HISTORICAL PERSPECTIVES INC.

Phase IA Archaeological Documentary Study
225th Street Infrastructure Improvements
Queens County, New York

NYCDDC Capital Project SE842A1

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Prepared For:

Department of Design and Construction

30-30 Thomson Avenue
Long Island City, NY 11101

Prepared By:

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August 2019

MANAGEMENT SUMMARY

SHPO Project Review Number (if available):

Involved State and Federal Agencies: **NYSDEC, NYSDOS, USACE, PANYNJ**

Phase of Survey: **Phase IA Archaeological Documentary Study**

Location Information
- Location: **Block 13791, Lot 2 and Block 14260, Lot 1**
- Minor Civil Division: **08101**
- County: **Queens**

Survey Area
- Length: **2,640 feet**
- Width: **84 feet**
- Number of Acres Surveyed: **ca. 5**

USGS 7.5 Minute Quadrangle Map: **Jamaica**

Archaeological Survey Overview
- Number & Interval of Shovel Tests: **N/A**
- Number & Size of Units: **N/A**
- Width of Plowed Strips: **N/A**
- Surface Survey Transect Interval: **N/A**

Results of Archaeological Survey
- Number & name of precontact sites identified: **None**
- Number & name of historic sites identified: **None**
- Number & name of sites recommended for Phase II/Avoidance: **Archaeological monitoring recommended for a portion of the project site**

Report Authors(s): **Julie Abell Horn, M.A., R.P.A., Historical Perspectives, Inc.**

Date of Report: **August 2019**

EXECUTIVE SUMMARY

The New York City Department of Design and Construction (NYCDDC), on behalf of the New York City Department of Environmental Protection (NYCDEP), is proposing Capital Project SE842A1, known as the 225th Street Infrastructure Improvements project. The proposed project area is located in the Springfield Gardens/Brookville neighborhoods in Queens, New York. The proposed project corridor extends between 149th Avenue on the north and John F. Kennedy International Airport (JFKIA) on the south (Figures 1 and 2a-c). The principal objective of the proposed project is to improve stormwater drainage in the project area that has experienced flooding during rain events in Southeast Queens by installing a large triple barrel storm sewer that, in conjunction with the other storm sewers that are proposed to be developed inland under separate capital projects, would convey this drainage to Thurston Basin.

The proposed project corridor begins at 149th Avenue in the north, extends southward along an access road known as Springfield Lane which is no longer used for through traffic within Idlewild Park, and continues south under Rockaway Boulevard to connect with an existing chamber where a double barrel storm sewer discharges into a quadruple barrel outfall sewer located on JFKIA property. Along this length, the proposed corridor alignment for the triple barrel storm sewer is approximately 50 feet wide. On the north end of the project corridor, a new sewer connection chamber is proposed to be installed on 149th Avenue. On the south end of the project corridor, the proposed triple barrel storm sewer would drain into a creek and that flows parallel to Rockaway Boulevard and which would incorporate a rip rap-lined dissipation pool, and then discharge into an existing outlet structure that is proposed to be modified to accommodate the flow and infrastructure improvements associated with this proposed triple barrel sewer.

Since the proposed project requires discretionary actions, an Environmental Assessment Statement (EAS) has been prepared to meet the requirements of the City Environmental Quality Review Act (CEQR) and the State Environmental Quality Review Act (SEQRA). As part of the CEQR review, project initiation materials were submitted to the New York City Landmarks Preservation Commission (LPC) in February 2019. The LPC responded:

> LPC review of archaeological sensitivity models and historic maps indicates that there is potential for the recovery of remains from 19th Century and Native American occupation on the project site. Accordingly, the Commission recommends that an archaeological documentary study be performed for this site to clarify these initial findings and provide the threshold for the next level of review, if such review is necessary (see CEQR Technical Manual 2014) (Santucci 2/14/2019).

It is expected that under SEQR, review of the archaeological documentary study by the New York State Office of Parks, Recreation, and Historic Preservation (NYSOPHRP or SHPO) will be necessary as well.

The Area of Potential Effect (APE) for this project includes all areas that will be subjected to ground disturbance. The combined width of the proposed triple barrel sewer corridor is about 50 feet. The area of disturbance, which includes the sewer corridor footprint and a construction buffer on either side, measures a total of 84 feet in width. The corridor length is 2,640 linear feet. As such, the APE measures 221,760 square feet or approximately 5 acres in total. Project impacts for the base (invert) of the new 8-foot high sewer are proposed to extend to elevation -2 to -3 (NAVD88 datum). The total depths of the project impacts vary across the APE depending on the elevation of the existing ground surface. In order to maintain a 2-foot minimum cover of the sewers below the ground surface, in some already low lying areas, fill will need to be placed above the sewers, which will raise the existing elevation by several feet (Figures 2a-c).

At the request of the NYCDDC and AKRF, Inc., Historical Perspectives, Inc. (HPI) has undertaken this Phase IA Archaeological Documentary Study to satisfy the requirements of SEQRA/CEQR, and to comply with the standards of the NYSOPRHP and the New York City Landmarks Preservation Commission (LPC) (New York Archaeological Council 1994; NYSOPRHP 2005; LPC 2018; CEQR 2014).

The purpose of this Phase IA Archaeological Documentary Study was to determine whether archaeological resources from Native American and historical period occupations could have been deposited in the project site, if they could have remained intact, surviving later historical development and disturbance, and if any potential

resources could be impacted by proposed project plans. The following sections outline the conclusions for these resources. For the purposes of clarity, the project site is addressed in three segments: the northern portion from 149th Avenue through the cricket field; the central portion along the alignment of Springfield Lane; and the southern portion through the former wetlands within Idlewild Park to JFKIA.

From what is known of precontact period settlement patterns on Long Island, most habitation and processing sites are found in sheltered, elevated sites close to wetland features, major waterways, and with nearby sources of fresh water. The project site once contained a combination of firm ground and natural marshlands surrounding tidal creeks. Native Americans would have been drawn to these creeks and marshlands for their aquatic life, wild game, and vegetation. As well, wetlands provided peat that could be used for fuel and a number of plants that served as materials for clothing, basketry and weaving. As importantly, the use of certain aquatic plants for medicinal purposes is ethnographically documented (Herrick 1995).

Precontact period sites, primarily from the Woodland Period, have been documented along the Jamaica Bay shoreline in proximity to marshlands. In some cases, extensive shell middens extended into the marshlands, the equivalent of precontact garbage dumps. Defined as deposits of shells, gravel, sand and silt and in some cases other cultural remains, they occur either as distinct cultural events or in association with habitation sites (Wells 2001). Along some areas of Jamaica Bay, these shell middens have been found under layers of modern fill, but on top of marshland soils (Pickman 1987:4). Additionally, prior to the creation of Jamaica Bay and its marshlands after the last Ice Age, the project site parcels would have been dry land. It is possible that precontact period archaeological sites from this period, dating from the Paleo Indian period through parts of the Archaic period, could remain capped by later marshland soils that accrued after the sea level rise, ca. 2000-4000 B.P.

The project site is located in an area that, while known to have had precontact occupation based on historic sources, has nonetheless never had an intact precontact period archaeological site recorded in the vicinity since the 1940s, likely in large part due to later disturbances that would have destroyed fragile sites. The degree of disturbance varies across the different parts of the project site.

The northern portion of the project site, from 149th Avenue through the cricket field to Springfield Lane, was once a combination of firm land and land at the edge of Bog Creek. Soil borings from this area indicate an upper stratum of fill, which was placed over the earlier landform in conjunction with later park modifications for the cricket field. Natural sandy soils were recorded beneath the fill, followed by a stratum of peat below the sand in several borings closest to the former creek location. It is possible that precontact period archaeological resources could be capped by both the imported fill and the sand and peat layer, if not disturbed from grading or other earthmoving activities. HPI concludes that the northern portion of the project site has a medium precontact period archaeological sensitivity.

The central portion of the project site runs along the Springfield Lane roadway and shoulders. This area was on firm land, and the soil borings taken along the sides of the roadway, albeit shallow in extent, confirm sandy soils and no recorded fill in the upper extent of the soil column. Historic maps do show that Springfield Lane has a buried water line beneath it, which formerly served the houses along it. It is possible additional utilities, such as gas lines, are buried beneath the roadway as well. However, because the soil borings did not extend to the full depth of the proposed sewer base, and were only taken on the shoulders of the road and not within it, the full extent of the soil column across this area is unknown at this time. Given these variables and the available data, HPI concludes that the central portion of the project site has a low to medium precontact period archaeological sensitivity at this time.

The southern portion of the project site, southwest of Springfield Lane, was once within marshlands. It has since been filled with soil and refuse as part of the city operated landfill that operated in the southern portion of Idlewild Park until the mid-1970s. Soil borings confirm fill deposits to the depth of the borings, either 10 or 15 feet below grade depending on location. However, the depth of the base of the sewer will extend to approximately elevation -3 in this area, which is 3-8 feet lower in extent than the soil borings were excavated, depending on location. It is possible that natural soil strata, including peat deposits, could be present in those remaining feet of soil that were not sampled during the soil boring program. Given these variables and the available data, HPI concludes that the southern portion of the project site has a low to medium precontact period archaeological sensitivity at this time.

The project site and vicinity was developed with residences and farm buildings along both sides of Springfield Lane during the nineteenth century. The buildings generally were set back from the roadway, often on multiple-acre

tracts. Archaeological sensitivity for historic period resources varies across the project site, depending on location, as described below.

The northern portion of the project site, from 149th Avenue through the cricket field to Springfield Lane, was once the rear yard of a farm tract that fronted Springfield Lane. Historically it was known as Block 4625, Lot 20, as shown on the 1918 Hyde map (Figure 12). Some of the structures on this lot were photographed in 1939-1941 and are included in Appendix B. An access driveway ran from Springfield Lane to Bog Creek along this property. A structure was shown on historic maps in this location as early as the 1852 Conner map (Figure 7), and continued to be shown on maps through the mid-twentieth century as a dwelling. Various farm buildings, and later garages, were located behind the house over time. Although the buildings on this tract have been removed, it is possible that archaeological resources associated with the former farm families could remain under the imported fill that comprises the elevated cricket field surface, if not disturbed from grading or other earthmoving activities. HPI concludes that the northern portion of the project site has a medium historic period archaeological sensitivity.

Archaeological resources such as domestic artifacts and refuse associated with the project site residents may have been deposited in shaft features—such as wells, cisterns, and privies—that were likely located in the yard area of the property. Masonry and wooden portions of these abandoned and truncated shaft features are often encountered because their deeper and therefore earlier layers remain undisturbed by subsequent construction or filling, and in fact, development often preserves the lower sections of the features by sealing them beneath structures and fill layers.

Privies were located furthest from the residences, often along the rear lot lines, while wells and cisterns frequently (but not always) were located closer to the rear walls of street-fronting buildings or outbuildings. Privies and cisterns would be excavated up to 10-15 feet below grade, while wells would need to be excavated as deep as the water table, which varied according to location. Before the introduction of piped city water in the early twentieth century, residents would have relied on rear yard shaft features, such as wells and cisterns. Privies and cesspools would have been used at least until the introduction of municipal sewers.

Identifying and examining buried features associated with the nineteenth century occupancy of the project site may reflect the daily activities of the residents and provide insight into cultural behavior of the farming community. If undisturbed deposits of cultural material do still exist, they may have the potential to provide meaningful information regarding the lives of the people who lived there. When recovered from their original context and in association with a specific historical occupation, historical deposits can provide a wealth of information about consumption patterns, consumer choice, gender relations, ethnicity, economic status, and other important issues.

The central portion of the project site runs along the Springfield Lane roadway and shoulders. The APE is 84 feet wide along Springfield Lane, including 45 feet of mapped roadway and approximately 20 feet on either side of the roadway (Figure 2a-b). Although there were several farm houses along Springfield Lane in proximity to the APE, the houses were set back from the roadway, such that the current APE would have only included a small strip of the front yards. Given that shaft features, where archaeological deposits are most likely to be found, generally were situated in the rear of the houses rather than in the front areas, there is less potential for recovering significant archaeological resources in these locations. HPI concludes that the central portion of the project site has a low historic period archaeological sensitivity.

The southern portion of the project site, southwest of Springfield Lane, was once within marshlands. There was no development or use of these marshlands during the nineteenth century. As such, HPI concludes that the southern portion of the project site has a low historic period archaeological sensitivity.

The table, below, summarizes the conclusions outlined above. Figure 16a-c depicts the archaeological sensitivity designations by segment.

Summary of archaeological sensitivity

Project segment	Precontact archaeological sensitivity	Historic period archaeological sensitivity
Northern	Medium	Medium
Central	Low to medium	Low
Southern	Low to medium	Low

Based on the conclusions, above, HPI recommends the following additional measures. The northern portion of the project site, from 149th Avenue to Springfield Lane, has been assigned a medium archaeological sensitivity for both precontact and historic period archaeological resources. Given the depth of the project impacts, HPI recommends that archaeological monitoring be conducted within this segment of the project site rather than pre-construction archaeological testing. Draft guidelines addressing the use of archaeological monitoring on urban sites (New York Archaeological Council/Professional Archaeologists of New York City 2002), as well as NYSOPRHP (2005) and LPC guidelines (2018) indicate that monitoring is appropriate where archaeological testing is found to be not feasible. Within the project site, where large amounts of soil and other overburden will need to be removed before reaching the archaeological resource zone, it will be most practical (and cost effective) to undertake these excavations in tandem with project construction, which can provide the large-scale excavation and soil removal operations necessary, shore up the site to facilitate deep excavation, and provide dewatering equipment if the water table interferes with archaeological resource recovery. OSHA regulations require stepping or shoring if excavations extend below four feet.

Prior to any excavation within the project site, an archaeological monitoring plan should be developed by an archaeologist in consultation with the NYSOPRHP and the LPC. The monitoring plan should be prepared according to applicable archaeological standards (New York Archaeological Council 1994, New York Archaeological Council/Professional Archaeologists of New York City 2002; LPC 2018, NYSORPHP 2005). Register of Professional Archaeologists-certified professional archaeologists, with an understanding of and experience in urban archaeological excavation techniques, would be required to be part of the archaeological team.

The central portion of the project site has been assigned a low to medium precontact period archaeological sensitivity based on a lack of complete data from soil borings, which generally were only excavated several feet below the existing grade, along the shoulders of Springfield Road. This portion was assigned a low historic period archaeological sensitivity. Likewise, the southern portion of the project site has been assigned a low to medium precontact period archaeological sensitivity because soil borings did not extend the full depth of the project impacts and it is unknown whether potential archaeological resources could exist below the deep fill deposits. The southern portion has been assigned a low historic period archaeological sensitivity.

Given the lack of complete soil boring data for the central and southern portions of the project site, HPI recommends that an additional soil boring program be undertaken in these areas, which would provide information on the entire soil column, to the depths of the project impacts. It is possible that geotechnical soil borings will be completed in the future as part of the proposed project. If geotechnical soil borings will be conducted in these areas, HPI recommends that the results of the borings be reviewed by the archaeological team in order to further clarify the current conditions. If geotechnical soil borings are not planned, then HPI recommends that a similar soil boring program, which would extend to the depths of the project impacts, be conducted in these specific areas for the same purposes. Results of the additional soil borings may determine that the central and southern portions of the project site are too disturbed to warrant additional archaeological study, or they may indicate intact soils that may need to be archaeologically monitored during construction.

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Photograph 3. Northern portion of project site showing cricket field. View looking southwest.

Photograph 4. North central portion of project site showing Springfield Lane corridor with woods and vegetation. View looking southwest.

Photograph 5. South central portion of project site showing Springfield Lane with woods and vegetation. View looking southeast.

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Photograph 7. Southern portion of project site showing Rockaway Boulevard in foreground and inaccessible JFKIA property behind fence. View looking southwest.

I. INTRODUCTION

The New York City Department of Design and Construction (NYCDDC), on behalf of the New York City Department of Environmental Protection (NYCDEP), is proposing Capital Project SE842A1, known as the 225th Street Infrastructure Improvements project. The proposed project area is located in the Springfield Gardens/Brookville neighborhoods in Queens, New York. The proposed project corridor extends between 149th Avenue on the north and John F. Kennedy International Airport (JFKIA) on the south (Figures 1 and 2a-c). The principal objective of the proposed project is to improve stormwater drainage in the project area that has experienced flooding during rain events in Southeast Queens by installing a large triple barrel storm sewer that, in conjunction with the other storm sewers that are proposed to be developed inland under separate capital projects, would convey this drainage to Thurston Basin.

The proposed project corridor begins at 149th Avenue in the north, extends southward along an access road known as Springfield Lane which is no longer used for through traffic within Idlewild Park, and continues south under Rockaway Boulevard to connect with an existing chamber where a double barrel storm sewer discharges into a quadruple barrel outfall sewer located on JFKIA property. Along this length, the proposed corridor alignment for the triple barrel storm sewer is approximately 50 feet wide. On the north end of the project corridor, a new sewer connection chamber is proposed to be installed on 149th Avenue. On the south end of the project corridor, the proposed triple barrel storm sewer would drain into a creek and that flows parallel to Rockaway Boulevard and which would incorporate a rip rap-lined dissipation pool, and then discharge into an existing outlet structure that is proposed to be modified to accommodate the flow and infrastructure improvements associated with this proposed triple barrel sewer.

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The Area of Potential Effect (APE) for this project includes all areas that will be subjected to ground disturbance. The combined width of the proposed triple barrel sewer corridor is about 50 feet. The area of disturbance, which includes the sewer corridor footprint and a construction buffer on either side, measures a total of 84 feet in width. The corridor length is 2,640 linear feet. As such, the APE measures 221,760 square feet or approximately 5 acres in total. Project impacts for the base (invert) of the new 8-foot high sewer are proposed to extend to elevation -2 to -3 (NAVD88 datum). The total depths of the project impacts vary across the APE depending on the elevation of the existing ground surface. In order to maintain a 2-foot minimum cover of the sewers below the ground surface, in some already low lying areas, fill will need to be placed above the sewers, which will raise the existing elevation by several feet (Figures 2a-c).

On behalf of the NYCDDC and retained by AKRF, Inc., Historical Perspectives, Inc. (HPI) has undertaken this Phase IA Archaeological Documentary Study to satisfy the requirements of SEQRA/CEQR, and to comply with the standards of the NYSOPRHP and the New York City Landmarks Preservation Commission (LPC) (New York Archaeological Council 1994; NYSOPRHP 2005; LPC 2018; CEQR 2014).

II. METHODOLOGY

The present study entailed a review of various resources.

- Primary and secondary sources concerning the general precontact period and history of the Idlewild Park area and specific events associated with the project site and vicinity were reviewed using materials from the Queens Public Library, the New York Public Library, the library of HPI, and using online resources.
- Historic maps and photographs were reviewed using materials from the New York City Department of Parks, the Queens Public Library, the New York Public Library, the New York City Municipal Archives, the library of HPI, and using various online websites. These maps and photographs provided an overview of the topography and a chronology of land usage for the project site. A selection of these maps and photographs has been reproduced for this report. The historic photographs are included as Appendices B and C.
- Selected land conveyances and federal censuses were reviewed.
- Information about previously recorded archaeological sites and surveys in the area was compiled from data available at the NYSOPRHP, the LPC, and the library of HPI.
- A Phase I Environmental Site Assessment was reviewed for the project (LiRo 2017).
- Soil borings completed in conjunction with environmental site investigations for a Phase II Environmental Site Investigation completed as part of this project were reviewed (LiRo 2018). The soil boring data is included as Appendix A.
- AKRF provided site photographs (Photographs 1-7; Figures 2a-c).

III. CURRENT CONDITIONS AND ENVIRONMENTAL SETTING

A. Current Conditions

The northern terminus of the project site is at the intersection of 224th Street and 149th Avenue, where the proposed storm sewer will connect to an existing sewer at that junction (Photograph 1). The project corridor begins just south of the intersection, crossing a small asphalt paved parking area for the park (Photograph 2). The project corridor then traverses a wooded area and crosses the location of a concrete retaining wall and chain link fence. A bend in the corridor takes the alignment through an area containing picnic tables, and then along the northwest side of a grass-covered cricket field, just southeast of two sets of metal bleachers and a storage container along a paved path. The cricket field has been artificially raised in elevation to bring it to its current grade and to create a level playing surface (Photograph 3).

The proposed alignment continues until reaching Springfield Lane located within Idlewild Park, a former roadway now closed to through traffic. The corridor makes a second bend and continues along the paved route of Springfield Lane, which is bordered by trees and high vegetation, frequently on top of berms or push piles of soil (Photograph 4). The corridor makes another bend as Springfield Lane turns to the southeast (Photograph 5).

The southern portion of the alignment makes another bend to the southwest, and leaves the Springfield Lane roadway. The corridor passes through a presently paved area that was once wetland but has been filled to create the level surface of the parking pad, which is in poor condition (Photograph 6). There are large piles of soil and debris in this area as well. The corridor continues under the present six-lane Rockaway Boulevard, which is divided by a concrete barrier between the two sets of traffic lanes. Continuing on the same alignment, the corridor crosses into the JFKIA property, which is also a former wetland that has been landfilled to bring the area up to its present grade (Photograph 7). The corridor joins an existing drainage, which is an artificial channel that was created by rerouting the water of Thurston Creek in conjunction with construction of the airport. The project sewer will empty into a proposed new dissipation pool at this location. The final section of the project alignment will extend from the existing drainage channel and new dissipation pool on an angle to the existing storm sewer which is to the southeast of the creek.

B. Topography and Hydrology

In its predevelopment condition, the project site consisted of low-lying, level land and natural marshlands. The route of Springfield Lane runs along the edge of a former neck of land that extended from the north into the marshes. The southernmost section of the project site, from Springfield Lane to the JFKIA, was once completely within marshland. The remainder of the project site was on firm ground, but only a few feet above sea level in elevation. Today, Springfield Lane is approximately 4-5 feet in elevation (NAVD88 datum), which likely is close to the original height of the roadway during the historic era (Figure 2a-b). The topography within the project site surrounding Springfield Lane is largely artificial, having been modified by landfilling, soil and refuse stockpiling or dumping, and disturbance from grading and filling. The cricket field at the northern end of the project site has been raised in elevation and graded and compacted to form the artificially level surface. Currently, elevations across the portion of the project site by the cricket field range from approximately 9 to 12.5 feet. Areas containing mounds of soil and debris rise to 17 feet in elevation between the cricket field and Springfield Lane. A particularly large soil and debris mound near the end of Springfield Lane within the project site reaches approximately 30 feet in elevation.

The project site is located between two natural drainages. Historic maps differ as to the precise alignments of these drainages over time. Thurston Creek is located to the west of the project site, as close as several hundred feet depending on location along the corridor and mapping source. Much of this creek has been rerouted due to nearby development. One portion of Thurston Creek has been rechanneled so that it now crosses the project site where the new stilling basin is proposed at the southern terminus, within the JFKIA property. Prior to landfilling in the twentieth century, Bog Creek was located east of the project site. The northern end of the project site is located very near the former route of the creek (Wolverton 1891, Figure 9; Bromley 1909, Figure 11). This creek has been largely covered over from landfilling in the area.

C. Geology

Long Island is the top of a Coastal Plain ridge formation that is covered with glacial drift, in reality an elevated sea bottom demonstrating low topographic relief and extensive marshy tracts. In the last million years, as glaciers advanced and receded three times, the surficial geology of the island, including the project site, was profoundly altered. "The glacier was an effective agent of erosion, altering the landscape wherever it passed. Tons of soil and stone were carried forward, carving and planing the land surface. At the margins of the ice sheet massive accumulations of glacial debris were deposited, forming a series of low hills or terminal moraines" (Eisenberg 1978). Circa 18,000 years ago, the last ice sheet reached its southern limit, creating the Harbor Hill moraine that traverses the length of Long Island. The moraine lies several miles north of the project site. North of the moraine, the complex rising and subsidence of the coastal plain, relieved of its glacial burden, and the rising sea level, caused by the volume of melting ice, created the coastline of embayed rivers and estuaries, with extensive marsh tracts, which stabilized approximately 3,000 years ago (Schuberth 1968).

D. Soils

According to the *New York City Reconnaissance Soil Survey* (Figure 3), the majority of the project site, within Idlewild Park, is within soil mapping unit 268, known as "Gravesend and Oldmill coarse sands, 0 to 8 percent slopes" and described as:

> Nearly level to gently sloping areas of household landfill materials capped by sandy fill of variable thickness (U.S.D.A. 2005:20).

The remainder of the project site, south of Rockaway Boulevard within the JFKIA property, is within mapping unit 7, known as "Laguardia-Ebbets-Pavement & buildings, wet substratum complex, 0 to 8 percent slopes," and described as:

> Nearly level to gently sloping areas filled with a mixture of natural soil materials and construction debris over swamp, tidal marsh, or water; a mixture of anthropogenic soils

> which vary in coarse fragment content, with 15 to 49 percent of the surface covered by impervious pavement and buildings (U.S.D.A. 2005:14).

As part of this project, LiRo Engineers completed a Phase I Corridor Assessment and a Phase II Corridor Site Investigation for the NYCDDC (LiRo 2017 and 2018). For the Phase II study, a series of 60 soil borings was completed (SB-01 through SB-60) to terminal depths ranging from approximately 2.5 to 15 feet below grade (ftbg). The locations of the soil borings and the soil boring logs are included as Appendix A. Soil characteristics were described in the Phase II Corridor report:

> Native soil along the Corridor was uniformly identified as fine to medium sand with trace of silt and gravel. Elevated areas (i.e., ground elevations greater than 5 to 7 feet above mean sea level (amsl)) were composed of fill. This included the Cricket Field (where fill thickness was 6 to 10 feet and was composed of sand with gravel, brick, glass, and ceramic shards) and New York City Department of Transportation (DOT) area at the southern end of the Corridor (where fill thicknesses was in excess of 15 feet and was composed of sand with waste including brick, asphalt, tires, and glass). The area around the pond located to the east of the central portion of the Corridor included several berms that appear to be composed of re-graded native soil. These berms were inferred by LiRo to have been constructed using soil excavated to create the pond area. Bedrock was not encountered within any of the borings.
>
> Groundwater was encountered within 58 of the 60 borings advanced at the Corridor at depths ranging from 2.5 to 14 ftbg (LiRo 2018:ES-3).

The soil borings recorded up to four soil levels, depending on location. Table 1, below, summarizes the general types of soil levels recorded in the soil borings, as well as the depth to ground water and the total depth of the boring. For the purposes of this summary, the soils are described as fill, sand, or peat. The specific characteristics of each soil level are described in the soil boring logs (Appendix A).

Table 1: Summary of soil boring results

Boring No.	Level 1 (ftbg)	Level 2 (ftbg)	Level 3 (ftbg)	Level 4 (ftbg)	Depth to Water (ftbg)	Total Depth (ftbg)
SB-01	Fill	Sand	Peat		7	10
	0 to 6	6 to 9	9 to 10			
SB-02	Fill	Sand	Peat		7	10
	0 to 6	6 to 9	9 to 10			
SB-03	Fill	Sand	Peat		8	10
	0 to 6	6 to 9	9 to 10			
SB-04	Fill	Sand	Peat		10	10
	0 to 6	6 to 9	9 to 10			
SB-05	Fill	Fill	Peat		10	10
	0 to 6	6 to 9	9 to 10			
SB-06	Fill	Fill			10	10
	0 to 6	6 to 10				
SB-07	Fill	Fill			10	10
	0 to 6	6 to 10				
SB-08	Fill	Fill			10	10
	0 to 6	6 to 10				
SB-09	Fill	Fill			10	10
	0 to 6	6 to 10				
SB-10	Fill	Fill			10	10
	0 to 6	6 to 10				

Boring No.	Level 1 (ftbg)	Level 2 (ftbg)	Level 3 (ftbg)	Level 4 (ftbg)	Depth to Water (ftbg)	Total Depth (ftbg)
SB-11	Fill	Fill			10	10
	0 to 6	6 to 10				
SB-12	Sand	Sand			4	5
	0 to 2	2 to 5				
SB-13	Sand	Sand			3	3
	0 to 1	1 to 3				
SB-14	Sand	Sand			3	3
	0 to 1	1 to 3				
SB-15	Sand	Sand			3	3
	0 to 1.5	1.5 to 3				
SB-16	Sand	Sand			3	3
	0 to 1.5	1.5 to 3				
SB-17	Sand	Sand			4	4
	0 to 1.5	1.5 to 4				
SB-18	Sand				3.5	3.5
	0 to 3.5					
SB-19	Fill	Sand			3	3
	0 to 1	1 to 3				
SB-20	Fill	Sand			3.5	3.5
	0 to 1	1 to 3.5				
SB-21	Sand	Sand			2.5	2.5
	0 to 1	1 to 2.5				
SB-22	Sand	Sand			3.5	3.5
	0 to 1	1 to 3.5				
SB-23	Sand				3	3
	0 to 3					
SB-24	Sand				3	3
	0 to 3					
SB-25	Sand				2.5	2.5
	0 to 2.5					
SB-26	Sand				2.5	2.5
	0 to 2.5					
SB-27	Sand				2.5	2.5
	0 to 2.5					
SB-28	Sand				2.5	2.5
	0 to 2.5					
SB-29	Sand				2.5	2.5
	0 to 2.5					
SB-30	Sand				3	3
	0 to 3					
SB-31	Sand				3	3
	0 to 3					
SB-32	Sand				2.5	2.5
	0 to 2.5					
SB-33	Sand				3	3
	0 to 3					

Boring No.	Level 1 (ftbg)	Level 2 (ftbg)	Level 3 (ftbg)	Level 4 (ftbg)	Depth to Water (ftbg)	Total Depth (ftbg)
SB-34	Sand				3	3
	0 to 3					
SB-35	Sand				3	3
	0 to 3					
SB-36	Sand				3	3
	0 to 3					
SB-37	Sand				2.5	2.5
	0 to 2.5					
SB-38	Sand				4	4
	0 to 4					
SB-39	Sand				4.5	4.5
	0 to 4.5					
SB-40	Sand				4	4
	0 to 4					
SB-41	Sand				5	5
	0 to 5					
SB-42	Sand				5	5
	0 to 5					
SB-43	Sand	Sand			7	10
	0 to 6	6 to 10				
SB-44	Fill				2.5	2.5
	0 to 2.5					
SB-45	Fill	Fill			10	10
	0 to 6	6 to 10				
SB-46	Fill	Fill			10	10
	0 to 6	6 to 10				
SB-47	Fill				5	5
	0 to 5					
SB-48	Fill	Fill			10	10
	0 to 6	6 to 10				
SB-49	Fill	Fill	Fill		10	15
	0 to 6	6 to 10	10 to 15			
SB-50	Fill	Fill			Non detect	10
	0 to 6	6 to 10				
SB-51	Fill	Fill	Fill		11	12
	0 to 6	6 to 10	10 to 12			
SB-52	Fill	Fill	Fill		14	15
	0 to 6	6 to 10	10 to 15			
SB-53	Fill	Fill	Fill	Peat	14	15
	0 to 6	6 to 10	10 to 14	14 to 15		
SB-54	Fill	Fill	Fill		14	15
	0 to 6	6 to 10	10 to 15			
SB-55	Fill	Fill	Fill		9	15
	0 to 6	6 to 10	10 to 15			
SB-56	Fill	Fill	Fill		14	15
	0 to 6	6 to 10	10 to 15			

Boring No.	Level 1 (ftbg)	Level 2 (ftbg)	Level 3 (ftbg)	Level 4 (ftbg)	Depth to Water (ftbg)	Total Depth (ftbg)
SB-57	Sand	Sand	Sand		11	13
	0 to 6	6 to 10	10 to 13			
SB-58	Sand	Sand			10	10
	0 to 6	6 to 10				
SB-59	Sand	Sand			Non detect	10
	0 to 6	6 to 10				
SB-60	Fill	Fill			10	10
	0 to 6	6 to 10				

This set of soil borings was undertaken to characterize the subsurface soil and groundwater and disposal purposes rather than geotechnical conditions. They are shallower in extent than geotechnical borings, and often were not excavated to the full depth of the proposed project impacts. Nonetheless, there are some conclusions that can be made. Namely, natural soils, consisting of sand and sometimes peat, are present under a number of the soil borings capped by fill. None of the soil borings recorded any shell included with the natural soils. In addition, although the U.S.D.A. soil survey (Figure 3) indicates all of Idlewild Park contains household landfill materials, not all areas of the park appear to have been used for dumping, as some soil borings, albeit shallow in depth, indicated no upper fill or refuse strata.

IV. BACKGROUND RESEARCH/HISTORICAL OVERVIEW

A. Precontact Period Summary

For this report, the word precontact is used to describe the period prior to the use of formal written records. In the western hemisphere, the precontact period also refers to the time before European exploration and settlement of the New World. Archaeologists and historians gain their knowledge and understanding of precontact Native Americans in the greater metropolitan New York area from three sources: ethnographic reports, Native American artifact collections, and archaeological investigations.

Based on data from these sources, a precontact cultural chronology has been devised for the New York City area. Scholars generally divide the precontact era into three main periods, the Paleo-Indian (c. 14,000-9,500 years ago), the Archaic (c. 9,500-3,000 years ago), and the Woodland (c. 3,000-500 years ago). The Archaic and Woodland periods are further divided into Early, Middle, and Late substages. The Woodland was followed by the Contact Period (c. 500-300 years ago). Artifacts, settlement, subsistence, and cultural systems changed through time with each of these stages. Characteristics of these temporal periods have been well documented elsewhere, and in keeping with guidelines issued by the NYSOPRHP (2005), will not be fully reiterated here.

Scholars often characterize precontact sites by their close proximity to a water source, fresh game, and exploitable natural resources (i.e., plants, raw materials for stone tools, clay veins, etc.). These sites are often separated into three categories: primary (campsites or villages), secondary (tool manufacturing, food processing), and isolated finds (a single or very few artifacts either lost or discarded). Primary sites are often situated in locales that are easily defended against both nature (weather) and enemies. Secondary sites are often found in the location of exploitable resources (e.g., shell fish, lithic raw materials).

B. Previously Recorded Archaeological Sites and Surveys

There have not been any archaeological sites previously recorded within the project site boundaries. Within one mile of the project site, two New York State Museum (NYSM) sites have been recorded, but there is minimal information available about them and they are broadly drawn on the SHPO's Cultural Resource Information System (CRIS). NYSM Site 4538 was once located on the grounds of JFKIA and the NYSM Site 4547 was once located along Hook Creek near the Nassau County border with Queens. In his archaeological study for Queens, Boesch (1997) indicates that there are three archaeological sites, one

of which corresponds to NYSM Site 4538. Table 2, below, lists the sites within a one-mile radius of the APE.

Table 2: Archaeological sites within a one-mile radius of the APE

Site # and name	Distance from APE	Time Period	Site Name/Type
NYSM 4538 Boesch 63	0.7 mile south	Unknown precontact	Habitation site
NYSM 4547	0.8 mile southeast	Unknown precontact	Unknown
Boesch 21	1 mile southeast	Unknown precontact	Traces of occupation
Boesch 44 Hassock Creek - Springfield (QN-9)	0.4 mile northwest	Unknown precontact and historic period	Assorted artifacts

Boesch's Site 44, also known as the Hassock Creek - Springfield (QN-9) Site, first was recorded by Ralph Solecki in 1941 in his archaeological survey prior to construction of the Belt Parkway. In a 2001 publication, Solecki presented more details about the site:

> In southern Queens, in the pathway of the Beltway under construction, we investigated around Hassock Creek (now obliterated by construction). A site was found on the west side of Springfield Pond, at what was then Conroy and Commercial Streets. There we recovered several white quartz arrowpoints, some broken fire-cracked stones, flakes, white clay pipestems and a fragment of pottery. Along Springfield Blvd. and just south of the Springfield Christian cemetery, a white quartz projectile point and a 19th century style white clay pipe bowl were recovered (Solecki 2001:21).

Based on the distance of the project site to the broadly drawn boundaries of NYSM #4538 and 4547, CRIS indicates that the project site is just outside an area of archaeological sensitivity. However, Boesch's sensitivity study for Queens indicates that the entire project site is within an area of high archaeological sensitivity (Boesch 1997).

A portion of the project site was included in one previous archaeological survey. In the late 1970s, the Nassau Expressway project proposed a new highway from the Brooklyn-Queens border to the Nassau County line. A portion of the highway was proposed to be constructed through the southern end of Idlewild Park, roughly bordering the edge of former landfilled areas, and overlapping the southern end of the project site (see Figure 15). The proposed alignment was included in the overall cultural resources assessment for the project, although no further work was recommended for the project site area (Rothschild and Pickman 1978, Pickman 1980, Vollmer Associates 1981).

There has been one additional archaeological study completed within a one-mile radius of the project site, which is on file at the NYSOPRHP. The study consisted of a Phase IA Archaeological Resource Assessment and a Phase IB Archaeological Survey of the Rockaway Boulevard Site at Rockaway Boulevard and the Nassau Expressway (LBA 2005, 2006). Despite the findings of archaeological sensitivity in the Phase IA study, Phase IB testing did not result in the recovery of any archaeological resources and no further work was recommended.

C. Historic Period Summary

What is now the Idlewild Park neighborhood was historically part of the area designated by the Dutch as Rustdorp ("rest-town"), which encompassed all of southern Queens. In 1655, it was settled by English colonists from Massachusetts and Heemstede (Hempstead in present Nassau County), who requested permission from Director General Peter Stuyvesant to establish a town halfway between Hemstede and Amersfoort (Flatlands in Kings County). The settlers referred to the village as "jemeco" which was Delaware for beaver, due to its proximity to a beaver pond, and was later corrupted to Jamaica (Munsell 1882:192). Jamaica's proprietors purchased surrounding lands from Native Americans in order to strengthen the town's title to lands granted by the Dutch colonial government. The hamlet of Springfield, at

the crossroads of what are now Merrick and Springfield Boulevards, was settled equally early (Munsell 1882:198).

After the British established rule in 1664, New Amsterdam became "New York" and Long Island became "Yorkshire," with Yorkshire being divided into "ridings" or thirds. Jamaica became part of the "North Riding" (Seyfried and Asadorian 1991:vi). In 1683, the system of ridings was abolished under Governor Thomas Dongan, and ten counties were created; three on Long Island. It was at that time that Kings, Queens, and Suffolk Counties came into existence, and Rustdorp was renamed Jamaica.

Between 1675-1700, many of the streams in lower Queens were dammed and mills were built on them. In 1700, farms were scattered along the countryside between Jamaica and the Nassau County boundary, with dirt and plank roads connecting them. The project site is located along Springfield Lane. This was a small, winding road that branched off the more central Springfield Road (now Springfield Boulevard), which ran through the hamlet of Springfield to the northwest of the project site. Historic maps show the Springfield settlement and Springfield Road in place at least by the 1780s (Taylor and Skinner 1781, Figure 4). A smaller road, possibly Springfield Lane, was shown branching off from the main route, in the project site vicinity. Two structures were shown along Springfield Lane, one near the intersection with Springfield Road, and another in the project site vicinity, although due to mapping imprecision it is unclear whether it was within the project site corridor.

By the 1830s, a roadway had been constructed connecting Jamaica on the northwest with Far Rockaway on the southeast. Known initially as the Rockaway Road and later the Rockaway and Jamaica Turnpike, it ran south and west of the project site, in the area now covered by JFKIA. Springfield Lane appears to have been extended to the south and across several hummocks of land within the marshland to intersect with this roadway. The 1837 U.S.C.S. map (Figure 5) shows the new roadway and the extension of Springfield Lane. One structure was shown on the north side of Springfield Lane near the project site corridor. The southern portion of the project site was entirely within marshland. Similar conditions were depicted on the 1845 U.S.C.S. map (Figure 6).

Development in and around the project site corridor remained mostly unchanged through the nineteenth century. The 1852 Conner map (Figure 7) depicted a structure in the approximate location of the present cricket field in the northern portion of the project site, as well as a cluster of structures on the northeast side of Springfield Road near the final southern bend in the project site corridor. None of the structures along Springfield Lane were labeled as to occupancy or ownership. The 1859 Walling map indicated two individuals attributed to structures along the east side of Springfield Lane, C. Amberman and N. Bailey. The 1863 Walling attributed structures in these locations to C. Amberman and N. M. Baylis.

By issuance of the 1873 Beers map (Figure 8), the Springfield Lane corridor had additional structures shown. The structure in the approximate cricket field location was attributed to A. Stoothoff, a structure just north of the Stoothoff home to J. Kinsey, and a structure further south on the east side of the road to J. Bedell. In 1886, the updated Beers map attributed structures to A. Stoothoff and the former Bedell house to C.B. Remsen. The 1891 Wolverton map (Figure 9) showed that by this time the Stoothoff house was attributed to W. Mills. According to federal censuses from 1860, 1870, and 1880, these households were generally headed by farmers, which was the local livelihood along this roadway. Members of most families had been born in New York.

The project site exhibited little change during the first decades of the twentieth century. The 1900 U.S.G.S. map (Figure 10) illustrated that the area was still comprised of low-lying land with scattered structures along Springfield Lane, with marshland at the southern end of the project site. Historic maps indicate that the tract and house in the area of the present cricket field, previously attributed to Stoothoff and, later, Mills, was noted on the 1901 Hyde map as belonging to H.R. Augustine, and on the 1909 Bromley map (Figure 11) and the 1912 Hyde map to H. Reimels. The property to the south remained attributed to C. Remsen during these years.

The 1912 Sanborn map[1] and the 1918 Hyde map (Figure 12) were the first to depict block and lot numbers in the project site. From north to south, the project site ran through Block 4626, Lot 1; Block 4625, Lots 20, 16, and 1; Block 4605, Lots 5 and 1; Block 4630, Lot 37; Block 4610, Lots 210, 175, and 95. All of these former blocks are now part of Block 13791. Both maps showed that structures in the project site and vicinity were frame dwellings and outbuildings. A 1924 aerial photograph (Figure 13) confirmed that the land surrounding the buildings in the project site and vicinity comprised both farmland and marshland.

The project site and vicinity continued to support houses, farm buildings, agricultural fields and marshlands into the early 1940s. Tax photographs made in 1939-1941 captured two of the farm properties along the project site corridor, on Block 4625, Lot 20 and Block 4630, Lot 37 (Appendix B). The photographs showed that the topography was generally level, with trees, grass, and other vegetation surrounding the properties. The buildings were set back from Springfield Lane, as shown on historic maps including the 1926 and 1950 Sanborn editions.

During the mid-1940s, construction began on what was originally known as Idlewild Airport, the precursor to today's JFKIA. Work started in 1943 and the airport opened in 1948. In 1947, the Port of New York Authority (today known as the Port Authority of New York and New Jersey) leased the airport from the city. One of the first projects the Port of New York Authority undertook was to create two new runways oriented northeast-southwest at the southeastern end of the airport property. The approach to these runways was over what is now Idlewild Park. In order to preserve open space and prevent future residential development in these areas, the Port of New York Authority began purchasing land in what is now the park in 1947, including the area of the project site corridor. The tidal marshlands, which in the thinking of that period were considered to be worthless in their natural condition, were slated for land reclamation through filling with refuse and construction waste (Vollmer Associates 1981: VI-32-33).

An aerial photograph from 1951 (Figure 14) shows the changes that had occurred in the project site vicinity in conjunction with construction of the airport. A roadway had been built along the line of 225th Street through the park, connecting the airport property with the inland neighborhood. Some landfilling of the marshland appears to have begun as well. Rockaway Boulevard, which had previously been located in the center of the airport property, had been reconstructed on a new alignment crossing the project site, in an area previously covered by marshland. A portion of Thurston Creek had been rechanneled to its present location south of Rockaway Boulevard. In 1958, the assignment of Idlewild Park, including the project site, was transferred from the Port of New York Authority to the New York City Parks Department.

During the 1960s and 1970s, Idlewild Park continued to be used for landfilling purposes, both at the municipal level and informally by local residents. The city used the southern portion of the marshlands in the park for a construction debris landfill, while many residents and businesses wishing to dispose of household and commercial trash often used the northern area of the park, which was accessible from local roads, as private, illicit dumping grounds (Hendrick 2002). A series of photographs taken in 1966 of the area, and on file with the New York City Parks Department, showed the extent of the illegal dumping activities (Appendix C)[2]. The city's landfill site was closed after 1974 (Vollmer Associates 1981: VI-35).

In addition to the airport construction and landfilling activities in the post-World War II period, the project site vicinity was affected by proposed plans for the Nassau Expressway. This highway was envisioned to run from the Brooklyn-Queens border through Queens and into Nassau County. Initial plans for the Nassau Expressway route in the 1940s and 1950s were just south of the present Rockaway Boulevard, within the JFKIA property. As the airport expanded and safety issues concerning flight patterns became more prevalent, the proposed alignment of the Nassau Expressway was shifted north, into Idlewild Park. Construction of the eastbound portion of the highway from Cross Bay Boulevard to the Van Wyck Expressway began in 1965, opening in 1967. However, the remaining segment of the highway, including

[1] Due to the large extent of the project site, coverage on Sanborn Fire Insurance Maps spans multiple sheets for each published year. Because of the numerous pages per year, the maps are not reproduced in this report.

[2] Although these photographs are from a collection identified as Brookville Park it appears that at least some of them were taken in Idlewild Park.

the area in Idlewild Park, was not built at that time due to a number of reasons, including community opposition. During the late 1970s additional alternatives were studied in an Environmental Impact Statement (EIS) and Section 4f study, culminating in a Final EIS in 1981 by Vollmer Associates. The alternative chosen for the Nassau Expressway was mapped as running through Idlewild Park, north of the city landfill extent, as shown on an aerial photograph from 1981 (Figure 15). The Nassau Expressway project ultimately did not move forward after 1981.

Since the 1980s and closure of the active landfill on the site, Idlewild Park has undergone a number of changes. In the mid-1990s the DEP installed a sewer running from the inland city streets to the south, just southeast and parallel to portions of the present proposed sewer. At the same time, the DEP restored 13 acres of tidal wetlands in the park, although outside of the project site. The portion of the project site south of Springfield Lane is part of a five-acre parcel that was paved over for a city Transportation Department-run cement recycling depot during this period (Hendrick 2002). Sanborn maps illustrated that some of the former private houses and outbuildings along Springfield Lane were converted into automobile repair and wrecking facilities during the second half of the twentieth century (Sanborn 1985-2002). The present cricket field was constructed in 2002 and was reconstructed in 2008, according to surveys on file with New York City Parks.

V. CONCLUSIONS

The purpose of this Phase IA Archaeological Documentary Study was to determine whether archaeological resources from Native American and historical period occupations could have been deposited in the project site, if they could have remained intact, surviving later historical development and disturbance, and if any potential resources could be impacted by proposed project plans. The following sections outline the conclusions for these resources. For the purposes of clarity, the project site is addressed in three segments: the northern portion from 149th Avenue through the cricket field; the central portion along the alignment of Springfield Lane; and the southern portion through the former wetlands within Idlewild Park to JFKIA.

A. Precontact Archaeological Sensitivity

From what is known of precontact period settlement patterns on Long Island, most habitation and processing sites are found in sheltered, elevated sites close to wetland features, major waterways, and with nearby sources of fresh water. The project site once contained a combination of firm ground and natural marshlands surrounding tidal creeks. Native Americans would have been drawn to these creeks and marshlands for their aquatic life, wild game, and vegetation. As well, wetlands provided peat that could be used for fuel and a number of plants that served as materials for clothing, basketry and weaving. As importantly, the use of certain aquatic plants for medicinal purposes is ethnographically documented (Herrick 1995).

Precontact period sites, primarily from the Woodland Period, have been documented along the Jamaica Bay shoreline in proximity to marshlands. In some cases, extensive shell middens extended into the marshlands, the equivalent of precontact garbage dumps. Defined as deposits of shells, gravel, sand and silt and in some cases other cultural remains, they occur either as distinct cultural events or in association with habitation sites (Wells 2001). Along some areas of Jamaica Bay, these shell middens have been found under layers of modern fill, but on top of marshland soils (Pickman 1987:4). Additionally, prior to the creation of Jamaica Bay and its marshlands after the last Ice Age, the project site parcels would have been dry land. It is possible that precontact period archaeological sites from this period, dating from the Paleo Indian period through parts of the Archaic period, could remain capped by later marshland soils that accrued after the sea level rise, ca. 2000-4000 B.P.

The project site is located in an area that, while known to have had precontact occupation based on historic sources, has nonetheless never had an intact precontact period archaeological site recorded in the vicinity since the 1940s, likely in large part due to later disturbances that would have destroyed fragile sites. The degree of disturbance varies across the different parts of the project site.

The northern portion of the project site, from 149th Avenue through the cricket field to Springfield Lane, was once a combination of firm land and land at the edge of Bog Creek. Soil borings from this area indicate an upper stratum of fill, which was placed over the earlier landform in conjunction with later park modifications for the cricket field. Natural sandy soils were recorded beneath the fill, followed by a stratum of peat below the sand in several borings closest to the former creek location. It is possible that precontact period archaeological resources could be capped by both the imported fill and the sand and peat layer, if not disturbed from grading or other earthmoving activities. HPI concludes that the northern portion of the project site has a medium precontact period archaeological sensitivity.

The central portion of the project site runs along the Springfield Lane roadway and shoulders. This area was on firm land, and the soil borings taken along the sides of the roadway, albeit shallow in extent, confirm sandy soils and no recorded fill in the upper extent of the soil column. Historic maps do show that Springfield Lane has a buried water line beneath it, which formerly served the houses along it. It is possible additional utilities, such as gas lines, are buried beneath the roadway as well. However, because the soil borings did not extend to the full depth of the proposed sewer base, and were only taken on the shoulders of the road and not within it, the full extent of the soil column across this area is unknown at this time. Given these variables and the available data, HPI concludes that the central portion of the project site has a low to medium precontact period archaeological sensitivity at this time.

The southern portion of the project site, southwest of Springfield Lane, was once within marshlands. It has since been filled with soil and refuse as part of the city operated landfill that operated in the southern portion of Idlewild Park until the mid-1970s. Soil borings confirm fill deposits to the depth of the borings, either 10 or 15 feet below grade depending on location. However, the depth of the base of the sewer will extend to approximately elevation -3 in this area, which is 3-8 feet lower in extent than the soil borings were excavated, depending on location. It is possible that natural soil strata, including peat deposits, could be present in those remaining feet of soil that were not sampled during the soil boring program. Given these variables and the available data, HPI concludes that the southern portion of the project site has a low to medium precontact period archaeological sensitivity at this time.

B. Historic Period Archaeological Sensitivity

The project site and vicinity was developed with residences and farm buildings along both sides of Springfield Lane during the nineteenth century. The buildings generally were set back from the roadway, often on multiple-acre tracts. Archaeological sensitivity for historic period resources varies across the project site, depending on location, as described below.

The northern portion of the project site, from 149th Avenue through the cricket field to Springfield Lane, was once the rear yard of a farm tract that fronted Springfield Lane. Historically it was known as Block 4625, Lot 20, as shown on the 1918 Hyde map (Figure 12). Some of the structures on this lot were photographed in 1939-1941 and are included in Appendix B. An access driveway ran from Springfield Lane to Bog Creek along this property. A structure was shown on historic maps in this location as early as the 1852 Conner map (Figure 7), and continued to be shown on maps through the mid-twentieth century as a dwelling. Various farm buildings, and later garages, were located behind the house over time. Although the buildings on this tract have been removed, it is possible that archaeological resources associated with the former farm families could remain under the imported fill that comprises the elevated cricket field surface, if not disturbed from grading or other earthmoving activities. HPI concludes that the northern portion of the project site has a medium historic period archaeological sensitivity.

Archaeological resources such as domestic artifacts and refuse associated with the project site residents may have been deposited in shaft features—such as wells, cisterns, and privies—that were likely located in the yard area of the property. Masonry and wooden portions of these abandoned and truncated shaft features are often encountered because their deeper and therefore earlier layers remain undisturbed by subsequent construction or filling, and in fact, development often preserves the lower sections of the features by sealing them beneath structures and fill layers.

Privies were located furthest from the residences, often along the rear lot lines, while wells and cisterns frequently (but not always) were located closer to the rear walls of street-fronting buildings or outbuildings. Privies and cisterns would be excavated up to 10-15 feet below grade, while wells would need to be excavated as deep as the water table, which varied according to location. Before the introduction of piped city water in the early twentieth century, residents would have relied on rear yard shaft features, such as wells and cisterns. Privies and cesspools would have been used at least until the introduction of municipal sewers.

Identifying and examining buried features associated with the nineteenth century occupancy of the project site may reflect the daily activities of the residents and provide insight into cultural behavior of the farming community. If undisturbed deposits of cultural material do still exist, they may have the potential to provide meaningful information regarding the lives of the people who lived there. When recovered from their original context and in association with a specific historical occupation, historical deposits can provide a wealth of information about consumption patterns, consumer choice, gender relations, ethnicity, economic status, and other important issues.

The central portion of the project site runs along the Springfield Lane roadway and shoulders. The APE is 84 feet wide along Springfield Lane, including 45 feet of mapped roadway and approximately 20 feet on either side of the roadway (Figure 2a-b). Although there were several farm houses along Springfield Lane in proximity to the APE, the houses were set back from the roadway, such that the current APE would have only included a small strip of the front yards. Given that shaft features, where archaeological deposits are most likely to be found, generally were situated in the rear of the houses rather than in the front areas, there is less potential for recovering significant archaeological resources in these locations. HPI concludes that the central portion of the project site has a low historic period archaeological sensitivity.

The southern portion of the project site, southwest of Springfield Lane, was once within marshlands. There was no development or use of these marshlands during the nineteenth century. As such, HPI concludes that the southern portion of the project site has a low historic period archaeological sensitivity.

Table 3, below, summarizes the conclusions outlined above. Figure 16a-c depicts the archaeological sensitivity designations by segment.

Table 3: Summary of archaeological sensitivity

Project segment	Precontact archaeological sensitivity	Historic period archaeological sensitivity
Northern	Medium	Medium
Central	Low to medium	Low
Southern	Low to medium	Low

VI. RECOMMENDATIONS

Based on the conclusions, above, HPI recommends the following additional measures. The northern portion of the project site, from 149th Avenue to Springfield Lane, has been assigned a medium archaeological sensitivity for both precontact and historic period archaeological resources. Given the depth of the project impacts, HPI recommends that archaeological monitoring be conducted within this segment of the project site rather than pre-construction archaeological testing. Draft guidelines addressing the use of archaeological monitoring on urban sites (New York Archaeological Council/Professional Archaeologists of New York City 2002), as well as NYSOPRHP (2005) and LPC guidelines (2018) indicate that monitoring is appropriate where archaeological testing is found to be not feasible. Within the project site, where large amounts of soil and other overburden will need to be removed before reaching the archaeological resource zone, it will be most practical (and cost effective) to undertake these excavations in tandem with project construction, which can provide the large-scale excavation and soil removal operations necessary, shore up the site to facilitate deep excavation, and provide dewatering equipment if the water table interferes with archaeological resource recovery. OSHA regulations require stepping or shoring if excavations extend below four feet.

Prior to any excavation within the project site, an archaeological monitoring plan should be developed by an archaeologist in consultation with the NYSOPRHP and the LPC. The monitoring plan should be

prepared according to applicable archaeological standards (NYAC 1994, New York Archaeological Council/Professional Archaeologists of New York City 2002; LPC 2018, NYSORPHP 2005). Register of Professional Archaeologists-certified professional archaeologists, with an understanding of and experience in urban archaeological excavation techniques, would be required to be part of the archaeological team.

The central portion of the project site has been assigned a low to medium precontact period archaeological sensitivity based on a lack of complete data from soil borings, which generally were only excavated several feet below the existing grade, along the shoulders of Springfield Road. This portion was assigned a low historic period archaeological sensitivity. Likewise, the southern portion of the project site has been assigned a low to medium precontact period archaeological sensitivity because soil borings did not extend the full depth of the project impacts and it is unknown whether potential archaeological resources could exist below the deep fill deposits. The southern portion has been assigned a low historic period archaeological sensitivity.

Given the lack of complete soil boring data for the central and southern portions of the project site, HPI recommends that an additional soil boring program be undertaken in these areas, which would provide information on the entire soil column, to the depths of the project impacts. It is possible that geotechnical soil borings will be completed in the future as part of the proposed project. If geotechnical soil borings will be conducted in these areas, HPI recommends that the results of the borings be reviewed by the archaeological team in order to further clarify the current conditions. If geotechnical soil borings are not planned, then HPI recommends that a similar soil boring program, which would extend to the depths of the project impacts, be conducted in these specific areas for the same purposes. Results of the additional soil borings may determine that the central and southern portions of the project site are too disturbed to warrant additional archaeological study, or they may indicate intact soils that may need to be archaeologically monitored during construction.

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FIGURES

Phase IA Archaeological Documentary Study
225th Street Infrastructure Improvements
Queens County, New York

Figure 1: Project site on *Jamaica, N.Y.* 7.5 minute topographic quadrangle (U.S.G.S. 2013).

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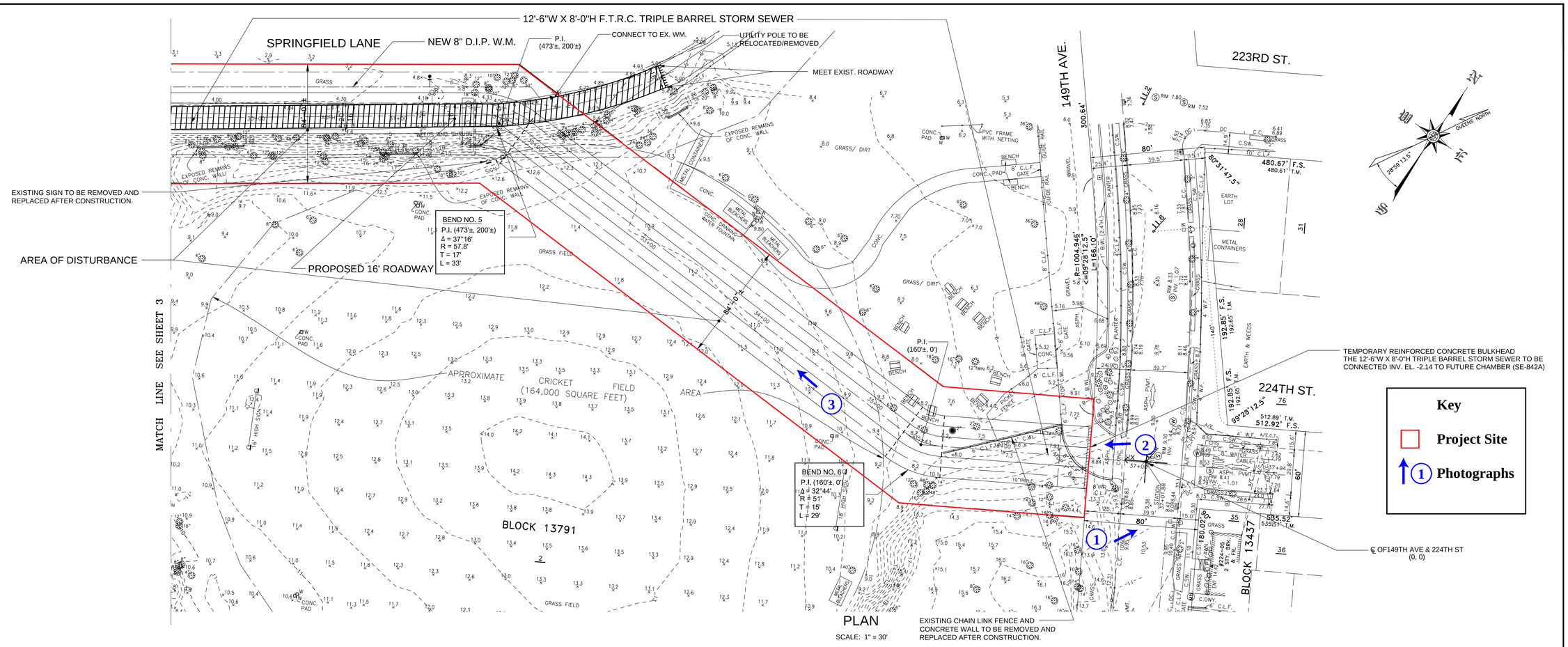

LOCATIONS, EXTENT AND SIZES OF UNDERGROUND UTILITIES AND SUBSTRUCTURES HAVE BEEN DETERMINED FROM RECORD INFORMATION, SUPPLEMENTED BY DATA OBTAINED IN THE FIELD. ACCURACY OF THIS UTILITY DATA IS NOT GUARANTEED, NOR IS THERE ANY GUARANTEE THAT ALL EXISTING UTILITIES AND SUBSTRUCTURES, WHETHER FUNCTIONAL OR ABANDONED, ARE SHOWN ON THIS MAP. CONSULT WITH THE APPROPRIATE UTILITY COMPANY PRIOR TO ANY DESIGN IMPROVEMENTS.

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NO.	DATE	DESCRIPTIONS	BY	APPR'D
		REVISIONS		

TOPOGRAPHIC SURVEY PREPARED BY:
FIELD SURVEY WAS COMPLETED ON: SEPTEMBER 08, 2016
NAME OF SURVEYING FIRM

LICENSED LAND SURVEYOR

DESIGNED J.C. / J.W.
DRAWN J.W. / C.Z.
CHECKED J.C.

SCALE AS SHOWN

CADD FILE

P.E.
ENGINEER–IN–CHARGE

P.E.
DIRECTOR

CITY OF NEW YORK
DEPARTMENT OF DESIGN + CONSTRUCTION
DIVISION OF INFRASTRUCTURE
BUREAU OF DESIGN

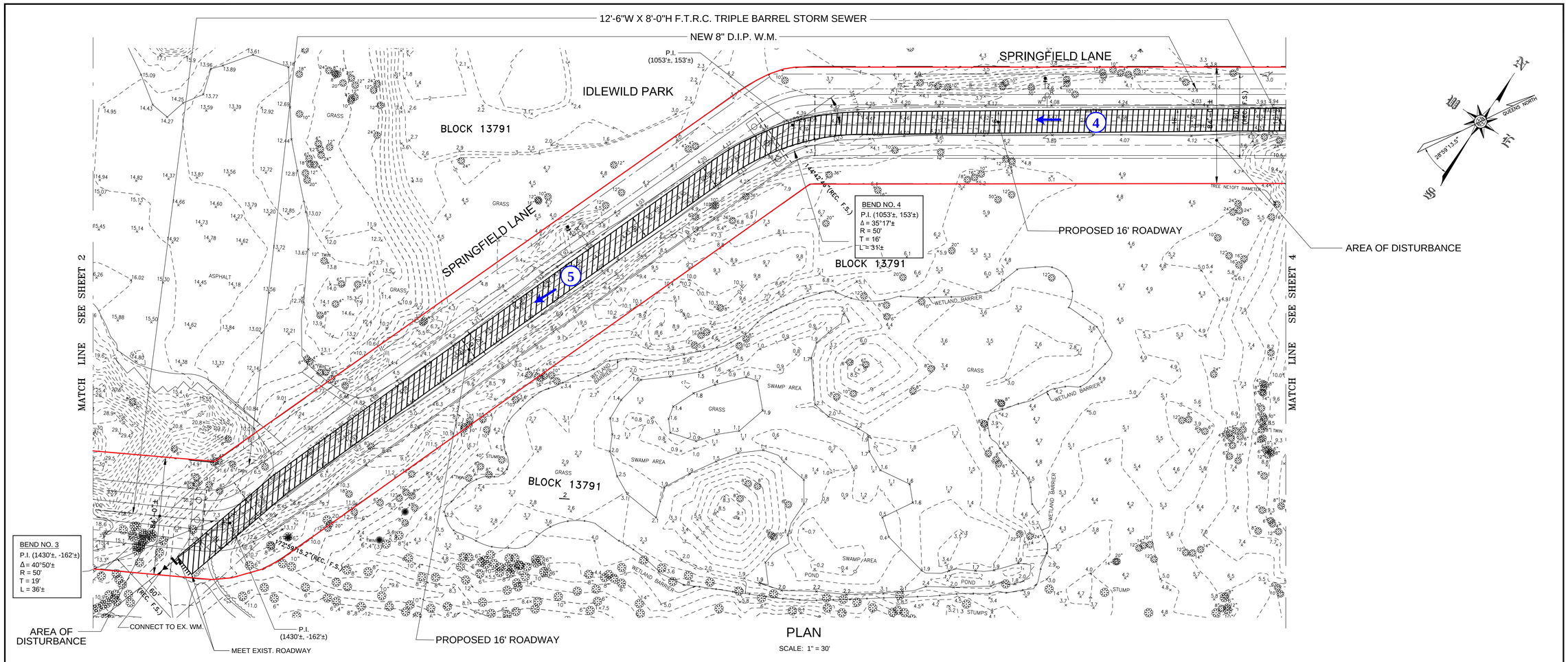
PLAN AND PROFILE
SPRINGFIELD LANE
INTERSECTION OF 224TH ST. AND 149TH AVE.

FOR CONSTRUCTION OF STORM SEWER AND APPURTENANCES IN IDLEWILD PARK, ETC.
BOROUGH OF QUEENS

PROJECT ID: SE-842A1 | DATE: JAN., 2019 | SHEET 4 OF 4

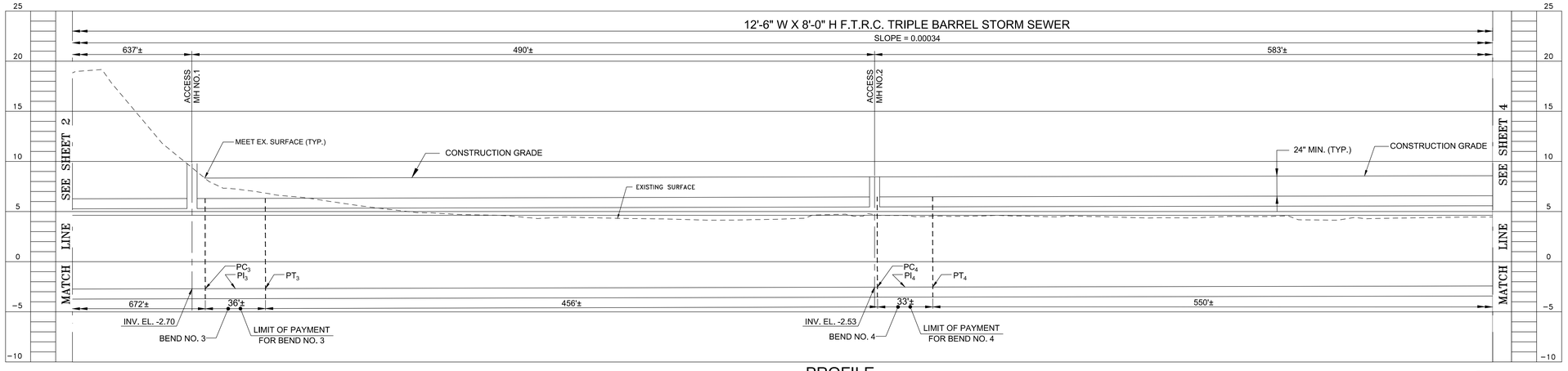
IN-HOUSE DESIGN

Figure 2a: Project site, proposed project plans, and photograph locations on modern topographical survey (HPI 2019 and NYCDDC 2019).



PLAN

SCALE: 1" = 30'



PROFILE

SCALE: VERT: 1" = 5'
HORIZ: 1" = 30'

Key

- Project Site
- ① Photographs

LOCATIONS, EXTENT AND SIZES OF UNDERGROUND UTILITIES AND SUBSTRUCTURES HAVE BEEN DETERMINED FROM RECORD INFORMATION, SUPPLEMENTED BY DATA OBTAINED IN THE FIELD. ACCURACY OF THIS UTILITY DATA IS NOT GUARANTEED, NOR IS THERE ANY GUARANTEE THAT ALL EXISTING UTILITIES AND SUBSTRUCTURES, WHETHER FUNCTIONAL OR ABANDONED, ARE SHOWN ON THIS MAP. CONSULT WITH THE APPROPRIATE UTILITY COMPANY PRIOR TO ANY DESIGN IMPROVEMENTS.

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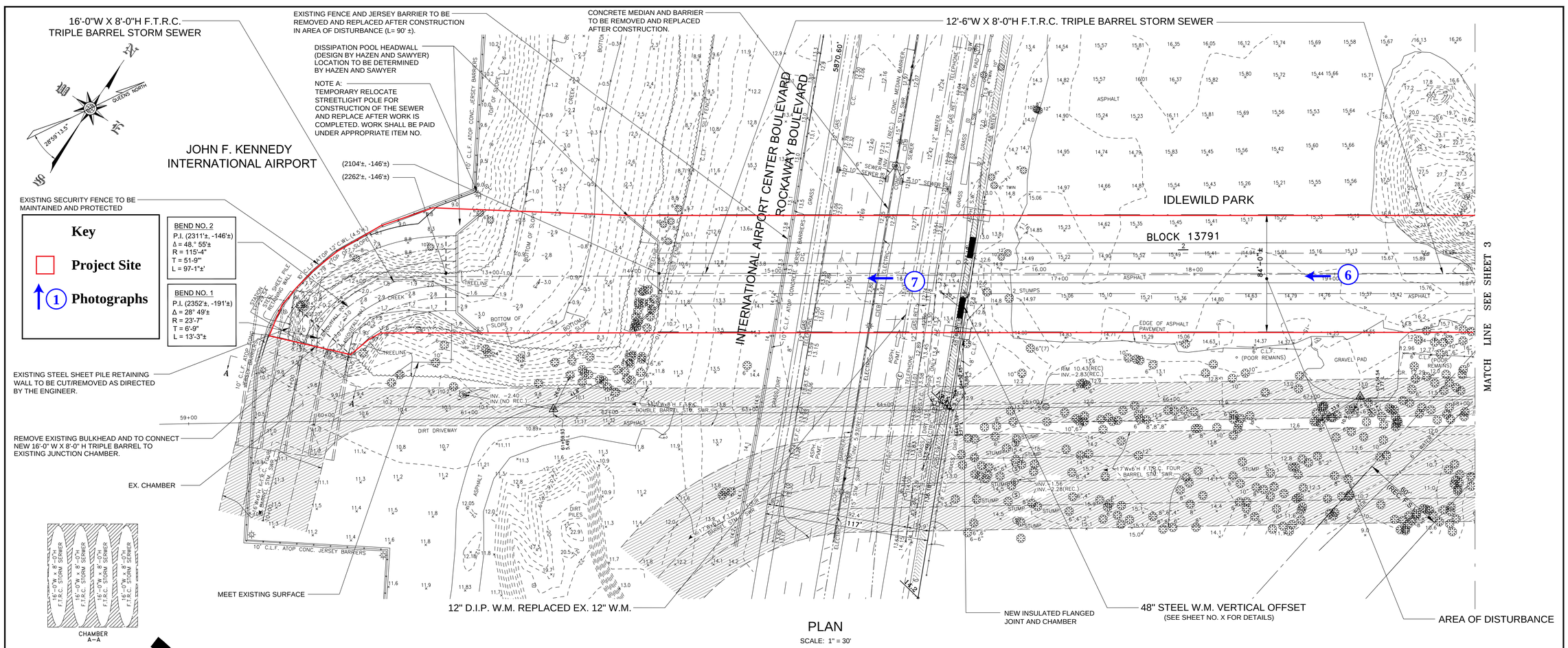
FOR CONSTRUCTION OF STORM SEWER AND APPURTENANCES IN IDLEWILD PARK, ETC.
BOROUGH OF QUEENS

PROJECT ID: SE-842A1 | DATE: JAN., 2019 | SHEET 3 OF 4

IN-HOUSE DESIGN

Figure 2b: Project site, proposed project plans, and photograph locations on modern topographical survey (HPI 2019 and NYCDDC 2019).



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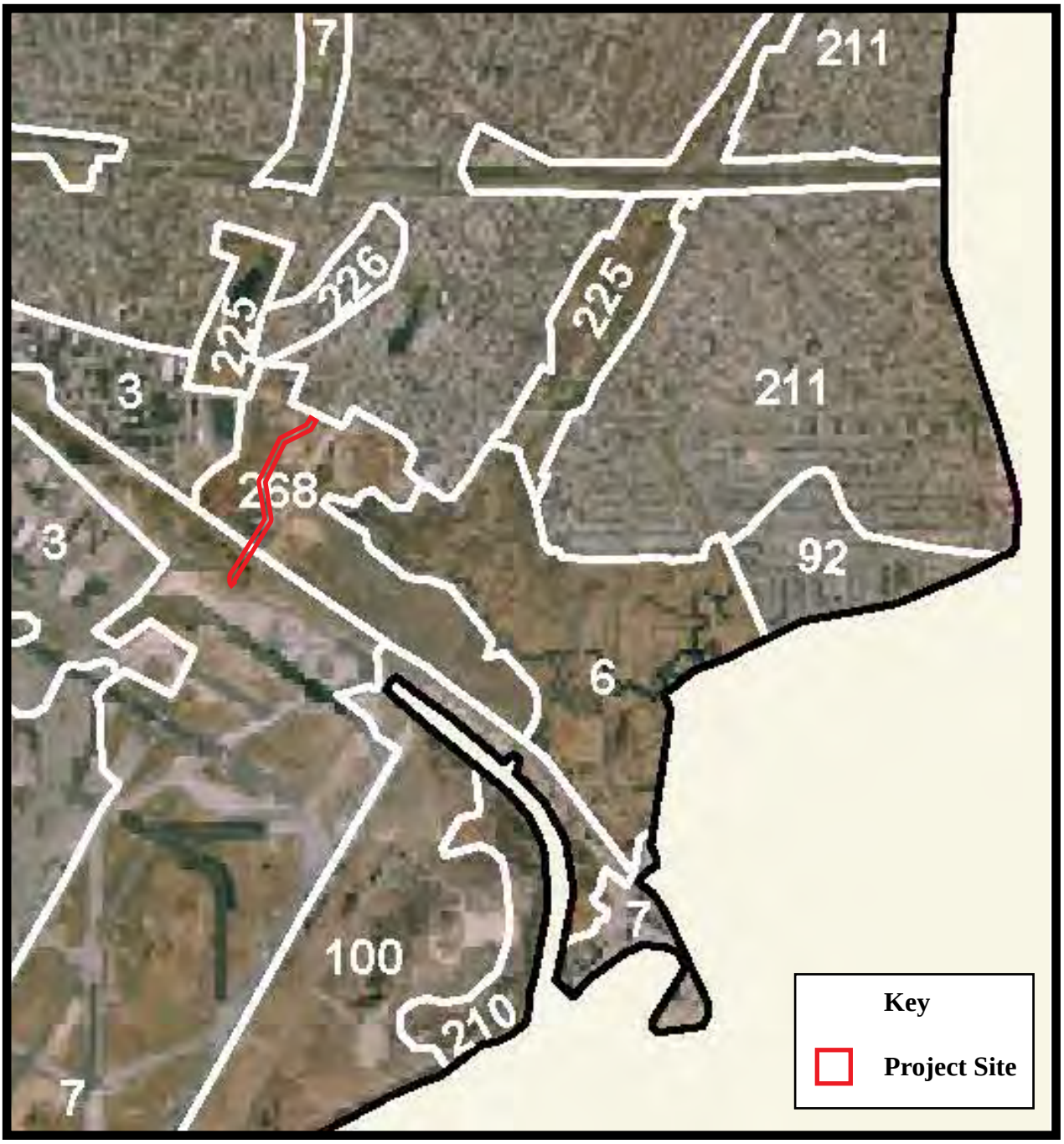
PLAN AND PROFILE
IDLEWILD PARK BETWEEN
OUTFALL AND SPRINGFIELD LANE

FOR CONSTRUCTION OF STORM SEWER AND APPURTENANCES IN IDLEWILD PARK, ETC.
BOROUGH OF QUEENS

PROJECT ID: SE-842A1 | DATE: JAN., 2019 | SHEET 2 OF 4

IN-HOUSE DESIGN

Figure 2c: Project site, proposed project plans, and photograph locations on modern topographical survey (HPI 2019 and NYCDDC 2019).

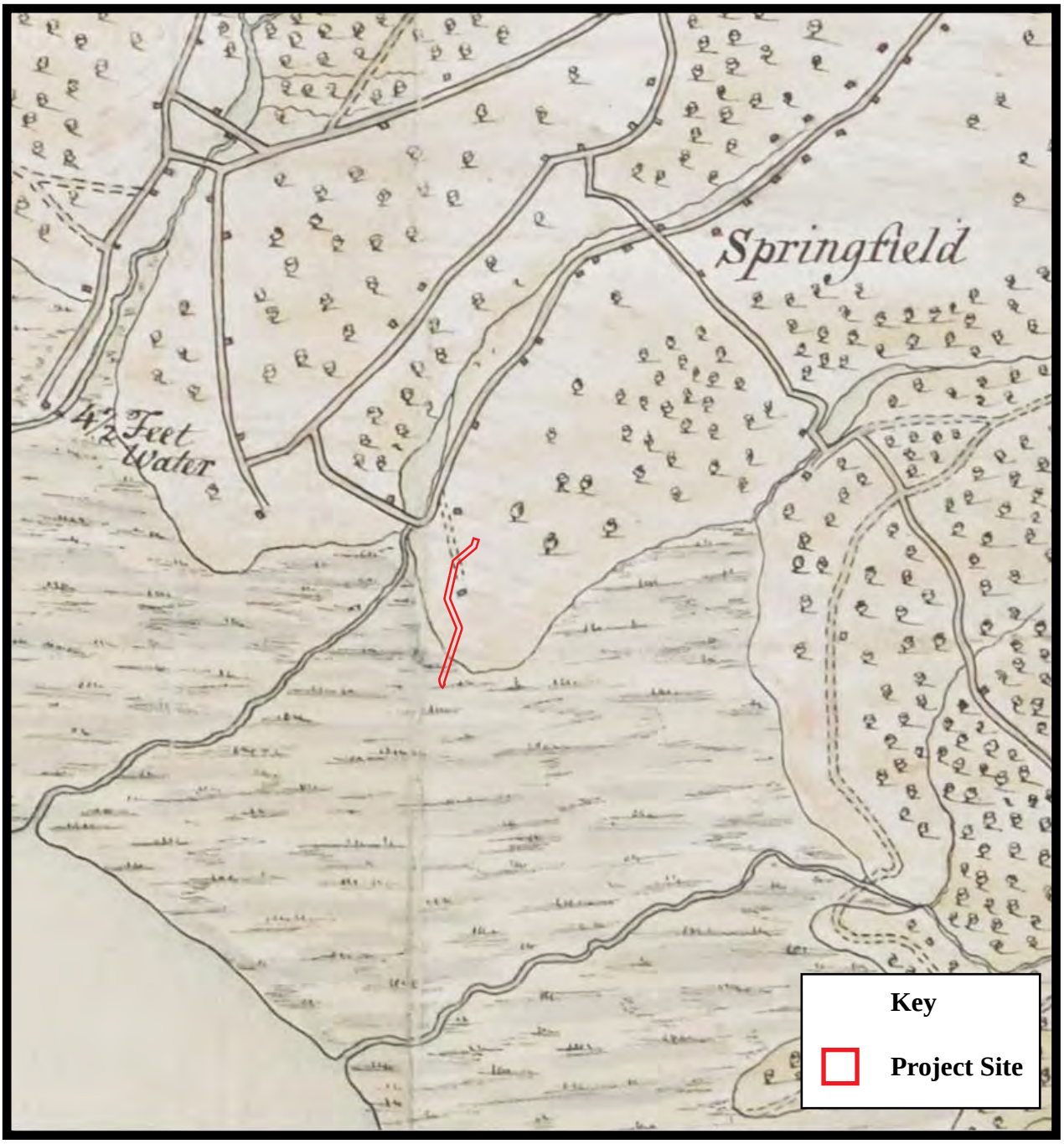


Phase IA Archaeological Documentary Study
225th Street Infrastructure Improvements
Queens County, New York

N

Figure 3: Project site on *New York City Reconnaissance Soil Survey* (U.S.D.A. 2005).

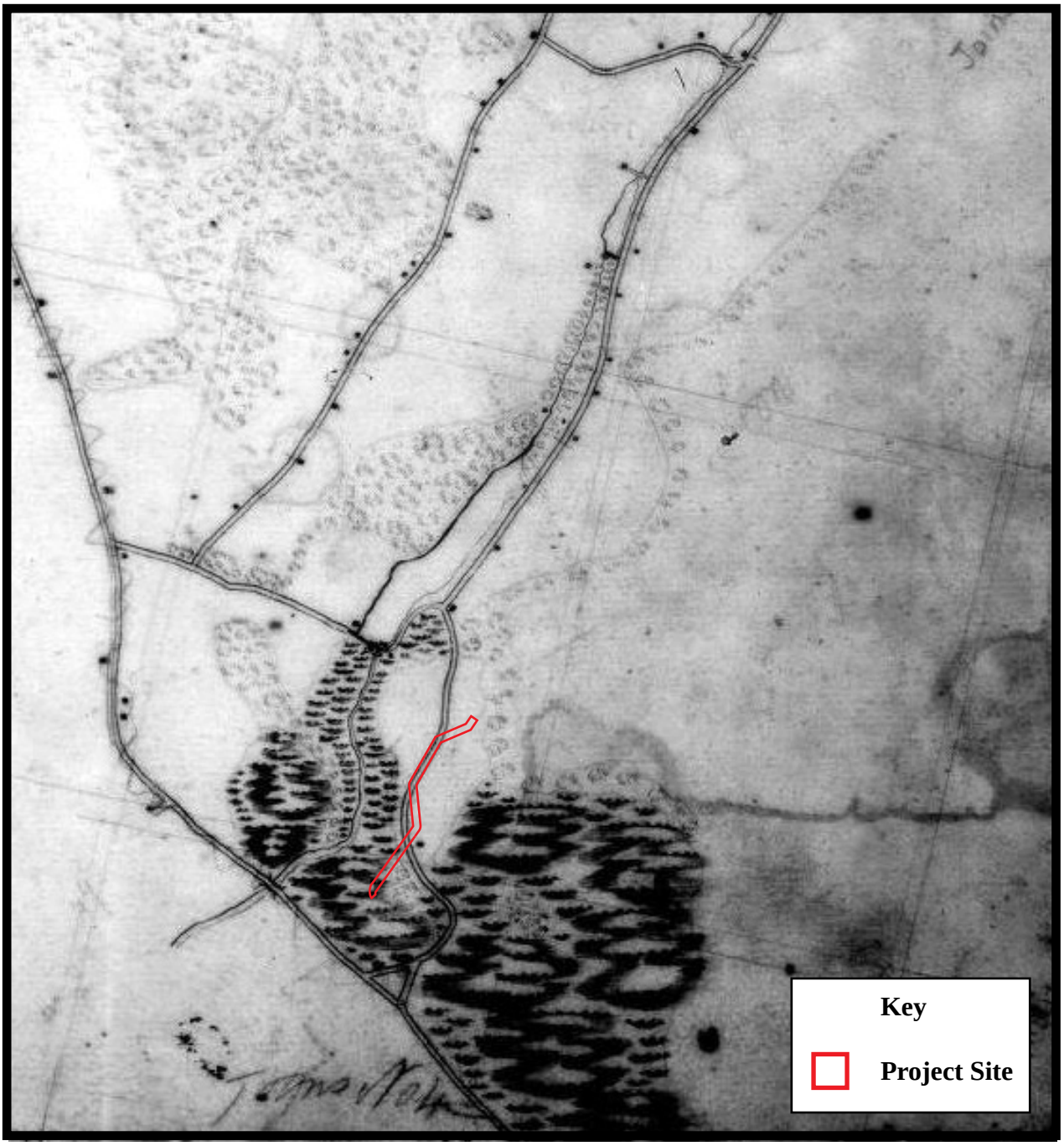
0 1000 2000 3000 4000 5000 FEET



Phase IA Archaeological Documentary Study
225th Street Infrastructure Improvements
Queens County, New York

Figure 4: Project site (approximate) on *Map of New York and Staten Island and Part of Long Island* (Taylor and Skinner 1781).

0 500 1000 1500 2000 2500 FEET



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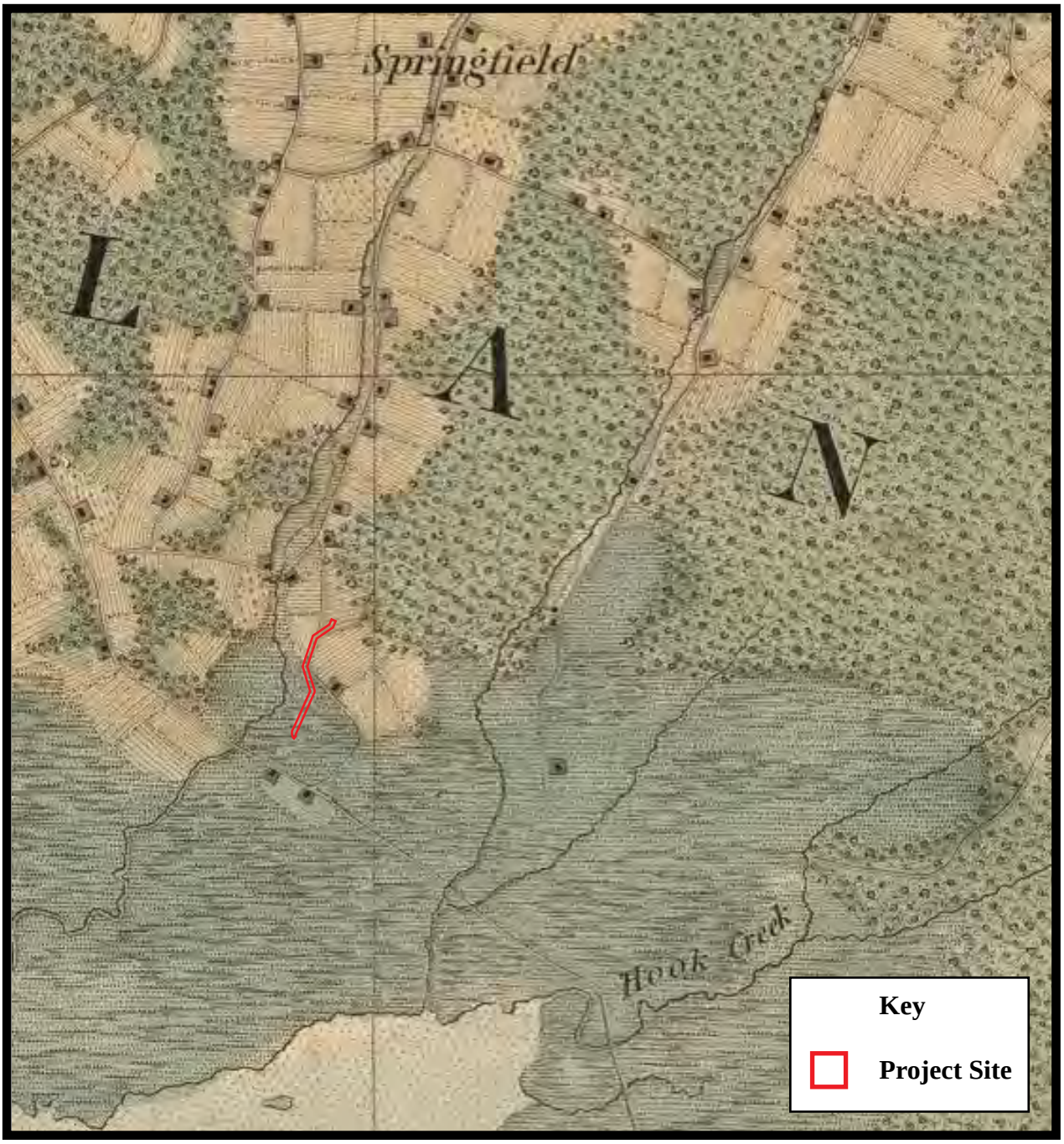
225th Street Infrastructure Improvements
Queens County, New York

Figure 5: Project site on *Map of the Interior of Long Island from Brooklyn to Jamaica, New York* (U.S.C.S. 1837).

0 500 1000 1500 2000 2500 FEET



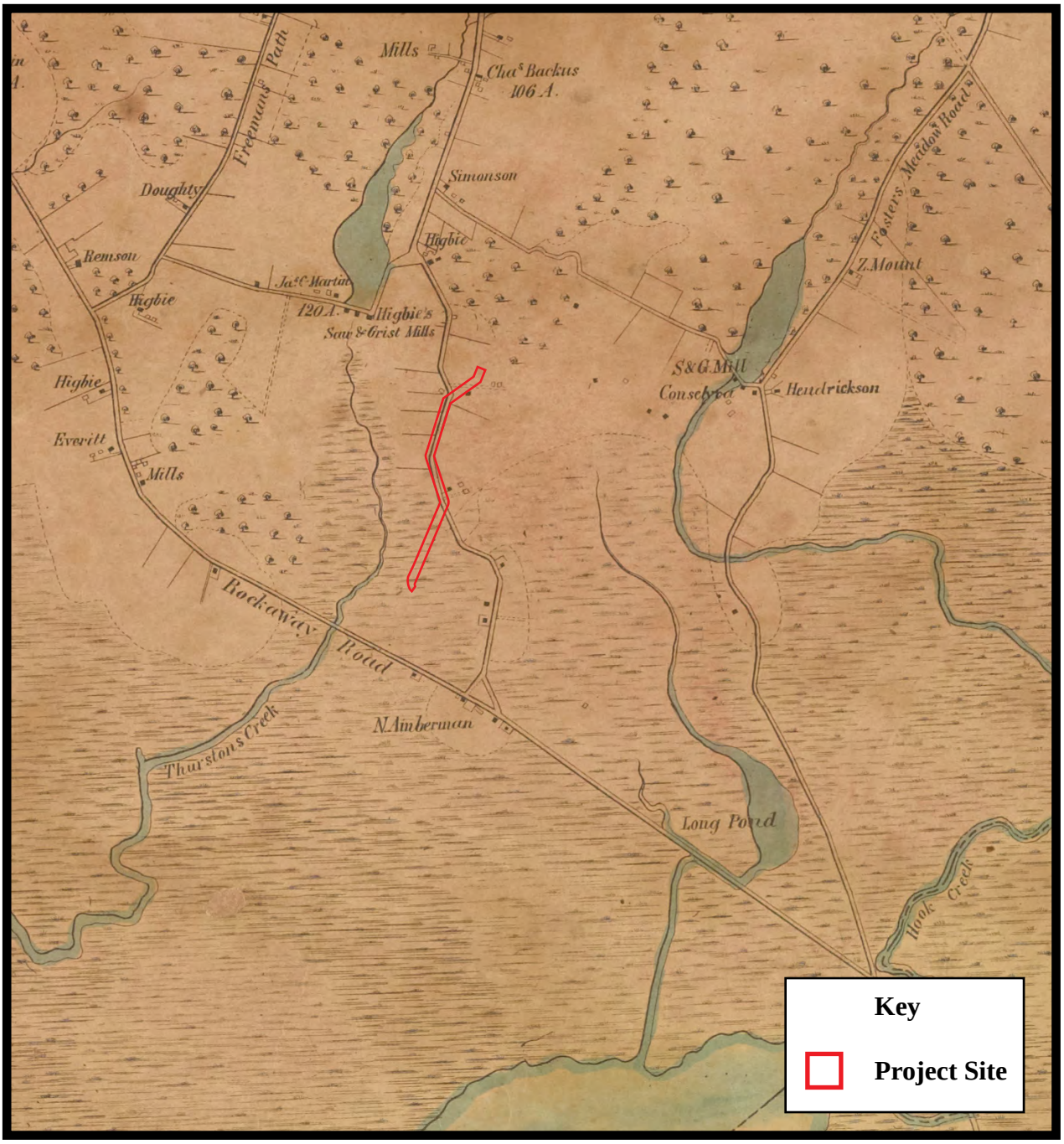
Phase IA Archaeological Documentary Study
225th Street Infrastructure Improvements
Queens County, New York

N

HP

Figure 6: Project site on *Map of New-York Bay and Harbor and the Environs* (U.S.C.S. 1845).

0 1000 2000 3000 4000 5000 FEET



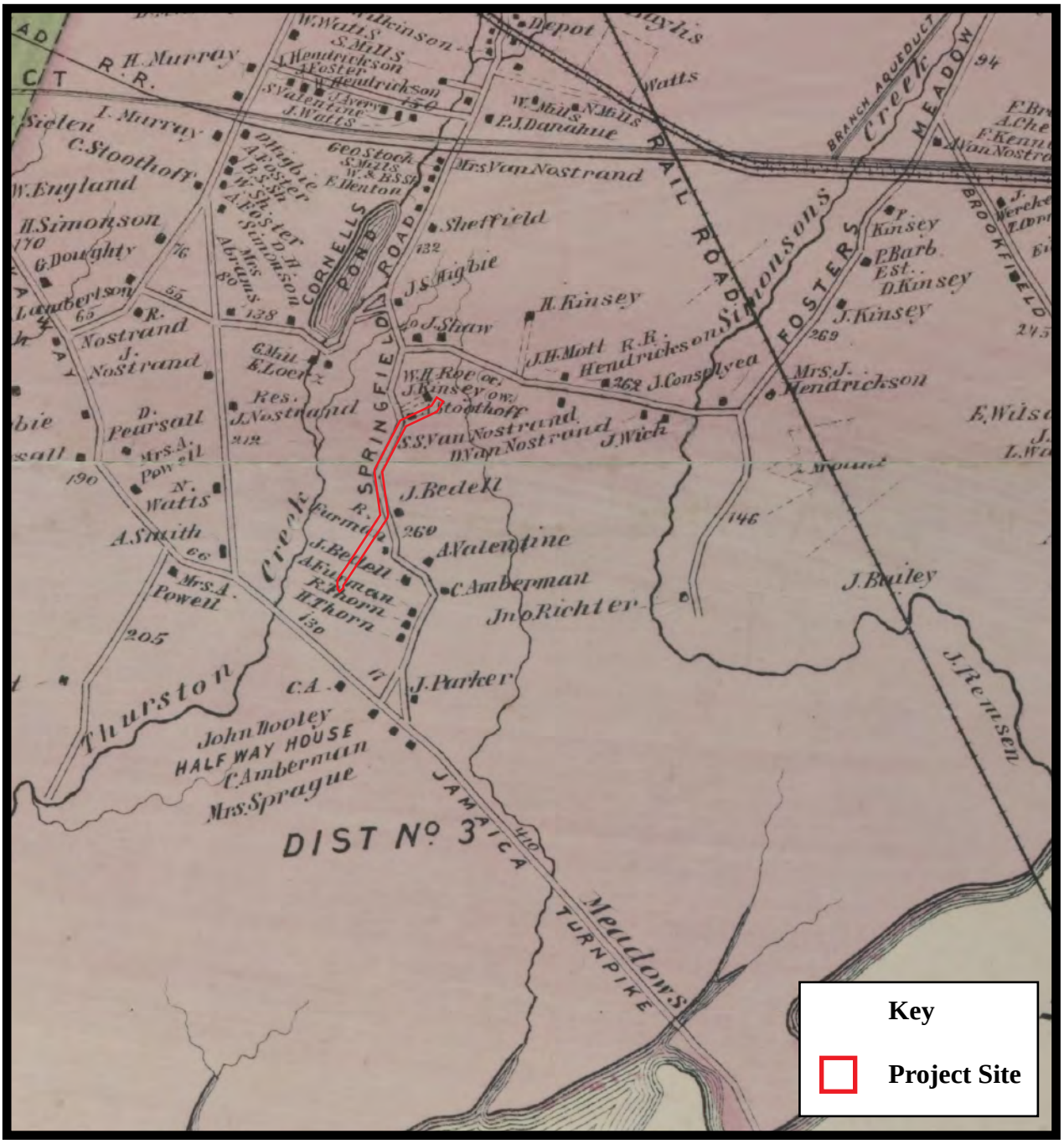
Phase IA Archaeological Documentary Study
225th Street Infrastructure Improvements
Queens County, New York

N

HP

Figure 7: Project site on *Map of Kings and Part of Queens Counties, Long Island, N.Y.* (Conner 1852).

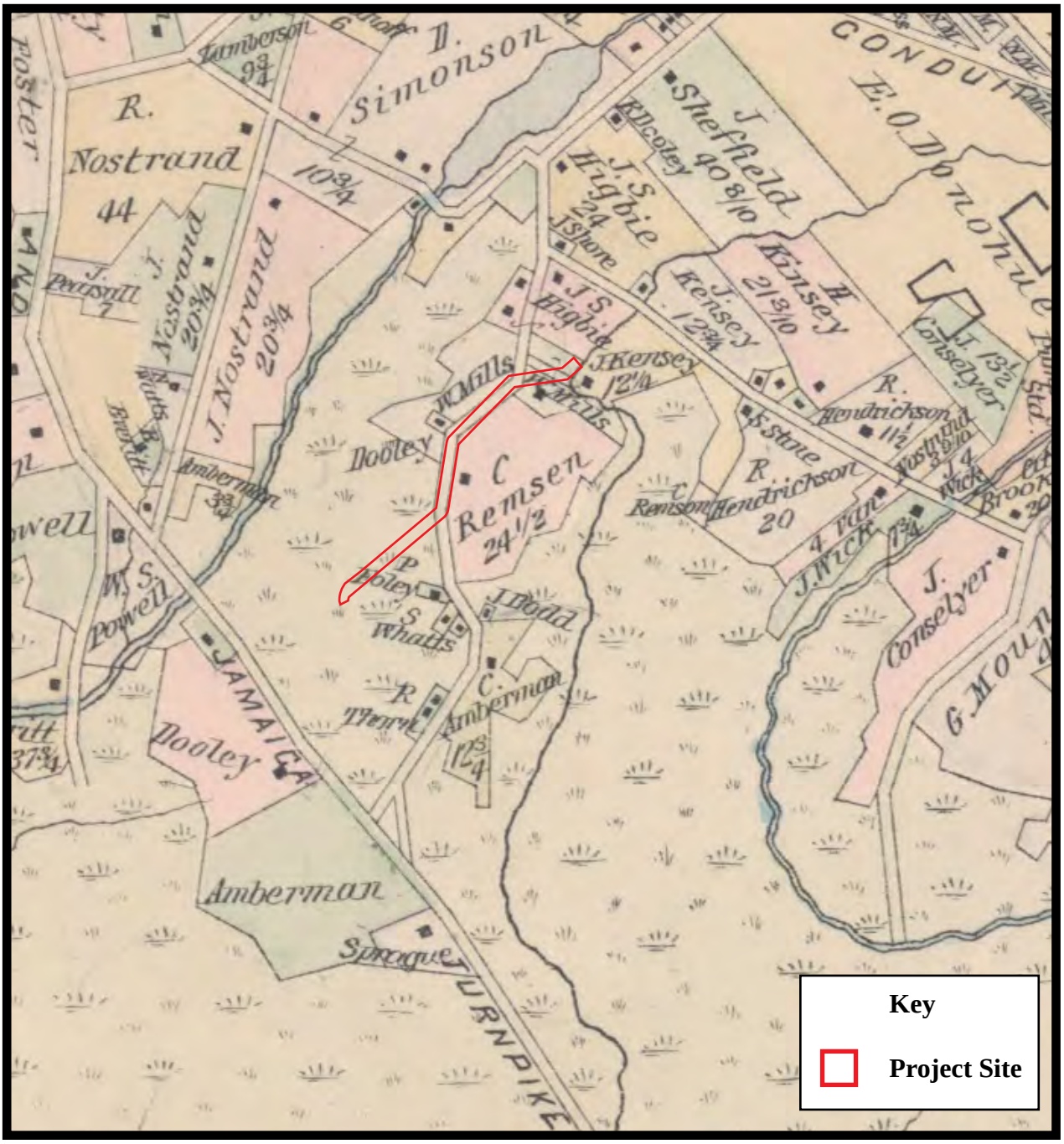
0 500 1000 1500 2000 2500 FEET



Phase IA Archaeological Documentary Study
225th Street Infrastructure Improvements
Queens County, New York

Figure 8: Project site on *Atlas of Long Island, New York* (Beers 1873).

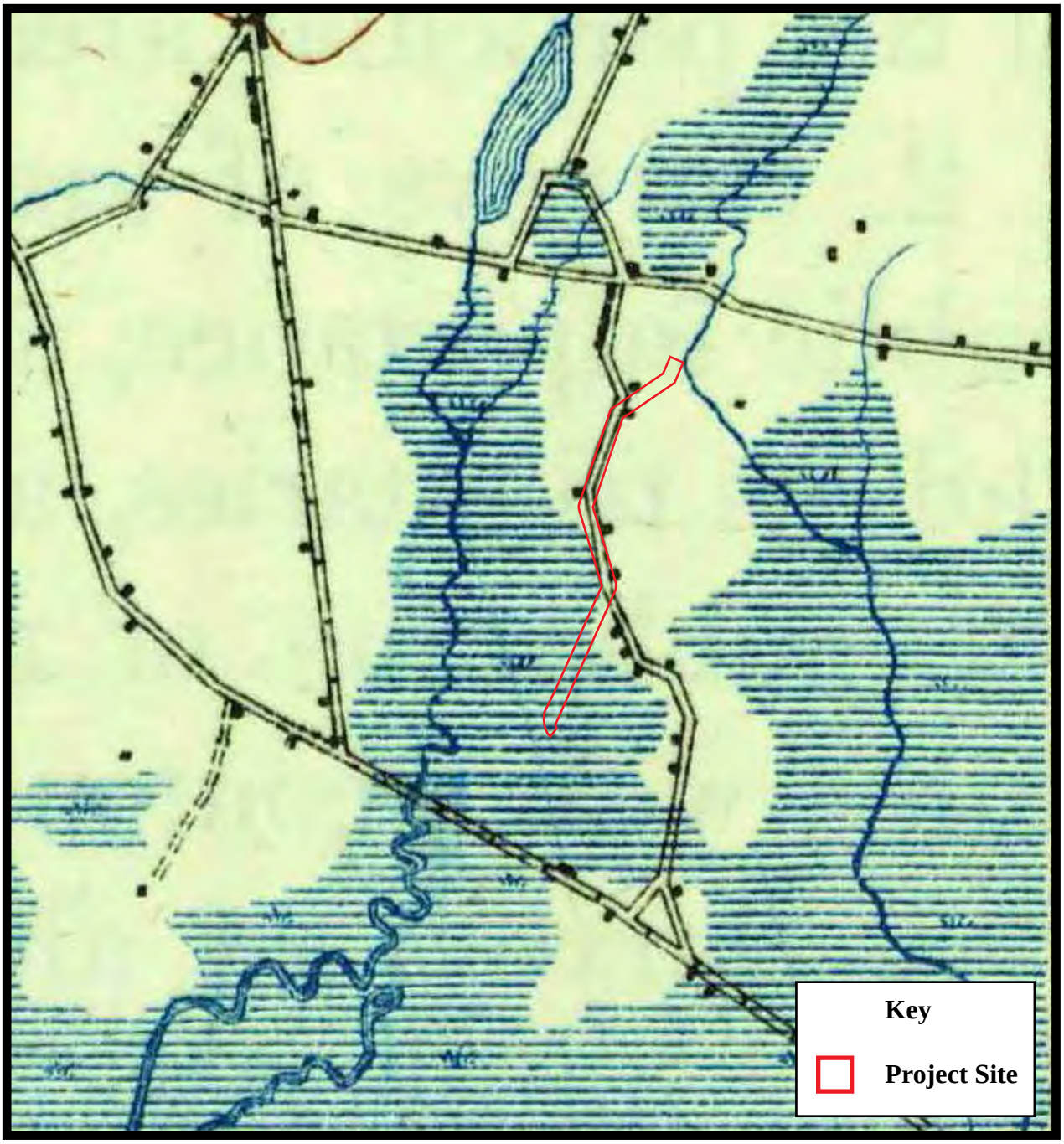
0 1000 2000 3000 4000 5000 FEET



Phase IA Archaeological Documentary Study
225th Street Infrastructure Improvements
Queens County, New York

Figure 9: Project site on *Atlas of Queens County, Long Island, New York* (Wolverton 1891).

0 500 1000 1500 2000 2500 FEET



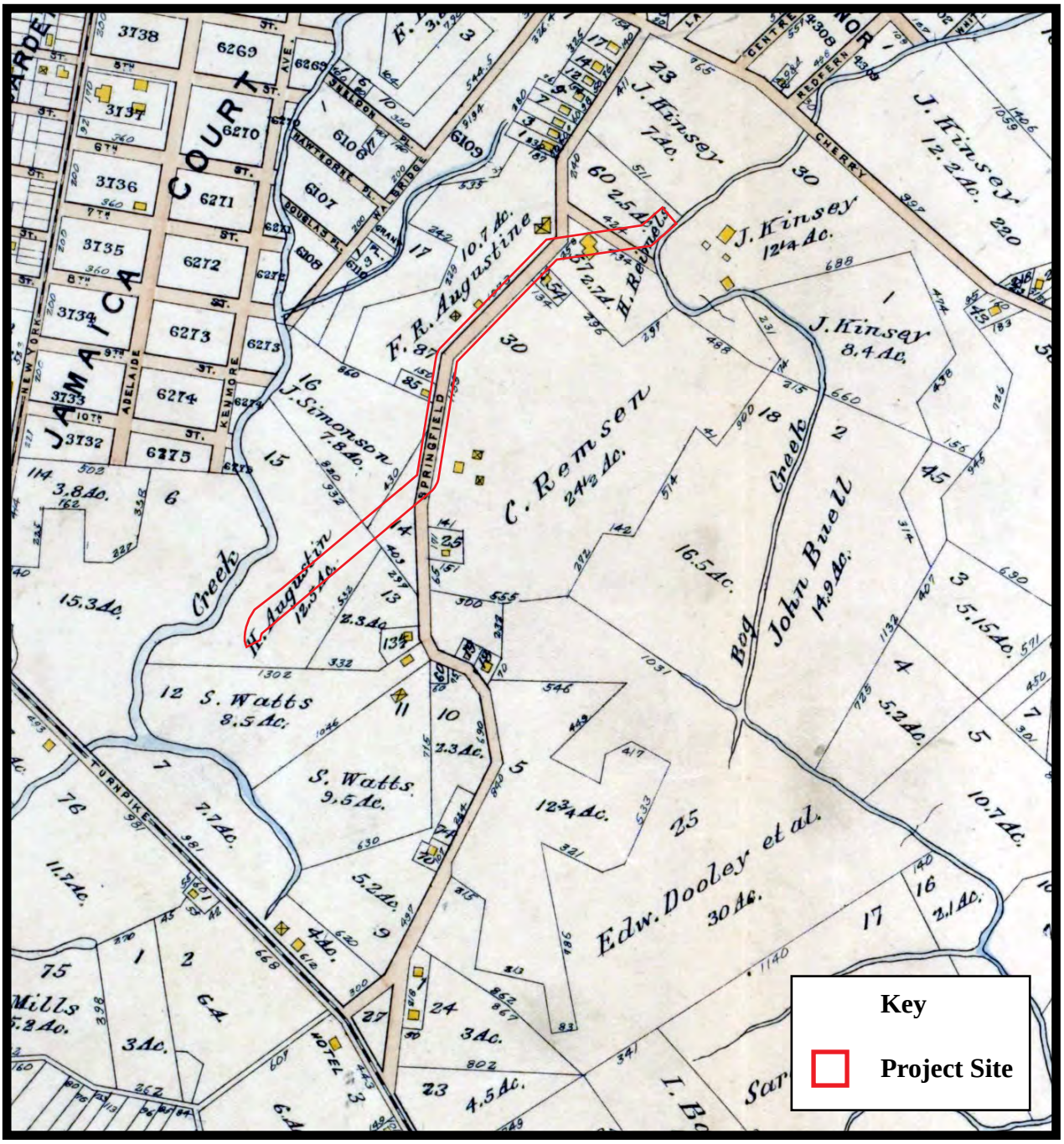
Phase IA Archaeological Documentary Study
225th Street Infrastructure Improvements
Queens County, New York

N

HP

Figure 10: Project site on *Brooklyn, N.Y.* 15 minute topographic quadrangle (U.S.G.S. 1900).

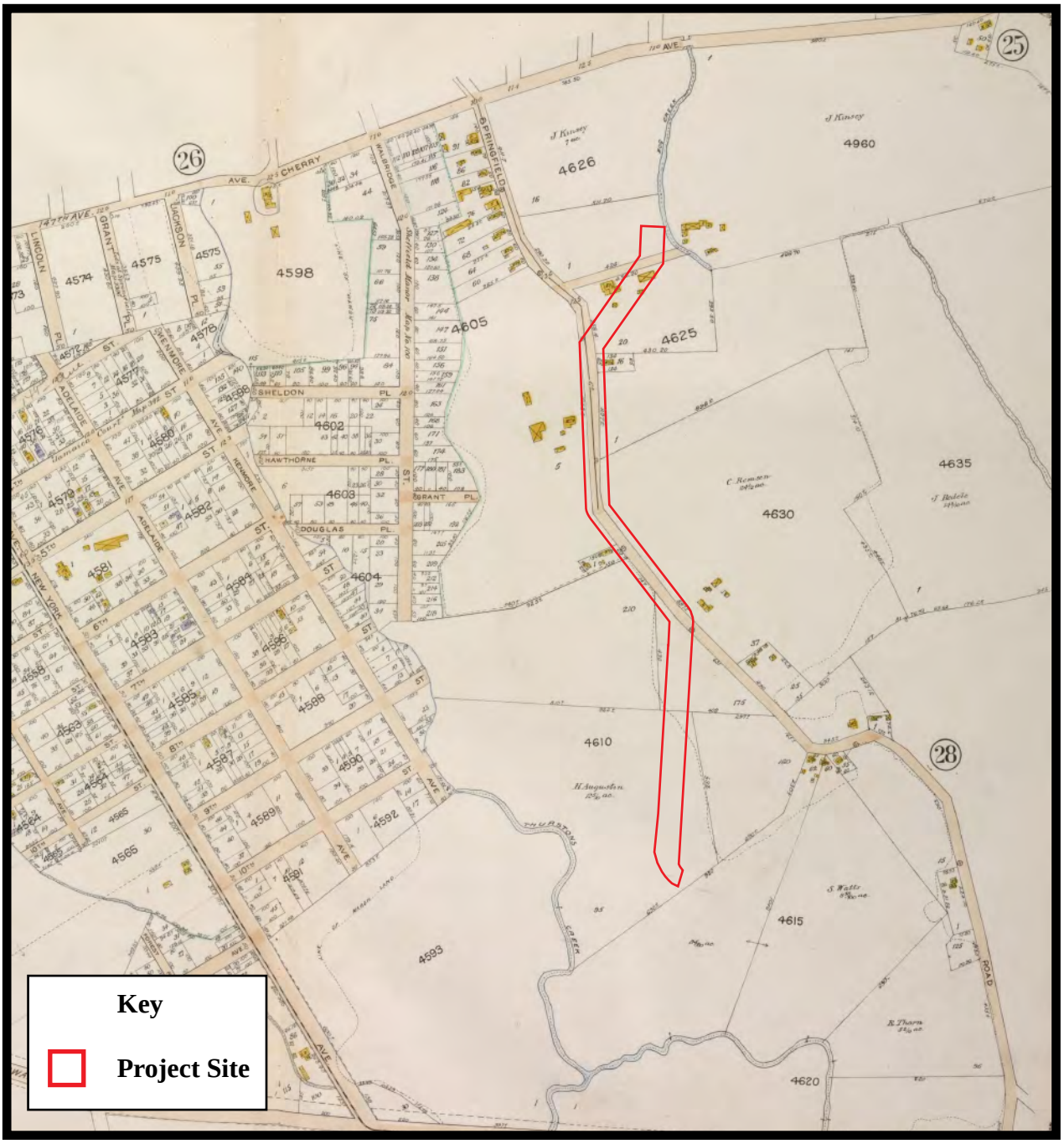
0 250 500 750 1000 1250 FEET



Phase IA Archaeological Documentary Study
225th Street Infrastructure Improvements
Queens County, New York

Figure 11: Project site on *Atlas of the City of New York, Borough of Queens* (Bromley 1909).

0 250 500 750 1000 1250 FEET



Phase IA Archaeological Documentary Study
225th Street Infrastructure Improvements
Queens County, New York

Figure 12: Project site on *Atlas of the Borough of Queens* (Hyde 1918).

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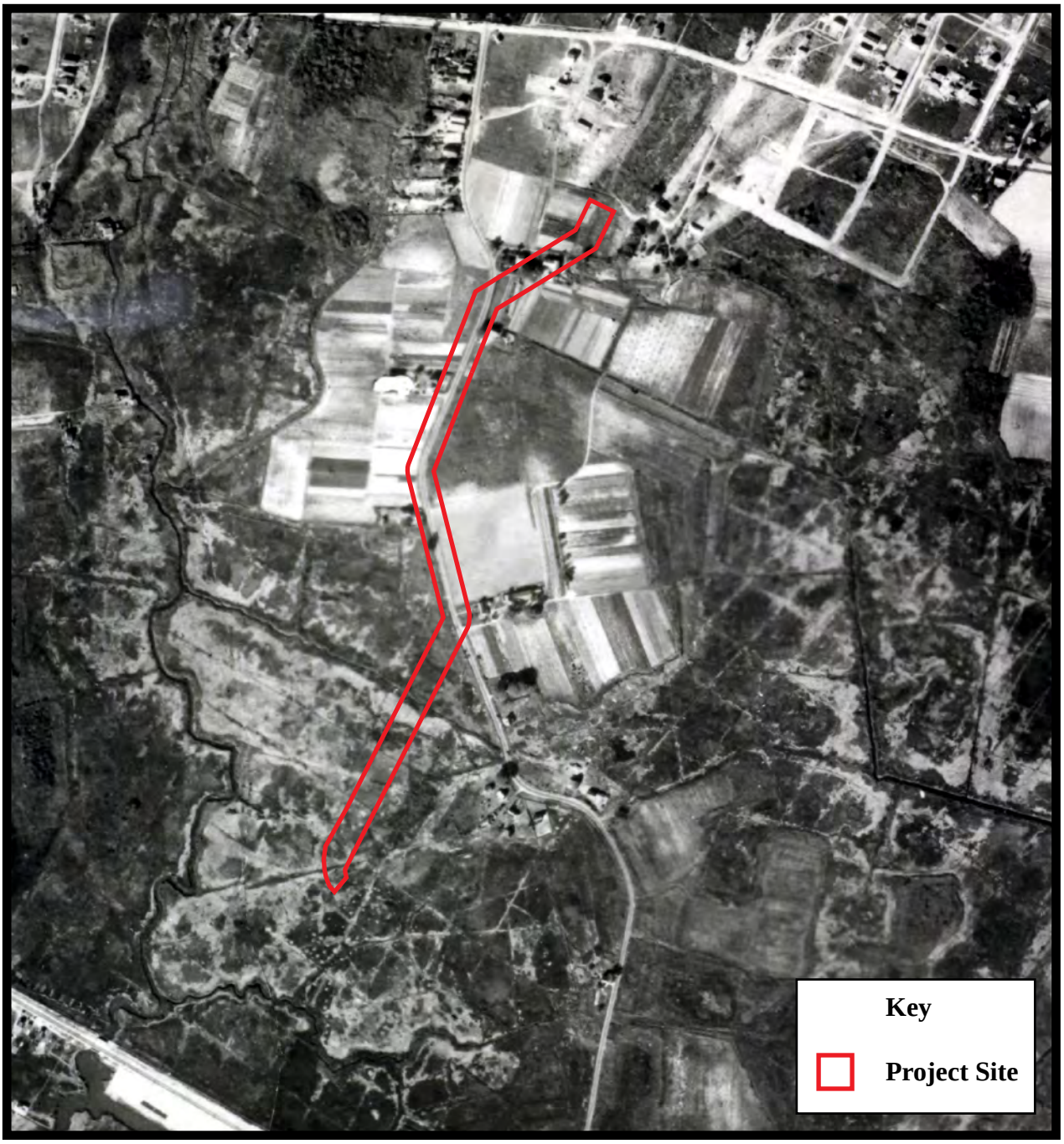


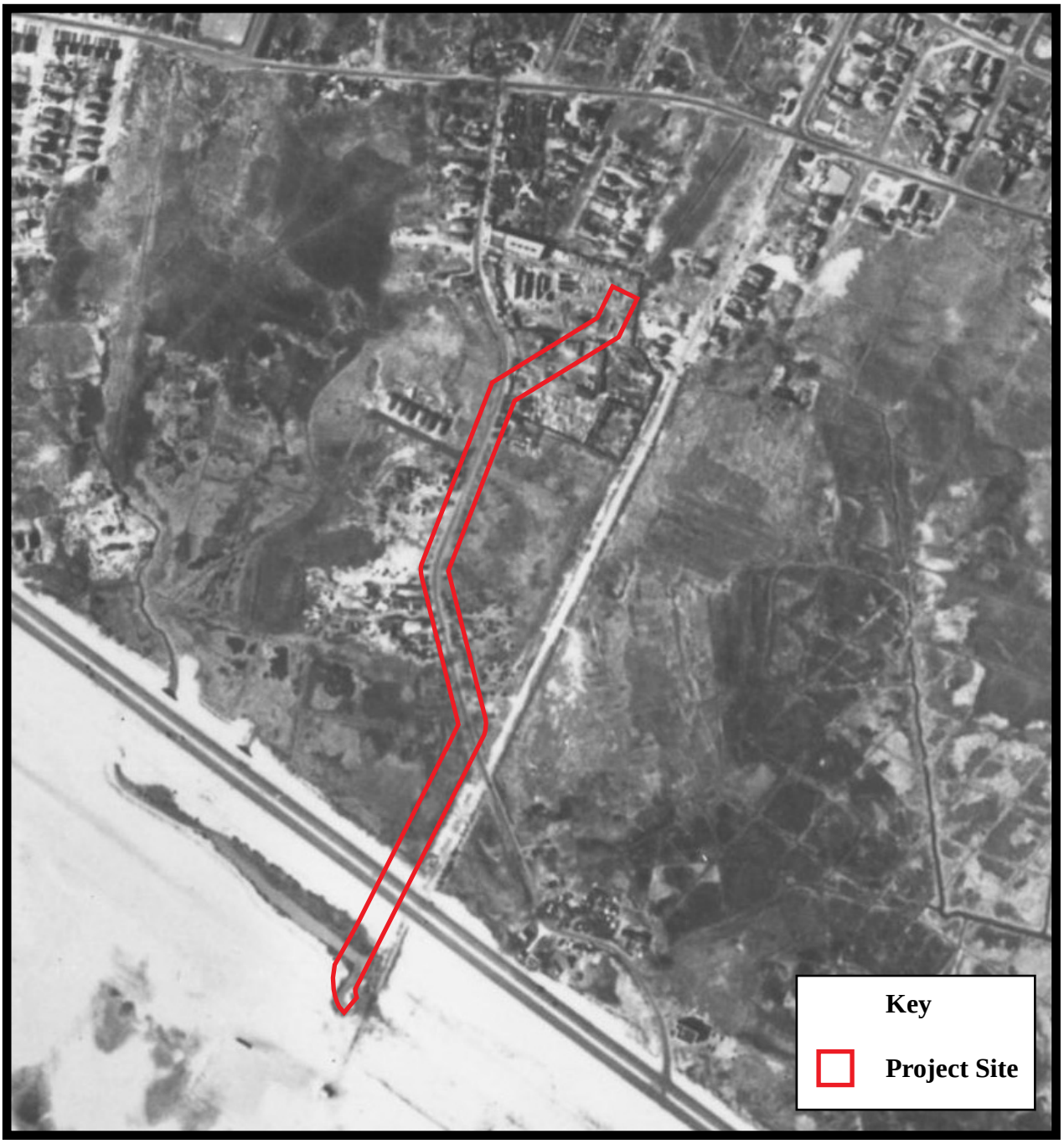
Phase IA Archaeological Documentary Study
225th Street Infrastructure Improvements
Queens County, New York

N

HP

Figure 13: Project site on *Sectional Aerial Maps of the City of New York* (Bureau of Engineering 1924).

0 250 500 750 1000 1250 FEET

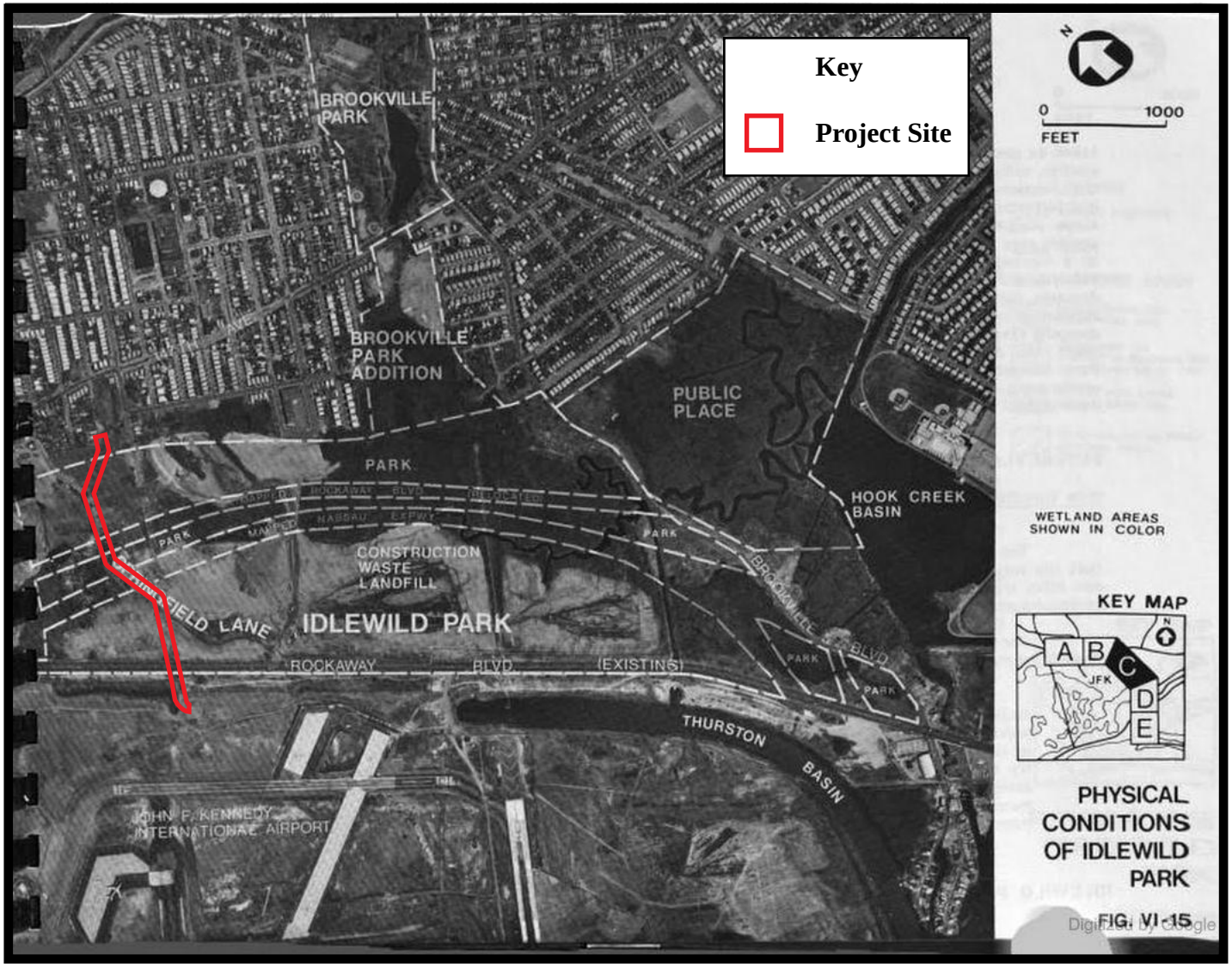


Phase IA Archaeological Documentary Study
225th Street Infrastructure Improvements
Queens County, New York

N

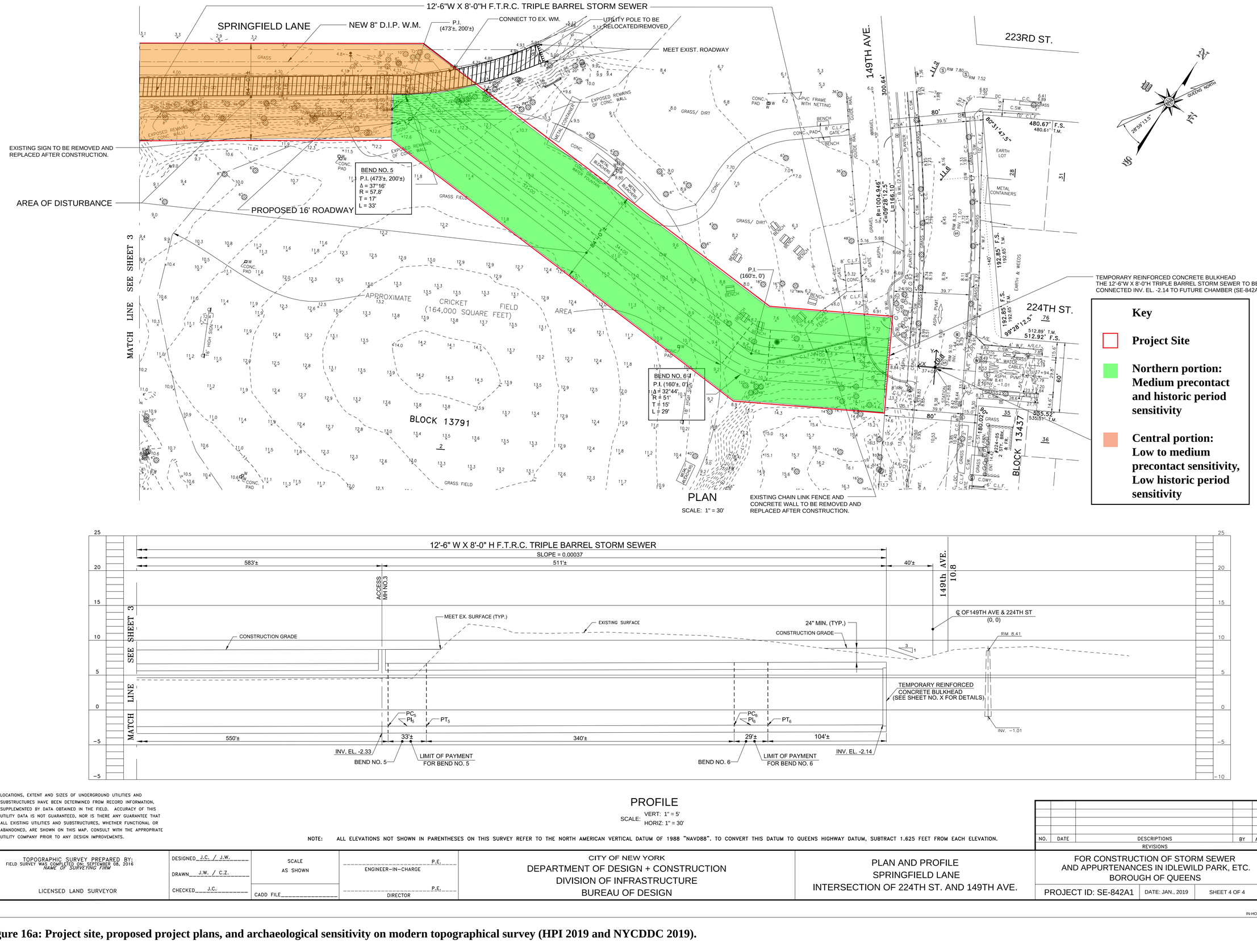
Figure 14: Project site on 1951 aerial photograph.

0 250 500 750 1000 1250 FEET



Phase IA Archaeological Documentary Study
225th Street Infrastructure Improvements
Queens County, New York

Figure 15: Project site on *Physical Conditions of Idlewild Park* (Vollmer Associates 1981).



PLAN

SCALE: 1" = 30'

PROFILE

SCALE: VERT: 1" = 5'
HORIZ: 1" = 30'

NOTE: ALL ELEVATIONS NOT SHOWN IN PARENTHESES ON THIS SURVEY REFER TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 "NAVD88". TO CONVERT THIS DATUM TO QUEENS HIGHWAY DATUM, SUBTRACT 1.625 FEET FROM EACH ELEVATION.

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NO.	DATE	DESCRIPTIONS	BY	APPR'D
		REVISIONS		

TOPOGRAPHIC SURVEY PREPARED BY:
FIELD SURVEY WAS COMPLETED ON: SEPTEMBER 08, 2016
NAME OF SURVEYING FIRM
LICENSED LAND SURVEYOR

DESIGNED J.C. / J.W.
DRAWN J.W. / C.Z.
CHECKED J.C.

SCALE AS SHOWN
CADD FILE

P.E.
ENGINEER-IN-CHARGE
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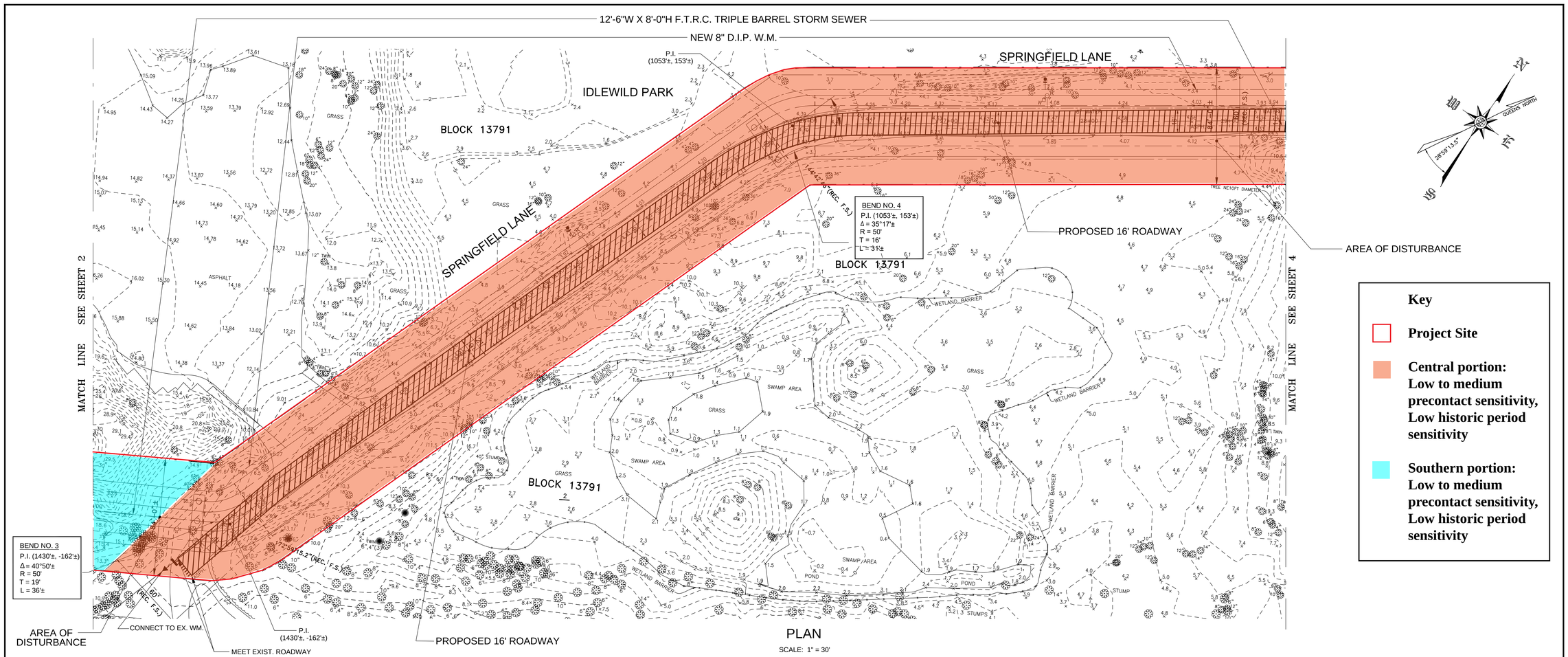
PLAN AND PROFILE
SPRINGFIELD LANE
INTERSECTION OF 224TH ST. AND 149TH AVE.

FOR CONSTRUCTION OF STORM SEWER AND APPURTENANCES IN IDLEWILD PARK, ETC.
BOROUGH OF QUEENS

PROJECT ID: SE-842A1 | DATE: JAN., 2019 | SHEET 4 OF 4

IN-HOUSE DESIGN

Figure 16a: Project site, proposed project plans, and archaeological sensitivity on modern topographical survey (HPI 2019 and NYCDDC 2019).



PLAN

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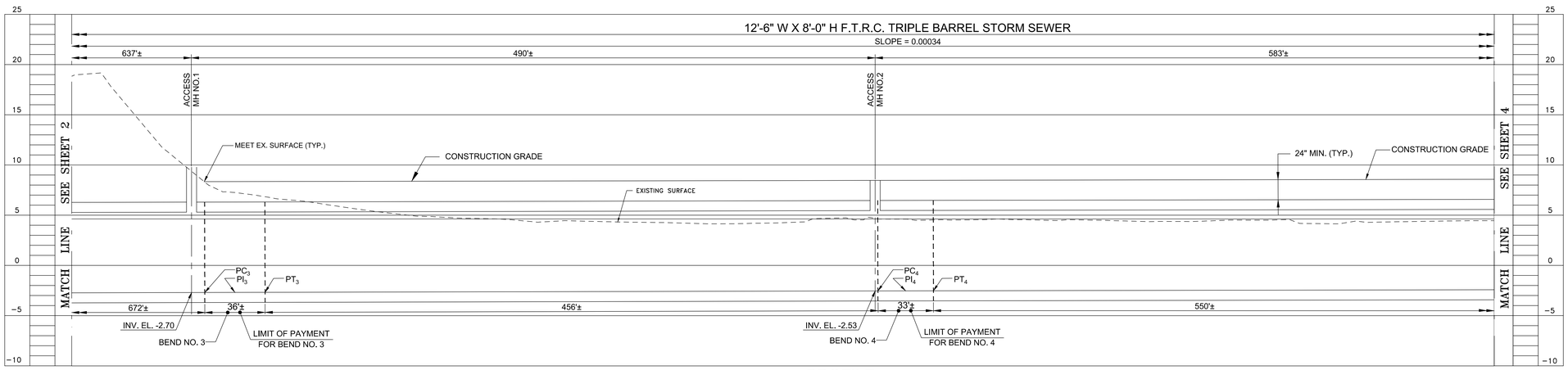

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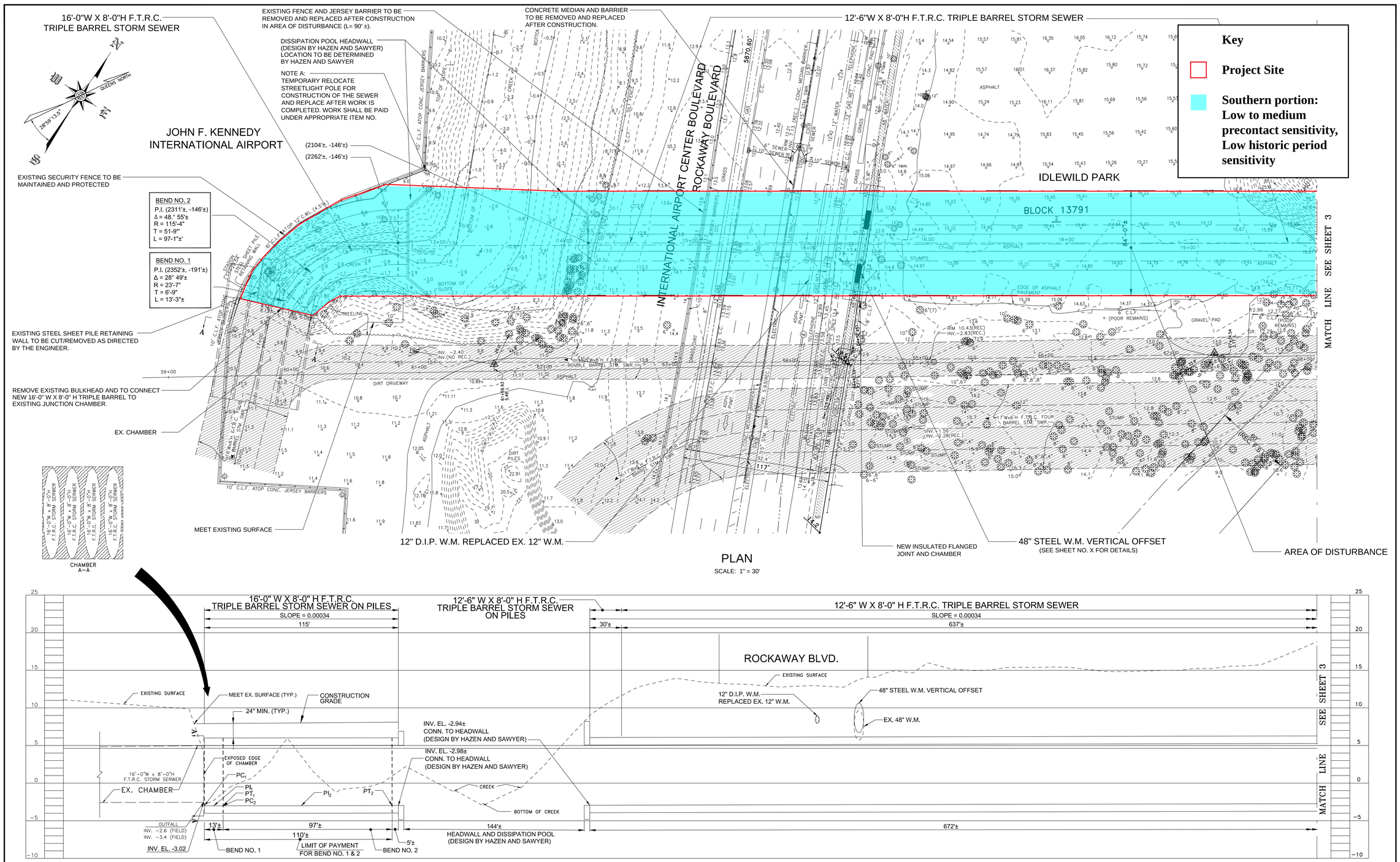
FOR CONSTRUCTION OF STORM SEWER AND APPURTENANCES IN IDLEWILD PARK, ETC.
BOROUGH OF QUEENS

PROJECT ID: SE-842A1 | DATE: JAN., 2019 | SHEET 3 OF 4

IN-HOUSE DESIGN

Figure 16b: Project site, proposed project plans, and archaeological sensitivity on modern topographical survey (HPI 2019 and NYCDDC 2019).



PLAN

SCALE: 1" = 30'

PROFILE

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LOCATIONS, EXTENT AND SIZES OF UNDERGROUND UTILITIES AND SUBSTRUCTURES HAVE BEEN DETERMINED FROM RECORD INFORMATION, SUPPLEMENTED BY DATA OBTAINED IN THE FIELD. ACCURACY OF THIS UTILITY DATA IS NOT GUARANTEED, NOR IS THERE ANY GUARANTEE THAT ALL EXISTING UTILITIES AND SUBSTRUCTURES, WHETHER FUNCTIONAL OR ABANDONED, ARE SHOWN ON THIS MAP. CONSULT WITH THE APPROPRIATE UTILITY COMPANY PRIOR TO ANY DESIGN IMPROVEMENTS.

NO.	DATE	DESCRIPTIONS REVISIONS	BY	APPR'D

TOPOGRAPHIC SURVEY PREPARED BY: *NAME OF SURVEYING FIRM* LICENSED LAND SURVEYOR	DESIGNED J.C. / J.W. DRAWN J.W. / C.Z. CHECKED J.C.	SCALE AS SHOWN CADD FILE	P.E. ENGINEER–IN–CHARGE P.E. DIRECTOR	CITY OF NEW YORK DEPARTMENT OF DESIGN + CONSTRUCTION DIVISION OF INFRASTRUCTURE BUREAU OF DESIGN	PLAN AND PROFILE IDLEWILD PARK BETWEEN OUTFALL AND SPRINGFIELD LANE	FOR CONSTRUCTION OF STORM SEWER AND APPURTENANCES IN IDLEWILD PARK, ETC. BOROUGH OF QUEENS

PROJECT ID: SE-842A1 | DATE: JAN., 2019 | SHEET 2 OF 4

IN-HOUSE DESIGN

Figure 16c: Project site, proposed project plans, and archaeological sensitivity on modern topographical survey (HPI 2019 and NYCDDC 2019).

PHOTOGRAPHS

Photograph 1. Northern terminus of project site at intersection of 149th Avenue and 224th Street. View looking north.

Photograph 2. Northern end of project site showing parking lot entrance for Idlewild Park with cricket field in background. View looking southwest.

Photograph 3. Northern portion of project site showing cricket field. View looking southwest.

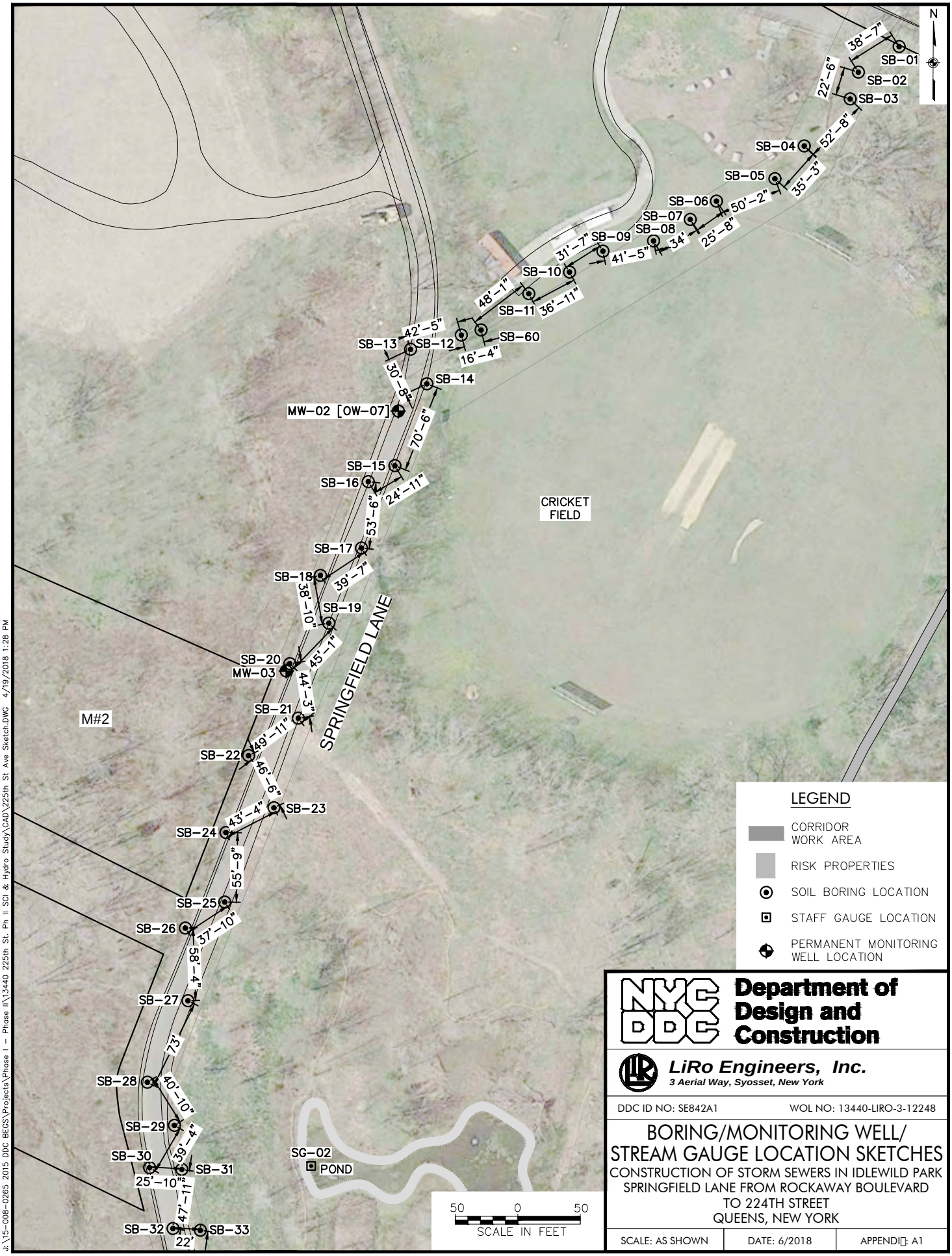
Photograph 4. North central portion of project site showing Springfield Lane corridor with woods and vegetation. View looking southwest.

Photograph 5. South central portion of project site showing Springfield Lane with woods and vegetation. View looking southeast.

Photograph 6. Southern portion of project site showing filled wetland area now covered by asphalt paving and vegetation. View looking southwest.

Photograph 7. Southern portion of project site showing Rockaway Boulevard in foreground and inaccessible JFK Airport property behind fence. View looking southwest.

APPENDIX A: SOIL BORING DATA (LIRO ENGINEERS, INC. 2018)



NYC DDC **Department of Design and Construction**

LiRo Engineers, Inc.
3 Aerial Way, Syosset, New York

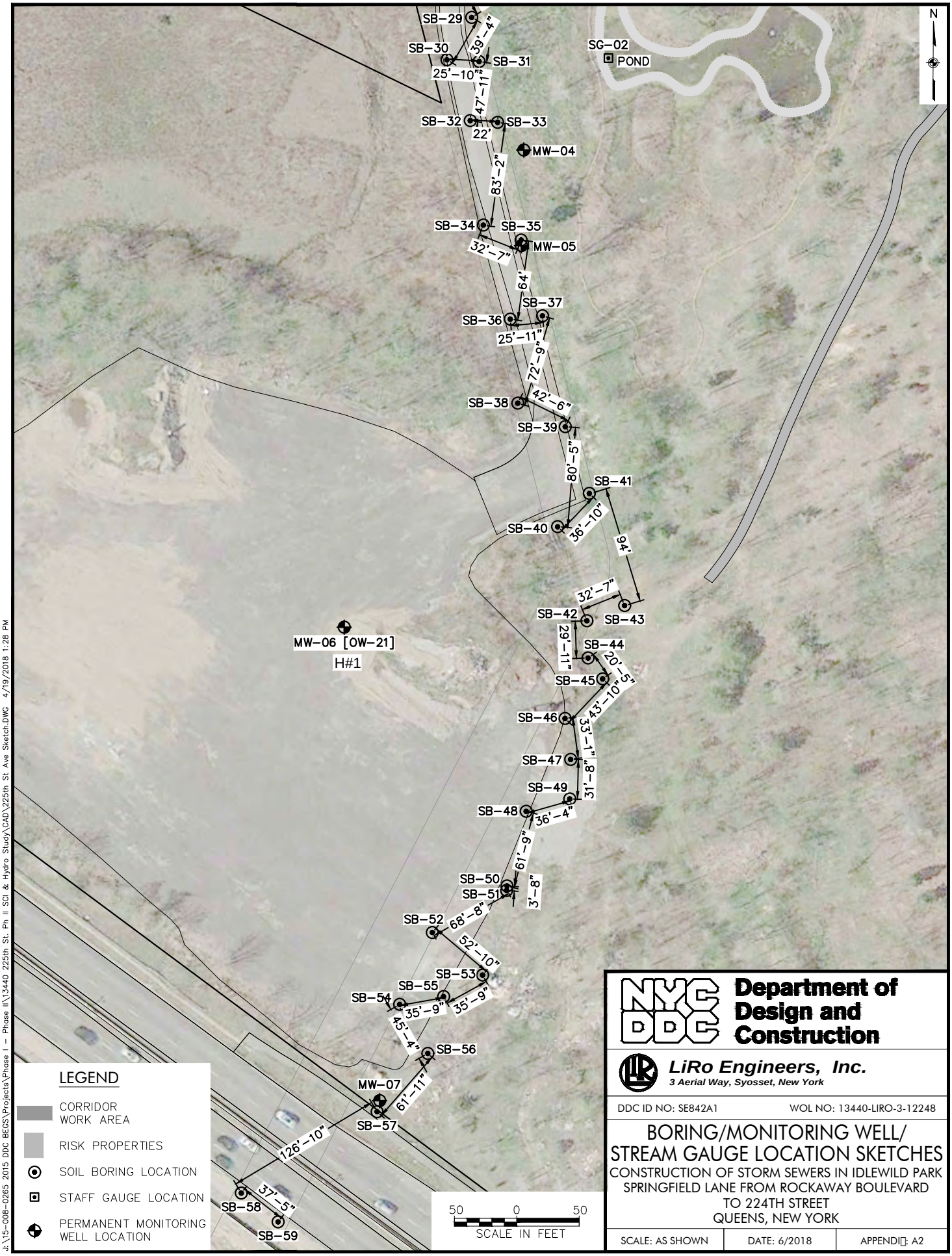
DDC ID NO: SE842A1 WOL NO: 13440-LIRO-3-12248

BORING/MONITORING WELL/ STREAM GAUGE LOCATION SKETCHES

CONSTRUCTION OF STORM SEWERS IN IDLEWILD PARK
SPRINGFIELD LANE FROM ROCKAWAY BOULEVARD
TO 224TH STREET
QUEENS, NEW YORK

SCALE: AS SHOWN	DATE: 6/2018	APPENDIX: A1

J:\15-008-0265 2015 DDC BEGS\Projects\Phase I - Phase II\13440 225th St. Ph II SCI & Hydro Study\CAD\225th St Ave Sketch.DWG 4/19/2018 1:28 PM



J:\15-008-0265 2015 DDC BEGS\Projects\Phase I - Phase II\13440 225th St. Ph II SCI & Hydro Study\CAD\225th St Ave Sketch.DWG 4/19/2018 1:28 PM

Department of Design and Construction

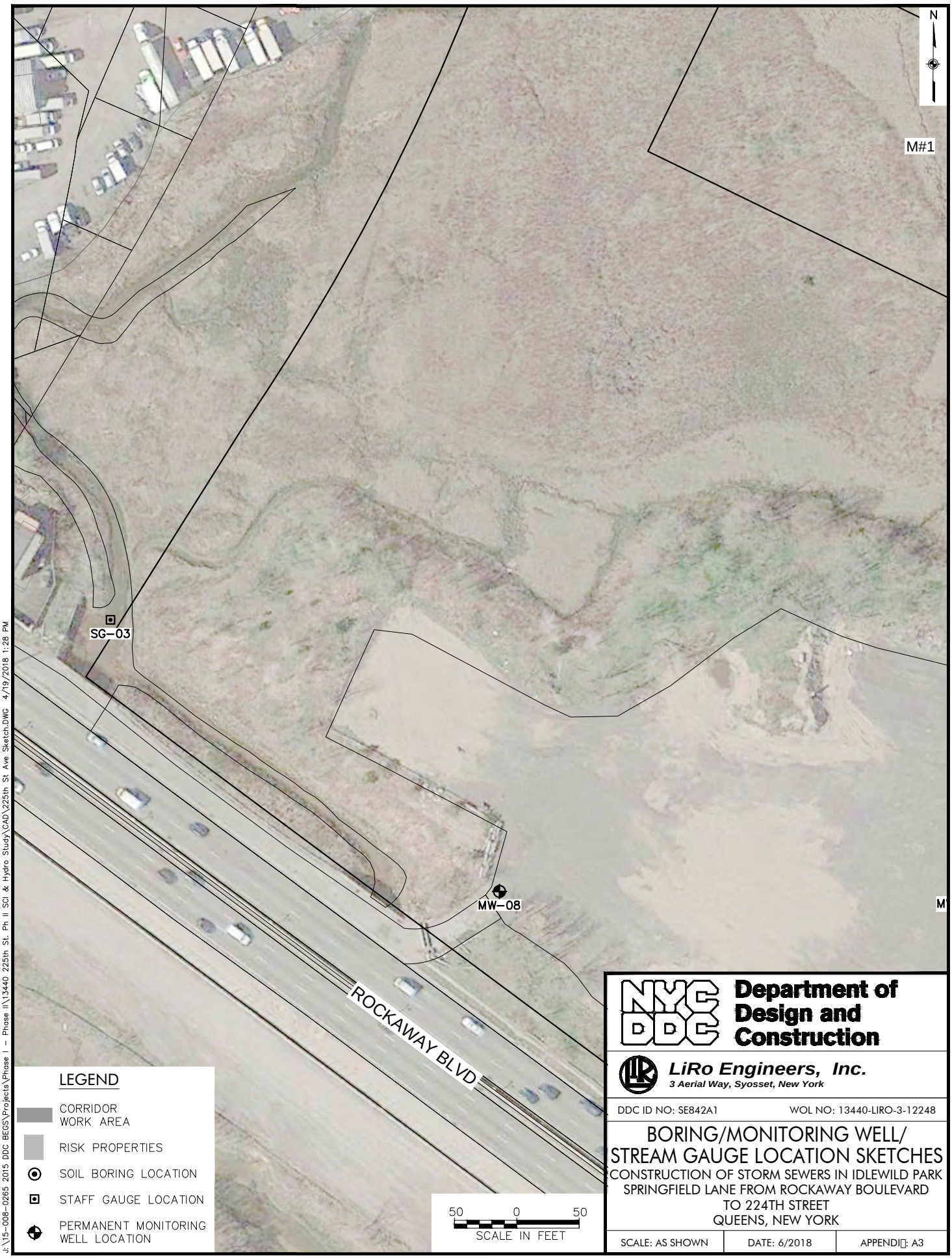
LiRo Engineers, Inc.
3 Aerial Way, Syosset, New York

DDC ID NO: SE842A1 WOL NO: 13440-LIRO-3-12248

BORING/MONITORING WELL/ STREAM GAUGE LOCATION SKETCHES

CONSTRUCTION OF STORM SEWERS IN IDLEWILD PARK
SPRINGFIELD LANE FROM ROCKAWAY BOULEVARD
TO 224TH STREET
QUEENS, NEW YORK

SCALE: AS SHOWN	DATE: 6/2018	APPENDIX: A2



J:\15-008-0265 2015 DDC BEGS\Projects\Phase I - Phase II\13440 225th St. Ph II SCI & Hydro Study\CAD\225th St Ave Sketch.DWG 4/19/2018 1:28 PM

Department of Design and Construction

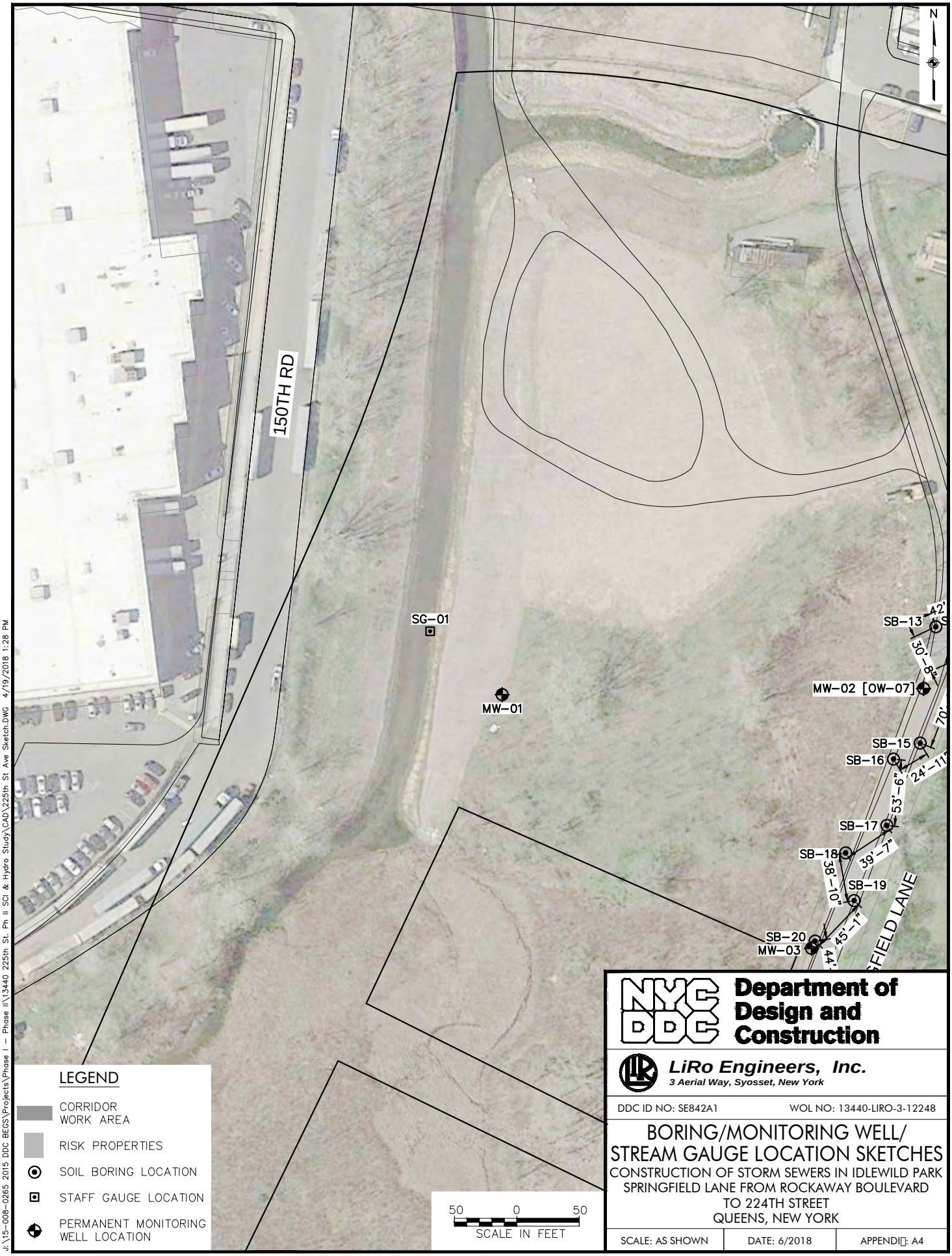
LiRo Engineers, Inc.
3 Aerial Way, Syosset, New York

DDC ID NO: SE842A1 WOL NO: 13440-LIRO-3-12248

BORING/MONITORING WELL/ STREAM GAUGE LOCATION SKETCHES

CONSTRUCTION OF STORM SEWERS IN IDLEWILD PARK
SPRINGFIELD LANE FROM ROCKAWAY BOULEVARD
TO 224TH STREET
QUEENS, NEW YORK

SCALE: AS SHOWN	DATE: 6/2018	APPENDIX: A3



J:\15-008-0265 2015 DDC BEGS\Projects\Phase I - Phase II\13440 225th St. Ph II SCI & Hydro Study\CAD\225th St Ave Sketch.DWG 4/19/2018 1:28 PM

NYC DDC **Department of Design and Construction**

LiRo Engineers, Inc.
3 Aerial Way, Syosset, New York

DDC ID NO: SE842A1 WOL NO: 13440-LIRO-3-12248

BORING/MONITORING WELL/ STREAM GAUGE LOCATION SKETCHES

CONSTRUCTION OF STORM SEWERS IN IDLEWILD PARK
SPRINGFIELD LANE FROM ROCKAWAY BOULEVARD
TO 224TH STREET
QUEENS, NEW YORK

SCALE: AS SHOWN	DATE: 6/2018	APPENDIX: A4

Idlewild Park
Soil Boring Coordinates

ID	Easting	Northing
SB-01	1051281.155	178919.995
SB-02	1051248.471	178899.502
SB-03	1051241.872	178877.988
SB-04	1051205.073	178840.361
SB-05	1051181.561	178814.065
SB-06	1051134.720	178796.084
SB-07	1051113.674	178781.452
SB-08	1051084.310	178764.248
SB-09	1051038.240	178768.494
SB-10	1051016.956	178739.289
SB-11	1050980.051	178740.280
SB-12	1050930.249	178688.773
SB-13	1050882.851	178671.520
SB-14	1050902.610	178649.714
SB-15	1050876.986	178584.065
SB-16	1050855.657	178571.255
SB-17	1050850.253	178518.048
SB-18	1050817.295	178496.098
SB-19	1050824.059	178457.862
SB-20	1050792.795	178425.351
SB-21	1050799.574	178381.650
SB-22	1050759.701	178351.666
SB-23	1050780.070	178309.824
SB-24	1050741.557	178290.045
SB-25	1050740.599	178234.300
SB-26	1050709.025	178213.446
SB-27	1050711.127	178155.160
SB-28	1050678.564	178089.856
SB-29	1050700.301	178055.304
SB-30	1050680.416	178021.367
SB-31	1050706.224	178019.980
SB-32	1050699.140	177972.598
SB-33	1050721.064	177971.201
SB-34	1050709.635	177888.831
SB-35	1050739.912	177876.891
SB-36	1050731.207	177813.474
SB-37	1050757.004	177816.095
SB-38	1050737.218	177746.089
SB-39	1050775.283	177727.248
SB-40	1050769.121	177647.079
SB-41	1050794.575	177673.745
SB-42	1050792.635	177571.727
SB-43	1050822.846	177583.833
SB-44	1050793.549	177541.855
SB-45	1050805.248	177525.128
SB-46	1050775.091	177493.349

Idlewild Park

Soil Boring Coordinates

ID	Easting	Northing
SB-47	1050779.620	177460.571
SB-48	1050743.940	177418.940
SB-49	1050778.874	177428.873
SB-50	1050728.297	177355.504
SB-51	1050728.565	177359.148
SB-52	1050668.732	177321.823
SB-53	1050709.059	177287.686
SB-54	1050642.529	177264.187
SB-55	1050677.751	177270.477
SB-56	1050665.112	177224.902
SB-57	1050624.450	177178.156
SB-58	177112.946	1050515.629
SB-59	177089.845	1050545.089
SB-60	1050946.053	178692.824

Idlewild Park
Monitoring Well and Stream Gauge Coordinates

ID	Easting	Northing
MW-01	1050541.9730	178622.8711
MW-02	1050879.7080	178627.8588
MW-03	1050789.8940	178419.5477
MW-04	1050741.9960	177949.0694
MW-05	1050740.1270	177872.3639
MW-06	1050598.1040	177566.5746
MW-07	1050626.5000	177187.0234
MW-08	1050207.5190	177563.9816
SG-01	1050484.2560	178673.7491
SG-02	1050809.8950	178022.7118
SG-03	1049895.7890	177781.6166

LiRo Engineers, Inc.

TEST BORING LOG

		BORING NO:	**SB-01**
PROJECT:	Construction of Storm Sewer in Idlewild Park, Springfield Ln. from Rockaway Blvd. to 224th St., Queens, NY	**SHEET:**	**1 of 1**
CLIENT:	Department of Design and Construction - OEGS - SE842A1	**JOB NO.:**	**15-008-0265**
BORING CONTRACTOR:	Associated Environmental Services, Ltd.	**LOCATION:**	**NA**
GROUNDWATER:	7'	**GROUND ELEVATION:**	**NA**

DATE	TIME	LEVEL	TYPE	TYPE	CAS.	SAMPLER	TUBE
			NA	**DIA.**		5' Microcore	
				WT.			
				FALL			

DATE STARTED:	**January 17, 2018**
DATE FINISHED:	**January 19, 2018**
DRILLER:	**John Weiss**
GEOLOGIST:	**Eva Jakubowska**
REVIEWED BY:	

DEPTH FEET	SAMPLE STRATA	"S" NO.	"N" NO.	BLOWS PER 6"	REC% RQD%	DESCRIPTION COLOR	CONSISTENCY HARDNESS	MATERIAL DESCRIPTION	USCS	REMARKS
1					NA	Dark brown	Medium loose	0-6': Fine to medium Sand, roots, gravel, and fill material (red brick and glass pieces).	FILL	Hand cleared to 6 ftbg 0.0 ppm Moist
6										
					50%	Brown to dark brown	Medium loose	6-9': Fine to medium Sand.	SW	wet at 7' 0.0 ppm
10								9-10': Peat.	PT	
								End of Boring at 10 ftbg		
15										
20										
25										
30										

COMMENTS: Grab sample collected @ 6.5-7 ftbg for TCL VOCs.

Composite sample collected from 0-7 ftbg for waste characterization parameters.

Soil was classified in accordance with the Unified Soil Classification System (USCS).

PROJECT NO.: 15-008-0265

BORING NO.: SB-01

LiRo Engineers, Inc.

TEST BORING LOG

		BORING NO:	**SB-02**
PROJECT:	Construction of Storm Sewer in Idlewild Park, Springfield Ln. from Rockaway Blvd. to 224th St., Queens, NY	**SHEET:**	**1 of 1**
CLIENT:	Department of Design and Construction - OEGS - SE842A1	**JOB NO.:**	**15-008-0265**
BORING CONTRACTOR:	Associated Environmental Services, Ltd.	**LOCATION:**	**NA**
GROUNDWATER:	7'	**GROUND ELEVATION:**	**NA**

DATE	TIME	LEVEL	TYPE	TYPE	CAS.	SAMPLER	TUBE
			NA	**DIA.**		5' Microcore	
				WT.			
				FALL			

DATE STARTED:	**January 17, 2018**
DATE FINISHED:	**January 19, 2018**
DRILLER:	**John Weiss**
GEOLOGIST:	**Eva Jakubowska**
REVIEWED BY:	

DEPTH FEET	SAMPLE STRATA	"S" NO.	"N" NO.	BLOWS PER 6"	REC% RQD%	DESCRIPTION COLOR	CONSISTENCY HARDNESS	MATERIAL DESCRIPTION	USCS	REMARKS
1					NA	Brown	Medium loose	0-6': Fine to medium Sand, roots, gravel, and fill material (red brick, glass, and ceramic pieces.)	FILL	Hand cleared to 6 ftbg 0.0 ppm Moist
6										
					60%	Dark brown	Medium loose	6-9': Fine to medium Sand.	SW	wet at 7' 0.0 ppm
10								9-10': Peat.	PT	
								End of Boring at 10 ftbg		
15										
20										
25										
30										

COMMENTS: Grab sample collected @ 6.5-7 ftbg for TCL VOCs.

Composite sample collected from 0-7 ftbg for waste characterization parameters.

Soil was classified in accordance with the Unified Soil Classification System (USCS).

PROJECT NO.: 15-008-0265

BORING NO.: SB-02

LiRo Engineers, Inc.

TEST BORING LOG

		BORING NO:	**SB-03**
PROJECT:	Construction of Storm Sewer in Idlewild Park, Springfield Ln. from Rockaway Blvd. to 224th St., Queens, NY	**SHEET:**	**1 of 1**
CLIENT:	Department of Design and Construction - OEGS - SE842A1	**JOB NO.:**	**15-008-0265**
BORING CONTRACTOR:	Associated Environmental Services, Ltd.	**LOCATION:**	**NA**
GROUNDWATER:	8'	**GROUND ELEVATION:**	**NA**

DATE	TIME	LEVEL	TYPE	TYPE	CAS.	SAMPLER	TUBE		
			NA	**DIA.**		5' Microcore		**DATE STARTED:**	**January 17, 2018**
				WT.				**DATE FINISHED:**	**January 19, 2018**
				FALL				**DRILLER:**	**John Weiss**
								GEOLOGIST:	**Eva Jakubowska**
								REVIEWED BY:	

DEPTH FEET	SAMPLE STRATA	"S" NO.	"N" NO.	BLOWS PER 6"	REC% RQD%	DESCRIPTION COLOR	CONSISTENCY HARDNESS	MATERIAL DESCRIPTION	USCS	REMARKS
1					NA	Dark brown to brown	Medium loose	0-6': Fine to medium Sand, with gravel, and fill material (red brick, glass, and ceramic pieces.)	FILL	Hand cleared to 6 ftbg 0.0 ppm Moist
6										
					60%	Dark brown to burgundy	Medium loose	6-9': Fine to medium Sand, some gravel.	SW	wet at 8' 0.0 ppm
10								9-10':Peat.	PT	
								End of Boring at 10 ftbg		
15										
20										
25										
30										

COMMENTS: Grab sample collected @ 7.5-8 ftbg for TCL VOCs.

Composite sample collected from 0-8 ftbg for waste characterization parameters.

Soil was classified in accordance with the Unified Soil Classification System (USCS).

PROJECT NO.: 15-008-0265

BORING NO.: SB-03

LiRo Engineers, Inc.

TEST BORING LOG

		BORING NO:	**SB-04**
PROJECT:	Construction of Storm Sewer in Idlewild Park, Springfield Ln. from Rockaway Blvd. to 224th St., Queens, NY	**SHEET:**	**1 of 1**
CLIENT:	Department of Design and Construction - OEGS - SE842A1	**JOB NO.:**	**15-008-0265**
BORING CONTRACTOR:	Associated Environmental Services, Ltd.	**LOCATION:**	**NA**
GROUNDWATER:	10'	**GROUND ELEVATION:**	**NA**
DATE STARTED:			**January 17, 2018**
DATE FINISHED:			**January 19, 2018**
DRILLER:			**John Weiss**
GEOLOGIST:			**Eva Jakubowska**
REVIEWED BY:			

DATE	TIME	LEVEL	TYPE	TYPE	CAS.	SAMPLER	TUBE
			NA	**DIA.**		5' Microcore	
				WT.			
				FALL			

DEPTH FEET	SAMPLE STRATA	"S" NO.	"N" NO.	BLOWS PER 6"	REC% RQD%	DESCRIPTION COLOR	CONSISTENCY HARDNESS	MATERIAL DESCRIPTION	USCS	REMARKS
1					NA	Brown	Medium loose	0-6': Fine to medium Sand, with gravel, and fill material (red brick, glass, and ceramic pieces).	FILL	Hand cleared to 6 ftbg 0.0 ppm Moist
6										
					60%	Dark brown	Medium loose	6-9': Fine to medium Sand, some gravel.	SW	wet at 10' 0.0 ppm
10								9-10': Peat.	PT	
								End of Boring at 10 ftbg		
15										
20										
25										
30										

COMMENTS: Grab sample collected @ 9.5-10 ftbg for TCL VOCs.

Composite sample collected from 0-10 ftbg for waste characterization parameters.

Soil was classified in accordance with the Unified Soil Classification System (USCS).

PROJECT NO.: 15-008-0265

BORING NO.: SB-04

LiRo Engineers, Inc.

TEST BORING LOG

		BORING NO:	**SB-05**
PROJECT:	Construction of Storm Sewer in Idlewild Park, Springfield Ln. from Rockaway Blvd. to 224th St., Queens, NY	**SHEET:**	**1 of 1**
CLIENT:	Department of Design and Construction - OEGS - SE842A1	**JOB NO.:**	**15-008-0265**
BORING CONTRACTOR:	Associated Environmental Services, Ltd.	**LOCATION:**	**NA**
GROUNDWATER:	10'	**GROUND ELEVATION:**	**NA**
DATE STARTED:			**January 17, 2018**
DATE FINISHED:			**January 19, 2018**
DRILLER:			**John Weiss**
GEOLOGIST:			**Eva Jakubowska**
REVIEWED BY:			

DATE	TIME	LEVEL	TYPE	TYPE	CAS.	SAMPLER	TUBE
			NA	**DIA.**		5' Microcore	
				WT.			
				FALL			

DEPTH FEET	SAMPLE STRATA	"S" NO.	"N" NO.	BLOWS PER 6"	REC% RQD%	DESCRIPTION COLOR	CONSISTENCY HARDNESS	MATERIAL DESCRIPTION	USCS	REMARKS
1					NA	Dark brown	Medium loose	0-6': Fine to medium Sand and fill material (red brick, glass, and ceramic pieces).	FILL	Hand cleared to 6 ftbg 0.0 ppm Moist
6										
					70%	Yellow to dark brown	Medium loose	6-9': Fine to medium Sand and fill materal.		wet at 10' 0.0 ppm
10								9-10': Peat.	PT	
								End of Boring at 10 ftbg		
15										
20										
25										
30										

COMMENTS: Grab sample collected @ 9.5-10 ftbg for TCL VOCs.

Composite sample collected from 0-10 ftbg for waste characterization parameters.

Soil was classified in accordance with the Unified Soil Classification System (USCS).

PROJECT NO.: 15-008-0265

BORING NO.: SB-05

LiRo Engineers, Inc.

TEST BORING LOG

		BORING NO:	**SB-06**
PROJECT:	Construction of Storm Sewer in Idlewild Park, Springfield Ln. from Rockaway Blvd. to 224th St., Queens, NY	**SHEET:**	**1 of 1**
CLIENT:	Department of Design and Construction - OEGS - SE842A1	**JOB NO.:**	**15-008-0265**
BORING CONTRACTOR:	Associated Environmental Services, Ltd.	**LOCATION:**	**NA**
GROUNDWATER:	10'	**GROUND ELEVATION:**	**NA**
DATE STARTED:	**January 18, 2018**		
DATE FINISHED:	**January 19, 2018**		
DRILLER:	**John Weiss**		
GEOLOGIST:	**Eva Jakubowska**		
REVIEWED BY:			

DATE	TIME	LEVEL	TYPE	TYPE	CAS.	SAMPLER	TUBE
			NA	**DIA.**		5' Microcore	
				WT.			
				FALL			

DEPTH FEET	SAMPLE STRATA	"S" NO.	"N" NO.	BLOWS PER 6"	REC% RQD%	DESCRIPTION COLOR	CONSISTENCY HARDNESS	MATERIAL DESCRIPTION	USCS	REMARKS
1					NA	Brown	Medium loose	0-6': Fine to medium Sand and fill material (red brick, glass, and ceramic pieces).	FILL	Hand cleared to 6 ftbg 0.0 ppm Moist
6					60%	Orange brown to brown	Medium loose	6-10': Fine to medium Sand and fill materal.		wet at 10' 0.0 ppm
10								End of Boring at 10 ftbg		
15										
20										
25										
30										

COMMENTS: Grab sample collected @ 0-2 ftbg & 9.5-10 ftbg for TCL VOCs.

Composite sample collected from 0-10 ftbg for waste characterization parameters.

Soil was classified in accordance with the Unified Soil Classification System (USCS).

PROJECT NO.: 15-008-0265

BORING NO.: SB-06

LiRo Engineers, Inc.

TEST BORING LOG

		BORING NO:	**SB-07**
PROJECT:	Construction of Storm Sewer in Idlewild Park, Springfield Ln. from Rockaway Blvd. to 224th St., Queens, NY	**SHEET:**	**1 of 1**
CLIENT:	Department of Design and Construction - OEGS - SE842A1	**JOB NO.:**	**15-008-0265**
BORING CONTRACTOR:	Associated Environmental Services, Ltd.	**LOCATION:**	**NA**
GROUNDWATER:	10'	**GROUND ELEVATION:**	**NA**
DATE STARTED:	**January 18, 2018**		
DATE FINISHED:	**January 19, 2018**		
DRILLER:	**John Weiss**		
GEOLOGIST:	**Eva Jakubowska**		
REVIEWED BY:			

DATE	TIME	LEVEL	TYPE	TYPE	CAS.	SAMPLER	TUBE
			NA	**DIA.**		5' Microcore	
				WT.			
				FALL			

DEPTH FEET	SAMPLE STRATA	"S" NO.	"N" NO.	BLOWS PER 6"	REC% RQD%	DESCRIPTION COLOR	CONSISTENCY HARDNESS	MATERIAL DESCRIPTION	USCS	REMARKS
1					NA	Dark brown	Medium loose	0-6': Fine to medium Sand, gravel and fill material (red brick, glass, and ceramic pieces).	FILL	Hand cleared to 6 ftbg 0.0 ppm Moist
6										
					80%	Brown	Medium loose	6-10': Fine to medium Sand and fill materal.		wet at 10' 0.0 ppm
10										
								End of Boring at 10 ftbg		
15										
20										
25										
30										

COMMENTS: Grab sample collected @ 0-2 ftbg & 9.5-10 ftbg for TCL VOCs.

Composite sample collected from 0-10 ftbg for waste characterization parameters.

Soil was classified in accordance with the Unified Soil Classification System (USCS).

PROJECT NO.: 15-008-0265

BORING NO.: SB-07

LiRo Engineers, Inc.

TEST BORING LOG

		BORING NO:	**SB-08**
PROJECT:	Construction of Storm Sewer in Idlewild Park, Springfield Ln. from Rockaway Blvd. to 224th St., Queens, NY	**SHEET:**	**1 of 1**
CLIENT:	Department of Design and Construction - OEGS - SE842A1	**JOB NO.:**	**15-008-0265**
BORING CONTRACTOR:	Associated Environmental Services, Ltd.	**LOCATION:**	**NA**
GROUNDWATER:	10'	**GROUND ELEVATION:**	**NA**
DATE STARTED:	**January 18, 2018**		
DATE FINISHED:	**January 19, 2018**		
DRILLER:	**John Weiss**		
GEOLOGIST:	**Eva Jakubowska**		
REVIEWED BY:			

DATE	TIME	LEVEL	TYPE	TYPE	CAS.	SAMPLER	TUBE
			NA	**DIA.**		5' Microcore	
				WT.			
				FALL			

DEPTH FEET	SAMPLE STRATA	"S" NO.	"N" NO.	BLOWS PER 6"	REC% RQD%	DESCRIPTION COLOR	CONSISTENCY HARDNESS	MATERIAL DESCRIPTION	USCS	REMARKS
1					NA	Dark brown	Medium loose	0-6': Fine to medium Sand, gravel and fill material (red brick, glass, and ceramic pieces).	FILL	Hand cleared to 6 ftbg 0.0 ppm Moist
6										
					80%	Brown	Medium loose	6-10': Fine to medium Sand and fill materal.		wet at 10' 0.0 ppm
10										
								End of Boring at 10 ftbg		
15										
20										
25										
30										

COMMENTS: Grab sample collected @ 0-2 ftbg & 9.5-10 ftbg for TCL VOCs.

Composite sample collected from 0-10 ftbg for waste characterization parameters.

Soil was classified in accordance with the Unified Soil Classification System (USCS).

PROJECT NO.: 15-008-0265

BORING NO.: SB-08

LiRo Engineers, Inc.

TEST BORING LOG

		BORING NO:	**SB-09**
PROJECT:	Construction of Storm Sewer in Idlewild Park, Springfield Ln. from Rockaway Blvd. to 224th St., Queens, NY	**SHEET:**	**1 of 1**
CLIENT:	Department of Design and Construction - OEGS - SE842A1	**JOB NO.:**	**15-008-0265**
BORING CONTRACTOR:	Associated Environmental Services, Ltd.	**LOCATION:**	**NA**
GROUNDWATER:	10'	**GROUND ELEVATION:**	**NA**
DATE STARTED:	**January 18, 2018**		
DATE FINISHED:	**January 19, 2018**		
DRILLER:	**John Weiss**		
GEOLOGIST:	**Eva Jakubowska**		
REVIEWED BY:			

DATE	TIME	LEVEL	TYPE	TYPE	CAS.	SAMPLER	TUBE
			NA	**DIA.**		5' Microcore	
				WT.			
				FALL			

DEPTH FEET	SAMPLE STRATA	"S" NO.	"N" NO.	BLOWS PER 6"	REC% RQD%	DESCRIPTION COLOR	CONSISTENCY HARDNESS	MATERIAL DESCRIPTION	USCS	REMARKS
1					NA	Dark brown	Medium loose	0-6': Fine to medium Sand, gravel and fill material (red brick, glass, and ceramic pieces).	FILL	Hand cleared to 6 ftbg 0.0 ppm Moist
6										
					60%	Dark brown	Medium loose	6-10': Fine to medium Sand and fill materal.		wet at 10' 0.0 ppm
10										
								End of Boring at 10 ftbg		
15										
20										
25										
30										

COMMENTS: Grab sample collected @ 0-2 ftbg & 9.5-10 ftbg for TCL VOCs.

Composite sample collected from 0-10 ftbg for waste characterization parameters.

Soil was classified in accordance with the Unified Soil Classification System (USCS).

PROJECT NO.: 15-008-0265

BORING NO.: SB-09

LiRo Engineers, Inc.

TEST BORING LOG

		BORING NO:	**SB-10**
PROJECT:	Construction of Storm Sewer in Idlewild Park, Springfield Ln. from Rockaway Blvd. to 224th St., Queens, NY	**SHEET:**	**1 of 1**
CLIENT:	Department of Design and Construction - OEGS - SE842A1	**JOB NO.:**	**15-008-0265**
BORING CONTRACTOR:	Associated Environmental Services, Ltd.	**LOCATION:**	**NA**
GROUNDWATER:	10'	**GROUND ELEVATION:**	**NA**
DATE STARTED:			**January 18, 2018**
DATE FINISHED:			**January 19, 2018**
DRILLER:			**John Weiss**
GEOLOGIST:			**Eva Jakubowska**
REVIEWED BY:			

DATE	TIME	LEVEL	TYPE	TYPE	CAS.	SAMPLER	TUBE
			NA	**DIA.**		5' Microcore	
				WT.			
				FALL			

DEPTH FEET	SAMPLE STRATA	"S" NO.	"N" NO.	BLOWS PER 6"	REC% RQD%	DESCRIPTION COLOR	CONSISTENCY HARDNESS	MATERIAL DESCRIPTION	USCS	REMARKS
1					NA	Dark brown	Medium loose	0-6': Fine to medium Sand, rocks and fill material (red brick, glass, and ceramic pieces).	FILL	Hand cleared to 6 ftbg 0.0 ppm Moist
6										
					90%	Brown	Medium loose	6-10': Fine to medium Sand and fill materal.		wet at 10' 0.0 ppm
10										
								End of Boring at 10 ftbg		
15										
20										
25										
30										

COMMENTS: Grab sample collected @ 0-2 ftbg & 9.5-10 ftbg for TCL VOCs.

Composite sample collected from 0-10 ftbg for waste characterization parameters.

Soil was classified in accordance with the Unified Soil Classification System (USCS).

PROJECT NO.: 15-008-0265

BORING NO.: SB-10

LiRo Engineers, Inc.

TEST BORING LOG

		BORING NO:	**SB-11**
PROJECT:	Construction of Storm Sewer in Idlewild Park, Springfield Ln. from Rockaway Blvd. to 224th St., Queens, NY	**SHEET:**	**1 of 1**
CLIENT:	Department of Design and Construction - OEGS - SE842A1	**JOB NO.:**	**15-008-0265**
BORING CONTRACTOR:	Associated Environmental Services, Ltd.	**LOCATION:**	**NA**
GROUNDWATER:	10'	**GROUND ELEVATION:**	**NA**
DATE STARTED:	**January 18, 2018**		
DATE FINISHED:	**January 19, 2018**		
DRILLER:	**John Weiss**		
GEOLOGIST:	**Eva Jakubowska**		
REVIEWED BY:			

DATE	TIME	LEVEL	TYPE	TYPE	CAS.	SAMPLER	TUBE
			NA	**DIA.**		5' Microcore	
				WT.			
				FALL			

DEPTH FEET	SAMPLE STRATA	"S" NO.	"N" NO.	BLOWS PER 6"	REC% RQD%	DESCRIPTION COLOR	CONSISTENCY HARDNESS	MATERIAL DESCRIPTION	USCS	REMARKS
1					NA	Brown	Medium loose	0-6': Fine to medium Sand, gravel and fill material (red brick, glass, and ceramic pieces).	FILL	Hand cleared to 6 ftbg 0.0 ppm Moist
6										
					100%	Brown	Medium loose	6-10': Fine to medium Sand and fill materal.		wet at 10' 0.0 ppm
10										
								End of Boring at 10 ftbg		
15										
20										
25										
30										

COMMENTS: Grab sample collected @ 0-2 ftbg & 9.5-10 ftbg for TCL VOCs.

Composite sample collected from 0-10 ftbg for waste characterization parameters.

Soil was classified in accordance with the Unified Soil Classification System (USCS).

PROJECT NO.: 15-008-0265

BORING NO.: SB-11

LiRo Engineers, Inc.

TEST BORING LOG

		BORING NO:	**SB-12**
PROJECT:	Construction of Storm Sewer in Idlewild Park, Springfield Ln. from Rockaway Blvd. to 224th St., Queens, NY	**SHEET:**	**1 of 1**
CLIENT:	Department of Design and Construction - OEGS - SE842A1	**JOB NO.:**	**15-008-0265**
BORING CONTRACTOR:	Associated Environmental Services, Ltd.	**LOCATION:**	**Springfield Ln.**
GROUNDWATER:	4'	**GROUND ELEVATION:**	**NA**
		DATE STARTED:	**January 9, 2018**
		DATE FINISHED:	**January 9, 2018**
		DRILLER:	**John Weiss**
		GEOLOGIST:	**Eva Jakubowska**
		REVIEWED BY:	

DATE	TIME	LEVEL	TYPE	TYPE	CAS.	SAMPLER	TUBE
			NA	DIA.			
				WT.			
				FALL			

DEPTH FEET	SAMPLE STRATA	"S" NO.	"N" NO.	BLOWS PER 6"	REC% RQD%	DESCRIPTION COLOR	CONSISTENCY HARDNESS	MATERIAL DESCRIPTION	USCS	REMARKS
1					NA	Black to orange brown	Loose	0-2': Fine to medium Sand, some tree roots.	SW	Hand cleared to 5 ftbg
								2-5': Fine to medium Sand.		0.0 ppm Wet at 4'
5										
								End of Boring at 5 ftbg		
10										
15										
20										
25										
30										

COMMENTS: Grab sample collected @ 3.5-4 ftbg for TCL VOCs.

Composite sample collected from 0-4 ftbg for waste characterization parameters.

Soil was classified in accordance with the Unified Soil Classification System (USCS).

PROJECT NO.: 15-008-0265

BORING NO.: SB-12

LiRo Engineers, Inc.

TEST BORING LOG

		BORING NO:	**SB-13**
PROJECT:	Construction of Storm Sewer in Idlewild Park, Springfield Ln. from Rockaway Blvd. to 224th St., Queens, NY	**SHEET:**	**1 of 1**
CLIENT:	Department of Design and Construction - OEGS - SE842A1	**JOB NO.:**	**15-008-0265**
BORING CONTRACTOR:	Associated Environmental Services, Ltd.	**LOCATION:**	**Springfield Ln.**
GROUNDWATER:	3'	**GROUND ELEVATION:**	**NA**
		DATE STARTED:	**January 9, 2018**
		DATE FINISHED:	**January 9, 2018**
		DRILLER:	**John Weiss**
		GEOLOGIST:	**Eva Jakubowska**
		REVIEWED BY:	

DATE	TIME	LEVEL	TYPE	TYPE	CAS.	SAMPLER	TUBE
			NA	DIA.			
				WT.			
				FALL			

DEPTH FEET	SAMPLE STRATA	"S" NO.	"N" NO.	BLOWS PER 6"	REC% RQD%	DESCRIPTION COLOR	CONSISTENCY HARDNESS	MATERIAL DESCRIPTION	USCS	REMARKS
1					NA	Black to light brown	Loose	0-1': Fine to medium Sand, some gravel and roots.	SW	Hand cleared to 3 ftbg 0.0 ppm, Wet at 3'
								1-3': Fine to medium sand, trace of gravel.		
3										
5								End of Boring at 3 ftbg		
10										
15										
20										
25										
30										

COMMENTS: Grab sample collected @ 2.5-3 ftbg for TCL VOCs.

Composite sample collected from 0-3 ftbg for waste characterization parameters.

Soil was classified in accordance with the Unified Soil Classification System (USCS).

PROJECT NO.: 15-008-0265

BORING NO.: SB-13

LiRo Engineers, Inc.

TEST BORING LOG

BORING NO: SB-14

PROJECT: Construction of Storm Sewer in Idlewild Park, Springfield Ln. from Rockaway Blvd. to 224th St., Queens, NY

SHEET: 1 of 1

CLIENT: Department of Design and Construction - OEGS - SE842A1

JOB NO.: 15-008-0265

BORING CONTRACTOR: Associated Environmental Services, Ltd.

LOCATION: Springfield Ln.

GROUNDWATER:			3'		CAS.	SAMPLER	TUBE
DATE	TIME	LEVEL	TYPE	TYPE			
			NA	DIA.			
				WT.			
				FALL			

GROUND ELEVATION: NA

DATE STARTED: January 9, 2018

DATE FINISHED: January 9, 2018

DRILLER: John Weiss

GEOLOGIST: Eva Jakubowska

REVIEWED BY:

DEPTH FEET	SAMPLE STRATA	"S" NO.	"N" NO.	BLOWS PER 6"	REC% RQD%	DESCRIPTION COLOR	CONSISTENCY HARDNESS	MATERIAL DESCRIPTION	USCS	REMARKS
1					NA	Black to light brown	Loose	0-1': Fine to medium Sand, some gravel and roots.	SW	Hand cleared to 3 ftbg 0.0 ppm, Wet at 3'
3								1-3': Fine to medium Sand.		
5								End of Boring at 3 ftbg		
10										
15										
20										
25										
30										

COMMENTS: Grab sample collected @ 2.5-3 ftbg for TCL VOCs.

Composite sample collected from 0-3 ftbg for waste characterization parameters.

Soil was classified in accordance with the Unified Soil Classification System (USCS).

PROJECT NO.: 15-008-0265

BORING NO.: SB-14

LiRo Engineers, Inc.

TEST BORING LOG

		BORING NO:	**SB-15**
PROJECT:	Construction of Storm Sewer in Idlewild Park, Springfield Ln. from Rockaway Blvd. to 224th St., Queens, NY	**SHEET:**	**1 of 1**
CLIENT:	Department of Design and Construction - OEGS - SE842A1	**JOB NO.:**	**15-008-0265**
BORING CONTRACTOR:	Associated Environmental Services, Ltd.	**LOCATION:**	**Springfield Ln.**
GROUNDWATER:	3'	**GROUND ELEVATION:**	**NA**
		DATE STARTED:	**January 9, 2018**
		DATE FINISHED:	**January 9, 2018**
		DRILLER:	**John Weiss**
		GEOLOGIST:	**Eva Jakubowska**
		REVIEWED BY:	

DATE	TIME	LEVEL	TYPE	TYPE	CAS.	SAMPLER	TUBE
			NA	DIA.			
				WT.			
				FALL			

DEPTH FEET	SAMPLE STRATA	"S" NO.	"N" NO.	BLOWS PER 6"	REC% RQD%	DESCRIPTION COLOR	CONSISTENCY HARDNESS	MATERIAL DESCRIPTION	USCS	REMARKS
1					NA	Dark brown to yellow brown	Loose	0-1.5': Fine to medium Sand, some gravel and roots.	SW	Hand cleared to 3 ftbg 0.0 ppm, Wet at 3'
								1.5-3': Fine to medium Sand.		
3										
5								End of Boring at 3 ftbg		
10										
15										
20										
25										
30										

COMMENTS: Grab sample collected @ 2.5-3 ftbg for TCL VOCs.

Composite sample collected from 0-3 ftbg for waste characterization parameters.

Soil was classified in accordance with the Unified Soil Classification System (USCS).

PROJECT NO.: 15-008-0265

BORING NO.: SB-15

LiRo Engineers, Inc.

TEST BORING LOG

		BORING NO:	**SB-16**
PROJECT:	Construction of Storm Sewer in Idlewild Park, Springfield Ln. from Rockaway Blvd. to 224th St., Queens, NY	**SHEET:**	**1 of 1**
CLIENT:	Department of Design and Construction - OEGS - SE842A1	**JOB NO.:**	**15-008-0265**
BORING CONTRACTOR:	Associated Environmental Services, Ltd.	**LOCATION:**	**Springfield Ln.**
GROUNDWATER:	3'	**GROUND ELEVATION:**	**NA**
		DATE STARTED:	**January 9, 2018**
		DATE FINISHED:	**January 9, 2018**
		DRILLER:	**John Weiss**
		GEOLOGIST:	**Eva Jakubowska**
		REVIEWED BY:	

DATE	TIME	LEVEL	TYPE	TYPE	CAS.	SAMPLER	TUBE
			NA	DIA.			
				WT.			
				FALL			

DEPTH FEET	SAMPLE STRATA	"S" NO.	"N" NO.	BLOWS PER 6"	REC% RQD%	DESCRIPTION COLOR	CONSISTENCY HARDNESS	MATERIAL DESCRIPTION	USCS	REMARKS
1					NA	Black to brown	Loose	0-1.5': Fine to medium Sand, some gravel and roots.	SW	Hand cleared to 3 ftbg 0.0 ppm, Wet at 3'
								1.5-3': Fine to medium Sand.		
3										
5								End of Boring at 3 ftbg		
10										
15										
20										
25										
30										

COMMENTS: Grab sample collected @ 2.5-3 ftbg for TCL VOCs.

Composite sample collected from 0-3 ftbg for waste characterization parameters.

Soil was classified in accordance with the Unified Soil Classification System (USCS).

PROJECT NO.: 15-008-0265

BORING NO.: SB-16

LiRo Engineers, Inc.

TEST BORING LOG

		BORING NO:	**SB-17**
PROJECT:	Construction of Storm Sewer in Idlewild Park, Springfield Ln. from Rockaway Blvd. to 224th St., Queens, NY	**SHEET:**	**1 of 1**
CLIENT:	Department of Design and Construction - OEGS - SE842A1	**JOB NO.:**	**15-008-0265**
BORING CONTRACTOR:	Associated Environmental Services, Ltd.	**LOCATION:**	**Springfield Ln.**
GROUNDWATER:	4'	**GROUND ELEVATION:**	**NA**
		DATE STARTED:	**January 9, 2018**
		DATE FINISHED:	**January 9, 2018**
		DRILLER:	**John Weiss**
		GEOLOGIST:	**Eva Jakubowska**
		REVIEWED BY:	

DATE	TIME	LEVEL	TYPE	TYPE	CAS.	SAMPLER	TUBE
			NA	**DIA.**			
				WT.			
				FALL			

DEPTH FEET	SAMPLE STRATA	"S" NO.	"N" NO.	BLOWS PER 6"	REC% RQD%	DESCRIPTION COLOR	CONSISTENCY HARDNESS	MATERIAL DESCRIPTION	USCS	REMARKS
1					NA	Dark brown to yellow brown	Loose	0-1.5': Fine to medium Sand, some tree roots.	SW	Hand cleared to 4 ftbg
								1.5-4': Fine to medium Sand, trace of gravel.		
4										0.0 ppm Wet at 4'
								End of Boring at 4 ftbg		
10										
15										
20										
25										
30										

COMMENTS: Grab sample collected @ 3.5-4 ftbg for TCL VOCs.

Composite sample collected from 0-4 ftbg for waste characterization parameters.

Soil was classified in accordance with the Unified Soil Classification System (USCS).

PROJECT NO.: 15-008-0265

BORING NO.: SB-17

LiRo Engineers, Inc.

TEST BORING LOG

		BORING NO:	**SB-18**
PROJECT:	Construction of Storm Sewer in Idlewild Park, Springfield Ln. from Rockaway Blvd. to 224th St., Queens, NY	**SHEET:**	**1 of 1**
CLIENT:	Department of Design and Construction - OEGS - SE842A1	**JOB NO.:**	**15-008-0265**
BORING CONTRACTOR:	Associated Environmental Services, Ltd.	**LOCATION:**	**Springfield Ln.**
GROUNDWATER:	3.5'	**GROUND ELEVATION:**	**NA**
		DATE STARTED:	**January 9, 2018**
		DATE FINISHED:	**January 9, 2018**
		DRILLER:	**John Weiss**
		GEOLOGIST:	**Eva Jakubowska**
		REVIEWED BY:	

DATE	TIME	LEVEL	TYPE	TYPE	CAS.	SAMPLER	TUBE
			NA	DIA.			
				WT.			
				FALL			

DEPTH FEET	SAMPLE STRATA	"S" NO.	"N" NO.	BLOWS PER 6"	REC% RQD%	DESCRIPTION COLOR	CONSISTENCY HARDNESS	MATERIAL DESCRIPTION	USCS	REMARKS
1					NA	Brown to orange-brown	Loose	0-3.5': Fine to medium Sand, trace of gravel.	SW	Hand cleared to 3.5 ftbg 0.0 ppm, Wet at 3.5'
3.5										
5								End of Boring at 3.5 ftbg		
10										
15										
20										
25										
30										

COMMENTS: Grab sample collected @ 3.0-3.5 ftbg for TCL VOCs.

Composite sample collected from 0-3.5 ftbg for waste characterization parameters.

Soil was classified in accordance with the Unified Soil Classification System (USCS).

PROJECT NO.: 15-008-0265

BORING NO.: SB-18

LiRo Engineers, Inc.

TEST BORING LOG

		BORING NO:	**SB-19**
PROJECT:	Construction of Storm Sewer in Idlewild Park, Springfield Ln. from Rockaway Blvd. to 224th St., Queens, NY	**SHEET:**	**1 of 1**
CLIENT:	Department of Design and Construction - OEGS - SE842A1	**JOB NO.:**	**15-008-0265**
BORING CONTRACTOR:	Associated Environmental Services, Ltd.	**LOCATION:**	**Springfield Ln.**
GROUNDWATER:	3'	**GROUND ELEVATION:**	**NA**
		DATE STARTED:	**January 9, 2018**
		DATE FINISHED:	**January 9, 2018**
		DRILLER:	**John Weiss**
		GEOLOGIST:	**Eva Jakubowska**
		REVIEWED BY:	

DATE	TIME	LEVEL	TYPE	TYPE	CAS.	SAMPLER	TUBE
			NA	DIA.			
				WT.			
				FALL			

DEPTH FEET	SAMPLE STRATA	"S" NO.	"N" NO.	BLOWS PER 6"	REC% RQD%	DESCRIPTION COLOR	CONSISTENCY HARDNESS	MATERIAL DESCRIPTION	USCS	REMARKS
1					NA	Brown to orange brown	Loose	0-1': Fine to medium Sand, roots and fill material (red brick, glass, and ceramic pieces).	FILL	Hand cleared to 3 ftbg 0.0 ppm, Wet at 3'
								1-3': Fine to medium Sand, some gravel.	SW	
3										
5								End of Boring at 3 ftbg		
10										
15										
20										
25										
30										

COMMENTS: Grab sample collected @ 2.5-3 ftbg for TCL VOCs.

Composite sample collected from 0-3 ftbg for waste characterization parameters.

Soil was classified in accordance with the Unified Soil Classification System (USCS).

PROJECT NO.: 15-008-0265

BORING NO.: SB-19

LiRo Engineers, Inc.

TEST BORING LOG

		BORING NO:	**SB-20**
PROJECT:	Construction of Storm Sewer in Idlewild Park, Springfield Ln. from Rockaway Blvd. to 224th St., Queens, NY	**SHEET:**	**1 of 1**
CLIENT:	Department of Design and Construction - OEGS - SE842A1	**JOB NO.:**	**15-008-0265**
BORING CONTRACTOR:	Associated Environmental Services, Ltd.	**LOCATION:**	**Springfield Ln.**
GROUNDWATER:	3.5'	**GROUND ELEVATION:**	**NA**
		DATE STARTED:	**January 9, 2018**
		DATE FINISHED:	**January 9, 2018**
		DRILLER:	**John Weiss**
		GEOLOGIST:	**Eva Jakubowska**
		REVIEWED BY:	

DATE	TIME	LEVEL	TYPE	TYPE	CAS.	SAMPLER	TUBE
			NA	DIA.			
				WT.			
				FALL			

DEPTH FEET	SAMPLE STRATA	"S" NO.	"N" NO.	BLOWS PER 6"	REC% RQD%	DESCRIPTION COLOR	CONSISTENCY HARDNESS	MATERIAL DESCRIPTION	USCS	REMARKS
1					NA	Dark brown to orange brown	Loose	0-1': Fine to medium Sand, tree roots and fill material (red brick, glass, and ceramic pieces).	FILL	Hand cleared to 3.5 ftbg 0.0 ppm, Wet at 3.5'
3.5								1-3.5': Fine to medium Sand, trace of gravel.	SW	
5								End of Boring at 3.5 ftbg		
10										
15										
20										
25										
30										

COMMENTS: Grab sample collected @ 3.0-3.5 ftbg for TCL VOCs.

Composite sample collected from 0-3.5 ftbg for waste characterization parameters.

Soil was classified in accordance with the Unified Soil Classification System (USCS).

PROJECT NO.: 15-008-0265

BORING NO.: SB-20

LiRo Engineers, Inc.

TEST BORING LOG

		BORING NO:	**SB-21**
PROJECT:	Construction of Storm Sewer in Idlewild Park, Springfield Ln. from Rockaway Blvd. to 224th St., Queens, NY	**SHEET:**	**1 of 1**
CLIENT:	Department of Design and Construction - OEGS - SE842A1	**JOB NO.:**	**15-008-0265**
BORING CONTRACTOR:	Associated Environmental Services, Ltd.	**LOCATION:**	**Springfield Ln.**
GROUNDWATER:	2.5'	**GROUND ELEVATION:**	**NA**
		DATE STARTED:	**January 9, 2018**
		DATE FINISHED:	**January 9, 2018**
		DRILLER:	**John Weiss**
		GEOLOGIST:	**Eva Jakubowska**
		REVIEWED BY:	

DATE	TIME	LEVEL	TYPE	TYPE	CAS.	SAMPLER	TUBE
			NA	DIA.			
				WT.			
				FALL			

DEPTH FEET	SAMPLE STRATA	"S" NO.	"N" NO.	BLOWS PER 6"	REC% RQD%	COLOR	CONSISTENCY HARDNESS	DESCRIPTION MATERIAL DESCRIPTION	USCS	REMARKS
1					NA	Dark brown to brown	Loose	0-1': Fine to medium Sand and roots.	SW	Hand cleared to 2.5 ftbg 0.0 ppm, Wet at 2.5'
2.5								1-2.5': Fine to medium sand.		
5								End of Boring at 2.5 ftbg		
10										
15										
20										
25										
30										

COMMENTS: Grab sample collected @ 2-2.5 ftbg for TCL VOCs.

Composite sample collected from 0-2.5 ftbg for waste characterization parameters.

Soil was classified in accordance with the Unified Soil Classification System (USCS).

PROJECT NO.: 15-008-0265

BORING NO.: SB-21

LiRo Engineers, Inc.

TEST BORING LOG

		BORING NO:	**SB-22**
PROJECT:	Construction of Storm Sewer in Idlewild Park, Springfield Ln. from Rockaway Blvd. to 224th St., Queens, NY	**SHEET:**	**1 of 1**
CLIENT:	Department of Design and Construction - OEGS - SE842A1	**JOB NO.:**	**15-008-0265**
BORING CONTRACTOR:	Associated Environmental Services, Ltd.	**LOCATION:**	**Springfield Ln.**
GROUNDWATER:	3.5'	**GROUND ELEVATION:**	**NA**
DATE STARTED:	**January 9, 2018**		
DATE FINISHED:	**January 9, 2018**		
DRILLER:	**John Weiss**		
GEOLOGIST:	**Eva Jakubowska**		
REVIEWED BY:			

DATE	TIME	LEVEL	TYPE	TYPE	CAS.	SAMPLER	TUBE
			NA	DIA.			
				WT.			
				FALL			

DEPTH FEET	SAMPLE STRATA	"S" NO.	"N" NO.	BLOWS PER 6"	REC% RQD%	DESCRIPTION COLOR	CONSISTENCY HARDNESS	MATERIAL DESCRIPTION	USCS	REMARKS
1					NA	Dark brown to orange brown	Loose	0-1': Fine to medium Sand, some roots.	SW	Hand cleared to 3.5 ftbg 0.0 ppm, Wet at 3.5'
								1-3.5': Fine to medium sand.		
3.5										
5								End of Boring at 3.5 ftbg		
10										
15										
20										
25										
30										

COMMENTS: Grab sample collected @ 3.0-3.5 ftbg for TCL VOCs.

Composite sample collected from 0-3.5 ftbg for waste characterization parameters.

Soil was classified in accordance with the Unified Soil Classification System (USCS).

PROJECT NO.: 15-008-0265

BORING NO.: SB-22

LiRo Engineers, Inc.

TEST BORING LOG

		BORING NO:	**SB-23**
PROJECT:	Construction of Storm Sewer in Idlewild Park, Springfield Ln. from Rockaway Blvd. to 224th St., Queens, NY	**SHEET:**	**1 of 1**
CLIENT:	Department of Design and Construction - OEGS - SE842A1	**JOB NO.:**	**15-008-0265**
BORING CONTRACTOR:	Associated Environmental Services, Ltd.	**LOCATION:**	**Springfield Ln.**
GROUNDWATER:	3'	**GROUND ELEVATION:**	**NA**
		DATE STARTED:	**January 9, 2018**
		DATE FINISHED:	**January 9, 2018**
		DRILLER:	**John Weiss**
		GEOLOGIST:	**Eva Jakubowska**
		REVIEWED BY:	

DATE	TIME	LEVEL	TYPE	TYPE	CAS.	SAMPLER	TUBE
			NA	**DIA.**			
				WT.			
				FALL			

DEPTH FEET	SAMPLE STRATA	"S" NO.	"N" NO.	BLOWS PER 6"	REC% RQD%	DESCRIPTION COLOR	CONSISTENCY HARDNESS	MATERIAL DESCRIPTION	USCS	REMARKS
1 – 3					NA	Black to light brown	Loose	0-3': Fine to medium Sand, trace of gravel.	SW	Hand cleared to 3 ftbg 0.0 ppm, Wet at 3'
5								End of Boring at 3 ftbg		

COMMENTS: Grab sample collected @ 2.5-3 ftbg for TCL VOCs.

Composite sample collected from 0-3 ftbg for waste characterization parameters.

Soil was classified in accordance with the Unified Soil Classification System (USCS).

PROJECT NO.: 15-008-0265

BORING NO.: SB-23

LiRo Engineers, Inc.

TEST BORING LOG

		BORING NO:	**SB-24**
PROJECT:	Construction of Storm Sewer in Idlewild Park, Springfield Ln. from Rockaway Blvd. to 224th St., Queens, NY	**SHEET:**	**1 of 1**
CLIENT:	Department of Design and Construction - OEGS - SE842A1	**JOB NO.:**	**15-008-0265**
BORING CONTRACTOR:	Associated Environmental Services, Ltd.	**LOCATION:**	**Springfield Ln.**
GROUNDWATER:	3'	**GROUND ELEVATION:**	**NA**
		DATE STARTED:	**January 10, 2018**
		DATE FINISHED:	**January 10, 2018**
		DRILLER:	**John Weiss**
		GEOLOGIST:	**Eva Jakubowska**
		REVIEWED BY:	

DATE	TIME	LEVEL	TYPE	TYPE	CAS.	SAMPLER	TUBE
			NA	DIA.			
				WT.			
				FALL			

DEPTH FEET	SAMPLE STRATA	"S" NO.	"N" NO.	BLOWS PER 6"	REC% RQD%	DESCRIPTION COLOR	CONSISTENCY HARDNESS	MATERIAL DESCRIPTION	USCS	REMARKS
1					NA	Dark brown to brown	Loose	0-3': Fine to medium Sand.	SW	Hand cleared to 3 ftbg 0.0 ppm, Wet at 3'
3										
5								End of Boring at 3 ftbg		
10										
15										
20										
25										
30										

COMMENTS: Grab sample collected @ 2.5-3 ftbg for TCL VOCs.

Composite sample collected from 0-3 ftbg for waste characterization parameters.

Soil was classified in accordance with the Unified Soil Classification System (USCS).

PROJECT NO.: 15-008-0265

BORING NO.: SB-24

LiRo Engineers, Inc.

TEST BORING LOG

		BORING NO:	**SB-25**
PROJECT:	Construction of Storm Sewer in Idlewild Park, Springfield Ln. from Rockaway Blvd. to 224th St., Queens, NY	**SHEET:**	**1 of 1**
CLIENT:	Department of Design and Construction - OEGS - SE842A1	**JOB NO.:**	**15-008-0265**
BORING CONTRACTOR:	Associated Environmental Services, Ltd.	**LOCATION:**	**Springfield Ln.**
GROUNDWATER:	2.5'	**GROUND ELEVATION:**	**NA**
DATE STARTED:	**January 10, 2018**		
DATE FINISHED:	**January 10, 2018**		
DRILLER:	**John Weiss**		
GEOLOGIST:	**Eva Jakubowska**		
REVIEWED BY:			

DATE	TIME	LEVEL	TYPE	TYPE	CAS.	SAMPLER	TUBE
			NA	DIA.			
				WT.			
				FALL			

DEPTH FEET	SAMPLE STRATA	"S" NO.	"N" NO.	BLOWS PER 6"	REC% RQD%	DESCRIPTION COLOR	CONSISTENCY HARDNESS	MATERIAL DESCRIPTION	USCS	REMARKS
1										
					NA	Brown to light brown	Loose	0-2.5': Fine to medium Sand.	SW	Hand cleared to 2.5 ftbg 0.0 ppm, Wet at 2.5'
2.5										
								End of Boring at 2.5 ftbg		
5										
10										
15										
20										
25										
30										

COMMENTS: Grab sample collected @ 2-2.5 ftbg for TCL VOCs.

Composite sample collected from 0-2.5 ftbg for waste characterization parameters.

Soil was classified in accordance with the Unified Soil Classification System (USCS).

PROJECT NO.: 15-008-0265

BORING NO.: SB-25

LiRo Engineers, Inc.

TEST BORING LOG

		BORING NO:	**SB-26**
PROJECT:	Construction of Storm Sewer in Idlewild Park, Springfield Ln. from Rockaway Blvd. to 224th St., Queens, NY	**SHEET:**	**1 of 1**
CLIENT:	Department of Design and Construction - OEGS - SE842A1	**JOB NO.:**	**15-008-0265**
BORING CONTRACTOR:	Associated Environmental Services, Ltd.	**LOCATION:**	**Springfield Ln.**
GROUNDWATER:	2.5'	**GROUND ELEVATION:**	**NA**
		DATE STARTED:	**January 10, 2018**
		DATE FINISHED:	**January 10, 2018**
		DRILLER:	**John Weiss**
		GEOLOGIST:	**Eva Jakubowska**
		REVIEWED BY:	

DATE	TIME	LEVEL	TYPE	TYPE	CAS.	SAMPLER	TUBE
			NA	DIA.			
				WT.			
				FALL			

DEPTH FEET	SAMPLE STRATA	"S" NO.	"N" NO.	BLOWS PER 6"	REC% RQD%	DESCRIPTION COLOR	CONSISTENCY HARDNESS	MATERIAL DESCRIPTION	USCS	REMARKS
1					NA	Brown to orange brown	Loose	0-2.5': Fine to medium Sand, trace of gravel.	SW	Hand cleared to 2.5 ftbg 0.0 ppm, Wet at 2.5'
2.5										
5								End of Boring at 2.5 ftbg		
10										
15										
20										
25										
30										

COMMENTS: Grab sample collected @ 2-2.5 ftbg for TCL VOCs.

Composite sample collected from 0-2.5 ftbg for waste characterization parameters.

Soil was classified in accordance with the Unified Soil Classification System (USCS).

PROJECT NO.: 15-008-0265

BORING NO.: SB-26

LiRo Engineers, Inc.

TEST BORING LOG

		BORING NO:	**SB-27**
PROJECT:	Construction of Storm Sewer in Idlewild Park, Springfield Ln. from Rockaway Blvd. to 224th St., Queens, NY	**SHEET:**	**1 of 1**
CLIENT:	Department of Design and Construction - OEGS - SE842A1	**JOB NO.:**	**15-008-0265**
BORING CONTRACTOR:	Associated Environmental Services, Ltd.	**LOCATION:**	**Springfield Ln.**
GROUNDWATER:	2.5'	**GROUND ELEVATION:**	**NA**
DATE STARTED:	**January 10, 2018**		
DATE FINISHED:	**January 10, 2018**		
DRILLER:	**John Weiss**		
GEOLOGIST:	**Eva Jakubowska**		
REVIEWED BY:			

DATE	TIME	LEVEL	TYPE	TYPE	CAS.	SAMPLER	TUBE
			NA	DIA.			
				WT.			
				FALL			

DEPTH FEET	SAMPLE STRATA	"S" NO.	"N" NO.	BLOWS PER 6"	REC% RQD%	DESCRIPTION COLOR	CONSISTENCY HARDNESS	MATERIAL DESCRIPTION	USCS	REMARKS
1										
					NA	Brown to orange brown	Loose	0-2.5': Fine to medium Sand.	SW	Hand cleared to 2.5 ftbg 0.0 ppm, Wet at 2.5'
2.5										
								End of Boring at 2.5 ftbg		
5										
10										
15										
20										
25										
30										

COMMENTS: Grab sample collected @ 2-2.5 ftbg for TCL VOCs.

Composite sample collected from 0-2.5 ftbg for waste characterization parameters.

Soil was classified in accordance with the Unified Soil Classification System (USCS).

PROJECT NO.: 15-008-0265

BORING NO.: SB-27

LiRo Engineers, Inc.

TEST BORING LOG

		BORING NO:	**SB-28**
PROJECT:	Construction of Storm Sewer in Idlewild Park, Springfield Ln. from Rockaway Blvd. to 224th St., Queens, NY	**SHEET:**	**1 of 1**
CLIENT:	Department of Design and Construction - OEGS - SE842A1	**JOB NO.:**	**15-008-0265**
BORING CONTRACTOR:	Associated Environmental Services, Ltd.	**LOCATION:**	**Springfield Ln.**
GROUNDWATER:	2.5'	**GROUND ELEVATION:**	**NA**
		DATE STARTED:	**January 10, 2018**
		DATE FINISHED:	**January 10, 2018**
		DRILLER:	**John Weiss**
		GEOLOGIST:	**Eva Jakubowska**
		REVIEWED BY:	

DATE	TIME	LEVEL	TYPE	TYPE	CAS.	SAMPLER	TUBE
			NA	DIA.			
				WT.			
				FALL			

DEPTH FEET	SAMPLE STRATA	"S" NO.	"N" NO.	BLOWS PER 6"	REC% RQD%	DESCRIPTION COLOR	CONSISTENCY HARDNESS	MATERIAL DESCRIPTION	USCS	REMARKS
1					NA	Brown to orange brown	Loose	0-2.5': Fine to medium Sand.	SW	Hand cleared to 2.5 ftbg 0.0 ppm, Wet at 2.5'
2.5										
5								End of Boring at 2.5 ftbg		
10										
15										
20										
25										
30										

COMMENTS: Grab sample collected @ 2-2.5 ftbg for TCL VOCs.

Composite sample collected from 0-2.5 ftbg for waste characterization parameters.

Soil was classified in accordance with the Unified Soil Classification System (USCS).

PROJECT NO.: 15-008-0265

BORING NO.: SB-28

LiRo Engineers, Inc.

TEST BORING LOG

		BORING NO:	**SB-29**
PROJECT:	Construction of Storm Sewer in Idlewild Park, Springfield Ln. from Rockaway Blvd. to 224th St., Queens, NY	**SHEET:**	**1 of 1**
CLIENT:	Department of Design and Construction - OEGS - SE842A1	**JOB NO.:**	**15-008-0265**
BORING CONTRACTOR:	Associated Environmental Services, Ltd.	**LOCATION:**	**Springfield Ln.**
GROUNDWATER:	2.5'	**GROUND ELEVATION:**	**NA**
		DATE STARTED:	**January 10, 2018**
		DATE FINISHED:	**January 10, 2018**
		DRILLER:	**John Weiss**
		GEOLOGIST:	**Eva Jakubowska**
		REVIEWED BY:	

DATE	TIME	LEVEL	TYPE	TYPE	CAS.	SAMPLER	TUBE
			NA	DIA.			
				WT.			
				FALL			

DEPTH FEET	SAMPLE STRATA	"S" NO.	"N" NO.	BLOWS PER 6"	REC% RQD%	DESCRIPTION COLOR	CONSISTENCY HARDNESS	MATERIAL DESCRIPTION	USCS	REMARKS
1					NA	Dark brown	Loose	0-2.5': Fine to medium Sand.	SW	Hand cleared to 2.5 ftbg 0.0 ppm, Wet at 2.5'
2.5										
5								End of Boring at 2.5 ftbg		
10										
15										
20										
25										
30										

COMMENTS: Grab sample collected @ 2-2.5 ftbg for TCL VOCs.

Composite sample collected from 0-2.5 ftbg for waste characterization parameters.

Soil was classified in accordance with the Unified Soil Classification System (USCS).

PROJECT NO.: 15-008-0265

BORING NO.: SB-29

LiRo Engineers, Inc.

TEST BORING LOG

		BORING NO:	**SB-30**
PROJECT:	Construction of Storm Sewer in Idlewild Park, Springfield Ln. from Rockaway Blvd. to 224th St., Queens, NY	**SHEET:**	**1 of 1**
CLIENT:	Department of Design and Construction - OEGS - SE842A1	**JOB NO.:**	**15-008-0265**
BORING CONTRACTOR:	Associated Environmental Services, Ltd.	**LOCATION:**	**Springfield Ln.**
GROUNDWATER:	3'	**GROUND ELEVATION:**	**NA**
		DATE STARTED:	**January 10, 2018**
		DATE FINISHED:	**January 10, 2018**
		DRILLER:	**John Weiss**
		GEOLOGIST:	**Eva Jakubowska**
		REVIEWED BY:	

DATE	TIME	LEVEL	TYPE	TYPE	CAS.	SAMPLER	TUBE
			NA	DIA.			
				WT.			
				FALL			

DEPTH FEET	SAMPLE STRATA	"S" NO.	"N" NO.	BLOWS PER 6"	REC% RQD%	DESCRIPTION COLOR	CONSISTENCY HARDNESS	MATERIAL DESCRIPTION	USCS	REMARKS
1					NA	Dark brown to brown	Loose	0-3': Fine to medium Sand, trace of gravel.	SW	Hand cleared to 3 ftbg 0.0 ppm, Wet at 3'
3										
5								End of Boring at 3 ftbg		
10										
15										
20										
25										
30										

COMMENTS: Grab sample collected @ 2.5-3 ftbg for TCL VOCs.

Composite sample collected from 0-3 ftbg for waste characterization parameters.

Soil was classified in accordance with the Unified Soil Classification System (USCS).

PROJECT NO.: 15-008-0265

BORING NO.: SB-30

LiRo Engineers, Inc.

TEST BORING LOG

		BORING NO:	**SB-31**
PROJECT:	Construction of Storm Sewer in Idlewild Park, Springfield Ln. from Rockaway Blvd. to 224th St., Queens, NY	**SHEET:**	**1 of 1**
CLIENT:	Department of Design and Construction - OEGS - SE842A1	**JOB NO.:**	**15-008-0265**
BORING CONTRACTOR:	Associated Environmental Services, Ltd.	**LOCATION:**	**Springfield Ln.**
GROUNDWATER:	3'	**GROUND ELEVATION:**	**NA**
		DATE STARTED:	**January 10, 2018**
		DATE FINISHED:	**January 10, 2018**
		DRILLER:	**John Weiss**
		GEOLOGIST:	**Eva Jakubowska**
		REVIEWED BY:	

DATE	TIME	LEVEL	TYPE	TYPE	CAS.	SAMPLER	TUBE
			NA	DIA.			
				WT.			
				FALL			

DEPTH FEET	SAMPLE STRATA	"S" NO.	"N" NO.	BLOWS PER 6"	REC% RQD%	DESCRIPTION COLOR	CONSISTENCY HARDNESS	MATERIAL DESCRIPTION	USCS	REMARKS
1					NA	Dark brown to orange brown	Loose	0-3': Fine to medium Sand.	SW	Hand cleared to 3 ftbg 0.0 ppm, Wet at 3'
3										
5								End of Boring at 3 ftbg		
10										
15										
20										
25										
30										

COMMENTS: Grab sample collected @ 2.5-3 ftbg for TCL VOCs.

Composite sample collected from 0-3 ftbg for waste characterization parameters.

Soil was classified in accordance with the Unified Soil Classification System (USCS).

PROJECT NO.: 15-008-0265

BORING NO.: SB-31

LiRo Engineers, Inc.

TEST BORING LOG

		BORING NO:	**SB-32**
PROJECT:	Construction of Storm Sewer in Idlewild Park, Springfield Ln. from Rockaway Blvd. to 224th St., Queens, NY	**SHEET:**	**1 of 1**
CLIENT:	Department of Design and Construction - OEGS - SE842A1	**JOB NO.:**	**15-008-0265**
BORING CONTRACTOR:	Associated Environmental Services, Ltd.	**LOCATION:**	**Springfield Ln.**
GROUNDWATER:	2.5'	**GROUND ELEVATION:**	**NA**
		DATE STARTED:	**January 10, 2018**
		DATE FINISHED:	**January 10, 2018**
		DRILLER:	**John Weiss**
		GEOLOGIST:	**Eva Jakubowska**
		REVIEWED BY:	

DATE	TIME	LEVEL	TYPE	TYPE	CAS.	SAMPLER	TUBE
			NA	**DIA.**			
				WT.			
				FALL			

DEPTH FEET	SAMPLE STRATA	"S" NO.	"N" NO.	BLOWS PER 6"	REC% RQD%	DESCRIPTION COLOR	CONSISTENCY HARDNESS	MATERIAL DESCRIPTION	USCS	REMARKS
1					NA	Brown to reddish-brown	Loose	0-2.5': Fine to medium Sand, trace of gravel.	SW	Hand cleared to 2.5 ftbg 0.0 ppm, Wet at 2.5'
2.5								End of Boring at 2.5 ftbg		
5										
10										
15										
20										
25										
30										

COMMENTS: Grab sample collected @ 2-2.5 ftbg for TCL VOCs.

Composite sample collected from 0-2.5 ftbg for waste characterization parameters.

Soil was classified in accordance with the Unified Soil Classification System (USCS).

PROJECT NO.: 15-008-0265

BORING NO.: SB-32

LiRo Engineers, Inc.

TEST BORING LOG

		BORING NO:	**SB-33**
PROJECT:	Construction of Storm Sewer in Idlewild Park, Springfield Ln. from Rockaway Blvd. to 224th St., Queens, NY	**SHEET:**	**1 of 1**
CLIENT:	Department of Design and Construction - OEGS - SE842A1	**JOB NO.:**	**15-008-0265**
BORING CONTRACTOR:	Associated Environmental Services, Ltd.	**LOCATION:**	**Springfield Ln.**
GROUNDWATER:	3'	**GROUND ELEVATION:**	**NA**
		DATE STARTED:	**January 10, 2018**
		DATE FINISHED:	**January 10, 2018**
		DRILLER:	**John Weiss**
		GEOLOGIST:	**Eva Jakubowska**
		REVIEWED BY:	

DATE	TIME	LEVEL	TYPE	TYPE	CAS.	SAMPLER	TUBE
			NA	DIA.			
				WT.			
				FALL			

DEPTH FEET	SAMPLE STRATA	"S" NO.	"N" NO.	BLOWS PER 6"	REC% RQD%	DESCRIPTION COLOR	CONSISTENCY HARDNESS	MATERIAL DESCRIPTION	USCS	REMARKS
1										
					NA	Brown to orange brown	Loose	0-3': Fine to medium Sand.	SW	Hand cleared to 3 ftbg 0.0 ppm, Wet at 3'
3										
5								End of Boring at 3 ftbg		
10										
15										
20										
25										
30										

COMMENTS: Grab sample collected @ 2.5-3 ftbg for TCL VOCs.

Composite sample collected from 0-3 ftbg for waste characterization parameters.

Soil was classified in accordance with the Unified Soil Classification System (USCS).

PROJECT NO.: 15-008-0265

BORING NO.: SB-33

LiRo Engineers, Inc.

TEST BORING LOG

		BORING NO:	**SB-34**
PROJECT:	Construction of Storm Sewer in Idlewild Park, Springfield Ln. from Rockaway Blvd. to 224th St., Queens, NY	**SHEET:**	**1 of 1**
CLIENT:	Department of Design and Construction - OEGS - SE842A1	**JOB NO.:**	**15-008-0265**
BORING CONTRACTOR:	Associated Environmental Services, Ltd.	**LOCATION:**	**Springfield Ln.**
GROUNDWATER:	3'	**GROUND ELEVATION:**	**NA**
		DATE STARTED:	**January 10, 2018**
		DATE FINISHED:	**January 10, 2018**
		DRILLER:	**John Weiss**
		GEOLOGIST:	**Eva Jakubowska**
		REVIEWED BY:	

DATE	TIME	LEVEL	TYPE	TYPE	CAS.	SAMPLER	TUBE
			NA	DIA.			
				WT.			
				FALL			

DEPTH FEET	SAMPLE STRATA	"S" NO.	"N" NO.	BLOWS PER 6"	REC% RQD%	DESCRIPTION COLOR	CONSISTENCY HARDNESS	MATERIAL DESCRIPTION	USCS	REMARKS
1					NA	Dark brown to brown	Loose	0-3': Fine to medium Sand and gravel.	SW	Hand cleared to 3 ftbg 0.0 ppm, Wet at 3'
3										
5								End of Boring at 3 ftbg		
10										
15										
20										
25										
30										

COMMENTS: Grab sample collected @ 2.5-3 ftbg for TCL VOCs.

Composite sample collected from 0-3 ftbg for waste characterization parameters.

Soil was classified in accordance with the Unified Soil Classification System (USCS).

PROJECT NO.: 15-008-0265

BORING NO.: SB-34

LiRo Engineers, Inc.

TEST BORING LOG

		BORING NO:	**SB-35**
PROJECT:	Construction of Storm Sewer in Idlewild Park, Springfield Ln. from Rockaway Blvd. to 224th St., Queens, NY	**SHEET:**	**1 of 1**
CLIENT:	Department of Design and Construction - OEGS - SE842A1	**JOB NO.:**	**15-008-0265**
BORING CONTRACTOR:	Associated Environmental Services, Ltd.	**LOCATION:**	**Springfield Ln.**
GROUNDWATER:	3'	**GROUND ELEVATION:**	**NA**
		DATE STARTED:	**January 10, 2018**
		DATE FINISHED:	**January 10, 2018**
		DRILLER:	**John Weiss**
		GEOLOGIST:	**Eva Jakubowska**
		REVIEWED BY:	

DATE	TIME	LEVEL	TYPE	TYPE	CAS.	SAMPLER	TUBE
			NA	DIA.			
				WT.			
				FALL			

DEPTH FEET	SAMPLE STRATA	"S" NO.	"N" NO.	BLOWS PER 6"	REC% RQD%	DESCRIPTION COLOR	CONSISTENCY HARDNESS	MATERIAL DESCRIPTION	USCS	REMARKS
1										
					NA	Brown to orange brown	Loose	0-3': Fine to medium Sand.	SW	Hand cleared to 3 ftbg 0.0 ppm, Wet at 3'
3										
5								End of Boring at 3 ftbg		
10										
15										
20										
25										
30										

COMMENTS: Grab sample collected @ 2.5-3 ftbg for TCL VOCs.

Composite sample collected from 0-3 ftbg for waste characterization parameters.

Soil was classified in accordance with the Unified Soil Classification System (USCS).

PROJECT NO.: 15-008-0265

BORING NO.: SB-35

LiRo Engineers, Inc.

TEST BORING LOG

		BORING NO:	**SB-36**
PROJECT:	Construction of Storm Sewer in Idlewild Park, Springfield Ln. from Rockaway Blvd. to 224th St., Queens, NY	**SHEET:**	**1 of 1**
CLIENT:	Department of Design and Construction - OEGS - SE842A1	**JOB NO.:**	**15-008-0265**
BORING CONTRACTOR:	Associated Environmental Services, Ltd.	**LOCATION:**	**Springfield Ln.**
GROUNDWATER:	3'	**GROUND ELEVATION:**	**NA**
		DATE STARTED:	**January 11, 2018**
		DATE FINISHED:	**January 11, 2018**
		DRILLER:	**John Weiss**
		GEOLOGIST:	**Eva Jakubowska**
		REVIEWED BY:	

DATE	TIME	LEVEL	TYPE	TYPE	CAS.	SAMPLER	TUBE
			NA	DIA.			
				WT.			
				FALL			

DEPTH FEET	SAMPLE STRATA	"S" NO.	"N" NO.	BLOWS PER 6"	REC% RQD%	DESCRIPTION COLOR	CONSISTENCY HARDNESS	MATERIAL DESCRIPTION	USCS	REMARKS
1					NA	Dark brown to brown	Loose	0-3': Fine to medium Sand and gravel.	SW	Hand cleared to 3 ftbg 0.0 ppm, Wet at 3'
3										
5								End of Boring at 3 ftbg		
10										
15										
20										
25										
30										

COMMENTS: Grab sample collected @ 2.5-3 ftbg for TCL VOCs.

Composite sample collected from 0-3 ftbg for waste characterization parameters.

Soil was classified in accordance with the Unified Soil Classification System (USCS).

PROJECT NO.: 15-008-0265

BORING NO.: SB-36

LiRo Engineers, Inc.

TEST BORING LOG

		BORING NO:	**SB-37**
PROJECT:	Construction of Storm Sewer in Idlewild Park, Springfield Ln. from Rockaway Blvd. to 224th St., Queens, NY	**SHEET:**	**1 of 1**
CLIENT:	Department of Design and Construction - OEGS - SE842A1	**JOB NO.:**	**15-008-0265**
BORING CONTRACTOR:	Associated Environmental Services, Ltd.	**LOCATION:**	**Springfield Ln.**
GROUNDWATER:	2.5'	**GROUND ELEVATION:**	**NA**
DATE STARTED:	**January 11, 2018**		
DATE FINISHED:	**January 11, 2018**		
DRILLER:	**John Weiss**		
GEOLOGIST:	**Eva Jakubowska**		
REVIEWED BY:			

DATE	TIME	LEVEL	TYPE	TYPE	CAS.	SAMPLER	TUBE
			NA	DIA.			
				WT.			
				FALL			

DEPTH FEET	SAMPLE STRATA	"S" NO.	"N" NO.	BLOWS PER 6"	REC% RQD%	DESCRIPTION COLOR	CONSISTENCY HARDNESS	MATERIAL DESCRIPTION	USCS	REMARKS
1										
					NA	Brown to dark brown	Loose	0-2.5': Fine to medium Sand.	SW	Hand cleared to 2.5 ftbg 0.0 ppm, Wet at 2.5'
2.5										
								End of Boring at 2.5 ftbg		
5										
10										
15										
20										
25										
30										

COMMENTS: Grab sample collected @ 2-2.5 ftbg for TCL VOCs.

Composite sample collected from 0-2.5 ftbg for waste characterization parameters.

Soil was classified in accordance with the Unified Soil Classification System (USCS).

PROJECT NO.: 15-008-0265

BORING NO.: SB-37

LiRo Engineers, Inc.

TEST BORING LOG

		BORING NO:	**SB-38**
PROJECT:	Construction of Storm Sewer in Idlewild Park, Springfield Ln. from Rockaway Blvd. to 224th St., Queens, NY	**SHEET:**	**1 of 1**
CLIENT:	Department of Design and Construction - OEGS - SE842A1	**JOB NO.:**	**15-008-0265**
BORING CONTRACTOR:	Associated Environmental Services, Ltd.	**LOCATION:**	**Springfield Ln.**
GROUNDWATER:	4'	**GROUND ELEVATION:**	**NA**
		DATE STARTED:	**January 11, 2018**
		DATE FINISHED:	**January 11, 2018**
		DRILLER:	**John Weiss**
		GEOLOGIST:	**Eva Jakubowska**
		REVIEWED BY:	

DATE	TIME	LEVEL	TYPE	TYPE	CAS.	SAMPLER	TUBE
			NA	**DIA.**			
				WT.			
				FALL			

DEPTH FEET	SAMPLE STRATA	"S" NO.	"N" NO.	BLOWS PER 6"	REC% RQD%	DESCRIPTION COLOR	CONSISTENCY HARDNESS	MATERIAL DESCRIPTION	USCS	REMARKS
1					NA	Dark brown to orange brown	Loose	0-4': Fine to medium Sand with pea gravel.	SW	Hand cleared to 4 ftbg
4										0.0 ppm Wet at 4'
								End of Boring at 4 ftbg		
10										
15										
20										
25										
30										

COMMENTS: Grab sample collected @ 3.5-4 ftbg for TCL VOCs.

Composite sample collected from 0-4 ftbg for waste characterization parameters.

Soil was classified in accordance with the Unified Soil Classification System (USCS).

PROJECT NO.: 15-008-0265

BORING NO.: SB-38

LiRo Engineers, Inc.

TEST BORING LOG

		BORING NO:	**SB-39**
PROJECT:	Construction of Storm Sewer in Idlewild Park, Springfield Ln. from Rockaway Blvd. to 224th St., Queens, NY	**SHEET:**	**1 of 1**
CLIENT:	Department of Design and Construction - OEGS - SE842A1	**JOB NO.:**	**15-008-0265**
BORING CONTRACTOR:	Associated Environmental Services, Ltd.	**LOCATION:**	**Springfield Ln.**
GROUNDWATER:	4.5'	**GROUND ELEVATION:**	**NA**
DATE STARTED:			**January 11, 2018**
DATE FINISHED:			**January 11, 2018**
DRILLER:			**John Weiss**
GEOLOGIST:			**Eva Jakubowska**
REVIEWED BY:			

DATE	TIME	LEVEL	TYPE	TYPE	CAS.	SAMPLER	TUBE
			NA	DIA.			
				WT.			
				FALL			

DEPTH FEET	SAMPLE STRATA	"S" NO.	"N" NO.	BLOWS PER 6"	REC% RQD%	DESCRIPTION COLOR	CONSISTENCY HARDNESS	MATERIAL DESCRIPTION	USCS	REMARKS
1					NA	Brown to greenish-brown	Loose	0-4.5': Fine to medium Sand, trace of silt.	SM	Hand cleared to 4.5 ftbg
4.5										0.0 ppm Wet at 4.5'
								End of Boring at 4.5 ftbg		
10										
15										
20										
25										
30										

COMMENTS: Grab sample collected @ 4-4.5 ftbg for TCL VOCs.

Composite sample collected from 0-4.5 ftbg for waste characterization parameters.

Soil was classified in accordance with the Unified Soil Classification System (USCS).

PROJECT NO.: 15-008-0265

BORING NO.: SB-39

LiRo Engineers, Inc.

TEST BORING LOG

		BORING NO:	**SB-40**
PROJECT:	Construction of Storm Sewer in Idlewild Park, Springfield Ln. from Rockaway Blvd. to 224th St., Queens, NY	**SHEET:**	**1 of 1**
CLIENT:	Department of Design and Construction - OEGS - SE842A1	**JOB NO.:**	**15-008-0265**
BORING CONTRACTOR:	Associated Environmental Services, Ltd.	**LOCATION:**	**Springfield Ln.**
GROUNDWATER:	4'	**GROUND ELEVATION:**	**NA**
		DATE STARTED:	**January 11, 2018**
		DATE FINISHED:	**January 11, 2018**
		DRILLER:	**John Weiss**
		GEOLOGIST:	**Eva Jakubowska**
		REVIEWED BY:	

DATE	TIME	LEVEL	TYPE	TYPE	CAS.	SAMPLER	TUBE
			NA	**DIA.**			
				WT.			
				FALL			

DEPTH FEET	SAMPLE STRATA	"S" NO.	"N" NO.	BLOWS PER 6"	REC% RQD%	DESCRIPTION COLOR	CONSISTENCY HARDNESS	MATERIAL DESCRIPTION	USCS	REMARKS
1					NA	Dark brown to orange brown	Loose	0-4': Fine to medium Sand, trace of gravel.	SW	Hand cleared to 4 ftbg
4										0.0 ppm Wet at 4'
								End of Boring at 4 ftbg		
10										
15										
20										
25										
30										

COMMENTS: Grab sample collected @ 3.5-4 ftbg for TCL VOCs.

Composite sample collected from 0-4 ftbg for waste characterization parameters.

Soil was classified in accordance with the Unified Soil Classification System (USCS).

PROJECT NO.: 15-008-0265

BORING NO.: SB-40

LiRo Engineers, Inc.

TEST BORING LOG

		BORING NO:	**SB-41**
PROJECT:	Construction of Storm Sewer in Idlewild Park, Springfield Ln. from Rockaway Blvd. to 224th St., Queens, NY	**SHEET:**	**1 of 1**
CLIENT:	Department of Design and Construction - OEGS - SE842A1	**JOB NO.:**	**15-008-0265**
BORING CONTRACTOR:	Associated Environmental Services, Ltd.	**LOCATION:**	**Springfield Ln.**
GROUNDWATER:	5'	**GROUND ELEVATION:**	**NA**
DATE STARTED:			**January 11, 2018**
DATE FINISHED:			**January 11, 2018**
DRILLER:			**John Weiss**
GEOLOGIST:			**Eva Jakubowska**
REVIEWED BY:			

DATE	TIME	LEVEL	TYPE	TYPE	CAS.	SAMPLER	TUBE
			NA	DIA.			
				WT.			
				FALL			

DEPTH FEET	SAMPLE STRATA	"S" NO.	"N" NO.	BLOWS PER 6"	REC% RQD%	DESCRIPTION COLOR	CONSISTENCY HARDNESS	MATERIAL DESCRIPTION	USCS	REMARKS
1					NA	Brown to orange brown	Loose	0-5': Fine to medium Sand, trace of gravel.	SW	Hand cleared to 5 ftbg
5										0.0 ppm Wet at 5'
								End of Boring at 5 ftbg		
10										
15										
20										
25										
30										

COMMENTS: Grab sample collected @ 4.5-5 ftbg for TCL VOCs.

Composite sample collected from 0-5 ftbg for waste characterization parameters.

Soil was classified in accordance with the Unified Soil Classification System (USCS).

PROJECT NO.: 15-008-0265

BORING NO.: SB-41

LiRo Engineers, Inc.

TEST BORING LOG

		BORING NO:	**SB-42**
PROJECT:	Construction of Storm Sewer in Idlewild Park, Springfield Ln. from Rockaway Blvd. to 224th St., Queens, NY	**SHEET:**	**1 of 1**
CLIENT:	Department of Design and Construction - OEGS - SE842A1	**JOB NO.:**	**15-008-0265**
BORING CONTRACTOR:	Associated Environmental Services, Ltd.	**LOCATION:**	**Springfield Ln.**
GROUNDWATER:	5'	**GROUND ELEVATION:**	**NA**
		DATE STARTED:	**January 11, 2018**
		DATE FINISHED:	**January 11, 2018**
		DRILLER:	**John Weiss**
		GEOLOGIST:	**Eva Jakubowska**
		REVIEWED BY:	

DATE	TIME	LEVEL	TYPE	TYPE	CAS.	SAMPLER	TUBE
			NA	DIA.			
				WT.			
				FALL			

DEPTH FEET	SAMPLE STRATA	"S" NO.	"N" NO.	BLOWS PER 6"	REC% RQD%	DESCRIPTION COLOR	CONSISTENCY HARDNESS	MATERIAL DESCRIPTION	USCS	REMARKS
1					NA	Dark brown to brown	Medium loose	0-5': Fine to medium Sand, roots and gravel.	SW	Hand cleared to 5 ftbg
5										0.0 ppm Wet at 5'
								End of Boring at 5 ftbg		
10										
15										
20										
25										
30										

COMMENTS: Grab sample collected @ 4.5-5 ftbg for TCL VOCs.

Composite sample collected from 0-5 ftbg for waste characterization parameters.

Soil was classified in accordance with the Unified Soil Classification System (USCS).

PROJECT NO.: 15-008-0265

BORING NO.: SB-42

LiRo Engineers, Inc.

TEST BORING LOG

		BORING NO:	**SB-43**
PROJECT:	Construction of Storm Sewer in Idlewild Park, Springfield Ln. from Rockaway Blvd. to 224th St., Queens, NY	**SHEET:**	**1 of 1**
CLIENT:	Department of Design and Construction - OEGS - SE842A1	**JOB NO.:**	**15-008-0265**
BORING CONTRACTOR:	Associated Environmental Services, Ltd.	**LOCATION:**	**Springfield Ln.**
GROUNDWATER:	7'	**GROUND ELEVATION:**	**NA**
DATE STARTED:	**January 12, 2018**		
DATE FINISHED:	**January 23, 2018**		
DRILLER:	**John Weiss**		
GEOLOGIST:	**Eva Jakubowska**		
REVIEWED BY:			

DATE	TIME	LEVEL	TYPE	TYPE	CAS.	SAMPLER	TUBE
			NA	**DIA.**		5' Microcore	
				WT.			
				FALL			

DEPTH FEET	SAMPLE STRATA	"S" NO.	"N" NO.	BLOWS PER 6"	REC% RQD%	DESCRIPTION COLOR	CONSISTENCY HARDNESS	MATERIAL DESCRIPTION	USCS	REMARKS
1										Hand cleared to 6 ftbg
6					NA	Brown to orange brown	Loose	0-6': Fine to medium Sand, trace of pea gravel.	SW	0.0 ppm Moist
10					90%	Orange brown	Loose	6-10': Fine to medium Sand, trace of small gravel.		wet at 7' 0.0 ppm
15								End of Boring at 10 ftbg		
20										
25										
30										

COMMENTS: Grab sample collected @ 6.5-7 ftbg for TCL VOCs.

Composite sample collected from 0-7 ftbg for waste characterization parameters.

Soil was classified in accordance with the Unified Soil Classification System (USCS).

PROJECT NO.: 15-008-0265

BORING NO.: SB-43

LiRo Engineers, Inc.

TEST BORING LOG

		BORING NO:	**SB-44**
PROJECT:	Construction of Storm Sewer in Idlewild Park, Springfield Ln. from Rockaway Blvd. to 224th St., Queens, NY	**SHEET:**	**1 of 1**
CLIENT:	Department of Design and Construction - OEGS - SE842A1	**JOB NO.:**	**15-008-0265**
BORING CONTRACTOR:	Associated Environmental Services, Ltd.	**LOCATION:**	**NA**
GROUNDWATER:	2.5'	**GROUND ELEVATION:**	**NA**
		DATE STARTED:	**January 12, 2018**
		DATE FINISHED:	**January 12, 2018**
		DRILLER:	**John Weiss**
		GEOLOGIST:	**Eva Jakubowska**
		REVIEWED BY:	

DATE	TIME	LEVEL	TYPE	TYPE	CAS.	SAMPLER	TUBE
			NA	**DIA.**			
				WT.			
				FALL			

DEPTH FEET	SAMPLE STRATA	"S" NO.	"N" NO.	BLOWS PER 6"	REC% RQD%	COLOR	CONSISTENCY HARDNESS	MATERIAL DESCRIPTION	USCS	REMARKS
1					NA	Dark brown to grey-brown	Loose	0-2.5': Fine to medium Sand and fill material (red brick, asphalt, and glass pieces).	FILL	Hand cleared to 2.5 ftbg 0.0 ppm, Wet at 2.5'
2.5								End of Boring at 2.5 ftbg		
5										
10										
15										
20										
25										
30										

COMMENTS: Grab sample collected @ 2-2.5 ftbg for TCL VOCs.

Composite sample collected from 0-2.5 ftbg for waste characterization parameters.

Soil was classified in accordance with the Unified Soil Classification System (USCS).

PROJECT NO.: 15-008-0265

BORING NO.: SB-44

LiRo Engineers, Inc.

TEST BORING LOG

		BORING NO:	**SB-45**
PROJECT:	Construction of Storm Sewer in Idlewild Park, Springfield Ln. from Rockaway Blvd. to 224th St., Queens, NY	**SHEET:**	**1 of 1**
CLIENT:	Department of Design and Construction - OEGS - SE842A1	**JOB NO.:**	**15-008-0265**
BORING CONTRACTOR:	Associated Environmental Services, Ltd.	**LOCATION:**	**Springfield Ln.**
GROUNDWATER:	10'	**GROUND ELEVATION:**	**NA**
DATE STARTED:			**January 12, 2018**
DATE FINISHED:			**January 23, 2018**
DRILLER:			**John Weiss**
GEOLOGIST:			**Eva Jakubowska**
REVIEWED BY:			

DATE	TIME	LEVEL	TYPE	TYPE	CAS.	SAMPLER	TUBE
			NA	**DIA.**		5' Microcore	
				WT.			
				FALL			

DEPTH FEET	SAMPLE STRATA	"S" NO.	"N" NO.	BLOWS PER 6"	REC% RQD%	DESCRIPTION COLOR	CONSISTENCY HARDNESS	MATERIAL DESCRIPTION	USCS	REMARKS
1					NA	Brown to reddish-brown	Medium loose	0-6': Fine to medium Sand and fill material (red brick, asphalt, and glass pieces).	FILL	Hand cleared to 6 ftbg 0.0 ppm Moist
6										
10					60%	Dark brown	Dense	6-10': Fine to medium Sand and fill material.		Wet at 10' 0.0 ppm
								End of Boring at 10 ftbg		
15										
20										
25										
30										

COMMENTS: Grab sample collected @ 9.5-10 ftbg for TCL VOCs.

Composite sample collected from 0-10 ftbg for waste characterization parameters.

Soil was classified in accordance with the Unified Soil Classification System (USCS).

PROJECT NO.: 15-008-0265

BORING NO.: SB-45

LiRo Engineers, Inc.

TEST BORING LOG

		BORING NO:	**SB-46**
PROJECT:	Construction of Storm Sewer in Idlewild Park, Springfield Ln. from Rockaway Blvd. to 224th St., Queens, NY	**SHEET:**	**1 of 1**
CLIENT:	Department of Design and Construction - OEGS - SE842A1	**JOB NO.:**	**15-008-0265**
BORING CONTRACTOR:	Associated Environmental Services, Ltd.	**LOCATION:**	**Springfield Ln.**
GROUNDWATER:	10'	**GROUND ELEVATION:**	**NA**
DATE STARTED:			**January 12, 2018**
DATE FINISHED:			**January 23, 2018**
DRILLER:			**John Weiss**
GEOLOGIST:			**Eva Jakubowska**
REVIEWED BY:			

DATE	TIME	LEVEL	TYPE	TYPE	CAS.	SAMPLER	TUBE
			NA	**DIA.**		5' Microcore	
				WT.			
				FALL			

DEPTH FEET	SAMPLE STRATA	"S" NO.	"N" NO.	BLOWS PER 6"	REC% RQD%	DESCRIPTION COLOR	CONSISTENCY HARDNESS	MATERIAL DESCRIPTION	USCS	REMARKS
1					NA	Brown	Dense	0-6': Fine to medium Sand and fill material (red brick, asphalt, and glass pieces).	FILL	Hand cleared to 6 ftbg 0.0 ppm Moist
6										
					70%	Dark brown to beige	Dense	6-10': Fine to medium Sand and fill material.		Wet at 10' 0.0 ppm
10										
								End of Boring at 10 ftbg		
15										
20										
25										
30										

COMMENTS: Grab sample collected @ 9.5-10 ftbg for TCL VOCs.

Composite sample collected from 0-10 ftbg for waste characterization parameters.

Soil was classified in accordance with the Unified Soil Classification System (USCS).

PROJECT NO.: 15-008-0265

BORING NO.: SB-46

LiRo Engineers, Inc.

TEST BORING LOG

		BORING NO:	**SB-47**
PROJECT:	Construction of Storm Sewer in Idlewild Park, Springfield Ln. from Rockaway Blvd. to 224th St., Queens, NY	**SHEET:**	**1 of 1**
CLIENT:	Department of Design and Construction - OEGS - SE842A1	**JOB NO.:**	**15-008-0265**
BORING CONTRACTOR:	Associated Environmental Services, Ltd.	**LOCATION:**	**NA**
GROUNDWATER:	5'	**GROUND ELEVATION:**	**NA**
		DATE STARTED:	**January 12, 2018**
		DATE FINISHED:	**January 12, 2018**
		DRILLER:	**John Weiss**
		GEOLOGIST:	**Eva Jakubowska**
		REVIEWED BY:	

DATE	TIME	LEVEL	TYPE	TYPE	CAS.	SAMPLER	TUBE
			NA	DIA.			
				WT.			
				FALL			

DEPTH FEET	SAMPLE STRATA	"S" NO.	"N" NO.	BLOWS PER 6"	REC% RQD%	DESCRIPTION COLOR	CONSISTENCY HARDNESS	MATERIAL DESCRIPTION	USCS	REMARKS
1					NA	Dark brown to grey brown	Dense	0-5': Fine to medium Sand and fill material (red brick, asphalt, and glass pieces).	FILL	Hand cleared to 5 ftbg
5										0.0 ppm Wet at 5'
								End of Boring at 5 ftbg		
10										
15										
20										
25										
30										

COMMENTS: Grab sample collected @ 4.5-5 ftbg for TCL VOCs.

Composite sample collected from 0-5 ftbg for waste characterization parameters.

Soil was classified in accordance with the Unified Soil Classification System (USCS).

PROJECT NO.: 15-008-0265

BORING NO.: SB-47

LiRo Engineers, Inc.

TEST BORING LOG

		BORING NO:	**SB-48**
PROJECT:	Construction of Storm Sewer in Idlewild Park, Springfield Ln. from Rockaway Blvd. to 224th St., Queens, NY	**SHEET:**	**1 of 1**
CLIENT:	Department of Design and Construction - OEGS - SE842A1	**JOB NO.:**	**15-008-0265**
BORING CONTRACTOR:	Associated Environmental Services, Ltd.	**LOCATION:**	**Springfield Ln.**
GROUNDWATER:	10'	**GROUND ELEVATION:**	**NA**
DATE STARTED:			**January 15, 2018**
DATE FINISHED:			**January 22, 2018**
DRILLER:			**John Weiss**
GEOLOGIST:			**Eva Jakubowska**
REVIEWED BY:			

DATE	TIME	LEVEL	TYPE	TYPE	CAS.	SAMPLER	TUBE
			NA	**DIA.**		5' Microcore	
				WT.			
				FALL			

DEPTH FEET	SAMPLE STRATA	"S" NO.	"N" NO.	BLOWS PER 6"	REC% RQD%	DESCRIPTION COLOR	CONSISTENCY HARDNESS	MATERIAL DESCRIPTION	USCS	REMARKS
1					NA	Dark brown to brown	Dense	0-6': Fine to medium Sand and fill material (red brick, asphalt, glass pieces, and tires at ~2.5').	FILL	Hand cleared to 6 ftbg 0.0 ppm Moist
6										
10					40%	Dark brown	Dense	6-10': Little Sand, mostly fill material.		Wet at 10' 0.0 ppm
15								End of Boring at 10 ftbg		
20										
25										
30										

COMMENTS: Grab sample collected @ 9.5-10 ftbg for TCL VOCs.

Composite sample collected from 0-10 ftbg for waste characterization parameters.

Soil was classified in accordance with the Unified Soil Classification System (USCS).

PROJECT NO.: 15-008-0265

BORING NO.: SB-48

LiRo Engineers, Inc.

TEST BORING LOG

		BORING NO:	**SB-49**
PROJECT:	Construction of Storm Sewer in Idlewild Park, Springfield Ln. from Rockaway Blvd. to 224th St., Queens, NY	**SHEET:**	**1 of 1**
CLIENT:	Department of Design and Construction - OEGS - SE842A1	**JOB NO.:**	**15-008-0265**
BORING CONTRACTOR:	Associated Environmental Services, Ltd.	**LOCATION:**	**NA**
GROUNDWATER:	10'	**GROUND ELEVATION:**	**NA**
DATE STARTED:			**January 15, 2018**
DATE FINISHED:			**January 23, 2018**
DRILLER:			**John Weiss**
GEOLOGIST:			**Eva Jakubowska**
REVIEWED BY:			

DATE	TIME	LEVEL	TYPE	TYPE	CAS.	SAMPLER	TUBE
			NA	DIA.		5' Microcore	
				WT.			
				FALL			

DEPTH FEET	SAMPLE STRATA	"S" NO.	"N" NO.	BLOWS PER 6"	REC% RQD%	DESCRIPTION COLOR	CONSISTENCY HARDNESS	MATERIAL DESCRIPTION	USCS	REMARKS
1					NA	Dark brown to brown	Dense	0-6': Fine to medium Sand and fill material (red brick, asphalt, glass pieces, and tires at ~2.5').	FILL	Hand cleared to 6 ftbg 0.0 ppm Moist
6					60%	Dark brown	Dense	6-10': Fine to medium Sand and fill material.		Moist 0.0 ppm
10					80%	Dark brown	Dense	10-15': Fine to medium Sand and fill material.		Wet at 10' 0.0 ppm
15								End of Boring at 15 ftbg		
20										
25										
30										

COMMENTS: Grab sample collected @ 9.5-10 ftbg for TCL VOCs.

Composite sample collected from 0-10 ftbg for waste characterization parameters.

Soil was classified in accordance with the Unified Soil Classification System (USCS).

PROJECT NO.: 15-008-0265

BORING NO.: SB-49

LiRo Engineers, Inc.

TEST BORING LOG

		BORING NO:	**SB-50**
PROJECT:	Construction of Storm Sewer in Idlewild Park, Springfield Ln. from Rockaway Blvd. to 224th St., Queens, NY	**SHEET:**	**1 of 1**
CLIENT:	Department of Design and Construction - OEGS - SE842A1	**JOB NO.:**	**15-008-0265**
BORING CONTRACTOR:	Associated Environmental Services, Ltd.	**LOCATION:**	**NA**
GROUNDWATER:	Not detect	**GROUND ELEVATION:**	**NA**
		DATE STARTED:	**January 15, 2018**
		DATE FINISHED:	**January 22, 2018**
		DRILLER:	**John Weiss**
		GEOLOGIST:	**Eva Jakubowska**
		REVIEWED BY:	

DATE	TIME	LEVEL	TYPE	TYPE	CAS.	SAMPLER	TUBE
			NA	**DIA.**		5' Microcore	
				WT.			
				FALL			

DEPTH FEET	SAMPLE STRATA	"S" NO.	"N" NO.	BLOWS PER 6"	REC% RQD%	DESCRIPTION COLOR	CONSISTENCY HARDNESS	MATERIAL DESCRIPTION	USCS	REMARKS
1					NA	Black to dark brown	Dense	0-6': Fine to medium Sand and fill material (red brick, asphalt, glass pieces, and tires at ~2.5').	FILL	Hand cleared to 6 ftbg 0.0 ppm Moist
6										
					40%	Dark brown	Dense	6-10': Fine to medium Sand and fill material. Fragmented rock at the bottom of boring.		Moist 0.0 ppm
10										
								End of Boring at 10 ftbg due to refusal		
15										
20										
25										
30										

COMMENTS: Grab sample collected @ 9.5-10 ftbg for TCL VOCs.

Composite sample collected from 0-10 ftbg for waste characterization parameters.

Soil was classified in accordance with the Unified Soil Classification System (USCS).

PROJECT NO.: 15-008-0265

BORING NO.: SB-50

LiRo Engineers, Inc.

TEST BORING LOG

BORING NO: SB-51

PROJECT: Construction of Storm Sewer in Idlewild Park, Springfield Ln. from Rockaway Blvd. to 224th St., Queens, NY

SHEET: 1 of 1

CLIENT: Department of Design and Construction - OEGS - SE842A1

JOB NO.: 15-008-0265

BORING CONTRACTOR: Associated Environmental Services, Ltd.

LOCATION: NA

GROUNDWATER: 11'

GROUND ELEVATION: NA

DATE	TIME	LEVEL	TYPE		CAS.	SAMPLER	TUBE
			NA	DIA.		5' Microcore	
				WT.			
				FALL			

DATE STARTED: January 15, 2018

DATE FINISHED: January 22, 2018

DRILLER: John Weiss

GEOLOGIST: Eva Jakubowska

REVIEWED BY:

DEPTH FEET	SAMPLE STRATA	"S" NO.	"N" NO.	BLOWS PER 6"	REC% RQD%	DESCRIPTION COLOR	CONSISTENCY HARDNESS	MATERIAL DESCRIPTION	USCS	REMARKS
1					NA	Dark brown	Dense	0-6': Fine to medium Sand and fill material (red brick, asphalt, glass pieces, and tires at ~2.5').	FILL	Hand cleared to 6 ftbg 0.0 ppm Moist
6					70%	Dark brown to grey	Dense	6-10': Fine to medium Sand and fill material. Fragmented rock in the center of boring.		Moist 0.0 ppm
10					30%	Dark grey	Dense	10-12': Fine to medium Sand and fill material.		Wet at 11' 0.0 ppm
15								End of Boring at 12 ftbg, due to refusal.		
20										
25										
30										

COMMENTS: Grab sample collected @ 10.5-11 ftbg for TCL VOCs.

Composite sample collected from 0-11 ftbg for waste characterization parameters.

Soil was classified in accordance with the Unified Soil Classification System (USCS).

PROJECT NO.: 15-008-0265

BORING NO.: SB-51

LiRo Engineers, Inc.

TEST BORING LOG

		BORING NO:	**SB-52**
PROJECT:	Construction of Storm Sewer in Idlewild Park, Springfield Ln. from Rockaway Blvd. to 224th St., Queens, NY	**SHEET:**	**1 of 1**
CLIENT:	Department of Design and Construction - OEGS - SE842A1	**JOB NO.:**	**15-008-0265**
BORING CONTRACTOR:	Associated Environmental Services, Ltd.	**LOCATION:**	**NA**
GROUNDWATER:	14'	**GROUND ELEVATION:**	**NA**
DATE STARTED:	**January 15, 2018**		
DATE FINISHED:	**January 22, 2018**		
DRILLER:	**John Weiss**		
GEOLOGIST:	**Eva Jakubowska**		
REVIEWED BY:			

DATE	TIME	LEVEL	TYPE	TYPE	CAS.	SAMPLER	TUBE
			NA	DIA.		5' Microcore	
				WT.			
				FALL			

DEPTH FEET	SAMPLE STRATA	"S" NO.	"N" NO.	BLOWS PER 6"	REC% RQD%	DESCRIPTION COLOR	CONSISTENCY HARDNESS	MATERIAL DESCRIPTION	USCS	REMARKS
1										
										Hand cleared to 6 ftbg
										0.0 ppm
6					NA	Black	Dense	0-6': Fine to medium Sand and fill material (red brick, asphalt, glass pieces, and tires at ~2.5').		Moist
					50%	Dark brown	Dense	6-10': Fine to medium Sand and fill material.	FILL	Moist
10										0.0 ppm
					90%	Dark brown to black	Dense	10-15': Fine to medium Sand and fill material.		Wet at 14'
										0.0 ppm
15										
								End of Boring at 15 ftbg		
20										
25										
30										

COMMENTS: Grab sample collected @ 13.5-14 ftbg for TCL VOCs.

Composite sample collected from 0-14 ftbg for waste characterization parameters.

Soil was classified in accordance with the Unified Soil Classification System (USCS).

PROJECT NO.: 15-008-0265

BORING NO.: SB-52

LiRo Engineers, Inc.

TEST BORING LOG

		BORING NO:	**SB-53**
PROJECT:	Construction of Storm Sewer in Idlewild Park, Springfield Ln. from Rockaway Blvd. to 224th St., Queens, NY	**SHEET:**	**1 of 1**
CLIENT:	Department of Design and Construction - OEGS - SE842A1	**JOB NO.:**	**15-008-0265**
BORING CONTRACTOR:	Associated Environmental Services, Ltd.	**LOCATION:**	**NA**
GROUNDWATER:	14'	**GROUND ELEVATION:**	**NA**
DATE STARTED:	**January 15, 2018**		
DATE FINISHED:	**January 22, 2018**		
DRILLER:	**John Weiss**		
GEOLOGIST:	**Eva Jakubowska**		
REVIEWED BY:			

DATE	TIME	LEVEL	TYPE	TYPE	CAS.	SAMPLER	TUBE
			NA	DIA.		5' Microcore	
				WT.			
				FALL			

DEPTH FEET	SAMPLE STRATA	"S" NO.	"N" NO.	BLOWS PER 6"	REC% RQD%	COLOR	CONSISTENCY HARDNESS	MATERIAL DESCRIPTION	USCS	REMARKS
1					NA	Dark brown	Dense	0-6': Fine to medium Sand and fill material (red brick, asphalt, glass pieces, and tires at ~2.5').	FILL	Hand cleared to 6 ftbg 0.0 ppm Moist
6					80%	Dark brown to black	Dense	6-10': Fine to medium Sand and fill material.		Moist 0.0 ppm
10					50%	Dark brown to greyish brown	Dense	10-14': Fine to medium Sand and fill material.		Wet at 14' 0.0 ppm
15								14-15': Peat	PT	
20								End of Boring at 15 ftbg		
25										
30										

COMMENTS: Grab sample collected @ 13.5-14 ftbg for TCL VOCs.

Composite sample collected from 0-14 ftbg for waste characterization parameters.

Soil was classified in accordance with the Unified Soil Classification System (USCS).

PROJECT NO.: 15-008-0265

BORING NO.: SB-53

LiRo Engineers, Inc.

TEST BORING LOG

		BORING NO:	**SB-54**
PROJECT:	Construction of Storm Sewer in Idlewild Park, Springfield Ln. from Rockaway Blvd. to 224th St., Queens, NY	**SHEET:**	**1 of 1**
CLIENT:	Department of Design and Construction - OEGS - SE842A1	**JOB NO.:**	**15-008-0265**
BORING CONTRACTOR:	Associated Environmental Services, Ltd.	**LOCATION:**	**NA**
GROUNDWATER:	14'	**GROUND ELEVATION:**	**NA**

DATE	TIME	LEVEL	TYPE	TYPE	CAS.	SAMPLER	TUBE
			NA	**DIA.**		5' Microcore	
				WT.			
				FALL			

DATE STARTED:	**January 16, 2018**
DATE FINISHED:	**January 22, 2018**
DRILLER:	**John Weiss**
GEOLOGIST:	**Eva Jakubowska**
REVIEWED BY:	

DEPTH FEET	SAMPLE STRATA	"S" NO.	"N" NO.	BLOWS PER 6"	REC% RQD%	DESCRIPTION COLOR	CONSISTENCY HARDNESS	MATERIAL DESCRIPTION	USCS	REMARKS
1					NA	Dark brown	Dense	0-6': Fine to medium Sand and fill material (red brick, asphalt, glass pieces, and tires at ~2.5').	FILL	Hand cleared to 6 ftbg 0.0 ppm Moist
6					30%	Dark brown	Dense	6-10': Fine to medium Sand and fill material.		Moist 0.0 ppm
10					40%	Dark brown	Dense	10-15': Fine to medium Sand and fill material.		Wet at 14' 0.0 ppm
15								End of Boring at 15 ftbg		
20										
25										
30										

COMMENTS: Grab sample collected @ 13.5-14 ftbg for TCL VOCs.

Composite sample collected from 0-14 ftbg for waste characterization parameters.

Soil was classified in accordance with the Unified Soil Classification System (USCS).

PROJECT NO.: 15-008-0265

BORING NO.: SB-54

LiRo Engineers, Inc.

TEST BORING LOG

		BORING NO:	**SB-55**
PROJECT:	Construction of Storm Sewer in Idlewild Park, Springfield Ln. from Rockaway Blvd. to 224th St., Queens, NY	**SHEET:**	**1 of 1**
CLIENT:	Department of Design and Construction - OEGS - SE842A1	**JOB NO.:**	**15-008-0265**
BORING CONTRACTOR:	Associated Environmental Services, Ltd.	**LOCATION:**	**NA**
GROUNDWATER:	9'	**GROUND ELEVATION:**	**NA**

DATE	TIME	LEVEL	TYPE	TYPE	CAS.	SAMPLER	TUBE
			NA	**DIA.**		5' Microcore	
				WT.			
				FALL			

DATE STARTED:	**January 16, 2018**
DATE FINISHED:	**January 22, 2018**
DRILLER:	**John Weiss**
GEOLOGIST:	**Eva Jakubowska**
REVIEWED BY:	

DEPTH FEET	SAMPLE STRATA	"S" NO.	"N" NO.	BLOWS PER 6"	REC% RQD%	DESCRIPTION COLOR	CONSISTENCY HARDNESS	MATERIAL DESCRIPTION	USCS	REMARKS
1					NA	Dark brown	Dense	0-6': Fine to medium Sand and fill material (red brick, asphalt, glass pieces, and tires at ~2.5').	FILL	Hand cleared to 6 ftbg 0.0 ppm Moist
6					60%	Black	Dense	6-10': Fine to medium Sand and fill material.		Wet at 9' 0.0 ppm
10					50%	Black to dark brown	Dense	10-15': Fine to medium Sand and fill material.		Wet 0.0 ppm
15								End of Boring at 15 ftbg		
20										
25										
30										

COMMENTS: Grab sample collected @ 8.5-9 ftbg for TCL VOCs.

Composite sample collected from 0-9 ftbg for waste characterization parameters.

Soil was classified in accordance with the Unified Soil Classification System (USCS).

PROJECT NO.: 15-008-0265

BORING NO.: SB-55

LiRo Engineers, Inc.

TEST BORING LOG

		BORING NO:	**SB-56**
PROJECT:	Construction of Storm Sewer in Idlewild Park, Springfield Ln. from Rockaway Blvd. to 224th St., Queens, NY	**SHEET:**	**1 of 1**
CLIENT:	Department of Design and Construction - OEGS - SE842A1	**JOB NO.:**	**15-008-0265**
BORING CONTRACTOR:	Associated Environmental Services, Ltd.	**LOCATION:**	**NA**
GROUNDWATER:	14'	**GROUND ELEVATION:**	**NA**
DATE STARTED:	**January 16, 2018**		
DATE FINISHED:	**January 22, 2018**		
DRILLER:	**John Weiss**		
GEOLOGIST:	**Eva Jakubowska**		
REVIEWED BY:			

DATE	TIME	LEVEL	TYPE	TYPE	CAS.	SAMPLER	TUBE
			NA	DIA.		5' Microcore	
				WT.			
				FALL			

DEPTH FEET	SAMPLE STRATA	"S" NO.	"N" NO.	BLOWS PER 6"	REC% RQD%	DESCRIPTION COLOR	CONSISTENCY HARDNESS	MATERIAL DESCRIPTION	USCS	REMARKS
1					NA	Dark brown	Dense	0-6': Fine to medium Sand and fill material (red brick, asphalt, and glass pieces).	FILL	Hand cleared to 6 ftbg 0.0 ppm Moist
6					80%	Orange brown	Medium loose	6-10': Fine to medium Sand and fill material.		Moist 0.0 ppm
10					80%	Orange brown to grey	Medium loose	10-15': Fine to medium Sand and fill material.		Wet at 14' 0.0 ppm
15								End of Boring at 15 ftbg		
20										
25										
30										

COMMENTS: Grab sample collected @ 13.5-14 ftbg for TCL VOCs.

Composite sample collected from 0-14 ftbg for waste characterization parameters.

Soil was classified in accordance with the Unified Soil Classification System (USCS).

PROJECT NO.: 15-008-0265

BORING NO.: SB-56

LiRo Engineers, Inc.

TEST BORING LOG

		BORING NO:	**SB-57**
PROJECT:	Construction of Storm Sewer in Idlewild Park, Springfield Ln. from Rockaway Blvd. to 224th St., Queens, NY	**SHEET:**	**1 of 1**
CLIENT:	Department of Design and Construction - OEGS - SE842A1	**JOB NO.:**	**15-008-0265**
BORING CONTRACTOR:	Associated Environmental Services, Ltd.	**LOCATION:**	**NA**
GROUNDWATER:	11'	**GROUND ELEVATION:**	**NA**

DATE	TIME	LEVEL	TYPE	TYPE	CAS.	SAMPLER	TUBE
			NA	**DIA.**			
				WT.			
				FALL			

DATE STARTED:	**January 16, 2018**
DATE FINISHED:	**January 16, 2018**
DRILLER:	**John Weiss**
GEOLOGIST:	**Eva Jakubowska**
REVIEWED BY:	

DEPTH FEET	SAMPLE STRATA	"S" NO.	"N" NO.	BLOWS PER 6"	REC% RQD%	DESCRIPTION COLOR	CONSISTENCY HARDNESS	MATERIAL DESCRIPTION	USCS	REMARKS
1						Brown to burgundy	Medium loose	0-6': Fine to medium Sand and gravel.	SW	Hand cleared to 13 ftbg 0.0 ppm Moist
6					NA					
10						Yellow	Loose	6-10': Fine to medium Sand, trace of gravel.		Moist 0.0 ppm
13						Yellow to light brown	Loose	10-13': Fine to medium Sand, some gravel.		Wet at 11' 0.0 ppm
15								End of Boring at 13 ftbg		
20										
25										
30										

COMMENTS: Grab sample collected @ 10.5-11 ftbg for TCL VOCs.

Composite sample collected from 0-11 ftbg for waste characterization parameters.

Soil was classified in accordance with the Unified Soil Classification System (USCS).

PROJECT NO.: 15-008-0265

BORING NO.: SB-57

LiRo Engineers, Inc.

TEST BORING LOG

		BORING NO:	**SB-58**
PROJECT:	Construction of Storm Sewer in Idlewild Park, Springfield Ln. from Rockaway Blvd. to 224th St., Queens, NY	**SHEET:**	**1 of 1**
CLIENT:	Department of Design and Construction - OEGS - SE842A1	**JOB NO.:**	**15-008-0265**
BORING CONTRACTOR:	Associated Environmental Services, Ltd.	**LOCATION:**	**NA**
GROUNDWATER:	10'	**GROUND ELEVATION:**	**NA**
DATE STARTED:	**January 22, 2018**		
DATE FINISHED:	**January 22, 2018**		
DRILLER:	**John Weiss**		
GEOLOGIST:	**Eva Jakubowska**		
REVIEWED BY:			

DATE	TIME	LEVEL	TYPE	TYPE	CAS.	SAMPLER	TUBE
			NA	**DIA.**			
				WT.			
				FALL			

DEPTH FEET	SAMPLE STRATA	"S" NO.	"N" NO.	BLOWS PER 6"	REC% RQD%	DESCRIPTION COLOR	CONSISTENCY HARDNESS	MATERIAL DESCRIPTION	USCS	REMARKS
1						Brown to yellow brown	Medium loose	0-6': Fine to medium Sand, trace of gravel.	SW	Hand cleared to 10 ftbg 0.0 ppm Moist
6					NA					
						Yellowish-brown	Loose	6-10': Fine to medium Sand and gravel.		Wet at 10' 0.0 ppm
10										
								End of Boring at 10 ftbg		
15										
20										
25										
30										

COMMENTS: Grab sample collected @ 9.5-10 ftbg for TCL VOCs.

Composite sample collected from 0-10 ftbg for waste characterization parameters.

Soil was classified in accordance with the Unified Soil Classification System (USCS).

PROJECT NO.: 15-008-0265

BORING NO.: SB-58

LiRo Engineers, Inc.

TEST BORING LOG

		BORING NO:	**SB-59**
PROJECT:	Construction of Storm Sewer in Idlewild Park, Springfield Ln. from Rockaway Blvd. to 224th St., Queens, NY	**SHEET:**	**1 of 1**
CLIENT:	Department of Design and Construction - OEGS - SE842A1	**JOB NO.:**	**15-008-0265**
BORING CONTRACTOR:	Associated Environmental Services, Ltd.	**LOCATION:**	**NA**
GROUNDWATER:	Not detect	**GROUND ELEVATION:**	**NA**
		DATE STARTED:	**January 22, 2018**
		DATE FINISHED:	**January 22, 2018**
		DRILLER:	**John Weiss**
		GEOLOGIST:	**Eva Jakubowska**
		REVIEWED BY:	

DATE	TIME	LEVEL	TYPE	TYPE	CAS.	SAMPLER	TUBE
			NA	**DIA.**			
				WT.			
				FALL			

DEPTH FEET	SAMPLE STRATA	"S" NO.	"N" NO.	BLOWS PER 6"	REC% RQD%	DESCRIPTION COLOR	CONSISTENCY HARDNESS	MATERIAL DESCRIPTION	USCS	REMARKS
1						Brown to beige	Loose	0-6': Fine to medium Sand, small gravel.	SW	Hand cleared to 10 ftbg 0.0 ppm Moist
6					NA					
						Beige	Loose	6-10': Fine to medium Sand and gravel.		Moist 0.0 ppm
10										
								End of Boring at 10 ftbg due to refusal.		
15										
20										
25										
30										

COMMENTS: Grab sample collected @ 9.5-10 ftbg for TCL VOCs.

Composite sample collected from 0-10 ftbg for waste characterization parameters.

Soil was classified in accordance with the Unified Soil Classification System (USCS).

PROJECT NO.: 15-008-0265

BORING NO.: SB-59

LiRo Engineers, Inc.

TEST BORING LOG

		BORING NO:	**SB-60**
PROJECT:	Construction of Storm Sewer in Idlewild Park, Springfield Ln. from Rockaway Blvd. to 224th St., Queens, NY	**SHEET:**	**1 of 1**
CLIENT:	Department of Design and Construction - OEGS - SE842A1	**JOB NO.:**	**15-008-0265**
BORING CONTRACTOR:	Associated Environmental Services, Ltd.	**LOCATION:**	**NA**
GROUNDWATER:	10'	**GROUND ELEVATION:**	**NA**
DATE STARTED:	**January 18, 2018**		
DATE FINISHED:	**January 19, 2018**		
DRILLER:	**John Weiss**		
GEOLOGIST:	**Eva Jakubowska**		
REVIEWED BY:			

DATE	TIME	LEVEL	TYPE	TYPE	CAS.	SAMPLER	TUBE
			NA	**DIA.**		5' Microcore	
				WT.			
				FALL			

DEPTH FEET	SAMPLE STRATA	"S" NO.	"N" NO.	BLOWS PER 6"	REC% RQD%	DESCRIPTION COLOR	CONSISTENCY HARDNESS	MATERIAL DESCRIPTION	USCS	REMARKS
1					NA	Dark brown	Medium loose	0-6': Fine to medium Sand, gravel and fill material (red brick and glass pieces).	FILL	Hand cleared to 6 ftbg 0.0 ppm Moist
6										
					65%	Brown	Medium loose	6-10': Fine to medium Sand and fill materal.		wet at 10' 0.0 ppm
10										
								End of Boring at 10 ftbg		
15										
20										
25										
30										

COMMENTS: Grab sample collected at 9.5-10 ftbg for TCL VOCs.

Composite sample collected from 0-10 ftbg for waste characterization parameters.

Soil was classified in accordance with the Unified Soil Classification System (USCS).

PROJECT NO.: 15-008-0265

BORING NO.: SB-60

LiRo Engineers, Inc.

TEST BORING LOG

BORING NO: MW-01

PROJECT: Construction of Storm Sewer in Idlewild Park, Springfield Ln. from Rockaway Blvd. to 224th St., Queens, NY

SHEET: 1 of 1

CLIENT: Department of Design and Construction - OEGS - SE842A1

JOB NO.: 15-008-0265

BORING CONTRACTOR: Associated Environmental Services, Ltd.

LOCATION: North side of Park

GROUNDWATER: 13'

GROUND ELEVATION: NA

DATE	TIME	LEVEL	TYPE	TYPE	CAS.	SAMPLER	TUBE
			NA	DIA.			
				WT.			
				FALL			

DATE STARTED: January 24, 2018

DATE FINISHED: January 24, 2018

DRILLER: John Weiss

GEOLOGIST: Eva Jakubowska

REVIEWED BY:

DEPTH FEET	SAMPLE STRATA	SAMPLE "S" NO.	SAMPLE "N" NO.	SAMPLE BLOWS PER 6"	REC% RQD%	DESCRIPTION COLOR	DESCRIPTION CONSISTENCY HARDNESS	DESCRIPTION MATERIAL DESCRIPTION	USCS	REMARKS
1 – 6					NA	Dark brown	Dense	0-6': Fine to medium Sand and fill material (red brick, glass, ceramic pieces, concrete).	FILL	Hand cleared to 6 ftbg 0.0 ppm
6 – 10					60%	Dark brown	Dense	6-10': Fine to medium Sand and fill material (red brick, glass, ceramic pieces, concrete).		0.0 ppm Moist
10 – 15					75%	Dark brown	Medium loose	10-15': Fine to medium Sand.	SW	0.0 ppm Moist
15 – 20					90%	Brown	Medium loose	15-20': Fine to medium Sand.		0.0 ppm Wet
20 – 25					45%	Brown	Medium Loose	20-23': Fine to medium Sand.		0.0 ppm Wet
25 – 30								End of boring at 23 ftbg		

COMMENTS:

PROJECT NO.: 15-008-0265

BORING NO.: MW-01

LiRo Engineers, Inc.

TEST BORING LOG

		BORING NO:	**MW-03**
PROJECT:	Construction of Storm Sewer in Idlewild Park, Springfield Ln. from Rockaway Blvd. to 224th St., Queens, NY	**SHEET:**	**1 of 1**
CLIENT:	Department of Design and Construction - OEGS - SE842A1	**JOB NO.:**	**15-008-0265**
BORING CONTRACTOR:	Associated Environmental Services, Ltd.	**LOCATION:**	**Springfield Ln.**
GROUNDWATER:	3.5'	**GROUND ELEVATION:**	**NA**
		DATE STARTED:	**January 24, 2018**
		DATE FINISHED:	**January 24, 2018**
		DRILLER:	**John Weiss**
		GEOLOGIST:	**Eva Jakubowska**
		REVIEWED BY:	

DATE	TIME	LEVEL	TYPE	TYPE	CAS.	SAMPLER	TUBE
			NA	**DIA.**			
				WT.			
				FALL			

DEPTH FEET	SAMPLE STRATA	"S" NO.	"N" NO.	BLOWS PER 6"	REC% RQD%	DESCRIPTION COLOR	CONSISTENCY HARDNESS	MATERIAL DESCRIPTION	USCS	REMARKS
1					NA	Dark brown to orange brown	Medium loose	0-5': Fine to medium Sand, tree roots and fill material (red brick pieces).	FILL	Hand cleared to 3.5 ftbg 0.0 ppm, Wet at 3.5'
5										
10					100%	Orange brown	Loose	5-10': Fine to medium Sand, trace of gravel.	SW	0.0 ppm Wet
12					30%	Orange brown	Loose	10-12': Fine to medium Sand.		0.0 ppm Wet
15								End of Boring at 12 ftbg		
20										
25										
30										

COMMENTS:

PROJECT NO.: 15-008-0265

BORING NO.: MW-03

LiRo Engineers, Inc.

TEST BORING LOG

		BORING NO:	**MW-04**
PROJECT:	Construction of Storm Sewer in Idlewild Park, Springfield Ln. from Rockaway Blvd. to 224th St., Queens, NY	**SHEET:**	**1 of 1**
CLIENT:	Department of Design and Construction - OEGS - SE842A1	**JOB NO.:**	**15-008-0265**
BORING CONTRACTOR:	Associated Environmental Services, Ltd.	**LOCATION:**	**Springfield Ln. by Pond**
GROUNDWATER:	9'	**GROUND ELEVATION:**	**NA**
DATE STARTED:	**January 23, 2018**		
DATE FINISHED:	**January 23, 2018**		
DRILLER:	**John Weiss**		
GEOLOGIST:	**Eva Jakubowska**		
REVIEWED BY:			

DATE	TIME	LEVEL	TYPE	TYPE	CAS.	SAMPLER	TUBE
			NA	DIA.			
				WT.			
				FALL			

DEPTH FEET	SAMPLE STRATA	"S" NO.	"N" NO.	BLOWS PER 6"	REC% RQD%	DESCRIPTION COLOR	CONSISTENCY HARDNESS	MATERIAL DESCRIPTION	USCS	REMARKS
1					NA	Dark brown to brown	Medium loose	0-6': Fine to medium Sand, some gravel.	SW	Hand cleared to 6 ftbg 0.0 ppm
6					90%	Brown	Medium loose	6-10': Fine to medium Sand.		0.0 ppm Wet at 9'
10					100%	Brown	Medium loose	10-15': Fine to medium Sand.		0.0 ppm Wet
15					80%	Brown	Medium loose	15-20': Fine to medium Sand.		0.0 ppm Wet
20								End of Boring at 20 ftbg		
25										
30										

COMMENTS:

PROJECT NO.: 15-008-0265

BORING NO.: MW-04

LiRo Engineers, Inc.

TEST BORING LOG

		BORING NO:	**MW-05**
PROJECT:	Construction of Storm Sewer in Idlewild Park, Springfield Ln. from Rockaway Blvd. to 224th St., Queens, NY	**SHEET:**	**1 of 1**
CLIENT:	Department of Design and Construction - OEGS - SE842A1	**JOB NO.:**	**15-008-0265**
BORING CONTRACTOR:	Associated Environmental Services, Ltd.	**LOCATION:**	**Springfield Ln.**
GROUNDWATER:	3'	**GROUND ELEVATION:**	**NA**
DATE STARTED:			**January 23, 2018**
DATE FINISHED:			**January 23, 2018**
DRILLER:			**John Weiss**
GEOLOGIST:			**Eva Jakubowska**
REVIEWED BY:			

DATE	TIME	LEVEL	TYPE	TYPE	CAS.	SAMPLER	TUBE
			NA	**DIA.**			
				WT.			
				FALL			

DEPTH FEET	SAMPLE STRATA	"S" NO.	"N" NO.	BLOWS PER 6"	REC% RQD%	DESCRIPTION COLOR	CONSISTENCY HARDNESS	MATERIAL DESCRIPTION	USCS	REMARKS
1					NA	Brown to orange brown	Loose	0-5': Fine to medium Sand.	SW	Hand cleared to 3 ftbg 0.0 ppm, Wet at 3'
5					100%	Orange brown	Loose	5-10': Fine to medium Sand.		0.0 ppm Wet
10					40%	Orange brown	Loose	10-12': Fine to medium Sand.		0.0 ppm Wet
12								End of Boring at 12 ftbg		
15										
20										
25										
30										

COMMENTS:

PROJECT NO.: 15-008-0265

BORING NO.: MW-05

LiRo Engineers, Inc.

TEST BORING LOG

		BORING NO:	**MW-07**
PROJECT:	Construction of Storm Sewer in Idlewild Park, Springfield Ln. from Rockaway Blvd. to 224th St., Queens, NY	**SHEET:**	**1 of 1**
CLIENT:	Department of Design and Construction - OEGS - SE842A1	**JOB NO.:**	**15-008-0265**
BORING CONTRACTOR:	Associated Environmental Services, Ltd.	**LOCATION:**	**South End by Rockaway Blvd.**
GROUNDWATER:	11'	**GROUND ELEVATION:**	**NA**
DATE STARTED:	**January 23, 2018**		
DATE FINISHED:	**January 23, 2018**		
DRILLER:	**John Weiss**		
GEOLOGIST:	**Eva Jakubowska**		
REVIEWED BY:			

DATE	TIME	LEVEL	TYPE	TYPE	CAS.	SAMPLER	TUBE
			NA	DIA.			
				WT.			
				FALL			

DEPTH FEET	SAMPLE STRATA	"S" NO.	"N" NO.	BLOWS PER 6"	REC% RQD%	DESCRIPTION COLOR	CONSISTENCY HARDNESS	MATERIAL DESCRIPTION	USCS	REMARKS
1					NA	Brown to burgundy	Medium loose	0-6': Fine Sand, trace of gravel.	SW	Hand cleared to 6 ftbg 0.0 ppm
6					75%	Yellow	Medium loose	6-10': Fine to medium Sand, tace of gravel.		0.0 ppm Moist
10					90%	Yellow to light brown	Medium loose	10-15': Fine to medium Sand, some gravel.		0.0 ppm Wet at 11'
15					60%	Light brown	Medium loose	15-18': Fine to medium Sand.		0.0 ppm Wet
18										
20								End of Boring at 18 ftbg		
25										
30										

COMMENTS:

PROJECT NO.: 15-008-0265

BORING NO.: MW-07

LiRo Engineers, Inc.

TEST BORING LOG

		BORING NO:	**MW-08**
PROJECT:	Construction of Storm Sewer in Idlewild Park, Springfield Ln. from Rockaway Blvd. to 224th St., Queens, NY	**SHEET:**	**1 of 1**
CLIENT:	Department of Design and Construction - OEGS - SE842A1	**JOB NO.:**	**15-008-0265**
BORING CONTRACTOR:	Associated Environmental Services, Ltd.	**LOCATION:**	**South End by Rockaway Blvd.**
GROUNDWATER:	12'	**GROUND ELEVATION:**	**NA**
DATE STARTED:			**January 24, 2018**
DATE FINISHED:			**January 24, 2018**
DRILLER:			**John Weiss**
GEOLOGIST:			**Eva Jakubowska**
REVIEWED BY:			

DATE	TIME	LEVEL	TYPE	TYPE	CAS.	SAMPLER	TUBE
			NA	**DIA.**			
				WT.			
				FALL			

DEPTH FEET	SAMPLE STRATA	"S" NO.	"N" NO.	BLOWS PER 6"	REC% RQD%	DESCRIPTION COLOR	CONSISTENCY HARDNESS	MATERIAL DESCRIPTION	USCS	REMARKS
1 – 6					NA	Dark brown	Dense	0-6': Fine to medium Sand and fill material (red brick, glass, ceramic pieces, concrete).	FILL	Hand cleared to 6 ftbg 0.0 ppm
6 – 10					90%	Dark brown	Dense	6-10': Fine to medium Sand and fill material (red brick, glass, ceramic pieces, concrete).		0.0 ppm Moist
10 – 15					85%	Dark brown to brown	Dense	6-10': Fine to medium Sand and fill material (red brick, glass, ceramic pieces, concrete).		0.0 ppm Wet at 12'
15 – 20					100%	Brown	Dense	15-20': Fine to medium Sand, some gravel.	SW	0.0 ppm Wet
20 – 22					30%	Brown	Medium Loose	20-22': Fine to medium Sand and gravel.		0.0 ppm Wet
22 – 25								End of boring at 22 ftbg		

COMMENTS:

PROJECT NO.: 15-008-0265

BORING NO.: MW-08

DRILLING SUMMARY

Geolgist:
Eva Jakubowska

Drilling Company:
Associated Environmental Services, Ltd.

Driller:
John Weiss

Rig Make/Model:
Geoprobe

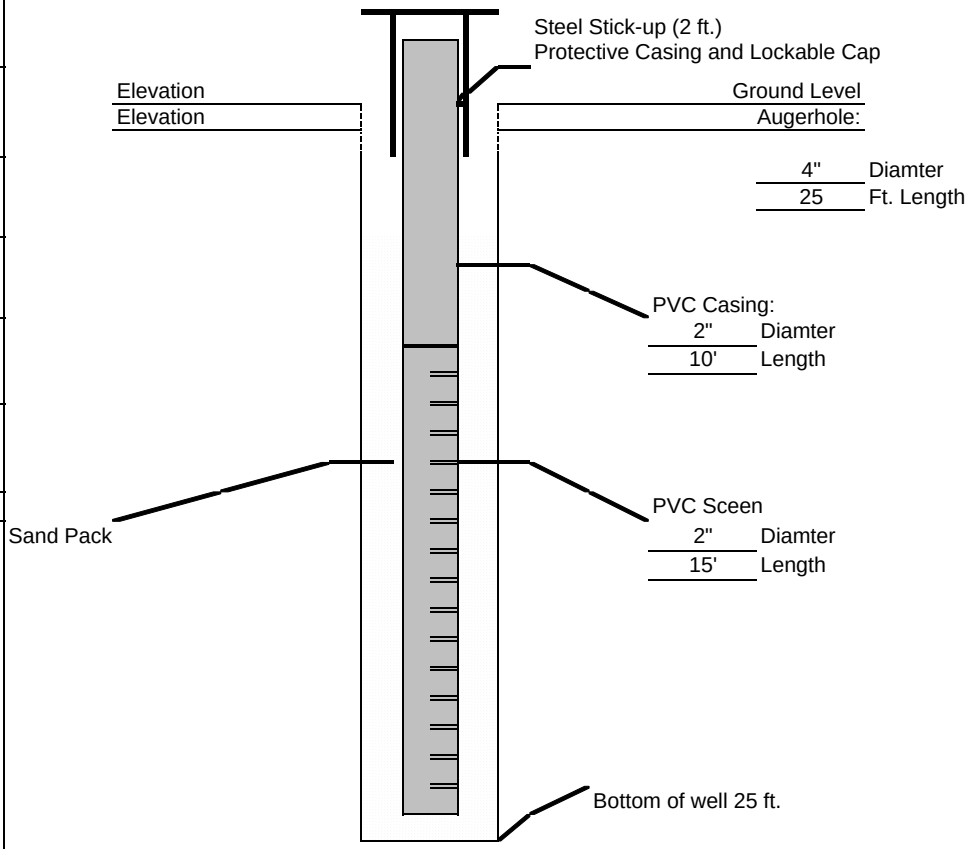
Date:
1/24/2018

GEOLOGIC LOG

Depth (ft.)	Desricption
	See well boring logs

WELL DESIGN

MONITORING WELL CONSTRUCTION LOG



NOT TO SCALE

CASING MATERIAL	*SCREEN MATERIAL*	*FILL MATERIAL*
Surface: Steel stick up Box	Type: Scheule 40 PVC	Type: NO. 2 Setting: 23' - 6'
Monitor: Scheule 40 PVC	Slot Diamter: 0.010	*SEAL MATERIAL* Type: Bentonite Chips Setting: NA Type: Concrete Pad Setting: NA

COMMENTS:
Groundwater noted at approximatley 13 ftbg

LEGEND:
- PVC Casing
- PVC Screen
- No.2 Sand Pack

CLIENT:	**LOCATION:**	Project No.
NYCDDC	Idlewild Park, Queens, NY	15-008-0265
LiRo Engineers, Inc.	**Monitoring Well Construction Details**	*Well Number:* **MW-01**

DRILLING SUMMARY

Geolgist:
Eva Jakubowska

Drilling Company:
Associated Environmental Services, Ltd.

Driller:
John Weiss

Rig Make/Model:
Geoprobe

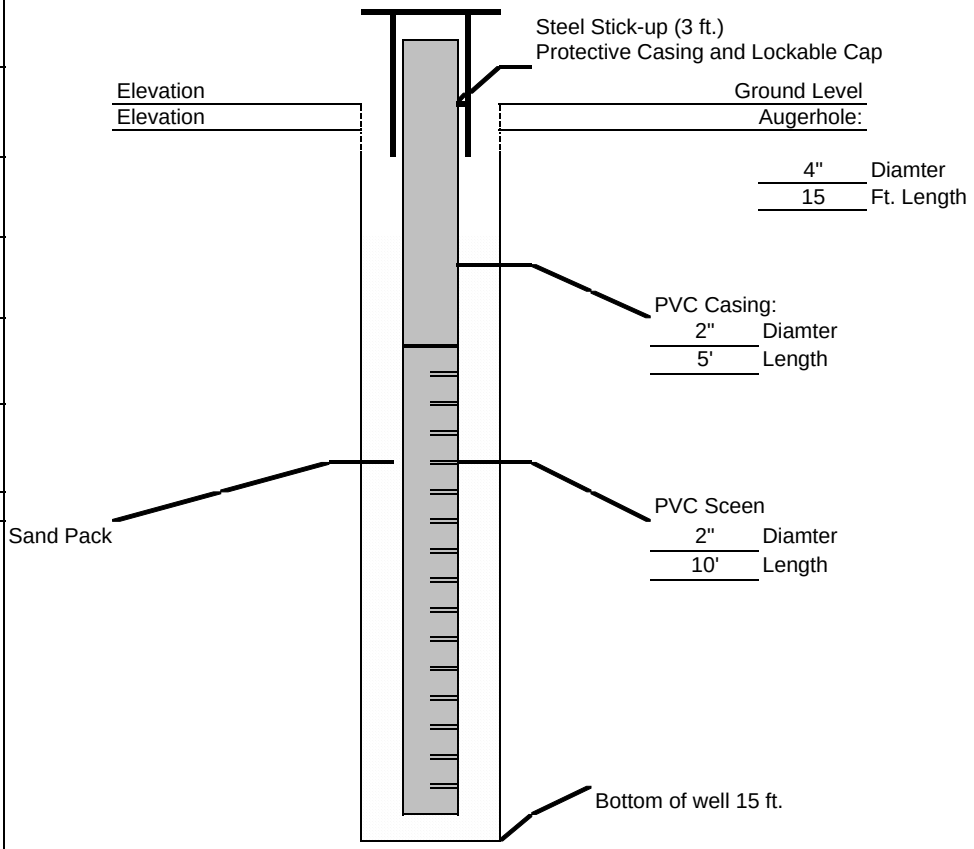
Date:
1/24/2018

GEOLOGIC LOG

Depth (ft.)	Desricption
	See well boring logs

WELL DESIGN

MONITORING WELL CONSTRUCTION LOG



NOT TO SCALE

CASING MATERIAL	*SCREEN MATERIAL*	*FILL MATERIAL*
Surface: Steel stick up Box	Type: Scheule 40 PVC	Type: NO. 2 Setting: 12'-1'
Monitor: Scheule 40 PVC	Slot Diamter: 0.010	*SEAL MATERIAL* Type: Bentonite Chips Setting: NA Type: Concrete Pad Setting: NA

COMMENTS:
Groundwater noted at approximatley 3.5 ftbg

LEGEND:
- PVC Casing
- PVC Screen
- No.2 Sand Pack

CLIENT:	**LOCATION:**	Project No.
NYCDDC	Idlewild Park, Queens, NY	15-008-0265
LiRo Engineers, Inc.	**Monitoring Well Construction Details**	*Well Number:* **MW-03**

DRILLING SUMMARY

Geolgist:
Eva Jakubowska

Drilling Company:
Associated Environmental Services, Ltd.

Driller:
John Weiss

Rig Make/Model:
Geoprobe

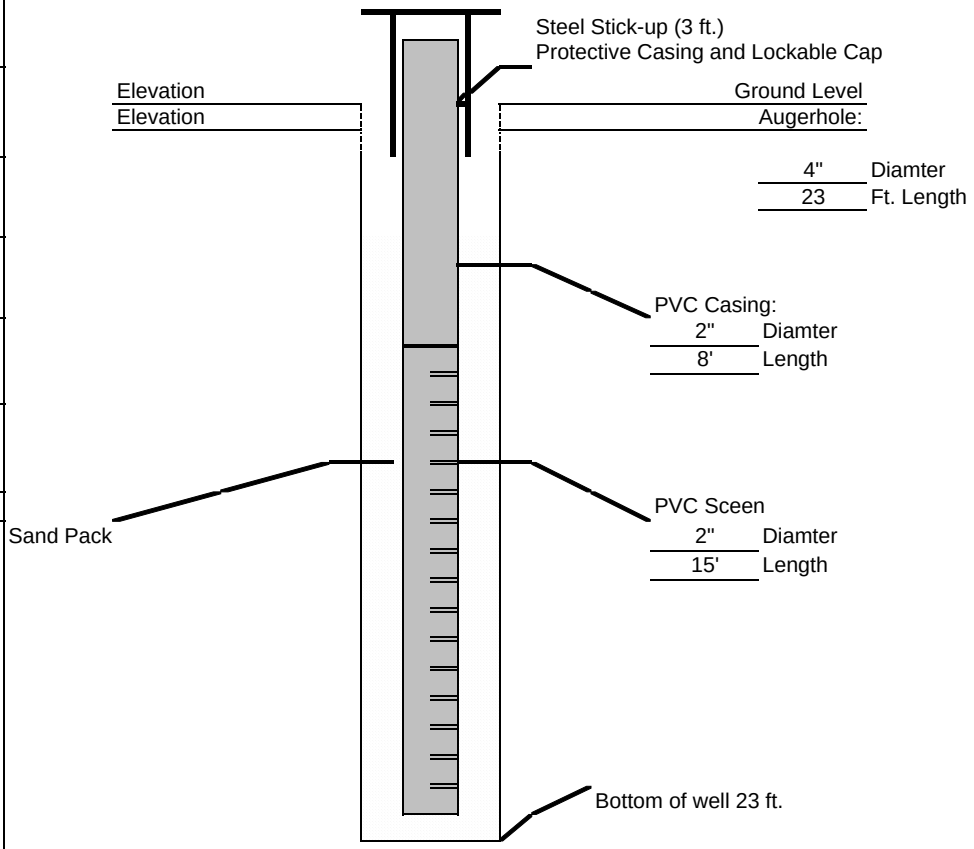
Date:
1/23/2018

GEOLOGIC LOG

Depth (ft.)	Desricption
	See well boring logs

WELL DESIGN

MONITORING WELL CONSTRUCTION LOG



NOT TO SCALE

CASING MATERIAL	*SCREEN MATERIAL*	*FILL MATERIAL*
Surface: Steel stick up Box	Type: Scheule 40 PVC	Type: NO. 2 Setting: 20'-4'
Monitor: Scheule 40 PVC	Slot Diamter: 0.010	*SEAL MATERIAL* Type: Bentonite Chips Setting: NA Type: Concrete Pad Setting: NA

COMMENTS:
Groundwater noted at approximatley 9 ftbg

LEGEND:
- PVC Casing
- PVC Screen
- No.2 Sand Pack

CLIENT:	**LOCATION:**	Project No.
NYCDDC	Idlewild Park, Queens, NY	15-008-0265
LiRo Engineers, Inc.	**Monitoring Well Construction Details**	*Well Number:* **MW-04**

DRILLING SUMMARY

Geolgist:
Eva Jakubowska

Drilling Company:
Associated Environmental Services, Ltd.

Driller:
John Weiss

Rig Make/Model:
Geoprobe

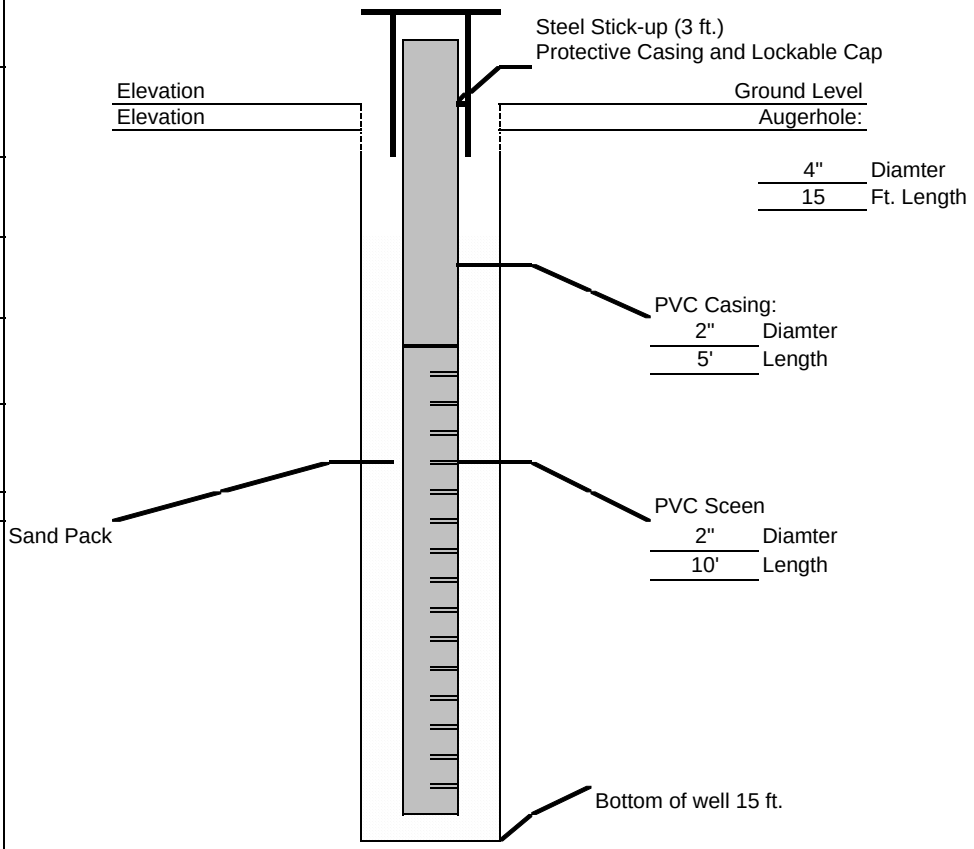
Date:
1/23/2018

GEOLOGIC LOG

Depth (ft.)	Desricption
	See well boring logs

WELL DESIGN

MONITORING WELL CONSTRUCTION LOG



NOT TO SCALE

CASING MATERIAL	*SCREEN MATERIAL*	*FILL MATERIAL*
Surface: Steel stick up Box	Type: Scheule 40 PVC	Type: NO. 2 Setting: 12'-1'
Monitor: Scheule 40 PVC	Slot Diamter: 0.010	*SEAL MATERIAL* Type: Bentonite Chips Setting: NA Type: Concrete Pad Setting: NA

COMMENTS:
Groundwater noted at approximatley 3 ftbg

LEGEND:
- PVC Casing
- PVC Screen
- No.2 Sand Pack

CLIENT:	**LOCATION:**	Project No.
NYCDDC	Idlewild Park, Queens, NY	15-008-0265
LiRo Engineers, Inc.	**Monitoring Well Construction Details**	*Well Number:* **MW-05**

DRILLING SUMMARY

Geolgist:
Eva Jakubowska

Drilling Company:
Associated Environmental Services, Ltd.

Driller:
John Weiss

Rig Make/Model:
Geoprobe

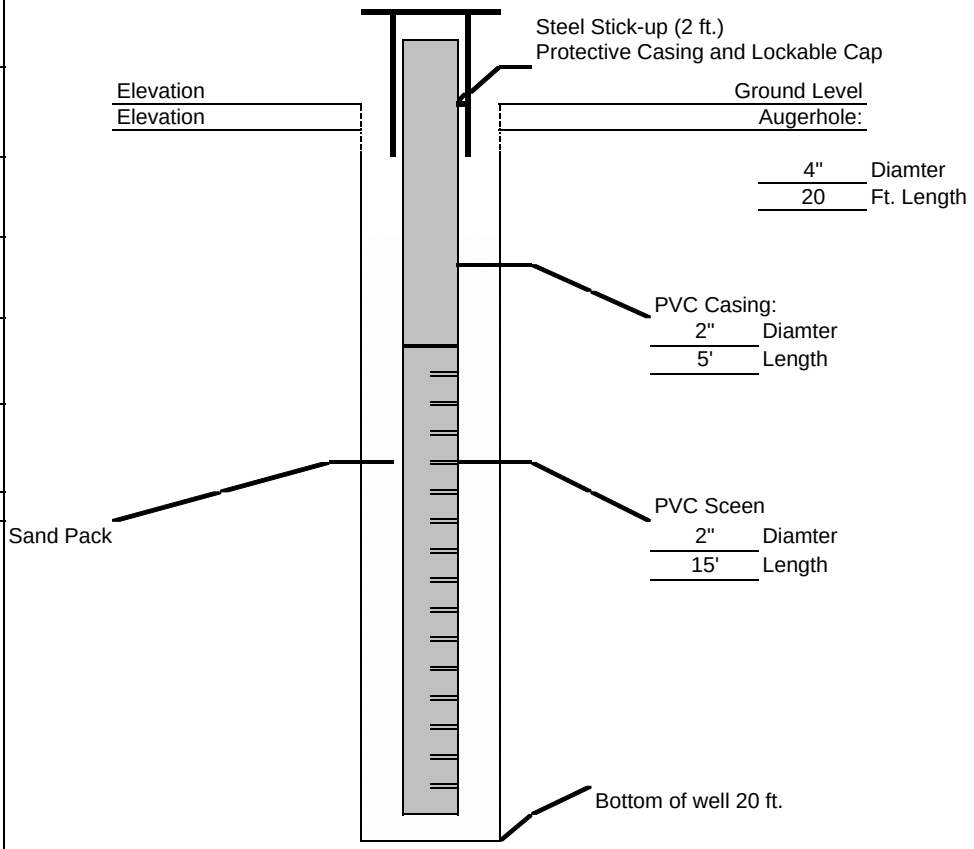
Date:
1/23/2018

GEOLOGIC LOG

Depth (ft.)	Desricption
	See well boring logs

WELL DESIGN

MONITORING WELL CONSTRUCTION LOG



NOT TO SCALE

CASING MATERIAL	*SCREEN MATERIAL*	*FILL MATERIAL*
Surface: Steel stick up Box	Type: Scheule 40 PVC	Type: NO. 2 Setting: 18'-2'
Monitor: Scheule 40 PVC	Slot Diamter: 0.010	*SEAL MATERIAL* Type: Bentonite Chips Setting: NA Type: Concrete Pad Setting: NA

COMMENTS:
Groundwater noted at approximatley 11 ftbg during low tide.

LEGEND:
- PVC Casing
- PVC Screen
- No.2 Sand Pack

CLIENT:	**LOCATION:**	Project No.
NYCDDC	Idlewild Park, Queens, NY	15-008-0265
LiRo Engineers, Inc.	**Monitoring Well Construction Details**	*Well Number:* **MW-07**

DRILLING SUMMARY

Geolgist:
Eva Jakubowska

Drilling Company:
Associated Environmental Services, Ltd.

Driller:
John Weiss

Rig Make/Model:
Geoprobe

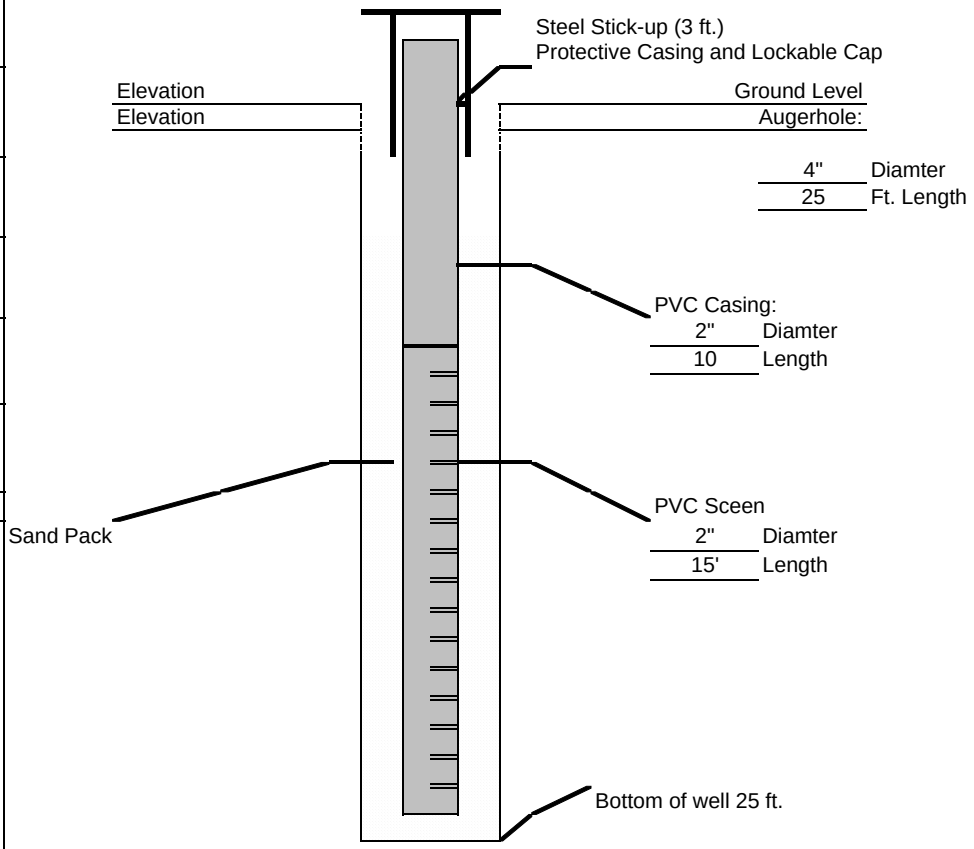
Date:
1/24/2018

GEOLOGIC LOG

Depth (ft.)	Desricption
	See well boring logs

WELL DESIGN

MONITORING WELL CONSTRUCTION LOG



NOT TO SCALE

CASING MATERIAL	*SCREEN MATERIAL*	*FILL MATERIAL*
Surface: Steel stick up Box	Type: Scheule 40 PVC	Type: NO. 2 Setting: 22'-6'
Monitor: Scheule 40 PVC	Slot Diamter: 0.010	*SEAL MATERIAL* Type: Bentonite Chips Setting: NA Type: Concrete Pad Setting: NA

COMMENTS:
Groundwater noted at approximatley 12 ftbg

LEGEND:
- PVC Casing
- PVC Screen
- No.2 Sand Pack

CLIENT:	**LOCATION:**	Project No.
NYCDDC	Idlewild Park, Queens, NY	15-008-0265
LiRo Engineers, Inc.	**Monitoring Well Construction Details**	*Well Number:* **MW-08**

APPENDIX B: 1939-1941 HISTORIC TAX PHOTOGRAPHS (NYC MUNICIPAL ARCHIVES)

Block 4625, Lot 20.

Block 4630, Lot 37.

APPENDIX C: 1966 BROOKVILLE PARK PHOTOGRAPHS (NYC PARKS)[1]

[1] Although these photographs are from a collection identified as Brookville Park it appears that at least some of them were taken in Idlewild Park.

32472_1_Q008_05-11-1966_Brookville Park, Dumping

32472_2_Q008_05-11-1966_Brookville Park, Dumping

32472_3_Q008_05-11-1966_Brookville Park, Dumping

32472_4_Q008_05-11-1966_Brookville Park, Dumping

32472_5_Q008_05-11-1966_Brookville Park, Dumping

32472_6_Q008_05-11-1966_Brookville Park, Dumping

32472_7_Q008_05-11-1966_Brookville Park, Dumping

32472_8_Q008_05-11-1966_Brookville Park, Dumping

32472_9_Q008_05-11-1966_Brookville Park, Dumping

32472_10_Q008_05-11-1966_Brookville Park, Dumping