Report TSD-234-74

A TRAFFIC ACCIDENT ANALYSIS

.IN JACKSON COUNTY

TRAFFIC and
SAFETY
DIVISION

DEPARTMENT OF STATE HIGHWAYS
STATE OF MICHIGAN

Michigan Department

of

State Highways and Transportation

Report TSD-234-74

A TRAFFIC ACCIDENT ANALYSIS

.IN JACKSON COUNTY

JOSEPH L. MESZAROS

TRAFFIC ENGINEERING SERVICES

State Highway Commission

E. V. Erickson
Chairman

Charles H. Hewitt
Vice Chairman

Peter B. Fletcher

Carl V. Pellonpaa

Director

John P. Woodford

March 1974

PREPARED BY

Traffic Engineering Services
Traffic and Safety Division
Michigan Department of State Highways and Transportation

in cooperation with
The Michigan Office of Highway Safety Planning
and
The U. S. Department of Transportation
Federal Highway Administration

i

TABLE OF CONTENTS

LIST OF FIGURES

INTRODUCTION

The Highway Safety Act of 1966 was enacted by the Congress of the United States in order to promote highway safety. Highway safety standards were then developed to assure the orderly implementation of the Act.

Purpose

Highway Safety Standard 4.4.13, Traffic Engineering Services, is one of those standards. The purpose of Standard 4.4.13 is

> "to assure the full and proper application of modern traffic engineering principles and uniform standards for traffic control to reduce the likelihood and severity of traffic accidents.".

This standard includes the identifying of specific locations or sections of streets and highways which have a high accident experience or potential as a basis for establishing priorities for improvement, selective enforcement or other practices that will eliminate or reduce the hazards.

The State of Michigan carries out a service of this type on the state trunkline system; however, many of the city and county agencies lack the financial and technical prerequisites necessary to pursue similar programs with similarly defined objectives. To insure that this additional highway safety standard is met and to improve the overall evaluation of the accident picture in Michigan, the Michigan Department of State Highways and Transportation requested and received through the Office of Highway Safety Planning in the Department of State Police, a federally funded project entitled "Traffic Engineering Services for Cities and Counties".

In cooperation with participating cities and counties, the proposed service, under the direction of Department personnel, will make a traffic engineering evaluation of the factors causing traffic accidents and will recommend corrections to those conditions which may be contributing to accidents.

Scope

The intent of this program is to improve traffic safety on all Michigan streets and roads by expanding the traffic engineering evaluation of factors causing accidents.

Study Procedures

The study procedures for this project involve a review of high accident locations. This review includes: basic data collection,

identifying and locating high accident locations, an accident analysis of these high accident locations, technical evaluation of accident facts, and consequent remedial recommendations.

Study Area

Jackson County is located in the south central portion of the state. It is bordered on the north by Ingham and Eaton Counties, on the east by Washtenaw County, on the west by Calhoun County and on the south by Hillsdale and Lenawee Counties (Figure 1).

The population of Jackson County in 1970 was 143,274 which is an increase of 8.5 percent over the 1960 census. This increase is not uncommon as the population of the county has been steadily increasing since 1920.

The road system in Jackson County, according to the Twenty Second Annual Progress Report as compiled by the Local Government Division of the Michigan Department of State Highways and Transportation, is made up of 157.30 miles of state trunkline, 529.29 miles of county primary roads and 1,011.95 miles of county local roads, for a total of 1,698.54 miles of roadway (Figure 2).

STUDY AREA

FIGURE 1

FIGURE 2

4
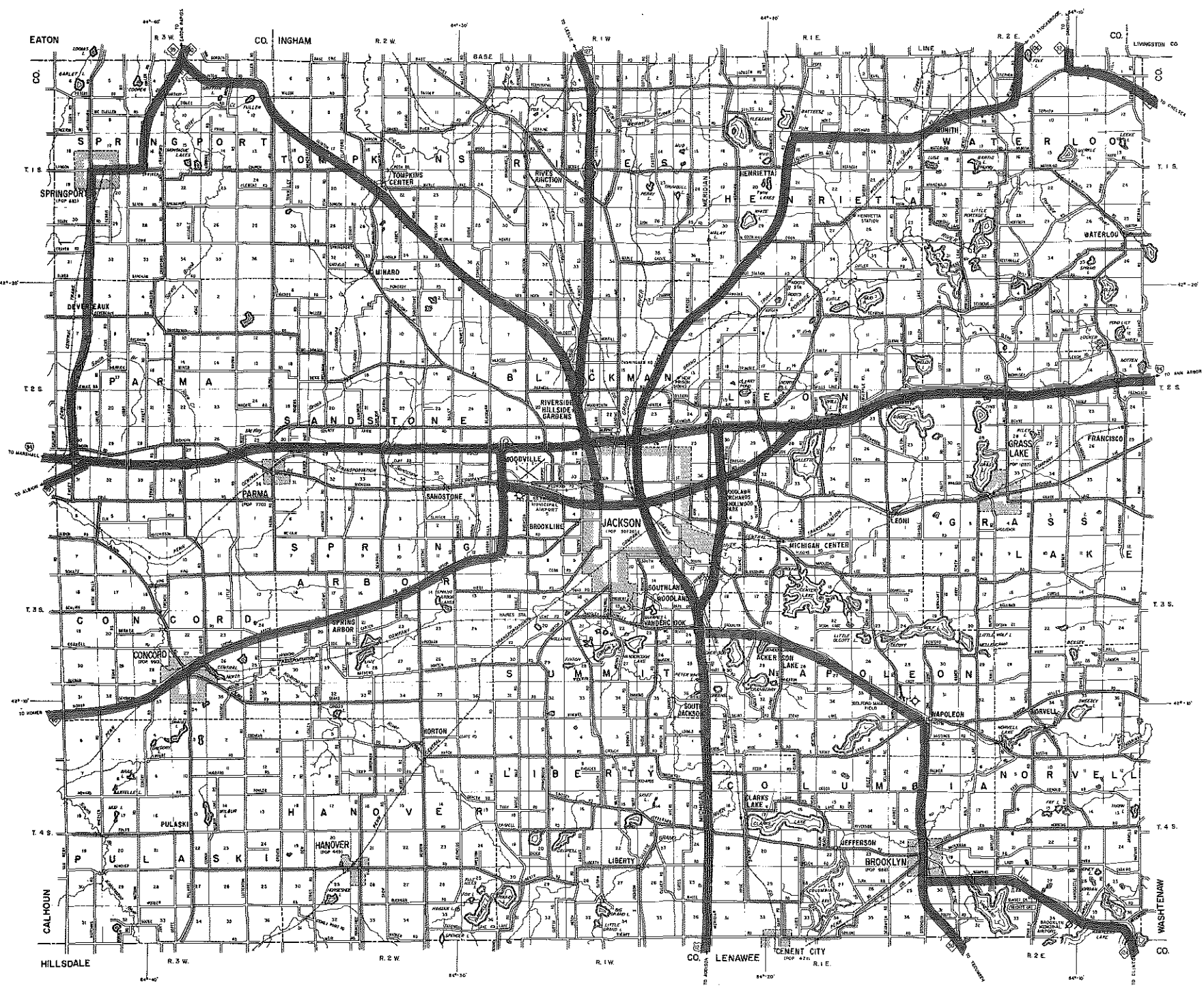
ROAD TYPES
IN
**JACKSON
COUNTY**

KEY TO COUNTIES

STATE TRUNKLINE

COUNTY PRIMARY

COUNTY LOCAL

HIGHWAY LIBRARY

MICHIGAN DEPARTMENT OF STATE
HIGHWAYS

LANSING, MICH.

P. O. DRAWER "K" 48904

JACKSON COUNTY
MICHIGAN
STATE HIGHWAY COMMISSION
DEPARTMENT OF STATE HIGHWAYS
DATA OBTAINED FROM
HIGHWAY PLANNING SURVEY
CONDUCTED IN COOPERATION WITH
U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
BUREAU OF PUBLIC ROADS

SCALE
1" = 2.75 MILES
POLYCONIC PROJECTION

TRAFFIC ENGINEERING ANALYSIS

Collection and Analysis of Data

The Department of State Police examined their records and trans-
mitted to the Traffic and Safety Division of the Michigan Depart-
ment of State Highways and Transportation a list of the 10 high
accident locations (Figure 3) on the county road system. An
automated system of locating accidents on local roads has not
yet been established on a statewide basis; therefore, the high
accident locations for Jackson County were determined by manually
extracting and compiling those locations with the highest number
of accidents from the 1970 county accident reports.

Once the problem locations were identified, additional accident
information for the years 1971 and 1972 was compiled in order to
expand the accident base at each location.

The 10 high accident locations accounted for 286 accidents during
the three-year study period. Traffic volumes on the County Pri-
mary Road System in Jackson County vary from moderate in outlying
areas to heavy near the City of Jackson. It is understandable
then that the high concentration of accidents will be in this
area (Figure 4).

The data collection, for which the Department of State Highways
and Transportation is responsible, involves the following basic
steps: 1) preparation of collision diagrams and, if necessary,
physical condition diagrams for each selected location; and 2)
obtaining traffic and speed study counts where necessary.

The analysis portion of the high accident location review involves
the analysis of the summarized facts and field data from the view-
point of a highway traffic engineer with special attention focused
on the effect which the highway environment may have had on the
accident. Thus, at each high accident location, individual acci-
dent reports were reviewed in detail and collision diagrams were
prepared for each location in order to identify accident patterns
and to locate the accident in relation to the intersection or
approaches to the intersection. The analysis results in evalu-
ating the total information and prescribing the proper treatment
at each location.

County-Wide Recommendations

Approach Lanes

Field observation revealed that a few signalized locations
in Jackson County had only one lane per approach. When an
intersection is signalized there often develops a need for

SPOT MAP
OF HIGH ACCIDENT LOCATIONS IN
JACKSON COUNTY
(1970—1972)
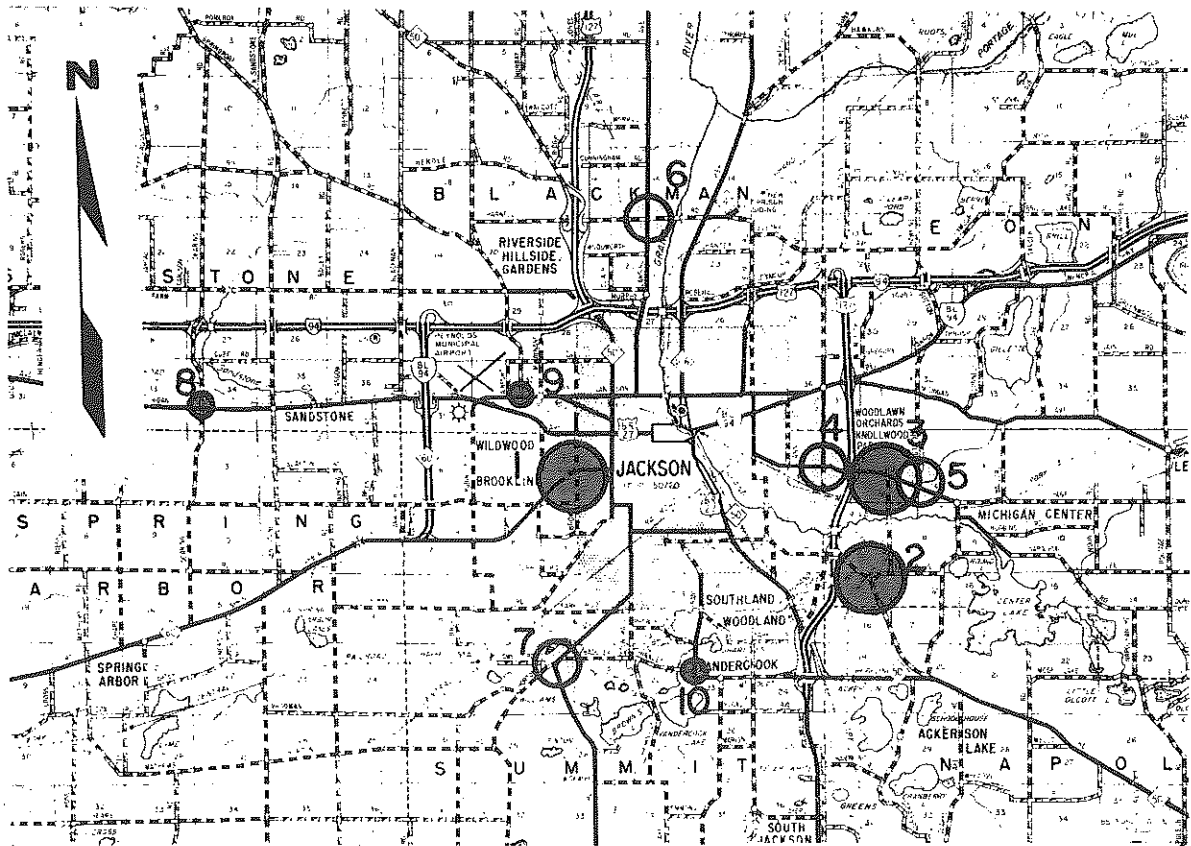
LEGEND

- ● 0—20 ACC.
- ○ 21—30 ACC.
- ● 31—45 ACC.
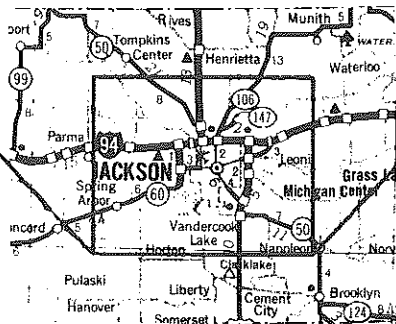
FIGURE 3

KEY TO COUNTIES

FIGURE 4

7

ADT MAP OF COUNTY
ROADS IN JACKSON COUNTY
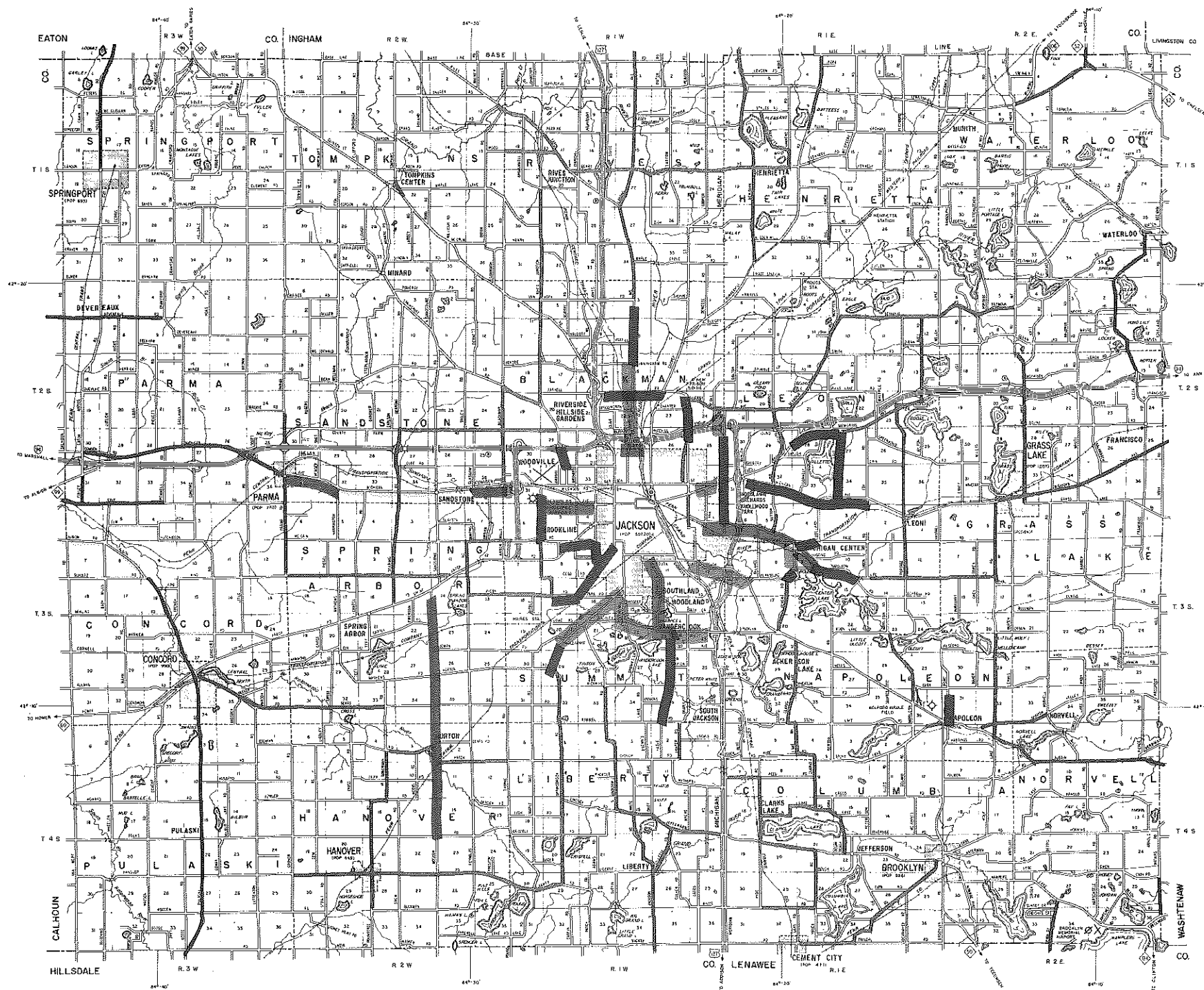
KEY TO COUNTIES

LEGEND

TRAFFIC FLOW BAND

0—499		2500—3999
500—1499		4000—6999
1500—2499		7000—OVER

JACKSON COUNTY
MICHIGAN
STATE HIGHWAY COMMISSION
DEPARTMENT OF STATE HIGHWAYS
DATA OBTAINED FROM
HIGHWAY PLANNING SURVEY
CONDUCTED IN COOPERATION WITH
U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
BUREAU OF PUBLIC ROADS
SCALE
1" = 2.75 MILES
POLYCONIC PROJECTION

additional intersection capacity. If the approaches have a single lane, then turning vehicles may cause extensive delay to other traffic on the same approach. A left turn may be delayed by opposing traffic or pedestrians in the crosswalk. Other traffic will then be held up in the same lane, until the turn can be completed. A right turn can be held up due to pedestrians in the crosswalk.

Since turning movements so readily create delay, there is a need for a minimum of two approach lanes on every approach to every signalized intersection. The second lane will allow bypassing of vehicles stopped or slowing to make turns, and will reduce unnecessary delays even if not actually needed for capacity. The widening of intersectional approaches to separate turning traffic from thru traffic is recommended to help reduce the delays caused by assignment of right-of-way at the intersections controlled by traffic signals. Widening also aids in the overall operation of the intersection, because more vehicles are able to negotiate the intersection per signal cycle. Additional width is also necessary on the leaving side as much as the approach side of the intersection to promote movement through the intersection.

Clear Vision Areas

In order to provide ample sight distance at intersections, the corners of these intersections must not be overgrown with foliage nor have other obstructions. Although sometimes buildings or other permanent obstacles create inadequate visibility, most of the time removable objects such as trees, signs, or parked vehicles prohibit adequate sight distances. It is therefore recommended that Jackson County not only establish a program to create clear vision corners at all intersections, but also begin a maintenance program to insure that all corners are kept clear of obstacles.

Estimated Costs

Since final construction plans are not available, in estimating the construction costs the lump sum of $5.00 per square foot of pavement has been used. The costs for all other recommendations are based on Department unit prices and using Department personnel for the work.

High Accident Locations

After the analysis of the 10 high accident locations was completed, it was apparent that no engineering recommendations would be

feasible for four of these locations. There were no accident
patterns at two of these locations and no present driving hazards
that could be controlled by traffic engineering. The remaining
two locations involved one that will be corrected under another
project and the other has undergone a recent change (signalization).
Consequently, only the remaining six locations will be discussed
in detail. The high accident locations for the study period
(1970-1971) are as follows:

1	Morell Street, Spring Arbor Road, and Brown Street	45
2	Flansburg Road and South Street	44
3	Page Avenue and Falahee Road	43
4	Page Avenue and Dettman Road	27
5	Page Avenue and Sutton Road	27
6	Lansing Avenue and Parnell Road	27
7	Horton Road, Jackson Road, Ridgeway Road, and Badgley Road	23
8	Michigan Avenue and Dearing Road	19
9	Francis Street and Hinckley Boulevard	19
10	Wildwood Avenue and Laurance Street	16

SOUTH STREET AT FLANSBURG ROAD

Operational Analysis:

South Street intersects Flansburg Road to form a "T" intersection operating under stop control. There is a 36 in. "Stop" sign used to control traffic on Flansburg Road.

Accidents:

Type	1970	1971	1972	Total
Ran Off Roadway	10	10	10	30
Head On	2	3	1	6
Misc.	3	5	0	8
Total	15	18	11	44

The miscellaneous types included four rear ends, three right-angles and one improper turning accident. The accident rate at this location was 6.3 acc/MV during the study period.

Eighteen of the accidents occurred at night. Seventeen of the accidents occurred on wet pavement and 20 occurred on snowy and icy pavement. Twenty-three of the ran off roadway accidents occurred on wet or snowy pavement.
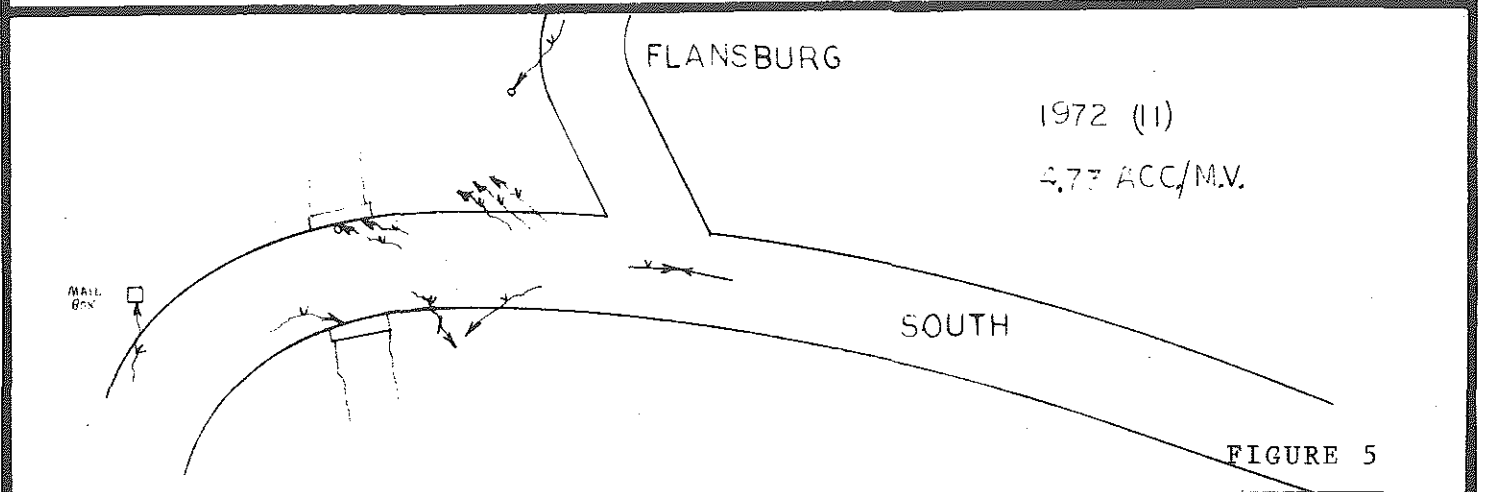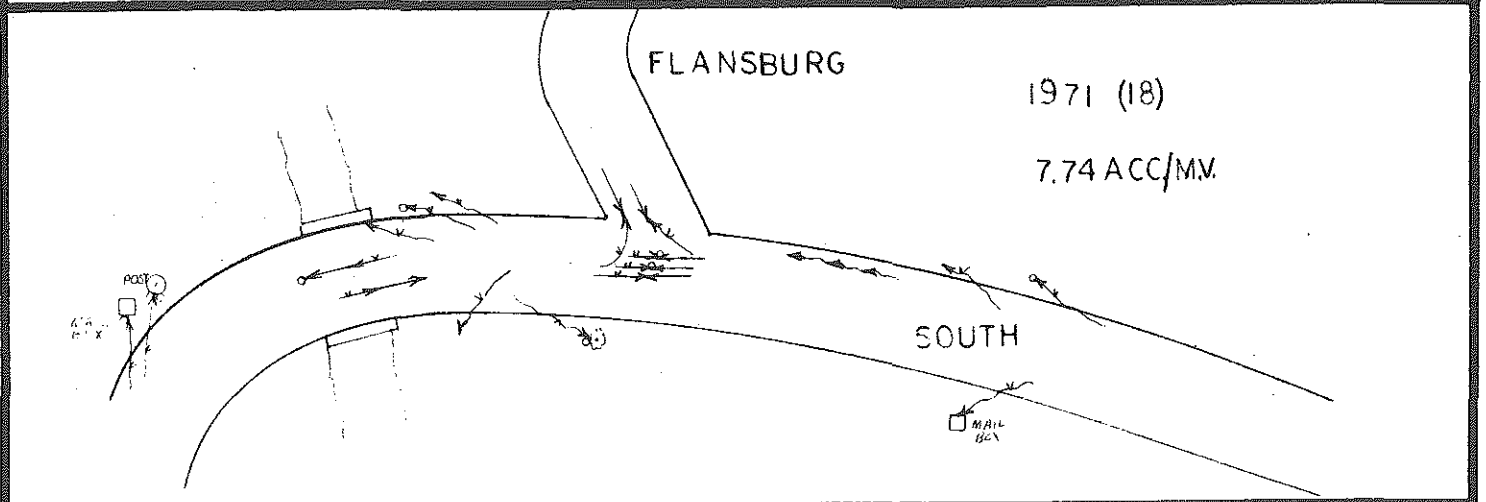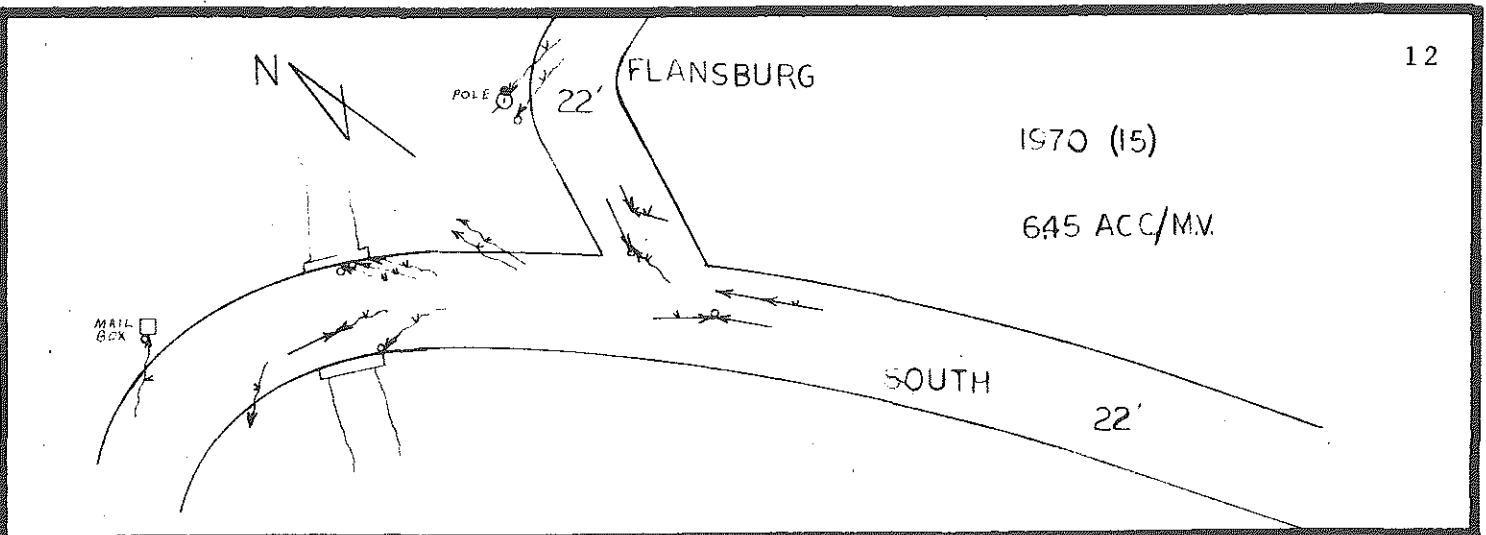
FLANSBURG

1970 (15)

6.45 ACC/M.V.

SOUTH 22'

FLANSBURG

1971 (18)

7.74 ACC/M.V.

SOUTH

FLANSBURG

1972 (11)

4.73 ACC/M.V.

SOUTH

FIGURE 5

LEGEND

MICHIGAN DEPARTMENT OF STATE HIGHWAYS
TRAFFIC AND SAFETY DIVISION

Stop & Go Signal — S —
Stop Sign   S
Flashing Beacon — F —
Yield Sign   Y

Fatal ——●
Injury ——○
Skidding ○○○
Jackknife
Overturned
Backing ←—→

Pedestrian · · · · ⓍX
Tree 🌸
Out of Control ～～→
Driver Intent
Deer Ⓥ
Violator V

Location FLANSBURG AT SOUTH
JACKSON CO.

Period: 1970 THRU 1972   6.31 ACC/M.V.
Accidents – Total 44   P.D. 27
Injury 16 ( ) Fatal 1 ( )
C.S. _____ Miles _____ Drawn D.J.M.
Plan No. LOCATION   Date 10-24-73

EDCO® 196M 8-72 52350   Form 1547 B (Rev. 11/70)

EASTBOUND SOUTH STREET

WESTBOUND SOUTH STREET

FIGURE 6

NORTHBOUND FLANSBURG ROAD
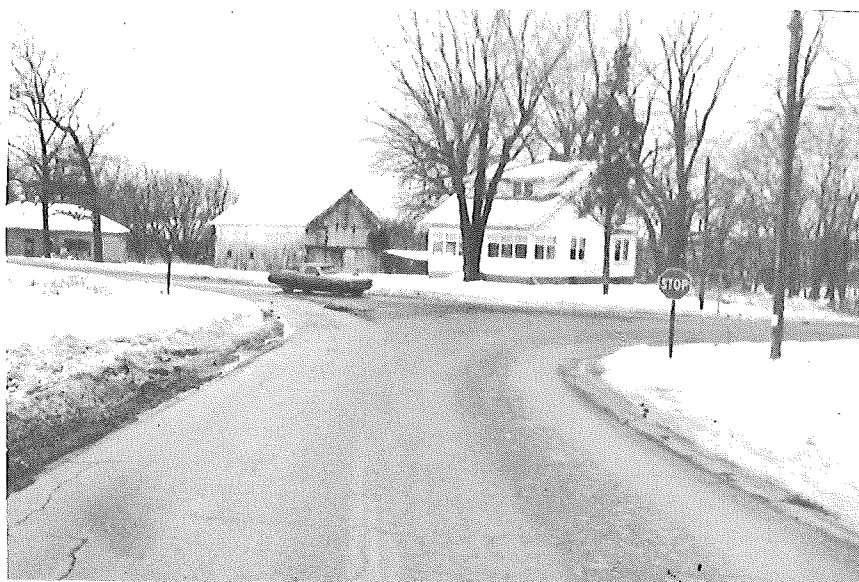
SOUTHBOUND FLANSBURG ROAD

FIGURE 7

RECOMMENDATIONS

Type		Estimated Cost
1.	Replace the Bi-Directional Target Arrows on South Street with Directional Target Arrows to indicate a change in alignment.	$ 89.52
2.	Erect delineators at 50 ft intervals along South Street on both sides of the road for a distance of 500 ft each direction from Flansburg Road to provide visibility during the periods of darkness.	372.00
3.	Apply pavement markings at this location to aid visibility during the periods of darkness.	40.00
4.	Install guardrail along each approach to the bridge to prevent vehicles from landing in the river. The installation of the guardrail supersedes the Type III Object Markers (Obstruction Panels).	6,200.00
5.	Install an overhead street light at the intersection to illuminate this area during the periods of darkness.	265.22
6.	Erect a modified Side Road Warning sign (W2-2) with an accompanying Road Name sign (D3-2a) on South Street on both sides of this intersection to indicate the presence of this side road.	152.80
7.	Replace the two Reverse Curve Warning signs on South Street with 30 MPH Speed Panels and 36 in. Turn Warning signs. Our field testing indicates that the safe negotiable speed for this turn is 30 MPH.	91.52
	TOTAL	$ 7,211.06

FIGURE 8

STATE OF MICHIGAN
DEPARTMENT OF STATE HIGHWAYS

TRAFFIC & SAFETY DIVISION

AUTH. NO.		DRAWN D.J.M.	PROPOSED INTERSECTION
CONT. SEC.		DATE 1/28/74	APPROACH DIAGRAM
REF.		SCALE	
SHEET	OF	PLAN	

PAGE AVENUE AT FALAHEE ROAD

Operational Analysis:

Page Avenue intersects Falahee Road to form a right-angle inter-section operating under traffic signal control. The right-of-way assignment is based on a 50 second cycle with a 50-50 percent split, and yellow clearance intervals of seven percent (3.5 seconds). Other controls include two right turn flashing red arrows, one for eastbound Page Avenue and one for northbound Falahee Road traffic.

Accidents:

Type	1970	1971	1972	Total
Rear End	9	7	3	19
Head On-Left Turn	4	3	3	10
Sideswipe	2	1	1	4
Misc.	6	1	3	10
TOTAL	21	12	10	43

The miscellaneous types included three improper turning, two ran off roadways, one deer, one head on, one improper backing, one vehicle struck a manhole and one right-angle accident. The accident rate at this location was 3.6 acc/MV during the study period.
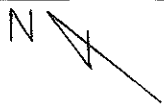
FIGURE 9
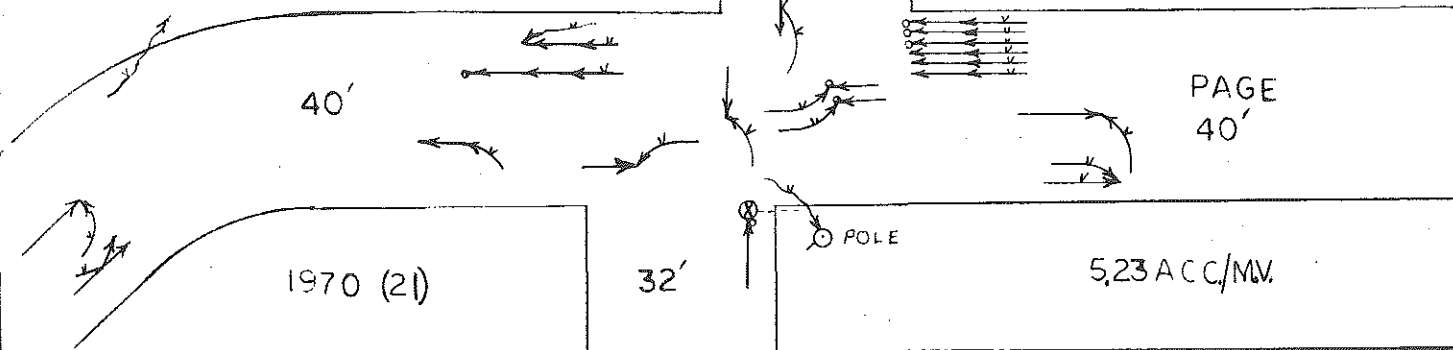
LEGEND

Stop & Go Signal — (S)
Flashing Beacon — (F)
R
Y — (F) — Y

Stop Sign   S ⊢
Yield Sign   Y ⊢

Fatal ——→●
Injury ——→○
Skidding ○○○
Jackknife
Overturned
Backing ←—— ——→

Pedestrian · · · · (X)
Tree
Out of Control
Driver Intent ——→
Deer (V)
Violator (V)

MICHIGAN DEPARTMENT OF STATE HIGHWAYS
TRAFFIC AND SAFETY DIVISION
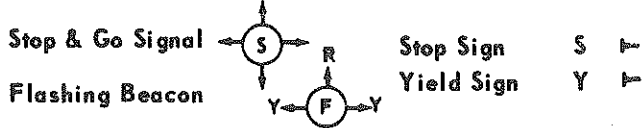
Location FALAHEE AT PAGE
JACKSON CO.
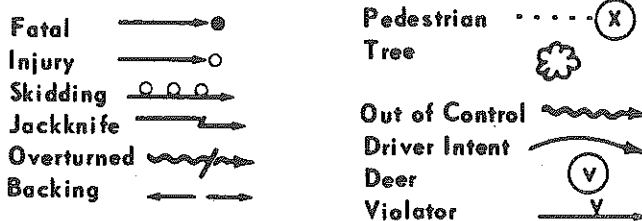
Period: 1970 THRU 1972   3.57 ACC/M.V.
Accidents – Total 43   P.D. 33
Injury 10 (   )   Fatal 0 (   )
C.S. _____ Miles _____ Drawn DJM
Plan No. LOCATION   Date 10-24-73

19

EASTBOUND PAGE AVENUE

WESTBOUND PAGE AVENUE

FIGURE 10

NORTHBOUND FALAHEE ROAD

SOUTHBOUND FALAHEE ROAD

FIGURE 11

RECOMMENDATIONS

Type		Estimated Costs

1. Change the signal timing to an 80 second cycle with a 65-35 percent split favoring Page Avenue and yellow clearance intervals of five percent (4.0 seconds). The signal split is based on traffic counts which indicate a substantial amount of vehicle travel on Page Avenue as compared to Falahee Road. By using this cycle length progression can be achieved between this signal and the signal located at Page Avenue and Dettman Road. These two signals should operate simultaneously through synchronous action. .... $ 50.00

2. Apply pavement markings including pavement arrows to define the function of each lane. 50.00

3. Provide a physical barrier between the north leg of this intersection and the parking lot. 1,500.00

4. If the head on-left turn pattern on westbound Page Avenue persists, consideration should be given to constructing a center left turn lane for westbound Page Avenue traffic.

TOTAL $ 1,600.00

FIGURE 12

N

22

CLOSE DRIVE

50'

20'

S

PAGE AVE.

S

8" RIGHT TURN
RED ARROWS

EXISTING
W 3-3

SIGNAL
AHEAD

ONLY

FALAHEE RD.

PROPOSED INTERSECTION
APPROACH DIAGRAM

STATE OF MICHIGAN DEPARTMENT OF STATE HIGHWAYS	AUTH. NO.	DRAWN DJM
	CONT. SEC.	DATE 1-24-74
TRAFFIC & SAFETY DIVISION	REF.	SCALE
	SHEET OF PLAN	

FORM 1890 (REV. 10-60)

EDCO: 196M 5-71 45820

PAGE AVENUE AT DETTMAN ROAD

Operational Analysis:

Page Avenue intersects Dettman Road to form a right-angle inter-
section operating under signal control. The right-of-way assign-
ment is based on a 70 second cycle with a 60-40 percent split and
yellow clearance intervals of five percent (3.5 seconds).

Accidents:

Type	1970	1971	1972	Total
Rear End	4	3	5	12
Head On-Left Turn	2	4	1	7
Turning	2	1	--	3
Misc.	1	3	1	5
TOTAL	9	11	7	27

The miscellaneous types included two ran off roadways, one pedes-
trian, one sideswipe and one right-angle accident. The accident
rate at this location was 2.2 acc/MV during the study period.
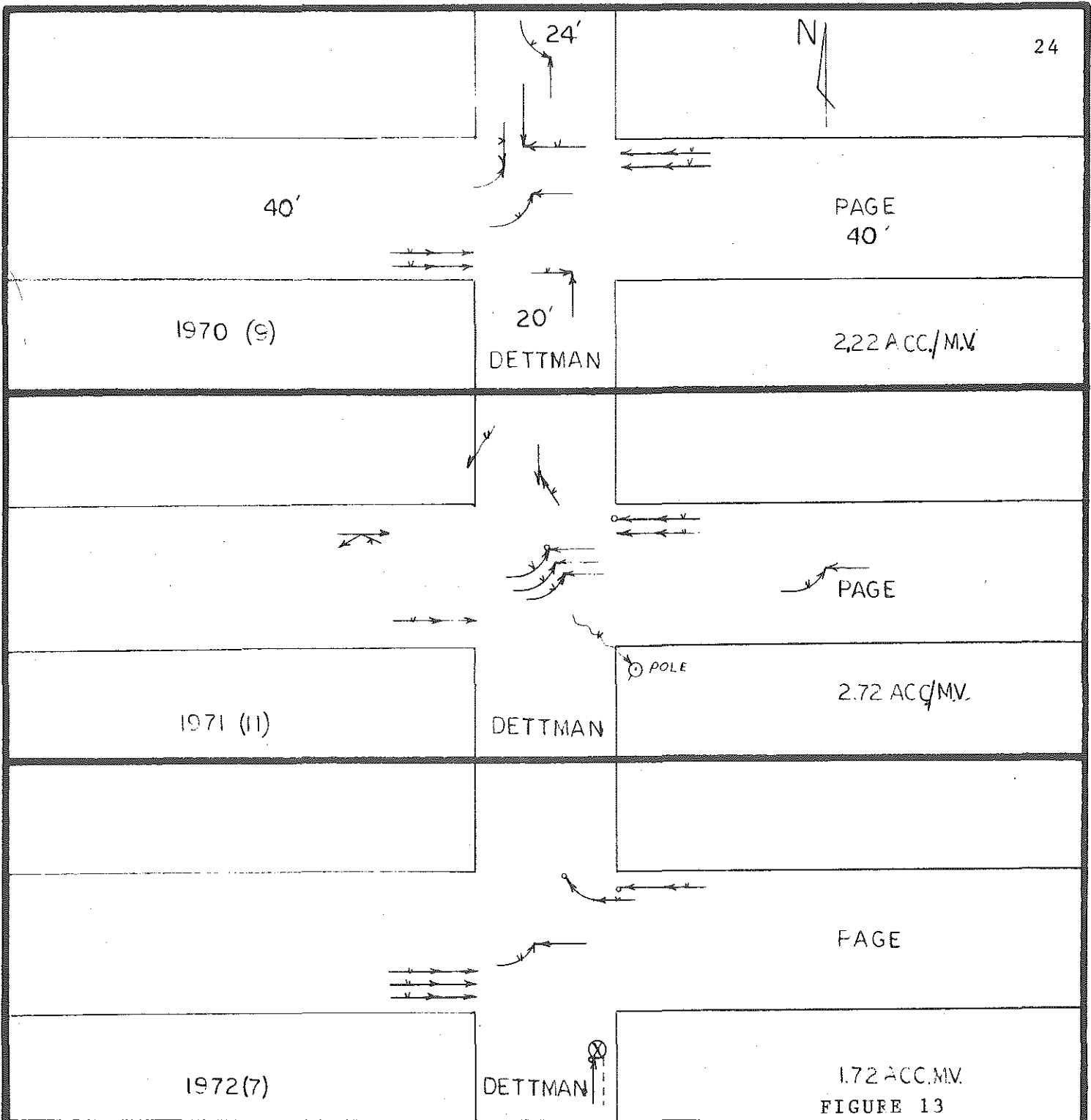
N

24'

40'

PAGE
40'

1970 (9)
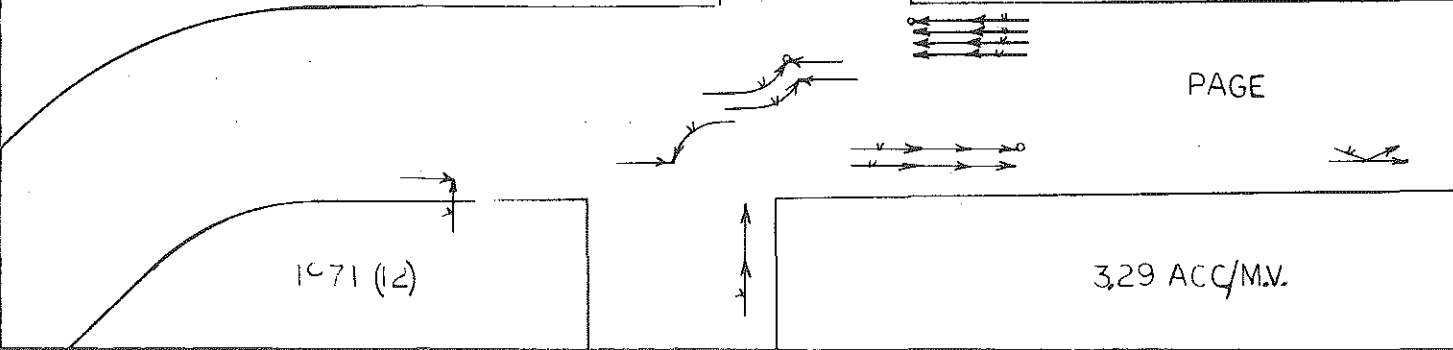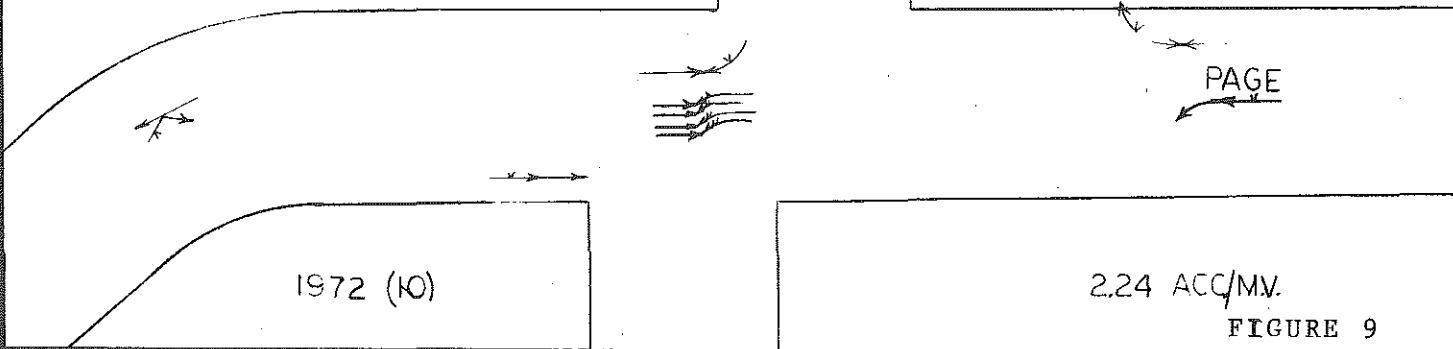
20'

DETTMAN

2.22 ACC./M.V.

PAGE

POLE

1971 (11)

DETTMAN

2.72 ACC/M.V.

PAGE

1972 (7)

DETTMAN

1.72 ACC.M.V.

FIGURE 13

| LEGEND | MICHIGAN DEPARTMENT OF STATE HIGHWAYS |
| | TRAFFIC AND SAFETY DIVISION |

Stop & Go Signal — (S)   Stop Sign   S ⊢

Flashing Beacon — (F)   Yield Sign   Y ⊢

R

Y — (F) — Y

Location DETTMAN AT PAGE
JACKSON CO.

Fatal ———●
Injury ———○
Skidding ○○○
Jackknife
Overturned
Backing ←— —→

Pedestrian · · · · (X)
Tree
Out of Control ∿∿∿
Driver Intent
Deer (V)
Violator V

Period: 1970 THRU 1972   2.22 ACC/M.V.

Accidents — Total 27   P.D. 22

Injury 5   ( )   Fatal 0   ( )

C.S. _____ Miles _____ Drawn DJM

Plan No. LOCATION   Date 10-24-73

25
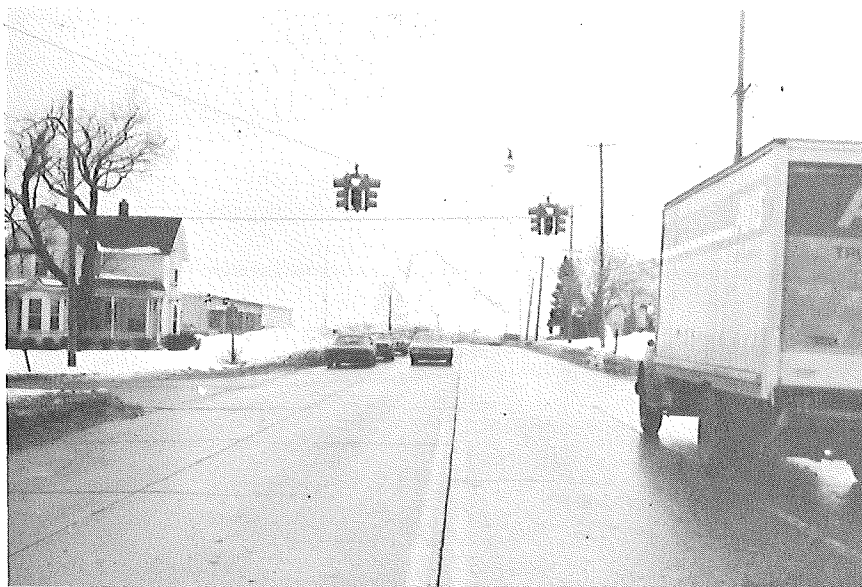
EASTBOUND PAGE AVENUE

WESTBOUND PAGE AVENUE

FIGURE 14
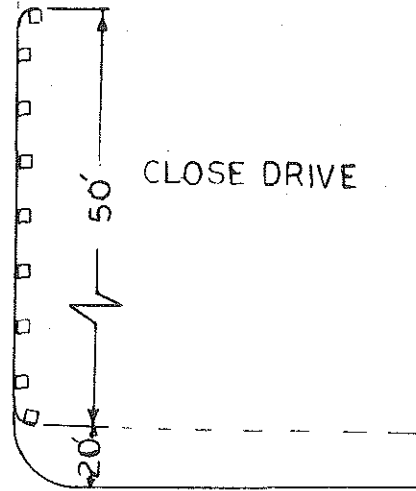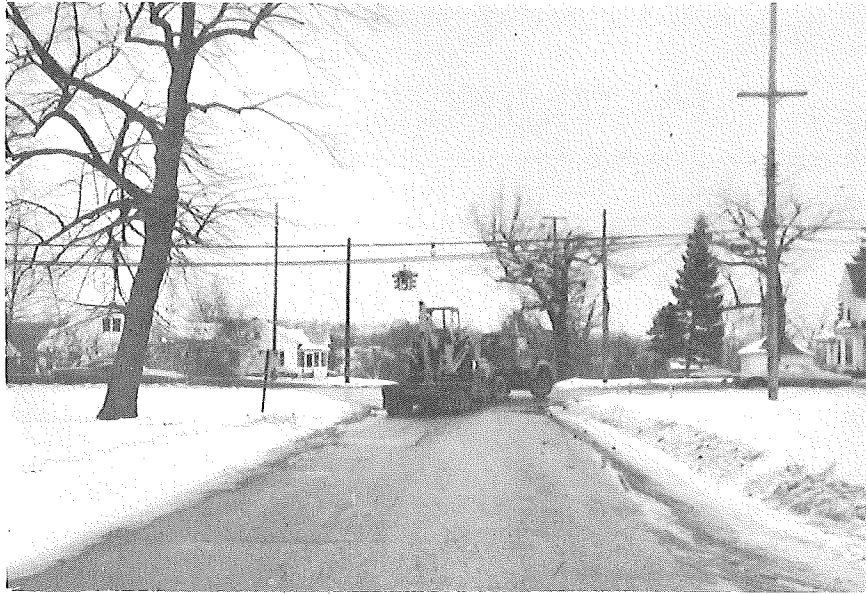
NORTHBOUND DETTMAN ROAD

SOUTHBOUND DETTMAN ROAD

FIGURE 15

RECOMMENDATIONS

Type	Estimated Costs

1. Erect (2) Signal Ahead signs to warn traffic of the signal as vehicles come around the horizontal curve on westbound Page Avenue and up the vertical curve on eastbound Page Avenue. $ 74.56

2. Construct another lane to provide a two lane approach on the north leg of this intersection and improve capacity.   30,312.50

3. Change the signal timing to an 80 second cycle with a 65-35 percent split favoring Page Avenue and yellow clearance intervals of five percent (4.0 seconds). This signal split is based on traffic counts which indicate a substantial amount of vehicle travel on Page Avenue as compared to Dettman Road. By using this cycle length, progression can be achieved between this signal and the signal located at Page Avenue and Falahee Road. This signal should be operated simultaneously through synchronous action.   50.00

4. Apply pavement marking including pavement arrows to aid in defining the operation of each lane of this intersection.   50.00

5. If the head on-left turn pattern on eastbound Page Avenue persists, consideration should be given to a center left turn lane for eastbound Page Avenue traffic.

TOTAL $ 30,487.06

PROPOSED INTERSECTION APPROACH DIAGRAM

FIGURE 16

28

N

24'

EXISTING PAVEMENT

DETTMAN RD.

225'

250'

12' 12' 15'

50'

ONLY

50'

25' R.

PROPOSED
W3-3

W3-3
PROPOSED

PAGE AVE.

SUTTON ROAD AT PAGE AVENUE

Operational Analysis:

Sutton Road intersects Page Avenue to form a "T" intersection operating under stop control. There is one 24 in. "Stop" sign used to control traffic on Sutton Road.

Accidents:

Type	1970	1971	1972	Total
Right-Angle	2	4	3	9
Rear End	2	2	1	5
Ran Off Roadway	1	2	2	5
Misc.	4	1	3	8
TOTAL	9	9	9	27

The miscellaneous types included three head on-left turns, two sideswipes, two improper turning and one improper backing accident. The accident rate at this location was 1.6 acc/MV during the study period.

N

SUTTON

22'

40'

PAGE 40'

21'
FELTER 1970 (9)   1.59 ACC/M.V.

SUTTON

PAGE

FELTER 1971 (9)   1.59 ACC/M.V.

SUTTON

PAGE

FIGURE 17

FELTER 1972 (9)   1.59 ACC/M.V.

| LEGEND | | MICHIGAN DEPARTMENT OF STATE HIGHWAYS |
| | | TRAFFIC AND SAFETY DIVISION |

Stop & Go Signal — S
Flashing Beacon — F
Stop Sign S
Yield Sign Y

Fatal ———●
Injury ———○
Skidding ○○○
Jackknife
Overturned
Backing ←——→

Pedestrian ···· (X)
Tree
Out of Control
Driver Intent
Deer (V)
Violator V

Location PAGE AT SUTTON
JACKSON CO.

Period: 1970 THRU 1972   1.59 ACC/M.V.
Accidents – Total 27   P.D. 22
Injury 5 ( )   Fatal 0 ( )
C.S. _____ Miles _____ Drawn DJM
Plan No. LOCATION   Date 10-29-73

EDCO 196M 8-72 52350

Form 1547 B (Rev. 11/70)

EASTBOUND PAGE AVENUE

WESTBOUND PAGE AVENUE

FIGURE 18

NORTHBOUND SUTTON ROAD

SOUTHBOUND SUTTON ROAD

FIGURE 19

RECOMMENDATIONS

	Type	Estimated Costs
1.	Erect 36 in. Side Road Warning signs east and west of the intersection on Page Avenue.	$ 74.56
2.	Apply pavement markings.	50.00
3.	Install a 12 in. flashing beacon at this location with the yellow lens for Sutton Road and the red lens for Page Avenue to indicate to traffic on Page Avenue of possible conflict with vehicles on Sutton Road.	2,500.00
	TOTAL	$ 2,624.56

SIDE ROAD WARNING SIGN PROPOSED W2-2

34

N
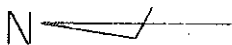
SUTTON RD.

STOP BAR

12"FLASHING BEACON

EXISTING RI-1

PAGE AVE.

EXISTING RI-1

FELTER RD.

SIDE ROAD WARNING SIGN PROPOSED W2-2

FIGURE 20

STATE OF MICHIGAN DEPARTMENT OF STATE HIGHWAYS	AUTH. NO.		DRAWN DJM	PROPOSED INTERSECTION DIAGRAM
	CONT. SEC.		DATE 1-24-74	
TRAFFIC & SAFETY DIVISION	REF.		SCALE	
	SHEET	OF	PLAN	

FORM 1598 (REV. 10-68)

EDCO• 196M 5-71 45820

HORTON ROAD AT JACKSON ROAD, RIDGEWAY ROAD, BADGLEY ROAD

Operational Analysis:

This location is a 0.1 mile segment of Horton Road. Jackson Road intersects Horton Road to form a "Y" intersection with Horton Road operating under stop (36 in. sign) control. Ridgeway Road and Badgley Road intersect Horton Road to form "T" intersections with Ridgeway Road and Badgley Road both operating under stop (24 in. sign) control.

Accidents:

Type	1970	1971	1972	Total
Ran Off Roadway	3	1	1	5
Sideswipe	1	2	1	4
Misc.	7	4	3	14
TOTAL	11	7	5	23

The miscellaneous types included three improper turnings, three head ons, three rear ends, three improper backings, one head on-left turn and one right-angle accident. The accident rate at this location was 3.72 acc/MV during the study period.

36

1970 (11)

HORTON 22'

BADGLEY

24'

N

JACKSON 22'

HORTON 24'

20' RIDGEWAY

1971 (7)

BADGLEY

HORTON

JACKSON

HORTON

RIDGEWAY

1972 (5)

BADGLEY

HORTON

JACKSON

HORTON

RIDGEWAY

FIGURE 21

LEGEND

Stop & Go Signal — (S) — R   Stop Sign   S

Flashing Beacon — (F) — Y   Yield Sign   Y

Fatal ——●
Injury ——○
Skidding ○○○——
Jackknife ～～～——
Overturned ～～～
Backing ←——→

Pedestrian · · · · (X)
Tree 🌳
Out of Control ～～～➤
Driver Intent ⌒➤
Deer (V)
Violator ——V

MICHIGAN DEPARTMENT OF STATE HIGHWAYS
TRAFFIC AND SAFETY DIVISION

Location HORTON AT JACKSON, RIDGEWAY & BADGLEY
JACKSON CO.

NO ACC. RATES AVAILABLE

Period: 1970 THRU 1972

Accidents — Total 23   P.D. 16

Injury 7 ( )   Fatal 0 ( )

C.S. _____ Miles _____ Drawn DJM

Plan No. LOCATION   Date 10-23-73

EDCO° 196M 8-72 52350

Form 1547 B (Rev. 11/70)

37

NORTHBOUND

HORTON ROAD

SOUTHBOUND

HORTON ROAD

NORTHBOUND

JACKSON ROAD

FIGURE 22

WESTBOUND

BADGLEY ROAD

SOUTHBOUND

HORTON ROAD

EASTBOUND

RIDGEWAY ROAD

FIGURE 23

RECOMMENDATIONS

	Type		Estimated Cost
1.	Apply pavement markings to provide visibility during the periods of darkness.	$	20.00
2.	Install an overhead street lighting system at each of these intersections to provide illumination at night.		791.06
3.	Erect a D1-2 Directional Guide sign for southbound Horton Road north of Ridgeway Road.		60.87
		TOTAL $	871.93

FIGURE 24

N

CENTER LINE

EXISTING RI-1

BADGLEY RD.

STOP BAR

EDGE LINE

PROPOSED DI-2

DI-2

HORTON RD. / JACKSON RD.

HORTON RD.

RIDGEWAY RD. STOP BAR

R-1 EXISTING

OVERHEAD LIGHTING SYSTEM

STOP BAR

RI-1 EXISTING

JACKSON RD.

HORTON RD.

STOP AHEAD W3-1 EXISTING

	AUTH. NO.		DRAWN DJM	PROPOSED INTERSECTION
STATE OF MICHIGAN DEPARTMENT OF STATE HIGHWAYS	CONT. SEC.		DATE 1-24-74	DIAGRAM
	REF.		SCALE	
TRAFFIC & SAFETY DIVISION	SHEET	OF	PLAN	

FORM 1898 (REV. 10-66)

EDCO• 196M 5-71 45820

FRANCIS STREET AT HINCKLEY BOULEVARD

Operational Analysis:

Francis Street intersects Hinckley Boulevard to form a "T" inter-
section operating under stop control. There is one 30 in. "Stop"
sign controlling traffic on Hinckley Boulevard. Francis Street
is a divided roadway at this location.

Accidents:

Type	1970	1971	1972	Total
Head On-Left Turn	4	2	2	8
Right-Angle	3	1	--	4
Misc.	4	2	1	7
TOTAL	11	5	3	19

The miscellaneous types included two improper turning, one im-
proper backing, one pedestrian, one parking, one ran off roadway
and one rear end accident. Six of the head on-left turns and two
right-angle accidents involved vehicles exiting a private drive-
way opposite Hinckley Boulevard.

FRANCIS

22′

1970 (11)

36′

36′

22′

N

HINCKLEY

FRANCIS

1971 (5)

HINCKLEY

FRANCIS

1972 (3)

HINCKLEY
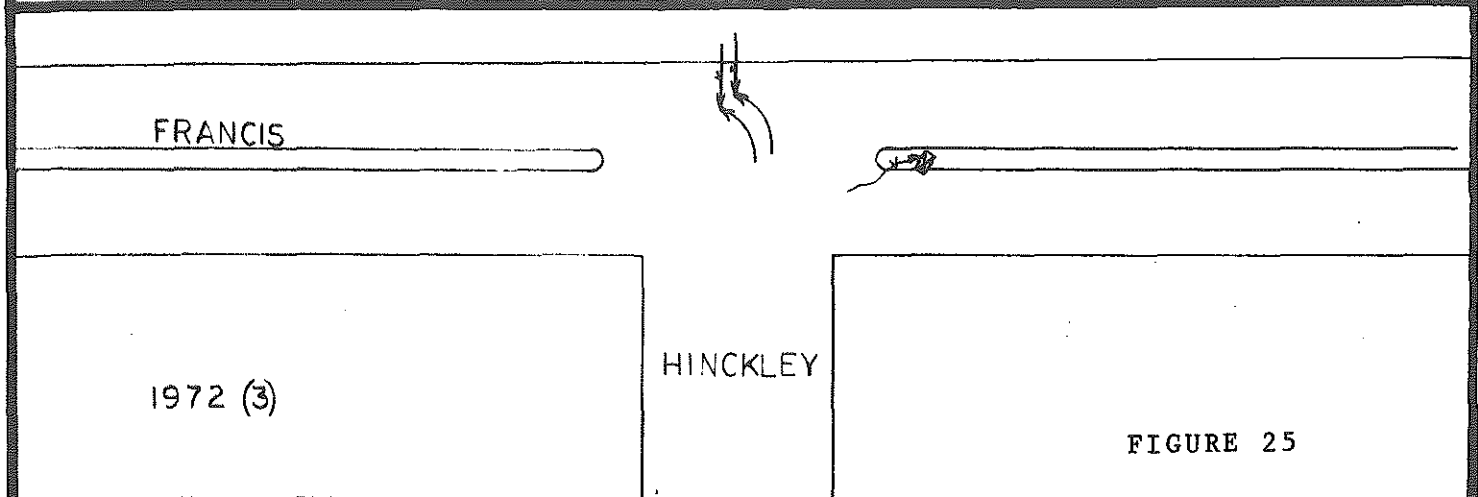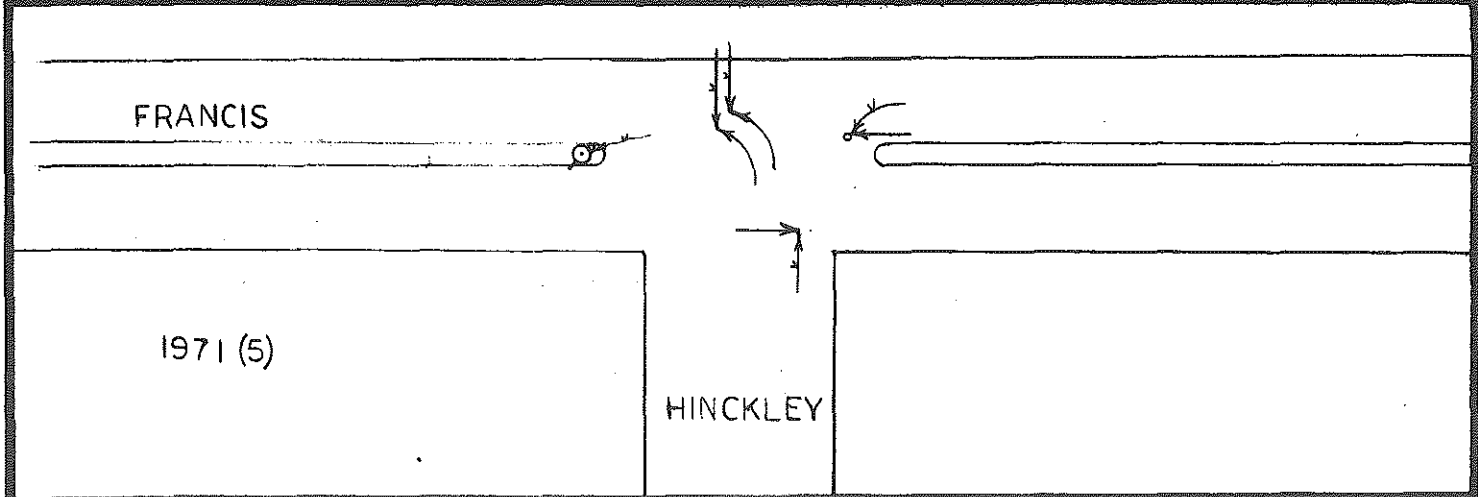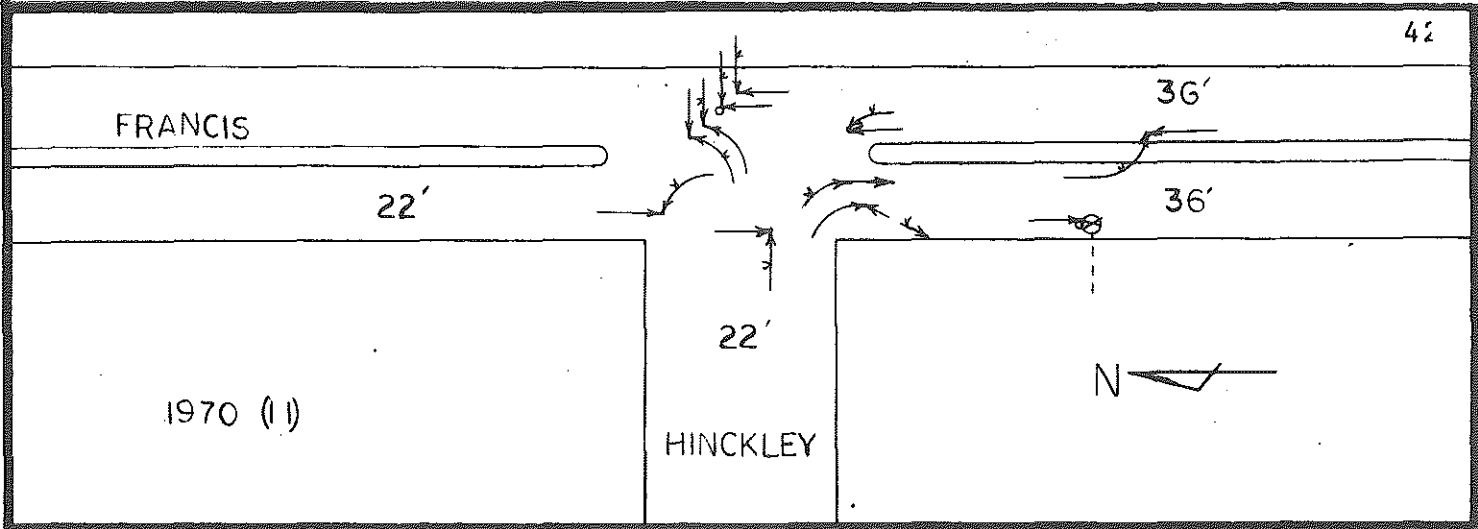
FIGURE 25

LEGEND	MICHIGAN DEPARTMENT OF STATE HIGHWAYS
	TRAFFIC AND SAFETY DIVISION

Stop & Go Signal — (S)   Stop Sign   S

Flashing Beacon — (F)   Yield Sign   Y

Fatal •

Injury ○

Skidding ○○○

Jackknife

Overturned

Backing

Pedestrian ····(X)

Tree

Out of Control

Driver Intent

Deer (V)

Violator V

Location FRANCIS AT HINCKLEY
JACKSON CO.

NO ACC RATES AVAILABLE

Period: 1970 THRU 1972

Accidents – Total 19   **P.D.** 15

Injury 4 ( )   **Fatal** 0 ( )

C.S. _____ **Miles** _____ **Drawn** _____

Plan No. LOCATION   **Date** 10-23-73

43

NORTHBOUND

FRANCIS STREET

THE ACCIDENT

POTENTIAL

SOUTHBOUND

FRANCIS STREET

FIGURE 26

EASTBOUND

HINCKLEY BLVD.

PARKING AREA

ACE'S HARDWARE

WESTBOUND

HINCKLEY BLVD.

FIGURE 27

RECOMMENDATIONS

Type	Estimated Costs
1. Close off the drive opening (Ace's Hardware) directly across from Hinckley Boulevard by erecting a physical barrier extending from Cass Street 190 ft south. This will provide two driveway openings to Ace's Hardware, one on Francis Street north of Meyer Street and one on Cass Street.	$ 1,900.00
2. Eliminate parking from the island dividing north and southbound Francis Street as per the Michigan Vehicle Code Section 644. Also, convert the angle parking on southbound Francis Street to parallel parking.	25.00
3. Relocate the stop sign on Hinckley Boulevard closer to the corner and the point of obedience.	13.25
TOTAL	$ 1,938.25

N

EXISTING
RI-I

CASS ST.

NOTE: FOR ESTIMATING PURPOSES
GUARD RAIL WAS USED IN
PROVIDING THE PHYSICAL
BARRIER IN FRONT OF THE
HARDWARE STORE

FRANCIS ST.

PARKING
AREA

190'

HINCKLEY BLVD.

RELOCATE
RI-I
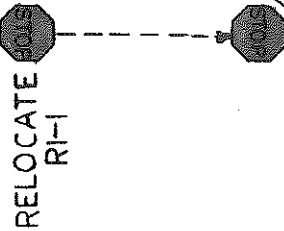
CONVERT ANGLE PARKING
TO PARALLEL PARKING

REMOVE PARKING
IN MEDIAN

EXISTING
RI-I

MEYERS

FIGURE 28

STATE OF MICHIGAN DEPARTMENT OF STATE HIGHWAYS ———— ● ———— TRAFFIC & SAFETY DIVISION	AUTH. NO.		DRAWN DJM	PROPOSED INTERSECTION APPROACH DIAGRAM
	CONT. SEC.		DATE 1-25-74	
	REF.		SCALE	
	SHEET	OF	PLAN	

SUMMARY

The Department of State Police submitted 10 high accident locations for Jackson County to the Department of State Highways and Transportation. After an in depth study of these locations, recommendations were formulated for six of these locations. The recommendations are as follows:

Location Number	Location Description and Estimated Cost	Recommendations
2	South Street at Flansburg Road $ 7,211.06	Replace Bi-Directional Target Arrows with Directional Arrows. Erect Delineators. Apply Pavement Markings. Install Guardrail. Remove Type III Object Markers. Install Street Lighting System. Erect Side Road Warning signs with a Road Name sign. Erect Turn Warning signs with 30 mph Speed Panels. Remove Reverse Turn warning signs.
3	Page Avenue at Falahee Road $ 1,600.00	Increase the signal cycle length to 80 seconds. Apply pavement markings. Construct' a physical barrier between the north leg and the parking lot.
4	Page Avenue at Dettman Road $ 30,487.06	Erect Signal Ahead signs. Construct another lane for the north leg of this intersection. Apply pavement markings. Increase the signal cycle length to 80 seconds.
5	Page Avenue at Sutton Road $ 2,624.56	Erect Side Road Warning signs. Apply pavement markings. Install flashing beacon
7	Horton Road at Jackson Road, Ridgeway Road, Badgley Road $ 871.93	Apply pavement markings. Install street lighting system. Erect a D1-2 Guide Sign.

Location Number	Location Description and Estimated Cost	Recommendations
9	Francis Street at Hinckley Boulevard $ 1,938.25	Close off the drive across from Hinckley Blvd. Eliminate median parking. Convert angle parking to parallel parking. Relocate the stop sign.

Furthermore, a few general recommendations were formulated that should be implemented by Jackson County.

1. Two approach lanes should be provided per signalized approach.

2. A program should be initiated by the county for removing vision obstructions that are located in clear vision areas at intersections throughout the county.

                    TOTAL ESTIMATED COST $44,732.86