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HISTORICAL PERSPECTIVES INC.

PHASE 1A ARCHAEOLOGICAL ASSESSMENT

Rego Park Retail and Residential Center

Queens, New York

Prepared for:
AKRF, Inc.
117 East 29th Street
New York, NY 10016

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CONTENTS

FIGURES

I. INTRODUCTION

Vornado Realty, Inc. has proposed the construction of the Rego Park Retail and Residential Center on Block 2080, Lot 101 in the Rego Park/Elmhurst section of the Borough of Queens. (Figure 1) Lot 101, which encompasses the entire block, is bounded on the northwest by the Horace Harding Expressway, the northeast by 97th Street, the southeast by 62nd Drive, and the southwest by Junction Boulevard. At present the project lot is used as a surface parking lot. (Figure 2)

The proposed project would consist of approximately 544,967 gross square feet of commercial retail space, 450 residential units, 23,400 square feet of publicly-accessible open and enclosed space, as well as on-site parking.

The subject parcel was part of an earlier development proposal and 1986 Environmental Impact Statement ("Rego Park Mall Final EIS," December 1986), for which a "Phase IA Archaeological Impact Report" was completed in 1984 for nearby Blocks 2084 and 2085, ***outside*** the current project site (Kearns and Kirkorian 1984). (Figure 3)

METHODOLOGY

This Phase 1A documentary study, prepared by Historical Perspectives, Inc. in accordance with the CEQR Technical Manual (2001), is designed to determine the presence, type, extent and potential significance of any archaeological resources which may have been present on the subject parcel, and the likelihood that these resources have survived post-depositional disturbances, including construction, regrading and other land use which may have accompanied subsequent development. If archaeological resources are present and have survived, their archaeological integrity must also be considered.

The New York City Landmarks Preservation Commission (LPC) reviewed the Rego Park Retail and Residential Center proposal in June of 2004 (DCP/04DCP040Q) and determined that the project site "May be archaeologically significant." LPC expressed concern for Native American sensitivity based on earlier findings in the area by Professor Ralph Solecki.

In order to address these concerns, various sources of data were researched. Primary source material on the project site was collected to determine the study block's original topography, early utility construction, and to compile a building history and disturbance record. Soil Boring Logs were requested from the New York City Department of Design and Construction. Historical maps and descriptions of the study area were sought at the New York Public Library, Map and Local History Divisions, and the Queens Library Long Island Division.

To place the project parcel in its historical context, both local and regional histories and archival materials have been examined. Archaeological sites inventoried by New York State Museum (NYSM) and the New York State Office of Parks, Recreation and Historic Preservation (OPRHP) were researched. A site visit and photographic record was also made (10/19/04). (See Photos 1-6)

II. ENVIRONMENTAL SETTING

Before nineteenth- and twentieth-century construction and development remade the Rego Park and Elmhurst areas, the project block was part of a large salt marsh system which drained the water runoff of a substantial area of central Queens. Water runoff would flow into Horse Brook, which carried it to Flushing Creek (about a mile to the east) and its adjacent marsh system, which then emptied into the East River. As can be seen on maps from as late as the 1940s, Horse Brook meandered its way through the project site, entering at its northwest corner, and exiting near the southeast corner (e.g., U.S.C.G.S. 1891; 1899; Beers 1873). (Figures 5, 9)

The most detailed of these early topographic maps, a 1910 map from a series known as the "Final Maps of the Borough of Queens," noted the project site within the salt marsh, with the nearest elevated, dry ground 480 feet to the south and east. (Figure 3) The map records the edge of the marsh as "Mean High Water" (0-foot contour line), and because the project block is within the swamp, the pre-development or pre-fill elevations of the project site would have been 0 feet or below.

There does not seem to be any evidence that Horse Brook and the marshes were purposely filled in as part of some large-scale plan to eliminate the marshlands. Rather, development came piecemeal, encroaching on the marsh, and as the surface area of the marsh shrank, the volume of water draining through it to supply Horse Brook dropped. By about 1930, the brook in the project site vicinity had simply run dry (Seyfried 1995: 89).

The current topographic map records the general vicinity of the project area sloping upward as one proceeds southward from the Horace Harding Expressway and southward beyond the project block. (Figure 1) Although Figure 1 is the latest U.S.G.S. map, dated 1979, the contours depicted have not been updated post-1966, and they give a representation of the project site in transition from marsh to the current parking lot. By 1966, the project block lay between the 30- and 20-foot contour lines, but a substantial depression encompassed the northern half of the project block, indicating elevations below 20 feet. A comparison of the current topographic map and earlier maps (Figures 1 and 7, e.g.), reveals that the contour line delimiting the depressed area mirrors the course of old Horse Brook.

The 1910 street intersection elevations, while possibly not indicative of the elevations within the blocks themselves (see Figure 3, e.g., for differing grades between Queens Boulevard and block interiors), provide figures of between 15 and 19 feet, which would correspond to those on the current U.S.G.S. map. The map comparisons clearly suggest the addition of large amounts of fill since 1910.

This conclusion is supported by the soil borings conducted on the project site from 11/15/04 to 11/17/04 (Appendix – Soil Boring Logs). Beneath the asphalt paving of the present parking lot, a layer of 20th-century fill ranges between 10 and 16.6 feet thick. (Appendix)

Part of this variation in the fill overmantle is due to the undulating surface of the parking lot, which is generally level, but isolated depressions can be observed, and are quite visible during

rainstorms. (Photo 3) At present, a downslope south of 63rd Drive to the Horace Harding is not readily discernable. In fact, the western corner of the site (intersection of Junction Boulevard and Horace Harding) is elevated about 2 feet above the adjacent street, as evidenced by the low retaining wall there. (Photo 4)

At present, the project block is a paved parking lot, with below-ground disturbance limited to perimeter fencing and signage, a lighting system, and the rows of London plane trees which have been planted between the parking lanes. During the site inspection, no evidence of a below-ground drainage system was observed.

III. PRECONTACT PERIOD

CULTURE PERIODS

The precontact period on Western Long Island and the surrounding area can be divided into three time periods, based on prehistoric man's adaptations to changing environmental conditions. These are generally known as the Paleo-Indian (c.12,000 to c.10,000 years ago), the Archaic (c.10,000 to c.2,700 years ago) and the Woodland (c.2,700 to c.500 years ago). These prehistoric periods are followed by the proto-historic and historical European Contact period, (beginning c.500 years ago), which is distinguished from the prehistoric by the first Native American contacts with European trade goods, traders, trappers, fishermen, explorers and settlers. From these early contacts we derive much of our firsthand knowledge of Native American culture. In order to be able to assess the project site's potential for prehistoric exploitation, it is first necessary to review briefly these time periods and their associated settlement patterns.

Archaeologists generally believe that humans migrated from Siberia to Alaska across the Bering Land Bridge during the Late Pleistocene, more than 12,000 years ago. The **Paleo-Indian Period,** c.12,000-10,000 B. P. (Before Present), encompasses the interval from the end of the Pleistocene glacial conditions in eastern North America to the appearance of more modern environments during the Holocene. A post-glacial conifer cover, consisting mainly of spruce and pine, was gradually augmented by the appearance of hardwoods, such as oak and hickory, trees which provide greater food resources for humans compared to conifers. Another food source, oysters, developed in great numbers on the southern Atlantic Shelf from c.12,000 B. P.

The Paleo-Indians also hunted the large Pleistocene herbivores, such as mammoth, mastodon, caribou and musk oxen. The diagnostic artifact of the Paleo-Indian period is the fluted projectile point, which was originally attached to a shaft for throwing or stabbing. Gravers, steep-edge scrapers, knives, drills and other unifacial tools were used as well. These nomadic people roamed widely in search of sustenance and their settlement pattern is characterized by small, temporary camps, shellfish- processing stations and lithic reduction stations (Lenik 1989: 31; Ritchie 1980: 7).

The **Archaic Period,** c.10,000 to 2,700 B. P., is characterized by a series of adaptations to the newly-emerged, full Holocene environments. As the period progressed, the dwindling meltwater from the disappearing glaciers, and the resultant reduced flow of streams and rivers, promoted the formation of swamps and mudflats, excellent hunting and gathering grounds because they provided congenial environments for migratory waterfowl, edible plants and shellfish. The new mixed hardwood forests of oak, hickory, chestnut, beech and elm attracted white-tailed deer, wild turkey, moose and beaver. The large herbivores of the Pleistocene were rapidly becoming extinct, and Archaic Period humans became increasingly dependent on smaller game and the plants of the deciduous forest.

Tool kits became more generalized during the Archaic compared to the Paleo-Indian period, with a wider array of plant processing equipment such as grinding stones, mortars and pestles. Animals were still hunted with spears or javelins, propelled by a spear-throwing device called an

atlatl. Notched stone sinkers provide the earliest evidence of net fishing (Lenik 1989: 29,30). Toward the end of the Archaic, carved soapstone bowls were introduced.

Archaic hunters and gatherers were organized into small bands which occupied locations along the Atlantic coast and estuaries during the warmer months, and moved to the interior during the colder months. Archaic settlements usually consist of small, multi-component sites, and a number of functional site types such as spring fishing camps along major streams, fall open-air hunting camps, rockshelter habitations, shellfish collecting and processing stations, mortuary sites, quarry and workshop sites and semi-permanent villages (Boesch 1997: 10).

From approximately 2,700 B. P. until the arrival of the first Europeans, c. 500 B. P., Native Americans of the **Woodland Period** on Western Long Island shared many cultural attributes. The period saw the advent of horticulture, and with it the appearance of large, permanent or semi-permanent villages. Plant processing tools became increasingly common, suggesting the extensive harvesting of wild plant foods. Maize cultivation may have begun as early as 800 years ago. Replacing the spear and javelin, the bow and arrow were introduced at this time, as well as pottery vessels and pipe smoking. A semi-sedentary culture, the Woodland Indians moved seasonally between villages within palisaded enclosures and campsites, hunting deer, turkey, raccoon, muskrat, ducks and other game; and fishing with dugout boats, bone hooks, harpoons and nets with pebble sinkers. Their shellfish refuse heaps, called middens, sometimes reached immense proportions, covering as much as three acres (Ritchie 1980: 80,267). Preferred village/camp sites were in protected, elevated locations at the confluence of two water systems. "Nearly all the permanent sites are situated on tidal streams and bays on the second rise of ground above water" (Smith 1950: 101).

Following the earliest recorded visit of Europeans to the New York City area, the exploration of New York Bay by Giovanni da Verazzano in 1524, descriptions of Native Americans and their settlements were recorded, providing another source of data to buttress archaeological inferences about Indian lifeways in the **Contact Period**.

Daniel Denton, who lived in Jamaica and Hempstead on Long Island, published his observations of the local Munsee-speaking Delawaran Indians in his *Description of New York* in 1670:

> They live principally by hunting, fowling and fishing, their wives being the husbandmen, to till the land and plant the corn. The meat they live most upon is fish, fowl and venison . . . They build small moveable tents, which they remove two or three times a year, having their principal quarters where they plant their corn; their hunting quarters and their fishing quarters (Thompson 1843: I 80).

The cultivation of maize, a previously unnecessary supplement to an already rich diet, and an increasingly sedentary lifestyle, became more widespread during the Contact Period, probably due to trade relations with Europeans. Shell bead and wampum production was increased, and furs were collected by Native Americans for exchange. Although there are many ethnohistorical accounts of trade, there is little archaeological evidence of this in the region (Kraft 1991: 213). Shellfish remained an important food source. Isaac Jogues who visited New Netherland (present

New York) in 1633-1634, observed the "great heaps" of oyster shells made by the "savages, who subsist in part by that fishery" (Jogues 1862: 29).

Apparently, the larger villages developed into permanent settlements, whose populations expanded and contracted with the availability of various natural food resources, while agriculture provided a storable surplus to maintain a smaller population throughout the year. Part of the population still migrated between food sources, inhabiting smaller seasonal campsites. Unfortunately, this period of growth was interrupted by epidemics of European diseases against which the Indians had no natural immunity, resulting in the decimation of their populations.

PREHISTORIC ARCHAEOLOGICAL POTENTIAL

Nineteenth- and twentieth-century archaeological research and excavation have identified a number of prehistoric archaeological sites in the vicinity of the project block, which have been inventoried in the site files of the New York State Museum (NYSM) and the New York State Office of Parks, Recreation and Historic Preservation (OPRHP). The data on these sites are based on the investigations of several archaeologists, including Arthur C. Parker and Ralph Solecki, and data on more recent research has been added to these compendia by Eugene Boesch (Parker 1920; Boesch 1997).

The locations of four inventoried sites can be identified, and are within 2 miles of the project block. These are described here in order of decreasing distance:

- Archaeologist Ralph Solecki investigated a large site on the location of the World's Fair, i.e., Flushing Meadows-Corona Park. The site, designated in LPC's sensitivity assessment as Boesch #70, was about 1.8 miles to the northeast of the project block, and on the opposite (eastern) side of Flushing Creek and marshes, in the vicinity of Sanford Avenue and Fowler Avenue (Solecki 1941; Boesch 1997: #70).

- Parker puts NYSM #4545, "traces of [prehistoric] occupation," south of the Queens Botanical Gardens, near what is now the Van Wyck Expressway, also about 1.8 miles east northeast of the project lot. This site is also east of the Flushing Creek and Meadows – the opposite side of the marshes and creek from the project block. (Parker 1920: 672; Boesch 1997: #19, #20)

- Parker also identifies NYSM #4544, a prehistoric camp. This site was on the west side of Flushing Creek, near the creek's confluence with an unnamed brook that flows east of Flushing Creek, draining what is now the Kissena Park Corridor. Within present Flushing Meadows-Corona Park, it was about 1.1 miles northeast of the project block (Parker 1920: 672; Boesch 1997: #61).

- The most enigmatic and perhaps relevant site to the concerns of this report, is an "Indian site" excavated during salvage work by archaeologist Ralph Solecki in the 1930s and designated by Boesch as #75A. Solecki's fieldwork photograph #108, now in the possession of the Queens Library, is captioned: "Elmhurst Queens site, Looking north across Horsebrook, June 1937. Part of Large swamp running east of Elmhurst. South side of Horse Brook east to Elmhurst

swamp. Indian site on north and south banks of stream." (Figure 8) Dr. Solecki was unable to identify the location when queried in 1986, and the exact location was never plotted on a map (Kearns and Kirkorian 1986: 13). One identifying feature of the location, however, is the headstones of the "Colonial cemetery," which stand on the south side of the brook, appearing in the right corner of the photograph. Interpreting the term "Colonial" rather loosely, there were four cemeteries in use in the Town of Newtown by 1805, only one of which, the burial ground of the First Presbyterian Church of Newtown was south of Horse Brook, as Solecki specifies.[1] The cemetery was established in 1723 and was formerly on the north side of Queens Boulevard opposite 54th Avenue, about 4,000 feet northwest of the project site (Inskeep 2000: 59). This location, at the edge of the developed section of Newtown village, also fits the other attributes of the 1937 photograph, such as numerous but not over-numerous dwellings, telephone/electric poles, and the open expanse of swampland to the north and northeast.

Other evidence of pre- and proto-historic presence in the vicinity of the project includes some scant documetary evidence. Archaeologist/Historian Robert S. Grumet noted a major east/west Native American trail traversing northern Queens, which in the vicinity of the project area appears to correspond to present Roosevelt and Elmhurst Avenues, about 6,000 feet north of the project site. Grumet mistakenly locates the Indian toponym or place name, *Sackhickneyah*, referring to a creek that ran through "Trains meadow," in what is now Flushing Meadows-Corona Park. Trains Meadow, however, was more than 3 miles northwest of the project block[2] (Grumet 1981: 48-49, 71; Kross 1983: 5; Seyfried 1984: 79).

In the discussion of pre-contact lifeways in the preceding section, it was noted that pre-contact Native Americans, when choosing the locations of their villages and campsites, preferred elevated sites near estuarine marsh systems, sources of fresh water, and a major waterway. Some of these attributes were formerly present on the project site. The project site itself was part of a marsh system, and a section of Horse Brook flowed through the site into Flushing Creek. As noted above, such a marsh would have provided a rich array of edible and useful plants and animals. On the other hand, despite these resources, by its very nature, the pre-development swampy condition of the project site would have proscribed the establishment of any sort of village or large camp. Adjacent areas of high ground existed 480 feet to the south and east, and would have provided locations far more attractive for settlement and exploitation.

It is probable that Native Americans crossed the marshlands of the project site during hunting and foraging expeditions, possibly leaving behind stray artifacts or other remains. Under normal circumstances, the project site would be considered to have a low potential for having hosted prehistoric archaeological materials, because the archaeological visibility of such transient activities is virtually nil.

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[1] The cemetery no longer exists, and the congregation's present name is the First Presbyterian Church of Elmhurst. The other cemeteries were: Old Newtown (1652-c.1880), east side of 90th Street between 56th and 57th Avenues, now a high school athletic field; First Reformed Church of Newtown (1794-1933), east side of Broadway between Corona and 51st Avenues; St. James' Churchyard (1805-1934), east side of Broadway, St. James Avenue and Corona Avenue (Inskeep 2000: 59,61-62, 131, 157-158).

[2] Trains Meadow was in what is now Woodside, bounded by present Newtown Avenue/Road, Steinway Street and Northern Boulevard.

On the other hand, not all prehistoric sites are semi-permanent or seasonal villages and camps. Smaller, more temporary campsites from hunting and foraging expeditions, as well as artifact and food processing locations, although they are more fragile, also have archaeological visibility. Based on the presence of the recorded "Indian site" along the banks of Horse Brook (within 4,000 feet of the project site), there is a strong possibility that similar activities took place further downstream on the project block. Therefore the project site should be considered to have a HIGH POTENTIAL for having hosted prehistoric archaeological remains.

Because prehistoric sites are generally only shallowly-buried, i.e., within 3 to 4 feet of the predevelopment surface, they are often adversely impacted by subsequent construction. Documented subsurface disturbance and its effect on potential prehistoric cultural materials, and therefore on archaeological sensitivity, will be discussed in Section VI. Conclusions and Recommendations.

IV. HISTORICAL PERIOD

The first Europeans to visit the section of Long Island now known as Queens County were probably fur traders operating under one of several Dutch commercial ventures in New Netherland during the early years of the 17th century. By the 1640s however, settlement of present Queens by English and Dutch colonists had begun in earnest. After securing land title from the local Native Americans, the Dutch West India Company granted land patents to settlers and groups of settlers.

One of these groups was led by the Rev. Francis Doughty, fleeing religious persecution in New England. He and his followers were granted over 13,000 acres of land at "Mespath" (Maspeth) by Governor Willem Kieft in 1642 (Brodhead 1853: 333). Cartographic reconstructions of the Doughty Patent boundaries indicate that this area included the project site, extending from English Kills in present-day Maspeth on the west, to present Flushing Meadows-Corona Park on the east. Settlement commenced at Maspeth, approximately 3.25 miles west of the project site. Unfortunately, the timing was not propitious, because in 1643 a series of Indian wars began, which decimated New Netherland settlements and farms. The Maspeth settlement was destroyed and the settlers were forced to flee to Manhattan.

After the cessation of hostilities, another group of New Englanders established a settlement at approximately the midpoint between Maspeth and the Village of Flushing, in 1651. The village center, near the present intersection of Broadway and Queens Boulevard, about 4,500 feet northwest of the project site, was originally called Middelburgh (middle village) by the Dutch, but generally known as Newtown by the English colonists. The village of Newtown became the town center of the Town of Newtown, one of the three original towns comprising present Queens County, along with Flushing to the east and Jamaica to the south. It occupied the entire northwestern quarter of Queens from Flushing to the East River (Kross 1983: 20, Map 3).

Blessed with a good all-purpose soil, known as "Miami stony loam," and Long Island's long growing season, the land was agriculturally productive. Newtown farmers, in addition to their main crop, wheat, also produced rye, barley, corn, hemp, flax, tobacco, and a variety of fruits and vegetables. By 1723, all the arable land in the township had been taken up (Munsell 1882: 333; Kross 1983: 4).

Large areas of the town, like the project site, were swamp and bog. Unlike today, when we tend to see wetlands as either wasteland, or an endangered part of the ecology that needs protection (or some combination of the two), colonial period townsmen recognized valuable resources. Already noted in the discussion of Native American lifeways, marshes were attractive destinations for hunting and foraging. Until pollution killed off the fish in circa 1883, trout fishing was popular, and specimens of one pound were common in the stream as it flowed through the middle of the Village of Newtown (Seyfried 1995: 56).

Fresh and salt meadows were also prized pasturages for livestock. Although it turned out that the native American grasses did not provide the same nutrients as Old World varieties, by the mid-17th century introduced English grasses had spread so rapidly, that Newtown marshlands were as

valuable as their European counterparts, and small herds of horses, cattle and sheep could be supported (Munsell 1882: 333; Kross 1983: 4).

Another important resource was Horse Brook, which drained the marshes surrounding the project block. Horse Brook rose west of Newtown village, passed through the settlement, where it was characterized as a "lively flowing stream" (Seyfried 1995: 9), and thereafter entered the marshes, snaked through the project site, and eventually flowed into Flushing Creek, about 1.2 miles east of the study parcel. The speculated origin of the name Horse Brook, i.e, it was common to water horses there, is probably correct (Historical 1938 II: 27).

A flouring or grist mill was built along the lower reaches of the brook in 1655 by Captain John Coe, one of the original and prominent settlers of Newtown. The mill stood on the west side of Old Mill Road, now Colonial Avenue, south of present Van Doren Street, a location now under the Long Island/Horace Harding Expressway, about 4,500 feet east northeast of the project site. According to one source, Coe's Mill was a tidal mill (O'Gorman 1934: 165-166), which would agree with a later citation that Horse Brook experienced tidal action as far as the Covert property (O'Gorman 1934: 165-166; Seyfried 1995: 55). According to the 1873 Beers atlas, which records property owners' names, the Covert family lands were west, or upriver of the mill and project site, indicating that all were subject to the tides, as well as the penetration of salt water (Beers 1873).

Coe's Mill was a busy enterprise. In 1657, an application by Edward Jessup for permission to construct a second mill, noted that Mr. Coe's mill "is overwrought, and the country may well employ two mills, and both have work enough" (Riker 1852: 44-45). The mill, or at least its remains, were visible to the end of the nineteenth century. Having suffered a fire, an 1888 description also records the "timbers of a burnt-out schooner that has sunk at its post of duty beside the old mill" (O'Gorman 1934: 372). This description also indicates the further usefulness of Horse Brook as a transportation route, since it was apparently navigable east of the mill and north along Flushing Creek to Flushing Bay and the East River.

In general, however, marshlands tended to be barriers to transportation, which is clear from the early maps of the project area vicinity. The few important roads existing up to the mid-nineteenth century generally skirted the edge of the swamp. Broadway/Queens Boulevard,[3] which ran through the center of Newtown village and continued southward, was one of the few roads which crossed over the creek and marsh, passing about 480 feet to the south of the project site. By 1666, this road was already one of the main east/west highways on western Long Island. (Figure 5)

Forming an important intersection with this highway (about 600 feet south of the project site) was the Old Mill Road (also the Hempstead Plank Road or North Hempstead Turnpike), which corresponds for the most part to present 63rd Road. This road skirted the southern edge of the project site marsh. The "old mill" in the title was Coe's Mill, adjacent to which was a second bridge over Horse Brook, known as Strong's Bridge or Causeway, from which one could cross the marshlands to Hempstead and other points east (O'Gorman 1934: 371). (Figure 5)

[3] Before it was called Queens Boulevard it was known as Hoffman Boulevard.

The Newtown village area remained an agricultural backwater compared to the western edges of the Town. In 1870, the western section, heavily industrialized because of its proximity to Manhattan, seceded from Newtown, and formed the separate municipality of Long Island City. Rural Newtown's turn for development did not come until the end of the century. In 1896, developer Cord Meyer purchased several old farms along Elmhurst and Whitney Avenues, north of the village center, and about 1.1 miles northwest of the project site. Meyer managed to have the name of the post office changed from Newtown to the more idyllic name of Elmhurst in 1897. It is probable that he realized that the name Newtown was generally associated with Newtown Creek, already a heavily-polluted, malodorous, open sewer, an image which ran counter to his intention to build substantial houses on tree-lined streets, with all the modern amenities, including water and sewer lines.

Even for Cord Meyer, the project area marshes proved to be an important asset in solving disposal problems. A problem for many developers of inland communities was the question of sewage disposal. Elmhurst was far from either Jamaica Bay or East River, into which, in the nineteenth century at least, sewage could simply be pumped and forgotten. The construction of a sewer system, and a plant to process the waste was a major undertaking. With Meyer's financial assets and political connections, however, he was able to have an Elmhurst sewer authorized by 1897. The project slowly traveled through the city and state bureaucracies and received the various necessary approvals, and construction began in March of 1902. The destination of all the sewage was to be a modern disposal plant on Queens Boulevard (then Hoffman), just west of 62nd Drive (about 440 feet southwest of the project site), designed as a brick building, 130 feet by 140, to cost $90,000. (Figures 6, 7) The *Newtown Register* of August 7, 1902 reported that:

> *The repository into which the material from the sewer is first received is a well with a depth of 28 ft. and a diameter of 24 ft. From this well the material is pumped up into four sedimentation tanks in which the separation of the solid from the fluid is effected. These tanks, supplemented by a sludge filter, take the last vestige of solid materials which are burned under the boilers. The capacity of the plant, in which the building is covered with a metal roof, is 1,000,000 gals. a day. Outside the main structure is a series of filter beds extending 381 ft. and covering a surface of 45,000 sq. ft., or a little more than an acre. These beds, which are not covered, are operated on the principle of intermittent filtration*
> (Seyfried 1995: 87).

However, the construction of the disposal plant lagged far behind that of the sewer lines. Homes were already connected to the sewer line in 1903, but the waste had no where to go until 1905 when the plant was finally completed. Once it was in working order, the plant, which presented an attractive Georgian colonial façade to Queens Boulevard (Figure 6), produced no odor. According to the *Newtown Register*, "the liquid matter that finally comes out is as clear as crystal," and the plant was recommended as "very interesting" and "well worth a visit." With this improvement, Cord Meyer was credited with creating "one of the most charming suburban developments of Greater New York" (Ibid.: 89).

House construction throughout Queens County was given further impetus with the completion of the Queensboro Bridge in 1909, which not only created an overland connection with Manhattan, but turned that connection, Queens Boulevard, into a major traffic artery, carrying a trolley from Manhattan to Jamaica, and widened to 200 feet by 1915.

The effluvia from the sewage plant drained into Horse Brook, but as the neighborhoods and streets which surrounded its banks were built up, large sections of the marsh were eliminated, and the volume of surface drainage into the brook dropped. It gradually ran dry by circa 1930 (Seyfried 1995: 89), even though the old water course was still depicted on contemporary maps. (Figure 9) The expression "built up" in regard to the local roadways is well-chosen, since the 1931 photograph of the plant shows Queens Boulevard at least three to four feet above the foundations of the plant and the unfilled marshlands. (Figure 6) Furthermore, new sewers also made the old Elmhurst system obsolete, and by 1941, the building had been turned into the "Queens Community Recreation Center." (Figures 1, 9, 10)

The Independent Subway System was extended along Queens Boulevard and completed in 1936, spurring further development in the project area vicinity, generally referred to as Rego Park. The mass transportation links made possible the apartment complexes and commercial buildings which were erected on the blocks surrounding the project site during the 1960s and 70s. The project site has remained strangely undeveloped. It has served as a surface parking lot from at least the 1970s until the present.

VI. CONCLUSIONS AND RECOMMENDATIONS

CONCLUSIONS

Historical Archaeological Sensitivity

No structures have been recorded on the Rego Park Retail and Residential Center site prior to the construction of the present parking lot during the second half of the twentieth century. Therefore, the project site is NOT SENSITIVE for archaeological remains from the historical period.

Disturbance

Subsurface disturbance caused by the construction of the extant parking lot is limited to the erection of signage, fencing, and a lighting system. No drainage system was noted during the site inspection. As described in Section II, however, a substantial fill overmantle, of between 10 and 16.6 feet thick, was deposited on the project site prior to this construction disturbance, and as a result, the pre-development surfaces of the project site would have been protected from any adverse impacts.

Prehistoric Sensitivity

Overwhelming evidence exists that Native Americans exploited the natural resources of western Long Island for thousands of years before the arrival of Europeans. It is also clear that the marshland of which the project site was once a part would have offered a rich source of food and raw materials for pre-contact Native Americans. As noted by LPC in the initial review of this project, there are reported Native American sites within the immediate project vicinity.

Settlement pattern data of the prehistoric culture periods reveals a strong correlation between habitation and processing sites and the confluence of two water courses, proximity to a major waterway, a marsh resource and/or well-drained, elevated land. A review of the cartographic and historical evidence confirms that many of these criteria were present on the project site prior to modern filling and development. In addition, the presence of an "Indian site" has been recorded along the same creek in the same conditions, only 4,000 feet upstream to the west.

A soil boring program was conducted on the project site by Roux Associates Inc., during the period from 11/15/04 to 11/17/04. (See Appendix – Soil Boring Logs) The ten borings were spread out across the entire site in order to discern an accurate picture of current subsurface conditions. As expected from a comparison of the historical maps, a substantial amount of modern fill was present on all parts of the project site. This fill overmantle ranged from 10 to as much as 16.6 feet thick. The water table, generally lies between 8 and 10 feet below the current surface, in most cases (RA-18, -19, -20, Roux-1, -2, -3, -4) extending up into the fill layer.[4]

[4] Part of this variation can be explained by the uneven surface of the current parking lot. The depth of the water table is generally indicated in the "Visual Description" section of the Boring Log, between strata described as "moist," and those described as "wet." See Appendix.

Beneath this layer of fill, however, there was no evidence of an expected meadow mat, i.e., the remains of the former marsh, expected to be seen as a layer of organic material, especially peat. Instead, a stratum of mostly "medium sand" was encountered. According to the field logs, no evidence of an organic layer, which would indicate a now-buried pre-fill ground surface, was found, even where two of the soil borings (RA-15 and –17) penetrated 35 feet below the current surface, encountering glacially deposited sands (Sin Senh, geologist, Roux Associates Inc., personal communication with Richard Schaefer, 12/3/04).

The logical interpretation of the soil boring logs is that prior to the deposit of the present fill layer, a regrading program was carried out on the project site, removing several feet of the pre-fill, i.e., marsh, surface. Because prehistoric archaeological remains are generally shallowly-buried -- within three feet of the pre-development surface, such a regrading program would have destroyed all potential prehistoric archaeological remains on the project site. Therefore the Rego Park Retail and Residential Center site is considered NOT SENSITIVE for potential archaeological materials from the pre-contact period.

Recommendations

Based on the conclusions of this report, the project site is not considered sensitive for archaeological materials from the prehistoric or historical periods. Therefore, further archaeological study or testing is NOT RECOMMENDED.

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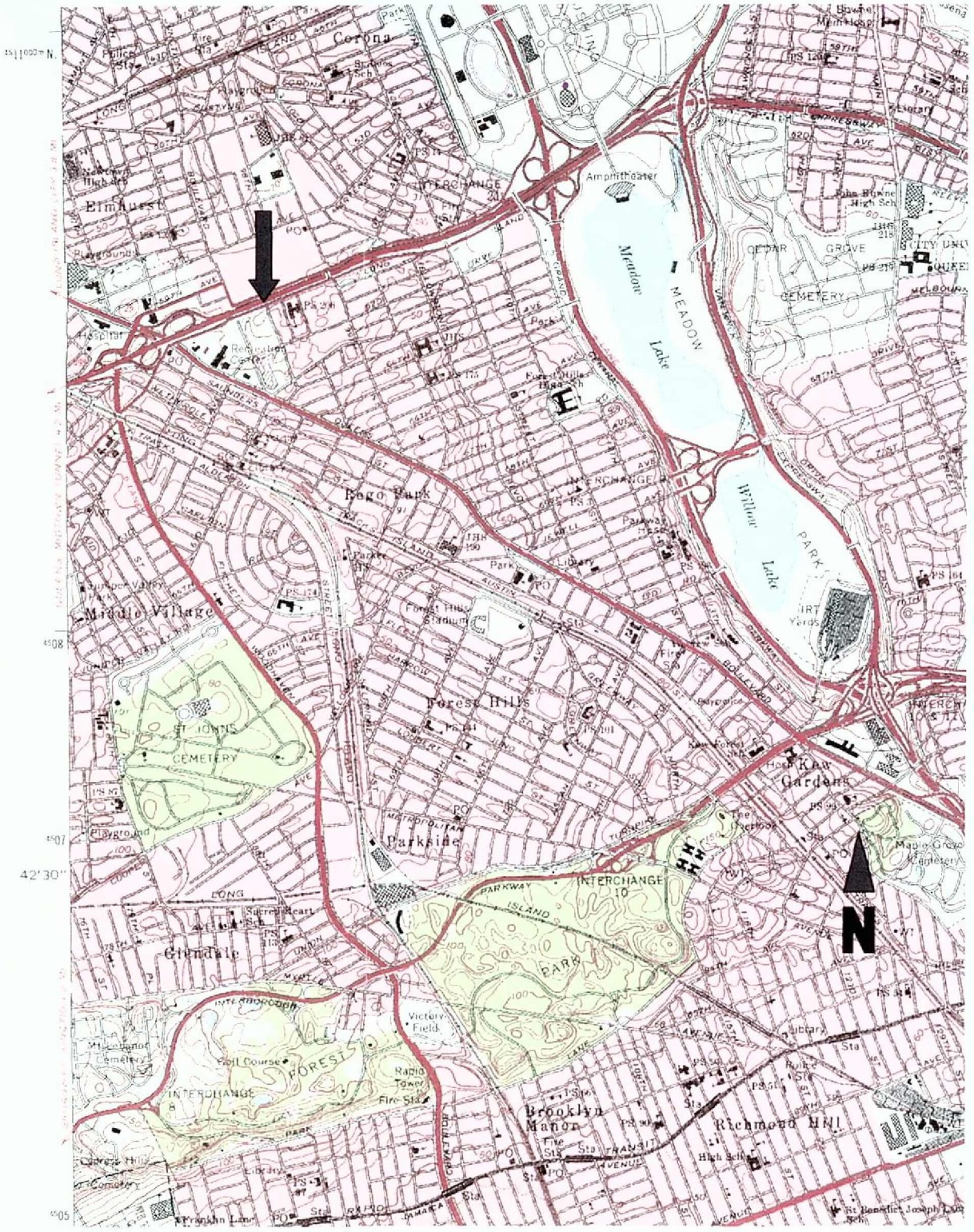


Figure 1. Project Site Location Map – Current U.S.G.S. Topographic Map, Jamaica Quad, 1979

Arrow indicates Project Site

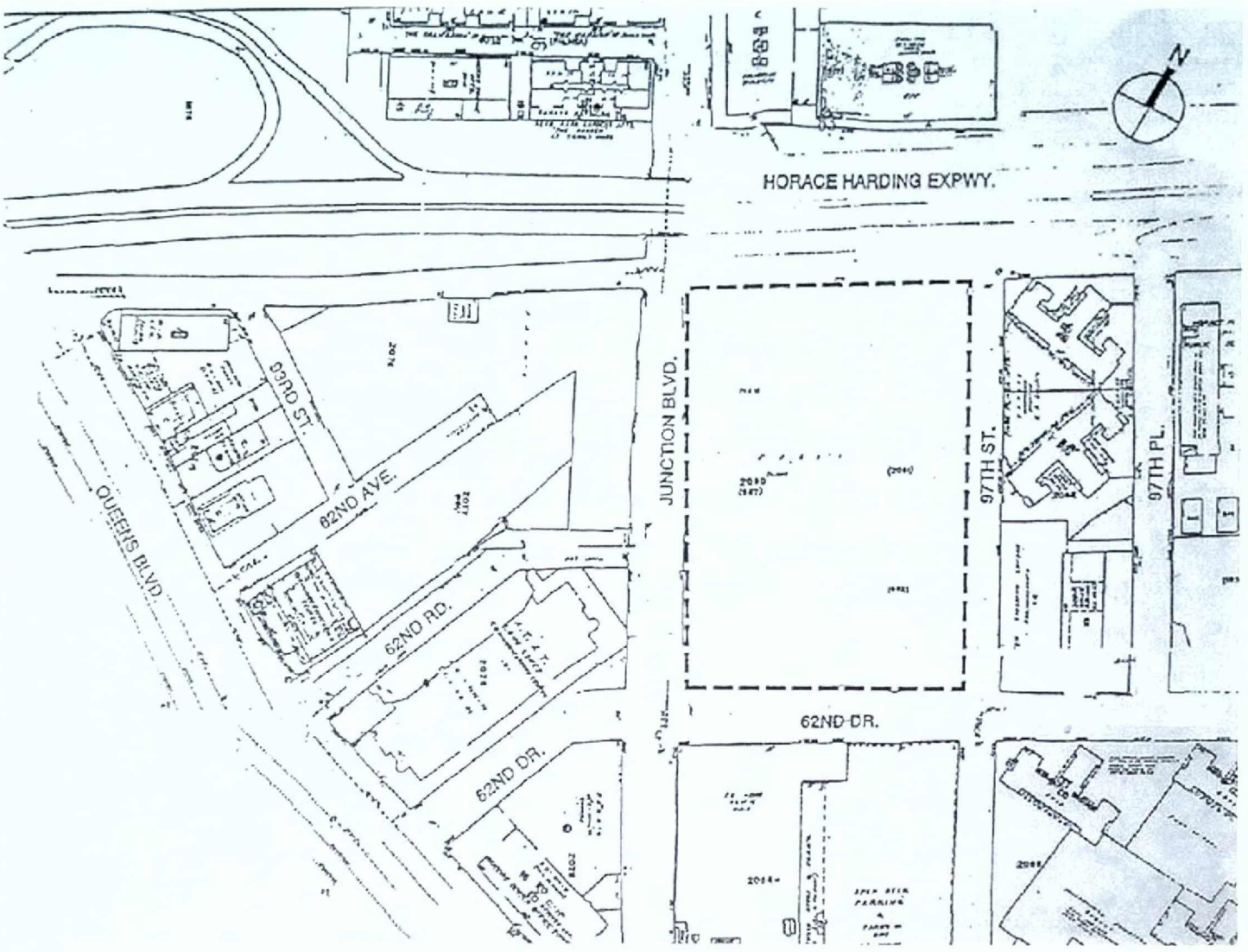


Figure 2. Sanborn, Insurance Maps of the Borough of Queens, 2004

– – – Project site boundaries

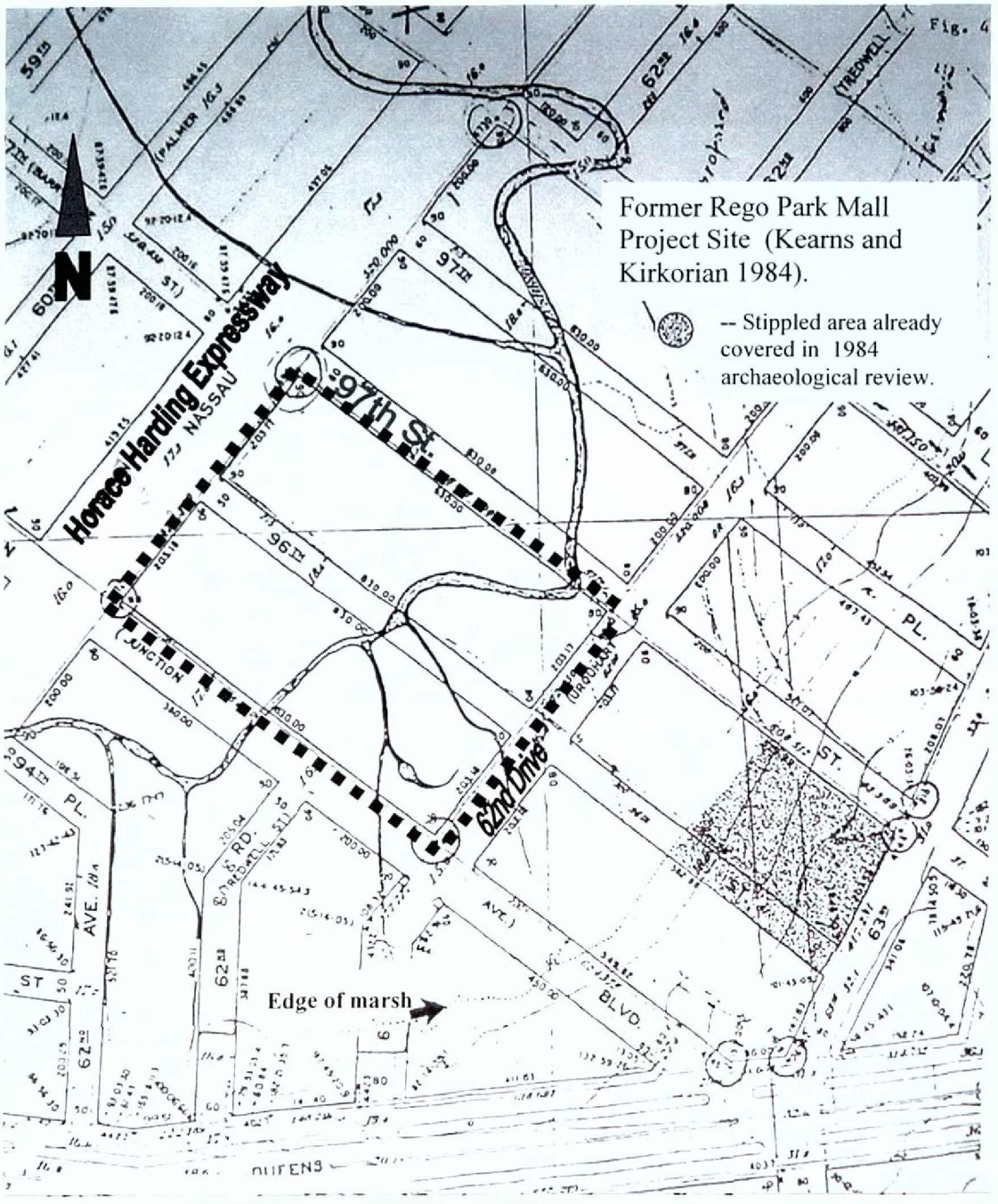


Figure 3. Final Maps of the Borough of Queens, 1910.
(Office of the Borough President, Borough of Queens)

■ ■ ■ ■ Project Site boundaries

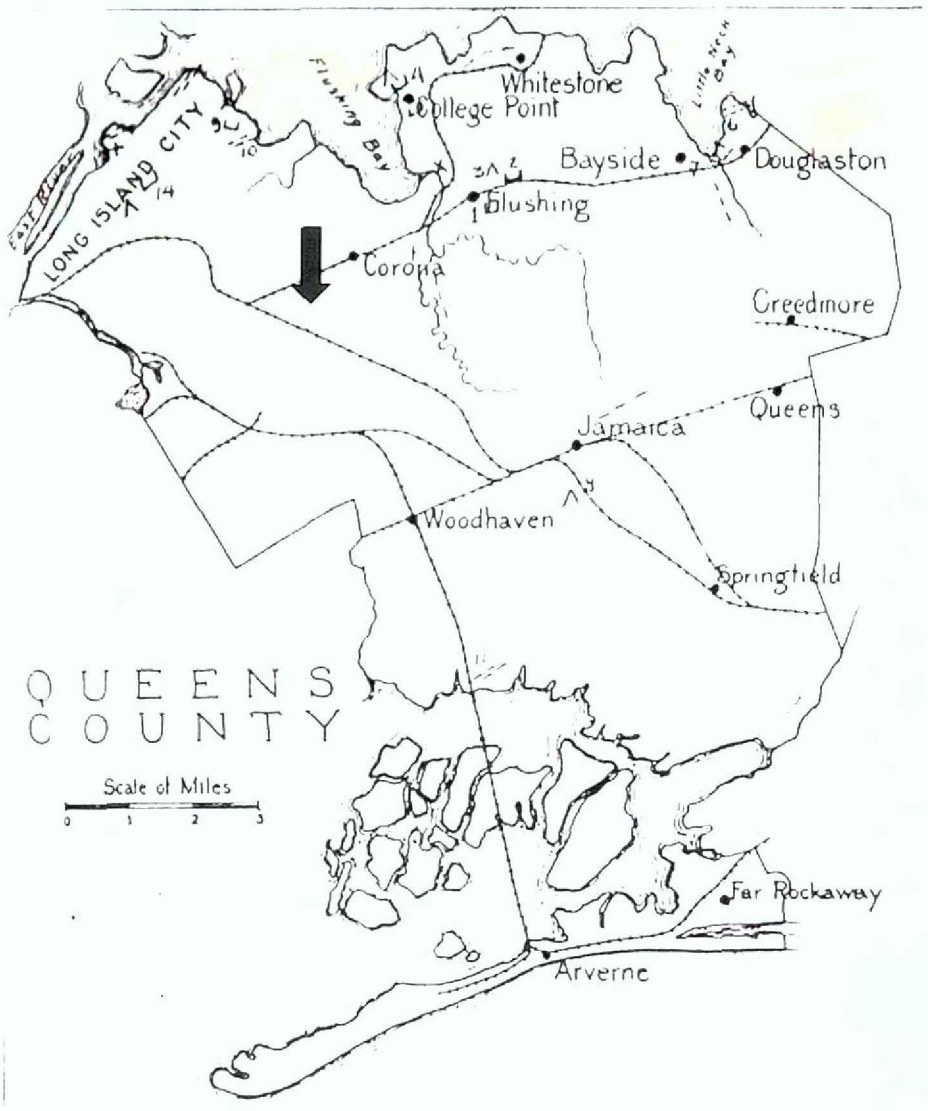


Figure 4. Queens County Archaeological Sites, from Parker (1920: 672, Plate 208).

- - - Traces of occupation
Λ - Settlements
X - Camp site
Numbers mark sites described in Parker's text

Arrow indicates approximate location of project site

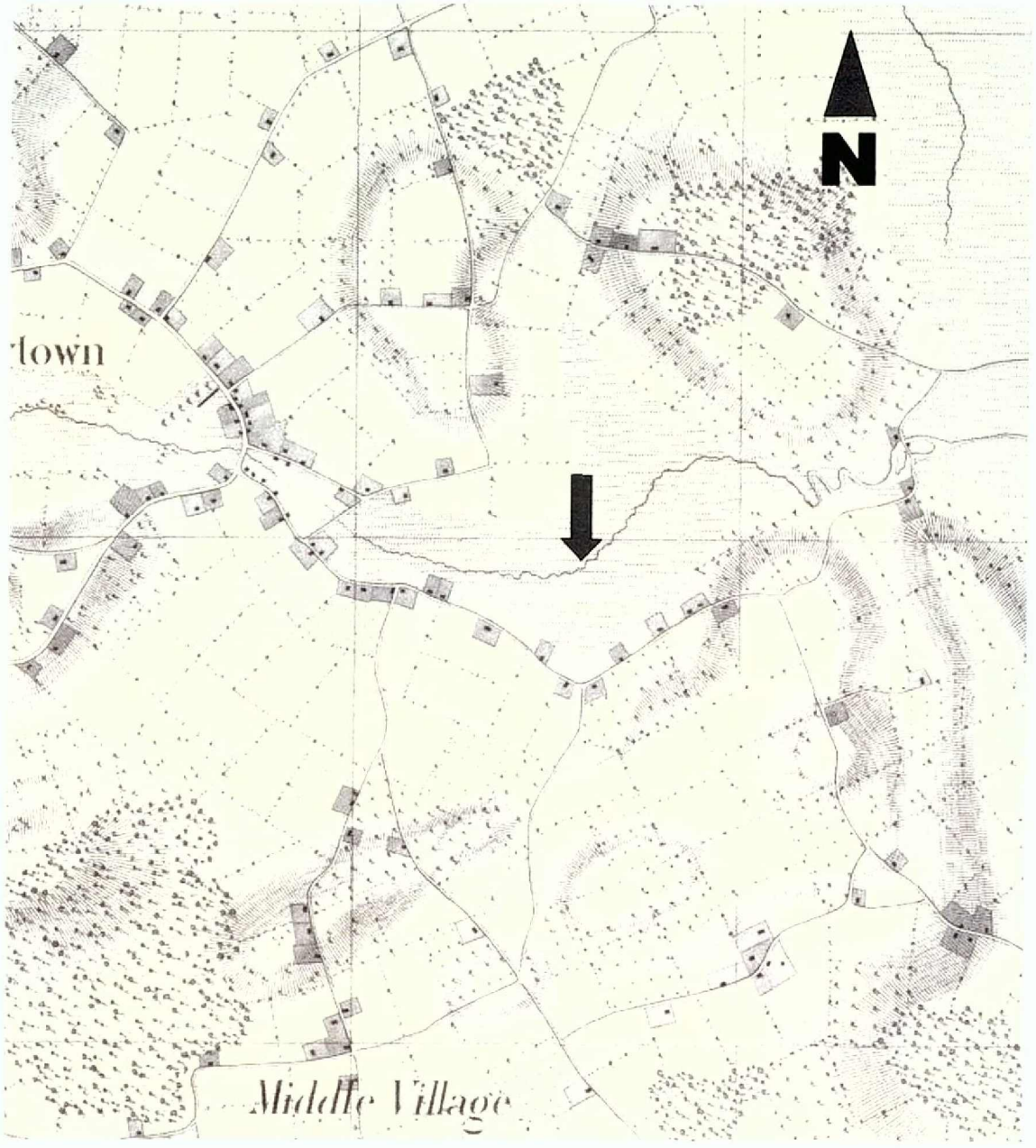


Figure 5. Hassler, Bay and Harbor of New York, 1844
U. S. Coast and Geodetic Survey

Arrow indicates approximate position of the project site.

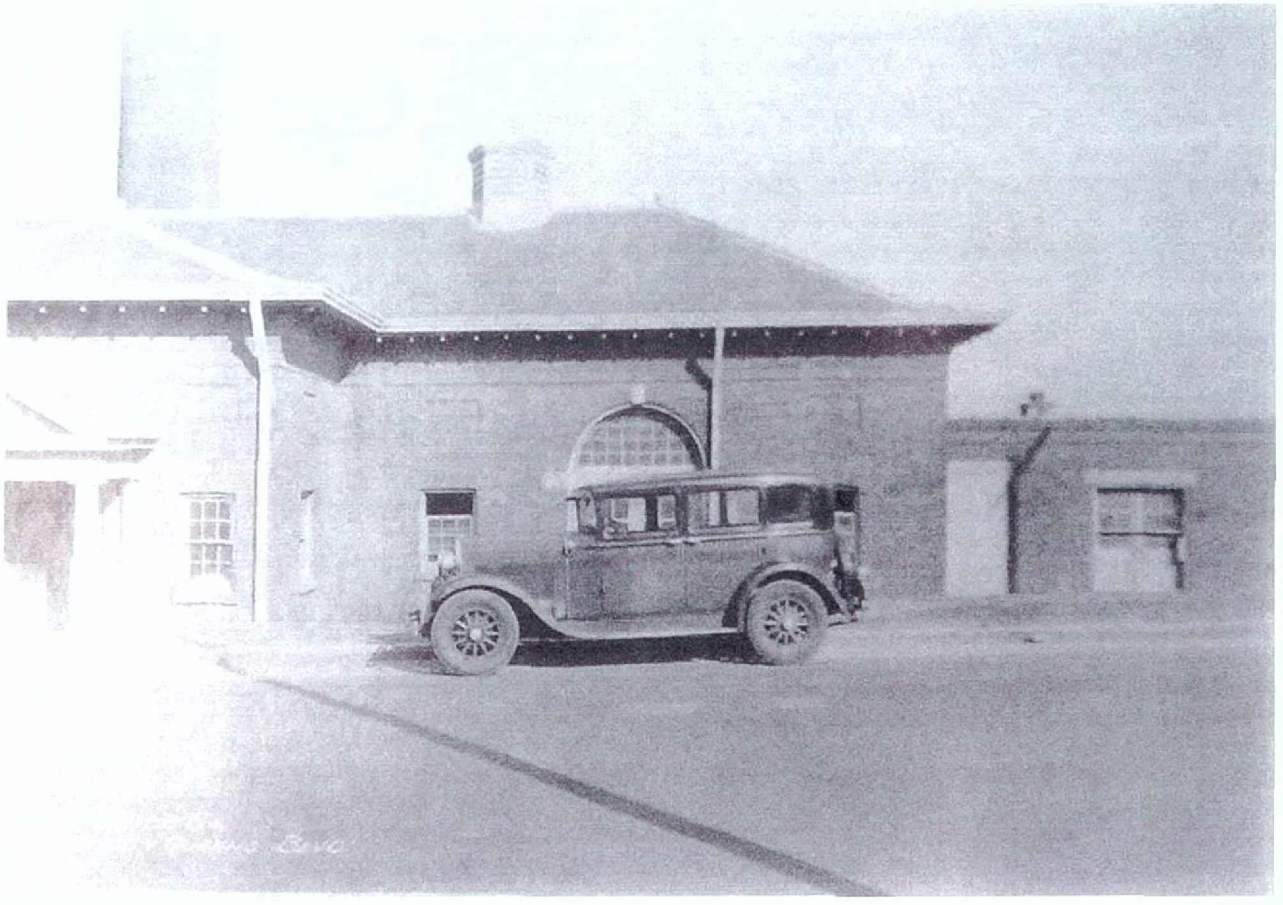


Figure 6. Elmhurst Sewage Disposal Plant at Queens Boulevard and 62nd Road, 1931 (Seyfried 1995:98 -- Note that the building sits in the marsh, about three feet below the level of Queens Boulevard)

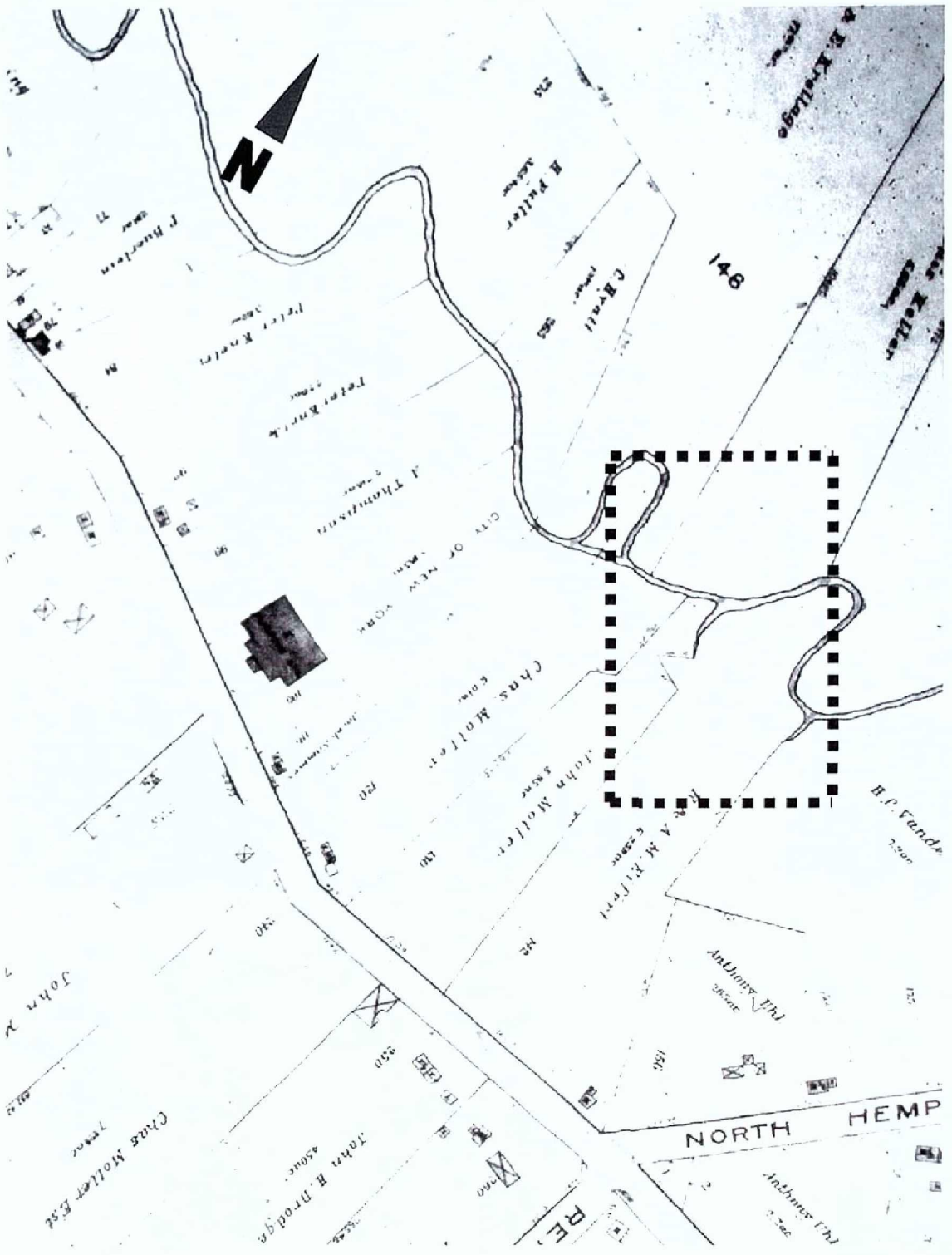


Figure 7. Sanborn, Insurance Maps of the Borough of Queens, 1908

■ ■ ■ ■ Approximate Project Site boundaries

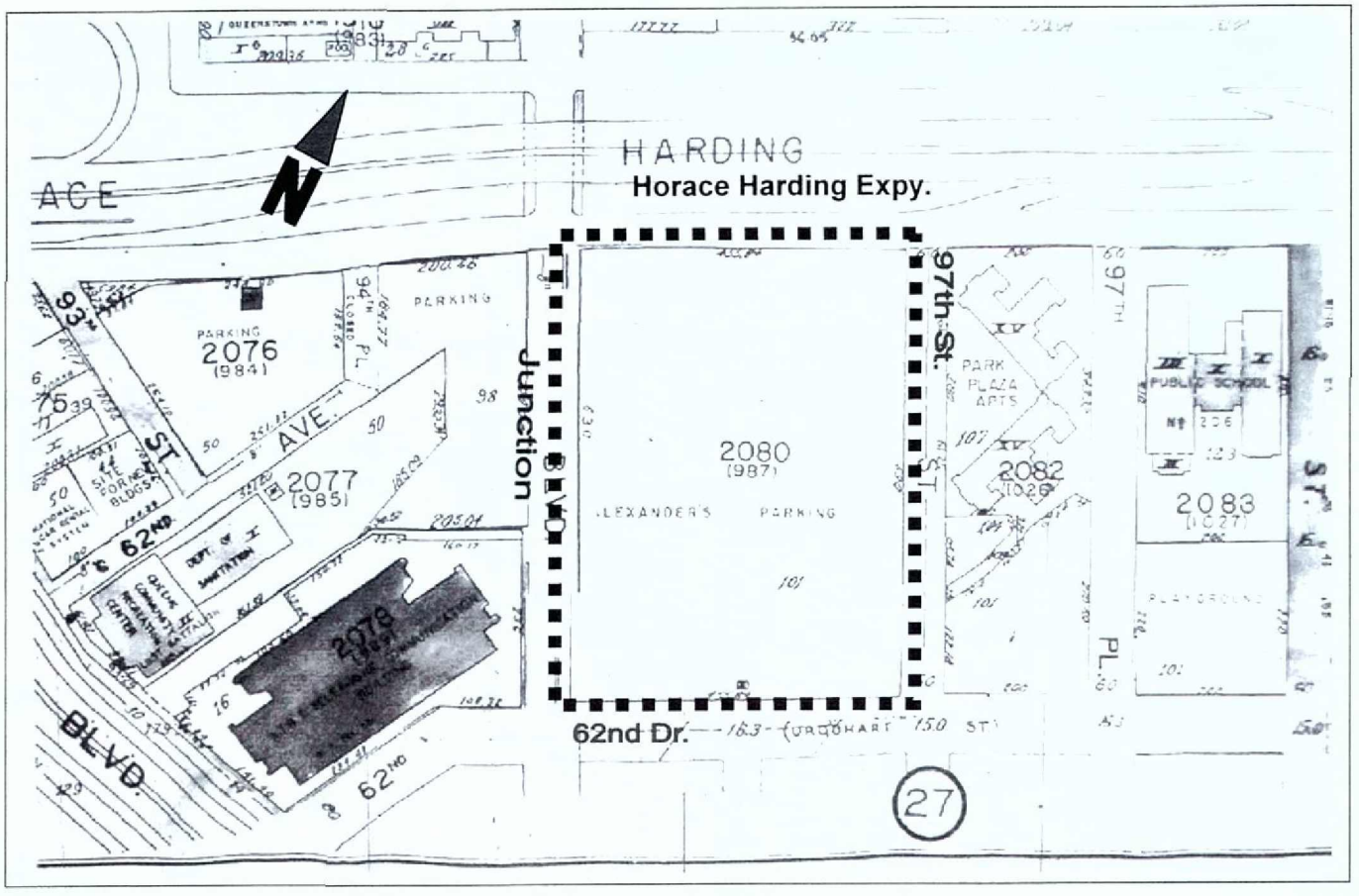


Figure 10. Hyde, Atlas of the Borough of Queens, 1979

▪ ▪ ▪ ▪ Project Site boundaries

Photo 1. View southwest from 97th Street toward project site parking lot entrance, between 62nd Drive and the Horace Harding Expressway.

Photo 2. Looking west from 97th Street across northern corner of project site. Horace Harding/Long Island Expressway at midground.

Photo 3. Project site looking southeast from Horace Harding Expressway, midway between Junction Boulevard and 97th Street. Store in distance is outside the project site on the far (southeast) side of 62nd Drive.

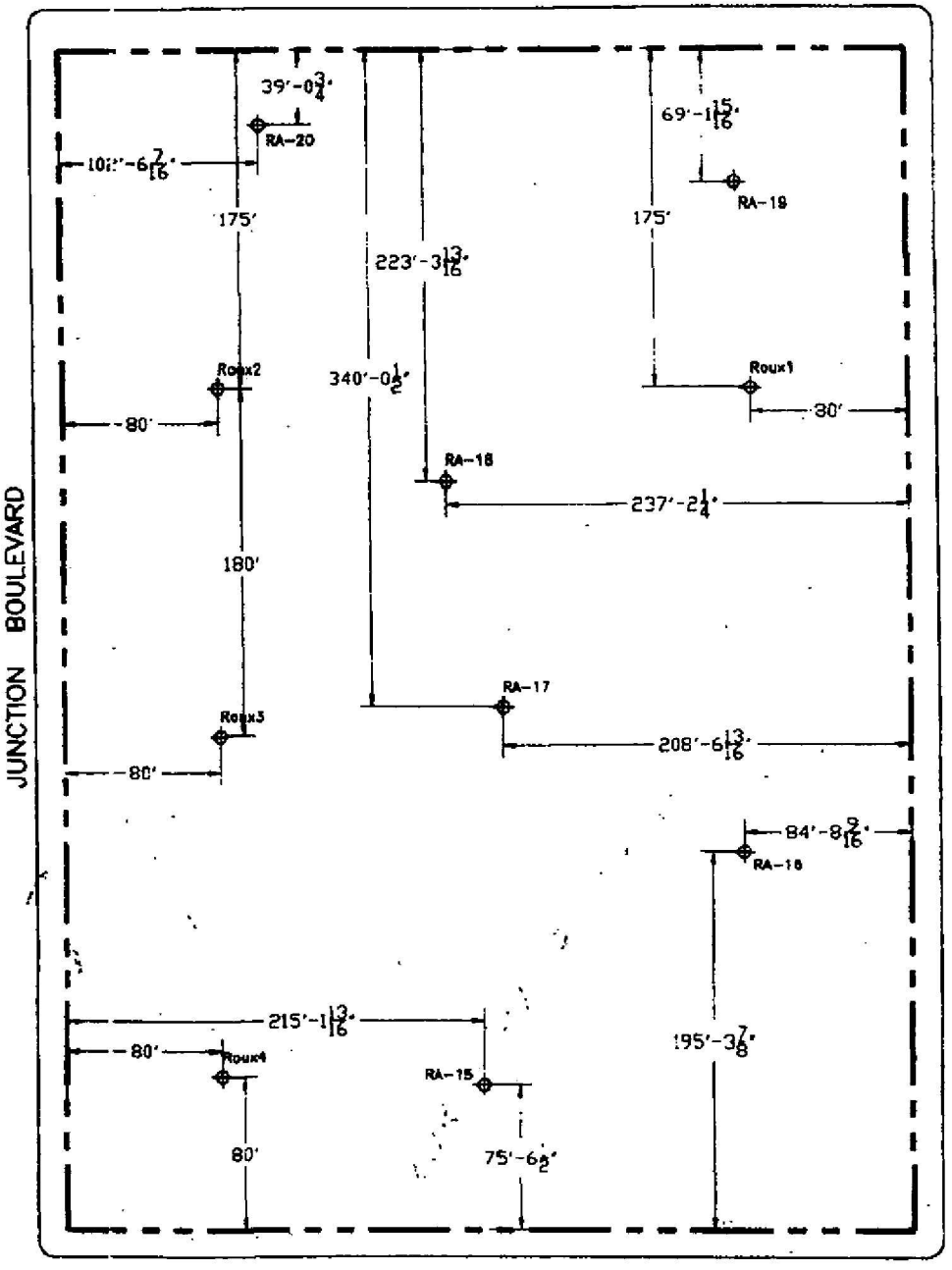
Photo 4. View southeast from Horace Harding along Junction Boulevard, with project site on northeast (left). Note retaining wall raising parking lot above street level.

Photo 5. Looking northwest from across the project site parking lot from 62nd Drive midway between Junction Boulevard and 97th Street. Note project site is level with adjacent sidewalk. Buildings in distance are on the far side of the Horace Harding/Long Island Expressway.

Photo 6. View southeast along 97th Street from Horace Harding, with project site to southwest (right). Note substantial upslope in middle distance, beyond 62nd Drive.

APPENDIX

Soil Boring Logs



LEGEND

RA-20 ⊕ LOCATION AND DESIGNATION OF PROPOSED BORING

● ADDITIONAL SOIL BORING

100' 0 100'

APPROXIMATE SCALE

Title:

BORING LOCATIONS DETAILED PHASE II ESA

BLOCK 2080 LOT 101
REGO PARK, NEW YORK

Prepared For:

VORNADO REALTY TRUST

ROUX

ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: S.S.		Date: 02DEC04	FIGURE
Prepared by: W.H.C.		Scale: AS SHOWN	1
Project Mgr: C.W.		Office: NY	
File No: VOR0310501		Project: 987037	

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Page 1 of 1

SOIL BORING LOG

WELL NO.: Roux-1	NORTHING: Not Measured	EASTING: Not Measured	
PROJECT NO./NAME: 98703Y / Vornado Realty		LOCATION: Rego Park Mall	
APPROVED BY: S. Senh	LOGGED BY: J. Sakellis	Rego Park, Queens, New York	
DRILLING CONTRACTOR/DRILLER: Roux Associates, Inc. / M. Smith		GEOGRAPHIC AREA	
DRILL BIT DIAMETER TYPE: 2-In. / Drive Sampler	BOREHOLE DIAMETER: 2-Inches	DRILLING EQUIPMENT/METHOD: Geoprobe 5400 / Geoprobe	SAMPLING METHOD: 2" Macro-Core
LAND SURFACE ELEVATION: Not Measured	DEPTH TO WATER: Not Measured	BACKFILL: Cuttings	START-FINISH DATE: 11/17/04-11/17/04

Depth, feet	Graphic Log	Visual Description	Blow Counts per 6"	PID Values (ppm)	REMARKS
		ASPHALT			
		Dark brown fine to medium SAND, little Silt, little Gravel, trace Brick, trace Wood; moist (Fill)		0.2	Sample Roux-1/0-2 collected for VOCs, SVOCs, Pesticides, PCBs and Metals.
				1.3	
		Dark brown fine to coarse SAND, little Silt, trace Brick, trace Ceramics, trace Gravel; moist (Fill)			
5				2.0	5
		Dark brown fine to coarse SAND, little Silt, trace Brick, trace Ceramics, trace Gravel; moist (Fill)			
				2.5	
		Brown fine to medium SAND, little Silt, little Gravel; moist to wet (Fill)			
				1.5	
10					10
		CONCRETE			
		Brown fine to medium SAND, trace Silt, trace Glass, trace Brick; moist to wet (Fill)		1.8	
		Dark brown fine to medium SAND, little Silt, trace Gravel, trace Brick, trace Ceramics; moist to wet (Fill)		1.9	
		Dark brown fine to medium SAND, little Silt, trace Gravel, trace Brick, trace Ceramics; moist to wet (Fill)			Sample Roux-1/14-16 collected for VOCs, SVOCs, Pesticides, PCBs and Metals.
15				16.5	15 Hydrocarbon odor detected. Sheen present. Bottom of boring at 16 feet bls.

BORING/WELL 98703Y.GPJ ROUX.GDT 12/2/04

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SOIL BORING LOG

WELL NO.: Roux-3	NORTHING: Not Measured	EASTING: Not Measured	
PROJECT NO./NAME: 98703Y / Vornado Realty		LOCATION: Rego Park Mall	
APPROVED BY: S. Senh	LOGGED BY: J. Sakellis	Rego Park, Queens, New York GEOGRAPHIC AREA	
DRILLING CONTRACTOR/DRILLER: Roux Associates, Inc. / M. Smith			
DRILL BIT DIAMETER TYPE: 2-in. / Drive Sampler	BOREHOLE DIAMETER: 2-inches	DRILLING EQUIPMENT/METHOD: Geoprobe 5400 / Geoprobe	SAMPLING METHOD: 2" Macro-Core
LAND SURFACE ELEVATION: Not Measured	DEPTH TO WATER: Not Measured	BACKFILL: Cuttings	START-FINISH DATE: 11/16/04-11/16/04

Depth, feet	Graphic Log	Visual Description	Blow Counts per 6"	PID Values (ppm)	REMARKS
		ASPHALT			
		Light brown to dark brown fine to coarse SAND, some Slag, some Ash, trace Cinders, trace Glass, trace Ceramics; dry (Fill)			
1				1.5	Sample Roux-3/0-2 and Duplicate collected for VOCs, SVOCs, Pesticides, PCBs and Metals.
2		Light brown to dark brown fine to coarse SAND, some Slag, some Ash, trace Cinders, trace Glass, trace Ceramics; dry (Fill)			
3				1.3	
4		Brown to dark brown fine to coarse SAND, some Ash, some Slag, trace Glass; dry (Fill)			
5				0.3	
6		Brown to dark brown fine to coarse SAND, some Ash, some Slag, trace Glass; dry (Fill)			
7				0.6	
8		Brown to reddish brown fine to coarse SAND, some Silt, some Ash, some Cinders, some Slag, trace Glass; dry (Fill)			
9				0.8	
10		Brown to reddish brown fine to coarse SAND, some Silt, some Ash, some Cinders, some Slag, trace Glass; dry (Fill)			
11				1.3	
12		Dark brown fine to medium SAND, little Silt, little Gravel, trace Brick, trace Cinders, trace Ceramics; moist (Fill)			Sample Roux-3/12-14 collected for VOCs, SVOCs, Pesticides, PCBs and Metals.
13				4.5	
14		Dark brown fine to medium SAND, little Silt, little Brick, trace Ceramics; wet (Fill)		4.5	Refusal at 14.5 feet bls.

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SOIL BORING LOG

WELL NO.	NORTHING	EASTING
RA-18	Not Measured	Not Measured
PROJECT NO./NAME		LOCATION
98703Y / Vornado Realty		Rego Park Mall
APPROVED BY	LOGGED BY	
S. Senh	J. Sakellis	Rego Park, Queens, New York
DRILLING CONTRACTOR/DRILLER		GEOGRAPHIC AREA
Roux Associates, Inc. / M. Smith		

DRILL BIT DIAMETER/TYPE	BOREHOLE DIAMETER	DRILLING EQUIPMENT/METHOD	SAMPLING METHOD	START-FINISH DATE
2-in. / Drive Sampler	2-Inches	Geoprobe 5400 / Geoprobe	2" Macro-Core	11/16/04-11/16/04
LAND SURFACE ELEVATION	DEPTH TO WATER	BACKFILL		
Not Measured	Not Measured	Cuttings		

Depth, feet	Graphic Log	Visual Description	Blow Counts per 6"	PID Values (ppm)	REMARKS
		ASPHALT			
1		Light brown to dark brown fine to coarse SAND, little Silt, little Gravel, trace Ash; moist (Fill)		1.2	*Sample RA-18/0-2 collected for VOCs, SVOCs, Pesticides, PCBs and Metals.*
2		Light brown to dark brown fine to coarse SAND, some Cinders, some Ash, little Silt, trace Glass; moist (Fill)			
3				1.2	
4		Grey to dark brown fine to medium SAND, some Silt, little Gravel, trace Brick; moist (Fill)			
5				0.6	
6		Brown fine to medium SAND, some Silt, trace Gravel, trace Glass; moist (Fill)			
7				1.1	
8		Brown fine to coarse SAND, some Silt, little Ash, little Cinders, trace Brick; moist (Fill)			
9				0.9	
10		Brown fine to medium SAND, some Silt, little Gravel, trace Ash, trace Cinders, trace Brick; wet (Fill)			Sample RA-18/10-12 collected for VOCs, SVOCs, Pesticides, PCBs and Metals.
11				1.5	
12					Bottom of boring at 12 feet bls.

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SOIL BORING LOG

WELL NO.	NORTHING	EASTING
RA-19	Not Measured	Not Measured
PROJECT NO./NAME		LOCATION
98703Y / Vornado Realty		Rego Park Mall
APPROVED BY	LOGGED BY	
S. Senh	J. Sakellis	Rego Park, Queens, New York
DRILLING CONTRACTOR/DRILLER		GEOGRAPHIC AREA
Roux Associates, Inc. / M. Smith		

DRILL BIT DIAMETER/TYPE	BOREHOLE DIAMETER	DRILLING EQUIPMENT/METHOD	SAMPLING METHOD	START-FINISH DATE
2-In. / Drive Sampler	2-Inches	Geoprobe 5400 / Geoprobe	2" Macro-Core	11/17/04-11/17/04
LAND SURFACE ELEVATION	DEPTH TO WATER	BACKFILL		
Not Measured	Not Measured	Cuttings		

Depth, feet	Graphic Log	Visual Description	Blow Counts per 6"	PID Values (ppm)	REMARKS
		ASPHALT			
		Brown fine to medium SAND, some Silt, trace Gravel, trace Brick; dry (Fill)		1.5	Sample RA-19/0-2 collected for VOCs, SVOCs, Pesticides, PCBs and Metals.
		Brown fine to medium SAND, some Silt, trace Gravel, trace Brick; dry (Fill)		0.9	
		Brown fine to medium SAND, some Silt, trace Gravel, trace Brick; moist (Fill)			
5				1.6	5
		No Recovery			
		Brown fine to medium SAND, some Silt, trace Gravel; wet (Fill)		1.2	
10		Brown fine to medium SAND, some Silt, trace Gravel; wet (Fill)		1.4	10
		Brown fine to medium SAND, some Silt, trace Gravel; wet (Fill)		2.0	
		Brown fine to medium SAND, some Silt, trace Gravel; wet (Fill)			Sample RA-19/14-16 collected for VOCs, SVOCs, Pesticides, PCBs and Metals.
15		Dark brown to black fine to coarse SAND, little Silt, trace Plastic, trace Glass, trace Wood; wet (Fill)		2.5	15
					Bottom of boring at 15 feet bls.

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SOIL BORING LOG

WELL NO.: RA-20	NORTHING: Not Measured	EASTING: Not Measured		
PROJECT NO./NAME: 98703Y / Vornado Realty		LOCATION: Rego Park Mall		
APPROVED BY: S. Senh	LOGGED BY: J. Sakellis	Rego Park, Queens, New York		
DRILLING CONTRACTOR/DRILLER: Roux Associates, Inc. / M. Smith		GEOGRAPHIC AREA		
DRILL BIT DIAMETER/TYPE: 2-in. / Drive Sampler	BOREHOLE DIAMETER: 2-inches	DRILLING EQUIPMENT/METHOD: Geoprobe 5400 / Geoprobe	SAMPLING METHOD: 2" Macro-Core	START-FINISH DATE: 11/17/04-11/17/04
LAND SURFACE ELEVATION: Not Measured	DEPTH TO WATER: Not Measured	BACKFILL: Cuttings		

Depth feet	Graphic Log	Visual Description	Blow Counts per 6"	PID Values (ppm)	REMARKS
0		ASPHALT			
		Dark brown fine SAND, some Silt, trace Gravel, trace Glass, trace Brick; moist (Fill)			
1				1.3	Sample RA-20/0-2 collected for VOCs, SVOCs, Pesticides, PCBs and Metals.
2		Light brown to dark brown medium SAND, little Gravel, trace Glass, trace Brick; moist (Fill)			
3				0.6	
4		Brown to dark brown fine to coarse SAND, little Silt, little Gravel, trace Brick, trace Glass, trace Ash; moist (Fill)			
5				0.5	
6		Brown to dark brown fine to coarse SAND, little Silt, little Glass, trace Brick, trace Cinders, trace Ash, trace Rubber; moist (Fill)			
7				.4	
8		Brown to dark brown fine to coarse SAND, little Silt, little Glass, trace Brick, trace Cinders, trace Ash, trace Rubber; moist (Fill)			
9				1.1	
10		Dark brown fine to coarse SAND, little Gravel, little Silt, little Glass, trace Metal, trace Wood; wet (Fill)			Sample RA-20/10-12 collected for VOCs, SVOCs, Pesticides, PCBs and Metals.
11				1.5	
12					Bottom of boring at 12 feet bls

BORINGWELL 98703Y.GPJ ROUX.GDT 12/2/04