

# **FIRE STATION CONSOLIDATION STUDY BELMONT, MASSACHUSETTS**

## **PHASE II REPORT**

**Prepared for**

**FIRE STATION CONSOLIDATION COMMITTEE**

**AND**

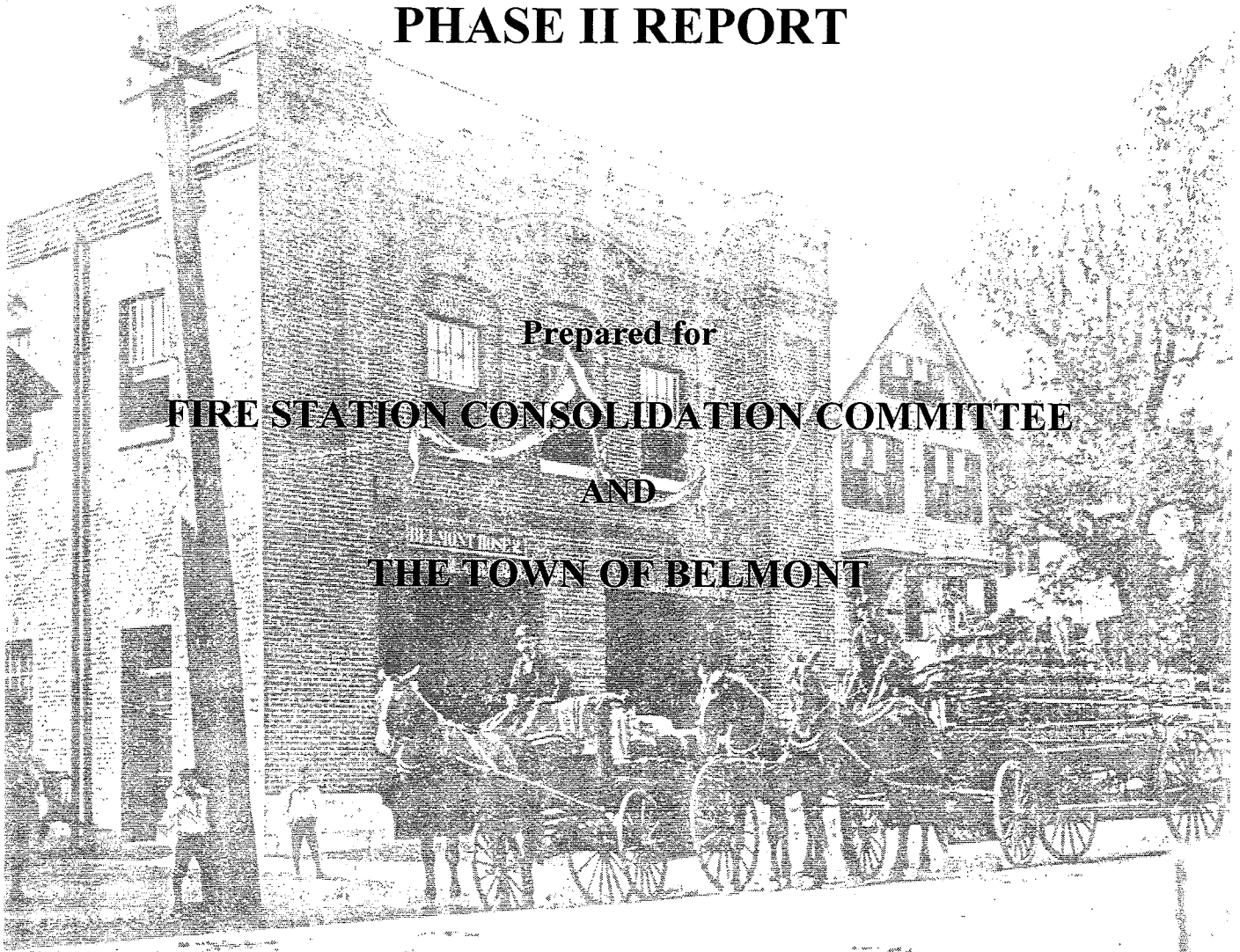
**THE TOWN OF BELMONT**

**Prepared by**

**Donham & Sweeney Inc**

**ARCHITECTS**

**1 April 2002**



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## **PHASE II REPORT**

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### **TOWN OF BELMONT, MASSACHUSETTS**

William Monahan, Chairman, Board of Selectmen  
William Brownsberger, Selectman  
Anne Marie Mahoney, Selectman  
Melvin Kleckner, Town Administrator

### **Fire Station Consolidation Committee**

Michael Egan, Chair  
Richard Betts  
Joanne Coakley  
Robert McLaughlin  
Linda Oates, Secretary  
John O'Donovan  
Leo J. Saidnawey

### **Fire Department Liaisons**

Chief William Osterhaus  
Assistant Chief David Frizzell

**Prepared by**

**Donham & Sweeney Inc**

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1 April 2002

**FIRE STATION CONSOLIDATION STUDY  
TOWN OF BELMONT  
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**1 INTRODUCTION AND EXECUTIVE SUMMARY**

Donham and Sweeney, Inc. – Architects were retained in June 2001 by the Town of Belmont to assist the Fire Station Consolidation Committee in recommending sites, budgets, and schedules for a new Fire Headquarters and a new Fire Sub-station. The Committee had previously decided to recommend consolidating the Town's three stations to two. In the past 20 years the Fire Department has reduced its fire suppression and EMS staffing by 30% and its emergency response equipment by 40%; they can no longer support three stations, increasing the need for consolidation. The Committee selected fourteen site options for study.

We reached the following conclusions during the course of that earlier study:

1. The Fire Department needs approximately 33,600 gross square feet of programmed floor area housed in two buildings, in comparison to approximately 24,185 gross square feet now occupied in three buildings. The Headquarters needs 20,700 SF and the Sub-station needs 13,100 SF.
2. The Committee concluded that only 4 of the 14 sites merited serious consideration. These were Claflin Street Lot, VFW, Belmont VW, and Cushing Square.
3. The zoning for each site allows the construction of a Fire Headquarters or a Sub-station. Variances would be needed on most of the sites for a reduction in the number of required parking spaces. Some sites would need a side yard setback variance.
4. A comparative site analysis, using a numerical system for rating measurable site criteria, indicates only a modest range of differentiation among the sites. While the Claflin Street and Cushing Square sites have the highest ratings, there are sufficient non-quantifiable issues to suggest that site selection cannot be made by using this tool alone. Among the non-quantifiable issues are uncertainties surrounding contaminated soils, actual site acquisition costs, and relocation costs for tenants and businesses.
5. The Belmont VW site may have costs for remediation of contaminated soils; prior petroleum spills are on Fire Department records, but the site has not been tested.
6. Selection of any of the sites will result in surplus buildings, the sale of which could provide approximately \$3,000,000 in income to the Town to offset the cost of the project.

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In February 2002 our study contract was extended to look at:

Pleasant Street Site (Peter Fuller Dodge)

- Review the location of a fire headquarters station with possible future expansion/conversion into a public safety complex.
- Reevaluate response times in connection with potential substation locations.
- Review and revise, if necessary, response times taking into consideration re-design of Pleasant Street (Route 60) and re-construction of the former Clark Street Bridge.

Clafin Street Parking Lot

- Reevaluate footprint and location of a fire station building to minimize impacts on existing municipal parking needs.
- Coordinate efforts with BSC to study expansion of municipal parking capacity.

Cushing Square Parking Lot

- Reevaluate footprint and location of a fire station building to minimize impacts on existing municipal parking needs and to consider possible expansion of the site by acquisition of up to three adjacent parcels of land.
- Coordinate efforts with the BSC study expansion of municipal parking capacity.

Belmont VW

- Reevaluate footprint and location of a fire station building to accommodate possible private development.

To carry out this new charge we looked at pairing options as follows:

<u>Site Pair Options</u>	<u>Cost</u>
<b>Option 1</b> H.Q. at Clafin Street and SUB at Belmont VW	\$12,631,000
<b>Option 2</b> H.Q. at Clafin Street and SUB at Cushing Square	\$12,646,000
<b>Option 3</b> H.Q. at Belmont VW and SUB at Clafin St.	\$12,683,000
<b>Option 4</b> H.Q. at VFW and SUB at Clafin Street	\$13,151,000
<b>Option 5</b> H.Q. at Clafin Street and SUB at VFW	\$13,153,000
<b>Option 6</b> H.Q. at Pleasant Street and SUB at Harvard Lawn	\$13,389,000
<b>Option 7</b> H.Q. at Pleasant Street and SUB at Belmont VW	\$14,629,000
<b>Option 8</b> H.Q. at Pleasant Street and SUB at Cushing Square	\$14,644,000
<b>Option 9</b> H.Q. at Pleasant Street and SUB at VFW	\$15,151,000

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The costs above are inclusive of construction, fees, equipment, land acquisition and construction of replacement parking.

The difference in response times from the Pleasant Street site if the Clark Street bridge were rebuilt was studied for the 13 September 2001 report. Page 35 of the report states that “the bridge made little or no impact on the response time.”

The improvements to Pleasant Street (Rte. 60) include installing curbs to re-pave Pleasant Street with two travel lanes each at 11 ½’ wide. If south bound traffic is backed up from Waverley Square, fire apparatus will be blocked and response time slowed. Currently, because Pleasant Street has no curbs, cars can move onto the shoulders, out of the way of fire apparatus; with curbs they can’t. Northbound traffic generally moves more freely on Pleasant Street so the installation of the curbs is not likely to have an adverse effect on response time in that direction.

The Pleasant Street site offers sufficient room for both a Fire Headquarters in the short run and a Police Headquarters in the future. The building footprints were determined by looking at the optimal ground floor space adjacencies. If both facilities are built there remains sufficient space for about 50 additional cars to be parked. However, the remaining space for public parking is so small that constructing a parking deck over that space would not increase the amount of parking by a significant amount. If a parking deck were extended over the Police Station parking as well, it could be made more efficient, but at a significant cost to construct. In addition, none of those scenarios leaves any room for commercial development.

The Fire Station Consolidation Committee has been clear from the beginning that any fire station siting proposal should be parking neutral; that is, the proposal for any given site should replace, to the fullest extent possible, any public parking cost by the placing of a fire station on the site. The proposal for a Fire Sub-Station at Cushing Square is, for all practical purposes, parking neutral. The proposal for a Fire Headquarters on the Claflin Street Parking Lot results in a loss of 6 cars, whereas the proposal for a Fire Sub-Station on the Claflin Street Parking Lot results in an increase of 19 cars.

It should be noted that a lot of the detailed information that backs up the findings in this report, such as the Detailed Space Needs Study, the description of the Response Time methodology, and the detailed Cost Estimates is to be found in the September 2001 Report.

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**2 SITE DESCRIPTIONS**

**Site 4A: VFW Site, Headquarters and Sub-station**

This site is located on Trapelo Road, south of the existing Waverley Station, and is the current location of the VFW. Use of this site assumes the demolition of the existing building, acquisition of the adjacent commercial parking lot, and relocation of the pedestrian access to Pequossette Playground. When used for a Sub-station, the parking lot for the tennis courts remains. However when used for a Headquarters, the parking lot is lost. In either case, a variance is required. If this site is used, the VFW would need to be relocated to another site or accommodated in the new building.

**Site 4B: Belmont VW Site, Headquarters and Sub-station**

The former site of the Belmont Volkswagon, this site is located south-east of the VFW on Trapelo Road. It is made up of seven parcels, some of which contain contaminated soils. The existing buildings would be demolished to accommodate the new Headquarters or Sub-station. If a Sub-station was built at this site, it is possible that less land would need to be acquired. Joint development of the site with the present owners developing commercial uses is a possibility.

**Site 8A: Claflin Street Lot, Headquarters and Sub-station**

This site is conveniently located just east of Belmont Center. It is near other Town Departments and out of Belmont Center traffic, allowing for excellent fire apparatus egress and ingress. The current use is a municipal parking lot with 140 spaces. Only part of the site would be required to accommodate either a Headquarters or a Sub-station. As much parking as possible could remain for use as both commuter and hourly parking. Use of this site assumes that a two level parking structure would be built on the Alexander Avenue Lot to replace the parking spaces lost from the Claflin Lot by its use for a fire station.

**Site 8B: Alexander Avenue Lot, Sub-station**

This site is located north of the existing Headquarters station on Leonard Street. The current use is a municipal parking lot providing 40 spaces. The site is small and requires the fire apparatus to egress to and ingress from the highly trafficked Leonard Street. Yard setback variances would be required. The 40 parking spaces lost would need to be replaced near the Town center.

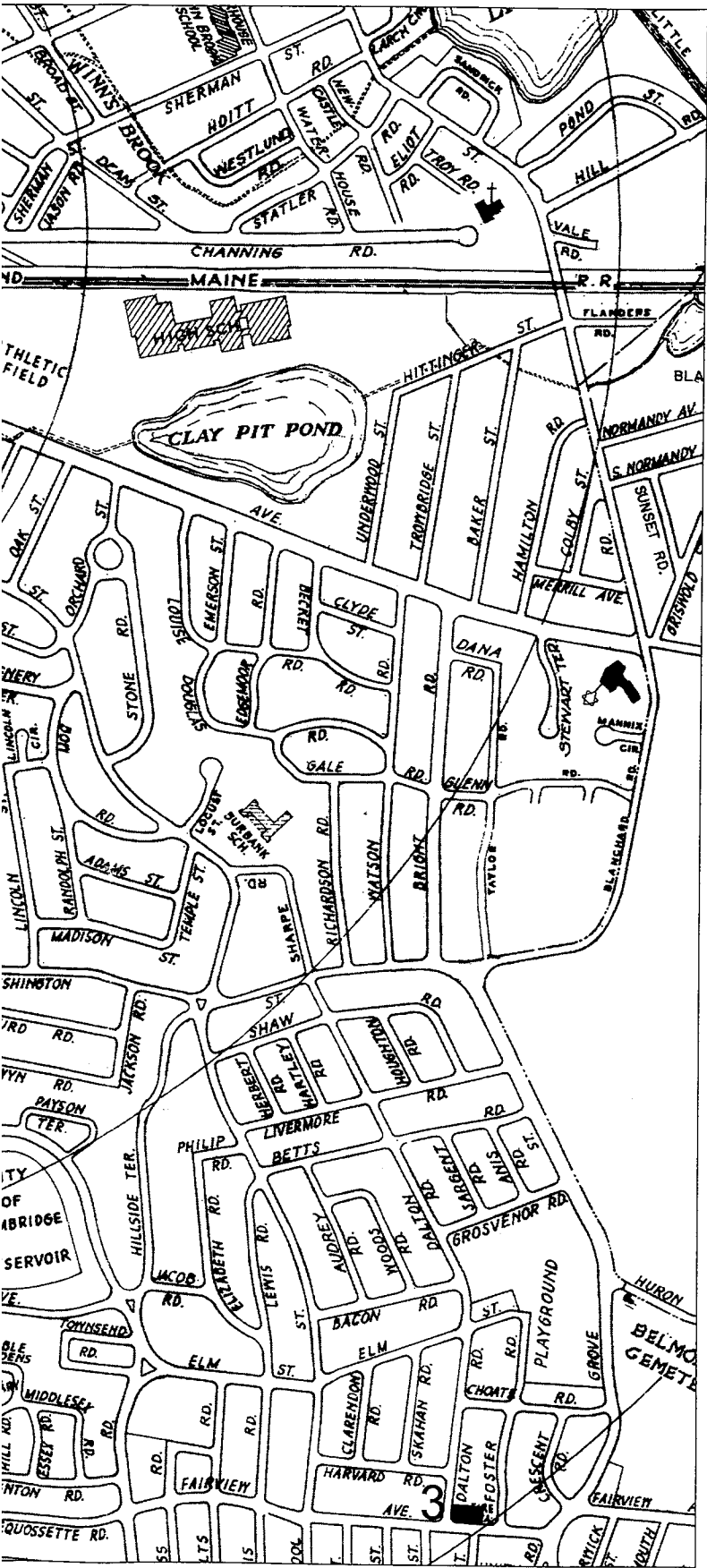
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**Site 9: Cushing Square Parking Lot, Sub-station**

This site is located on the corner of Trapelo Road and Williston Road. The parking lot currently provides spaces for 52 cars, however is not fully used. It abuts a residential neighborhood, but is located within the local business district. The size of the site limits the amount of on-site parking that can be accommodated, but other parking would be available. The site is conveniently located between the two existing Sub-stations and would be able to sufficiently respond to those areas currently covered. Use of this site assumes acquisition of 3 lots on Horne Road to be used as a replacement parking lot.

**Site 10B: Pleasant Street/Peter Fuller Dodge Site, Headquarters**

This large site is located on Pleasant Street adjacent to the animal hospital. Pleasant Street is a main thoroughfare through Town increasing the difficulty of fire apparatus egress and ingress. A 10' wide sewer easement runs through the site from Pleasant Street to the railroad tracks. The easterly portion of the site is fill. Plans are underway to repave and curb Pleasant Street, channeling traffic into two lanes, one in each direction. Travel speed is expected to be slowed by the re-design. Use of this site assumes demolition of the existing buildings. All of the site would not be needed for the Fire Headquarters or the Sub-station and could be available for a future Police Headquarters, or commercial use.



Site 3: Harvard Lawn Station

Site 4A: VFW & Adjacent  
Parking Lot

Site 4B: Belmont VW

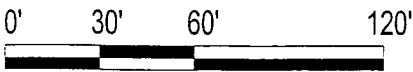
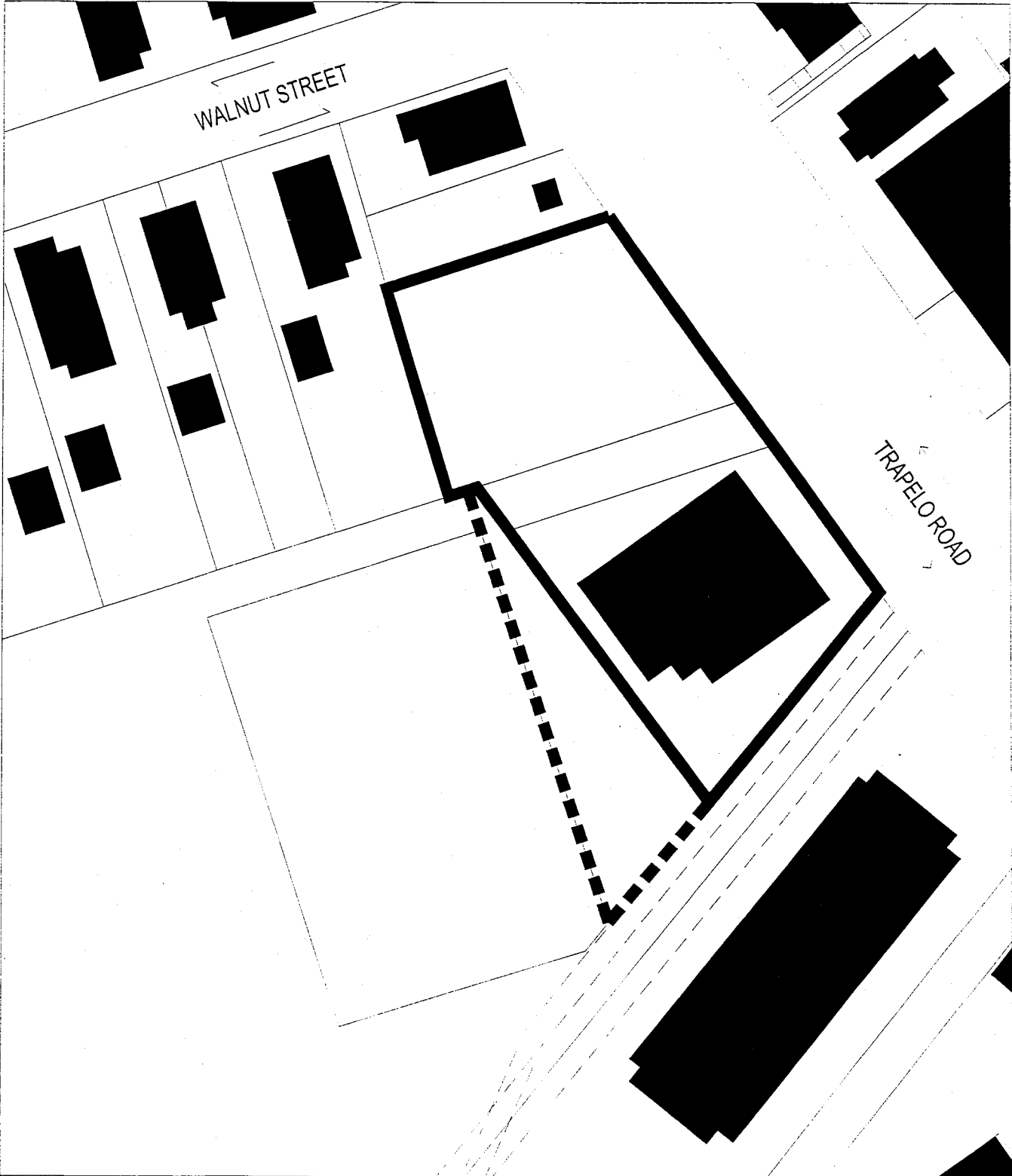
Site 8A: Clafin Street Parking  
Lot

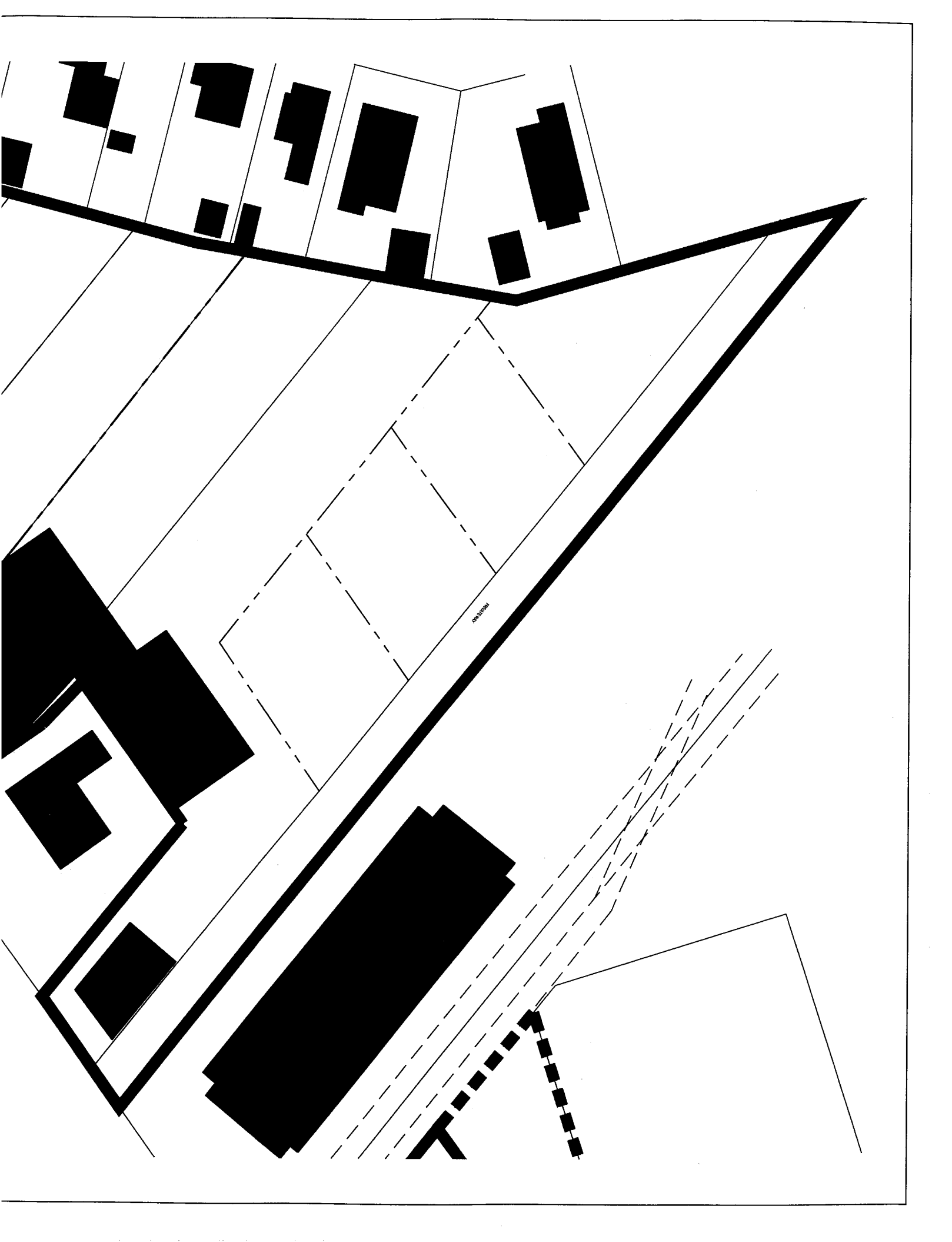
Site 8B: Alexander Avenue  
Parking Lot

Site 9: Cushing Square  
Parking Lot & Horne Road

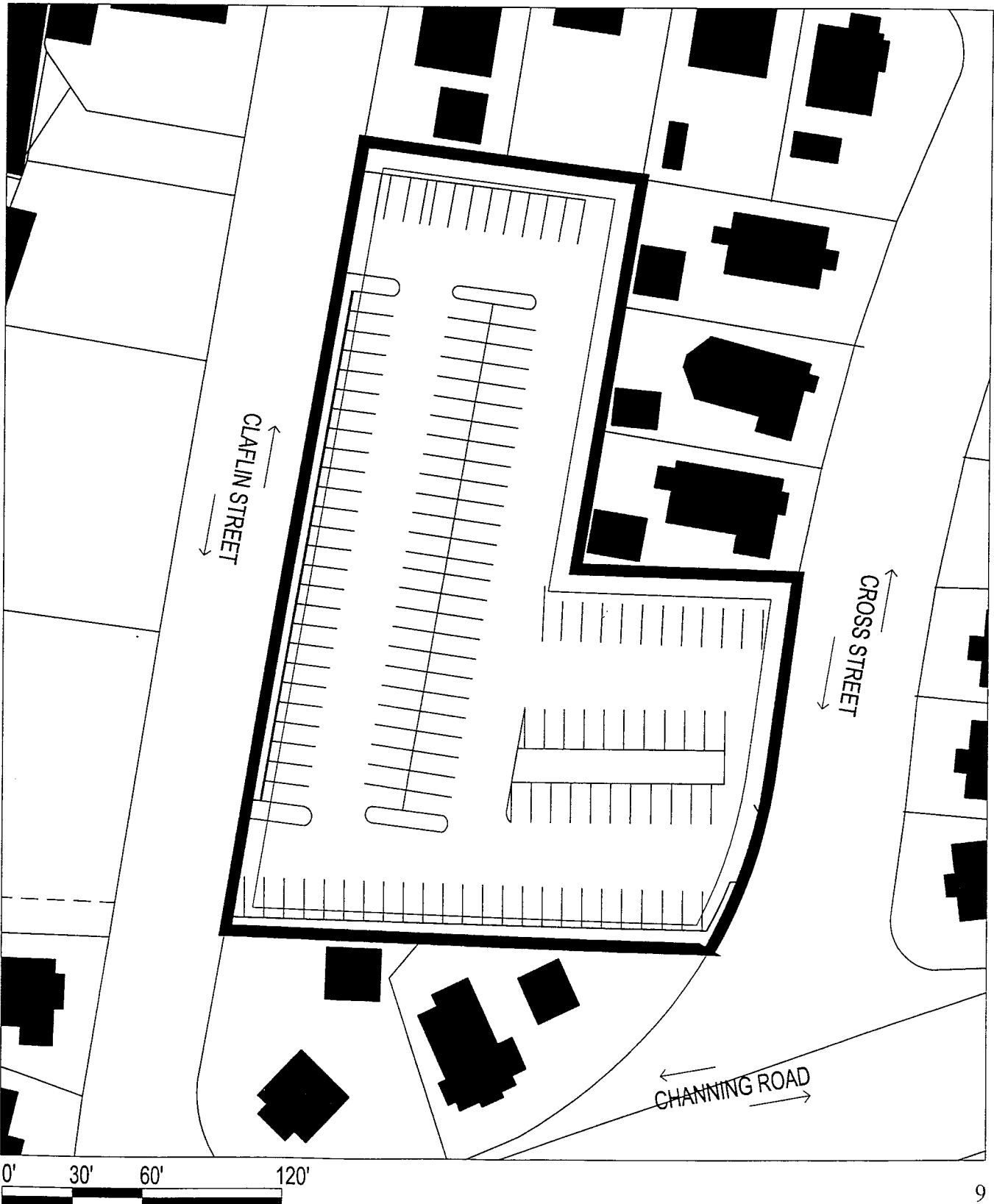
Site 10B: Pleasant Street/  
Peter Fuller Dodge

BELMONT FIRE STATION CONSOLIDATION STUDY  
SITE #4A- VFW & ADJ. LOT  
EXISTING CONDITIONS

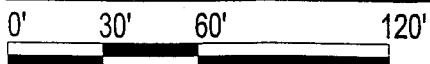
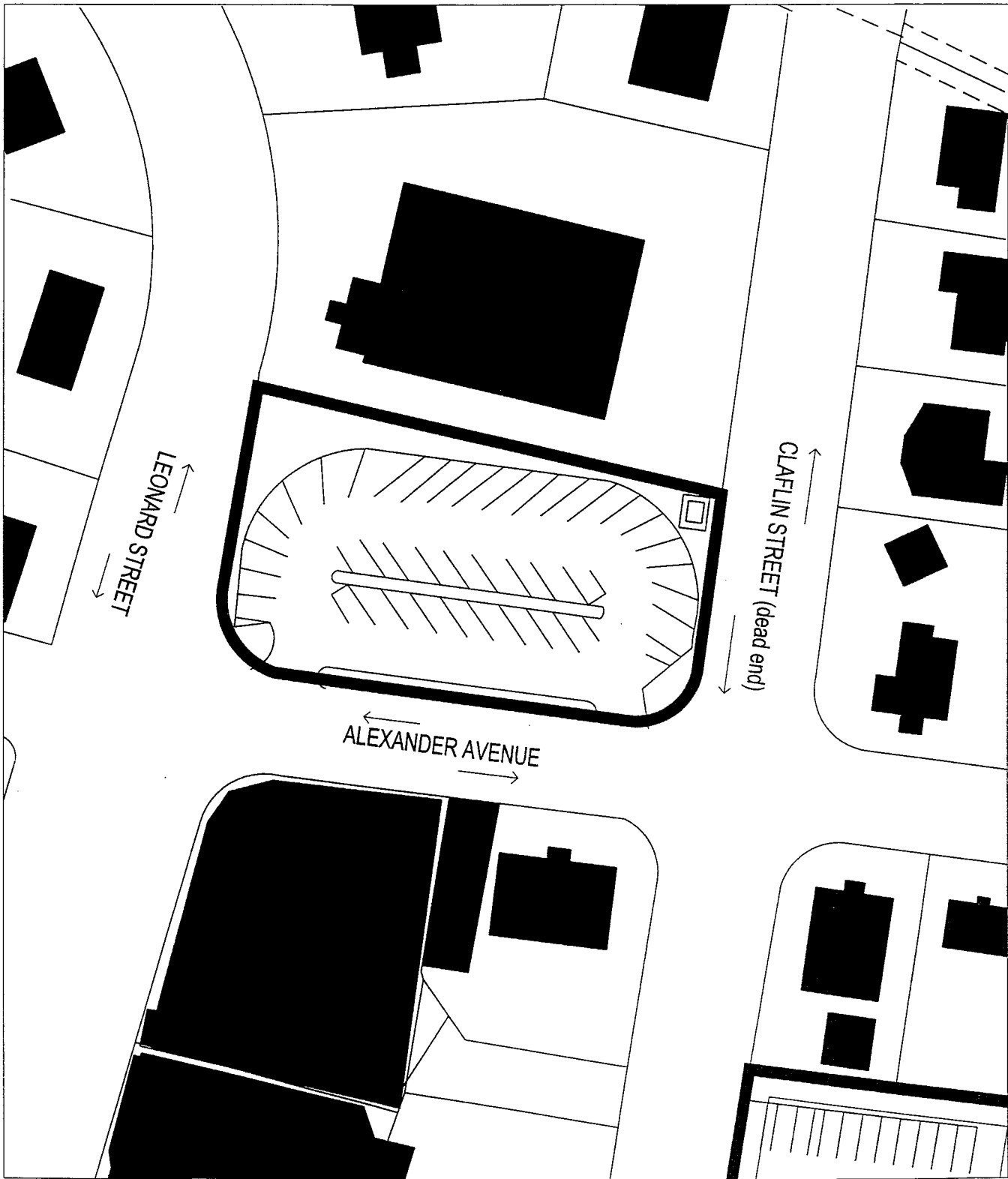




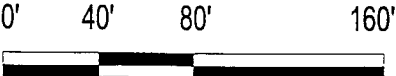
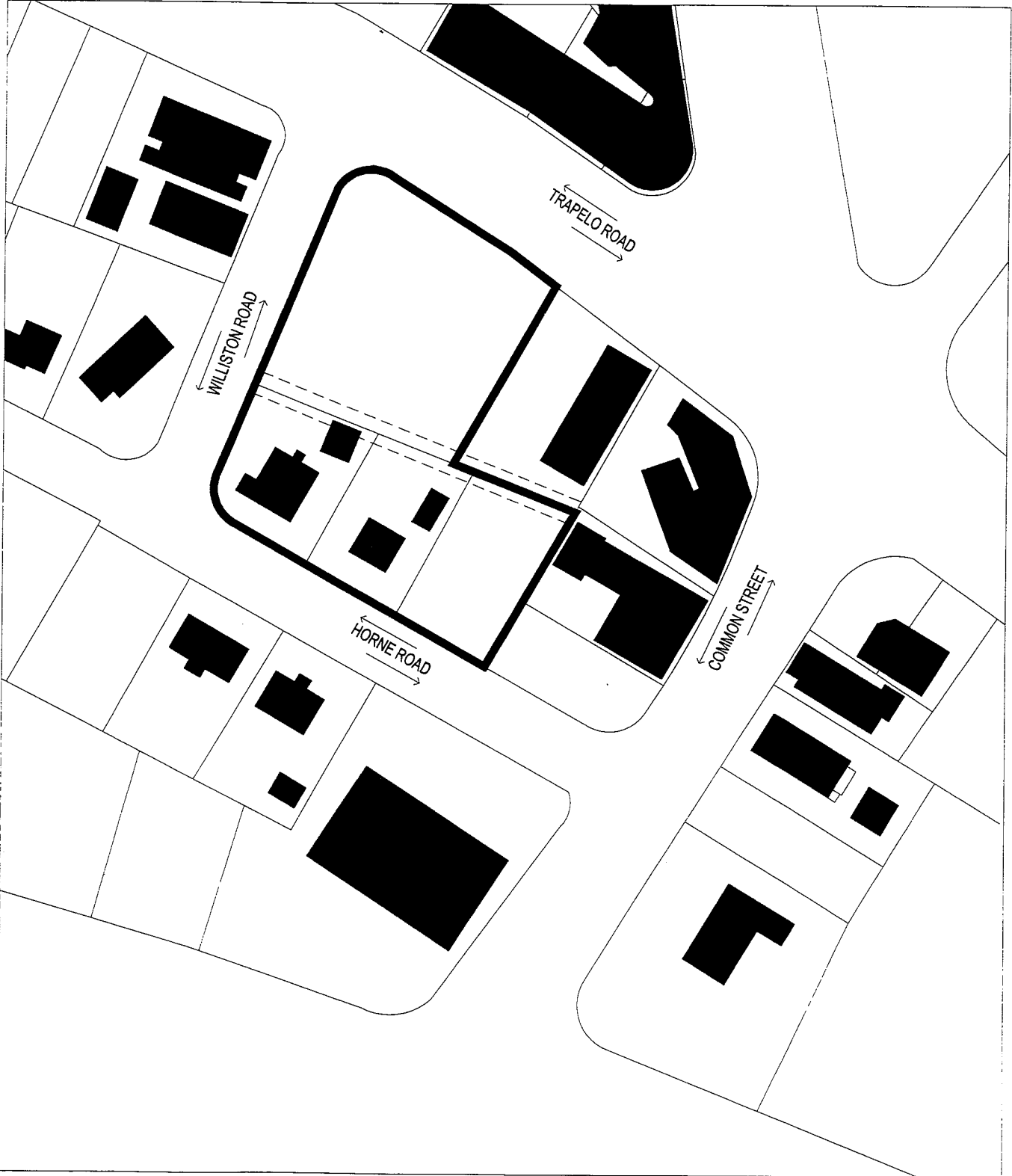
BELMONT FIRE STATION CONSOLIDATION STUDY  
SITE #8A- CLAFLIN STREET MUNICIPAL PKG LOT  
EXISTING CONDITIONS



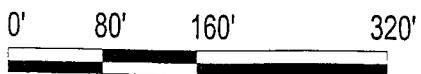
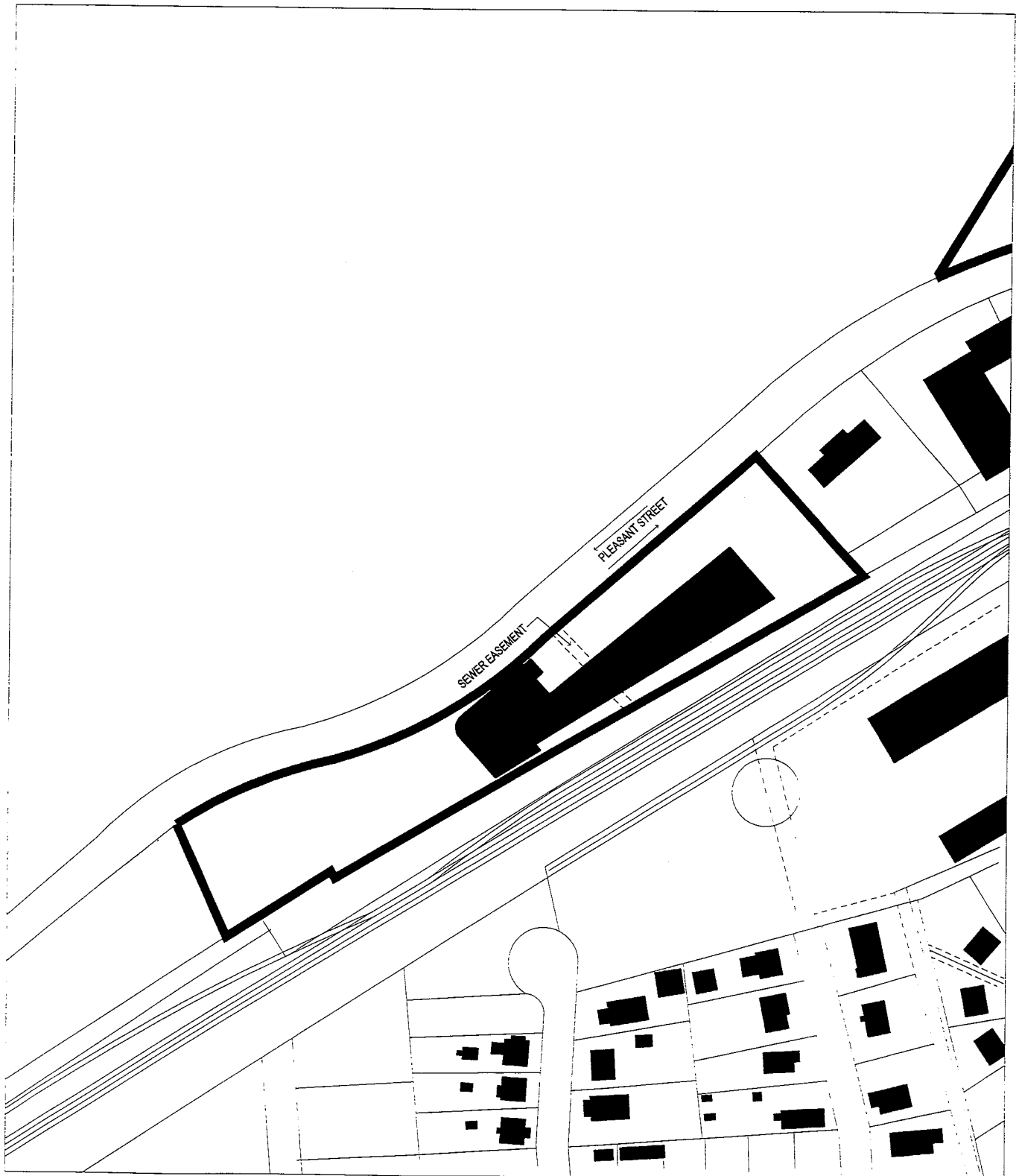
FIRE STATION CONSOLIDATION STUDY  
SITE #8B- ALEXANDER AVENUE MUNICIPAL PKG LOT  
EXISTING CONDITIONS



BELMONT FIRE STATION CONSOLIDATION STUDY  
SITE #9- CUSHING SQ. MUNICIPAL PKG LOT  
EXISTING CONDITIONS



BELMONT FIRE STATION CONSOLIDATION STUDY  
SITE #10B- PLEASANT STREET/ PETER FULLER DODGE  
EXISTING CONDITIONS



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**3 RESPONSE TIME ANALYSIS**

We have looked at several site pairing options as follows:

<u>Site Pair Options</u>		<u>Maps</u>	<u>Scenario</u>
<b>Options 1 &amp; 2</b>	H.Q. at Belmont VW and SUB at Claflin Street	13 & 14	7
<b>Option 3</b>	H.Q. at Claflin Street and SUB at Cushing Square	17 & 18	9
<b>Options 4 &amp; 5</b>	H.Q. at VFW and SUB at Claflin Street	13 & 14	7
<b>Option 6</b>	H.Q. at Pleasant Street and SUB at Harvard Lawn	19 & 20	10
<b>Option 7</b>	H.Q. at Pleasant Street and SUB at Belmont VW	21 & 22	11
<b>Option 8</b>	H.Q. at Pleasant Street and SUB at Cushing Square	25 & 26	13
<b>Option 9</b>	H.Q. at Pleasant Street and SUB at VFW	21 & 22	11

There are two maps for each site pairing option. The first map shows the area covered from each station in four minutes, the optimal response time. The second map shows the overlap, that is, the area covered by both stations within four minutes. Achieving the greatest amount of overlap is highly desirable because it indicates the four minute fire response coverage when both stations need to respond or when one station is already out on a call.

**Comments on Maps And Scenarios**

**Scenario 7 Maps 13 & 14**

Comments:

- This configuration of stations leaves the northwest and southeast corners of the Town uncovered.
- The overlap between the stations is substantial and is located mostly south of the railroad tracks and in the center of Town.

**Scenario 9 Maps 17 & 18**

Comments:

- There is good coverage to all parts of the Town except the northwest corner.
- The overlap is the largest of all the scenarios and is confined mostly to the area south of the railroad tracks and the center of Town.

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**Scenario 10 Maps 19 & 20**

Comments:

- This configuration provides good coverage except for the northwest corner of the Town.
- Overlap is small and limited to the area south of the railroad tracks.

**Scenario 11 Maps 21 & 22**

Comments:

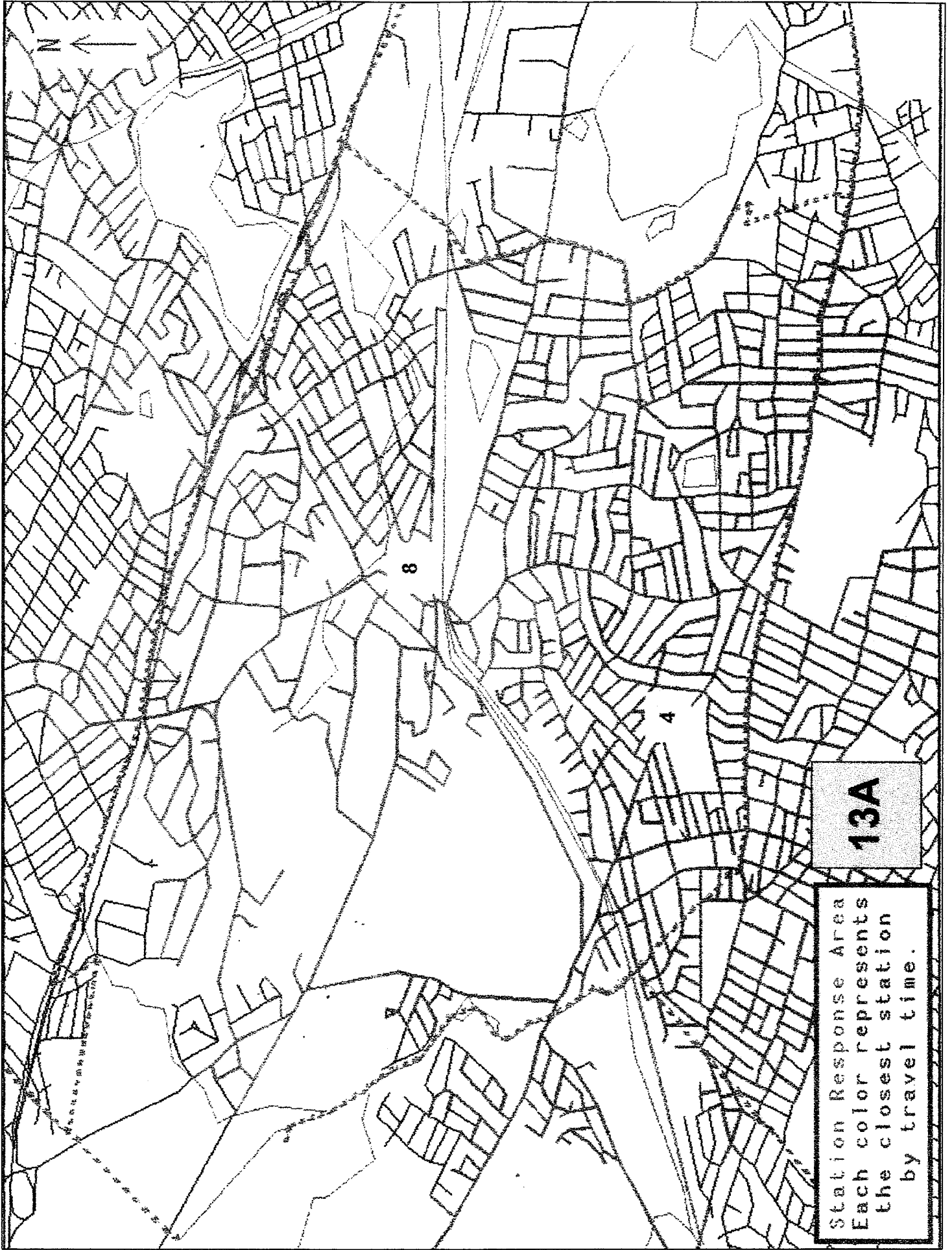
- Coverage with this configuration has shifted to the west leaving a the southeast corner of the Town uncovered.
- The overlap is fair but not as good as Scenarios 7 and 9.

**Scenario 13 Maps 25 & 26**

Comments:

- Coverage with this configuration has shifted to the southeast providing good coverage except for the northwest corner of the Town.
- The overlap is not as good as Scenarios 7 and 9.

The two best Scenarios, giving the most coverage and the most overlap, are Scenarios 7 and 9.



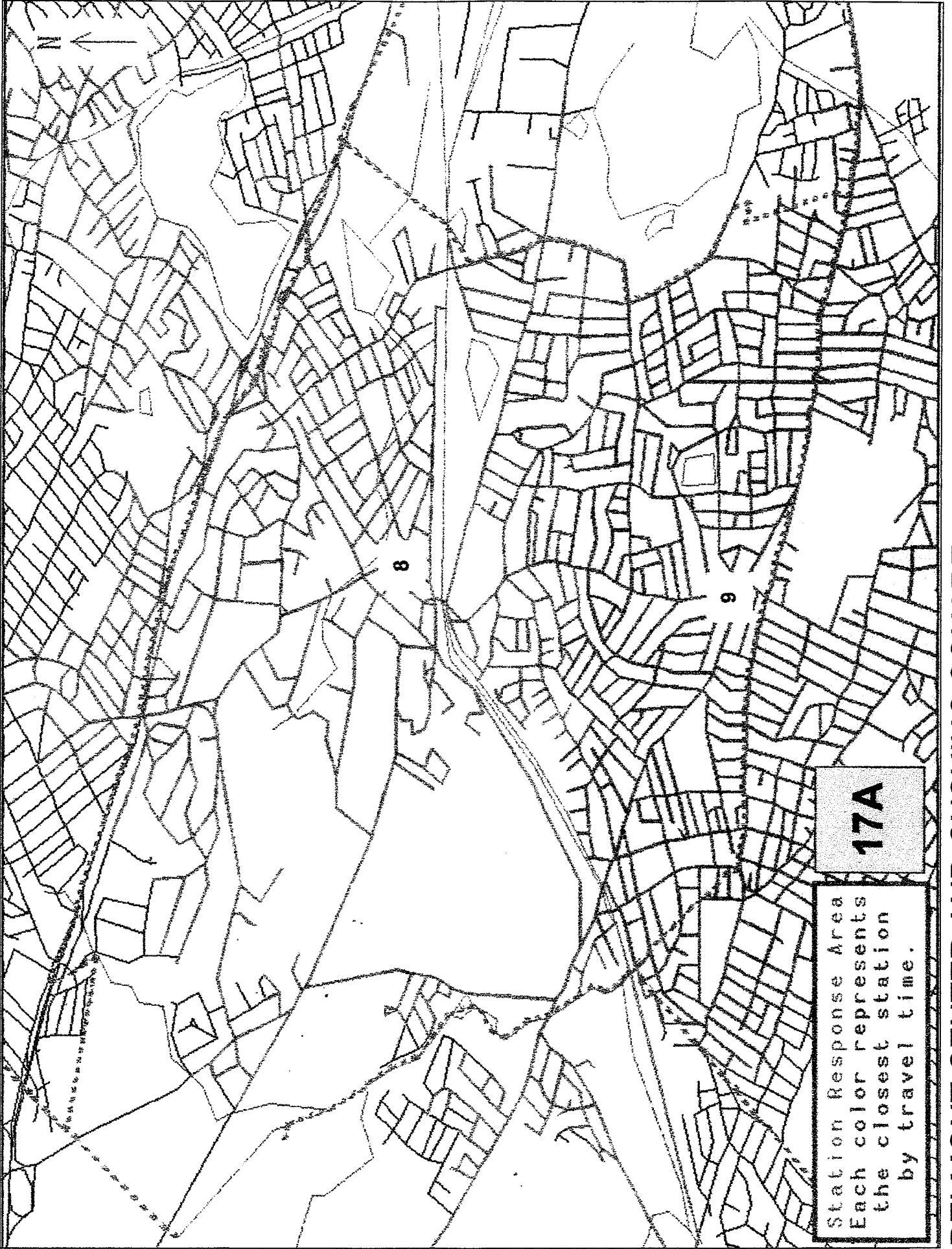
Station Response Area  
Each color represents  
the closest station  
by travel time.

13A

**BELMONT CENTER & VW OR VFW SITES**



**BELMONT CENTER & VW OR VFW SITES**



Station Response Area  
Each color represents  
the closest station  
by travel time.

**17A**

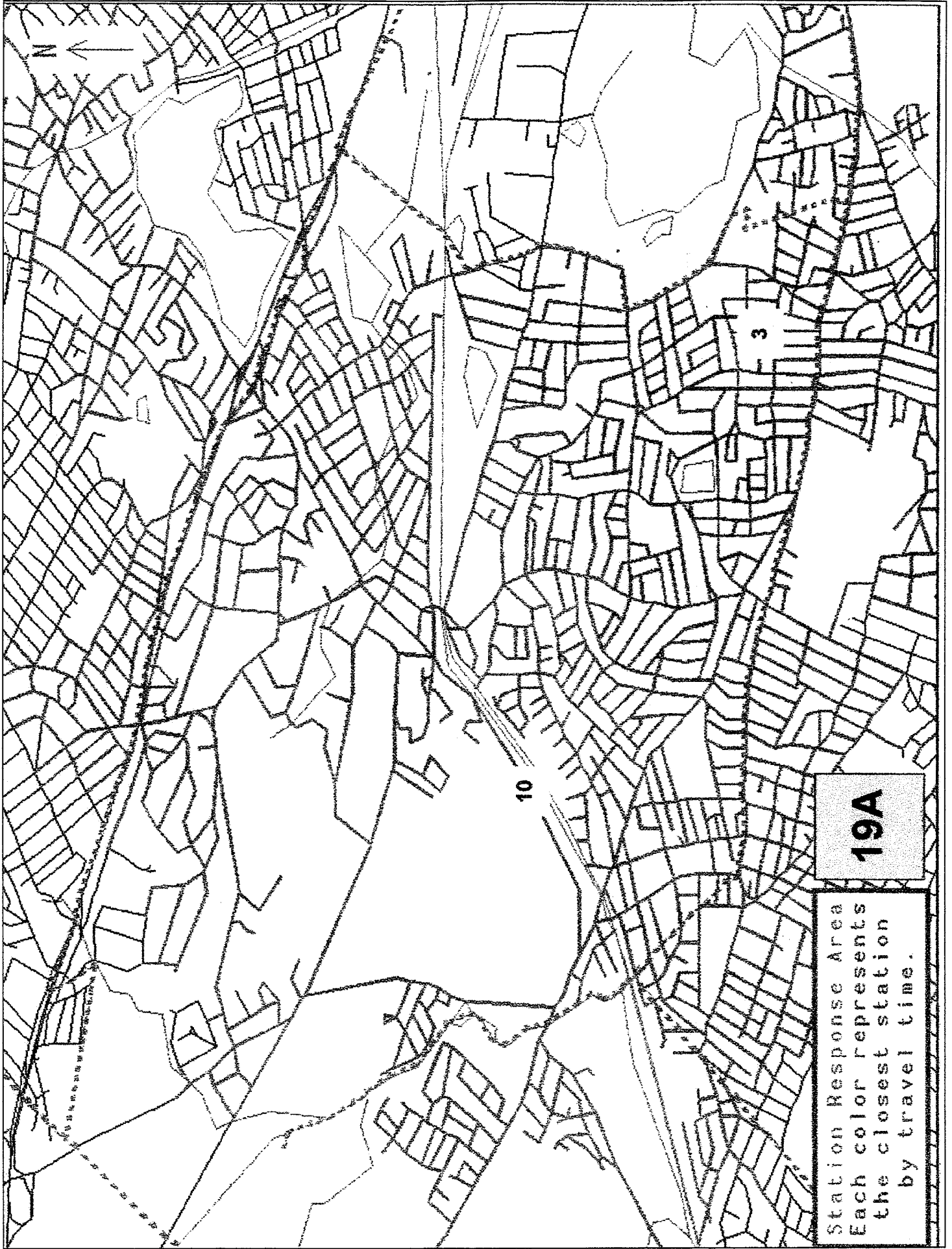
**BELMONT CENTER AND CUSHING SQUARE**



**BELMONT CENTER AND CUSHING SQUARE**

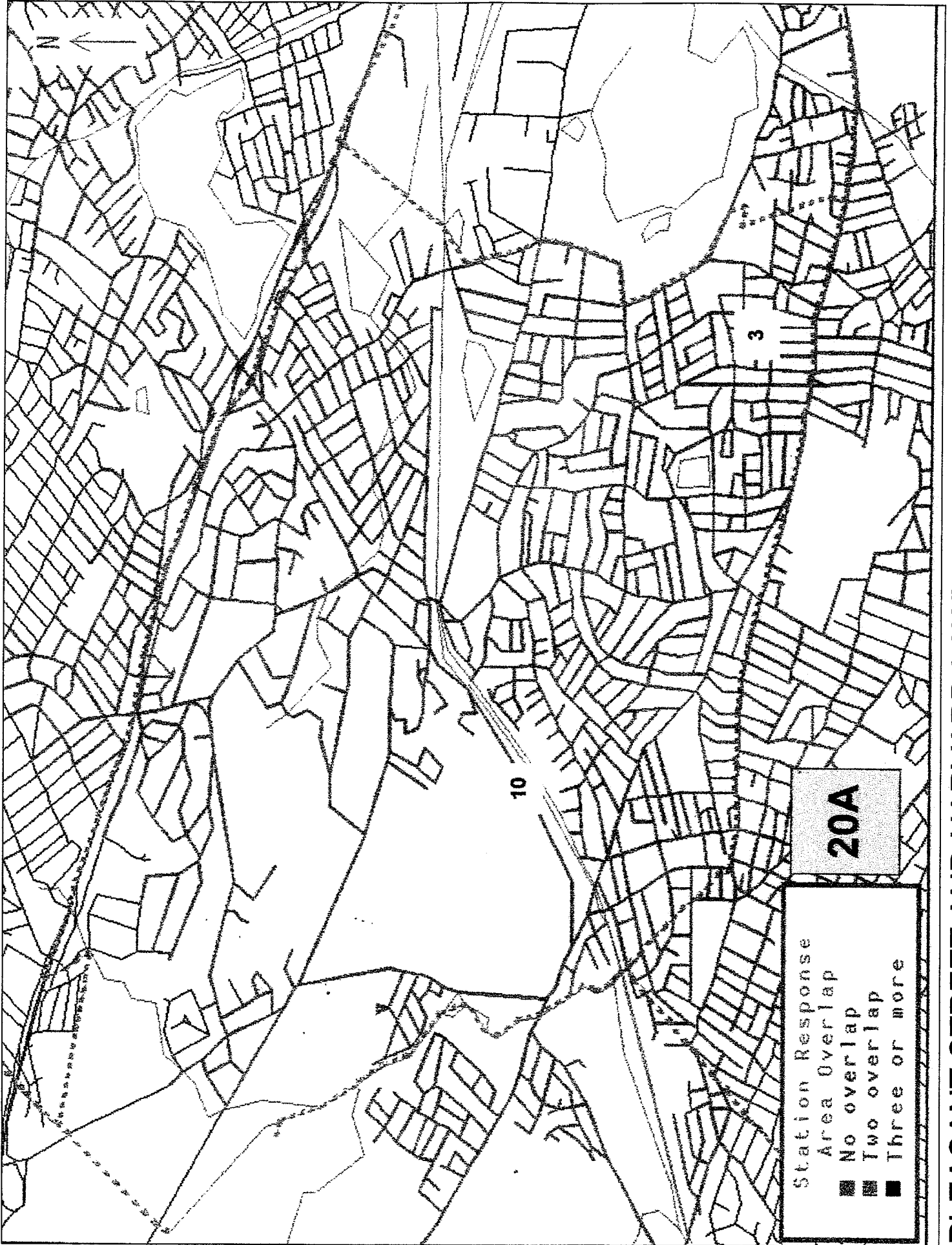
**18A**

- Station Response Area Overlap
- No overlap
  - ▨ Two overlap
  - Three or more



**19A**  
Station Response Area  
Each color represents  
the closest station  
by travel time.

**PLEASANT STREET AND HARVARD LAWN**



PLEASANT STREET AND HARVARD LAWN

