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TRAFFIC CONTROL ORDER MANUAL

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I. FOREWORD

When Department of State Police officers consider the traffic control process, they should understand our primary contribution is enforcement, experience and perspective. This perspective is equally as important as the engineering perspective provided by the Michigan Department of Transportation or county road commission officials. We should serve as the crucial bridge between that which is feasible from an academic, engineering, or political point of view and the actual highway safety need.

State police officials with specific traffic control order related responsibilities must be intimately familiar with the statutory references contained in the Michigan Vehicle Code. It is obvious the legislature intended the Department of State Police to take a very responsible and active role in this area. Having reached that understanding, we should assume a proactive posture and confidently exercise the responsibility and authority appropriate to our role.

Officers are responsible for making joint investigations and recommendations concerning: (1) reasonable and safe speed limits; (2) parking restrictions; and (3) traffic preference at intersections of state trunkline highways. Investigations of other types of traffic control and regulatory problems may be made on an advisory and counseling basis.

Officers are guided in making recommendations by the following general guidelines. Adherence to these guidelines is necessary to achieve statewide uniformity. Some situations may arise which cannot be resolved locally. In these instances officers may obtain further guidance from the Special Operations Division.

II. PARTICIPATING PARTIES

Michigan State Police officers will coordinate with the Michigan Department of Transportation engineers in the investigations of state trunkline highways and with representatives of the county road commission in the investigations of county roads. These two parties constitute the survey team members. In school zones, the school superintendent is also a member of the survey team. In each investigation the local governmental representative and the law enforcement representatives will be notified of studies being conducted and their input sought during the process.

There are several situations listed in Section XII which allow the establishment of speed and parking controls and stop determinations without the necessity of a joint traffic engineering investigation. In these situations, the permissible actions granted by the Michigan Vehicle Code take precedence and there is no reason to duplicate or further legitimatize these actions. A traffic survey investigation will not be conducted in these situations except in an advisory capacity when adequate staffing levels are present.

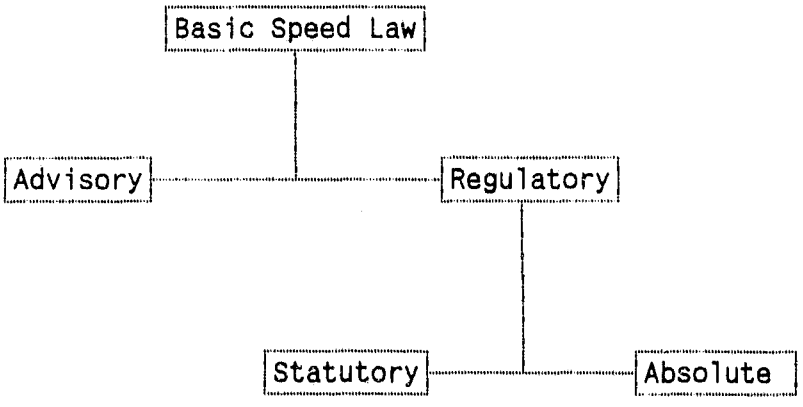
It is the responsibility of each district to address and resolve grievances associated with traffic survey investigations. This will be accomplished in accordance with the established and accepted traffic engineering/enforcement guidelines in this manual. Technical assistance is always available from the Special Operations Division.

Specific policies developed in concert with the Michigan Department Of Transportation will be followed when appropriate. (See Appendix 5.)

III. PRINCIPLES OF SPEED CONTROL

The basis for all speed controls is predicated upon the nationally accepted traffic engineering principle which states that drivers will drive at speeds they feel are reasonable and proper, regardless of the posted speed limit.

This "reasonable and proper" theme is part of the Basic Speed Law as set forth in the Michigan Vehicle Code. The Basic Speed Law governs the speed of all drivers regardless of any other speed controls. This is an important point because there are several types of speed controls. The following chart shows the types of speed controls in use in Michigan.



ADVISORY speed controls are recommended safe driving speeds. They are posted only with an appropriate warning sign and are not enforceable in Michigan courts except under the basic speed law provisions.

REGULATORY speed controls are enforceable and are categorized as either statutory or absolute.

> ***STATUTORY*** speed limits are set either as maximum/minimum speed limits or as prima facie restrictions. These limits are established by the legislature and apply throughout the state.
>
> ***ABSOLUTE*** speed limits are utilized in areas requiring speed limits between the statutory 65/55 mph maximum speed limits on state and county roadways and the 25 mph prima facie speed limit recommended for business and residential areas. These absolute speed limits are established by administrative action based upon a traffic engineering study.

Driver behavior is an extension of societal attitudes. Most drivers respond to traffic regulations in a safe and reasonable manner as demonstrated by their consistently favorable driving records. Traffic laws which reflect the behavior of the majority of motorists are usually respected and obeyed. In order for any traffic law to be enforceable, voluntary compliance must be practiced by the vast majority of drivers so violators can be easily identified. Realistic speed limits reflect this fact and recognize that unreasonable restrictions encourage widespread violations and disrespect for the entire traffic control system. Arbitrary laws, which unnecessarily restrict drivers, encourage violations and lack public support.

The posting of unrealistically low speed limits may create a false sense of security and actually cause more crashes by producing two distinct groups of drivers--those attempting to observe the speed limit and those driving at what they feel is reasonable and prudent. Investigations of crashes reveal that in the majority of cases, regardless of the speed of the vehicles involved, one or both drivers were, at the time of occurrence, performing some act clearly in violation of existing law or rule of good driving.

Without the immediate presence of an enforcement officer, the actions of motorists are dictated by the conditions encountered in a particular area irrespective of the presence of control signs or the numerical speed designations thereon. These conditions comprise the driving environment and include type and physical characteristics of the roadway, traffic volume, parked vehicles, pedestrians crossing or walking along the roadway, weather conditions, ice or snow on the pavement, and visibility during day and night. The driving environment is indirectly calculated by measuring the 85th percentile speed. The 85th percentile speed has been established as the national standard and this figure is the primary basis for what is finally determined to be the appropriate speed limit.

IV. TRAFFIC CONTROL ORDERS ESTABLISHING SPEED LIMITS

Authorized by Section 628, Act 300 of the Public Acts of 1949, as amended.

A speed limit may be recommended when investigation reveals: (1) high crash experience; (2) excessive motorist noncompliance with speed limits; (3) increasing traffic volume; (4) roadside and adjacent area developments causing an increase in the number of turning movements onto and off of the highway; (5) unusual or unexpected hazardous highway or traffic conditions.

AN ABSOLUTE SPEED LIMIT is one that is jointly established by the road agency and the Director of the Department of State Police. This is the maximum safe speed limit above which it is always illegal to drive regardless of conditions. This type of speed limit allows no question as to whether or not a driver was proceeding at a safe speed when he exceeded the speed limit. The advantages of absolute speed limits are the clarity of meaning and the comparative ease with which verdicts can be reached.

THE 85th PERCENTILE SPEED reflects the total driving environment as perceived by the vast majority of drivers. A speed limit recommendation should be made as near as possible to the 85th percentile speed, in five (5) mile-per-hour increments. A hidden hazard in the driving environment which is not readily apparent to the reasonably prudent driver would normally be reflected in an increase in crashes at this location; i.e., one car ran off the road. Advisory speed panels should be used in these instances. If a sufficient number of these hidden hazards are present, the speed limit recommendation may be set up to seven (7) miles-per-hour below the 85th percentile speed. This is an exception to our policy and requires compelling and written justification.

INCREMENTS - Speed limit recommendations between adjacent sections of highway outside incorporated cities/villages should generally be made in increments of ten (10) miles per hour. Inside incorporated cities/villages these speed limits should be in increments of five (5) miles per hour. The number of such changes should be held to a minimum when speed limits are being applied to several adjacent sections of highway.

LENGTH/TRANSITIONS - A speed limit will generally not be recommended when the length of road affected would be less than five-tenths (0.5) of a mile in length. A shorter distance may be considered or even necessary in urban settings where transitional speed limits are enacted as a buffer between high and low speed limits. These transitional zones must be supported by the 85th percentile speed and in no case should the length be shorter than three-tenths (0.3) of a mile (1584 feet). The shorter length may be used only when the recommended speed is 35 mph or lower. In all cases, transitional zones should be posted where the roadside environment changes without regard to city or village limits rather than opting for a shorter zone length. If concurrence cannot be obtained, a compromise of sound traffic safety principles is not possible.

In many rural areas where urban sprawl is not present, an abrupt change occurs in the driving environment when entering or leaving an urban area and a transitional speed will not be supported by the 85th percentile speed. Unless the driver perceives a reason to slow down, transitional zones are almost completely ineffective. In these cases, advance warning signs advising the driver of a drop in the speed limit is the preferred method.

GRAVEL ROADS are not generally conducive to absolute speed limits. The conditions on gravel roads change very rapidly due to climatic conditions such as rain. Therefore, a maximum safe speed limit is almost impossible to determine, even under normal conditions. The basic speed law states that speeds driven must be reasonable and proper with due regard to the traffic surface, width of the highway, and other conditions then existing. This section of the basic speed law should be adequate for enforcement in most situations. Specific hazards should be posted using warning or advisory signs which appropriately address the hazard. Many times requests for speed limits on gravel roads are generated because of the dust control problems. A reduction in speed is not an appropriate solution for this type of problem.

NATURAL BEAUTY ROADS is a program administered by the Department of Natural Resources and they are becoming increasingly popular statewide. Generally, in order to qualify as a natural beauty road, the roadway must be a county-local road (Sec. 247.654) of one-half (1/2) mile or more in length with outstanding, unique, and distinctive natural features in an undeveloped or naturally unspoiled road area.

The classification and length of the roadway is easily determined. However, the natural features which make the roadway outstanding, unique, and distinctive are more elusive. The presence of endangered or threatened species of flora and fauna throughout the length being considered is certainly a qualifying feature. Additionally, the presence of scenic or natural vista adds to the roadside beauty. These features must be natural and uncomparable to other like roadways in the area. When these conditions are documented, officers may recommend a reasonable speed limit in keeping with the intent of the program. The recommended speed limit on these roads, as proposed by the Department of Natural Resources, is 25 mph on gravel and 35 mph on hard surface. However, the survey team is not bound by these recommendations.

Occasionally, residents will request such a designation where it is not warranted. The presence of residences or other structures which detract from the naturally unspoiled character of the roadway may disqualify the area from consideration. In all cases, the intent of the original petitioners should be determined and the sincerity of the request evaluated. Appendix 6 contains additional information on natural beauty roads.

RAILROAD GRADE CROSSINGS present unique situations. Generally the advisory speed panel should be used when sight or geometric conditions require a speed lower than the existing limit. It is generally not our policy to establish an absolute speed zone in these areas due to the low compliance rates achieved unless supported by the 85th percentile speed. Exceptions require extensive justification and in no case will an exception be approved when active or passive controls are present excluding crossbucks.

PRIMA FACIE SPEED LIMITS are provided for in the Michigan Vehicle Code in certain areas; these include school zones, county parks, and business/residential areas. Generally these speed limits are arbitrary in nature and are not based on any type of traffic investigation. If properly conducted, a traffic investigation of these areas usually reveals a higher maximum limit, especially during nighttime and off-peak hours.

Prima facie speed zones posted in accordance with the Michigan Vehicle Code are statutory regulations and do not require a traffic control order. Therefore, prima facie speed limits shall not be included in any traffic control order recommendation. These areas may be excluded from the appropriate traffic control order or, preferably, the recommended absolute speed limit extended through these areas.

In those rare instances when the 85th percentile speed is less than 27.5 mph, an absolute 25 mph limit may be recommended, however, the speed study data must be closely scrutinized and support the recommendation.

SCHOOL SPEED LIMITS are prima facie in nature, however, these do require an investigation by our officers when state trunkline highways or county roads are involved. Our role in the investigation is to propose an enforceable, realistic speed limit. School speed limits will only be recommended on roadways adjoining school property. The guidelines in Appendix 4 will be followed in making these recommendations. Since school speed limits are prima facie, they will not be included in any traffic control orders.

BRIDGES may be posted with a "conclusive" speed limit pursuant to a structural engineering study by the road authority with jurisdiction over the bridge. The study does not require the involvement of our officers and the speed limit may be unilaterally posted by the road authority. A traffic control order will not be issued nor include these types of speed limits on bridges.

ROADWAY CONDITIONS on hard surface roadways are usually static and the 85th percentile speed reflects their condition. Over an extended period of time, however, hard surface will deteriorate and require routine maintenance. It is highly recommended that defective surfaces be corrected rather than tolerate the unsafe condition. However, if the condition of the roadway becomes too poor, vehicle speeds may be reduced to compensate for the rough surface. The basic speed law should be adequate in regulating vehicle speeds, however advisory speed panels may offer some additional information if not overused. If a reduction in the absolute speed limit is appropriate, a temporary order should be issued until the defect(s) can be corrected. The temporary order is preferred due to the difficulty we have experienced in rescinding an absolute speed limit once the condition is corrected. The temporary order should state an expiration date in lieu of such statements as ". . . until repaired. . ." and the like. This provides a time frame for improvement and a periodic review of the roadway.

FUTURE DEVELOPMENTS and the impact on vehicle speeds is almost impossible to predict. For this reason the survey team should not attempt to consider such things as future growth, anticipated enforcement, or concerns for something that hasn't happened. The recommendation can only be based on the conditions that exist at the time of the survey team's evaluation.

V. PRINCIPLES OF PARKING CONTROLS

The primary function of a roadway network is to provide for the safe and efficient movement of vehicles operating on the system. Generally stopping, standing, or parking is prohibited by the Michigan Vehicle Code on the main traveled portion of the roadway. However, the demands of the land use adjacent to the roadway may require that parking be allowed within the right-of-way. The loss of parking adjacent to the main traveled portion of the roadway, coupled with the lack of sufficient and convenient off-street parking, may cause significant economic loss. This situation dictates that a careful balance be maintained between local demands and traffic safety in the removal of parking within the right-of-way.

Overly restrictive prohibitions of parking that are not based on a genuine need cause widespread non-compliance and are unenforceable. Overly permissive parking situations lead to decreased capacities, crashes, and a dysfunctional transportation system. Parking restrictions must reflect a narrow band between these two extremes. In all cases, however, the rights and safety of the driver take precedence over the demands of adjacent land owners.

While curb parking is generally permitted on local streets, it should not be permitted on arterial or collector-distributor streets. The greatest adverse effect of parked vehicles results from their interference with the free flow of traffic and the resulting loss in capacity. Crash potential is increased and vision obstructions occur near intersections and private driveways. Vision obstructions caused by parked vehicles must be removed for the safety of traffic and pedestrians alike.

No other single operational control can have as dramatic an effect on traffic flow as the proper regulation of parking. Close coordination and understanding among our officers, state and county engineers, and other survey participants on these points will enhance the entire transportation network.

VI. TRAFFIC CONTROL ORDERS ESTABLISHING PARKING RESTRICTIONS

Authorized by Section 675, Act 300, of the Public Acts of 1949, as amended.

The basis for taking action in parking studies must be as stated in Section 675 (4), ". . . is dangerous to those using the highway or where the stopping, standing, or parking of vehicles would unduly interfere with the free movement of traffic on the highway or street."

Recommendations for parking restrictions may be made on highways when: (1) there have been crashes involving cars parked or entering or leaving parked positions; (2) cars are continually stopped on the highway because of roadside interest; (3) parked cars will not permit the continuous free movement of traffic on the main traveled part of the highway; (4) parked cars are creating vision obstructions or other hazardous situations for traffic utilizing the highway; or (5) parked cars obstruct, hinder, or interfere with the general maintenance of the highway.

SIGNING - In the majority of locations surveyed a prohibition by stating "no parking at any time" will be used. In those places where the conditions are such that even momentary stopping creates a hazard, the more restrictive "no stopping, standing, or parking" designation will be used. "No stopping, standing or parking" should be reserved for special or unusual conditions, such as in the vicinity of schools, fast food restaurants, etc.

PARKING ON THE MAIN TRAVELED PORTION of the roadway is prohibited by the Michigan Vehicle Code. Parking restrictions are only necessary where the survey team recommends that parking should be prohibited in areas adjoining the main traveled portion of the right-of-way. The width of the roadway and pavement markings will usually determine the main traveled portion. In the case where the main traveled portion is not readily apparent, such as gravel roads, a parking traffic control order may be necessary. Curb and gutter, grass, and similar treatments along the highway and shoulder are issues to be considered in a parking investigation but their presence alone does not dictate that a traffic control order be recommended. Shoulders are only maintained for the temporary accommodation of disabled or stopped vehicles.

LOCAL STREETS - On-street parking is generally permitted on most local or residential streets. Specific parking lanes are not usually designated but the primary purpose of such local streets is to ensure one freely moving lane. Driver inconvenience occurs infrequently by the lack of two (2) moving lanes. Parking restrictions may be recommended for one side of such streets that are less than 26 feet in width. Parking restrictions may be recommended for both sides when the street is less than 20 feet in width. This does not apply to state trunkline highways or primary, arterial, or collector-distributor county roads.

TIMED PARKING (i.e., 30 minute parking, No Parking 8 AM-4 PM) will not generally be recommended. It is difficult to show that timed parking will remove an existing hazard. If a hazard exists so as to warrant a parking prohibition, timed parking will do nothing to remove the hazard.

VISION OBSTRUCTIONS caused by parked vehicles occurs at intersections and busy commercial drives. The operator of a vehicle should have an unobstructed view of a certain length of the intersecting highway to avoid collisions. Numerous private driveways entering onto high volume urban highways may also require safe sight distance. This length is directly related to the vehicle approach speeds and the resultant distances traversed during perception, reaction, and braking time. Due to the unique characteristics of each roadway and the sophisticated calculations required, the engineer participating in the survey shall review the safe sight triangle for the roadway condition. This will indicate the amount of parking to be restricted. Without this calculation, the parking restriction distance is purely a guess and a recommendation is not possible. If the required sight distance cannot be jointly recommended due to pressure exerted on a survey team member by local businesses, politicians, etc., the report should indicate the positions and reasons of each party.

Sight triangles are only necessary where vision obstructions are present. Parking restrictions for other reasons do not require sight triangulation. Appendix 7 lists minimum and desired sight distances for right angle, at grade, and signed intersections. These distances are a guide for comparison purposes only. They are <u>not</u> to be used in any recommendations.

CLEAR VISION AREAS are those areas purchased, acquired, adjacent to, or on a highway right-of-way which are used as a means to provide for the safe sight distance of traffic on one or more highways. The posting of clear vision areas prohibits the parking of vehicles in these areas and an investigation or traffic control order is not required.

ANGLE PARKING is especially hazardous due to varying lengths of vehicles and the sight distance problems associated with this type of parking, especially during the backing-out maneuver. For this reason angle parking on state trunkline highways and county roads is specifically prohibited by the Michigan Vehicle Code and should be discouraged on city streets as well.

CONSTRUCTION AGREEMENTS made by county road commissions and the Michigan Department Of Transportation prohibit parking, usually within the right-of-way, in areas of construction. These agreements are usually not based on traffic or engineering surveys and are entered into primarily to avoid future appeals to administrative hearings. These agreements do not justify the issuance of a parking traffic control order and should in no way influence the outcome of a parking survey. After the roadway is constructed, a parking investigation may be initiated.

WINTER PARKING - In areas where the snowfall is significant, parked vehicles are potentially hazardous obstacles which hinder snow removal and endanger the general public as well as the individuals engaged in maintaining this vital transportation system. The greatest portion of this snowfall occurs during the months of December, January, and February, particularly along the western and northern counties of Michigan.

In order to facilitate snow removal, general highway maintenance, and to eliminate undue interference with the free movement of traffic, it may be necessary to prohibit parking on all roadways and shoulders in specific counties during these months. Those counties that receive four-tenths (.4) percent or more of the available snow removal payments pursuant to Section 247.662a may request a blanket parking prohibition. The request must be accompanied by justification based on crashes, snowfall, or other pertinent information. This recommendation will be the joint responsibility of the Michigan Department of Transportation, county road commissions, and the Michigan Department of State Police. Appendix 8 should be consulted for more information on winter parking prohibition.

VII. PRINCIPLES OF TRAFFIC PREFERENCE INTRODUCTION

Traffic preference refers to the assignment of vehicular right-of-way to one or more directions of traffic at an intersection. The ultimate goal of any intersection is to safely and efficiently accommodate the required traffic volume on each roadway segment.

Where traffic volume is relatively low and sight distance or approach speeds are relatively high, intersection traffic controls are not normally necessary. However, when either of these conditions is not present, traffic control devices may be necessary to regulate, warn, or guide intersection traffic.

The types of traffic control devices commonly used to assign the right-of-way at intersections are merge, yield and stop signs, and the traffic signal. The use of these controls will interrupt the traffic flow and increase the delays in traffic thus affecting the capacity and level of service for that roadway. For these reasons, traffic control devices should only be used where the conditions warrant their installation. Alternatives such as improving the sight distance by removing vision obstructions (parked cars, tree limbs, bushes, etc.), changing the roadway alignment, or improving the grade separation should be considered before restricting traffic flow.

Generally the roadway with the greater traffic volume will be awarded the traffic preference at an intersection. Three and four-way controls may be considered when traffic volumes on each intersecting roadway are approximately equal in number. Since traffic demands fluctuate throughout the day, any intersection traffic control investigation should consider the impact of such a control on a 24-hour basis.

Right angle crashes are an important consideration in establishing right-of-way. A certain number of these types of crashes will occur at an intersection even with a traffic control device present. However, when right angle crashes become disproportionately high in relation to total crashes, causation factors need to be determined. If warranted, traffic controls at these intersections may reduce the number and severity of right angle crashes, however, the number of rear-end collisions and other types of crashes tend to increase.

The avoidance of crashes and the efficiency of traffic operations still depend on the judgment, capabilities, and the response of the individual driver.

VIII. TRAFFIC CONTROL ORDERS ESTABLISHING TRAFFIC PREFERENCE

Authorized by Section 651, Act 300, of the Public Acts of 1949, as amended.

Traffic preference generally will be recommended for the highway with greater traffic volumes; however, consideration will also be given to: (1) intersection crash experience; (2) restricted visibility; and (3) types and capacities of the highways in question. Exceptions to the general rule may be made when the traffic volumes are small.

The Michigan Vehicle Code requires county roads and city streets to stop, yield, or merge at all intersections with state highways except where traffic signals are used. Thus, there is no need to conduct investigations in these situations. However, where two or more state highways intersect at an unsignaled intersection, a joint determination is required to determine the assignment of right-of-way. Trunkline highway median crossover locations can be either one or two separate intersections and require signing. However, these median crossovers are within the same state highway and do not require an investigation or a traffic control order.

Occasionally, more efficient traffic flow may result by requiring traffic on one or more of the state highway legs to stop or yield to non-trunkline traffic. A joint determination and traffic control order is required in these instances. Desirably, a representative of the agency having jurisdiction over the affected non-trunkline roadway would also participate, although this is not legally required. Any traffic preference investigations exclusively involving non-trunkline highways may be done in an advisory capacity. However, our experience and role as an enforcement representative in these types of investigations is not a substitute for technically sound engineering methods.

Since traffic preference at intersections of state highways is based primarily on traffic volume and to a lesser degree on capacity, sight distance, and crash data, the participating Michigan Department Of Transportation representative plays a major role in determining if the warrants for a particular control have been satisfied. Appendix 9 lists some general warrants for the various controls. Traffic volume or an estimate of volume must be included in all investigations.

While not specifically required, a traffic control order will be recommended for all stop and yield determinations conducted pursuant to the above guidelines. For merge locations, a traffic control order is not necessary except where unusual conditions exist; i.e., complex geometric design.

IX. TEMPORARY TRAFFIC CONTROL ORDERS

The purpose of temporary traffic control orders is to implement a traffic restriction on a highway to temporarily address a particular situation which is unexpected, hazardous, or of such short duration that immediate action is necessary. They cannot be issued to circumvent or contravene the joint investigation procedure established by state law. Temporary traffic control orders should be implemented sparingly and only when emergencies arise such that the normal traffic control order process would be untimely. These orders are intended for short durations of less than 90 days and should specify an expiration date.

Authorized by Section 750.497 of the Compiled Laws.

The law provides that: Whenever, in the opinion of the Director of the Department of Transportation, a condition arises, or is about to arise, upon any of the highways of the state occasioned by a condition of the highway or by any approaching public gathering likely to bring about unusual congestion or danger, the Director of the Department of Transportation is empowered to issue a temporary control order which can detour, close, limit, or provide direction on any highway for such length of time as he may deem necessary. This section of law is to be implemented sparingly and only in conjunction with local Department of Transportation traffic and safety engineers. Requests for issuance of these orders will be initiated through the district Department of Transportation engineers.

It is important to note that this law empowers the Director of the Michigan Department of Transportation to issue the control order for any highway in the state. This has been interpreted to mean county and city highways as well as State Trunklines. Therefore, if such highways are to be affected by the temporary controls, the officials having jurisdiction over these highways must be contacted and coordination established.

Authorized by Section 257.606, Act 300, of the Public Acts of 1949, as amended, and Article 7, Michigan Constitution 1963, as amended.

This same authority granted to the Director of the Department of Transportation in regards to temporary traffic control orders also applies to counties, townships, cities, and villages in regards to highways, streets, and alleys under their jurisdiction. These sections specify that local units of government may exercise their jurisdiction in the public interest without the benefit of a joint investigation. In granting or denying a request for a temporary traffic control order, the actions of the road agency with jurisdiction over the highway must be reasonable and consistent. Additionally, the law enforcement agencies responsible for enforcing these temporary restrictions should be notified or involved in the process.

X. ADMINISTRATION OF TRAFFIC CONTROL ORDERS

Traffic control order investigations will be made by Michigan State Police, Traffic Services Division personnel in conjunction with other appropriate representatives. Each field unit will maintain records and reports of all investigations conducted. A standardized filing system for all traffic survey investigations will be maintained by each unit as outlined in Appendix 14. Each original survey report, any investigation of an existing traffic control order (including ten-year reviews), and any denial of a traffic control order request shall be reported on a Traffic Survey Report (TS-4). Instructions for completion of the TS-4 are contained in Appendix 11.

Generally, incident reports should be submitted within 30 days of the original date. The original TS-4 will be maintained in the master file at the officers work location. A copy will be maintained in the roadway name file at each work location. A second copy should be provided to each survey team participant. When the investigation recommends that a traffic control order be issued, a third copy of the incident report will be sent to the Special Operations Division.

A traffic control order for county roads will be prepared on the proper form and the required signatures obtained. An original order will be returned to each district office for filing. Original orders will also be forwarded to the clerk of the appropriate county by the road commission.

A traffic control order for state trunkline highways will be prepared by the Michigan Department of Transportation, Traffic Regulation Coordinator in Lansing on the proper form. These documents are signed by the Michigan Department Of Transportation and forwarded to the Special Operations Division for the appropriate signature. Once signed, a copy is made for the district files and the original is returned to the Michigan Department Of Transportation for further distribution.

Copies of traffic control orders certified by the county clerk are prima facie evidence of the issuance and authorization of the control.

Any traffic control order issued after January 1, 1991, which is not signed by the road agency within one year of the departments approval will be invalidated. The process to issue a traffic control order may then be initiated again with a new study of the area. This restudy process may be prioritized by the district commander based on need, staffing levels, or other reasonable criteria.

XI. REVIEW OF TRAFFIC CONTROL ORDERS

Each unit shall have a system which will cause a review of each traffic control order at a minimum of once every ten years. This review will consist of a separate written report and an on-site investigation for each traffic control order. This investigation must be adequate to determine if the initial justification for the traffic control order still exists. All current appropriate information will be provided in the TS-4. If no significant changes have occurred in the area, speed studies for the purposes of speed limit reviews are not required. If any changes are recommended, other than name changes, a speed survey must be conducted. Name changes will only be made if the traffic control order has been reviewed pursuant to the above procedure.

Occasionally, requests for reviews more often than the ten-year cycle are received from various sources. If the area is new or significant changes have occurred in the requested area, an investigation will be initiated. In denying such a request, officers should be guided by the sincerity of the request, the completeness of the previous investigation, and the sensitivity of the issues involved.

XII. MISCELLANEOUS INFORMATION

Officers should be aware that investigations by representatives of the Michigan State Police are not required in the following situations. Some of these situations circumvent the intent of the legislature to involve law enforcement officers in the establishment of control zones but are provided for in the Michigan Vehicle Code:

1) Construction zones. (627.9)

2) Local or city streets that are not county roads or state trunkline highways per Act No. 51. (629.1.c)

3) Prima facie speed limits in business and residential zones, near county parks, and on bridges. (627.2.a.b, 629.4, and 631.5)

4) Prima facie speed limits on state trunkline highways inside of cities and villages. (629.2)

5) Parking controls on state trunkline highways inside of Home Rule cities. (675.4 and 117.1)

6) Temporary traffic control orders on all roads. (750.497, 257.606 of Article 7)

7) Public parks. (629.3)

APPENDIX 1

JURISDICTIONAL ASSIGNMENTS

Jurisdictional responsibilities for the traffic control order investigations will be divided among the districts as follows:

COUNTIES

First District-	1. Branch	2. Calhoun	3. Clinton
	4. Eaton	5. Gratiot	6. Ingham
	7. Ionia	8. Hillsdale	9. Jackson
	10. Lenawee	11. Livingston	12. Shiawassee
Second District-	1. Macomb	2. Monroe	3. Oakland
	4. St.Clair	5. Washtenaw	6. Wayne
Third District-	1. Alcona	2. Arenac	3. Bay
	4. Genesee	5. Gladwin	6. Huron
	7. Iosco	8. Lapeer	9. Midland
	10. Ogemaw	11. Oscoda	12. Saginaw
	13. Sanilac	14. Tuscola	
Fifth District-	1. Allegan	2. Barry	3. Berrien
	4. Cass	5. Kalamazoo	6. St.Joseph
	7. Van Buren		
Sixth District-	1. Isabella	2. Kent	3. Lake
	4. Mecosta	5. Montcalm	6. Muskegon
	7. Newaygo	8. Oceana	9. Osceola
	10. Ottawa		
Seventh District-	1. Alpena	2. Antrim	3. Benzie
	4. Charlevoix	5. Cheboygan	6. Clare
	7. Crawford	8. Emmet	9. Grand Traverse
	10. Kalkaska	11. Leelanau	12. Manistee
	13. Mason	14. Missaukee	15. Montmorency
	16. Otsego	17. Presque Isle	18. Roscommon
	19. Wexford		
Eighth District-	1. Alger	2. Baraga	3. Chippewa
	4. Delta	5. Dickinson	6. Gogebic
	7. Houghton	8. Iron	9. Keewenaw
	10. Luce	11. Mackinac	12. Marquette
	13. Menominee	14. Ontonagon	15. Schoolcraft

APPENDIX 2

APPLICABLE LAWS

A. DEFINITIONS	CL 1949 as amended
Business District	257.5
Commissioner	257.8
Freeway	257.18a
Highway/Street	257.20
Intersection	257.22
Laned Roadway	257.24
Limited Access Highway	257.26
Local Authorities	257.27
Parking	257.38
Private Road/Driveway	257.44
Residence District	257.51
Right-of-Way	257.53
Roadway	257.55
Safety Zone	257.56
School Crossing	257.57a
Shoulder/Ditch Slope	257.59a
Sidewalk	257.60
Through Highway	257.68
Traffic	257.69
Traffic Control Devices	257.70
Traffic Control Order	257.71

B. PRIMARY LAWS AFFECTING SPEED

Basic Speed Law - Business/Residential/Mobile Home Parks, etc.	257.627
School Speed Limits - School Zones	257.627a
Speed Limits-Roadways, Schools, Records, Removal	257.628
Prima Facie Speed Limits - Local Authorities, Public Parks	257.629
Governors Authority - Energy Emergency	257.629b
Speed Limits on Bridges - Conclusive Evidence	257.631
Legal Rate of Speed	750.326

C. PRIMARY LAWS AFFECTING PARKING

Parking on Pavement	257.672/257.676b
Obstructing Traffic - Removal of Parked Vehicles	257.252d/257.673
Prohibited Parking - Intersection, Driveways, Bridges, etc.	257.674
Clear Vision Area, Parking Prohibited	257.674a
Parking Regulations - Angle Parking, Handicapped Persons	257.675
Parked Vehicles - Lighting	257.694
Traffic Control - Parking Areas	257.941/257.943

D. PRIMARY LAWS AFFECTING STOP DETERMINATIONS

Stop, Yield, Merge Determinations-State Trunkline Highways,	257.651
Stop, Yield, Merge Determinations - Through Highways	257.671

E. MISCELLANEOUS

Bicycle Paths	750.419
Home Rule Cities	117.1 et seq.
Jumping from Bridges	750.493e
Negligence - Rear End Collisions	257.402
Obstructing Farm/Commercial Vehicles	750.421b
Powers of Local Authorities	257.606
Powers of Real Property Owners	257.607
Restriction of local authorities - Co. Road Comm.	257.609
Request for Traffic Control Devices - State Highways by Twp. Boards, Co. Road Comm., etc.	750.498
Snow Removal Payments	247.662a
Temporary Traffic Control Orders-Engineers	750.497
Township Board; Ordinance; Health, Safety; Fire Protection; Bicycles; Traffic; Parking; Sidewalks; Police Protection	41.181
Trains Obstructing Traffic	466.23
Traffic Control Devices - Conformance With	257.610
Traffic Control Devices - Obedience To	257.611
Traffic Control Devices - Advertising, Resembling, Removal Of	257.615
Traffic Control Devices - Interference With	257.616
Traffic Control - School Properties	257.961
Traffic Control - College Campuses	390.891
Turfing	750.382
Uniform System of Traffic Control Devices Manual	157.608
Uniform Traffic Code	257.951/257.954

APPENDIX 3

SPEED STUDY CRITERIA

A. REFERENCES FOR 85TH PERCENTILE PHILOSOPHY

Transportation and Traffic Engineering Handbook, (2nd Edition), Institute of Traffic Engineers, 1982.

Spot speed studies provide the most reliable data for zoning. At selected locations, speed of vehicles are determined under favorable driving conditions. When the speed distribution is thus determined, the value to use for zoning is usually taken at the 85th percentile speed.

Volume has a pronounced effect on speed, particularly on two-lane rural highways where volume, as low as 200 vehicles per hour, reduces the average spot speed.

Traffic Engineering Theory and Practice, Louis Pignatro, Prentice-Hall, 1973.

85th Percentile Speed - That speed at or below which 85 percent of the traffic units travel and above which 15 percent travel.

Pace - A ten mile-per-hour increment of speed that includes the greatest number of observations.

Time & Length of Study - It is recommended that the study be conducted during off-peak hours, and that observations be made during two one-hour periods, or not less than 50 motor vehicles for each period.

1. One hour between 9 AM - 12 noon.

2. One hour between 1 PM - 4 PM

If nighttime studies are necessary, they should be done between the hours of 8 PM and 10 PM For all studies, statistically adequate samples must be obtained and the effect of volume on speed must be considered.

B. COMMON TYPES OF SPEED STUDY ERRORS

Traffic Engineering Theory and Practice, Louis Pignatro, Prentice-Hall, 1973.

Selection of the 1st vehicle in a platoon. This is generally the easiest vehicle to observe, but it is often the slowest vehicle in the platoon. Vehicles of differing platoon position must be selected to avoid biasing the sample toward lower speeds.

Selection of too large a percentage of trucks. Trucks are generally slower than other vehicle types and should be measured in the same proportion as their percentage of the traffic stream.

Tendency to try and "catch" extremely fast or slow speed vehicles. This must be avoided. It is not necessary to determine the "fastest" or "slowest" vehicle in a spot speed study.

C. ENGINEERING ASPECTS OF SPEED CONTROL

Traffic Engineering Theory and Practice, Louis Pignatro, Prentice-Hall, 1973.

Highway Design - Design considerations, including sight distance, curvature, grades, cross-section dimensions, and other features.

Prevailing Vehicle Speeds - Prevailing vehicle speed is a significantly important factor in speed zoning. The criterion most generally used and preferred in determining the specific maximum speed limit from speed studies is the 85th percentile speed. Another criterion that is used in selecting a proper speed limit is the ten mile-per-hour pace, as the numerical limit should not be set at a value below the lower limit of the pace.

Physical Features - The physical features of the section of the roadway should be considered in determining whether or not a speed zone is desirable. These features include spacing between intersections, roadside businesses per mile, roadway surface and characteristics, including roughness of pavement, presence of transverse dips and bumps, shoulders, width of median, if present, horizontal and vertical alignments, etc.

Crash Experience - Crash experience should be reviewed with respect to frequency, severity, type, and cause. A comparison of crash rates for similar highways may be beneficial. Lowering of the speed limit will not necessarily reduce vehicle speeds or result in fewer crashes. Collision frequencies and crash rates have often been reduced by raising speed limits to realistic levels. Particular attention should be given to those crashes in which unreasonable speeds appear to have been a causative or severity factor. The severity of crashes increases as speed increases, especially at speeds exceeding 60 mph.

Traffic Characteristics and Control - These factors include traffic volumes during peak and off-peak periods, parking, loading, and other vehicle operations adjacent to travel lanes, turning movements, traffic signals, and other traffic control devices and vehicle-pedestrian conflicts. Speed differentials are not as objectionable on low volume highways, but they may become more troublesome as volume increases.

D. SPEED STUDIES

In the interest of uniformly applying spot speed study principles, all speed studies conducted should be governed by the following considerations.

1. Radar studies must involve utilization of an unmarked car parked as inconspicuously as possible.

2. Studies will be conducted during off-peak hours on off-peak days and not on holidays.

3. Clear and sunny weather is ideal. Overcast or even very light rain is acceptable.

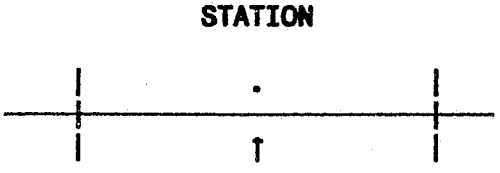
4. Dry road surface is preferred. Wet surface is acceptable. Standing water on the surface is not acceptable.

5. Light to medium volumes are ideal. Only clock and count the free-flowing vehicles. Clock and count through traffic only.

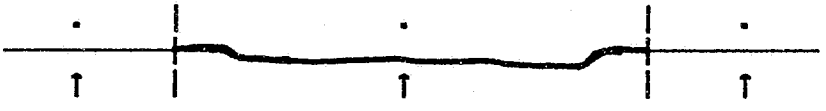
6. The number of units necessary for an acceptable count will vary according to the highway involved. Generally, however, a speed investigation requires a 100-unit sample or two one-hour studies.

7. The location and number of study stations which constitute an acceptable study will vary according to these scenarios.

   a. One station in the center of the area under review if the road and roadside development is constant. See Example #1.



   b. If variations in environment exist, additional stations near the center of each change are required. See Example #2.



8. Study stations must not be placed near horizontal curves, railroad crossings, stop or yield signs. These locations tend to lower speed study results due to deceleration, braking, and acceleration. The minimum distance from any influencing factors is 2/10 of a mile (1,056 feet) however, the desired distance of 1/4 mile (1,320 feet) will be used whenever possible.

E. Other devices such as a Sarasota, Trafficomp III, etc., are acceptable alternatives to radar and in some respects may be superior to a radar study. The data obtained from these types of instruments must be closely scrutinized, especially if the instrument is unattended.

Date _____ Location _____ Speed Detection Device:

Time _____ _____ Type _____

Weather _____ N S E W (Circle One) Model _____

Road Surface Condition _____ of _____

Direction of Travel _____ Unit Number _____

SPEED	NUMBER OBSERVATIONS			TOTAL
	PASSENGER CARS	TRUCKS	BUSES	
40				
41				
42				
43				
44				
45				
46				
47				
48				
49				
50				
51				
52				
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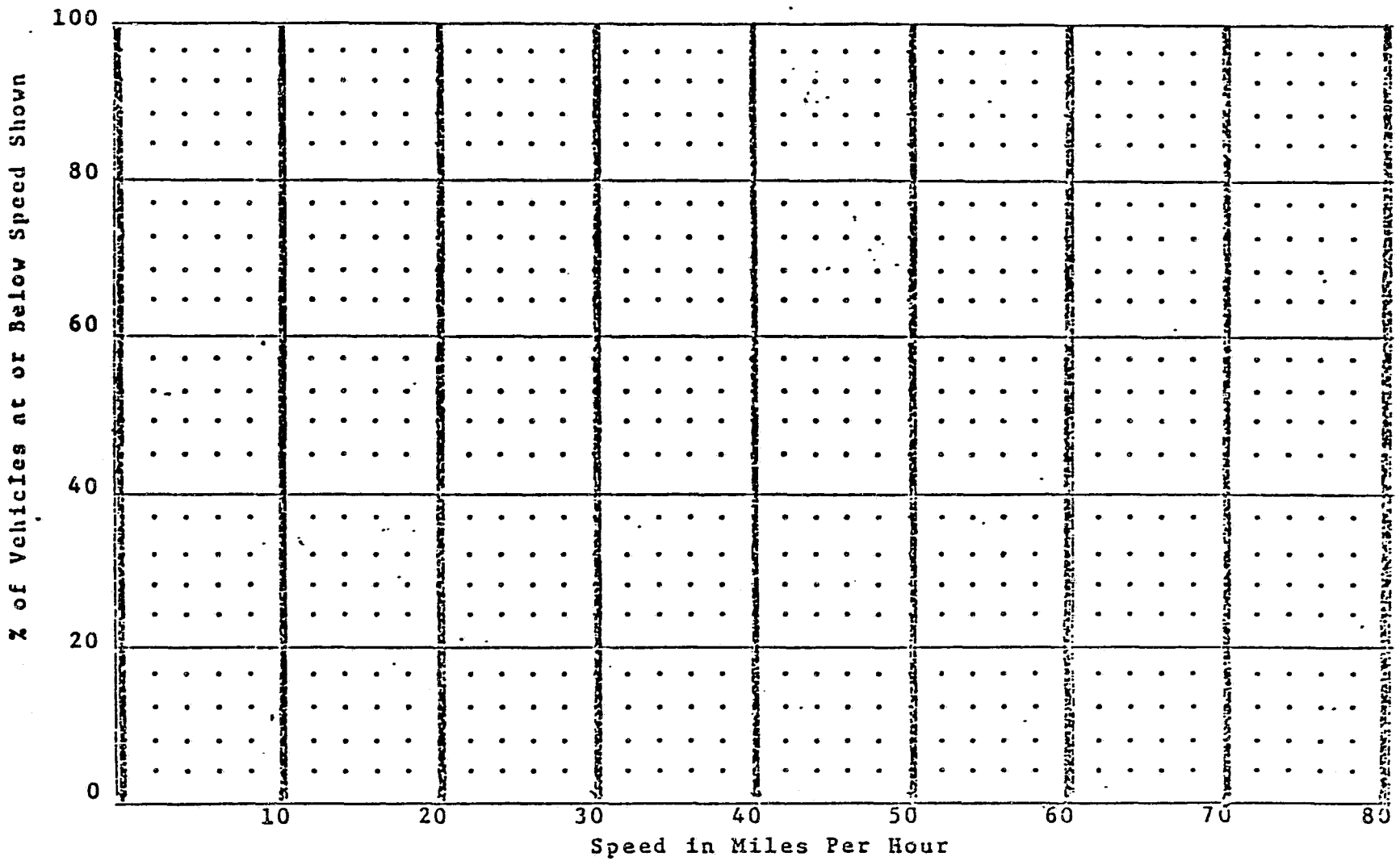
74				
75				
76				
77				
78				
79				
80				
81				
82				
83				
84				
85				
			Total Observations	

SPOT SPEED STUDY

Location: _____ On _____ Date _____
(Direction of Flow) N S E W

Time _____ To _____

Of _____ Weather _____



Remarks _____

_____

NUMBER OBSERVATIONS

Motor Vehicle Spot Speed

Summary Sheet

Class Limits	Midpoint (x)	No. of Cars (f)	(fx)	Cumulative Number	Cumulative Per Cent
21 - 25					
26 - 30					
31 - 35					
36 - 40					
41 - 45					
46 - 50					
51 - 55					
56 - 60					
61 - 65					

1. Mean (or average) Speed
2. Pace
3. P 15
4. P 85

APPENDIX 4

SCHOOL ZONE SPEED LIMITS

School zone speed limits are addressed in three sections of the Michigan Vehicle Code. Section 627a addresses prima facie school zones. Section 628 gives school superintendents a voice in the speed limit setting process. Section 629(1)(d) & (2) merely allow the local authorities to establish prima facie speed limits after conferring with Michigan Department Of Transportation and Michigan State Police under Section 627.

A. SITUATION ONE

Prima Facie Speed Limit Section 627(2)

In order to qualify for an automatic 25 mph zone, several criteria must be met. All of the following are requirements for an automatic 25 mph zone.

1. The school must house one class of students, eighth grade or below.
2. The street in question must be adjoining to the school property.
3. The school does not transport all of the student population to and from school by motor vehicles.
4. The street in question is not a limited access highway and the portion being studied does not have an overhead crosswalk available.
5. Sidewalks are not available to the students adjacent to the street being studied.
6. The zone must be requested by the superintendent and posted.
7. The entire population of the school are not live-ins.

When all of the above criteria are met, the school zone shall be a 25 mph prima facie zone. The hours of such a zone are from 30 minutes before the start of classes until the start of class, from dismissal until 30 minutes after dismissal and during any lunch period when students are permitted to leave the school property.

An incident report should be completed for this type of investigation if we participate in the process. A traffic control order will not be required for this prima facie speed limit and the school zone will not be incorporated into any existing traffic control order covering the area.

B. SITUATION TWO

Prima Facie Speed Limit Section 627(5)

A school speed zone which is a maximum of fifteen (15) mph below the posted absolute speed limit, but not less than 25 mph, is also available under certain conditions.

These conditions are:

1. The school must house one class of students, eighth grade or below.

2. The street in question must be adjoining the school property.

3. The school does not transport all of the student population to and from school by motor vehicles.

4. The street in question is not a limited access highway and the portion being studied does not have an overhead crosswalk available which is being used as the primary access for students to the school.

5. Sidewalks are available to the students on at least one side of the street being studied.

6. The zone must be requested by the superintendent and posted.

When all of the above criteria are met, a prima facie school speed zone shall be established if requested by the school superintendent. The zone shall be no less than 15 mph under the absolute speed limit in the area, but never less than 25 mph.

An incident report should be completed for this type of investigation if we participate in the process. A traffic control order will not be required for this prima facie speed limit and the school zone will not be incorporated into any existing traffic control order covering the area.

A school located within one-thousand (1,000) feet of a highway which does not meet the criteria for either of the above speed zones does not qualify for a school speed limit. The school may be a factor in the recommendation and the superintendent may be included in the survey as a consultant on the sole discretion of the survey team.

One issue remains to be considered in the above situations. This is the matter of the zone length. This matter is to be resolved by the survey party consisting of the school superintendent, highway representative, and state police representative. The maximum distance beyond the school frontage adjoining the roadway is 1,000 feet. The minimum is not defined in the statute. The Department of State Police policy is that the survey party will determine the appropriate length by a majority consensus of the survey party.

APPENDIX 5

MSP & MDOT PROCEDURES FOR ESTABLISHING SPEED LIMITS ON STATE HIGHWAYS

1. Speed Survey Origination

Speed survey request is initiated by either Michigan State Police (MSP) or Michigan Department of Transportation (MDOT) or responsible local agency due to traffic operational needs.

2. Pre-Study Contact with Local Agency

Prior to initiating detailed studies and surveys, the MSP/MDOT survey team will contact local agency representatives to explain the need for a traffic study or survey and solicit local comments. They should be advised of the highways to be studied in the next several months and they should be requested to present evidence (number of citations and/or hours of surveillance, etc.) of local enforcement efforts which may affect speeds in the survey area.

Notification will include an appropriate city, incorporated village or township administrator, school superintendent when appropriate, and the area's law enforcement organization chief.

The MSP representative and the MDOT counterpart will also provide an opportunity for a pre-study meeting with local governmental representatives. The purpose of the pre-study meeting, when requested, will be to inform those having an interest in the speed limit issue of why a study is necessary, what type of data will be collected, and how the speed limit evaluation will be conducted. The meeting will also provide an opportunity for those interested to comment on the proposed spot speed study locations, in addition to commenting on crash experience and other factors that may have a significant impact and may warrant further consideration during the evaluation process. Our plans include a video presentation, if needed, to assist during pre-study meetings.

3. Survey

The MSP/MDOT survey team initiates the request for appropriate surveys. MDOT staff will collect data, coordinate and conduct field surveys, and document survey findings.

4. Field Evaluation

The MSP/MDOT survey team is to conduct an on-site review of roadway, travel conditions, and other safety considerations of adjacent roadway environs along with related crash history.

5. Post-Study Contact with Local Agency

When the results of the spot speed study, crash analysis, and field review are available, the MSP/MDOT survey team will again contact local governmental and law enforcement representatives to discuss the data and proposed speed limit recommendations. All efforts should be made to resolve differences at the district level, including public presentations of the field evaluation.

6. Installation of Speed Zone

a. If local concurrence is reached to initiate a new or modified speed zone, a traffic control order (TCO) is prepared by MDOT and the signature of the MSP and MDOT directors are obtained.

b. If local concurrence cannot be reached, MSP and MDOT will explore all opportunities to resolve the issue in an effort to develop a mutually acceptable alternative. If concurrence from local governmental and law enforcement representatives cannot be obtained, the MSP/MDOT survey team will submit their joint recommendation to their respective traffic regulation coordinators, noting that concurrence was not obtained and the reason for nonconcurrence. The final recommendation will be submitted jointly to the MDOT, Engineer of Traffic And Safety and the MSP Special Operations Divison Commanding Officer for concurrence and subsequent signature by both agency directors for the issuance of a TCO as recommended.

APPENDIX 6

(GUIDELINES FOR NATURAL BEAUTY ROADS WILL FOLLOW THIS PAGE)

NATURAL BEAUTY ROADS ACT OF 1970

Act 150, 1970, Eff. August 1, 1970

AN ACT to designate certain roads as Michigan natural beauty roads; to provide certain powers and duties; and to provide for the development of guidelines and procedures.

The People of the State of Michigan enact:

Sec. 1. As used in this act:

(a) "Board" means a board of county road commissioners.

(b) "Department" means the department of natural resources.

(c) "Native vegetation" means an original or indigenous plant of this state including trees, shrubs, vines, wild flowers, aquatic plants or ground cover.

(d) "Natural" means in a state provided by nature, without man-made changes, wild or uncultivated.

(e) "County local road" means a county local road as defined in section 4 of Act No. 51 of the Public Acts of 1951, being section 247.654 of the Compiled Laws of 1948.

Sec. 2. (1) Twenty-five or more freeholders of a township may apply by petition to their board for designation of a county local road or portion thereof as a natural beauty road.

(2) Within 6 months after a petition is received, the board shall hold a public hearing to consider designating the described road as a natural beauty road. The hearing shall be held at a suitable place within the township in which the proposed natural beauty road is located. At the hearing a party or interested person shall be given an opportunity to present his support for or objections to the proposed designation. Notice of the hearing shall be given by the board by causing a notice thereof to be published at least once in each week for 2 successive weeks in a newspaper of general circulation in the county, and by posting 5 notices within the limits of the portion of the road to be designated, in public and conspicuous places therein. The posting shall be done and at least 1 publication in the newspaper shall be made not less than 10 days before the hearing.

(3) Within 30 days after the hearing, if the board deems the designation desirable, it shall file with the county clerk a true copy of its resolution designating the portion of the county local road as a natural beauty road.

Sec. 3. (1) If the board designates a road as a natural beauty road, the property owners of record of 51% or more of the lineal footage along the natural beauty road may submit within 45 days after the road is so designated a petition to the board requesting that the natural beauty road designation be withdrawn and if the petition is valid, the designation as a natural beauty road shall be withdrawn.

(2) A designation of a natural beauty road may be withdrawn or revoked by the board after the board holds a public hearing in accordance with the procedure described in subsection (2) of section 2. Within 30 days after a hearing, if the board by majority vote determines the revocation necessary, it shall file with the county clerk a notice of its determination and publish the notice in a newspaper of general circulation, once in each week for 2 successive weeks. After publication of the notice, the road previously designated shall revert to its former status.

Sec. 4. (1) The department shall develop uniform guidelines and procedures which may be adopted by the board to preserve native vegetation in a natural beauty road right of way from destruction or substantial damage by cutting, spraying, dusting, salting, mowing or by other means. No guidelines and procedures adopted under the authority of this act shall prohibit the application of accepted principles of sound forest management in a natural beauty road right of way.

(2) The department may advise and consult with the board on the application of the guidelines and procedures.

(3) The board shall provide for a public hearing before an act is permitted which would result in substantial damage to native vegetation in the right of way.

(4) Nothing in this act shall affect the right of a public utility to control vegetation in connection with the maintenance, repair or replacement of public utility facilities, which were constructed in a road prior to its designation as a natural beauty road, or in connection with the construction, maintenance, repair or replacement of public utility facilities crossing a natural beauty road.

Sec. 5. The department may establish a citizen's advisory committee to assist in the formulation of proposals for guidelines and procedures.

This act is ordered to take immediate effect.

DEPARTMENT OF NATURAL RESOURCES

GUIDELINES FOR DESIGNATION OF

NATURAL BEAUTY ROADS

(As provided under Act 150, P.A. 1970)

These guidelines have been prepared jointly by the Department of Natural Resources and the County Road Association in consultation with other persons knowledgeable in the identification of natural and aesthetic values.

GUIDELINES

Goals. The goals of the Natural Beauty Roads program are to identify and preserve in a natural, essentially undisturbed condition certain county-local roads having unusual or outstanding natural beauty by virtue of native vegetation or other natural features within or associated with the right-of-way, for the use and enjoyment of local residents and the public in general.

Objectives.

1. To officially recognize and designate roads in the county-local system which meet the natural beauty criteria.
2. To keep these roadsides as they presently exist insofar as possible.
3. To maintain and administer these roads so that they will continue to meet the criteria and at the same time provide safe public travel.
4. To mark such roads for the information of the public.

Criteria for Designation.

1. Character of Road. To qualify as a natural beauty road, a road must have outstanding natural features along its borders, including

native trees and other native vegetation such as shrubs, wildflowers, grasses, and ferns, and open areas with scenic or natural vistas, which, singly or in combination, set this road apart from other roads as being something unique and distinct.

2. Length. Normally a minimum of one-half mile will be considered for designation as a natural beauty road with exceptions below this length depending upon unusual features. Stretches will be continuous except where broken by a non-qualifying portion. Non-qualifying portions should normally not exceed one-half mile in length.
3. Roadside Development. Qualifying roads should preferably have no development along them, but such development as exists at the time the road is designated should be compatible with the surroundings, and should not detract from the natural unspoiled character and visual impact of the road area.
4. Road Bed. Natural beauty roads may be dirt, gravel, or hard surface.
5. Function of the Road. Normally, the existing road should function as a local access road, i.e., one which serves the adjacent property owners and/or as a road serving those wishing to travel for the purpose of enjoying its natural beauty features. These uses would generally preclude designation as a Natural Beauty Road any road serving as a collector or a higher functional classification as defined by federal standards.
6. Speed. Natural beauty roads are intended to be low speed roads for purposes of enjoyment. It is recommended that hard surface roads be posted for a speed of not more than 35 m.p.h.; gravel and dirt roads, 25 m.p.h.

ACCEPTED MAINTENANCE PRACTICES

In general, natural beauty roads should receive the same level of maintenance that was performed on the road prior to designation, as long as the character of use and development of the road does not change to the extent that a higher degree of maintenance is necessary.

1. Mowing. Mowing should be continued where done previously, but should be limited to one swath (maximum of five feet) on either side as follows:
   (a) On one-lane trail or dirt roads, mowing should be immediately adjacent to the tracks.
   (b) On two-way gravel roads, mowing should be immediately adjacent to the edge of the graded surface.
   (c) On paved roads, mowing should be immediately adjacent to the edge of the pavement.
2. Grading. Grading will be kept as narrow as possible. This should normally be kept within a total width of 10 to 15 feet for trail roads. On other roads, grading should continue as normally provided except that it should be kept to a minimum to avoid disturbance of vegetation. It should be pulled back to avoid trees or unusual sites which have been designated.
3. Herbicides. Under no circumstances will herbicides be used to control or eliminate roadside vegetation.
4. Dust Laying. Where dust laying has been the practice or becomes a necessity, a minimum level of dust treatment may be used.
5. Cross Drainage. Cross drainage must be handled where necessary to prevent damage to the road and possible washouts and other problems which may be detrimental to proper safety.

6. Signing. Natural beauty roads will be identified at entrance points by a specifically designated standard sign to be of a design prepared by the Department of State Highways, and placed by the County Road Commission. The length of the designated road will be indicated on the sign.

7. Tree and Shrub Trimming and Tree Removal. Where necessary for safety or protection of the traveling public and vehicles, tree branches and shrubs may be trimmed or whole trees removed. This should be done judiciously and with proper tools so as not to leave unsightly scars.

8. Road Surfacing. The existing road surface at the time of designation should normally be continued. Necessary changes in surface to improve safety, drainage, reduce maintenance problems, etc., may be cause for undesignating such roads if such changes disturb the natural beauty characteristics for which the road was designated.

TREE AND PLANT REFERENCES

Billington - Shrubs of Michigan. Cranbrook Institute of Science

Billington - Ferns of Michigan. Cranbrook Institute of Science

Case - Orchids of the Western Great Lakes. Cranbrook Institute of Science

Peterson and McKenny - Field Guide to Wildflowers of Northeastern and Northcentral North America. Houghton Mifflin Company

Petrides - Field Guide to Trees and Shrubs. Houghton Mifflin Company

Smith, Helen V. - Michigan Wildflowers. Cranbrook Institute of Science

Smith, N. F. - Michigan Trees Worth Knowing. Hillsdale Educational Publishers, Inc.

Voss, E. G. - Michigan Flora. Cranbrook Institute of Science

Michigan Plants Protected by Law -- see two attached lists.

MICHIGAN
WILDFLOWERS, SHRUBS AND VINES
PROTECTED BY LAW

Act 182 of the Public Acts of 1962 extends protection to certain native plants. As listed in the Act these are: Trailing arbutus, bird's foot violet, climbing bittersweet, club mosses, flowering dogwood, all Michigan holly, North American lotus, pipsissewa, and all native orchids, trilliums and gentians.

A complete listing of the species covered by the Act is presented here for reference purposes.

COMMON NAME	SCIENTIFIC NAME	FAMILY NAME
Shining Club Moss	Lycopodium lucidulum	Lycopodiaceae
Tree Club Moss or Ground Pine	" obscurum	
Stiff or Interrupted Club Moss	" annotinum	
Trailing Club Moss or Ground Pine	" complanatum	
Common or Running Club Moss	" clavatum	
Trailing Arbutus	Epigaea repens	Ericaceae
Pipsissewa (Prince's Pine)	Chimaphila umbellata	
Birdfoot Violet	Viola pedata	Violaceae
Bittersweet, Climbing	Celastrus scandens	Celastraceae
Flowering Dogwood	Cornus florida	Cornaceae
Mountain Holly	Nemopanthus mucronata	Aquifoliaceae
Michigan Holly (Winterberry)	Ilex verticillata	
North American Lotus	Nelumbo lutea	Nymphaceaeae
Ladies' Tresses	Spiranthes gracilis	Orchidaceae
	" Romanzoffiana	
	" lucida	
	" cernua	
Early Coral Root	Corallorhiza trifida	
Spotted Coral Root	" maculata	
Autumn Coral Root	" odontorhiza	
Striped Coral Root	" striata	
Arethusa	Arethusa bulbosa	
Cranefly Orchis	Tipularia discolor	
Putty Root	Aplectrum hyemale	
Grass Pink (Calopogon)	Calopogon pulchellus	
Adder's Mouth	Malaxis brachypoda	
	" unifolia	
Calypso	Calypso bulbosa	
Twayblade	Listera cordata	
	" convallarioides	
	Liparis lilifolia	
	" loeselii	
Round-leaved Orchis	Orchis rotundifolia	
Showy Orchis	" spectabilis	
Rattlesnake Plantian	Epipactis decipiens	
	" repens	
	" pubescens	

COMMON NAME	SCIENTIFIC NAME	FAMILY NAME
White Lady's Slipper	Cypripedium candidum	Orchidaceae
Stemless Lady's Slipper	" acaule	
Yellow Lady's Slipper	" parviflorum	
Ram's Head Lady's Slipper	" arietinum	
Showy Lady's Slipper	" hirsutum	
Whorled Pogonia	Pogonia verticillata	
Snake Mouth	" ophioglossoides	
Nodding Pogonia	" trianthophora	
One-leaf Rein Orchis	Habenaria obtusata	
Green Woodland Orchis	" clavellata	
Hooker's Orchis	" hookeri	
Large-leaved Orchis	" macrophylla	
Bracted Green Orchis	" bracteata	
Tall White Bog Orchis	" dilatata	
Northern Green Orchis	" hyperborea	
Pale Green Orchis	" flava	
Purple Fringed Orchis	" Psycodes	
Prairie Fringed Orchis	" leucophaea	
Ragged Fringed Orchis	" lacera	
Yellow Fringed Orchis	" ciliaris	
White Fringed Orchis	" blephariglottis	
Large White Trillium	Trillium grandiflorum	Liliaceae
Purple Trillium	" erectum	
Toadshade Trillium	" sessile	
Recurved Trillium	" recurvatum	
Nodding Trillium	" cernuum	
Trillium (with bent foot stalk)	" flexipes	
Dwarf White Trillium	" nivale	
Painted Trillium	" undulatum	
Bartonia	Bartonia virginica	Gentianaceae
Floating Heart	Nymphoides cordata	
Buckbean	Menyanthes trifoliata	
American Columbo	Frasera caroliniensis	
Rose Pink	Sabatia angularis	
Centaury	Centaurium umbellatum	
Spurred Gentian	Halenia deflexa	
Fringed Gentian	Gentiana crinita	
Fringed Gentian	" procera	
Stiff Gentian	" quinquefolia	
Soapwort Gentian	" puberula	
Closed Gentian	" Saponaria	
Yellowish Gentian	" Andrewsii	
Bog Gentian	" flavida	
	" linearis	

GUIDELINES FOR PETITIONERS FOR NATURAL BEAUTY ROADS

The Natural Beauty Road Act empowers County Road Commissions to dedicate county-local roads as Michigan Natural Beauty Roads. Specific procedures are to be followed by interested citizens when recommending the designation of potential Natural Beauty Roads to respective County Road Commissions.

Roads must be county-local roads as a prerequisite before they may be considered for designation. They must not be collectors or primary roadways. Status of roads may be obtained from the County Road Commission.

Twenty-five or more landowners in a township may apply by petition to their County Road Commission for designation of a county-local road or portion thereof, as a Natural Beauty Road. Signers need not live on the road for which the petition is made. Petitions should state clearly the name, location, length, and exact beginning and ending points of the proposed Natural Beauty Road. The petition must be supported by a statement of justification for the requested designation.

Within six months after the petition is received, the County Road Commission shall hold a public hearing to consider the described road as a Natural Beauty Road. Within thirty days after the public hearing, the County Road Commission will announce its decision as to whether the road shall or shall not be designated as a Natural Beauty Road.

The designation of a road as a Natural Beauty Road will not curtail or cut-back on existing road maintenance programs; will not prohibit the application of sound forest management in the right-of-way; and will not affect the right of a public utility to control vegetation in connection with the maintenance, repair, or replacement of facilities which were constructed in a road, or across a road, prior to its designation as a Natural Beauty Road.

For further information contact:

Natural Resource Heritage Program, Wildlife Division, Stevens T. Mason Bldg., P.O. Box 30028, Lansing, MI 48909; 517-373-1263.

or

James Little, Director, Michigan County Road Association, P.O. Box 12067, Lansing, MI 48901; 517-482-1189. The office is located at 230 N. Washington, Suite 300, Lansing.

9/88

PETITION

TO DESIGNATE A MICHIGAN NATURAL BEAUTY ROAD, under Public Acts of 1970, #150 effective August 1, 1970.

To the Board of County Road Commissioners of.....County.

We, the undersigned freeholders of .....Township,..... County, do hereby petition that the following county local road of Michigan be designated a natural beauty road in accordance with the above act, and that the Board set the time for holding a public hearing to consider designating the said road as a natural beauty road, and proceed to do all the things necessary under said act to designate said road a natural beauty road of Michigan.

Name of Road:.....

Portion of Road sought to be designated:.....

.....

.....

Total mileage of road sought to be designated:.....

NAME	ADDRESS	DATE

Name and address of Circulator of Petition:

_____

_____

_____

STATE OF MICHIGAN

WILLIAM G. MILLIKEN, Governor

DEPARTMENT OF NATURAL RESOURCES

STEVENS T. MASON BUILDING, BOX 30028, LANSING, MICHIGAN 48909
HOWARD A. TANNER, Director

DIRECTORY OF

MICHIGAN'S NATURAL BEAUTY ROADS

The roads listed in this directory have been designated according to the Natural Beauty Roads Act (Act 150 of the Public Acts of 1970) by the respective boards of county road commissions.

These roads were determined by local landowners and the road commissions to possess unusual or outstanding natural beauty. The road commission has agreed, by designation, to maintain and administer these county local roads to preserve their natural features while still providing for safe public travel.

Natural beauty roads are intended to be low speed roads for purposes of enjoyment. Speed restrictions vary, however, and are established by the county road commissions and state law.

In traveling on these roads, please respect the rights of the private property owners who may reside along its borders.

County	Road Name	Location	Length
Alcona	AuSable Road	From west county line to Bamfield Road, Curtis and Mitchell townships	11.33
Alger	McCloud Road	From Grand Marias Road east to Luce County line, Burt Township	3.30
	Old Seney Road	From H-58 south to Carlson Camp Road, Burt Township	10.20
	School Forest Roads	From East Bay of Lost Lake to Luce County line, also from Sucker River to H-58, Burt Township	5.30
Alpena	Hamilton Road	From North Point Road west to Wessel Road, Alpena Township	4.47
Benzie	Sutter Road	From M-22 northeasterly to M-22, Lake Township	2.71

MICHIGAN

51026 10/76

County	Road Name	Location	Length
Berrien	Jones Road	From True Road to Fairland Road, Berrien Township	1.96
Charlevoix	Lake 26 Road	From Phelps Road to Marion Center Road, Marion Township	2.48
	Magee Road	From McGregory Road to Thumb Lake Road, Hudson Township	2.25
	West Side Road	On Beaver Island from Pogenog Road to Lighthouse Drive, Peaine Township	9.7
Dickinson	Norway Lake Truck Trail	From south line of Section 22, T41N, R27W, north to west line of Section 6, T42N, R27W, Breen Township	12.5
Eaton	Delta River Drive	From Waverly Road west to Delta Mills Cemetery, Delta Township	2.0
Emmet	Lake Grove Road	From Morford Road to Resort Pike Road, Resort Township	2.54
	Lower Shore Drive	From M-131, West Traverse Township, to M-131, Friendship Township	3.63
Iosco	National City Road	From Curtis Road to Old State Road, Grant and Plainfield townships	4.0
Kent	Alden Nash Avenue	From Vergennes Street to Bailey Drive, Vergennes Township	1.0
	Bailey Dr.	From Vergennes Street to Boynton Avenue, Ada Township	2.65
	Bewell Ave.	From 36th Street to Grand River Drive, Lowell Township	1.52
	Buttrick Ave.	From 48th Street to 60th Street, Cascade Township	1.51
	Byrne Ave.	From 5 Mile Road to 6 Mile Road, Grattan Township	1.05
	Conservation Street	From center of Section 21 to Honey Creek Avenue, Ada Township	1.46
	Court Dr.	From Timpson Avenue to Bewell Avenue, Lowell Township	0.74
	Cramton Ave.	From Conservation Street to 2 Mile Road, Ada Township	1.46
	Dogwood Ave.	From Pettis Avenue to Conservation Street, Ada Street	0.95

County	Road Name	Location	Length
Kent (con't.)	Finn St.	From Murray Lake Avenue to Alden Ash Avenue, Vergennes Township	1.0
	Friske Dr.	From 12 Mile Road to 13 Mile Road, Algoma Township	1.41
	Hillton Ave.	From Cascade Road to 36th Street, Lowell Township	1.00
	Leonard St.	Cramton Avenue to Honey Creek Avenue, Ada Township	1.00
	Montcalm Ave.	From M-91 to Covered Bridge Road, Vergennes Township	1.42
	Squires St.	From Young Avenue to Parmeter Avenue, Courtland Township	.76
	Timpson Ave.	From 60th Street to I-96 turnaround, Lowell Township	1.51
	Timpson Ave.	From Cascade Road to 36th Street, Lowell Township	1.00
	Wildermere Drive	From Belding Road to 1/2 mile northwesterly, Cannon Township	.30
	Wilkinson Dr.	From 9 Mile Road to Loop, Cannon Township	1.23
	2 Mile Road	From Pettis Avenue to Honey Creek Avenue, Ada Township	2.79
	3 Mile Road	From Petis Avenue to Honey Creek Avenue, Ada Township	2.88
	40th Street	From Timpson Avenue to Alden Nash Avenue, Lowell Township	1.05
	52nd Street	From Buttrick Avenue to Whitneyville Avenue, Cascade Township	.49
	96th Street	From Alaska Avenue to Whitneyville Avenue, Caledonia Township	1.18
Lapeer	Blood Road	From Metamora Road to Brocker Road, Metamora Township	1.64
Lenawee	Comfort Road	From Raisin Center Highway to Rogers Highway, Raisin Township	.98
	Grassy Lake Road	From Marr Highway to Prospect Hill Highway, Woodstock Township	1.35

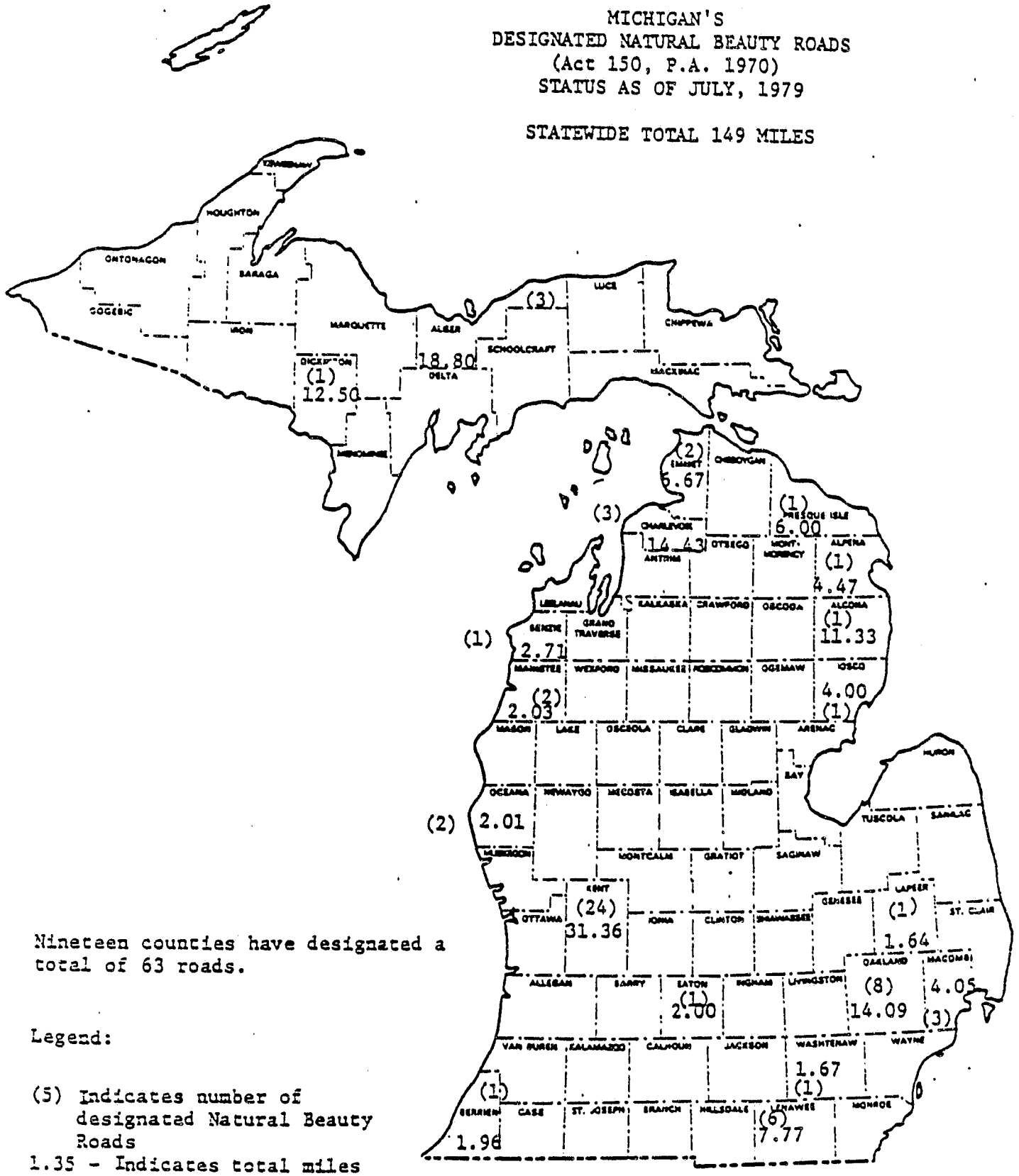
County	Road Name	Location	Length
Lenawee (con't.)	Prospect Hill Highway	From Grassy Lake Road to Marr Highway, Woodstock Township	1.52
	Marsh Road	From Sand Lake to Springville Highway, Cambridge Township	1.05
	Killarney Highway	From M-50 to U.S. 12, Cambridge Township	1.80
	Taylor Road	From Carson Highway to Wisner Highway, Franklin Township	1.07
Macomb	Fisher Road	From 37 Mile Road to Bordman Road, Bruce Township	1.15
	McKail Road	From Fisher Road to Wales Road, Bruce Township	.90
	Mt. Vernon Road	From Dequindre to 31 Mile Road, Washington Township	2.00
Manistee	Lakeview Road	From Schaef to 13 Mile Road, Arcadia and Onekama Townships	1.13
	Schaef Road	From M-22 to Lake Michigan, Arcadia Township	.90
Oakland	Clarkson Road	From Kern Road to .16 mile west of Kern Road (combined with Kern Road)	
	Kern Road	From Clarkston Road to Orion Road, Orion Township	.79
	Delano Road	From Ray road to north county line, Oxford Township	3.09
	Echo Road	From Lone Pine Road to Long Lake Road, Bloomfield Township	.99
	Indian Lake Road	From Barr Road to Lake George Road, Addison Township	2.10
	Predmore Road	From Rochester Road to east county line, Oakland Township	1.92
	Ray Road	From .44 mile west of Delano Road to Lake George Road, Oxford and Addison townships	3.08
	Rush Road	From Parks Road to Predmore Road, Oakland Township	1.06
	Wing Lake Road	From Maple Road to Quarton Road, Bloomfield Township	1.06

County	Road Name	Location	Length
Oceana	Silver Lake Channel Rd.	From "Termite Bridge" to Lighthouse Driveway, Golden Township	1.16
	Thomas St.	From 28th Avenue to Scenic Drive, Benona Township	.85
Presque Isle	South Ward Branch Rd.	From Heythaler Highway to Noffzee Highway, Bismark Township	6.00
Washtenaw	Gale Road	From Cherry Hill Road to Geddes Road, Superior Township	1.67

A total of 63 county local roads comprising 149 miles in 19 counties have been designated under the Natural Beauty Roads Act (Act 150, P.A. 1972).

MICHIGAN'S
DESIGNATED NATURAL BEAUTY ROADS
(Act 150, P.A. 1970)
STATUS AS OF JULY, 1979

STATEWIDE TOTAL 149 MILES



Nineteen counties have designated a total of 63 roads.

Legend:

(5) Indicates number of designated Natural Beauty Roads

1.35 - Indicates total miles of designated Natural Beauty roads by county

DIVISION OF
LAND RESOURCE PROGRA

DEPARTMENT OF NATURAL RESOURCES

FISHERIES AND WILDLIFE DIVISIONS

ENDANGERED AND THREATENED SPECIES

Filed with the Secretary of State on September 4, 1987.
These rules take effect 15 days after filing with the Secretary of State (9/22/87)

(By authority conferred on the Commission of Natural Resources by Section 4 of Act No. 203 of the Public Acts of 1974, beginning 299.224 of the Michigan Compiled Laws)

R 299.1021, R 299.1022, R 229.1023, R 299.1024, R 299.1025, R 299.1026, R 299.1027, and R 299.1028 of the Michigan Administrative Code, appearing in pages 1457-1460 of the 1979 Michigan Administrative Code and pages 57-63 of the 1980 Annual Supplement to the Code, are amended to read as follows:

R 299.1021. Mollusks.

Rule 1. (1) The following species of mullusks of Class Pelecypoda (mussels) are included on the state list of endangered species.

(a)	Carunculina (=Toxolasma) glans (=lividus) (Lea)	Purple lilliput
(b)	Dysnomia (=Epioblasma) sulcata (Lea)	Catspaw
(c)	Dysnomia (=Epioblasma) torulosa (Rafinesque)	Northern rifflesheil
(d)	Pleurobema clava (Lamarck)	Clubshell
(e)	Simpsoniconcha (=Simpsonaias) ambigua (Say)	Salamander mussel
(f)	Villosa fabalis (Lea)	Bean Villosa

(2) The following species of mollusks of class Pelecypoda (mussels) are included on the state list of threatened species:

(a)	Anodonta subgibbosa (Anthony)	Lake floater
(b)	Dysnomia (=Epioblasma) triquetra (Rafinesque)	Snuffbox
(c)	Obovaria subrotunda (=leibii) (Rafinesque)	Round Hickorynut

(3) The following species of mollusk of class Gastropoda (snails) is included on the state list of endangered species:

	Planorbella (=Helisoma) multivolvis (Case)	Acorn Rams-horn

(4) The following species of mollusk of class Gastropoda (snails) are included on the state list of threatened species:

(a)	Hendersonia occulta (Say)	Cherrystone drop
(b)	Stagnicola (=Lymnaea) contracta (Currier)	Deepwater pondsnail

R 299.1022 Insects.

Rule 2. (1) The following species of insects are included on the state list of endangered species:

(a)	Brychius hungerfordi Spangler	Hungerford's crawling water beetle

(b) Nicrophorus americanus Olivier — American burying beetle

(2) The following species of insects are included on the state list of threatened species:

(a)	Euphyes dukesi (Lindsey)	Dukes' skipper
(b)	Hesperia ottoe Edwards	Ottoe skipper
(c)	Lycaeides argyrognomon nabokovi Masters	Northern blue
(d)	Neonympha mitchellii French	Mitchell's satyr
(e)	Oarisma powesheik (Parker)	Powesheik skipper
(f)	Speyeria idalia (Drury)	Regal fritillary

R 299.1023 Fishes.

Rule 3. (1) The following species of fishes are included on the state list of endangered species:

(a)	Coregonus reighardi (Koelz)	Shortnose cisco
(b)	Hybopsis amblops (Rafinesque)	Bigeye chub
(c)	Noturus stigmosus Taylor	Northern madtom

(2) The following species of fishes are included on the state list of threatened species:

(a)	Acipenser fulvescens Rafinesque	Lake sturgeon
(b)	Ammocrypta pellucida (Putnam)	Eastern sand darter
(c)	Clinostomus elongatus (Kirtland)	Redside dace
(d)	Coregonus artedii Lesueur	Cisco or lake herring
(e)	Coregonus zenithicus (Jordan and Evermann)	Shortjaw cisco
(f)	Erimyzon oblongus (Mitchill)	Creek chubsucker
(g)	Hiodon tergisus, Lesueur	Mooneye
(h)	Moxostoma carinatum (Cope)	River redhorse
(i)	Notropis chalybaeus (Cope)	Ironcolor shiner
(j)	Notropis emiliae (Hay)	Pugnose minnow
(k)	Notropis photogenis (Cope)	Silver shiner
(l)	Percina copelandi (Jordan)	Channel darter
(m)	Percina shumardi (Girard)	River darter
(n)	Phoxinus erythrogaster (Rafinesque)	Southern redbelly dace

(3) The following species are thought to be extirpated in Michigan but if rediscovered will automatically be listed as threatened:

(a)	Coregonus alpenae (Koelz)	Longjaw cisco
(b)	C. johannae (Wagner)	Deepwater cisco
(c)	C. nigripinnis (Gill)	Blackfin cisco
(d)	Polyodon spathula (Walbaum)	Paddlefish
(e)	Stizostedion vitreum glaucum (Hubbs)	Bluepike
(f)	Thymallus arcticus (Richardson)	Arctic grayling

R 299.1024 Amphibians.

Rule 4. (1) There are no species of amphibians included on the state list of endangered species.

(2) The following species of amphibians are included on the state list of threatened species:

(a)	Ambystoma opacum (Gravenhorst)	Marbled salamander
(b)	Ambystoma texanum (Matthes)	Smallmouth salamander

R 299.1025 Reptiles.

Rule 5. (1) The following species of reptiles are included on the state list of endangered species:

(a)	Clonophis kirtlandii (Kennicott)	Kirtland's snake
(b)	Nerodia erythrogaster neglecta (Conant)	Copperbelly water snake

(2) The following species of reptiles is included on the state list of threatened species:

(a)	Elaphe vulpina gloydi, Conant	Eastern fox snake

R 299.1026 Birds.

Rule 6. (1) The following species of birds are included on the state list of endangered species:

(a)	Asio flammeus (Pontoppidan)	Short-eared owl
(b)	Charadrius melodus Ord.	Piping plover
(c)	Dendroica kirtlandii (Baird)	Kirtland's warbler
(d)	Falco peregrinus Tunstall	Peregrine falcon
(e)	Lanius ludovicianus Linnaeus	Loggerhead shrike
(f)	Rallus elegans Audubon	King rail
(g)	Tyto alba (Scopoli)	Barn owl

(2) The following species of birds are included on the state list of threatened species:

(a)	Buteo lineatus (Gmelin)	Red-shouldered hawk
(b)	Chondestes grammacus (Say)	Lark sparrow
(c)	Dendroica dominica (Linnaeus)	Yellow-throated warbler
(d)	Falco columbarius (Linnaeus)	Merlin
(e)	Gavia immer (Brunnich)	Common loon
(f)	Haliaeetus leucocephalus (Linnaeus)	Bald eagle
(g)	Pandion haliaetus (Linnaeus)	Osprey
(h)	Sterna caspia Pallas	Caspian tern
(i)	Sterna hirundo Linnaeus	Common tern

(3) The following species are thought to be extirpated in Michigan but if rediscovered will automatically be listed as threatened:

(a)	Cygnus buccinator Richardson	Trumpeter swan
(b)	Ectopistes migratorius (Linnaeus)	Passenger pigeon
(c)	Tympanuchus cupido, (Linnaeus)	Greater prairie chicken

R 299.1027 Mammals.

Rule 7. (1) The following species of mammals are included on the state list of endangered species:

(a)	Canis lupus Linnaeus	Gray wolf
(b)	Felis concolor Linnaeus	Cougar
(c)	Felis lynx Linnaeus	Lynx
(d)	Myotis sodalis Miller and Allen	Indiana bat

(2) The following species of mammals are included on the state list of threatened species:

(a)	Cryptotis parva (Say)	Least shrew
(b)	Martes americana (Turton)	Marten
(c)	Microtus ochrogaster (Wagner)	Prairie vole

(3) The following species are thought to be extirpated in Michigan but if rediscovered will automatically be listed as threatened:

(a)	Bison bison (Linnaeus)	Bison
(b)	Gulo gulo (Linnaeus)	Wolverine
(c)	Rangifer tarandus (Linnaeus)	Woodland caribou

R 299.1028 Plants.

Rule 8. (1) The following species of plants are included on the state list of endangered species:

(a)	Baptisia leucophaea Nutt.	Cream wild indigo
(b)	Castanea dentata (Marsh.) Borkh.	American chestnut
(c)	Chamaerhodos nuttallii var. keweenawensis Fern.	Keweenaw rock-rose
(d)	Chelone obliqua L.	Purple turtlehead
(e)	Eleocharis atropurpurea (Retz.) Kunth.	Purple spike-rush
(f)	Isotria medeoloides (Pursh) Raf.	Smaller whorled pogonia
(g)	Lycopodium sabinifolium Willd.	Savin-leaved clubmoss
(h)	Orchis rotundifolia Pursh	Small round-leaved orchis
(i)	Phyllitis scolopendrium var. americana Fern.	Hart's-tongue fern
(j)	Platanthera leucophaea (Habenaria ciliaris)	Orange or yellow-fringed orchid
(k)	Platanthera leucophaea (Nutt.) Lindl. [Habenaria leucophea (Nutt.) Gray]	Prairie white-fringed orchid
(l)	Proserpinaca pectinata Lam.	Mermaid-weed
(m)	Scirpus hallii Gray	Hall's bulrush
(n)	Scleria reticularis Michaux	Netted nut-rush
(o)	Trillium undulatum Willd.	Painted trillium
(p)	Utricularia inflata Walt. [U. radiata Small]	Floating bladderwort

2) The following species of plants, listed by class and family, are included on the state list of threatened species:

(a)	PTERIDOPHYTES:	
(i)	LYCOPODIACEAE (Clubmoss family):	
	Lycopodium appressum, Lloyd & Underwood	Appressed bog clubmoss
(ii)	OPHIOGLOSSACEAE (Adder's-tongue family):	
(A)	Botrychium campestre Wagner, (Spp. Nov.)	Prairie Moonwort or Dunewort
(B)	Botrychium hesperium (Maxon & Clausen) Wagner & Lellinger	Western moonwort
(C)	Ophioglossum pycnostichum Fern., Love & Love	Southeastern adder's-tongue
(iii)	POLYPODIACEAE (Fern family):	
(A)	Asplenium ruta-muraria L.	Wall-rue
(B)	Cryptogramma acrostichoides R. Br.	American rock-brake
(C)	Dryopteris celsa (Wm. Palmer) Small	Log-fern
(D)	D. filix-mas (L.) Schott	Male fern
(E)	Pellaea atropurpurea (L.) Link.	Purple cliff-brake
(F)	Woodsia alpina (Bolton) S. F. Gray	Northern woodsia
(G)	W. obtusa (Spreng.) Torrey	Blunt-lobed woodsia

(iv)	SCHIZAEACEAE (Curly-grass family):	
	Lygodium palmatum (Bernh.) Sw.	Climbing fern
(b)	MONOCOTYLEDONS:	
(i)	ALISMATACEAE (Water-plantain family):	
	Sagittaria montevidensis Cham. & Schlecht	Arrowhead
(ii)	CYPERACEAE (Sedge family):	
(A)	*Carex assiniboinensis* W. Boott	Assiniboia sedge
(B)	*C. atratiformis* Britton	Sedge
(C)	*C. crus-corvi* Kunze.	Ravens's-foot sedge
(D)	*C. heleonastes* Ehrh.	Hudson bay sedge
(E)	*C. media* R. Br.	Sedge
(F)	*C. nigra* (L.) Reich	Black sedge
(G)	*C. platyphylla* Carey	Broad-leaved sedge
(H)	*C. rossii*, Boott.	Ross's sedge
(I)	*C. seorsa* Howe	Sedge
(J)	*C. sychnocephala* Carey	Dense long-beaked sedge
(K)	*C. typhina* Michaux	Cattail sedge
(L)	*C. wiegandii*, Mackenzie	Wiegland's sedge
(M)	*Eleocharis caribaea*, (Rottb.) S. F. Blake	Spike-rush
(N)	*E. compressa* Sulliv.	Flattened spike-rush
(O)	*E. melanocarpa* Torrey	Black-fruited spike-rush
(P)	*E. microcarpa* Torrey	Small-fruited spike-rush
(Q)	*E. nitida* Fern	Slender spike-rush
(R)	*E. parvula*, (R. & S.) Link.	Dwarf spike-rush
(S)	*Fuirena squarrosa* Michaux	Umbrella-grass
(T)	*Psilocarya scirpoides* Torrey	Bald-rush
(U)	*Scirpus olneyi* Gray	Olney's bulrush
(iii)	IRIDACEAE (Iris family):	
(A)	*Iris lacustris* Nutt.	Dwarf lake iris
(B)	*Sisyrinchium atlanticum* Bickn.	Atlantic blue-eyed grass
(iv)	JUNCACEAE (Rush family):	
(A)	*Juncus brachycarpus* Engelm.	Short-fruited rush
(B)	*J. militaris* Bigelow	Bayonet rush
(C)	*J. scirpoides* Lam.	Scirpus-like rush
(D)	*J. stygius* L.	Moor rush
(E)	*J. vaseyi* Engelm.	Vasey's rush
(F)	*Luzula parviflora* (Ehrh.) Desv.	Small-flowered wood rush
(v)	LILIACEAE (Lily family):	
(A)	*Allium schoenoprasum* L. (native variety)	Chives
(B)	*Camassia schilloides* (Raf.) Cory.	Wild-hyacinth
(C)	*Diporum hookeri* (Torrey) Nicholson	Fairy bells
(D)	*Tofieldia pusilla* (Michaux) Pers.	False asphodel
(E)	*Trillium nivale* Riddell	Snow trillium
(F)	*T. recurvatum* Beck.	Prairie trillium
(G)	*T. sessile* L.	Toadshade

(vi)	ORCHIDACEAE (Orchid family):	
(A)	Cypripedium candidum Willd.	White lady-slipper
(B)	Isotria verticillata (Willd.) Raf.	Whorled pogonia
(C)	Platanthera ciliaris (L.) (Lindl.) [Habenaria ciliaris (L.), R. Br.]	Orange or yellow-fringed orchis
(D)	Spiranthes ovalis Lindl.	Lesser ladies' tresses
(E)	Tipularia discolor (Pursh) Nutt.	Cranefly orchid
(F)	Triphora trianthophora (Sw.) Rydb.	Nodding pogonia or three birds orchid
(vii)	POACEAE (Grass family):	
(A)	Aristida longispica Poiret	Three awn grass
(B)	A. necopina Shinners	False arrow feather
(C)	Beckmannia syzigachne (Steudel) Fern.	Slough grass
(D)	Bouteloua curtipendula (Michaux) Torrey	Side-oats grama
(E)	Bromus pumpellianus Scribner	Pumpell's bromegrass
(F)	Calamagrostis lacustris (Kearney) Nash.	Northern Reedgrass
(G)	C. stricta (Timm) Koeler	Narrow-leaved reedgrass
(H)	Danthonia compressa Aust.	Flattened oat-grass
(I)	Diarrhena americana Beauv.	Beak grass
(J)	Festuca scabrella Torrey	Rough fescue
(K)	Muhlenbergia richardsonis (Trin.) Rydb.	Mat muhly
(L)	Oryzopsis canadensis (Poiret) Torrey	Canada rice-grass
(M)	Panicum leibergii (Vasey) Scribner	Leiberg's panic-grass
(N)	P. spretum Schultes	Panic-grass
(O)	Poa alpina L.	Alpine bluegrass
(P)	P. canbyi (Scribner) Piper	Canby's bluegrass
(Q)	P. Paludigena Fern. & Wieg.	Bog Bluegrass
(R)	Sporobolus heterolepis (Gray) Gray	Prairie dropseed
(S)	Uniola latifolia Michaux	Wild-oats
(T)	Zizania aquatica L. var. aquatica	Wild-rice
(viii)	POTAMOGETONACEAE (Pondweed family):	
(A)	Potamogeton bicupulatus Fern, (P. capillaceus)	Waterthread pondweed
(B)	P. confervoides Reichenb.	Alga pondweed
(C)	P. hillii Morong.	Hill's pondweed
(D)	P. pulcher Tuckerman	Spotted pondweed
(E)	P. vaseyi Robins	Vasey's pondweed
(ix)	RUPPIACEAE (Ditch-grass family):	
	Ruppia maritima L.	Ditch-grass
(c)	DICOTYLEDONS:	
(i)	ACANTHACEAE (Acanthus family):	
(A)	Justicia americana (L.) Vahl.	Water-willow
(B)	Ruellia humilis Nutt.	Hairy wild-petunia
(C)	R. strepens L.	Smooth wild-petunia

(ii)	APIACEAE (Parsley family):	
(A)	Berula pusilla (Nutt.) Fern.	Cut-leaved water-parsnip
(B)	Eryngium yuccifolium Michaux	Rattlesnake-master or button-snakeroot
(C)	Zizia aptera (Gray) Fern.	Prairie golden alexanders
(iii)	ARALIACEAE (Ginseng family):	
(A)	Oplopanax horridus (Sm.) Miq.	Devil's-club
(B)	Panax quinquefolius L.	Ginseng
(iv)	ARISTOLOCHIACEAE (Birthwort family):	
	Aristolochia serpentaria L.	Virginia snakeroot
(v)	ACSLEPIADACEAE (Milkweed family):	
(A)	Asclepias hirtella (Pennell) Woodson	Tall green milkweed
(B)	A. ovalifolia Dcne.	Dwarf milkweed
(C)	A. sullivantii Engelm.	Sullivant's milkweed
(vi)	ASTERACEAE (Composite family):	
(A)	Agoseris glauca (Pursh) Raf.	Prairie or pale agoseris
(B)	Antennaria rosea Greene	Rosy pussytoes
(C)	Arnica cordifolia Hooker (A. whitneyi Fern.)	Heart-leaved arnica
(D)	Aster modestus Lindley	Great northern aster
(E)	A. sericeus Vent.	Western silvery aster
(F)	Cacalia plantaginea (Raf.) Shinners [C. tuberosa Nutt.]	Prairie Indian plantain
(G)	Cirsium pitcheri (Torrey) Torrey & Gray	Pitcher's thistle
(H)	Coreopsis palmata Nutt.	Prairie coreopsis
(I)	Erigeron hyssopifolius Michaux	Hyssop-leaved fleabane
(J)	Eupatorium sessilifolium L.	Upland boneset
(K)	Helianthus mollis Lam.	Downy sunflower
(L)	Lactuca pulchella (Pursh) DC.	Blue lettuce
(M)	Petasites sagittatus (Pursh) Gray	Sweet coltsfoot
(N)	Polymnia uvedalia L.	Yellow-flowered leafcup
(O)	Senecio indecorus Greene	Rayless mountain ragwort
(P)	Silphium integrifolium Michaux	Rosinweed
(Q)	S. laciniatum L.	Compass-plant
(R)	S. perfoliatum L.	Cup-plant
(S)	Solidago houghtonii Torrey & Gray	Houghton's goldenrod
(T)	Tanacetum huronense Nutt.	Lake Huron tansy
(vii)	BORAGINACEAE (Borage family):	
	Mertensia virginica (L.) Pers.	Virginia bluebells
(viii)	BRASSICACEAE (Mustard family):	
(A)	Arabis perstellata Braun	Rock-cress
(B)	Armoracia aquatica (Eaton) Wiegand	Lake-cress
(C)	Braya humilis (C. A. Meyer) Robinson	Low northern rock-cress
(D)	Dentaria maxima Nutt.	Large toothwort
(E)	Draba arabisans Michaux	Rock whitlow-grass
(F)	D. cana Rydb.	Ashy whitlow-grass
(G)	D. glabella Pursh	Smooth whitlow-grass

(H)	D. incana L.	Twisted whitlow-grass
(I)	Subularia aquatica L.	Awlwort
(ix)	CACTACEAE (Cactus family):	
	Opuntia fragilis (Nutt.) Haw.	Fragile prickly-pear
(x)	CALLITRICHACEAE (Water-starwort family):	
	Callitriche heterophylla Pursh	Large water-starwort
(xi)	CAPRIFOLIACEAE (Honeysuckle family):	
	Lonicerta involucrata (Richardson) Banks	Black twinberry
(xii)	CARYOPHYLLACEAE (Pink family):	
(A)	Arenaria macrophylla Hooker	Large-leaved sandwort
(B)	Sagina nodosa (L.) Fenzl.	Pearlwort
(C)	Silene stellata (L.) Ait., F.	Starry campion
(D)	Stellaria crassifolia Ehrh.	Fleshy stichwort
(xiii)	CISTACEAE (Rockrose family):	
	Lechea pulchella Raf. (L. leggettii)	Leggett's pinweed
(xiv)	EMPETRACEAE (Crowberry family):	
	Empetrum nigrum L.	Black crowberry
(xv)	ERICACEAE (Heath family):	
(A)	Pterospora andromedea Nutt.	Pine-drops
(B)	Vaccinium cespitosum Michaux	Dwarf bilberry
(C)	V. uliginosum L.	Alpine blueberry
(xvi)	FABACEAE (Pulse family):	
(A)	Baptisia lactea (Raf.) Thieret [B. leucantha Torrey & Gray]	White or prairie false indigo
(B)	Dalea purpurea Vent. [Petalostemum hedysarum alpinum L.]	Alpine sainfoin
(C)	Wisteria frutescens (L.) Poir.	Wisteria
(D)	Dalea purpurea Vent. (Petalostemum purpurea).	Red prairie clover
(xvii)	FUMARIACEAE (Fumitory family):	
	Corydalis flavula (Raf.) DC.	Yellow fumewort
(xviii)	GENTIANACEAE (Gentian family):	
(A)	Bartonia paniculata (Michaux) Muhl	Panicled screw-stem
(B)	Gentiana alba Muhl. [G. flavida Gray]	Yellowish gentian
(C)	G. linearis Froel.	Closed gentian
(D)	Gentianella quinquefolia (L.) Small	Stiff gentian
(E)	Sabatia angularis (L.) Pursh	Rose-pink
(xix)	HALORAGACEAE (Water-milfoil family):	
	Myriophyllum farwellii Morong.	Farwell's water-milfoil
(xx)	HYDROPHYLLACEAE (Waterleaf family):	
	Phacelia franklinii (R. Br.) Gray	Franklin's phacelia

(xxi)	LAMIACEAE (Mint family):	
(A)	*Scutellaria parvula* Michaux (sensu lato)	Small skullcap
(B)	*Trichostema brachiatum* L. [*Isanthus brachiatus* (L.) BSP.]	False pennyroyal
(C)	*T. dichotomum* L.	Bastard pennyroyal
(xxii)	LINACEAE (Flax family):	
	Linum virginianum L.	Virginia flax
(xxiii)	NYMPHAEACEAE (Water-lily family):	
(A)	*Nelumbo lutea* (Willd.) pers. [*N. pentapetala* (Walter) Fern.]	American lotus
(B)	*N. pumila* (Timm) DC. [*N. microphylla* (Pers.) Fern.]	Small yellow pond-lily
(C)	*Nymphaea tetragona* Georgi.	Pygmy water-lily
(xxiv)	ONAGRACEAE (Evening-primrose family):	
(A)	*Ludwigia alternifolis* L.	Seedbox
(B)	*L. sphaerocarpa* Ell.	Globe-fruited seedbox
(xxv)	OROBANCHACEAE (Broom-rape family:	
	Orobanche fasciculata Nutt.	Broom-rape
(xxvi)	OXALIDACEAE (Wood-sorrel family):	
	Oxalis violacea	Violet wood-sorrel
(xxvii)	POLEMONIACEAE (Phlox family):	
(A)	*Phlox bifida* Beck.	Cleft phlox
(B)	*P. maculata* L.	Wild sweet William
(C)	*Polemonium reptans* L.	Jacob's ladder
(xxviii)	POLYGONACEAE (Buckwheat family):	
(A)	*Polygonum careyi* Olney.	Carey's smartweed
(B)	*P. viviparum* L.	Alpin bistort
(xxix)	PRIMULACEAE (Primrose family):	
	Dodecatheon meadia L.	Shooting-star
(xxx)	RANUNCULACEAE (Crowfoot family):	
(A)	*Hydrastis canadensis* L.	Golden-seal
(B)	*Ranunculus ambigens* Wats.	Spearwort
(C)	*R. cymbalaria* Pursh	Seaside crowfoot
(D)	*R. lapponicus* L.	Lapland buttercup
(E)	*R. macounii* Britt.	Macoun's buttercup
(F)	*R. rhomboideus* Goldie.	Prairie buttercup
(G)	*Thalictrum revolutum* DC.	Waxy meadow-rue
(H)	*T. venulosum* Trel.	Veiny meadow-rue
(xxxi)	RHAMNACEAE (Buckthorn family):	
	Ceanothus sanguineus Pursh	Wild-lilac

(xxxii)	ROSACEAE (Rose family):	
(A)	Dalibarda repens L.	False violet
(B)	Filipendula rubra (Hill) Robinson	Queen-of-the-Prairie
(C)	Geum triflorum Pursh	Prairie smoke
(D)	Porteranthus trifoliatus (L.) Britt. [Gillenia trifoliata (L.) Moench.]	Bowman's root
(E)	Potentilla paradoxa Nutt.	Sand cinquefoil
(F)	P. pennsylvanica, L.	Prairie cinquefoil
(G)	Rubus acaulis Michaux	Dwarf raspberry
(H)	Sanguisorba canadensis L.	Canadian burnet
(xxxiii)	SALICACEAE (Willow family):	
(A)	Populus heterophylla L.	Swamp or black cottonwood
(B)	Salix planifolia, Pursh	Tea-leaved willow
(xxxiv)	SARRACENIACEAE (Pitcher-plant family):	
	Sarracenia purpurea f. heterophylla (Eaton) Fern.	Yellow pitcher-plant
(xxxv)	SAXIFRAGACEAE (Saxifrage family):	
(A)	Parnassia palustris L. var. negogaga	Marsh grass-of-parnassus
(B)	Saxifraga paniculata Miller [S. aizoon Jacq.]	Encrusted saxifrage
(C)	S. tricuspidata Rottb.	Prickly saxifrage
(xxxvi)	SCROPHULARIACEAE (Figwort family):	
(A)	Besseya bullii (Eaton) Rydb.	Kitten-tails
(B)	Castilleja septentrionalis Lindley	Pale Indian paintbrush
(C)	Collinsia parviflora Dougals ex Lindley	Small blue-eyed Mary
(D)	Euphrasia arctica Lange (sensu lato)	American eyebright
(E)	Gratiola lutea Raf. (G. aurea Muhl.)	Hedge-hyssop
(F)	Mimulus alatus Aiton.	Wing-stemmed Monkey-flower
(G)	M. glabratus var. michiganensis	Michigan Monkey-flower
(xxxvii)	VALERIANACEAE (Valerian family):	
(A)	Valeriana ciliata T. & G.	Edible valerian
(B)	Valerianella chenopodifolia (Pursh) DC.	Goosefoot corn salad
(xxxviii)	VIOLACEAE (Violet family):	
(A)	Viola epipsila Ledeb.	Northern marsh violet
(B)	V. pedatifida, G. Don.	Prairie bird's foot violet

(3) This rule does not apply to cultivated plants.

(4) The following species are thought to be extirpated in Michigan but if rediscovered will automatically be listed as threatened:

(A)	Agalinis auriculata (Michaux) [Aureolaria auriculata (Michaux) Farw.]	Eared false foxglove
(B)	A. gattingeri Small [Gerardia gattingeri Small]	Gattinger's gerardia

(C)	Agropyron spicatum (Pursh) Scribn. & J.G. Smith	Bluebunch wheatgrass
(D)	Aristida dichotoma Michaux	Three-awn grass
(E)	Asplenium montanum Willd.	Mountain spleenwort
(F)	Buchnera americana L.	Blue-hearts
(G)	Carex decomposita Muhl.	Log sedge
(H)	Commelina erecta L.	Slender day-flower
(I)	Digitaria filiformis (L.) Koeler	Slender crabgrass
(J)	Disporum maculatum, (Buckl.) Britt.	Nodding madarian
(K)	Echinodorus tenellus (Mart.) Buchenau	Dwarf burhead
(L)	Eleocharis radicans (Poiret) Kunth.	Spike rush
(M)	E. tricostata Torr.	Three-ribbed spike-rush
(N)	Equisetum telmateia Ehry.	Giant horsetail
(O)	Fimbristylis puberula (Michaux) Vahl	Chestnut sedge
(P)	Gentiana puberulenta Pringle [G. puberula Michaux]	Downy gentian
(Q)	G. saponaria L.	Soapwort gentian
(R)	Glyceria acutiflora Torrey	Manna grass
(S)	Helianthus microcephalus Torrey & Gray	Small wood sunflower
(T)	Lemna valdiviana Phil.	Pale duckweed
(U)	Liatris punctata Hook.	Dotted blazing-star
(V)	Muhlenbergia cuspidata (Hooker) Rydb.	Plains muhly
(W)	Panicum verrucosum, Muhl.	Warty panic-grass
(X)	Phleum alpinum L.	Mountain Timothy
(Y)	Plantago cordata Lam.	Heart-leaved plantain
(Z)	Polygala incarnata L.	Pink milkwort
(AA)	Polygonatum biflorum (Walter) Ell. var. Mellum (Farwell) Ownbey	Honey-flowered solomon-seal
(BB)	Polytaenia nuttallii DC.	Prairie-parsley
(CC)	Rhynchospora globularis (Chapm.) Small	Globe beak-rush
(DD)	Scleria pauciflora Willd.	Few-flowered nut-rush
(EE)	Senecio congestus, (R. Br.) DC.	Marsh-fleabane
(FF)	Silene virginica L.	Fire pink
(GG)	Sisyrinchium farwellii, Bickn.	Farwell's blue-eyed grass
(HH)	S. hastile, Bickn.	Blue-eyed grass
(II)	Tradescantia bracteata	Long-bracted spiderwort
(JJ)	Trillium viride Beck	Green trillium
(KK)	Vaccinium vitis-idaea L.	Mountain-cranberry
(LL)	Woodwardia areolata (L.) Moore	Netted chain fern

APPENDIX 7

SIGHT TRIANGLE DETERMINATION

Sight distance versus approach speed. There should be a minimum of six seconds sight distance measured from a point 18 feet back from the edge of the roadway. The desired sight distance would be eight seconds measured from a point 18 feet from the edge of the roadway.

SPEED LIMIT X 1.47 X 6 = MINIMUM SIGHT DISTANCE

SPEED LIMIT X 1.47 X 8 = DESIRED SIGHT DISTANCE

SIGHT DISTANCE TABLE

SPEED (MPH/FPS)	8 SECOND DISTANCE	6 SECOND DISTANCE
55/80.685	645.48 feet	484.11 feet
50/73.350	586.80 feet	440.10 feet
45/66.015	528.12 feet	396.09 feet
40/58.680	469.44 feet	352.08 feet
35/51.345	410.76 feet	308.07 feet
30/44.010	352.08 feet	264.06 feet
25/36.675	293.40 feet	220.05 feet

These distances are a guide for comparison purposes only. These distances are <u>not</u> to be used in any investigations or recommendations.

APPENDIX 8

WINTER PARKING POLICY

The parking of vehicles is generally permitted along the shoulders of most roadways unless specifically prohibited by the Michigan Vehicle Code or by signs posted for this purpose. Generally, these vehicles do not pose any problem. However, during the winter months visibility and maneuverability are severely diminished. In areas where the snowfall is significant, parked vehicles are potentially hazardous obstacles which hinder snow removal and endanger the general public as well as the individuals engaged in maintaining this vital transportation system. Snow removal allows for the free movement of emergency vehicles and all other traffic. The task of maintaining free passage on all roads is a responsibility shared by various road agencies and law enforcement departments.

The location of our state in the northern latitudes of the continental United States and the dual peninsular shape produce lake-affect precipitation. During the winter season, snowfall in excess of 300 inches has been recorded at various locations. The greatest portion of this snowfall occurs during the months of December, January, and February, particularly along the western and northern counties of Michigan.

Those counties that receive four-tenths (.4) percent or more of the available snow removal payments pursuant to Section 247.662a may request a winter parking prohibition. The request must be accompanied by justification based on crashes, snowfall, or other pertinent information. This recommendation will be the joint responsibility of the Michigan Department of Transportation, county road commission, and the Michigan Department of State Police. A resolution must be approved by the county road commission supporting the parking prohibition and detailed plans must be incorporated into the resolution outlining specifically how constituents will be notified of the restrictions.

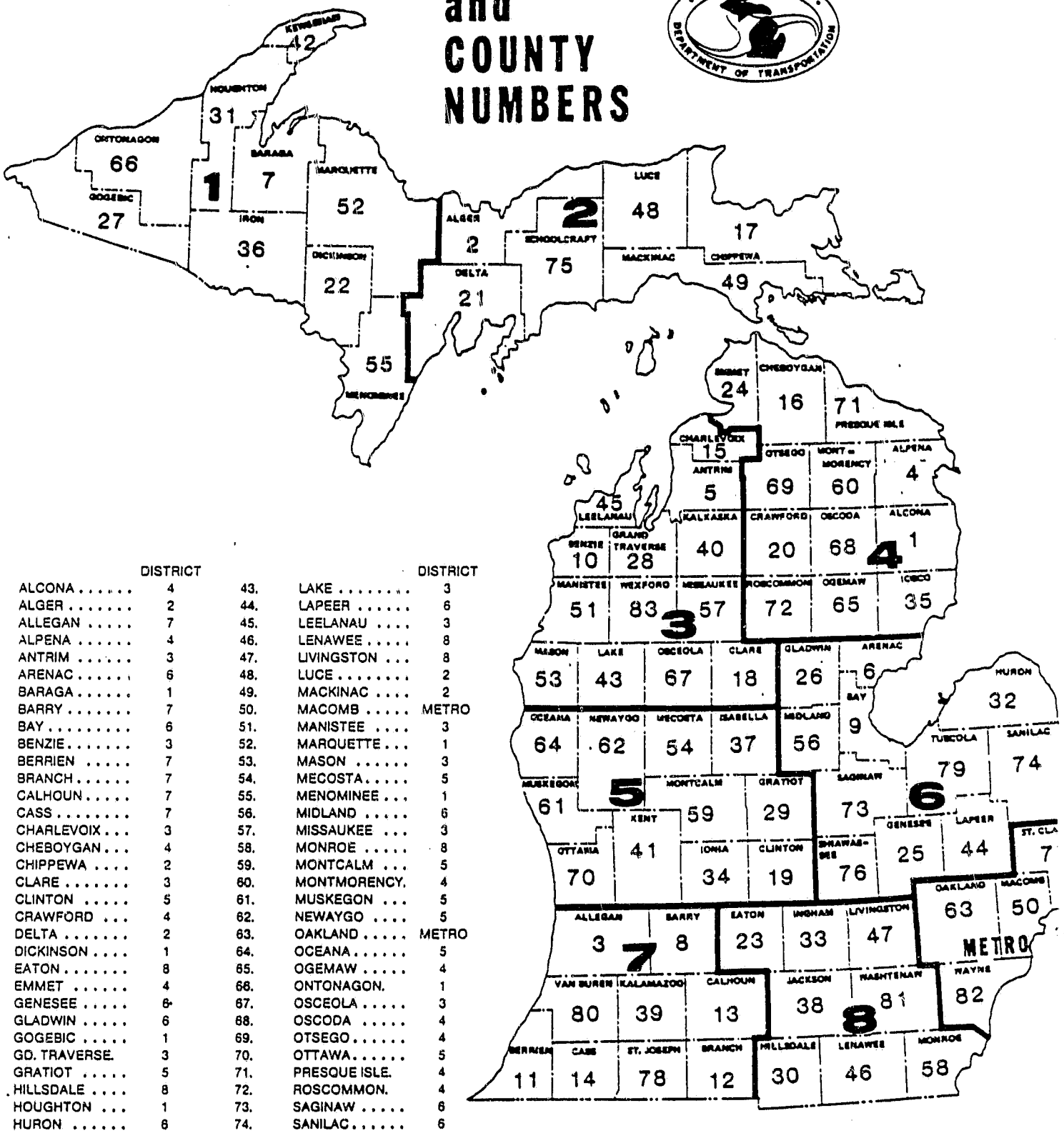
Signs shall be erected at the corporate limits of the county on state trunkline highways and primary county roads or as otherwise necessary or required by law. All signs shall be installed and in accordance with and conform to the Michigan Manual of Uniform Traffic Control Devices. It is suggested that public notification of the parking prohibition be posted in all newspapers circulated within the county at least twice each year prior to the implementation of the restriction.

The traffic control order (TCO), if approved, will not include cities and villages as they are empowered to regulate parking for snow removal and other reasons under a different authority. Also, due to the unpredictabilty of snowfall the traffic control order will apply on a 24-hour basis during these months unless compelling and written justification is presented for what may be construed as timed parking.

If approved, one TCO will be recommended for the entire county and include both state trunkline highways and county roads. An example of the TCO follows this page.

A TCO issued pursuant to these guidelines may be rescinded by a consensus of a majority of two-thirds (2/3) of the survey team. This should be understood and agreed upon by the survey team members before an investigation is initiated.

DISTRICT and COUNTY NUMBERS



		DISTRICT
1.	ALCONA	4
2.	ALGER	2
	ALLEGAN	7
	ALPENA	4
5.	ANTRIM	3
6.	ARENAC	6
7.	BARAGA	1
8.	BARRY	7
9.	BAY	6
10.	BENZIE	3
11.	BERRIEN	7
12.	BRANCH	7
13.	CALHOUN	7
14.	CASS	7
15.	CHARLEVOIX	3
16.	CHEBOYGAN	4
17.	CHIPPEWA	2
18.	CLARE	3
19.	CLINTON	5
20.	CRAWFORD	4
21.	DELTA	2
22.	DICKINSON	1
23.	EATON	8
24.	EMMET	4
25.	GENESEE	6
26.	GLADWIN	6
27.	GOGEBIC	1
28.	GD. TRAVERSE	3
29.	GRATIOT	5
30.	HILLSDALE	8
31.	HOUGHTON	1
32.	HURON	8
33.	INGHAM	8
34.	IONIA	5
35.	IOSCO	4
36.	IRON	1
	ISABELLA	5
	JACKSON	8
39.	KALAMAZOO	7
40.	KALKASKA	3
41.	KENT	5
42.	KEWEENAW	1

		DISTRICT
43.	LAKE	3
44.	LAPEER	6
45.	LEELANAU	3
46.	LENAWEE	8
47.	LIVINGSTON	8
48.	LUCE	2
49.	MACKINAC	2
50.	MACOMB	METRO
51.	MANISTEE	3
52.	MARQUETTE	1
53.	MASON	3
54.	MECOSTA	5
55.	MENOMINEE	1
56.	MIDLAND	6
57.	MISSAUKEE	3
58.	MONROE	8
59.	MONTCALM	5
60.	MONTMORENCY.	4
61.	MUSKEGON	5
62.	NEWAYGO	5
63.	OAKLAND	METRO
64.	OCEANA	5
65.	OGEMAW	4
66.	ONTONAGON.	1
67.	OSCEOLA	3
68.	OSCODA	4
69.	OTSEGO	4
70.	OTTAWA	5
71.	PRESQUE ISLE.	4
72.	ROSCOMMON.	4
73.	SAGINAW	6
74.	SANILAC	6
75.	SCHOOLCRAFT.	2
76.	SHIAWASSEE	6
77.	ST. CLAIR	METRO
78.	ST. JOSEPH	7
79.	TUSCOLA	6
80.	VAN BUREN	7
81.	WASHTENAW.	8
82.	WAYNE	METRO
83.	WEXFORD	3

AVERAGE SNOWFALL COMPUTATIONS

BASED ON SNOWFALL DATA FOR LAST 10 YEARS

CO NO	COUNTY NAME	79-80 SNOWFALL	80-81 SNOWFALL	81-82 SNOWFALL	82-83 SNOWFALL	83-84 SNOWFALL	84-85 SNOWFALL	85-86 SNOWFALL	86-87 SNOWFALL	87-88 SNOWFALL	88-89 SNOWFALL	10 YEAR AVERAGES
1	ALCONA	59.0	65.2	84.5	52.6	56.1	108.8	85.36	54.85	69.17	58.59	69.4
2	ALGER	154.9	182.2	202.1	148.1	195.2	211.0	193.68	136.18	172.13	191.40	178.8
3	ALLEGAN	60.4	86.8	103.4	34.5	95.5	88.9	101.71	50.84	84.13	65.10	77.1
4	ALPENA	69.3	73.5	87.2	61.4	67.2	109.3	87.11	53.38	73.42	72.11	75.4
5	ANTRIM	108.0	129.1	138.8	68.6	132.2	166.7	156.63	88.05	124.96	136.75	125.0
6	ARENAC	36.2	41.4	48.5	30.9	34.8	68.4	59.53	35.02	41.97	37.06	43.4
7	BARAGA	159.1	153.0	166.4	182.3	163.2	196.2	213.03	107.21	208.12	192.59	174.1
8	BARRY	39.2	46.3	73.2	25.9	62.1	64.1	57.65	33.28	49.41	50.65	50.2
9	BAY	26.0	39.5	41.9	25.2	28.6	60.3	53.45	28.09	31.60	30.99	36.6
10	BENZIE	107.1	117.5	124.1	66.4	113.8	156.8	144.11	73.11	111.23	127.74	114.2
11	BERRIEN	51.9	76.4	93.1	28.7	75.9	76.0	92.59	46.81	77.11	54.13	67.3
12	BRANCH	32.7	47.9	74.7	20.5	57.0	47.6	39.98	36.08	40.66	33.48	43.1
13	CALHOUN	35.9	44.6	72.9	25.0	56.8	57.0	55.05	39.35	43.02	31.70	46.1
14	CASS	50.5	62.4	85.3	21.6	68.5	58.9	64.79	41.63	55.65	41.61	55.1
15	CHARLEVOIX	100.5	93.2	113.0	49.3	118.9	151.2	134.70	79.04	115.94	132.63	108.8
16	CHEBOYGAN	79.0	72.9	98.8	48.6	112.5	128.8	124.13	83.14	97.02	111.41	95.6
17	CHIPPEWA	94.6	113.0	140.3	87.1	109.7	145.1	141.60	92.50	119.73	124.04	116.8
18	CLARE	48.5	60.8	71.8	37.7	42.6	87.2	74.22	36.93	55.86	55.02	57.1
19	CLINTON	33.3	34.7	51.0	26.5	41.9	63.7	55.17	33.50	36.73	30.84	40.7
20	CRAWFORD	70.6	78.0	101.3	54.8	99.1	114.9	122.78	69.59	101.28	113.09	92.5
21	DELTA	55.5	79.6	104.7	61.5	67.5	92.4	89.64	57.17	72.76	85.07	76.6
22	DICKINSON	54.9	52.3	80.8	62.5	64.7	83.9	94.78	50.58	67.63	80.28	69.2
23	EATON	37.4	35.8	64.5	24.8	44.7	57.9	56.50	33.63	45.94	31.87	43.3
24	EMMET	95.0	76.8	105.6	46.0	113.9	134.1	124.11	79.29	95.02	114.98	98.5
25	GENESEE	34.2	35.3	57.2	29.2	42.9	50.3	49.21	35.53	28.42	21.00	38.3
26	GLADWIN	35.1	44.5	53.8	30.3	32.2	65.8	70.58	36.48	43.90	40.21	45.3
27	GOGEBIC	143.5	140.7	179.4	169.7	147.3	141.7	156.87	102.53	139.04	191.20	151.2
28	GRAND TRAVERSE	102.6	104.5	127.0	70.9	96.8	157.9	143.45	76.39	112.60	116.95	110.9
29	GRATIOT	30.8	35.8	45.9	24.8	35.2	62.2	50.31	28.85	33.33	29.88	37.7
30	HILLSDALE	27.0	41.1	85.5	23.4	56.1	43.4	39.44	42.60	39.16	23.11	42.1
31	HOUGHTON	172.7	168.3	229.3	185.3	209.5	217.8	263.40	128.56	189.21	261.59	202.6
32	HURON	41.3	45.1	60.2	41.4	50.6	93.1	67.76	39.94	45.70	31.85	52.6
33	INGHAM	30.7	31.5	55.0	21.3	37.8	57.7	50.50	37.36	42.03	25.13	38.9
34	IONIA	35.7	42.9	54.9	28.4	53.3	65.5	59.48	36.03	47.87	48.82	47.3
35	IOSCO	42.0	49.5	65.4	37.2	42.6	82.0	73.40	40.58	44.62	52.87	53.0
36	IRON	80.8	79.7	103.3	106.8	93.4	100.7	115.21	60.64	79.81	96.59	91.7
37	ISABELLA	33.7	43.7	55.3	26.5	35.1	67.9	54.32	27.22	35.60	30.14	40.9
38	JACKSON	31.4	31.5	67.5	17.2	40.6	40.5	45.08	40.83	37.80	20.93	37.3
39	KALAMAZOO	44.0	61.7	81.3	23.7	69.6	67.6	61.63	38.57	56.26	45.42	55.0
40	KALKASKA	99.9	124.3	137.7	72.6	108.7	155.6	146.99	79.48	116.24	137.81	117.9
41	KENT	44.3	52.2	69.4	32.9	65.0	70.1	72.30	43.33	56.38	57.96	56.4
42	KEWEENAW	214.3	185.1	299.4	192.2	283.4	256.4	320.52	153.87	188.29	284.30	237.8
43	LAKE	71.1	81.2	123.4	47.0	89.0	106.4	102.98	53.64	87.28	97.94	86.0
44	LAPEER	31.9	37.3	55.2	24.6	47.2	54.2	47.06	31.31	26.65	18.80	37.4

AVERAGE SNOWFALL COMPUTATIONS

BASED ON SNOWFALL DATA FOR LAST 10 YEARS

CO NO	COUNTY NAME	79-80 SNOWFALL	80-81 SNOWFALL	81-82 SNOWFALL	82-83 SNOWFALL	83-84 SNOWFALL	84-85 SNOWFALL	85-86 SNOWFALL	86-87 SNOWFALL	87-88 SNOWFALL	88-89 SNOWFALL	10 YEAR AVERAGES
45	LEELANAU	131.0	125.8	143.0	75.5	138.6	171.2	171.36	83.17	120.40	166.11	132.6
46	LENAWEE	25.2	35.4	72.6	17.5	45.5	35.8	34.29	34.23	33.88	17.02	35.1
47	LIVINGSTON	28.3	28.6	62.3	21.5	31.4	42.6	42.24	38.57	36.39	18.65	35.1
48	LUCE	106.7	138.8	148.1	105.1	132.0	163.5	163.74	87.80	129.36	140.05	131.5
49	MACKINAC	75.6	96.5	119.4	70.3	99.0	133.1	121.57	85.47	103.95	104.54	100.9
50	MACOMB	26.0	36.2	70.9	19.0	50.5	55.6	46.53	29.72	30.66	16.46	38.1
51	MANISTEE	87.7	95.2	115.2	53.4	99.2	124.1	127.62	65.62	100.83	96.07	96.5
52	MARQUETTE	105.6	116.6	161.4	138.1	140.6	156.5	151.17	80.11	138.87	145.51	133.4
53	MASON	85.0	101.5	138.0	47.5	94.2	118.0	127.28	58.99	105.12	83.17	95.9
54	MECOSTA	48.9	56.6	85.3	27.3	59.3	82.3	82.50	40.67	52.57	55.04	59.0
55	MENOMINEE	46.9	44.5	72.9	45.9	53.3	76.4	80.90	47.48	69.03	69.03	60.6
56	MIDLAND	25.9	39.2	45.4	22.8	25.9	58.1	46.21	24.35	29.52	27.90	34.5
57	MISSAUKEE	63.4	79.8	96.1	56.2	62.0	107.7	98.21	52.30	88.11	86.63	79.0
58	MONROE	21.8	33.4	72.6	16.3	42.6	40.3	35.47	34.82	36.22	17.04	35.1
59	MONTCALM	39.4	50.7	71.7	33.0	55.2	69.7	69.42	38.14	51.42	46.30	52.5
60	MONTMORENCY	55.9	68.1	72.1	50.9	85.8	89.3	104.29	56.40	87.03	76.33	74.6
61	MUSKEGON	61.6	92.8	124.2	35.1	83.1	99.0	98.14	47.52	73.99	70.18	78.6
62	NEWAYGO	62.5	71.5	97.7	33.8	75.7	79.6	88.48	46.94	63.00	72.50	69.2
63	OAKLAND	30.8	36.4	72.9	22.1	43.3	50.0	48.71	35.02	27.60	13.46	38.0
64	OCEANA	73.0	98.2	132.6	44.9	95.7	99.7	107.91	48.76	74.40	73.23	84.8
65	OGEMAW	42.2	49.8	71.1	37.7	46.7	75.9	69.09	38.26	48.50	48.62	52.8
66	ONTONAGON	167.6	163.5	206.4	180.4	172.3	180.5	208.81	118.37	163.08	228.41	178.9
67	OSCEOLA	56.0	66.4	103.4	42.6	61.5	102.3	96.61	47.51	76.81	85.74	73.9
68	OSCODA	50.7	59.3	69.0	41.9	54.0	82.7	73.71	47.62	54.28	54.15	58.7
69	OTSEGO	98.5	94.8	119.3	71.8	121.6	129.0	143.25	87.00	140.07	127.26	113.3
70	OTTAWA	46.7	83.0	91.3	28.2	76.4	90.8	98.71	47.25	72.74	65.37	70.0
71	PRESQUE ISLE	80.5	79.4	104.3	58.2	97.5	123.0	102.30	61.10	87.64	87.82	88.2
72	ROSCOMMON	56.4	70.2	94.0	49.1	52.4	86.0	80.14	41.20	67.13	68.11	66.3
73	SAGINAW	29.8	34.2	45.6	29.6	37.0	57.1	47.28	27.30	31.84	27.00	36.7
74	SANILAC	34.2	34.1	55.9	30.0	54.3	74.1	54.84	38.56	34.81	24.47	43.5
75	SCHOOLCRAFT	97.7	120.8	127.8	96.5	120.2	150.6	148.46	95.05	118.92	129.12	120.5
76	SHIAWASSEE	29 2	31.7	50.7	26.7	41.8	58.1	48.48	29.44	30.85	20.46	36.7
77	ST. CLAIR	30.8	33.1	62.8	16.2	46.8	60.4	46.27	30.33	32.26	23.07	38.2
78	ST. JOSEPH	27.2	45.6	67.2	17.0	52.9	41.3	35.80	31.22	32.76	25.46	37.6
79	TUSCOLA	26.0	33.7	46.7	26.9	39.5	53.6	51.25	29.52	28.76	26.91	36.3
80	VAN BUREN	50.3	79.5	90.3	29.5	72.9	75.1	89.83	46.41	81.03	66.91	68.2
81	WASHTENAW	29.7	35.5	66.2	23.1	43.7	44.1	46.25	42.31	41.32	24.81	39.7
82	WAYNE	22.9	31.1	67.6	17.6	45.2	46.1	48.08	38.09	35.77	19.63	37.2
83	WEXFORD	84.2	92.4	131.8	77.5	103.0	158.6	133.38	72.17	116.21	122.67	109.2
STATEWIDE AVERAGE		63.48	72.07	96.14	52.20	78.56	96.70	94.96	55.15	74.55	75.99	75.98

COUNTY NAME	1989 County Snow Removal Payments 07-Oct-88 14 year ave. PERCENT	AMOUNT DISTRIBUTED $3,422,929.01
ALCONA	0.3378%	$11,561.24
ALGER	4.5040%	$154,169.83
ALLEGAN	1.8723%	$64,088.84
ALPENA	0.4174%	$14,288.08
ANTRIM	5.0313%	$172,219.10
ARENAC	0.0000%	
BARAGA	4.5340%	$155,194.93
BARRY	0.0000%	
BAY	0.0000%	
BENZIE	2.3939%	$81,941.25
BERRIEN	0.6006%	$20,557.12
BRANCH	0.0000%	
CALHOUN	0.0000%	
CASS	0.1060%	$3,629.36
CHARLEVOIX	2.1367%	$73,138.72
CHEBOYGAN	2.2051%	$75,477.68
CHIPPEWA	5.5850%	$191,170.35
CLARE	0.0401%	$1,373.43
CLINTON	0.0000%	
CRAWFORD	1.0366%	$35,481.17
DELTA	0.5446%	$18,641.37
DICKINSON	0.2198%	$7,524.04
EATON	0.0000%	
EMMET	2.2484%	$76,960.87
GENESSEE	0.0000%	
GLADWIN	0.0000%	
GOGEBIC	4.4865%	$153,568.12
GRAND TRAVERSE	2.7925%	$95,584.56
GRATIOT	0.0000%	
HILLSDALE	0.036[illegible]%	$1,264.48
HOUGHTON	9.2730%	$317,406.60
HURON	0.1279%	$4,377.45
INGHAM	0.0000%	
IONIA	0.0000%	
IOSCO	0.0129%	$442.51
IRON	1.4640%	$50,110.18
ISABELLA	0.0000%	
JACKSON	0.0000%	
KALAMAZOO	0.0507%	$1,734.85
KALKASKA	3.7058%	$126,847.04

COUNTY NAME	1989 County Snow Removal Payments 07-Oct-88 14 year ave. PERCENT	AMOUNT DISTRIBUTED $3,422,929.01
KENT	0.1637%	$5,604.41
KEWEENAW	2.1504%	$73,605.70
LAKE	1.2935%	$44,274.85
LAPEER	0.0000%	
LEELANAU	2.9324%	$100,374.19
LENAWEE	0.0000%	
LIVINGSTON	0.0000%	
LUCE	2.7268%	$93,334.86
MACKINAC	1.6364%	$56,011.94
MACOMB	0.0000%	
MANISTEE	2.3110%	$79,104.18
MARQUETTE	6.5011%	$222,526.40
MASON	1.9082%	$65,317.35
MECOSTA	0.1897%	$6,492.67
MENOMINEE	0.0415%	$1,420.82
MIDLAND	0.0000%	
MISSAUKEE	0.6665%	$22,812.54
MONROE	0.0000%	
MONTCALM	0.0042%	$143.13
MONTMORENCY	0.5176%	$17,715.89
MUSKEGON	1.3689%	$46,856.35
NEWAGO	0.5936%	$20,318.29
OAKLAND	0.0000%	
OCEANA	2.0129%	$68,901.85
OGEMAW	0.0000%	
ONTONAGON	5.2414%	$179,410.68
OSCEOLA	0.4181%	$14,312.49
OSCODA	0.1382%	$4,730.13
OTSEGO	3.6612%	$125,321.73
OTTAWA	1.0162%	$34,784.24
PRESQUE ISLE	1.1536%	$39,485.90
ROSCOMMON	0.1207%	$4,132.46
SAGINAW	0.0000%	
SANILAC	0.0000%	
SCHOOLCRAFT	2.0102%	$68,808.43
SHIAWASSEE	0.0000%	
ST. CLAIR	0.0000%	
ST. JOSEPH	0.0000%	
TUSCOLA	0.0000%	

COUNTY NAME	1989 County Snow Removal Payments 07-Oct-88 14 year ave. PERCENT	AMOUNT DISTRIBUTED $3,422,929.01
VAN BUREN	0.8349%	$28,576.48
WASHTENAW	0.0000%	
WAYNE	0.0000%	
WEXFORD	2.6234%	$89,797.88
TOTALS	100.00%	$3,422,929.01

MDOT 1512 (1/79)

DISTRIBUTION:
White - MDOT
Pink - County Clerk
Copies for -
MDSP, MDOT, Sheriff
Local Officials
School

STATE OF MICHIGAN

File No.

TRAFFIC CONTROL ORDER

DRAFT

ORDER NO. PA 05-01-91

EFFECTIVE DATE _____
When official traffic control signs conforming to the mandate of this order shall have been erected.

In accordance with Act 300, PA1949, as amended, we have jointly caused a traffic engineering investigation to be made of traffic conditions on State Trunkline Highways and County roads in the xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx in Antrim County, and as a result of said investigation do hereby direct that:

There shall be no parking at any time on either the roadway or shoulder of any state trunkline highway or county road outside of incorporated cities and villages from December 1 of any year through March 1 of the succeeding year.

The following Traffic Control Order(s) is/are hereby rescinded _____.

This Traffic Control Order shall be filed in the office of the Antrim County Clerk.

MICHIGAN
DEPARTMENT OF TRANSPORTATION _____ *Director* _____ *Date*

MICHIGAN
DEPARTMENT OF STATE POLICE _____ *Director* _____ *Date*

_____ SCHOOL DISTRICT xxxxxxxxxxxx
County Road Commission

_____ xxxxxxxxxxxx
Commissioner

_____ *Date*

APPENDIX 9

GENERAL WARRANTS

The following chart is an extremely oversimplified generalization of some of the conditions considered in establishing various intersection controls:

TYPE OF CONTROL	APPROACH SPEED	VOLUME PER DAY	RIGHT ANGLE CRASHES/YR	OTHER
NONE	> 30	< 250	≤ 3	
YIELD	> 10 ≤ 30	≥ 250 < 500	≥ 3	
STOP	≤ 10	≥ 500	≥ 3	
4-WAY STOP	≤ 10	500/hr for 6 hr near equal vol	≥ 5	Rural = 70% of this
SIGNAL	≤ 10	800/hr for 8 hr 200/hr on leg	≥ 5	Rural = 70% 11 warrants

These figures serve as a guide only. Officers are not to use these figures exclusively or in lieu of an in-depth traffic survey investigation. Please consult the Michigan Manual of Uniform Traffic Control Devices for a complete discussion of the various warrants required for each control.

APPENDIX 10

CRASH RATES

1989

CRASH EXPERIENCE BY ROADWAY TYPE

The schedule below provides a detailed breakdown of estimated vehicle mileage, crashes, fatality rates (deaths per 100 million vehicle miles), and crash rates (accidents per 100 million vehicle miles) for the major roadway types in Michigan.

Statewide Crashes	*Estimated Mileage (Billions)	All Crashes	Deaths	RATES Death Rate	RATES Injury Crashes	RATES Total Crashes
Limited Access Roadways...	22.4	36,293	157	0.70	42.5	162.0
U.S. & Michigan Roads.....	20.1	104,469	480	2.39	131.5	519.7
County & Local Roads.....	37.4	276,490	993	2.66	182.4	739.3
TOTALS.....	79.9	417,252	1,630	2.04	130.4	522.2

*1989 MICHIGAN DEPARTMENT OF TRANSPORTATION FIGURES

APPENDIX 11

TS 4 (REV 10-89)
MICHIGAN DEPARTMENT OF STATE POLICE

TRAFFIC SURVEY REPORT Page#

DATE	COMPLAINT NO.
WORK UNIT	FILE CLASS 93005

COMPLAINANT			TELEPHONE NO.	
ADDRESS: STREET AND NO.	CITY		STATE	ZIP
INCIDENT STATUS ☐				
COUNTY	CITY/TWP/VILLAGE of			SECTION
NAME OF ROAD		RIGHT OF WAY		NUMBER OF LANES
LENGTH OF ROAD UNDER STUDY				
DIVIDED	SURFACE MATERIAL	SHOULDER WIDTH & MATERIAL		
ROADWAY WIDTH	ALIGNMENT	DEVELOPMENT		
PRIVATE DRIVES	COMMERCIAL DRIVES	INTERSECTIONS		SIDEWALKS
BRIDGES,RR,CROSSINGS,OTHER		EXISTING CONTROLS		
VOLUME COUNT:	DATE	BY	VOLUME	

NATURE OF INCIDENT

TRAFFIC SURVEY

PARTICIPANTS:

PAGE	INVESTIGATED BY	UNIT REVIEWED	DIVISION REVIEWED

CRASH SYNOPSIS REPORT FORM

COUNTY:	TOWNSHIP/CITY	INCIDENT #
HIGHWAY:	FROM:	TO:
LENGTH OF ZONE:	ADT VOLUME:	CRASH RATE:
TOTAL CRASHES:	INJURY CRASHES:	FATAL CRASHES:
ONE VEHICLE CRASHES:	ALCOHOL INVOLVED CRASHES:	YEAR(S):
ROAD CONDITIONS DRY:	WET	SNOWY/ICY:

DIRECTION OF TRAVEL: NORTHBOUND:	SOUTHBOUND:
EASTBOUND:	WESTBOUND:

HAZARDOUS ACTION INDICATED:

1. SPEED TOO FAST..... _____
2. SPEED TOO SLOW..... _____
3. FAILED TO YIELD/DISREGARD SIGNAL..... _____
4. WRONG WAY..... _____
5. DROVE LEFT OF CENTER/IMPROPER PASSING..... _____
6. IMPROPER TURN..... _____
7. IMPROPER BACKING/UNSAFE START..... _____
8. FOLLOWING TOO CLOSE..... _____
9. OTHER OR NOT KNOWN..... _____
0. NO HAZARDOUS ACTION INDICATED..... _____

CRASH TYPE:

TRAIN.....	_____	PARKING/DRIVEWAY..	_____
PEDESTRIAN.....	_____	LEFT TURN.....	_____
FIXED OBJECT.....	_____	RIGHT TURN.....	_____
OTHER OBJECT.....	_____	ANGLE.....	_____
ANIMAL.....	_____	REAR END.....	_____
PEDACYCLE.....	_____	SIDESWIPE.....	_____
VEHICLE ROLLOVER.	_____	PARKED VEHICLE....	_____
BACKED INTO.....	_____	HEADON.....	_____

INVESTIGATED BY:	UNIT REVIEW:	DIVISION REVIEW:

INVESTIGATION AND REPORTING REQUIREMENTS

A. TS-4 Information Requirements

1. The Original Date - This will be the date that the officer first visits the scene.

2. Incident Number - This will be the incident number assigned by the unit. This number will be assigned on the same date that the officer first visits the scene.

3. Work Unit - This will be filled in via the computer; e.g., Fifth District Headquarters, Flint Post, etc.

4. File Class - As indicated in the UCR manual

5. Complainant - The complainant in most cases would be whoever initiated the survey. The road commission will only be listed if not in response to another parties request. This allows the survey team to contact the complainant for additional information during the investigations and to apprise them of the outcome of the survey. On the ten-year review, the District Commander will be the complaining party.

6. Address and Telephone Number - This should include the title and organization when the individual is an official of a governmental agency.

7. Incident Status - Indicate the status of the investigation per the UCR Manual; i.e., open, closed, inactive, etc. The computer will generate this information on the report in this section.

8. County, City/Village/Township, and Section - As the case may be. List all jurisdictions which the TCO passes through. Indicate by number and verbiage the jurisdiction of the area.

9. Name of Road - Both the number designation and the local name will be included where appropriate. The number designation should precede the local name designation. There is only one proper name for each road as recorded on an Act 51 map.

10. Right-of-Way - Indicate the width in feet of the right-of-way.

11. Number of Lanes - As appropriate. Do not include any variables such as passing lanes, flares, etc., but explain these in the narrative portion.

12. Length of Road Under Study - This should include the length in feet or miles of the entire portion considered including references to specific points or intersections.

13. Divided - Yes or no.

14. Surface Material - Bituminous, concrete, gravel, etc.

15. Shoulder Width and Material - Bituminous, concrete, gravel, etc.

16. Roadway Width - Indicate in feet the width of the roadway.

17. Alignment - The alignment should be described by such words as level, rolling, straight, the number of vertical or horizontal curves, etc.

18. Development - Should be described as rural, suburban, residential, or commercial with adjectives such as mixed, isolated, moderate, intermittent, and continuous.

19. Private Drives - Indicate by number how many in the study section.

20. Commercial Drives - Indicate by number how many in the study section.

21. Intersections - Indicate by number how many, excluding the ends of the study section.

22. Sidewalks - Indicate yes, no, or partial. If partial, approximate percentage.

23. Bridges, RR Crossings, Other - Indicate the number and type of any bridges, railroad crossings, or other structures. If other is applicable, explain in the narrative portion of the report.

24. Existing Control - If the investigation is a speed survey, list a given TCO number for any existing traffic speed control order in effect for the survey section. Example: S 89-23-81 (45 MPH)

    a. Speed surveys need not have parking control orders identified by number, but they should be indicated as follows: NPAAT.

    b. Conversely, parking surveys need not have speed control orders identified by number but they should be noted as follows: 45 MPH.

    c. Any controls which were considered in reaching a decision relative to the investigation should be noted, such as signals, stop signs, no passing zones, etc.

25. Volume Count - Volume count should be identified by date, agency, and individual conducting the study. If a recent volume count is unavailable, then the survey team should estimate this value; i.e., 1,000 (est.)

26. Investigated By - Indicate the name and rank of the officer completing the report. Also include the employee number listed in the division worksite manual. Other officers names are already listed as participants, if appropriate, and should not be included in this section. The investigating officer shall sign the completed report across their name in the section.

27. Unit Reviewed - The district commander, or his designee, will review reports and, if approved, initial this section. The review will check grammar, structure, completeness and conformance with departmental reporting requirements.

28. Division Reviewed - The division commander will cause a review of these reports and, if approved, the reviewing officer will initial this section. This review will check the technical accuracy of the conclusions reached in the report.

NARRATIVE PORTION

The following suggested headings are recommended for reports. Some are specific to certain investigations while others are required for all investigations.

Nature of Incident - Speed, parking, or stop determination. Also indicate new, ten-year review, or other descriptive language.

Participants - This will be required in each survey. Each participant and the agency they represent should be listed. The guidelines for local involvement will be followed in each case. Other persons who were consulted but did not personally attend the survey should also be listed and their status indicated; i.e., consulted, advised, etc. Concurrence or position should be indicated in the narrative report.

Investigation - Begin this paragraph by typing the name of the road in capitals and describe it. Example: HURON LAKE BOULEVARD is a primary, arterial county road running westerly from I-40 to M-73. In this area the roadway is marked by numerous curves, intersections, and is moderately developed as both a residential and commercial area.

This paragraph should describe traffic conditions, hazards, turning movements, etc. The problem under consideration should be accurately described. Any future development that is planned might be mentioned. List what actions the survey party took, such as persons contacted, experimental speeds driven, etc. Indicate any special considerations such as dual political jurisdiction, detours, construction, existing control orders which are no longer acceptable and why, etc. A map or sketch of the area is extremely helpful for all investigations but especially where complex geometrics are involved.

Speed Study - This will be a requirement for all speed surveys unless specifically excluded for acceptable reasons. If the speed survey is not included, the exempting reason must be stated. See Appendix 3 for proper speed study procedures. Due to the importance which is placed on speed studies for the establishment of speed controls, the report must indicate who conducted the study, the dates, days, and times used, the number of vehicles in the samples, the location of the stations, and the road and weather conditions at the time. A summary of the results will be provided which analyzes the data. Do not forward a copy of the speed study sheets.

Crash Experience - Describe crash experience by indicating number, type, causation, and other relevant data. The crash rate is a highly valuable comparison tool. A minimum of three (3) years should be considered. This can be accomplished by a narrative or, preferably, a crash synopsis report form.

Rescinding Orders - If existing traffic control orders are to be rescinded, a separate line should so indicate. Example: Traffic Control Order P 86-113-84 should be rescinded.

Recommendation - If no action is recommended, a statement to that effect should be made with reference to the reasons for this decision spelled out. If there is a difference in the recommendation from survey team participants, the report should indicate the position and reason for it for each participant.

If a recommendation is made to issue a TCO, it should be written in the same language that will actually appear on the order. A TCO is a legal document often used as evidence in court and must be worded so it is clear, exact, and unambiguous. Directions must be listed west to east and south to north. Whenever possible, controls should be referenced to existing roadways. City limits, bridges, culverts, railroad crossings, and the like shall not be used as a starting or termination point.

EXAMPLES:

a. The survey party recommends a traffic control order be issued to provide:

   In the County of Sanilac, Township of Worth:

   No parking at any time within the right-of-way of HURON LAKE BOULEVARD from I-40 to M-73.

b. The survey party recommends a traffic control order be issued to provide:

   In the County of Sanilac, Township of Worth:

   A speed limit of thirty (30) miles per hour on HURON LAKE BOULEVARD from I-40 to M-73.

For the purposes of uniformity and clarity, recommendations should be worded using the terms ". . .from. . .to. . .," exclusively. Such terms as between, on either side of, therefrom, thereto, and others which have been used in the past are no longer acceptable. Sample verbiage is provided in Appendices 13 and 14.

Complainant Recontacted - In each case, the complainant will be recontacted by a member of the survey team and apprised of the outcome of the investigation. This may be accomplished by letter, telephone, or, preferably, in person. This not only provides an opportunity to explain how the recommendation was reached but is also good public relations.

Disposition - Indicate the status of the incident; i.e., open, closed, inactive, etc. If the incident is open or inactive, please indicate the reason(s) for this status.

APPENDIX 12

INSTRUCTIONS FOR COMPUTERIZED TCO AND TS-4 PROGRAM

The UD109/UD110/TS-4 is a word processing and database management program originally designed from the computerized UD-109 by F/Lt. Jack Moulik. By filling in the computerized prompts the computer operator will be supplying information either for the UD109, UD110, TS-4 report forms or will be building the UD109 and TCO file systems.

The UD109/UD110/TS-4 is menu driven and will start from the main menu. Hold down the CONTROL key and press the F10 key. At the bottom line prompt, select the letter T. The first set of prompts will start with the incident report menu. You will be asked to pick either an original report, a supplementary report, revise an existing report, or to use UD109/110 utilities. The UD109/110 utilities will not work in this program. Select an option with the cursor and press enter.

Pressing the original report cursor will display a second set of prompts. The original incident data page will ask you for the juris number which is the post number of your incident number. This will have to consist of three numbers such as 050. You will then be asked for the incident number; this is for only the incident number, not the post number or the year. Next is the year of incident which is the last two numbers of the year. For the file class, fill in the whole file class number without any dashes. You will next enter the incident status by number.

If you wish to review the above original incident data or change the data, select REVIEW for your next option. If not, select CREATE REPORT and enter. While waiting for further prompts to appear you may have to change disks several times.

ALL PROMPT INFORMATION BEYOND THIS POINT MUST BE ENTERED IN CAPS

The next prompt will be to enter the original date. Please enter the date without dashes and beginning with the month, day, and year. Enter the complainant's name, telephone number, the complainant's street address, city, state, zip code, and the county number of the TCO. Enter city, township, or village then the name of the city, township, or village where the incident occurred, along with the corresponding city/township/village number separated by a "/", for example: Lansing/95, the section number(s) of the incident. Enter the type of TCO - SP for speed, ST for stop, or PK for parking TCO.

Enter the trunkline information - yes or no. Enter the name of the road, length of road under study, width of right-of-way (changed from numeric to open text so feet symbol may be used such as 66'/ten characters), number of lanes (changed from numeric to open text/ten characters). Enter yes or no for divided highway. Enter type of surface material, shoulder width and material, roadway width (change to open text/ten characters), alignment, development, number of private drives (open text/ten characters), number of commercial drives (open text/ten characters),

intersections, (open text/ten characters). Enter yes, no, or partial for sidewalks (open text/tencharacters). Enter bridges, railways and crossings, and existing controls. The "Enter Current TCO#," " Denied," "Rescinded" prompts will appear and may be used if applicable. This entry will not be used in the TS-4 Report Form but will be stored in the TCO database. Enter date of volume count, who conducted the volume count, and the volume per 24 hours.

Next enter the name of the investigator and employee number separated by "/" for example: Bruce Pollock/50, then the rank.

Next you will find "review" prompts. Under "Nature of Incident" please be specific as to the type of TCO report, example - PARKING TCO REVIEW/ RETENTION. If the other information is correct, press "ENTER" to bypass these. The next prompt will be "do you wish to review or change what you have entered?" If you wish to review or change what you have entered, place a Y (for yes) in the prompt. If not, place an N (for no) in the prompt and enter.

The program then will begin to load the information that you have just entered, not only onto the UD109/UD110/TS-4 report forms but will also load that information into the UD109 and TCO database files.

Next you will be directed to the narrative portion of the TS-4. The first heading you will see will be "Participants." You may then begin typing out your narrative section of your report. During and after you have finished your report, you may save your report by using Alt/F10 and accepting options. When your report is finished and you wish to have a printed copy of it you may use Alt/F2 which will print your TS-4.

If you have an Epson printer you must change the print options on the UD109O.rpt and the UD109S.rpt from 5 to 2 on the left margin offset, then use Alt/F10 twice.

To quit the TS-4, F10, Q, Y will bring you back to the main menu.

THE TCO DATABASE MANAGEMENT FILE SYSTEM

The TCO records may be added to or edited to the TCO file system at any time. You may also obtain written reports of the information contained in the TCO file system.

Command Chart:

To enter the TCO file system from the main menu, select USE SYSTEMS, DATABASE MANAGEMENT & GRAPHICS, and then INTERACT. This will bring you to the database management system command chart.

Add:

If you wish to add information to the database management system, select ADD at the command chart. Then type "TS4" at the DATABASE prompt. At the USING FORM prompt, type in "TCO." Displayed will be an input form on which you will type in necessary information for the database management system. In order to save the information typed in, select F10 next or F10 save. You will then be ready for your next entry.

To quit the input form, hit escape twice to bring you back to the command chart.

Edit:

If you wish to edit information already in the database management system, select EDIT at the command chart. Type in "TS4" at the DATABASE prompt and "TCO" in the USING FORM prompt. At the INDEX, place the indexed field name such as road = "West Michigan Avenue". If you use an index name you do not need to use a where statement.

Displayed will now be the edit input form to which you may make changes. After your changes are made, press F10 and save. When this is completed you may leave the edit form by pressing the escape button twice to bring you back to the command chart.

Report:

If you wish a report of the information stored in your database system, select REPORT at the command chart. Type in "TS4" for the DATABASE prompt and either "TCO list" or "TCO" at the USING FORM prompt.

The TCO list is a shortened form with limited information which you may use as an index for your paper file system. The TCO form is a more extensive information report. At INDEX, pick the index field which you wish to use such as road = "West Michigan Avenue". Next you may pick SCREEN or PRINTER. The SCREEN prompt will give you an opportunity to see the information on the screen. The PRINTER prompt will print the database information on the printer.

If you have selected index information, you probably will not need a where statement. If you have selected the printer, you will be routed via the computer to select the print options in which you wish the information to be printed. Select those options and then press Alt/F2 to print the information. Make sure the printer is on.

Make sure you keep backup copies of your disks.

APPENDIX 13

EXAMPLES OF REPORTS WILL FOLLOW THIS PAGE

NOTCO

TS 4 (REV 10-89)
MICHIGAN DEPARTMENT OF STATE POLICE

TRAFFIC SURVEY REPORT Page 1

DATE	COMPLAINT NO.
SEP 07, 1990	050 - 214-90
WORK UNIT: FIFTH DISTRICT H.Q.	FILE CLASS: 93005

COMPLAINANT			TELEPHONE NO.
THOMAS MATTESON			372-8604-HOME
ADDRESS: STREET AND NO.	CITY	STATE	ZIP
2306 N. 5TH STREET	KALAMAZOO	MI	49009

INCIDENT STATUS: 5 CLOSED

COUNTY 39	CITY/TWP/VILLAGE	SECTION
KALAMAZOO	TWP of TWP. OF OSHTEMO/ 08	16

NAME OF ROAD	RIGHT OF WAY	NUMBER OF LANES
N. 5TH ST. BETWEEN M-43/H AVE. W	66 FEET	2

LENGTH OF ROAD UNDER STUDY: 7885 FEET (1.5 MILES)

DIVIDED	SURFACE MATSRIAL	SHOULDER WIDTH & MATERIAL
NO	BITUMINOUS ASPHALT	0-4 FEET / DIRT AND GRASS

ROADWAY WIDTH	ALIGNMENT	DEVELOPMENT
22 FEET	8-VERTICAL/0-HORIZ	RURAL RESIDENTIAL

PRIVATE DRIVES	COMMERCIAL DRIVES	INTERSECTIONS	SIDEWALKS
31	NONE	NONE	NONE

BRIDGES, RR, CROSSINGS, OTHER	EXISTING CONTROLS
NONE	STATEWIDE UNPOSTED 55 MPH-UNSIGNED

VOLUME COUNT:	DATE	BY	VOLUME
	07/25/89	KALAMAZOO CO. ROAD COMM.	315

NATURE OF INCIDENT %LINES 6

TCO TRAFFIC SURVEY/SPEED/NEW-DENIED

PARTICIPANTS:
ROBERT B. CARROLL Traffic Engineer, Kalamazoo County Road Commission, 3801 East Kilgore Rd. Kalamazoo, Michigan 49003, (616) 381-3171.
MICHAEL L. NOFS, Sergeant, Michigan Department of State Police, Traffic Services Division, 5th District, Paw Paw, Michigan.
WILLIAM NOLAN, F/Lieutenant, Michigan Department of State Police, Commander Paw Paw Post, Hastings, Michigan.
MICHAEL ANDERSON, Undersheriff, Kalamazoo County Sheriff Department, Lamont Street, Kalamazoo, Michigan.

ROADWAY:
County highway N. 5th Street runs south and north. This particular section of roadway under consideration starts from M-43 (West Main) to H Avenue West.
The only speed limit for this roadway is the statewide speed limit of 55 MPH. Other road markings include a double yellow no passing line for the duration of this section of roadway.

OFFICIALS NOTIFIED:
Sergeant Michael Nofs did contact both the sheriff of the county and the post commander of the Paw Paw Post of the Michigan State Police. They both

PAGE	INVESTIGATED BY	UNIT REVIEWED	DIVISION REVIEWED
1	SERGEANT MIKE NOFS / 51		9/20/90

DATE	COMPLAINT NO.
SEP 07, 1990	050 - 214-90
WORK UNIT	FILE CLASS
FIFTH DISTRICT H.Q.	93005

stated that they do not know of any problems or concerns with the current speed limit for this section of roadway. Enforcement for this section of roadway is not a problem at this time.

INVESTIGATION:
Sergeant Nofs contacted Robert Carroll of the Kalamazoo County Road Commission and told him that he had received a request to review the current speed limit for this section of roadway. The request was to lower the speed limit. Therefore, it was determined that Sgt. Nofs would do a speed study and check of accidents for this section of roadway. A recommendation from the parties involved would be made after more facts were available. Robert Carroll stated that he did not think that the current speed limit was a problem.

SPEED STUDY:
A speed study of this section of roadway was taken on April 30, 1990 with the TraffiComp III counter by Sgt. Nofs. The counter was placed in front of the complaintants house on this section of roadway. The results of this study are attached. Also, the 85th percentile showed that vehicle traveled at 57.9 MPH.

ACCIDENT HISTORY:
The accident history for this section of roadway is low. Copies of the accident history are attached. Nothing from this history shows a reason for change.

OFFICIALS RECONTACTED:
All parties were recontacted by Sgt. Nofs and all were in agreement that the current speed limit was proper.

TWONSHIP OFFICIALS NOTIFIED:
Sergeant Nofs contacted ELAINE J. BRANCH who is the township clerk for the Township of Oshtemo. She stated that she had not received any complaints about speed on this section of roadway. Sgt. Nofs showed her the speed study that was taken and briefed her on the results of the survey. Sergeant Nofs informed Ms. Branch that his recommendation was going to be to maintain the current speed limit.

COMPLAINTANT RECONTACTED:
Sergeant Nofs recontacted the complaintant Mr. Matteson and told him of the participants decision to maintain the current speed limit. Mr. Matteson did not have a problem with the participants decision.

RECOMMENDATION:
It is the joint recommendation of all participants that there should not be a change in the current speed limit for this particular section of roadway at this present time.

PAGE	INVESTIGATED BY	UNIT REVIEWED	DIVISION REVIEWED
2	SERGEANT MIKE NOFS / 51		

ACCIDENT SYNOPSIS REPORT FORM

COUNTY Kalamazoo TOWNSHIP/CITY Oshtemo YEAR(S) 87/88/89

HIGHWAY N. 5th Street FROM M-43 (West Main) TO H Avenue West

DISTANCE 1.5 miles ADT VOLUME 315 ACC. RATE

TOTAL ACCIDENTS 1/1/1 INJURY ACC. 0/0/0 FATAL ACC. 0/0/0

ONE VEH. ACC. 1/1/1 ALCOHOL INVOLVED ACC. 0/0/0

ROAD SURFACE CONDITIONS:

DRY 1/0/1 WET SNOWY/ICY 0/1/0

DIRECTION OF TRAVEL:

NORTHBOUND 1/0/1 SOUTHBOUND 0/1/0

EASTBOUND WESTBOUND

HAZARDOUS ACTION INDICATED:

1. SPEED TOO FAST.....
2. SPEED TOO SLOW.....
3. FAILED TO YIELD, DISREGARD SIGNAL.....
4. WRONG WAY.....
5. DROVE LEFT OF CENTER, IMP. PASSING.....
6. IMPROPER TURN.....
7. IMPROPER BACKING, UNSAFE START.....
8. FOLLOWING TOO CLOSE..... 0/1/0
9. OTHER OR NOT KNOWN.....

ACCIDENT TYPE:

TRAIN		PARKING/DRIVEWAY	
PEDESTRIAN		LEFT TURN	
FIXED OBJECT	0/1/0	RIGHT TURN	
OTHER OBJECT		ANGLE	
ANIMAL	1/0/1	REAR END	
PEDALCYCLE		SIDESWIPE	
VEH OVERTURN		PARKED VEHICLE	
BACKED INTO		HEAD ON	

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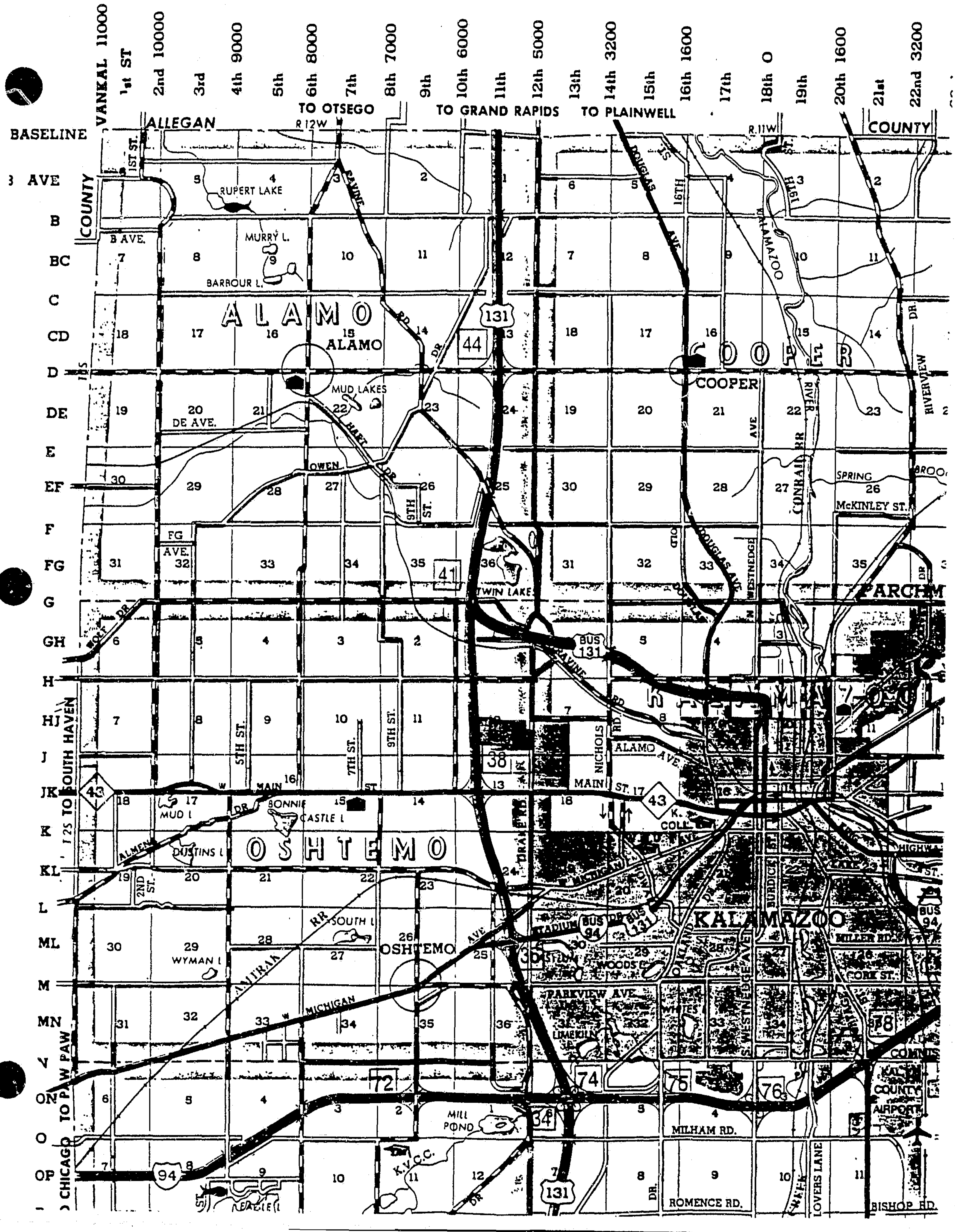

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14th 3200
15th
16th 1600
17th
18th 0
19th
20th 1600
21st
22nd 3200
TO OTSEGO
TO GRAND RAPIDS
TO PLAINWELL
BASELINE
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DE AVE.
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HAFT
RAVINE
DOUGLAS AVE
KALAMAZOO
COOPER
CONRAIL RR
RIVERVIEW DR.
SPRING
McKINLEY ST.
FG AVE.
TWIN LAKE
PARCHMENT
BUS 131
ALAMO AVE
NICHOLS RD.
MAIN ST.
W MAIN
MUD L
BONNIE CASTLE L
DUSTINS L
OSHTEMO
K. COLL.
W MICHIGAN
STADIUM DR
BUS 94
SOUTH L
WYMAN L
AMTRAK RR
PARKVIEW AVE
WOODS L
LIMEKILN
S. WESTNEDGE AVE
OAKLAND DR.
BURDICK ST.
MILLER RD.
CORK ST.
MILL POND
MILHAM RD.
K.V.C.C.
ROMENCE RD.
LOVERS LANE
BISHOP RD.
KAL'ZOO COUNTY AIRPORT
TO SOUTH HAVEN
TO CHICAGO
TO PAW PAW
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TR 4 (REV 10-89)
MICHIGAN DEPARTMENT OF STATE POLICE

NoTCO

\FFIC SURVEY
ORT Page 1

DATE	COMPLAINT NO.
JUL 17, 1990	010 - 116-90
WORK UNIT	FILE CLASS
FIRST DISTRICT H.Q.	93005

COMPLAINANT			TELEPHONE NO.	
LINDA ARWENSHIRE			(517) 543 4291	
ADDRESS: STREET AND NO.	CITY		STATE	ZIP
2107 E. VERMONTVILLE HWY.	CHARLOTTE		MI	
INCIDENT STATUS				
5 CLOSED				
COUNTY 23	CITY/TWP/VILLAGE		SECTION	
EATON	TWP. OF BENTON/02		20-22&27-29	
NAME OF ROAD	RIGHT OF WAY	NUMBER OF LANES		
VERMONTVILLE HWY.	66 FT.	TWO		
LENGTH OF ROAD UNDER STUDY				
2.5 MILES - FROM STEWART RD. WEST TO BENTON RD.				
DIVIDED	SURFACE MATERIAL	SHOULDER WIDTH & MATERIAL		
NO	ASPHALT	VARIABLE GRAVEL, GRASS		
ROADWAY WIDTH	ALIGNMENT	DEVELOPMENT		
23 FT.	STRAIGHT, 4 VERT.	RURAL RESIDENTIAL		
PRIVATE DRIVES	COMMERCIAL DRIVES	INTERSECTIONS	SIDEWALKS	
51	0	3	NO	
BRIDGES.RR.CROSSINGS.OTHER	EXISTING CONTROLS			
ONE BRIDGE	NONE			
VOLUME COUNT:	DATE	BY	VOLUME	
	7-90	ECRC	2244 ADT	

ATURE OF INCIDENT

SPEED LIMIT REQUEST - DENIED

PARTICIPANTS:

Mr. Kieth Vedder, Eaton County Road Commission, Charlotte.
Lt. James Burdick, Michigan State Police, TSD, Lansing.
Sgt. William Brandt, Michigan State Police, TSD, Lansing.
Lt. Robert Powers, Michigan State Police, Lansing Post.
Lt. Patrick Hutting, Eaton County Sheriff Dept., Charlotte.
Mr. Mark Ewing, Benton Twp. Supervisor.

INFORMATION:

Complainant called and requested an investigation of the intersection of Otto and Vermontville Roads, along with a speed study on Vermontville Rd. Subject complained of a high rates of speed through this area, which has numerous residences along the roadway, and cited the recent fatal collision that had occurred at the intersection of Otto Rd.

STUDY AREA:

Vermontville Hwy., beginning at Stewart Rd., west to Benton Rd.

PAGE	INVESTIGATED BY	UNIT REVIEWED	DIVISION REVIEWED
1	SGT WM. BRANDT #30		

TS 4 (REV 10-89)
MICHIGAN DEPARTMENT OF STATE POLICE

TRAFFIC SURVEY REPORT Page 2

DATE	COMPLAINT NO.
JUL 17, 1990	010 - 116-90
WORK UNIT	FILE CLASS
FIRST DISTRICT H.Q.	93005

SPEED SURVEY:

A speed survey was conducted in the study area. Two stations were used, one located east of Otto Rd., and the second located west of Otto Rd. A traffic counter/classifier was set up on 7-23-90, approximately .3 miles east of Otto Rd. and left for 48 hours. 4,911 vehicles were monitored during this time period. On 8-13-90, undersigned officer conducted a second speed study using an unmarked vehicle and stationary radar at this same station, clocking 100 vehicles. The 85th percentile speeds on both these speed studies were 61 mph.

On 7-17-90, a counter/classifier was set up approximately .3 miles west of Otto Rd. and left for 48 hours. 3,518 vehicles were monitored during this time period. On 8-13-90, undersigned officer conducted a second speed study at a location .5 miles west of Otto Rd. using an unmarked vehicle and stationary radar, and clocking 100 vehicles. The 85th percentile speeds on both these speed studies were 61 mph.

ACCIDENT EXPERIENCE:

The MALI printout shows a total of 33 traffic crashes along the study area for the three prior years, 1987 thru 1989. Of the total 33 crashes, 26 are one vehicle type crashes. 31 of the 33 total crashes occurred between Stewart Rd. and Otto Rd. 8 of the total 33 were injury crashes, with no fatalities, excluding the recent fatal that had occurred in June of this year. 21 of the 33 total occurred while road and weather conditions were clear and dry. 16 of the 26 one vehicle crashes were with a fixed object, and 6 were with an animal. 3 of the two vehicle crashes involved left turn movements, and 2 were parking/driveway type crashes. Of hazardous actions listed, speed too fast was listed for 9 of the crashes with all but 1 occurring on rainy/snowy conditions. Fail to yield/disregard stop was listed for 2 of the crashes. Other hazardous actions listed were following too close, and drove left of center, improper overtaking.

INVESTIGATION:

An on site inspection of the study area has been made. Vermontville Hwy. basically runs east - west in direction. The roadway is straight, with several hills, and the road surface is in good condition. Otto Rd. basically runs north - south in direction, and intersects Vermontville Hwy. in the middle of the study area. The area from Otto Rd. east to Stewart Rd. is the most built up, with numerous homes on both the north and south sides of the roadway. Otto Rd. is controlled by stop signs, along with the proper stop ahead warning signs, for both north and southbound traffic at the intersection with Vermontville Hwy. Signing on Otto Rd. is not obscured as one approaches the intersection from either the north or the south. Traffic volume on Vermontville Hwy. is higher from Otto Rd. east, due to the construction for the I-69 freeway. Vehicles are bypassing construction areas by traveling on Otto Rd. to Vermontville, and turning east, back to Temp. I-69.

PAGE	INVESTIGATED BY	UNIT REVIEWED	DIVISION REVIEWED
2	SGT. WM. BRANDT #30		

DATE	COMPLAINT NO.
JUL 17, 1990	010 - 116-90
WORK UNIT	FILE CLASS
FIRST DISTRICT H.Q.	93005

INVESTIGATION CONT'D.:

In reviewing the data obtained, and looking at the study area in detail, it appears that the collisions that have occurred at the intersection of Otto Rd. and Vermontville Hwy. have occurred due to drivers on Otto Rd. not perceiving the stop ahead and stop signs at the intersection. Investigation reveals the signs are not obscured, and are visible. It is also quite evident that traffic on Vermontville Hwy. is ignoring the statewide 55 mph speed limit as evidenced by the 85th percentile speeds. After reviewing all the information obtained, the survey party concurs on the following recommendation.

RECOMMENDATION:

The request for a reduced speed limit on Vermontville Hwy. is denied. A speed limit lower than the statewide 55 mph limit is unrealistic. The survey party recommends special attention be given to this area for the purpose of speed enforcement, to attempt to bring the 85th percentile speeds in line with the statewide 55 mph speed limit.

The survey party concurs that the only improvements warranted at this intersection because of anticipated increased traffic volumes would be the following: Both the northbound and southbound Otto Road approaches at Vermontville Hwy. be signed with double Stop Ahead signs and double Stop signs, and that these signs be increased to 36 inches in size. The party also recommends that the Stop Ahead warning signs be relocated closer to the intersection.

This may give additional visibility to those signs, and may draw the motorists attention to the controlled intersection.

RECONTACT COMPLAINANT:

Complainant was recontacted by undersigned officer, and advised of the recommendation of the survey party.

FINAL DISPOSITION:

Closed.

TS 4 (REV 10-39)
MICHIGAN DEPARTMENT OF STATE POLICE

TRAFFIC SURVEY REPORT Page 1

S 09- -40

DATE	COMPLAINT NO.
JUL 17, 1990	030 - 250-90
WORK UNIT	FILE CLASS
THIRD DISTRICT H.Q.	93005

COMPLAINANT			TELEPHONE NO.
TOM LEFEVRE, ASSISTANT ENGINEER			686-4610
ADDRESS: STREET AND NO.	CITY	STATE	ZIP
2600 E. BEAVER ROAD	KAWKAWLIN	MI	48631

INCIDENT STATUS: 5 CLOSED

COUNTY 09	CITY/TWP/VILLAGE	SECTION
BAY	BANGOR #01 AND KAWKAWLIN #08	

NAME OF ROAD	RIGHT OF WAY	NUMBER OF LANES
BEAVER ROAD	66 FEET	TWO

LENGTH OF ROAD UNDER STUDY: TWO MILES

DIVIDED	SURFACE MATERIAL	SHOULDER WIDTH & MATERIAL
NO	BITUMINOUS	6' PAVED / 1' GRAVEL
ROADWAY WIDTH	ALIGNMENT	DEVELOPMENT
22 FEET	STRAIGHT & LEVEL	LIGHT RESIDENTIAL & COMM.

PRIVATE DRIVES	COMMERCIAL DRIVES	INTERSECTIONS	SIDEWALKS
55	10	2	NONE

BRIDGES, RR. CROSSINGS, OTHER	EXISTING CONTROLS
RAILROAD CROSSING	45 MPH AND RAILROAD SIGNAL

VOLUME COUNT:	DATE	BY	VOLUME
	1987	ROAD COMMISSION	5888

NATURE OF INCIDENT

PARTIAL REVIEW OF S 09-136-85

PARTICIPANTS:
Complainant and undersigned. Copies of the report will be forwarded to concerned officials requesting their concurrence with the recommendation or further information into the investigation.

ORIGIN OF INVESTIGATION:
Complainant requested that I conduct a speed study in the 45 MPH portion of Beaver to determine if the limit is a reasonable control pursuant to engineering standards.

INVESTIGATION:
BEAVER ROAD is a primary county highway. The portion under consideration runs between M-13 (Huron Road) and M-247 (Euclid Avenue). Traffic control order, S 09-136-85, establishes a 45 MPH limit.

PAGE	INVESTIGATED BY	UNIT REVIEWED	DIVISION REVIEWED
1	SGT. JON CLUFF #41		9/7/90

TS 4 (REV 10-89)
MICHIGAN DEPARTMENT OF STATE POLICE

TRAFFIC SURVEY REPORT Page 2

DATE	COMPLAINT NO.
JUL 17, 1990	030 - 250-90
WORK UNIT	FILE CLASS
THIRD DISTRICT H.Q.	93005

The highway is in excellent condition. The Bay County Road Commission's office and garage is located on the south side east of the railroad tracks. There is a golf course on the north side. The Bay City State Park is located near the east end off of M-247. The roadside environment is intermixed residential and commercial with some undeveloped areas.

SPEED STUDY:
In July of 1984 I made speed studies at two locations in this area. The 85th percentile speeds were 52 MPH which indicated that the reasonableness of the 45 MPH limit was suspect. It was decided not to pursue a change in the limit at that time.

On July 17th. 1990 I again surveyed vehicular speeds at two locations. The 85th percentiles speeds were 52 and 54 MPH. The average speeds were 47.3 and 49 MPH. Seventy-two (72) percent of the traffic was found to be traveling over the speed limit. Copies of the speed study are attached to this report.

The studies do indicate that the 45 MPH control is not perceived as reasonable by a majority of the motorists.

ACCIDENT DATA:
MALI accident data between 1986 through 1988 (1989 not immediately available) indicates that the highway is operating very safely. There are less that six accidents per year. The three year accident rate is 1.31 accidents per a million vehicle miles. The statewide rate for county and local roads is 7.52. Only one of the seventeen accidents involved injury. Copies of the accident synopsis report are attached for further information.

RECOMMENDATION:
It is recommended that a traffic control order be issued to provide:

A Speed Limit of:

Fifty (50) miles per hour on BEAVER ROAD ~~between~~ FROM the westerly intersection of Fraser Road ~~and~~ TO M-247 (Euclid Avenue)

RESCIND ORDER:
Traffic control order. S 09-136-85, should be rescinded.

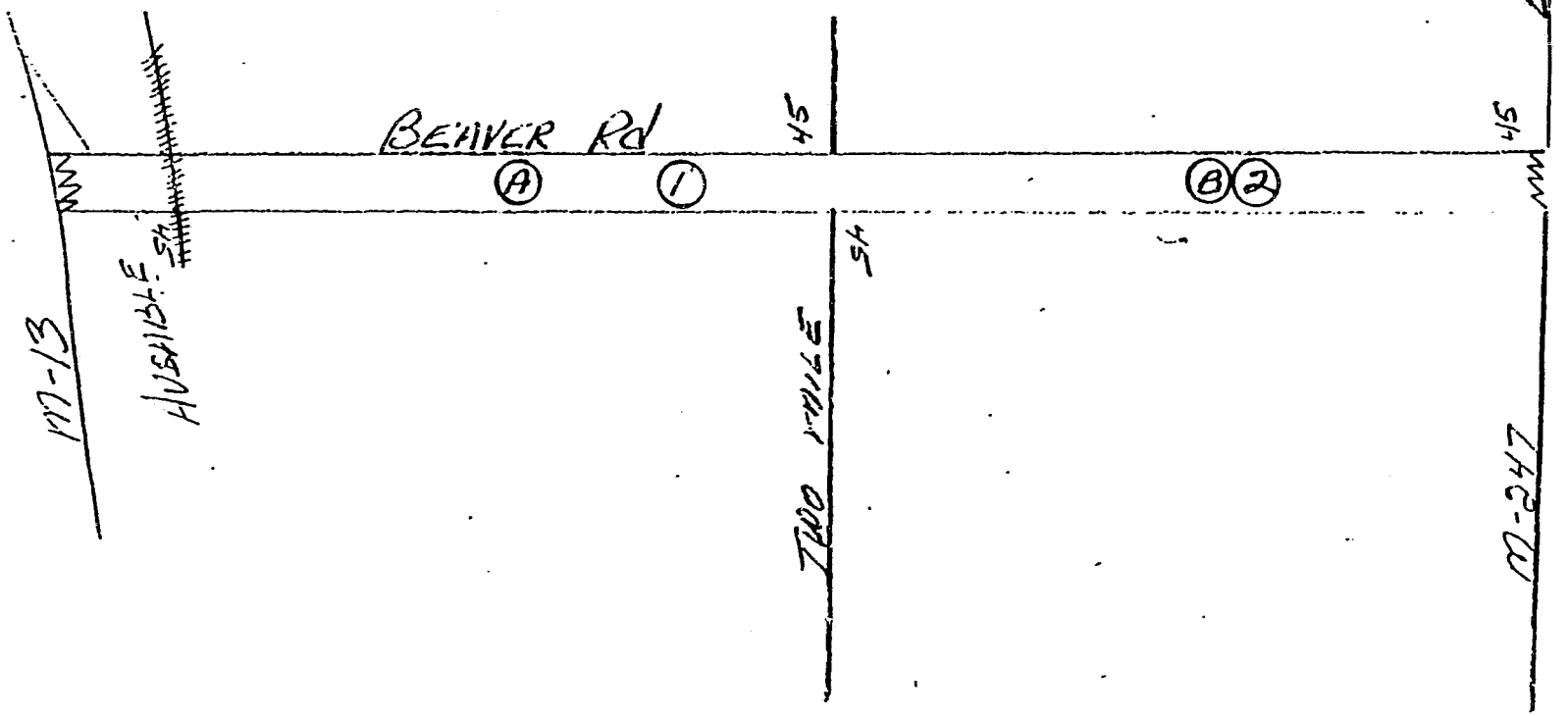
FURTHER:
This report will be forwarded to Traffic Services. Lansing for approval if concurrence is received from the Bay County Road Commission.

copy to
Robert Fudge
Sheriff Kevin Green
Joseph Garland. Supervisor
Lloyd W. Paiot. Supervisor

PAGE	INVESTIGATED BY	UNIT REVIEWED	DIVISION REVIEWED
2	SGT. JON CLUFF #41		

DATE	STATION	A	B			
7/84	AVERAGE	46.2	46.6			
	PACE	43/52	42/51			
	85TH PCT	52	52			
	SPD LIMT	45	45			

DATE	STATION	1	2			
7/90	AVERAGE	47.3	49.0			
	PACE	43-52	45-53			
	85TH PCT	52	54			
	SPD LIMT	45	45			



ACCIDENT SYNOPSIS REPORT FORM comp. 30-150-90

COUNTY: Bay TOWNSHIP/CITY Ban. & Kaw. YEAR(S): 1986

HIGHWAY: Beaver Road FROM: M-13 TO: M-247

DISTANCE: Two Miles ADT VOLUME: 5888 ACC. RATE: 1.39

TOTAL ACCIDENTS: 6 INJURY ACCIDENTS: 1 FATAL ACCIDENTS: 0

ONE VEHICLE ACCIDENTS 2 ALCOHOL INVOLVED ACCIDENTS 2

ROAD SURFACE CONDITIONS

DRY 5 WET 1 SNOWY/ICY

DIRECTION OF TRAVEL

NORTHBOUND SOUTHBOUND EASTBOUND 3 WESTBOUND 7

HAZARDOUS ACTION INDICATED

1. SPEED TO FAST.....
2. SPEED TO SLOW.....
3. FAILED TO YIELD. DISREGARD SIGNAL..... 1
4. WRONG WAY.....
5. DROVE LEFT OF CENTER. IMP. PASSING.....
6. IMPROPER TURN.....
7. IMPROPER BACKING. UNSAFE START.....
8. FOLLOW TOO CLOSE. OR DUE CARE CAUTION..... 3
9. OTHER OR NOT KNOWN.....

ACCIDENT TYPE

TRAIN		PARKING/DRIVEWAY	
PEDESTRIAN		LEFT TURN	
FIXED OBJECT		RIGHT TURN	
OTHER OBJECT		ANGLE	1
ANIMAL	2	REAR END	3
PEDALCYCLE		SIDESWIPE	
VEH OVERTURN		PARKED VEHICLE	
BACKED INTO		HEAD ON	

ACCIDENT SYNOPSIS REPORT FORM comp. 30-150-90

COUNTY: Bay TOWNSHIP/CITY Ban. & Kaw. YEAR(S): 1987

HIGHWAY: Beaver Road FROM: M-13 TO: M-247

DISTANCE: Two Miles ADT VOLUME: 5888 ACC. RATE: 1.39

TOTAL ACCIDENTS: 6 INJURY ACCIDENTS: 0 FATAL ACCIDENTS: 0

ONE VEHICLE ACCIDENTS 4 ALCOHOL INVOLVED ACCIDENTS 0

ROAD SURFACE CONDITIONS

DRY 4 WET 2 SNOWY/ICY

DIRECTION OF TRAVEL

NORTHBOUND SOUTHBOUND EASTBOUND 4 WESTBOUND 4

HAZARDOUS ACTION INDICATED

1. SPEED TO FAST..... 1
2. SPEED TO SLOW.....
3. FAILED TO YIELD. DISREGARD SIGNAL.....
4. WRONG WAY.....
5. DROVE LEFT OF CENTER. IMP. PASSING..... 1
6. IMPROPER TURN.....
7. IMPROPER BACKING. UNSAFE START.....
8. FOLLOW TOO CLOSE. OR DUE CARE CAUTION..... 3
9. OTHER OR NOT KNOWN.....

ACCIDENT TYPE

TRAIN		PARKING/DRIVEWAY	
PEDESTRIAN		LEFT TURN	
FIXED OBJECT	2	RIGHT TURN	
OTHER OBJECT		ANGLE	
ANIMAL	3	REAR END	
PEDALCYCLE		SIDESWIPE	
VEH OVERTURN	1	PARKED VEHICLE	
BACKED INTO		HEAD ON	

ACCIDENT SYNOPSIS REPORT FORM comp. 10-150-90

COUNTY: Bay TOWNSHIP/CITY Ban. & Kaw. YEAR(S): 1988

HIGHWAY: Beaver Road FROM: M-13 TO: M-247

DISTANCE: Two Miles ADT VOLUME: 5888 ACC. RATE: 1.16

TOTAL ACCIDENTS: 5 INJURY ACCIDENTS: 0 FATAL ACCIDENTS: 0

ONE VEHICLE ACCIDENTS 1 ALCOHOL INVOLVED ACCIDENTS _____

ROAD SURFACE CONDITIONS

DRY 5 WET _____ SNOWY/ICY _____

DIRECTION OF TRAVEL

NORTHBOUND _____ SOUTHBOUND _____ EASTBOUND 7 WESTBOUND 2

HAZARDOUS ACTION INDICATED

1. SPEED TO FAST..... _____
2. SPEED TO SLOW..... _____
3. FAILED TO YIELD. DISREGARD SIGNAL..... _____
4. WRONG WAY..... _____
5. DROVE LEFT OF CENTER. IMP. PASSING..... 1
6. IMPROPER TURN..... _____
7. IMPROPER BACKING. UNSAFE START..... _____
8. FOLLOW TOO CLOSE. OR DUE CARE CAUTION..... 4
9. OTHER OR NOT KNOWN..... _____

ACCIDENT TYPE

TRAIN	_____	PARKING/DRIVEWAY	1
PEDESTRIAN	_____	LEFT TURN	1
FIXED OBJECT	1	RIGHT TURN	_____
OTHER OBJECT	_____	ANGLE	_____
ANIMAL	_____	REAR END	2
PEDALCYCLE	_____	SIDESWIPE	_____
VEH OVERTURN	_____	PARKED VEHICLE	_____
BACKED INTO	_____	HEAD ON	_____

Board of County Road Commissioners
County of Bay

2600 EAST BEAVER ROAD, KAWKAWLIN, MICHIGAN 48631
ROBERT A. FUDGE, P.E., MANAGING-DIRECTOR
(517) 686-4610

COMMISSIONERS:

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Member

DEPARTMENT OF WATER & SEWER

HUBERT J. GORNEY, DIRECTOR
3933 PATTERSON ROAD
BAY CITY, MICHIGAN 48706
(517) 684-3883

August 10, 1990

Sgt. Jon Cluff
Michigan Dept. of State Police
411-B E. Genesee Street
Saginaw, MI 48607

RE: Partial Review of S 09-136-85
Complaint No. 030-250-90

Dear Sgt. Cluff:

The above referenced traffic survey report was reviewed by the Commission at their regular meeting of August 8, 1990. At that time, they concurred in your recommendation that a traffic control order be issued to provide a speed limit of 50 M.P.H. on Beaver Road between the west intersection of Fraser Road and Euclid Avenue (M-247).

Sincerely,

BAY COUNTY ROAD COMMISSION

Robert A. Fudge, P.E.
Managing-Director

RAF:lto

TS 4 (REV 10-87)
MICHIGAN DEPARTMENT OF STATE POLICE

TRAFFIC SURVEY REPORT Page 1

DATE	COMPLAINT NO.
January 17, 1989	20-19-89
WORK UNIT	FILE CLASS
SECOND DISTRICT H.Q.	9300-5

COMPLAINANT			TELEPHONE NO.
Mr. Michael Rushlow			942-9920
ADDRESS: STREET AND NO.	CITY	STATE	ZIP
Wayne County Dept. of Roads	Romulus	MI	

INCIDENT STATUS ☐

COUNTY	CITY/TWP/VILLAGE	SECTION
Wayne	See Below	

NAME OF ROAD	RIGHT OF WAY	NUMBER OF LANES
Baseline Road (Eight Mile Road)	93' to 120'	2-5

LENGTH OF ROAD UNDER STUDY
10.6 Miles +

DIVIDED	SURFACE MATERIAL	SHOULDER WIDTH & MATERIAL
Yes	Concrete & Asphalt	Some 3'-5' asphalt & 3'-8' gravel Some 8' to 10' gravel

ROADWAY WIDTH	ALIGNMENT	DEVELOPMENT
22' to 62'	4 horizontal/9 vertical	

PRIVATE DRIVES	COMMERCIAL DRIVES	INTERSECTIONS	SIDEWALKS
86	219	72	Partial

BRIDGES.RR.CROSSINGS.OTHER	EXISTING CONTROLS
4 bridges	Speed 2 82-169-84 Parking P63-54-87

VOLUME COUNTS	DATE	BY	VOLUME
		W. C. Rd's	See sht. att'd.

NATURE OF INCIDENT

TRAFFIC SURVEY

PARTICIPANTS: Mr. Richard Hodges, P. E., Traffic Engineer Wayne County Roads, 942-9920
Michael Rushlow, Traffic Technician, Wayne County Roads, 942-9920
Mohsen Katibai, Traffic Technician, Wayne County Road, 942-9920
Chief Rodney Cannon, Northville City Police Department, 349-1280
Chief Lee Begole, Novi Police Department, 348-7100
Chief Kenneth Hardesty, Northville Township Police Department, 348-5800
Deputy Director Gary Goss, Farmington Department of Public Safety, 474-4700
Lt. Robert Thorn, Livonia Police Department, 421-2900
Kevin McCarthy, Traffic Engineer, City of Farmington Hills, 473-9590
Mr. Winston Myire, Traffic Engineer, Oakland County Road Commission 858-4830
Sgt. Donald Swalwell, State Police Traffic Services Division, Northville, 473-1079
Sgt. Weldon D. Greiger, State Police Traffic Services Division, Northville, 473-1063

ADDITIONAL PERSONS PARTICIPATING:

PAGE	INVESTIGATED BY	UNIT REVIEWED	DIVISION REVIEWED
1	Sergeant Weldon D. Greiger		

TS 4 (REV 10-87)
MICHIGAN DEPARTMENT OF STATE POLICE

TRAFFIC SURVEY REPORT Page 2

DATE	COMPLAINT NO.
January 17, 1989	20-19-89
WORK UNIT	FILE CLASS
SECOND DISTRICT H.Q.	9300-5

On January 17, 1989, a meeting was held at the Northville City Hall, to discuss the Amerman Elementary School crossing at Eight Mile Road and Center Street. In addition to Mr. Hodges, Mr. Rushlow, Mr. Katibai, and Sgt. Greiger, the following people were in attendance.

Capt. James Petres, Northville City Police Department 349-1280
Mr. Steven Walters, Northville City Manager 349-1300
Mrs. Judith McIntyre, Amerman School PTA 348-8280
Dr. Burton Knighton, Assistant Superintendent Administrative Services, Northville Schools 344-8441
Mr. Milton Jacobi, Principal, Amerman School 344-8405
Mr. Ralph Redmond, Principal, Northville High School 344-8420

This writer's purpose in attending this meeting was to determine the concerns of the Northville School District and the parents of students at the Amerman School and explain the process of speed limit determination. This writer expressed the concern as a traffic professional and also as a parent and one concerned on a personal level as well. This writer's commitment was to provide whatever assistance was necessary. Also expressed was a firm commitment to be truthful and not to commit to any proposal which would be counterproductive. No decisions were made based on the information garnered at this meeting.

INFORMATION:

Eight Mile Road is a main county arterial east west highway, bordering Wayne and Oakland Counties. Eight Mile Road is a connecting link between the Farmington Hills/Livonia commercial areas and the suburban/residential areas of western Wayne/Oakland and eastern Washtenaw counties. This roadway is not residential in nature or usage. The area under study is easterly from Beck Road to Grand River Avenue. A distance of just under ten (10) miles. In the area under study Eight Mile travels through Northville Township, the Cities of Novi, Northville, Farmington Hills, Livonia and the City of Farmington. Speed limits range from 40 to 55 per hour currently.

A letter was received from Kevin McCarthy, Traffic Engineer, Farmington Hills by the Wayne County Department of Roads. This letter asked for a review of the speed limits on Eight Mile Road in Farmington Hills. In addition a letter was received by the Department of Wayne County Roads from Chief Rodney Cannon, relaying concerns about the speed limits on Eight Mile in the area of the Amerman School in Northville. As a result of these two letters and other factors, Wayne County Department of Roads requested that we jointly survey Eight Mile Road from Beck Road to Grand River Avenue.

INVESTIGATION:

PAGE	INVESTIGATED BY	UNIT REVIEWED	DIVISION REVIEWED
2	Sergeant Weldon D. Greiger		

DATE	COMPLAINT NO.
January 17, 1989	20-19-89
WORK UNIT	FILE CLASS
SECOND DISTRICT H.Q.	9300-5

Section 257.628 of the Michigan Compiled Laws establishes a joint survey between the County Road Agency and the Director of the State Police. This joint survey is based on an engineering and traffic investigation of the vehicular speeds of traffic on a county highway. Established traffic engineering practices widely used throughout the country are the basis for this determination. These guidelines have been established by the engineering community and have long been held to be the proper procedures for the establishment of speed limits. These following criteria have been and will continue to be used to formulate a recommendation for the speed limits on Eight Mile Road.

1. Road surface characteristics
2. Curb and shoulder conditions
3. Grade of the road
4. Road alignment
5. Stopping sight distance
6. Eighty-fifth percentile speed
7. Pace speed
8. Design speed
9. Road side development and culture
10. Road side friction
11. The safe speed for curves or hazardous locations
12. Parking practices
13. Pedestrian activities
14. Reported accident experience for a three year period

In addition to the above listed criteria, input from the local police, elected officials, officials from the Northville School District and the PTA representative was sought. Also consulted were Mr. Myrie, the Oakland County Road Commission and Sgt. Donald Swalwell, Michigan State Police. On site surveys conducted by the Wayne County Department of Roads and on site surveys conducted by Sgt. Greiger were also studied and considered.

AMERMAN SCHOOL AREA:

The Amerman school is located in the northwest quadrant of the Eight Mile, Center Street intersection. Due to the express concerns of the school officials and the PTA at the Amerman School, several on site surveys were conducted including three studies at a time when students were crossing the intersection at Eight Mile Road and Center Street This intersection is controlled by a stop and go traffic signal, with pedestrian walk/don't walk signals. In addition, two school crossing guards were also assigned to this location to assist in crossing the students to and from the Amerman School from 8:30 to 9:05 a.m., 11:35 to 11:55 a.m., 12:15 to 12:50 p.m. and 3:20 to 3:50 p.m. An on site study was conducted on three occasions. On the first occasion Mr. Rushlow and Mr. Katibai and this writer parked in the Amerman School lot and observed approximately 23 children crossing during the 3:20 p.m. to the 3:50 p.m. period. Subsequent

to that survey, this writer alone observed the intersection on December 21, 1988 during the 12:15 to the 12:50 p.m. return from lunch. Observed were three students crossing Eight Mile Road. An additional on site survey was conducted on December 22, 1988 at the 8:30 to 9:05 a.m. period, when 15 students were observed crossing Eight Mile. During the three survey studies and additional times in the past when this writer simply happened to have driven past the Amerman School during crossing hours, no problems were observed at the location. The traffic flow appeared to be normal and the school crossing guards were efficient in crossing the children. A most critical factor to observe is that the children were crossed at the direction of the school crossing guard using the standard hand held stop sign and under the protection of the red traffic signal, that is red for Eight Mile Road. Under the circumstances which the children were being crossed the red traffic signal is the controlling factor not the speed limit.

SPOT SPEED STUDIES:

Thirty-eight (38) spot speed studies taken in nineteen (19) locations were conducted by the Wayne County Department of Roads from September 8, 1988 through October 5, 1988. The average Eighty-fifth percentile speed at each of these locations range from 42 to 52 miles per hour. In the area of the Amerman School, eighty-fifth percentile averages ranged from 42 to 45 miles per hour. The spot speed study data has been tabulated and is attached to this report.

DESIGN SPEED:

Design speed combines horizontal alignment, superelevation, and sight distance and is of concern in the area of the Amerman School. Design speed is one of the factors used in determining the ability of drivers to normally observe traffic control devices and to react to unforeseen hazards. At the request of this writer, the Wayne County Department of Roads analyzed the area and determined that the design speed of which sight distance and the ability of drivers to perceive a hazard, is a major factor is excess of 45 miles per hour.

COLLISION EXPERIENCE IN THE AMERMAN SCHOOL AREA:

A tabulation of collisions was studied from January of 1985 through December of 1987. This study revealed that a total of eight collisions occurred, all between 11:00 a.m. and 1:00 p.m. in this area. With four collisions occurring on Monday, one collision occurring on Wednesday and three collisions occurring on Friday. This study prompted the writer to inquire as to the lunch facilities available at the Amerman School and the possibility of considering the children remain on site during the lunch hour. During one site visit at the Amerman School, three children were observed crossing the intersection from 12:15 to 12:50 p.m.

DATE	COMPLAINT NO.
January 17, 1989	20-19-89
WORK UNIT	FILE CLASS
SECOND DISTRICT H.Q.	9300-5

COMPLAINT STATUS:

Remains open pending further investigation.

PAGE	INVESTIGATED BY	UNIT REVIEWED	DIVISION REVIEWED
5	Sergeant Weldon D. Greiger		

UD-110 (Rev. 7-85)

MICHIGAN DEPARTMENT OF STATE POLICE	Original Date	Incident No.
(X) Supplementary Incident Report	January 17, 1989	20-19-89
( ) Additional Incident Page No. 1	Date of Supplementary Report: March 14, 1989	Primary File Class: 9300-5

ADDITIONAL INFORMATION:

F/Lt. Hugh Thomas contacted this writer and was told that Wayne County Commissioner Susan Heintz had written a letter to a few State Legislators advising them that a State policy prevented a proper solution to the issue under study. Subsequently a copy was transmitted to this writer. The source of Commissioner Heintz information is not known. As to the information concerning State Police involvement, that information is in error in its content. An effort will be made to contact the Commissioner in association with the Wayne County Department of Roads in an effort to properly describe the joint engineering nature of the speed and parking determinations.

CONTACT WITH DR. KNIGHTON:

During the January 17th meeting no one was able to define a specific problem at the intersection in the area of the Amerman School except to say there was a concern for safety at the crossing. As a result additional discussions were held on a one to one basis with Mrs. McIntyre and Dr. Knighton. Since Dr. Knighton is the Chairperson of the group requesting the lower speed limit, this writer asked for and he agreed to provide a letter which would specify the problems, recommended solutions and rational in this situation. This request was made on March 19, 1989. As of March 28, 1989 no reply had been received.

COMPLAINT STATUS:

Remains open.

Page	Investigated By	Reported By	Reviewed By
1	Sergeant Weldon D. Greiger	[signature]	[signature] 4/13/89

UD-110C (Rev 11-84)

Michigan Department of State Police

SUPPLEMENTAL INCIDENT REPORT Page 8

ORIGINAL DATE	INCIDENT NO.
JAN 17, 1989	020 - 19-89
SUPPLEMENTAL REPORT DATE	FILE CLASS
SEP 11, 1989	93005

INCIDENT STATUS

0 OPEN

NATURE OF INCIDENT

TRAFFIC SURVEY - EIGHT MILE ROAD

JOURNAL:
None.

INFORMATION:
After an extensive engineering and enforcement review of the entire stretch of EIGHT MILE, it was decided to propose, to the effected communities, a uniform speed limit of forty-five (45) miles per hour westerly from Grand River Avenue to one-quarter (0.25) mile west of Beck Road. This proposal would make the following changes:

1. Raise the speed limit from 40 to 45 mph from Grand River Avenue to Gill Road.

2. Reduce the speed limit from 50 mph to 45 mph from Gill Road to Griswold Road.

3. Raise the speed limit from 40 to 45 mph from Griswold Road to Beck Road.

4. Reduce the speed limit from 55 mph to 45 mph from Beck Road to one-quarter mile westerly of Beck Road.

AMERNAN SCHOOL AREA:
In addition to these changes, it was decided to grant the request of the Northville Community Schools and Parents Groups and install a 30 mph school zone speed limit (during the hours of operating flashers only) to conform to the current standards for school zone speed limits.

CONCURRENCE:
The following communities and individuals were contacted of the results of the joint Wayne County Roads Department and Michigan State Police traffic studies. The traffic studies were discussed in great detail.

Farmington Hills - KEVIN McCARTY, City Traffic Engineer
Livonia Police Department - Lt. ROBERT THORNE
City of Farmington - Deputy Director GARY GOSS
Northville Township Police Department - ROBERT HARDESTY, Chief of Police
City of Novi Police Department - LEE BeGOLE, Chief of Police

PAGE	INVESTIGATED BY	REPORTED BY	REVIEWED BY
8	SGT. WELDON D. GREIGER 34 /VM	Sgt. [signature]	[signature]

ORIGINAL DATE	INCIDENT NO.
JAN 17, 1989	020 - 19-89
SUPPLEMENTAL REPORT DATE	FILE CLASS
SEP 11, 1989	93005

All of the above persons contacted concurred with the proposed changes as it would effect their areas.

In April of 1989, this officer called Dr. KNIGHTON at the Northville Community School District, and he failed to return my telephone calls. I then contacted Mr. RICHARD HODGES, P.E., County Highway Engineer for the Wayne County Roads Department and discussed this situation with him. He attempted to contact the Northville Community School District on several occasions without results. The purpose of this contact is to advise them of our proposal, on the short term obtain their feedback, and over the long term concur with our proposal. It has been several months and there has been no response from the school district. A letter will be written to the school district, notifying them that without their concurrence, the school zone speed limit will not be recommended.

COMPLAINT STATUS:
Remains open.

UD-110C(Rev 11-84)
Michigan Department of State Police

SUPPLEMENTAL INCIDENT REPORT Page 10

ORIGINAL DATE	INCIDENT NO.
JAN 17, 1989	020 - 19-89
SUPPLEMENTAL REPORT DATE	FILE CLASS
DEC 18, 1989	93005

INCIDENT STATUS

[5] CLOSED

NATURE OF INCIDENT

TRAFFIC SURVEY - EIGHT MILE ROAD

JOURNAL:
None.

INFORMATION:
Constant contact has been maintained between the Wayne County Department of Roads Highway Engineer RICHARD HODGES and Traffic Technician MICHAEL RUSHLOW and this writer. As the result of discussions held on 12/1/89. a ball bank indicator test was done in the vicinity of Taft Road. Based on that testing and after much discussion, it was agreed to maintain the forty (40) mile per hour speed limit in the City of Northville area at 40 mph.

RECOMMENDATION:
It is therefore recommended to rescind Traffic Control Order S82-169-84 and replace it with a Traffic Control Order to read as follows:

In the Township of Northville, the Cities of Novi, Northville, Farmington Hills, Farmington, and Livonia, and in the Counties of Wayne and Oakland:

A speed limit of:

Forty-five (45) miles per hour on EIGHT MILE ROAD (BASELINE ROAD) from Beck Road to a point five hundred (500) feet westerly of Greenridge Drive;

Forty (40) miles per hour on EIGHT MILE ROAD (BASELINE ROAD) from a point five hundred (500) feet westerly of Greenridge Drive to Griswold Road;

Forty-five (45) miles per hour on EIGHT MILE ROAD (BASELINE ROAD) from Griswold Road to Grand River Avenue (Business State Trunkline I-96).

All concurred with the above recommendation.

COMPLAINT STATUS:
Closed.

PAGE	INVESTIGATED BY	REPORTED BY	REVIEWED BY
10	SGT. WELDON D. GREIGER /vm	Sgt. W.D. Greiger	

TS 4 (REV 10-89)
MICHIGAN DEPARTMENT OF STATE POLICE

TRAFFIC SURVEY REPORT Page 1

Review

DATE	COMPLAINT NO.
JAN 31, 1990	060 - 23-90
WORK UNIT	FILE CLASS
GRAND RAPIDS H.Q.	93005

COMPLAINANT			TELEPHONE NO.
DEBRA PELTON			457-5466
ADDRESS: STREET AND NO.	CITY	STATE	ZIP
7450 SHADBLEAU DRIVE	JENISON	MI	49428

INCIDENT STATUS: [5] CLOSED

COUNTY 70	CITY/TWP/VILLAGE	SECTION: 13,
OTTAWA/70	TWP of GEORGETOWN (05)	14, 15, 16

NAME OF ROAD	RIGHT OF WAY	NUMBER OF LANES
BALDWIN STREET	66'	VARIES 4 - 5

LENGTH OF ROAD UNDER STUDY: 3.2 MILES (BETWEEN MAIN STREET & 28TH AVENUE)

DIVIDED	SURFACE MATERIAL	SHOULDER WIDTH & MATERIAL
NO	BITUMINOUS	CURB & GUTTER
ROADWAY WIDTH	ALIGNMENT	DEVELOPMENT
VAR. 48'-60'	3 VERT/ 0 HORIZ.	RESIDENTIAL/MIXED COMMERCIAL

PRIVATE DRIVES	COMMERCIAL DRIVES	INTERSECTIONS	SIDEWALKS
128	71	47	YES

BRIDGES.RR.CROSSINGS.OTHER	EXISTING CONTROLS
NONE	34/45 MPH SPEED LIMIT (S70-249-76)

VOLUME COUNT:	DATE	BY	VOLUME
	1989	O.C.R.C	VARIES 7900 - 22,100

NATURE OF INCIDENT

SPEED LIMIT REVIEW

INFORMATION:
Mrs. Pelton made contact with the Ottawa County Road Commission and requested that the speed limit on BALDWIN STREET be reduced from its current 45 MPH limit to a 35 MPH limit. Mrs. Pelton made the request because of serious and fatal accidents (1989) occurring on this roadway. The Ottawa County Road Commission and this department also received petitions signed by hundreds of citizens living on or near BALDWIN STREET requesting a 35 MPH speed limit. A copy of the petition/letter is attached.

PARTICIPANTS:
TOM PALARZ, Director of Engineering, Ottawa County Road Commission, Grand Haven, MI
TIM TERRY, Traffic Engineer, Ottawa County Road Commission, Grand Haven, MI
ROGER NOVENSKE, Sgt., Traffic Services, MSP/Grand Rapids, MI
WESTLEY HANEY, Lt., Traffic Services, MSP/Grand Rapids, MI
AL BROUWER, Sgt., Ottawa County Sheriff Dept., Grand Haven, MI
LARRY BELD, Lt., Ottawa County Sheriff Dept., Grand Haven, MI
LARRY BRUURSEMA, Supervisor, Georgetown Twp., Jenison, MI
DAVID DRESSLER, Supt., Jenison Public Schools, Jenison, MI
RICHARD HOUSENGA, F/Lt., MSP/Grand Haven, MI (Unable to attend)

PAGE	INVESTIGATED BY	UNIT REVIEWED	DIVISION REVIEWED
1	SGT. ROGER NOVENSKE 56		3/16/90

DATE	COMPLAINT NO.
JAN 31, 1990	060 - 23-90
WORK UNIT	FILE CLASS
GRAND RAPIDS H.Q.	93005

SPEED STUDIES:
The Ottawa County Road Commission conducted speed studies on BALDWIN STREET between 28th Street and Main Street in November, 1989, December, 1989, and January, 1990. The Road Commission conducted separate speed studies, using both a traffic counter and a radar gun. The 85th percentile speed results of these studies are listed below.

In the 45 MPH zone: from west to east, 49, 49, 48, 47, 49, 48, 47, and 46 MPH.
In the 35 MPH zone: from west to east, 42, and 37 MPH.

Copies of the speed study results are attached to this report.

ACCIDENT EXPERIENCE:
Undersigned officer reviewed a MALI accident log for the year 1988 with the following results. There were a total of 212 accidents, with 60 being injury-type, 52 being property damage type, and zero fatal-type. The three most common types of accidents occurring on BALDWIN STREET were rear-end accounting for 27%, left-turn accounting for 23%, and parking/driveway accounting for 22%. The most common hazardous actions indicated were: failing to yield the right-of-way, or disregarding a signal - 41%; following too close, 32%; and drivving left of center or improper passing - 11%. The accident rate was calculated at 1210.0.

INVESTIGATION:
BALDWIN STREET travels in an easterly/westerly direction between 152nd Avenue and the east county line, and is broken into several segments. The segment under investigation is located between 28th Avenue and Main Street, and is considered to be a primary road in the county roadway system. The section of BALDWIN STREET between 28th Avenue and 20th Avenue was recently reconstructed into a four-lane roadway, with curb and gutter. BALDWIN STREET varies between 4 - 5 lanes in width, and is continuous curb and gutter construction with sidewalks. The development along BALDWIN STREET is primarily residential in the western third, and residential with mixed commercial in the eastern two-thirds. Accident history shows a typical clustering at and near the major intersections. Traffic volumes vary from 7,900 to 22,100, and have been increasing over the past several years because of continuing development.

TRAFFIC CONTROLS:
In addition to the speed limit mentioned above, stop and go signals control traffic at three intersections (20th Avenue, 12th Avenue, and School Street). An elementary school (Sandy Hill Elementary), located on BALDWIN STREET near the intersection of 20th Avenue, has a school speed limit of 30 MPH, which is in effect during certain times of the school days. Parking is prohibited along the entire length of BALDWIN STREET and is covered by two separate traffic control orders, (P 70-317-73) and (P 70-278-88).

INFORMATIONAL MEETING:
The Ottawa County Road Commission and police agencies met with some concerned parents, including the complainant. Debra Pelton, and explained to them the results of the various studies conducted on BALDWIN STREET. It is anticipated that one or more public meetings will be held in the near future.

TS 4 (REV 10-89)
MICHIGAN DEPARTMENT OF STATE POLICE

TRAFFIC SURVEY REPORT Page 3

DATE	COMPLAINT NO.
JAN 31, 1990	060 - 23-90
WORK UNIT	FILE CLASS
GRAND RAPIDS H.Q.	93005

RECOMMENDATION:
After reviewing the existing controls, the physical characteristics of the roadway, the accident history, and the results of the speed studies, it is the recommendation of the survey team that the speed limit on BALDWIN STREET remain unchanged at this time.

REMARKS:
The last written traffic survey report on BALDWIN STREET in this area was dated February 7, 1985, and is carried on Complaint #60-11-85. Township officials are working with the Ottawa County Sheriff Department in an attempt to bring additional enforcement officers in to work on BALDWIN STREET. The Ottawa County Road Commission will be conducting additional studies to determine the feasibility of stop and go signals at two additional intersections on BALDWIN STREET. The Road Commission, at some point in time in the future, will also consider adding a fifth lane to the current four-lane section of BALDWIN STREET.

COMPLAINT STATUS:
Closed

PAGE	INVESTIGATED BY	UNIT REVIEWED	DIVISION REVIEWED
3	SGT. ROGER NOVENSKE		

September 19, 1989

Tom Polarz
Ottawa County Road Commission
Rosy Mound Drive at US 31
P.O. Box 739
Grand Haven, MI 49417

Dear Mr. Polarz:

As citizens of Georgetown Township, we are writing to you today to express our concern over the current speed limit of 45 m.p.h. on Baldwin Street in Jenison, from School Street to 28th Avenue. Ten years ago that particular section of Baldwin was primarily residential, but today it is the site of many businesses and multi-resident structures. Within a period of less than one month, there have been three fatal accidents and numerous other accidents resulting in property damage and/or personal injury. The current speed limit may have contributed to the outcome of at least two of the fatalities.

Every day many children travel Baldwin to reach Greenfield Christian, Pinewood, Sandy Hill and Maplewood Elementary Schools. In addition, Baldwin is a main access route for Jenison Public Junior and Senior High, and Jenison Christian Junior High Schools. There is also a high concentration of senior citizens residing at Pine Grove and Boulder Bluff Condominiums, Sunset Manor, New Amsterdam Village and Riverside Apartments who regularly travel Baldwin.

Our concern has been especially heightened for the safety of our citizens by the accident that occurred Tuesday, September 5, 1989, taking the life of Roxanne Zakem. Her vehicle flipped over, slid across Baldwin and landed up over the curb inches from the sidewalk where only 15 minutes earlier children walked on their way to school. This accident happened within a few hundred feet of a Sandy Hill Elementary School crosswalk. And, with the forthcoming opening of the Georgetown Library, we foresee an added danger to that already hazardous stretch of road.

Therefore, we the undersigned, express our conscientious concern for the safety of our citizens and request that the speed limit be reduced to 35 m.p.h., thus allowing for more reaction time for both drivers and pedestrians. We would appreciate your consideration of this suggestion to support all efforts in making our community as safe as possible.

Sincerely,

Deborah K. Pelton

Deborah Pelton, President
Sandy Hill Parents' Club

cc Sgt. L. Brouwer,
Ottawa County Sheriff's Dept.
✓Sgt. Novenske
Michigan State Police
Larry Bruursema
Township Supervisor

SP 86-33-90

Also see complaint 80-80-90

4 (REV 10-89)
CHIGAN DEPARTMENT OF
TATE POLICE

TRAFFIC SURVEY
REPORT Page 1

DATE	COMPLAINT NO.
MAY 31, 1990	070 - 95-90
WORK UNIT	FILE CLASS
SEVENTH DISTRICT H.Q	93005

COMPLAINANT			TELEPHONE NO.
MAX COBURN			906-643-7600
ADDRESS: STREET AND NO.	CITY	STATE	ZIP
I-75 BRIDGE AUTHORITY	ST. IGNACE	MI	49781

INCIDENT STATUS: [5] CLOSED

COUNTY 24	CITY/TWP/VILLAGE	SECTION
EMMET	TWP of WAWATAM/15	12

NAME OF ROAD	RIGHT OF WAY	NUMBER OF LANES
I-75	variable	2/4

LENGTH OF ROAD UNDER STUDY: APPROXIMATELY SEVEN MILES

DIVIDED	SURFACE MATERIAL	SHOULDER WIDTH & MATERIAL
SOME	BITUMINOUS	VARIABLE
ROADWAY WIDTH	ALIGNMENT	DEVELOPMENT
VARIABLE	HORZ/VERT CURVE	SEE NARRATIVE

PRIVATE DRIVES	COMMERCIAL DRIVES	INTERSECTIONS	SIDEWALKS
0	0	4	no

BRIDGES, RR, CROSSINGS, OTHER	EXISTING CONTROLS
MACKINAC BRIDGE	SP86-09-85

VOLUME COUNT:	DATE	BY	VOLUME
	1988	MDOT	8800

SPEED INV. MACKINAC BRIDGE AREA

INFORMATION:
Two accidents on the Mackinac Bridge during the Fall of 1989 prompted an investigation into the safety of the bridge. Many safety improvements were recommended, including a review of the posted speed limit. A meeting was conducted at the bridge on May 3rd, 1990 to discuss some options.

PARTICIPANTS:
Judd Doyle, MDOT, Traffic Regulations, Traffic Safety, Lansing.
Wayne Gunderman, MDOT, District #4 Traffic Engineer, Alpena.
Paul Michelin, MDOT, District #2 Traffic Engineer.
Bill Hitchins, MDOT, Supervisor, Freeway Signing, Traffic Safety, Lansing.
Leo DeFrain, MDOT, Materials and Safety, Lansing.
Eugene Massey, Mackinac Bridge Authority, Operations Manager.
Walter North, Mackinac Bridge Authority, Executive Secretary.
Max Coburn, Mackinac Bridge Authority, Bridge Engineer.
Jim Ecker, Mackinac Bridge Authority, Assistant Bridge Engineer.
Lt. Vic Trierweiler, MSP Traffic Services, Traverse City.
F/Lt. Thomas Garvale, MSP Traffic Services, Lansing.

Continued on page #2.....

PAGE	INVESTIGATED BY	UNIT REVIEWED	DIVISION REVIEWED
1	SERGEANT MARS/61 LIEUTENANT TRIERWEILER/58	Tree	8/24/90

TS 4 (REV 10-89)
MICHIGAN DEPARTMENT OF STATE POLICE

TRAFFIC SURVEY REPORT Page 2

Also see complaint 80-80-90

DATE	COMPLAINT NO.
MAY 31, 1990	070 - 95-90
WORK UNIT	FILE CLASS
SEVENTH DISTRICT H.Q	93005

SPEED INVESTIGATION I-75, MACKINAC BRIDGE:

INVESTIGATION:
Safety concerns discussed included (See attached list from Representative Bart Stupek) the establishment of an "Absolute/Variable" speed limit which could be changed from within the bridge authority when conditions warranted. It was decided that this was not feasible, and that the established speed limit on the Mackinac Bridge was safe and should remain intact. The possibility of using changeable message signs, both portable and fixed, was discussed for posting advisory speeds when conditions warrant.

A transition zone at both ends of the bridge was discussed. The intent of this is to slow traffic down prior to the bridge in hopes of reducing speeds upon crossing the bridge and approaching the toll both at the North end. Paul Michelin stated that MDOT is looking into building five (5) "Rumble Strips" for Southbound traffic. These would be installed in the Southbound lane of I-75 approaching the toll both at the North end of the bridge.

ADDITIONAL MEETING:
On May 31st, 1990 an additional meeting was conducted at the bridge. The participants included:

Eugene Massey, MBA, Operations Manager.
Max Coburn, MBA, Engineer.
Jim Ecker, MBA, Assistant Engineer.
Lt. Len Anthos, MSP Traffic Services, 8th District.
Sgt. Dick Aper, MSP Traffic Services, 8th District.
F/Lt. Newton Jerome, MSP Post Commander, St. Ignace.
Lt. Vic Trierweiler, MSP Traffic Services, 7th District.
Sgt. Joel Mars, MSP Traffic Services, 7th District.
Wayne Gunderman, MDOT District #4 Engineer, Alpena.

At this meeting the exact parameters of the traffic control order and the wording was to be worked out. After much discussion it was decided that speed studies should be obtained on I-75 at both ends of the bridge before the traffic control order is revised. Lt. Anthos and Paul Michelin will obtain studies and further address the North boundaries. Lt. Trierweiler and Wayne Gunderman will take care of the South boundaries. When both the North and South boundaries are finalized by the respective investigators the traffic control order will be drafted by the 7th district, lower peninsula, Emmet County.

C.O.N.T.I.N.U.E.D.....

PAGE	INVESTIGATED BY	UNIT REVIEWED	DIVISION REVIEWED
2	SERGEANT MARS/61 LIEUTENANT TRIERWEILER/58	Tree	

Also see complaint 80-80-90

DATE	COMPLAINT NO.
MAY 31, 1990	070 - 95-90
WORK UNIT	FILE CLASS
SEVENTH DISTRICT H.Q	93005

SPEED INVESTIGATION I-75, MACKINAC BRIDGE:

SPEED STUDIES:

On Friday June 29th, 1990 speed study data was obtained on the transition zone South of the bridge. Results were as follows:

Station #1: NB I-75 @ US-23 overpass.
Average Speed: 61.66 MPH
Pace Speed: 58-67 MPH
85% Speed: 67 MPH

Station #2: NB I-75 3,000' N of US-23 overpass.
Average Speed: 52.32 MPH
Pace Speed: 48-57 MPH
85% Speed: 60 MPH

Station #3: SB I-75 @ Exit #338 (US-23).
Average Speed: 55.05 MPH
Pace Speed: 52-61 MPH
85% Speed: 60 MPH

Station #4: SB I-75 @ US-23 overpass.
Average Speed: 60.04 MPH
Pace Speed: 56-65 MPH
85% Speed: 65 MPH

ACCIDENT EXPERIENCE:

MALI report attached to original complaint filed at district headquarters. Total accident experience is complicated due to the fact that the area involved includes three counties, three Townships and the City of Mackinac City. Suffice it to say, accidents are negligible with the portion of roadway under consideration having a relatively good safety record.

C.O.N.T.I.N.U.E.D....

TS 4 (REV 10-89)
MICHIGAN DEPARTMENT OF STATE POLICE

TRAFFIC SURVEY REPORT Page 4

Also see complaint 80-80-90

DATE	COMPLAINT NO.
MAY 31, 1990	070 - 95-90
WORK UNIT	FILE CLASS
SEVENTH DISTRICT H.Q	93005

SPEED INVESTIGATION I-75, MACKINAC BRIDGE:

RECOMMENDATION:
After reviewing the old traffic control order, the current facts as they pertain to the Counties of Cheboygan and Emmet, and reviewing the report (80-80-90) generated by the 8th District involving Mackinac County, the following is recommended.

The maximum speed limit on state trunkline highway I-75 shall be fifty - five (55) miles per hour from the South bound US-23 overpass Northerly to Jamet Street; and forty-five (45) miles per hour from Jamet Street to a point seven tenths (0.7) of a mile South of US-2; and fifty - five (55) miles per hour from last said point to a point two tenths (0.2) of a mile South of US-2.

EXCEPTION: For all vehicles exceeding thirty (30) tons, (60,000 pounds), the maximum speed limit shall be twenty (20) miles per hour from Jamet Street Northerly to a point seven tenths (0.7) of a mile South of US-2.

RESCISSION:
This proposed traffic control order will necessitate the rescission of control order SP86-09-85 issued January 25th, 1985.

CONCURRENCE:
The Seventh and Eighth District Traffic Services Units, as well as the respective MDOT District Engineers, concur with the above recommendation.

FINAL DISPOSITION:
CLOSED.

PAGE	INVESTIGATED BY	UNIT REVIEWED	DIVISION REVIEWED
4	SERGEANT MARS/61 LIEUTENANT TRIERWEILER/58	Tree	

SP 86-33-90

TS 4 (REV 10-89)
MICHIGAN DEPARTMENT OF STATE POLICE

TRAFFIC SURVEY REPORT Page 1

DATE	COMPLAINT NO.
MAY 31, 1990	080 - 80-90
WORK UNIT	FILE CLASS
EIGHTH DISTRICT H.Q.	93005

COMPLAINANT			TELEPHONE NO.
WALTER NORTH			
ADDRESS: STREET AND NO.	CITY	STATE	ZIP
MACKINAC BRIDGE AUTHORITY	ST. IGNACE	MI	49781

INCIDENT STATUS: 5 CLOSED

COUNTY 49	CITY/TWP/VILLAGE	SECTION
MACKINAC	TWP of MORAN/08	

NAME OF ROAD	RIGHT OF WAY	NUMBER OF LANES
I-75 EXPRESSWAY		2 TO 4

LENGTH OF ROAD UNDER STUDY: SEVEN TENTHS OF MILE

DIVIDED	SURFACE MATERIAL	SHOULDER WIDTH & MATERIAL
YES	BITUMINOUS	VARIABLE/BITUMINOUS-GRASS

ROADWAY WIDTH	ALIGNMENT	DEVELOPMENT
VARIABLE	2 HORZ./2 VERT.	RURAL

PRIVATE DRIVES	COMMERCIAL DRIVES	INTERSECTIONS	SIDEWALKS
NONE	NONE	FOUR	NONE

BRIDGES, RR. CROSSINGS, OTHER	EXISTING CONTROLS
MACKINAC BRIDGE	NONE

VOLUME COUNT:	DATE	BY	VOLUME
	8,000 DAY	M.D.O.T.	8000

NATURE OF INCIDENT

SPEED LIMIT CHANGE

PARTICIPANTS:

Michigan Department of State Police
Michigan Department of Transportation
Mackinac Bridge Authority
Names of individuals will be carried on complaint 70-95-90.

INFORMATION:

The Mackinac Bridge Authority contacted both the Department of State Police, and the Department of Transportation to inquire if a speed limit change on I-75 could be changed to a lower speed on the North and South approaches to the Mackinac Bridge. The Bridge authority sited two vehicle crashes on the bridge, one resulting in a fatal when a vehicle went over the bridge railing. The authority also sited concerns from their personnel who work in the toll booths on the North end of the Bridge.

The toll booth personnel sited an accident that involved a semi-truck crashing into the toll booth. the toll collectors believe that if the speed was reduced North of the toll booth in the South bound lanes of I-75, this would reduce the prospects of this type of accident happening again.

PAGE	INVESTIGATED BY	UNIT REVIEWED	DIVISION REVIEWED
1	SGT. R. APER/63 LT. L. ANTHOS/62		8/24/90

DATE	COMPLAINT NO.
MAY 31, 1990	080 - 80-90
WORK UNIT	FILE CLASS
EIGHTH DISTRICT H.Q.	93005

MEETINGS HELD:

Two meetings were held reference the above request. A meeting was held on May 3, 1990 and May 31, 1990 to discuss the issue. The participants of this meeting will be carried on complaint 70-95-90.

Results of the meetings were that this office and the Seventh District Traffic Services Division would conduct investigations relative to the request, and that M.D.O.T. would conduct a speed study.

SPEED STUDY:

On July 12, 1990 undersigned officer contacted Mr. Paul Michelin District Engineer for M.D.O.T. in Newberry. He stated M.D.O.T. was not able to conduct a speed study due to the inaccessibility of the area. Undersigned conducted a speed study on July 13, 1990 with the following locations and results.

LOCATION	TIME	# OF VEHICLES	85TH PERCENTILE
I-75 at US-2 SB	*11:00AM to 11:49AM*	*200*	*62 MPH.*
I-75 4/10 mile North of toll booth SB.	*10:05AM to 10:51PM*	*200*	*54 MPH.*
I-75 at US-2 NB	*12:25PM to 1:05PM*	*200*	*58 MPH.*
I-75 4/10 mile North of toll booth NB.	*1:20PM to 2:00PM*	*200*	*48 MPH.*

ACCIDENT EXPERIENCE:

See attached MALI log of accidents for the years 1986,1987,1988,& 1989.

INVESTIGATION:

I-75 is a limited access highway running Northerly from the Mackinac Bridge fifty miles to Sault St. Marie, Michigan. In the area in question, 7/10 of a mile, the two South bound lanes are marked by a curve, and two entrance ramps for vehicles entering I-75 from either East bound US-2 or West bound US-2.

South bound traffic on I-75 must come to a full stop at the toll booth located at the North end of the Mackinac Bridge. This is the only section of the total interstate system in the state where vehicles must stop. Vehicles entering I-75 from the two ramps are traveling at speeds ranging from

42 MPH to 51 MPH. This may cause a problem with the I-75 traffic traveling at a speed of 65 MPH and encountering the slower traffic, although there are two lanes in which to negotiate.

Officer noted a reduction in speed of the surveyed vehicles. The surveyed vehicles reduced their speed by eight miles per hour within three tenths of a mile South of US-2 which would leave four tenths of a mile remaining until they would have to come to a full stop.

CONTACT M.D.O.T.

On July 16, 1990 undersigned contacted Mr. Paul Michelin and informed him of the results of the speed study. Officer informed him that the speed study did not support the requested reduction of speed to 45 MPH. Mr. Michelin stated he understood. Mr. Michelin stated we have to go by what the investigation reveals.

FUTURE CONTROLS:

The Michigan Department of Transportation has plans to cut "Rumble Strips" on I-75 in five locations. These locations include two just North of US-2 in the South bound lanes and three South of US-2 also in the South bound lanes in an attempt to prepare traffic for the full stop at the toll booth. It is anticipated these "Rumble Strips" will be installed in the near future.

The Mackinac Bridge Authority has just recently installed strobe lights on the toll booths in an attempt to make drivers aware of the toll booth location, and also to make the toll booths more visible in bad weather.

RECOMMENDATION:

The survey party recommends a Traffic Control Order should be issued to provide:

> A speed limit of: **FIFTY FIVE (55)** miles per hour on I-75 between two-tenths (.2) mile Southerly of US-2 and a point one-half (.5) mile Southerly thereof. (Mackinac Bridge Toll Booth).

STATUS:

Closed. Awaiting issuance of Traffic Control Order.

TS 4 (REV 10-89)
MICHIGAN DEPARTMENT OF STATE POLICE

TRAFFIC SURVEY REPORT Page 1

Open

DATE	COMPLAINT NO.
MAR 14, 1990	040 - 51-90
WORK UNIT	FILE CLASS
FOURTH DISTRICT H.Q.	93005

COMPLAINANT			TELEPHONE NO.
DIRECTOR MURRAY SWITZER			616-968-9303
ADDRESS: STREET AND NO.	CITY	STATE	ZIP
620 CLIFF STREET	BATTLE CREEK	MI	49017

INCIDENT STATUS: [0] OPEN

COUNTY 13	CITY/TWP/VILLAGE	SECTION
CALHOUN	TWP of EMMETT/10	8-9-10

NAME OF ROAD	RIGHT OF WAY	NUMBER OF LANES
BUSINESS LOOP 94 (MICHIGAN AVE)	66	2

LENGTH OF ROAD UNDER STUDY: 13689 FEET

DIVIDED	SURFACE MATERIAL	SHOULDER WIDTH & MATERIAL
NO	ASPHALT	8 FEET - GRAVEL

ROADWAY WIDTH	ALIGNMENT	DEVELOPMENT
22	5H/4V CURVES	COMMERCIAL/RURAL

PRIVATE DRIVES	COMMERCIAL DRIVES	INTERSECTIONS	SIDEWALKS
45	69	20	NONE

BRIDGES, RR, CROSSINGS, OTHER	EXISTING CONTROLS
1 BRIDGE - RAILROAD UNDER	SP 13-21-81/ VARIOUS NO PARKING

VOLUME COUNT:	DATE	BY	VOLUME
	1988	M.D.O.T.	15000

NATURE OF INCIDENT

TRAFFIC SURVEY

TCO REVIEW BUSINESS LOOP 94 (MICHIGAN AVE.)

PARTICIPANTS:

Mr. Ed Miller, District Traffic Engineer, Michigan Department of Transportation, Kalamazoo
Sgt. R. Rogers, Michigan State Police, Traffic Services, Jackson

INFORMATION:

This review was conducted in response to a letter from the complainant to Mr. Miller dated November 3, 1989. The complainant, in the letter, expressed concerns about the present 50 mph speed limit due to traffic volumes, accident history, sight restrictions and commercial development in the area. The complainant requested a study for speed control as he believes the present 50 mph speed limit is too high.

PRE-STUDY MEETING:

The required pre-study meeting with local governmental representatives was held on March 14, 1990 at the Emmett Township Hall, 620 Cliff Street, Battle Creek. Present at the meeting was Mr. Gordon Peckham, Township Supervisor, Ms. Gloria Michley, Township Clerk, Ms. Peg Garner, Township Treasurer, the complainant, Public Safety Director, Murray Switzer, and both above mentioned participants. Problems along this section of roadway addressed by the local governmental representatives consisted of the accident problems during inclement weather, roadway icing problems between Katherine and the

PAGE	INVESTIGATED BY	UNIT REVIEWED	DIVISION REVIEWED
1	SGT. R. ROGERS #48		10/17/90

DATE	COMPLAINT NO.
MAR 14, 1990	040 - 51-90
WORK UNIT	FILE CLASS
FOURTH DISTRICT H.Q.	93005

Kimball Medical Center, and several areas with sight distance problems. Also of concern was the various illegal parking by semi-tractor-trailer vehicles in the No Parking Zone at Michigan and Wattles, and vehicles improperly passing on the right near a boat dealership.

The participants assured those at the meeting that a thorough review of the existing zone including new speed studies and accident histories would be accomplished. Pending the completion of these studies the participants would again meet with the above group and explain the findings of the investigation.

STATUS:
Open.

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Michigan Department of State Police

SUPPLEMENTAL INCIDENT REPORT Page 3

ORIGINAL DATE	INCIDENT NO.
MAR 14, 1990	040 - 51-90
SUPPLEMENTAL REPORT DATE	FILE CLASS
MAY 30, 1990	93005

INCIDENT STATUS

[0] OPEN

NATURE OF INCIDENT

TRAFFIC SURVEY - TCO REVIEW

JOURNAL:

4-13-90	Lt. Jarriell	Complaint being worked
5-13-90	Rogers	Still doing accident work-ups - Speed studies indicate no change.

ACCIDENT HISTORY:

Accident data was collected for the years 1986, 1987, 1988 and up to September 1989. In addition copies of all accident reports for the year 1989 up to August 19 were reviewed by the participants. During the above period 240 accidents were reported within the existing zone. Of the total number 2 were fatal, 20 were alcohol related and 67 were personal injury accidents. The hazardous action of following too close was indicated in 118 of the accidents followed by failure to yield/disregard signal which was indicated in 48 accidents. A total of 49 accidents occurred at the intersections of Wattles Road and BL.94 during the above period. The intersection of Katherine/Nixon and BL.94 had a total of 30 accidents during the period.

While it is apparent that one third of all the accidents within the two and one half mile zone occurred at just two intersections it is also apparent that a simple reduction in the speed limit would have no effect on reducing this number. Slight approach improvements in the area of Katherine/Nixon have been ordered by MDOT. The intersection of Wattles and BL.94 has been extensively studied by MDOT on the feasibility of the installation of a a stop light. The intersection, however does not meet existing warrants for the light. The complainant was advised that perhaps an increased enforcement effort from his department may contribute some effect on reducing the number of accidents at this particular intersection.

SPEED STUDIES:

Speed studies were conducted by MDOT in December 1989. The 85% speed indicated at two stations within the 40 mph section of the zone was 38.4 and 42.5 mph. The 85% speed indicated at 7 stations within the present 50 mph zone ranged from a high of 54.6 mph to a low of 49.3 mph. The 85% speed indicated near the intersection of Wattles Rd and BL.94 was 50.4, while the 85% speed indicated near the intersection of Katherine/Nixon and BL.94 was 49.3 mph.

PAGE	INVESTIGATED BY	REPORTED BY	REVIEWED BY
3	SGT. R. ROGERS. #48		

ORIGINAL DATE	INCIDENT NO.
MAR 14, 1990	040 - 51-90
SUPPLEMENTAL REPORT DATE	FILE CLASS
MAY 30, 1990	93005

VIEW ZONE:
The participants viewed the entire zone on several occasions in an effort to address the roadway problems mentioned at the pre meeting. The participants were unable to find an above normal increase in accidents within the zone during inclement weather. Roadway icing problems between Katherine and the Kimball Medical Center may be caused from a rather large stand of pine trees along that section blocking sunlight to the roadway and thereby causing the roadway to hold the frost while the other section of the zone is clear and dry. Accident data gathered does not indicate that this is a problem area. There does not appear to be any major sight distance problems along the length of the zone.

RECOMMENDATION:
It is the recommendation of the participants that the existing TCO SP 13-21-81 be rescinded and a new TCO be written to reflect up to date language as follows:

Speed Limit of forty (40) miles per hour on BL-94 (East Michigan Ave) from a point 100 feet easterly of Bell Street (Battle Creek City Limit) to Columbia Avenue and

Speed Limit of fifty (50) miles per hour on BL-94 (East Michigan Ave) from Columbia Avenue to Fifer Lane.

STATUS:
Open, pending post study meeting with complainant.

UD-110C (Rev 11-86)
Michigan Department of State Police

SUPPLEMENTAL INCIDENT REPORT Page 1

ORIGINAL DATE	INCIDENT NO.
MAR 14, 1990	040 - 51-90
SUPPLEMENTAL REPORT DATE	FILE CLASS
AUG 08, 1990	93005

INCIDENT STATUS

[0] OPEN

NATURE OF INCIDENT

TRAFFIC SURVEY

JOURNAL:
None.

INFORMATION:
Sgt. Rogers requested undersigned to meet with Mr. Ed Miller of the Michigan Department of Transportation at the Battle Creek State Police Post at 8:30am of August 8, 1990 to go over the information relative to this complaint prior to meeting with the complainant at 9:00am date.

MEETING:
Mr. Miller and undersigned met at the Emmet Township hall with Mr. Gordon Peckham, the township supervisor, and Murray Switzer, the Township Public Safety Director, relative to the speed zone on business loop I-94 as it passes through their township. The video tape "Establishing A Realistic Speed Limit" was shown to Mr. Switzer.

The results of the speed study conducted by the Department of Transportation was presented and the results of the study were discussed.

STATUS:
Remains open pending follow-up by Mr. Miller.

10/17/90

PAGE	INVESTIGATED BY	REPORTED BY	REVIEWED BY
1	SGT. LES AUSTIN	Les	JB

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Michigan Department of State Police

SUPPLEMENTAL INCIDENT REPORT Page 5

ORIGINAL DATE	INCIDENT NO.
MAR 14, 1990	040 - 51-90
SUPPLEMENTAL REPORT DATE	FILE CLASS
OCT 25, 1990	93005

INCIDENT STATUS

[5] CLOSED

NATURE OF INCIDENT

TRAFFIC SURVEY

JOURNAL:
None.

COMPLAINT STATUS:
Inasmuch as there is no new information to add, this complaint will be closed at this time. It is anticipated that another review of this zone will be made after the construction on I-94 is completed sometime in 1991. Further studies may be necessary as the area continues to develop.

PAGE	INVESTIGATED BY	REPORTED BY	REVIEWED BY
5	SGT. R. ROGERS. #48		

No TCs

TS 4 (REV 10-99)
MICHIGAN DEPARTMENT OF STATE POLICE

TRAFFIC SURVEY REPORT Page 1

DATE	COMPLAINT NO.
JAN 12, 1990	024 - 166-90
WORK UNIT	FILE CLASS
NEW BALTIMORE POST	93005

COMPLAINANT			TELEPHONE NO.
CHARLES ALLOWAY			
ADDRESS: STREET AND NO.	CITY	STATE	ZIP
21 AIRPORT DR	PORT HURON	MI	48060

INCIDENT STATUS: [5] CLOSED

COUNTY 77	CITY/TWP/VILLAGE	SECTION
SAINT CLAIR	TWP of COLUMBUS/08	20

NAME OF ROAD	RIGHT OF WAY	NUMBER OF LANES
BAUMAN RD	66	2

LENGTH OF ROAD UNDER STUDY: 4030' SOUTHERLY FROM CRAWFORD RD

DIVIDED	SURFACE MATERIAL	SHOULDER WIDTH & MATERIAL
NO	BIT	6'GRAVEL

ROADWAY WIDTH	ALIGNMENT	DEVELOPMENT
22	1 HORIZ	FARM/RES

PRIVATE DRIVES	COMMERCIAL DRIVES	INTERSECTIONS	SIDEWALKS
13	3	1	0

BRIDGES, RR, CROSSINGS, OTHER	EXISTING CONTROLS
RAILROAD CROSSING	

VOLUME COUNT:	DATE	BY	VOLUME
	JAN 12, 1990	ST. CLAIR CO RD COMM	500

NATURE OF INCIDENT

TRAFFIC SURVEY - SPEED

PARTICIPANTS:
CHARLES ALLOWAY, Traffic Eng., St. Clair Co. Road Comm., Port Huron
ROBERT STEVENS, Sgt. Dept. of State Police, Traffic Services, New Baltimore

INFORMATION:
Mr. Alloway advised that it has come to his attention that the U.S. Dept. of Transportation, in the Railroad-Highway grade crossing handbook, has recommended the following:
"At crossings where audible warnings must have a primary role because of poor visibility and/or no active control devised, highway speed limits for the approach to the crossing should be lowered."
Because of this recommendation, Mr. Alloway requested an investigation of railroad crossings meeting this criteria.

SPEED STUDIES:
Speed studies were conducted by the St. Clair Co. Road Comm., on 01/03/90 with the following results:
.5 mile North of crossing 85% 54 mph
.25 mile North of crossing 85% 56 mph
.5 mile South of crossing 85% 56 mph
.25 mile South of crossing 85% 47 mph

PAGE	INVESTIGATED BY	UNIT REVIEWED	DIVISION REVIEWED
1	SGT R.C.STEVENS #38		

TS 4 (REV 10-89)
MICHIGAN DEPARTMENT OF STATE POLICE

TRAFFIC SURVEY REPORT Page 2

DATE	COMPLAINT NO.
JAN 12, 1990	024 - 166-90
WORK UNIT	FILE CLASS
NEW BALTIMORE POST	93005

INVESTIGATION:
BAUMAN RD is a paved 2 lane county road running basically in a North-South direction. Length under study is 4030' from Crawford Rd South. This area would take in at least .25 mile each direction from the Grand Trunk Western Railroad crossing. Area is rural and development is mainly farm to North and residential to the South of the tracks. Survey party drove the length and found that traveling South from Crawford Rd a horizontal curve is encountered and farms on both sides of road. Upon approach to the tracks it was observed that the view of tracks in both direction was obstructed. All signing was in place and proper and party had no trouble observing warning signs and stop sign. Once at the stop sign, a clear view of the tracks in both directions was evident. Traveling South from the tracks development becomes residential with homes strung along the West side of the road. Party approached the crossing from both directions and found that the same applied; obstructed view of tracks upon approach, clear view once stopped at stop sign, all warning signs in place and visible. Survey party concluded that because of the recommendation of the U.S. Dept. of Transportation, and the obstructed view of the tracks and approaching trains, that the approach speed to the crossing should be reduced. Survey party, after driving the approach several times, concurred that 45 mph would be reasonable and safe.

RECOMMENDATIONS:
The survey party concurred with the following recommendation:
1. That a Traffic Control Order be written stating:

"In the County of St. Clair, Township of Columbus, a speed limit of 45 mph on Bauman Rd from Crawford Rd to a point 4030 feet Southerly."

DISPOSITION:
Closed.

PAGE	INVESTIGATED BY	UNIT REVIEWED	DIVISION REVIEWED
2	SGT R.C.STEVENS #38		

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Michigan Department of State Police
SUPPLEMENTAL INCIDENT REPORT Page 3

ORIGINAL DATE	INCIDENT NO.
JAN 12, 1990	024 - 166-90
SUPPLEMENTAL REPORT DATE	FILE CLASS
JUL 31, 1990	93005

INCIDENT STATUS
5 CLOSED

NATURE OF INCIDENT

TRAFFIC SURVEY - SPEED REVIEW

RECOMMENDATION DENIED:
The recommendations submitted by the survey party to reduce the existing speed limit on the approach to the railroad crossing was denied by F/Lt. Thomas Garvale, Michigan State Police, Traffic Services Section, Lansing, using the following rationale:

1-The 1978 edition has been replaced by the 1986 edition.

2-The section quoted on page 36 of the 78 edition no longer exists in the new edition. Additionally, this quote was taken from a research paper studying the effects of train whistles. It is out of context in regard to the sight distance situation presented in the above complaint.

3-It should have been obvious that in the presence of stop signs a reduced speed limit is not called for. Who needs to see a train before they stop? I realize the county is concerned about liability, but the only clear vision area of concern is at the stop signs.

FINAL DISPOSITION:
Complaint closed, survey party notified that there will be no change in the speed limit.

PAGE	INVESTIGATED BY	REPORTED BY	REVIEWED BY
3	SGT R.C.STEVENS #38		

S58-126-90

TS 4 (REV 10-89)
MICHIGAN DEPARTMENT OF STATE POLICE

TRAFFIC SURVEY REPORT Page 1

DATE	COMPLAINT NO.
MAR 08, 1990	020 - 103-90
WORK UNIT	FILE CLASS
SECOND DISTRICT H.Q.	93005

COMPLAINANT			TELEPHONE NO.
THOMAS DJEKIC			(517)394-8600
ADDRESS: STREET AND NO.	CITY	STATE	ZIP
MICHIGAN DEPT. OF TRANSPORTATION	JACKSON	MI	

INCIDENT STATUS: [5] CLOSED

COUNTY 58	CITY/TWP/VILLAGE	SECTION
MONROE	TWP of BEDFORD/02	

NAME OF ROAD	RIGHT OF WAY	NUMBER OF LANES
LAVOY ROAD	66'	2

LENGTH OF ROAD UNDER STUDY: 1 MILE BETWEEN TELEGRAPH (US-24) AND S. DIXIE (M-125)

DIVIDED	SURFACE MATERIAL	SHOULDER WIDTH & MATERIAL
NO	CONCRETE	6' SHOULDER WITH GRAVEL

ROADWAY WIDTH	ALIGNMENT: STRAIGHT	DEVELOPMENT: 10% RESIDENTIAL,
24'	W/2 HORIZONTAL CURVES	50% COMMERCIAL, 40% OPEN

PRIVATE DRIVES	COMMERCIAL DRIVES	INTERSECTIONS	SIDEWALKS
8	20	● NONE	● NONE

BRIDGES, RR. CROSSINGS, OTHER:	EXISTING CONTROLS
1 SMALL CULVERT, 2 RAILROAD CROSSINGS	STATEWIDE 55MPH

VOLUME COUNT:	DATE	BY	VOLUME
	1990	MONROE COUNTY RD. COMM.	1739

NATURE OF INCIDENT

TRAFFIC SURVEY - SPEED

PARTICIPANTS:
RAJA A. ELACHKAR, Monroe County Road Commission Staff Engineer
LARRY SUBOSKI, Traffic Safety Engineer, Monroe County Road Commission
F/LT. DOUGLAS SWIX, Michigan State Police, Erie, MI (Did not attend)
SGT. PHILLIP CHRZAN, MSP Traffic Services Division, Northville, MI

INFORMATION:
The above complainant, THOMAS DJEKIC, who is an Inspector for the Michigan Department of Transportation, requested that the speed law on LAVOY ROAD between Telegraph Road (US-24) and S. Dixie (M-125) be lowered from the statewide 55mph speed law to 25mph due to problems with traffic stacking at railroad track crossing gates and the exposure factor on LAVOY ROAD.

The complainant stated that increased traffic and two horizontal curves do not allow proper sight distance for traffic approaching the railroad crossings while traffic is stopped and backed up.

PAGE	INVESTIGATED BY	UNIT REVIEWED	DIVISION REVIEWED
1	SGT. PHILLIP T. CHRZAN #37/co		10/17/90

TS 4 (REV 10-89)
MICHIGAN DEPARTMENT OF STATE POLICE

TRAFFIC SURVEY REPORT Page 2

DATE	COMPLAINT NO.
MAR 08, 1990	020 - 103-90
WORK UNIT	FILE CLASS
SECOND DISTRICT H.Q.	93005

INVESTIGATION:
The survey party drove this section of roadway under study several times and determined that the statewide 55mph speed law that currently regulates traffic is not applicable to LAVOY ROAD due to the following factors:

LAVOY ROAD is now very commercial with its traffic and much of this commercial traffic is of the tractor/trailer type (18 wheelers). This type of traffic is stopped along the roadway and backing into various businesses and small factories. At times the roadway is blocked by the tractor/trailers as they are backing into driveways.

This roadway also has two horizontal curves that approach two separate railroad crossings. These railroad crossings will be discussed below. Using the current speed law as a comparison, it is felt that traffic going between 45mph and 55mph, mixed with slow moving tractor/trailers, would not allow much room for adjustment along the roadway. There is too wide a margin in the pace with this mixed traffic to justify the current speed law. It is the survey party's opinion that the road conditions, along with the 85th percentile received from speed studies, justify that a lower speed law be established on LAVOY ROAD.

RAILROAD CROSSINGS:
As stated before, LAVOY ROAD runs westerly from S. Dixie (M-125) one mile to Telegraph Road (US-24). Railroad tracks cross LAVOY ROAD .3 miles westerly of S. Dixie and at that point the railroad crossing is governed by crossing gates. Driving .3 miles from this point you come upon another set of railroad tracks governed by a stop sign. The distance between this set of tracks and Telegraph Road is .4 miles. The two horizontal curves along this roadway do not cause any sight distance problem for traffic approaching stopped traffic at a railroad crossing. The railroad tracks are in very good condition as far as traffic crossing them. The pavement is in good shape and there are no buildings or brush that cause sight distance problems for motorists attempting to see the oncoming train traffic.

SPEED STUDIES:
Speed studies were conducted by the Monroe County Road Commission on 1/18/90 and indicate the 85th percentiles were 41mph and 43mph. These studies were conducted 1,000 feet east of Telegraph Road (US-24) and 1,000 feet west of S. Dixie Road (M-125). Most of the traffic that was studied was truck traffic due to the commercial setting of the area. The speed study that was taken 1,000 feet east of Telegraph (US-24) was the only speed study that was uninfluenced by the flow of traffic or the railroad tracks. The other speed study is somewhat influenced by a set of railroad tracks that has crossing gates and even though the gates are not in use, traffic has a tendency to slow down as it crosses the tracks. It should be noted, however, that these speed studies fall in line with the survey party's feelings on what the speed limit should be set at.

PAGE	INVESTIGATED BY	UNIT REVIEWED	DIVISION REVIEWED
2	SGT. PHILLIP T. CHRZAN #37/co		

DATE	COMPLAINT NO.
MAR 08, 1990	020 - 103-90
WORK UNIT	FILE CLASS
SECOND DISTRICT H.Q.	93005

TRAIN TRAFFIC:
The train traffic on the two railway systems is approximately 9 to 10 trips per day per track. It should also be noted that the so called "Death Train" operates through this area twice a week. The "Death Train" transports millions of gallons of hazardous material into the state. This officer also talked with THOMAS DJEKIC from the Department of Transportation, Railroad Safety and Tariffs Division. He stated that he requested a lower speed law be set on LAVOY ROAD because the exposure factor, that relationship between train traffic and vehicular traffic at railroad crossings.

He stated that the exposure factor should be around 5,000. However, when studied it was found that the exposure factor on LAVOY ROAD at the Chessie Railway crossing (governed by stop signs) was 16,200. The other railway system which is the Ann Arbor Railway System was not studied but believed to be in the same exposure factor area. To lower the exposure factor MR. DJEKIC requested the speed law be lowered to 25mph. The survey party felt this was too low and instead made their recommendation using 85th percentiles.

ACCIDENT EXPERIENCE:
After contact with the Monroe County Sheriff Department, the Michigan State Police in Erie, and after reviewing MALI information, it was found that there was one accident in 1987 where a vehicle hit a fixed object during inclement weather; one accident in 1988 that was a rear end collision at night; two accidents in 1989, one that was a rear end collision on icy roads and one that was a fixed object on icy roads ; one accident in 1990 that was a right turn accident that happened during daylight hours near the intersection of M-125 (Dixie Highway). There were many accidents near the intersection of LAVOY ROAD on US-24 (Telegraph Road) and this area is currently being redesigned. After reviewing the MALI material it appears that no unusual traffic patterns exist.

RECOMMENDATION:
It is therefore recommended that a new speed law be established and a Traffic Control Order be issued to read as follows:

In the County of Monroe, in the Township of Bedford:

A speed limit of Forty-Five (45) miles per hour on LAVOY ROAD from Telegraph Road (US-24) to S. Dixie (M-125).

All participants concurred.

COMPLAINT STATUS:
Closed.

PAGE	INVESTIGATED BY	UNIT REVIEWED	DIVISION REVIEWED
3	SGT. PHILLIP T. CHRZAN #37/co		

NO TCO

TS 4 (REV 10-89)
MICHIGAN DEPARTMENT OF STATE POLICE

TRAFFIC SURVEY REPORT Page 1

DATE	COMPLAINT NO.
SEP 17, 1990	030 - 328-90
WORK UNIT	FILE CLASS
THIRD DISTRICT H.Q.	93005

COMPLAINANT			TELEPHONE NO.
ROBERT CALTRIDER, ENGINEER-MANAGER			653-2411
ADDRESS: STREET AND NO.	CITY	STATE	ZIP
ARENAC COUNTY ROAD COMM.	OMER	MI	48749

INCIDENT STATUS: [5] CLOSED

COUNTY 05	CITY/TWP/VILLAGE	SECTION
ARENAC	STANDISH #10	05

NAME OF ROAD	RIGHT OF WAY	NUMBER OF LANES
STATE ROAD	66 FEET	TWO

LENGTH OF ROAD UNDER STUDY: 200 FEET

DIVIDED	SURFACE MATERIAL	SHOULDER WIDTH & MATERIAL
NO	BITUMINOUS	6 FEET / GRAVEL

ROADWAY WIDTH	ALIGNMENT	DEVELOPMENT
22 FEET	STRAIGHT & LEVEL	RURAL

PRIVATE DRIVES	COMMERCIAL DRIVES	INTERSECTIONS	SIDEWALKS
0	1	1	NONE

BRIDGES, RR, CROSSINGS, OTHER	EXISTING CONTROLS
NONE	

VOLUME COUNT:	DATE	BY	VOLUME
	1989	A.C.R.C.	1230

NATURE OF INCIDENT

PARKING SURVEY

PARTICIPANTS:

Complainant and undersigned. Copies of the report will be forwarded to concerned officials requesting their concurrence with the recommendation or further information into the investigation.

INVESTIGATION:

This investigation involves the intersection of State and Pine River. Both are primary county roads. There is a flashing red signal at the intersection with the right of way given to State Road. There is a small grocery/gas station (Pine River Grocery) in the northwest quadrant. The store is located 48 feet from the roadway. There is a 42'X 6' island constructed near the northwest radius of the intersection. Eighteen feet west of the island are two gas pumps.

The primary concern is ability for stopped eastbound traffic on Pine River to observe southbound State Road traffic. Investigators concluded that if a vehicle parked next to the east roadway edge within the north driveway entrance, vision would be reduced for eastbound Pine River traffic. This would be an unlikely location to park, as there is ample parking closer to the store entrance and along the south and west sides of the store.

PAGE	INVESTIGATED BY	UNIT REVIEWED	DIVISION REVIEWED
1	SGT. JON CLUFF #41		10/17/90

TS 4 (REV 10-89)
MICHIGAN DEPARTMENT OF STATE POLICE

TRAFFIC SURVEY REPORT Page 2

DATE	COMPLAINT NO.
SEP 17, 1990	030 - 328-90
WORK UNIT	FILE CLASS
THIRD DISTRICT H.Q.	93005

ACTION TAKEN:

Investigators agreed that parking controls are not warranted at this time. We spoke with store clerk, Valerie Donelow, about our concerns for maintaining visibility at the intersection. She agreed that vehicles normally don't park along the edge of State Road. A letter will be sent to the store's owners, Susan & Ron Foco, requesting that they assure that their patrons/delivery trucks refrain from parking in such a manner that would obstruct vision or parking controls would be installed.

ACCIDENT DATA:

There have been 13 accidents within 500 feet of this intersection between 1987 and 1989. Only two of the accidents involved a east and south bound vehicle. A like number involved a northbound vehicle where vision is not a factor. Eleven of the vehicles were eastbound compared to only two being westbound. This is because traffic volumes are only 300 for the east leg and 1255 for the west leg of Pine River Road. The accident data supports investigators conclusions that there is not a bona fide parking problem along State Road that is contributing to accidents.

CONTACT WITH SHERIFF'S DEPT.:

I contacted Sheriff James Mosciski and reviewed this investigation with him. He will advise if he observes vision problems at this location.

RECOMMENDATION:

Investigators agreed that parking controls are not warranted at this location at this time.

copy to
Robert Caltrider
Sheriff James Mosciski
Paul LaClair, Supervisor

PAGE	INVESTIGATED BY	UNIT REVIEWED	DIVISION REVIEWED
2	SGT. JON CLUFF #41		

ACCIDENT SYNOPSIS REPORT FORM comp. 30-328-90

COUNTY: Arenac TOWNSHIP/CITY Standish YEAR(S): 1987-1989

HIGHWAYS Pine River at State Road

DISTANCE: 500 feet ADT VOLUME: _____ ACC. RATE: _____

TOTAL ACCIDENTS: 13 INJURY ACCIDENTS: 4 FATAL ACCIDENTS: _____

ONE VEHICLE ACCIDENTS _____ ALCOHOL INVOLVED ACCIDENTS 1

ROAD SURFACE CONDITIONS

DRY 12 WET 1 SNOWY/ICY _____

DIRECTION OF TRAVEL

NORTHBOUND 5 SOUTHBOUND 6 EASTBOUND 11 WESTBOUND 2

HAZARDOUS ACTION INDICATED

1. SPEED TO FAST..... _____
2. SPEED TO SLOW..... _____
3. FAILED TO YIELD. DISREGARD SIGNAL..... 6
4. WRONG WAY..... _____
5. DROVE LEFT OF CENTER, IMP. PASSING..... _____
6. IMPROPER TURN..... _____
7. IMPROPER BACKING, UNSAFE START..... 1
8. FOLLOW TOO CLOSE, OR DUE CARE CAUTION..... 2
9. OTHER OR NOT KNOWN..... _____

ACCIDENT TYPE

TRAIN	_____	PARKING/DRIVEWAY	3
PEDESTRIAN	_____	LEFT TURN	1
FIXED OBJECT	1	RIGHT TURN	_____
OTHER OBJECT	_____	ANGLE	6
ANIMAL	_____	REAR END	_____
PEDALCYCLE	_____	SIDESWIPE	_____
VEH OVERTURN	_____	PARKED VEHICLE	_____
BACKED INTO	1	HEAD ON	_____

STATE OF MICHIGAN

JAMES J. BLANCHARD, GOVERNOR

MICHIGAN STATE POLICE

COL. R. T. DAVIS, DIRECTOR

Sept. 26, 1990

Ron & Susan Foco
Pine River Grocery
2008 Pine River Road
Standish, MI 48658

RE: Complaint report 30-328-90, State Road Parking Survey

This letter is reference the potential for patrons of your store to park along State Road causing vision obstructions for eastbound Pine River Road traffic.

Robert Caltrider, Engineer-Manager of the Arenac County Road Commission and I recently conducted an investigation into this matter. We concluded that parking prohibitions along the west side of State are not warranted at this time. It was our conclusion that rarely would someone park in such a manner that would obstruct vision.

We are requesting your assistance with helping keep this intersection operating as safe as possible. Please inform you clerks to request any deliver truck or customer to refrain from parking near the north entrance to your store. Your cooperation in this matter is greatly appreciated. Please feel free to contact Robert Caltrider or myself if you have any questions. Thank you.

Sincerely,

Jon D. Cliff, Sergeant
Traffic Services Division
411-B E. Genesee Street
Saginaw, MI 48607
phone (517) 771-1744

APPROVED

Traffic Services Division

TS 4 (REV 10-99)
MICHIGAN DEPARTMENT OF STATE POLICE

TRAFFIC SURVEY REPORT Page 1

OPEN

DATE	COMPLAINT NO.
JUN 12, 1990	060 - 147-90
WORK UNIT	FILE CLASS
GRAND RAPIDS H.Q.	93005

COMPLAINANT			TELEPHONE NO.
TIM HAAGSMA, TRAFFIC ENGINEER			(616) 242-6923
ADDRESS: STREET AND NO.	CITY	STATE	ZIP
1500 SCRIBNER, NW	GRAND RAPIDS	MI	49504

INCIDENT STATUS: [0] OPEN

COUNTY 41	CITY/TWP/VILLAGE	SECTION
KENT	TWP of SPENCER/20	10

NAME OF ROAD	RIGHT OF WAY	NUMBER OF LANES
MASTON LAKE ROAD	66'	2

LENGTH OF ROAD UNDER STUDY: 1100 FT. (PENELOPE DRIVE TO A POINT 100' EAST OF PINE TREE DRIVE)

DIVIDED	SURFACE MATERIAL	SHOULDER WIDTH & MATERIAL
NO	BITUMINOUS	0'-6' GRAVEL

ROADWAY WIDTH	ALIGNMENT	DEVELOPMENT
20'	2 VERT./2 HORIZ.	RESORT

PRIVATE DRIVES	COMMERCIAL DRIVES	INTERSECTIONS	SIDEWALKS
6	0	5	NONE

BRIDGES, RR, CROSSINGS, OTHER	EXISTING CONTROLS
NONE	N.P.A.A.T. P41-142-60

VOLUME COUNT:	DATE	BY	VOLUME
	1989	K.C.R.C.	447

NATURE OF INCIDENT

PARKING REVIEW

INFORMATION:
A request was received from the Kent County Road Commission requesting that consideration be given to the removal of parking on MASTON LAKE ROAD in the area of Pine Tree Drive. It has been advised that parking near the intersection is obscuring the approach of traffic on MASTON LAKE ROAD.

PARTICIPANTS:
TIM HAAGSMA. Traffic Engineer, Kent County Road Commission. Grand Rapids. MI
STEPHEN MADDEN. F/Lt., MSP/Rockford. MI (Unable to attend)
ROGER KLINGE. Sgt.. Traffic Services. MSP/Grand Rapids, MI

ACCIDENT EXPERIENCE:
The MALI records were checked for the years 1987 and 1988. There were no accidents on record for this portion for the year 1987.

In 1988. there were a total of two accidents. of which one was a Personal Injury type. The Personal Injury collision involved a pedestrian-type accident. which occurred on a Sunday between 2 - 3:00 PM: the pedestrian received "A"-type injuries. The other accident was a Property Damage accident involving a rear-end collision occurring between 2 - 3:00 AM on a Monday. under rainy/wet conditions. This collision occurred at a point 50 feet westerly of Pine Tree. The pedestrian accident occurred 100 feet north of McManus Street.

PAGE	INVESTIGATED BY	UNIT REVIEWED	DIVISION REVIEWED
1	SGT. ROGER KLINGE/55		

TS 4 (REV 10-89)
MICHIGAN DEPARTMENT OF STATE POLICE

TRAFFIC SURVEY REPORT Page 2

DATE	COMPLAINT NO.
JUN 12, 1990	060 - 147-90
WORK UNIT	FILE CLASS
GRAND RAPIDS H.Q.	93005

DESCRIPTION OF AREA:
The portion of MASTON LAKE DRIVE under review is located between Penelope Drive and a point 100 feet easterly of Pine Tree Drive. This portion of highway is located in a resort type area. with many cottages and homes in close proximity to each other. The area is popular for fishing, resulting in vehicles left parked along the roadway. In some areas along the route. there are no shoulders present, with guardrails next to the edge of the roadway. Vehicles have been parking in an area just northeasterly of the existing "No Parking" control area. Vehicles parking along this route unduly interfere with the free movement of traffic. and make it dangerous for those using the highway and obscure vision for approaching vehicles at intersections along this route.

REMARKS:
A drawing will be prepared by Tim Haagsma. Traffic Engineer. Kent County Road Commission, indicating the necessary visibility requirements.

The recommendation will be made upon receipt of the drawing.

COMPLAINT STATUS:
Complaint remains open pending receipt of the drawing and the final recommendation.

PAGE	INVESTIGATED BY	UNIT REVIEWED	DIVISION REVIEWED
2	SGT. ROGER KLINGE/55		8/20/90

P 41- -90

UD-110C(Rev 11-88)
Michigan Department of State Police

SUPPLEMENTAL INCIDENT REPORT Page 3

ORIGINAL DATE	INCIDENT NO.
JUN 12, 1990	060 - 147-90
SUPPLEMENTAL REPORT DATE	FILE CLASS
AUG 24, 1990	93005

INCIDENT STATUS

5 CLOSED

NATURE OF INCIDENT

PARKING INVESTIGATION

JOURNAL:

8-07-90 Lt. Westlev W. Hanev Original report submitted and reviewed.

DRAWING RECEIVED:
An engineering drawing was received from TIM HAAGSMA. Traffic Engineer. Kent Countv Road Commission. Grand Rapids. MI. indicating the area necessarv for a parking prohibition control. Copv of drawing attached.

RECOMMENDATION:
It is the recommendation of the survev partv a Traffic Control Order be written which states:

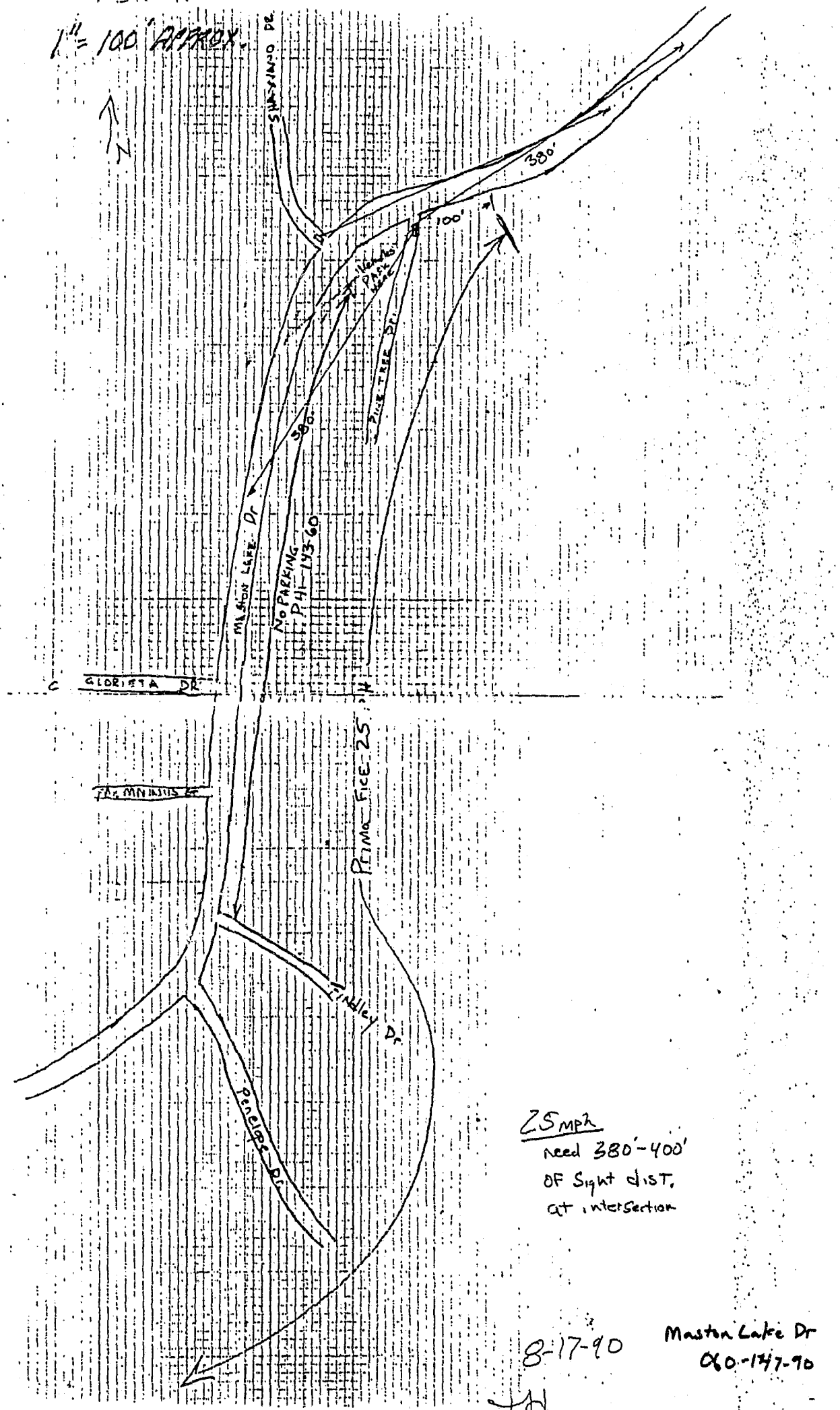
No Parking At Anv Time within the right of wav on MASTON LAKE DRIVE from Penelope Drive to a point 100 feet easterlv of Pine Tree Drive.

All persons participating concurred with the above recommendation.

RESCIND TRAFFIC CONTROL ORDER
Traffic Control Order P 41-143-60 should be rescinded with the issuance of the new order.

STATUS:
Complaint closed. Larry Hansen. Spencer Township Supervisor. who had expressed an interest in this Parking Investigation being conducted. will be contacted by the Kent Countv Road Commission and advised of the results.

PAGE	INVESTIGATED BY	REPORTED BY	REVIEWED BY
3	SGT. ROGER KLINGE/55		



25 MPH
need 380'-400'
OF Sight dist.
at intersection

8-17-90

Maston Lake Dr
C10-147-90

TSD-HQ

TS 4 (REV 10-89)
MICHIGAN DEPARTMENT OF STATE POLICE

TRAFFIC SURVEY REPORT Page 1

DATE	COMPLAINT NO.
SEP 05, 1990	060 - 207-90
WORK UNIT	FILE CLASS
6TH DISTRICT HQ.	93005

COMPLAINANT			TELEPHONE NO.	
TOM AMMON			788-2381	
ADDRESS: STREET AND NO.	CITY		STATE	ZIP
7700 E. APPLE AVENUE	MUSKEGON		MI	49442
INCIDENT STATUS				
5 CLOSED				
COUNTY 61	CITY/TWP/VILLAGE			SECTION
MUSKEGON	TWP of FRUITLAND/06			13, 24
NAME OF ROAD		RIGHT OF WAY		NUMBER OF LANES
WHITEHALL ROAD		66'		2
LENGTH OF ROAD UNDER STUDY				
.5 MILE (FROM A POINT .1 MILE SOUTH OF RILEY-THOMPSON ROAD)				
DIVIDED	SURFACE MATERIAL	SHOULDER WIDTH & MATERIAL		
NO	BITUMINOUS	AVG. 8' BITUMINOUS/GRAVEL		
ROADWAY WIDTH	ALIGNMENT	DEVELOPMENT		
24'	1-HORIZ./0-VERT.	RURAL/ISOLATED COMMERCIAL		
PRIVATE DRIVES	COMMERCIAL DRIVES	INTERSECTIONS	SIDEWALKS	
0	4	1	NONE	
BRIDGES, RR. CROSSINGS, OTHER		EXISTING CONTROLS		
NONE		NPAAT P61-180-80 MAJORITY OF STUDY		
VOLUME COUNT:	DATE	BY	VOLUME	
	1985	M.C.R.C.	4000	

NATURE OF INCIDENT

PARKING INVESTIGATION-REVIEW

INFORMATION:
Mr. Ammon, Director of Traffic Services, requested that an investigation be conducted to extend the No Parking prohibition on WHITEHALL ROAD between Riley-Thompson Road and a point south. The investigation would also cover a review of the parking prohibition on WHITEHALL ROAD between Riley-Thompson Road and a point north.

ACCIDENT EXPERIENCE:
The Muskegon County Road Commission advised that a search of their files indicated that two accidents occurred in the area under investigation during the year 1989. One accident involved leaving the roadway and striking a fixed object, and the second accident involved striking a deer. The accident rate was calculated at 273.9.

INVESTIGATION:
WHITEHALL ROAD travels in a northerly/southerly direction between the city of North Muskegon and the north County line and is considered to be a primary road in the County roadway system. The portion of WHITEHALL ROAD under investigation is located from a point 600 feet south of the intersection of Riley-Thompson Road to a point 2,000 feet north of the intersection of Riley-Thompson Road. WHITEHALL ROAD is a two-lane, 24 ft. bituminous roadway that has shoulders which average 8 feet in width. Motorists have been parking along both sides of WHITEHALL ROAD south of the intersection of Riley-Thompson Road because of a commercial establishment (Michigan's Adventure Amusement Park) which is located in the northeast quadrant of the intersection. Adequate parking is provided for the

DATE	COMPLAINT NO.
SEP 05, 1990	060 - 207-90
WORK UNIT	FILE CLASS
6TH DISTRICT HQ.	93005

INVESTIGATION: (continued)
Amusement Park and there is no need for motorists to park along the roadway in this area. To allow parking to continue on WHITEHALL ROAD in the vicinity of Riley-Thompson Road will create dangerous vision obstructions for those motorists attempting to enter or cross WHITEHALL ROAD from the Riley-Thompson Road intersection. Mr. Ammon indicated that the parking prohibition north of the intersection of Riley-Thompson Road was initially installed because motorists were parking in this area to patronize the Amusement Park, and this was creating vision obstructions for the motorists using the several commercial driveways in the area. Also, pedestrians moving from between parked cars crossing WHITEHALL ROAD were creating a dangerous situation for themselves and for the motorists travelling on WHITEHALL ROAD. Mr. Ammon indicated that the Road Commission believes that the parking prohibition north of the intersection is still required to prevent the problems mentioned from recurring.

CORNER SIGHT DISTANCE:
With an estimated speed of 55 MPH for northbound and southbound motorists on WHITEHALL ROAD, the corner sight distance was calculated by Mr. Ammon using the Michigan Department of Transportation criteria for entering sight distance for driveways and intersections. Using the triangulation method, and establishing points 18 feet east and west of the edge of the road pavement in the center of the Riley-Thompson intersection, it was determined that 200 feet of sight distance is required to the south on the western side of WHITEHALL ROAD and 600 feet of sight distance is required on the eastern side of WHITEHALL ROAD.

RECOMMENDATION:
It is the recommendation of the survey party that a Traffic Control Order be issued as follows:

> No Parking at Any Time within the right-of-way on the west side of WHITEHALL ROAD from a point 200 feet south of the intersection of Riley-Thompson Road to a point 2,000 feet north of the intersection of Riley-Thompson Road;
>
> No Parking At Any Time within the right-of-way on the east side of WHITEHALL ROAD from a point 600 feet south of the intersection of Riley-Thompson Road to a point 2,000 feet north of the intersection of Riley-Thompson Road.

REMARKS:
Traffic Control Order P 61-180-80 should be rescinded. Parking on Riley-Thompson Road in the vicinity of WHITEHALL ROAD is carried on Complaint #60-206-90.

COMPLAINT STATUS:
Closed.

PAGE	INVESTIGATED BY	UNIT REVIEWED	DIVISION REVIEWED
2	SGT. ROGER NOVENSKE RC Novenske	Westley Harvey	

P. 88-109-90

TS 4 (REV 10-89)
MICHIGAN DEPARTMENT OF STATE POLICE

TRAFFIC SURVEY REPORT Page 1

DATE	COMPLAINT NO.
APR 20, 1990	020 - 183-90
WORK UNIT	FILE CLASS
SECOND DISTRICT H.Q.	93005

COMPLAINANT			TELEPHONE NO.
MR. WILLIAM LAWERY			(313) 782-1709
ADDRESS: STREET AND NO.	CITY	STATE	ZIP
25640 MIDDLEBELT ROAD	FLAT ROCK	MI	48134

INCIDENT STATUS: [5] CLOSED

COUNTY 82	CITY/TWP/VILLAGE:	SECTION
WAYNE	TWP OF HURON/06	25 & 26

NAME OF ROAD	RIGHT OF WAY	NUMBER OF LANES
MIDDLEBELT ROAD, AREA #1	66 - 100 FEET	2

LENGTH OF ROAD UNDER STUDY: 700 FT. ON THE WESTERLY SIDE OF MIDDLEBELT ROAD FROM THE Y INTERCHANGE NORTH

DIVIDED	SURFACE MATERIAL	SHOULDER WIDTH & MATERIAL
NO	ASPHALT	3 FT. ASPHALT, 3-5 FT. GRAVEL

ROADWAY WIDTH	ALIGNMENT	DEVELOPMENT
24 FEET IN WIDTH	STRAIGHT	100% RESIDENTIAL

PRIVATE DRIVES	COMMERCIAL DRIVES	INTERSECTIONS	SIDEWALKS
10	NONE	NONE	NONE

BRIDGES, RR. CROSSINGS, OTHER	EXISTING CONTROLS
NONE	35MPH

VOLUME COUNT:	DATE	BY	VOLUME
	11/10/89	WAYNE COUNTY ROADS	2802

NATURE OF INCIDENT

TRAFFIC SURVEY - PARKING

PARTICIPANTS:

MR. RICK HODGES, Wayne County Office of Public Service, Roads Division, Romulus
MR. MICHAEL RUSHLOW, Wayne County Office of Public Service, Roads Division, Romulus
SGT. MARVIN GIER, Michigan State Police, Second District Traffic Services, Northville
CHIEF JAMES CAYGILL, Huron Township Police Department, New Boston, MI (Advised)
F/LT. RICHARD MILLER, Michigan State Police, Flat Rock, MI (Advised)
OFFICER RICK SCHWARTZ, Romulus Police Department, Romulus, MI (Advised)
LT. THORNE, Livonia Police Department, Livonia, MI
Construction agreement between Garden City and Wayne County Roads Division

INFORMATION:

The complainant, MR. WILLIAM LAWERY, called the Wayne County Roads Division reference sight distance problems when leaving his driveway. This problem exists because of vehicles parked along the shoulder of the road north of his residence.

In addition to the above, there is a construction project on Middlebelt Road in Garden City. The contract agreement between the city and county calls for the removal of parking within the right of way.

PAGE	INVESTIGATED BY	UNIT REVIEWED	DIVISION REVIEWED
1	SGT. MARVIN GIER #39 /CO		

DATE	COMPLAINT NO.
APR 20, 1990	020 - 183-90
WORK UNIT	FILE CLASS
SECOND DISTRICT H.Q.	93005

Because this roadway had not been reviewed in the recent past, the survey party will review the entire length of the road in Wayne County.

INVESTIGATION (AREA #1):
MIDDLEBELT ROAD in this area is a main arterial roadway traveling in a northerly/southerly direction through a residential area. This area is 700 feet in length and covers the westerly side of the road only. The easterly side of the road in the area already has the parking removed.

The road is straight and level and is lined with single family homes that front the roadway. At the south end of this segment MIDDLEBELT ROAD is a horizontal curve which travels in a westerly direction and intersects with Huron River Drive. It is in this area where there has been several complaints from local citizens of restricted sight distance. The problem comes when vehicles park in the straight segment of road along the shoulder. This in turn blocks or restricts the sight distance for those leaving their driveways in the curved portion.

It should also be noted that the speed limit in this area is thirty-five (35) miles per hour. The minimum sight distance should be 308 feet and a desired distance would be 411 feet. Currently, with vehicles parked in the right of way north of the complainant's home, the sight distance is only 252 feet measured from 18 feet off the roadway.

Recommendations to remove the parking in this area will be made because to allow parking interferes with the free flow of traffic and is dangerous for those using the roadway as it relates to sight distance.

ACCIDENT INFORMATION (AREA #1):
Accident information comes from the M.A.L.I. system, request NO.82B48, for the years 1986, 1987, and 1988.

1986.....One accident.....Fixed object
1987.....One accident.....Rear End
1988.....One Accident.....Fixed object

Accidents have not become a problem over the past three years in this area.

TS 4 (REV 10-89)
MICHIGAN DEPARTMENT OF STATE POLICE

TRAFFIC SURVEY REPORT Page 3

DATE	COMPLAINT NO.
APR 20, 1990	020 - 183-90
WORK UNIT	FILE CLASS
SECOND DISTRICT H.Q.	93005

COUNTY 82	CITY/TWP/VILLAGE		SECTION
WAYNE	TOWNSHIP of HURON/06		11,12,13,14
NAME OF ROAD		RIGHT OF WAY	NUMBER OF LANES
MIDDLEBELT ROAD (AREA #2)		66-120 FEET	2
LENGTH OF ROAD UNDER STUDY			
1,000 FEET NORTH AND SOUTH OF KING ROAD			
DIVIDED	SURFACE MATERIAL	SHOULDER WIDTH & MATERIAL	
NO	ASPHALT	3 TO 10 FEET GRAVEL	
ROADWAY WIDTH	ALIGNMENT	DEVELOPMENT	
24 FEET IN WIDTH	STRAIGHT-LEVEL	50% RESIDENTIAL, 30% COMMERCIAL, 20% OPEN	
PRIVATE DRIVES	COMMERCIAL DRIVES	INTERSECTIONS	SIDEWALKS
8	4	1	NONE
BRIDGES.RR.CROSSINGS.OTHER		EXISTING CONTROLS	
NONE		45MPH	

VOLUME COUNT:	DATE	BY	VOLUME
	11/20/87	WAYNE COUNTY ROADS	3097 TO 3180

INVESTIGATION (AREA #2):
MIDDLEBELT ROAD in this area, 500 feet north and south of King Road, is a main arterial roadway traveling in a northerly/southerly direction through a mix of rural, residential, and commercial. The homes in this area all front the road but sit well off from it. Commercial properties sit in the southwest and southeast corners of the intersection with King Road. The northwest is also commercial, However no business is conducted there at this time. The northeast corner is currently open field. As this area increases population wise the commercial businesses, a hardware store, auto service, beauty shop, and party store, are attracting more vehicles and pedestrians to the area. Also, because there is no curbing or green belts in this area, drivers tend to park wherever they can and often restrict the sight distance for persons using the roadway and parking areas.

ACCIDENT INFORMATION (AREA #2):
Accident information comes from the M.A.L.I. system, request NO.82B48, for the years 1986, 1987, and 1988.

1986...5 accidents: 2 left turns, 2 fixed object, 1 angle
1987...2 accidents: 1 fixed object, 1 angle
1988...None

There was a total of seven accidents in the three year period. Of these, five occurred in the intersection which is controlled only by stop signs on King Road. The accident rate for the years 1986 and 1987 is 207, excluding the intersection accidents, nothing unusual as to accident in this segment of MIDDLEBELT ROAD.

PAGE	INVESTIGATED BY	UNIT REVIEWED	DIVISION REVIEWED
3	SGT. MARVIN GIER #33/06		

TS 4 (REV 10-89)
MICHIGAN DEPARTMENT OF STATE POLICE

TRAFFIC SURVEY REPORT Page 4

DATE	COMPLAINT NO.
APR 20, 1990	020 - 183-90
WORK UNIT	FILE CLASS
SECOND DISTRICT H.Q.	93005

COUNTY 82	CITY/TWP/VILLAGE	SECTION
WAYNE	CITY of ROMULUS/75	N/A

NAME OF ROAD	RIGHT OF WAY	NUMBER OF LANES
MIDDLEBELT ROAD (AREA #3)	66-120 FEET	2

LENGTH OF ROAD UNDER STUDY
1.58 MILES FROM CALIFORNIA STREET TO A POINT 250 FEET SOUTH OF NORTHLINE RD

DIVIDED	SURFACE MATERIAL	SHOULDER WIDTH & MATERIAL
NO	ASPHALT	3 FT. ASPHALT, 3 TO 5 FT. GRAVEL

ROADWAY WIDTH	ALIGNMENT	DEVELOPMENT
24 FEET IN WIDTH	STRAIGHT - LEVEL	15% RESIDENTIAL, 15% COMMERCIAL, 70% OPEN

PRIVATE DRIVES	COMMERCIAL DRIVES	INTERSECTIONS	SIDEWALKS
21	11	2	NONE

BRIDGES, RR. CROSSINGS, OTHER	EXISTING CONTROLS
NONE	45MPH

VOLUME COUNT:	DATE	BY	VOLUME
	3/19/87	WAYNE COUNTY ROADS	6064 TO 12718

INVESTIGATION (AREA #3)

MIDDLEBELT ROAD, in this area, is a main arterial roadway traveling in a northerly/southerly direction through a rural area with commercial at the intersection with Eureka Road.

From California Street to just south of Eureka Road there are single family homes fronting the road on the west side. The east side is made up of open fields and a commercial business.

At the major intersection of MIDDLEBELT and Eureka Roads, three of the four corners have commercial businesses and the northwest corner is open field which belongs to Metro Airport.

Between a point just north of the commercial business there are open fields north of Eureka Road to a point two hundred and fifty (250) feet south of Northline Road. This area adjacent to the road on either side is all open and belongs to Metro Airport.

In the aforementioned locations, from California Street to a point 250 feet south of Northline Road there is evidence of parking on either side of the road by commercial vehicles (trucks). The survey party will recommend that the parking be removed before this gets out of hand. Also it is felt to allow parking would be dangerous to those using the roadway and unduly interferes with the free flow of traffic and sight distance as it relates to intersection and driveway use.

ACCIDENT INFORMATION (AREA #3):

Accident information comes from the M.A.L.I. system, request NO.82B48, for the years 1986, 1987, and 1988.

PAGE	INVESTIGATED BY	UNIT REVIEWED	DIVISION REVIEWED
4	SGT. MARVIN GIER #33/cc		

TS 4 (REV 10-89)
MICHIGAN DEPARTMENT OF STATE POLICE

TRAFFIC SURVEY REPORT Page 5

DATE	COMPLAINT NO.
APR 20, 1990	020 - 183-90
WORK UNIT	FILE CLASS
SECOND DISTRICT H.Q.	93005

YEAR	LEFT TURN	ANGLE	FIXED OBJECT	PARKING/ DRIVEWAY	REAR END	HEAD ON	BIKE	OTHER	TOTAL
1986	5	6	5	5	5	0	0	3	29
1987	10	1	4	7	4	2	2	2	32
1988	1	1	0	5	3	0	0	1	11

(One of the bike accidents was fatal in 1987.)

There was a total of 82 accidents in the three year period, with 1987 being the highest (32 accidents), with nearly one third (10) of the 32 accidents being left turns.

Accident rates in the three year period range from 77 to 311 in the segment south of Eureka Road. The accident rates north of Eureka Road range from 129 to 311. All are acceptable for this type of roadway system. These rates don't include accidents within 50 feet of the center of the intersection.

Accident rates for the intersection range from 20 to 88. This is well within the acceptable limits for this type of intersection.

Accident rates in the segment south of Eureka Road with ADT's of 6064 are well within the acceptable limits of 90 to 152.

COUNTY 82	CITY/TWP/VILLAGE	SECTION
WAYNE	CITY of GARDEN CITY/81	N/A

NAME OF ROAD	RIGHT OF WAY	NUMBER OF LANES
MIDDLEBELT ROAD (AREA #4)	66-120 FEET	5 TO 7

LENGTH OF ROAD UNDER STUDY
ONE MILE, FROM PARDO STREET TO BEECHWOOD STREET

DIVIDED	SURFACE MATERIAL	SHOULDER WIDTH & MATERIAL
NO	CONCRETE	CURBED

ROADWAY WIDTH	ALIGNMENT	DEVELOPMENT
60 TO 84 FEET	STRAIGHT - LEVEL	100% COMMERCIAL

PRIVATE DRIVES	COMMERCIAL DRIVES	INTERSECTIONS	SIDEWALKS
NONE	9	1	100%

BRIDGES, RR. CROSSINGS, OTHER	EXISTING CONTROLS
NONE	40MPH

VOLUME COUNT:	DATE: FEB. OF 1989 MARCH OF 1989	BY	VOLUME
		W.C.R.D.	25368 TO 30343

INVESTIGATION (AREA #4):
MIDDLEBELT ROAD in this area is a main arterial roadway traveling in a northerly/southerly direction through a commercial district.

This is the area where there is an agreement between the city of Garden City and the Wayne County Roads Division to eliminate the parking because of the reconstruction of the roadway and intersection with Ford Road (M-153).

PAGE	INVESTIGATED BY	UNIT REVIEWED	DIVISION REVIEWED
5	SGT. MARVIN GIER #33/60		

The survey party also recognizes that to allow parking in the area would be dangerous to those using the roadway and would unduly interfere with the free flow of traffic.

ACCIDENT INFORMATION (AREA #4)
Accident information comes from the M.A.L.I. system, request NO.82B48, for the years 1986, 1987, and 1988.

YEAR	LEFT TURN	ANGLE	FIXED OBJECT	PARKING/ DRIVEWAY	REAR END	HEAD ON	BIKE	PARKED VEHICLE	OTHER	TOTAL
1986	16	3	2	7	18	0	1	1	0	48
1987	11	1	0	8	24	0	2	1	4	51
1988	23	3	1	7	16	1	2	1	7	61

The accident rate south of M-153/Ford Road is between 172 and 216 over the three year period. North of M-153/Ford Road it is between 144 and 252. In either segment these rates are very acceptable in this suburban setting.

Accident rates for the intersection over the past three years ranges from 43 to 57. These also are well within the acceptable limits for a suburban area.

TRAFFIC CONTROL ORDERS TO BE RESCINDED AND PARKING TYPE ADJUSTED:
The following Traffic Control Orders will be rescinded and the information retained and included in a new Order. However, some of the parking restrictions shall be changed as follows:

Order P82-332-82: All of the information in this order shall be retained and included in the new order with no adjustments to the type of parking.

Order P82-355-72: All of the information in this order shall be retained and included in the new order. However, the type of parking will be changed from "No Parking on the Roadway" to "No Parking Within the Right of Way".

Order P82-34-73: All of the information in this order shall be retained and included in the new order. However, the type of parking will be changed from "No Parking Within Ten (10) Feet of the Pavement Edge" to "No Parking Within the Right of Way".

Copies of the above listed Traffic Control Orders are attached.

RECOMMENDATION:
Therefore it is recommended that the following Traffic Control Orders be rescinded; P82-332-82, P82-355-72, and P82-34-73. Some of the information shall be retained and included in a new order to read as follows:

TS 4 (REV 10-89)
MICHIGAN DEPARTMENT OF STATE POLICE

TRAFFIC SURVEY REPORT Page 7

DATE	COMPLAINT NO.
APR 20, 1990	020 - 183-90
WORK UNIT	FILE CLASS
SECOND DISTRICT H.Q.	93005

In the County of Wayne, Cities of Romulus, Westland, Inkster, Garden City, and Livonia, and Township of Huron:

No Parking At Any Time within the right of way of MIDDLEBELT ROAD (westerly and easterly legs) from Huron River Drive to a point One Thousand Sixty Five (1065) feet northerly of Huron River Drive;

No Parking At Any Time within the right of way of MIDDLEBELT ROAD from a point Five Hundred (500) feet northerly of King Road to a point Five Hundred (500) feet southerly of King Road.

No Parking At Any Time within the right of way of MIDDLEBELT ROAD from a point Two Hundred Fifty (250) feet southerly of Sibley Road to a point One Thousand (1000) feet northerly of Sibley Road.

No Parking At Any Time within the right of way of MIDDLEBELT ROAD from a point Two Hundred Fifty (250) feet southerly of Pennsylvania Road to Eight Mile Road (Base Line Road).

All participating concur.

FINAL DISPOSITION:
Closed.

PAGE	INVESTIGATED BY	UNIT REVIEWED	DIVISION REVIEWED
7	SGT. MARVIN GIER #33/cd		

PA 13-51-90

TS 4 (REV 10-89)
MICHIGAN DEPARTMENT OF STATE POLICE

TRAFFIC SURVEY REPORT Page 1

DATE	COMPLAINT NO.
AUG 31, 1990	040 - 195-90
WORK UNIT	FILE CLASS
FOURTH DISTRICT H.Q.	93005

COMPLAINANT			TELEPHONE NO.	
LT. JAMES BURDICK			782-0463	
ADDRESS: STREET AND NO.	CITY		STATE	ZIP
3400 COOPER STREET	JACKSON		MI	49201
INCIDENT STATUS				
5 CLOSED				
COUNTY 13	CITY/TWP/VILLAGE			SECTION
CALHOUN	TWP of EMMETT/10			8,9,10
NAME OF ROAD		RIGHT OF WAY		NUMBER OF LANES
B.L.94 (EAST MICHIGAN AVE)		66 +		2
LENGTH OF ROAD UNDER STUDY				
13689 FEET				
DIVIDED	SURFACE MATERIAL	SHOULDER WIDTH & MATERIAL		
NO	ASPHALT	0-8 FEET - GRAVEL		
ROADWAY WIDTH	ALIGNMENT	DEVELOPMENT		
22 FEET	5H - 4V CURVES	COMMERCIAL		
PRIVATE DRIVES	COMMERCIAL DRIVES	INTERSECTIONS	SIDEWALKS	
45	69	20	NONE	
BRIDGES, RR. CROSSINGS, OTHER		EXISTING CONTROLS		
1 BRIDGE - RAILROAD UNDER		SP 13-21-81/VARIOUS NO PARKING		
VOLUME COUNT:	DATE	BY	VOLUME	
	1988	MDOT	15000	

NATURE OF INCIDENT

TRAFFIC SURVEY

PARKING TCO REVIEW B.L. 94

PARTICIPANTS:

Mr. Ed Miller, Traffic Engineer, Michigan Department of Transportation, Kalamazoo

Sgt. R. Rogers, Michigan State Police, Traffic Services Division, Jackson

INFORMATION:

During the review process of existing TCOs the above zone was viewed by the participants. The current TCO was established in 1971 and since that time the area has seen a dramatic increase in commercial development. Several apartment complexes, boat dealers and various small business enterprises have been established in the area serviced by this roadway. The need for the parking restriction continues to be valid. With the large number of both private and commercial driveways entering this roadway it is necessary to restrict parking on the right-of-way from the standpoint of vision restrictions alone. There is ample off roadway parking available at the various business establishments. The eastern section of the zone can be eliminated due to the closure of a drive-in theater located to the east of Fifer Lane.

PAGE	INVESTIGATED BY	UNIT REVIEWED	DIVISION REVIEWED
1	SGT. R. ROGERS #48	EB	9/7/90

DATE	COMPLAINT NO.
AUG 31, 1990	040 - 195-90
WORK UNIT	FILE CLASS
FOURTH DISTRICT H.Q.	93005

ACCIDENT HISTORY:
MALI reports for the years 1986,1987,1988 and 1989 were reviewed and the following information learned from these reports.

During 1986 there was one fatal accident, 11 personal injury accidents and 49 property damage accidents reported within the zone. During 1987 there were 20 personal injury accidents and 43 property damage accidents reported. In 1988 the number of personal injury accidents decreased to 17 and the number of property damage accidents also decreased to 37. During 1989, however, personal injury accidents rose to 33 and property damage accidents increased to 69. There were 2 fatal accidents also recorded in 1989. The following table lists 4 of the 20 intersections within the zone that have shown an increase in accidents during 1989.

BL 94 AT OR NEAR	1986	1987	1988	1989
RAYMOND ROAD	4	6	4	9
COLUMBIA AVENUE	3	2	3	11
KATHERINE/NIXON	5	6	9	18
WATTLES ROAD	8	16	4	13

Representatives from the Calhoun County Sheriff Department, Emmett Township Safety Department, Battle Creek State Police Post and the 4th District Traffic Services Unit have scheduled a meeting later during September to address the accident situation within this zone. That information will be carried under a separate heading.

RECOMMENDATION:
It is the recommendation of the participants that the existing TCO PA 13-23-71 be rescinded and a new TCO be written to read:

> No parking at any time within the right-of-way of BL-94 (East Michigan Avenue) from a point 100 feet easterly of Bell Street to Fifer Lane.

FINAL DISPOSITION:
Closed.

SEP 25 1989

Review

TS 4 (REV 06-88)
MICHIGAN DEPARTMENT OF STATE POLICE

TRAFFIC SURVEY REPORT Page 1

DATE	COMPLAINT NO.
MAR 14, 1989	080 - 46-89
WORK UNIT	FILE CLASS
EIGHTH DISTRICT H.Q.	93005

COMPLAINANT		TELEPHONE NO.	
MR. EARL MARTIN (DIST. OPERATIONS ENG.)		875-6644	
ADDRESS: STREET AND NO.	CITY	STATE	ZIP
TOBIN LOCATION, BOX 120	CRYSTAL FALLS	MI	49920

INCIDENT STATUS

[5] CLOSED

COUNTY	CITY/TWP/VILLAGE	SECTION
IRON (36)	TWP OF CRYSTAL FALLS (02)	

NAME OF ROAD	RIGHT OF WAY	NUMBER OF LANES
US-2	VARIABLE	2

LENGTH OF ROAD UNDER STUDY
0.5 MILE (EASTERLY FROM US-141)

DIVIDED	SURFACE MATERIAL	SHOULDER WIDTH & MATERIAL
NO	BITUMINOUS	6' - 8'/BITUMINOUS

ROADWAY WIDTH	ALIGNMENT	DEVELOPMENT
22'	STRAIGHT/LEVEL	COMMERCIAL

PRIVATE DRIVES	COMMERCIAL DRIVES	INTERSECTIONS	SIDEWALKS
1	12	1	NONE

BRIDGES, RR, CROSSINGS, OTHER	EXISTING CONTROLS
NONE	PA 36-09-77 & 40 MPH SPEED LIMIT

VOLUME COUNT:	DATE	BY	VOLUME
	1987	M.D.O.T.	7500

NATURE OF INCIDENT

T.C.O. - REVIEW PA 36-09-77

PARTICIPANTS:

Earl Martin, District Operations Engineer, M.D.O.T., Crystal Falls, MI

Sgt. Ronald J. Ulvila, Michigan State Police, Traffic Services Division, Negaunee, MI

ACCIDENT EXPERIENCE:

See attached Accident Synopsis Report Form.

INVESTIGATION:

TRAFFIC CONTROL ORDER PA 36-09-77 was reviewed by participants, in the field.

Conditions along US-2 within the area surveyed remain basically the same as there were when this order was originally implemented. There are businesses located on both sides of the highway. All presently have off road parking available.

PAGE	INVESTIGATED BY	UNIT REVIEWED	DIVISION REVIEWED
1	SERGEANT RONALD ULVILA 64		

DATE	COMPLAINT NO.
MAR 14, 1989	080 - 46-89
WORK UNIT	FILE CLASS
EIGHTH DISTRICT H.Q.	93005

INVESTIGATION (CONTINUED):

The prohibited stopping, standing or parking was originally instituted to allow adequate sight distance for drivers exiting the driveways within the area.

RECOMMENDATION:

Due to the traffic volume and commercial driveways it is jointly recommended that **TRAFFIC CONTROL ORDER PA 36-09-77** remain in effect as originally implemented.

STATUS:

Closed.

PAGE	INVESTIGATED BY	UNIT REVIEWED	DIVISION REVIEWED
2	SERGEANT RONALD ULVILA		Lt Hughes 4/21/89

ACCIDENT SYNOPSIS REPORT FORM

COUNTY:	TOWNSHIP/CITY:	COMPLAINT #
IRON	CRYSTAL FALLS TWP	80-46-89
HIGHWAY:	FROM:	TO:
US-2	US-141 EAST 0.5 MILE	
LENGTH OF ZONE:	ADT VOLUME:	ACCIDENT RATE:
0.5 MILE	7500	
TOTAL ACCIDENTS:	INJURY ACCIDENTS:	FATAL ACCIDENTS:
17	6	0
ONE VEHICLE ACCIDENTS:	ALCOHOL INVOLVED ACCIDENTS	YEAR(S):
11	0	1985- 1988

ROAD CONDITIONS		
DRY: 2	WET: 4	SNOWY/ICY: 2

DIRECTION OF TRAVEL	
NORTHBOUND: 2	SOUTHBOUND: 2
EASTBOUND: 7	WESTBOUND: 4

HAZARDOUS ACTION INDICATED:

1.	Speed Too Fast	1
2.	Speed Too Slow	
3.	Failed To Yield/Disregard Signal	5
4.	Wrong Way	
5.	Drove Left of Center/Improper Passing ...	
6.	Improper Turn	1
7.	Improper Backing/Unsafe Start	
8.	Following Too Close	4
9.	Other or Not Known	3
0.	No Hazardous Action Indicated.....	6

ACCIDENT TYPE:

Train.....		Parking/Driveway.	8
Pedestrian.....		Left Turn.....	2
Fixed Object.....		Right Turn.....	
Other Object.....		Angle.....	
Animal.....	4	Rear End.....	1
Pedacycle.....		Sideswipe.....	
Vehicle Rollover.		Parked Vehicle...	
Backed Into.....		Head On.....	2

INVESTIGATED BY:	UNIT REVIEW:	DIVISION REVIEW
SGT. RONALD J. ULVILA		

DA-R 13-06-90

TS 4 (REV 10-89)
MICHIGAN DEPARTMENT OF STATE POLICE

TRAFFIC SURVEY REPORT Page 1

DATE	COMPLAINT NO.
AUG 28, 1990	040 - 187-90
WORK UNIT	FILE CLASS
FOURTH DISTRICT H.Q.	93005

COMPLAINANT			TELEPHONE NO.
LT. JAMES BURDICK			782-0463
ADDRESS: STREET AND NO.	CITY	STATE	ZIP
3400 COOPER STREET	JACKSON	MI	49201

INCIDENT STATUS: [5] CLOSED

COUNTY 13	CITY/TWP/VILLAGE	SECTION
CALHOUN	CITY of BATTLE CREEK/80	

NAME OF ROAD	RIGHT OF WAY	NUMBER OF LANES
M-96	150	4-5

LENGTH OF ROAD UNDER STUDY: 11012 FEET

DIVIDED	SURFACE MATERIAL	SHOULDER WIDTH & MATERIAL
NO	ASPHALT	NONE

ROADWAY WIDTH	ALIGNMENT	DEVELOPMENT
48+	1 H CURVE	INDUSTRIAL

PRIVATE DRIVES	COMMERCIAL DRIVES	INTERSECTIONS	SIDEWALKS
NONE	25	12	NONE

BRIDGES, RR. CROSSINGS, OTHER	EXISTING CONTROLS
NONE	TEMP 45 MPH SPEED ZONE/ NSS&P

VOLUME COUNT:	DATE	BY	VOLUME
	1988	MDOT	13700

NATURE OF INCIDENT

TRAFFIC SURVEY

PARKING TCO REVIEW M-96

PARTICIPANTS:

Mr. Ed Miller, Traffic Engineer, Michigan Department of Transportation, Kalamazoo
Sgt. R. Rogers, Michigan State Police, Traffic Services, Jackson

INFORMATION:

The present zone on M-96 covers essentially the old Fort Custer area. M-96 through this area is basically an east/west roadway joining the City of Battle Creek and the Village of Augusta. At one time apparently there was a need for this TCO restricting parking throughout the area, however at this time the need is not evident. The industrial complex offers very adequate parking well away from the present zone. Some minor commercial and high density residential development offer more than adequate parking facilities again well away from the present zone. At one time the roadway was bordered by curb, however due to constant resurfacing the top portion of the curb is now below the surface. There is more than ample room for vehicles to pull completely off the travelled portion of the roadway should the need arise.

The roadway was extensively studied during 1989 as a question as to lowering the speed limit arose. Presently there is a temporary 45 mph speed zone throughout the existing zone. Related complaint is 40-205-89.

PAGE	INVESTIGATED BY	UNIT REVIEWED	DIVISION REVIEWED
1	SGT. R. ROGERS #48		9/7/90

TS 4 (REV 10-89)
MICHIGAN DEPARTMENT OF STATE POLICE

TRAFFIC SURVEY REPORT Page 2

DATE	COMPLAINT NO.
AUG 28, 1990	040 - 187-90
WORK UNIT	FILE CLASS
FOURTH DISTRICT H.Q.	93005

ACCIDENT HISTORY:
According to MALI reports for 1987 there were 28 personal injury accidents and 35 property damage accidents reported within the zone. During the year 1988 there were 14 personal injury and 37 property damage accidents reported. During 1989 1 fatal accident, 25 personal injury accidents and 49 property damage accidents were reported.

RECOMMENDATION:
It is the recommendation of the participants that the existing TCO PA 13-61-71 be rescinded.

FINAL DISPOSITION:
Closed.

PAGE	INVESTIGATED BY	UNIT REVIEWED	DIVISION REVIEWED
2	SGT. R. ROGERS #48		

~~Add'l~~

No TCO ~~No TCO~~

TS 4 (REV 10-89)
MICHIGAN DEPARTMENT OF STATE POLICE

TRAFFIC SURVEY REPORT Page 1

DATE	COMPLAINT NO.
AUG 30, 1990	010 - 142-90
WORK UNIT	FILE CLASS
FIRST DISTRICT H.Q.	93005

COMPLAINANT			TELEPHONE NO.	
WAYNE WINSLOW, IONIA COUNTY ROAD COMMISSION			(616) 527 1700	
ADDRESS: STREET AND NO.	CITY		STATE	ZIP
169 E. RIVERSIDE DR. P.O. BOX 76	IONIA		MI	48846
INCIDENT STATUS				
5 CLOSED				
COUNTY 34	CITY/TWP/VILLAGE		SECTION	
IONIA	TOWNSHIP of EASTON/05		12	
NAME OF ROAD		RIGHT OF WAY	NUMBER OF LANES	
DILDINE AND M-66		66 FT.	2 EACH ROADWAY	
LENGTH OF ROAD UNDER STUDY				
INTERSECTION				
DIVIDED	SURFACE MATERIAL	SHOULDER WIDTH & MATERIAL		
NO	ASPHALT	VARIABLE TO NONE		
ROADWAY WIDTH	ALIGNMENT	DEVELOPMENT		
22 - 24 FT.	STRAIGHT	RURAL		
PRIVATE DRIVES	COMMERCIAL DRIVES	INTERSECTIONS	SIDEWALKS	
BRIDGES, RR, CROSSINGS, OTHER		EXISTING CONTROLS		
NONE		STOP FOR DILDINE AT M-66		
VOLUME COUNT:	DATE	BY	VOLUME	
			0	

NATURE OF INCIDENT

STOP DETERMINATION

PARTICIPANTS:

Mr. Wayne Winslow, Ionia County Road Commission, Ionia.
Mr. Lou Cook, Ionia County Road Commission, Ionia.
Sgt. William Brandt, Michigan State Police, Lansing.
Sgt. Glen Joy, Michigan State Police, Ionia. (notified)

INFORMATION:

The Ionia County Road Commission received a request to look at the above listed intersection and make any corrections necessary in signing of the intersection. They have received complaints of vehicles going through the intersection, and ending up in the yard to the east of the intersection.

ACCIDENT EXPERIENCE:

The MALI printout shows no traffic crashes at the intersection for the two year period 1988 - 1989. (Complainant states that many times, the police are never called when vehicles end up in his yard.)

PAGE	INVESTIGATED BY	UNIT REVIEWED	DIVISION REVIEWED
1	SGT. WM. BRANDT #30		10/17/90

TS 4 (REV 10-89)
MICHIGAN DEPARTMENT OF STATE POLICE

TRAFFIC SURVEY REPORT Page 2

DATE	COMPLAINT NO.
AUG 30, 1990	010 - 142-90
WORK UNIT	FILE CLASS
FIRST DISTRICT H.Q.	93005

VOLUMES:

Traffic volumes for M-66 in the study area are 9400 ADT. Traffic volumes for Dildine Hwy. in the study area are estimated at 350 ADT.

INVESTIGATION:

Dildine Hwy. runs east - west in direction, is constructed of asphalt, and ends at M-66, forming a T intersection. Traffic control devices include a 36 inch reflectorized stop sign at the intersection, as well as a stop ahead warning sign. Dildine Hwy. approaching M-66 is straight and flat, giving good visibility. There is no bi-directional arrow located across from the intersection, on the east side of M-66 for eastbound traffic on Dildine Hwy. An on-site inspection of the area has been conducted, including experimental driving of the area. The survey party feels the intersection is adequately signed, and that the following recommendation is appropriate.

RECOMMENDATION:

A bi-directional arrow will be placed opposite the intersection of Dildine Hwy. and M-66 by the County Road Commission to attempt to draw attention of the eastbound motorists to the intersection.

FINAL DISPOSITION:

Closed.

PAGE	INVESTIGATED BY	UNIT REVIEWED	DIVISION REVIEWED
2	SGT. WM. BRANDT #30		

TS 4 (REV 10-89)
MICHIGAN DEPARTMENT OF STATE POLICE

TRAFFIC SURVEY REPORT Page 1

DATE	COMPLAINT NO.
AUG 01, 1990	040 - 171-90
WORK UNIT	FILE CLASS
FOURTH DISTRICT H.Q.	93005

COMPLAINANT			TELEPHONE NO.	
MR ED MILLER			616-343-3054	
ADDRESS: STREET AND NO.	CITY		STATE	ZIP
1501 E. KILGORE	KALAMAZOO		MI	49001
INCIDENT STATUS				
5 CLOSED				
COUNTY 13	CITY/TWP/VILLAGE			SECTION
CALHOUN	TWP of SHERIDAN/19			26 - 27
NAME OF ROAD		RIGHT OF WAY		NUMBER OF LANES
BL. 94		100+		4-2
LENGTH OF ROAD UNDER STUDY				
N/A				
DIVIDED	SURFACE MATERIAL	SHOULDER WIDTH & MATERIAL		
NO	ASPHALT	2-8 GRAVEL/ASPHALT		
ROADWAY WIDTH	ALIGNMENT	DEVELOPMENT		
VARIES	STRAIGHT	INTERSECTION		
PRIVATE DRIVES	COMMERCIAL DRIVES	INTERSECTIONS		SIDEWALKS
N/A	N/A	1		NONE
BRIDGES, RR. CROSSINGS, OTHER		EXISTING CONTROLS		
NONE				
VOLUME COUNT:	DATE	BY	VOLUME	

NATURE OF INCIDENT

TRAFFIC SURVEY - STOP DETERMINATION

PARTICIPANTS:
Mr. Ed Miller, Traffic Engineer, Michigan Department of Transportation, Kalamazoo
Sgt. R. Rogers, Traffic Services Division, Michigan State Police, Jackson

INFORMATION:
Complainant advised that he had recently become aware of a jurisdictional transfer and establishment as a state trunkline highway of BL 94 north of the City of Albion. Advised that the roadway is presently and has been for the past 30 years, signed and maintained as a state trunkline highway, however, apparently the paperwork was never formulated officially. This portion of BL-94 handles the westbound traffic of I-94 from the entrance/exit ramp north of the freeway. A portion of C Drive North (Territorial Road) and 28 Mile Road are changed to BL-94 by the transfer.

INTERSECTION:
The intersection of BL-94 (C Drive North) and BL-94 (28 Mile Road) necessitates that the secondary roadway stop for the primary. In the case of this intersection 28 Mile Road is the primary with C Drive North being the secondary. On the south side of the intersection 28 Mile Road is a 4 lane roadway with 6 to 8 foot gravel shoulders. 28 Mile Road on the north side of the intersection traverses into a two lane roadway with 2 to 8 foot gravel shoulders. C Drive North on both sides of the intersection is a two lane roadway with 6 to 8 foot gravel shoulders.

PAGE	INVESTIGATED BY	UNIT REVIEWED	DIVISION REVIEWED
1	SGT. R. ROGERS #48		10/17/90

DATE	COMPLAINT NO.
AUG 01, 1990	040 - 171-90
WORK UNIT	FILE CLASS
FOURTH DISTRICT H.Q.	93005

ACCIDENT HISTORY:
The log of accidents was checked for the years 1987 through 1989. In 1987 there were 2 reported PDAs and 2 PIAs. During 1988 there were 4 PDAs and 1 PIA reported. For the year 1989 there was one report PDA within the intersection.

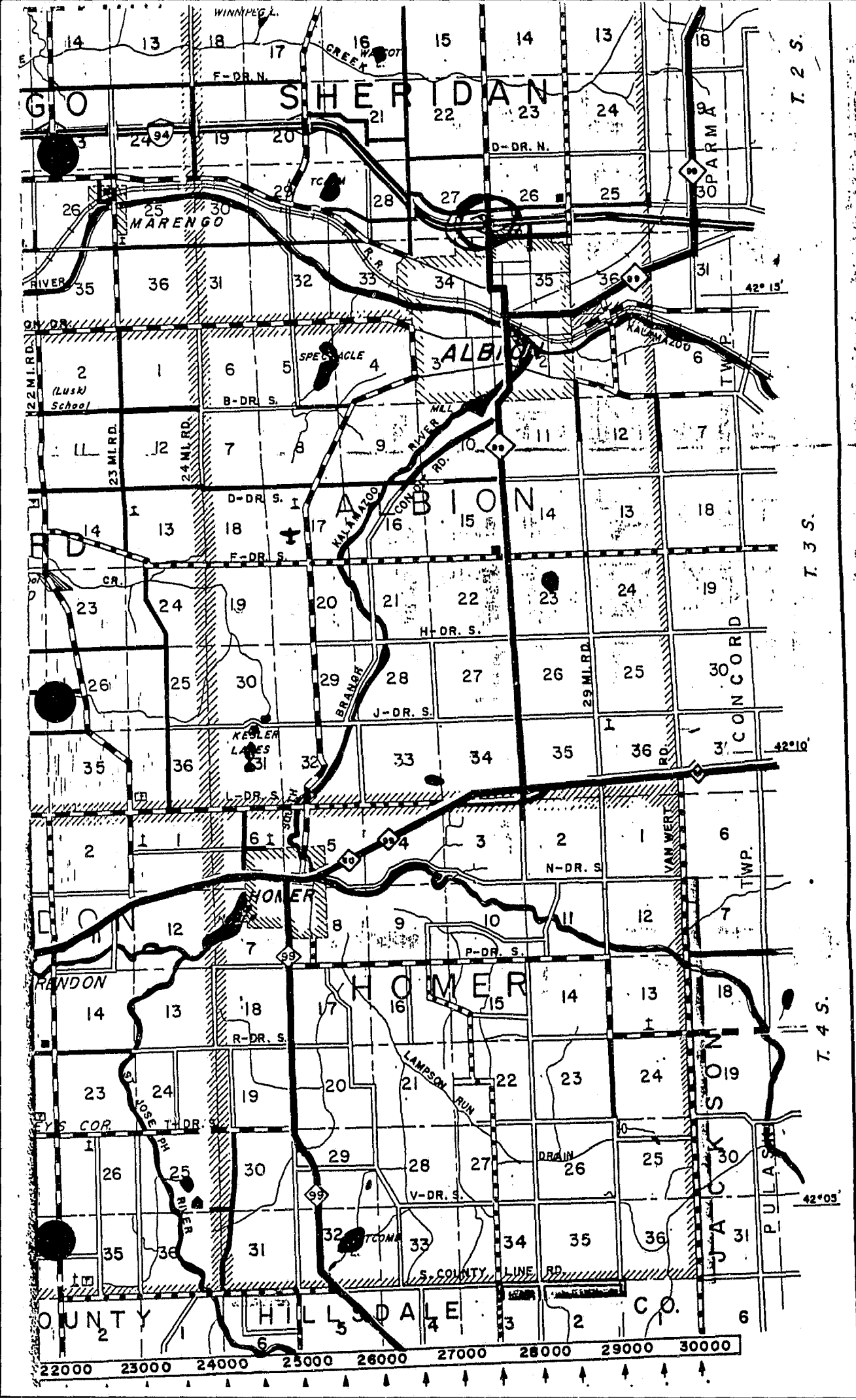
VOLUME COUNTS:
Volume counts conducted by the Calhoun County Road Commission in 1987 showed a total of 1541 vehicles on C Drive North. A similar count on 28 Mile Road conducted in 1988 showed a total of 3543 vehicles.

RECOMMENDATION:
It is the recommendation of the participants that a new traffic control determination be written as follows:

> Eastbound traffic on BL-94 (C Drive North) and westbound C Drive North shall be required to stop and yield the right-of-way to northbound traffic on BL-94 (28 Mile Road-Eaton Street) and to southbound traffic on 28 Mile Road.

FINAL DISPOSITION:

Closed as indicated.


SHERIDAN
ALBION
HOMER
MARENGO
CONCORD
SHERIDAN TWP.
ALBION TWP.
CONCORD TWP.
HOMER TWP.
SONG CREEK TWP.
PULASKI TWP.
HILLSDALE CO.
T. 2 S.
T. 3 S.
T. 4 S.
42° 15'
42° 10'
42° 05'
F-DR. N.
D-DR. N.
B-DR. S.
D-DR. S.
F-DR. S.
H-DR. S.
J-DR. S.
L-DR. S.
N-DR. S.
P-DR. S.
R-DR. S.
V-DR. S.
S. COUNTY LINE RD.
22 MI. RD.
23 MI. RD.
24 MI. RD.
29 MI. RD.
KALAMAZOO RIVER
BRANER
LAMPSON RUN
DRAIN
KEGLER LAKES
SPECTACLE
(Lusk) School
22000
23000
24000
25000
26000
27000
28000
29000
30000

TS 4 (REV 10-89)
MICHIGAN DEPARTMENT OF STATE POLICE

TRAFFIC SURVEY REPORT Page 1

Review

DATE	COMPLAINT NO.
MAY 02, 1990	040 - 105-90
WORK UNIT	FILE CLASS
FOURTH DISTRICT H.Q.	93005

COMPLAINANT			TELEPHONE NO.
LT. HARVIE JARRIELL			782-0463
ADDRESS: STREET AND NO.	CITY	STATE	ZIP
3400 COOPER STREET	JACKSON	MI	49201

INCIDENT STATUS: [5] CLOSED

COUNTY 30	CITY/TWP/VILLAGE	SECTION
HILLSDALE	VILLAGE of ALLEN / 02	10

NAME OF ROAD	RIGHT OF WAY	NUMBER OF LANES
U.S. 12 & M-49	66	2

LENGTH OF ROAD UNDER STUDY: 100 FEET

DIVIDED	SURFACE MATERIAL	SHOULDER WIDTH & MATERIAL
NO	BLACKTOP	GRAVEL 6 FT+

ROADWAY WIDTH	ALIGNMENT	DEVELOPMENT
20	FLAT	RURAL

PRIVATE DRIVES	COMMERCIAL DRIVES	INTERSECTIONS	SIDEWALKS
0	0	1	NONE

BRIDGES, RR. CROSSINGS, OTHER	EXISTING CONTROLS
NONE	DET 30-38-75

VOLUME COUNT:	DATE	BY	VOLUME
	1989	M.D.O.T.	7400

NATURE OF INCIDENT

REVIEW OF STOP DETERMINATION

PARTICIPANTS:
Mr. Dwight Hornbeck, Michigan Department of Transportation, Jackson.
Sgt. Les Austin, Michigan State Police, Jackson.

INFORMATION:
The complainant has requested a ten year review of the existing traffic control order DET 30 38-75, which controls the stop sign placement at the intersection of M-49 with U.S. 12. The present order states that Northerlybound M-49 (Edon road) shall stop for U.S. 12 (Chicago Road) at the East junction.

ACTION TAKEN:
The participants examined the area in question and determined that with the present conditions there is no reason to change the existing traffic control order.

ACCIDENT HISTORY:
During the year 1987 there was one reported traffic crash that being a property damage type involving two vehicles in a left turn movement.

In 1988 there was one reported crash, a property damage type, involving a fixed object.

PAGE	INVESTIGATED BY	UNIT REVIEWED	DIVISION REVIEWED
1	SGT. LES AUSTIN / 47		6/27/90

TS 4 (REV 10-99)
MICHIGAN DEPARTMENT OF STATE POLICE

TRAFFIC SURVEY REPORT Page 2

DATE	COMPLAINT NO.
MAY 02, 1990	040 - 105-90
WORK UNIT	FILE CLASS
FOURTH DISTRICT H.Q.	93005

In 1989, through November, there was one crash, which was a property damage type, involving two vehicles in a left turn movement.

FINAL STATUS:
Complaint closed, no changes at this time in the current control order.

PAGE	INVESTIGATED BY	UNIT REVIEWED	DIVISION REVIEWED
2	SGT. LES AUSTIN / 47		

APPENDIX 14

EXAMPLES OF TRAFFIC CONTROL ORDERS WILL FOLLOW THIS PAGE

Complaint No. 30-250-90

STATE OF MICHIGAN

TRAFFIC CONTROL ORDER
CONTROLLING SPEED ON COUNTY HIGHWAYS

TRAFFIC CONTROL ORDER NO. S 09-110-90

Pursuant to Act 300, P.A. 1949, as amended, we have jointly caused an engineering and traffic investigation to be made with respect to County Road BEAVER ROAD in the Townships of Bangor and Kawkawlin

in Bay County, and having thereby determined that the speed of vehicular traffic is greater or less than is reasonable or safe under the conditions found to exist at the intersection or other place or upon any part of such highway hereafter described, hereby determine and declare the following reasonable and safe speed limits and direct the Bay County Road Commission to erect and maintain appropriate signs in conformity with the Michigan Manual of Uniform Traffic Control Devices which give notice of the following determination:

A speed limit of fifty (50) miles-per-hour on **BEAVER ROAD** from the westerly intersection of Fraser Road to M-247 (Euclid Avenue).

Any Traffic Control Orders heretofore made with respect to the foregoing are hereby rescinded and superseded: S 09-136-85

This order becomes effective when signs giving notice of same have been erected.

R. T. Davis

Director, Department of State Police

Date September 13, 1990

MSP 90

Board of County Road Commissioners
of Bay County

Edwin M. Dearing

Robert A. Linsenby

Edward B. Glaza

Date 10-17-90

Complaint No. 20-19-89

STATE OF MICHIGAN

TRAFFIC CONTROL ORDER
CONTROLLING SPEED ON COUNTY HIGHWAYS

TRAFFIC CONTROL ORDER NO. S 82-313-89

Pursuant to Act 300, P.A. 1949, as amended, we have jointly caused an engineering and traffic investigation to be made with respect to County Road EIGHT MILE ROAD (BASELINE ROAD) in the Township of Northville, the Cities of Novi, Northville, Farmington Hills, Farmington, and Livonia, in the Counties of Wayne and Oakland

in Wayne & Oakland County, and having thereby determined that the speed of vehicular traffic is greater or less than is reasonable or safe under the conditions found to exist at the intersection or other place or upon any part of such highway hereafter described, hereby determine and declare the following reasonable and safe speed limits and direct the Wayne & Oakland County Road Commission to erect and maintain appropriate signs in conformity with the Michigan Manual of Uniform Traffic Control Devices which give notice of the following determination:

Forty-five (45) miles-per-hour on EIGHT MILE ROAD (BASELINE ROAD) from Beck Road to a point five hundred (500) feet westerly of Greenridge Drive; and,

Forty (40) miles-per-hour on EIGHT MILE ROAD (BASELINE ROAD) from a point five hundred (500) feet westerly of Greenridge Drive to Griswold Drive; and,

Forty-five (45) miles-per-hour on EIGHT MILE ROAD (BASELINE ROAD) from Griswold Road to Grand River Avenue (Business State Trunkline I-96).

Any Traffic Control Orders heretofore made with respect to the foregoing are hereby rescinded and superseded: S 82-169-84

This order becomes effective when signs giving notice of same have been erected.

Director, Department of State Police

Date May 16, 1990

Board of County Road Commissioners
of Wayne & Oakland County

Date

MDOT 1512 (1/79)

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STATE OF MICHIGAN

File No. 86000
49025
24071

TRAFFIC CONTROL ORDER

ORDER NO. SP 86-33-90

EFFECTIVE DATE _____
When official traffic control signs conforming to the mandate of this order shall have been erected.

In accordance with Act 300, PA1949, as amended, we have jointly caused a traffic engineering investigation to be made of traffic conditions on State Trunkline Highway I-75 and the Mackinac Bridge in the Village of Mackinaw City in Emmet & Cheboygan Counties and City of St. Ignace and Moran Twp. in Mackinac County, and as a result of said investigation do hereby direct that:

The maximum speed limit on State Trunkline Highway I-75 and the Mackinac Bridge shall be as follows:

fifty five (55) miles per hour from the Southbound U.S.-23 overpass northerly to Jamet Street and,

forty five (45) miles per hour from Jamet Street to a point seven-tenths (0.7) of a mile southerly of U.S.-2 and,

fifty five (55) miles per hour from the last-mentioned point to a point two-tenths (0.2) of a mile southerly of U.S.-2.

EXCEPT:

twenty (20) miles per hour from Jamet Street to a point seven-tenths (0.7) of a mile southerly of U.S.-2 for all vehicles exceeding thirty (30) tons (60,000 pounds).

The following Traffic Control Order(s) is/are hereby rescinded SP 86-09-85.

This Traffic Control Order shall be filed in the office of the Emmet, Cheboygan, Mackinac County Clerk.

MICHIGAN
DEPARTMENT OF TRANSPORTATION

James P. Margo — *Director*
8/16/90 — *Date*

MICHIGAN
DEPARTMENT OF STATE POLICE

R. T. Davis — *Director*
9-4-90 — *Date*

SCHOOL DISTRICT

_____ — *Superintendent*
_____ — *Date*

MDOT 1512 (1/79)

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Local Officials
School

STATE OF MICHIGAN

File No. 13061

TRAFFIC CONTROL ORDER

ORDER NO. SP 13-36-90

EFFECTIVE DATE _____
When official traffic control signs conforming to the mandate of this order shall have been erected.

In accordance with Act 300, PA1949, as amended, we have jointly caused a traffic engineering investigation to be made of traffic conditions on State Trunkline Highway BL-94 (East Michigan) in the township of Emmett in Calhoun County, and as a result of said investigation do hereby direct that:

the maximum speed limit on State Trunkline Highway BL-94 (East Michigan) shall be as follows;

forty (40) miles per hour from a point (east city limit of Battle Creek) one-hundred (100) feet easterly of Bell Street to Columbia Avenue and,

fifty (50) miles per hour from Columbia Avenue to Fifer Lane.

The following Traffic Control Order(s) is/are hereby rescinded SP 13-21-81.

This Traffic Control Order shall be filed in the office of the Calhoun County Clerk.

MICHIGAN
DEPARTMENT OF TRANSPORTATION

_____ *Director*

9/26/90 *Date*

MICHIGAN
DEPARTMENT OF STATE POLICE

_____ *Director*

_____ *Date*

_____
SCHOOL DISTRICT

_____ *Superintendent*

_____ *Date*

Exhibit No. 20-103-90

STATE OF MICHIGAN

TRAFFIC CONTROL ORDER
CONTROLLING SPEED ON COUNTY HIGHWAYS

TRAFFIC CONTROL ORDER NO. S 58-126-90

Pursuant to Act 300, P.A. 1949, as amended, we have jointly caused an engineering and traffic investigation to be made with respect to County Road LAVOY ROAD in the Township of Bedford

in Monroe County, and having thereby determined that the speed of vehicular traffic is greater or less than is reasonable or safe under the conditions found to exist at the intersection or other place or upon any part of such highway hereafter described, hereby determine and declare the following reasonable and safe speed limits and direct the Monroe County Road Commission to erect and maintain appropriate signs in conformity with the Michigan Manual of Uniform Traffic Control Devices which give notice of the following determination:

In the County of Monroe, in the Township of Bedford:

A speed limit of forty-five (45) miles-per-hour on LAVOY ROAD from Telegraph Road (US-24) to S. Dixie (M-125).

Any Traffic Control Orders heretofore made with respect to the foregoing are hereby rescinded and superseded:

This order becomes effective when signs giving notice of same have been erected.

Director, Department of State Police

Date October 19, 1990

Board of County Road Commissioners
of Monroe County

Date

MDOT 1572A (1/79)

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Copies for–
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Local Officials
School

STATE OF MICHIGAN

File No. 82122 C95

RESCINDING TRAFFIC CONTROL ORDER

ORDER NO. SP 82-02-87 EFFECTIVE DATE OCT 26 1987

In accordance with Act 300, PA1949, as amended, we have jointly caused a traffic engineering investigation to be made of traffic conditions on State Trunk Line Highway I-96 Service Roads in the City of Livonia in Wayne County, and as a result of data presented from said investigation it is hereby directed that Traffic Control Order No. SP 82-06-84 is no longer appropriate or necessary to control the speed limit on said highway and the same is hereby rescinded.

This Rescinding Traffic Control Order shall be filed in the office of the Wayne County Clerk.

MICHIGAN
DEPARTMENT OF TRANSPORTATION

Director

Date 12/11/86

MICHIGAN
DEPARTMENT OF STATE POLICE

R. T. Davis
Director

Date 10-26-87

Complaint No. 60-147-90

STATE OF MICHIGAN

TRAFFIC CONTROL ORDER
CONTROLLING PARKING ON COUNTY HIGHWAYS

TRAFFIC CONTROL ORDER NO. P 41-113-90

Pursuant to Act 300, P.A. 1949, as amended, we have jointly caused an engineering survey to be made with respect to County Road MASTON LAKE ROAD in the Township of Spencer

in Kent County, and being of the opinion, as determined by said engineering survey, that stopping, standing or parking on said highway is dangerous to those using the highway and would unduly interfere with the free movement of traffic, hereby direct the Kent County Road Commission to erect and maintain official signs, prohibiting or restricting the stopping, standing or parking of vehicles in conformity with the Michigan Manual of Uniform Traffic Control Devices, which give notice of the following prohibition or restriction.

No parking at any time within the right-of-way on MASTON LAKE DRIVE from Penelope Drive to a point one hundred (100) feet easterly of Pine Tree Drive.

Any Traffic Control Orders heretofore made with respect to the foregoing are hereby rescinded and superseded: P 41-143-60

This order becomes effective when signs giving notice of same have been erected.

Director, Department of State Police

Date September 18, 1990

Board of County Road Commissioners
of Kent County

Date

Complaint No. 60-207-90

STATE OF MICHIGAN

TRAFFIC CONTROL ORDER
CONTROLLING PARKING ON COUNTY HIGHWAYS

TRAFFIC CONTROL ORDER NO. P 61-153-90

Pursuant to Act 300, P.A. 1949, as amended, we have jointly caused an engineering survey to be made with respect to County Road WHITEHALL ROAD in the Township of Fruitland

in Muskegon County, and being of the opinion, as determined by said engineering survey, that stopping, standing or parking on said highway is dangerous to those using the highway and would unduly interfere with the free movement of traffic, hereby direct the Muskegon County Road Commission to erect and maintain official signs, prohibiting or restricting the stopping, standing or parking of vehicles in conformity with the Michigan Manual of Uniform Traffic Control Devices, which give notice of the following prohibition or restriction.

No parking at any time within the westerly one-half (1/2) of the right-of-way of WHITEHALL ROAD from a point two hundred (200) feet south of Riley-Thompson Road to a point two thousand (2,000) feet north of Riley-Thompson Road; and

No parking at any time within the easterly one-half (1/2) of WHITEHALL ROAD from a point six hundred (600) feet south of Riley-Thompson Road to a point two thousand (2,000) feet north of Riley-Thompson Road.

Any Traffic Control Orders heretofore made with respect to the foregoing are hereby rescinded and superseded: P 61-180-80

This order becomes effective when signs giving notice of same have been erected.

Director, Department of State Police

November 28, 1990

Board of County Road Commissioners
of Muskegon County

Date

Docket No. 20-183-90

STATE OF MICHIGAN

TRAFFIC CONTROL ORDER
CONTROLLING PARKING ON COUNTY HIGHWAYS

TRAFFIC CONTROL ORDER NO. P 82-109-90

Pursuant to Act 300, P.A. 1949, as amended, we have jointly caused an engineering survey to be made with respect to County Road MIDDLEBELT ROAD, in the Cities of Romulus, Westland, Inkster, Garden City, and Livonia, and Township of Huron

in Wayne County, and being of the opinion, as determined by said engineering survey, that stopping, standing or parking on said highway is dangerous to those using the highway and would unduly interfere with the free movement of traffic, hereby direct the Wayne County Road Commission to erect and maintain official signs, prohibiting or restricting the stopping, standing or parking of vehicles in conformity with the Michigan Manual of Uniform Traffic Control Devices, which give notice of the following prohibition or restriction.

No parking at any time within the right-of-way of **MIDDLEBELT ROAD** (westerly and easterly legs) from Huron River Drive to a point One Thousand Sixty-Five (1,065) feet northerly of Huron River Drive; and

No parking at any time within the right-of-way of **MIDDLEBELT ROAD** from a point Five Hundred (500) feet northerly of King Road to a point Five Hundred (500) feet southerly of King Road; and

No parking at any time within the right-of-way of **MIDDLEBELT ROAD** from a point Two Hundred Fifty (250) feet southerly of Sibley Road to a point One Thousand (1,000) feet northerly of Sibley Road; and

No parking at any time within the right-of-way of **MIDDLEBELT ROAD** from a point Two Hundred Fifty (250) feet southerly of Pennsylvania Road to Eight Mile Road (Base Line Road).

Any Traffic Control Orders heretofore made with respect to the foregoing are hereby rescinded and superseded: P 82-332-82, P 82-355-72, and P 82-34-73

This order becomes effective when signs giving notice of same have been erected.

Director, Department of State Police

Date September 13, 1990

Board of County Road Commissioners
of Wayne County

Date

MDOT 1512 (1/79)

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STATE OF MICHIGAN

File No. 13061

TRAFFIC CONTROL ORDER

ORDER NO. PA 13-51-90

EFFECTIVE DATE _____
When official traffic control signs conforming to the mandate of this order shall have been erected.

In accordance with Act 300, PA1949, as amended, we have jointly caused a traffic engineering investigation to be made of traffic conditions on State Trunkline Highway B.L.-94 (East Michigan) in the township of Emmett in Calhoun County, and as a result of said investigation do hereby direct that:

There shall be no parking at any time within the right-of-way of State Trunkline Highway B.L.-94 from a point (East City Limit of Battle Creek) one-hundred (100) feet easterly of Bell Street to Fifer Lane.

The following Traffic Control Order(s) is/are hereby rescinded PA 13-23-71.

This Traffic Control Order shall be filed in the office of the Calhoun County Clerk.

MICHIGAN
DEPARTMENT OF TRANSPORTATION

Robert Adams — *Director*

8/7/90 — *Date*

MICHIGAN
DEPARTMENT OF STATE POLICE

R. T. Davis — *Director*

9-13-90 — *Date*

SCHOOL DISTRICT

Superintendent

Date

MDOT 1512B (1/87)

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STATE OF MICHIGAN

File No. 13043

TRAFFIC CONTROL DETERMINATION

DETERMINATION NO. DET 13-05-90

EFFECTIVE DATE _____
When official traffic control signs conforming to the mandate of this order shall have been erected.

In accordance with Act 300, PA1949, as amended, we have jointly caused a traffic engineering investigation to be made of traffic conditions at the intersection or interchange of State Trunkline highway BL-94 (28 Mile Road/Eaton Street) and BL-94 (C Drive North) in the township of Sheridan in, Calhoun County, and as a result of said investigation do hereby direct that Eastbound traffic on BL-94 (C Drive North) and westbound C Drive North shall STOP for northbound traffic on BL-94 (28 Mile Road/Eaton Street) and southbound traffic on 28 Mile Road.

The following Traffic Control Determination Order(s) is/are hereby rescinded.

_____.

It is directed that the original of this Determination be filed in the office of the Michigan Department of Transportation and a copy thereof in the office of the Michigan Department of State Police.

MICHIGAN
DEPARTMENT OF TRANSPORTATION

_____
Director

Date 12/4/90

MICHIGAN
DEPARTMENT OF STATE POLICE

_____
Director

Date _____

MDOT [illegible] (1/79)

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School

STATE OF MICHIGAN

File No.13131C15
13131C35
13131

RESCINDING TRAFFIC CONTROL ORDER

ORDER NO. PA-R 13-06-90 EFFECTIVE DATE _____

In accordance with Act 300, PA1949, as amended, we have jointly caused a traffic engineering investigation to be made of traffic conditions on State Trunkline Highway M-96 in the Cities of Battle Creek & Springfield and Bedford Township in Calhoun County, and as a result of data presented from said investigation it is hereby directed that Traffic Control Order No. PA 13-61-71 is no longer appropriate or necessary to control parking on said highway and the same is hereby rescinded.

This Rescinding Traffic Control Order shall be filed in the office of the Calhoun County Clerk.

MICHIGAN
DEPARTMENT OF TRANSPORTATION

Wayne C Mc
Director

Date 7/27/90

MICHIGAN
DEPARTMENT OF STATE POLICE

R. T. Davis
Director

Date 9-13-90

MDOT 1512C (1/79)

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Local Officials

STATE OF MICHIGAN

File No. 38083-13
38111

RESCINDING

TRAFFIC CONTROL DETERMINATION

Determination No. DET-R 38-06-88 Effective Date 8-16-88

In accordance with Act 300, PA1949, as amended, we have jointly determined that Traffic Control Determination No. DET 38-345-73 controlling traffic at the intersection of northbound US-127 exit ramp and BL-94 (Michigan Avenue) in the township of Leoni in Jackson County, is no longer appropriate or necessary and the same is hereby rescinded.

Note: This location is presently operating under traffic signal control.

MICHIGAN
DEPARTMENT OF TRANSPORTATION

Director

Date 5/16/88

MICHIGAN
DEPARTMENT OF STATE POLICE

R. T. Davis
Director

Date 8-16-88

File: 41000

TRAFFIC CONTROL ORDER

(Temporary)

PA-T 41-03-81

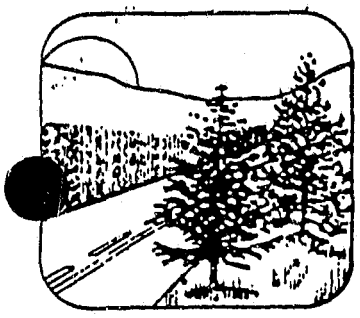
By virtue of the authority vested in the Michigan Transportation Commission by 1931 PA 328, MCLA 750.497, Section 497 of the Michigan Penal Code and 1974 PA 162, MSA 9.2328, Michigan Vehicle Code Section 628, we hereby order that there shall be no parking at any time within the right-of-way of John J. Oostema Boulevard from Patterson Avenue to the easterly termini of John J. Oostema Boulevard (approximately 1.2 miles long), from September 17, 1981, to September 18, 1981, in the city of Grand Rapids and Township of Cascade, Kent County, and that all police agencies having jurisdiction therein shall enforce said parking prohibition when official traffic control signs conforming to the mandate of this Order shall have been erected. This parking control is issued to prohibit parking while dignataries are attending the opening of the Gerald R. Ford Museum.

Date: Lansing, Michigan 9/17/81

MICHIGAN TRANSPORTATION COMMISSION

By _____
Director

MDOT
MDOT - District
MDSP - Post
MDSP - District
MDSP - Headquarters
County Sheriff Department
County Road Commission
District Operations



Board of County Road Commissioners and Park Trustees of The County of Kent

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David A. Bosch

Managing Director
James C. Porritt

Chairman
Ronald D. Sytsma

Vice-Chairman
Harry J. Bloem

Member
E. M. (Wes) Weston

TRAFFIC CONTROL ORDER

PA-T 41-02-88

JULY 7, 1988

By virtue of the authority vested in the Kent County Road Commission by 1931 PA 328, MCLA 750.497, Section 497 of the Michigan Penal Code and 1974 PA 162, MSA 9.2328, Michigan Vehicle Code Section 628, we hereby order that there shall be no parking at any time in the right-of-way of Gordon Industrial Drive from 76 th Street to its southerly terminus (a distance of 650 feet) on both sides of the road in the Township of Byron, County of Kent. All police agencies having jurisdiction therein shall enforce said parking prohibition when official traffic control signs conforming to the mandate of this order have been erected. This parking control is issued to prohibit parking until a permanent no parking order is issued.

Kent County Road Commission
Kent County, Michigan

By: Tim Haagsma

Tim Haagsma
Traffic Engineer

cc: Mi. Dept. of State Police - Post
Mi. Dept. of State Police - District
Kent County Sheriff Dept.

TEMPORARY

TRAFFIC CONTROL ORDER

for

FENNER ROAD/LAKETON TOWNSHIP

* * * * * * * * * * * * *

The Board of County Road Commissioners of Muskegon County, under the authority vested by P.A. 300 of 1949; M.C.L.A. 257.1 ET SEQ. herewith establish and order a Temporary Traffic Control Order for a portion of Fenner Road, located in Laketon Township of Muskegon County, more fully described as follows:

TYPE OF CONTROL:	"NO PARKING AT ANY TIME" within the road right-of-way
LOCATION OF CONTROL:	FENNER ROAD
DESCRIPTION OF CONTROL:	From the intersection of Fenner Road and Scenic Drive to a point one mile easterly thereof
TIME OF CONTROL:	February 23, 1985 and February 24, 1985

Further, that all police agencies having jurisdiction shall be informed and enforce said parking prohibition when official traffic control signs conforming to this order have been erected.

This parking control order is issued to prohibit parking at this location, thereby affording the safe efficient flow of vehicular traffic due to scheduled A.A.U. winter games at the Muskegon State Park.

Date of Authorization: _____

BOARD OF COUNTY ROAD
COMMISSIONERS of Muskegon County

_____
F. Charles Raap - Chairman

cc: All Police Agencies

APPENDIX 15

STANDARDIZED INCIDENT FILING SYSTEM

1) All incidents will be processed, filed, and supervised in accordance with Official Order No. 6 and the Uniform Crime Reporting manual, except for traffic surveys (file class 9300-5).

2) All traffic surveys, file class 9300-5, shall be typed and generated using the computerized TS-4 report form and processed in the following manner:

   (a) Master file - The original of all TS-4 reports and supplemental pages shall be retained in the worksite master file.

   (b) Work file - A legible copy of all traffic surveys shall be segregated into one of three (3) sets of files:

      (1) One file containing open and/or inactive reports.
      (2) One file containing closed reports pending the issuance of a TCO.
      (3) One file containing closed reports.

   (c) A second copy of each incident report will be sent to the Special Operations Division only when a TCO is recommended. The order will be processed and returned to the worksite for retention.

3) Open and inactive traffic survey reports will be supervised in the same manner as other incidents.

4) Closed traffic survey reports that are pending the issuance of a TCO shall be reviewed every three months to determine their status in the TCO process. Appropriate action will be taken to follow-up on delinquent reports.

5) The need to review and refer to closed reports necessitates that traffic surveys be retained for longer than the usual retention period. Therefore, closed traffic survey reports are to be retained indefinitely using the following standardized filing system:

   (a) All closed traffic survey reports, regardless of recommendation and including advisory investigations, are to be filed inside of a traffic control order file jacket (TS-23). The minimum amount of information to be filled out on the front of the jacket is the county name, highway name, and TCO number, if any. The jacket will also contain TCO's (past and present), correspondence, speed studies, and other related material pertaining to that highway.

   (b) Space permitting, multiple reports for the same highway and county, may be filed in the same jacket.

   (c) Jackets will be filed by county, jurisdiction, and then alphabetically by roadway name.

   (d) There may be many unofficial, colloquial, or local names given to a roadway, but there is only one proper roadway name for each roadway. This name is on file at the county clerk's office, the road commission office, or may be found on an Act 51 map.

(e) Boundary roads should be filed in only one county, with an empty jacket in the adjoining county file making reference to where the file may be found. Color coding may be helpful in maintaining your files.

(f) Card files, cross indexes, and other locally developed systems defeat the simplicity of this system and are not encouraged or approved.

APPENDIX 16

TRAFFIC CONTROL ORDER PROCESSING DOCUMENTATION

COUNTY TCO FLOW CHART

TS-4 AT SOD → SORTED BY COUNTY/TRUNKLINE → SEND TO OFFICER FOR REVIEW

↓

RETURN TO SECRETARY FOR TCO NUMBER ASSIGNMENT → LOGGED INTO TCO DATABASE WITH THE DATE THAT THE ORDER WILL BE SENT FOR APPROVAL AND SIGNATURE → ORDER TYPED

↓

2 COPIES ARE MADE → ORIGINAL STAMPED "MSP COPY" 1 COPY STAMPED "COUNTY CLERK COPY" THESE ARE SENT FOR APPROVAL AND SIGNATURE. SECOND COPY IS ATTACHED TO THE COMPLAINT AND PUT IN THE COUNTY HOLD FILE. → RETURNED TO SECRETARY. LOGGED OUT OF DATABASE WITH DATE SENT TO ROAD COMMISSION FOR APPROVAL AND SIGNATURE

↓

THEY COPY AND RETAIN 1 FOR THEIR FILE AND FORWARD COUNTY CLERK THEIR ORIGINAL SIGNED COPY AND RETURN OUR ORIGINAL SIGNED COPY TO US.

↓

RETURNED TO SOD AND LOGGED OUT OF DATABASE AS FINALIZED → ORIGINAL "MSP COPY" IS FORWARDED TO DISTRICT FOR THE MASTER FILE. → THE TS-4 IS THEN PULLED FROM THE COUNTY HOLD FILE AND THROWN AWAY.

STATE TCO FLOW CHART

TS-4 AT SOD → SORTED BY COUNTY/TRUNKLINE → COMPARE TS-4 AND MDOT ORDER FOR DISCREPANCIES

↓

SEND TO OFFICER FOR REVIEW → RETURN TO SECRETARY TO BE LOGGED INTO TCO DATABASE WITH THE DATE THE ORDER WAS SENT FOR APPROVAL AND SIGNATURE. → TS-4 WITH ORDER NUMBER WRITTEN ON TOP IS FILED IN THE STATE HOLD FILE

↓

TS-4 IS THEN PULLED FROM THE STATE HOLD FILE AND THROWN AWAY. ← ORDERS ARE LOGGED INTO DATABASE WITH THE DATE THE ORDER IS FINALIZED ← WHEN RETURNED FROM HQ 1 COPY IS MADE AND SENT TO DISTRICT. THE ORIGINAL ORDER IS RETURNED TO MDOT FOR THEIR MASTER FILE.