

DEPARTMENT OF TRANSPORTATION STATE OF GEORGIA

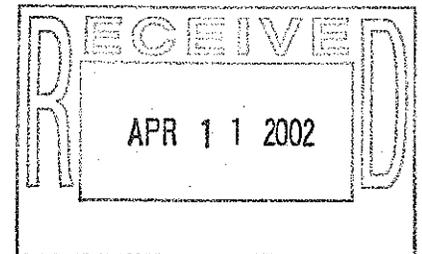
INTERDEPARTMENT CORRESPONDENCE

FILE: STP-0004-00(048) Gordon County
P.I. No.: 0004048
SR 53 @ CR 5/McDaniel Station Road
Safety/Intersection Improvements

OFFICE: Traffic Operations
Atlanta, Georgia
DATE: April 10, 2002

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

TO: Kent Sager, District Engineer, Cartersville
Attn: DeWayne Comer



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 widening SR 53 12 ft. to provide for auxiliary right turn lanes in both directions and the left turn lane will be extended. CR 5 will be widened 7 ft. symmetrically to provide for left turn lanes at both approaches. A stop and go traffic signal is 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.
Harry Maddox, w/attach.
General Files

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

PROJECT CONCEPT REPORT

GORDON COUNTY

STP-0004-00(048)

FEDERAL ROUTE NO: N/A

STATE ROUTE NO: 53

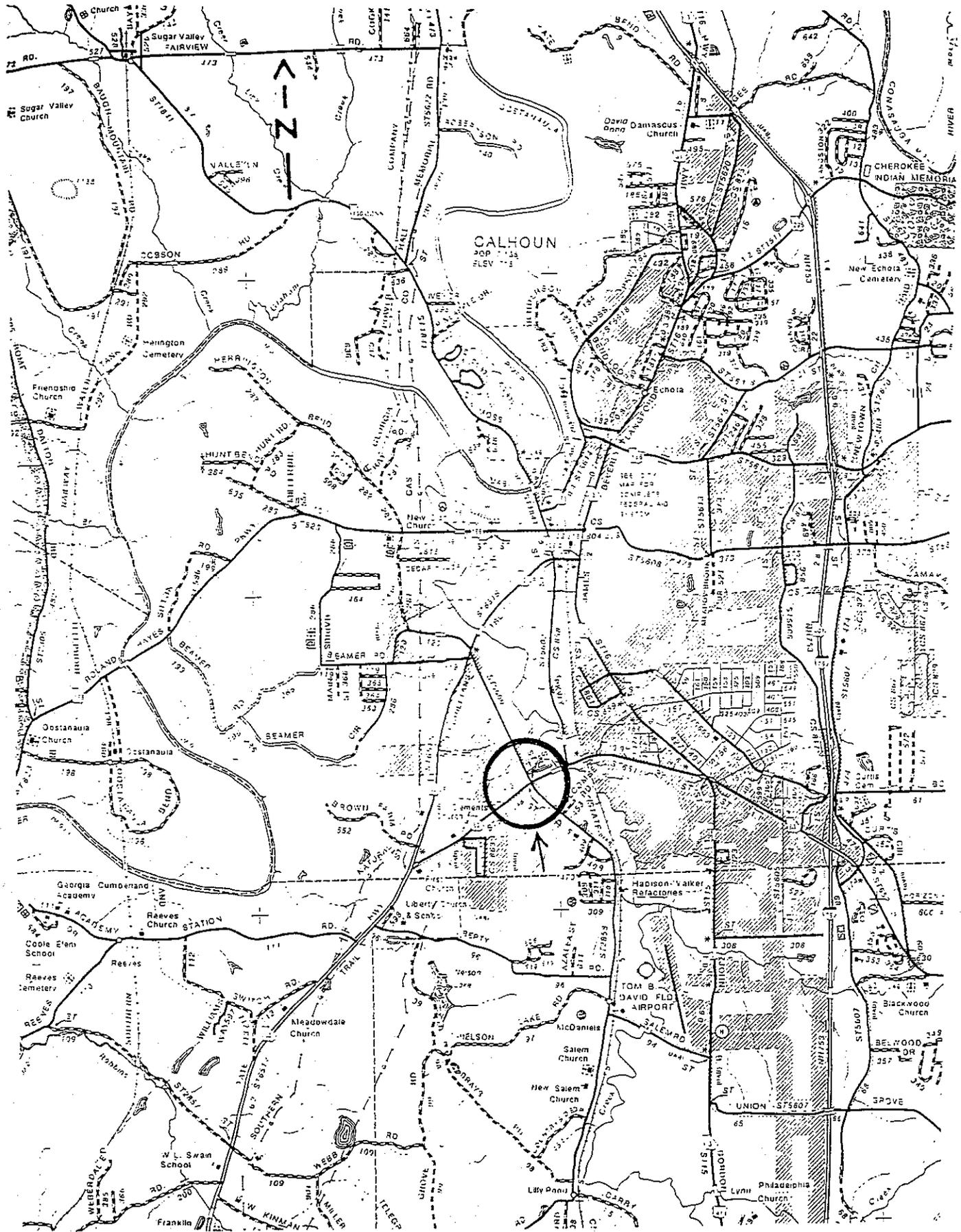
GADOT P.I. NO: 0004048

SEE ATTACHED
LOCATION SKETCH

Date of Report: August 27, 2001

RECOMMENDED:	<u>10/4/01</u>	<u>Phillip M. Allen</u>
	DATE	STATE TRAFFIC SAFETY AND DESIGN ENGINEER
RECOMMENDED:	<u>10/11/01</u>	<u>Mark Soren</u>
	DATE	DISTRICT ENGINEER
RECOMMENDED:	<u>10/22/01</u>	<u>H. L. Daulton</u>
	DATE	CHIEF ENGINEER
APPROVED:	<u>10/22/01</u>	<u>Tom Calhoun</u>
	DATE	COMMISSIONER

Project Concept Report, Page 2
SR 53 at CR 5 (McDaniel Station Road)



PROJECT CONCEPT REPORT

P.I. No.: 0004048

Project No.: STP-0004-00(048) Gordon County

Route No.: S.R. 53
C.R. 5/McDaniel Station Road

Location: The intersection of S.R. 53 at C.R. 5 is located 0.5 miles west of the City of Calhoun and 1.1 miles east of S.R. 53 SP in Gordon County.

Description: S.R. 53 will be widened to add right turn lanes in both directions and the left turn lanes will be extended. C.R. 5 will be widened 7 ft. symmetrically to add left turn lanes for both approaches. A traffic signal will be installed at the intersection and interconnect cable will be installed to the adjacent signalized intersection approximately 0.4 miles to the east.

Traffic – Current ADT:

S.R. 53	-----	17,100 (1999 ADT)
C.R. 5	-----	2,200 (1999 ADT)

Existing Typical: S.R. 53: 2- 11 ft. through lanes in each direction and a 15 ft. left turn lane for both directions with 4 ft. paved shoulders.
C.R. 5: 2 – 11 ft. travel lanes, one in each direction with variable shoulders.

Existing Right of Way: S.R. 53 ----- 120' (Estimated)
C.R. 5 ----- 60' (Estimated)

Existing Traffic Control: S.R. 53 is the through movement and has advanced crossroad advisory signs and standard pavement markings.
C.R. 5 has stop signs and stop bars.

Existing Major Structures: None.

Statement of Need & Purpose: Accident history for this intersection shows 8 accidents with 7 injuries and one fatality for the 18-month period from June 1999 to December 2000, including 7 right-angle accidents. The lengthening of left-turn lanes and installation of right-turn lanes on SR 53, the installation of left-turn lanes on CR 5, and the installation of a traffic signal will reduce accidents at this intersection. To improve the safety and orderly progression of traffic through the intersection, these improvements are recommended.

Bicycle & Pedestrian Considerations: None

Length: 0.52 miles

<u>Termini:</u>	S.R. 53	C.R. 5
From M.P.	7.12	0.93
To M.P.:	7.40	1.17

PDP Class: Minor Existing

Functional Class: S.R. 53 ----- Rural Minor Arterial
 C.R. 5 ----- Rural Minor Collector

Max Degree of Curve: +/- 2.0 Degrees **Max Grades:** +/- 2.0 %

Design Speed: S.R. 53 ----- 45 mph
 C.R. 5 ----- 35 mph

Proposed Typical Section: S.R. 53: 2 – 12 ft. through lanes in each direction, one 12 ft. left turn and one 12 ft. right turn lane in each direction with 6 ft. paved, 4 ft. grassed shoulders.
 C.R. 5: 2 – 12 ft. travel lanes, one in each direction, and a 12 ft. left turn lane.

Proposed major structures: None.

Type Access: By Permit.

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

Right-of-Way Requirement: Gordon County shall be responsible for the acquisition of all Required Right of Way for this project.

Utilities: Gordon County shall be responsible for all Utility adjustments.

Estimated Cost:

<u>Item</u>	<u>Total Amount</u>	
Right-of-way	\$ 73,500	(By Gordon Co.)
Utilities	\$ 82,549	(By Gordon Co.)
Estimated LGPA Total	\$156,049	
Construction	\$ 286,381	
Traffic Signal	\$ 50,000	
Railroad Equipment	\$ 0	
E & C 10 %	\$ 33,638	
Total Construction	\$ 370,019	

Permits Required: None.

Level of Environmental Analysis: Categorical Exclusion.

August 27, 2001

Level of Public Involvement: None.

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

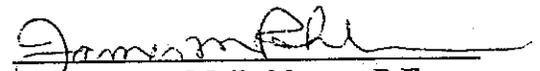
Design Variânces Required: None.

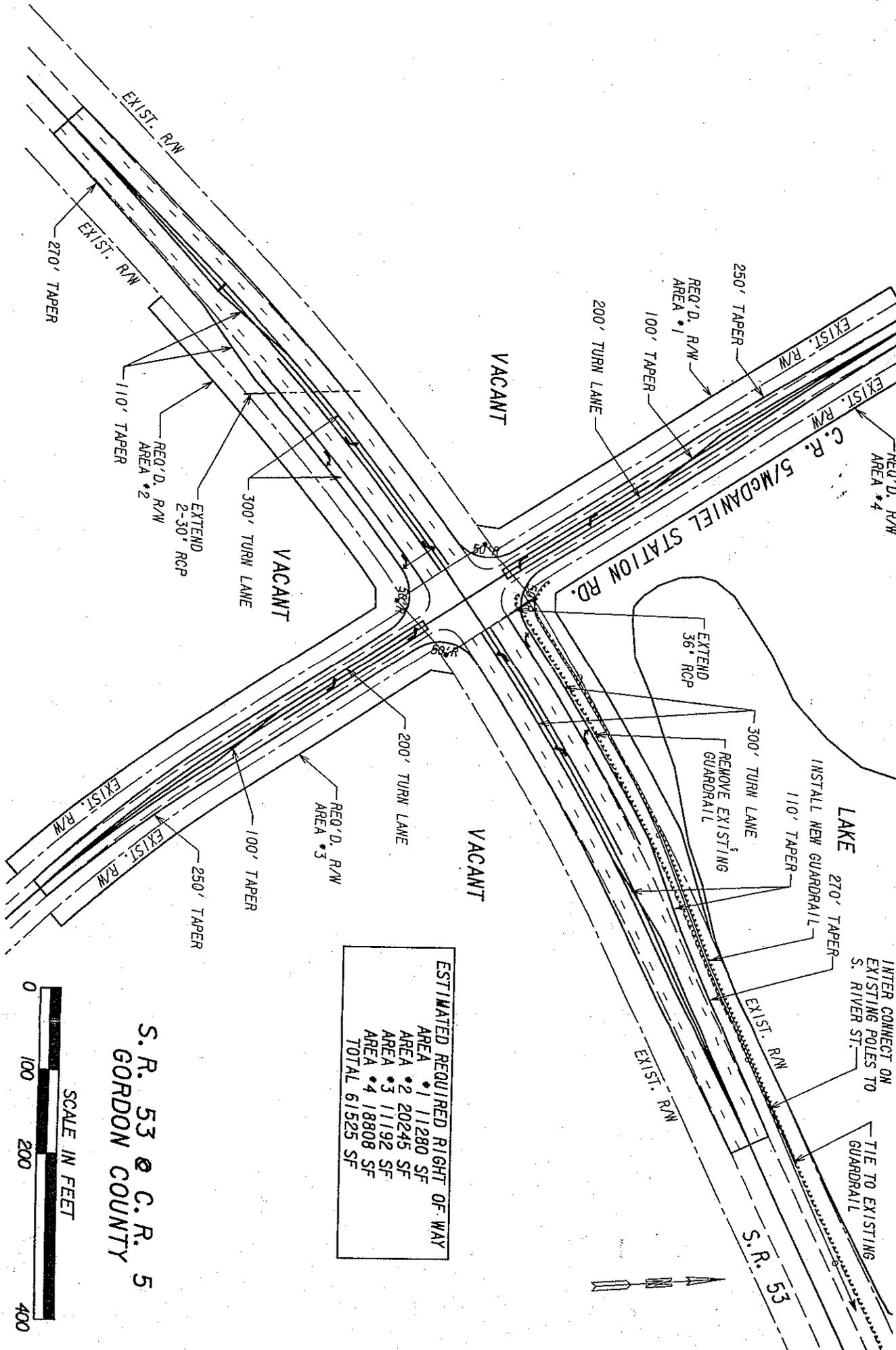
Alternates Considered: None

Comments:

Attachments: None

Prepared by Kimley-Horn and Associates/Gresham, Smith and Partners on behalf of the
Office of Traffic Operations of the Georgia Department of Transportation.


James M. Pohlman, P.E.



ESTIMATED REQUIRED RIGHT OF WAY

AREA *1	11280 SF
AREA *2	20245 SF
AREA *3	11192 SF
AREA *4	18808 SF
TOTAL	61525 SF

S. R. 53 @ C. R. 5
GORDON COUNTY



DEPARTMENT OF TRANSPORTATION

STATE OF GEORGIA

TRAFFIC ENGINEERING INVESTIGATION

CARTERSVILLE, GEORGIA

DISTRICT SIX

APRIL 3, 2001

COUNTY: GORDON

CITY: N/A

PRIMARY ROUTE: STATE ROUTE 53

**SECONDARY ROUTE: MCDANIEL STATION ROAD
COUNTY ROAD 5**

MILEPOST: 7.26

**PREPARED BY: PHILLIP A. FERGERSON
DISTRICT TRAFFIC OPERATIONS MANAGER**

**REQUESTED BY: HARRY A. MADDOX
DISTRICT TRAFFIC ENGINEER**

REASON FOR INVESTIGATION: TO MAKE A DETERMINATION OF THE NEED FOR THE INSTALLATION OF A STOP AND GO SIGNAL, THE CONSTRUCTION OF RIGHT TURN LANES ON STATE ROUTE 53 AND THE CONSTRUCTION OF LEFT TURN LANES ON MCDANIEL STATION ROAD.

TOPOGRAPHY: State Route 53 is primarily a South to North Federal Aid Route located in the southwestern portion of Gordon County near the City of Calhoun, Georgia. Serving as a major route, State Route 53 begins at the Georgia and Alabama State Lines and follows a northerly direction through farm lands, recreational areas, and heavily populated areas consisting of commercial and industrial development. State Route 53 terminates in the Department of Transportation's Sixth District at the Gilmer Dawson County Lines.

The Traffic Engineering Study performed at the intersection of State Route 53 and McDaniel Station is located within the Sixth District of the Department of Transportation and the Seventh Congressional District of the State of Georgia.

GEOMETRICS: State Route 53 is a four-lane non-divided highway with left turn lanes present in each direction. The total width of the roadway is 59 feet wide with 4 foot paved shoulders and additional 16 foot earth shoulder.

The approach of State Route 53 to McDaniel Station Road is located in an estimated two degree curve with a negative 0.25 percent grade westbound. Sight distance on State Route 53 approaching the intersection from the south to the north is 641 feet while the opposing approach is 680.

McDaniel Station Road, approaching from the east to the west, has a sight distance of 850 and 1700 feet of sight distance on the opposite approach.

EXISTING TRAFFIC CONTROL: The existing traffic control for this intersection consists of signing and pavement markings.

The signing on State Route 53 consists of an Advance Crossroad Advisory Sign with a name plate in each direction. The pavement markings for State Route 53 are typical of a four lane roadway with exclusive left turn lanes consisting of double yellow centerlines, edgelines, RPM's, broken white skip lines and a solid white line. Guardrail is present in the northwestern quadrant on State Route 53. McDaniel Station Road is controlled by Stop Signs and Stop Bars. Striping on the roadway consists of a double solid yellow centerline.

PEDESTRIAN MOVEMENT: Observations of the intersection revealed no pedestrian movements nor worn footpaths. A review of the Motor Vehicle Accident Reports did not reveal pedestrians being struck or involved in any motor vehicle accidents.

STATE ROUTE 53 @ MCDANIEL STATION ROAD

VEHICULAR VOLUMES: The 24-HOUR Average Annual Daily Traffic for State Route 53 is 17,100 vehicles per day. Vehicular traffic on McDaniel Station Road is projected at 2,200 vehicles per day. The average traffic count for the peak hours is shown below.

The peak hour turning movements are as follows:

State Route 53 North and South		McDaniel Station Road
0700 - 0800	1257	108
0800 - 0900	731	78
0900 - 1000	703	58
1000 - 1100	680	64
1500 - 1600	810	85
1600 - 1700	908	86
1700 - 1800	1055	112

SPEED STUDY: The posted speed limit on State Route 53 and McDaniel Station Road is 45 miles per hour. State Route 53 is enforceable by radar surveillance under permit from the Department of Public Safety to the Gordon County Sheriff's Office.

A spot speed study, conducted 4-9-01 revealed an 85th percentile speed of 53 miles per hour and a ten mile per hour pace range of 43 to 52 miles per hour with 59.1% of total sample observations within that range. The average speed was calculated to be 47.0 miles per hour.

DELAY STUDY: A calculated delay study was not conducted. It was observed delays were present for turning vehicles on State Route 53 and for vehicles crossing State Route 53 from McDaniel Station Road.

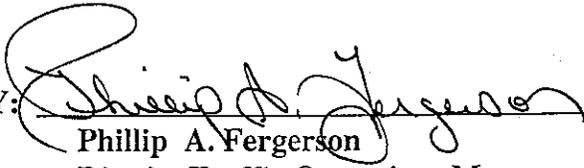
ACCIDENT HISTORY: Motor Vehicle Accident Reports were analyzed for a period of eighteen months beginning June 1, 1999 and extending through December 31, 2000. The analysis of the accidents for the eighteen month period disclosed a total of eight accidents resulting in seven injuries, four property damage accidents and one fatality. The review of the Motor Vehicle Accident Reports revealed a total of seven angle intersecting accidents and one rear end type accident.

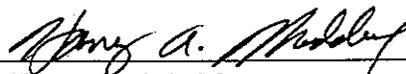
OTHER INFORMATION: A review of PC Warrants revealed Warrant 1 was not satisfied, meeting the criteria for 2 hours. Warrant 2 was satisfied for 8 hours, Warrant 9 was satisfied for 5 hours and Warrant 11 was satisfied for 2 hours.

STATE ROUTE 53 @ MCDANIEL STATION ROAD

CONCLUSIONS: The findings of the study indicate traffic volume, delays and the anticipated increase in traffic are sufficient to warrant the installation of the Stop and Go Traffic Signal. With the installation of the signal and the construction of additional turning lanes both on State Route 53 and McDaniel Station Road the efficiency of intersection will be enhanced.

RECOMMENDATIONS: Based upon the findings of the study area, it is recommended that right turn lanes be constructed on State Route 53 and left turn lanes be constructed on McDaniel Station Road. Additionally, it is recommended that a Stop and Go Signal Permit be issued to Gordon County for the installation of a traffic signal at the intersection of State Route 53 and McDaniel Station Road as part of the proposed project. It is further recommended that this project be programmed as a SHIP Project.

RECOMMENDED BY:  DATE May 5, 2001
Phillip A. Fergerson
District Traffic Operations Manager

RECOMMENDED BY:  DATE 5-7-01
Harry A. Maddox
District Traffic Engineer

RECOMMENDED BY: _____ DATE _____
Marion G. Waters, III, P.E.
State Transportation Engineering Administrator

APPROVED BY: _____ DATE _____
David Studstill
Director of Operations

Major Street Approaches:

Northbound:

Data File: No Count Defined
 Count Type: None. Channel: 0. Count Date: 4/16/ 1
 Number of Lanes: 2
 Approach Speed: 45
 Total Approach Traffic: 3641

Southbound:

Data File: No Count Defined
 Count Type: None. Channel: 0. Count Date: 4/16/ 1
 Number of Lanes: 2
 Approach Speed: 45
 Total Approach Traffic: 4387

Minor Street Approaches:

Eastbound:

MCDANIEL STAT RD

Data File: No Count Defined
 Count Type: None. Channel: 0. Count Date: 4/16/ 1
 Number of Lanes: 1
 Approach Speed: 0
 Total Approach Traffic: 692

Westbound:

MCDANIEL STATION

Data File: No Count Defined
 Count Type: None. Channel: 0. Count Date: 4/16/ 1
 Number of Lanes: 1
 Approach Speed: 0
 Total Approach Traffic: 587

Analysis of 8-Hour Volume Warrants (Criteria refers to high volume side street for that hour):

Hour	Main (Total)	Side Vol.	Dir.	Rank	Warrant 1 Meets? Criteria	Warrant 2 Meets? Criteria	Warrant 8 Meets? Criteria
0	0	0	W	10	105	52	84
1	0	0	W	11	105	52	84
2	0	0	W	12	105	52	84
3	0	0	W	13	105	52	84
4	0	0	W	14	105	52	84
5	0	0	W	15	105	52	84
6	0	0	W	16	105	52	84
7	1257	108	W	2	--BOTH-- 105	--BOTH-- 52	--BOTH-- 84
8	731	67	E	7	MAIN 105	--BOTH-- 52	MAIN 84
9	748	58	W	8	MAIN 105	--BOTH-- 52	MAIN 84
10	780	48	E	9	MAIN 105	MAIN 52	MAIN 84
11	789	73	E	6	MAIN 105	--BOTH-- 52	MAIN 84
12	920	89	E	3	MAIN 105	--BOTH-- 52	--BOTH-- 84
13	0	0	W	17	105	52	84
14	0	0	W	18	105	52	84
15	810	85	E	5	MAIN 105	--BOTH-- 52	--BOTH-- 84
16	938	86	E	4	MAIN 105	--BOTH-- 52	--BOTH-- 84
17	1055	112	E	1	--BOTH-- 105	--BOTH-- 52	--BOTH-- 84
18	0	0	W	19	105	52	84
19	0	0	W	20	105	52	84
20	0	0	W	21	105	52	84
21	0	0	W	22	105	52	84
22	0	0	W	23	105	52	84
23	0	0	W	24	105	52	84

Warrant Summary:

Rural values apply.

Warrant 1 - Minimum Vehicular Volumes

NOT SATISFIED. Required values reached for 2 hours. Criteria--Main St.: 420; Side St.: See Volume Summary.

Warrant 2 - Interruption of Continuous Traffic

SATISFIED for 8 hours. Criteria--Main St.: 630; Side St.: See Volume Summary.

Warrant 3 - Minimum Pedestrian Volumes

NOT SATISFIED. Ped volumes too low. Criteria--190 Peds in peak hour, 100 peds in 4th high hour.

Warrant 4 - School Crossing

NOT APPLICABLE. Gap data has not been defined.

Warrant 5 - Progressive Movement

NOT SATISFIED. Adjacent signals closer than 1000 feet and/or not part of coordinated system.

Warrant 6 - Accident Experience

NOT SATISFIED. 0 correctable accidents is fewer than required 5.

Correctable Accidents: 0; Right Angle Accidents: 7; Left Turn Accidents: 0; Other Accidents: 10.

Warrant 7 - Systems Warrant

NOT SATISFIED. At least one street has no major approaches.

NS - Approaches which are part of the principal through traffic roadway network.

- Approaches which include rural or suburban highways outside, entering or traversing a city.

- Approaches which appear as a major route in an official transportation plan.

Warrant 8 - Combination of Warrants

NOT SATISFIED. Required values reached for 5 hours. Criteria--Main: 504; Side: See Volume Summary.

Warrant 9 - Four Hour Volumes

SATISFIED for 5 hours.

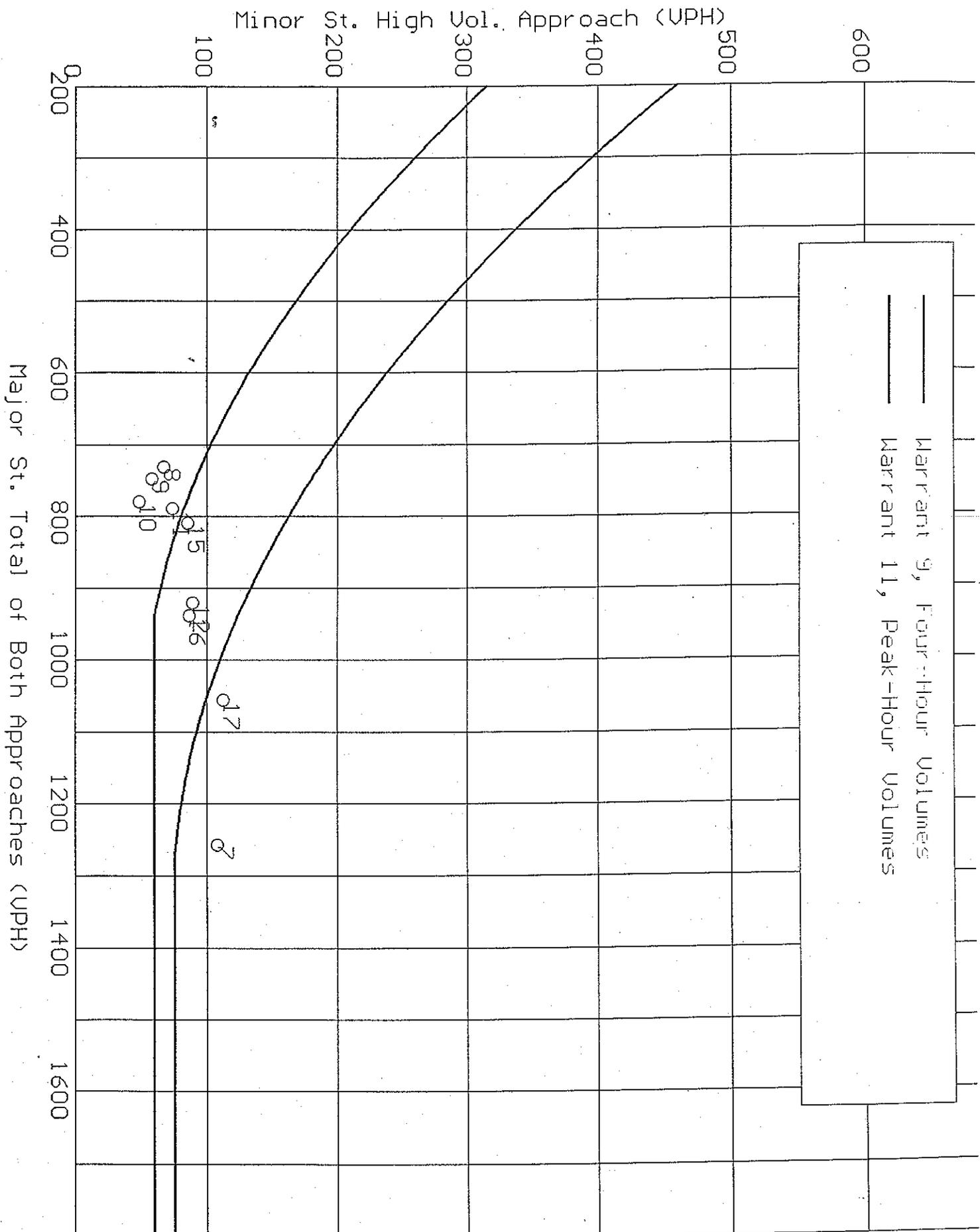
Warrant 10 - Peak Hour Delay

NOT APPLICABLE. Volume requirements satisfied, but side street peak hour delay not defined.

Criteria--Main St.: 800 (4 approaches), 650 (3 approaches); Side St.: 100.

Warrant 11 - Peak Hour Volume

SATISFIED for 2 hours.



DEPARTMENT OF TRANSPORTATION
 TRAFFIC ENGINEERING AND SAFETY

MANUAL TRAFFIC COUNT

COUNTY GORDON

CITY _____

LOCATION SR 53 @ Mc DANIEL STATION RD

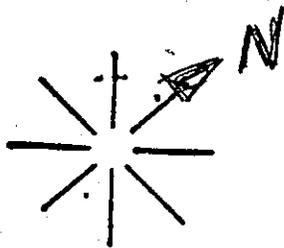
DATE 4-16-01

DAY OF WEEK MONDAY

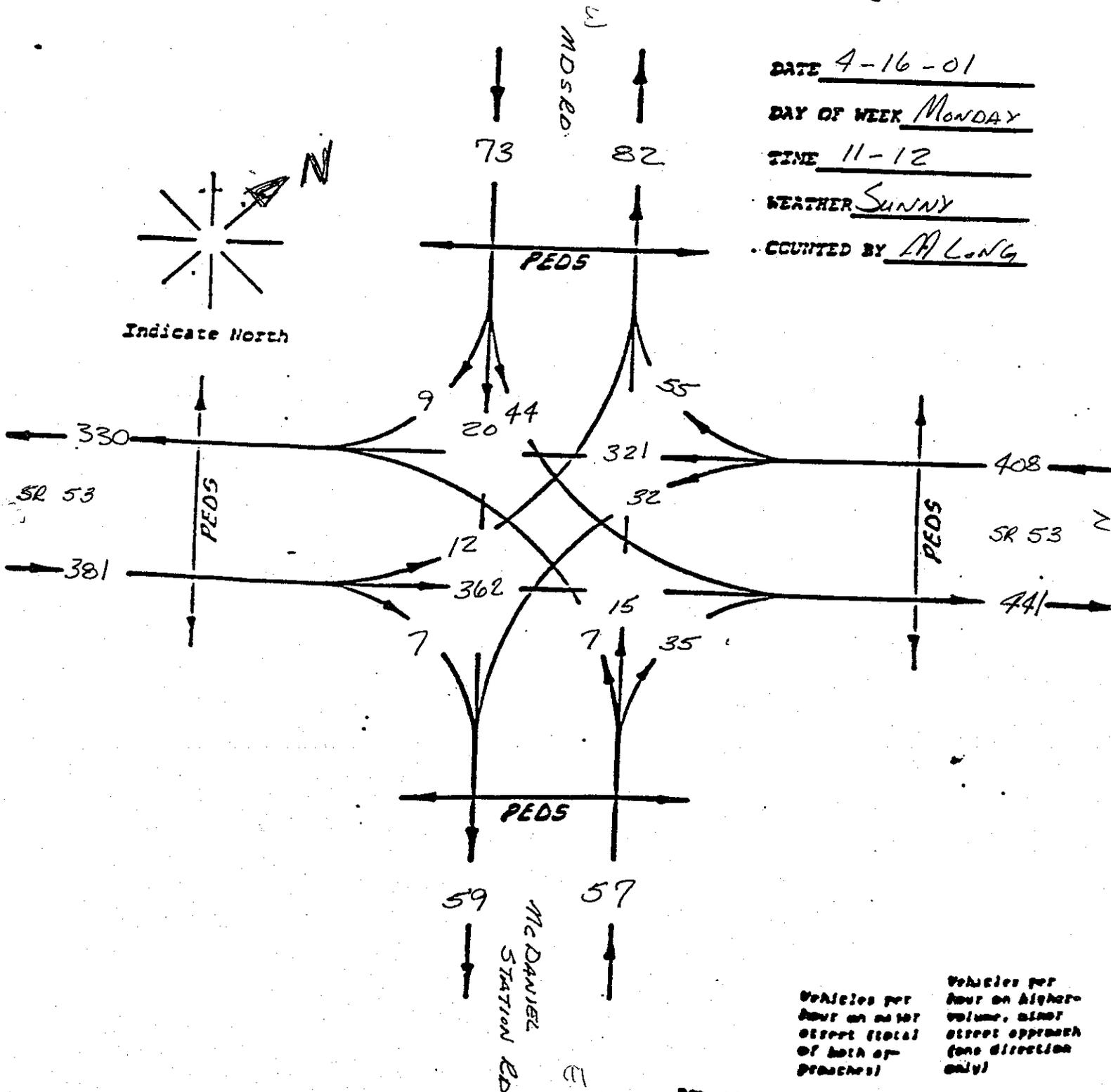
TIME 11-12

WEATHER SUNNY

COUNTED BY M LONG



Indicate North



Vehicles per hour on major street (total of both approaches)

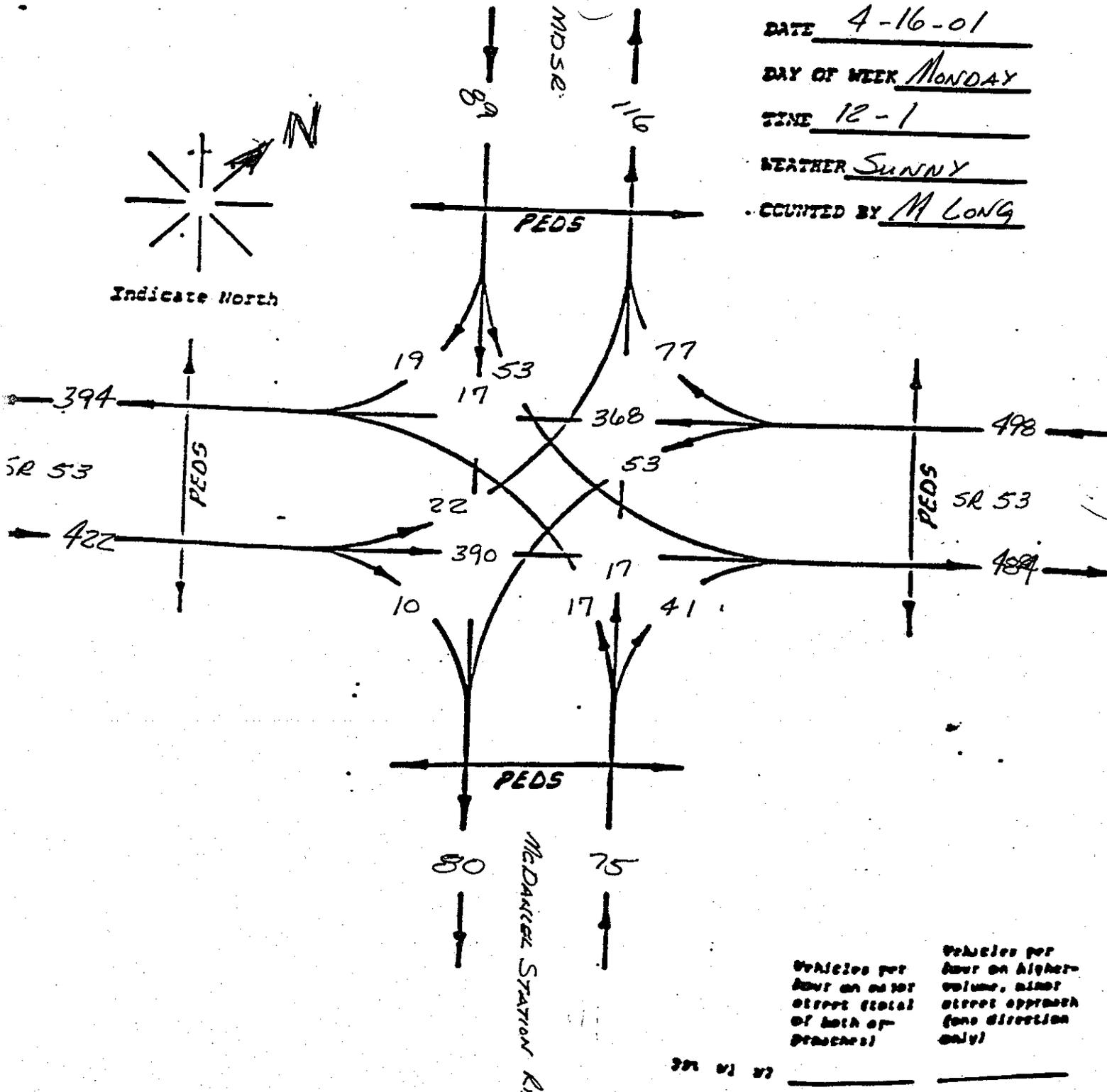
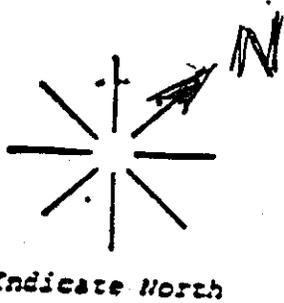
Vehicles per hour on higher volume, minor street approach (one direction only)

DEPARTMENT OF TRANSPORTATION
 TRAFFIC ENGINEERING AND SAFETY

MANUAL TRAFFIC COUNT

COUNTY GORDON CITY _____
 LOCATION SR 53 @ Mc DANIEL STATION RD

DATE 4-16-01
 DAY OF WEEK MONDAY
 TIME 12-1
 WEATHER SUNNY
 COUNTED BY M LONG



Vehicles per hour on major street (total of both directions)

Vehicles per hour on higher-volume, minor street approach (one direction only)

TIME	NO. ACC	ACCIDENT SEVERITY	NO. ACC
0600 - 1000	1		
1000 - 1600	1	FATAL	1
1600 - 1900	1	NON FATAL	1
1900 - 2400	1	PROP DAM.	2
2400 - 0600			
TOTAL	4	TOTAL	4

WEATHER	NO. ACC	TYPE VEH	NO. VEH
CLEAR	4	CARS	9
CLOUDY	0	TRUCKS	0
RAIN	0	OTHER	0
FOG	0		
SNOW	0		
TOTAL	4	TOTAL	9

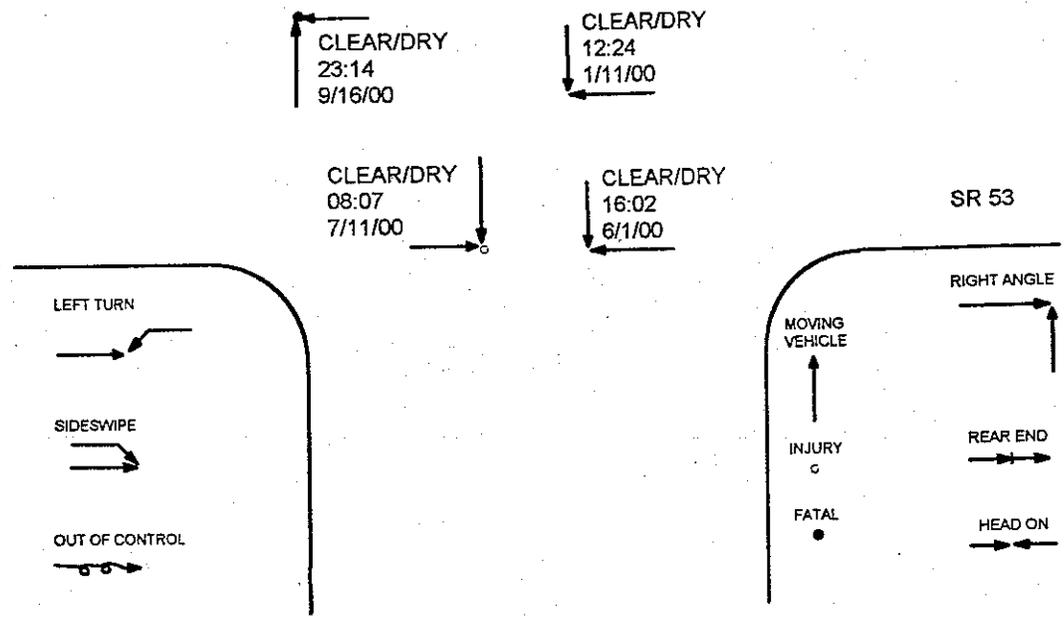


McDaniel Sta Rd

ROAD	NO. ACC	APPROACH FROM DIRECTION	NO. VEH
DRY	4	NORTH	3
WET	0	SOUTH	2
ICY	0	EAST	3
TOTAL	4	WEST	1
		TOTAL	9

SEASON	NO. ACC	TYPE ACC	NO. ACC
WINTER (dec-feb)	1	SIDESWIPE	0
SPRING (mar-may)	0	REAR END	0
SUMMER (june-aug)	2	RT. ANGLE	4
FALL (sept-nov)	1	LEFT TURN	0
		OTHER	0
TOTAL	4	TOTAL	4

2000 Accident Data



LOCATION: SR 53 @ MCDANIEL STA RD COUNTY: GORDON

FROM: 1/1/00 TO: 12/31/00 DATE: 10/20/00

SR 53 AT Mc DANIEL STATION ROAD GORDON COUNTY

SIGNAL HEAD DETAIL



General Notes

- TRAFFIC SIGNAL INSTALLATION SHALL CONFORM TO ALL GADOT SPECIFICATIONS AND CONSTRUCTION DETAILS.
- ALL POLES SHALL BE SET BACK TO MEET REQUIRED CLEAR ZONES DISTANCE.
- PRIOR TO BEGINNING CONSTRUCTION THE CONTRACTOR SHALL NOTIFY THE TRAFFIC OPERATIONS OFFICE @ 770-387-3632.
- UPON COMPLETION OF THE SIGNAL INSTALLATION THE CONTRACTOR SHALL NOTIFY THE DISTRICT SIGNAL ENGINEER @ 770-387-3632 TO ARRANGE FOR FINAL INSPECTION. AT THAT TIME A SCHEDULE WILL BE SET FOR PLACING THE SIGNAL INTO ITS FULL OPERATION.
- EXACT LOOP PLACEMENT IS TO BE DETERMINED BY SIGNAL ENGINEER.
- EXACT CABINET LOCATION IS TO BE DETERMINED BY FIELD CONDITIONS.

