

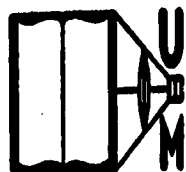
DOCTORAL DISSERTATION SERIES

TITLE A LAND USE SEQUENCE Study
OF THE DORT HIGHWAY AREA, FLINT,
MICHIGAN

AUTHOR NOLAN RALL HEIDEN

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NOLAND RALL HEIDEN

1949

A LAND USE SEQUENCE STUDY
OF THE DORT HIGHWAY AREA, FLINT, MICHIGAN

by
Noland Rall Heiden

A dissertation submitted in partial fulfillment
of the requirements for the degree of
Doctor of Philosophy in the
University of Michigan
1949

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PREFACE

"Now to the Flint we will return,
For something more is there to learn.
By the old treaty of the nation,
There was there made a reservation
Of eleven sections of good land,
For half breeds of Flint river's band;
To the section lying east and south,
Just above Thread river's mouth,
The title to Edward Campeau went,
A half breed of Indian descent.
He built a house for the Indian trade;
No other improvements there were made.
The trading house they occupied,
And with them here, I did reside.
Two families near that place did stay;
The third was seven miles away.
Since then there's been a great accession
To that very scanty population;
For the place that was then esteemed so light
Has since become Flint city's site."
-Judge Albert Miller

Flint is a young city which has passed through a period of rapid expansion in response to the impact of a great industry, the automobile. While still feeling the pains of past uncontrolled growth, Flint today is looking forward to new horizons. These horizons can be made brighter if some thought is given to past development. This study is intended to show how the area around one industrial plant developed. It is hoped that the study may shed a little light on what may be expected, in terms of land use, when a new plant is established on the outskirts of an urban area. Emphasis is placed on the fact that this represents but one study and has been designed to measure the plant's influence upon the immediate surrounding area.

The study was made possible through research fellowships in the Metropolitan Community Seminar at the University of Michigan. The writer wishes to here express his appreciation for the great consideration shown by the faculty of this Seminar. Professor Robert B. Hall of the Geography Department of the University of Michigan has been very helpful in his encouragement and his willingness to discuss the various problems as they arose. Professor Stanley D. Dodge of the Geography Department and Professor Amos H. Hawley of the Sociology Department deserve much credit for their kind assistance in helping organize the study and in giving helpful suggestions as it progressed.

The writer also wishes to express his appreciation for the cooperation received from the numerous Flint city employees in the collection of the necessary data. It was with the kind permission of Mr. Jack Mosier, Flint's City Planner, that the 1940 Population Distribution Map of Flint was incorporated within this study. Credit is also due the members of the City Inspection Department for permitting access to their building and inspection reports and to their Sanborn Insurance Atlases. The City Assessor, Mr. Sherff, and his staff are to be thanked for their permission to use office space while going through the assessment rolls. Mr. Moss, Director of Public Works, was very helpful in the acquisition of data for storm and sanitary sewers and

streets. Grateful acknowledgement is also given to the staff of Flint's Main Library for their help in locating needed historical maps and atlases.

Holand R. Heiden

Ann Arbor, Michigan
April 1949.

TABLE OF CONTENTS

Chapter	Page
I. INTRODUCTION.....	1
II. THE DEVELOPMENT OF FLINT.....	11
III. LAND USE SEQUENCE IN THE DORT HIGHWAY AREA BEFORE THE CONSTRUCTION OF THE A.C. PLANT.....	31
IV. LAND USE SEQUENCE IN THE DORT HIGHWAY AREA AFTER THE CONSTRUCTION OF THE A.C. PLANT.....	44
V. CONCLUSIONS.....	85
BIBLIOGRAPHY.....	106

MAPS AND FIGURES

Map No.	Page
1. Dort Highway Area, 1907.....	10
2. Population Distribution, City of Flint, 1859..	21
3. Population Distribution, Flint City, 1873.....	23
4. Population Distribution, Flint City, 1917.....	25
5. Population Distribution, Flint City, 1924.....	26
6. Population Map (Flint), 1940.....	28
7. Population Distribution, Genesee County, 1940.	30
8. Land Use (Experimental Area), 1921.....	40
9. Land Use (Control Area), 1921.....	41
10. Land Use (Experimental Area), 1926.....	45
11. Land Use (Control Area), 1926.....	48
12. Land Use (Experimental Area), 1931.....	50
13. Land Use (Control Area), 1931.....	52
14. Land Use (Experimental Area), 1936,.....	54
15. Land Use (Control Area), 1936.....	55
16. Land Use (Experimental Area), 1941.....	57
17. Land Use (Control Area), 1941.....	58
18. Land Use (Experimental Area), 1946.....	60
19. Land Use (Control Area), 1946.....	61
20. Sanitary Sewers (Experimental Area).....	63
21. Sanitary Sewers (Control Area).....	65
22. Storm Sewers (Experimental Area).....	68
23. Storm Sewers (Control Area).....	70
24. Paved Streets (Experimental Area).....	72
25. Paved Streets (Control Area).....	73
26. Assessed Land Values, 1948. (Experimental Area)	75
27. Assessed Land Values, 1948 (Control Area).....	76
28. Dort Highway Area, 1948.....	84
29. Flint and Its Fringe, 1948.....	94
30. Trends in Assessed Land Values (Exp. Area),...	104
31. Trends in Assessed Land Values (Control Area).	105

Fig.

1. Population Curves, Flint, Metropolitan Area and Genesee County,.....	17
2. Population Growth in Flint City, 1855-1940.....	18
3. Land Ownership Experimental Area, 1907.....	32
4. Land Ownership Experimental Area, 1921.....	33
4a. Platting in Experimental and Control Areas....	36
5. Land Use Profile, Franklin Avenue.....	43
6. Semilogarithmic Curves Showing No. of Acres in Residential and Light Commercial.....	100
7. Semilogarithmic Curves Showing No. of Acres in Heavy Commercial and Industrial.....	101

Fig.	Page
8. Land Use in Experimental Area Showing No. of Acres and Percentage in Each Category,.....	102
9. Land Use in Control Area Showing No. of Acres and Percentage in Each Category.....	103

ILLUSTRATIONS

Residential Development North of Davison Road and West of Dort Highway.....	79
Typical Light Commercial Development Along Franklin Avenue North of Davison Road.....	80
Residential Development West of the A.C. Plant Between Davison Road and Kearsley Street.....	81
Residential Development West of the A.C. Plant Between Davison Road and Kearsley Street (Near Franklin Avenue).....	82
Residential Development West of Dort Highway Between Kearsley and Gilkey Creek.....	83
The New Chevrolet Assembly Plant Area.....	97

CHAPTER I

INTRODUCTION

There has, in the past, been a strong tendency to establish industrial sites without proper regard to the future growth of the surrounding area. In many cases this has led to a decline in the value of the original site. It has also led to the site becoming hemmed in by residential and commercial activities and has further left the city with a high density residential area oftentimes approaching near slum conditions. There exists a need for an understanding of how the development of a new industrial plant or locality may affect the land use of an urban area. The effect may be very local in nature, or it may extend throughout the city or metropolitan area. It also appears conceivable that the changes brought about may vary in degree and kind according to the size of the urban area and the size and type of the industry. Thus it seems that the construction of a large industrial plant in a small community would have a broader effect upon the land use pattern than would the same plant built in an area already possessing much industrial development. These, however, are questions which have yet to be answered through case studies.

It is therefore proposed to trace the sequence of land use in the vicinity of the A.C. Spark Plug Dort Highway Plant, in order to find out what may be expected to happen near the new Chevrolet Assembly Plant. A second and more general aim

is to see how the East Industrial Area, set up in 1920, has affected the growth of Flint. Answers have been attempted for such questions as the following: Did the plant follow or precede the establishment of transportation facilities? Did the plant serve as a center around which residences and commercial establishments were built? Was the plant's effect upon the use of the land subordinate to that of the lines of transportation? Did the plant have a blighting effect on residential development? Was it possible to create good residential sections near such disturbing elements as the Plant and the highway?

The study will be divided into four parts. First of all, there will be a survey of the development of Flint from 1859 to the present. This will deal mainly with the distribution of commerce, industry, and population, and, to a lesser degree, with the rate of population growth. The second and third major divisions will contain respectively an analysis of the land use sequence in the Dort Highway area before and after the construction of the A.C. Plant. The final section will be concerned with the application of this study's findings to the area about the new Chevrolet Plant.

The A.C. Plant is located near the center of the East Side Industrial Area. This area extends along the east side of Flint, and is a north-south strip of land east of and parallel to Dort Highway; it is approximately two and one quarter miles from the center of the city. The new Chevrolet Plant has been constructed in the southwestern corner of

Flint, adjacent to the Grand Trunk Railroad where it intersects the city limits just south of Swartz Creek. The new plant is just outside of the city limits and within two and one half miles of the center of the city.

Having stated the purpose and manner of presentation of the study, it would be well here to consider the method used in handling the problem. In tracing the effects of the A.C. Plant two areas were selected, similar in all major respects, except for the existence of a large industrial plant in one. In order to isolate this one main variable -- the A.C. Plant -- the following system of controls was established. First of all, similar surface drainage was a necessary condition. Throughout both areas selected, elevation varies very little especially east of Dort Highway (Maps 22 and 23). There is also a small creek, Gilkey Creek by name, which cuts through portions of both areas. This creek, plus what little variation in elevation does exist, offers very little resistance to urban development in either area. Next was the need to secure areas with a similar land use. In 1907, both areas were in farms ranging from 5 to 210 acres, and were entirely outside the city. Further, it was desirable to find within the two areas similar transportation arteries into the city. In this case, 1907 found both areas having approximately the same quality of roads with equal access to the central part of the city (Map 1). In addition, these areas were later simultaneously cut by the Dort Highway and by the Pere Marquette Railroad. Again, the date at which time a particular

section of land comes into the municipal fold can have a profound effect upon its subsequent development. It was therefore considered necessary that the two areas should have been brought within the city at about the same time, as these were. Finally, both areas should have had approximately the same zoning restrictions. The core of these selected areas was an industrially zoned district whose history dates back to about 1917 when leading manufacturers of Flint proposed to establish just such an area east of the old Western Road.

In so far as selecting an area for study is concerned, the Dort Highway Area offers an excellent opportunity for studying the effects of a large industrial establishment upon the immediate surrounding area. The Plant is located on the eastern side of Dort Highway between Davison Road to the north and the Grand Trunk Railroad to the south. At the time of the Plant's construction -- at that time it was known as the Dort Automobile Plant -- the area was definitely a "fringe" area well beyond the commercial, industrial, and residential centers of Flint. In fact, at the time when construction of the Plant was contemplated, the site and most of the area under study was outside the city limits. Another factor leading to the selection of this area is that it represents an early and concentrated attempt to plan and develop a large industrial center along the east side of Flint. Between 1917 and 1926 the dream of several powerful figures in Flint industry and real estate was the development of a

large industrial center in the area now parallel to Dort Highway and the Pere Marquette Railroad. This proposed development was clearly shown in "The City Plan of Flint" for 1920 made by John Nolen, City Planner, and Bion J. Arnold, Transportation Engineer.

For purposes of clarity the two areas will be called the Experimental Area and the Control Area. The Control Area will serve as a means by which the effect of the A.C. Plant upon the Experimental Area can be estimated. By comparing the sequence of development for both areas it will be possible to determine what differences, if any, occur between the two areas. Such types of differences as the following will be looked for: Differences in the direction of development; in the amount of land in the various land uses; in the acquisition of utilities; and in the rate of development.

The Experimental Area is a tract of land extending one half mile beyond the property limits of the A.C. Plant and forming a rectangle of approximately 1.8 square miles. It is bounded on the north by Maryland Avenue, on the east by Dexter Street, on the south by East Court and on the west by Franklin Avenue. The Control Area is located immediately south of and adjacent to the Experimental Area and contains one square mile. Its northern limits are set at East Court, its southern ones at Lippincott Blvd. Although they are adjacent, several factors have led to the choice of this latter area as best fulfilling the requirements of a control area. First of all, both areas should be situated on the same side

of the city. Next, it was deemed advisable to extend the bounds of the Experimental Area at least one half mile beyond the A.C. Plant property in order to have a workable area for this section. Since the controls previously described necessitated starting the study at the time when both areas were raw land, it was found that at the time of raw land there was no area north of the Experimental Area which had equal access to the center of Flint, and any area south of the selected Control Area would have encountered dissimilar surface conditions such as Thread Lake, and might moreover, have fallen in part outside of the city limits.

The periods used for comparison were determined both by available data and by important changes in the area. The year 1907 was chosen as the initial date of the study in that the Dort Highway area was then entirely raw land and the first platting did not occur until 1909. There was also available an excellent historical atlas showing the entire area in 1907.¹ Then it was necessary to choose dates shortly before and shortly after the construction of the A.C. Plant. 1921 was selected for the first date because existing data were limited to this year. Moreover, the whole Dort Highway area had been incorporated into the city in 1920. With 1921 as the starting point then, five year intervals were chosen. This also gave a comparison for 1926 which was just after the 1925 occupation of the A.C. Plant.

1. Atlas of Genesee County. George A. Ogle & Co., 1907.

Thus there were laid out seven comparative periods -- the first, 1907, and then the five year intervals of 1921, 1926, 1931, 1936, 1941, and 1946. These cover the depression, war, and post-war periods.

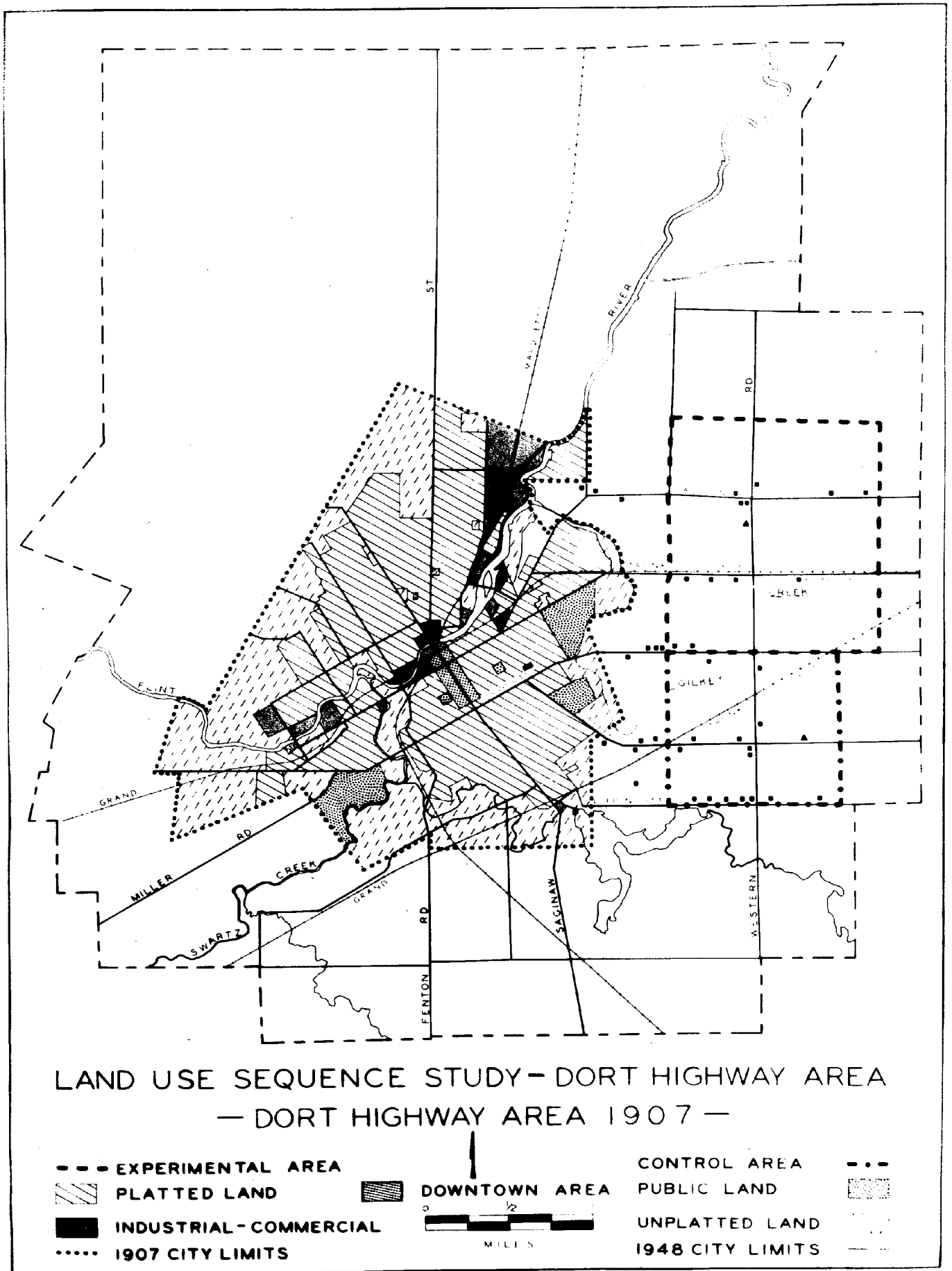
A land use sequence study requires specific land use categories. Those used here are single family, multiple family, apartment, light commercial, heavy commercial, industrial, public, religious, and vacant. For the purposes of this study, the term multiple family is restricted to houses within the area studied which were built for single families, but which are or have been occupied by two or more families. Light commercial includes those lands which are devoted to neighborhood retail services such as filling stations, grocery stores, drug stores, taverns, and bowling alleys. Heavy commercial, on the other hand, indicates such activities as bulk gasoline storage, warehouses, coal and lumber yards, truck terminals, and junk yards.

The data used in this study will be considered on the bases of their sources and their limitations. The population distribution maps are based on historical atlases of Flint, Sanborn Insurance Atlases, individual historical maps, and maps issued by the Michigan State Highway Department. From these maps house counts were made. The number of individuals per house was calculated by dividing the number of houses into the estimated population for that given year. This estimated population in turn was based on an assumed uniform rate of increase for the ten year period, since the

map dates occur between census periods. These calculated population figures were then checked with the existing population estimates made by other organizations. This approach is useful in giving an over-all view of the distribution of population within a city, and, if a sequence can be had, large trends can be shown. The land use maps for the Control and Experimental Areas have been compiled from such sources as Polk's City Directories, assessment rolls, and field survey. The base maps were made by combining existing city plat sheets, having a scale of 1 inch to 200 feet. A "house number map" was then made from existing Sanborn Insurance Atlases and from available data in the office of the City Engineer. With this map as a guide it was possible, using Polk's Directories for the desired years, to plot the type of use for each lot. The platted area was "spot checked" against the assessment rolls and from this source the use of all unplatted areas was also derived. Polk's Directories were used in order to obtain the specific use of each description, which datum is not shown in assessment rolls, and also to discover the number of houses occupied by more than one household. The area of each lot was then determined, making it possible to compute the amount of land covered by each of the land use categories. This method would not be suitable for large area studies because of the time consumed in collecting data. Employing this method of locating the land use by lot and house numbers, there is a possibility of placing a particular house or retail store in the wrong

position within its block; but there is reason to believe that the error tends to be slight. In any event, the purpose is to show over-all distribution for the area and such errors do not alter the basic pattern. It will be noticed that the figures showing the amount of land occupied by the various categories includes only the eastern side of Franklin Avenue which, as it happens, is one of the retail shopping centers. This factor should be considered in evaluating the rate of light commercial growth in relation to that of residential. In as much as only the growth of that area east of Franklin Avenue was being considered in this study, it was deemed advisable to include only that side of the street.

Land values at their simplest are difficult to establish and any discussion of them is bound to lead to endless debate. Any consideration of this elusive factor has purposely been held to a minimum. Assessed land values have been the only criteria used, and it must be made clear that such values are used only as an indication of what the city considers the land worth for taxation purposes. The Assessed Land Values Map for 1948 shows the values for both areas on the basis of dollars per acre. It is realized that this method is, of course, not the standard one used for residential or platted land. Since so much of this area is occupied by unplatted land, some comparable figure had to be established; so it was decided to compute all values on an acre basis.



Map 1

CHAPTER II

THE DEVELOPMENT OF FLINT

Any examination of the development of a particular segment of an urban area for the purpose of estimating possible development in another segment, necessitates a knowledge of the general pattern of growth for the whole area. The development of Flint will here be considered on the basis of the distribution of industry and commerce, and on the growth and distribution of population.

The city was first established at the point where the old Indian trail to the north intersected the Flint River; it is on this spot that the present Saginaw Street Bridge is located. Here the first business enterprises were established. Due to the growing lumbering industry a railroad (later to become the Pere Marquette) was built connecting Saginaw and Flint. Subsequently the Grand Trunk Railroad built a line intersecting the Pere Marquette at the old river crossing, and the center of Flint was established.

Since Flint's first industry was lumbering, it was natural that the lumber mills should dominate the scene and be located along the Flint River. In 1859 they were mainly east of Saginaw Street along both sides of the river. At this time a large number of persons were engaged in such allied occupations as carpenters, joiners, cabinet makers,

carriage and wagon makers.¹ Indeed, between the lumber era and the automobile era, Flint became one of the leading producers of carriages and wagons, with its industrial areas still centered along the river.

With the coming of the automobile, industrial development increased tremendously in Flint. During the early expansion of the automobile industry the plants were located on or near the existing sites of other factories and thus still close to the river and the railroads. The role of the river in determining these sites was, of course, in the significance of its attraction for the lumber mills and in the construction of the railroads along the course of the river valley. Thus in 1907 there were in Flint three main industrial and commercial centers stretched in an arc along the Flint River and the adjacent railroads (Map 1). The largest was the one in the northern edge of the city just west of the river. This today is part of the vast Buick Motor Car Plant. Notice that in 1907 it bordered the northern city limits and apparently had unlimited space for expansion to the north along the Pere Marquette Railroad. There was a second industrial area concentrated north and south of the river in almost the geographical center of the city. Even in 1907 this was hemmed in by commercial and residential development. The third area lay in the southwestern part of Flint, like-

1. An Historical Map of Flint City, Geil and Jones, Philadelphia, 1859, contains a business directory of Flint for that year.

wise adjacent to the river and the railroad, and appeared to have had sufficient space for expansion to the west.

As the automobile became a permanent part of the American scene, Flint experienced a great expansion of its manufacturing plants; most of this occurred within the above mentioned areas. Thus in 1917 the industrial situation was summed up thus: "The present industrial development in Flint is confined to the valleys along the railroad right-of-ways. The largest single plant is the Buick, and between there and the Chevrolet Motor Company to the south are most of the smaller concerns. There is little available land for factory expansion but the new industrial district will solve this problem."¹

The first location of any industrial plant outside of the "Chevrolet-Buick arc" occurred about 1923, when two such variations were established (Map 28). One was the Fisher Body Plant located on the southern city limits just west of South Saginaw Street. The second was the construction of the Dort Automobile Plant on the east side of Dort Highway just south of Davison Road. This plant was later occupied by the A.C. Spark Plug Company.

Flint today has developed two broad industrial areas. The more compact one has been called the "Chevrolet-Buick arc." Although considerable expansion has occurred at

1. John Nolen and Bion J. Arnold, The City Plan of Flint, Mich. Published by the Planning Board, Flint, Michigan, 1920. p.22.

various times within this area, it has by now reached its maximum density. Hemmed in by commercial and residential developments, it is further subject in part to costly damage by flood. Further expansion must occur elsewhere as is exemplified by the construction of the new Chevrolet Assembly Plant on the southwestern edge of Flint just south of the Grand Trunk Railroad. Thus the second area can be visualized as an outer arc extending around the eastern and southern edges of Flint from the A.C. Spark Plug Plant on Dort Highway to this new Chevrolet Plant. This area is by no means continuous; still it would not require very much expansion to fill in the gaps sufficiently to have a profound effect upon Flint. If industrial and heavy commercial activities should move into this outer arc such a move, unless properly planned, could be detrimental to the growth of Flint in this direction. At the same time any such move might be very hazardous to the firms involved if no consideration were taken of those populated areas already existing beyond the city limits. The location of new sites in this outer arc could soon be hemmed in by residential and retail activities such as happened with the Chevrolet and Buick Plants and is happening now in the Dort Highway Area.

Indications of a shift in the location of the heavy commercial sites in Flint have become apparent. It was along the railroad with their sites close to the central business area that the wholesale businesses were first

established. This concentration remained true in 1917 even after many years of growth. "The wholesale business, of course, follows the railroad and seeks locations central to the city area."¹ With the continued growth of the city, this central warehouse area has proved very costly in traffic delays. With the development of truck transportation, terminals were oftentimes established at or near the edge of the downtown business district.² In 1947 this was still the pattern with a single important exception. There is a small but definite indication that some truck terminals are locating along Dort Highway.³ There is also some shifting of other heavy commercial business from the central downtown area towards the periphery of the city, and especially along Dort Highway.

The distribution of the light commercial development in Flint assumes a linear pattern which closely corresponds to the main routes of local traffic. North and South Saginaw Street has by far the greatest development; with varying degrees of density it stretches from the southern to the northern city limits. This is an outgrowth of the original settlement near the Saginaw Street Bridge. There are similar developments along Fenton Road, Davison Road, Court Street,

1. City Plan of Flint. Op.Cit. p.22.

2. Comprehensive City Plan for Flint, Mich. Part I, Traffic Survey and Thoroughfare Plan. W.P.A. Project 25-3-1029. City Planning Board, Flint, Michigan, 1937. p.17.

3. Report on Federal Aid Project AE-FAP-403(1), Flint. Michigan State Highway Dept., Lansing, Mich., 1947. p.16.

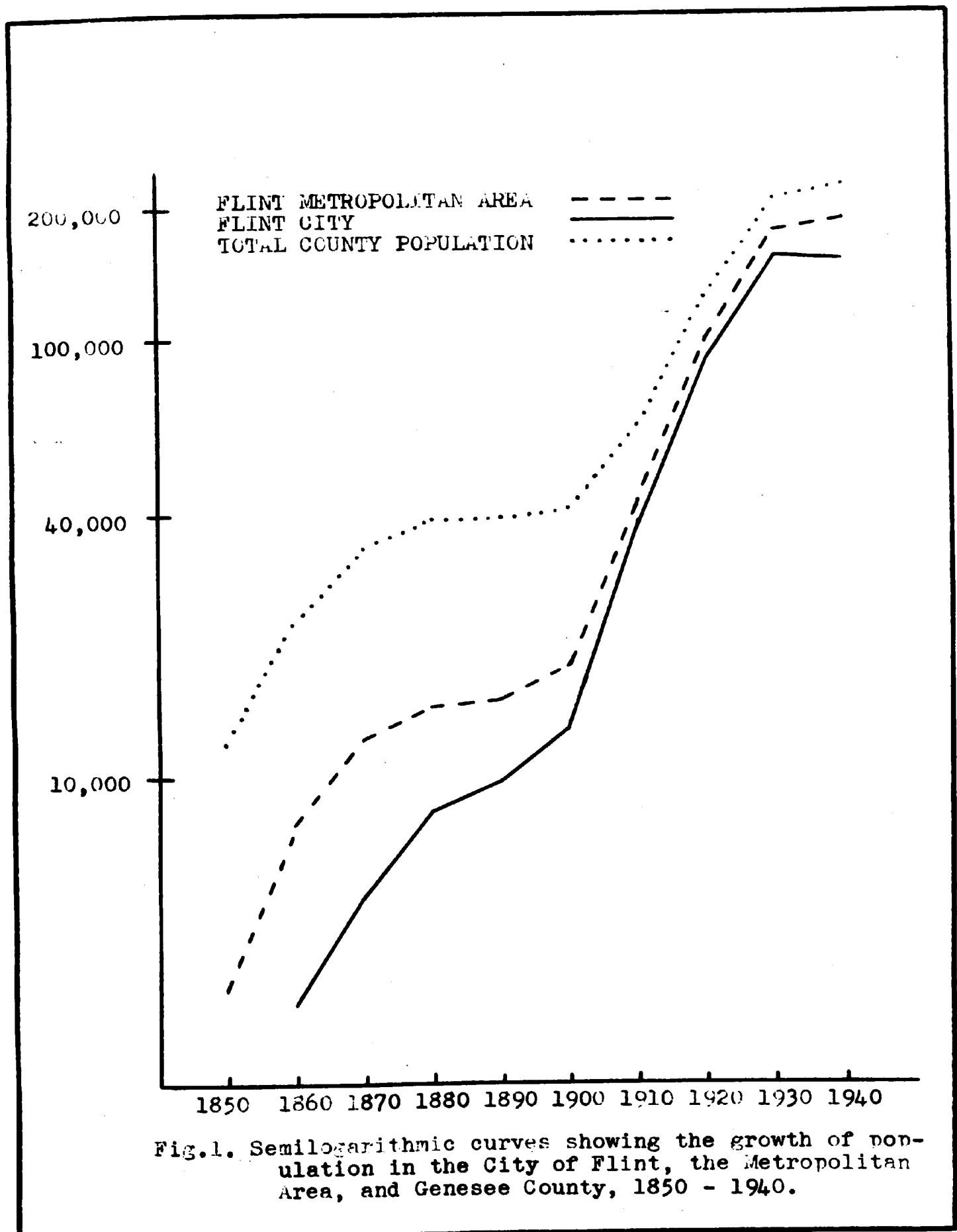
and several other important routes.

The growth of the population itself in the city of Flint has been one of continuous increase with variations in the rate of growth -- until the last census period, 1940, at which time the population figure decreased by approximately 4900. Thus there are four phases in the development of population in the city of Flint, -- three increasing and the fourth decreasing (Figure 1).

In the first period, from 1860 to 1880, the population of Flint was growing rapidly with a 76.4% increase from 1860 to 1870 and a 56.1% increase from 1870 to 1880. By 1880 Flint was a town of over 8,000 inhabitants.

The second phase, 1880 to 1900, indicates a definite decrease in the rate of population expansion. This lessening is particularly large in the curve for the ten years from 1880 to 1890 when the percent of increase was 16.5, a figure far below any preceding one. While the population did increase by 33.6% from 1890 to 1900, this figure still does not approximate the rate of growth for any census period during the first phase. This twenty year period from 1880 to 1900 is considered a transitory phase during which the population of Flint changed from one dependent upon carriage manufacturing and its related small industrial activities to one relying upon its present world important industry, automobile manufacture.

The third phase of Flint's population curve comprises



Date	Numerical Increase	Percent of Increase
1855 - 1860	1052	52.6
1860 - 1870	2334	76.4
1870 - 1880	3023	56.1
1880 - 1890	1394	16.5
1890 - 1900	3300	33.66
1900 - 1910	25,447	194.2
1910 - 1920	53,049	137.61
1920 - 1930	64,893	70.8
1930 - 1940	- 4,949	- 3.1

Source: U.S. Census.

Fig. 2. Population growth in Flint City, 1855 - 1940.

the period from 1900 to 1930. Outstanding in this period is the phenomenal rise in the population of the city. From 1900 to 1910 Flint enjoyed a 194% increase; and while the percent of increase for 1910 to 1920 was somewhat smaller, it still registered 137.6%. From 1920 to 1930 the population grew by 70.8%, a percent of increase almost small in comparison with those cited previously. However, taken in sheer numbers, the increase from 1920 to 1930 represents one of over 64,000 inhabitants while the increase in total number of individuals from 1910 to 1920 was one of slightly over 53,000 persons. Thus, as the city grows in population, the use of percent of increase or rate of increase must be compared with the increase in actual numbers of individuals in order to assure a more rounded picture of the population changes taking place. The city's population increased from 13,103 in 1900 to 156,492 in 1930, a total expansion of 143,389 individuals in a thirty year period. This gives an average yearly increase during the third phase, 1900 to 1930, of approximately 4,779 inhabitants.

The fourth phase of the city's population curve is the decrease in population which occurred from 1930 to 1940. This seems to be a temporary downward trend of very small proportions caused by the centrifugal movement of the population toward the urban fringe during the depression years. From all indications this downward trend has already ceased and the next census period will see the curve again assume an upward sweep. Furthermore the population of Flint at this

time should not be considered as terminating at the city limits (Map 7); and so, in the period from 1930 to 1940, the population of Flint as a metropolitan area actually increased (Fig. 1).

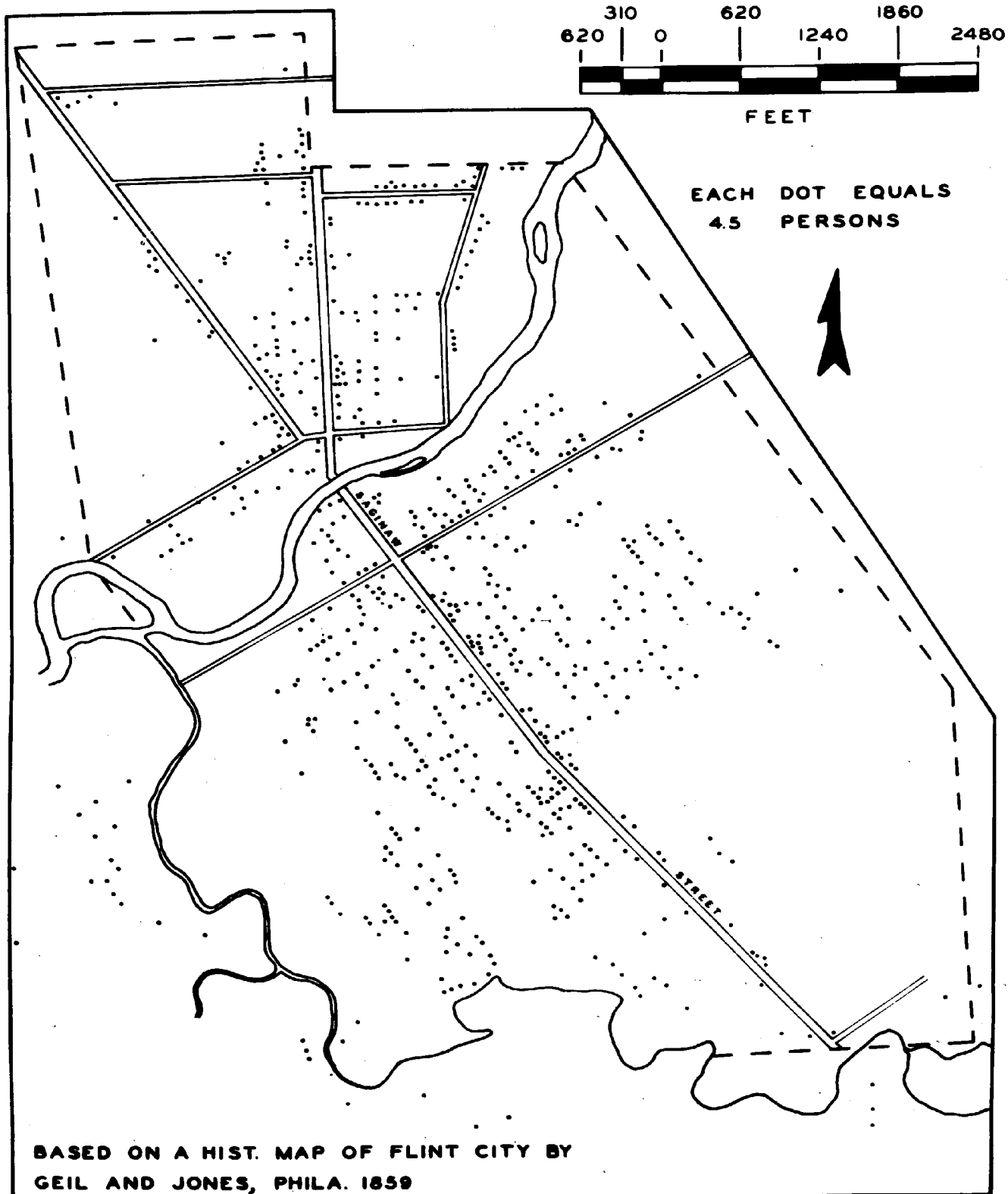
Flint's population pattern was relatively static until about 1909. After 1909 population distribution in Flint has shown two distinct tendencies. First of all, in the period of Flint's rapid growth, at the time of the founding and development of the automobile industry, population clustered closely around the main industrial areas. Later, as the city expanded and the automobile became more common, population flowed outward along the main highways, giving Flint a dense central core with fingers of decreasing density extending outward.

Settlement in Flint in 1859 can be divided into two parts, one north and one south of the Flint River (Map 2). Although the higher land was located to the north of the river, population nevertheless tended to concentrate to the south. Litigation over title to the land and not the physical attributes of the land seemed to be the governing factor in retarding settlement on the land north of the Flint River. "This litigation, which only came to an end recently, having lasted some thirty or forty years, and engaged at one time or another pretty much all the lawyers in that part of the state, seriously affected the growth of the city, many who had bought homes being virtually lawed out of them, and others declining to buy lots the titles to which were under a

POPULATION DISTRIBUTION

CITY OF FLINT

1859



BASED ON A HIST. MAP OF FLINT CITY BY
GEIL AND JONES, PHILA. 1859

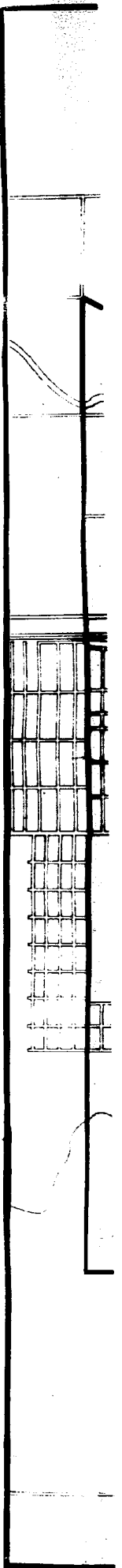
Map 2

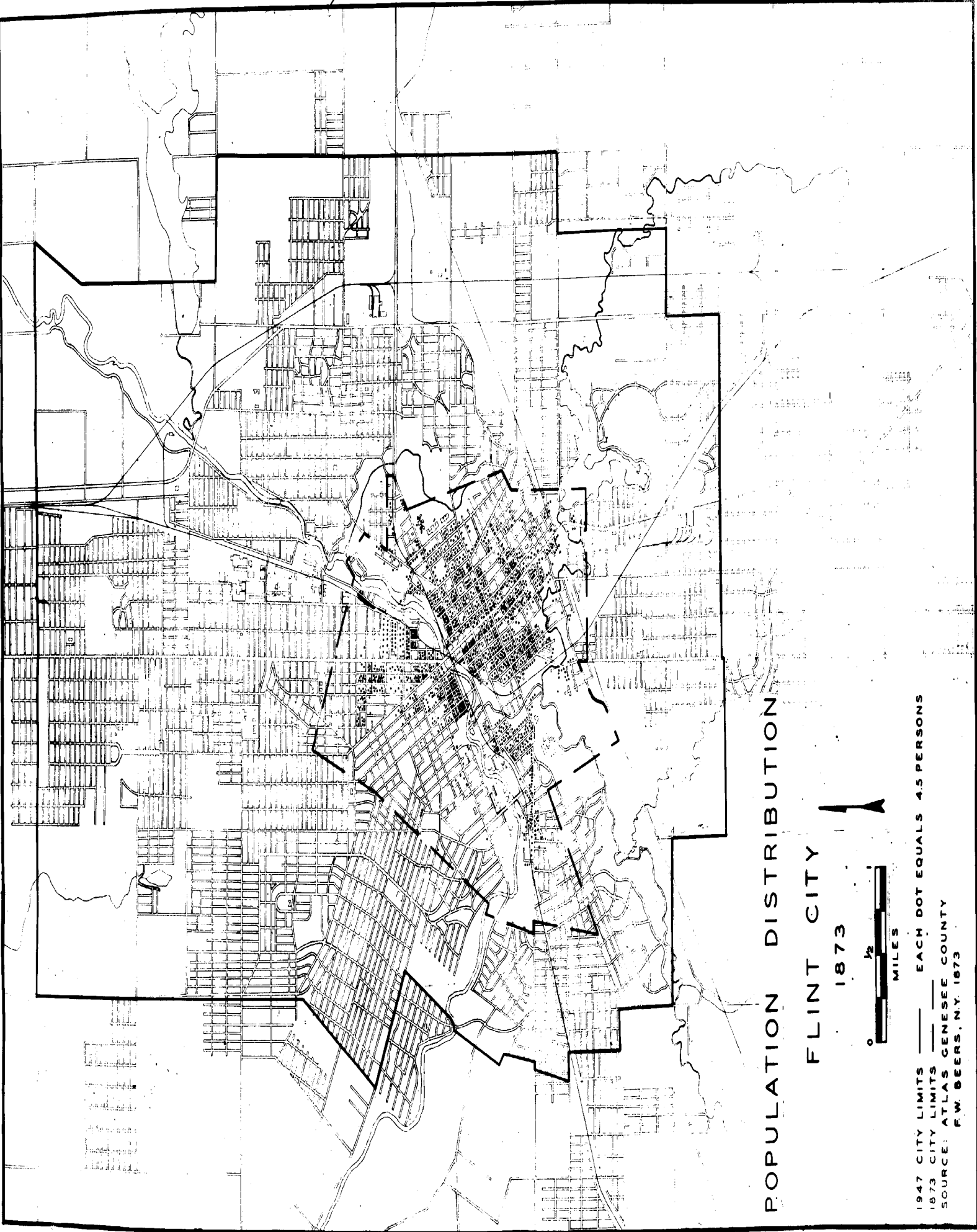
shadow."¹ Thus, in so far as direction is concerned, Flint's population had, by 1859, arranged itself in that part of the city south of the river in a general northwest-southeast direction parallel to Saginaw Street. However, in the section of the city north of the river, it is interesting to note that settlement turned sharply north still following the present Saginaw Street. Thus it seems that population had gravitated generally along lines of communication and specifically along the main north-south artery, the old Saginaw military road.

The over-all population pattern of the city in 1873 approximates that of 1859 with an even greater portion of the population south of the Flint River in 1873 than was there in the earlier year (Map 3). There was one major change in 1873, -- the decided trend west of Thread River between Court Street and the Flint River. Minor changes are seen in the filling in of the 1859 pattern both north and south of the river and in the slight but definite northward extension in the northern part of town.

The primary change in the population pattern from 1873 to 1909 was one of density rather than location. The area of greatest change was that generally north of the river and specifically in that part between Detroit and St. John's Streets. Here there was an increase in the density of settle-

1. Michigan Pioneer and Historical Collections. Vol. 3, 1879-1880. p.432.





POPULATION DISTRIBUTION

FLINT CITY

1873



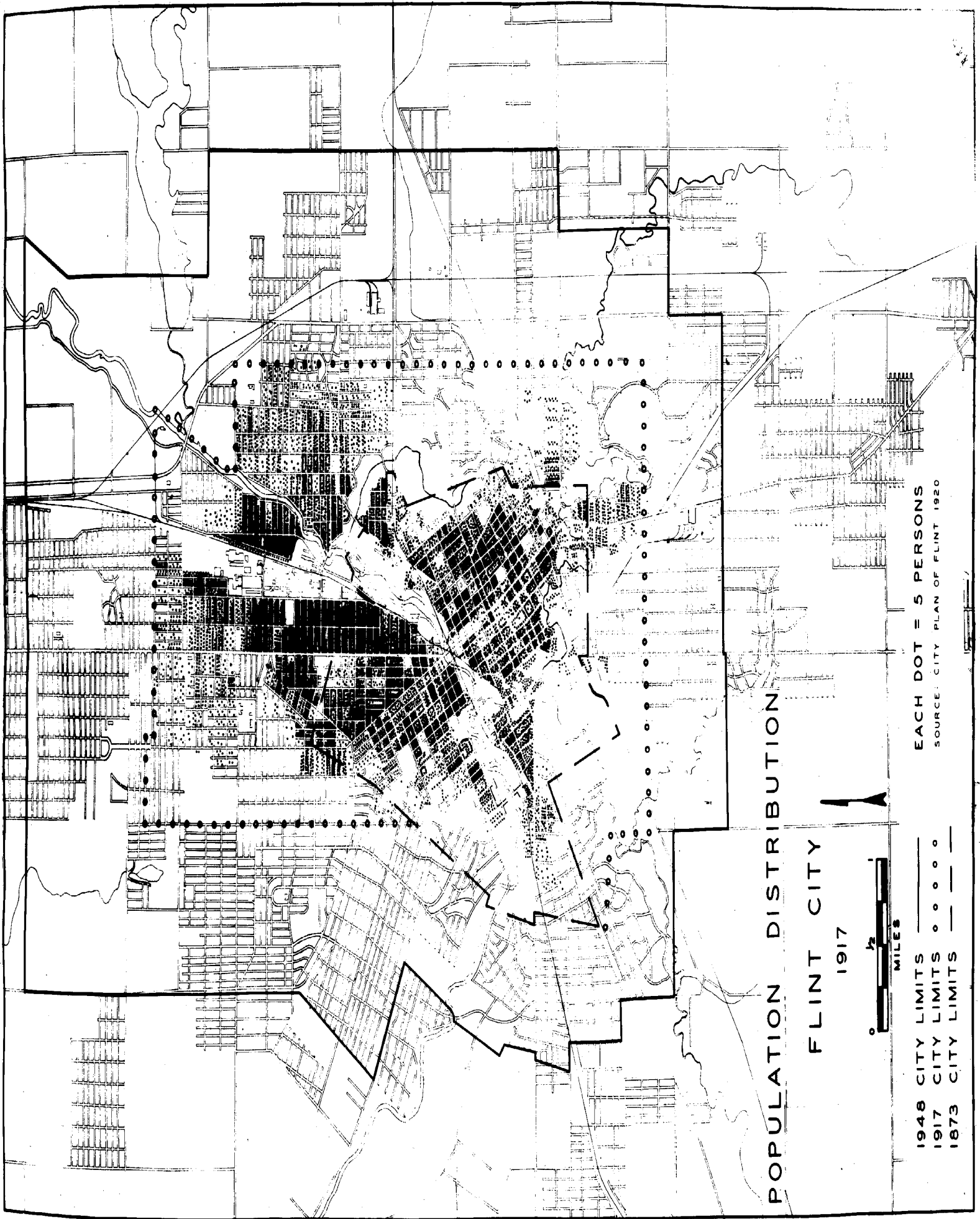
1947 CITY LIMITS ———
 1873 CITY LIMITS - - - -
 SOURCE: ATLAS, GENESSEE COUNTY
 F. W. BEERS, N. Y. 1873

ment of the previously settled areas, accompanied by a northward extension of the entire district. This northward trend, slight as it was, is sufficient to forewarn of possible future sweeping extensions northward along the Buick Plant.

By 1917 the attraction of the northern industrial area to residential development was clearly evident (Map 4). Population had definitely settled north of the river, especially in a narrow band of high density extending northward parallel to the western edge of the present Buick Plant. Population had also closed in along the eastern side of the "Buick area." This eastern settlement extended eastward almost as far as Western Road (now Dort Highway), with East Kearsley as its southern limit.

There were six channels of settlement in Flint's 1924 population pattern (Map 5). With the point where Saginaw Street crosses the Flint River as the geographical center of Flint, it will be noticed that these channels extended one each to the north, northeast, southeast, south, southwest, and west. The continuous northern trend is by far the most striking, especially the very dense concentration of population adjacent to the Buick Plant area. In general the 1924 map shows that those areas near the center of the city and adjacent to the Buick Plant area are nearing their density capacity while tongues of settlement are stretching toward the periphery of the city.

By 1940, Flint's population has greatly expanded its movement toward the border areas and shows five directions



POPULATION DISTRIBUTION

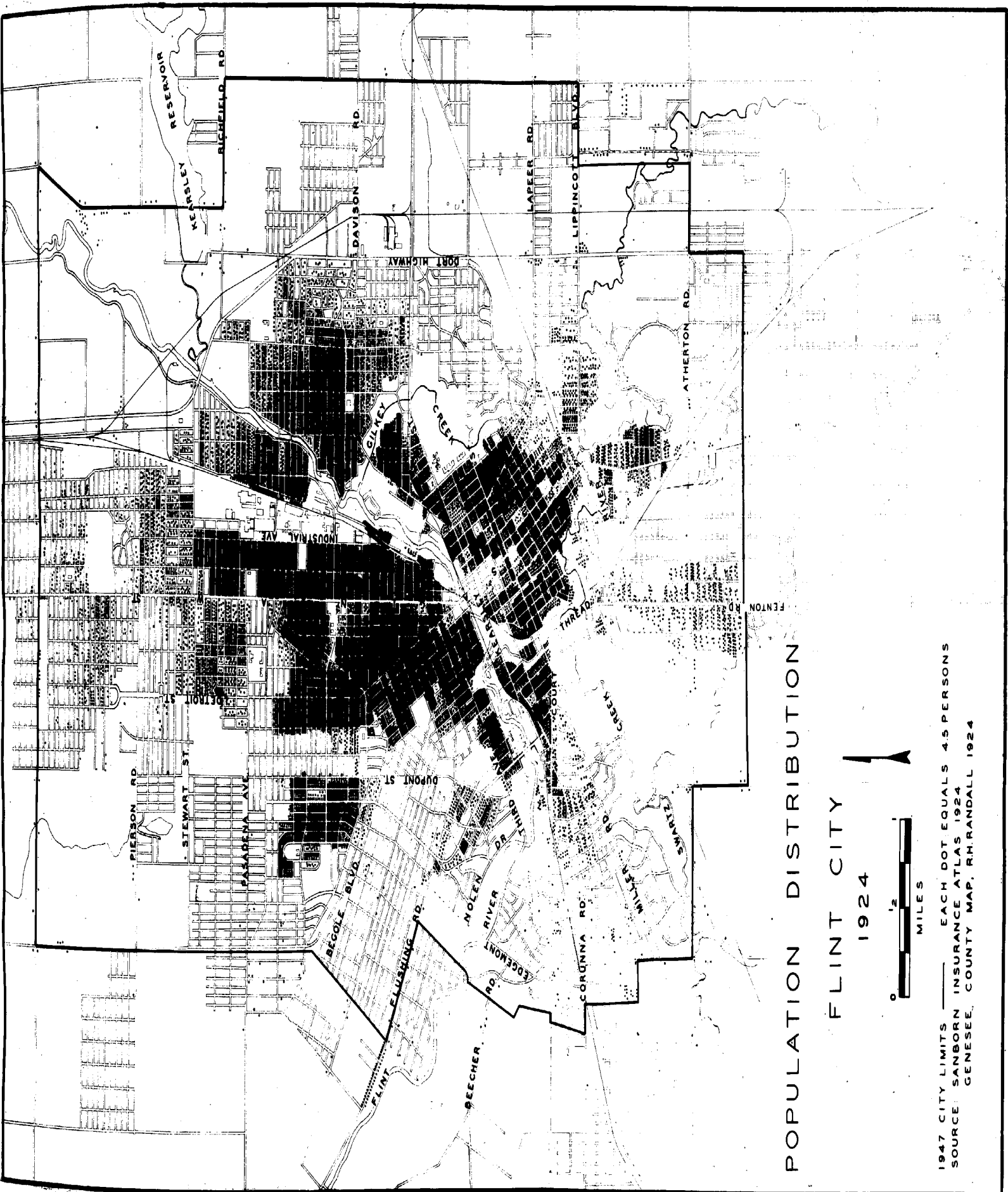
FLINT CITY

1917



- 1948 CITY LIMITS ————
- 1917 CITY LIMITS ○ ○ ○ ○
- 1873 CITY LIMITS - - - -

EACH DOT = 5 PERSONS
 SOURCE: CITY PLAN OF FLINT 1920



POPULATION DISTRIBUTION

FLINT CITY

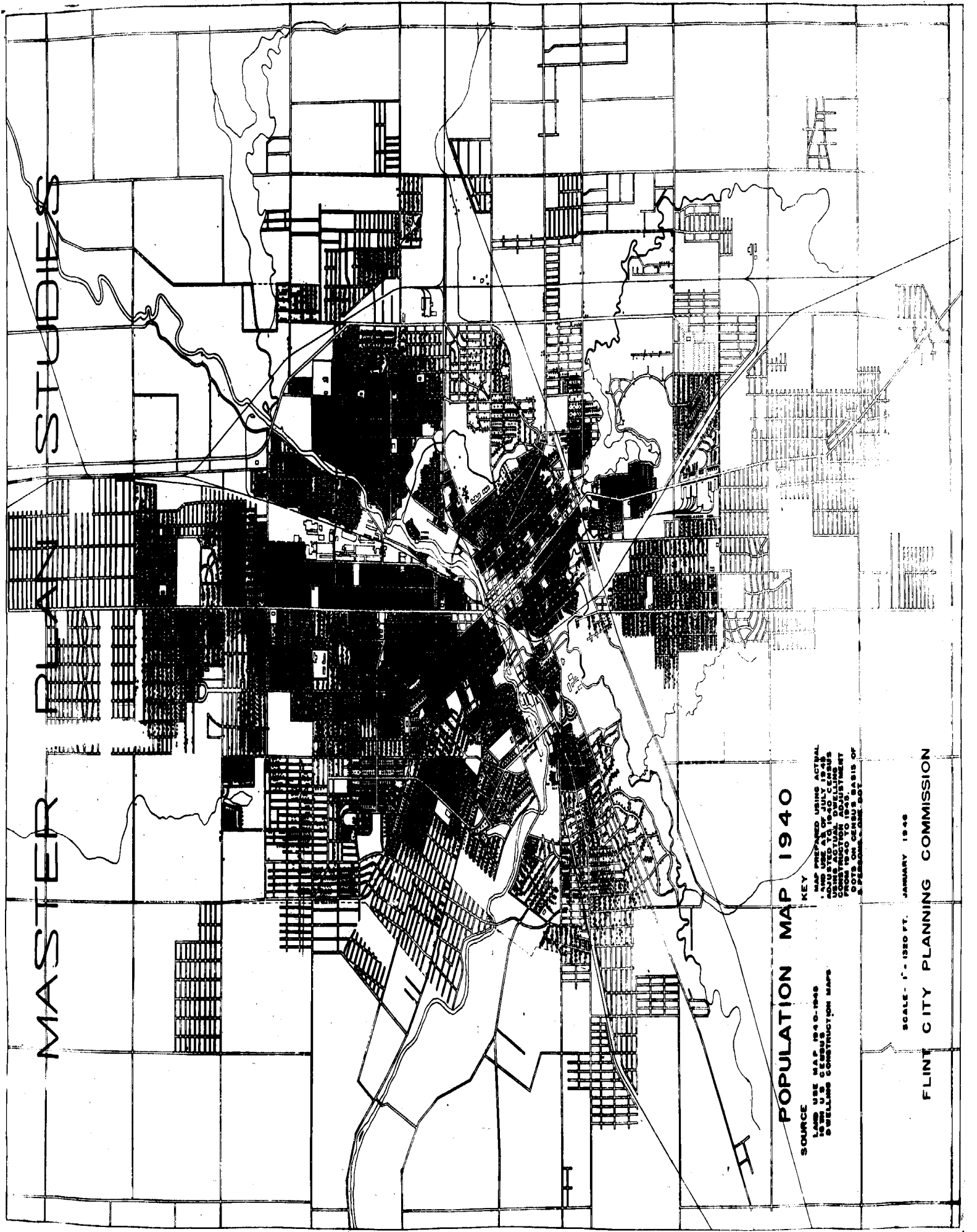
1924



1947 CITY LIMITS ——— EACH DOT EQUALS 4.5 PERSONS
 SOURCE: SANBORN INSURANCE ATLAS 1924
 GENESEE COUNTY MAP, R.H. RANDALL 1924

of major flow (Map 6). The northward trend which has been apparent since 1873 is still very strong. An eastern trend has been occurring, especially north of Kearsley Street, and to a lesser degree just south of East Court Street. The original northwest-southeast alignment along South Saginaw Street has ceased and has now been diverted by Thread Lake into an eastern stream north of the lake and a southern channel west of the lake. This southern channel along South Saginaw Street is accompanied by another southern trend bordering Fenton Road, the two combining to form a broad sweep of scattered settlements all the way to the southern limits of the city. The fourth direction of movement is to the southwest and it likewise travels along avenues of communication. The fifth population trend is the westward movement so apparent along the entire western edge of the city. But despite these definite population projections, it is equally certain that settlement tends to be spotty in character and undergoes a clear cut decrease in density as the city limits are neared.

It would not be valid for the purposes of this study to eliminate all consideration of population distribution beyond the city limits. Flint today possesses a definite urban fringe which must be recognized in any plans for the future development of the city. Within the four townships, Mt. Morris, Genesee, Flint, and Burton, immediately adjacent to the city of Flint, there was in 1940 a population of 37,011, of which approximately 24,000 individuals were located within a one and one-half mile wide band surrounding



MASTER PLAN STUDIES

POPULATION MAP 1940

KEY

- MAP DEDUCED USING ACTUAL
- MAP USE MAP OF JULY 1940
- ADJUSTED TO 1940 CENSUS
- CONSTRUCTION ADJUSTMENT
- FROM 1940 CENSUS BASIS OF
- 2.5 PERSONS PER ACRE

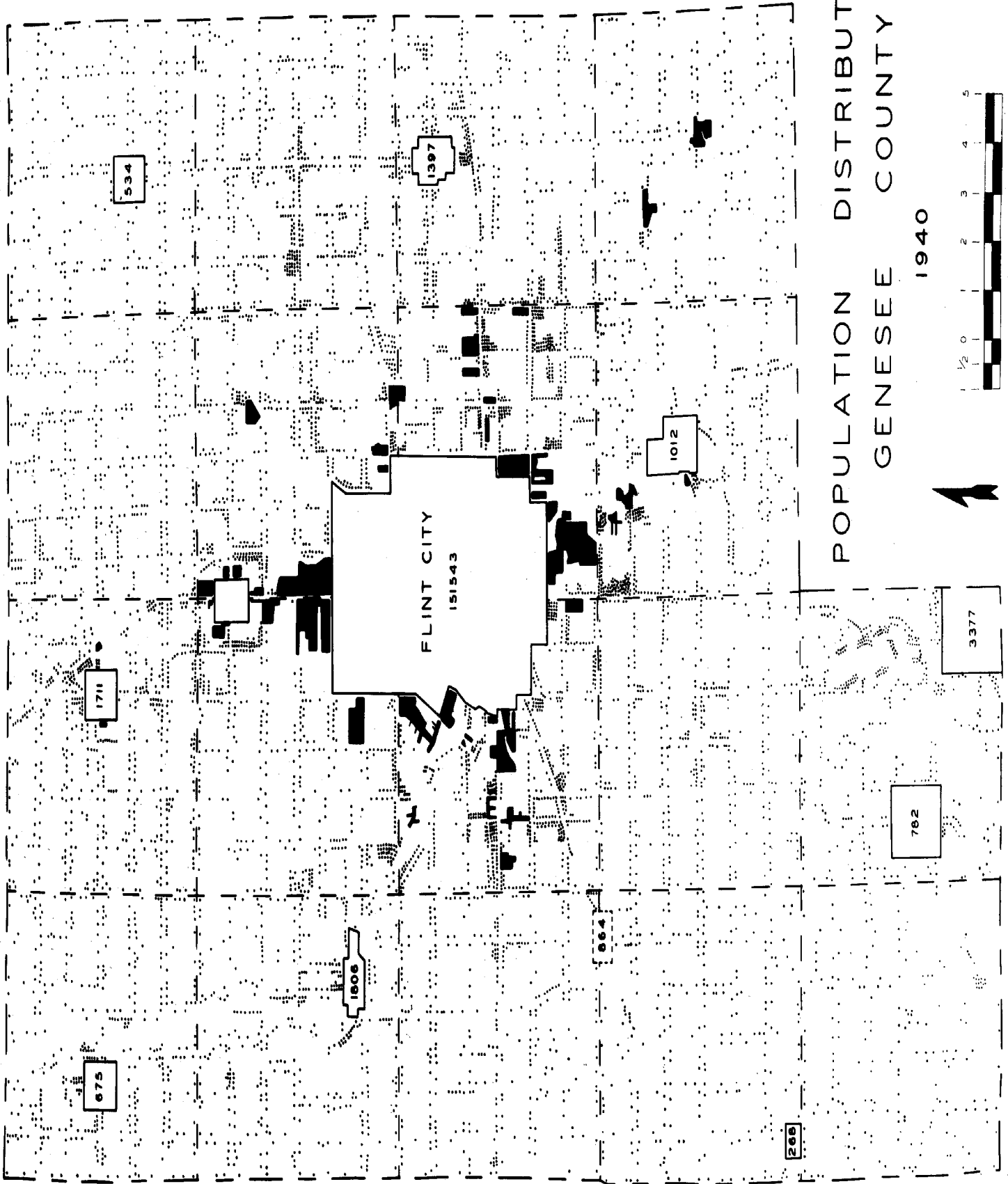
SOURCE

- 1940 U.S. CENSUS
- 1940 U.S. CENSUS
- DEDUCED CONSTRUCTION MAPS

SCALE - 1" = 1500 FT. JANUARY 1946

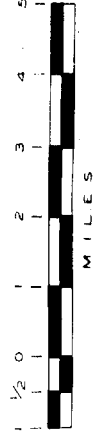
FLINT CITY PLANNING COMMISSION

the city (Map 7). This fringe area is not a continuous band but rather a series of settlement projections corresponding closely to the five major channels of population flow found within the city. Notice that the north and south trend in Flint extends into the fringe area; the same is true of the southwestern channel of population within the city. However, this continuity of settlement does not exist for the metropolitan area as a whole, for in almost every other case where a fringe settlement occurs, it is isolated from the city population by a strip of unpopulated or very sparsely populated territory. Thus there has developed within Flint a belt of vacant land adjacent to the city limits, and immediately beyond this belt of idle land, in close proximity to avenues of transportation, have developed the many pockets of settlement commonly called the urban fringe (Compare Maps 6 and 7). Of special importance to this study is the fact that no large fringe development has occurred along the east-central edge of Flint between Lapeer Road to the south and Maryland Avenue to the north. This is the area lying east of the Dort Highway area.



POPULATION DISTRIBUTION
GENESEE COUNTY
1940

EACH DOT EQUALS 4.5 PERSONS
GENERAL HIGHWAY MAP GENESEE COUNTY
MICHIGAN STATE HIGHWAY DEPT. 1940.
U.S. CENSUS 1940



Map 7

CHAPTER III

LAND USE SEQUENCE IN THE DORT HIGHWAY AREA BEFORE THE CONSTRUCTION OF THE A.C. PLANT

In order to bridge the gap between the date when both the Experimental and Control Areas were raw land (1907) and the date when the A.C. Plant was built (1923), it is necessary to examine closely the sequence of land use in both areas for this sixteen year period. This examination is divided into two parts. The first, the general aspects of the area, will cover such factors as land ownership, platting, annexation, and the City Plan of Flint for 1920. The second division will be concerned with the various land use categories found throughout the period.

In 1907 both the Experimental and Control Areas were farm holdings ranging from 5 to 210 acres. Land ownership definitely was not concentrated in the hands of a few. But by the time of the A.C. Plant construction there had occurred considerable changes in land ownership and a definite concentration of land in the hands of a few owners (Fig. 3 and 4). The following, taken from the Office of the Recorder of Deeds in Genesee County, are a few examples of how the land was transferred from farms into land set aside for urban development.

Farm "A", shown in Fig. 3, contained 80 acres. It was bought in 1886 for \$4,000, or \$50 an acre. In 1893, forty acres of this tract were deeded away, and in 1895 these were

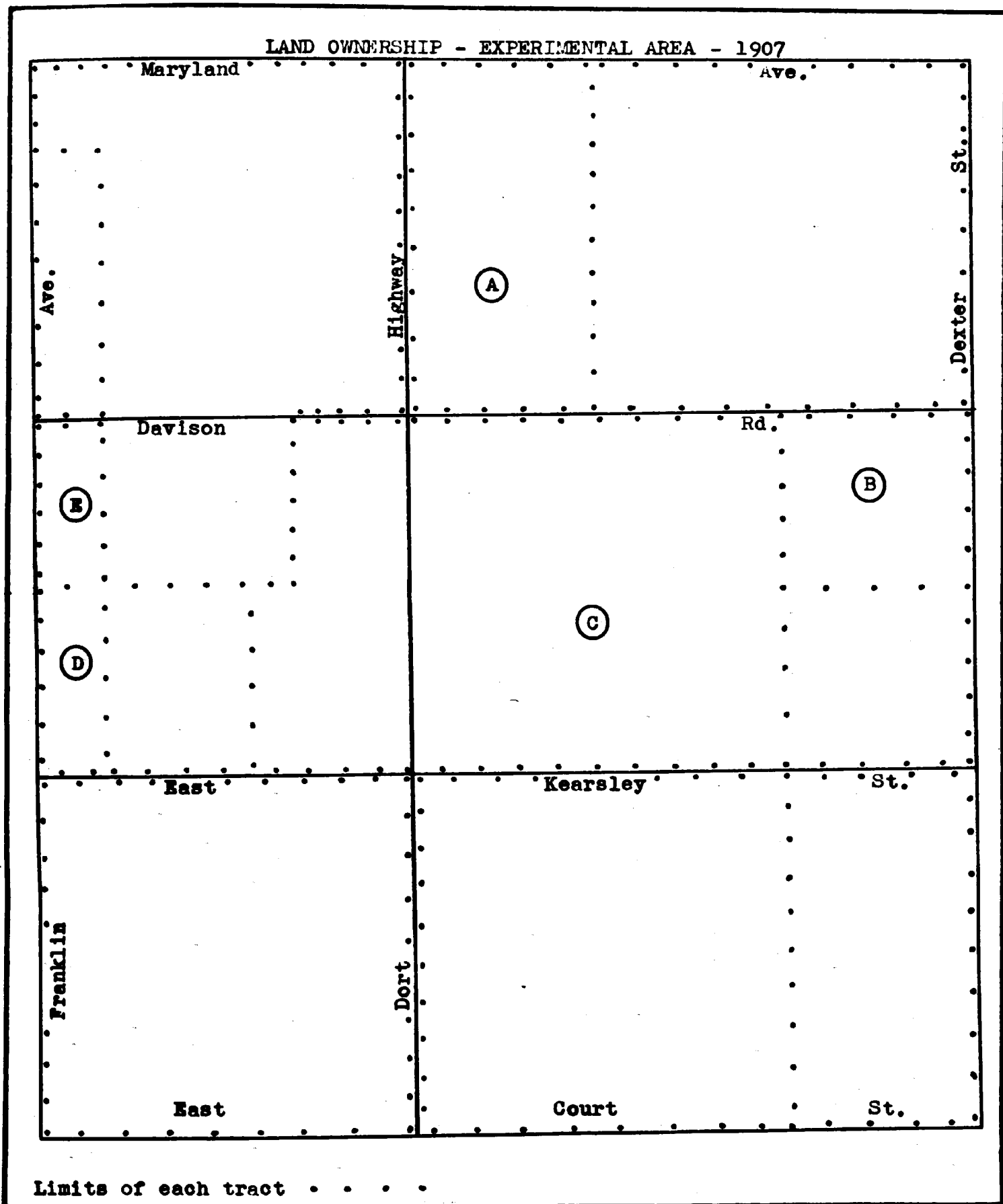


Fig. 3. Diagram showing limits and location of individually owned tracts of land.

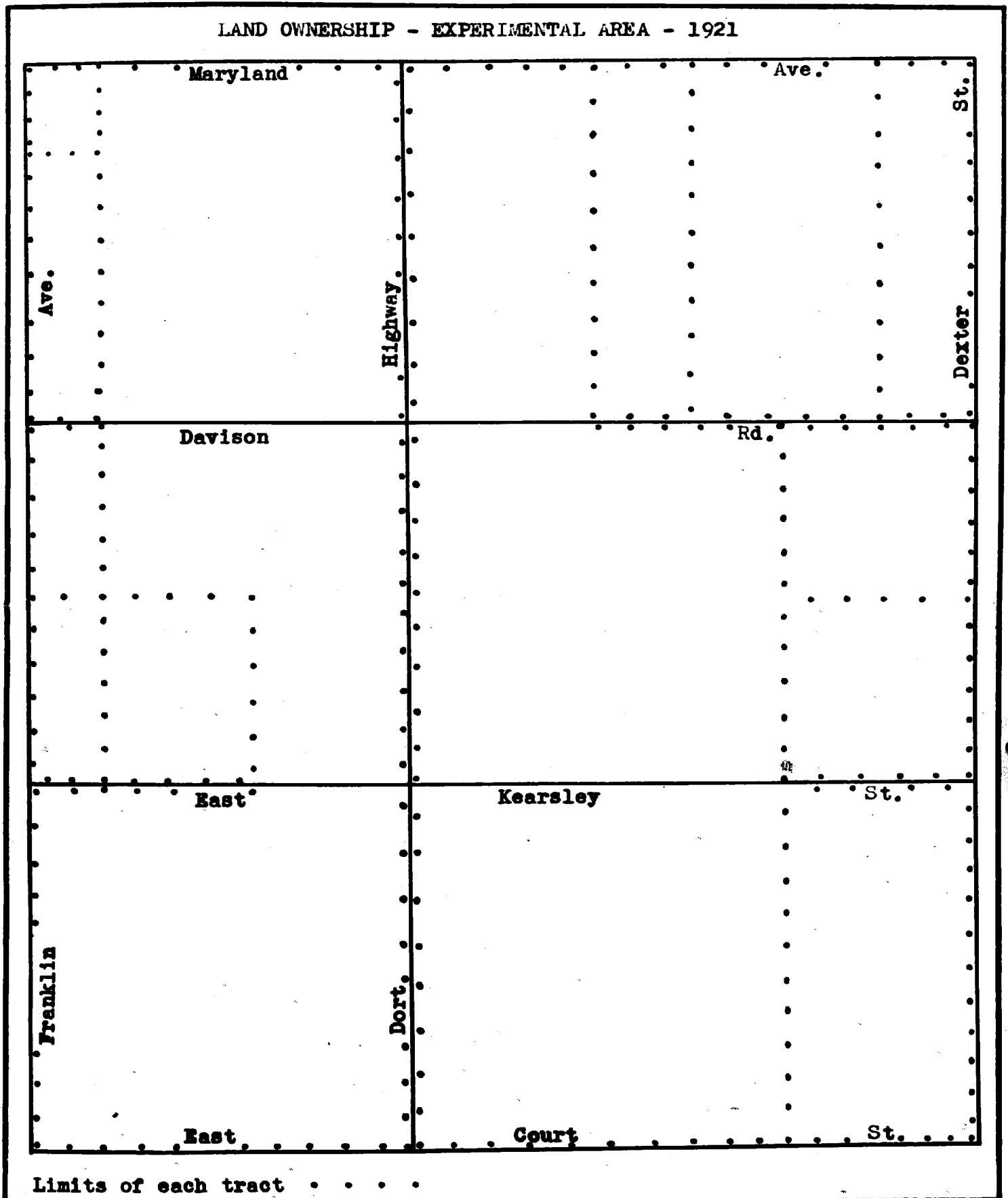


Fig. 4. Diagram showing limits and location of individually owned tracts of land.

returned to the former owner. In 1917 this farm underwent at least three transfers of deed. In one of these transactions a mortgage of \$12,000 was given for the 80 acres. On the basis of the mortgage alone the land was at this time considered worth \$150 per acre or three times its sale value of 1886. From 1917 to 1920 this area experienced numerous deed transfers as it was broken up into smaller parcels. Of interest is one transaction in 1926 in which twelve acres were sold for \$10,000 or approximately \$833 per acre.

Farm "B" was bought in 1895. It was later transferred to a new owner in 1909. It underwent three further deed transfers from 1917 to 1920, at which time it was platted.

Farms "D" and "E" were platted by the original farm owners.

Farm "C" contained approximately 154 acres and was purchased in 1892 by one man. In 1896 an undivided half interest was deeded to another individual who returned it in 1899. In 1919 the whole parcel was sold to a Flint industrialist. After 1919 there were created in this area the present sites of the A.C. Spark Plug Plant, the Flint Structural Steel Plant, and the James Lumber Company.

The same increased tempo of land transaction appeared in the Control Area. Here, however, there seemed to be no concentration of land among a few owners. The situation can thus be summed up for both areas: -- a few farms were platted by their original owners while most of the others were sold

one, two, three, and even more times before they were platted or set aside for commercial and industrial purposes.

Most of the platting in the Experimental Area was done before the construction of the A.C. Plant (Map 8; Fig. 4a). The first platting was in 1909 and occurred along the western edge of the area. By 1921 the entire section between Franklin Avenue and Dort Highway had been platted. In the Control Area only about half the platting occurred before the construction of the A.C. Plant (Map 9). As in the Experimental Area, the first platting occurred in 1909 and it also was in the extreme western part of the area. Notice that the Control Area by 1921 had been platted only in its southwestern section, although as in the Experimental Area, platting here too moved eastward toward Dort Highway. It seems that until 1921 at least platting in the two areas was an outward extension of existing platted areas located between the area under study and the central part of the city. There is one singular deviation from this pattern and that is the lone plat lying on the east central side of the Experimental Area along the southern edge of Davison Road. From the dates of the various plats in both areas, it appears that much of the platting occurred just before or at the time portions of the areas were annexed, in 1910 and 1920.

Between 1921 and 1926 plats had been established north and northeast of the A.C. Plant (Maps 8 and 10). That plat immediately north of the plant was platted in 1924 and was in-

PLATTING IN THE EXPERIMENTAL AREA

Name of Plat	Date of Recording	Number of Lots	
Arlington	1909	185	} 3,677
Columbia Heights	1909	29*	
Franklin Park	1909	242	
Bickford Park	1914	60	
Kearsley Park #1	1916	201	
Nickels Park	1916	176	
Beechwood Park ^s	1917 ^s	742	
Leasdale	1917 ^s	576	
Hills MacPherson Plat	1919	26*	
Woodlawn Park #2 ^s	1919 ^s	303	
Eastlawn ^s	1920 ^s	256	
Eastlawn Annex ^s	1920 ^s	19*	
Woodlawn Park #3 ^s	1920 ^s	623	
Thrift Addition ^s	1923 ^s	239	
East Belt Subdivision ^s	1924 ^s	14	
Thrift Addition #1	1925	423	} 681
Thrift Addition #3 ^s	1927 ^s	244	
Total		<u>4358</u>	

PLATTING IN THE CONTROL AREA

Name of Plat	Date of Recording	Number of Lots	
South Park	1909	124	} 639
Woodlawn Park	1910	46*	
Lapeer Park	1919	235	
Coates Subdivision	1920	13	
Oakwood Park	1920	122	
Reed Subdivision	1920	76	
Stone Plat	1920	23	
Evergreen Park	1927	326	} 759
Aviation Park	1928 ^a	69*	
Brookside	1929	261	
Union Park	1942	54	
Dort Highway Industrial Sites	1947	49	
Total		<u>1398</u>	

* This figure includes only those lots within the designated area.

s. Platted by same individual.

a. Vacated in 1932.

Source: City Assessor's Office.

Fig. 4a.

tended for industrial and heavy commercial developments; consequently the lots are few in number but have very large areas. The plats northeast of the Plant were for residential development and were recorded in 1923, 1925, and 1927. There was no platting in the Control Area between 1921 and 1926. Unlike the Experimental Area in which no platting was done after 1927, more than half of the platting done in the Control Area occurred between 1927 and 1929, with two small plats recorded from 1942 to 1947.

Flint had two annexations which affected the Dort Highway area, the first occurring in 1910 and the second in 1920 (Compare with Fig. 4a). In 1910 equal portions of both areas were annexed when the city limits were extended eastward to a point approximately half way between Franklin Avenue and Dort Highway. In 1920 Flint again extended its city area, at that time to a point east of the entire Dort Highway area, thus absorbing the remainder of the two areas at a similar time.

Since the "Flint City Plan of 1920" was very instrumental in setting up and expounding the virtues of an "East Industrial Belt," it is prudent to examine this plan briefly in its relationship to the Dort Highway area. The following was given as one of the principal general recommendations of the city plan: "The development and use of an adequate industrial district on the east side of the city."¹ This dis-

1. City Plan of Flint, Mich., 1920. Op.Cit. p.8.

trict was a strip approximately one half mile wide located east of Dort Highway and extending from Richfield Road in the north to Lippincott Blvd. in the south. The role to be played by this area is clearly shown in the section of the plan on zoning. "All new industries and similar undertakings should, if possible, be located in the large tract east of the city now definitely acquired and designed for industrial purposes. Beyond this industrial district further to the east is an area set apart as an Unrestricted District in which would be allowed such developments as are not desirable in other industrial districts due to unusual danger, offensive odors or noise."¹

These conclusions are but part of a far broader scheme which had been conceived earlier by a group of Flint industrialists and realtors. In this earlier plan the East Industrial Belt would have extended much farther north and south. The Pere Marquette main line was to be rerouted from the center of town to its present position along the east side of Flint. This rerouting has saved at least 30 feet of rise and fall into the central part of the city and has also eliminated considerable delay due to street crossings. Power lines, water mains, and other necessary utilities were to be added. With sufficient land, power, and transportation facilities, this area was to become a new core around which

1. City Plan of Flint, Mich., 1920. Op.Cit. p.62.

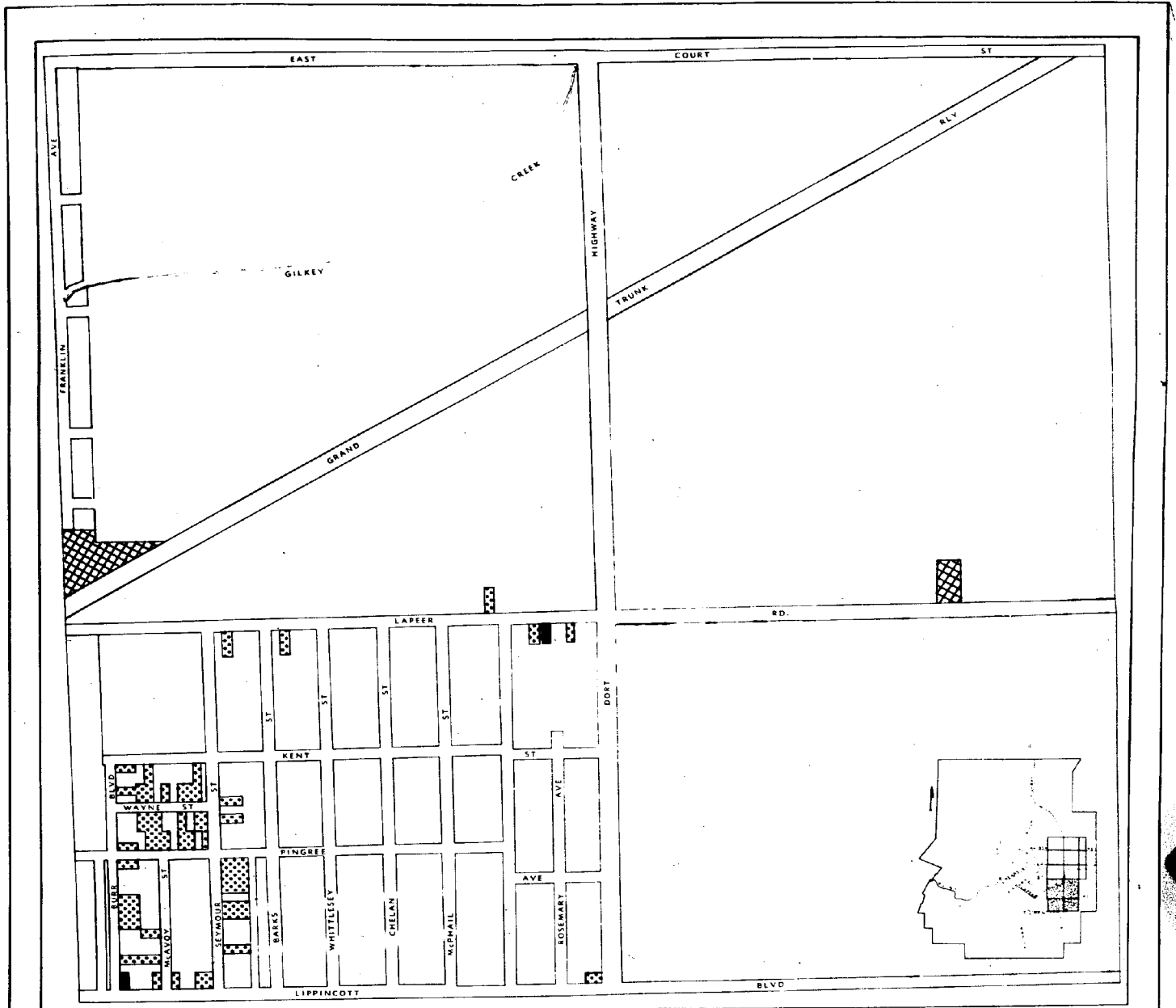
Flint would develop.¹

These then were the general aspects of the area between 1907 and 1923; attention now will be focused upon the various land use categories found there during this same period. As stated earlier, both the Experimental and Control Areas were, in 1907, composed of farms ranging in size from 5 to 210 acres. Notice that these farms had an east-west orientation, having been located along the east-west extending roads leading into the center of the city (Map 1).

By 1921 (Maps 8 and 9) residential units had been constructed in both areas and were, for the most part, oriented north and south at right angles to the main roads into the center of the city. The Experimental Area had the larger amount of land in residential use (Fig. 8 and 9). All residential units lay north of East Kearsley with most of them concentrated within the area's three westernmost blocks. Residential development in the Control Area was restricted primarily to a group of five blocks in the southwestern corner of the area. Thus by comparing maps 8 and 9, it will be seen that, combining the two areas, residential development had begun in the western part of both the northern and southern extremities, with a large vacant area lying between.

Light commercial uses had seen some development along Franklin Avenue in the Experimental Area. A glance at the

1. From an interview with one of the real estate leaders in the proposed development.



LAND USE SEQUENCE STUDY DORT HIGHWAY AREA
LAND USE 1921

- | | | | |
|-----------------|------------------|------------|--------|
| SINGLE FAMILY | LIGHT COMMERCIAL | INDUSTRIAL | PUBLIC |
| MULTIPLE FAMILY | HEAVY COMMERCIAL | | CHURCH |
| APARTMENTS | | | VACANT |



Map 9

Franklin Avenue Land Use Profile (Fig. 5), will show that this development was the beginning of that street's present retail shopping center. Fig. 5 has been drawn to show the specific use of each building for the given year. By comparing the uses of any one building for the years covered, it is possible to see what changes have occurred. The Control Area too gave evidence of some slight commercial development although the amount was still negligible.

Heavy commercial land use, on the other hand, first occurred in the Control Area. There were in 1921 two such sites. One, located in the west central part, along the Grand Trunk Railroad, was utilized as a coal yard and coal mining site. Indeed, this area was at one time considered a possible rich coal bearing region although the idea soon proved false. The second area was located west of Dort Highway on the north side of Lapeer Road and was used as a dairy.

Although the map indicates no industrial development in the Experimental Area, it has been shown that there was considerable speculation astir concerning future construction in this area. The following account was carried in the September 30, 1919 edition of the Flint Journal. "Development of East Side Industrial Section Forecast Within the Next Twelve Years. Operations on the Dort Motor Car Company Plant in that section, he (J. Dallas Dort) expects will start this fall as plans and specifications for buildings are now in preparation."

LAND USE PROFILE - EAST SIDE FRANKLIN AVE.

HORIZONTAL SCALE 1" = 100'
 VERTICAL SCALE 1" = 30'

SOURCE: POLK'S DIRECTORIES, 1916 - 1946
 FLINT BUILDING INSPECTOR'S REPORTS

- | | |
|--------------------------|-----------------------------------|
| A - APPLIANCE STORE | S - GROCERY |
| B - BAKERY | ■ - SECOND HAND STORE |
| C - BARBER & BEAUTY SHOP | T - MEATS |
| D - BEAUTY SHOP | U - MEN'S FURNISHINGS |
| E - BEER | V - PAPER & PAINT STORE |
| F - BOWLING & TAVERN | W - REAL ESTATE |
| G - BROKER | X - REFRIGERATION SALES & SERVICE |
| H - CHURCH | Y - RESTAURANT |
| I - CLEANERS & DYERS | Z - SCHOOL |
| J - CONFECTIONERS | 1 - HARDWARE |
| K - DARTY | 2 - SHOE REPAIR |
| L - DRUG STORE | 3 - SHOE STORE |
| M - DRY GOODS | 4 - TIRE STORE |
| N - FLOOR COVERING | 5 - VACANT |
| O - FURNITURE | 6 - VARIETY STORE |
| P - GAS STATION | 8 - VERTICAN BLIND WKS. |
| R - GOSPEL GIFT SHOP | 9 - WATCH REPAIR |

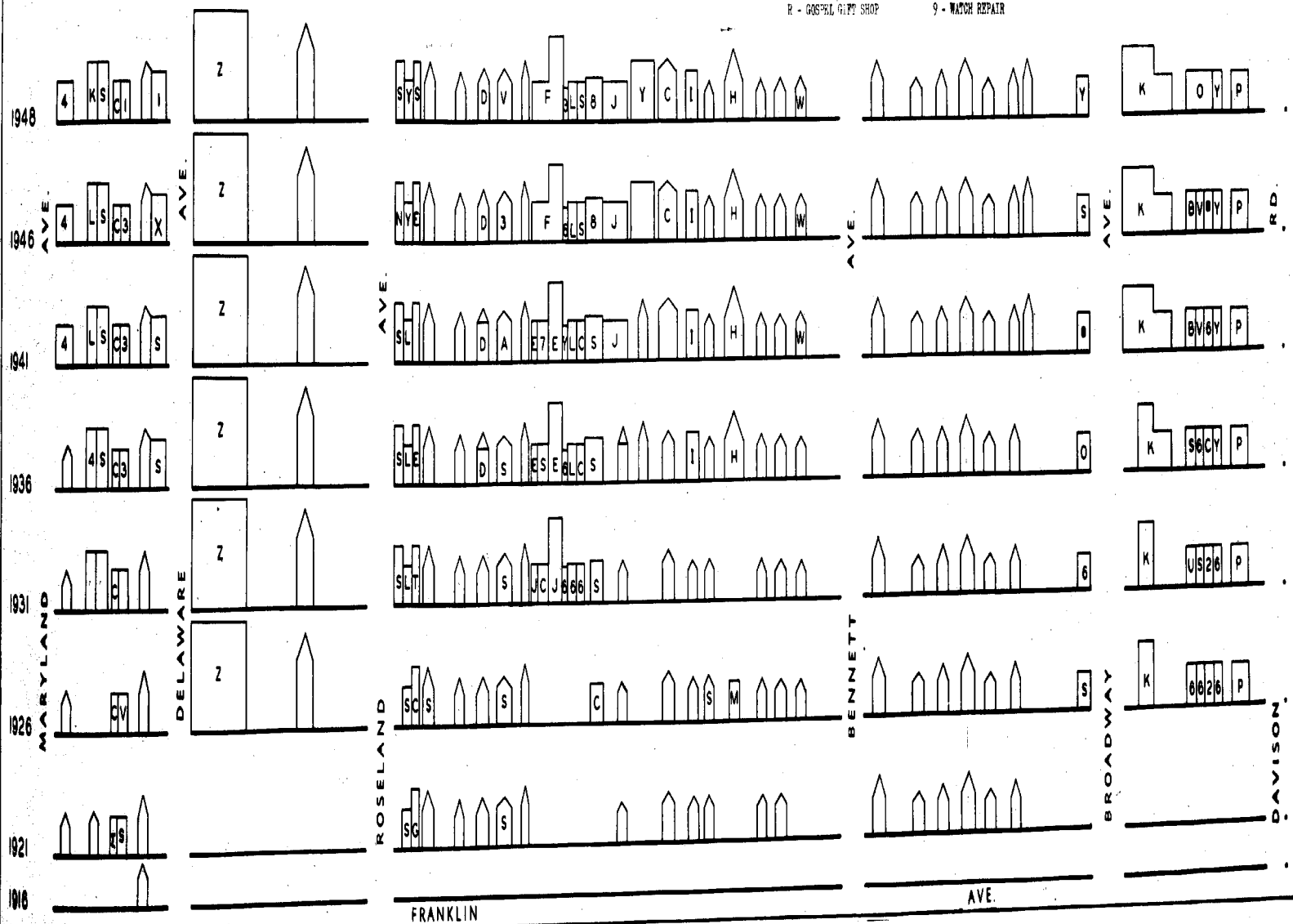


Fig. 5

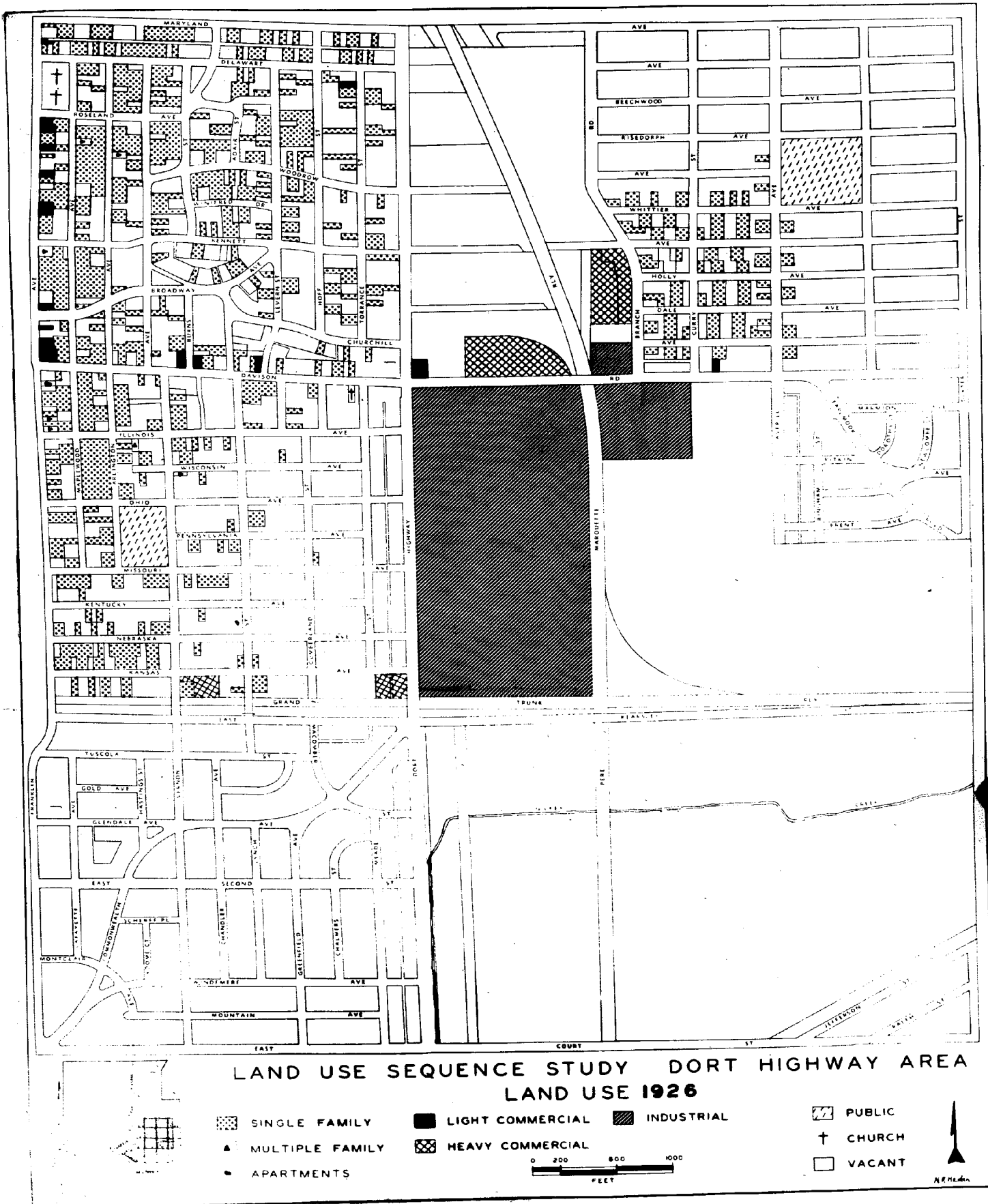
CHAPTER IV

LAND USE SEQUENCE AFTER CONSTRUCTION OF THE A.C. PLANT

It has been shown that the period before the construction of the A.C. Plant was one of great real estate and planning activity. For several years before the actual construction of the Plant, very detailed plans were drawn up for the development of this East Industrial Belt. Control of the necessary land was accomplished, platting went on at a rapid rate, a belt line railroad was built, and the necessary power lines were set up. Thus the foundation of a good industrial site was laid and the plant built.

Now let us examine the land use sequence within this Dort Highway Area as it developed after the construction of the Plant.

Between 1921 and 1926 there occurred several great changes in the land use of the Experimental Area (Maps 8 and 10). The most striking of these is the large industrial tract located in the center of the area, between Dort Highway and the Pere Marquette Railroad. This area is the present A.C. Spark Plug Plant, built in 1923. Just east of the A.C. Plant and south of Davison Road is another industrial site, the Flint Structural Steel Plant. Another decidedly important change is the appearance here of the Pere Marquette Railroad, constructed in 1923. Running parallel to Dort Highway as far north as Davison Road, the railroad then swings in a broad curve to the west, eventually intersecting



Map 10

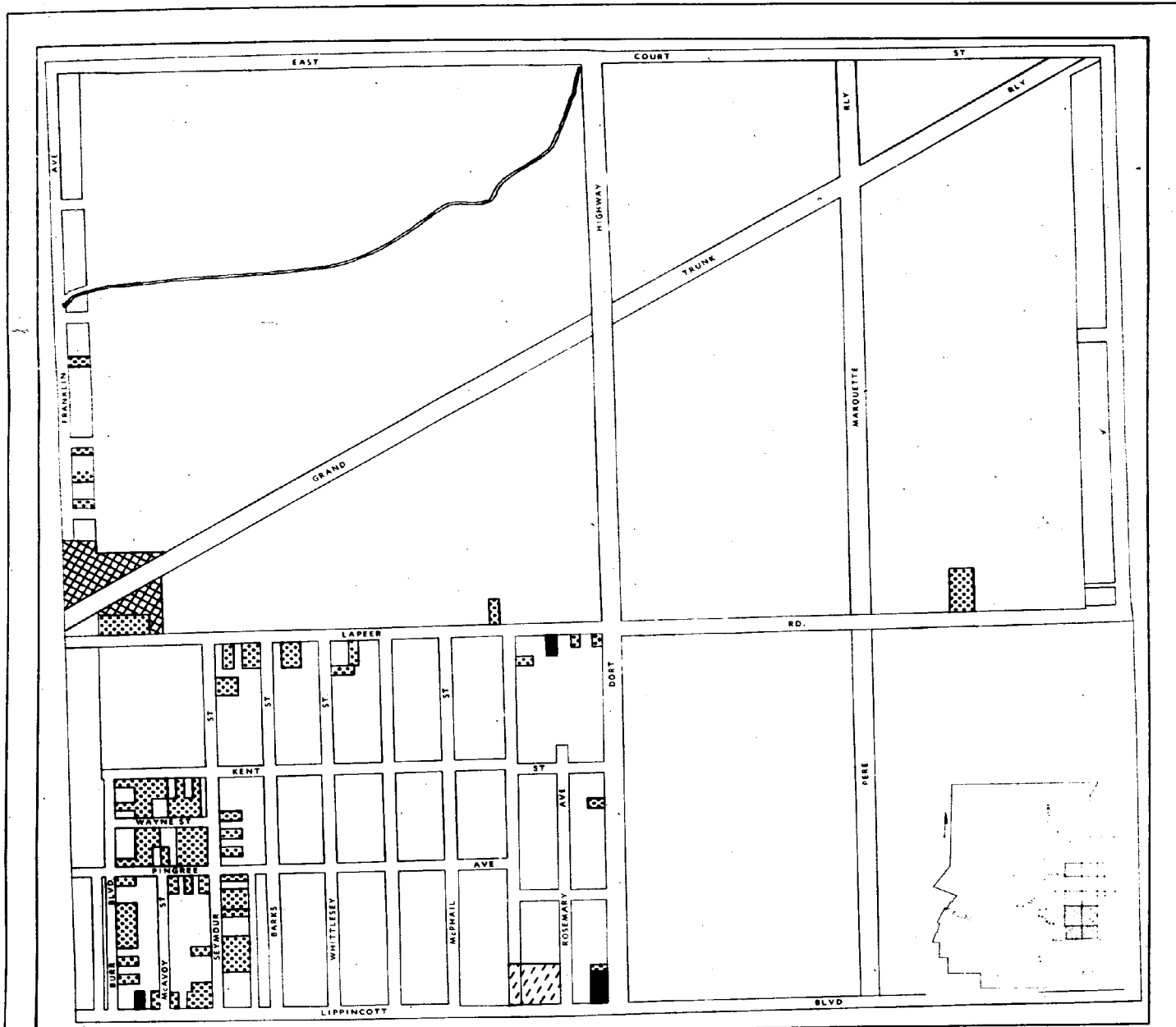
the Highway north of the Experimental Area. A third change is the first appearance of heavy commercial sites. The two largest ones are located north of the A.C. Plant, one opposite the Plant on the north side of Davison Road, the other north of Davison Road between the Pere Marquette Railroad and Branch Road. The other heavy commercial sites are west of Dort Highway just north of the Grand Trunk Railroad. Still another evident change has been the increase in the amount of land devoted to light commercial use and the new location of this use (Fig. 8). The Franklin Avenue retail center has been firmly established (Fig. 5). Additional retail establishments are now beginning to move eastward along the north side of Davison Road with two sites already established east of Dort Highway. Notice the single retail site on the southern edge of the residential district which has sprung up northeast of the A.C. Plant. Residential development likewise shows considerable variation from the pattern of 1921. This development is of two types: a change in density and new location. There has been a filling in of the 1921 pattern in the area north of Davison Road and west of Dort Highway along with a significant eastward movement here which in some places reaches to Dort Highway. There has been very little change in the area immediately west of the A.C. Plant between Davison Road and East Kearsley. A new residential section has sprung up northeast of the A.C. Plant in the area platted in 1923 and 1925. Notice that the

plat east of the A.C. Plant has remained vacant although it was platted long before the occupied area north of it. The amount of public land has increased with the acquisition of a new school site in the northeast corner of the area just west of Averill Avenue. There has also been constructed a new parochial school on the corner of Franklin and Maryland Avenues.

Very little change has occurred in the Control Area from 1921 to 1926 (Maps 9 and 11). Residential development has increased slightly along Lapeer Road. A school site has been secured near the corner of Dort Highway and Lippincott Blvd., and a small heavy commercial site has been established in the angle formed by the Grand Trunk Railroad and Lapeer Road. There has been no industrial development.

By 1926 all industrial and heavy commercial uses have been located in close proximity to one of the three railroads traversing the areas, and the light commercial uses have developed mainly along the paved streets, Franklin Avenue and Davison Road. Thus, early in the development of the area, transportation factors are playing an important role.

1926 to 1931 is another period of expansion for the Experimental Area (Map 12; Fig. 6 and 7). Although industrial development has been very small in area as compared to that of the previous period, three new sites have been established. Two of these are north of the A.C. Plant, one on the southeast corner of Woodrow Avenue and Dort Highway, the other on



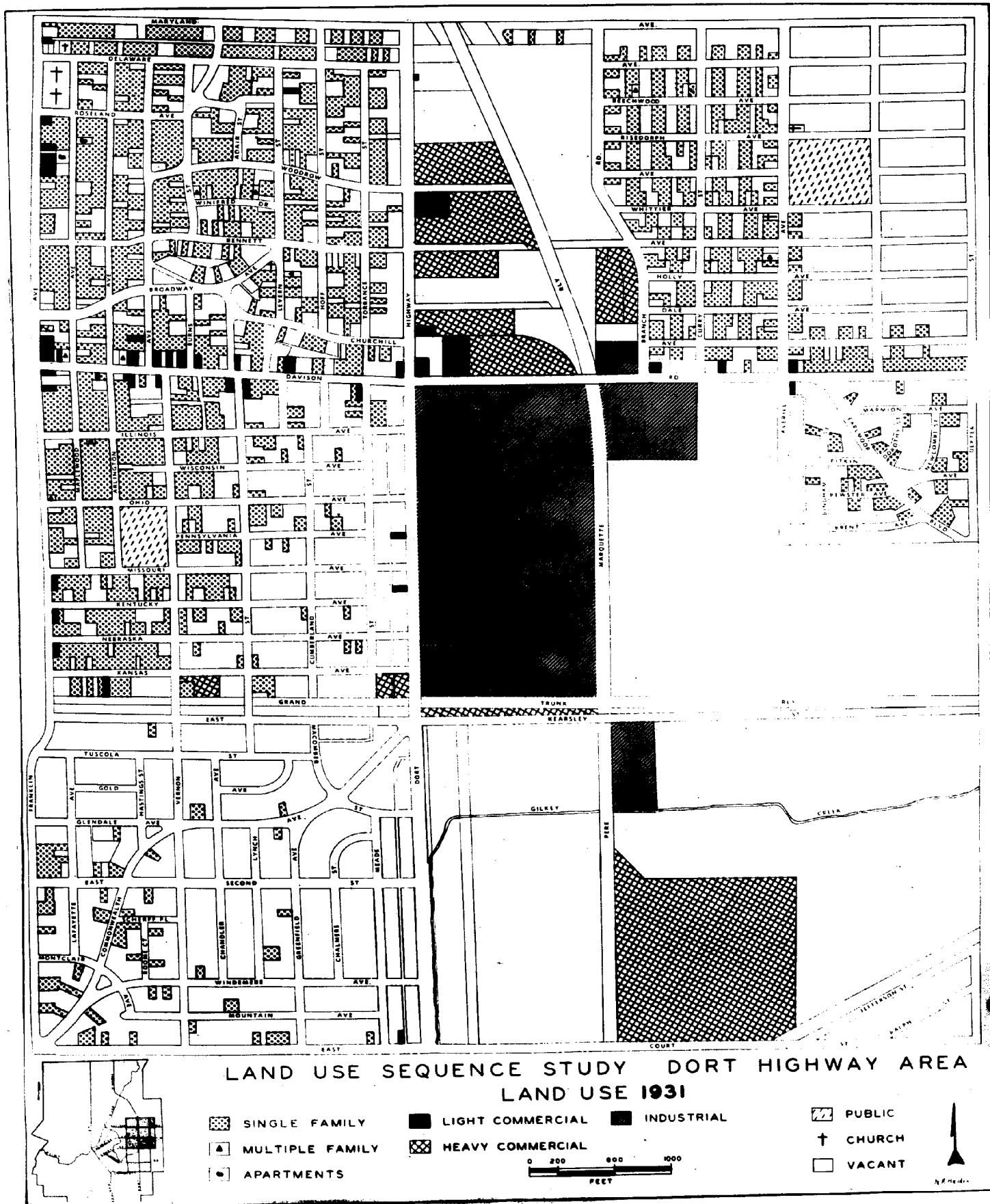
LAND USE SEQUENCE STUDY DORT HIGHWAY AREA
 LAND USE 1926

- | | | | |
|-----------------|------------------|------------|--------|
| SINGLE FAMILY | LIGHT COMMERCIAL | INDUSTRIAL | PUBLIC |
| MULTIPLE FAMILY | HEAVY COMMERCIAL | | CHURCH |
| APARTMENTS | | | VACANT |



Map 11

Davison Road just east of Dort Highway. The outstanding land use change at this time has been the increase in commercial establishments both heavy and light. In the triangular tract north of the A.C. Plant, there has been a considerable development of heavy commercial sites. These sites are, for the most part, occupied by coal yards and a tile supply company. The one north of Woodrow Avenue was still under construction in 1931; on this two warehouses were being built, their building permits indicating a total value of \$200,000. This is the present location of the large A & P Warehouse and Super Market. Further developments in the heavy commercial category have included the location of the Consumers Power Gas Plant east of the Pere Marquette Railroad in the southern part of the area, and the occupation of the narrow strip of land south of the A.C. Plant between the Grand Trunk Railroad and East Kearsley. There has been a very evident increase in the light commercial services between 1926 and 1931. It appears that Davison Road has exceeded Franklin Avenue in the development of retail services; for by 1931 there has not only been an increase in the number of stores along its north side, but there has been the additional development of light commercial uses along the previously undeveloped south side of the street. This increase along Davison Road has even extended east of the A.C. Plant where the single site of 1926 has been increased to several. Elsewhere too, there has been

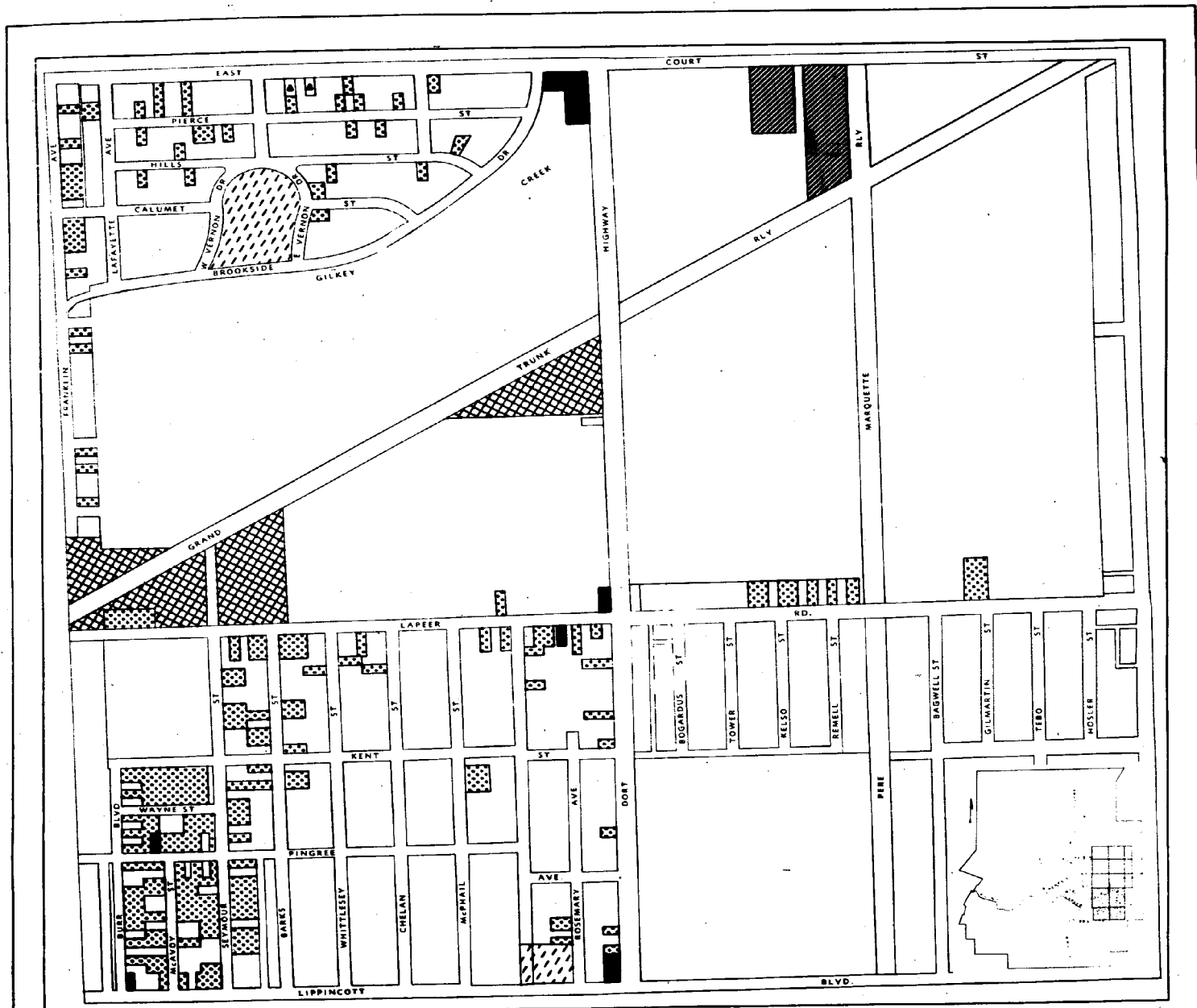


Map 12

scattered development. Notice the two sites, restaurants, on the west side of Dort Highway opposite the center of the A.C. Plant area.

Residential development has occurred along five fronts. First of all, there has been a continued filling in of the 1926 pattern in the section north of Davison Road and west of Dort Highway. Secondly, there has been a definite northward extension of residences in the area northeast of the A.C. Plant, known as "Thrift City." Accompanying this northward push is a narrow eastward extension along Davison Road. A third change is the construction of homes in that previously vacant plot just south of "Thrift City;" a fourth, the filling in of the 1926 pattern in the area west of the A.C. Plant between Davison Road and East Kearsley. Notice that there is still only a very scattered development in the three easternmost blocks of this area. Last, if far from least, is the residential development in the area's previously vacant southwestern section which, although scattered, tends largely to be restricted to the extreme southwestern corner.

Considerable changes have taken place within the Control Area since 1926 (Map 13). Its first industrial sites have been established, these in the northern part, just west of the Pere Marquette Railroad. Heavy commercial development has spread eastward between Lapeer Road and the Grand Trunk Railroad, and another new site has been set up along the



LAND USE SEQUENCE STUDY DORT HIGHWAY AREA
LAND USE 1931

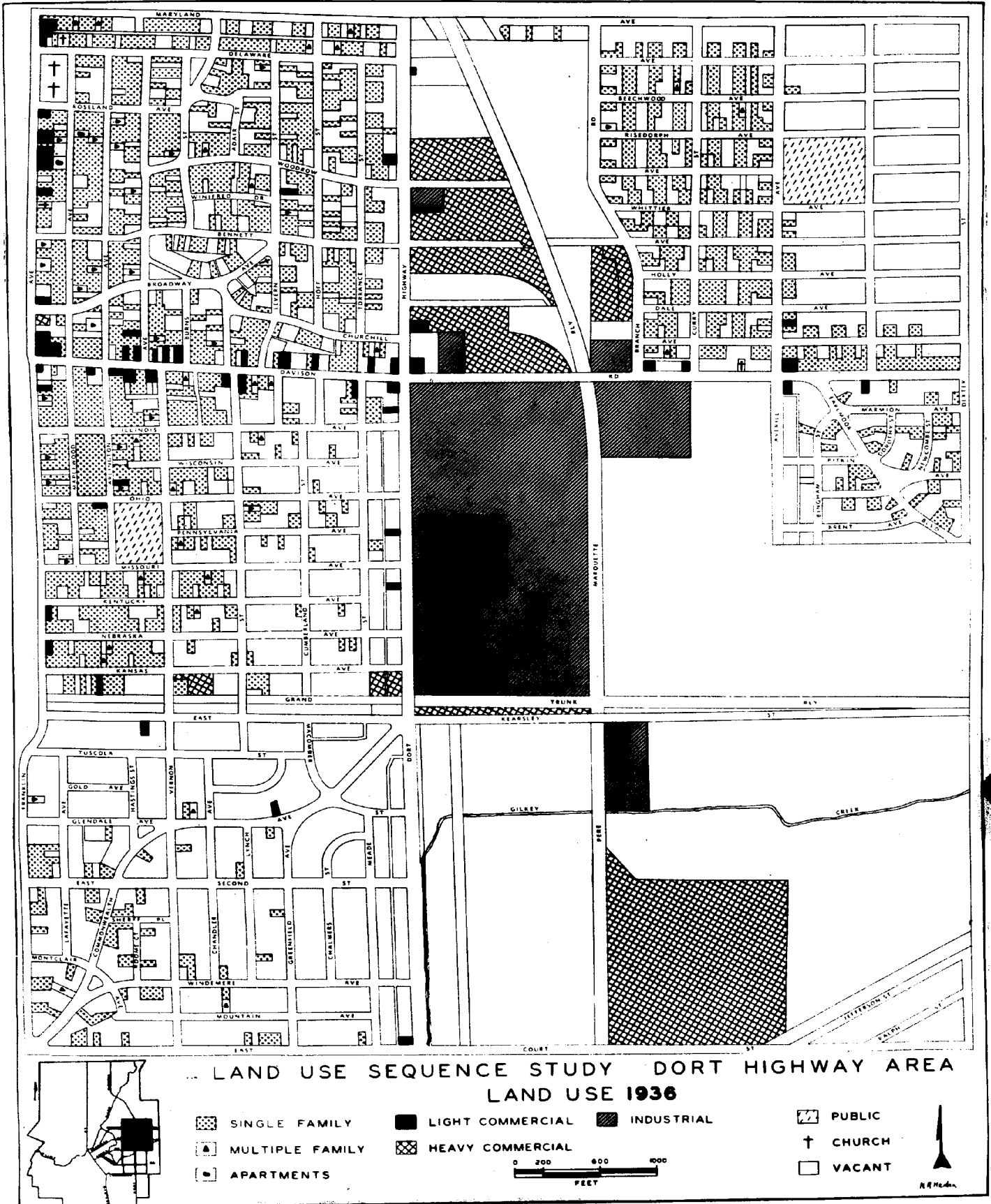
- | | | | |
|-----------------|------------------|------------|--------|
| SINGLE FAMILY | LIGHT COMMERCIAL | INDUSTRIAL | PUBLIC |
| MULTIPLE FAMILY | HEAVY COMMERCIAL | | CHURCH |
| APARTMENTS | | | VACANT |



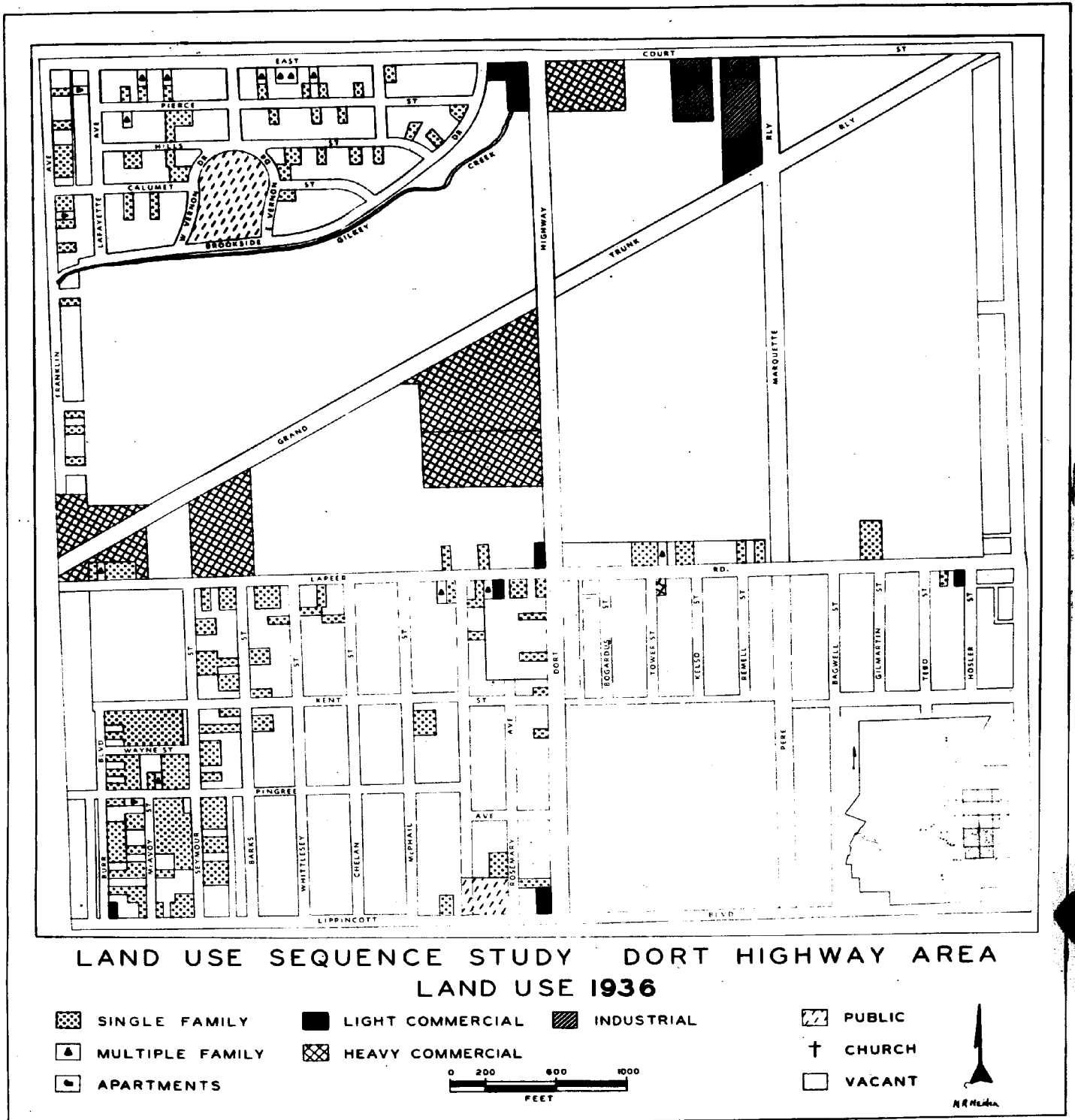
Map 13

west side of Dort Highway just south of the Grand Trunk Railroad. While heavy commercial and industrial orientation has been chiefly a north-south one in the Experimental Area, in the Control Area it appears as an east-west trend. Residential development has found new locations. In the southwestern corner the 1926 settlement has been altered very little, but in other parts, the Control Area has gained three new plats. The second largest of these is "Brookside," located in the northwestern corner of the area between East Court Street and Gilkey Creek. "Brookside" has been occupied by a scattered residential development and along with this residential beginning a school site has been acquired. The second plat, Stone Plat, is a very small one located on the north side of Lapeer Road between Dort Highway and the Pere Marquette Railroad. The largest of the three, Evergreen Park, extends along the south side of Lapeer Road from Dort Highway to the eastern edge of the Control Area, and has as yet given no indications of any type of development. Light commercial uses are still widely scattered although there is some tendency to locate them along Dort Highway.

The period from 1931 to 1936 has been rather a static one in both areas. Fig. 6 and 7 show that the rate of increase for all categories leveled off tremendously. The 1936 maps (Maps 14 and 15) therefore appear practically the same as those for 1931 in respect to location; there are a few changes in type of use. Of interest is the noticeable



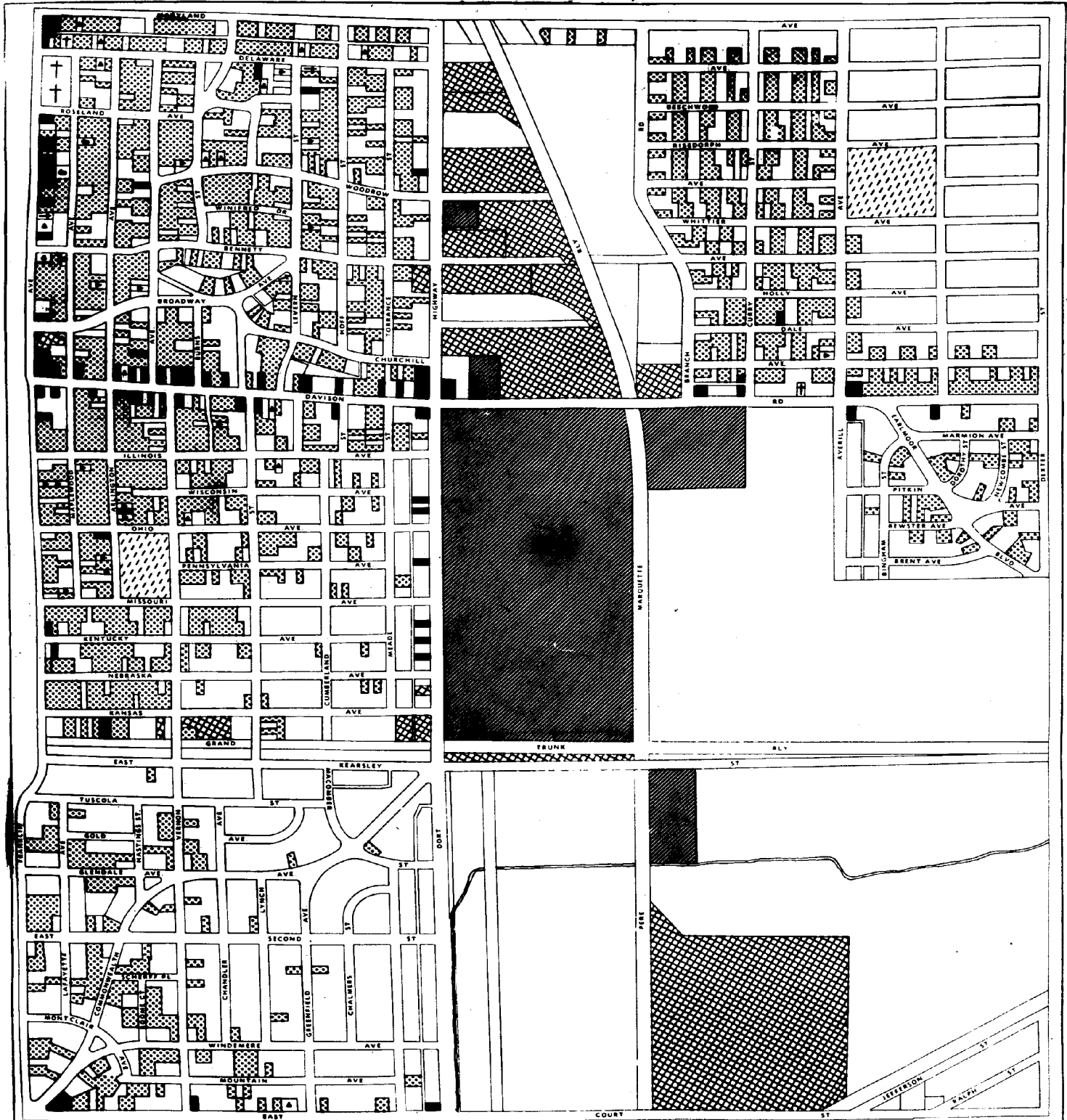
Map 14



Map 15

increase in the number of multiple family units which have sprung up by 1936. Another interesting change is the appearance of taverns among the retail services (Fig. 5). Although the rate of development decreased greatly at this time, the Control Area has seen some heavy commercial development south of the Grand Trunk Railroad on the west side of Dort Highway and on the southeastern corner of Court Street and Dort Highway. The development south of the Grand Trunk further reflects the change in the times, for one of the new businesses set up was a wholesale beer distributing warehouse; the others were a trucking firm and a greenhouse.

During the period from 1936 to 1941 (Maps 16 and 17) neither area underwent any industrial growth in so far as the amount of land occupied is concerned. With the establishment of two coal yards, the Experimental Area experienced a northward extension of the heavy commercial area immediately north of the A.C. Plant. Two smaller heavy commercial sites have been located on the west side of Dort Highway. The one north of Davison Road is a commercial bakery. The second site, opposite the A.C. Plant and south of Nebraska Avenue, is a trucking firm. The retail centers in 1941 are largely the same as in 1936 with the primary change being an increase in number. Notice the increase in the light commercial establishments opposite the A.C. Plant. These now include a union hall and four restaurants. A small but significant change has been the beginning of a

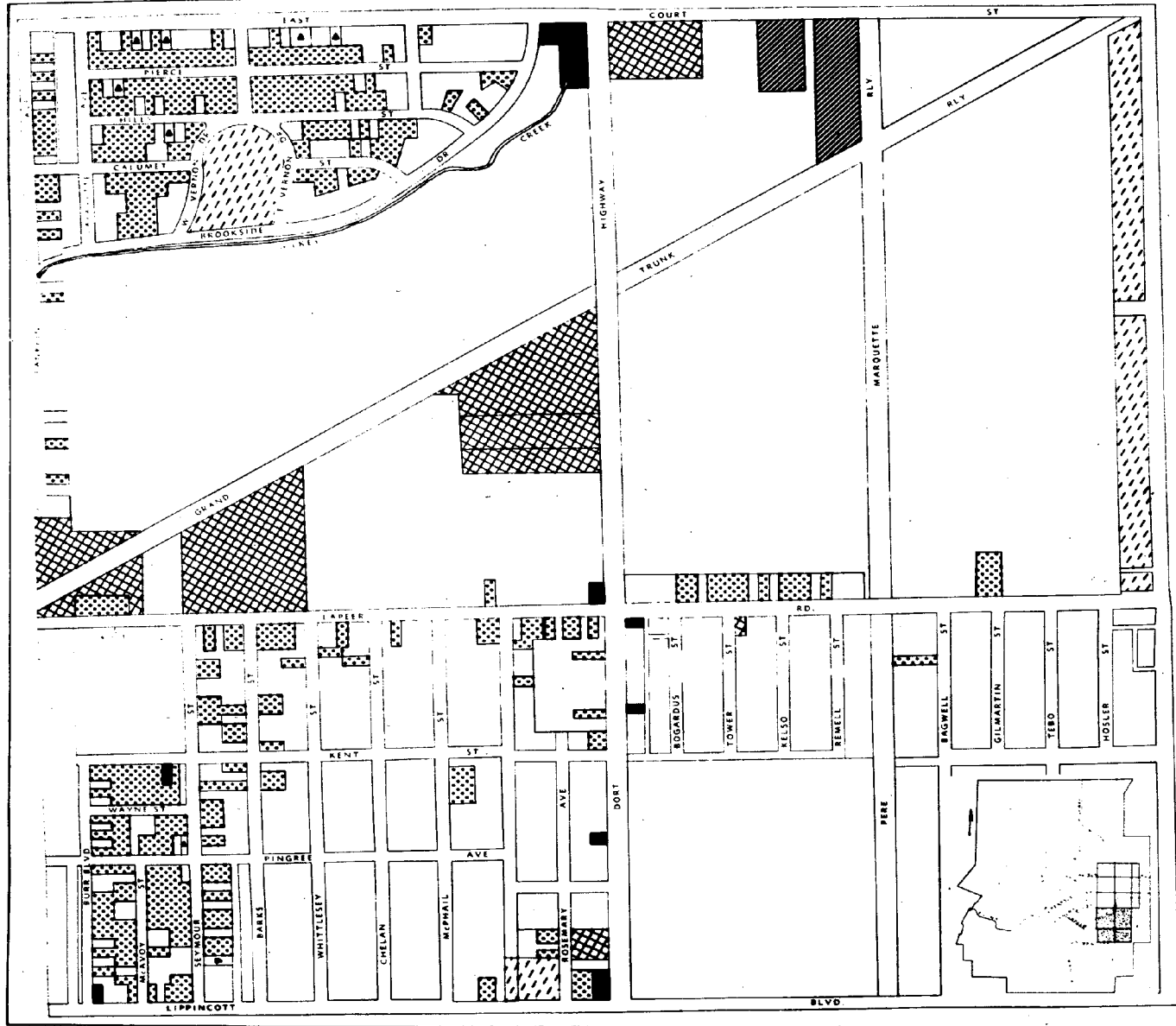


LAND USE SEQUENCE STUDY DORT HIGHWAY AREA
LAND USE 1941

- | | | | |
|-----------------|------------------|------------|--------|
| SINGLE FAMILY | LIGHT COMMERCIAL | INDUSTRIAL | PUBLIC |
| MULTIPLE FAMILY | HEAVY COMMERCIAL | | CHURCH |
| APARTMENTS | | | VACANT |



Map 16



LAND USE SEQUENCE STUDY DORT HIGHWAY AREA
LAND USE 1941

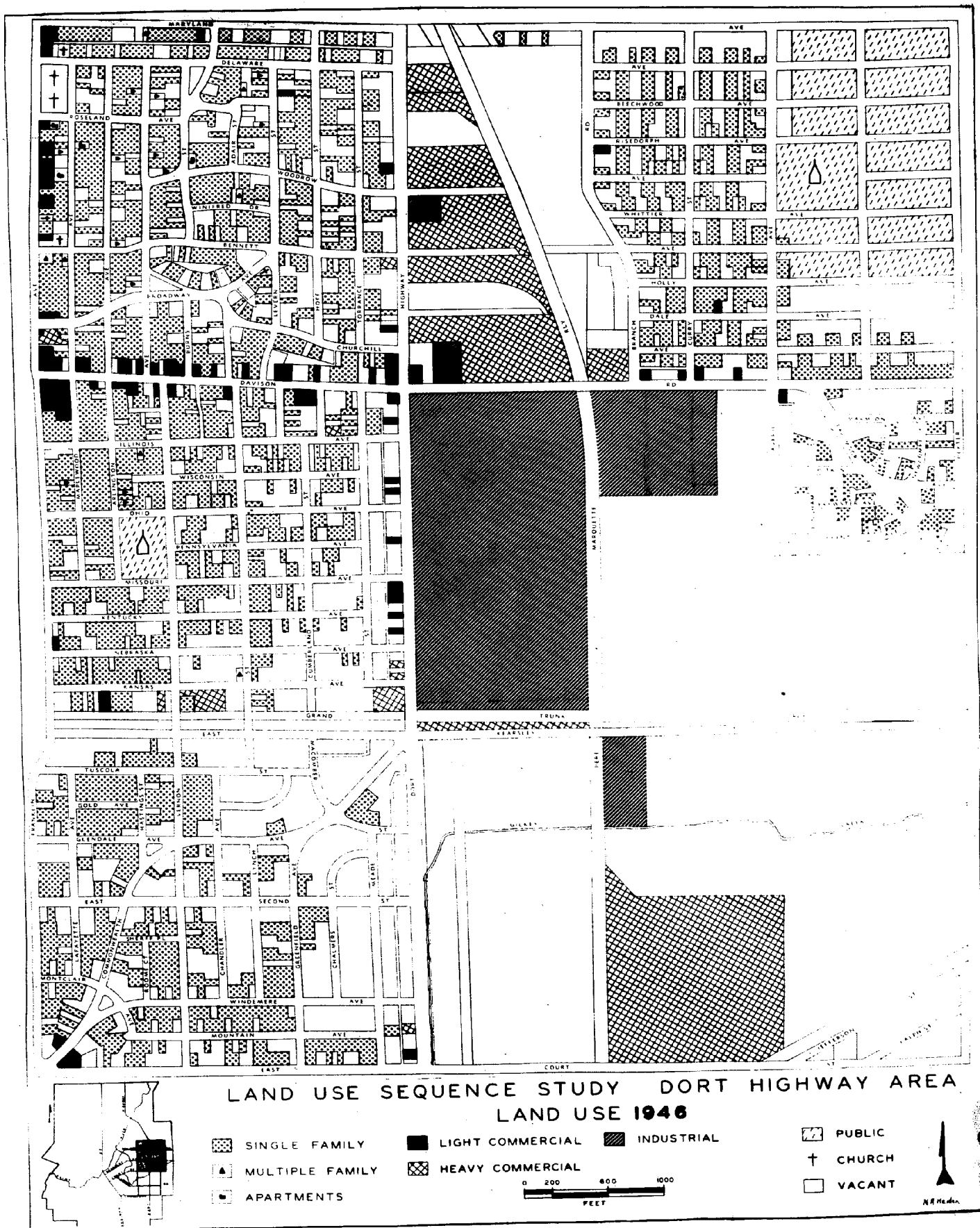
- | | | | |
|-----------------|------------------|------------|--------|
| SINGLE FAMILY | LIGHT COMMERCIAL | INDUSTRIAL | PUBLIC |
| MULTIPLE FAMILY | HEAVY COMMERCIAL | | CHURCH |
| APARTMENTS | | | VACANT |



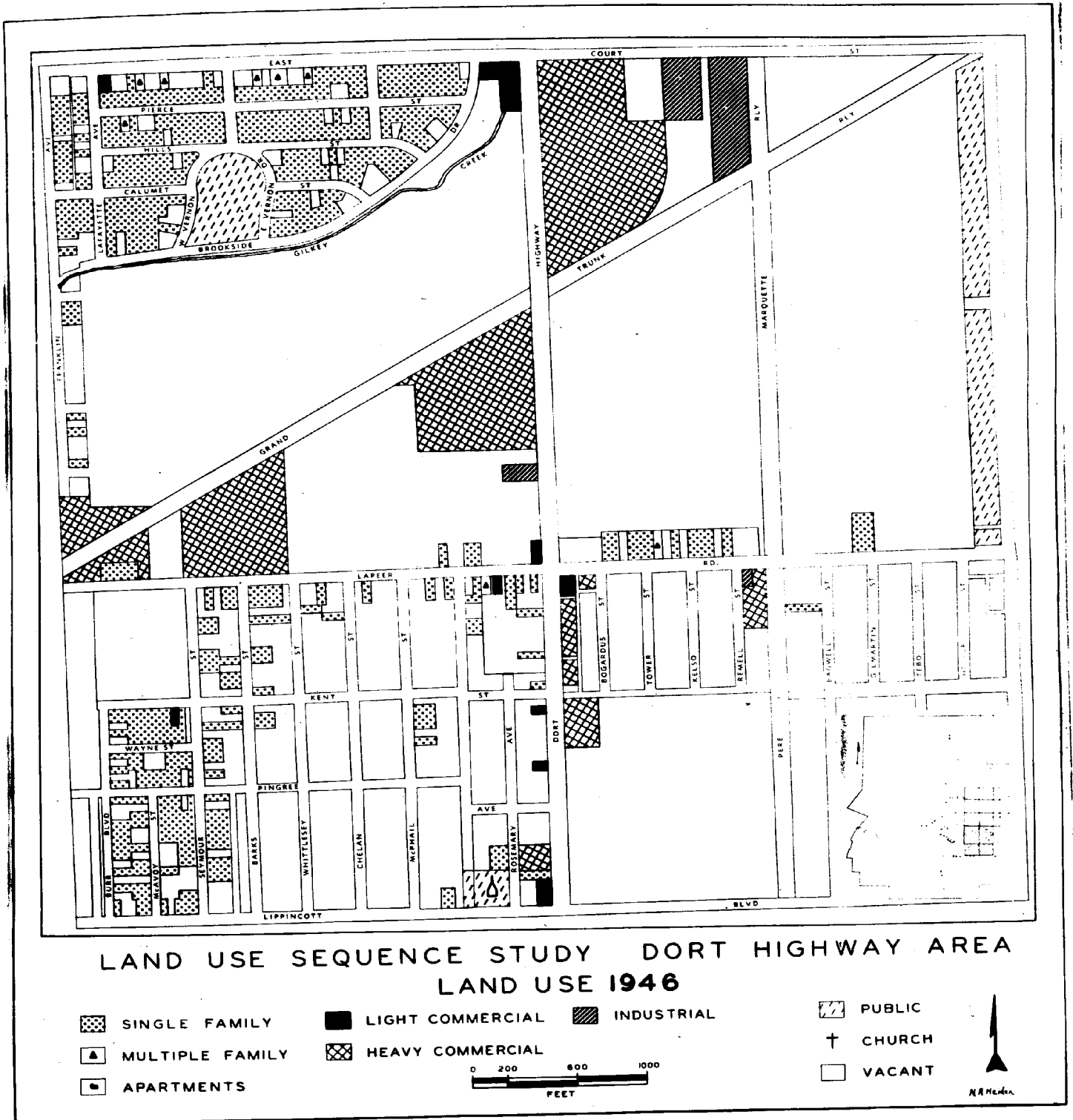
Map 17

neighborhood shopping center at the intersection of Commonwealth Avenue and East Court Street. This particular development services the only good residential section in both areas. This section will be discussed later. The residential pattern has changed but slightly in the Experimental Area. It is however, of interest to notice that the construction which has taken place has been mainly in the southwest section, south of East Kearsley Street. Fig. 6 shows a much greater rate of increase in residential development for the Control than for the Experimental Area. This residential development occurred in the northwest corner between Gilkey Creek and East Court Street. The city has acquired a narrow strip of land along the eastern edge of the Control Area just north of Lapeer Road; this is a recently vacated plat.

The land use pattern has not changed materially from 1941 to 1946 (Maps 18 and 19). Rather, what change has occurred has been mainly a filling in of a frame work laid down as early as 1931. No residential changes have occurred in the Experimental Area north of Davison Road. Notice that the city has now acquired a large tract of formerly platted land in the northeast corner. South of Davison Road and west of Dort Highway, there has been a general filling in of the 1941 pattern. A single item of interest is the light commercial change on the southeast corner of Davison Road and Franklin Avenue. This site, formerly occupied by homes, vacant land, and small stores, has been cleared and a large



Map 18

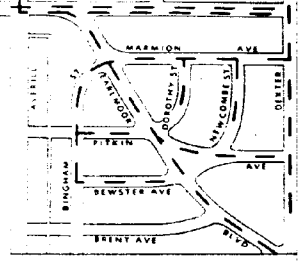
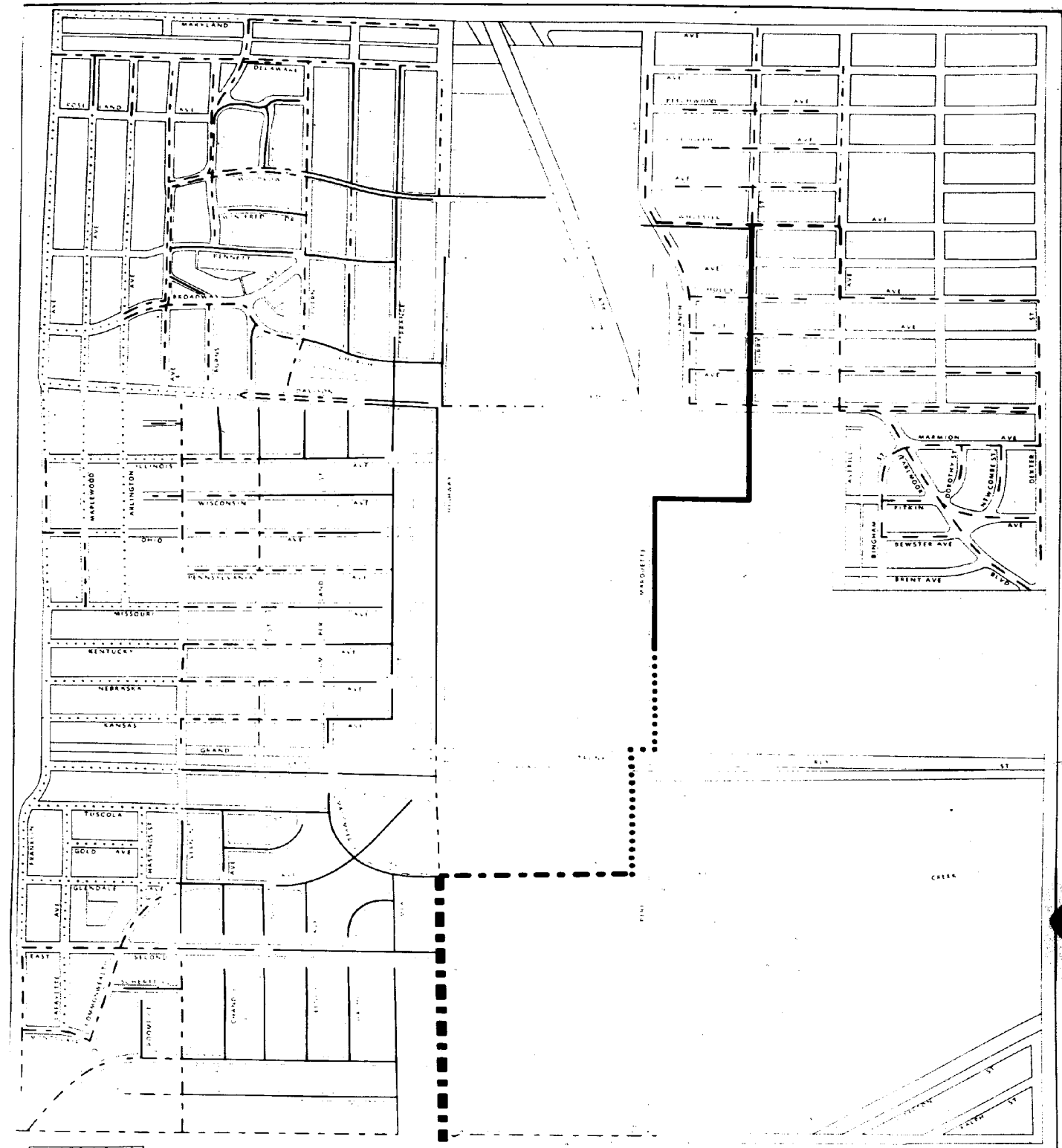


Map 19

modern super market, with ample parking space, has been constructed. The Control Area has had several changes in its heavy commercial development. Several trucking firms and a large cold storage plant have been located east of Dort Highway between the Grand Trunk Railroad and East Court Street. There has been an introduction of similar uses in the area south of Lapeer Road and east of Dort Highway. Here, the trucking firms have been located along the main highway, while a bulk petroleum company has been located along the Pere Marquette Railroad and Lapeer Road.

Having seen the direction of the development of the various land use categories within the two areas, it will now be attempted to show this development in relation to the extension of such services as sanitary and storm sewers, roads, and water supply.

There have been four periods in the development of the sanitary sewer system in the Experimental Area, and these periods correspond closely with the trends in residential and light commercial land uses (Map 20). In the period 1907 - 1921 the three westernmost blocks of the Experimental Area were largely furnished with sanitary sewers. Most of this development occurred around 1917, 1919, and 1920. Comparing the Sanitary Sewer Map with the Land Use Map for 1921 (Map 8) it is readily seen that the first residential building occurred within these three blocks. A rapid eastward expansion of sanitary sewer facilities was continued from 1921 to 1926. This expansion too was accompanied by an ex-



LAND USE SEQUENCE STUDY - DORT HIGHWAY AREA
SANITARY SEWERS

1907-21	1931-36	1941-46	8-12 INCHES	15-22 INCHES	↑
1921-26	1936-41	1946-48	24-30 "		
1928-31			42-45 "		

PERIOD BUILT

SIZE

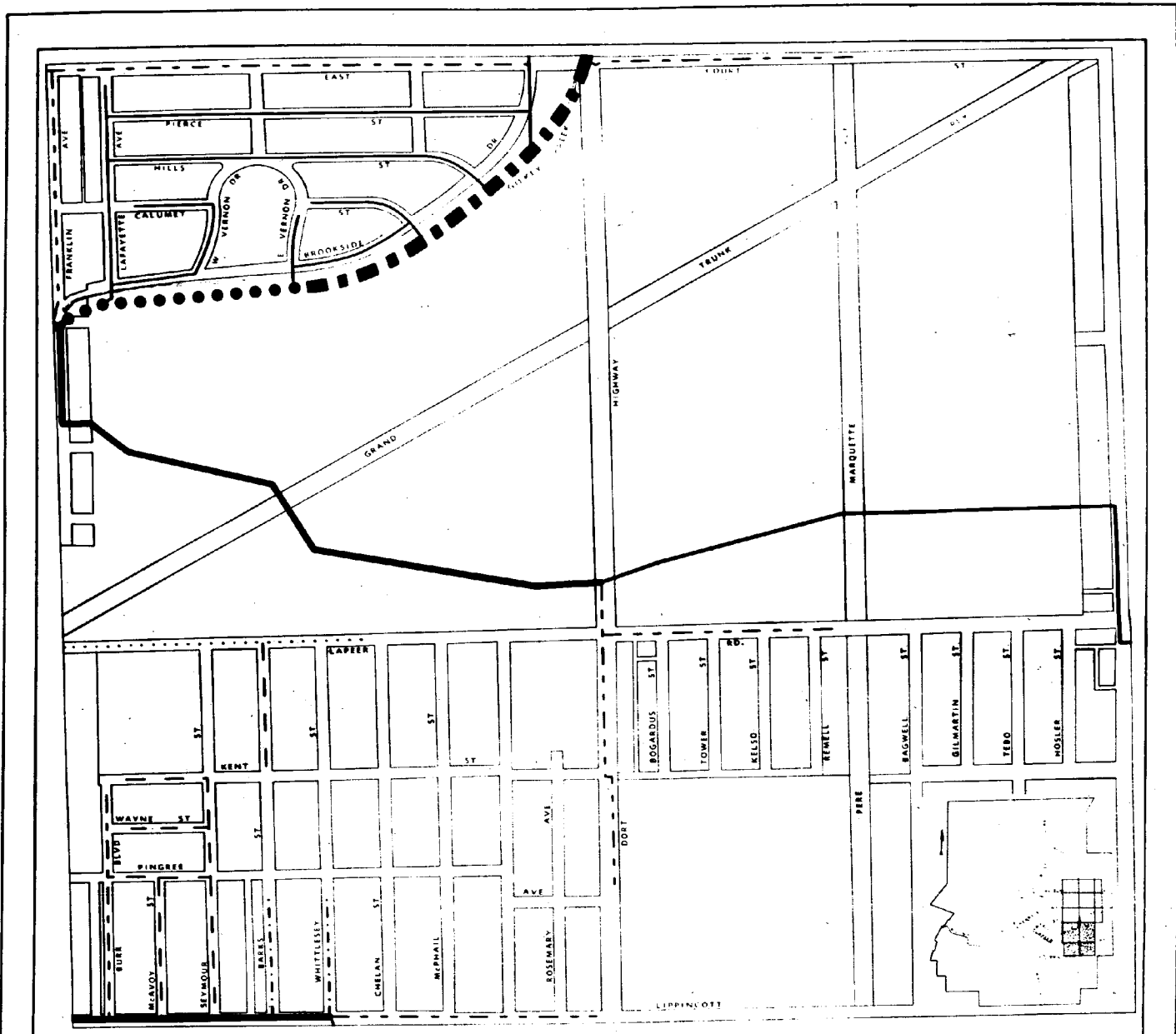
0 200 600 1000 FEET

SOURCE: CITY ENGINEERS SANITARY SEWER MAP
DRAWINGS ON FILE IN CITY ENGINEERS OFF

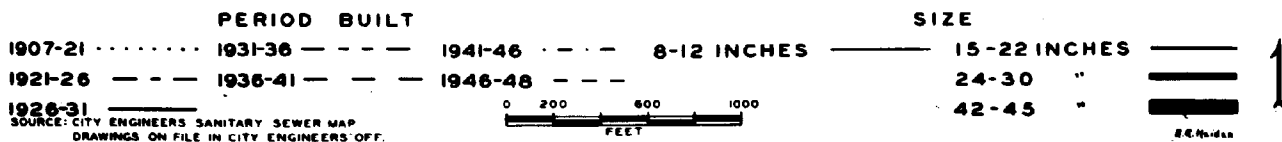
24 Miles

tensive development of all the land use categories. During these years sanitary sewers were extended eastward to Levern and Cumberland Streets. South of Kearsley Street sanitary sewers were laid in the southwestern corner as far as Vernon Avenue. There was also a trunk line laid along Dort Highway north to Gilkey Creek, then east along the Creek to the Pere Marquette Railroad. By 1931 all of the Experimental Area west of Dort Highway has been furnished with sanitary sewer facilities. The sections northeast and east of the A.C. Plant did not receive such facilities until 1936 to 1941 at which time many of these sewers were laid under W.P.A. funds. At the time construction started on the portion located in the Thrift City addition a bog was discovered, approximately 7 feet beneath the surface, which hindered the laying and raised the cost considerably. It will be noticed that residential development preceded the establishment of sanitary sewer facilities by a goodly number of years in this area northeast and east of the A.C. Plant (Map 10). Most of the housing here is of poor quality and includes a considerable number of garage homes; aside from those blocks bordering on Davison Road, there has been very little subsequent construction in these areas.

Unlike the Experimental Area, the Control Area has not been as extensively furnished with sanitary sewers (Map 21). Today the Experimental Area has all of its platted sections supplied, whereas there is a large portion of the Control Area still lacking such amenities. The first construction



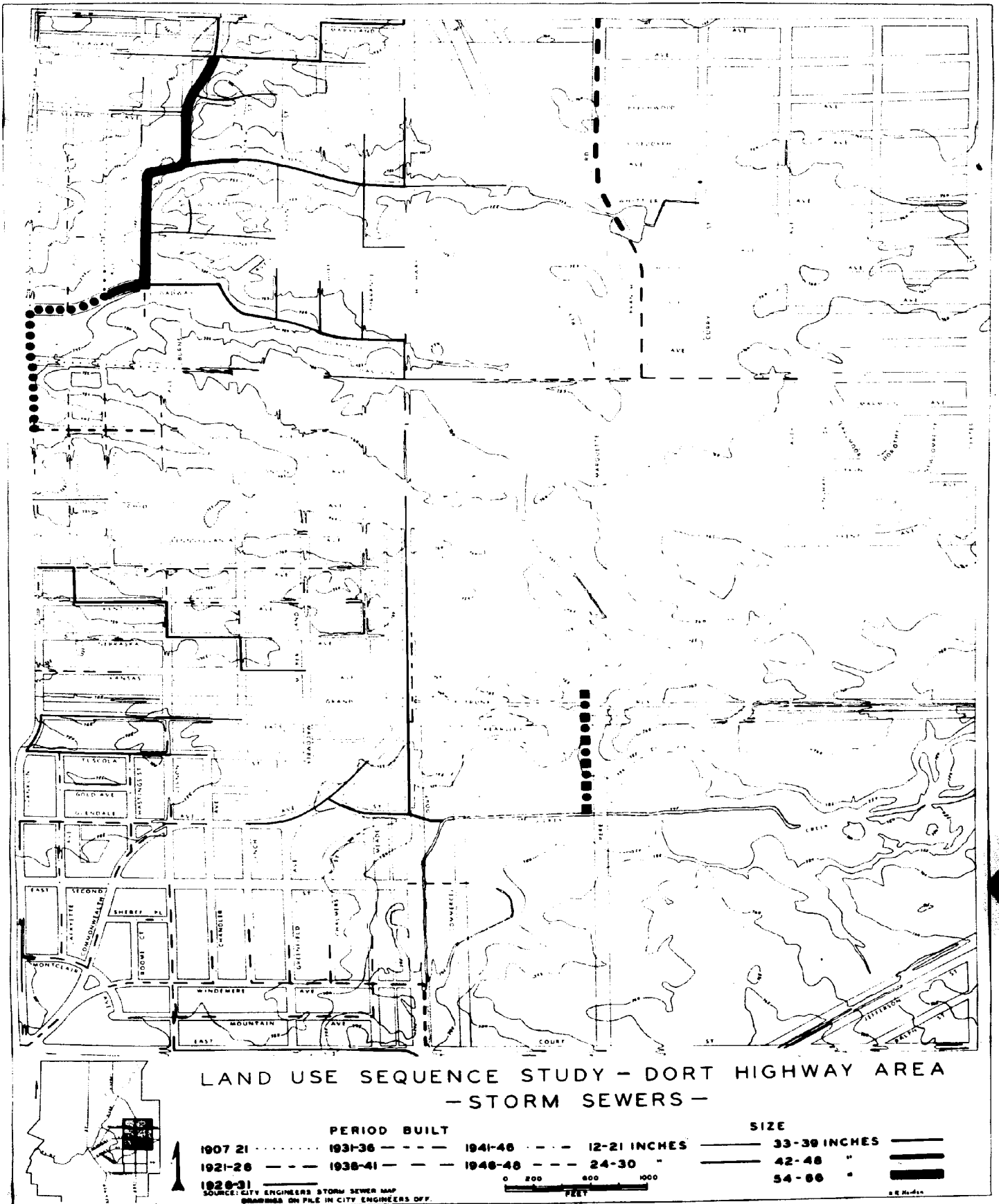
LAND USE SEQUENCE STUDY - DORT HIGHWAY AREA
SANITARY SEWERS



Map 21

of these sewers in the Control Area occurred during the period 1921 to 1926. At this time a trunk line was laid along Gilkey Creek which is an extension of the same pipe laid in the Experimental Area. The map indicates that this section of pipe along Gilkey Creek was laid in two different periods. As it happens however, the laying of this trunk sewer was a single large project and so the one section was laid in 1921, the other in 1922. An 8-12 inch pipe was also laid along Burr Blvd. in the southwestern corner of the Control Area in 1922. The Land Use Map (Map 9) will show that this southwestern corner had been settled long before the extension of these sewers. From 1926 to 1931 the platted area "Brookside," just north of Gilkey Creek, was furnished with sanitary sewers. This plat was recorded in 1928, the whole area serviced in 1929, and by 1931, it could boast of considerable good residential development (Compare Maps 13 and 21). During this same period, a sanitary sewer had been laid across the unplatted section north of Lapeer Road and another along Lippincott Blvd.; the latter was extended to Dort Highway in 1932. The next extension of sanitary sewers occurred in 1938 when another two blocks in the extreme southwestern corner were serviced. This again was some time after residential development had begun there. Since 1938 there has been very little extension of this service with the result that much of the platted area south of Lapeer Road is today without sanitary sewers.

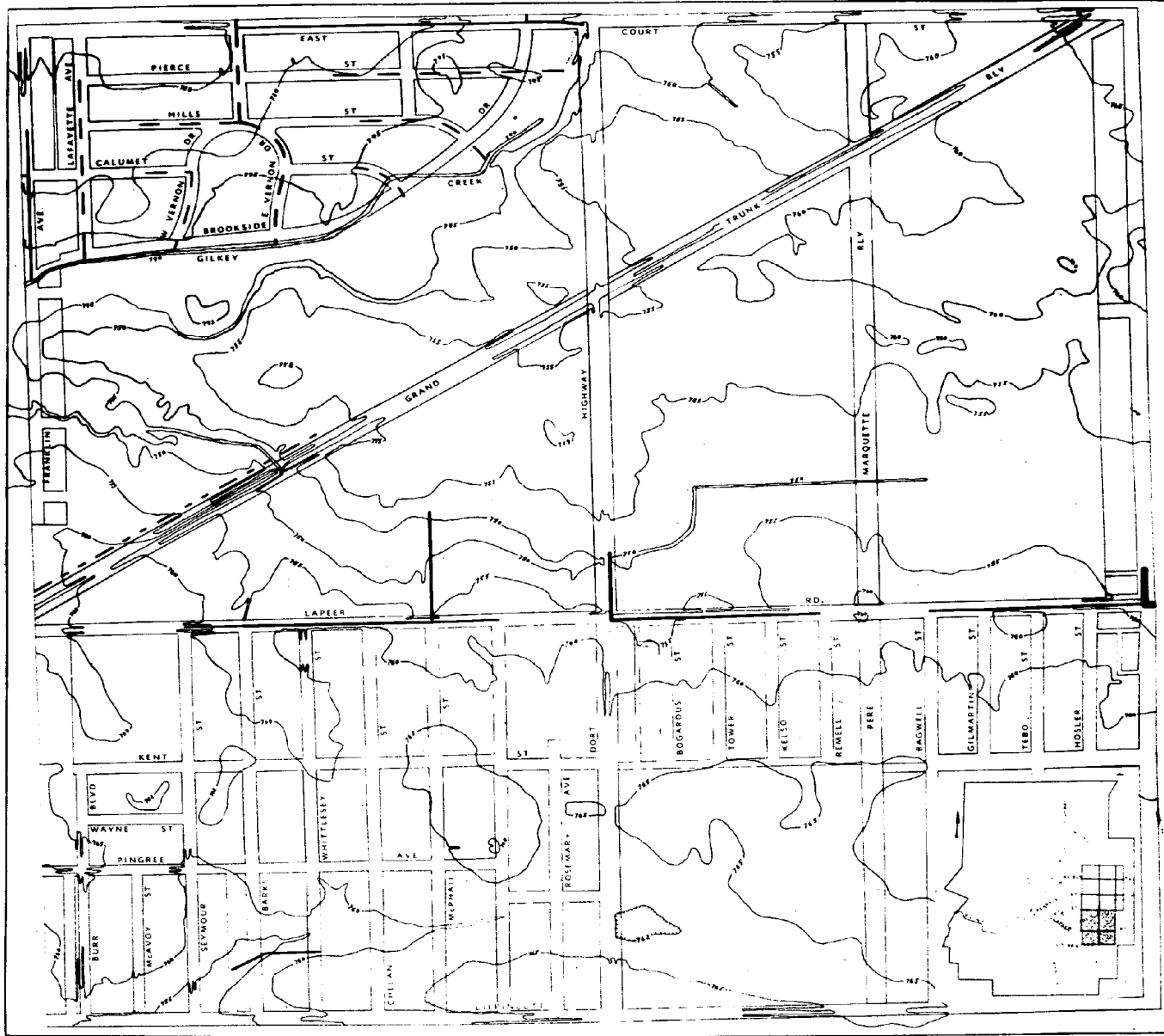
In the Experimental Area there occurred in the period from 1921 to 1926 two small extensions of storm sewers (Map 22). One was the laying of a 33-39 inch pipe along Illinois Avenue from Franklin to Vernon, a distance of three blocks. The other was the laying of a 54-66 inch pipe from the southeastern corner of the A.C. Plant site, south along the Pere Marquette right-of-way, to Gilkey Creek. By 1931 it is clear that the extension of storm sewer facilities has not been as general as that of sanitary sewers. In the area north of Davison Road a trunk sewer has been laid from Broadway Avenue in the south to Delaware Avenue in the north. From this trunk, smaller pipes have been laid along the two main drainage channels. In the section between Davison Road and East Kearsley there has been considerably less laying of storm sewers. The principal addition has been that "step like" development extending from Franklin Avenue southeastward along the depression formed by the 750 ft. and 755 ft. contour lines. In the southwestern section there has been a small amount of pipe laid along East Kearsley and Tuscola Streets. There has also been some development along the eastern end of Glendale Avenue and Macomber Street, with this pipe connecting to one laid north along Dort Highway as far as Ohio Street; all drain into Gilkey Creek. Another extension has been that along East Court Street, from Vernon Avenue to Dort Highway, this likewise draining into Gilkey Creek. No storm sewers were laid from 1931 to 1936 in the Experimental Area, but a considerable area was ser-



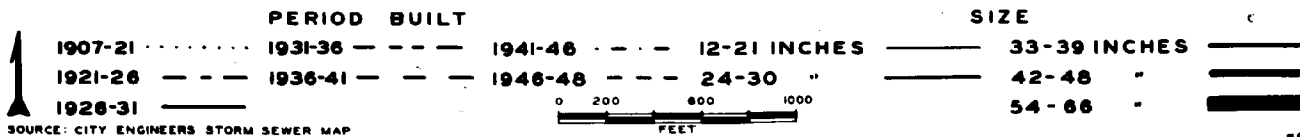
viced from 1936 to 1941. It will be noticed that what storm sewers there are in the Thrift City area, northeast of the A.C. Plant, were placed there at this time. Much of the southwestern section was also supplied with storm sewers during the same period.

As in the case of sanitary sewers, a great deal of the platted land in the Control Area is still without storm sewer facilities (Map 23). Lapeer Road was serviced in the period 1926 - 1931. The line west of Dort Highway drains the area in front of the heavy commercial area which was developing at this time. The sewer east of Dort Highway drains the small residential area just platted north of Lapeer Road (Map 13). The "Brookside" area between Gilkey Creek and East Court Street did not acquire storm sewers until 1936 - 1941, the same period when much of the adjacent area just north of Court Street in the Experimental Area was serviced.

All that portion of the Experimental Area west of Dort Highway has been supplied with water. East of Dort Highway the only platted section without water is that just east of the A.C. Plant and south of Davison Road. Mains have been laid east of Dort along the main streets, Davison, Kearsley, and East Court. A large part of the Control Area has not been supplied with water. There are no water mains east of Dort Highway from East Court Street south to Lippincott Blvd. West of Dort Highway the only platted section com-



LAND USE SEQUENCE STUDY - DORT HIGHWAY AREA
- STORM SEWERS -

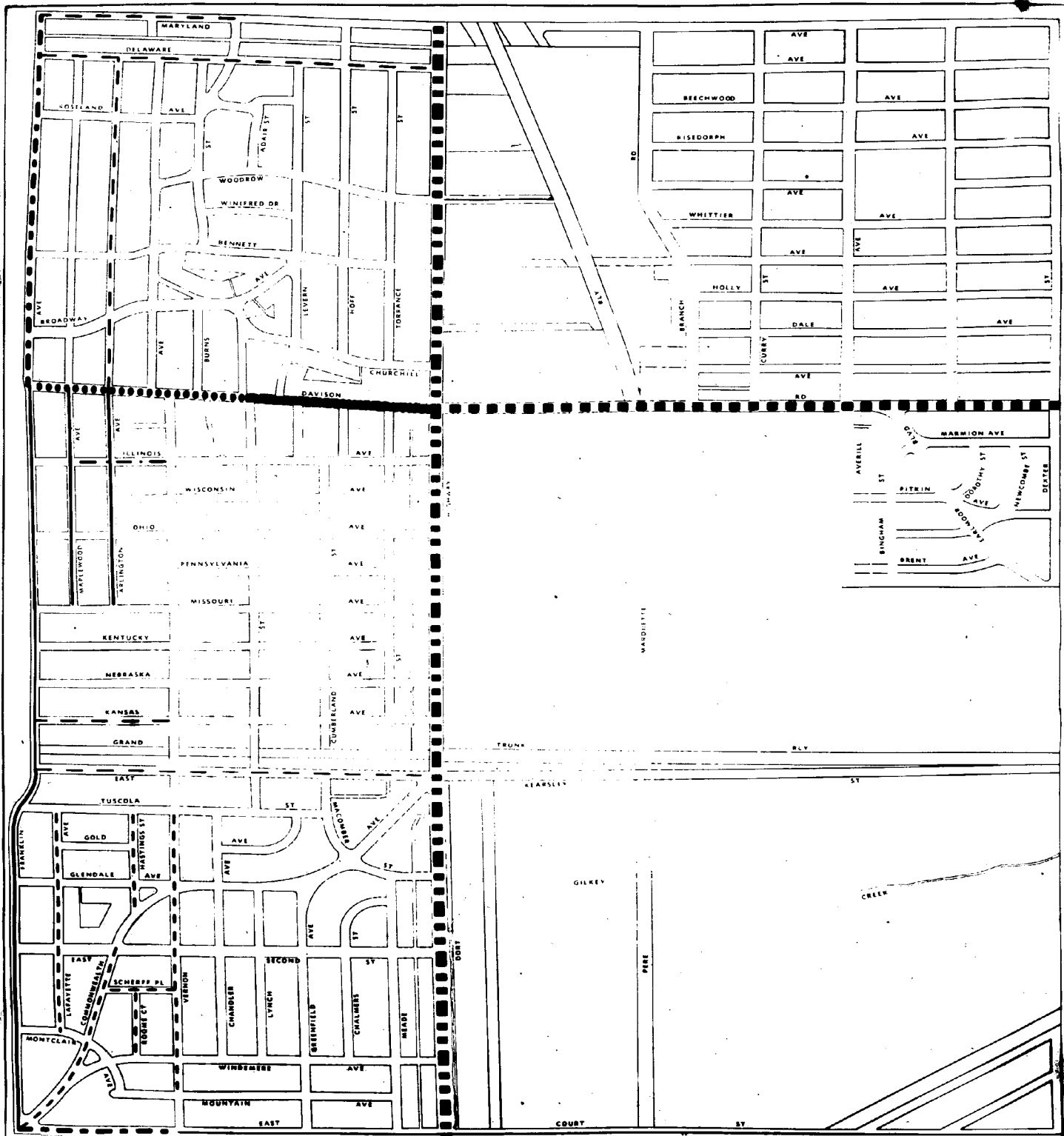


SOURCE: CITY ENGINEERS STORM SEWER MAP
DRAWINGS ON FILE IN CITY ENGINEERS OFF

Map 23

pletely supplied is that northern part between Gilkey Creek and East Court Street. In the southern section between Lapeer Road and Lippincott Blvd. only the three westernmost blocks and those blocks along Dort Highway have been supplied.

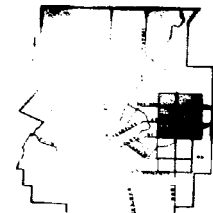
Paved roads are conspicuous by their absence in both the Experimental and Control Areas (Maps 24 and 25). Davison Road, paved in 1921 was the first road in either of the two areas to be paved. In 1947 it was widened to four lanes in the section east of Dort Highway. The next street to be surfaced was that part of Franklin Avenue north of Davison Road; this was paved in 1923. A glance at the Experimental Area Land Use Maps will show that it has been along the above two paved streets that the light commercial development has concentrated. The westernmost block of East Court Street was paved in 1924. By 1931 Franklin Avenue had been paved south from Davison Road in the Experimental Area to Brookside Drive in the Control. Arlington and Maplewood Avenues, just east of Franklin Avenue and south of Davison Road, along with East Court Street, had also been surfaced. All of this road improvement took place between 1927 and 1929. With its paving in 1926-27, Western Road or Dort Highway became the cut-off for M-10, the Dixie Highway, around Flint. Thus a paved north-south route was established skirting the eastern edge of Flint with two paved east-west highways intersecting it at right angles. It is interesting to compare the dates of these street improvements with the



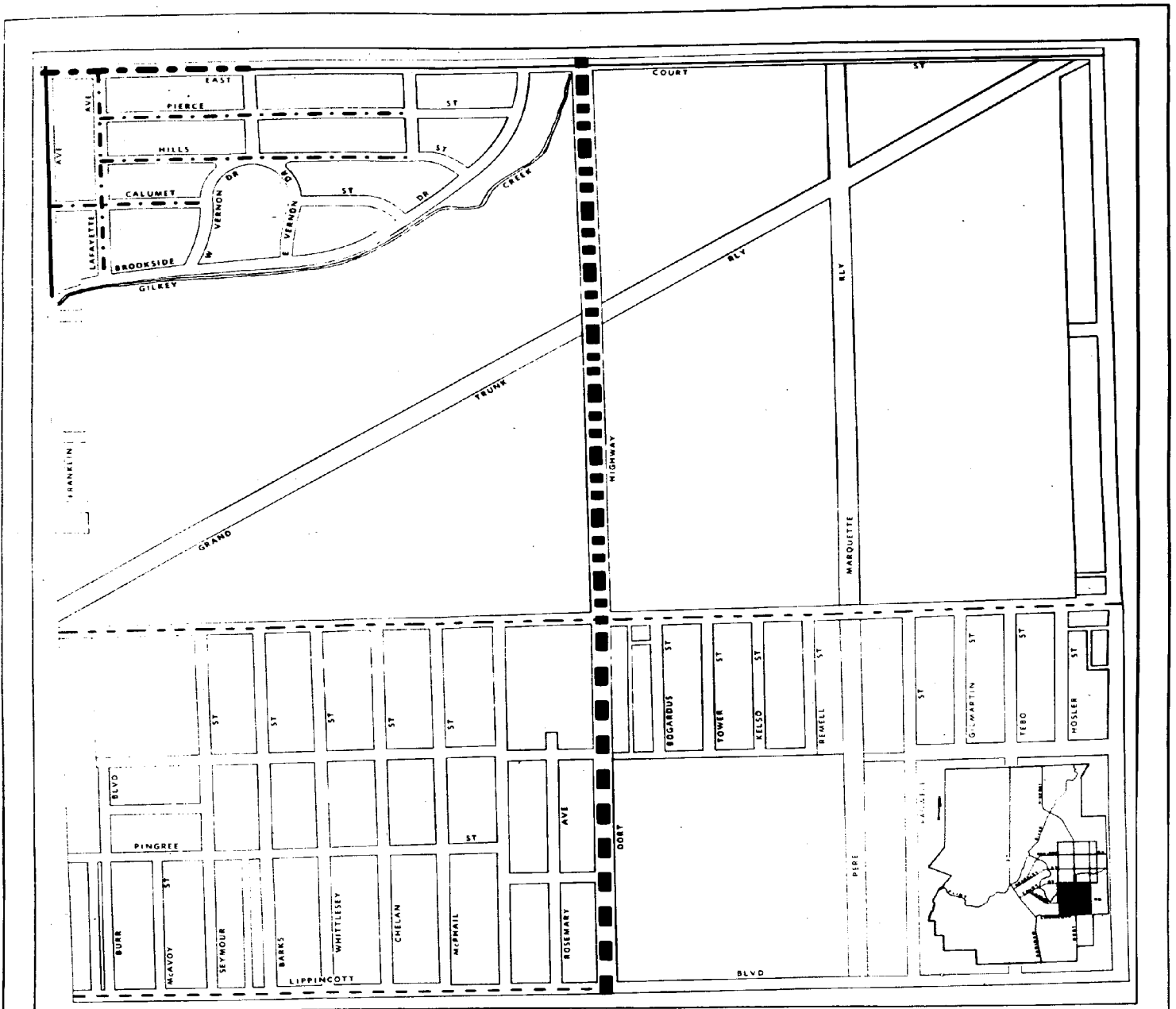
LAND USE SEQUENCE STUDY - DORT HIGHWAY AREA
PAVED STREETS

PERIOD BUILT		SIZE
1907-21	1931-36	18 20 FEET
1921-26	1936-41	36 "
1926-31	1946-48	40 42 "

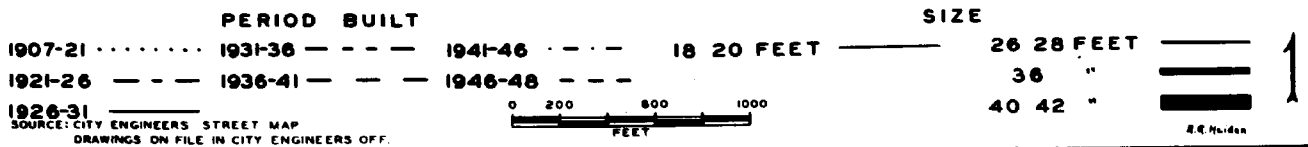
SOURCE: CITY ENGINEERS STREET MAP
DRAWINGS ON FILE IN CITY ENGINEERS OFF



Map 24



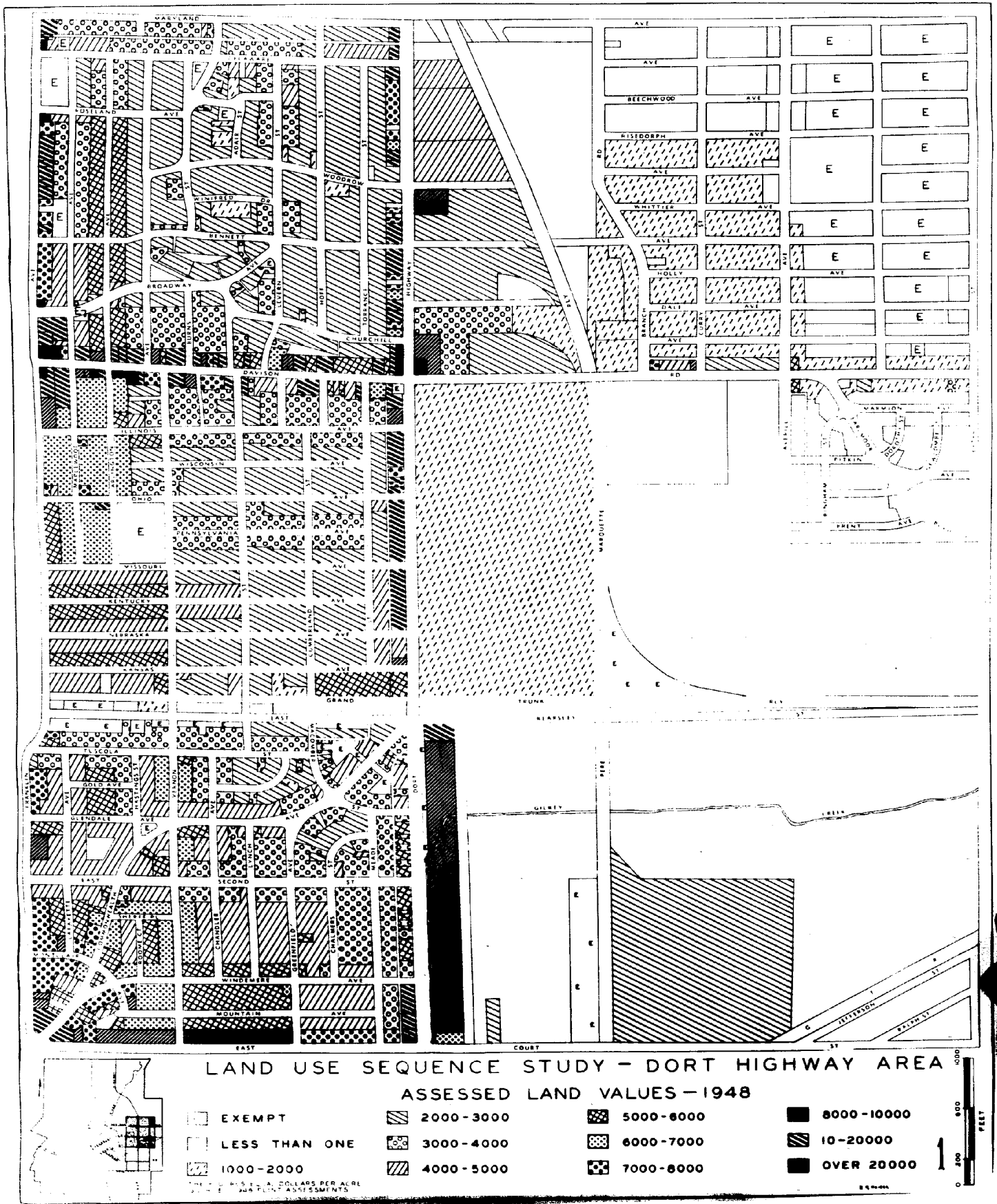
LAND USE SEQUENCE STUDY - DORT HIGHWAY AREA
PAVED STREETS

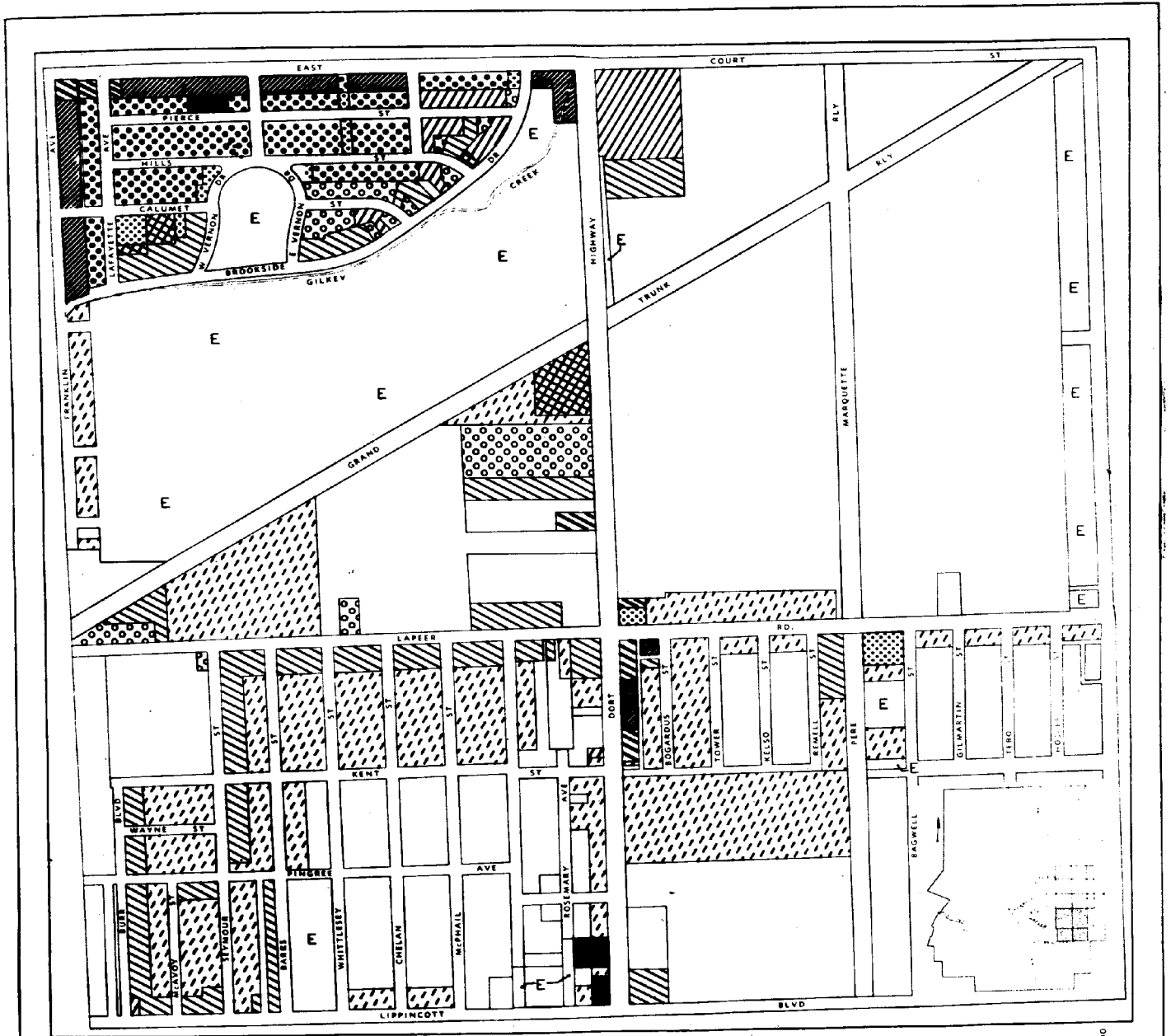


Map 25

dates when the first two major shifts in industrial location occurred. No further surfacing took place until Lapeer Road was paved in 1933. At that time Dort Highway was widened to its present four lanes. Since the improvement of Dort Highway in 1934, there was very little activity in the way of road repairs in either area until 1941 when the streets in "Brookside" were paved. The war, of course, stopped all further development until the present post war period. Most of the paving done since the war has occurred in the southwestern section of the Experimental Area. It appears then that in most cases paving has followed the initial residential, commercial, and industrial development. What paved streets do exist are found either in the areas of commercial and industrial development or in the better residential sections.

Assessed land values are one indication of the relative value of the various sections in both areas. The 1948 Assessed Land Values Maps (Maps 26 and 27) show that the high assessed valuations closely follow the main thoroughfares and occupy only that half of the block adjacent to the main road. Thus a narrow band of high values extends south along Franklin Avenue to Davison Road; there it swings east along both sides of the street as far as Dort Highway. Then the high values tend to concentrate along the western side of Dort, north as far as Maryland Avenue and south as far as





LAND USE SEQUENCE STUDY - DORT HIGHWAY AREA

ASSESSED LAND VALUES - 1948

EXEMPT	2000-3000	5000-6000	8000-10000
LESS THAN ONE	3000-4000	6000-7000	10-20000
1000-2000	4000-5000	7000-8000	OVER 20000

THE FIGURES EQUAL DOLLARS PER ACRE
SOURCE: 1948 FLINT ASSESSMENTS

B. E. Nelson



Map 27

Kearsley Street; at this latter point they jump to the east side of the highway and continue south to East Court Street. This high value strip along the east side of Dort between Kearsley and East Court Street is a new plat, recorded in 1947, and known as the Dort Highway Industrial sites. Another band of high value land extends along both sides of East Court Street as far east as Dort Highway. In the Control Area the high land values are concentrated in the residential area between Gilkey Creek and East Court Street. Outside of this area, land values drop tremendously with a few small sections of high value scattered along Dort Highway.

In general, the areas of highest assessed value are the residential and light commercial areas west of Dort Highway. East of Dort Highway in both areas assessed valuations are very much lower, not only in the large unplatted sections but also in the residential tracts. This low valuation in the residential sections reflects the general lack of services and the poor condition of the homes.

As the Experimental and Control Areas have become imprinted with their respective patterns of land use there has occurred a definite distribution of residences according to quality.¹ In the Experimental Area Kearsley Street appears to be the dividing line between the good and fair residen-

1. See illustrations on the following pages.

tial areas with the good appearing south of Kearsley and west of Dort Highway. The poorest residential section is that in the northeastern part of the Experimental Area. In the Control Area the best residences are located in the northern part between Gilkey Creek and East Court Street. These two good residential districts are comprised of the only three subdivisions in the area which had at all sufficient plat or deed restrictions; indeed, there were no plat or deed restrictions imposed on most of the remainder of the area under study. Two of these aforementioned subdivisions occupied that portion of the Experimental Area west of Dort Highway between Kearsley and East Court Streets; the third was in the northwest corner of the Control Area between East Court Street and Gilkey Creek. These, in fact, subsequently became the only areas in the study to be classified as "good" residential areas according to F.H.A. standards. The subdivisions in the Experimental Area have been the result of concentrated effort on the part of the original platter to plan and control development in this area. It is believed that this good residential section shows that it is possible through planning to attract good residential building within close proximity to such disturbing factors as an industrial plant and a main highway.

RESIDENTIAL DEVELOPMENT NORTH OF DAVISON ROAD
AND WEST OF DORT HIGHWAY



1. Typical view looking west
from Dort Highway. Photograph
taken at the corner of Dort
Highway and Churchill Avenue.

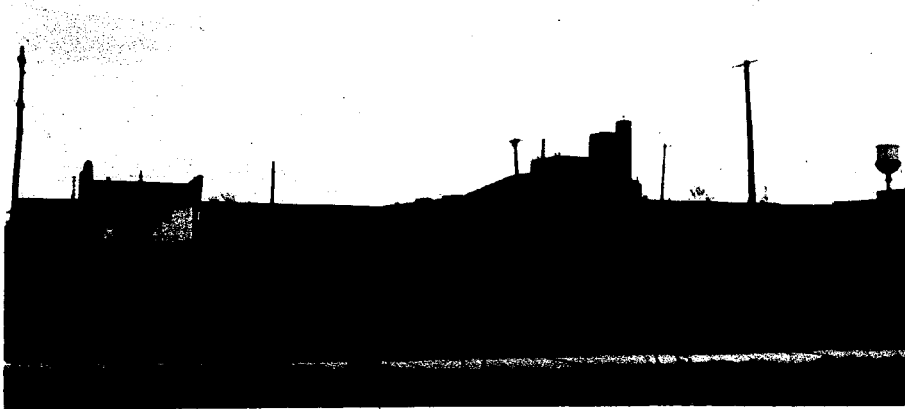


2. Looking south along Burns Street from Woodrow Avenue.

TYPICAL LIGHT COMMERCIAL DEVELOPMENT ALONG FRANKLIN AVENUE
NORTH OF DAVISON ROAD



RESIDENTIAL DEVELOPMENT WEST OF THE A.C. PLANT
BETWEEN DAVISON ROAD AND KEARSLEY STREET



1



2

1. Looking east from the corner of Meade Street and Wisconsin Avenue, showing light commercial development in the foreground and the A.C. Plant in the background.
2. Looking west from the same corner, showing recent residential construction along Wisconsin Avenue.

RESIDENTIAL DEVELOPMENT WEST OF THE A.C. PLANT
BETWEEN DAVISON ROAD AND KEARSLEY STREET



1



2



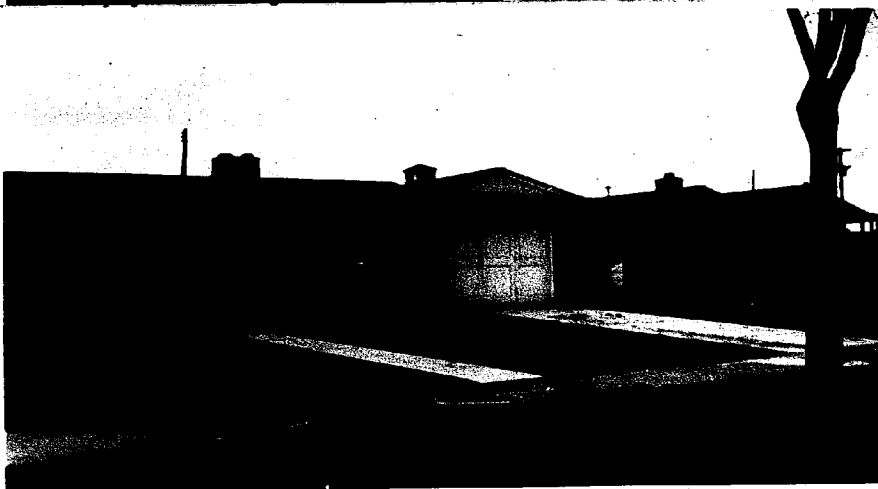
3

1. Corner of Nebraska and Vernon, looking west; old residences.
2. Same corner, looking east; new residences.
3. Same corner, looking south toward coal company.

RESIDENTIAL DEVELOPMENT WEST OF DORT HIGHWAY
BETWEEN KEARSLEY AND GILKEY CREEK



1. Exp. Area

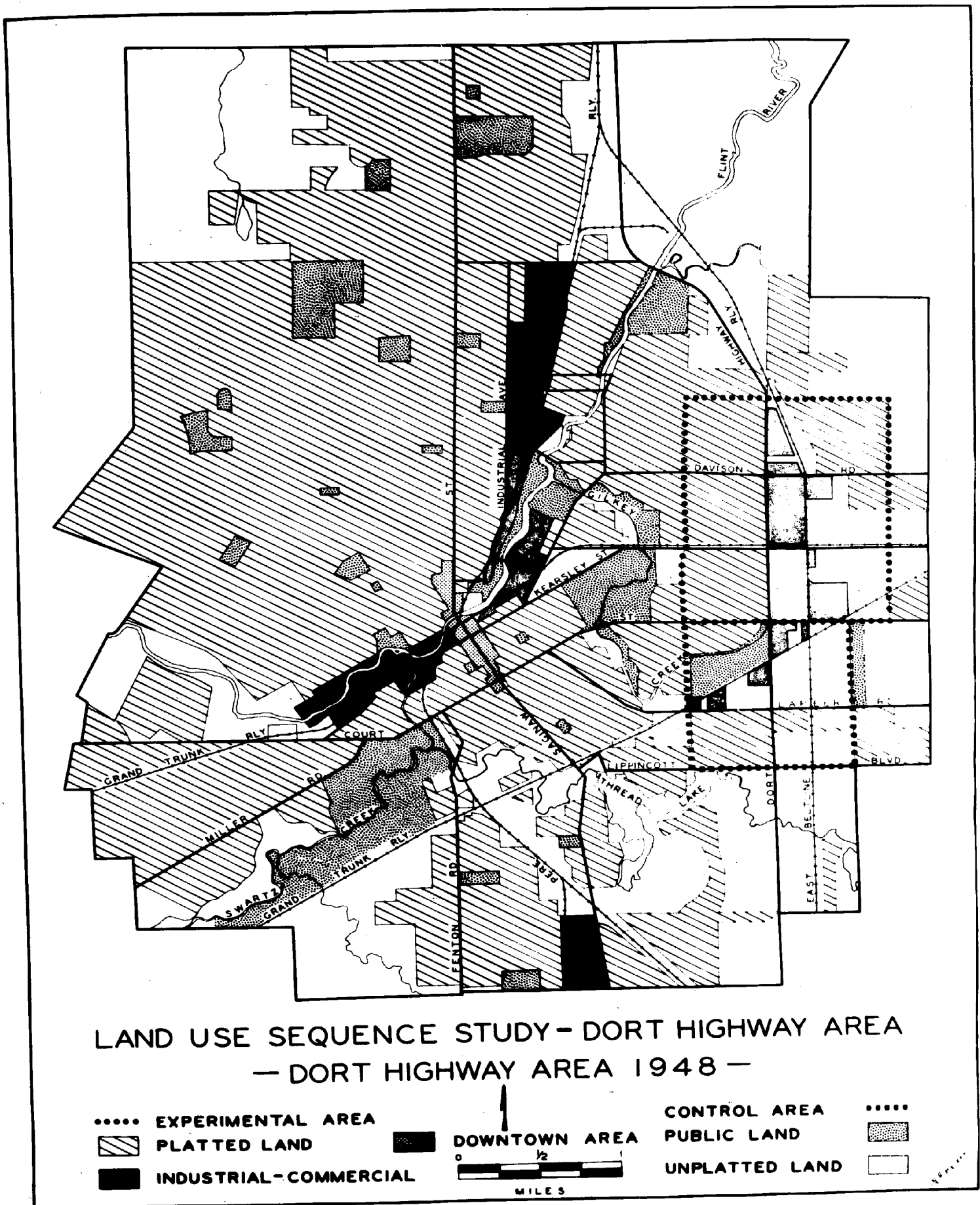


2. Exp. Area



3. Control
Area

1. Vernon Ave. south of Tuscola St.; 2. New construction,
northwest corner of Commonwealth Ave. and Macomber St.;
3. Pierce St. looking east toward Brookside Dr.



Map 28

CHAPTER V

CONCLUSIONS

Having examined the development of Flint and determined the land use sequence in the Dort Highway Area before and after the construction of the A.C. Plant, it is now time to generalize the findings and apply them to the area around the new Chevrolet Plant. (1.) The first step will be to examine the type of differences which occurred between development in the Experimental and Control Areas. (2.) The second step will be to show the effect of the East Side Industrial Area on the direction of development in Flint and the fringe. (3.) The third step will be to examine the factors of similarity and dissimilarity between the A.C. Plant site and the new Chevrolet Assembly Plant site. (4.) The fourth step will be an estimate of what may occur in the vicinity of the new Chevrolet Assembly Plant.

In taking up the first step, the first type of difference to be considered is the amount of land devoted to the various land use categories (Fig. 8 and 9). Throughout the period covered, the Experimental Area has had a far greater percentage of land in residential use than has the Control Area. Also, the difference between these percentages has been growing progressively greater. The Experimental Area has further led the Control Area in the amount of land in light commercial use, although here the Control Area has been gaining. The Control Area has again lagged behind the

Experimental in the development of heavy commercial activities until just recently when the two have become about equal. The Experimental Area has likewise maintained a large lead over the Control Area in the development of industry. Only in so far as public land is concerned, has the Control Area had the greater percent. Thus the Control Area has consistently lagged behind the Experimental in the development of three of the land use categories -- residential, light commercial, and industrial; it has exceeded the Experimental Area in the acquisition of public property and it has equalled the Experimental Area in the development of the heavy commercial uses.

Secondly, differences have occurred in the direction of development. In this regard, certain facts concerning the land use pattern prior to the construction of the Plant should be remembered. (1.) The Experimental Area had the larger amount of land in residential use. (2.) The original development in both areas occurred on the extreme western edge. As the areas cannot be taken as separate from the city, trends here must be correlated with larger over-all city trends. Thus a glance at the 1917 and 1924 population distribution maps (Maps 4 and 5) will show that the foregoing developments are the eastern extremities of the city's two eastward channels of population flow, the larger development in the Experimental Area being accounted for by the fact that it is the eastern edge of the larger channel of

population flow. (3.) The Experimental Area had a small but definite light commercial development along Franklin Avenue, whereas the Control Area had but two widely separated sites. (4.) The only paved road, Davison Road, was located in the Experimental Area. (5.) Very important is the fact that 4,114 of the total 4,358 lots in the Experimental Area were platted before or at the time of the construction of the Plant. In the Control Area only 639 of the total 1398 lots were platted before the Plant's construction. Remembering that the development of an East Industrial Area was strongly advocated in the City Plan of Flint for 1920 and that the study was actually done several years prior to 1920, it appears that a considerable part of this platting done in the Experimental Area was done with the idea that future development would occur in this vicinity. Further weight is given to this assumption by the fact that plans and specifications for the Dort Motor Car Plant, now the A.C. Plant, had been in preparation at least by 1919. Thus the plant was affecting the land use pattern of both areas even before its physical presence was apparent.

In both areas, since the construction of the Plant, the general direction of development has been an extension of residential areas eastward toward Dort Highway. The Plant had at once an attraction and a repulsion for residential development. In general, it attracted residential construction eastward from Franklin Avenue. The initial

development came in the northern end of the Experimental Area and extended east and northeast of the Plant. That this development was directly in the path of the eastward trend of the city's expansion is shown in the population distribution maps. Once development had begun along Court Street, the residential development there was attracted north toward the Plant. Platting was done around the Plant. But it is noteworthy that residential development, particularly in the southern half, came just so far, then stopped; herein was the repulsion. Attraction is again shown in that residential development in the Control Area began in the southwest corner, stopped, and then jumped north to "Brookside," which, in reality, can be considered an extension of the southwestern corner of the Experimental Area. It appears that the Plant has tended to focus the past eastward trend from within the city in its direction, with the greatest share of this extension halting a block east of Dort Highway, with no good extension beyond. Given, therefore, a plant located on the fringe of a city, residential development will tend to concentrate between the plant and the existing built up areas. Around the new Chevrolet Plant this will be the place to look for residential development rather than in the altogether undeveloped areas.

In the Control Area there has been no concentration of light commercial sites along any east-west extending street such as there has been in the Experimental Area. Instead,

light commercial development has centered at the intersections made by the east-west roads with Dort Highway. The light commercial development along Dort Highway in the Experimental Area has occurred close to the Plant. The Plant did not bring the area's initial light commercial establishments which were located along the western edge of the Experimental and were widely separated in the Control Area; but the Plant has focused the light commercial development eastward along Davison Road and north and south of Davison along Dort Highway. It may be said that the highways and not the Plant are the causes of this linear development. It is maintained here that both the Plant and the roads have had a role in this light commercial development. A brief re-examination of road improvements will make this assumption clearer. In 1921 Davison Road was the only paved street in both areas and it did not possess any retail sites. In 1926 this same road shows considerable light commercial development. At this same time, Dort Highway was in the process of being paved and converted into the east-side cut-off for M-10 around Flint. This highway improvement followed closely the occupation of the Dort Motor Car Plant by the A.C. Spark Plug Company. Following the conversion of Dort Highway into an east-side cut-off, light commercial development began to spring up opposite the A.C. Plant. The roads have been the frame on which the light commercial establishments have been nailed; the Plant has been the motivating force

giving incentive to the establishment of these light commercial sites.

The direction of heavy commercial development in the Experimental Area has been north and south, parallel to Dort Highway and the Pere Marquette Railroad. Only a very small amount has availed itself of locations along the Grand Trunk line which runs east and west through the area. This same type of land use in the Control Area has become oriented in a southwest-northeast direction along the Railroad which cuts diagonally through the area. It appears that the presence of the Plant has discouraged heavy commercial development except north of the Plant in the area laid out for this purpose. Another consideration is the fact that many of the heavy commercial establishments require sufficient land accessible to both the railroad and the highways; except for the area north of the Plant, this type of site was more readily available in the Control Area than in the Experimental. On the basis of the findings in this study it appears that the location of heavy commercial sites was more a function of the location of the roads and railroads than of the Plant.

A third type of difference has occurred in the rate of development for the two areas. The rate of development in the Control Area has been more sporadic than that in the Experimental Area for three land use categories -- residential, light commercial, and heavy commercial (Fig. 6 and 7). The

Experimental Area had a period of rapid growth from 1921 to 1931 and then leveled off, subsequently maintaining a steady rate of increase in both residential and light commercial land uses. These rates of development in the Control Area, although increasing, have undergone greater fluctuations. It should also be noticed that during the period from 1931 to 1941, when the rate of residential development in the Control Area did exceed that in the Experimental Area, this development in the Control Area took place in the extreme northwest corner (Maps 13, 15, 17; Fig.6). The rate of heavy commercial development in the Experimental Area was very large from 1926 to 1931, at which time it leveled off tremendously until 1946 when an upswing was again apparent. The rate of heavy commercial development in the Control Area, on the other hand, has been far more irregular. In a fourth land use category, the industrial, the rate of growth for the Control Area has been static from 1931 to 1941 with a slight upward trend from 1941 to 1948, while the Experimental Area has had a large rate of increase from 1926 to 1931 with a leveling off from 1931 to 1941 at which time it also had an upward swing.

Fourthly, there have occurred differences in the development of utilities. Whereas the Experimental Area has had all of its platted sections furnished with sanitary sewers, a large portion of the Control Area still lacks this facility. Storm sewer conveniences too are far more exten-

sive in the Experimental Area than in the Control, and the Control Area has also lagged far behind the Experimental in the acquisition of water mains.

A fifth type of difference has been in assessed land values. In the Experimental Area the land in the section west of Dort Highway has been generally assessed at \$2,000 or more per acre, while the land in the same section in the Control Area (except for the northwest portion and small parcels along Dort Highway) has been assessed at \$2,000 or less per acre. The Experimental Area has by far the greater amount of land assessed at \$8,000 or above per acre.

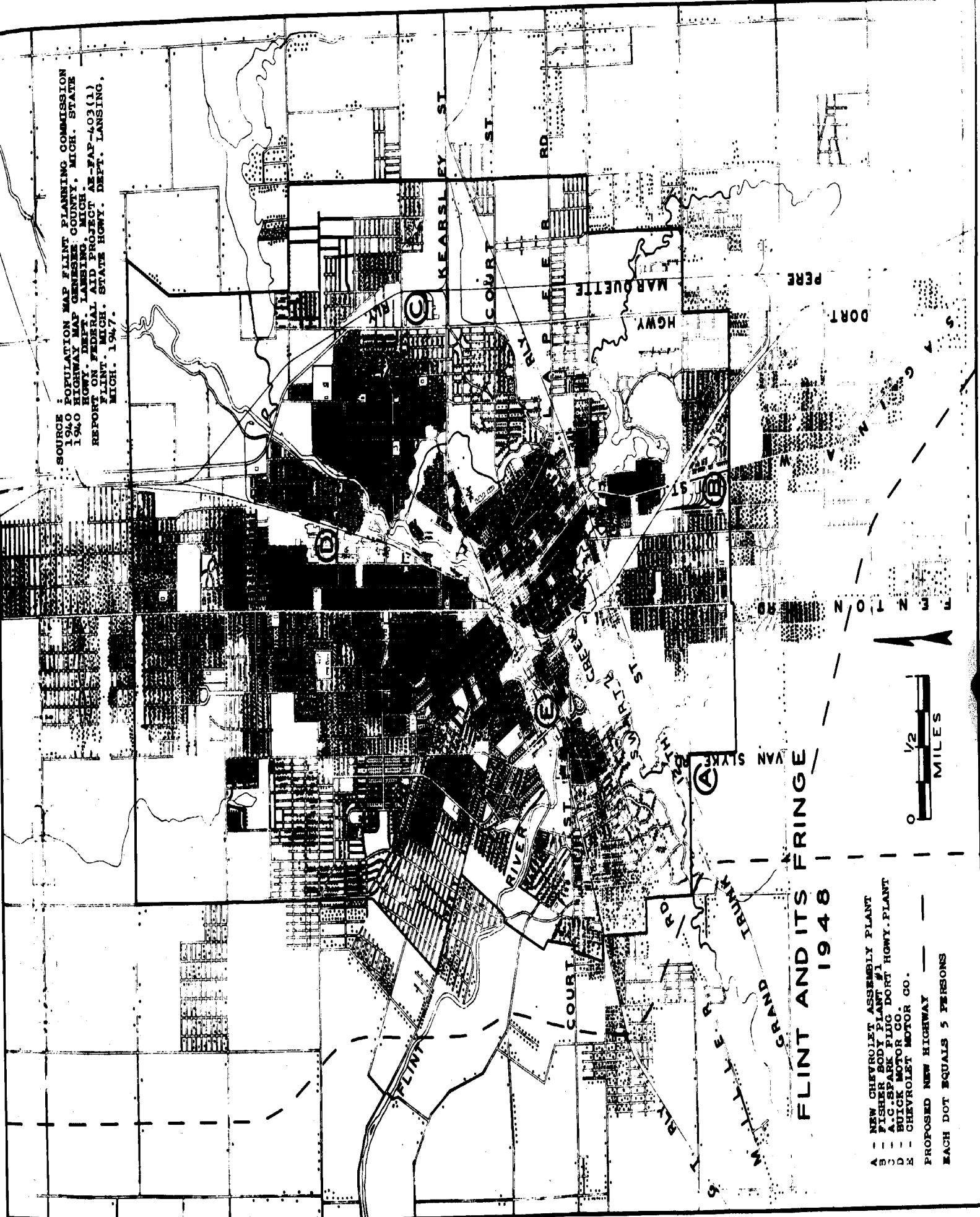
The formation of the East Side Industrial Area has affected the direction of development both inside and outside the city. Two facts concerning the formation of this area should be remembered. One is the considerable planning and publicity that went into the project. The public was made aware of the purpose of the area and even today it is still zoned and kept as an area intended for industrial purposes. The other significant fact is the size and shape of the area. It is a long narrow strip of land extending along the eastern side of Flint for approximately three miles, forming, as it were, a dike to hold the flow of population west of Dort Highway. Although the dike has been pierced at both ends by subdividing, the holes have not as yet developed into full fledged breaks. The population distribution map for 1940 shows that the population has moved eastward as far as

Dort Highway and then stopped, whereas the city limits actually lie a mile east of the Highway. No concentration of population has occurred beyond the city limits in the area opposite this industrial belt. This becomes more significant when it is realized that: (1) Population in the fringe area has tended to concentrate along the major highways extending from Flint; (2) With the exception of Saginaw Street and Dort Highway north of Flint, the busiest road entering Flint is Davison Road.¹

With the differences between the development of the Experimental and the Control Areas determined and the effect of the East Industrial Area upon the direction of growth of Flint shown, it is now time to consider the factors of similarity and dissimilarity between the location of the new Chevrolet Plant and that of the A.C. Plant (Map 29). A glance at the location of the new Chevrolet Assembly Plant will show that there are the following important factors of similarity. (1) The Chevrolet Plant has been located along one of the main railroads servicing Flint. This railroad is the Grand Trunk which has another line entering Flint just to the north. It is along this second line that the old Chevrolet Plant is located. Considerable freight is shuttled

1. Report on Federal Aid Project AE-FAP-403 (1), Flint Mich., State Highway Dept., Lansing, Mich., 1947. p.21.

SOURCE : POPULATION MAP FLINT PLANNING COMMISSION
 1940 HIGHWAY MAP GENESSEE COUNTY, MICH. STATE
 1940 HWY. DEPT. LANSING, MICH.
 REPORT ON FEDERAL AID PROJECT AE-FAP-403(1)
 FLINT, MICH. STATE HWY. DEPT. LANSING,
 MICH. 1947.



FLINT AND ITS FRINGE
 1948

- A - NEW CHEVROLET ASSEMBLY PLANT
- B - FISHBODY PLANT #1
- C - SPARK PLUG DORT HWY. PLANT
- D - BUICK MOTOR CO.
- E - CHEVROLET MOTOR CO.

PROPOSED NEW HIGHWAY ———
 EACH DOT EQUALS 5 PERSONS



between the two plants via this railroad. (2) A new highway is planned which will skirt the western edge of the plant site. As now planned this highway will be "full limited" along the entire western side of Flint with a 200 ft. minimum width of right-of-way.¹ Although these restrictions make the highway less comparable to Dort Highway, they do not by any means prevent the highway from affecting land use. Also, the ultimate completion of the whole highway project is a long term affair and many changes can be made in the best plans. One of the main entrances into the city from this new highway will be just north of the Chevrolet Plant along 12th Street which has carried a relatively small amount of traffic in previous years. The estimated 1960 daily traffic volume along this route, which is to be improved, is 11,200 cars.² When this figure is compared with the 1941 average daily traffic volume of 6,000 cars for Davison Road, it becomes clear that this southwestern area is a potential area for development. (3) While the Plant has not been set directly in the path of a past population trend, it has been located between two trends. The city's southwestern extension of population lies approximately three-quarters of a mile to the northwest whereas the southern extension along Fenton Road lies an equal distance to the east. (4) Although the plats were laid out long before the plant

1. Report on Federal Aid Project AE-FAP-403. Op.Cit., . Fig.7, p.11.

2. Ibid. Fig.16, p.23.

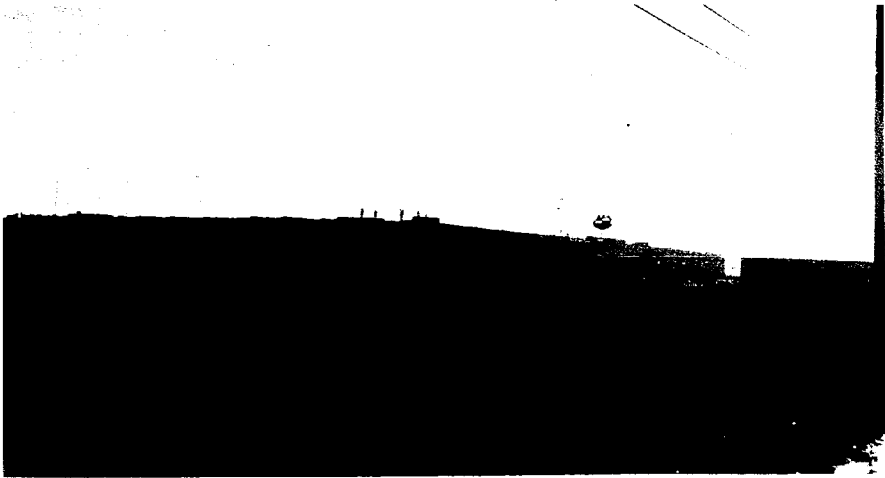
was built and have been unrecorded for years there has been considerable platting done between the new Chevrolet Plant and the built up area along Fenton Road. Thus a framework for residential development has been laid down; whether future development will adhere to it is another matter. However, the trend in the Dort Highway Area was to move outward from the city along existing platted areas.

There are also dissimilar factors between the location of the Chevrolet Plant and the A.C. Plant. (1) Surface drainage is of greater consequence in the vicinity of the new Chevrolet Plant than it was in the vicinity of the A.C. Plant. Swartz Creek is located north of the Plant and flows northeastward into the Flint River. Elevation decreases from 750'-770' in the vicinity of the Plant to 700'-720' along the Creek and then rises sharply again in the area along Miller Road. The area along the Creek is subject to frequent flooding and is now occupied by a city owned golf course. Consequently development north of the Plant is already hindered by natural and cultural obstacles. (2) The A.C. Plant was constructed during the period of Flint's greatest increase in population, whereas the Chevrolet Plant has been built during a period in which the growth of population has leveled off tremendously. Whether the future population of Flint will be much greater than it is now is a matter open to question. It does appear that the period of great expansion has passed. However, future development

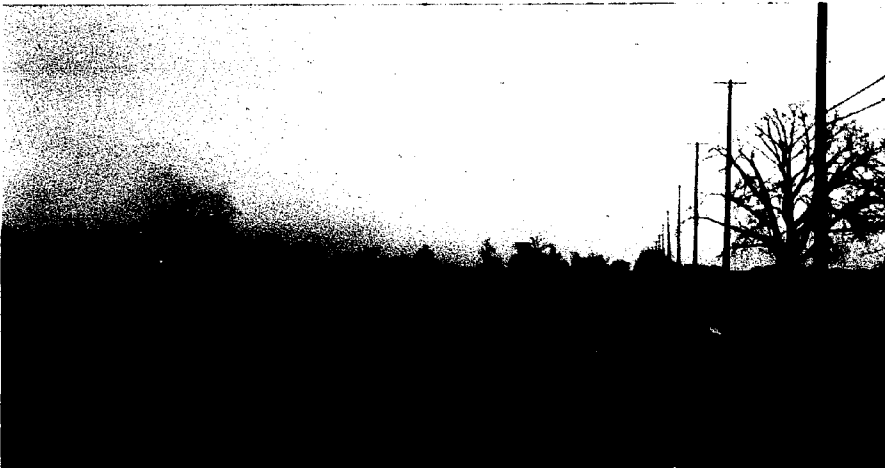
THE NEW CHEVROLET ASSEMBLY PLANT AREA



1



2



3

1. North of Plant looking across Gilkey Creek toward Miller Rd.
2. Looking west toward new Plant.
3. Looking east toward Fenton Road.

in this vicinity does not depend entirely upon future growth in the population of Flint and its surrounding area. There has occurred a backlog of residential needs due to the depression and war; these needs have been only partly met during the past few years. (3) The new Chevrolet Plant has been constructed outside the city limits of Flint. This may have considerable effect upon the acquisition of such facilities as water and sewers which in turn can affect the character and location of future residential development. (4) There appears to have been no plan to make the new Chevrolet Area an industrial area; on the contrary, there has been active open criticism to the location of the Plant on its present site.

Combining the findings in the Experimental and Control Areas with the factors of similarity and dissimilarity between the location of the A.C. Plant and that of the new Chevrolet Plant it seems that the following future developments may occur in the vicinity of the new Chevrolet Plant. (1) The combination of plant, highway and railroad may attract other industrial and commercial establishments with the result that a wedge of land in industrial and commercial use might develop along the Grand Trunk Railroad and 12th Street. A thought may also be given to the possibility of connecting the two lines of the Grand Trunk Railroad by a spur skirting the southwestern edge of the city. (2) Good residential development will be possible if it is accompanied

by adequate planning. (3) Residential development will occur between the Plant and existing built up areas. Due to the new highway to the west and Swartz Creek to the north, the area between the Plant and Fenton Road appears to be the most likely place for future development.

It is to be emphasized that the results in this study are not functions of natural laws but rather of human thought and emotion. It may be possible to state that the development of a new industrial plant will stimulate and attract other residential, commercial, and industrial development in its vicinity. It may also be possible to estimate the most likely sections in which this development may occur. Nevertheless, the location of any particular structure or plat is not predetermined by some natural law; man must himself decide where he will build. By means of careful planning it is possible to guide this course of development. Thus development in all probability will occur in the vicinity of the new plant. The type, quality, and location of this development will be greatly influenced by the presence of or lack of a strong vigorous policy of planning for the future.

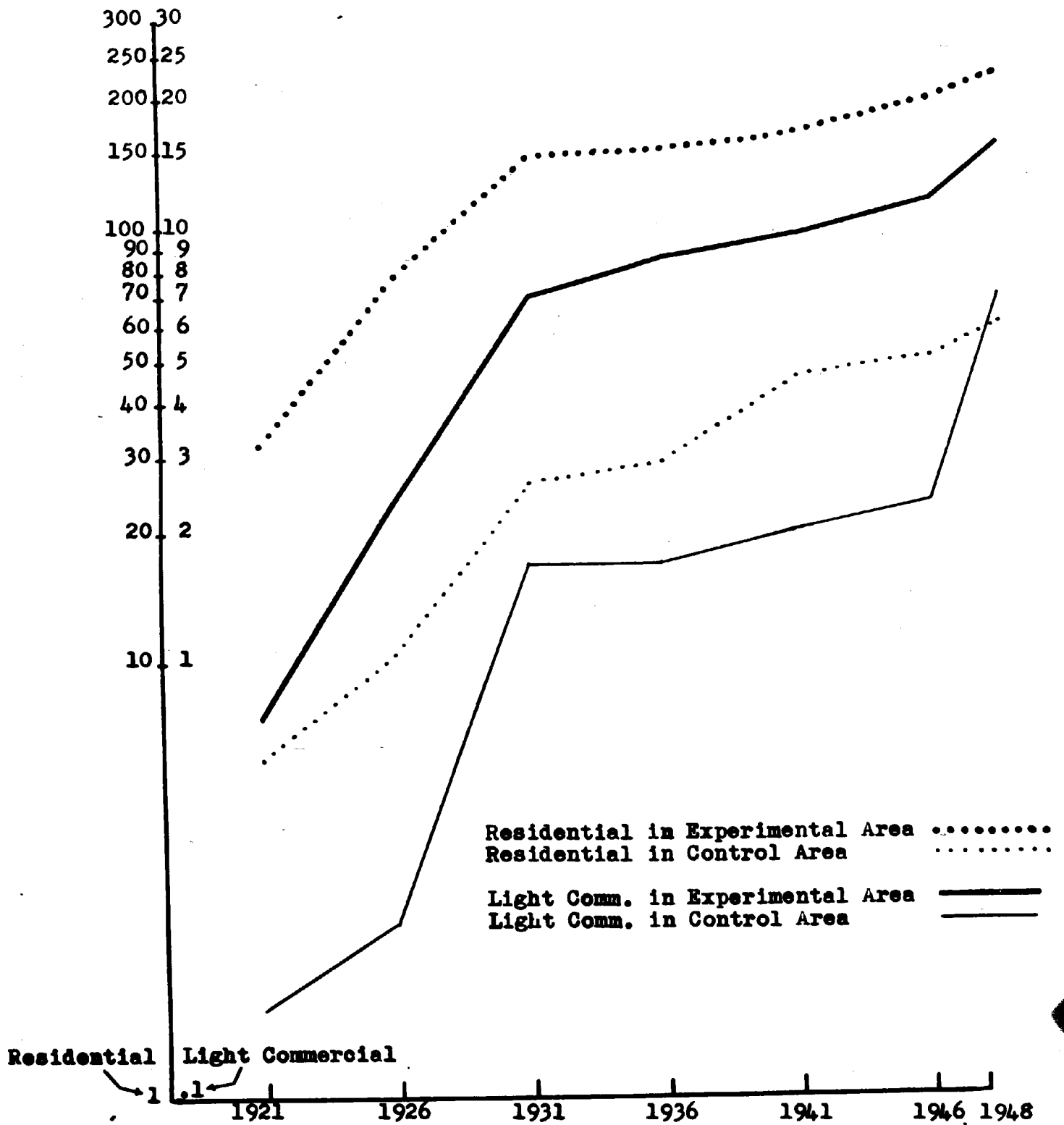


Fig. 6. Semilogarithmic curves showing the number of acres of land in the residential and light commercial uses in the Control and Experimental areas.

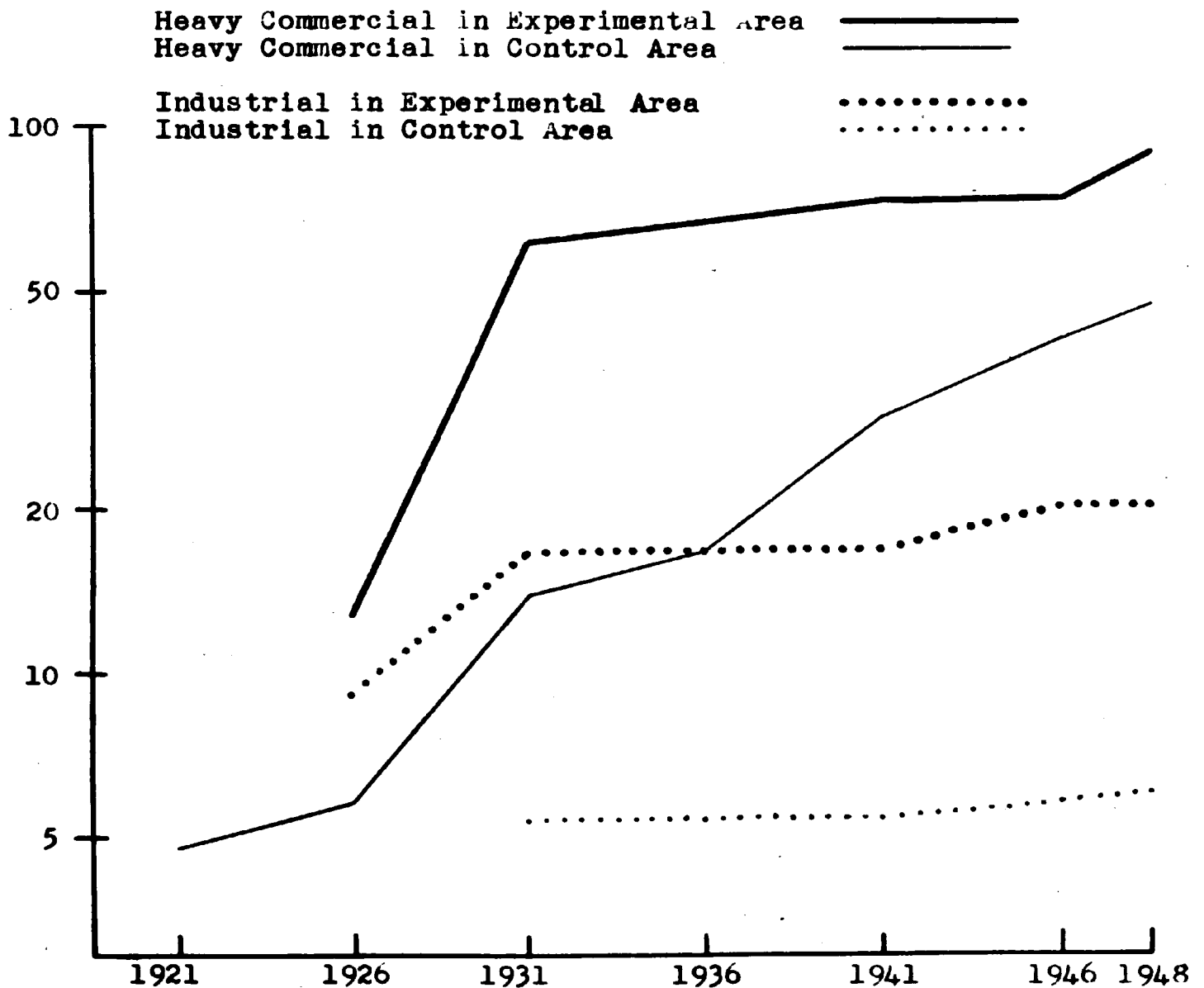


Fig. 7. Semilogarithmic curves showing the number of acres of land in the heavy commercial and industrial land uses in the Experimental and Control Areas.

LAND USE - EXPERIMENTAL AREA¹

DATE	RESIDEN- TIAL	COMMERCIAL LIGHT	HEAVY	INDUS- TRIAL*	ROADS & PUBLIC RLYS.	VACANT	
1921	32.30	.74	0	0	190.16	5.47	987.39
1926	78.78	2.32	12.8	9.1	257.12	5.75	778.95
1931	149.84	6.94	61.32	16.58	256.56	6.15	649.42
1936	152.75	8.63	66.18	16.58	257.36	6.46	638.83
1941	164.95	9.58	71.92	16.58	257.44	6.56	612.97
1946	199.58	11.43	71.99	19.71	265.57	43.52	535.01
1948	225.04	15.41	86.42	19.71	267.65	45.58	477.30

1. Figures = acres.

PERCENTAGE OF EXPERIMENTAL AREA
IN EACH LAND USE CATEGORY

DATE	RESIDEN- TIAL	COMMERCIAL LIGHT	HEAVY	INDUS- TRIAL*	ROADS & PUBLIC RLYS.	VACANT	
1921	2.62	.06	0	0	15.6	.4	81.19
1926	6.45	.2	3.95	.7	21.13	.46	64.05
1931	12.24	.6	5.04	1.3	21.13	.49	53.4
1936	12.55	.7	5.44	1.3	21.13	.51	52.5
1941	13.55	.8	5.8	1.3	21.13	.53	50.8
1946	16.49	.9	5.9	1.6	21.8	3.55	43.9
1948	18.4	1.2	7.1	1.6	22.	4.54	39.2

* Not including A.C. Plant.

Fig. 8

LAND USE - CONTROL AREA¹

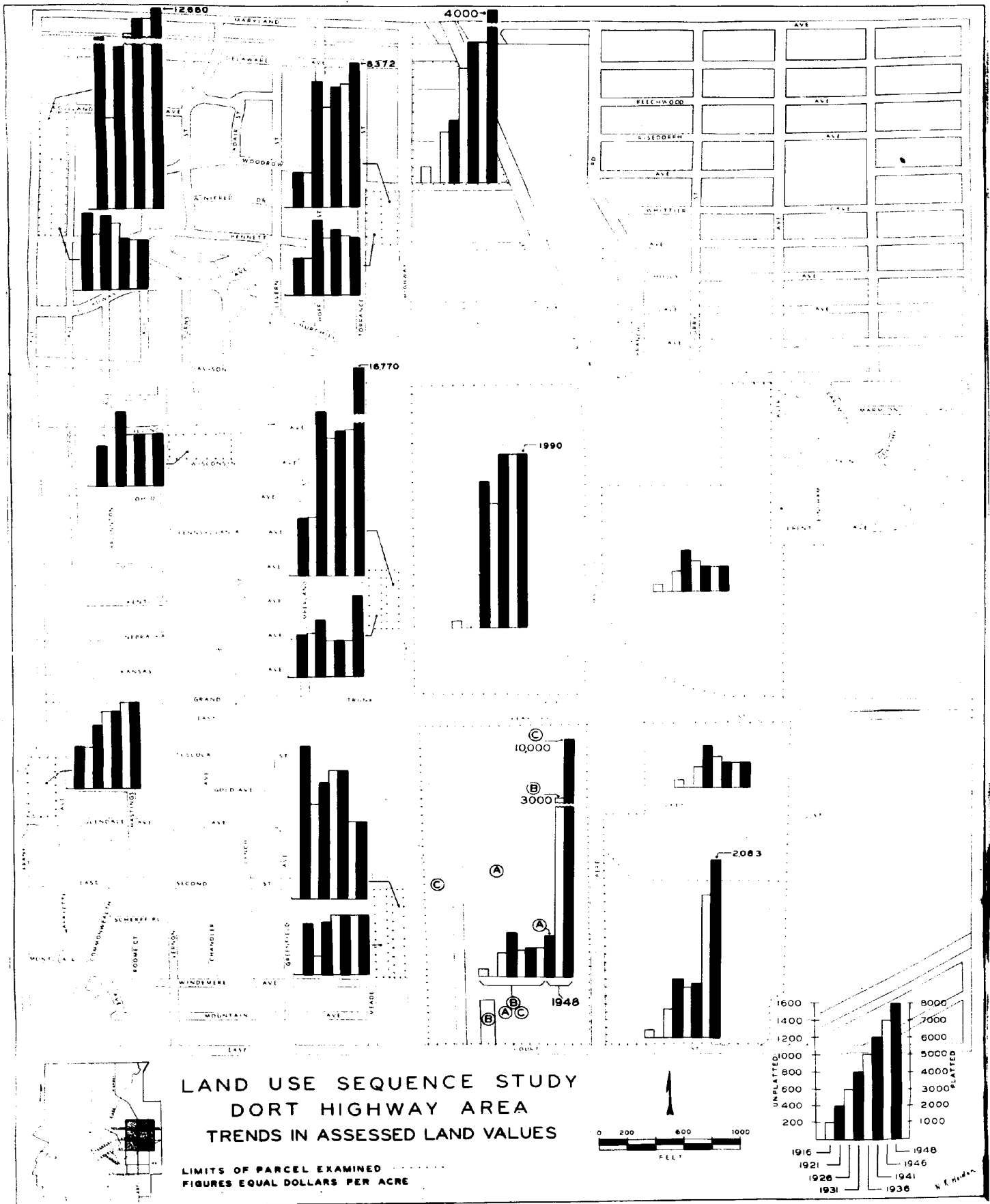
DATE	RESIDEN- TIAL	COMMERCIAL LIGHT	HEAVY	INDUS- TRIAL	ROADS & RLYS.	PUBLIC	VACANT
1921	5.97	.16	4.8	0	56.24	1.5	571.33
1926	10.52	.25	5.75	0	56.24	1.5	566.78
1931	26.39	1.71	13.80	5.3	86.12	6.09	500.59
1936	29.07	1.7	16.69	5.3	91.60	6.22	489.42
1941	42.70	2.04	29.39	5.3	93.84	6.09	460.64
1946	50.79	2.36	40.00	5.75	101.13	83.39	357.21
1948	54.83	6.99	45.76	5.89	103.16	85.98	337.39

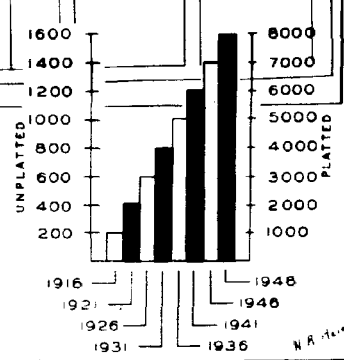
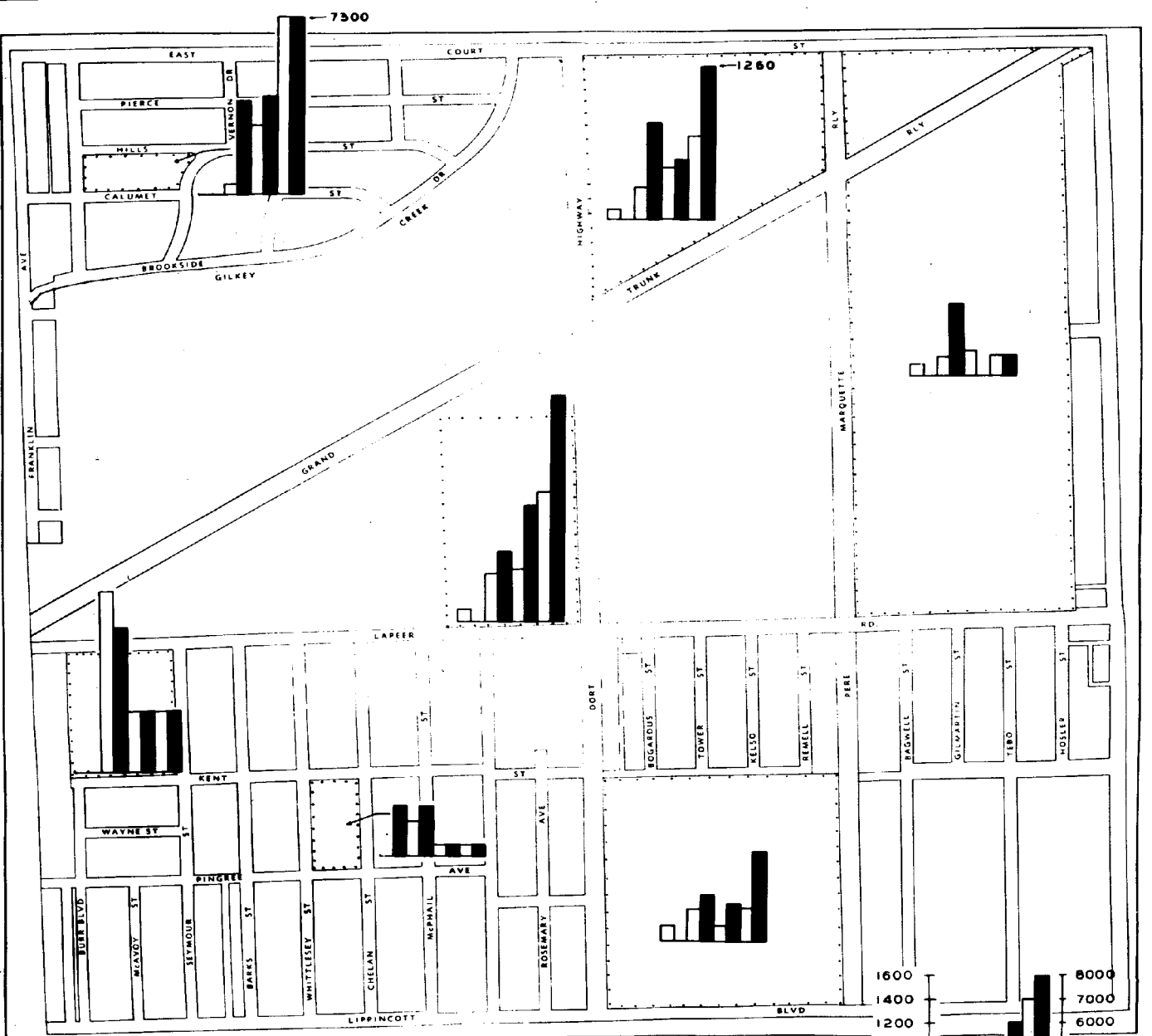
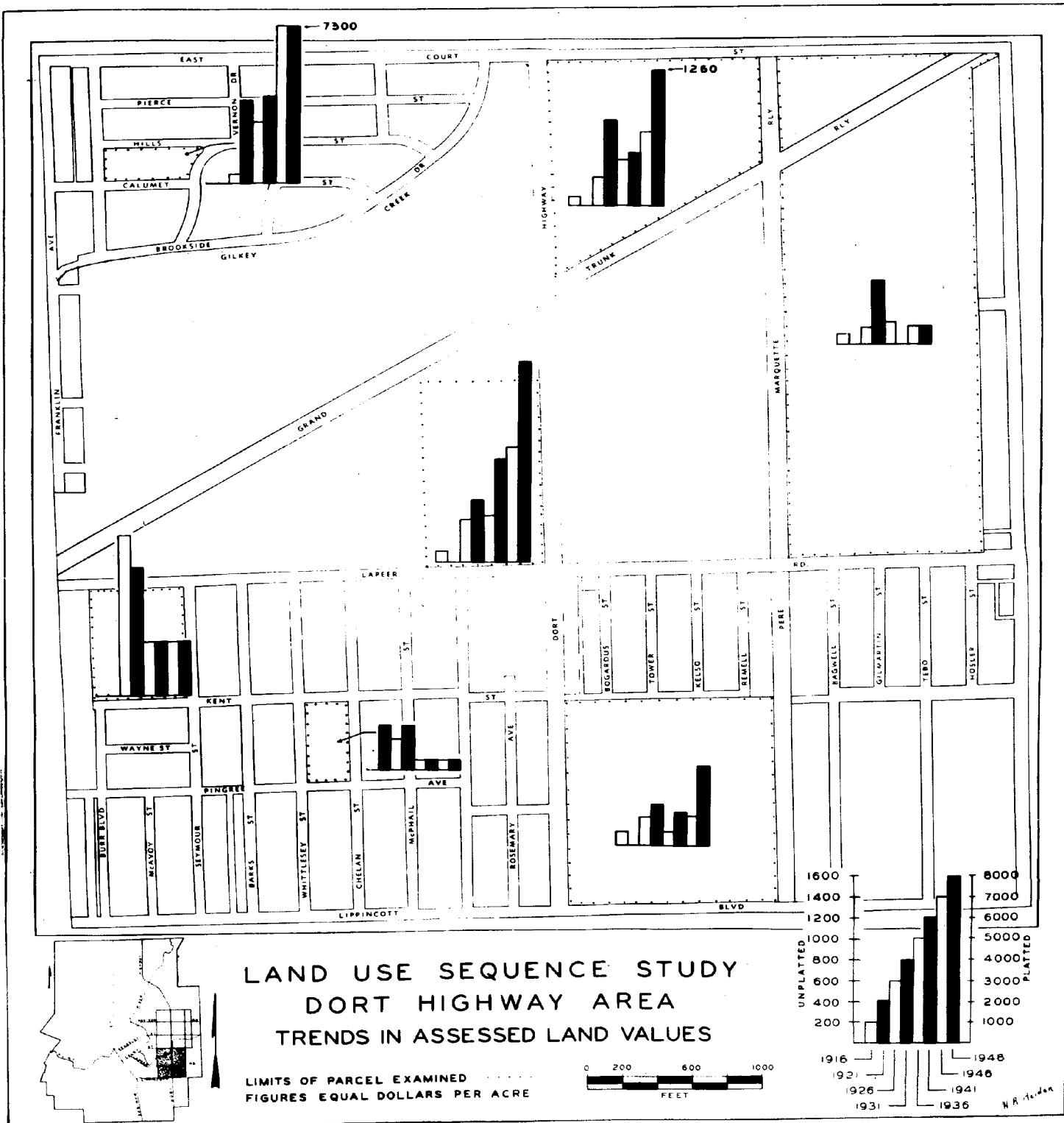
1. Figures - acres.

PERCENTAGE OF CONTROL AREA
IN EACH LAND USE CATEGORY

DATE	RESIDEN- TIAL	COMMERCIAL LIGHT	HEAVY	INDUS- TRIAL	ROADS & RLYS.	PUBLIC	VACANT
1921	.93	.02	.7	0	8.7	.23	89.27
1926	1.6	.04	.9	0	8.7	.23	88.55
1931	4.11	.1	2.15	.8	13.4	.92	78.37
1936	4.46	.05	2.6	.8	14.3	.9	76.68
1941	6.58	.29	4.59	.8	14.66	.9	72.
1946	7.84	.2	6.25	.9	15.8	13.2	55.8
1948	8.5	1.09	7.1	.9	16.1	13.24	52.6

Fig. 9





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