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TAMS  
2007

## TECHNICAL REPORT

# *ARCHAEOLOGICAL MONITORING OF 27kV SUBSTATION AREA*

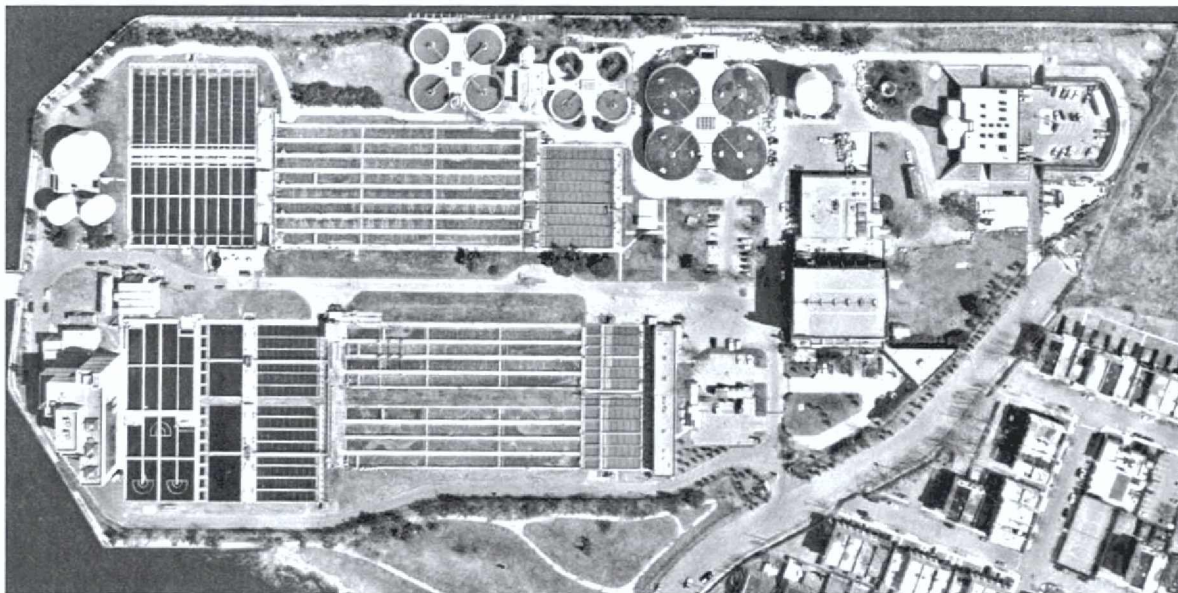
## TALLMAN ISLAND WPCP

127-01 POWELL'S COVE BOULEVARD  
COLLEGE POINT, QUEENS COUNTY, NEW YORK

CAPITAL PROJECT WP-249  
CONTRACTS TI-2 & TI-3

CEQR No. 06DEP009Q

MARCH 2007



**BBL**  
an ARCADIS company

**TAMS**

TAMS Consultants, Inc.

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# 1 INTRODUCTION

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The New York City Department of Environmental Protection (NYCDEP) is proposing a project known as Tallman Island TI-2 / TI-3 Water Pollution Control Plant (WPCP) Upgrade. Proposed actions for the Tallman Island WPCP upgrade include replacement of a gas burner, replacement of roofs on a number of digester tanks, and construction of seven new buildings, including one temporary field office.

New York City agencies are required to comply with City Environmental Quality Review (CEQR) guidelines by identifying archaeological resources and State or National Register-listed or eligible historic resources (more than 50 years old) where impacts are proposed. Blasland, Bouck & Lee, Inc. (BBL) and TAMS Consultants, Inc. (an Earth Tech company) were contracted by the NYCDEP to prepare environmental reports for the proposed Tallman Island TI-2 / TI-3 WPCP upgrade program to fulfill this requirement (NYCDEPa, 2006).

## Location of Project Area

Tallman Island is located at 127-01 Powell Cove Blvd at the western edge of Powell's Cove in the College Point section of Queens, New York (Figure 1, Location of Project Area). The proposed 27kV Substation encompasses the southeastern portion of the park area, located just west of the main gates of the WPCP facility and just north of Powell's Cove Blvd.

In February 2007, the footprint of the substation structure was shifted west and south of the proposed location depicted in previous reports, in order to avoid an existing buried electric utility. Changing the proposed location required that a roughly five-foot high landscaped hill formed in the 1970s (the southernmost of two hills created in the park area) be leveled; at the same time the remainder of the footprint within the park area was graded. These leveling and grading activities were completed prior to the archaeological monitoring effort. A second hill, also created in the 1970s as noted above, remains in the park area northwest of the substation footprint.

## Project History

In compliance with CEQR guidelines, BBL/TAMS prepared an Environmental Assessment Statement (EAS) for the NYCDEP of the proposed WPCP facility project (NYCDEP, 2006a). Following submission and review of this report, the Landmarks Preservation Commission (LPC) requested additional information on the archaeological sensitivity of the project area. The LPC specifically requested the boring logs of the area of proposed impact be reviewed by an archaeologist to determine the potential for intact soils to be present, and that a report be submitted them assessing whether archaeological monitoring was necessary to determine subsurface conditions (Amanda Sutphin, LPC, March 24, 2006).

# Location of Project Area

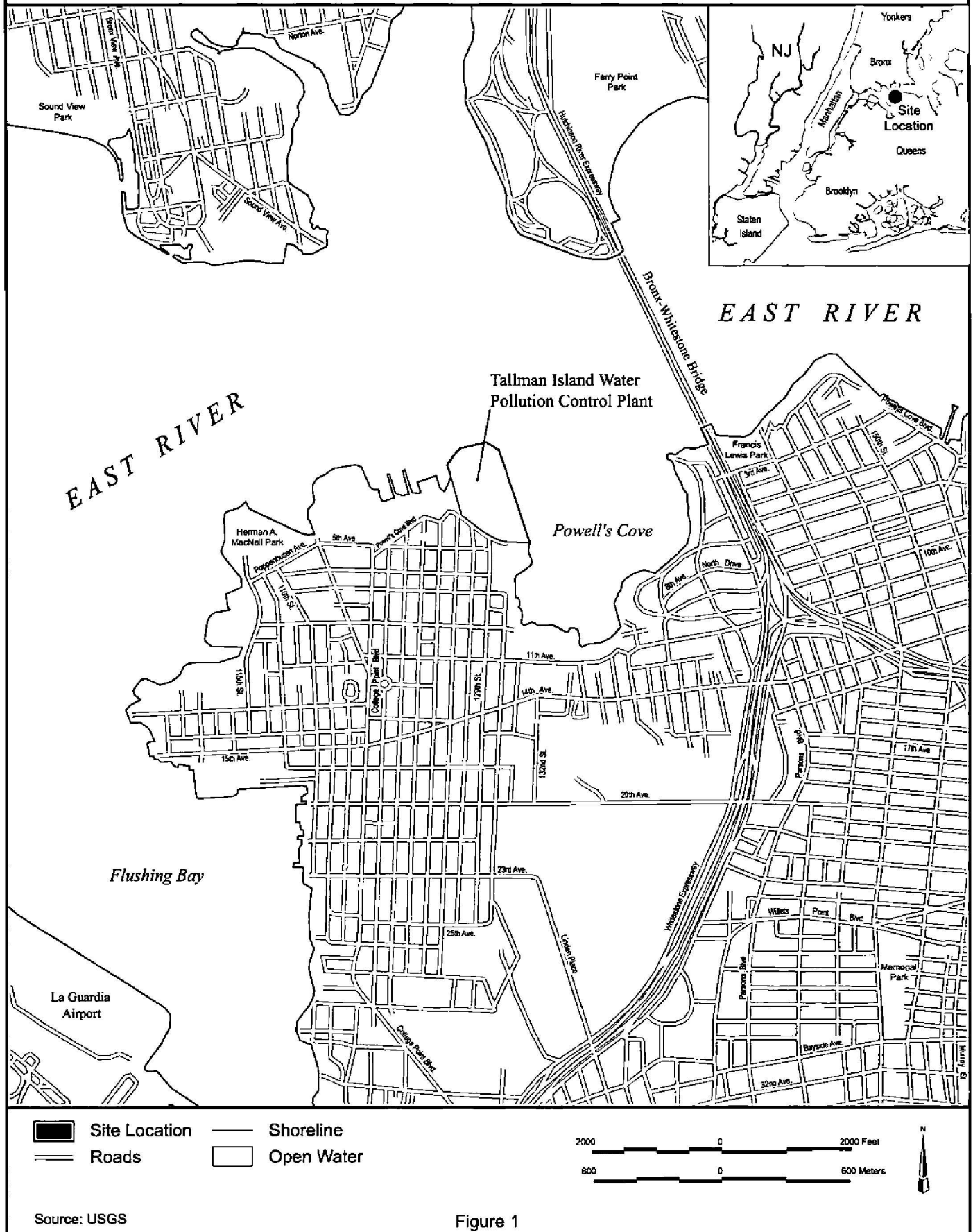


Figure 1

These comments were addressed in an archaeological sensitivity report prepared by BBL/TAMS in June 2006 (NYCDEP, 2006b). This report concluded that the majority of the Tallman Island WPCP project area did not have potential for intact soils to be present; however, the potential for intact soils to be present below several feet of fill in the 27kV Substation area was ambiguous (IBID). Following consultation with LPC it was determined that archaeological monitoring of backhoe excavated trenches in this area would be conducted in order to determine subsurface conditions (Amanda Suthpin, LPC, May 2006).

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## 2 OBJECTIVE AND METHODOLOGY

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The objective of this archaeological monitoring effort was to determine the presence or absence of intact soils or archaeological resources within the area of proposed impact for the 27kV Substation. This effort was performed as part of the NYCDEP's compliance with CEQR, which requires State or National Register-eligible archaeological resources be identified within the areas of proposed impact.

Previous research determined the area to have been covered in several feet of fill, below which intact soils could be present. In order to determine subsurface conditions, a backhoe was utilized to excavate trenches to depths of proposed impact within the structure's footprint, exposing a wide cross section of the areas stratigraphy. A team of two archaeologists from Earth Tech monitored the excavation of these trenches, the results of which are presented in this report.

The archaeological sensitivity report (NYCDEP, 2006b) had proposed that archaeologists monitor backhoe-excavated utility trenches around the perimeter of the substation footprint, as these impacts were to precede construction of the substation; however, changes in the construction schedule allowed archaeologists to monitor trenches excavated within the footprint of the planned structure.

As noted earlier, the area for the proposed substation (which had been shifted west and south of the earlier planned location) was leveled by the construction crew prior to the archeological monitoring effort, removing an approximately five-foot high hillock created in the 1970s. On the day of the monitoring effort, three trenches were excavated to varying depths based on the proposed impacts in each area (from five to twelve feet below the leveled grade). The backhoe utilized a three-foot wide, toothed bucket to remove soils.

Surveyors for the construction crew on site (Picone Construction) outlined the structure's footprint with spray paint the morning of the monitoring effort. They also provided archaeologists with a several elevations within the project area; these elevations are based on the Queens Borough Datum, which is 2.275 feet above mean sea level (amsl) as established by the National Geodetic Vertical Datum at Sandy Hook, NJ.

Subsurface conditions, including stratigraphy, artifacts, or features encountered were recorded by archaeologists through notes, profile drawings, sketches, and photographs. Archaeologists entered the excavation areas (trenches) when possible in order to more closely examine stratigraphy. All soils were viewed while being removed and back dirt piles were occasionally reviewed for the presence of artifacts. Soils were not screened by archaeologists and no artifacts were collected.



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### 3 RESULTS OF SURVEY

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On February 26, 2007 Earth Tech archaeologists monitored three backhoe-excavated trenches in the footprint of the proposed 27kV Substation (Figure 2, Archaeological Monitoring Areas, and Photo 1). The trenches were excavated in various parts of the project area in order to provide a wide cross section of the area's stratigraphy. Depths of excavation varied based on proposed impacts, from five feet in the northwestern portion of the footprint to approximately ten to twelve feet below grade in the central and eastern portions, where a basement is planned. In all areas, fill layers were exposed to the base of excavation. Similar fill layers were encountered in Trenches 2 and 3, which differed from the fill layers encountered in Trench 1. Subsurface conditions are discussed in more detail below by trench.

#### Trench 1

Trench 1 was located in the western portion of the substation's footprint, in the area where the landscaped hill had been removed prior to the archaeological monitoring effort (discussed earlier). Following this leveling event, the grade in this area was approximately 14.5 feet amsl. Trench 1 covered an approximately 40 foot square area and was excavated to a depth of five feet below grade (9.5 feet amsl).

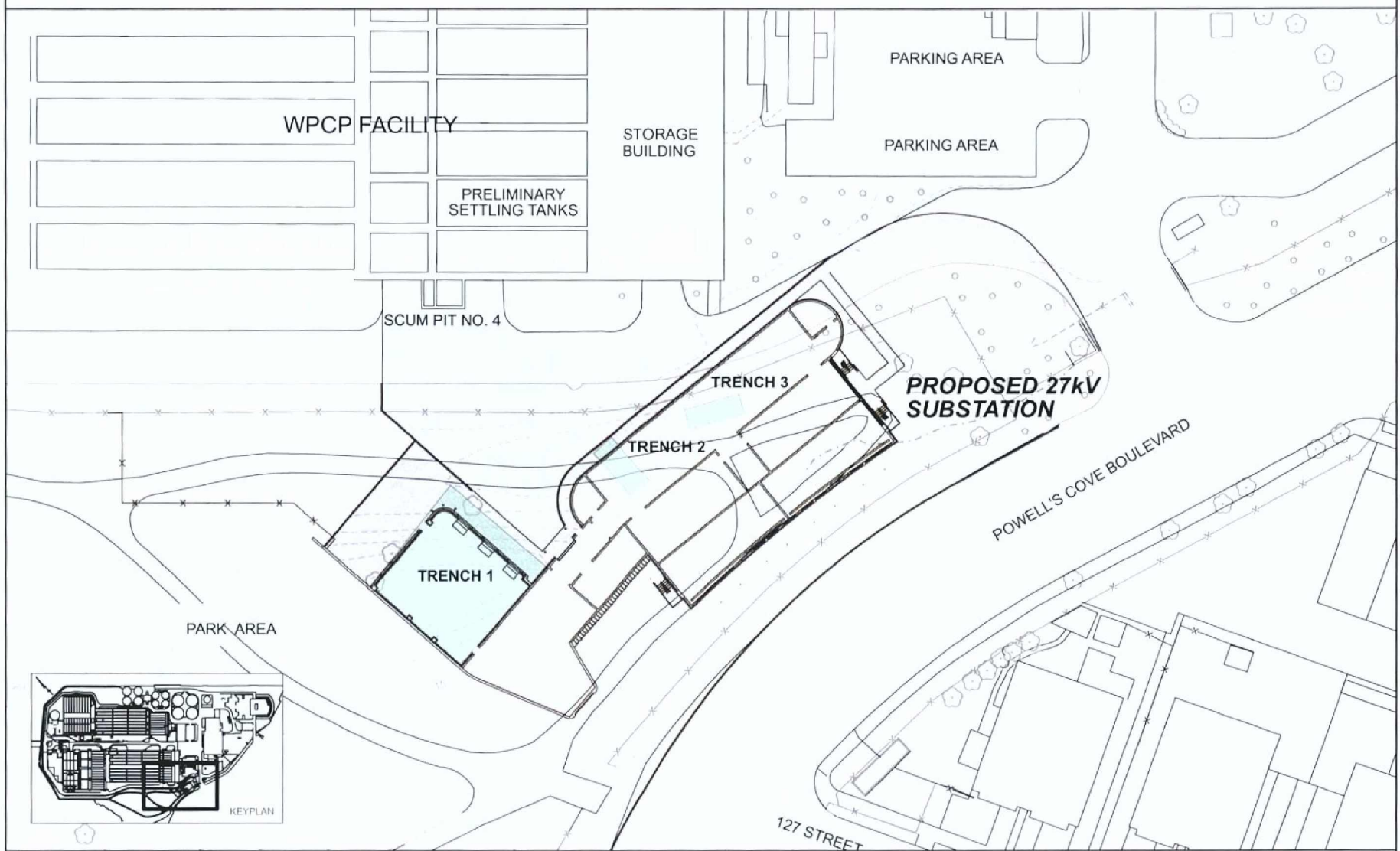
Due to the relatively shallow depth and wide area of excavation, archaeologists were able to enter the trench by ladder to complete a profile drawing of a ten foot-long section of the north wall (Figure 3, Trench 1 North Wall Profile, and Photo 2). This wall was used to characterize the stratigraphy of the Trench 1 excavation area.

The archaeologically monitored excavation of Trench 1 exposed a two foot thick fill layer comprised of compact brown sand with rocks, pebbles, and modern trash and construction debris (i.e., wood boards, ceramic sewer pipe fragments, and plastic wrappers). Remnants of a modern topsoil layer were encountered in the northeastern corner of Trench 1, adjacent to and overlying this fill layer.

Below this fill was a six-inch layer of very compact black loamy sand with large chunks of macadam and rock. This layer likely represents the remnants of an east-west oriented roadway dating to the period of construction of the WPCP facility in the 1930s; subsequent construction and landscaping efforts in the park area would have covered this roadway in several feet of fill (NYCDEP, 2006b). This roadway was only encountered in the north wall of Trench 1.

Below this was another level of fill that extended to the depth of excavation, comprised of yellow brown fine sand with large pockets of mottled olive brown soil, as well as rock and few small roots. In the lower right hand corner of the north wall, a north-south oriented utility line (probably electrical) was encountered four feet below grade (Photo 2). This utility line was covered by a roughly six-inch wide wood casing; a light olive

# Archaeological Monitoring Areas



- Archaeologically Monitored Backhoe Trench
- Proposed New Sidewalk
- Proposed New Pavement

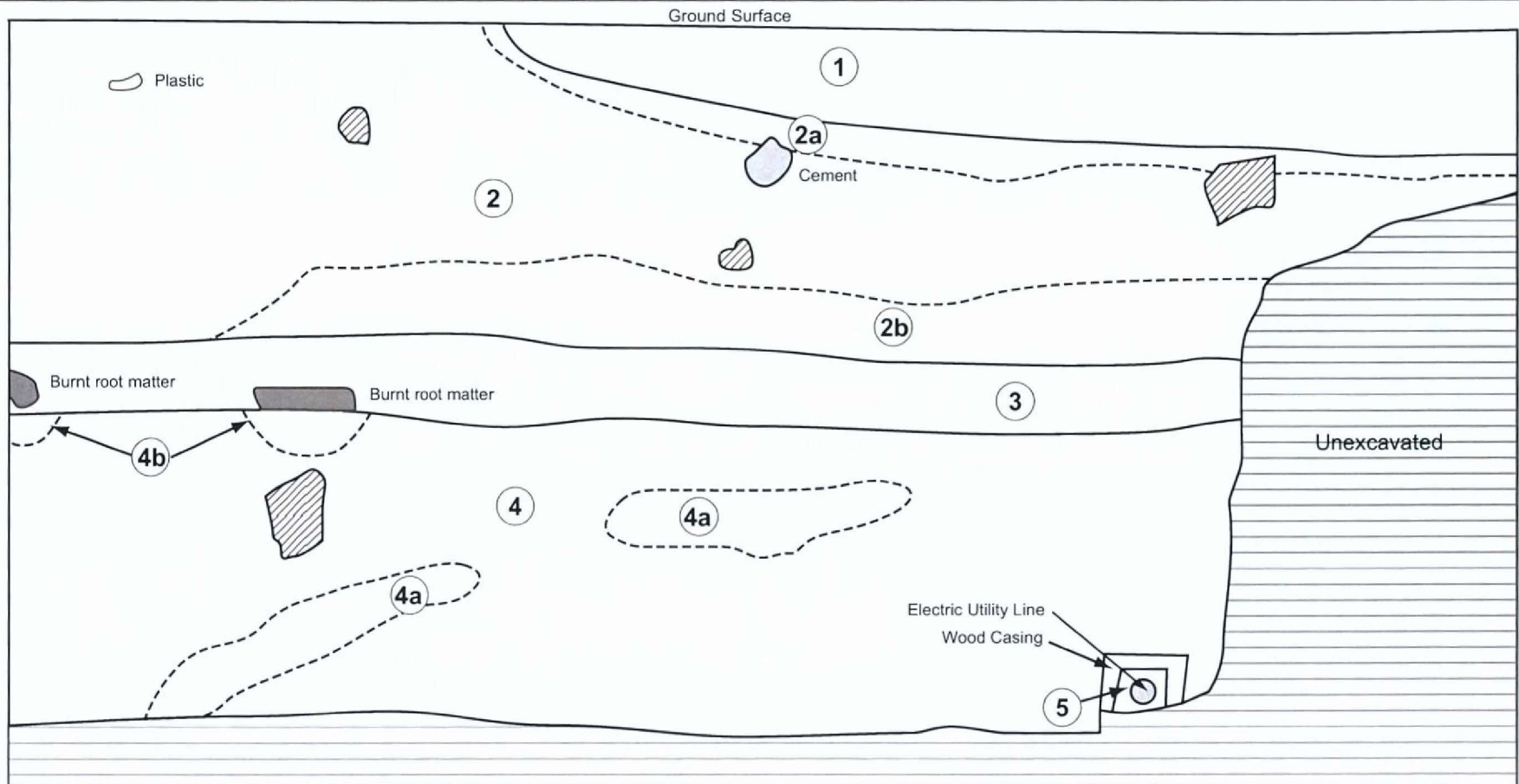


Source: NYCDEP, 2007.

Figure 2



# Trench 1 - North Wall Profile



1. Munsell 10YR 4/2 dark gray brown loam with pebbles and roots, Topsoil
2. Munsell 10YR 4/3 brown compact fine-medium sand with many pebbles and rocks, and construction debris, Fill 1
- 2a. Munsell 10YR 4/4 dark brown fine sand, Fill 1
- 2b. Munsell 0YR dark yellow brown fine-medium sand, cleaner, Fill 1
3. Munsell 2.5Y 2.5/1 black very compact loamy fine-medium sand, with macadam and rock, and burnt root matter, Roadway

4. Munsell 10YR 5/4 yellow brown slightly compact fine sand with rocks and few small roots, Fill 2
- 4a. 10YR 5/3 and 5/6 light olive brown soft fine sand mottle within Fill 2
- 4b. 5Y 4/2 olive gray fine sand, Stain from overlying burnt root matter
5. 2.5Y 5/3 light olive brown soft fine sand, Utility trench fill

 Rock

Figure 3

0.5  
0.5 Feet



Photo 1 View southeast over footprint of the 27kV Substation, taken from an artificial rise in the park area. Powell's Cove Blvd is in the upper right of photo.



Photo 2 View of the north wall in Trench 1 extending about five feet below ground surface, showing fill layers and a former road surface. An electrical wire and a wood casing that covers it are visible in the lower right hand corner.



brown fine sandy fill surrounded the wire within the casing. No installation trench was evident for this utility line in either the north or east walls of Trench 1.

No artifacts or features, aside from the one modern utility line and associated wood casing, were encountered in Trench 1.

## **Trench 2**

Trench 2 was oriented roughly north-south, situated perpendicular to Powell's Cove Blvd (Figure 2). The trench was located 40 feet east of Trench 1 and was about 20 feet long and seven feet wide. This trench was excavated to a depth approximately twelve feet below grade (approximately one foot amsl).

This excavation area cut through a portion of the park area's modern macadam pathway and approximately six inches of underlying gravel bedding (Figure 2). Below this was an orange-brown sandy soil layer with loose rock (Photo 3). Within this fill, in the southwestern portion of the trench, approximately two feet below grade was a roughly five inch thick and four foot long section of cement. The foreman of the construction crew on site noted a gazebo having once been located in this area, though maps and site plans previously reviewed had not depicted any such structures in the area (Jim Flinn, Picone Construction, February 26, 2007); if such a structure had existed this section of cement may be associated with it.

Below the section of cement and orange-brown sandy fill were three more layers of clean sandy fill changing in color from yellow-brown, to orange-brown, and finally gray-brown at ten feet below grade. No layers or pockets of organic material were encountered in any of this fill, nor was the water table reached. No artifacts or features, aside from the modern section of cement, were encountered in Trench 2.

## **Trench 3**

Trench 3 was oriented east-west, situated 30 feet east of Trench 2, and adjacent and parallel to the chain link fence separating the park area from the WPCP facility (Figure 2). This trench was similar in size to Trench 2 and excavated to a depth of approximately ten feet below grade (approximately two feet amsl).

Excavation exposed a topsoil/leaf mulch layer and dark brown rootmat overlying varying layers of dark orange-brown, yellow brown, and gray brown sandy clean fills with some cobbles and gravel that extended to the depth of excavation. Two large utility pipes were encountered in this trench: a roughly eight-inch wide water main surrounded by gravel eight feet below grade in the west end of the trench and an eight-inch wide gas main surrounded by light yellow-brown sand six feet below grade at the east end of the trench (Photo 4). As in Trench 2, no layers or pockets of organic material were encountered, nor was the water table reached. No artifacts or features, aside from the two modern utility pipes, were encountered in Trench 3.



Photo 3 West wall of Trench 2, showing the asphalt paving from the existing pathway overlying layers of clean sandy fill.

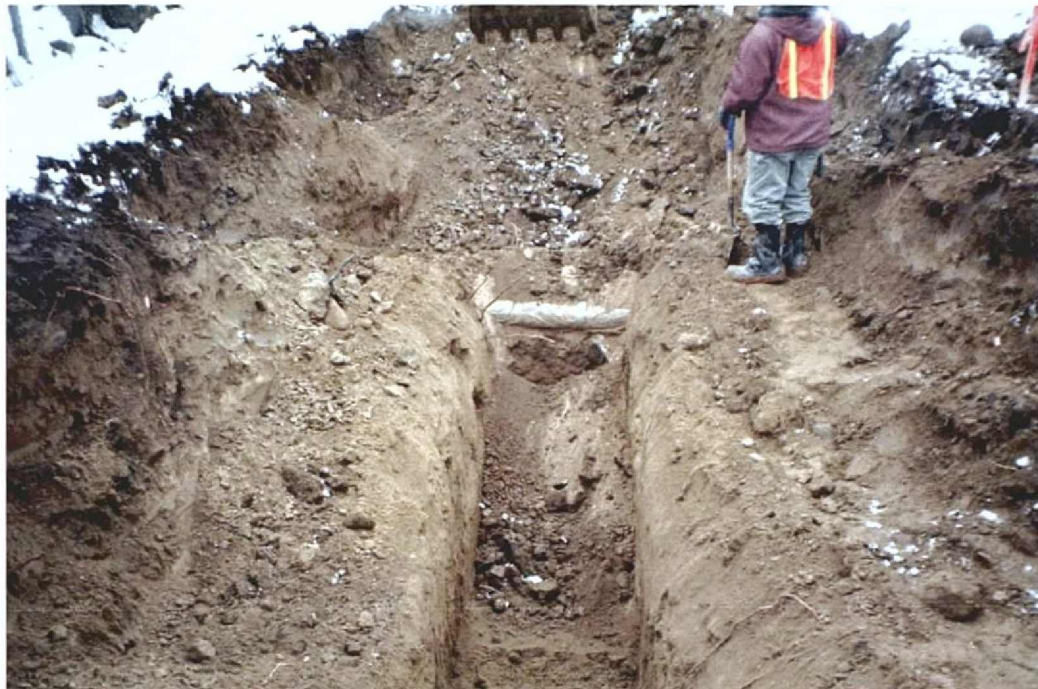


Photo 4 View southeast across Trench 3, showing an exposed steel gas main approximately seven feet below the ground surface within clean fill. A water pipe was exposed at the other end of the trench (not visible in photo).



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## 4 CONCLUSIONS AND RECOMMENDATIONS

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This archaeological monitoring effort consisted of observing and recording conditions in three backhoe-excavated trenches within the footprint of the proposed 27kV Substation for the Tallman Island WPCP planned upgrade program. The purpose of this monitoring effort was to determine the presence or absence of intact soils and/or archaeological resources that may be eligible for listing to the National Register.

No intact soils were encountered during excavation, nor were any archaeological features identified. All soils encountered were either modern topsoil or fill (debris-laden fill as well as clean fill) exposed to depths of proposed impact, between five and twelve feet below grade. Excavation encountered several modern features in the project area:

- Trench 1 encountered a modern, pre-1970s macadam roadway two feet below grade;
- Trench 2 encountered a cement slab two feet below grade that may be remnants of a modern cement path or platform for modern gazebo; and
- Trench 3 encountered two modern utility pipes approximately six and eight feet below grade.

None of these modern features are eligible for listing to the National Register.

It is possible that there are intact ground surfaces or organic layers present further below the fill encountered, but these soils will not be impacted by the planned construction. We therefore conclude that construction of the proposed 27kV Substation would have no effect on archaeological resources and recommend no further archaeological work.



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## 5 REFERENCES

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### Personal Communications

Amanda Sutphin, Landmarks Preservation Commission (LPC), Environmental Review letter, March 24, 2006.

Amanda Sutphin, LPC, telephone consultation, May 2006.

Jim Flinn, Picone Construction, February 26, 2007.

### Reports

NYCDEP. Environmental Assessment Statement-Tallman Island TI-2/TI-3 Pollution Control Plant-Plant Upgrade. February 2006a. Prepared by Blasland, Bouck & Lee, Inc. and TAMS Consultants, Inc. (BBL /TAMS).

NYCDEP. Archaeological Sensitivity of Planned Construction. Tallman Island WPCP Capital Project WP-249, Contracts TI-2 & TI-3. June 2006b. Prepared by BBL /TAMS.

### Plans

NYCDEP. *Contract TI-3G-Structures and Equipment Sitework Civil Sitework Plan Roadway "B" and "C"*. Sheet C02-C-SW-108. Division of Facilities Design WP-249 Tallman Island WPCP Plant Upgrade. February 2007.