



90 Larch Road  
Cambridge 38  
Massachusetts

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Professor Lawrence B. Anderson  
Head, Department of Architecture  
Massachusetts Institute of Technology  
Cambridge 39, Massachusetts

Dear Sir:

I herewith submit my thesis, "A Community  
School and Recreation Facility for North Cambridge,  
Mass.," in partial fulfillment of the requirements  
for the degree Master in Architecture.

Respectfully,

Zachary Rosenfield

## TABLE OF CONTENTS

	Page
I. INTRODUCTION TO THE PROBLEM	1
II. NORTH CAMBRIDGE: PRESENT AND FUTURE	6
a. Relation to the city as a whole	6
b. Population characteristics	6
c. Land use	8
d. Public transportation, traffic, and internal circulation	8
e. Existing schools - condition of buildings	9
f. Effects of proposed transit and highway extensions	10
g. Future population	12
h. Suggested re-zoning	14
III. NEED FOR RECREATION AREAS	15
a. Method of analysis	15
b. Playfields	16
c. Playgrounds	17
d. Parks	18
e. Totlots	19
f. Summary of areas needed for a new central recreational facility	19
IV. ENROLLMENT PREDICTIONS	21
a. Assumptions and qualifications	21
b. The effect of a modern public school system on enrollment	24
c. Educational opportunities afforded with an enrollment of 180 pupils in grades 6-8	27
V. BUILDING REQUIREMENTS: UNITS AND RELATION- SHIPS	29
a. For the elementary school	29

	Page
b. For the junior high-school	30
c. For the use of school and general public	33
d. For the use of both schools	40
VI. SITE SELECTION	42
a. General considerations	42
b. Site No. 1	45
c. Site No. 2	48
VII. CONCLUSION	51
VIII. ENROLMENT APPENDIX	
IX. BIBLIOGRAPHY	
X. DRAWINGS	

## MAPS

No.		Following Page No.
1.	North Cambridge Schools	5
2.	Population Distribution	5
3.	Existing Public Elementary School Plant	5
4.	Population Spot Map	5
5.	Proposed Elementary School Districts	5
6.	Proposed Elementary School Plant for Grades 1-5 Related to Present Residen- tial Zone	5
7.	Proposed Elementary School Plant for Grades 6-8	5
8.	High Population Density	5
9.	Coincidence of Symptoms of Substandard Housing	5
10.	Types of Residential Areas	5
11.	Traffic Survey of 1939	5
12.	Proposed Highway and Rapid Transit Ex- tensions	5
13.	Suggested Re-Zoning of North Cambridge	5
14.	Playfields	14
15.	Playgrounds	14
16.	Parks	14
17.	Totlots	14
18.	Vacant Land, School Sites, and Viola- tions of the Residential Zone	41

## TABLES

No.		Location
1.	Academic schedule for grades 6-8 in new school	Following page 30
2.	Rooms required for grades 6-8 in new school	Following page 30
E 1.	School enrollment forecast - U.S. Census	Enrollment Appendix
E 2.	Gross registered births - Cambridge	Enrollment Appendix
E 3.	Census grade 1-8 enrollment predic- tion vs. Cambridge 8-year births	Enrollment Appendix
E 4.	Total Cambridge elementary school enrollments	Enrollment Appendix
E 5.	Parochial elementary school enroll- ments	Enrollment Appendix
E 6.	Enrollments in North Cambridge pub- lic schools (grade 1-8 totals)	Enrollment Appendix
E 7.	Total Cambridge public and parochi- al enrollments, grades 1-8, vs. 8-year births	Enrollment Appendix
E 8.	( <u>All-Cambridge public and parochial,</u> <u>North Cambridge public and parochial,</u> <u>grades 1-8</u> ) vs. year	Enrollment Appendix
E 9.	North Cambridge public vs. parochi- al; ratio for grade 1-8 totals	Enrollment Appendix
E10.	Effect of public housing on school enrollment	Enrollment Appendix
E11.	North Cambridge enrollment summary	Enrollment Appendix

No.		Location
E12.	Prediction of % enrollment in grades 6-8; public schools	Enrollment Appendix
E13.	Distribution of enrollment in new Ellis-Sleeper School	Enrollment Appendix

## GRAPHS

No.		Following Table No.
1.	Ratio ( $\frac{\text{Census grade 1-8 prediction}}{\text{Cambridge 8-year births}}$ ) vs. year	E 3
2.	Ratio ( $\frac{\text{total Cambridge public \& parochial}}{\text{Cambridge 8-year births}}$ ) vs. year	E 7
3.	Ratio ( $\frac{\text{all-Cambridge public \& parochial}}{\text{North Cambridge public \& parochial}}$ ) vs. year	E 8
4.	Ratio: North Cambridge ( $\frac{\text{parochial}}{\text{public}}$ ) vs. year	E 9



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## I. INTRODUCTION TO THE PROBLEM

In April of 1947, the School Committee of the City of Cambridge, Massachusetts, received the final reports of a comprehensive survey of the Cambridge public school system<sup>1</sup>, which the Committee had ordered in 1946. This document, which will be hereinafter referred to as The Survey, recommended the following program of action for North Cambridge:

"Plan and erect a new school on the land now occupied by the Sleeper School....On account of the age, the unsafe type of buildings and the lack of play area, this is one of the MOST URGENT ELEMENTARY SCHOOL BUILDING NEEDS in the city, and should be included in the first steps to be undertaken. The playground here will be of great value as a neighborhood playground; and certain facilities in the building should be planned to coordinate with the city recreation program. Among these are toilets available to the playground, storage of recreation equipment, the gymnasium with its accessories of dressing rooms and showers and the auditorium.

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1. "The Cambridge School Survey: Report to the School Committee of the Survey of the Cambridge, Massachusetts, Public Schools by the Survey Staff," Alfred D. Simpson, Director: Cambridge, Mass., 1947.

"ROOMS NEEDED IN THE NEW ELLIS-SLEEPER.

- "a. For kindergarten through the fifth - 250 pupils:  
1 kindergarten unit, with toilets, store-room, wardrobe, drinking fountain; 8 regular classrooms (capacity at 30 per room and 40 in kindergarten is 280 pupils).
- "b. For Grammar School - 180 pupils:  
4 regular classrooms, 1 science, 1 art, 1 music, 1 homemaking, 1 general shop, 1 library.
- "c. Other classrooms:  
1 open air unit, 1 small auditorium (capacity 300-400), 1 gymnasium and 2 dressing rooms and 2 showers.
- "d. Service Rooms:  
Office suite, 1 lunchroom and kitchen, 2 teachers' rooms, 1 medical and dental suite, 4 toilets - 2 on each floor, 2 adequate storerooms."<sup>1</sup>

The recommendations of the Survey were not taken lightly in North Cambridge. Father Hugh Blunt, of St. John's Parish, in a recent report to his parishioners, had this to say in reply:

"...I wish to oppose the recommendation of the Survey to build a new school in the North Cambridge district. The survey reads: 'A new building to replace the SLEEPER, Ellis, and Wyman to house all grades in the section from kindergarten to grade eight....'

"Now one would think that when a survey is made, it should be made with reference to all the condi-

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1. Ibid., p. 207.

tions present and future. Those who make the recommendations for a proposed new school evidently do not understand the locale. To understand this, some statistics are necessary. The North Cambridge district is at least ninety-eight percent Catholic. There are two parochial schools. St. John's School has an enrollment in its elementary school of 1200. Our Lady of Pity has an enrollment of 500---a total of seventeen hundred. The present enrollment in the Wyman and the Ellis (now including the Sleeper) is 423. The enrollment in the parochial schools will be increased this fall, as St. Vincent's School will admit boys. At St. John's we are planning to add two more rooms, so great is the demand. If we had the room, we would be sure to take at least half of the enrollment from the public schools in the district. We have to face facts. It will not be many years before practically every child in the district will be enrolled in the parochial school. Now in the face of these facts is it not the height of folly to propose a new project that will cost upwards of a half million dollars, in erecting a new school that after a few years will be abandoned? If the city of Cambridge has a half million dollars to throw out the window, well and good. The Survey has this paragraph that is very much ad rem. 'The Parochial School enrollment cannot be overlooked. A better public school system might very well reduce this enrollment very substantially.

But for the present and the near future an increase in the Parochial School enrollment is predicted.' The statement that 'A better public school system might very well reduce this enrollment very substantially' is mere wishful thinking. Some figures may help. The enrollment in the public elementary schools of Cambridge is just under 7,000. The enrollment in the elementary parochial schools is 6,456, almost an equal enrollment. And of course the enrollment in the parochial schools will go on increasing. To be assured of that you must understand the Catholic philosophy in regard to education. Our Catholic parents know that their children receive in the parochial schools at least as good an education as in the public schools, but the chief thing that governs them in the selection of the parochial school is that they want a Catholic education for their children. No matter what advantages you might offer them you will not persuade them to take their children out of the Catholic school. They willingly bear the burden of double taxation in order to be true to their ideal of education. I might say in passing that I tremble to think of what would happen to the Cambridge tax rate if the eight thousand pupils in the elementary and secondary parochial schools were thrown back on the city to educate. The running expense alone would be a million dollars a year, outside the tremendous investment in

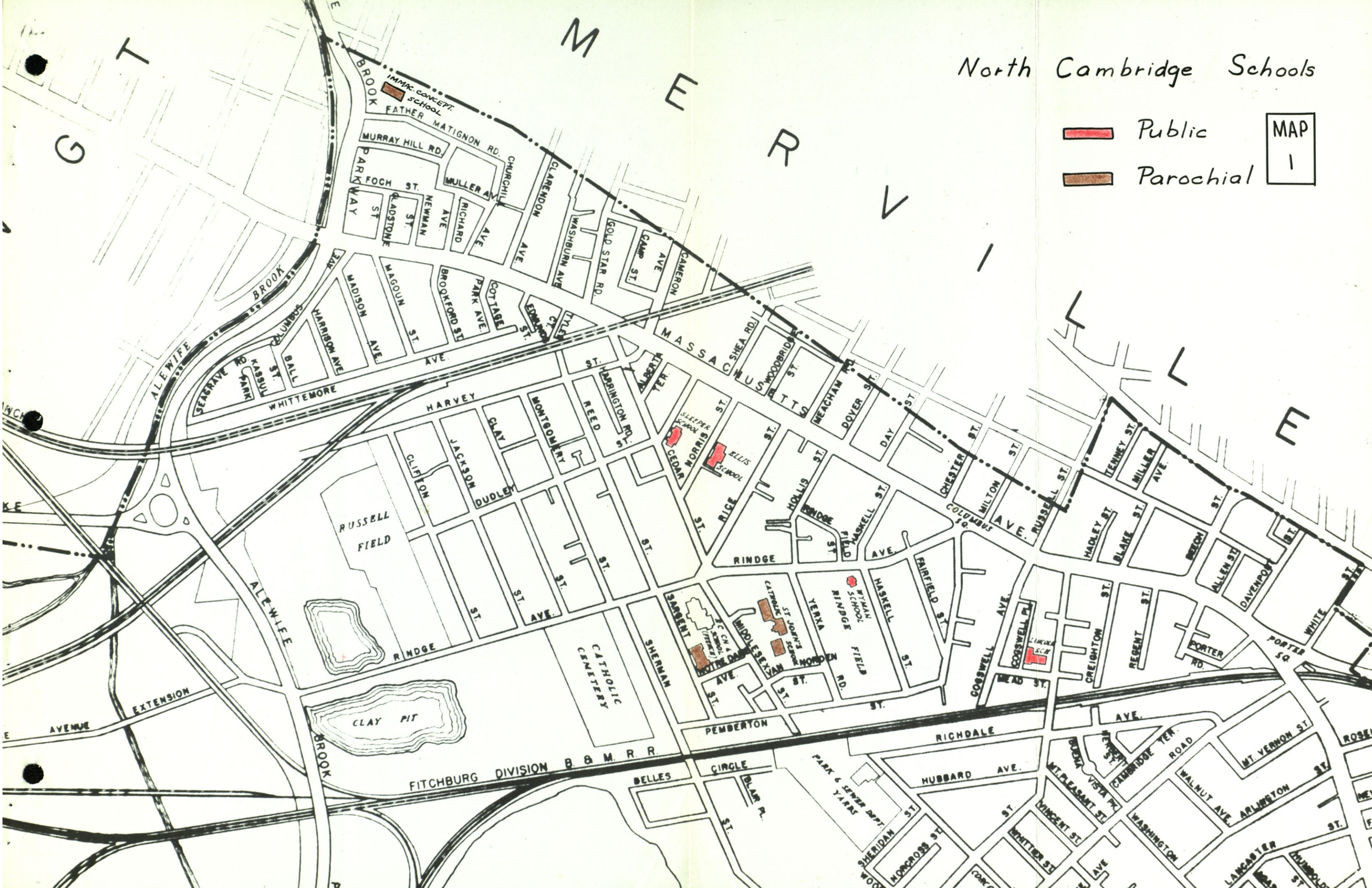
schools and equipment.

"These are vital facts, and they cannot be dodged. You must take conditions as they are and as they will be. Hence, to sum up, it would be silly to build a new school in North Cambridge which would be closed almost as soon as it was opened."

It is apparent that a re-investigation of the school problem in North Cambridge is needed, on the advice of the Survey Committee, the urging of the Catholic clergymen, and the fact that the potential school enrollment has changed considerably since 1947. I propose to do this in the following report in which I will suggest a new program and consider its implementation.

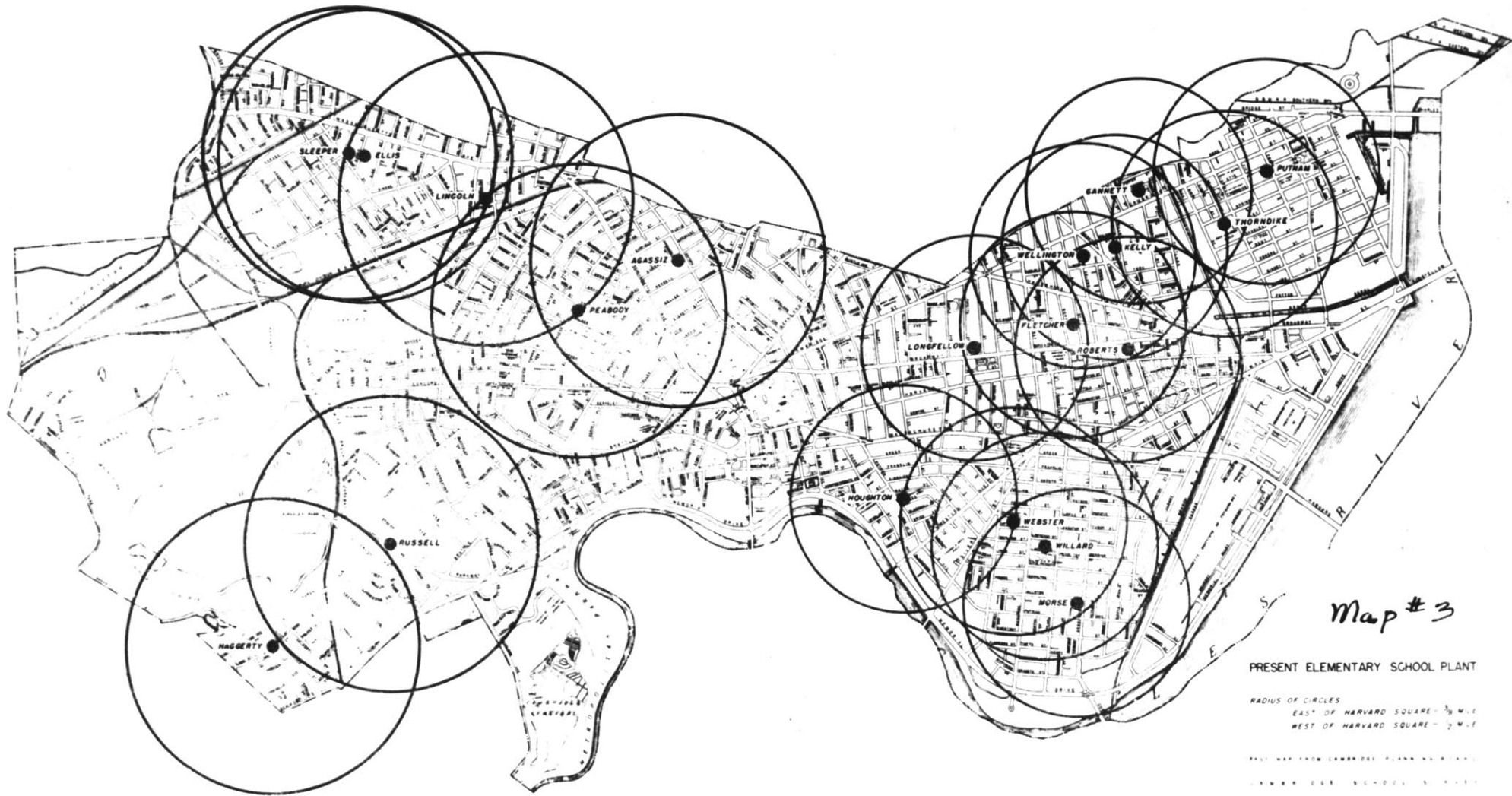
# North Cambridge Schools

Public  Parochial  MAP 1









Map # 3

PRESENT ELEMENTARY SCHOOL PLANT

RADIUS OF CIRCLES  
 EAST OF HARVARD SQUARE - 3/4 M. E  
 WEST OF HARVARD SQUARE - 1/2 M. E

..... FIRST WAY FROM CAMBRIDGE PLANA NO. 1000  
 ..... SECOND WAY FROM CAMBRIDGE PLANA NO. 1000

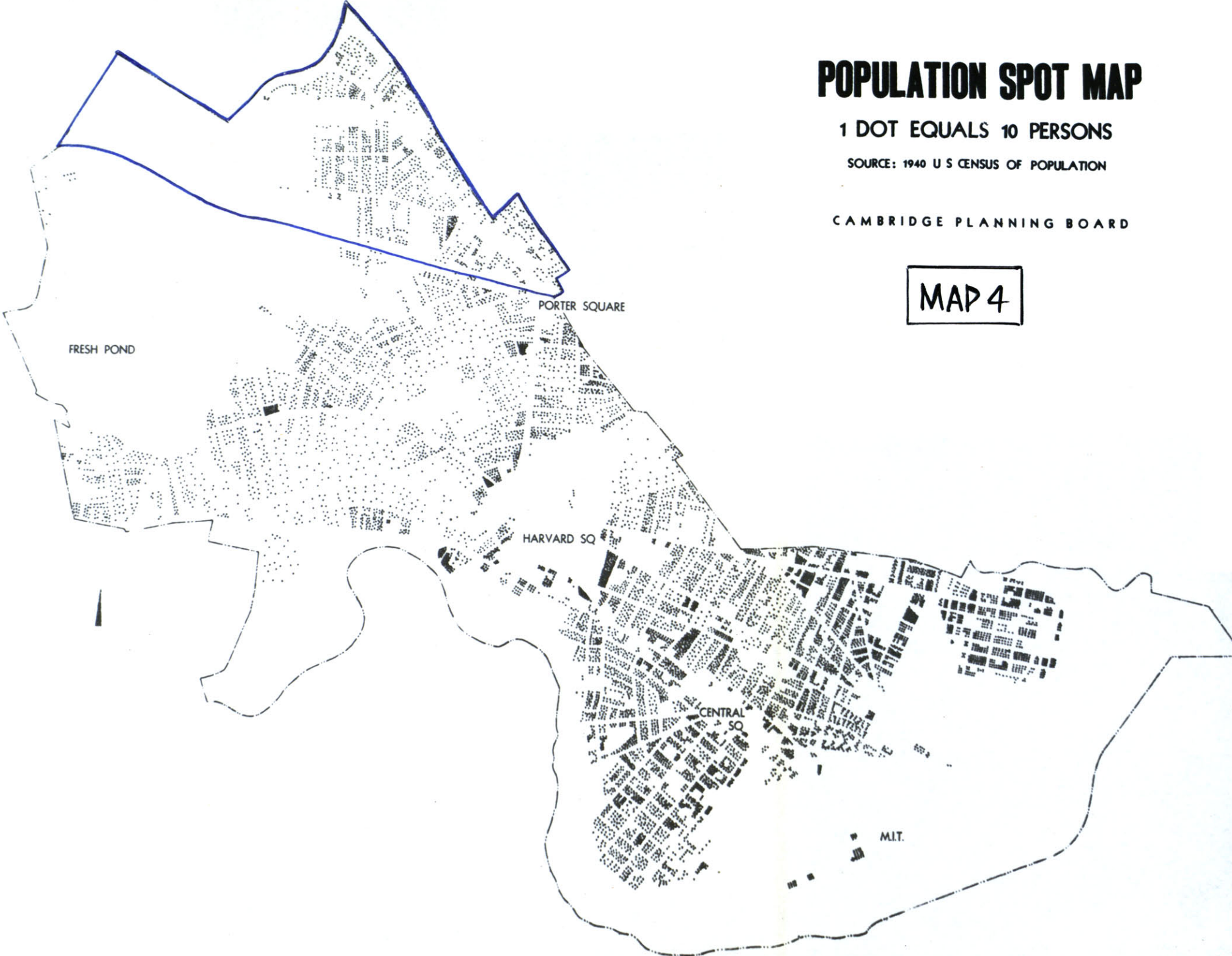
# POPULATION SPOT MAP

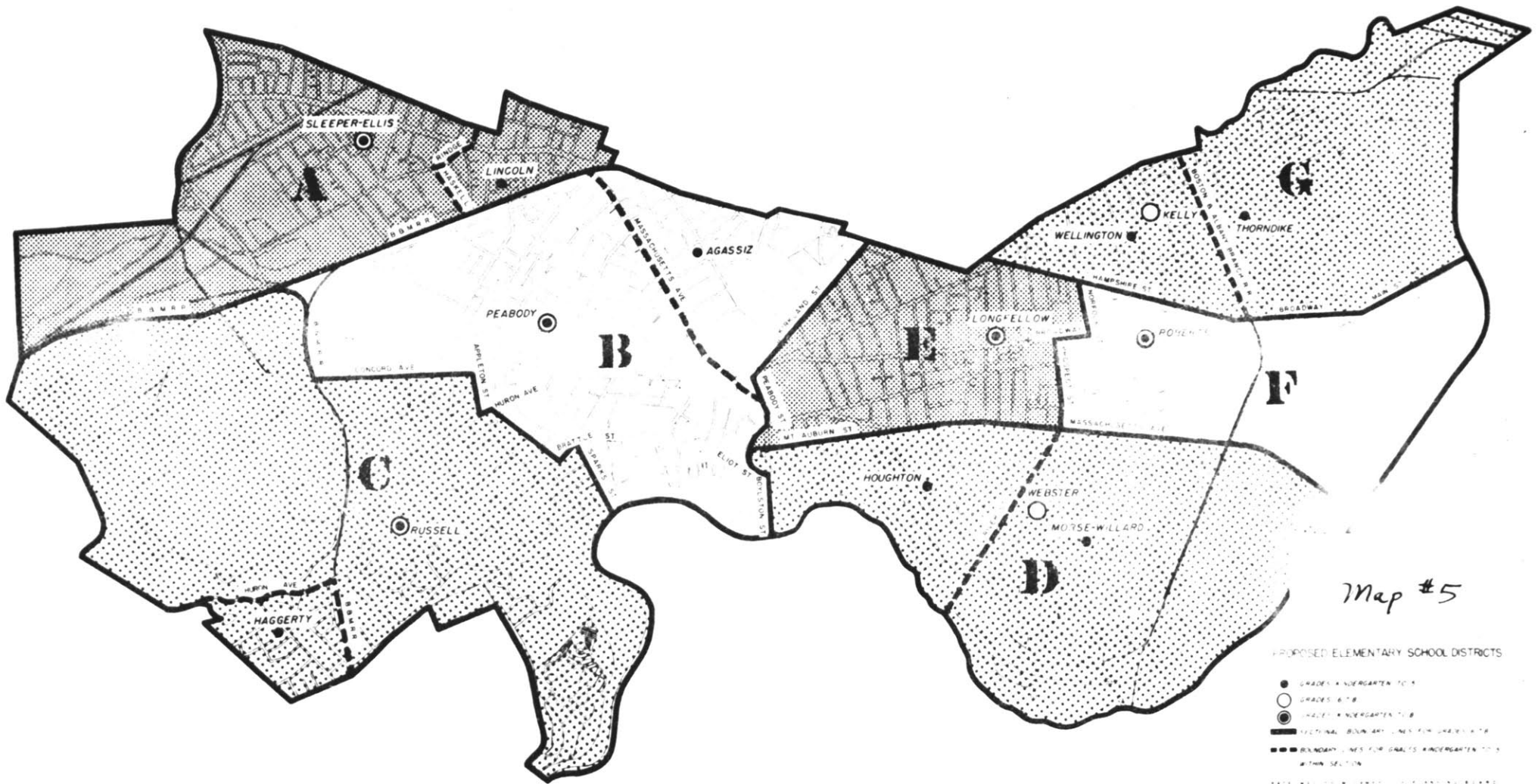
1 DOT EQUALS 10 PERSONS

SOURCE: 1940 U S CENSUS OF POPULATION

CAMBRIDGE PLANNING BOARD

MAP 4





SLEEPER-ELLIS

LINGOLN

AGASSIZ

PEABODY

**B**

**E**

LONG ELLOW

KELLY

**G**

WELLINGTON

THORNDIKE

**F**

**C**

RUSSELL

HOUGHTON

**D**

WEBSTER

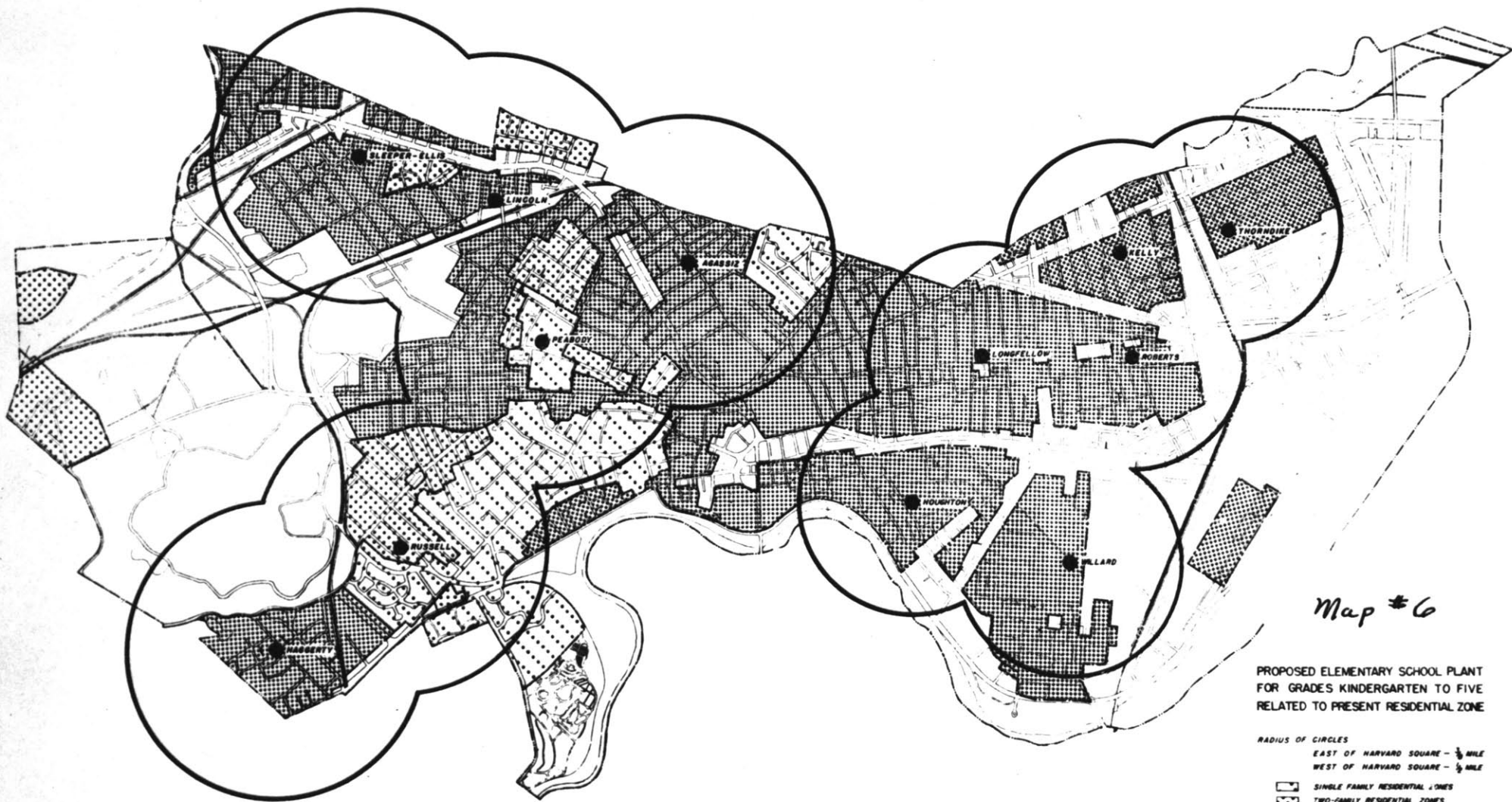
MORSE-WILLARD

HAGGERTY

Map #5




PROPOSED ELEMENTARY SCHOOL DISTRICTS

- GRADES: KINDERGARTEN TO 4
- GRADES: 5-7
- ⊙ GRADES: KINDERGARTEN TO 8
- SECTIONAL BOUNDARY LINES FOR GRADES 5-7
- - - BOUNDARY LINES FOR GRADES: KINDERGARTEN TO 4 WITHIN SECTION



Map #6

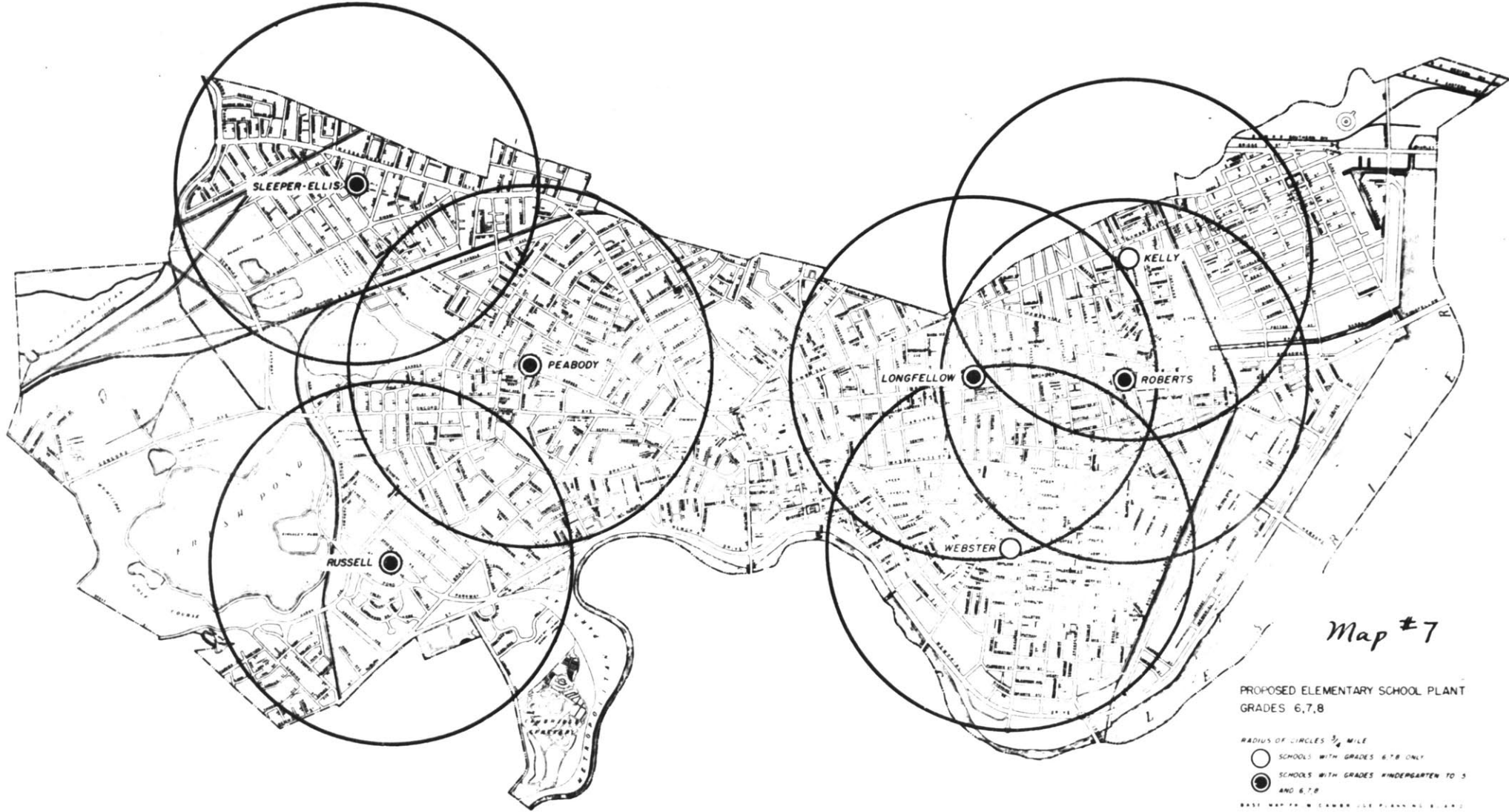
PROPOSED ELEMENTARY SCHOOL PLANT  
FOR GRADES KINDERGARTEN TO FIVE  
RELATED TO PRESENT RESIDENTIAL ZONE

- RADIUS OF CIRCLES  
EAST OF HARVARD SQUARE - 1/4 MILE  
WEST OF HARVARD SQUARE - 1/2 MILE
-  SINGLE FAMILY RESIDENTIAL ZONES
  -  TWO-FAMILY RESIDENTIAL ZONES
  -  MULTI-FAMILY RESIDENTIAL ZONES

DATA FROM CAMBRIDGE ZONING ORDINANCE


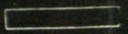

BASE MAP FROM CAMBRIDGE PLANNING BOARD

CAMBRIDGE SCHOOL SURVEY



SYMPTOMS OF SUBSTANDARD ENVIRONMENT

# HIGH POPULATION DENSITY

	100 — 150	PERSONS PER ACRE.
	150 — 200	PERSONS PER ACRE.
	OVER 200	PERSONS PER ACRE.

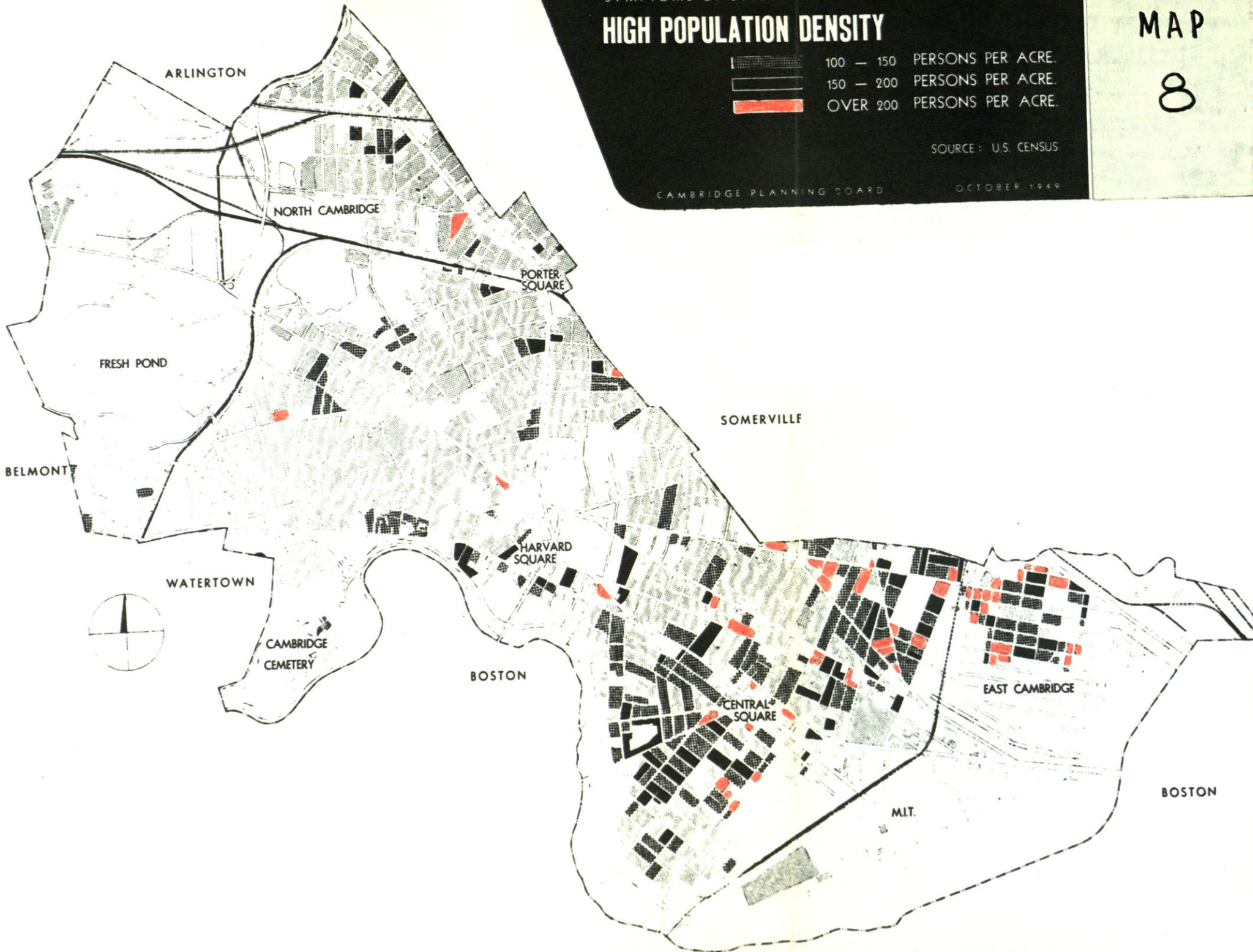
SOURCE: U.S. CENSUS

CAMBRIDGE PLANNING BOARD

OCTOBER 1949

MAP


8





SYMPTOMS OF SUBSTANDARD HOUSING

# COINCIDENCE OF SYMPTOMS

▶ THE SHADED AREAS INDICATE BLOCKS HAVING 3 OR MORE SYMPTOMS OF SUBSTANDARD HOUSING.

 3 SYMPTOMS

 4 SYMPTOMS

 5 SYMPTOMS

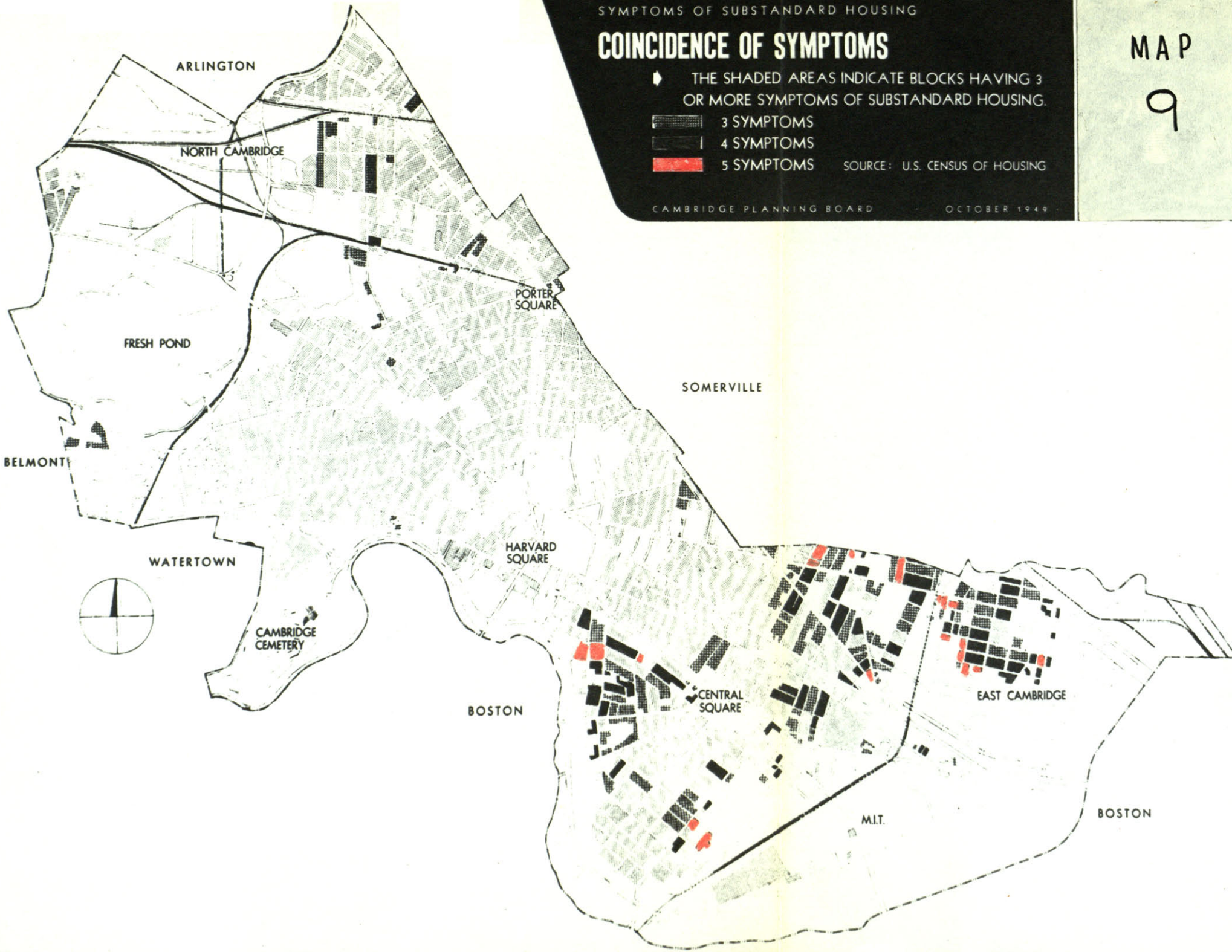
SOURCE: U.S. CENSUS OF HOUSING

CAMBRIDGE PLANNING BOARD

OCTOBER 1949

MAP

9

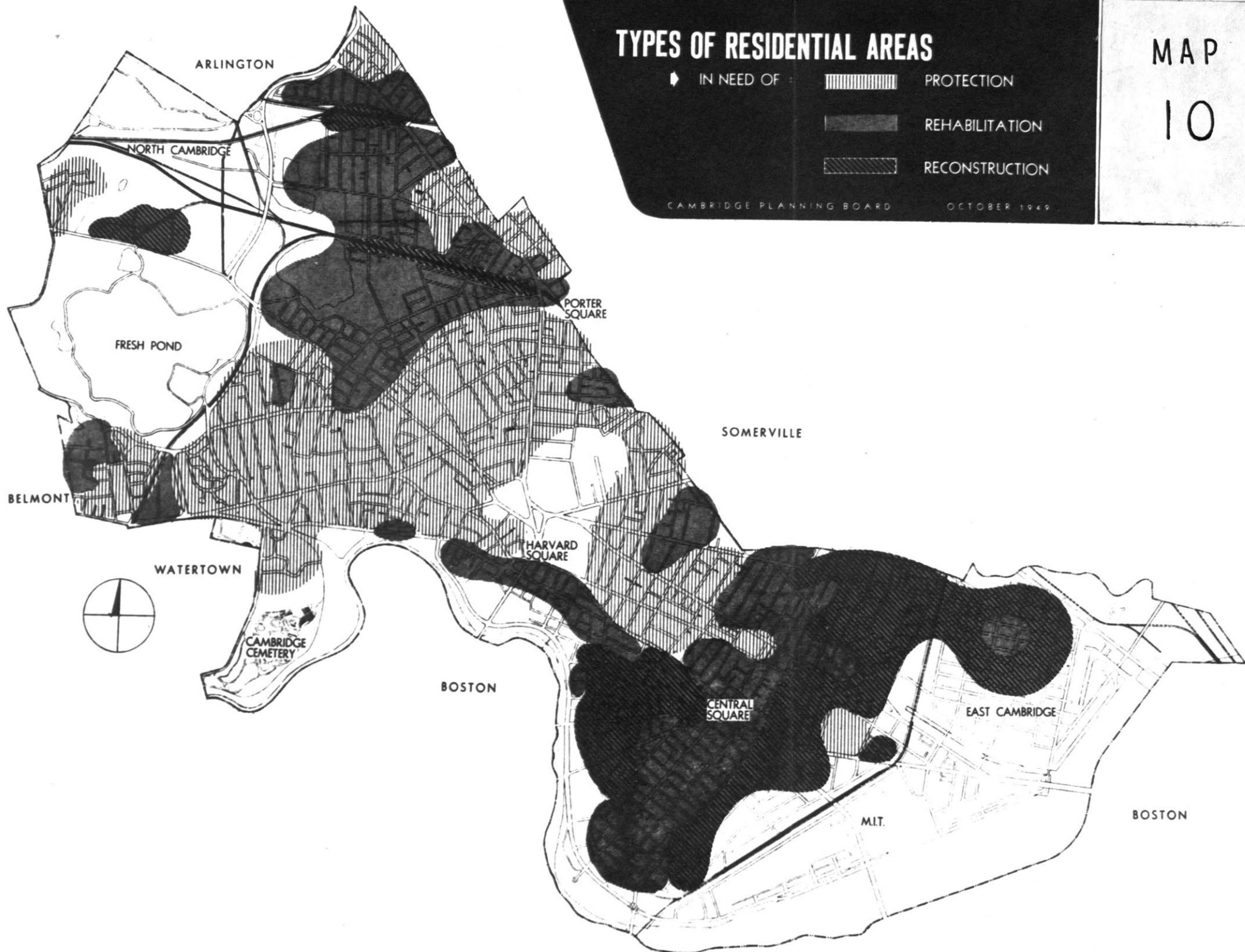


# TYPES OF RESIDENTIAL AREAS

- ▶ IN NEED OF
- PROTECTION
- REHABILITATION
- RECONSTRUCTION

MAP  
10

CAMBRIDGE PLANNING BOARD      OCTOBER 1949





**AVERAGE**

**DAILY**

**TRAFFIC**

**FLOW**

**IN**

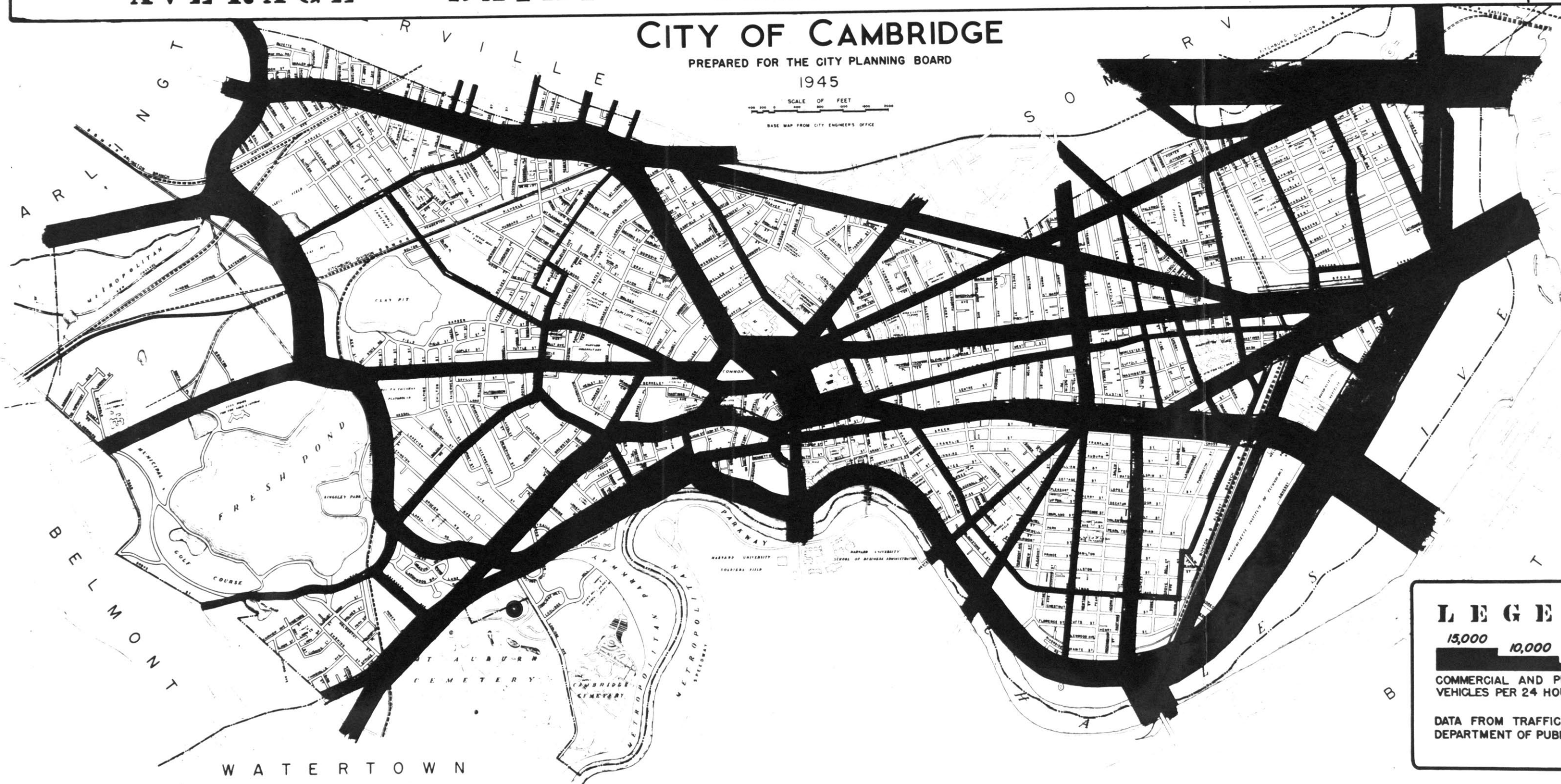
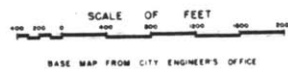
**1939**

**MAP  
II**

**CITY OF CAMBRIDGE**

PREPARED FOR THE CITY PLANNING BOARD

1945



**LEGEND**

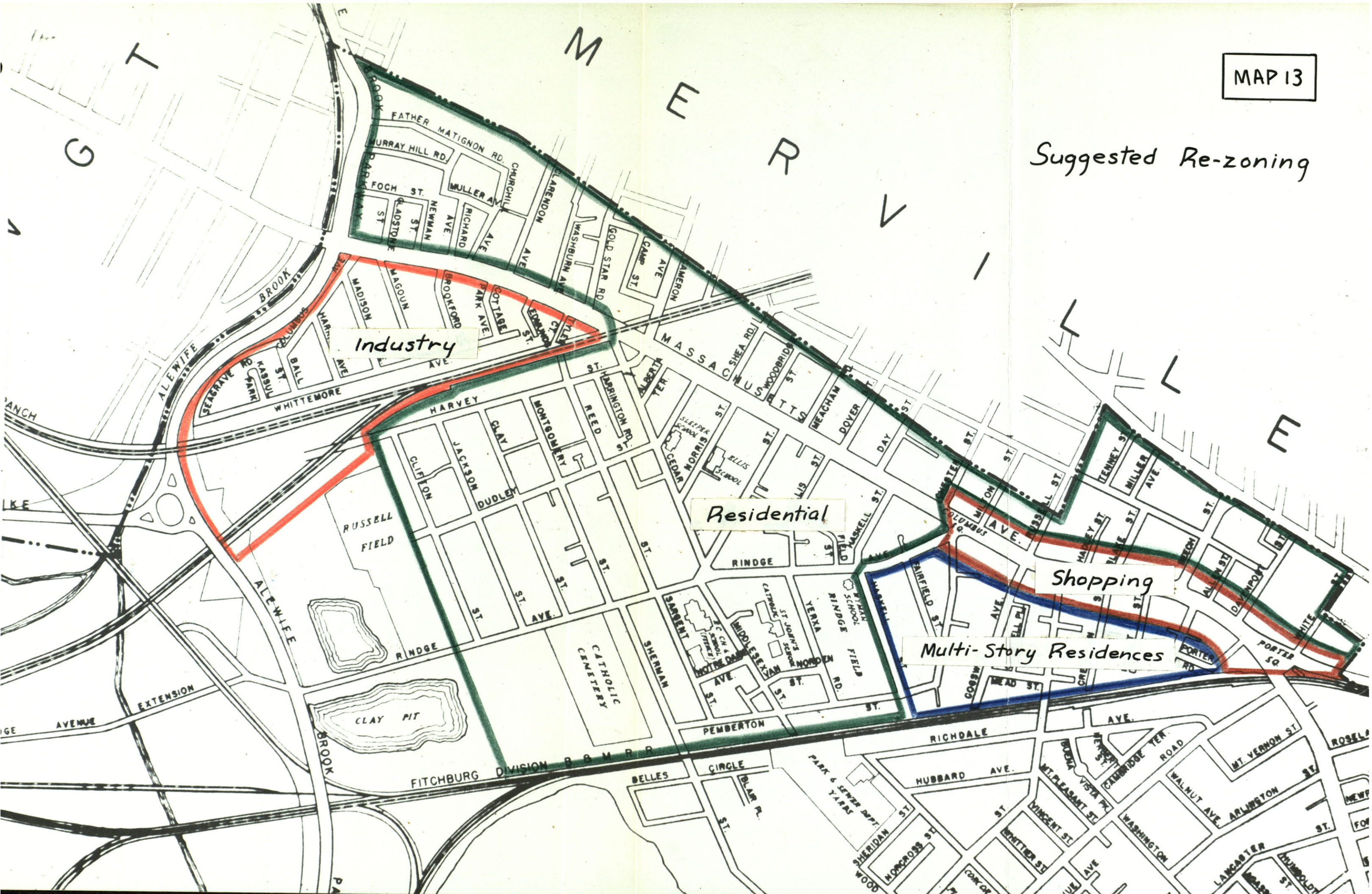
15,000 10,000 5,000

COMMERCIAL AND PLEASURE VEHICLES PER 24 HOUR PERIOD

DATA FROM TRAFFIC DIVISION, DEPARTMENT OF PUBLIC WORKS



Suggested Re-zoning



## II. NORTH CAMBRIDGE: PRESENT AND FUTURE

### a. Relation to the city as a whole

North Cambridge is widely recognized as a separate and distinct neighborhood of the City of Cambridge. It is effectively separated from the rest of Cambridge by the tracks of the Fitchburg division of the B and M Railroad, over which pass only four connecting roads. The Cambridge city line defines its remaining boundaries. North Cambridge is further defined by its homogeneity of population, relative to the rest of Cambridge. The strong St. John's Parish of the Catholic Church, with headquarters on Mass. Avenue, the French Catholic parish of Our Lady of Pity, with headquarters on Rindge Avenue, and the Immaculate Conception Parish, on Alewife Brook Parkway, together claim ninety-eight per cent of the population of North Cambridge as their flock.<sup>1</sup> The proportion of Catholics in the population of Cambridge as a whole is seventy-five per cent.<sup>2</sup>

### b. Population characteristics

There are three fairly well-defined "minority"

- 
1. Information from Father Hugh Blunt of St. John's Parish, Cambridge.
  2. Information from Msgr. Hickey of St. Paul's Parish, Cambridge.

groups in North Cambridge:

The first of these, the French Catholics, occupy most of the area bounded by Rindge Avenue, Russell Field, Cedar Street, and Harvey Street, centering their group activities in Our Lady of Pity Church at Rindge Avenue near Sargent Street, and in the church school, located directly behind the church.

The second group, the non-Catholics, does not seem to have any distinct geographical concentration. Together with their brethren from Arlington, Belmont, Somerville, and the other parts of Cambridge, they support the Cornerstone Baptist Church, the Swedish Evangelical Church, the St. James Episcopal Church, and the First Armenian Church. The fact that all of these churches are spread out on or near Mass. Avenue indicates the fact that these congregations have no definite concentration in North Cambridge.

The third distinct population group, the families having relatively high incomes, seems to be concentrated in the strip of blocks east of Mass. Avenue, in the extreme north and south ends of this strip. (This conclusion is drawn from the fact that the houses in these areas appear to be the largest, most substantial, and best maintained in the entire area.)

c. Land use

The existing land uses are shown on maps No. 6 and 18. Zoning violations by light industry are shown on map No. 18. These maps, together with maps 8-10, clearly demonstrate the variations of quality in residential areas and their potential for redevelopment under the Federal Urban Redevelopment Act of 1949. The importance of redevelopment potential will be discussed later in the section on site selection.

d. Public transportation, traffic, and internal circulation

Trolley cars on Mass. Avenue provide the major public transportation for North Cambridge. They provide adequate service for local residents to Harvard Square, from which connection to other parts of the Metropolitan Area is obtained. Mass. Avenue trolleys also serve a large commuting population located in Arlington and Lexington.

The accompanying traffic survey map, made in 1939, shows major automotive circulation. The relative volumes of traffic shown may be assumed to be the same today.

The internal circulation provided by the present street system has several flaws when North Cambridge is considered as a single unified neighborhood. Inspection of map No. 1 reveals that the most logical location

for any facility which is intended to serve the entire neighborhood, such as a school or a playground, is in the area bounded on the north by the tracks of the Arlington Division of the B and M Railroad, south by Rindge Avenue, east by Mass. Avenue, and on the west by Clifton Street.

Mass. Avenue provides suitable access to this central area for the people living east of it. But the population north of the Arlington Branch and west of Mass. Avenue has no proper access. If the new school is not located on Mass. Avenue, a pedestrian overpass over the railroad tracks, connecting Magoun and Jackson Streets, should be built to solve this problem. Along the southern edge of North Cambridge, a pedestrian extension of Mead Street connecting Porter Road and Pemberton Street would solve a similar problem.

e. Existing schools - condition of buildings

Seven elementary schools serve North Cambridge, of which three are Catholic schools, and four are public schools operated by the City of Cambridge. Their enrollments and the proportions of these enrollments originating in North Cambridge are shown in the enrollment appendix tables No. E5 and 6. Locations are shown on map No. 1.

Of the public schools, the Sleeper, Ellis, and Wyman buildings are all between forty-five and fifty years

old. The Survey classes them all as unsafe and unattractive buildings which ought to be abandoned as schools.<sup>1</sup> This has already been done in the case of the Sleeper School, which was abandoned in 1947 after suffering two fires in close succession. The Lincoln School is a relatively new and safe structure. All of these schools have inadequate playgrounds.

St. John's elementary school has the worst plant of the parochial schools. It has two buildings; one of them, built in 1922, is in approximately the same condition as the Lincoln School, and the other building, a converted church, is in the same class as the Sleeper, Ellis, and Wyman Schools. Here again, the playground is inadequate.

Our Lady of Pity School is the newest of the parochial schools, apparently a safe and pleasant structure. Its playground, although small, is supplemented by a large and beautiful garden. The Immaculate Conception School rates a similar classification.

f. Effects of proposed transit and highway extensions

The Master Plan for the Boston Metropolitan Area, prepared in 1948, proposes both rapid transit and highway extensions through North Cambridge, as shown on map No. 12, which may be put into effect by 1965. Al-

---

1. The Survey: section VII.



though the plans for these extensions may be changed considerably by 1965<sup>1</sup>, a discussion of their potential effect on North Cambridge is necessary to this report.

The Northwest Expressway as shown would require conversion to industrial use for the area bounded by the Arlington Branch railroad tracks, Alewife Brook Parkway, and Mass. Avenue. This seems to be a reasonable step to take because it would eliminate a residential area which is unsuitable as such even today, due to its small size, isolation from other residential areas, fringing industrial and heavy-traffic uses, and poor access to any neighborhood center. This step would remove about 1,100 people from North Cambridge. If this highway is kept west of the central residential area, it need not reduce the local population any further, although it probably will have a bad effect on residential amenities in the western blocks. However, if the Northern Expressway does require the removal of any housing in the central part of North Cambridge, the housing on the western fringe would be missed least, because the poorest development, lowest population density, and cheapest land are all found there. At worst, 200 persons would be removed from the western blocks if the Expressway passes through them.

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1. Considerable pressure is being exerted against execution of the highway plans in their present form: see the "Boston Evening Globe," June 15, 1950, p. 1.

The Master Plan also proposes an express highway to Boston which will run in North Cambridge from Porter Square to the junction of the Alewife Brook Parkway and the Concord Turnpike, paralleling the B and M Fitchburg Division tracks. It is expected that this project can be handled so that no housing need be destroyed.

The third Master Plan project is the construction of a new branch of the rapid transit system, to run from Harvard Square through Porter Square and thence parallel to the Fitchburg Division tracks to a new terminal west of the Alewife Brook Parkway. Besides replacing all of the terminal functions now provided at Harvard Square, this new facility will also provide ample automobile parking space, so that it may become a major transfer point for commuters from the outlying towns.

It can be reasonably expected that these measures, taken together, will effectively remove all except local traffic from Mass. Avenue and transform its upper reaches from their present role as neighborhood-divider into a relatively safe street. Furthermore, the importance of the Porter Square area as a shopping center will be greatly increased, relative to the northern end of Mass. Avenue.

g. Future population

A declining population for Cambridge as a whole

is predicted by The Survey<sup>1</sup>. In general, the trend is that people who can afford to do so move from Cambridge to Arlington, Belmont, Lexington, and the other outlying regions that offer greater amenity as residential locations. And although the amenities of North Cambridge may be considerably improved in the future, I expect that because of its present relatively high population density and lack of open spaces, North Cambridge will never match these competing suburbs. None of the proposed transit extensions will benefit North Cambridge sufficiently, relative to the other suburbs, to reverse the trend of migration. The most optimistic guess seems to be that if the removal of local population by the new highway projects (about 1,600 persons) is balanced by construction of new multifamily dwellings, the North Cambridge population will decline slightly in the next twenty years. At least one new housing development can be reasonably expected when the rapid transit extension is completed, because the M.T.A.'s existing yard in North Cambridge will then be available for development. This site, bounded by the Arlington Division tracks of the B and M Railroad, Mass. Avenue, and Shea Road, can be reasonably expected to house at least 150 families, or about 550 persons.

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1. The Survey, pp. 227-236.

h. Suggested re-zoning

It seems reasonable, in view of the plans discussed above, that the following zoning changes should be made in North Cambridge: First, the area bounded by the Alewife Brook Parkway, Arlington Division tracks, and Mass. Avenue, should be changed to an industrial zone in which no new residential construction is permitted. Second, all shopping facilities except small local stores should be confined to Mass. Avenue from Porter Square north to about Rindge Avenue. And third, a new multistory residential zone should be created west of Mass. Avenue between Porter Square and Rindge Avenue, because in this area best access will be provided to both transportation and shopping for a concentrated population. These suggestions are shown on map No. 12.



\* ONE DOT  
REPRESENTS  
10 CAMBRIDGE  
CITIZENS



THESE CITIZENS  
ARE IN  
GREATEST NEED  
OF PLAYFIELDS



THESE  
ARE ALSO  
UNSERVED



PRESENT  
PLAYFIELDS



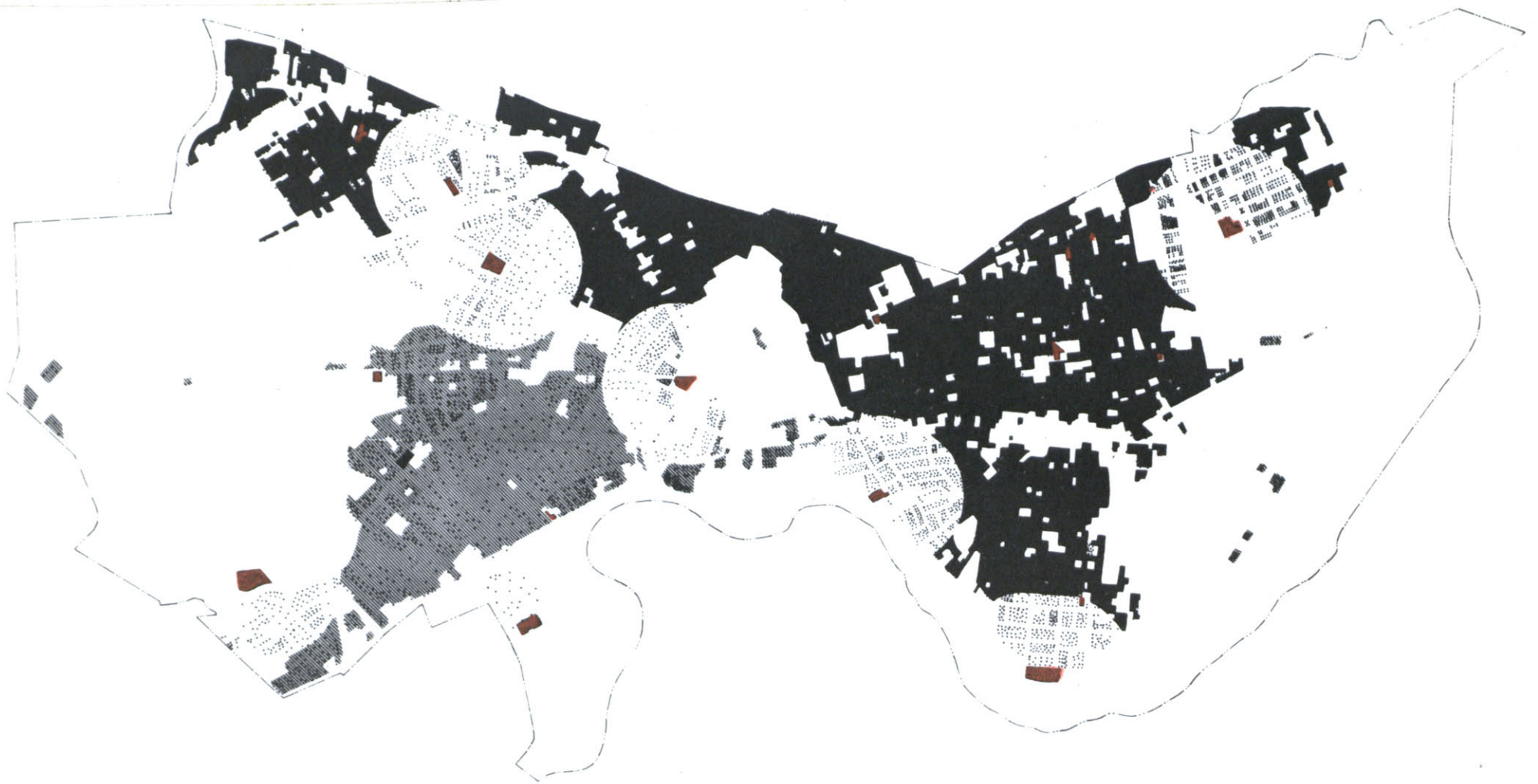
HIGH AND  
LATIN  
SCHOOL



RINDGE  
TECHNICAL  
SCHOOL

# Playfields

MAP  
14



ONE DOT  
REPRESENTS  
10 CAMBRIDGE  
CITIZENS



THESE CITIZENS  
ARE IN  
GREATEST NEED  
OF PLAYGROUNDS



THESE  
ARE ALSO  
UNSERVED



PRESENT  
PLAYGROUNDS

# Playgrounds

MAP  
15



\* ONE DOT  
REPRESENTS  
10 CAMBRIDGE  
CITIZENS



THESE CITIZENS  
ARE IN  
GREATEST NEED  
OF PARKS



THESE  
ARE ALSO  
UNSERVED



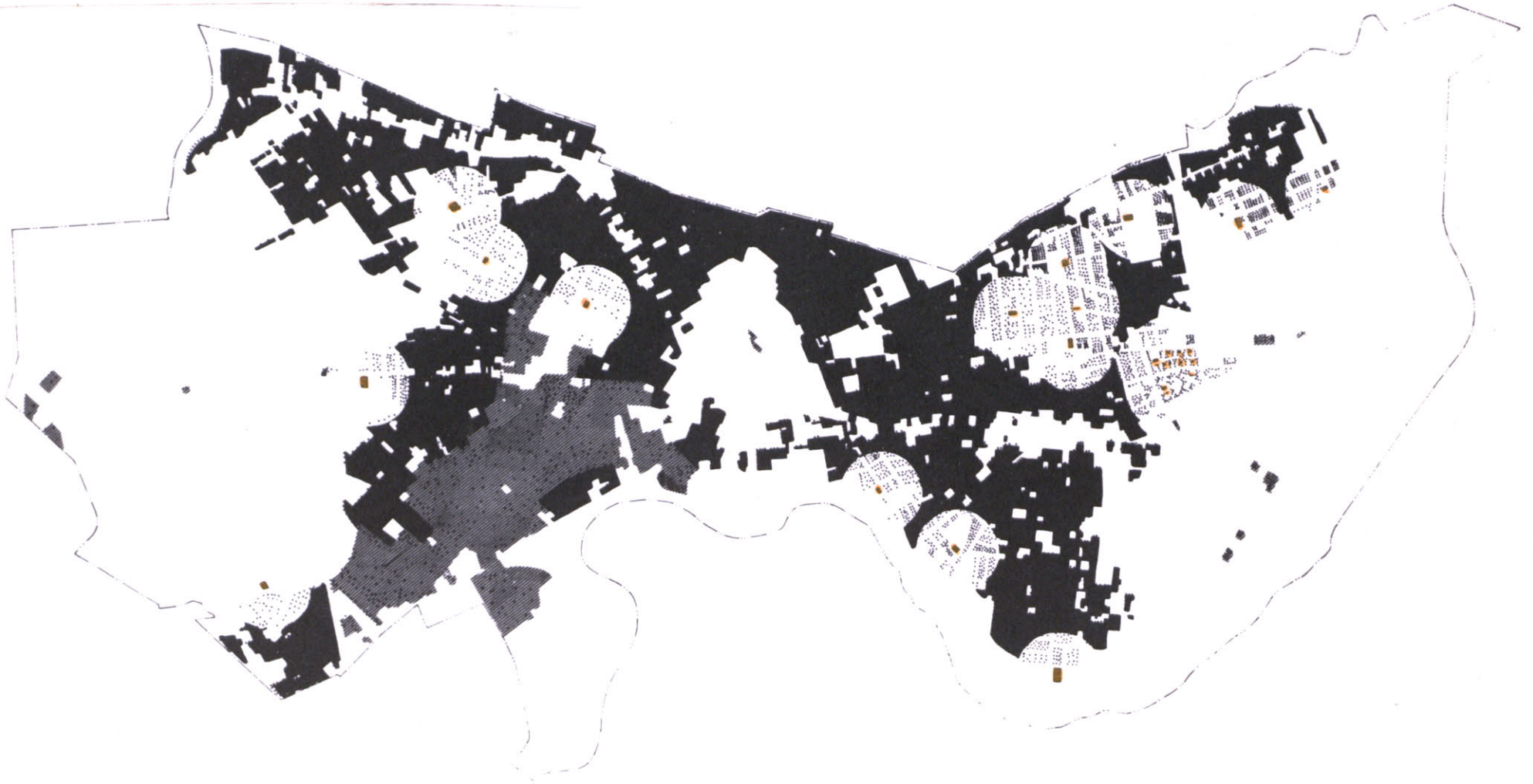
MUNICIPAL  
PARKS



METROPOLITAN  
DISTRICT  
COMMISSION  
PARKS

Parks

MAP  
16



ONE DOT  
REPRESENTS  
10 CAMBRIDGE  
CITIZENS



THESE CITIZENS  
ARE IN  
GREATEST NEED  
OF TOTLOTS



THESE  
ARE ALSO  
UNSERVED



PRESENT  
TOTLOTS

# Totlots

MAP  
17



### III. NEED FOR RECREATION AREAS

#### a. Method of analysis

I have made extensive use of the Cambridge Planning Board's analysis of recreation needs<sup>1</sup>. Inspection of the maps presented in that report and reproduced here (maps No. 14-17) shows that the greatest need for new recreation areas in North Cambridge is in the area centered on Cedar Street just north of its junction with Rindge Avenue. A new facility of adequate size located within a few blocks of this point would function effectively as a neighborhood recreation center for most of North Cambridge, and should be able to satisfy most of the area requirements now unsatisfied by existing facilities.

Rindge Field is the only existing major recreation area serving North Cambridge. Its total area of 7.9 acres contains 5.9 acres of playfield, 1.1 acres of playground (expected to be occupied until 1951 by temporary housing of the Cambridge Public Housing Authority), 0.6 acre of totlot, about 0.1 acre of park, and a field house, containing a gymnasium, social room, locker room,

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1. "Recreation in Cambridge," City of Cambridge, Massachusetts, Planning Board, 1946.

showers, and toilets. The Wyman School is located in the same block, and if this building is demolished, the land it occupies will afford a small additional park area. The Sleeper School has a playground of 0.5 acre which is practically useless now because it is fringed with private houses whose occupants object strenuously to the noise made by children playing there. This area will not be taken into account in the calculations which follow.

Russell Field and Jerry's Pit, both located on the western fringe of North Cambridge, cannot be considered as contributing to the recreation areas required locally because they are special facilities which serve all of Cambridge.

The area standards used in this analysis are half of those given as minimum national recreation area standards by the National Recreation Association. It was suggested by Mr. Mahoney of the Cambridge Park and Recreation Department that attainment of half of the minimum national standard would be the best that could be reasonably expected in Cambridge, considering the scarcity of vacant land.

b. Playfields: to serve high-school youths and adults

The existing facilities provided by Rindge

Field (5.9 acres of playfield) serve all of the North Cambridge population except about 2,000 people living between the Alewife Brook Parkway and the Arlington branch of the B and M Railroad. However, the existing 5.9 acres do serve the entire North Cambridge population of 12,000 at approximately half of minimum national standard rates (one acre per 1,000 population). Therefore, no additional playfield area is needed.

c. Playgrounds: to serve children of grammar-school age

The maps of the Cambridge recreation report show that a new playground located north of Rindge Avenue near Cedar Street would include, within a serving radius of one-quarter to one-half mile, most of the population which is not served by the Rindge Field playground of 1.1 acres. The people living west of Mass. Avenue and south of Creighton Street, now shown beyond the Rindge Field radius, would be brought effectively within range of Rindge Field by the proposed extension of Mead Street. Some other provision would have to be made for the population living east of Mass. Avenue between Russell Street and White Street.

The effective range of the proposed new playground would include about 2,350 people north of the Arlington division tracks and about 4,720 people south

of the tracks. The proposed overpass over the railroad tracks would give good access from the northern area to the new playground. Therefore, the new playground should contain (at one-half acre per 1,000 population) a total of 3.53 acres.

d. Parks: to serve people of all ages

The relatively large lots and back yards of North Cambridge, and the trees which line the streets, make the local need for parks less severe than in the more densely populated sections of Cambridge. However, the existing park facilities are far below the standards recommended by this study. The demolition of the Wyman School will add to the Rindge Field park sufficiently to enable it to serve all except 6,000 of the North Cambridge population. Of these, about 1,800 people are within the effective radius of the Metropolitan District Commission's landscaped area along the Alewife Brook Parkway, and about 1,500 people in the Porter Square area would be out of range of a park facility located next to the proposed new playground. Therefore, the new park would serve about 2,700 people. Since minimum national recreation area standards call for one acre per 1,000 population, the new park should contain about 1.35 acres.

e. Totlots: to serve children of pre-school age

The City of Cambridge has developed its own standard of one acre of totlot per 10,000 population, with an effective radius of one-eighth of a mile for each such facility. For the convenience of mothers, it has been recommended that these play areas be placed in or near parks wherever possible. The only existing facility in North Cambridge is the 0.6 acre provided in Rindge Field, serving about 800 people in its effective radius. Therefore, the remaining 10,500 population of North Cambridge needs a total of about one acre of additional totlots.

However, a totlot located in the proposed new recreation facility would serve only about 2,500 people in its effective radius and should therefore contain about 0.25 acre. The remaining 0.75 acre should be provided in vacant lots properly located throughout the unserved area.

f. Summary of areas needed for a new central recreational facility

Playfield	0	acres
Playground	3.53	acres
Park	1.35	acres
Totlot	0.25	acre
<hr/>		
Total area	5.13	acres

The new playground of 5.13 acres added to the existing Rindge Field facilities of 7.9 acres will give a total of 13.03 acres of recreational facilities in North Cambridge for a population of about 11,300. Minimum national standards call for a total of three acres in intensive recreational use for each 1,000 people, or about thirty-four acres for North Cambridge. Therefore, the new area total will be approximately four-tenths of the minimum national standard.

#### IV. ENROLLMENT PREDICTIONS

##### a. Assumptions and qualifications

Complete tabulation and graphs of data and calculations are included in the Enrollment Appendix. In these calculations the following assumptions were made:

1. All reasonably large enrollment totals for grades 1-8 have a definite relation to cumulative births in Cambridge taken over the corresponding eight-year period.

2. The birth figures used represent all recorded births in the City of Cambridge. They do not include births to Cambridge residents which occurred outside of the city, and they do include births to non-residents of Cambridge occurring in the city. Because the neighboring towns of Belmont, Arlington, Lexington, and Lincoln do not have hospital facilities adequate to serve their own populations, large and increasing numbers of these people give birth to their children in Cambridge. Also, increasing numbers of Cambridge residents give birth to their babies in Boston. This trend is clearly shown by the graphs relating school enroll-

ments to cumulative births. It is assumed, however, that this trend does not seriously affect the validity of the correlation between cumulative recorded births and enrollment.

3. On the basis of the statement of Catholic policy in the introduction to this report, it can be conservatively assumed that there will be a continuing rate of growth of North Cambridge parochial school enrollment relative to the corresponding public school enrollment, following the trend which has been shown in the last ten years, at least until the inauguration of a modern public school system in North Cambridge.

The third assumption, however, is subject to several qualifications, as follows, all of them having a potentially serious effect on the enrollment of the proposed new school.

First, Our Lady of Pity School shows a definitely declining enrollment, which cannot be expected to fill the school to more than half its capacity of 700 pupils at any time in the future. This conclusion is supported by the fact that the local French Catholic population is decreasing. Furthermore, there is a decreasing demand for the French language instruction which is one of this school's major features (one hour per day is compulsory for all grades). Officials of



this school expect that the local population will not be able to finance the operation of the school for long after 1952 without help.

Second, St. John's elementary school is now grossly overcrowded; at present there are about fifty students in each classroom, including two basement classrooms. Officials of the school plan to build additional classrooms to house another eighty children by 1952. They claim not to have given serious consideration to the possibility of making an arrangement which would enable them to use the 400-odd empty seats in the Our Lady of Pity School. Since Our Lady School is just across the street from St. John's School, such an arrangement would seem to be the most reasonable solution to the growing problem of the local parochial schools, and I believe that this arrangement should be and probably will be made.

Thirdly, it should be noted that the peak enrollment predicted for 1956 will fill both schools past their capacities even when the suggested arrangements have been made and the projected new classrooms have been built. However, the Immaculate Conception School is at present considering an expansion of its facilities to 700-800 seats, at an indefinite time in the future. This step could add about eighty to one hundred pupils

to the North Cambridge parochial enrollment. It should be noted that the expansion of the Immaculate Conception School is a major one, which would probably have to be accomplished at the expense of the school's playground and garden area.

Finally, in the event that the parochial schools take all of the above steps for expansion, their plants will still be unsatisfactory for the conduct of a modern educational program. In each school the playground areas will be even less adequate than they are now, and the St. John's School will still be crowded to fifty students per classroom.

b. The effect of a modern public school system on enrollment

The enrollment summary presented in the foregoing pages justifies the continuation of public education in North Cambridge, and the dangerous condition of the existing buildings justifies the construction of a new public school plant. Furthermore, it is the duty of the City of Cambridge to provide in its schools an educational program which is in accordance with the best modern practice. If these public school needs are satisfied, the enrollment potential will be larger than that which has just been described, because it is not likely that the parochial schools will be able to make

improvements commensurate with those which the public schools must make.

Even today, this enrollment shift is well-illustrated at the high-school level: Public elementary schools in Cambridge enroll approximately 1 1/2 times as many pupils as do the parochial elementary schools; but public high-school enrollments are 3 1/2 times as big as parochial high-school enrollments. Thus it is evident that large numbers of students transfer from parochial to public schools when they enter high-school. The major reasons for this shift were explained by Father Hugh Blunt, approximately as follows:

1. Some students do not like the strict discipline of the parochial schools. "Discipline" is less strict in public schools.

2. Some students enjoy the athletic and recreational opportunities which are offered by the public schools and not available in the parochial schools.

3. Some students feel that it is easier to get college scholarships from public schools than from parochial schools.

4. Some students with special needs ("slow learners" and students who want vocational training) find that their needs are better met in the public high-schools than in the parochial schools.

Note that the parochial high-schools are compared above with the public high-schools of today---the same public schools whose plant and operations were so strongly criticized by The Survey as being inadequate to meet the needs of Cambridge. It is also apparent, and verified by Father Blunt, that factors 1, 2, and 4 operate at the elementary school level as well as at the high-school level even now. Therefore, it seems reasonable to expect that if the Cambridge public elementary school system is improved as suggested in The Survey, the rate of increase of parochial elementary school enrollment with respect to public elementary enrollment will at least decline and may even become negative. However, since the above preference factors would be more effective in grades 6-8 than in grades 1-5, it seems logical to expect the new North Cambridge junior high-school to expand more rapidly after construction than will the elementary school. The amounts of these potential enrollment expansions cannot be easily estimated; however, the section on building requirements will demonstrate that the junior high-school could absorb approximately fifty per cent more enrollment than the 180 students for which it will be planned, without having to expand either shop, science, music, art, or home-making classrooms.

c. Educational opportunities afforded with an enrollment of 180 pupils in grades 6-8

Most educational authorities say that a junior high-school (which this new plant will include) ought to have 300-400 pupils enrolled for greatest educational efficiency. Since this school will have a considerably smaller enrollment than the above, some justification must be made for building it; as we have seen, there is no apparent method for increasing the enrollment above 180, unless the program presented in the new school is sufficiently better than that presented in the parochial schools. Extension of the enrollment boundaries of the new school beyond North Cambridge is not advisable because of the excessive travel distances for the pupils.

The major disadvantage of this school relative to one of optimum enrollment lies in the field of social relationships: the opportunities offered to the pupils for experience in impersonal relationships, large-group activities, and student government are necessarily limited. However, the chances of providing a diversified program of studies are good. In his study of the limitations of the small junior high-school, Prof. Francis T. Spaulding has this to say:

"Schools enrolling an average of from 50 to

60 pupils per grade, under conditions of adequate staff and equipment,

"(a) May inaugurate any desired program of election on the paired-elective basis, together with a limited program of election on the one-out-of-three basis.

"(b) They may rarely expect to provide a complete system of promotion by subject...; but such adjustments as may need to be made may be accomplished with little difficulty....

"(c) ....They may introduce a satisfactory system of departmental teaching."<sup>1</sup>

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1. The Small Junior High-School, A Study of Its Possibilities and Limitations, by Francis T. Spaulding, Cambridge, 1927, p. 173.

V. BUILDING REQUIREMENTS: UNITS AND RELATIONSHIPS

a. For the elementary school: grades 1-5 and kindergarten

For grades 1-5, the normal capacity is about 240 pupils; the maximum capacity is about 290 pupils. Therefore, eight classrooms with an average capacity of thirty pupils each, maximum capacity of thirty-five pupils, will be adequate. However, to allow for differences in the size of classes, rooms should be provided having a range of normal capacities from twenty to thirty-five pupils. Cambridge policy currently sets a limit of thirty-eight pupils per room. One toilet room per sex for grades 1-5 will be sufficient, assuming that the classrooms nearest to the toilets will be assigned to the lower grades. A controlled entrance, separate from that for the junior high-school, must be provided for the elementary grades, and the elementary classrooms must be located in a relatively quiet area.

For the kindergarten, an expected enrollment of from forty to fifty children may be accommodated in one room of approximately thirty-child capacity operating two shifts a day. It is expected that the declining birth rate will make one-shift operation possible by

1955. The kindergarten should have its own toilet and a separate entrance, visible from the street, if possible.

b. For the junior high-school

In conformance with the recommendation of The Survey, grades 6-8 will be separated in this plant and will be provided with the facilities needed to support a modern system of semi-departmentalized teaching. This means that every class-section of about thirty pupils will have a home-room in which section activities, such as class government, and discussion of social conduct and ethics, will take place under the guidance of a home-room teacher. Each home-room teacher will also teach at least one special or academic subject (not necessarily in the same room) when home-room periods are not scheduled.

Because the amount of time scheduled for each subject determines the number of rooms required, and because no such schedule is now in effect in Cambridge, I have assumed that the Cambridge schedule will be similar to the schedules used by neighboring communities. The accompanying tables, Nos. 1 and 2, illustrate the schedule chosen and calculate the number of rooms which will be required for each subject.



TABLE #1

ACADEMIC SCHEDULE FOR GRADES 6,7,8  
IN NEW SCHOOL:

PROGRAM FACTORS	SCHOOL		
	WEST ARLINGTON JR. HIGH SCHOOL (GRADES 7,8)	BELMONT JR. HIGH SCHOOL, (GRADES 7,8)	NEW SCHOOL, GRADES 6,7,8 (AVERAGE)
MINUTES PER PERIOD	40	40	40
PERIODS PER DAY	6	6	6
ACADEMIC PERIODS (MATH, ENGS, SOC. STUDY) /WK.	17	15	16
SCIENCE PERIODS /WK.	3	2-3	3
HOME-MAKING OR SHOP PERIODS /WK.	2	2	2
MUSIC PERIODS /WK.	2	2	2
ART PERIODS /WK.	1	2	2
GUIDANCE OR HOME-ROOM PERIODS /WK.	1	2	2
PHYSICAL ED. PERIODS /WK.	2	2	2

TABLE #2

ROOMS REQUIRED FOR GRADES 6,7,8  
IN NEW SCHOOL:

ASSUME: 180 STUDENTS IN GRADES 6-8, 6 SECTIONS  
@ 30 STUDENTS / SECTION; SAME BASIC  
SCHEDULE FOR GRADES 6,7,8; 80% EFFICI-  
ENCY IN USE OF ALL ROOMS; 30 PERIODS/SCHL. WK.

	A	B	C	D	E = D/A x 30 x C
SUBJECT	PUPILS PER CLASS-SESSION	PERIODS PER WK. PER SECTION IN SUBJECT	EFFICY. OF ROOM USE	PUPIL-PERIODS PER WK. IN SUB-JECT	NUMBER OF ROOMS REQUIRED AT CAPACITY "A"
ACADEMIC	30	16	0.8	180x16	$\frac{180 \times 16}{30 \times 30 \times .8} = 4.0$
SCIENCE	20	3	0.8	180x3	$\frac{180 \times 3}{20 \times 30 \times .8} = .75$ $\approx 1 \text{ ROOM}$
HOME-MAKING	20	2 (GIRLS)	0.8	90x2	$\frac{90 \times 2}{20 \times 30 \times .8} = .375$ $\approx 1 \text{ ROOM}$
SHOP	15	2 (BOYS)	0.8	90x2	$\frac{90 \times 2}{15 \times 30 \times .8} = .50$ $\approx 1 \text{ ROOM}$
ART	20	2	0.8	180x2	$\frac{180 \times 2}{20 \times 30 \times .8} = 0.75$ $\approx 1 \text{ ROOM}$
MUSIC	30	2	0.8	180x2	$\frac{180 \times 2}{30 \times 30 \times .8} = 0.5 \approx 1 \text{ ROOM}$ (USE LUNCHRM. & AUDIT.)

Multiple use of special rooms such as art, science, etc., is not recommended in this building except in the case of the music department, which will use the gymnasium, and/or the auditorium, as described later. However, the home-room activities do require a special kind of multiple use. For the "normal" enrollment of 180 pupils on which this design is based, a total of six home-rooms of thirty-pupil capacity will suffice. However, only four interchangeable academic rooms are needed. These will serve also as home-rooms, and the other two home-rooms will be provided as auxiliary instruction spaces for the shop and science departments. However, during the peak enrollment period, when about 220 pupils are expected, two additional home-rooms will be required; to serve this peak need, the normal equipment of the science and art departments proper will be sufficient.

It should be noted further that the special classrooms provided will serve the peak need adequately, without requiring an increase in the efficiency of the schedule, but that any enrollment increase over 240 will require either the addition of new special classrooms and new academic classrooms, if the same program is offered, or an increase in schedule efficiency.

Therefore, in view of the above and of the

discussion of expansion probabilities presented earlier in this report, it is essential that the junior high-school be planned so that it can be easily expanded on the site without impairing its relationship to the other parts of the school plant.

In addition to the special rooms already mentioned, one small room for student activities should be provided. Since this room will be used by several student organizations and clubs, it should contain three or four small storage closets.

A direct service entrance will be required only for the shop, because the size and quantity of materials used in the other special classrooms will be small enough to permit them to be delivered through the main entrance.

The junior high-school facilities will receive intensive use by adults at night, according to the pattern already established in Cambridge schools. Arts and crafts and shop work may be offered in addition to classes in "Americanization," "English for Recent Arrivals from Foreign Lands," etc. Therefore, the junior high-school must be provided with a good artificial lighting system. This school must be easily entered from the main lobby and must also be capable of being operated without opening the rest of the buildings.

The junior high-school students should have preference over the elementary school students in access to the auditorium and library, because the former will use these facilities most.

c. For the use of school and general public

1. Auditorium: This should seat the entire student body (420 seats). Because the auditorium will be one of few public auditoriums in Cambridge, and the only one in the neighborhood, considerable community and public use may be expected. To accommodate professional and amateur theatrical groups, there should be dressing facilities available, and the stage should accommodate rolling scenery wagons. A direct service entry is required for the stage. Also, a movie projection booth equipped to show both 35-mm. and 16-mm. films should be provided. Toilet facilities are needed near the entrance, and adjacent junior high-school classrooms may serve as coat rooms.

2. Public library: According to Mr. Dolan, Head Librarian of Cambridge, the North Cambridge branch of the Public Library is now little-used because of its location away from major traffic (it is now in the basement of the Lincoln School). The library should therefore be moved to the new school-community center and

placed in such a way that it may be easily identified from the street and the main entrance. It should be near the auditorium to facilitate using the auditorium for lectures, film-showing, and story-telling after school hours. The library should also have a separate outside entrance. A capacity of 8,000 volumes in open shelving, expandable to 12,000 volumes, should be provided for.

It is now Cambridge policy that the Public Library lends books to the schools, and that the schools have relatively few books of their own. Even if this policy is changed, a duplication of library facilities is inadvisable, and for this reason a close relationship to both parts of the new school, and particularly the junior high-school, is required. One segregated reading area of fifty-student capacity will serve both the junior-high and elementary schools adequately.

About fifty per cent of the shelving space should be segregated for adult use in such a way that adults using the library during school hours will not disturb the children. A separate conference room is desirable for school use.

The service areas required include a staff room for three librarians, private toilet, work room, and a storage room for 500 volumes. The work room

should have access to a service entrance.

3. Public health clinic: The new policy of the Cambridge Public Health Department is to establish a branch clinic in each neighborhood school. This facility will serve the general public during school hours as well as after hours. The Health Department will also make use of the auditorium for lectures and film-showings. For these reasons, the clinic should be easily recognizable from the street and from the main public entrance, and should have, in addition, a separate entrance of its own, as well as easy access to the auditorium. The school nurse is available to the school in the clinic for three half-days per week, and therefore easy access must be had from all classroom buildings.

The required spaces are as follows:

1) Medical examining room large enough to accommodate a patient and his family. Also, two dressing booths.

2) An X-ray room for diagnostic work, connecting with the first examining room, and equipped so that it may be used as a second examining room whenever two clinics are in session at the same time.

3) One dental examining room.

4) Two rest rooms with two cots each.

5) Two toilets.

6) A combination nurse's office and waiting space, capable of seating about thirty people. This large capacity would be desirable during the annual examination of school children (one class at a time) and whenever two clinics are in session at once.

4. Gymnasium and locker facilities: Because the gym will be operated after school hours by the Park and Recreation Department of Cambridge for the use of adults and teen-agers of the neighborhood, a basketball court of standard high-school dimensions should be provided. It should be possible to operate the entire gym-locker unit without opening the rest of the school plant. Because there is a possibility that the gym may find simultaneous use by both sexes, it is desirable to arrange the locker room entrances to the gym so that they will allow proper access to a playing floor divided into two parts by a movable partition. Folding bleacher seats for about 200 spectators at non-school games should also be provided on the gym floor.

No gym clothes lockers need be provided for elementary school children, because they will keep their gym clothes in their classroom wardrobes. Grades 1-3 may dress in their classrooms, and grades 4 and 5 may dress in the appropriate locker rooms, using the street-



clothes lockers. The showers will not be used by the elementary school children.

The boys' locker room should contain:

For junior high-school: 60 street-clothes lockers,

90 gym clothes lockers.

For community use: 50 street-clothes lockers,

50 gym clothes lockers.

Total: 60 street-clothes lockers,

140 gym clothes lockers.

One supervisor's office.

Sufficient toilets, showers, and drying rooms.

At least two storage closets for the equipment of non-school teams.

One towel room.

One storage space for school gymnasium-play equipment.

One storage space for large indoor and outdoor equipment, with easy access both to the playing field and to the gym floor.

The toilet room should be available to the playing fields at all times.

The girls' locker room should contain:

For junior high-school: 60 street-clothes

lockers,

90 gym clothes  
lockers.

For community use: 30 street-clothes  
lockers,  
30 gym clothes lockers.

Total: 60 street-clothes lockers,  
120 gym clothes lockers.

One supervisor's office, with private bath.

Sufficient toilets, showers, and drying  
rooms.

One towel room.

One storage room for girls' athletic equip-  
ment.

Both locker rooms should be closely related to the playing fields. Also, the gymnasium should be closer to the elementary school than to the junior high-school, because it is most difficult to move the youngest children from their classrooms to the gym; the elementary school will use the gym for rhythms and for rainy-day play, both of which uses will probably occur in the middle of the school day. The junior high-school, on the other hand, will use the gym mostly at the end of the school day, so that its traffic problem is less than half as severe as that of the elementary school.

5. Lunchroom and kitchen: It is hoped that in the future the School Department will operate its own lunchroom facilities in all schools. It is assumed that this lunchroom will offer one menu per day to all students, that Federal aid will be used in its operation, and that, because of the educational value of such a facility, its use will be compulsory. Therefore, a seating capacity of 140 seats, operated three shifts per day, will serve adequately.

The lunchroom and kitchen should be located with preference to the elementary school, but with easy access also for the junior high-school and for the general public. Preference for the elementary school is required because the lunchroom will be the best space for small children's assemblies and also because milk and crackers will be distributed from the kitchen to all elementary grades at mid-morning under the Federal School Aid Program. Easy public access from the auditorium and lobby is required so that the lunchroom may be used for community dinners, teas, and to serve refreshments after Parent-Teachers' Association meetings and other public uses of the auditorium.

6. Heating and maintenance: Sufficient space should be provided for heating equipment, maintenance shop, and employees' lockers, toilets, and showers. Direct service from the street should be available to the heater room and maintenance shop. Janitor's closets should be well-distributed throughout the building.

d. For the use of both schools

1. Guidance room: This room will serve triple duty: as an office for the guidance specialist who will be available perhaps three afternoons a week; as a classroom for remedial reading and speech correction (fifteen to twenty students three periods per week); and as a rest room for those students now housed in the Wyman School who are physically handicapped or malnourished.

It is the recommendation of The Survey that the Wyman School be abandoned and its pupils dispersed into the regular classes, in which it is felt that their educational and psychological needs will be best attended. However, their physical needs include more frequent and varied rest periods than those required by normal children. Since perhaps twenty to forty of these handicapped children will attend the new school, and because





their rest periods cannot be well supervised by their regular classroom teachers, a central rest facility is required. This activity should be supervised by a teacher who is temporarily freed from her classroom duties. The school nurse cannot assume this responsibility because she will not be at the school all the time. Therefore, to make the assignment and transfer of this duty as simple as possible, the guidance room should be located immediately adjacent to the teachers' lounge. This will also facilitate the arrangement of conferences between teachers and the guidance specialist.

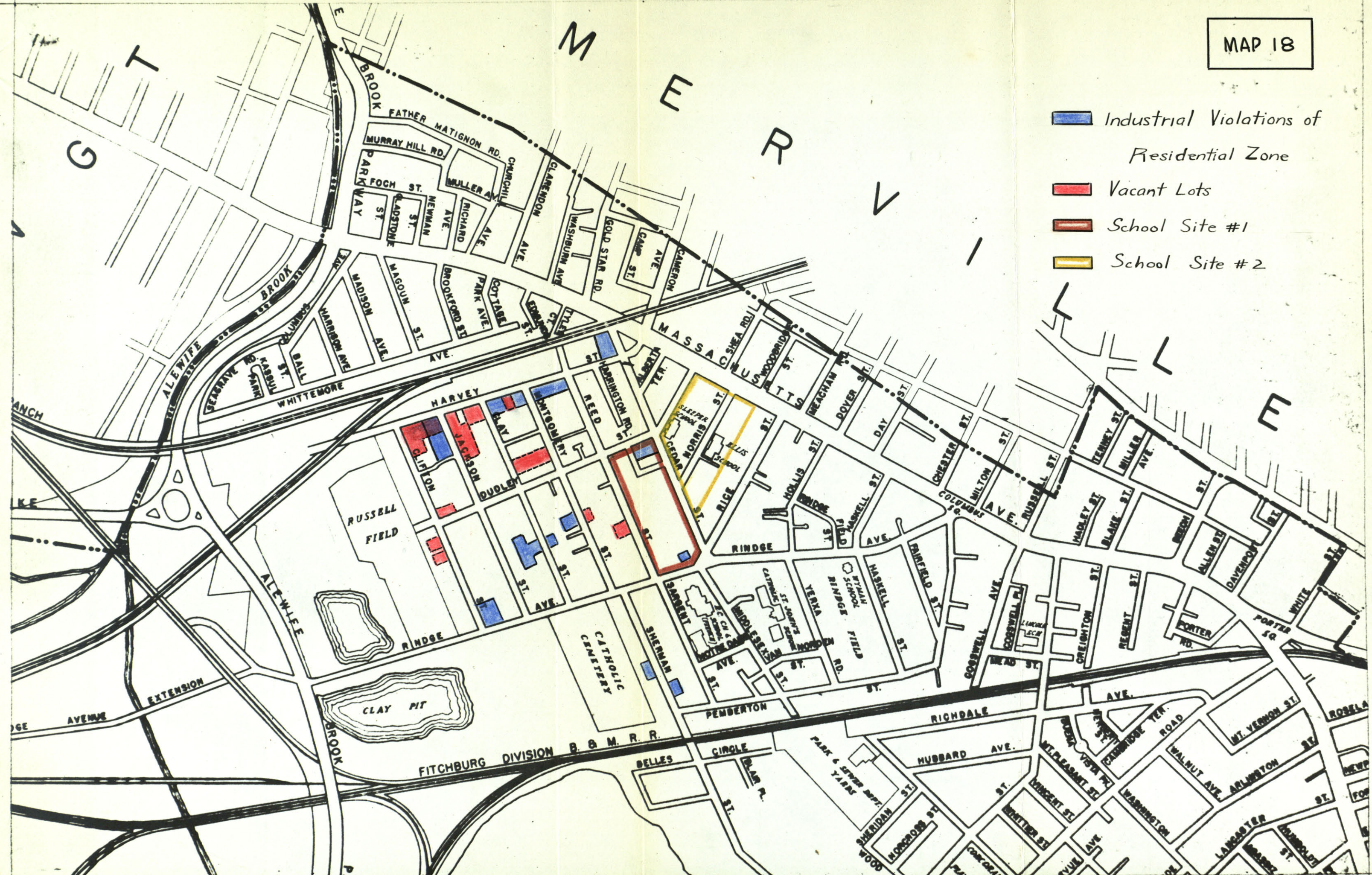
In addition to the above multi-use space, storage should be provided for testing-equipment, for mats or cots, and for blankets.

2. Administrative facilities: These should include one principal's office with private toilet and adjoining secretarial and waiting space; one teachers' lounge, large enough for about twenty teachers, adaptable for conference uses, and containing two teachers' toilets and a kitchenette. The secretary's desk should be placed in a controlling position at the main entrance, and the teachers' room should be so located that it affords some control over the elementary school entrance. A close relationship between the principal's office and teachers' room is desirable but not mandatory.

3. Music room: The music room will be used by grades 2 to 8 of both schools. Elementary school children in kindergarten and first grade will receive music instruction in their home classrooms. Because rhythms and dancing will be conducted in the gymnasium and choral and orchestral work will be done in the auditorium, the music room proper need only accommodate a piano, instrument and music storage spaces, and seating for 30 students. This room should have immediate access to the auditorium stage to aid in the conduct of the music instruction program and to facilitate the presentation of music in school assemblies. The music room should be located so that its noise will not disturb other class activities.

M  
E  
R  
V  
I

-  Industrial Violations of Residential Zone
-  Vacant Lots
-  School Site #1
-  School Site #2



## VI. SITE SELECTION

### a. General considerations

The problem of site selection is intimately connected with the current housing shortage; the scarcity of vacant land; the redevelopment plans of the Cambridge Housing Authority, the City Planning Department, and the transportation authorities; the function of the building; and the cost of property.

The function of the building as a school and a community education and recreation center decisively limits the choice of site to the general area bounded by Harvey and Reed Streets, and Massachusetts and Rindge Avenues. In this area, the essential central location is achieved. To serve effectively as a community center, a prominent location in concentrated neighborhood traffic is desirable, and to serve effectively as a school, a location northwest of the Lincoln School is required.

Since any site chosen will require the removal of some well-built existing houses and some poorly-built ones, it is necessary to determine the area of vacant land in North Cambridge to which solidly-built houses



could be moved, and on which new homes could be built to replace those which cannot be moved. If it is possible to relocate this housing near its original location, much social disruption will be avoided.

The vacant lots, which are located as shown on map No. 18, total 103,769 square feet, or 2.38 acres in area. To take them by Eminent Domain proceedings would cost about \$21,000. A density of thirty dwelling-units per acre, which is the same as that at which they are now developed and the same as that which the Cambridge Housing Authority is now planning in its new projects, would permit construction or relocation of seventy-one dwelling-units. Therefore, if possible, the clearing of the new school site should not require the relocation of more than seventy-one dwelling-units or 274 persons unless the existing Ellis and Sleeper School sites are also used for housing. (The average Cambridge family consisted of 3.86 persons in 1940, according to the U. S. Census.)

The area of site required is at least 6.5 acres to accommodate the building and the recreational areas which have been described. The National Council on Schoolhouse Construction<sup>1</sup> recommends that no elemen-

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1. National Council on Schoolhouse Construction, Part II, Guide for Planning School Plants (Tentative), Published by the Council, Washington, D.C., 1946, p. 42.

tary school site should be smaller than five acres, and that no junior high-school site should be smaller than ten acres. For the enrollment anticipated here, they recommend at least twelve acres, exclusive of building area. The Survey, on the other hand, recommended a site of 3.04 acres. But it would be absolutely impossible to serve the community's needs in the latter area. The site area of 6.5 acres asked for by this report will certainly be adequate for an urban school, and considering the high financial and social costs of acquiring land, the city could not easily afford more.

There are only two sites within the area described which will provide the necessary acreage, require little or no readjustment of neighborhood traffic patterns, permit easy expansion of well-oriented classroom buildings, and dislocate an allowable number of dwellings. These sites are shown on map No. 18.

In order to make a comparison of the costs of acquiring each of the two sites, the following program of acquisition has been assumed. It is felt that this procedure would be reasonably just, although the question of whether it can be used is open to debate:

The City will acquire, by Eminent Domain proceedings, all of the land and non-movable buildings on the new site and all of the vacant lots needed for relocating dwellings. The City will then sell the vacant

lots to the owners of the dwellings which will be relocated on them, at the same price for which the City bought the lots; and the City will also pay for moving these houses. Since the surrounding streets all have negligible grades and are all at least forty feet wide, including sidewalks, it should be possible to move most of the houses which are in good condition. Then the City will destroy those houses on the school site which cannot be moved, and private investors will buy the remaining vacant lands from the City (again at the same price for which they were obtained), and build sufficient new houses on these lots to replace all or part of those which were destroyed.

b. Site No. 1

Site No. 1, bounded by Dudley, Reed, and Cedar Streets, and Rindge Avenue, has a total area of 5.62 acres. The price of the properties, if taken by Eminent Domain proceedings (1.625 times assessed valuation), is as follows:

Land	\$ 65,000
Buildings	295,000
	<hr/>
Total	\$360,000

There are about 100 dwellings on this block. By inspection, I estimate that fifty per cent of their valuation could be relocated (about sixty dwellings).

But to rehouse the entire population in the neighborhood, the existing vacant lands are not sufficient. The Ellis and Sleeper School sites would also have to be developed in housing; their combined areas are 1.43 acres and they would therefore support approximately 165 persons, or forty-three dwellings. Assuming that all of these available lands are used for housing, and not counting the cost of erecting new dwellings or of moving existing dwellings, the total immediate cost to the City of Cambridge would be approximately:

New site (land only)	\$ 65,000
Buildings to be demolished	\$147,000
<hr/>	
Total	\$212,000

But the City would sell the Ellis-Sleeper site to accommodate relocated housing, bringing the net cost of site No. 1 to:

New site total	\$212,000
Ellis-Sleeper site	(-) \$ 26,000
<hr/>	
Net cost	\$186,000

Site No. 1 has several good points: First, it is nearer to the area which might be redeveloped under the Federal Urban Redevelopment Act of 1949 than is site No. 2. Under this act, an unspecified portion of the costs of neighborhood improvements paid for by Cambridge

could be counted by the Federal Government as part of Cambridge's contribution to the cost of rehabilitation, provided that this neighborhood improvement is near enough and of use enough to be considered a direct contribution to the redevelopment project. Possibly the Federal Government would credit a lower percentage of the cost of the community school on site No. 2 than for the same facilities on site No. 1. (See maps Nos. 8, 9, and 10.)

Second, the use of site No. 1 would create a fine feeling of community for the area west of Mass. Avenue by opening the land between the new school, the Our Lady of Pity Church (a handsome building), and the small shopping concentration near the church.

But site No. 1 also has some bad features. First, to make it as accessible to the entire neighborhood as it ought to be, the overpass and street extension mentioned earlier would probably have to be built. Second, the center it would create would not serve all of North Cambridge equally well, because its facilities would be hidden from the people east of Mass. Avenue: visual recognition of a community center is an important determinant of the amount of use it gets. The lack of room for expansion on this site is also a disadvantage: the building would be best placed on the north end of the block, to save an area broad enough for softball and

football fields. Then the building can only expand into the playfields with properly oriented classroom wings. The acquisition of additional land would then require crossing or closing a street, and any street thus closed will have to be what is now a through street. Also, to keep from closing Cedar Street, the expansion would have to occur toward the west, away from the rest of North Cambridge.

c. Site No. 2

Site No. 2 includes the block bounded by Cedar, Norris, and Dudley Streets, and Mass. Avenue, Norris Street (which would be closed, acquired as part of the site), and also includes the northern half of the block bounded by Mass. Avenue and Norris, Cedar, and Rice Streets. The existing sites of the Ellis and Sleeper Schools would be included in this area, so that the City would acquire these two sites and Norris Street at no cost. The total area of this site is 6.23 acres. The cost of the entire property, if taken by Eminent Domain, is:

Land	\$111,000
Buildings	\$414,000
<hr/>	
Total	\$525,000

A total of sixty-five dwelling units (number

determined by doorbell count) would have to be cleared from the site; this number could be moved to the existing vacant land (capacity seventy-one dwelling units) or replaced by new structures. Of these sixty-five dwellings, seventeen would have to be bought and demolished, and the remaining forty-eight could be moved intact. The total cost of buildings to be demolished would be \$96,000. Thus, the cost of acquiring site No. 2 would be:

New site (land only)	\$111,000
Buildings to be demolished	\$ 96,000
<hr/>	
Total	\$207,000

This is \$21,000, or eleven per cent, more than the cost of site No. 1, but the cost per acre is practically identical for both sites (\$33,000 per acre).

Site No. 2 has several disadvantages. First, the fact that its use will require the destruction of one of the better residential areas may cause considerable neighborhood sentiment against it. Second, the fact that it is somewhat removed from the potential redevelopment areas may reduce its value in the redevelopment program, relative to site No. 1.

However, site No. 2 has many advantages which far outweigh its disadvantages. Of the former, the most important are expansibility and visibility. Expansion

of both site and building may take place in the future by acquisition of the remaining half-block north of Rice Street, and both the playground and the building may occupy a prominent and highly visible position along Mass. Avenue, where all of the residents of North Cambridge will see them and consequently use them most intensively. Furthermore, an open site here will make a visual connection between the areas east and west of Mass. Avenue, thus heightening the visual sense of community. The public transportation facilities on Mass. Avenue will be a valuable asset to the use of the building, and the noise problem, which will diminish greatly within the next few years, can be alleviated by setting the classrooms back from the street.

I have therefore elected to use site No. 2 for this design.



## VII. CONCLUSION

I have shown that there is a present need for this building, that this need may expand in the future, and that a site can be obtained to satisfy the requirements of the program. The total cost of this project would be upwards of \$1,600,000; this large sum is made necessary in part by lack of foresight in past acquisition of school sites, but it will buy an essential school and the kind of a community center which may soon also be considered essential to modern living.

SCHOOL ENROLLMENT FORECAST - U.S. CENSUS:

FOR ENTIRE U.S.A., APRIL 1948 TO 1960, FROM;  
 "CURRENT POPULATION REPORTS", FEB. 14, 1949,  
 SERIES B-25, NO. 18, BY BUREAU OF THE CENSUS,  
 WASHINGTON, D.C.

YEAR	ENROLLMENT, IN THOUSANDS, BY GRADES								
	GR. 1	GR. 2	GR. 3	GR. 4	GR. 5	GR. 6	GR. 7	GR. 8	TOTAL
1947	3,394	2565	2241	2298	2174	1,980	1,864	1,573	18,269
48	3541	2676	2505	2355	2181	1996	1892	1540	18,686
49	3926	2829	2625	2447	2248	2015	1917	1572	19,579
1950	4048	3154	2780	2570	2343	2088	1939	1599	20,521
51	4082	3263	3090	2712	2456	2173	2004	1614	21,394
52	3956	3315	3209	3030	2604	2288	2096	1674	22,172
53	4558	3229	3260	3146	2909	2426	2206	1753	23,487
54	4754	3741	3174	3194	3022	2712	2338	1846	24,781
19 55	4841	3872	3640	3078	3040	2788	2590	1940	25,189
56	4483	3976	3786	3552	2944	2819	2675	2159	26,394
57	4184	3704	3900	3706	3408	2738	2714	2240	26,594
58	3929	3475	3643	3827	3570	3179	2645	2281	26,549
59	3668	3258	3404	3565	3672	3316	3060	2217	26,160
1960	3506	3103	3233	3374	3465	3456	3233	2599	25,969

GROSS REGISTERED BIRTHS - CAMBRIDGE :

ALL BIRTHS IN CAMBRIDGE - NOT INCLUDING BIRTHS TO CAMBRIDGE RESIDENTS OUTSIDE CITY - INCLUDING BIRTHS TO NON-RESIDENTS; FROM CAMBRIDGE ANNUAL REPORTS.

YEAR OF BIRTH	BIRTHS A	DEATHS CITY. B	NET BIRTHS C = A - B	ENROLL- MENT YEAR	8-YEAR BIRTHS (GR. 1-8)	3-YEAR BIRTHS (GR. 6-8)
1925	3,438	178	3260	1938	21,569	9,238
26	3416	192	3224	39	20,477	8641
27	2910	156	2754	1940	19411	7935
28	2813	150	2663	41	18785	7666
29	2665	147	2518	42	18208	7350
1930	2606	121	2485	43	17742	7150
31	2476	129	2347	44	17396	6833
32	2459	141	2318	1945	17133	6644
33	2273	105	2168	46	17239	6454
34	2261	103	2158	47	17884	6372
1935	2253	125	2128	48	19250	6266
36	2187	101	2086	49	20822	6277
37	2168	116	2052	1950	22195	6275
38	2223	84	2139	51	23409	6647
39	2160	76	2084	52	24948	7301
1940	2508	84	2424	53	26757	8761
41	2866	73	2793	54	28024	10037
42	3636	92	3544	1955	—	10703
43	3787	87	3700	56	—	10425
44	3545	86	3459	57	—	10403
1945	3351	85	3266	58	—	10837
46	3793	115	3678	59	—	11262
47	4014	121	3893			
48	3796	105	3691			

CENSUS GR. 1-8 ENROLLMENT PREDICTION  
VS. CAMBRIDGE 8-YEAR BIRTHS

YEAR	CENSUS PREDICT, GR1-8 A	CAMBRIDGE 8-YR. BIRTHS B	RATIO C = A/B
1947	18,269	17,884	1.02
48	18,686	19,250	0.97
49	19,579	20,822	0.937
1950	20,521	22,195	0.924
51	21,394	23,409	0.914
52	22,172	24,948	0.889
53	23,487	26,757	0.878
54	24,781	28,024	0.885
1955	25,789	30,000	0.860
56	26,394	31,300	0.845
57	26,594	32,000	0.830
58	26,549	32,500	0.815

NOTE: ALL FIGURES BELOW HEAVY LINE ARE READ AND CALCULATED FROM GRAPH FOLLOWING.

RATIO  $\left( \frac{\text{CENSUS GR. 1-9 PREDICTION}}{\text{CAMBRIDGE 3-YR. BIRTHS}} \right)$  VS. YEAR

RATIO  
1.10  
1.00  
0.90  
0.80  
0.70

1930

1940

1950

1960

YEAR

GRAPH 1

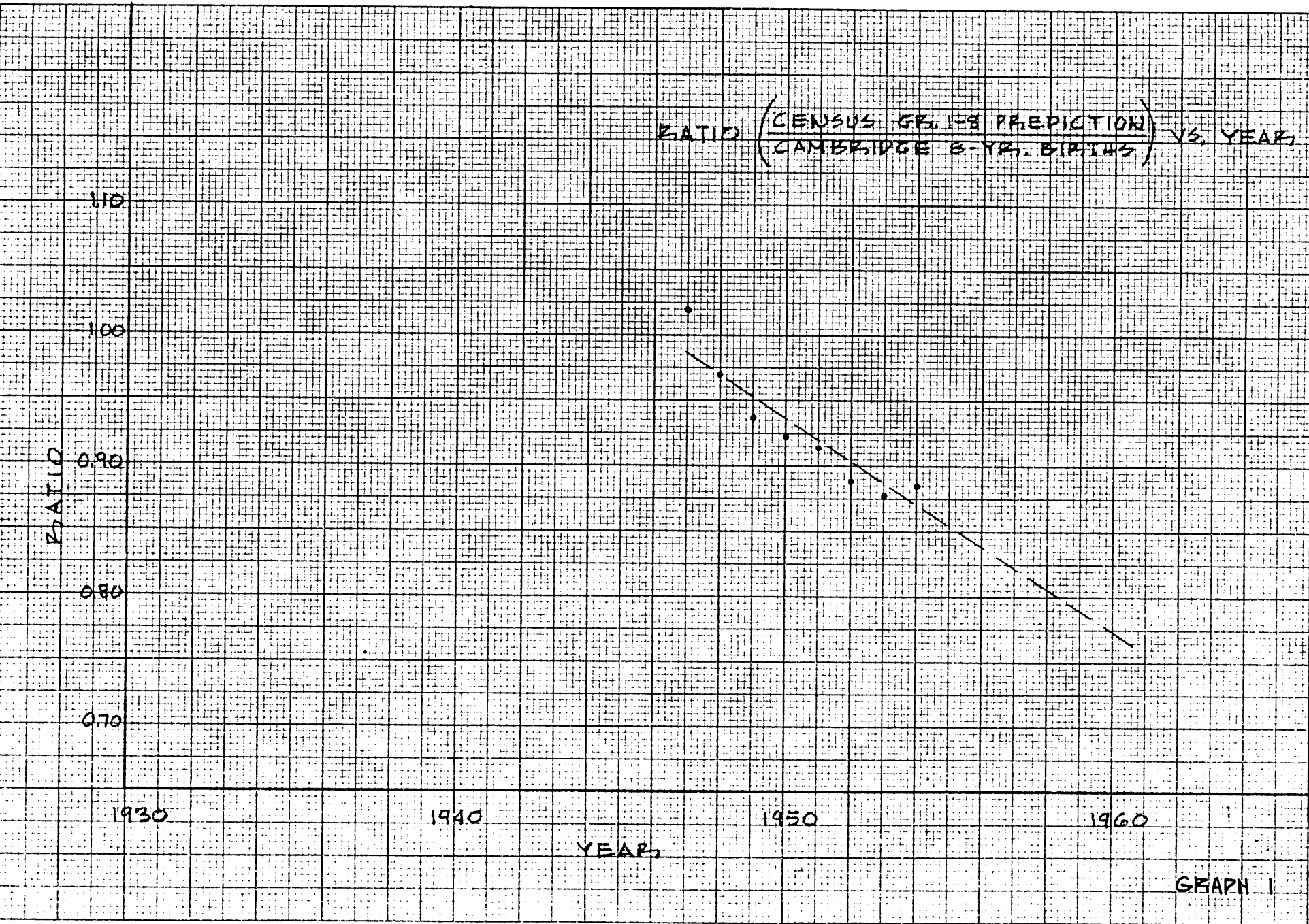




TABLE #E5

PAROCHIAL ELEMENTARY SCHOOL ENROLLMENTS:  
FROM CATHOLIC SCHOOL BUREAU, 468 BEACON ST., BOSTON.

NORTH CAMBRIDGE PAROCHIAL SCHOOLS

SCHOOL YEAR BEGINNING (MO. OF COUNT)	ST. JOHN'S SCHOOL										NUMBER IN 1-8 FROM N. CAMB.	OUR LADY OF PITY SCHOOL										ST. VINCENT'S ORPHANAGE - TO 1946 ST. VINCENT'S SCHOOL - 1946-48 IMMACULATE CONCEPTION SCHOOL - 1948										TOTAL # GR. 1-8 N. CAMB.	TOTAL # GR. 1-8 ALL CAMB.		
	K'G'TAL	1	2	3	4	5	6	7	8	TOTAL 1-8		K'G'TAL	1	2	3	4	5	6	7	8	TOTAL 1-8*	K'G'TAL	1	2	3	4	5	6	7	8	TOTAL 1-8			NUMBER IN 1-8 FROM N. CAMB.	
1935 (OCT.)	133	131	129	145	135	124	155	99	129	1,047	890	68	76	82	45	73	61	62	49	63	512											127	—	1,686	6,524
36 "	117	154	126	125	150	128	129	151	101	1,064	905	54	68	80	83	33	58	60	59	47	488											133	—	1,685	6,361
37 "	118	134	139	124	126	147	128	127	142	1,067	907	52	48	77	91	36	70	71	42	41	476											158	—	1,701	6,161
38 "	94	135	149	145	133	126	152	128	131	1,099	934	57	51	62	85	38	64	35	62	38	435											137	—	1,671	6,191
39 "	104	130	116	158	140	135	124	149	125	1,077	915	40	40	35	72	58	58	57	43	36	399											136	—	1,612	6,134
1940 "	111	121	123	126	155	138	130	132	148	1,073	912	42	36	41	43	63	52	53	59	35	382											159	—	1,614	5,970
41 "	114	121	111	117	121	157	141	128	119	1,015	863	30	43	33	40	39	62	52	45	62	376											157	—	1,548	5,765
42 "	99	142	116	118	124	127	148	144	129	1,052	894	50	33	38	34	34	39	61	53	45	337											143	—	1,532	5,552
43 "	96	148	125	133	109	122	136	149	138	1,060	901	35	43	37	34	36	29	43	64	48	334											133	—	1,528	5,907
44 (JUNE)	87	131	125	139	113	113	116	127	134	998	849	39	33	38	34	37	31	32	43	64	312											169	—	1,479	5,407
1945 "	113	125	119	139	137	106	118	114	119	977	830	46	34	35	40	35	37	35	30	41	287											165	—	1,429	5,362
46 "	113	154	120	117	141	138	114	124	111	1,019	867	48	49	33	36	44	36	35	34	30	297											170	—	1,486	5,334
47 "	125	148	130	125	107	131	136	110	120	1,007	856	55	44	42	30	36	41	37	37	33	300											—	—	5,764	
48 "	113	165	125	128	115	102	115	131	100	981	834	56	46	33	37	31	43	37	28	38	293	—	48	48	43	47	42	36	39	21	324	54	1,598	5,897	
49 (OCT.)	121	168	149	120	128	122	98	117	125	1,027	873	45	45	37	33	42	25	40	42	27	291	—	48	52	48	46	49	35	38	40	366	55	1,684	6,299	

\* DATA ON NORTH CAMBRIDGE RESIDENTS NOT AVAILABLE.  
# TOTALS INCLUDE NON-RESIDENTS

TABLE # E G

ENROLLMENTS IN NORTH CAMBRIDGE  
PUBLIC SCHOOLS (GRADE 1-8 TOTALS)

SCHOOL	SCHOOL YEAR BEGINS									
	1939 <sup>*</sup>	1941	1942	1943	1944	1945	1946 <sup>o</sup>	1947 <sup>#</sup>	1948	1949 <sup>*</sup>
ELLIS	506	327	303	275	271	261	237	313	316	322
SLEEPER	161	185	162	163	168	161	190			
LINCOLN	222	261	258	241	225	217	145	178	165	173
WYMAN	68	51	43	40	41	39	41	50	43	36
TOTAL	957	844	766	719	705	678	613	541	524	531

\* MARCH  
o OCTOBER  
# DECEMBER



TABLE # E 7

TOTAL CAMBRIDGE PUBLIC & PAROCHIAL ENROLLMENTS, GRADES 1-8, VS. 8-YEAR BIRTHS:

- ALL DATA BELOW HEAVY LINE PREDICTED

SCHOOL YEAR BEGINS	PAROCHIAL A	PUBLIC B	TOTAL C = A + B	8-YEAR BIRTHS D	RATIO E = C/D
1938	6,191	9,761	15,952	21,569	0.740
39	6,134	9,426	15,560	20,477	.759
1940	5,970	8,716	14,686	19,411	.756
41	5,765	8,306	14,071	18,785	.748
42	5,552	7,829	13,381	18,208	.734
43	5,907	7,144	13,051	17,742	.735
44	5,407	7,206	12,613	17,396	.725
1945	5,362	6,856	12,218	17,133	.713
46	5,334	6,623	11,957	17,239	.693
47	5,764	6,245	12,009	17,884	.671
48	5,897	6,231	12,128	19,250	.630
49	6,299	6,532	12,831	20,882	.614
1950			13,430	22,195	.605
51			13,730	23,409	.587
52			14,250	24,948	.571
53			14,840	26,757	.554
54			15,100	28,024	.538
1955			15,620	30,000	.521
56			15,790	31,300	.504
57			15,650	32,000	.488
58			15,280	32,500	.470

RATIO (TOTAL CAMBER. PUBLIC & PAROCHIAL) VS. YEARS  
8-YEAR BIRTHS

RATIO  
0.80  
0.70  
0.60  
0.50  
0.40

1930 1940 1950 1960  
YEARS

GRAPH 2

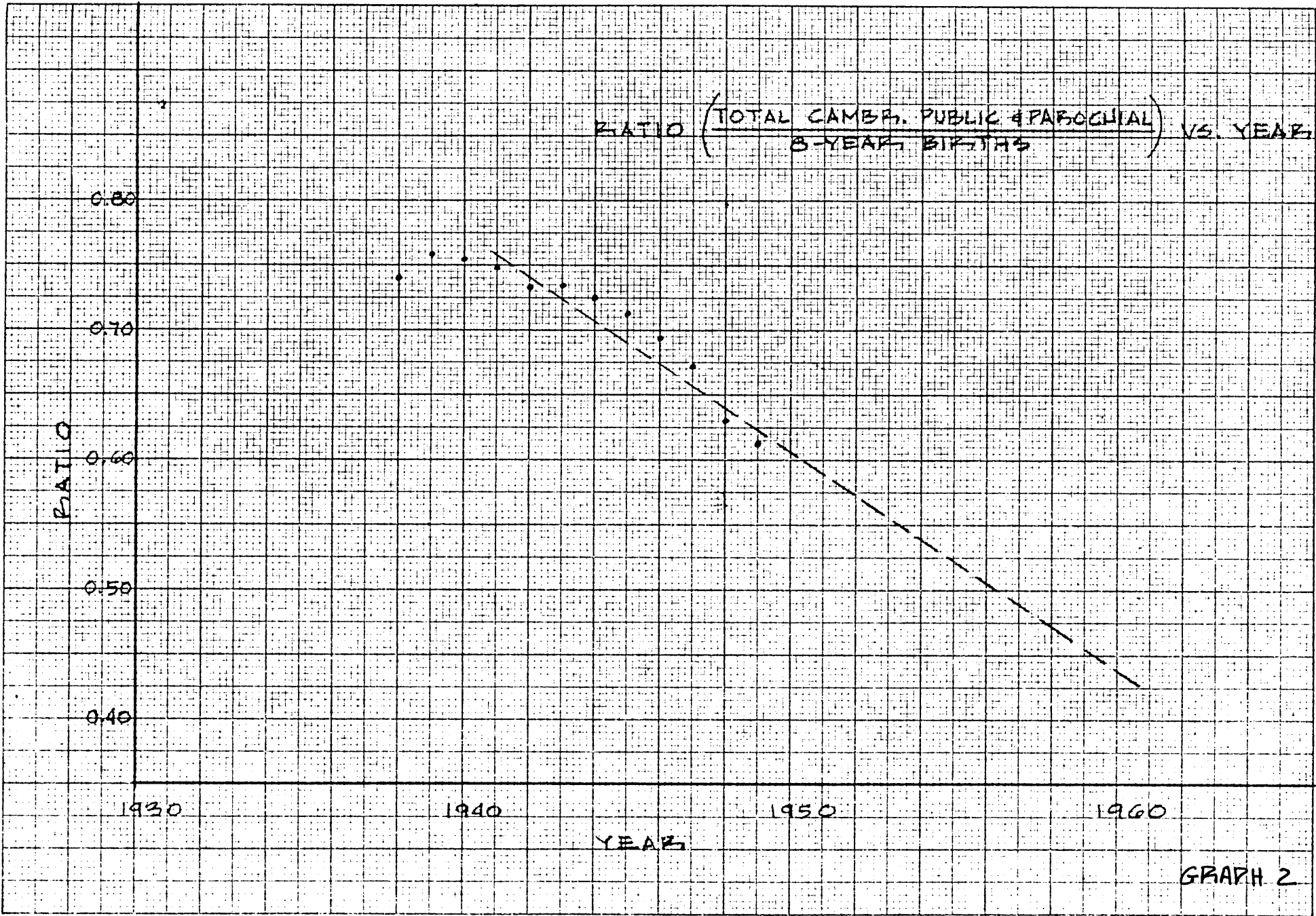


TABLE #E 8

(ALL-CAMBRIDGE PUBLIC & PAROCHIAL, GR 1-8)  
 (NORTH CAMBRIDGE PUBLIC & PAROCHIAL, GR 1-8) VS. YR.

SCHOOL YEARS BEGINS	ALL-CAMBR. PUB. & PAROCH. A	NO. CAMBR. PUB. & PAROCH. B	RATIO C = A/B
1939	15,560	2,569	6.06
41	14,071	2,392	5.88
42	13,381	2,298	5.83
43	13,051	2,247	5.80
44	12,613	2,184	5.78
1945	12,218	2,107	5.78
46	11,957	2,099	5.70
48	12,128	2,122	5.72
49	12,831	2,215	5.79
1950	13,430	2,370	5.65
51	13,730	2,440	5.63
52	14,250	2,540	5.61
53	14,840	2,650	5.58
54	15,100	2,720	5.56
1955	15,620	2,830	5.53
56	15,790	2,870	5.51
57	15,650	2,850	5.48
58	15,280	2,800	5.46

NOTES: - PAROCHIAL DATA USED INCLUDES NON-RESIDENTS.  
 - ALL DATA BELOW HEAVY LINE PREDICTED.

RATIO  $\left( \frac{\text{ALL-CAMBRIDGE PUBLIC \& PAROCHIAL}}{\text{NORTH CAMBRIDGE PUBLIC \& PAROCHIAL}} \right)$  VS. YEAR

RATIO  
7.0  
6.0  
5.0

1930

1940

1950

1960

YEAR

GRAPH 3

1937



TABLE #E9

NORTH CAMBRIDGE PUBLIC VS. PAROCHIAL;  
RATIO FOR GRADE 1-8 TOTALS:

SCHOOL YEAR BEGINNING	NO. CAMB. TOTAL (TABES) A = B + C	NO. CAMB. PAROCHIAL B = $A \left( \frac{D}{1+D} \right)$	NO. CAMB. PUBLIC C = $\left( \frac{A}{1+D} \right)$	RATIO: D = B/C
1939	2569	1612	957	1.69
41	2392	1548	844	1.83
42	2298	1532	766	2.00
43	2247	1528	719	2.13
44	2184	1479	705	2.10
1945	2107	1429	678	2.11
46	2099	1486	613	2.42
48	2122	1598	524	3.07
49	2215	1684	531	3.17
1950	2370	1817	553	3.28
51	2440	1885	555	3.42
52	2540	1978	562	3.53
53	2650	2082	568	3.66
54	2720	2150	570	3.77
1955	2830	2250	580	3.88
56	2870	2295	575	3.98
57	2850	2290	560	4.10
58	2800	2263	537	4.22

NOTES: - COMPLETE DATA NOT AVAILABLE FOR 1940, 47.  
 - PAROCHIAL INCLUDES NON-RESIDENTS.  
 - ALL DATA BELOW HEAVY LINE PREDICTED.

RATIO: NORTH CAMBRIDGE  $\left(\frac{\text{PAROCHIAL}}{\text{PUBLIC}}\right)$  VS. YEARS

RATIO  
5.00  
4.00  
3.00  
2.00  
1.00

1930

1940

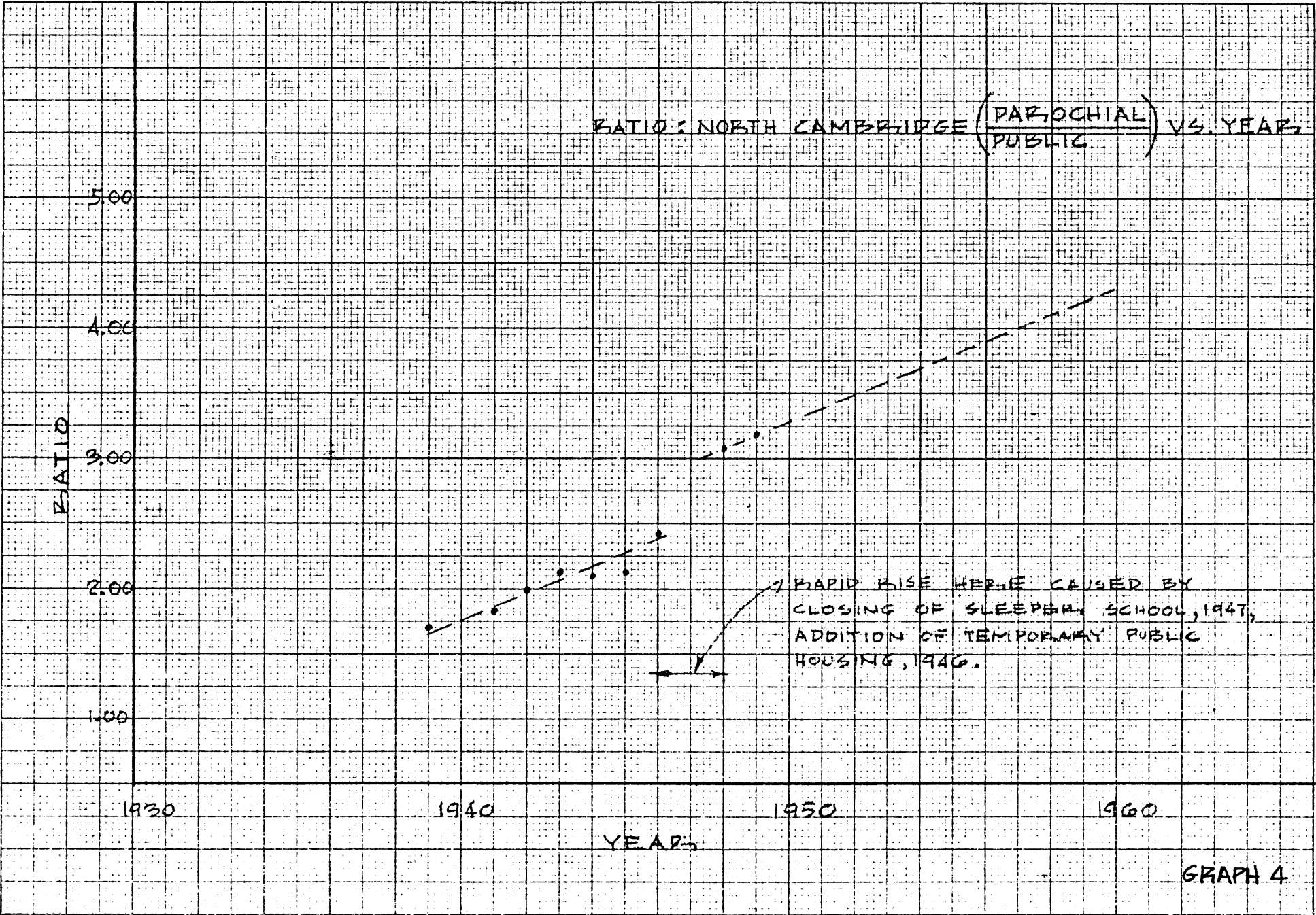
1950

1960

YEARS

RAPID RISE HERE CAUSED BY  
CLOSING OF SLEEPER SCHOOL, 1947,  
ADDITION OF TEMPORARY PUBLIC  
HOUSING, 1946.

GRAPH 4



EFFECT OF PUBLIC HOUSING ON SCHOOL ENROLLMENT

1) BY JULY, 1951, 309 NEW PERMANENT UNITS WILL BE OCCUPIED: (KINDGE AVE. & SHERMAN ST.)

36	UNITS	@	1	BEDRM.	@	0	CHILDREN/UNIT	=	0	CHILDREN
123	"	"	2	"	@	1.5	"	"	=	184
126	"	"	3	"	@	3	"	"	=	378
24	"	"	4	"	@	5	"	"	=	120
									TOTAL	= 672

2) BY SAME DATE, 136 TEMPORARY UNITS WILL BE DESTROYED (SCATTERED IN NORTH CAMBRIDGE):

48	UNITS	@	1	BEDROOM	@	0	CHILDREN/UNIT	=	0	CHILDREN
48	"	"	2	"	@	1.5	"	"	=	72
40	"	"	3	"	@	3	"	"	=	120
									TOTAL	= 192

3) TOTAL ADDED CHILDREN = 672 - 192 = 480 CHILDREN

4) ASSUME AGES OF CHILDREN: (IN FALL OF 1951.)  
 20% ARE 0-2 YRS. OLD  
 60% " 3-6 " "  
 20% " 7-12 " "

THEREFORE, THE FOLLOWING % WILL BE IN GR. 1-8:

YEAR	1951	1952	1953	1954	1955	1956	1957	1958
% IN SCHOOL	60	60	65	70	75	75	80	80

5) ASSUME AVERAGE % OF CATHOLICS:

NORTH CAMBRIDGE CATHOLICS = 98%  
 ALL - CAMBRIDGE CATHOLICS = 75% } AV. = 86%

6) THEREFORE, ENROLLMENTS IN NORTH CAMBRIDGE WILL BE INCREASED:

SCHOOL YEAR BEGINS	BASE NUMBER A	GROSS ENROLL. PERCENT B	PAROCHIAL ENROLL. C = .86 x A x B	PUBLIC ENROLL. D = .14 x A x B
1951	480	60	248	40
52	"	60	248	40
53	"	65	268	44
54	"	70	290	47
1955	"	75	310	50
56	"	75	310	50
57	"	80	330	54
58	"	80	330	54

TABLE # E II

NORTH CAMBRIDGE ENROLLMENT SUMMARY

SCHOOL YEAR BEGINS	PREDICT'D. PAROCHIAL ENROLL., EXCEPT HOUSING.	HOUSING ADDS TO PAROCHIAL	POTENTIAL PAROCHIAL TOTAL	PAROCHIAL CAPACITY	PREDICT'D. PUBLIC ENROLL., EXCEPT HOUSING	HOUSING ADDS TO PUBLIC	PAROCHIAL EXCESS TO PUBLIC	PUBLIC TOTAL	NEW ELLIS-SLEEPER ENROLL.
	A	B	C=A+B	D*	E	F	G=(C-D)·K	H=E+F+G	I=H-170
1950	1,817	0	1,817	1770	553	0	① 35	588	418
51	1,885	248	2,133	2250	555	40	0	595	425
52	1,978	248	2,226	2250	562	40	0	602	432
53	2,082	268	2,350	2250	568	44	② 75	687	517
54	2,150	290	2,440	2520-2680	570	47	0	617	447
1955	2,250	310	2,560	"	580	50	0	630	460
56	2,295	310	2,605	"	575	50	0	625	455
57	2,290	330	2,620	"	560	54	0	614	444
58	2,263	330	2,593	"	537	54	0	591	421

\* PAROCHIAL CAPACITY

SCHOOL	1950-1951	1951-1952	1952 -
ST. JOHN	1,100	1,180	1,180
IMMAC. CONCEPT	370	370	700-800
OUR LADY OF PITY	300	700	700
TOTAL	1,770	2,250	2580-2680

# LINCOLN SCHOOL CAPACITY (GRADES 1-6) = 52 Hs. @ 30-35 ≈ 170 PUPILS

K = % OF ENROLLMENT ORIGINATING IN NO. CAMBRIDGE:  
 K<sub>①</sub> = 73% ; K<sub>②</sub> = 75%



TABLE #E12

PREDICTION OF % ENROLLMENT IN GRADES 6-8, PUBLIC SCHOOLS:

NOTE: ALL FIGURES BELOW HEAVY LINE ARE PREDICTIONS.

FALL OF YEAR	3-YR. BIRTHS A	8-YR. BIRTHS B	CAMBR. TOTAL PUBLIC ENROL.		RATIOS		
			GR. 6-8 C	GR. 1-8 D	A/B	C/D	C/D/A/B
1938	9,238	21,569	3,761	9,761	.428	.386	.900
39	8,641	20,477	3,738	9,426	.421	.397	.943
1940	7,935	19,411	3,586	8,716	.408	.411	1.005
41	7,666	18,785	3,389	8,306	.407	.408	1.005
42	7,350	18,208	3,085	7,829	.404	.394	.975
43	7,150	17,742	2,745	7,144	.403	.384	.952
44	6,833	17,396	2,714	7,206	.393	.377	.960
1945	6,644	17,133	2,632	6,856	.388	.384	.980
46	6,454	17,239	2,552	6,623	.375	.385	1.025
47	6,372	17,884	2,267	6,245	.356	.374	1.050
48	6,266	19,250	2,095	6,231	.325	.336	1.035
49	6,277	20,822	—	—	.301	.296	0.985
1950	6,275	22,195	—	—	.283	.279	.985
51	6,647	23,409	—	—	.283	.279	.985
52	7,301	24,948	—	—	.293	.289	.985
53	8,761	26,757	—	—	.327	.322	.985
54	10,037	28,024	—	—	.358	.353	.985
1955	10,703	30,000	—	—	.357	.352	.985
56	10,425	31,300	—	—	.333	.328	.985
57	10,403	32,000	—	—	.325	.320	.985
58	10,837	32,500	—	—	.333	.328	.985

AVERAGE = .985

TABLE #E13

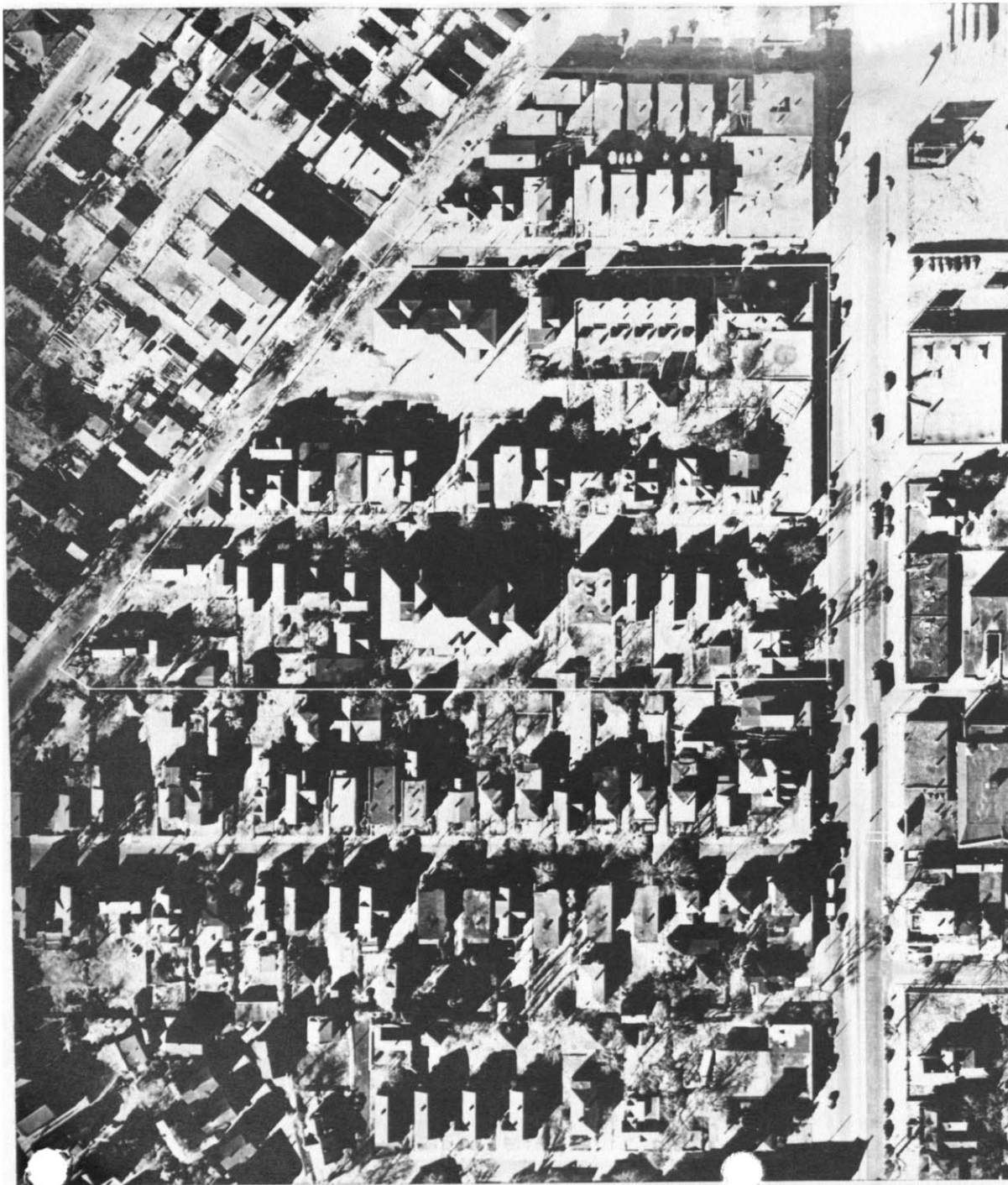
DISTRIBUTION OF ENROLLMENT IN  
NEW ELLIS - SLEEPER, SCHOOL

SCHOOL YEARS BEGINS	TOTAL NO. CAMB. PUBLIC	FACTOR FOR GRADES 6-8 #	ENROLL. IN GRADES 6-8 (NEW SCHOOL)	TOTAL PUPILS IN NEW SCHOOL	ENROLL. IN GR 1-5, NEW SCHOOL
	A	B	$C=A \times B$	D	$E=D-C$
1950	588	0.279	164	418	254
51	595	.279	166	425	259
52	602	.289	175	432	257
53	687	.322	221	517	296
54	617	.353	218	447	229
1955	630	.352	222	460	238
56	625	.328	205	455	250
57	614	.320	198	444	246
58	591	.328	193	421	228

# FROM TABLE #E12

## IX. BIBLIOGRAPHY

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**A COMMUNITY SCHOOL  
& RECREATION FACILITY**

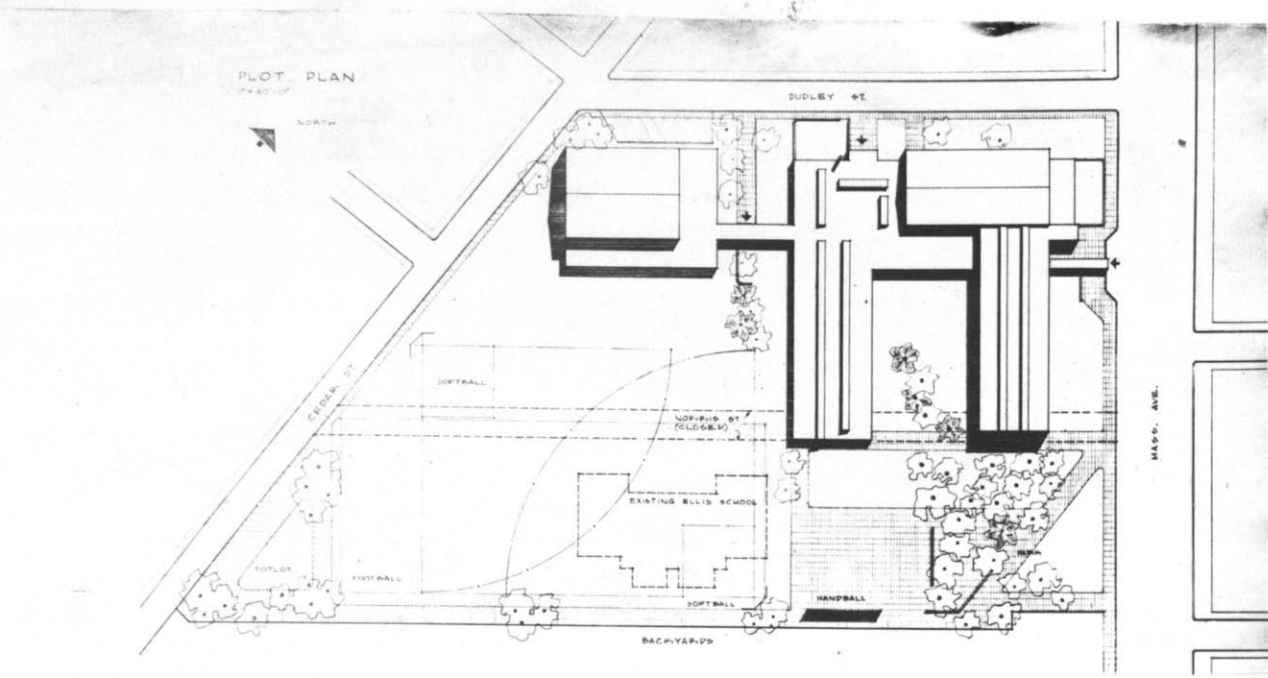
FOR NORTH CAMBRIDGE, MASSACHUSETTS

SUBMITTED IN PARTIAL FULFILMENT  
OF THE REQUIREMENTS FOR THE  
DEGREE MASTER IN ARCHITECTURE  
MASSACHUSETTS INSTITUTE OF TECHNOLOGY  
SEPT. 1, 1950                      ZACHARY ROSENFELD

*Zachary Rosenfeld*



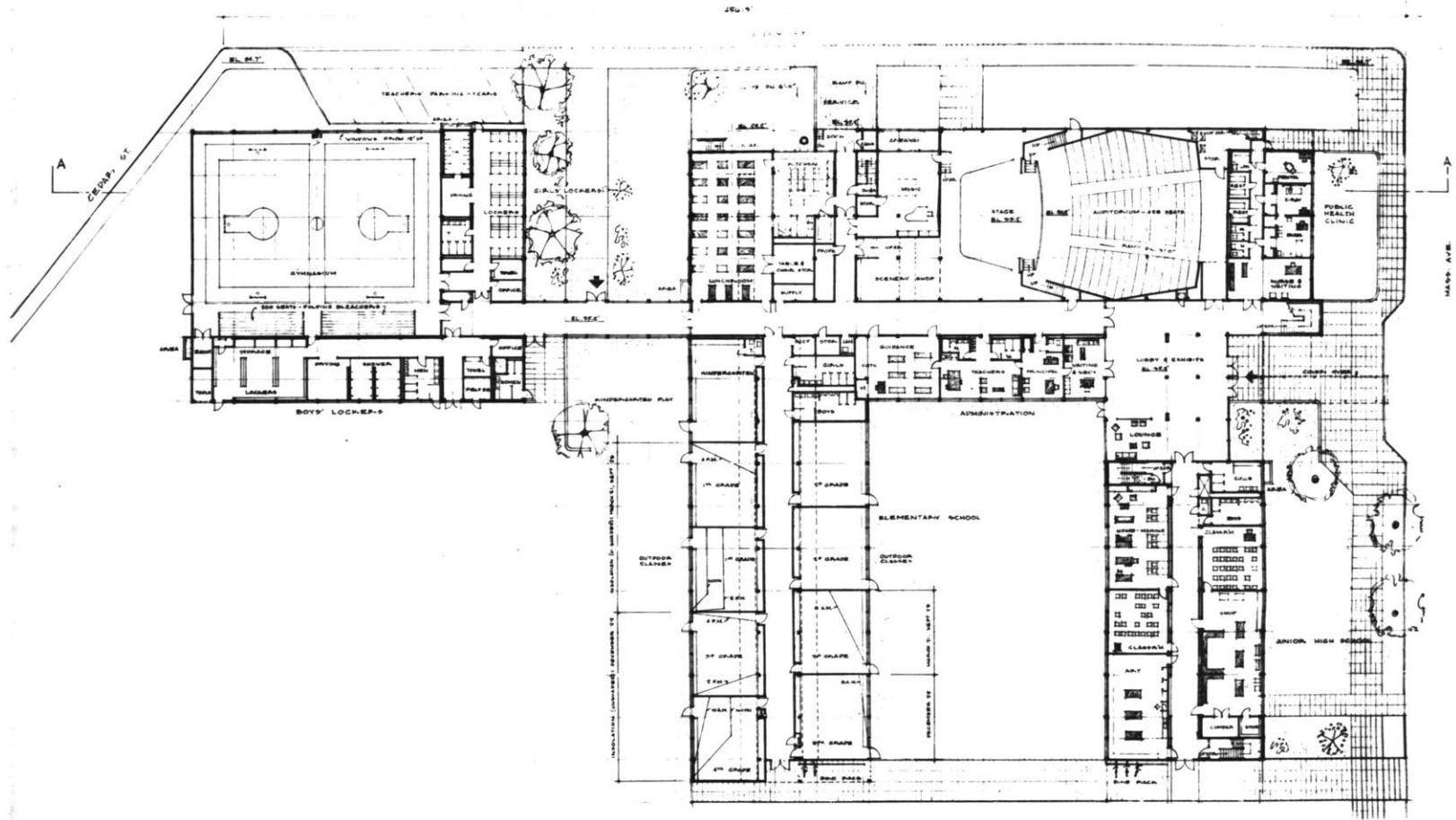
ST. JOHN'S SCHOOL      OUR LADY OF PITY SCHOOL  
 OUR LADY OF PITY CHURCH      ELLIS SCHOOL



INDUSTRIAL INFILTRATION

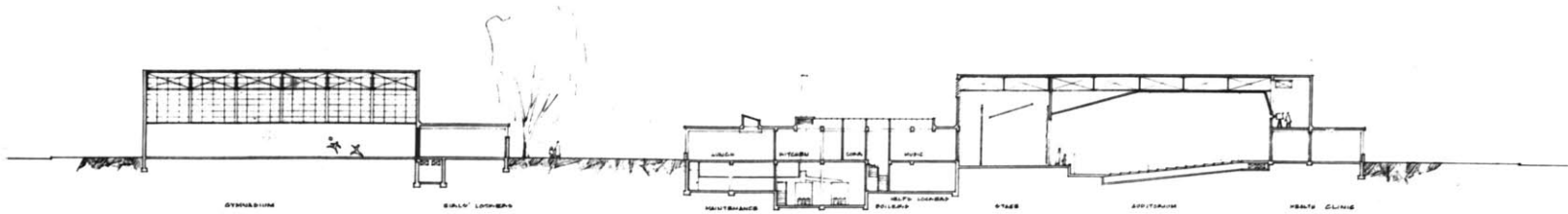


REPRESENTATIVE VIEWS

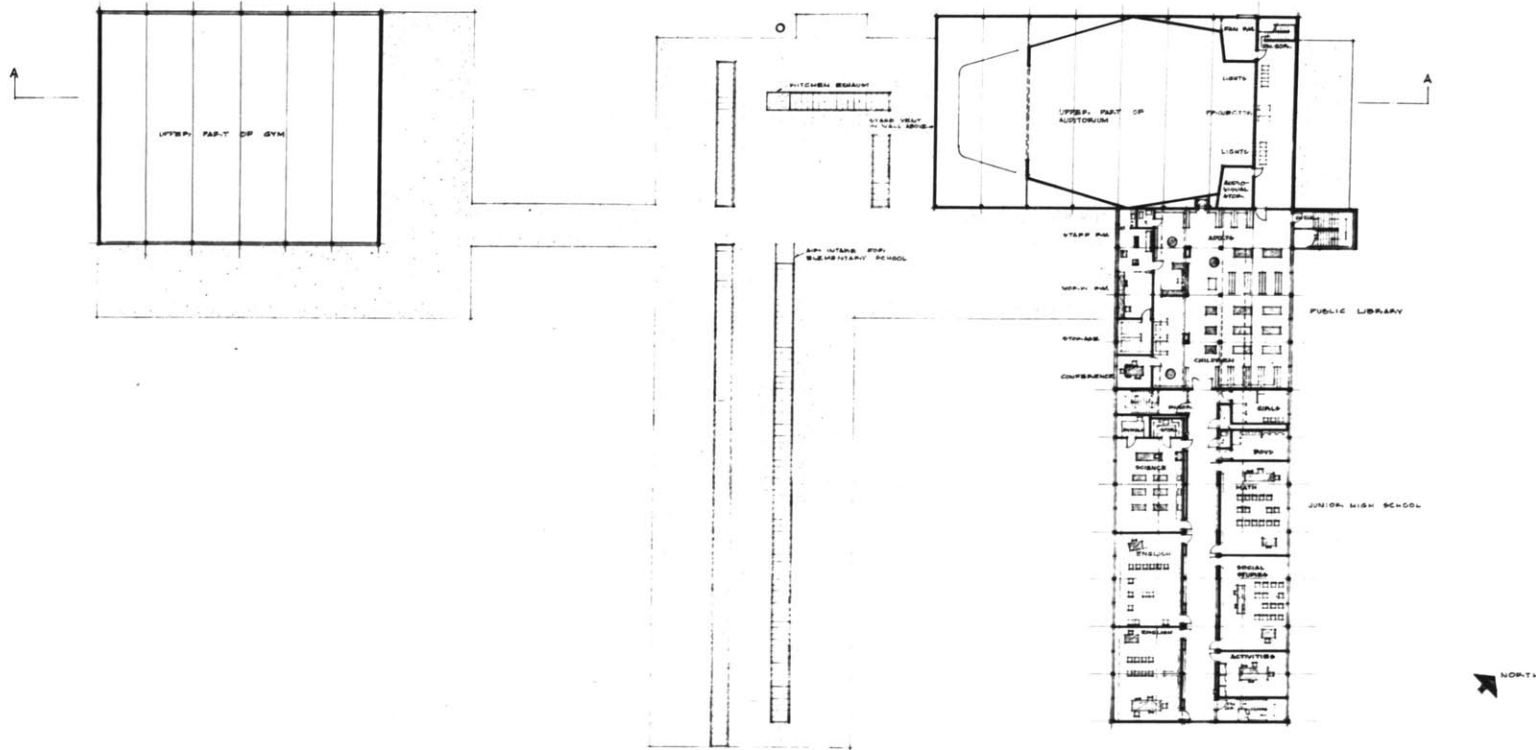


FIRST FLOOR, PLAN  
 1st - 100

*Ranfild*



SECTION A-A  
1/4" = 1'-0"



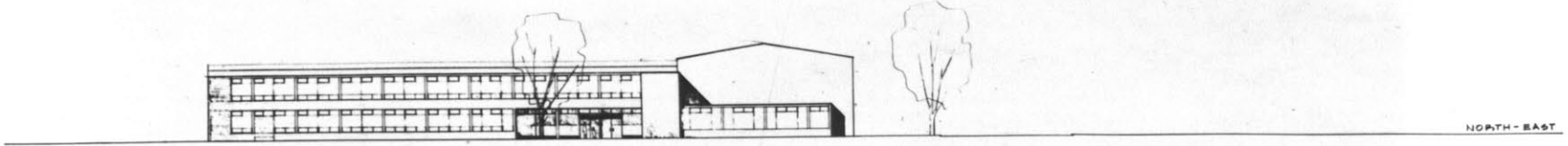
SECOND FLOOR PLAN  
1/4" = 1'-0"

44

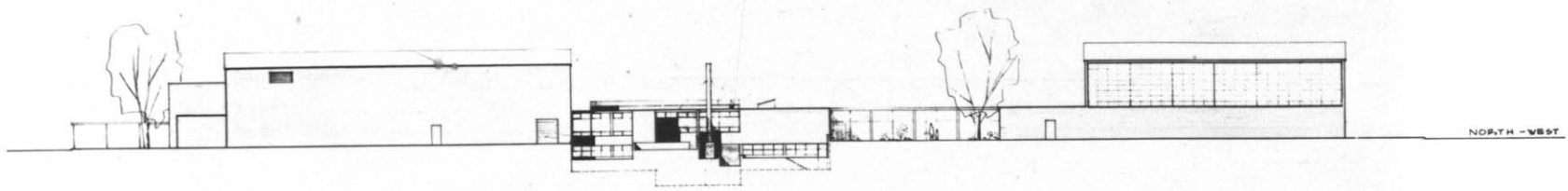
*Working manuscript*



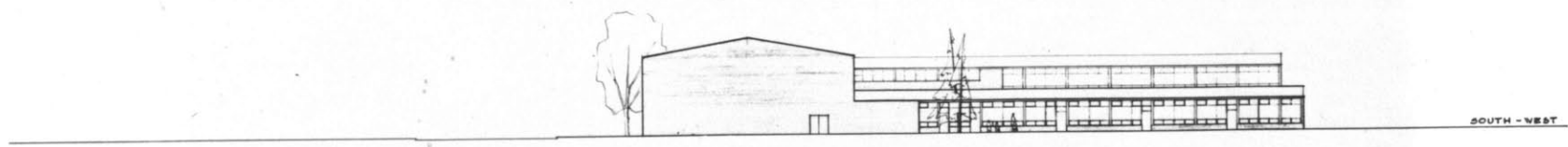




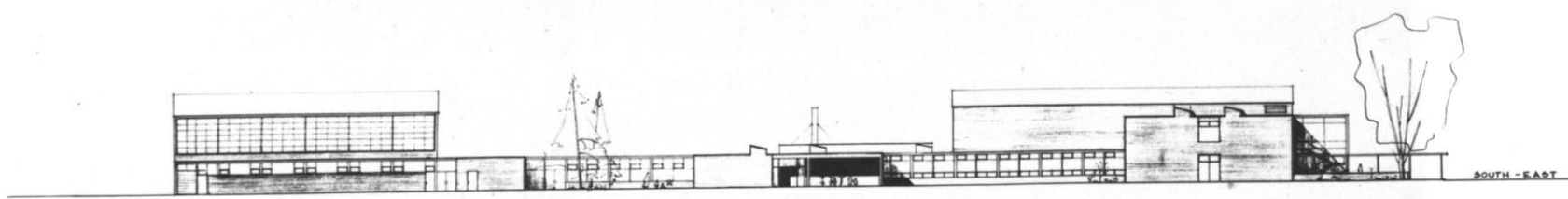
NORTH - EAST



NORTH - WEST



SOUTH - WEST



SOUTH - EAST

ELEVATIONS  
1/8" = 1'-0"

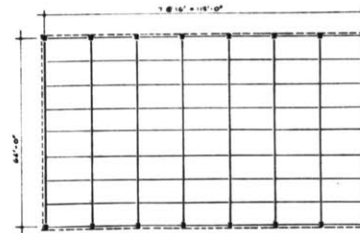
6

Jac [Signature]

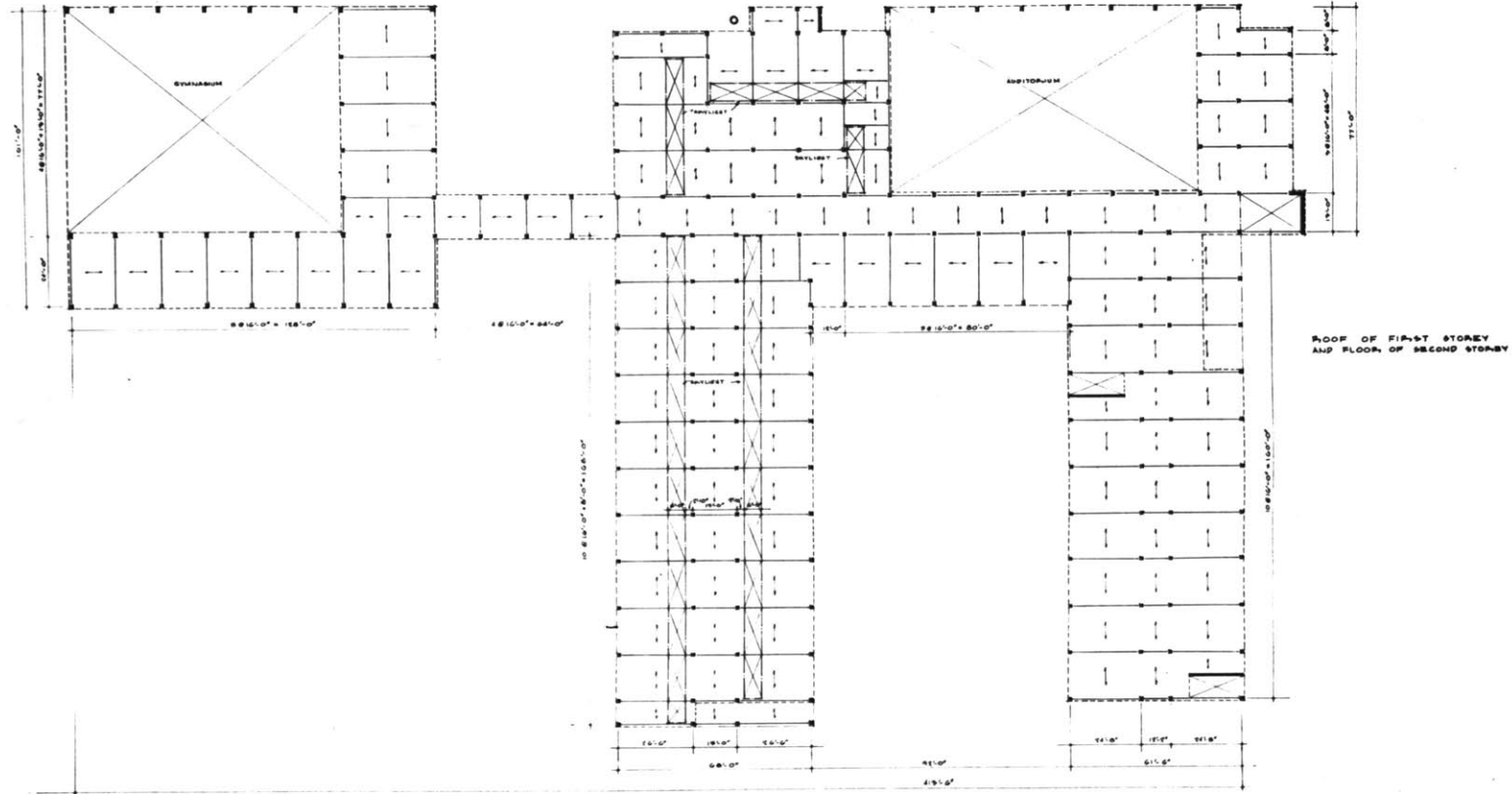


CONSTRUCTION: STEEL MEMBERS  
THROUGH STEEL JOISTS. JOISTS  
LONGER THAN 8'0" SHALL BE  
ADDED, ONE FOR EACH END OF  
MEMBER.

GYMNASIUM ROOF



AUDITORIUM ROOF



ROOF OF FIRST STOREY  
AND FLOOR OF SECOND STOREY

FRAMING PLANS  
1/16/1910

*Zach, afid*



