





A STUDY OF MAINTENANCE COSTS  
ON CERTAIN MICHIGAN TRUNK LINE HIGHWAYS  
TO DETERMINE THE  
RELATIVE ECONOMICS OF MAINTENANCE OF SURFACE TYPES.

A THESIS  
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## PREFACE.

No definition of any profession has had wider circulation and more general acceptance than the old one formulated by Tredgold and adopted in its infancy by the institution of Civil Engineers.

"Engineering is the art of directing the great sources of power in nature for the use and convenience of man".

But the definition does not limit the field of engineering and the definition might reach to science in general.

Wellington, it seems, came closer in the following:

"Engineering is the conscientious application of science to the problems of economic production."

Since engineering in the common sense consists in solving problems in economic construction and operation it should be apparent to all that cost data are of primary importance to every engineer.

Comparison of unit costs is the only scientific criterion by which to judge the economic merit of a structure, a machine, or a method of doing work and it is with this in mind that a comparison of the cost of



maintenance of the several types of surfaces of highways of this state are dealt with in this treatise.

This work was carried on under the supervision of G. C. Dillman, Deputy Commissioner of the Michigan State Highway Department, and it is to him and his office force that we owe the possibilities of making this study.

## HISTORY

Michigan has approximately 6700 miles of State Trunk Line highways laid out in accordance with certain acts of the legislature, the first legislation of this kind being enacted in 1913.

In 1919 the law was changed in that all construction and maintenance heretofore supervised by the counties was to now be transferred, and all maintenance and construction of these State Trunk Line routes were to be put under the direction, supervision and control of the State Highway Commissioner.

The State Highway Commissioner contracts with all counties the first of each year for trunk line maintenance for the ensuing twelve months. These contracts cover all work to be done as near as can be estimated and this cost is met in the first instance

by counties. The State Highway Department then refunds to the counties every three months from five to fifty percent of the total account spent, upon approval of itemized statements of county expenditures. The percentage the state and county pay in each instance is based on the valuation per trunk line mile for each county.

The valuation per trunk line mile is determined for each county by dividing the equalized valuation for each county by three times the number of surveyed townships in the county.

#### METHODS OF MAINTENANCE

All Trunk Line routes passing through or in connection with counties are divided into sections (as shown in Appendix 11 on blue prints) for convenience of handling the work and as an aid in keeping accurate cost data on maintenance.

So far as is practicable one maintenance section covers but one type of surface and it is with these one type sections only that this thesis deals.

All maintenance costs are distributed to the following items:

1. Work on grade.
2. Bridges and culverts.
3. Dragging and patching.
4. Dust Layers.
5. Resurfacing.
6. Snow removal.
7. Roadside planting.

Supervision is an item of considerable amount in the aggregate but the percentage is small for dollar spent and is not considered in connection with this study.

#### TRAFFIC CENSUS.

The State Highway Department organized for taking traffic census in most counties in Michigan during the summer of 1921. Census was taken at certain predetermined stations, the stations being located where traffic varied from the lightest to the heaviest. In most cases the census period was from 7 A. M. to 9 P. M. , a total of 14 hours , however, as some stations were adjacent to the larger cities twenty-four hour counts were taken. Before making a study of the census all of these were reduced to a twenty-four hour basis by adding ten percent to all fourteen hour counts.

The State Highway Department has computed from various traffic census that the average trunk line road carries a traffic, from 9 P. M. to 7 A. M. of approximately ten percent of the traffic of the day.

This traffic census taken in 1921 carried with it a cost of approximately \$8,000.

#### METHOD

As was mentioned in the Preface the only true system of comparing the economic merit of a proposition is by comparison of unit costs, and the unit here considered being the maintenance vehicle mile cost i.e. The cost of maintenance on a road for the passage of one vehicle over one mile of surface.

Of the eighty-nine trunk lines in the State of Michigan this thesis covers 17 which are typical of the whole system.

In this study six types of road surfaces were used. They are with definition as taken from Blanchards' American Highway Engineer's Hand Books as follows:

1. Earth. A roadway composed of natural earthy material.

2. Gravel Roads of three types. Natural gravel roads, roads built by the surface method of construction and roads built by the trench method of construction.

3. Water Bound Macadam. A road crust composed of stone or similar material broken into irregular fragments compacted together so as to be interlocked and mechanically bound to the utmost possible extent.

4. Bituminous Macadam. A road having a wearing course of macadam with the interstices filled by a penetration method with a bituminous binder.

5. Cement Concrete. An intimate mixture of gravel, shell slag or broken stone particles with certain proportions of sand or similar material, cement and water made previous to placing.

6. Bituminous Concrete. A road composed of broken stone, broken slag, gravel or shell without or with sand, Portland cement, fine inert material or combinations thereof, and a bituminous cement incorporated together by a mixing method.

#### VEHICLE MILE COST COMPUTATION.

As to the method of computing the vehicle mile cost, we will describe from the taking of the traffic census to the final conclusion, the method used on Trunk Line



Route No. 17 lying between Cadillac Square, Detroit to the intersection with Trunk Line No. 11 at Watervliet.

During the summer of 1921, as has been stated, the State Highway Department authorized the County Road Commission of each county in the state to take traffic census points on State Trunk Line routes determined by the Maintenance Department.

The census were taken at these predetermined points in the following manner:-

A count as shown in (Appendix 11) was taken at Junction of Trunk Line No. 10 and No. 17, Dearborn Township, Wayne County on Tuesday, August 2nd of the following kinds of vehicles.

1. Single horse
2. Double team (Light)
3. Double team (loaded)
4. Motor Cycles.
5. 2 Passenger cars.
6. 5-7 passenger cars.
7. Busses.
8. Motor Trucks 2 tons and less
9. Motor Trucks 2-5 tons.
10. Motor trucks 5 tons and over.
11. Trailers.

The same count was made on Wednesday and again on Saturday the 6th and so on until a week of traffic data had been completed.

Generally counts were taken on a certain day of the week and then wait two weeks and one day and take another count until the week was completed, thus getting an average count per day over a period of several months.

After the counts were taken the data was sent to the State Highway Department to be filed. It was at this point that we take up the study of Maintenance Vehicle Mile cost.

On tracing cloth, mileage of surface in convention was platted as shown on prints in Appendix 4. Cities, county lines and maintenance sections were also platted in their proper location.

The next data involved was taken from maintenance cost sheets shown in Appendix 3. This data was collected from the different counties through which state trunk lines were routed and maintained, and tabulated according to trunk line route numbers.

Maintenance costs on this sheet were first tabulated per section cost and this figure, divided by the number of miles in the section, gave the average maintenance cost per mile over the section.

In plating onto the tracings shown in Appendix 4 the traffic census per 24 hours was platted at its

respective position on the layout of the trunk line. A traffic curve was then drawn through these points. The average maintenance cost was plotted according to sections in a heavy dotted line.

In order to compute the vehicle mile cost as per example on Sec. 4, Wayne County of Trunk Line route No. 17, the traffic curve was first read and the average amount of traffic per 24 hours determined by getting the mean of the curve over the 21 miles in the section.

Since the maintenance cost is given per year it is necessary to use the amount of traffic per year also.

This was found by multiplying the average number of vehicles per 24 hours by the constant 200 which is a figure as has been stated, was determined by the Maintenance Division of the State Highway Department .

The average maintenance cost per mile per year divided by the traffic per year which is computed by the product of daily traffic times 200, gives the vehicle mile cost over the particular section which in the example stated is:-

$$\frac{4100 + 2100}{2} \times 200 = 620,000 \text{ vehicles a year.}$$

Reading from maintenance cost sheets.

Average maintenance costs per mile for Sec. 4 = \$1114.00

$$\frac{\$1114.00}{620,000} = \$.0018 \text{ - Vehicle mile cost.}$$

This was then plotted in horizontal solid lines above each section.

This same process was carried through on the seventeen trunk line routes taken in the study and a final summary which is shown in Sec. B of Appendix 1 was made after the material in Sec. A of Appendix 1 had been taken from the points.

In the summary it was only possible to use maintenance sections containing one surface type.

These sections and vehicle mile costs were tabulated and averaged by adding the total vehicle section costs and dividing by the total number of miles of the type taken.

Thus the figures arrived at in the final summary is the average vehicle mile maintenance cost for each type considered.

#### CONCLUSION

In conclusion, it can be said that a study of this sort is very general in its character though it covers the various types of highways in every part of

the state and embracing practically every type of maintenance, surface, kind and amount of traffic which our Michigan highways encounter, it gives fairly accurate results.

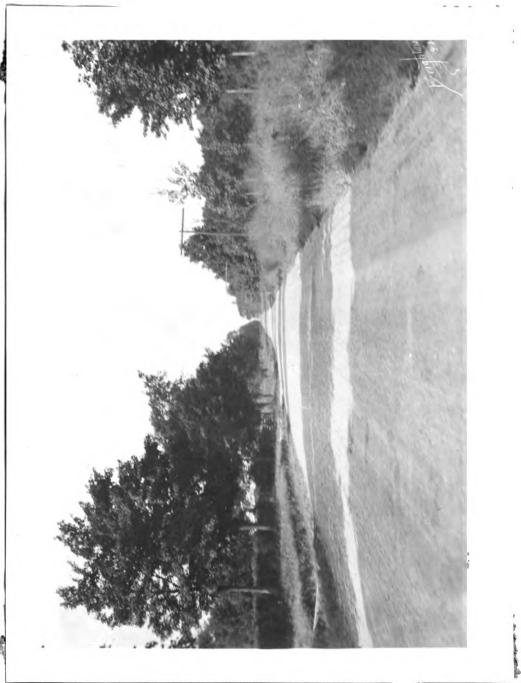
The comparison of the vehicle mile maintenance type costs show that per vehicle, an earth road requires more maintenance than the other types considered. Gravel roads seem to have the mean at about .57 of a cent per vehicle mile.

Bituminous and cement concrete require according to this study .18 and .36 of a cent respectively. Water bound and bituminous macadam uphold a vehicle mile cost of .6 and .36 of a cent each.

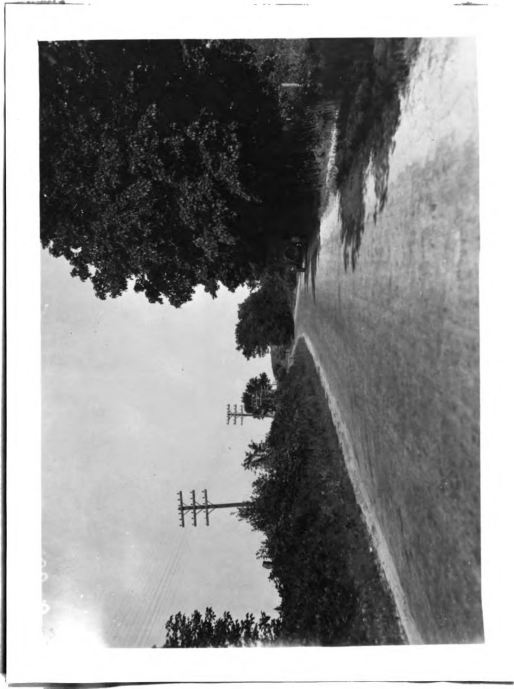
The possibilities of carrying this thesis further to find the total vehicle mile cost of each type instead of the maintenance vehicle mile cost would give a true comparison of the economics of the several surface types involved.



**Typical Earth Road**



**Typical Gravel Road  
Sanilac County**

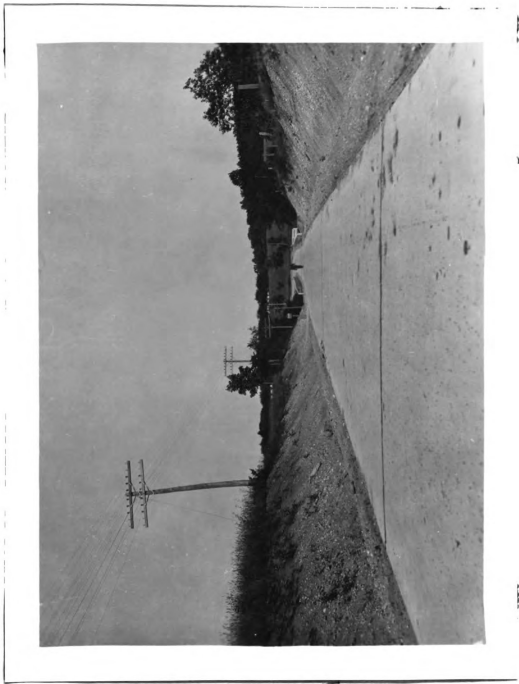


Typical Macadam Road (Surface Treated)  
on Trunk Line No. 11, Emmet County





**Typical Bituminous Macadam Road  
on Trunk Line No. 12, Gogebic County**



**Typical Cement Concrete Road  
on Federal Aid Road No. 27, Charlevoix  
County**



**Typical Bituminous Concrete Road  
on Federal Aid Road No. 16, Washitena  
County**

year 1921

Location Michigan Avenue to Miller Road

Time 7 a.m. to 5 p.m.

Date	7/21 Thur.	7/23 Sat.
Single Horse	16	16
Double Team (Light)	23	11
Double Team (Loaded)	26	11
Motor Cycles	54	46
2 Passenger Cars	436	415
5-7 Passenger Cars	1755	2030
Busses		
Motor Trucks - 2 tons and less	293	311
Motor Trucks - 2-5 tons	276	255
Motor Trucks - 5 tons and over	135	129
Trailers		
Totals	3016	3224

Daily Average =  $\frac{\text{Average of Sundays + Holidays} + (6 \times \text{week day a})}{7}$

Percent of total from 9 p.m. to 7 a.m. \_\_\_\_\_ % \* Hol

Foreign Vehicles \_\_\_\_\_ %

Motor Vehicles 98.2 % Estia

The following Traffic Census and Maintenance Report are for T.L.R. #17 altho in the study all other reports were used.

v.v.

The first part of the document discusses the importance of maintaining accurate records of all transactions. It emphasizes that every entry should be supported by a valid receipt or invoice. This ensures transparency and allows for easy verification of the data.

In the second section, the author outlines the various methods used to collect and analyze the data. This includes both primary and secondary data collection techniques. The primary data was gathered through direct observation and interviews with key personnel. Secondary data was obtained from existing reports and databases.

The third section details the results of the data analysis. It shows a clear upward trend in the number of transactions over the period studied. This increase is attributed to several factors, including improved marketing strategies and a growing customer base.

Finally, the document concludes with a series of recommendations for future actions. It suggests that the company should continue to invest in its marketing efforts and maintain its focus on customer service. Additionally, it recommends regular audits to ensure the accuracy of the financial records.

TRAFFIC SUMMARY

State Trunk Line No. 17  
 Year 1921  
 Location Junction of Trunk line #10 and #17 - Dearborn Townshi  
 Time 7 a.m. to 9 p.m.

Date	8/2 Tues.	8/3 Wed.	8/6 Sat.
Single Horse	6	9	14
Double Team (Light)	12	11	4
Double Team (Loaded)	20	18	3
Motor Cycles	3	22	17
2 Passenger Cars	325	402	359
5-7 Passenger Cars	1934	2455	2716
Busses	40	48	47
Motor Trucks - 2 tons and less	239	249	192
Motor Trucks - 2-5 tons	115	156	139
Motor Trucks - 5 tons and over	72	98	60
Trailers			
Totals	2766	3468	3551

Daily Average = (Average of Sundays + Holidays) \* (6 x week day av

Percent of total from 9 p.m. to 7 a.m. \_\_\_\_\_ % \* Holi  
 Foreign Vehicles \_\_\_\_\_ %  
 Motor Vehicles \_\_\_\_\_ %  
 99.3

Year	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
Population	502.1	505.9	510.0	514.3	518.8	523.5	528.3	533.2	538.2	543.3	548.5	553.8	559.2	564.7	570.3	576.0	581.8	587.7	593.7	600.0	606.4	613.0	619.7	626.5	633.5	640.6	647.8	655.2	662.8	670.5	678.4	686.4	694.6	703.0	711.6	720.3	729.2	738.3	747.5	756.9	766.4	776.1	786.0	796.1	806.4	816.8	827.4	838.1	849.0	860.1	871.4	882.9	894.6	906.5	918.6	930.9	943.4	956.1	969.0	982.1	995.4	1009.0	1022.8	1036.8	1051.0	1065.4	1080.0	1094.8	1109.8	1125.0	1140.4	1156.0	1171.8	1187.8	1204.0	1220.4	1237.0	1253.8	1270.8	1288.0	1305.4	1323.0	1340.8	1358.8	1377.0	1395.4	1414.0	1432.8	1451.8	1471.0	1490.4	1510.0	1529.8	1549.8	1570.0	1590.4	1611.0	1631.8	1652.8	1674.0	1695.4	1717.0	1738.8	1760.8	1783.0	1805.4	1828.0	1850.8	1873.8	1897.0	1920.4	1944.0	1967.8	1991.8	2016.0	2040.4	2065.0	2089.8	2114.8	2140.0	2165.4	2191.0	2216.8	2242.8	2269.0	2295.4	2322.0	2348.8	2375.8	2403.0	2430.4	2458.0	2485.8	2513.8	2542.0	2570.4	2599.0	2627.8	2656.8	2686.0	2715.4	2745.0	2774.8	2804.8	2835.0	2865.4	2896.0	2926.8	2957.8	2989.0	3020.4	3052.0	3083.8	3115.8	3148.0	3180.4	3213.0	3245.8	3278.8	3312.0	3345.4	3379.0	3412.8	3446.8	3481.0	3515.4	3550.0	3584.8	3619.8	3655.0	3690.4	3726.0	3761.8	3797.8	3834.0	3870.4	3907.0	3943.8	3980.8	4018.0	4055.4	4093.0	4130.8	4168.8	4207.0	4245.4	4284.0	4322.8	4361.8	4401.0	4440.4	4480.0	4519.8	4559.8	4600.0	4640.4	4681.0	4721.8	4762.8	4804.0	4845.4	4887.0	4928.8	4970.8	5013.0	5055.4	5098.0	5140.8	5183.8	5227.0	5270.4	5314.0	5357.8	5401.8	5446.0	5490.4	5535.0	5580.0	5625.0	5670.0	5715.0	5760.0	5805.0	5850.0	5895.0	5940.0	5985.0	6030.0	6075.0	6120.0	6165.0	6210.0	6255.0	6300.0	6345.0	6390.0	6435.0	6480.0	6525.0	6570.0	6615.0	6660.0	6705.0	6750.0	6795.0	6840.0	6885.0	6930.0	6975.0	7020.0	7065.0	7110.0	7155.0	7200.0	7245.0	7290.0	7335.0	7380.0	7425.0	7470.0	7515.0	7560.0	7605.0	7650.0	7695.0	7740.0	7785.0	7830.0	7875.0	7920.0	7965.0	8010.0	8055.0	8100.0	8145.0	8190.0	8235.0	8280.0	8325.0	8370.0	8415.0	8460.0	8505.0	8550.0	8595.0	8640.0	8685.0	8730.0	8775.0	8820.0	8865.0	8910.0	8955.0	9000.0	9045.0	9090.0	9135.0	9180.0	9225.0	9270.0	9315.0	9360.0	9405.0	9450.0	9495.0	9540.0	9585.0	9630.0	9675.0	9720.0	9765.0	9810.0	9855.0	9900.0	9945.0	9990.0	10035.0	10080.0	10125.0	10170.0	10215.0	10260.0	10305.0	10350.0	10395.0	10440.0	10485.0	10530.0	10575.0	10620.0	10665.0	10710.0	10755.0	10800.0	10845.0	10890.0	10935.0	10980.0	11025.0	11070.0	11115.0	11160.0	11205.0	11250.0	11295.0	11340.0	11385.0	11430.0	11475.0	11520.0	11565.0	11610.0	11655.0	11700.0	11745.0	11790.0	11835.0	11880.0	11925.0	11970.0	12015.0	12060.0	12105.0	12150.0	12195.0	12240.0	12285.0	12330.0	12375.0	12420.0	12465.0	12510.0	12555.0	12600.0	12645.0	12690.0	12735.0	12780.0	12825.0	12870.0	12915.0	12960.0	13005.0	13050.0	13095.0	13140.0	13185.0	13230.0	13275.0	13320.0	13365.0	13410.0	13455.0	13500.0	13545.0	13590.0	13635.0	13680.0	13725.0	13770.0	13815.0	13860.0	13905.0	13950.0	13995.0	14040.0	14085.0	14130.0	14175.0	14220.0	14265.0	14310.0	14355.0	14400.0	14445.0	14490.0	14535.0	14580.0	14625.0	14670.0	14715.0	14760.0	14805.0	14850.0	14895.0	14940.0	14985.0	15030.0	15075.0	15120.0	15165.0	15210.0	15255.0	15300.0	15345.0	15390.0	15435.0	15480.0	15525.0	15570.0	15615.0	15660.0	15705.0	15750.0	15795.0	15840.0	15885.0	15930.0	15975.0	16020.0	16065.0	16110.0	16155.0	16200.0	16245.0	16290.0	16335.0	16380.0	16425.0	16470.0	16515.0	16560.0	16605.0	16650.0	16695.0	16740.0	16785.0	16830.0	16875.0	16920.0	16965.0	17010.0	17055.0	17100.0	17145.0	17190.0	17235.0	17280.0	17325.0	17370.0	17415.0	17460.0	17505.0	17550.0	17595.0	17640.0	17685.0	17730.0	17775.0	17820.0	17865.0	17910.0	17955.0	18000.0	18045.0	18090.0	18135.0	18180.0	18225.0	18270.0	18315.0	18360.0	18405.0	18450.0	18495.0	18540.0	18585.0	18630.0	18675.0	18720.0	18765.0	18810.0	18855.0	18900.0	18945.0	18990.0	19035.0	19080.0	19125.0	19170.0	19215.0	19260.0	19305.0	19350.0	19395.0	19440.0	19485.0	19530.0	19575.0	19620.0	19665.0	19710.0	19755.0	19800.0	19845.0	19890.0	19935.0	19980.0	20025.0	20070.0	20115.0	20160.0	20205.0	20250.0	20295.0	20340.0	20385.0	20430.0	20475.0	20520.0	20565.0	20610.0	20655.0	20700.0	20745.0	20790.0	20835.0	20880.0	20925.0	20970.0	21015.0	21060.0	21105.0	21150.0	21195.0	21240.0	21285.0	21330.0	21375.0	21420.0	21465.0	21510.0	21555.0	21600.0	21645.0	21690.0	21735.0	21780.0	21825.0	21870.0	21915.0	21960.0	22005.0	22050.0	22095.0	22140.0	22185.0	22230.0	22275.0	22320.0	22365.0	22410.0	22455.0	22500.0	22545.0	22590.0	22635.0	22680.0	22725.0	22770.0	22815.0	22860.0	22905.0	22950.0	22995.0	23040.0	23085.0	23130.0	23175.0	23220.0	23265.0	23310.0	23355.0	23400.0	23445.0	23490.0	23535.0	23580.0	23625.0	23670.0	23715.0	23760.0	23805.0	23850.0	23895.0	23940.0	23985.0	24030.0	24075.0	24120.0	24165.0	24210.0	24255.0	24300.0	24345.0	24390.0	24435.0	24480.0	24525.0	24570.0	24615.0	24660.0	24705.0	24750.0	24795.0	24840.0	24885.0	24930.0	24975.0	25020.0	25065.0	25110.0	25155.0	25200.0	25245.0	25290.0	25335.0	25380.0	25425.0	25470.0	25515.0	25560.0	25605.0	25650.0	25695.0	25740.0	25785.0	25830.0	25875.0	25920.0	25965.0	26010.0	26055.0	26100.0	26145.0	26190.0	26235.0	26280.0	26325.0	26370.0	26415.0	26460.0	26505.0	26550.0	26595.0	26640.0	26685.0	26730.0	26775.0	26820.0	26865.0	26910.0	26955.0	27000.0	27045.0	27090.0	27135.0	27180.0	27225.0	27270.0	27315.0	27360.0	27405.0	27450.0	27495.0	27540.0	27585.0	27630.0	27675.0	27720.0	27765.0	27810.0	27855.0	27900.0	27945.0	27990.0	28035.0	28080.0	28125.0	28170.0	28215.0	28260.0	28305.0	28350.0	28395.0	28440.0	28485.0	28530.0	28575.0	28620.0	28665.0	28710.0	28755.0	28800.0	28845.0	28890.0	28935.0	28980.0	29025.0	29070.0	29115.0	29160.0	29205.0	29250.0	29295.0	29340.0	29385.0	29430.0	29475.0	29520.0	29565.0	29610.0	29655.0	29700.0	29745.0	29790.0	29835.0	29880.0	29925.0	29970.0	30015.0	30060.0	30105.0	30150.0	30195.0	30240.0	30285.0	30330.0	30375.0	30420.0	30465.0	30510.0	30555.0	30600.0	30645.0	30690.0	30735.0	30780.0	30825.0	30870.0	30915.0	30960.0	31005.0	31050.0	31095.0	31140.0	31185.0	31230.0	31275.0	31320.0	31365.0	31410.0	31455.0	31500.0	31545.0	31590.0	31635.0	31680.0	31725.0	31770.0	31815.0	31860.0	31905.0	31950.0	31995.0	32040.0	32085.0	32130.0	32175.0	32220.0	32265.0	32310.0	32355.0	32400.0	32445.0	32490.0	32535.0	32580.0	32625.0	32670.0	32715.0	32760.0	32805.0	32850.0	32895.0	32940.0	32985.0	33030.0	33075.0	33120.0	33165.0	33210.0	33255.0	33300.0	33345.0	33390.0	33435.0	33480.0	33525.0	33570.0	33615.0	33660.0	33705.0	33750.0	33795.0	33840.0	33885.0	33930.0	33975.0	34020.0	34065.0	34110.0	34155.0	34200.0	34245.0	34290.0	34335.0	34380.0	34425.0	34470.0	34515.0	34560.0	34605.0	34650.0	34695.0	34740.0	34785.0	34830.0	34875.0	34920.0	34965.0	35010.0	35055.0	35100.0	35145.0	35190.0	35235.0	35280.0	35325.0	35370.0	35415.0	35460.0	35505.0	35550.0	35595.0	35640.0	35685.0	35730.0	35775.0	35820.0	35865.0	35910.0	35955.0	36000.0	36045.0	36090.0	36135.0	36180.0	36225.0	36270.0	36315.0	36360.0	36405.0	36450.0	36495.0	36540.0	36585.0	36630.0	36675.0	36720.0	36765.0	36810.0	36855.0	36900.0	36945.0	36990.0	37035.0	37080.0	37125.0	37170.0	37215.0	37260.0	37305.0	37350.0	37395.0	37440.0	37485.0	37530.0	37575.0	37620.0	37665.0	37710.0	37755.0	37800.0	37845.0	37890.0	37935.0	37980.0	38025.0	38070.0	38115.0	38160.0	38205.0	38250.0	38295.0	38340.0	38385.0	38430.0	38475.0	38520.0	38565.0	38610.0	38655.0	38700.0	38745.0	38790.0	38835.0	38880.0	38925.0	38970.0	39015.0	39060.0	39105.0	39150.0	39195.0	39240.0	39285.0	39330.0	39375.0	39420.0	39465.0	39510.0	39555.0	39600.0	39645.0	39690.0	39735.0	39780.0	39825.0	39870.0	39915.0	39960.0	40005.0	40050.0	40095.0	40140.0	40185.0	40230.0	40275.0	40320.0	40365.0	40410.0	40455.0	40500.0	40545.0	40590.0	40635.0	40680.0	40725.0	40770.0	40815.0	40860

TRAFFIC SUMMARY

Year 1921

State Trunk Line No. 17

Location Michigan Avenue at Merriman Road - Nankin Township

Time 7 a.m. to 9 p.m.

Date	8/1 Mon.	8/4 Thur.	8/8 Mon.
Single Horse	5	5	11
Double Team (Light)	2	2	2
Double Team (Loaded)	3	3	
Motor Cycles	9	14	19
2 Passenger Cars	357	340	277
5-7 Passenger Cars	1589	1888	1815
Busses	38	61	40
Motor Trucks - 2 tons and less	102	176	176
Motor Trucks - 2-5 tons	111	84	102
Motor Trucks - 5 tons and over	70	45	56
Trailers			
<b>Totals</b>	<b>2286</b>	<b>2618</b>	<b>2498</b>

Daily Average = (Average of Sundays + Holidays) ÷ 7 + (6 x week day a

\* Hol

Percent of total from 9 p.m. to 7 a.m. \_\_\_\_\_%

Foreign Vehicles \_\_\_\_\_%

Estim \_\_\_\_\_%

99.5





TRAFFIC SUMMARY

State Trunk Line No. 17

Year 1921

Location Michigan Avenue at Wayne Road 5 - Nankin Township

Time 7 a.m. to 9 p.m.

Date	7/23 Sat.	7/25 Mon.	7/29 Fri.
Single Horse	26	16	22
Double Team (Light)	6	1	2
Double Team (Loaded)	1	2	3
Motor Cycles	42	20	30
2 Passenger Cars	458	378	404
5-7 Passenger Cars	2585	1994	1933
Busses	4	3	4
Motor Trucks - 2 tons and less	212	219	249
Motor Trucks - 2-5 tons	138	154	132
Motor Trucks - 5 tons and over	79	63	62
Trailers			
Totals	3551	2850	2841

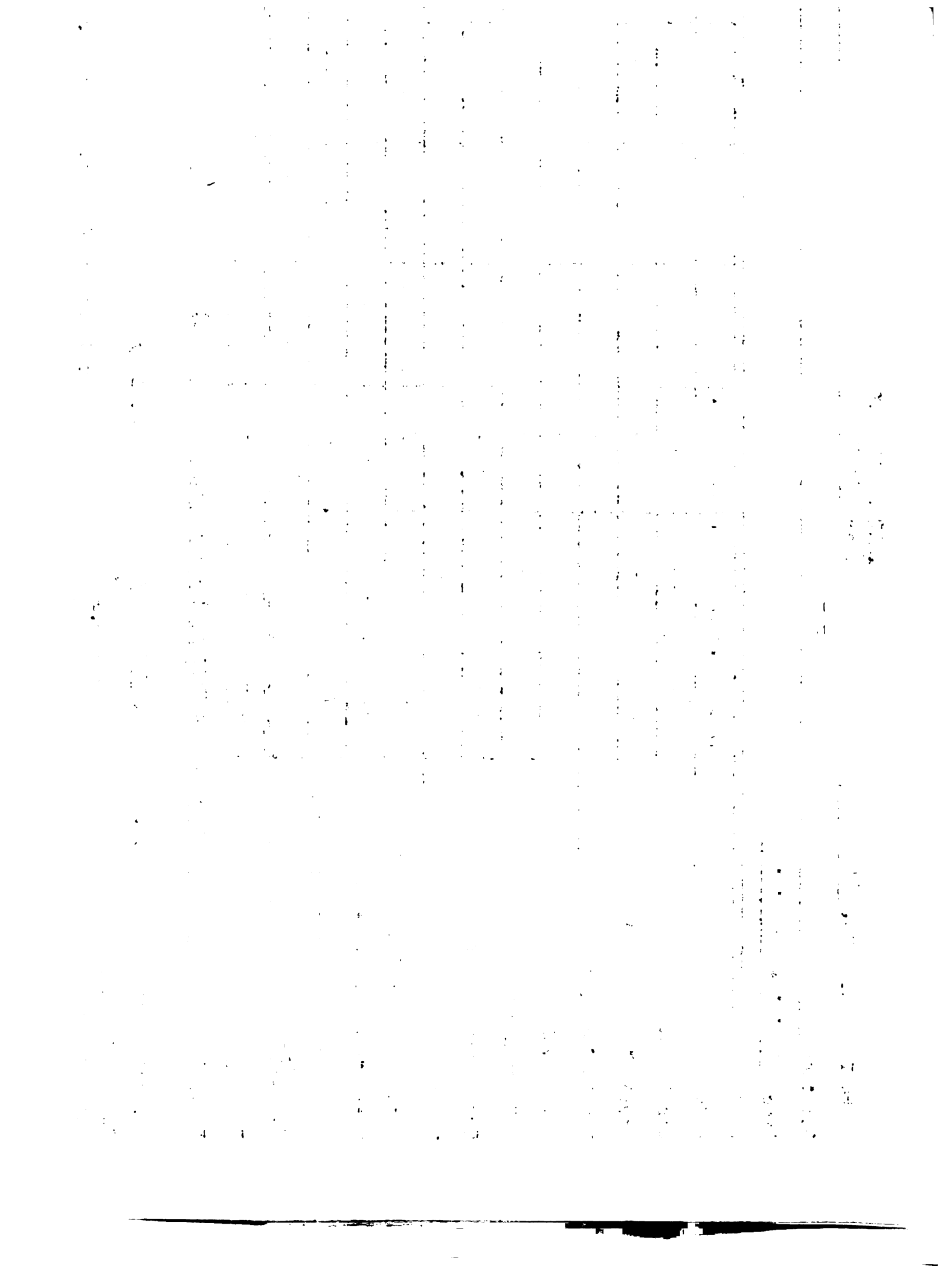
Daily Average = (Average of Sundays + Holidays) ÷ 7 = (6 x week day a

Percent of total from 9 p.m. to 7 a.m.      % \* Hol

Foreign Vehicles      %

Motor Vehicles 99.1 %

Estin



TRAFFIC SUMMARY

Year 1921

State Trunk Line No. 17

Location Michigan Avenue at Canton Center and Belleville Road

Time 7 a.m. to 9 p.m.

Date	7/24 Sun.	7/28 Thur.	7/30 Sat.
Single Horse	3	2	4
Double Team (Light)		1	1
Double Team (Loaded)		1	
Motor Cycles	21	12	11
2 Passenger Cars	481	216	317
5-7 Passenger Cars	3529	1194	1607
Busses	2	9	9
Motor Trucks - 2 tons and less	80	163	137
Motor Trucks - 2-5 tons	26	82	47
Motor Trucks - 5 tons and over	13	21	20
Trailers			
Totals	4155	1701	2153

Daily Average = (Average of Sundays + Holidays) ÷ (6 x week day a

7

Percent of total from 9 p.m. to 7 a.m. \_\_\_\_\_ % \* Hol

Foreign Vehicles \_\_\_\_\_ %

Motor Vehicles 99.8 % Estir



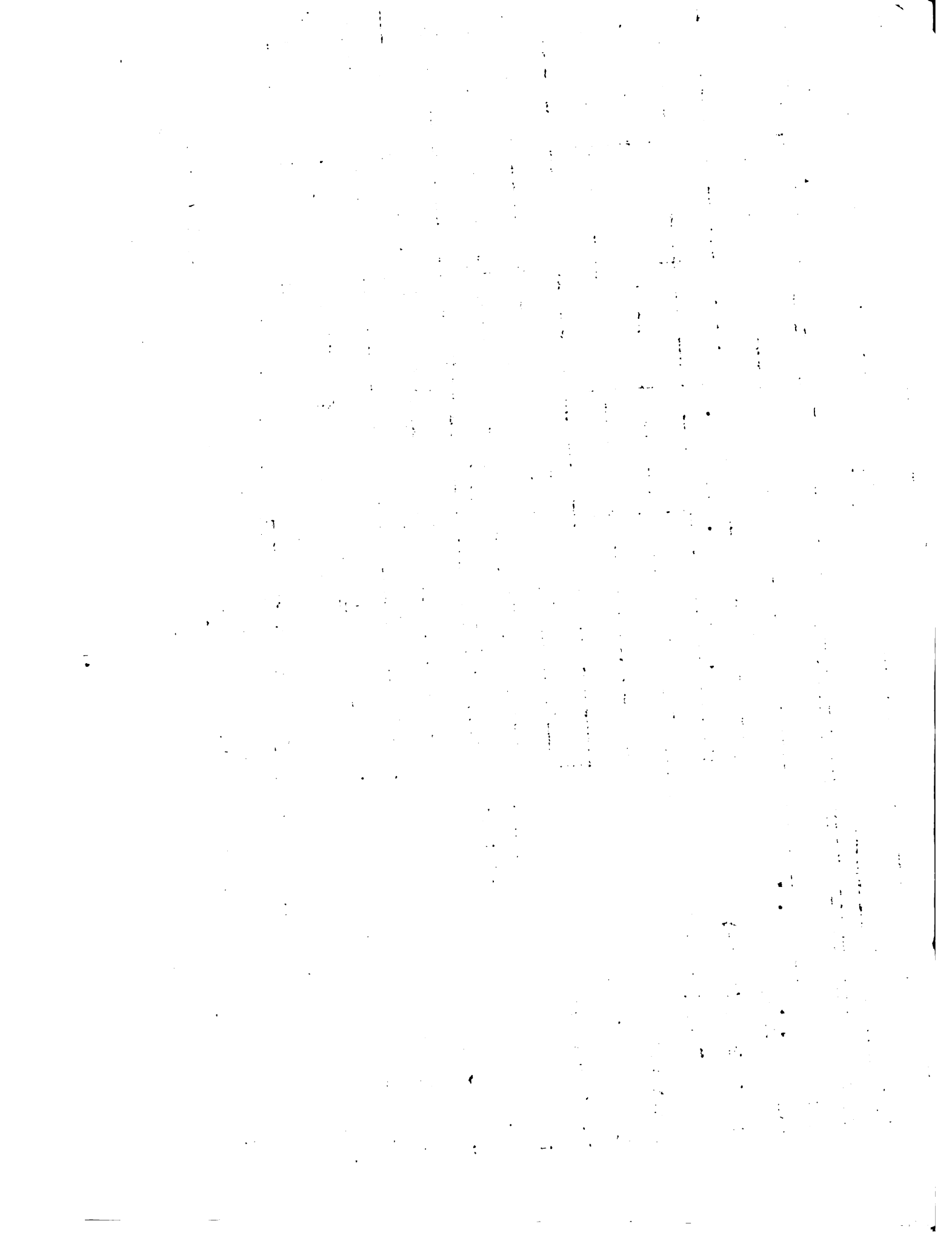
State Trunk Line No. 17 TRAFFIC SUMMARY  
 Year 1921

Location Michigan Avenue at Wayne and Washtenaw County Line  
 Time 7 a.m. to 9 p.m.

Date	7/22 Fri.	7/26 Tues.	7/31 Sun.
Single Horse	1	6	2
Double Team (Light)	4		
Double Team (Loaded)	6		
Motor Cycles	6	12	18
2 Passenger Cars	262	225	520
5-7 Passenger Cars	1106	1059	3529
Busses	5	8	2
Motor Trucks - 2 tons and less	97	146	88
Motor Trucks - 2-5 tons	55	73	22
Motor Trucks - 5 tons and over	24	28	13
Trailers			
Totals	1566	1557	4194

Daily Average = (Average of Sundays + Holidays) ÷ 7 = (6 x week day a.

Percent of total from 9 p.m. to 7 a.m. \_\_\_\_\_ % \* Hol  
 Foreign Vehicles \_\_\_\_\_ %  
 Motor Vehicles 99.7 % Estim



TRAFFIC SUMMARY

State Trunk Line No. 17

Year 1921

Location South 1/8 post between sections 1 & 2, Ypsilanti-Tomah

Time 7 a.m. to 9 p.m.

Date	8/5 Fri.	8/6 Sat.	8/7 Sun.
Single Horse	13	2	3
Double Team (Light)			
Double Team (Loaded)	1	1	
Motor Cycles	18	1	39
2 Passenger Cars	221	258	378
5-7 Passenger Cars	1351	1165	3282
Busses			
Motor Trucks - 2 tons and less	102	99	82
Motor Trucks - 2-5 tons	158	124	33
Motor Trucks - 5 tons and over			
Trailers			
Totals	1866	1650	3817

Daily Average = (Average of Sundays + Holidays) ÷ (6 x week day a

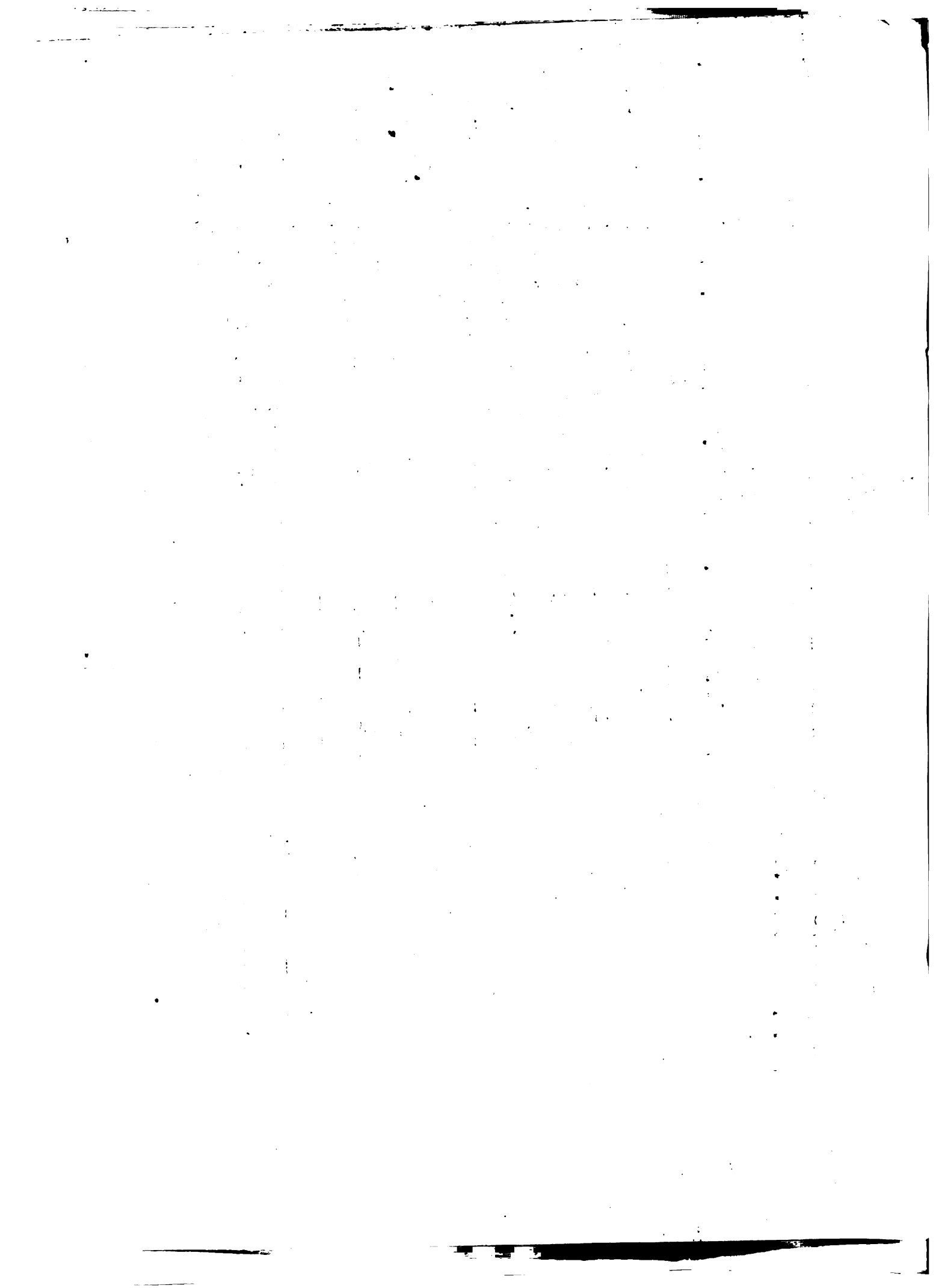
Percent of total from 9 p.m. to 7 a.m. \_\_\_\_\_ \* Ho.

Foreign Vehicles \_\_\_\_\_ %

Motor Vehicles 97.5 %

Esti.





TRAFFIC SUMMARY

State Trunk Line No. 17

Year 1921

Location Intersection of the Trunk Line 17 and Dexter Road - An

Time 7 A.M. to 9 P.M.

Date	8/5 Fri.	8/6 Sat.	8/7 Sun.
Single Horse	20	15	5
Double Team (Light)	2	1	
Double Team (Loaded)	1		
Motor Cycles	4	2	12
2 Passenger Cars	148	128	169
5-7 Passenger Cars	577	492	986
Busses			
Motor Trucks - 2 tons and less	21	14	7
Motor Trucks - 2-5 tons	13	9	5
Motor Trucks - 5 tons and over			
Trailers			
Totals	786	661	1184

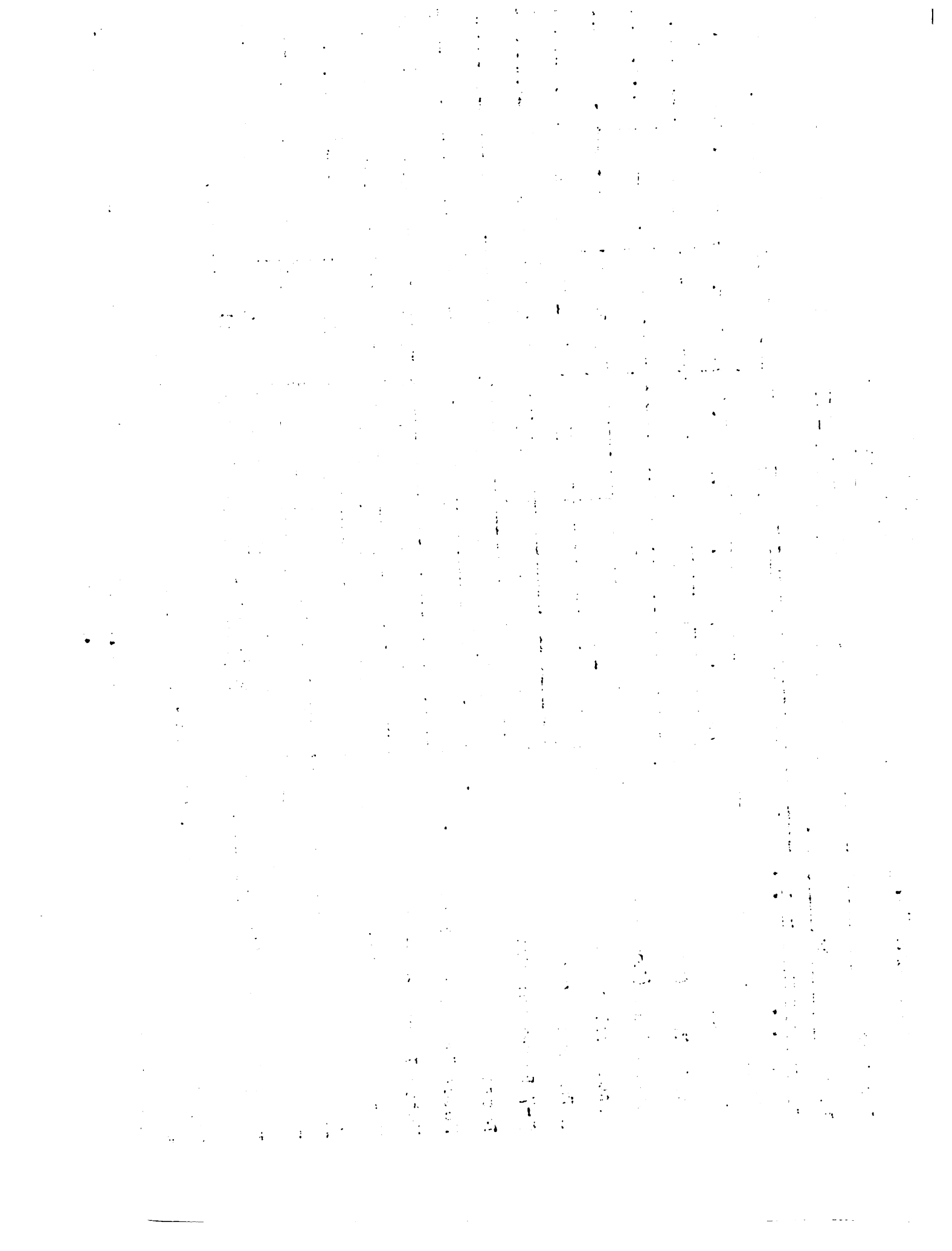
Daily Average = (Average of Sundays + Holidays) ÷ (6 x week day av

7

Percent of total from 9 p.m. to 7 a.m. \_\_\_\_\_ % \* Holl

Foreign Vehicles \_\_\_\_\_ %

Motor Vehicles 97.5 % Estimate



TRAFFIC SUMMARY

State Trunk Line No. 17

Year 1921

Location Near north section corner of 2 and 3 - Pittsfield Tenn.

Time 7 a.m. to 8 p.m.

Date	8/5 Fri.	8/6 Sat.	8/7 Sun.
Single Horse	3	5	2
Double Team (Light)	2		
Double Team (Loaded)	2	3	3
Motor Cycles	5	3	8
2 Passenger Cars	107	100	148
5-7 Passenger Cars	415	386	824
Busses			
Motor Trucks - 2 tons and less	15	9	4
Motor Trucks - 2-5 tons	20	11	8
Motor Trucks - 5 tons and over			
Trailers			
Totals	569	517	997

Daily Average = (Average of Sundays + Holidays) \* (6 x week day a 7)

Percent of total from 9 p.m. to 7 a.m.       

Foreign Vehicles       

Motor Vehicles 98.4

\* Holiday

UNITED STATES DEPARTMENT OF JUSTICE  
 FEDERAL BUREAU OF INVESTIGATION  
 WASHINGTON, D. C. 20535

REPORT OF AN INVESTIGATION  
 MADE AT [ ] ON [ ] 19[ ]  
 TITLE [ ]

NO.	NAME	POSITION	ORGANIZATION	ADDRESS	CITY	STATE	ZIP	DATE	INITIALS
1	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
2	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
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REPORT MADE AT [ ] ON [ ] 19[ ]  
 TITLE [ ]  
 MADE BY [ ]  
 SPECIAL AGENT IN CHARGE

## TRAFFIC SUMMARY

State Trunk Line No. 17Year 1921Location Two miles east of Jackson - Leoni townshipTime 7 a.m. to 9 p.m.

Date	9/15 Sun.	10/3 Mon.	10/8 Sat.
Single Horse	5	11	15
Double Team (Light)	2	10	7
Double Team (Loaded)	5	8	14
Motor Cycles	9	7	14
2 Passenger Cars	94	79	85
5-7 Passenger Cars	701	434	698
Buses			
Motor Trucks - 2 tons and less	105	104	97
Motor Trucks - 2-5 tons	99	85	63
Motor Trucks - 5 tons and over			
Trailers			6
Totals	1020	738	999

Daily Average = (Average of Sundays + Holidays) ÷ (6 x week day a

Percent of total from 9 p.m. to 7 a.m. \_\_\_\_\_ %

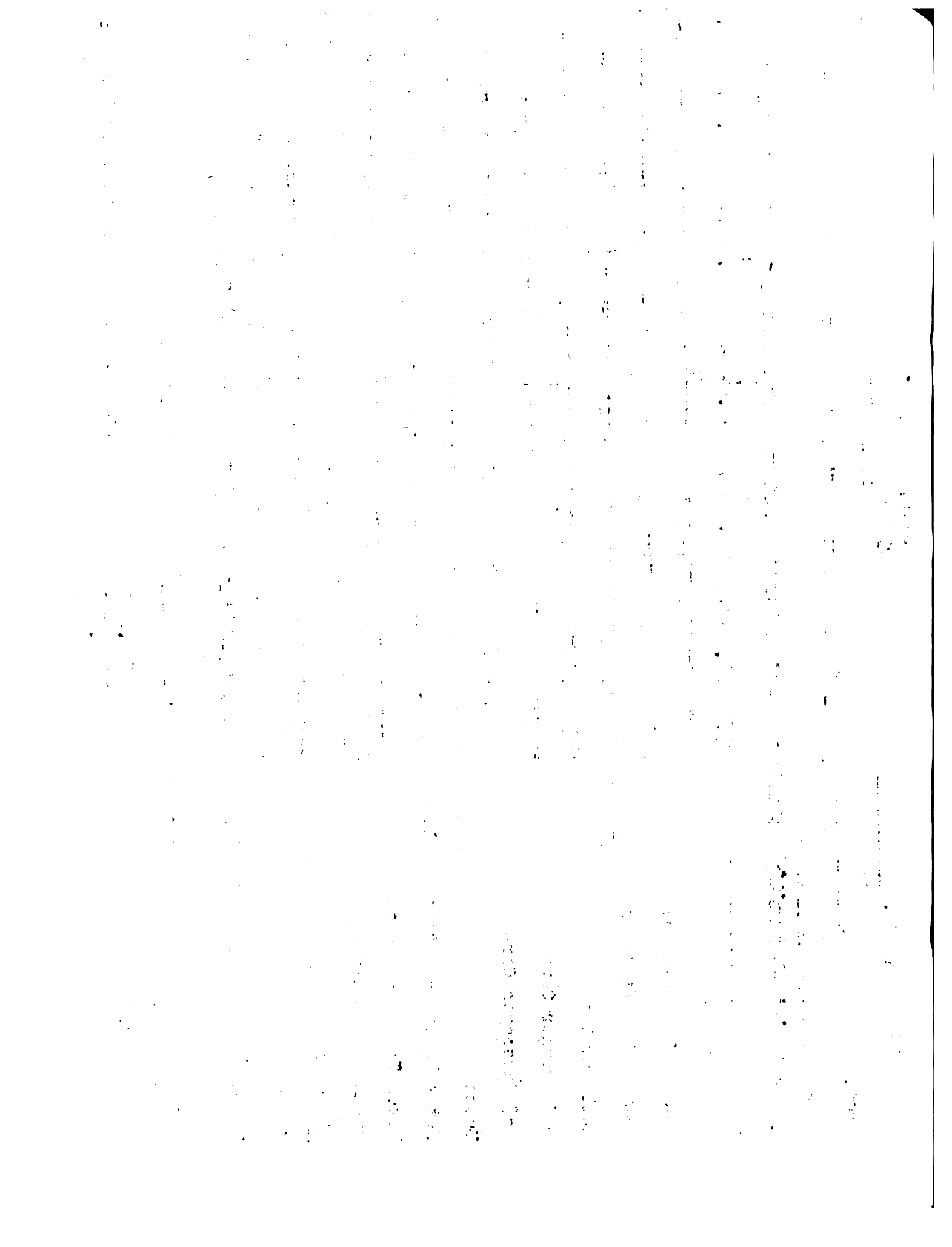
Foreign Vehicles

Motor Vehicles

1.1 %97.0 %

\* Hol

Estin



## TRAFFIC SUMMARY

State Trunk Line No. 17 Year 1921.Location One half mile west of GalesburgTime 7 a. m. to 9 p. m.

Date	8/14 Sun.	8/18 Thurs	8/24 Wed
Single Horse	9	6	4
Double Team (Light)	1	22	3
Double Team (Loaded)		12	3
Motor Cycles	21	12	9
2 Passenger Cars	226	165	158
5-7 Passenger Cars	1907	950	875
Busses			1
Motor Trucks - 2 tons and less	24	108	113
Motor Trucks - 2-5 tons	17	9	36
Motor Trucks - 5 tons and over	4		9
Trailers	1	2	
Totals	2210	1286	1211

Daily Average = (Average of Sundays + Holidays) ÷ (6 x week days)

Percent of total from 9 p.m. to 7 a.m. \_\_\_\_\_ % \* Ho

Foreign Vehicles

Motor Vehicles

10.3 %98.7 %

Esti:



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TRAFFIC SUMMARY

Year 1921.

State Trunk Line No. 17

Location One half mile east of east city limits of Kalamazoo -

Time 7 a.m. to 7. a. m.

Date	8/6 Sat.	8/14 Sun.	8/18 Thur
Single Horse	36	37	48
Double Team (Light)	12	8	43
Double Team (Loaded)	7	7	38
Motor Cycles	18	55	16
2 Passenger Cars	322	490	290
5-7 Passenger Cars	2140	2568	1854
Busses	6	7	2
Motor Trucks - 2 tons and less	193	64	220
Motor Trucks - 2-5 tons	79	13	65
Motor Trucks - 5 tons and over	11	33	28
Trailers	1	3	2
Totals	2825	3275	2606

Daily Average = (Average of Sundays + Holidays) ÷ (6 x week day a

Percent of total from 9 p.m. to 7 a.m. 16.2 % \* Hol:

Foreign Vehicles 6.5 %

Motor Vehicles 97.6 % Estima



TRAFFIC SUMMARY

State Trunk Line No. 17

Year 1921.

Location West city limits of Kalamazoo - Kalamazoo Township.

Time 7 a. m. to 7 a. m.

Date	8/4 Thur.	8/10 Wed.	8/16 Tues.
Single Horse	39	23	22
Double Team (Light)	12	6	20
Double Team (Loaded)	8	14	14
Motor Cycles	3	13	1
2 Passenger Cars	231	183	177
5-7 Passenger Cars	1172	774	907
Busses	17	3	21
Motor Trucks - 2 tons and less	81	113	92
Motor Trucks - 2-5 tons	29	29	36
Motor Trucks - 5 tons and over	5		26
Trailers	3	7	1
Totals	1600	1165	1317

Daily Average = (Average of Sundays + Holidays) + (6 x week day av

Percent of total from 9 p.m. to 7 a.m. 16.9% \* Holi

Foreign Vehicles 9.0%

Motor Vehicles 97.0% Estima

1. The first part of the document discusses the importance of maintaining accurate records of all transactions and activities. It emphasizes that this is essential for ensuring transparency and accountability in the organization's operations.

2. The second part of the document outlines the various methods and tools used to collect and analyze data. It highlights the need for consistent data collection procedures and the use of advanced analytical techniques to derive meaningful insights from the data.

3. The third part of the document focuses on the role of technology in data management and analysis. It discusses how modern software solutions can streamline data collection, storage, and analysis processes, thereby improving efficiency and accuracy.

4. The fourth part of the document addresses the challenges associated with data management, such as data quality, security, and privacy. It provides strategies to mitigate these risks and ensure that the data remains reliable and secure throughout its lifecycle.

5. The fifth part of the document concludes by summarizing the key findings and recommendations. It stresses the importance of a data-driven approach in decision-making and the need for continuous monitoring and improvement of data management practices.

State Trunk Line No. 17

TRAFFIC SUMMARY

Year 1921

Location One half mile west of Hartford - Hartford Towns

Time 7 a. m. to 2. p. m.

Date	9/4/Sun.	9/5/*Mon.	9/6 Tues
Single Horse	29	39	39
Double Team (Light)	2	11	18
Double Team (Loaded)	1	9	12
Motor Cycles	8	10	4
2 Passenger Cars	59	54	37
5-7 Passenger Cars	1553	<del>1671</del>	586
Busses	18	25	15
Motor Trucks - 2 tons and less	35	59	77
Motor Trucks - 2-5 tons	3	4	2
Motor Trucks - 5 tons and over		4	
Trailers		4	
Totals	1708	1886	790

Daily Average = (Average of Sundays + Holidays) ÷ (6 x week day a. 7)

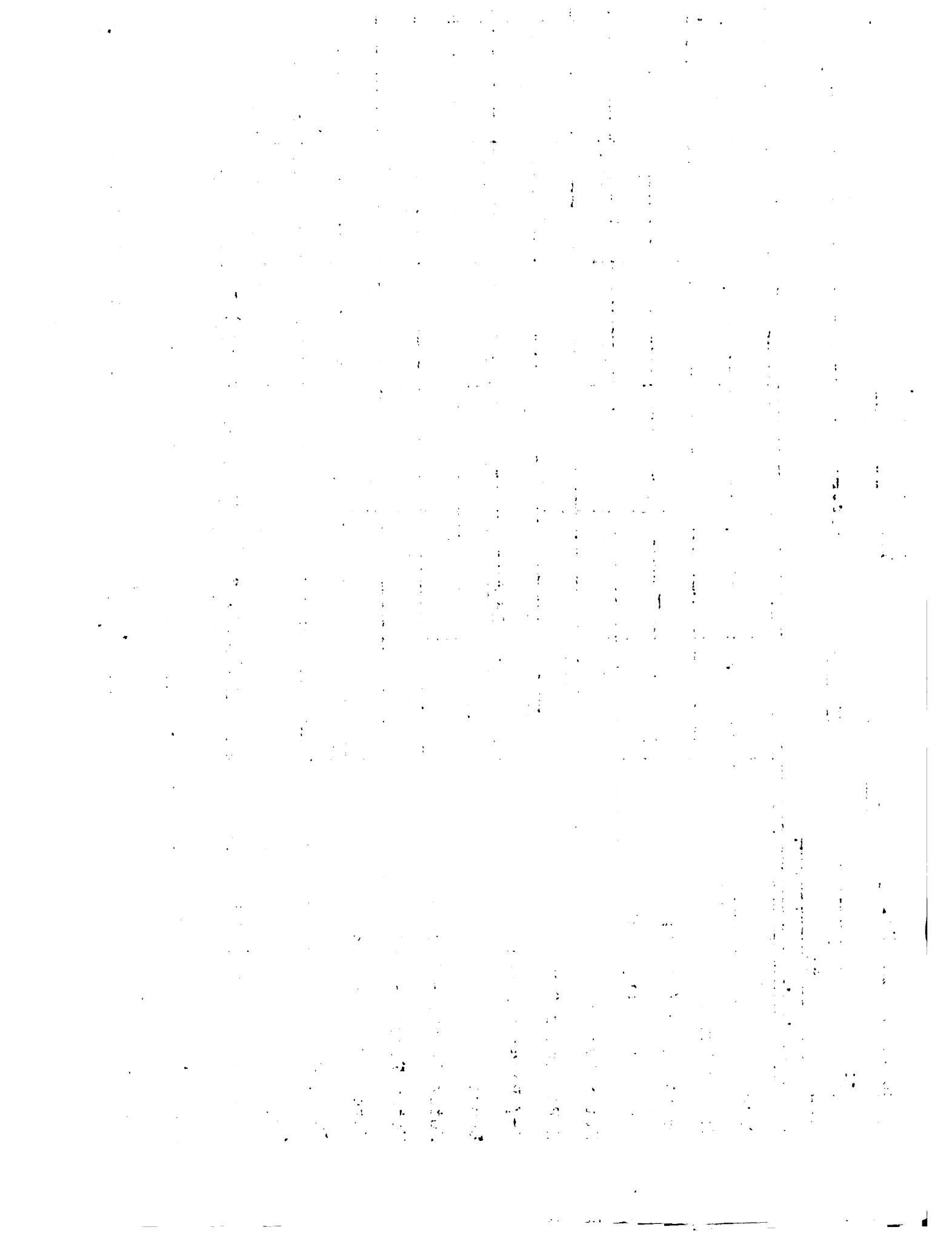
Percent of total from 9 p. m. to 7 a. m.        %

\* Hol.

Foreign Vehicles 21.0 %

Motor Vehicles 94.5 %

Estim



TRAFFIC SUMMARY

State Trunk Line No. 17

Year 1921

Location One mile east of Watervliet - Watervliet Township.

Time 7 a. m. to 9 p. m.

Date	8/15 Mon.	8/16 Tues	8/17 Wed.
Single Horse	48	22	32
Double Team (Light)	11	10	9
Double Team (Loaded)	8	5	3
Motor Cycles	4	6	6
2 Passenger Cars	56	62	34
5-7 Passenger Cars	535	490	477
Busses	14	13	12
Motor Trucks - 2 tons and less	71	72	59
Motor Trucks - 2-5 tons	16	16	22
Motor Trucks - 5 tons and over			
Trailers			
Totals	763	696	654

Daily Average = (Average of Sundays + Holidays) ÷ 7 (6 x week day a)

Percent of total from 9 p.m. to 7 a.m.      %

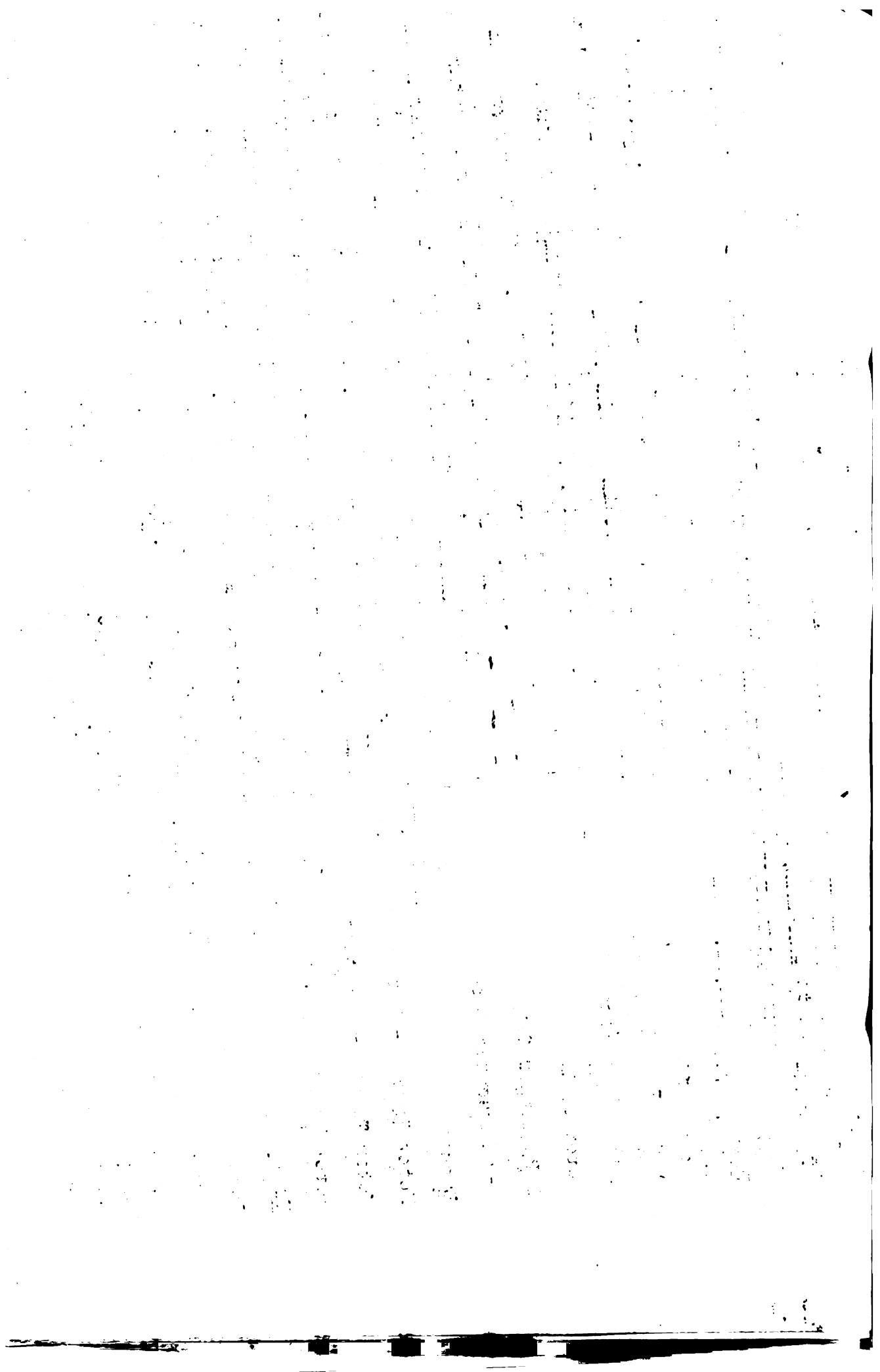
\* Hol:

Foreign Vehicles 22.3 %

Motor Vehicles 94.7 %

Estim





TRAFFIC SUMMARY

State Trunk Line No. 17

Year 1921

Location One half mile west of Oshtemo, Oshtemo Township.

Time 7 a.m. to 9 p.m.

Date	8/28 Sun.	9/3 Sat.	9/9/ Fri.
Single Horse	5	14	17
Double Team (Light)		14	7
Double Team (Loaded)		2	
Motor Cycles	1	3	1
2 Passenger Cars	96	72	137
5-7 Passenger Cars	1598	968	606
Busses	6	14	12
Motor Trucks - 2 tons and less	20	69	29
Motor Trucks - 2-5 tons	11	11	10
Motor Trucks - 5 tons and over	1	7	5
Trailers	8	3	1
Totals	1746	1177	825

Daily Average = (Average of Sundays + Holidays) ÷ (6 x week day a) 7

Percent of total from 9 p.m. to 7 a.m.        %

\* Hol:

Foreign Vehicles 9.0 %

Motor Vehicles 98.4 %

Estim

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TRAFFIC SUMMARY

State Trunk Line No. 17

Year 1921

Location Three quarters miles east of Lawrence, Lawrence T

Time 7 a. m. to 9 p. m.

Date	8/22 Mon.	8/23 Tues.	8/24 Wed.
Single Horse	15	22	15
Double Team (Light)	23	39	44
Double Team (Loaded)	16	33	35
Motor Cycles		1	
2 Passenger Cars	63	67	89
5-7 Passenger Cars	554	607	664
Busses	12	10	12
Motor Trucks - 2 tons and less	64	69	71
Motor Trucks - 2-5 tons	4	13	15
Motor Trucks - 5 tons and over		1	
Trailers	1	1	2
Totals	752	863	947

Daily Average = (Average of Sundays + Holidays) ÷ 7 → (6 x week day a

Percent of total from 9 p.m. to 7 a.m.        %

\* Hol.

Foreign Vehicles 5.1 %

Motor Vehicles 92.2 %

Estim



## TRAFFIC SUMMARY

State Trunk Line No. 17Year 1921Location W.H. Pierce Farm - Emmett TownshipTime 7 a.m. to 7 a.m.

Date	8/17 Sat.	8/21 Sun.	8/29 Mon.
Single Horse		1	7
Double Team (Light)	1	1	7
Double Team (Loaded)			
Motor Cycles	3	36	2
2 Passenger Cars	78	151	82
5-7 Passenger Cars	901	1419	776
Busses		1	2
Motor Trucks - 2 tons and less	50	37	102
Motor Trucks - 2-5 tons	11	2	9
Motor Trucks - 5 tons and over			
Trailers			1
Totals	1044	1648	988

Daily Average = (Average of Sundays + Holidays) ÷ 7 → (6 x week day a

Percent of total from 9 p.m. to 7 a.m. 15.1 %

\* Holiday

Foreign Vehicles 8.0 %

Motor Vehicles

99.4 %

Estimate



TRAFFIC SUMMARY

State Trunk Line No. 17

Year 1921

Location One-quarter mile east of Marengo - Marengo Township

Time 7 a.m. to 7 a.m.

Date	8/13 Sat	8/21 Sun.	9/29 Mon.
Single Horse	2		5
Double Team (Light)	1	1	1
Double Team (Loaded)	1		
Motor Cycles	6	53	2
2 Passenger Cars	90	128	97
5-7 Passenger Cars	711	1143	604
Busses			
Motor Trucks - 2 tons and less	45	14	65
Motor Trucks - 2-5 tons	6	4	9
Motor Trucks - 5 tons and over		2	3
Trailers			
Totals	862	1345	786

Daily Average = (Average of Sundays + Holidays) ÷ (6 x week day a

Percent of total from 9 p.m. to 7 a.m. 13.9 % \* Hol:

Foreign Vehicles 4.7 %

Motor Vehicles 99.6 % Estime



CONFIDENTIAL

TRAFFIC SUMMARY

Year 1921

State Trunk Line No. 17

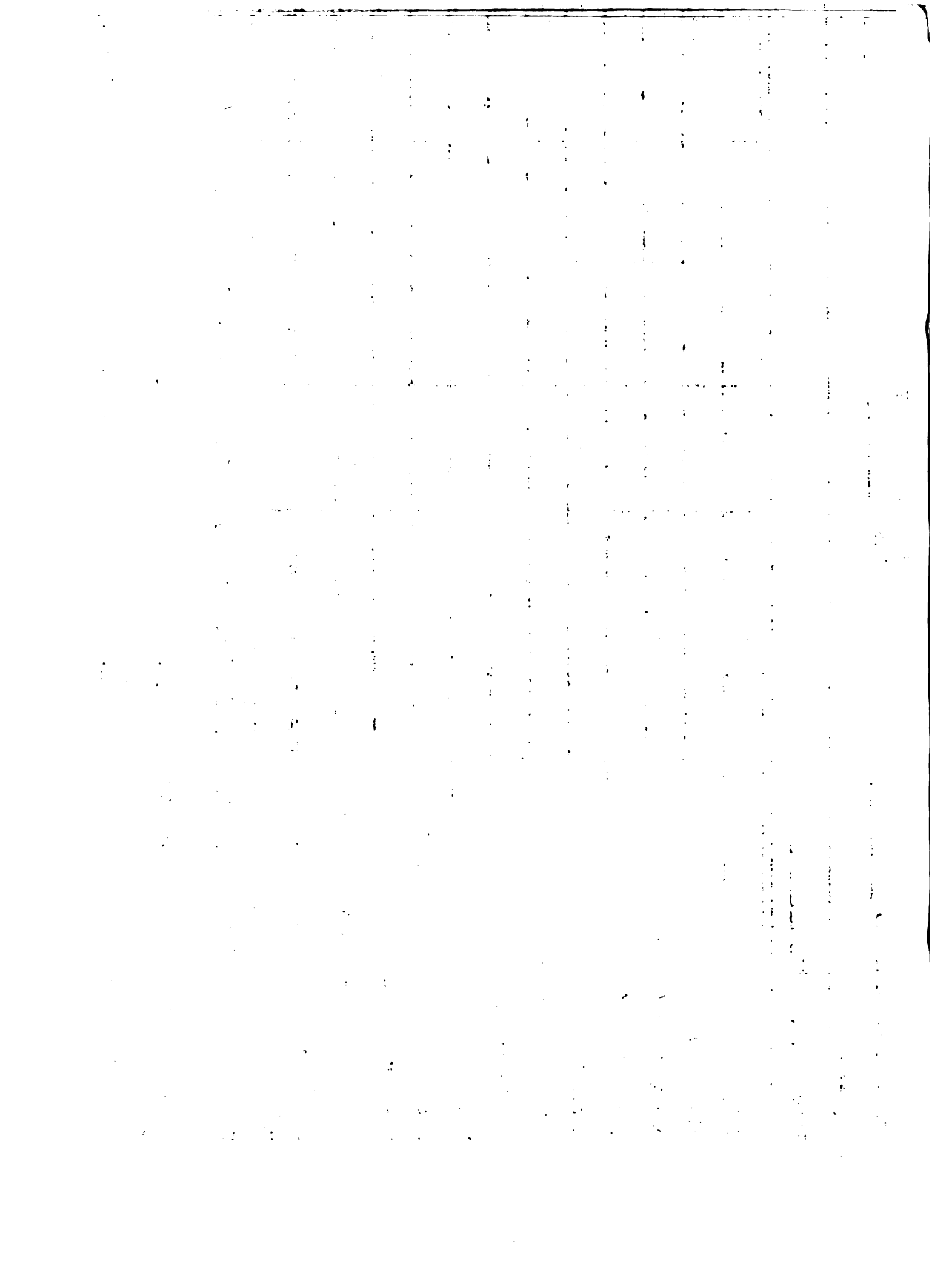
Location Intersection of trunk line #17 and #37

Time 7 a.m. to 7 a.m.

Date	8/13 Sat.	8/21 Sun.	8/29 Mon.
Single Horse	29	8	36
Double Team (Light)	15	3	17
Double Team (Loaded)	13	1	10
Motor Cycles	6	36	29
2 Passenger Cars	215	352	301
5-7 Passenger Cars	1363	2296	1285
Busses	15	26	30
Motor Trucks - 2 tons and less	14	31	74
Motor Trucks - 2-5 tons	6	3	11
Motor Trucks - 5 tons and over	2	1	1
Trailers	6	4	1
Totals	1684	2761	1795

Daily Average = (Average of Sundays + Holidays) ÷ (6 x week day av

Percent of total from 9 p.m. to 7 a.m. 11.6 % \* Holi  
 Foreign Vehicles        %  
 Motor Vehicles 98.7 % Estimate



TRAFFIC SUMMARY

State Trunk Line No. 17

Year 1921

Location 1 1/2 miles west of Jackson- Blackman Township

Time 7 a.m. to 9 p.m.

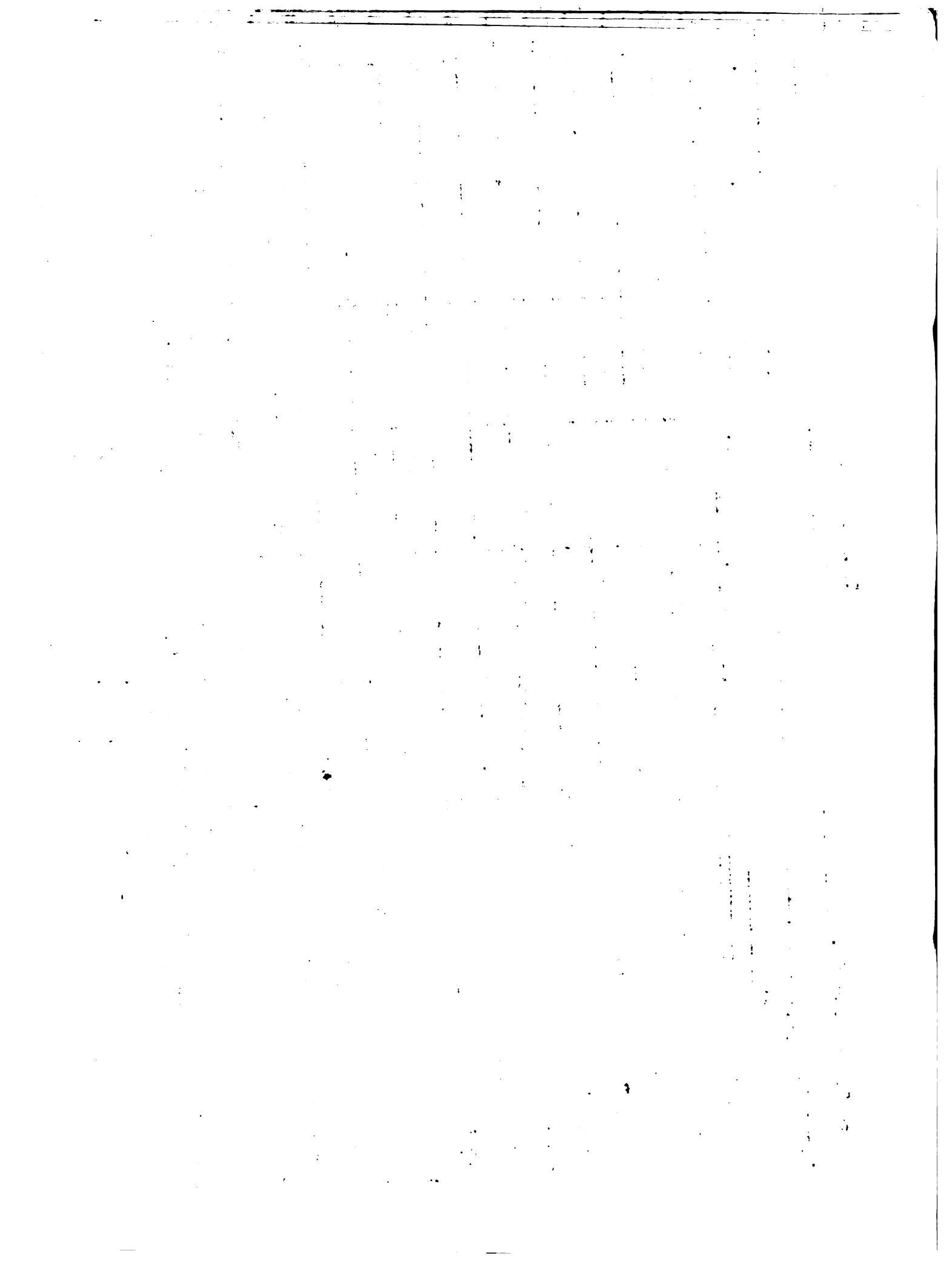
Date	9/26 Mon.	10/18 Sat.	10/6 Thur.
Single Horse	20	24	19
Double Team (Light)	11	6	9
Double Team (Loaded)	6	7	14
Motor Cycles	12	3	3
2 Passenger Cars	70	100	55
5-7 Passenger Cars	486	627	432
Busses	76		2
Motor Trucks - 2 tons and less	34	84	74
Motor Trucks - 2-5 tons		4	24
Motor Trucks - 5 tons and over			
Trailers	1		
Totals	716	855	632

Daily Average = (Average of Sundays + Holidays) \* (6 x week day av

Percent of total from 9 p.m. to 7 a.m. 7 % \* Holi

Foreign Vehicles 3.1 %

Motor Vehicles 94.8 % Estima



TRUNK LINE ROUTE NO. 17

County	Maint. Number	Type	Sec. Mileage	Sec. Maint. Cost for Year.	Maint. Cost per Mile for Year.	Maint. Cost per Vehicle Mile.
Wayne Washtenaw	17-4	Concrete	21.561	24,017.91	1114.00	.0018
	17-2	Concrete	2.826	664.43	235.11	.0006
	17-1	Gravel	4.828	10,798.38	2236.61	
	17-3	A. Concrete	4.723	202.07	42.78	.0003
Jackson	17-4	A. Concrete	15.618	7.98	.51	
	17-11	Earth	2.500			
	17-10	Earth	7.000			
	17-9	Gravel	3.000			
	17-1	Gravel	3.500			
	17-2	Gravel	5.000			
	17-3	Gravel	6.200			
	17-6	Gravel	1.300			
	17-5	Gravel	2.300			
	17-4	Brick	5.700			
Calhoun	17-3	Gravel	2.500	1,068.11	821.62	.0016
	17-2	Gravel	9.600	729.18	399.01	.0005
	17-2	Gravel	0.600	1,249.48	127.92	.0007
	17-2	Bit. Con.	3.200	6,053.98	499.79	.0002
	17-1	Gravel	3.200	378.37	630.61	.0002
	17-1	Concrete	2.000	1519.24	474.76	.015
	17-4	Gravel	6.500	949.52	474.76	.015
	17-5	Gravel	2.500	5,108.13	785.86	.028
	17-6	Concrete	6.500	1,274.12	509.64	.019
	17-7	Concrete	9.500	1,223.78	188.27	.0013
	17-5	Gravel	0.900	1,724.76	181.55	.0003
	17-5	Concrete	6.700	241.51	268.34	.0013
Kalamazoo	17-4	Gravel	7.800	1,797.88	268.34	.0013
	17-3	Gravel	4.000	3,241.95	415.63	.002
	17-2	Concrete	4.400	1,858.28	464.57	.002
	17-2	Concrete	4.400	1,253.49	284.88	.0012

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Trunk Line Route No. 10

County	Maintenance Section No.	Type	Mileage	Vehicle Mile Cost
Saginaw	3	C. Concrete	8.900	.0046
Saginaw	2	Water Bound Macadam	6.700	.005
Bay	1	Cement Concrete	3.000	.001
Bay	2	Cement Concrete	6.400	.0148
Bay	3	Gravel	7.500	.016
Bay	4	Gravel	8.000	.011
Arenac	2	Gravel	6.750	.004
Arenac	1	Gravel	3.500	.016
Iosco	6	Gravel	4.500	.0147
Iosco	2	Gravel	7.800	.0057
Alcona	5	Gravel	6.000	.005
Alcona	4	Gravel	7.750	.008
Presque Isle	5	Gravel	11.000	.0018
"	4	Gravel	6.000	.0063
"	3	Gravel	7.750	.0094



A grid of 10 columns and 10 rows. The grid is formed by thin, dotted lines. Scattered throughout the grid are several small black dots. The dots are most concentrated in the top-left quadrant, with a few isolated dots in the middle and bottom sections. The overall appearance is that of a sparse data set or a random distribution on a coordinate plane.

Trunk Line Route No. 11

County	Maintenance Section No.	Type	Mileage	Vehicle Mile Cost
Van Buren	7	Water Bound Macadam	10.200	.0043
Alleghen	3	" "	3.500	.0046
Alleghen	1	" "	6.000	.006
Mason	4	Gravel	6.400	.0008
Mason	5	Gravel	5.000	.0014
Mason	6	Gravel	5.000	.0014
Manistee	5	Gravel	7.500	.0051
Benzie	Twp. 1	Gravel	5.032	.007
Grand Traverse	1	Gravel	9.000	.003
Grand Traverse	2	Gravel	6.700	.0046
Grand Traverse	4	Gravel	8.400	.002
Antrim	1	Water Bound Macadam	6.500	.016
Antrim	4	Gravel	5.949	.0022
Charlevoix	1	Gravel	11.606	.0046



This image shows a grid of 10 columns and 10 rows. The grid lines are faint and dotted. The text within the cells is extremely faint and illegible, appearing as scattered black pixels and noise. The overall appearance is that of a very low-quality scan of a document page.

Trunk Line Route No. 12

County	Maintenance Section No.	Type	Mileage	Vehicle Mile Cost
Chippewa	1	Water Bound Macadam	7.00	.0085
Chippewa	2	Gravel	5.500	.0015
"	3	Gravel	5.000	.009
"	4	Gravel	5.000	.0044
Mackinac	11	Gravel	12.500	.0045
"	10	Gravel	10.000	.0043
"	9	Gravel	4.000	.014
"	8	Earth	6.000	.0154
"	7	Earth	5.500	.0176
"	3	Water Bound Macadam	6.000	.0061
"	2	Earth	6.000	.0042
Delta	8	Water Bound Macadam	5.300	.0052
"	7	" "	5.272	.0061
"	6	" "	5.095	.0056

The image displays a grid structure, likely a table or form, that has been severely degraded. The grid consists of approximately 10 vertical columns and 10 horizontal rows. The lines are thin and heavily obscured by noise, including numerous black specks and streaks. The overall appearance is that of a low-quality scan or a corrupted document page. No text or data is legible within the grid cells.

Trunk Line Route No. 12 Cont'd.

County	Maintenance Section No.	Type	Mileage	Vehicle Mile Cost
Delta	2	Water Bound Macadam	5.665	.0024
Delta	1	" "	5.665	.0042
Menominee	2	Gravel	3.500	.0033
"	3	Gravel	6.000	.008
Dickinson	1	Gravel	6.555	.0073
"	2	Water Bound Macadam	3.613	.0056
"	10	Gravel	2.157	.012
Iron	5	Water Bound Macadam	10.400	.0051
"	1	Gravel	21.600	.0036
Gogebic	3	Gravel	27.600	.014

The image shows a document page that is extremely degraded and noisy. The content is almost entirely illegible due to the quality of the scan. However, a grid-like structure is visible, suggesting a table or a form with multiple rows and columns. The lines of the grid are faint and broken, and any text within the cells is completely unreadable. The overall appearance is that of a very poor quality scan of a document.





Trunk Line Route No. 15

County	Maintenance Section No.	Type	Mileage	Vehicle Mile Cost
Menominee	7	Gravel	3,500	.0130
"	8	Gravel	4,000	.0088
"	11	Gravel	5,300	.0024
"	12	Gravel	6,600	.0018
Delta	13	Earth	6,000	.0103
Delta	14	Earth	5,990	.0023
Baraga	1	Gravel	8,000	.021
Keweenaw	1	C. Concrete	1,300	.0046
"	2	Water Bound Macadam	.966	.0056
"	5	" "	1,500	.007
"	6	" "	3,600	.0103
"	8	" "	6,500	.0039



Trunk Line Route No. 16

County	Maintenance Section No.	Type	Mileage	Vehicle Mile Cost
Livingston	4	Gravel	5,200	.0073
"	3	Gravel	5,200	.0045
"	1	"	6,000	.0017
Ingham	9	"	6,800	.003
"	7	"	5,600	.0043
Eaton	1	"	6,000	.005
Ionia	1	"	5,000	.0063
"	2	"	5,000	.007
"	6	"	4,500	.010
"	7	"	6,000	.005
Kent	17	"	7,600	.014
"	16	"	4,200	.010
"	13	C. Concrete	4,800	.0013

Year	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030																																																																																																																																																																																																																																																																																																																																																																																																											
Population	150,000	155,000	160,000	165,000	170,000	175,000	180,000	185,000	190,000	195,000	200,000	205,000	210,000	215,000	220,000	225,000	230,000	235,000	240,000	245,000	250,000	255,000	260,000	265,000	270,000	275,000	280,000	285,000	290,000	295,000	300,000	305,000	310,000	315,000	320,000	325,000	330,000	335,000	340,000	345,000	350,000	355,000	360,000	365,000	370,000	375,000	380,000	385,000	390,000	395,000	400,000	405,000	410,000	415,000	420,000	425,000	430,000	435,000	440,000	445,000	450,000	455,000	460,000	465,000	470,000	475,000	480,000	485,000	490,000	495,000	500,000	505,000	510,000	515,000	520,000	525,000	530,000	535,000	540,000	545,000	550,000	555,000	560,000	565,000	570,000	575,000	580,000	585,000	590,000	595,000	600,000	605,000	610,000	615,000	620,000	625,000	630,000	635,000	640,000	645,000	650,000	655,000	660,000	665,000	670,000	675,000	680,000	685,000	690,000	695,000	700,000	705,000	710,000	715,000	720,000	725,000	730,000	735,000	740,000	745,000	750,000	755,000	760,000	765,000	770,000	775,000	780,000	785,000	790,000	795,000	800,000	805,000	810,000	815,000	820,000	825,000	830,000	835,000	840,000	845,000	850,000	855,000	860,000	865,000	870,000	875,000	880,000	885,000	890,000	895,000	900,000	905,000	910,000	915,000	920,000	925,000	930,000	935,000	940,000	945,000	950,000	955,000	960,000	965,000	970,000	975,000	980,000	985,000	990,000	995,000	1,000,000																																																																																																																																																																																																																																																																																																																	
GDP	100	105	110	115	120	125	130	135	140	145	150	155	160	165	170	175	180	185	190	195	200	205	210	215	220	225	230	235	240	245	250	255	260	265	270	275	280	285	290	295	300	305	310	315	320	325	330	335	340	345	350	355	360	365	370	375	380	385	390	395	400	405	410	415	420	425	430	435	440	445	450	455	460	465	470	475	480	485	490	495	500	505	510	515	520	525	530	535	540	545	550	555	560	565	570	575	580	585	590	595	600	605	610	615	620	625	630	635	640	645	650	655	660	665	670	675	680	685	690	695	700	705	710	715	720	725	730	735	740	745	750	755	760	765	770	775	780	785	790	795	800	805	810	815	820	825	830	835	840	845	850	855	860	865	870	875	880	885	890	895	900	905	910	915	920	925	930	935	940	945	950	955	960	965	970	975	980	985	990	995	1,000																																																																																																																																																																																																																																																																																																							
Unemployment	5.0	5.2	5.4	5.6	5.8	6.0	6.2	6.4	6.6	6.8	7.0	7.2	7.4	7.6	7.8	8.0	8.2	8.4	8.6	8.8	9.0	9.2	9.4	9.6	9.8	10.0	10.2	10.4	10.6	10.8	11.0	11.2	11.4	11.6	11.8	12.0	12.2	12.4	12.6	12.8	13.0	13.2	13.4	13.6	13.8	14.0	14.2	14.4	14.6	14.8	15.0	15.2	15.4	15.6	15.8	16.0	16.2	16.4	16.6	16.8	17.0	17.2	17.4	17.6	17.8	18.0	18.2	18.4	18.6	18.8	19.0	19.2	19.4	19.6	19.8	20.0	20.2	20.4	20.6	20.8	21.0	21.2	21.4	21.6	21.8	22.0	22.2	22.4	22.6	22.8	23.0	23.2	23.4	23.6	23.8	24.0	24.2	24.4	24.6	24.8	25.0	25.2	25.4	25.6	25.8	26.0	26.2	26.4	26.6	26.8	27.0	27.2	27.4	27.6	27.8	28.0	28.2	28.4	28.6	28.8	29.0	29.2	29.4	29.6	29.8	30.0	30.2	30.4	30.6	30.8	31.0	31.2	31.4	31.6	31.8	32.0	32.2	32.4	32.6	32.8	33.0	33.2	33.4	33.6	33.8	34.0	34.2	34.4	34.6	34.8	35.0	35.2	35.4	35.6	35.8	36.0	36.2	36.4	36.6	36.8	37.0	37.2	37.4	37.6	37.8	38.0	38.2	38.4	38.6	38.8	39.0	39.2	39.4	39.6	39.8	40.0	40.2	40.4	40.6	40.8	41.0	41.2	41.4	41.6	41.8	42.0	42.2	42.4	42.6	42.8	43.0	43.2	43.4	43.6	43.8	44.0	44.2	44.4	44.6	44.8	45.0	45.2	45.4	45.6	45.8	46.0	46.2	46.4	46.6	46.8	47.0	47.2	47.4	47.6	47.8	48.0	48.2	48.4	48.6	48.8	49.0	49.2	49.4	49.6	49.8	50.0	50.2	50.4	50.6	50.8	51.0	51.2	51.4	51.6	51.8	52.0	52.2	52.4	52.6	52.8	53.0	53.2	53.4	53.6	53.8	54.0	54.2	54.4	54.6	54.8	55.0	55.2	55.4	55.6	55.8	56.0	56.2	56.4	56.6	56.8	57.0	57.2	57.4	57.6	57.8	58.0	58.2	58.4	58.6	58.8	59.0	59.2	59.4	59.6	59.8	60.0	60.2	60.4	60.6	60.8	61.0	61.2	61.4	61.6	61.8	62.0	62.2	62.4	62.6	62.8	63.0	63.2	63.4	63.6	63.8	64.0	64.2	64.4	64.6	64.8	65.0	65.2	65.4	65.6	65.8	66.0	66.2	66.4	66.6	66.8	67.0	67.2	67.4	67.6	67.8	68.0	68.2	68.4	68.6	68.8	69.0	69.2	69.4	69.6	69.8	70.0	70.2	70.4	70.6	70.8	71.0	71.2	71.4	71.6	71.8	72.0	72.2	72.4	72.6	72.8	73.0	73.2	73.4	73.6	73.8	74.0	74.2	74.4	74.6	74.8	75.0	75.2	75.4	75.6	75.8	76.0	76.2	76.4	76.6	76.8	77.0	77.2	77.4	77.6	77.8	78.0	78.2	78.4	78.6	78.8	79.0	79.2	79.4	79.6	79.8	80.0	80.2	80.4	80.6	80.8	81.0	81.2	81.4	81.6	81.8	82.0	82.2	82.4	82.6	82.8	83.0	83.2	83.4	83.6	83.8	84.0	84.2	84.4	84.6	84.8	85.0	85.2	85.4	85.6	85.8	86.0	86.2	86.4	86.6	86.8	87.0	87.2	87.4	87.6	87.8	88.0	88.2	88.4	88.6	88.8	89.0	89.2	89.4	89.6	89.8	90.0	90.2	90.4	90.6	90.8	91.0	91.2	91.4	91.6	91.8	92.0	92.2	92.4	92.6	92.8	93.0	93.2	93.4	93.6	93.8	94.0	94.2	94.4	94.6	94.8	95.0	95.2	95.4	95.6	95.8	96.0	96.2	96.4	96.6	96.8	97.0	97.2	97.4	97.6	97.8	98.0	98.2	98.4	98.6	98.8	99.0	99.2	99.4	99.6	99.8	1,000
Inflation	2.0	2.2	2.4	2.6	2.8	3.0	3.2	3.4	3.6	3.8	4.0	4.2	4.4	4.6	4.8	5.0	5.2	5.4	5.6	5.8	6.0	6.2	6.4	6.6	6.8	7.0	7.2	7.4	7.6	7.8	8.0	8.2	8.4	8.6	8.8	9.0	9.2	9.4	9.6	9.8	10.0	10.2	10.4	10.6	10.8	11.0	11.2	11.4	11.6	11.8	12.0	12.2	12.4	12.6	12.8	13.0	13.2	13.4	13.6	13.8	14.0	14.2	14.4	14.6	14.8	15.0	15.2	15.4	15.6	15.8	16.0	16.2	16.4	16.6	16.8	17.0	17.2	17.4	17.6	17.8	18.0	18.2	18.4	18.6	18.8	19.0	19.2	19.4	19.6	19.8	20.0	20.2	20.4	20.6	20.8	21.0	21.2	21.4	21.6	21.8	22.0	22.2	22.4	22.6	22.8	23.0	23.2	23.4	23.6	23.8	24.0	24.2	24.4	24.6	24.8	25.0	25.2	25.4	25.6	25.8	26.0	26.2	26.4	26.6	26.8	27.0	27.2	27.4	27.6	27.8	28.0	28.2	28.4	28.6	28.8	29.0	29.2	29.4	29.6	29.8	30.0	30.2	30.4	30.6	30.8	31.0	31.2	31.4	31.6	31.8	32.0	32.2	32.4	32.6	32.8	33.0	33.2	33.4	33.6	33.8	34.0	34.2	34.4	34.6	34.8	35.0	35.2	35.4	35.6	35.8	36.0	36.2	36.4	36.6	36.8	37.0	37.2	37.4	37.6	37.8	38.0	38.2	38.4	38.6	38.8	39.0	39.2	39.4	39.6	39.8	40.0	40.2	40.4	40.6	40.8	41.0	41.2	41.4	41.6	41.8	42.0	42.2	42.4	42.6	42.8	43.0	43.2	43.4	43.6	43.8	44.0	44.2	44.4	44.6	44.8	45.0	45.2	45.4	45.6	45.8	46.0	46.2	46.4	46.6	46.8	47.0	47.2	47.4	47.6	47.8	48.0	48.2	48.4	48.6	48.8	49.0	49.2	49.4	49.6	49.8	50.0	50.2	50.4	50.6	50.8	51.0	51.2	51.4	51.6	51.8	52.0	52.2	52.4	52.6	52.8	53.0	53.2	53.4	53.6	53.8	54.0	54.2	54.4	54.6	54.8	55.0	55.2	55.4	55.6	55.8	56.0	56.2	56.4	56.6	56.8	57.0	57.2	57.4	57.6	57.8	58.0	58.2	58.4	58.6	58.8	59.0	59.2	59.4	59.6	59.8	60.0	60.2	60.4	60.6	60.8	61.0	61.2	61.4	61.6	61.8	62.0	62.2	62.4	62.6	62.8	63.0	63.2	63.4	63.6	63.8	64.0	64.2	64.4	64.6	64.8	65.0	65.2	65.4	65.6	65.8	66.0	66.2	66.4	66.6	66.8	67.0	67.2	67.4	67.6	67.8	68.0	68.2	68.4	68.6	68.8	69.0	69.2	69.4	69.6	69.8	70.0	70.2	70.4	70.6	70.8	71.0	71.2	71.4	71.6	71.8	72.0	72.2	72.4	72.6	72.8	73.0	73.2	73.4	73.6	73.8	74.0	74.2	74.4	74.6	74.8	75.0	75.2	75.4	75.6	75.8	76.0	76.2	76.4	76.6	76.8	77.0	77.2	77.4	77.6	77.8	78.0	78.2	78.4	78.6	78.8	79.0	79.2	79.4	79.6	79.8	80.0	80.2	80.4	80.6	80.8	81.0	81.2	81.4	81.6	81.8	82.0	82.2	82.4	82.6	82.8	83.0	83.2	83.4	83.6	83.8	84.0	84.2	84.4	84.6	84.8	85.0	85.2	85.4	85.6	85.8	86.0	86.2	86.4	86.6	86.8	87.0	87.2																																																	

The image shows a document page that is severely degraded. It contains a large table with approximately 10 columns and 15 rows. The table is rendered as a grid of lines, but the text within the cells is completely illegible due to extreme noise and low contrast. The overall appearance is that of a very poor quality scan of a document.











Faint, illegible text, possibly bleed-through from the reverse side of the page.

Handwritten text or signature, possibly a date or name.

Handwritten text or signature, possibly a date or name.



1. The first part of the document discusses the importance of maintaining accurate records of all transactions and activities. It emphasizes that proper record-keeping is essential for transparency and accountability, particularly in financial reporting and auditing. The text notes that incomplete or inconsistent records can lead to misunderstandings, disputes, and potential legal consequences.

2. The second part of the document outlines the various methods and tools used to collect and analyze data. It mentions the use of surveys, interviews, and focus groups to gather qualitative information, as well as statistical software and data visualization techniques for quantitative analysis. The importance of ensuring the reliability and validity of the data sources is highlighted throughout this section.

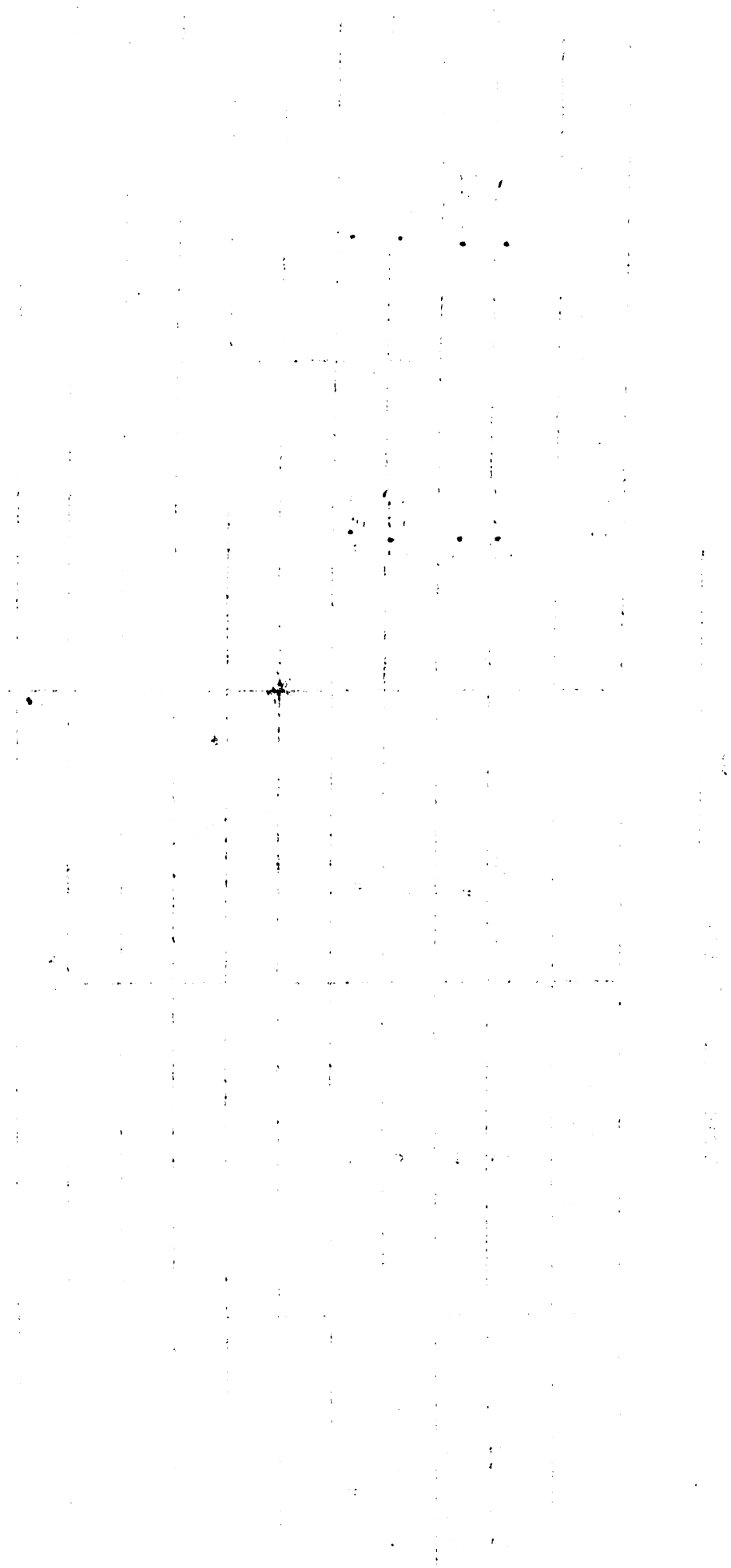
3. The third part of the document focuses on the ethical considerations surrounding data collection and analysis. It discusses the need to obtain informed consent from participants, to protect their privacy, and to use the data responsibly. The text also addresses the potential for bias and the importance of maintaining objectivity and integrity throughout the research process.

4. The fourth part of the document provides a detailed overview of the research methodology employed in the study. It describes the selection of the research site, the recruitment of participants, and the specific procedures used for data collection and analysis. This section aims to provide a clear and replicable account of the research process.

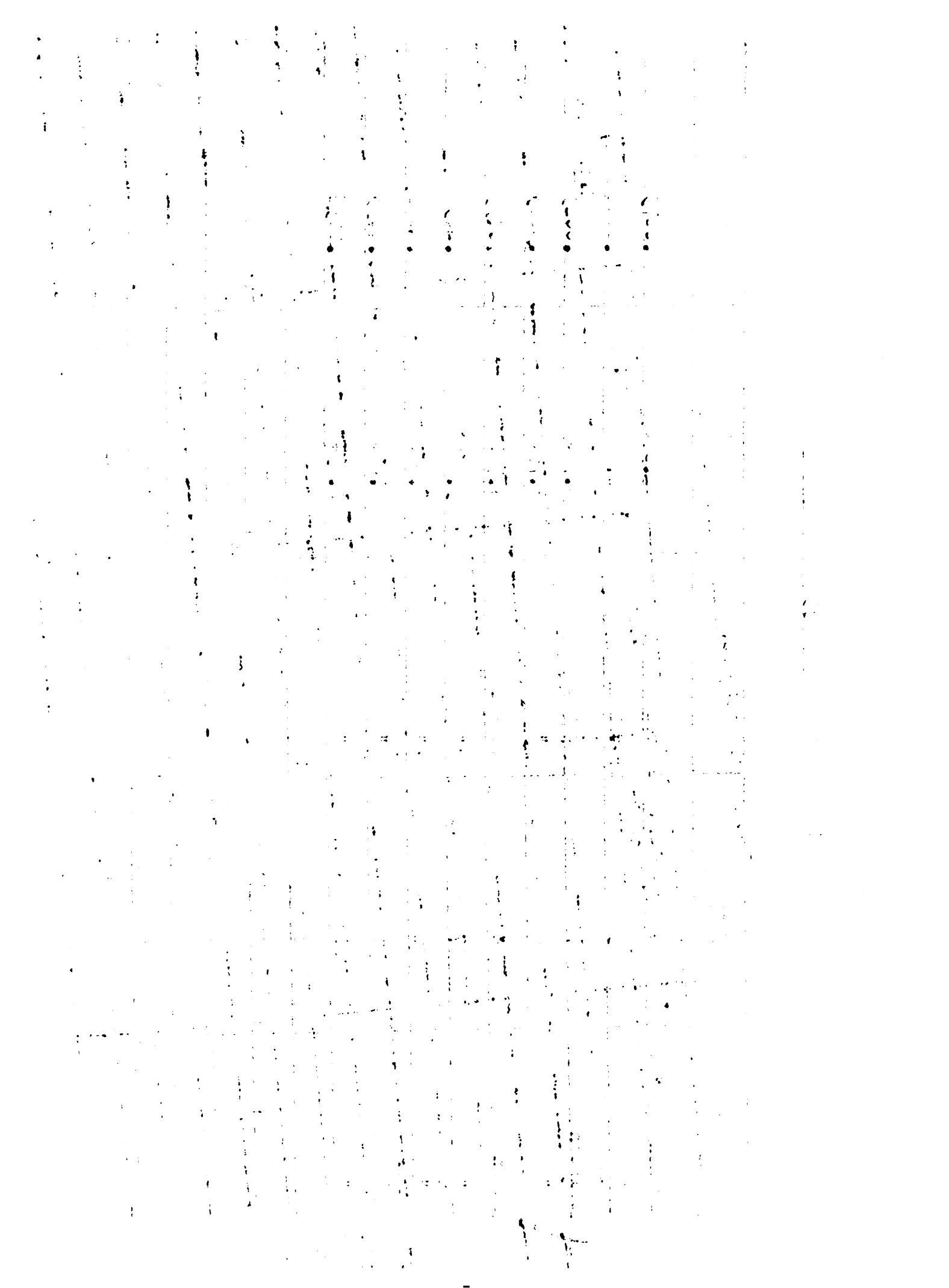
5. The fifth part of the document presents the results of the study, organized into several key findings. Each finding is supported by relevant data and analysis, and is discussed in the context of the research objectives and existing literature. The text highlights both the strengths and limitations of the study's findings.

6. The sixth part of the document discusses the implications of the research findings for practice and policy. It explores how the results can be used to inform decision-making and to address the issues identified in the study. The text also suggests areas for further research and provides recommendations for future studies.

7. The final part of the document is a conclusion that summarizes the main points of the research and reiterates the significance of the findings. It expresses the author's appreciation for the support and assistance provided by the research team and acknowledges any limitations of the study.

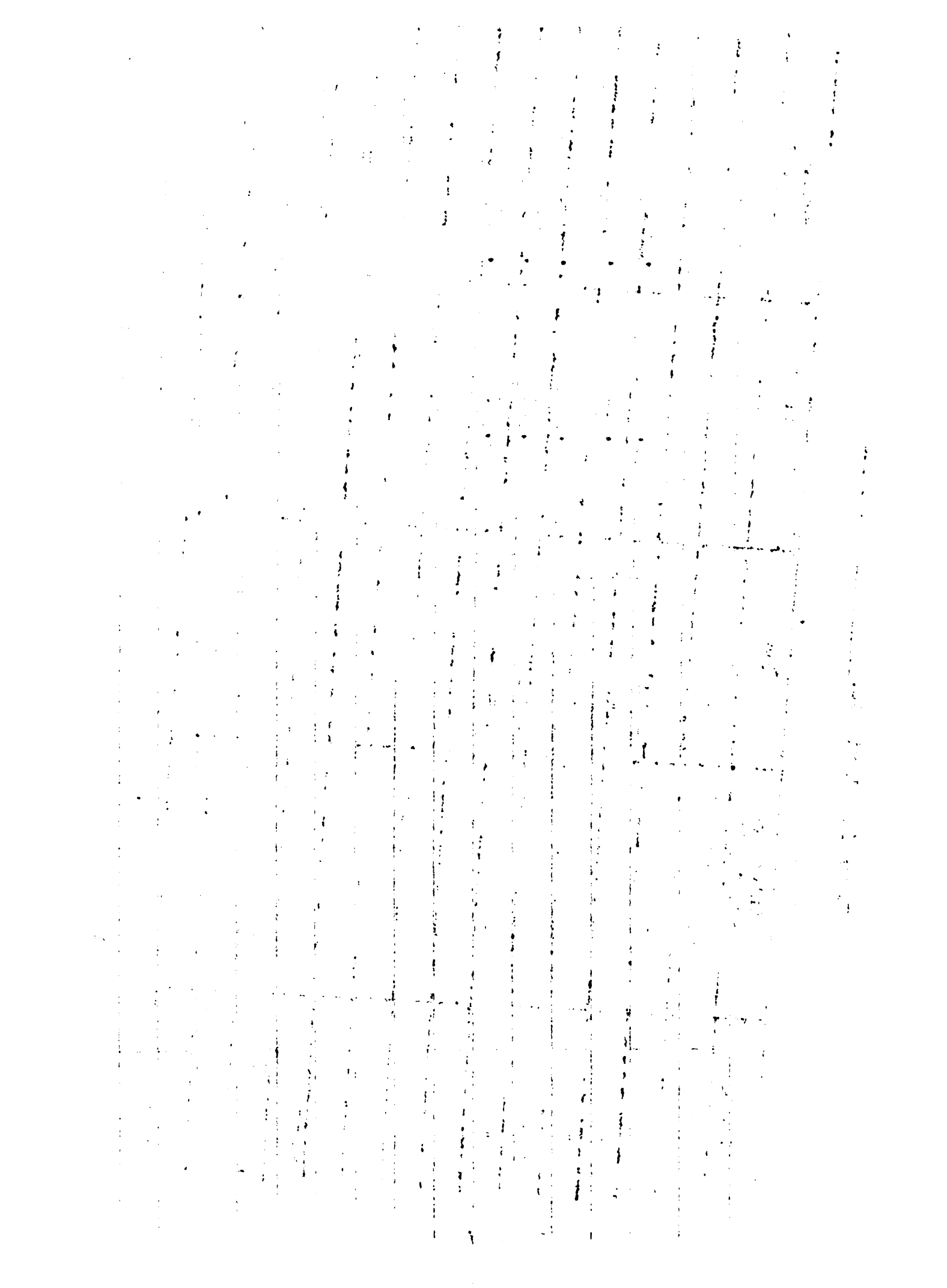










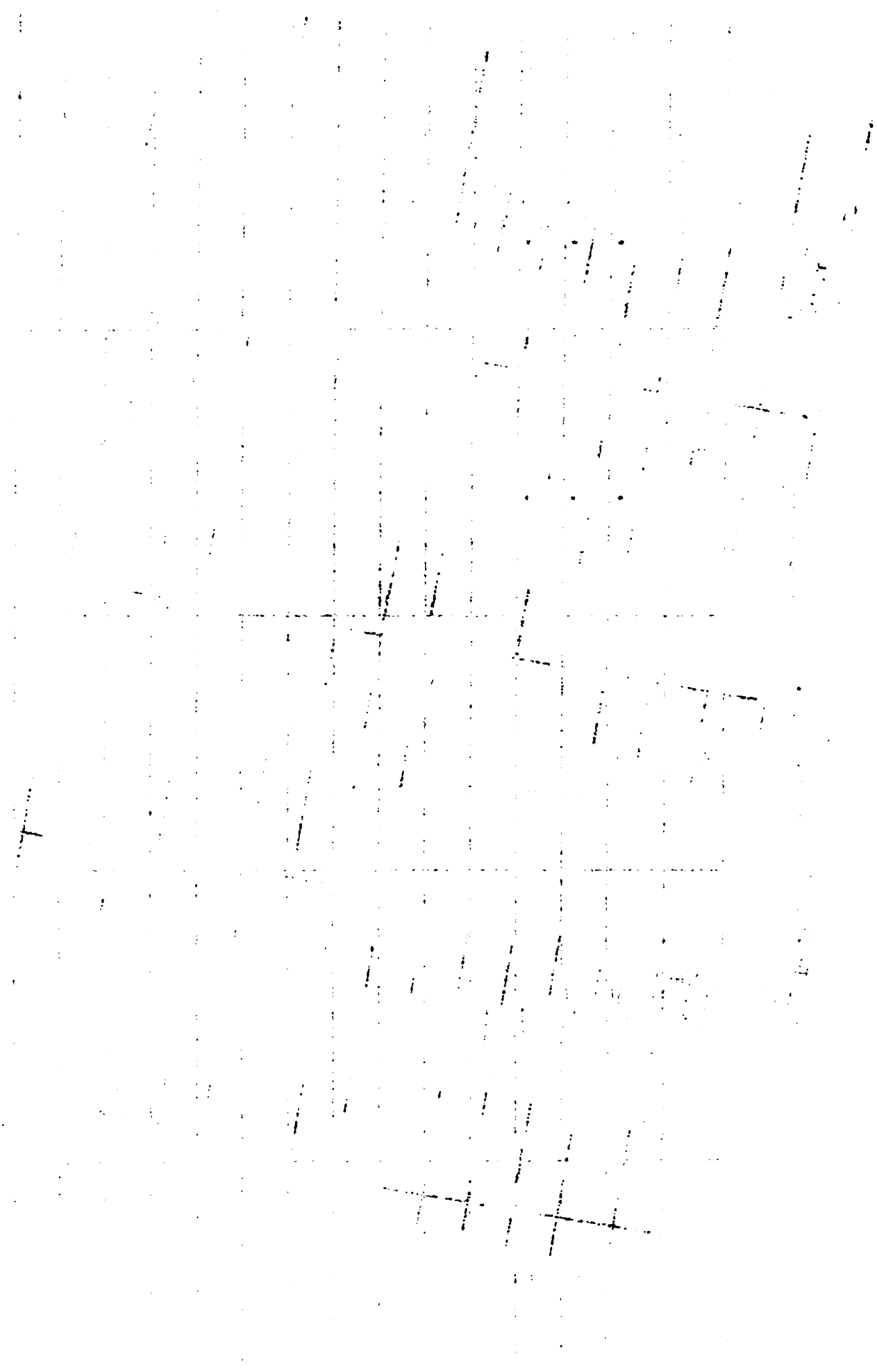












1. The first part of the document discusses the importance of maintaining accurate records of all transactions. It emphasizes that every entry should be supported by a valid receipt or invoice to ensure transparency and accountability.

2. The second section outlines the procedures for handling discrepancies between the recorded amounts and the actual cash received. It states that any such variance must be investigated immediately and reported to the appropriate authority.

3. The third part of the document details the process of reconciling the accounts at the end of each month. It requires that the total of the recorded transactions be compared against the bank statements to identify any differences.

4. The fourth section describes the requirements for the physical custody of the cash. It mandates that all funds must be stored in a secure, fireproof safe and that access to the safe is restricted to authorized personnel only.

5. The fifth part of the document discusses the frequency of audits. It specifies that internal audits should be conducted quarterly, while external audits should be performed annually by an independent accounting firm.

6. The sixth section outlines the consequences of non-compliance with these procedures. It states that any employee found to be involved in a discrepancy or audit failure will be subject to disciplinary action, up to and including termination.

7. The seventh part of the document provides a list of the key personnel responsible for each aspect of the financial management process, including the Treasurer, the Accounting Manager, and the Internal Auditor.

8. The eighth section of the document discusses the importance of maintaining up-to-date financial records. It states that all records should be retained for a minimum of seven years to facilitate future audits and legal proceedings.

9. The ninth part of the document describes the process of reporting financial results to the Board of Directors. It requires that a comprehensive financial statement be prepared and presented at each quarterly meeting.

10. The tenth and final section of the document discusses the importance of maintaining accurate records of all transactions. It emphasizes that every entry should be supported by a valid receipt or invoice to ensure transparency and accountability.



Type of Surface Earth

Trunk Line Route No.	County	Maintenance Section No.	Mileage	Vehicle Mile Cost	Vehicle Section Cost
12	Mackinac	6	6,000	.0154	.0924
12	Mackinac	7	5,500	.0176	.0968
12	Mackinaw	2	6,000	.0042	.0252
14	Hillsdale	2	7,500	.0036	.0270
14	Lenawee	1	6,000	.0073	.0438
20	Lake	2	6,500	.015	.0975
15	Delta	13	6,000	.0103	.0618
15	Delta	14	5,990	.0023	.01377
80	Lenawee	1	9,000	.003	.027
80	Lenawee	2	7,000	.0045	.0315
80	Lenawee	3	3,000	.0110	.033
		Total	68,490		.54977



Type of Surface Gravel

Trunk Line Route No.	County	Maintenance Section No.	Mileage	Vehicle Mile Cost	Vehicle Section Cost
10	Bay	3	7,500	.016	.120
10	Bay	4	8,000	.011	.088
10	Arenac	2	6,750	.004	.0270
10	Arenac	1	3,500	.016	.0560
10	Iosco	6	4,500	.0147	.06615
10	Iosco	2	7,800	.0057	.0444
10	Alcona	5	6,000	.005	.030
10	Alcona	4	7,750	.008	.0620
10	Presque Isle	5	11,000	.0018	.0198
10	"	4	6,000	.0063	.0378
10	"	3	7,750	.0094	.0728
11	Mason	4	6,400	.0008	.00512
11	Mason	5	5,000	.0014	.007
11	Mason	6	5,000	.0014	.007



Type of Surface Gravel

Trunk Line Route No.	County	Maintenance Section No.	Mileage	Vehicle Mile Cost	Vehicle Section Cost
11	Manistee	5	7,500	.0057	.0427
11	Benzie	Twp 1	5,032	.007	.0352
11	Grand Traverse	1	9,000	.003	.027
11	"	2	6,700	.0046	.0308
11	"	4	8,400	.002	.0168
11	Antrim	4	5,049	.0022	.0130
11	Charlevoix	1	11,606	.0046	.05338
12	Chippewa	2	5,500	.0015	.0082
12	Chippewa	3	5,000	.009	.045
12	Chippewa	4	5,000	.0044	.0220
12	Mackinac	11	12,500	.0045	.0552
12	Mackinac	10	10,000	.0043	.043
12	Mackinac	9	4,000	.014	.056
12	Menominee	2	3,500	.0033	.01155
12	Menominee	3	6,000	.008	.048

1. The first part of the document discusses the importance of maintaining accurate records of all transactions. It emphasizes that this is crucial for ensuring the integrity of the financial statements and for providing a clear audit trail.

2. The second part of the document outlines the specific procedures that should be followed when recording transactions. This includes the use of double-entry bookkeeping and the requirement that every entry must be supported by a valid receipt or invoice.

3. The third part of the document addresses the issue of reconciling the books. It states that the total debits must always equal the total credits, and any discrepancies should be investigated immediately to identify the source of the error.

4. The fourth part of the document discusses the role of the accounting department in providing timely and accurate information to management. It notes that this information is essential for making informed decisions about the company's operations and financial health.

5. The fifth part of the document concludes by reiterating the importance of adherence to these procedures and the need for continuous monitoring and improvement of the accounting system.

6. The sixth part of the document provides a detailed explanation of the accounting cycle, which consists of eight steps: identifying the accounting entity, choosing the accounting method, analyzing and recording the business events, adjusting the accounts, preparing the financial statements, and closing the books.

7. The seventh part of the document discusses the impact of accounting on the company's overall performance. It explains how accurate accounting can help identify areas of inefficiency and provide a clear picture of the company's financial position.

8. The eighth part of the document addresses the legal requirements for accounting. It notes that companies are often required to maintain certain records for a specific period of time and to provide them to tax authorities upon request.

9. The ninth part of the document discusses the role of accounting in the broader context of business. It explains that accounting is not just a technical function but a strategic one that can provide valuable insights into the company's operations.

10. The tenth part of the document concludes by summarizing the key points discussed in the document and emphasizing the importance of a strong accounting system for the success of any business.

11. The eleventh part of the document provides a detailed overview of the different types of accounting, including financial accounting, management accounting, and cost accounting. It explains the unique characteristics and purposes of each type.

12. The twelfth part of the document discusses the importance of internal controls in the accounting process. It notes that these controls are designed to prevent errors and fraud and to ensure the accuracy and reliability of the financial information.

13. The thirteenth part of the document addresses the issue of the accounting profession. It discusses the role of accountants and the importance of maintaining high ethical standards and professional competence.

14. The fourteenth part of the document discusses the impact of technology on accounting. It notes that the use of computers and software has revolutionized the accounting process, making it more efficient and accurate.

15. The fifteenth part of the document concludes by discussing the future of accounting. It notes that as technology continues to advance, the role of accountants will evolve, and they will need to stay up-to-date on the latest developments in the field.

16. The sixteenth part of the document provides a detailed explanation of the accounting equation, which states that assets equal liabilities plus equity. It explains how this equation is used to ensure the balance of the accounting system.

17. The seventeenth part of the document discusses the importance of the accounting cycle in the overall accounting process. It notes that following these steps ensures that all transactions are recorded and that the books are balanced.

18. The eighteenth part of the document addresses the issue of the accounting period. It explains that the accounting period is the time interval over which the accounting system is used to record transactions and calculate financial results.

19. The nineteenth part of the document discusses the role of the accounting department in the company's internal control system. It notes that accountants are responsible for identifying and controlling risks and ensuring the accuracy of the financial information.

20. The twentieth part of the document concludes by discussing the importance of the accounting system in the overall success of the company. It notes that a strong accounting system is essential for providing accurate and timely financial information to management and stakeholders.

21. The twenty-first part of the document provides a detailed overview of the accounting system, including the different components and how they work together to provide a complete picture of the company's financial performance.

22. The twenty-second part of the document discusses the importance of the accounting system in the overall business strategy. It notes that the accounting system provides the data needed to make informed decisions about the company's future.

23. The twenty-third part of the document addresses the issue of the accounting system's security. It notes that the accounting system is a critical part of the company's information system and must be protected from unauthorized access and data loss.

24. The twenty-fourth part of the document discusses the role of the accounting system in the company's compliance with laws and regulations. It notes that the accounting system provides the data needed to ensure that the company is following all applicable rules and standards.

25. The twenty-fifth part of the document concludes by discussing the importance of the accounting system in the overall success of the company. It notes that a strong accounting system is essential for providing accurate and timely financial information to management and stakeholders.

Type of Surface Gravel

Trunk Line Route No.	County	Maintenance Section No.	Mileage	Vehicle Mile Cost	Vehicle Section Cost
12	Dickinson	1	6,555	.008	.0524
12	Dickinson	10	2,157	.012	.0258
12	Iron	1	21,600	.0036	.0777
12	Gogebic	3	27,600	.014	.3864
14	Clare	1	7,500	.0110	.0825
14	Clare	2	11,000	.0104	.1144
15	Menominee	7	3,500	.013	.0455
15	Menominee	8	4,000	.0088	.0352
15	Menominee	11	5,300	.0024	.0127
15	Menominee	12	6,600	.0018	.01188
15	Baraga	1	8,000	.021	.168
16	Livingston	4	5,200	.0073	.0379
16	Livingston	3	5,200	.0045	.0234
16	Livingston	1	6,000	.0017	.0102





Type of Surface Gravel

Trunk Line Route No.	County	Maintenance Section No.	Mileage	Vehicle Mile Cost	Vehicle Section Cost
16	Ingham	9	6,800	.003	.0204
16	Ingham	7	5,600	.0043	.0240
16	Eaton	1	6,000	.005	.030
16	Ingham	9	6,800	.003	.02040
16	Ingham	7	5,600	.0043	.02400
16	Eaton	1	6,000	.005	.03000
16	Ionia	1	5,000	.0063	.03150
16	Ionia	2	5,000	.007	.03500
16	Ionia	6	4,500	.010	.04500
16	Ionia	7	6,000	.005	.03000
16	Kent	17	7,600	.014	.10640
16	Kent	16	4,200	.010	.04200
16	Oakland	2	4,181	.002	.00836
16	Oakland	3	3,199	.0023	.00735

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Type of Surface Gravel

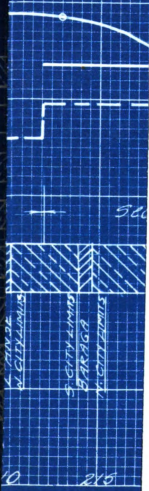
Trunk Line Route No.	County	Maintenance Section No.	Mileage	Vehicle Mile Cost	Vehicle Section Cost
16	Oakland	4	4,261	.0025	.01065
16	Oakland	5	2,557	.0028	.00799
16	Livingston	5	4,700	.0005	.00235
17	Calhoun	2	9,600	.002	.0192
17	Kalamazoo	4	6,500	.0027	.01755
17	Van Buren	4	7,800	.002	.0156
17	Van Buren	3	4,000	.002	.008
20	Osceola	4	8,000	.0048	.0384
20	Osceola	5	15,000	.0022	.0330
20	Mason	8	6,500	.0052	.0338
20	Mason	7	6,000	.0046	.0276
21	Genesee	4	7,600	.0033	.02508
24	Mecosta	8	7,964	.0054	.043
24	Mecosta	7	5,154	.0013	.0067

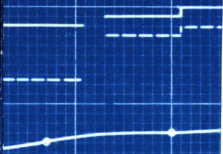


Type of Surface Gravel

Trunk Line Route No.	County	Maintenance Section No.	Mileage	Vehicle Mile Cost	Vehicle Section Cost
24	Newaygo	11	8.500	.0061	.0518
24	Newaygo	10	8.750	.0065	.05687
24	Newaygo	7	6.500	.0074	.0481
29	Branch	4	11.800	.0075	.0885
29	Branch	5	8.400	.0022	.01848
29	Calhoun	7	6.700	.0023	.01541
29	Calhoun	8	7.750	.0063	.048825
29	Eaton	8	4.700	.0033	.01551
29	Eaton	7	3.600	.0054	.01944
29	Eaton	6	4.600	.0048	.02208
29	Eaton	5	3.000	.0053	.0159
29	Eaton	11	1.854	.0036	.00667
34	Lenawee	3	11.000	.0043	.0473
34	Lenawee	4	5.000	.0022	.0110

AMP  
 RND  
 RTH  
 AVEL  
 MACA  
 MACA  
 CON.  
 CON.  
 PICK





TI

EARTH

GRAVEL

W. B. MAR 580.4      580.5      5



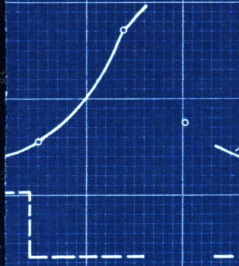
GEM. CO.  
 BIT. CO.  
 BRICK

Inter T.L. #  
 5 City Limits  
 Inter 9. 1/2  
 5 City Limits

TOTAL

125      130

EUGENE DELTA "Profile" CROSS SECTION CP



W.F. - 500.6



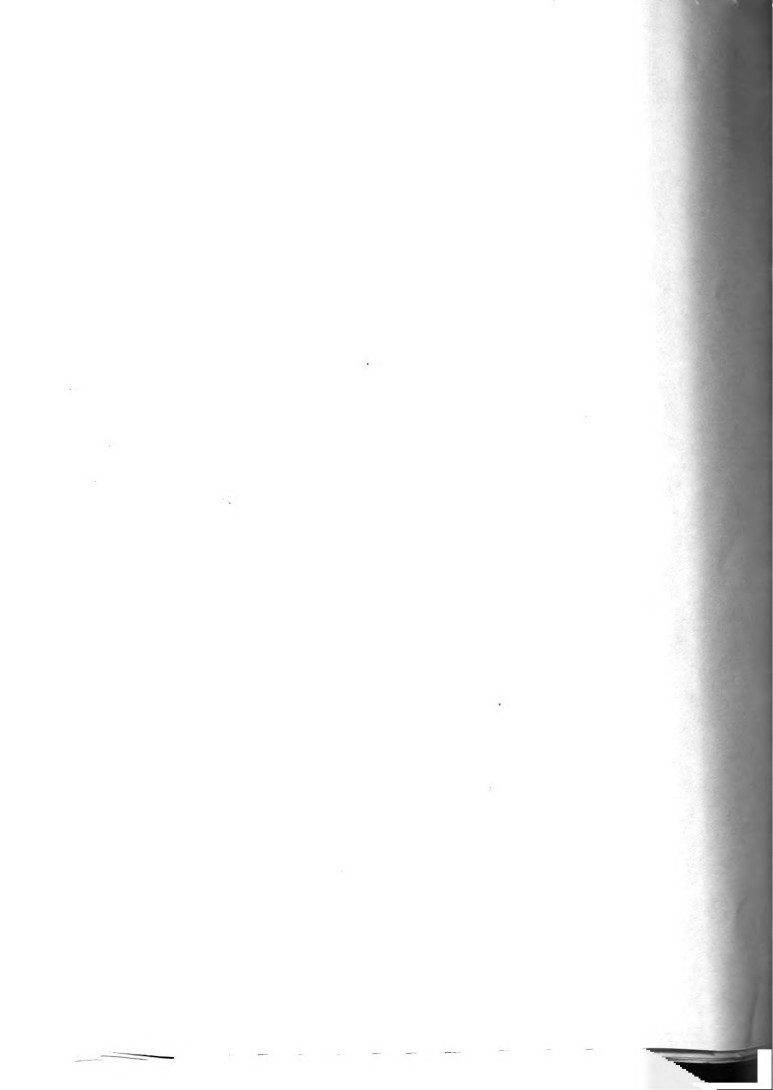
CEN  
 BI  
 E  
 CR

Cornstock  
 F. City Limits  
 Kalamazoo  
 Trailer Tr #13  
 W. City Limits

135

140











1. The first part of the document discusses the importance of maintaining accurate records of all transactions. It emphasizes that this is crucial for ensuring the integrity of the financial statements and for providing a clear audit trail. The text notes that any discrepancies or errors in the records can lead to significant complications during an audit and may result in the disallowance of certain expenses.

2. The second part of the document addresses the issue of proper documentation. It states that all receipts, invoices, and other supporting documents must be retained for a minimum of three years. This requirement is intended to ensure that all necessary evidence is available to substantiate the reported amounts. The document also highlights the importance of organizing these documents in a systematic and accessible manner to facilitate the audit process.

3. The third part of the document focuses on the need for transparency and communication. It advises that any changes to the accounting policies or procedures should be clearly documented and communicated to all relevant parties. This includes providing a detailed explanation of the reasons for the changes and the impact they will have on the financial statements. The text also stresses the importance of maintaining open lines of communication with the auditor throughout the process to address any questions or concerns promptly.

4. The fourth part of the document discusses the role of internal controls in preventing errors and fraud. It notes that a strong system of internal controls is essential for ensuring the accuracy and reliability of the financial information. This includes implementing segregation of duties, requiring proper authorization for transactions, and conducting regular internal audits. The document also emphasizes the importance of monitoring and evaluating the effectiveness of these controls on an ongoing basis.

5. The fifth and final part of the document provides a summary of the key points discussed. It reiterates the importance of accurate record-keeping, proper documentation, transparency, and strong internal controls. The text concludes by stating that adherence to these principles is not only a legal requirement but also a best practice for any organization seeking to maintain the highest standards of financial integrity and accountability.

Type of Surface      Cement Concrete

Trunk Line Route No.	County	Maintenance Section No.	Mileage	Vehicle Mile Cost	Vehicle Section Cost
10	Saginaw	3	8,900	.0046	.0409
10	Bay	1	3,000	.001	.003
10	Bay	2	6,400	.00148	.0096
15	Keweenaw	1	1,300	.0046	.00598
16	Kent	13	4,800	.0013	.00624
16	Wayne	3	11,702	.0026	.03042
16	Oakland	1	4,335	.0007	.00303
17	Wayne	4	21,561	.0018	.0388
17	Washtenaw	2	2,826	.0005	.00141
17	Kalamazoo	7	9,500	.0003	.0028
17	Van Buren	2	4,400	.0012	.00528
		<b>Total</b>	<b>78,722</b>		<b>.28712</b>



FINAL SUMMARY OF STUDY

Type of Surface	Total Mileage	Total Vehicle Type Cost	Vehicle Mile Cost
Earth	68.490	\$ .54977	.008027
Gravel	677.844	3.89309	.005743
Water Bound Macadam	111.276	.67274	.006045
Bituminous Macadam	16.500	.05940	.003600
Cement Concrete	78.724	.28712	.003647
Bituminous Concrete	10.723	.01941	.001810



100

100

100

100

No. Vehicles  
4500  
AV Cost Per mile  
2000  
Vehicle mile Cost  
0.15

3000  
2000  
1500  
1000  
005

No. Vehicles Per 24 Hours

TYPE 5 - MILES

0 500

AV maintenance

Vehicle

ARTH 00

PAVEL 15.4

MAC 11.7 5TL

MAC 0.4 \* 52

CON 0.0

CON 0.7

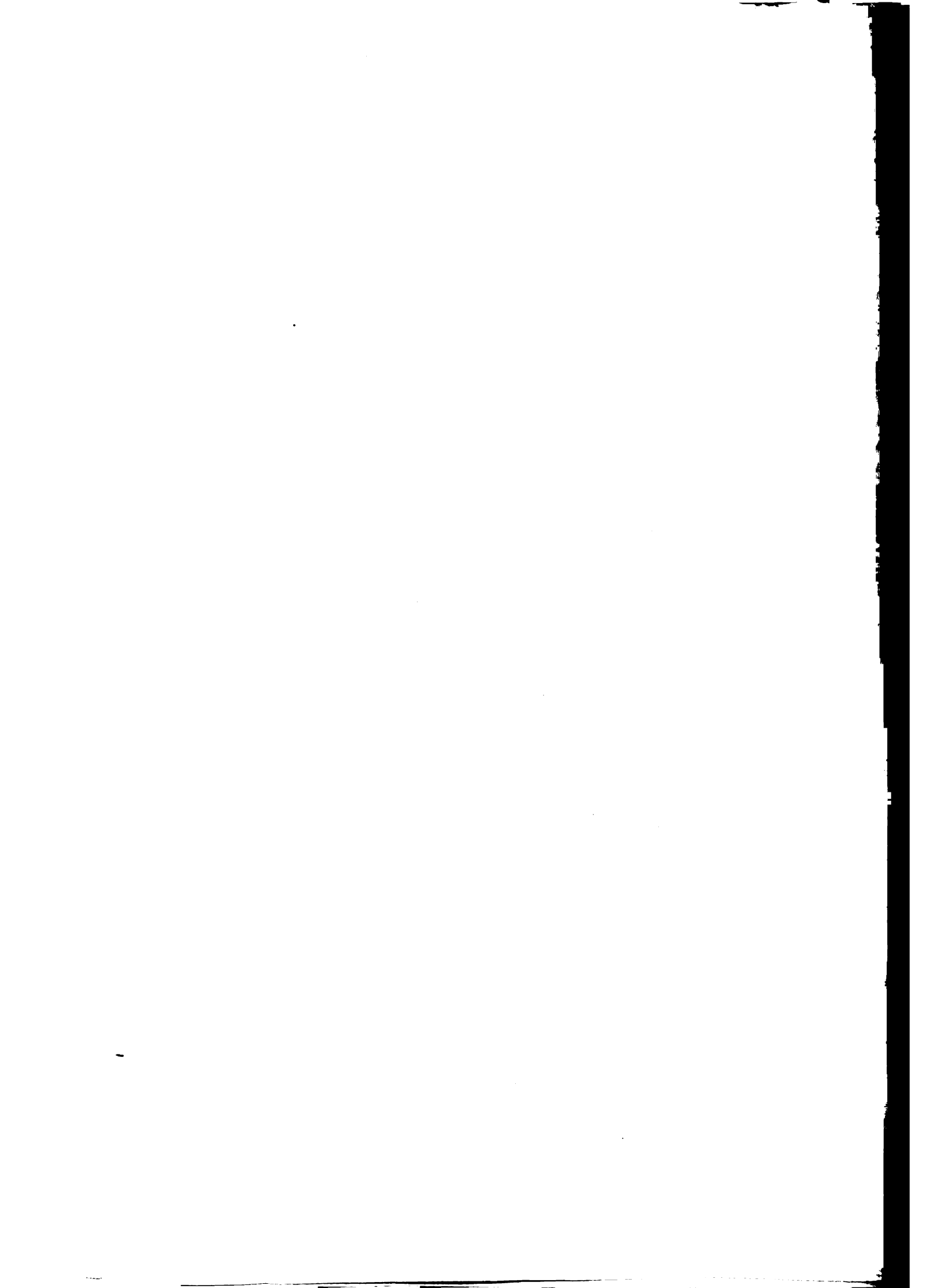
TICK 1.0

29.3

900.4 900.3

Ohio Michigan Jasper Fairfield Ohio limits Erie TL #34 Harrison City limits

0 5 10 15



No Vehicles

4000

3000

2000

1000

PES

TH



MILES  
5.3

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35.1

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#3

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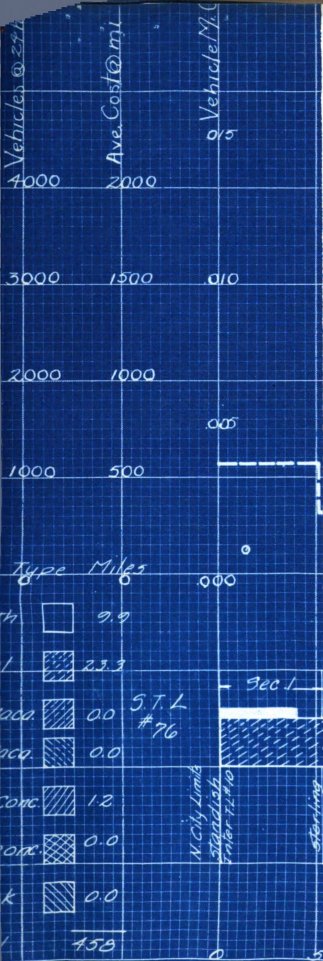
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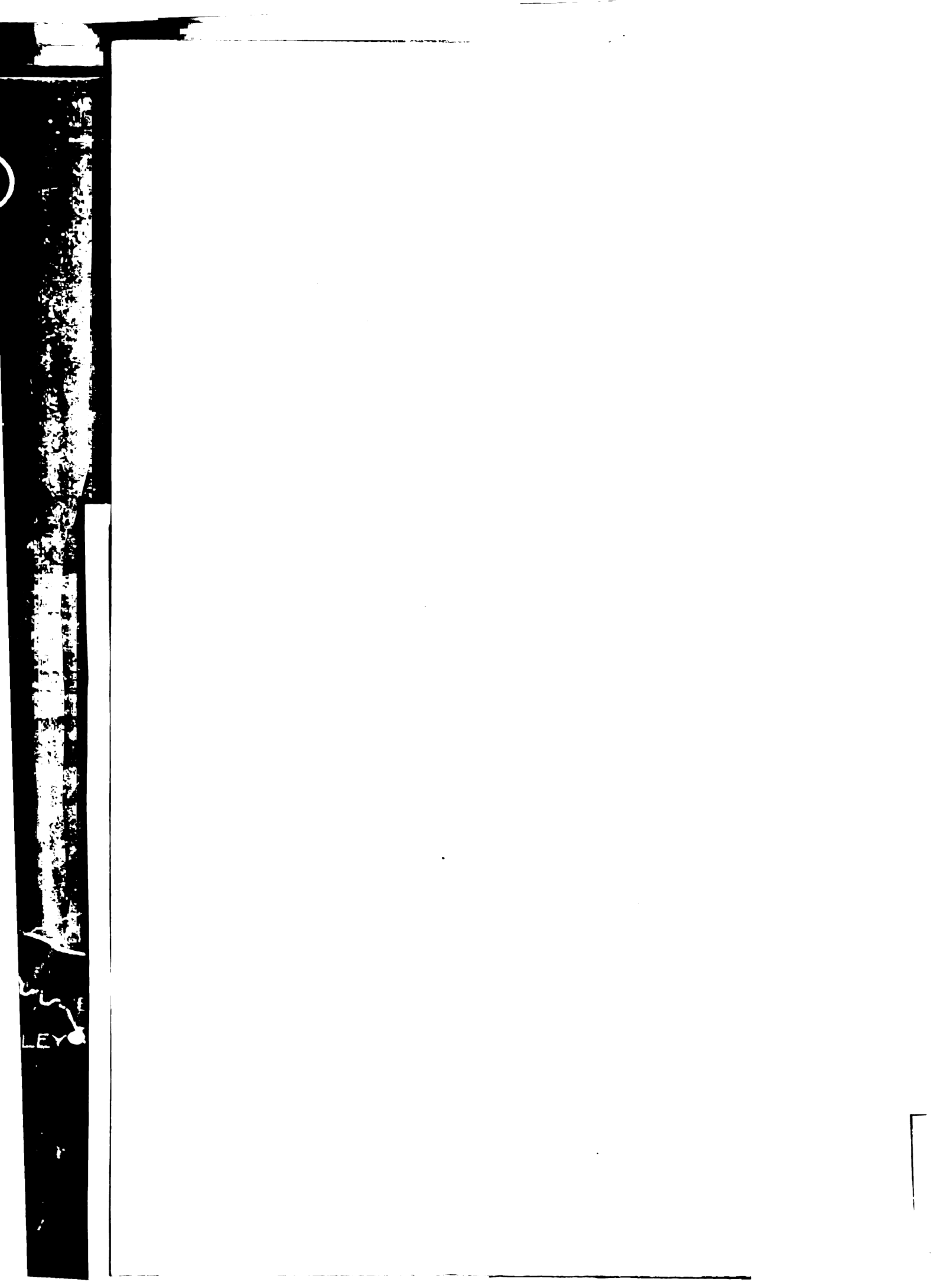
500.4

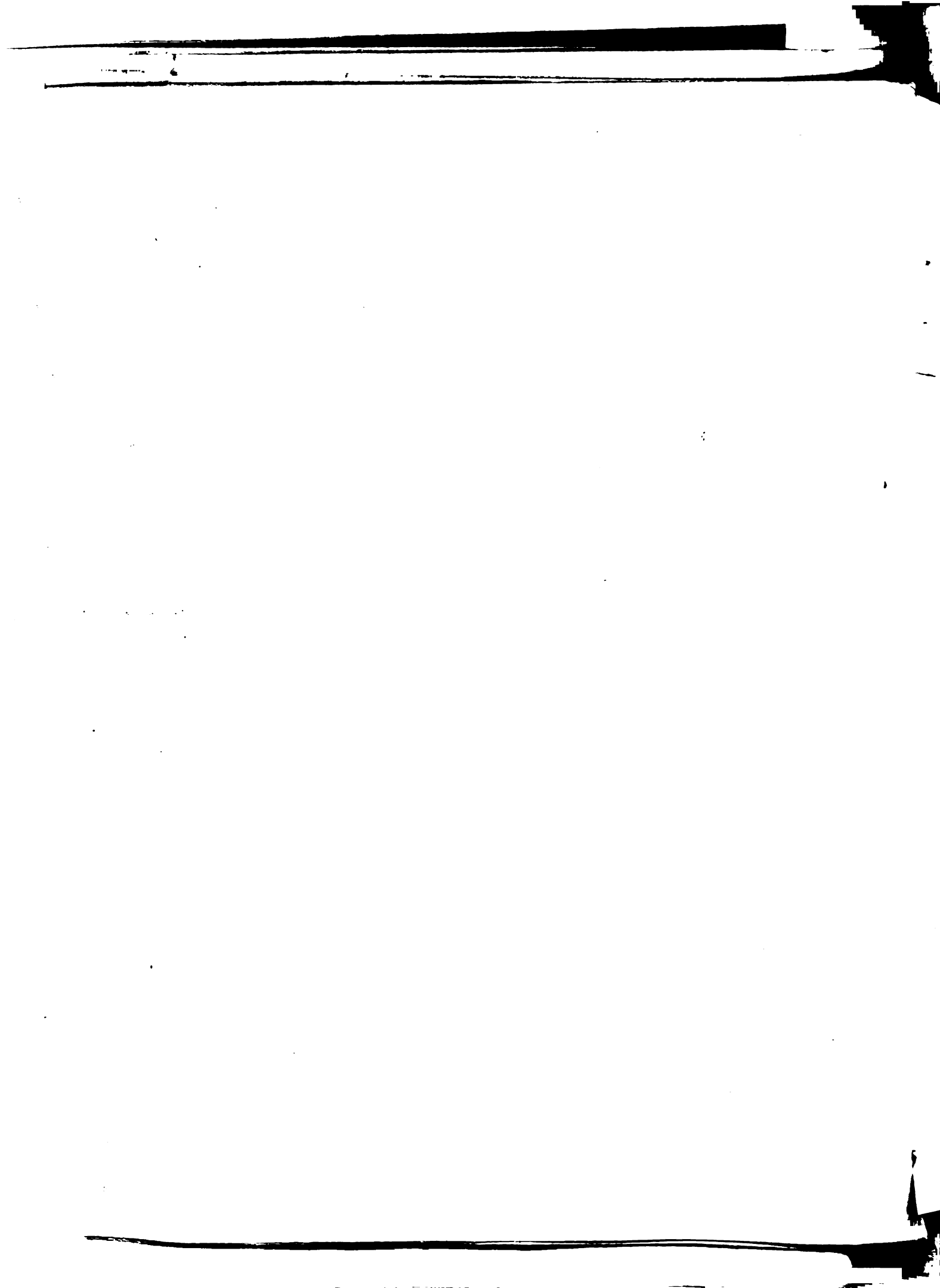
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360

365









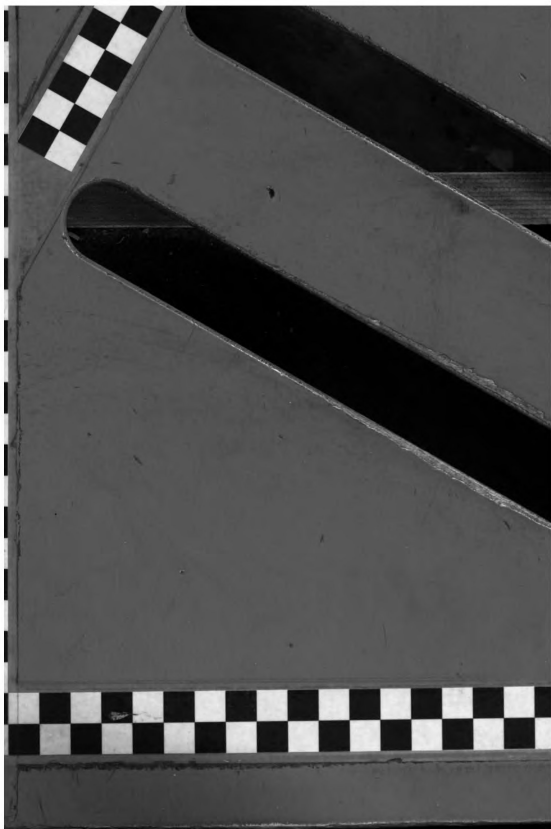
FROM THE



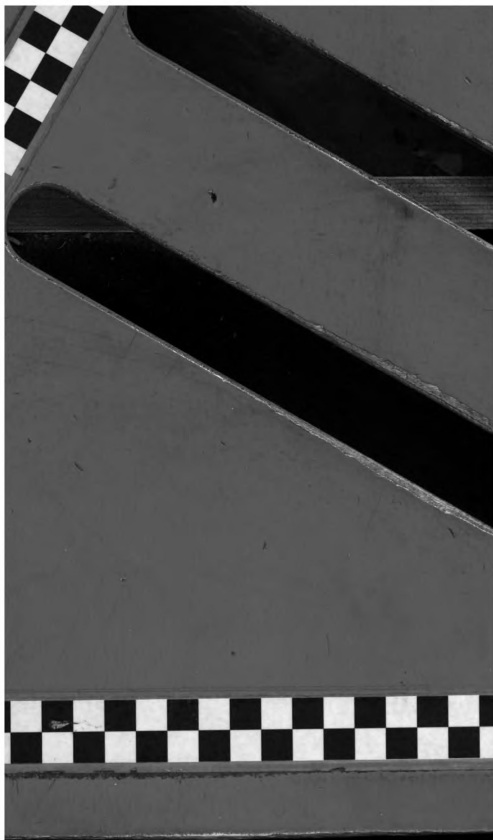
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MICHIGAN STATE UNIVERSITY LIBRARIES



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