HISTORICAL PERSPECTIVES INC.

Phase IA Archaeological Documentary Study

4830 Arthur Kill Road
Block 7584, Lot 85
Staten Island, Richmond County, New York

LPC Project # 12DCP014R

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Prepared For:

Celerant Technology Corp.
c/o Hiram Rothkrug
EPDSCO
55 Water Mill Road
Great Neck, NY 11021

Prepared By:

Historical Perspectives, Inc.
P.O. Box 3037
Westport, CT 06880

Authors:
Julie Abell Horn, M.A., R.P.A.
Cece Saunders, M.A., R.P.A.

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EXECUTIVE SUMMARY

Celerant Technology, Corp. is proposing new development and parking facilities at 4830 Arthur Kill Road, in the Charleston neighborhood of Staten Island, Richmond County, New York (Figures 1, 2, and 3). The parcel, which until recently was known as Block 7584, Lots 4 and 85, has recently been merged into one lot, now identified as Block 7584, Lot 85 (Figure 2). The project site consists of an approximately 47,000 square foot rectangular parcel located along the east side of Arthur Kill Road, 102.19 feet south of South Bridge Street. The site is partially developed with a two-story, 8,525 square foot office building and 29 accessory at-grade parking spaces. Access to the site is provided via a 14-foot curb cut onto Arthur Kill Road which would be widened from the current 14 feet to 16 feet. The proposed project includes construction of a three-story approximately 14,634 square foot, at grade extension to the rear of the existing building to be occupied as office space. The project would also include the addition of 54 accessory at-grade parking spaces, requiring some grading. Development of the parcel would require the removal of 45 of the 85 existing $\geq$ 6-inch caliper trees. Forty of these existing trees would remain and 24 new trees would be planted for a total of 64 trees on the site (Rothkrug 2011).

As part of the proposed project, sponsors submitted project materials to the New York City Landmarks Preservation Commission (LPC) for an initial archaeological review in accordance with New York City Environmental Quality Review (CEQR) regulations and procedures. The LPC responded:

> LPC review of archaeological sensitivity models and historic maps indicates that there is potential for the recovery of remains from Native American occupation on the project site. Accordingly, the Commission recommends that an archaeological documentary study be performed for this site to clarify these initial findings and provide the threshold for the next level of review, if such review is necessary (see CEQR Technical Manual 2010) (Santucci 2011).

The present report, prepared by Historical Perspectives, Inc. (HPI) comprises the Phase IA Archaeological Documentary Study for the proposed project, which is also referred to as the Area of Potential Effect, or APE. This study complies with the *Guidelines* of the LPC (CEQR 2010; LPC 2002).

Based on extensive research and the data collected from other archaeological studies in the area that have demonstrated the recovery of Native American resources just below the natural ground surface, HPI has concluded that the southern and central portions of the undeveloped APE may retain precontact archaeological sensitivity, if not disturbed, as shown on Figure 6. HPI concludes that the remainder of the APE is too disturbed from grading, filling, and other earthmoving to retain precontact archaeological sensitivity. Based on these conclusions, HPI recommends that a program of Phase IB archaeological testing be implemented along the southern and central portions of the undeveloped section of the APE to determine whether precontact period archaeological resources may

still be present within the APE. The Phase IB testing program should consist of the excavation of a small number of hand-excavated shovel tests (STs) along the central and southern portions of the APE, placed at 50-foot intervals. If the Phase IB testing confirms disturbance to buried soil horizons, then no additional archaeological studies would be warranted. All archaeological testing should be conducted according to applicable archaeological standards (LPC 2002; CEQR 2010). Professional archaeologists, with an understanding of and experience in urban archaeological excavation techniques, would be required to be part of the archaeological team.

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I. INTRODUCTION

Celerant Technology, Corp. is proposing new development and parking facilities at 4830 Arthur Kill Road, in the Charleston neighborhood of Staten Island, Richmond County, New York (Figures 1, 2, and 3). The parcel, which until recently was known as Block 7584, Lots 4 and 85, has recently been merged into one lot, now identified as Block 7584, Lot 85 (Figure 2). The project site consists of an approximately 47,000 square foot rectangular parcel located along the east side of Arthur Kill Road, 102.19 feet south of South Bridge Street. The site is partially developed with a two-story, 8,525 square foot office building and 29 accessory at-grade parking spaces. Access to the site is provided via a 14-foot curb cut onto Arthur Kill Road which would be widened from the current 14 feet to 16 feet. The proposed project includes construction of an approximately 14,634 square foot, at grade extension to the rear of the existing building to be occupied as office space. The project would also include the addition of 54 accessory at-grade parking spaces, requiring some grading. Development of the parcel would require the removal of 45 of the 85 existing $\geq$ 6-inch caliper trees. 40 of these existing trees would remain and 24 new trees would be planted for a total of 64 trees on the site (Rothkrug 2011).

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II. METHODOLOGY

This archaeological documentary study, in direct response to the specific concerns expressed by LPC, has concentrated on establishing the potential for Native American, or precontact period archaeological resources on and later disturbance to the APE.

The project site is located in an area that until the late twentieth century was undeveloped. The interior section of the parcel (the former Lot 4) has never been developed. As such, and because the LPC has requested information about the possibility of Native American archaeological

remains and not historic period occupation, many of the standard archival resources normally consulted for an Archaeological Documentary Study were not applicable, including early Department of Buildings records, tax records, city directories, and census records. Rather, research for this study has concentrated primarily on documenting the disturbance to the project site. Resources provided by the project sponsor, including a recent topographical survey map and two soil borings completed in 1999 (Staten Island Testing Corp. 1999), as well as a review of twentieth-century aerial photographs (available at www.historicaerials.com) were used to meet that goal. A site visit was conducted on February 22, 2012 by Julie Abell Horn of HPI to assess any obvious or unrecorded subsurface disturbance.

III. ENVIRONMENTAL/PHYSICAL SETTING

A. Current Conditions

As noted above, the project site has two distinct sections. The western section, which until recently was the only part of the parcel designated Lot 85, contains the two-story Celerant office building fronting Arthur Kill Road, and its associated at-grade parking lot behind the building to the east (Photographs 1-4). A chain link fence surrounds the parking lot. This portion of the APE has been graded and filled to create the modern artificially level landscape. The parking lot and driveway contain stormwater grates attesting to the presence of a subgrade drainage system.

The eastern section of the project site, which was originally part of Lot 4 before being merged into Lot 85, is undeveloped woodland, with trees and light to heavy understory (Photographs 5-8). However, earthmoving associated with development along adjacent South Bridge Street appears to have affected the northern side of this area, with disturbance from grading and filling visible bordering the abutting buildings, and disturbance from other earthmoving and dumping visible within parts of the central portion of this area. A bank of soil appeared to have been graded in this area. The southern edge of this area, former Lot 4, appeared less disturbed than the northern portion, although dense ground cover made visibility difficult.

B. Topography, Hydrology and Soils

As noted above, prior to the late twentieth century the entire APE was undeveloped. Historic maps show that the leg of Arthur Kill Road south of Kreisherville was built in the 1850s (e.g. U.S.C.S. 1844, Dripps 1850, Walling 1860), but development along its east side during the later nineteenth and early twentieth centuries was sparse, with most structures concentrated well south of the APE, closer to the intersection with Richmond Valley Road (e.g. Dripps 1872; Beers 1874, 1887; U.S.G.S. 1891; Robinson 1907). The 1891 U.S.G.S. map noted that elevations of the project site fell within the 20-40 foot range, although the lack of more detailed contour lines on this map makes it difficult to determine more precise elevations. The 1913 Borough of Richmond Topographical Survey (Figure 5), however, does indicate detailed topographical conditions, showing elevation contours at two-foot intervals. This map shows that the western side of the APE, where the office building and parking lot now stand, ranged from 26 feet in elevation at the Arthur Kill Road boundary to 30 feet in elevation at the eastern end of the modern parking lot. The eastern, presently undeveloped, side of the APE was shown to have a slight terrace formation, with elevations at 30 feet on the west, east, and north sides, but a rise in

elevation to 36 feet along the southern boundary. The map shows a gradual, but consistent rise in elevation toward the crest of the terrace.

The change in topography on the APE can be seen by comparing the 1913 topographical map (Figure 4) with the modern topographical survey map (Figures 3 and 4). On the modern map (Figure 4), the eastern side of the APE no longer indicates a gradual change in elevation, but suggests that topography within portions of the central and the majority of the northern sides of the lot has been altered. The site inspection confirmed the earthmoving disturbance to these areas.

The 1913 Topographical Survey also shows the presence of a small stream crossing the APE at its western end. Today, the stream is not visible east of Arthur Kill Road, having been channeled underground, but does emerge from a culvert on the west side of Arthur Kill Road immediately across from the APE.

The USDA soil survey for New York City indicates that the APE falls within an area mapped as Wethersfield-Foresthills-Pavement & buildings complex, 0 to 8 percent slopes. It is described as:

> Nearly level to gently sloping areas of till plains and hills that have been partially filled for cemeteries and residential use; a mixture of red till soils and anthropogenic soils, with more than15 percent impervious pavement and buildings covering the surface; located in Staten Island (USDA 2005:17).

The two soil series within this complex are described in the table, below.

Name	**Soil Horizon Depth**	**Color**	**Texture, Inclusions**	**Slope %**	**Drainage**	**Landform**
Wethersfield Series	*A:* 0-3 in *Bw:1* 3-13 in *Bw2:* 13-27 in *Cd:* 27-65 in	7.5YR 3/2 5YR 4/4 5YR 3/3 2.5YR 4/4	Lo Lo GrlLo GrlLo	8-15	Well	Till plains and hills
Foresthills Series	*A:* 0-2 in *Bw:* 2-15 in *Ab:* 15-17 in *BAb:* 17-28 in *Bwb:* 28-42 in *Cd:* 42-60 in	10YR 3/2 7.5YR 4.4 10YR 2/1 7.5YR 4/3 5YR 4/4 5YR 4/6	Lo SiLo Lo Lo Lo Lo	0-8	Well	Anthropogenic fill areas on urbanized till plains

Key: Soils: Lo-Loam, Sa-Sand, Si-Silt
Other Grl-Gravelly, V-Very, Co-Coarse, Ext-Extremely, Cob-Cobbly, Fi-Fine

In March 1999, prior to the construction of the present Celerant building on the project site, two soil borings were completed within the future footprint of the building, as shown in Appendix A (Staten Island Testing Corp. 1999). Boring B-1 was located within the north-central portion of the proposed 1999 building and Boring B-2 was located near the southeastern corner of the proposed 1999 building.

Boring B-1 recorded 14 feet of fill as the upper stratum, described as "sand, silt, gravel, cinders, and wet." Beneath the fill was a stratum from 14-25 feet below grade noted as "fine and medium sand," with the lowest layer, from 25-40 feet below grade, noted as "little to some gravel and silt."

Boring B-2 recorded 5 feet of fill as the upper stratum, described as "sand, silt, gravel, wood, and roots." The stratum under the fill, from 5-30 feet below grade, was described as "fine and medium sand, little gravel, some silt, trace of clay."

It is assumed that the filling in these locations was in conjunction with an earlier channelizing of the former stream in this location into an underground culvert, and bringing the area up to a more level grade by filling the area around the stream, which aerial photographs indicate may have been wetlands.

No soil borings have been undertaken for the remainder of the project site.

IV. BACKGROUND RESEARCH

A. Precontact Summary

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

The Paleo Indian Period (c. 10,500 B.C. - c. 8000 B.C.) represents the earliest known human occupation of Staten Island. 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 circa 5,000 B.C., in the Early to Middle Archaic Period). As such, Staten Island was situated much further inland from the Atlantic Ocean shore than today, and was characterized by higher ground amid glacial lakes and rivers (Boesch 1994). 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. It has been theorized that the end of the Paleo-Indian Period arose from the failure of over-specialized, big-game hunting (Snow 1980:150-157). Based on excavated Paleo-Indian sites in the Northeast, there was a preference for high, well-drained areas in the vicinity of streams or wetlands (Boesch 1994). Sites have also been found near lithic sources, rock shelters and lower river terraces (Ritchie 1980). Paleo-Indian 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. One isolated fluted point was reportedly found in the Great Kills Park area.

During the Archaic Period (c. 8000 B.C. - 1000 B.C.) 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 along the coast of Staten Island, its estuaries and streams and inland areas (Boesch 1994). Typically such sites are located on high ground overlooking water courses. This large period has been divided up into four smaller periods, the Early, Middle, Late and Terminal Archaic.

The environment during the Early Archaic (c. 8000 B.C. - 6000 B.C.) 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 Paleo-Indian period, showing a wider array of plant processing equipment such as grinding stones, mortars and pestles. Although overall evidence of Early Archaic sites on Staten Island is sparse, there are some significant Early Archaic component sites from this period, including the Old Place, Hollowell, Charleston Beach, Wards Point, Travis, and Richmond Hill sites (Ritchie and Funk 1971; Boesch 1994).

The archaeological record suggests that a population increase took place during the Middle Archaic Period (c. 6000 - c. 4000 B.C.). 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. Such artifacts have been found throughout Staten Island, including the Old Place and Wards Point sites (Boesch 1994).

Late Archaic people (c. 4000 - c. 1000 B.C.) 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. A large number of Late Archaic Period sites have been found on Staten Island. These include the Pottery Farm, Bowman's Brook, Smoking Point, Goodrich, Sandy Brook, Wort Farm, Old Place, and Arlington Avenue sites (Boesch 1994).

During the Terminal Archaic Period (c. 1700 B.C. - c. 1000 B.C.), 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. Sites on Staten Island from the Terminal Archaic Period include the Old Place, Pottery Farm, Wards Point, and Travis sites (Boesch 1994).

The Woodland Period (c. 1000 B.C. - 1600 A.D.) 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 (c. 1000 B.C. to A.D 1). The earliest ceramic type found on Staten Island 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 (c. A.D. 1 to c. 1000 A.D.). 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 display 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 (c. 1000 A.D. - 1600 A.D.), triangular projectile points such as the Levanna and Madison types, were common throughout the Northeast, including Staten Island (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 Staten Island 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. A large number of Woodland Period archaeological sites have been found on Staten Island in a variety of environmental settings.

A favored setting for occupation during this period was well-drained ground near stream drainages and coastal waterways. One such site, dating to the Middle Woodland period and including net and fabric impressed pottery, was discovered within DEP Bluebelt property overlooking Lemon Creek and was excavated in 2009 and 2010 (HPI 2009a, 2009b, 2010a, 2010b).

During the early Contact period (1500 to 1700 A.D.) there was a continuation of the Late Woodland settlement patterns of the coastal Algonquians. By the 17th century the Dutch settlers of lower New York were in frequent contact with the many Native Americans who lived in the vicinity. Historic accounts describe both peaceful and violent interchanges between these two groups (Brasser 1978, Flick 1933). Through at least the 1650s, Native Americans known as the Raritans occupied portions of Staten Island and New Jersey's Raritan Valley (Ruttenber 1872). The Raritans were but one of many native groups which as a whole were known as the Delaware Indians by the European settlers. As the European population increased, and internecine warfare due to increased competition for trade with the Europeans intensified, the Raritans, and the Delaware in general, retreated inland away from the eastern coast. By the 1800s their migration had scattered them across the Midwest and even into Canada (Weslager 1972), where they have continued living to the present day. Journal accounts by European explorers, settlers and travelers describe Native settlements and lifeways. However, only a few Historic Contact Period sites have been found on Staten Island. Sites include those at Wards Point, Old Place, Corsons Brook, Travis, New Springfield, and at the PS56R Site in Woodrow (Boesch 1994; HPI 1996a).

B. Archaeological Sites and Surveys within One Mile

Records on file at the OPRHP and the New York State Museum (NYSM) as well as the Boesch (1994) *Archaeological and Sensitivity Assessment of Staten Island, New York* indicate that there have been numerous precontact period archaeological sites documented within a one-mile radius of the project site. The table below lists these sites, beginning on the north and moving to the south. Maritime archaeological resources in the Arthur Kill that are within a one mile radius of the project site are not included in this list. Additionally, NYSM site locations and descriptions often are vague, due to the fact that many of these sites were documented based on non-professional records (such as information from local landowners, avocational collectors, or historic accounts); descriptions and distances of these sites from the project site are given based on available mapping and other data, but should not be considered definitive. Some sites have had different numbers and names applied to them over time; all known appellations are listed in the first column.

Site # and Name	Location	Time Period	Site Type
Boesch 16 Kreischerville campsites ACP-RICH-16 NYSM 4606	Multiple locations between Port Mobil and Outerbridge Crossing	Paleo Indian to Late Woodland	Series of small camp sites
NYSM 744 Charleston Beach 30-RIC-19-AJA	Waterfront near end of Sharrotts Road	Paleo Indian through Middle Woodland	Materials probably from peat eroding onto beach, 19 fluted points reported from area
NYSM 771 Kreischerville	Kreischer Street area	Unknown precontact	Unknown

Site # and Name	Location	Time Period	Site Type
08501.002815 Fairview Prehistoric Site Canada Hill Site	Area south of Englewood Avenue and east of Arthur Kill Road	Unknown precontact	Lithic workshop
08501.002766 C4-MCB-1	Area south of Englewood Avenue and west of the West Shore Expressway	Unknown precontact	Lithic workshop
08501.002767 A7-MCB-1	Area south of Englewood Avenue and west of the West Shore Expressway	Unknown precontact	Unknown, part of Canada Hill site
08501.002847 Price Prehistoric Site	West side of Arthur Kill Road near Veterans Road	Late Archaic through Late Woodland	Stratified camp
08501.002846 Van Allen Farmstead	West side of Arthur Kill Road near Veterans Road	19th century	Farmstead
NYSM 4606 ACP RICH 16A	Large area on both sides of Arthur Kill Road from Sharrotts Road on north to Richmond Valley Road on south	Unknown precontact	Middens, camps, traces of occupation
NYSM 8493 ACP RICH 16B	Large area on both sides of Arthur Kill Road north and south of Outerbridge Crossing	Unknown precontact	Camp
NYSM 770 Boesch 17 Canada Hill	Multiple locations bounded by Veterans Road West, Englewood Avenue, and Arthur Kill Road	Woodland	Surface scatter of shell fragments and lithic debitage
Boesch 78 Indian Fields Kreischerville ACP-RICH-13 NYSM 771 NYSM 4620	Kreischerville/Charleston	Woodland	Traces of occupation
Boesch 116 Outerbridge STD-O	Beach and bluff near Outerbridge Crossing	Unknown precontact	Unknown
08501.000026 Nassau Place Site	Nassau Place and Arthur Kill Road	Unknown precontact	Shovel tests

Site # and Name	Location	Time Period	Site Type
Boesch 53 Richmond Valley Boiling Spring STD-RV	Bluff near a spring in Richmond Valley, near intersection of Page Avenue and Staten Island Railroad	Woodland	Shell midden
Boesch 101 Bethel Church STD-BC	Rear yard of Bethel Church, near intersection of Amboy Road and Page Avenue	Woodland	Camp site.
NYSM 8471 ACP RICH 19C	Large area south of Richmond Valley Road in Richmond Valley and Tottenville neighborhoods	Unknown precontact	Middens, traces of occupation
NYSM 8492	Large area on north side of Amboy Road west of Page Avenue	Unknown precontact	Traces of occupation
NYSM 8491	Large area on south side of Amboy Road on both sides of Page Avenue	Unknown precontact	Traces of occupation
NYSM 8490	Large area southeast of NYSM 8491 on both sides of Page Avenue	Unknown precontact	Traces of occupation
08501.002707 P.S. 6R, Page Avenue	Page Avenue near Camden Street	Late Archaic	Lithic workshop
08501.002377 Honey Blossom	Joline Avenue and Truman Street	Middle-Late Woodland	Stray find, Jack's Reef corner notched projectile point
08501.000018 Page Ave. Site	Page Avenue at Hylan Boulevard	Unknown precontact	Shovel tests
NYSM 768 Boesch 18a Page Ave. North 30-RIC-7-AJA	Both sides of Page Avenue approximately 0.2 miles north of Hylan Boulevard	Archaic-Woodland	Camp
Boesch 18b Child and dog burial 30-RIC-7-AJA	East side of Page Avenue approximately 0.2 miles north of Hylan Boulevard	Middle Woodland	Burial

Archaeological Surveys

There have been numerous archaeological studies conducted within a one mile radius of the project site, although the project site itself has never been subjected to an archaeological study. The table below lists archaeological studies within one mile of the project site and their findings.

Project Name	Location	Findings	Reference
Oakwood Beach	Arthur Kill Road from Kreischer Street to Ellis Street	Potential precontact site under deep fill beneath roadway north of Nassau Street; areas north of Richmond Valley Road are disturbed	Pickman and Yamin 1978, Jacobson 1980
Clay Pit Ponds/Port Mobil Watershed, Phase IA	Included proposed sewers in Arthur Kill Road from Bloomingdale Road to Veteran's Road West	Testing recommended for section of Arthur Kill Road north of Johnson Avenue only	HPI 2002
Kreischer House Site, Phase IA, IB	4500 Arthur Kill Road	Testing showed site is disturbed, no further work recommended	Cityscape 2002a, 2002b
Charleston Retail Center Phase IA; Bricktown Centre at Charleston Phase IB/II	East side of Arthur Kill Road south of Englewood Avenue	Phase IA concluded site is sensitive for both precontact and historic resources; Phase IB/II testing revealed both precontact and historic sites	HPI 1996b, JMA 2000
Arthur Kill Factory Outlet; Van Allen Farmstead and Price Prehistoric Site; Tides of Charleston	West side of Arthur Kill Road between Englewood Avenue and Allentown Lane	Both precontact and historic period sites encountered on interior of property; site was mitigated and is now developed as Tides of Charleston	Hunter 1995, 1996, URS 2005
Charleston Bus Depot Phase IA, IB	4700 Arthur Kill Road, east side north of Veterans Road West	Phase IB testing revealed no sites and much disturbance, no further work recommended	LBA 2001, 2002
Charleston Bus Annex Stormwater Sewer	1400 linear feet in Arthur Kill Road north of Allentown Lane, and in Allentown Lane	No testing recommended for Arthur Kill Road roadbed due to known disturbance, no sites found under Allentown Lane	AKRF 2006, Boesch 2007
Arthur Kill Station and Parking Lot	Both sides of Arthur Kill Road west of Lion Street	Testing showed that site is disturbed, no further work recommended	Stone 2005, HPI 2008
Liberty Pipeline	Alignment crosses Arthur Kill Road west of Bloomingdale Road	Testing recommended from Arthur Kill Road to shoreline, but access denied	LBA 1992

V. DISTURBANCE RECORD AND ARCHAEOLOGICAL SENSITIVITY

There are two issues to consider in determining the archaeological sensitivity of the project site, or APE, for potential precontact remains. The first is whether any potential resources would have been located within the project site at all; and the second is whether these potential resources could still be present within the project site after the development of the office building and parking lot, and possible disturbance to the remainder of the APE from earthmoving episodes.

From what is known of precontact period settlement patterns on Staten 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. There have been a large number of precontact period archaeological sites recorded in the APE vicinity. NYSM sites 4606 and 8493 have been mapped, albeit largely and vaguely, as overlapping the APE. There is little question that much of Staten Island, particularly along the Arthur Kill Road corridor, was, in its natural state, highly sensitive for the recovery of precontact archaeological resources. The APE itself, containing a perennial stream at its western end and having both level and terrace landforms with areas of well drained soils, would have been especially sensitive.

However, there have clearly been changes to the natural landform of the APE during the last decades that have altered the once high precontact archaeological sensitivity. The stream at the western end of the APE has been channeled underground and fill has been placed in this area to bring it up to the existing grade, as noted in the soil borings. The construction of the existing office building on the property and its associated parking lot also has necessitated grading and filling to create the artificially level landform. Additionally, within the interior of the parcel where maps show no development has occurred, adjacent land uses appear to have spilled over into portions of these areas and caused disturbance. Aerial photographs (available on www.historicaerials.com) show that during the 1970s and 1980s, the western end of the undeveloped area had been cleared of vegetation, as had a section south of South Bridge Road. These areas are now wooded again, although the ground surface appears undulating. Other earthmoving on the undeveloped part of the site appears to have occurred in other spots, based on the site inspection, although could not be seen as easily on aerial photographs. Comparison of the 1913 and modern topographical maps for the site further suggests some landform manipulation.

It is possible that despite the earthmoving described above, some areas of the eastern, undeveloped, section of the APE may have less disturbed, potentially intact soils, based on topographical mapping and site observations. These potentially less or undisturbed areas are along the southern and central portions of the undeveloped part of the APE, although as noted above, dense ground cover here made visibility difficult.

VI. CONCLUSIONS AND RECOMMENDATIONS

HPI has concluded that the southern and central portions of the undeveloped APE, part of the former Lot 4, may retain precontact archaeological sensitivity, if not disturbed, as shown on

Figure 6. HPI concludes that the remainder of the APE is too disturbed from grading, filling, and other earthmoving to retain precontact archaeological sensitivity. This conclusion is based on extensive data collected from other archaeological studies in the area that have demonstrated the recovery of Native American resources just below the natural ground surface. HPI recommends that a program of Phase IB archaeological testing be implemented along the southern and central portions of the undeveloped section of the APE to determine whether precontact period archaeological resources may still be present within the APE. The Phase IB testing program should consist of the excavation of a small number of hand-excavated shovel tests (STs) along the southern and central portions of the APE, placed at 50-foot intervals. If the Phase IB testing confirms disturbance to buried soil horizons, then no additional archaeological studies would be warranted. All archaeological testing should be conducted according to applicable archaeological standards (LPC 2002; CEQR 2010). Professional archaeologists, with an understanding of and experience in urban archaeological excavation techniques, would be required to be part of the archaeological team.

VII. REFERENCES

AKRF, Inc.
2006 *Phase IA Archaeological Documentary Study: Charleston Bus Annex-Stormwater Sewer Arthur Kill Road and Allentown Lane, Charleston, Richmond County, NY.* For: Metropolitan Transportation Authority-New York City Transit.

Beers, F.W.
1874 *Atlas of Staten Island, Richmond County, New York, from official records and surveys; compiled and drawn by F. W. Beers.* J.B. Beers and Co., New York. On file at the New York Public Library.

Beers, J.B.
1887 *Atlas of Staten Island, Richmond County, New York, from official records and surveys; compiled and drawn by J.B. Beers and Company*. J.B. Beers and Co., New York. On file at the New York Public Library.

Boesch, Eugene J.
1994 *Archaeological Evaluation and Sensitivity Assessment of Staten Island, New York*. Prepared for the New York City Landmarks Preservation Commission.

2007 *Phase IB Archaeological Investigation of the Allentown Lane Portion of the Charleston Bus Annex, Stormwater Sewer Project, Charleston, Richmond County, NY.*

Borough of Richmond
1913 *Borough of Richmond, Topographical Survey*. New York. On file at the New York Public Library.

Brasser, T. J.
1978 "Early Indian-European Contacts," in *Handbook of North American Indians: Northeast,* vol. 15, B. G. Trigger (ed.), Smithsonian Institution, Washington, D.C..

City Environmental Quality Review (CEQR)
2010 *City Environmental Quality Review Technical Manual*. City of New York, Mayor's Office of Environmental Coordination. May, 2010.

City/Scape
2002a *Stage 1A Literature Review & Sensitivity Analysis, Kreischer House Site, 4500 Arthur Kill Road. Borough of Staten Island. Richmond County, New York.* For: Robert Caneco.

2002b *Stage 1B Archaeological Field Reconnaissance Survey, Kreischer House Site, 4500 Arthur Kill Road. Borough of Staten Island. Richmond County, New York.* For: Robert Caneco.

Dripps, M.
1850 *Map of Staten Island or Richmond County*. M. Dripps, New York.

1872 *Map of Staten Island, Richmond County, New York*. M. Dripps, New York.

Flick, Alexander C.
1933 *History of New York*, Vol. I. The New York State Historical Association.

Historical Perspectives, Inc. (HPI)
1996a *Final Report: Phase 3 Archaeological Data Recovery of the P.S. 56 R School Site, Staten Island, New York*. Westport, CT. Prepared for School Construction Authority.

1996b *Charleston Retail Center, Veterans Road West, Staten Island, Phase IA Archaeological Assessment*.

2002 *Phase 1A Archeological Sensitivity Evaluation. South Richmond Drainage Plans: Clay Pit Ponds/Port Mobil Watershed Staten Island, NY*. Prepared for NYC DDC/DEP.

2008 *Phase IB Archaeological Field Investigation, New York City Transit Arthur Kill Road Railroad Station and Parking Lot, Staten Island Railway, Block 8020, Lots 6, 80, and 86, Richmond County, New York*. Prepared for STV, Inc.

2009a *Memorandum: Phase IA Cultural Resources Sensitivity Evaluation Addendum New York City Department of Environmental Protection, South Richmond Drainage Storm Water and Sanitary Drainage Plan, Lemon Creek Drainage Area, Staten Island, New York, Knox Street, BMP LC-16, BMP LC-17, BMP LC-18, and BMP LC-19*. Prepared for NYC DDC/DEP.

2009b *Phase IB Archaeological Investigations, New York City Department of Environmental Protection, South Richmond Drainage Storm Water and Sanitary Drainage Plan Lemon Creek Drainage Area, Staten Island, New York, BMP LC-16 and BMP LC-17*. Prepared for NYC DDC/DEP.

2010a *Phase II Archaeological Investigations, New York City Department of Environmental Protection, South Richmond Drainage Storm Water and Sanitary Drainage Plan Lemon Creek Drainage Area, Staten Island, New York, BMP LC-16*. Prepared for NYC DDC/DEP.

2010b *Lemon Creek Drainage Area, Staten Island, Richmond County, New York, BMP LC-16, Phase III Archaeological Data Recovery*. Prepared for NYC DDC/DEP.

Hunter Research
1995 *A Phase IA Archaeological Survey For the Arthur Kill Factory Outlet Center, Staten Island. Borough of Richmond, County of Richmond, New York City, New York [CEQR 95-DCP-058R]*. For Bellemead Development Corporation, Roseland, New Jersey.

1996 *A Phase 1B Archaeological Survey of the Arthur Kill Factory Outlet Center, Staten Island, Borough of Richmond, County of Richmond, New York City, New York [CEQR 95-DCP-058R]*. For Bellemead Development Corporation, Roseland, New Jersey.

Jacobson, Jerome
1980 *Report of the Stage 1B Archaeological Survey for the Oakwood Beach Water Pollution Control Project, County of Richmond, New York.* Contract Numbers FK-24 and FK-25.

John Milner Associates (JMA)
2000 *Phase IB/II Archeological Investigations of the Bricktown Centre at Charleston, Staten Island, New York.*

Landmarks Preservation Commission (LPC)
2002 *Landmarks Preservation Commission Guidelines for Archaeological Work in New York City*.

Lenik, Edward J.
1989 "Cultural Contact and Trade in Prehistoric Staten Island." *Proceedings Staten Island Institute of Arts and Sciences,* Vol. 34, no. 1.

Louis Berger & Associates, Inc. (LBA)
1992 *Phase I Historical and Archaeological Survey, Liberty Pipeline Project, Borough of Richmond, New York, New York.*

2001 *Cultural Resource Assessment: Proposed NYCT Department of Buses Storage and Maintenance Facility: Arthur Kill Road, Staten Island, New York.* For: New York City Transit, New York, New York.

2002 *Phase 1B Archaeological Survey, Proposed NYC Transit Department of Buses Storage and Maintenance Facility, 4700 Arthur Kill Rd, SI, NY*.

Pickman, Arnold and Rebecca Yamin
1978 *EIS Background Document, Preliminary Cultural Resources Assessment. Literature Search and Windshield Survey, Oakwood Beach Water Pollution Control Project. Phase III and Future Phases.* Submitted to USEPA Region II.

Ritchie, William A.
1980 *The Archaeology of New York State.* Revised edition. Harbor Hill Books, Harrison, New York.

Ritchie, William A. and Robert E. Funk
1971 Evidence For Early Archaic Occupation On Staten Island. *Pennsylvania Archaeologist* 31(3):45-60.

Robinson, E.
1907 *Atlas of the Borough of Richmond, City of New York*. E. Robinson, New York.

Rothkrug, Hiram A.
2011 New York City Environmental Quality Review, Environmental Assessment Statement Short Form, 4830 Arthur Kill Road.

Ruttenber, E. M.
1872 *Indian Tribes of Hudson's River to 1700*. Reprinted in 1992 by Hope Farm Press & Bookshop.

Santucci, Gina
2011 Environmental Review letter for 4830 Arthur Kill Road Project. Landmarks Preservation Commission, New York, NY.

Snow, Dean R.
1980 *The Archaeology of New England*. Academic Press, New York.

Staten Island Testing Corp.
1999 Soil boring map and logs, E/S Arthur Kill Road, 102.19' S/O South Bridge St., Staten Island, N.Y.

Stone, Linda
2005 *Report on Phase IA Archaeological Documentary Research for the New Arthur Kill Station of the Staten Island Railway Located Along Arthur Kill Road in Tottenville, Staten Island, New York Block 8020- Lots 6, 80 and 86*. Prepared for Shaw Environmental and Infrastructure, Inc.

URS Corporation
2005 *Phase III Archaeological Data Recovery at the Van Allen Farmstead Site and the Price Prehistoric Site for the Proposed Residential Development The Tides at Charleston, Arthur Kill Road. Staten Island, New York.* For: Allen Arthur LLC. Bayonne, New Jersey.

United States Coast Survey (U.S.C.S.)
1844 *Map of New-York Bay And Harbor And The Environs*. Washington, D.C.

United States Department of Agriculture (USDA)
2005 *New York City Reconnaissance Soil Survey*. United States Department of Agriculture, Natural Resources Conservation Service, Staten Island, NY.

United States Geological Survey (U.S.G.S.)
1891 *Staten Island, N.Y-N.J.* 15 Minute Topographic Quadrangle.

1981 *Arthur Kill, N.J.-N.Y.* 7.5 Minute Topographic Quadrangle.

Walling, H.F.
1860 *Map of the City Of New-York and Its Environs from Actual Surveys*. S.D. Tilden, New York.

Weslager, C. A.
1972 *The Delaware Indians A History*. Rutgers University Press, New Brunswick.

Wohl &O'Mara, L.L.P.
2010 Survey of Block 7584, Lot 85.

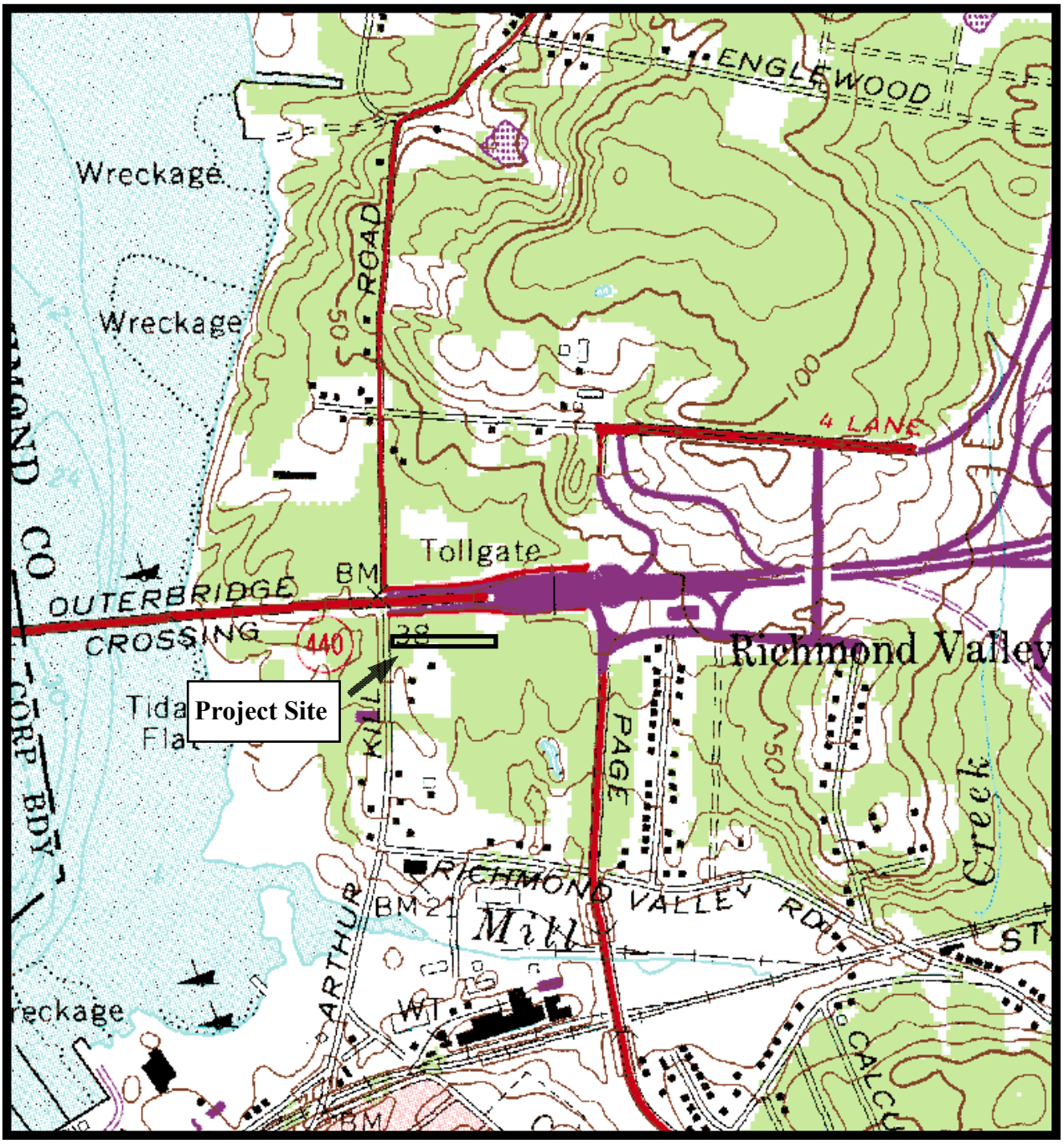

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Figure 1: Project site on *Arthur Kill, N.Y-N.J.* 7.5 Minute Quadrangle (U.S.G.S. 1981).

500 0 500 1500 2000 2500 FEET

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4830 Arthur Kill Road
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Figure 2: Project site on modern aerial photograph (NYC OASIS 2010).

500 0 500 1500 2000 2500 FEET

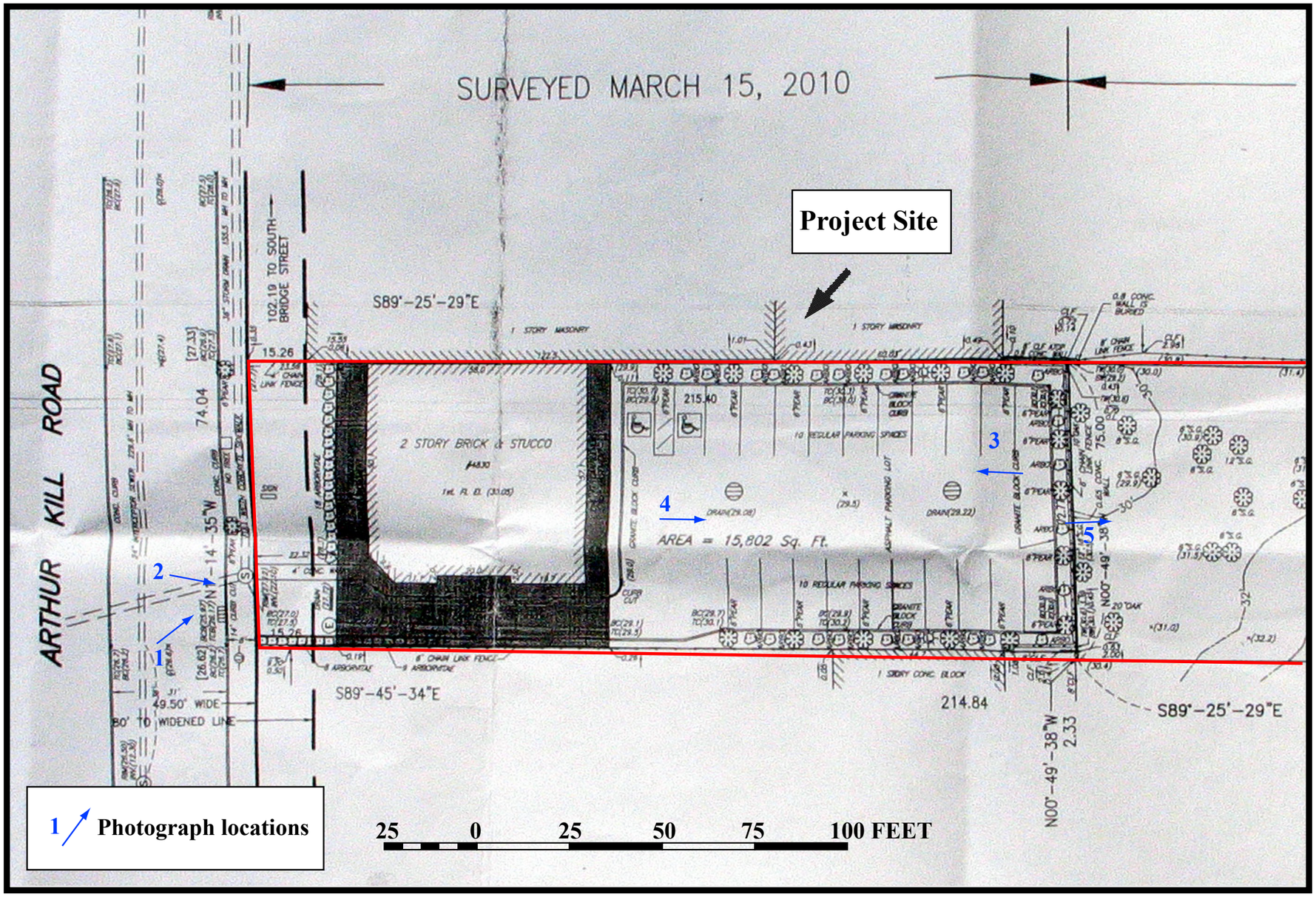

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Figure 3: Project site and photograph locations on modern survey map [west portion] (Wohl & O'Mara, L.L.P. 2010).

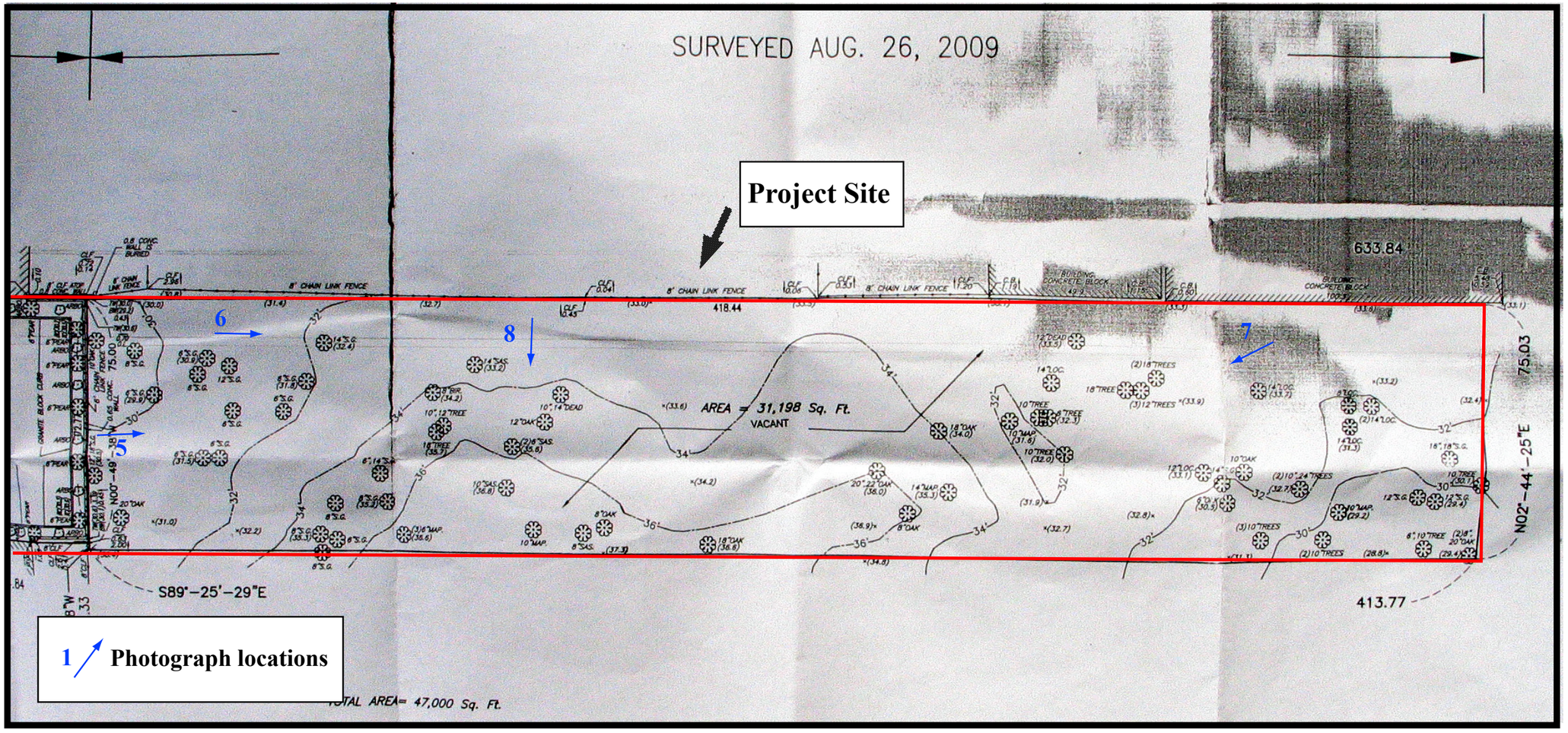

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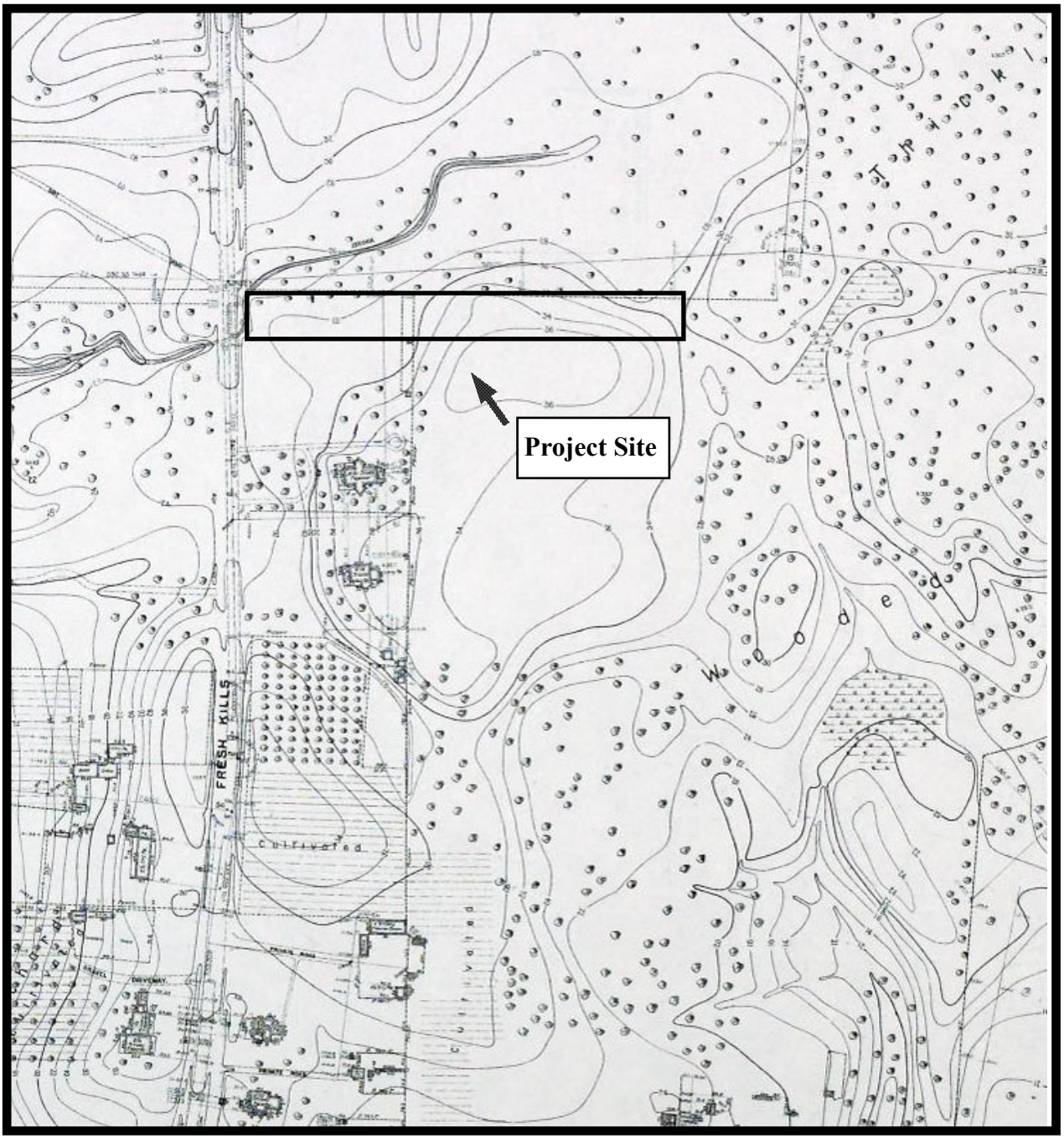
Figure 4: Project site and photograph locations on modern survey map [east portion] (Wohl & O'Mara, L.L.P. 2010).

25 0 25 50 75 100 FEET



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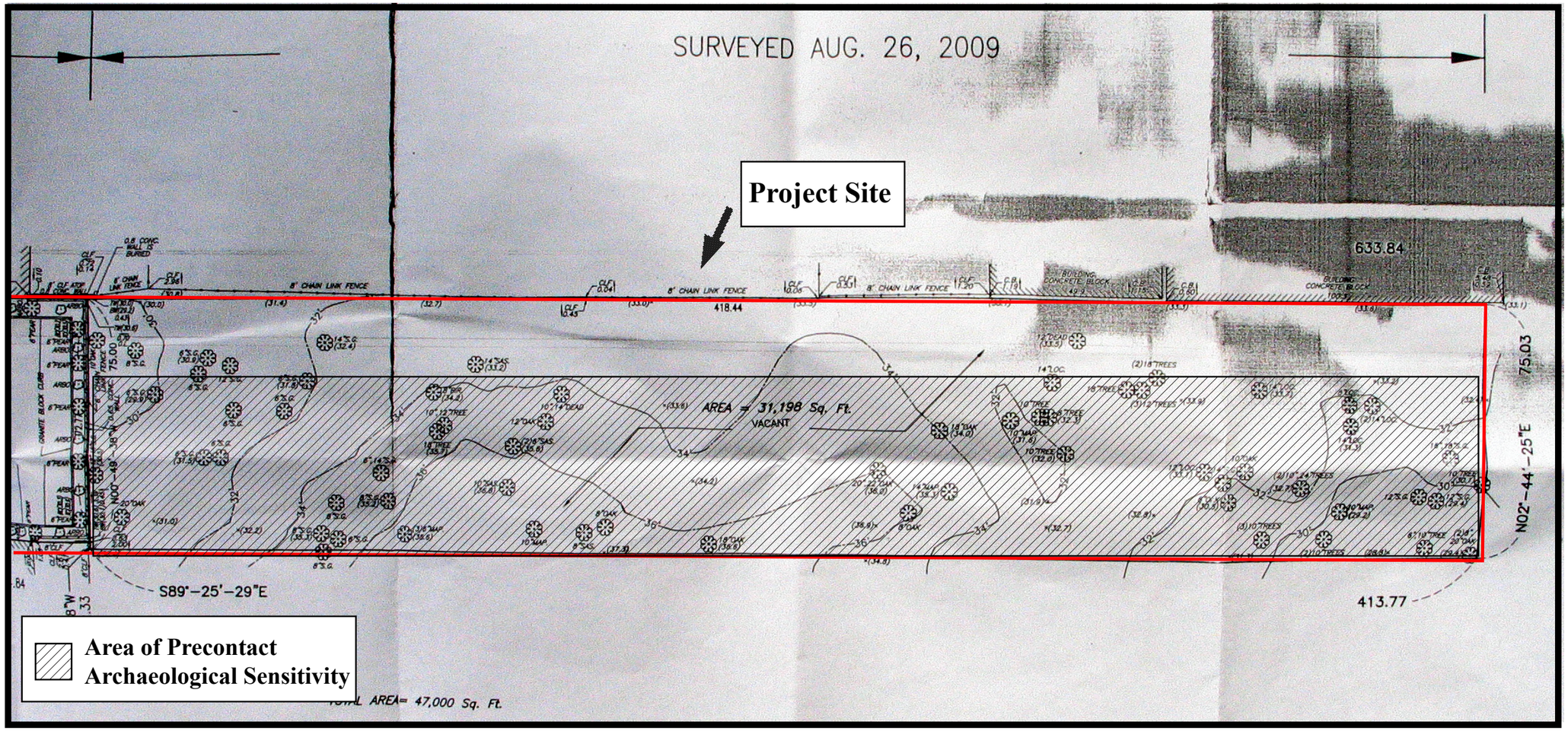
Block 7584, Lot 85
Staten Island, Richmond County, New York

N

HP

Figure 5: Project site on *Borough of Richmond Topographical Survey* (Borough of Richmond 1913).

100 0 100 200 300 400 FEET



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Block 7584, Lot 85
Staten Island, Richmond County, New York

Figure 6: Project site showing area of precontact archaeological sensitivity on modern survey map [east portion] (Wohl & O'Mara, L.L.P. 2010).

N

25 0 25 50 75 100 FEET

Photograph 1: 4830 Arthur Kill Road, Celerant Building fronting Arthur Kill Road. View looking northeast.

Photograph 2: Detail of driveway on south side of project site leading to interior of lot. View looking southeast.

Photograph 3: Surface parking lot to east of Celerant building. Note stormwater grate in foreground. View looking west.

Photograph 4: Surface parking lot to east of Celerant building, with undeveloped area behind chain link fence in background. View looking east.

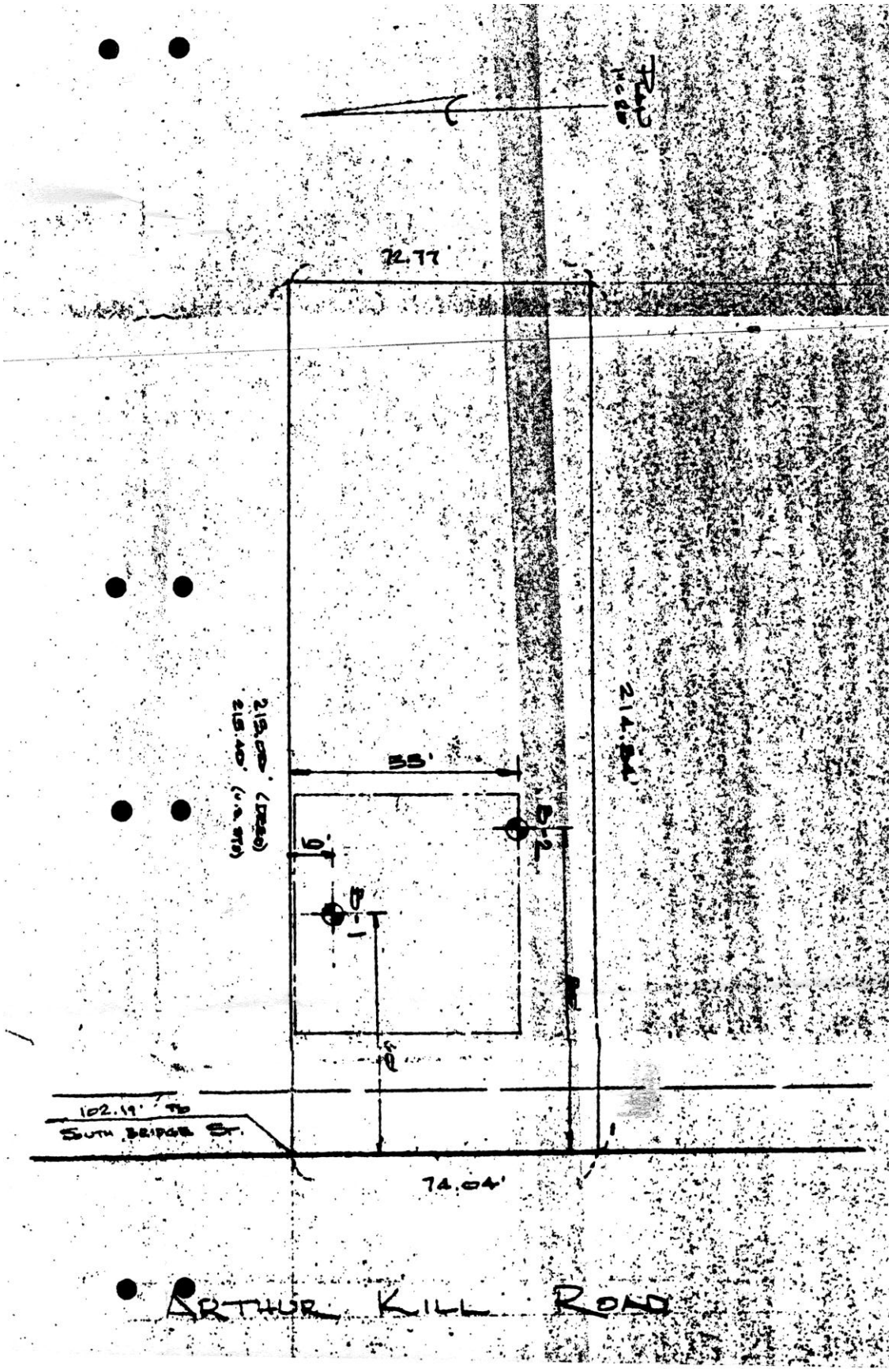
Photograph 5: View of undeveloped area east of surface parking lot. Buildings in left background are bordering site on south side of South Bridge Road. View looking east.

Photograph 6: View of graded area on left side of image, bordering buildings on South Bridge Road. View looking east.

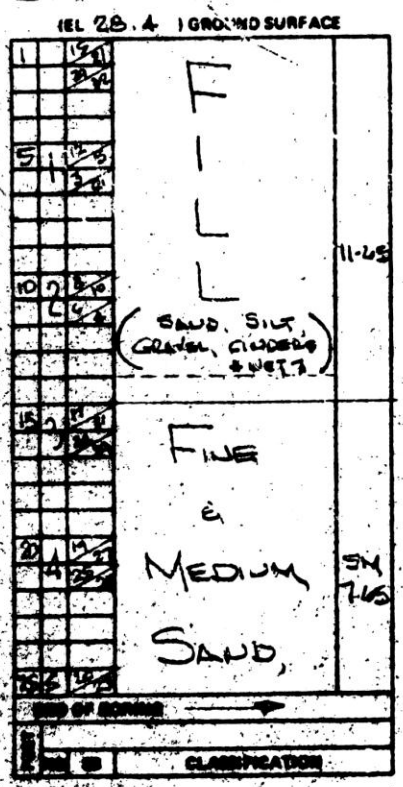
Photograph 7: View of site showing disturbance. View looking southwest from northwest end of lot.

Photograph 8: View of site showing cut bank oriented east-west in center of site. View looking south.

APPENDIX A: SOIL BORINGS


72.77'
214.84'
55'
6'
102.19' TO SOUTH BRIDGE ST.
74.04'
ARTHUR KILL ROAD

B-1



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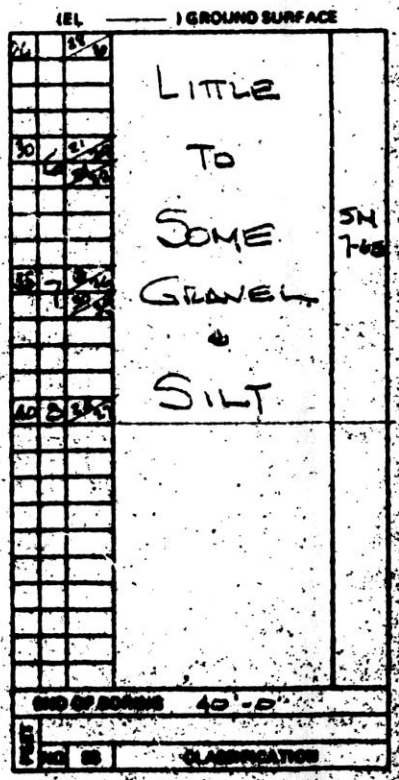
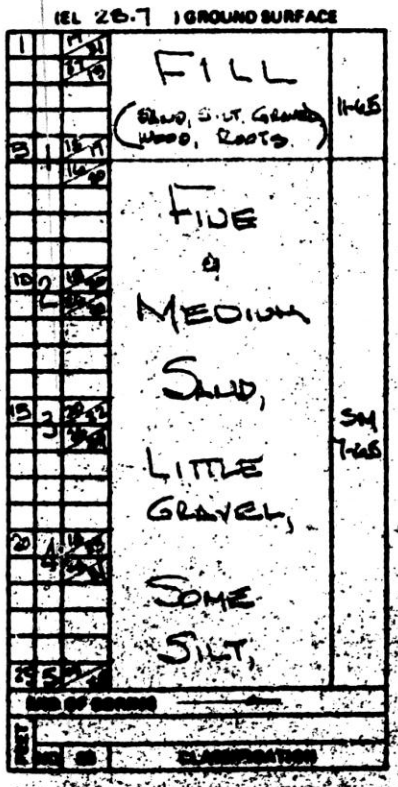


B-2



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