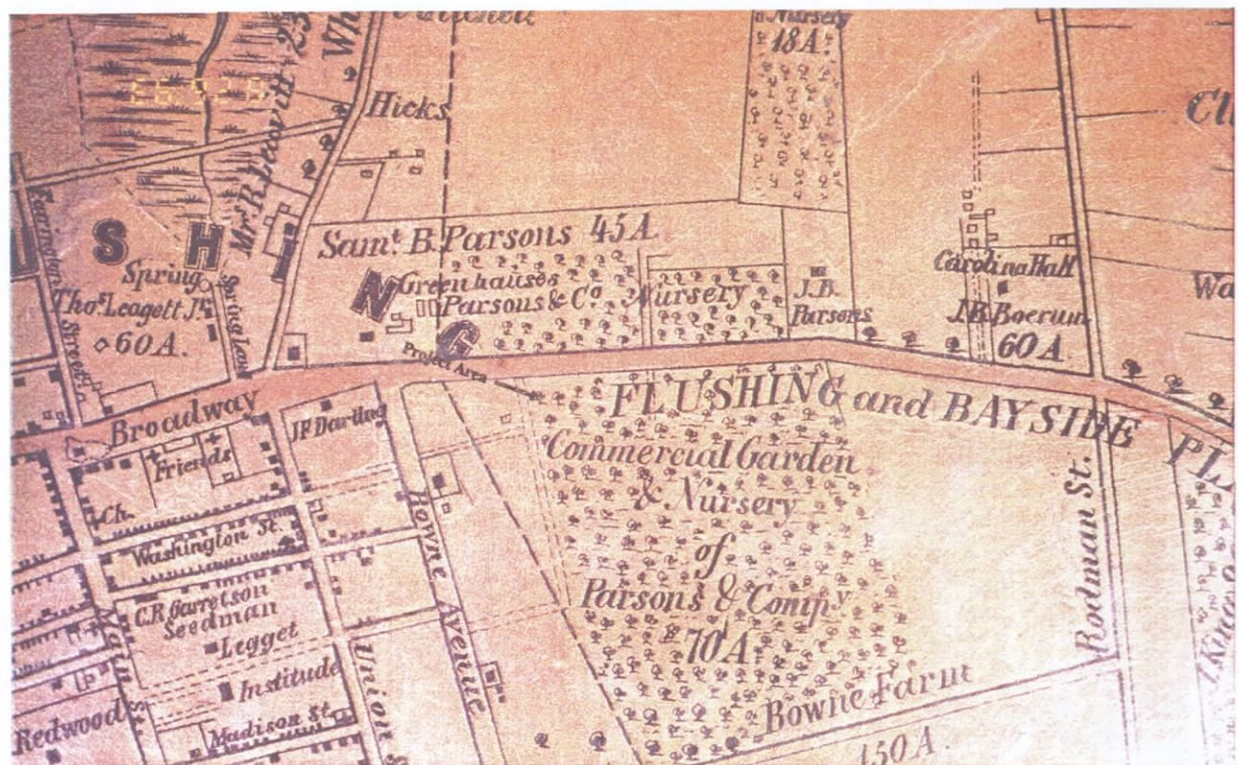


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The Stage IA Archaeological Sensitivity Evaluation of the Flushing Manor Geriatric Center, Flushing, Queens County, New York.

(Block 5014, Lot 4 and Lot 86)

CEQR Project No. 93-012-Q



Prepared for: Environmental Project Data Statements Company
Hiram A. Rothkrug, Director.
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Prepared by: Joel W. Grossman, Ph.D., Principal Investigator.
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September 30, 1993.

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The Stage IA Archaeological and Historic Sensitivity Evaluation of Flushing Manor Geriatric Center Site, Flushing, Queens, New York, New York. (Block 5014, Lots 4 and 86, CEQR # 93 - 012Q)

I. Executive Summary and Recommendations

A. Introduction

This Stage IA Archaeological and Historic Sensitivity Evaluation has been conducted in accordance with the standards and guidelines of the New York City Landmarks Preservation Commission. The purpose of this Stage IA archaeological sensitivity evaluation has been to establish the potential for encountering possibly surviving historic or *prehistoric cultural remains* based on the synthesis of existing documentary, archival, and cartographic records, including the review of relevant secondary sources, historical characterizations of the Flushing area, and insights from previously conducted cultural resource surveys in the vicinity of the project area. This study involved the focused investigation of two main archival and documentary sources to establish the distribution and proximity to the project parcels of previously identified historic and *prehistoric resources* in the area.

The first line of inquiry used the traditional historical accounts, archival, and newspaper sources, and the scaled computer generated sequential comparison of 19th and 20th century historic maps to reconstruct the settlement history of the block, and the relative age of identified historic resources which formerly existed in, or adjacent to, the project parcel from 1852 to the present.

In addition to the identification of potential historic resources, the study utilized the historic map depictions of the former environmental setting, land use patterns, former property owners, and roadways to reconstruct a more accurate depiction of the location of previously identified prehistoric and Contact Period Native American sites in the town of Flushing, as well as the distribution and location of former historic water powered mills, stream courses, springs, and formerly extensive tidal marshes which represented critical resources for both Pre Contact and 17th century Native American inhabitants, as well as early 17th, 18th, and 19th century European settlements.

In particular, the effort resulted in the ability to define a pattern of prehistoric site distribution which correlated with the availability of fresh water sources in general, and also showed that the Pre Contact Native American sites were concentrated, or focused,

not simply next to streams, but actually adjacent to the former fastland boundaries of 17th century tidal marshlands, or estuary meadowlands, which have subsequently been extensively landfilled and/or drained. This environmentally based settlement distribution study and effort to correlate published archaeological site locations with relative past environmental conditions and historic land use patterns versus the contemporary and much altered urban landscape added a new level of information concerning the location and distribution of what in many cases have repeatedly been reported as generalized site locations.

The review of historic documentary and map sources has established that although no specific historic structures could be pinpointed within the proposed Flushing Manor Geriatric Center project area itself, the area was the focus of early Colonial settlement beginning in the 17th century. The original European settlement in area was the Bowne family who initially purchased their farmstead from the Native Americans in 1661. The Bowne house still stands today and represents one of the earliest structures in the New York metropolitan area. According to the records of the Queens Historical Society this land belonged to Samuel Parsons by 1837 and was by 1852 depicted on the Conner-Dripps map as the "Parsons Commercial Garden and Nursery". This nursery, although one of many in Queens, was significant in the mid 19th century because it supplied many of the trees and shrubs for Central Park in Manhattan as well as Prospect Park in Brooklyn.

Both the 1852 Conner-Dripps map and the Beers 1873 map depicted a number of historic structures in the vicinity of the project parcel, however, all but one were located to the west of Parsons Boulevard. As rendered on the computer scaled historic map correlations, a single structure is shown to the south of the project block under what became Washington Street. None of the identifiable mid 19th century Parsons or earlier structures fall within or adjacent to either of the project parcels. In 1854 Parsons & Co. developed a "sale plan of the Bowne Estate" with proposed lot subdivisions which showed the proposed and now actual alignment of Parsons Boulevard and 147th Street (Percy Street), the western and eastern boundaries of the modern project block. None of Parsons proposed lot subdivisions were ever actualized or had any relationship to modern lot subdivisions.

This review also established, based on the analysis of computer scaled historic map coverage of the area, that the earliest structure on either of the two project parcels dates to circa 1909, with no cartographic evidence for either 17th, 18th, or 19th century structures in, or adjacent to, the two project parcels (Lots 4 and 86 of modern Block 5014).

Based on the combined analysis of early 20th century map coverage and building records, this review has established the larger of the two lots, Lot 4, was first built upon with a 2 1/2 story frame dwelling by 1909. Later map coverage evidenced by the 1926 E. Belcher Hyde and the 1917 and 1934 Sanborn Insurance maps showed that the same

structure continued with no apparent structural changes until after the end of World War II. Based on a Demolition Permit application dated September 1949 and the subsequent Certificate of Occupancy dated January 1951, this original structure was demolished and replaced by a 1 story concrete block and frame structure used as a residence and doctor's office. With the addition of landscaping in front of the building, the footprint of this structure has continued with only minimal alterations until the present, 1993 (See Figures 20 and 21).

For the smaller of the two lots, Lot 86, the available map and building records document that the first structure was constructed by 1917 as a 2 1/2 story frame dwelling. During 1946, as evidenced by a Certificate of Occupancy dated July 1946, the structure appeared to have undergone alterations, but with no change in the footprint or foundation outline of the building. Sanborn map coverage dated 1951 through to the present indicates that this same structure has remained unchanged from the end of World War II to the present. It is presently used by the Korean community as a church and school (See Figures 25 and 26).

Map evidence further indicates that both Lots 4 and 86 contained small single story frame garage structures in their northeast corners. Both garage structures were constructed by 1926 based on the Sanborn Insurance map coverage. The garage in Lot 4 is no longer present based on a field inspection, the one in Lot 86 continues to the present. In addition, a small utility shed of unknown function was added to the north side of the Lot 4 building, by ca. 1960, as is depicted on a lot survey map dated May 19, 1960.

A field inspection of both lots conducted as part of this sensitivity evaluation confirmed the general pattern of structure locations and footprints indicated by the documentary and cartographic evidence. The rear of Lot 4 was wooded with mixed hardwood tree cover that ranged between 6 to 8 inches in diameter, suggesting that they represent secondary growth less than 50 years of age (See Figures 22 and 23). With the exception of a small rectangular pool (?) the rear portion of Lot 4 appears to be predominantly undisturbed by any identifiable subsurface impacts within the last half century (See Figure 24).

The rear of Lot 86 was observed to contain a well constructed cement driveway along the entire length of the eastern side of the lot, which widens towards the rear or north end of the parcel to a ca. 20 foot wide band of concrete (See Figure 27). The western side of the parcel behind the frame structure is exposed with traces of a ca. 3 to 4 foot wide brick walkway (?) and associated car parking features manifested as two lines of brick (See Figure 28). Based on this site visit and the historic map analysis, this northwest corner of Lot 86 appears to be predominantly unimpacted by any 20th century structural remains or activities. This undisturbed northwest section of Lot 86 is adjacent to and contiguous with the undisturbed rear portion of Lot 4.

Based on archival and cartographic evidence which document the relatively late date (ca. 1909 to 1917) of the earliest historic structures relative to the documented date for the introduction of municipal water service (ca. 1891 to 1903), the available sources suggest that the potential for encountering historic cultural resources, specifically cisterns or privies which may have existed in the rear yard areas of the parcels is very low.

B. Potential Prehistoric Sensitivity

Although the ability to project the archaeological presence of Pre Contact Native American remains in the vicinity of the proposed project area is limited by the fact that no systematic regional archaeological surveys have been conducted in Queens at least since the 1920's, if not the turn of the century. Nevertheless, surviving 19th and early 20th century accounts and official records of the New York State Museum and New York State Office of Parks, Recreation, and Historic Preservation document the presence of at least 13 and possibly 14 previously identified prehistoric archaeological sites within the areas of Flushing and College Point in Queens. As detailed below, this survey of available sources utilized two approaches for establishing the proximity of known archaeological resources to the proposed project development parcels. The first consisted of a formal report on known archaeological sites in the state files at Albany, which is of limited utility due to the fact that the state only releases generalized information in the form of large concentric circles on a USGS 7.5 minute series topographic map, which are intended to depict only the general vicinity of the sites listed in the official records. A second approach utilized original historic reports and map depictions to project the location of sites described in the 1940's, 1920's, and earlier onto an historic 19th century map which contained place names and geographical locations which were referred to in the original accounts (Conner-Dripps Map 1852).

These two approaches resulted in the identification of at least 3 prehistoric sites which can be shown to have been located between 1000 and 2500 feet from the project area. Two of these sites appear to have been located in the vicinity of Northern Boulevard, formerly a major Native American trail across Queens, and the third to the west of the project area, adjacent to a spring and what came to be known as Spring Street. All three sites were described and roughly located by Parker in the 1920's. One of his sites, Site 2, was described as a cemetery currently designated as Site 4525 in the state files, it appears to be located immediately to the northeast within 1000 to 2000 feet from the project site. Parker Site 3, described as a village and cemetery site (NYSM 4526), also appears to be located to the north and slightly east of the project site. The third site referred to by Parker was even less precisely located in his and later accounts that appears to represent a "campsite", designated NYSM 4542 in the state files, to the west of the project area. Accurate distances are difficult to establish because these generalized locations were only sufficient to establish that Native American remains had indeed been encountered within the general vicinity of this area of Queens. Accurate projections of

distance and location relative to the project area are difficult today because these descriptions were, in turn, based on earlier mid 19th century references which were also less than precise in specific locational information.

C. Recommendations

Although the cartographic and archival study of the settlement history of this section of Queens has established that the project parcels do not fall within or overlap with any known 17th, 18th, or even 19th century structure or occupation remains, the evidence does indicate that the project parcel lies adjacent to and within a block of extant 17th through 19th century remains belonging to the former Bowne estate and the Parsons Nursery (See Figures 29 through 34). Given the long term historic occupation of this area of Queens, and the general continuity in area coverage for these historic properties, a very low possibility exists that early historic remains could be encountered within the project parcel, based on only the general historic sensitivity and proximity of these generalized historic remains.

While no known Pre Contact archaeological remains have been encountered within, or immediately adjacent to, the project parcels, the general proximity of confirmed prehistoric sites to the northeast and northwest, as well as the fact that Northern Boulevard formerly served as a significant trail and transportation route for the Native Americans in this area during the Pre Contact and Contact Periods, the proximity of the project area to these identified resources suggests the possibility that comparable remains could be found within the undisturbed portions of the project lots today. Based on the scaled computer map correlations, it has been established that the rear portions of Lot 4 and the northwest section of Lot 86 have not been impacted by any identified historic or modern structures from the 17th century to the present. Given this map based reconstruction of land use history, it is the conclusion of this analysis that the application of a limited presence and/or absence testing program within these demonstrably unimpacted portions of Lots 4 and 86 would provide the basis for precluding the presence of any prehistoric or historic occupation or burial remains within these project parcels.

II. The Project Area

The proposed Flushing Manor Geriatric Center project area is located within Block 5014, on Lots 4 and 86, in the Flushing section of the Borough and County of Queens, New York. The 25.67 acre block is irregular in shape and oriented roughly east-west (See Figure 1). The block measures 1058.85 feet along its northern boundary of Northern Boulevard, 1020.11 feet along its southern boundary of 37th Avenue, 314.19 feet along Parsons Boulevard to the west, and 122.14 feet along 147th Street to the east (See Figure 13). The .56 acre project area of Lots 4 and 86 lies in the western section of Block 5014.

Lot 4, fronting Parsons Boulevard is the larger of the two, measuring 120 feet wide at the front of the lot (along Parsons Boulevard) by 178.33 feet deep and 100 feet wide at the rear. The current street address is 36-17 Parsons Boulevard. Lot 86 fronts 37th Avenue, and measures 50 feet wide by 112 feet deep. The present street address is 144-21 37th avenue. The rear 37 feet of Lot 86 lies adjacent to the southeast portion of Lot 4. The proposed Flushing Manor Geriatric Center construction will impact both Lots 4 and 86.

Both Lots 4 and 86 contain extant 20th century structures. The structure presently on Lot 4 dates to 1951 with alterations in 1959, as evidenced by the first Certificate of Occupancy dated January 19, 1951 and the latest dated May 27, 1959. This present structure replaced the first structure built on Lot 4, which was a 2 1/2 story dwelling which occupied the lot from ca. 1909 to 1949, as evidenced by Demolition Permit #140, dated September 14, 1949. Lot 86 contains a 2 1/2 story structure, first depicted on the 1917 Sanborn Insurance Map of Queens. The structure is currently utilized as a church, school, and dwelling. The 1992 Sanborn Insurance map shows that Lots 4 and 86 both have 1 story garages on their respective northeast corners (See Figure 15). The block and lot history of the project area will be discussed in detail below.

The historic map and atlas research has shown that the project area block number and its boundary street names have changed through time. Modern Block 5014 was first designated as Block 72 on the 1903 Sanborn Insurance map. It remained as such until 1926 when it was labeled Block 834 on the E. Belcher Hyde Atlas of Queens County. Block 5014, as it is currently known, is first designated on the 1934 Sanborn Insurance map. Modern Northern Boulevard was formerly known as Broadway, and was, by several historic accounts, a Native American path or trail at the time of contact with European settlers (Bolton 1922:183). The earliest (1852) historic map showing the project area and vicinity depicts Broadway as a major thoroughfare (See Figure 2). The designation of Northern Boulevard first appears on the 1917 Sanborn Insurance map. Parsons Boulevard was known as Parsons Avenue, first depicted in 1854 on the Parsons sale plan of the Bowne Estate. It remained as such on subsequent maps until ca. 1917. Modern 147th Street was known as Percy Street from its earliest depiction in 1854 until ca. 1917. Present day 37th Avenue was laid out as Washington Street. Washington Street, to the west of the project area block dated to the mid 19th century as it is depicted on the 1852 Conner-Dripps map. Washington Street between Parsons Avenue and Percy Street is not a through street as late as 1891; it is not yet mapped on the Wolverton Atlas of Queens, as future Blocks 5014 and 5015 to the south appear as one. By 1903, according to the Sanborn Insurance map, Washington Street was laid out to Percy Street and contains a 6 inch water main.

III. The Historic Cartographic Analysis

Despite the density of 20th century street grids, residential, and commercial development within the Flushing area today, and the intensity of late 19th and early 20th century alterations to the historic environmental setting, both the history of human occupation and the landscape history of Flushing can be traced with some clarity back to the 17th century. Many of the modern streets and avenues cross the north-south, east-west alignment of the 20th century grid based street system at odd angles, and in fact, represent the former colonial era roads and in some cases Native American trails, such as Northern Boulevard, which transected the town of Flushing (Bolton 1922).

Major fresh water streams, which in addition to a series of freshwater and mineral springs mapped in detail on the 1852 Conner-Dripps map, provided both fresh water for the historic settlements, and power for late 18th and early 19th century water powered mills along the course of the streams (See Figure 37). In addition to the primary north-south courses of Flushing Creek, segments of which are still visible next to Shea Stadium, two major tributaries flowed south and east with confluences on the eastern side of the creek. The northernmost of these streams ran from the north through the extensive meadowlands which separated College Point from the main settlement of Flushing. This tributary flowed directly into Flushing Bay near the mouth of Flushing Creek, and was formerly associated with a grist mill in the mid 19th century on the west side of what is now College Point Boulevard, formerly Lawrence Street.

A major stream on the western portion of Flushing consisted of a tributary known as Mill Creek, which joined Flushing Creek through Kissena Lake (a mill pond) which is now the property of the Queens Botanical Garden. This major tributary was significant in both Pre Contact and historic periods, and was the focus of what appears to represent a series of prehistoric site locations. Additionally, this major tributary formerly provided water power to at least three historic mills, one in the approximate setting of the Van Wyck Expressway at its confluence with Flushing Creek, and the other two, known as the Upper and Lower Mills, 1.5 miles to the east, on the edge of Kissena Lake.

In addition to these primary fresh water sources, the landscape in the mid 19th century was dominated by extensive tracts of nursery and garden plots, and by large areas of tidal marsh, or meadowlands, which bordered Flushing Creek and extended to the north between Flushing Bay and Powell's Cove forming an isolated peninsula or near island at College Point. When plotted relative to the 19th century topography, the identified prehistoric resources are consistently found concentrated at the headwaters of these protected zones, associated with to the fresh water streams, but more importantly in association with, and next to, the former extent of the tidal marshlands (See Figure 37).

The earliest historic map clearly depicting the project area and its surroundings is the 1852 Conner-Dripps map, published by Matthew Dripps, showing roadways, streams, marshlands, springs, property owners, and acreage (See Figure 2). The Flushing Manor Geriatric Center project area lies within a 70 acre tract of land designated "Commercial Garden & Nursery of Parsons & Company", with "Bowne Farm" also labeled. The boundary of this tract to the north, which is the approximate route of modern Northern Boulevard, is labeled "Flushing and Bayside Plank Road" and "Broadway". To the north of Broadway is a 45 acre tract labeled "Sam B. Parsons Greenhouses Parsons & Co Nursery". Nursery related roads and/or paths and buildings are present only on the extreme western end of the 70 acre tract, off Bowne Avenue. The project area itself appears to be within the wooded area of the nursery. Parsons Avenue and Percy Street are not yet laid out, and Washington Street ends at Union Street to the west, with only a track shown through Bowne Avenue, which is also west of the project area.

The 1854 "Map of the Bowne Estate, Flushing, near New York for sale by Parsons & Co", shows an area south of Broadway to the south of Matlock Street extending from Union Street on the west to just east of Murray Street on the east (See Figure 3). The estate sale area is much larger in area than the 70 acre tract labeled "Bowne Farm" on the 1852 Conner-Dripps map. The estate is divided into large and small lots, and a street grid, probably proposed, is indicated. Parsons Avenue and Percy Street are mapped, however, Washington Street (37th Avenue) is not depicted through to Percy Street. Liberty Street (38th Avenue) is mapped and forms the southern boundary of future Block 5015, one block south of the project area Block 5014. No existing structures are shown on the project area block which has been divided in five large parcels. The "Commercial Garden & Nursery of Parsons & Co" is shown to be limited at this time to the block just west of the project area block.

The 1873 F.W. Beers Atlas of Queens shows that Washington Street has not yet been laid out from Parsons Avenue to Percy Street. Broadway, Parsons Avenue, and Percy Street are, however, mapped by this time. The project area block (future Block 5014) therefore, is shown as a large block bounded on the south by Liberty Street (38th Avenue) which includes future Block 5015. This large block is shown to be divided into four large parcels owned by Samuel and R. Parsons and Mary B. Parsons. One structure is shown centrally located on the western half of the block, on the land of Samuel and R. Parsons. It appears that this structure is located within the future route of Washington Street (See Figures 16 and 17).

The 1891 Wolverton Atlas of Queens shows much the same street grid configurations as seen on the 1873 Beers atlas. The Wolverton atlas, however, has omitted the route of Percy Street from Liberty Street north, across Broadway, and beyond. The eastern boundary of the project area block, however, is the same as the eastern property line of the lot owned by J.B. Parsons in 1891. Washington Street has not yet been laid out east

of Parsons Avenue and the project area block is still part of a larger tract including the future block to the south. This large block is in 1891 divided into five parcels owned by A.B. Crane, Mary B. Parsons and J.B. Parsons. The project area is located on the northern portions of the lots owned by A.B. Crane and Mary B. Parsons. No structures are shown on these portions of the lots, although structures are depicted on the portions of these same lots which will become Block 5015, south of the project area Block 5014 (See Figures 6 and 7).

The 1903 Sanborn Insurance Map of Queens first shows Washington Street through from Parsons Avenue to Percy Street, dividing the project area block (Block 72) from the block to the south (Block 73). A 6 inch water main is indicated for Washington Street at this time. Broadway contains a 12 inch main, Parsons Avenue an 8 inch main and Percy Street a 6 inch main. The project area Block 72 is divided into five lots, designated Lots 1, 4, 14, 32, and 40. The project area is located within portions of Lots 4 and 14. No structures are present on the block except for a 2 1/2 story dwelling on Lot 1, which is not part of the Flushing Manor Geriatric Center project area.

The 1904 E. Belcher Hyde Atlas of Queens shows the same Block 72 lot configuration and street grid as the 1903 Sanborn Insurance map with the additional information of lot dimensions and property owners. Lots 1, 4, 14 and 32 are owned by Mary B. Parsons. Lot 40, the easternmost lot of the block, is owned by J.B. Parsons. Future project area Lots 4 and 86 are owned by Mary B. Parsons. No structures are shown for the project area parcel (See Figure 8).

The project area Lots 4 and 86 are first depicted in their modern configurations on the 1909 G.W. Bromley Atlas of Queens. Lot 4, fronting on Parsons Avenue, measures 120 by 178 by 100 feet. A frame dwelling is shown for the first time, occupying the front portion of Lot 4. Lot 86, fronting Washington Street, measures 50 by 112 feet. It was formerly the extreme southwest corner of Lot 14. Lot 86 is vacant at this time (See Figure 9).

The 1917 Sanborn Insurance Map of Queens shows considerable development along Washington Street. Lot 86, first appearing ca. 1909 now contains a 2 1/2 story frame dwelling. Lot 4 also contains a 2 1/2 story frame dwelling with 1 story extensions on three sides. The rear yards of both Lots 4 and 86 are vacant. Modern street names as well as addresses are shown for the first time on this 1917 map. Lot 4 is designated 20 Parsons Boulevard (Parsons Avenue) and Lot 86 is designated 272 37th Avenue (Washington Street). The block number is still 72 (since 1903). At this time, Northern Boulevard (Broadway) and Parsons Boulevard are 80 feet wide and 37th Avenue and 147th Street (Percy Street) are 60 feet wide (See Figure 10).

The 1926 E. Belcher Hyde Atlas of Queens shows considerable additional development of the project area block, now redesignated Block 834. Project area Lots 4 and 86

still contain 2 1/2 story frame dwellings, with the structure on Lot 4 now showing an addition to its north wing. Both lots now contain 1 story frame garages in their formerly vacant rear yard areas, in their respective northeast corners. Northern Boulevard has been widened to 100 feet by 1926, while the street widths of Parsons Boulevard, 37th Avenue and 147th Street remain the same as shown in 1917 (See Figures 11 and 12).

The 1934 Sanborn Insurance map shows the same structures on both Lots 4 and 86; 2 1/2 frame dwellings with 1 story automobile garages at the rear of the lots. Block designations and addresses have been renumbered by 1934. The block appears as modern Block 5014 for the first time on this map. Lot 4, formerly 20 Parsons Boulevard is now 36-17 Parsons Boulevard. Lot 86, formerly 272 37th Avenue, is now 144-21 37th Avenue. These are the present day street addresses for the project area lots.

The structure occupying Lot 4 has undergone major structural alterations based on the City of New York Department of Housing and Building Records furnished by Environmental Project Data Statements Company (1993). In 1949, the 2 1/2 story frame dwelling on Lot 4 was demolished by the owner of the property, as evidenced by Demolition Permit Application No. 140 dated September 14, 1949, and Demolition Permit No. 5703 issued September 20, 1949. This structure, which was first depicted on the 1909 Bromley map was described on the demolition application as a 9 room, 3 story, 30 feet in height frame dwelling measuring 40 feet in front, 40 feet in the rear and 35 feet deep. The application also states that the reason for demolition is, "public improvement", and that it will be replaced by a new building.

A 1 story structure was then built on Lot 4, as evidenced by Certificate of Occupancy No. Q 70289, dated January 19, 1951. The building is described as a 1 story frame residence, 21' 8" in height, completed on October 2, 1950, and incorporates an on-ground cellar for storage and a first floor 1 family dwelling, doctor's office and two car garage. The 1951 Sanborn Insurance map indicates a 1 story concrete block building occupying Lot 4 (See Figure 14).

In 1959, alterations were again completed on the structure in Lot 4. Certificate of Occupancy No. Q 129093, dated May 27, 1959 indicates a second story was added (Alteration No. 2156/57) by May 8, 1959. The structure now incorporates an on ground cellar with boiler room and storage, a first floor dwelling, doctor's office and two car garage, and a second story dwelling (See Figures 16 through 18).

A survey map of Lot 4, by Walter I. Browne, City Surveyor, dated May 19, 1960 was furnished by Environmental Project Data Statements Company (1993). This survey, which post dates the most recent Certificate of Occupancy relating to the structure on Lot 4 indicates a 1 story concrete block and stone building as occupying the lot.

The structure occupying Lot 86 has also undergone alterations since it was first constructed. The 2 1/2 story frame dwelling is first depicted on the 1917 Sanborn Insurance Map of Queens. A 1946 Certificate of Occupancy indicates that alterations were completed on July 2, 1946, however, the building height is given as 2 1/2 stories, 30 feet, incorporating a cellar with a boiler room, two family dwellings on the first and second floors and a bedroom on the third floor. It does not appear that these alterations affected the footprint of the extant building. The 1951 Sanborn Insurance map still depicts the structure as a 2 1/2 story frame dwelling in the same location (See Figure 14).

A survey map of Lot 86 by Joseph Nicoletti, Professional Land Surveyor, dated March 12, 1985 identifies the structure as a 3 story frame dwelling. At the rear of the lot is a frame garage, first depicted on the 1926 E. Belcher Hyde map.

The 1980 Sanborn Insurance Map of Queens shows that the footprint of the structure on Lot 86 has changed since the 1951 depiction after demolition of the ca. 1909 dwelling and rebuilding. A 2 story concrete block construction extension has been added to the south wall of the structure adjacent to the ca. 1951 attached two car garage. The footprint of the structure is now almost on the lot line dividing Lot 4 from Lot 1 to the south. The structure on Lot 86 appears unchanged, a 2 1/2 story frame dwelling. Both lots have 1 story garages at the rear northeast corners (See Figures 16 through 18).

The 1992 Sanborn Insurance Map of Queens shows no change in the footprints of the structures on Lots 4 and 86. The structure on lot 4 is designated "offices" and the former dwelling on Lot 86 is identified as "church". The 1 story garages are present on both lots, unchanged since ca. 1926 (See Figure 15).

IV. The General History of Flushing

The borough of Queens was first settled by the Dutch ca. 1639, as part of the lands of New Netherland. Director General Kieft of the Dutch West India Company purchased from the Native American inhabitants title to the lands comprising what is now the eastern half of Queens, including the townships of Flushing and Jamaica (Ellis 1966; Kearns and Kirkorian 1992). Local historical accounts refer to this area as having formerly belonged to Native American inhabitants who were referred to as the "Matinecocs" by the earliest Dutch settlers.

Settlement began at Flushing Bay, a shallow inlet of the East River bordered by extensive salt meadows and tidal marshes. By 1643, "Vlissingen" or Flushing was established, and it received its formal charter in 1645 (WPA 1982:54). The place name "Vlissingen" comes from a town in the Zeeland Province of Holland and translates to "salt meadow" in Dutch. A cartographer, native to Vlissingen in Zeeland sent by the Dutch West India Company to record bays and creeks on Long Island in 1628 reportedly gave

the general area and bay their names. "The mapmaker came upon lands and a body of water surrounded by salt marshes and promptly named them Vlissingen and Vlissingen Bay." (Waller 1899:15 in Kearns and Kirkorian 1992). The Dutch place name Vlissingen eventually became "Flushing".

The Flushing area was open to settlement by the English as well as the Dutch during the 1640's. New Netherland was badly in need of settlers since the disastrous Indian Wars of the 1640's. The most serious of these armed conflicts between the New Netherland colonists and the Native Americans was known as Kieft's War of 1643 (Kearns and Kirkorian 1988). Many English colonists left New England and subsequently settled in New Netherland in the 1640s. Some left New England for religious reasons, having found the Puritan Orthodox atmosphere of the colonies too restrictive, while other "heretics" fled, finding their positions dangerous (Kearns and Kirkorian 1992). When, in 1645, Director General Kieft granted the patent of 16,000 acres east of Flushing Creek, all but one of the original patentees were English emigrants (Ibid). Thus, Flushing or Vlissingen receiving its formal charter by the Dutch Governor, was one of several English towns founded in New Netherland. Other such towns in present day Queens County were Hempstead, Newtown, and Jamaica. The English had, therefore, well established settlements in Queens prior to the takeover of New Amsterdam and New Netherland by the English in 1664.

Under English rule, "Governor Thomas Dongan and the first elected Assembly in New York established three counties on Long Island in the 1680's." (Luke and Venables 1976:2). Queens County was organized in 1683, one of the twelve counties making up the British Province of New York, which was named in honor of Catherine of Braganza, Queen of Charles II (WPA 1982:557). Flushing Township was also incorporated in 1683.

The formal transfer of all Native American holdings in the Whitestone and Flushing areas to the European colonists occurred in 1684. As of this date, all lands in these areas of Queens were acquired through treaty which encompassed all rights and privileges to "...hunting, hawking, fishing, fowling, feeding marshes, marsh grounds, woods, meadows, underwoods, waters, ponds, liberties, franchises and permissions to the buyers and successors." (Linton 1933). No reimbursements were explicitly mentioned, except for one concession which was granted, "...that the Indians... have reserved the liberty to cut bul-rushes (in the tidal estuary marshes) for them and their heirs forever in any place within the tract of land." (Ibid). By 1724, the local Native American population had been both drastically reduced and stripped of all lands, and/or access to them, making Flushing an exclusively European settlement (Grossman 1993).

From the 1680's until the American Revolution, the town of Flushing grew steadily, with the village of Flushing at its center. Its economy was primarily agriculturally based, and thriving due to the favorable topography, fertile soil, and long growing season. "Before the Revolution, Flushing was already famous for its wheat production and

farmers tended their animals and crops, producing corn, beef, pork, butter, and staves, which they exchange for liquors and merchandise..." (Munsell 1882:82). Shellfish, such as oysters and clams were plentiful in Flushing Bay and along its extensive border marshes, and were an additional valuable economic resource. With New York City as a large market fairly accessible along adjacent waterways, the town's economy flourished during the 18th and well into the 19th century.

The fertile soils of Queens proved to be an invaluable resource for another industry - horticulture, for which the area became famous. Flushing was the site of what has been described as the first commercial nursery in the United States, "The Old American Nursery" founded ca. 1725 to 1737 by Samuel Prince (WPA 1982). These gardens were so famous for their fruit, nut, and shade trees by the time of the American Revolution, it has been reported that when British troops under General Howe occupied Flushing in the late summer of 1776, they were ordered not to damage the nursery (Ibid; Munsell 1882). In 1793, Samuel Prince's grandson William bought additional property in Flushing and founded the Linnaean Nursery. The Old American Nursery was being run by William Prince's brother Samuel (also a grandson of the founder, Samuel Prince). Eventually these two established nurseries combined (Kearns and Kirkorian 1992:13). During the 19th century, numerous other commercial nurseries were established including Samuel Parson's in 1838 (Ibid). These tracts of nursery and garden lands can be readily seen on the 1852 Conner-Dripps map (See Figure 2). The Flushing Manor Geriatric Center project area is located within the lands of the former "Commercial Gardens and Nursery" of Parsons and Company.

The town and village of Flushing continued to prosper during the decades of the 19th century. The village of Flushing was incorporated in 1837. Improved transportation links with the rest of Long Island as well as New York City played an important role in the continued development and population growth of Flushing. Ferries, turnpikes, stages, and eventually the railroad in 1854 spurred the growth of the area. The town continued to grow throughout the 19th century, with many country homes being erected in the pleasant countryside of Flushing with its numerous nurseries and low hills. Despite this "rural atmosphere", the proximity of Brooklyn and New York City was to have an effect on the commercial development of the area. The area around Flushing Creek, still an important waterway during the 19th century, became a stockpile and shipment point for building materials, coal, and grain. "These businesses, founded in the 1850's and 1860's, gave the lands along the shore of Flushing Creek an industrial aspect." (Munsell 1882:106 in Kearns and Kirkorian 1992).

In 1898, the county of Queens became the Borough of Queens, City of New York by the Act of Consolidation.

V. Potential Prehistoric Sensitivity

The pre European history of Native American settlement extends back in time over ten thousand years, from at least 8,000 B.C., through to the 17th century (Strong 1983:8). Archaeological evidence concerning the number, location, and cultural characteristics of Native American coastal occupations in this area is limited in coverage to, and predominantly reconstructed from, early to mid 20th century surveys, conducted mostly along the East River shoreline of Queens. While New York State files show only limited coverage for the area based on sites identified by Parker in 1920, other sources document a number of prehistoric sites throughout the general area of Flushing at College Point, the Whitestone Peninsula, and Flushing Bay. Four early archaeological studies, each attempting to compile and interpret a range of site location and excavation reports produced between 1900 and 1950, have, together, helped to establish the former location and distribution of a number of archaeological sites bordering the East River shore and along the fringes of the extensive tidal estuaries and meadowlands feeding Flushing Bay, Powell's Cove, and the headwaters of Little Neck Bay within the eastern section of Queens (Beauchamp 1900; Parker 1920; Bolton 1922 and 1934; Solecki 1941; Smith 1944 and 1950).

A search of the New York State Museum (NYSM) and New York State Office of Parks, Recreation, and Historic Preservation (SHPO) files for the locations of previously reported prehistoric archaeological sites in the vicinity of the project area and the Flushing area in general has yielded information on eleven sites (See Figure 37 and Table 1). Of these State designated sites, two have been cross referenced to Beauchamp 1900, eight to Parker 1920, and six to Bolton 1922,1934. The locational information provided by the state is very general, noting that the archaeological finds, burials, or sites were previously reported somewhere within a large circle drawn on the USGS Flushing 7.5 minute series quadrangle map. There are four such locations which appear to be within a mile of the project area (See Figure 36 and Figure 37.)

The earliest of these aboriginal settlement studies was published by Beauchamp in 1900, and treated Queens County as the first and western most section of the Long Island study areas. As such, many of his opening comments in his discussion of Queens were meant to hold for the rest of the Island as well. In addition to distinguishing three different archaeological sites or areas within Whitestone, between Little Neck and Flushing Bay, Beauchamp also characterized this north shore section of Long Island as a zone of "frequent shell heaps" where natives were "...feasting on shellfish in the summer but drying large quantities of oysters and clams for winter use" (Beauchamp 1900:137). He noted that Long Island was formally known as the land of shells, or shell beads, by the

local Native Americans, the "Matinecocs" according to the local Algonquian dialect (Ibid). In his summary, Beauchamp observed that while relatively few large "village" sites are known, "...in many places shell heaps continuously line the shores of the bays..." (Ibid).

At the turn of the century, Beauchamp identified three discrete archaeological areas, two consisting of burial sites (Sites 1 and 2), in the vicinity of Flushing, and a third general area (Site 3) covering the entire shore of Little Neck Bay, with a specific reference to Douglas Point near the Douglaston Rail Station. Beauchamp's first site (Site 1) was highlighted because of the 1841 discovery of eleven skeletons which were found in the "Linnaean Garden" in Flushing. Although no longer marked as such on modern maps, the 1852 Conner-Dripps map shows a "Princes Linnaean Gardens and Nursery", as well as many other gardens, on the east bank of Flushing Creek and meadowlands, south of Broadway, bordering what was then known as Lawrence St., and is today College Point Boulevard. This corresponds to the modern intersections of Sanford Avenue, and both sides of College Point Boulevard which currently runs along the eastern shore of Flushing Meadows to the west, and the Kissena Arboretum to the south.

There was, however, some discrepancy as to the location of this burial site found when reviewing the past survey literature. The discrepancy is whether or not the " 11 skeletons found in the Linnaean Garden in Flushing in 1841" (Beauchamp 1900:1) were located in the Linnaean Gardens north of Broadway (Northern Blvd.) or south of Broadway, as Prince's nursery lands were in both locations (See Figure 37). The NYSM files locate this site as # 4524, south of Broadway. Arthur C. Parker in 1920, also locates this site (his site 1) south of both Broadway and the Flushing Railroad Station, and sites both Beauchamp 1900 and Furman 1874 (See Figure 35a). Reginald P. Bolton in 1922, however, locates this site in the "Linnaean Gardens" north of Broadway and the railroad tracks. "In the town of Flushing some traces of native occupancy have been recorded. There was a tract on the north side of Broadway, cultivated in the eighteenth century as a horticultural establishment, which was known as the Linnaean Gardens. Within this area skeletons were uncovered indicating its use as a burial ground." (Bolton 1922:182). This citation may relate to the same burial ground Mandeville reported in 1860 as " a burial ground of a dozen skeletons, with lead bullets, found when Linnaeus Street - the northern extension of Prince Street was opened." (Mandeville 1860:67 in Kearns and Kirkorian 1992). Beauchamp's Site 1, Parkers Site 1, and the NYSM file Site 4524 place this "Linnaean Garden" site south of Broadway (Northern Blvd.). Bolton's 1922 "Linnaean Gardens" and possible Mandeville's 1860 "burial ground with lead bullets" are located north of Broadway. For this reason, Figure 37, the prehistoric site locations plotted on the 1852 Conner-Dripps map, offers both possible site locations as A-1 south of Broadway and A-2 north of Broadway (See Table 1).

Beauchamp's second burial site described as a "cemetery" was located a mile from Flushing on the farm of "Thomas P. Duryea" (NYSM 4525). Aside from these general-

ized site identifications and locations, Beauchamp also added a caveat that, "...The Matinecocs had large settlements at Flushing, Glen Cove, and Cow Harbor." Beauchamp did not identify their location on his map, nor did any of his numbered sites correspond with any of these referenced Contact Period ethnohistoric settlements (See Figure 35).

The second of the published site distribution surveys by Arthur C. Parker highlighted the presence of nearly a mile of shoreline as being zones of shell heaps or kitchen middens (Parker 1920). Parker also mapped the location of what he characterized as four discrete Native American sites (numbered 1 through 4 on his 1920 outline map), as well as two other sites that were unnumbered but shown as a symbol representing "camp" sites on the west side of Flushing Creek, and on the east bank of Flushing Creek. Site 1 (NYSM 4524), was a burial ground located south of the Flushing Railroad Station. However, Parker's Sites 2 and 3 (NYSM 4525 and 4526), were situated in comparable terrain and denoted with his symbol for a burial ground east of the Flushing Railroad Station, north of the tracks. His Site 3, located ca. 1/4 mile to the northeast of the Flushing Railroad Station is unambiguously depicted by a "tepee" symbol as being a major village (See Figure 35). Parker did record a large site on the east shore of Flushing Bay. Designated as Site 4 (NYSM 4527) on Parker's map, he recorded the presence of both a village and a burial site situated along the northeast shore of Flushing Bay within what is now College Point. He described the site as being within the E. Platt Stratton estate within which "skeletons were found in 1861, when excavating for the foundation of Knickerbocker Hall." (Parker 1920:672) However, in addition to the text, Parker's map showed two burial and village sites, all referenced as number 4. The relative placement of this site depiction suggests that human remains were recovered in the vicinity of central College Point, and also that a major village site had been previously identified along the shore of Flushing Bay, to the south of College Point proper, formerly Strattonport (NYSM 4540). This site has been designated # 4540 by the NYSM files as a burial site, first mentioned by Arthur C. Parker in 1920. Parker's site map showed an unnumbered site, depicted by an "X", which he characterized with the symbol for a "...camp site or other indications covering small area..." on what formerly constituted the high ground bordering the north side of Flushing Creek and tidal marsh at the inlet of Flushing Bay (NYSM 4542). Finally, Parker depicted a second unnumbered and undescribed "camp" site on the western shore of Flushing Creek (NYSM 4544), and a line of middens and "traces of occupation" along the east bank of Flushing Creek, to the south of the eastern tributary which flowed through Kissena Lake (NYSM 4545). This zone of identified sensitivity correlated with the map based location of a freshwater spring on the east bank of Flushing Creek as depicted on the 1852 Conner-Dripps map (See Figure 37).

In addition to including Parker and Beauchamp's previously identified site locations, a subsequent survey of archaeological sites long the North Shore of Long Island published by Bolton in 1934 identified a new site, designated Site 128. Although roughly located in the same shoreline strip of land as Parker's general depiction of a zone of un-

differentiated midden or "traces of occupation" for this section of the peninsula, Bolton identified a discrete location on the East River which he described as a "fishing camp" based on the appearance of "shell deposits" (NYSM 4541). Bolton also identified a second site in the Whitestone area, designated Site 129, which appears to represent the same site as Parker's site 4 at College Point (NYSM 4527; See Figure 36 and Figure 37). This site is located on both maps along the protected eastern shore of Flushing Bay (Parker 1920, Plate 208; Bolton 1934:148; Pickman 1989:3). Finally, Bolton's inventory also included three other sites to the south away from the East River, two were shown next to the Flushing rail line and station on high ground, above, and to the north of, the stream leading into Flushing Bay. Designated Sites 126 and 127, they appear to be the same as Parker's original Site 3 (NYSM 4526) and "Campsite X" (NYSM 4542) in his 1920 survey. A fifth site located next to the tidal marsh of Flushing Bay on the east bank of the estuary was identified by Bolton. This is his "Linnaean Garden" site, north of Broadway as discussed in detail above.

Finally, during and following World War II, two more recent site distribution surveys were published by Smith in 1944 and 1950, and one by Solecki in 1941. Both sets of surveys re-identified some of the previously known sites, and added new site locations to the local inventory of confirmed Pre Contact period Native American sites. Smith identified three discrete sites within Whitestone between Flushing Creek and Little Neck Bay. Of these, his Site 18 in College Point was located in the same general vicinity as Parker's Site 4, and Bolton's Site 129 (Smith 1950). In his earlier survey, Smith identified a second site which he called Site 20, or the Wilkins site, which was described as being off of 14th Avenue in Whitestone (Smith 1944). As part of an earlier attempt to pinpoint its location in a previous cultural resource survey by A. Pickman, a review of Smith's original field notes established that the "Wilkins" site was actually located "...south of 14th Ave. at 142 St. in College Point." (Pickman 1989:3). The Wilkins site was located on a neck of land connecting the Whitestone Peninsula to College Point, shown on the 1852 Conner-Dripps map between marshlands. To the north, lies a marsh and Powells Cove, and to the south is a vast expanse of marsh bordering northern Flushing village. The 1852 roadway across this neck of land appears to be the route of present day 14th Avenue. South of the roadway, where Pickman has placed Smith's Site 20, are land and buildings belonging to "Wilkins". Based on excavation of 18 pits with artifacts, food remains, and pottery, Smith assigned the site to the Late Woodland Period, Bowman's Brook Phase which he dated to ca. 1100 to 1400 A.D. (Smith 1944:50). However, the recovery of shell remnants from the production of wampum, or beads has suggested to others that this site may have been occupied through the historic period and was involved with the Contact Period European and Native American production of wampum for exchange in the fur trade (Ceci 1977, Table 1).

The second new site identified by Smith was designated Site 32, or the "Clearview" site (Smith 1950). Subsequent comparison with historic maps and deeds pertaining to the

former property owners in the area provided the basis for fixing the location of the site at Willets Point Boulevard and 201st Street, on a ridge of high ground along the East River and Little Bay (Pickman 1989). The site is located parallel to the Clearview Expressway and the western shore of Little Bay, across the bay from Fort Totten. Aside from being located next to a protected cove, this site was apparently situated next to a fresh water spring, and also beside a major Native American trail which crossed the peninsula between Little Neck and Flushing Bay (Pickman 1989, and Bolton 1922)(See Figure 37).

The files of the Nassau County Museum contain three site locations not mentioned in any of the past site survey literature discussed above. The three sites are located in College Point, north and west of the project area (See Figure 37). The first site, identified as Graham Court # 194, is also designated as NYSM site 519, using the old reference system. It is located on the east side of Flushing Bay, south of Strattonport and NYSM site 4540, between the Bay and the extensive marsh to the east. The second site, identified as Tallman's Island # 128, is located on the East River shore, on the west side of Powell's cove, in the northernmost section of College Point. The third site, identified as Powell's Cove #101, is located between 7th and 9th Avenues and 130th Street in College Point. It is on high ground to the west of the marsh bordering the west side of Powell's Cove, to the east of NYSM site 4527.

When evaluated as a group relative to the location and extent of former 19th century tidal estuary marshlands, streams, and springs which were clearly delimited on the Conner-Dripps 1852 map of Queens, each of the identified Native American sites are found situated on areas of high ground adjacent to protected inlets or shore areas beside extensive tidal coves and marsh areas or along major Native American trails. The sites were located on the edge of Flushing Creek at the head of Flushing Bay, on a protected spit of land near the mouth of the stream and marsh zone opening into Powell's cove, and finally next to a spring on the western shore of Little Bay, and finally next to a spring on the western shore of Little Bay. While extensive areas of shoreline shell midden were formerly reported by Parker along the East River shore north of Clintonville and modern Whitestone, each of the identified occupation sites can now be shown to be consistently restricted to not only the protected crux, or southern ends of coves next to either springs or streams, but also next to the tidal marshes and meadows which covered nearly a third of this section of Queens prior to being landfilled along Flushing Creek and between Powell's Cove and Flushing Bay. Thus, in addition to the seasonal exploitation of shellfish along the East River shore during the summer months, several archaeologists have postulated that the association of identified "village", "campsite", and "burial" sites with tidal marshlands also suggests the probable importance of both the shore birds which inhabited these tidal zones, and also the material value of these marsh grasses as well (Ceci 1977). As discussed above, when the Native Americans officially lost their lands to the European settlers in the 1680's, the local Native American population retained access and harvesting rights to only one resource, the tidal marsh grasses.

VI. The Potential Historic Sensitivity

A. 17th and 18th Century Land Use

As discussed above in the general history of Flushing section, settlement of the area dates to the first half of the 17th century. While no documented 17th century structures are known to have existed within the project lots or even the project block, the Bowne House, erected in 1661 by John Bowne, is standing one block to the southwest. The project area was formerly part of the Bowne Estate, then the parsons and Company Commercial Gardens and Nursery circa 1838. As seen on Figures 2, and Figures 16 through 18, no 19th century historic structures were located within the project area lots. As the first structures were erected during the early decades of the 20th century, it is unlikely that any historic period cultural resources relating to the early settlements would be encountered within the project area.

The general vicinity of the project area, as well as most of eastern Queens, was the location of activities relating to troop encampment and movement during the American Revolution. After the Battle of Long Island, Aug-Sept 1776, Flushing was occupied by three British units under General Howe. These units were the 71st Highlanders, and the 71st and 17th Dragoons. The encampment was "on a farm along Northern Boulevard between 147th and 156th Streets" (MacMaster 1961 in Pickman 1989:6). While 147th Street, formerly Percy Street, forms the eastern boundary of Block 5014, the project area Lots 4 and 86 are located on the westernmost portion of the block, circa 1,000 feet from 147th Street.

After the British units left the Flushing area in preparation for the Battle of White Plains, the area was garrisoned with Loyalist and Hessian troops. A 1776 map by Wm. Faden shows that the 6th, 2nd, and 1st Brigades remained encamped between Whitestone and College Points, well north of the project area (Pickman 1989:Fig 10). Later, during the Revolution, the 38th and 57th British Landgraf Regiment of Hessians and von Huyn's Hessian Regiment wintered at "Flushing and Whitestone". However, the locations of these encampments are not specifically identified (MacMaster 1961 in Pickman 1989:6).

B. The Historic Water Supply: Cisterns and Privies

The survey of the general economic and demographic history of the area helps to define the age and range of any potential resources which may have existed in or near the project parcel. In addition to the map and document based reconstruction of the parcel's developmental history, it is the history of the local water supply which provides one of the primary bases for projecting the potential historic archaeological sensitivity of the parcel. The date of installation of the municipal water supply, and the dates of house-to-house hookups with piped water relative to the age of any structures within a parcel can help to establish the potential presence of historic water related features. Specifically, given the

widespread use of circular stone and brick cisterns (which were generally located immediately adjacent to the roof lines of structures) for the collection of rain or well water prior to the advent of municipal water service, the timing of historic water main installation and domestic hookups, in turn, determine the potential for encountering such historic features in association with any former dwelling locations. If the documented presence of a structure pre dates the advent of piped water hookups, the potential exists for encountering such features, with the cisterns generally located next to the structures and the privies located in the rear portions of the property. If, however, the documented presence of dwellings can be shown to post date the installation of piped municipal water, the potential for encountering such features is significantly lower, aside from the separate issue of any subsequent impacts to the property.

The history of water supply in Queens was heavily influenced by the number of springs which were documented in past news accounts, local histories, and by otherwise unpublished depictions on historic maps, specifically the 1852 Conner-Dripps map. The 1852 Conner-Dripps map explicitly identified seven springs in the area which were not commonly referenced in the subsequent published accounts. Five were located adjacent to Flushing Creek and its eastern tributary, Mill Creek, which ran through Kissena Lake, one along old Whitestone Avenue, and the last near the western shore of Little Bay (See Figure 37). One spring located at the end of Spring Lane was approximately 2000 feet west of the project area. Together, these springs provided a much broader and diversified range of fresh water sources than has been commonly recognized for the area when evaluating the potential location and distribution of Native American sites and early 17th and 18th century European settlements. While not the single determining factor, this added line of information highlights the need to utilize historic map sources when attempting to project the potential archaeological sensitivity of an area, beyond the often redundant references contained in traditional accounts of prehistoric settlement history for this and other, now densely populated urban areas.

Queens was incorporated into the City of New York by an Act of Consolidation in 1898 (White 1987). Through this consolidation, the new borough was provided access to, and began to be supplied by, Manhattan's Croton System of reservoirs in the Croton, Delaware, and Catskill watersheds, all connected by 12 to 15 foot wide rock tunnels deep underground (Ibid).

Prior to the hookup with the Croton System, both for Manhattan and for the outer boroughs, the availability of, and reliable access to, potable water was both limited and problematic. The problems faced by Queens residents before the hookup of municipal water, were also faced by other areas of the metropolitan area, including Manhattan. As one account portrays, the problematic availability of a reliable water supply was inconvenient, unsavory and a clear and present health hazard up until the mid 19th century for

Manhattan, and until the 1880's for the borough of Queens. As depicted by Talbot Hamlin, in his *Greek Revival Architecture in America*, and as quoted by White in his more recent history of New York's infrastructure:

"New York's shortage of water up to the time of the completion of the Croton aqueduct [accounted for the shortage of water closets and plumbing in the metropolitan area]...Privies in the rear of the back yard, often connected with the houses by attractive wooden colonnades or trellises or porches, were standard even in large and expensive New York houses until the 1840's" (White 1987:46).

The function and domestic consequences of pre piped water supplies is further characterized by White in his *New York, A Physical History* as follows:

"Prior to the Croton's coming, water for washing and other household uses was collected through leaders from the roof, which emptied into underground backyard cisterns. Unfortunately, the nearly contiguous privy permeated the ground, sullyng these private [water] reservoirs. Drinking water was brought by itinerant vendors whose tank carts delivered door to door..." (Ibid:47).

Prior to the installation of piped water systems with house to house hookups, 18th and early 19th century dwellings in both Manhattan and Queens were characterized by the common occurrence of cisterns in association with the dwellings and rear yard privies which are now archaeological features. Because of the problem of water contamination and the aging of the water collected in a cistern, and due to the propensity for privies to fill over time, it was not uncommon for these structures to have been upgraded and replaced on a number of occasions throughout the tenure of a residential structure's history of occupation, a factor which often led to the occurrence of a number of such features, each filled with historic refuse and cultural materials relating to the period of use and abandonment. Therefore, as relatively short term receptacles of refuse and artifacts, these historic archaeological features also commonly represent a primary source of information on the cultural, ethnic, and economic status of the occupants. The documentary and map based process of reconstructing the date of initial municipal water hookup relative to the age of the historic structure therefore becomes a prime variable in determining the potential archaeological sensitivity of parcels within and adjacent to historic districts.

As stressed above, the potential presence of backyard cisterns for the collection of water can often be determined by establishing the date of the installation of municipal water hookups, relative to the age of historic structures identified within the study parcel. If the earliest historic structures pre date the installation of municipal water pipes and house hookups, the possibility for encountering cisterns and on site wells for water collection exists. If they post date, or are roughly contemporaneous with the date of municipal water supplies, the potential is significantly reduced. For this specific area and project parcel, the potential for the presence of historic cisterns is accordingly deemed to be very low.

VII. Conclusions

The earliest evidence of residential structures within Lots 4 and 86 has been established as of 1909 and 1917 respectively, as depicted on the 1909 Bromley map and the 1917 Sanborn Insurance maps. Since water lines are depicted as being in place on all four streets defining the boundary of Block 5014 by 1903 (according to the Sanborn Insurance map of the same date) the probability of encountering any cisterns or privies in the rear yard areas of these two parcels is deemed to be very low. The second identified potential for historic sensitivity is the documentation of the occupation of Flushing area by British troops during the Revolutionary War. However, historic accounts suggest that this activity was probably restricted to the area north of Northern Boulevard and east of the project area along the road to the Port of Whitestone. Therefore, the potential for encountering any cultural materials related to this activity is also considered to be very low.

Finally, numerous Pre Contact Native American sites have been identified in the general vicinity of the study parcels, with four having been identified within a one mile radius of the study area. Since the project area is located in a topographically similar setting as the other defined sites, within 2,000 feet of both fresh water and tidal marsh resources, and immediately south of a major Native American trail, the potential for encountering prehistoric cultural materials is considered high. Therefore we recommend a strategy of limited archaeological testing in the rear yard portions of Lots 4 and 86 to determine the presence and/or absence of potential prehistoric archaeological resources.

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Figure 1. Section of the USGS 7.5 minute Flushing New York Quadrangle Map (1966, photorevised 1979), showing the Flushing Manor Geriatric Center Project Area Block.

Grossman and Associates, Inc. September, 1993.

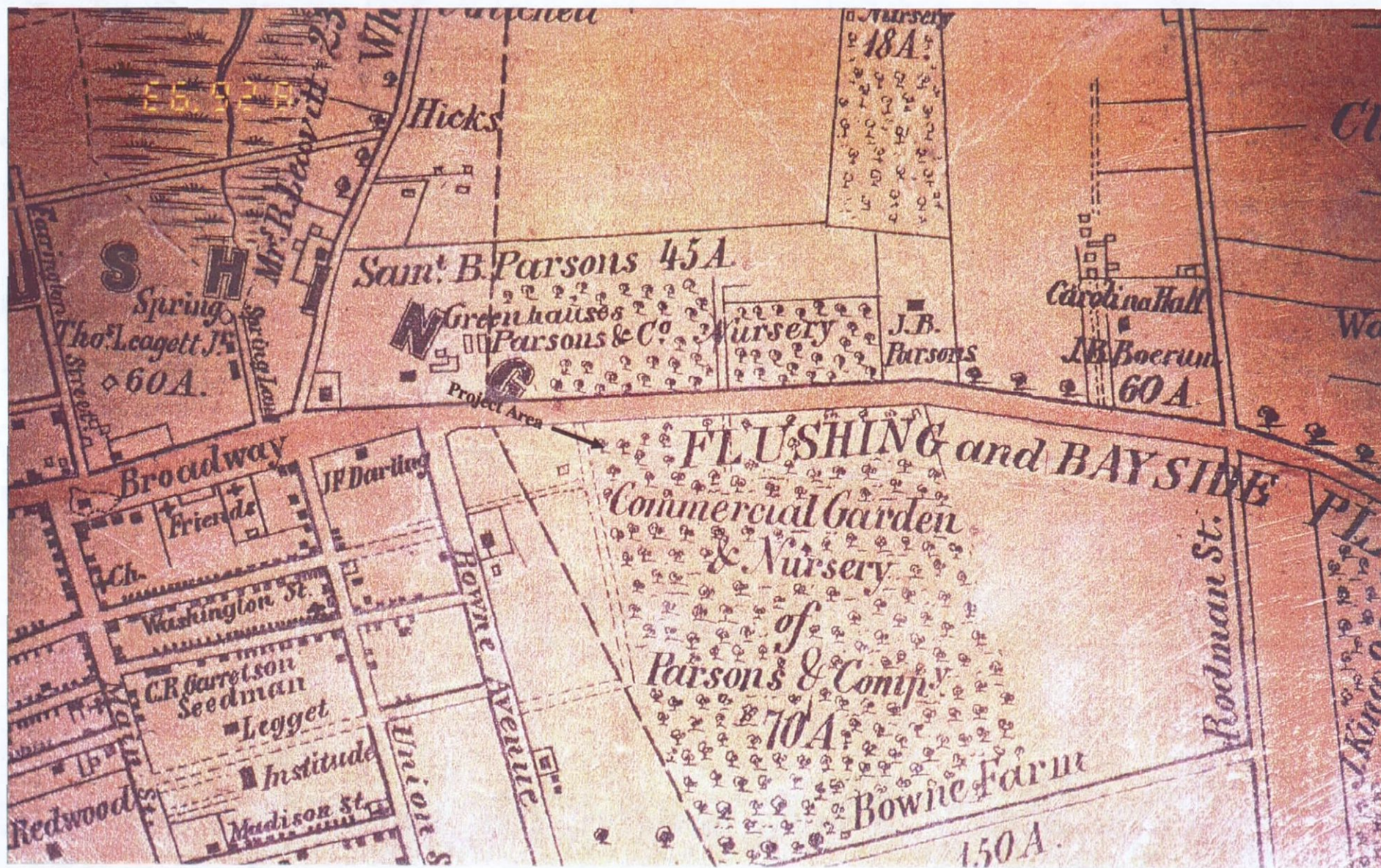


Figure 2. Enlarged Section of original 1852 Conner-Dripps Map Showing Approximate Location of Project Area, lying within the 70 acre tract of "Parsons & Company Commercial Garden and Nursery", also designated "Bowne Farm".

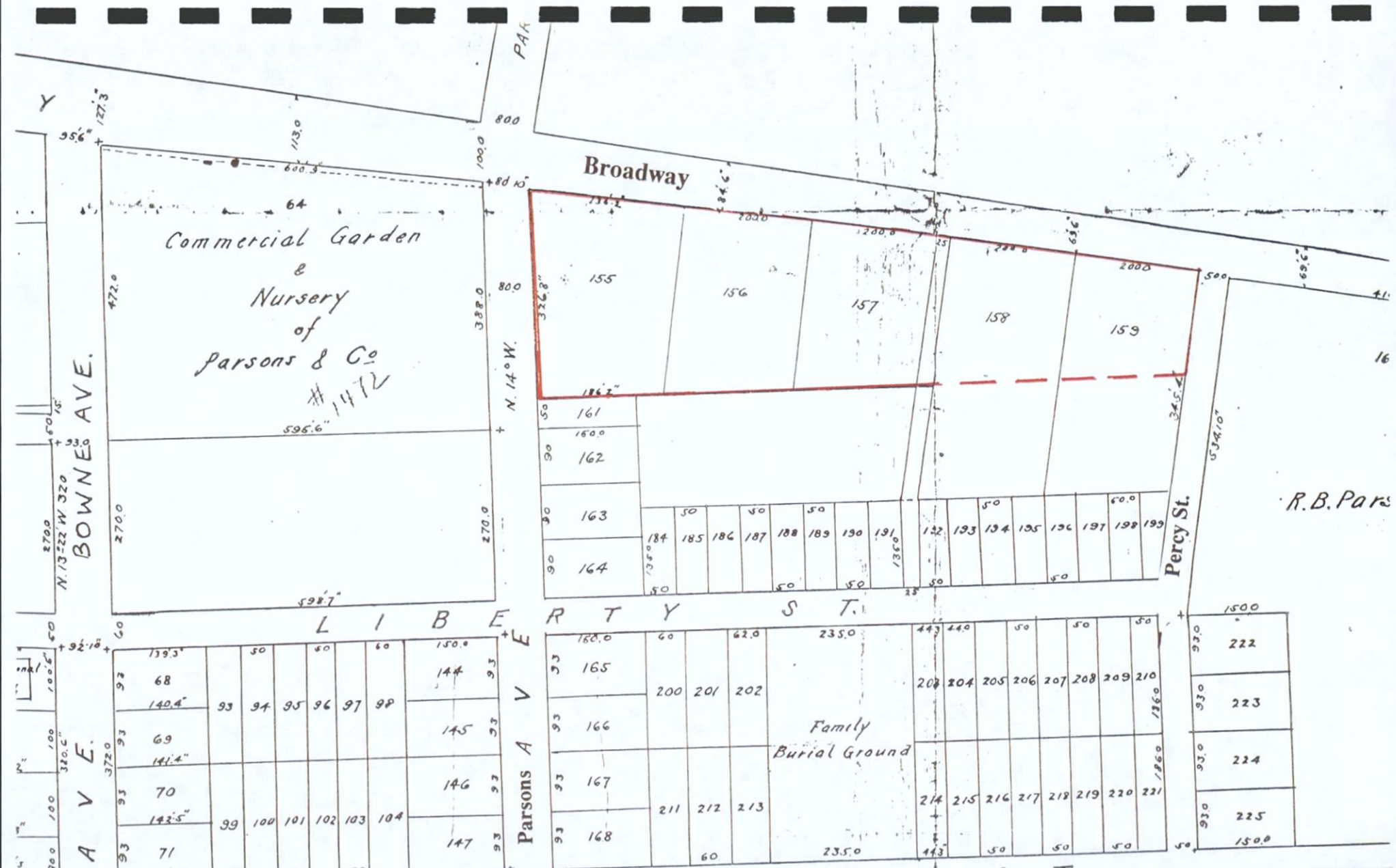


Figure 3. Section of the 1854 Daniels and Hatheway "Map of the Bowne Estate for Sale by Parsons & Co.", showing the future project area block offered as five large lots. Broadway, the northern boundary of the block is mapped, but Washington Street, the future southern boundary of Block 5014, has not as yet been laid out east of Bowne Avenue to Percy Street. Parsons Avenue and Percy Street are either proposed or actually laid out.

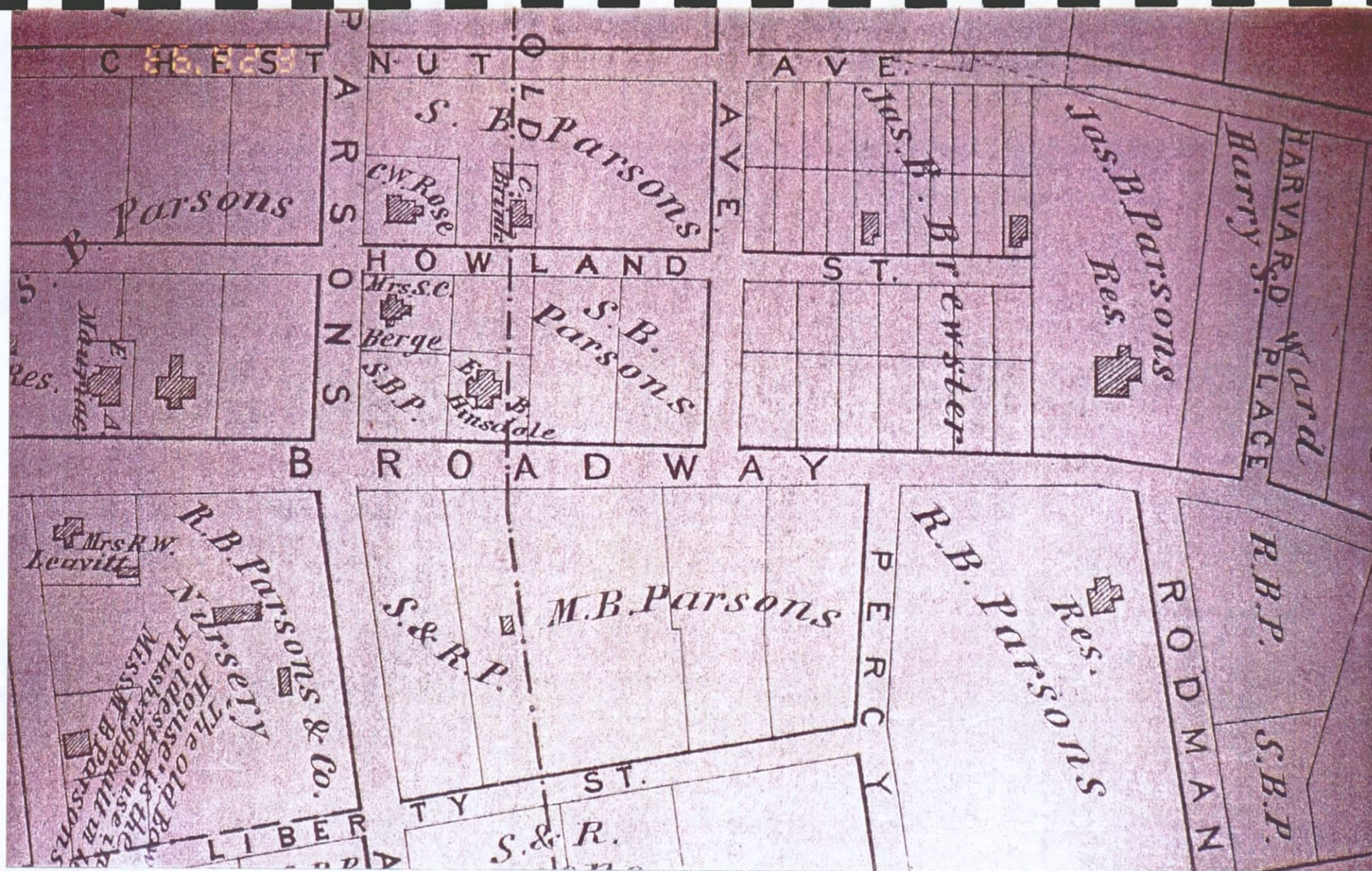


Figure 4. Section of the 1873 Beers Atlas showing lot subdivisions, structures and property owners. Washington Street has still not been laid out east of Bowne Avenue to Percy Street, defining the southern boundary of future Block 5014. One structure is shown in the vicinity of the project area, designated the property of Samuel & R. P. Parsons. This structure, however, falls within the future corridor of Washington Street (see Figure 17). The Parsons & Co. Nursery and the "Old Bowne House", are depicted on the double block to the west, across Parsons Avenue, laid out since 1854.



Figure 5. Enlargement of a section of Figure 4, the 1873 Beers Atlas showing lot subdivisions, structures and property owners.



Figure 6. Section of the 1891 Wolverton Atlas showing changed lot subdivisions, additional structure locations and new property owners. Washington Street has still not been laid out east of Parsons Ave, but is depicted to the west, between Bowne Ave. and Parsons for the first time. The structures depicted fall within the block to the south of future project block 5014; no structures are shown on the project area block parcels. (note: the section of Percy Street from Liberty Street north to Broadway has been omitted from this 1891 map.)

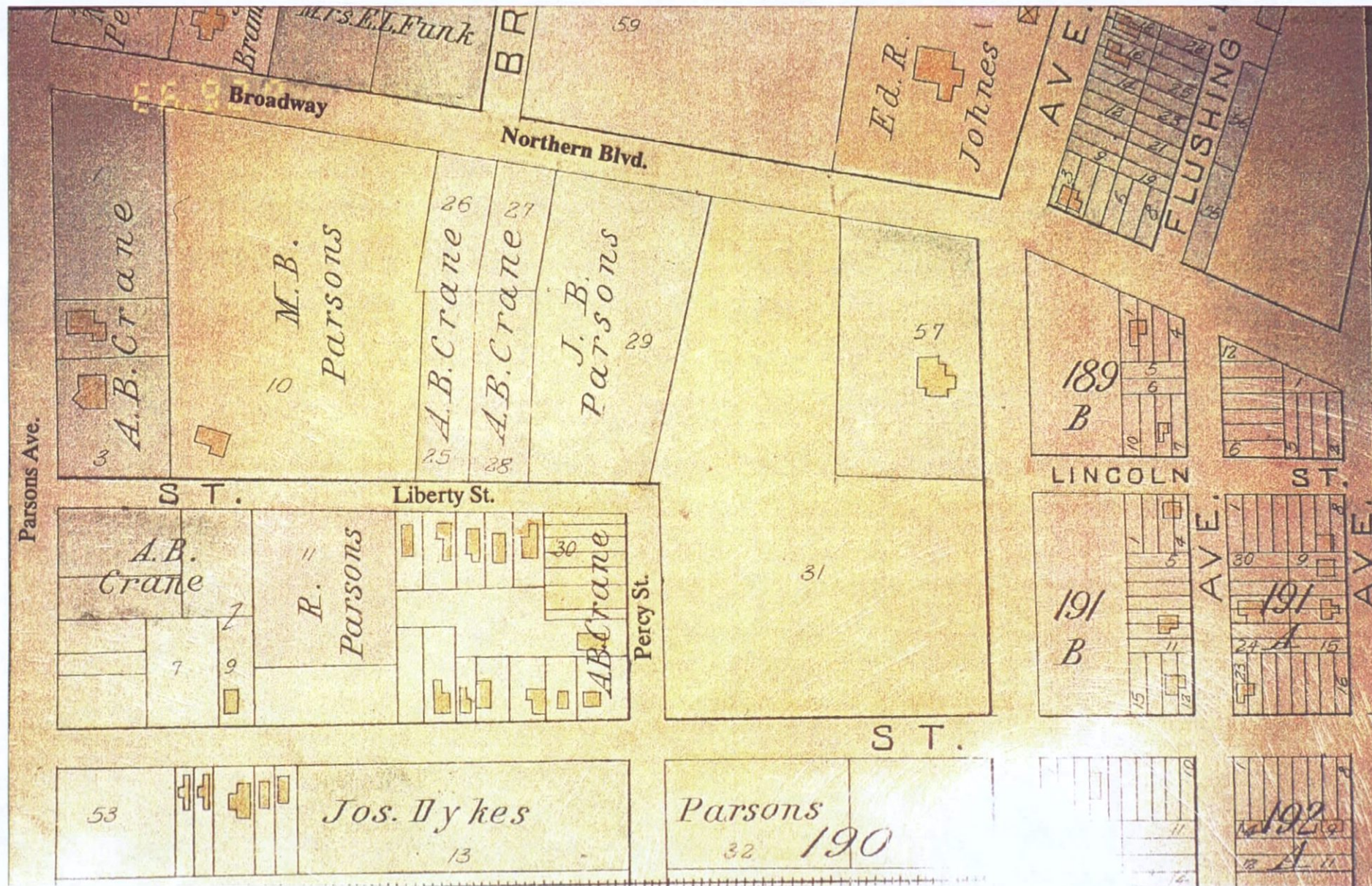


Figure 7. Enlargement of a section of Figure 6, the 1891 Wolverton Atlas, showing changed lot subdivisions, additional structures and new property owners. No structures are shown on the future Block 5014 project area.

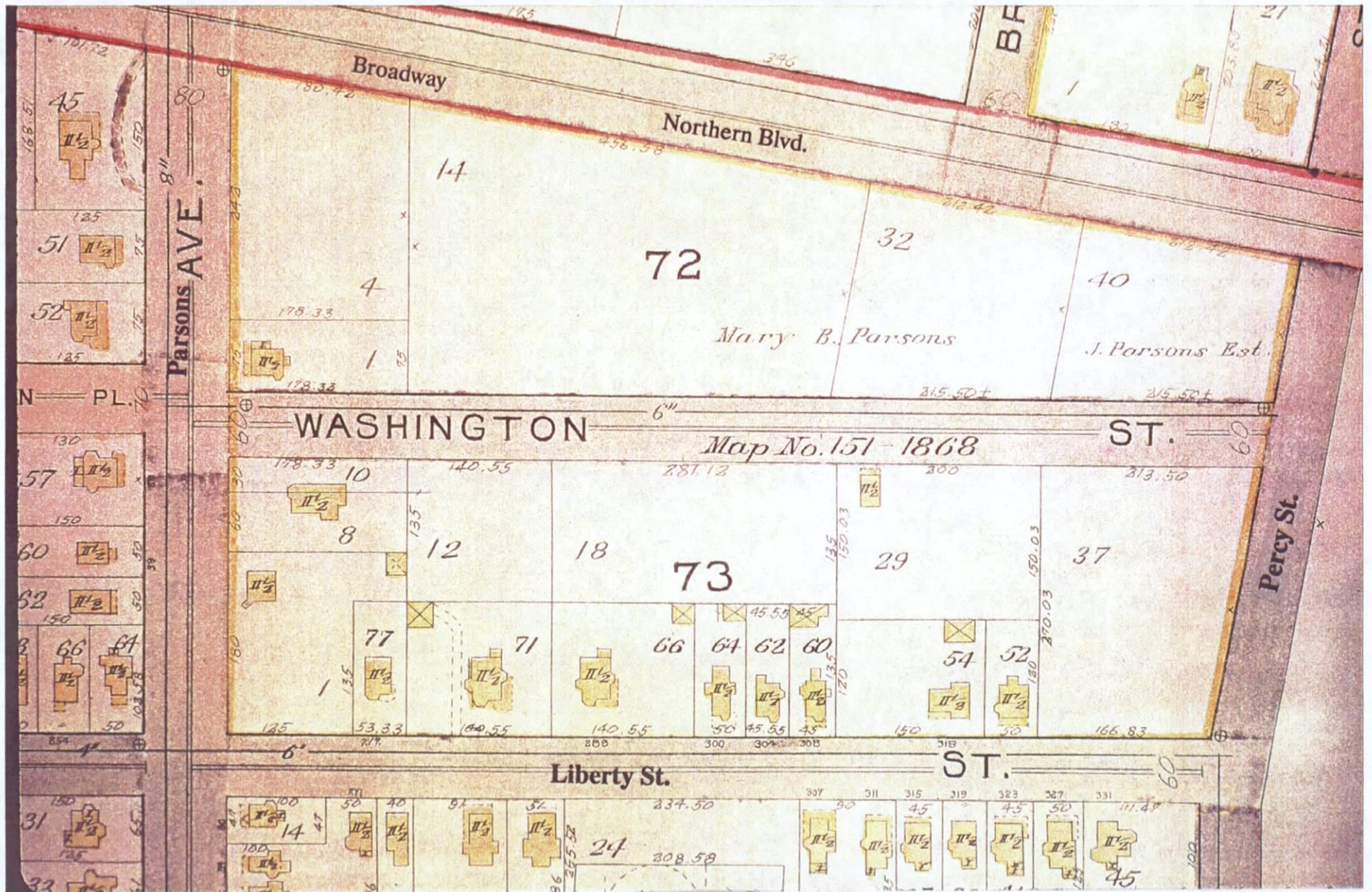


Figure 8. Section of the 1904 E. Belcher Hyde Atlas showing Washington Street, Parsons Avenue, Broadway and Percy Street defining the modern project area Block 5014, which is designated Block 72. Lot 4 is lotted, but vacant, and the portion of lot 14 which becomes lot 86 is not yet subdivided, and is also vacant.

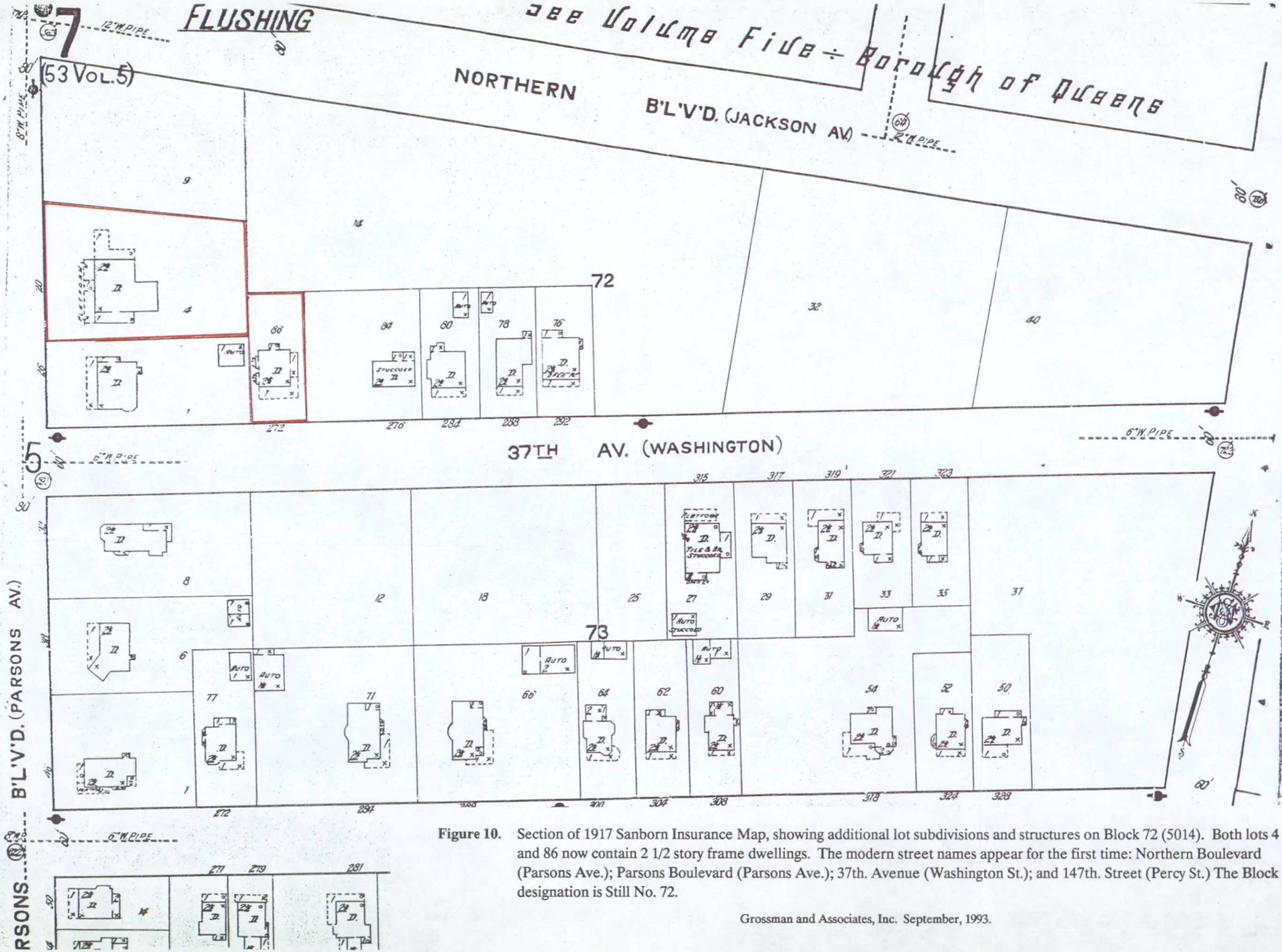


Figure 10. Section of 1917 Sanborn Insurance Map, showing additional lot subdivisions and structures on Block 72 (5014). Both lots 4 and 86 now contain 2 1/2 story frame dwellings. The modern street names appear for the first time: Northern Boulevard (Parsons Ave.); Parsons Boulevard (Parsons Ave.); 37th. Avenue (Washington St.); and 147th. Street (Percy St.) The Block designation is Still No. 72.

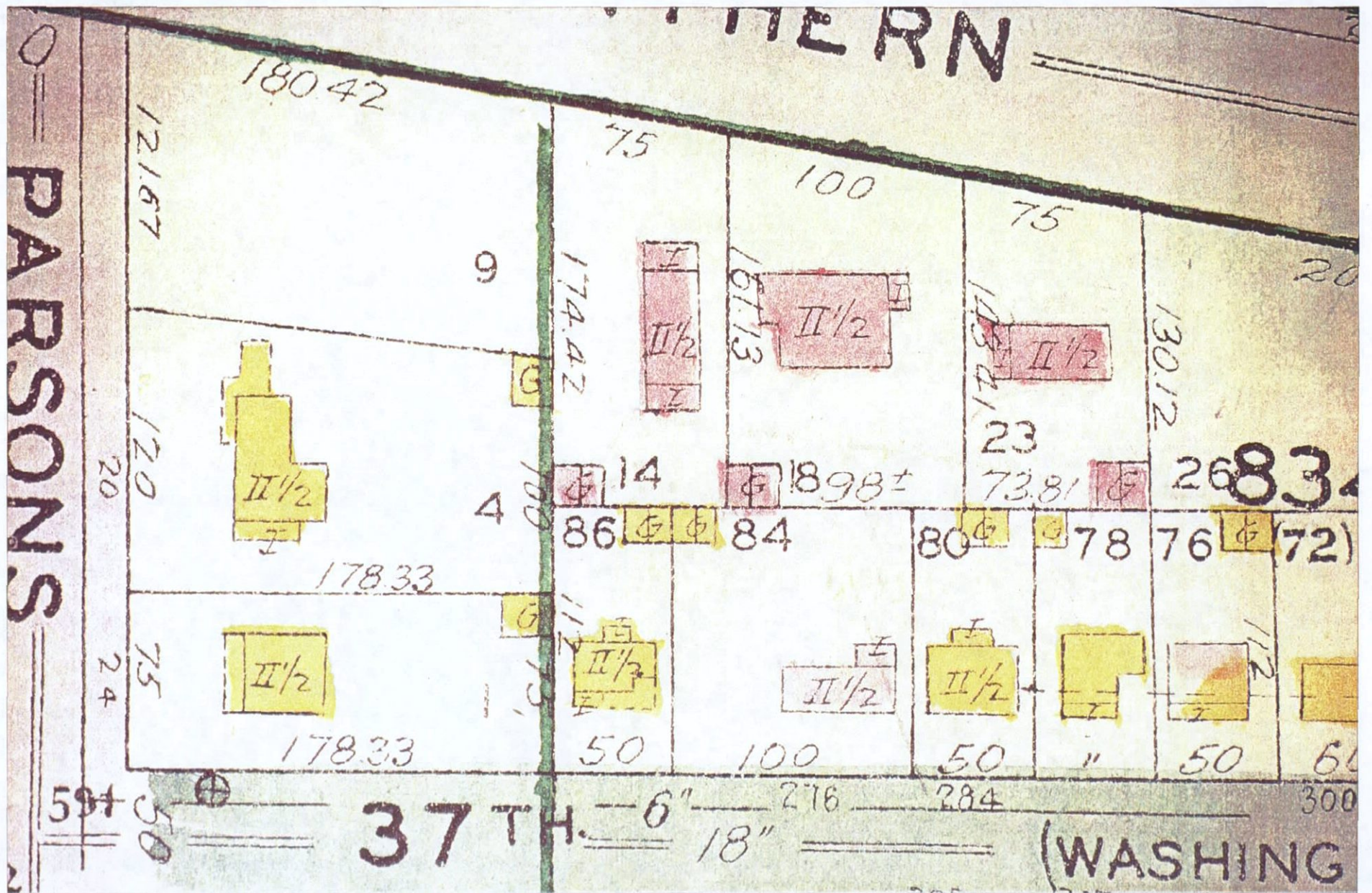


Figure 12. Enlargement of a section of Figure 11, the 1926 E. Belcher Hyde Atlas, showing frame dwellings and garages on lots 4 and 86.

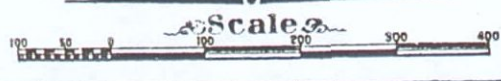
SECTION 62
of Final Maps of the Borough of Queens.
Prepared under Authority of Chapter 466 of the Laws of 1901.
Dated, New York, October 5th 1911.

CITY OF NEW YORK
Office of the PRESIDENT of the BOROUGH of QUEENS
Topographical Bureau.



Maurice Donnelly
President of the Borough of Queens.

Clifford Billmont
Engineer in Charge.



NOTE:
This map includes modifications adopted by the Board of Estimate and Apportionment prior to October 1925

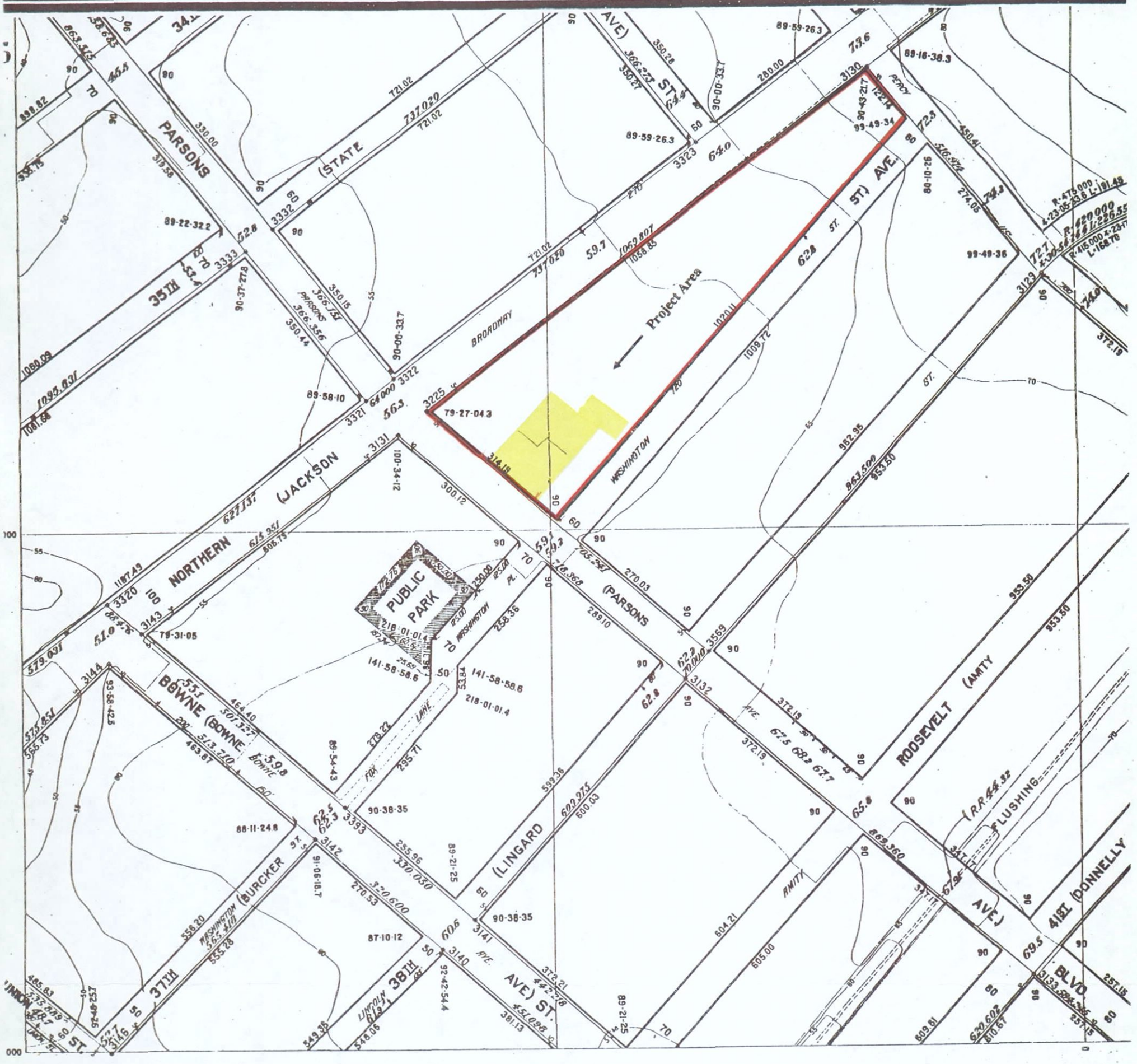


Figure 13. Portion of the Final Maps of the Borough of Queens, Section 62, Topographic Map of 1911, with modifications to 1925, showing the original (1911) topographic contour lines of the project area. The 1911 elevations shown on this map are 59.2 ft. at Parsons Blvd and 37th. Ave., and 72.3 ft. at 147th. St. and 37th. Ave. The modern elevations provided by Environmental Project Data Statements Company (1993) are 59 ft. 4 in., at Parsons Blvd. and 37th. Ave. and 72 ft. 3 in. at 147th. St. and 37th. Ave. This topographic data would indicate that little to no change in grade has occurred during the 20th Century due to construction activities on the project area block.

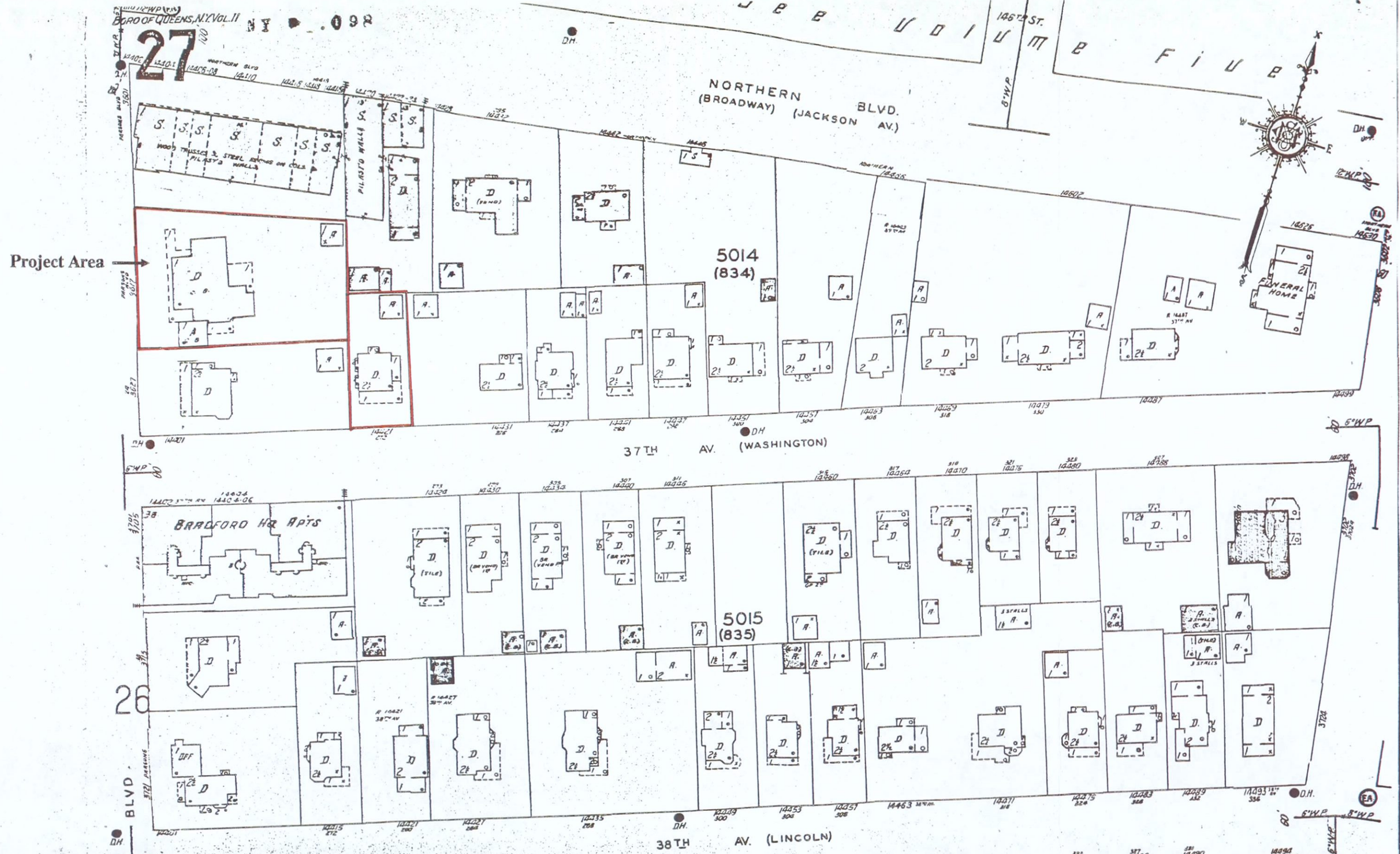


Figure 14. Section of the 1951 Sanborn Insurance Map Showing lots, structures and street addresses. Lot 86 still contains a 2 1/2 story frame dwelling with a 1 story garage. Lot 4 now contains a structure with an altered foot print; it is now a 1 story dwelling with 1 story additions on the front, back and south side. A 1 story attached garage is also on the south side. The 1 story frame garage is still present on the northeast corner. The block number is 5014.

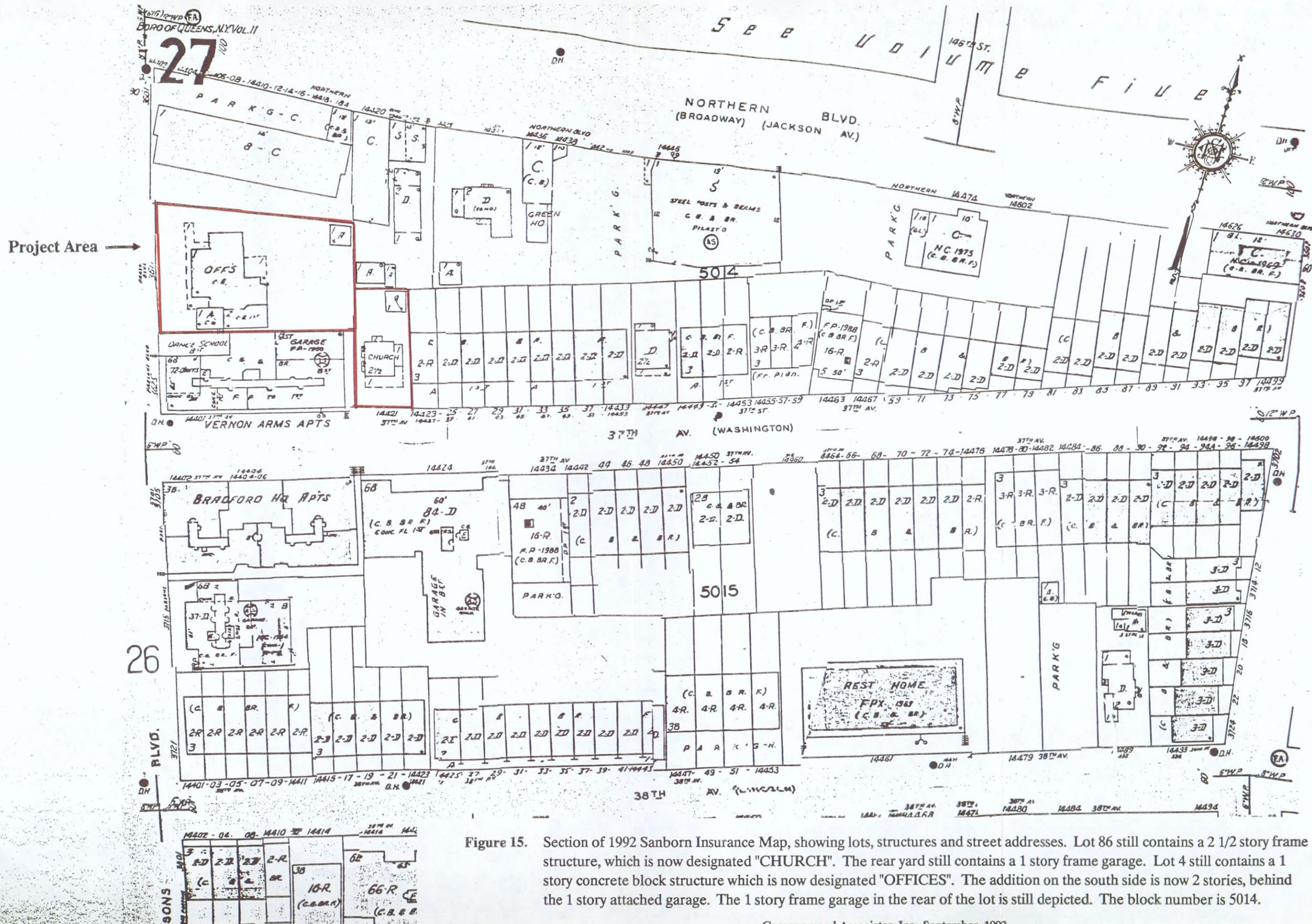


Figure 15. Section of 1992 Sanborn Insurance Map, showing lots, structures and street addresses. Lot 86 still contains a 2 1/2 story frame structure, which is now designated "CHURCH". The rear yard still contains a 1 story frame garage. Lot 4 still contains a 1 story concrete block structure which is now designated "OFFICES". The addition on the south side is now 2 stories, behind the 1 story attached garage. The 1 story frame garage in the rear of the lot is still depicted. The block number is 5014.

Figure 16.

MAP KEY

-  SANBORN MAPS POST 1951
-  SANBORN 1951 (BLDG. ON PARSONS BLVD. REPLACED)
-  E.B. HYDE 1926

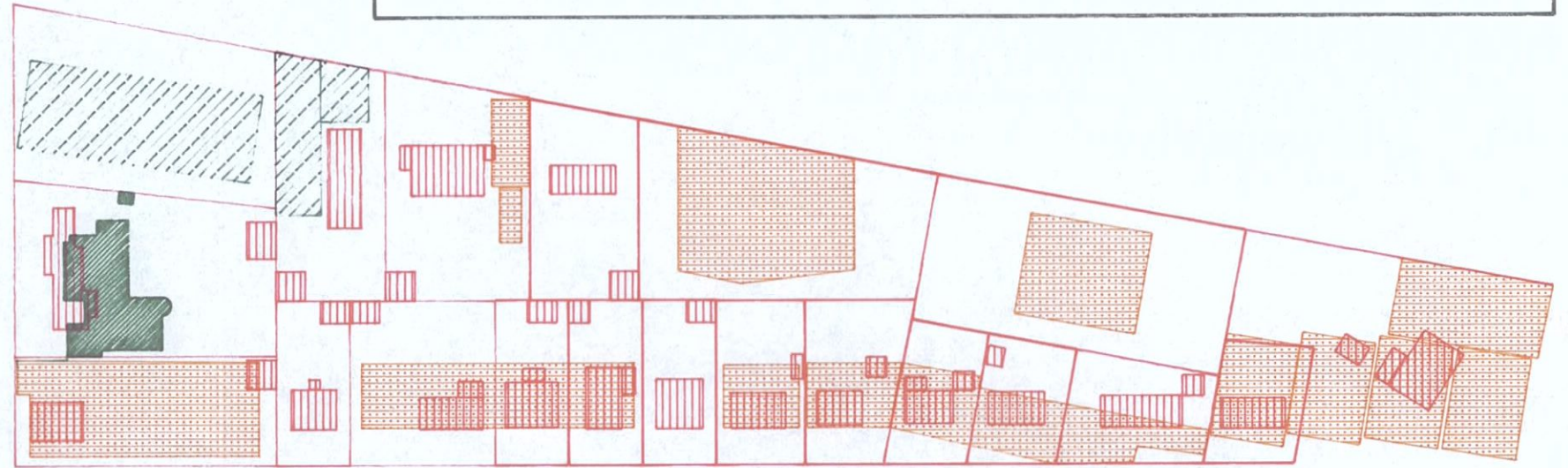
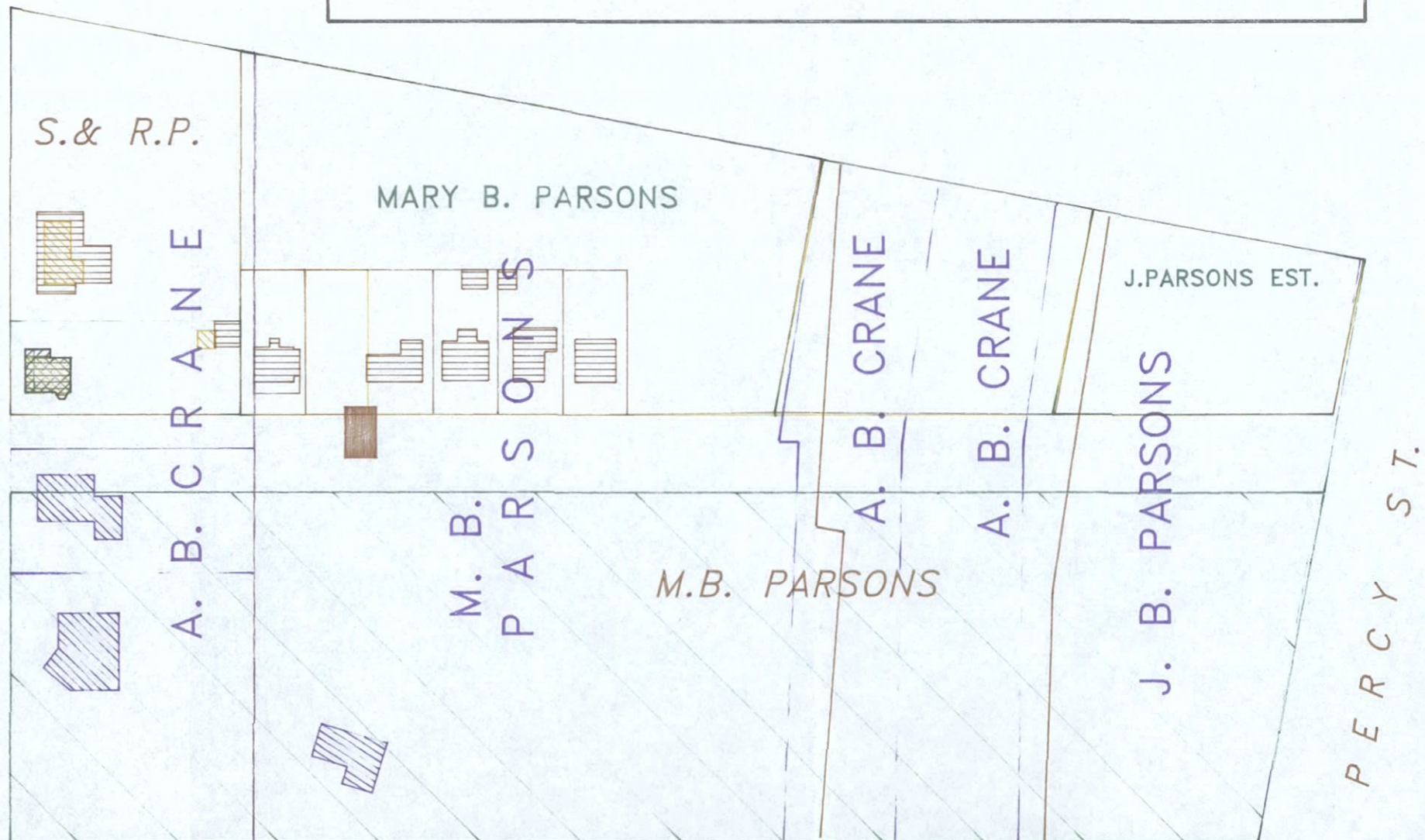
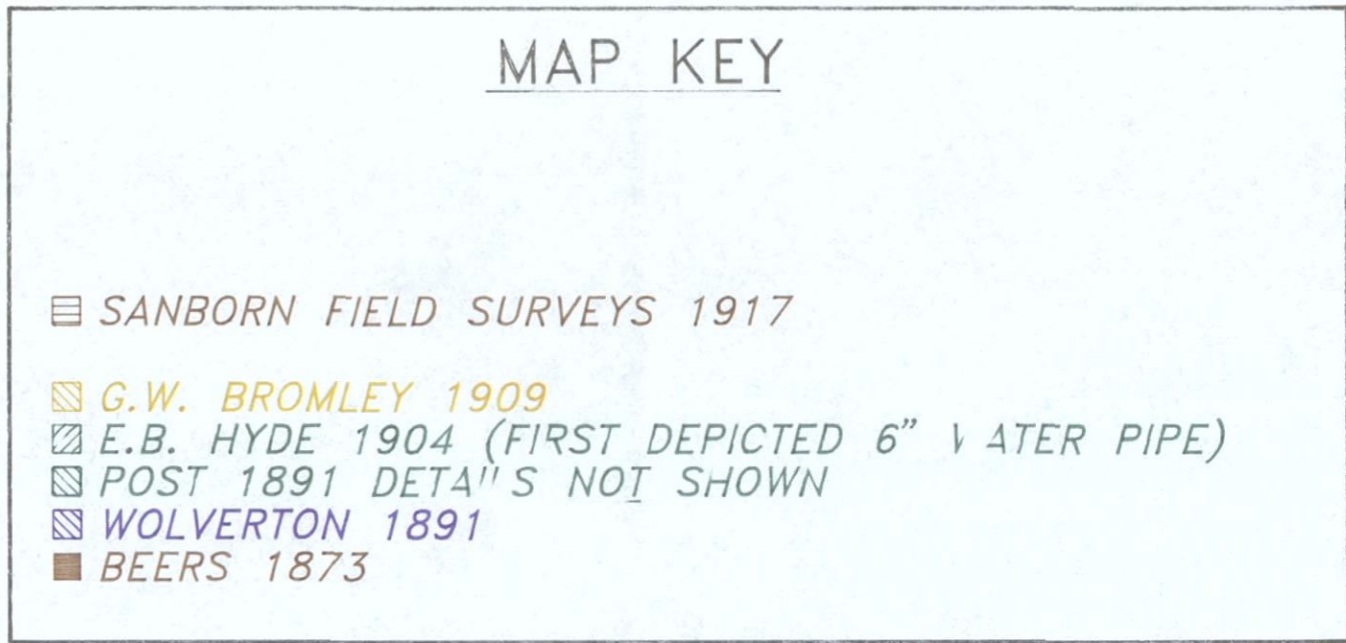
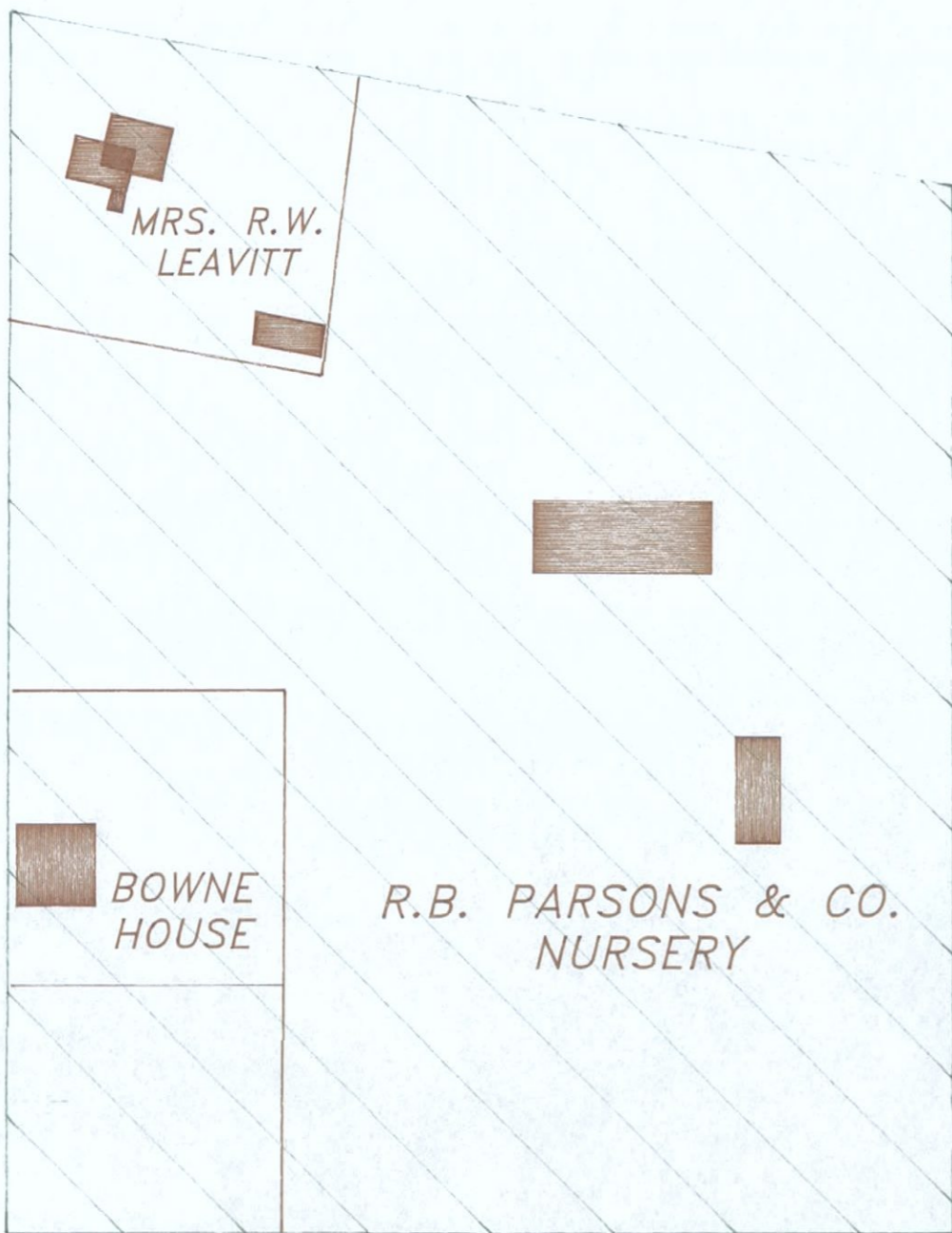


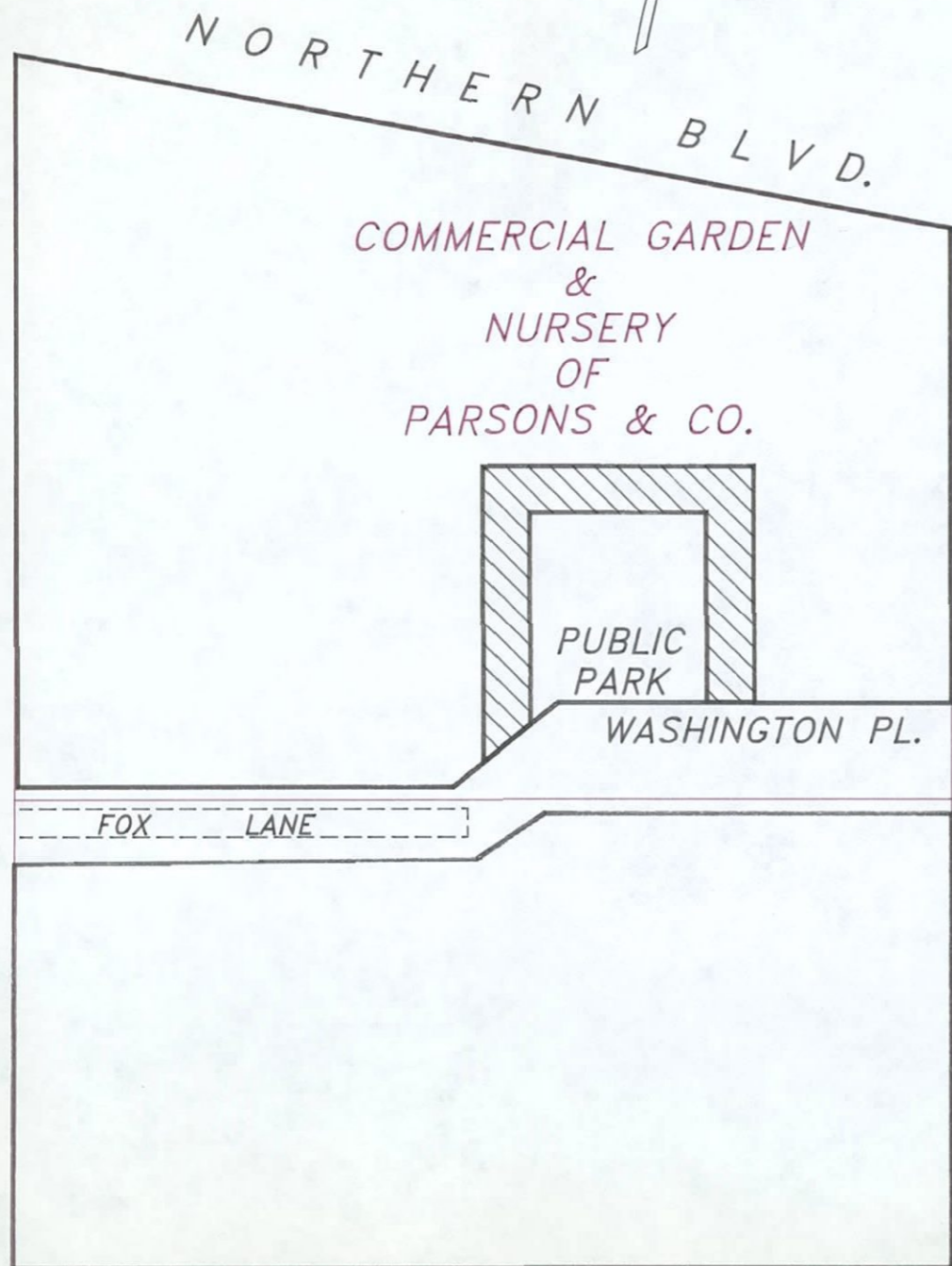
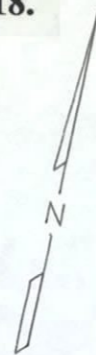
Figure 17.



GROSSMAN & ASSOCIATES
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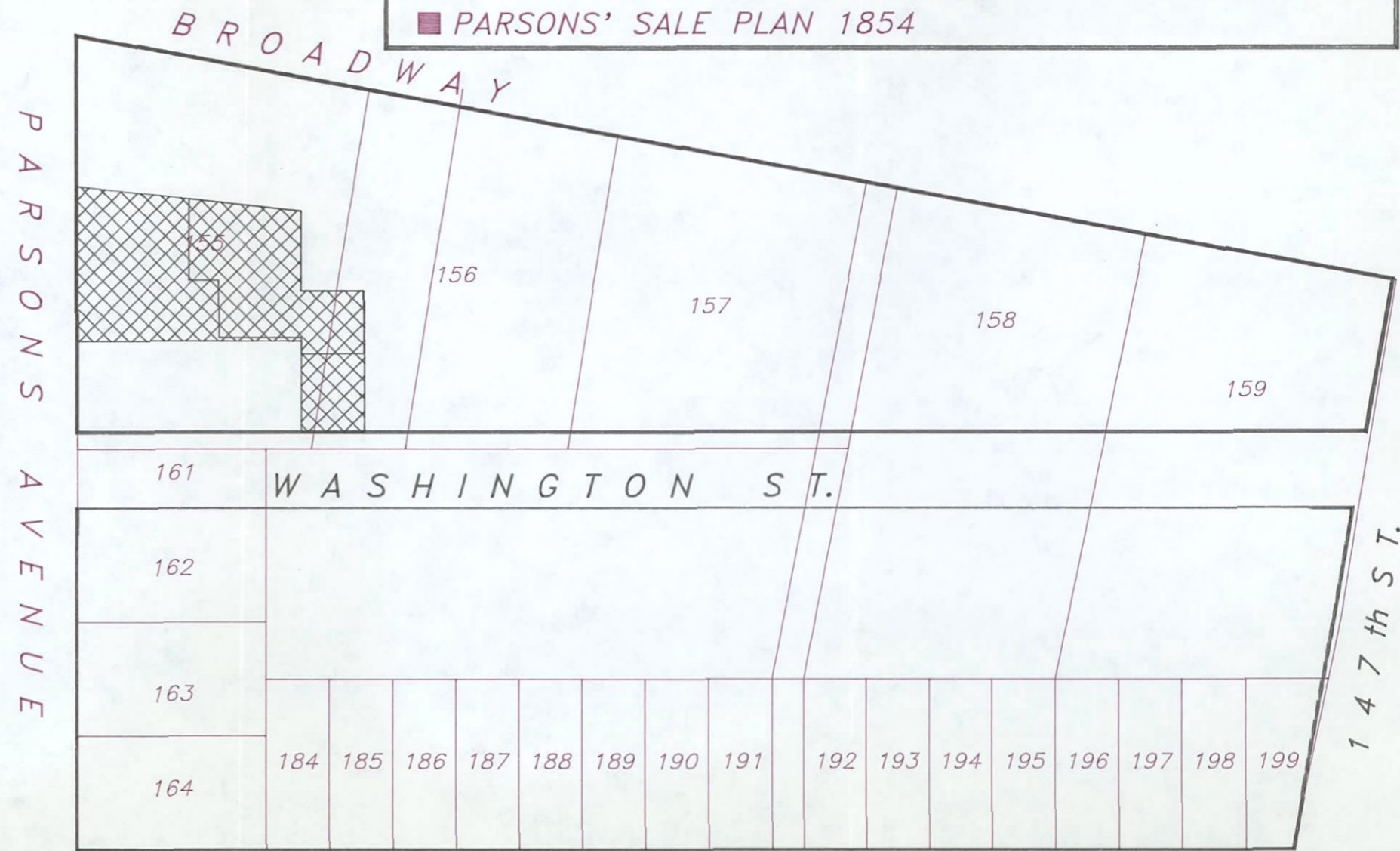
Figure 18.

100'



MAP KEY

- STUDY SITE (FLUSHING GERIATRIC REALTY)
- QUEENS TOPO. BUREAU C. 1911
- PARSONS' SALE PLAN 1854



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Figure 19. Photo Key

MAP SHOWING LOCATION OF PHOTOS

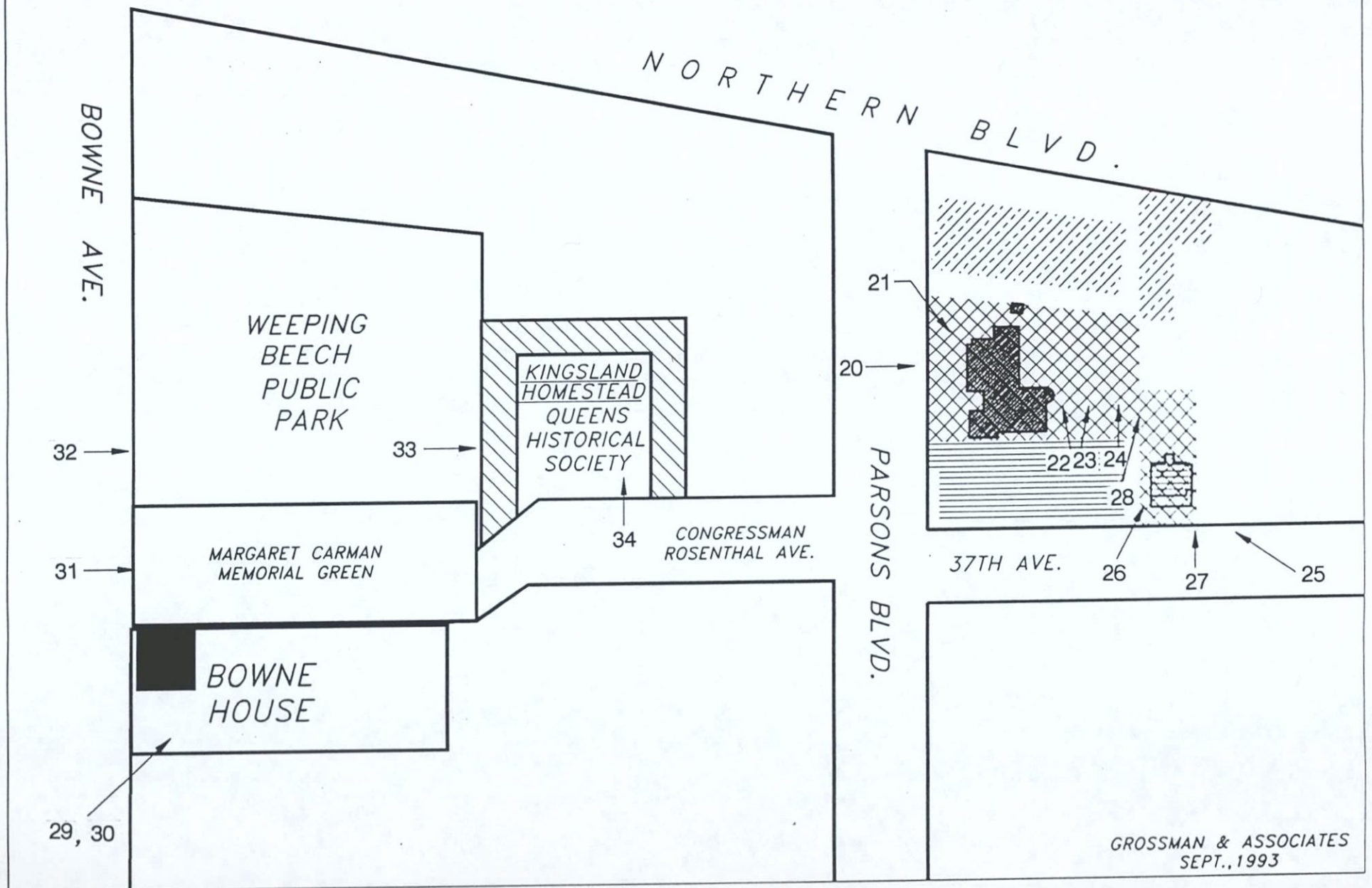




Figure 20. View of Lot 4 looking east across Parsons Boulevard, at front of 1 story doctor's offices and attached garage. Note trees in background behind structure.



Figure 21. View of Lot 4 looking southeast from pavement on Parsons Boulevard, at 1 story structure, lawn, hedgerow and ornamental trees at front of lot.

Grossman and Associates, Inc. September, 1993.



Figure 22. View of rear yard and structure on Lot 4 looking north from terrace of Vernon Apartments (Lot 1). Note lawn, shrubs and trees.



Figure 23. View of rear yard and rear fence line of Lot 4 looking northeast from terrace of Vernon Apartments, showing wooded aspect of rear section of lot.



Figure 24. View of rear yard of Lot 4 at fenceline looking north from terrace of Vernon Apartments, showing rectangular pool (?) and wooded aspect of rear section of lot.

Grossman and Associates, Inc. September, 1993.



Figure 25. View of Lot 86 looking northwest across 37th Avenue, at front of 2 1/2 story structure, now a Korean Church. Note cement driveway leading to garage structure at rear of lot.



Figure 26. View of west side of Lot 86 2 1/2 story Church structure along fenceline, looking northeast from alley at rear of Vernon Apartments. Note recessed well with basement windows along west foundation wall.



Figure 27. View of east side of Lot 86 2 1/2 story Church structure looking north from pavement on 37th Avenue. Note cement driveway from foundation of structure to lot line of adjacent brick building.



Figure 28. View of rear yard of Lot 86 looking north from alley at rear of Vernon Apartments. Note double line of bricks in foreground and two car garage at rear, at end of cement driveway. Most of the northwest portion of the rear yard appears undisturbed.



Figure 29. View looking northeast at front of the historic 1661 Bowne house, 1 block to the southwest of the project area, located along Bowne Avenue just south of the Margaret Carmen Memorial Green.

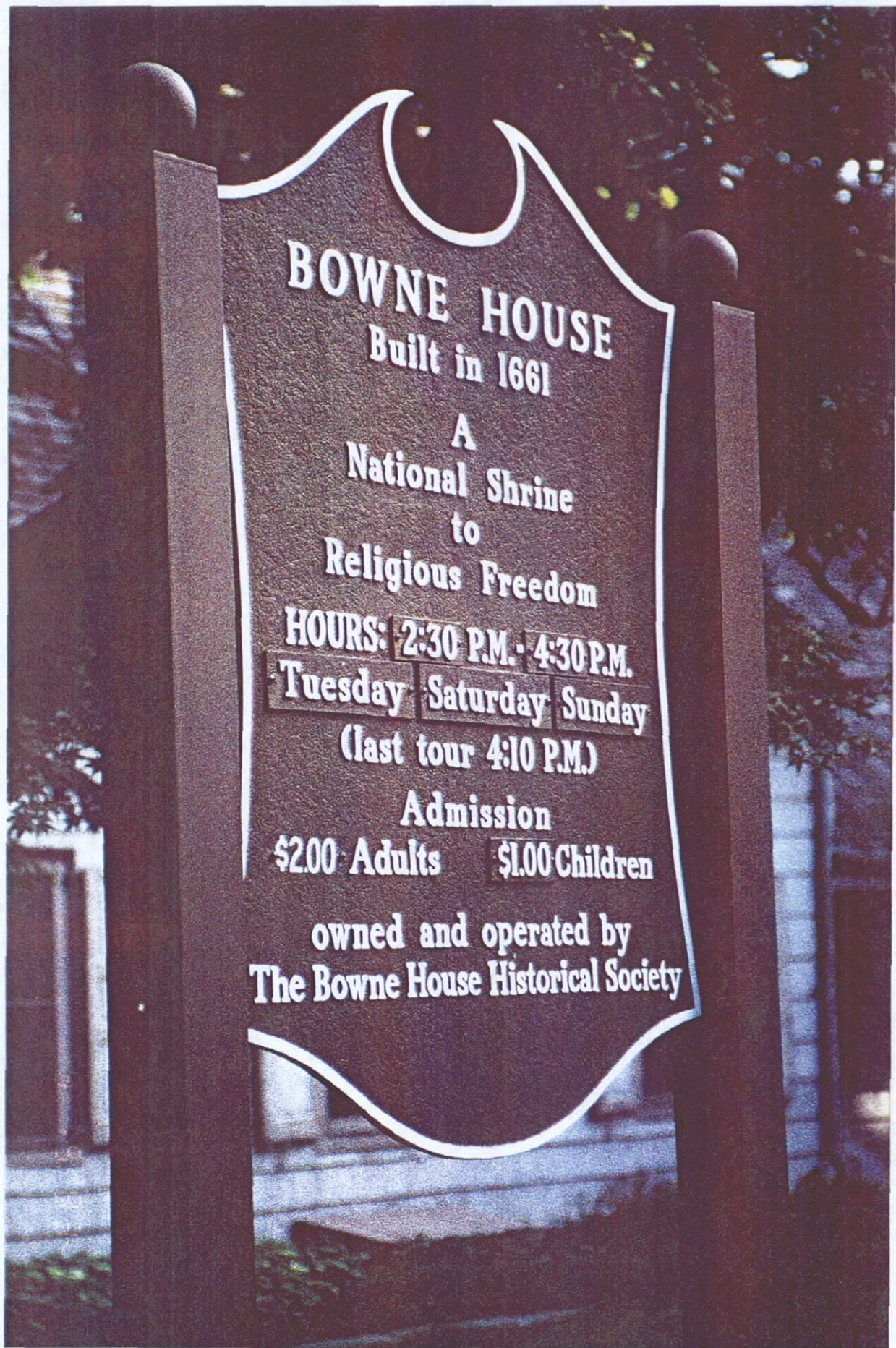


Figure 30. Close up view of the Bowne House Historical Society sign in front of the historic house.



Figure 31. View looking east from pavement on Bowne Avenue at the Margaret Carmen Memorial Green which is located at the rear of the Bowne House property and would be a part of the extension of 37th Avenue from Parsons Boulevard west to Bowne Avenue.



Figure 32. View looking east from pavement on Bowne Avenue at the NYC Weeping Beech Park sign. The Park is located adjacent to the north of the Memorial Green, and occupies more than half of the block which lies directly across Parsons Boulevard to the west of the Project Area block.



Figure 33. View looking east from within the playground of Weeping Beech Park at the front of the *ca.* 1774 Kingsland Homestead, the headquarters of the Queens County Historical Society. This structure, listed on the National Register of Historic Places, was moved to its present location in 1968, from its original site in Flushing near the intersection of Roosevelt Avenue and Northern Boulevard (Queens County Historical Society).



Figure 34. View of plaque located at the rear of the Kingsland Homestead in Weeping Beech Park, beneath the tree. This entire block, as well as the entire Project Area block to the east was once the gardens and nursery of Samuel Parsons and Company. This same land was formerly known as the Bowne Estate (See Figure 2 and Figure 3).

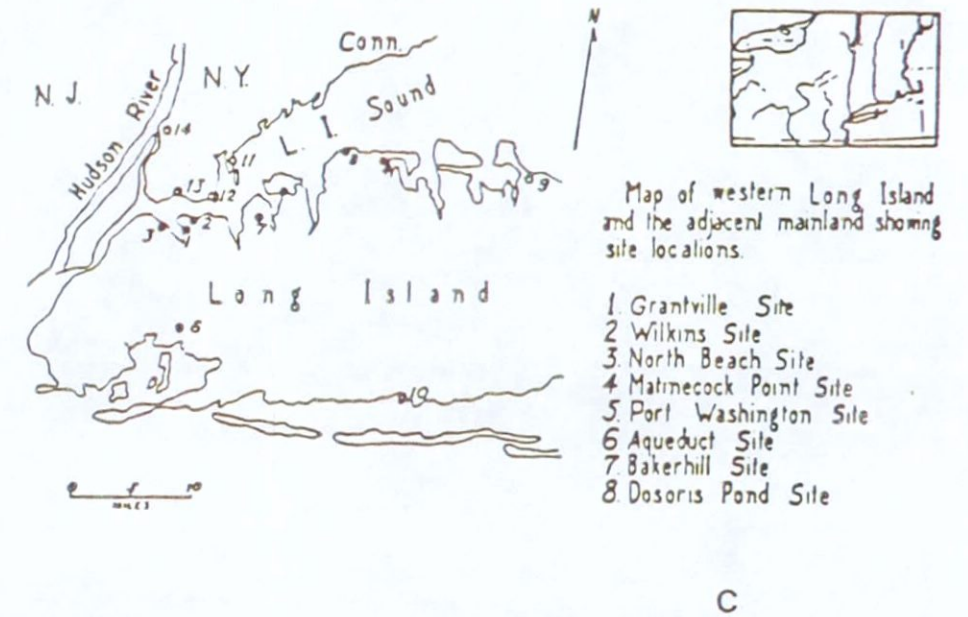
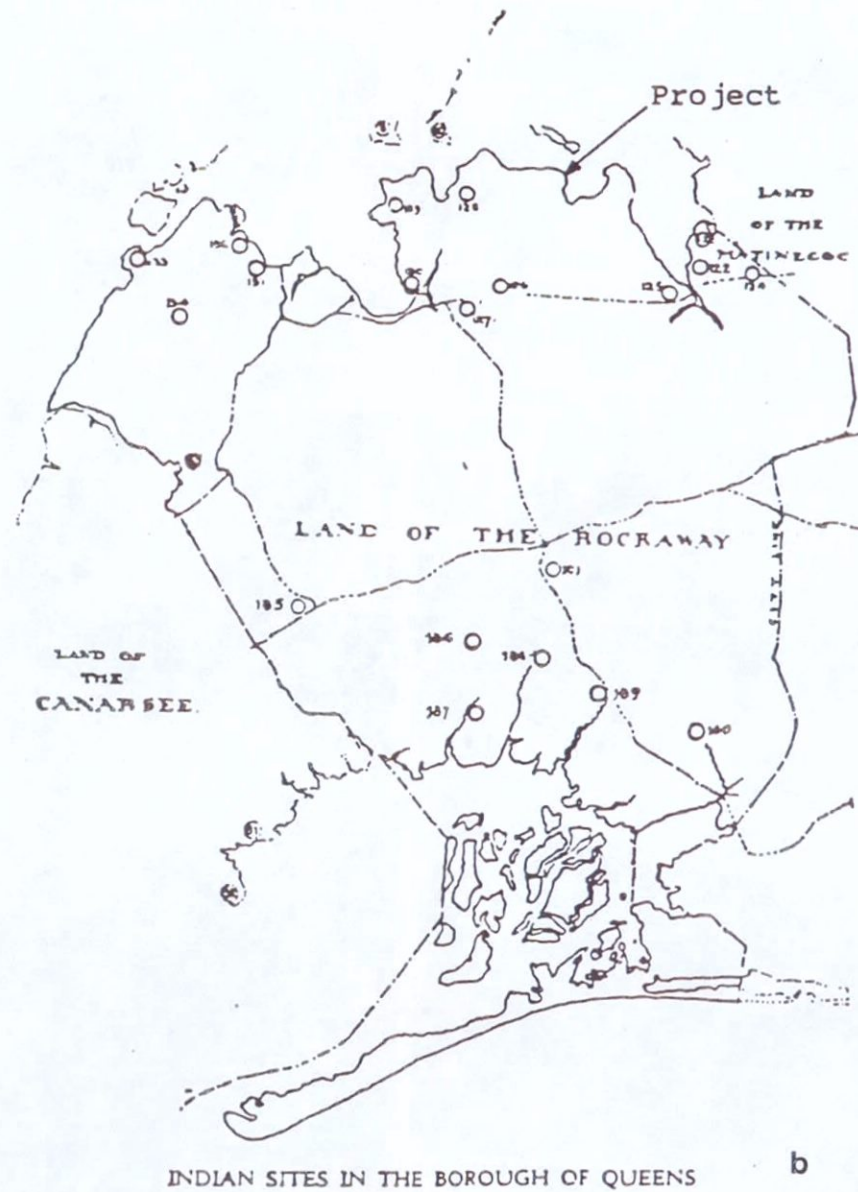
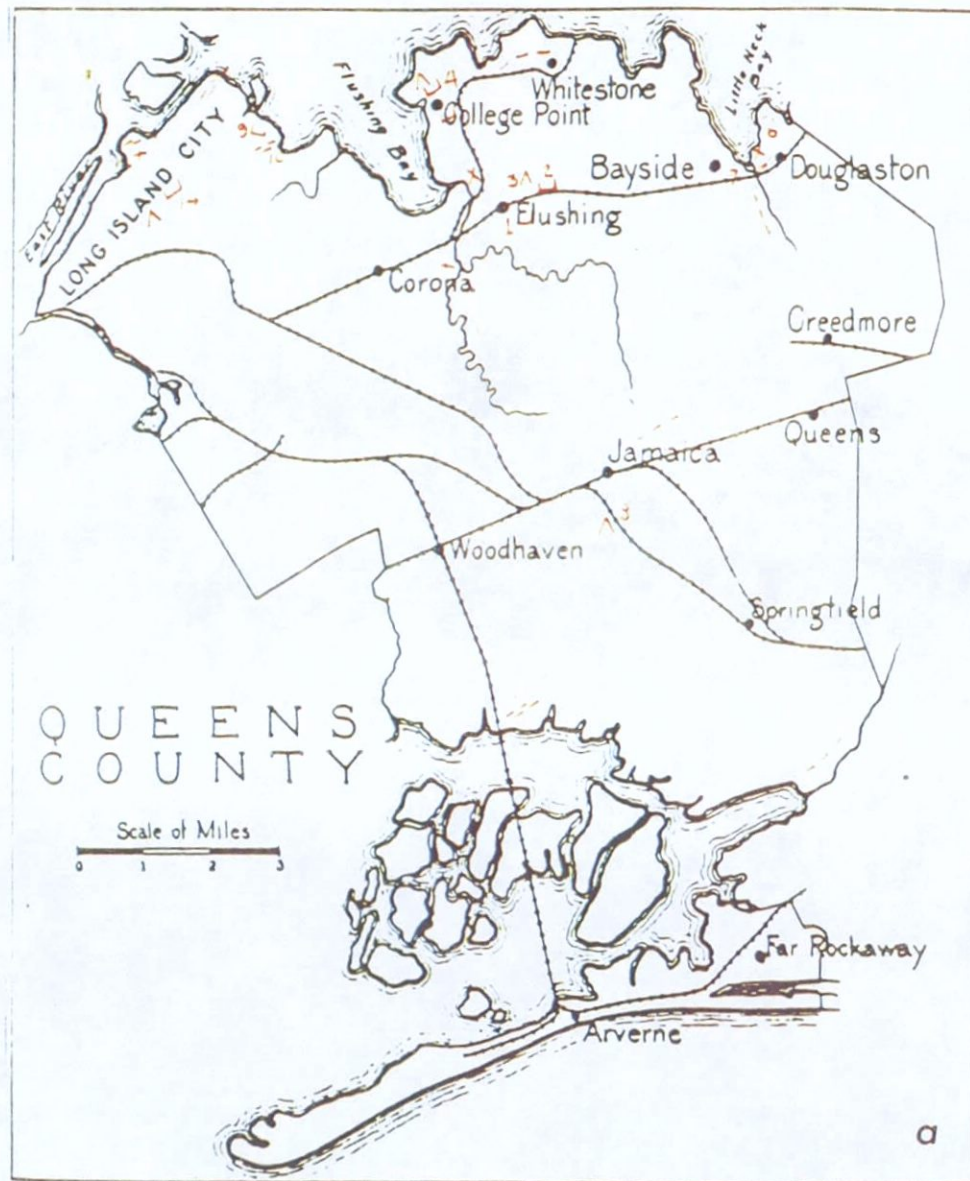
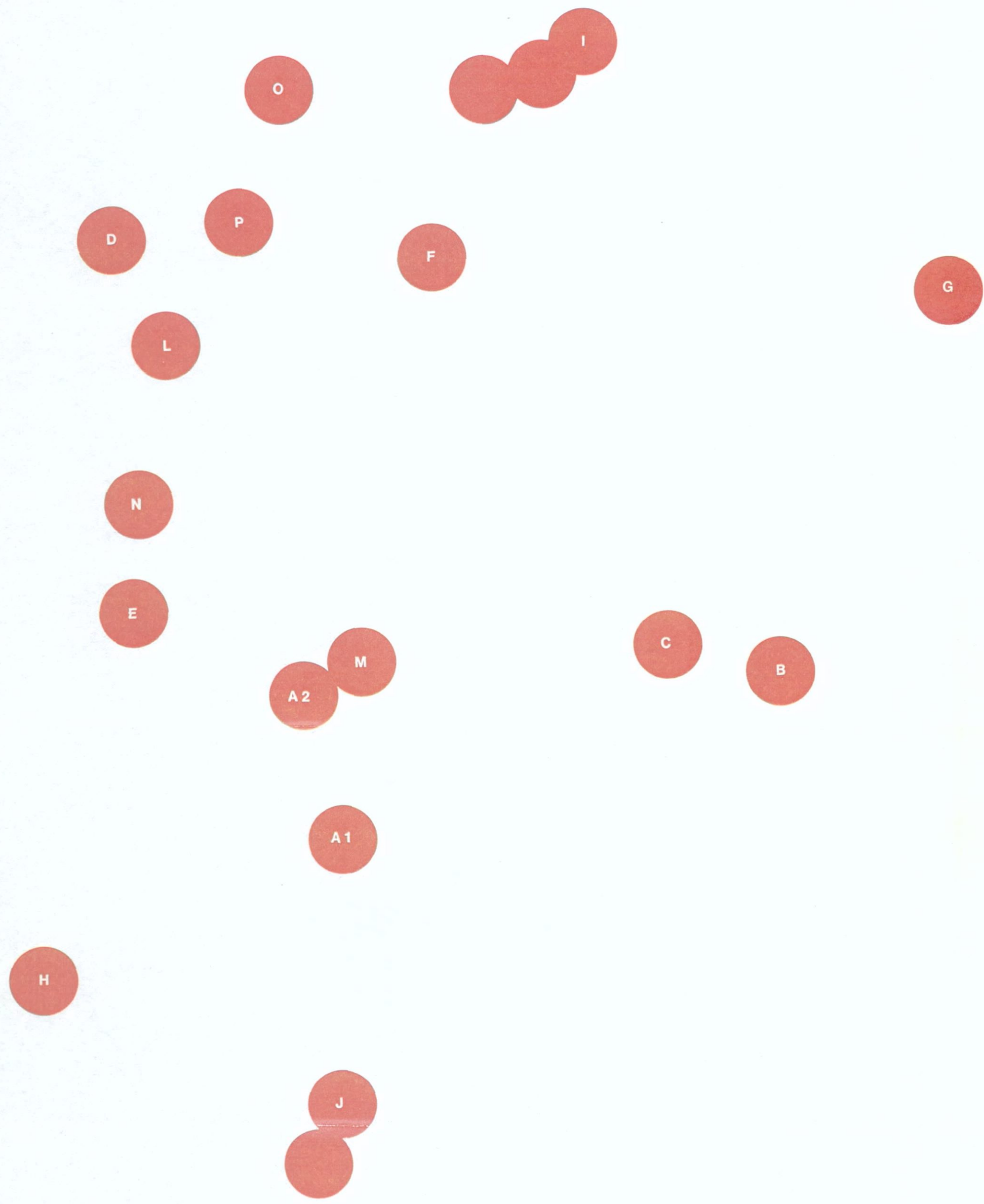


Figure 35. Photocopies of the original small scale site distribution maps by a) Parker (1920); b) Bolton (1934); and c) Smith (1944). These maps provided the general background information for the reconstruction of the prehistoric site locations depicted in Figure 37 and Table 1.



Figure 36. Prehistoric site locations as provided by the New York State Museum and the New York State Office of Parks, Recreation and Historic Preservation, shown as red circles on the USGS Flushing, NY 7.5 minute quadrangle map. A 1 mile radius around the project area block is shown in green.

Grossman and Associates, Inc. September, 1993.



Distribution of previously reported prehistoric site locations. See Table 1, site reference key.



Figure 37. Reproduction of a section of the 1852 Conner-Dripps map of Long Island showing the Flushing Manor Geriatric Center Project Area in relation to the East River, Long Island Sound, early roadways, streams, marshlands, springs, and forested areas. Due to the clear depiction of these 19th century environmental and landscape features, as well as roads and property owners, this map was used to plot the Project Area (yellow), historic water powered mills (green) and fresh water and mineral springs (blue). After correlating locational data from several primary sources as well as repositories, this map was used to plot a more probable distribution of previously reported, but less precisely defined prehistoric archaeological site locations (red on the overlay sheet; see Table 1 for the site reference key).

Table 1: Prehistoric Sites Reference Key

Figure 37	Beauchamp, 1900	Parker, 1920	New York State Museum	Bolton, 1922; 1934	Smith, 1944; 1950	SHPO	Nassau County Museum
A-1	Site 1 Linnaean Garden	Site 1	4524				
A-2				Linnaean Garden			
B	Site 2 Thomas P. Duryea Farm	Site 2	4525	Thomas P. Duryea Farm			
C		Site 3	4526	Site 126			
D		Site 4	4527	Site 129	Site 18		
E				Flushing Bay	Grantville	A-081-01-0133	# 79 Grantville
F					Site 20 Wilkins		# 100 Wilkins Site
G					Site 32 Clearview		
H		Camp Site "X"	4544				
I	Shell Heaps	"Traces of occupation"	4541	Site 128, Fishing Camp			
J		"Traces of occupation"	4545				
K	Site 3 Douglas Pt. (Not Shown)						
L			4540				
M		Campsite "X"	4542	Site 127			
N			old # 719				# 94 Graham Court
O							# 128 Tallman's Island
P							# 101 Powell's Cove