PHASE IB ARCHAEOLOGICAL REPORT

Ennis Frances Houses
Expansion and Improvements
2070 Adam Clayton Powell, Jr. Boulevard
Block 1929 / Lot 57
Manhattan, New York
CEQR 10DCP028M

Prepared For:
Equity Environmental Engineering
500 International Drive
Budd Lake, NJ 07828

Prepared By:
Historical Perspectives, Inc.
P.O. Box 529
Westport, CT 06881

August 2019
EXECUTIVE SUMMARY

A portion of the Ennis Francis Houses (EFH) at 2070 Adam Clayton Powell, Jr. Boulevard and West 124th Street on Block 1929 in Manhattan are slated for improvements. However the proposed construction of a new EFH residential facility cannot proceed without addressing a specific concern of New York City’s Landmarks Preservation Commission (LPC). Research compiled in a 2010 Phase IA Archaeological report by archaeologist Dr. Joan Geismar identified a portion of the current EFH project site as sensitive for the possibility of human remains from a “German burial ground” associated with a mid-nineteenth century church on the abutting current Tax Lot 17. The 2010 study identified an L-shaped area near the rear of Lot 57 with no history of standing structures.

The EFH proposed improvements cannot avoid the identified sensitive area, the open rear yards in current tax Lot 57, which is considered the Area of Potential Effect (APE). As a result, Historical Perspectives, Inc. (HPI) prepared a Testing Protocol according to applicable archaeological standards (LPC 2018) in order to address the LPC concerns for potential human remains.

At the request of LPC, the Testing Protocol included outreach to the descendant community of the “German burial ground.” Through parish mergers over several generations, The Church of St. John the Baptist (located on West 42nd Street) and Holy Cross (located on West 30th Street) are the acknowledged descendental community of the West 124th Street property. The protocol included notification procedures for when and how this descendant parish community would be notified if any human remains were to be recovered during HPI’s testing on Block 1929.

The Testing Protocol was reviewed and approved by LPC (Sutphin 5/28/19). The field investigation was conducted June 17-19, 2019 under the direction of Dr. Sara Mascia, Vice President of HPI.

Testing was conducted by a combined effort of heavy machinery and hand-excavations. The testing entailed excavation of a ca. 13 x 100-foot (4 x 30 m) west-west trench along the rear of Lot 57 (crossing the rear of the four historic lots identified by Geismar as sensitive). Excavation found that the entire southern half of the trench contained fill extending to depths over 6 feet below the surface, evidently impacts by construction activities in the adjacent property. The northern half of the trench (which extended 4-5 feet south from the north wall) did contain some pockets of subsoil between historical disturbances (both late 19th century construction and 20th century demolition activities, as well as the introduction of the water drainage feature across the back yards). Each of these locations was shovel-shaved and hand excavated to determine if any evidence of burial shafts was present. No evidence of burial shafts or disturbed burials was observed in any location throughout the trench’s width or length.

No further archaeological consideration is recommended for the project site.
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I. Introduction

A portion of the Ennis Francis Houses (EFH) at 2070 Adam Clayton Powell, Jr. Boulevard and West 124th Street on Block 1929 in Manhattan are slated for improvements. (Figure 1) However, the proposed construction of a new EFH residential facility cannot proceed without addressing a specific concern of New York City’s Landmarks Preservation Commission (LPC). Research compiled in a 2010 Phase IA Archaeological report by archaeologist Dr. Joan Geismar identified a portion of the current EFH project site as sensitive for the possibility of human remains from a “German burial ground” associated with a mid-nineteenth century church on the abutting current Tax Lot 17.

The 2010 study identified an L-shaped area near the rear of Lot 57 with no history of standing structures. (Figure 2) The 1985 construction of the Ennis Frances complex had retained and maintained these small, open rear yards areas that could be accessed for archaeological testing.

The EFH proposed improvements cannot avoid the identified sensitive area, the open rear yards in current tax Lot 57, which is considered the Area of Potential Effect (APE). As a result, Historical Perspectives, Inc. (HPI) prepared a Testing Protocol according to applicable archaeological standards (LPC 2018) in order to address the LPC concerns for potential human remains.

At the request of LPC, the Testing Protocol included outreach to the descendant community of the “German burial ground.” Through parish mergers over several generations, The Church of St. John the Baptist (located on West 42nd Street) and Holy Cross (located on West 30th Street) are the acknowledged descendent community of the West 124th Street property. The protocol included notification procedures for when and how this descendant parish community would be notified if any human remains were to be recovered during HPI’s testing on Block 1929.

The Testing Protocol was reviewed and approved by LPC (Sutphin 5/28/19).

II. Goals of the Archaeological Testing

The primary goal of the EFH archaeological testing was to verify the presence/absence of human remains from a possible undisturbed “German burial ground” which might have been within the APE of the proposed new EFH structures.

- Site Inspection

Pre-construction archaeological examination, aided by a careful combined approach of mechanical soil stripping and hand-shovel testing, is often embraced as the most practical approach to an archaeological investigation of a site when (1) large amounts of pavement, soil and other overburden may need to be removed before reaching the archaeological resource zone, (2) the presence of resources is unclear, and (3) there is a potential for the recovery of human remains.

As the post-1985 integrity of the individual rear yard areas was unknown, once site access for fieldwork was provided to HPI, the archaeological team was able to identify additional impacts
and disturbances to the sensitive area as flagged by Dr. Geismar in 2010. An extensive site visit was completed on June 12, 2019 to examine the sensitivity area that had been identified by Geismar (Photographs 1-4). The area identified as sensitive runs east-west along the rear edge of the former lots fronting on 124th Street and, at the western end the sensitivity area extends northward to the back of the existing building (see Figure 2). The site visit found that the northern leg of the sensitivity area had been extensively disturbed in the twentieth century. A water-management system, comprised of a series of deep drains and linked piping, runs parallel to the edge of the east-west sensitivity area as well as through a large portion of the northern leg (Photograph 1). In addition, an external staircase leading down into the basement of the existing EFH structure was also present within the northernmost leg of the sensitivity area (Photograph 4). The presence of these two large-scale disturbances eliminated this portion of the sensitivity area from having the potential to retain archaeological integrity (see Figure 3). Testing proceeded with this refinement.

- Historical Sensitivity and Outreach

A second, equally critical goal was to identify, prior to excavations, the descendant community of the possible “German burial ground” in order to obtain appropriate approval of the removal of any recovered remains. Since 10 years had passed since Geismar’s original research on Lots 45-48, new on-line data sources were sought, a review of historic maps was conducted, interviewees were re-contacted for updates, additional archives sources were sought, and notices were posted on Ancestry.com. A full report on this Descendant Community Research is on file with LPC.

In summary, the 2010 1A Documentary Study by Geismar stated

the 1851 Dripps map, that shows a Catholic Cemetery on much, if not all, of the project block and identified the need for this 1A archaeological study, was mainly, but not entirely, inaccurate. In the latter half of the 19th century, a 100 by 100-foot cemetery—on former Lots 45, 46, 47, and 48 on West 124th Street owned by St. John’s German Roman Catholic Church—was located where the 3-story Francis Ennis Houses were built in 1985. …..[the properties] were owned by the church from 1848 until the 1870s when all the church lots, including the four cemetery lots, were intermittently sold for development (Geismar 2010:6).

Through parish mergers over several generations, The Church of St. John the Baptist (located on West 42nd Street in Manhattan and Holy Cross (Church), located at West 30th Street in Manhattan, are the acknowledged descendant community of the West 124th Street property. The Pastor of the Church, The Very Rev. Francis J. Gasparik, was contacted regarding the proposed archaeological excavation for the determination of presence/absence of a “German burial ground”.

Father Gasparik, in 2010 and, again, in 2018, researched his own Church records and could not locate any documents to suggest the use of the EFH for burials. He firmly believes that the early map notations reflect the property owner’s intent to associate [historic] Lots 45-48 with the church through a burial-ground label, perhaps in order to avoid taxation.
Maps provided the only documentary data indicating that Lots 45-48 might have once been the site of a cemetery. No additional documentary evidence was found for this report that would indicate that any formal burials actually took place within the project APE. Because negative evidence does not provide ground truth, archaeological field testing was recommended to ensure that no potential burials would be disturbed by the proposed development of the project site. Father Gasparik approved in writing (4/6/19) that if human burials were identified during the archaeological testing, the burials could be removed from the site. Notification procedures for the descendant parish community were established and a copy forwarded to LPC.

III. Archaeological Field Methodology

This first level of fieldwork, often referred to as Phase IB, was conducted in accordance with the applicable archaeological guidelines (LPC 2018). The subsurface testing for archaeological resources is limited to the portion of the project area that has been identified as sensitive and will be impacted by the proposed development (the APE). It is not, however, a full-scale Data Recovery excavation.

The overall proposed testing area at EFH was limited to portions of four small historic lots, Lots 45 - 48. A large, west-west trench (100 x 15 feet) was planned for the rear of the former project lots within the APE (Figure 3). The testing plan called for each of these lots to be subjected to trenching by heavy machinery in order to identify potential burial shafts that might be present in the former rear lots. The HPI field testing program was designed to rely primarily on machine-excavation. Excavation within the test trench was designed to be conducted by scraping thin levels of soil to remove the overburden and after the surface layers were carefully removed, the team might be able to discern the presence of discrete burial shafts (usually by soil color) within the APE. The excavation trench would be canted as necessary to comply with OSHA regulations.

During the course of the field investigation, professional standards for excavation, screening, recording stratigraphy, labeling, mapping, photographing, and cataloging will be applied.

IV. Results of Field Testing

The LPC archaeology staff was notified when testing would begin (Saunders 6/14/19) and the field investigation was conducted June 17-19, 2019 under the direction of Dr. Sara Mascia, Vice President of HPI. Sara Mascia meets the standards of the New York Archaeological Council and the National Park Service 36 CFR 61 and is certified by the Register of Professional Archaeologists (RPA).

Testing was conducted by a combined effort of heavy machinery and hand-excavations. As mentioned above, the field investigation entailed the excavation of a ca. 13 x 100-foot (4 x 30 m) west-west trench along the rear of Lot 57 (crossing the rear of the four historic lots identified by Geismar as sensitive). The team left approximately 2-3 feet intact along the southern border of the property to prevent any soil collapse from the neighboring property. Excavation of the surface overburden and fill layers began in the east end of the trench. Working with the machine operator, the HPI archaeologists began the investigation by carefully removing the overburden and surface strata in shallow increments. After the overburden was removed the archaeologists utilized the backhoe to carefully remove fill layers which contained 20th-century construction/
demolition debris in order to expose any undisturbed strata or burial shafts. The trench was examined in ca. 3.5-meter (ca. 12-foot) sections to ensure proper control of the removed soils and the safety of the field personnel.

Excavation found that the ca. 13 ft x 100 ft trench, overall, contained two separate soil profiles for the northern and southern sections. The southern portion of the trench measured approximately 8 to 9 feet wide north to south, leaving a width of between 4-5 feet x 100 feet in the northern section.

Testing recorded the entire southern half of the trench as fill, extending to depths over 6 feet below the surface. A review of historical and current maps of the project block indicates that the elevation of the project block has remained steady from the 19th century through the present (Figures 1, 2, and 4). Traditional burials are typically found at 6 feet (1.82 m) below the surface. The presence of fill to the depth of 6 feet (1.82 m) at the east end of the trench indicated that considerable unrecorded disturbance occurred in this location, obscuring any evidence of possible grave shafts. After phone consultation with LPC, it was determined that an additional one to one and a half feet of fill would be excavated to determine if subsoil or any burials were present (Sutphin, personal communication to Mascia 6.17.19). In the southern half of the trench, excavation halted at depths between 7.5-8 feet (2.15-2.4 m) below the surface (Figure 3, Photograph 5).

The depth of fill observed by the archaeological team confirmed the results of two soil borings in the rear yard that were completed in April 2019 (Mueser Rutledge Consulting Engineers 2019). An examination of the boring logs indicated that fill was present at the extreme rear (south side) of Lot 57 to 15 feet below the surface. (See Appendix: B3 and B5 Soil Boring Logs.) Because historical features often mimic fill, soil borings are not 100% reliable to predict the presence of disturbed strata. However, in this case, the soils observed during testing were clearly recent fill. In fact, near the southwest corner of the archaeological test trench, a large plastic bucket with a date of March 05, 2012 was recovered at a depth of 6.25 feet (1.9 m). (See Photograph 10.) The presence of this bucket indicates a significant deep disturbance to this portion of the site in the relatively recent past.

The northern half of the trench (which extended 4-5 feet south from the north wall) did contain some pockets of subsoil between historical disturbances. Each of these locations was shovel-shaved and hand excavated to determine if any evidence of burial shafts was present. The soil profiles in the northern section of the trench were also different between the eastern and western sides. On the east side of the trench, subsoil was finally reached at depths between 4.75 feet (1.45 m) and 5.25 feet (1.6 m). While in the western one-third of the trench, a stratum of subsoil mixed with ashy fill was observed extending from 4.5 to 6.2 feet, indicating that subsoil in this location had been disturbed to greater depths in the past. Undisturbed subsoil was only present in a few deep pockets from 5.5 to 6.25 feet (1.68 to 1.9 m).

Soil profile columns were completed every 25 feet along the north wall (Tables 1-4 below).

Table 1. Stratigraphy of North Wall of Trench 1 (at 5 Feet from NE corner)
### Table 2. Stratigraphy of North Wall of Trench 1 (at 30 Feet from NE corner)

<table>
<thead>
<tr>
<th>Level</th>
<th>Depths</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0–32 cm</td>
<td>Brown (10YR 5/3) coarse sand</td>
</tr>
<tr>
<td>2</td>
<td>32–48 cm</td>
<td>Yellow (10YR 7/6) sand</td>
</tr>
<tr>
<td>3</td>
<td>25–108 cm</td>
<td>Very Dark Grayish Brown (10YR 3/2) sandy fill with modern bricks</td>
</tr>
<tr>
<td>4</td>
<td>108–122 cm</td>
<td>Black (10YR 2/1) sand and Ash</td>
</tr>
<tr>
<td>5</td>
<td>122–230 cm</td>
<td>Strong Brown (7.5 YR 5/8) sandy fill with architectural demolition debris and building remnants</td>
</tr>
</tbody>
</table>

### Table 3. Stratigraphy of North Wall of Trench 1 (at 65 Feet from NE corner)

<table>
<thead>
<tr>
<th>Level</th>
<th>Depths</th>
<th>Description</th>
</tr>
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<tbody>
<tr>
<td>1</td>
<td>0–30 cm</td>
<td>Brown (10YR 5/3) coarse sand</td>
</tr>
<tr>
<td>2</td>
<td>30–45 cm</td>
<td>Yellow (10YR 7/6) sand</td>
</tr>
<tr>
<td>3</td>
<td>45–101 cm</td>
<td>Dark yellowish Brown (10YR 4/4) sandy loam and modern artifacts</td>
</tr>
<tr>
<td>4</td>
<td>101–145 cm</td>
<td>Black (10YR 2/1) sandy fill with architectural debris</td>
</tr>
<tr>
<td>5</td>
<td>145–194 cm</td>
<td>Strong Brown (7.5 YR 5/8) sand</td>
</tr>
<tr>
<td>6</td>
<td>194–235 cm</td>
<td>Pale Brown (10YR 6/3) sand subsoil</td>
</tr>
</tbody>
</table>

### Table 4. Stratigraphy of North Wall of Trench 1 (at 90 Feet from NE corner)

<table>
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<th>Level</th>
<th>Depths</th>
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</thead>
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<tr>
<td>1</td>
<td>0–26 cm</td>
<td>Brown (10YR 5/3) coarse sand</td>
</tr>
<tr>
<td>2</td>
<td>26–40 cm</td>
<td>Yellow (10YR 7/6) sand</td>
</tr>
<tr>
<td>3</td>
<td>40–130 cm</td>
<td>Dark yellowish Brown (10YR 4/4) sandy loam and modern artifacts</td>
</tr>
<tr>
<td>4</td>
<td>130–195 cm</td>
<td>Strong Brown (7.5 YR 5/8) sand</td>
</tr>
<tr>
<td>5</td>
<td>195–250 cm</td>
<td>Pale Brown (10YR 6/3) sand subsoil</td>
</tr>
</tbody>
</table>
Several remnants of historical features were identified in the northern section of the trench. Beneath the initial modern fill layer, excavation exposed a section of a former 19th century brick foundation at the northeast corner of the trench (Figure 3; Photograph 6). In this location, fill was finally encountered at a depth of 6.25 feet (1.9 m) below the surface. At 18 feet from the northeast corner the remnant of a brick cistern was observed (Photograph 7). After cleaning the side of the cistern for photographs, it was discovered that it was a small remnant left in situ with the rest of the cistern no longer present (Photograph 8). A small assemblage of 20th century artifacts was collected from the area where the cistern had once been. The concentration was likely deposited when the majority of the cistern was destroyed, likely by the introduction of the current water drainage pipe across the site. The laboratory analysis of the artifacts retrieved around the cistern remnant found they all dated from the mid-20th century or later. They included a glass salt shaker, a plastic spoon, two porcelain fuse fragments, a modern GE lightbulb fragment, the top of a colorless jar with screw threads, and a fragment of a Noxema jar.

At 44-47 feet (13.4 – 14.32m) from the northeast corner a deposit of brick and ash was noted at depths between 2.5-3.11 feet (75-95cm). The deposit appeared to be from the demolition of the former buildings and has no archaeological integrity. Near the western end of the trench, a section of thick concrete pathway was exposed (Photograph 9).

No evidence of burial shafts or disturbed burials was observed in any location throughout the total ca. 13 x 100-foot (4 x 30 m) east-west trench along the rear of Lot 57.

V. Conclusions and Recommendations

In conclusion, one large test trench was investigated during the course of fieldwork in the former backyards of historic Lots 45-48. The HPI team found that the majority of the sensitivity area contained disturbed fill strata, with the southern half of the area impacted by construction activities in the adjacent property and the northern half of the area impacted by both late 19th century construction and 20th century demolition activities, as well as the introduction of the water drainage feature across the back yard. No evidence of burials or burial trenches was observed during the excavation affirming the Church’s assertion that Lot 57 was not utilized for burial purposes. No further archaeological consideration is recommended for the project site.
VI. References

Bromley, G. W.

Geismar, Joan

Historical Perspectives, Inc.

Landmarks Preservation Commission (LPC)

Mueser Rutledge Consulting Engineers

New York Archaeological Council (NYAC)

Robinson, E. and R. H. Pidgeon

Sutphin, Amanda

Telephone communication, Amanda Sutphin, Landmarks Preservation Commission, with Sara Mascia, Historical Perspectives, Inc. June 17, 2019.

United States Geological Survey (U.S.G.S.)
2016 *Central Park, N.Y. 7.5 Minute Topographic Quadrangle.*
Ennis Francis Houses Expansion and Improvements
2070 Adam Clayton Powell, Jr., Boulevard
[Block 1929, Lot 57]
New York, New York

Figure 1. Project Site on Central Park, NY-NJ 7.5 Minute Quadrangle (USGS 2016).
Ennis Francis Houses Expansion and Improvements
2070 Adam Clayton Powell, Jr., Boulevard
[Block 1929, Lot 57]
New York, New York

Figure 2. Identified Area of Archaeological Sensitivity.
Excavation Trench

Staircase

Location of drain and pipes under 2-foot concrete pad/sidewalk

Ennis Francis Houses Expansion and Improvements

Figure 3. Location of Archaeological Test Trench and Disturbance Behind Existing Building and photo key.
Ennis Francis Houses Expansion and Improvements
2070 Adam Clayton Powell, Jr., Boulevard
[Block 1929, Lot 57]
New York, New York

Figure 4. Graphic reproduced from Geismar, Joan H., 2010. *Ennis Francis Houses 1A Documentary Report*. 
Photograph 1. Project Site Area of Potential Effect, South of the Existing Structures, Facing East.

Photograph 2. Brush and Refuse in the Location of the Test Trench, Facing South.
Photograph 3. Brush and Refuse in the Location of the Test Trench, Facing Southwest.

Photograph 4. Staircase in the Rear of Existing Structure Fronting on West 124th Street.
Photograph 5. South Wall Profile of the Test Trench, Showing Disturbed Fill to the Depth of 7.6 Feet (230 cmbs).

Photograph 7. Remnant of a 19th Century Cistern.

Photograph 8. Profile of North Wall After Removal of the Cistern Remnant.
Photograph 9. Section of the Concrete Pathway and Drain Cover Exposed at the West End of the North Wall.

Photograph 10. Plastic Bucket Recovered from Southwest End of the Trench at a depth of 6.25 feet (1.9 m). Note date of 2012 on the bucket.
APPENDIX:
Geotechnical Report:
212 W. 124th Street, NY, NY, Mueser Rutledge Consulting Engineers, 2019
GEOTECHNICAL REPORT
212 W. 124th STREET
NEW YORK, NEW YORK

NY Developers & Management LLC
266 47th Street, 5th Floor
Brooklyn, NY 11220

Mueser Rutledge Consulting Engineers
225 W. 34th Street, 14 Penn Plaza
New York, NY 10122-0002

April 3, 2019
# Boring Log

**Geologist:** C. Duymaz  
**Drilling Co.:** CMI Subsurface Investigations  
**Foreman:** Greg Leavitt  
**Type of Drill Rig:** Mobile B-61 Truck Rig  
**Drilling Method:** MRC  
**Auger/Casing:** Casing  
**O.D./I.D. Dia. (in.):** 4  
**Hammer Type:** Donut  
**Hammer Weight (lb.):** 140  
**Hammer Fall (in.):** 30  
**Sampler Type:** SS  
**Sampler I.D. (in.):** 2.0  
**Sampler Length (in.):** 24  
**Boring Location (Latitude Longitude):** See Location Plan  
**Ground Surface Elev. (ft.):** 0  
**Datum:** Sidewalk  
**Final Boring Depth (ft.):** 52  

### Groundwater Depth (ft.)

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<th>Date</th>
<th>Time</th>
<th>Water Depth</th>
<th>Stab. Time</th>
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<table>
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<tr>
<th>Depth (ft.)</th>
<th>No.</th>
<th>Depth (ft.)</th>
<th>Pen./Rec.</th>
<th>Blows per 6”</th>
<th>Sample Description Modified Burnister</th>
<th>USGS</th>
<th>PP/TV (tsf)</th>
<th>Bk.</th>
<th>Stratum Description (NYCBC)</th>
<th>Depth (ft.)</th>
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<tr>
<td>1</td>
<td>S-1</td>
<td>1-3</td>
<td>24/14</td>
<td>23 19</td>
<td>S-1 : Red, Brick fragments, frequent Concrete fragments.</td>
<td>1</td>
<td></td>
<td></td>
<td>0.5 - ASPHALT 2” - 0.5</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>S-2</td>
<td>3-5</td>
<td>24/6</td>
<td>3 5</td>
<td>S-2 : Red, Brick and Concrete fragments and fine to coarse SAND.</td>
<td>2</td>
<td></td>
<td></td>
<td>FILL (11-65)</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>S-3</td>
<td>5-7</td>
<td>24/3</td>
<td>2 3</td>
<td>S-3 : No recovery, Washed sample.</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>S-4</td>
<td>7-9</td>
<td>24/4</td>
<td>3 13</td>
<td>S-4 : Red, Brick fragments, some fine to coarse SAND and frequent Concrete fragments.</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>S-5</td>
<td>10-12</td>
<td>24/5</td>
<td>5 6</td>
<td>S-5 : Medium dense, gray, fine to coarse SAND, frequent Brick and Concrete fragments.</td>
<td>5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>S-6</td>
<td>15-17</td>
<td>24/8</td>
<td>6 7</td>
<td>S-6 : Medium dense, brown, medium to coarse SAND, trace Gravel.</td>
<td>6</td>
<td></td>
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<tr>
<td>7</td>
<td>S-7</td>
<td>20-22</td>
<td>24/9</td>
<td>10 7</td>
<td>S-7 : Medium dense, brown, fine to coarse SAND, trace Silt</td>
<td>7</td>
<td></td>
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</tr>
</tbody>
</table>

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**Note:** Sampler used throughout unless otherwise noted on the log.
## BORING LOG

**GZA GeoEnvironmental of New York**

Abyssinian Development Corporation
Ennis Francis House Project
Harlem, New York

**BORING NO.: B-5**
**SHEET:** 1 of 2
**PROJECT NO:** 41.0161682.00
**CHECKED BY:** PBP

**GZA Inspector:** C. Duymaz
**Drilling Co.:** CMI Subsurface Investigations
**Drilling Method:** MRC
**Foreman:** Greg Leavitt
**Type of Drill Rig:** Mobile B-61 Truck Rig

**Auger/Casing:** Casing
**O.D./I.D. Dia. (in.):** 4

**Boring Location (Latitude Longitude):** See Location Plan
**Datum:** Sidewalk
**Final Boring Depth (ft.):** 52
**Date Start/Finish:** 8/20/2007 - 8/23/2007

**Hammer Type:** Donut
**Hammer Weight (lb.):** 140
**Hammer Fall (in.):** 30

**Sampler Type:** SS
**Sampler I.D. (in.):** 2.0
**Sampler Length (in.):** 24

**Groundwater Depth (ft.)**

<table>
<thead>
<tr>
<th>Date</th>
<th>Time</th>
<th>Water Depth</th>
<th>Stab. Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Sample used throughout unless otherwise noted on the log.**

<table>
<thead>
<tr>
<th>Depth (ft)</th>
<th>No.</th>
<th>Depth (ft)</th>
<th>Pen./Rec.</th>
<th>Blows per 6&quot;</th>
<th>Sample Description</th>
<th>Modified Burnister</th>
<th>USGS</th>
<th>PP/Tr (tcf)</th>
<th>Elev. (ft)</th>
<th>Stratum Description (NYCBO)</th>
<th>Depth (ft)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>S-1</td>
<td>1-3</td>
<td>24/16</td>
<td>10 9 9 8 9 8</td>
<td>S-1: Medium dense, brown, fine to medium SAND, little Silt, trace Clay.</td>
<td></td>
<td></td>
<td></td>
<td>0.5</td>
<td>ASPHALT 1.5&quot;</td>
<td>0.5</td>
</tr>
<tr>
<td>1</td>
<td>S-2</td>
<td>3-5</td>
<td>24/8</td>
<td>3 5 3 5</td>
<td>S-2: Medium dense, brown, fine to coarse SAND, some Gravel, trace Silt, frequent Brick fragments.</td>
<td></td>
<td></td>
<td></td>
<td>10</td>
<td>11-05</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>S-3</td>
<td>5-7</td>
<td>24/6</td>
<td>3 4 3 4</td>
<td>S-3: Loose, brown, fine to coarse SAND, trace Gravel, trace Silt.</td>
<td></td>
<td></td>
<td></td>
<td>15</td>
<td>FILL (11-05)</td>
<td></td>
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<tr>
<td>3</td>
<td>S-4</td>
<td>7-9</td>
<td>24/18</td>
<td>32 36 32 32 36</td>
<td>S-4: Very dense, brown, fine to coarse SAND, some coarse Gravel, frequent Concrete fragments, trace Silt.</td>
<td></td>
<td></td>
<td></td>
<td>20</td>
<td>-15</td>
<td>15</td>
</tr>
<tr>
<td>4</td>
<td>S-5</td>
<td>10-10.8</td>
<td>12/5</td>
<td>65 100/4&quot;</td>
<td>S-5: Very dense, brown, fine to coarse GRAVEL, little fine to coarse SAND.</td>
<td></td>
<td></td>
<td></td>
<td>25</td>
<td>-15</td>
<td>15</td>
</tr>
<tr>
<td>5</td>
<td>S-6</td>
<td>15-17</td>
<td>24/5</td>
<td>13 15 13 14</td>
<td>S-6: Medium dense, brown, medium to coarse SAND, some Gravel, trace Silt.</td>
<td></td>
<td></td>
<td></td>
<td>30</td>
<td>SAND AND GRAVEL</td>
<td>15</td>
</tr>
<tr>
<td>6</td>
<td>S-7</td>
<td>20-22</td>
<td>24/0</td>
<td>15 13 10 10</td>
<td>S-7: No Recovery.</td>
<td></td>
<td></td>
<td></td>
<td>35</td>
<td></td>
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</tr>
</tbody>
</table>

**Notes:**
- Sampler used throughout unless otherwise noted on the log.
- Groundwater depth and stability noted for each sample.
- Sample descriptions include details of sediment composition and characteristics.