
County Administrator

Osborn, Lakeshia D.

From: Cameron, Derrick
Sent: Monday, August 23, 2010 6:12 PM
To: Story, Brent; Buchan, Ben
Cc: Osborn, Lakeshia D.; Belford, Charity; Peters, Dave; Zahul, Kathy; Simpson, Jim; Thompson, Ken; Pass, Daniel
Subject: RE: PI 0008534, Peach and PI 0008884 Monroe - concept report review

To All:

Below are my responses (in black) to Daniel's comments regarding the Concept Reports for the subject projects. Please contact me if we need to discuss this matter in greater detail.

Project 0008534:

1. **Need and Purpose:** Consider a signalized intersection alternate for both capacity analyses and cost estimate. Also, please clarify the difference in total number of crashes shown in the tables titled "Crash History" and "Summary of Collision Types" (i.e., 24 vs. 16). Add comparison of historical crash numbers to statewide averages.
   Roundabout analysis was proven to be the best countermeasure to correct the crashes occurring at the intersection. Therefore, a capacity analysis was not conducted for this intersection. This design was reviewed and approved by the State Traffic Engineer.

2. **Description of the proposed project:** The recognition of the need for lighting is described. Recommend to provide any documentation related to meetings with local officials which relate to lighting. It is recommended that a lighting agreement be signed prior to approval of the concept, but at minimum provide something (letter or other signed document) that shows that the local government is agreeable to paying for maintenance and energy costs for lighting.
   It was determined by the State Policy Engineer that we could proceed with concept approval without the lighting agreement. However, we have sent the letter to the County seeking their agreement to pay the cost of energizing the lighting. We are currently waiting on their response.

3. **Traffic Control During Construction:** At least a brief explanation of how traffic will be maintained during staging would be helpful.
   A brief description of traffic control during staging cannot be given at the time.

4. **Other Alternatives Considered:** Please complete the sentence for the last bullet on Page 7. Also, an obvious question by the public will likely be why a signalized alternate was not more fully developed and considered. I would agree that a roundabout is commonly a better solution for a high speed rural intersection where an existing two-way stop shows a history of high injury/fatality crash rates. Still, the reasons need to be well understood and presented to the public as to why a signal would not accomplish the same goal. The statement "This improvement was not chosen due to the fact the roundabout promotes the most safety." is somewhat lacking in substance.
   The sentence on page 7 will be completed. A PIOH will be held next month to address the concerns of the public.

5. **Cost Estimate:** Add lighting costs and landscaping costs. Consider using CES for the cost estimate.
   Lighting elements and landscaping (grassing) cost should not be a significant addition to the overall project cost estimate. The cost information will be obtained and added to the estimate. The Concept estimate was developed prior to the implementation of CES, but the revised estimate will be completed using current methods

6. **Typical Section:** The lane widths vary considerably on the typical section provided. It not readily apparent to me why. Further clarification on the details would be helpful and defining approximate limits for which these typicals apply.
The typical section will be revised for clarity. The construction of this roundabout includes both a rural (for the existing roadway) and urban (for the roundabout: curb & gutter and sidewalks) typical sections. Hence the inclusion of two typical sections.

7. **Concept Team Meeting Minutes:** The minutes of the concept meeting state that a PIOH will not be held for this project. A PIOH **should** be held, preferably before the concept report is approved. Also, the question was raised during the concept meeting as to whether or not this project is on a bike route. The question should be answered and any corresponding requirements added to the report.
A PIOH for this project will be held on September 23, 2010. Coordination with Byron Rushing will be done to make sure that proper provisions are considered for the bike route.

8. **Capacity analysis & Roundabout Analyses:** Please provide a traffic diagram for design and build years.
See Concept attachment for traffic diagrams.

9. **Further comments:**
   - Some sheets are not legible; please provide more readable copies of the R/W cost estimate letter and the HCM and GDOT Roundabout Tool output reports, if possible.

   Will do if possible.

   - Include a scaled layout of the proposed roundabout, overlain on an aerial, if possible. (See the DPM Section 8.2.2.)

   A scaled layout will not be provide in the Concept Report.

   - Recommend that request be made to Scott Z. for decision as to whether or not an external peer review is warranted. This would be best done before public meeting.

   Due to simplicity of project, a determination will be made as to whether additional reviews, other than field plan reviews are necessary.

Project 0008884:

1. **Need and Purpose, *Operational Analysis*:** Please provide output reports for capacity analyses. Also, note what model the result from the GDOT Roundabout Analysis Tool are presented for – i.e., NCHRP–572 or UK model? In Table 7, "2034 Build" is noted. Should this read "2034 Design Year"?

   The results of the capacity analysis were provided in the Concept Report. I do not understand why the complete report is needed. Page 7 of the Concept states that the Department's analysis tool was based on NCHRP Report 572: Roundabout in the United States. "2034 Build" should be changed to read "2034 Design Year".

2. **Proposed Design Features:** The proposed maximum grade for SR 87 is 5.2% which would be high for a roundabout. What would be the max grade through the proposed roundabout? Is stopping sight distance met for all approaches to the roundabout? Does the roundabout accommodate the swept paths of a WB-67? Please add a brief description of proposed staging.

   The grade throughout the roundabout will be flat to best tie into the existing crossing roadways. The stopping sight distance in accordance with the "Green Book" will be met. As noted in the Concept Report, the roundabout design vehicle is a WB-67. A brief description of how this project will be staged cannot be given at this point in

the project. Construction staging will be required and staging plans will be design as construction plans are developed.

3. **Other Alternatives Considered:** It would be helpful to more fully explain why a signal was eliminated from consideration, particularly for communicating this decision at a public meeting. The statement that a traffic signal would add "significant cost to the project without additional benefit" appears to indicate that the cost for a signal would be significantly higher than for roundabout. This may be the case but the reasoning can be better explained and better supported. If the "benefit" being referred to is that the signal is not expected to address the high crash rates this can be more directly stated and supported. It was noted that this intersection does not meet the criteria for a traffic signal – please provide the TE study supporting this.

   The best countermeasure for the predominant type of crashes occurring at this intersection is the installation traffic signal or a roundabout. The Chief's policy for new traffic signals states that the location must be considered and analyzed for roundabout. This location met the criteria for a roundabout. The State Traffic Engineer agreed with the roundabout and subsequently signed the Concept Report. Therefore, no further action regarding the comparison of a roundabout to a traffic signal will be completed.

   The recommended LOC for a rural minor arterial is B – See Table 6.6 of the DPM. Can the layout of the roundabout be improved to improve the LOS of D for design year PM traffic on the southbound approach leg?

   LOS B cannot be achieved without constructing by-pass lane or a multi-lane roundabout. Both options will create significant environmental and right-of-way impacts that could be avoided.

4. **Signature on Page 12:** Should be "Director of Engineering" and not "Director of Preconstruction".

   The signature title on page 12 will be corrected as noted and re-submitted.

5. **Cost Estimate:** Add lighting and landscaping costs. Landscaping would be for the central island. Provide preliminary R/W cost estimate from Office of Right of Way. Consider using CES.
   Lighting elements and landscaping (grassing) cost should not be a significant addition to the overall project cost estimate. The cost information will be obtained and added to the estimate. The Concept estimate was developed prior to the implementation of CES, but the revised estimate will be completed using current methods.

6. **Concept Team Meeting Minutes:** Derrick mentions in his e-mail to Melanie Deal on June 10 that the locals have verbally agreed to pay energy costs to light the roundabout but suggests that they may want to see the lighting plans before signing. It would be better practice to have a lighting agreement (or at least a signed letter of commitment) prior to approving of the concept and certainly long before lighting plans are prepared.

   Written confirmation of the locals agreeing to pay the cost of energizing the lighting was requested.

   Monroe County asked whether or not crash rates had increased or decreased since the intersection was made a four-way stop. When was the intersection changed to a four-way stop? If the crash history presented in the Need & Purpose section corresponds to a two-way stop this should be stated. What is the answer to Monroe Counties questions?

   This project qualified for safety funding after analyzing five years of crash data. The benefit cost for this project is 6.46. Comparatively this is a high BC for a safety project regardless of when the 4-way stop was implemented. Operationally, a 4-way stop will not function as well as a roundabout. This was explained to the locals during the Concept Team Meeting.

   A PIOH **should** be held. It was stated during the concept meeting that Monroe County would inform the PM within two weeks of their desire for a public meeting. What was their decision? Additionally, at the PIOH we would want to be prepared to defend the newly constructed roundabout in the southern part of the county. (Culloden)

The locals have not made a decision regarding the PIOH. Monroe County has a functioning roundabout that was Let to construction by the Department. I feel a PIOH for this project will not be necessary. The locals felt the same and expressed this during the Concept Team meeting.

A decision should be made by Scott Z. on whether or not an external peer review is warranted. This peer review is best accomplished prior to a public meeting.

A peer review took place during the development of the conceptual layout. Scott has reviewed the layout and provided his comments. Other than the field plan reviews, no further reviews will be conducted.

Sincerely,

Derrick D. Cameron

Traffic Design Manager
Georgia Department of Transportation
Office of Traffic Operations
404 635-8153

From: Story, Brent
To: Peters, Dave; Zahul, Kathy; Cameron, Derrick; Simpson, Jim; Thompson, Ken
Sent: Thu Jun 24 16:37:28 2010
Subject: Re: PI 0008534, Peach and PI 0008884 Monroe - concept report review

Since they are time sensitive, send them to me and I will put a note on them that Derrick will address comments with a Revised Concept at a later date; and send down to Keith, Ben and Gerald for approval.
Thanks
Brent

From: Peters, Dave
To: Story, Brent; Thompson, Ken
Sent: Thu Jun 24 16:21:00 2010
Subject: FW: PI 0008534, Peach and PI 0008884 Monroe - concept report review
Brent,

Based on Jim & Daniel's comments below, do you still want me to send these two up to Ben & Gerald for approval?

We had some unresolved issues/questions with 0008884 as well -- there were attachments missing, among other things. 0008884 was received on June 7, 2010, was reviewed and the PM contacted on June 21. We have not gotten a response and the report has not been to the administrators for recommendation at this point.

I will be out on furlough on Friday the 25th, but I'm leaving the reports with Ken packaged up to be sent to you in tomorrow's (Friday) mail run.

Dave Peters
(404) 699-4453

From: Simpson, Jim
Sent: Thursday, June 24, 2010 10:17 AM
To: Peters, Dave
Cc: Story, Brent; Thompson, Ken
Subject: PI 0008534, Peach and PI 0008884 Monroe - concept report review

Dave,

Here are cursory reviews of the two concept reports of Derrick's that have been pending approval. As we discussed at the meeting yesterday with Kathy and Charity, the schedules on these are pretty tight, so it may not be feasible to address every item, but I would recommend that they do as much as they can. Let me know if you have any questions. Thanks,

Jim Simpson
Assistant State Design Policy Engineer
Georgia Department of Transportation
Office of Design Policy and Support
One Georgia Center, 26th Floor
(404)631-1605 - Office
(404)895-4999 - BlackBerry

From: Pass, Daniel
Sent: Monday, June 21, 2010 2:18 PM
To: Simpson, Jim
Subject: PI 0008534, Peach - concept report review

0008534 Peach County:

Jim,

I've added the items from your review.

10. **Need and Purpose:** Consider a signalized intersection alternate for both capacity analyses and cost estimate. Also, please clarify the difference in total number of crashes shown in the tables titled "Crash History" and "Summary of Collision Types" (i.e., 24 vs. 16). Add comparison of historical crash numbers to statewide averages.
11. **Description of the proposed project:** The recognition of the need for lighting is described. Recommend to provide any documentation related to meetings with local officials which relate to lighting. It is recommended that a lighting agreement be signed prior to approval of the concept, but at minimum provide something (letter or other signed document) that shows that the local government is agreeable to paying for maintenance and energy costs for lighting.
12. **Traffic Control During Construction:** At least a brief explanation of how traffic will be maintained during staging would be helpful.
13. **Other Alternatives Considered:** Please complete the sentence for the last bullet on Page 7. Also, an obvious question by the public will likely be why a signalized alternate was not more fully developed and considered. I would agree that a roundabout is commonly a better solution for a high speed rural intersection where an existing two-way stop shows a history of high injury/fatality crash rates. Still, the reasons need to be well understood and presented to the public as to why a signal would not accomplish the same goal. The statement "This improvement was not chosen due to the fact the roundabout promotes the most safety." is somewhat lacking in substance.
14. **Cost Estimate:** Add lighting costs and landscaping costs. Consider using CES for the cost estimate.
15. **Typical Section:** The lane widths vary considerably on the typical section provided. It not readily apparent to me why. Further clarification on the details would be helpful and defining approximate limits for which these typicals apply.
16. **Concept Team Meeting Minutes:** The minutes of the concept meeting state that a PIOH will not be held for this project. A PIOH **should** be held, preferably before the concept report is approved. Also, the question was

raised during the concept meeting as to whether or not this project is on a bike route. The question should be answered and any corresponding requirements added to the report.

17. **Capacity analysis & Roundabout Analyses:** Please provide a traffic diagram for design and build years.
18. **Further comments:**
    - Some sheets are not legible; please provide more readable copies of the R/W cost estimate letter and the HCM and GDOT Roundabout Tool output reports, if possible.
    - Include a scaled layout of the proposed roundabout, overlain on an aerial, if possible. (See the DPM Section 8.2.2.)
    - Recommend that request be made to Scott Z. for decision as to whether or not an external peer review is warranted. This would be best done before public meeting.

The roundabout solution seems to be a valid choice. Although this project began long before our new roundabout policy was published, some effort should be made to adhere as closely to that policy as practical.

Daniel G. Pass, P.E.

Design Policy & Support
Georgia Department of Transportation

p 404.631.1651, f 404.631.1949
main 404.631.1978, dpass@dot.ga.gov

0008884 Monroe County:

.n – I've added the items from your e-mail.

7. **Need and Purpose, *Operational Analysis*:** Please provide output reports for capacity analyses. Also, note what model the result from the GDOT Roundabout Analysis Tool are presented for – i.e., NCHRP–572 or UK model? In Table 7, "2034 Build" is noted. Should this read "2034 Design Year"?

8. **Proposed Design Features:** The proposed maximum grade for SR 87 is 5.2% which would be high for a roundabout. What would be the max grade through the proposed roundabout? Is stopping sight distance met for all approaches to the roundabout? Does the roundabout accommodate the swept paths of a WB-67? Please add a brief description of proposed staging.

9. **Other Alternatives Considered:** It would be helpful to more fully explain why a signal was eliminated from consideration, particularly for communicating this decision at a public meeting. The statement that a traffic signal would add "significant cost to the project without additional benefit" appears to indicate that the cost for a signal would be significantly higher than for roundabout. This may be the case but the reasoning can be better explained and better supported. If the "benefit" being referred to is that the signal is not expected to address the high crash rates this can be more directly stated and supported. It was noted that this intersection does not meet the criteria for a traffic signal – please provide the TE study supporting this.

   The recommended LOC for a rural minor arterial is B – See Table 6.6 of the DPM. Can the layout of the roundabout be improved to improve the LOS of D for design year PM traffic on the southbound approach leg?

10. **Signature on Page 12:** Should be "Director of Engineering" and not "Director of Preconstruction".

11. **Cost Estimate:** Add lighting and landscaping costs. Landscaping would be for the central island. Provide preliminary R/W cost estimate from Office of Right of Way. Consider using CES.

12. **Concept Team Meeting Minutes:** Derrick mentions in his e-mail to Melanie Deal on June 10 that the locals have verbally agreed to pay energy costs to light the roundabout but suggests that they may want to see the lighting plans before signing. It would be better practice to have a lighting agreement (or at least a signed letter of commitment) prior to approving of the concept and certainly long before lighting plans are prepared.

    Monroe County asked whether or not crash rates had increased or decreased since the intersection was made a four-way stop. When was the intersection changed to a four-way stop? If the crash history presented in the Need & Purpose section corresponds to a two-way stop this should be stated. What is the answer to Monroe Counties questions?

    A PIOH **should** be held. It was stated during the concept meeting that Monroe County would inform the PM within two weeks of their desire for a public meeting. What was their decision? Additionally, at the PIOH we would want to be prepared to defend the newly constructed roundabout in the southern part of the county. (Culloden)

A decision should be made by Scott Z. on whether or not an external peer review is warranted. This peer review is best accomplished prior to a public meeting.

The roundabout solution here seems to be a valid choice and the concept seems generally well prepared.

Daniel G. Pass, P.E.

Design Policy & Support
Georgia Department of Transportation

p 404.631.1651, f 404.631.1949
main 404.631.1978, dpass@dot.ga.gov