

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

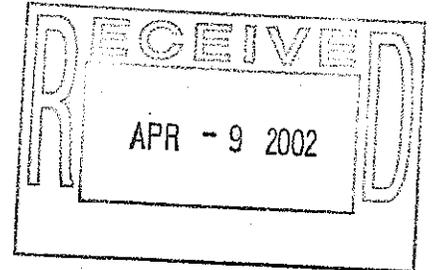
INTERDEPARTMENT CORRESPONDENCE

FILE: STP-0003-00(947) Douglas County
P.I. No.: 0003947
SR 5 @ SR 166
Safety/Intersection Improvements

OFFICE: Traffic Operations
Atlanta, Georgia
DATE: April 5, 2002

Allen
FROM: Phillip M. Allen, State Traffic Safety & Design Engineer

TO: Steve Henry, District Engineer, Chamblee
Attn: Mike Malcolm



SUBJECT: APPROVED CONCEPT REPORT

Attached is a copy of the approved concept report on the above listed project for your use and further handling.

This project consists of the installation of a modern roundabout with a diameter of 130 ft. with a 16 ft. travel lane and a 14 ft. concrete apron for truck turning movements. The interior island and approach islands will be installed and exterior lighting will be provided. A stop and go traffic signal is not warranted.

By copy of this letter, this office is requesting for this project be assigned to Chuck Hasty as Project Manager. The design of this project will be handled under our Consultant Design Contract, STP-0001-00(853).

Should you have any questions, please contact Ken Werho of this office at 404-635-8144.

PMA:kms

Attachments

- cc: Frank Danchetz
- Tom Turner, w/attach.
- David Mulling, w/attach.
- Wayne Hutto, w/attach.
- Herman Griffin, w/attach.
- Harvey Keepler, w/attach.
- Yancy Bahmann, w/attach.
- General Files

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

PROJECT CONCEPT REPORT

DOUGLAS COUNTY

STP-0003-00(947)

FEDERAL ROUTE NO:
STATE ROUTE NO: 5 & 166
GADOT P.I. NO: 0003947

SEE ATTACHED
LOCATION SKETCH

Date of Report: August 8, 2001

RECOMMENDED: 08/13/01
DATE

Marion H. Adams
STATE TRAFFIC OPERATIONS ENGINEER

RECOMMENDED: 8-29-01
DATE

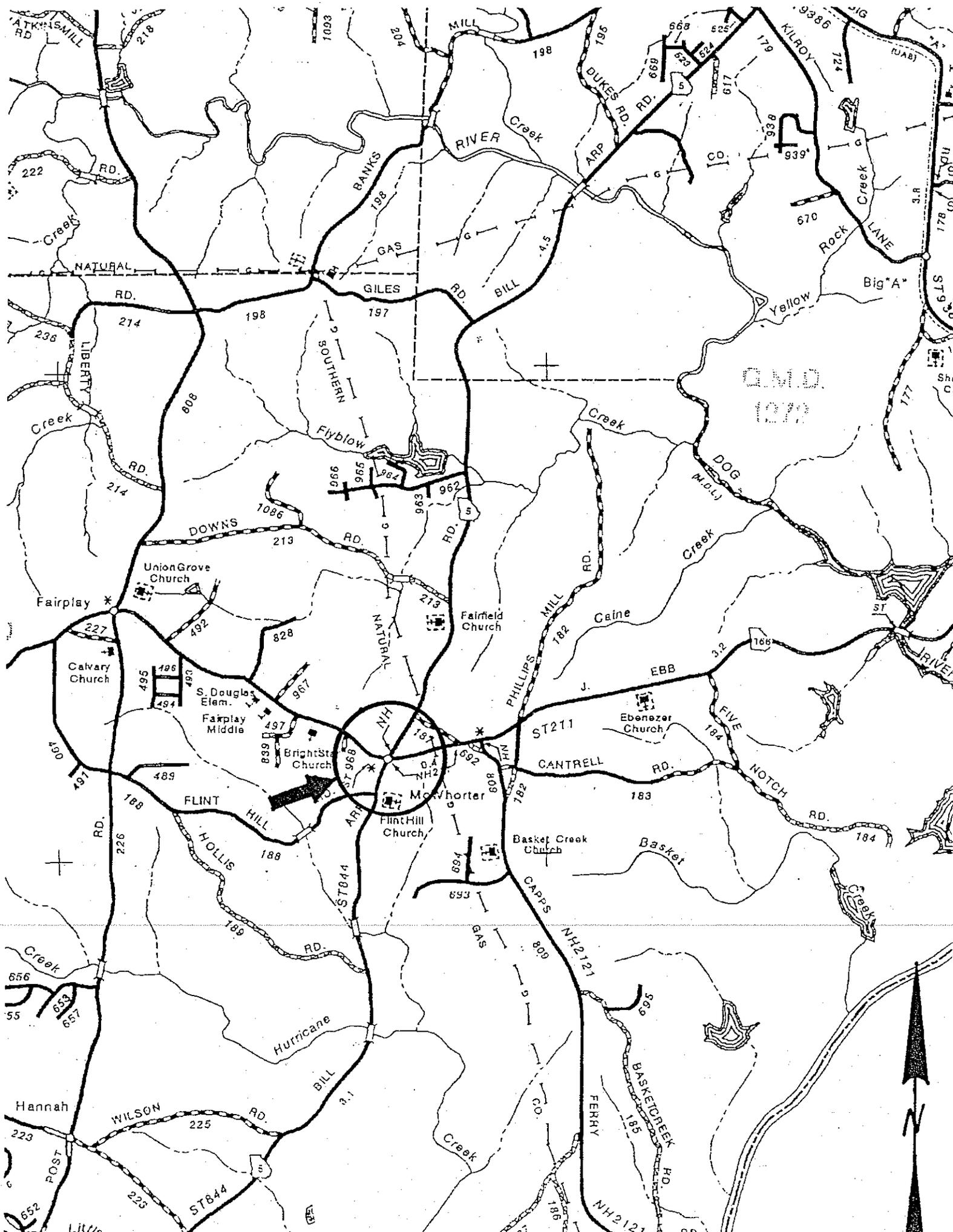
Stephen T. Newman
DISTRICT ENGINEER

RECOMMENDED: 9-20-01
DATE

W. T. Leach
CHIEF ENGINEER

APPROVED: 9-28-01
DATE

J. Tom Clump
COMMISSIONER



Q.M.D.
1977



PROJECT CONCEPT REPORT

P.I. No.: 0003947

Project No.: STP-0003-00(947) Douglas County

Route No.: S.R. 5/Bill Arp Road
S.R. 166

Location: The intersection of S.R. 5 at S.R. 166 is located approximately 5 miles east of the Carroll County line and approximately 3 miles west of the Fulton County line in Douglas County.

Description: A modern roundabout is proposed at the intersection with S.R. 5 and S.R. 166. The inscribed diameter of the roundabout will be 130' with a 16' travel lane and a 14' concrete apron for truck turning movements. The interior island and approach islands will be installed and exterior lighting will be provided.

Traffic – Current ADT:
S.R. 5 ----- 5,300 (1998 ADT)
S.R. 166 ----- 4,300 (1999 ADT)

Existing Typical: SR 5: 2 – 12 ft. travel lanes, two in each direction and a grassed shoulder.
S.R. 166: 2 – 12 ft. travel lanes, one in each direction and a grassed shoulder.

Existing Right of Way:
S.R. 5 ----- 100' (Estimated)
S.R. 166 ----- 160' (Estimated)

Existing Traffic Control: All approaches of S.R. 5 and S.R. 166 are currently controlled by stop signs. All the approaches of S.R. 5 and S.R. 166 have advanced warning Stop Ahead signs approximately 300 feet in advance of the intersection.

Existing Major Structures: None.

Statement of Need & Purpose: Accident history for this intersection shows 5 accidents over a three-year period ('96-'98). In addition, S.R. 5 southbound has a level of service "C" with the current traffic control. To improve the safety and orderly progression of traffic through the intersection, these improvements are recommended.

Bicycle & Pedestrian Considerations: None.

Length: 0.46 miles

<u>Termini:</u>	S.R. 5	S.R. 166
From M.P.	3.05	4.46
To M.P.:	3.25	4.72

PDP Class: Minor Existing

Functional Class: S.R. 5 ----- Rural Principal Arterial
S.R. 166----- Rural Principal Arterial

Max Degree of Curve: +/- 3.0 Degrees

Max Grades: +/-1.0 %

Design Speed: S.R. 5 ----- 55 mph
S.R. 166 ----- 55 mph

Proposed Typical Section: S.R. 5: 2 – 12 ft. travel lanes tapering approx. 200-ft. to 2-16-ft. lanes separated by a splitter island. The splitter island will be landscaped at the entry and exit of the roundabout and concrete approaching the roundabout. Curb and gutter will extend approximately 365 ft. back from the roundabout in both directions.
S.R. 166: 2 – 12 ft. travel lanes tapering approx. 200-ft. to 2-16-ft. lanes separated by a splitter island. West of the intersection with S.R. 5, the splitter island will be landscaped at the entry and exit of the roundabout and concrete approaching the roundabout. East of the intersection with S.R. 5, 2 – 12 ft. travel lanes tapering approx. 300-ft. to 2-16-ft. lanes separated by traffic striping. Curb and gutter will extend approximately 365 ft. back from the roundabout in both directions. Right turn lanes will be provided for both approaches. The proposed roundabout: A 16 ft. travel lane with an exterior non-mountable and interior mountable curb and gutter adjacent to a 14 ft. concrete apron with an interior non-mountable curb and gutter. The interior non-mountable curb and gutter island will be landscaped and lighted per sight distance standards.

Proposed major structures: None.

Type Access: By Permit.

Traffic Control During Construction: Existing operation shall be maintained during construction.

Right-of-Way Requirement: The Georgia Department of Transportation shall be responsible for the acquisition of all Required Right of Way for this project.

Utilities: The Georgia Department of Transportation shall be responsible for all Utility adjustments.

Estimated Cost:

<u>Item</u>	<u>Total Amount</u>	
Right-of-way	\$ 134,900	(By GDOT)
Utilities	\$ 0	(By GDOT)
Estimated LGPA Total	\$134,900	
Construction	\$ 700,000	
Traffic Signal	\$ 0	
Railroad Equipment	\$ 0	
E & C 10 %	\$ 70,000	
Total Construction	\$ 770,000	

Permits Required: None.

Permits Required: None.

Level of Environmental Analysis: Categorical Exclusion.

Level of Public Involvement: None.

Time Saving Procedures Appropriate: Yes (X) No ()

Design Variances Required: None.

Alternates Considered:

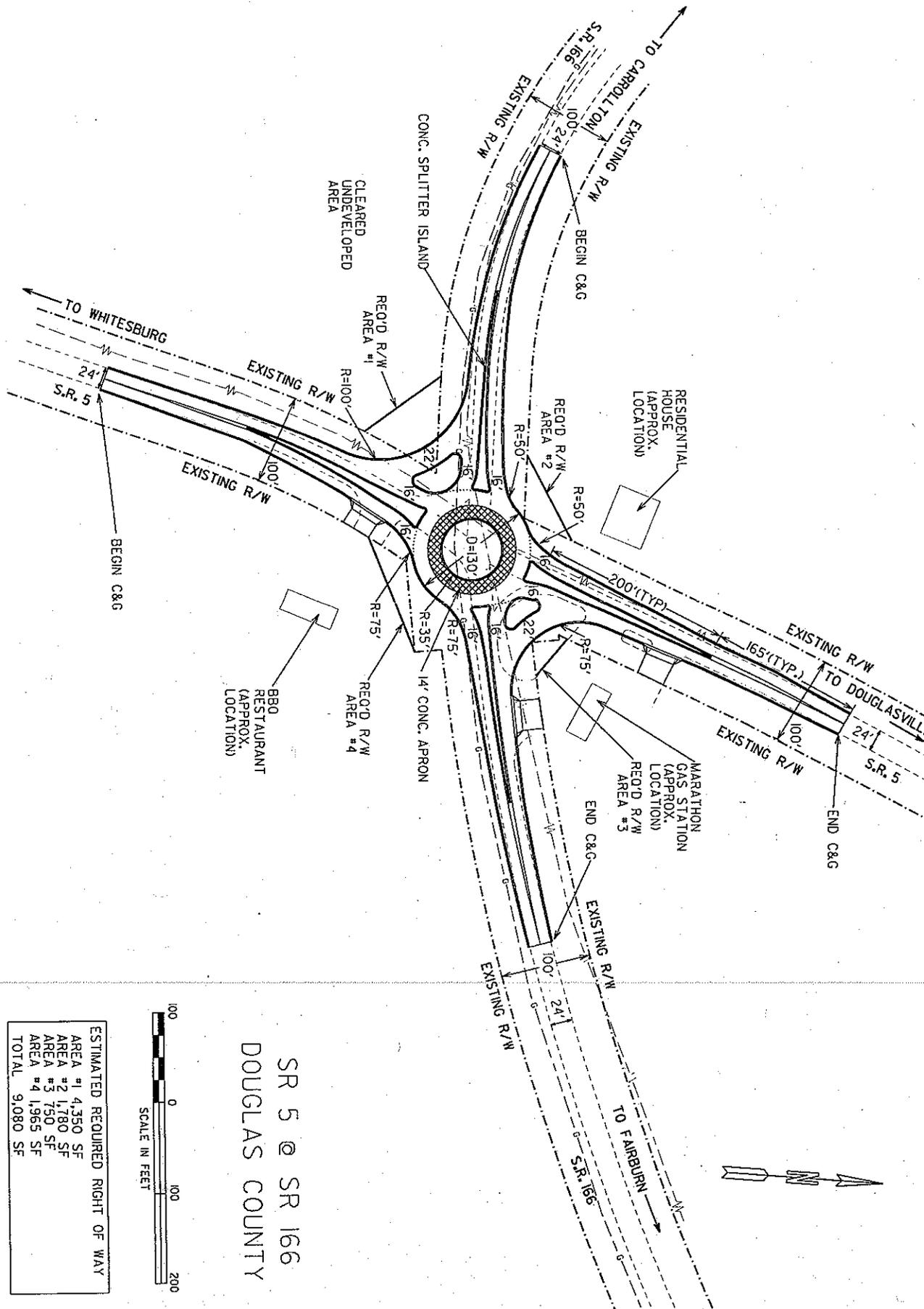
Comments: There is a roundabout approximately 11 miles south of S.R. 5 and S.R. 166 at S.R. 16 in the City of Whitesburg in Carroll County. The nearest adjacent traffic signal on S.R. 5 is approximately 8 miles north at Central Church Road. The nearest adjacent traffic signal on S.R. 166 is approximately 2 miles west at Post Road.

Attachments: None

Prepared by Gresham, Smith and Partners on behalf of the Office of Traffic Operations of the Georgia Department of Transportation.



Michael R. Holt, P.E.



SR 5 @ SR 166
DOUGLAS COUNTY



ESTIMATED REQUIRED RIGHT OF WAY	
AREA #1	4,350 SF
AREA #2	1,780 SF
AREA #3	750 SF
AREA #4	1,965 SF
TOTAL	9,080 SF

DEPARTMENT OF TRANSPORTATION

STATE OF GEORGIA

INTERDEPARTMENTAL CORRESPONDENCE

FILE : Douglas County
State Route 5 (Bill Arp Road)
at State Route 166

OFFICE: 7th District
Chamblee

DATE: February 13, 2001


FROM : Gene M. Bachmann, District Traffic Engineer

TO : Marion G. Waters, III P.E. State Traffic Operations Engineer
Attn. : Joe Fletcher, Assistant State Traffic Operations Engineer

SUBJECT: Modern Roundabout Request, Douglas County, Milelog 3.15,
State Route 5 (Bill Arp Road) at State Route 166

Attached is a Traffic Operations Report for the intersection of State Route 5 (Bill Arp Road) at State Route 166. This report recommends that a Modern Roundabout be constructed at this location. This roundabout would have to be installed as part of a safety project.

This recommendation is based on the number of accidents, 4 accidents in a 20-month period and also based on the improved level of service with a modern roundabout. All information collected for this review is included in the attached report. An approximate roundabout design is included, including the needed right turn bypass lane. This intersection is an excellent candidate for a modern roundabout, with the equal and low volumes, the rural two lane approaches in all directions, the good sight distance in all directions, the proximity to another roundabout, and the abundance of Right of Way at the intersection. This intersections operation and safety would be improved through the installation of a modern roundabout at this location. A modern roundabout should reduce both the number and also the severity of the accidents at this intersection. A modern roundabout should also improve the traffic flow through this intersection, and improve level of service at this intersection.

If you have any questions or would like to further discuss this matter, please call Scott Zehngraft at 770-986-1073.

GMB:SEZ
Attachments

cc: file

TRAFFIC ENGINEERING REPORT

FILE Douglas County
SR 5 @ State Route 166

DATE February 13, 2001

REASON FOR INVESTIGATION:

Potential Roundabout Location: Existing four way stop

TOPOGRAPHY:

State Route 5 (Bill Arp Road) is classified as a Rural Principal Arterial having an ADT of 5,300 in 1998. State Route 5 is a north-south arterial that extends from Carroll, north through Douglas County, and into Cobb County. At this intersection, State Route 5 is a two-lane, two-way road with 12 foot lanes in each direction. At this intersection, State Route 5 has grass shoulders on both sides of the road. Currently there are no left turn lanes at this intersection and the sight distance is good in both directions along State Route 166.

State Route 166 is classified as a Rural Principal Arterial having an ADT of 4,300 in 1998. State Route 166 is a east-west arterial that extends from Carroll, east through Douglas County, and into Fulton County. At this intersection, State Route 166 is a two-lane, two-way road with 12 foot lanes in each direction. At this intersection, State Route 166 has grass shoulders on both sides of the road. Currently there are no left turn lanes at this intersection and the sight distance is good in both directions along State Route 5.

VEHICLE VOLUMES:

The following 24-Hour counts were provided by the Office of Planning:

	12-19-2000	12-20-2000	12-21-2000
State Route 166 EB	1686	2612	2023
State Route 166 WB	1285	2019	1568
State Route 5 NB	1038	1676	1405
State Route 5 SB	1457	2485	1968

LEVEL OF SERVICE ANALYSIS:

The level of service for the intersection using the existing all-way stop configuration, and the peak hour volumes provided by the Office of Planning are as follows:

Direction of travel on SR 5 & 166	EB	WB	NB	SB
Corresponding Level of service	A	B	A	C

The level of service for the intersection using a modern roundabout designed with a 130 foot inscribed diameter, and the peak hour volumes provided by the Office of Planning are as follows:

Direction of travel on SR 5 & 166	EB	WB	NB	SB
Corresponding Level of service	A	A	A	A

VEHICLE SPEEDS:

The posted speed limit on both State Route 5 and State Route 166 are 55 MPH, however, actual speeds approaching the intersection are minimal due to the stop condition. The 85th percentile speeds were also provided by the Office of Planning, but due to the stop condition, the actual speeds approaching the intersection are lower than would be expected for an open section of roadway.

EXISTING TRAFFIC CONTROL:

All approaches of State Route 5 and State Route 166 are currently controlled by R1-1 STOP signs. All the approaches of State Route 5 and State Route 166 also have advanced warning STOP Ahead (W3-1a) signs at 300 feet in advance of the intersection.

ADJACENT TRAFFIC CONTROL DEVICES:

There is a Roundabout approximately 10.8 miles south of the study intersection at State Route 166 (Main Street) in the City of Whitesburg in Carroll County. The nearest adjacent traffic signal on State Route 5 is approximately 8.0 miles north of the study intersection at Central Church Road. The nearest adjacent traffic signal on State Route 166 is approximately 1.5 miles west of the study intersection at Post Road.

ACCIDENTS:

Accident data was retrieved from the GDOT database for 1996, 1997, and 60% of 1998. The worst 12-month period was from 10-1-1996 to 9-31-1997, during which period there were two angle intersecting accidents and one rear end accident. The accidents are listed as follows:

1996: 2 total accidents, one angle intersecting and one rear end.

1997: 2 total accidents, one angle intersecting and one rear end.

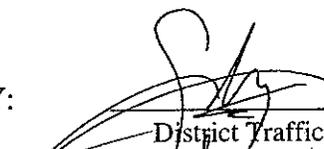
60% of 1998: 1 total accident, one sideswipe same direction.

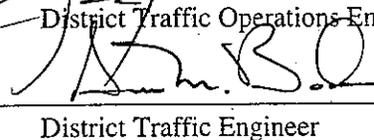
CONCLUSIONS

From the information gathered and observations made during this study, this intersection's operation and safety would be improved through the installation of a modern roundabout at this location. This recommendation is based on the number of accidents, 4 accidents in a 20-month period and also based on the improved level of service with a modern roundabout. A modern roundabout should reduce both the number and also the severity of the accidents at this intersection. A modern roundabout should also improve the traffic flow through this intersection, and improve level of service at this intersection. This intersection is an excellent candidate for a modern roundabout, with the equal and low volumes, the rural two lane approaches in all directions, the good sight distance in all directions, the proximity to another roundabout, and the abundance of Right of Way at the intersection.

RECOMMENDATIONS:

1. District seven traffic operations recommends the construction of a modern roundabout at the intersection of State Route 5 and State Route 166.
2. The improvement could be constructed as a safety project. It is estimated that the construction costs shouldn't be much more than \$100,000. Sufficient right of way exists to construct the project, so no additional right of way should be necessary.
3. The design and construction of this modern roundabout should approximately be based on the attached design

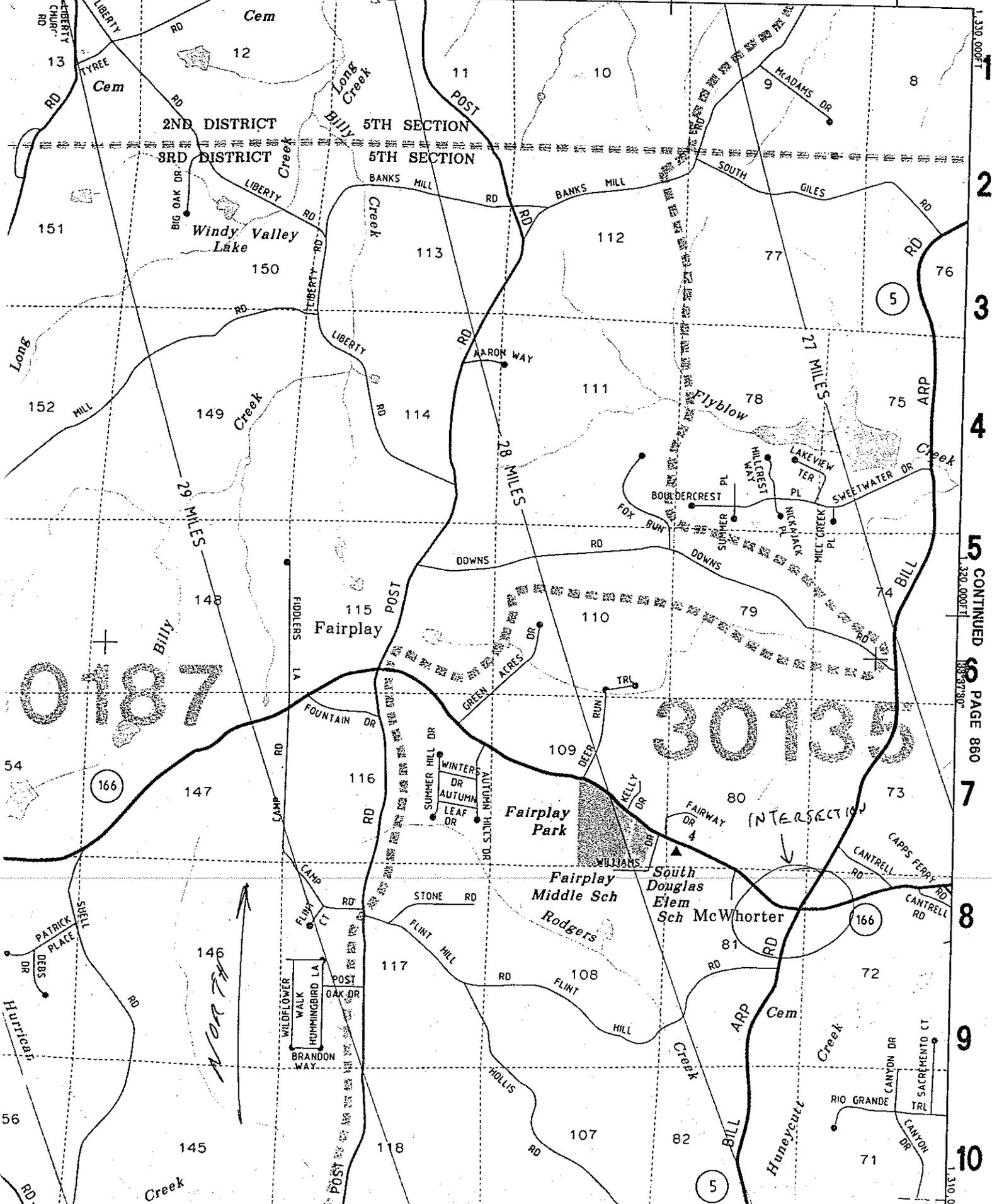
PREPARED BY:  DATE: 2-16-2001
District Traffic Operations Engineer

RECOMMENDED BY:  DATE: 2-20-2001
District Traffic Engineer

RECOMMENDED BY: _____ DATE: _____
State Traffic Operations Engineer

APPROVED BY: _____ DATE: _____
Director of Operations

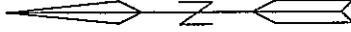
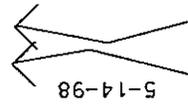
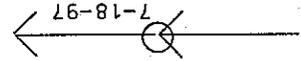
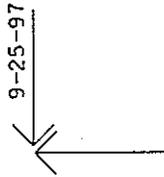
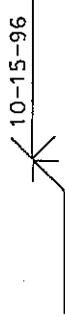
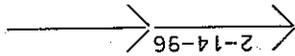
GMB:MCE:SEZ
Attachments
cc: file



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S.R. 5

State Route 166



DEPARTMENT OF TRANSPORTATION
 DISTRICT SEVEN - TRAFFIC OPERATIONS

DRAWN BY: sez
 CHECKED BY: hg
 APPROVED BY:

TRAFFIC OPERATIONS

State Route 5 at
 State Route 166

Accident Diagram SCALE: nts

DEPARTMENT OF TRANSPORTATION
 OFFICE OF TRAFFIC AND SAFETY
 ACCIDENT LISTING

17 Feb-2001
 : 1

CASE	DATE	TIME	COU	TP	ROUTE	MILE	INT RD TYPE	INT RD	RAMP SECT	F I-V I-C	TYPE ACCIDENT	LOC	LI	SUR	D1	D2	VM1	VM2
62750687	10/15/96	21:24	097	SR	5	3.15	SR	166	0	0 00 00	ANGLE INTERSECTING	ON ROADWAY	5	DRY	E	W	05	01
60440780	02/14/96	13:35	097	SR	5	3.15	SR	166	0	0 00 00	REAR END	ON ROADWAY	1	DRY	S	S	02	02

REPORT TOTALS..... ACCIDENTS: 2 FATALITIES: 0 INJ-VISIBLE: 0 INJ-COMP: 0

PAGE TOTALS..... ACCIDENTS: 2 FATALITIES: 0 INJ-VISIBLE: 0 INJ-COMP: 0

DEPARTMENT OF TRANSPORTATION
 OFFICE OF TRAFFIC AND SAFETY
 ACCIDENTAL LISTING

17 Feb-2001
 : 1

CASE	DATE	TIME	COU	TP	ROUTE	MILE	INT RD TYPE	INT RD	RAMP SECT	F	I-V	I-C	TYPE	ACCIDENT	LOC	LI	SUR	D1	D2	VM1	VM2
72500116	09/25/97	15:14	097	SR	5	3.15	SR	166	0	0	00	00	ANGLE INTERSECTING	ON ROADWAY	ON ROADWAY	1	WET	W	N	05	05
71870343	07/18/97	15:37	097	SR	5	3.15	SR	166	0	0	00	02	REAR END	ON ROADWAY	ON ROADWAY	1	WET	N	N	04	05

REPORT TOTALS..... ACCIDENTS: 2 FATALITIES: 0 INJ-VISIBLE: 0 INJ-COMP: 2

PAGE TOTALS..... ACCIDENTS: 2 FATALITIES: 0 INJ-VISIBLE: 0 INJ-COMP: 2

DEPARTMENT OF TRANSPORTATION
 OFFICE OF TRAFFIC AND SAFETY
 ACCIDENT LISTING

17 Feb-2001
 : 1

CASE	DATE	TIME	COU	TP	ROUTE	MILE	INT RD TYPE	INT RD SECT	RAMP	F I-V I-C	TYPE	ACCIDENT	LOC	LI	SUR	D1	D2	VM1	VM2
81460439	05/14/98	17:52	097	SR	5	3.15	SR 166	0		0 00 00	SIDESWIPE	SAME DIR	ON ROADWAY	1	DRY	N	N	05	05
REPORT TOTALS																		
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	FATALITIES:	0																	
	INJ-VISIBLE:	0																	
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PAGE TOTALS																		
	ACCIDENTS:	1																	
	FATALITIES:	0																	
	INJ-VISIBLE:	0																	
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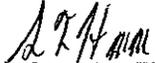
DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

INTERDEPARTMENT CORRESPONDENCE

FILE SR 5 at SR 166 Safety Operational Improvements
Douglas County

OFFICE District Seven

DATE August 30, 2001


FROM Stephen T. Henry, District Engineer

TO Marion G. Waters, III, P.E., State Traffic Operations Engineer

SUBJECT **PROJECT CONCEPT REPORT**

We have reviewed the above referenced concept report and find it satisfactory for approval with the following exceptions:

- Because of the lack of forces available to maintain, landscaping should not be specified for splitter islands or in roundabout.

Attached is a signed cover sheet. If you have any questions or need additional information, please contact me at 770-986-1001 or Mike Malcom, District Preconstruction Engineer at 770-986-1050.

STH:MEM

Attachment

C: file

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

INTERDEPARTMENT CORRESPONDENCE

FILE: Douglas County
SR 5 at SR 166
Safety/Operational Improvements

DATE: September 24, 2001

FROM: ^{BM/ML} Phillip M. Allen, State Traffic Safety & Design Engineer

TO: Steve Henry, District Engineer, Chamblee
Attention: Mike Malcom, District Preconstruction Engineer

SUBJECT: PROPOSED PROJECT CONCEPT REPORT

Your recent request to eliminate landscaping on the above referenced safety project has been reviewed by our office. We have attached it to the concept and it shall be addressed in the design phase. Please note, as we concur with your request, a physical barrier is required to prevent truck traffic from crossing the roundabout.

If additional information is needed, please contact Brook Martin of this office at 404-635-8127.

PMA:bm

Attachments

cc: General Files
Office Files