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**STAGE 1A  
ARCHAEOLOGICAL ASSESSMENT**

**SHEA STADIUM REDEVELOPMENT  
FLUSHING MEADOWS - CORONA PARK  
BLOCK 1787, QUEENS, NEW YORK  
CEQR No. 02DPR001Q**

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## INTRODUCTION

The New York City Department of Parks and Recreation (NYCDPR) proposes to allow the construction of a new multi-purpose, retractable-roof, 45,000-seat stadium to be located immediately east of the present William A. Shea Municipal Stadium and, following construction, to demolish the old stadium and convert the resulting space to a parking area. The project is to be known as the *Shea Stadium Redevelopment*. Historical Perspectives, Inc. has been contracted to perform a Stage 1A Archaeological Assessment to determine the site's potential for archaeological resources and, if the site is deemed to be sensitive, how these resources have been affected by episodes of construction, filling or grading. This report has been prepared according to City Environmental Quality Review (CEQR) standards.

Archaeological resources are finite and non-renewable, and the optimum time to assess their significance and organize for recovery or preservation is in the initial stages of project planning.

### Methodology

In order to accomplish this task, the following steps have been undertaken:

- A surficial examination of and photographic record of the present conditions of the parcel;
- Research in both primary and secondary sources on the historic functions of the land through time, including inspection of old photographs and cartographic study;
- A review of published and unpublished archaeological literature and records pertinent to the project site and project area; and
- Direct inquiries of individuals working within the project site, of historians, and of both avocational and professional archaeologists for any relevant facts concerning the primary site and the secondary impact areas.

Much of the Native American and Historical research for this assessment comes from an earlier report on a site immediately east of the project parcel (HPI 1985).

### Site Location and Current Conditions

The project site is located within Flushing Meadows-Corona Park, on Block 1787 in Queens, New York. (See Figures 1 and 2.) It is bounded by park perimeter roads on the north and west, which in turn abut Northern Boulevard and Grand Central Parkway. The New York City Transit (NYCT) Corona Yards south of Roosevelt Avenue form the site's southern boundary, and 126<sup>th</sup> Street forms its eastern edge. The elevated

Queensboro IRT-BMT subway line runs above Roosevelt Avenue in the southern portion of the site, where a former World's Fair station (now Willets Point/Shea Stadium) is located. The old fair grounds, now part of Flushing Meadows-Corona Park, are just south of the project site and contain the United States Tennis Association's facilities. In addition, NYCDPR's Olmsted Center is located just south of Roosevelt Avenue.

The entire area around Shea Stadium and the subway station is paved over and serves as parking for the stadium and for commuters using the subway and Long Island Rail Road (LIRR) lines. These parking lots are punctuated by flood light towers, with trees planted around the site perimeter. (See Photographs A and B.)

### **Geological Setting**

The North Shore of Long Island is regularly indented by bays and estuaries—a legacy of the last advance of the Wisconsin Glacier of 10,000 to 12,000 years ago. Flushing Bay is approximately 1,300 feet to the north of the project site, and Flushing Creek runs approximately 2,000 feet to the east.

Following the retreat of the Wisconsin Glacier circa 12000 years ago, the project parcel was a glacial lake. As the glacier melted and sea levels rose, the lake silted in and became a salt marsh; this is confirmed by soil borings done for Mueser Rutledge Consulting Engineers (Mueser Rutledge 1998). The depth of these borings, done at the proposed construction site of the new stadium, were up to 260 feet below the ground surface.<sup>1</sup> Fill was deposited directly on the surface of the marsh, as is apparent from the depth of fill, which is the same as the depth of the water table. In the borings, ground water appeared at between 8 and 11 feet below the surface, under an equivalent layer of fill 8 to 12 feet thick. The fill consisted of brown-black-gray coarse to fine sand, trace to some gravel, silt, trace mica, cinders, wood, roots, glass, brick, metal, and asphalt. Below the fill, there were several strata, as described and interpreted in the Mueser Rutledge report:

- 50-60 feet of organic clay with a trace of shells, decomposed vegetation, and mica;
- Layers of peat both above and below the organic clay;
- 7-20 feet of various layers of sand, varied silt and silty clay;
- A fine grained glacial lake deposit interlayered with varied silts and sands;

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<sup>1</sup> All elevations refer to Queens Borough President datum, which is 2.725' above the U.S. Coast & Geodetic Survey datum of mean sea level at Sandy Hook.

- 10 to 70 feet of glacial sand; and
- Outwash sand, the deepest stratum.

Peat is partially decomposed vegetation, for example salt hay. Its presence at varying levels indicates that the glacial lake, silted over circa 12,000 years ago, and then new grasses grew and were silted over, and so on in a series of growth and burial episodes:

### **NATIVE AMERICAN ARCHAEOLOGICAL RESEARCH**

That Indian settlements were located near fresh-water rivers and salt bays is known both from early documents and archaeological research conducted over the past 100 years. It is necessary to establish whether the project site would have been attractive to the Native American population, and if so, what kind of sites might be expected.

To understand how Native Americans exploited different environmental niches over time, it is necessary to separate the prehistoric peoples into time periods according to their distinct cultural differences. Archaeologists divide the Native American period into three sub-periods: the Paleo-Indian, the Archaic, and the Woodland, which are further divided as shown below:

PERIOD	YEARS BEFORE PRESENT (BP)
Paleo-Indian	13,000 – 10,000
Early Archaic	10,000 – 8,000
Middle Archaic	8,000 – 6,000
Late Archaic	6,000 – 3,700
Terminal Archaic	3,700 – 2,700
Early Woodland	2,700 – 2,000
Middle Woodland	2,000 – 1,200
Late Woodland	1,200 – 300

#### **Paleo-Indian Period**

The sea level was notably lower during this period. Therefore, many sites that were once on well-drained land near the ancient coast are now submerged, and sites that later became swamps could have been on dry land. Leonard Eisenberg's research has indicated that three types of terrain were preferred for Paleo-Indian sites:

- Lowland waterside camps near coniferous swamps and near larger rivers;
- Upland bluff camps in the areas where deciduous trees dominated;

- Ridge-top camps, also where deciduous trees dominated.

Eisenberg notes that the waterside settlements he studied were situated on locally well-drained soils (Rutsch 1983: 33). Archaeo-exploitation of upland zones was limited primarily to the Late Archaic Period and after, whereas recent Connecticut River Valley research indicates Paleo-Indian exploitation of the upland zone ridge terraces overlooking water courses (Gorman 1983:18-22). The only evidence of Paleo-Indian Period occupation in Queens County is a projectile point mentioned in Saxon (1973), as noted in Rutsch (1970), for which no provenance was obtainable from the Museum of the American Indian. Paleo-Indian sites are scarce in the Northeast.

As stated above, the parcel itself was a glacial lake during the Paleo-Indian Period. Therefore, although the Indians probably exploited its natural resources, it is unlikely that it was used for habitation. There were higher and better-drained areas adjacent to the parcel that would have been more suitable. There is, however, such a lack of knowledge on the habitation system and population density of this earliest time that we cannot predict the extent of any such possible resource. It is evident that more scientifically documented field excavations of this period would greatly aid our understanding of southern New York's past.

### **Archaic Period**

The sea level began to rise during the Archaic Period, as the glacier melted. In the coastal and tidewater areas of New York, the Archaic Period (ca. 9,000 years ago) is "represented by numerous, small, nearly always multi-component sites, variously situated on tidal inlets, coves and bays, particularly at the heads of the latter, and on fresh-water ponds on Long Island, Shelter Island, Manhattan Island, Fisher's Island, and Staten Island and along the lower Hudson River on terraces and knolls, at various elevations having no consistent relationship to the particular cultural complex" (Ritchie 1980:143). The people of this period were primarily hunters and gatherers, with recent research indicating some more permanent settlements.

### **Woodland Period**

By the time of the Woodland Period (c. 3,000 years ago), the sea level and exposed coastal regions were, in most respects, as they appear today. The archaeological evidence from Woodland Period sites indicates a strong preference for large scale habitation sites to be within proximity to a major fresh water source (e.g., a river, lake, or extensive wetland), and smaller scale extractive-functioning sites to be situated at other resource centers (e.g., quarrying sites, butchering stations, and shell gathering localities). The production of pottery and the use of the bow and arrow began in this period, as did the practice of agriculture.

## Contact Period

This final period, after the arrival of the first Europeans, is a period of decline for the Native Americans. Their pattern of hunting was disrupted by the spread of settlement, many died from diseases to which they had no resistance, and there were wars which drove them out of their homelands. A few fled to eastern Long Island, and many went west.

## NATIVE AMERICAN ARCHAEOLOGICAL SENSITIVITY

Archaic, Woodland, and Historic Period aboriginal presence in Queens County is well documented by sites excavated by Bolton, Harrington, Skinner, Smith, Solecki, Williams, Platt, Kaeser, and Venuto. Documentary evidence shows that by 1666 the Indians had been pushed out of the project site area by the European arrivals, although the Indians reserved the right to hunt in the uplands of the area. Flushing Creek is the eastern boundary of the plot cited in the deed granting land to the settlers (Riker 1852: 73ff). Although Queens historian Riker refers to this Indian tribe as Canarsie, Thompson identifies the local Indians as part of the Rockaway tribe. (1839:135)

Some of the known Native American sites in the area include the extensive shell mounds which once existed at the Jackson farm and a burial field at the neighboring Kouwenhoven farm at the Poor Bowery, both discussed by Riker. These sites are approximately two to three miles west of the project site. M. R. Harrington's 1909 report, American Museum of Natural History *Anthropological Papers*, provides a map of shell deposit sites that includes an area south of Flushing Creek and north of Jamaica Bay, the College Point area, and the Little Neck Bay area. It is very possible that unidentified bones and projectile points presently at the Poppenhusen Institute, on the west side of Flushing Creek, were from some of these local sites. However, it is impossible to make that connection now. It is also impossible to exactly locate many of the sites reported by the historians of the nineteenth century.

The following quote, from archaeologist Dr. Ralph Solecki, speaks of the many Indian sites in the area that were lost during construction and development before World War II.

*Building activity and public improvements have been a deterrent to the committee's research activities in the field. Out of a total of 29 Indian sites in Queens, 17 within the past three years have become entirely obliterated. In the process of enlarging the airport at LaGuardia Field, several sites on Jackson's Creek and Bowery Bay were destroyed. The World's Fair obliterated a large site on Flushing Creek and another at Sanford and Fowler Avenues, Flushing. Perhaps the most destructive large scale operation was the construction of the Belt Parkway which*

*covered 17 sites. The parkway also cut through a small site on the Lawrence estate near Flushing Bay. The committee had scarcely begun work on Tallman's Island, at College Point, when the surveying crew for the sewage disposal plant moved in. From then on it was a hectic race between the trowel and shovel of the archaeologist and the steamshovel and bulldozer of the engineer. (Solecki, 1941)*

Robert Steven Grumet, expanding on Solecki's and Bolton's work, depicts many of the sites that were located in the Borough of Queens (Grumet 1981:71). He shows two Indian trails converging on or near the project site; however, actual settlements were located to the north and east of the project site at the base of College Point, and to the west at Maspeth near Newtown Creek. (See Figure 3.) An even more comprehensive work by Eugene Boesch evaluates the archaeological sensitivity for all of Queens and locates known Indian sites, some more precisely than others (Boesch 1997). (See Figure 4.) None of these sites are within the project parcel. However, Boesch rates the project area as highly sensitive. He locates the following sites within a mile of the project parcel on his map, using his own numbering system. They are listed in order of their proximity to Shea Stadium.

- 61. A campsite reported by Parker in 1922. New York State Museum (NYSM) #4544. (Two locations are given for this number, with one of them on the project site. It is highly unlikely that this is accurate, given the geological make-up of the parcel.)
- 75. An unspecified site discovered by Solecki in 1941 that was destroyed by construction of the Van Wyck Expressway and is very precisely located in Figure 4.
- 60. A campsite and traces of occupation, reported by Parker 1922 and Solecki 1941, which is also given two locations on the map. NYSM #4545.
- 40. A camp site discovered by Solecki in 1941.
- 2. 15 Burials at the former Linnaean Gardens, with musket balls and nails associated with some, suggesting Contact Period age. Also with two alternative locations. Recorded by Beauchamp 1900:1; Bolton 1922, 1934; Furman 1874; Parker 1922; Mandeville 1860. NYSM #4524.
- 30. Archaic and Woodland site excavated by Smith at the beginning of College Point. Nassau County Museum Files #79 "the woods."

Just outside the one mile study area, to the northeast of the project site, is Boesch's Site #4, a Contact Period (Matinicock) habitation reported by Bolton in 1975.

To the north across Flushing Bay and the East River on the Bronx side are sites at Throgs Neck (Rothschild and Lavin 1977; Bolton 1934) and Clason's Point (Skinner 1919; Lopez 1955). Pelham Park area sites are reported in Lopez 1956 and Kaeser 1963, 1964, and 1965. Although the Bronx sites are separated from the project site by Flushing Bay, they should not be overlooked in the pattern of aboriginal inhabitation of the area. Sensitivity reports (Gonzalez and Daniel 1978) and locational models (Ceci 1980) demonstrate that waterways were no barrier between Indian groups/sites, and that reported prehistoric sites cluster around water sources and waterways. The Indians of north shore Queens possibly may have been in greater contact with those of the Bronx than with the Indians of south shore Queens.

In summary, the project site is encircled by archaeological sites reported in the literature and by avocational and professional archaeologists. However, the only direct information on prehistoric artifacts found within the actual boundaries of the site is from William Asadorian, historian and former staff member at the Long Island Room, Queens Borough Public Library. Asadorian states that "old timers" of the area using the library collections told him of walking the beaches of the area and finding stone "arrowheads" near Shea Stadium. They were not "collectors" or "diggers," but found them on the surface. He has no way of identifying these people today.

As mentioned above, the majority of the project site was a marsh after the sea level gained its present height and prior to modern manipulation of the topography. (See Figure 5.) Thus, it would appear unlikely that the project site was a prehistoric habitation zone during the recent periods of higher sea level, which correspond to approximately the past 3,000 years. However, the site may have had greater habitation potential during the Archaic Period (10,000-3,000 years ago) when the shoreline was meters or kilometers away, (Edwards and Emery, 1982:14). Officially recorded Native American sites within the general area are located on natural soils of elevations between 0 and 60 feet above the 1891 mean high water line. Even so, it seems highly unlikely, with more elevated locations to the east and west, that this lower ground would have been attractive to the earliest people.

## HISTORICAL PERIOD RESEARCH

Before the arrival of Europeans, the area was a great sea of windblown marsh grass, inundated at every tide by the waters of Flushing Creek and naturally drained by a myriad of intersecting streamlets. Waterfowl nested in the tussocks of grass, fiddler crabs found a home in the soft muck and fish spawned in the brackish upland pools. The Corona Meadows, as it was called, extended from present-day 111<sup>th</sup> Street to Flushing Creek and from Flushing Bay to the Long Island Expressway, covered hundreds of acres, and acted as an almost impenetrable barrier separating western Queens and its populous villages from Flushing.

The first European settlers were attracted to the project site area by the abundance of materials needed for settlement: timber on the uplands, potable water, thatch, fieldstone, meadowland for grazing, and well-watered soil for growing crops. The earliest settlers chose the western edge of the meadowlands—a point beyond the reach of the high spring flood tides, where the land slopes gently upward blending imperceptibly into forest—to make their settlement.

The first settler to the area was Robert Coe, an Englishman, who in 1655 built a house at Colonial Avenue and what is now the middle of the Long Island Expressway, a little over a mile south of the project site. A large stream from the west, Horse Brook, debouched into Flushing Creek at this point, and Coe dammed up the stream to create a pond to furnish water for a grist mill. The house and mill went through many ownerships over the years. The grist mill saw declining use through the 19<sup>th</sup> century, finally succumbing to fire in 1875 (Burr 1829). The house survived until 1930, when it fell victim to the building of Horace Harding Boulevard, the predecessor of the Long Island Expressway.

The next settlement in the area was made by John Ramsden, a Newtown magistrate, very probably in 1655 or 1656. Ramsden built a house on the north side of Northern Boulevard between 111<sup>th</sup> and 112<sup>th</sup> Streets, about 2,500 feet northwest of the project site. The house later passed to the Rapalyes, Lawrences, and Lents. A second, larger house was built circa 1712, and survived with many alterations into the 1920s (Riker 1852).

In 1684, Abram Joris Brinckerhoff, along with his brother-in-law, John Berrien, bought 400 acres on the Corona Meadows. Both built houses very near each other. Brinckerhoff put up his house at what is now the northeast corner of 112<sup>th</sup> Street and 39<sup>th</sup> Avenue, approximately 1,200 feet west-southwest of the project site. The Berrien house, a typical Dutch farmhouse, was built midway between 112<sup>th</sup> and 114<sup>th</sup> Streets and south of 38<sup>th</sup> Avenue. The Brinckerhoff house was enlarged and rebuilt by successive owners in the 19<sup>th</sup> century and was razed in 1910 by a development company to create Elliott manor. The Berrien house remained unchanged in appearance for over 200 years, and was finally burned down by tramps in 1906 (Seyfried, *Newtown Register Indexes*).

Other colonists settled in Corona during the 18<sup>th</sup> century, but they carved out homesteads farther to the northwest, in the neighborhood of Junction Avenue (the old road leading to the only other grist mill in the area at 94<sup>th</sup> Street and Grand Central Parkway, today the main entrance to LaGuardia Airport). It is said that the new President, George Washington, considered the project area as a site for his new capital, but was driven away by the marsh's mosquitoes (Miller 2000:184).

The Corona Meadows were by no means neglected by the colonists during the 17<sup>th</sup> and 18<sup>th</sup> centuries; on the contrary, it was essential for every settler, no matter where he

settled, to carve out a patch of meadowland for himself, because the salt grass provided two necessities for life: hay for cattle to eat during the long winter, and bedding for the animals in the barn. In the summer colonists bagged geese to vary the monotony of their diet. At all times of the year, Flushing Creek provided a navigable waterway to reach Flushing and the markets of New York. Up to the 19<sup>th</sup> century, no one traveled overland if this could be avoided, because the roads were very few in number, circuitous, and in wretched condition.

The solitude of the vast Corona Meadows began to be invaded with increasing frequency by the works of man over the course of the 19<sup>th</sup> century. The first such incursion was the laying-down of a turnpike road by the Flushing and Newtown Road and Bridge Company, which was incorporated in March, 1801. The company also built the first bridge over Flushing Creek, ending the colonial ferry service. The turnpike road ran just north of the project parcel, following the present roadbeds of Northern Boulevard, 37<sup>th</sup> Avenue, and Elmhurst Avenue to Broadway. The company charged tolls ranging from 3¢ to 25¢, depending on whether one traveled by coach, wagon, horseback, or foot. The turnpike company went out of business in 1861 (U.S.C.& G.S. 1838, Dripps 1852).

The second and more lasting turnpike was constructed by the Hunter's Point, Newtown and Flushing Turnpike Road Company, incorporated on April 16, 1857. The road was built primarily to bring patrons to the Fashion Race Course in Corona, which was then at the height of its fame. The race course was located between 34<sup>th</sup> and 37<sup>th</sup> Avenues and 98<sup>th</sup> and 104<sup>th</sup> Streets. The turnpike was constructed during 1859 and 1860 and opened in 1861. The new turnpike intersected today's Astoria Boulevard at 114<sup>th</sup> Street; and then utilized the older turnpike route to Flushing Creek. Fill was laid on the meadows to widen the older road, so that two lanes of traffic could be accommodated. This second turnpike road also followed the route of today's Northern Boulevard, just north of the project site.

The next major construction project in the area was undertaken by the Flushing and North Side Railroad, which built its line in 1868 from Whitestone to College Point, south to Flushing, then across Flushing Creek on a trestle to about 36<sup>th</sup> Avenue to the Corona side. From there the track hugged the creek bank, joining the LIRR track at about 44<sup>th</sup> Avenue. This course brought it well south of the project site. The line later became the Whitestone Branch of the LIRR and operated until February 15, 1932.

In 1873, the Woodside and Flushing Railroad laid a track on a man-made embankment across the meadows, through the project site, roughly 250 to 300 feet south of and paralleling Northern Boulevard. The building and grading of the embankment, which involved gouging out a ditch and piling up the muck for a right of way, occupied all of 1872 and 1873, and trains began running over the single track on April 27, 1874. This service was very short-lived, ending at the end of 1878. The track thereafter lay abandoned for many years.

The next intrusion in the meadows was made by the Newtown Railway Company, which established a trolley line running from Woodside to Flushing via a circuitous route.<sup>2</sup> The trolley ran through Corona along 43<sup>rd</sup> Avenue to 114<sup>th</sup> Street, where the meadows began. At that point, the track struck out across the meadows on a high wooden trestle in a northeasterly direction, slicing diagonally across the project site, until it came to Flushing Creek, where it joined the Northern Boulevard trolley line and crossed the bridge into Flushing. The trolley began operating on April 21, 1895 and continued running until 1915, when the filling of the meadows forced a shutdown of the line (Rand McNally 1908). (See Figure 5.) Queens railroad historian Vincent Seyfried describes the old trestle as supporting a single track, except for a passing siding in the middle of the meadows. It was expensive to maintain, and the trolley company was happy to tear it down and reroute service to the north of the project site near Northern Boulevard (Vincent Seyfried, personal communication 9/29/2001).

The elevated Queensboro IRT-BMT subway line was extended to its current Willets Point/Shea Stadium stop, in the southern portion of the project parcel, in 1928. Mr. Seyfried remembers how the columns holding up the track remained firm because of their footings, but the pavement in between sank down as the fill underneath subsided (Vincent Seyfried, personal communication to Marty Cobbs, 9/29/2001).

### THE FILLING-IN OF CORONA MEADOWS

The years immediately before and during World War I witnessed one of the largest reclamation projects ever undertaken in Queens County—the filling-in of the Corona Meadows. As mentioned above, this huge tract of land covered hundreds of acres and acted as an almost impenetrable barrier separating western Queens and its populous villages from Flushing. Only two roads crossed these vast meadows: Northern Boulevard, following the line of Flushing Bay, and Strong's Causeway, obliterated by today's Long Island Expressway (Rand McNally 1908). The short-lived Woodside and Flushing Railroad passed through the northern edge of the project site between 1874 and 1878, and the 1895 Newtown Railway Company trolley crossed the Shea parcel on its trestle.

The idea of reclaiming hundreds of acres of marsh and building a huge industrial park on the site can be traced back to Michael Degnon. Degnon had made a reputation for himself as one of the most prominent contractors in the metropolitan area. He built the Williamsburg Bridge in 1903, and later the Cape Cod Canal; still later, he was the contractor for large sections of the IRT subway and the Steinway Tunnel. His development of the big Degnon Terminal in Long Island City had proved successful, and in 1907 he began to buy up every tract of salt meadow along Flushing Creek that he could

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<sup>2</sup>The various turnpike, rail and trolley companies that traversed the project site were merged, consolidated, bankrupted, and dissolved over time; with each transition, the corridor took on a new, but similar name.

get—land that up to that time had been considered all but worthless. Degnon set up two subsidiaries of his Degnon Realty and Terminal Improvement Company, called the Borough Development Company and the Flushing Bay Improvement Company, to manage the filling-in of the newly-purchased marshes.<sup>3</sup> Several other wealthy contractors were associated with him in the project.

The Borough Development Company made a five-year contract with the City of New York for the removal of ashes and street sweepings from Brooklyn. The Sanitation Department in Brooklyn delivered to various depots along the line of the Long Island Rail Road at Sheepshead Bay, Vanderveer Park, East New York, Carlton Avenue, Bushwick, and other stations, 20 carloads of 1,000 cubic yards of sweepings per day, which the railroad then delivered to sidings in the meadows for dumping. Within Brooklyn, the Brooklyn Rapid Transit Company set up a subsidiary called the Brooklyn Ash Removal Company. Trolley dump cars, operating at night, collected the ashes from thousands of city homes and delivered them to depots from whence the material was transferred to the Long Island Rail Road or run out by trolley to Corona. In this way, Degnon was in effect setting up a vast conveyor belt for the refuse of an entire borough to be dumped in Corona. The City of New York not only derived an income from the sale of its refuse but was spared the expense and trouble of its disposal.

The filling-in of the meadows constituted only a small part of Degnon's grandiose scheme for the area. He envisioned a great port to be built in Corona fronting on Flushing Bay. It was anticipated that the federal government would invest liberally in digging out the bay to accommodate large ships and then straighten and bulkhead the whole length of Flushing Creek to its headwaters in Kew Gardens. The State of New York was at this period committed to stimulating barge traffic via the Erie Canal and the Hudson River, and was actually buying up sites for three large barge canal terminals, one at the mouth of Flushing Bay and two in Long Island City. The City of New York agreed to Degnon's request to de-map all of the "paper" streets laid out across his proposed industrial park and to furnish all the city services needed for the new port. Degnon, having worked closely with the Long Island Rail Road in Long Island City, had no difficulty in persuading the railroad to furnish all the industrial spurs and sidings that would be necessary to move freight into and out of the waterside terminal.

The first extensive filling-in work was done during the winter and spring of 1910 south of the LIRR track and down to Strong's Causeway (now the Long Island Expressway), which is just south of the project area. An average of three to five scow loads of ashes, loaded under the Brooklyn Bridge, were unloaded each day at the dock of the Borough Development Company on Flushing Creek. These scows were in addition to

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<sup>3</sup>Over time, Degnon's corporate entities were known by a variety of similar names. The historical accounts and records are confusing in the lack of consistency in referencing his endeavors. This report has attempted to maintain a consistent reference for each business enterprise.

the Long Island Rail Road's daily carload deliveries. Degnon was also making plans to bring to the site the dirt and rock from the new Brooklyn subways then being excavated.

In September 1911, the *Newtown Register* reports, for the first time, a complaint that would later prove perennial—the nauseating stench of rotting garbage decomposing in the summer heat. The original contract had called for the dumping of clean ashes and street sweepings, a euphemism for horse manure, but in practice, it proved impossible to prevent people from throwing out garbage along with their ashes. On summer days the stench pervaded the territory for miles around and forced residents to close their windows in the hottest weather. The civic associations talked about an invasion of property rights and violations of the sanitary code, but the project was too well established to stop.

Three Queens Final Maps, each containing a portion of the project area, were drawn up between 1910 and 1911, presumably before any fill had been deposited (Final Maps 1910, 1911). They show a slightly undulating surface crisscrossed by streamlets that drain into Flushing Bay and Creek, and there are two almost block-size lakes and one smaller one on the project parcel. Blocks and streets have been laid out, but only on paper. The elevations at the corner of each block alternate from north to south, from 10 feet, to 11.6 feet, to 10 feet, to 11 feet, and so on, with a rise to 13 feet near the northwest corner of the parcel. (See Figure 6.)

The War Department and the Queens Topographical Bureau established their requirements for the development of the seaport by 1911:

*According to plans the river is to be widened and docked. A marginal street is to be extended along the river front and from it are to be other streets extended through the tract. These streets are to be lined with manufacturing plants and along the river front are to be docks and freight landing facilities. Special freight tracks are to run to all parts of the district. This means that the district (Corona) will become a hive of industry and that the section of Corona and thereabouts will be filled up with the houses of workingmen. (Newtown Register, Sept. 28, 1911, in the Long Island Division of the Queensborough Public Library vertical files)*

In May of 1913, Governor Sulzer signed a bill providing for a state appropriation of \$259,000 for the dredging and improving of Flushing Creek. Michael Degnon, pleased with the way his project was moving along, gave to the contractors who got the state job another contract to fill in his section of the meadow, by pumping soil from the bottom of Flushing Bay onto his land. It was estimated that it would require 2 million cubic yards of material to fill in his acreage, and by taking this material out of the channel, he would in the process deepen his own docking area.

In 1914 there was another outcry against the stench of the dumps. The fill at this time had reached 114<sup>th</sup> Street and 43<sup>rd</sup> Avenue (immediately southwest of the project area), the edge of a neighborhood with hundreds of private residences. The Borough Development Company made a gesture towards meeting the demands of Corona residents by sprinkling liberally with disinfectant all material unloaded from scows. According to a description of the deposition of Brooklyn ashes, street sweepings and garbage, noted above, the dumping gradually worked its way north onto the project parcel (Seyfried: personal communication, 9/29/2001).

Another eye-witness account of December 1914 tells us that at that time 50 laborers, all wearing goggles, were at work on the contractor's railroad, handling 50 to 60 carloads of ashes and refuse deposited nightly by the scows. The fill by this time was rising higher than the Long Island Rail Road trestle just south of the project site and the trolley trestle running through it. The new surface was now 10 to 14 feet above the old marsh level.

The success of Degnon's first land fill induced the city to award another contract to the Borough Development Company in June 1915 to fill in the remaining salt meadows from Northern Boulevard south to the Long Island Rail Road, which includes the project site. In the contract was an agreement with the New York and Queens County Railway to stop the running of trolley cars on the wooden trestle which crossed the meadows diagonally from 114<sup>th</sup> Street and 43<sup>rd</sup> Avenue to Flushing Bridge, because the filling posed a threat to the stability of the pilings and could endanger passengers. The trestle, built in 1895, was beginning to require costly repairs and the company was not too reluctant to close down operations and save expenses. Once the meadows were brought up to grade, the Company planned to re-lay the tracks on a new street. The Public Service Commission went along with the proposal and gave its approval to the discontinuance of trolley operations as of August 9, 1915.

The upper meadows between Northern Boulevard and the Long Island Rail Road comprised 217 acres. Engineers estimated that 3,000,000 cubic yards of silt would be required to raise the area 10 to 14 feet above high water level, and that the job would take 1½ to 2 years to accomplish. The Topographical Bureau of Queens had already established a future street layout for the area, and those streets would be regulated and graded and have sewer lines installed. The federal government would then follow up by constructing a half mile of substantial concrete bulkhead wall extending around the southern end of Flushing Bay, adapted to handling heavy water-borne traffic.

On May 15, 1916 a new technique of filling in the upper meadows (the project site) began, in conjunction with the dredging of Flushing Bay. A dredge, anchored 100 feet offshore in 30 feet of water, sucked up mud and silt from the bottom of the bay and sent it through a 1,500 foot pipeline across Northern Boulevard and then onto the meadows, where the silt and water poured out in great fan-shaped deltas. (See Figure 7.)

The dredge worked day and night and poured out 35,000 gallons per minute. The silt and sediment settled while the water ran off back into the bay through a sluice. To control the deposits, great dikes made of sod from the meadows, cut into cakes, were built up to a height of 12 feet and several feet in thickness to impound the watery fill. The technique for this procedure is well documented, so no subsurface investigation is needed to record it.

During the summer of 1916, a large tract of the upper meadows was filled in by the hydraulic method, and many Coronaites turned out to watch the novel process. Many felt that this method of filling was far superior to the garbage dumping process used in the southern half of the meadows. The silt packed down much more firmly than the garbage, and there were no odors and no slow-burning fires to spread sickening odors over the neighborhood. The dredge out in the bay was eliminating the mudflats along the shoreline off Northern Boulevard, and the channel through Flushing Bay was already being notably widened and deepened.

In June of 1917, the Topographical Bureau of Queens submitted to the Board of Estimate for its approval a map of the Corona Meadows, providing for the elimination of sections of paper streets over an area of 500 acres, to permit the fullest industrial development. A number of the plants which it proposed to establish in the area covered more than a single block; one proposed foundry covered 25 or more acres. Railroad sidings would lead into the plants. By June of 1917, between 8,000,000 and 10,000,000 cubic yards of fill had already been deposited in both sections of the meadows. Two miles and more of bulkheads were in the process of being built along the waterfront.

The entry of the United States into World War I in 1917 changed the future of the reclamation project. The federal government put a ban on all construction involving the use of steel and cement, which effectively put a stop to any industrial development on the meadows for 1918 and 1919. After the war, the impetus to develop a new seaport with an industrial park for heavy industry had faded; the new thrust in Queens was for homes and apartments. Industry did not disappear, but it was well accommodated in Long Island City and Maspeth and to a lesser extent in Flushing and College Point.

The Corona Dumps, as they came to be called, remained an eyesore. The intersection of Astoria Boulevard and Northern Boulevard, just outside the northeast corner of the project parcel, required special traffic officers to direct motorists through the thick smoke coming from the dumps. One witness claimed that tarring and feathering a rat and turning it loose was the only way to get rid of the hundreds of rats in his backyard (Miller 2000:177). F. Scott Fitzgerald, who drove by the Corona Dumps on his commute from Great Neck, Long Island, to Manhattan, described them in *The Great Gatsby*:

*A valley of ashes—a fantastic farm where ashes grow like wheat into ridges and hills and grotesque gardens; where ashes take the forms of*

*houses and chimneys and rising smoke and, finally, with a transcendent effort, of men who move dimly and already crumbling through the powdery air.*

## THE WORLD'S FAIR AND SHEA STADIUM

The future of the upper meadows remained in limbo for more than ten years, until the decision was made to hold a World's Fair on the old ash dumps just south of the project site, to honor the 150<sup>th</sup> anniversary of George Washington's taking the oath of office in New York City. Commissioner of Parks Robert Moses spearheaded the Fair planning effort. Moses was responsible for many urban renewal projects in New York, including the renovation and improvement of Central Park, the construction of the Queens-Battery Tunnel and the Triborough Bridge, and a network of roads including the Grand Central Parkway, the western boundary of the project site.

Plans for the disposition of the fill at the Fair grounds were completed on January 4, 1937 (City of New York 1937). The associated map, titled *Moving, Stockpiling and Processing Topsoil Material*, does not give elevations, but there were approximately 4,600 cubic yards of existing topsoil on the project site, a fraction of the amount in nearby areas. (See Figure 9.) Another, presumably an additional, 4,600 cubic yards were to be moved from the west side of the project site. The World's Fair opened in 1939 and ran until 1940, during which time the project parcel became a vast parking lot for visitors. The project parcel and the entire Fair site were to become a New York City park at the end of the exposition.

A map including the project area was drawn up in 1943, showing it as a large paved parking lot punctuated by asphalt islands and flood lights. At the end of the parking area, approximately 1,000 feet west-northwest of Roosevelt Avenue, was a field house, probably destroyed in the construction of Shea Stadium, and beyond that an undeveloped space that may have been a playing field, which probably abutted the service road next to Northern Boulevard (City of New York 1943). The elevations of the parking field are presumably those of the Fair lot, now the site of Shea Stadium's east parking lots, and they correspond closely to the elevations from the 1910-1911 maps. The unknown factor is how much fill, if any, was added and how much was subsequently removed between 1910 and 1943. The 1943 elevations near Roosevelt Avenue range from 7.2 to 9.6 feet, in contrast to 1911 measurements that were in the 10-11 foot range. Obviously, some grading was done.

There was little change to the project parcel between the first and through the second World's Fairs. The IND at-grade seasonal service for the 1939-1940 World's Fair was south of the project site (Cudahy 1988: 113).

Construction of Shea Stadium began early in January of 1962, and photographs show it rising from a sea of mud (L.I. Division vertical files). According to "as built" plans, it was built on piles set three to five feet apart that ranged in depth from 2'4" to 5'4" (City of New York 1966). It was officially dedicated on the afternoon of April 16, 1964, a full year behind schedule. The next day, according to the *New York Times*, the New York Mets defeated the Pittsburgh Tigers 4-3 before a crowd of 50,312. The cost of the facility was estimated at \$25,500,000, and still a lack of parking space created massive traffic jams. William A. Shea, chairman of Mayor Wagner's baseball committee and the man for whom the stadium was named, even then urged building a dome over the stadium to enable all-weather play. This was considered a future option—along with expanding the stadium seating from 55,000 to 80,000—but it never transpired (L.I. Division vertical files). The Shea Stadium site has remained virtually unaltered since its opening in 1964.

## CONCLUSIONS AND RECOMMENDATIONS

According to soil borings done on the site, the project site was a glacial lake following the retreat of the Wisconsin Glacier circa 12,000 years ago. As the glacier melted and sea levels rose, the lake silted in and became a salt marsh, as shown on maps from 1797 through 1908. When the Final Maps of Queens were done in 1910-1911, the property was shown crisscrossed by streams draining into Flushing Bay and Flushing Creek, with surface elevations undulating between 10 and 11 feet, with the highest point at 12 feet in the northwest corner of the parcel, rising to 13-16 feet outside of the project site. Mud and ground water were at depths from 8 to 11 inches below the surface. Although streets had been mapped, they were not opened, and there were two almost block-sized lakes and one smaller one on the parcel.

Although roads, a railroad, a trolley on trestles, and at least one small building have been built on the project area since pre-historic times, they had little or no impact on the project parcel and traces of them have long since vanished. Beginning to the south of the project in late 1911, the marsh was covered over with Brooklyn ash, street sweepings, and stinking garbage, earning the name Corona Dumps. This layer was then covered over with mud and silt dredged from Flushing Bay and Flushing Creek, beginning in 1916.

Filling operations ceased with the beginning of World War I, and the hiatus lasted until the decision was made to host the 1939-40 World's Fair on a site directly to the south of the project parcel. The project parcel became a paved parking lot for the World's Fair, the first development of the property. Layers of fill material were added and consequently subsided, and then were graded in the process of preparing for the Fair.

It is certain that the marshland that is now the project site was exploited by both Native Americans and early settlers from Europe. Both would have used the salt hay, hunted the waterfowl and crabs, and harvested some of the many plants growing there.

However, the project site's low elevation would not have been conducive to farming or habitation sites, or substantial processing sites, during the later Archaic and Woodland Periods or during settlement from Colonial days through the first third of the twentieth century. Even during the Paleo-Indian and Early Archaic Periods, when the sea level was lower, the site would still not have been attractive to the Indians, compared to more desirable higher and larger knolls and ridges immediately to the east and west.

Thus, although the layer of fill and the pavement of the later parking area probably protected the original ground surface, and with it any Prehistoric or Historic-Period archaeological resources, it is highly unlikely that they exist. Boesch's attribution of high sensitivity to the project site is theoretical and was made because of the site's proximity to streams and Flushing Bay. Our assessment is site specific, based on the results of soil borings and surface elevations. No further archaeological consideration is recommended.

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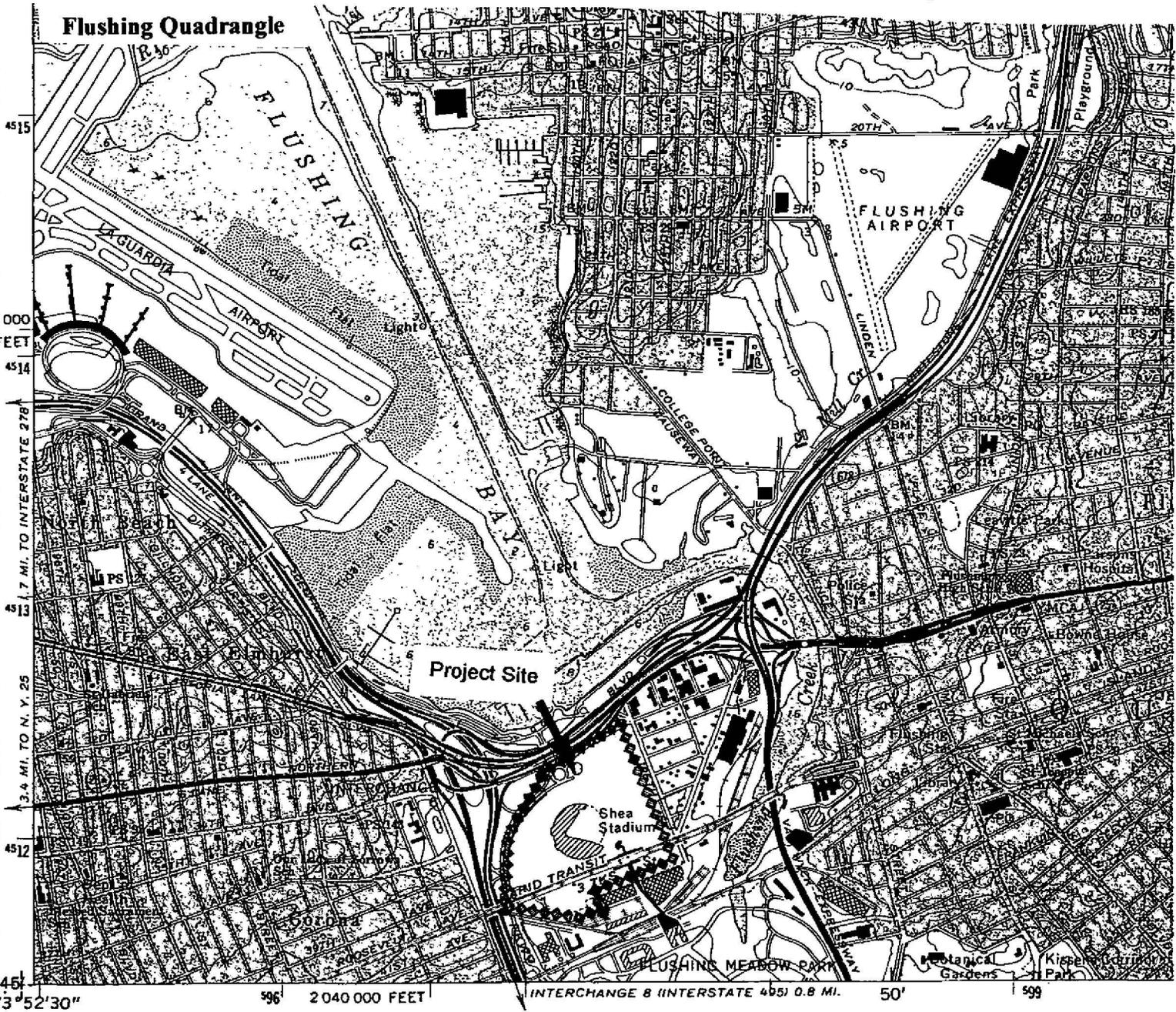
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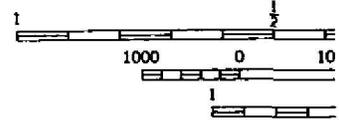
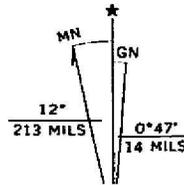
**Figure 1.**  
**U.S.G.S. Topographical Map with Location of Project Site.**



Mapped, edited, and published by the Geological Survey  
 Revised in cooperation with New York Department  
 of Transportation

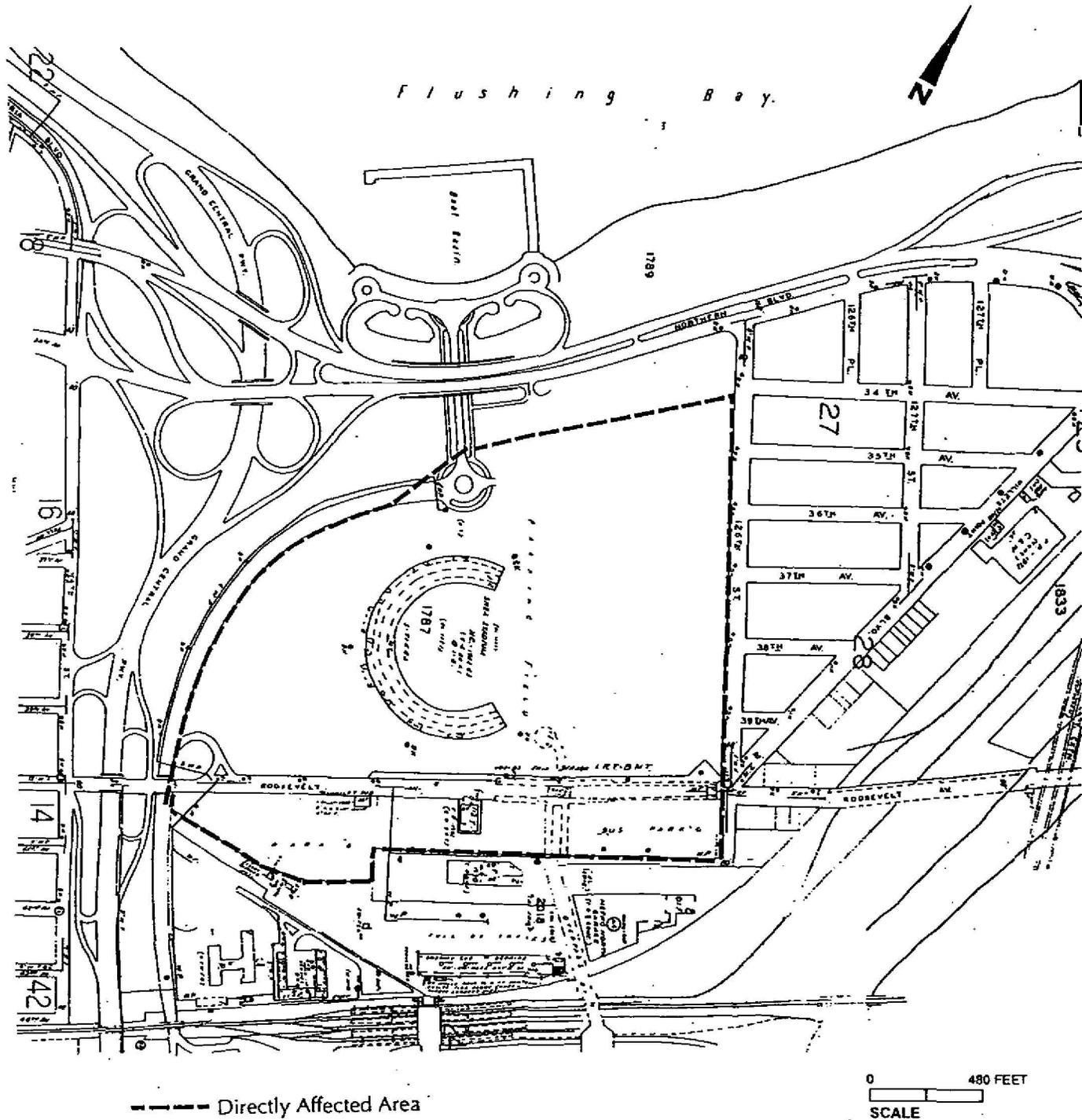
Control by USGS, USC&GS, and Nassau County

Planimetry compiled from USC&GS Charts T-5089, T-5090,  
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 from aerial photographs taken 1954. Field checked 1955.  
 Revised 1966

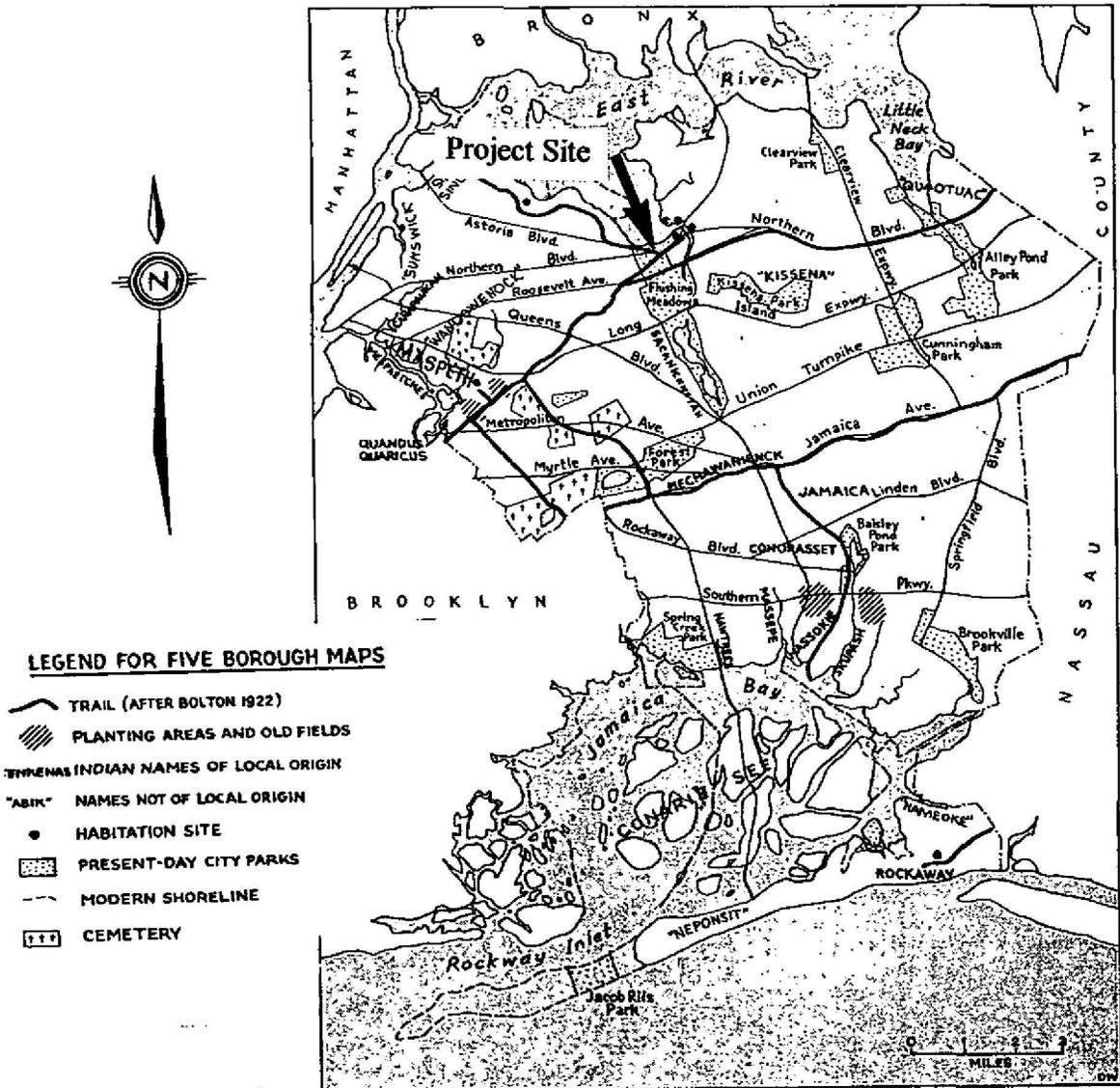


NAT  
 DEPTH CURVES

**Figure 2.**  
**Project Site Location on Current Sanborn Map, Supplied by AKRF**



**Figure 3.**  
**Indian Trails, Planting Areas and Habitation Sites in Queens**  
**(from Grumet, 1981)**



**Figure 4.**  
**Location of Indian Sites Near Shea Stadium (from Boesch 1997)**  
**Cross-hatching Indicates Native American Archaeological Sensitivity**

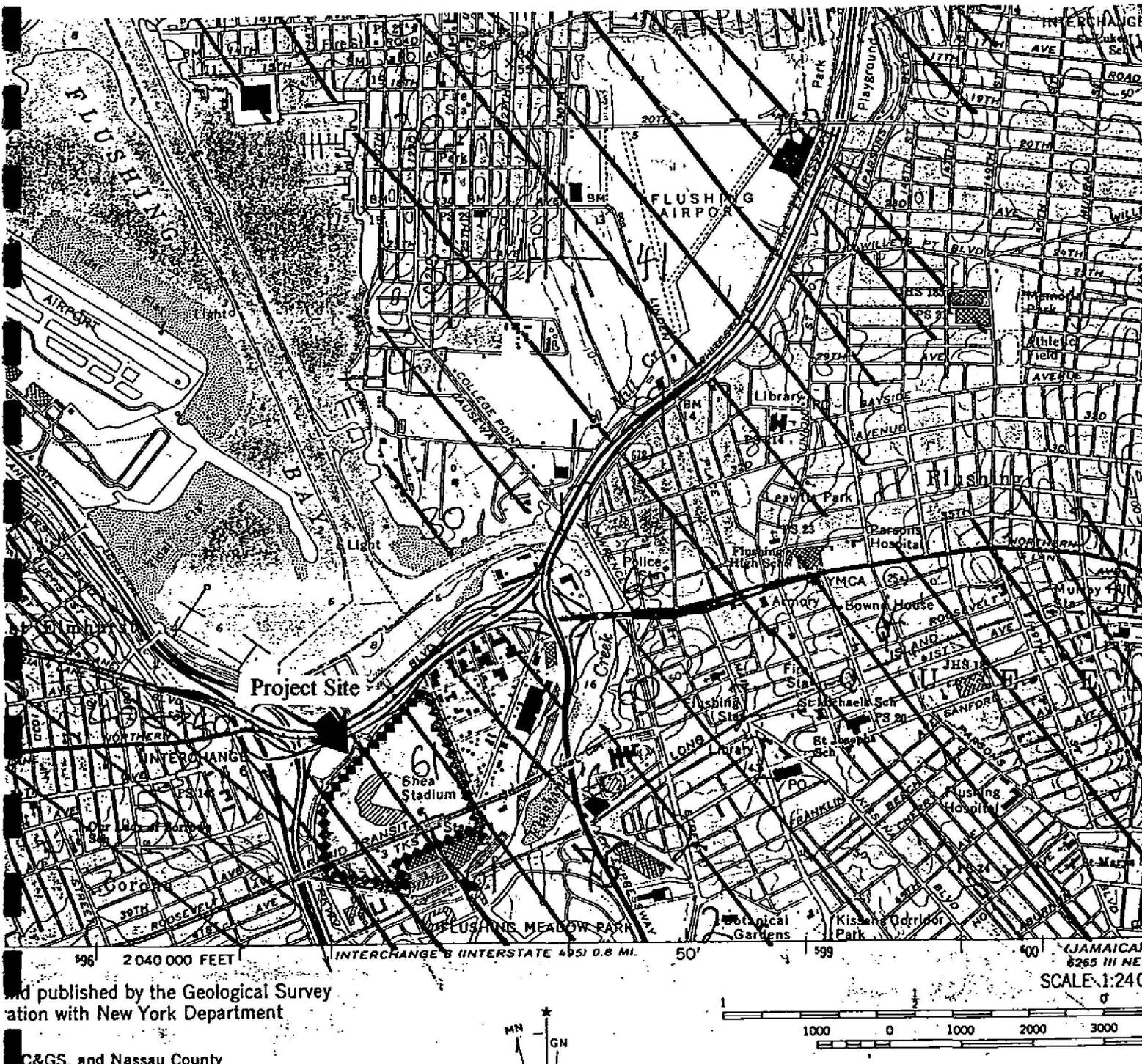
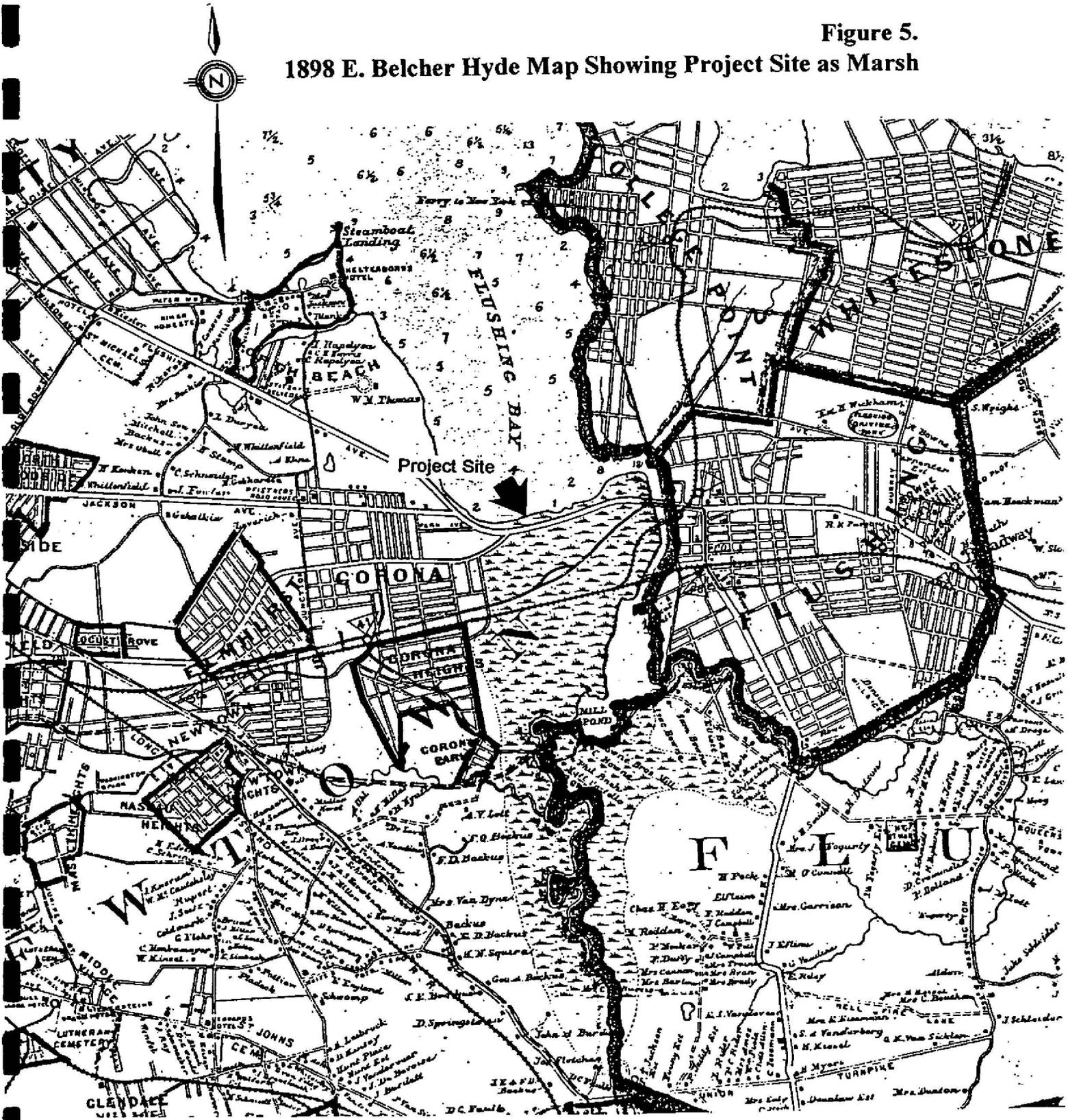


Figure 5.

1898 E. Belcher Hyde Map Showing Project Site as Marsh



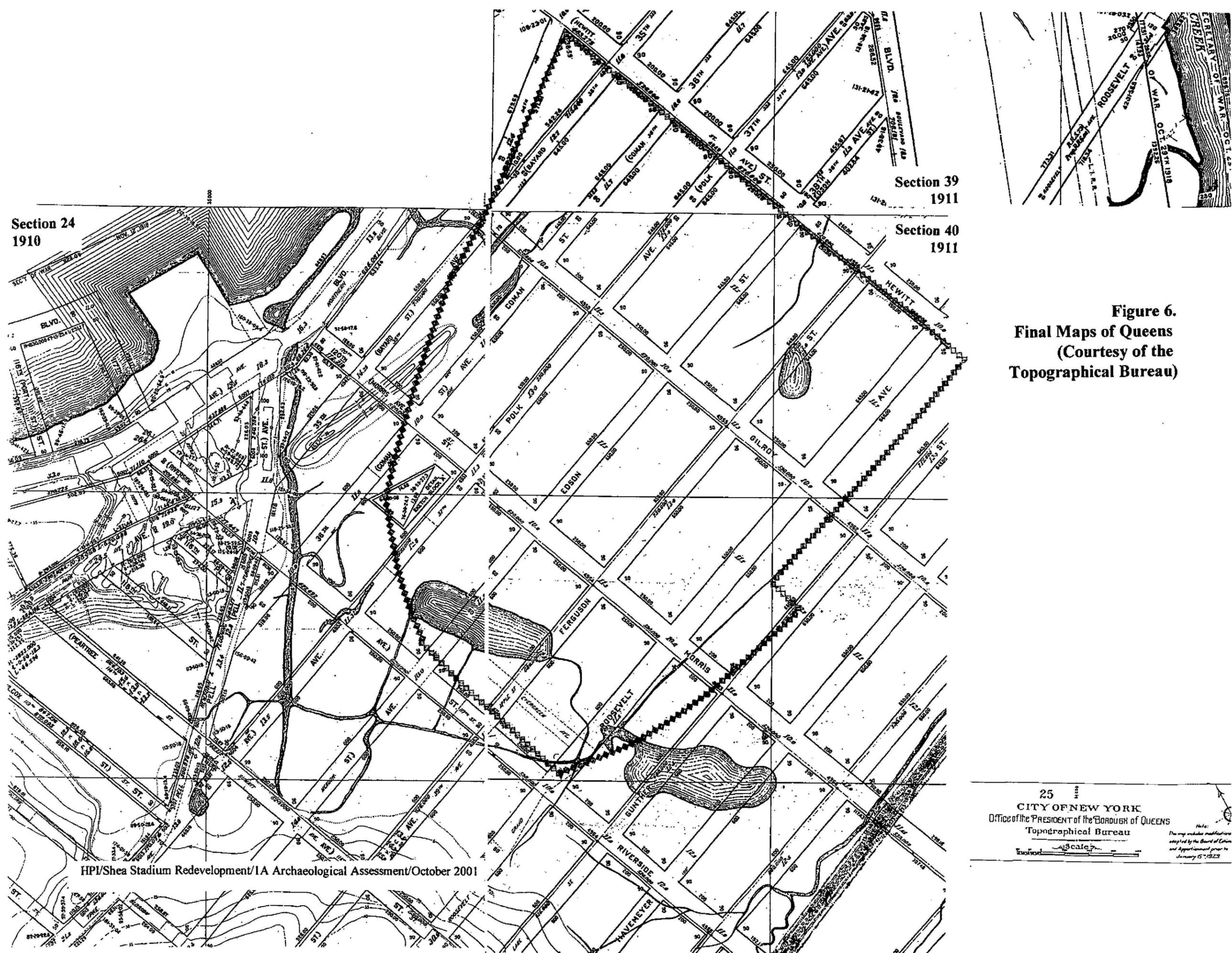


Figure 6.  
Final Maps of Queens  
(Courtesy of the  
Topographical Bureau)

25  
CITY OF NEW YORK  
Office of the President of the Borough of Queens  
Topographical Bureau  
Scale  
This map includes modifications  
adopted by the Board of Estimate  
and Approprations prior to  
January 15, 1923

HPI/Shea Stadium Redevelopment/IA Archaeological Assessment/October 2001

**Figure 7.**  
**1924 Aerial Photograph with Line at West Side of Filled Area**  
**(Note the Fan Shape) (Photograph supplied by Vincent Seyfried)**

**PROJECT SITE**



**Figure 8.**  
**1937 Aerial Photograph, with Flushing Creek on the Right and**  
**Grand Central Parkway on the Left (from Sweeney 1937)**

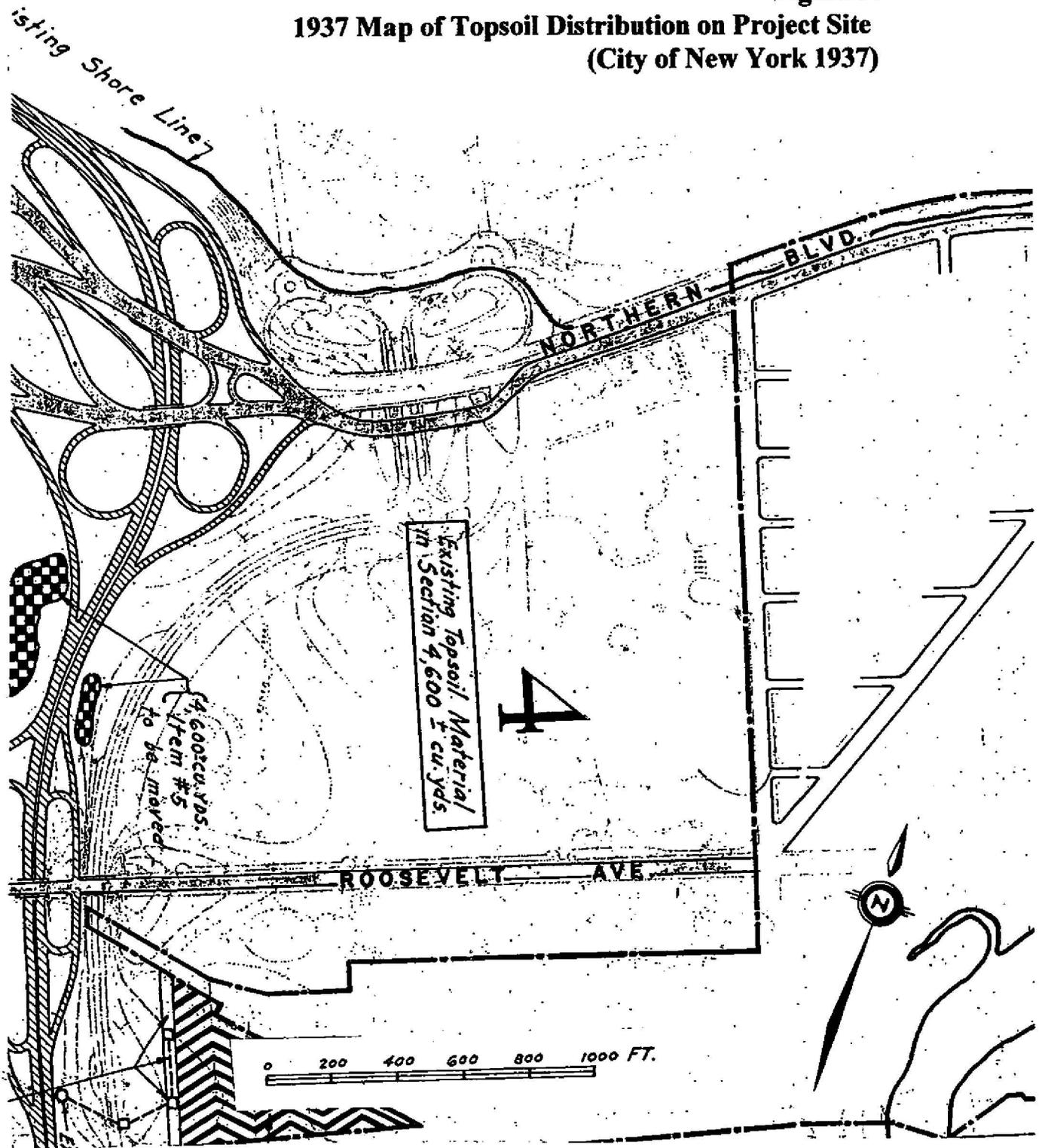


View of Northern Half of Flushing Meadow Park—Feb. 26, 1937

MARCH, 1937



**Figure 9.**  
**1937 Map of Topsoil Distribution on Project Site**  
**(City of New York 1937)**





**Photograph A.**  
**Proposed Site of New Stadium in East Parking Lot of Present Shea Stadium**  
**(looking southwest to northeast).**



**Photograph B.**  
**Present Shea Stadium and West Parking Lot (looking south to north).**