



NEW SETTLEMENT, AN ADAPTABLE URBAN STRUCTURE

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of the Requirement for the
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Dear Dean Belluschi;

In partial fulfillment of the requirements for the
degree of Master of Architecture, we hereby submit
this thesis entitled, "New settlement, An Adaptable
Urban Structure".

Respectfully,

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Alan L. Fishman

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George L. Nielsen

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Julius R. Izen

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TABLE OF CONTENTS

SECTION I---Research

- I. General Philosophy of A New Settlement
Introduction--Robert P. Cooke pp. 1-16
Statement of Objectives, Assumptions, and
Program--George L. Nielsen pp. 17-24
- II. New Town Analysis
Broadacre, U.S.A.--Harry T. Miyachi pp. 1-8
Saint-Die, France--Mohsen M. Zahran pp. 1-13
- III. Site Analysis
Alan L. Fishman, Robert A. Mayers,
Charles B. Thomsen pp. 1-5

SECTION II---Design

- I. Team #1
Master Plan--Robert P. Cooke, Harry T. Miyachi,
Mohsen M. Zahran pp. 1-6
City Center--Cooke, Miyachi pp. 7-17
Residential--Zahran pp. 1-13
- II. Team #2
Master Plan--Charles B. Thomsen pp. 1-12
Residential--Thomsen pp. 13-18
- III. Team #3
Master Plan--Alan L. Fishman, Robert A. Mayers
pp. 1-5
Residential--Mayers pp. 6-9
City Center--Fishman pp. 10-18
- IV. Team #4
George L. Nielsen
Master Plan--pp. 1-4
Residential--p. 5
City Center--pp. 6-11

SECTION I

The students wish this endeavor to illustrate their concern for the present situation of the urban and suburban environment that has developed as a result of the explosive expansion of cities that is rapidly transforming the open landscape into vast metropolitan regions. These regions are afflicted with an uncontrolled development, a much too rapid growth and change, obsolescence and instability.

The circulation systems are congested; absorbing time and effort. This has affected accessibility to and use of facilities which, as a result, become obsolete. The choice of residential location is restricted and unsatisfactory. Also, social segregation within living areas is growing. The city lacks legibility which involves identity and the entire concept of a city as an extension of one self and the necessity for the comprehension of this extension. Such circumstances create a deficiency for a suitable living environment.

The evolution of technology has certainly been the greatest physical force that allowed this transformation process to gather such impetus. The mechanization of transportation has greatly increased the mobility of people and products. The machine has replaced man in the performance of many tasks thus allowing him increased leisure time.

GENERAL PHILOSOPHY OF A NEW SETTLEMENT

Indroduction

Robert P. Cooke

The combination of the decrease in working hours, the increase in the standard of living and availability of inexpensive, rapid, private transportation has allowed increasing numbers of the population a greater freedom of mobility and, therefore, the opportunity to abandon the central city and seek living space in the less crowded landscape of the suburb.

Science has provided the factual data by means of which the industrialist, inventor, and engineer have transformed the physical world. The effect of the new technology is apparent in all portions of the city scape as suggested in the above paragraph. Thus, man has the ability to refashion his physical world but the application of scientific methods to man and his institutions has hardly been successfully attempted.

Science or technology, is an instrument for enabling us to create a more effective relationship with other men and our environment. A lack of recognition of the potentialities of technology and its future impact on an urban environment has often resulted in dull, abstract solutions for a new city structure. These solutions do not acknowledge the diversity and complexity of man's physical surroundings.

Many men have been concerned with the relationship of man to his physical environment. They have illustrated their criticisms by literal and design proposals some of which were realized. One could wish, and rightly so, that more individuals within the architectural profession were objectively aware of these problems. The architect is challenged to avoid his preoccupation with the treatment of a building design as an individual object on an isolated site. Such an isolated site does not exist in the urban pattern but has a direct relationship not only to its immediate surroundings but to the total city structure. The designer is increasingly required to design large blocks of buildings and yet the treatment of these units in an isolated fashion continues as a heritage. A great degree of disorder is created as a result of so many buildings of often quite similar function competing through their individual expressions for attention. Individual expression has its place but the individual object finds its successfulness through its scarcity and its thoughtful position in relation to a subordinate surrounding.

This disorder has a similar evolution in a city scale and should be of concern to more architects. They should express themselves verbally and by way of design in a manner that would begin to influence the proponents and executors of metropolitan expansion. For with the concern

and work of increased numbers, solutions might be achieved that if realized, would illustrate that there is a systematic process for urban expansion and transformation.

Efforts to depict a desirable pattern for future living and criticize the environment currently in existence have absorbed the activities of philosophical men since the time of Plato. The new social orders created by these various men have become known as utopias. The classic utopia projected a whole community, living, working, mating, and spanning the gamut of man's activity. These projections were fantasy, so to speak, for they generally did not evolve out of a real environment or attempt to solve the conditions the present environment represented. They did not realize or build upon the potential powers of the community. The contributions from the minds of such authors came through their analysis of a particular situation rather than through development of a visual solution. They were committed to change; they rebutted the static in human condition. They were not inclined to detail the end products of the changes they desired.

During the 20th Century, the popularity of creating a literary and social utopia declined but the physical or design utopia of the ideal city through work of such men as Frank Lloyd Wright and Le Corbusier achieved recognition. They produced a (20th Century) utopia amid

flourishing technological advances and an urbanized society. Alarmed but fascinated by industrialized civilization, they concluded that a new physical setting was a correct means of remaking industrial civilization.

These men were among a series of individuals that evolved solutions for a new urban structure. They all possessed the concept of a city as a complex of machines allowing all men the right to light, greenery, space, silence, privacy beauty--elements before restricted to peasants or the rich. Given a common goal, the endeavors of these men acquire interest in the varied ways they attempted to illustrate a desirable solution based on the above mentioned "concept."

Wright's proposal was dispersion of people and their activities. He presented his ideas through a model for Broadacre City and books depicting his ideal city of Usonia. His city would be built at much lower densities than currently existing and would rapidly spread over a vast region and come into coexistence with surrounding metropolitan regions. The old premise of a dominant center would disappear and city-wide activities, i.e., factories, offices, museums, universities, hospitals, etc., would be dispersed throughout the region. This low density and dispersion would be dependent on communication via privately owned vehicles, air transport, telephone, television, and

mail. Recreational facilities would be plentiful and easily accessible. The place of residence and work might be adjacent to one another or dispersed throughout the area. Such a scheme seems to provide a great deal of flexibility, independence and presents a solution to traffic congestion through a balanced dispersion. This concept of dispersion is illustrated in an analysis of Broadacre City in a following section.

Other men envisioned a policy of concentration. In such a consideration enclosed floor area would approximate the total ground area in the city. Open land has a necessary use for streets, parks, etc.; therefore, allowing a realistic construction of elevator apartments rather than single-family dwellings. Such a city could become three dimensional in its spacial occupation and transportation system. All activities would be highly integrated such that apartments would occur over factories or stores. The traffic system would also have a similar consideration with different types of traffic separated into their own channels.

This would increase accessibility between various elements of the city and the open country. This rather rigid environment would produce a definite image and strong sense of the total community.

The concepts of Corbusier seem to be somewhat aligned with this policy. One of the principles on which he based his ideal city was "A city made for speed is made for success". The railroad station stood at the center of the city, linked to transportation facilities like the hub of a wheel. Complete separation of motorized transportation and pedestrian circulation was proposed.

His scheme for Paris envisioned a center surrounded by skyscrapers 60 stories high. These great, self-contained complexes served the needs of their particular building community. They were placed on stilts so as to allow a continuous flow of ground space. In surrounding parks were restaurants, theatres, shops, etc. The majority of the population lived in well-spaced, high, elevator apartments with private hanging gardens and a few lived-in private houses in the outlying areas. Streets were on three levels to separate different types of vehicles traveling at different speeds. Therefore, a high density is obtained in a small area leaving large amounts of free land.

Corbusier's concept of an urban structure as illustrated in his proposal for St. Die' will be discussed in a later section.

Another consideration has been the development of small urban clusters separated from one another by a zone of low or zero building density. This would, of course,

require a greater area than the previous concept. City-wide activities and density would be centered in each urban cluster that would form a series of centers of generally equal importance. These centers could vary in specialization so that one might be a cultural center and another a financial center. Communication might be via private vehicle but public transportation would seem to be possible. Individual participation might be increased due to a smaller scale but a metropolitan identity would be lacking.

This type of thinking is essentially similar to the advocates of satellite towns. The formulation of this idea was Ebenezer Howard's main contribution. He saw that once it has achieved an optimum size, the need for the individual town is not to increase its own area and population but to be part of a larger system that has the advantage of large numbers and extensive facilities. His was the concept of the Social City or regional constellation of separate but interdependent towns, each in itself combining openness with urbanity, each serving local needs and helping to serve the exceptional needs of all and all looking to a common center or capital only as a place of assemblage for those still more exceptional functions which by their nature depend on concentration and mutual proximity. Howard's ideal was not the Garden City, but the articulated cluster of garden cities. It was in its urbanity, not its horticulture that the garden city made a bold departure from

the established method of building and planning.

Howard's concepts found expression in the new towns of England such as Harlow. These towns were designed not only as self-contained units but were also to assume a regional nature. The city of Harlow is presented in detail in a later section.

Another application of this principle is illustrated in the proposals for the expansion of Stockholm. The expansion problems of the city of Stockholm were studied by Sven Markelius. His proposal was the creation of new, independent developments with a clear transportation connection to the old, inner town. As a result, independent settlements such as the Vallingby group were designed and constructed. This solution was more realistic than in some countries such as the United States due to the fact that the surrounding Stockholm region was owned and controlled by the state.

Vallingby is the center of a satellite group. It is calculated to accommodate a population of 60,000. The center is regional in nature and contains shops, offices, a medical center, administration offices, cinemas, theatres, churches, restaurants, civic government, club rooms, library, etc. Offices once located in Stockholm were re-located in this area. 40% of the population is employed in the immediate area. (illustration)



Plan of the Vallingby Satellite Group

Another possibility that has been studied is to retain a dominant city core with expansion along linear axis radiating from this center. These axis might in time connect to other metropolitan regions and become linear cities between regional centers. The communication system would follow this radial pattern with a supplementary system forming a pattern of concentric rings. This type of form is being applied in the growth of Copenhagen and is reinforced as a possibility by the writings of Blumenfeld. Easy access for an individual to living, working, and recreation areas seems quite possible. The system would promote a strong image and an identity with a metropolitan region.

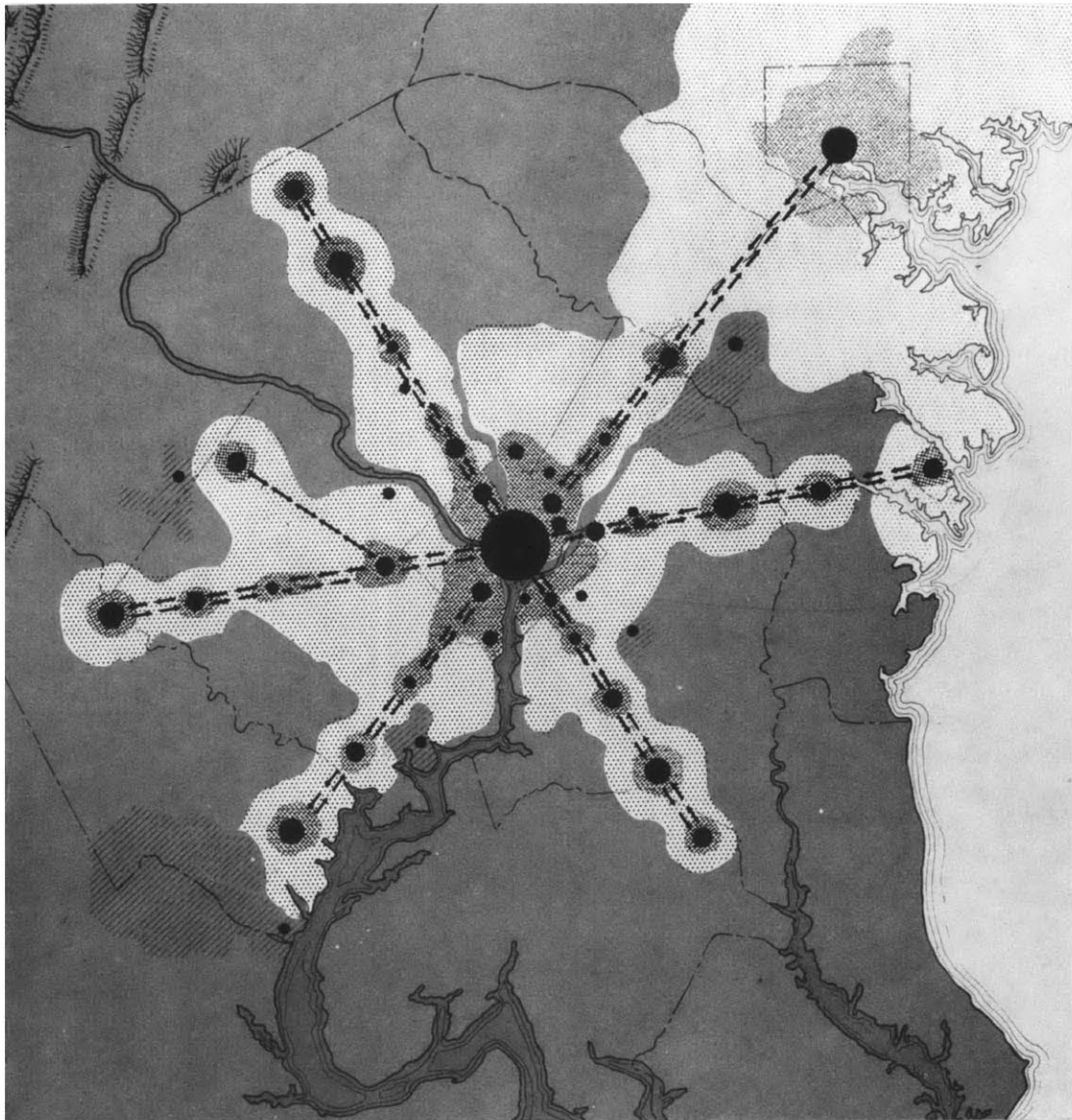
Such a solution seems to be the basis for the National Capitol Regional Plan in the United States. This proposal encompasses a larger, more complex plan than hitherto approached in this country.

The Washington, D.C., metropolitan area envisions a rapidly expanding population that will reach 5 million by the year 2000. In an effort to control the continued expansion, a plan was developed to create new urban communities within the region to accommodate a majority of the growth. These communities would be of densities higher than the current 15 persons per acre and accommodate a population of 100,000 each. The scheme presents

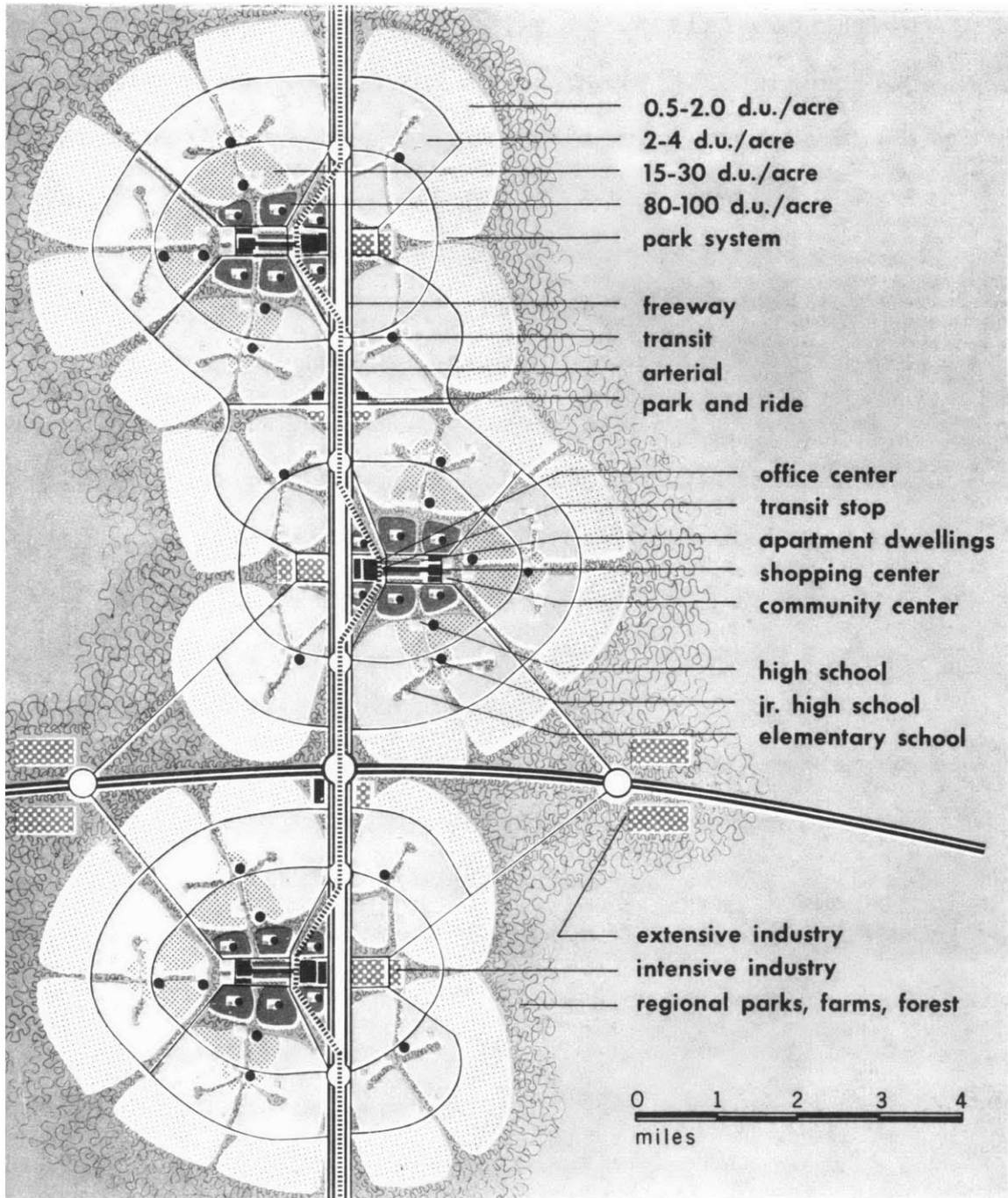
more efficient land uses and reduces the transportation needs by a closer relationship of multi-family units, commercial and employment centers. A wide variety of housing types will be provided. This illustrates the American idea of intermixing compared to St. Die' and Harbw. Various types of employment will be offered in each community but the central city would still be the dominant employment center. These developments will occur in corridors radiating from the central city outward. This solution was selected due to advantages in efficient access to the central city via rapid transportation which would result in giving growth potential to the employment center in the central city. There would be easy access to a variety of employment opportunities throughout the region. The areas between the development corridors would provide (significant) green areas accessible to all in the region.

Each community has an arterial street system which will radiate from the community center and reinforce this area as a primary destination. The density will decrease as distance from the center increases. Freeways will come close to the center to support the development. Mass transit systems will connect the cities and the metropolitan center. (illustration)

The problems of metropolitan expansion are discussed in a publication by C. A. Doxiadis. He offers



Washington D.C. Proposed Radial Corridor Plan



Washington D.C. Model Corridor Plan

three considerations for the persistence of this movement. These forces are: (1) The rapidly increasing population (2) The introduction of the machine (3) the gradual socialization of the complex governments. There has been a change in the notion of how a settlement expands. In the past settlements grew principally in length and width. In the last century this growth has been expressed in height also. Time is now an important dimension which often results in overgrowth. This element hampers the accuracy of planning in predicting a definite growth pattern.

Another change has been the unit around which our thoughts are formulated. This unity formally was man. Now the automobile has acquired this position as it consumes an increasing amount of space coverage. The automobile gradually usurped the street as the domain of man and continues to compete with him for space. Industry has replaced an agricultural economy. Therefore, the location of settlements is now determined by man made factors as well as natural ones.

Definite resulting changes are foreseen. The population of and immigration to cities will increase; swelling them to even greater dimensions. There will be changes due to productivity and automation requiring a resultant flexibility of spaces and buildings. The work week will decrease and multiply the problem of what facilities

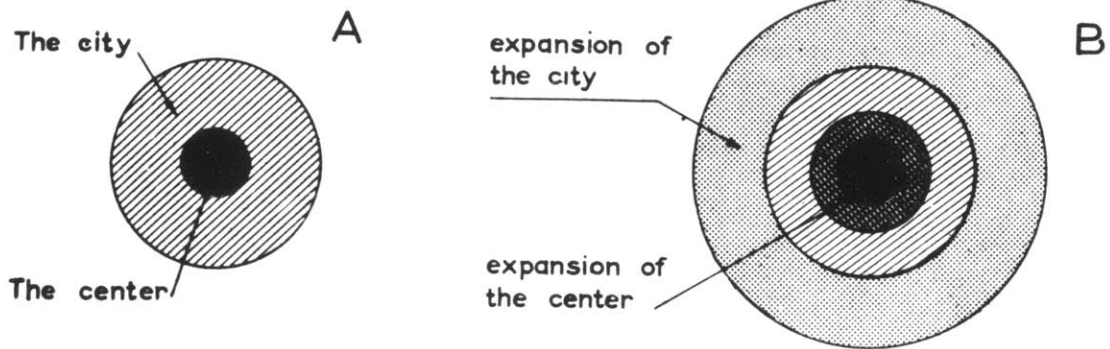
to provide for recreation. There will be changes in technique such as the types of cars, air transportation, etc. The car and truck have outmoded the small market towns and this trend will continue. Home functions will change as the wife joins the husband in the employment market. Therefore, planners must consider the population increase, social and technical problems, the role of the machine and new means of transportation.

Doxiadis presents a diagrammatic solution for a city structure based on growth considerations. The city expansion will occur along a predetermined axis. This axis will comprise the original city core. The city will move and develop dynamically in one direction while also expanding in the other three directions. It is comprised of a rectangular system of roads in which the blocks become self-sufficient sectors. (illustration)

The considerations of growth as presented by Doxiadis find an expression in the plan for the expansion of Tokyo by Kenzo Tange. In contrast to Stockholm, this solution avoids redistribution of industry and commerce to the country or to satellites. The solution is a proposal to alter the existing radial network to a linear expansion form. The unification of the transportation system with the city structure is the governing concept...the restoration of spacial order in the city. This cycle transportation

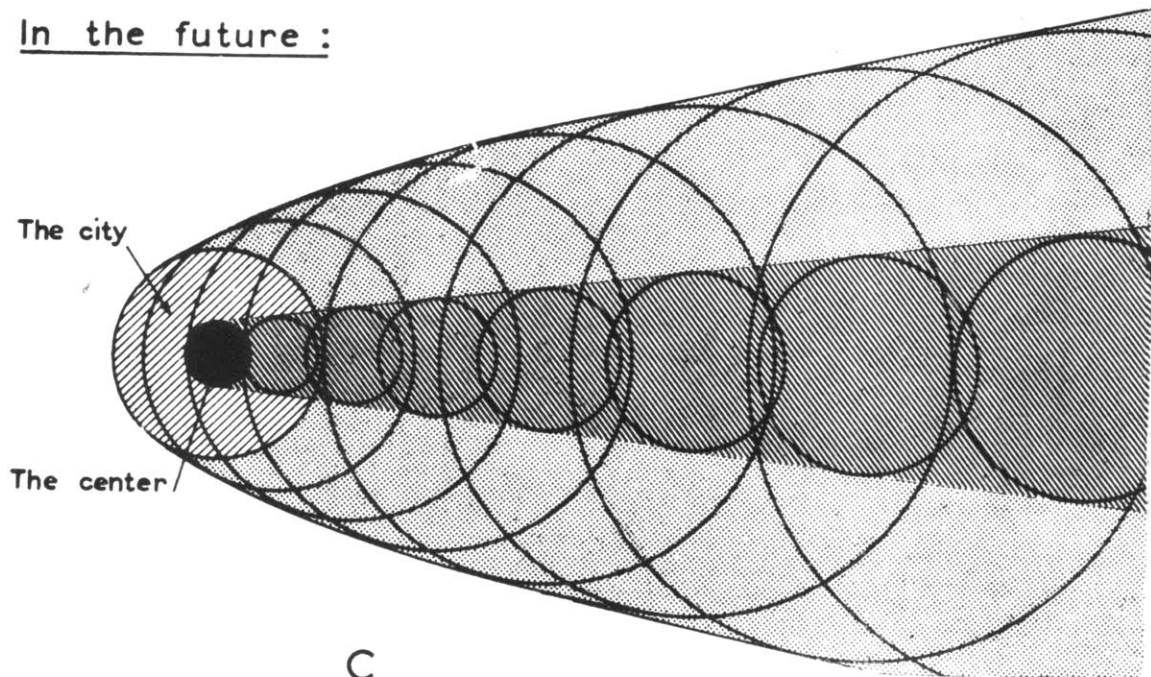
THE EXPANSION OF CITIES

In the past :

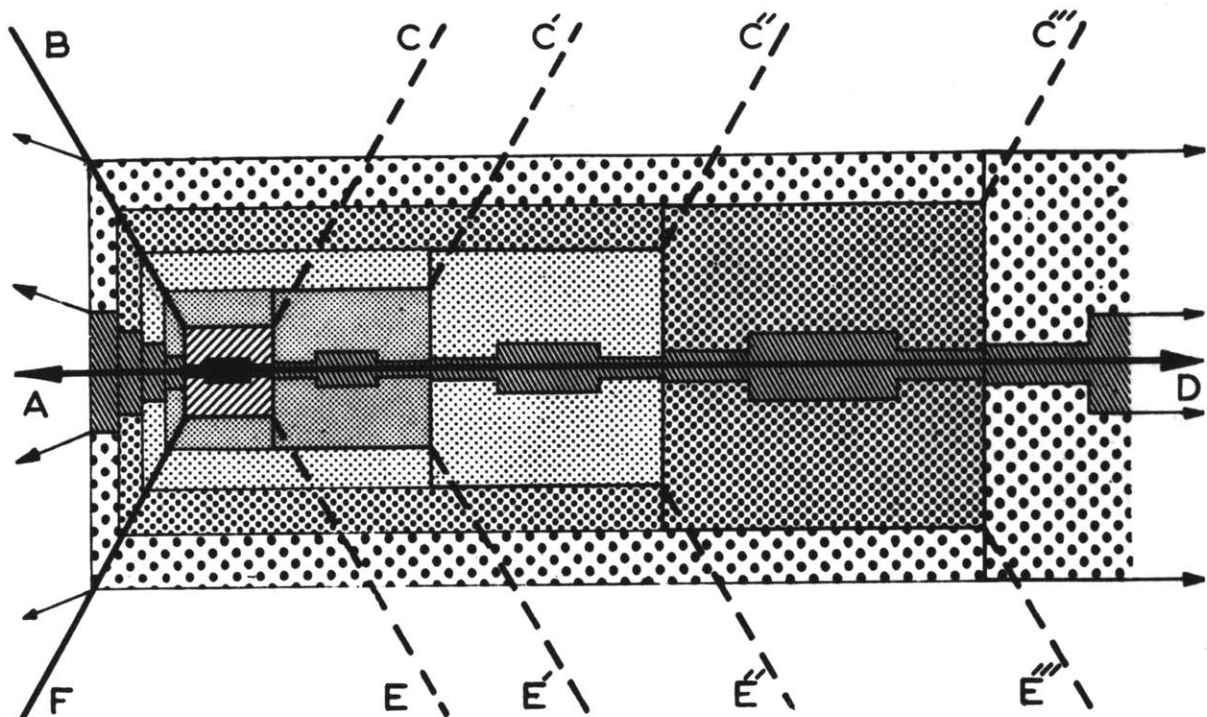


the concentric expansion strangles the center which struggles with other functions

In the future :



the expansion in one direction allows the center to expand without difficulty



F

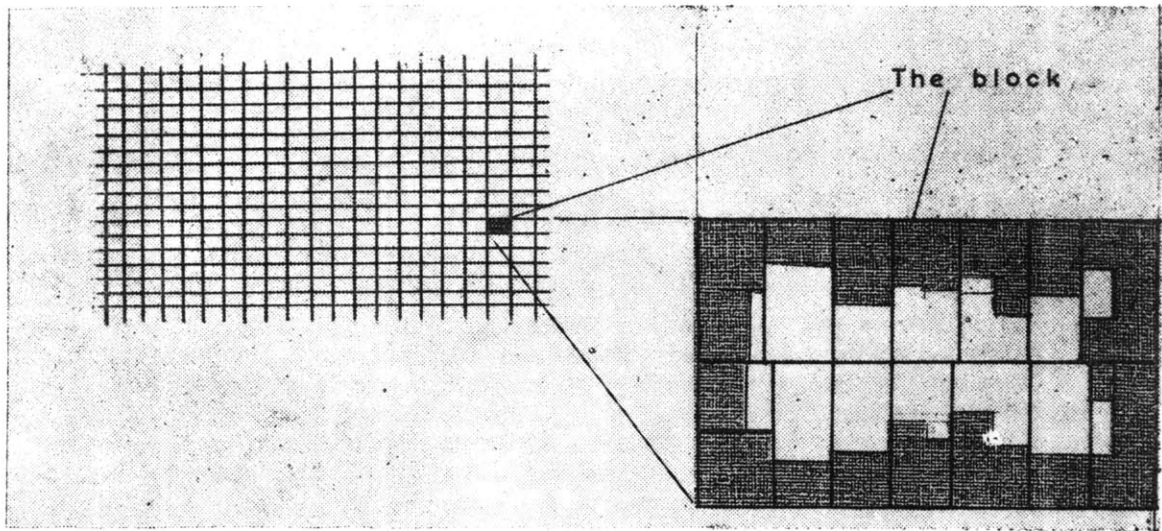
First Conclusion Highways A and B shall remain stationary inside and outside the city.
 Highways B and F may remain stationary outside the city but will be relocated inside the city.
 Highways C and E shall be carefully relocated along with every expansion.

Second Conclusion: The sides of the main sectors and their incidence with the highways shall develop 30°—60° triangles

Third Conclusion: If we want to have the same breadth to width ratio in the development of our sections, we have to add on each side the regular multiples of new sectors imposed by the above triangular relation.

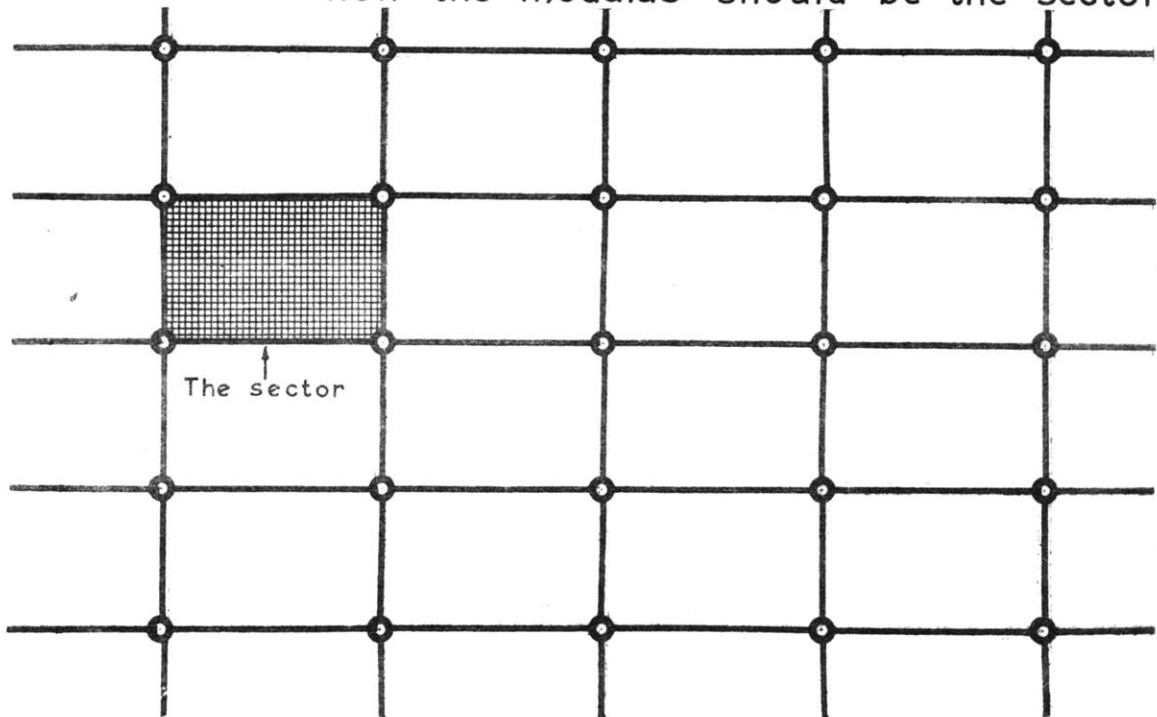
THE OLD CITY

here the modulus is the block



THE NEW CITY IN THE SAME SCALE

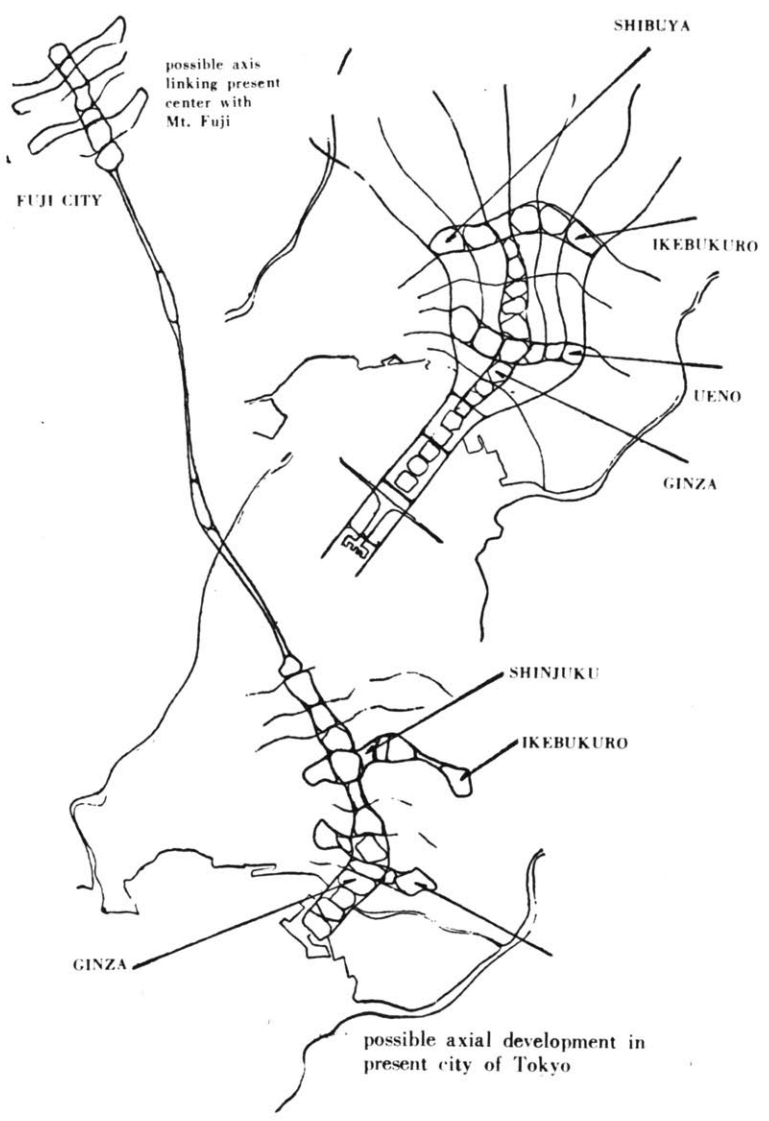
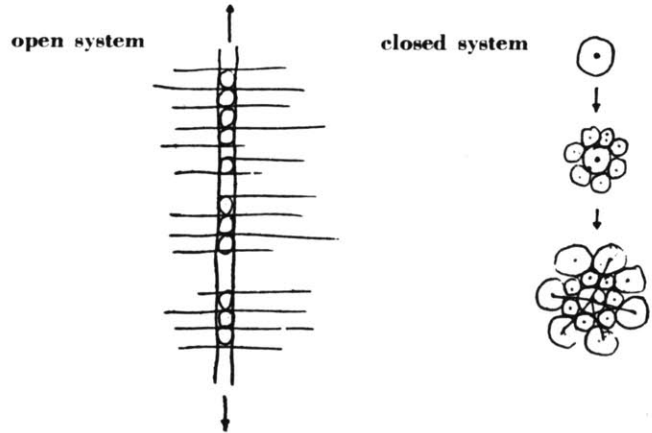
now the modulus should be the sector



The scale in our city planning has changed. Thus the basic element which used to be the city block is now replaced by the community sector.

system attempts to express a new urban order of open organization and spontaneous nobility. (illustration)

After completing research on past and present planning problems and solutions, the students endeavor to be specific in their expression of a criticism of the present status of urban expansion by selecting a comprehensible scale within which to work. The Boston region is experiencing a metropolitan explosion similar to other cities on the northeastern coastline and elsewhere. Currently the Boston metropolitan region is observing a rapidly developing suburban growth to the north and west. This area is confronted with absorption of the burgeoning population expansion with no opportunity to receive or plan for this phenomenon. The original communities in this region are losing their identities as they grow without plan and the open landscape between them succumbs to construction of vast expressionless housing developments which offer no recognition of order or scale to the landscape or dweller. This pattern has not developed to such a magnitude to the south quite possibly because of less developed vehicular communications. At the present a new interstate highway is under construction which will link Boston and Providence. This installation will quite possibly offer an impetus to an increased metropolitan expansion in this area. Thus this corridor area has been



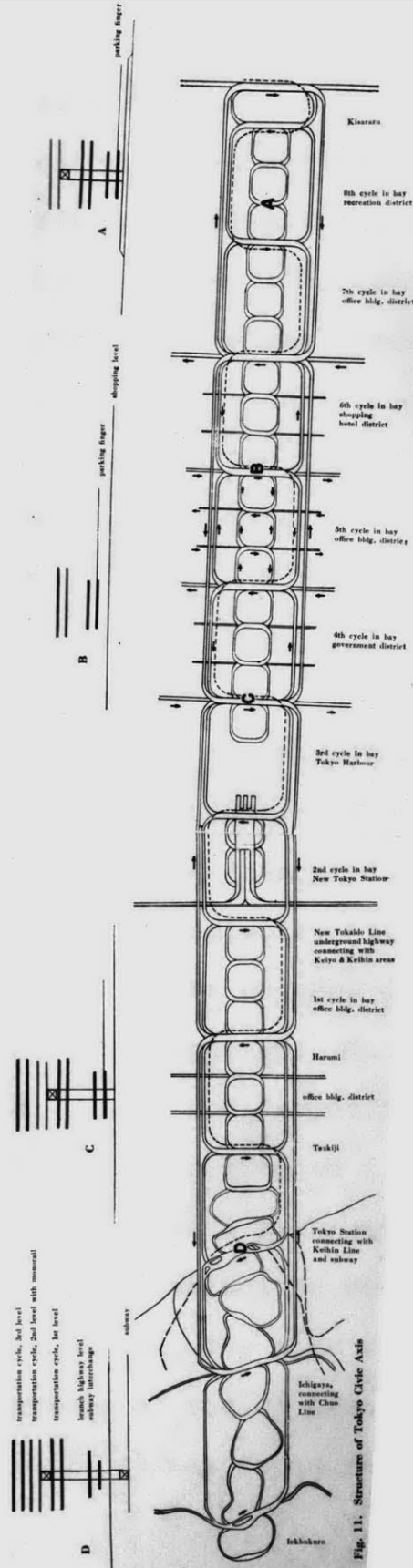


Fig. 11. Structure of Tokyo Civic Axis

selected in which to develop a pilot town to illustrate that undefinable growth is not the only possible solution. The site is located in the Attleboro region approximately mid-distance between Route 128 and Providence.

Consideration will be given to the fact that the individual should have the greatest variety of goods, services, and facilities readily accessible to him. He should be able to choose the type of habitat he prefers and be able to enter many kinds of environments at will, including the open country. Transportation and communication should be quick and effortless. A high interaction between people is desirable but only to the extent of individual control and a person should be able to shield himself if desired, i.e., centers of high activity vs. quiet parks. The city must be 'imageable'. The component parts should be visually perceptible. It must be easy to recognize and interrelate between intensive and less intensive areas of congregation. The resultant desirable variety should augment a clear definition between parts which relate to a well patterned flow system.

This thesis will attempt to develop a design strategy based on a distinction between the more permanent and the less permanent, the more significant and less significant aspects of the environment, with the ideal of creating a strong but adaptable environmental structure.

Many problems have been stated about the current disadvantages of city life, yet this element we attack as confused and characterless continues to grow due to economic and social advantages. Therefore, the question seems to be: what patterns can be realized that will advance the potential of metropolitan life?

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GENERAL PHILOSOPHY OF A NEW SETTLEMENT

Statement of Objectives, Assumptions, and Program
George L. Nielsen

In order to evolve sound proposals for a new settlement a foundation of objectives must be stated, assumptions must be accepted for a degree of consistency in the proposals and a program for use as a guide must be presented.

OBJECTIVES

There are two classes of objectives for the "New Settlement" program. They are:

Class I: Objectives for the total city plan and the related region.

1. To study the problem of the so-called urban sprawl and propose appropriate solutions.
2. To analyze a particular landscape and evaluate its own permanent and ephemeral qualities, and propose methods for making the "fit" between the man-made and natural element environment.
3. To study the general problem of growth and expansion and propose urban structures to accommodate it.

Class II: Objectives for typical problems within the various city and regional concepts.

1. To study the residential problems in the various city schemes proposed and provide appropriate solutions.
2. To study the problems of the business and commercial activities of the city schemes and propose appropriate solutions.

Taken together, these two classes of objectives comprise a complete study which ranges from the large or urban planning scale to the small or architectural scale. The Class I objectives are studied on a group basis, with four groups proposing four solutions. The Class II objectives are studied on an individual basis with each student providing a separate solution within the context of the city plan his group proposes.

The separate group and individual schemes proposed assign different priorities to the various objectives; hence, the variation in the schemes.

ASSUMPTIONS

The following assumptions were made:

- I. The location of the new settlement is to be in Southeastern Massachusetts, midway between Boston and Providence, R. I. It is in close proximity to the Foxboro-Mansfield-Wrentham towns and will be located between the new interstate highway, Rt. 95,

and existing Rt. 1. These highways link Boston and Providence. This area was chosen because it contains the necessary conditions for such a "New Settlement" proposal. That is, already wide-spread sprawl exists in this region and it can be expected to accelerate in the Rt. 1-Rt. 95 corridor as it has done in other corridors in the Boston area. A plan should be evolved for this area to control this sprawl. Also, in this connection, there can be expected growth. Thus, growth and expansion can be studied. The topographical conditions are particularly suited for defining a new city. There are relatively strong boundaries and geographical features in this area.

Finally, the existing towns are hearty enough for continued existence, yet lack definition and sorely need an urban nucleus.

- II. The population will grow to 25,000 by 1970 (first phase) and 100,000 by 2000. The first stage figure is large enough to constitute an urban nucleus for the various population concentrations in the region of the proposed new settlement. The largest towns nearby are Mansfield (4,700) and Foxboro (3,200).

The figure of 100,000 population by 2000 is used to indicate the expected rate of growth. It does not necessarily indicate a maximum or minimum population figure.

III. Strict design and planning control will be executed over the first phase (25,000) population. A somewhat lesser degree of control will be exercised over the ensuing growth.

In order to actually design the new settlement and not just direct it, political, social and economic controls are necessary in excess of those existing today. Whether or not such controls ever come about is unimportant to the proposal. But, in order to make the proposals as emphatic and definitive as possible, such controls must be assumed. Various designs will imply different degrees and kinds of controls.

IV. Rt. 95 and Rt. 1 can be moved if desired. Massive highways are barriers, paths and connectors. They influence population concentrations and activities by the location of their roadbeds and connections. Thus they are important tools in urban design. It is felt by the class that they are vital planning elements and in order to enrich the proposals they should be designed properly and not necessarily accepted in their present form.

PROGRAM

The program is represented in two stages. Only the first stage, 25,000 population by 1970 is presented in detail. The second stage, 100,000 population by 2000 is not presented, but each design should indicate a method for expansion to this point.

Stage I 1970 @ 25,000

Residential:

Provide housing for 25,000 population. Assume 8,315 families or 3.35 per family. It may be that 30% of these families do not desire a yard or garden but would like some private outdoor space while 70% require a yard. Also, approximately 1,500 old people wish to live in accommodations located near the center of town.

Schools:

Provide schools for the following school age groups.

Elementary (1-6)	2,500 students
Junior High (7-9)	800 students
High School (10-12)	780 students
Junior or small college (if appropriate)	500 students

Recreation Places:

Provide for a system of both indoor and outdoor, active and passive recreation. Note should be made of the communitie's close proximity to various lakes.

Service Facilities:

Provide for service functions and institutions.

1. Municipal Office Building	15,000 sq. ft.
2. Police Station	10,000 sq. ft.
3. 2 Fire Stations	20,000 sq. ft. each
4. Post Office	20,000 sq. ft.
5. Library	20,000 sq. ft.
6. Community Center and Auditorium	70,000 sq. ft.
7. Exhibition Gallery	20,000 sq. ft.
8. Health Clinic	10,000 sq. ft.
9. Hospital	37,500 sq. ft.
10. Bus Terminal	20,000 sq. ft.
11. Churches	say 12 needed
12. Cemetery	35 acres
13. City dump	10 acres
14. Sewerage	10 acres
15. Power Plant	10 acres
16. Rail and Air Terminals	-----

Industrial:

Indicate some method of industrial and warehouse location. The degree of connection to the city and the amount of development are left to individual designs.

Business and Commercial:

Provide for a system of local business and commercial activity. Include in this system a regional shopping center for surrounding communities. The degree of intimacy between the local business and commercial interests and the regional shopping center are left for design.

A. Local

1. Commercial (including 2 dept. stores 2 theatres 3 banks)	250,000 sq. ft.
2. Business and Offices (including professional offices and company offices)	350,000 sq. ft.
3. Outlying commercial centers and strip commercial (incl. service stations, super markets, drive ins)	275,000 sq. ft.
	<hr/>
Total	875,000 sq. ft.

Note: Items 1 and 2 may interchange areas but their combined net area should be the same.

B. Regional Shopping Center

The inclusion of a regional shopping center in this business and commercial center can be expected to

add another 700,000 sq. ft. to the center.

Approximately 650,000 of it would be commercial

area and 50,000 would be business and office

space.

Total 700,000 sq.ft.

C. Service

20% of the net business and commercial area must

be added for service areas (does not include out-

lying commercial).

Total 260,000 sq.ft.

The order in which this program is presented does not necessarily indicate a method in which the various elements are to be composed in the final schemes. It is, instead, a categorized statement of the basic elements to be included in the planning of the new city. The program is a guide; deviations are expected as suits the purposes of the individual design. Elements may be added or deleted as the design demands. But the designer must be able to justify any major changes, additions or subtractions since they may represent new social implications.

NEW TOWN ANALYSIS

Julius Roy Izen
Harry T. Miyachi
Mohsen M. Zahran

NEW TOWN ANALYSES

INTRODUCTION

It was our aim to analyze certain new towns from certain aspects in such a way as to formulate our own objectives for the design of the new settlement.

We were concerned fundamentally in our analyses of the visual form objectives though we touched on the social and economic objectives as well, inasmuch as they were needed.

The analyses were objective and subjective to give a proper guide for an adaptable structure of the city from the natural, social, economical and technological points of view. Every city passed through these check points as a unified bases of analysis:

1 - Community objectives

A - Visual

integration - congruence with landscape, congruence with activity, coherence, differentiation, continuity, growth, familiarity, expression of community values.

B - Social

C - Adaptability

social, technological and quantitative change.

D - Economy

of land and environment.

2 - Family objectives

A - Kind and type of living choice.

B - Privacy - social integration and community interaction.

We analyzed the following new towns of which one (Harlow) was built, and the other two have never been built.

- | | |
|---------------------------|---------------------|
| 1. Harlow, England | (Izen, Julius Roy) |
| 2. Broadacre City, U.S.A. | (Miyachi, Harry T.) |
| 3. Saint Die, France | (Zahran, Mohsen M.) |

NEW TOWN ANALYSIS

HARLOW NEW TOWN, ENGLAND

MASTER PLAN BY FREDERICK GIBBERD, AUGUST, 1947

Location:

It is located twenty-three miles northeast of London on a main railway line and is adjacent to the old town of Harlow.

Area:

The total amount of available land is 6,320 acres. It is 3 1/4 miles from north to south and 4 1/2 miles from east to west.

Population:

a) original objective - 60,000 persons.

present objective -- 80,000 persons.

b) 1946 - population - 4,500

1959 - population - 48,000

1964 - expected population - 80,000

c) 1959 population breakdown:

1) over 65 years old - 1.5% of population

2) young married couples - 1/2 of population

3) under 15 years old - 2/5 of population.

Density:

a) The original objective was 38 persons per acre. The present objective is 50 persons per acre.

b) At the 80,000 population stage, the town will be made up of 13 residential units, with each unit containing 100 to 140 dwellings.

c) The 13 residential units will form 4 separate residential districts with approximately 20,000 persons in each district.

Income:

It is intended that the labour force will be made up of primarily skilled labour in the low to middle income group.

Economic Base:

a) At the 80,000 population stage, it is expected that 17,000-18,000 persons will be employed in local industry.

b) The majority of the remainder will commute to either London or other centres.

General Objectives:

a) to change a rural environment to an urban one and to preserve the natural features which give the area its particular character, integrating architectural and landscape elements.

b) to organize the town into distinct areas for home, work and play.

c) to separate these areas with green areas, and connect them with a traffic pattern, separating pedestrian from vehicular traffic and keeping the roads free of building.

d) to break the town into compact, self-contained units by areas of landscape and to limit the size of the open spaces.

e) to capture the most characteristic feature of a great town: Urbanity.

Landscape Treatment:

a) agricultural land to surround and project into the area to bring rural life into immediate contact with the urban one.

b) natural valleys and woods left as such.

c) local playing fields and sports areas occurring in large green areas separating the zones.

d) the creation of a town park and a natural reserve.

Circulation:

a) a system of cycle and foot paths located in the green areas and separated from vehicular traffic, but which go through residential areas.

b) Major roads pass between Residential zones and not through them, and are free of buildings.

Industry:

Industry is planned in two zones, or estates, adjacent to a main railway line and connected to the regional road pattern. They are split in two zones in order not to form too large and dominant an elements.

COMMUNITY OBJECTIVES-VISUAL

Congruence:

1. with landscape is achieved in the following ways:

a) green belts and agricultural lands are used to integrate the rural life with the urban one, bringing the country into the town.

b) one of the valleys acts as a main east-west axis for the town.

c) one of the industrial estates is located in a separate valley while the other one is surrounded by a wooded area.

d) the main centre as well as some of the local ones are located on higher parts of the site.

e) it was intended that the major district centres as well as the local ones be focused on some existing landscape feature rather than being placed in the best theoretical position.

2. with activity is achieved in the following ways:

a) the journey from the home to the shopping centres seems to have been given the most emphasis and predominates

due to the ease of accessibility, over the journey from home to work.

b) the centres are most congruent with the activity pattern inasmuch as their size and location vary in accordance with the daily needs and habits of the people.

c) in organizing the town into distinct areas for home, work and play, the only place commercial and residential uses are mixed is at the local or neighbourhood level.

d) residential areas are directly related to the business and commercial zones and the commercial and business zones are directly related to service and industrial zones.

e) There are 3 types of centres:

1. Town centre which includes large scale activities such as shopping, business, civic, entertainment, and cultural centres.

2. Major District centres which contain large groups of shops, cinema, health centre, service industries, church, community buildings and facilities.

3. Local or neighbourhood shopping centres include small groups of shops and such recreation space and community facilities as the residents may wish to build up.

f) There is also a public drinking house and the equivalent of the "corner grocery store" in each of the 13 residential unit areas.

Structure:

a) There is quite a clear and consistent relation of the centres to the neighbourhoods and to the green belts and green open areas.

b) Major district centres, as well as most of the local ones, are directly adjacent to green spaces which function as recreation areas.

c) The major green belts which separate the four major districts lead to the town centre.

d) Centres are within easy walking distance of each other and the pedestrian and cycle paths connect the centres, as well as the residential and work areas.

e) Pedestrian and cycle paths are separated from vehicular traffic routes for the most part and except for the major green belts, display no heroic scale.

f) Therefore, it is felt that pedestrian circulation is related to man by means of walking distances, the scale aspect being questionable.

g) In attempting to analyze the Master Plan from the aspect of the relationship of the design of circulation elements to movement, it is difficult to ascertain whether or not the pedestrian spatial experiences are more detailed than for those of the automobile.

h) Where pedestrian routes coincide with those for the automobile, there is evidence of a wide variety of different spatial experiences, especially those related to journeys within the town as opposed to journeys into the town.

i) The design of the street system would indicate that they are intended to cater to traffic of varying speeds, the major town collectors streets being the most direct and having the least amount of access from minor streets.

Differentiation:

a) Inasmuch as a town should be differentiated as to scale, Harlow succeeds only partly.

b) Exterior spaces vary in size according to their function and relation to the area they serve.

c) Most of the buildings and dwelling types suffer from similar heights and a sameness of scale.

d) An attempt has been made to diversify the character by changing the design of the dwelling types in

many of the units but this does not alleviate the situation concerning the lack of contrast in scale, and even in character.

e) In general, it is only the swelling types and not the neighbourhoods which are well differentiated.

f) It is quite possible that differentiation exists in the following ways:

1. differentiation in the scale and type of landscape in the neighbourhoods as well as in the green belts.

2. differentiation in the architectural treatment and character of the centres.

3. differentiation between different nodes and by way of landmarks and local street types.

4. activities are zoned by use and separated by green areas providing differentiation between activity zones.

Continuity:

a) The development program for Harlow, endeavors to provide a continuity throughout the town's growth and through any changes it will undergo.

b) Since residential unit areas or neighbourhoods are small and compact, a whole unit will be built at one time.

c) Centres will begin with a framework of necessary buildings and grow as the number of units and/or districts increase.

Development:

a) Due to the integration of architectural elements and existing landscape elements, the town has a few major views of outstanding interest as well as numerous minor ones.

b) As one grows more acquainted with the town, many new and interesting views would become apparent.

c) However, due to the architectural treatment, it is doubtful whether new discoveries in views or spatial experiences would have too different a character from those one was already familiar with. Thus, interest, due to lack of contrast of character and scale, is possibly lost.

d) It is possible though that the design is such that certain views or experiences remain delightful and maintain their appeal no matter how many times one goes by, even if no new relationships are discovered each time.

e) It is possible, however, that if there is a variety in the landscape treatment, the aspect of development would be greatly improved.

Expression:

a) The physical planning of Harlow is based on the grouping of residential units to form neighbourhood units and districts.

b) These units are to be of mixed income groups.

c) This method of planning is expressive of the original desire to have the town develop as a social community.

d) In each unit, dwelling types are the same.

Thus, in each unit there should be:

1. a sense of unit.

2. a sense of cohesion among the inhabitants.

e) The centres of varying sizes and intensity of activity are expressive of the desire to have places where individuals may mix freely, yet retaining their own identity inasmuch as they live in a small unit which represents their own particular standard of values.

f) Thus, Harlow tries to express the identity of small residential groups by similar housing types in each of the residential units.

g) It endeavors to express the idea of balanced communities and equality of neighbourhoods by providing a mixture of housing types from one residential unit area to the next within the neighbourhood.

h) It expresses the separation between home and work by surrounding the industrial estates, which are in close proximity to residential areas, with wooded areas.

i) It expresses the importance of the countryside by bringing the agricultural land into the town adjacent to some of the residential areas.

j) It tries to express historical continuity by incorporating the old town of Harlow as one of the neighbourhoods in the new town.

Social:

a) Harlow seems quite successful in providing for the possibility of informal contact and social life.

b) The social life is affected and made possible by:

1. towns abnormal age structure - industry hiring mostly young workers.

2. the absence of commercial entertainment at the outset led the fast growth of social clubs and associations.

3. the provision of tenant's common rooms and public houses in the centres and in the units themselves, which are used for any activities the community or district may wish to develop.

4. shopping and entertainment centres and playgrounds and recreation areas.

5. the exterior formed by groups of dwellings where people can meet informally while relaxing or watching the children play.

c) There has been some attempt to mix different income groups by providing a variety of dwelling types in each of the residential units.

d) At present, it is not possible to predict how successfully the different income groups will integrate at the social level.

e) Some of the problems facing other new towns which Harlow might also be confronted with are:

1. families are split up by the new developments due to the fact that they lure primarily the younger people to them, leaving the older generation behind in the city. This might well be the situation in Harlow where local industry gives special attention

to its employees by way of rental systems which quite possibly gives preference to the younger, married employees.

2. complaints of lack of privacy.

3. complaints of boredom from people used to a more intense, urban life, which is not evident in Harlow.

Adaptability:

a) From the point of view of adaptability, it is felt that the street pattern displayed here would tend to be an impediment to flexibility, should future changes in location of activities occur. This could affect public utilities as well as changes in transportation methods.

b) On the other hand, since each activity zone is quite clearly defined, it could afford internal change without possibly affecting the neighbouring zones.

c) Concerning total expansion, the town is bounded on three sides by a major expressway, connecting regional centres. On the fourth or east side, there is the old town of Harlow and this situation might certainly limit expansion. Of the 6320 acres, much will be given over to green areas and the question arises as to how much of this will be available for expansion.

FAMILY OBJECTIVES

Visual:

The town provides living conditions which allow:

- a) a good choice of hilly as opposed to flat areas.
- b) quite a good choice of open and enclosed areas more by virtue of the landscaped areas.
- c) not a very wide choice of formal spaces as opposed to informal spaces and urban environments as opposed to natural ones. Due to winding streets, of vegetation and lack of variation of scale, the prevailing character is an informal, rural one. There is little evidence of residential units in the centres, which if provided, would add to the intensity of activity in the centres and provide a stronger urban character, which was one of the original objectives.

Social:

1. The need for family privacy has been provided for in the following ways:

- a) internal space is provided more or less according to the disposition of the elements within the different dwelling types, the houses designed for the upper income groups, providing more flexible and larger internal space.

b) external space is provided by small enclosed rear gardens which 80% of the 2-story dwellings have, - this type of dwelling being dominant.

2. a) The degree of privacy decreases progressively in the exterior spaces which are climaxed by the district and town centres.

b) For those who wish to have contact with the bustle of urban life, depending on the level of intensity they desire, the sub shopping centres and the district shopping centres are within easy walking distance of the residential areas which surround them.

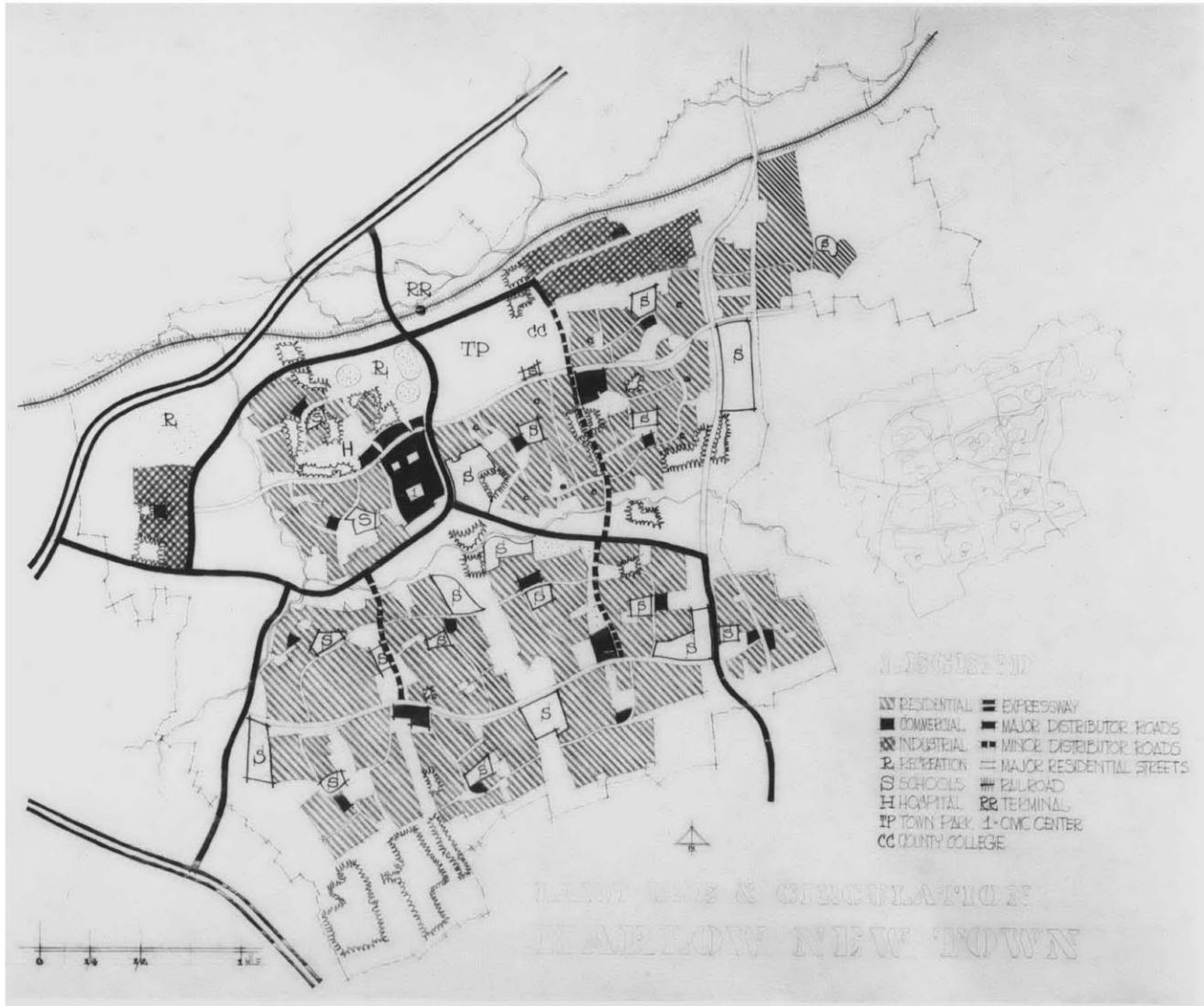
c) The quality of the architecture in the centres in Harlow could be improved upon to add to the desired urban character, by altering the scale of the buildings in the centres, as well as giving them more of a feeling of permanence which they did not seem to possess.

Conclusion:

Although the town seems to be lacking in urban character, this may not be the actual situation, this report is based only on the photographs and information available. In general, Harlow New Town seems to have many desirable qualities which would make living in a new town such as this quite a pleasant experience.

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PLANNED DISTRICTS
FOR NEW TOWN

- AGRICULTURE
- WOODLAND
- RESIDENTIAL
- COMMERCIAL
- RECREATIONAL & INDUSTRIAL
- GREEN AREAS

PLANNED DISTRICTS FOR NEW TOWN

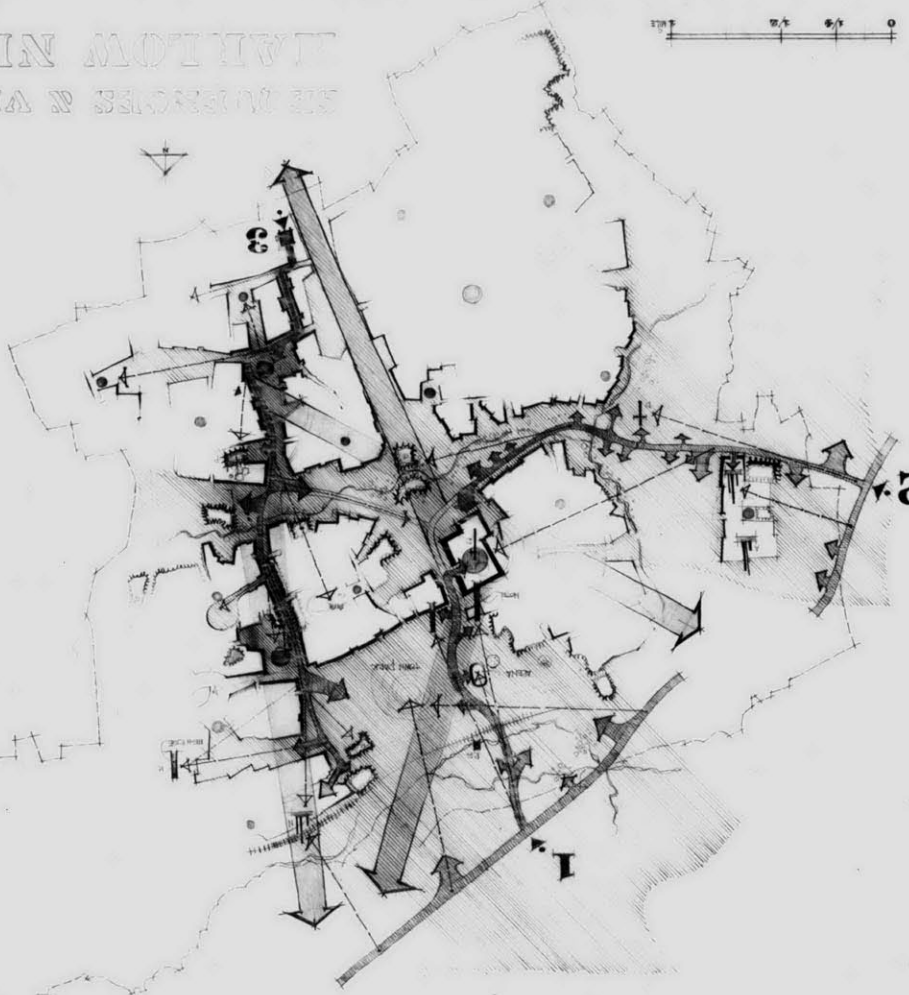
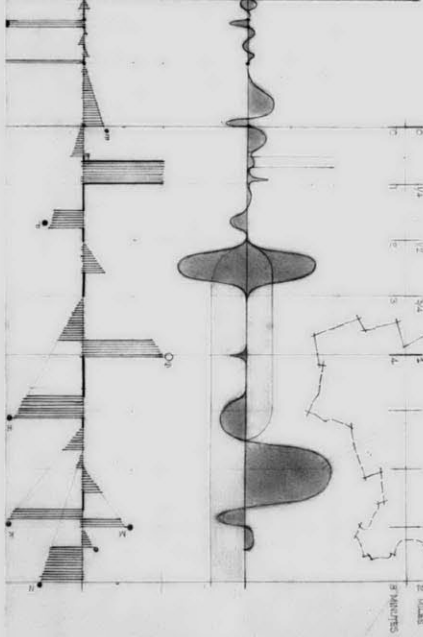


MAYLOW NEW TOWN

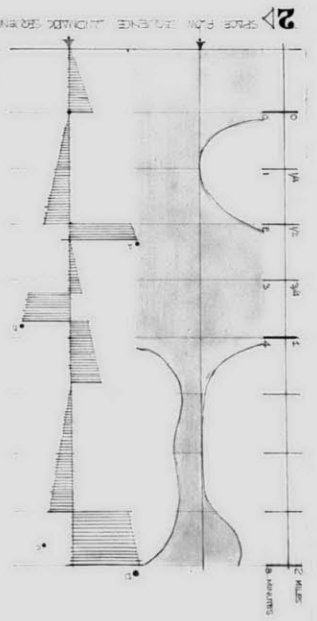
THE PROBLEMS & VIEWPOINTS

- 1. SPECIAL FLOW
- 2. HARD ENCLOSURE
- 3. SOFT ENCLOSURE
- 4. MAJOR VIEWS
- 5. VIEWS ALONG PATHS
- 6. DISTANT VIEWS
- 7. NODES
- 8. CHURCHES
- 9. FACTORY
- 10. EXPOSED SKYLINES

1. LEGEND



SEQUENCE DIAGRAMS





LEGEND

- INTENSITY & VEHICULAR ACTIVITY
- ▲ SHOPPING & PEDESTRIAN ACTIVITY - DAY
- ▲ SHOPPING & PEDESTRIAN ACTIVITY - NIGHT
- ▲ CHILDREN PLAYING
- SPECIAL ACTIVITY - DAY
- SPECIAL ACTIVITY - NIGHT

VISIBILE ACTIVITY
HARLOW NEW TOWN



NEW TOWN ANALYSIS

BROADACRE, U.S.A.

FRANK LLOYD WRIGHT

Concept

The basis is decentralization in which the city is going to the country. It is assumed that the country is a characteristic four square miles in the temperate zone. The type of town would change somewhat according to the climate and topography.

The three major inventions that will build Broadacre are: (1) Increased general mobility of the human being. (2) Electrical intercommunication becoming complete. (3) Machine invention plus scientific inventions.

Agriculture, manufacturing, and residence are not separated but integrated as a single entity. The concept of "live where you work" is employed. Distribution is direct, taking place mostly in the region of origin.

Broadacre City is the entire country and predicated upon the basis that every man, woman, and child in America is entitled to "own" an acre of ground so long as they live on it and use it. So the portion illustrated is only a minute part of the whole concept of Broadacre City. It was presented as a transitional scheme.

The three assumptions made by Broadacre as an ideal are: (1) Man's social right to a simple direct medium of exchange in place of gold as a commodity: some form of universal social credit. (2) Man's social right to his place on the ground as he has had his right in the sun and air. (3) Man's social right to the ideas by which and for which he lives: that is to say public ownership of invention and scientific discoveries that concern the life of the people.

Broadacre is not built as a finality but as an interpretation of the changes predicted.

Area:

4 square miles

2600 Acres: Housing--1300

Farming--280

Industry--160

Community Facilities--500

Open Parks, Lakes--360.

Density:

2 persons per acre (gross)

Population:

5,000 (1,400 families)

Growth:

Certain tree covered areas are reserved in the beginning for the increase in population. The general expansion is on three sides but more likely north and south along the main arterial. No major or minor axis to allow growth as required.

Traffic:

Every citizen has his own car or more. Therefore greater dispersal is justified and distance is measured by time and not by miles.

The only fixed transport trains kept on the major arterial are the long distance monorail cars. Major traffic by car is on a 12-lane highway with truck lanes on the lower level directly accessible to warehouses. The major roads are treated as architectural elements in the landscape.

Landscape:

Recognizing in the necessity of cultivation a need for formality in its planting, the trees are expressed as an architectural element. There are no rows of trees along major roads to shut off the view. If planted, they are perpendicular to the road or planted in groups of the same species.

Vegetation plays an important role in Broadacre and is, therefore, the dominant overall texture.

The major landscape feature is the recreation park with its highly controlled wall of trees.

COMMUNITY OBJECTIVES

Visual:

The plan for Broadacre places the ground in human possession for human purposes instead of collecting and raising and viewing the ground around it. The tillage and consideration for the ground makes a humanized landscape. The plan preserves the nature-features of its site but also complements it with the "designed landscape" which will not look "naturalistic". The landscape is conceived as an integral part of the city and also a dominating element. The activities take place among the landscape and basically its use is dictated by it.

It has a very coherent structure due to its consistent texture throughout. The repetitive texture of vegetation gives it a basic theme to which one is always related. The dominance of this theme gives it structural coherency but also monotony. The spatial sequence through it also adds to this monotony by its similar rhythm and vistas. There seems to be no strong variations. The differentiations are too subtle. Therefore structural coherency is achieved through the expense of variation, but undoubtedly visual continuity will be maintained in its growth and changes by the adaptation of the basic theme.

Visually, as one approaches the city and circulates around it, the dominating landmark is a tower which is located near the lake and the airport. It dominates the skyline but does not mark the major activity area which is the market place. But in persuring the landmark from the main arterial, one is forced to pass by the market or the recreation area, so therefore experiencing the major visual activities.

Due to the basic concept of decentralization and self-sufficiency, it is improbable that it will be able to develop with more familiarity for the inhabitants. It is visually limited and will probably expand with the same theme. There seems to be a limited chance to discover new things due to the limited variations.

Visually it is very expressive of its community values. The value of the land, nature, and the right to a simple and direct medium of exchange of commodity is strongly reflected in the layout and use of the land. It is conceived as a homogeneous society with similar likes and dislikes and is visually evident.

Social:

The possibility of informal contact is at a minimum due to the dispersal of the people. The basic mode of travel is by the private automobile, and that is basically a

means of getting from one point to another without any contact in between. Therefore the only contact will probably be at the point of destination. The market place and the park are probably the potential areas for informal contact, but by the very nature of dispersal and self-sufficiency the chances of social contact is lessened. It discourages walking.

Adaptability:

The de-centralization of elements gives a greater degree of adaptability to change technologically, socially, and quantitatively. It is this looseness of layout that can adapt to changes more readily than a very compact one. The development or shrinkage of one element does not directly affect the whole to any great degree. The basis of the layout with no major or minor axis, and also no dominant central area, gives it great flexibility to future growth and change.

Economy:

The ground is an integral part of the concept and is developed intensively throughout. By the nature of the concept, greater space is allotted to each individual unit without sacrifice to the common spaces since land is plentiful. Economy of ground space was an objective but was not expressed in terms of compactness but instead in terms of direct usability.

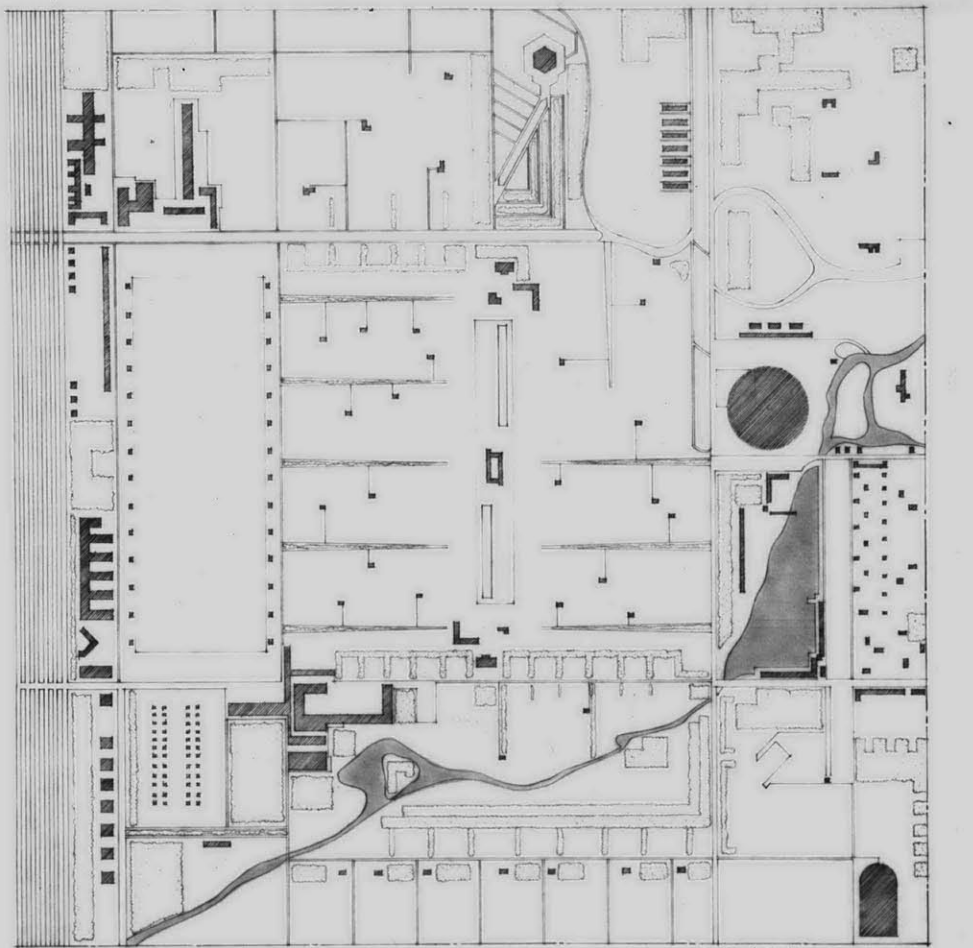
FAMILY OBJECTIVES

Visual:

The choice of living space is limited due to the topography and the common objectives of the inhabitants. It is generally directed to the rural mode of living. The basic rural theme predominates the whole and is reflected in its spatial layout and choice of activities. It allows no choice for urban living which a minority admittedly would still demand. Dispersal with a lot of open spaces will probably be the only type of living available. Even the high rise apartment buildings are proposed to be out in the open fields.

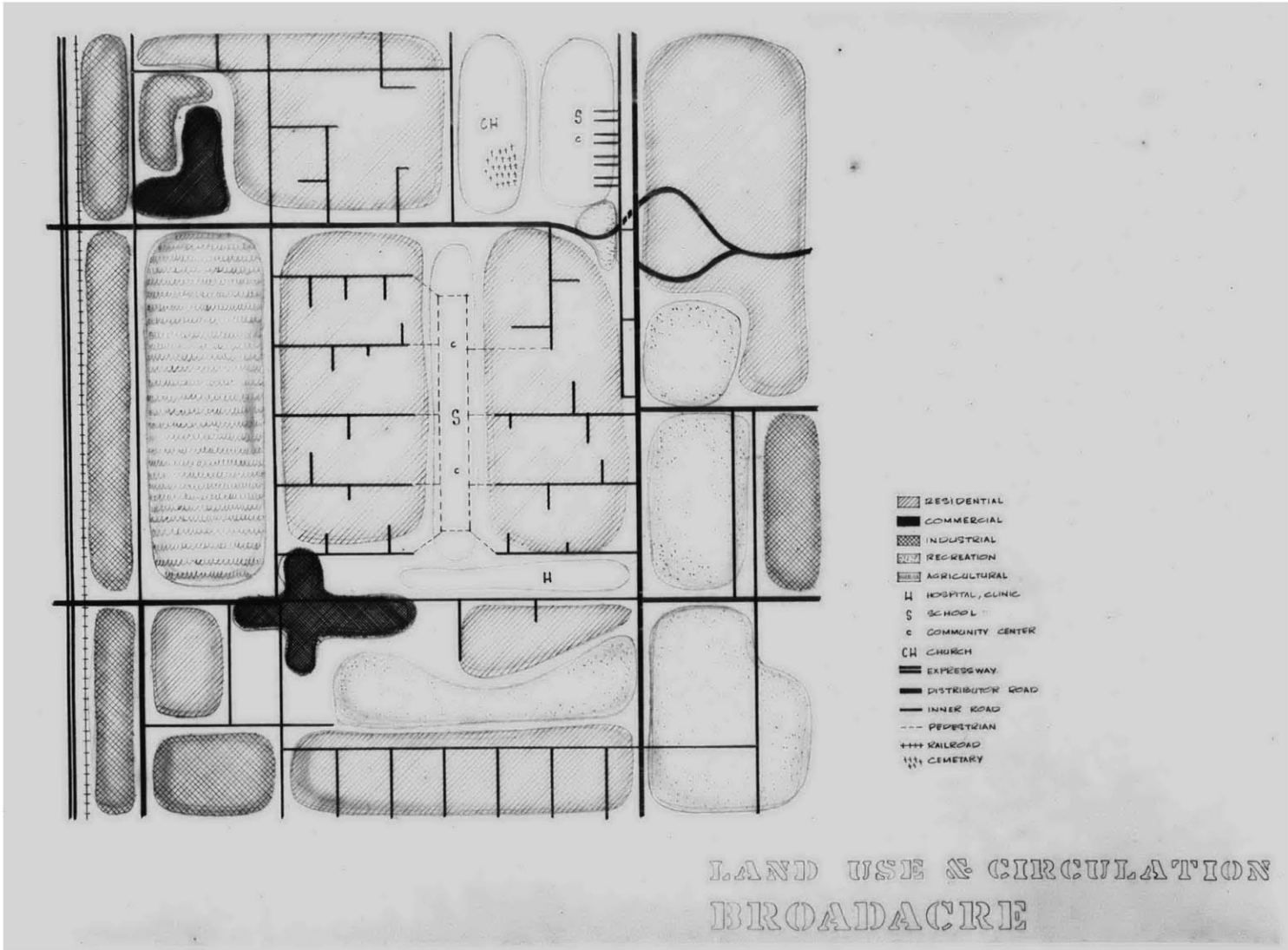
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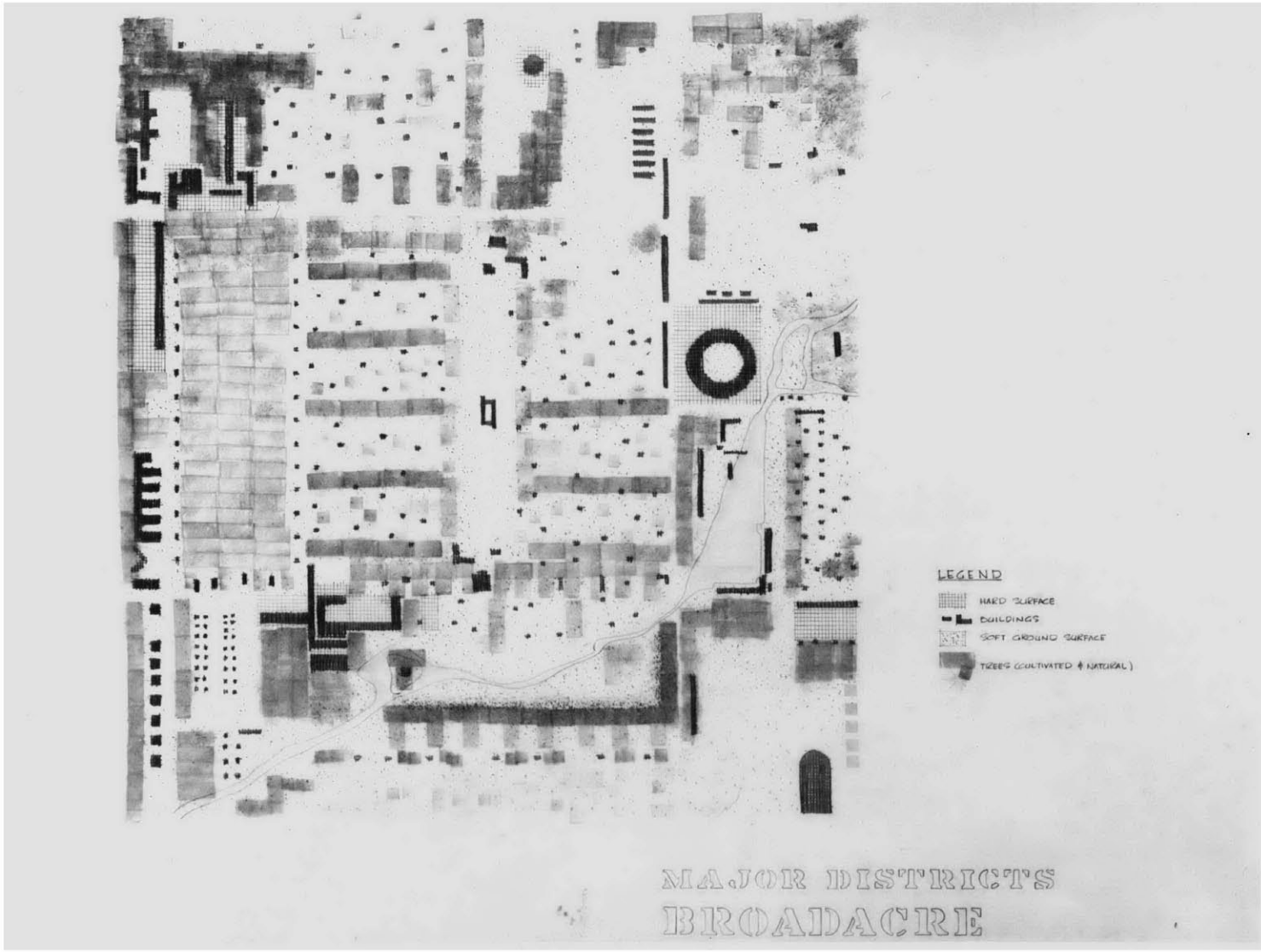
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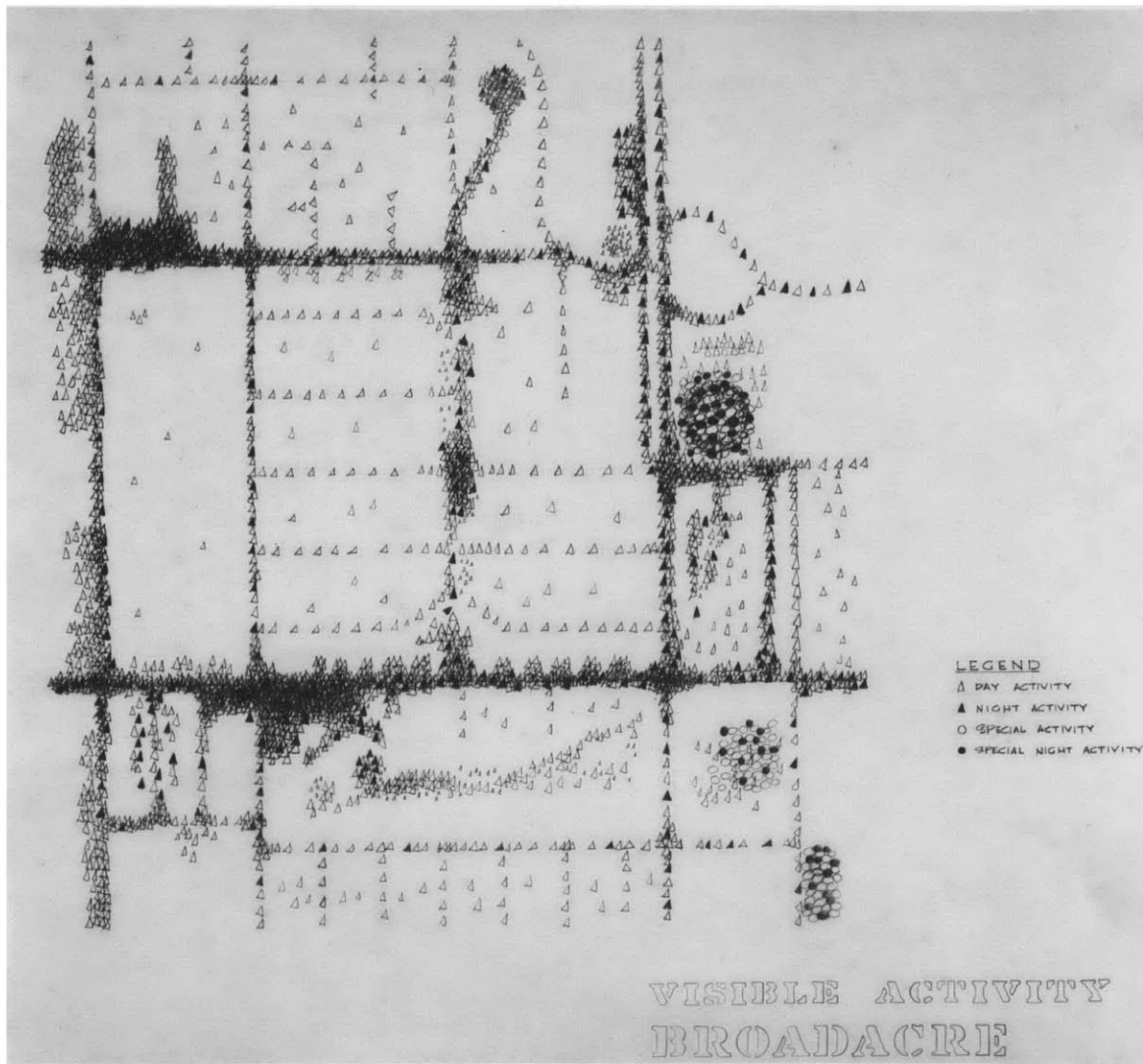


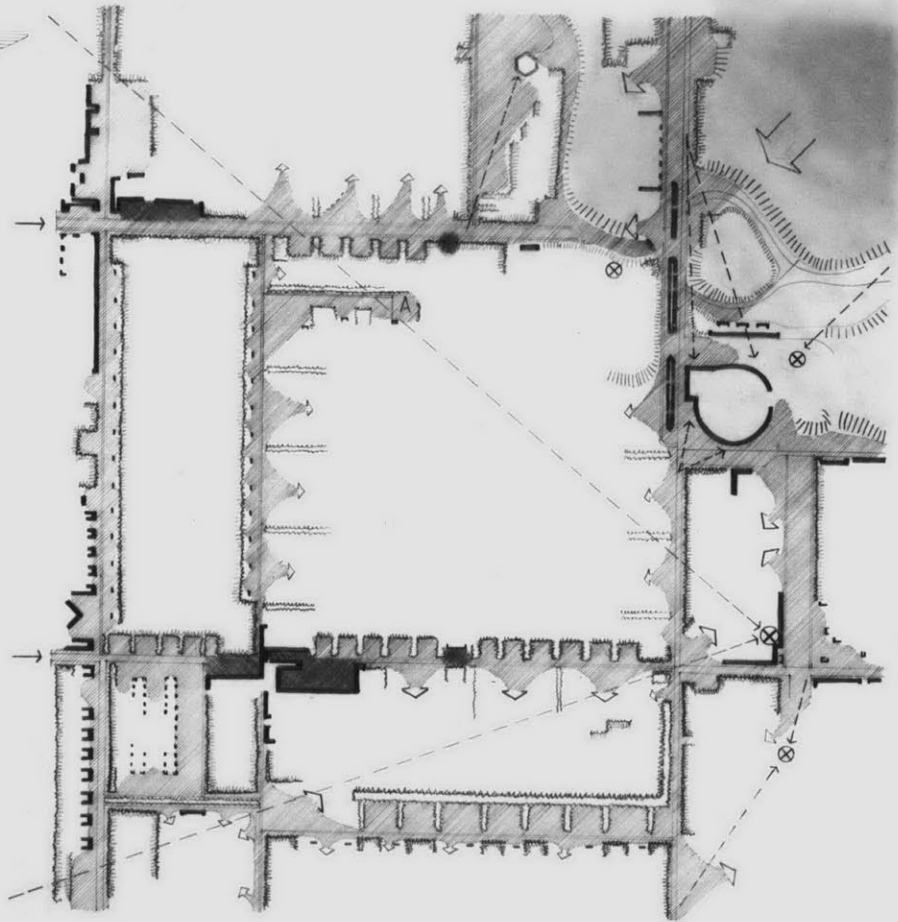
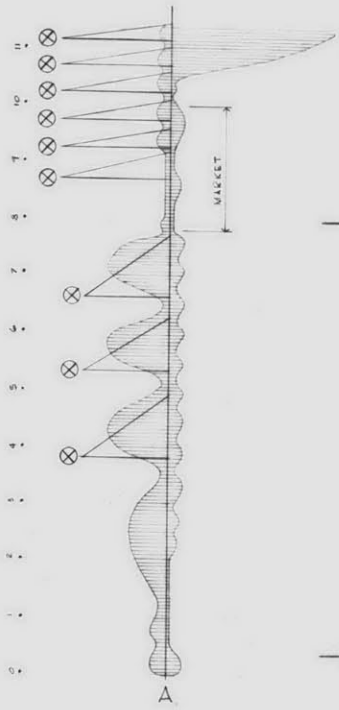
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PLAN
BROADACRE



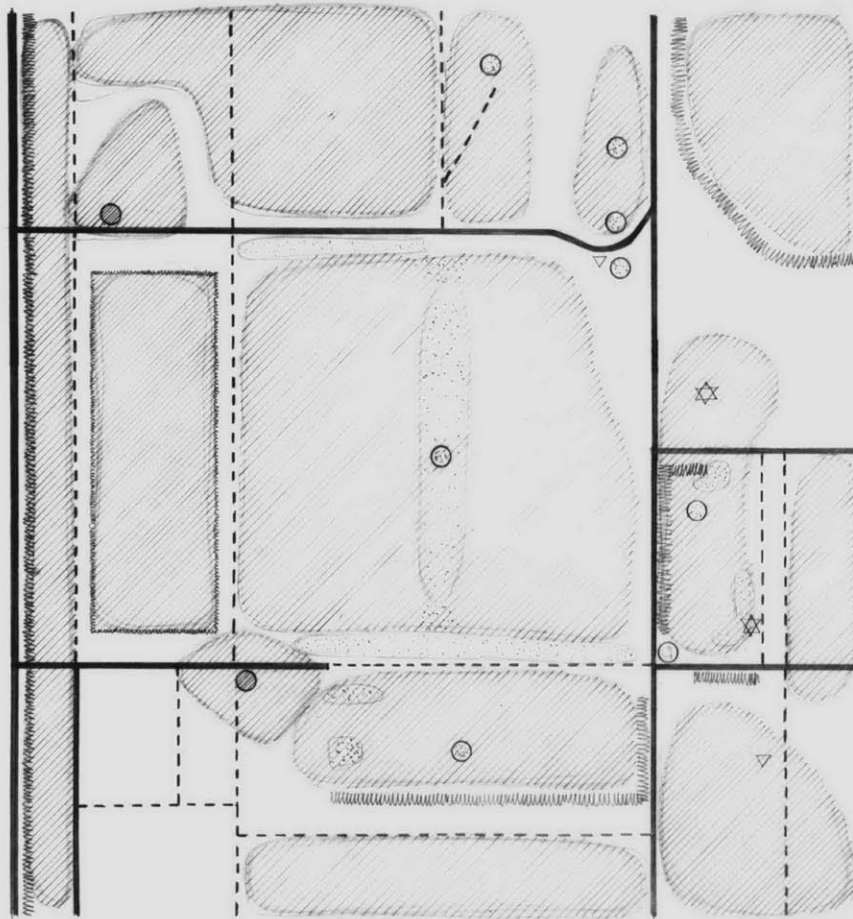






- HARD SURFACE WALL
- - - SOFT SURFACE WALL
- ▭ DEFINED SPACE
- NODE
- ||||| BANK
- ↖ MINOR VIEW
- ↗ MAJOR VIEW
- ⊗ TOWER LANDMARK
- ← VIEW OF LANDMARK
- ↖ DOMINANT VIEW OF CITY

SEQUENCES & VIEWPOINTS
BROADACRE



LEGEND

	PATH	EDGE	NODE	DISTRICT	LANDMARK
MAJOR					
MINOR					

IMAGE
BROADACRE

NEW TOWN ANALYSIS

SAINT-DIE, FRANCE

LE CORBUSIER

Brief Background + A Concept

As an application of the linear industrial town, Le Corbusier, designed Saint-Die. His concept is an application similar to Ebenezer Howard's theme of the "Garden City".

Population and the New Settlement

The immediate problem of the town of small industries is to house about 10,500 people who became homeless during the last phases of World War II.

Supposedly, the low income families will be housed in five story residential units of 1600 people each. It will be similar to the Unite d'Habitation at Marseilles at the first stage. The rest of the 10,500 (1500) who are considered better class will be housed in individual houses located in a "garden city" pattern, to the north of the towers. They are connected directly to the center. Each of the two quarters have their community facilities. The old cathedral centers the two quarters. The distance between east and west is to be walked in a quarter of an hour.

Area:

Approximately 550 acres.

Climate:

66° F summer, 31° winter, rainfall 26"

Density:

The high rise units quarter has a gross density of 200 persons/g. acre, i.e. 55 families/g. acre. The individual houses quarter is of three families/g. acre. The whole g. density in the settlement is six families/g. acre.

Income:

The normal income ranges from 200-300 francs per person per month (i.e. 50-70 dollars/person/month).

Economic Base:

The plan constitutes a standard type of industrial development (usines vertes), to allow work primarily for the inhabitants. The major economic activity is dependent upon those factories. The environment has a well stabilized economic base supported by good ground transportation (highway and railroad), water, and air transportation as well.

Visual and Social Activity:

The civic center occupies the heart of the new community. The City Hall, centering the area and standing high enough to form a landmark for the entire community, generates a tremendous activity around it, together with the cultural, commercial, and social facilities around it.

The major social and sports center is located along the river, far from the city life.

Growth:

Three more towers are planned for growth. The individual houses are to continue to grow in the same manner. The entire population of the prospective community shall be 20,000 people.

Objectives:

Le Corbusier writes his objectives as follows:

"to create a green city with a plan to fit
the modern time,
the modern technique,
the modern esthetics,
the modern life,
the modern ethics..."

Here I shall discuss these and the underlying objectives in a more concrete manner, in such a way as to give conclusions to our own objectives for the new settlement.

Visual:

1-A Concurrence with Natural Form

a. He planned the new settlement to fit the environment contours, foliage and water streams. The line of the towers and that of the factories is parallel to the river following its windings.

b. The towers are lined in such a way as to allow the mountain view to penetrate the development as well as to be related visually to the old settlement across the river.

c. The individual houses are planned to follow the contours as well as the mountain view.

d. The foliage at the tower zone is cleared, in such a way as to allow baths, facilities, and visual contact, whereas in the north, it is left to form an integrated environment with the houses.

e. I believe that the river is an important factor in orientation, visual character, and amenity throughout the whole community. Le Corbusier has well justified this point.

f. The mountains could be another kind of visual orientation, if there are differences in their character of form. But, probably he did not think specifically in these terms.

1-B Congurence with Activity

a. The climax of activity coincides with the climax in space and form in the center. This in a way makes sense, but the towers as vertical, independent and dense activities are too separated by large spaces around them to allow in between activities to occur. However, they visually declare a strong statement of what is going on there.

b. The two quarters are planned at the two extremes (dense verticality of towers and dispersed horizontality of the single houses). They are hardly related to each other visually. No intermediate stage was planned to prepare for the

immediate shift between the two extremes. Perhaps, the old cathedral in the middle, acts as a focal point between two different parts.

2. Coherence

a. It seems to me, that there is a lack of coherence between the new town and the old one. He did show the plan of the old town in one picture and it is hardly married to the new one. He never permits his progressive design to destroy the old, if it is worth saving. He strongly shows his belief in keeping the old cathedral and its cemetery to be as a strong focus centering his quarters.

b. We can find that the low density quarter is related to man and to movement more plastically and attractively than the identical towers.

c. The system of movement has the strong privilege of coherence with the spaces and structures. For example, the large central space is left entirely for pedestrian movement. The movement within the tower's quarter is so designed as to allow easy and efficient movement for both the pedestrian and the car. The single family houses which need primarily vehicular access, are provided adequately with individual access.

d. The vehicular movement, being separated from the pedestrians, pays the price for longer trips and more turns. Also there is no intended coherence between the pedestrian and vehicular movements. Nevertheless, the system he provides, allows a strong connection; south to north, and east to west.

e. The cathedral acts coherently with both quarters and serves well orientation, identity, visual interrelation and specific activity.

f. The visual relation between the railway station, the civic center and the cathedral has a great value in the plan. Actually, the important buildings are located in key locations for reasons of congruence, They not only serve certain functions, but also are expressive for symbolic reasons.

g. The possibility of movement and interaction is at a minimum because of the large spaces between the towers which creates isolated social units.

h. He has provided the possibility of choice of living on the ground or high in the tower though, I think, primarily, economical reasons would determine the type and kinds of groups who will live in each quarter.

i. The separation of vehicular and pedestrian traffic specially in the central area, seems to me unusual and far from the city life and actual visual familiarity of urban experiences.

3. As it is obvious that we can identify exactly certain quarters in the whole town, their edges are finite. No mixing on preparatory shift has ever been planned between any of these parts. It seems to me that it is differentiated too greatly, and I might say segregated.

4-a

a. It seems obvious that the same character will continue throughout the growth stages which are planned together

with the whole community.

b. I think if it continues to grow in the same manner two things will occur:

1. More monotony and unfamiliarity to such a community will occur in the towers' quarters, where they disturb the homogeneity and background view of the mountains (Imagine, if they were placed parallel to the river, it would have been a calamity. The mountains would have been entirely obstructed from the community spaces).

4-b

a. The individual houses are capable of developing ^{with} more familiarity because the quality of spaces vary from one place to another fitting more with nature. The monotony will be continuous on the growth of the high towers.

b. I wonder, how the center that is well set and planned is going to grow or change with the fixed boundaries unless the whole design is disturbed. (a big interrogation mark)?

5. I question here again, whether this plan is expressive to the community values or not. Is segregation included in the community values? Is the swimming pool inside the civic center and the busy factories, included in the community values? Is the complete separation of diverse movements inside the city, with all the problems it involves, acceptable as an urban character, and as city life?...

The cathedral with its central terrific location, does have a merit in the plan, because it deals directly with the community values. Other points dealing with this issue are mentioned herewith under separate headings.

Social:

a. There is possibility of social and informal contact between the two groups only in the center at which everybody is to pass through.

b. There are two pitfalls: one of them is that each tower has its own social facilities, which in a sense makes separate isolated districts within the towers' zone as one group; whereas, the social interaction is more possible in the community centers planned inside the low density community as another group. The second is the impossibility of achieving any of these in the sports center located far from the two diverse groups.

Adaptability:

a. This settlement could be adaptable for technological or quantitative changes. However, again, I raise the question, about the inflexibility of the center for business, etc...which is planned and so defined architecturally to allow no adding or subtracting of any activity. The adaptability for social change is not easy to predict because of the system he established.

b. A major issue here is that he planned everything related to the factories as a major economic base for the community. Suppose that for some reasons this industry is not re-

quired any more. What will happen? principally, the economic, visual and social arrangements he planned will entirely collapse.

The community should not depend on one source of living, and even if it has to, it should be adaptable to change visually and economically, This is very likely to occur in the course of time. He has never given thought to this point.

Economic:

A reasonable economy of space is justified in some places as in the individual houses and one or two of the towers. Then for geometrical arrangement, this factor is seemingly disregarded. The density seems reasonable, but it is not uniform throughout the environment. The towers are so dense internally and the individual houses are so dispersed.

The location of industry in the south seems to act as a barrier of any other diverse activities in the south, which he left vacant. It seems a wasteful use of space economy in the environment.

Family Objectives:

Visual:

This settlement allows choices between two diverse conditions. For example, (1) urban (the towers with their complete facilities) and natural (as the individual houses quarter). The whole development with an overall look is inclined to a rural rather than urban character, Formal places (as the towers)

and informal places (as the meeting places and centers) have been established as well as the private houses which have more informal character. (2) hilly or flat sites are available but with two extreme, diverse developments, i.e. dense towers on the flat and dispersed houses on the hills. (3) Enclosed (as the spaces between the individual houses) or open (as the spaces between the towers), the two extreme choices are allowed without any other choice in between.

Social:

1. The family privacy existing in the individual houses is not of the same value or sense as in the towers, which provide common outer and inner space and facilities. The two extremes again are provided.

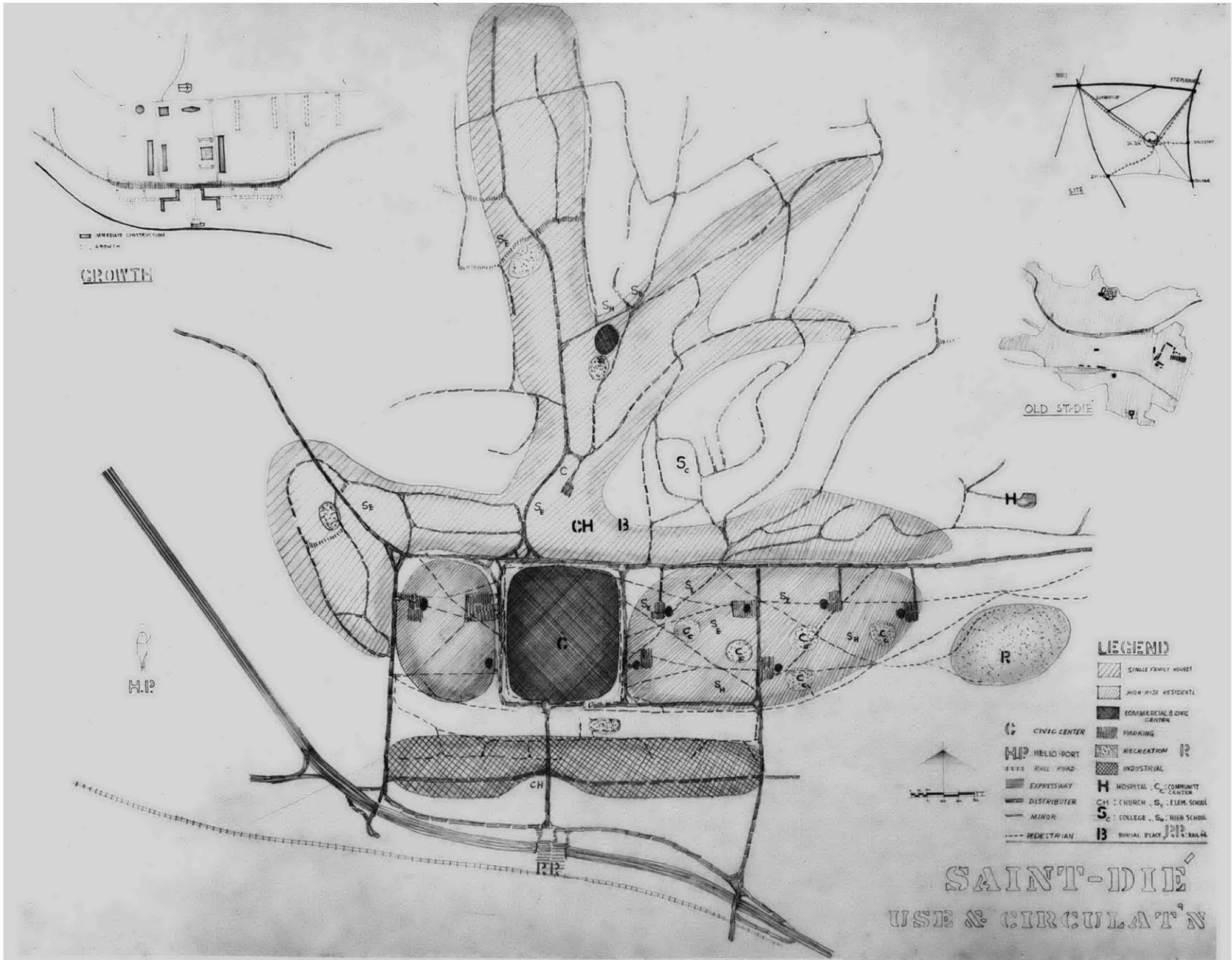
2. The possibility of contact with the bustle of urban life is well justified here within the towers, in the community centers, or in the major center. I cannot help but feel the formality and cold, hard ground of the major center socially, and visually. I cannot even say that there is "bustle of urban life in the whole community, on which the rural character dominates."

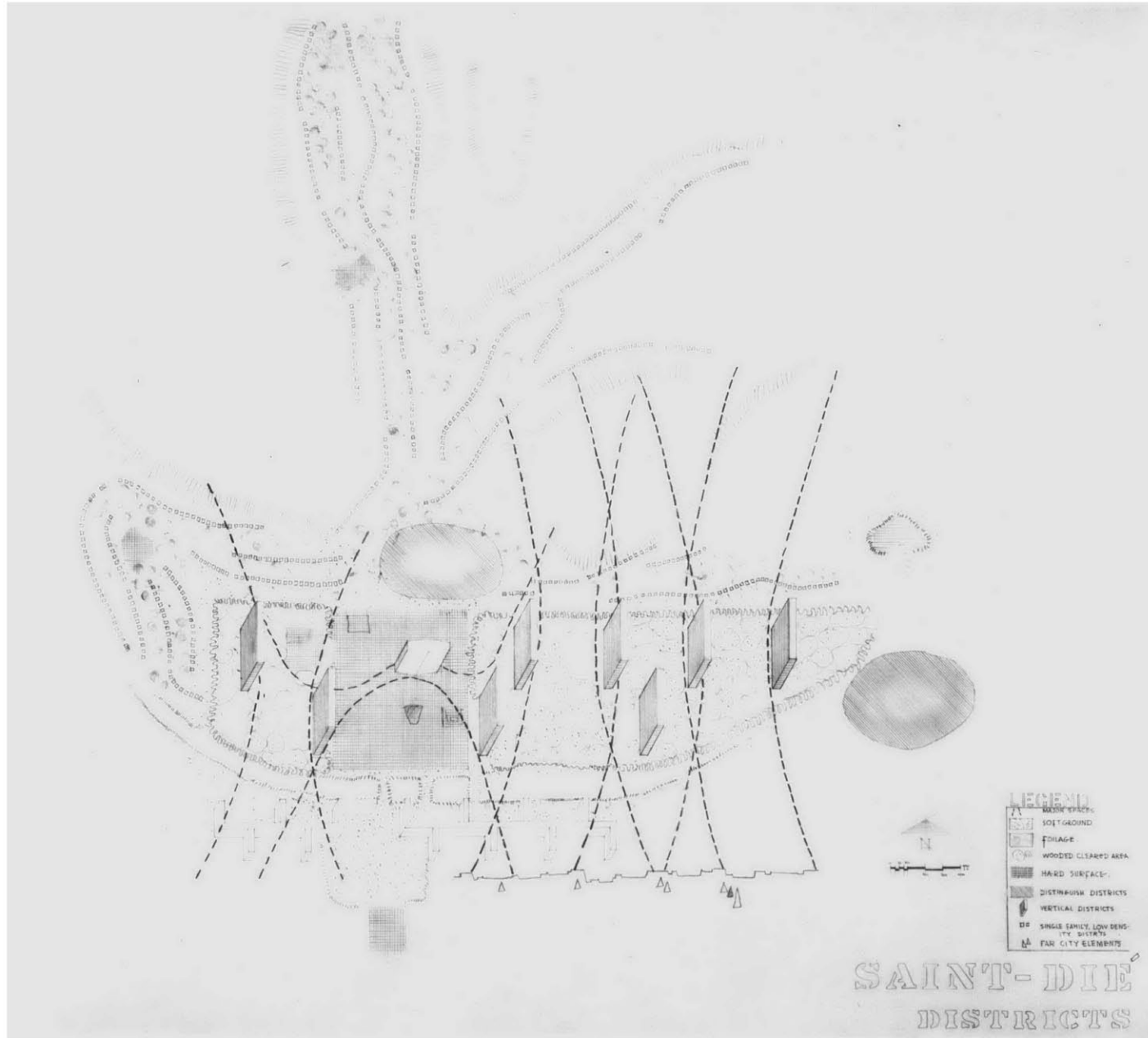
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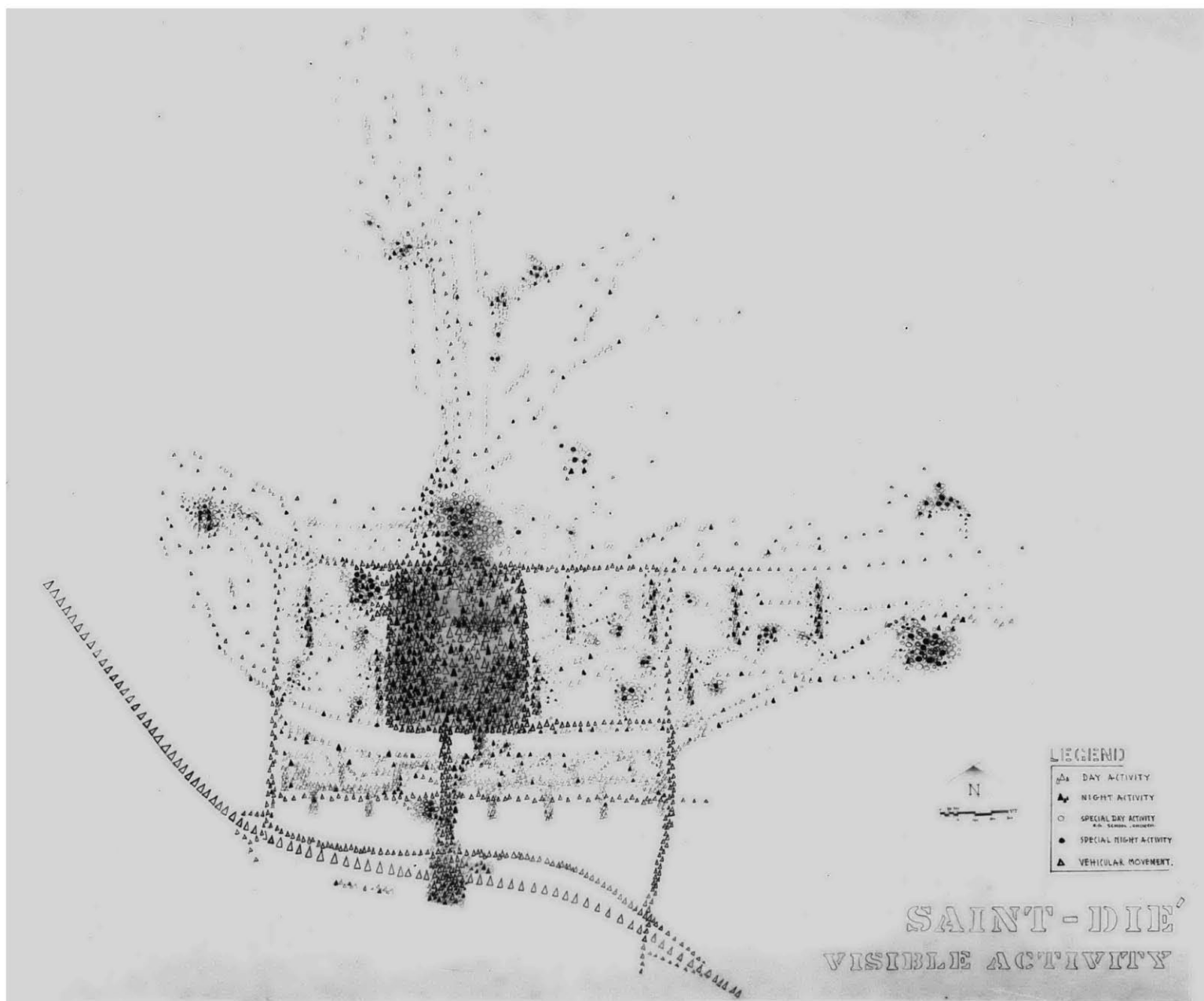
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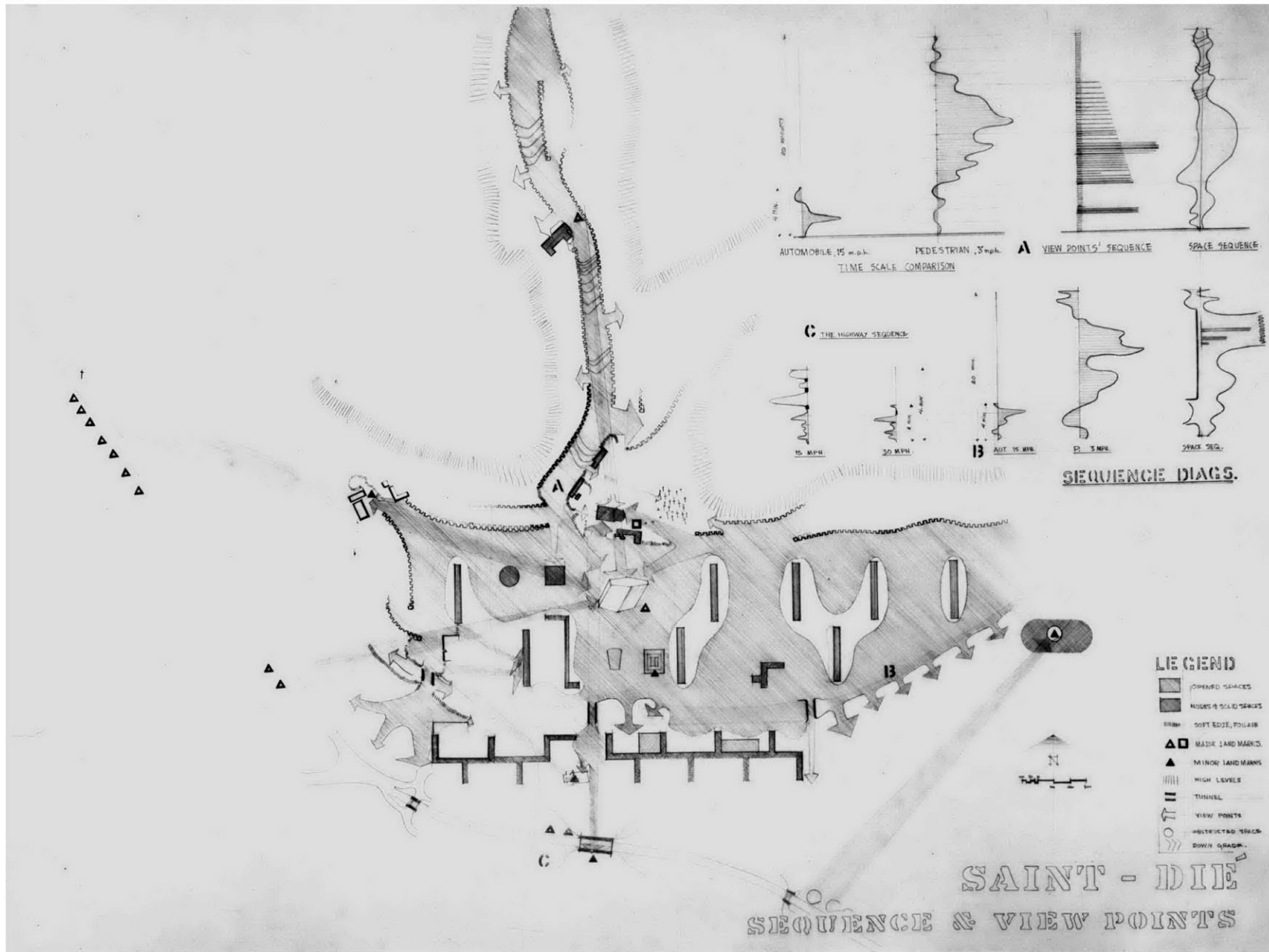


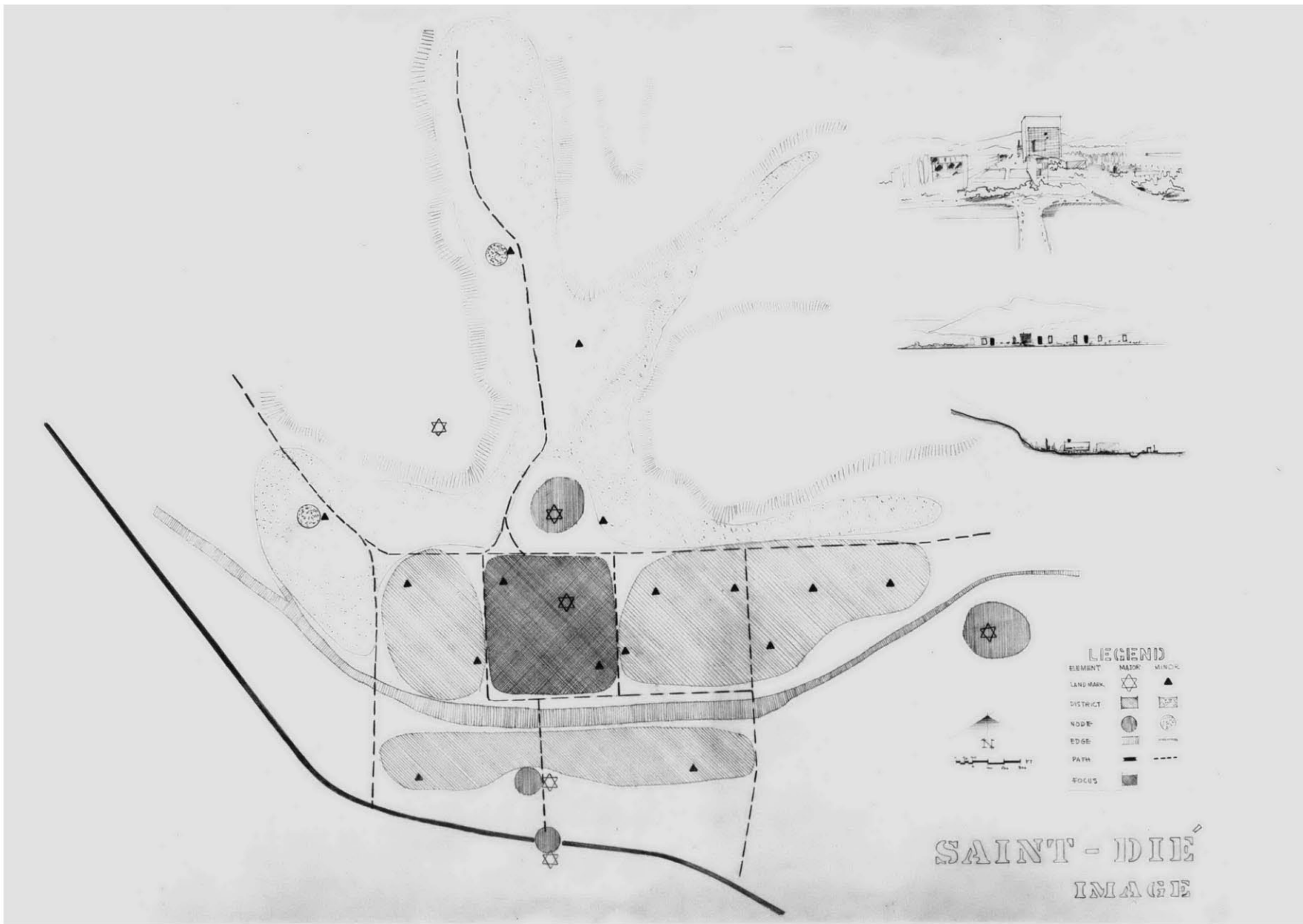
SAINT - DIE
BASE MAP











SITE ANALYSIS

Alan L. Fishman
Robert A. Mayers
Charles B. Thomsen

REGION, CIRCULATION AND SETTLEMENT (DIAGRAMS 1 AND 2)

THE SITE IS LOCATED 20 MILES FROM THE CENTER OF BOSTON, MIDWAY BETWEEN BOSTON AND PROVIDENCE, IN AN AREA DEFINED ON THE EAST BY THE TOWN OF FOXBORO; ON THE SOUTHEAST BY MANSFIELD; ON THE WEST BY NORTH ATTLEBORO AND PLAINVILLE; AND ON THE NORTHWEST BY WRENTHAM. ATTLEBORO LIES $4\frac{1}{2}$ MILES SOUTH OF THE SITE.

U. S. HIGHWAY 1 PASSES THROUGH THE NORTHWEST PORTION OF THE SITE AND IS NOW THE MAJOR CONNECTION BETWEEN BOSTON AND PROVIDENCE. IT IS AN EXTENSION OF WASHINGTON STREET AND IS BOSTON'S OLDEST CONNECTION TO THE "HINTERLAND". THIS FOUR LANE HIGHWAY IS CLUTTERED WITH COMMERCIAL DEVELOPMENT AND WILL BE REPLACED AS THE PRINCIPLE CONNECTION BY A LIMITED ACCESS EXPRESSWAY, INTERSTATE ROUTE 95, WHICH IS PRESENTLY UNDER CONSTRUCTION. ROUTE 95 WILL PASS THROUGH THE SOUTHEAST PORTION OF THE SITE. INTERCHANGES ARE PLANNED FOR ATTLEBORO AND FOXBORO-MANSFIELD. THE COURSE OF ROUTE 95 MAY BE ALTERED SO AS NOT TO DIVIDE THE SITE, AND AN INTERCHANGE MAY BE PROVIDED FOR THE NEW CITY.

STATE HIGHWAY 140 CONNECTS WRENTHAM, FOXBORO AND MANSFIELD AND CONTINUES ON TO WORCESTER TO THE NORTHWEST AND TAUNTON IN THE SOUTHEAST. STATE HIGHWAY 106 BEGINS AT PLAINVILLE, RUNS THROUGH MANSFIELD, AND CONTINUES THROUGH A NUMBER OF SMALL TOWNS ENDING 4 MILES NORTH OF PLYMOUTH. STATE HIGHWAY 152 CONNECTS ATTLEBORO WITH U. S. HIGHWAY 1 NORTH OF PLAINVILLE. THERE ARE OTHER MINOR ROADS RUNNING THROUGH THE SITE IN A RANDOM PATTERN.

ATTLEBORO IS THE LARGEST AND MOST PROSPEROUS TOWN IN THE REGION. MANY OF ITS 27,118 PEOPLE ARE EMPLOYED IN THE JEWELRY INDUSTRY. THE STATE INSTITUTION FOR THE MENTALLY ILL PROVIDES A HEALTHY ECONOMIC BASE FOR FOXBORO'S 3,169 PEOPLE. WITH ITS TOWN GREEN, FOXBORO HAS RETAINED SOME OF THE TRADITIONAL NEW ENGLAND CHARACTER. THE STATE PRISON IS LOCATED IN WRENTHAM, POPULATION 1,790. WRENTHAM ALSO RETAINS ITS TOWN GREEN, BUT MUCH OF ITS COMMERCE HAS MOVED OUT ALONG ONE OF ITS STREETS. MANSFIELD, POPULATION 4,674, WAS ORIGINALLY A STRONG INDUSTRIAL CENTER; BUT MUCH OF THE INDUSTRY HAS GONE, LEAVING MANSFIELD WITH THE ASPECT

OF A DEPRESSED AREA. PLAINVILLE, POPULATION 3,810, AND NORTH ATTLEBORO, POPULATION 14,777, HAVE A SIMILARLY DEPRESSING APPEARANCE. THE TOWNS PLUS THE SCATTERED SETTLEMENTS AROUND THE SITE HAVE A TOTAL POPULATION OF 75,000.

TOPOGRAPHY AND LAND FORM (DIAGRAMS 3 AND 4)

THE AREA DOES NOT SHOW ANY GREAT DIFFERENCES IN LEVEL (150' TO 450' AT DISTANCES OF ABOUT 3 MILES). A RANGE OF MOUNTAINS (ROCKY REMNANTS OF A PRE-GLACIAL RANGE) FORMS A HALF-CIRCLE IN THE NORTHERN PORTION OF THE SITE. THIS RANGE IS CUT BY A PASS WHICH IS UTILIZED BY HIGHWAY 1. THE HIGHEST POINTS IN THIS RANGE ARE PINNACLE HILL (456'), FIRE TOWER HILL (410') AND KNUCKUP HILL (410').

SOUTH OF THIS RANGE THERE IS A BELT 2 TO 4 MILES WIDE OF SMALLER ROCK OUTCROPS PLUS LARGE BOULDERS WHICH THE GLACIERS, COMING FROM THE NORTHWEST, TRANSPORTED FROM THE MOUNTAIN TOPS. THESE ROCKS FORM A MOST INTRICATE SMALL SCALE TOPOGRAPHY WHICH INCLUDES MANY SMALL LAKES (TROUT, RABBITT HILL, AND CARPENTER PONDS; AND SUNSET, COCASSET, AND FURNACE LAKES).

SOUTH OF THIS ROCKY BELT AND SOMETIMES INTERMIXED WITH IT ARE GLACIER DEPOSITED SANDHILLS (MORAINES) UP TO 400' HIGH. THERE ARE THREE MORAINES: ONE NEAR PLAINVILLE, THE OTHER TWO BETWEEN MANSFIELD AND FOXBORO. THE CENTRAL PLAINS BETWEEN TURNPIKE LAKE AND WADING RIVER ARE SANDY-LOAMY PLAINS 200 TO 300' HIGH AND ARE PROBABLY OUTWASH SAND FROM GLACIAL STREAMS. WITHIN THESE LARGE SCALE SANDY-LOAMY PLAINS ARE SOME BELTS OF SMALL SCALE, QUITE INTRICATE TOPOGRAPHY. THESE BELTS OCCUR ON THE WEST SIDE OF THE VALLEY BETWEEN MIRIMICHI AND GREENWOOD LAKES, SOUTH OF ROBINSON POND NEAR THE MANSFIELD LOWLANDS, AND NORTHWEST OF TURNPIKE LAKE. SUCH SMALL SCALE TOPOGRAPHY WAS PROBABLY CAUSED BY GLACIAL CURRENTS FLOWING OVER A GLACIAL LOAM SURFACE, MEANDERING AROUND TRANSPORTED BOULDERS, AND SCOOPING OUT LITTLE HOLLOWLS, CONFUSING THE TOPOGRAPHY.

DRAINAGE (DIAGRAM 5)

THE GENERAL DIRECTION OF ALL SITE DRAINAGE IS SOUTHWARD IN THREE MAIN COURSES EVENTUALLY LEADING TO WADING RIVER. THESE THREE COURSES ARE AS FOLLOWS:

1. SWAMPS ON THE WESTERN SITE EDGE DRAIN ALONG HAWTHORNE BROOK INTO TURNPIKE LAKE AND THEN INTO LAKE MIRIMICHI.
2. CROCKER POND DRAINS SOUTHWARD THROUGH SWAMPS INTO RABBITT HILL POND, THEN INTO LAKE MIRIMICHI.
3. CARPENTER POND DRAINS SOUTHWARD THROUGH SUNSET, COCASSET, AND FURNACE LAKES, THROUGH SWAMPS, AND THEN INTO LAKE MIRIMICHI.

THESE THREE COURSES THEN FLOW OUT OF LAKE MIRIMICHI TO FORM WADING RIVER.

ANOTHER DRAINAGE PATTERN, LOCATED IMMEDIATELY TO THE SOUTH OF LAKE MIRIMICHI, BUT ENTIRELY DIVORCED FROM IT, IS THAT OF THE WITCH POND SWAMP AREA, WHICH FLOWS THROUGH GREENWOOD LAKE INTO BUNGAY RIVER.

THE PRESENT SITE LAKES ARE ARTIFICIAL, CAUSED BY DAMMING WITHIN THE DRAINAGE PATTERN, AND WERE USED ORIGINALLY AS A WATER SUPPLY. IT IS FEASIBLE TO ALTER THE LAKES BY REMOVING EXISTING DAMS AND INTRODUCING NEW ONES.

IN ADDITION TO THE LAKES, THE SITE CONTAINS MANY MARSHY AREAS. BY USE OF DRAG LINES AND DAMS, IT IS POSSIBLE TO ESTABLISH NEW LAKES OUT OF THE EXISTING MARSHES. MARSHES ALSO MAY BE FILLED IN AND BUILT UPON.

FOREST COVER (DIAGRAM 6)

THE ENTIRE SITE, WITH THE EXCEPTION OF A FEW SCATTERED CLEARINGS, IS COVERED BY A DENSE FOREST. BEFORE 1880 THE WHOLE AREA, EXCEPT THE MOUNTAINS, MUST HAVE BEEN IN CULTIVATION AND FAIRLY WELL SETTLED. EVERYWHERE ONE FINDS THE STONE WALLS WHICH ENCLOSED FORMER PASTURES AND CROPLANDS. THESE LOCATIONS WERE DESERTED WHEN THE MIDDLE WEST WAS OPENED UP WITH BETTER SOILS AT LOWER PRICES, AND ARE NOW COVERED BY DENSE SECOND GROWTH WOODS.

THE MOUNTAINOUS REGIONS AND THE LOWER ROCKY PARTS ARE MOSTLY COVERED BY NATURAL OAK WOODS, WITH SCATTERED WHITE PINES.

THE SMALL SCALE ROCKY TOPOGRAPHY IS ENTIRELY COVERED BY AN OAK AND WHITE PINE FOREST. THE MORAINES AND SAND PLAINS ARE COVERED BY THE SAME MIXTURES; IN SOME STERILE SAND PLAINS AROUND LAKE MIRIMICHI THE RED PINE PREDOMINATES.

THE ONLY AREAS NOW WITHOUT FOREST COVER ARE SOME BOGS, WITH THE WATER TABLE UP TO THE LAND SURFACE (WEST OF CROCKER POND, NORTHERN SHORES OF LAKE MIRIMICHI, AND AROUND TURNPIKE LAKE). THERE ARE ALSO MAN-MADE CLEARINGS SOUTH OF FOXBORO AND NORTH OF PLAINVILLE ALONG HIGHWAY 1. THERE ARE SEVERAL LARGER CLEARINGS BETWEEN TURNPIKE AND MIRIMICHI LAKES WHERE THE SOIL IS MORE LOAMY AND FOR THAT REASON BETTER AGRICULTURALLY.

THE ONLY REMAINS OF THE ORIGINAL FOREST COVER ARE SOME SCATTERED WHITE PINES OVER A HUNDRED YEARS OLD. THE BETTER PINES HAVE BEEN CUT SINCE, OF COURSE, AND SOME LUMBERING STILL TAKES PLACE.

MUCH OF THE FOREST COVERING THE SITE IS STATE PROPERTY, SUCH AS FOXBORO AND WRENTHAM STATE FORESTS. OTHER PARTS OF THE FOREST ARE OWNED BY MUNICIPALITIES, SUCH AS WRENTHAM, WHICH USES KNUCKUP HILL FOR ITS WATER SUPPLY.

CONCLUSIONS

THE CONTINUOUS FOREST COVER MAKES READING THE DIFFERENCES IN LEVELS DIFFICULT, AND ONLY SOME HIGH POINTS STAND OUT (THE MICROWAVE TOWER ON FIRE TOWER HILL AND THE WATER TOWER ON KNUCKUP HILL). IF THE SITE WERE CLEARED BELOW THE 300' CONTOUR IT WOULD BE PERCEIVED AS A BOWL ABOUT $2\frac{1}{2}$ MILES ACROSS, TIPPED UP SLIGHTLY TOWARD THE NORTH. IT WOULD BE BOUNDED ON THE NORTH BY THE MOUNTAINS, ON THE EAST AND WEST BY THE SAND HILLS WITH THE FLAT SAND PLAINS AND MIRIMICHI AND GREENWOOD LAKES OCCUPYING THE DEEPEST PART. AT PRESENT THIS SHAPE IS ONLY PERCEIVABLE AFTER THE OBSERVER BECOMES FAMILIAR WITH THE STRUCTURE AND RELATES SCATTERED EXPERIENCES TO ONE ANOTHER.

THE SOIL IS NOT AGRICULTURALLY VALUABLE AS SOILS OF EQUAL OR HIGHER VALUE ARE TO BE FOUND EVERYWHERE. FOR FORESTRY PURPOSES,

THE SAND HILLS ARE BEST, GROWING STATELY WHITE PINE OF GOOD DIMENSIONS. THE FLAT SAND PLAINS DO NOT YIELD MUCH LUMBER, NOR COULD THEY SUPPORT MORE VALUABLE TREE CROPS. THE MOUNTAINS ARE COMPOSED OF VERY HARD, SLOWLY WEATHERING KINDS OF ROCK, WHICH DO NOT SUPPORT VALUABLE FOREST; YET, SINCE IT IS DIFFICULT TO BUILD ON THIS LAND, THE PRESENT FOREST GROWTH COULD BE CONTINUED.

SOUTH OF THE MOUNTAIN RANGE URBAN AND SUBURBAN SETTLEMENT IS FEASIBLE. THE SAND PLAINS IN THE CENTER OF THE BOWL LEND THEMSELVES EASILY TO A DEFINITE, MAN-MADE PATTERN. THE SAND HILLS ARE ADAPTABLE FOR DEVELOPMENT, IF THEIR SLOPE AND GENERAL LAND FORM IS A PRINCIPLE FACTOR IS THE LAYOUT OF SUCH DEVELOPMENT.

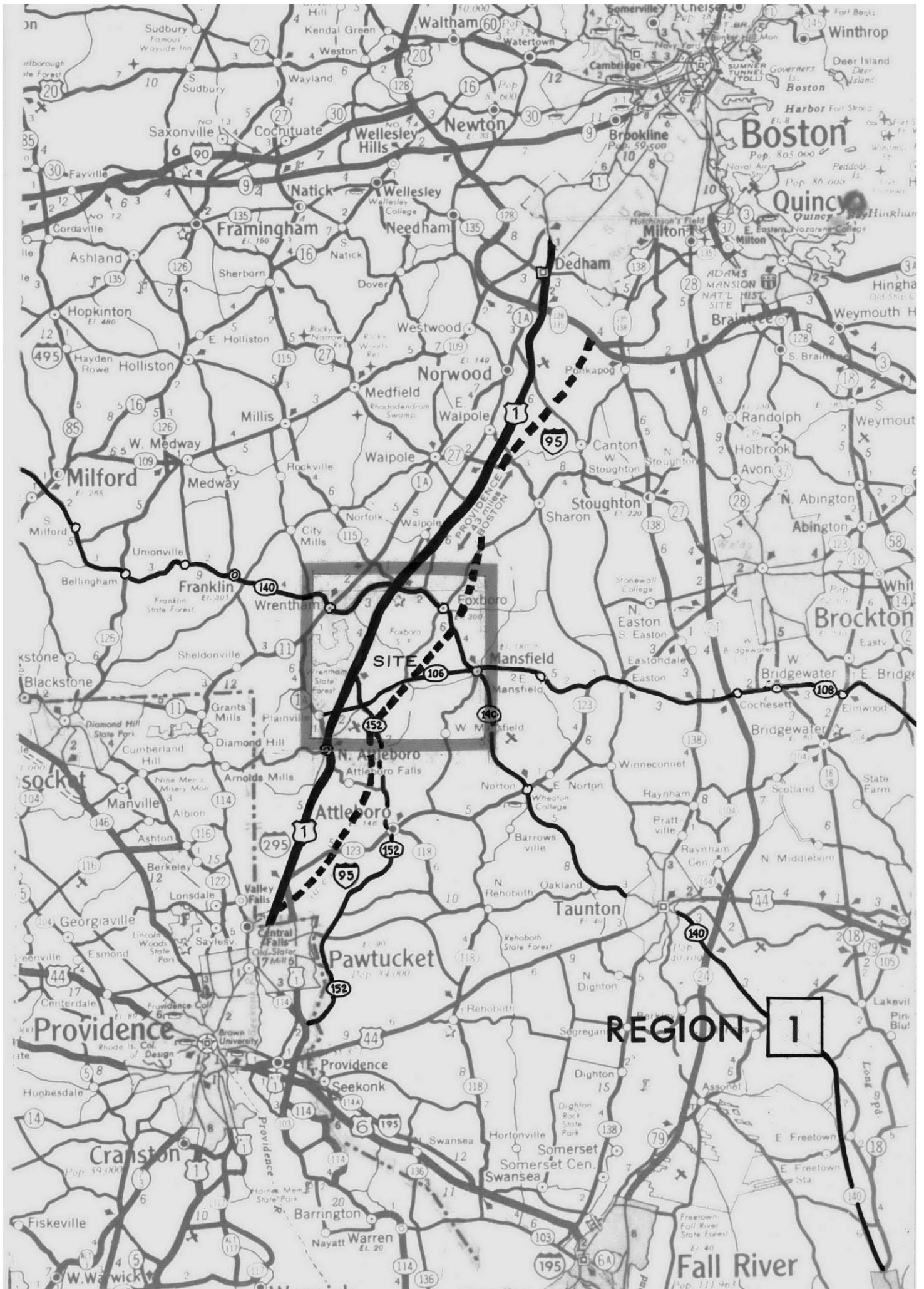
THE SMALL SCALE SANDY AREAS, THOUGH MORE DIFFICULT TO DEVELOP IN DEFINITE PATTERNS, CAN BE HANDLED WITH IMAGINATIVE BULLDOZING. THE SMALL SCALE ROCKY BELT WITH ITS ROCK OUTCROP OFFERS MUCH MORE OF A PROBLEM FOR DEVELOPMENT.

NORMALLY, WHEN A DENSELY WOODED REGION IS BUILT UP, ALL THE TREES ARE CUT DOWN AND REMOVED. THIS LEAVES A BARE SURFACE WHICH MAY LATER BE DECORATED WITH LAWNS AND SMALL SHRUBS. SEVERAL OTHER PROCEDURES ARE FEASIBLE:

1. CREATING CLEARINGS WHERE THE ROWS OF HOUSES AND THE ROADS ARE TO BE, PRESERVING THE DENSE FOREST AS A BELT, AFFORDING PRIVACY.
2. THINNING OUT THE FOREST, LEAVING TREES OF VARYING VITALITY AT DISTANCES OF 8 TO 10' AMONG THE SMALL BUILDINGS. PRESERVING THE BEST OR MOST STRIKING TREES AND REMOVING THE INFERIOR ONES IS A BETTER SOLUTION THAN PLANTING NEW ONES AFTER CONSTRUCTION IN "PURPOSELY ACCIDENTAL" SPOTS.

THE GROUND COVER OF NATIVE SHRUBS MAY BE PRESERVED FOR PRIVACY OR MAY BE REPLACED BY LAWNS.

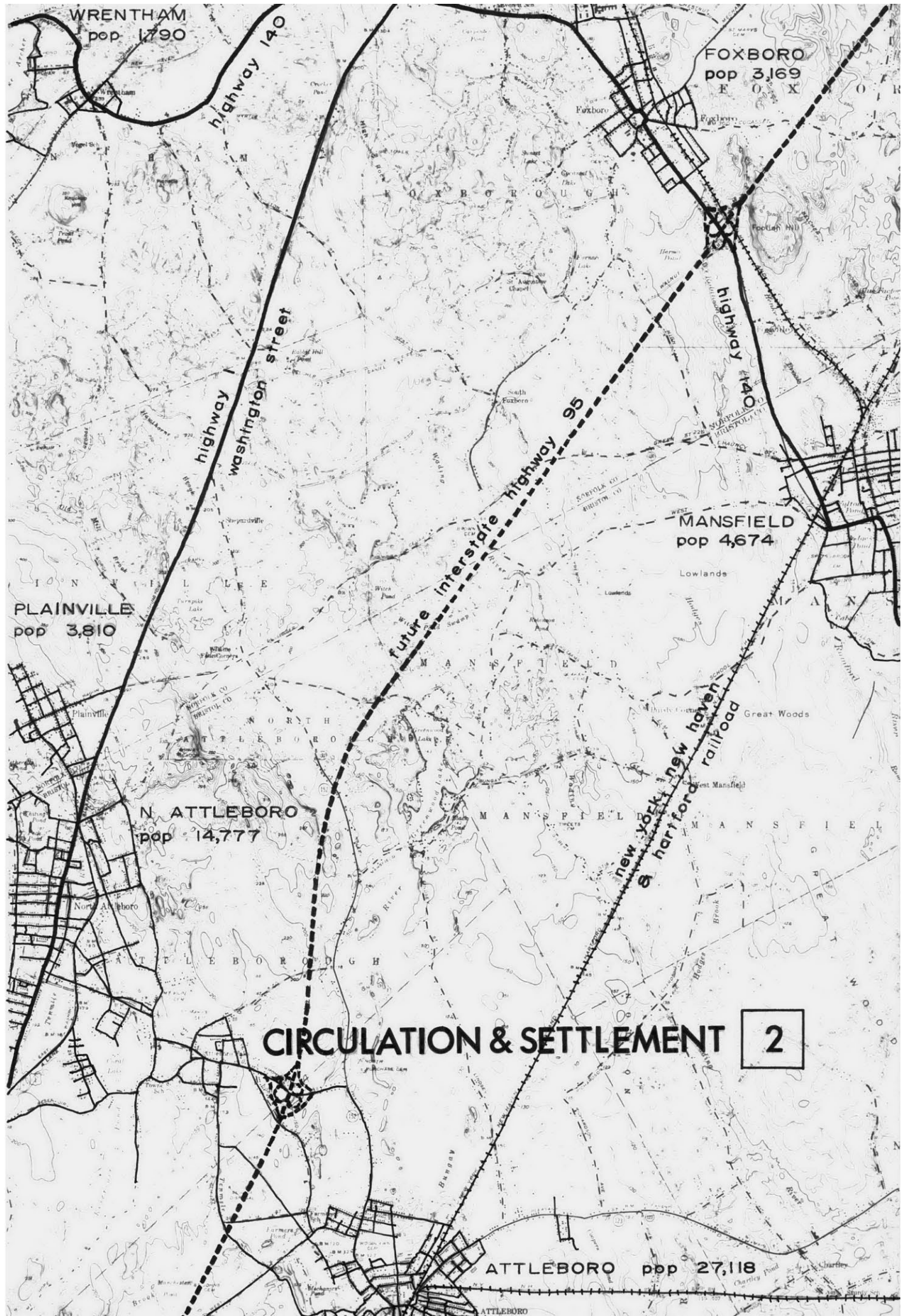
MANY VARIATIONS OF CLEARINGS ARE FEASIBLE: FROM THOSE THAT ARE SHADED TO THOSE THAT ARE SUNNY, WITH OR WITHOUT A GRASS GROUND COVER, WITH OR WITHOUT SHRUB SCREENS FOR SECLUSION BELOW EYE LEVEL. IN THE IMMEDIATE VICINITY OF DWELLINGS IT IS ADVISABLE TO REMOVE THE NATIVE SHRUB UNDERGROWTH, WHICH MAY CONTAIN POISON IVY.



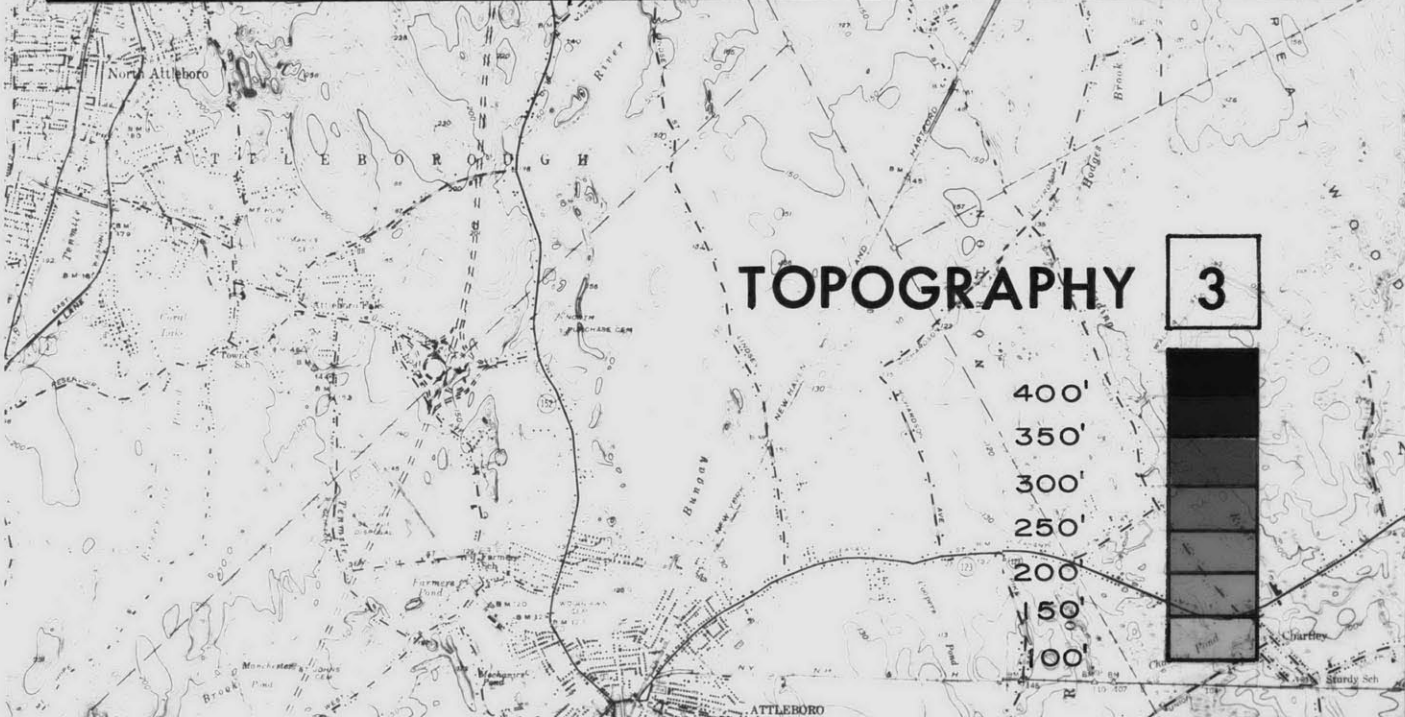
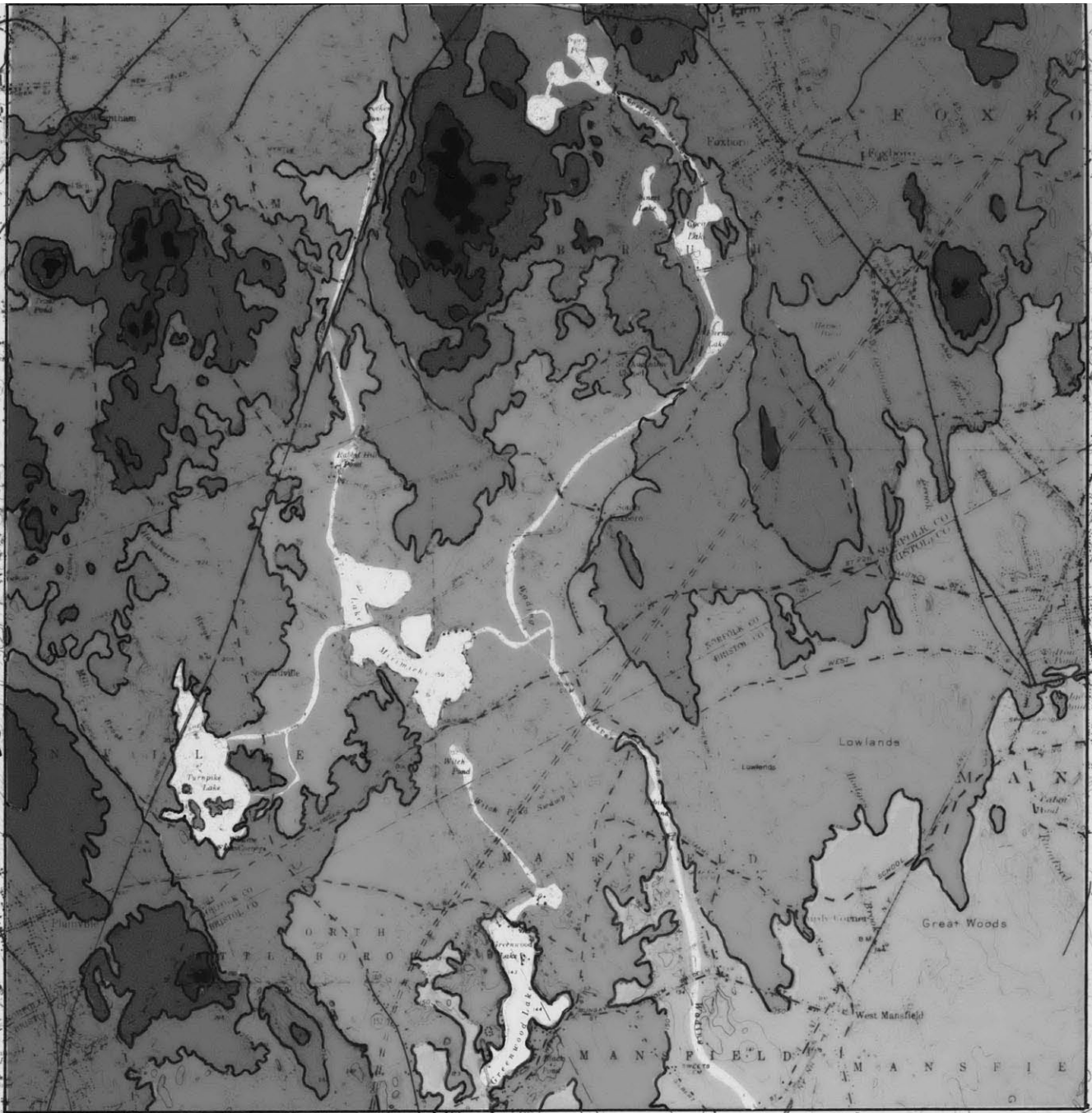
SITE

REGION 1

1



CIRCULATION & SETTLEMENT 2

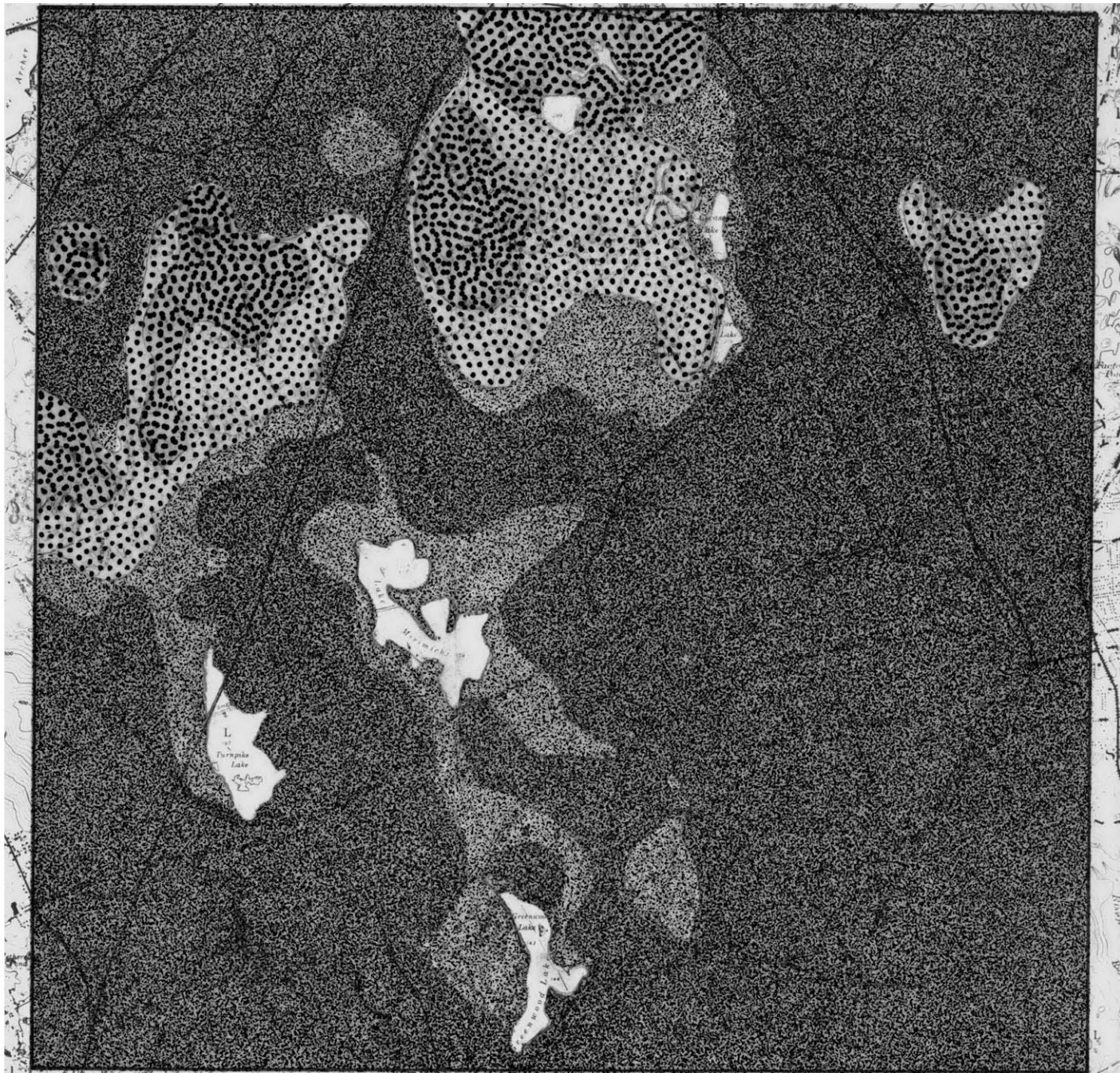


TOPOGRAPHY 3

- 400'
- 350'
- 300'
- 250'
- 200'
- 150'
- 100'



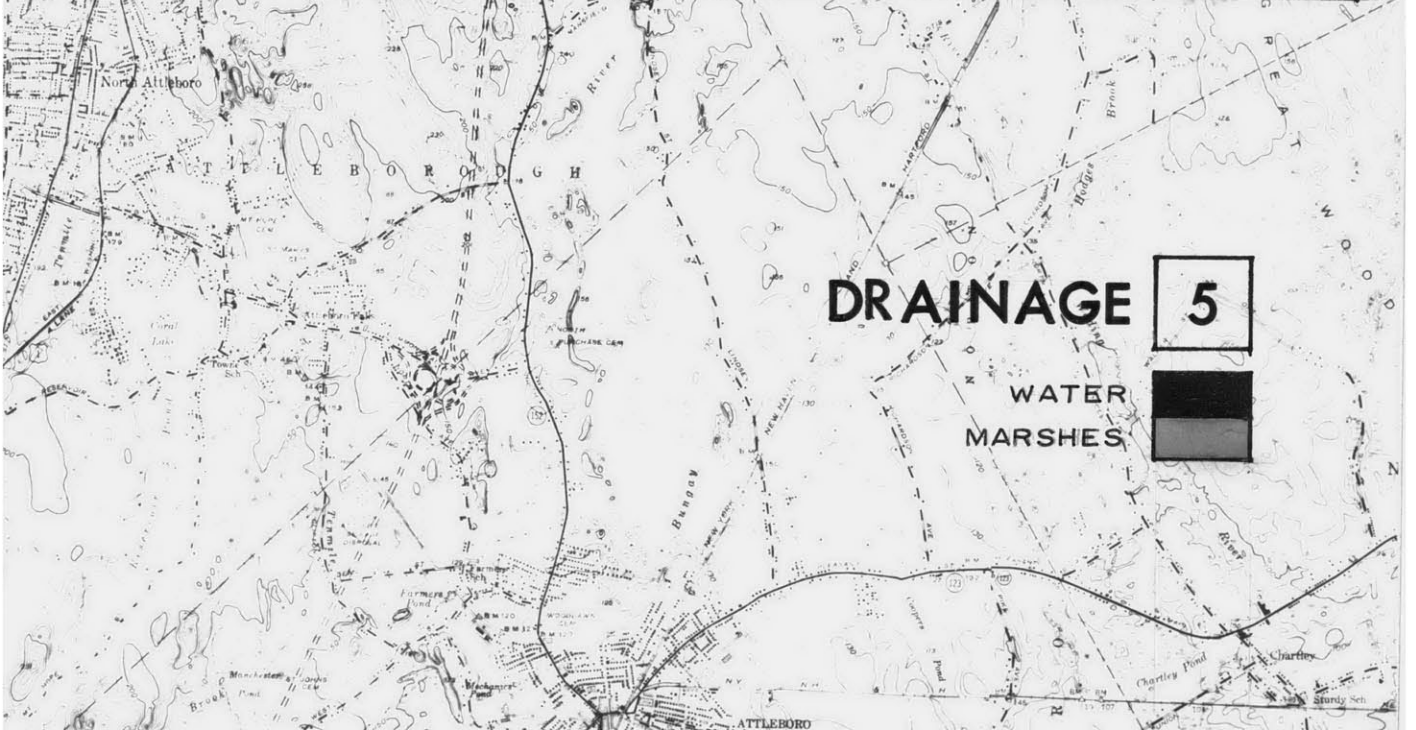
ATTLEBORO

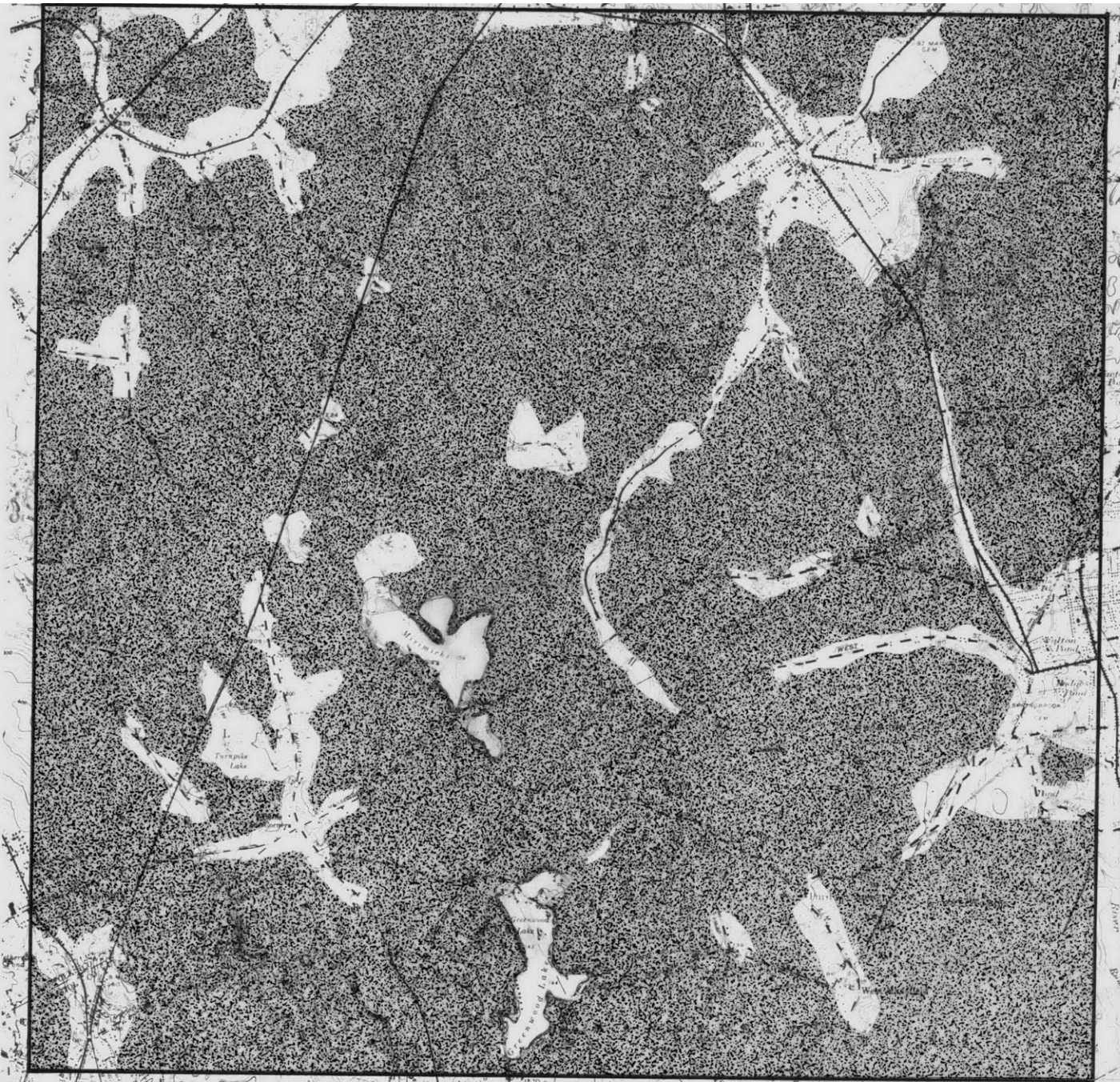


LAND FORM 4

- LARGE SCALE ROCKY
- SMALL SCALE ROCKY
- LARGE SCALE SANDY
- SMALL SCALE SANDY







FOREST COVER 6
UNCLEARED LAND



U.S.G.S. SURVEY 7

SECTION II

MASTER PLAN

Robert P. Cooke
Harry T. Miyachi
Mohsen M. Zahran

Considering the research as presented by the students in previous sections of this report, this group attempted to arrive at a conclusive format upon which to base a strong concept.

The site is located approximately mid distance between Route #128 and Providence. In contemplating a growth along this corridor defined by Route #1 and Interstate 95, the site would seem to be a feasible location for a regional shopping center installation. Therefore, primary consideration must be given to the relationship of the site to the surrounding region and the necessity for a clearly definable regional access to the site.

Certain natural and man-made elements define the site. The north, west, and east edges are defined by hills of varying topography while the south edge is enclosed by the right of way of Interstate 95. To further define the area a certain amount of liberty was assumed in re-routing Route #1 from its present location to a path following the hills to the north and west passing to the east of Plainville and connecting with the present route near North Attleboro. Consult diagram #1.

It would seem necessary to connect Route #1 and the towns to the north of the site with Interstate 95 and the towns to the south by a road(s) leading through the

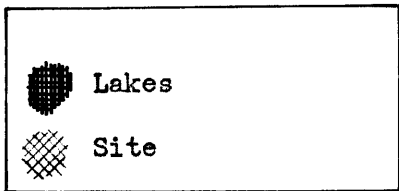
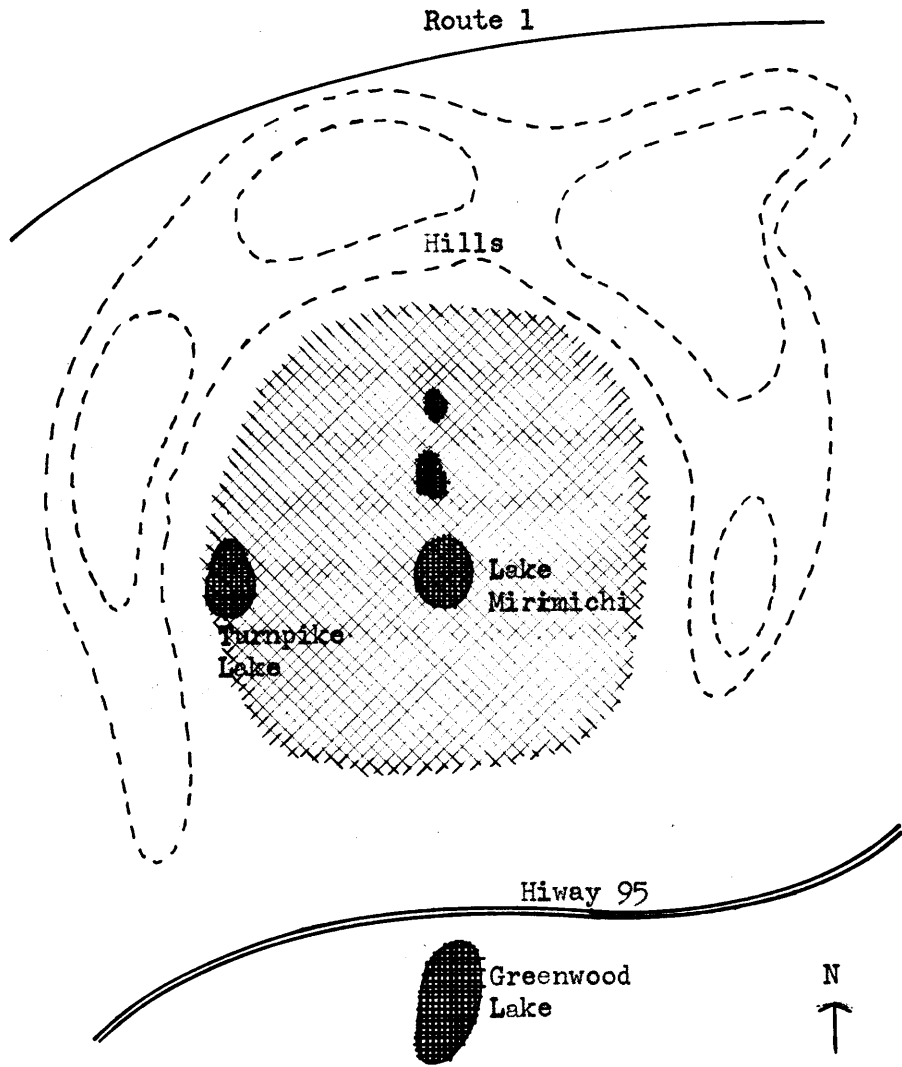


DIAGRAM OF SITE

Diagram #1

site itself. There are two clearly definable valleys in the hills to the north which would lend themselves to construction of vehicular routes that would connect the site with Route #1.

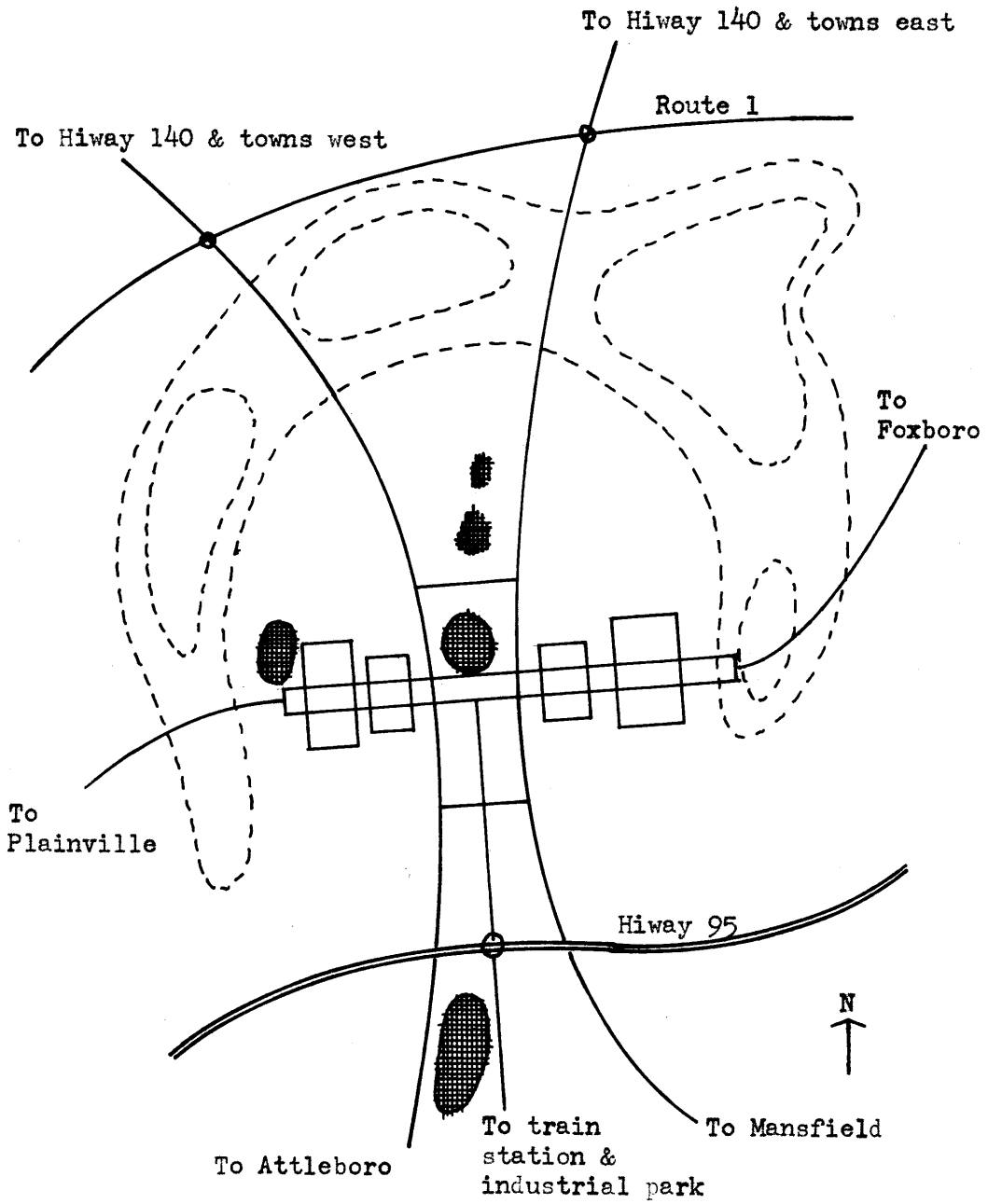
Based on these considerations, the group proposed the construction of two roads that will connect Route #1, the cities north of Wampum Corner and Route #140 with Interstate 95, Attleboro, Mansfield and the proposed industrial park to be located between Mansfield and Attleboro. A secondary connection is proposed to connect Plainville and Foxboro. A parkway system is also proposed to circumvent the settlement and serve as a secondary collector and distributor.

The two north-south roads define an area containing Lake Mirimichi. This 'spine' will contain all facilities relating to a regional usage as well as installations that perform a common service to the immediate population of the new settlement. The east-west road intercepts the 'spine' at the southern edge of Lake Mirimichi. At this point of intersection, the regional and town center will be constructed. A direct route to Interstate 95 will also connect at this major point of intersection. This route also connects to the industrial park and the train station. The east-west route will define a secondary spine that will contain high density

dwelling units and facilities of common usage to neighborhoods developing to the north and south. Consult diagram #2.

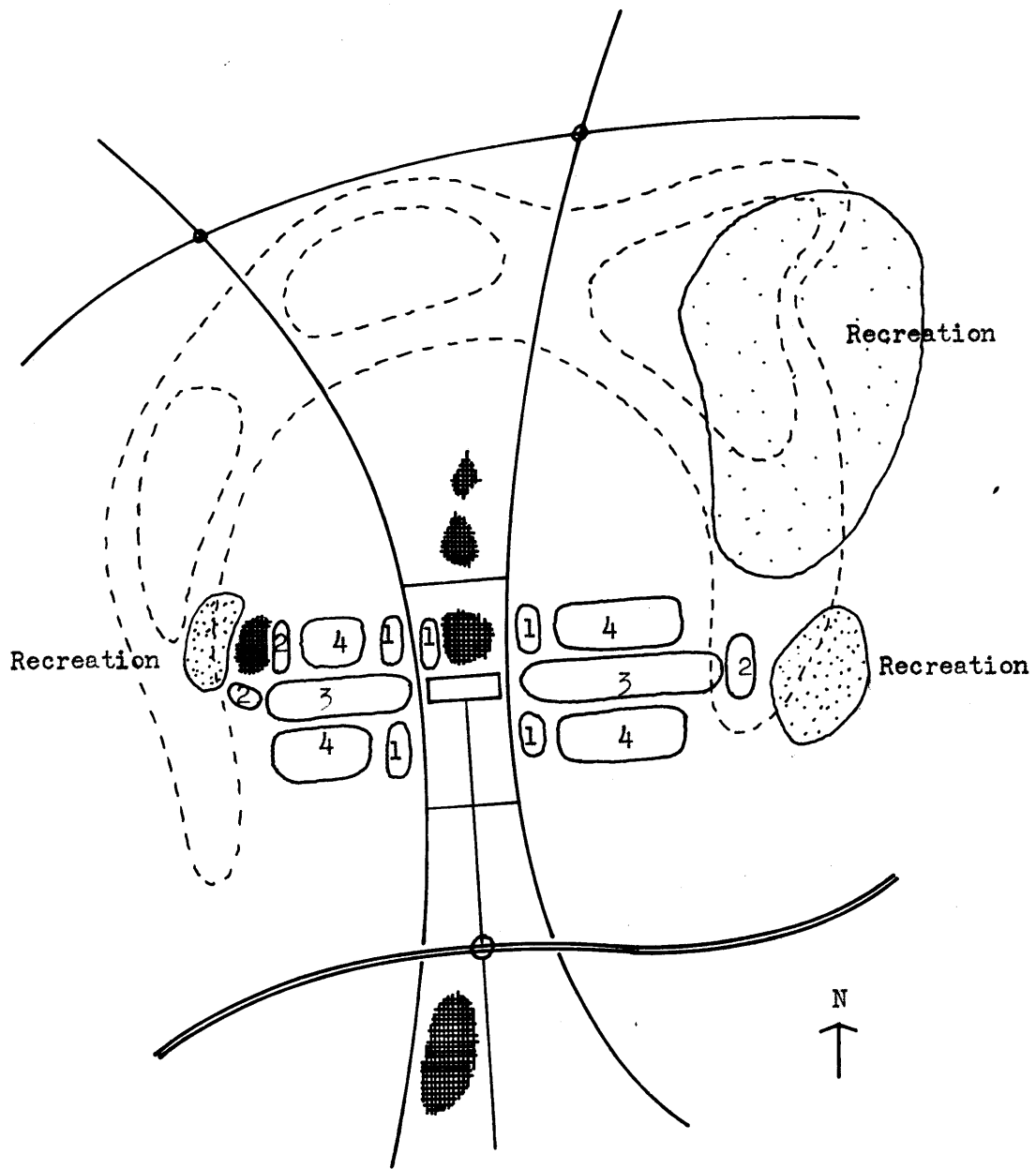
Thus, two spines have been determined upon which to base the growth of the town. The regional spine will contain the regional and local shopping centers, business area, entertainment section, governmental facilities, high school, stadium, hospital and other institutional facilities as well as high density residential installations. This area will be governed by a strict design proposal for the present as well as for future expansion. The secondary spine will contain high density dwelling units and additional community services such as churches, small stores, taverns and some recreation facilities such as pool halls and club rooms. This spine will terminate at areas of higher density located at the west on the shores of Turnpike Lake and on a hill east of Lake Mirimichi. Each terminus also connects to developed recreation areas such as golf courses and picnic grounds.

The concept of density locations is based on a belief that large scale construction and high density relate to large scale spaces. Thus, the dense building area of the regional spine and the high density housing also proposed for this area relate to the expanse of Lake Mirimichi. The next order of magnitude is defined by the secondary spine and the density disperses as distance from this spine increases. Consult sketch #3.



ROAD CONNECTION DIAGRAM

Diagram #2



Densities

1-	20 F/gross area
2-	18 "
3-	15 "
4-	8 "

DENSITY DIAGRAM

Diagram #3

The group envisions this city as an easily comprehensible structure within which a reevaluation of current living patterns are presented. The current desirability for a varying choice of residential locations, ease of access to schools, shopping facilities, recreation areas, and open country is considered. Such a flexibility is absent in current metropolitan development. Hopefully, this city structure presents a pattern which will advance the potential of urban life and provide an impetus to future considerations for urban expansion.

The form of urban development presents a number of difficult problems if consideration is given to the spacing of buildings, the location of activities and the interrelation of the routes of circulation. There are certain essential factors for consideration. (1) Circulation and intercommunication (2) Location of such definite activities as department stores, factories, offices, government buildings, parks, etc. (3) The ratio of building area to the site area (4) The distribution of local activities, i.e., residences, local shopping, schools, services, etc. These elements, working successfully together, will formulate a desirable spacial pattern.

Attention is now brought to the developed site plan. Complete detail is indicated for the original

settlement of 25,000 population. This area is defined to the west by Turnpike Lake, to the east by the hill east of Lake Mirimichi, to the north by streams, and to the south by Interstate 95. The major circulation system is quite evident: the north-south regional spine roads and the east-west neighborhood spine road. The circulation system within the city center and the public transportation service connecting the settlement to the center and the region will be presented in detail in a following section. The basic concept is one of linear development along 2 axis: the north-south regional axis and the east-west neighborhood axis.

Future growth is illustrated schematically as the probable possibility. The city would grow to the north around another secondary spine road. However, there is a different relationship to the central commercial area. The original settlement has a direct pedestrian access to the city center. Future areas of development would be related through vehicular access. Thus, the spacial pattern of this area would involve a greater dispersion due to an increased automotive dependency. Due to rapid changes in technology, it is difficult to determine a living and transportation pattern for future years. Radical changes are almost certain to occur which could change the area of future expansion.

A future population approaching 100,000 is foreseen in this area. The greatest expansion would be to the north while the original settlement would increase its density somewhat.

What will define this final expansion? The hills, due to their difficult terrain, discourage construction particularly to the north. To the east a recreation development is proposed to encompass the lake area between the site and Foxboro. Another recreation area is proposed west of Turnpike Lake. This will discourage development between the site and Plainville. Interstate 95 formulates a definite boundary to the south.

The city will be self/contained in some aspects. However the major areas of employment are located outside the city proper in the industrial park to the south and in Boston and Providence. Also, the central area is consolidated to serve the new population and also acquires a regional nature to provide a shopping atmosphere that is currently non-existent. Surrounding communities will experience some growth and therefore their centers will expand to provide local service. The proposed regional center serves as a special shopping facility of a long term nature. It achieves a position somewhere between the various local centers and concentrated centers in Boston and Providence.

CITY CENTER

Robert P. Cooke
Harry T. Miyachi

Two areas of the settlement were studied in greater detail: The central spine encompassing the regional and local commercial facilities and dwelling development around Lake Mirimichi; a segment of the residential area immediately adjacent to the regional spine. Discussion of these areas is now presented.

The governing features for the particular location of the major city and regional facilities have been presented. This location at the intersection of intra city and regional circulation seems quite logical.

The center is located in a 'bowl' bounded on the north by the southern portion of Lake Mirimichi and on the east and west by hills that reach an elevation of approximately 35 feet above the level of the lake. The ground slopes to the south toward Interstate #95.

This solution is a reevaluation of present commercial facilities and an attempt to present a reorganization of these elements into a desirable environment for shopping and social interrelation.

The automobile has been the primary factor in the current situation of spread out stores and clogged streets. This undesirable shopping environment seems to necessitate a solution which will cluster shops together in a pedestrian landscape: complete divorce of automobile and pedestrian.

The popularity of constructing 'pedestrian malls' in shopping centers has had an increasing popularity across the country. This concept of separating automobile and pedestrian is admirable but the solutions too often present bleak, wide-open spaces that provide neither pleasure for the sauntering eye nor convenience for the foot-weary shopper.

The first major decision in evolving the design was to separate the pedestrian and the automobile. Also, it was decided that the center should consist of closely packed services relating to various spaces. As a result of the proposed high building density, it seemed feasible to install parking services beneath the commercial level. The communication and service system will be presented in detail in a following discussion.

Such a center can only be comprehended by the nature of the spaces within it as a pedestrian circulates about and experiences them. Therefore, the spaces become primary in the basic considerations for evolving a design for the complex. There should be spaces of varying size intensity and mood; each related to a primary function. There should be a system of 'arrested views' that define and enhance spaces and draw the pedestrian to a new experience.

This complex is anchored around two major spaces. One is devoted primarily to regional services, the other to

services relating to community facilities. They should have a different character; easily perceptible but directly connected to one another to allow an interrelation of people using these various facilities.

The major commercial and regional space is of a generous proportion to accommodate the anticipated intense use. It is framed by buildings of an average height of 45 feet. The two department stores open to this space as well as the major commercial establishments. The south end is defined by the transportation center and motor hotels. The north end opens to the community space. There is a level change within the space to offer a visual dimensional relief. On the lower level will be located small scale outdoor facilities such as cafes, open air markets, and fountains to suggest the water of the lake immediately ahead. This level is directly connected to the parking levels and to the two major automobile, bus, and cab 'drop offs'. The landscape will receive a manicured treatment.

Directly connected to this space via narrow 'walking streets' are the two spaces which serve as secondary shopping areas and as collectors for pedestrians arriving from the neighborhood.

The community space is considerably larger than the commercial one and is much less contained. It is

grouped about an extension of the major body of the lake and is accented by the governmental tower. The space will assume a passive quality in contrast to the active commercial area. The landscape will be park-like with a generous useage of trees. It is visually connected to the lake beyond. The lake edge will be developed as a recreation area with an open-air theatre. The small lake extension can be utilized for canoeing in the summer and ice skating in the winter. The south end will be developed with small outdoor cafes, flower stands, etc.

Two secondary spaces relate directly to this area. One serves as a forecourt to the civic center and professional offices. The other is primarily the entertainment court relating to theatres, cafes, bowling alleys, etc.

The passive area connects to another 'walkway' on the north-west side that leads to a secondary shopping space, the major recreation area, and finally to the elementary school and high school facilities. This walkway is defined by residential units at a higher elevation. The recreation space contains shops related to water sports and opens to the lake and docks which accommodate sail boats.

The lake is a large space that requires a definite architectural statement to define and to give a sense of partial enclosure. The west shore is bordered by a cliff

terrace and dwelling units rising to an elevation of 60 feet above the water level. The north shore is defined by a stadium and high school facilities. The defined edge indicates that the water axis continues to the north. The east edge is defined by higher apartment units situated on a 35-foot high cliff above the spine road. The south edge is contained by the city center and is accented by the government center that serves as an introduction to interior spaces.

The general architectural expression will be one of continuity that expresses adaptability to various changes. The apartment units will be of an even elevation but express a personal identity through use of balconies and smaller scale accrinilations in contrast to its commercial neighbors to the south. However, the expression cannot be so great as to discourage the possibility of business expansion into these units.

The commercial space will be defined and surrounded by an arcade to present a conformity to the myriad commercial expressions that occur on store facades.

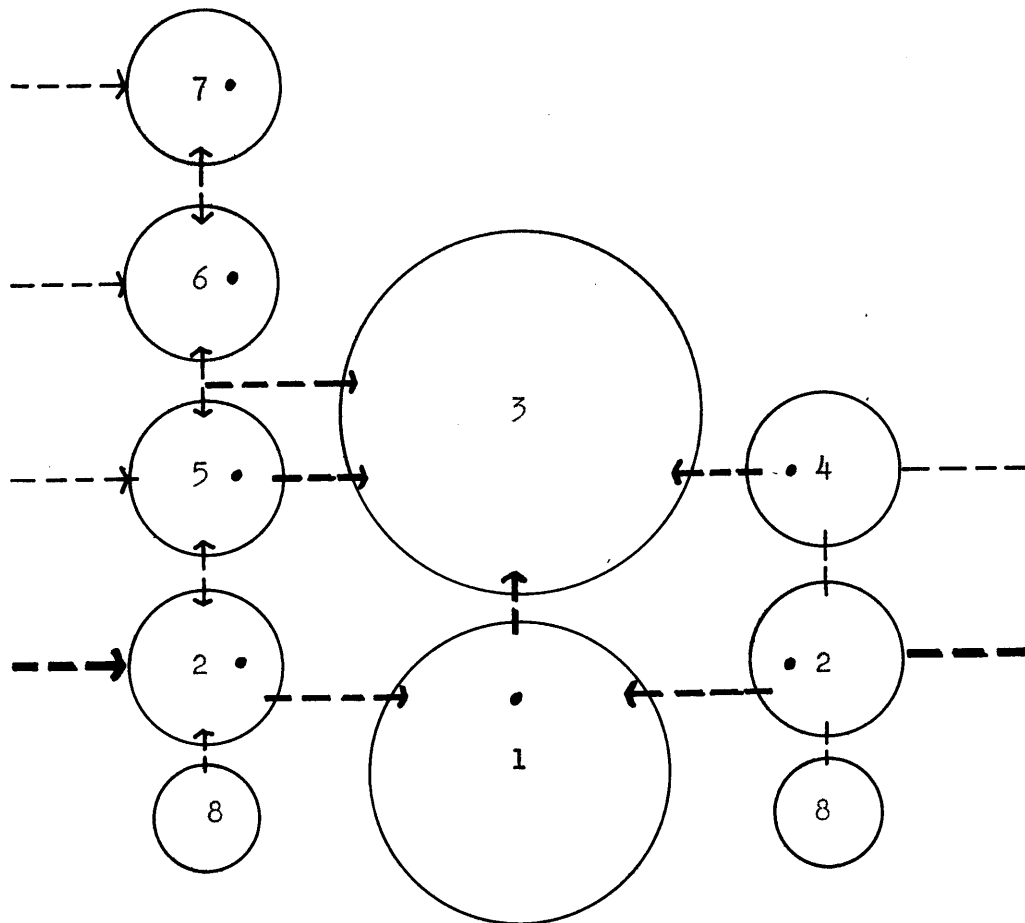
For visual relief certain buildings must express an individuality. The government center has such a quality and is expressed as a tower in the large community space. It serves as a point of reference from any point of entrance to the complex. The main commercial area is accented by the hotel units to the south and by sculptural elements within

the space. Other elements such as the auditorium, supermarkets, etc., will present a different expression along the continuous facades which enclose the various spaces. Facilities that are subject to change are grouped together while major structures are widely spaced and utilized as focal centers. Consult the following diagram #4.

This complex has four directions for growth. The regional facilities might expand to the south forming another space to the south of the transportation center and be serviced by the expanding parking ramps at either side. A more obvious direction of expansion would be along the axis leading through the apartment section toward the recreation space.

The secondary shopping areas could quite possibly expand into the neighborhood spine locating below the residential units.

The original complex will have a built in growth potential. The average floor to ceiling height will approximate 16 feet. This will allow future construction of mezzanines or entire new floors. Due to the uniform architectural expression and grid dimension, various buildings will be able to assume new functions, i.e., residential units can serve as office space and vice versa. The arcade in the commercial area will allow complete change in store facilities without disturbing the overall nature of the space.



- Access to Parking below
- > Secondary Pedestrian Access
- > Major Pedestrian Access

- 1- Major Regional Shopping (active space)
- 2- Local Shopping & Major Pedestrian Collector
- 3- Collector of Primary Functions (passive space)
- 4- Civic & Professional
- 5- Entertainment
- 6- Local Shopping
- 7- Recreation
- 8- Parking Garage

FUNCTIONAL AND SPATIAL DIAGRAM

Diagram #4

As stated previously, the first consideration in evolving a concept was the separation of automobile and pedestrian circulation. Therefore, given the proposed solution for the pedestrian area, the next point of detail is the vehicular circulation system. The success of the entire proposal would seem to depend on the design of a good communication system: highly developed and rather neutral.

It was decided that the pedestrian and vehicular circulation should be separated in a vertical direction and expressed as such.

In the parking levels, the automobile passengers circulate to various collection points from which they ascend by means of escalators or stairways to the main pedestrian level. The people always ascend into a defined space which offers a sense of identification and direction. This collection and dispersion will induce an interrelation among shoppers.

Direct vertical connection of office and residential floors to the parking levels will occur at certain key points. Vertical connection to the main pedestrian level will occur more frequently.

In contemplating the parking spaces, it was decided that private vehicles necessitate a larger scale due to their speed of circulation and also as a result of probable rapid

'turn over' and resultant traffic. This will affect the grid of the column system and the floor-ceiling dimensions. This consideration will be illustrated in the discussion of the structural system.

The entrances or connections to the parking complex are easily perceptible. Vehicular traffic generated in the neighborhoods have a direct connection to the central parking area from the east and west. The major regional access is from the south connecting to the central parking area as well as to surface parking structures. These structures serve as a long term parking accommodation and absorb anticipated increased parking demands.

Vehicles circulating on the regional spine roads are introduced to the parking system via roads connecting at right angles.

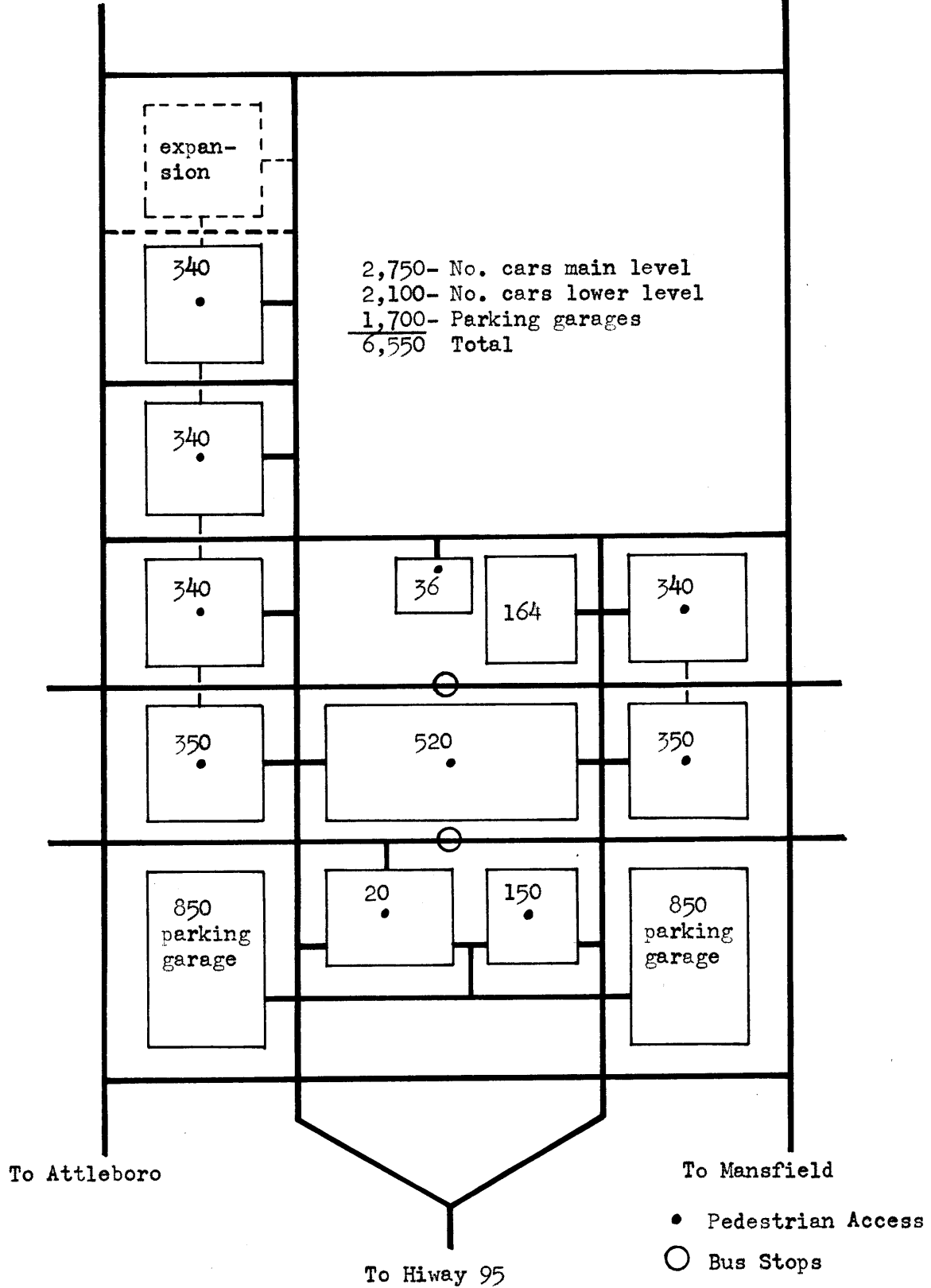
This system is easier to perceive by studying the accompanying diagram #5.

A public transportation system utilizing buses is proposed. Inter-city buses enter directly from Interstate 95 and Route #1 to the terminal. There is also a direct bus connection from the Transportation terminal to the train station.

Local buses circulate on the neighborhood spine roads with major stops at both the regional and local centers. The route of circulation is a continuous path connecting the

To Route 1 & Towns West

To Route 1 & Towns East



AUTO CIRCULATION & MAIN LEVEL PARKING DIAGRAM

Diagram #5

east and west neighborhoods to each other as well as to the regional and sub centers and to the transportation terminal. Consult Diagram # 6.

The circulation system for service trucks will be entirely separated from other vehicular routes within the parking complex. All commodities will be distributed through this system to various facilities within the complex. Goods will be loaded or unloaded at distribution points indicated on the accompanying diagram. Articles will be transported vertically via service elevators to the service level. From this point goods can be distributed to storage areas of various individual establishments.

It is possible to zone the entire center into individual service sectors that are connected to their own particular loading platform. Therefore, goods may be delivered to a specific zone and loading platform that is in the nearest proximity to the particular establishment to be served. Consult diagram #7.

The service level or core is integrated with the major structural frame spanning the parking system and supporting complex above.

The structural frame will span a space 120 feet square. This dimension was determined by the consideration of the largest single space to be spanned and the required modular that would give the greatest flexibility to accommodate

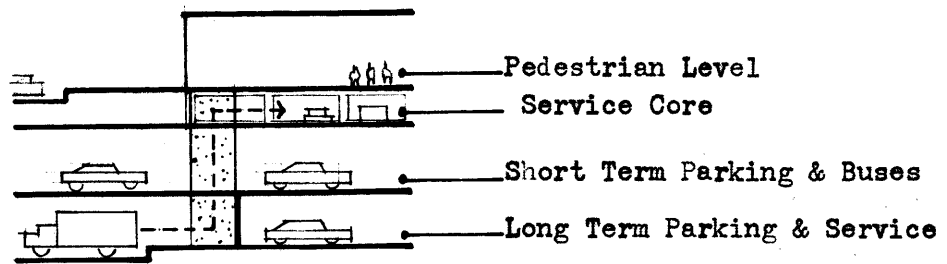
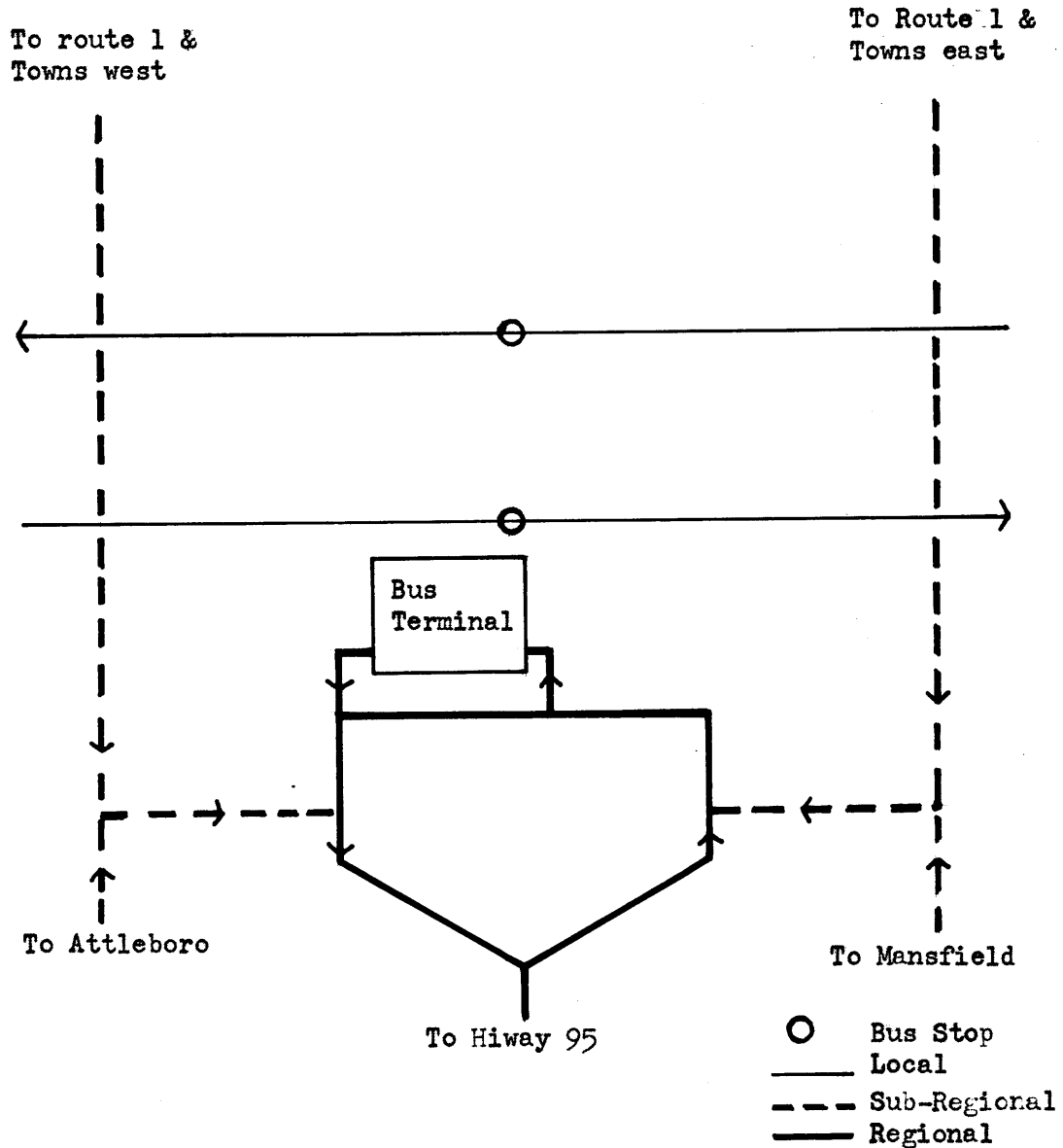


DIAGRAM OF LEVELS

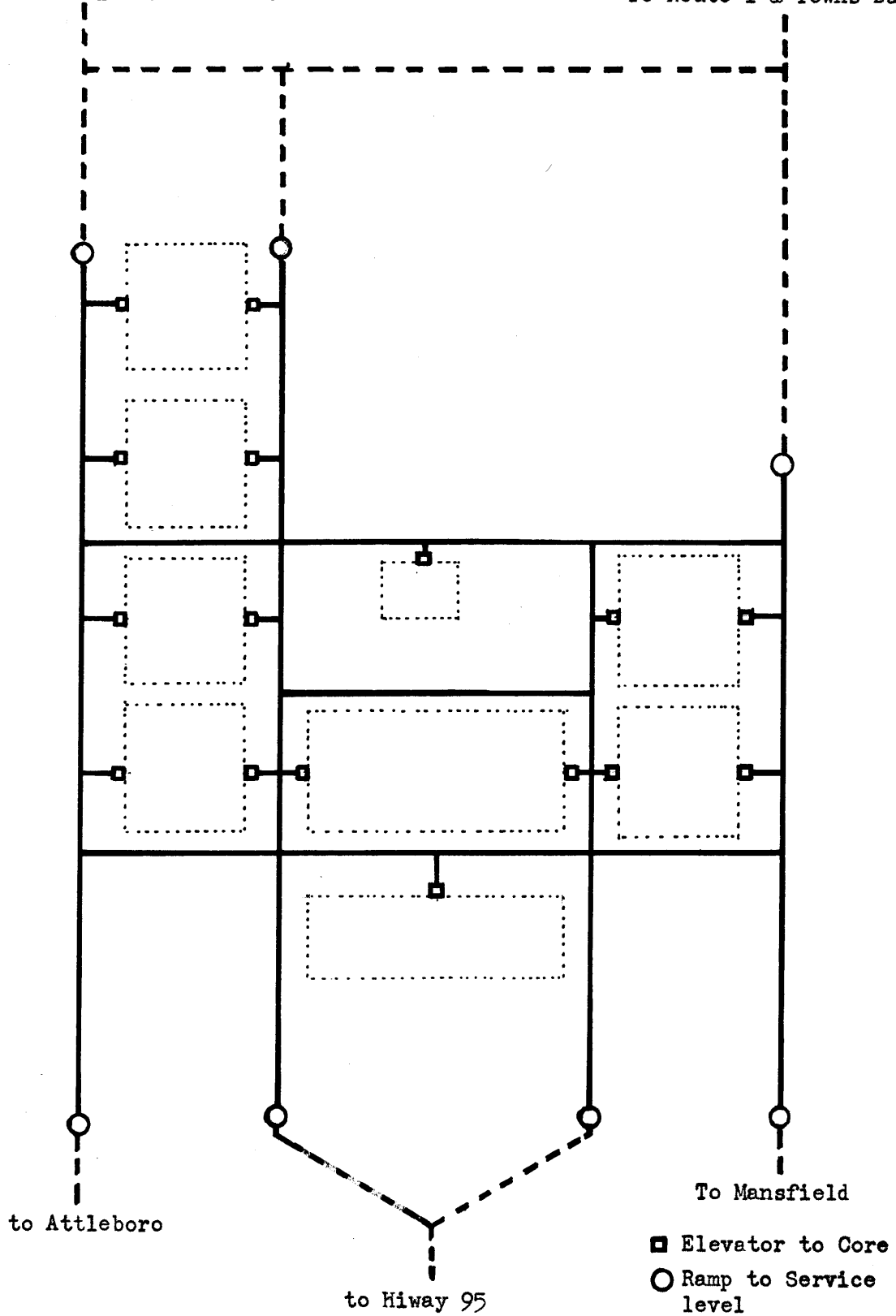


BUS CIRCULATION DIAGRAM

Diagram #6

To Route 1 & Towns West

To Route 1 & Towns East



SERVICE CIRCULATION & DELIVERY ZONES

Diagram #7

the varying functions. A 30 foot modual was arrived at as a result of the above considerations. This modual can be divided into incriments of 2,3,5,6,10, and 15 feet to accommodate the smallest type of building or store installation and also can be successfully applied to larger building dimersions.

The frame, as mentioned previously, will contain the service level for distribution and storage of goods. Also, this level will accommodate the mechanical service system, The frame has an open quality (30 foot openings) thus allowing a great flexibility for mechanical runs and space division. The upper floors of the complex will be serviced by vertical mechanical chases that are housed in the pedestrian circulation core.

The structural frame will also eliminate a great number of columns from the main parking and circulation level. Granted, a 'parking garage' is not visually pleasing. However, this frame will add a quality of spaciousness which this scale demands. By eliminating the 'forest' of columns which are usually experienced in parking structures, a more pleasant transitional experience between this level and the pedestrian surface is achieved.

Attention is now centered on the final drawings. By examining them, the success of the integrated but separated parking and pedestrian circulation system can be evaluated.

A center has been created that hopefully illustrates an ability to reasonably adapt to future change. The design illustrates that flexibility does not result in vague, undifferentiated space.

A NEIGHBORHOOD

M. Zahran

"The Little Ones leaped and
shouted,...and laughed,...
and all the hills echoed.."

William Blake

A Philosophy

The human experience through the course of Ages has swung to the absolute extremities; between prosperity and hardship; between the good and the bad; and between happiness and misery. But the human life in its sincere universal aspect has never swung as much.

The truthfulness, the innocence, the compassion and deep emotions, and the social interaction have always been the same all over the earth and ages. Some features have changed, though, due to the technology; due to the years and what they bear of significant influences. The potentialities of the progressive technology will rightly vary the external features of daily life that any prospective community should adapt itself to such variations. It should allow also, freedom of choice between different types of houses and living conditions.

Elie Saarien says rightly:

"just at the same time when the creative instinct for town building was most needed; it ceased to exist. The sense for the most comprehensive act of man was lost."*

Thus a planning for a community should get to the roots of human life, the aspirations of man, and justifies it in the

* Elie Saarien, "The City".

envelope of the modern character and potentialities.

An open society needs an open city; freedom to move and somewhere to go, both inside and outside the city.

It is now accepted that the making of good places to live in involves more than the provision of good houses. Neighborhood planning on the Radburn principle with the distances for walking to school for the various grades of children, carefully calculated, with the integration of green space and play areas into the plan is now widely understood as an ideal. It is also quite clear that the city green and the "super blocks placed in vast promenades"* did not achieve the real character of human life; but, on the contrary, they become centers of delinquency, vandalism and general social hopelessness.

The diverse activities--within limits--are not incompatible uses. On the contrary, they intensify each other as a coffee house or a delicatessen store does in a residential area. Thus, in my neighborhood, my cause is to let people experience the narrowness and openness to appreciate the quality of space; to provide the freedom of choice between a strong urban life and lovely natural setting, as well as the type of housing itself; to play with the organic and inorganic forms to result in an integrated unity; and to design the part as a unit of the whole. Finally,

* Jane Jacobs, "The death and life of Great American Cities."

the many elements contained in the system should harmonize and play with one another to compose the lovely symphony of life.

A Concept

I believe that true architecture and good form coherence are the cultural and spiritual essence of both the art of building and of town planning.

The articulation of forms and congruent activities in the center are responded to at the east-west pedestrian "spines."

The strong urban character in the center is carried strongly at the pedestrian spines to achieve a strong tie and connection to the center.

The neighborhoods on both sides are subsequently tied to that spine. (Diag. 1). pedestrian access at certain points is expressed along the two urban streets which will carry the pedestrian flow to the center at a clearly expressed overpass. (Diag. 2).

In the 25,000 stage, we created 4 neighborhoods around and along each spine--two on each side. They act as one integrated unit. Every one has its own entity, identity, and the same circulation system for easy identification and unification. (Diag. 1)

Facilities:

Community facilities are the raw materials for the construction of social space. They should not be dumped down as items of a plant in a void of green space where their impact is very minimum. They should be organized to create a social space. Here every two neighborhoods are served with the elementary school within walking distance of 10 minutes maximum. In the same space, social, athletic, and religious facilities are provided. The two institutional areas are tied strongly with the convenience commercial and social sub-center in the middle tying the four communities together. (Diag. 3)

In my neighborhood I established a common open space easily accessible to all residents for meeting and recreation. This space is strongly tied to the street and the open space inside the spine across the street. Also the natural green terrain is allowed to penetrate through both sides. (Diag. 4).

Circulation:

The neighborhood is accessible through a loop feeder from the horizontal spine by car. This loop feeds in turn a system of cul de sacs and loops that serve the micre neighborhoods.

It is also accessible from the outer ring of the whole settlement by another feeder. (Diag. 5).

Parking:

Parking along the two main streets, which are separated by grade from the pedestrian paths, is provided underground the residential units along with vertical access to the houses. (Diag. 6).

Surface parking is provided by the cul-de sacs or loops inside the neighborhood. The sub-center is provided with short and long term parking.

Keeping in mind that the total number of families in this neighborhood is 963, the overall ratio of parking is 1 1/2 parking places per household. Parking places are provided for individual houses.

Amount of Parking provided:




Undergroup parking along the spine	▪	1200 parking spaces.
Surface parking along the feeders	▪	250 parking spaces.
Total parking spaces	=	<u>1450</u> parking spaces.

Density:

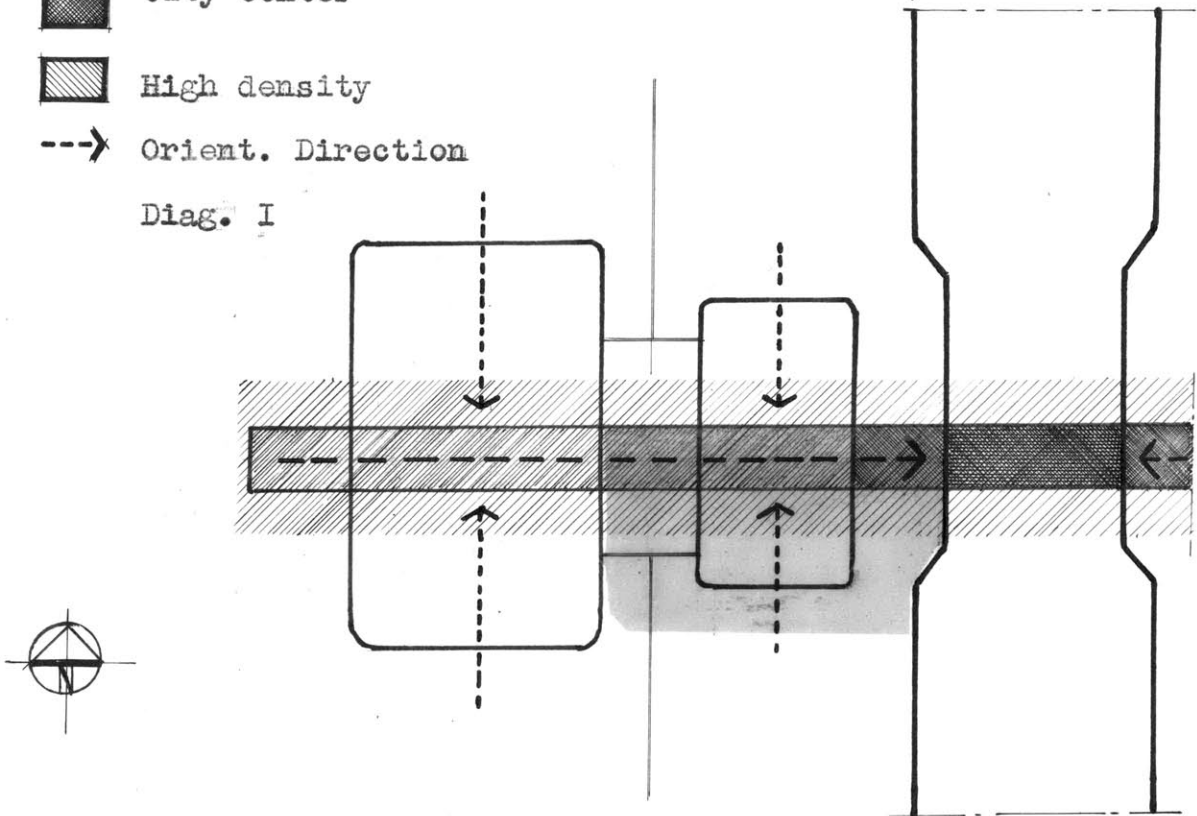
The total area of the neighborhood site is 78 acres. The overall density decreases as we get far from the pedestrian "spine" maintaining almost the same density along the two urban streets, (Diag. 7). The spine ends with the junior high school and some high density at the end by the turnpike lake shore, accompanied with recreational areas.

The density along the spine	▪	22 families/gross acre.
the density inside the neighborhood	=	8 families/gross acre.
The overall density altogether	▪	15 families/gross acre.

ORIENTATION

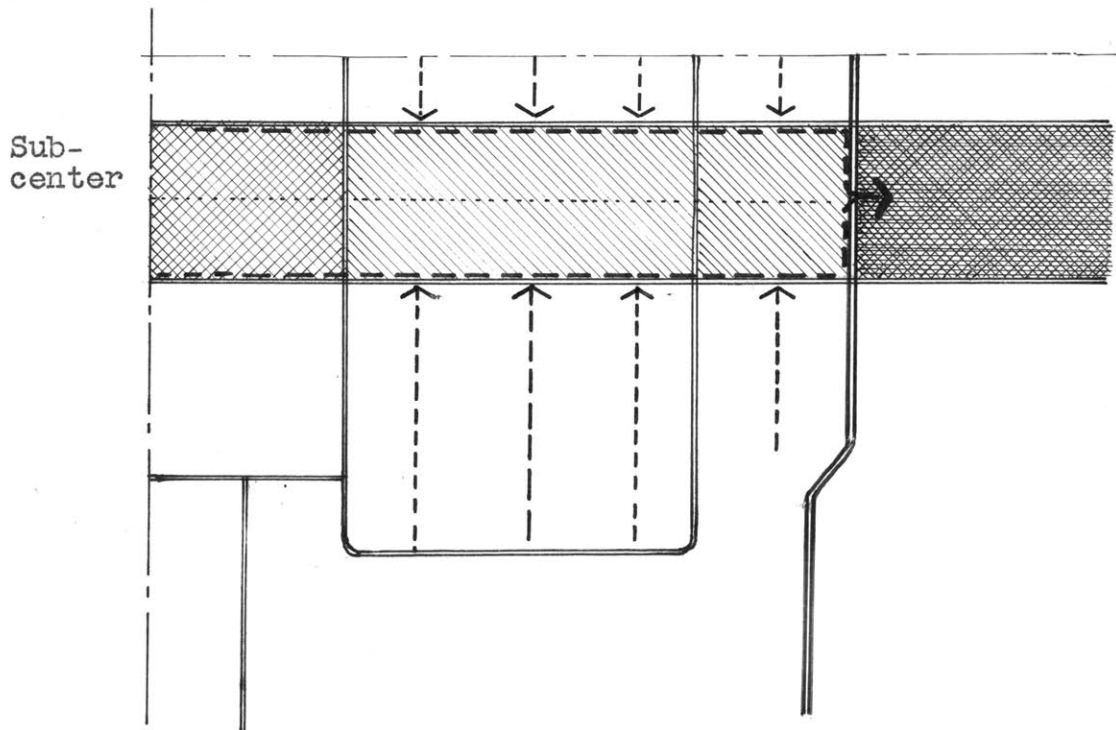
-  City center
-  High density
-  Orient. Direction

Diag. I



PEDESTRIAN FLOW

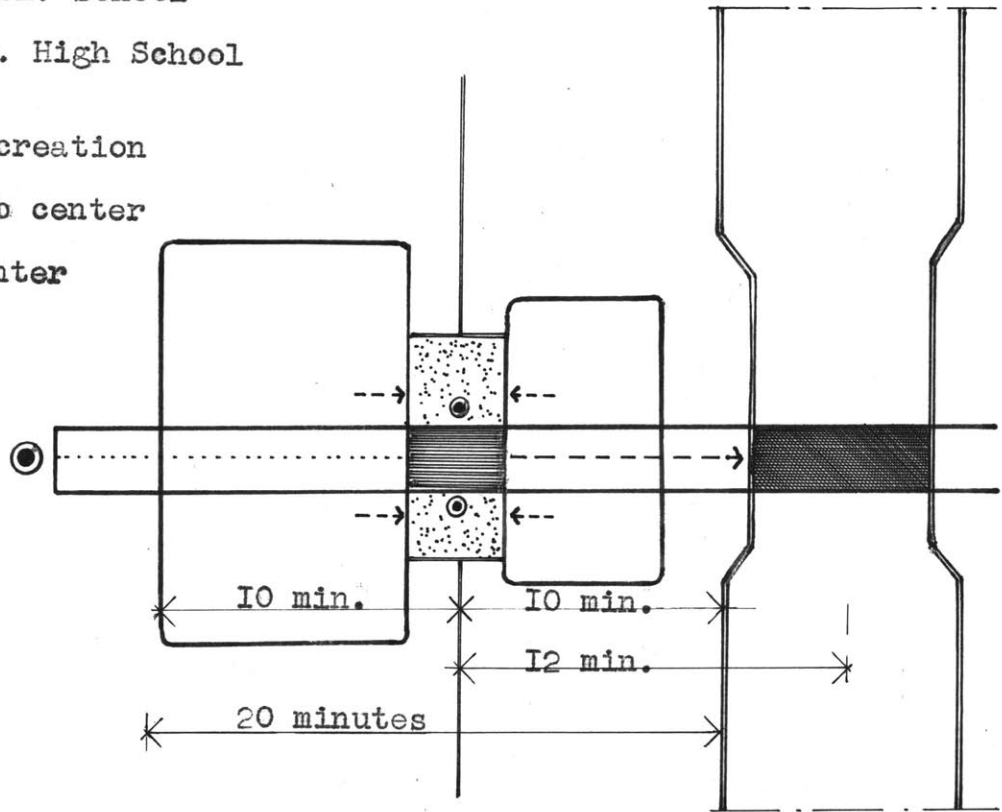
Diag. 2



FACILITIES & WALKING DISTANCES

- Elem. School
- Jr. High School
- ▨-- Recreation
- ▧-- Sub center
- ▩-- Center

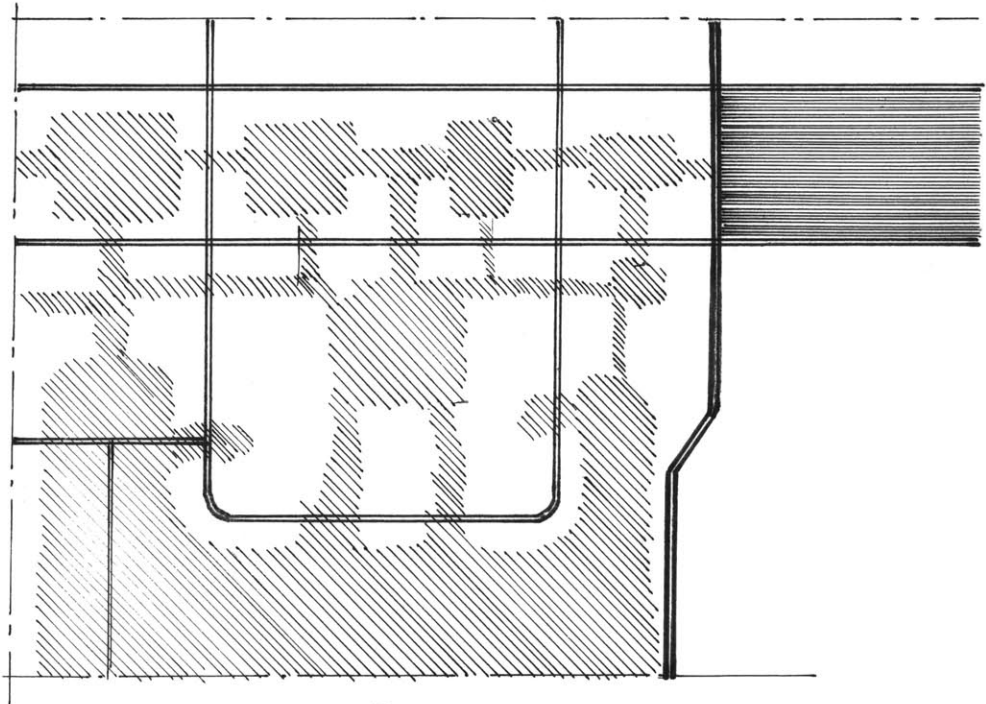
Diag. 3

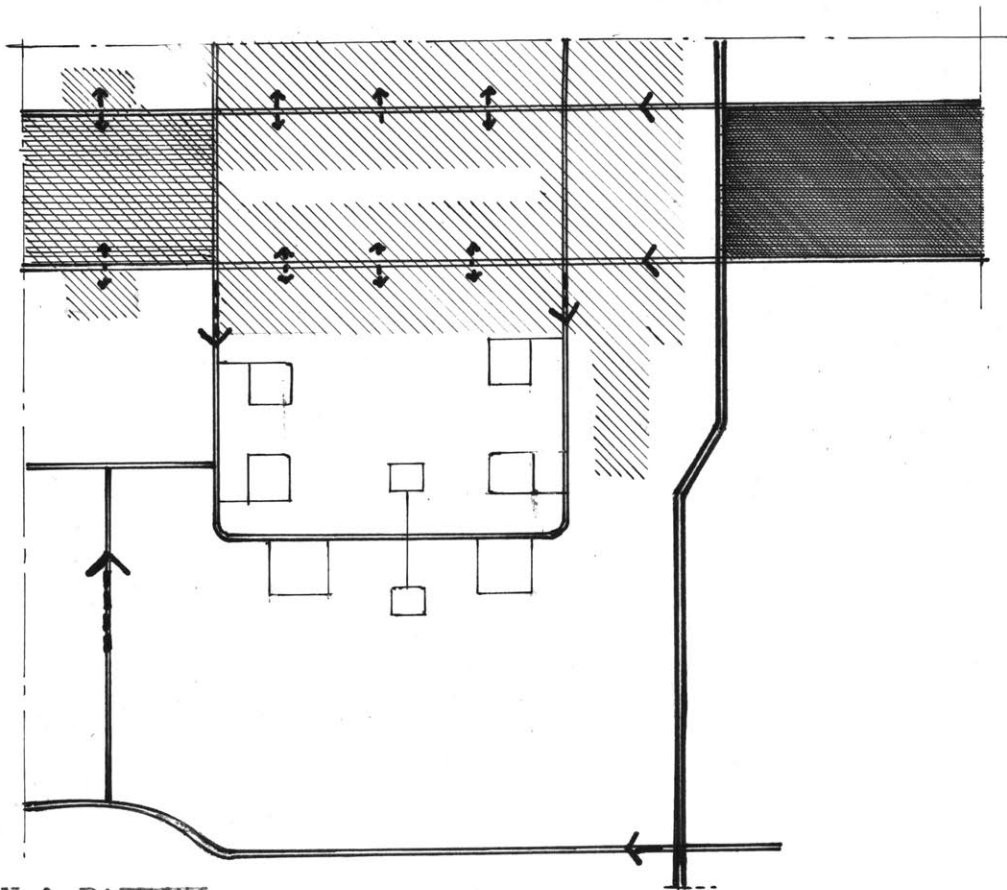


SPACES




Inegration of the natural and Man-made

Diag. 4

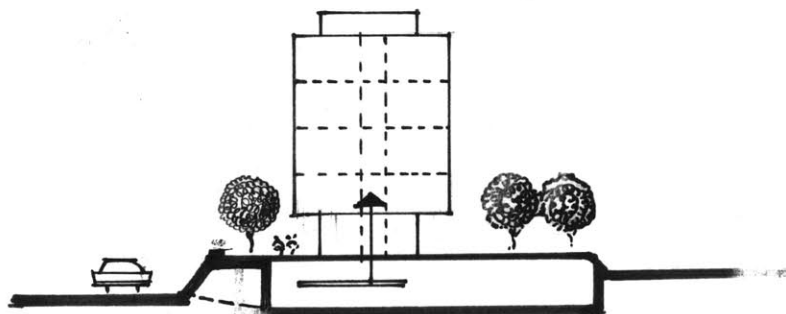




CIRCULATION & PARKING.

-  Multi level parking
-  Under ground "
-  Enterences




Diag. 5



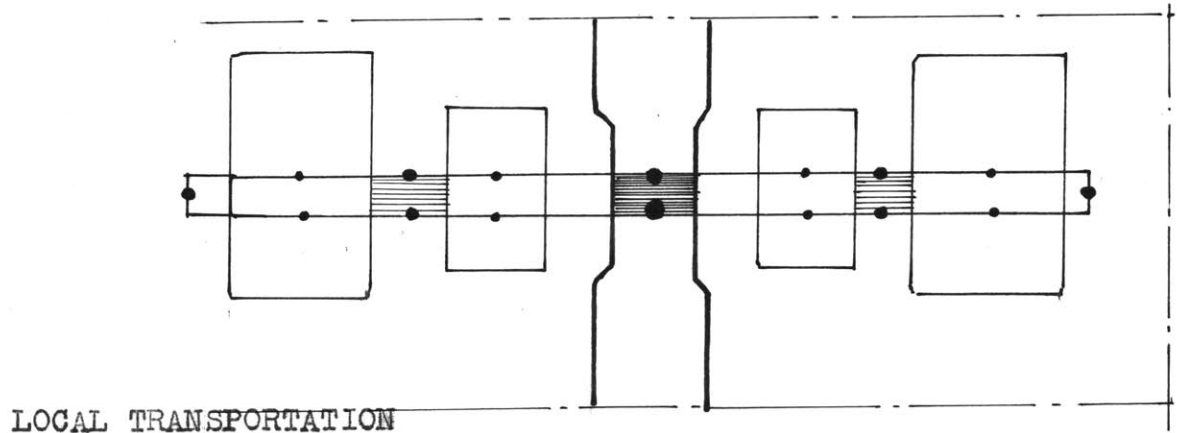
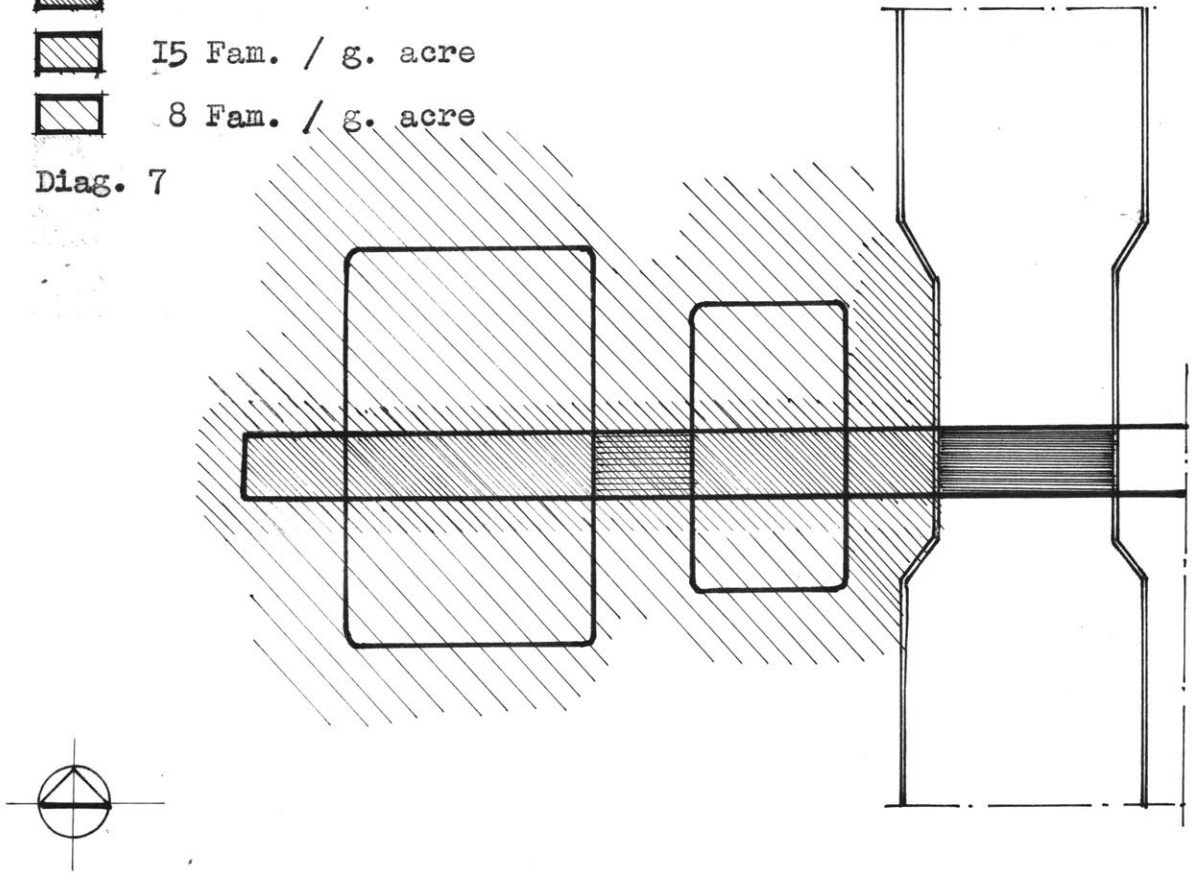
Section at under ground Pkg.

Diag. 6

DENSITY

-  20 Families / gross acre
-  15 Fam. / g. acre
-  8 Fam. / g. acre

Diag. 7



LOCAL TRANSPORTATION

- ● ● Bus stations

Diag. 8

Housing type:

It is well believed that the housing group within the neighborhood needs to be visually comprehensible, (micro-neighborhoods), and that the housing group is the first step towards establishing a form of identity beyond the household.

Housing near the main arteries or shopping facilities tend to be denser and occupied by people who want proximity and ease of circulation. Due to this fact and the fact that higher buildings require larger spaces, I designed towers located inside the spine implying their own space with walk-up apartments in units located along the urban street. The complexion of towers and walkups ties visually the neighborhoods on both sides to the pedestrian spine--to the center. (Diag. 7).

As we get far away, the type of houses changes and begins to break down to row houses and single family houses along the loop feeder. They share their parking in common, with everyone having his own privacy. No home faces a circulation street. They are connected with certain paths that allow the common green open spaces to penetrate through them. This makes possible the pedestrian environment essential to lovely family living, where children's safety and play is primary. All the internal spaces are recreational, and all those connected to the feeder are for access and service.

I have the conviction that there should be different types of houses as we have different types of individuals. The freedom of choice is essential.

The terrain in this area is very gradually sloping. It is of 2% in my neighborhood. It is considered that recreational areas will have a lovely hilly terrain overlooking turnpike lake, and along its nice shores.

No. of families at each type of housing*

<u>Type</u>	<u>No. of Floors</u>	<u>No. of Units</u>	<u>No. of Families/fl</u>	<u>Total No. of families</u>	<u>Sq. ft. Household</u>
Tower	7	7	4	196	800
Walk-up	3	42	4	504	1500
Garden Apts.	2	27	2	108	1850
Row Houses	1-2	115	1	115	2400
Single family Houses	1-2	40	1	40	5000
Total number of families.....				963	

The total population is approximately 3500 in this specific neighborhood.

Facilities:

Though this point is mentioned before, here I want to specify the commercial local sub-center components which are necessary to the residents convenience without detracting the main center's prestige. (Diag. 7).

These commercial facilities in the sub-center are: grocery store, Book store, Dispensary, Laundry, Barber shop, Bakery, Gas station, Bar and Restaurant, a Gallery, and the like.

It is considered that the same kind can creep to occupy around the plaza at the beginning of the spine.

(Diag. 8).

Cafe stands, band stands, churches and the like can spread along the "spine."

Local Transit:

It is considered that a local bus route will circulate along the spine binding the two spines (arms) together with certain stops at significant places.

A Conclusion :

I have the aspiration that my little neighborhood can contribute a brick in the structure of human life , and adapt itself to any variations . The structure of the community should have an order of hierarchy in the physical and social senses . Also the mixing of different types of dwellings and social stratas is necessary to promote social interaction and a unity for all.

Here , a continuous structure of association from the individual unit to the total community is established in many senses. **I tried to relate the man in his house;** his little kingdom , to a larger scale ; a micro-neighborhood , to a larger scale; the neighborhood itself , to the largest scale ; the city itself , in a hierarchial order , in many senses .

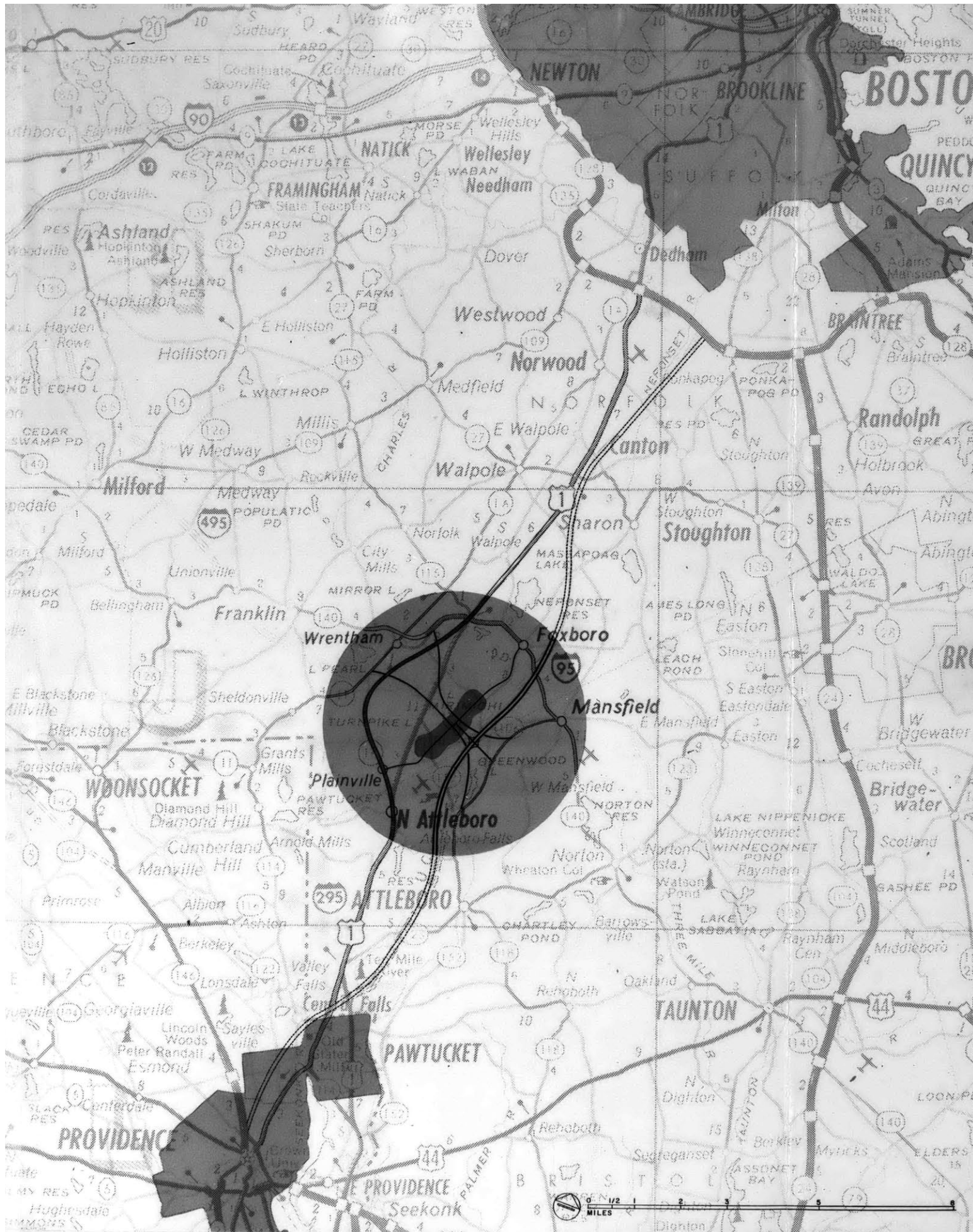
Simplicity of character visually , socially and technically is sought all over .

" The wise man looks into space
and does not regard the small
as too little, nor the great
as too big
for he knows that there is no
limit to dimensions . "

Lao-Tse .

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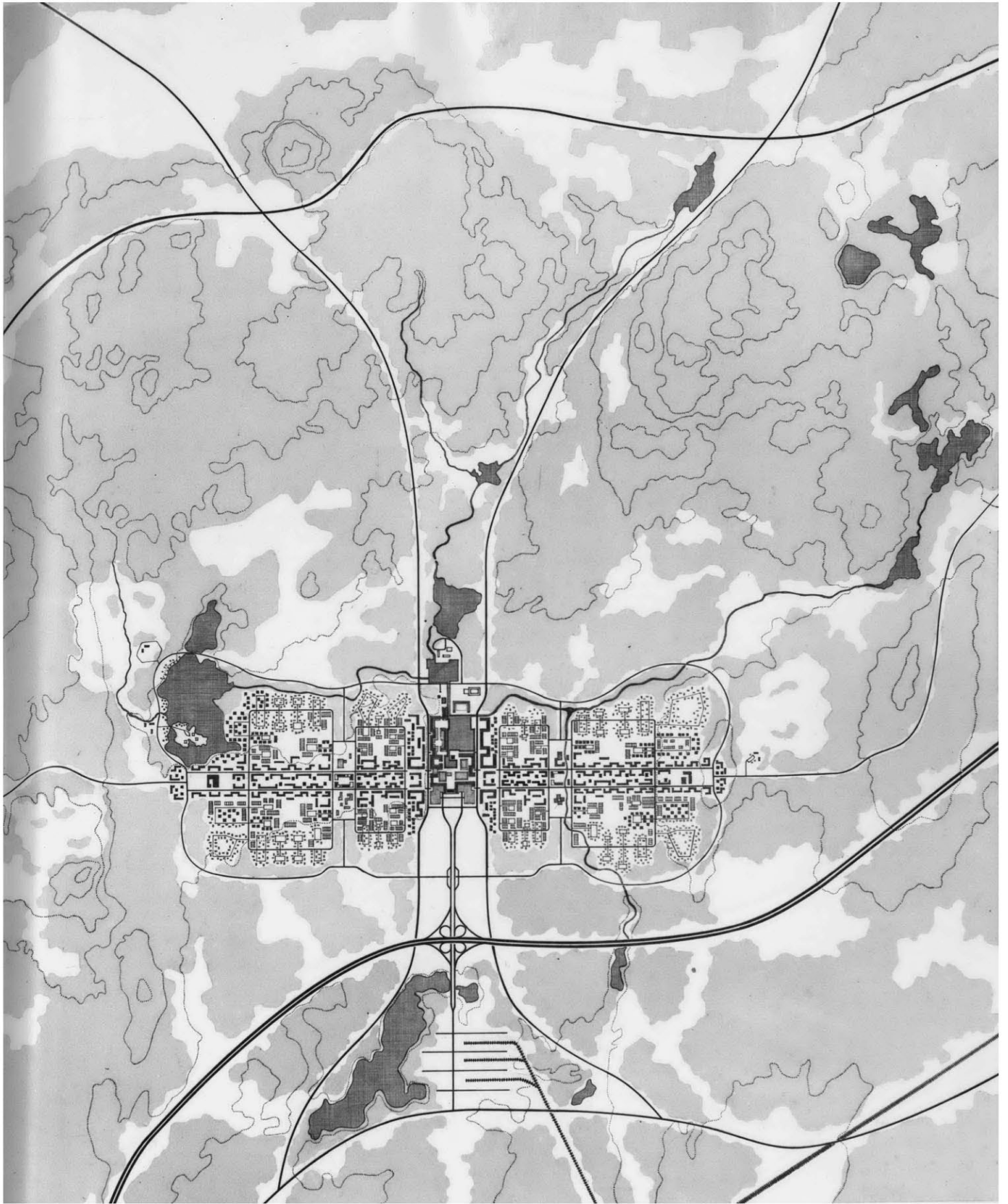
I REGIONAL PLAN

NEW SETTLEMENT - AN ADAPTABLE URBAN STRUCTURE

MASTER IN ARCHITECTURE THESIS
CITY STRUCTURE - R.P. COOKE

M.I.T.
H.T. MIYACHI

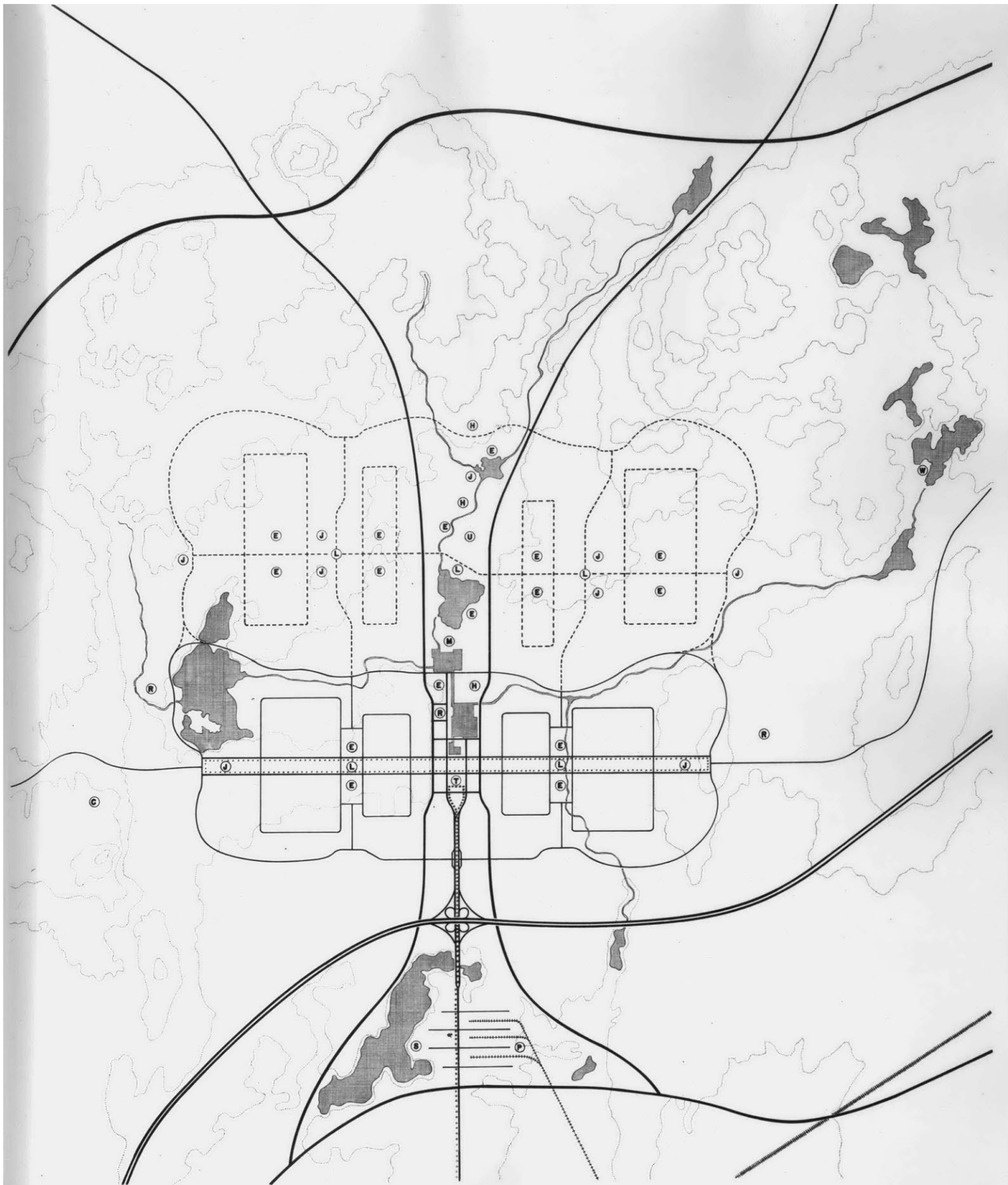
JULY 1962
M.M. ZAHRAN



2 VISUAL PLAN



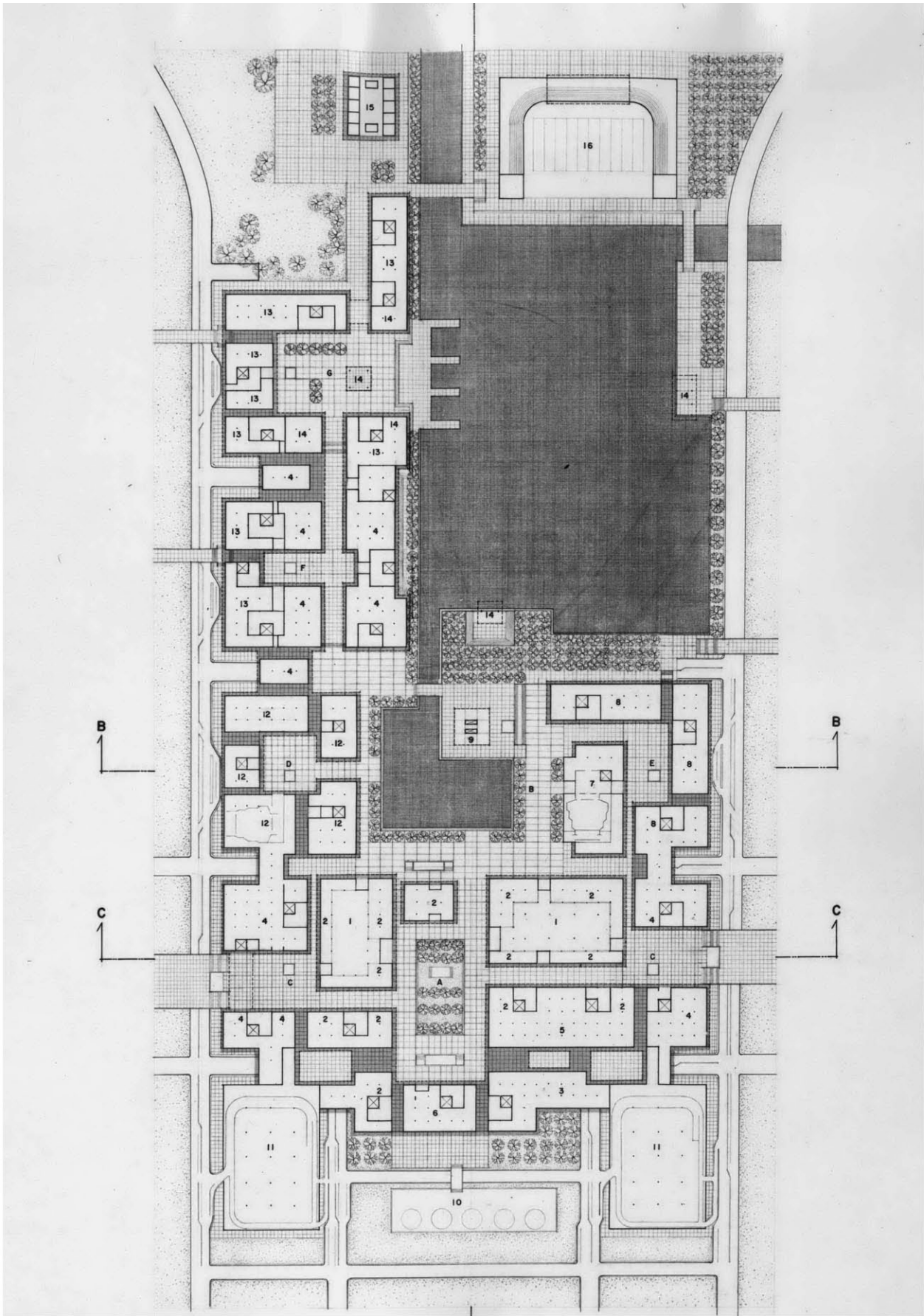
NEW SETTLEMENT - AN ADAPTABLE URBAN STRUCTURE
 MASTER IN ARCHITECTURE THESIS M.I.T. JULY 1962
 CITY STRUCTURE - R.P. COOKE H.T. MIYACHI M.M. ZAHRAN



- Ⓢ SEWAGE TREATMENT PLANT
- Ⓣ TRANSPORTATION CENTER
- Ⓤ COLLEGE
- Ⓡ DEVELOPED RECREATION AREA
- Ⓟ INDUSTRIAL PARK
- Ⓜ MEDICAL FACILITIES
- Ⓛ LOCAL SHOPPING AREA
- Ⓝ JUNIOR HIGH SCHOOL
- Ⓜ HIGH SCHOOL
- Ⓟ ELEMENTARY SCHOOL
- Ⓢ CEMETARY

3 CIRCULATION PLAN

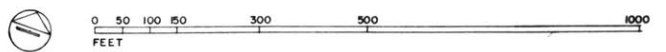
NEW SETTLEMENT - AN ADAPTABLE URBAN STRUCTURE
 MASTER IN ARCHITECTURE THESIS
 CITY STRUCTURE - R.P. COOKE
 M.I.T.
 H.T. MIYACHI
 JULY 1962
 M.M. ZAHRAH



- MAJOR FUNCTIONS**
- 1 DEPARTMENT STORE
 - 2 RETAIL STORES
 - 3 WHOLESALE STORES
 - 4 LOCAL CONVENIENCE STORES
 - 5 NEWSPAPER
 - 6 TRANSPORTATION CENTER
 - 7 CIVIC CENTER
 - 8 PROFESSIONAL SERVICES
 - 9 GOVERNMENT BUILDING
 - 10 HELIPORT
 - 11 PARKING GARAGE
 - 12 ENTERTAINMENT FACILITIES
 - 13 RESIDENTIAL FACILITIES
 - 14 RECREATION ACTIVITIES
 - 15 ELEMENTARY SCHOOL
 - 16 STADIUM

- MAJOR SPACES**
- A MAJOR COMMERCIAL
 - B COMMUNITY FUNCTIONS
 - C LOCAL SHOPPING & MAJOR PEDESTRIAN COLLECTOR
 - D ENTERTAINMENT
 - E CIVIC & PROFESSIONAL
 - F LOCAL SHOPPING
 - G RECREATION

4 MAIN PEDESTRIAN LEVEL



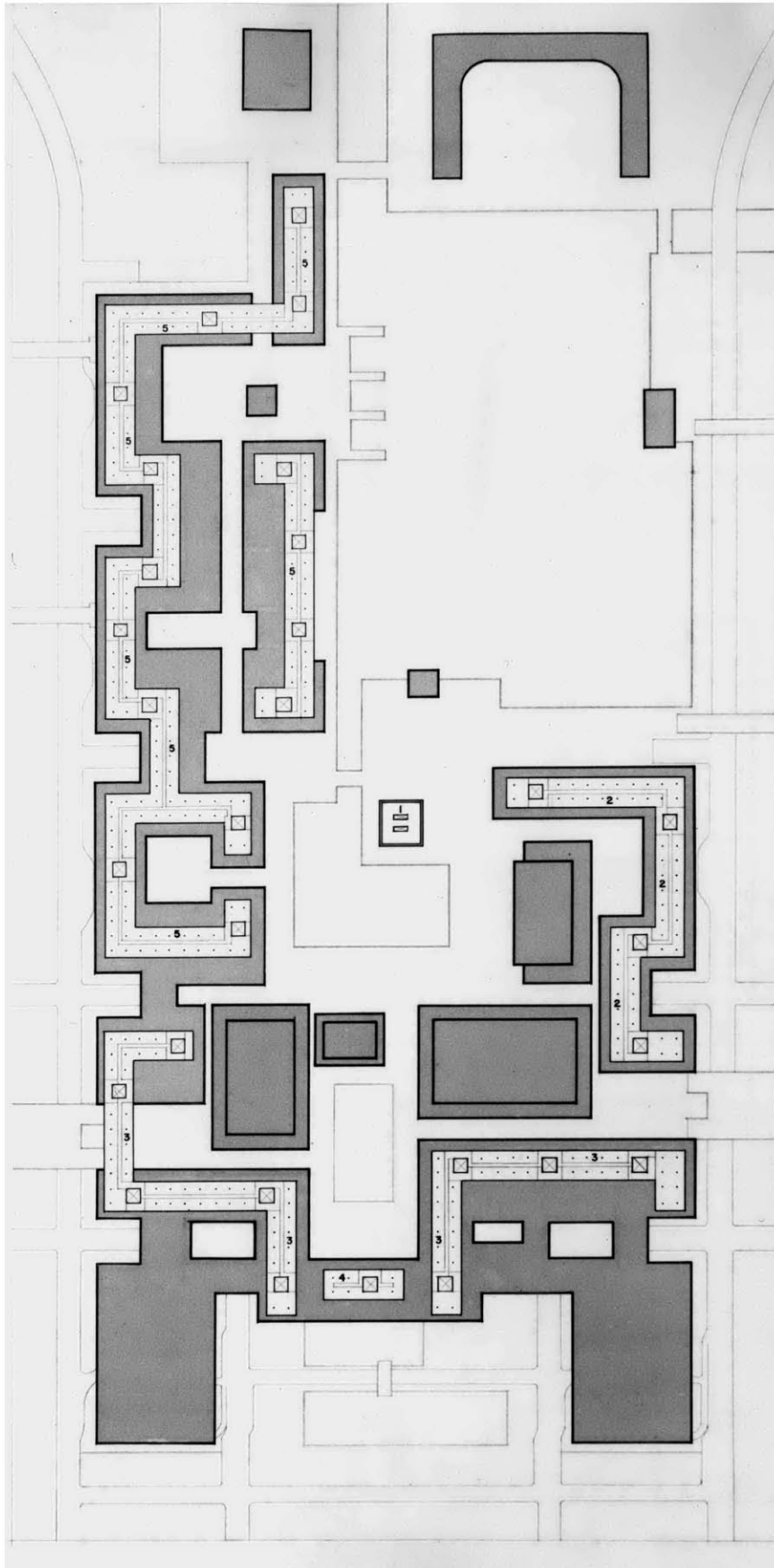
NEW SETTLEMENT - AN ADAPTABLE URBAN STRUCTURE

MASTER IN ARCHITECTURE THESIS
CITY CENTER - R.P. COOKE

M.I.T.

JULY 1962

H.T. MIYACHI



- 1 GOVERNMENT
- 2 PROFESSIONAL
- 3 GENERAL OFFICES
- 4 MOTEL
- 5 RESIDENTIAL

5 TYPICAL UPPER LEVEL

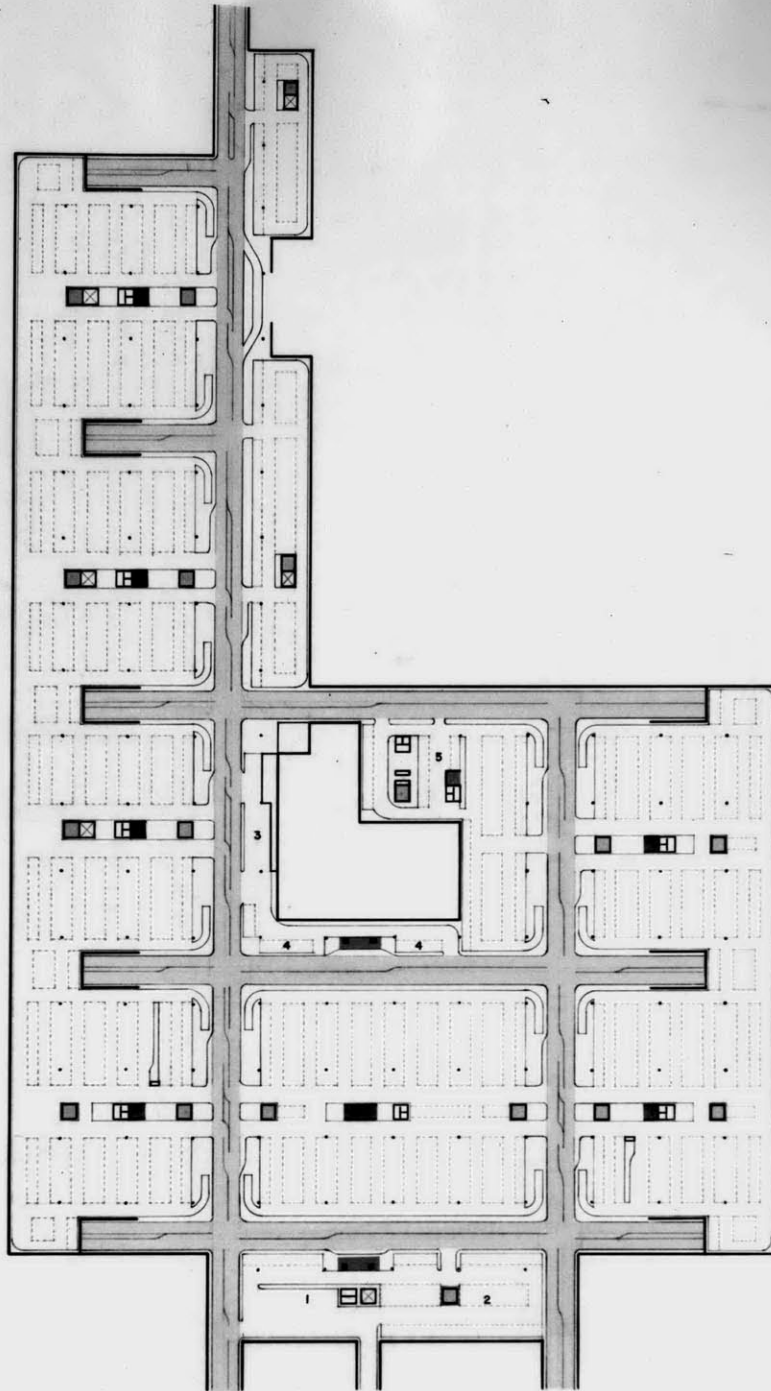
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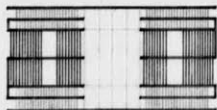
M.I.T.

JULY 1962

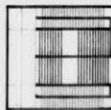
H.T. MIYACHI



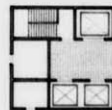
- 1 BUS LOADING
- 2 MOTEL PARKING
- 3 SERVICE STATIONS
- 4 TAXI PARKING
- 5 GOVERNMENT PARKING



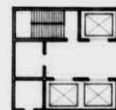
■ RISER CONNECTOR TO MAJOR COMMERCIAL SPACE



■ TYPICAL RISER CONNECTOR TO PEDESTRIAN LEVEL



□ TYPICAL VERTICAL CORE TO UPPER LEVELS



□ TYPICAL SERVICE CORE

6 PARKING SYSTEM-MAIN LEVEL

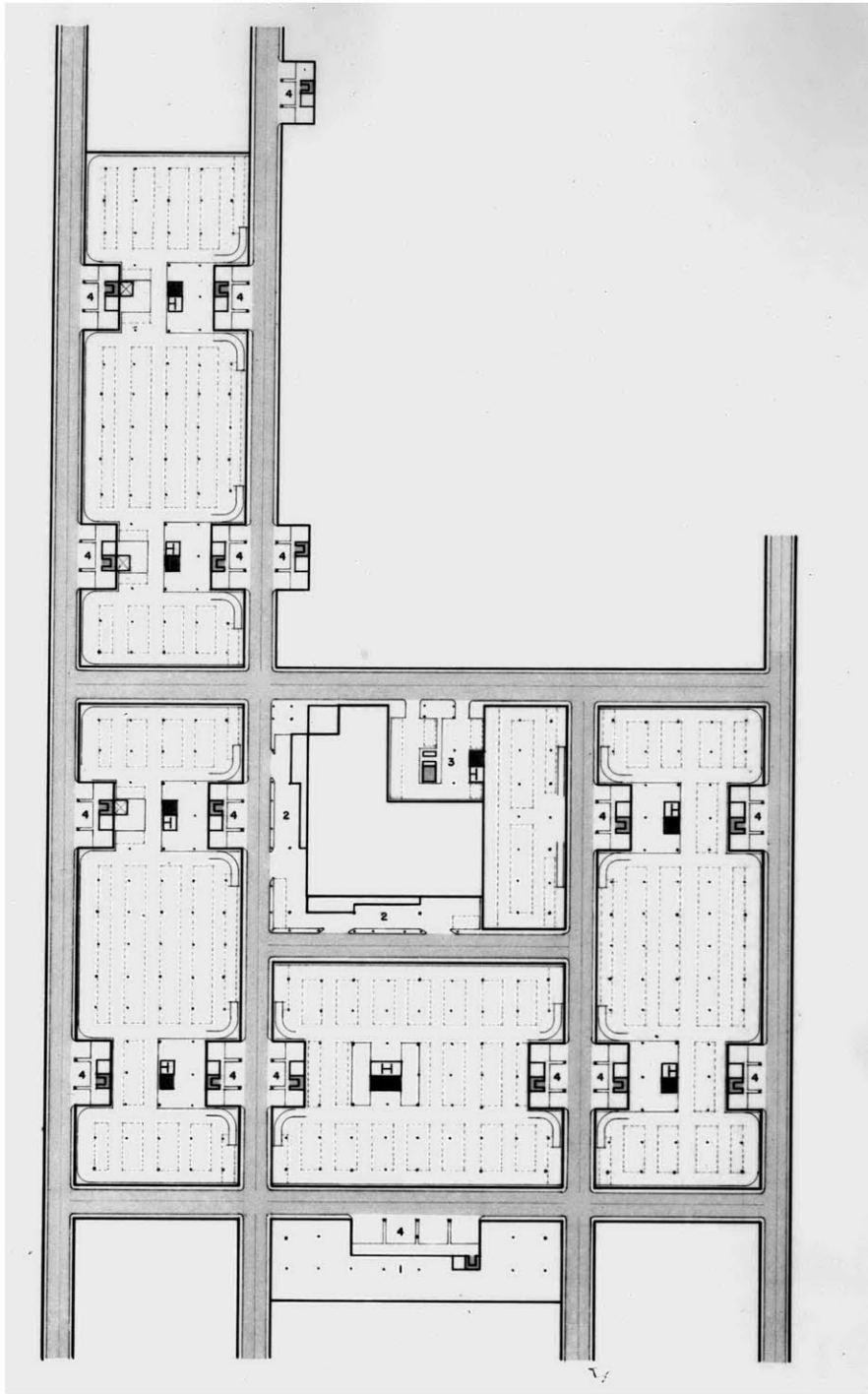
NEW SETTLEMENT - AN ADAPTABLE URBAN STRUCTURE

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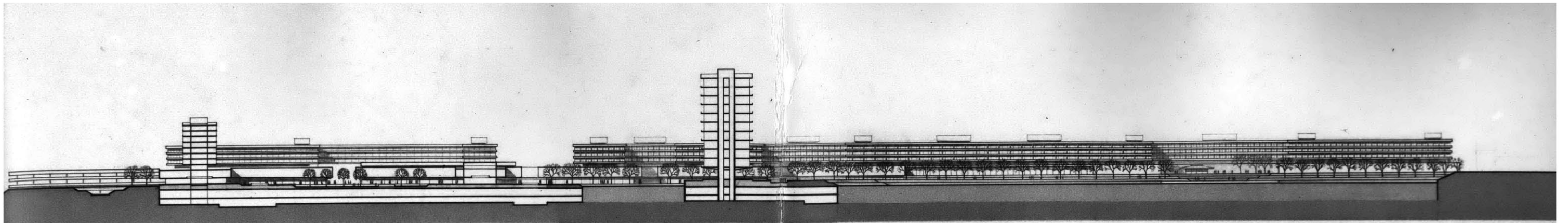
M.I.T.

JULY 1962

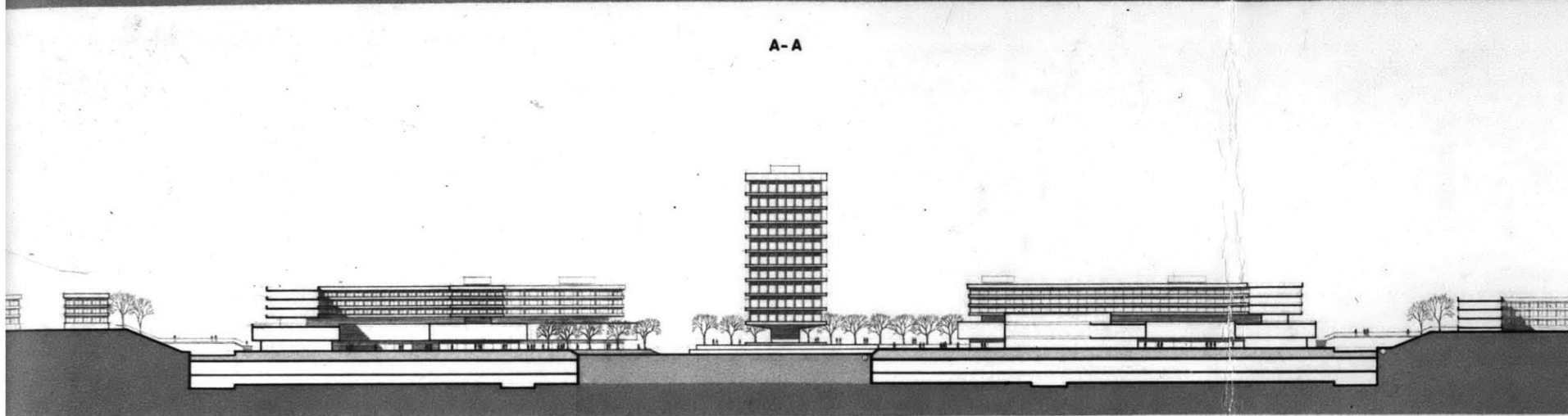
H. T. MIYACHI



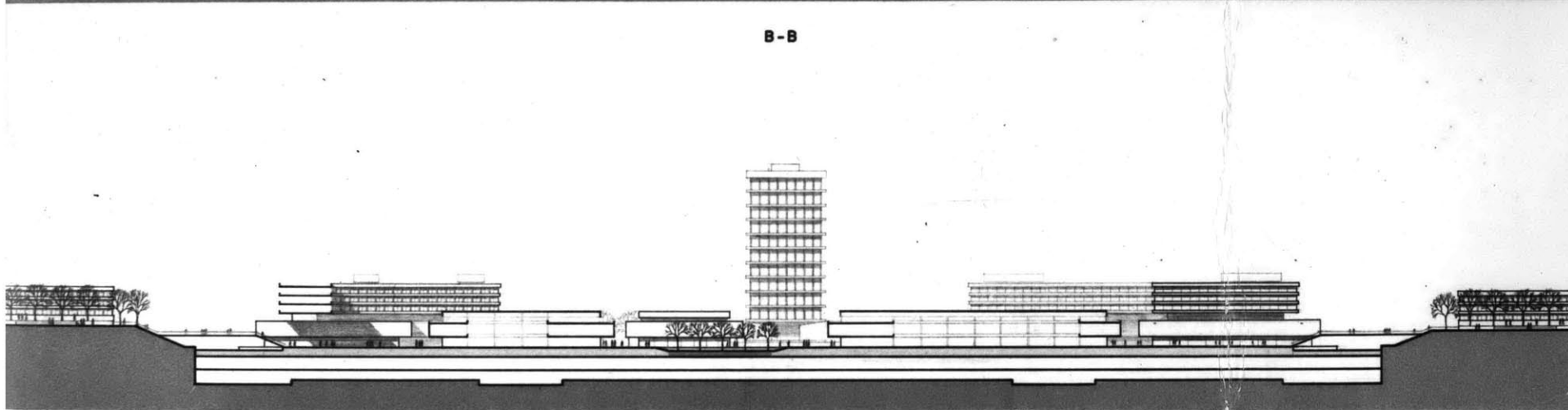
- 1 WAREHOUSE
- 2 SERVICE STATIONS
- 3 POST OFFICE LOADING
- 4 LOADING DOCK



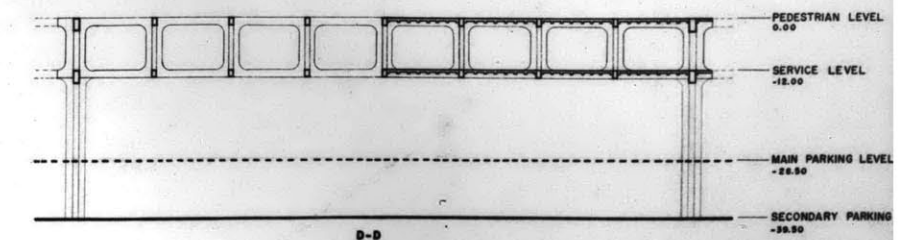
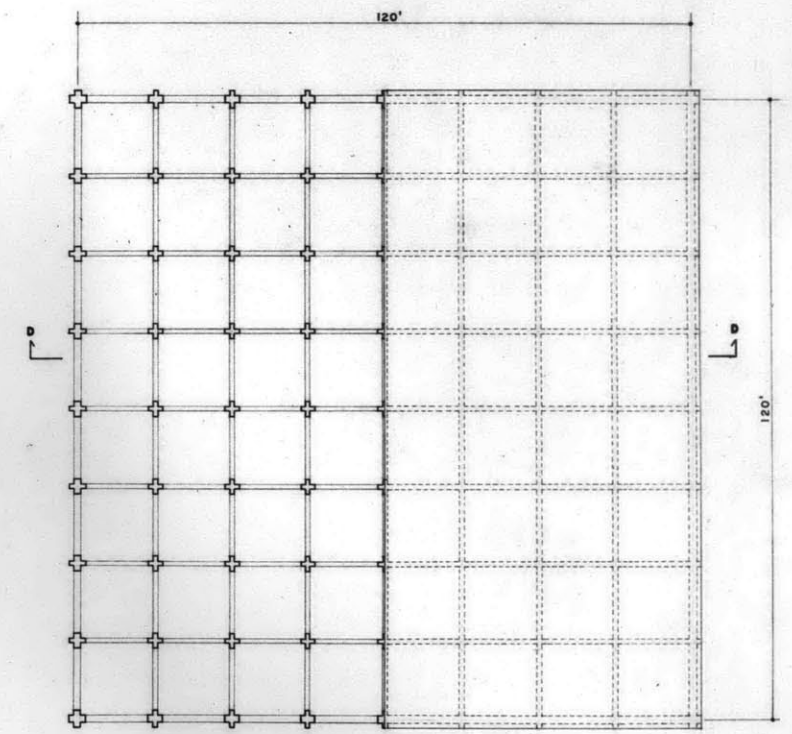
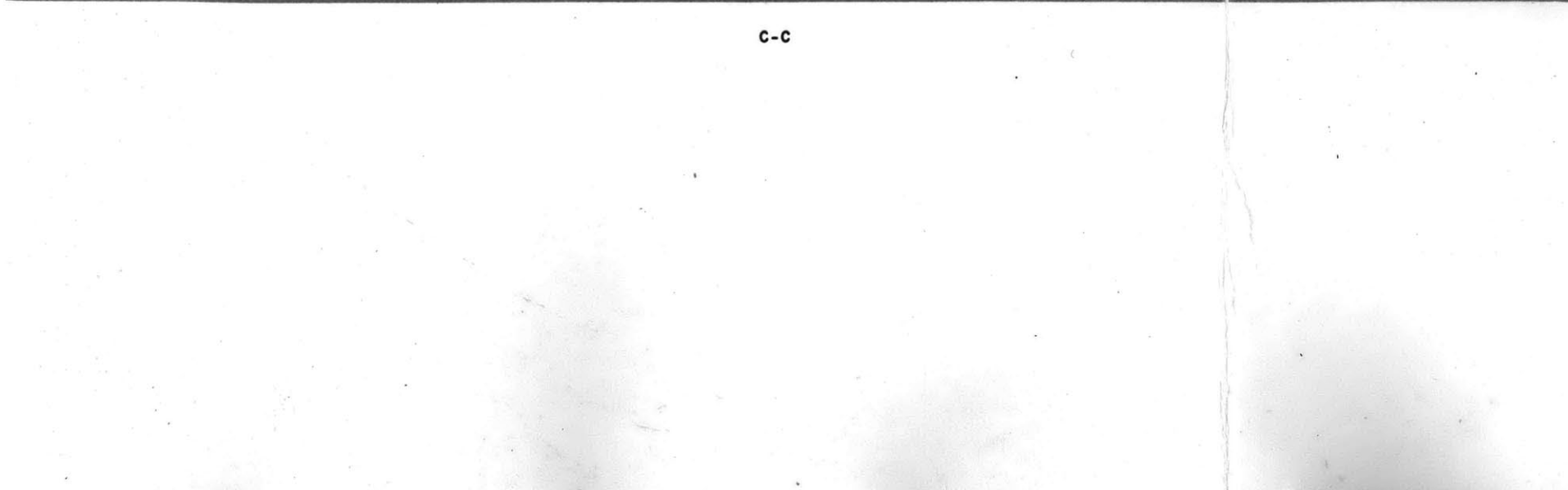
A-A



B-B



C-C



D-D
STRUCTURAL FRAME
3/32" = 1'-0"

8 SECTIONS & DETAILS

NEW SETTLEMENT - AN ADAPTABLE URBAN STRUCTURE

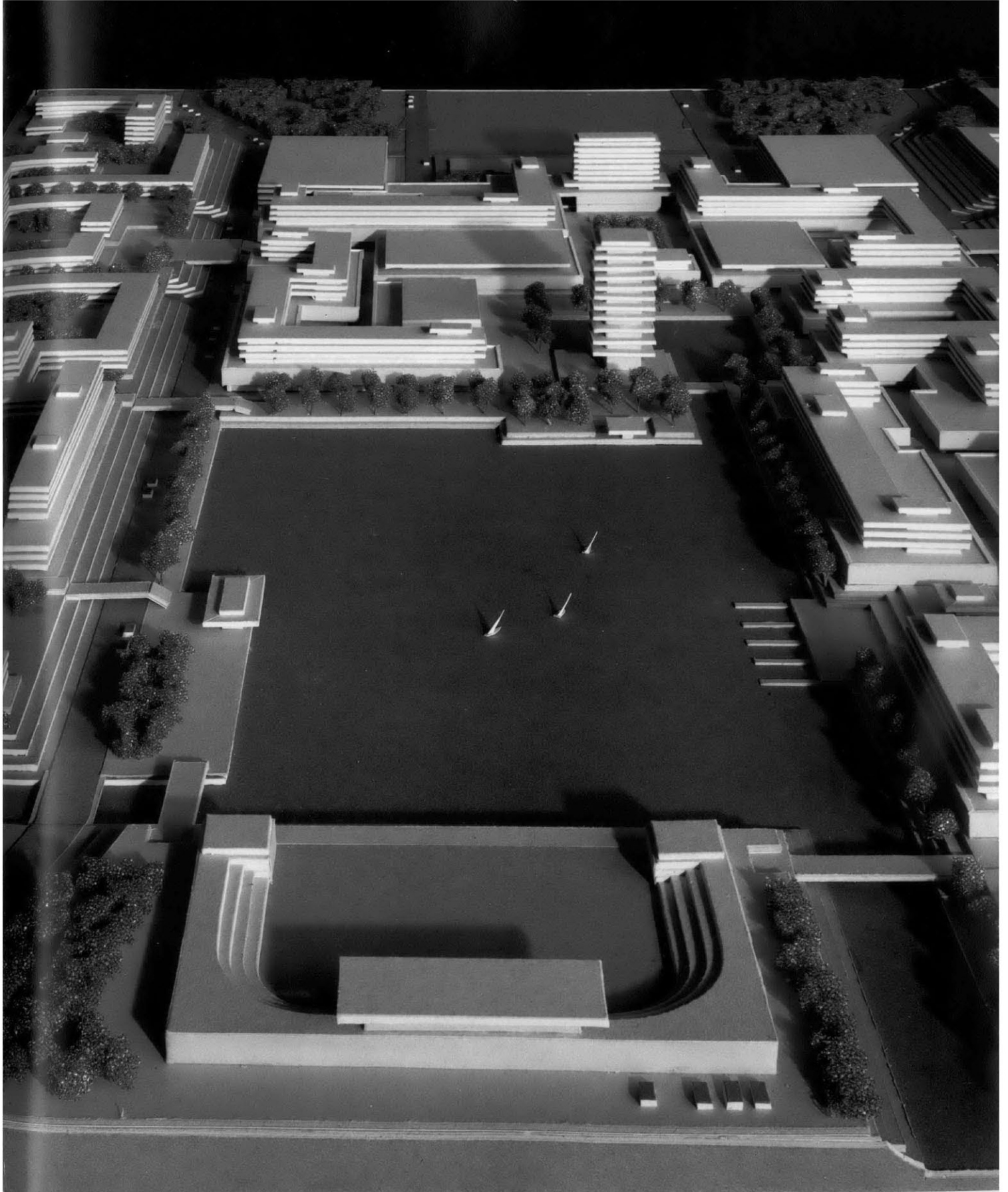
MASTER IN ARCHITECTURE THESIS

M. I. T.

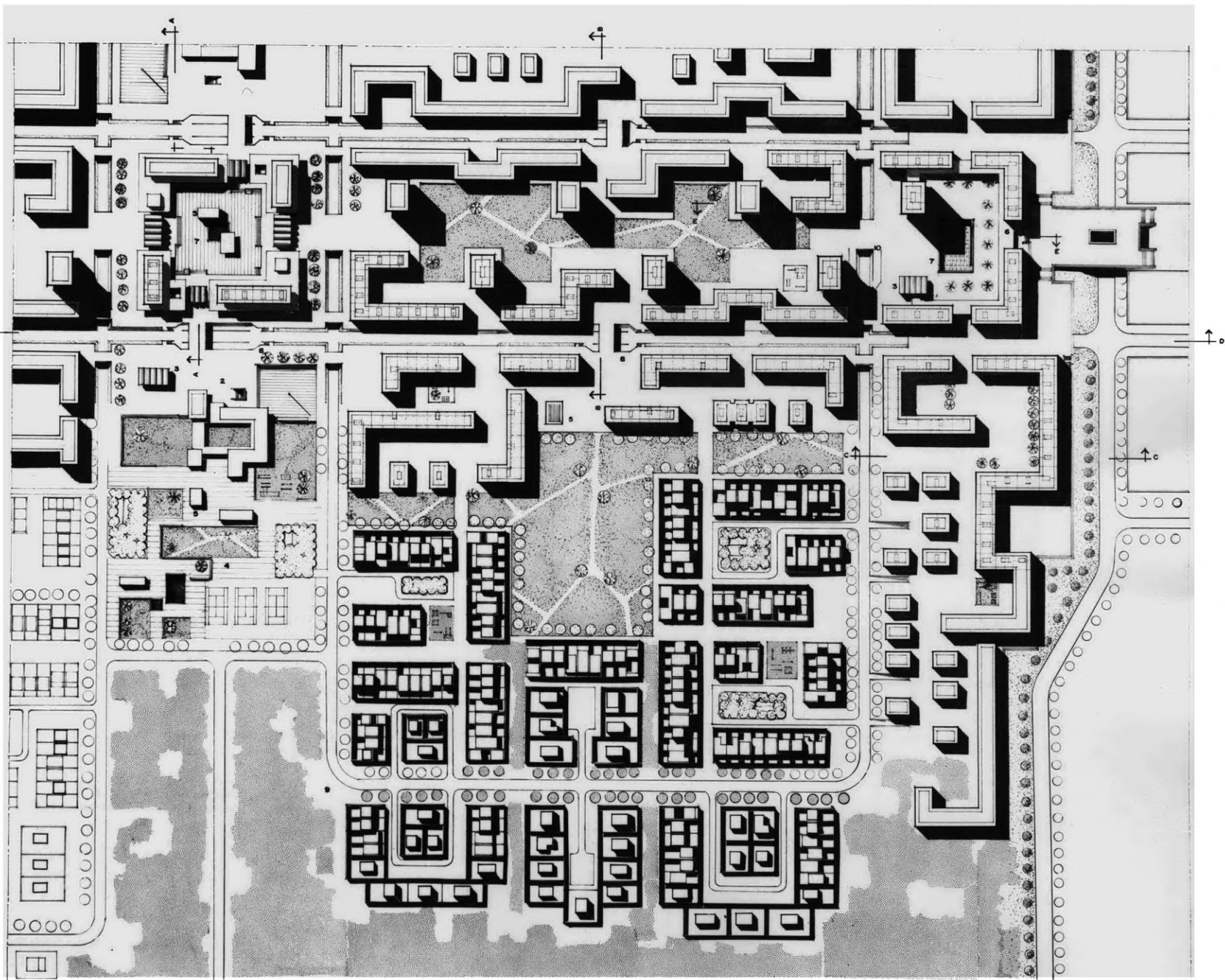
JULY 1962

CITY CENTER - R. P. COOKE

H. T. MIYACHI







- KEY**
- 1. SUB-CENTER.
 - 2. ELEMENTARY SCHOOL.
 - 3. SOCIAL CLUB.
 - 4. ATHLETIC AREA.
 - 5. CHURCH.
 - 6. PROSPECTED CONVENIENCE GOODS EXPANSION.
 - 7. PLAZA
 - 8. DROPPING POINTS.
 - 9. WOODS.
 - 10. EMERGENCY ACCESS TO PEDESTRIAN LEVEL.
- POPULATION** = 3500
DENSITY = 15 FAMILY/G. ACRE
PARKING = 15 PLACE/FAMILY

10 A RESIDENTIAL QUARTER.

SITE PLAN.



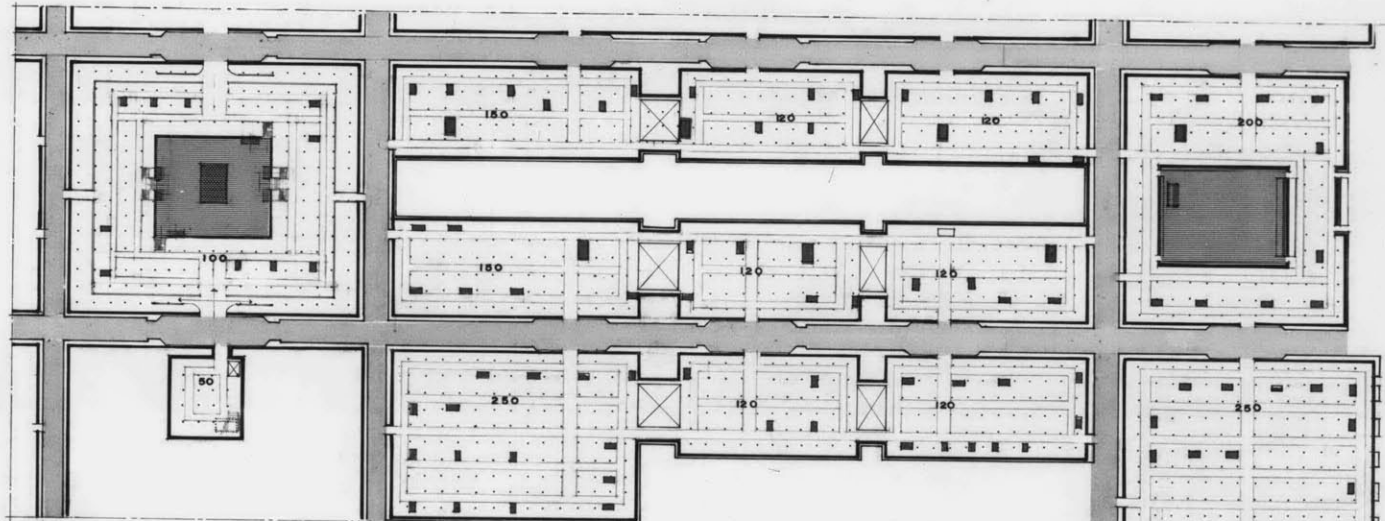
A NEW SETTLEMENT. AN ADAPTABLE URBAN STRUCTURE

M.I.T. MASTER OF ARCHITECTURE THESIS.

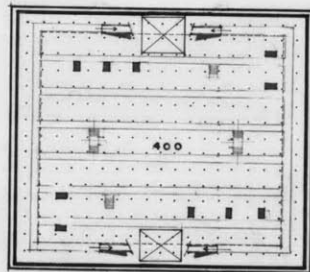
MOHSEN M. ZAHRAN.

JULY 1962.

FIRST PARKING LEVEL.



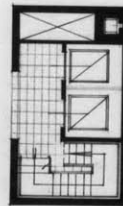
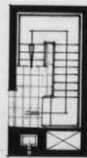
SECOND PARKING LEVEL.



TYPICAL SHAFT PLANS AT PARKING LEVEL

WALK-UPS

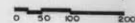
ELEVATOR APPARTMENT



SCALE: 1" = 8'-0"

II A RESIDENTIAL QUARTER

PARKING

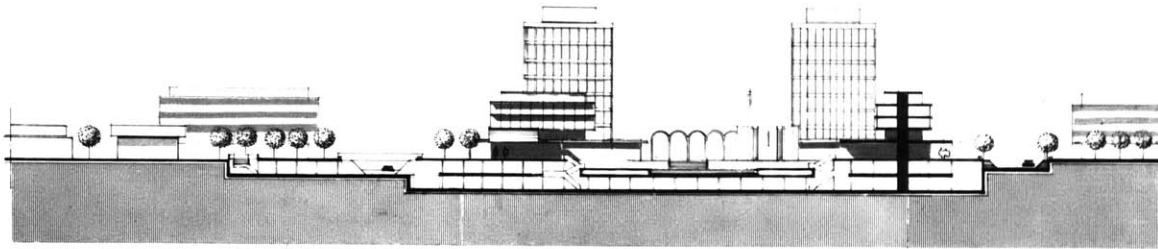


A NEW SETTLEMENT - AN ADAPTABLE URBAN STRUCTURE

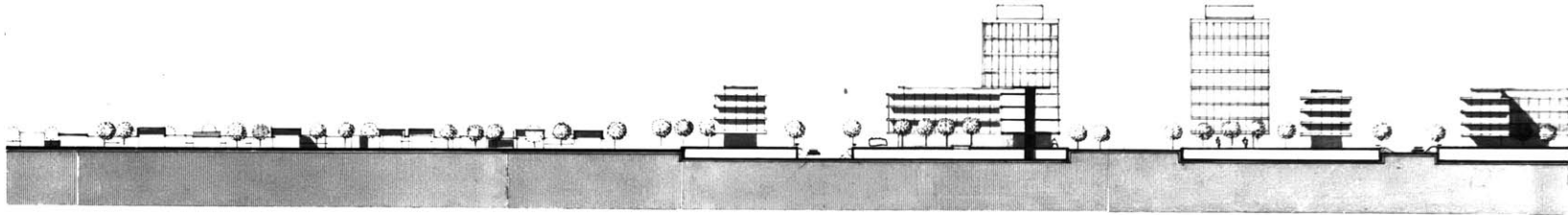
M.I.T. MASTER OF ARCHITECTURE THESIS.

MOHSEN M. ZAHRAN.

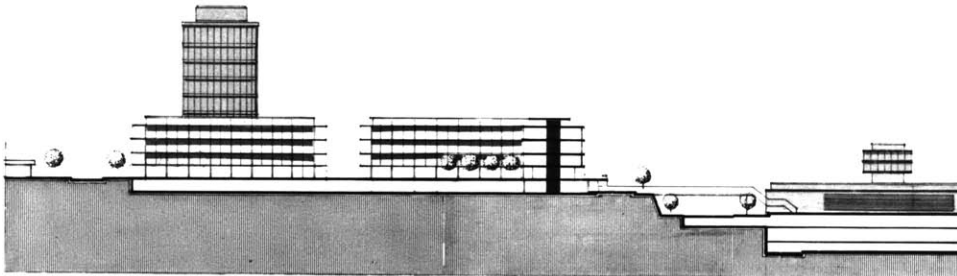
JULY 1962



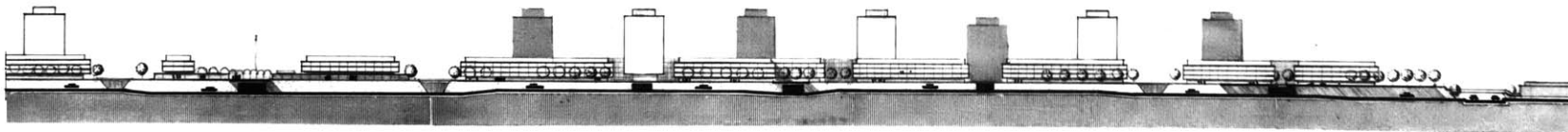
SECTION A-A IN SUB-CENTER SCALE 1" = 50'-0"



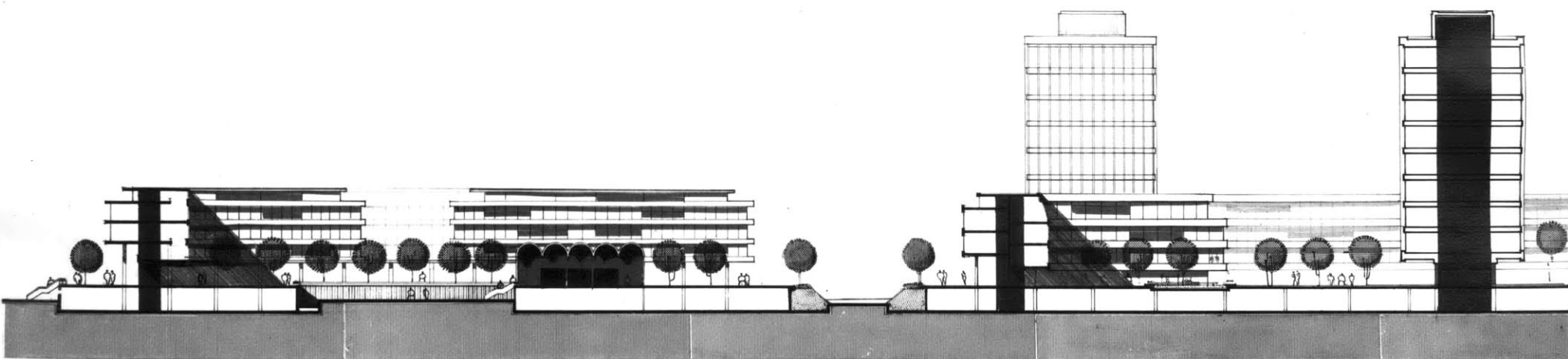
SECTION B-B SCALE 1" = 50'-0"



SECTION C-C SCALE 1" = 50'-0"



SECTION D-D SCALE 1" = 100'-0"



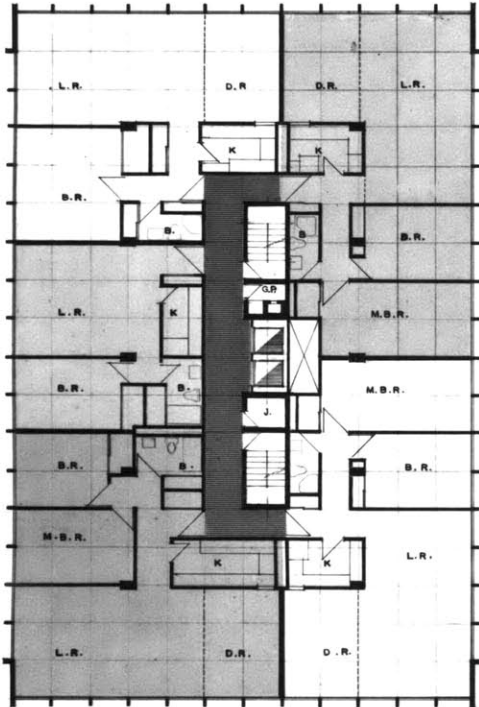
13 A RESIDENTIAL QUARTER

SECTION E-E SCALE 1"=20'-0"

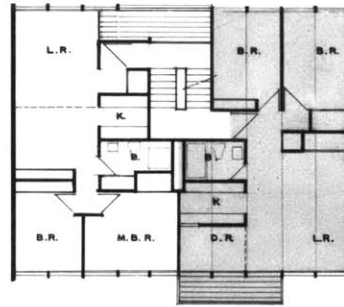
A NEW SETTLEMENT - AN ADAPTABLE URBAN STRUCTURE

M.I.T. MASTER OF ARCHITECTURE THESIS
MOHSEN M. ZAHRAAN.

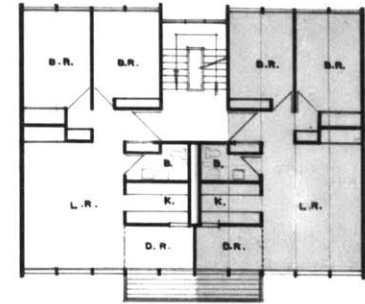
JULY 1962



AN ELEVATOR APARTMENT
TYPICAL FLOOR PLAN



WALK-UP APARTMENTS.
PROPOSAL ONE - TYPICAL FLOOR PLAN



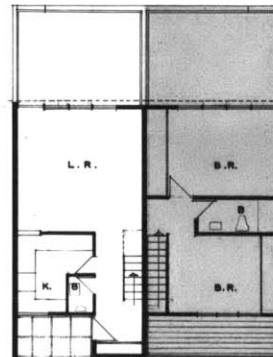
PROPOSAL TWO - TYPICAL FLOOR PLAN.



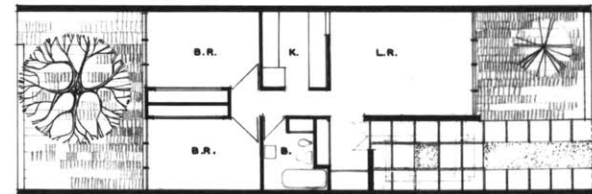
ROW HOUSES
PROPOSAL ONE - 2 STORIES. F.F. PLAN.



G.F. PLAN.



PROPOSAL TWO - 2 STORIES.
G.F. PLAN F.F. PLAN



PROPOSAL THREE - 1 STORY

14 A RESIDENTIAL QUARTER

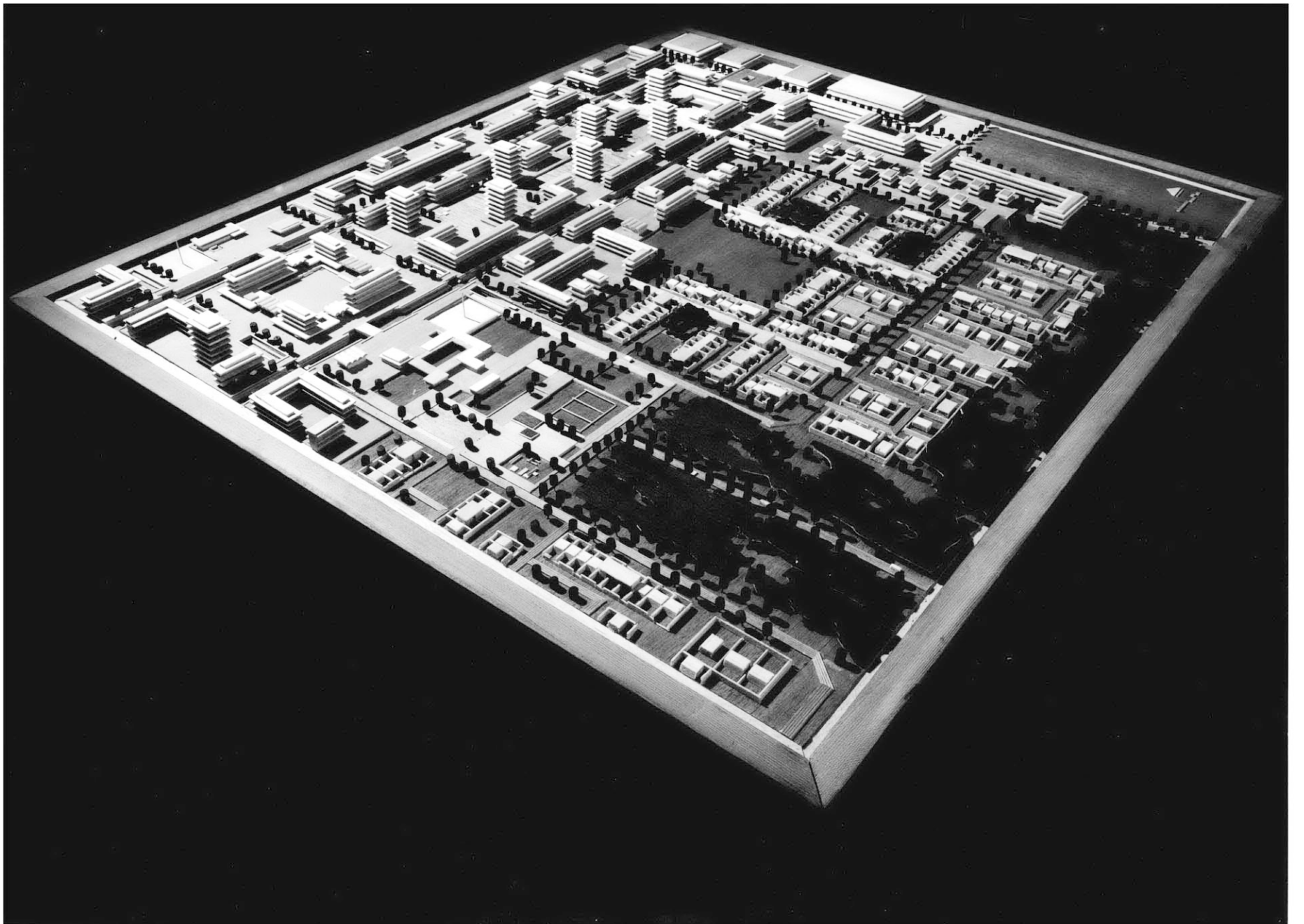
DETAIL - PLANS. SCALE 1/8" = 1'-0"

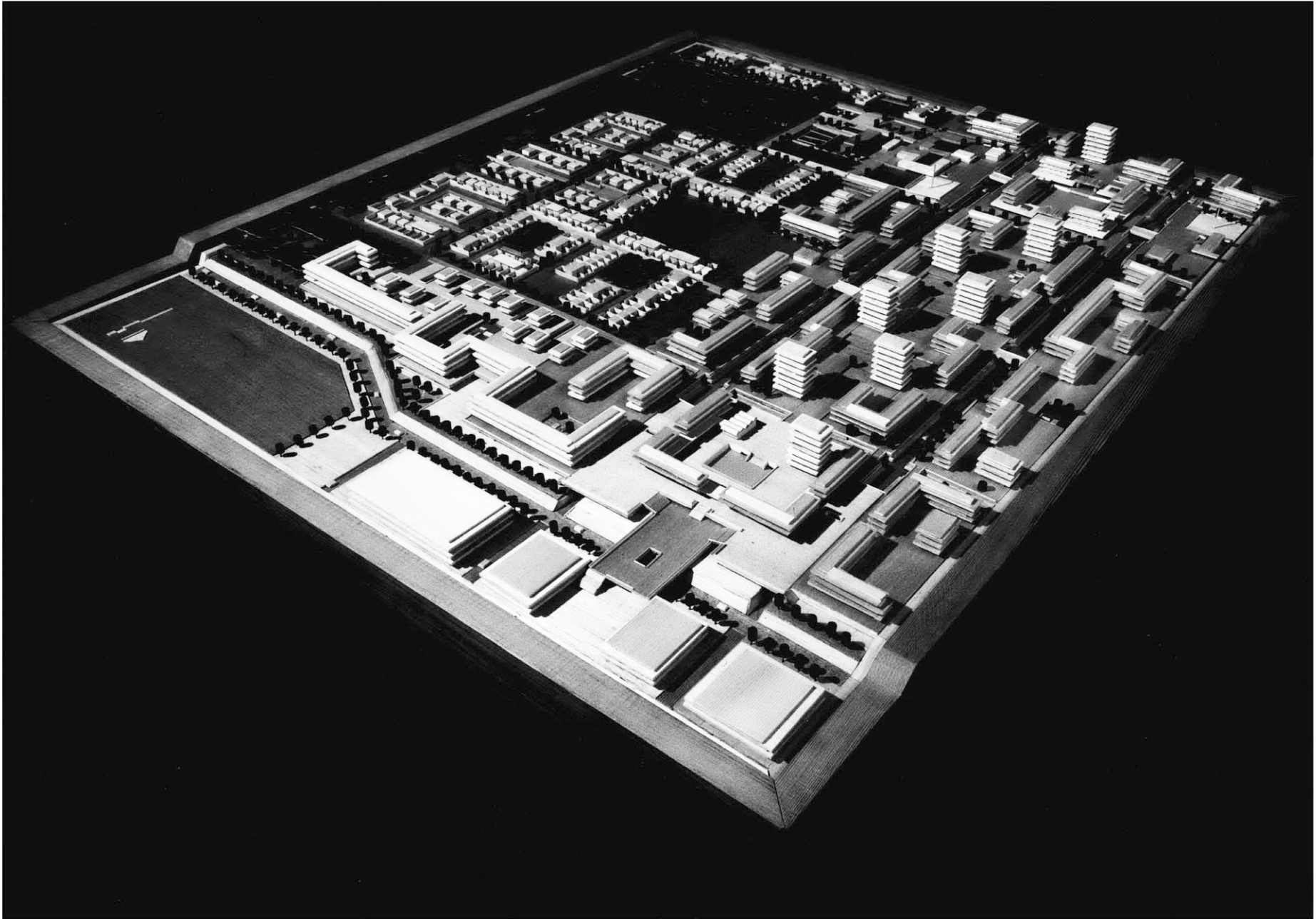
A NEW SETTLEMENT - AN ADAPTABLE URBAN STRUCTURE

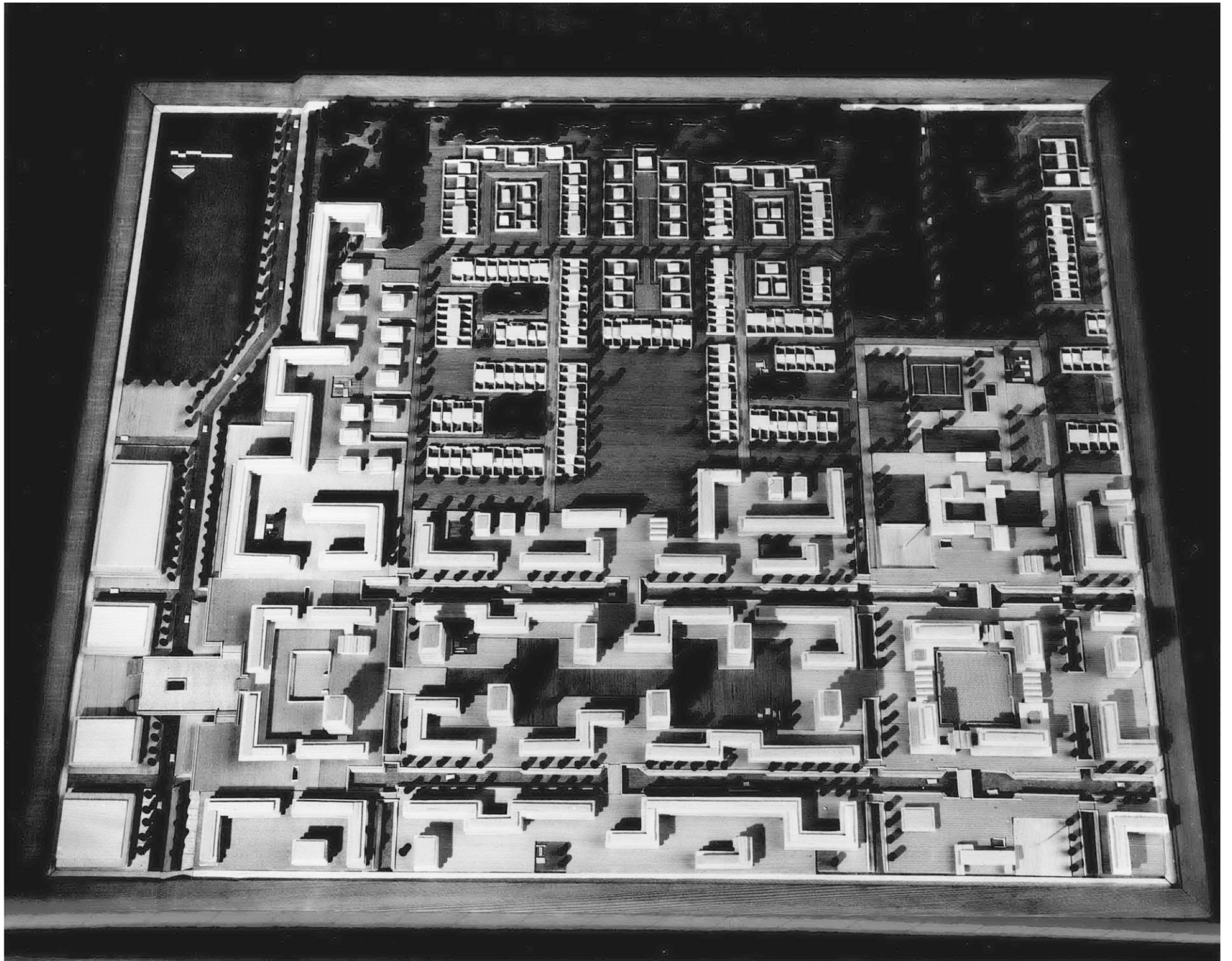
M.I.T. MASTER OF ARCHITECTURE THESIS

JULY 1962

MOHSEN M. ZAHRAN.







MASTER PLAN

Julius Roy Izen
Charles B. Thomsen

THIS REPORT INTRODUCING THE MASTER PLAN OF THE NEW SETTLEMENT DESIGNED BY JULIUS ROY IZEN AND CHARLES THOMSEN IS PRESENTED IN THREE SECTIONS: TOPOGRAPHICAL INFLUENCES, LAND USES, AND CIRCULATION CONCEPT. THESE AND OTHER ISSUES WILL BE FURTHER DEVELOPED UNDER THE INDIVIDUAL REPORTS ON THE TOWN CENTER AND THE RESIDENTIAL SECTORS.

TOPOGRAPHICAL INFLUENCES

THE SITE, AS INDICATED IN THE SITE REPORT, HAS NO STRONG UNIFYING FEATURES. IT IS THE DESIGN OF THE NEW SETTLEMENT ITSELF THAT MUST GATHER THE STRONGEST FEATURES INTO A COHERENT ORGANIZATION. THE MASTER PLAN CONFORMS AND IS SHAPED BY THE GENERALITIES OF THE SITE, WHILE SPECIFIC INCIDENTS IN THE TOPOGRAPHY AND WATERWAYS PLAY A LESSER ROLE. THERE HAS BEEN LITTLE MODIFICATION OF EXISTING LAND CONTOURS AND WATERWAYS.

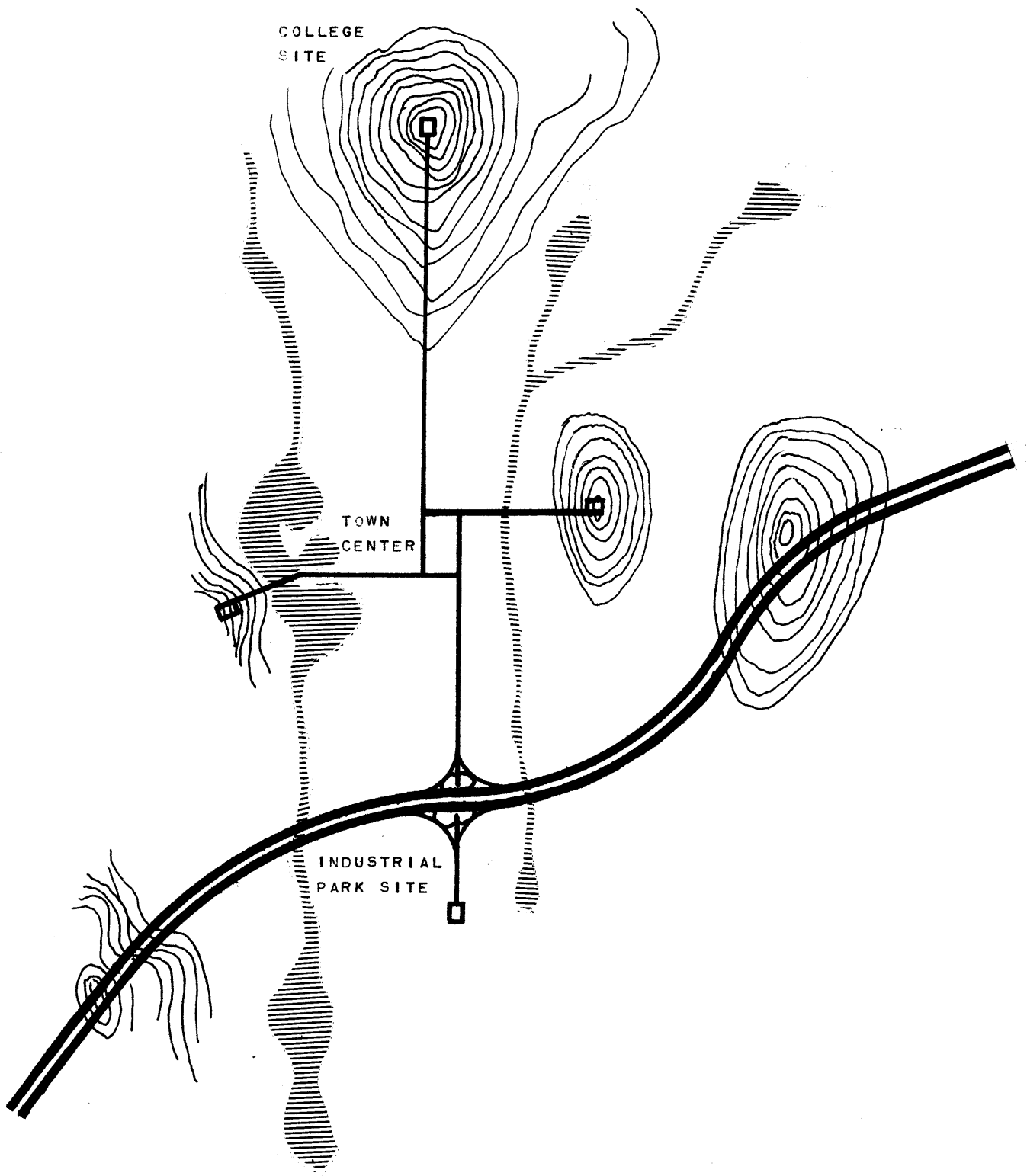
THE TOWN CENTER AND THE MAJOR ACTIVITIES ARE LOCATED ALONG AN AXIS TERMINATED AT ONE END BY THE COLLEGE, LOCATED ON THE MAJOR PROMONTORY ON THE SITE, FIRE TOWER HILL, AND TERMINATED AT THE OTHER END BY THE CLOVERLEAF ON INTERSTATE 95 AND THE NEW INDUSTRIAL PARK. THIS AXIS IS FLANKED BY TWO PARALLEL WATERWAYS WHICH SERVE AS ORGANIZING ELEMENTS FOR THE RESIDENTIAL SECTORS.

THERE IS A CROSS AXIS THROUGH THE TOWN CENTER WHICH EXTENDS TO THE MAJOR RESIDENTIAL CENTERS. TRAVELING ALONG THIS CROSS AXIS FROM THE TOWN CENTER TO THE EAST, ONE CROSSES THE WATERWAY AND RISES APPROXIMATELY 100' IN 2,800' TO THE TOP OF A LARGE HILL WHERE THE MAJOR CENTER FOR THE EASTERN RESIDENTIAL SECTOR IS LOCATED. THE CENTER SERVING THE WESTERN RESIDENTIAL SECTOR IS REACHED IN THE OPPOSITE

DIRECTION BY CROSSING LAKE MIRIMICHI AND RISING SHARPLY TO A RIDGE APPROXIMATELY 50' ABOVE THE TOWN CENTER. THERE IS A GOOD CONNECTION TO THE TOWN CENTER AND THE OPPOSITE RESIDENTIAL CENTER BOTH VISUALLY AND IN TERMS OF ACCESSIBILITY.

THE NEIGHBORHOOD CENTERS, WITH ONLY A FEW EXCEPTIONS, ARE LOCATED ALONG THE WATERWAYS. THE ACTIVITIES LOCATED AROUND THESE CENTERS WILL GENERATE TALLER BUILDINGS THAN IN THE ADJACENT AREAS, SO THAT FROM THE OTHER SITE LOCATIONS AFFORDING GOOD VIEWS OF THE TOWN, THE LOCATION OF THE WATERWAYS WILL BE EXPRESSED EVEN THOUGH INVISIBLE BENEATH THE FOLIAGE (EXCEPT IN THE OBVIOUS CASE OF LAKE MIRIMICHI). THE WATERWAYS ALSO SERVE TO CONNECT THE CENTERS WITH A PEDESTRIAN SYSTEM. SINCE IT IS NECESSARY TO BRIDGE THE WATER FOR AUTOMOBILE TRAFFIC, IT BECOMES QUITE SIMPLE TO CHANNEL PEDESTRIAN TRAFFIC UNDER THE SAME BRIDGES. SINCE THE AMENITIES OF THE WATERWAYS AND CENTERS ALONG THEM GENERATE A HIGH PRIORITY ON LAND, ONLY PASSIVE RECREATIONAL ACTIVITIES OCCUR ALONG THEM. THE MORE ACTIVE, LAND CONSUMING RECREATIONAL ACTIVITIES OCCUR ELSEWHERE.

INTERSTATE 95 PASSES OVER A LARGE HILL APPROXIMATELY 150' ABOVE THE TOWN CENTER TO THE EAST. IT THEN CURVES AND DROPS TO THE CLOVERLEAF ON THE MAIN AXIS OF THE TOWN AND AGAIN RISES TO A HEIGHT APPROXIMATELY 150' ABOVE THE CENTER TO THE SOUTHWEST OF THE SITE. ALSO, THREE OF THE FOUR REGIONAL ACCESSES COME IN OVER HIGH GROUND. WITH PLANNED CLEARINGS ALONG THESE ROADS EXCELLENT VIEWS OF THE TOWN AND ITS VARIOUS CENTERS WILL EXIST.



TOPOGRAPHICAL INFLUENCE

MAJOR ELEMENTS OF SITE AND NEW SETTLEMENT

LAND USES

THE TOWN CENTER HAS THREE MAJOR FUNCTIONS: A SHOPPING CENTER FOR THE REGIONAL POPULATION, THE MAIN TOWN CENTER FOR THE NEW SETTLEMENT, AND A LOCAL SHOPPING CENTER FOR THE RESIDENTS HOUSED WITHIN THE CENTER. ALONG THE MAIN TOWN AXIS ARE LOCATED ALL MAJOR TOWN FUNCTIONS WHICH RELATE EITHER TO THE REGION OR TO THE TOWN AS A WHOLE. THE COLLEGE IS AT ONE END OF THE AXIS, THE INDUSTRIAL PARK AT THE OTHER. LYING BETWEEN AND ENCLOSED BY THE TWO PARALLEL MAIN TOWN ROADS ARE THE COMMERCIAL, CIVIC, GOVERNMENTAL, MEDICAL, CENTRAL EDUCATIONAL, AND CENTRAL RECREATIONAL FUNCTIONS. THE MAJOR COMMERCIAL ACTIVITIES ARE LOCATED AT THE SOUTH END OF THE TOWN CENTER AND ARE EXPECTED TO GROW IN THE SOUTHERN DIRECTION TOWARD INTERSTATE 95 AND THE REGIONAL PULL. THE OTHER ACTIVITIES CONTAINED WITHIN THIS CENTRAL BELT ALONG THE MAIN AXIS WILL GROW TO THE NORTH WHERE THE COLLEGE IS LOCATED.

THE RESIDENTIAL AREAS EXTEND EAST AND WEST ON EITHER SIDE OF THE TOWN CENTER. ALL MAJOR GROWTH IS EXPECTED TO OCCUR ACCORDING TO A LINEAL PRINCIPLE NORTH AND SOUTH PARALLEL TO THE MAIN AXIS.

THE INDUSTRIAL PARK WHICH IS LOCATED AT THE SOUTHERN END OF THE DEVELOPMENT IS SEPARATED FROM THE TOWN BY INTERSTATE 95 WHICH WILL CONNECT THE PARK TO THE REGION.

THE PARK IN THIS POSITION WILL CREATE A DEMAND FOR HOUSING TO THE SOUTH OF THE EXISTING RESIDENTIAL AREAS, PARALLELLING OR EXCEEDING THE SOUTHERN GROWTH OF THE COMMERCIAL CENTER.

THE COLLEGE AT THE NORTHERN END OF THE MAIN AXIS IS A CENTER FOR HIGHER EDUCATION FOR THE IMMEDIATE REGION. IT WILL AID IN THE EXPANSION OF COMMERCIAL ACTIVITY AND WILL GENERATE GROWTH AND IMPROVE THE QUALITY OF THE CIVIC, CULTURAL, AND EDUCATIONAL FACILITIES LOCATED AT THE NORTHERN END OF THE TOWN CENTER. IN ORDER TO CARE FOR THE INFLUX OF STUDENTS AND FACULTY, THERE WOULD ALSO BE A DEMAND FOR HOUSING TO THE NORTH OF THE EXISTING RESIDENTIAL AREAS.

THE SENIOR HIGH SCHOOL IS ALSO LOCATED IN THE CENTRAL BELT NORTH OF THE TOWN CENTER AND WOULD PROBABLY SHARE ATHLETIC AND RECREATIONAL FACILITIES WITH THE TOWN AND THE COLLEGE.

OTHER LAND USES, SUCH AS RELIGIOUS, EDUCATIONAL, AND COMMERCIAL, WHICH REQUIRE A CLOSER RELATIONSHIP TO THE RESIDENTIAL AREAS OF THE TOWN ARE LOCATED WITHIN A HIERARCHY OF RESIDENTIAL NODES WHICH IN THIS REPORT ARE CALLED RESIDENTIAL CENTERS.

THESE CENTERS ARE STRONGLY RELATED TO ONE ANOTHER AND THE RELATIONSHIP IS CONSISTENT. THUS THE RELATION OF THE TOWN CENTER TO THE REGION IS SIMILAR TO THE RELATIONSHIP OF THE MAJOR RESIDENTIAL CENTER TO THE TOWN CENTER, WHICH IN TURN IS SIMILAR TO THE RELATIONSHIP OF THE NEXT LOWER CENTER IN THE ORDER TO THE MAJOR RESIDENTIAL CENTER, AND SO ON DOWN INTO THE SMALLEST RESIDENTIAL CENTER. WHILE THE INTENSITY OF THESE CENTERS MAY VARY, THEY OFFER A DIVERSITY OF DIFFERENT LEVELS OF ACTIVITY WHICH IS IN CHARACTER AND SCALE WITH THE AREAS THEY SERVE.

CIRCULATION CONCEPT

IN THE REPORT NEW TOWN DEVELOPMENT, THE HOOK STUDY (RIBA JOURNAL, FEBRUARY, 1962), MR. JOHN CRAIG, TOWN DEVELOPMENT OFFICER, MAKES THE STATEMENT "...SUPPOSING YOU HAD BEEN AN ARCHITECT...(IN 1900) LOOKING AT THE HORSEDRAWN TRAFFIC, WHAT SORT OF A TOWN WOULD YOU HAVE NOW IF YOU HAD PLANNED ON THE BASIS OF TWO HORSES PER FAMILY, EACH WITH ADEQUATE STABLING?"

THE OBVIOUS IS THAT NO ONE'S CRYSTAL BALL HAS MUCH CLARITY AND NO AUTHORITY IS REALLY WILLING TO SPECULATE MUCH ON HOW WE WILL BE GETTING ABOUT VERY FAR IN THE FUTURE. HOWEVER, THERE DO SEEM TO BE TWO PRINCIPLES ON WHICH ONE MIGHT BASE PREDICTIONS.

THE FIRST IS THAT ANY NEW SYSTEM THAT IS DEVELOPED WILL PROBABLY NOT SPRING FULL BLOWN INTO EXISTENCE GENERATING ITS OWN CIRCULATION NETWORK, BUT WILL BE A DEVELOPMENT DERIVED FROM, AND ADAPTABLE TO, EXISTING CIRCULATION SYSTEMS. ROUTE 1 PASSING THROUGH THE SITE IS AN EXTENSION OF THE OLD WASHINGTON STREET CONNECTION ACROSS THE SHAWMUT PENNINSULA AND IS ONE OF THE OLDEST HIGHWAYS IN THE UNITED STATES. INDEED IN OTHER PARTS OF THE WORLD GAS POWERED VEHICLES ARE NOW TRAVELING ON ROADS THAT ONCE CARRIED ROMAN CHARIOTS. IT IS THEREFORE LIKELY THAT THE STREET SYSTEM WILL BE THE HERITAGE OF ANY NEW TRANSPORTATION SYSTEM, BE IT ASSET OR LIABILITY, AND THEREFORE SHOULD BE DESIGNED WITH THIS IN MIND.

THE SECOND PRINCIPLE IS ONE OF INCREASING DEVELOPMENT IN PARALLEL TRANSPORTATION SYSTEMS: ONE CARRYING NON-STOP TERMINAL TO TERMINAL OR NODE TO NODE TRAFFIC, THE OTHER CARRYING LOCAL-STOPPING TRAFFIC. THIS IS OBVIOUSLY THE CASE IN THE RELATIONSHIP OF NEW INTERSTATE 95 TO HIGHWAY 1, JUST AS WITH INTERSTATE 90 (MASSACHUSETTS TURNPIKE) TO HIGHWAY 9, AND HIGHWAY 24 TO 138. MANY OTHER SIMILARITIES MAY BE DRAWN: THE SUBWAY TRAVELING FROM NODE TO NODE WITH SURFACE BUS OR TROLLEY PARALLEL ROUTES, AIRLINE NON-STOP AND LOCAL-STOPPING ROUTES, AND EVEN NON-STOP EXPRESS AND LOCAL ELEVATOR SYSTEMS IN HIGH BUILDINGS.

THE QUESTIONS ARISE AS TO HOW FAR DOWN IN THE DESCENDING ORDER CAN THIS PRINCIPLE BE SENSIBLY APPLIED WITHIN THE STREET SYSTEM, WHAT ARE THE IMPLICATIONS ON THE FORM OF THE CITY, AND OF COURSE FINALLY, WHAT DOES ONE SACRIFICE FOR THE SYSTEM. THESE QUESTIONS ARE DISCUSSED IN THE FOLLOWING PARAGRAPHS.

FOR THE PURPOSES OF THIS REPORT THE TERMS "CONTROLLED ACCESS" AND "FREE ACCESS" ARE USED TO DESIGNATE THE DIFFERENCE IN THE TWO TYPES OF ROADS WITHIN THE SYSTEM. THIS IS TO EXCLUDE THE USUAL CONNOTATIONS AND EXPECTATIONS OF "LIMITED ACCESS" AND "SERVICE ROAD" WHICH DO NOT APPLY WELL TO THIS SYSTEM.

IN THIS PLAN THE DESCENDING ORDER OF CONTROLLED ACCESS AND FREE ACCESS ROADS CONTINUES DOWN INTO THE SMALLEST NEIGHBORHOOD UNIT. NEW INTERSTATE 95 USES A LIMITED ACCESS SYSTEM WITH INTERSECTIONS SPACED ABOUT EVERY FOUR MILES. THE BOSTON CENTRAL ARTERY NECESSARILY PLACES THEM MUCH CLOSER. HOWEVER, THESE ARE GRADE SEPARATION INTERCHANGES WHICH ARE LAND CONSUMING AND EXPENSIVE TO BUILD. WITHIN THE SYSTEM OF THIS PLAN, ONCE ONE LEAVES THE CENTRAL CONTROLLED ACCESS ROAD ALL INTERSECTIONS ARE ON GRADE AND CONTROLLED BY LIGHTS AND STOP SIGNS WHERE NECESSARY. THE SPEED ON THE CONTROLLED ACCESS ROADS IS NOT HIGH, PROBABLY IN THE 30 TO 40 MPH. RANGE, AND TRAFFIC IS SLOWED AT THE NODES OR RESIDENTIAL CENTERS WITH GRADE ACCESS TO THE ACTIVITIES LOCATED THERE. IN EACH INSTANCE WHERE ONE LEAVES A CENTER IN THE DIRECTION OF THE NEXT CENTER OF SMALLER SIZE, THERE IS AN IMMEDIATE INTERSECTION ALLOWING ACCESS TO THE ADJACENT RESIDENTIAL SECTOR. THE PRIMARY ADVANTAGE IS THAT INTERSECTIONS OCCUR INFREQUENTLY, AND EVEN WHEN THE SYSTEM REACHES ITS SMALLEST ORDER, THE INTERRUPTION AND DANGER OF TRAFFIC EMERGING FROM DRIVEWAYS OR PARKING SPACES IS ELIMINATED. IN ADDITION TO THE BASIC QUALITY OF RELATIVELY DIRECT TRAFFIC FLOW, IT BECOMES APPARENT THAT IF ALL ACTIVITIES REQUIRING ANY KIND OF PUBLIC CONTACT ARE LOCATED AT THE VARIOUS CENTERS, THERE IS ABSOLUTELY NO TRAFFIC WITHOUT A RESIDENTIAL DESTINATION (OR ORIGIN) ON RESIDENTIAL OR FREE ACCESS STREETS (WITH THE EXCEPTION OF THE FREE ACCESS STREETS ENCLOSING THE CENTRAL

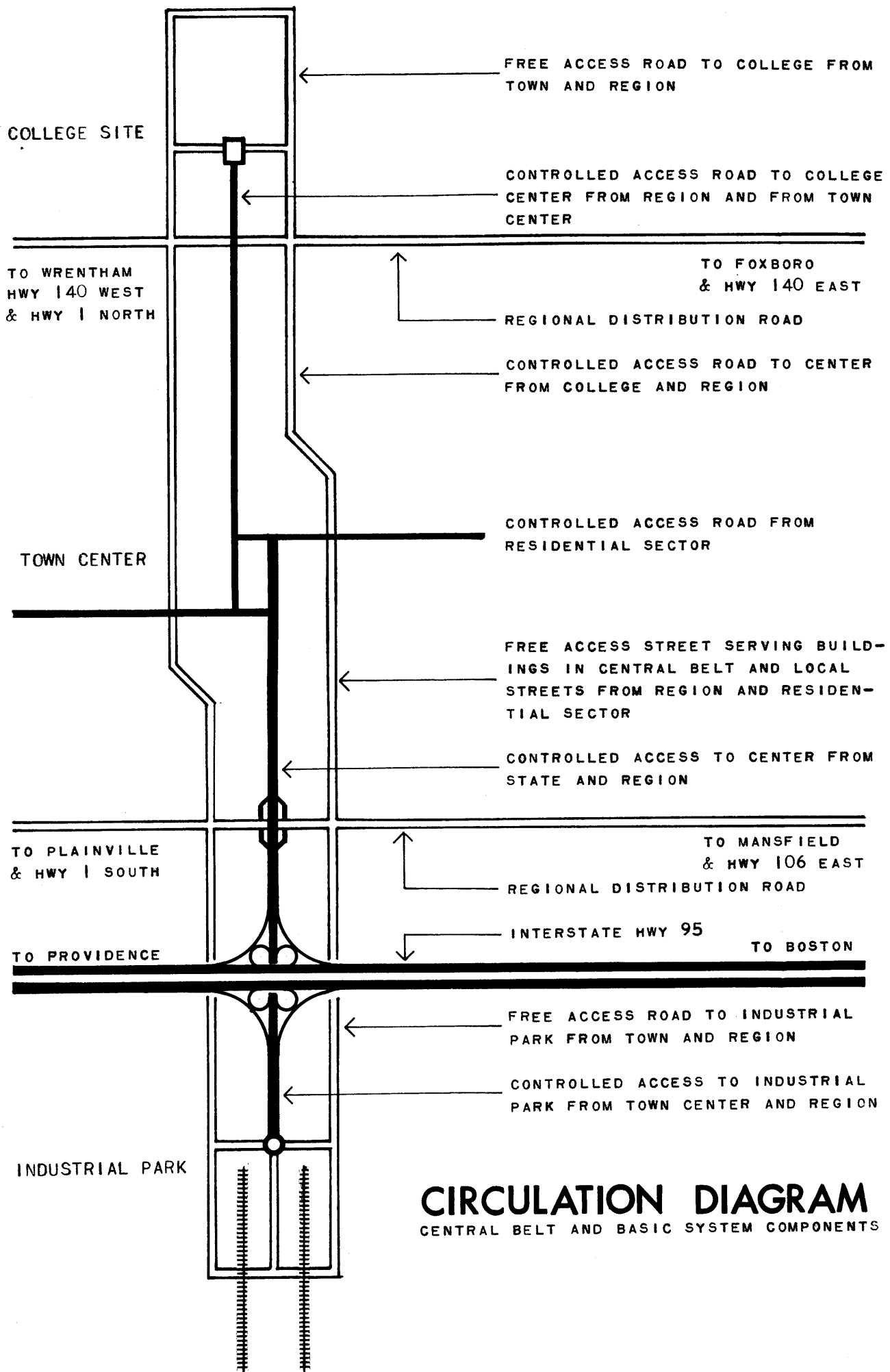
BELT). THUS IT BECOMES POSSIBLE FOR A SCHOOL SUPERINTENDENT TO VISIT THE SCHOOLS, OR THE BREAD TRUCK TO MAKE DELIVERIES TO THE NEIGHBORHOOD GROCERIES WITHOUT PASSING A SINGLE RESIDENTIAL DRIVEWAY. THE INTERESTING DEVELOPMENT IS THAT THE NEIGHBORHOOD UNITS THEMSELVES FORM A TRUE HIERARCHICAL RELATIONSHIP. TWO NEIGHBORHOODS WITH SMALL CENTERS FORM AROUND A LARGER CENTER, WHICH THEN COMBINES WITH ANOTHER GROUP TO FORM A NEW NUCLEUS AND SO ON. WHILE THERE IS AN OVERLYING CONTROLLED ACCESS NETWORK, DIRECT NEIGHBORHOOD TO ADJACENT NEIGHBORHOOD ACCESS STILL EXISTS. IT THEREFORE BECAME CLEAR THAT THERE WERE CONSIDERABLE ADVANTAGES EVEN AT A VERY SMALL SCALE.

THE IMPLICATIONS ON THE FORM OF THE NEW SETTLEMENT INDICATE THAT AT THE NODES THE DENSITY AND HEIGHTS OF THE BUILDINGS SHOULD BE EXPRESSIVE OF A CONCENTRATION OF ACTIVITY. ALSO, SINCE THE CONTROLLED ACCESS STREETS CARRY FASTER AND GREATER AMOUNTS OF TRAFFIC, THE ARCHITECTURE RELATED TO THEM MUST BE OF APPROPRIATE SCALE, GENERATING RHYTHMS APPROPRIATE TO THE SPEED OF THE TRAFFIC. THE SMALLER SCALE ARCHITECTURE WOULD BE MORE RELATED TO THE SLOWER STREETS. IT IS ALSO REASONABLE TO EXPECT THAT IF A FUTURE, FASTER MEANS OF TRANSPORTATION IS DEVELOPED ALONG THE CONTROLLED ACCESS SYSTEM, THE USE OF REASONABLY STRAIGHT STREETS WITH NO SHARP CROOKS OR BENDS WOULD BE ADVISABLE.

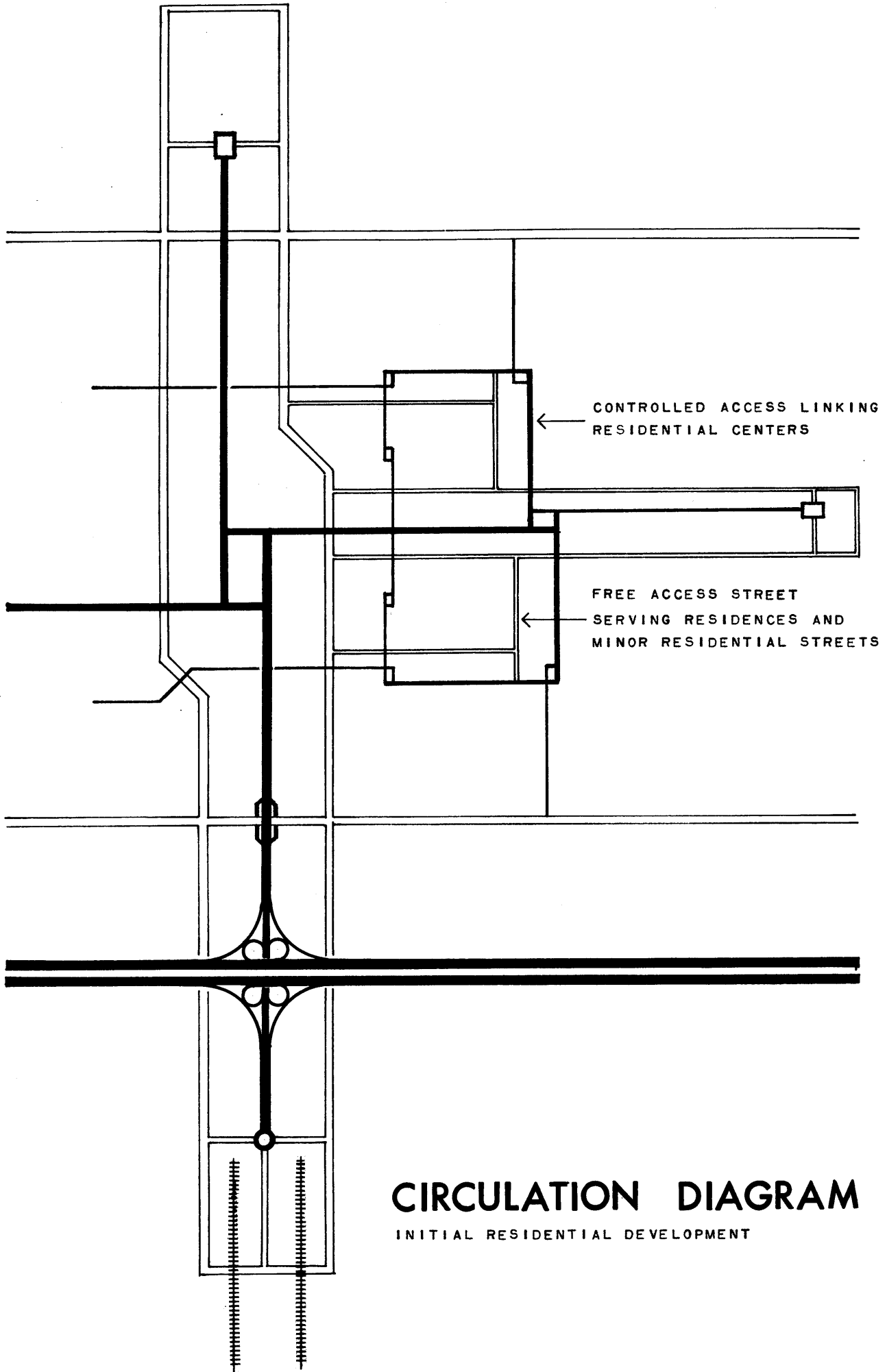
THE SACRIFICES FOR THE SYSTEM ARE PRIMARILY ECONOMIC, BUT THESE ARE NOT GREAT. THE GREATEST EXPENSE IS FOR PROVIDING GRADE SEPARATIONS FOR PEDESTRIAN CROSSINGS WHERE THEY OCCUR OUTSIDE OF THE WATER SYSTEM. INITIALLY IT WAS EXPECTED THAT SINCE THERE WERE PARALLEL SYSTEMS THERE WOULD BE A CERTAIN DEGREE OF REDUNDANCY INHERENT AND THE COST OF PAVEMENT AND USE OF LAND MIGHT INCREASE. THIS INCREASE COULD HAVE BEEN JUSTIFIED, HOWEVER, ON THE BASIS OF THE ECONOMIC ADVANTAGES OF TIME SAVING COMMUNICATION WITHIN THE CITY. AS THE PLAN DEVELOPED IT BECAME CLEAR THAT WHILE THERE IS AN INCREASE IN THE TOTAL LENGTH OF STREETS, THE ACTUAL SQUARE FOOTAGE OF STREET AREA IS REDUCED, (THESE ARE VERY ROUGH ESTIMATES

BASED ON COMPARISON TO A GRIDIRON PATTERN) AND THAT BECAUSE OF THE HIERARCHAL NATURE THERE IS A SAVINGS RESULTING FROM THE USE OF AN APPROPRIATE APPLICATION OF THE PROPER ROAD BED SPECIFICATIONS WHICH ARE RELATED TO THE INTENSITY OF USE. FINALLY, BECAUSE OF THE VERY LOW ORDER OF INTENSITY WITHIN THE STREETS SERVING THE DETACHED AND SEMI-DETACHED HOUSES, DRIVEWAYS AND SETBACKS CAN BE VERY SMALL, RESULTING IN BOTH LAND AND ECONOMIC SAVINGS. A DANGER IN THE SYSTEM IS THAT THE CONTROLLED ACCESS ROADS MIGHT SEVER RESIDENTIAL AREAS. THEREFORE THE RESIDENTIAL CENTERS AND THE STREET ARCHITECTURE MUST BE DESIGNED TO MAKE THIS A JOINT RATHER THAN A SEVERANCE.

TO SUMMARIZE THEN IT MAY BE SAID THAT THE CIRCULATION SYSTEM HAS TWO PARALLEL COMPONENTS; ONE IS CONTROLLED ACCESS AND NON-STOP IN CHARACTER, AND THE OTHER IS A FREE ACCESS, LOCAL-STOPPING DISTRIBUTION ROAD. THE CONTROLLED ACCESS IS ESSENTIALLY A GRIDIRON WITH NODES AT THE INTERSECTIONS. THE INTERSECTIONS WERE DESIGNED AS PINWHEELS FOR THREE REASONS: 1. IT IS DESIRABLE TO PROVIDE A METHOD OF CIRCLING OR REVERSING DIRECTION 180° WITHOUT "GOING AROUND THE BLOCK". 2. THE NODES ARE TRANSITION JOINTS FROM AREAS OF ONE CHARACTER TO ANOTHER OR FROM ONE LEVEL OF NEIGHBORHOOD UNIT TO ANOTHER AND SHOULD BE EXPRESSED IN THE CIRCULATION SYSTEM. 3. THEY DISTINGUISH IN THE SYSTEM THE INTERSECTIONS BETWEEN ONE CONTROLLED ACCESS ROAD AND ANOTHER FROM THE INTERSECTION OF A CONTROLLED ACCESS ROAD AND A FREE ACCESS ROAD. IN THE FUTURE THE NODES MAY SERVE AS TERMINAL POINTS FOR A HIGH SPEED PUBLIC TRANSIT SYSTEM OR POINTS WHERE ONE'S AUTOMOBILE MAY BE PROGRAMMED INTO SOME AUTOMATED SYSTEM WHICH WOULD THEN TAKE OVER AND DEPOSIT THE VEHICLE AT SOME OTHER PRE-SELECTED NODE. IN THE MEANTIME THE SYSTEM SERVES WELL FOR THE EXISTING AUTOMOTIVE MEANS OF TRANSPORTATION.

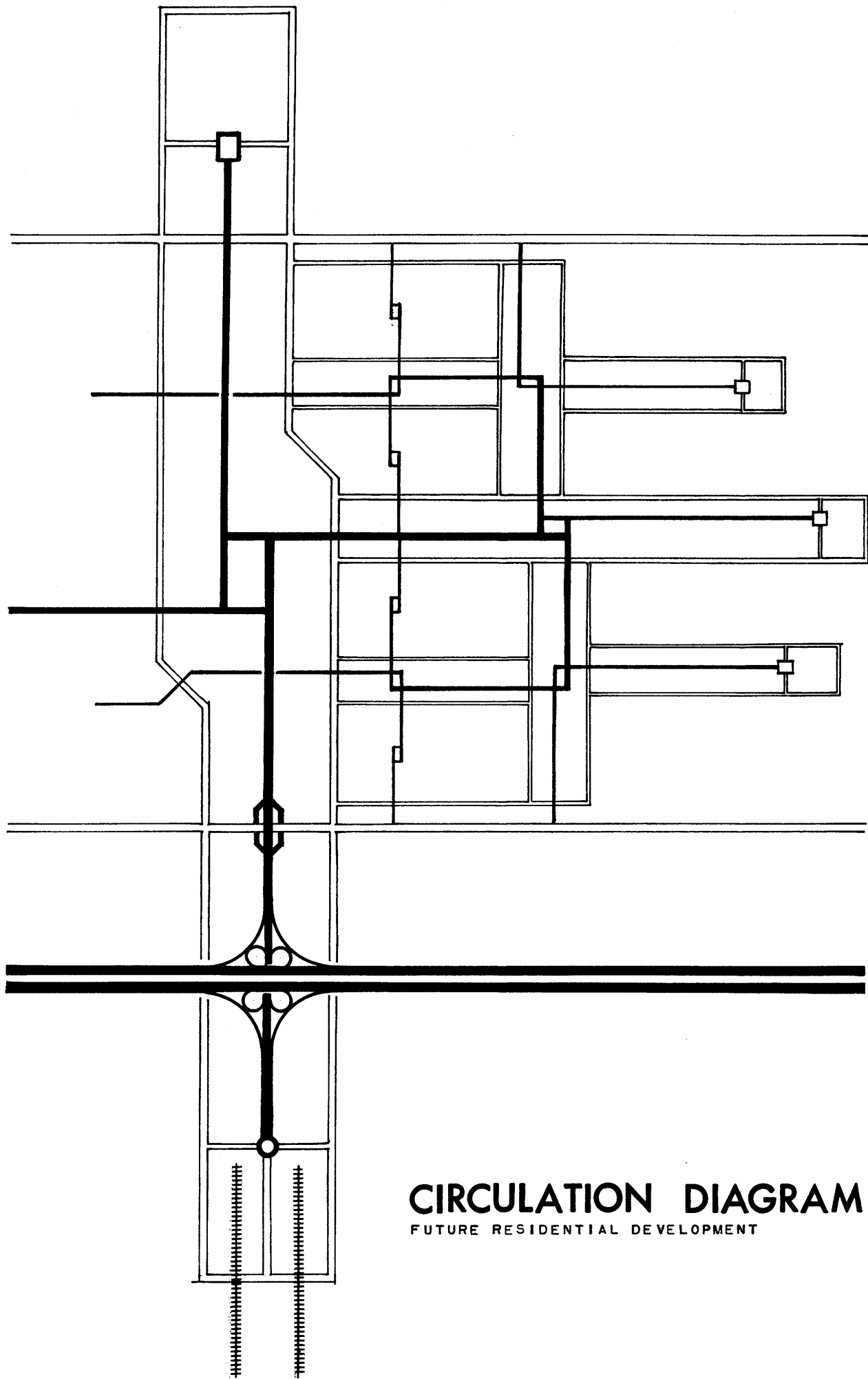


CIRCULATION DIAGRAM
CENTRAL BELT AND BASIC SYSTEM COMPONENTS



CIRCULATION DIAGRAM

INITIAL RESIDENTIAL DEVELOPMENT



CIRCULATION DIAGRAM
FUTURE RESIDENTIAL DEVELOPMENT

RESIDENTIAL SECTION

CHARLES B. THOMSEN

RESIDENTIAL SECTION

THIS REPORT INTRODUCING THE RESIDENTIAL SECTION DESIGNED BY CHARLES B. THOMSEN IS PRESENTED IN THREE PARTS: (1) DISTRIBUTION OF DENSITY, (2) SOCIAL CONSIDERATIONS, (3) LANDSCAPE CHARACTER AND PEDESTRIAN CIRCULATION. OTHER ISSUES RELATIVE TO THE RESIDENTIAL SECTION HAVE BEEN DISCUSSED IN THE MASTER PLAN REPORT.

DISTRIBUTION OF DENSITY

FACTORS INFLUENCING AN INCREASE IN RESIDENTIAL DENSITY ARE:

- (1) PROXIMITY OR ACCESS TO AN ACTIVITY WHICH IS A FREQUENT TRIP DESTINATION (EMPLOYMENT, SHOPPING, SCHOOLS, PUBLIC TRANSPORTATION, ETC.)
- (2) AMENITY OF THE LOCATION (VIEW, EXCEPTIONAL TOPOGRAPHICAL FEATURES)

THE FIRST FACTOR IS OBVIOUSLY REASONABLE ON THE GROUNDS OF CONVENIENCE. A LESS OBVIOUS JUSTIFICATION IS THAT THE HIGHER DENSITIES WILL NUTURE ACTIVITIES WHICH IN TURN ATTRACT RESIDENTIAL DEVELOPMENT. THUS THE HIGHEST DENSITIES WOULD BE EXPECTED TO OCCUR NEAR THE TOWN CENTER OR ALONG ITS MAIN ACCESS ROUTES. THERE WILL ALSO BE A TENDENCY TO INCREASE DENSITY ADJACENT TO THE VARIOUS RESIDENTIAL CENTERS. FUTURE DEMAND BY THE INDUSTRIAL PARK WILL TEND TO GENERATE AN INCREASE IN DENSITY TO THE SOUTH, AND THE COLLEGE WILL GENERATE AN INCREASE TO THE NORTH, BUT THESE FORCES ARE NOT REFLECTED IN THE 25,000 POPULATION STAGE.

WHEN THE SECOND FACTOR IS CONSIDERED, IT SEEMS MOST PROBABLE THAT INCREASED DENSITY WOULD OCCUR ALONG THE WATERWAYS, AROUND THE LAKES, ON THE TOP OF THE KNOLL TO THE EAST OF THE TOWN CENTER, AND ALONG THE RIDGE TO THE WEST OF LAKE MIRIMICHI.

THE LOGICAL APPROACH TO THE PLAN OF THE RESIDENTIAL AREAS THEREFORE IS BEST SERVED BY PROVIDING CONDITIONS WHERE BOTH FACTORS ARE FOUND SIMULTANEOUSLY. THIS APPROACH WOULD TEND TO DIFFERENTIATE MORE BETWEEN HIGH AND LOW DENSITIES. (THE OPPOSITE APPROACH WOULD CREATE A MORE EVEN DISTRIBUTION AND WOULD SEEM SCHIZOPHRENIC IN CONCEPT.)

THEREFORE THE MAJOR RESIDENTIAL CENTERS HAVE BEEN LOCATED ON THE KNOLL AND ON THE OPPOSITE RIDGE WITH MAJOR ACCESS ROADS TO THE CENTER. CONTINUING THIS APPROACH THEN, THE SMALLER RESIDENTIAL CENTERS ARE LOCATED WHEREVER POSSIBLE ALONG THE WATERWAYS.

WHILE THESE ISSUES DETERMINE RELATIVE DENSITIES THEY DO NOT PROVIDE ANSWERS IN TERMS OF PERSONS PER ACRE. THESE ANSWERS RESULT FROM THE DETERMINATION OF ACTUAL HOUSING TYPES SUITABLE FOR THE LARGE CROSS SECTION OF POPULATION RESIDING IN THE NEW SETTLEMENT. IN ORDER TO ARRIVE AT DESIGN DECISIONS FOR THE PROPER KINDS OF HOUSING, THE RELATIVE QUANTITIES OF EACH, AND THE TOTAL STRUCTURE OF THE RESIDENTIAL AREAS, SOCIAL DECISIONS MUST BE MADE.

SOCIAL CONSIDERATIONS

LEWIS MUMFORD IN HIS PHILADELPHIA ADDRESS SAID, "THE ASPECTS OF CULTURE WHICH MAKE A CITY LIVABLE, CANNOT BE EFFECTIVELY PURSUED WHERE PERSONAL INDIVIDUALITY AND CHOICE ARE ABSENT. TODAY'S BUILDINGS SHOULD... (AVOID) DESIGNS BASED ON STANDARDIZATION AND MECHANICAL REPETITION."* WHILE THE FIRST STATEMENT IS CERTAINLY CORRECT IT MAY BE ARGUED THAT GREAT VARIATION AND A WIDE INDIVIDUAL CHOICE ARE POSSIBLE IN A SYSTEM OF STANDARDIZATION THAT WOULD ALLOW ORDERLY VARIATION.

EXCEPT FOR TWO RATHER SMALL GROUPS THERE IS GREAT IMPETUS TO EXPRESS

*(PROGRESSIVE ARCHITECTURE, OCTOBER 1961, PAGE 124)

INDIVIDUALITY IN THE CHOICE OF A RESIDENCE, TO ASSOCIATE ONESELF WITH AN AREA WHICH IS NOT MARKED BY REPETITIVE HOUSING, AND TO MODIFY A RESIDENCE IN AN INDIVIDUAL WAY. AS LONG AS THERE IS A STRONG OVERLYING UNITY IN THE DESIGN, INDIVIDUAL VARIATION IN THE UNITS (EVEN THOUGH THEY MAY NOT EXPRESS THE BEST OF TASTE OR DESIGN PRINCIPLES) IS NOT CONSIDERED UNDESIRABLE. ON THE CONTRARY, THE TEXTURE AND DIVERSITY OF THE RESULTS WOULD BE APPROPRIATELY EXPRESSIVE OF THE FACT THAT A DIVERSITY IN THE POPULATION EXISTS AND WOULD ADD A RICHNESS THAT CONTEMPORARY HOUSING FREQUENTLY LACKS.

THE TWO GROUPS THAT DO NOT FEEL A STRONG NEED FOR INDIVIDUALITY IN A RESIDENCE CONSIST OF (1) PEOPLE OF A PARTICULARLY HIGH LEVEL WHO FIND THEIR WORK OR SOCIAL CONTACTS SO CONSUMING THAT THEY FEEL LITTLE NEED FOR OTHER EXPRESSION (ALTHOUGH IT IS ASSUMED THAT THERE WOULD BE NO OBJECTION ON THEIR PART OF LIVING IN A UNIT UNLIKE ITS NEIGHBOR) AND (2) PEOPLE, USUALLY OF A VERY LOW LEVEL OF PERSONAL IDEALS, WHO HAVE NOTHING TO EXPRESS OR LACK THE INCLINATION.

THE FIRST GROUP OFFERS NO PROBLEM; THE SECOND WE HOPE IN THE FIRST STAGE WILL NOT CONSTITUTE A LARGE ENOUGH DEMAND TO REQUIRE APPROPRIATE QUARTERS, ALTHOUGH IN THE FUTURE STAGES IT MAY BE NECESSARY.

AS TO THE PROPORTIONATE QUANTITY OF THE VARIOUS TYPES OF HOUSING, THE IMPORTANT ISSUE IS THAT THERE BE A CHOICE. AS LONG AS THERE IS A CHOICE, THE DEMAND (OR LACK OF DEMAND) FOR A PARTICULAR TYPE CAN BE DETERMINED AND THE PROPORTIONS CORRECTED IN LATER GROWTH STAGES. HOWEVER A DECISION MUST BE MADE, AND IN THIS PLAN DENSITIES CONSIDERABLY HIGHER THAN NORMAL FOR AMERICAN CITIES ARE EMPLOYED. THE LIMITATIONS ARE PRIMARILY IMPOSED BY THE HOUSING TYPES CHOSEN AND THE RELATIVE QUANTITIES OF EACH.

THE DESIGN IS BASED PRIMARILY ON HORIZONTAL HOUSING TYPES AS THE BEST METHOD OF ACHIEVING UNIT VARIATION. FURTHERMORE, PRIVATE OUTDOOR SPACE RELATED TO LARGER SEMI-PRIVATE OUTDOOR SPACES WAS FELT NECESSARY IN MOST CASES. WITHIN THE GENERAL CONFINES OF THIS CONCEPT DENSITIES WERE PUSHED TO RELATIVELY HIGH LIMITS.

"...IN THE CITY OF TODAY THERE ARE CERTAIN HIGHLY CHERISHED OBJECTIVES WHICH RESIDENTS CAN ACHIEVE ONLY BY SHARING FACILITIES."* THESE GOALS EXTEND THE GAMUT OF ACTIVITIES FROM COMMERCIAL, RELIGIOUS, SOCIAL, EDUCATIONAL, AND RECREATIONAL THROUGH TO THE MOST MUNDANE SERVICES SUCH AS STREETS AND PUBLIC UTILITIES. INCREASES IN DENSITY NOT ONLY SERVE TO GENERATE A DESIRABLE INCREASE IN THE FREQUENCY OF USE; IT ALSO PROVIDES A MORE ECONOMICAL METHOD OF CREATING SUCH FACILITIES AND SERVICES.

THE STRUCTURE OF THE RESIDENTIAL AREAS IS DIFFICULT TO DETERMINE OBJECTIVELY. THE CONCEPT OF A NEIGHBORHOOD IS AN ELUSIVE ONE AND THE TERM HAS BEEN DELIBERATELY AVOIDED AS OFTEN AS POSSIBLE. THE SOCIAL NEIGHBORHOOD FOR ONE FAMILY MAY BE ENTIRELY DIFFERENT FROM THE NEIGHBORHOOD OF THE FAMILY NEXT DOOR, INDEED WILL PROBABLY BE SOMEWHAT DIFFERENT FOR HUSBAND AND WIFE. SOME PERSONALITIES TEND TO OPERATE WELL IN SMALL GROUPS, OTHERS CATHECT MORE SUCCESSFULLY IN LARGER POPULATIONS. ON THE OTHER HAND, ONE DOES TEND TO GENERATE FRIENDSHIPS WITH THOSE NEARBY, AND AS DISTANCE INCREASES THE RELATIVE PERCENTAGE OF ACQUAINTANCES DIMINISHES. THEREFORE A RESIDENTIAL PLAN WHICH EXPRESSES ACTIVITY ON A MULTITUDE OF LEVELS BEGINNING WITH A SMALL CLUSTER OF RESIDENTIAL UNITS AND ENDING WITH THE RELATIONSHIP OF THE TOWN TO THE REGION IS PROPOSED. THERE ARE NEIGHBORHOOD UNITS, BUT THEIR EDGES HAVE BEEN DESIGNED AS JOINTS RATHER THAN BOUNDARIES AND THROUGH CIRCULATION TO OTHER UNITS EXISTS.

WHILE EACH NEIGHBORHOOD UNIT HAS A CENTER, IT IS RELATED TO A LARGER CENTER WHICH SERVES TO LINK IT WITH ANOTHER NEIGHBORHOOD UNIT AND ITS CENTER. THIS LARGER CENTER IS RELATED TO ANOTHER OF A HIGHER ORDER AND THE ASCENDING ORDER IS CONTINUED. (SEE DIAGRAMS ON PAGES 10, 11, AND 12.) IN EACH CENTER ARE LOCATED THE ACTIVITIES WHICH WOULD BEST RELATE TO THE AREA WITHIN ITS SPHERE OF INFLUENCE...I.E. AN ELEMENTARY SCHOOL IN THE SMALLEST UNIT, A JUNIOR HIGH AT A LARGER SIZE, THE SENIOR HIGH AT THE LARGEST, OR A SMALL STOCK OF GROCERIES,

* (PERRY, CLARENCE ARTHUR, "THE NEIGHBORHOOD UNIT", NEIGHBORHOOD AND COMMUNITY PLANNING, REGIONAL SURVEY OF NEW YORK AND ITS ENVIRONS, VOL. VII, 1929)

DRUGS, SUNDRIES AT THE SMALLEST CENTER, A SMALL SHOPPING CENTER AT THE MAJOR RESIDENTIAL CENTERS.

LANDSCAPE CHARACTER AND PEDESTRIAN CIRCULATION

TYPICAL AMERICAN HOUSING DEVELOPMENTS EMPLOY FRONT AND SIDE YARDS THAT ARE VIRTUALLY WORTHLESS. THEY ARE INADEQUATE AS SPACIAL EXPERIENCES, USELESS AS ACOUSTICAL OR VISUAL SEPARATION AND PROVIDE NO OUTDOOR LIVING SPACE. FURTHERMORE, THEY ARE LAND CONSUMING AND ARE MAINTENANCE LIABILITIES. THEREFORE FRONT SET BACKS ARE MINIMAL IN THE AREAS OF DETACHED AND SEMI-DETACHED HOUSES, ALLOWING ONLY FOR GUEST PARKING OR A SPACE TO PARK A CAR TO WASH IT OR OPERATE THE GARAGE DOOR. ELSEWHERE THEY ARE NON-EXISTENT OR LARGE ENOUGH TO CREATE A SPACIAL INCIDENT IN THE TOTAL DESIGN AND TO BE USEFUL AS AREAS OF ACTIVITY. SIDE YARDS ARE NON-EXISTENT EXCEPT IN THE AREAS OF THE DETACHED AND SEMI-DETACHED HOUSES WHERE THEY EXIST ON ONE SIDE ONLY AND ARE USED AS PRIVATE OUTDOOR LIVING AREAS. THE WALL OF THE ADJACENT HOUSE FACING THIS AREA WOULD HAVE NO FENESTRATION. SUCH A SIDE YARD WOULD ALSO BE SHIELDED FROM THE STREET BY OPAQUE FENCING.

MANY TRADITIONAL AMERICAN HOMES BEFORE THE ACCEPTANCE OF THE AUTOMOBILE, HAD FRONT PORCHES ON WHICH THE INHABITANTS OF THE HOUSE SAT AND GREETED THEIR NEIGHBORS AS THEY PASSED. THIS ACTIVITY WAS VALUABLE IN PROMOTING CHANCE SOCIAL CONTACTS. THE REAR WAS USED FOR STABLES AND SERVICES. THE IMPERSONAL AUTOMOBILE AND ITS ACCOMPANYING INCREASE IN TRAFFIC HAS INTROVERTED THE HOME SO THAT NOW ITS OUTDOOR SPACE FACES THE REAR. THE RESULT WAS THAT THE NEIGHBORLY QUALITY WAS LOST AND THE REAR, WHICH IN MOST CASES RETAINED ITS SERVICE USES, BECAME CONFUSED IN CHARACTER. IT WAS FELT THAT THE LOGICAL DEVELOPMENT THEN WOULD BE TO PROVIDE AUTOMOBILE AND SERVICE ACCESS TO ONE SIDE OF THE HOUSE AND RELATE THE OTHER SIDE TO A PRIVATE OUTDOOR SPACE.

THIS SPACE IN TURN RELATES TO A SEMI-PRIVATE AREA SERVING A CLUSTER

OF TEN TO TWENTY RESIDENCES, THUS REGAINING SOME OF THE NEIGHBORLY QUALITIES OF THE 1800'S. THE SEMI-PRIVATE AREA WOULD BE A NODE IN AN OVER-ALL PEDESTRIAN SYSTEM WHICH WOULD IN TURN CONNECT TO OTHER SEMI-PRIVATE AREAS AND TO SEMI-PUBLIC SPACES OF SPECIAL CHARACTER. THE PEDESTRIAN SYSTEM IN ONE DIRECTION CONNECTS HOUSING OF DIFFERENT DENSITIES WHICH CONTRIBUTES A DESIRABLE HETEROGENITY. THE LANDSCAPE CHARACTER ALSO BECOMES MORE SOPHISTICATED AS IT APPROACHES THE HIGHER DENSITIES. THE RELATIVE QUANTITY OF OPEN SPACE ALSO DIMINISHES WITH THE INCREASE IN DENSITY. ALONG THE OTHER AXIS THE PEDESTRIAN SYSTEM CONNECTS HOUSING OF LIKE DENSITIES, AND THE CHARACTER OF THE SYSTEM IS AGAIN MORE SOPHISTICATED IN THE AREAS OF HIGH DENSITY.

THE CENTERS ARE LINKED TOGETHER WITH A PEDESTRIAN SYSTEM (ALONG THE WATERWAY WHEREVER POSSIBLE) WHICH IS MANICURED IN LANDSCAPE CHARACTER. THE CORE OF EACH NEIGHBORHOOD UNIT IS PENETRATED BY OPEN, MORE NATURAL LAND WITH EXISTING TREE COVER SELECTIVELY THINNED TO PROVIDE HEALTHY GROWTH AND APPROPRIATE CLEARINGS. THIS RELATES TO THE LOWER DENSITY, SEMI-DETACHED AND DETACHED HOUSES WHICH ARE TUCKED BENEATH THIS FOLIAGE. THE ROW AND TOWN HOUSE UNITS EXIST IN A MIXTURE OF EXISTING TREES WITH SMALL FORMAL GROUPINGS AT PARTICULAR LOCATIONS. THE LARGER TOWN HOUSES, WALK-UPS, AND ELEVATOR APARTMENTS ARE IN AREAS OF NEARLY COMPLETE CLEARINGS WITH FORMAL OR HIGHLY DESIGNED LANDSCAPING.

THE MAJOR PARK SYSTEM IS GENERATED ALONG THE WATERWAYS AND PENETRATES THE CORE OF BOTH RESIDENTIAL SECTORS. IT THEN WRAPS AROUND THE REAR OF THE COLLEGE IN A LARGE RESERVATION AT ONE END AND MOVES THROUGH THE INDUSTRIAL PARK AT THE OTHER END. THUS FOR ONE WITH SUFFICIENT ENERGY IT BECOMES POSSIBLE TO WALK OR BICYCLE ENTIRELY AROUND AND THROUGH THE CITY WITHIN THE PARK SYSTEM.

Team No. III

Master Plan- Alan L. Fishman
Robert A. Mayers

Neighborhood- Robert A. Mayers

City Center - Alan L. Fishman

Alan L. Fishman

Robert A. Mayers

Master Plan

The new development that is expected to start with the completion of Interstate Route 95 will completely engulf this vicinity. It will spread across the landscape destroying what remnants of nature exist. Within the specified site area we propose a system to order this anticipated development and preserve the best aspects of the landscape for public recreation. This system provides a dense, compact city and reserves the unique woodland and lakes for public use by this city and those of the region. This public reservation will contain the mountains and the hills, thereby retaining their excellent views for the enjoyment of all.

The development follows the drainage through the valleys between the mountains and the high sand hills. The densest development is built upon the large scale sand plains and small scale sandy areas, which lend themselves most easily to earth moving and urban construction. This consistent relationship between the city's form and that of the topography allows each to be easily perceived by both the city dweller and the people enjoying the reservation.

The reservation envelopes the city and offers it a strong visual containment with tree-covered mountains and sand hills on the North, West, and East. The boundaries of the reservation are defined by major inter-regional roads (type a): Route # 1 (relocated to bypass the new city) on the North and West, Interstate Route # 95 on the South, and State Route # 140 on the East. (see diagram A).

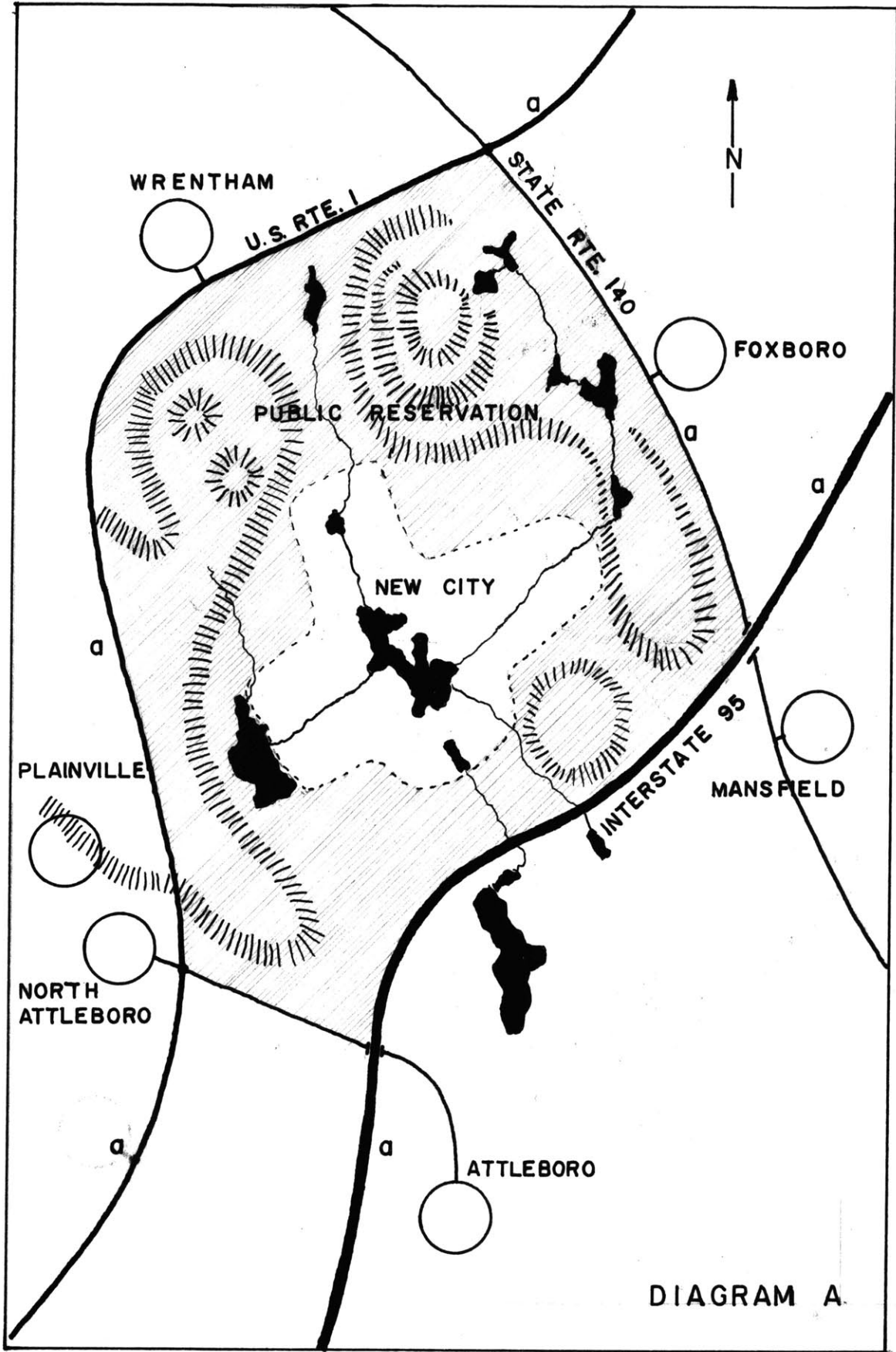
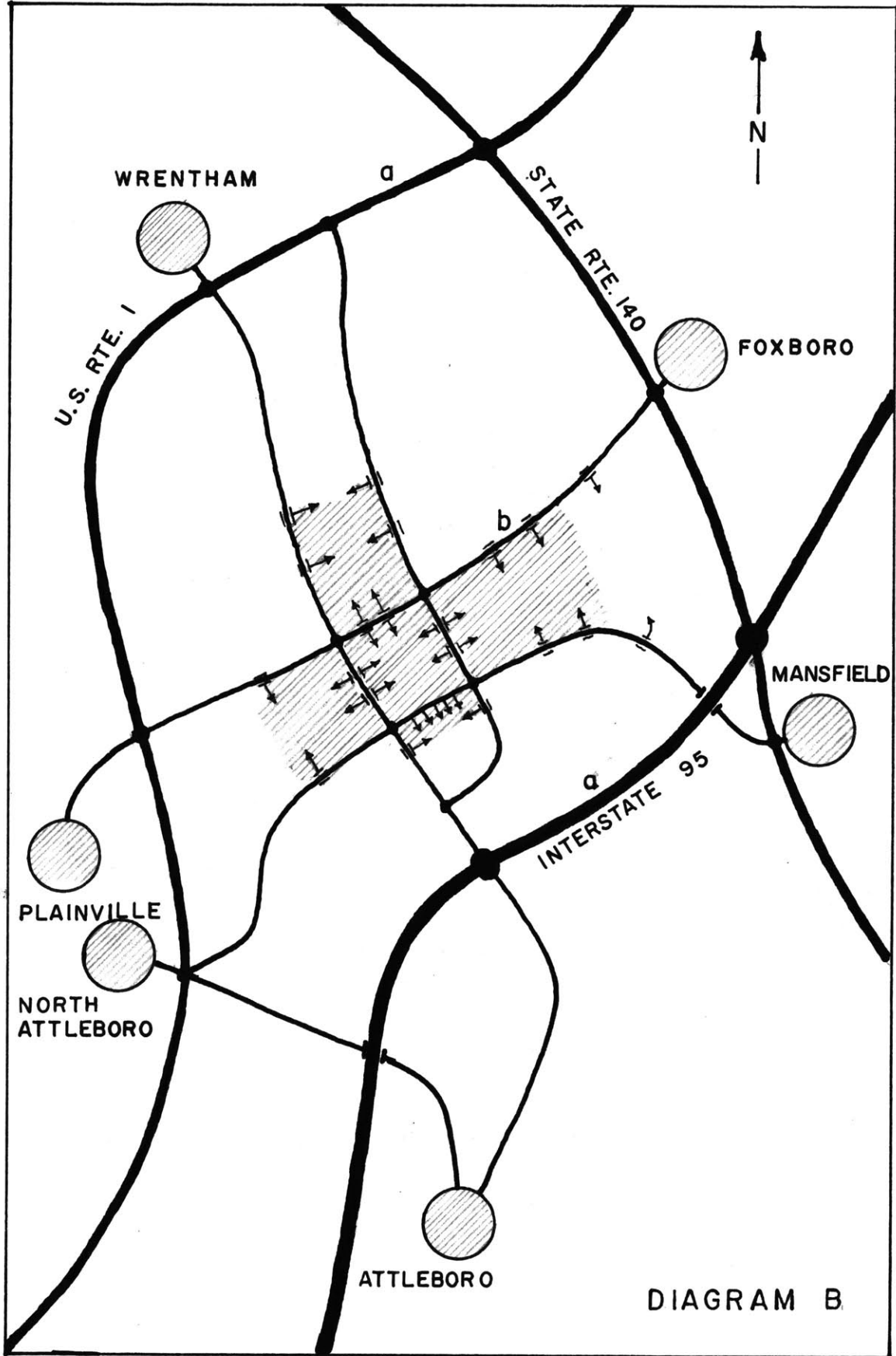


DIAGRAM A.

These inter-regional roads carry high speed, limited access traffic through the region. The new city is at once in close proximity with these inter-regional roads and insulated from them by the public reservation. A second system of roads, the intra-regional network (type b), carries traffic within the region. (see diagram B)..

The residential development of the new city consists of dense "chains", the links of which are neighborhoods of 2500 to 25,000 each. The intra-regional road network encloses each "chain" with a pair of roads. The nearby towns may be considered further links in the chain of neighborhoods. These towns are connected with the new city's neighborhoods and center by the intra-regional road network. This network thus carries traffic from regional and city neighborhoods to the center, or to other neighborhoods. The network also creates a strong link between the center and the inter-regional road system. The intra-regional roads are of lower speed than the inter-regional, of course, but movement is facilitated by a limited number of intersections.

Each link of the dense residential "chains" is not only enclosed by the intra-regional road network, but is surrounded by the public reservation, which penetrates the neighborhoods at points where the junior high school and elementary schools can be found. The center of each link is a man-made urban park containing lakes created by damming the site drainage courses. The links form three chains of



development, each of which follows a principal drainage artery. (see diagram C). These drainage arteries are formed by headwater lakes in the public reservation, and converge at Lake Mirimichi. It is here that the chains converge to form the densest residential development and the city center.

There are basically three types of neighborhoods (links in the chain), although each neighborhood possesses a character of its own, in order that it may be readily distinguished from the next.

Type 1 neighborhood (diagram C) is a link between the town center and the three chains. It has the highest density and consists mainly of elevator apartments. It is subdivided into four minor neighborhoods, each of which groups about a major body of water created by redamming Lake Mirimichi. This type of neighborhood contains the largest population of all. It also has a high school.

Type 2 neighborhood is the most complex. It contains the largest variety of housing types, and the second largest population (18,000), as well as a high density. This neighborhood has been designed in detail and will be explained in this report. This neighborhood serves as a link between type 1 and type 3.

Type 3 is a special neighborhood of high density which contains only elevator apartments. Adjacent to this neighborhood is the high school, contained within the public reservation.

Each neighborhood type contains a junior high

school, elementary schools, and minor shopping.

Within the neighborhoods there is another system of roads which connects to the intra-regional network. (diagram - C). This neighborhood road system consists of types c, d, and e.

Type e roads are completely within the neighborhood and directly serve the residences. They are collected into type d roads. Those type d roads which follow the continuous urban parks link to type d roads of the adjacent neighborhoods. While these roads are inter-neighborhood to a certain extent, they do not have the accessibility to distant neighborhoods or to the city center which the type b intra-regional roads possess. Type c roads collect the type d roads and feed into the intra-regional system.

The intra-regional roads lie within the public reservation; while the roads along the urban parks lie completely within the densely developed "urban chains". The other road types pass through both conditions. A variety of experiences is thus afforded the driver, and a strong architectural expression is given to those roads contained within the "chains".

In both the town center and the neighborhood there has been a conscious effort to define the proper relationships between landscape and building, building and pedestrian, pedestrian and automobile. How these relationships are achieved will be explained in detail.

In addition to the neighborhood links, each "chain" has a unique character emphasized at its termination.

The "chain" following the westward drainage artery terminates at Turnpike Lake with a type 3 neighborhood. The eastward "chain" is terminated by a low density neighborhood of single family dwellings framed by a high sand hill and insulated from one another by the wooded reservation. The northward "chain" ends with a special link containing regional facilities such as: the hospital, stadium, and a junior college. Each "chain" contains a type 2 neighborhood, but each of these in turn has a different character within its urban park.

In addition to the residential "chains" and the town center, there is an industrial park between the town center and Interstate Route # 95. This industry is served by the railroad which connects Boston to Providence. A railroad terminal which serves both passenger and freight traffic will be located adjacent to the center and within the industrial park.

The growth of the city occurs in five stages. (see diagram D). The original stage (25,000) will start at Lake Mirimichi and develop along the westward drainage artery ending at Turnpike Lake, thus serving as a strong connection between the two lakes. One of the three chains is thus formed at the initial stage. In the final stage a population of 107,000 will reside in chains of development formed along all three of the drainage arteries.

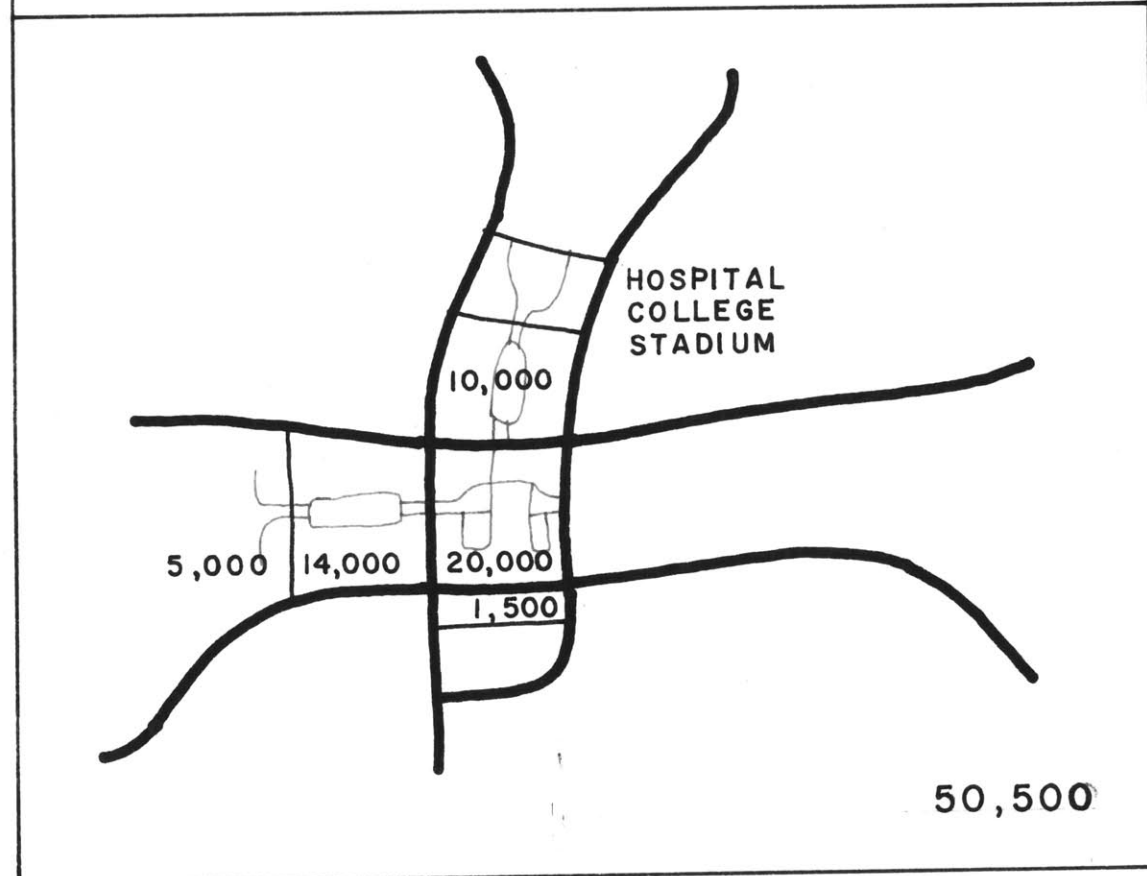
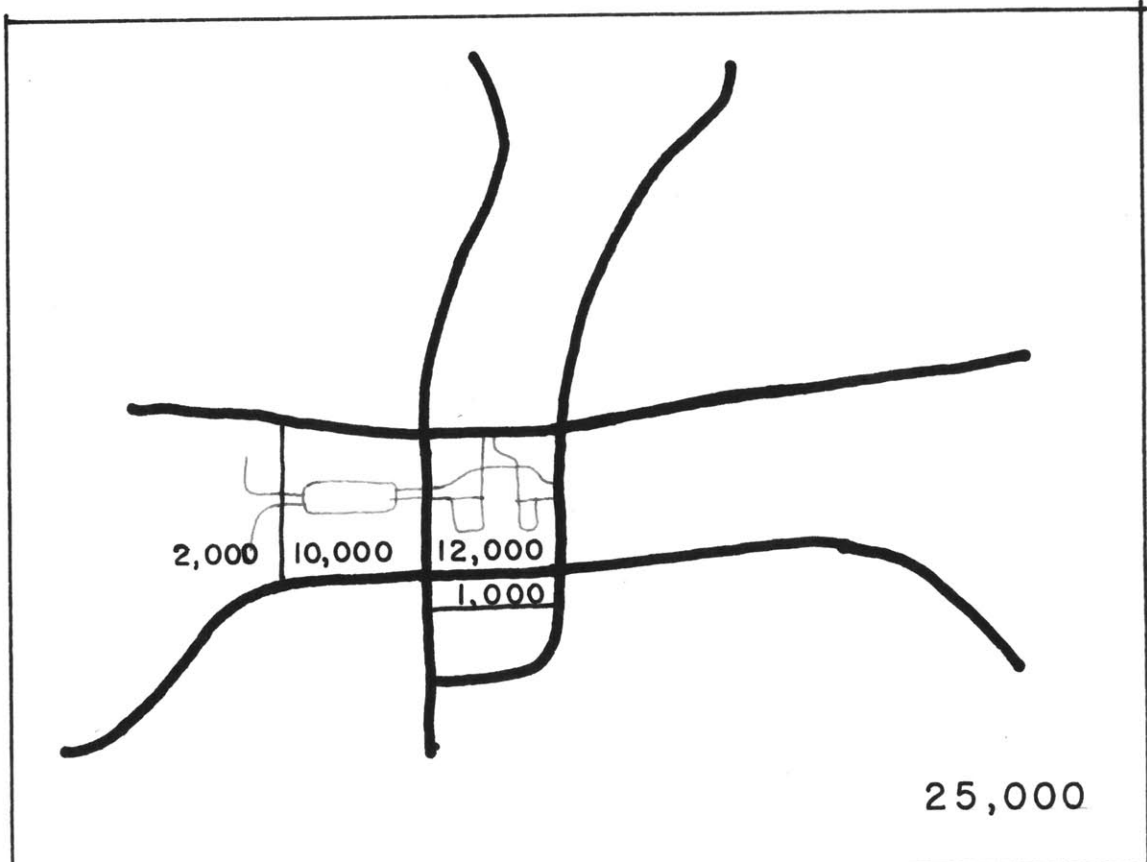
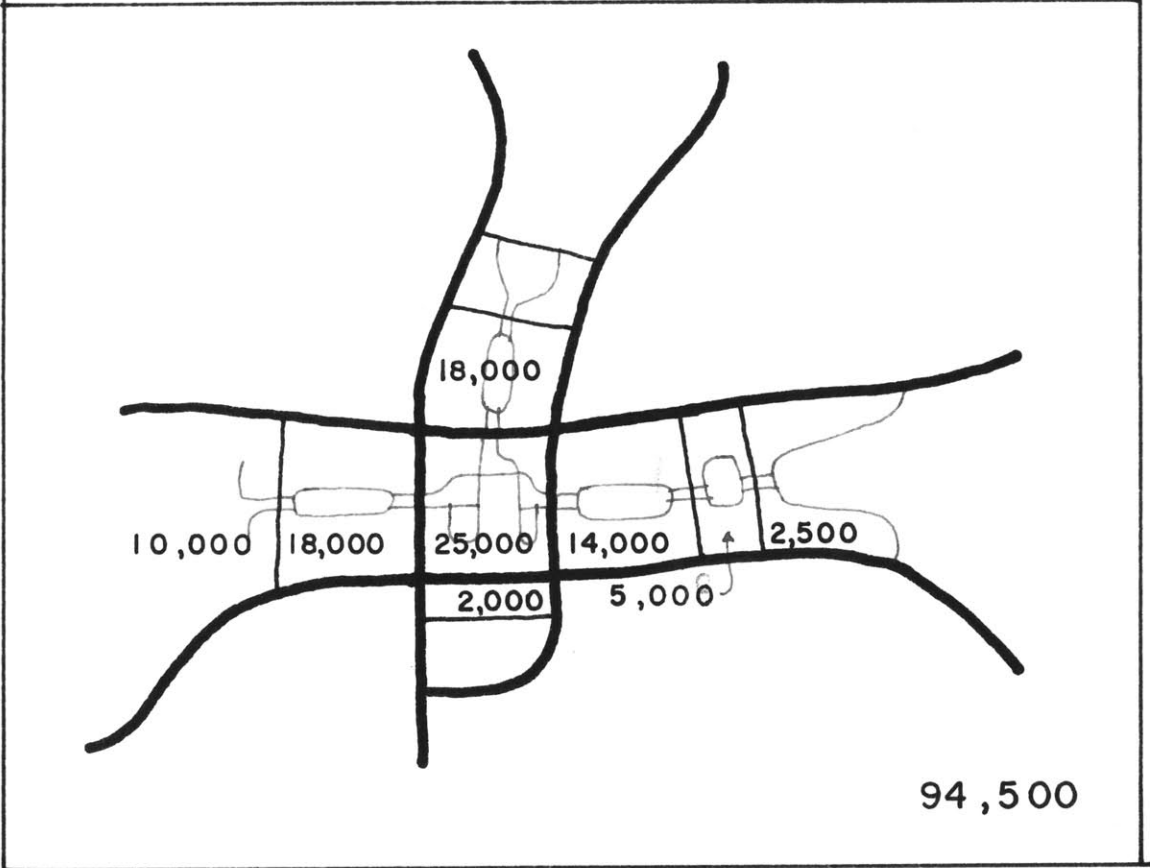
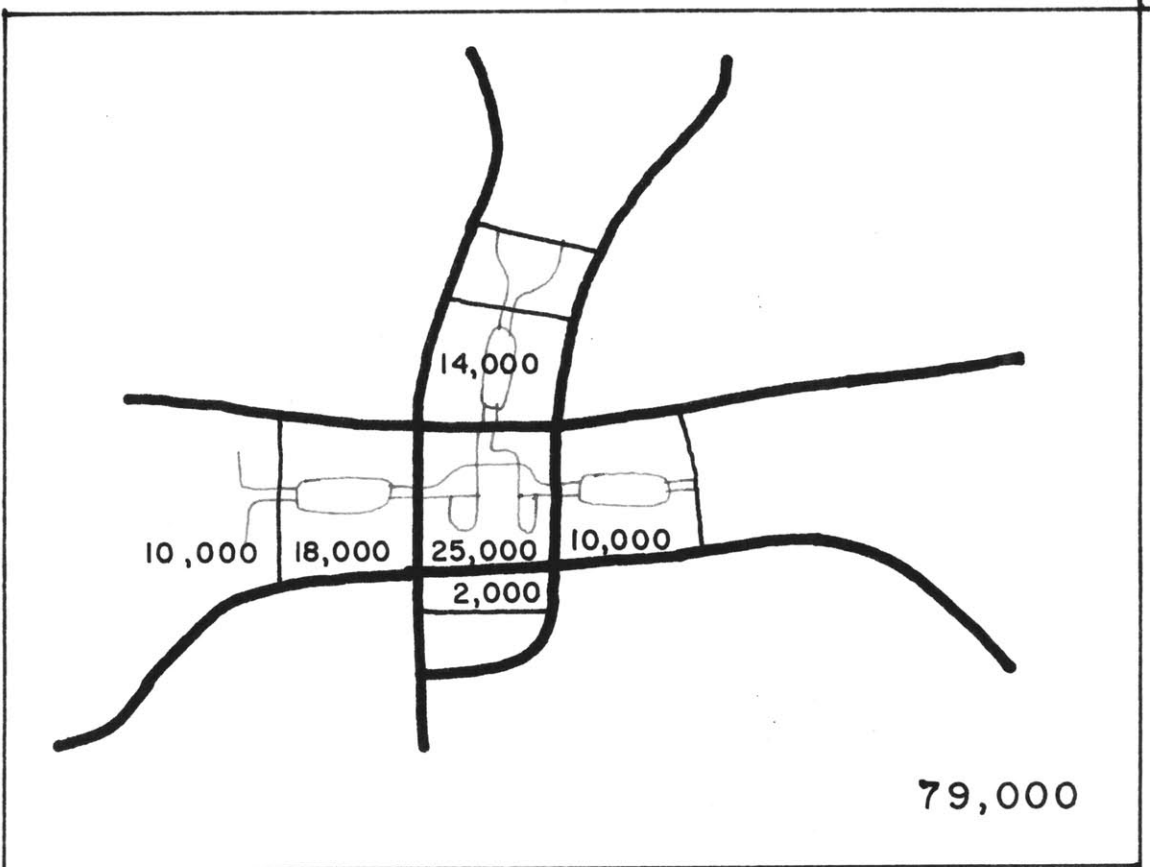
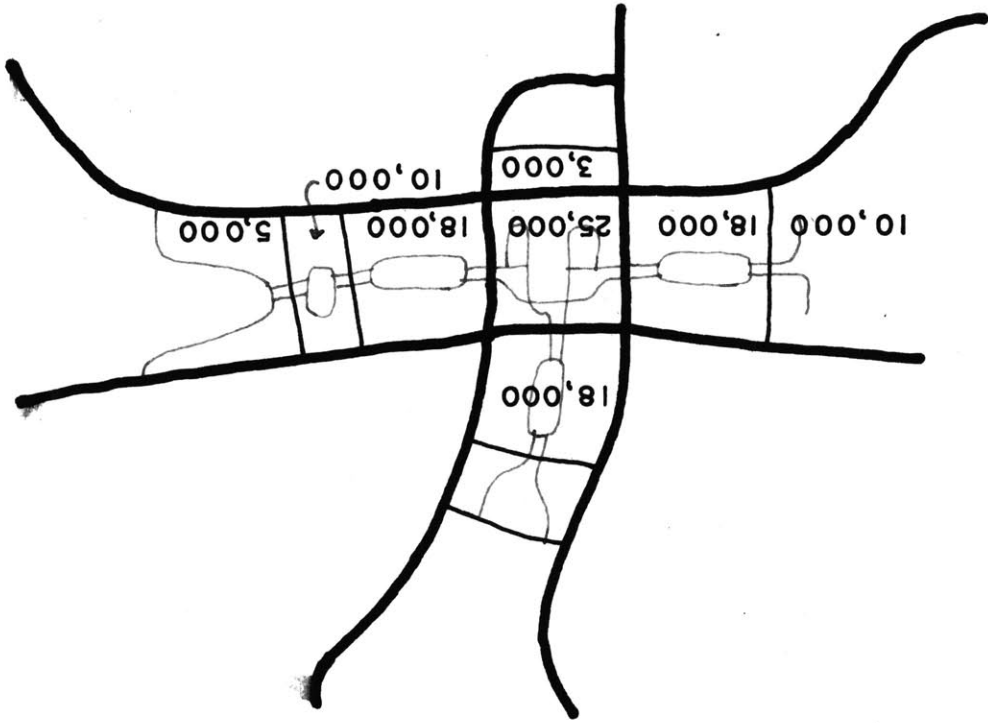
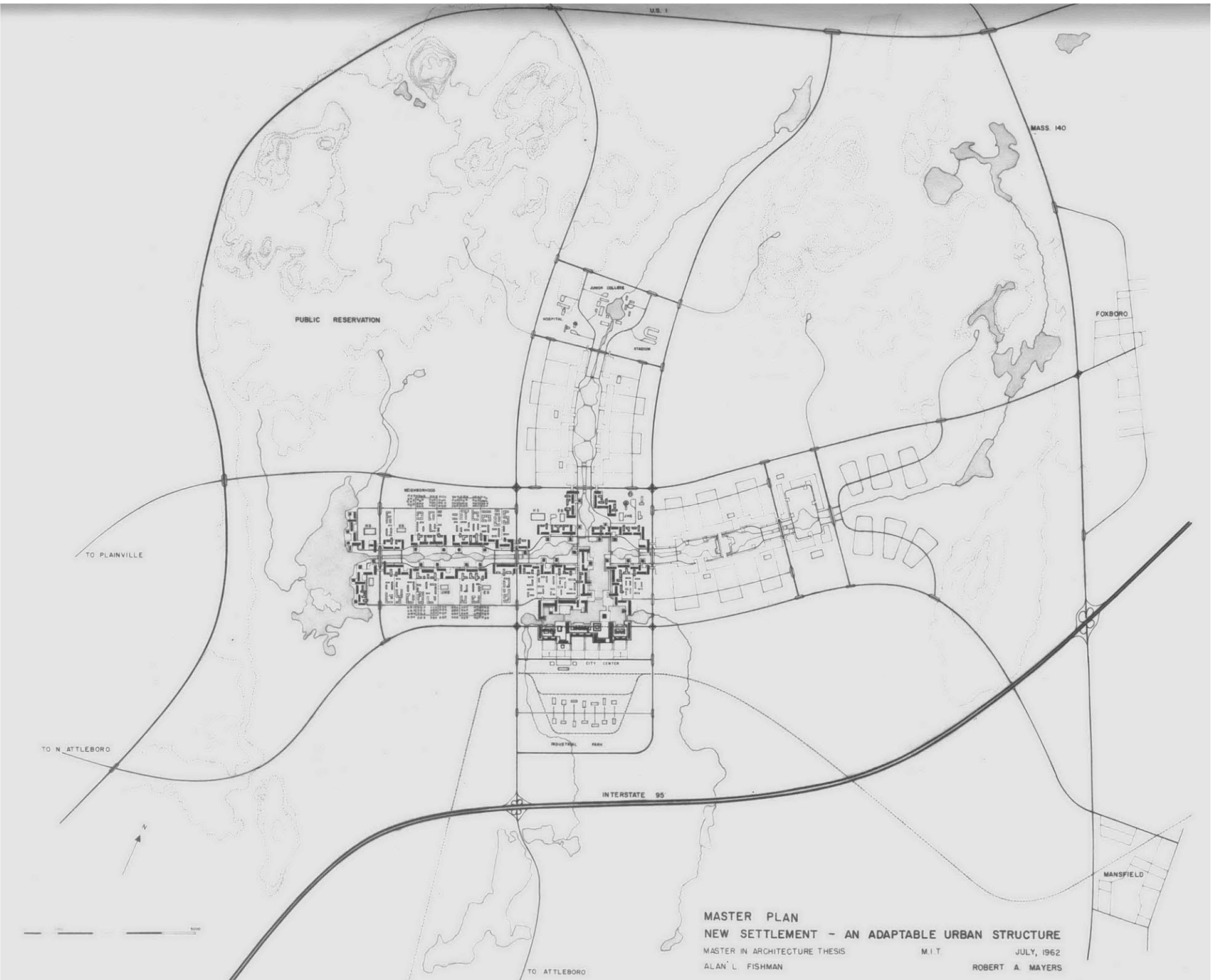


DIAGRAM D



107,000





**MASTER PLAN
NEW SETTLEMENT - AN ADAPTABLE URBAN STRUCTURE**

MASTER IN ARCHITECTURE THESIS
ALAN L. FISHMAN

M.I.T.

JULY, 1962

ROBERT A. MAYERS

The Neighborhood

This neighborhood is built as a dense island of structure within the untouched, natural reservation. "Nature" is also found at the neighborhood's heart; but here, at the center of development, "nature" takes the form of a man-made, sculptured urban park.

There are five major types of housing, each affording its unique quality of life; each placed with its particular relationship to landscape, automobile, services, and pedestrian.

The densest type of dwelling, type 1, (see diagram E), the apartment towers, stand on bases in the large central urban park. Their parking is within the bases; their services feed directly off the main intra-neighborhood loop "d". Their bases are used as main points of access to the park and as docking facilities for the pleasure craft on the lakes and streams which flow through the park. By a system of locks, dams and bridges, these craft may cruise to the lakes in the reservation, or may go directly to a marina at the town center.

The second highest density dwellings are built upon platforms which lie on the long edges of the park. All buildings on the platforms use elevator cores which connect them to the parking and services within the platform. The platform is a pedestrian level which connects directly with the platforms of adjacent neighborhoods without crossing streets. On the platform are found residential spaces, and major and minor shopping spaces. Seven story corridor apartment houses

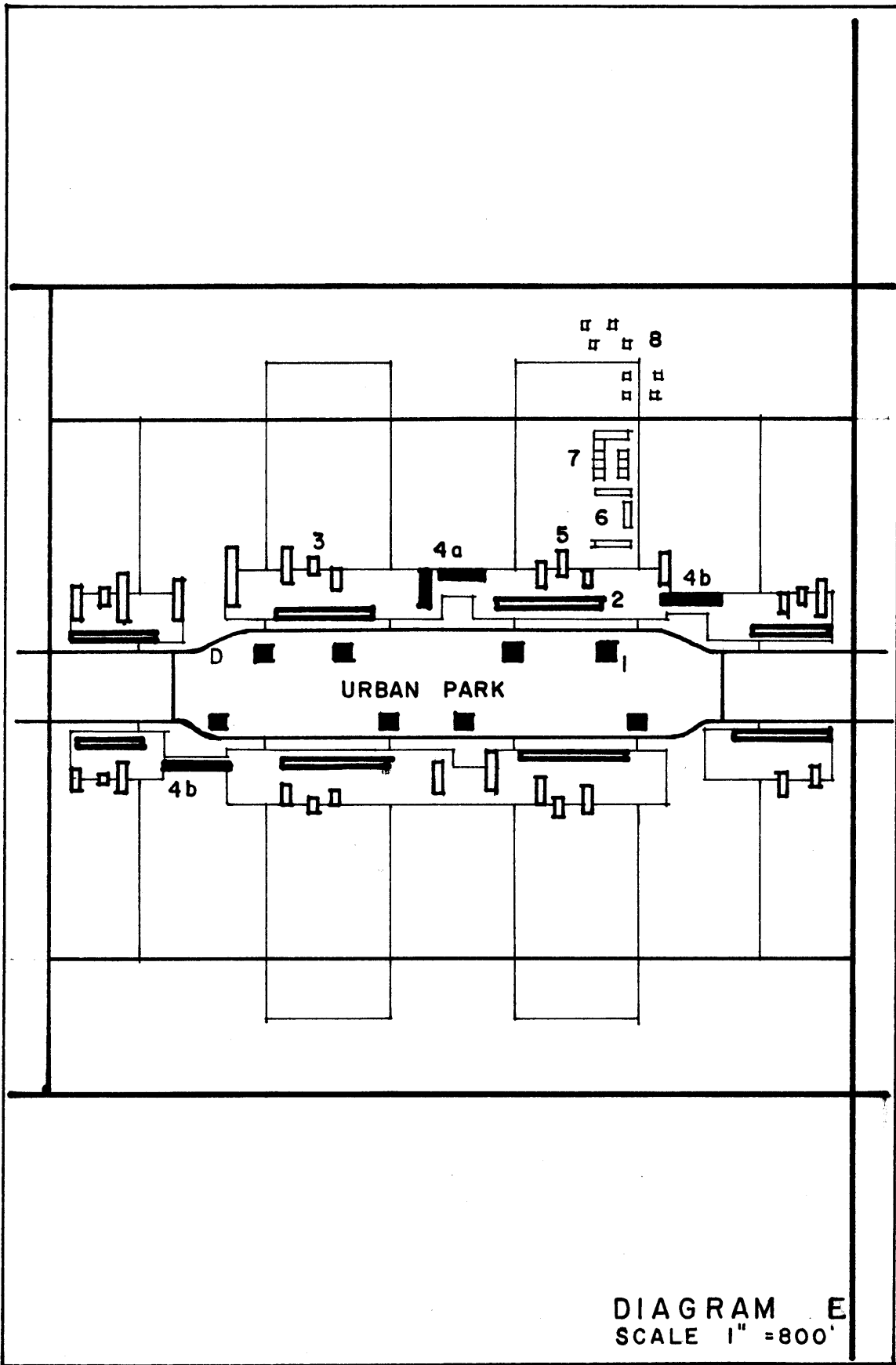


DIAGRAM E
SCALE 1" = 800'

form a "wall" along the park edges (type 2, diagram E) of the platforms. Four story "cluster" apartments (type 3) form a "screen" along the other platform edge, allowing views of the more rugged landscape of the reservation. Nine story corridor apartment houses group about the major (4a) and minor (4b) shopping spaces. The shops are contained on the platform level of these buildings. The major shopping consists of convenience goods stores: supermarkets, drug stores, hardware stores, restaurants, taverns, liquor stores, etc.. The minor shopping facilities include services such as: tailor shops, snack shops, radio-tv shops, small grocery stores, etc.. The platform cuts back at these shopping areas, providing an open space for gas stations, bus stops and short term parking.

Some buildings on the "back" side of the platforms project into the more natural landscape (type 5) of the lightly wooded and uphill sloping clearings. These clearings contain four-story walk-up row houses (6), which utilize the natural land slope to reduce the "walking-up". These houses have private outdoor yards, and share with the platform buildings in enclosing lightly wooded clearings. These walk-up row houses utilize the underground system of parking and services. In this way, the tree-shaded clearings, walks and dwellings in this area are kept free from the automobile.

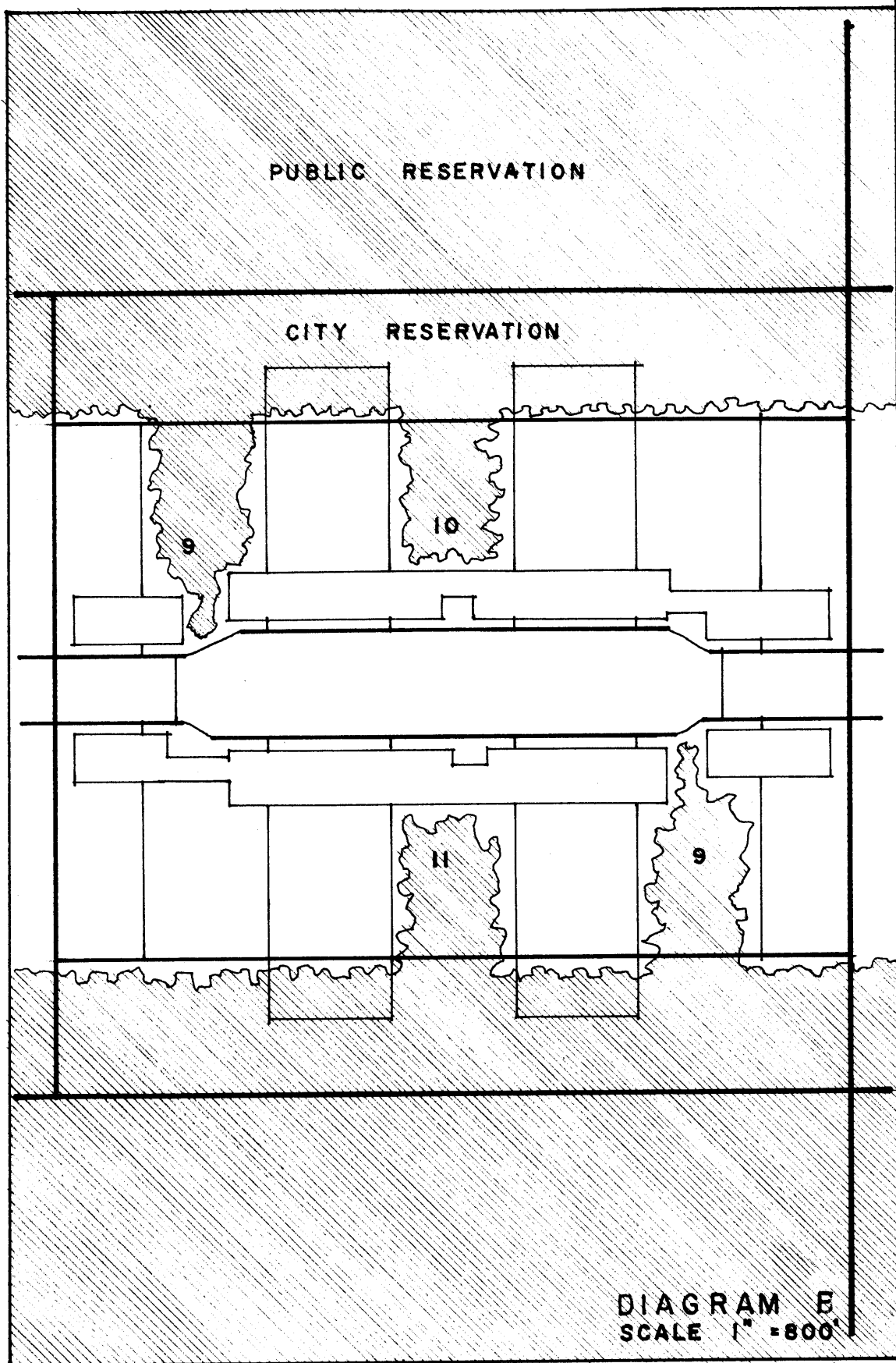
Beyond the row houses, the underground road ramps to ground level and joins the driveways which enter enclosed service courts used by the patio houses (7)..

Further out from the platform, the road forms loops which enter the densely wooded reservation. It is here that the single, unattached house may exist with privacy, insulated from road noises by the dense woods about. (8)

There are four points where the densely wooded reservation penetrates into the neighborhood (diagram F). In two of these penetrations are found the elementary schools (9); in one, the junior high school (10); The fourth is the major point of access from the neighborhood into the reservation (11). These penetrations allow the schools and the neighborhood direct access into the reservation.

Diagram G shows the neighborhood road system, which is composed of three types of roads. The roads labeled "d" are the major intra-neighborhood roads. They connect the residential roads "e" to each other and to the intra-regional road system. The "d" road which encircles the central urban park is the main service road of the community; it provides bus service and automobile access to the immediately adjacent neighborhoods.

The "e" roads take residential traffic off the intra-neighborhood "d" roads and connect directly with the residential driveways and service roads "f".. The "f" roads under the platforms have room for truck clearance, and have direct access to the building cores; as all building cores fall on one or the other side of the "f" roads. In the platforms opposite apartment towers there are three levels of parking, with the "f" road entering on the middle level.



PUBLIC RESERVATION

CITY RESERVATION

9

10

11

9

DIAGRAM E
SCALE 1" = 800'

INTRA-REGIONAL ROAD SYSTEM

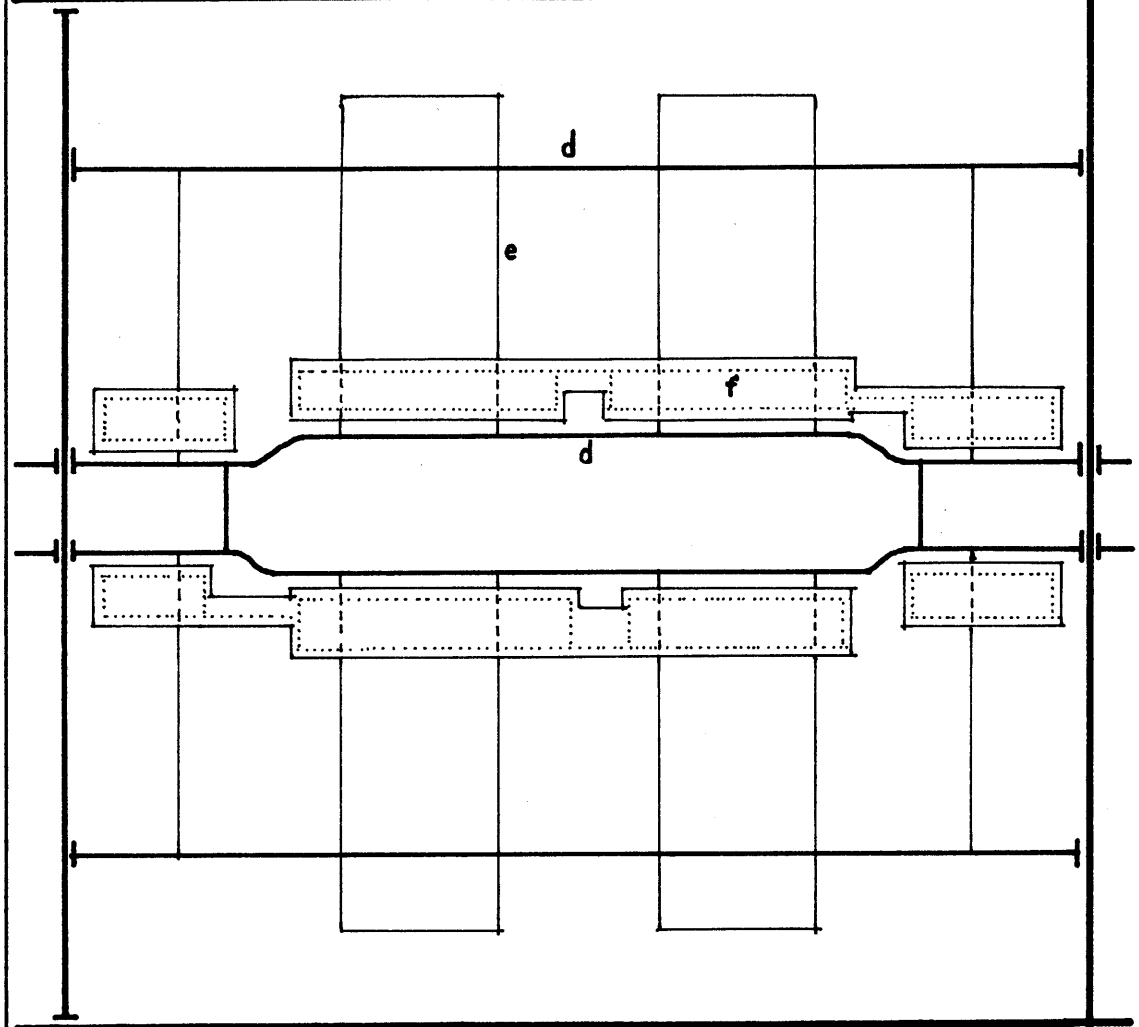


DIAGRAM G
SCALE 1" = 800'

The bottom level of parking connects directly with the parking under the tower bases. The 30' square bay is used both within the parking garages and the residences above.

The concept of city life proposed here, is not achieved by the carless scattering of dwellings about meaningless open spaces; but by the precise planning of dense development grouped about public and semi-public open spaces. By varying the character of these spaces from the completely man-made to the densely wooded, a more complete living environment is achieved.

Neighborhood Figures:

6948 cars - total number parked in platforms and under towers.

4632 families - living on platforms and in towers, each family having 1.5 cars.

109.8 acres - area of the platforms and central urban park.

42 families/ per gross acre - density on platforms and urban park towers.

800 families - live in low density dwelling off platforms.

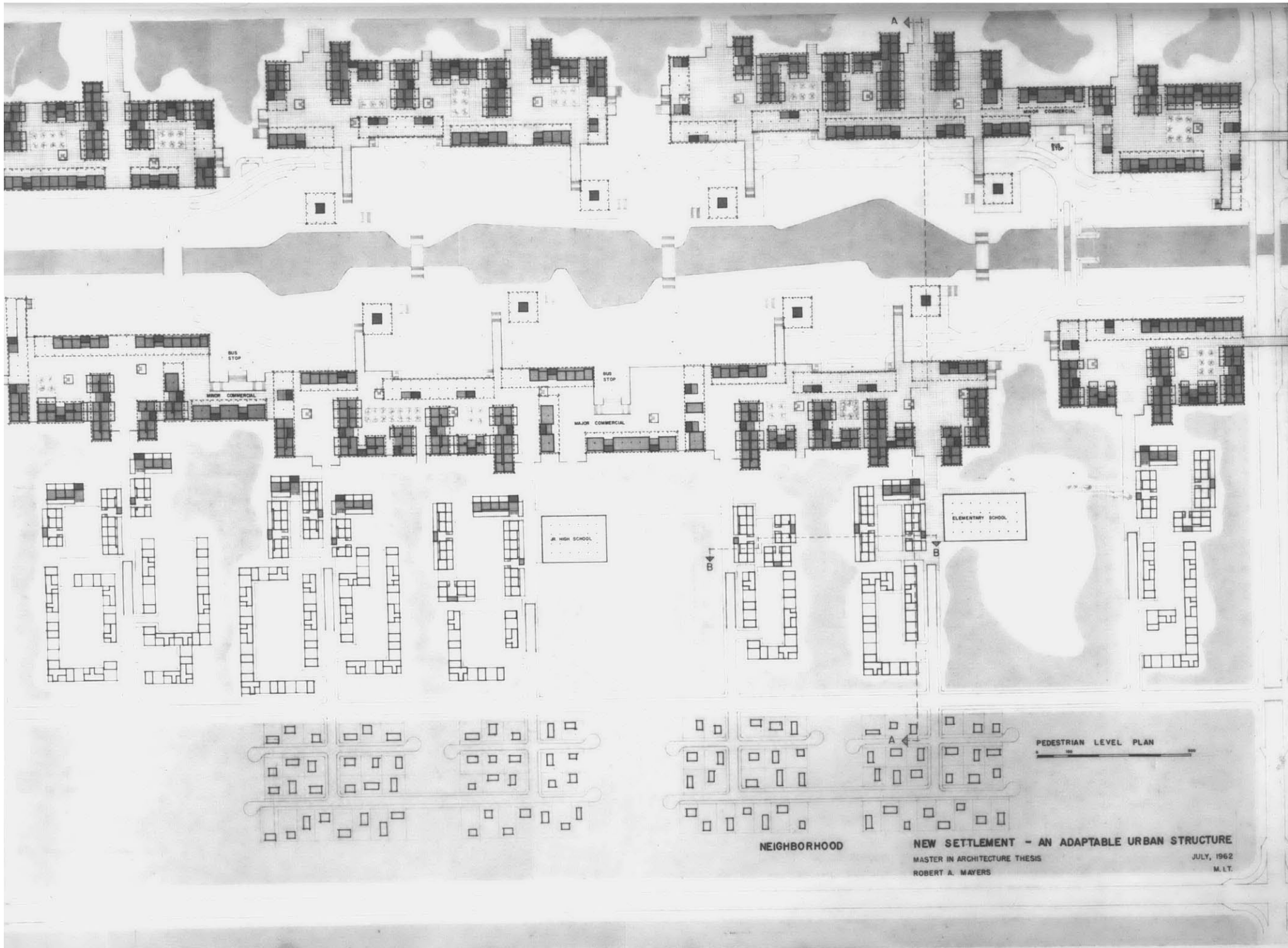
5432 families - total number of families in neighborhood.

509.8 acres - total area of neighborhood.

10.6 families/ per gross acre - overall neighborhood density.

18, 500 people - total population of neighborhood with 3.4 people/ per family.

It should also be noted that the utilities such as: steam, water and electricity are sent from the industrial park, through the city center, and then to the neighborhoods. in an accessible 30' wide strip adjacent to the platform edges. There are feeders off the main service line at the points where the "e" roads lead off the urban park loops. These services enter the platform and are received in mechanical rooms on either side of the "e" roads. These mechanical rooms reduce the steam pressure, heat the water, and cool the air; and then send these utilities along with electricity out along the lines over the "f" service roads. As the building cores fall on either side of these service roads, the utility lines feed directly into the cores and up to the apartments.



NEIGHBORHOOD

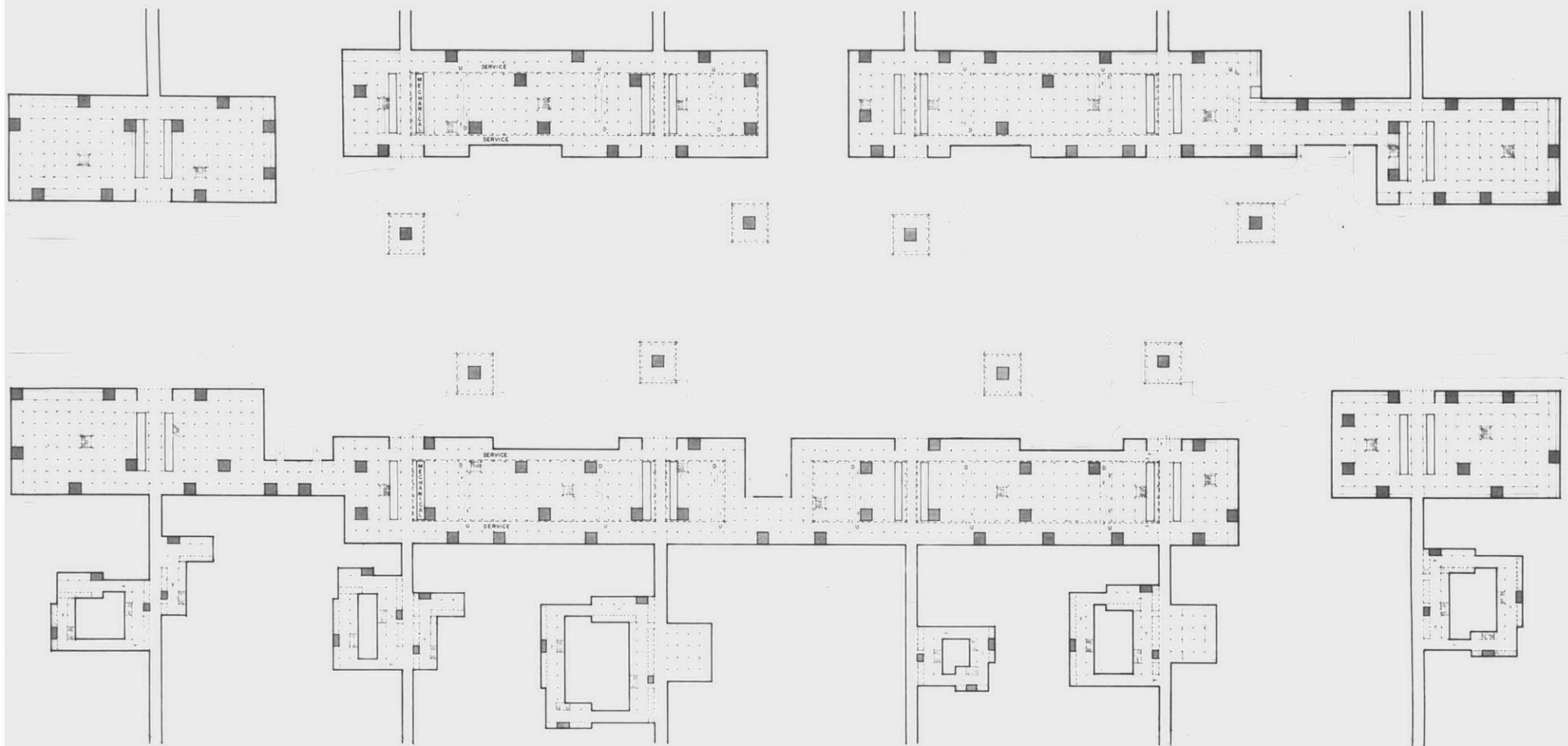
NEW SETTLEMENT - AN ADAPTABLE URBAN STRUCTURE

MASTER IN ARCHITECTURE THESIS

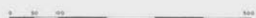
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SECOND LEVEL PARKING
 SERVICE
 STREET ENTRANCE



NEIGHBORHOOD

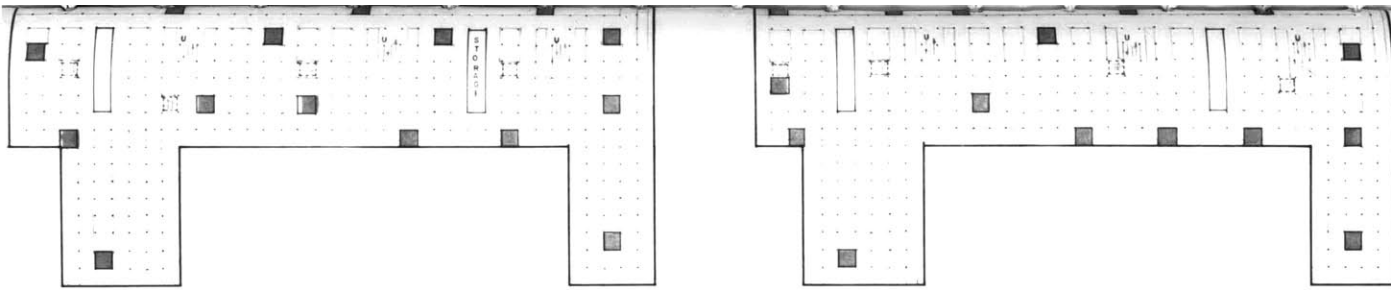
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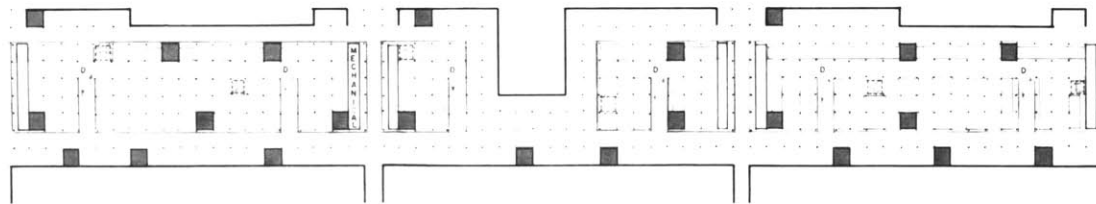
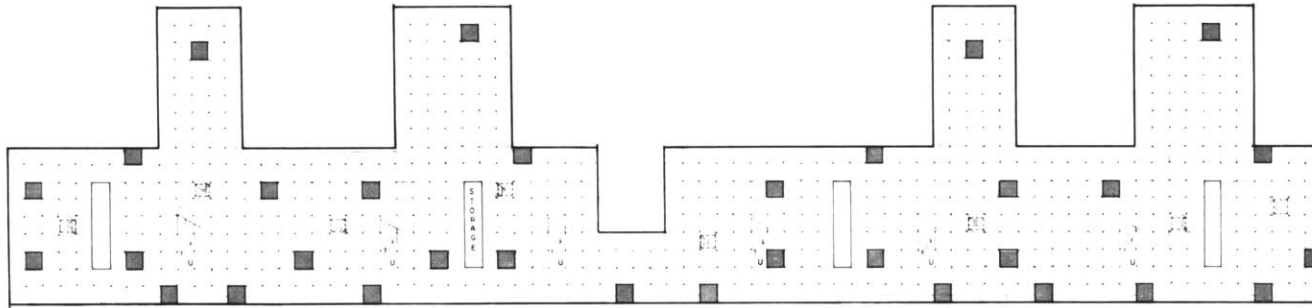
ROBERT A. MAYERS

JULY, 19

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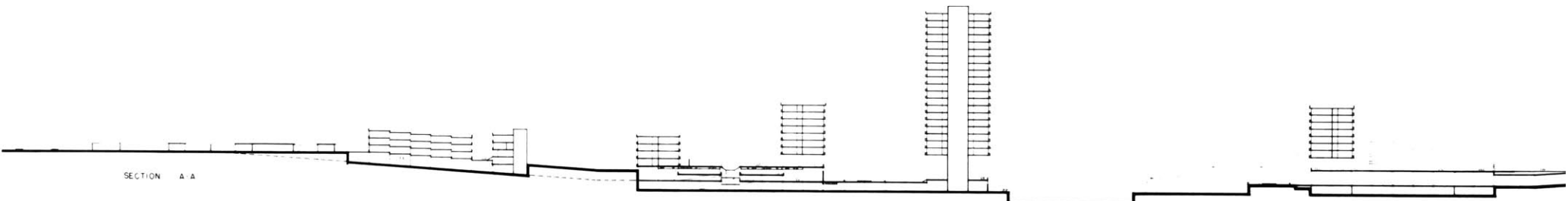


FIRST LEVEL PARKING

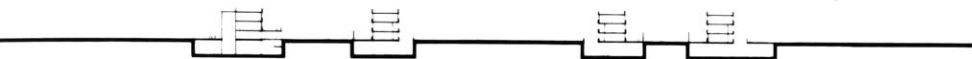


THIRD LEVEL PARKING - SOUTH SIDE





SECTION A-A



SECTION B-B

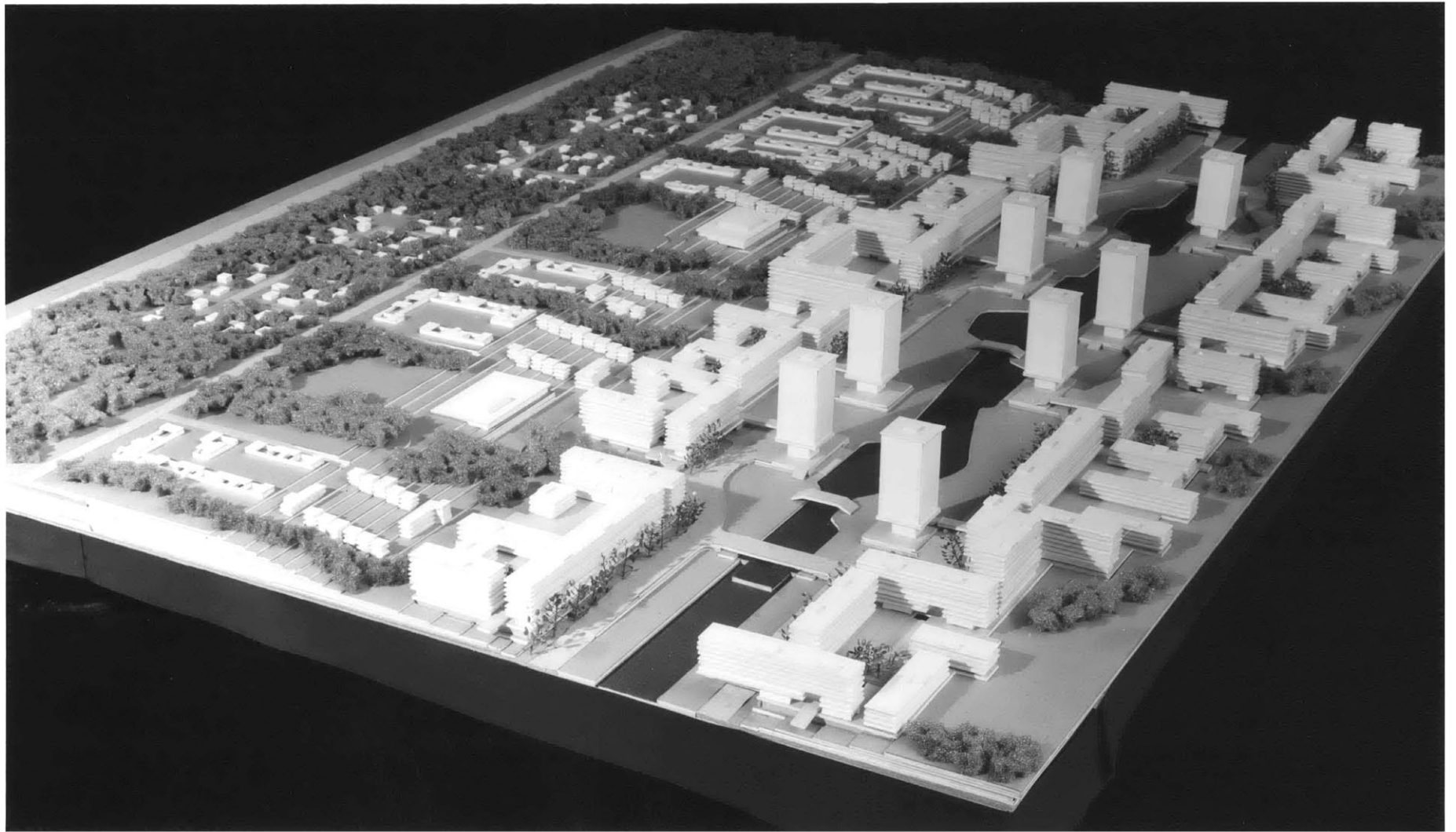


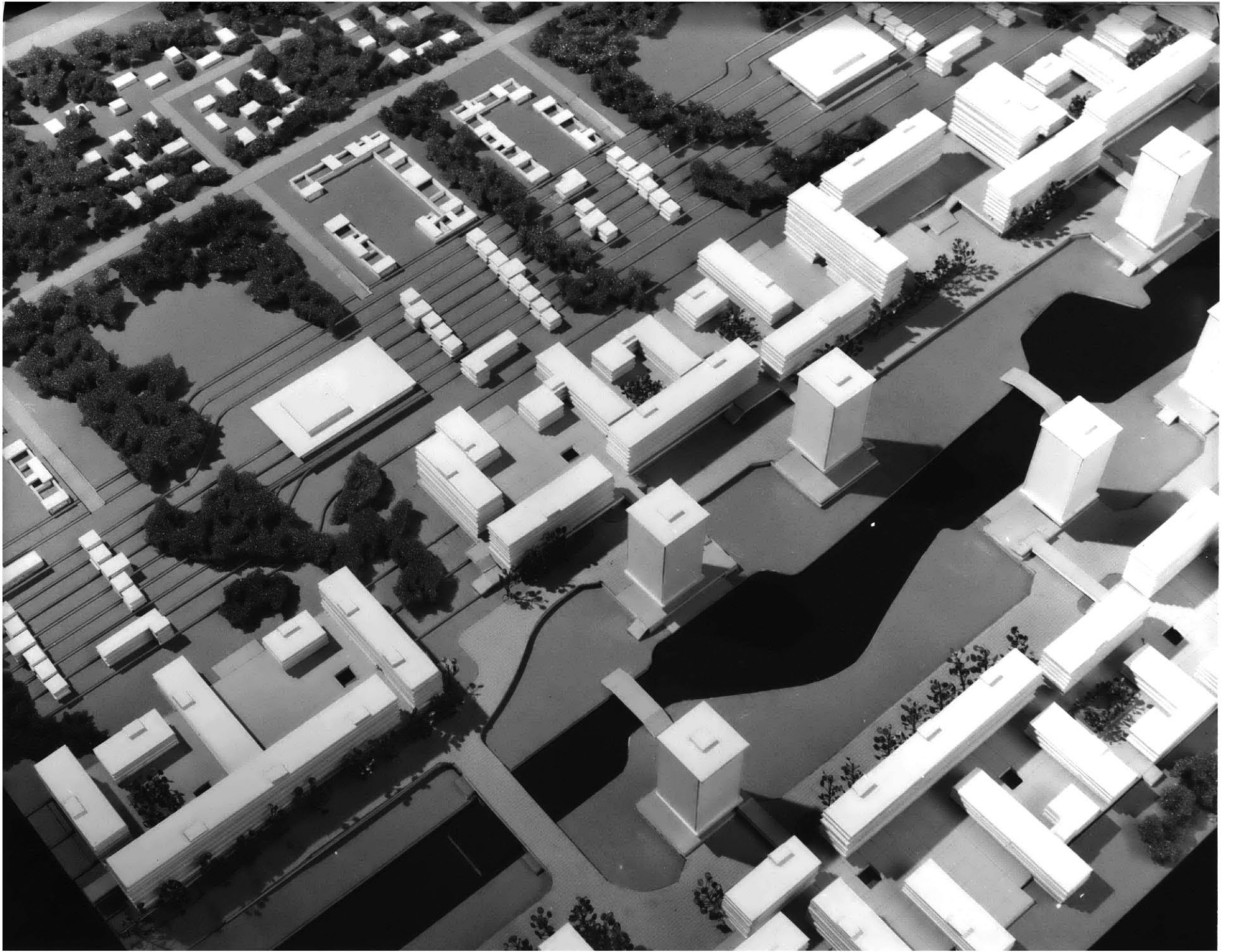
NEIGHBORHOOD

NEW SETTLEMENT - AN ADAPTABLE URBAN STRUCTURE
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JULY, 1962
M.I.T.









City Center

The city center contains a variety of uses which will give it a high amount of activity. One finds cultural, community, entertainment, government facilities; shops, offices, and residences at the center. By intermixing residential and commercial uses, the center is assured of continuous activity both day and night. This activity is necessary to give the center an urban environment which we desire.

The center serves both the new city and the region. The city's location midway between Boston and Providence is prime for a major regional center. Thus, a strong vehicular connection with the region becomes important. At the same time, the center should have a strong architectural and pedestrian connection to the residential areas of the city, in addition to a vehicular connection.

The form of the center is linear. All activity is distributed along one "street." At the fully expanded stage of the city (population 107,000), the street will reach a maximum length of 2500 feet. This is a reasonable walking distance of ten minutes, and there will be in addition moving sidewalks to speed travel time from one end to the other.

The linear system was chosen for its clear orientation values. The pedestrian will always be able to relate himself to the street, as for example when exits from a parking area or a bus stop. Also, the linear scheme lends

itself easily to expansion. By adding units to either end of the street, the center may be enlarged as the population of the new city increases.

The street is completely pedestrian. There is a complete separation of vehicular and pedestrian traffic. This is advantageous both in facilitating the traffic flow of each and in creating a good environment in which to shop. This also allows a richer expression of architecture in which one scale is perceived by the pedestrian and another by the automobile.

However, the pedestrian street has a close relationship with the vehicular streets. This is achieved by a similar direction of movement for both, as well as a visual relationship between the two. Also, bus, taxi, and automobile drop-off areas create a tie between the pedestrian platform and the vehicular level.

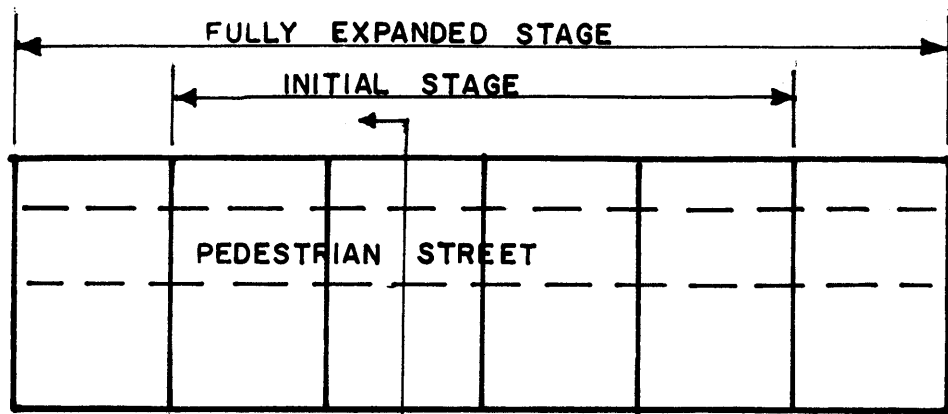
The major roads parallel the pedestrian street, and the minor roads are perpendicular to it, just as the minor pedestrian ways, such as the access from the parking areas, are perpendicular to the main pedestrian street.

The center at the fully expanded stage is divided into six bays. (See diagram H). Each bay is a parking unit, the size of which is determined by an optimum walking distance from the car to a shop. This distance varies between 300 and 500 feet-- 300 feet for the short term parking and 500 feet for the long term. Each parking

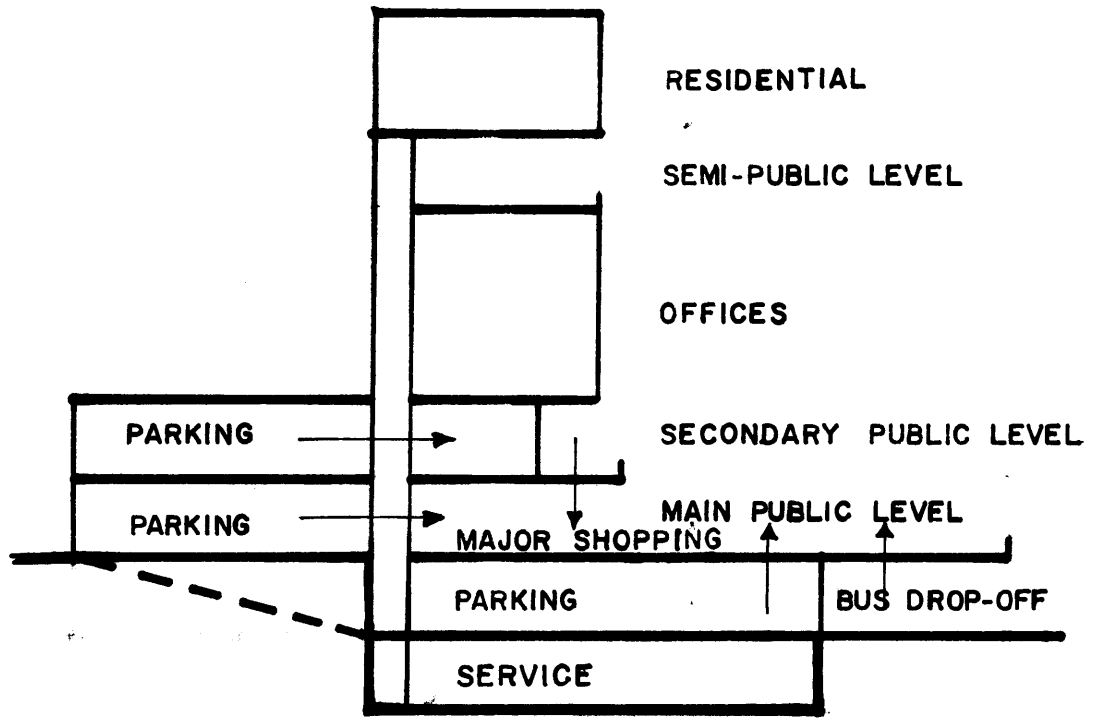
bay is 420 feet wide, and the depth varies. The bay is three levels high. The bottom two levels are for short term parking, the top level for long term. Each level of each bay holds between 200 and 300 cars, which is a reasonable number to avoid congestion. The main pedestrian level (the street) is at the middle level of parking. Thus, a person parking his car will never have to travel more than one level vertically or more than 500 feet horizontally to reach the main level of shopping. In reality, the horizontal distance in most cases is much shorter than the maximum of 500 feet and varies between 150 and 200 feet.

All major shopping activity occurs at the main public pedestrian level (diagram H). Thus, a concentration of pedestrian activity is achieved and a vitality given to the main level. The short distances from the parking bays to the street reinforces this activity.

A minor public level occurs above the main level and overlooks it. This level coincides with the top layer of parking, and those leaving their cars at this level will pass through the minor level, have a view of the main level, and then come down to it. This secondary level contains activity which does not call for immediate visual contact with the pedestrian, such as real estate offices, insurance offices, as well as some convenience goods stores. This level will also contain the mezzanine floor of some shops at the major level.



PARKING BAYS
(TOTAL: 5000 CARS)



VERTICAL DISTRIBUTION OF ACTIVITIES

DIAGRAM H

Above the secondary level is the major portion of the professional and business offices. (Diagram H). These offices will be accessible through public elevator cores which connect all parking levels as well as the major and secondary public levels.

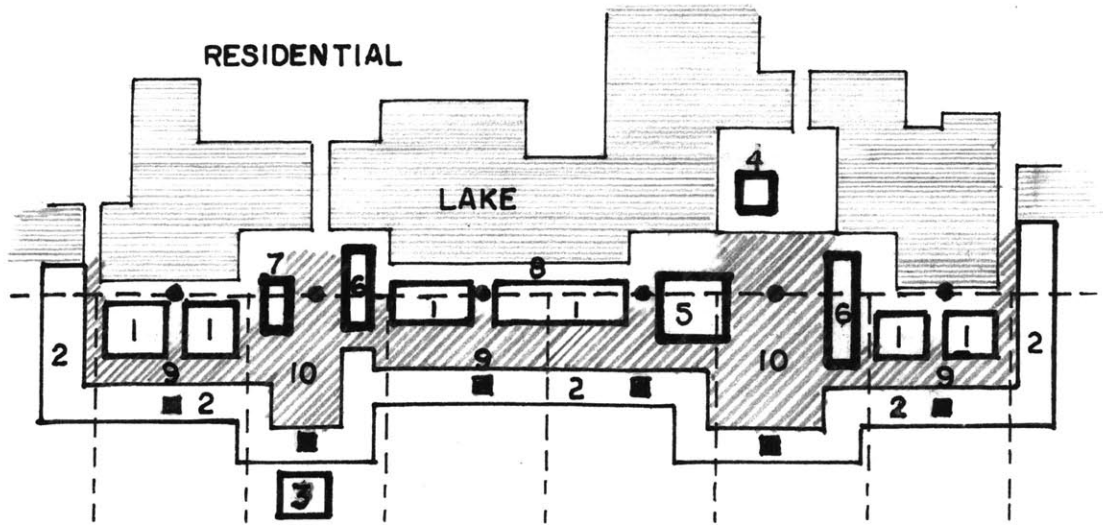
A semi-public level is located above the offices. This serves the residential which is the topmost layer of the center. The public elevator cores will serve to this level, and access to the individual apartments will be at points along the semi-public level and will be divorced from the public cores. This level will be landscaped with roof gardens. The residential located here will serve mainly couples without children and single people who desire very urban living conditions.

Opposite the center, but closely connected to it, will be more residential neighborhoods. (Diagram I) These neighborhoods will have direct access to schools located in penetrations of the public reservation, and thus will be more suited to family living. Yet these people will participate in the life of the center and will be in constant sight of it. Also, these living units are architecturally united with the major form of the center. This residential area also assumes a linear form and becomes one side of a rectangle, the opposite side of which is the center, and the middle of which is a lake created by redamming Lake Mirimichi. (Diagram I) Like the other neighborhood units of the new city, this

residential area is on a pedestrian platform with the parking and roads below. The platform is at the same level as that of the main public street of the center and connects to it by bridges across the lake. (Diagram I). This serves as a buffer between the busy commercial and the quiet residential neighborhood which enhances its value for family living. At the same time, the lake is a uniting visual element between the two. It will also contain public recreation facilities such as marinas and ice skating ponds.

The form of the lake is linear, relating to the form of the center. As one moves along the pedestrian street parallel to the lake, he will come in visual contact with it at small openings. The street is broken into three segments, and at their joints occur two major spaces. (Diagram I). These spaces relate outward to the lake and their openings to it are much larger than those of the street. The street openings lead to a waterfront promenade and access to the vehicular drop-off points.

Along the lake side of the street segments are the major variety and department stores, which will stand out as individual elements. Along the other side of the street, away from the lake, there will be smaller shops which are more anonymous in character than the major stores. These small stores will form a continuous arcaded wall which will be broken only by access to the parking areas and the public circulation cores.



- | | |
|----------------|------------------------|
| 1 MAJOR STORES | 6 HOTEL |
| 2 SMALL STORES | 7 THEATER |
| 3 BUS TERMINAL | 8 WATERFRONT PROMENADE |
| 4 OFFICE TOWER | 9 PEDESTRIAN STREET |
| 5 TOWN HALL | 10 SQUARE |

- DROP-OFF POINTS
- CORES-ACCESS TO PARKING

DIAGRAM I

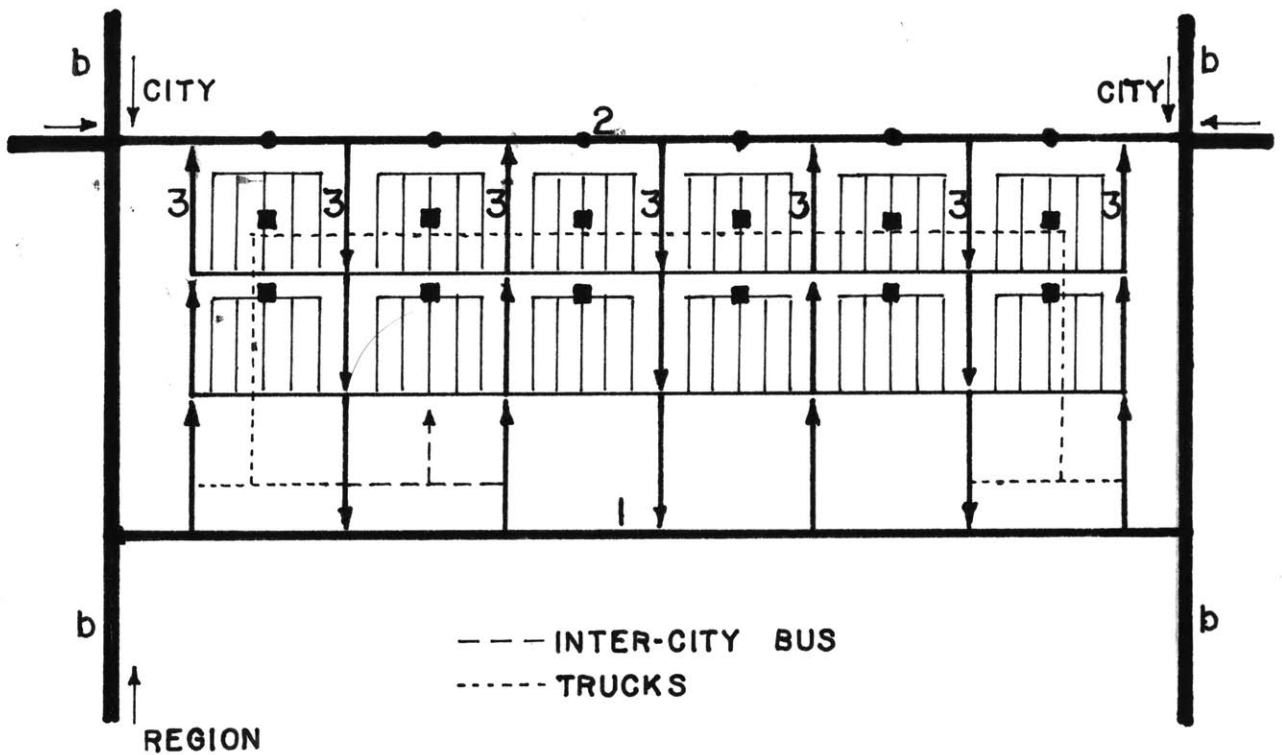


DIAGRAM J

The two major spaces will contain the civic and major entertainment functions. The more dominant space of the two will be the main focal point of the center. Here will be found the town hall, community center building, a hotel with public entertainment facilities, the public library, and an office tower. This tower would be the headquarters for an important regional industry, and in conjunction with the town hall would serve as symbols for the community.

This secondary square will contain another hotel, a theater which would be the dominant element of the square, and the intercity bus terminal. High price specialty shops and cinemas would group about both squares.

At either end of the center, the street turns a right angle and links across the lake to the residential neighborhood. There are also connections at both of the squares. Thus, the ends of the center, as well as the squares, will draw activity from the residential opposite. The major stores located on all three of the segments of the street between the squares will act as magnets and draw this activity along the street from one end to the other. In addition, since there are six parking bays each with its entrance to the street, more activity is generated at all points along the street. (Diagram I)

Breaking the street into segments in combination with the squares not only creates variety and interest for the pedestrian and generates much activity, but insures

that each point of access from the parking or drop-off areas will differ in character and will be easily remembered.

A system of circulation has been devised whereby a majority of the city dwellers will be entering the center from one side, while those from the region will be entering from the other. The major architectural form of the center is directed toward the city, and the major squares look toward the residential areas on the opposite side of the lake. The scale of the center on the city side is small and pedestrian in character, and that of the regional side is large and related to vehicles.

Traffic from the region will be coming from Interstate Route 95 to the south of the center (diagram B and C). After leaving #95 it will be on an intraregional road (b). This traffic exits at the side away from the lake (the regional side) onto a road (1) which feeds the six bays of parking and parallels the pedestrian street (Diagram J). There is also another parallel "feeder" which collects city traffic from the north, west, and east on (b) roads. Along this "city feeder" (2) will be drop-off points for pedestrians from busses, taxis, and automobiles, as well as entrances to the parking bays. (Diagram J) Road (2) occurs one level below the pedestrian street, and those deposited at the drop-off points will ascend escalators and stairs.

Ramping roads (3) connect (1) and (2) roads and feed the first and second layers of parking (Diagrams

H and J). The top level of each bay is reached within the bay itself. After leaving the (3) road, the automobile is within the parking area itself. Thus, on the (1) and (2) roads the driver chooses which bay he will enter, and on the (3) road selects the level of the individual bay in which he will park. This provides the driver an efficient way to select his destination, since with each bay a major function will be associated. The number of levels in each bay affords him a maximum opportunity of finding a space near his destination.

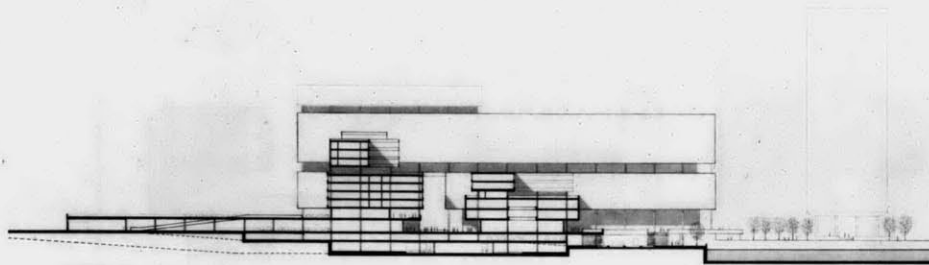
Within each level of every bay is one access point to the main pedestrian level which coincides with the vertical circulation to the office and residential above (Diagram J).

The service level occurs below the bottom layer of parking (Diagram H). It will contain truck docking facilities as well as storage and service areas for the stores above. The stores will be reached by freight elevators located in cores spaced at regular intervals. Trucks enter from road (1) at either end of the center and ramp down to their level (Diagram J).

Intercity busses occupy one bay at the uppermost layer of parking and reach it by ramping up from road (1). This bay coincides with the smaller of the two squares where the bus terminal is located.

An attempt has been made here to superimpose a clear and ordered system of circulation onto a rich and varied

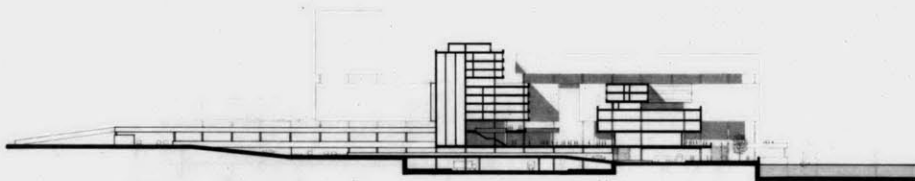
sequence of spaces, in which the pedestrian would find shopping a pleasure. This was achieved in part by finding the proper relationship between the automobile and the pedestrian, and in part by the relationship between pedestrian, building, and space.



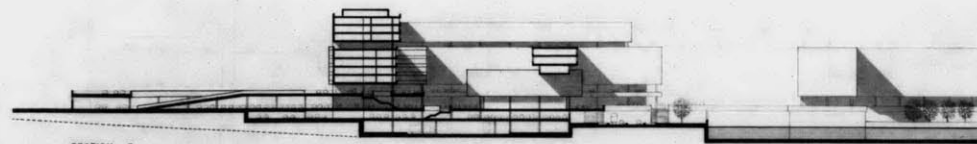
SECTION A



SECTION B



SECTION C

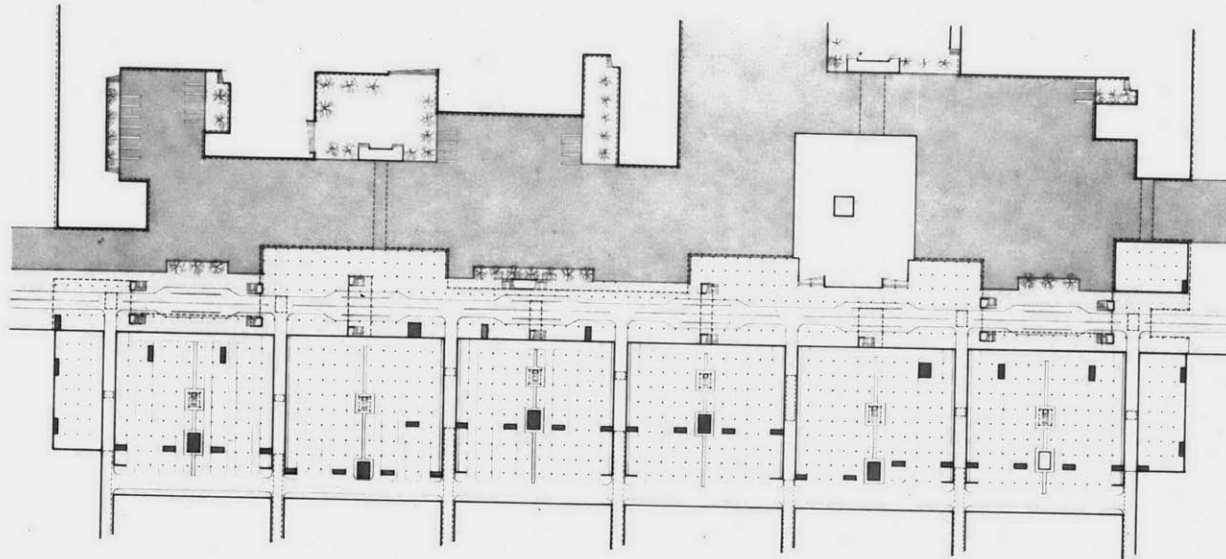


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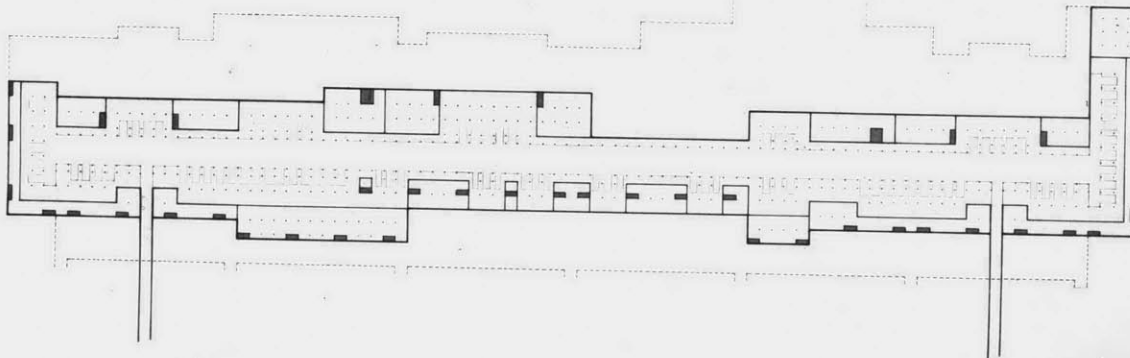
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JULY, 1962
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1ST LEVEL PARKING
PASSENGER DISCHARGE LEVEL



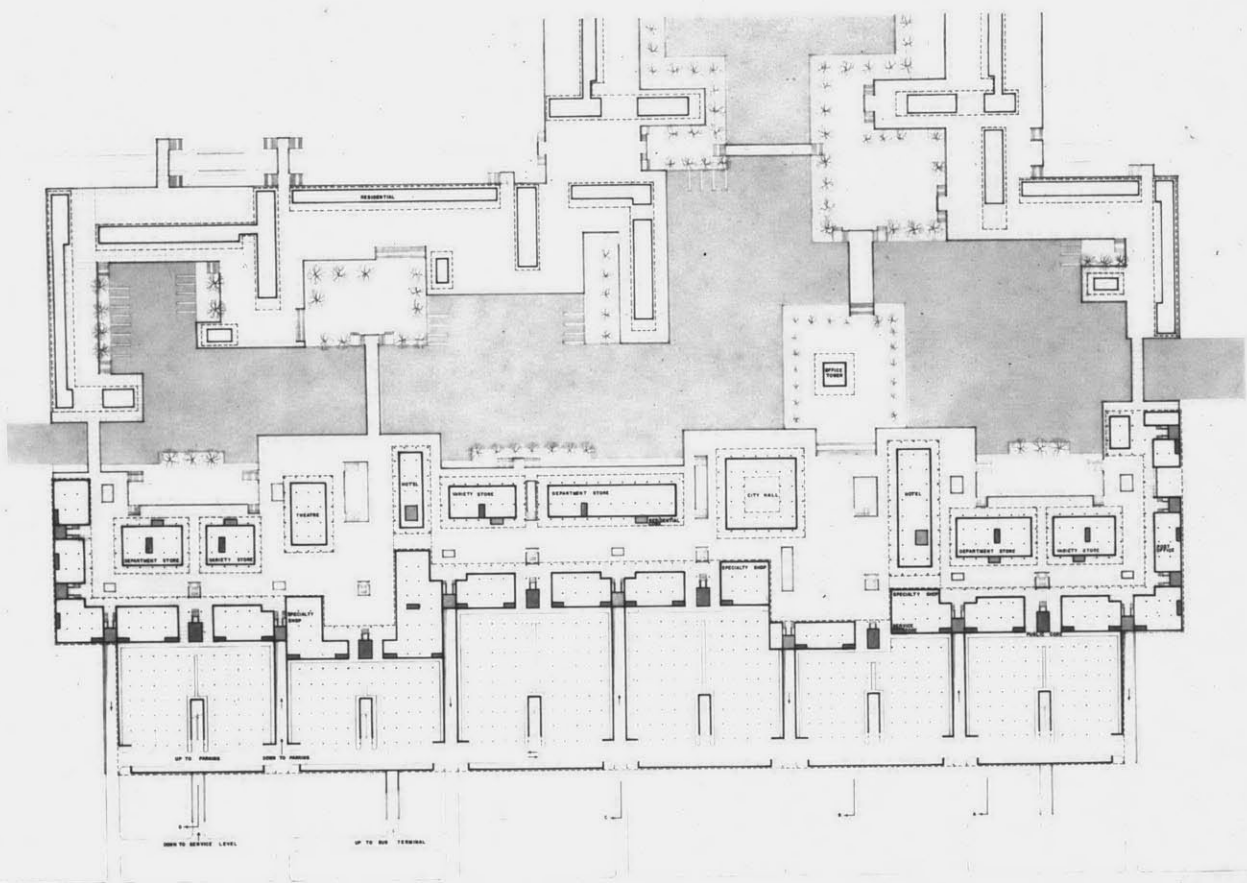
SERVICE LEVEL



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MAIN COMMERCIAL LEVEL
2ND LEVEL PARKING

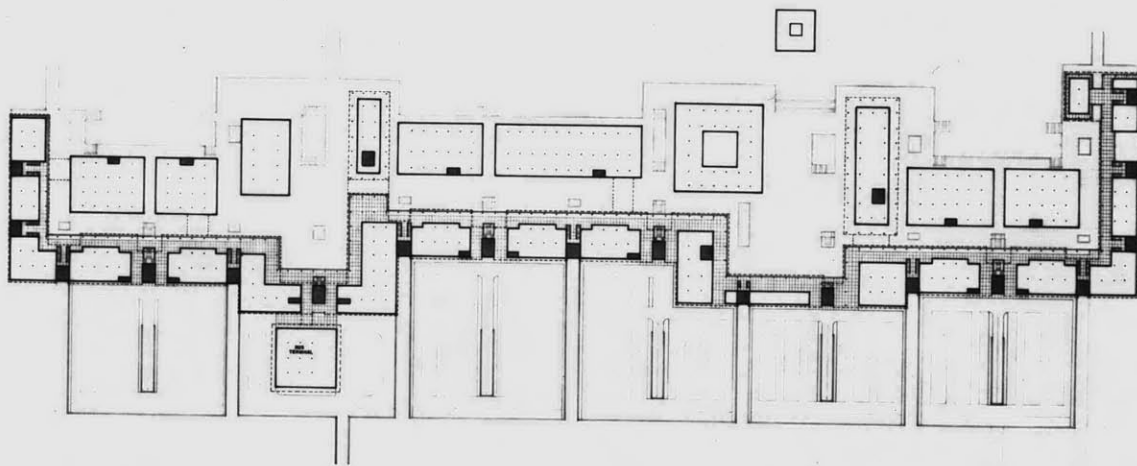


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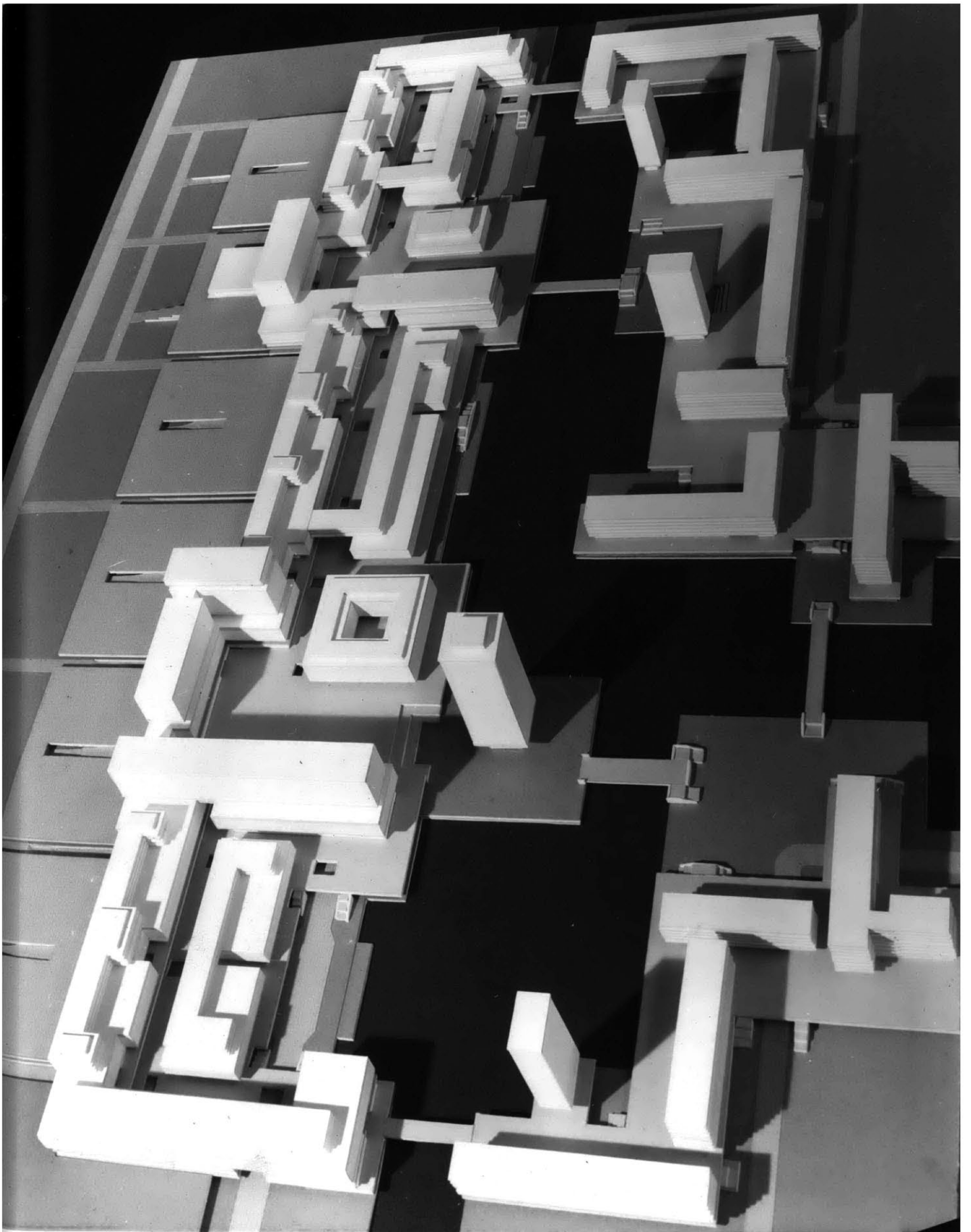


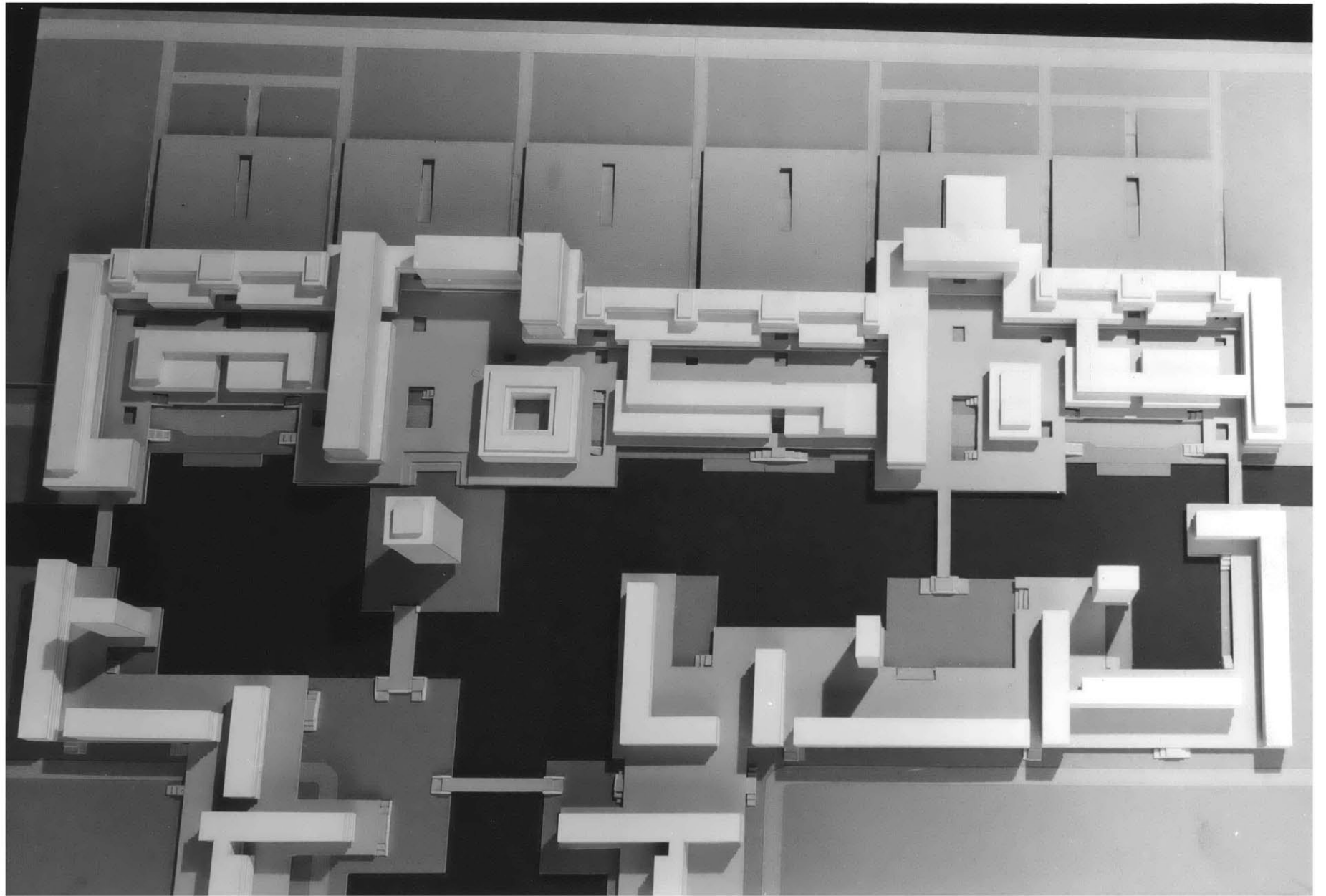
SECONDARY COMMERCIAL LEVEL
3RD LEVEL PARKING

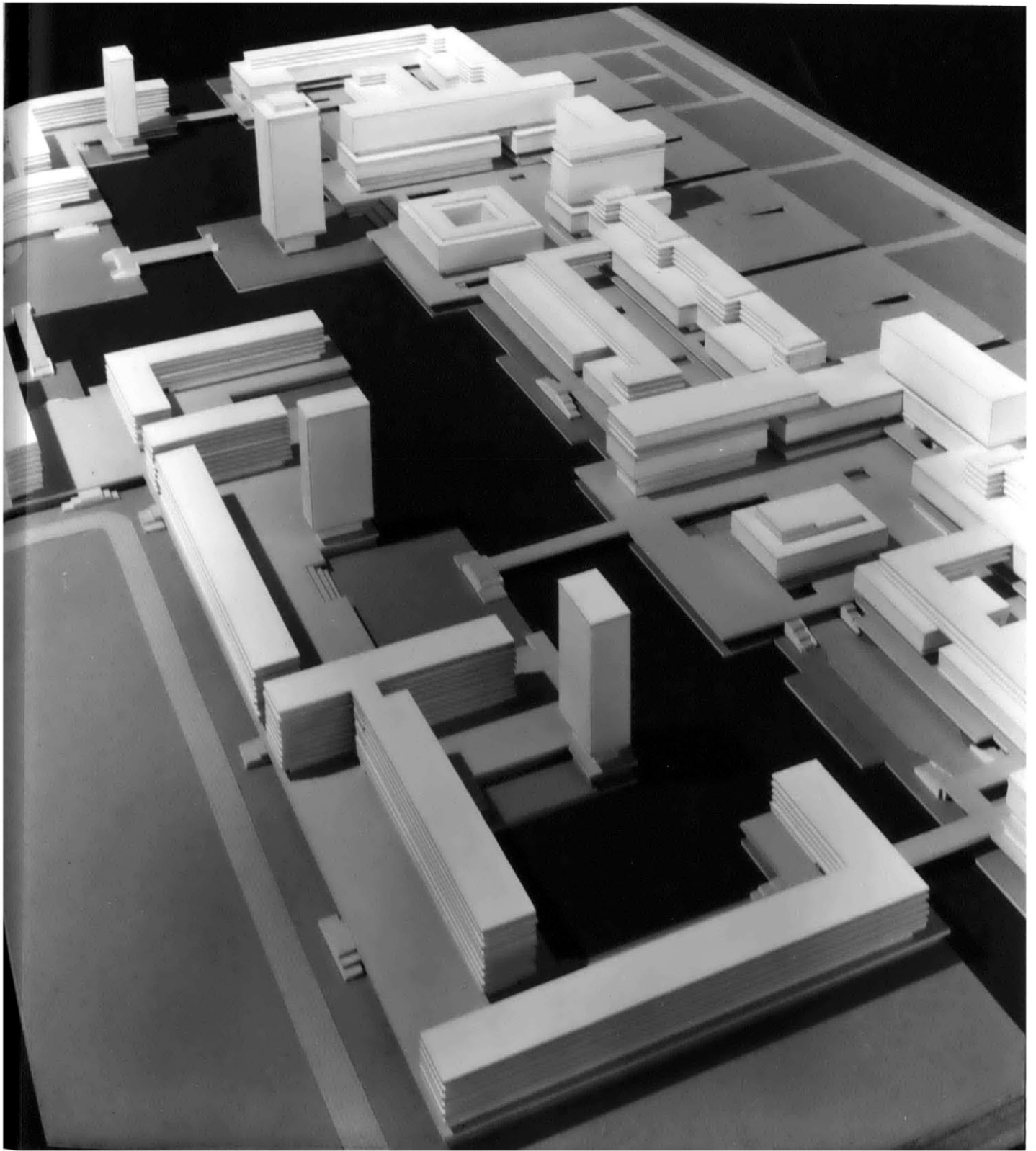


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ALAN L. FISHMAN
JULY, 1962
M.I.T.







TEAM #4

George L. Nielsen
Master Plan
Residential
City Center

INTRODUCTION

The object of this new settlement proposal is to create a needed new urban center for the proposed Rt. 1- Rt. 95 corridor which utilizes the two existing towns of Foxboro and Mansfield.

MASTER PLAN

In the area for the proposed new settlement, there are several small towns. Each town (all with populations of less than 5,000 within the incorporated city limits) is widely dispersed over large areas. There is little identity of belonging to a particular town and in most cases the residential and some commercial development runs continuously from one town to the next. Because of this, circulation paths and city functions are unpleasant and inefficient. Foxboro is growing uncontrollably while its near neighbor Mansfield (5 miles away) is gradually dying. The lack of planning and consequent order is the cause of this. In addition, there is a large amount of undesirable mixing of functions. Industry is dispersed and functions inefficiently within this region. Commercial areas are located in near rural surroundings and their consequent spans of activity and markets are small. Residential areas are often too near circulation paths, objectionable industrial operations or commercial establishments.

With the location of interstate Rt. 95, a limited access highway connecting Boston and Providence, growth will take place in this area. There will be a need for a planned method for this growth.

This new settlement plan proposes to utilize some of the desirable existing conditions in order to provide a nucleus for growth in this region and correct some of

the undesirable existing conditions.

This new settlement proposal will utilize the two types of labor pools in Foxboro (light) and Mansfields (heavy), the two largest towns on the site, to create a concentrated urban center. This proposal has the following advantages:

1. It is located to give order to the growth of Foxboro and Mansfield, the two largest and most critical towns (in terms of increase and decrease in population) in the region.
2. It utilizes the labor pools of Foxboro and Mansfield in a central efficient industrial development which gives a strong economic base to the new settlements.
3. The new center has the advantage through the use of these two towns, of having a large population (25,000 + 9,000) in the first phase. This assures its dominance within the region.

This new settlement will contain within its own business and commercial district a regional shopping center which will fulfill the apparent commercial needs of the region. This has the following advantages.

1. It will act as a commercial magnet for the new settlement and give it additional economic strength.

2. The intimacy of the new town and the shopping center will provide continuous activity within the center and give it a continuous market.
3. The concentration of the two will make justifiable elaborate but efficient and pleasant traffic engineering.

See diagram I for the existing conditions on the specific site for the new settlement.

The new settlement contains the following life functions. See diagram II.

Commercial and Business

Industrial

Residential

Recreational and Reserve

The new settlement contains the following circulation functions. See diagram III.

_____ Intercity vehicular

___ ___ Regional vehicular

- - - - Local vehicular

Pedestrian

These functions are arranged to facilitate the most pleasant and efficient operation of the city for all kinds of activity while trying to solve the objectives set down above.

The city proposed is designed to grow to a maximum population of 100,000. At this population its objectives,

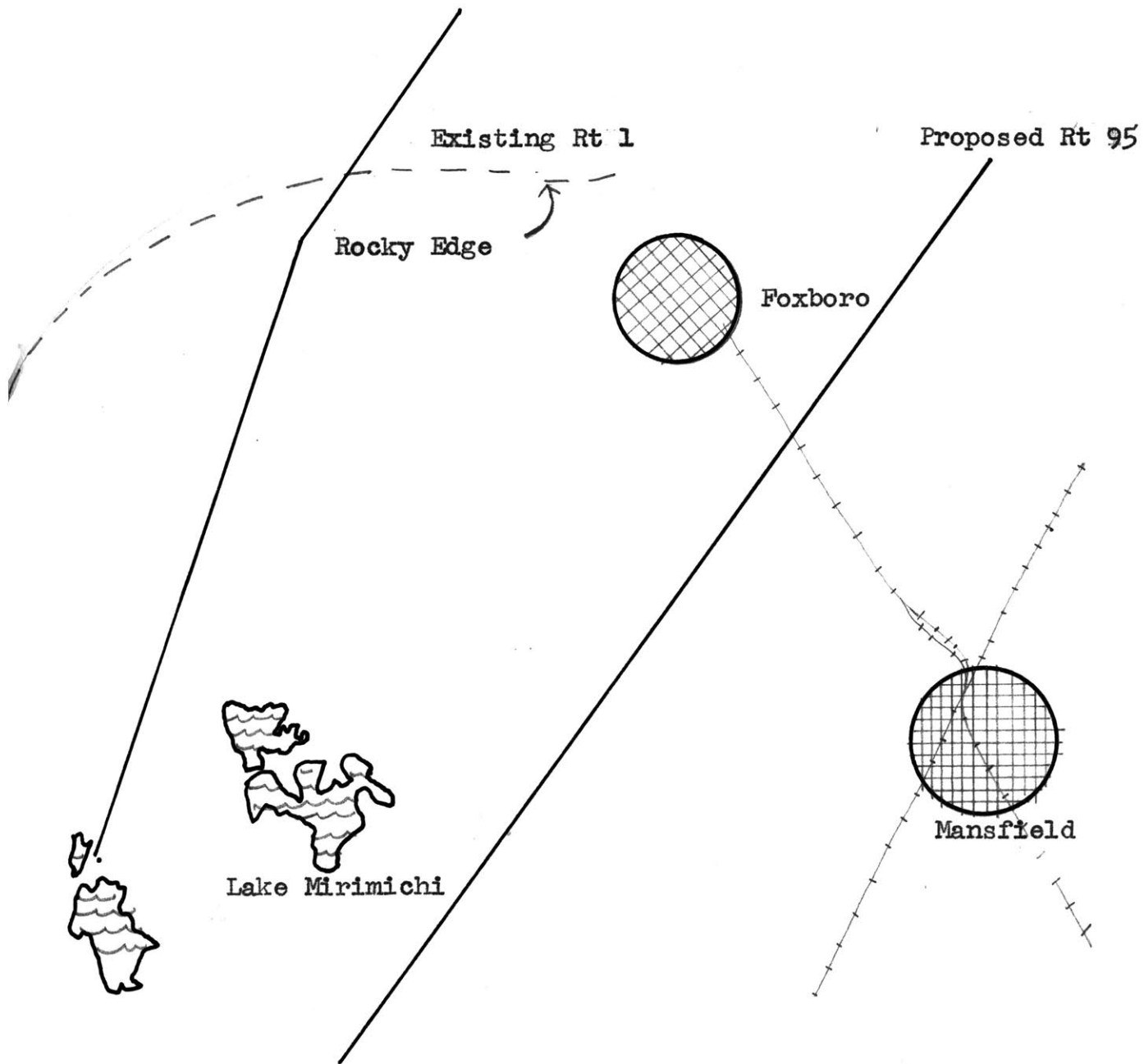


DIAGRAM I
Existing Conditions

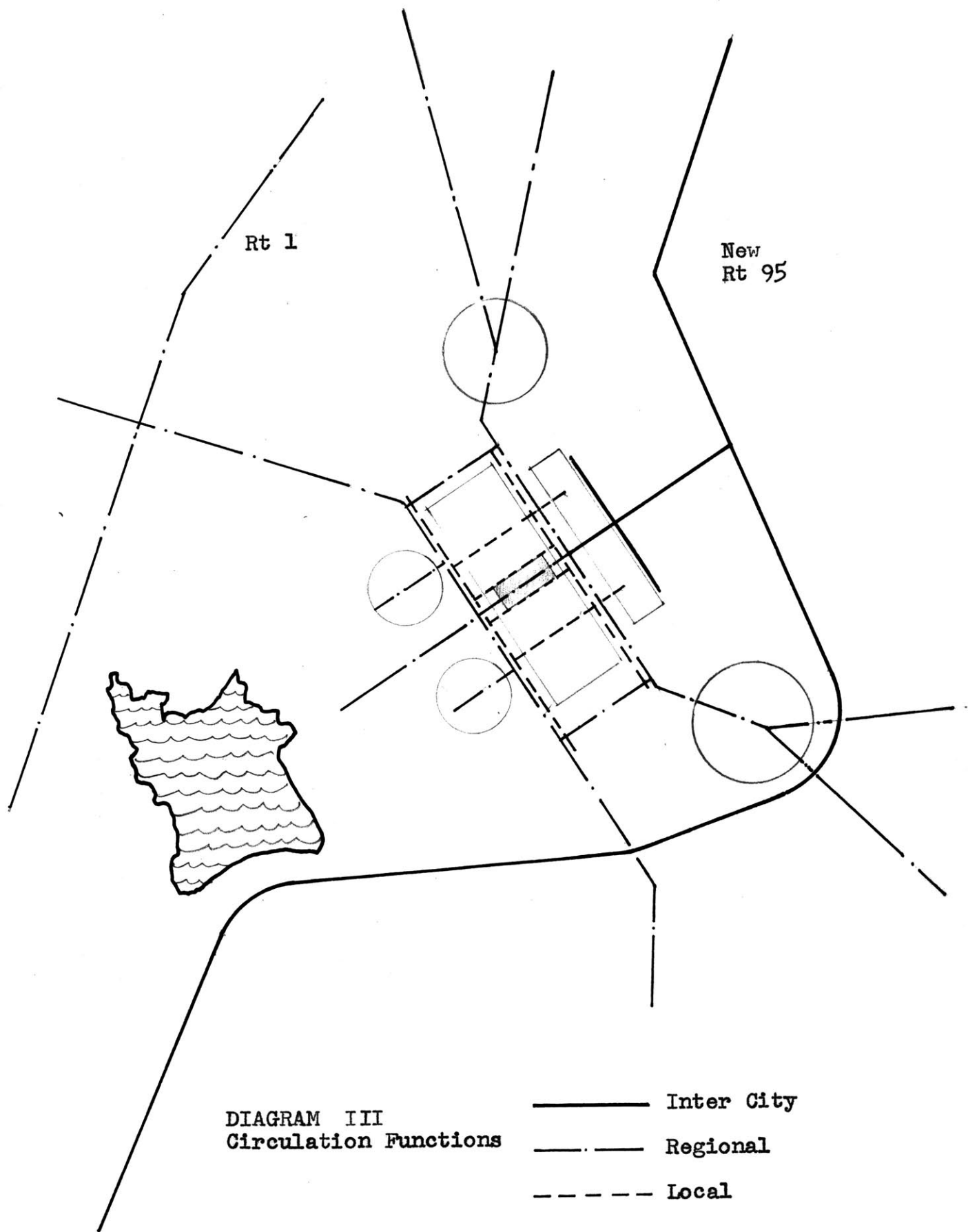


DIAGRAM III
Circulation Functions

- Inter City
- . - . - . Regional
- - - - - Local

to limit sprawl and act as a regional center, have reached the limits of their effectiveness. The full span of life processes within the city will have reached their limiting dimension. This city will not function efficiently or pleasantly if these dimensions (either distance or population) are exceeded. Thus the city is self limiting as it should be to fulfill its function as a regional center.

RESIDENTIAL

There are two classes of residential areas, local and regional. See diagram IV. Local is that area which has pedestrian dimensions that give easy access to the business and commercial center and the industrial park. Its composition flows from low density at one end towards the commercial center where densities are high. This action is symmetrical to both sides of the commercial center. See diagram V. Growth of this class residence would be by a very small increase in area (in order not to exceed pedestrian dimensions) and constant increase in density through renewal and new multi-family housing. In the first stage there would be a near equal amount of single family and multi-family housing. As growth occurs, the economic pressures would a giving over of single family housing area to multi-family.

All other residential areas are treated as regional with respect to the city center and industrial area. Their density would be uniformly low and movement to and from them would be vehicular. They would consist almost entirely of single family dwellings at various low densities. Growth of this residential class would be by addition of new neighborhood increments. Densities within each neighborhood increment would remain constant. Residential areas in existing surrounding towns in the area would assume the character of regional neighborhoods.

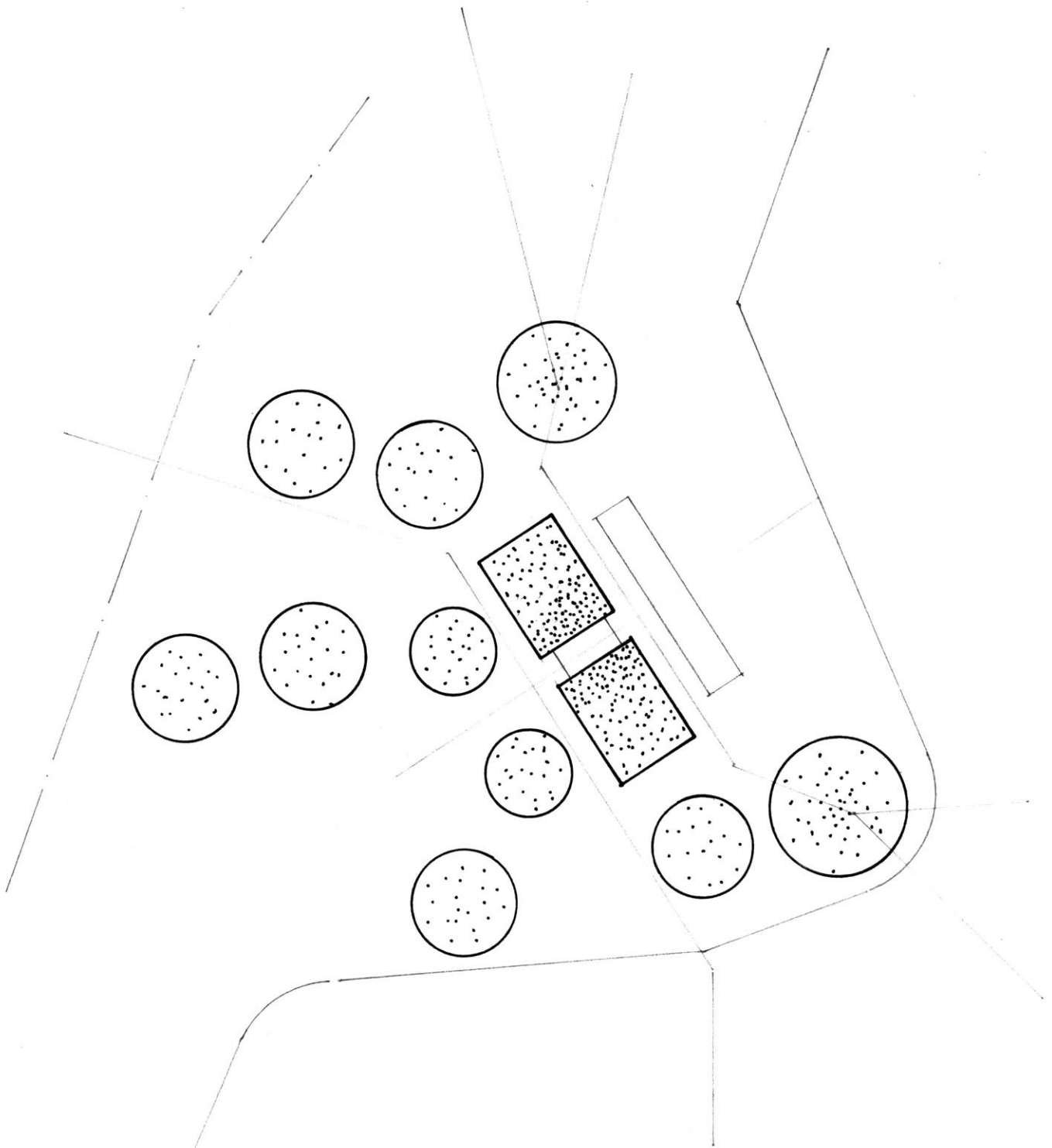
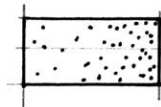
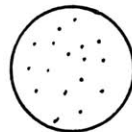


DIAGRAM IV
Residential



Local



Regional

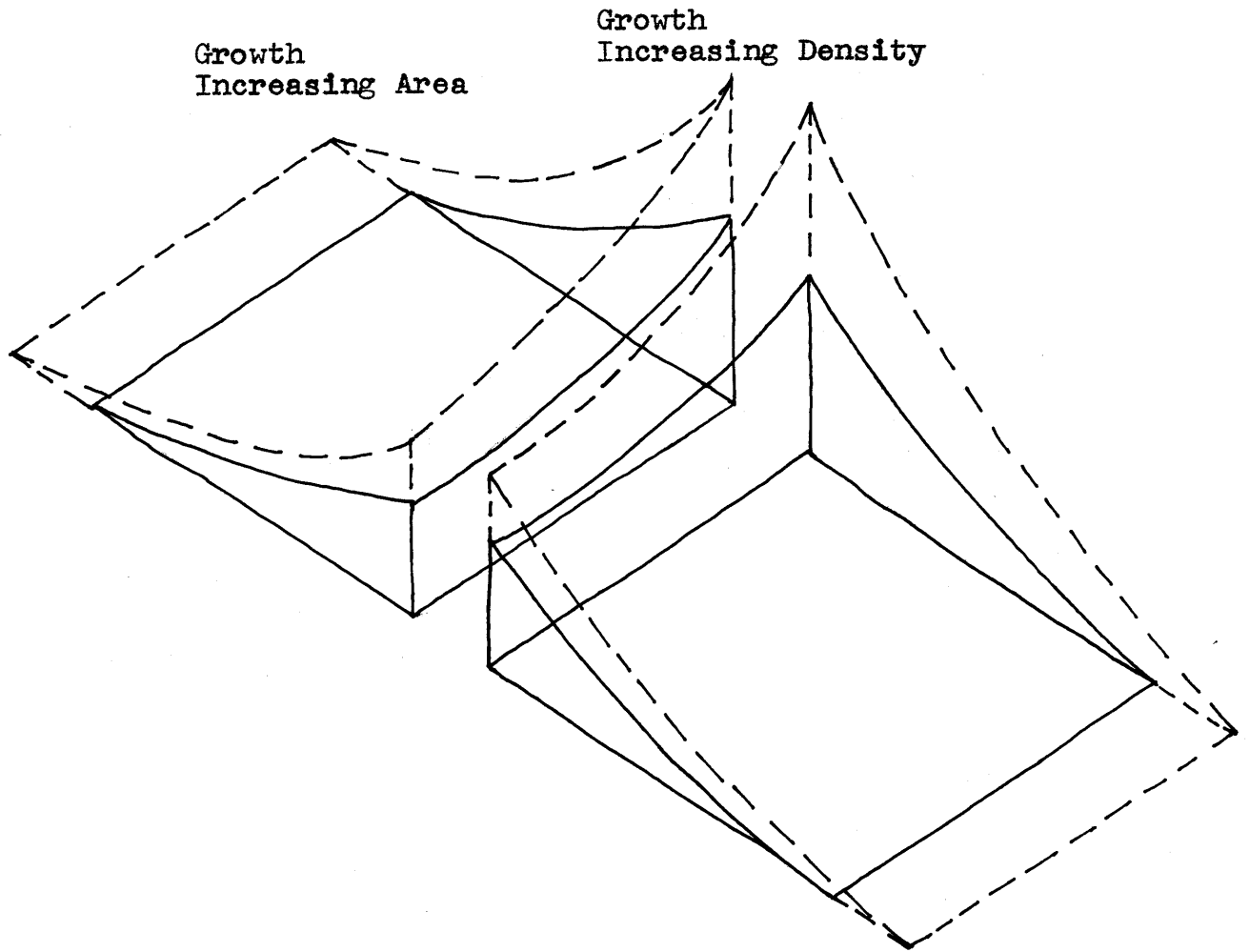


DIAGRAM V
Local Residential
Density & Growth

COMMERCIAL AND BUSINESS DISTRICT

The commercial and business district or city center of this new settlement is planned to recognize the following requirements.

1. The desirability of linear elements for efficient vehicular flow.
2. A meaningful arrangement of architectural solids and voids which work for the pedestrian scale.
3. A systematic scheme for parking and service functions.
4. The appropriate function elements which are needed to satisfy both the regional and local aspects of the new settlement proposal.

General:

The city center will contain a regional shopping center. This has the following advantages.

1. The shopping function required by the regional importance of the city and the designed residential scheme is provided.
2. It consolidates all splinter commercial activities into one urban center where service and traffic is efficiently planned for and a single and more intense commercial atmosphere exists.
3. Location of the regional shopping center within the city center provides an intimate and constant market in the form of the local residential

population. Thus, daily shoppers (local) supplement the economic activities of weekly (regional) shoppers.

4. The concentration of commercial activity within the city center of the new settlement assures its dominance as the one nucleus of the region.

Such disadvantages as massive parking and traffic needs are overcome by planning. Widely scattered traffic and parking problems that could not be foreseen in a dispersing of commercial activities are consolidated and simplified so that they can be planned for.

Traffic:

Vehicular demands are principally single directional linear paths to function efficiently. Pedestrian requirements are multidirectional and labyrinthine. The form of the city center is derived from the process of connecting these two requirements.

Streets functioning in simple straight line paths lead directly through the city center at a submerged level. They feed down ward to parking levels. Thus all vehicular access and parking is submerged. This underground access and parking has the following advantages.

1. It separates vehicular traffic from pedestrian traffic thus making possible the design of the proper forms for each.
2. It places parking in intimate contact with the commercial areas.
3. It maintains the surface level free from vehicular clutter and congestion, fumes and noises and accident hazards.

4. It makes possible a continuous and natural flow from residential area into the commercial areas by eliminating busy vehicular paths which would act as barriers.

Local access to the city center and parking is separated from regional and intercity access and parking. Parking is supplied for approximately 3,000 cars local and 5,000 cars regional and intercity. See diagram VI and VII.

Service:

All services for the city center are provided by a submerged service module which functions as a path for both utilities and vehicles. The servicing rises vertically in service cores and chases which are connected directly to the various structures above. These cores can be dropped where desired so long as they connect to the service module. Each core would cut through a total of four parking spaces. These cores would be structural as they would replace columns within the system. Planning freedom of the buildings above ground would be relatively unhampered since the cores can be placed in greatly varied positions. But a certain expression of this service module is felt to be desirable. The module seeks to recognize the basic spatial objectives above ground while maintaining its efficiency below ground.

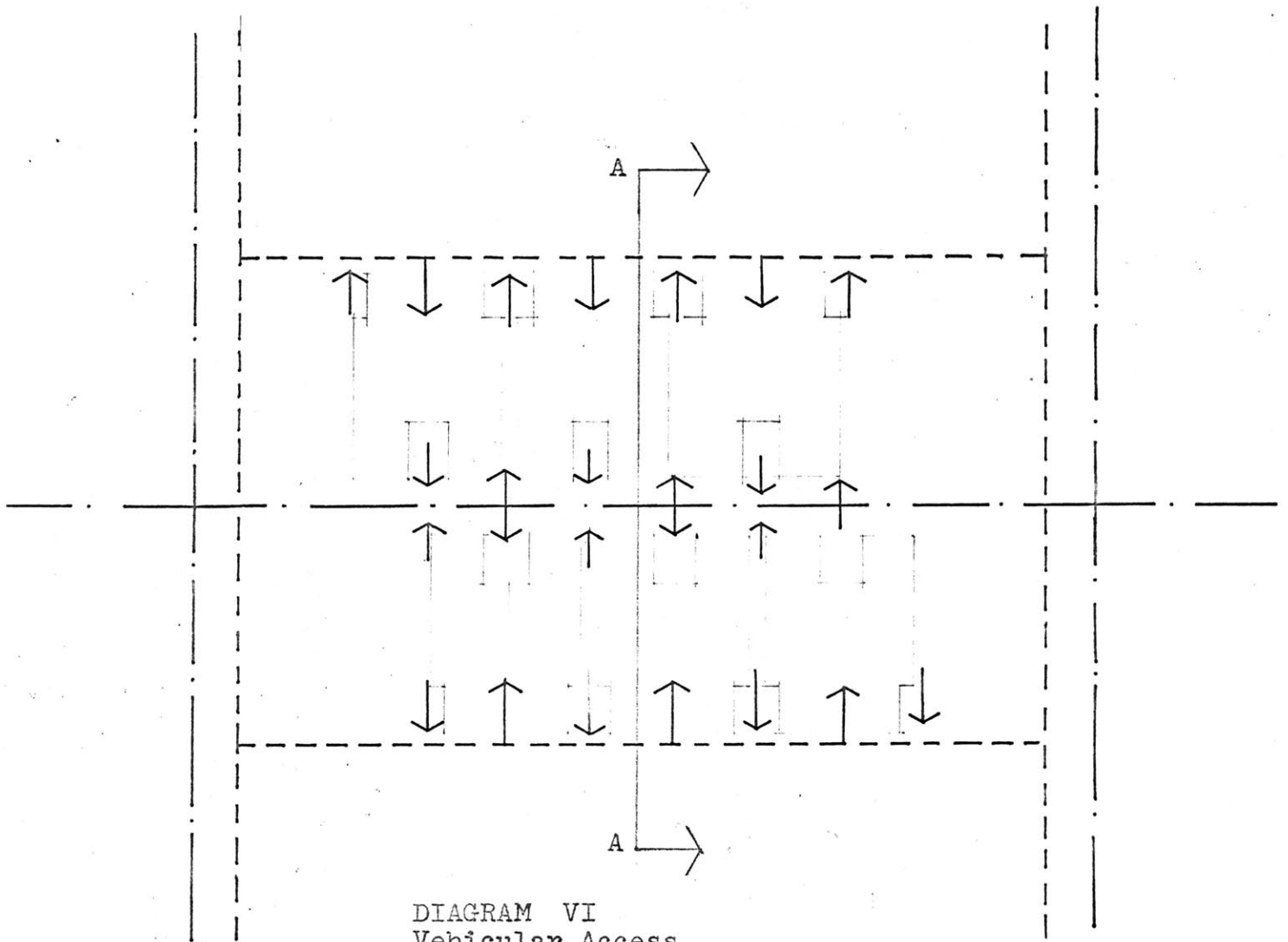


DIAGRAM VI
Vehicular Access

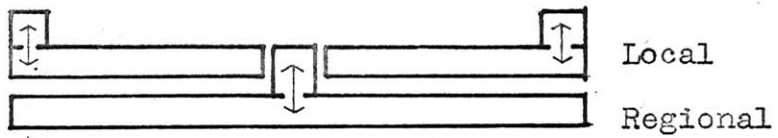


DIAGRAM VII
Section A A

Functions:

Local shopping functions are located along the periphery of the center and regional shopping functions are grouped around the central open spaces. Business spaces are lined along the edges of the city center and function both horizontally and vertically in a linear path. The government center, transportation center and civic center, which are the most public of the city functions are placed geometrically in the center of the city center. These functions generate the most intense activities (this intensity being most appropriate centrally located) and belong entirely to the public. See diagram VIII.

There is a large degree of mixing of activities in the city center at the first stage. This is done because at the first stage it is important that there be an even level of intensity throughout the entire center so that growth will take place in the planned symmetrical pattern. In addition this mixing enriches the activities of all the various functions and at the first stage density and dimensions it is possible to do so without impairing efficiency or convenience. Night and day activities are dispersed so that there will be constant activity throughout the whole center for twenty four hours. Finally, this mixing and dispersion spreads density to an appropriate level for a city of 25,000.

As growth takes place and dimensions and densities increase, various functions will begin to group themselves naturally for increased efficiency. At these increased

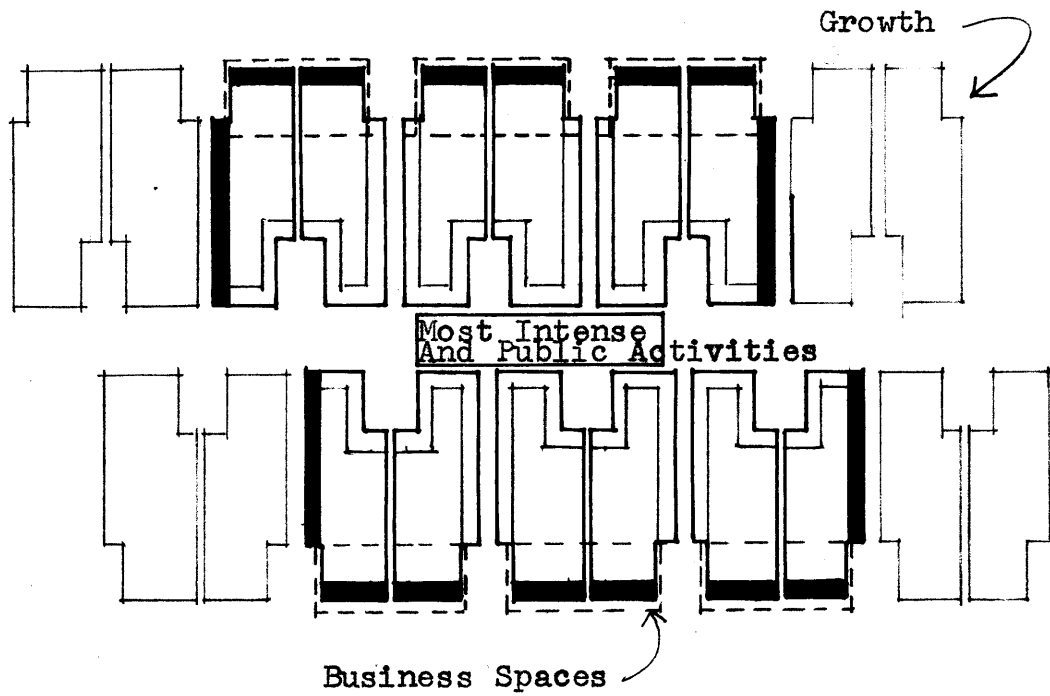
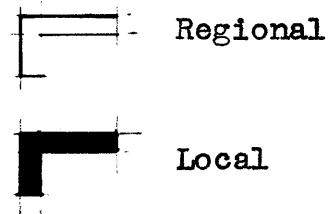


DIAGRAM VIII
Functional Arrangements



densities and dimensions this "grouping" is appropriate to bring about a more urban atmosphere and greater efficiency.

Growth:

Growth will take place by two processes. First there will be the addition of 66% more surface area in increments of 16% at a time. This growth is horizontal and will take place along the lines of vehicular access in order to maintain their requirements for efficient operation. The purpose of this growth is to make more appropriate dimensions of a city center for 100,000 people, and more important the increased area will provide an enlarged base for the more important second type of growth.

This second type of growth will be the process of renewal and regrowth within the existing center itself. This growth is vertical and will serve to increase the density of the center and make more intense the activities. This is appropriate for a more urban and higher populated city. The spaces will diminish and structures will rise higher. This growth will serve most to effect the design of a 100,000 population city as opposed to a 25,000 population city. Since the city is designed to grow no larger than 100,000 (this will include the region), the city center is designed to limit itself. At 100,000 the city center will have grown to the limits of its

area within the surface street boundaries. The vertical growth will have reached a point where increase in density without additional increase in surface area will cause congestion rather than increased activity.

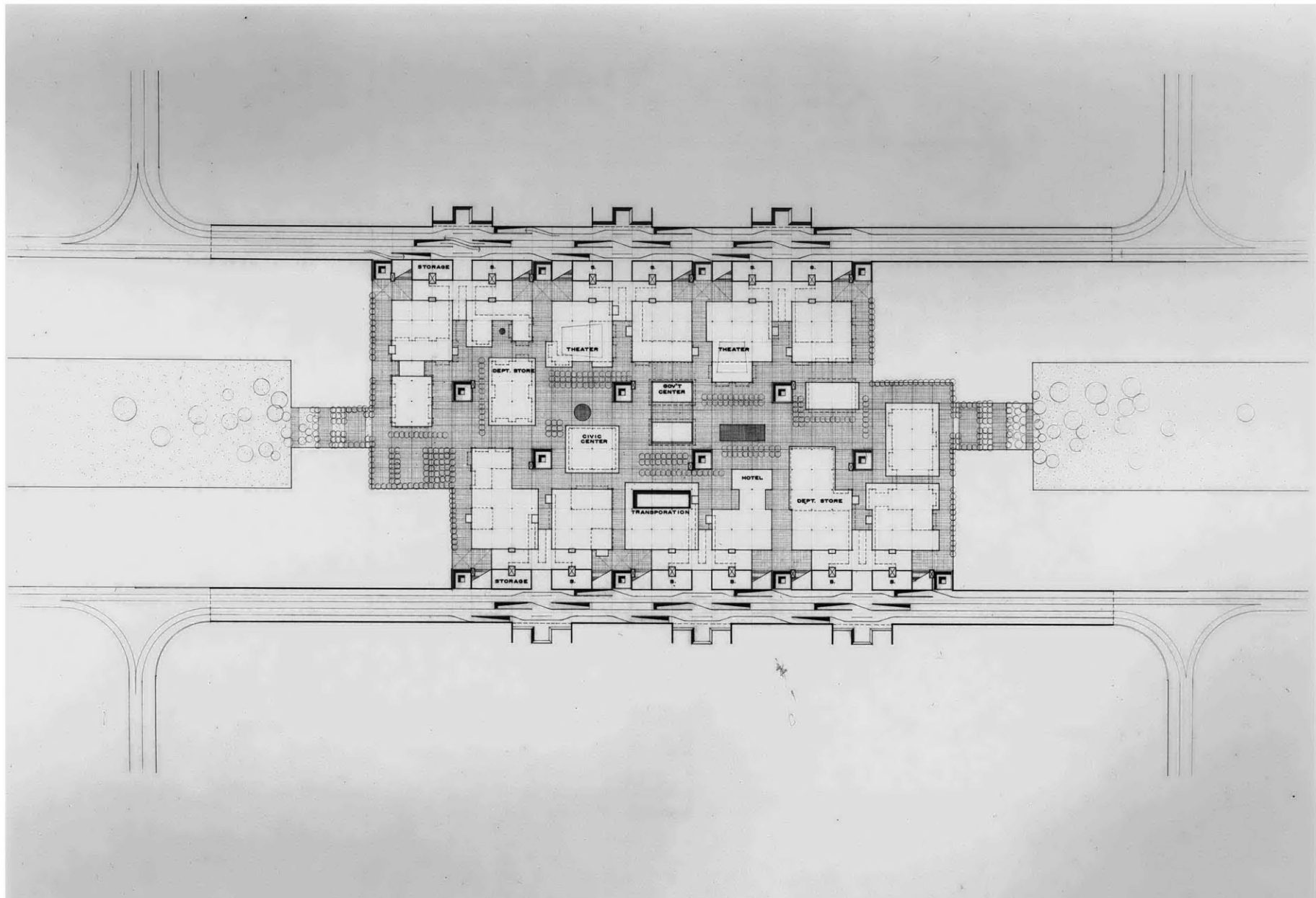
Quality of the spaces:

The quality of the spaces, the arrangement by their corresponding mass should be noted from the model and drawings. They are intended to be the manifestation of the above stated explanations.



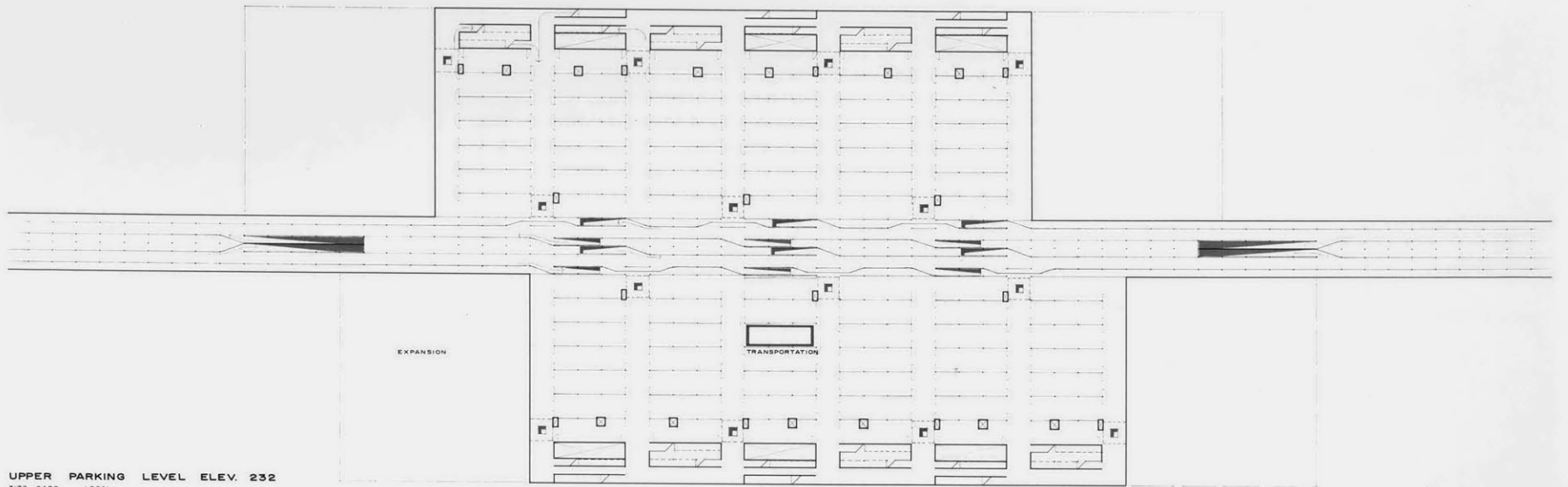
MASTER PLAN NEW SETTLEMENT AN ADAPTABLE URBAN STRUCTURE

MASTER ARCH THESIS
 GEORGE LEE NIELSEN
 MASS. INST. OF TECH
 SCALE 1"=1000' JULY 1962

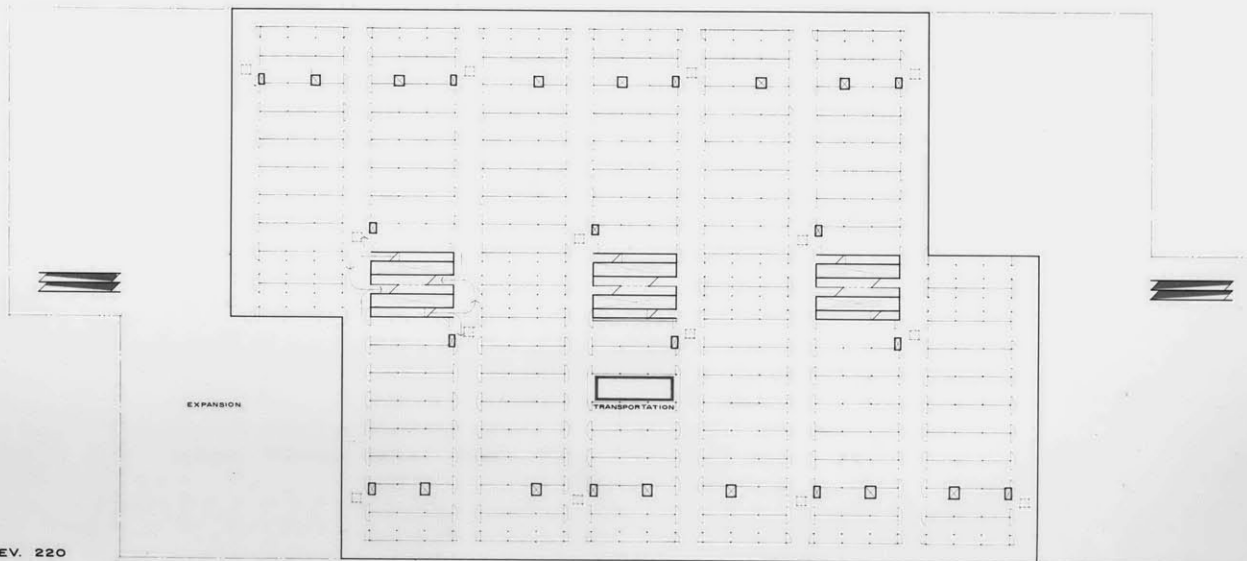


PLAZA LEVEL ELEV. 244

MASTER ARCH. THESIS
GEORGE LEE NIELSEN
MASS. INST. OF TECH
SCALE 1"=100' JULY 1962

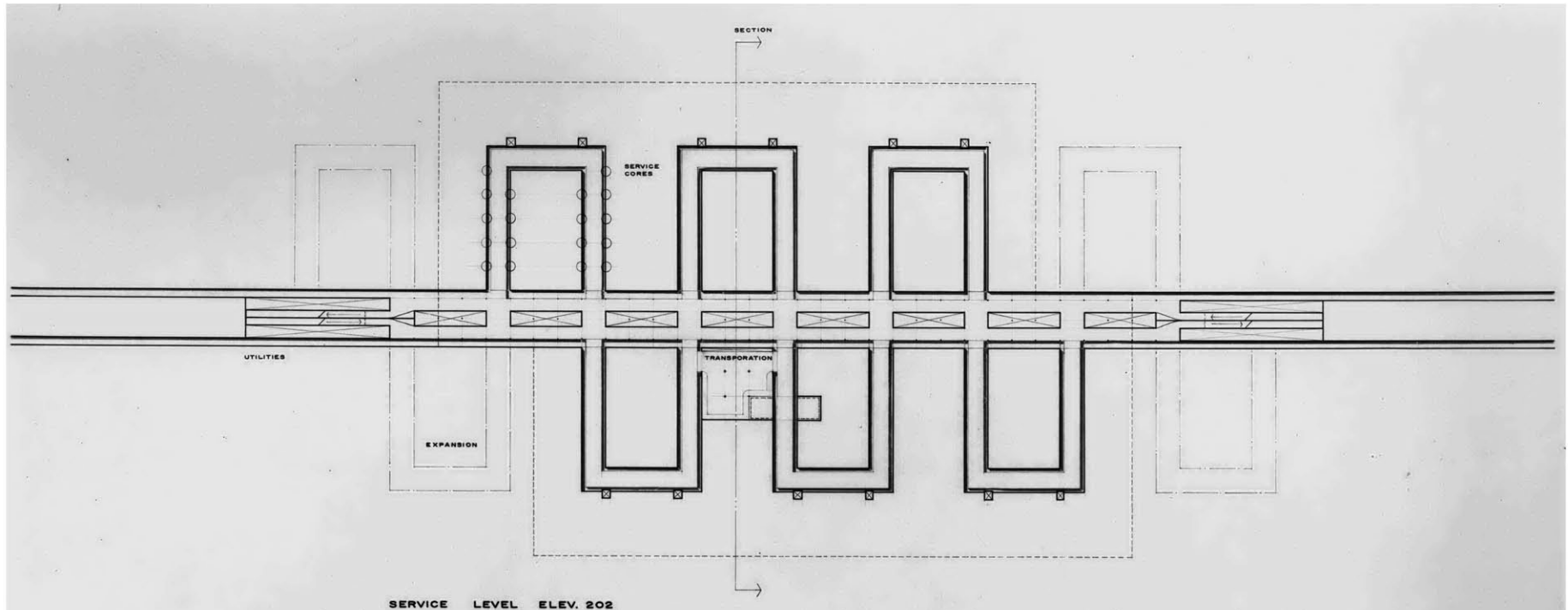


UPPER PARKING LEVEL ELEV. 232
 3172 CARS LOCAL

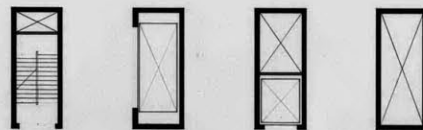


LOWER PARKING LEVEL ELEV. 220
 4296 CARS REGIONAL

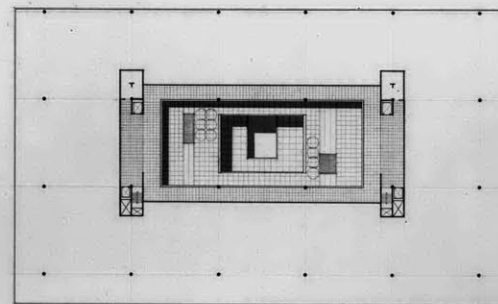
MASTER ARCH. THESIS
 GEORGE LEE NIELSEN
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 SCALE 1"=100' JULY 1962



SERVICE LEVEL ELEV. 202



TYPICAL VERTICAL SERVICE CORES



TYPICAL OFFICE FLOOR



TRANSVERSE SECTION

MASTER ARCH. THESIS
GEORGE LEE NIELSEN
MASS. INST. OF TECH.
SCALE 1"=50' JULY 1962

