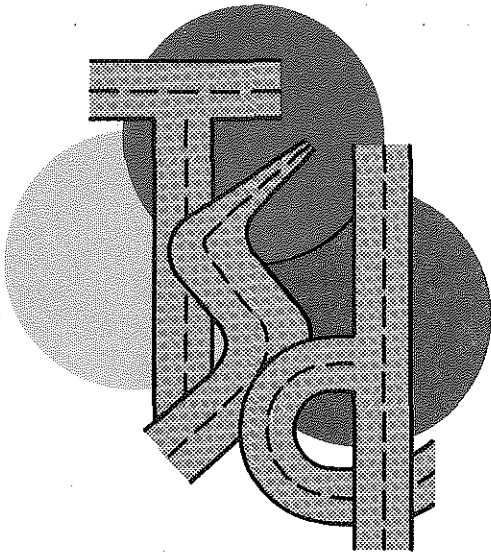


HE  
5614.3  
.M52  
S3  
1973

A TRAFFIC ACCIDENT ANALYSIS AND  
TRAFFIC CONTROL DEVICES INVENTORY  
IN SCHOOLCRAFT COUNTY

Report TSD-ES-195-73



**TRAFFIC and  
SAFETY  
DIVISION**

HIGHWAY LIBRARY  
MICHIGAN DEPARTMENT OF STATE  
HIGHWAYS  
LANSING, MICH.  
P. O. DRAWER "K" 48504

**DEPARTMENT OF STATE HIGHWAYS  
STATE OF MICHIGAN**

MICHIGAN STATE HIGHWAY COMMISSION

E. V. Erickson . . . . .Chairman  
 Charles H. Hewitt . . . . .Vice Chairman  
 Claude J. Tobin . . . . .Member  
 Peter B. Fletcher . . . . .Member

A TRAFFIC ACCIDENT ANALYSIS AND  
 TRAFFIC CONTROL DEVICES INVENTORY  
 IN SCHOOLCRAFT COUNTY

Report TSD-ES-195-73

HIGHWAY LIBRARY  
 MICHIGAN DEPARTMENT OF STATE  
 HIGHWAYS  
 LANSING, MICH.  
 P. O. DRAWER "K" 48904

by

KENNETH J. O'BERRY

MICHIGAN DEPARTMENT OF STATE HIGHWAYS

J. P. Woodford . . . . .State Highway Director  
 G. J. McCarthy . . . . .Assistant Deputy Director  
 H. H. Cooper . . . . .Engineer of Traffic and Safety  
 J. E. Hobrla . . . . .Traffic Field Services Engineer

Department of State Highways  
 State Highways Building - P.O. Drawer K  
 Lansing, Michigan 48904

PREPARED BY

Traffic Engineering Services  
Traffic and Safety Division  
Bureau of Operations  
Michigan Department of State Highways

in cooperation with

The Michigan Office of Highway Safety Planning  
and

The U. S. Department of Transportation  
National Highway Traffic Safety Administration

HIGHWAY LIBRARY  
MICHIGAN DEPARTMENT OF STATE  
HIGHWAYS  
LANSING, MICH.  
P. O. DRAWER "K" 48904

"The opinions, findings and conclusions expressed in this publication are those of the authors and not necessarily those of the State or U. S. Department of Transportation, National Highway Traffic Safety Administration."

ACKNOWLEDGMENTS

Michigan Department of State Police

Captain Amthor  
Lt. Zane Gray  
Lt. Bryce Gray

Schoolcraft County Road Commission

E. E. Johnson - Engineer

Schoolcraft County Sheriff Department

Lloyd E. Gray, County Sheriff

Michigan Department of State Highways

Ursel L. Savage, Project Engineer  
Robert G. Lariviere, Engineer

Office of Highway Safety Planning

Noel C. Bufe, Executive Director

NHTSA Project #MCD-73-1

TABLE OF CONTENTS

|  | Page |
|--|------|
| Acknowledgments.....                         | ii   |
| Introduction.....                            | 1    |
| Scope.....                                   | 1    |
| Study Procedures.....                        | 2    |
| F.A.S. Map.....                              | 3    |
| Traffic Engineering Analysis.....            | 5    |
| Control Devices Inventory.....               | 5    |
| Collection of field data.....                | 5    |
| Conversion of field data.....                | 5    |
| Signs.....                                   | 6    |
| Regulatory.....                              | 7    |
| Warning.....                                 | 7    |
| Guide.....                                   | 8    |
| No passing zones.....                        | 8    |
| Pavement markings at railroad crossings..... | 8    |
| Cost estimates for material and labor.....   | 9    |
| Accident Analysis.....                       | 9    |
| Appendix.....                                | 11   |

## 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.

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 high or potentially high accident experience as a basis for establishing priorities for improvement, selective enforcement or other practices that will eliminate or reduce the hazards at the locations so identified. It provides an orderly inventory of all traffic control devices, which include those signs, signals, markings and devices placed on, over or adjacent to a street or highway to regulate, warn and guide vehicular and pedestrian traffic.

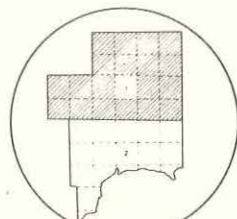
The State of Michigan carries out a program of this type on the state trunkline system; however, many of the state's city and county agencies lack the financial and technical prerequisites necessary to pursue similar programs with similarly defined objectives. To insure that this additional highway safety standard is met and to improve the overall evaluation of the accident picture in Michigan, the Michigan Department of State Highways 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; and additionally will recommend the upgrading of traffic control devices where necessary.

### 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, and by providing uniform standards for traffic control to reduce the likelihood and severity of traffic accidents.

### Study Procedures

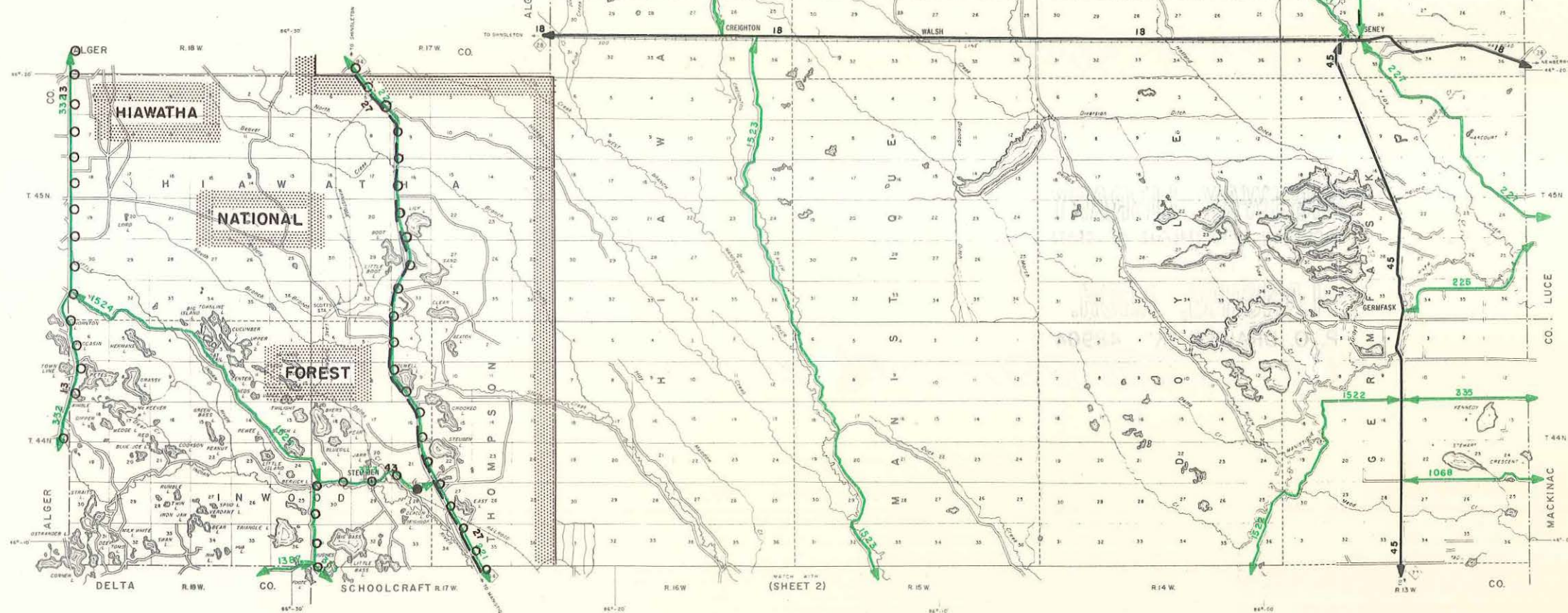
The study procedures for this project involve a review of high accident locations and an inventory of traffic control devices. The review of high accident locations includes: basic data collection, identifying and locating high accident locations, an accident analysis of these high accident locations, technical evaluation of accident facts and consequent remedial recommendations. The traffic control devices inventory includes: surveying traffic control devices, tabulating the field data, determining priorities for replacement of traffic control devices and calculating a cost estimate for this replacement. The inventory of all the traffic control devices on the County Primary Road System in Schoolcraft County was completed in October 1971. The results including the work sheets and quantity sheets are found in the appendix.



KEY TO SHEETS



KEY TO COUNTIES



LEGEND

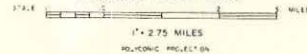
| APPROVED FEDERAL AID SYSTEM | PROPOSED REVISIONS         |
|-----------------------------|----------------------------|
| PRIMARY                     | ADDITION TO _____ SYSTEM   |
| SECONDARY (STATE)           | DELETION FROM _____ SYSTEM |
| SECONDARY (COUNTY)          |                            |
| FEDERAL FOREST HIGHWAY      |                            |

REVISED TO JANUARY 1, 1970

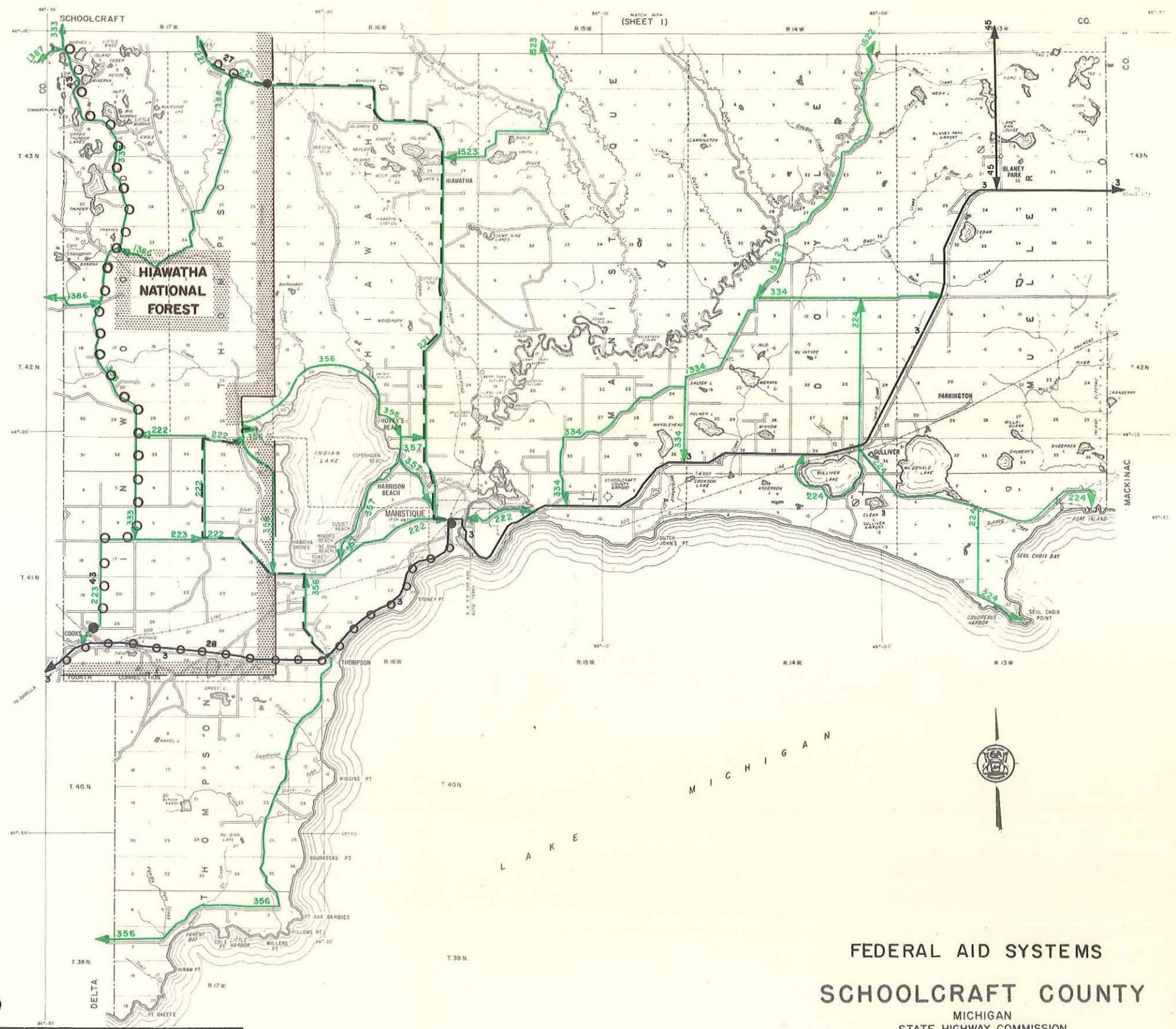
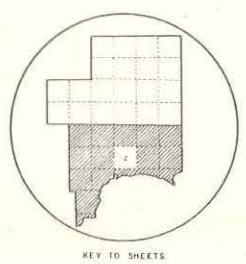
HIGHWAY LIBRARY  
 DEPARTMENT OF STATE HIGHWAYS  
 MICH.  
 NUMBER "K" 18904

FEDERAL AID SYSTEMS  
 SCHOOLCRAFT 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





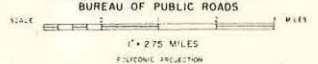


LEGEND

| APPROVED FEDERAL AID SYSTEM | PROPOSED REVISIONS         |
|-----------------------------|----------------------------|
| PRIMARY                     | ADDITION TO _____ SYSTEM   |
| SECONDARY (STATE)           | DELETION FROM _____ SYSTEM |
| SECONDARY (COUNTY)          |                            |
| FEDERAL FOREST HIGHWAY      |                            |

FEDERAL AID SYSTEMS  
SCHOOLCRAFT 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



## TRAFFIC ENGINEERING ANALYSIS

### Control Devices Inventory

Collection of field data. In the traffic control devices inventory, all county-maintained control devices on the County Primary Road System, including the Federal-Aid Secondary Routes, within Schoolcraft County were surveyed. All county-maintained signs on this system were inventoried including "STOP" and "YIELD" signs on other roads which intersect with the inventoried routes. Traffic control devices which are adequate in their present state, were tabulated by the field crews and are included on the quantity sheets, but not the work sheets. Additional traffic control devices and those in need of replacement were located by establishing their distance in miles from a major crossroad, city or village limit, or the county line.

All signs on the County Primary Road System were inventoried by driving west to east or south to north, depending on the basic direction of the route. In the case of two intersecting inventoried routes, the "STOP" and "YIELD" signs at such intersections were inventoried on their respective routes.

Traffic Control Orders for speed zones on the County Primary Road System were checked with the Department of State Police. All areas along the inventoried routes were checked to ensure compliance with these Traffic Control Orders, as well as the "Michigan Manual of Uniform Traffic Control Devices".

This study does not include a check of Traffic Control Orders for parking prohibitions and restrictions. It is suggested that as a part of the general sign upgrading efforts of the County Road Commission, all no-parking zones be checked in the field to ensure their conformance to the Traffic Control Orders and the "Michigan Manual of Uniform Traffic Control Devices".

Conversion of field data. Two simple forms (Work Sheets and Quantity Sheets) were developed upon which to record the collected field data. This should enable the Schoolcraft County Road Commission's personnel to determine the necessary work which must be done at particular locations and, also, the total amount of work to be done county-wide and per route. These sheets are located in the Appendix of this report.

The work sheets are the forms which the county will use to do the actual field work. There is a work sheet for each inventoried route where work is necessary. Reference points are measured from major crossroads, city or village limits, or the county line. The "Location" column on this sheet refers to the side of the road where work must be done. There is also a "Priority and Description" column. The "Priority" portion of this column lists five different priorities; three of these relate to sign work and the remaining two relate to sign support work. These priorities are as follows:

#### Sign Work

- Priority 1 - Work which should be completed as soon as possible.
- Priority 2 - Work which should be completed when existing signs are in need of maintenance.
- Priority 3 - Work that would be beneficial to the guidance of traffic although, if not completed, would not specifically affect traffic safety.

#### Sign Support Work

- Priority A - Work which should be completed as soon as possible.
- Priority B - Work that would be beneficial to the guidance of traffic although, if not completed, would not specifically affect traffic safety.

The quantity sheets show the number of signs by type and total number of signs by route. The total number of signs includes those signs which are needed and are not presently in place, replacement of existing signs, and signs requiring no change. The quantity sheets further list those signs which are in poor condition, signs which are obsolete, signs needed, and the total number of signs which must be replaced by type per route and by type county-wide.

Signs. It is expected that the revised edition of the "Michigan Manual of Uniform Traffic Control Devices" will be issued in 1973 and will be in accordance with the 1971 National Manual. Therefore, we recommend that the placement of signs not be undertaken until receipt of the revised Michigan Manual.

Regulatory: A comprehensive study of traffic control devices on the Schoolcraft County Primary Road System has established a need for installation or maintenance of approximately 42 percent of the required regulatory signs. The primary reason for this deficiency was the lack of "STOP" (R1-1) and "BRIDGE WEIGHT LIMIT" (R3-29) signs.

There is one location along the inventoried route where a speed control sign is in place, but is not legal, due to the lack of the necessary Traffic Control Order. We have noted on the work sheet that the sign relating to this illegal speed restriction should be removed. However, if it is felt that this speed control sign is necessary, the Schoolcraft County Road Commission should contact the Department of State Police and pursue the legal requirements for determining and establishing speed restrictions. The area in question is:

County Primary Road No. 433 - between US-2 and a point 0.038 miles east (25 mph) (1 sign).

Warning: The inventory indicates a need for the installation of approximately 54 percent of the required warning signs. The most evident deficiency is the need for additional Turn (W1-1), Curve (W1-2) and "ONE LANE BRIDGE" (W5-3) signs, and Obstruction (W12-9) panels.

It should be noted that "STOP AHEAD" (W3-1) and "YIELD AHEAD" (W3-2) signs on roads intersecting inventoried routes have not been inventoried or checked for compliance with the MANUAL.

The traffic control devices inventory revealed a need for Obstruction (W12-9) panels at locations in Schoolcraft County where the clear roadway over a structure was less than 19 feet wide or where culverts or bridge railings were four feet or less from the pavement edge. It is permissible to use reflective liquids in place of the Obstruction panels where the liquid would not be hidden by weeds growing along the road. For the purpose of estimating costs, we have assumed that Schoolcraft County will use the Obstruction panels at all obstructions.

Guide: The guide signing in Schoolcraft County consists mainly of County Route Markers that are not reflectorized.

No Passing Zones. It was noted that there were approximately 112 no-passing zones designated by signs and/or markings on the County Primary Road System in Schoolcraft County. A no-passing zone is defined as a section of roadway having insufficient passing sight distance. It is recommended that, as time and resources of the County Road Commission permit, a field survey be completed on all sections of hard-surfaced roads where sight distances are restricted. Such a field survey should result in any necessary corrections being made to the limits of existing no-passing zones and in the establishment of new zones where necessary.

After the field survey is completed, no-passing zones should be indicated by solid yellow lines applied along the limits established by the survey. Then "DO NOT PASS" (R3-17) and "PASS WITH CARE" (R3-18) signs may (at option of the County Road Commission) be placed at the limits of the no-passing zones.

Also, it should be noted that Public Act 224 of the Public Acts of 1971 refers to no-passing zones and states, in part, "...beginning January 1, 1973, a sign shall be placed to the left of the roadway on those portions of a highway WHERE ADDITIONAL NOTICE IS DEEMED NECESSARY". When left-side signs are placed in accordance with this legislation they shall be "NO PASSING ZONE" (W14-3) signs.

Pavement Markings at Railroad Crossings. The approach lanes at several of the railroad crossings are not properly marked. Beginning with the 1973 pavement marking season, the pavement marking in advance of a railroad crossing shall consist of an X, the letters RR, centerline markings to indicate no passing, and certain transverse lines. Such markings shall be white except for the no-passing zone. They shall be placed on all paved approaches to railroad crossings and, if physically feasible, at all grade crossings where railroad crossing signals or automatic gates are operating, and at all other crossings when the prevailing speed of highway traffic is 40 mph or greater.

The markings shall also be placed at crossings where engineering studies indicated there is a significant potential conflict between vehicles and trains. At minor crossings or in urban areas, these markings may be omitted if engineering studies indicate that other devices would provide suitable protection.

Cost estimate for materials and labor. The cost estimate for acquiring necessary materials for the work shown on the work sheets, including labor costs involved in installing supports, or straightening signs or supports, is as follows:

|            |           |
|------------|-----------|
| Priority 1 | \$ 6,558. |
| Priority 2 | 115.      |
| Priority 3 | 0.        |

### ACCIDENT ANALYSIS

In an attempt to fulfill all the aspects of Standard 4.4.13, a determination of the high accident locations for Schoolcraft County was undertaken. The Department of State Police transmitted to the Traffic and Safety Division of the Department of State Highways, 12 high accident locations (county roads only). These locations were selected on the basis of the 1969-1971 accident experience. Total accidents was the only criteria, as severity of accidents was not considered.

The accident picture on county roads only, as indicated by the Department of State Police booklet "Michigan Traffic Accident Facts", reveals that over the three-year period, 1969-1971, Schoolcraft County ranked 69th, 72nd and 75th in total number of accidents as compared with the other 82 counties. Over the five-year period from 1967-1971 Schoolcraft County ranked 75th in total motor vehicle deaths county-wide. These county-wide figures for Schoolcraft County do not indicate an alarming accident criticality.

An accident analysis of the 12 high accident locations also did not reveal a serious problem. There were 60 accidents at these locations during the three-year study period. The number one location had nine accidents in three years while location 12 had only three. Single vehicle ran-off roadway accidents accounted for 72 percent of the total accidents at the 12 locations. Adverse weather conditions, excessive speed and driving while under the influence of alcohol contributed heavily to the total accidents and especially to the ran-off roadway accidents. Almost 37 percent of the accidents occurred during adverse weather with 15 percent occurring on wet pavement and 22 percent occurring on snowy or icy pavement. Excessive speed was reportedly responsible for 60 percent of the total accidents and 70 percent of the ran-off roadway accidents. Almost 27 percent of the drivers

were under the influence of alcohol, while altogether 45 percent of the drivers had been drinking to some extent. It is our opinion that these locations would require no special traffic engineering attention over and above the Traffic Control Devices Inventory which is found in this report.

---

# APPENDIX





County Schoolcraft

Sheet 2 of 4

Route County Wide Warning

Direction of Route \_\_\_\_\_

| LEGEND    | TOTAL | POOR<br>CONDITION | OBSOLETE | SIGN<br>NEEDED | TOTAL TO<br>REPLACE |
|-----------|-------|-------------------|----------|----------------|---------------------|
| W1-1-30 R | 24    |                   |          | 17             | 17                  |
| W1-1-30 L | 23    |                   |          | 17             | 17                  |
| W1-2-30 R | 45    |                   |          | 25             | 25                  |
| W1-2-36 R | 5     | 2                 |          | 1              | 3                   |
| W1-2-30 L | 45    |                   |          | 22             | 22                  |
| W1-2-36 L | 5     | 3                 |          |                | 3                   |
| W1-3-30 R | 4     |                   |          | 4              | 4                   |
| W1-3-30 L | 4     |                   |          | 4              | 4                   |
| W1-4-30 R | 8     |                   |          | 6              | 6                   |
| W1-4-30 L | 9     |                   |          |                |                     |
| W1-5-30 R | 4     |                   |          | 2              | 2                   |
| W1-5-30 L | 10    |                   |          | 8              | 8                   |
| W1-5-36 L | 1     | 1                 |          |                | 1                   |
| W1-6-48   | 16    |                   |          |                |                     |
| W1-7-48   | 5     |                   | 1        |                | 1                   |
| W3-1-30   | 3     |                   |          | 1              | 1                   |
| W3-1-36   | 1     |                   |          |                |                     |
| W4-2-36   | 1     |                   |          | 1              | 1                   |
| W4-4-36   | 1     |                   |          | 1              | 1                   |
| W5-1-30   | 5     |                   |          | 5              | 5                   |
| W5-3-30   | 14    | 2                 |          | 11             | 13                  |
| W8-3-30   | 5     |                   |          | 5              | 5                   |
| W9-1-30   | 7     |                   |          |                |                     |
| W9-6-36   | 5     |                   |          | 4              | 4                   |
| W10-1-36  | 8     |                   |          |                |                     |
| 10-2      | 6     |                   |          |                |                     |





WORK SHEET

FAS 222 County Road 453

| REFERENCE                       | LOCATION                | PRIORITY & DESCRIPTION   |
|---------------------------------|-------------------------|--|
| E County Rd 437 0.000           |                         | Blacktop, White Skip, No Pass Yellow                             |
| E County Road 1.002             |                         |  |
| E County Road 0.000             |                         |  |
| 0.825                           | South Side              | 1 Erect W1-2-30R & W12-1-21(45)                                  |
| E M-149 1.207                   |                         |  |
|                                 | FAS 222 County Road 442 |  |
| E M-149 0.000                   |                         | Blacktop   |
| 0.303                           | South Side              | 1 Replace W1-2-36L & Relocate W12-1-21(35) to bottom             |
| E County Road 0.610             |                         |  |
| 0.692                           | North Side              | 1 Replace W1-2-36R & Relocate W12-1-21(35) to bottom             |
| E County Road 441 1.151         |                         |  |
| E County Rd 441 0.000           |                         |  |
| 0.559                           | South Side              | 1 Replace W1-1-36R w/ W1-2-36R & Relocate W12-1-21(35) to bottom |
| 0.912                           | North Side              | 1 Replace W1-2-36L & Relocate W12-1-21(35) to bottom             |
| 1.326                           | South Side              | 1 Replace W1-2-36L & Relocate W12-1-21(35) to bottom             |
| 1.708                           | North Side              | 1 Replace W1-2-36R & Relocate W12-1-21(35) to bottom             |
| 2.434                           | South Side              | 2 Relocate W12-1-21(35) to bottom W1-2-36R                       |
| 2.741                           | North Side              | 2 Relocate W12-1-21(35) to bottom W1-2-36L                       |
| W. Manistique City Limits 2.932 |                         |  |
|                                 | FAS 222 County Road 439 |  |
| E. Manistique City Limits 0.000 |                         | Gravel   |
| E US-2 1.373                    |                         |  |

**HIGHWAY LIBRARY**  
 MICHIGAN DEPARTMENT OF STATE  
 HIGHWAYS  
**LANSING, MICH.**  
 P. O. DRAWER "K" 48904

County Schoolcraft

Sheet 1 of 1

Route RAS 222 Co Rd 453

Direction of Route WEST TO EAST

| LEGEND               | TOTAL     | POOR<br>CONDITION | OBSOLETE | SIGN<br>NEEDED | TOTAL TO<br>REPLACE |
|----------------------|-----------|-------------------|----------|----------------|---------------------|
| R1-1-24              | 3         |                   |          |                |                     |
| W1-2-30 R            | 1         |                   |          | 1              | 1                   |
| W1-2-36 R            | 4         | 2                 |          | 1              | 3                   |
| W1-2-36 L            | 4         | 3                 |          |                | 3                   |
| W1-6-48              | 2         |                   |          |                |                     |
| W12-1-21 (35)        | 8         |                   |          |                |                     |
| W12-1-21 (45)        | 1         |                   |          | 1              | 1                   |
| G2-3                 | 1         |                   |          |                |                     |
| County Route Markers | 11        |                   |          |                |                     |
| <b>Total</b>         | <b>35</b> | <b>5</b>          |          | <b>3</b>       | <b>8</b>            |

WORK SHEET

Sheet 1 of 1

FAS 223 County Road 442

| REFERENCE             | LOCATION   | PRIORITY & DESCRIPTION   |
|-----------------------|------------|--|
| E US-2 0.000          |            | Blacktop, White Skip, No Pass Yellow                             |
| @ County Road         | West Side  | 1 Replace R1-2-36 w/ R1-1-24                                     |
| E County Road 0.093   |            |  |
| 0.177                 | East Side  | 2 Relocate W12-1-21(35) to bottom W1-2-3OR                       |
| 0.417                 | West Side  | 2 Relocate W12-1-21(35) to bottom W1-2-3OL                       |
| 0.534                 | East Side  | 2 Relocate W12-1-21(30) to bottom W1-2-3OR                       |
| 0.551                 | East Side  | 1 Replace R1-2-36 w/ R1-1-24                                     |
| 0.735                 | North Side | 2 Relocate W12-1-21(30) to bottom W1-2-3OL                       |
| 0.779                 | South Side | 2 Relocate W12-1-21(35) to bottom W1-2-3OL                       |
| E County Road 0.882   |            |  |
| E County Road 0.000   |            |  |
| @ County Road         | East Side  | 1 Replace R1-2-36 w/ R1-1-24                                     |
| 0.075                 | East Side  | 2 Replace R1-2-36  |
| 0.254                 | West Side  | 2 Relocate W12-1-21(35) to bottom W1-2-3OR                       |
| @ County Road         | West Side  | 1 Replace R1-1-24  |
| E County Road 0.537   |            |  |
| @ County Road         | East Side  | 1 Replace R1-1-24  |
| @ County Road         | West Side  | 1 Replace R1-2-24 w/ R1-1-24                                     |
| E County Road 1.551   |            |  |
| E County Road 0.000   |            |  |
| 0.808                 | East Side  | 1 Replace W1-1-3OR w/ W1-2-3OR & Relocate W12-1-21(35) to bottom |
| E County Road 1.025   |            |  |
| E County Road 0.000   |            |  |
| 0.207                 | North Side | 2 Replace W1-1-3OL w/ W1-2-3OL & Relocate W12-1-21(35) to bottom |
| E County Rd 437 0.991 |            |  |
| E County Rd 437 0.000 |            |  |
| E M-149 2.027         |            |  |

County Schoolcraft

Sheet 1 of 1

Route EAS 223 Co Rd 442

Direction of Route South to North & East to West

| LEGEND              | TOTAL     | POOR<br>CONDITION | OBSOLETE | SIGN<br>NEEDED | TOTAL TO<br>REPLACE |
|---------------------|-----------|-------------------|----------|----------------|---------------------|
| R1-1-24             | 13        | 2                 |          | 4              | 6                   |
| R1-2-36             | 1         |                   | 1        |                | 1                   |
| W1-2-30 R           | 4         |                   |          | 1              | 1                   |
| W1-2-30 L           | 4         |                   |          | 1              | 1                   |
| W1-6-48             | 2         |                   |          |                |                     |
| W10-1-36            | 2         |                   |          |                |                     |
| W10-2 w/Flashers    | 2         |                   |          |                |                     |
| W12-1-21 (30)       | 2         |                   |          |                |                     |
| W12-1-21 (35)       | 6         |                   |          |                |                     |
| G2-2                | 2         |                   |          |                |                     |
| G2-4                | 2         |                   |          |                |                     |
| County Route Marker | 5         |                   |          |                |                     |
| <b>Total</b>        | <b>45</b> | <b>2</b>          | <b>1</b> | <b>6</b>       | <b>9</b>            |



WORK SHEET

Sheet 1 of 3

FAS 22 1/2 County Road 431

| REFERENCE               | LOCATION             |   | PRIORITY & DESCRIPTION   |
|-------------------------|----------------------|---|--|
| Coast Guard Sta 0.000   |                      |   | Gravel   |
| 0.055                   | South Side           | 1 | Replace CAUTION CHILDREN w/ W9-6-36                              |
| 1.015                   | South Side           | 1 | Replace W1-5-36L   |
| 1.408                   | North Side           | 1 | Erect W12-1-21(15) on W1-1-30R                                   |
| 1.674                   | West Side            | 1 | Erect W12-1-21(15) on W1-1-30L & Relocate<br>assembly 200' South |
| 4.080                   | West Side            | 1 | Erect W12-3-30   |
| E County Road 432 4.100 |                      |   |  |
|                         | FAS 22 1/2 Co Rd 432 |   |  |
| @ Port Inland 0.000     |                      |   | Blacktop, White Skip, No Pass Yellow                             |
| 0.106                   | East Side            | 2 | Relocate W12-1-21(45) to bottom W1-2-36L                         |
| 0.519                   | South Side           | 2 | Relocate W12-1-21(45) to bottom W1-2-36R                         |
| @ County Rd             | South Side           | 2 | Replace R1-2-36  |
| E County Rd 1.685       |                      |   |  |
| E County Rd 0.000       |                      |   |  |
| @ County Rd             | North Side           | 2 | Replace R1-2-36  |
| E County Rd 431 2.246   |                      |   |  |
| E County Rd 431 0.000   |                      |   |  |
| E County Rd 2.728       |                      |   |  |
| E County Rd 0.000       |                      |   |  |
| E County Rd 0.687       |                      |   |  |
| E County Rd 434 1.383   |                      |   |  |
| E County Rd 434 0.000   |                      |   |  |
| 0.150                   | West Side            | 1 | Remove W10-1-36  |
| E US-2 0.168            |                      |   |  |
| E US-2 0.000            |                      |   |  |
| @ County Rd             | West Side            | 1 | Replace R1-2-30 w/ R1-1-24                                       |

WORK SHEET

FAS 224 County Road 432

| REFERENCE             | LOCATION              |   | PRIORITY & DESCRIPTION                     |
|-----------------------|-----------------------|---|--|
| E County Road 0.158   |                       |   |  |
| E County Road 0.360   |                       |   |  |
| @ County Road         | East Side             | 1 | Replace R1-2-36 w/ R1-1-24                 |
| 1.875                 | East Side             | 1 | Erect W8-3-30                              |
| 1.989                 |                       |   | Pavement Ends                              |
| 4.266                 |                       |   | Begin Blacktop                             |
| E County Rd 433 4.362 |                       |   |  |
|                       | FAS 224 County Rd 434 |   |  |
| E US-2 0.000          |                       |   | Blacktop, White Skip, No Pass Yellow       |
| 0.035                 | West Side             | 1 | Erect W12-1-21(15) on W1-1-30R             |
| @ County Road         | East Side             | 1 | Erect R1-1-24                              |
| E County Road 0.131   |                       |   |  |
| 0.132                 | East Side             | 1 | Replace R1-2-36 w/ R1-1-24                 |
| 0.136                 | South Side            | 1 | Replace R1-2-36 w/ R1-1-24                 |
| 0.236                 | South Side            | 1 | Erect W12-1-21(15) on W1-1-30L             |
| 0.365                 | North Side            | 1 | Remove NARROW WINDING ROAD DRIVE WITH CARE |
| 0.457                 | West Side             | 1 | Erect W1-1-30L & W12-1-21(20)              |
| 0.680                 | North Side            | 1 | Erect W1-1-30R & W12-1-21(20)              |
| 0.910                 | South Side            | 1 | Erect W1-5-30L                             |
| 1.306                 | South Side            | 1 | Erect W1-5-30L & W12-1-21(20)              |
| 1.353                 | North Side            | 1 | Erect W1-5-30R                             |
| 1.724                 | North Side            | 1 | Erect W1-5-30L & W12-1-21(20)              |
| 1.838                 | South Side            | 1 | Erect W1-1-30L & W12-1-21(20)              |
| 2.074                 | West Side             | 1 | Erect W1-1-30R & W12-1-21(20)              |
| 2.159                 | East Side             | 1 | Erect W1-5-30L                             |
| 2.414                 | East Side             | 1 | Erect W1-2-30L                             |

WORK SHEET

Sheet 3 of 3

FAS 224 County Road 434

| REFERENCE             | LOCATION  |   | PRIORITY & DESCRIPTION  |
|-----------------------|-----------|---|---|
| @ County Rd           | West Side | 1 | Replace R1-2-36 w/ R1-1-24  |
| E County Rd 2.425     |           |   |   |
| E County Rd 0.000     |           |   |   |
| @ County Rd           | East Side | 1 | Replace R1-2-36 w/ R1-1-24  |
| 0.057                 | West Side | 1 | w/ W1-5-30R & W12-1-21(35)<br>Replace NA ROW WINDING ROAD DRIVE WITH CARE |
| 0.322                 | West Side | 1 | Erect W1-2-30R  |
| @ County Rd           | West Side | 1 | Replace R1-2-36 w/ R1-1-24  |
| E County Rd 0.366     |           |   |   |
| 0.417                 | East Side | 1 | Erect R2-1-24(40) & R2-1-24   |
| @ County Rd           | West Side | 1 | Replace R1-2-36 w/ R1-1-24  |
| E County Rd 0.656     |           |   |   |
| E County Rd 0.715     |           |   |   |
| @ County Rd           | East Side | 1 | Replace R1-2-36 w/ R1-1-24  |
| E County Rd 0.925     |           |   |   |
| E County Rd 0.000     |           |   |   |
| 0.408                 | East Side | 1 | Erect W3-1-30   |
| @ County Rd 432       | East Side | 1 | Replace R1-2-36 w/ R1-1-24  |
| E County Rd 432 0.559 |           |   |   |
|                       |           |   |   |
|                       |           |   |   |
|                       |           |   |   |
|                       |           |   |   |
|                       |           |   |   |
|                       |           |   |   |
|                       |           |   |   |
|                       |           |   |   |

County Schoolcraft

Sheet 1 of 2

Route FAS 224 County Rd 431

Direction of Route West to East

| LEGEND                 | TOTAL | POOR<br>CONDITION | OBSOLETE | SIGN<br>NEEDED | TOTAL TO<br>REPLACE |
|------------------------|-------|-------------------|----------|----------------|---------------------|
| R1-1-24                | 20    |                   |          | 11             | 11                  |
| R1-2-36                | 2     |                   | 2        |                | 2                   |
| R2-1-24 (40)           | 5     |                   |          | 1              | 1                   |
| R2-1-24                | 1     |                   |          | 1              | 1                   |
| W1-1-30 R              | 4     |                   |          | 2              | 2                   |
| W1-1-30 L              | 4     |                   |          | 2              | 2                   |
| W1-2-30 R              | 1     |                   |          | 1              | 1                   |
| W1-2-36 R              | 1     |                   |          |                |                     |
| W1-2-30 L              | 1     |                   |          | 1              | 1                   |
| W1-2-36 L              | 1     |                   |          |                |                     |
| W1-5-30 R              | 2     |                   |          | 2              | 2                   |
| W1-5-30 L              | 4     |                   |          | 4              | 4                   |
| W1-5-36 L              | 1     | 1                 |          |                | 1                   |
| W1-7-48                | 1     |                   |          |                |                     |
| W3-1-30                | 2     |                   |          | 1              | 1                   |
| W8-3-30                | 1     |                   |          | 1              | 1                   |
| W9-1-30                | 2     |                   |          |                |                     |
| W9-6-36                | 1     |                   |          | 1              | 1                   |
| W10-1-36               | 3     |                   |          |                |                     |
| W10-2                  | 2     |                   |          |                |                     |
| W10-2 with Flashers    | 2     |                   |          |                |                     |
| W11-1-36 with Flashers | 2     |                   |          |                |                     |
| W12-1-21 (15)          | 4     |                   |          | 4              | 4                   |
| W12-1-21 (20)          | 6     |                   |          | 6              | 6                   |
| W12-1-21 (35)          | 1     |                   |          | 1              | 1                   |

County Schoolcraft

Sheet 2 of 2

Route FAS 224 County Road 431

Direction of Route West to East

| LEGEND               | TOTAL | POOR<br>CONDITION | OBSOLETE | SIGN<br>NEEDED | TOTAL TO<br>REPLACE |
|----------------------|-------|-------------------|----------|----------------|---------------------|
| W12-1-21 (45)        | 2     |                   |          |                |                     |
| W12-3-30             | 1     |                   |          | 1              | 1                   |
| W12-4-30             | 1     |                   |          |                |                     |
|                      |       |                   |          |                |                     |
| G2-2                 | 2     |                   |          |                |                     |
| County Route Markers | 15    |                   |          |                |                     |
|                      |       |                   |          |                |                     |
| Total                | 95    | 1                 | 2        | 40             | 43                  |
|                      |       |                   |          |                |                     |
|                      |       |                   |          |                |                     |
|                      |       |                   |          |                |                     |
|                      |       |                   |          |                |                     |
|                      |       |                   |          |                |                     |
|                      |       |                   |          |                |                     |
|                      |       |                   |          |                |                     |
|                      |       |                   |          |                |                     |
|                      |       |                   |          |                |                     |
|                      |       |                   |          |                |                     |
|                      |       |                   |          |                |                     |
|                      |       |                   |          |                |                     |
|                      |       |                   |          |                |                     |
|                      |       |                   |          |                |                     |
|                      |       |                   |          |                |                     |



County Schoolcraft

Sheet 1 of 1

Route FAS 225 H44

Direction of Route West to East

| LEGEND                  | TOTAL | POOR<br>CONDITION | OBSOLETE | SIGN<br>NEEDED | TOTAL TO<br>REPLACE |
|-------------------------|-------|-------------------|----------|----------------|---------------------|
| R1-1-24                 | 2     |                   |          |                |                     |
| W1-1-30 R               | 1     |                   |          |                |                     |
| W1-1-30 L               | 1     |                   |          |                |                     |
| W1-2-30 R               | 3     |                   |          | 2              | 2                   |
| W1-2-30 L               | 3     |                   |          | 2              | 2                   |
| W1-6-48                 | 8     |                   |          |                |                     |
| W12-1-21 (30)           | 2     |                   |          |                |                     |
| W12-1-21 (35)           | 4     |                   |          | 2              | 2                   |
| W12-1-21 (45)           | 1     | 1                 |          |                | 1                   |
| W12-9 R (24x48)         | 4     | 1                 |          |                | 1                   |
| W12-9 L (24x48)         | 4     | 1                 |          |                | 1                   |
| G2-1                    | 1     |                   |          |                |                     |
| G2-4                    | 1     |                   |          |                |                     |
| G3-3                    | 1     |                   |          |                |                     |
| G3-7                    | 1     |                   |          |                |                     |
| G3-9                    | 4     |                   |          |                |                     |
| County Route Marker     | 2     |                   |          |                |                     |
| County Route Marker H44 | 5     |                   |          |                |                     |
| Total                   | 48    | 3                 |          | 6              | 9                   |

WORK SHEET

Sheet 1 of 1

FAS 227 Co Rd 456

| REFERENCE                      | LOCATION   | PRIORITY & DESCRIPTION |                                 |
|--------------------------------|------------|------------------------|---------------------------------|
| Line<br>E.Schoolcraft Co 0.000 |            |                        | Gravel                          |
| 2.841                          | East side  | 1                      | Erect W1-1-30 L                 |
| 3.068                          | South side | 1                      | Erect W1-1-30 R                 |
| 3.409                          | South side | 1                      | Erect W5-1-30                   |
| 3.902                          | North side | 1                      | Erect W5-1-30                   |
| 5.777                          | South side | 1                      | Erect W5-1-30                   |
| 5.777                          | North side | 1                      | Erect W1-2-30 L                 |
| 5.810                          |            |                        | begin blacktop                  |
| 5.909                          | South side | 1                      | Erect W8-3-30                   |
| 6.147                          | South side | 1                      | Erect W1-2-30 R                 |
| 6.288                          | North side | 1                      | Erect W1-1-30 R & W12-1-21 (25) |
| 6.496                          | West side  | 1                      | Erect W1-1-30 L & W12-1-21 (25) |
| C Co Rd 6.601                  |            |                        |                                 |
| C Co Rd                        | East side  | 1                      | Replace R1-2-36 w/ R1-1-24      |
| 6.620                          | East side  | 1                      | Relocate W10-1-36 300° South    |
| 6.629                          | West side  | 1                      | Relocate W10-1-36 300° North    |
| C Co Rd 6.639                  |            |                        |                                 |
| C M 28 6.702                   |            |                        |                                 |
|                                |            |                        |                                 |
|                                |            |                        |                                 |
|                                |            |                        |                                 |
|                                |            |                        |                                 |
|                                |            |                        |                                 |
|                                |            |                        |                                 |



QUANTITY SHEET

County Schoolcraft

Sheet 1 of 1

Route FAS 227 Co Rd 456

Direction of Route South to North

| LEGEND               | TOTAL | POOR<br>CONDITION | OBSOLETE | SIGN<br>NEEDED | TOTAL TO<br>REPLACE |
|----------------------|-------|-------------------|----------|----------------|---------------------|
| R1-1-24              | 3     |                   |          | 1              | 1                   |
| W1-1-30 R            | 2     |                   |          | 2              | 2                   |
| W1-1-30 L            | 2     |                   |          | 2              | 2                   |
| W1-2-30 R            | 1     |                   |          | 1              | 1                   |
| W1-2-30 L            | 1     |                   |          | 1              | 1                   |
| W5-1-30              | 3     |                   |          | 3              | 3                   |
| W8-3-30              | 1     |                   |          | 1              | 1                   |
| W10-1-36             | 2     |                   |          |                |                     |
| W10-2                | 2     |                   |          |                |                     |
| W12-1-21 (25)        | 2     |                   |          | 2              | 2                   |
| County Route Markers | 1     |                   |          |                |                     |
| Total                | 20    |                   |          | 13             | 13                  |

WORK SHEET

Sheet 1 of 2

FAS 333 County Road 437

| REFERENCE             | LOCATION  |   | PRIORITY & DESCRIPTION               |
|-----------------------|-----------|---|--------------------------------------|
| E County Rd 442 0.000 |           |   | Blacktop, White Skin, No Pass Yellow |
| E County Rd 1.026     |           |   |                                      |
| E County Rd 0.000     |           |   |                                      |
| E County Rd 453 2.013 |           |   |                                      |
| E County Rd 453 0.000 |           |   | Road Under Construction              |
| @ FFH 2219            | West Side | 1 | Replace R1-2-30 w/ R1-1-24           |
| E FFH 2219 0.709      |           |   |                                      |
| E FFH 2219 0.000      |           |   |                                      |
| E County Rd 443 3.653 |           |   |                                      |
| E County Rd 443 0.000 |           |   |                                      |
| @ County Rd 443       | East Side | A | Raise R1-1-24 to 6' bottom Height    |
| 0.568                 |           |   | Return to Old Road                   |
| 1.364                 |           |   | End Construction                     |
| E County Rd 449 1.724 |           |   |                                      |
| E County Rd 449 0.000 |           |   |                                      |
| E County Rd 1.769     |           |   |                                      |
| E County Rd 2.336     |           |   |                                      |
| E County Rd 0.000     |           |   |                                      |
| E FFH 2438 2.046      |           |   |                                      |
| E FFH 2438 0.000      |           |   |                                      |
| E FAS 1387 2.297      |           |   |                                      |
| E FAS 1387 0.000      |           |   |                                      |
| 1.875                 | East Side | 1 | Erect W1-2-30R                       |
| E County Rd 2.046     |           |   |                                      |
| E County Rd 0.000     |           |   |                                      |
| 0.076                 | West Side | 1 | Erect W1-2-30L                       |



QUANTITY SHEET

County Schoolcraft

Sheet 1 of 1

Route FAS 333 Co. Rd. 437

Direction of Route South to North

| LEGEND                              | TOTAL     | POOR<br>CONDITION | OBSOLETE | SIGN<br>NEEDED | TOTAL TO<br>REPLACE |
|-------------------------------------|-----------|-------------------|----------|----------------|---------------------|
| R1-1-24                             | 10        |                   |          | 2              | 2                   |
| R1-1-36                             | 1         |                   |          |                |                     |
| W1-1-30 R                           | 1         |                   |          | 1              | 1                   |
| W1-1-30 L                           | 1         |                   |          | 1              | 1                   |
| W1-2-30 R                           | 2         |                   |          | 2              | 2                   |
| W1-2-30 L                           | 2         |                   |          | 2              | 2                   |
| W3-1-36                             | 1         |                   |          |                |                     |
| W12-1-21 (25)                       | 1         |                   |          | 1              | 1                   |
| W12-9 R (12x36)                     | 6         |                   |          | 2              | 2                   |
| W12-9 L (12x36)                     | 6         |                   |          | 2              | 2                   |
| NARROW WINDING ROAD DRIVE WITH CARE | 3         |                   |          |                |                     |
| G2-2                                | 1         |                   |          |                |                     |
| G2-4                                | 2         |                   |          |                |                     |
| County Route Markers                | 16        |                   |          |                |                     |
| <b>Total</b>                        | <b>53</b> |                   |          | <b>13</b>      | <b>13</b>           |

WORK SHEET

FAS 334 County Road 438

| REFERENCE               | LOCATION              | PRIORITY & DESCRIPTION                               |
|-------------------------|-----------------------|--|
| E US-2 0.000            |                       | Blacktop, White Skip, No Pass Yellow                 |
| E County Road 1.768     |                       |  |
| E County Road 0.000     |                       |  |
| @ County Road           | East Side             | 1 Replace R1-1-24                                    |
| E County Road 433 0.497 |                       |  |
|                         | FAS 334 County Rd 433 |  |
| E US-2 0.000            |                       | Blacktop   |
| 0.217                   | East Side             | 2 Relocate W12-1-21(35) to bottom W1-2-30L           |
| 0.445                   | East Side             | 2 Relocate W12-1-21(35) to bottom W1-2-30R           |
| 0.492                   | West Side             | 2 Relocate W12-1-21(35) to bottom W1-2-30R           |
| @ County Rd             | West Side             | 1 Replace R1-2-30 w/ R1-1-24                         |
| E County Rd 0.553       |                       |  |
| 0.674                   | West Side             | 2 Relocate W12-1-21(35) to bottom W1-2-30L           |
| 0.693                   | East Side             | 1 Replace & Relocate W12-1-21(35) to bottom W1-1-30L |
| E County Rd 1.117       |                       |  |
| E County Rd 0.000       |                       |  |
| @ County Rd             | East Side             | 1 Replace R1-2-24 w/ R1-1-24 & Relocate 50' North    |
| 0.024                   | West Side             | 2 Relocate W12-1-21(35) to bottom W1-4-30L           |
| 0.862                   | East Side             | 2 Relocate W12-1-21(35) to bottom W1-2-30R           |
| @ County Rd             | West Side             | 1 Replace R1-2-30 w/ R1-1-24                         |
| E County Rd 1.009       |                       |  |
| E County Rd 0.000       |                       |  |
| 0.142                   | North Side            | 2 Relocate W12-1-21(35) to bottom W1-2-30L           |
| E County Rd 0.500       |                       |  |
| @ County Rd             | North Side            | 2 Replace W1-7-48                                    |
| E County Rd 1.015       |                       |  |

WORK SHEET

FAS 334 County Rd 433

| REFERENCE             | LOCATION   | PRIORITY & DESCRIPTION                              |
|-----------------------|------------|---|
| E County Rd 0.000     |            |   |
| @ County Rd           | North Side | 1 Replace R1-2-36 w/ R1-1-24                        |
| E County Rd 1.361     |            |   |
| E County Rd 0.000     |            |   |
| E County Rd 0.557     |            |   |
| @ Section 13 Rd       | North Side | 1 Replace & Relocate R1-1-24 60' South              |
| E Section 13 Rd 1.199 |            |   |
| E Section 13 Rd 0.000 |            |   |
| E County Rd 438 0.514 |            |   |
| E County Rd 438 0.000 |            |   |
| 0.025                 | East Side  | 2 Relocate W12-1-21(20) to bottom W1-1-30R          |
| 0.365                 | North Side | 2 Relocate W12-1-21(20) to bottom W1-1-30L          |
| 0.720                 | South Side | 1 Erect W8-3-30                                     |
| 0.823                 |            | Begin Gravel  |
| 1.068                 | South Side | 2 Relocate W12-1-21(30) to bottom W1-2-30L          |
| 1.418                 | North Side | 2 Relocate W12-1-21(30) to bottom W1-2-30R          |
| @ County Rd           | West Side  | 1 Replace R1-2-36 w/ R1-1-24                        |
| E County Rd 2.391     |            |   |
| E County Rd 0.000     |            |   |
| @ County Rd           | East Side  | 1 Replace R1-2-36 w/ R1-1-24                        |
| 0.554                 | South Side | 1 Replace W1-4-30R w/ W1-3-30R & Erect W12-1-21(30) |
| 1.053                 | South Side | 1 Replace W1-2-30R w/ W1-1-30R & Erect W12-1-21(15) |
| 1.083                 | North Side | 1 Replace W1-4-30R w/ W1-3-30R & Erect W12-1-21(30) |
| E County Rd 436 1.226 |            |   |
| E County Rd 436 0.000 |            |   |
| 0.162                 | North Side | 1 Replace W1-2-30L w/ W1-1-30L & Erect W12-1-21(15) |



County Schoolcraft

Sheet 1 of 1

Route FAS 334 Co. Rd. 438

Direction of Route South to North

| LEGEND               | TOTAL | POOR<br>CONDITION | OBSOLETE | SIGN<br>NEEDED | TOTAL TO<br>REPLACE |
|----------------------|-------|-------------------|----------|----------------|---------------------|
| R1-1-24              | 14    | 1                 |          | 8              | 9                   |
| W1-1-30 R            | 2     |                   |          | 1              | 1                   |
| W1-1-30 L            | 2     |                   |          | 1              | 1                   |
| W1-2-30 R            | 14    |                   |          |                |                     |
| W1-2-30 L            | 14    |                   |          |                |                     |
| W1-3-30 R            | 2     |                   |          | 2              | 2                   |
| W1-4-30 L            | 4     |                   |          |                |                     |
| W1-6-48              | 4     |                   |          |                |                     |
| W1-7-48              | 2     |                   | 1        |                | 1                   |
| W8-3-30              | 2     |                   |          | 2              | 2                   |
| W9-1-30              | 2     |                   |          |                |                     |
| W12-1-21 (15)        | 2     |                   |          | 2              | 2                   |
| W12-1-21 (20)        | 2     |                   |          |                |                     |
| W12-1-21 (30)        | 4     |                   |          | 2              | 2                   |
| W12-1-21 (35)        | 8     | 1                 |          |                | 1                   |
| W12-9 R (12x36)      | 2     |                   |          |                |                     |
| W12-9 L (12x36)      | 2     |                   |          |                |                     |
| County Route Markers | 10    |                   |          |                |                     |
| Total                | 92    | 2                 | 1        | 18             | 21                  |







WORK SHEET

Sheet 1 of 2

FAS 356 Co Rd 435

| REFERENCE                       | LOCATION   | PRIORITY & DESCRIPTION |                                |
|---------------------------------|------------|------------------------|--------------------------------|
| Line<br>W. Schoolcraft Co 0.000 |            |                        | gravel                         |
| 1.202                           | South side | 1                      | Replace W1-5-30 L w/ W1-2-30 L |
| 1.385                           | North side | 1                      | Erect W1-2-30 R                |
| 2.578                           | North side | 1                      | Remove W1-5-30 L               |
| E Co Rd 5.256                   |            |                        |                                |
| E Co Rd 0.000                   |            |                        |                                |
| @ Co Rd                         | East side  | 1                      | Erect R1-1-24                  |
| E Co Rd 2.719                   |            |                        |                                |
| E Co Rd 0.000                   |            |                        |                                |
| E Co Rd 0.793                   |            |                        |                                |
| E Co Rd 0.000                   |            |                        |                                |
| @ Co Rd                         | East side  | 1                      | Replace R1-2-36 w/ R1-1-24     |
| 0.045                           | East side  | 1                      | Remove W1-5-30 R               |
| 0.265                           | East side  | 1                      | Erect W1-4-30 R                |
| 0.796                           | West side  | 1                      | Erect W1-4-30 R                |
| 3.068                           | East side  | 1                      | Erect W1-2-30 L                |
| 3.353                           | West side  | 1                      | Erect W1-2-30 R                |
| 3.807                           | East side  | 1                      | Erect W1-2-30 R                |
| 4.110                           | West side  | 1                      | Erect W1-2-30 L                |
| 4.337                           | East side  | 1                      | Erect W1-2-30 L                |
| 4.565                           | West side  | 1                      | Replace W1-5-30 R w/ W1-2-30 R |
| @ Co Rd                         | West side  | 1                      | Replace R1-2-36 w/ R1-1-24     |
| E Co Rd 4.573                   |            |                        |                                |
| @ Co Rd                         | West side  | 1                      | Replace R1-2-36 w/ R1-1-24     |
| E Co Rd 4.636                   |            |                        |                                |
| @ Co Rd                         | East side  | 1                      | Replace R1-2-36 w/ R1-1-24     |

WORK SHEET

FAS 356 Co Rd 435

| REFERENCE     | LOCATION          |   | PRIORITY & DESCRIPTION   |
|---------------|-------------------|---|--|
| E Co Rd 4.690 |                   |   |  |
| @ Co Rd       | East side         | 1 | Replace R1-2-36 w/ R1-1-24   |
| E US 2 4.710  |                   |   |  |
|               | FAS 356 Co Rd 455 |   |  |
| E M 149 0.000 |                   |   | gravel   |
|               | East side         | 1 | Erect W12-1-21 (20) on W1-1-30 L   |
| E Co Rd 2.964 |                   |   |  |
| E Co Rd 0.000 |                   |   |  |
| @ Co Rd       | North side        | 1 | Replace R1-2-36 w/ R1-1-24   |
|               | South side        | 1 | Erect W12-1-21 (20) on W1-1-30 R   |
|               | North side        | 1 | Replace W1-4-30 R w/ W1-3-30 R   |
|               | South side        | 1 | Replace W1-4-30 R w/ W1-3-30 R   |
|               | North side        | 1 | Replace W1-4-30 L w/ W1-3-30 L   |
|               | South side        | 1 | Replace W1-4-30 L w/ W1-3-30 L   |
| E M 149 1.579 |                   |   |  |
|               |                   |   |  |
|               |                   |   |  |
|               |                   |   | <p style="text-align: center;">HIGHWAY LIBRARY<br/>MICHIGAN DEPARTMENT OF STATE<br/>HIGHWAYS<br/>LANSING, MICH.<br/>P. O. DRAWER "K" 48904</p> |
|               |                   |   |  |
|               |                   |   |  |
|               |                   |   |  |
|               |                   |   |  |
|               |                   |   |  |
|               |                   |   |  |



WORK SHEET

FAS 357 County Rd 441

| REFERENCE                          | LOCATION              | PRIORITY & DESCRIPTION                     |
|------------------------------------|-----------------------|--|
| E County Rd 442 0.000              |                       | Blacktop, White Skip, No Pass Yellow       |
| 0.379                              | East Side             | 1 Erect W1-4-30R                           |
| E County Rd 0.914                  |                       |  |
| E County Rd 0.000                  |                       |  |
| 0.284                              | West Side             | 1 Erect W1-4-30R                           |
| 0.464                              | East Side             | 1 Erect W1-2-30R                           |
| 0.781                              | West Side             | 1 Erect W1-2-30L                           |
| 0.881                              | West Side             | 1 Erect R3-18-24                           |
| 1.185                              | East Side             | 1 Erect W1-2-30R                           |
| 1.484                              | East Side             | 1 Erect W1-2-30L                           |
| 1.520                              | West Side             | 1 Erect W1-2-30L                           |
| 1.739                              | West Side             | 1 Erect W1-2-30R                           |
| 1.739                              | East Side             | 1 Erect W1-4-30R                           |
| 2.292                              | West Side             | 1 Erect W1-4-30R                           |
| 2.317                              | East Side             | 2 Relocate W12-1-21(30) to bottom W1-4-30L |
| E County Rd 2.358                  |                       |  |
| @ Harrison Beach Rd.               | West Side             | 1 Replace R1-2-36 w/ R1-1-24               |
| E Harrison Bch.Rd. 2.475           |                       |  |
| @ Harrison Bch. Rd                 | East Side             | 1 Replace R1-2-36 w/ R1-1-24               |
| 2.620                              | West Side             | 2 Relocate W12-1-21(30) to bottom W1-4-30L |
| 2.815                              | East Side             | 1 Erect W9-6-36                            |
| E County Rd 440 2.922              |                       |  |
|                                    | FAS 357 County Rd 440 |  |
| North Manistique City Limits 0.000 |                       | Blacktop                                   |
| @ North Manistique City Limits     | East Side             | 2 Relocate W12-1-21(30) to bottom W1-2-30R |
| 0.229                              | West Side             | 2 Relocate W12-1-21(30) to bottom W1-2-30L |



County Schoolcraft

Sheet 1 of 1

Route EAS 357 Co. Rd. 441

Direction of Route South to North

| LEGEND               | TOTAL | POOR<br>CONDITION | OBSOLETE | SIGN<br>NEEDED | TOTAL TO<br>REPLACE |
|----------------------|-------|-------------------|----------|----------------|---------------------|
| R1-1-24              | 13    |                   |          | 3              | 3                   |
| R1-1-36              | 1     |                   |          |                |                     |
| R2-1-24 (25)         | 4     |                   |          |                |                     |
| R2-1-24 (35)         | 7     |                   |          |                |                     |
| R2-1-24 (45)         | 12    |                   |          |                |                     |
| R3-17-24             | 2     |                   |          |                |                     |
| R3-18-24             | 2     |                   |          | 1              | 1                   |
| R4-1-12              | 6     |                   |          |                |                     |
| W1-2-30 R            | 4     |                   |          | 3              | 3                   |
| W1-2-30 L            | 5     |                   |          | 3              | 3                   |
| W1-4-30 R            | 4     |                   |          | 4              | 4                   |
| W1-4-30 L            | 5     |                   |          |                |                     |
| W1-7-48              | 2     |                   |          |                |                     |
| W3-1-30              | 1     |                   |          |                |                     |
| W4-2-36              | 1     |                   |          | 1              | 1                   |
| W4-4-36              | 1     |                   |          | 1              | 1                   |
| W9-1-30              | 1     |                   |          |                |                     |
| W9-6-36              | 4     |                   |          | 3              | 3                   |
| W12-1-21 (30)        | 6     |                   |          |                |                     |
| W12-9 L (12x36)      | 2     |                   |          | 2              | 2                   |
| County Route Markers | 9     |                   |          |                |                     |
| Total                | 92    |                   |          | 21             | 21                  |







## WORK SHEET

Sheet 1 of 2

FAS 1101 Co. Rd. 450

| REFERENCE                        | LOCATION   |   | PRIORITY & DESCRIPTION                      |
|----------------------------------|------------|---|---|
| Line<br>W. Schoolcraft Co. 0.000 |            |   | gravel                                      |
| @ Co. Rd. 453                    | South side | 1 | Replace R1-2-36 w/ R1-1-24                  |
| E Co. Rd. 453 0.153              |            |   |   |
| E Co. Rd. 453 0.000              |            |   |   |
| 1.132                            | South side | 1 | Remove LOAD LIMIT BRIDGE & 5 Ton Limit Sign |
| 1.190                            | North side | 1 | Remove LOAD LIMIT BRIDGE & 5 Ton Limit Sign |
| 1.629                            | South side | 1 | Erect W1-1-30 L                             |
| 1.799                            | West side  | 1 | Erect W1-1-30 R                             |
| E Co Rd 3.401                    |            |   |   |
| E Co Rd 3.460                    |            |   |   |
| E Co Rd 0.000                    |            |   |   |
| 2.785                            | South side | 1 | Erect W1-2-30 R                             |
| @ Co. Rd                         | North side | 1 | Erect R1-1-24                               |
| E Co. Rd. 2.893                  |            |   |   |
| E Co. Rd. 0.000                  |            |   |   |
| 0.076                            | East side  | 1 | Erect W1-2-30 L                             |
| @ Co. Rd.                        | South side | 1 | Erect R1-1-24                               |
| E Co. Rd. 1.903                  |            |   |   |
| E Co. Rd. 0.000                  |            |   |   |
| @ Co. Rd.                        | South side | 1 | Remove R1-2-36                              |
| 3.296                            | South side | 1 | Erect W1-1-30 L                             |
| E Walsh Grade Rd 3.356           |            |   |   |
| E Walsh Grade Rd 0.000           |            |   |   |
| 0.076                            | West side  | 1 | Erect W1-1-30 R                             |
| 4.375                            | South side | 1 | Erect W1-2-30 R                             |
| @ Mahoney Lake Rd                | North side | 1 | Erect R1-1-24                               |

WORK SHEET

Sheet 2 of 2

FAS 1101 Co. Rd. 450

| REFERENCE                          | LOCATION   |   | PRIORITY & DESCRIPTION          |
|------------------------------------|------------|---|---------------------------------|
| C Mahoney Lake Rd 4.470            |            |   |                                 |
| C Mahoney Lake Rd 0.000            |            |   |                                 |
| 0.100                              | East side  | 1 | Erect W1-2-30 L                 |
| Dam Rd.<br>@ Wagner & Taylor       | East side  | 1 | Erect R1-1-24                   |
| Dam Rd.<br>C Wagner & Taylor 4.284 |            |   |                                 |
| Dam Rd.<br>C Wagner & Taylor 0.000 |            |   |                                 |
| 7.225                              | West side  | 1 | Erect W1-2-30 L                 |
| 7.285                              |            |   | begin blacktop                  |
| 7.443                              | North side | 1 | Erect W8-3-30                   |
| 7.473                              | North side | 1 | Erect W1-2-30 R                 |
| 7.557                              | South side | 1 | Erect W1-5-30 L & W12-1-21 (15) |
| 7.832                              | East side  | 1 | Erect W1-5-30 L & W12-1-21 (15) |
| 7.912                              | West side  | 1 | Erect W1-1-30 L                 |
| @ Co. Rd.                          | East side  | 1 | Replace R1-2-36 w/ R1-1-24      |
| C Co. Rd. 7.932                    |            |   |                                 |
| C Co. Rd. 0.000                    |            |   |                                 |
| C Co. Rd. 0.058                    |            |   |                                 |
| @ Co. Rd.                          | West side  | 1 | Replace R1-2-36 w/ R1-1-24      |
| C Co. Rd. 0.115                    |            |   |                                 |
| @ Co. Rd.                          | West side  | 1 | Replace R1-2-36 w/ R1-1-24      |
| 0.135                              | East side  | 1 | Erect W1-1-30R                  |
| @ Co. Rd.                          | East side  | 1 | Replace R1-2-36 w/ R1-1-24      |
| C Co. Rd. 0.191                    |            |   |                                 |
| @ Co. Rd.                          | West side  | 1 | Replace R1-2-36 w/ R1-1-24      |
| C M 28 0.256                       |            |   |                                 |

#County Schoolcraft

Sheet 1 of 1

Route FAS 1101 Co Rd 450

Direction of Route West to East

| LEGEND               | TOTAL | POOR<br>CONDITION | OBSOLETE | SIGN<br>NEEDED | TOTAL TO<br>REPLACE |
|----------------------|-------|-------------------|----------|----------------|---------------------|
| R1-1-24              | 14    |                   |          | 10             | 10                  |
|                      |       |                   |          |                |                     |
| W1-1-30 R            | 3     |                   |          | 3              | 3                   |
| W1-1-30 L            | 3     |                   |          | 3              | 3                   |
| W1-2-30 R            | 3     |                   |          | 3              | 3                   |
| W1-2-30 L            | 3     |                   |          | 3              | 3                   |
| W1-5-30 L            | 2     |                   |          | 2              | 2                   |
| W8-3-30              | 1     |                   |          | 1              | 1                   |
| W12-1-21 (15)        | 2     |                   |          | 2              | 2                   |
|                      |       |                   |          |                |                     |
| County Route Markers | 16    |                   |          |                |                     |
|                      |       |                   |          |                |                     |
| Total                | 47    |                   |          | 27             | 27                  |
|                      |       |                   |          |                |                     |
|                      |       |                   |          |                |                     |
|                      |       |                   |          |                |                     |
|                      |       |                   |          |                |                     |
|                      |       |                   |          |                |                     |
|                      |       |                   |          |                |                     |
|                      |       |                   |          |                |                     |
|                      |       |                   |          |                |                     |
|                      |       |                   |          |                |                     |
|                      |       |                   |          |                |                     |
|                      |       |                   |          |                |                     |
|                      |       |                   |          |                |                     |
|                      |       |                   |          |                |                     |

WORK SHEET

Sheet 1 of 1

FAS 1386 Co. Rd. 443

| REFERENCE                       | LOCATION           | PRIORITY & DESCRIPTION |   |
|---------------------------------|--------------------|------------------------|---|
| Line<br>W. Schoolcraft Co 0.000 |                    |                        | gravel                                      |
| 0.246                           | South side         | 1                      | Erect W1-2-30 R                             |
| 0.436                           | North side         | 1                      | Erect W1-2-30 L                             |
| C Co Rd 437 1.138               |                    |                        |   |
|                                 | FAS 1386 Co Rd 449 |                        |   |
| C Co Rd 437 0.000               |                    |                        | gravel                                      |
| 0.020                           | North side         | 1                      | Erect R3-29-18 & BRIDGE AHEAD               |
| 3.144                           | South side         | 1                      | Erect W1-2-30 L                             |
| 3.334                           | North side         | 1                      | Erect W1-2-30 R                             |
| 3.561                           | South side         | 1                      | Erect W1-1-30 R                             |
| @ FFH 2435 3.636                | North side         | 1                      | Replace R1-2-36 w/ R1-1-24                  |
| C FFH 2435                      |                    |                        |   |
| C FFH 2435 0.000                |                    |                        |   |
| 0.048                           | South side         | 1                      | Replace W5-3-30                             |
| 0.048                           | North side         | 1                      | Erect W1-1-30 L                             |
| 0.089                           | South side         | A                      | Raise R3-29-18 (15) to 6' bottom Height     |
| 0.116                           | South side         | 1                      | Erect W12-9 R & L (12x36)                   |
| 0.116                           | North side         | 1                      | Erect W12-9 R&L ( 12x36)                    |
| 0.136                           | North side         | A                      | Raise R3-29-18 (15 ton) to 6' bottom height |
| 0.196                           | North side         | 1                      | Replace W5-3-30                             |
| 0.205                           | South side         | 1                      | Erect W1-2-30 L                             |
| 0.417                           | North side         | 1                      | Erect W1-2-30 R                             |
| 2.462                           | South side         | 1                      | Erect W1-1-30 L                             |
| 2.671                           | North side         | 1                      | Erect W1-1-30 R                             |
| 4.635                           | North side         | 1                      | Erect R3-29-18 (15 ton) & BRIDGE AHEAD      |
| C M 94 4.655                    |                    |                        |   |









## WORK SHEET

Sheet 1 of 2FAS 1522 Co. Rd. 436

| REFERENCE           | LOCATION   |   | PRIORITY & DESCRIPTION                          |
|---------------------|------------|---|---|
| @ Co. Rd. 433 0.000 |            |   | gravel  |
| @ Co. Rd            | West side  | 1 | Replace R1-2-36 w/ R1-1-24 & Relocate 50° South |
| 0.020               | East side  | 1 | Erect R3-29-18 (10 ton) & BRIDGE AHEAD          |
| 1.187               | East side  | 1 | Remove W7-1-30                                  |
| 1.212               | East side  | 1 | Erect W5-1-30                                   |
| 1.250               | East side  | 1 | Erect W1-3-30 L & W12-1-21 (10)                 |
| @ Co. Rd. 1.362     |            |   |   |
| @ Co. Rd. 0.000     |            |   |   |
| 0.156               | North side | 1 | Erect W1-3-30 L & W12-1-21 (10)                 |
| 0.424               | East side  | 1 | Replace LOAD LIMIT BRIDGE w/ W5-3-30            |
| 0.424               | East side  | A | Relocate R3-29-18 (10 ton) 465° North           |
| 0.526               | East side  | 1 | Erect W12-9 R & L (12x36)                       |
| 0.526               | West side  | 1 | Erect W12-9 R & L (12x36)                       |
| 0.587               | West side  | A | Relocate R3-29-18 (10 ton) 200° South           |
| 0.587               | West side  | 1 | Replace LOAD LIMIT BRIDGE w/ W5-3-30            |
| 0.600               | West side  | 1 | Erect W5-1-30                                   |
| @ Co. Rd.           | West side  | 1 | Replace R1-2-36 w/ R1-1-24                      |
| @ Co. Rd. 0.711     |            |   |   |
| @ Co. Rd. 0.000     |            |   |   |
| @ Co. Rd.           | North side | 1 | Replace R1-2-36 w/ R1-1-24                      |
| @ Co. Rd. 8.922     |            |   |   |
| @ Co. Rd. 0.000     |            |   |   |
| 0.402               | South side | 1 | Replace LOAD LIMIT BRIDGE w/ W5-3-30            |
| 0.402               | South side | A | Relocate R3-29-18 (10 ton) 200° East            |
| 0.449               | South side | 1 | Erect W12-9 R & L (12x36)                       |
| 0.449               | North side | 1 | Erect W12-9 R & L (12x36)                       |





## WORK SHEET

Sheet 1 of 2FAS 1523 Co. Rd. 448

| REFERENCE | LOCATION | PRIORITY & DESCRIPTION                              |
|-----------|----------|---|
| C M 94    | 0.000    | gravel  |
|           | 0.010    | South side 1 Erect R3-29-18 (5 ton) & BRIDGE AHEAD  |
|           | 0.020    | South side 1 Erect W1-5-30 L                        |
|           | 0.455    | North side 1 Erect W1-5-30 L                        |
| C Co. Rd. | 1.036    |   |
| C Co. Rd. | 0.000    |   |
| @ Co. Rd. |          | East side 1 Erect R1-1-24                           |
|           | 0.208    | East side 1 Erect W1-2-30 R                         |
|           | 0.208    | West side 1 Erect W1-2-30 R                         |
|           | 0.872    | East side 1 Erect W1-1-30 R                         |
|           | 1.080    | North side 1 Erect W1-1-30 L & W12-1-21 (20)        |
|           | 2.311    | South side 1 Erect W1-2-30 L                        |
|           | 2.440    | South side 1 Remove LOAD LIMIT BRIDGE               |
|           | 2.490    | South side 1 Replace R3-29-18 (20 ton)              |
|           | 2.525    | South side 1 Erect W12-9 R & L (12x36)              |
|           | 2.525    | North side 1 Erect W12-9 R & L (12x36)              |
|           | 2.550    | North side 1 Replace R3-29-18 (20 ton)              |
|           | 2.596    | North side 1 Replace LOAD LIMIT BRIDGE w/ W1-2-30 R |
|           | 6.105    | East side 1 Remove LOAD LIMIT BRIDGE                |
|           | 6.151    | East side 1 Replace R3-29-18 (20 ton)               |
|           | 6.165    | East side 1 Erect W12-9 R & L (12x36)               |
|           | 6.165    | West side 1 Erect W12-9 R & L (12x36)               |
|           | 6.180    | West side 1 Replace R3-29-18 (20 ton)               |
|           | 6.223    | West side 1 Remove LOAD LIMIT BRIDGE                |
| C Co. Rd. | 8.797    |   |
| C Co. Rd. | 0.000    |   |

## WORK SHEET

Sheet 2 of 2FAS 1523 Co. Rd. 448

| REFERENCE     | LOCATION         | PRIORITY & DESCRIPTION |                                       |
|---------------|------------------|------------------------|---------------------------------------|
| @ Co. Rd.     | East side        | 1                      | Erect R1-1-24                         |
| 2.971         | East side        | 1                      | Remove 5 TON LIMIT                    |
| 2.971         | East side        | 1                      | Replace LOAD LIMIT BRIDGE w/ W5-3-30  |
| 3.011         | East side        | 1                      | Erect R3-29-18 (5 ton)                |
| 3.021         | East side        | 1                      | Erect W12-9 R & L (12x36)             |
| 3.021         | West side        | 1                      | Erect W12-9 R & L (12x36)             |
| 3.030         | West side        | 1                      | Erect R3-29-18 (5 ton)                |
| 3.045         | West side        | 1                      | Remove 5 TON LIMIT                    |
| 3.045         | West side        | 1                      | Replace LOAD LIMIT BRIDGE w/ W5-3-30  |
| 6.915         | East side        | 1                      | Replace LOAD LIMIT BRIDGE w/ W5-3-30  |
| 6.915         | East side        | A                      | Relocate R3-29-18 (5 ton) 125° North  |
| 6.958         | East side        | 1                      | Erect W12-9 R & L (12x36)             |
| 6.958         | West side        | 1                      | Erect W12-9 R & L (12x36)             |
| 7.005         | West side        | A                      | Relocate R3-29-18 (5 ton) 200° South  |
| 7.005         | West side        | 1                      | Replace LOAD LIMIT BRIDGE w/ W5-3-30  |
| 7.690         | East side        | 1                      | Erect W1-1-30 L                       |
| 7.879         | West side        | 1                      | Erect W1-1-30 R                       |
| 10.795        | East side        | 1                      | Erect W1-1-30 R                       |
| 10.909        | North side       | 1                      | Erect W1-1-30 L                       |
| 10.909        | South side       | 1                      | Erect W1-1-30 L                       |
| 11.035        | West side        | 1                      | Erect R3-29-18 (5 ton) & BRIDGE AHEAD |
| 11.040        | West side        | 1                      | Replace W10-1-36 w/ W1-1-30 R         |
| C M 28        | 11.061           |                        |                                       |
|               | FAS 1523 Co. Rd. | 454                    |                                       |
| C M 28        | 0.000            |                        | gravel                                |
| C Co. Rd. 450 | 9.500            |                        |                                       |

County Schoolcraft

Sheet 1 of 1

Route FAS 1523 Co. Rd. 448

Direction of Route South to North

| LEGEND               | TOTAL | POOR<br>CONDITION | OBSOLETE | SIGN<br>NEEDED | TOTAL TO<br>REPLACE |
|----------------------|-------|-------------------|----------|----------------|---------------------|
| R1-1-24              | 2     |                   |          | 2              | 2                   |
| R1-2-36              | 1     |                   |          |                |                     |
| R3-29-18 (5 tons)    | 6     |                   |          | 4              | 4                   |
| R3-29-18 (20 tons)   | 4     | 4                 |          |                | 4                   |
| BRIDGE AHEAD         | 2     |                   |          | 2              | 2                   |
| W1-1-30 R            | 4     |                   |          | 4              | 4                   |
| W1-1-30 L            | 4     |                   |          | 4              | 4                   |
| W1-2-30 R            | 3     |                   |          | 3              | 3                   |
| W1-2-30 L            | 3     |                   |          | 1              | 1                   |
| W1-5-30 L            | 2     |                   |          | 2              | 2                   |
| W5-3-30              | 4     |                   |          | 4              | 4                   |
| W10-1-36             | 1     |                   |          |                |                     |
| W10-2                | 2     |                   |          |                |                     |
| W12-1-21 (20)        | 1     |                   |          | 1              | 1                   |
| W12-9 R (12x36)      | 8     |                   |          | 8              | 8                   |
| W12-9 L (12x36)      | 8     |                   |          | 8              | 8                   |
| County Route Markers | 9     |                   |          |                |                     |
| Total                | 64    | 4                 |          | 43             | 47                  |
|                      |       |                   |          |                |                     |
|                      |       |                   |          |                |                     |
|                      |       |                   |          |                |                     |
|                      |       |                   |          |                |                     |









