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STAGE 1B ARCHAEOLOGICAL SURVEY OF THE 26TH WARD WATER POLLUTION CONTROL PLANT EXPANSION PROJECT BOROUGH OF BROOKLYN, NEW YORK CITY KINGS COUNTY, NEW YORK

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STAGE IB ARCHAEOLOGICAL SURVEY OF THE 26TH WARD WATER POLLUTION CONTROL PLANT EXPANSION PROJECT BOROUGH OF BROOKLYN KINGS COUNTY, NEW YORK

INTRODUCTION

The purpose of this Stage 1B Archaeological Survey is to document the presence or absence of potential prehistoric and/or historic archaeological resources within the 26th Ward Water Pollution Control Plant Expansion Project Area in the Borough of Brooklyn, New York City, Kings County, New York, through the use of physical testing techniques.

The project area consists of the central and southern parts of the present Water Pollution Control Plant property as well as vacant land to the south. It is approximately 2875 feet north to south by 575 feet east to west in size. See Figure 1 for the location of the project area.

The project area lies on a moderate slope ranging in elevation from approximately 13.5 feet above sea level in the northwest approximately 7.5 feet in the south. The vegetation of the area consists of grasses, shrubs and occasional trees. The portion within the existing plant has been landscaped, while the extension to the south consists of a fallow field with some old garden plots. The project area and its immediate vicinity include at least two water resources, both of which would have been important to both prehistoric and historic peoples.

METHODOLOGY

The subsurface archaeological testing of the 26th Ward Water Pollution Control Plant Site in Brooklyn, New York began on April 10, 1990 and was completed on April 13, 1990. As stated in our proposal for the Phase 1B survey, the technique used to expose buried surfaces and thereby determine the presence or absence of archaeological resources was the mechanical excavation of trenches. A total of seven trenches were excavated by backhoe (see Figure 2), the results of which were closely monitored by archaeologists. This testing strategy was designed by the principal investigator, and approved by the New York State Department of Environmental Conservation, Division of Construction Management, Cultural Resources Section.

The use of mechanical means of excavation expedites the removal of large quantities of fill. See Plate 1 for a view of backhoe trenching operation. A total of approximately 12,100 cubic feet of soil were removed from the trenches, the dimensions of which varied from 30 feet to 60 feet long, 3 feet to 5 feet wide, and 7 feet to 8 feet deep. Despite the excavation of the trenches being impeded by the seepage of ground water into the units, and the collapse of unit sides, probable original

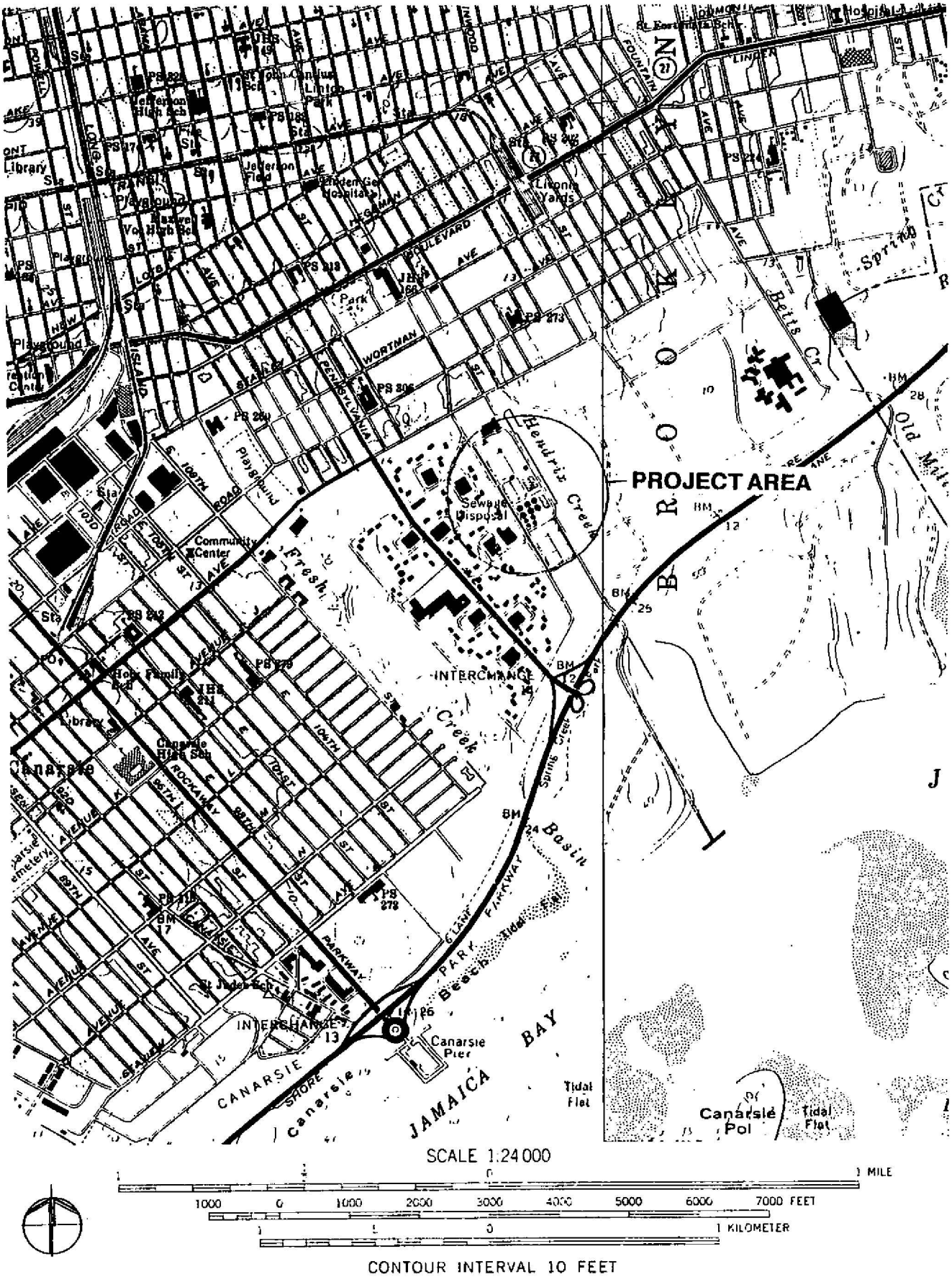

Figure 1 Location of Project Area shown on portion of U.S.G.S. 7.5 minute Brooklyn, New York and Jamaica, New York Quadrangles (1967, photorevised 1979).

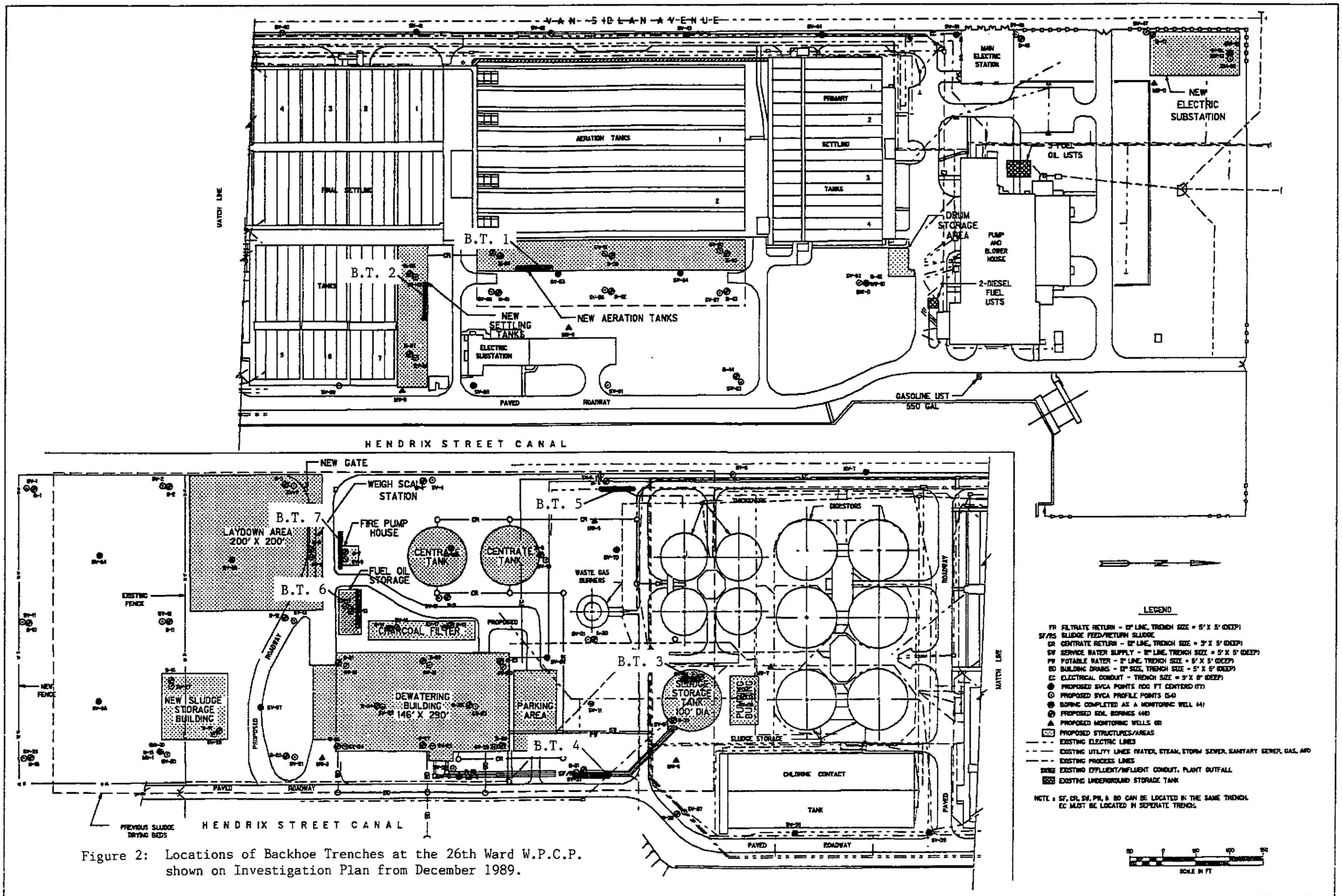

Figure 2: Locations of Backhoe Trenches at the 26th Ward W.P.C.P. shown on Investigation Plan from December 1989.

STONE & WEBSTER ENGINEERING CORPORATION
NEW YORK, NEW YORK

HAZEN AND SAWYER, P.C. ENGINEERS
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APPROVED FOR THE CITY OF NEW YORK
PROJECT ENGINEER
CHIEF, DIVISION OF PLANT DESIGN

CITY OF NEW YORK
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF HEAVY CONSTRUCTION
DIVISION OF PLANT DESIGN
WP-284 LAND-BASED SLUDGE MANAGEMENT PLAN
PHASE I DEWATERING FACILITIES

26TH WARD - GENERAL CONTRACT

INVESTIGATION PLAN

SCALE 1"=50'

DATE
SHEET OF
DWG. NO. 26-SA-003

ground surfaces were encountered in two of the trenches. See Plate 7 for an example of collapse of the sections of one of the backhoe trenches. The other five units apparently consisted of fill down to the lowest elevations.

Soil samples were selectively removed from the trenches where distinct changes were observed. This soil was then screened through 1/4 inch mesh in order to recover artifacts. Artifacts were also recovered when they were observed in the trench by directing the backhoe operator to selectively remove them with the backhoe bucket. Soil strata were measured, described, and recorded for all trenches. All trenches were backfilled immediately following excavation and the recording of data.

STRATIGRAPHIC SUMMARY

Seven backhoe trenches at the 26th Ward Water Pollution Control Plant Site were excavated in order to remove and examine various depths of landfill, and thereby expose any evidence of prehistoric or historic occupations that may have remained buried in the area below this fill. Five of the trenches (1-5) were located within the present Water Pollution Control Plant facility limits, and two (6 and 7) were located on New York City Department of Environmental Protection property, adjacent to, but outside the limits of the present facility. Because some of the backhoe trenches were fairly distant from each other, trenches were grouped together according to geographic proximity in order to facilitate a comparative analysis of their respective strata.

Backhoe trenches 1 and 2 were approximately 160 feet from each other, and approximately 920 feet from the nearest other backhoe trenches (3 and 4). Backhoe trenches 3 and 4 were approximately 240 feet apart, and approximately 350 feet from backhoe trench 5. Backhoe trenches 6 and 7 were located outside the present Water Pollution Control Plant facility, approximately 400 feet from the south gate. Because of the disparity of spatial relations of one trench to another, backhoe trenches 1 and 2, 3 and 4, 5, and 6 and 7, were grouped as separate units for purposes of analysis.

The following summary of the stratigraphy of the backhoe trench testing will discuss the layers of soil by color, texture, depth, and inclusions. Copies of the field recording sheets are attached to this report as Appendix 2. All soil deposits were recorded using the Context System, which is explained in Appendix 3.

Backhoe trenches 1 and 2, located in the northern part of the project area (see Figure 2), exhibited similar, though not identical stratigraphy. The surface of both units was covered by manicured lawn, beneath which was a layer of silty or sandy dark brown loam (Munsell color: 10 YR 3/3), approximately 0.5-0.7 feet deep. Beneath the topsoil, there were three or four layers of fill. The top layers of fill were

medium brown or gray brown (10 YR 3/2) to dark grayish brown sand or silty sand, and varied in thickness from 0.4 feet to 1.5 feet. (Note: because the sides of backhoe trenches 1 and 2 collapsed immediately following excavation, danger precluded the removal of soil samples from all strata in situ to determine Munsell colors). Soil inclusions consisted mainly of red bricks, and small quantities of glass and ceramic fragments.

The bottom layers of fill, approximately 4.9-5.0 feet thick, were yellow brown or dark yellow brown sand or sandy silt, with inclusions of red bricks, mortar, and small fragments of glass and ceramics. In the northern section of backhoe trench 1, a layer of dark gray brown silt was encountered adjacent to the dark yellow brown sand. In backhoe trench 2, there was a layer of black sandy silt that began between the top and bottom layers of fill, and continued down to the bottom of the trench adjacent to the yellow silty sand. The black color of the soil in this level may be the result of the leaching of a petroleum product into the soil before or after its redeposition. Large planks of creosoted wood were recovered from this stratum. The natural soils of the area, yellow brown or pale yellow brown clean sand were reached at depths of 7.0 feet to 8.0 feet. No cultural materials were recovered from this layer. In backhoe trench 2, ground water entered the unit at a depth of approximately 8.0 feet. See Plates 2 and 3 for views of Backhoe Trenches 1 and 2.

Backhoe trenches 3 and 4 were similarly covered by manicured lawn overlaying a layer of very dark brown (10 YR 2/2) silty loam approximately 0.5 feet to 0.8 feet in depth. The topmost layer of fill beneath the topsoil was a dark yellowish brown (10 YR 3/4) silty sand or medium to coarse sand, varying in thickness from 0.7 to 2.1 feet. Building materials, such as red brick, and small quantities of ceramic fragments were recovered from this stratum. The next layer of fill was a black clayey silt, approximately 1.9 feet to 2.0 fee wide. This layer, apparently devoid of cultural materials, probably reflects the former use of these particular locations as sludge drying beds. The bottom layer of fill in both trenches was a dark gray (10 YR 4/1) micaceous sand with organic inclusions of a peaty substance containing stalks of reedgrass. There were also chunks of clay, a large quantity of cobbles and boulders, and fragments of bottle glass. Within this layer 3.0 to 4.6 feet were excavated before ground water was encountered at depths of 7.5 feet and 8.0 feet. See Plate 4 and 5 for views of Backhoe Trenches 3 and 4. Note in Plate 5, the bottom layer of dark grey clay with inclusions of peat.

The top layer of backhoe trench 5, similar to the trenches previously described, consisted of approximately 0.5 feet of very dark brown (10 YR 2/2) sandy loam beneath a cover of manicured lawn. Three strata of dark yellowish brown (10 YR 4/1, 10 YR 4/4, and 10 YR 4/6) soils, ranging from silt to sand comprised the topmost layers of fill. Red bricks and glass fragments were recovered from these layers. A fourth layer of fill, a dark gray ash (10 YR 4/1) mottled with dark yellowish brown silt (10 YR

4/4), approximately 3.3 feet thick, yielded more than twenty whole bottles of mid-twentieth century origin. The bottom layer of fill was similar to that encountered in trenches 3 and 4, a very dark gray clay (10 YR 3/1) with organic inclusions of a peaty substance containing reedgrass. Ground water was encountered at a depth of 8.0 feet. The bottom layer, just above the water table, can be seen in the view of Backhoe Trench 5 provided in Plate 6.

Backhoe trenches 6 and 7 were located outside the present Water Pollution Control Plant facility in an area which though strewn with debris, had been cleared in certain areas for garden plots. The topsoil, approximately 1.0 feet in depth, was a dark yellow brown (10 YR 3/4) or very dark brown (10 YR 2/2) sandy loam. The top layer of fill, approximately 1.0 feet to 1.6 feet, was a yellowish brown (10 YR 3/4) silty sand or medium sand, devoid of cultural material. The next stratum of fill, approximately 0.6 feet to 1.0 feet in depth, was a black (10 YR 2/1) silty clay also devoid of cultural material. This layer was followed by a layer of yellowish brown (10 YR 4/6) coarse sand, approximately 1.7 feet to 2.2 feet thick. This stratum yielded fragments of bottle glass. Toward the bottom of both trenches, there were layers of fill consisting of gray (10 YR 5/1) and very dark gray (10 YR 3/1) sand with silty or coarse sand, with inclusions of the type of peat encountered in the other trenches. Approximately 2.3 feet of this layer were exposed in backhoe trench 6 before excavation was impeded by the intrusion of ground water into the unit at a depth of 7.0 feet. In backhoe trench 7, however, another stratum of fill was encountered beyond the 2.1 feet of gray coarse sand. This bottommost layer of fill, beginning at a depth of approximately 7.5 feet, was a black clayey silt with inclusions of peat and reedgrass. Cultural material from this layer included scraps of plastic, and rubber bands. Plates 7 and 8 provide views of Backhoe Trenches 6 and 7.

ARTIFACT PROCESSING, ANALYSIS AND INVENTORY

Subsequent to all fieldwork, all recovered materials were washed, marked, stabilized, and catalogued in the Greenhouse laboratory. The majority of artifacts were washed in room temperature tap water with added ORVUS paste (modified sodium lauryl sulfate), which is a non-ionic detergent. Harsh detergents leave an alkali residue if not completely rinsed away, which will chemically attack certain artifacts (the overglazed decoration on porcelain, for instance). ORVUS is a mild and free-rinsing surface active agent with a low pH of 6.3. Metal artifacts were systematically dewatered by submersion in acetone immediately after rinsing. The drying procedure was dependent upon the condition and material class of the artifact. The standard procedure employed was slow air drying on screens in the laboratory processing area.

All recovered materials were then catalogued according to the National Park Service Material Culture Data Base taxonomy for artifacts (see

Appendix 1). All historic artifacts were coded as to group, class and material. All diagnostic artifacts such as glass and ceramics were dated based on stylistic and technical criteria according to the TPQ (terminus post quem, or the beginning date of manufacture). The TPQ provided a time frame for establishing the initial date after which the deposit had to have been laid down. During tabulation, the National Park Service code system was employed to the group, class and material level.

Subsequent to cataloging, all artifacts were then computer inventoried as a file in dBase III+, which provided sorted catalogues with totals and numbers for each excavated group of artifacts by units of stratigraphic association. The final inventory is reproduced on paper and appears as Appendix 1.

Artifact Analysis Results

A total of sixteen objects or fragments thereof were recovered from the test trenches excavated at the 26th Ward Water Pollution Control Plant. These items come from five contexts and their decimal subdivisions. No prehistoric artifacts were recovered. Approximately one half of the artifacts recovered consist of glass. The largest group of glass artifacts are glass containers such as beer and soda bottles. The remainder of the glass artifacts consist of a small Christmas ornament type light bulb and a radio or television tube with a Bakelite base. It is possible to date the bottle glass due to the presence of diagnostic attributes such as the neck and finish. Four of the bottles are probably post-1903 and were produced on fully automatic bottle machines. The other bottle dates to 1881 or later and was produced on a semi-automatic machine.

Just over one-third of the artifacts recovered are fragments of ceramics. Two of the ceramic sherds are ironstone which was introduced in 1813 in England (Noel Hume 1969:31). Another sherd is whiteware. Whiteware was initially produced during the 1820s (South 1972) although this sherd could also be the thick undecorated whiteware that was introduced in 1858 (Price 1979). The small size of the sherd makes such distinctions very difficult. Also represented in this collection are sherds of porcelain and red earthenware. Both of theses wares were in existence prior to the nineteenth century.

A number of artifacts were recovered that clearly date to the twentieth century. Included in this category are a rubber band, the radio tube and the light bulb, as well as four of the five bottles.

RESULTS

Greenhouse Consultants performed Stage 1B archaeological testing at seven locations within the 26th Ward Water Pollution Control Plant Expansion specified as having potential prehistoric and/or historic remains in the "Archaeological Sensitivity Evaluation for Eight Water Pollution Control

Plants in New York City" (Roberts et al. 1990:12). Excavations were carried out through a series of backhoe trenches in order to expedite the removal of large quantities of landfill indicated by the soil borings performed by Warren George, Inc., during February to April 1990.

Analysis of the data obtained from these trenches indicates that proposed construction activities at the specified sites will not adversely affect any archaeological resources that may remain buried in the area. While evidence of cultural activity was recovered from all excavation units, no evidence was obtained indicating prehistoric or early historic activities in the test locations.

Analysis of Backhoe Trench Units

Backhoe Trench 1, located in the area proposed for new aeration tanks, was excavated to depths of 7.0 feet to 8.0 feet. Though the collapse of the sides of the unit during excavation precluded excavation in some parts of the trench to the projected depth of impact (eight feet), natural subsoil, a yellow brown sand, was encountered at a depth of approximately 7.0 feet and was devoid of cultural material. Cultural material recovered from upper layers consisted primarily of discarded building materials (e.g., bricks, window glass) and housewares used as part of the landfill during the mid-twentieth century.

Backhoe Trench 2, located in the area of the proposed new settling tanks was excavated to depths below eight feet, the depth of projected impact. The natural subsoil, a pale yellow brown clean sand, was encountered at approximately 8.0 feet and was devoid of artifacts. The artifacts recovered from the upper layers, comprised of mid-twentieth century landfill, consisted largely of discarded building materials, such as bricks, mortar, window glass and planks of creosoted wood.

Backhoe Trench 3, located in the area of the proposed sludge storage tanks, was excavated to a depth of 8.0 feet. The lowest layer in the unit, a dark gray micaceous sand with inclusions of peaty reedgrass, is probably composed of redeposited soils from nearby marshlands, such as those abutting the Hendrix Street Canal. The removal of wetland soils and their redeposition on Water Pollution Control Plant grounds would serve the dual function of containing the flow of water within the canal while providing material for landfill. The dark color of this layer is probably the result of the leaching of chemicals from the overlying buried sludge bed, and the natural decomposition of marsh vegetation.

Backhoe Trench 4, located along the proposed sludge feed/return pipe was excavated to 7.5 feet, at which point ground water seeped into the bottom of the unit precluding further excavation. A buried sludge bed was encountered at a depth of 2.5 to 4.5 feet below which was a layer of dark gray sand with chunks of clay and peat probably representing redeposited marsh soils.

Backhoe Trench 5, located along the proposed new electrical conduit, was excavated to a depth of eight feet at which point ground water seeped into the trench. The lowest layer, a very dark gray clay mixed with peaty organic soil encountered at a depth of approximately 5.3 feet indicates that the area of projected impact (8.0 feet below grade) is contained within landfill. Intermediate layers of landfill included a stratum consisting predominately of ash, and another of silt with a strong ash component. The ash layers, encountered at 3.0 feet below surface and continuing down for approximately 1.3 feet consisted of what appears to have been the contents of a primary or secondary waste disposal area as reflected by the concentration of mid-twentieth century artifacts, including more than twenty whole bottles (from which samples were recovered), ceramic fragments, a Christmas decorative light bulb and a radio (or television) tube.

Backhoe Trench 6, located in the area of the proposed fuel oil tank was excavated to a depth of approximately seven feet at which point ground water seeped into the unit impeding further excavation. Though the excavation was approximately one foot shy of the depth of projected impact (8.0 feet), it was determined that construction activities in the area would probably not adversely affect cultural resources since landfill - a layer of dark to very dark gray sand with profuse inclusions of decomposing reedgrass - was encountered at approximately 4.7 feet and was devoid of cultural material.

Backhoe Trench 7, located in the area of the proposed fire pump house, was excavated to depths of 7.0 to 8.0 feet. The lowest layers of the trench, a clayey silt with peaty inclusions, interpreted as redeposited marsh soils, contained evidence of modern cultural material, including a rubber band and fragments of a plastic bag. This evidence indicates that the depth of the proposed construction impact, here, four and a half feet, would not adversely affect any significant cultural resources.

In summation, the determination that proposed construction activities at the 26th Ward Water Pollution Control Plant would not adversely impact any significant archaeological resources in the area of test locations was based on the analysis of the data recovered from seven backhoe trenches.

Of the seven excavated units, original ground surfaces (subsoil) were encountered below the area of projected construction impact in two trenches (Backhoe Trench 1 and Backhoe Trench 2). Of the remaining five units (Backhoe Trench 3 and Backhoe Trench 7), the area of impact was determined to be confined within depths below grade consisting of redeposited soils (land fill).

CONCLUSIONS AND RECOMMENDATIONS

It is our conclusion that no potentially significant cultural resources were found within the seven mechanically excavated test trenches. Based on this subsurface testing, we further conclude that it is highly unlikely that any significant cultural resources will be impacted by the proposed expansion of the 26th Ward Water Pollution Control Plant. We recommend that no additional archaeological testing or mitigation is necessary at these locations.

PLATE 1: View of backhoe trenching in operation.

PLATE 2: View of Backhoe Trench 1, facing east.

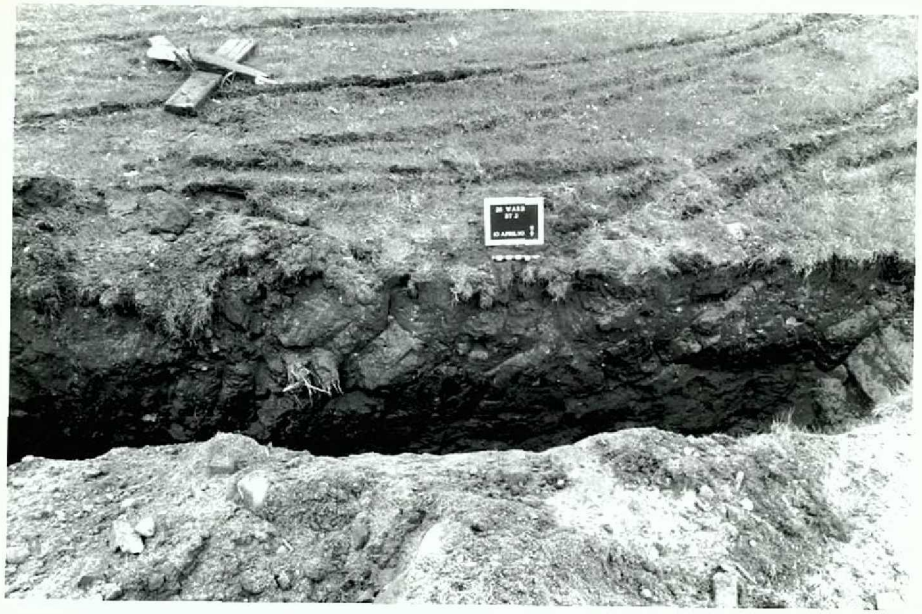

PLATE 3: View of Backhoe Trench 2, facing north.

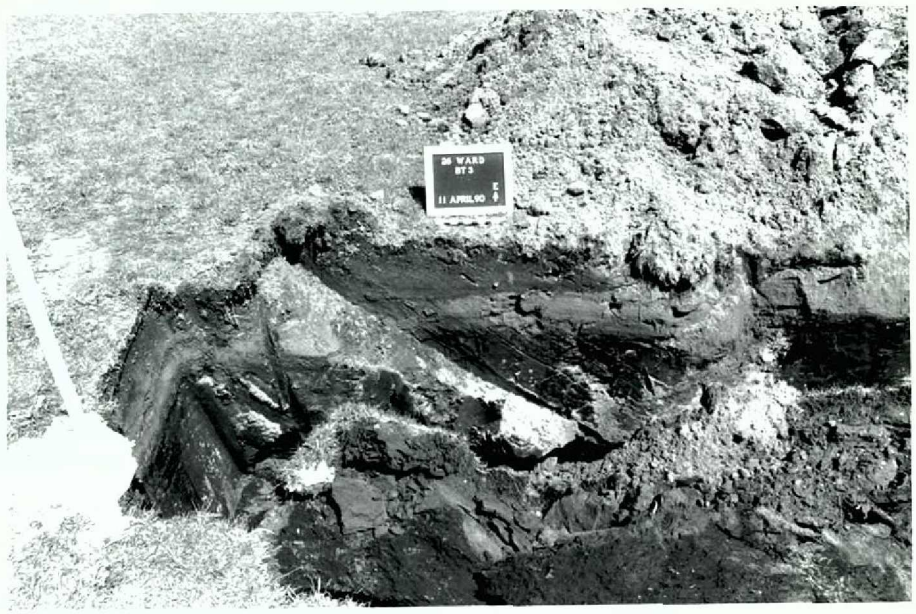

PLATE 4: View of Backhoe Trench 3, facing east.

PLATE 5: View of Backhoe Trench 4, facing east. The bottom layer, just above the water table, consists of dark gray clay with inclusions of peat.

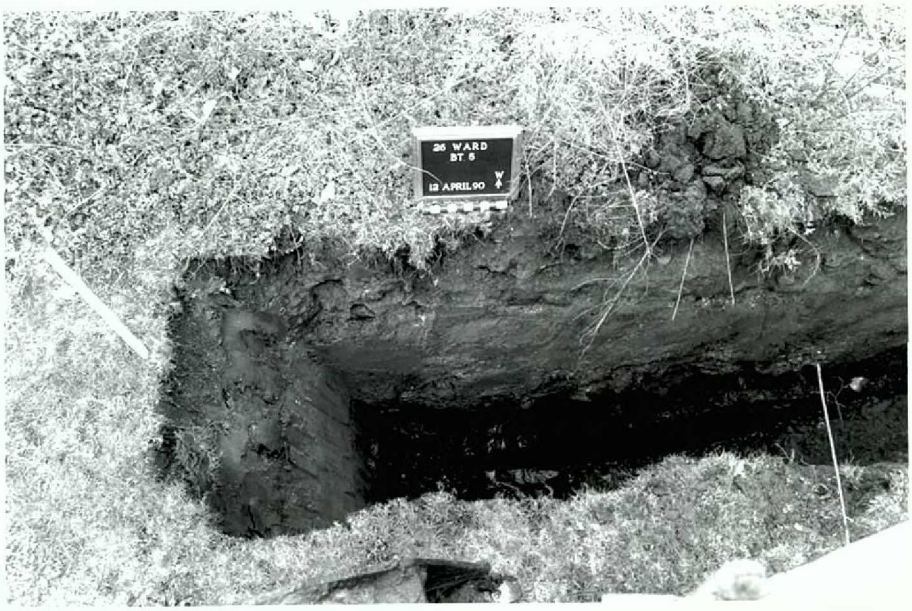

PLATE 6: View of Backhoe Trench 5, facing west. The bottom layer, just above the water table, consists of very dark gray clay with organic inclusions.

PLATE 7: View of Backhoe Trench 6, facing west. Note collapse of sandy sediments below layer of black silty clay.

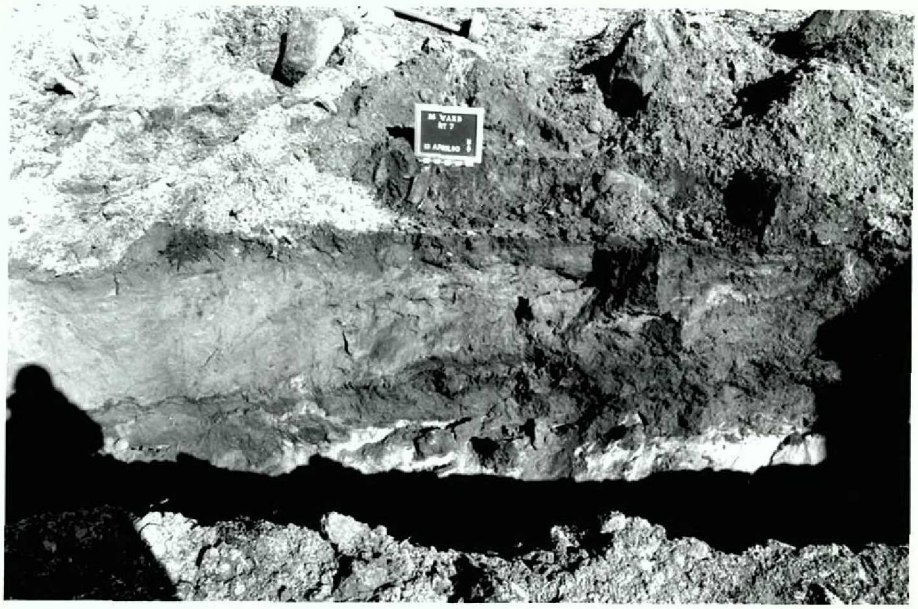

PLATE 8: View of Backhoe Trench 7, facing north.

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APPENDIX I
THE COMPLETE ARTIFACT INVENTORY

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Table 1. The National Park Service Material Culture Data Base Coding Chart.

Table 2. Coded Examples from the Data Base.

Table 3. Data Base Codes for Ambiguous Items.

GROUPS AND CLASSES

01 KITCHEN GROUP
- 01 Dishes
- 02 Containers
- 03 Tableware
- 04 Kitchenware

02 BONE GROUP
- 01 Mammalia
- 02 Aves
- 03 Reptilia
- 04 Amphibia
- 05 Pisces

03 ARCHITECTURAL GROUP
- 01 Window Glass
- 02 Nails
- 03 Spikes
- 04 Door & Window Hardware
- 05 Other Structural Hardware
- 06 Construction Materials

04 FURNITURE GROUP
- 01 Hardware
- 02 Materials
- 03 Lighting Device
- 04 Decorative Furnishings

05 ARMS GROUP
- 01 Projectiles
- 02 Cartridge Case
- 03 Arms Accessories
- 04 Gun Parts

06 CLOTHING GROUP
- 01 Apparel
- 02 Ornamentation
- 03 Making and Repair
- 04 Fasteners

07 PERSONAL GROUP
- 01 Coins
- 02 Keys
- 03 Writing Paraphernalia
- 04 Grooming and Hygiene
- 05 Personal Ornamentation
- 06 Other Personal Items

08 KAOLIN TOBACCO PIPE GROUP
- 01 Kaolin Pipe Class

09 ACTIVITIES GROUP
- 01 Construction Tools
- 02 Farm Tools
- 03 Leisure Activities
- 04 Fishing Gear
- 05 Nonkaolin Pipe
- 06 Smoking Accessories
- 07 Pottery Class
- 08 Storage Items
- 09 Ethnofaunal Zoological
- 10 Stable and Barn
- 11 Miscellaneous Hardware
- 12 Specialized Activities
- 13 Military Objects
- 14 Housekeeping
- 15 Public Services
- 16 Ethnobotanical

10 PREHISTORIC GROUP
- 01 Weapons
- 02 Domestic
- 03 Stone Working
- 04 Wood Working
- 05 Digging Tools
- 06 Other Fabricating or Processing Tools
- 07 Other General Utility Tools
- 08 Ceremonial & Ornamental
- 09 Miscellaneous Artifacts

98 UNSPECIFIED GROUP

MATERIALS - COMMON LIST (classified)

INORGANIC MATERIALS

CERAMIC
- 003 earthenware
- 004 ironstone/granite/whiteware
- 001 porcelain
- 002 stoneware
- 134 undifferentiated ceramic

CLAY
- 047 clay
- 062 kaolin
- 079 red clay

CONSTRUCTION
- 069 brick
- 071 cement
- 070 mortar
- 072 plaster

GLASS
- 078 glass
- 013 glass, milk
- 112 slag and clinker

METALS
- 029 aluminum
- 035 chrome
- 026 cuprous metal
- 028 ferrous alloy
- 021 gold
- 034 lead
- 096 mercury
- 019 silver
- 032 steel
- 005 tin
- 136 undifferentiated metal

STONE
- 129 agate
- 075 asbestos
- 133 chalk
- 052 chert
- 046 gravel
- 109 jet
- 038 limestone
- 041 marble
- 049 mica
- 058 obsidian
- 057 ochre
- 068 precious stone
- 053 quartz
- 054 quartzite
- 039 sandstone
- 044 shale
- 040 slate
- 060 steatite
- 043 schist
- 126 undifferentiated stone
- 042 granite

ORGANIC MATERIALS

CELLULOSIC
- 115 bark
- 108 burlap
- 128 charcoal
- 092 cork
- 087 cotton
- 131 fiberboard/masonite
- 085 hemp
- 011 paper
- 006 wood
- 121 cellulose seeds/seed covering

CONSTRUCTION
- 093 asphalt
- 125 formica
- 101 linoleum
- 102 tar paper

WAX
- 076 wax

GUM/RESIN
- 010 rubber, elastic
- 009 rubber, hard

PETROCHEMICALS
- 073 carbon
- 095 coal
- 048 graphite
- 116 tar

PROTEIN
- 118 chitin (arthropod, exoskeleton)
- 106 felt
- 122 flesh
- 016 hair
- 117 keratin (horns/fingernail/claws)
- 015 leather
- 107 silk
- 090 sponge, natural
- 105 wool

COMBINATION MATERIALS
- 017 bone
- 132 ivory
- 067 pearl
- 089 shell

SYNTHETIC MATERIALS
- 103 celluloid
- 088 nylon
- 008 plastic
- 077 soap
- 091 sponge, synthetic
- 104 synthetic

TEXTILE
- 151 undifferentiated textile

TABLE 1 The National Park Service Material Culture Database Coding Chart (partial listing).

GROUPS AND CLASSES		SAMPLE ARTIFACTS
01	KITCHEN	
	01 Dishes	Historic fragments, plate, cup, salt cellar
	02 Containers	Bottle glass fragments
	03 Tableware	Eating Utensils
	04 Kitchenware	Cooking Utensils, pot, kettle
02	BONE GROUP	
	01 Mammalia	Mammal Bones
	02 Aves	Bird Bones
	03 Reptilia	Reptile Bones
	04 Amphibia	Amphibian Bones
	05 Pisces	Fish Bones
03	ARCHITECTURAL GROUP	
	01 Window Glass	Window pane glass
	02 Nails	Copper nails, iron nails
	03 Spikes	Railroad spikes
	04 Door & Window Hardware	Doorknob, door hinge
	05 Other Structural Hardware	Pipe, fireplace tiles
	06 Construction Materials	Brick, mortar, metal roofing
04	FURNITURE GROUP	
	01 Hardware	Handle, drawer pull, latch
	02 Materials	Stove parts, chair part, bed frame
	03 Lighting device	Candlestick, lamp base
	04 Decorative Furnishings	Flower pot, clock parts, vase
05	ARMS GROUP	
	01 Projectiles	Shot, bullets
	02 Cartridge Case	Cartridge
	03 Arm Accessories	Gun flints, bullet molds, powder horn
	04 Gun Parts	Pistol barrel, flint lock assembly
06	CLOTHING GROUP	
	01 Apparel	Hat, coat, scarves, glove, shoe
	02 Ornamentation	Beads, sequin, hatpin, feather
	03 Making & Repair	Thimble, straight pin, straight scissors
	04 Fasteners	Buttons, snaps, buckles, cuff links
07	PERSONAL GROUP	
	01 Coins	Silver coins, copper coins
	02 Keys	Door lock keys, padlock keys
	03 Writing Paraphernalia	Quill, fountain pen nib, graphite pencil
	04 Grooming & Hygiene	Hair brush, razor, mirror, tweezers
	05 Personal Ornamentation	Jewelry, ribbon, ornamental comb
	06 Other Personal Items	Pocket watch, key chain, pocket knife
08	*KAOLIN PIPE GROUP*	
	01 Kaolin Pipe Class	Kaolin pipe fragments

GROUPS AND CLASSES (cont'd)		
09	ACTIVITIES GROUP	
	01 Construction Tools	Axe head, drill bit, saw, paint brush
	02 Farm Tools	Hoe, rake, plow blade
	03 Leisure Activities	Marbles, jew's harp, doll parts
	04 Fishing Gear	Fish hooks, sinkers, crab trap
	05 Nonkaolin Pipe	Corncob pipe
	06 Smoking Accessories	Snuff tin, tobacco tin, pipe cleaner
	07 Pottery Class	(Indian) water jar, effigy pot
	08 Storage Item	Crock, barrel staves, sacks
	09 Ethnofaunal Zoological	Oyster shells, crab shells
	10 Stable and Barn	Stirrup, horse shoe, rein, harness belt
	11 Miscellaneous Hardware	Rope, bolts, nuts, washers, chain
	12 Specialized Activities	Button blanks, metallurgic debris, saggars
	13 Military Objects	Insignia, bayonets
	14 Housekeeping	Broom, coat hanger, washboard
	15 Public Services	Sewer pipe, water pipe
	16 Ethnobotanical	
10	PREHISTORIC GROUP	
	01 Weapons	Projectile point, atlatl hook
	02 Domestic	Vessel, mortar, pestle
	03 Stone Working	Hammerstone, baton, flake, core
	04 Wood Working	Celt, grooved axe
	05 Digging Tools	Hoe
	06 Other Fabricating or Processing Tools	Drill, chisel, needle
	07 Other General Utility Tools	Knife, prismatic blade, chopper
	08 Ceremonial and Ornamental	Sheet, gorget, bead
	09 Miscellaneous Artifacts	Function unknown

TABLE 2 Coded Examples from the Database.

THE ITEMS LISTED BELOW MAY BE AMBIGUOUS OR HARD TO PLACE IN A TAXONOMIC CATEGORY, BUT AS A CONVENTION, FOR INVENTORY PURPOSES, WILL BE CODED AS FOLLOWS:

Unident Wood Frags	98 00 006
Construction Wood, Wooden Pegs, Wood Planks	03 06 006
Twigs, Branches	09 16 006
Burned Wood (Partial)	Code as wood (above) and put "burnt wood" in the comments section.
Charcoal & all small frags of completely burnt wood	Code as charcoal
Coal	98 00 095
Slag, burned coal, vitrified metalworking or manufacturing by-products	98 00 112
Pantiles	03 06 003
Delft fireplace tiles, wall skirting, etc.	04 04 003
Porcelain bathroom tiles, other bathroom furniture (tub, toilet, etc)	03 05 001
Chamber Pot	04 02 ( )
Flower Pot	04 04 003
Teeth	02 ( ) 132
Fish scales	09 09 118
Coral	98 00 119
Eggshell	09 09 119
Seeds, Seed Covering	09 16 121
Schist (construction)	03 06 043
Schist (unident)	98 00 043
Red Brick	03 06 169
Yellow Brick	03 06 155
Linoleum	03 06 101
Metal Hardware (probably construction)	03 06 ( )
Furniture Hardware	04 01 ( )
Misc. hardware (other and unident), screws, car parts	09 11 ( )
Leather Shoe Parts	06 01 015
Unident Leather scraps	98 00 015
Leather Personal Items	07 ( ) 015

TABLE 3 Database Codes for Ambiguous Items.

ARTIFACT INVENTORY
26th WARD
BOROUGH OF BROOKLYN, KINGS COUNTY
NEW YORK, NEW YORK

Context	Gp	Cl	Mat	Identity	Count	Weight	Comment	Reference	TPQ
1.04	01	01	004	Ironstone	1	0.00	Thick double-layer		
1.04	01	01	004	Whiteware	1	0.00	Rim thick		
1.04	01	02	078	Bottle	1	0.00	Complete Fully automatic	Lorrain 1968:43	1903
2.03	01	02	002	Stoneware	1	0.00	Container rim		
3.02	03	05	025	Faucet	1	0.00	Brass		
5.05	01	01	001	Porcelain	1	0.00	Saucer "Nico ware/Japan"		
5.05	01	01	004	Ironstone	1	0.00	Saucer complete "Incaware/Shenango China/New Castle, Pa."		
5.05	01	02	078	Bottle	1	0.00	Complete "One Quart" line of bells around upper part of body Fully automatic	Lorrain 1968:43	1903
5.05	01	02	078	Bottle	1	0.00	Complete "SHEFFIELD" Semi-automatic	Lorrain 1968:42	1881
5.05	04	01	078	Tube	2	0.00	Complete bulb and base blue television or radio 5 prong base		
5.05	07	04	078	Bottle	1	0.00	Complete blue "BROMO-SELTZER EMERSON DRUG CO" Fully automatic Push-down cap marks	Lorrain 1968:43	1903
5.05	07	04	078	Bottle	1	0.00	Complete blue "MILK OF MAGNESIA" Phillips Fully automatic machine made	Lorrain 1968:43	1903
5.05	09	12	078	Light bulb	1	0.00	Christmas ornament grayish-blue		
7.04	01	01	003	Earthenware	1	0.00	Base Saucer or bowl crude		
7.06	09	17	010	Rubber band	1	0.00	attached to stretchy material		
*** Total ***					16	0.00			

APPENDIX II:

SURVEY RECORD FORMS

SURVEY RECORD SHEET : Postholes, Auger holes, Shovel tests

PROJECT : 26 WARD WPCP			COORDINATES :		
SITE :	SUPERVISOR : WILL ROBERTS	EXCAVATOR : JESSE	SCREENED ? ¼" layer 1.04:- ~~[illegible]~~ 3 screenfuls	DATE : 4/10/90	TEST TYPE AND NO. : BT #1
STRATIGRAPHY. :					

LAYER	DEPTH *	DESCRIPTION	COLOR	CULT. MAT.	NOTES
1-1	0 – 0.7	Turf/Topsoil Sandy loam	10 YR 3/3 DK. BROWN	—	
1-2	0.7 - 1.1	sand	red brown	brick inclusions & other finds	
1-3	1.1 - 2.1	sand mixed w. dark black	gray	brick inclusions & other finds	
1-4	2.1 - ~~7~~.0+	sand	DARK yellow brown	Brick inclusions & other finds, incl. glass & ceramics	plus Concrete & brick
1-5	5' – 7 & 8'	Silt	Dark gray-brown	Brick inclusions & other finds	ONLY found BELOW layer #4 IN NORTHERN END OF TRENCH
1-6	7'+	SAND	Yellow Brown	appears to be largely sterile	possibly Natural sand
7					
8					

* Give depths relative to ground surface

General Notes : (Note if cult. material retained, and if soil samples are taken.)
material discarded: slab of bathroom tile, misc. schist, construction wire
Walls Collapsed – Unsafe Conditions.

Cross Refs :	
Plan	Photos
Section	Notebook

SURVEY RECORD SHEET : Postholes, Auger holes, Shovel tests

PROJECT : 26 WARD WPCP			COORDINATES :		
SITE :	SUPERVISOR : WILL ROBERTS	EXCAVATOR : JESSE PONZ	SCREENED ? ¼ —	DATE : 4/10/90	TEST TYPE AND NO. : BT #2
STRATIGRAPHY. :					

LAYER	DEPTH *	DESCRIPTION	COLOR	CULT. MAT.	NOTES
2-1	0.- 0.5'	TURF & TOPSOIL SILTY LOAM	10 YR 3/3 DK. BRWN	—	
2-2	0.5 - 2.0'	SILTY SAND	10 YR 3/2 V. DK. grayish Brn	BRICK	FILL
2-3	2.0 - 3.0'	SANDY SILT.	BLACK 10YR 2/1	e.g. planks of creosoted wood	Fill / GETS THICKER TOWARD W. END OF TRENCH
2-4	3.0 - 8.0'	SILTY SAND	Yellow Brown	BUILDING RUBBLE BRICK, MORTAR, WINDOW GLASS, & BOX TILE	Fill
2-5	8.0'+	CLEAN SAND (NO INCLUSIONS) ~~[illegible]~~	pale yellow brown	—	POSSIBLY NATURAL
6					
7					
8					

* Give depths relative to ground surface

General Notes : (Note if cult. material retained, and if soil samples are taken.)
4th layer disappears 25' from East end of trench.
& 3rd layer gets much thicker – extends down to 8' (minimum).
WATER ran off into trench at bottom.

Cross Refs :	
Plan	Photos
Section	Notebook

SURVEY RECORD SHEET : Postholes, Auger holes, Shovel tests

PROJECT : 26 WARD			COORDINATES :		
SITE :	SUPERVISOR : WILL ROBERTS	EXCAVATOR : JESSE PINE	SCREENED ? 1/4" 2 screenfuls from Layer 4. NO finds	DATE : 4/11/90	TEST TYPE AND NO. : BT # 3

STRATIGRAPHY. :

LAYER	DEPTH *	DESCRIPTION	COLOR	CULT. MAT.	NOTES
1	0 - 0.8'	TURF and Topsoil Silty loam	10 YR 3/2 V. DK. Brown	~~—~~	
2	0.8 - 1.5'	Med. to coarse sand	10 YR 3/4 DK. Yellowish Brown	Faucet (Brass :)	—
3	1.5 - 3.4'	CLAYEY SILT	BLACK 10 YR 2/1	—	Probably Buried Sludge
4	3.4 - ?	Micaceous Sand w. Organic inclusions & Cobbles + boulders	10 YR 4/1 DK. Gray	—	
5					
6					
7					
8					

* Give depths relative to ground surface

General Notes : (Note if cult. material retained, and if soil samples are taken.)

WATER Flowed in from layer #4 + Caused trench to Collapse. We stopped at 8 Feet depth.

Cross Refs :	
Plan	Photos
Section	Notebook

SURVEY RECORD SHEET : Postholes, Auger holes, Shovel tests

PROJECT : 26 WARD			COORDINATES :		
SITE :	SUPERVISOR : WILL ROBERTS	EXCAVATOR : JESSE PINE	SCREENED ? 1/4" 3 Screenfuls from Layer 4	DATE : 4/11/90	TEST TYPE AND NO. : BT # 4

STRATIGRAPHY. :

LAYER	DEPTH *	DESCRIPTION	COLOR	CULT. MAT.	NOTES
4.1	0 - 0.4'	TURF & TOPSOIL SILTY LOAM	10 YR 2/2 V. DK. BROWN	—	
4.2	0.4 - 2.5'	SILTY SAND	10 YR 3/4 DARK yellowish BROWN	CERAMIC, RED BRICK	
4.3	2.5 - 4.5'	CLAYEY SILT	BLACK 10 YR 2/1	—	PROBABLY BURIED SLUDGE
4.4	4.5 - ?	SAND with some CLAY CHUNKS + organic inclusions	GRAY 10 YR 4/1	BOTTLE GLASS	perhaps original sand
4.5					
6					
7					
8					

* Give depths relative to ground surface

General Notes : (Note if cult. material retained, and if soil samples are taken.)

Stopped at 7.5'. water ran off in a trench from 3rd Layer

Cross Refs :	
Plan	Photos
Section	Notebook

SURVEY RECORD SHEET : Postholes, Auger holes, Shovel tests

PROJECT : 26 WARD			COORDINATES :		
SITE :	SUPERVISOR : Will Roberts	EXCAVATOR : Jesse Ponz	SCREENED ? 1/4 mesh	DATE : 4/12/90	TEST TYPE AND NO. : BT 5

STRATIGRAPHY. :

LAYER	DEPTH *	DESCRIPTION	COLOR	CULT. MAT.	NOTES
5 1	0 - 0.5	Turf, Top Soil sandy loam	10 YR 2/2 V. DK BRN.		
5 2	0.5 - 1.1	Silty sand	10 YR 4/6 DK. Yellowish Brown		
5 3	1.1 - 1.6	silt w. ash DK. YEL BRN	10 YR 4/4 with 10 YR 4/1	Brick, Glass frags	
5 4	1.6 - 3.0'	Sand DK YEL	10 YR 4/4 DK. Yellowish Brown	Bottle whole (at interface with layer 5, 1 frag)	
5 5	3.0 - 5.3	~~Sand~~ ASH w. silt	10 YR 4/1 DK. Gray with 10 YR 4/4	whole bottles 1 Raisin rake Ceramic frags (SEE BELOW)*	
5 6	5.3 - ?	Clay w. buried organics - almost marl/muck	10 YR 3/1 V. DK Gray w. 10 YR 2/2 (organics)		
7					
8					

* Give depths relative to ground surface

General Notes : (Note if cult. material retained, and if soil samples are taken.) WATER Flowed into trench at bottom (8 FEET). * APPROX. 20 bottles (whole) were found at layer 5 - but were discarded. ONLY THOSE with Embossments INDICATING Commercial origin were sampled. Two screens from level 5. Level 6 - too clayey to screen - equivilent of a screen full was tested by shovel & trowel.

Cross Refs :

Plan

Section

Photos

Notebook

SURVEY RECORD SHEET : Postholes, Auger holes, Shovel tests

PROJECT : 26 WARD			COORDINATES :		
SITE :	SUPERVISOR : WILL ROBERTS	EXCAVATOR : Jesse Ponz	SCREENED ? 1/4" mesh	DATE : 4/12/90	TEST TYPE AND NO. : BT 6

STRATIGRAPHY. :

LAYER	DEPTH *	DESCRIPTION	COLOR	CULT. MAT.	NOTES
1	0 - 1.0'	sandy loam (Topsoil)	10 YR 3/4 DK yellow brown with some 10 YR 4/2 v DK BRN	–	
2	1.0 - 2.0'	silty sand	10 YR 3/6 DK yellow brown with some 10 YR 3/2 v DK BRN	–	
3	2.0 - 3.0'	silty Clay	10 YR 2/1 BLACK		
4	3.0 - 4.7'	Sand, coarse	10 YR 4/6 DK. yellow brown	bottle glass fragment discarded	
5	4.7 - ?	Sand w. silt w. organic inclusions	10 YR 4/1 & 3/1 DK gray & v. DK gray w. 10 YR 2/1 (org. inclusions)	–	
6					
7					
8					

* Give depths relative to ground surface

General Notes : (Note if cult. material retained, and if soil samples are taken.) Water is approx. 7' depth. 12 Screenfuls screened from level # 5. No cultural material. Some water-worn pebbles + peaty soil clumps containing a decomposing grass or reed.

Cross Refs :

Plan

Section

Photos

Notebook

SURVEY RECORD SHEET : Postholes, Auger holes, Shovel tests

PROJECT : 26 WARD			COORDINATES :		
SITE :	SUPERVISOR : Will Roberts	EXCAVATOR : James Berg	SCREENED ? ¼" mesh	DATE : 4/13/90	TEST TYPE AND NO. : BT 7

STRATIGRAPHY. :

LAYER	DEPTH *	DESCRIPTION	COLOR	CULT. MAT.	NOTES
1	0 - 1.0'	Sandy loam	10 YR 2/2 V. DK. BROWN	–	
2	1.0 – 2.6'	Med. sand	10 YR 5/4 Yellowish BROWN	–	
3	2.6 – 3.2	SILTY Clay	Black 10 YR 2/1	–	
4	3.2 - 5.4	Coarse sand	10 YR 5/6 Yellowish Brown	bottle glass (discarded)	
5	bot. 78/81 5.4	Coarse sand some organic inclusions (grass)	10 YR 5/1 Gray	ceramic (possibly 7.04) some missing	
6	78/81 – ?	Clayey silt with Heavy organic inclusions (rooty, grass)	Black 10 YR 2/1	Plastic bag & rubber band recovered in c.h.*	* East end of trench 20' from Manhole
7					
8					

* Give depths relative to ground surface

General Notes : (Note if cult. material retained, and if soil samples are taken.) UNIT collapsed right away. Depths of last two layers are estimated. * 14 Samples from layer 7.05 with some missing from 7.04. Layer 7.84 backdirt tested with shovel & trowel - too heavy to be screened.

Cross Refs :	
Plan	Photos
Section	Notebook

APPENDIX III
THE CONTEXT SYSTEM

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APPENDIX 3
THE CONTEXT SYSTEM

Complex strata were a possibility within the project area, so a field recording system that could encompass this situation as well as the large number of finds expected, was required. Another requirement of the system was that it be compatible with computerized data management. It was with these requirements in mind that the field recording system used in this project was selected.

The stratigraphic recording system used at the site was derived from recent developments in British archaeological field methodology. In this system, the term Context is used to represent the minimal unit of stratification. On this project, this was the smallest observable natural stratigraphic deposit within a grid unit. A unique 3-digit Context number was used to identify each Context observed and described in the field. Contexts representing parts or all of strata are treated in exactly the same manner as those representing parts of all of the features. Each Context is given its own identifying Context number when initially described. It can then be interpreted as a feature or part of a stratum at any stage during the excavation or post-excavation stratigraphic analysis. In the case of deposits with a series of lenses or layers within a feature, decimal subdivisions of the Context number were employed (i.e. 397.02), to stress the relationship of these deposits as part of the same feature. This system can easily be used on a site where excavation by arbitrary stratigraphic units has been deemed necessary. The context was also used on this project to record the location of surface finds, both in relatively large areas and individually located artifacts.

The primary record of each Context is the Context or Survey Recording Sheet. Most of these forms should be self-explanatory. All the various slots and boxes were filled in immediately with the appropriate information by the excavator. Particular attention was paid to the accurate recording of the soil texture and inclusions, the Munsell color reading, and the various stratigraphic inter-relationships.

There are a number of advantages in the Context recording system. The use of only one number register to identify all varieties of soil deposits eliminates the premature interpretation of deposits that was necessary with many other recording systems. It is often difficult, if not impossible, to classify soil deposits when they are initially uncovered. Using the Context system, deposits are simply assigned Context numbers and excavated. They can be interpreted or re-interpreted at any time during or after their excavation without any need to change their identifying Context number. This leads directly to the Context system's second advantage. There is no possibility of confusing numbers issued from one register with these from any others if there is only one number register used to record and identify soil

deposits. Another advantage is derived from using this single identifying number not only for the soil deposits and its description, but also for all the artifacts from the deposit during all stages of their processing, analysis and curation. One further advantage is the ability to expand the system. The Context numbers are a potentially infinite sequence, so any size site or survey can be encompassed. The final advantage present here is that the Context system is a digital recording system. As such, it is immediately adaptable for computer entry and numerical data sorting.