Phase IA Archaeological Documentary Study
2390 McDonald Avenue Rezoning
Brooklyn, New York 11223
Block 7146, Lots 47, 48, 49 and 50

LPC Project Number:
Department of City Planning/ LA-CEQR-K

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EXECUTIVE SUMMARY

MTL LLC is applying for a zoning map amendment and a zoning text amendment to facilitate the development of a site located in the Gravesend neighborhood of Brooklyn Community District 15, in Kings County, New York (Figures 1 and 2). The rezoning area includes property known as Block 7146, Lots 47, 48, 49, and 50. Block 7146 is bounded by McDonald Avenue on the east, Village Road South on the south, Van Sicklen Street on the west, and Gravesend Neck Road on the north. The rezoning area lots are bounded by the Old Gravesend Cemetery on the north and west. Low rise commercial buildings border the rezoning site on the north, along McDonald Avenue. MTL, LLC, owns Block 7146, Lot 50, known as 2390 McDonald Avenue, but does not own Lots 47,48, and 49, which are currently under separate ownership and contain a mix of commercial and residential uses in three separate buildings.

With the approval of the rezoning actions, the applicant intends to develop a mixed-use building on Lot 50. The proposed development is a 91,606 gross square foot (gsf), 9-story building. The building would have a total height of 95ft and contain 84 dwelling units (73,923 gsf). Of these units, up to 25 would be reserved as moderate to low income units pursuant to the requirements of Mandatory Inclusionary Housing (MIH). In addition to residential uses the proposed development would also contain 17,683 gsf of commercial uses (local retail), and 190 accessory parking spaces in an attended underground garage accessible via car elevator.

As part of the City Environmental Quality Review (CEQR) process, the New York City Landmarks Preservation Commission (LPC) was contacted. The LPC responded that the project site, including all four lots, has archaeological significance. The LPC further stated:

> LPC review of archaeological sensitivity models and historic maps indicates that there is potential for the recovery of remains from colonial and Native American occupation, including the Gravesend cemetery 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 11/19/2020).

At the request of the project sponsors, Historical Perspectives, Inc. (HPI) has undertaken a Phase IA Archaeological Documentary Study of the project site in order to: 1) identify any potential archaeological resources that might have been present on the site, and 2) examine the construction history of the study site in order to estimate the probability that any such potential resources might have survived and remain on the site undisturbed. Although the project site includes all four lots, the Area of Potential Effect (APE) is limited at this time to Lot 50, which is owned by the applicant. This Phase IA Archaeological Assessment was prepared to satisfy the requirements of the CEQR process and complies with the standards of the LPC (LPC 2018).

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. In its natural state, the project site was on firm ground, located approximately 1300 feet north and east of the marshlands surrounding Coney Island Creek, and approximately 1800 feet north and east of the creek channel itself. The project site likely had a gentle slope in its predevelopment condition. Given these factors, during the precontact period, the project site would have been moderately sensitive for archaeological resources.

However, soil borings and historic maps and photographs indicate that there has been a substantial amount of disturbance to the natural landform during the historic era. The soil borings in particular indicate that most of the project site is covered by a thick mantle of fill or redeposited soil; natural soils beneath the fill appear to represent subsoil rather than the types of soils higher in the soil column which normally could contain precontact period archaeological materials. Based on these factors, HPI concludes that the project site now has a low precontact period archaeological sensitivity.

The project site is part of the historic village center of colonial Gravesend. The block including the project site was laid out in the 1640s, and it is likely there were structures on the property during the seventeenth and eighteenth centuries, although the precise locations of the buildings cannot be confirmed. The land was owned by members of the Stillwell family from the seventeenth through nineteenth centuries, who were descendants of Captain Nicholas Stillwell III, one of the first residents of Gravesend. By the 1830s, when the first detailed historic maps were made including the project site,

there was a building depicted on the property, likely a residence, and in subsequent years maps indicated there were additional structures, fronting McDonald Avenue and Village Road South. Members of the Stillwell family lived on the project site until it was sold after the turn of the twentieth century. During the early twentieth century, the project site contained a Borden's Milk Company facility, including several large outbuildings. Two of these buildings – and office and a barn – still survive on the project site, albeit surrounded by newer building segments. By the 1930s the entire project site was covered with buildings, including three brick row houses with basements fronting McDonald Avenue on Lots 47, 48, and 49.

Figure 21 illustrates the locations of the buildings with known basements on the project site, as well as the locations of the historic structures (three dwellings and two outbuildings) as of 1895, based on the Sanborn map from that year, which is among the most accurate of the historic maps. It is likely that there were additional historic structures on the project site which were not mapped with enough precision to depict on this overlay graphic.

All areas of the project site that do not contain basements and have not experienced other subsequent disturbances could be sensitive for the recovery of historic period archaeological resources associated with occupation of the property from the seventeenth through nineteenth centuries. These resources could include yard deposits, trash dumps, foundation remains, and other landscape features. Although the soil borings conducted on Lot 50 of the project site indicated an upper stratum of fill, this would not be inconsistent with the recovery of historic period archaeological resources.

Additionally, archaeological resources such as domestic artifacts and refuse associated with the project site residents may have been deposited in shaft features—wells, cisterns, and privies—that were likely located in the yard surrounding the historic houses. Comparative data has shown that these types of archaeological resources frequently are found in urban contexts, particularly in Brooklyn. 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, and in fact, construction often preserves the lower sections of the features by sealing them beneath structures and fill layers. Because most of the current building segments on the project site do not contain basements, it is possible that truncated portions of these types of resources may still exist beneath the extant buildings and paved yard areas.

Privies were located furthest from residences, while wells and cisterns frequently (but not always) were located closer to the walls of buildings or outbuildings. Privies and cisterns could 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. Today, groundwater is located approximately 16 feet below the existing grade. Until the introduction of piped city water, 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. Due to the rural nature of the project site, municipal water likely was not available in this neighborhood until after the area became part of New York City, after 1898. Municipal sewers likely were not installed under city streets until the twentieth century. It was often the case that owners did not hook up their buildings to water and sewer lines until years, and sometimes decades, after the services were available, suggesting a potentially longer use-life for yard shaft features.

Identifying and examining buried features associated with the seventeenth through nineteenth-century occupancy of the project site may reflect the daily activities of the residents and provide insight into cultural behavior of the Gravesend 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.

In addition to the domestic historic period archaeological sensitivity of the project site, there is also a possibility of recovering human remains associated with the Old Gravesend Cemetery along the edges of the project site. Although presently the project site is separated from the cemetery by chain link fencing, historic images show that there were earlier fence lines prior to installation of the chain link fencing. It is possible that the dividing line between the cemetery land and the non-cemetery land was less precise in the seventeenth, eighteenth, and parts of the nineteenth century, and burials or cemetery resources could have extended into the project site for a variety of reasons, including:

- Lack of formal cemetery boundaries, or imprecision in land division markings, causing burials to be placed in the project site;
- Burials monumented with wooden markers or natural stones that have been lost on today's landscape;
- Unmarked burials outside of formal cemetery boundaries, for people such as paupers, unbaptized individuals, Native Americans, enslaved Africans and African-Americans, or others deemed undesirable by the local community at the time;
- Intrusions into the project site of burials or partial burials from root action, bioturbation, or other human or non-human earthmoving activities; and
- Gravestones that have been moved from their original locations and deposited elsewhere.

HPI concludes that the portion of the project site abutting the cemetery on the north side of Lot 49 and the west sides of Lots 49 and 50 are the most likely to contain cemetery-related resources.

HPI has determined that the project site has a low sensitivity for precontact archaeological resources, due to disturbance from prior grading and filling associated with multiple construction and demolition activities on the property. HPI has concluded, however, that historic period archaeological resources associated with historic period occupancy of the project site could still survive in any locations on the project site not containing current or former basements, as shown on Figure 21. Additionally, the northern edge of Lot 49 and the western edge of Lots 49 and 50 are sensitive for historic period archaeological resources associated with the abutting Old Gravesend Cemetery.

At this time, the project sponsors only own Lot 50, which is slated for new construction. Lots 47, 48, and 49 may be subjected to new construction in the future, in conjunction with a second phase of this project or as part of a subsequent endeavor. If future ground disturbance activities are planned for the rear yards of Lots 47, 48, and 49 and the C4-4L district building restriction, which requires a 30-foot rear yards for parcels that are not corner lots, is not applicable, archaeological field testing may be necessary.

HPI recommends that a program of Phase IB archaeological field testing be conducted in the paved parking area of Lot 50, as shown on Figure 21, which does not contain any buildings (the two portable shipping containers would need to be removed). This testing, which would be conducted using heavy machinery, such as a backhoe, under the supervision of a professional archaeologist, to remove the upper pavement, gravel, and any underlying modern fill in order to ascertain whether any natural surfaces that may have contained historic period resources, shaft features, or cemetery remains still exist on the project site. Subsequent hand testing would be conducted within the machine cleared shallow trenches to the extent necessary to ascertain presence/absence of historic resources/features/shafts.

Depending on the results of the initial Phase IB testing in the parking lot area, and in consultation with the LPC, it may be determined that additional archaeological testing will need to be conducted after the existing building on Lot 50 is demolished and the concrete slab of the first floor removed, which could reveal any pre-twentieth century deposits still extant beneath the building. If in the future ground disturbance activities are planned for Lots 47, 48, and 49, archaeological field testing may be necessary for any areas on those lots without basements as well.

All archaeological testing should be conducted according to OSHA regulations and applicable archaeological standards, which includes prior LPC approval of a field testing work plan (LPC 2018; CEQR 2014). Professional archaeologists, with an understanding of and experience in urban archaeological excavation techniques, would be required to be part of the archaeological team. Due to the potential for the recovery of human remains, an on-call Forensic Archaeologist may also be required to be part of the project team, and an Unanticipated Discovery Plan be included in any future efforts.

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I. INTRODUCTION

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II. METHODOLOGY

The present study entailed review of various resources.

- Primary and secondary sources concerning the general precontact period and history of the area, and specific events associated with the project site were reviewed using materials at the New York Public Library, the Brooklyn Public Library, the Brooklyn Historical Society, the New York City Municipal Archives (Old Town Kings County Records) and various websites.
- Historic maps, atlases, and photographs were reviewed using materials at the Map Division of the New York Public Library, the New York City Municipal Archives, the Brooklyn Historical Society, and various websites. These maps and photographs provided an overview of the topography and a chronology of land usage for the study site.
- New York City Department of Buildings data were reviewed using the department's website.
- Land records were reviewed using materials from the New York City Register and familysearch.com.
- Federal census records and other data concerning site occupants and owners were reviewed on familysearch.com and ancestry.com.
- Selected city directory data were reviewed using materials from the Brooklyn Public Library.

- Tax assessment records for Gravesend were reviewed using the Old Town Kings County Records on microfilm and digitized by the Municipal Archives. However because these records only listed the taxes by individuals and not by property location, they could not provide any site-specific data.
- The project sponsors provided a Phase I Environmental Site Assessment and a Phase II Environmental Site Assessment, which also included soil borings (ESC 2020a, 2020b).
- Previous archaeological sites and surveys were reviewed using data available from the NYSOPRHP and the New York City Landmarks Preservation Commission (LPC).
- Drs. Arthur Bankoff and Frederick Winter provided personal communication about their archaeological fieldwork in the Old Gravesend Cemetery in 1978.
- Last, HPI conducted a site visit on January 22, 2021, to document current conditions, identify any potential features and assess any signs of obvious or unrecorded subsurface disturbance (Photographs 1-22).

III. CURRENT CONDITIONS AND ENVIRONMENTAL SETTING

A. CURRENT CONDITIONS

The overall project site consists of four lots.

Lot 47 is the northernmost of the lots, measuring 1,440 square feet. It contains a two-story and basement brick row house type building (Photograph 1). The building is currently occupied by an interior design office. Behind the row house is a small open yard area, which is paved with concrete and enclosed by fencing (Photograph 2). There is an outdoor hatch leading to the basement at the rear of the building.

Lot 48 is located south of Lot 47, and also measures 1,440 square feet (Photograph 1). It contains a two-story and basement brick row house type building. There is a small one-story frame addition on the rear of the building. The building is currently occupied by a luncheonette on the ground floor and a residential apartment on the second floor. Behind the row house is a small open yard area, which is paved with concrete and enclosed by fencing (Photograph 3). There is an enclosed shed and an open, roofed area at the rear of the yard. A raised masonry platform contains an outdoor oven along the north side of the yard.

Lot 49 is an irregularly-shaped parcel that measures 8,780 square feet (Photograph 1). At the front of the lot is a two-story and basement brick row house type building located south of Lot 48. There is a sidewalk vault on the front of the building leading to the basement (Photograph 4). Behind the row house building is a one-story addition (constructed in two segments) that extends to the west and wraps around the rear or western sides of Lots 47 and 48 (Photograph 5). The lot contains an auto repair shop on the ground floor and commercial office space on the second floor. At the far western end of the lot is an asphalt-paved parking area that is shared with Lot 50. The parking area is enclosed by fencing. There is a small gap between the rear-most addition on Lot 49 and the fence along the northern side of the lot, which presently is used for storage.

Lot 50, located south of Lot 49, is a large, rectangular-shaped parcel measuring 20,252 square feet (Photographs 6-9). The majority of the lot contains a mixed-use building, which is comprised of several interconnected building segments. The southeast corner of the building, at the corner of McDonald Avenue and Village Road South, is a one-story with basement frame and masonry building that was constructed just after the turn of the twentieth century (Photographs 6 and 8). A second building, which is two stories high, is a former barn (now painted red) from about the same time period that has been renovated and converted into office space (Photographs 10 and 11). The remainder of the Lot 50 building is one story in height, with no basement, and was constructed in between and surrounding the two earlier buildings by about 1930. There have been numerous alterations to the different parts of the overall building since that time. Current uses of the Lot 50 building include professional office uses (Foremost Contracting & Building LLC, Windweaver Technology, Apple Surveying Services of New York, Glide Luxury Transportation), the event space Top Spot and Diva Spa, and a car wash. Due to the Covid-19 pandemic, several of the commercial and office spaces are not in use. The car wash has wide entrance and exit doors on McDonald Avenue, and contains shallow pits under the service areas that channel the water and soap from the facility to the sewer system under McDonald Avenue (Photographs 6 and 7). Lot 50 also includes the southern portion of the asphalt-paved parking lot shared with Lot 49 (Photographs 12-15). There is a catch basin in the middle of the parking lot. The southwest portion of the parking area contains two steel shipping containers. The parking lot is enclosed by fencing and a gate at the Village Road South entrance.

The project site is bounded on the west and north by the Old Gravesend Cemetery, which is listed on the State/National Register of Historic Places (S/NRHP) and is a New York City Landmark (NYCL). The main entrance to the Old Gravesend Cemetery is on Gravesend Neck Road, on the northern side of the block (Photograph 16). The smaller, rectangular-shaped Van Sicklen family cemetery also is situated fronting Gravesend Neck Road, and abutting the Old Gravesend Cemetery on the block (Photograph 17). The Old Gravesend Cemetery is an irregularly-shaped parcel (Photographs 18-20). The center square of the cemetery is the oldest portion, which was established at least by 1658. The northern boundary of Lot 49 adjoins this older part of the cemetery (Photograph 20). The portion of the cemetery west of the paved parking area for Lots 49 and 50 was added to the cemetery in 1847 (Liber 163:57) (Photograph 21). There are visible gravestones situated within approximately 6 feet of the boundary of the cemetery with Lot 50 (Photograph 22).

B. TOPOGRAPHY AND HYDROLOGY

The project site and vicinity are within a relatively level portion of Brooklyn with minimal change in elevation. By the time the first topographical maps were made during the nineteenth century, the project site vicinity had already been occupied by Native Americans for thousands of years and colonial and American residents for over 200 years, all of whom may have contributed to changes in the natural topography. Thus, it is difficult to determine the degree to which the natural landform has been altered. One of the earliest topographical maps that indicated elevations (Bien and Vermeule 1891) showed the entire site vicinity to be between 10-20 feet above sea level. The earliest available Sanborn map, from 1895 (see Figure 13) indicated the streets surrounding the project site were 15 feet above sea level. Elevations have not changed markedly since that time.

The topographical maps also show that in its natural state, the project site was located approximately 1300 feet north and east of the marshlands surrounding Coney Island Creek, and approximately 1800 feet north and east of the creek channel itself.

C. SOILS

According to the soil survey for New York City (Figure 3), the project site is mapped as unit 211, "Pavement & buildings-Flatbush-Riverhead complex, 0 to 8 percent slopes." This mapping unit is described as:

> Nearly level to gently sloping urbanized areas of outwash plains that have been substantially cut and filled, mostly for residential use; a mixture of anthropogenic and gneissic outwash soils, with up to 80 percent impervious pavement and buildings covering the surface. (USDA 2005:14).

In 2020 as part of the Phase II Environmental Site Investigation, a set of six soil borings was excavated on Lot 50 (ESC 2020b). Borings B-1 and B-2 were located in the asphalt covered parking lot behind the building, and Borings B-3, B-4, B-5, and B-6 were located within the interior of the building, on the ground floor. None of the borings were placed in basement areas. All of the borings recorded an upper stratum of fill, to an average depth of 5-6 feet below grade. The fill was described as containing red brick, concrete, stone fragments intermixed with fine to coarse sand. Below the fill stratum was subsoil described as native brown to tan fine to coarse grained sand with little gravel. Groundwater was measured at approximately 16 feet below grade. The borings were terminated at either 16 or 20 feet below grade. None of the borings reached bedrock. The soil boring logs are included as Appendix A.

IV. BACKGROUND RESEARCH/HISTORICAL OVERVIEW

A. PRECONTACT SUMMARY

For this report, the word precontact is used to describe the period prior to the use of formal written records, and dates presented are for years before present (B.P.). 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 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 four main periods, the PaleoIndian (ca. 14,000-10,000 B.P.), the Archaic (ca. 10,000-2700 B.P.), the Woodland (ca. 2700-400 B.P.), and the Contact Period (ca.400-300 B.P.) (Cantwell and diZerega Wall 2001). The Archaic and Woodland periods are further divided into Early, Middle, and Late substages. Artifacts, settlement, subsistence, and cultural systems changed through time with each of these stages.

- **PaleoIndian Period (ca. 14,000-10,000 BP)**

The PaleoIndian Period represents the earliest known human occupation of the New York City area. Approximately 14,000 years ago, the Wisconsin Glacier retreated from the area leading to the emergence of a cold dry tundra environment. Sea levels were considerably lower than modern levels during this period (they did not reach current levels until ca. 7000 B.P., in the Early to Middle Archaic Period). The material remains of the Paleo Indians include lithic tools such as Clovis-type fluted projectile points, bifacial knives, drills, gravers burins, scrapers, flake cores, and flake tools, although sites generally are represented by limited small surface finds. The highly mobile nomadic bands of this period specialized in hunting large game animals such as mammoth, moose-elk, bison, and caribou and gathering plant foods.

From the locations of recorded sites in the Northeast, PaleoIndians exhibited a marked preference for well-elevated situations. However, 30 percent of sites were found on or near the margins of swampy ground. Sites have also been found near lithic sources, rock shelters and lower river terraces. Environmental characteristics that appear to have been attractive to PaleoIndians include the proximity of major waterways, large fertile valleys and the coastal plain, where the densest population of desired food animals was supported (Ritchie 1980:7). However, since 10,000 years ago the rise in sea level, estimated to be from 75 to 80 feet, has submerged large numbers of these sites.

The retreat of ice from Long Island approximately 18,000 years ago and a global warming trend circa 14,000 B.P., encouraged PaleoIndian settlement in the Northeast. The post-glacial environment of spruce and pine underwent a gradual modification in favor of deciduous hardwoods such as oak and hickory, which have greater importance in terms of nutritional value to both animals and humans than do conifers. By 10,000 B.P., these deciduous species dominated forests along the eastern seaboard. In general, settlement patterns suggest small mobile nomadic groups that utilized a wide range of seasonally available resources. The Paleoindian Period is theorized to have ended because of "overspecialized subsistence strategies emphasizing big-game hunting" (Snow 1980).

A typical artifact assemblage from Paleoindian sites in the Northeast include diagnostic Clovis-type fluted projectile points and processing tools such as scrapers, gravers, and drills indicative of processing faunal material. Stone tools were most often made from chert native to eastern New York and jasper from Pennsylvania and New Jersey. To some archaeologists, lithics recovered far from their sources suggest well-defined or extensive travel or trade networks in operation at that time. Although no PaleoIndian sites have been recorded in the project site vicinity, materials have been recovered at several sites on Staten Island including Port Mobil, the Cutting site, Smoking Point, and along the beach in the Kreischerville area.

- **Archaic Period (ca. 10,000-2700 B.P.)**

During the ensuing Archaic Period a major shift occurred in the subsistence and settlement patterns of Native Americans. Archaic period peoples still relied on hunting and gathering for subsistence, but the emphasis shifted from hunting large animal species, which were becoming unavailable, to smaller game and collecting plants in a deciduous forest. The settlement pattern of the Archaic people consisted of small bands that occupied larger and relatively more permanent habitations sites. Typically, such sites were located on high ground overlooking water courses. The Archaic has been subdivided into four smaller periods, the Early, Middle, Late, and Terminal Archaic.

The environment during the Early Archaic (ca. 10,000 - 8000 B.P.) displayed a trend toward a milder climate and the gradual emergence of a deciduous-coniferous forest with a smaller carrying capacity for the large game animals of the previous period (Ritchie and Funk 1971). The large Pleistocene fauna of the previous period were gradually replaced by modern species such as elk, moose, bear, beaver, and deer. New species of plant material suitable for human consumption also became abundant. The increasing diversification of utilized food sources is further

demonstrated by a more complex tool kit. The tool kit of the Early Archaic people included bifurcated or basally notched projectile points generally made of high-quality stone. Tool kits were more generalized than during the PaleoIndian period, showing a wider array of plant processing equipment such as grinding stones, and mortars and pestles.

The archaeological record suggests that a population increase took place during the Middle Archaic Period (ca. 8000 - 6000 B.P.). This period is characterized by a moister and warmer climate and the emergence of an oak-hickory forest. The settlement pattern during this period displays specialized sites and increasing cultural complexity. The exploitation of the diverse range of animal and plant resources continued with an increasing importance of aquatic resources such as mollusks and fish (Snow 1980). In addition to projectile points, the tool kits of Middle Archaic peoples included grinding stones, mortars, and pestles.

Late Archaic people (ca. 6000 - 3700 B.P.) were specialized hunter-gatherers who exploited a variety of upland and lowland settings in a well-defined and scheduled seasonal round. The period reflects an increasingly expanded economic base, in which groups exploited the richness of the now established oak-dominant forests of the region. It is characterized by a series of adaptations to the newly emerged, full Holocene environments. As the period progressed, the dwindling melt waters from disappearing glaciers and the reduced flow of streams and rivers promoted the formation of swamps and mudflats, congenial environments for migratory waterfowl, edible plants, and shellfish. The new mixed hardwood forests of oak, hickory, chestnut, beech, and elm attracted white-tailed deer, wild turkey, moose and beaver. The large herbivores of the Pleistocene were rapidly becoming extinct and the Archaic Indians depended increasingly on smaller game and the plants of the deciduous forest. The projectile point types attributed to this period include the Lamoka, Brewerton, Normanskill, Lackawaxen, Bare Island, and Poplar Island. The tool kit of these peoples also included milling equipment, stone axes, and adzes. Coastal sites showed a principal reliance upon shellfish, especially oysters, hard and soft shell clams, and bay scallops, which were readily available in the waters around the Bronx. In contrast to conditions during the PaleoIndian, Early and Middle Archaic, "by Late Archaic times sea level was so close to present levels that its subsequent small rise has failed to obliterate much of what remains on Long Island from that period" (Gwynne 1982:192).

During the Terminal Archaic Period (ca. 3700 - 2700 B.P.), native peoples developed new and radically different broad bladed projectile points, including Susquehanna, Perkiomen and Orient Fishtail types. The use of steatite or stone bowls is a hallmark of the Terminal Archaic Period.

- **Woodland Period (ca. 2700 - 400 B.P.)**

The Woodland Period is generally divided into Early, Middle, and Late Woodland on the basis of cultural materials and settlement-subsistence patterns. Settlement pattern information suggests that the broad-based strategies of earlier periods continued with a possibly more extensive use of coastal resources. The Early Woodland was essentially a continuation of the tool design traditions of the Late Archaic. However, several important changes took place. Clay pottery vessels gradually replaced the soapstone bowls during the Early Woodland Period (ca. 2700 to 2000 B.P.). An early ceramic type is called Vinette 1, an interior-exterior cordmarked, sand tempered vessel. The Meadowood-type projectile point is a chronological indicator of the Early Woodland Period.

Cord marked vessels became common during the Middle Woodland Period (ca. 2000-1000 B.P.). Jacks Reef and Fox Creek-type projectile points are diagnostic of the Middle Woodland. Another characteristic projectile point of the early to Middle Woodland Period is the Rossville type, named for the site at Rossville where it predominated. It is believed to have originated in the Chesapeake Bay area and is found in New Jersey, southeastern New York, and southern New England (Lenik 1989:29). The Early and Middle Woodland periods displayed significant evidence for a change in settlement patterns toward a more sedentary lifestyle. The discovery of large storage pits and larger sites in general has fueled this theory. Some horticulture may have been utilized at this point but not to the extent that it was in the Late Woodland period.

In the Late Woodland period (ca. 1000 – 400 B.P.), triangular projectile points such as the Levanna and Madison types, were common throughout the Northeast (Lenik 1989:27). Made both of local and non-local stones, brought from as far afield as the northern Hudson and Delaware River Valleys, these artifacts bear witness to the broad sphere of interaction between groups of native peoples in the Northeast. Additionally, during this period collared ceramic vessels, many with decorations, made their appearance.

Woodland Period Native Americans in the New York City area and surrounding regions shared common attributes. The period saw the advent of horticulture and with it, the appearance of large, permanent or semi-permanent villages. Plant and processing tools became increasingly common, suggesting an extensive harvesting of wild plant foods. Maize cultivation may have begun as early as 800 years ago. The bow and arrow, replacing the spear and javelin, pottery vessels instead of soap stone ones, and pipe smoking, were all introduced at this time. A semi-sedentary culture, the Woodland Indians moved seasonally between villages within palisaded enclosures and campsites, hunting deer, turkey, raccoon, muskrat, ducks and other game and fishing with dug-out boats, bone hooks, harpoons and nets with pebble sinkers. Their shellfish refuse heaps, called "middens," sometimes reached immense proportions of as much as three acres (Ritchie 1980:80, 267). Habitation sites of the Woodland Period Indians increased in size and permanence.

The archaeological evidence from Woodland Period sites indicates a strong preference for large-scale habitation sites in close proximity to a major fresh water source, e.g., a river, a lake, or an extensive wetland; and smaller scale sites for extractive operations, e.g., butchering stations, shellfish processing sites, and quarrying sites, to be situated at other resource locales. Late Woodland Stage sites of the East River Tradition in southern New York have been noted on the "second rise of ground above high water level on tidal inlets," and situated on "tidal streams or coves" and "well-drained sites" (Ritchie 1980:16). Carlyle S. Smith, who studied and analyzed the distribution of prehistoric ceramics in coastal New York, stated that "village sites" are found on the margins of bays and tidal streams" (Smith 1950:130).

- **Contact Period (ca. 400 - 300 B.P.)**

Historical narratives written by European travelers and settlers provide us with our only first-hand descriptions of Native American daily life and customs during the seventeenth century. Johannes de Laet, in his *New World, or Description of West India*, published in Holland in 1625, wrote that the Native Americans:

> are divided into many nations and languages, but differ little in manners. They dress in the skins of animals. Their food is maize, crushed fine and baked in cakes, with fish, birds and wild game. Their weapons are bows and arrows, their boats are made from the trunks of trees hollowed out by fire. Some lead a wandering life, others live in bark houses, their furniture mainly mats and wooden dishes, stone hatchets, and stone pipes for smoking tobacco (Bolton 1972:16).

By the seventeenth century western Long Island was inhabited by Native Americans of the Delaware group, speaking a Munsee dialect, when the first Europeans arrived. The impact of the European colonization of Long Island drastically altered the lifestyles of Native Americans.

Twentieth century research by Robert S. Grumet and Reginald Bolton does not indicate the presence of an Indian village in the vicinity of the project site. Grumet does identify the Indian toponyms Mocuny and Morpeesah as swampy areas in southern Gravesend, probably south of the project site closer to Coney Island Creek. His research suggests that they might be synonyms, probably meaning "black or miry" place. Another toponym for a location further north in Gravesend was Massebackhun, roughly translating to "land at the waters" (Grumet 1981:35, 36).

E. PREVIOUSLY RECORDED ARCHAEOLOGICAL SITES AND SURVEYS

A site file search conducted using materials from the NYSOPRHP and the LPC indicated that only one archaeological site has been previously recorded within a one mile radius of the project site. This is New York State Museum Site 7877, recorded approximately 0.8 mile southeast of the project site as a precontact period shell midden in the vicinity of Vorheis Avenue, although the mapped location is not precise.

Although the project site itself has never been subjected to an archaeological study, several archaeological studies have been conducted within a one-mile radius. In closest proximity, there have been three archaeological studies of the Old Gravesend Cemetery, abutting the project site and P.S. 95, one block to the north.

In the summer of 1978, students from Brooklyn College participated in a field school, led by Professors H. Arthur Bankoff and Frederick A. Winter. The students excavated first within a portion of the P.S. 95 schoolyard, at the northeast corner of Van Sicklen Street and Gravesend Neck Road, and subsequently within the Old Gravesend

Cemetery. The P.S. 95 excavations revealed debris and artifacts in secondary deposition, including kaolin pipestems dating to the early eighteenth century, late nineteenth century bottle fragments, and materials from the 1930s when the school's annex and courtyard were constructed. Also found were portions of a mid-nineteenth-century house foundation, and demolition materials from earlier buildings on the site. The lowest stratum contained embedded clam shells that were thought to be part of the seventeenth-century yard surface (Bankoff 1979:64-65; Winter 1981:58).

The excavations in the Old Gravesend Cemetery were conducted after the P.S. 95 excavations. According to Dr. Winter's account of this work:

> That 1978 dig consisted of a checkerboard line of 1m square trenches along Village Road S, just in from the southern fence of the currently enclosed Gravesend cemetery, and just to the W of Lot 50, extending toward Van Sicklen Street.
>
> …we found no foundations or other signs of houses in our dig area, but we did encounter some unmarked graves, recognizable based on soil color and, in one instance, as I recall, some rotted wood that appeared to be from a casket and which appeared in a scarp. We did not continue excavations in any of the areas that appeared to be graves.
>
> The only significant archaeological feature we recovered was a refuse pit that, based on the presence of a dated NY State automotive license plate, had a terminus post quem of the early 1930s. We tried to track down the ownership of the plate, but NY State did not have records that extended that far back so all we had was the date. The trash included in the pit was domestic in character, and it apparently was the result of a cleanup of the graveyard area that took place during the Depression, presumably around the time when the graveyard was formally delineated and fenced (Winter, personal email communication 1/16/21).

According to an article published by Dr. Winter in Archaeology magazine (Winter 1981:58), while there were no foundations encountered from seventeenth-century buildings within the trenches, there were some artifacts from that time period mixed in the soils (along with the later materials) including pottery and kaolin pipe stems. Dr. Bankoff recalled that there were also a number of milk bottle shards found, presumably from the former Borden's Milk distribution facility that was once located on Lot 50 of the project site (Bankoff cited in Loorya 2002:5-6).

In 2000, Greenhouse Consultants, Inc. prepared a Documentary Study of the Old Gravesend Cemetery (GCI 2000). The purpose was to determine whether unmarked graves could extend beyond the perimeter fence lines of the cemetery, as replacement fencing was proposed at that time. The study indicated:

> It is our conclusion that the Old Gravesend Cemetery is unlikely to preserve evidence of its use during prehistory. This is due primarily to the 350 years of development and use of this location during the historic period.
>
> It is also our conclusion that part of the street frontage of the Old Gravesend Cemetery may preserve evidence of graves beyond the fence-line and that the remainder has no such potential. The frontage of the cemetery along Van Sicklen Street has no potential for graves beyond the fence-line since it previously was part of the street. This also is true of the western 89 feet of the frontage along Village Road South. It is possible that graves may extend beyond the fence-line of the eastern 110 feet of the Village Road South frontage and all of the frontage along Gravesend Neck Road. This is unlikely for the eastern sixteen feet of the Gravesend Neck Road frontage since this was originally a pathway.
>
> We recommend that archaeological testing of the Gravesend Neck Road frontage and the eastern 110 feet of the Village Road South frontage take place prior to replacement of the fence. The purpose of the testing is to search for evidence of burials. This testing should be in the form of mechanically excavated trenches augmented by manual investigations if evidence of graves is seen (GCI 2000:9).

In 2002, Alyssa Loorya conducted the recommended Phase IB archaeological field investigations along the periphery of the Old Gravesend Cemetery where the new fencing was proposed, as described in the Documentary study prepared by GCI in 2000. The 2002 fieldwork included both archaeological testing along the northern and southern fence lines as recommended by GCI, as well as archaeological monitoring in additional areas. Results of the Phase IB testing and monitoring revealed significant disturbance across all potentially sensitive areas along the existing fence lines. Generally, there were only two strata of soil observed, a thick topsoil including a mixture of artifacts from the nineteenth and twentieth centuries, and sterile subsoil. Along the southern edge of the cemetery, closest to the project site, the team found a large amount of milk bottle shards, similar to the archaeological excavations in 1978, described above. No further archaeological investigations were recommended, and the new fence was subsequently installed.

The NYSOPRHP CRIS database lists two other archaeological surveys within a one-mile radius of the project site. One was a Stage 1A Cultural Resources Assessment of the Belt Parkway Bridges Project, located approximately 0.7 mile to the southeast (HPI 1998). The other was a Phase IA Archaeological Resources Assessment for the GOSR Green Infrastructure project, bounded roughly by Kings Highway, Avenue P, West 7th Avenue and Ocean Parkway, located approximately 0.7 mile to the north (HPI 2019).

Additionally, the LPC lists one other archaeological survey within a one-mile radius of the project site. This was a Phase IA Archaeological Assessment for the new P.S. 721K building project, located approximately 0.4 mile to the southwest of the project site (HPI 1991).

F. HISTORY OF THE PROJECT SITE

Driven from Massachusetts by angry Puritans, Lady Deborah Moody and her followers, "infected with Anabaptism," fled to New Netherland and the more tolerant rule of the Dutch West India Company in 1642. Here they were joined by Nicholas Stillwell, a tobacco planter, and his fellows, who had already been driven from their settlement in eastern Manhattan by Indian attacks. The West India Company was desperate to secure settlers to occupy its lands and hold off the encroachments of expansionist New England, and accordingly, in June 1643, Director General Willem Kieft gave Moody permission to settle at a site he named *'s-Gravensande*, after the ancient residence of the Counts of Holland. The English settlers corrupted this word, literally meaning "the Count's Sand," to Gravesend, probably thinking of the port of the same name on the Thames (Brodhead 1854:367; Stillwell 1892:5-6).

However, Moody and her compatriots were not the first European settlers in the project area. A month previously, in May 1643, Kieft had issued a ground brief for 100 morgen (200 acres) of property to the southwest and west of the original Gravesend settlement to Antonie Jansen van Salee. He had evidently settled in the area much earlier, since the patent was made retroactive to August 1639. One section of the property was named "Old Bowery" (later the site of the village of Unionville. The other section was known as "Twelve Morgen." It was situated to the northwest of the project site on Hubbards Creek. This meadow property became a bone of contention between the town and Salee's successors, each of which claimed the land as part of its original grant. The dispute was not settled until the mid-nineteenth century, when Gravesend finally relinquished any interest in the property (Stockman 1884:158-160).

Gravesend is unique in many ways, as the only English town founded in present Kings County, with a town patent (1645) that may be the only one in which a woman, Lady Moody, headed the list of patentees, as well as guaranteeing freedom of worship "without magisterial or ministerial interference." Religion was up to the individual, and therefore no provision for a church was made, neither for a burial ground, town hall nor a school. The town plan, comparable to the sophisticated layout of New Haven and later Philadelphia, was based on a central square of 16 acres, divided into four smaller squares, each surrounded by a street. The perimeters of the four squares were divided into ten equal lots, one for each of the forty original patentees. The lots surrounded common yards, where cattle were to be kept when brought in from pasture. The town core was surrounded by a palisade, from which triangular "planters' lots" radiated like the spokes of a wheel. Among other things, this arrangement meant that all the farm lots were the same distance from the settlement, and each patentee could reach his own farm without trespassing (Stockman 1884:160-162).

The New York City Municipal Archives' Old Town Kings County Records for Gravesend contains a microfilmed copy of the original town plan, showing the four quadrants of the town center and the radiating wedge-shaped

parcels assigned to individual owners (Figure 4a). This map was also traced and reproduced in Stockman's 1884 history of Gravesend (Figure 4b), more clearly showing the configuration of the lots, although the dimensions may have been approximated. The project site contained portions of Lots 2, 3 and 4 on this map, as well as part of the Common Yard.

In the first year of settlement, Gravesend was almost destroyed by constant Indian attacks, during a colony-wide war which was a result of Kieft's inept Indian policy. The village survived, and organized itself, choosing town court justices, a constable and town clerk. Laws were enacted against conducting business on Sundays, selling alcohol to the Indians and even selling more than one pint at a time to whites. In 1647 the town effected a further division of common lands among the patentees, allotting the meadowland used as a cow pasture between the settlement and Coney Island, "so that every man might know his own" (Stockman 1884:163-165).

Although no church had been included in the original town plan, the village became known as a "mecca of Quakerism." When Richard Hodgson and eleven other Quaker preachers arrived in New Netherland in 1657, he and two colleagues visited Gravesend, where according to Hodgson's journal, they held the first recorded Quaker meeting in America. Lady Moody may have been a convert, since meetings were held in her house the following year (Stillwell 1892:9). Although some sources claim the founding of a Dutch Reformed Church by 1655, when village residents first petitioned for "a good clergyman," there is no evidence of more than occasional visits by a circuit preacher, who had to serve all the churches of Kings County (Anniversary 1905:7; Stockman 1884:177-178). With the English conquest of New Netherland in 1664, the town patent was confirmed. Between 1668 and 1685 the English designated Gravesend as a "shire" town, and a structure for the court of sessions was built in the northwestern village square. During and after this period, when the court was returned to Flatbush, the sessions house was used as meeting house for the Quakers, and later served as Gravesend's Dutch Reformed Church (Stillwell 1892:9-10; Brooklyn 1946:11).

The village of Gravesend and its near surroundings changed little during the eighteenth and nineteenth centuries. Because of its commodious harbor, the early settlers had hoped to develop Gravesend into a major port, but despite its size, the shallowness of Gravesend Bay was unsuitable for large ships. Therefore, there was little development and the town grew slowly, maintaining its rural character, "conservative in its habits of life." During the American Revolution, British forces landed within a mile of the village and General Cornwallis passed through in 1776. Some soldiers were billeted in local houses, and after the war several Hessians remained behind and settled within the township. The population in 1810 was 520 (Stockman 1884:176,177; Ostrander 1894:33).

Because the project site was within the original town center, it is probable that there were buildings on the property during the seventeenth and eighteenth centuries, although no available historic maps from that period or other archival materials could provide precise confirmation. The ca. 1645 town plan (Figures 4a and 4b) is likely a generalized rendition of the development rather than a precise mapping of early structures. It appears that the project site, as well as the corresponding wedge-shaped tract of land emanating to the southwest from the project site, was the property of the Stillwell family. Captain Nicholas Stillwell III was one of the original settlers of Gravesend, having emigrated from Holland. He was married three times and had six children. Many of his descendants lived and owned property in Gravesend, and many of them had similar or repeating names, with "Nicholas Stillwell" being used several times in every generation. Generally, the middle initial would correspond to the man's father's name.

Nicholas J. Stillwell (son of Joost Stillwell, hence the "J" middle initial), who was the great-great-grandson of Captain Nicholas Stillwell III, appears to have become the owner of the project site, most likely by the late eighteenth or early nineteenth century. Because the property was handed down through the family, not all land transactions were formally recorded, and it is likely he inherited the land from his father. According to a Stillwell family genealogy, Nicholas J. Stillwell was born in 1768 in Gravesend, married Aeltie (or Aletta) Hubbard in 1797, and died in 1837. A description of him indicated:

> He was a carpenter, farmer and grocer, in Gravesend; highly esteemed and chosen administrator, executor, arbitrator and Tax Collector. He was tall, robust, and in his latter years, very corpulent (Stillwell 1931:94).

Although not noted in the above description, Nicholas J. Stillwell also appears to have had a supervisory role in the Old Gravesend Cemetery. Materials on file at the New York City Municipal Archives Old Town Kings County Records for Gravesend indicate in the Sexton's Report that cash was paid to him in 1815 related to various materials and labor associated with the cemetery. Included in the list of items were posts, boards, planks, shingles, nails, breakfasts, joists, and labor for paving the turnpike, cartage, 20 days of work for him, 6 ½ days of work for John Stillwell, and 3 ½ days of work for Isaac Ryder. The records also show that in 1815, a fence was erected around the entirety of the cemetery (Old Town Kings County Records, Reel 107, page 506).

The 1835 U.S.C.S. map (Figure 5), published two years before Nicholas J. Stillwell's death, clearly showed a structure on the project site, likely his home. Although the Old Gravesend Cemetery was not specifically labeled on the map, it would have been located in the center of the block. After Nicholas J. Stillwell's death, his property passed to his wife Aeltie. A deed from 1847, from Garret Stryker to the Town of Gravesend, transferred land in the southwest corner of the Old Gravesend Cemetery, known as part of the "Old Orchard lot," which was bounded on the east by land of Altie Stillwell, confirming the ownership of the project site within the Stillwell family (Liber 163:57).

Nicholas J. Stillwell and Aeltie Stillwell had two children, Stephen N. Stillwell and Ann Stillwell. Stephen was born in 1799, and married his cousin Ann Vorhees in 1831. Aeltie Stillwell lived with her son Stephen and his family after 1839. While the 1840 federal census only named the household head, the 1850 federal census specifically noted that Aletta Stillwell was living with farmer Stephen N. Stillwell and his children (Stephen's wife Ann had died in 1840). After Aeltie Stillwell died in 1860, Stephen N. Stillwell inherited her property, including the project site.

Maps made during the 1840s and 1850s continued to show a structure at the southeast corner of the project site, fronting McDonald Avenue (then called Gravesend Avenue). While the 1845 U.S.C.S. map and the 1849 Sidney map showed just one structure (Figure 6), the 1852 Conner map illustrated three structures within the project site, with two of them possibly fronting Village Road South (Figure 7). The wedge-shaped land tract south of the project site was attributed to "Stillwell." The 1855-1856 U.S.C.S. map also showed several structures in the project site, and depicted the bounds of the burial ground (albeit unlabeled) in the center and southwestern portion of the block (Figure 8). The 1868 Dripps map (Figure 9), while only showing one structure in the project site, clearly indicated that the wedge-shaped tract south of the project site belonged to S.N. Stillwell. Similarly, the 1873 Beers detailed map of Gravesend (Figure 10) attributed one large structure within the project site and the wedge-shaped tract to the south to S.N. Stillwell. The Old Gravesend Cemetery, now occupying both the center and southwestern portion of the block, erroneously was labeled the Dutch Reformed Cemetery. The smaller Van Sicklen family cemetery was delineated fronting Gravesend Neck Road on the north side of the block. The Sexton's Records in the Old Town Kings County Records for Gravesend noted that in 1876 a picket fence was built around the burial ground, measuring approximately 1400 feet. The same records indicated that at least by the 1870s, both white and "colored" people were buried in the cemetery, although there was no mention if there was a separate section reserved for African Americans, as was often the case.[1]

Stephen N. Stillwell owned the project site, as well as numerous other lands, until his death in 1880. The 1855 New York State agricultural census noted that he owned 26 improved acres, 21 unimproved acres, and 4 acres of meadow. The value of his farm was listed as $8000. That year, his household included himself, listed as a bookkeeper, his mother Aeltie, two adult sons (one a surveyor, the other a farmer), an adult daughter, a teenage daughter, and four Irish servants (three young men and one woman). Subsequent state and federal censuses from 1860, 1865, 1870, 1875, 1880, and 1900 continued to indicate households headed by Stephen N. Stillwell, and later his son and/or son-in-law Albert V. Stillwell and Washington Willis (married to daughter Catherine or Kate Stillwell) on the project site. Lain's 1897 city directory listed Washington Willis, carpenter, living in a home on Gravesend Avenue at the corner of South Village Road.

A Stillwell genealogy provided a portrait of Stephen N. Stillwell (Appendix B), as well as a lengthy biography, which detailed his multiple business pursuits and community involvement:

[1] The Sexton's records had a large gap in documentation from the years 1815-1865. No data were available for those missing years.

> Mr. Stillwell received an elementary education in the village school, at Gravesend Neck, and early was placed in mercantile life. After an apprenticeship as clerk in several prominent business houses, he commenced business on his own account, as a manufacturer of hats at 291 Water Street, New York City, with branches at Mobile, Ala., and St. Mary's, Florida. In visiting his branch store it was his custom to go by sailing vessel to the latter place, and thence overland on horseback, through an unbroken forest to the former. In making his trips he passed Cape Hatteras fourteen times, and often remarked that he never sailed by it, except during a violent thunder shower. His agent in Mobile died, and little or nothing was realized from the business, which compelled him to close out his other houses, and go into bankruptcy; but nothing daunted, he settled with his creditors, and again started, this time with a partner, one George M. Cummings. They would charter a vessel, load her with goods for Kingston, Jamaica; dispose of them, and with the profits invest in local commodities, and sail for the "Spanish Main," as Yucatan and Campeachy were then called. Here the new cargo was disposed of, and they returned to New York laden with logwood, mahogany, etc. The net result of the last of these operations is perhaps best indicated by the bonds of G. W. Cummings, still held by the descendants of Mr. Stillwell, as curiosities.
>
> He then went into mercantile life in his own town, later to Brooklyn, and still later returned to the ancestral farm in Gravesend, where he devoted himself to agriculture. Here in 1840, his wife died.
>
> When the office of Town Superintendent of Schools was created, he was unanimously chosen to fill it in the village of Gravesend, and succeeded himself in that position several years.
>
> He was commissioned by Gov. Throop, Quarter-Master of the First Regiment, New York State Infantry.
>
> In 1845, the Board of Supervisors appointed him one of the Superintendents of the Poor, to which position he was elected by the people of the county the succeeding term, and at the expiration of his second term was made their Clerk. When the "Superintendents" were succeeded by the "Commissioners of Charities," he was continued as Secretary, a position he held through various changes of administration until his death.
>
> Though past eighty years of age Mr. Stillwell was a man of remarkable vigor, both mentally and physically. For thirty years, during his long office as Secretary to the Charities' Department, he was wont to arrive daily at half past six A.M. at the Alms House in Flatbush. He drove over from Gravesend along Parkson Ave., and people living on that route are said to have set their clocks and watches frequently by his chronometric regularity (Stillwell 1931:141-142).

After Stephen N. Stillwell's death in 1880, his estate, including his land holdings, was divided among his heirs. Survey maps were included with the various deeds transferring parcels to his children. The project site was divided into two lots, with his daughter Kate Willis acquiring an L-shaped parcel that now includes Lots 47, 48, and part of Lot 49, and his son Albert V. Stillwell receiving the remainder of the project site, including part of Lot 49 and Lot 50 (Liber 1387:79; Figure 11).

The 1890 Robinson map (Figure 12) indicated that the portion of the project site assigned to Kate Willis (now Lots 47, 48, and part of 49) was attributed to P.W. Johnson, and a house was located north of the project site. The area now covered by the row houses and small rear yards on Lots 47, 48, and 49 was then the side yard of the Johnson property. The remainder of the project site was attributed to A.W. (sic) Stillwell, and contained a large frame house fronting McDonald Avenue, a small brick structure fronting Village Road South, and two frame outbuildings in the interior of modern Lots 49/50. The 1895 Sanborn map (Figure 13) and the 1899 Hyde map (Figure 14) showed similar configurations to the 1890 map, although by this time another frame building had been constructed at the rear of Lot 48, which was noted on the 1895 Sanborn map as vacant at the time.

Gravesend and the rest of Kings County become part of the Borough of Brooklyn in 1898. Just after the turn of the twentieth century, the project site changed significantly when the Stillwell heirs sold the property to the Borden's Condensed Milk Company, and the residential houses and outbuildings were demolished to make way for a milk

distribution center. In 1906, Upington's city directory listed Borden's Condensed Milk Co. at 2380 Gravesend Avenue for the first time. The 1906 Sanborn map (Figure 15) showed that the project site now contained a frame office building at the southeast corner of Lot 50 and a large outbuilding at the rear of Lots 49/50. As described in the Current Conditions section, the office building is still extant on the project site, although now encapsulated by additional building segments. The 1907 Bromley map (Figure 16) illustrated similar conditions, but now attributed the project site to the Borden Company. The edition of the 1907 Hyde map, updated to 1912 (Figure 17), indicated the addition of another frame building in the approximate center of the project site, on Lot 50. This is the extant "red barn" described in the Current Conditions section, which survives on the property, but surrounded by other building segments. The property was attributed to Borden Condensed Milk.

During the 1910s and 1920s the project site building configurations changed again. The 1916-1920 Hyde map (Figure 18) showed that by this time, the three brick rowhouses on Lots 47, 48, and 49 had been constructed. Additionally, a narrow frame building had been erected on Lot 50, fronting Gravesend Avenue. The map indicated that the property was attributed to Borden's Condensed Milk. In the early 1920s, the remainder of the project site was infilled with building segments, as shown on a 1924 aerial photograph. The only remaining open yard areas were directly behind the row houses on Lots 47 and 48. The 1930 Sanborn map (Figure 19) illustrated the layout of the buildings on the project site by this time, and attributed the property to Borden's Farm Products Co., Inc. Several photographs taken during the 1930s showed the buildings on the project site, as well as their proximity to the Old Gravesend Cemetery (Appendix B).

By at least the late 1940s, the William Pinsker Company, manufacturers of paper and glassware, had taken over the Borden's facility. City directory entries included in the Phase I Environmental Site Assessment for Lot 50 indicated that the Pinsker Company was listed on Lot 50 through 1997 (ESC 2020a). The 1951 Sanborn map (Figure 20) labeled the Lot 50 portion of the project site a paper warehouse, and noted the rear of Lot 49 manufactured glass droppers. Curiously, the 1950 Sanborn map also showed that the large outbuilding at the rear of Lots 49 and 50 had been either demolished or truncated, to make room for the current driveway at the rear of the lots. This contradicts aerial photographs on historicaerials.com, which showed that the driveway was not constructed until much later, likely the 1970s, as a 1966 aerial photograph still showed the large outbuilding but a 1980 aerial photograph did not. The 1950 Sanborn map may have been updated but not labeled as such.

Additional Sanborn maps from the 1960s and 1970s indicated that Lot 49 contained a steam laundry facility. In the 1980s, it became an automotive repair facility (ESC 2020a). In 1998, Florence Pinsker sold Lot 50 to MTL Realty, LLC, ending the Pinsker family ownership of the property (Liber 4328:1150). After 1998, the property was converted to commercial space and offices. The car wash was installed in 2012 and a party space in 2014. As noted in the Current Conditions section, a number of the businesses within the Lot 50 building have shuttered due to the Covid-19 pandemic.

V. CONCLUSIONS

A. PRECONTACT SENSITIVITY AND DISTURBANCE RECORD

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. In its natural state, the project site was on firm ground, located approximately 1300 feet north and east of the marshlands surrounding Coney Island Creek, and approximately 1800 feet north and east of the creek channel itself. The project site likely had a gentle slope in its predevelopment condition. Given these factors, during the precontact period, the project site would have been moderately sensitive for archaeological resources.

However, soil borings and historic maps and photographs indicate that there has been a substantial amount of disturbance to the natural landform during the historic era. The soil borings in particular indicate that most of the project site is covered by a thick mantle of fill or redeposited soil; natural soils beneath the fill appear to represent subsoil rather than the types of soils higher in the soil column which normally could contain precontact period archaeological materials. Based on these factors, HPI concludes that the project site now has a low precontact period archaeological sensitivity.

B. HISTORICAL PERIOD SENSITIVITY AND DISTURBANCE RECORD

The project site is part of the historic village center of colonial Gravesend. The block including the project site was laid out in the 1640s, and it is likely there were structures on the property during the seventeenth and eighteenth centuries, although the precise locations of the buildings cannot be confirmed. The land was owned by members of the Stillwell family from the seventeenth through nineteenth centuries, who were descendants of Captain Nicholas Stillwell III, one of the first residents of Gravesend. By the 1830s, when the first detailed historic maps were made including the project site, there was a building depicted on the property, likely a residence, and in subsequent years maps indicated there were additional structures, fronting McDonald Avenue and Village Road South. Members of the Stillwell family lived on the project site until it was sold after the turn of the twentieth century. During the early twentieth century, the project site contained a Borden's Milk Company facility, including several large outbuildings. Two of these buildings – and office and a barn – still survive on the project site, albeit surrounded by newer building segments. By the 1930s the entire project site was covered with buildings, including three brick row houses with basements fronting McDonald Avenue on Lots 47, 48, and 49.

Figure 21 illustrates the locations of the buildings with known basements on the project site, as well as the locations of the historic structures (three dwellings and two outbuildings) as of 1895, based on the Sanborn map from that year, which is among the most accurate of the historic maps. It is likely that there were additional historic structures on the project site which were not mapped with enough precision to depict on this overlay graphic.

All areas of the project site that do not contain basements and have not experienced other subsequent disturbances could be sensitive for the recovery of historic period archaeological resources associated with occupation of the property from the seventeenth through nineteenth centuries. These resources could include yard deposits, trash dumps, foundation remains, and other landscape features. Although the soil borings conducted on Lot 50 of the project site indicated an upper stratum of fill, this would not be inconsistent with the recovery of historic period archaeological resources.

Additionally, archaeological resources such as domestic artifacts and refuse associated with the project site residents may have been deposited in shaft features—wells, cisterns, and privies—that were likely located in the yard surrounding the historic houses. Comparative data has shown that these types of archaeological resources frequently are found in urban contexts, particularly in Brooklyn. 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, and in fact, construction often preserves the lower sections of the features by sealing them beneath structures and fill layers. Because most of the current building segments on the project site do not contain basements, it is possible that truncated portions of these types of resources may still exist beneath the extant buildings and paved yard areas.

Privies were located furthest from residences, while wells and cisterns frequently (but not always) were located closer to the walls of buildings or outbuildings. Privies and cisterns could 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. Today, groundwater is located approximately 16 feet below the existing grade. Until the introduction of piped city water, 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. Due to the rural nature of the project site, municipal water likely was not available in this neighborhood until after the area became part of New York City, after 1898. Municipal sewers likely were not installed under city streets until the twentieth century. It was often the case that owners did not hook up their buildings to water and sewer lines until years, and sometimes decades, after the services were available, suggesting a potentially longer use-life for yard shaft features.

Identifying and examining buried features associated with the seventeenth through nineteenth-century occupancy of the project site may reflect the daily activities of the residents and provide insight into cultural behavior of the Gravesend 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.

In addition to the domestic historic period archaeological sensitivity of the project site, there is also a possibility of recovering human remains associated with the Old Gravesend Cemetery along the edges of the project site.

Although presently the project site is separated from the cemetery by chain link fencing, historic images show that there were earlier fence lines prior to installation of the chain link fencing. It is possible that the dividing line between the cemetery land and the non-cemetery land was less precise in the seventeenth, eighteenth, and parts of the nineteenth century, and burials or cemetery resources could have extended into the project site for a variety of reasons, including:

- Lack of formal cemetery boundaries, or imprecision in land division markings, causing burials to be placed in the project site;
- Burials monumented with wooden markers or natural stones that have been lost on today's landscape;
- Unmarked burials outside of formal cemetery boundaries, for people such as paupers, unbaptized individuals, Native Americans, enslaved Africans and African-Americans, or others deemed undesirable by the local community at the time;
- Intrusions into the project site of burials or partial burials from root action, bioturbation, or other human or non-human earthmoving activities; and
- Gravestones that have been moved from their original locations and deposited elsewhere.

HPI concludes that the portion of the project site abutting the cemetery on the north side of Lot 49 and the west sides of Lots 49 and 50 are the most likely to contain cemetery-related resources.

VI. RECOMMENDATIONS

HPI has determined that the project site has a low sensitivity for precontact archaeological resources, due to disturbance from prior grading and filling associated with multiple construction and demolition activities on the property. HPI has concluded, however, that historic period archaeological resources associated with historic period occupancy of the project site could still survive in any locations on the project site not containing current or former basements, as shown on Figure 21. Additionally, the northern edge of Lot 49 and the western edge of Lots 49 and 50 are sensitive for historic period archaeological resources associated with the abutting Old Gravesend Cemetery.

At this time, the project sponsors only own Lot 50, which is slated for new construction. Lots 47, 48, and 49 may be subjected to new construction in the future, in conjunction with a second phase of this project or as part of a subsequent endeavor. If future ground disturbance activities are planned for the rear yards of Lots 47, 48, and 49 and the C4-4L district building restriction, which requires a 30-foot rear yards for parcels that are not corner lots, is not applicable, archaeological field testing may be necessary.

HPI recommends that a program of Phase IB archaeological field testing be conducted in the paved parking area of Lot 50, as shown on Figure 21, which does not contain any buildings (the two portable shipping containers would need to be removed). This testing, which would be conducted using heavy machinery, such as a backhoe, under the supervision of a professional archaeologist, to remove the upper pavement, gravel, and any underlying modern fill in order to ascertain whether any natural surfaces that may have contained historic period resources, shaft features, or cemetery remains still exist on the project site. Subsequent hand testing would be conducted within the machine cleared shallow trenches to the extent necessary to ascertain presence/absence of historic resources/features/shafts.

Depending on the results of the initial Phase IB testing in the parking lot area, and in consultation with the LPC, it may be determined that additional archaeological testing will need to be conducted after the existing building on Lot 50 is demolished and the concrete slab of the first floor removed, which could reveal any pre-twentieth century deposits still extant beneath the building. If in the future ground disturbance activities are planned for Lots 47, 48, and 49, archaeological field testing may be necessary for any areas on those lots without basements as well.

All archaeological testing should be conducted according to OSHA regulations and applicable archaeological standards, which includes prior LPC approval of a field testing work plan (LPC 2018; CEQR 2014). Professional archaeologists, with an understanding of and experience in urban archaeological excavation techniques, would be required to be part of the archaeological team. Due to the potential for the recovery of human remains, an on-call Forensic Archaeologist may also be required to be part of the project team, and an Unanticipated Discovery Plan be included in any future efforts.

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FIGURES

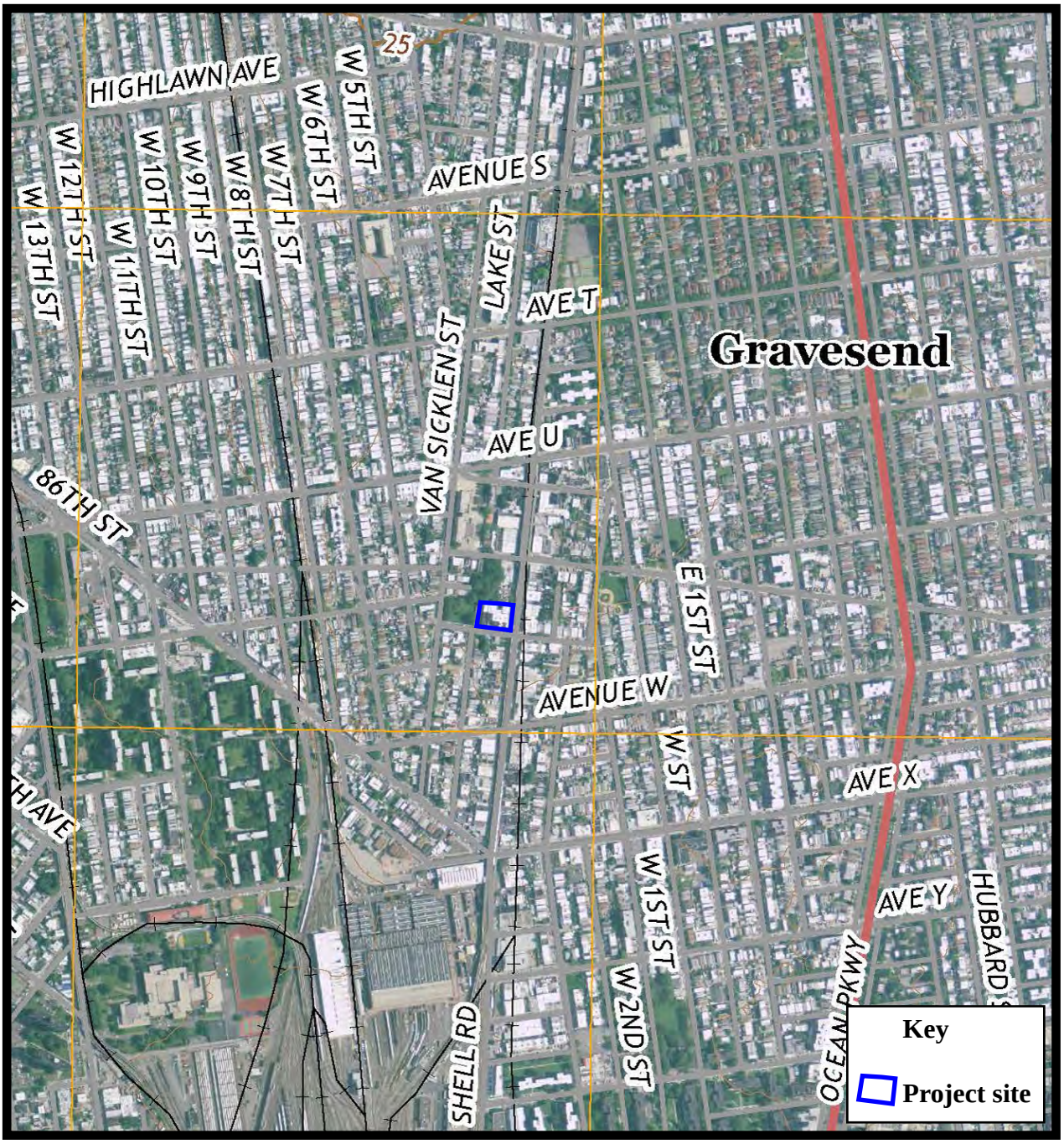

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Figure 1: Project site on *Coney Island, N.Y-N.J.* topographic quadrangle (U.S.G.S. 2016).

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Figure 2: Project site and photograph locations on New York City Oasis Map (Oasis 2018).

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Figure 3: Project site on *New York City Reconnaissance Soil Survey* (U.S.D.A. 2006).

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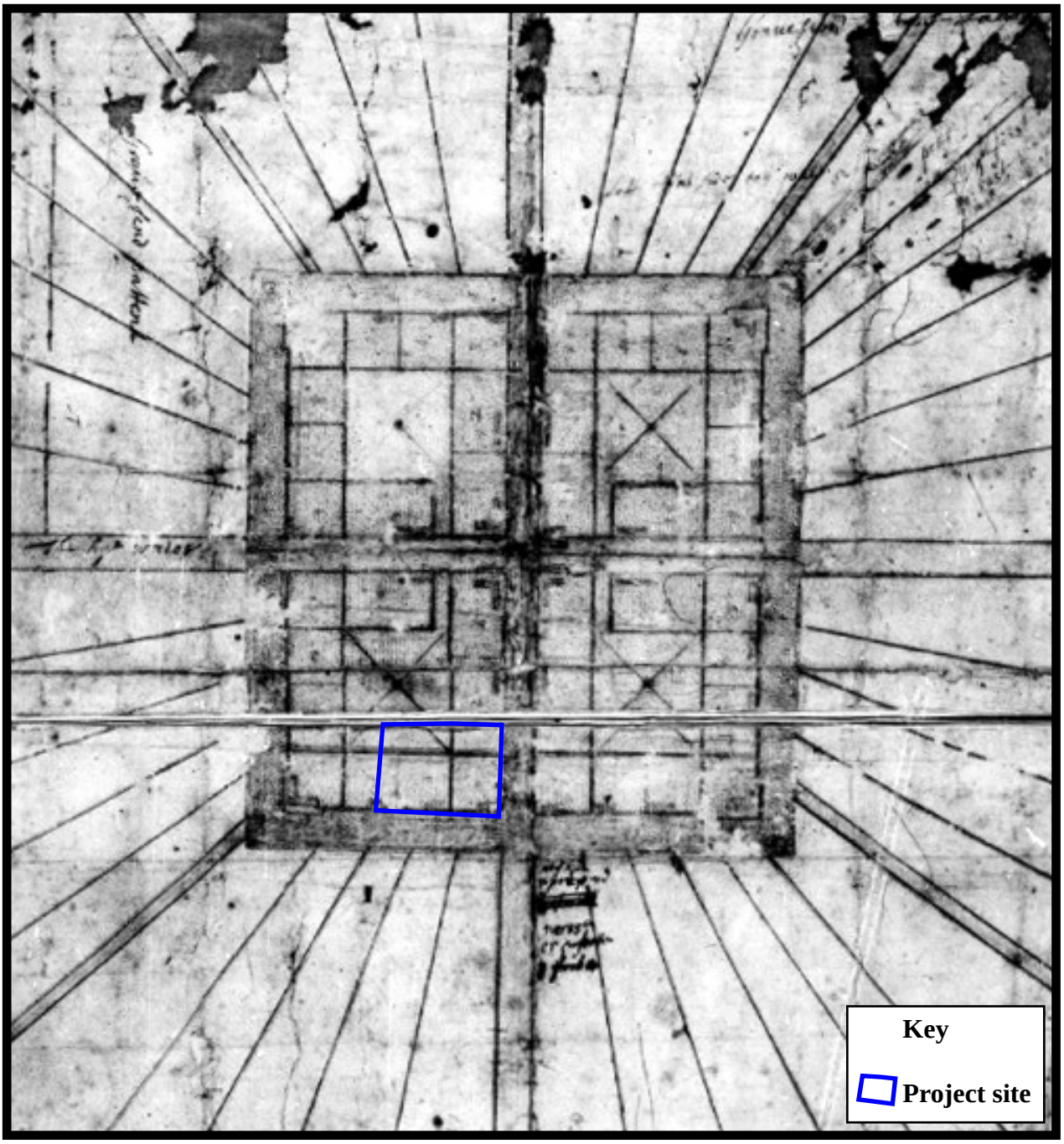

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Figure 4a: Project site on *Ye Ancient Plot of Ye Towne of s'Gravesende* [Old Town Kings County records] (Anonymous ca. 1645).

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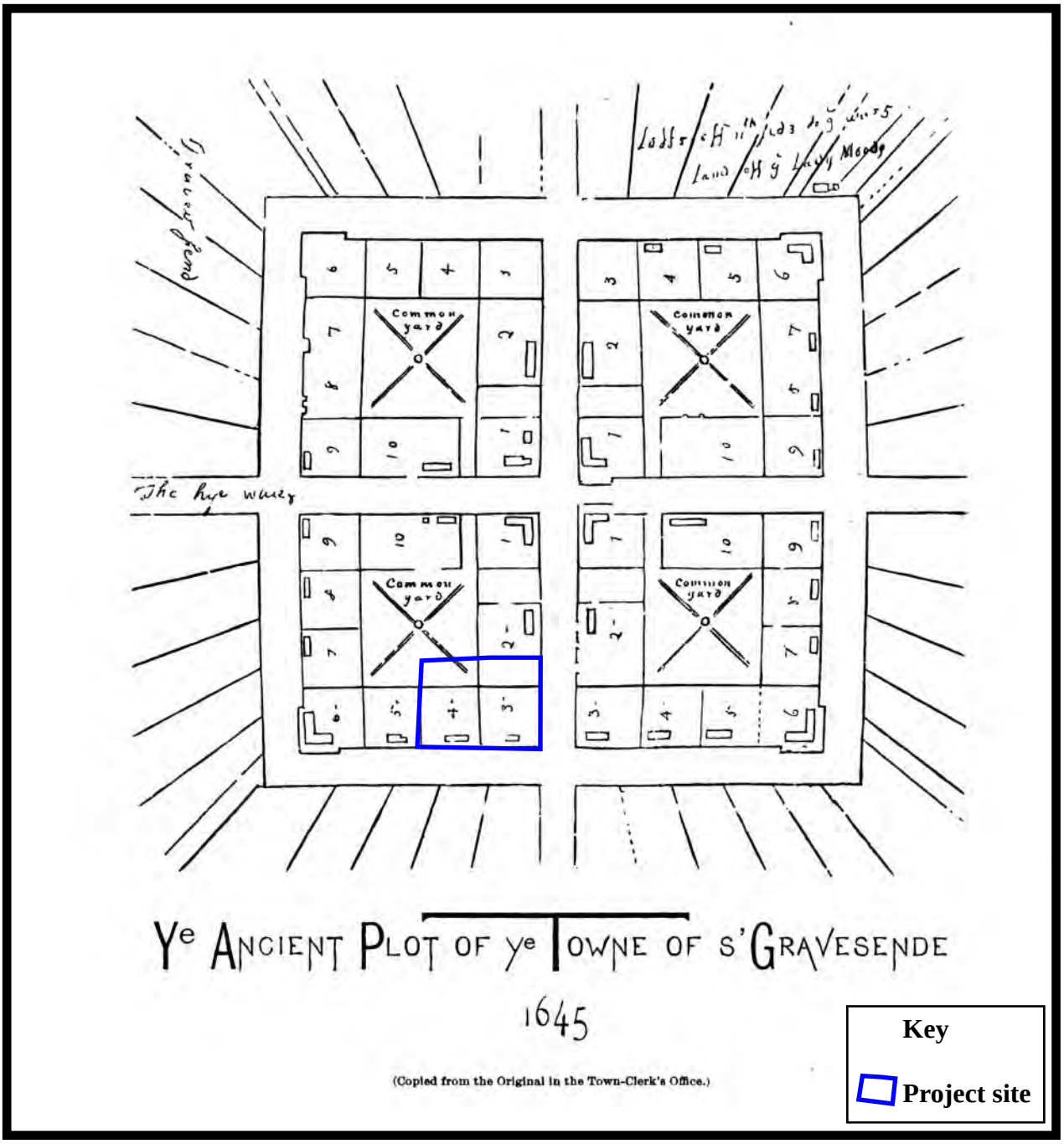

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Figure 4b: Project site on *Ye Ancient Plot of Ye Towne of s'Gravesende* (Anonymous ca. 1645 traced and reproduced in Stockwell 1884:6).

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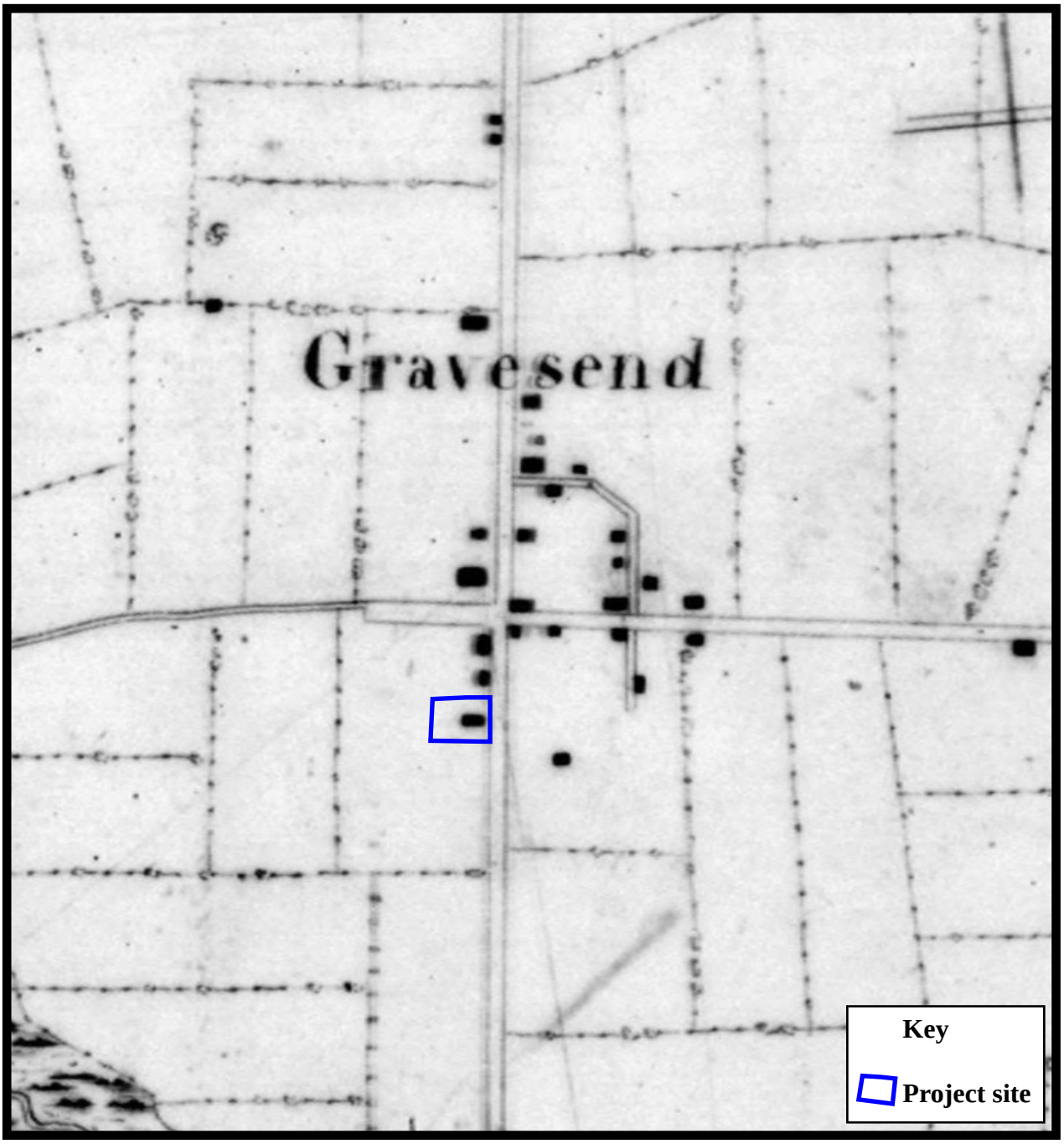

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Figure 5: Project site on *Fort Hamilton to Coney Island* (U.S.C.S. 1835).

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Figure 6: Project site on *Sidney's Map of Twelve Miles Around New-York* (Sidney 1849).

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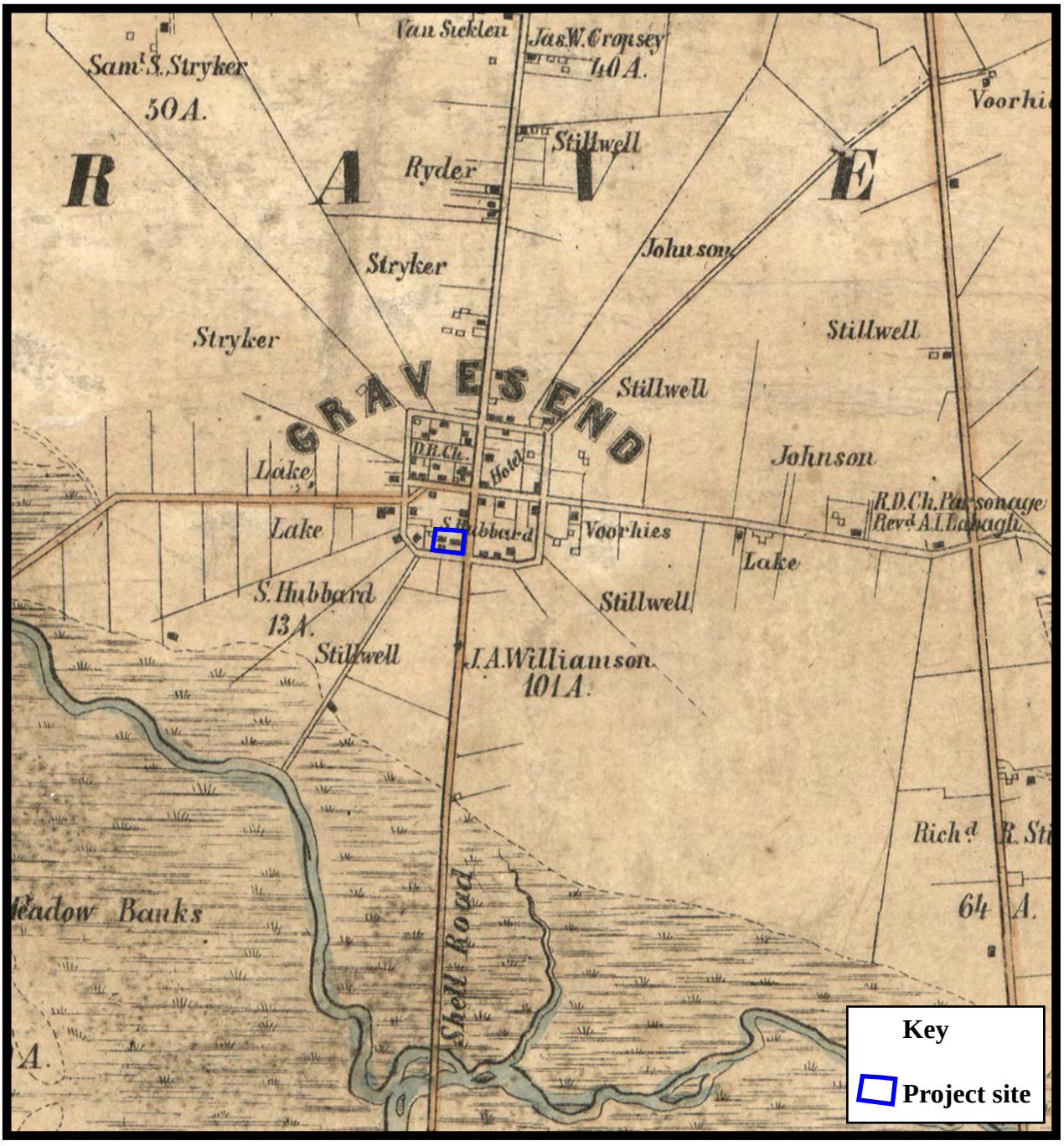

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Figure 7: Project site on *Map of Kings and Part of Queens Counties, Long Island, N.Y.* (Conner 1852).

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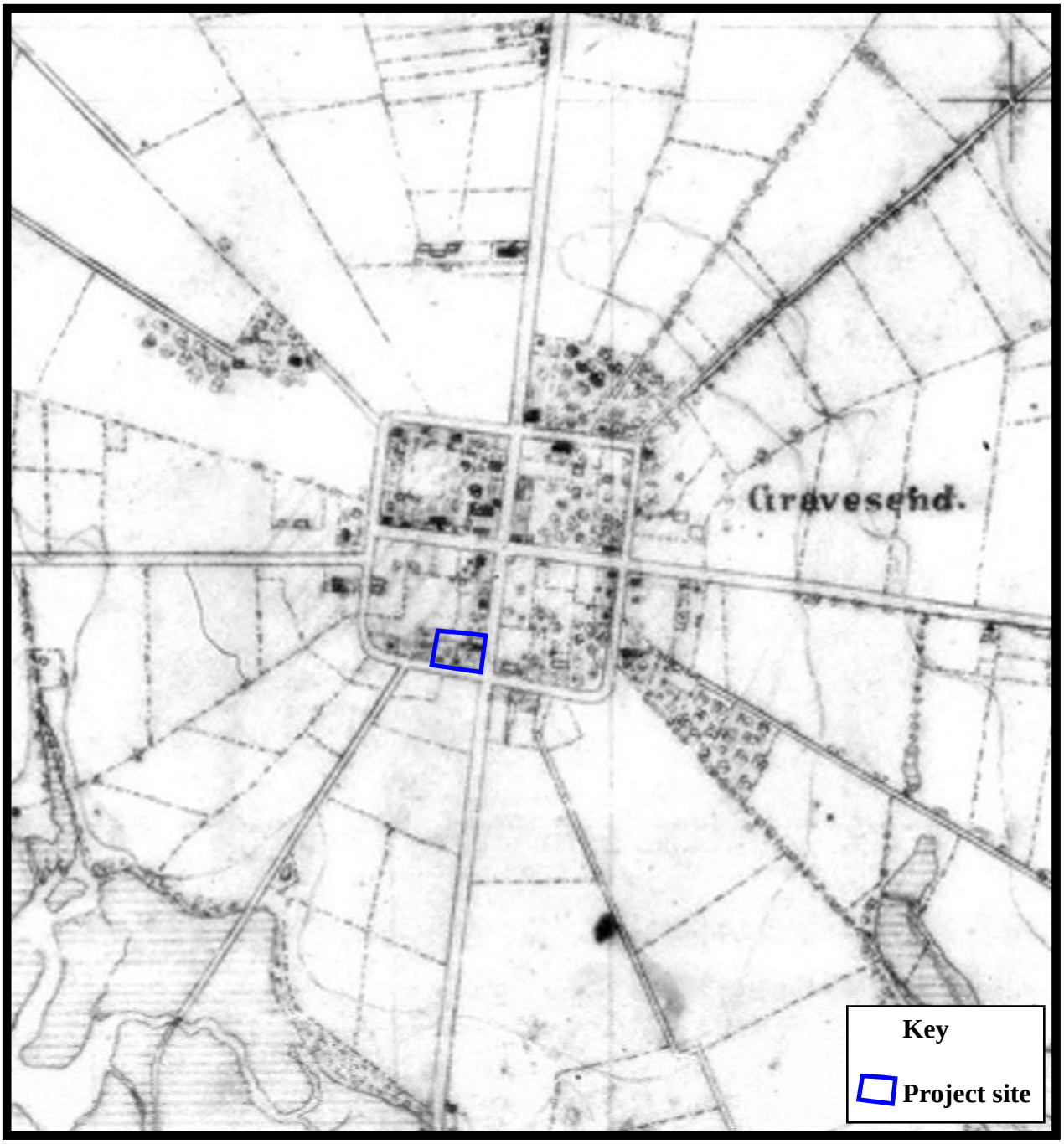

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Figure 8: Project site on *Coney Island and Dead Horse Inlet* (U.S.C.S. 1855-56).

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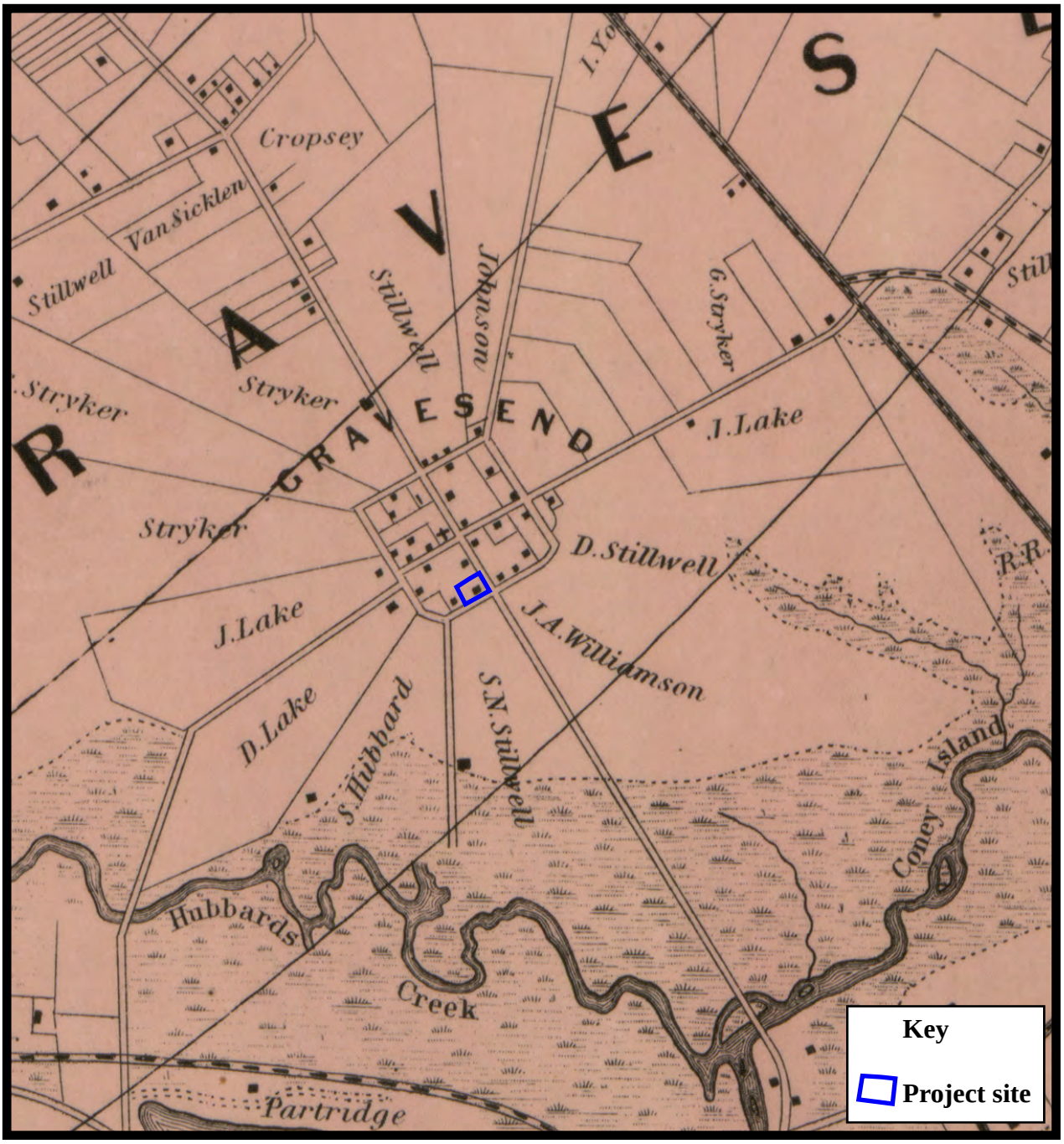

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Figure 9: Project site on *Map of Kings County, N.Y.* (Dripps 1868).

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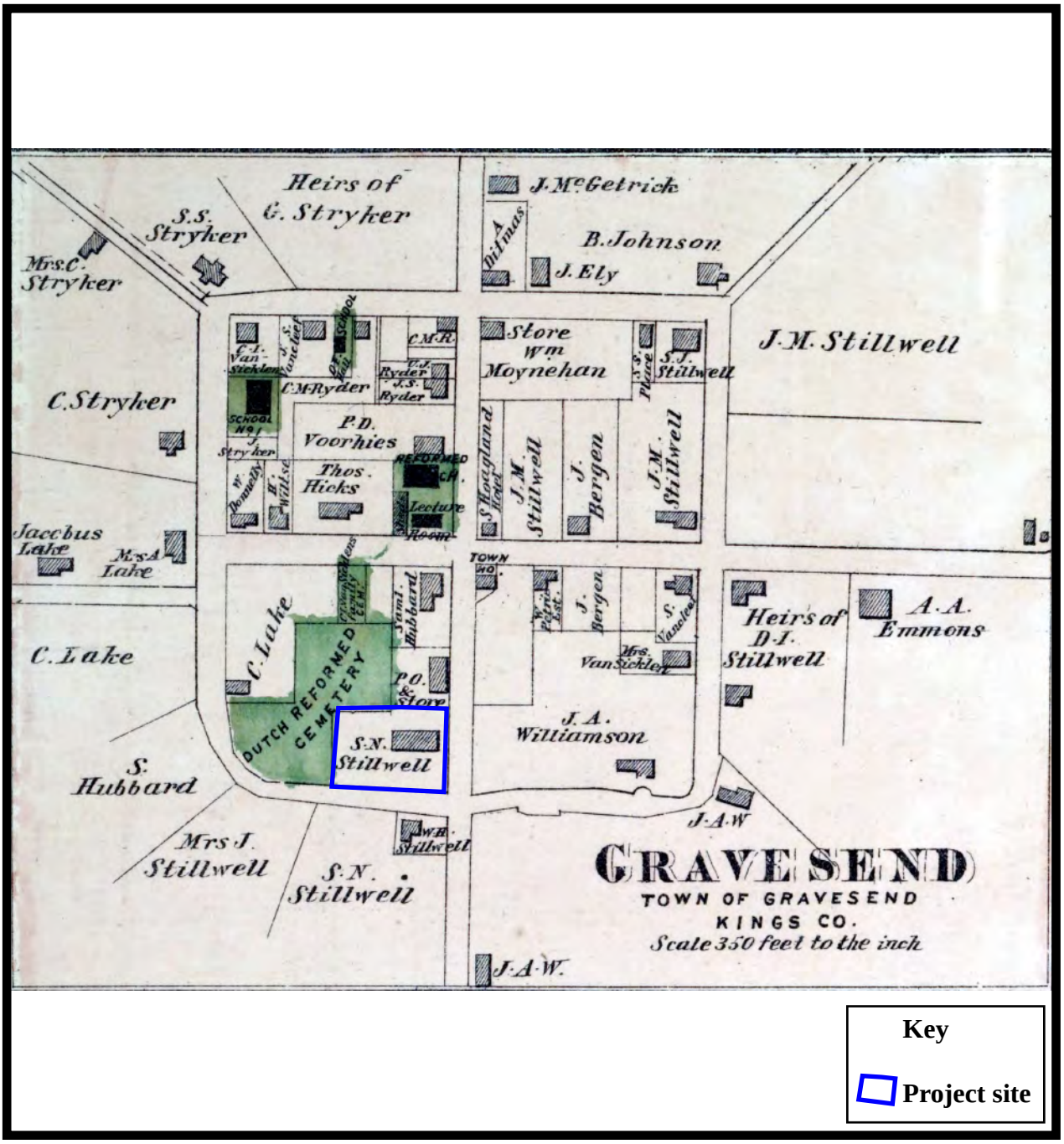

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Figure 10: Project site on *Atlas of Long Island, Town of Gravesend, Kings Co.* (Beers 1873).

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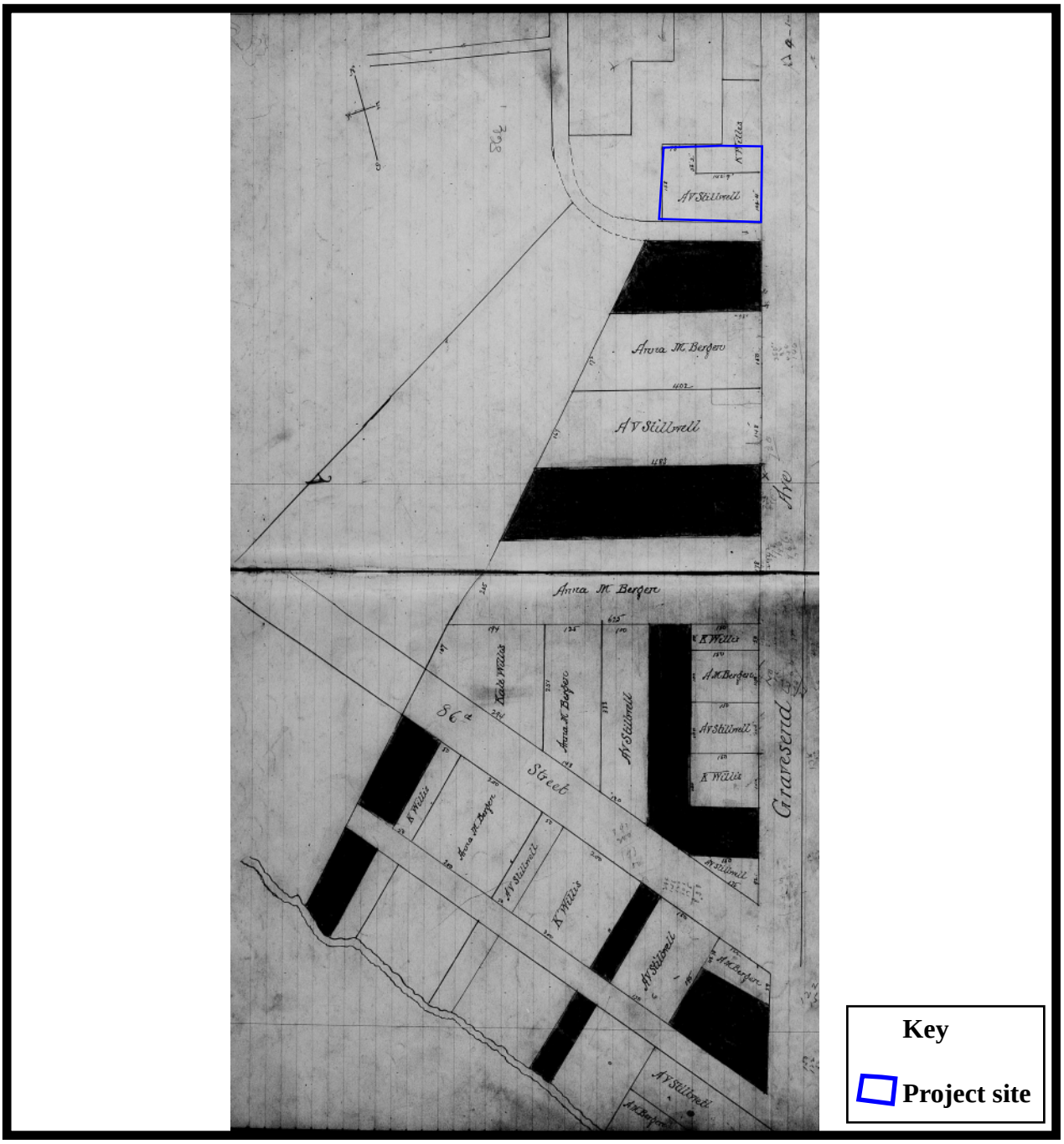

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Figure 11: Project site on survey map showing division of Stillwell estate (Liber 1384:120).

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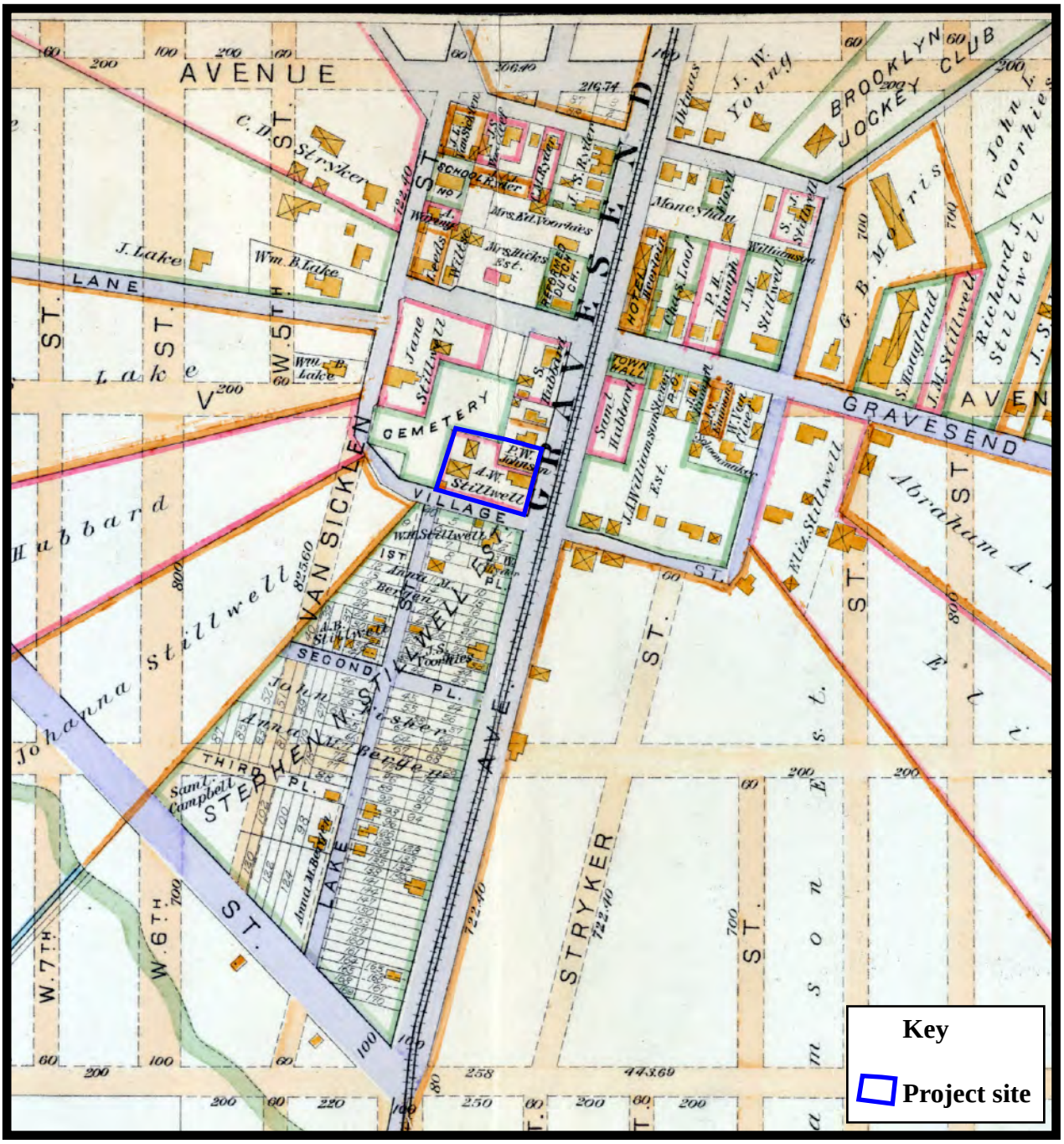

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Figure 12: Project site on *Robinson's Atlas of Kings County, New York* (Robinson 1890).

0 200 400 600 800 1000 FEET

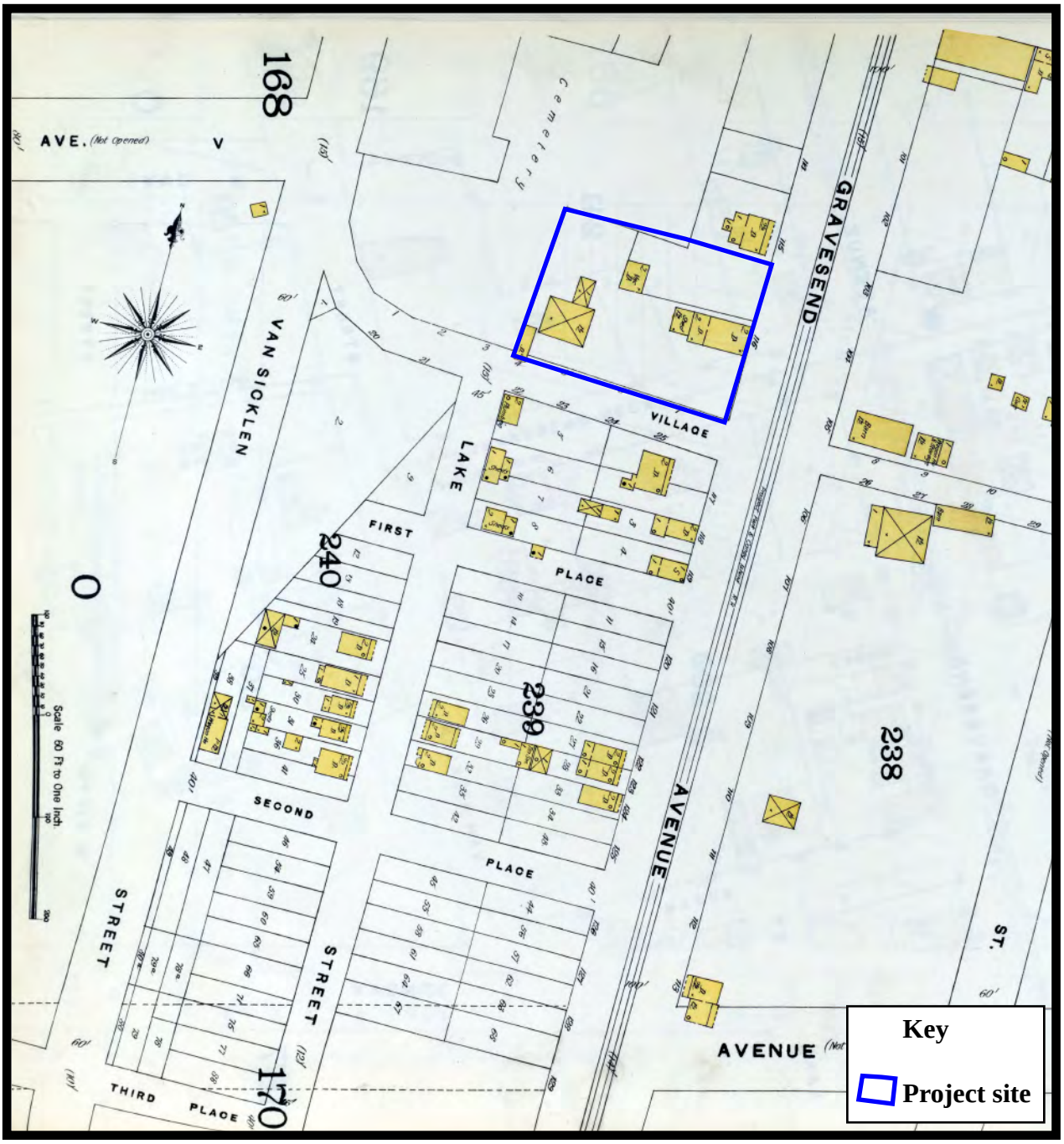

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Figure 13: Project site on *Insurance Maps of the City of Brooklyn, New York Suburbs* (Sanborn 1895).

0 50 100 150 200 250 FEET

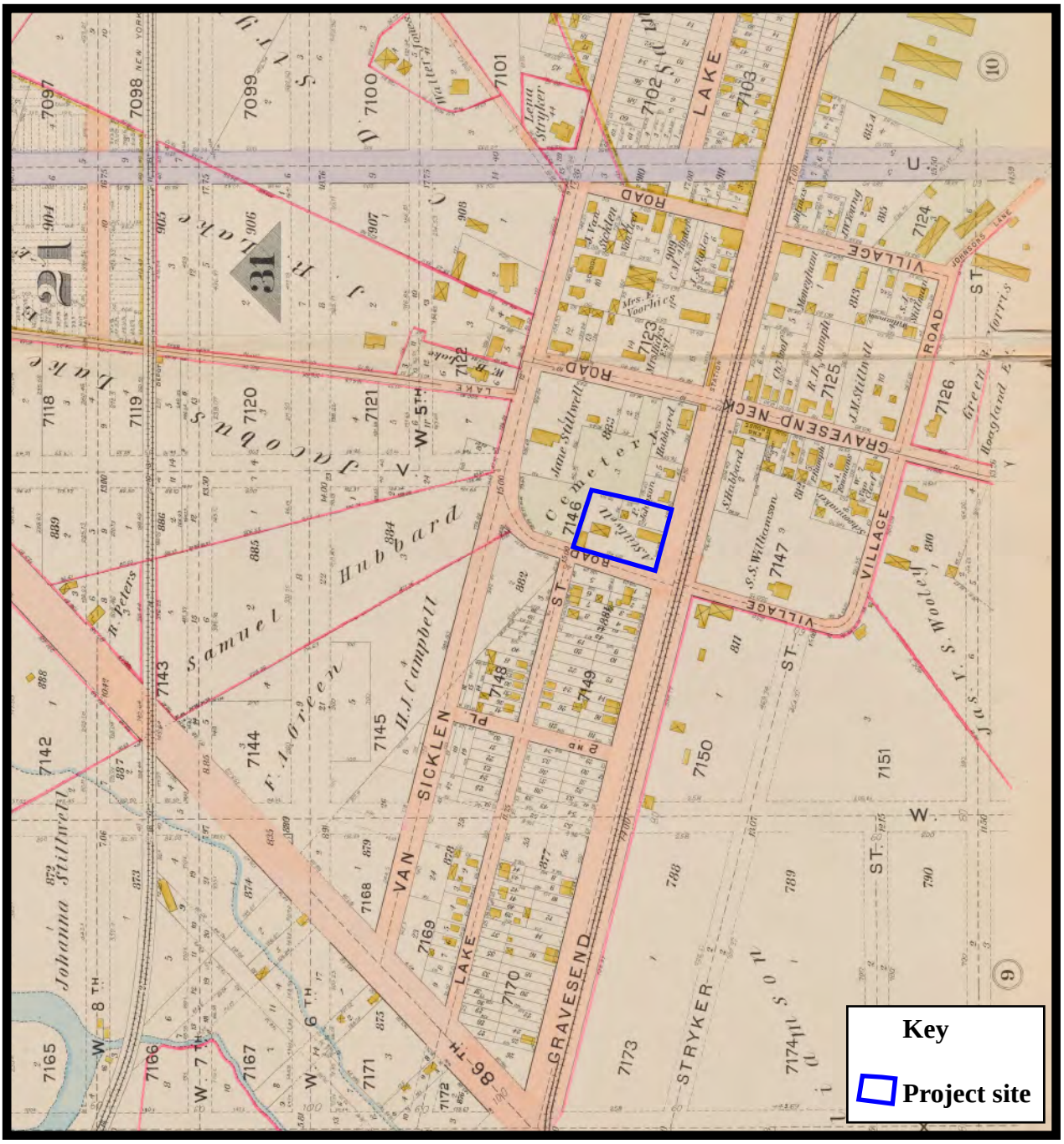

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Figure 14: Project site on *Atlas of the Brooklyn Borough of the City of New York* (Hyde 1899).

0 200 400 600 800 1000 FEET

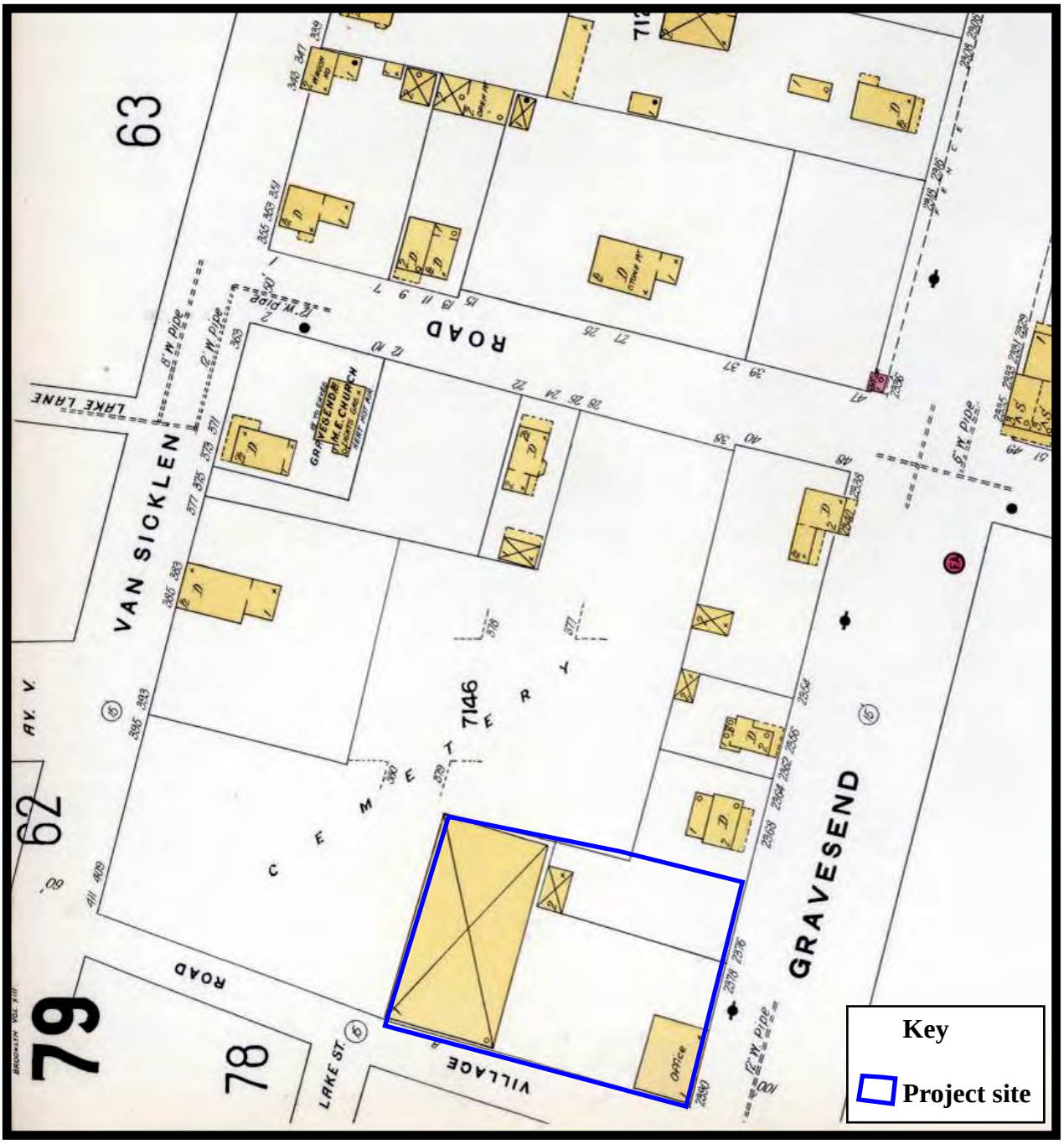

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Figure 15: Project site on *Insurance Maps of the City of Brooklyn* (Sanborn 1906).

0 50 100 150 200 250 FEET

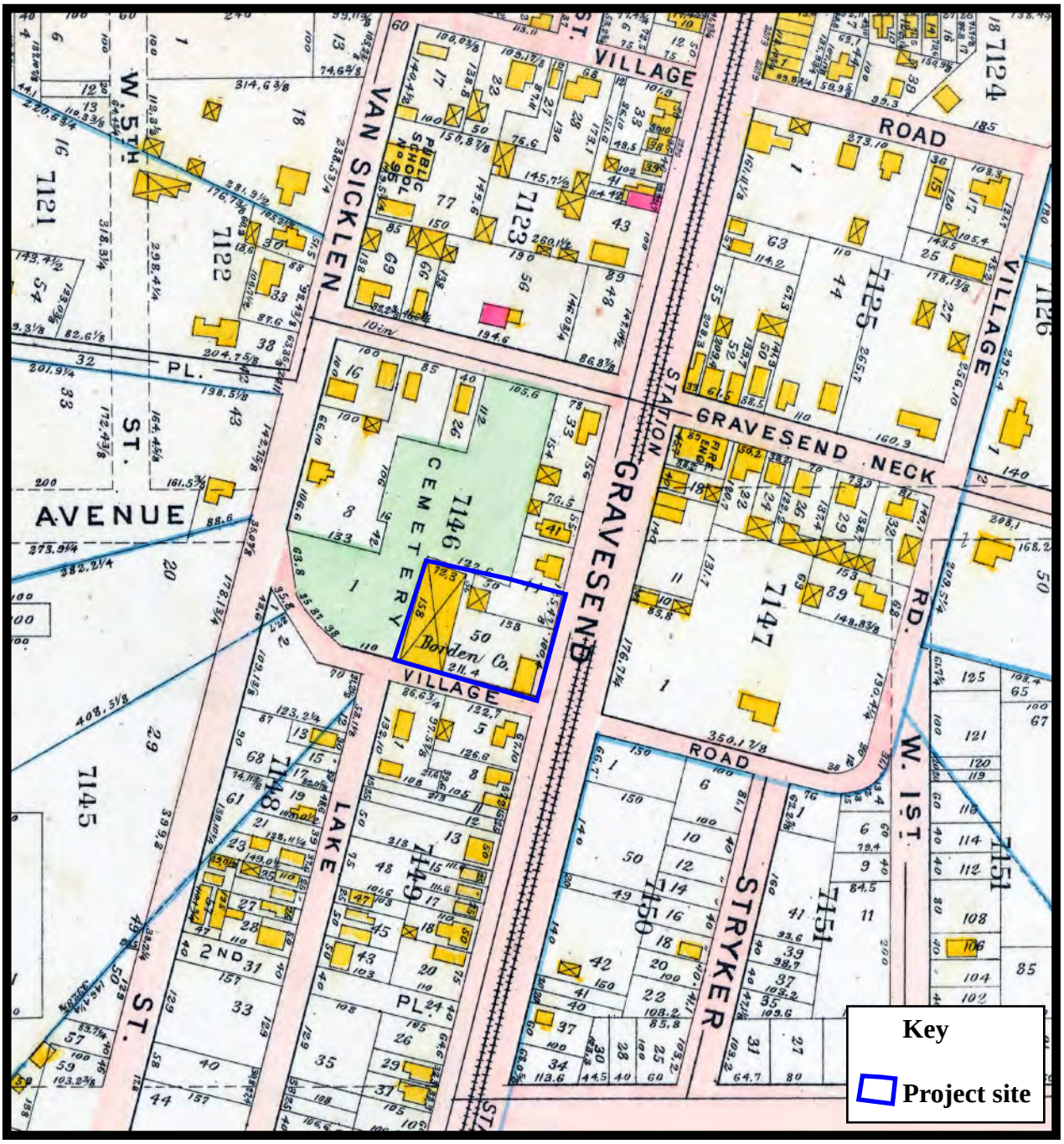

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Figure 16: Project site on *Atlas of the Borough of Brooklyn, City of New York* (Bromley 1907).

0 100 200 300 400 500 FEET

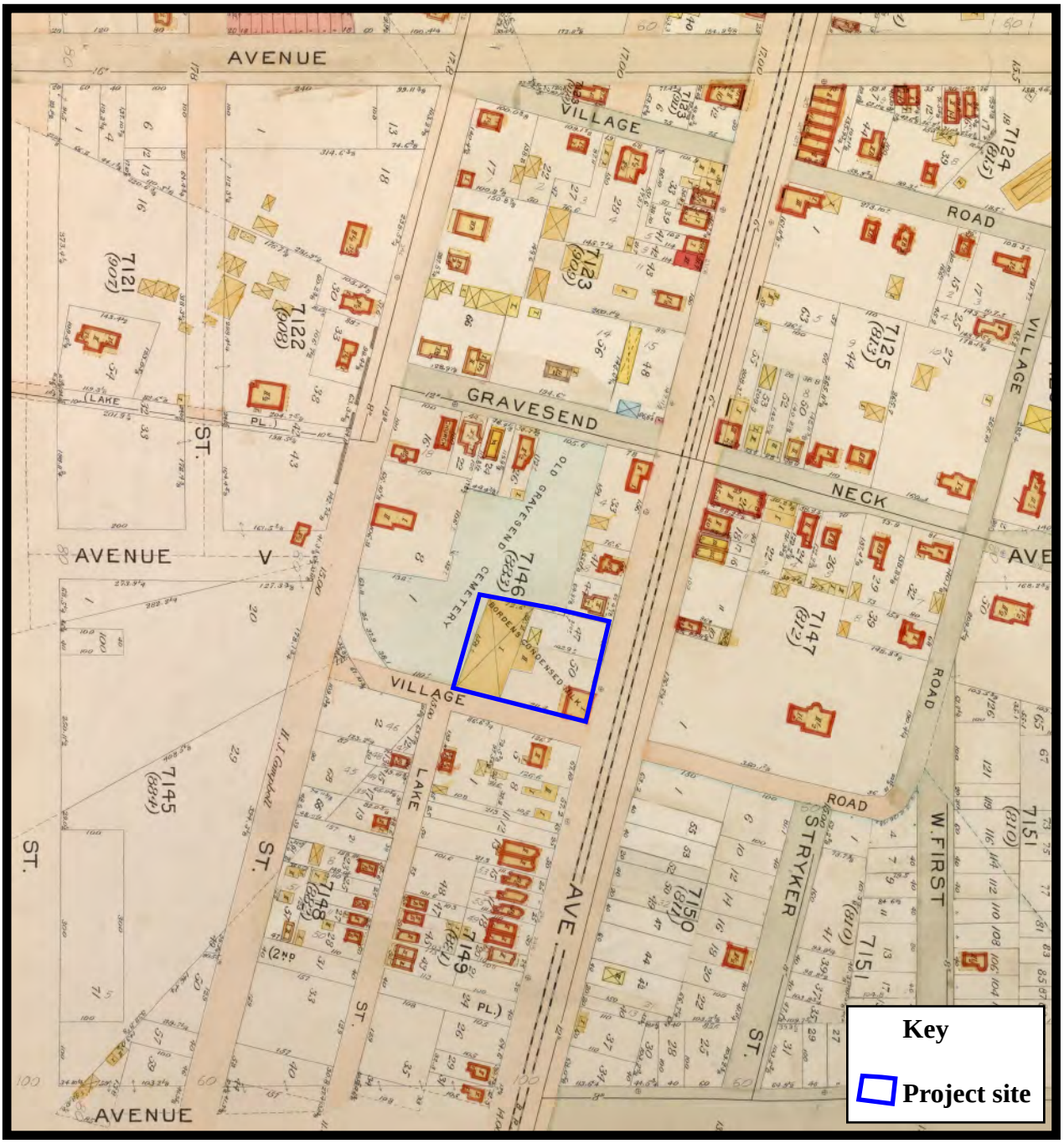

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Figure 17: Project site on *Atlas of the Borough of Brooklyn, City of New York* (Hyde 1907, updated to 1912).

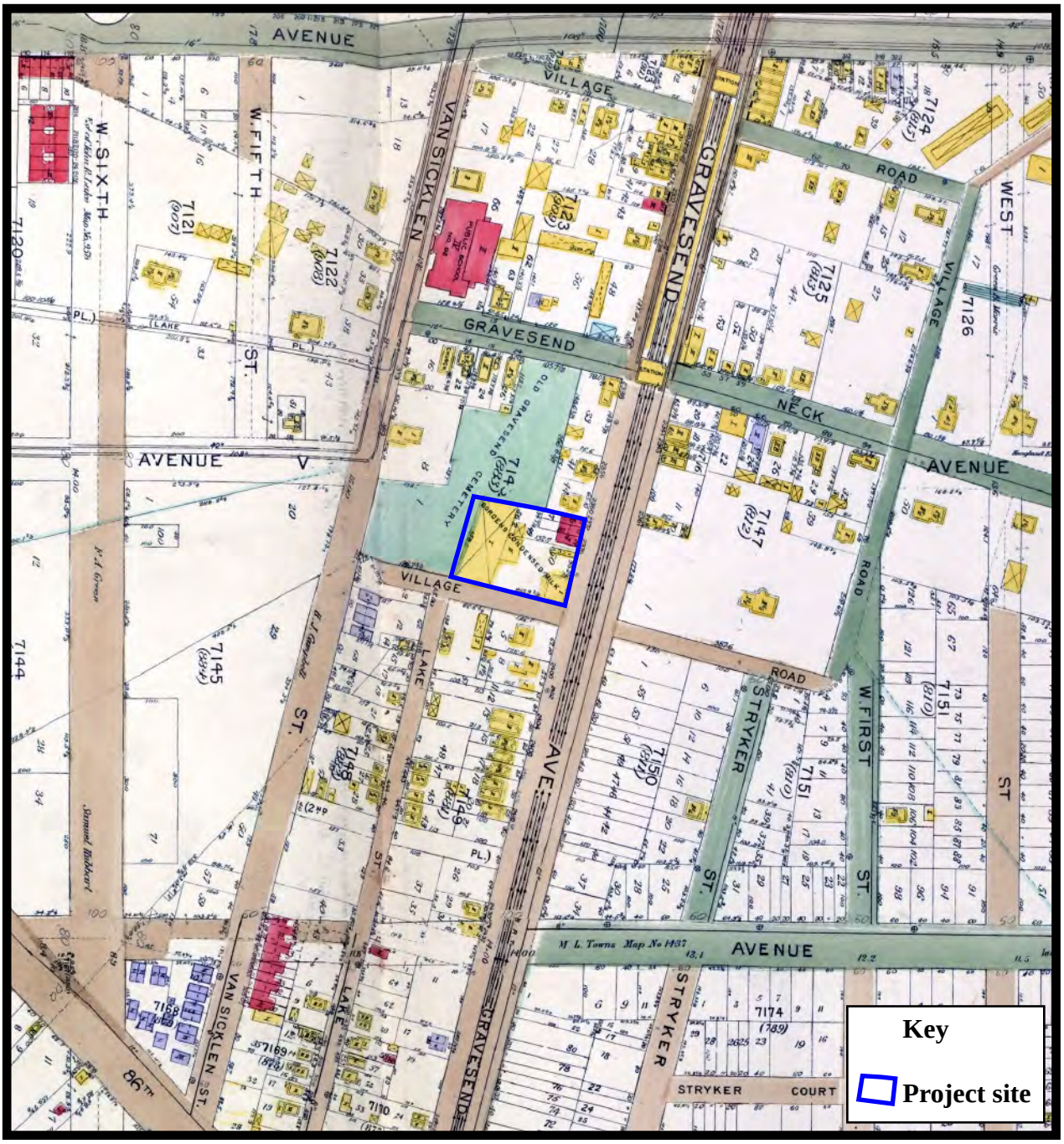

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Figure 18: Project site on *Atlas of the Borough of Brooklyn, City of New York* (Hyde 1916-1920).

0 200 400 600 800 1000 FEET

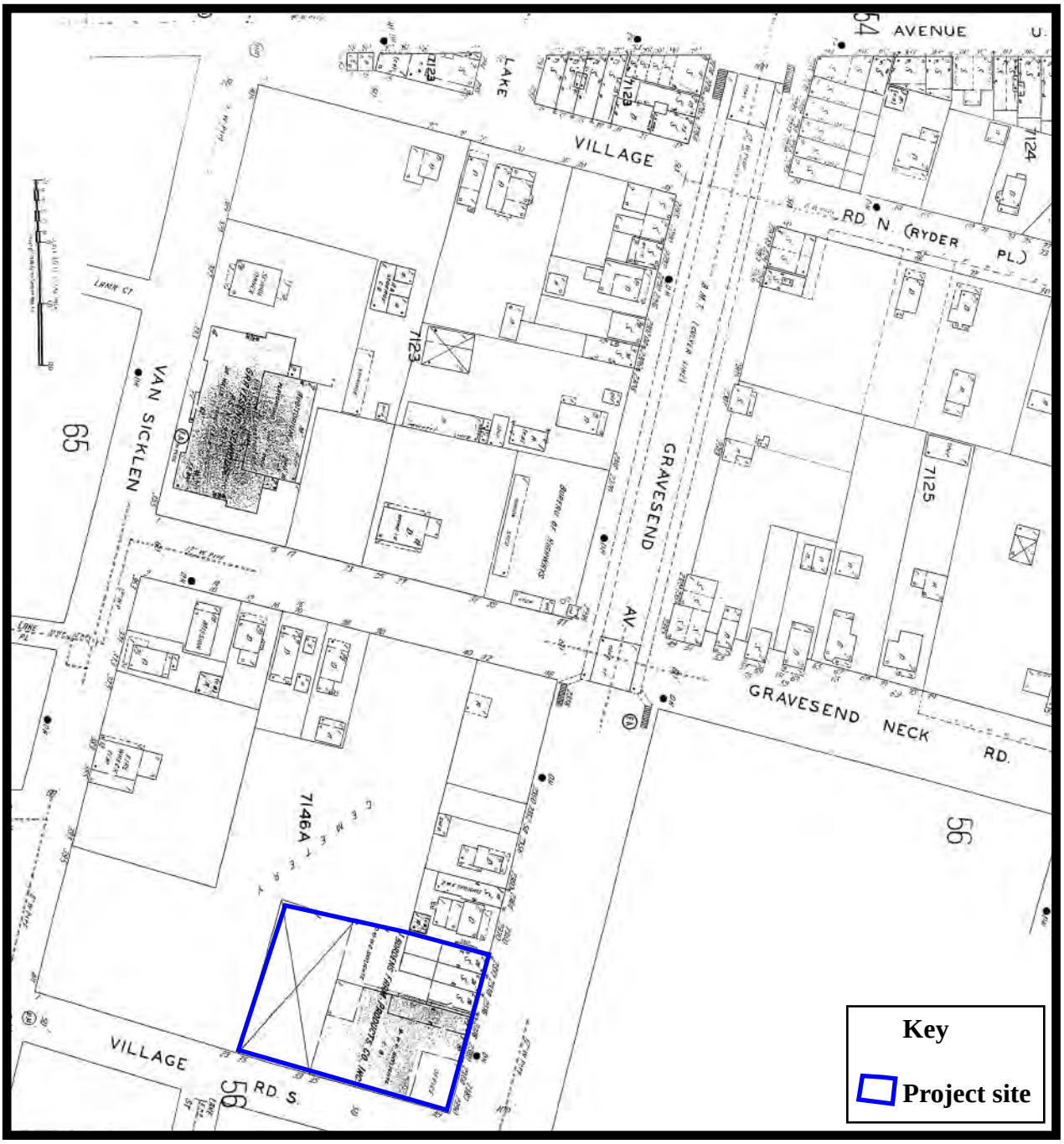

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Figure 19: Project site on *Insurance Maps of the City of Brooklyn* (Sanborn 1930).

0 100 200 300 400 500 FEET

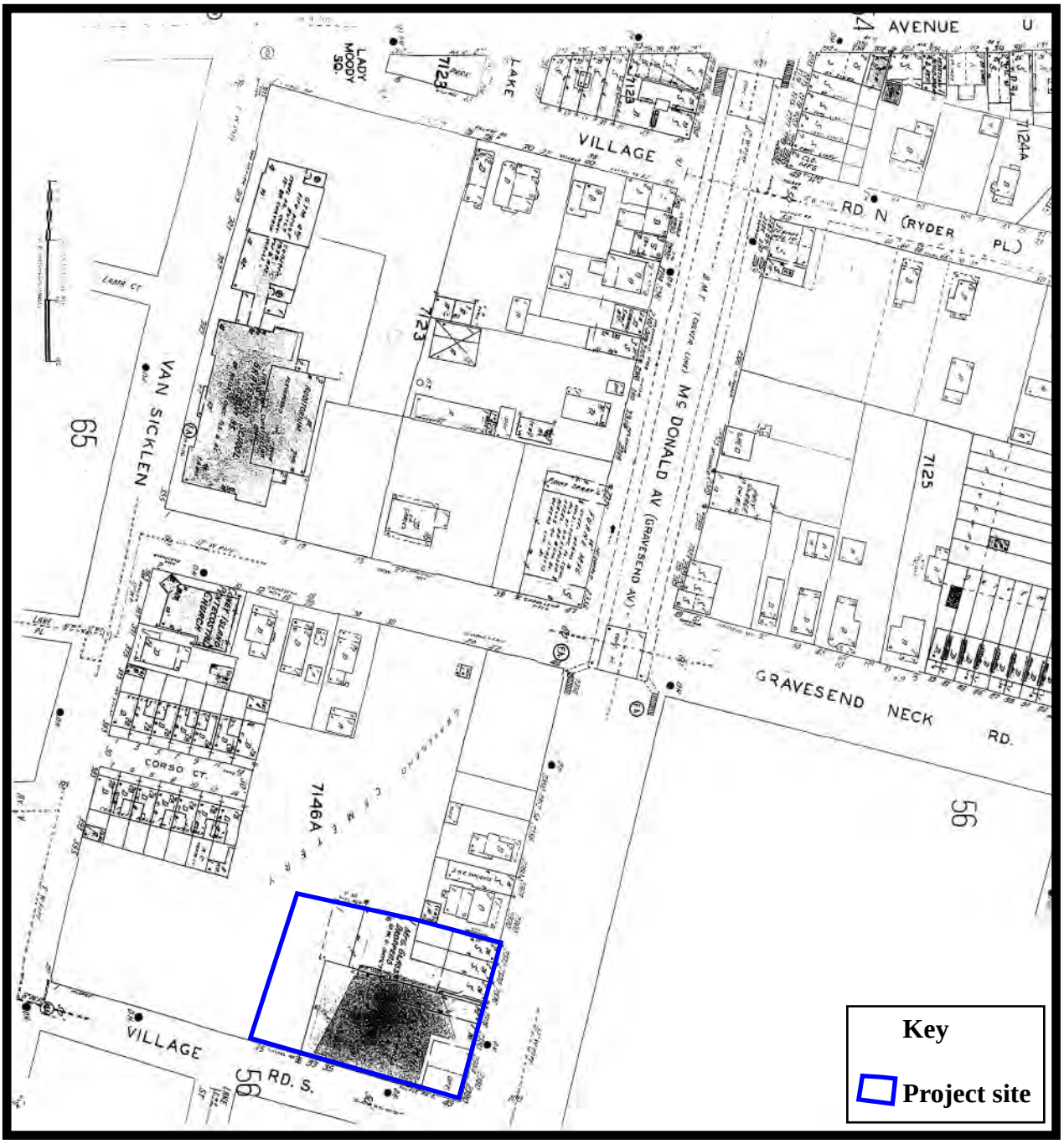

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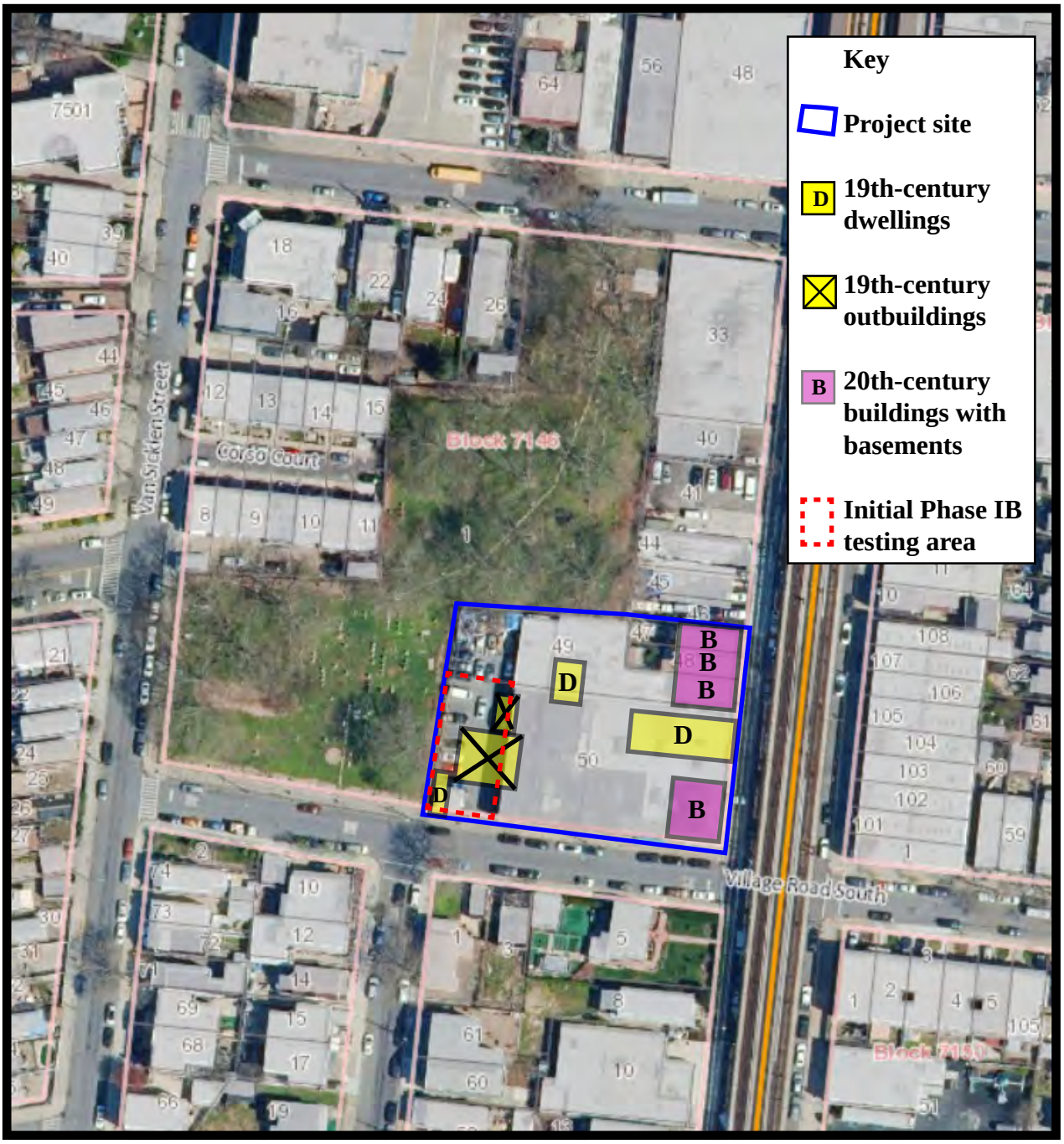
Figure 20: Project site on *Insurance Maps of the City of Brooklyn* (Sanborn 1951).

0 100 200 300 400 500 FEET



Phase IA Archaeological Documentary Study
2390 McDonald Avenue Rezoning
Brooklyn, NY 11223
Block 7146, Lots 47, 48, 49, and 50

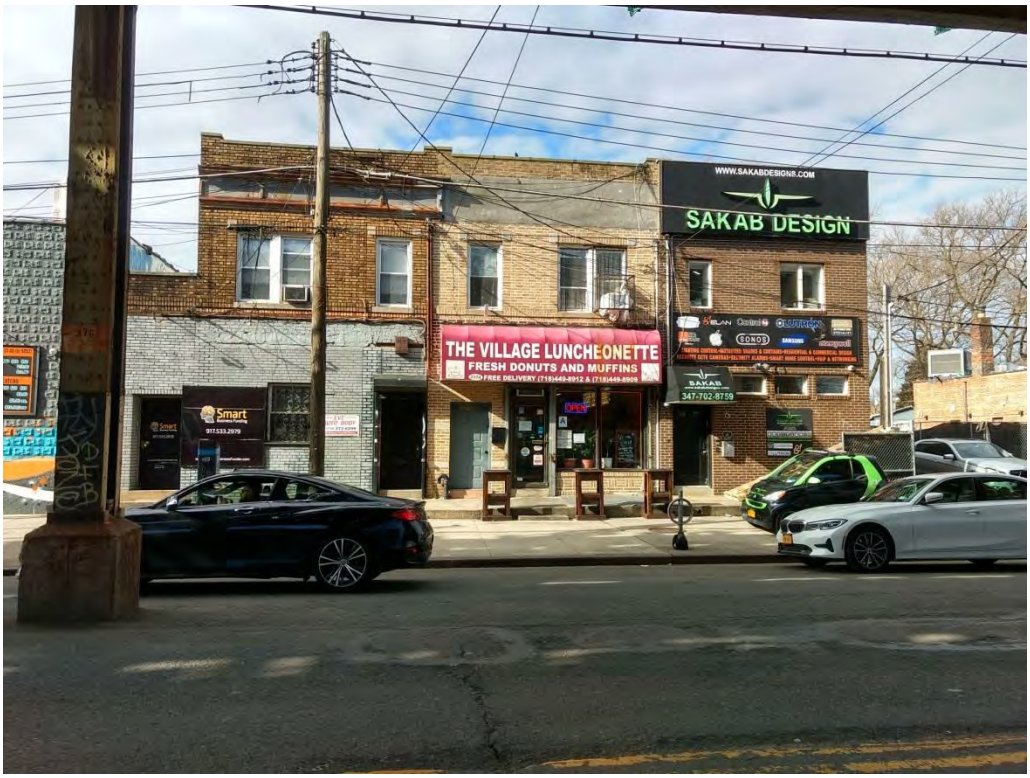
N

HP

Figure 21: Project site showing locations of former nineteenth-century buildings [1895 Sanborn], current twentieth-century buildings with basements, and initial Phase IB testing area on New York City Oasis Map (Oasis 2018).

0 50 100 150 200 250 FEET

PHOTOGRAPHS



Photograph 1. From right, Lots 47, 48, and 49. View looking west from McDonald Avenue.

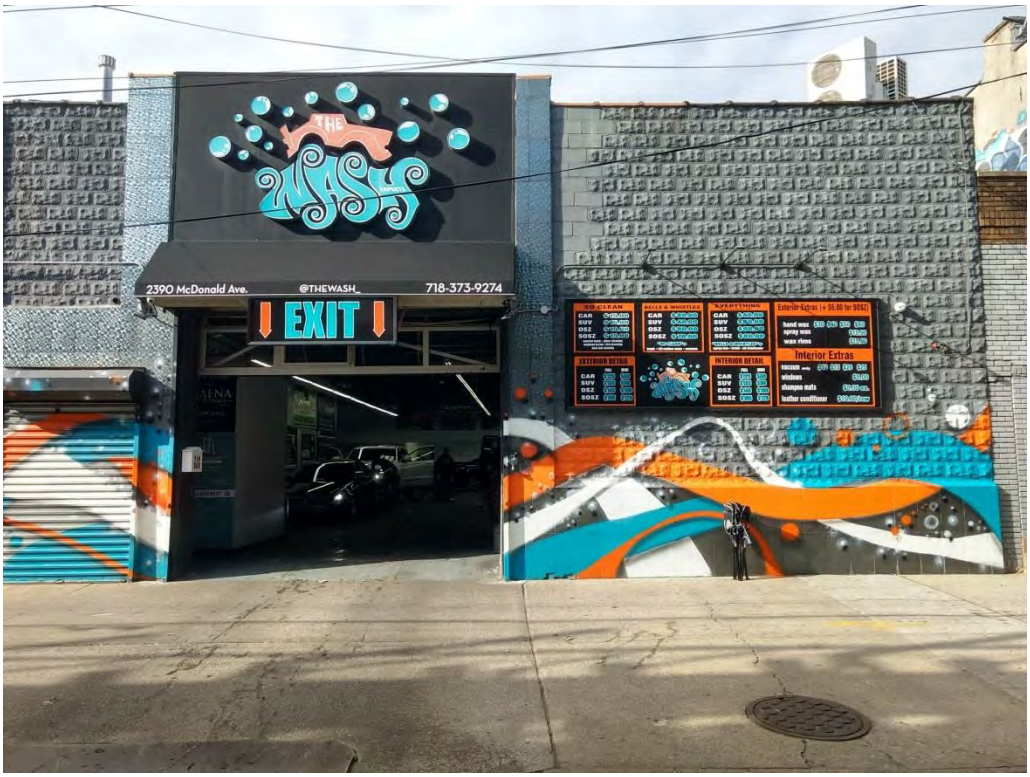

Photograph 2. Lot 47 concrete paved rear yard. View looking east from the roof of Lot 49.

Photograph 3. Lot 48 concrete paved rear yard. View looking north from the roof of Lot 49.

Photograph 4. Lot 49 sidewalk vault extending to the basement level. View looking southwest from the sidewalk of McDonald Avenue.

Photograph 5. The rear (western) entrance for the building on Lot 49, with the shared parking lot in the foreground. View looking northeast.

Photograph 6. The car wash entrance to the building on Lot 50. The oldest portion of the building is to the left of the car wash, with the banner. View looking southwest from McDonald Avenue.



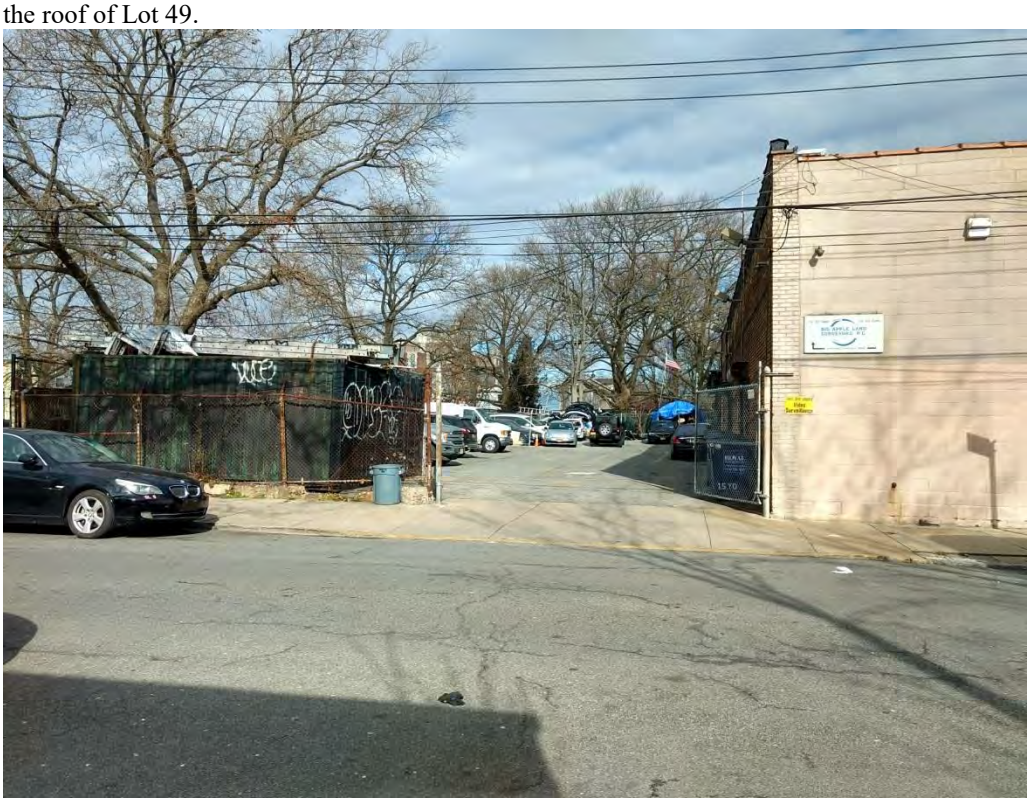
Photograph 7. The car wash exit from the building on Lot 50. (The cars make a U-turn within the building.) View looking west from McDonald Avenue.

Photograph 8. The south side of the building on Lot 50. The oldest part of the building is on the corner. View looking northwest from the intersection of McDonald Avenue and Village Road South.

Photograph 9. The rear of the building on Lot 50 with the shared parking lot in the foreground. View looking northeast.

Photograph 10. The interior of the building on Lot 50 showing old red, clapboard barn that was incorporated into the footprint of the building. View looking northeast.

Photograph 11. The top of the old red barn projecting above the roofline on Lot 50. View looking southwest from the roof of Lot 49.



Photograph 12. The entrance to the shared parking lot at the rear of Lots 49 and 50. View looking north from Village Road South.

Photograph 13. Detail of the parking lot at the rear of Lots 49 and 50. There is a storm water grate in the right center. View looking north.

Photograph 14. Detail of the parking lot at the rear of Lot 50, with the shipping containers in the right background. View looking south towards Village Road South.

Photograph 15. Detail of the parking lot at the rear of Lot 50 with the metal shipping containers. View looking northwest.

Photograph 16. The entrance to the Old Gravesend Cemetery on Gravesend Neck Road. View looking south.

Photograph 17. The entrance to the privately owned Van Sicklen Cemetery on Gravesend Neck Road, adjoining the Old Gravesend Cemetery. View looking south from Gravesend Neck Road.

Photograph 18. Detail of the Old Gravesend Cemetery from Gravesend Neck Road. The red brick building in the far background is the north side of the building on Lot 49 of the project site. View looking south.

Photograph 19. Detail of the Old Gravesend Cemetery looking north from the roof of Lot 49, with Gravesend Neck Road in the far background.

Photograph 20. Detail of the Old Gravesend Cemetery from the roof of Lot 49. View looking west.

Photograph 21. Detail of the Old Gravesend Cemetery with the project site behind the fence in the background. View looking northeast.

Photograph 22. Gravestones situated approximately six feet from the edge of the project site, which is bounded by the fence on the right. View looking north from Village Road South.

APPENDIX A: SOIL BORINGS (ESC 2020b)

Scale: 1″= 20ft

● Soil Boring ● GW Sample ● SV Sample

Figure 1

Environmental Studies Corporation	Property Located at: 2390 McDonald Avenue Brooklyn, New York	Sample Collection Locations

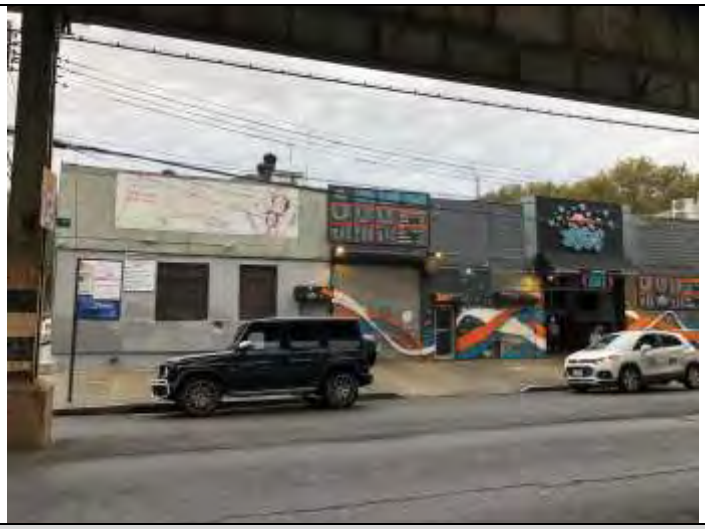


PHOTO 1: 2390 McDonald Ave front of building

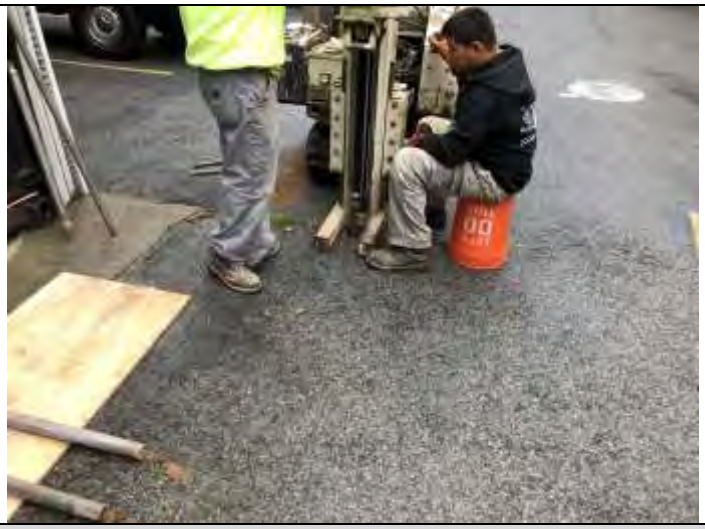


PHOTO 2: Soil Boring using Geoprobe Drill rig B-1

PHOTO 3: Soil samples B-1 0-2ft and 10-12ft

PHOTO 4: Soil Vapor sample SV-1

PHOTO 5: Sample Location B-2

PHOTO 6: Collection of Groundwater Samples

PHOTO 7:. Soil Sample B-2 0-2ft and 10-12ft

PHOTO 8: Soil Sample B-4 0-2ft and 10-12ft

PHOTO 9: Geoprobe Sampling B-3

Photo 10: Geoprobe Soil Sampling B-5

PHOTO 11: Soil Samples B-5 0-2ft and 10-12ft

PHOTO 12: Soil Sampling location B-6

Environmental Studies Corporation

SOIL BORING REPORT LOG

DATE 10-2-2020						SHEET 1 OF 1
CLIENT Environmental Studies Corporation						LOCATION ID#
PROJECT LOCATION 2390 McDonald Avenue, Brooklyn, New York						**B-1 GW-1**
REMARKS : SV-1 and GW-1 completed in converted borehole						**SV-1**
DRILLING CONTRACTOR TSDT, INC.			LOGGED BY PR		DRILLER CG	
EQUIPMENT	SOIL SAMPLER	HAMMER WEIGHT/FALL		Groundwater Collection		DRILL RIG
				PVC	1 -inch	DRILL METHOD
TYPE	Macrocore			temporary		Geoprobe LT 5400
SIZE	2 inch O.D.					
SURFACE ELEVATION NA		Surface Materials: Asphalt				
WATER LEVEL (IN OPEN BOREHOLE) 16 feet at end of boring						

DEPTH	SAMPLE	DEPTH	OVA/PID READINGS	MOISTURE	STRATA	SOIL – ROCK DESCRIPTION – CLASSIFICATION
	*S-1	0 - 4	0.0	Dry		asphalt surface
						Brown-Gray fine to course SAND intermixed w/construction debris and fill – concrete, red brick, stone (Urban Fill)
	S-2	4 – 8	0.0	Dry		
5						
						Brown Fine to coarse SAND, little gravel (Native)
	*S-3	8 – 12	0.0	Dry		
10						
						Brown Fine to coarse SAND, little gravel (Native)
	S-4	12 -16	0.0	Dry		
						Borehole advance to 20 feet to collect groundwater
15						
					▽ WT	
				Wet		
						EOB @20 ft
20						
						* sample collected for laboratory analysis
						Samples collected:
						B-1 0 – 2 feet
						B-1 10 – 12 feet
						GW-1 sampled in temporary well conversion
25						
						SV-1 probe collected at 12 feet below grade
30						

Environmental Studies Corporation

SOIL BORING REPORT LOG

DATE 10-2-2020						SHEET 1 OF 1
CLIENT Environmental Studies Corporation						LOCATION ID#
PROJECT LOCATION 2390 McDonald Avenue, Brooklyn,New York						**B-2**
REMARKS : SV-2 completed in converted borehole						**SV-2**
DRILLING CONTRACTOR TSDT, INC.			LOGGED BY PR		DRILLER CG	
EQUIPMENT	SOIL SAMPLER	HAMMER WEIGHT/FALL		Groundwater Collection		DRILL RIG
				PVC	1 -inch	DRILL METHOD
TYPE	Macrocore			temporary		Geoprobe LT 5400
SIZE	2 inch O.D.					
SURFACE ELEVATION NA		Surface Materials: Asphalt				
WATER LEVEL (IN OPEN BOREHOLE) not encountered						

DEPTH	SAMPLE	DEPTH	OVA/PID READINGS	MOISTURE	STRATA	SOIL – ROCK DESCRIPTION – CLASSIFICATION
	*S-1	0 - 4	0.0	Dry		asphalt surface
	S-2	4 – 8	0.0	Dry		Brown-Gray fine to course SAND intermixed w/construction debris and fill – concrete, red brick, stone (Urban Fill)
5						
	*S-3	8 – 12	0.0	Dry		Brown Fine to coarse SAND, little gravel (Native)
10						
						Brown Fine to coarse SAND, little gravel (Native)
	S-4	12 -16	0.0	Dry		
15						
				Moist		EOB @16 ft
						* sample collected for laboratory analysis
						Samples collected:
						B-2 0 – 2 feet
						B-2 10 – 12 feet
20						
						SV-2 probe collected at 12 feet below grade
25						
30						

Environmental Studies Corporation

SOIL BORING REPORT LOG

DATE 10-2-2020						SHEET 1 OF 1
CLIENT Environmental Studies Corporation						LOCATION ID#
PROJECT LOCATION 2390 McDonald Avenue, Brooklyn, New York						**B-3**
REMARKS : SV-3 completed in converted borehole						**SV-3**
DRILLING CONTRACTOR TSDT, INC.			LOGGED BY PR		DRILLER CG	
EQUIPMENT	SOIL SAMPLER	HAMMER WEIGHT/FALL		Groundwater Collection		DRILL RIG
				PVC	1 -inch	DRILL METHOD
TYPE	Macrocore			temporary		Geoprobe LT 5400
SIZE	2 inch O.D.					
SURFACE ELEVATION NA		Surface Materials: Concrete floor/tile				
WATER LEVEL (IN OPEN BOREHOLE) not encountered						

DEPTH	SAMPLE	DEPTH	OVA/PID READINGS	MOISTURE	STRATA	SOIL – ROCK DESCRIPTION – CLASSIFICATION
	*S-1	0 - 4	0.0	Dry		Concrete flor/tile surface
	S-2	4 – 8	0.0	Dry		Brown-Gray fine to course SAND intermixed w/construction debris and fill – concrete, red brick, stone (Urban Fill)
5						
	*S-3	8 – 12	0.0	Dry		Brown Fine to coarse SAND, little gravel (Native)
10						
						Brown Fine to coarse SAND, little gravel (Native)
	S-4	12 -16	0.0	Dry		
15						
				Moist		EOB @16 ft
						* sample collected for laboratory analysis
						Samples collected:
						B-3 0 – 2 feet
						B-3 10 – 12 feet
20						
						SV-3 probe collected at 12 feet below grade
25						
30						

Environmental Studies Corporation

SOIL BORING REPORT LOG

DATE 10-2-2020						SHEET 1 OF 1
CLIENT Environmental Studies Corporation						LOCATION ID#
PROJECT LOCATION 2390 McDonald Avenue, Brooklyn, New York						**B-4 GW-2**
REMARKS : SV-4 and GW-2 completed in converted borehole						**SV-4**
DRILLING CONTRACTOR TSDT, INC.			LOGGED BY PR		DRILLER CG	
EQUIPMENT	SOIL SAMPLER	HAMMER WEIGHT/FALL		Groundwater Collection		DRILL RIG
				PVC	1 -inch	DRILL METHOD
TYPE	Macrocore			temporary		Geoprobe LT 5400
SIZE	2 inch O.D.					
SURFACE ELEVATION NA		Surface Materials: Concrete floor slab				
WATER LEVEL (IN OPEN BOREHOLE) 16.5 feet at end of boring						

DEPTH	SAMPLE	DEPTH	OVA/PID READINGS	MOISTURE	STRATA	SOIL – ROCK DESCRIPTION – CLASSIFICATION
	*S-1	0 - 4	0.0	Dry		Concrete surface
						Brown-Gray fine to course SAND intermixed w/construction debris and fill – concrete, red brick, stone (Urban Fill)
	S-2	4 – 8	0.0	Dry		
5						
	*S-3	8 – 12	0.0	Dry		Brown Fine to coarse SAND, little gravel (Native)
10						
	S-4	12 -16	0.0	Dry		Brown Fine to coarse SAND, little gravel (Native)
15					▽ WT	Borehole advance to 20 feet to collect groundwater
				Wet		
20						EOB @20 ft
25						* sample collected for laboratory analysis Samples collected: B-4 0 – 2 feet B-4 10 – 12 feet GW-2 sampled in temporary well conversion SV-4 probe collected at 12 feet below grade
30						

Environmental Studies Corporation

SOIL BORING REPORT LOG

DATE 10-2-2020						SHEET 1 OF 1
CLIENT Environmental Studies Corporation						LOCATION ID#
PROJECT LOCATION 2390 McDonald Avenue, Brooklyn, New York						**B-5**
REMARKS :						
DRILLING CONTRACTOR TSDT, INC.			LOGGED BY PR		DRILLER CG	
EQUIPMENT	SOIL SAMPLER	HAMMER WEIGHT/FALL		Groundwater Collection		DRILL RIG
				PVC	1 -inch	DRILL METHOD
TYPE	Macrocore					Geoprobe LT 5400
SIZE	2 inch O.D.					
SURFACE ELEVATION NA		Surface Materials: Concrete floor tile				
WATER LEVEL (IN OPEN BOREHOLE) not encountered						

DEPTH	SAMPLE	DEPTH	OVA/PID READINGS	MOISTURE	STRATA	SOIL – ROCK DESCRIPTION – CLASSIFICATION
	*S-1	0 - 4	0.0	Dry		Concrete floor tile surface
						Brown-Gray fine to course SAND intermixed w/construction debris and fill – concrete, red brick, stone (Urban Fill)
	S-2	4 – 8	0.0	Dry		
5						
	*S-3	8 – 12	0.0	Dry		Brown Fine to coarse SAND, little gravel (Native)
10						
	S-4	12 -16	0.0	Dry		Brown Fine to coarse SAND, little gravel (Native)
15						EOB @16 ft
						* sample collected for laboratory analysis
						Samples collected:
						B-5 0 – 2 feet
20						B-5 10 – 12 feet
25						
30						

Environmental Studies Corporation

SOIL BORING REPORT LOG

DATE 10-2-2020					SHEET 1 OF 1
CLIENT Environmental Studies Corporation					LOCATION ID#
PROJECT LOCATION 2390 McDonald Avenue, Brooklyn, New York					**B-6**
REMARKS :					
DRILLING CONTRACTOR TSDT, INC.			LOGGED BY PR	DRILLER CG	
EQUIPMENT	SOIL SAMPLER	HAMMER WEIGHT/FALL		Groundwater Collection	DRILL RIG
					DRILL METHOD
TYPE	Macrocore				Geoprobe LT 5400
SIZE	2 inch O.D.				
SURFACE ELEVATION NA		Surface Materials: Concrete floor slab			
WATER LEVEL (IN OPEN BOREHOLE) not encountered					

DEPTH	SAMPLE	DEPTH	OVA/PID READINGS	MOISTURE	STRATA	SOIL – ROCK DESCRIPTION – CLASSIFICATION
	*S-1	0 - 4	0.2	Dry		Concrete floor slab
	S-2	4 – 8	0.0	Dry		Brown-Gray fine to course SAND intermixed w/construction debris and fill – concrete, red brick, stone (Urban Fill)
5						
	*S-3	8 – 12	0.0	Dry		Brown Fine to coarse SAND, little gravel (Native)
10						
						Brown Fine to coarse SAND, little gravel (Native)
	S-4	12 -16	0.0	Dry		
15						
						EOB @16 ft
						* sample collected for laboratory analysis
						Samples collected:
						B-6 0 – 2 feet
						B-6 10 – 12 feet
20						
25						
30						

APPENDIX B: HISTORIC PHOTOGRAPHS

Portrait of Stephen N. Stillwell (Stillwell 1930:140).

The Old Gravesend Cemetery in the foreground and the large building formerly on the project site (the west end of Lots 49/50) in the right background. The location of the former building now contains the asphalt parking area (Sperr 1931, courtesy New York Public Library).

1939-1941 Tax photo of Lots 47, 48, and 49. Courtesy New York City Municipal Archives.

1939-1941 Tax photo of Lot 50. Courtesy New York City Municipal Archives.