CENTER FOR ENVIRONMENTAL STRUCTURE

ARCHITECTS . ENGINEERS . CONTRACTORS

2701 SHASTA ROAD • BERKELEY, CALIFORNIA 94708
TELEPHONE 415 / 841-6166

November 20, 1987

To: Task force and city staff.

From: Christopher Alexander.

Re: Draft of Multi-family zoning Ordinance.

I shall briefly summarise the main points of disagreement between CES and DS. It must be emphasized that these disagreements are of an amicable and professional nature. Both consultants have declared themselves willing to abide by the resolution of disagreements after discussion by the task force.

1. OPEN SPACE, PARKING AND BUILDING HEIGHT.

In the eyes of CES the most fundamental point of the new ordinance, lies in the balance of open space, parking, and building height. This is thoroughly discussed throughout chapter 1, especially in the legislative commentary, chapter 1.2.

The standards proposed by DS fail to establish this necessary balance, and err in favor of unworkably low open space, too much parking, and excessive building height. The traditional character of Pasadena requires gardens of 3000 sf, building height no more than 2 stories with only rare exceptions, and no more than 39% asphalt (at-grade parking and driveways).

The main thing which CES case studies have demonstrated during the last ten months of work, is that it is possible to attain this balance while achieving existing densities.

CES case studies show that it is possible to plan buildings at the required density, with large main gardens, at 2 stories, provided that building volumes are placed and shaped in flexible ways which makes these three numbers attainable.

Case-studies made by DS show something a little different. Because DS have placed several additional stringent restrictions on buildings, they create the impression that it is it necessary to decrease open space, increase asphalt devoted to parking, and increase building height. But at that stage, the baby goes out with the bath water. If the city were to be built according to the current DS draft standards then, in lesser degree, there would still be the same lack of usable green space, the same overbearing building height, and the same dominance of asphalt, that exists today in many undesirable projects. These are the features which this ordinance is intended to replace.

The key assumptions in DS case studies, which create these errors are:

- 1. Use of modular box-like apartment units and lack of plan flexibility.
- 2. Exaggerated setbacks and building separations.
- 3. Too much parking at grade.
- 4. Failure to appreciate the fact that the essence of courtyard buildings is that they must be narrow.

If the city wishes to maintain its traditional character, it will be necessary to be more flexible about these issues.

2. APPLICATION AND LAYOUT PROCESS.

There is also some disagreement about layout process. DS prefers a more traditional use of standards, without emphasizing the sequential nature of the process. CES places great emphasis on the process, because it is only this process which permits creation of the configurations necessary to achieve the flexible building volumes mentioned above.

The results of using the layout process produce more uniquely shaped building volumes which are capable of meeting the open-space/parking/height requirements.

DS views the buildings so produced as idiosyncratic. This error appears to be based on his very strong philosophical conviction about post-modern building typology, which blinds him to the practical problems mentioned here. The building designs he calls "possibly unique in the history of world housing" are in fact typical of 90% of the world's historical architecture. What is more important: They are capable of solving the problem which Pasadena faces.

In my view, the CES type of buildings are more subtle, less rigid, and far more like traditional buildings that produced the Pasadena heritage. They are also more capable of creating the context sensitive neighborhood harmony defined in chapter 1 (section 1.3), because they tend to place more emphasis on the uniqueness of individual projects in relation to their surroundings.

The DS building plans, on the other hand, tend to place more emphasis on their closed and internal integrity, and are less coherently connected with the neighborhood.

All in all it appears that the DS case studies have been inspired by the town house building type which is sympathetic with the urban character of San Francisco, but perhaps less sympathetic to the lower density green character of Pasadena. It is also possible that DS experience lies more in the construction of town house buildings, and less in the construction of courtyard buildings. The two key factors in the construction of successful courtyard buildings are the diameter of the courtyard in relation to its height, and the narrowness of the building wings in relation to property lines and daylight. The DS case studies appear to be unaware of the subtle relations between size, height and volumetric flexibility that are needed to make a successful courtyard.

In addition, the DS studies appear to be ignorant of a fundamental fact in courtyard design: namely, that successful space of the kind advocated in the ordinance, cannot be created unless gardens precede parking and parking precedes building volumes in the layout sequence.

A final aspect of the layout process concerns the effect on individual apartments. The modular apartments visible in every single one of the DS case studies suggest a serious failure to recognise how important the uniqueness of individual apartments is as an issue. Once again, I believe DS is unaware that this uniqueness of apartment units, so important to the inhabitants, is a quality which is most easily produced by strict adherence to a sequential layout process.

DS's condemnation of the process as "simply silly" reflects an ignorance of modern developments in planning, apparently coupled with a lack of experience in new types of performance-based zoning which frequently make extensive use of flow charts and sequences as a necessary part of their rules.

Furthermore, the pattern language, today used in planning and design all over the world, and evidently a major factor in the task force decision to hire the CES/DS joint venture, has the use of such processes at the very heart of its effectiveness.

The following pages show case studies prepared by CES.

RM-16 EXAMPLES

Address: 1543/9 Locust st. Number of Units: 3 units

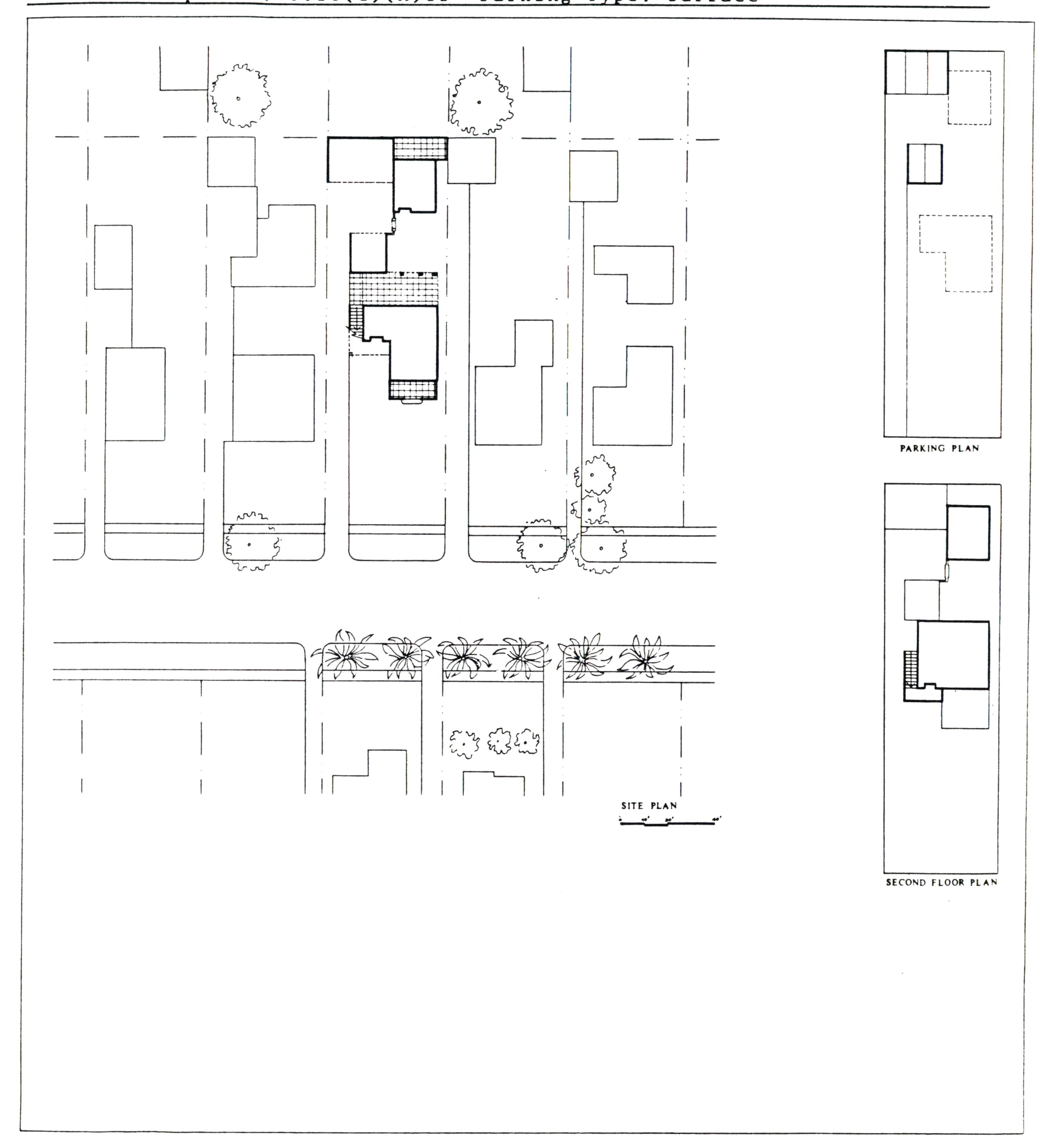
Lot Area (A): 8,250 sf Number of Parking Spaces: 5 cars

Lot Dimensions: 50'x 165' Square Feet of Construction: 2,475 sf

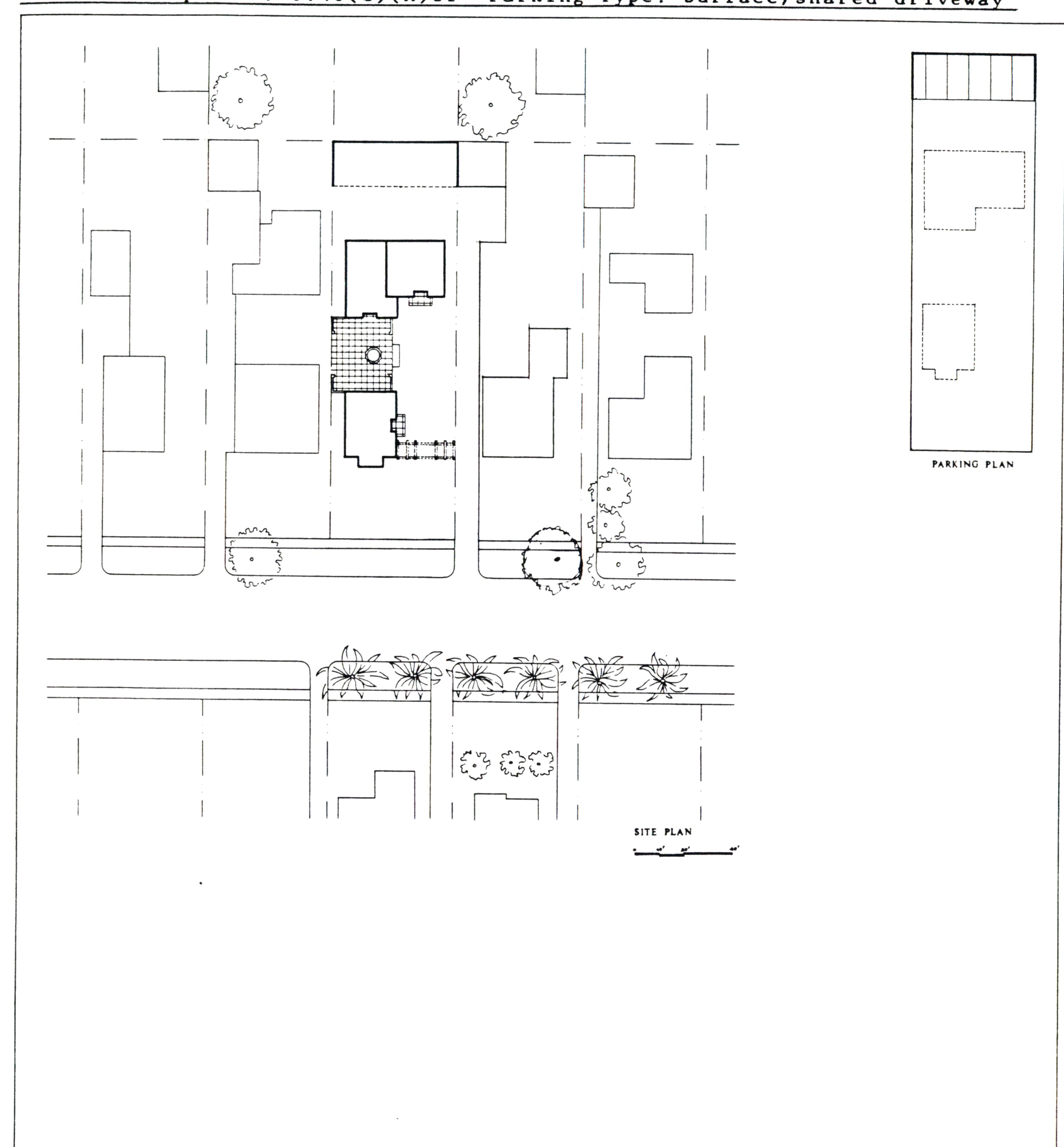
Context Density: 2.2 units/lot Size of Total Open Space: 3,500 sf

Value of (C): 1 Size of Main Garden: 2,520 sf

Allowed sq.ft : 0.30(C)(A)sf Parking Type: surface

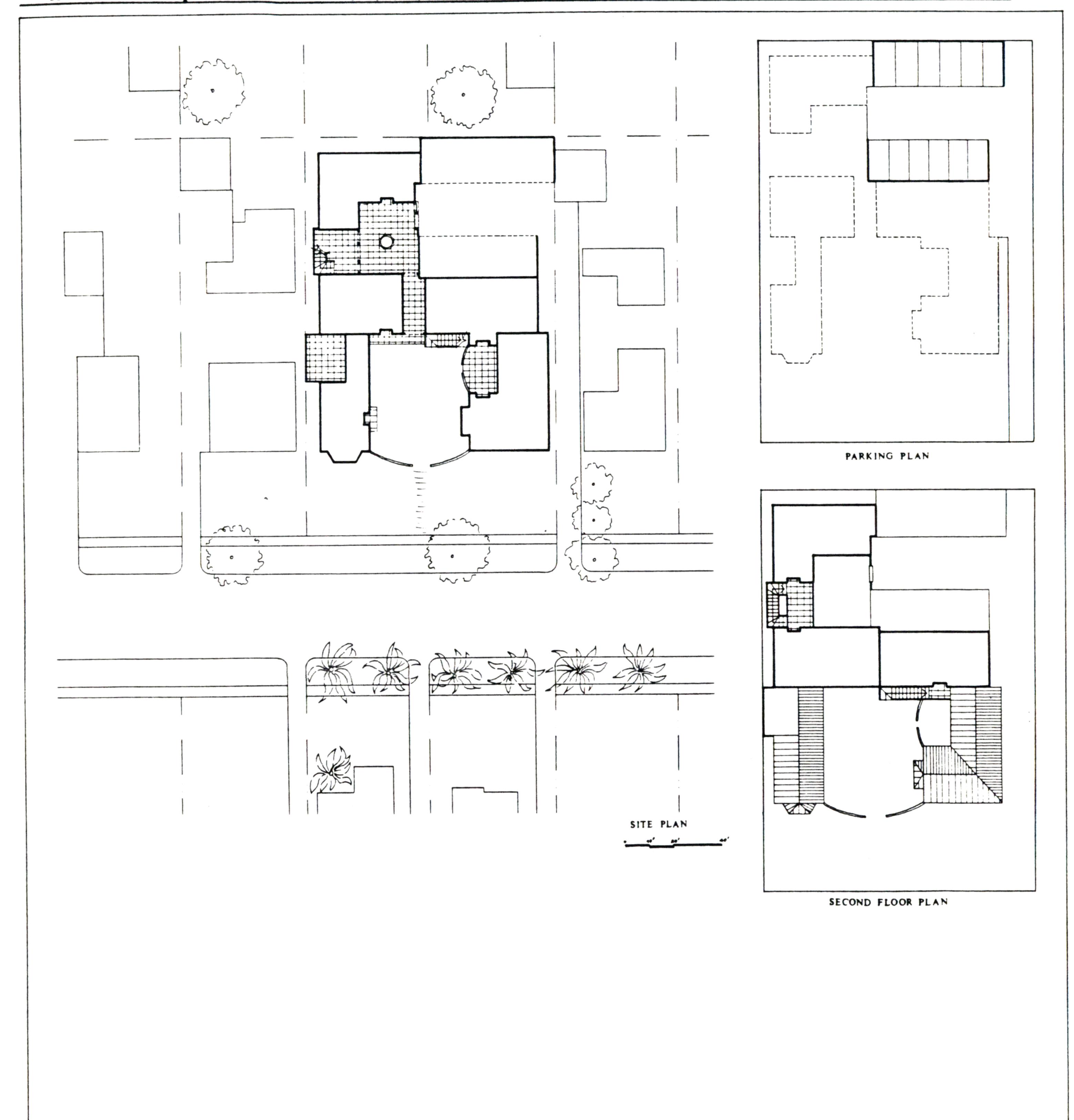


Address: 1543/9 Locust st. Number of Units: 3 units
Lot Area (A): 8,250 sf Number of Parking Spaces: 5 cars
Lot Dimensions: 50'x 165' Square Feet of Construction: 3,300 sf
Context Density: 2.2 units/lot Size of Total Open Space: 3,570 sf
Value of (C): 1 Size of Main Garden: 2,140 sf
Allowed sq.ft : 0.40(C)(A)sf Parking Type: surface/shared driveway



Address: 1543/51 Locust st. Number of Units: 7 units
Lot Area (A): 16,500 sf Number of Parking Spaces: 11 cars
Lot Dimensions: 100'x 165' Square Feet of Construction: 6,930 sf
Context Density: 2.2 units/lot Size of Total Open Space: 6,220 sf
Value of (C): 1 Size of Main Garden: 3,500 sf
Allowed sq.ft : 0.42(C)(A)sf Parking Type: surface

PARKING PLAN SITE PLAN SECOND FLOOR PLAN Address: 1543/51 Locust st. Number of Units: 8 units
Lot Area (A): 16,500 sf Number of Parking Spaces: 12 cars
Lot Dimensions: 100'x 165' Square Feet of Construction: 8,033 sf
Context Density: 2.2 units/lot Size of Total Open Space: 6,220 sf
Value of (C): 1 Size of Main Garden: 3,500 sf
Allowed sq.ft : 0.52(C)(A)sf Parking Type: surface/shared driveway



Address: 1543/9 Locust st. Number of Units: 3 units

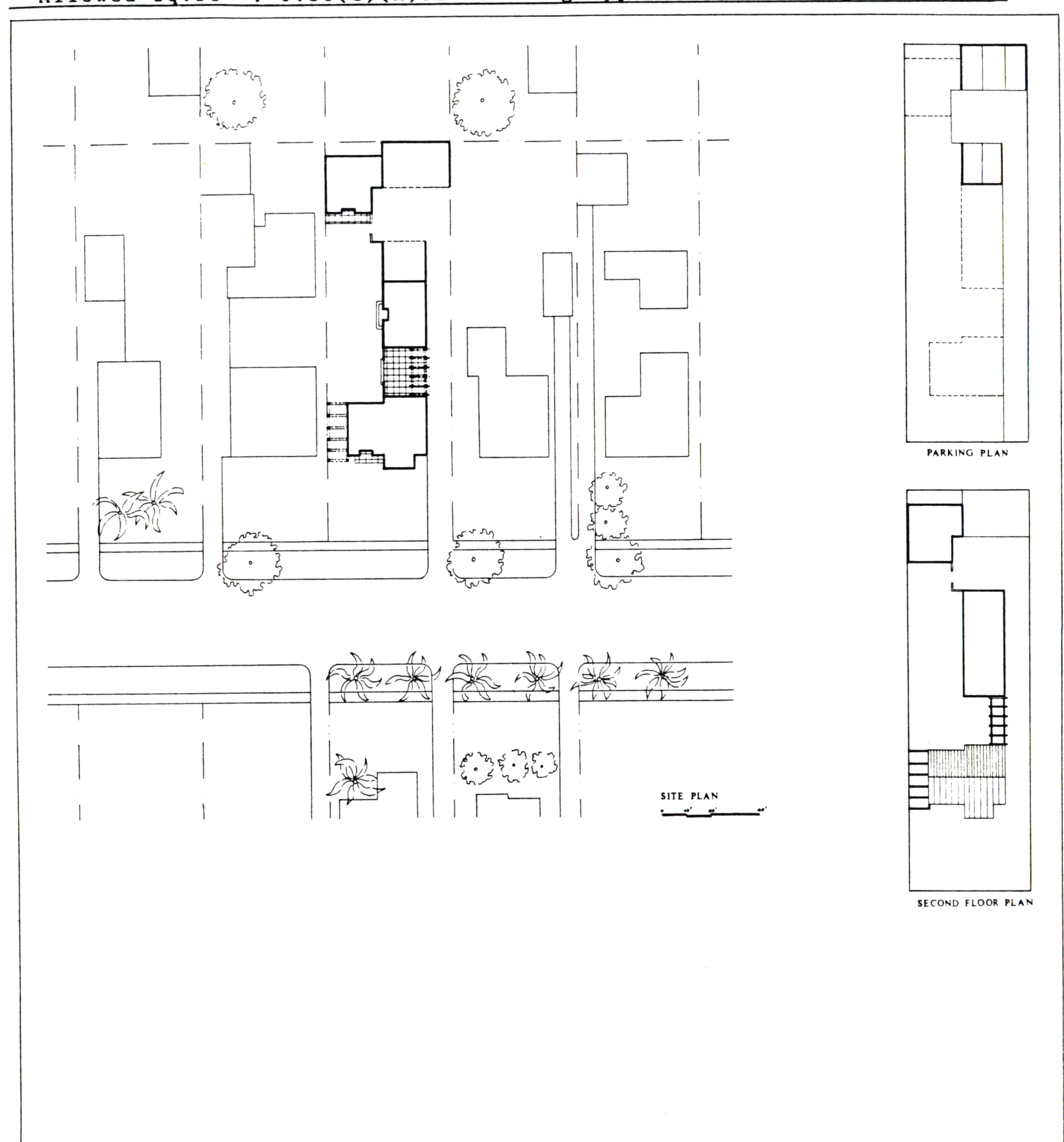
Lot Area (A): 8,250 sf Number of Parking Spaces: 5 cars

Lot Dimensions: 50'x 165' Square Feet of Construction: 2,932 sf

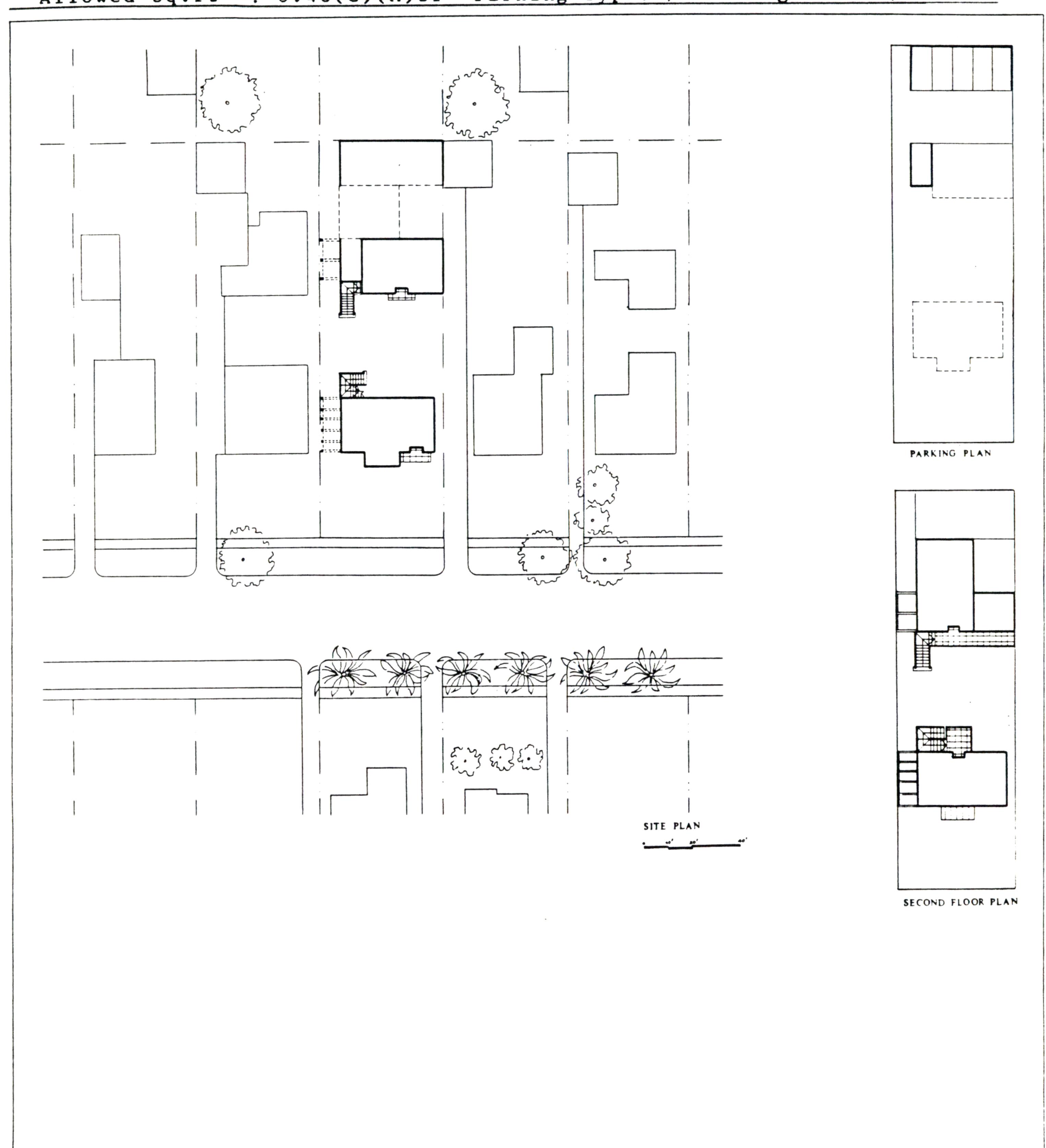
Context Density: 2.2 units/lot Size of Total Open Space: 3,528 sf

Value of (C): 1 Size of Main Garden: 2,100 sf

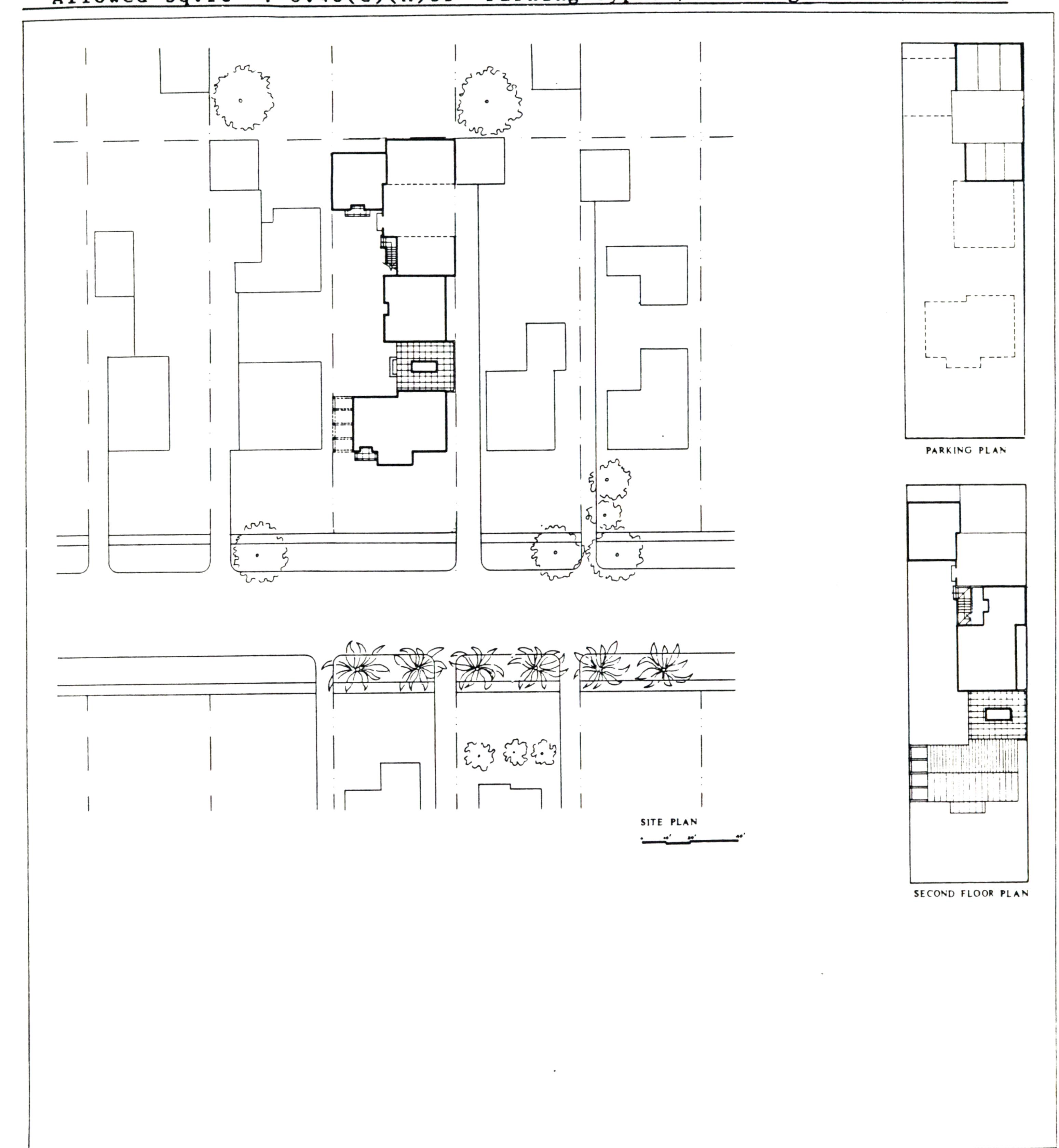
Allowed sq.ft: 0.36(C)(A)sf Parking Type: with dwellings above



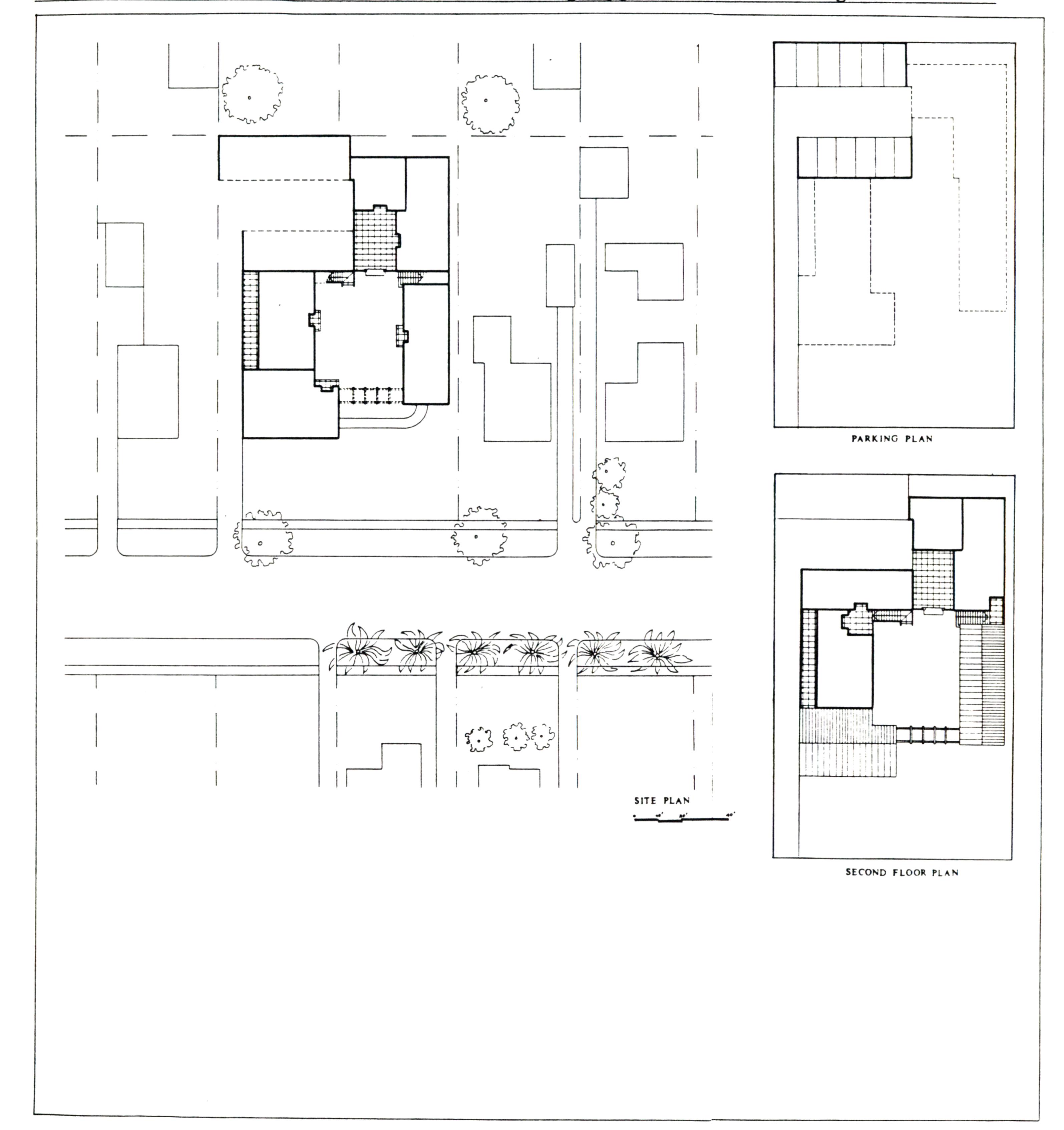
Number of Units: 4 units Address: 1543/9 Locust st. Number of Parking Spaces: 6 cars Lot Area (A): 8,250 sf Lot Dimensions: 50'x 165' Square Feet of Construction: 3,804 sf Context Density: 2.2 units/lot Size of Total Open Space: 3,574 sf Size of Main Garden: 2,230 sf Value of (C): Parking Type:w/dwellings above/shared Allowed sq.ft: 0.46(C)(A)sf



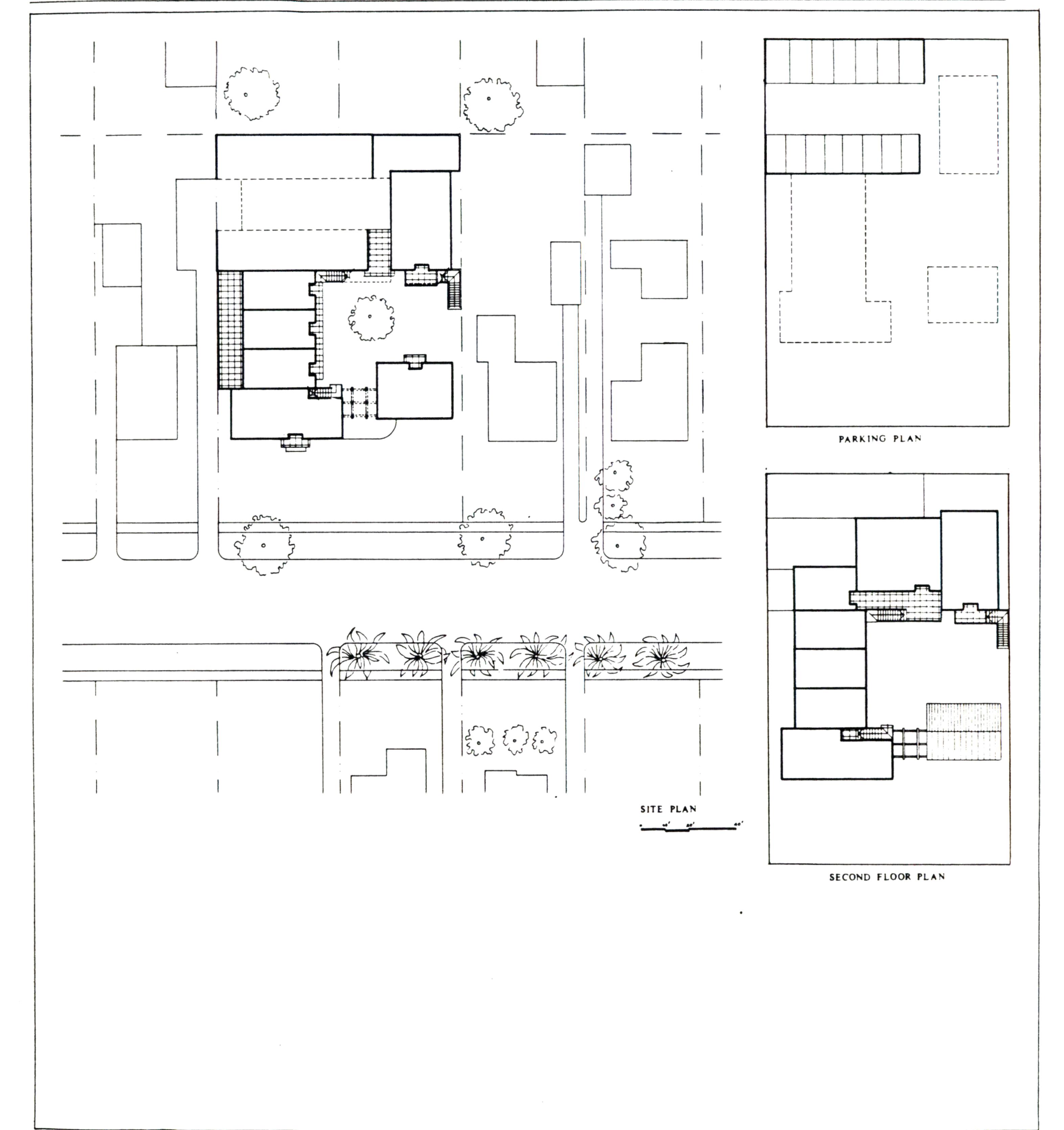
Address: 1543/9 Locust st. Number of Units: 4 units
Lot Area (A): 8,250 sf Number of Parking Spaces: 6 cars
Lot Dimensions: 50'x 165' Square Feet of Construction: 3,795 sf
Context Density: 2.2 units/lot Size of Total Open Space: 3,850 sf
Value of (C): 1 Size of Main Garden: 2,100 sf
Allowed sq.ft: 0.46(C)(A)sf Parking Type:w/dwellings above/shared



Address: 1543/51 Locust st. Number of Units: 8 units
Lot Area (A): 16,500 sf Number of Parking Spaces: 12 cars
Lot Dimensions: 100'x 165' Square Feet of Construction: 7,920 sf
Context Density: 2.2 units/lot Size of Total Open Space: 6,350 sf
Value of (C): 1 Size of Main Garden: 3,850 sf
Allowed sq.ft : 0.48(C)(A)sf Parking Type: with dwellings above



Address: 1543/51 Locust st. Number of Units: 10 units
Lot Area (A): 16,500 sf Number of Parking Spaces: 15 cars
Lot Dimensions: 100'x 165' Square Feet of Construction: 9,570 sf
Context Density: 2.2 units/lot Size of Total Open Space: 6,490 sf
Value of (C): 1 Size of Main Garden: 3,900 sf
Allowed sq.ft : 0.58(C)(A)sf Parking Type:w/dwellings above/shared



Address: 1543/9 Locust st. Number of Units: 5 units

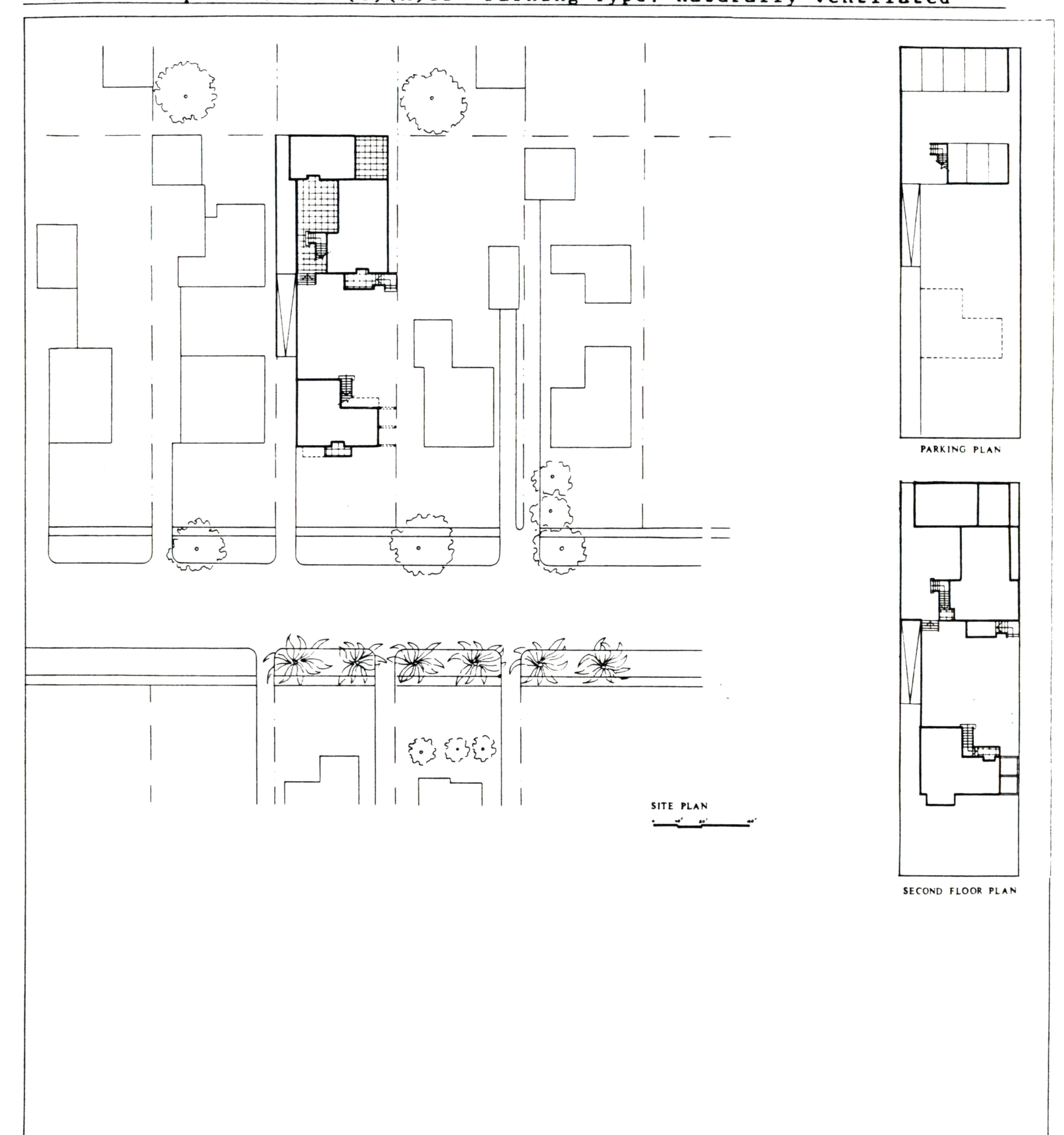
Lot Area (A): 8,250 sf Number of Parking Spaces: 8 cars

Lot Dimensions: 50'x 165' Square Feet of Construction: 4,765 sf

Context Density: 2.2 units/lot Size of Total Open Space: 3,540 sf

Value of (C): 1 Size of Main Garden: 2,100 sf

Allowed sq.ft: 0.60(C)(A)sf Parking Type: naturally ventilated



Address: 1543/51 Locust st. Number of Units: 11 units

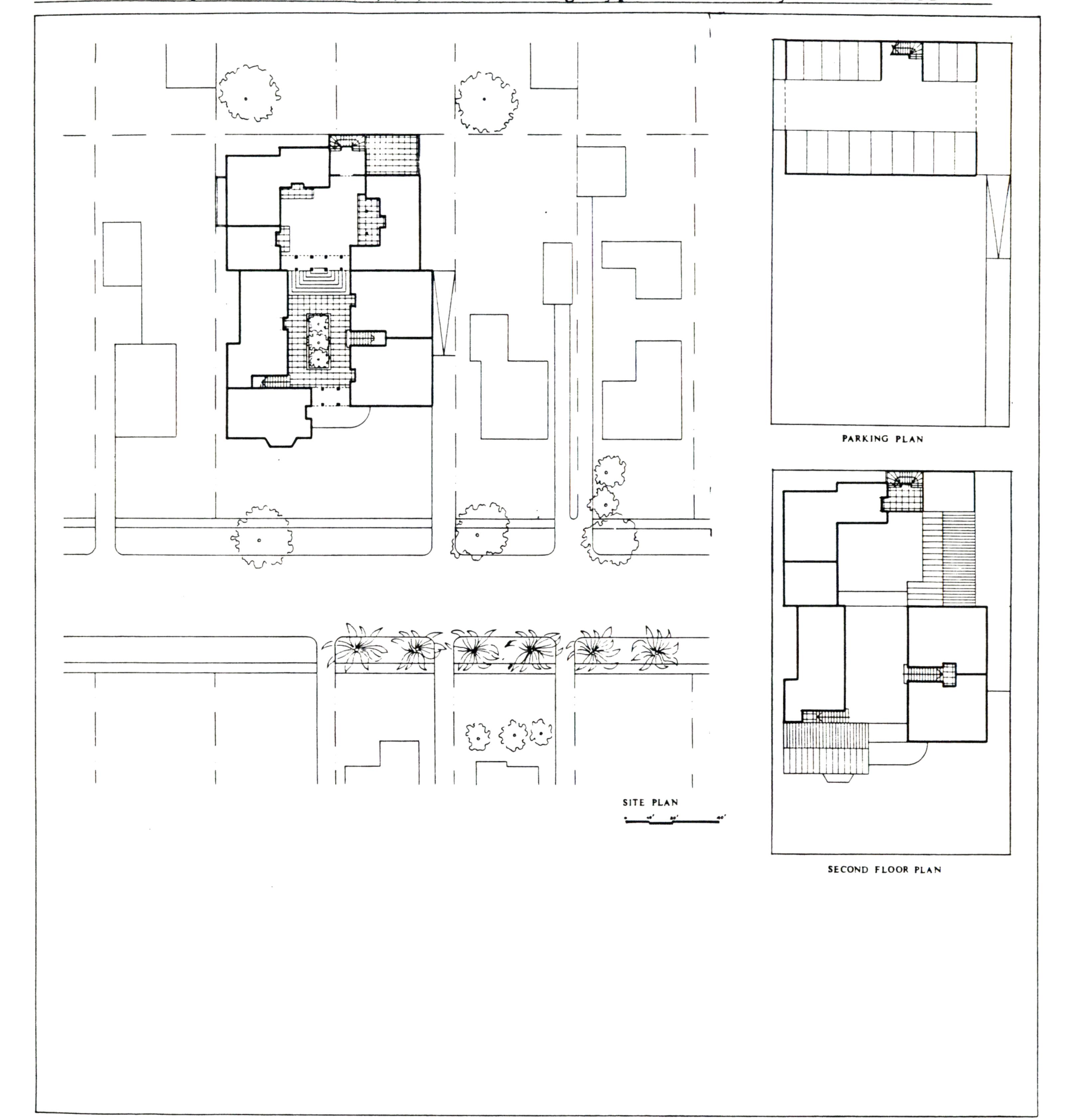
Lot Area (A): 16,500 sf Number of Parking Spaces: 17 cars

Lot Dimensions: 100'x 165' Square Feet of Construction: 11,180 sf

Context Density: 2.2 units/lot Size of Total Open Space: 3,540 sf

Value of (C): 1 Size of Main Garden: 2,100 sf

Allowed sq.ft: 0.68(C)(A)sf Parking Type: naturally ventilated



RM-32 EXAMPLES

Address: 376 S.Oakland st. Number of Units: 4 units

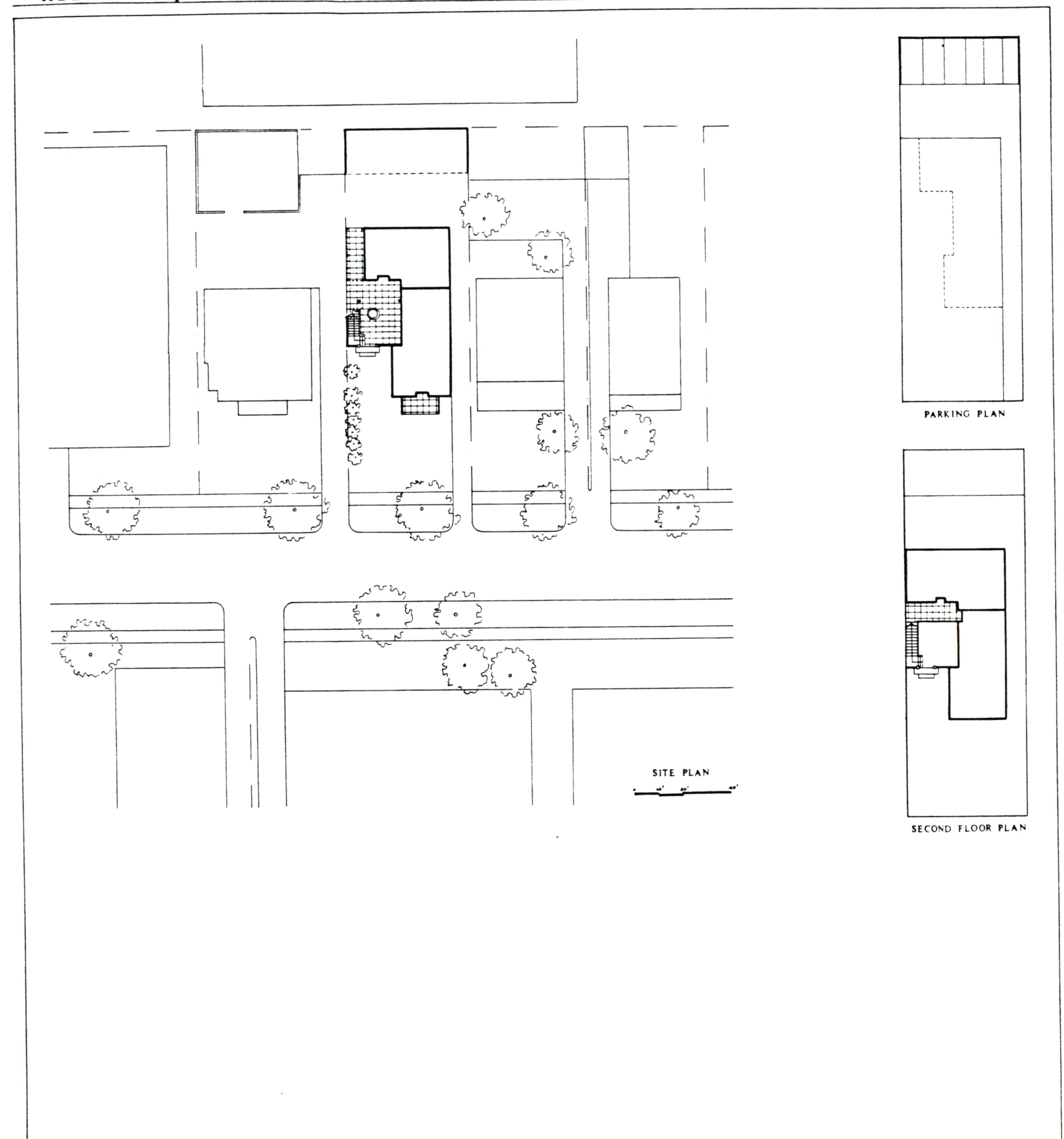
Lot Area (A): 7,650 sf Number of Parking Spaces: 6 cars

Lot Dimensions: 50'x 153' Square Feet of Construction: 3,870 sf

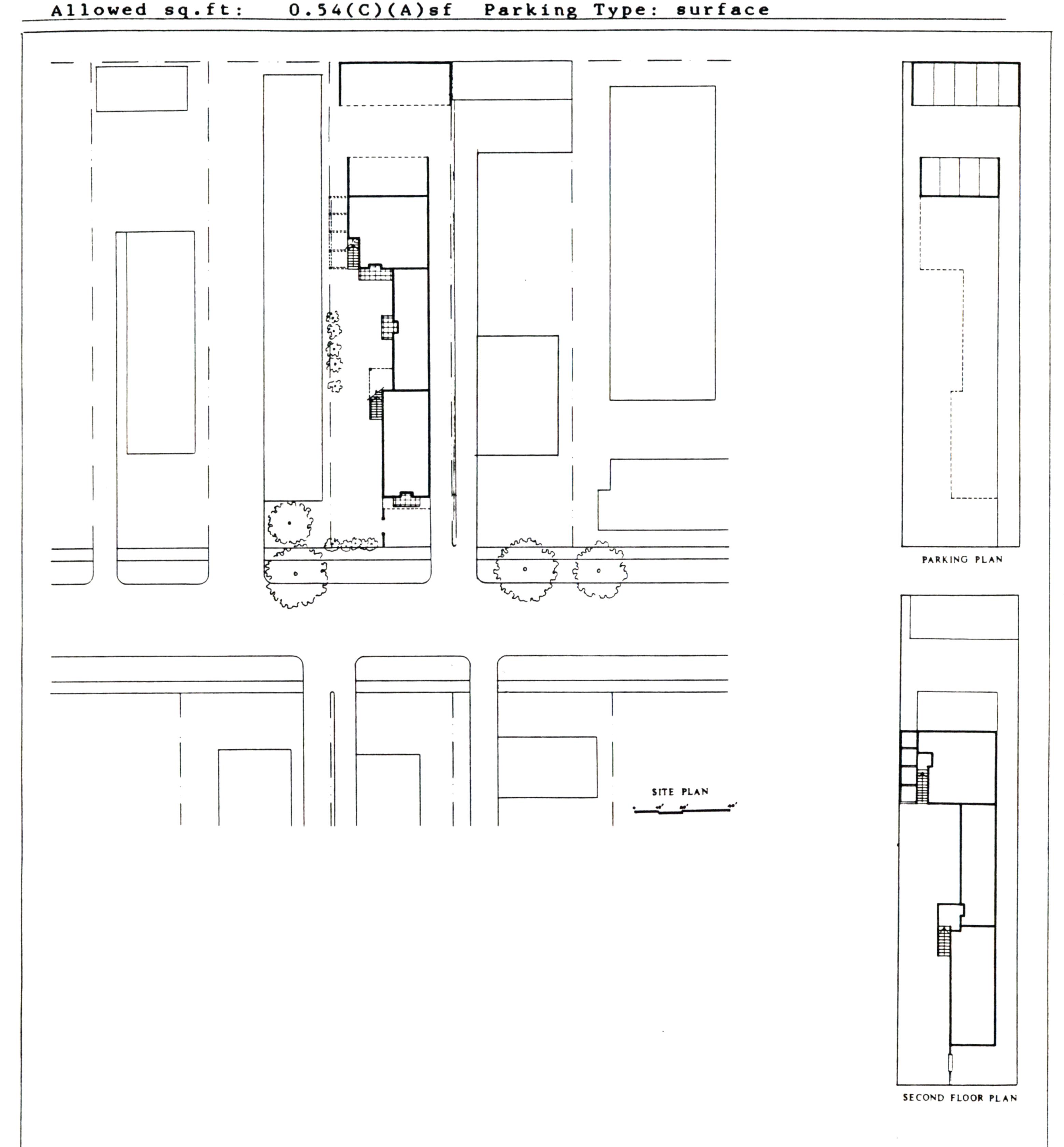
Context Density: 9 units/lot Size of Total Open Space: 2,690 sf

Value of (C): 1 Size of Main Garden: 2,090 sf

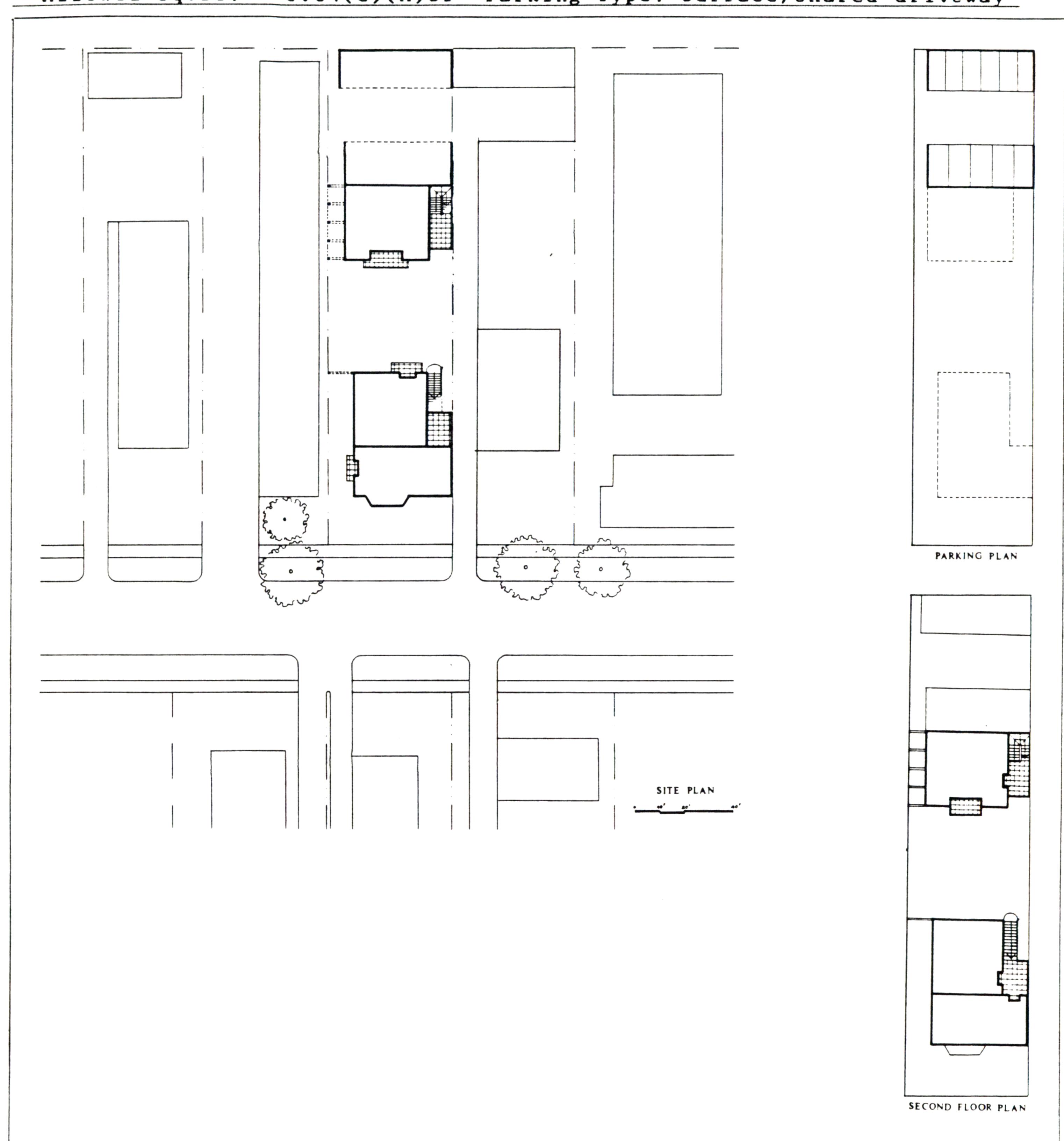
Allowed sq.ft: 0.50(C)(A)sf Parking Type: surface



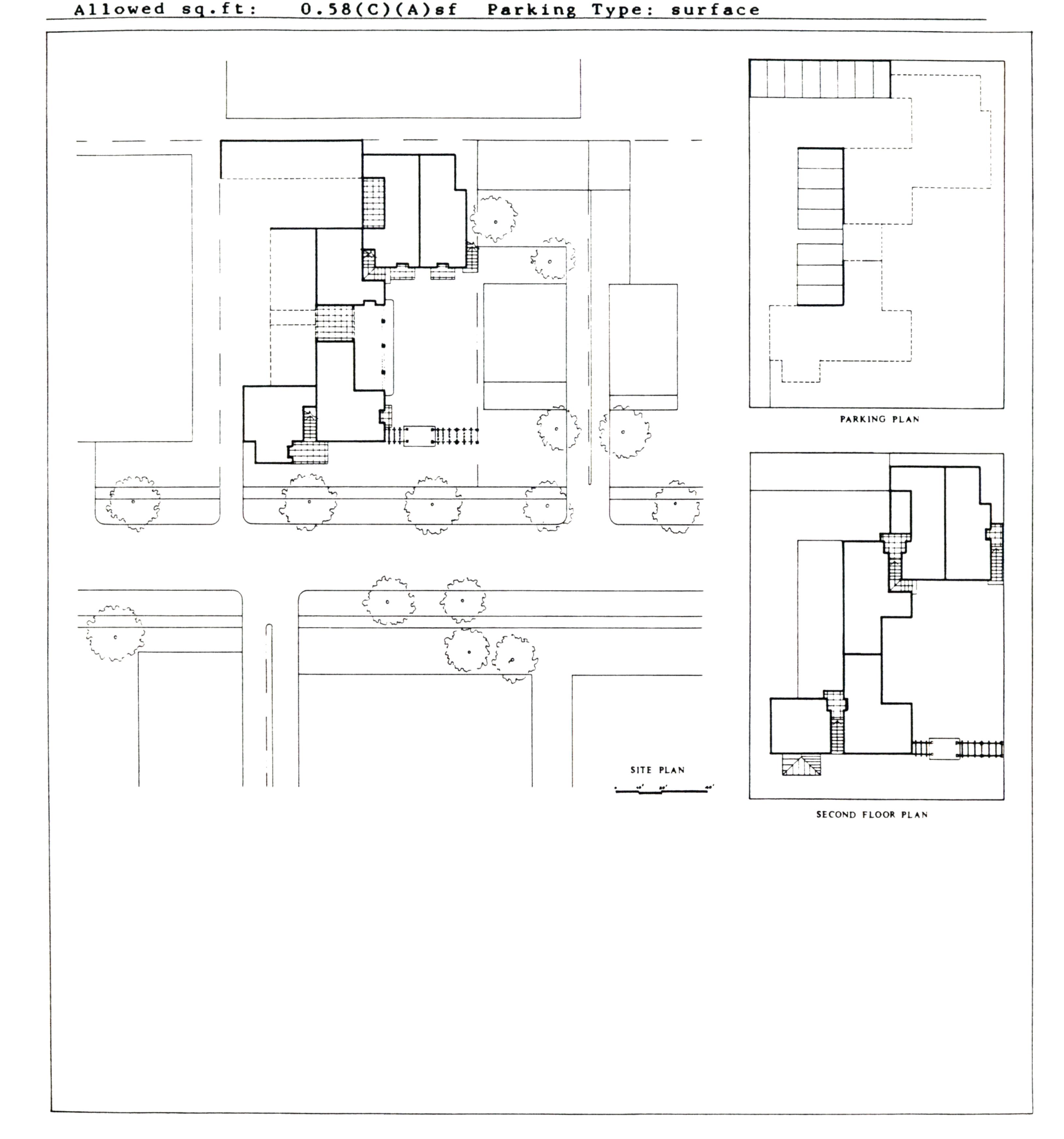
Address: 285 Holliston st. Number of Units: 6 units
Lot Area (A): 10,250 sf Number of Parking Spaces: 9 cars
Lot Dimensions: 50'x 205' Square Feet of Construction: 5,430 sf
Context Density: 7 units/lot Size of Total Open Space: 3,090 sf
Value of (C): 1 Size of Main Garden: 2,690 sf



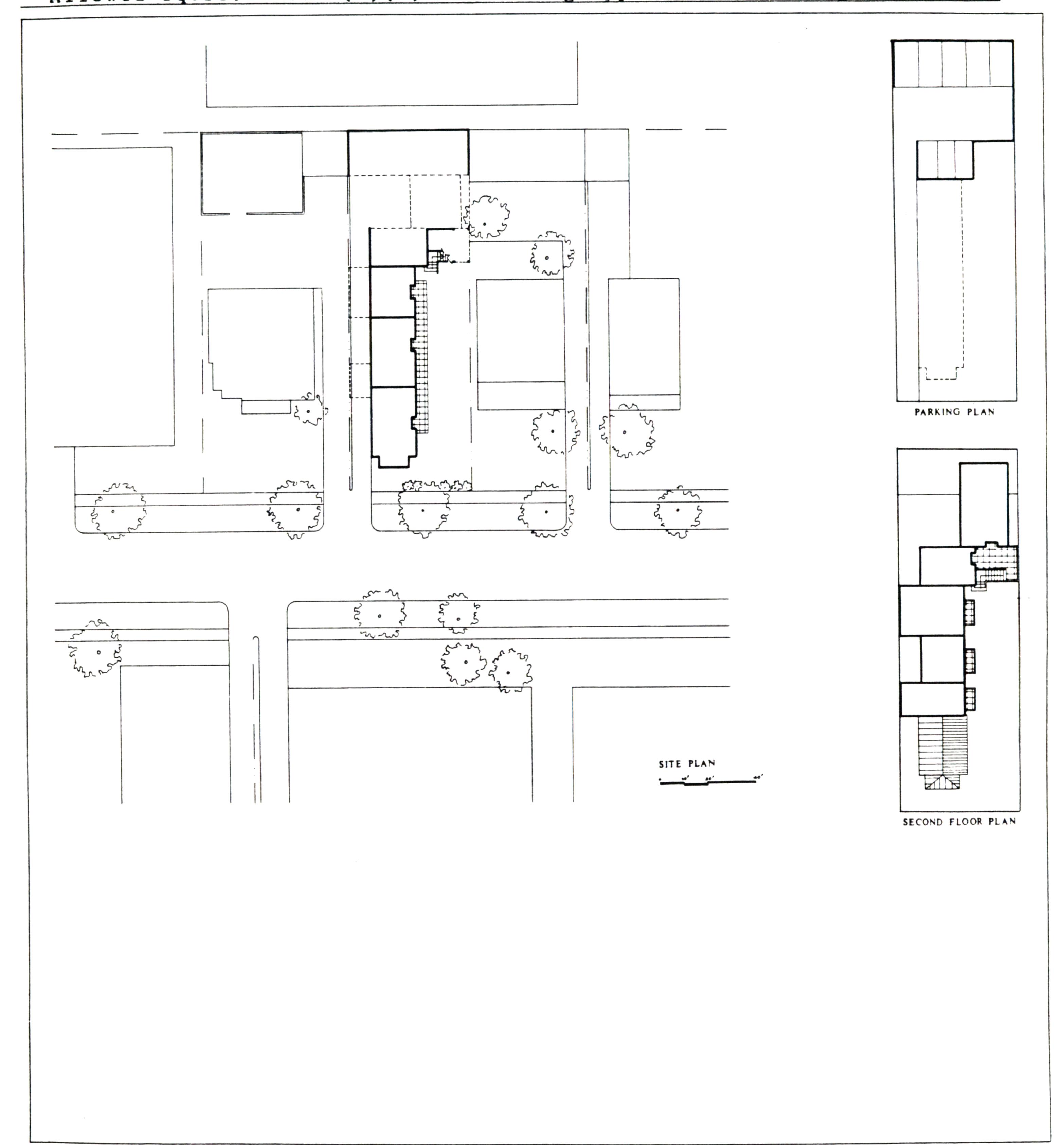
285 Holliston st. Number of Units: 7 units Address: Lot Area (A): 10,250 sf Number of Parking Spaces: 11 cars Lot Dimensions: 50'x 205' Square Feet of Construction: 6,560 sf Context Density: 7 units/lot Size of Total Open Space: 3,225 sf Value of (C): 1 2,300 sf Size of Main Garden: Allowed sq.ft: 0.64(C)(A)sf Parking Type: surface/shared driveway



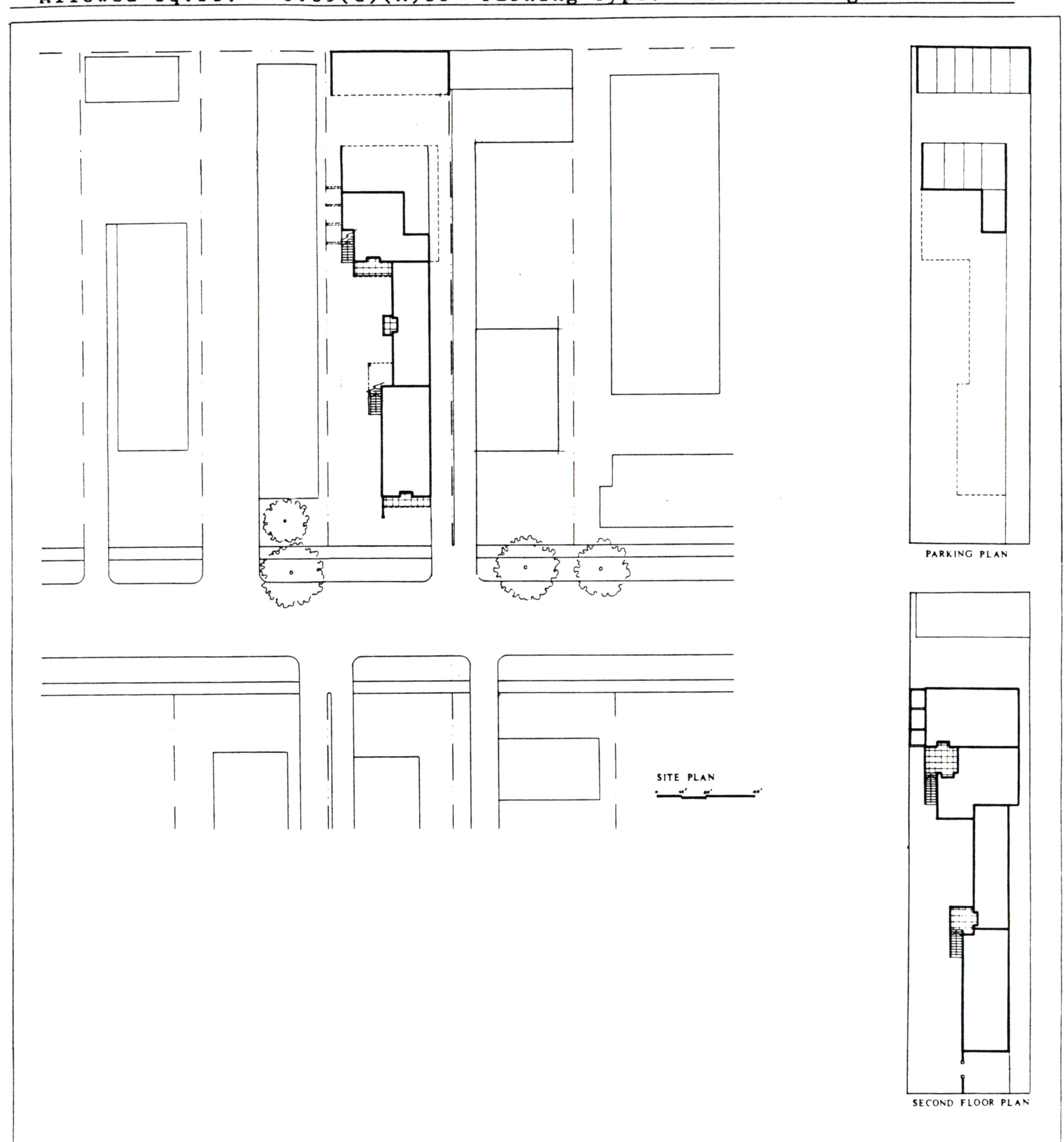
Address: 376/8 S.Oakland st. Number of Units: 10 units
Lot Area (A): 16,830 sf Number of Parking Spaces: 15 cars
Lot Dimensions: 110'x 153' Square Feet of Construction: 9,800 sf
Context Density: 9 units/lot Size of Total Open Space: 5,374 sf
Value of (C): 1 Size of Main Garden: 3,574 sf



376 S.Oakland st. Number of Units: 5 units Address: 8 cars Lot Area (A): 7,650 sf Number of Parking Spaces: Lot Dimensions: 50'x 153' 4,566 sf Square Feet of Construction: 2,680 sf Context Density: 9 units/lot Size of Total Open Space: 2,080 sf Size of Main Garden: Value of (C): Parking Type: with dwellings above 0.60(C)(A)sf Allowed sq.ft:



285 Holliston st. Number of Units: 7 units Address: 11 cars Lot Area (A): 10,250 sf Number of Parking Spaces: Square Feet of Construction: 6,300 sf Lot Dimensions: 50'x 205' 3,090 sf Context Density: 7 units/lot Size of Total Open Space: 2,690 sf Size of Main Garden: Value of (C): 0.65(C)(A)sf Parking Type: with dwellings above Allowed sq.ft:



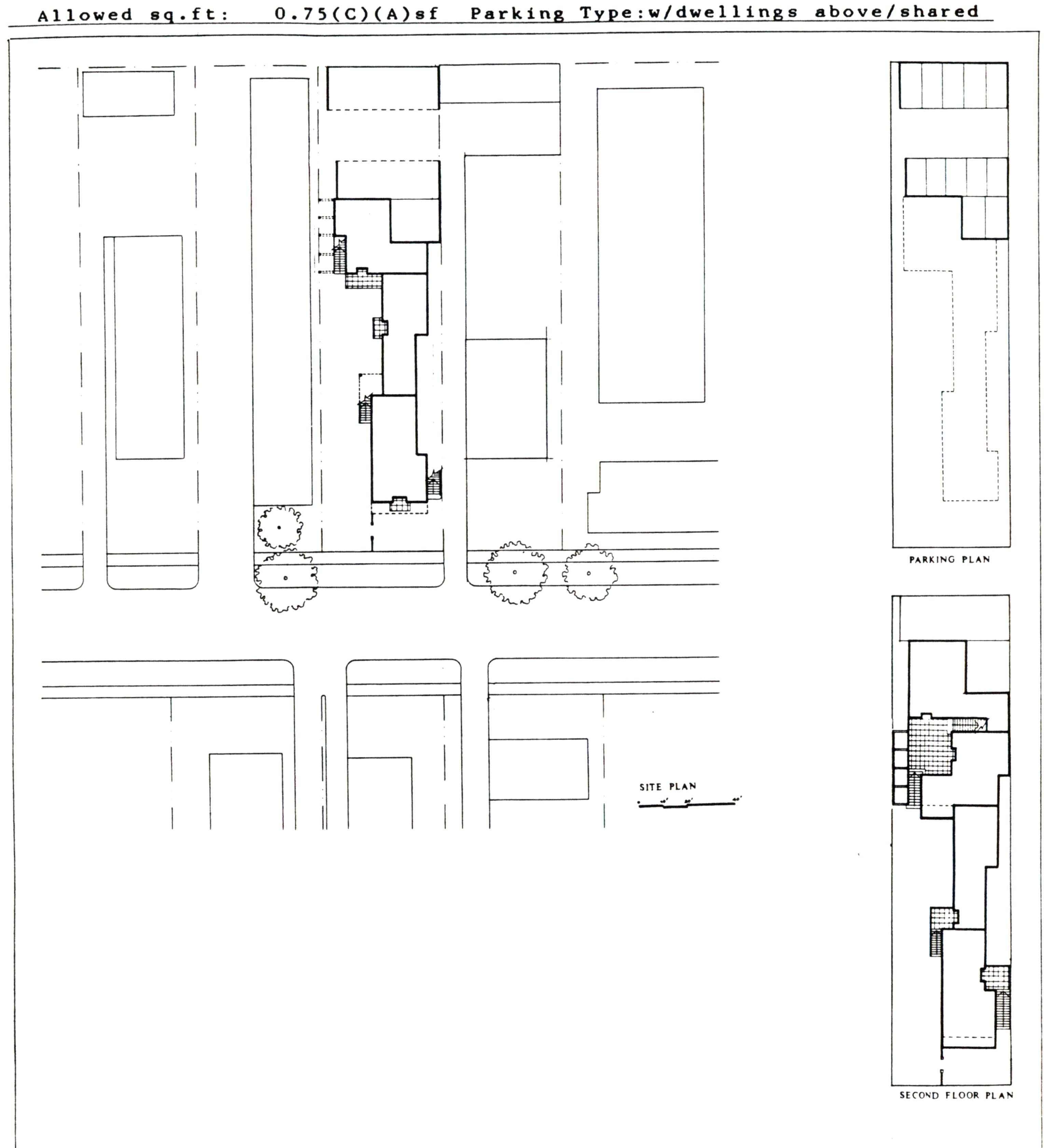
Address: 285 Holliston st. Number of Units: 8 units

Lot Area (A): 10,250 sf Number of Parking Spaces: 12 cars

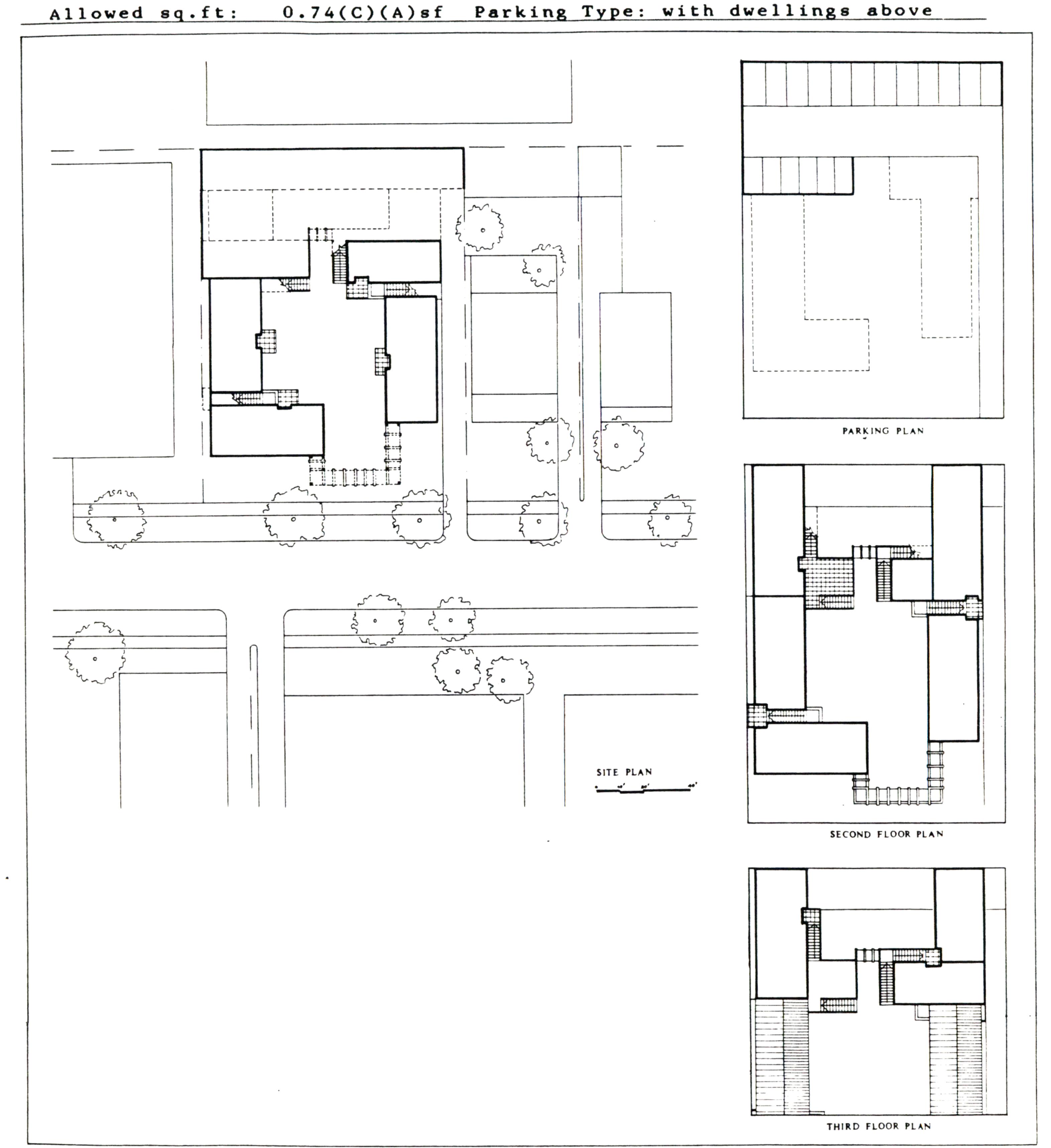
Lot Dimensions: 50'x 205' Square Feet of Construction: 7,607 sf

Context Density: 7 units/lot Size of Total Open Space: 3,270 sf

Value of (C): 1 Size of Main Garden: 2,690 sf



Address: 376/8 S.Oakland st. Number of Units: 12 units
Lot Area (A): 16,830 sf Number of Parking Spaces: 18 cars
Lot Dimensions: 110'x 153' Square Feet of Construction: 12,500 sf
Context Density: 9 units/lot Size of Total Open Space: 5,300 sf
Value of (C): 1 Size of Main Garden: 3,500 sf



Address: 285/7 Holliston st. Number of Units: 15 units

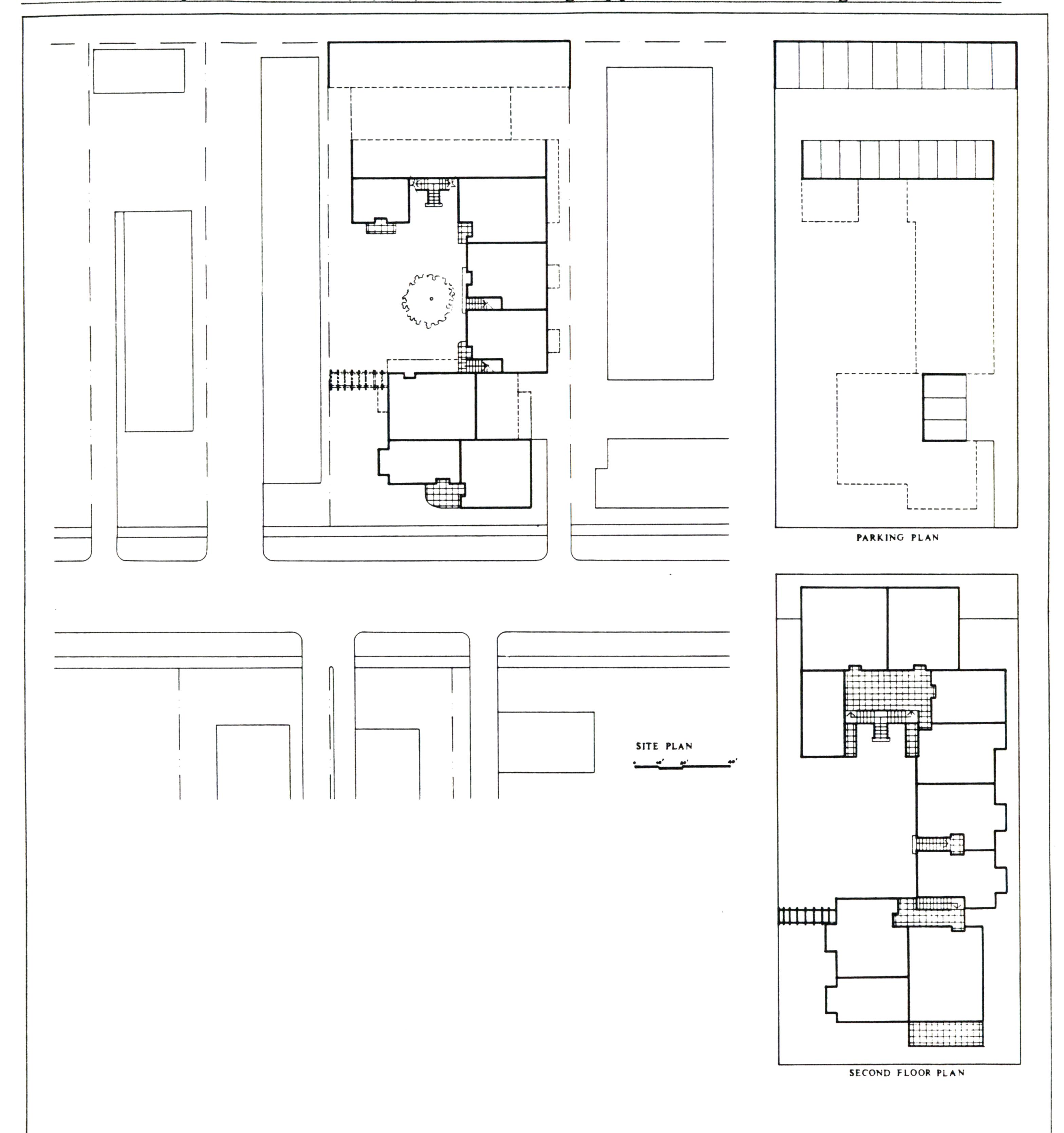
Lot Area (A): 20,550 sf Number of Parking Spaces: 23 cars

Lot Dimensions: 100'x 205' Square Feet of Construction: 15,053 sf

Context Density: 7 units/lot Size of Total Open Space: 5,538 sf

Value of (C): 1 Size of Main Garden: 3,500 sf

Allowed sq.ft: 0.74(C)(A)sf Parking Type: with dwellings above



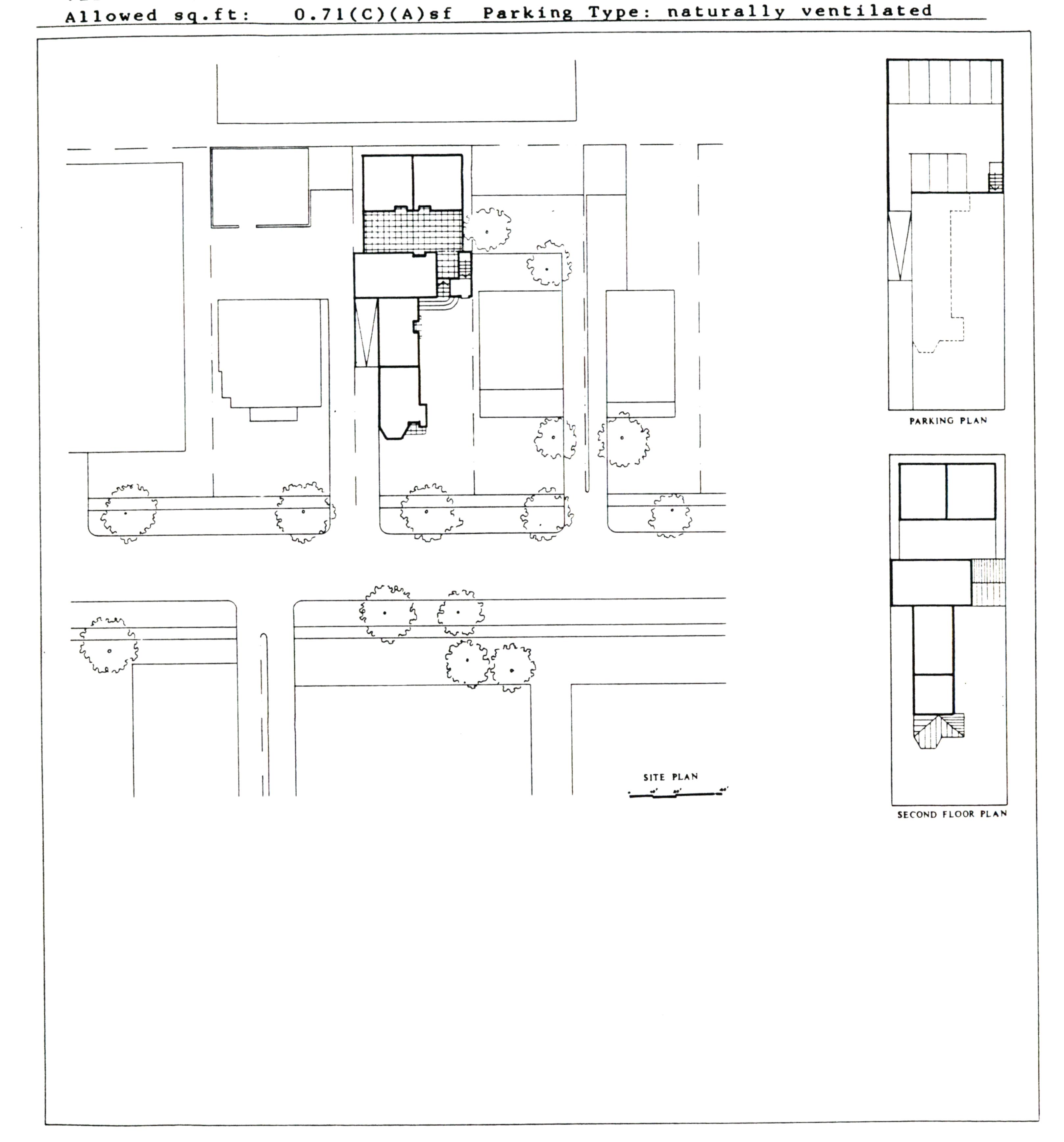
Address: 376 S.Oakland st. Number of Units: 5 units

Lot Area (A): 7,650 sf Number of Parking Spaces: 8 cars

Lot Dimensions: 50'x 153' Square Feet of Construction: 5,430 sf

Context Density: 9 units/lot Size of Total Open Space: 2,680 sf

Value of (C): 1 Size of Main Garden: 2,080 sf



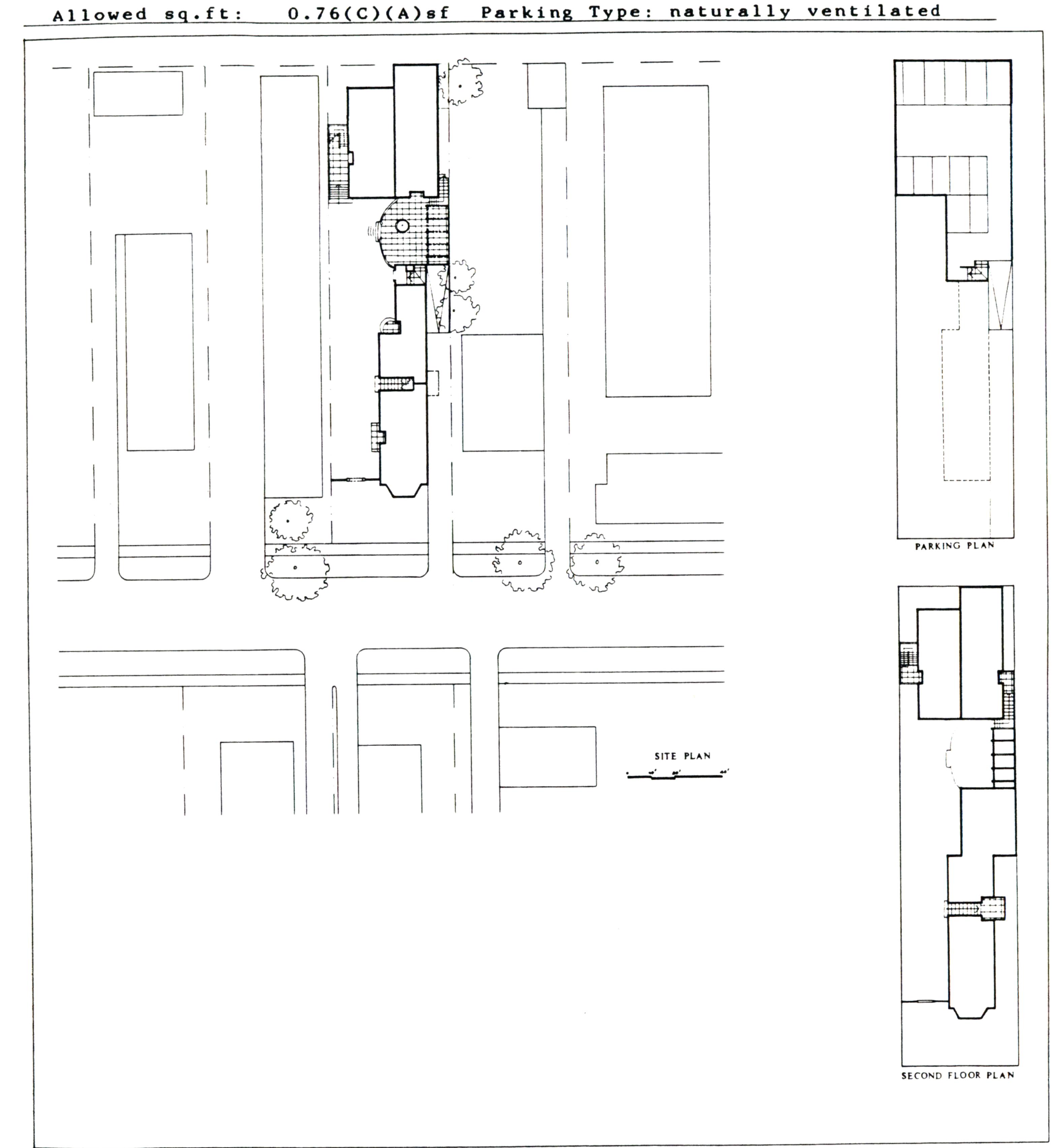
Address: 285 Holliston st. Number of Units: 8 units

Lot Area (A): 10,250 sf Number of Parking Spaces: 12 cars

Lot Dimensions: 50'x 205' Square Feet of Construction: 7,700 sf

Context Density: 7 units/lot Size of Total Open Space: 3,700 sf

Value of (C): 1 Size of Main Garden: 2,900 sf



Address: 285/7 Holliston st. Number of Units: 17 units

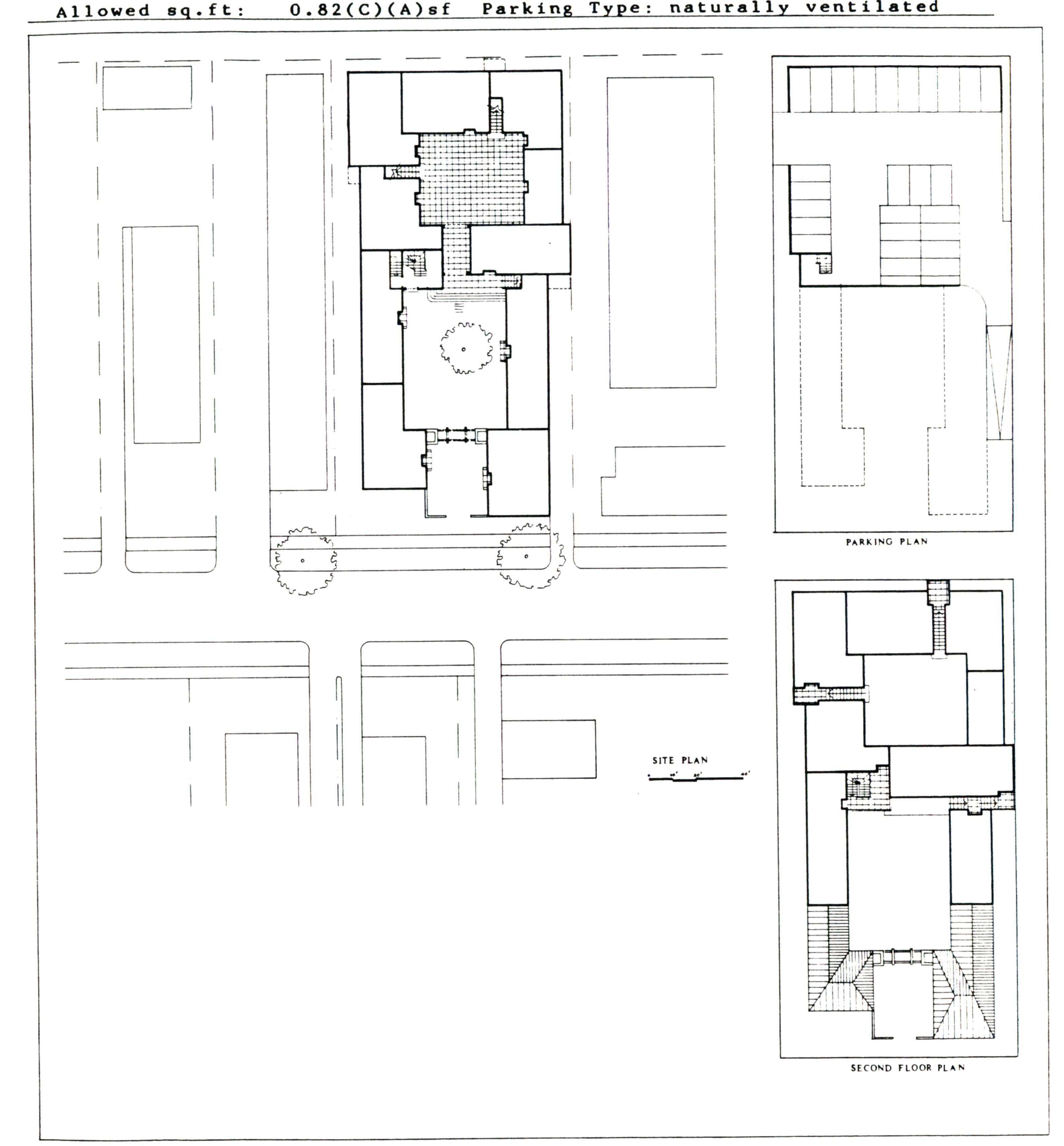
Lot Area (A): 20,550 sf Number of Parking Spaces: 26 cars

Lot Dimensions: 100'x 205' Square Feet of Construction: 16,800 sf

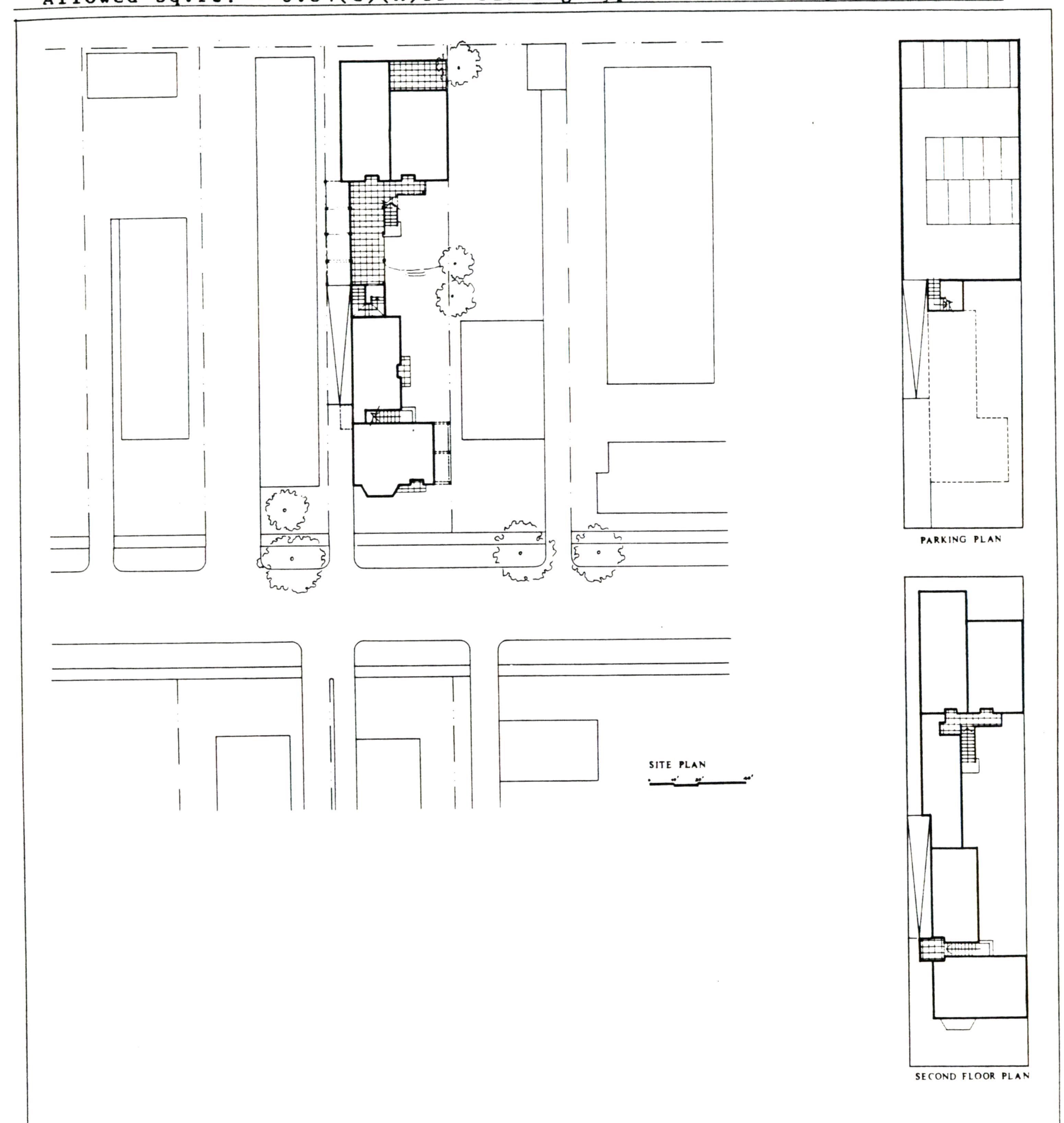
Context Density: 7 units/lot Size of Total Open Space: 5,937 sf

Value of (C): 1 Size of Main Garden: 3,500 sf

Allowed sq.ft: 0.82(C)(A)sf Parking Type: naturally ventilated



285 Holliston st. Number of Units: 9 units Address: 14 cars Number of Parking Spaces: 10,250 sf Lot Area (A): Square Feet of Construction: 8,595 sf Lot Dimensions: 50'x 205' 3,115 sf Size of Total Open Space: Context Density: 7 units/lot 2,315 sf Size of Main Garden: Value of (C): Parking Type: mechanically ventilated 0.84(C)(A)sf Allowed sq.ft:



Address: 285/7 Holliston st. Number of Units: 18 units

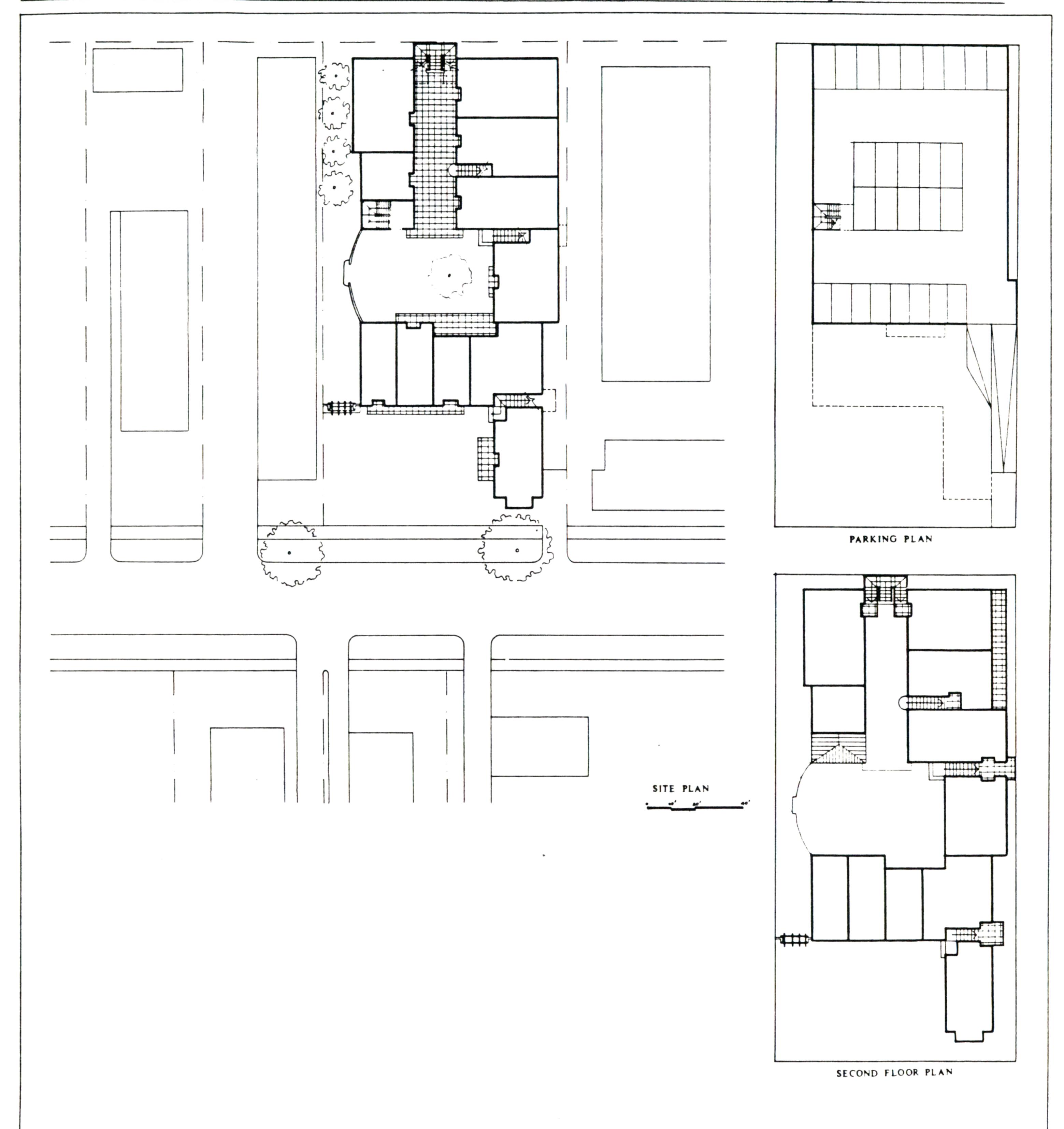
Lot Area (A): 20,550 sf Number of Parking Spaces: 27 cars

Lot Dimensions: 100'x 205' Square Feet of Construction: 17,937 sf

Context Density: 7 units/lot Size of Total Open Space: 5,645 sf

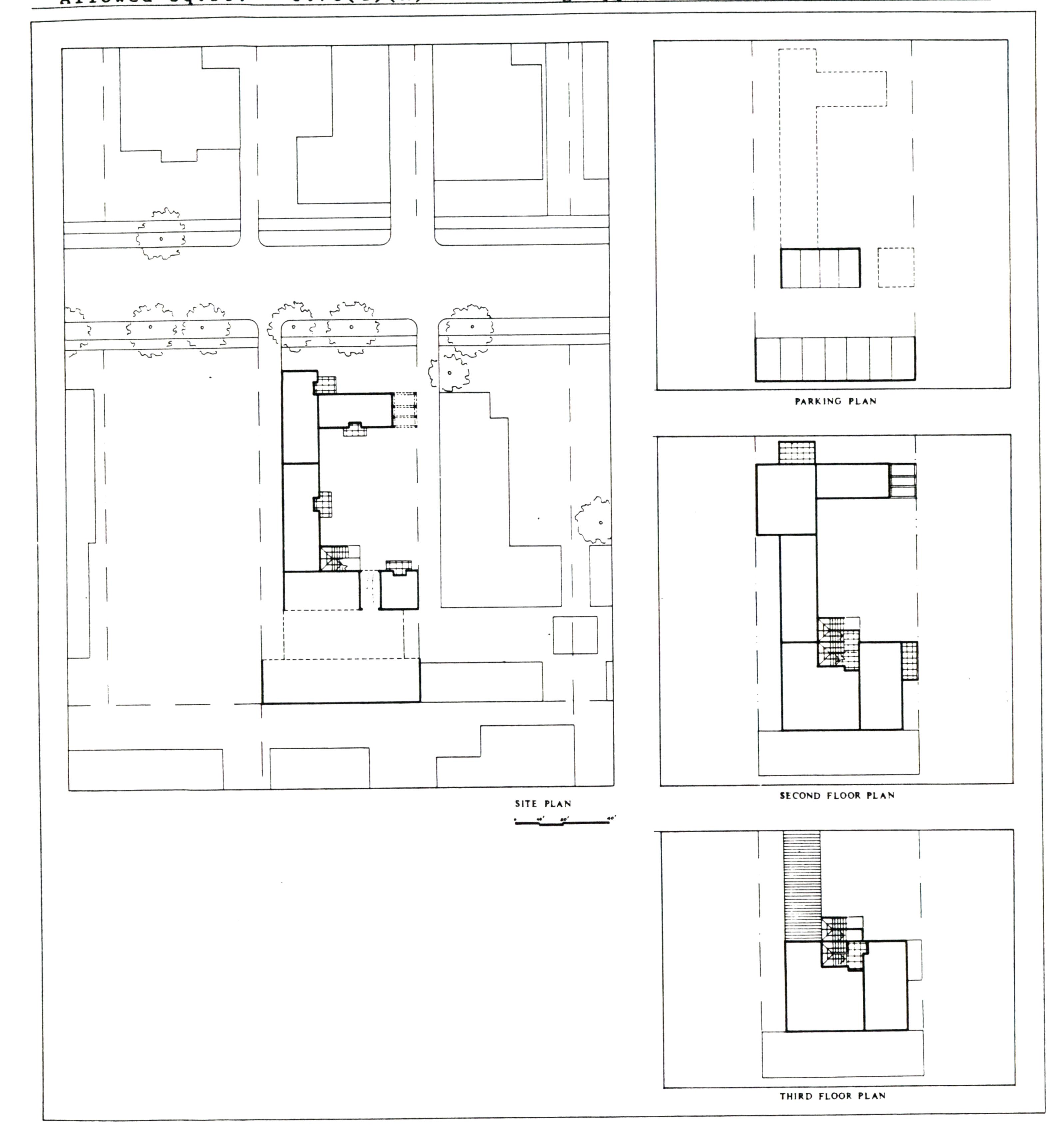
Value of (C): 1 Size of Main Garden: 3,500 sf

Allowed sq.ft: 0.88(C)(A)sf Parking Type: mechanically ventilated

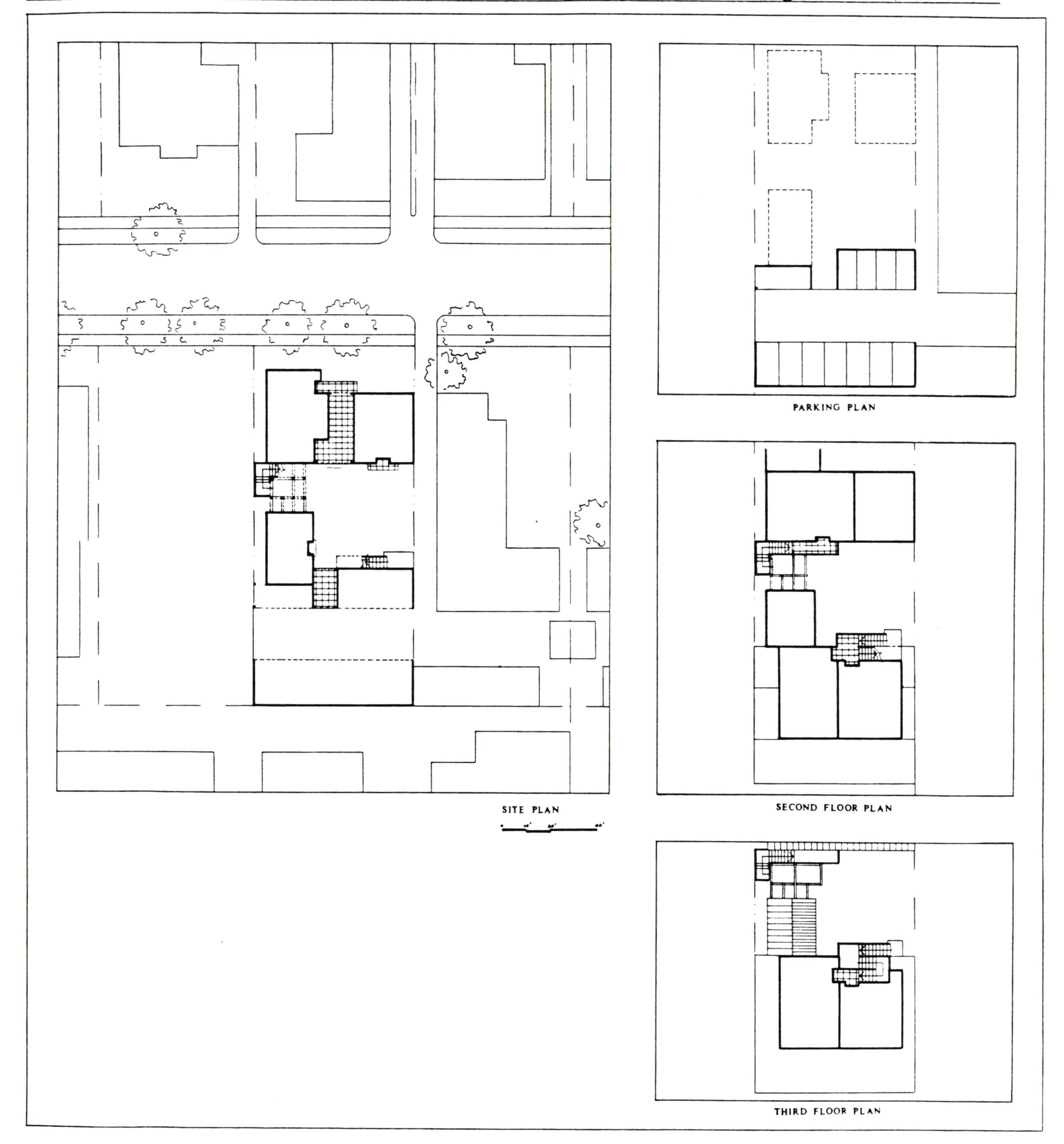


RM-48 EXAMPLES

7 units Number of Units: Address: 236 Oakland st. 11 cars Number of Parking Spaces: Lot Area (A): 10,098 sf 7,674 sf Square Feet of Construction: 66'x 153' Lot Dimensions: 3,100 sf Size of Total Open Space: Context Density: 8 units/lot 2,300 sf Size of Main Garden: Value of (C): 0.76(C)(A)sf Parking Type: with dwellings above Allowed sq.ft:



Address: 236 Oakland st. Number of Units: 8 units
Lot Area (A): 10,098 sf Number of Parking Spaces: 12 cars
Lot Dimensions: 66'x 153' Square Feet of Construction: 8,450 sf
Context Density: 8 units/lot Size of Total Open Space: 3,100 sf
Value of (C): 1 Size of Main Garden: 2,300 sf
Allowed sq.ft: 0.86(C)(A)sf Parking Type:w/dwellings above/shared



Address: 236/40 Oakland st. Number of Units: 17 units

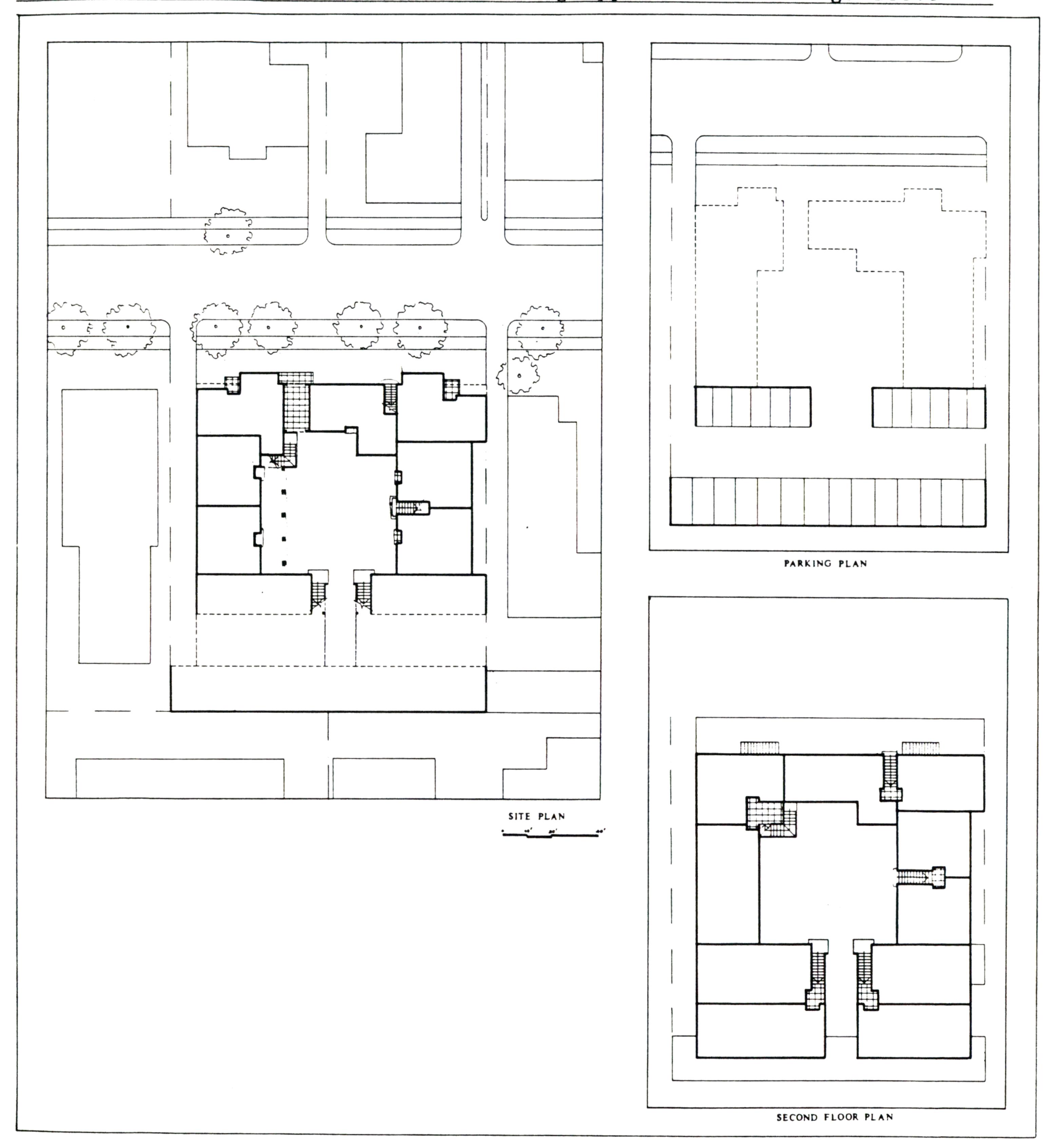
Lot Area (A): 19,890 sf Number of Parking Spaces: 26 cars

Lot Dimensions: 130'x 153' Square Feet of Construction: 16,500 sf

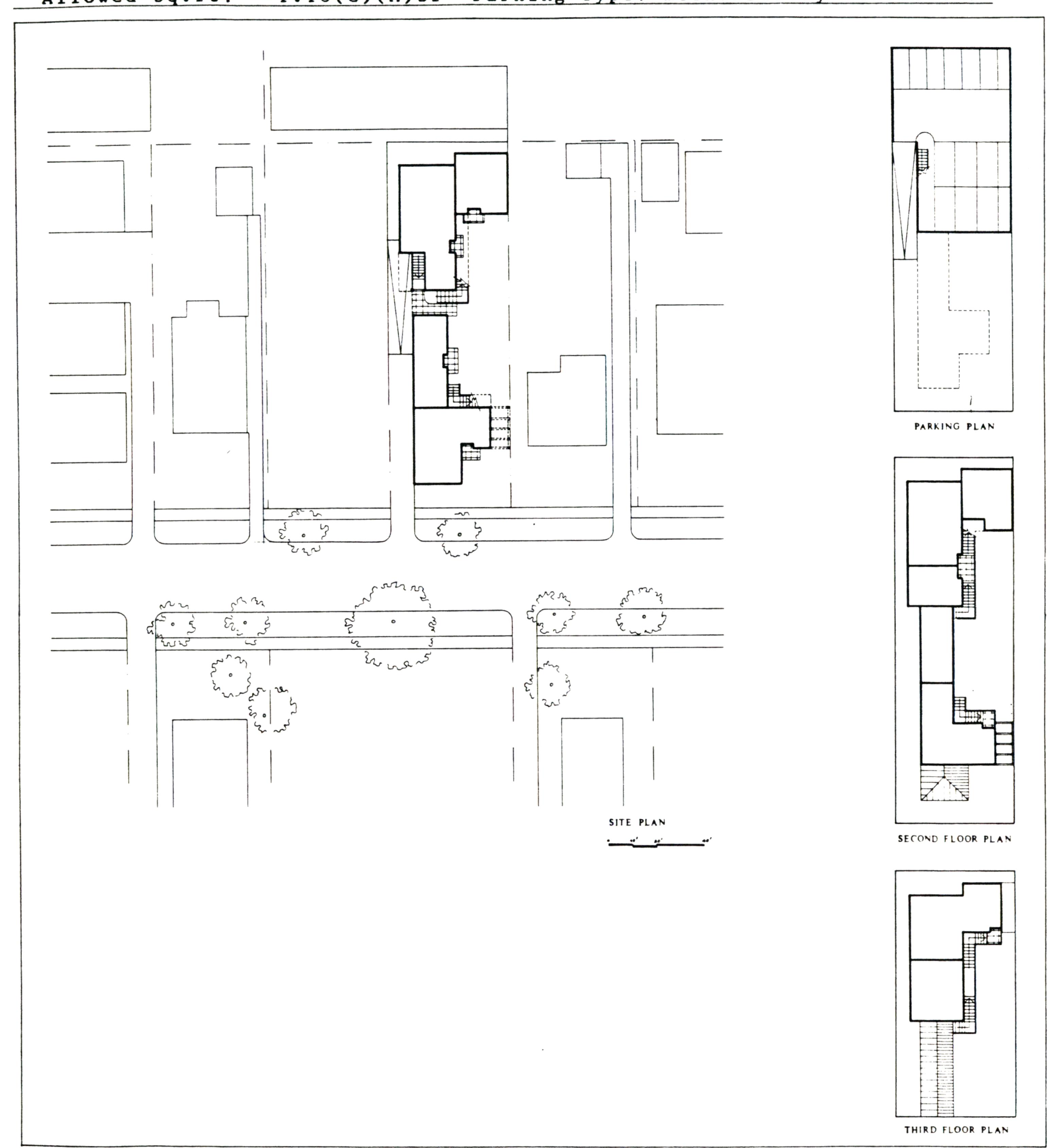
Context Density: 8 units/lot Size of Total Open Space: 5,300 sf

Value of (C): 1 Size of Main Garden: 3,500 sf

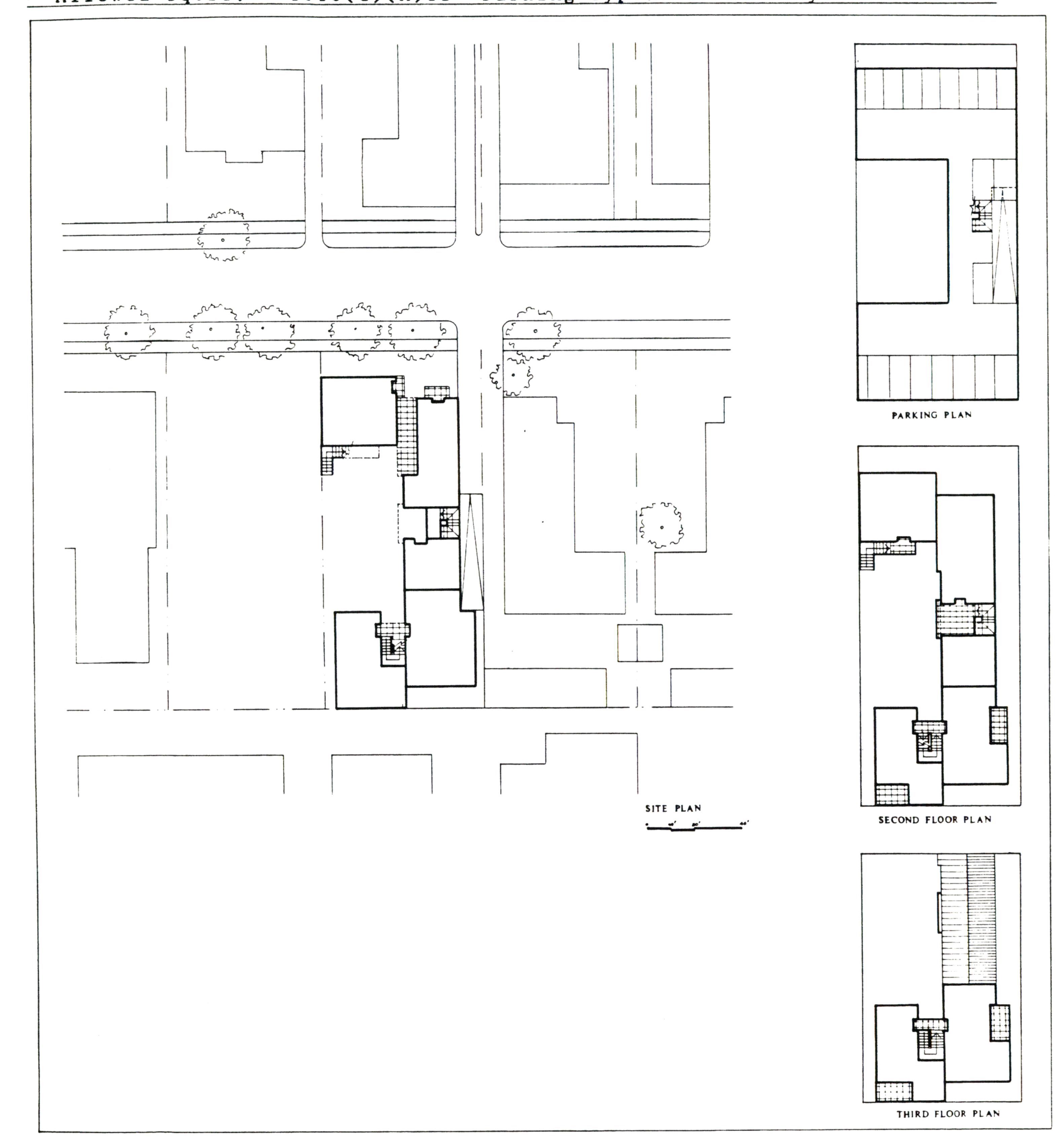
Allowed sq.ft: 0.84(C)(A)sf Parking Type: with dwellings above



Address: 106/10 N.Chester st. Number of Units: 8 units
Lot Area (A): 7,700 sf Number of Parking Spaces: 12 cars
Lot Dimensions: 50'x 154' Square Feet of Construction: 8,100 sf
Context Density: 8 units/lot Size of Total Open Space: 2,700 sf
Value of (C): 1 Size of Main Garden: 2,100 sf
Allowed sq.ft: 1.10(C)(A)sf Parking Type: mechanically ventilated



Address: 236 Oakland st. Number of Units: 11 units
Lot Area (A): 10,098 sf Number of Parking Spaces: 17 cars
Lot Dimensions: 66'x 153' Square Feet of Construction: 11,060 sf
Context Density: 8 units/lot Size of Total Open Space: 3,100 sf
Value of (C): 1 Size of Main Garden: 2,450 sf
Allowed sq.ft: 1.10(C)(A)sf Parking Type:mechanically ventilated



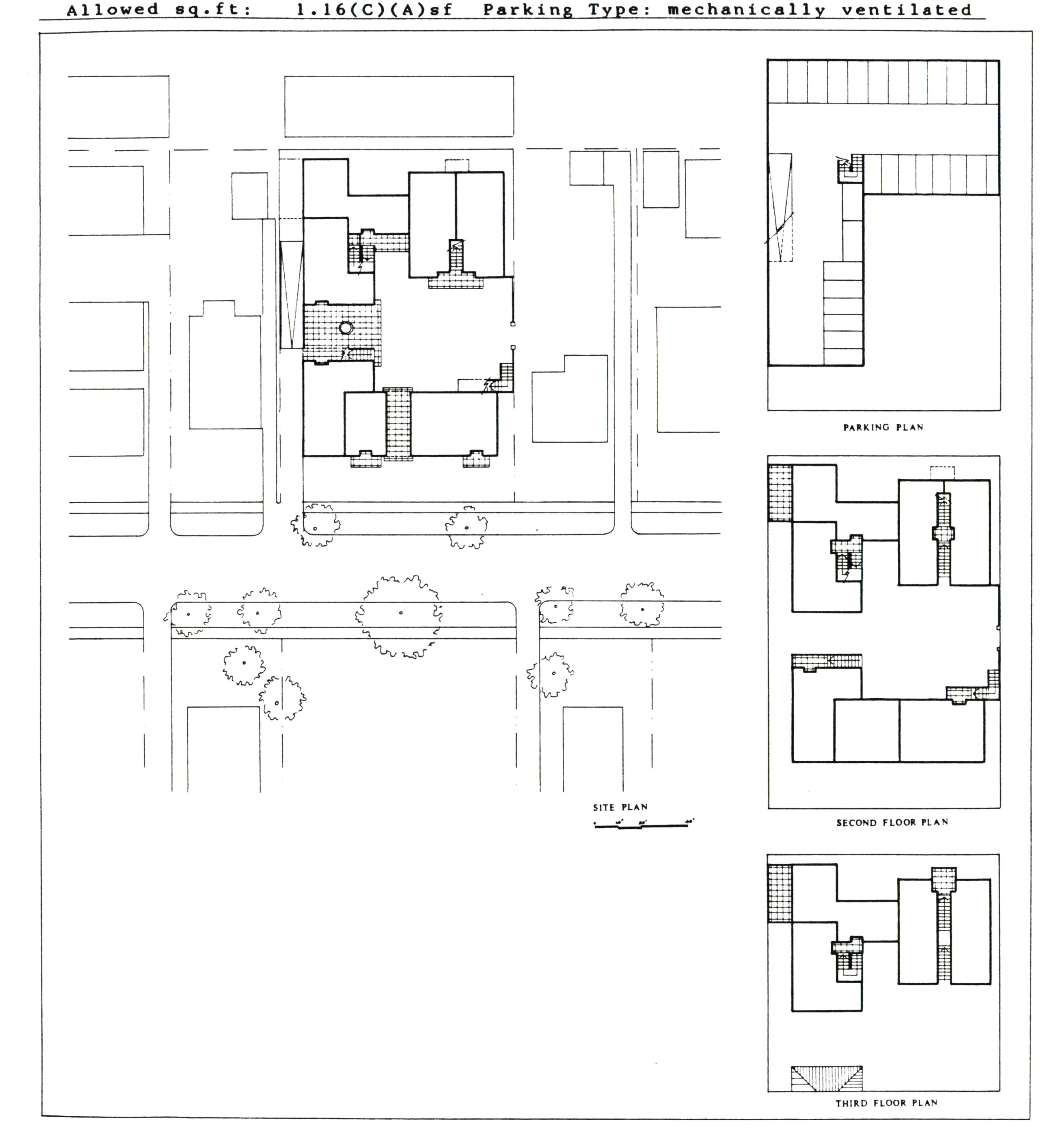
Address: 106/30 N.Chester st. Number of Units: 17 units

Lot Area (A): 15,400 sf Number of Parking Spaces: 26 cars

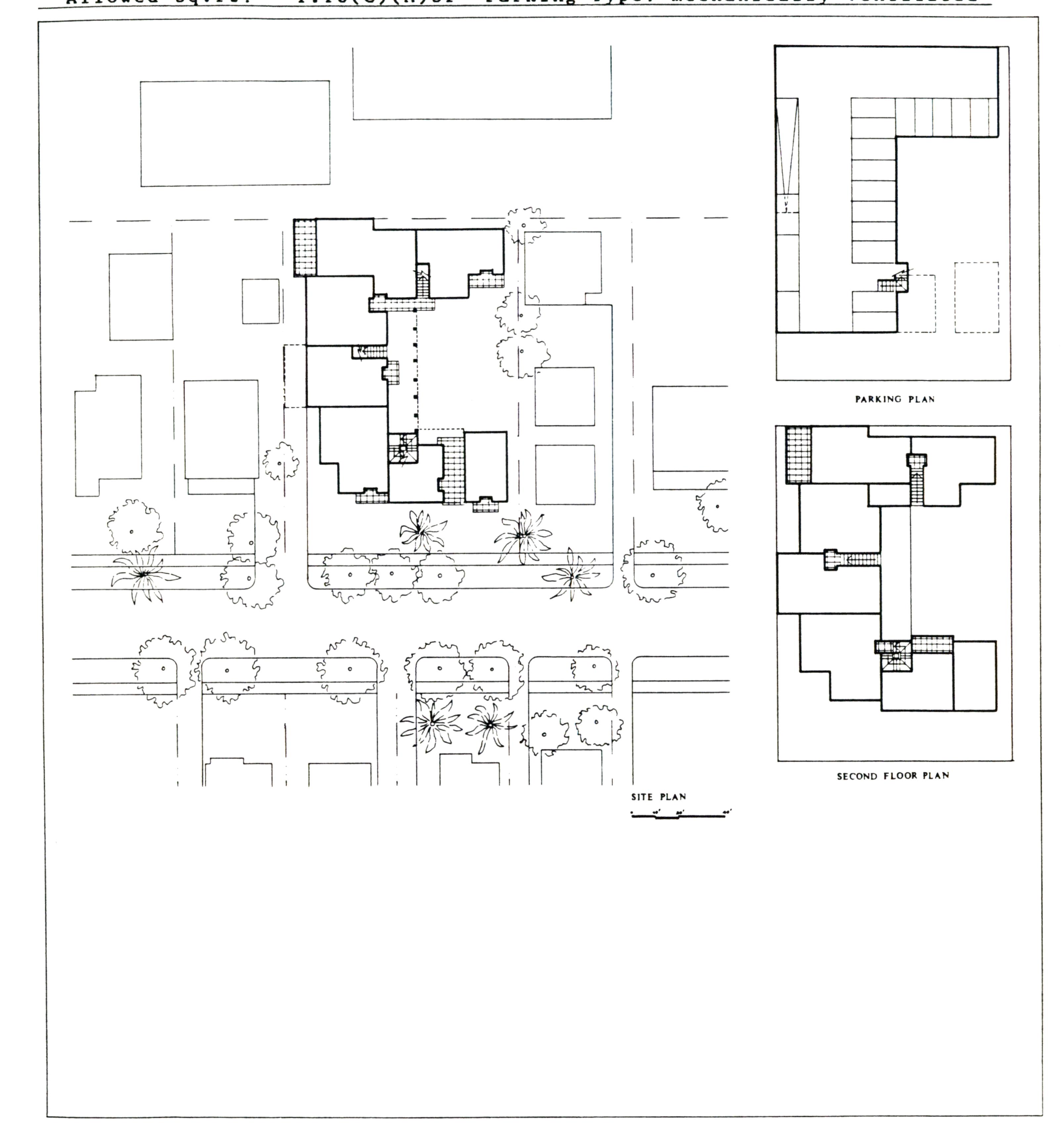
Lot Dimensions: 100'x 154' Square Feet of Construction: 17,493 sf

Context Density: 8 units/lot Size of Total Open Space: 5,300 sf

Value of (C): 1 Size of Main Garden: 3,740 sf



Address: 148/56 N.Chester st. Number of Units: 12 units 18 cars Number of Parking Spaces: Lot Area (A): 14,500 sf Square Feet of Construction: 12,403 sf 100'x 145' Lot Dimensions: 5,300 sf Context Density: 3 units/lot Size of Total Open Space: 3,560 sf Size of Main Garden: Value of (C): 0.75 Parking Type: mechanically ventilated 1.16(C)(A)sf Allowed sq.ft:



Address: 200 S.Molino/Cordova Number of Units: 30 units

Lot Area (A): 27.900 sf Number of Parking Spaces: 45 cars

Lot Dimensions: 124'x 225' Square Feet of Construction: 32,518 sf

Context Density: 8 units/lot Size of Total Open Space: 7,264 sf

Value of (C): 1 Size of Main Garden: 4,753 sf

Allowed sq.ft: 1.16(C)(A)sf Parking Type: mechanically ventilated

