



Phase IA Archaeological Documentary Study

**Crotona Park Tennis Center
Block 2942 Lot 1
Bronx, New York**

LPC Project # 77DPR009X

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Prepared For:

City of New York Department of Parks & Recreation
830 Fifth Avenue, Room 401
New York, NY 10065

and the

New York Junior Tennis League
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EXECUTIVE SUMMARY

The City of New York Department of Parks and Recreation (DPR), in partnership with the New York Junior Tennis League, a concessionaire, is proposing to develop a new Tennis Center and two new tennis courts in Crotona Park to provide facilities necessary for tennis users and teaching purposes (Figures 1, 2, and 3). The new tennis amenities, to be known as the Cary Leeds Tennis Center, are located within a portion of Block 2942 Lot 1 in an area of the park that until late 2011 contained concrete handball courts, but which have since been removed. The tennis center building and two new courts will be situated in near proximity to twenty existing tennis courts, ten of which are currently under renovation. The tennis center is proposed to be 12,755 square feet, with one story situated 12 feet below grade in order to minimize the physical scale of the building within the park landscape.

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).

Results of the Phase IA Documentary Study revealed that despite the lack of previously recorded precontact archaeological sites within Crotona Park or the immediate vicinity, the site's natural conditions – only ca. 175 feet from a natural water source, well drained soils, and a relatively level landform – suggest that in its undisturbed state, the potential for the presence of precontact archaeological resources nonetheless would have been high. However, as described in the following report, the site has undergone a series of construction and demolition episodes since the 1930s that have disturbed the original landform. These have included:

- Construction of tennis courts immediately north of the site by 1924,
- Construction of horseshoe courts and shuffleboard courts on the northern and central portion of the site in 1935, which necessitated grading to create the level surface,
- Demolition of the horseshoe and shuffleboard courts and construction of the massive concrete handball courts in their place in 1939, and construction of new horseshoe courts and bocce courts at the southern end of the site at the same time, which likely required additional grading, and,
- Maintenance and demolition, 1939 – 2011, of the handball, horseshoe, and bocce courts.

The soil borings completed as part of the proposed project, while not overly precise, nevertheless allow several conclusions. None of the soil borings recorded what could be construed as an A horizon soil stratum at any point in the soil column, despite the USDA soil series description for the site and vicinity that suggested the possible presence of both an upper A horizon and a buried A horizon. Neither did the soil borings note soil that could be construed as a B horizon, either in color or in texture. Rather, the natural soils encountered in the soil borings appear to represent soil from the lower reaches of the soil column, well below the upper strata where precontact sites would most likely be found. Five soil borings, or one-third of the total, encountered bedrock but no soil. Even discounting the fact that the soil borings did not record the concrete surface of the handball court or any underlying soil used to prepare the concrete surface, the lack of upper soil horizons and the presence of shallow bedrock suggests that a significant amount of grading has occurred on the project site over time. It seems unlikely that the site could contain any potential precontact resources.

HPI has concluded that the Crotona Park Tennis Center project site is no longer sensitive for precontact archaeological resources. This is based on several factors, including a history of construction, demolition, and grading activities on the site; results of soil borings that indicate a lack of upper soil horizons remaining on the site; and the presence of bedrock located very close to what is now the ground surface. Based on these conclusions, HPI recommends that no additional archaeological investigations are warranted for the Crotona Park Tennis Center project site.

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PHOTOGRAPHS
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1. Project site, view looking east.
2. Project site, view looking southeast.
3. Project site, view looking northeast.
4. Project site, view looking northwest.

I. INTRODUCTION

The City of New York City Department of Parks and Recreation (DPR), in partnership with the New York Junior Tennis League, a concessionaire, is proposing to develop a new Tennis Center and two new tennis courts in Crotona Park to provide facilities necessary for tennis users and teaching purposes (Figures 1, 2, and 3). The new tennis amenities, to be known as the Cary Leeds Tennis Center, are located within a portion of Block 2942 Lot 1 in an area of the park that until late 2011 contained concrete handball courts, but which have since been removed. The tennis center and two new courts will be situated in near proximity to twenty existing tennis courts, ten of which are currently under renovation. The tennis center building is proposed to be 12,755 square feet, with one story situated 12 feet below ground in order to minimize the physical scale of the building within the park landscape. The tennis center would contain multiuse rooms for tennis instruction purposes, locker rooms, office space, a pro-shop, and tennis viewing areas. A viewing platform would be constructed to allow for viewing of tennis activities for five of the twenty existing courts in addition to the two new courts to be constructed. Bleachers flanking the two new courts would also be incorporated into the project. One of the two new tennis courts, the stadium court will be situated 12 feet below grade. The second new court, the exhibition court, would have reduced stadium seating and would be 6 feet below grade.

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). The HPI project team consisted of Julie Abell Horn, M.A., R.P.A., who conducted the project research, the site visit, and wrote this report; and Cece Saunders, M.A., R.P.A., who assisted with the project research, oversaw the project, and provided editorial and interpretive assistance.

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 within Crotona Park, which was established as a New York City park in 1888. Prior to that time, the project site was part of a large estate. According to nineteenth century maps, several of which are included as figures, the project site was not developed prior to its acquisition by the City of New York. The first development in the vicinity was not until the 1920s, when a series of tennis courts were built adjacent to the APE. The handball courts, which until late 2011 stood on the project site, were built in 1939. 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 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 during its use as a public park. DPR provided a number of useful resources toward this goal, including maps depicting topography and construction within the park during the twentieth century, a recent geotechnical investigation including soil borings (RA Consultants 2011), and site photographs. A site visit was conducted on January 30, 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, until late 2011, the APE was covered entirely by concrete handball courts and adjacent grassy areas that once contained horseshoe courts. The site is nearly level, with only approximately a foot of variation in elevation across the expanse (Photographs 1-4). An asphalt path is located to the west of the APE. Tennis courts are under renovation immediately to the north of the APE, and a brick tennis building is situated along the east side of Crotona Avenue. A large bank of exposed bedrock is situated immediately west of the APE, bordering Crotona Avenue.

B. Topography, Hydrology and Soils

Prior to development with athletic facilities, the APE was vacant parkland, and before being acquired as part of Crotona Park in 1888, part of a large estate attributed to a series of landowners (e.g., Sidney and Neff 1851; Conner 1853; Beers 1868, 1872; Grant 1873; Viele 1874; Robinson and Pidgeon 1885). Original topography of the APE and vicinity can be seen on several nineteenth century historic maps, which show that the area was relatively level, but with some undulations in the topography, as is found throughout most of the park. A topographic map from 1873, made before the park was deeded to the City of New York but nonetheless identified as Crotona Park, shows the APE as more than 90 but less than 100 feet above sea level (Grant 1873; Figure 4). Another topographic map from 1894 shows nearly identical conditions (Risse 1894; Figure 5). The tennis courts to the north of the APE had been built by 1924, when an aerial photograph clearly shows their placement (Bureau of Engineering 1924; Figure 6). The APE, however, remained vacant until 1935, when horseshoe courts were created on the northern side of the APE and shuffleboard courts were built in the central section of the APE (Department of Parks 1935; Figure 7). The southern end of the APE remained vacant. Topography on the 1935 as-built map indicates the same nearly level landscape that the APE contains today,

suggesting that the APE was graded to create this nearly flat surface. In 1939, the horseshoe and shuffleboard courts were replaced with concrete handball courts, and new horseshoe courts were constructed at the southern end of the APE, along with several bocce courts (Department of Parks 1939; Figure 8). A modern topographical survey of the APE notes no change in topography since the 1930s (DPR 2011; Figure 3).

Historic maps also show that the area now covered by Crotona Park Lake to the east of the courts was originally a perennial stream, known historically as Bound Brook, a branch of which originated within Crotona Park, and then flowed south before joining Leggets Creek and emptying into Long Island Sound. The portion of Bound Brook within Crotona Park was bordered by wetlands. A small man-made pond, likely created by the nineteenth-century estate residents, was located along this drainage near the southern end of the existing lake, which was enlarged during the twentieth century to its present size. The original alignment of the drainage, prior to creation of the existing lake, was located ca. 175 feet east of the APE.

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

Nearly level to gently sloping areas of bedrock controlled hills and ridges modified by glacial action that have been partially cut and filled, mostly for parks and low density residential use; a mixture of moderately deep gneissic till soils and anthropogenic soils, with more than 15 percent impervious pavement and buildings covering the surface; located in Manhattan and the Bronx (USDA 2005:14).

The Greenbelt series is a well drained soil composed of silt loam, loam, or sandy loam. It may contain both an upper soil horizon series (A, Bw, C) as well as a buried soil horizon series (Ab, Bwb). The USDA soil survey for New York City (2005:27) notes that a typical soil profile for the Greenbelt series is:

A 0 to 3 inches – brown (7.5YR 4/4) loam; medium subangular blocky structure; very friable; 5 percent gravel, 2 percent cobbles, and 2 percent stones; very strongly acid.

Bw 3 to 13 inches – yellowish red (5YR 4/6) loam; moderate medium subangular blocky and platy structure; friable; 2 percent gravel, 1 percent cobbles, and 1 percent stones; moderately acid.

C 13 to 57 inches – reddish brown (2.5YR 4/4) gravelly loam; massive; firm; 15 percent gravel, 5 percent cobbles, and 2 percent stones; moderately acid.

Ab 57 to 58 inches – dark brown (7.5YR 3/2) loam; weak medium granular structure; very friable; 5 percent gravel and 5 percent cobbles; extremely acid.

Bwb 58 to 65 inches – yellowish red (5YR 4/6) loam; moderate medium subangular blocky structure; very friable; 5 percent gravel and 5 percent cobbles; very strongly acid.

In April 2011, 15 soil borings were completed within the APE, as shown in Appendix A (RA Consultants 2011). The soil borings encountered three types of profiles: a profile whose upper stratum was fill, followed by natural soils below; a profile that did not contain fill, only natural soils; and profile that had no soil of any kind but was pure bedrock. Of note, although the borings were completed prior to the demolition of the handball courts, the logs did not record the concrete surface

of the courts or any underlying bedding materials used to prepare the concrete surface. The fill, measuring 3-4 feet in thickness, was found in Borings 1, 2, and 3, which were located along the western edge of the APE. Borings 8, 9, 13, 14, and 15, which were located at various points within the central portion of the APE, contained only bedrock. The remaining borings had strata described as silt with sand or sand with silt, containing varying amounts of gravel, with bedrock encountered at ca. 4-21 feet below the existing ground surface, depending on location. Colors were noted only as brown, grey, or greenish grey. None of the more precise soil distinctions noted in the USDA soil survey for the Greenbelt series were observed during the soil boring program. The geotechnical report that included these soil borings indicated that the natural soils on the APE were glacial till. Groundwater was observed at ca. 7-10 feet below the existing ground surface.

IV. PRECONTACT SUMMARY

The presence of Native Americans in the Bronx for the Early Archaic through Late Woodland Periods has been documented, although some periods are more abundantly represented than others (Boesch 1996). At the time of European contact, Native American groups known as the Siwanoy occupied the northern coastline of Long Island Sound from Norwalk, Connecticut to what is now known as the south Bronx. However, the Bronx River is theorized to be the dividing line between the Siwanoy and another Upper Delaware Munsee speaking cultural group, the Wiechquaesqueak (Grumet 1981:1, 59-60).

An examination of records relating to precontact habitation in the Bronx indicates that while a diverse number of precontact sites were located throughout the Bronx at various time periods, often along watercourses, neither the project site nor the extent of Crotona Park have had any sites previously recorded. The closest known precontact sites to the project site are approximately one mile away. Boesch (1996) notes these sites as:

- The Bronx River Avenue site, also known as NYSM #2830 and 2831, and ACP-BRNX-9. This site, originally recorded by Arthur C. Parker (1922), consisted of a shell midden and small camp site with pit features in the West Farms neighborhood, immediately east of the Bronx River near Westchester Avenue.
- The Bronx River II site, recorded by the Westchester County Heritage Map as shell heaps located south of Delancy's Mills, on the east bank of the Bronx River, just south of the New York Zoological Gardens.
- An unnamed camp recorded by Bolton (1922), located at the intersection of the Boston Post Road and East 166th Street near a large glacial erratic.

Grumet's map of Indian Trails indicates that the closest known trail was located approximately 0.75 mile to the east of the project site, along the approximate alignment of West Farms Road to the west of the Bronx River (Grumet 1981:69).

Based on the distance of these precontact resources from the project site, the New York State Office of Parks, Recreation, and Historic Preservation (NYSOPRHP) GIS does not identify Crotona Park as within an area of archaeological sensitivity.

However, in addition to compiling previously recorded precontact archaeological sites, Boesch also undertook the task of creating a model of precontact land use in the Bronx based upon the knowledge of existing precontact sites and their topographic locations coupled with an understanding of the precontact environmental conditions (Boesch 1996). Boesch identified fresh water courses, such as small streams, larger rivers, and saltwater estuaries as magnets for precontact settlement and resource exploitation. His generalized sensitivity map for the borough indicated that all of Crotona Park has a high sensitivity for precontact period resources, based no doubt on the original presence of the perennial drainage and wetlands within the park, and the fact that the park has not been subjected to widespread development. However, it should be noted that Boesch's assessment was generalized, and was not intended to account for prior disturbance, which is essential to establish in order to determine if any potential archaeological resources may have retained their integrity.

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 associated with use of the site for athletic facilities.

Despite the lack of previously recorded precontact archaeological sites within Crotona Park or the immediate vicinity, the site's natural conditions – only ca. 175 feet from a natural water source, well drained soils, and a relatively level landform – suggest that in its undisturbed state, the potential for the presence of precontact archaeological resources nonetheless would have been high. However, as described above, the site has undergone a series of construction and demolition episodes since the 1930s that have disturbed the original landform. These have included:

- Construction of tennis courts immediately north of the site by 1924,
- Construction of horseshoe courts and shuffleboard courts on the northern and central portion of the site in 1935, which necessitated grading to create the level surface,
- Demolition of the horseshoe and shuffleboard courts and construction of the massive concrete handball courts in their place in 1939, and construction of new horseshoe courts and bocce courts at the southern end of the site at the same time, which likely required additional grading, and
- Maintenance and demolition, 1939 – 2011, of the handball, horseshoe, and bocce courts.

The soil borings completed as part of the proposed project, while not overly precise, nevertheless allow several conclusions. None of the soil borings recorded what could be construed as an A horizon soil stratum at any point in the soil column, despite the USDA soil series description for the site and vicinity that suggested the possible presence of both an upper A horizon and a buried A horizon. Neither did the soil borings note soil that could be construed as a B horizon, either in color or in texture. Rather, the natural soils encountered in the soil borings appear to represent soil from the lower reaches of the soil column, well below the upper strata where precontact sites would most likely be found. Five soil borings, or one-third of the total, encountered bedrock but

no soil. Even discounting the fact that the soil borings did not record the concrete surface of the handball court or any underlying soil used to prepare the concrete surface, the lack of upper soil horizons and the presence of shallow bedrock suggests that a significant amount of grading has occurred on the project site over time. It seems unlikely that the site as it exists today could still contain any potential precontact resources.

VI. CONCLUSIONS AND RECOMMENDATIONS

HPI has concluded that the Crotona Park Tennis Center project site is no longer sensitive for precontact archaeological resources. This is based on several factors, including a history of construction, demolition, and grading activities on the site; results of soil borings that indicate a lack of upper soil horizons remaining on the site; and the presence of bedrock located very close to what is now the ground surface. Based on these conclusions, HPI recommends that no additional archaeological investigations are warranted for the Crotona Park Tennis Center project site.

VII. REFERENCES

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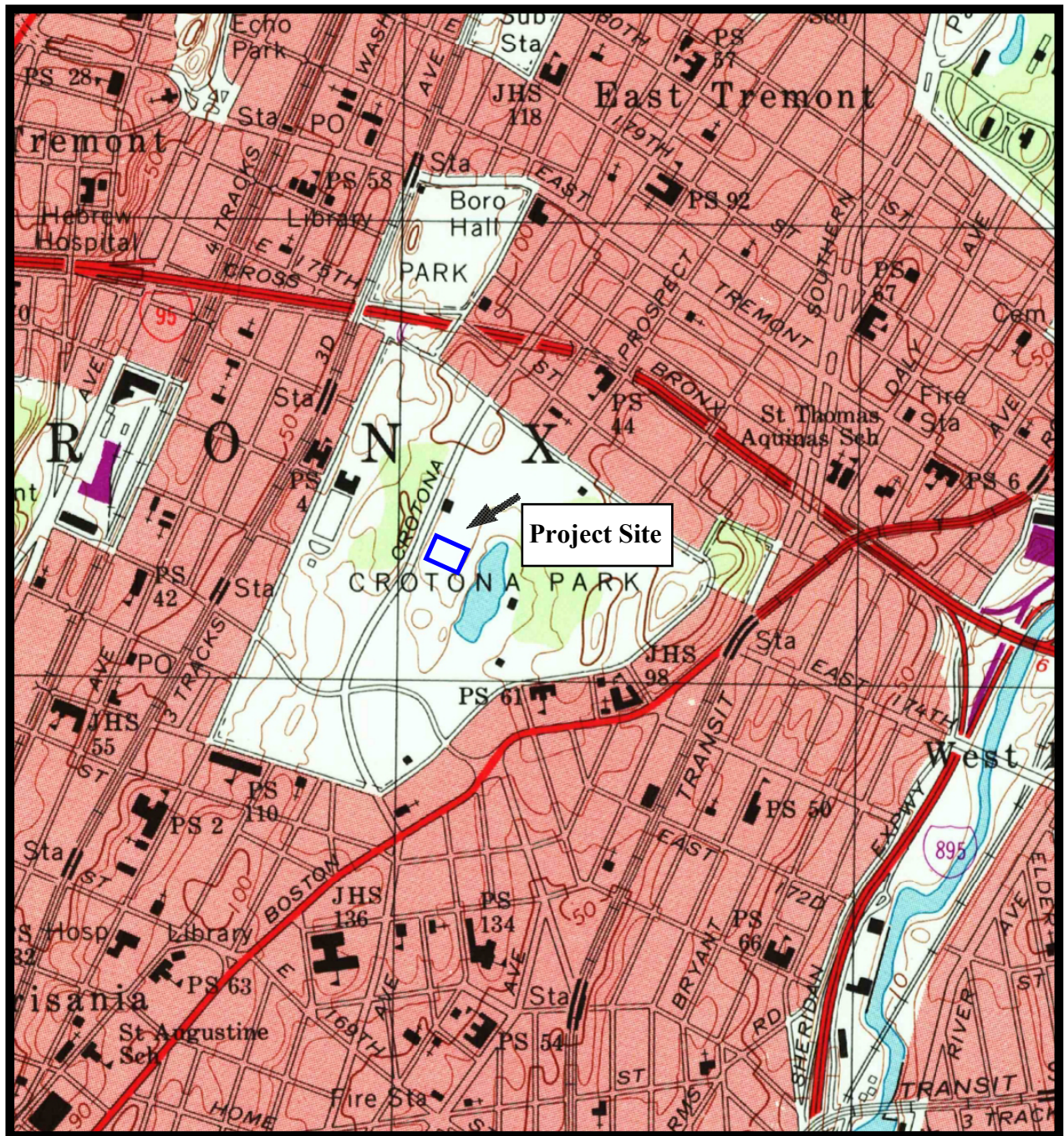
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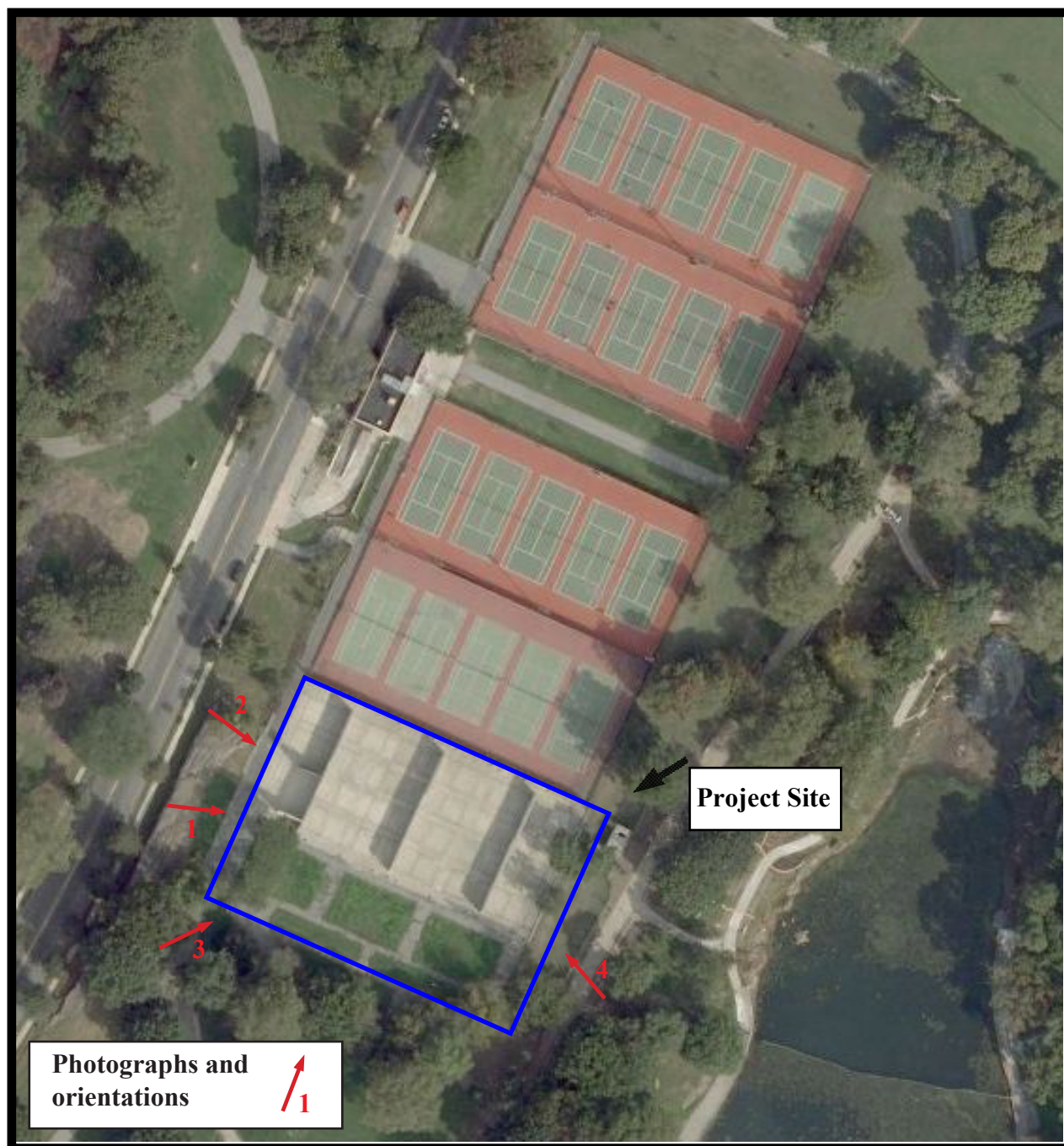


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Figure 1: Project site on *Central Park, N.Y. 7.5 Minute Quadrangle* (U.S.G.S. 1995).

0 1000 2000 3000 4000 5000 FEET

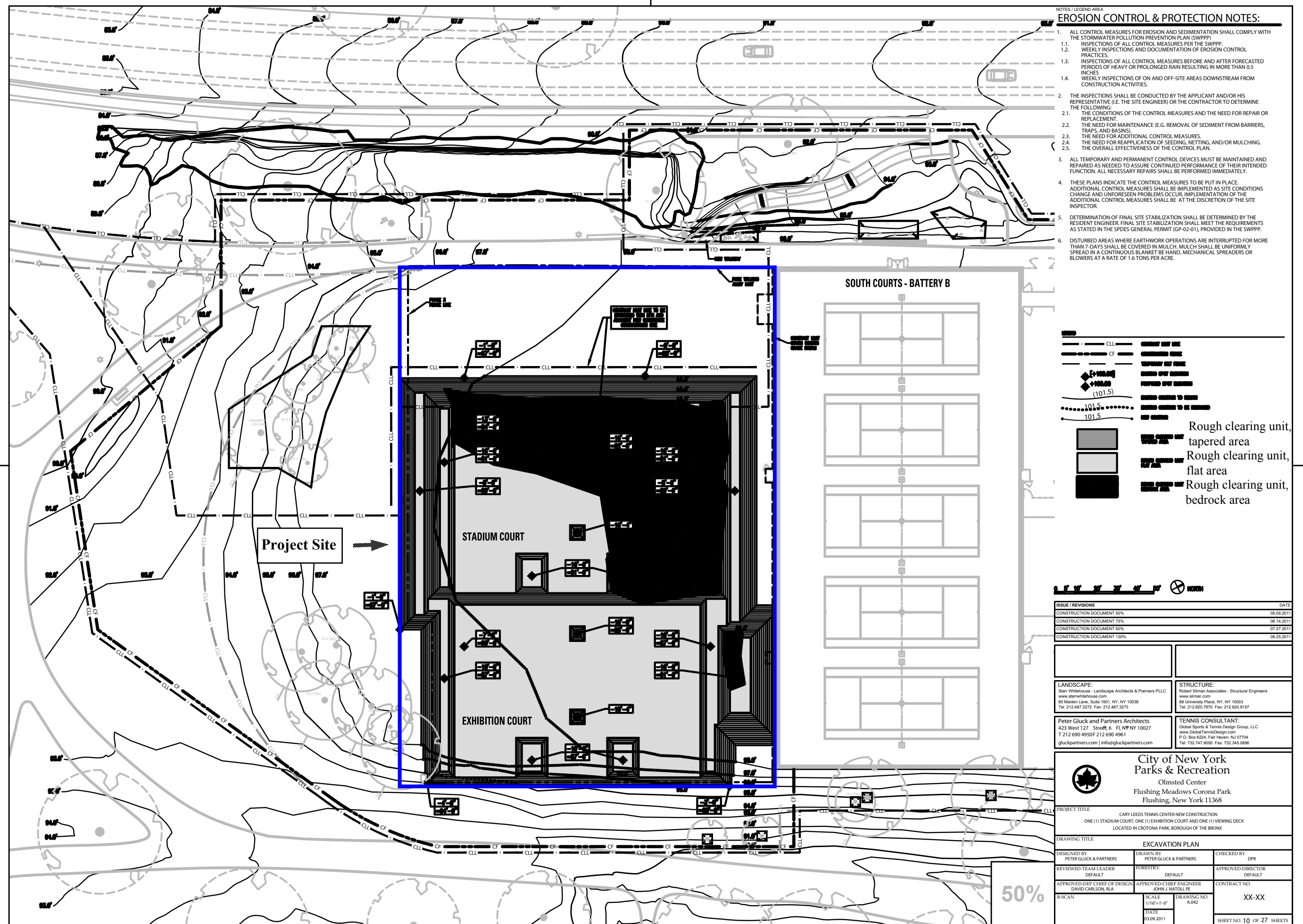


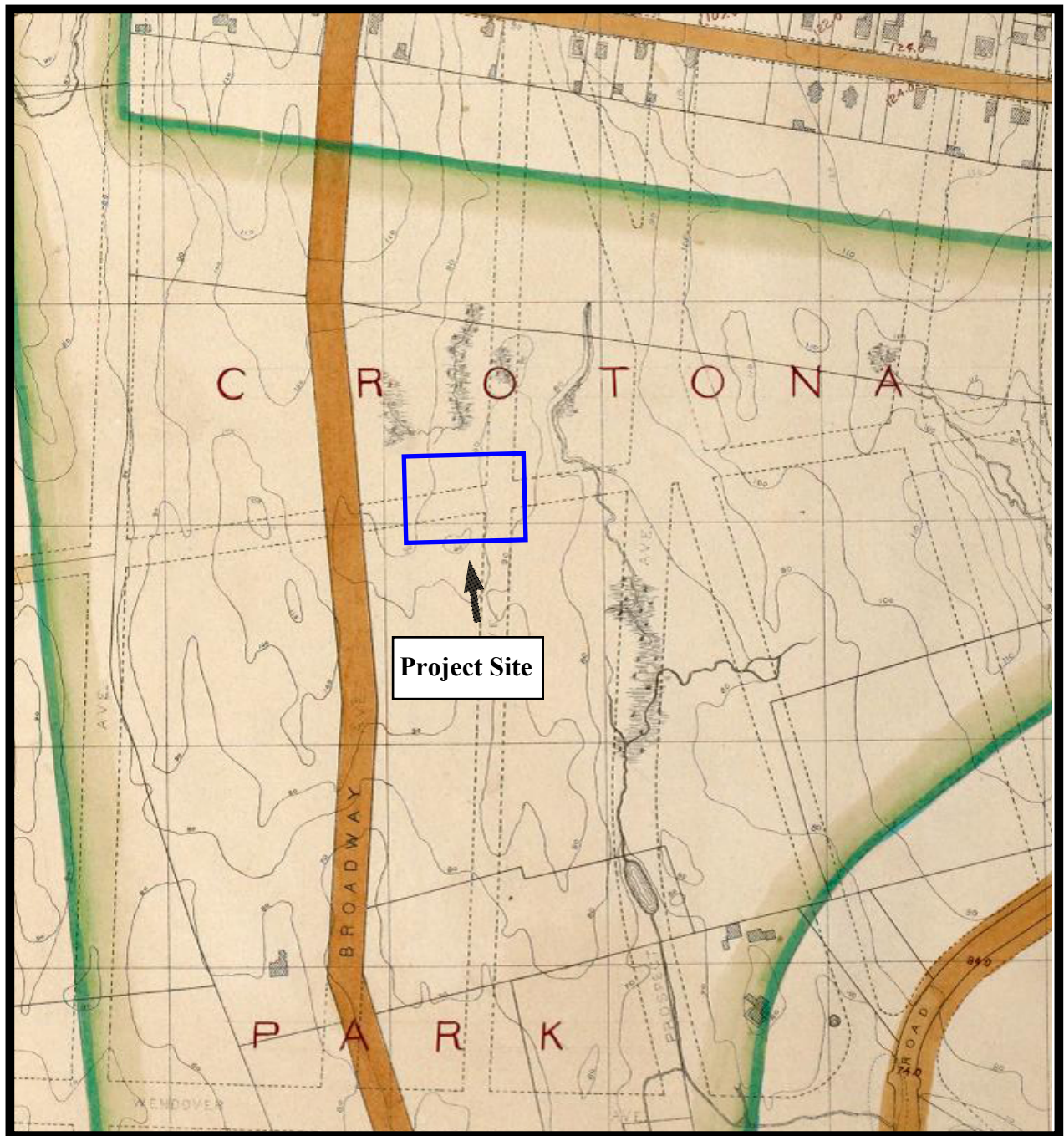
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**Figure 2: Project site and photograph locations on modern aerial photograph (Bing 2011).
 Note that project site currently is vacant.**

0 100 200 300 400 500 FEET



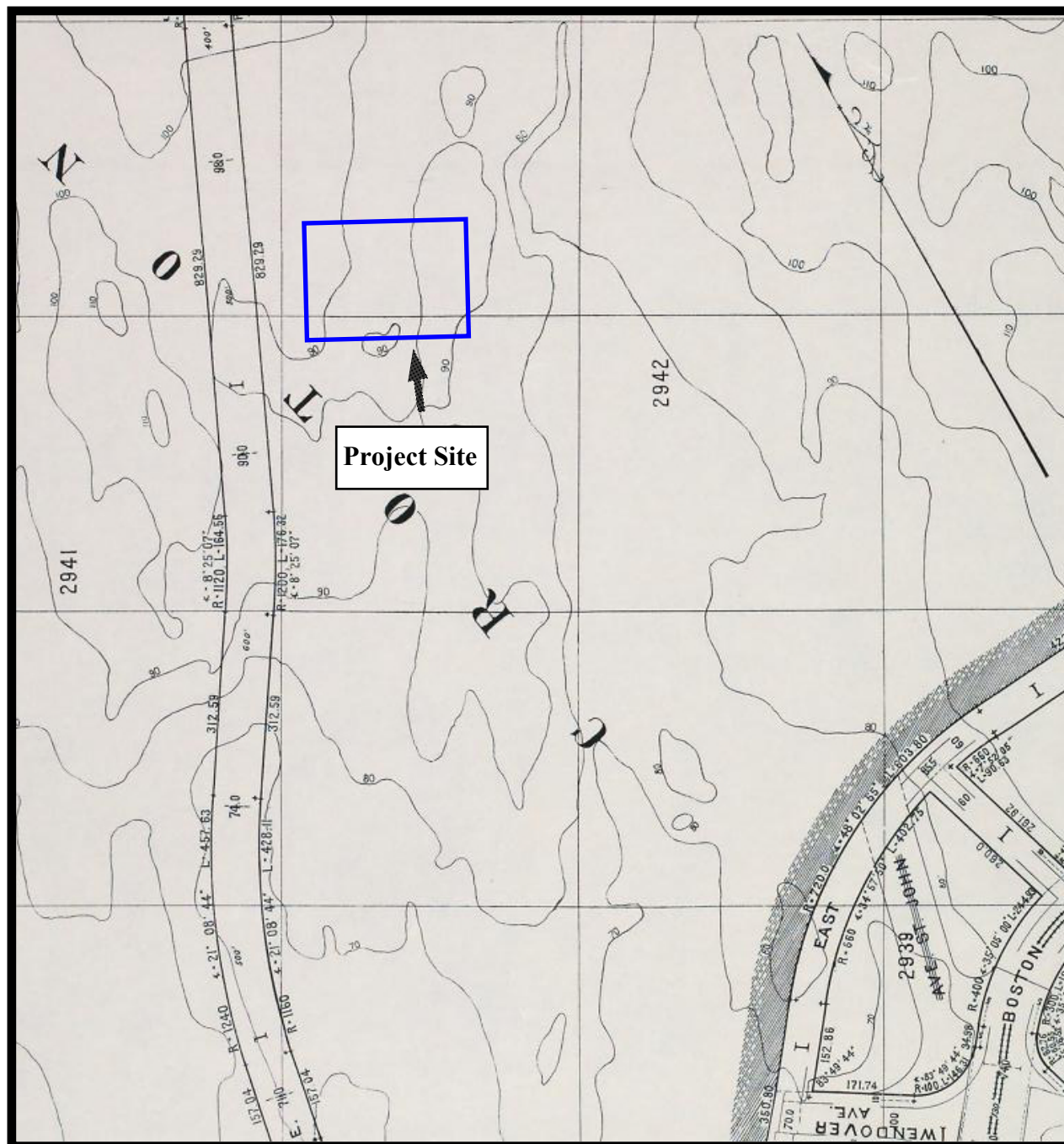


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Figure 4: Project site on *Topographical map made from surveys by the commissioners of the Department of Public Parks (Grant 1873).*

0 200 400 600 800 1000 FEET



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Figure 5: Project site on *Maps or plans and profiles, with field notes and explanatory remarks...* (Risse 1894).

0 250 500 750 1000 1250 FEET



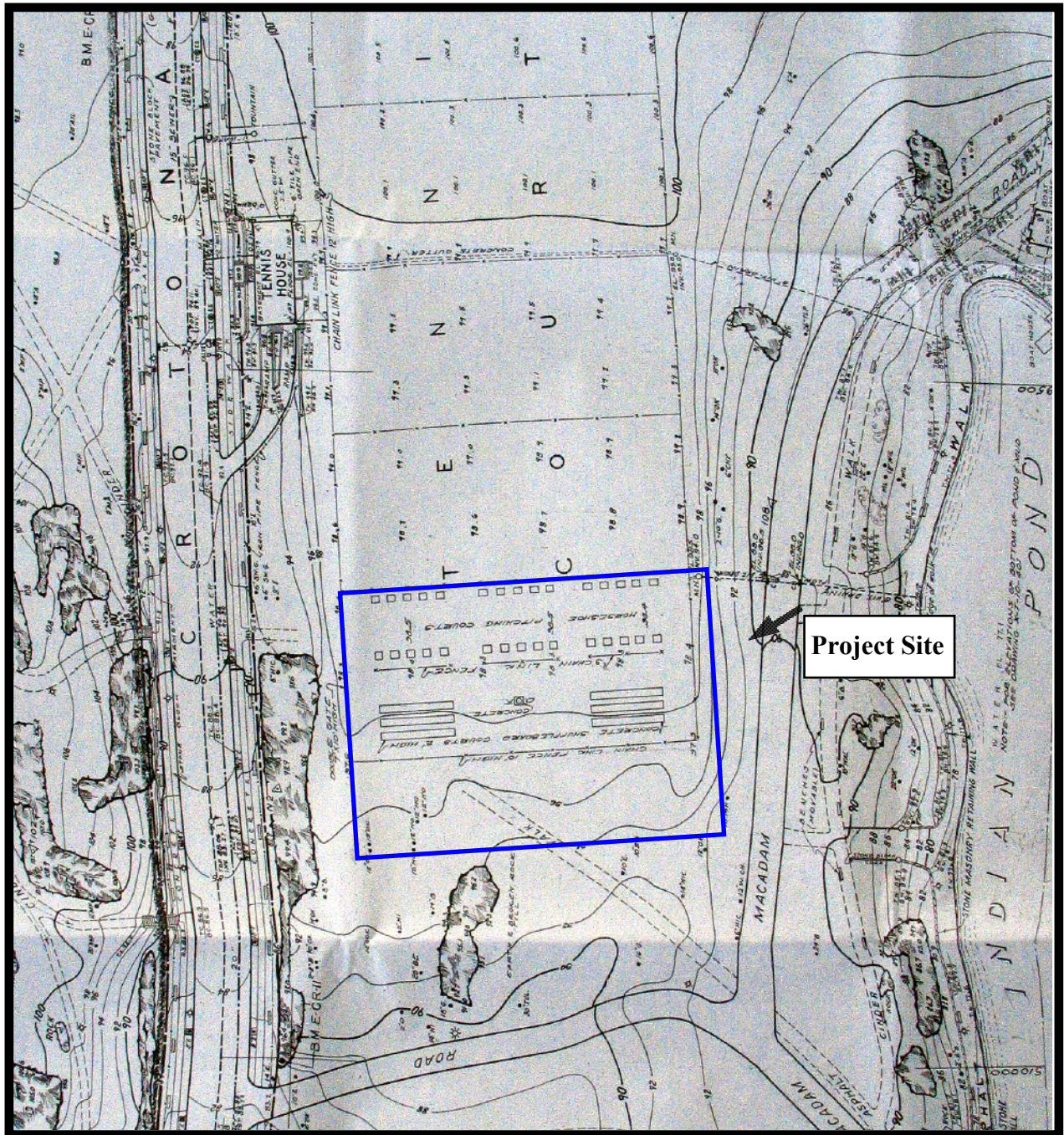
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Figure 6: Project site on *Sectional Aerial Maps of the City of New York*
 (N.Y. Bureau of Engineering 1924).

0 125 250 375 500 625 FEET

 A horizontal scale bar with alternating black and white segments. The segments are labeled with the numbers 0, 125, 250, 375, 500, and 625, followed by the word "FEET".

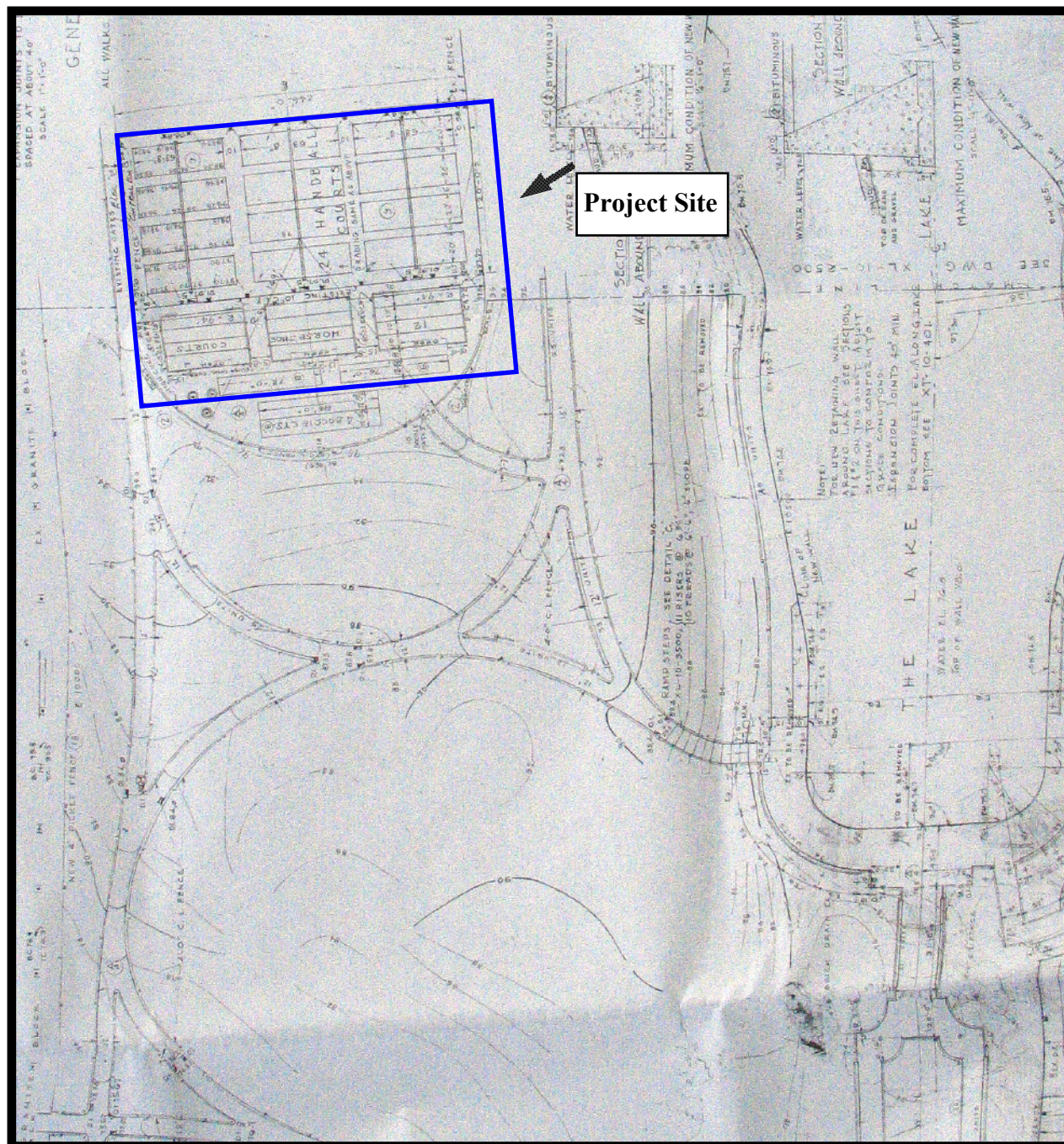


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Figure 7: Project site on *Map of Portion of Crotona Park* (Department of Parks 1935).

0 125 250 375 500 625 FEET



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Figure 8: Project site on *Landscape, Construction & Grading Plan* (Department of Parks 1939).

0 125 250 375 500 625 FEET

PHOTOGRAPHS



Photograph 1: Project site, view looking east.



Photograph 2: Project site, view looking southeast.



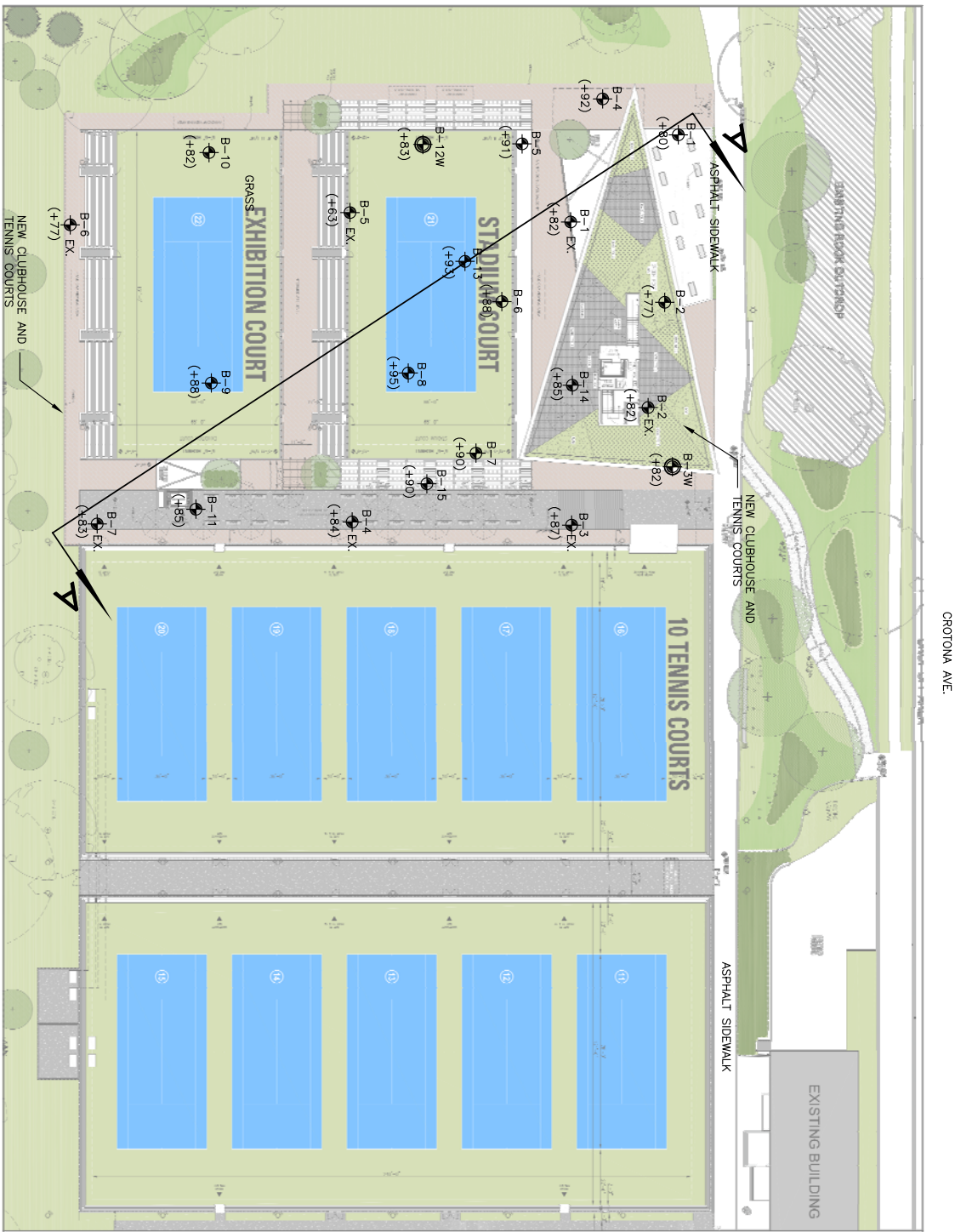
Photograph 3: Project site, view looking northeast.



Photograph 4: Project site, view looking northwest.

APPENDIX A

Boring Logs

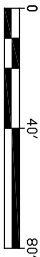
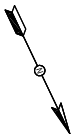


LEGEND:

- BORING LOCATION
- BORING LOCATION WITH OBSERVATION WELL
- (+XX) TOP OF ROCK CLASS 1C OR BETTER

NOTES:

- BORINGS DRILLED BY WARREN GEORGE INC. AND OBSERVED BY RA CONSULTANTS LLC., APRIL 6TH THROUGH APRIL 14TH 2011.
- ELEVATIONS CORRESPOND TO BRONX HIGHWAY DATUM
- REFER TO FIGURE 2 FOR SECTION A-A



REV.	DATE	DETAILS

PROJECT:
CART LEEDS TENNIS COURTS
CROTONA PARK, BRONX, NY

BORING LOCATION PLAN



RA CONSULTANTS LLC
Geotechnical Engineering

EAST WINDSOR

SEAL AND SIGNATURE

DATE: MAY 1, 2011
NEW JERSEY

PROJ. NO.: 11C1016

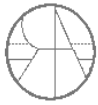
DRAWN BY: PS

CHECKED BY: RA

DRAWING:

FIGURE 1

SHEET: 1 OF 1



RA CONSULTANTS LLC

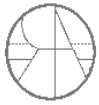
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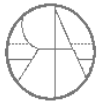
Sheet 1 of 2

PROJECT Carey Leeds Tennis Center				PROJECT NUMBER 11C1016			
LOCATION Crotona Park, Bronx, NY				ELEVATION & DATUM Bronx Highways +98, approx			
DRILLING AGENCY Warren George Inc				DATE STARTED 4/6/2011		DATE COMPLETED 4/6/2011	
DRILLING EQUIPMENT Soil Max XLS				COMPLETION DEPTH (FT) 23.0		ROCK DEPTH (FT) 18.0	
SIZE AND TYPE OF BIT 3-15/16"		SIZE AND TYPE CORE BARREL NX		NO. SAMPLES	DIST. 4	UNDIST. 0	CORE (FT) 5
CASING SIZE AND TYPE 4"				WATER LEVEL	FIRST -	COMPL. -	24HR -
CASING HAMMER WEIGHT 300 lb		DROP	30"	SAMPLING HAMMER TYPE			
SAMPLER 2 in S.S		DROP	30"				
SAMPLER HAMMER WEIGHT 140 lb		x Safety <input type="checkbox"/> Donut <input type="checkbox"/> ATH					
				FOREMAN Gil Burgess			
				HELPER Alen Burgess			
				INSPECTOR Patrick Sorrentino			

DESCRIPTION	DEPTH (ft)	Samples			Lab. Results		STRATA	REMARKS
		Type No.	Recov. FT %	Resist. BL/6" RQD%	water cont. (%)	-200 (%)		
Fill: Brown medium to fine sand with silt, asphalt (7)	1						Fill 3'	Started drilling at 11:00
	2	SS 1	1	5 6 5 10				
	3							
Brown silt with fine sand (ML)(5b)	4						Silt 8.5'	
	5							
	6	SS 2	1	7 7 3 2	31	82.6		
Brown medium to fine sand with silt, fine gravel (SP)(3a)	7						Sand 18'	
	8							
	9							
Brown silty sand (SM)(3b)	10						Rock	Core Recovery & RQD considered for rock class
	11	SS 3	1.5	13 15 19 21				
	12							
Gray intermediate mica schist (1b)	13							
	14							
	15							
	16	SS 4	2	3 5 10 13	17.9	23.8		
	17							
	18							
	19	C-1	88	41				
	20							



DESCRIPTION	DEPTH (ft)	Samples			Lab. Results		STRATA	REMARKS
		Type	Recov.	Resist.	water			
		No.	FT %	BL/6" RQD%	cont. (%)	-200 (%)		
Gray intermediate mica schist (1c)	21	C-1	88	41			Rock	
	22							
	23							
End of boring	24							
	25							
	26							
	27							
	28							
	29							
	30							
	31							
	32							
	33							
	34							
	35							
	36							
	37							
	38							
	39							
	40							
	41							
	42							
	43							
	44							
	45							



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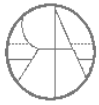
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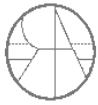
Sheet 1 of 2

PROJECT Carey Leeds Tennis Center			PROJECT NUMBER 11C1016		
LOCATION Crotona Park, Bronx, NY			ELEVATION & DATUM Bronx Highways +98, approx		
DRILLING AGENCY Warren George Inc			DATE STARTED 4/11/2011	DATE COMPLETED 4/12/2011	
DRILLING EQUIPMENT Soil Max XLS			COMPLETION DEPTH (FT) 26.0	ROCK DEPTH (FT) 21.0	
SIZE AND TYPE OF BIT 3-15/16"	SIZE AND TYPE CORE BARREL NX		NO. SAMPLES	DIST. 5	UNDIST. 0
CASING SIZE AND TYPE 4"			WATER LEVEL	FIRST -	COMPL. -
CASING HAMMER WEIGHT 300 lb	DROP	30"	FOREMAN Gil Burgess		
SAMPLER 2 in S.S	DROP	30"	HAMMER TYPE HELPER Alen Burgess		
SAMPLER HAMMER WEIGHT 140 lb	x Safety <input type="checkbox"/> Donut <input type="checkbox"/> ATH		INSPECTOR Patrick Sorrentino		

DESCRIPTION	DEPTH (ft)	Samples			Lab. Results		STRATA	REMARKS
		Type No.	Recov. FT %	Resist. BL/6" RQD%	water cont. (%)	-200 (%)		
Fill: Black asphalt with broken rock (7)	1						Fill	Started drilling at 11:30 Boulder from 3'-5'
	2	SS 1	1	10 20 35 50/3"				
	3							
	4							
Brown silty sand (SM)(6)	5						Sand	
	6	SS 2	1.2	6 5 3 2	36.3	46.3		
	7							
	8							
Brown medium to fine sand with silt, mica (SM)(3a)	9							
	10							
	11	SS 3	1	9 24 20 22	14.8	18		
	12							
Brown coarse to fine sand with coarse to fine gravel, silt, mica (SP)(3a)	13							
	14							
	15							
	16	SS 4	1	9 24 20 22				
	17							
	18							
	19							
	20							



DESCRIPTION	DEPTH (ft)	Samples			Lab. Results		STRATA	REMARKS
		Type No.	Recov. FT %	Resist. BL/6" RQD%	water cont. (%)	-200 (%)		
Gray broken rock (1d)	21	SS 5	0.2	50/3"			Soft Rock 21'	
Hard gray mica schist (1a)	22							
	23							
	24	C-1	99	98			Rock	
	25							
	26						26'	Finished hole at 10:00
End of boring	27							
	28							
	29							
	30							
	31							
	32							
	33							
	34							
	35							
	36							
	37							
	38							
	39							
	40							
	41							
	42							
	43							
	44							
	45							



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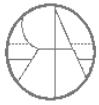
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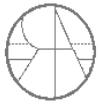
Sheet 1 of 2

PROJECT Carey Leeds Tennis Center			PROJECT NUMBER 11C1016		
LOCATION Crotona Park, Bronx, NY			ELEVATION & DATUM Bronx Highways , +99 approx		
DRILLING AGENCY Warren George Inc			DATE STARTED 4/11/2011	DATE COMPLETED 4/11/2011	
DRILLING EQUIPMENT Soil Max XLS			COMPLETION DEPTH (FT) 22.0	ROCK DEPTH (FT) 17.0	
SIZE AND TYPE OF BIT 3-15/16"	SIZE AND TYPE CORE BARREL NX		NO.SAMPLES	DIST. 4	UNDIST. 0
CASING SIZE AND TYPE 4"			WATER LEVEL	FIRST -	COMPL. -
CASING HAMMER WEIGHT 300 lb	DROP	30"	FOREMAN Gil Burgess		
SAMPLER 2 in S.S	DROP	30"	HAMMER TYPE HELPER Alen Burgess		
SAMPLER HAMMER WEIGHT 140 lb	x Safety <input type="checkbox"/> Donut <input type="checkbox"/> ATH		INSPECTOR Patrick Sorrentino		

DESCRIPTION	DEPTH (ft)	Samples			Lab. Results		STRATA	REMARKS		
		Type	Recov. FT	Resist. BL/6'	water cont.	-200		Date	Time	Water Level El.
		No.	%	RQD%	(%)	(%)				
Fill: Brown silty sand with concrete (7)	1			7			Fill	4/12/2011	8:00	89.5
	2	SS 1	1.5	4				4/13/2011	8:00	90.8
	4					4/14/2011		8:00	90.9	
	3			4						
	4						4'	Installed Well at 11:00 (10' of screen, 7' of riser)		
Gray silty fine sand with medium to fine gravel (SM)(3b)	5			3			Sand			
	6	SS 2	1.5	4						
	8									
	7			8						
	8						8.5'			
	9									
Greenish gray silt with fine sand (ML)(5b)	10						Silt			
	11	SS 3	1	2						
	3									
	12			16						
	13									
	14						14'			
Decomposed rock with medium to fine sand, silt (1d)	15						DR			
	16	SS 4	1	8						
	17			8						
Gray medium hard mica schist (1b)	18			53			Rock			
	19									
	20	C-1	70	58						



DESCRIPTION	DEPTH (ft)	Samples			Lab. Results		STRATA	REMARKS
		Type	Recov.	Resist.	water			
		No.	FT %	BL/6" RQD%	cont. (%)	-200 (%)		
Gray medium hard mica schist (1b)	21	C-1	70	58			Rock	
	22						22'	
End of boring	23							
	24							
	25							
	26							
	27							
	28							
	29							
	30							
	31							
	32							
	33							
	34							
	35							
	36							
	37							
	38							
	39							
	40							
	41							
	42							
	43							
	44							
	45							



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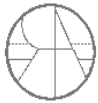
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Log of Boring: B-4

Sheet 1 of 1

PROJECT	Carey Leeds Tennis Center	PROJECT NUMBER	11C1016
LOCATION	Crotona Park, Bronx, NY	ELEVATION & DATUM	Bronx Highways +98, approx
DRILLING AGENCY	Warren George Inc	DATE STARTED	4/6/2011
DRILLING EQUIPMENT	Soil Max XLS	DATE COMPLETED	4/6/2011
SIZE AND TYPE OF BIT	3-15/16"	COMPLETION DEPTH (FT)	10.5
CASING SIZE AND TYPE	4"	ROCK DEPTH (FT)	5.5
CASING HAMMER WEIGHT	300 lb	NO. SAMPLES	DIST. 2
SAMPLER	2 in S.S	UNDIST. 0	CORE (FT) 5
SAMPLER HAMMER WEIGHT	140 lb	WATER LEVEL	FIRST -
		COMPL. -	24HR -
		FOREMAN	Gil Burgess
		HELPER	Alen Burgess
		INSPECTOR	Patrick Sorrentino

DESCRIPTION	DEPTH (ft)	Samples			Lab. Results		STRATA	REMARKS
		Type	Recov. FT	Resist. BL/6"	water cont. (%)	-200 (%)		
Brown medium to fine sand with silt (SP)(3b)	1							
	2	SS 1		6			Sand	
	3			6				
	4			6			4'	
	5						Silt	
Brown silt with fine sand (SM)(5a) Gray medium hard mica schist (1b)	5	SS-2	0.2	50/2"			5.5'	
	6							
	7							
	8	C-1	63	51			Rock	
	9							
End of boring	10						10.5'	
	11							
	12							
	13							
	14							
	15							
	16							
	17							
	18							
	19							
	20							



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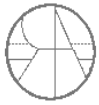
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Log of Boring: B-5

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PROJECT Carey Leeds Tennis Center			PROJECT NUMBER 11C1016		
LOCATION Crotona Park, Bronx, NY			ELEVATION & DATUM Bronx Highways +98, approx		
DRILLING AGENCY Warren George Inc			DATE STARTED 4/6/2011	DATE COMPLETED 4/7/2011	
DRILLING EQUIPMENT Soil Max XLS			COMPLETION DEPTH (FT) 12.0	ROCK DEPTH (FT) 7.0	
SIZE AND TYPE OF BIT 3-15/16"	SIZE AND TYPE CORE BARREL NX		NO. SAMPLES	DIST. 2	UNDIST. 0
CASING SIZE AND TYPE 4"			WATER LEVEL	FIRST -	COMPL. -
CASING HAMMER WEIGHT 300 lb	DROP	30"	FOREMAN Gil Burgess		
SAMPLER 2 in S.S	DROP	30"	HAMMER TYPE HELPER Alen Burgess		
SAMPLER HAMMER WEIGHT 140 lb	x Safety <input type="checkbox"/> Donut <input type="checkbox"/> ATH		INSPECTOR Patrick Sorrentino		

DESCRIPTION	DEPTH (ft)	Samples			Lab. Results		STRATA	REMARKS
		Type No.	Recov. FT %	Resist. BL/6" RQD%	water cont. (%)	-200 (%)		
Brown medium to fine sand with fine gravel (SP)(3b)	1	SS 1	1	4 7 7 6			Sand	
	2							
	3							
	4							
Brown silt with fine sand, mica (ML)(5b)	5						Silt	
	6	SS 2	1	2 2 50/2"				
Gray medium hard mica schist (1b)	7						Rock	
	8							
	9							
	10	C-1	97	75				
End of boring	11						12'	
	12							
	13							
	14							
	15							
	16							
	17							
	18							
	19							
	20							



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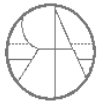
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Log of Boring: B-6

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PROJECT	Carey Leeds Tennis Center	PROJECT NUMBER	11C1016
LOCATION	Crotona Park, Bronx, NY	ELEVATION & DATUM	Bronx Highways +98, approx
DRILLING AGENCY	Warren George Inc	DATE STARTED	4/7/2011
DRILLING EQUIPMENT	Soil Max XLS	DATE COMPLETED	4/7/2011
SIZE AND TYPE OF BIT	3-15/16"	COMPLETION DEPTH (FT)	15.0
CASING SIZE AND TYPE	4"	ROCK DEPTH (FT)	10.0
CASING HAMMER WEIGHT	300 lb	NO. SAMPLES	DIST. 2
SAMPLER	2 in S.S	UNDIST. 0	CORE (FT) 5
SAMPLER HAMMER WEIGHT	140 lb	WATER LEVEL	FIRST -
		COMPL. -	24HR -
		FOREMAN	Gil Burgess
		HELPER	Alen Burgess
		INSPECTOR	Patrick Sorrentino

DESCRIPTION	DEPTH (ft)	Samples			Lab. Results		STRATA	REMARKS
		Type No.	Recov. FT %	Resist. BL/6" RQD%	water cont. (%)	-200 (%)		
Brown medium to fine sand with silt, fine gravel (SP)(3b)	1						Sand	
	2	SS 1	1	10 7 4 4				
	3							
	4							
Brown silty medium to fine sand with fine gravel (SM)(6)	5						Sand	
	6	SS 2	1	4 2 1 1				
	7							
	8							
Gray hard mica schist (1a)	9						Rock	
	10							
	11							
	12	C-1	100	93				
End of boring	13						15'	
	14							
	15							
	16							
	17							
	18							
	19							
	20							



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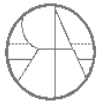
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PROJECT Carey Leeds Tennis Center			PROJECT NUMBER 11C1016		
LOCATION Crotona Park, Bronx, NY			ELEVATION & DATUM Bronx Highways +99, approx		
DRILLING AGENCY Warren George Inc			DATE STARTED 4/7/2011	DATE COMPLETED 4/7/2011	
DRILLING EQUIPMENT Soil Max XLS			COMPLETION DEPTH (FT) 19.0	ROCK DEPTH (FT) 9.0	
SIZE AND TYPE OF BIT 3-15/16"	SIZE AND TYPE CORE BARREL NX		NO. SAMPLES	DIST. 2	UNDIST. 0
CASING SIZE AND TYPE 4"			WATER LEVEL	FIRST -	COMPL. -
CASING HAMMER WEIGHT 300 lb	DROP	30"	FOREMAN Gil Burgess		
SAMPLER 2 in S.S	DROP	30"	HAMMER TYPE HELPER Alen Burgess		
SAMPLER HAMMER WEIGHT 140 lb	x Safety <input type="checkbox"/> Donut <input type="checkbox"/> ATH		INSPECTOR Patrick Sorrentino		

DESCRIPTION	DEPTH (ft)	Samples			Lab. Results		STRATA	REMARKS
		Type No.	Recov. FT %	Resist. BL/6" RQD%	water cont. (%)	-200 (%)		
Greenish brown silty sand with fine gravel (SM)(3b)	1			6			Sand	
	2	SS 1	2	4				
	3			6				
	4			10				
Greenish brown silt with fine sand, fine gravel (ML)(5b)	5			5			Silt	
	6	SS 2	1	8				
	7			7				
	8			5				
Gray intermediate mica schist (1c)	9						Rock	
	10							
	11	C-1	60	16				
	12							
Gray hard mica schist (1a)	13						Rock	
	14							
	15							
	16	C-2	95	90				
End of boring	17						Rock	
	18							
	19							
	20							



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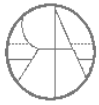
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PROJECT Carey Leeds Tennis Center			PROJECT NUMBER 11C1016		
LOCATION Crotona Park, Bronx, NY			ELEVATION & DATUM Bronx Highways +99, approx		
DRILLING AGENCY Warren George Inc			DATE STARTED 4/7/2011	DATE COMPLETED 4/7/2011	
DRILLING EQUIPMENT Soil Max XLS			COMPLETION DEPTH (FT) 9.0	ROCK DEPTH (FT) 4.0	
SIZE AND TYPE OF BIT 3-15/16"	SIZE AND TYPE CORE BARREL NX		NO. SAMPLES	DIST. 0	UNDIST. 0
CASING SIZE AND TYPE 4"			WATER LEVEL	FIRST -	COMPL. -
CASING HAMMER WEIGHT 300 lb	DROP	30"	FOREMAN Gil Burgess		
SAMPLER 2 in S.S	DROP	30"	HAMMER TYPE HELPER Alen Burgess		
SAMPLER HAMMER WEIGHT 140 lb	x Safety <input type="checkbox"/> Donut <input type="checkbox"/> ATH		INSPECTOR Patrick Sorrentino		

DESCRIPTION	DEPTH (ft)	Samples			Lab. Results		STRATA	REMARKS
		Type No.	Recov. FT %	Resist. BL/6" RQD%	water cont. (%)	-200 (%)		
Gray intermediate mica schist (1c)	1							
	2							
	3							
	4							
	5							
	6							
	7	C-1	70	40			Rock	
	8							
	9						9'	
End of boring	10							
	11							
	12							
	13							
	14							
	15							
	16							
	17							
	18							
	19							
	20							



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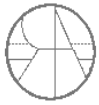
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PROJECT				PROJECT NUMBER			
Carey Leeds Tennis Center				11C1016			
LOCATION				ELEVATION & DATUM			
Crotona Park, Bronx, NY				Bronx Highways +98, approx			
DRILLING AGENCY				DATE STARTED		DATE COMPLETED	
Warren George Inc				4/13/2011		4/13/2011	
DRILLING EQUIPMENT				COMPLETION DEPTH (FT)		ROCK DEPTH (FT)	
Soil Max XLS				15.0		10.0	
SIZE AND TYPE OF BIT		3-15/16"		SIZE AND TYPE CORE BARREL			
CASING SIZE AND TYPE		4"		NX			
CASING HAMMER WEIGHT		300 lb		DROP		30"	
SAMPLER		2 in S.S		DROP		30"	
SAMPLER HAMMER WEIGHT		140 lb		x Safety <input type="checkbox"/> Donut <input type="checkbox"/> ATH			
				NO. SAMPLES		DIST. 0	
				WATER LEVEL		FIRST -	
				FOREMAN		Gil Burgess	
				HELPER		Alen Burgess	
				INSPECTOR		Patrick Sorrentino	

DESCRIPTION	DEPTH (ft)	Samples			Lab. Results		STRATA	REMARKS
		Type	Recov. FT	Resist. BL/6"	water cont.	-200		
		No.	%	RQD%	(%)	(%)		
Hard gray mica schist (1a)	1							
	2							
	3							
	4							
	5							
	6							
	7							
	8							
	9							
	10							
	11	C-1	100	100			Rock	
	12							
	13							
	14							
	15							
End of boring	16							
	17							
	18							
	19							
	20							



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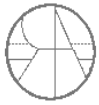
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PROJECT	Carey Leeds Tennis Center	PROJECT NUMBER	11C1016
LOCATION	Crotona Park, Bronx, NY	ELEVATION & DATUM	Bronx Highways +98, approx
DRILLING AGENCY	Warren George Inc	DATE STARTED	4/8/2011
DRILLING EQUIPMENT	Soil Max XLS	DATE COMPLETED	4/8/2011
SIZE AND TYPE OF BIT	3-15/16"	COMPLETION DEPTH (FT)	22.0
CASING SIZE AND TYPE	4"	ROCK DEPTH (FT)	17.0
CASING HAMMER WEIGHT	300 lb	NO. SAMPLES	DIST. 4
SAMPLER	2 in S.S	UNDIST.	0
SAMPLER HAMMER WEIGHT	140 lb	CORE (FT)	5
		WATER LEVEL	FIRST -
		COMPL.	-
		24HR	-
		FOREMAN	Gil Burgess
		HELPER	Alen Burgess
		INSPECTOR	Patrick Sorrentino

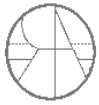
DESCRIPTION	DEPTH (ft)	Samples			Lab. Results		STRATA	REMARKS
		Type No.	Recov. FT %	Resist. BL/6" RQD%	water cont. (%)	-200 (%)		
Brown medium to fine sand with silt (SP)(3b)	1	SS 1	1.5	6 8 8 6			Sand	
	2							
	3							
	4							
Brown medium to fine sand with fine gravel, silt (SP)(3b)	5			4				
	6	SS 2	1	13 15 11				
	7							
	8							
	9							
Gray brown silty sand with gravel (SM)(3a)	10							
	11	SS 3	1	6 21 21 18	12.2	18.1	Rock	
	12							
	13							
	14							
No Recovery	15			50/4"				
	16	SS 4						
	17							
Gray hard mica schist (1a)	18	C-1	100	100				
	19							
	20							

16'

Difficult drilling from 15' to 17'



DESCRIPTION	DEPTH (ft)	Samples			Lab. Results		STRATA	REMARKS
		Type	Recov.	Resist.	water	-200		
		No.	FT %	BL/6" RQD%	cont. (%)	(%)		
Gray hard mica schist (1a)	21	C-1	100	100			Rock	
	22						22'	
	23							
	24							
	25							
	26							
	27							
	28							
	29							
	30							
	31							
	32							
	33							
	34							
	35							
	36							
	37							
	38							
	39							
	40							
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	43							
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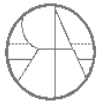
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Log of Boring: B-11

Sheet 1 of 1

PROJECT	Carey Leeds Tennis Center	PROJECT NUMBER	11C1016
LOCATION	Crotona Park, Bronx, NY	ELEVATION & DATUM	Bronx Highways +99, approx
DRILLING AGENCY	Warren George Inc	DATE STARTED	4/12/2011
DRILLING EQUIPMENT	Soil Max XLS	DATE COMPLETED	4/12/2011
SIZE AND TYPE OF BIT	3-15/16"	COMPLETION DEPTH (FT)	19.0
CASING SIZE AND TYPE	4"	ROCK DEPTH (FT)	14.0
CASING HAMMER WEIGHT	300 lb	NO. SAMPLES	DIST. 3
SAMPLER	2 in S.S	UNDIST. 0	CORE (FT) 5
SAMPLER HAMMER WEIGHT	140 lb	WATER LEVEL	FIRST -
		COMPL. -	24HR -
		FOREMAN	Gil Burgess
		HELPER	Alen Burgess
		INSPECTOR	Patrick Sorrentino

DESCRIPTION	DEPTH (ft)	Samples			Lab. Results		STRATA	REMARKS
		Type No.	Recov. FT %	Resist. BL/6" RQD%	water cont. (%)	-200 (%)		
Brown medium to fine sand with silt (SP-SM)(6)	1			4			Sand	
	2	SS 1		3				
	3			2				
	4			2				
Brown medium to fine sand with silt (SP-SM)(3b)	5			2				
	6	SS 2	0.2	5			8.5'	
	7			8				
	8			6				
	9							
Brown clayey silt with fine sand (ML)(6)	10			1			Silt	
	11	SS 3	0.2	1				
	12			4				
	13			6				
	14							
Gray hard mica schist (1a)	15						14'	
	16							
	17	C-1	100	89				
	18							
	19							
End of boring	20						19'	



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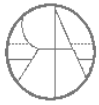
Geotechnical Engineering

Log of Boring: B-12W

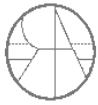
Sheet 1 of 2

PROJECT Carey Leeds Tennis Center			PROJECT NUMBER 11C1016		
LOCATION Crotona Park, Bronx, NY			ELEVATION & DATUM Bronx Highways +98, approx		
DRILLING AGENCY Warren George Inc			DATE STARTED 4/8/2011	DATE COMPLETED 4/8/2011	
DRILLING EQUIPMENT Soil Max XLS			COMPLETION DEPTH (FT) 25.0	ROCK DEPTH (FT) 15.0	
SIZE AND TYPE OF BIT 3-15/16"	SIZE AND TYPE CORE BARREL NX		NO. SAMPLES	DIST. 2	UNDIST. 0
CASING SIZE AND TYPE 4"			WATER LEVEL	FIRST -	COMPL. -
CASING HAMMER WEIGHT 300 lb	DROP	30"	FOREMAN Gil Burgess		
SAMPLER 2 in S.S	DROP	30"	HAMMER TYPE HELPER Alen Burgess		
SAMPLER HAMMER WEIGHT 140 lb	x Safety <input type="checkbox"/> Donut <input type="checkbox"/> ATH		INSPECTOR Patrick Sorrentino		

DESCRIPTION	DEPTH (ft)	Samples			Lab. Results		STRATA	REMARKS		
		Type No.	Recov. FT %	Resist. BL/6" RQD%	water cont. (%)	-200 (%)		Date	Time	Water Level El.
Brown medium to fine sand with silt (SM)(3b)	1	SS 1		5 5 8 7			Sand	4/11/2011	8:00	88.5
	2							4/12/2011	8:00	88.7
	3							4/13/2011	8:00	89.5
	4							4/14/2011	8:00	89.7
Decomposed rock	5						DR	Installed Well at 12:00 (10' of screen, 7' of riser)		
	6							Boulder from 4' - 6'		
	7									
	8									
Gray intermediate mica schist (1c)	9						Rock			
	10									
	11	SS 2	0.5	30 25 34 50/3"						
	12									
	13									
	14									
	15									
	16									
	17									
	18	C-1	67	32						
	19									
	20									



DESCRIPTION	DEPTH (ft)	Samples			Lab. Results		STRATA	REMARKS
		Type	Recov.	Resist.	water			
		No.	FT %	BL/6" RQD%	cont. (%)	-200 (%)		
Gray intermediate mica schist (1c)	21	C-2	70	48			Rock	
	22							
	23							
	24							
	25							
End of boring	25						25'	
	26							
	27							
	28							
	29							
	30							
	31							
	32							
	33							
	34							
	35							
	36							
	37							
	38							
	39							
	40							
	41							
	42							
	43							
	44							
	45							



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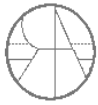
Geotechnical Engineering

Log of Boring: B-13

Sheet 1 of 1

PROJECT				PROJECT NUMBER			
Carey Leeds Tennis Center				11C1016			
LOCATION				ELEVATION & DATUM			
Crotona Park, Bronx, NY				Bronx Highways +98, approx			
DRILLING AGENCY				DATE STARTED		DATE COMPLETED	
Warren George Inc				4/13/2011		4/13/2011	
DRILLING EQUIPMENT				COMPLETION DEPTH (FT)		ROCK DEPTH (FT)	
Soil Max XLS				10.0		5.0	
SIZE AND TYPE OF BIT		3-15/16"		SIZE AND TYPE CORE BARREL			
CASING SIZE AND TYPE		4"		NX			
CASING HAMMER WEIGHT		300 lb		DROP		30"	
SAMPLER		2 in S.S		DROP		30"	
SAMPLER HAMMER WEIGHT		140 lb		x Safety <input type="checkbox"/> Donut <input type="checkbox"/> ATH			
				NO. SAMPLES		DIST. 0	
				UNDIST. 0		CORE (FT) 5	
				WATER LEVEL		FIRST -	
				COMPL. -		24HR -	
				FOREMAN		Gil Burgess	
				HELPER		Alen Burgess	
				INSPECTOR		Patrick Sorrentino	

DESCRIPTION	DEPTH (ft)	Samples			Lab. Results		STRATA	REMARKS
		Type	Recov. FT	Resist. BL/6"	water cont.	-200 (%)		
		No.	%	RQD%	(%)	(%)		
Gray intermediate mica schist (1c)	1							
	2							
	3							
	4							
	5							
	6							
	7							
	8	C-1	89	45			Rock	
	9							
	10						10'	
End of boring	11							
	12							
	13							
	14							
	15							
	16							
	17							
	18							
	19							
	20							



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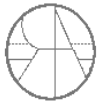
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Log of Boring: B-14

Sheet 1 of 1

PROJECT Carey Leeds Tennis Center			PROJECT NUMBER 11C1016		
LOCATION Crotona Park, Bronx, NY			ELEVATION & DATUM Bronx Highways +99, approx		
DRILLING AGENCY Warren George Inc			DATE STARTED 4/14/2011	DATE COMPLETED 4/14/2011	
DRILLING EQUIPMENT Soil Max XLS			COMPLETION DEPTH (FT) 17.5	ROCK DEPTH (FT) 14.0	
SIZE AND TYPE OF BIT 3-15/16"	SIZE AND TYPE CORE BARREL NX		NO. SAMPLES	DIST. 0	UNDIST. 0
CASING SIZE AND TYPE 4"			WATER LEVEL	FIRST -	COMPL. -
CASING HAMMER WEIGHT 300 lb	DROP	30"	FOREMAN Gil Burgess		
SAMPLER 2 in S.S	DROP	30"	HAMMER TYPE HELPER Alen Burgess		
SAMPLER HAMMER WEIGHT 140 lb	x Safety <input type="checkbox"/> Donut <input type="checkbox"/> ATH		INSPECTOR Patrick Sorrentino		

DESCRIPTION	DEPTH (ft)	Samples			Lab. Results		STRATA	REMARKS
		Type	Recov. FT	Resist. BL/6"	water cont.	-200		
		No.	%	RQD%	(%)	(%)		
Gray intermediate mica schist (1c)	1							
	2							
	3							
	4							
	5							
	6							
	7							
	8							
	9							
	10							
	11							
	12							
	13							
	14							
End of boring	15							
	16	C-1	66	36			Rock	
	17						17.5'	
	18							
	19							
	20							



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Log of Boring: B-15

Sheet 1 of 1

PROJECT Carey Leeds Tennis Center			PROJECT NUMBER 11C1016		
LOCATION Crotona Park, Bronx, NY			ELEVATION & DATUM Bronx Highways +99, approx		
DRILLING AGENCY Warren George Inc			DATE STARTED 4/13/2011	DATE COMPLETED 4/13/2011	
DRILLING EQUIPMENT Soil Max XLS			COMPLETION DEPTH (FT) 14.0	ROCK DEPTH (FT) 9.0	
SIZE AND TYPE OF BIT 3-15/16"	SIZE AND TYPE CORE BARREL NX		NO. SAMPLES	DIST. 0	UNDIST. 0
CASING SIZE AND TYPE 4"			WATER LEVEL	FIRST -	COMPL. -
CASING HAMMER WEIGHT 300 lb	DROP	30"	FOREMAN Gil Burgess		
SAMPLER 2 in S.S	DROP	30"	HAMMER TYPE HELPER Alen Burgess		
SAMPLER HAMMER WEIGHT 140 lb	x Safety <input type="checkbox"/> Donut <input type="checkbox"/> ATH		INSPECTOR Patrick Sorrentino		

DESCRIPTION	DEPTH (ft)	Samples			Lab. Results		STRATA	REMARKS
		Type	Recov. FT	Resist. BL/6"	water cont.	-200		
		No.	%	RQD%	(%)	(%)		
Graymedium hard mica schist (1b)	1							
	2							
	3							
	4							
	5							
	6							
	7							
	8							
	9							
	10							
	11							
	12	C-1	90	57			Rock	
	13							
	14						14'	
End of boring	15							
	16							
	17							
	18							
	19							
	20							