PHASE IB ARCHAEOLOGICAL SURVEY
For the proposed Queens Botanical Garden Educational Building
43-50 Main Street, Flushing, Borough of Queens, New York

Prepared for:
Department of Design and Construction (DDC)

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MANAGEMENT SUMMARY

Under Capital Project PV272EDUC, a new education center and surrounding landscapes are proposed at the Queens Botanical Garden in Flushing, Borough of Queens, New York. A Phase IA Documentary Study in 2021 assessed the area with low archaeological sensitivity (in Appendix A: Archaeological Work Plan, see Attachment B). A Phase IB Archaeological Survey has been undertaken by NV5 to determine the presence or absence of intact, potentially significant archaeological resources, and the potential for human skeletal remains, either in situ burials or fragmented disarticulated skeletal elements and other materials associated with any previous occupation within the APE. The work was carried out in accordance with an approved Archaeological Work Plan (see Appendix A: Archaeological Work Plan). Archaeological fieldwork comprised of shovel test pits (STPs) and geotechnical borings (geo-probes) was completed on March 26, 2024.

Prior to Phase IB archaeological fieldwork, a site walkover revealed areas of disturbance within the APE associated with utilities and concrete paving. Additionally, portions of the APE are within steep slopes exceeding 45 percent. A total of 20 shovel test pits (STPs) and 19 Geo-probes were excavated, all containing modern and disturbed fill strata, capping sterile subsoil in only one location (Geo-probe 18, or G18). Subsoil was not encountered in any other excavated location, with secondary fill deposits documented as deep as 27.0 feet below ground surface (-8.0 feet relative to the North American Vertical Datum of 1988). No precontact cultural material or features, or intact historic deposits pre-dating the early twentieth century were encountered in any of the excavated STPs or Geo-probes. Furthermore, no evidence of human burials were encountered. Therefore, no further archaeological survey is recommended within the present APE.

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1. INTRODUCTION

NV5, Inc. was retained by the Department of Design and Construction (DDC) to conduct a Phase IB Archaeological survey for proposed work that consists of a new education center and surrounding landscapes at the Queens Botanical Garden, including classrooms, a multi-purpose room for exhibits, a teaching kitchen, and a teaching greenhouse. The work under Capital Project PV272EDUC is within the Queens Botanical Garden, which is an area bounded by Blossom Avenue and Crommelin Street (to the north), College Point Boulevard (to the west), Booth Memorial Avenue and Elder Avenue (to the south), and Main Street (to the east) in the Borough of Queens, New York (Figures 1 and 2). The purpose of the project is to provide additional space for the year-round classes that use the garden (in Appendix A, see Attachment A: Project plans). The Phase IB archaeological testing was carried out in accordance with an Archaeological Work Plan, approved by LPC, DCLA, the Stockbridge-Munsee Community, and Delaware Nation in February 2024 (see Appendix A). The purpose of this cultural resources project was to determine the presence or absence of intact, potentially significant archaeological resources, and the potential for human skeletal remains, either in situ burials or fragmented disarticulated skeletal elements and other materials associated with any previous occupation within the APE. Archaeological fieldwork was completed on March 26, 2024 and laboratory analysis comprised of artifact processing and cataloging was completed on May 2, 2024.

1.1. Project Description

The primary construction and excavation areas (referenced in orange hatch in Figure 3) are associated with construction of the education center. The secondary construction and excavation areas (referenced in pink hatch in Figure 3) are associated with utility connections, which include the following:

- New sanitary sewer connection to an existing 7'x7' sanitary sewer located on site
- New storm sewer connection to an existing 10'x10' storm sewer located on site
- New 6" ductile iron pipe hydrant service line to an existing 8" water main on Elder Avenue (to the south)
- New 6" ductile iron pipe fire service and 3" ductile iron pipe domestic water service line to an existing 8" water main on Elder Avenue (to the south)
- New 4-4" conduits for electrical service and pull boxes to existing electrical service on Elder Avenue (to the south)
- New 2-4" conduits for communication service and pull boxes to existing service on Elder Avenue (to the south)

Structure:

- The ground floor structure generally consists of a 12" thick concrete slab, supported on 36" deep grade beams and 48" thick pile caps. At some locations, the structure is dropped to accommodate openings and pits, which extends the bottom of foundation structure down to 8'-0" below ground floor elevation. Foundation Plan F0-100 indicates structural elevations at all unique conditions (in Appendix A, see Attachment A).

Utilities:

- The excavation depth for the fire protection and water service is 4'-6" and for electrical and communications is 3'-6". For both sanitary and storm, it varies. Sanitary varies from 6' to 6.5' and the storm varies from 3.5' to 15.5'.

In a comment letter dated January 20, 2021, the New York State Office of Parks, Recreation and Historic Preservation (OPRHP) requested the preparation of a Phase 1A Archaeological Documentary Study of an adjacent proposed project sites (for an open air pavilion and kids culture garden, to the west and east of the current project location), given its location within a generalized area of

archaeological sensitivity and its proximity to a previously reported archaeological site that was believed to have been associated with a Revolutionary War-era burial ground. In a comment letter dated February 2, 2021, the New York City Landmarks Preservation Commission (LPC) also requested the preparation of a Phase 1A survey. AKRF conducted a Phase 1A Archaeological Documentary Study in March 2021 and determined that the area was largely inundated marshland associated with the larger network of wetlands known as Flushing Meadows, which was subsequently infilled for the 1939 World's Fair (AKRF, Inc. 2021; in Appendix A see Attachment B: Phase IA survey). The survey also concluded that an archaeological site (Linnaean Garden site), associated with precontact habitation, historic botanical gardens, and human burials associated with the Revolutionary War period, was actually situated approximately 4,000 feet north/northwest of the project location and was incorrectly plotted in the Cultural Resource Information System (CRIS). As such, the area was assessed with low sensitivity for archaeological resources and no further archaeological survey was recommended (AKRF, Inc. 2021).

In response to a review of a first draft of the Phase 1A Archaeological Documentary Study issued in February 2021, OPRHP issued a comment letter on February 22, 2021 that concurred with the conclusions and recommendations of the survey and stated that the proposed project would not result in adverse effects on cultural resources, including archaeological resources; however, a Human Remains Discovery Protocol was requested for report inclusion in the event that human remains were encountered during the construction of the proposed project. In a comment letter dated February 22, 2021, LPC also requested minor revisions to the Phase 1A survey, including the preparation of an Unanticipated Discoveries Plan for human remains in compliance with the requirements outlined in LPC's 2018 Guidelines for Archaeological Work in New York City. A final revised version of the Phase 1A Archaeological Documentary Study was submitted in March 2021 that included a Plan for the Unanticipated Discovery of Human Remains that was in compliance with both the 2021 State Historic Preservation Office (SHPO) Human Remains Discovery Protocol and the 2018 LPC guidelines. The revised report was accepted by OPRHP via CRIS.

The Department of Cultural Affairs (DCLA), as the lead agency for the CEQR for the proposed project, received a request from the Tribal Historic Preservation Officer (THPO) for the Stockbridge-Munsee Community to conduct a Phase IB Archaeological Survey of the project location. The DCLA consulted with the LPC and concluded that appropriate steps would be taken to conduct the Phase IB survey for the proposed project. It is noted that the work associated with the Phase IB survey is not subject to New York State review (i.e. OPRHP).

1.2. Cultural Resources Regulations

For cultural resources, the National Historic Preservation Act (NHPA) and the Advisory Council on Historic Preservation (ACHP) define, under Section 106 Regulations, wherein federal agencies (and other governmental agencies using federal funds) must consider the effects of their actions on any properties listed on, or determined eligible for listing on, the National Register for Historic Places (NRHP). Likewise, the State Historic Preservation Act (SHPA) and the New York City Environmental Quality Review Act (CEQRA) require that agencies must consider the effects of their actions on any properties listed on, or determined eligible for listing on, the State and City Register for Historic Places; more specifically for SHPA conformance, implementing regulations of Section 14.09 of the Parks, Recreation and Historic Preservation Law (PRHPL).

An Archaeological Work Plan, following the LPC Archaeological Guidelines for NYC, was developed and approved in February 2024 (LPC 2018; see Appendix A).

The cultural resources specialists who conducted the Phase IB Archaeological Survey satisfy the qualifications specified in the Archaeological Guidelines for NYC and 36 CFR 61 (LPC 2018). Lauren Lembo, MA, RPA served as Principal Investigator, Field Director, and Laboratory Director. NV5 archaeologist Benjamin Hornstra assisted in archaeological fieldwork, along with Jacquelene Poveromo and Megan Distefano of WSP USA, Inc (WSP). Gary Marcus and Sherry Wang served as supervising geotechnical specialists. Geo-probes were conducted by Associated Environmental Services, Ltd (AES) technicians, with oversight from the aforementioned NV5 and WSP archaeological and geotechnical staff members.

1.3. Area of Potential Effects

The Area of Potential Effects (APE) is defined in 36 CFR 800.16(d) as "the geographic area or areas within which an undertaking may directly or indirectly cause changes in the character or use of historic properties, if any such properties exist. The area of potential effect is influenced by the scale and nature of the undertaking and may be different for different kinds of effects cause[d] by the undertaking."

Included within the APE are all locations where the undertaking may result in ground disturbance. For this project, the boundary of the APE encompasses all areas subject to proposed construction or ground disturbance (see Figure 3). The primary construction and excavation areas (referenced in orange hatch) are associated with construction of the education center. The secondary construction and excavation areas (referenced in pink hatch) are associated with utility connections. Portions of the APE include areas that have previously been paved with asphalt and/or concrete, and/or have been impacted by buried utilities.

2. BACKGROUND RESEARCH

AKRF conducted a Phase 1A Archaeological Documentary Study in March 2021, the results of which are summarized herein. As part of the Phase IB Archaeological Survey, NV5 consulted two additional historic map resources utilizing geographic information system (GIS) georeferencing (Hassler 1837; WPA 1937).

2.1 Environmental Setting and Historic Context

The Borough of Queens is located within a geographical region known as the Atlantic Coastal Plain Physiographic Province, which includes all of Long Island, tends to include flat, gently sloping land (Isachsen, et al. 2000). The project location was historically included in an inundated marsh associated with the larger wetland network known as Flushing Meadows (AKRF, Inc. 2021). Maps from 1891 indicate that the elevation of the area was at sea level; however, modern Lidar elevation data recorded by USGS in 2013 indicates that the western portion of the project location is situated at an elevation of approximately 18 to 24 feet relative to the North American Vertical Datum of 1988 (NAVD88), and the eastern portion is largely situated between 18 and 22 feet NAVD88, suggesting that the majority of the project location contains between 18 and 24 feet of fill deposits (AKRF, Inc. 2021).

Soils within the Area of Potential Effects (APE) are mapped as Laguardia artifactual coarse sandy loam, 8 to 15 percent slopes (LaC), and Laguardia-Ebbets complex, 0 to 3 percent slopes (LEA) in the northern portion (NRCS 2022). Both aforementioned soil types are considered urban site complexes with parent material consisting of loamy-skeletal, human-transported materials (NRCS 2022).

2.2. Archaeological Sensitivity

An archaeological site containing human remains that had been reported in the vicinity of the project location, as mapped in the CRIS database, is likely revealed to be incorrectly mapped based on background research presented in the Phase 1A Archaeological Documentary Study (AKRF, Inc. 2021). New York State (NYS) Museum Site 4524 is presently mapped via point data adjacent to the east side of the APE in CRIS; however, titled "Linnaean Garden?" due to the uncertainty of the site's location.

Known as the Linnaean Garden site, or Linnaean Botanic Garden/Prince's Nursery, the site was believed to have been a precontact (Native American) area of habitation, that was later used as a botanical garden by the Prince family in the eighteenth through mid-nineteenth centuries, and which also contained a number of human burials dating to around the time of the American Revolution (AKRF, Inc. 2021; Williams 1833). The burials were purportedly encountered in 1841 during construction of Linnaeus Street (in the vicinity of present-day Prince Street north of 25A/Northern Boulevard and intersecting 35th Avenue), and was reported on by several sources (AKRF, Inc. 2021; Smith 1841). The Phase 1A survey concluded that the site was actually located approximately 4,000 feet to the north of the project location and its position was misreported in CRIS. The area surrounding the current APE was therefore assessed with low archaeological sensitivity, and also due to the likelihood for deep, modern infilling to have occurred in the area.

For a detailed overview of the project location's environmental setting, including precontact and historic period research, please refer to the Phase IA Archaeological Documentary Study (AKRF, Inc. 2021; in Appendix A, see Attachment B: Phase IA survey).

2.3. Additional Map Review

To supplement the map review conducted by AKRF (AKRF, Inc. 2021), an 1837 Hassler map and 1937 Works Progress Administration (WPA) map were georeferenced with present day aerial imagery and the APE (Figures 4 and 5; Hassler 1837; WPA 1937). Both map documents, much like those referenced in the aforementioned AKRF Phase IA report, depict the APE within a former creek and associated wetlands. Geotechnical analysis and a geomorphological assessment were conducted as part of the Phase IB archaeological survey efforts to verify the landform formation (see Section 5).

3. PROJECT DESIGN and METHODS

The purpose of Phase IB archaeological testing in Queens Botanical Garden was to determine the presence or absence of intact, potentially significant archaeological resources, and the potential for human skeletal remains, either in situ burials or fragmented disarticulated skeletal elements and other materials associated with any previous occupation within the Area of Potential Effects (APE) associated with a new education center. The work was carried out in accordance with an Archaeological Work Plan, approved by LPC, DCLA, the Stockbridge-Munsee Community, and Delaware Nation in February 2024 (see Appendix A).

AKRF's 2021 survey assessed the project location with low archaeological sensitivity due to deep, modern infilling, and furthermore, determined that the Linnaean Garden site is situated approximately 4,000 feet away from the current project location (AKRF 2021). Because the site contains 20th century fill material of variable thickness, the Phase IB Archaeological Work Plan proposed using geotechnical soil borings (geo-probes) to sample at depth in order to determine the limits of fill thickness in the APE, and the potential for cultural material beneath the fill. As the weight of the proposed structure could impact cultural resources below, geo-probe sampling was proposed and undertaken below the limit of excavation within the footprint of the building. As part of the field exploration, borings extended 10 feet below the limit of excavation or until culturally sterile subsoils were reached within the proposed

building footprint. Within proposed utility areas, borings extended through the proposed limit of excavation (see Appendix A).

The Phase IB Archaeological Survey included the following: review of background research provided in the Phase IA survey and historic mapping; a site walkover to examine the APE and document existing conditions; subsurface shovel test pit (STP) excavation; geotechnical soil borings (geo-probes); Geographic Information System (GIS) mapping; artifact analysis, geotechnical analyses, and report production. The STP and Geo-probe log and artifact catalog have been included herein (Appendices B and C).

The excavation of STPs was proposed throughout the APE, supplemented by geotechnical soil borings (geo-probes) in areas in which the proposed ground disturbance will reach below depths that STPs are able to document (e.g. 3 to 4 feet). All excavated STPs and Geo-probes were plotted and recorded using a Global Positioning System (GPS) unit and corresponding Geographic Information System (GIS) mapping. The North American Vertical Datum of 1988 (NAVD88) and North American Datum of 1983 (NAD83) were utilized in surveying. The surface elevation of a concrete pad within the central portion of the project site is 19.0 feet relative to NAVD88, and served as the project datum.

3.1. Shovel Test Pits

Shovel test pit (STP) locations measured 45 centimeters (1.5 feet) in diameter. An effort was made to excavate all STPs to 3-feet in depth, unless impenetrable rock, modern buried utilities, or the infilling of water in flooded terrain were encountered. Beyond 3-feet in depth, an auger was utilized to penetrate an additional one to two feet, unless otherwise impeded. No culturally sterile or natural strata were encountered during STP excavation. All excavated soil was screened through ¼-inch wire mesh to facilitate artifact recovery. At each STP, stratigraphic depths, soil texture and inclusions, Munsell colors, and artifact information were recorded on standardized field forms (see Appendix B). All STPs were backfilled as near to the original ground surface as possible when excavation and data recording was completed.

The manual excavation of up to 30 STPs was planned at 50-foot intervals throughout the APE; however, due to existing marked utilities, mature trees with extensive root systems, steep slopes, and concrete surfaces, some STP locations could not be excavated or offset (Figures 6 and 8; see Appendix B). For safety and state compliance, a New York 811 utility mark-out request was made 4 days prior to fieldwork. Staff conducted GIS mapping of excavation locations and documented existing conditions with digital photographs.

Background research provided by AKRF's Phase IA survey indicated that deep, redeposited twentieth-century fill strata may stretch across the landform. Shovel testing conducted during the Phase IB survey was aimed at documenting stratigraphy and the extent of modern disturbance within the upper approximately 3-feet of the soil column.

3.2. Geo-probes

Because the project site contains 20th century fill material of variable thickness, the Phase IB sampling plan proposed using geotechnical soil borings (geo-probes) to sample at depth in order to determine the limits of fill thickness in the APE, and the potential for intact or potentially significant cultural deposits to exist. As the weight of the proposed structure could impact cultural resources below, geo-probe sampling was proposed below the limit of excavation within the footprint of the building. As part of the field exploration, 20 geo-probes were planned and plotted on field maps (see Figures 6 and 8). Geo-probes were planned at 50-foot and 25-foot intervals, positioned with respect to specified areas of proposed deep impacts and offset due to obstructions, when necessary. Within the proposed

building footprint, borings extended 10 feet below the limit of excavation, while geo-probes within proposed utility areas extended through the proposed limit of excavation.

Drilling equipment consisted of hollow-stem augers (in accordance with ASTM Standard D-6151), and included continuous split spoon sampling every two feet, starting at ground surface and continuing down to the completion depth of the borings, unless otherwise impeded by an impasse. When impasses were encountered, efforts were made to offset the geo-probe location.

The sampling was performed in accordance with ASTM Standard D-1586, with the only exception that a 3-inch outside diameter split-spoon barrel was used for collecting samples for archaeological use. After flights were extruded, soils were described, measured, and visually assessed by qualified geotechnical analysts Gary Marcus and Sherry Wang of NV5. Flights were additionally screened for archaeological materials by qualified archaeologists Lauren Lembo of NV5 and Jacquelene Poveromo of WSP to observe each level for evidence of possible former occupied surfaces or intact deposits. Documentation was completed in accordance with stratigraphic changes in color, soil texture, hydric properties, and inclusions observed in the field by the aforementioned specialists. After field review and documentation of all samples, Gary Marcus and Sherry Wang described the encountered soil conditions in accordance with the Unified Soil Classification System and the NYC Building Code (see Section 5).

The geotechnical fieldwork and STP excavations were conducted concurrently in order to better assist with stratigraphic interpretations. The geo-probes were offset from the STPs by 25 feet, and closer in some locations (e.g. the proposed utility corridor), depending on location and proposed impacts (see Figures 6 and 8).

3.3. Unanticipated Discoveries Plan (UDP)

In conjunction with this education building project, which is City-funded, an Unanticipated Discovered Plan (UDP) was developed. The Phase IB archaeological survey did not encounter human remains or other artifacts or deposits triggering the UDP. It is the understanding of NV5 that an on-call archaeologist is being retained during construction. If discoveries of human remains or other artifacts trigger the UDP during construction, then the UDP's provisions will be followed as described within the approved Archaeological Work Plan, along with the Unmarked Burial Law, if triggered (in Appendix A, see Attachment C: Policies and Attachment D: Allowance For Unanticipated Archeological Discoveries).

3.4. Artifact Analysis

During the excavation of STPs, artifacts over 50 years of age were placed in re-sealable polyethylene bags with appropriate excavation provenience information. Modern materials such as plastic, asphalt, and concrete were observed in redeposited, twentieth-century fill layers of the STPs and were noted, sampled, and otherwise not retained. Non-diagnostic slag and brick flecking were also noted and discarded in the field. All recovered artifacts were processed, analyzed, and cataloged. An effort was made to temporally date all recovered diagnostic cultural material. Artifacts observed in extruded geo-probe flights were noted within the field logs and were sampled for inclusion in the artifact catalog (see Appendices B and C).

Artifact processing consisted of cleaning and hand washing non-friable cultural material. Durable artifacts (i.e. ceramic, glass) were washed to remove residual soil and to facilitate identification. Less durable artifacts (i.e., metal) were carefully dry-brushed to remove residues prior to identification. Artifacts were placed in archival, four-mil polyethylene zip lock bags. All recovered artifacts were analyzed and cataloged according to provenience, artifact group, material, artifact type, decorative or surface treatments(s), and period of manufacture (when applicable) (see Appendix C). All recovered

artifacts and field documentation are temporarily stored at NV5's laboratory in Parsippany, New Jersey. Artifacts will be transferred to the property owner, upon approval of the final report.

4. ARCHAEOLOGICAL FIELDWORK RESULTS

NV5, Inc. documented site conditions within the Area of Potential Effects (APE) during an initial walkover (see Figure 8; Photographs 1-8). The excavation of shovel test pits (STPs) were supplemented by geotechnical soil borings (geo-probes), in accordance with the Archaeological Work Plan methodology (see Appendix A). All excavated STPs and Geo-probes were plotted and recorded using a Global Positioning System (GPS) unit and corresponding Geographic Information System (GIS) mapping. Geo-probe and STP excavations occurred concurrently on March 18 to 22, and 25 to 26, 2024.

Shovel test pits were excavated until impenetrable rock, root, buried utilities, or water impasses were encountered (see Appendix B). Due to extreme slopes exceeding 45 percent, as well as concrete paved surfaces, 10 STPs and 1 Geo-probe could not be excavated (see Figures 6 and 8; Photographs 3, 4, and 8). Geo-probe 1 was offset to 27 feet from G2 to avoid electrical utilities, and G4 was offset 13.5 feet east due to encountering asphalt and solid cement at approximately eight feet below ground surface; approximately 11.0 feet relative to the North American Vertical Datum of 1988 (NAVD88). Geo-probe 18, which was the only test to eventually encounter natural soils, was offset 10 feet west to avoid a mature tree. Lastly, G20 was offset six feet west to avoid sizeable surface roots. Testing locations, including those offset due to the aforementioned obstructions, are reflected in the field mapping presented in Figures 6 and 8.

No natural soils were encountered during STP excavation, and no intact soils or cultural deposits pre-dating the early twentieth century were present. All deposits investigated revealed re-deposited strata post-dating 1930. For example, STP 19 contained a 0.8-foot thick very dark grayish brown (10YR 3/2) damp clay topsoil (Fill 1), overlaying a 0.8-foot thick very dark grayish brown (10YR 3/2) mottled with brown (10YR 4/3) silty clay Fill 2 with large cobbles, which yielded wire nail fragments (n=11), an asphalt roof shingle, two clear window glass fragments, machine-manufactured bottle glass fragments (n=6), three whiteware sherds, one ironstone sherd, and one terracotta flower pot sherd. Fill 2 overlaid a 2.5-foot thick dark gray (10YR 4/1) mottled with dark yellowish brown (10YR 3/6) compact and hydric silty clay Fill 3, which contained wire nail fragments (n=9), one large concrete fragment, and one clear machine-manufactured bottle glass fragment (see Appendix C). Excavation of STP 19 was terminated at 4.1 feet below ground surface (14.9 feet relative to NAVD88).

Natural soils (C-horizon) were only encountered in G18, at 23.0 feet below ground surface (-4.0 feet relative to NAVD88). The natural soils were explored for 3 feet and passed through a ¼-inch mesh screen. No cultural material was encountered within the natural soil stratum. Geo-probe excavations revealed secondary, early twentieth-century deposits with mixed refuse as deep as 27.0 feet below ground surface (-8.0 feet relative to NAVD88). Artifacts yielded from extruded flights were noted in the field, with a sample retained for inclusion within the artifact inventory (see Appendices B and C). The types of artifacts recovered from across geo-probe excavations was consistent, with machine-manufactured bottle glass present throughout each stratigraphic change, along with plastic, rubber, shoe leather, and galvanized wire located with the deepest and final soil flights extruded. For example, G1 (which was positioned within a proposed utility area) was excavated to 20.3 feet and contained eight redeposited fill strata and yielded a total of 58 historic and modern artifacts (Figure 7; see Appendix B). The lowermost Fill 8 stratum yielded two tar paper fragments, one clear machine-manufactured bottle glass fragment, and one amber machine-manufactured bottle glass fragment. A geotechnical analysis discussing the fill deposits encountered is presented in the following section.

A total of 440 historic and modern artifacts were recovered from STP and geo-probe excavations, yielded from 20 STPs and 19 Geo-probes (Figure 3). The artifacts recovered are indicative of domestic and architectural re-deposited refuse (i.e. secondary deposits representative of infilling), post-dating the early twentieth century. The overwhelming majority (78 percent; n=345) of recovered artifacts are comprised of domestic material, 56 percent of which (n=194) is represented by machine-manufactured bottle glass dating from the early twentieth century to present, followed by ceramics (n=126) comprised of mostly whiteware (n=81), following by porcelain (n=20). Additionally, 20 non-diagnostic glass fragments, three aluminum can fragments, and two plastic cup fragments represented domestic refuse. Architectural material accounted for 12.5 percent of the assemblage (n=55), followed in frequency by: miscellaneous (n=10) artifacts comprised of asphalt, rubber, plastic and PVC that were retained as samples; electrical items (n=9); sewer pipe and drain fragments (n=8); biological materials (n=7) comprised of shell and bone; clothing (n=4); and one coal fragment and one glass marble (see Appendix C). Diagnostic materials such as plastic, galvanized wire, rubber, and machine-manufactured bottle glass were recovered as deep as the base of excavation in many areas, and throughout strata.

All STPs and Geo-probes were backfilled as near to the original ground surface as possible when excavation and data recording was completed, with assistance from Queens Botanical Garden staff in areas that were particularly inundated.

5. GEOTECHNICAL ANALYSIS

As part of the geotechnical analysis, sediment and soil stratigraphy interpretations were synthesized. Laboratory analysis of recovered artifacts (conducted by Ms. Lembo) was accompanied by a review of the stratigraphy logs for further geomorphological and geotechnical analyses, along with a review of georeferenced historic maps and aerials, and literature pertaining to land formation in the Flushing area (conducted by Mr. Marcus). Natural soils were encountered within one geo-probe (Geo-probe 18, or G18); however, no intact or potentially significant archaeological deposits were encountered. Representative Geo-probe profiles are presented in Figure 7, and a log is provided in Appendix B.

5.1 Subsurface Exploration

The subsurface exploration consisted of drilling 19 geotechnical borings (geo-probes) for identifying archaeological sensitivity of existing fill materials. Drilling was performed by Associated Environmental Service, Ltd. (AES) of Hauppauge, NY using a Geoprobe 7822DT track-mounted drilling rig equipped with hollow-stem augers (4.25-inch inside diameter) and an automatic safety hammer. Soil samples were obtained at all boring locations in accordance with the American Society for Testing and Materials (ASTM) Standard D1586, which describes the Standard Penetration Test (SPT) of samples. While ASTM D1586 specifies the use of a 2-inch outside diameter sampler for performing the Standard Penetration Test (SPT), the soil sampling was performed using 3-inch outside diameter samplers to allow for collection of a larger volume of sample for archaeological purposes.

Soil samples were taken continuously from the ground surface, and at 2-foot intervals until the final depth of the boring was reached, with the resistance to penetration of the sampler being recorded in blows per foot (bpf). Hollow stem augers were used to advance the boreholes and keep the holes open as drilling progressed deeper into the ground. As samples were retrieved from each boring, a geotechnical engineer from NV5 was present to record sample information and field classify the sample materials.

5.2. Generalized Subsurface Conditions

Based on our review of the boring logs completed at the site, we present our interpretation of the generalized subsurface conditions, which may be summarized by the following brief descriptions of the major strata, listed in their order of occurrence with depth:

FILL MATERIALS (Class 7). The location of the site is in an area where a previous creek existed. The borings indicated two different types of fill materials, whose combined thicknesses are between 22 feet and at least 27 feet thick.[1] The fill is considered to be uncontrolled, because the composition of the material includes items not commonly included in engineered, controlled fill materials, and the density of the material is not consistent throughout.

> *Upper Fill:* At almost all borings—except for boring G11, a layer of brown, dark gray, and black sandy fill materials were encountered, with some to little silt, little to trace gravel, and minor amounts of miscellaneous debris (e.g. plastic, shell, glass, and ceramics), organic materials (tree limbs and root material), and construction and demolition debris (e.g. asphalt, concrete, brick, and piping) (see Appendices B and C for complete artifact details). This upper layer of fill varied between 2 feet and 8 feet thick.Field SPT N-Values were recorded between 4 bpf (loose) and sampler refusal[2] (dense), with an average N-Value of about 13 bpf (medium dense).
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> *Lower Fill:* Beneath the mainly sandy upper fill materials, all borings encountered a lower fill material consisting of hydric, gray to black silty/clayey marine and organic soils with varying amounts of sand and gravel, and minor amounts of miscellaneous debris (e.g. plastic, rubber, shell, ceramics, glass, leather, paper, aluminum, fabric, slag, coal, wire, and animal/butchered bone), organic materials (ash, naturally occurring small marsh and terrestrial shell, tree limbs and root material), and construction and demolition debris (e.g. asphalt, brick, concrete, piping, tile, wood, and tar paper) (see Appendices B and C for complete artifact details). Many samples in this lower fill layer had an organic odor with oil slicking. Field SPT N-Values were recorded between 2 bpf (loose) and sampler refusal (dense), with an average N-Value of about 12 bpf (medium dense).

SAND (Class 3). Beneath the fill materials at the location of boring G18, a deposit of yellowish brown fine sand soil (with little to no silt) was encountered at a depth of 23.0 feet below existing ground surface (-4.0 feet relative to NAVD88). These sands are expected to be part of the natural glacial deposits. Field SPT N-Values were recorded between 32 and 59 bpf (dense), with an average N-Value of about 45 bpf (dense).

Geotechnical Analysis and Conclusions

Geotechnical staff reviewed the soil boring data both in the field and in a laboratory and research setting to interpret the landform and previous site use. Based on the results of geotechnical analysis, organic material that was identified within geo-probe excavations are representative of ash fill and other post-1930 landfilling that occurred to level the APE by 1939. The hydric nature of the soils encountered at lower levels of geo-probe excavations are additionally indicative of a natural creek having been routed through the APE. The landfilling that occurred in the 1930s was an effort to divert or eradicate the watercourse; however, the hydrology of the landform is still evident, even on the

[1] The thickness of the fill soils was only identified at the location of G-18, due to the presence of the underlying glacial sandy soils. The glacial sand was not encountered at the locations of the other borings at the depths where the borings were completed.

[2] Sampler refusal indicates the inability of the sampler to penetrate the soil or fill material in a 6-inch interval.

ground surface (see Figure 5; Photograph 5). There is no evidence of occupied surfaces or burial deposits having existed within the APE.

6. CONCLUSIONS and RECOMMENDATIONS

No significant archaeological deposits were encountered during the combined STP and geo-probe excavation efforts, and no intact deposits pre-dating the 1930s were present. Geotechnical analysis additionally confirmed that no occupied surfaces or burial deposits exist within the Area of Potential Effects (APE). As such, no archaeological sites were identified. Based on the results of the Phase IB Archaeological Survey, the landform was created by the deposition of post-1930 fills, which capped natural soils in one excavated location (Geo-probe 18, or G18). The stratigraphy documented throughout the APE was comprised of hydric modern fills encountered as deep as 27.0 feet below ground surface (-8.0 feet relative to NAVD88). Prior to 1930s landfilling, the area in which the APE is situated was within a natural creek. The results confirm the findings of AKRF's 2021 documentary study, which assessed the project location with low archaeological sensitivity. No further archaeological survey is recommended.

7. REFERENCES

AKRF, Inc.
2021 Phase IA Archaeological Documentary Study, Open Air Pavilion and Kids Culture Garden at the Queens Botanicals Garden, 43-50 Main Street (Block 5107, Lot 200), Kissena Park, Flushing, Queens County, New York. Report on file with CRIS.

BKSK Architects LLP
2023 Staging Plan, QBG Educational Building, 43-50 Main Street, Flushing, NY 11355.

City of New York – Landmarks Preservation Commission (LPC)
2018 Guidelines for Archaeological Work in New York City. Report on file with the City of New York – Landmarks Preservation Commission. New York, New York.

ESRI
2022 Aerial Imagery, accessed from ArcMap, GIS.

Hassler, F.R
1837 *Map of the Interior of Long Island from Brooklyn to Jamaica, New York*. United States Coast Survey, Washington, D.C.

Isachsen, Y.W., E. Landing, J.M. Lauber, L.V. Richard, and W. B. Rogers
2000 Geology of New York: A Simplified Account. The University of the State of New York, Albany, New York.

Natural Resources Conservation Service (NRCS)
2022 Web Soil Survey. Electronic document accessed October 2023. https://websoilsurvey.sc.egov.usda.gov/App/ WebSoilSurvey.aspx

NYC DoITT
2021 Two Feet Elevation Contours, accessed from ArcMap, GIS.

Smith, Elijah A.
1841 *The Village of Flushing, Queens County, L.I*. Accessed October 2023, LOC.gov

USGS
2014 World Topographic Map, accessed from ArcMap, GIS.
2022 The National Map, accessed from ArcMap, GIS.

Williams, Edwin
1833 *The New-York Annual Register*. Peter Hill, New York, NY.

Works Progress Administration (WPA)
1937 "Map 41." Rock Line Survey - City of New York, Borough of Queens.

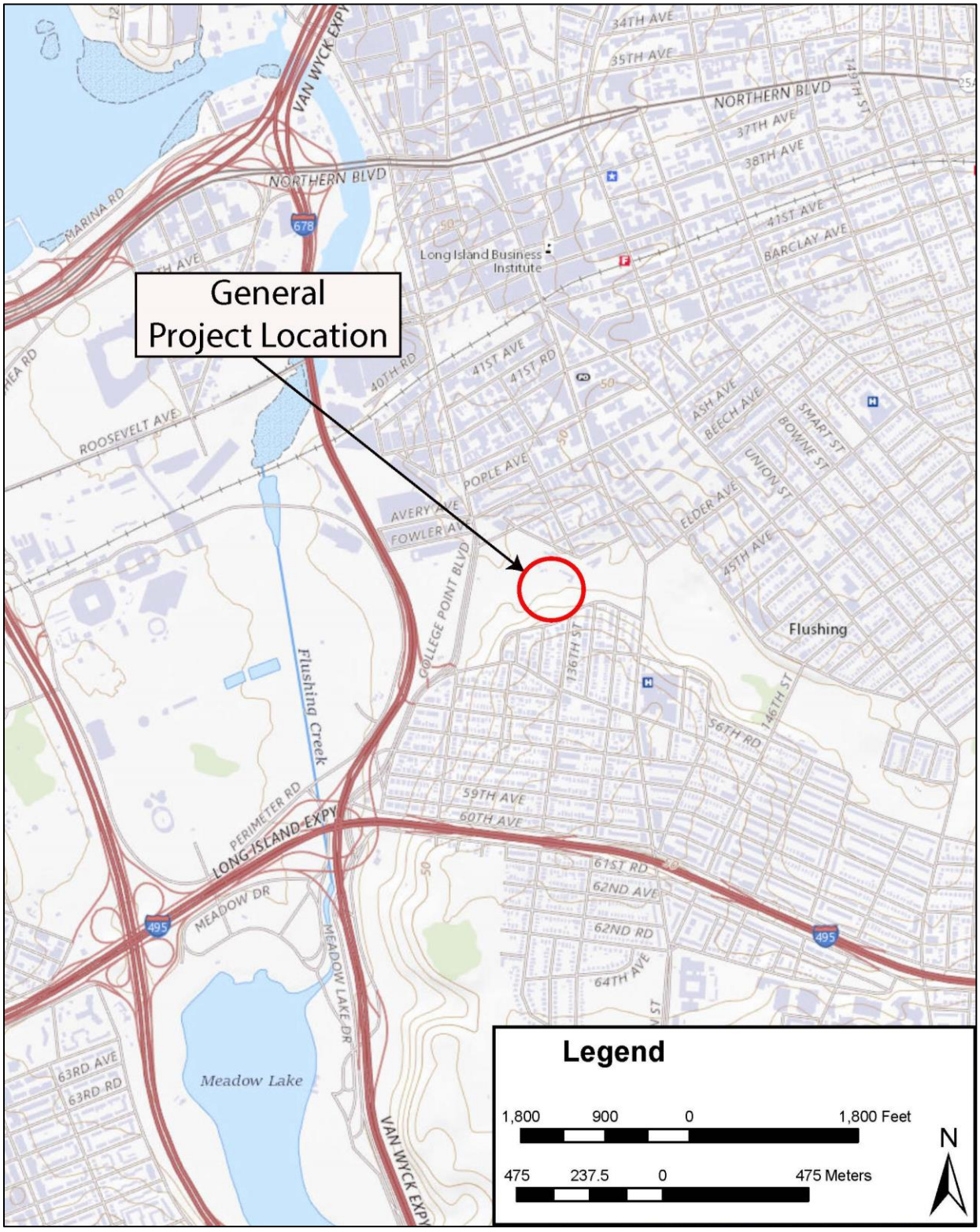

Figure 1. The General Project Location shown on USGS The National Map 2022 (USGS 2022).

Figure 2. The APE shown on aerial imagery with shovel test pit (STP) and geo-probe locations (ESRI 2022).

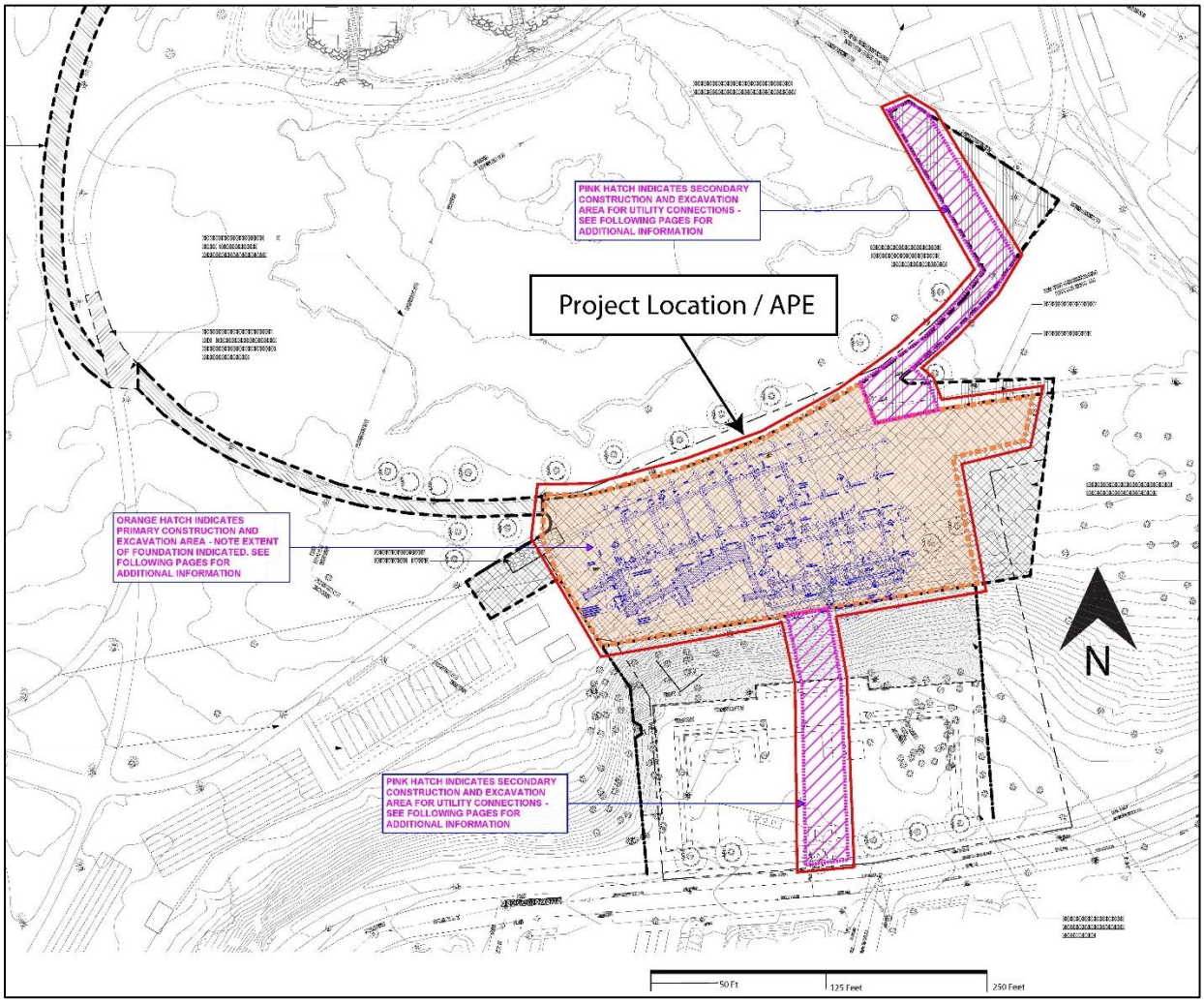

Figure 3. The Project Location / APE shown on a portion of the Staging Plan (BKSK Architects LLP 2023).

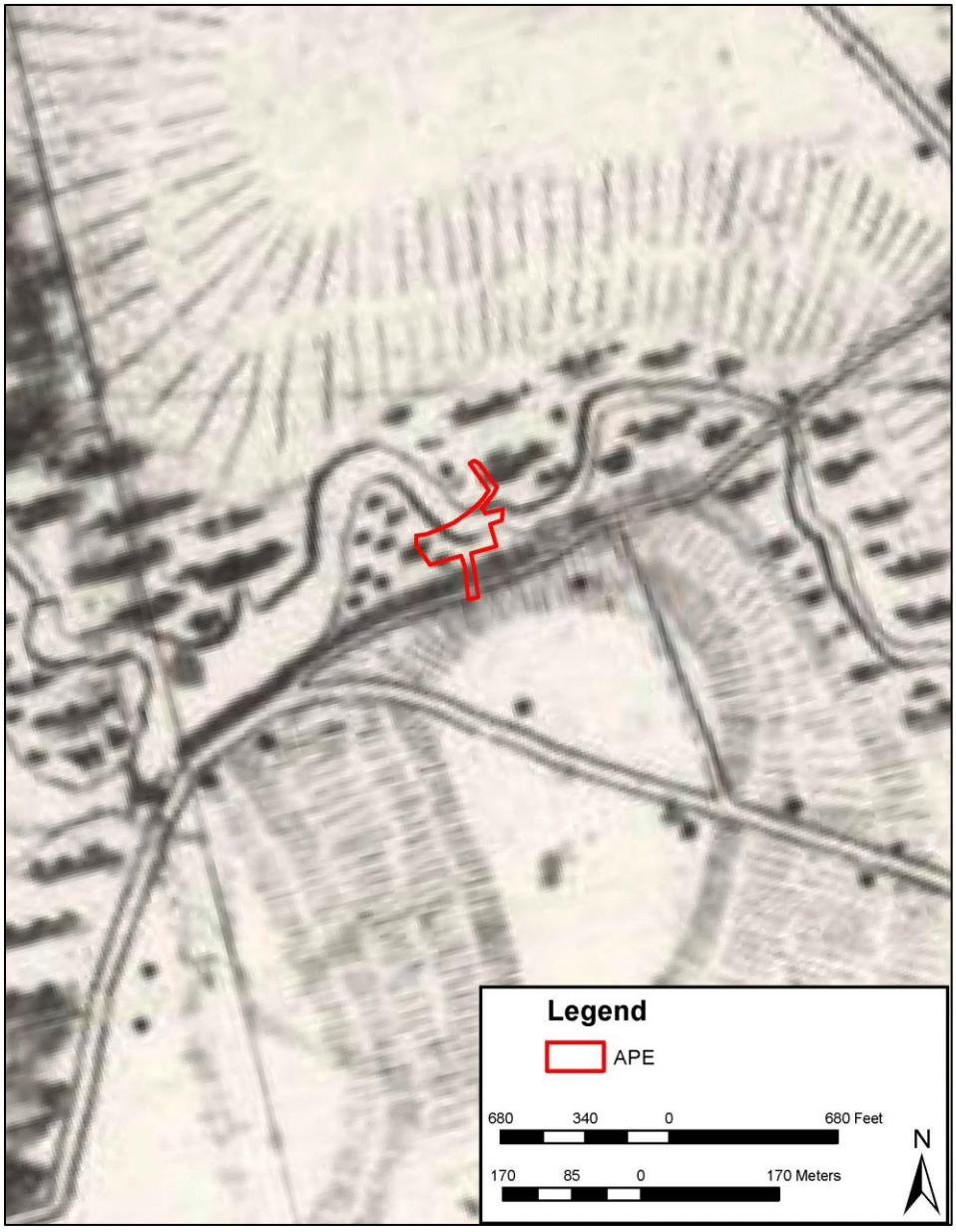

Figure 4. The APE shown on a portion of an 1837 coastal survey map (Hassler 1837).

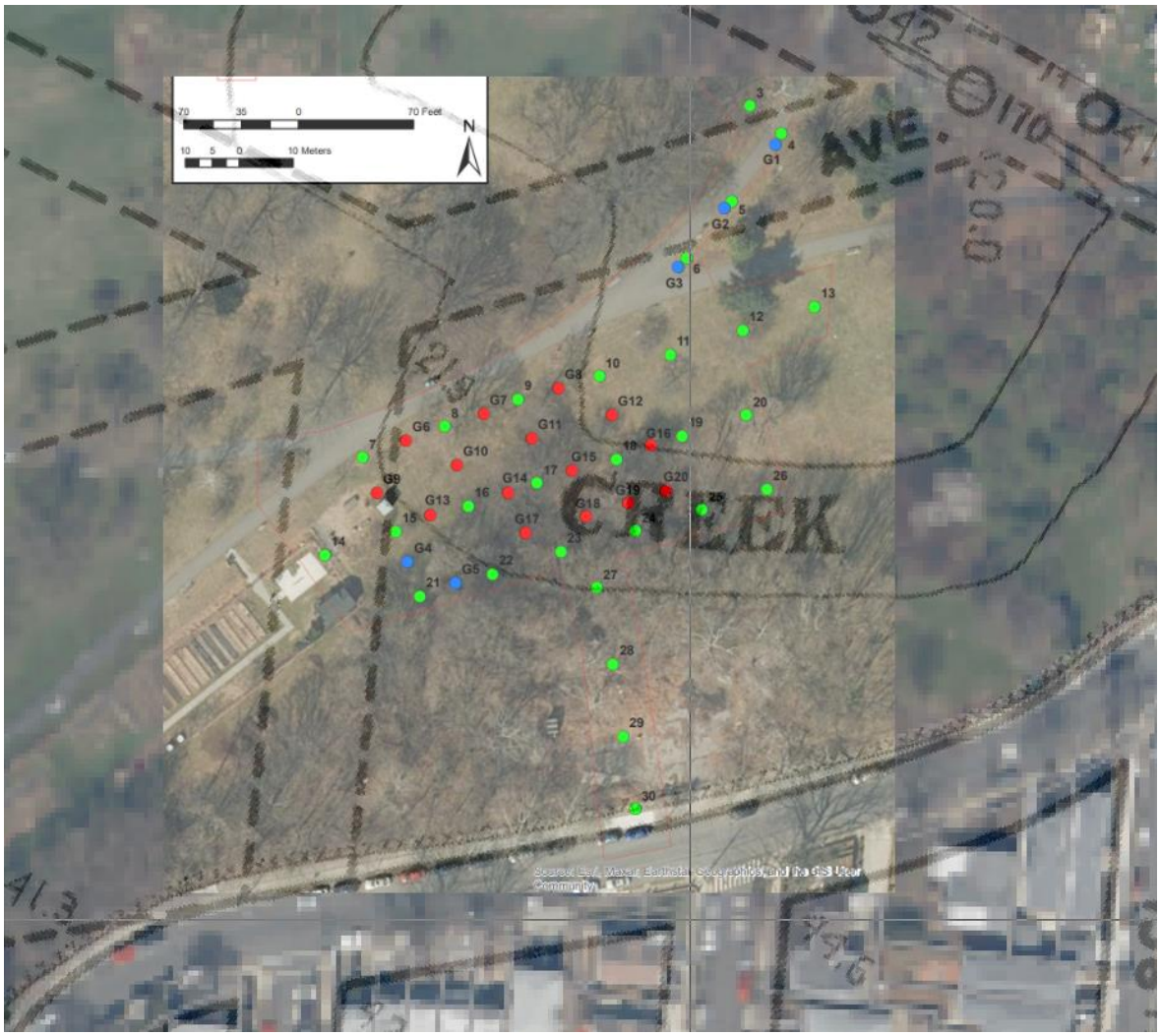

Figure 5. The initial field testing map overlaid on the Works Progress Administration (WPA) "Map 41." Rock Line Survey - City of New York, Borough of Queens. 1937 with 2022 aerial (ESRI 2022; WPA 1937).

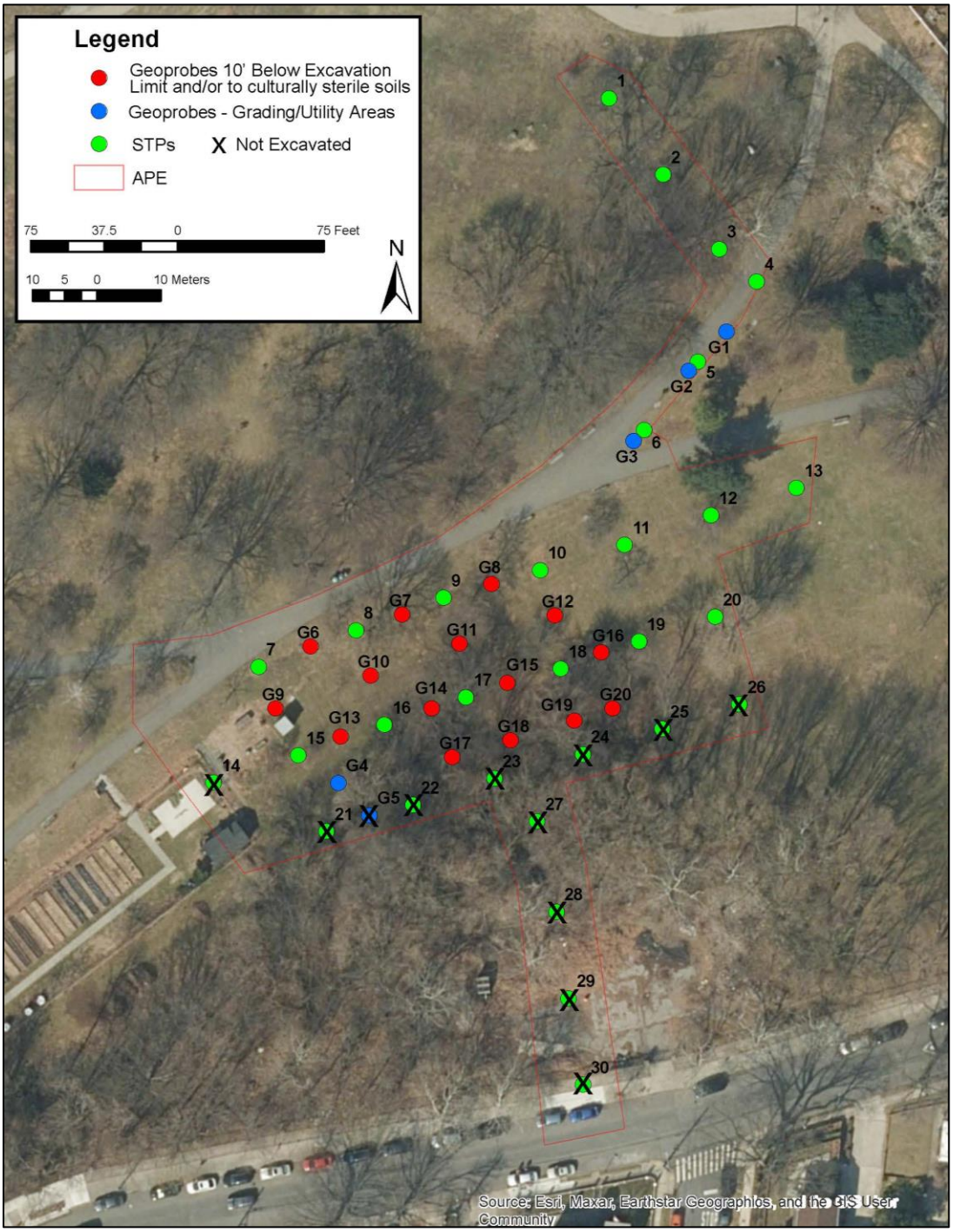

Figure 6. The APE shown on aerial imagery with shovel test pit (STP) and geo-probe locations (ESRI 2022).

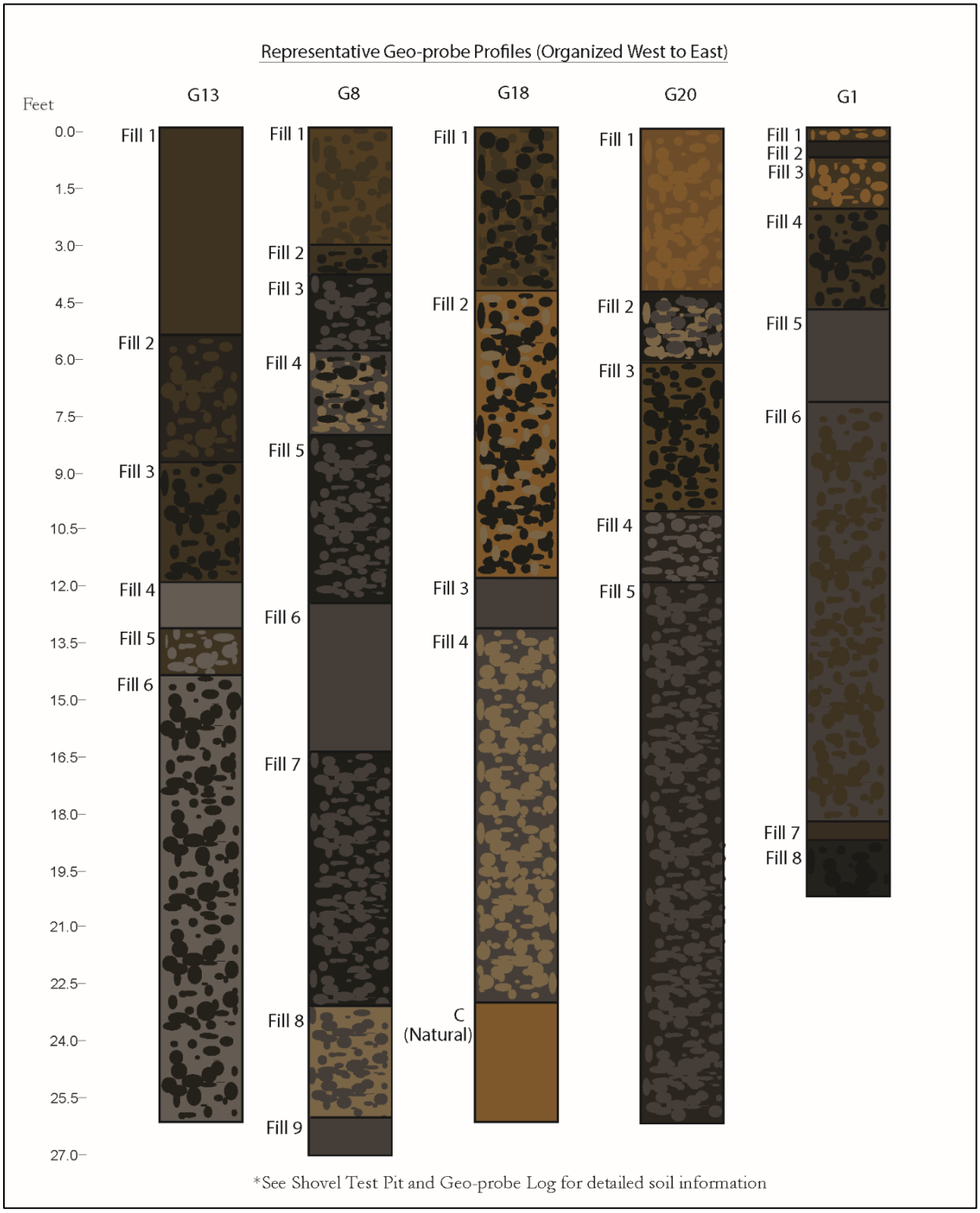

Figure 7. Representative Geo-probe profiles, shown from west to east across the APE. Note that the stratum colors shown correspond with recorded Munsell colors, and the patterned strata represent Munsell soil colors that were mottled (see Appendix B).

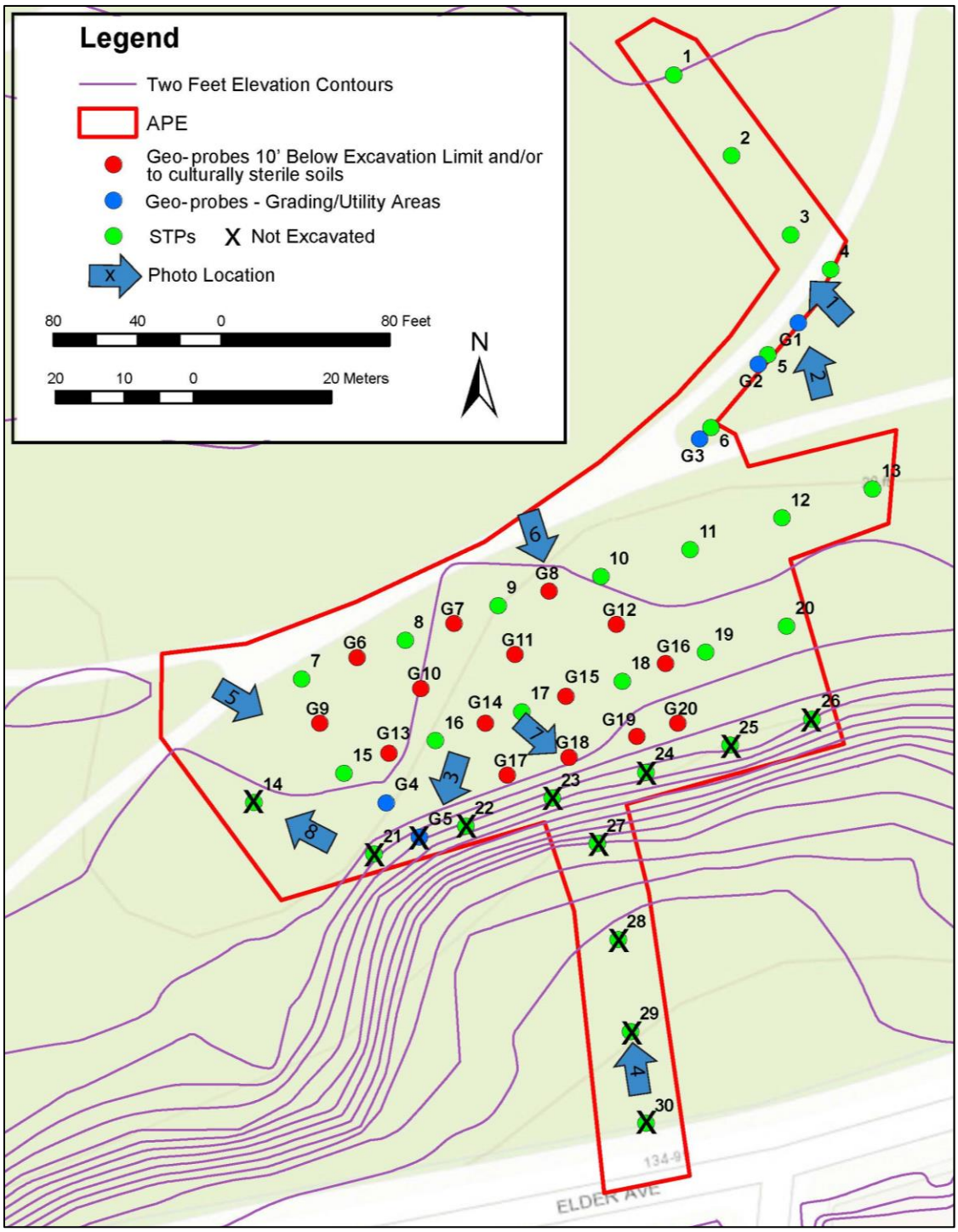

Figure 8. Photograph locations shown on USGS topographic map with two feet elevation contours, and STP and Geo-probe locations (NYC DoITT 2021; USGS 2014).

Photograph 1. Archaeological excavation in progress at STP 3 (NV5, Inc: Lauren Lembo, 3/18/24).

Photograph 2. Archaeological excavation in progress at geo-probe 1 (G1) (NV5, Inc: Lauren Lembo, 3/18/24).

Photograph 3. Overview of the APE showing considerable slopes within the southern portion (NV5, Inc: Lauren Lembo, 3/18/24).

Photograph 4. Overview of the APE showing concrete paved surfaces throughout the southern portion (NV5, Inc: Lauren Lembo, 3/20/24).
Note: buried electrical utilities are routed throughout this location.

Photograph 5. Overview of the APE showing inundation (NV5, Inc: Lauren Lembo, 3/25/24). Note: orange-striped safety cones designate excavated geo-probe locations.

Photograph 6. Showing Fill 7 of G8, which yielded post-1900s cultural material at 15 feet below ground surface (approximately 4.0 feet relative to NAVD88) (NV5, Inc: Lauren Lembo, 3/20/24).

Photograph 7. Showing natural soils encountered at 23 feet below ground surface (-4.0 feet relative to NAVD88) within G18 (NV5, Inc: Lauren Lembo, 3/26/24).

Photograph 8. View towards STP 14 showing electrical utilities and paved surfaces (NV5, Inc: Lauren Lembo, 3/18/24).

Appendix A:

Approved Archaeological Work Plan

REVISED February 8, 2024

To: City of New York – Landmarks Preservation Commission (LPC)

From: Lauren Lembo, MA, RPA, NV5, Inc., Cultural Resource Unit

Subject: Phase IB Archaeological Work Plan for the proposed Queens Botanicals Garden Educational Building, 43-50 Main Street, Flushing, Borough of Queens, New York

1. INTRODUCTION

NV5, Inc. has been retained by the Department of Design and Construction (DDC) to conduct an archaeological survey for proposed work that consists of a new education center and surrounding landscapes at the Queens Botanical Garden, including classrooms, a multi-purpose room for exhibits, a teaching kitchen, and a teaching greenhouse. The work under Capital Project PV272EDUC is within the Queens Botanical Garden, which is an area bounded by Blossom Avenue and Crommelin Street (to the north), College Point Boulevard (to the west), Booth Memorial Avenue and Elder Avenue (to the south), and Main Street (to the east) in the Borough of Queens, New York (Figures 1 and 2). The purpose of the project is to provide additional space for the year-round classes that use the garden (see Attachment A: Project plans).

Project Description

The primary construction and excavation areas (referenced in orange hatch in Figure 3) are associated with construction of the education center. The secondary construction and excavation areas (referenced in pink hatch in Figure 3) are associated with utility connections, which include the following:

- New sanitary sewer connection to an existing 7'x7' sanitary sewer located on site
- New storm sewer connection to an existing 10'x10' storm sewer located on site
- New 6" ductile iron pipe hydrant service line to an existing 8" water main on Elder Avenue (to the south)
- New 6" ductile iron pipe fire service and 3" ductile iron pipe domestic water service line to an existing 8" water main on Elder Avenue (to the south)
- New 4-4" conduits for electrical service and pull boxes to existing electrical service on Elder Avenue (to the south)
- New 2-4" conduits for communication service and pull boxes to existing service on Elder Avenue (to the south)

Structure:

- The ground floor structure generally consists of a 12" thick concrete slab, supported on 36" deep grade beams and 48" thick pile caps. At some locations, the structure is dropped to accommodate openings and pits, which extends the bottom of foundation structure down to 8'-0" below ground floor elevation. Foundation Plan F0-100 indicates structural elevations at all unique conditions (see Attachment A).

Utilities:

- The excavation depth for the fire protection and water service is 4'-6" and for electrical and communications is 3'-6". For both sanitary and storm, it varies. Sanitary varies from 6' to 6.5' and the storm varies from 3.5' to 15.5'.

In a comment letter dated January 20, 2021, the New York State Office of Parks, Recreation and Historic Preservation (OPRHP) requested the preparation of a Phase 1A Archaeological Documentary

Study of an adjacent proposed project sites (for an open air pavilion and kids culture garden, to the west and east of the current project location), given its location within a generalized area of archaeological sensitivity and its proximity to a previously reported archaeological site that was believed to have been associated with a Revolutionary War-era burial ground. In a comment letter dated February 2, 2021, the New York City Landmarks Preservation Commission (LPC) also requested the preparation of a Phase 1A survey. AKRF conducted a Phase 1A Archaeological Documentary Study in March 2021 and determined that the area was largely inundated marshland associated with the larger network of wetlands known as Flushing Meadows, which was subsequently infilled for the 1939 World's Fair (AKRF, Inc. 2021; see Attachment B: Phase IA survey). The survey also concluded that an archaeological site (Linnaean Garden site), associated with precontact habitation, historic botanical gardens, and human burials associated with the Revolutionary War period, was actually situated approximately 4,000 feet north/northwest of the project location and was incorrectly plotted in the Cultural Resource Information System (CRIS). As such, the area was assessed with low sensitivity for archaeological resources and no further archaeological survey was recommended (AKRF, Inc. 2021).

In response to a review of a first draft of the Phase 1A Archaeological Documentary Study issued in February 2021, OPRHP issued a comment letter on February 22, 2021 that concurred with the conclusions and recommendations of the survey and stated that the proposed project would not result in adverse effects on cultural resources, including archaeological resources; however, a Human Remains Discovery Protocol was requested for report inclusion in the event that human remains were encountered during the construction of the proposed project. In a comment letter dated February 22, 2021, LPC also requested minor revisions to the Phase 1A survey, including the preparation of an Unanticipated Discoveries Plan for human remains in compliance with the requirements outlined in LPC's 2018 Guidelines for Archaeological Work in New York City. A final revised version of the Phase 1A Archaeological Documentary Study was submitted in March 2021 that included a Plan for the Unanticipated Discovery of Human Remains that was in compliance with both the 2021 State Historic Preservation Office (SHPO) Human Remains Discovery Protocol and the 2018 LPC guidelines. The revised report was accepted by OPRHP via CRIS.

The Department of Cultural Affairs (DCLA), as the lead agency for the CEQR for the proposed project, received a request from the Tribal Historic Preservation Officer (THPO) for the Stockbridge-Munsee Community to conduct a Phase IB Archaeological Survey of the project location. The DCLA consulted with the LPC and concluded that appropriate steps would be taken to conduct the Phase IB survey for the proposed project. It is noted that the work associated with the Phase IB survey is not subject to New York State review (i.e. OPRHP).

This Archaeological Work Plan is provided to the LPC for review and approval. It describes the procedures and tasks to be performed as part of the Phase IB Archaeological Survey, consisting of an archaeological testing plan and an Unanticipated Discoveries Plan (UDP – see Attachment D: Allowance For Unanticipated Archeological Discoveries). The Stockbridge-Munsee Community's *Policy for Treatment and Disposition of Human Remains and Cultural Items that may be Discovered Inadvertently* is also included, along with the Delaware Nation Historic Preservation Department's *Inadvertant Discovery Policy* (see Attachment C: Policies). The purpose of this overall cultural resources project is to determine the presence or absence of potentially significant archaeological resources, and to document and determine the extent of any potential archaeological resources and/or human remains, which may be encountered.

Cultural Resources Regulations

For cultural resources, the National Historic Preservation Act (NHPA) and the Advisory Council on Historic Preservation (ACHP) define, under Section 106 Regulations, wherein federal agencies (and other governmental agencies using federal funds) must consider the effects of their actions on any

properties listed on, or determined eligible for listing on, the National Register for Historic Places (NRHP). Likewise, the State Historic Preservation Act (SHPA) and the New York City Environmental Quality Review Act (CEQRA) require that agencies must consider the effects of their actions on any properties listed on, or determined eligible for listing on, the State and City Register for Historic Places; more specifically for SHPA conformance, implementing regulations of Section 14.09 of the Parks, Recreation and Historic Preservation Law (PRHPL). This Archaeological Work Plan follows the LPC Archaeological Guidelines for NYC (LPC 2018). The cultural resources specialists who will perform this work satisfy the qualifications specified in the Archaeological Guidelines for NYC and 36 CFR 61. Lauren Lembo, MA, RPA will serve as Principal Investigator, Field Director, and Laboratory Director.

2. ENVIRONMENTAL SETTING AND HISTORIC CONTEXT

The Borough of Queens is located within a geographical region known as the Atlantic Coastal Plain Physiographic Province, which includes all of Long Island, tends to include flat, gently sloping land (Isachsen, et al. 2000). The project location was historically included in an inundated marsh associated with the larger wetland network known as Flushing Meadows (AKRF, Inc. 2021). Maps from 1891 indicate that the elevation of the area was at sea level; however, modern Lidar elevation data recorded by USGS in 2013 indicates that the site of the open air pavilion is situated at an elevation of 18 to 24 feet relative to the North American Vertical Datum of 1988 (NAVD88) and the kids culture garden is largely situated between 18 and 22 feet NAVD88, suggesting that the majority of the project location contains between 18 and 24 feet of fill deposits (AKRF, Inc. 2021).

Soils within the Area of Potential Effects (APE) are mapped as Laguardia-Ebbets complex, 0 to 3 percent slopes (LEA) in the northern portion, and Laguardia artifactual coarse sandy loam, 8 to 15 percent slopes (LaC) (NRCS 2022). Both aforementioned soil types are considered urban site complexes with parent material consisting of loamy-skeletal, human-transported materials (NRCS 2022).

Archaeological Sensitivity

An archaeological site containing human remains that had been reported in the vicinity of the project location, as mapped in the CRIS database, is likely revealed to be incorrectly mapped based on background research presented in the Phase 1A Archaeological Documentary Study (AKRF, Inc. 2021). New York State (NYS) Museum Site 4524 is presently mapped via point data adjacent to the east side of the APE in CRIS; however, titled “Linnaean Garden?” due to the uncertainty of the site’s location.

Known as the Linnaean Garden site, or Linnaean Botanic Garden/Prince’s Nursery, the site was believed to have been a precontact (Native American) area of habitation, that was later used as a botanical garden by the Prince family in the eighteenth through mid-nineteenth centuries, and that also contained a number of human burials dating to around the time of the American Revolution (AKRF, Inc. 2021; Williams 1833). The burials were purportedly encountered in 1841 during construction of Linnaeus Street (in the vicinity of present-day Prince Street north of 25A/Northern Boulevard and intersecting 35th Avenue), and was reported on by several sources (AKRF, Inc. 2021; Smith 1841). The Phase 1A survey concluded that the site was actually located approximately 4,000 feet to the north of the Project Sites and its location was misreported in CRIS. The area surrounding the current APE was therefore assessed with low archaeological sensitivity, and also due to the likelihood for deep, modern infilling to have occurred in the location.

For a detailed overview of the project location’s environmental setting, pre-contact and historic periods, please refer to the Phase IA Archaeological Documentary Study (AKRF, Inc. 2021; see Attachment B: Phase IA survey).

3. RESEARCH DESIGN

The Phase IB Archaeological Survey is designed to determine the presence or absence of intact archaeological resources, and the potential for human skeletal remains, either in situ burials or fragmented disarticulated skeletal elements and other materials associated with the Linnaean Garden site or any previous occupation within the APE. AKRF's 2021 survey assessed the project location with low archaeological sensitivity due to deep, modern infilling, and furthermore, determined that the Linnaean Garden site is situated approximately 4,000 feet away from the current project location. Testing and monitoring will determine the accuracy of the historic map and research review. The Phase IB Archaeological Survey will include the following: review of background research and historic mapping provided in the Phase IA survey; a site walkover to examine the APE and document existing conditions; subsurface shovel test pit (STP) excavation; geotechnical soil borings (geo-probes); Geographic Information System (GIS) mapping; artifact analysis and report production.

Area of Potential Effects

The Area of Potential Effects (APE) is defined in 36 CFR 800.16(d) as "the geographic area or areas within which an undertaking may directly or indirectly cause changes in the character or use of historic properties, if any such properties exist. The area of potential effect is influenced by the scale and nature of the undertaking and may be different for different kinds of effects cause[d] by the undertaking."

Included within the APE are all locations where the undertaking may result in ground disturbance. For this project, the boundary of the APE encompasses includes all areas subject to proposed construction or ground disturbance (see Figure 3). The primary construction and excavation areas (referenced in orange hatch) are associated with construction of the education center. The secondary construction and excavation areas (referenced in pink hatch) are associated with utility connections. Portions of the APE may encompass areas that have previously been paved with asphalt and/or concrete, and/or have been impacted by buried utilities (Photographs 1 and 2).

Field Methodology

NV5, Inc. will review project information, including proposed construction activities and areas in which existing utilities are routed. Site conditions will be documented during an initial walkover. The excavation of shovel test pits (STPs) is proposed throughout the APE, supplemented by geotechnical soil borings (geo-probes) in areas in which the proposed ground disturbance will reach below depths that STPs are able to document (e.g. 3 to 4 feet). All excavated STPs and Geo-probes will be plotted and recorded using a Global Positioning System (GPS) unit and corresponding Geographic Information System (GIS) mapping.

Shovel test pit (STP) locations will measure 45 centimeters (1.5 feet) in diameter. All STPs will be excavated into culturally sterile subsoil and/or to 3-feet in depth, unless impenetrable rock or modern buried utilities are encountered. Beyond 3-feet in depth, an auger may be utilized to penetrate an additional one to two feet if sterile subsoil is not encountered. All excavated soil/sediment will be screened through ¼-inch wire mesh to facilitate artifact recovery. At each STP, stratigraphic depths, soil texture and inclusions, Munsell colors, and artifact information will be recorded on standardized field forms. All STPs will be backfilled as near to the original ground surface as possible when excavation and data recording is completed.

The manual excavation of up to 30 STPs are planned at 50-foot intervals throughout the APE (Figure 3). Due to existing marked utilities, mature trees/extensive root systems, and/or asphalt-paved

surfaces, STP locations may be off-set to areas within the APE in which excavations can take place. For a positive STP (defined as a test yielding intact soils and cultural deposits), up to an additional four (4) radial STPs at 25-foot intervals will be placed, respectively four (4) in a cruciform pattern around one positive STP. For safety and state compliance, a New York 811 utility mark-out request will be made 4 days prior to fieldwork. Staff will conduct GIS mapping of excavation locations and take photographs.

Background research provided by AKRF's adjacent Phase IA survey indicated that deep, redeposited twentieth-century fill strata may stretch across the landform. Shovel testing within the Phase IB will document stratigraphy and determine the extent of modern disturbance within the upper approximately 3-feet of the soil column.

Because the site contains 20th century fill material of variable thickness, the Phase IB sampling plan proposes using geotechnical soil borings (geo-probes) to sample at depth in order to determine the limits of fill thickness in the project area, and the potential for cultural material beneath the fill. As the weight of the proposed structure could impact cultural resources below, we are proposing geo-probe sampling below the limit of excavation within the footprint of the building. As part of our field exploration, we plan to advance 20 geo-probes to depths between 6 feet and 26 feet locally below existing ground surface (see Figure 3). The borings will be placed at 50-foot and 25-foot intervals, positioned with respect to specified areas of proposed deep impacts. Within the proposed building footprint, borings will extend 10 feet below the limit of excavation or until culturally sterile subsoils are reached. Within proposed utility areas, borings will extend through the proposed limit of excavation. In the building footprint, up to 5 feet of ground disturbance is generally proposed, comprised of a 1-foot thick slab and 4-foot thick pile cap for foundation construction. Therefore, in the northern portion of the building footprint, it is anticipated that borings will penetrate up to 15 feet below ground surface. Along Section 2 of the footprint, it is anticipated borings will penetrate up to 16 feet in depth (see Attachment A). South of the Section 4 line on the plan set within the building footprint, it is anticipated that borings will be excavated up to 20 feet in depth (see Attachment A). Within the area of the proposed sewer utility to the south of the proposed building, excavation for storm and sanitary ranges from 7 feet to 15 feet with the deeper excavation near the tie in points. In this area, borings will penetrate up to 16 feet in depth.

We intend to use drilling equipment consisting of hollow-stem augers (in accordance with ASTM Standard D-6151, and including continuous split spoon sampling every two feet, starting at ground surface and continuing down to the completion depth of the borings. During a geotechnical investigation conducted by CDM Smith in 2021 for structural aspects of the proposed project, the top of glacial till was encountered at depths of between 10 feet and 43.5 feet below existing ground surface. It is NV5's professional opinion that archaeological exploratory borings made to depths of between about 6 feet and 16 feet below existing ground surface will encounter fill materials and possibly marsh and marine deposits. In the event that sterile glacial till soils are encountered shallower than the proposed depth of a given archaeological exploratory boring, the boring can be concluded shallower than originally planned.

The sampling will be performed in accordance with ASTM Standard D-1586, with the only exception that a 3-inch outside diameter split-spoon barrel will be used for collecting samples for archaeological use. After flights are extruded, soils will be described, measured, and visually assessed for archaeological materials. In the event of a stratigraphic change (e.g. color, texture, inclusions), archaeologists may sub-sample the soils by passing them through a ¼-inch wire mesh screen, after all documentation is completed. A geotechnical professional will be on-site for the first day of geo-probe sampling, and as many as 3 days throughout the expected 10-day sampling period, pending availability. After field review and documentation of all samples by the archaeologist, NV5 staff with

expertise in soil geomorphology will classify and describe the encountered soil conditions in accordance with the Unified Soil Classification System and the NYC Building Code. Because borings have already been performed for the design of the foundations being constructed for this project, and unless otherwise directed by DDC, these proposed borings will not include any additional geotechnical laboratory testing.

The geotechnical fieldwork and STP excavations will be conducted concurrently in order to better assist with stratigraphic interpretations. The STPs will be off-set from the borings by 25 feet, and closer in some locations (e.g. the proposed utility corridor), depending on location and proposed impacts (see Figure 3).

Phase II archaeological survey and/or mechanically excavated trenches will not be conducted in conjunction with the Phase IB survey; however, recommendations as to the need for additional efforts, if warranted, will be addressed within the Phase IB reporting.

Significant Archaeological Deposits

If archaeological resources are encountered that the on-site archaeologist determines to be potentially significant, e.g. appearing to meet eligibility criteria for listing on the National Register of Historic Places (NRHP-eligible), the archaeologist will notify all project shareholders, including, but not limited to, DDC, LPC, and DCLA. The Phase IB Archaeological Survey report will provided recommendations as to the need for further archaeological survey, if warranted, based on a thorough analysis of stratigraphy and cultural material.

Artifact Analysis

All artifacts over 50 years of age will be placed in re-sealable polyethylene bags with appropriate excavation provenience information. Non-diagnostic or modern materials will be field counted, noted and discarded. All recovered artifacts will be processed, analyzed, and cataloged by NV5. Artifacts will be described in detail and will be analyzed according to functional group, material, type, and class. An effort will be made to temporally date all recovered diagnostic artifacts. This information will be used to establish context and to determine whether such assemblages represent primary or secondary deposits. All artifact analysis data will be entered into a Microsoft Excel data spreadsheet that will be included in the final Phase IB Archaeological Survey. Artifacts will be transferred to the property owner, upon completion and approval of the final report. A site registration form will be prepared for submission to the OPRHP via CRIS, should an archaeological site be identified during archaeological fieldwork.

Geotechnical Analysis

As part of the geotechnical analysis, sediment and soil stratigraphy interpretations will be synthesized and presented as a section within the Phase IB final report. The section will include an analysis of field collected data, including a discussion and inventory of artifacts recovered, an interpretation of the potential for an occupied surface or surfaces to exist (e.g. buried A-horizon), the presence and depths of sterile subsoil, the relationship between soil stratigraphy and land-use history, and stratigraphic profiles and depths including representative photographic documentation.

Reporting

A report documenting the results of the additional map review, field testing, analyses, and other background and/or documentary research, will be prepared according to LPC standards (LPC 2018). The report will include recommendations for further archaeological efforts if any intact, potentially significant archaeological resources are encountered. Upon approval of a draft report by DDC, a final report will be submitted to LPC. The Phase IB Archaeological Survey report will include: a project description; a description of the research and fieldwork conducted / methodology; complete record of

identified soil stratigraphy and archaeological features (if encountered); an interpretation of geo-probe sampling results; artifact catalog; mapping of test locations and any identified archaeological site(s), if applicable; results of survey; and, as appropriate, recommendations and supporting rationale for additional investigation, if recommended. It is assumed that consultation with the Stockbridge-Munsee Community will continue to be coordinated by DCLA.

DDC will be informally advised of the results by email in the form of a summary letter following the completion of fieldwork and analysis, and before the report is submitted. Upon submittal of the report, sufficient time will be given for review by DDC, DCLA, Tribal Nations, and LPC.

Unanticipated Discoveries Plan (UDP)
In conjunction with this education building project, which is City-funded, an Unanticipated Discovered Plan (UDP) was developed (see Attachment C: Policies, and Attachment D: Allowance For Unanticipated Archeological Discoveries). If discoveries of human remains or other artifacts trigger the UDP, then the UDP's provisions will be followed as described therein. Note that the Unmarked Burial Law described below may also be triggered as provided in the UDP. At any time, if human remains, or potential human remains are encountered and/or recovered, the project will immediately halt excavation, pursuant to the UDP and begin the coordination process with all relevant entities. If intact human remains are found, they may not be disinterred until the consultation process has been completed. The discovery of intact, in situ human remains may require a redesign of portions of the project to ensure the remains are not disturbed.

New York State (NYS) Unmarked Burial Law
The "unmarked burial site protection act" under NY State Senate Bill 2023-S630A, to regulate the discovery of burial grounds, human remains, and funerary objects, was enacted January 5, 2023 (The New York State Senate 2023). If any human remains are discovered during the project, the DDC Senior Construction Project Manager, LPC and the Office of the Chief Medical Examiner (OCME), the NYS Archaeologist, Dr. Christina Rieth, and Tribal Nations will be immediately contacted in accordance with the NYS "Unmarked Burial Site Protection Act," Details and specifications of the protocols can be found in Attachments C and D. The contact information for the aforementioned personnel are as follows:

DDC Senior Construction Project Manager: Charles Lin, Senior Construction Project Manager
Telephone: 917-731-6801
Address: 3030 Thomson Avenue, Long Island City, NY 11101
Email: Linc@ddc.nyc.gov

LPC Contact: Amanda Sutphin, Director of Archaeology
Telephone: 212.602.6353
Address: New York City Landmarks Preservation Commission, 1 Centre Street, 9th Floor, New York, NY 10007
E-mail: asutphin@lpc.nyc.gov

Office of the Chief Medical Examiner (OCME) Contact: Dr. Bradley Adams, Director of Forensic Anthropology
Telephone: Primary: 212.447.2030; Secondary: 718.804.8050
Address: 520 First Avenue, New York, New York 10016
E-mail: badams@ocme.nyc.gov

NYS Archaeologist Contact: Dr. Christina Rieth
Telephone: (518) 402-5975

Address: New York State Museum Cultural Education Center, 222 Madison Avenue, Albany, New York 12230
E-mail: christina.rieth@nysed.gov

Stockbridge-Munsee Community Contact: Jeffrey Bendremer, Tribal Historic Preservation Officer
Telephone: 413-884-6029
Address: 86 Spring Street, Williamstown, MA 01267
E-mail: thpo@mohican-nsn.gov

Delaware Nation Historic Preservation Department: Katelyn Lucas, Tribal Historic Preservation Officer
Telephone: 405-544-8115
Address: Delaware Nation, P.O. Box 825, Anadarko, OK 73005
E-mail: klucas@delawarenation-nsn.gov

4. PROJECT SCHEDULE

There are six (6) tasks associated with the archaeological portion of the proposed project. The following is an estimation of time required to complete these tasks. If the schedule requires adjustment, based on unanticipated field conditions, a new schedule will be prepared and provided for consideration.

TASK 1. Background Research – Duration: 1 days

- Review of the Phase IA Archaeological Documentary Study background research and historic mapping.

TASK 2a: NYC Parks Tree Work Permit is assumed to be required – Duration: 5 days

TASK 2b: Geotechnical soil borings (geo-probes) – Duration: 10 days (to be conducted concurrently with archaeological fieldwork)

- Geotechnical staff will be on-site for day 1 and as many as 3 days thereafter. Archaeological staff will be on-site during all of the geotechnical fieldwork to conduct field documentation under the direction of geotechnical staff and identify any recovered cultural material.

TASK 2c. Archaeological Field Work – Duration: 4 days for 4 archaeological staff (to be conducted concurrently with geotechnical soil borings)

- It is assumed that no more than four (4) radial STPs will be excavated around one positive STP.
- Phase II archaeological survey and/or mechanically excavated trenches will not be conducted in conjunction with the Phase IB survey; however, recommendations as to the need for additional efforts, if warranted, will be addressed within the Phase IB reporting.

TASK 3. Artifact Processing and Analysis – Duration: 7 days

- It is assumed that no more than 900 artifacts will be recovered in the field and retained for analysis.

TASK 4. Prepare Report of Findings – Duration: 20 days

- Included drafting of a summary letter to be submitted to DDC following completion of fieldwork and analysis.
- A section on the geotechnical analysis and reporting, authored by NV5 geotechnical staff.

- It is assumed that consultation with the Stockbridge-Munsee Community and Delaware Nation will be coordinated by DCLA.
- It is assumed that an archaeologist has been retained by DDC Public Buildings for on-call services at the time of construction.

5. PROJECT CONTACTS

DDC
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Long Island City, NY 11101
(917)-731-6801
Email: Linc@ddc.nyc.gov

NV5, Inc.
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800 Lanidex Plaza, Suite 300
Parsippany, NJ 07054
Office: (973) 946-5656 Cell: (609) 815-0699
Email: lauren.lembo@nv5.com

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Amanda Sutphin, Director of Archaeology
City of New York – Landmarks Preservation Commission Municipal Building
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(212) 602-6353
Email: asutphin@lpc.nyc.gov

New York State (NYS) Museum Cultural Education Center
Dr. Christina Rieth, NYS Archaeologist
New York State Museum
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Albany, New York 12230
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City of New York – Police Department
New York City Police Department
110th Precinct 94-41 43rd Avenue
Queens, NY 11373
Phone: (718) 476-9311

City of New York – Office of the Medical Examiner
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OCME
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New York, New York 10016-6499
(212) 447-2760 or (646) 879-7873
Email: badams@ocme.nyc.gov

Funeral Director
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Jurek-Park Slope Funeral Homes, Inc.
728 Fourth Avenue
Brooklyn, New York 11232
Phone: (718) 768-4192
Email: dorisvamen@verizon.net

We appreciate your consultation on this project. Please review this information and if you have any questions, or need additional information, please feel free to contact me at (973) 946-5656 (office); (609) 815-0699 (cell) or Lauren.Lembo@NV5.com.

Sincerely,

Lauren Lembo
Principal Archaeologist
NV5, Inc.

References

AKRF, Inc.
2021 Phase IA Archaeological Documentary Study, Open Air Pavilion and Kids Culture Garden at the Queens Botanicals Garden, 43-50 Main Street (Block 5107, Lot 200), Kissena Park, Flushing, Queens County, New York. Report on file with CRIS.

BKSK Architects LLP
2023 Staging Plan, QBG Educational Building, 43-50 Main Street, Flushing, NY 11355.

City of New York – Landmarks Preservation Commission (LPC)
2018 Guidelines for Archaeological Work in New York City. Report on file with the City of New York – Landmarks Preservation Commission. New York, New York.

ESRI
2022 Aerial Imagery, accessed from ArcMap, GIS.

Isachsen, Y.W., E. Landing, J.M. Lauber, L.V. Richard, and W. B. Rogers
2000 Geology of New York: A Simplified Account. The University of the State of New York, Albany, New York.

Natural Resources Conservation Service (NRCS)
2022 Web Soil Survey. Electronic document accessed October 2023. https://websoilsurvey.sc.egov.usda.gov/App/ WebSoilSurvey.aspx

New York Archaeological Council
1994 Standards for Cultural Resource Investigations and the Curation of Archaeological Collections in New York State. Report on file with the New York State Office of Parks, Recreation and Historic Preservation. Albany, New York.
2000 Cultural Resource Standards Handbook: Guidance for Understanding and Applying the New York Standards for Cultural Resource Investigations. Report on file with the New York State Office of Parks, Recreation and Historic Preservation. Albany, New York.
2002 Guidelines for the Use of Archaeological Monitoring as an Alternative to Other Field Techniques. Report on file with the New York State Office of Parks, Recreation and Historic Preservation. Albany, New York.

Smith, Elijah A.
1841 *The Village of Flushing, Queens County, L.I*. Accessed October 2023, LOC.gov

The New York State Senate
2023 Senate Bill S630A. Digital file, https://legislation.nysenate.gov/pdf/bills/2023/S630A

USGS
2022 The National Map, accessed from ArcMap, GIS.

Williams, Edwin

1833 *The New-York Annual Register*. Peter Hill, New York, NY.

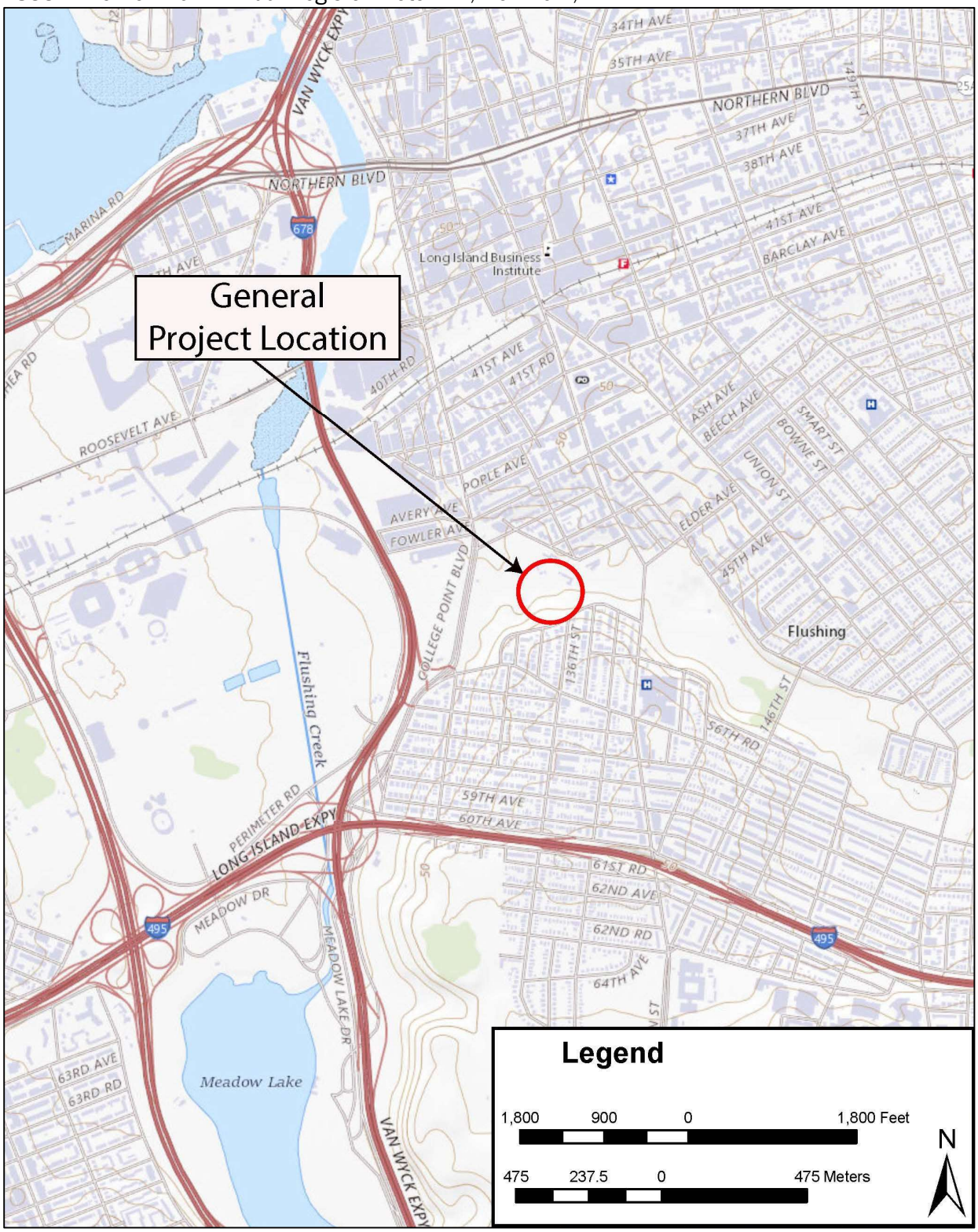


Figure 1. The General Project Location shown on USGS The National Map 2022 (USGS 2022).

Figure 2. Project Location shown on 2022 aerial imagery (ESRI 2022).

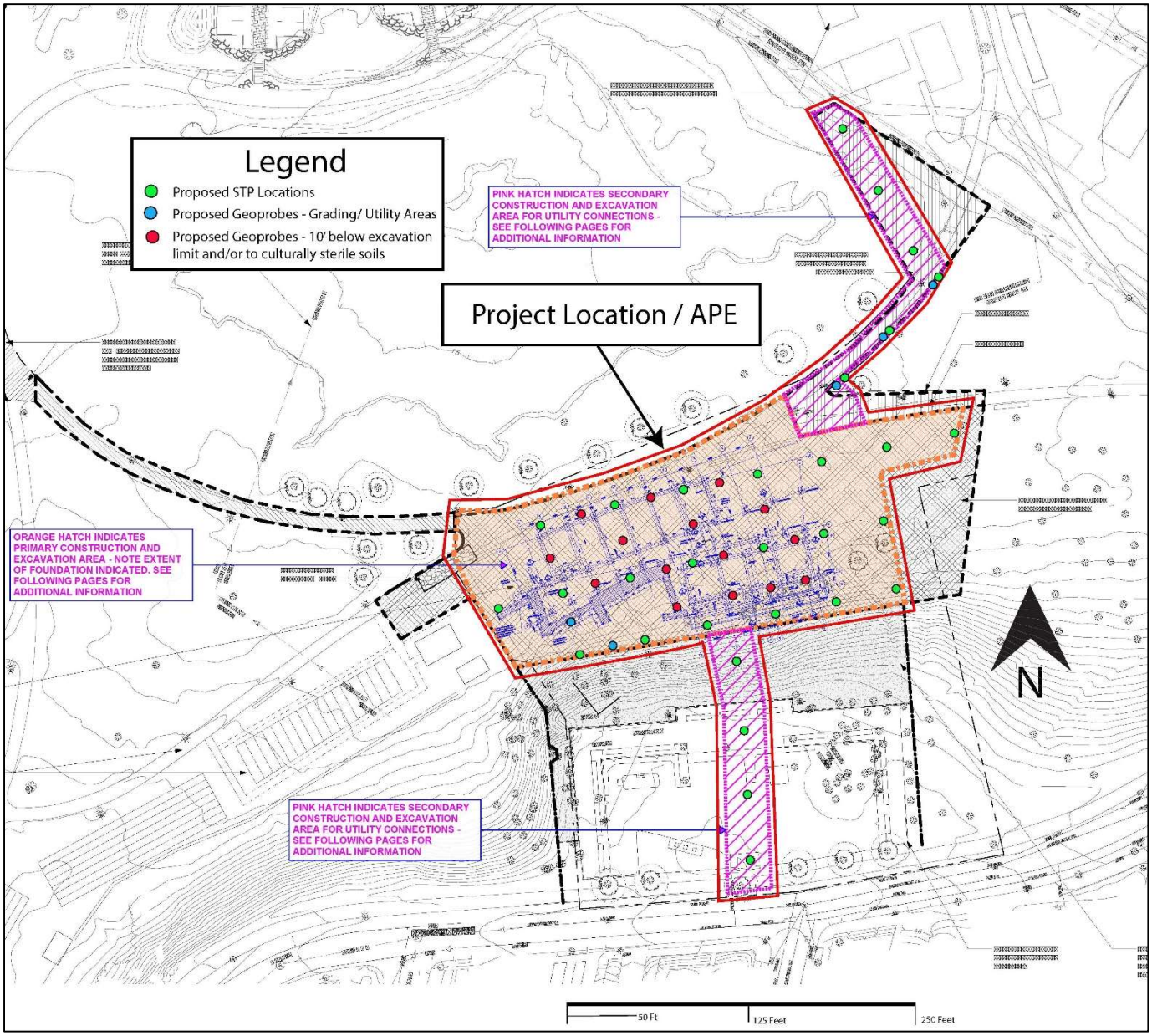


Figure 3. The Project Location / APE shown on a portion of the Staging Plan (BKSK Architects LLP 2023).

Photograph 1. Overview of the project location (NV5, Inc: Elisa Tsang, 10/11/23).

Photograph 2. Overview of the project location (NV5, Inc: Elisa Tsang, 10/11/23).
Note: paved surfaces and evidence of buried utilities.

Attachment A:

Project plans

LEGEND

- HAUL ROAD
- PEDESTRIAN CROSSING THROUGH HAUL ROAD
- CONSTRUCTION AREA CLOSED FOR ENTIRETY OF CONSTRUCTION
- CONSTRUCTION AREA CLOSED TEMPORARILY TO ACCOMMODATE TEMPORARY CONSTRUCTION
- TRUCK WHEEL WASH AREA
- AREA OF TREE REMOVAL AND HILLSIDE MAINTENANCE
- PROJECT LIMIT LINE

REFERENCES	DWG. NO.
- EROSION AND SEDIMENT CONTROL PLANS:	C-103.1 AND C-103.2
- DRAINAGE PLAN:	C-104
- SANITARY SEWER PLAN:	C-106
- UTILITY PLAN:	C-107
- PLANTING PLAN, TREE REMOVAL, PROTECTION AND SLOPE STABILIZATION:	L-702

NOTES

1. CONTRACTOR SHALL REFER TO "CONTRACTOR GUIDELINES AS PER THE ADDENDUM TO GENERAL CONDITIONS" FOR FURTHER INFORMATION AND SITE REQUIREMENTS.

2. CONSTRUCTION SEQUENCING AND MEANS AND METHODS ARE THE RESPONSIBILITY OF THE CONTRACTOR.

3. FOLLOWING AWARD, THE CONTRACTOR SHALL ATTEND A MEETING WITH THE NEW YORK CITY DEPARTMENT OF DESIGN AND CONSTRUCTION (DDC), THE QUEENS BOTANICAL GARDEN (QBG), AND THE DESIGN CONSULTANT TO DISCUSS CAMPUS OPERATIONS AND EVENT SCHEDULE. FOLLOWING THIS MEETING, THE CONTRACTOR MUST SUBMIT A CONSTRUCTION SCHEDULE FOR REVIEW AND APPROVAL BASED ON CRITERIA BUT NOT LIMITED TO THE FOLLOWING:
   - EVENT CALENDAR
   - CAMPUS MAINTENANCE OPERATIONS
   - SEQUENCING OF CONSTRUCTION
   - WEATHER RESTRICTIONS

4. STAGING PLAN IS PROVIDED TO IDENTIFY AVAILABLE AREAS FOR STAGING OF WORK AND FOR TRAILER LOCATIONS. CONTRACTOR IS RESPONSIBLE FOR PROJECT COORDINATION, MEANS AND METHODS, MAINTAINING CONSTRUCTION SCHEDULE AND LOGISITICS OF THE WORK

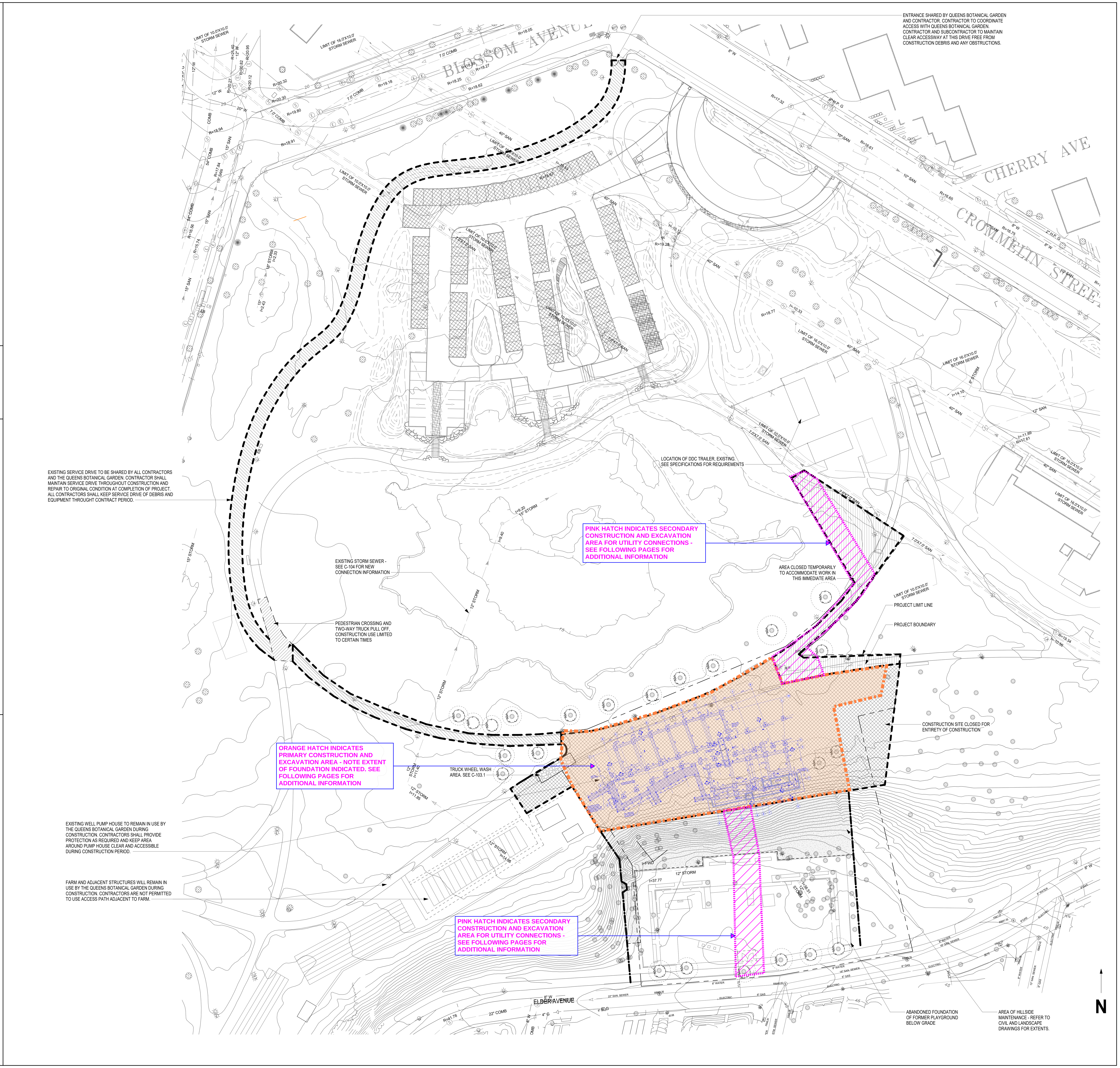
5. THERE IS NO ON SITE PARKING AVAILABLE FOR CONTRACTORS OR SUBCONTRACTORS. STREET PARKING ALONG CROMLIN STREET, DAHLIA AVENUE, BLOSSOM STREET, ELDER AVE AND PECK AVE WILL ALSO NOT BE PERMITTED. ALL CONTRACTORS AND SUBCONTRACTORS ARE RESPONSIBLE FOR PROVIDING OFF STREET PARKING FOR THEIR FORCES OFF SITE.

6. CONTRACTOR SHALL DESIGNATE A STAGING AREA FOR USE IN STAGING WASTE MANAGEMENT ACTIVITIES. CONTRACTOR SHALL DESIGNATE A RECYCLING AREA FOR USE BY ALL CONTRACTORS THROUGHOUT DURATION OF THE PROJECT. WASTE MANAGEMENT AND RECYCLING AREA LOCATIONS SHALL BE REVIEWED AND APPROVED BY DDC SITE ENGINEER AND THE QUEENS BOTANICAL GARDEN

7. CONTRACTOR SHALL KEEP ALL ADJOINING STREETS CLEAR OF CONSTRUCTION DEBRIS, MUD, ETC, AS A RESULT OF CONSTRUCTION ACTIVITY OR CONSTRUCTION VEHICLE ACCESS INTO AND OUT OF THE SITE

8. REFER TO LANDSCAPE DRAWINGS FOR TREE PROTECTION

9. CONSTRUCTION SHALL HAVE AS LITTLE IMPACT AS POSSIBLE ON THE OPERATIONS OF THE QUEENS BOTANICAL GARDEN. ANY INTERRUPTION TO THE GARDEN'S OPERATIONS SHALL BE MINIMAL. ANY INTERRUPTION SHALL BE PLANNED IN ADVANCE WITH THE GARDEN AND COMMISSIONER



NYC DDC
Department of Design and Construction

1	ISSUE FOR BID	04.14.2023
ISSUE/REVISION		**DATE**

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EXTERIOR ENVELOPE CONSULTANT
AJ LABELLE & PARTNERS
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FLUSHING, NY 11355
T: (718) 886 - 3800

SPONSOR AGENCY
NYC Cultural Affairs
NEW YORK CITY DEPARTMENT OF CULTURAL AFFAIRS (DCLA)

BKSK
BKSK ARCHITECTS LLP
230 W 38th St, 16th fl, New York, New York 10018
t: 212.807.9600 www.bksk.com

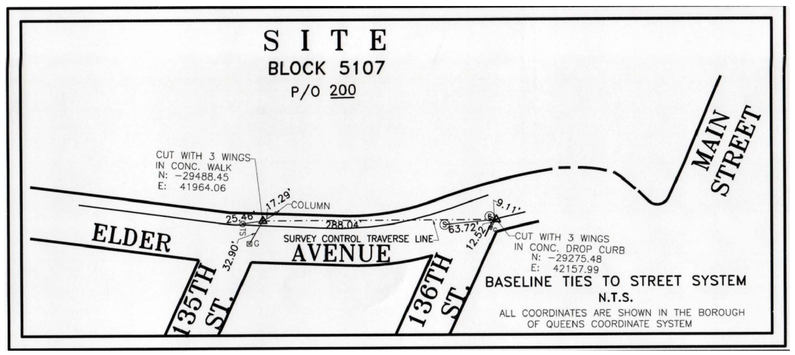
PROJECT NAME
QBG Educational Building
43-50 Main Street
Flushing, NY 11355

DRAWING TITLE
STAGING PLAN

STAMP & SIGNATURE	PROJECT NO.	1831
	DATE:	04/14/23
	SCALE:	1" = 40'-0"

ARCHITECT, AIA

A-111



NOTES:

1. SURVEY CONTROL POINTS OBTAINED FROM SURVEY PREPARED BY MONTROSE SURVEYING CO., LLP, FIELD SURVEY COMPLETED 06/24/2021, LAST REVISION DATED 10/14/2021. ALL ELEVATIONS SHOWN ON THIS SURVEY REFER TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88). TO CONVERT THIS DATUM TO QUEENS HIGHWAY DATUM, SUBTRACT 1.625 FEET FROM EACH ELEVATION.

LEGEND

- LEGAL GRADE
- INTERPOLATED GRADE
- EXISTING ELEVATION
- OFFSETS
- BUILDING
- WALLS
- FENCE
- GUIDE RAIL
- SEWER
- WATER
- GAS
- ELECTRIC
- TELEPHONE/FIRE ALARM/CABLE
- STEAM
- AERIAL UTILITY LINE W/ELEV.
- U.S. PIERHEAD LINE
- U.S. BULKHEAD LINE
- U.S. PIERHEAD & BULKHEAD LINE
- TREE & TRUNK DIAMETER
- DEPRESSED CURB
- TAX LOT NUMBER
- TAX LOT LINE & DIMENSION
- BLOCK LINE
- EASEMENT LINE
- STREET LINE & DIMENSION
- SITE LINE & DIMENSION
- LOT CROSSES LINE
- PAINTED LINE

PARTY WALL / INDEPENDENT WALL

(TREE) (EVERGREEN) (SHRUB)

40.55' T.M.

200.00'

100'

0 30 60
SCALE IN FEET

	ISSUED FOR BID	04.14.2023
ISSUE/REVISION		DATE

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28 W 25th Street New York, New York 10010
t: 212.807.9600 www.bksk.com

PROJECT NAME

QBG Educational Building
43-50 Main Street
Flushing, NY 11355

DRAWING TITLE

PROPOSED GRID LINE PLAN

DOB #Q00673744-I1

STAMP & SIGNATURE

CIVIL ENGINEER

PROJECT NO.	1831
DATE:	04/07/2023
SCALE:	AS SHOWN

C-101.1

QBG Educational Building

BKSK ARCHITECTS

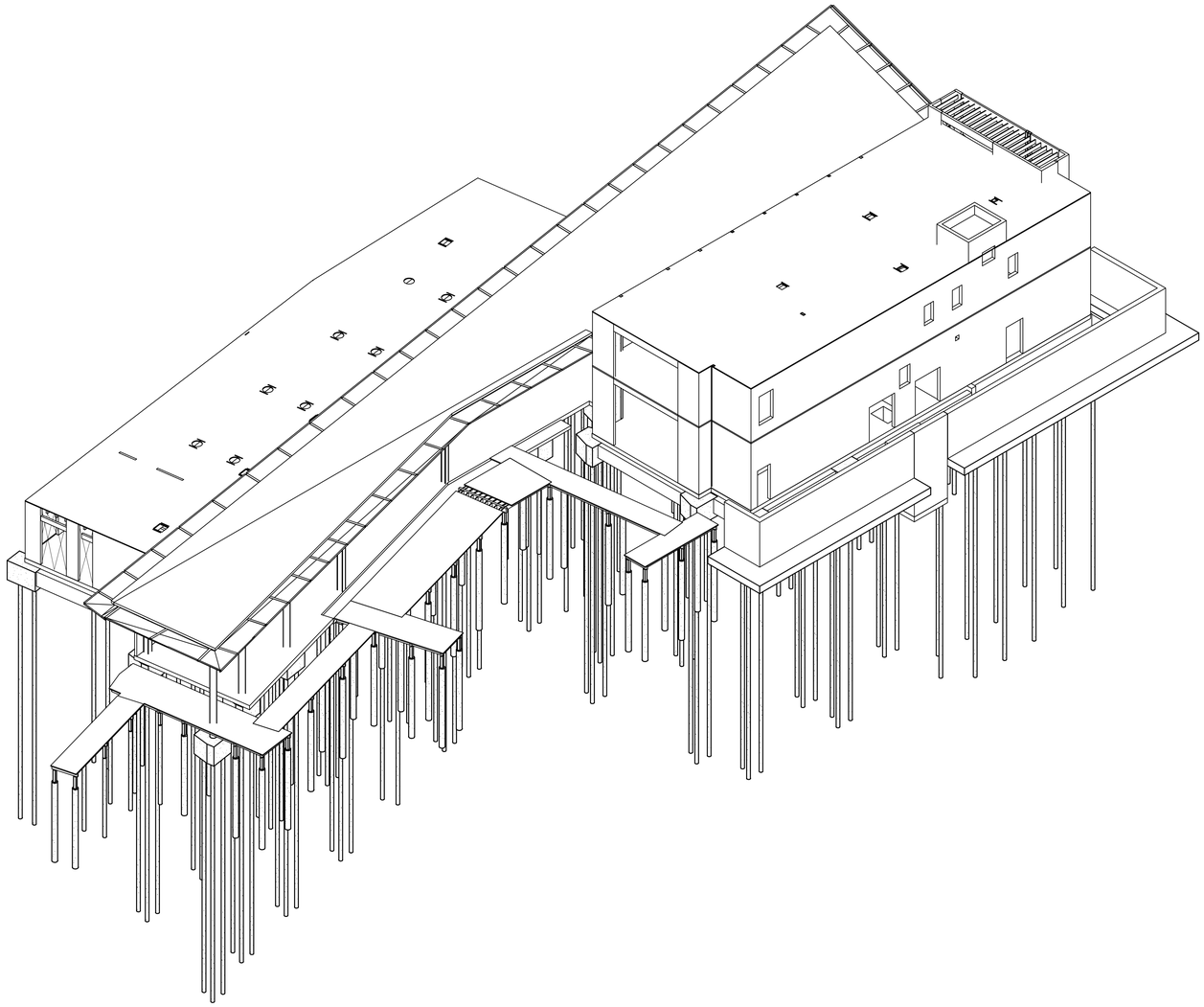
43-50 Main Street
Flushing, NY 11355

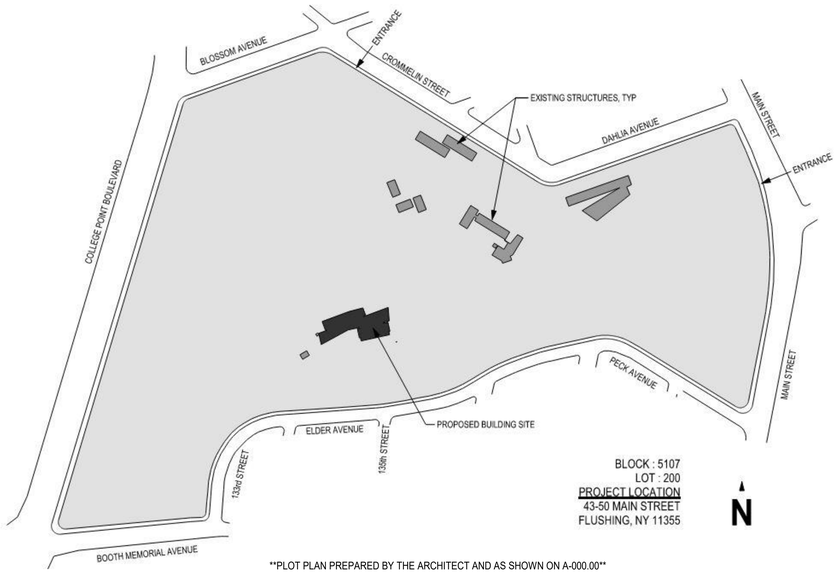
ISSUED FOR BID

04.14.2023

SHEET LIST

SHEET NO	SHEET NAME
S-000	COVER SHEET & SHEET LIST
S-001	GENERAL NOTES
S-002	GENERAL NOTES
S-010	LOADING DIAGRAMS
FO-100	FOUNDATION PLAN
FO-101	FOUNDATION SECTIONS AND DETAILS
FO-102	FOUNDATION SECTIONS AND DETAILS
FO-103	FOUNDATION SECTIONS AND DETAILS
FO-104	TYPICAL FOUNDATION SECTIONS AND DETAILS
FO-105	TYPICAL FOUNDATION SECTIONS AND DETAILS
FO-106	TYPICAL FOUNDATION SECTIONS AND DETAILS
S-101	GROUND FLOOR PLAN
S-102	SECOND FLOOR PLAN
S-103	ROOF FRAMING PLAN
S-104	CORNICE FRAMING PLAN
S-105	SPINE AXON
S-201	ELEVATIONS
S-210	SUPERSTRUCTURE SECTIONS AND DETAILS
S-211	SUPERSTRUCTURE SECTIONS AND DETAILS
S-212	SUPERSTRUCTURE SECTIONS AND DETAILS
S-213	SUPERSTRUCTURE SECTIONS AND DETAILS
S-220	TYPICAL SUPERSTRUCTURE SECTIONS AND DETAILS
S-221	TYPICAL SUPERSTRUCTURE SECTIONS AND DETAILS
S-222	TYPICAL SUPERSTRUCTURE SECTIONS AND DETAILS
S-223	TYPICAL SUPERSTRUCTURE SECTIONS AND DETAILS
S-224	TYPICAL SUPERSTRUCTURE SECTIONS AND DETAILS
S-225	TYPICAL SUPERSTRUCTURE SECTIONS AND DETAILS
S-600	COLUMN AND POST SCHEDULE





PLOT PLAN PREPARED BY THE ARCHITECT AND AS SHOWN ON A-000.00

NYC DDC
Department of Design and Construction

1	ISSUED FOR BID	04.14.2023

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PROJECT NAME
QBG Educational Building
43-50 Main Street
Flushing, NY 11355

DRAWING TITLE
COVER SHEET & SHEET LIST

STAMP & SIGNATURE

ENGINEER, PE

PROJECT NO.	NN19206
DATE:	01.18.2023
SCALE:	3/4" = 1'-0"

S-000.00

GR GENERAL REQUIREMENTS

1. AS USED IN THESE GENERAL NOTES:
   "DRAWINGS" MEANS THE LATEST STRUCTURAL DESIGN DRAWINGS, UON.
   "SPECIFICATIONS" MEANS THE LATEST PROJECT SPECIFICATIONS, UON.
   "CONTRACT DOCUMENTS" IS DEFINED AS THE DESIGN DRAWINGS AND THE SPECIFICATIONS
   "SER" IS DEFINED AS THE STRUCTURAL ENGINEER OF RECORD FOR THE STRUCTURE IN ITS FINAL CONDITION.
   "DESIGN PROFESSIONALS" IS DEFINED AS THE OWNER'S ARCHITECT AND SER.
   "MEP" INCLUDES, BUT IS NOT LIMITED TO MECHANICAL, ELECTRICAL, PLUMBING, FIRE PROTECTION.
   "CONTRACTOR" IS DEFINED TO INCLUDE ANY OF THE FOLLOWING: GENERAL CONTRACTOR AND THEIR SUBCONTRACTORS, CONSTRUCTION MANAGER AND THEIR SUBCONTRACTORS, STRUCTURAL STEEL FABRICATOR OR STRUCTURAL STEEL ERECTOR.
   "BASE BUILDING STRUCTURE" IS DEFINED AS THE STRUCTURAL FRAME DESIGNED BY THORNTON TOMASETTI.
   "STRUCTURE IN ITS FINAL CONDITION" MEANS ALL STRUCTURAL ELEMENTS SHOWN ON THE STRUCTURAL CONTRACT DOCUMENTS ARE INSTALLED AND COMPLETELY CONNECTED AND INSPECTED WITH NO OUTSTANDING NON-COMPLIANCE ISSUES.
   "ENGINEERING SERVICES" MEANS A SCOPE OF WORK THAT MEETS PERFORMANCE CRITERIA ESTABLISHED IN THE CONTRACT DOCUMENTS AND IS TO BE COMPLETED BY THE CONTRACTOR'S LICENSED ENGINEER.
2. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATION OF THE STRUCTURAL WORK WITH THE ARCHITECTURAL, CIVIL, MEP CONTRACT DOCUMENTS, AS WELL AS ANY OTHER APPLICABLE TRADES.
3. THE CONTRACTOR IS RESPONSIBLE FOR THE STABILITY OF THE STRUCTURE UNTIL THE CONSTRUCTION OF THE STRUCTURE REACHES ITS FINAL CONDITION.
4. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR THE DESIGN, INSTALLATION, AND REMOVAL OF TEMPORARY BRACING AND CONSTRUCTION SUPPORTS, FOR NEW AND EXISTING STRUCTURES, AS NECESSARY TO COMPLETE THE PROJECT. NO PORTION OF THE PROJECT WHILE UNDER CONSTRUCTION IS INTENDED TO BE STABLE IN THE ABSENCE OF THE CONTRACTOR'S TEMPORARY SUPPORTS AND BRACES. CONTRACTOR SHALL RETAIN A PROFESSIONAL ENGINEER LICENSED IN THE STATE WHERE THE PROJECT IS LOCATED TO DESIGN TEMPORARY BRACING AND CONSTRUCTION SUPPORTS.
5. THE SPECIFICATIONS ARE AN INTEGRAL PART OF THE CONTRACT DOCUMENTS AND SHALL BE USED IN CONJUNCTION WITH THE STRUCTURAL DRAWINGS.
6. THE CONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS AND CONDITIONS AND COORDINATE WITH THE STRUCTURAL DRAWINGS, ARCHITECTURAL DRAWINGS, DRAWINGS FROM OTHER CONSULTANTS, PROJECT SHOP DRAWINGS AND FIELD CONDITIONS.
7. IN CASES OF CONFLICT BETWEEN DRAWINGS AND/OR SPECIFICATIONS AND OTHER DISCIPLINES OR EXISTING CONDITIONS, CONTRACTOR SHALL NOTIFY THE DESIGN PROFESSIONALS AND OBTAIN CLARIFICATION PRIOR TO BIDDING AND PROCEEDING WITH WORK.
8. APPLY DETAILS, SECTIONS, AND NOTES ON THE DRAWINGS WHERE CONDITIONS ARE SIMILAR TO THOSE INDICATED BY DETAIL, DETAIL TITLE OR NOTE.
9. ONLY USE DIMENSIONS INDICATED ON THE DRAWINGS. DO NOT SCALE DRAWINGS.
10. ASSUME EQUAL SPACING BETWEEN ESTABLISHED DIMENSIONS, IF NOT INDICATED ON DRAWINGS.
11. GRID LINES COINCIDE WITH THE CENTER OF COLUMNS AND WOOD SHEAR WALLS, WHERE COLUMNS TAKE PRIORITY, UON. PILE CAPS COINCIDE WITH THE CENTERLINE OF COLUMNS. GRADE BEAMS COINCIDE WITH THE CENTERLINE OF WOOD SHEAR WALLS.
12. CENTERLINES OF FRAMING MEMBERS COINCIDE WITH COLUMN CENTERLINES, UON.
13. THE CONTRACTOR SHALL PROTECT EXISTING FACILITIES, STRUCTURES AND UTILITIES FROM DAMAGE.
14. THE CONTRACTOR SHALL VERIFY THAT CONSTRUCTION LOADS DO NOT EXCEED THE CAPACITY OF THE STRUCTURE AT THE TIME THE LOAD IS APPLIED.
15. THE CONTRACTOR SHALL VERIFY ALL OPENING SIZES AND LOCATIONS WITH OTHER DISCIPLINES. THE DRAWINGS DO NOT SHOW ALL OPENINGS REQUIRED. ADDITIONAL OPENINGS, BLOCKOUTS AND SLEEVES MAY BE REQUIRED BY OTHER DISCIPLINES AND SHALL BE CONSTRUCTED USING THE TYPICAL DETAILS AND/OR THE CRITERIA INDICATED ON THE DRAWINGS. OPENINGS REQUIRED BUT NOT SHOWN ON THE STRUCTURAL DRAWINGS MUST BE APPROVED BY THE SER.
16. ELEVATIONS INDICATED ON STRUCTURAL DRAWINGS ARE BASED ON A PROJECT DATUM INDICATED ON THE ARCHITECTURAL DRAWINGS. [0'-0" = +20'-00"] PER NAVD88.

FN FOUNDATIONS

1. THE FOUNDATION DESIGN IS BASED ON THE GEOTECHNICAL REPORT BY THORNTON TOMASETTI DATED APRIL 7TH, 2021.
2. FOUNDATIONS HAVE BEEN DESIGNED BASED ON DRILLED MICROPILES WITH THE FOLLOWING DESIGN VALUES FROM THE GEOTECHNICAL REPORT:

ALLOWABLE COMPRESSIVE CAPACITY:	60 TONS
ALLOWABLE UPLIFT CAPACITY:	10 TONS
ALLOWABLE LATERAL CAPACITY:	5 TONS

   SEE GEOTECHNICAL REPORT FOR ADDITIONAL REQUIREMENTS AND INFORMATION. DESIGN VALUES SHALL BE FIELD VERIFIED BY QUALIFIED GEOTECHNICAL ENGINEER RETAINED BY THE OWNER.
3. MICROPILES CONSIST OF AN OPEN-ENDED STEEL PIPE (CASING) DRILLED TO THE PROPOSED PILE TOE ELEVATION. STEEL CASING OUTSIDE DIAMETERS TO BE 7.625 IN. AND A THICKNESS OF 0.5 IN. THE STEEL CASING AND REINFORCING BAR SHOULD HAVE A MINIMUM YIELD STRENGTH OF 50 KSI. MICROPILE REINFORCING TO CONSIST OF 1 #11 REINFORCEMENT BAR. PRESSURE GROUTING IS REQUIRED, WITH MINIMUM GROUT COMPRESSIVE STRENGTH OF 4000 PSI AND A RECOMMENDED PRESSURE OF ABOUT 100 PSI AT THE TOP OF THE PILE CASING.
4. BASED ON THE SOIL PROPERTIES, IT IS ANTICIPATED THAT A SKIN FRICTION OF 3 KSF CAN BE ACHIEVED. THIS CORRESPONDS TO A 20 FT. MINIMUM EMBEDMENT INTO THE UNDERLYING SANDS. THE OVERALL PILE LENGTH FROM GRADE WOULD BE ABOUT 50-FT. THE BOND LENGTH IS ESTIMATED AND SHOULD BE ADJUSTED BASED ON THE RESULTS OF THE PILE LOAD TESTS PERFORMED PRIOR TO THE INSTALLATION OF PRODUCTION PILES.
5. EXTERIOR RETAINING WALL FOOTINGS ARE DESIGNED TO BEAR ON FILL WITH AN ALLOWABLE BEARING PRESSURE OF 2-KSF.
6. FOUNDATIONS FOR EXTERIOR BOARDWALK CONSISTS OF 20-TON TIMBER PILES WITH A 12" BUTT DIMENSIONS AND 8" TIP. PILE LENGTH TO BE 40-FT. SEE SPECIFICATIONS FOR ADDITIONAL INFORMATION.
7. THE CONTRACTOR SHALL VERIFY FOUNDATION INSTALLATION AND CONSTRUCTION IS IN CONFORMANCE WITH THE RECOMMENDATIONS OUTLINED IN THE GEOTECHNICAL REPORT.
8. CONTRACTOR SHALL BE RESPONSIBLE TO ADEQUATELY PROTECT ALL EXCAVATION. WHERE NECESSARY, SHEET AND SHORE THE EXCAVATION WITH ALL REQUIRED TIEBACKS AND BRACING AS DETERMINED BY CONTRACTOR'S ENGINEER.
9. PROVIDE BRACING FOR ALL BASEMENT FOUNDATION WALLS PRIOR TO BACKFILLING. THIS BRACING SHALL REMAIN IN PLACE UNTIL ALL SLABS AND BEAMS FRAMING INTO WALL HAVE BEEN PLACED AND HAVE ATTAINED 100% OF THEIR DESIGN STRENGTH.
10. DO NOT BACKFILL AGAINST CANTILEVER RETAINING WALLS UNTIL THE CONCRETE HAS ATTAINED 100% OF ITS DESIGN STRENGTH. BACKFILL SHOULD BE DONE EVENLY ON BOTH SIDES OF THE RETAINING WALL.

CD CODES AND DESIGN CRITERIA

1. PERFORM ALL CONSTRUCTION IN CONFORMANCE WITH THE BUILDING AND DESIGN CODES REFERENCED WITHIN THESE DOCUMENTS. THE PROJECT DOCUMENTS REFER TO THE FOLLOWING CODES AND STANDARDS, UON:

   NYC BUILDING CODE, 2014 EDITION

   STRUCTURAL CONCRETE:
   "BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE"
   THE AMERICAN CONCRETE INSTITUTE (ACI 318-11)

   STRUCTURAL STEEL:
   "SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS", (AISC 360 14TH EDITION) CONFORMING TO THE PROVISIONS OF LOAD RESISTANCE FACTOR DESIGN,
   BY THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC-LRFD)

2. LIVE LOADS:

LOBBY	100	PSF
CORRIDORS	100	PSF
CLASSROOMS	40	PSF
ROOFS	30	PSF [UNREDUCED]

3. SUPERIMPOSED DEAD LOADS:

FINISHES - FLOOR	10	PSF
FINISHES - CEILING	10	PSF
HANGING MEP	5	PSF
ROOF FILL AND FINISH	50	PSF

4. RISK CATEGORY — II
5. SNOW LOADS:

FLAT ROOF SNOW LOAD (Pf):	21 PSF
GROUND SNOW LOAD (Pg)	25 PSF
SNOW EXPOSURE FACTOR (Ce):	1
SNOW LOAD IMPORTANCE FACTOR (Is):	1
THERMAL FACTOR (Ct):	1.0 FOR ROOFS 1.2 FOR CANOPIES

   SNOW DRIFTING PER CODE

6. WIND LOAD DESIGN DATA:

MAIN WIND FORCE RESISTING SYSTEM	
BASIC WIND SPEED, V	98 MPH
EXPOSURE	B
WIND IMPORTANCE FACTOR (Iw)	1.0
INTERNAL PRESSURE COEFFICIENT	± 0.18
COMPONENT & CLADDING PRESSURES	30 PSF

7. SEISMIC LOAD DESIGN DATA:

SEISMIC IMPORTANCE FACTOR (I_E)	1.0
S_s	0.281 g
S_1	0.073 g
S_{DS}	0.294 g
S_{D1}	0.117 g
SITE CLASS	D
SEISMIC DESIGN CATEGORY	B
LATERAL SYSTEM DESCRIPTION	
1 STORY CLASSROOMS (NORTH)	LIGHT-FRAME (WOOD) SHEAR WALLS R = 6.5
CENTRAL SPINE	INTERMEDIATE STEEL MOMENT FRAMES R =4.5
2-STORY OFFICES (SOUTH)	INTERMEDIATE REINFORCED MASONRY SHEAR WALLS R = 4
	LIGHT-FRAME (WOOD) SHEAR WALLS R = 6.5
	INTERMEDIATE STEEL MOMENT FRAMES R =4.5
SEISMIC RESPONSE COEFFICIENT (Cs)	0.08
RESPONSE MODIFICATION FACTOR (R)	SMALLEST OF THE DIFFERENT SYSTEMS USED
ANALYSIS PROCEDURE DESCRIPTION	EQUIVALENT LATERAL FORCE
DESIGN BASE SHEAR	72 KIPS (SEISMIC)

7. IN CASES WHERE THE CONTRACTOR DETERMINES THAT SUSPENDED OR FLOOR MOUNTED EQUIPMENT LOADS EXIST WHICH EXCEED DESIGN LOADS INDICATED ON CONTRACT DOCUMENTS, CONTRACTOR SHALL SUBMIT LOAD DATA TO DESIGN PROFESSIONALS FOR REVIEW PRIOR TO PROCEEDING WITH WORK.
8. DISTRIBUTE THE MAXIMUM LOAD HUNG FROM ANY STRUCTURAL MEMBER FOR DUCTWORK, PIPING ETC OVER THE MEMBER'S TRIBUTARY AREA IN A WAY THAT THE MEP DESIGN SUPERIMPOSED DEAD LOADS LISTED IN CONTRACT DOCUMENTS ARE NOT EXCEEDED. THE CONTRACTOR SHALL COORDINATE THE LOADS OF ALL TRADES AND PROVIDE ADDITIONAL SUPPORT OR DISTRIBUTION FRAMING AS REQUIRED TO ACHIEVE THE ALLOWABLE LOAD DISTRIBUTION.
9. STRUCTURAL COMPONENTS ARE NOT DESIGNED FOR VIBRATING EQUIPMENT. MOUNT VIBRATING EQUIPMENT ON VIBRATION ISOLATORS.
10. CONNECTIONS OF SYSTEMS DESIGNED BY CONTRACTOR'S ENGINEER SUCH AS, BUT NOT LIMITED TO, CLADDING, STAIRS, ELEVATORS, ESCALATORS, PRECAST, AND MEP LOADS ARE ASSUMED TO IMPOSE VERTICAL AND/OR HORIZONTAL LOADS ON THE BASE BUILDING STRUCTURAL MEMBERS WITHOUT GENERATING TORSION IN THE SUPPORTING STRUCTURAL MEMBERS. CONTRACTOR IS RESPONSIBLE FOR FURNISHING AND INSTALLING ALL SUPPLEMENTARY BRACING MEMBERS AS REQUIRED TO PREVENT TORSION ON THE BASE BUILDING STRUCTURE.
11. FOR FIRE RATING AND FIREPROOFING ASSEMBLY EVALUATIONS, CONSIDER THE FOLLOWING ASSEMBLIES RESTRAINED: COMPOSITE WIDE-FLANGE STEEL FRAMING, INTERIOR BAYS OF CONTINUOUS CAST-IN-PLACE CONCRETE CONSTRUCTION. CONSIDER ALL OTHER ASSEMBLIES UNRESTRAINED.
12. THERE HAVE BEEN NO LOAD RESTRICTION FACTORS APPLIED TO THE STRUCTURAL DESIGN FOR THE PURPOSES OF SELECTING FIREPROOFING ASSEMBLIES.

RE CONCRETE REINFORCEMENT

1. ALL CONCRETE SHALL INCLUDE REINFORCEMENT. IF REINFORCEMENT IS NOT SPECIFICALLY INDICATED ON THE DRAWINGS VERIFY WITH THE SER.
2. REINFORCEMENT SHALL CONFORM TO THE FOLLOWING STANDARDS AND MATERIAL PROPERTIES UON:

DEFORMED BARS:	ASTM A615 GRADE 60
WELDABLE DEFORMED BARS:	ASTM A706
EPOXY COATED DEFORMED BARS:	ASTM A615 / A775
WELDED WIRE REINFORCEMENT	ASTM A1064
EPOXY COATED WELDED WIRE REINFORCEMENT	ASTM A1064 / A884

3. DETAIL REINFORCEMENT BASED ON THE PROJECT REQUIREMENTS, ACI-318 AND ACI-315, UON.
4. WHERE A 90-DEG, 135 –DEG OR 180-DEG HOOK IS GRAPHICALLY INDICATED, PROVIDE CORRESPONDING ACI STANDARD HOOKS UON.
5. DOWELS SHALL MATCH SIZE AND SPACING OF MAIN REINFORCEMENT UON.
6. REINFORCEMENT SHALL HAVE CONCRETE PROTECTION (CLEAR COVER) PER ACI 318 UNLESS OTHERWISE INDICATED ON THE DRAWINGS.
7. LAP REINFORCEMENT ONLY AT LOCATIONS AS SPECIFICALLY DETAILED ON THE DRAWINGS EXCEPT REINFORCEMENT MARKED AS CONTINUOUS CAN BE SPLICED AT LOCATIONS DETERMINED BY CONTRACTOR USING TENSION LAP SPLICES (LTS). SEE LAP SPLICE AND EMBEDMENT SCHEDULE.
8. UNLESS OTHERWISE NOTED ALL LAP SPLICES ARE TO BE TENSION LAP SPLICES PER LAP SPLICE AND EMBEDMENT SCHEDULE.
9. LAP WELDED WIRE REINFORCEMENT TWO PANEL SPACINGS, UON.

MINIMUM DEVELOPMENT (EMBEDMENT) LENGTH, ld		
BAR SIZE	TOP BARS	OTHER THAN TOP BARS
#4	25"	19"
#5	31"	24"
#6	37"	28"
#7	54"	42"
#8	62"	47"
#9	70"	54"
#10	78"	60"
#11	87"	67"

MINIMUM LAP SPLICE LENGTH		
BAR SIZE	TOP BARS	OTHER THAN TOP BARS
#4	33"	25"
#5	41"	31"
#6	49"	37"
#7	71"	54"
#8	81"	62"
#9	91"	70"
#10	102"	78"
#11	114"	87"

10. ALL REINFORCING BARS SHALL BE ACCURATELY PLACED AND SECURELY WIRED TO PREVENT DISLOCATION FROM PROPER POSITION.

CONCRETE PROTECTION FOR REINFORCEMENT	
CONDITION	MINIMUM COVER
CONCRETE CAST AGAINST PERMANENTLY EXPOSED EARTH	3"
CONCRETE EXPOSED TO EARTH AND WEATHER	1 1/2" FOR #5 AND SMALLER BARS 2" FOR #6 THRU #14 BARS
CONCRETE NOT EXPOSED TO EARTH AND WEATHER	3/4" FOR SLAB AND WALL 1 1/2" FOR BEAM AND COLUMN PRIMARY REINF, TIES, STIRRUPS, AND SPIRALS

CM CONCRETE MATERIALS

1. CONCRETE STRENGTH SHALL MEET THE FOLLOWING 28-DAY COMPRESSIVE STRENGTHS (f' c), UON:

NON-SHRINK GROUT	8,000 PSI
CONCRETE MAT, GRADE BEAMS	6,000 PSI NORMALWEIGHT
CONCRETE PILE CAPS, RETAINING WALLS	4,000 PSI NORMALWEIGHT
CONCRETE TOPPING SLAB	4,000 PSI LIGHTWEIGHT
CONCRETE CURBS	4,000 PSI NORMALWEIGHT

2. PROVIDE NORMALWEIGHT CONCRETE WITH CURED DENSITY OF 145 +/- 5 PCF, AND AGGREGATE CONFORMING TO ASTM C33, UON. WHERE INDICATED, PROVIDE LIGHTWEIGHT CONCRETE WITH CURED DENSITY OF 112+/-3 PCF AND AGGREGATE CONFORMING TO ASTM C330.
3. THE USE OF CALCIUM CHLORIDE AND OTHER CHLORIDE CONTAINING AGENTS IS PROHIBITED. THE USE OF RECYCLED CONCRETE IS PROHIBITED. PLACEMENT WITHIN AND CONTACT BETWEEN ALUMINUM ITEMS, INCLUDING ALUMINUM CONDUIT, AND CONCRETE IS PROHIBITED.
4. ALL CAST-IN-PLACE CONCRETE WILL EXPERIENCE DIFFERING VARIATIONS OF CRACKING. ANY ELEMENT EXPOSED TO DIRECT WEATHER AND/OR TEMPERATURE VARIATIONS DURING CONSTRUCTION OR IN THE FINAL CONDITION IS TO BE TREATED AND REGULARLY MAINTAINED TO PREVENT PROPAGATION OF CRACKS AND WATER PENETRATION. THE CONTRACTOR SHALL DEVELOP A REGULAR MAINTENANCE PROGRAM AND SUBMIT IT TO THE OWNER.

SS STRUCTURAL STEEL

1. STEEL MATERIALS SHALL CONFORM TO THE FOLLOWING MINIMUM REQUIREMENTS UNLESS OTHERWISE NOTED ON THE CONTRACT DOCUMENTS:

ROLLED SHAPES AND CHANNELS:	ASTM A572 OR A992, MIN YIELD STRENGTH 50 KSI
MISCELLANEOUS ANGLES:	ASTM A36
HOLLOW STRUCTURAL SECTIONS: FOR RECTANGULAR HSS	ASTM A500 GRADE B, MIN YIELD STRENGTH 42 KSI FOR ROUND AND 46 KSI

2. CONNECTION MATERIAL SHALL CONFORM TO THE FOLLOWING MINIMUM REQUIREMENTS OR AS NEEDED FOR CONNECTION DESIGN:

ANGLES:	ASTM A36
WTs:	ASTM A992
PLATES:	ASTM A36, MIN YIELD STRENGTH 36 KSI OR ASTM A572 OR A529, MINIMUM YIELD STRENGTH 50 KSI
BOLTS:	ASTM A325 OR A490
NUTS:	ASTM A563
WASHERS:	ASTM F436
ANCHOR RODS:	ASTM F1554 GRADE 55 WITH WELDABILITY SUPPLEMENT S1
HEADED STUDS	ASTM A 108, GRADE 1010 THROUGH 1020 HEADED STUD TYPE, COLD-FINISHED CARBON STEEL, AWS D1.1, TYPE B. 3/4" DIAMETER UON
WELD ELECTRODES:	E70XX

3. WHERE NO CAMBER IS INDICATED, FABRICATE BEAMS SO THAT ANY NATURAL CAMBER IS UPWARD AFTER ERECTION.
4. SPLICES SHALL BE ALLOWED ONLY AT LOCATIONS SPECIFICALLY INDICATED ON THE STRUCTURAL DRAWINGS UNLESS APPROVED OTHERWISE BY THE SER IN WRITING.
5. FOR STEEL MEMBERS AND EMBEDMENTS EXPOSED TO WEATHER, PROVIDE HOT-DIPPED GALVANIZED FINISH OR APPROVED ZINC RICH EXTERIOR COATING SYSTEM.
6. PROVIDE HOLES IN ALL STEEL AS REQUIRED TO PREVENT ANY ACCUMULATION OF WATER. ALL PENETRATIONS THROUGH MAIN MEMBERS SHALL NOT EXCEED 1 1/8" DIA. AND SHALL BE GROUND SMOOTH. THESE DRAINS MUST BE KEPT CLEAN AND OPEN.
7. SHOW ALL COPES, HOLES, OPENINGS AND MODIFICATIONS REQUIRED IN STRUCTURAL STEEL MEMBERS FOR ERECTION OR THE WORK OF OTHER TRADES ON THE SHOP DRAWINGS FOR APPROVAL BY THE DESIGN PROFESSIONALS.
8. FIELD MODIFICATION OF STRUCTURAL STEEL IS PROHIBITED WITHOUT PRIOR WRITTEN APPROVAL OF THE DESIGN PROFESSIONALS.
9. REFER TO SPECIFICATION SECTION 051200 FOR ADDITIONAL STRUCTURAL STEEL REQUIREMENTS.

NYC DDC
Department of Design and Construction

1	ISSUED FOR BID	04.14.2023
ISSUE/REVISION		DATE

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PROJECT NAME
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Flushing, NY 11355

DRAWING TITLE
GENERAL NOTES

STAMP & SIGNATURE
ENGINEER, PE

PROJECT NO.	NN19206
DATE:	01.18.2023
SCALE:	12" = 1'-0"

S-001.00

DK STEEL COMPOSITE DECK AND FORM DECK

1. COMPOSITE DECK AND FORM DECK SHALL CONFORM TO THE FOLLOWING STANDARDS AND MATERIAL PROPERTIES:

   ASTM A653-HOT-DIPPED GALVANIZED CONFORMING TO ASTM A924 G60,
   OR ASTM A1008, GRADE C WITH PHOSPHATE TREATED AND BAKED ON RUST-INHIBITIVE PAINT

   FABRICATE STEEL DECK UNITS AND ACCESSORIES FROM STEEL SHEET CONFORMING TO ASTM A653
   STRUCTURAL QUALITY GRADE 33, WITH A MINIMUM YIELD STRENGTH OF 33 KSI.

2. FASTEN COMPOSITE FLOOR DECK UNITS AS FOLLOWS:
   A. TO THE STEEL FRAMEWORK AT ENDS OF UNITS AND AT ALL INTERMEDIATE SUPPORTS: BY PUDDLE WELDS NOT LESS THAN 3/4 INCH DIAMETER SPACED AT 12 INCHES ON CENTER MAXIMUM, UON. WHERE PRESENT, A HEADED STUD CAN REPLACE A PUDDLE WELD.

   B. AT SIDE LAPS OF ADJACENT UNITS BETWEEN SUPPORTS AT INTERVALS NOT EXCEEDING 24 INCHES ON CENTER UON.

3. COMPOSITE FLOOR DECK HANGER TABS LOADS SHALL NOT EXCEED 60 LBS PER HANGER TAB. IN ADDITION LOADS ON HANGERS SHALL BE DISTRIBUTED IN SUCH A MANNER THAT THE TRIBUTARY LOADS FOR EACH HANGER SHALL NOT EXCEED 5 POUNDS PER SQUARE FOOT.

4. DISTRIBUTE STEEL STUDS UNIFORMLY OVER BEAM SPAN UNLESS OTHERWISE NOTED ON DRAWINGS. MAXIMUM SPACING OF 3/4 INCH HEADED STUDS SHALL NOT EXCEED 12" ON CENTER (ONE STUD PER FOOT) UNLESS OTHERWISE NOTED ON PLAN.

5. HEADED SHEAR STUDS SHALL EXTEND A MINIMUM OF 1 ½ INCHES ABOVE THE TOP OF STEEL DECK WITH A MINIMUM CLEAR COVER OF ½ INCH FROM THE TOP OF SLAB.

6. STEEL COMPOSITE DECKS ARE TO BE POURED-TO-THICKNESS OR AS INDICATED ON THE DRAWINGS.

7. DESIGN AND DETAIL COMPOSITE DECK TO SUPPORT SCHEDULED DESIGN LOADS, WORKING AS A PART OF COMPOSITE SLAB.

8. DESIGN AND DETAIL STEEL COMPOSITE DECK, FORM DECK, DECK ENCLOSURES, AND DECK ACCESSORIES FOR CONSTRUCTION LOADS. IN DETERMINING CONSTRUCTION LOADING OF FRESH CONCRETE, ACCOUNT FOR RELEVANT FACTORS, INCLUDING BUT NOT LIMITED TO THE FOLLOWING:

   A. THE PLANNED CONCRETE PLACEMENT METHODS
   B. ADDITIONAL 5 PSF CONCRETE WEIGHT DUE TO DECK DEFLECTION
   C. WHERE DECKS ARE POURED TO LEVEL ADDITIONAL CONCRETE WEIGHT DUE TO CUMULATIVE DEFLECTION OF INDIVIDUAL BEAMS AND GIRDERS EQUAL TO DIAGONAL BAY DIMENSION BETWEEN COLUMNS DIVIDED BY 360 LESS ANY INDICATED CAMBER.

PA POST-INSTALLED ANCHORS

1. ADHESIVE ANCHOR SYSTEMS USED FOR DESIGN:

   SEISMIC DESIGN CATEGORY A - F

   ADHESIVE: HILTI HIT-HY 200

   THREADED ROD: HILTI HAS OR
   THREADED ROD: HILTI HIT-Z

   OVERHEAD AND/OR CONSTANT TENSION ADHESIVE ANCHOR INSTALLATIONS NOT SHOWN ON THE DRAWINGS SHALL NOT BE PERMITTED UNLESS EACH CONDITION IS REVIEWED AND APPROVED IN WRITING BY THE SER.

2. PROOF TESTING OF ADHESIVE ANCHORS SHALL BE PERFORMED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS. UNLESS NOTED OTHERWISE, ADHESIVE ANCHOR PROOF TENSION LOADS SHALL BE PER THE ADHESIVE ANCHOR PROOF SCHEDULES.

3. FIELD DRILLED EXPANSION ANCHOR SYSTEMS USED FOR DESIGN:

   SEISMIC DESIGN CATEGORY A - F
   HILTI KWIK BOLT TZ
   SEISMIC DESIGN CATEGORY A - B AT LOCATIONS SPECIFICALLY NOTED IN DETAILS ONLY
   HILTI KWIK BOLT 3

4. PROOF TESTING OF EXPANSION ANCHORS SHALL BE PERFORMED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS. UNLESS NOTED OTHERWISE, EXPANSION ANCHOR PROOF TORQUE LOADS SHALL BE PER THE EXPANSION ANCHOR PROOF SCHEDULES.

5. FIELD DRILLED THREADED SCREW ANCHOR SYSTEMS USED FOR DESIGN:

   HILTI KH-EZ

6. ALTERNATIVE SYSTEM EQUIVALENT TO OR EXCEEDING THE PROPERTIES OF THE SYSTEMS ABOVE WILL BE CONSIDERED AS A SUBSTITUTION REQUEST. SEE PROJECT SPECIFICATIONS.

7. ANCHORS ARE TO BE MINIMUM 3/4" DIAMETER WITH A MINIMUM EMBEDMENT OF 6", UON.

8. INSTALL ANCHORS TO MEET THE REQUIREMENTS INDICATED IN THE CONTRACT DOCUMENTS AND THE CURRENT MANUFACTURER'S PUBLISHED INSTALLATION INSTRUCTIONS (MPII).

9. LOCATE, BY NON-DESTRUCTIVE MEANS, AND AVOID ALL EXISTING REINFORCEMENT PRIOR TO INSTALLATION OF ANCHORS. IF EXISTING REINFORCING LAYOUT PROHIBITS THE INSTALLATION OF ANCHORS AS INDICATED ON THE DRAWINGS, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE DESIGN PROFESSIONALS.

10. INSTALL MASONRY ANCHORS IN SOLID MASONRY OR IN HOLLOW MASONRY THAT HAS BEEN GROUTED SOLID AT LEAST ONE COURSE ABOVE TO ONE COURSE BELOW THE ANCHOR, UON.

11. SEE PROJECT SPECIFICATIONS FOR POST-INSTALLED ANCHOR INSPECTION REQUIREMENTS.

DI ENGINEERING SERVICES

1. THE CONTRACTOR SHALL EMPLOY OR RETAIN A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF NEW YORK TO DESIGN AND DETAIL ITEMS TO MEET THE PERFORMANCE AND DESIGN CRITERIA ESTABLISHED AS PART OF THE BASE BUILDING STRUCTURE INDICATED IN THE CONTRACT DOCUMENTS INCLUDING BUT NOT LIMITED TO:

   STRUCTURAL STEEL CONNECTIONS
   WOOD TRUSSES
   OVER FRAMING

SI SPECIAL INSPECTIONS

1. THE FOLLOWING STRUCTURAL ITEMS REQUIRE SPECIAL TESTING AND/OR INSPECTIONS:

STRUCTURAL STEEL - WELDING	BC 1704.3.1	
STRUCTURAL STEEL - DETAILS	BC 1704.3.2	
STRUCTURAL STEEL - HIGH STRENGTH BOLTING	BC 1704.3.3	
CONCRETE - CAST-IN-PLACE	BC 1704.4	
MASONRY	BC 1704.5	
WOOD - INSTALLATION OF HIGH-LOAD DIAPHRAGMS	BC 1704.6.1	
WOOD - INSTALLATION OF METAL-PLATE CONNECTED TRUSSES	BC 1704.6.2	
CONCRETE DESIGN MIX	BC 1905.3, BC 1913.5	
CONCRETE SAMPLING AND TESTING	BC 1905.6, BC 1913.10	
SUBGRADE INSPECTION	BC 1704.7.1	(GEOTECHNICAL)
SUBSURFACE CONDITIONS - FILL PLACEMENT & IN-PLACE	BC 1704.7.2, BC 1704.7.3	(GEOTECHNICAL)
DEEP FOUNDATION ELEMENTS	BC 1704.8	(GEOTECHNICAL)

PI PROGRESS INSPECTIONS

1. THE FOLLOWING STRUCTURAL ITEMS REQUIRE PROGRESS INSPECTIONS:

PRELIMINARY	28-116.2.1, BC 110.2
FOOTING AND FOUNDATION	BC 110.3.1
STRUCTURAL WOOD FRAME	BC 110.3.3
FINAL	BC 28-116.2.4.2, BC 110.5

RF RELATED FILINGS

1. THE FOLLOWING WORK IS TO BE FILED UNDER SEPARATE APPLICATIONS:

ARCHITECTURAL	# 420667451-I1
MECHANICAL	# Q00345542-I1
PLUMBING	# Q00345549-I1
SPRINKLER AND STANDPIPE	# Q00672381-I1
CIVIL	# Q00673744-I1

WD WOOD

1. ALL FRAMING LUMBER SHALL BE DOUGLAS FIR, UON. GRADE SHALL BE AS FOLLOWS:

   JOIST AND RAFTERS: NO. 1
   POST, BEAMS, HEADERS: NO. 1
   STUDS, PLATES, BLOCKS
   LIGHT FRAMING AND MISC: NO. 2

2. ALL LUMBER EXPOSED TO WEATHER AND IN CONTACT WITH CONCRETE OR MASONRY 6'-0' OR LESS ABOVE GROUND SHALL BE PRESSURE TREATED.

3. LUMBER MOISTURE CONTENT: MAINTAIN UNIFORM MOISTURE CONTENT OF LUMBER AT NOT MORE THAN 19-PERCENT DURING AND AFTER INSTALLATION. NEW LUMBER ADJACENT AND CONNECTED TO EXISTING LUMBER SHALL HAVE A MOISTURE CONTENT OF NOT MORE THAN 15-PERCENT AT TIME OF INSTALLATION

4. STRUCTURAL SHEATHING:

   A. ROOF SHEATHING: 23/32" APA RATED STRUCTURAL 1 SHEATHING 32/16", EXPOSURE 1, PS1 (LATEST EDITION), 5 PLY PLYWOOD. SHEATHING TO BE TONGUE AND GROOVE.
   B. FLOOR SHEATHING: 23/32" APA RATED, STRUCTURAL 1 SHEATHING, EXPOSURE 1, PS1 (LATEST EDITION). SHEATHING TO BE TONGU
   C. WALL SHEATHING: 15/32" APA RATED STRUCTURAL 1 SHEATHING, EXPOSURE 1, PS1 (LATEST EDITION), 4 PLY PLYWOOD
   D. FIRE TREATED WALL SHEATHING: 19/32" APA RATED STRUCTURAL 1 SHEATHING, EXPOSURE 1, PS1 (LATEST EDITION), 5 PLY PLYWOOD

5. PREFABRICATED WOOD I-JOIST: AS MANUFACTURED BY WEYERHAEUSER OR APPROVED EQUAL

6. MICROLAM LAMINATED VENEER LUMBER (LVL): AS MANUFACTURED BY WEYERHAEUSER OR APPROVED EQUAL

7. GLUE-LAMINATED BEAMS:

   A. 24VF4 FOR SIMPLE SPANS AND 24FV8 FOR CANTILEVERED AND CONTINUOUS BEAMS.
   B. APPEARANCE: INSUDTRIAL GRADE TYP.; ARCHITECTURAL GRADE IF EXPOSED.
   C. CAMBER TO RADIUS OF 3500' UON
   D. GLULAM BEAMS SHALL BE CONTINUOUSLY INSPECTED PER 1704a6.2.1 BY A CLUE FABRICATION INSPECTOR APPROVED BY DSA. ALL GLULAM BEAMS SHALL BE STAMPED WITH AN IDENTIFICATION MARK.

8. PREFABRICATED WOOD TRUSSES: TRUSS DESIGN AND SPECS BY SUPPLIER

9. FRAMING HARDWARE: AS MANUFACTURED BY USP PRODUCTS OR APPROVED EQUAL. SIMPSON DESIGNATIONS USED.

10. NAILS: COMMON WIRE GAGE UON.

    USE OF MACHINE NAILING IS SUBJECT TO A SATISFACTORY JOBSITE DEMONSTRATION FOR EACH PROJECT AND THE APPROVAL OF THE PROJECT ARCHITECT OR STRUCTURAL ENGINEER. THE APPROVAL IS SUBJECT TO CONTINUED SATISFACTORY PERFORMANCE. IF THE NAIL HEADS PENETRATE TH OUTER PLY MORE THAN WOULD BE NORMAL FOR A HAND-HELD HAMMER, OR IF MINIMUM ALLOWABLE EDGE DISTANCES ARE NOT MAINTAINED, THE PERFORMANCE WILL BE DEEMED UNSATISFACTORY AND MACHINE NAILING SHALL BE DISCONTINUED.

11. BOLTS: ASTM A307. ANCHOR RODS = ASTM F1554, FY = 36 KSI

12. GLUE FLOOR SHEATHING AT T&G JOINTS AND TO SUPPORTING MEMBERS.

13. NAILS, BOLTS AND SCREWS FOR PRESSURE PRESERVATIVE TREATED AND FIRE RETARDANT TREATED WOOD SHALL BE HOT-DIPPED ZINC COATED GALVANIZED.

14. ROUGH HARDWARE: ALL EXTERIOR HARDWARE SHALL BE HOT-DIPPED GALVANIZED.

15. BOLT HOLES TO BE 1/16-INCH OVERSIZE. THREADS SHALL NOT BEAR ON WOOD. USE STANDARD MALLEABLE IRON WASHERS AGAINST WOOD.

16. NAIL HEADS SHALL BE DRIVEN FLUSH WITH PLYWOOD SURFACE. OVERDRIVEN NAILS (NAILS WHICH FRACTURE THE OUTER PLY LAYER) SHALL BE REPLACED ONE-FOR-ONE.

17. SHOP DRAWINGS – SUBMIT SHOP DRAWINGS OF ALL MANUFACTURED LUMBER. SHOP DRAWINGS SHALL INCLUDE PLAN LAYOUT OF MEMBERS AND BRIDGING, DETAILS OF MEMBER CONNECTIONS, STIFFENERS, BLOCKING, WEB OPENINGS, AND ALL INFORMATION NECESSARY FOR FABRICATION AND INSTALLATION.

18. ALL WOOD MEMBERS WHICH REQUIRE 2 HOUR FIRE PROTECTION SHALL BE FIRE TREATED. FIRE TREATED WOOD AND PLYWOOD SHALL BE TREATED WITH PYROGUARD FIRE TREATED WOOD OR EQUIVALENT. ALL FASTENERS IN AFRTW SHALL BE IN CONFORMANCE TO THE ICC REPORT OF THE FIRE TREATMENT.

19. WOOD FLOOR AND ROOF TRUSSES:

    A. PREFABRICATED WOOD TRUSSES SHALL BE DESIGNED BY THE MANUFACTURER TO SUPPORT THE LOADING REQUIREMENTS SHOWN ON THESE PLANS AND REQUIRED BY THE BUILDING CODES. PROVIDE BRIDGING AND BRACING AS REQUIRED BY THE MANUFACTURER. DESIGN IN ACCORDANCE WITH "DESIGN SPECIFICATIONS FOR LIGHT STEEL CONNECTED WOOD TRUSSES". INSTALL IN ACCORDANCE WITH "BRACING WOOD TRUSSES COMMENTARY", PUBLISHED BY THE TRUSS PLATE INSTITUTE. PROVIDE ALL TEMPORARY BRACING AND BRIDGING AS NEEDED TO ENSURE THE OVERALL STABILITY OF THE ROOF DURING ERECTION. SPREAD ALL CONSTRUCTION LOADS AS NEEDED TO PREVENT DAMAGE TO THE TRUSSES. TRUSSES SHALL BE MANUFACTURED BY AN ACCEPTABLE TRUSS MANUFACTURER, RECOGNIZED BY THE I.C.B.O. TRUSS MANUFACTURER SHALL SUPPLY ALL HANGERS, PLATES, BLOCKS, CLIPS, BRIDGING, AND OTHER ITEMS RELATED TO THEIR UNITS.

    B. DESIGN CRITERIA

       ALL LIVE LOAD AND SNOW LOAD SHALL BE APPLIED TO TOP CHORD OF TRUSS. 10 PSF SUPERIMPOSED DEAD LOAD SHALL BE APPLIED TO BOTTOM CHORD OF TRUSS. REMAINDER SUPERIMPOSED DEAD LOAD SHALL BE APPLIED TO TOP CHORD OF TRUSS.

       ROOF TRUSS (PITCHED LESS THAN 4:12):

       LL DEFLECTION MIN = L/360
       TL DEFLECTION MIN = L/240

       FLOOR TRUSSES

       LL DEFLECTION MIN = L/480
       TL DEFLECTION MIN = L/360

    C. ALL FLOOR AND ROOF TRUSSES PARALLEL TO AND OVER SHEAR WALLS SHALL BE DESIGNED TO HORIZONTALLY TRANSFER THE LATERAL LOADS OF THE SHEAR WALL BELOW.

    D. GIRDER TRUSS SHALL BE DESIGNED TO SUPPER LOADS FROM THEIR TRIBUTARY AREA.

    E. PRIOR TO ERECTION, CONTRACTOR SHALL SUBMIT TRUSS MANUFACTURER'S SHOP DRAWINGS AND CALCULATIONS TO THE SER FOR REVIEW. SHOW DRAWING AND CALCULATIONS SHALL BE SIGNED AND SEALED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE WHERE THE PROJECT IS LOCATED.

    F. TRUSS MANUFACTURER SHALL VERIFY WITH ARCHITECT AND MECHANICAL CONTRACTOR THE SIZE, LOCATION, AND SUPPORT OF MECHANICAL UNITS.

    G. DESIGN OF LUMBER AND CONNECTOR PLATES FOR THE TRUSSES SHALL BE IN ACCORDANCE WITH THE LATEST TRUSS PLATE INSTITUTE (TPI) REQUIREMENTS.

20. STUDS:

    A. NOTCHED AND/OR CUT STUDS TO CLEAR ANCHOR BOLTS ARE NOT ALLOWED. STUDS SHALL HAVE FULL BEARING TO THE BOTTOM PLATES.

    B. STACK ALL BEARING STUDS, CRIPPLE STUDS, AND POSTS FROM ROOF AND ALL FLOOR LEVELS DOWN TO THE C ONCRETE SLAB.

    C. PROVIDE SOLID BLOCKING BETWEEN FLOORS FOR ALL POSTS. ALL POSTS SHALL STACK AND BE CONTINUOUS TO THE CONCRETE SLAB.

21. WALLS SHOWN ARE ABOVE FRAMING LEVEL AT FLOOR PLANS.

22. VERIFY ALL DIMENSIONS WITH ARCHITECTURAL DRAWINGS. SEE ARCHITECTURAL DRAWINGS FOR WALLS AND DIMENSIONS NOT SHOWN OR NOTED.

23. VERIFY PLATE AND FRAMING ELEVATIONS WITH ARCHITECTURAL DRAWINGS.

24. SEE ARCHITECTURAL DRAWINGS FOR ROOF SLOPES, ELEVATIONS, AND DRAINAGE.

25. USE POWDER ACTUATED FASTENERS AT 16" O.C. MAX WITH 2x PRESSURE TREATED SILL PLATES AT NON BEARING AND NON-SHEAR WALLS AT CONCRETE SLAB ONLY.

26. CRIPPLE WALL SHALL BE A MINIMUM OF 12" IN HEIGHT. FOR LESSER HEIGHTS, STACK 2x PLATES AND SHIM AS REQUIRED

27. NOTCHED AND/OR CUTJOISTS ARE NOT ALLOWED. VERIFY ALL JOIST OPENINGS WITH STRUCTURAL ENGINEER PRIOR TO STARTING WORK.

28. WOOD CONSTRUCTION SHALL BE PER AMERICAN INSTITUTE OF TIMBER CONSTRUCTION (AITC) STANDARDS AND SPECIFICATIONS AND THE NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION (NDS) AS PUBLISHED BY THE AMERICAN FOREST AND PAPER ASSOCIATION (AFPA).

29. PROVIDE TWO (2) JACK STUDS AND TWO (2) KING STUDS AT EACH END OF WOOD HEADERS, TYPICAL, UON

30. SHEATHING SHALL BE CONTINUOUS OVER TWO (2) OR MORE SPANS AND FACE GRAIN PERPENDICULAR TO SUPPORT

31. NAILING OF MULTIPLE MEMBERS SHALL BE AS REQUIRED BY THE MANUFACTURER. BEARING OF ALL BEAMS SHALL BE 1 ½" MINIMUM.

32. LAMINATED BEAMS SHALL NOT BE USED IN LOCATIONS EXPOSED TO WEATHER, UNLESS THEY HAVE BEEN PRESSURE TREATED AND WATER REPELLANT APPLIED.

33. NAILING SCHEDULE:

    A. SUB-FLOOR FASTENERS SHALL BE SPACED AT 6" O.C. AT EDGES AND AT 12" O.C. AT INTERMEDIATE SUPPORTS, UON. USE RING SHANK NAILS.
    B. WALL SHEATHING FASTENERS SHALL BE SPACED AS NOTED ON THE SECTIONS AND DETAILS.
    C. ROOF SHEATHING FASTENERS SHALL BE SPACED AT 6: O.C. AT EDGES AND AT 12" O.C. AT INTERMEDIATE SUPPORTS, UON.
    D. BOX NAILS MAY BE USED FOR ABOVE NAILING WITH APPROVAL FROM THE SER. BOX NAILS REQUIRE 1/3 MORE NAILS THAN LISTED ABOVE. CEMENT COATED SINKERS ARE CONSIDERED BOX NAILS.
    E. COMMON NAILS ARE REQUIRED FOR SHEAR WALLS, INCLUDING PLATE NAILING, TIE-DOWNS, AND LEDGERS.

34. CONTRACTOR SHALL ACCOUNT FOR CUMULATIVE VERTICAL DESIGN DISPLACEMENTS DUE TO WOOD SHRINKAGE AND SETTLEMENT AT EACH FLOOR LISTED BELOW:
    LEVEL 2 1/4"
    AND FLOOR-TO-FLOOR DISPLACEMENTS OF 0.2".

MA MASONRY

1. LOAD BEARING, NON-LOAD BEARING, AND BACKUP WALL CONCRETE MASONRY CONSTRUCTION SHALL CONFORM TO THE FOLLOWING MATERIAL STANDARDS:

   CONCRETE BLOCK: ASTM C90, NORMALWEIGHT (135 PCF),
   (MINIMUM NET AREA COMPRESSIVE STRENGTH 2800 PSI FOR USE WITH TYPE S OR M MORTAR OR 3050 PSI FOR USE WITH TYPE N MORTAR)

   MORTAR: ASTM C270, TYPE S, M OR N PORTLAND CEMENT / LIME ONLY BY PROPORTION

   MORTAR USAGE
   (UON ON DRAWINGS): USE TYPE S OR M MORTAR WHEN MASONRY IS IN DIRECT CONTACT WITH SOIL; USE TYPE S MORTAR FOR ALL EXTERIOR AND INTERIOR LOAD-BEARING WALLS; USE TYPE N MORTAR FOR ALL EXTERIOR AND INTERIOR NON-LOAD-BEARING WALLS

   GROUT: ASTM C476 BY PROPORTION (MINIMUM 28 DAY COMPRESSIVE STRENGTH 2000 PSI)

   REINFORCEMENT: ASTM A615, GRADE 60

   JOINT REINFORCEMENT: ASTM A1064, TRUSS OR LADDER TYPE

   EXTERIOR JT REINF: GALVANIZE PER ASTM A153

   INTERIOR JT REINF:
   TYPICAL GALVANIZE PER ASTM A641
   RELATIVE HUMIDITY >75% GALVANIZE PER ASTM A153
   ADHESIVE ANCHORS: HILTI HIT-HY 270

2. THE MINIMUM COMPRESSIVE STRENGTH OF THE MASONRY (f' m) SHALL BE 2,000 PSI UON, VERIFIED BY THE UNIT STRENGTH METHOD IN ACCORDANCE WITH THE ABOVE REFERENCED SPECIFICATIONS.

3. CALCIUM CHLORIDE SHALL NOT BE USED IN MORTAR OR GROUT.

4. PROVIDE FULL FACE SHELL MORTAR COVERAGE ON MASONRY UNIT HORIZONTAL AND VERTICAL (BED AND HEAD) FACE SHELL JOINTS.

5. PROVIDE FULL MORTAR COVERAGE ON WEBS AROUND ALL GROUTED CELLS.

6. LAY MASONRY UNITS IN RUNNING BOND UON WITH UNITS DESIGNED TO ALIGN WITH WEBS IN EACH COURSE.

7. REFER TO PLANS AND DETAILS FOR BONDED JOINT REQUIREMENTS AT WALL CORNERS AND INTERSECTIONS. WHERE INDICATED ON DRAWINGS, INTERLOCK WALLS WITH METAL TIES, ANCHORS OR PREFABRICATED JOINT REINFORCEMENT UON ON DRAWINGS OR IN SPECIFICATIONS.

8. GROUT SOLID CELLS WITH REINFORCEMENT. GROUT SOLID CELLS IN BELOW GRADE CONSTRUCTION WHERE MASONRY IS IN CONTACT WITH SOIL.

9. GROUT MINIMUM OF ONE (1) CELL WITH REINFORCEMENT AT EACH SIDE OF ALL OPENINGS. SEE DRAWINGS FOR ADDITIONAL REINFORCEMENT REQUIREMENTS.

10. WHERE STRAP ANCHORS ARE REQUIRED BY DRAWINGS OR SPECIFICATIONS, LOCATE THEM AT DIFFERENT BED JOINTS THAN THOSE RECEIVING HORIZONTAL JOINT REINFORCEMENT.

11. WHERE REQUIRED, LAP HORIZONTAL JOINT REINFORCEMENT BY AT LEAST 6 INCHES.

12. PLACE GROUT BY THE LOW-LIFT METHOD. MAXIMUM GROUT POUR SHALL BE 4 FEET.

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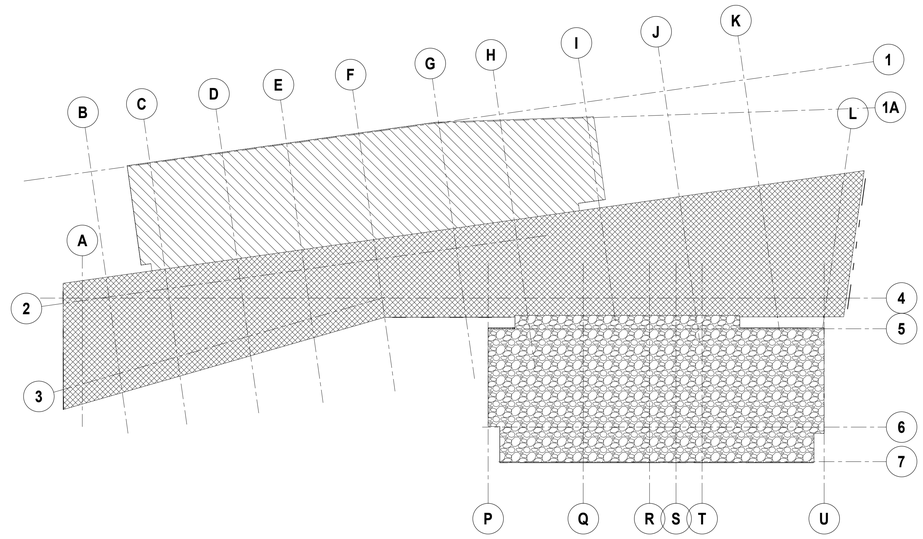
PROJECT NO.	NN19206
DATE:	01.18.2023
SCALE:	12" = 1'-0"

S-002.00

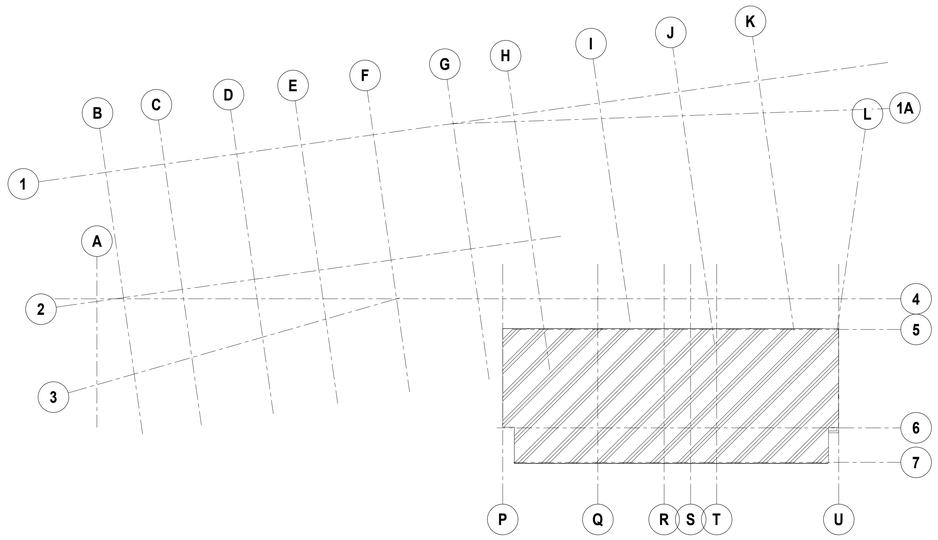
1 GROUND FLOOR LOADING

SCALE: 1/16" = 1'-0"



2 SECOND FLOOR LOADING

SCALE: 1/16" = 1'-0"



3 ROOF LOADING

SCALE: 1/16" = 1'-0"

SUPERIMPOSED DEAD AND LIVE LOAD SCHEDULE

DESCRIPTION	DESIGNATION MARK	UNFACTORED SUPERIMPOSED DEAD LOAD (PSF UON)		UNFACTORED LIVE LOAD (PSF UON)	
PUBLIC		40	25 FLOOR TOPPING + 5 FINISHES + 10 MEP	100	PUBLIC OCCUPANCY
ROOF I		35	20 ROOFING + 5 PV PANELS + 10 MEP	40	ROOF
ROOF II		50	40 GREEN ROOF + 10 MEP	40	ROOF
OFFICE		50	25 FLOOR TOPPING + 5 FINISHES + 10 PARTITIONS + 10 MEP	80	OFFICE
ROOF III		35	20 ROOFING + 5 PV PANELS + 10 MEP	40	ROOF
PUBLIC		8	8 PSF DECKING	100	PUBLIC OCCUPANCY

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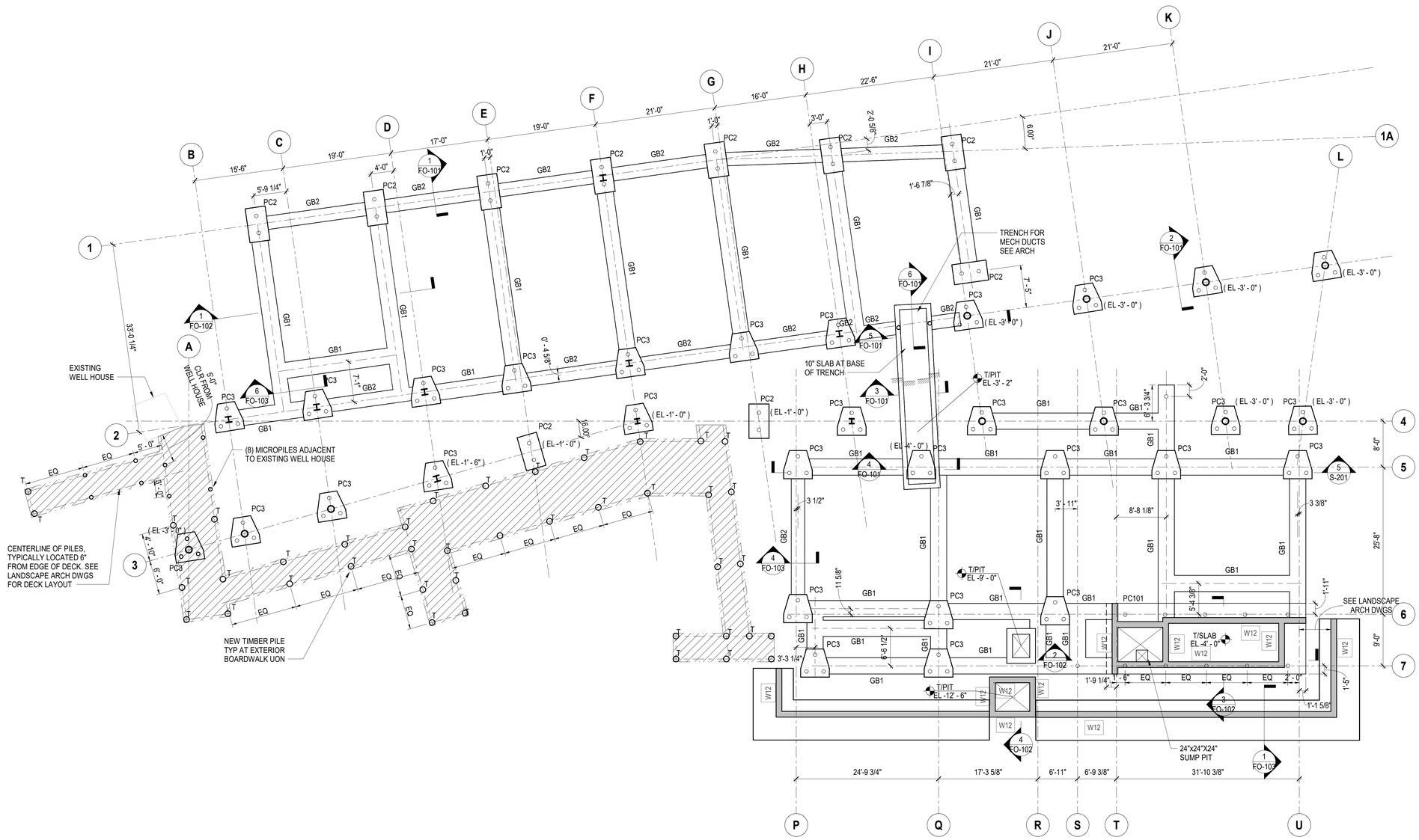

1 FOUNDATION PLAN

SCALE: 1/8" = 1'-0"

NOTES:

1. TOP OF PILE CAP ELEVATION TO BE 12" BELOW TOP OF GROUND FLOOR SLAB, UON THUS (±_____) ON PLAN, INDICATING ACTUAL ELEVATION.
2. GBX INDICATES GRADE BEAM. SEE DETAILS AND SCHEDULE.
3. TOP OF GRADE BEAM ELEVATION TO BE 12" BELOW TOP OF GROUND FLOOR SLAB, UON THUS [±_____] ON PLAN, INDICATING ACTUAL ELEVATION.
4. FOR TOP OF GROUND FLOOR SLAB, SEE S-101.00.
5. PCX INDICATES PILE CAP DESIGNATION. SEE PILE CAP SCHEDULE FOR DETAILS.
6. ALL COLUMNS TO BE CENTERED ON PILE CAPS UNLESS OTHERWISE NOTED.
7. ○ DENOTES 7.625"Ø MICROPILE. SEE GENERAL NOTES FOR ADDITIONAL INFORMATION.
8. (T) DENOTES TIMBER PILE. SEE GENERAL NOTES FOR ADDITOINAL INFORMATION.
9. SEE ARCH DWGS FOR LOCATIONS OF LOADING BEARING AND SHEAR WALLS, AND ALL REQUIRED OPENINGS.
10. W12 INDICATES 12" THICK CONCRETE WALL. SEE SECTIONS FOR REINFORCEMENT.

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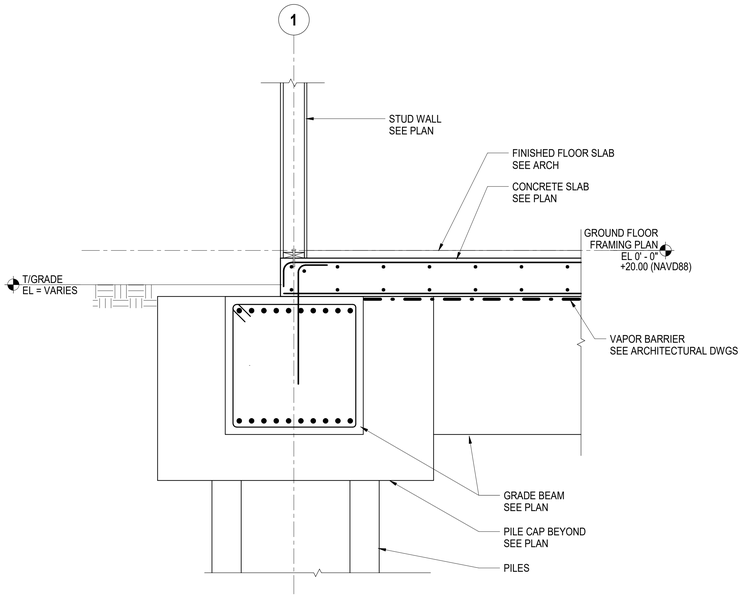

1 SECTION
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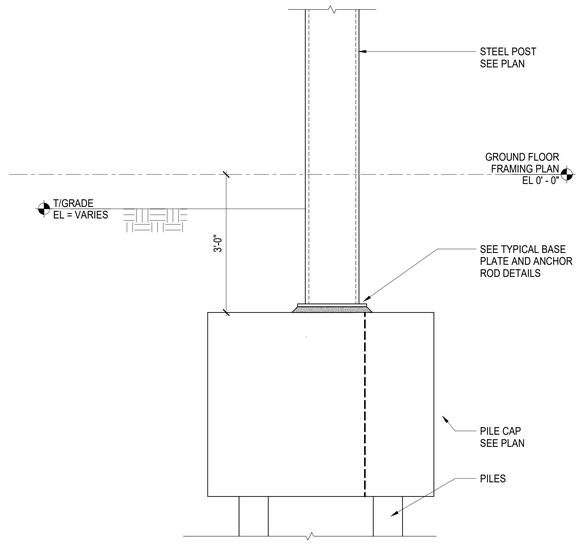

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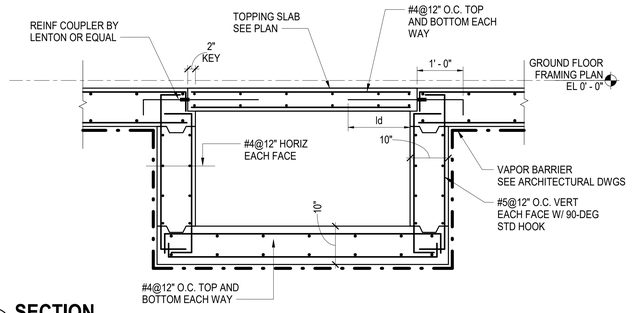

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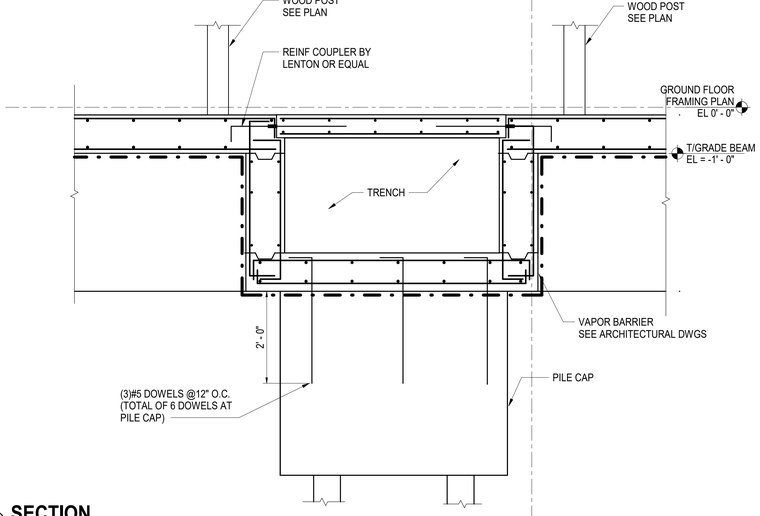

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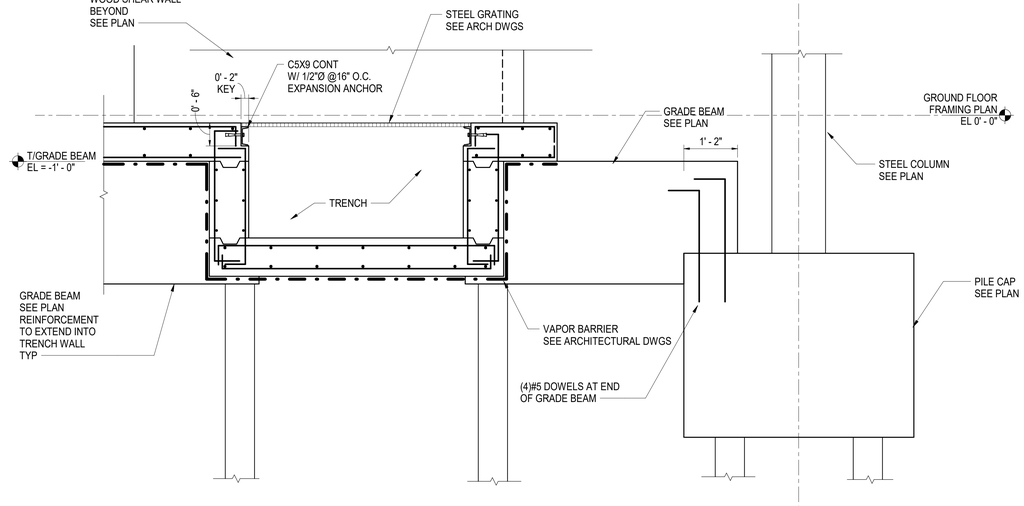

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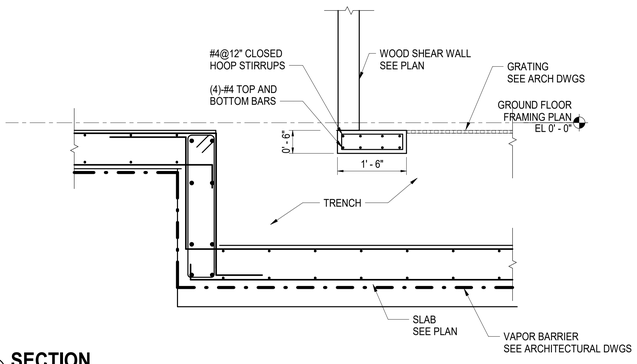

6 SECTION
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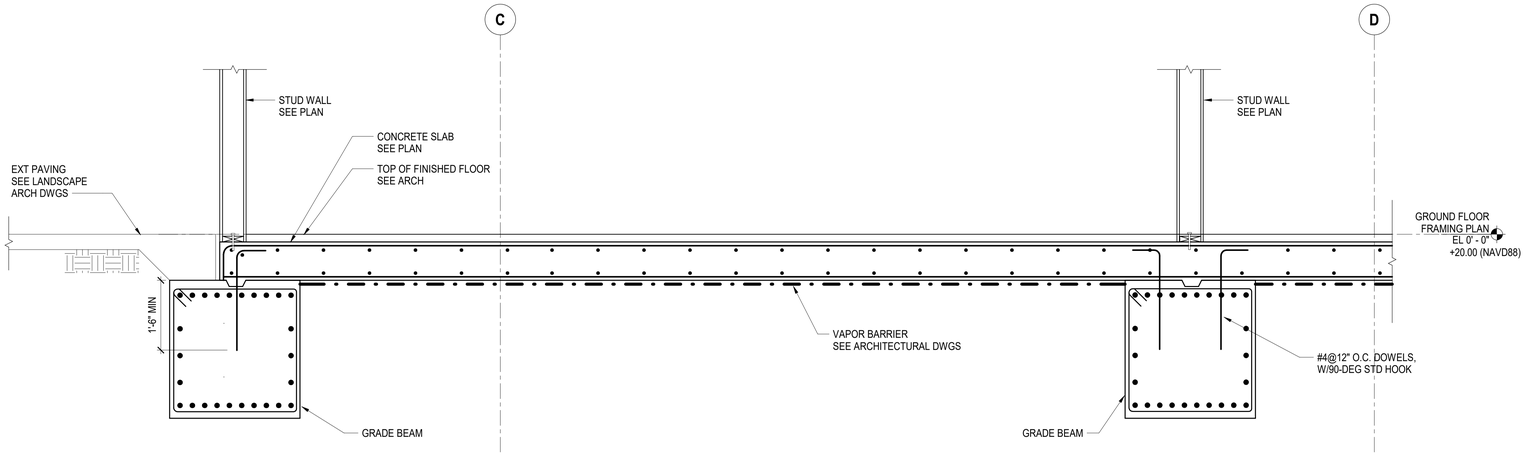

1 SECTION

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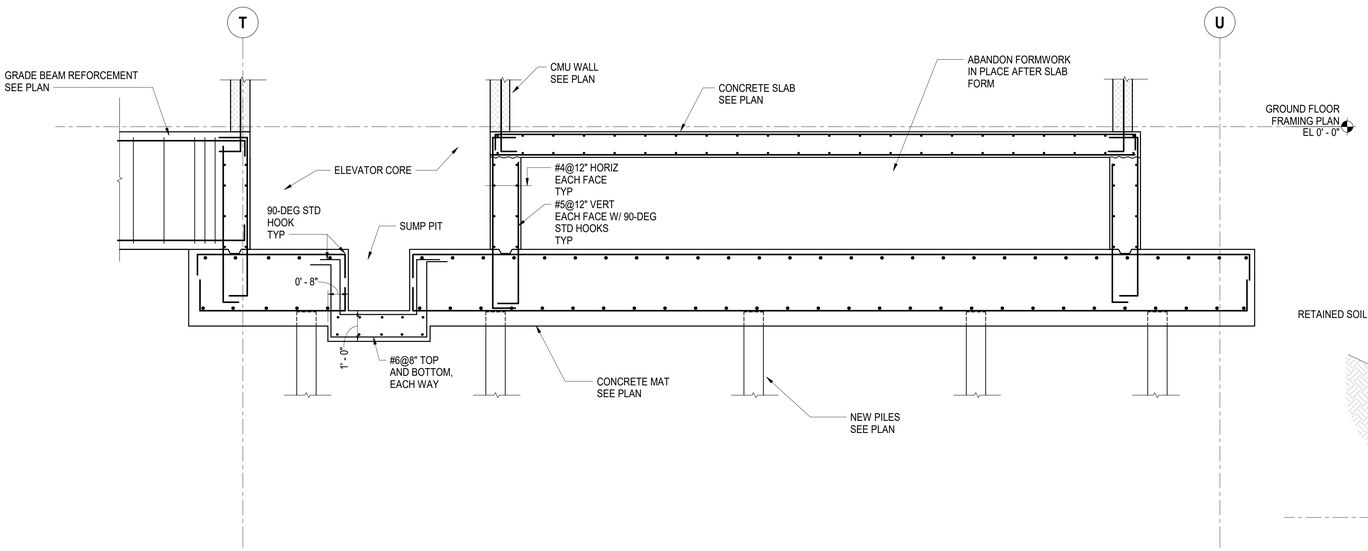

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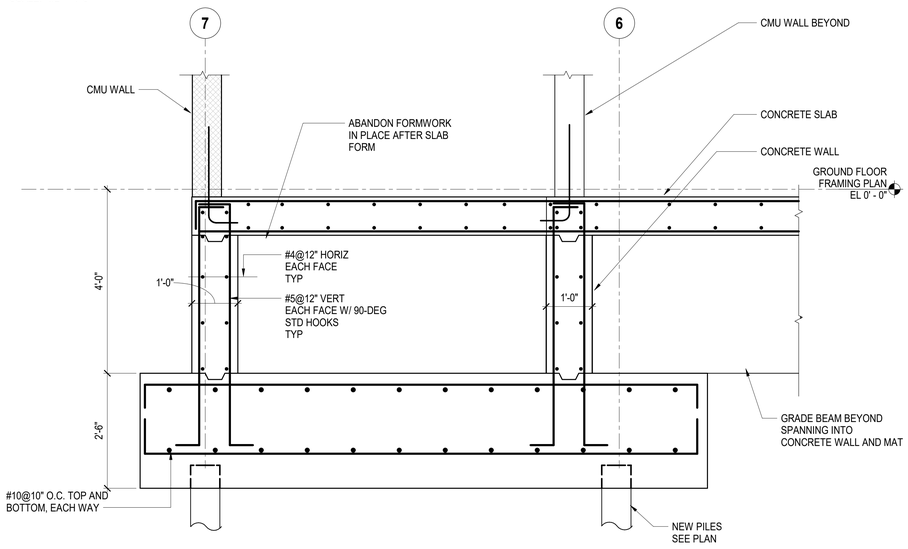

3 SECTION

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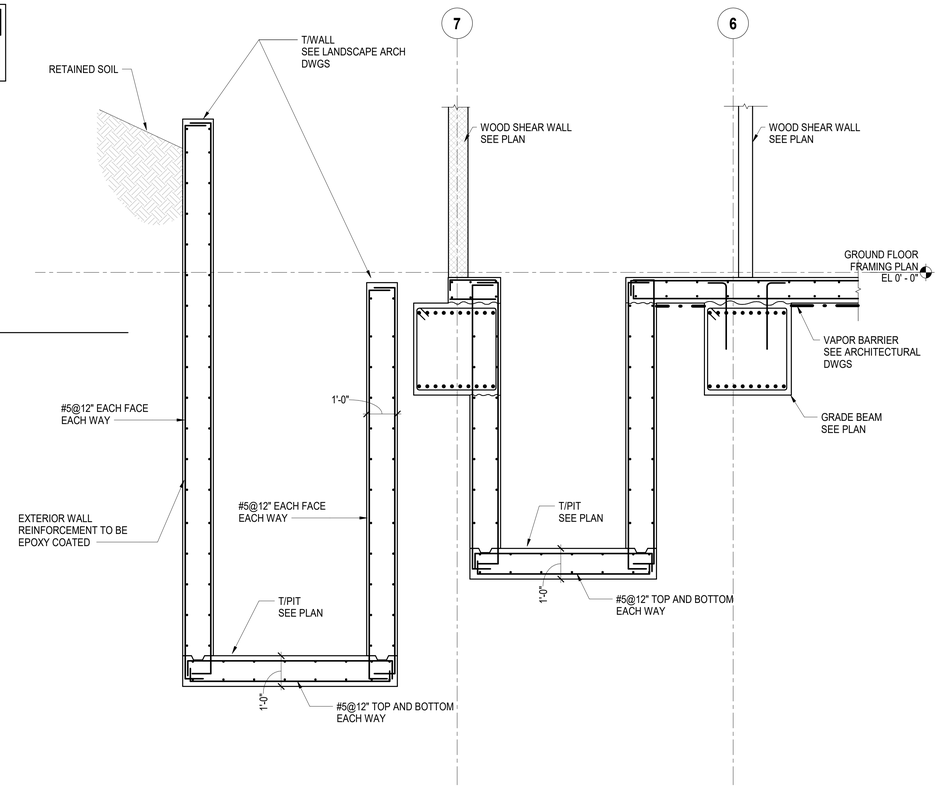

4 SECTION

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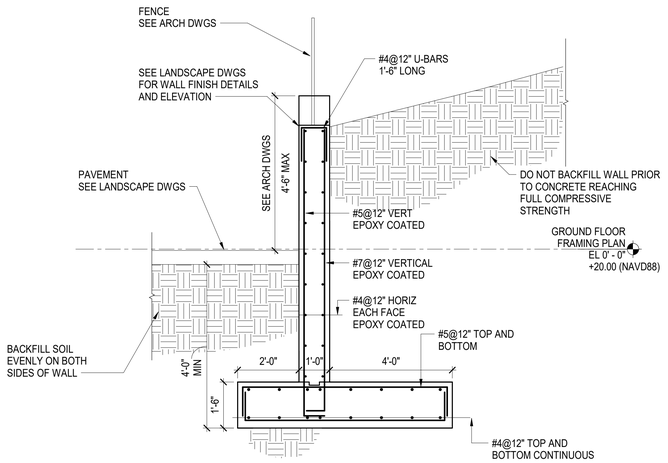
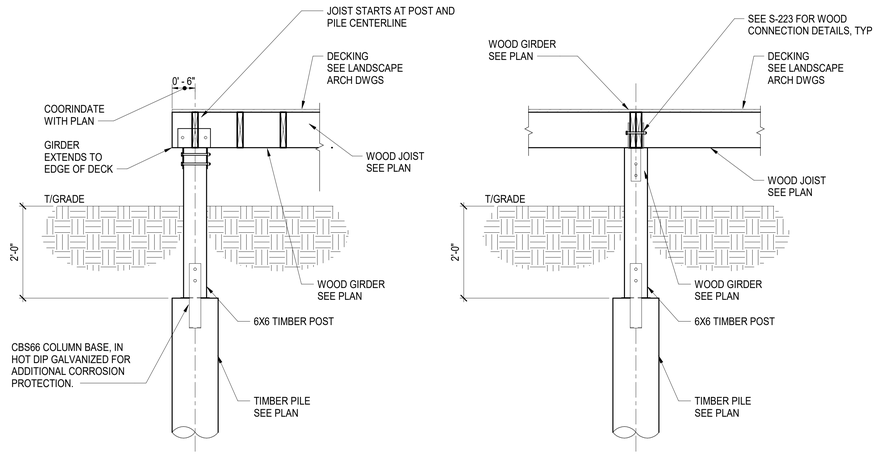


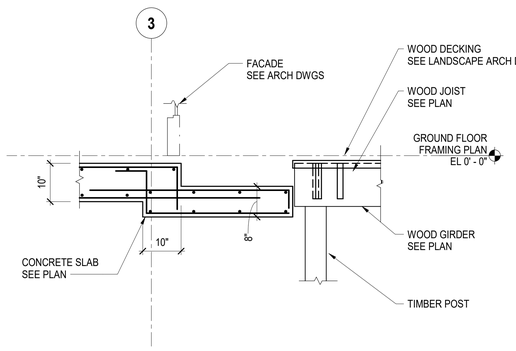
1 SECTION AT RETAINING WALL

SCALE: 1/2" = 1'-0"



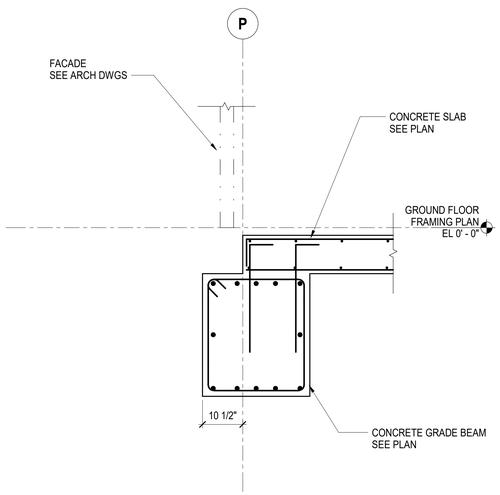
2 BOARDWALK SUPPORT DETAIL

SCALE: 3/4" = 1'-0"



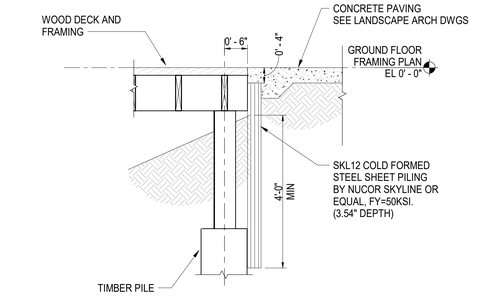
3 SECTION

SCALE: 3/4" = 1'-0"



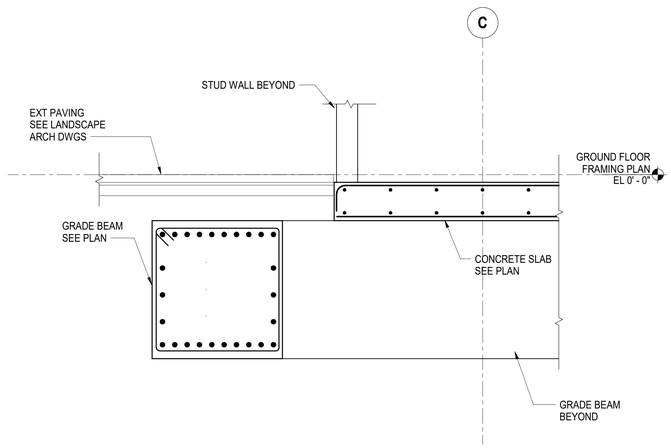
4 SECTION

SCALE: 3/4" = 1'-0"



5 SECTION

SCALE: 3/4" = 1'-0"



6 SECTION

SCALE: 3/4" = 1'-0"

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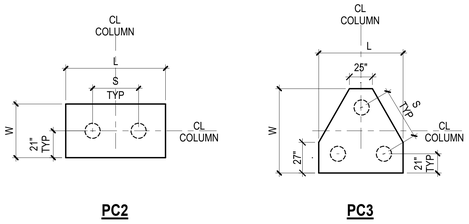
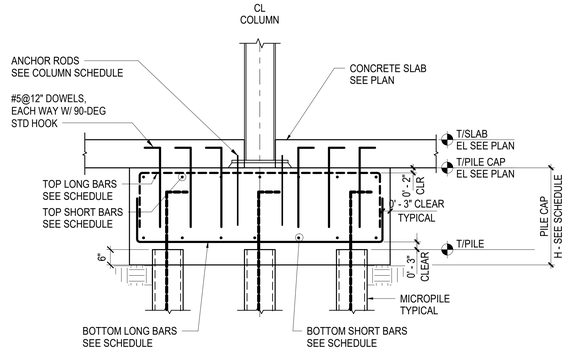


PC2 PC3

1 STEEL PILE CAP LAYOUT DETAILS

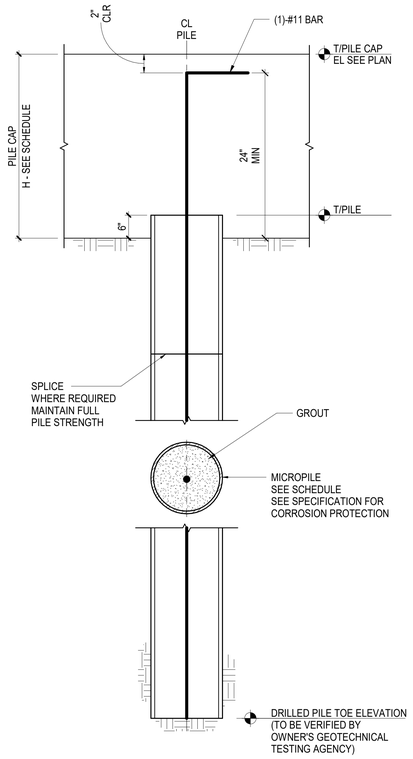
SCALE: NOT TO SCALE

PILE CAP SCHEDULE										
PILE CAP MARK	PILE TYPE	H (IN)	L (IN)	W (IN)	S (IN)	BOTTOM LONG BARS	BOTTOM SHORT BARS	TOP LONG BARS	TOP SHORT BARS	REMARKS
PC2	7.625" DIA	48"	6'-6"	3'-6"	3'-0"	4-#9	7-#9			
PC3	7.625" DIA	48"	6'-6"	6'-0"	3'-0"	7-#9	7-#9			
PC101	7.625" DIA	30"			3'-0" MIN	#10@10"	#10@10"	#10@10"	#10@10"	SEE PLAN FOR DIMENSIONS AND LAYOUT



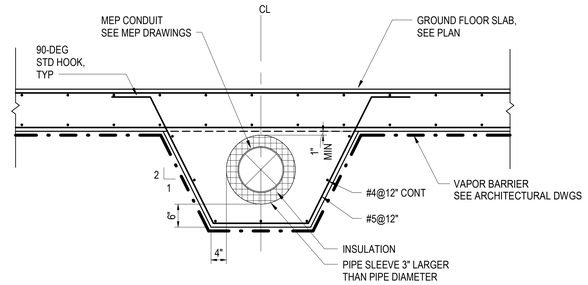
2 TYPICAL PILE CAP SECTION

SCALE: NOT TO SCALE



3 TYPICAL STEEL MICROPILE DETAIL

SCALE: NOT TO SCALE



4 BELOW GRADE UTILITY SUPPORT TYPICAL DETAIL

SCALE: 3/4" = 1'-0"

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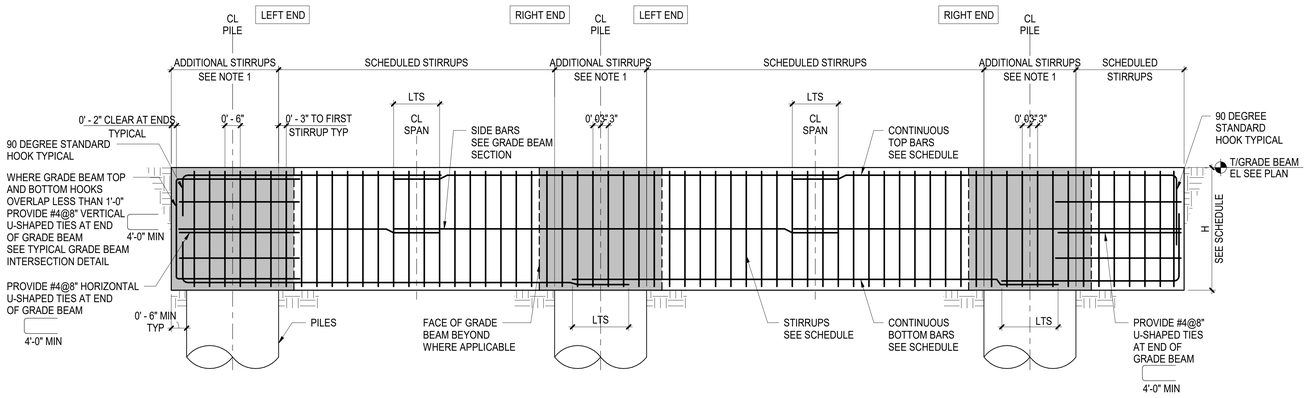
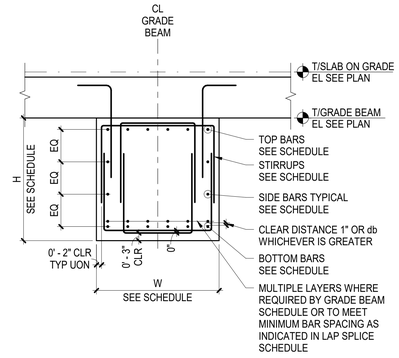


NOTES:

1. PROVIDE #4@6" TYPE 2A STIRRUPS OVER CAISSON SUPPORT TYPICAL

1 TYPICAL GRADE BEAM ELEVATION

SCALE: NOT TO SCALE

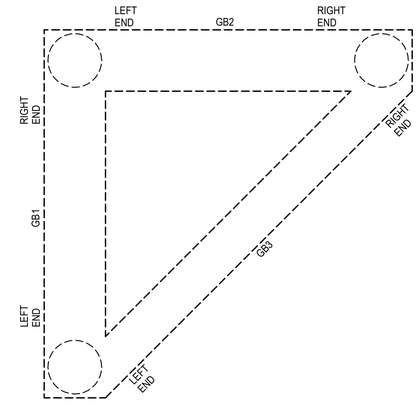


NOTES:

1. IF H IS GREATER THAN 24" PROVIDE SIDE BARS #5@10" MINIMUM UON IN SCHEDULE

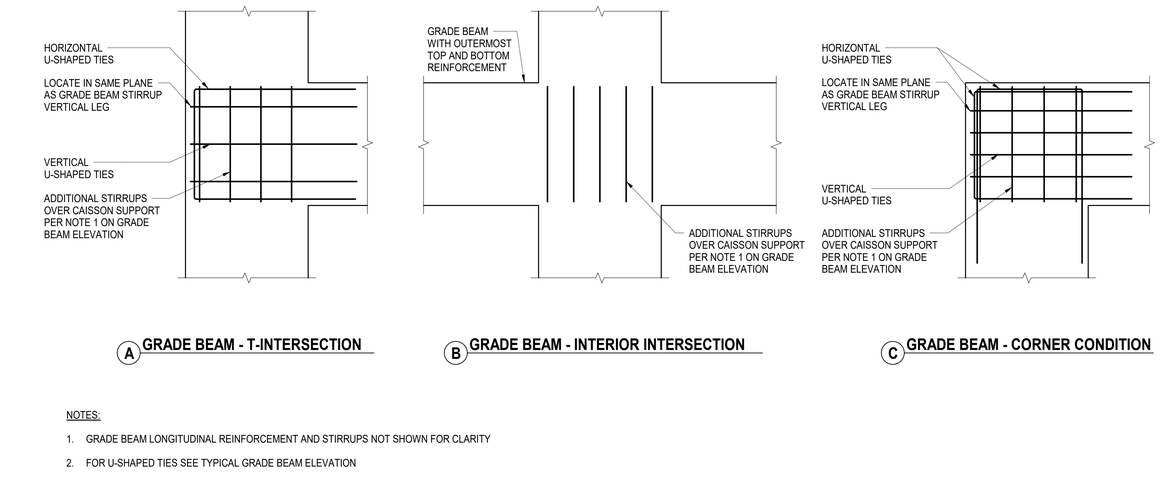
2 GRADE BEAM SECTION - TYPICAL

SCALE: NOT TO SCALE



3 GRADE BEAM ORIENTATION KEY PLAN

SCALE: NOT TO SCALE



A GRADE BEAM - T-INTERSECTION

B GRADE BEAM - INTERIOR INTERSECTION

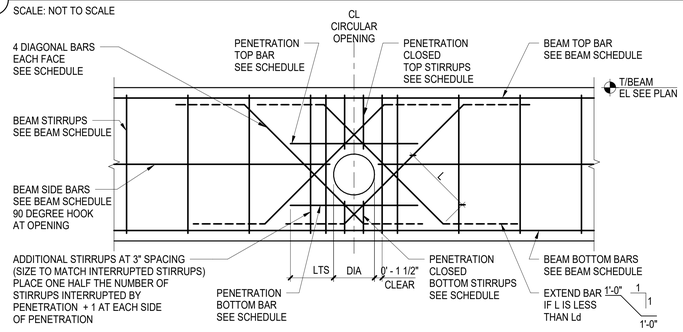
C GRADE BEAM - CORNER CONDITION

NOTES:

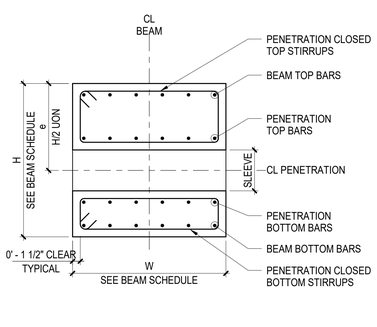
1. GRADE BEAM LONGITUDINAL REINFORCEMENT AND STIRRUPS NOT SHOWN FOR CLARITY
2. FOR U-SHAPED TIES SEE TYPICAL GRADE BEAM ELEVATION

4 TYPICAL GRADE BEAM INTERSECTION PLAN DETAILS

SCALE: NOT TO SCALE



A DETAIL



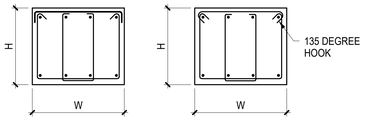
B SECTION

NOTES:

1. ALL BEAM PENETRATIONS SHALL BE SHOWN ON THE SHOP DRAWINGS FOR REVIEW BY THE ARCHITECT/ENGINEER. NO PENETRATIONS SHALL BE MADE WITHOUT PRIOR REVIEW BY THE ARCHITECT AND WRITTEN APPROVAL FROM THE SER
2. THESE DETAILS SHALL BE USED IN CONJUNCTION WITH CONCRETE BEAM PENETRATION SCHEDULE
3. THE MINIMUM CLEAR SPACE BETWEEN TWO ADJACENT PENETRATIONS SHALL BE GREATER OF THE LARGEST PENETRATION DIMENSION OR TWO TIMES THE BEAM DEPTH
4. THE MINIMUM CLEAR DIMENSION BETWEEN THE EDGE OF A PENETRATION AND THE FACE OF SUPPORT, FACE OF SUPPORTED BEAM, OR POINT LOAD IMPOSED, SHALL BE THE BEAM DEPTH
5. SEE STRUCTURAL DRAWINGS FOR PENETRATIONS. GENERAL CONTRACTOR SHALL VERIFY QUANTITY, SIZE, AND LOCATION OF ALL PENETRATIONS WITH MEP DRAWINGS. NOTIFY SER IN WRITING OF ANY DISCREPANCIES FOR REVIEW AND APPROVAL
6. THE ADDITIONAL REINFORCEMENT SHOWN HERE IS NOT REQUIRED FOR OPENINGS 4" IN DIAMETER OR SMALLER PROVIDED NO BEAM REINFORCEMENT IS INTERRUPTED AND MINIMUM CONCRETE COVER IS PROVIDED AROUND ALL BARS. IT IS ACCEPTABLE TO ADJUST BEAM REINFORCEMENT WITHIN MAXIMUM SPACING LIMITS FOR STIRRUPS OR SIDE BARS.

7 TYPICAL CONCRETE BEAM WITH CIRCULAR PENETRATION

SCALE: NOT TO SCALE



A TYPE 2A
2 LEGS

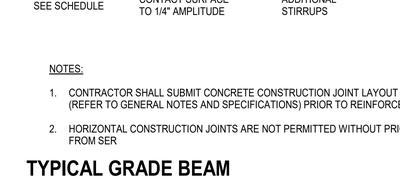
B TYPE 2B
2 LEGS

C TYPE 4A
4 LEGS

D TYPE 4B
4 LEGS

5 GRADE BEAM STIRRUP TYPES

SCALE: NOT TO SCALE



NOTES:

1. CONTRACTOR SHALL SUBMIT CONCRETE CONSTRUCTION JOINT LAYOUT FOR REVIEW AND ACTION (REFER TO GENERAL NOTES AND SPECIFICATIONS) PRIOR TO REINFORCEMENT SUBMITTAL
2. HORIZONTAL CONSTRUCTION JOINTS ARE NOT PERMITTED WITHOUT PRIOR WRITTEN APPROVAL FROM SER

6 TYPICAL GRADE BEAM CONSTRUCTION JOINT - ELEVATION

SCALE: NOT TO SCALE

GRADE BEAM SCHEDULE

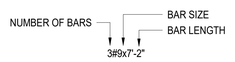
f'c = SEE GENERAL NOTES

GRADE BEAM MARK	SIZE		REINFORCEMENT						
	W (IN)	H (IN)	CONT TOP BARS	BOTTOM BARS	SIDE BARS EACH FACE SEE NOTE 3	STIRRUPS TYPE	STIRRUPS SIZE	STIRRUPS SPACING EACH END	REMARKS
GB1	34	36	12#10	12#10	6#8	4B	#4	8"	-
GB2	28	32	8#10	8#10	4#8	4B	#4	8"	-

NOTES:

1. SEE PLAN FOR TOP OF GRADE BEAM ELEVATION.
2. LEFT END AND RIGHT END OF BEAM ARE DEFINED ON BEAM ORIENTATION KEY PLAN.
3. SEE TYPICAL GRADE BEAM SECTION DETAIL WHERE NO SIDE BARS ARE INDICATED.

REINFORCEMENT LEGEND:



8 GRADE BEAM SCHEDULE

SCALE: NOT TO SCALE

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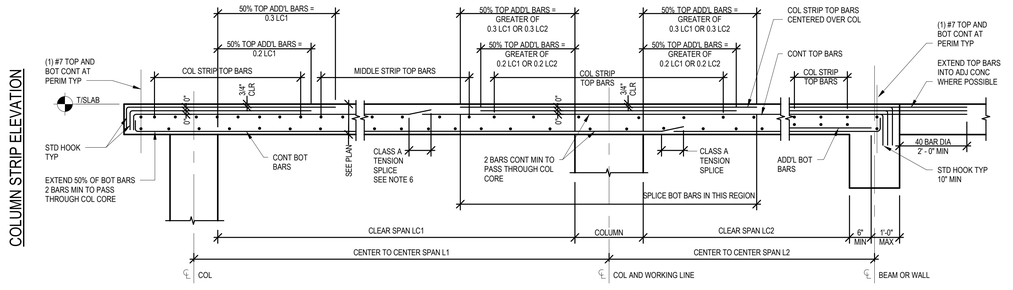
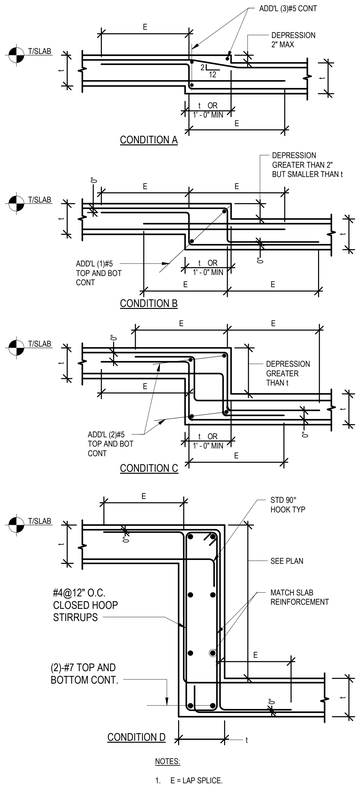


NOTES:

1. OUTERMOST REINFORCEMENT SHALL BE IN THE NORTH-SOUTH DIRECTION.
2. SEE PLANS FOR DIRECTION AND LAYER OF BARS.
3. SPACE BARS UNIFORMILY ACROSS STRIP.
4. ALL SUPPORT BARS AND CHAIRS SHALL BE DETAILED WITH THE SLAB REINFORCEMENT.
5. ADDITIONAL MOMENT TRANSFER TOP BARS (MARKED "MT ON PLANS) SHALL BE PLACED WITHIN EFFECTIVE SLAB WIDTH (COLUMN WIDTH + 3 TIMES SLAB THICKNESS).
6. LOCATE CONT TOP BAR SPLICE WITHIN MIDDLE THIRD OF SPAN.

1 TYPICAL 2-WAY FLAT PLATE REINFORCEMENT DETAIL

SCALE: 3/4" = 1'-0"

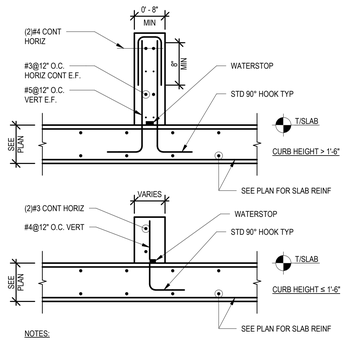


NOTES:

1. E = LAP SPLICE.

5 SLAB DEPRESSION REINF DETAILS

SCALE: 3/4" = 1'-0"

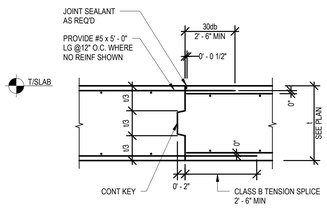


NOTES:

1. SEE ARCHITECTURAL AND MEP DRAWINGS FOR CONCRETE CURB LOCATIONS AND SIZES.
2. CURB REINF. TO BE EPOXY COATED.

6 TYPICAL CONCRETE CURB DETAILS

SCALE: 3/4" = 1'-0"

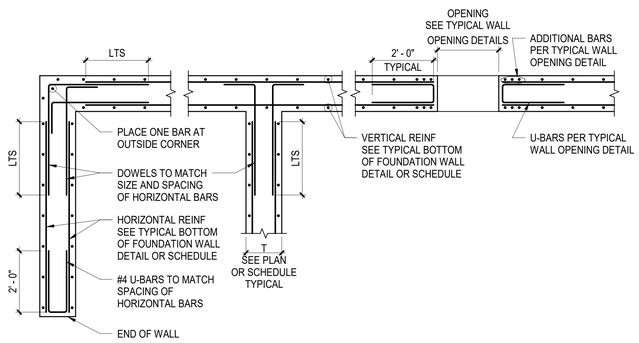


NOTES:

1. LOCATE CONSTRUCTION JOINT IN THE MIDDLE THIRD OF SPAN.
2. SHOW CONSTRUCTION JOINTS ON SHOP DRAWINGS.

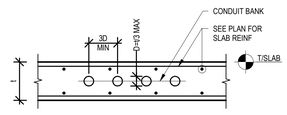
7 FRAMED SLAB CONSTRUCTION JOINT

SCALE: 3/4" = 1'-0"



9 TYPICAL FOUNDATION WALL DETAIL - PLAN

SCALE: NOT TO SCALE

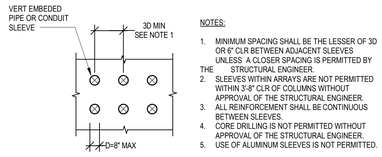


NOTES:

1. THE AGGREGATE DIMENSION OF INTERSECTING CONDUITS MUST BE LESS THAN t/3.
2. CONDUITS ARE NOT PERMITTED WITHIN 3'-8" CLR OF COLUMNS WITHOUTH APPROVAL OF THE STRUCTURAL ENGINEER.
3. CONDUITS MUST BE LOCATED BETWEEN TOP AND BOTTOM LAYERS OF REINFORCEMENT.
4. USE OF ALUMINUM CONDUITS IS NOT PERMITTED.

2 TYPICAL SLAB EMBEDED CONDUIT DETAIL

SCALE: 3/4" = 1'-0"

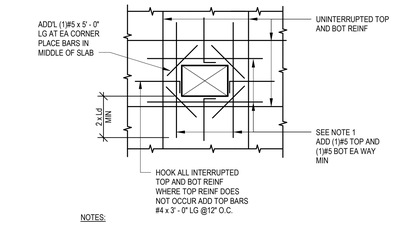


NOTES:

1. MINIMUM SPACING SHALL BE THE LESSER OF 3D OR 6" CLR BETWEEN ADJACENT SLEEVES UNLESS A CLOSER SPACING IS PERMITTED BY THE STRUCTURAL ENGINEER.
2. SLEEVES WITHIN ARRAYS ARE NOT PERMITTED WITHIN 3'-8" CLR OF COLUMNS WITHOUT APPROVAL OF THE STRUCTURAL ENGINEER.
3. ALL REINFORCEMENT SHALL BE CONTINUOUS BETWEEN SLEEVES.
4. CORE DRILLING IS NOT PERMITTED WITHOUT APPROVAL OF THE STRUCTURAL ENGINEER.
5. USE OF ALUMINUM SLEEVES IS NOT PERMITTED.

4 TYPICAL SLAB VERTICAL SLEEVE ARRAY DETAIL

SCALE: 3/4" = 1'-0"

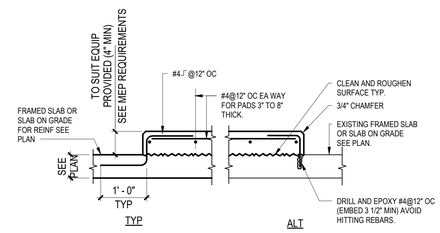


NOTES:

1. PLACE 50% OF TOP AND BOT INTERRUPTED BARS AT EACH SIDE OF THE OPENING IN EACH DIRECTION. THE TOTAL AMOUNT OF INTERRUPTED STEEL SHALL BE REPLACED.
2. AT MEP BLOCKOUTS THAT DON'T FULLY PENETRATE THE SLAB, BOT BARS SHALL REMAIN CONTINUOUS BENEATH BLOCKOUTS AND TOP BARS SHALL BE INSTALLED IN ACCORDANCE WITH THIS DETAIL.

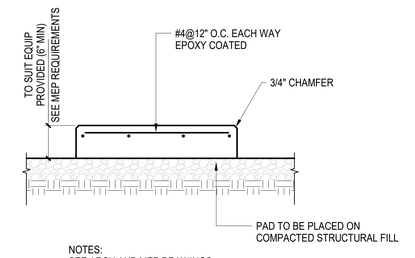
3 TYPICAL SLAB OPENING REINF DETAIL

SCALE: 3/4" = 1'-0"



8 TYPICAL INTERIOR EQUIPMENT PAD DETAIL

SCALE: 3/4" = 1'-0"



NOTES:
SEE ARCH AND MEP DRAWINGS FOR LAYOUT AND SIZE

10 TYPICAL EXTERIOR EQUIPMENT PAD DETAIL

SCALE: 3/4" = 1'-0"

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PROJECT NAME
QBG Educational Building
43-50 Main Street
Flushing, NY 11355

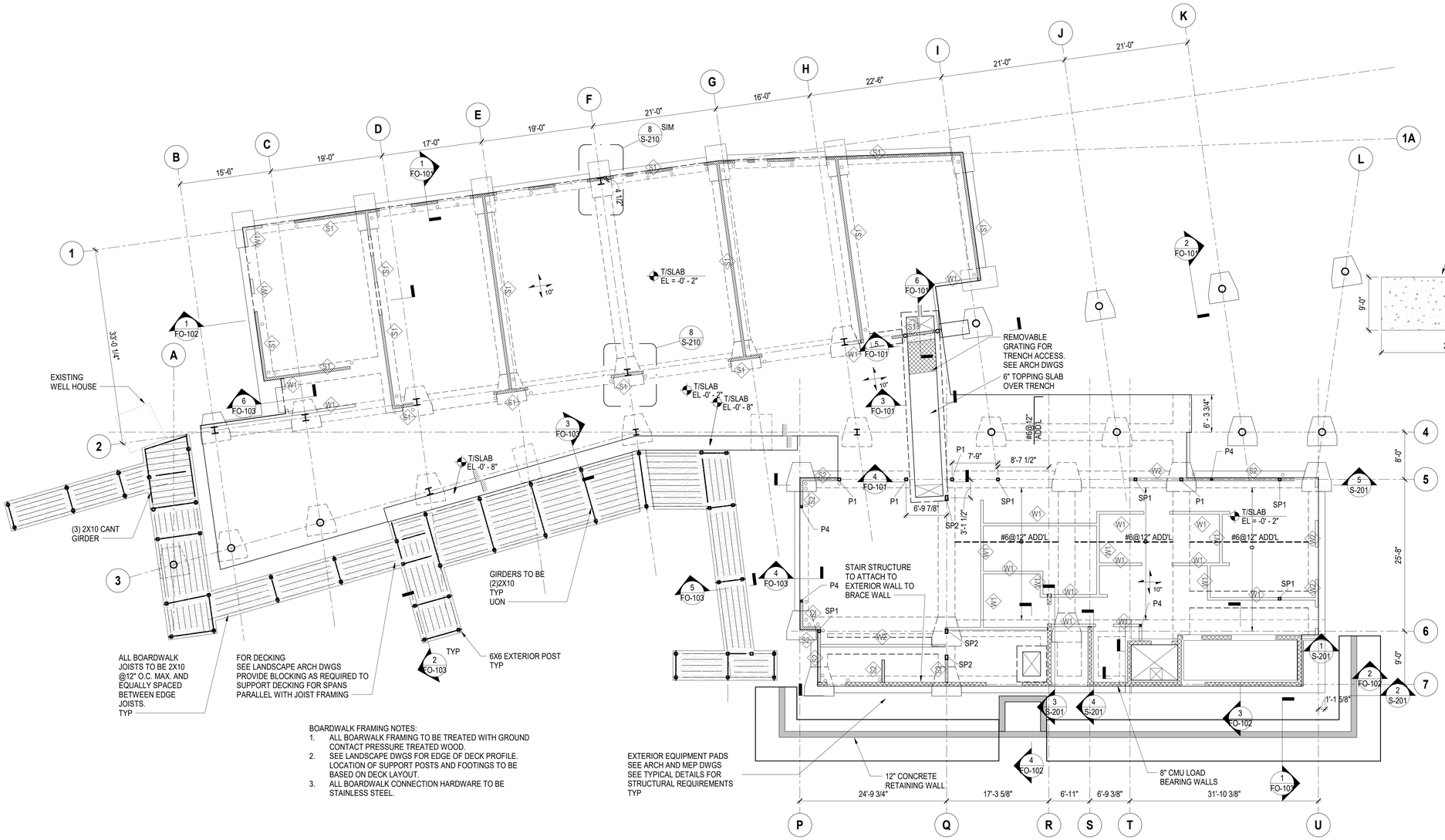
DRAWING TITLE
TYPICAL FOUNDATION SECTIONS AND DETAILS

STAMP & SIGNATURE

ENGINEER, PE

PROJECT NO. NN19206
DATE: 01.18.2023
SCALE: As indicated

FO-106.00



BOARDWALK FRAMING NOTES:

1. ALL BOARWALK FRAMING TO BE TREATED WITH GROUND CONTACT PRESSURE TREATED WOOD.
2. SEE LANDSCAPE DWGS FOR EDGE OF DECK PROFILE. LOCATION OF SUPPORT POSTS AND FOOTINGS TO BE BASED ON DECK LAYOUT.
3. ALL BOARDWALK CONNECTION HARDWARE TO BE STAINLESS STEEL.

1 GROUND FLOOR FRAMING PLAN

SCALE: 1/8" = 1'-0"

NOTES:

1. TOP OF SLAB ELEVATION INDICATED ON PLAN.
2. FLOOR CONSTRUCTION TO BE 10" THICK TWO-WAY SLAB UNLESS OTHERWISE NOTED.
3. SLAB BOTTOM REINFORCEMENT TO BE #6@12" O.C. EACH WAY.
   - - - - - - INDICATES ADDITIONAL BOTTOM REINFORCEMENT.
4. SLAB TOP REINFORCEMENT TO BE #6@12" O.C. EACH WAY.
   ——— INDICATES ADDITIONAL TOP REINFORCEMENT.
5. WX DENOTES LOAD BEARING WALL. SEE SCHEDULE ON S-223.
6. SX DENOTES SHEAR WALL. SEE SCHEDULE ON S-224.
7. DENOTES 8" LOAD BEARING CMU WALL
8. ° REPRESENTS A SHEAR WALL HOLD DOWN CABLE. REFER TO TYPICAL DETAILS FOR HOLD DOWN FORCES.
9. SEE ARCH DWGS FOR LOCATIONS OF LOADING BEARING AND SHEAR WALLS, AND ALL REQUIRED OPENINGS.
10. SPX INDICATES STEEL POST. SEE POST SCHEDULE ON S-600.
11. PXX INDICATES WOOD POST, SEE POST SCHEDULE ON S-600.

NYC DDC
Department of Design and Construction

1	ISSUED FOR BID	04.14.2023
ISSUE/REVISION		DATE

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DRAWING TITLE
GROUND FLOOR PLAN

STAMP & SIGNATURE

ENGINEER, PE

PROJECT NO.	NN19206
DATE:	01.18.2023
SCALE:	As indicated

S-101.00

Attachment B:

Phase IA Archaeological Documentary Study

Open Air Pavilion and Kids Culture Garden at the Queens Botanical Garden

43-50 Main Street (Block 5107, Lot 200)

KISSENA PARK, FLUSHING, QUEENS COUNTY, NEW YORK

Phase 1A Archaeological Documentary Study

Prepared for:

Dormitory Authority of the State of New York (DASNY)
One Penn Plaza, 52nd Floor
New York, New York 10119-0098

Prepared by:

AKRF, Inc.
440 Park Avenue South
New York, NY 10016
212-696-0670

FEBRUARY 2021 (REVISED March 2021)

Management Summary

NYSOPRHP Project Review Number: 21PR00293

Involved Agencies: Dormitory Authority of the State of New York (DASNY)

Phase of Survey: Phase 1A Documentary Study

Location Information

Location: Flushing, New York
Minor Civil Division: 08101
County: Queens County

Survey Area, Open Air Pavilion

Length: Approximately 500 feet
Width: Approximately 175 feet
Area: 1.7 acres (73,000 square feet)

Survey Area, Kids Culture Garden

Length: Approximately 160 feet
Width: Approximately 350 feet
Area: 1 acres (45,000 square feet)

USGS 7.5 Minute Quadrangle Map: Flushing and Jamaica

Report Author: Elizabeth D. Meade, PhD, RPA

Date of Report: February 2021, Revised March 2021

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List of Figures

Chapter 1: Introduction and Methodology

A. INTRODUCTION AND PROJECT DESCRIPTION

The Queens Botanical Garden Society, Inc. ("Queens Botanical Garden" or "QBG") is proposing to construct improvements on the QBG grounds within Kissena Park in the Flushing neighborhood of Queens, New York (see **Figure 1**). The QBG is an approximately 39-acre property located on Block 5107, Lot 200 in the Flushing neighborhood in the borough of Queens, Queens County, New York. The QBG is located at 43-50 Main Street and is bounded by Main Street to the east; Elder Avenue, 133rd Street, and Booth Memorial Avenue to the south; College Point Boulevard to the west; and Blossom and Dahlia Avenues and Crommelin Street to the north Project Site. The Proposed Project would provide the QBG with new garden amenities that would support the QBG's sustainability initiatives while enhancing the visitor experience of the garden, including opportunities for hands-on experiences for children visiting the garden.

The Dormitory Authority of the State of New York ("DASNY") has received a funding request from QBG for its *Open Air Pavilion and Kids Culture Garden* as part of the Community Capital Assistance Program ("CCAP") and/or the State and Municipal Facilities Program "SAM") (DASNY project #8140). The Proposed Action would involve DASNY's authorization of the expenditure of CCAP and/or SAM program bond proceeds for the Proposed Project as described below. The grant funding would be used for the design and construction of an open air pavilion with composting toilets, and a kids culture garden ("the Proposed Project"). The open air pavilion would provide approximately 3,200 square feet ("sf") of covered space that is envisioned to be used for educational programs for children and adults and for professional development for teachers. The approximately 0.5-acre kids culture garden would provide hands-on learning opportunities. The Proposed Project is part of a multi-phase Education Center that will also include an approximately 13,000-gross-square-foot ("gsf") Education Building. The Education Building is currently in design and undergoing a separate environmental assessment.

The Project Site therefore includes two non-contiguous locations within the QBG: 1) the open air pavilion site is located in the southwest portion of the QBG and 2) the kids culture garden site is located in the south-central portion of the QBG (see **Figure 2**). The construction of the open air pavilion will require site clearing and the installation of piles to support a structural slab for the base of the pavilion. The kids culture garden would include woodlands, a garden, and water play areas. Both locations are grassy, unprogrammed open areas that are landscaped with small, mature, and common trees.

B. PROPOSED ACTION AND REQUIRED APPROVALS

The land on which the QBG is located is mapped parkland owned by the City of New York and receives funding through the Office of the Mayor of New York, the New York City Council, and the Office of the Queens Borough President, with most City funding issued through the New York City Department of Cultural Affairs ("NYCDCLA"). In addition, the QBG receives New York State funding through New York State Office of Parks, Recreation and Historic Preservation ("NYSOPRHP"). The QBG is under the jurisdiction of NYCDCLA. The QBG capital projects must receive approval from the New York City Department of Parks and Recreation ("NYC Parks"). Approval from the New York City Public Design Commission ("NYCPDC") is also required because the QBG is on City-owned property. The Proposed Project is therefore being reviewed pursuant to the *State Environmental Quality Review Act ("SEQRA")*, codified at Article 8 of the *New York Environmental Conservation Law ("ECL"),* and its implementing regulations, promulgated at Part 617 of Title 6 of the *New York Code, Rules and Regulations ("N.Y.C.R.R."),* which collectively contain the requirements for the *State Environmental Quality Review ("SEQR")* process. The environmental review of the Open Air Pavilion and Kids Culture Garden project ("Proposed Project") follows *SEQRA*, and the New York *City Environmental Quality Review ("CEQR") Technical Manual* generally is used as a guide with respect to environmental analysis methodologies and impact criteria for evaluating the Proposed Project.[1] For purposes of *SEQR*, the Proposed Action would consist of DASNY's authorization of the issuance of the grant funding to the QBG.

The Proposed Project is also being reviewed in conformance with the *New York State Historic Preservation Act of 1980 ("SHPA")*, specifically the implementing regulations of Section 14.09 of the *Parks, Recreation and Historic Preservation Law ("PRHPL")*, as well as with the requirements of the Memorandum of Understanding ("MOU"), dated March 18, 1998, between DASNY and the New York State Office of Parks, Recreation, and Historic Preservation (NYSOPRHP).

Pursuant to these regulations, consultation was initiated with NYSOPRHP regarding the Project Site's potential archaeological sensitivity. In a comment letter dated January 20, 2021, NYSOPRHP determined that the Project Site is potentially archaeologically sensitive and requested that a Phase 1A Literature Search and Sensitivity Assessment (also known as a "Phase 1A Archaeological Documentary Study" or "Phase 1A Study") be prepared to further assess areas of archaeological sensitivity within the Project Site. Specifically, NYSOPRHP stated that the site was in close proximity to New York State Museum ("NYSM") archaeological site number 4524, which was reported to include precontact archaeological resources and human remains potentially associated with military activity in the area during the Revolutionary War. This Phase 1A Study has been prepared to satisfy these comments.

[1] The City of New York, Mayor's Office of Environmental Coordination, *CEQR Technical Manual,* 2020.

C. RESEARCH GOALS AND METHODOLOGY

The Phase 1A Study of the QBG Project Site has been designed to satisfy the requirements of NYSOPRHP and it also follows the guidelines of the New York Archaeological Council ("NYAC"). The study documents the development history of the Project Site and its potential to yield archaeological resources, including both precontact and historic period cultural resources. This Phase 1A Study has four major goals: (1) to determine the likelihood that the Project Site was occupied during the precontact (Native American) and/or historic periods; (2) to determine the effect of subsequent development and landscape alteration on any potential archaeological resources that may have been located within the Project Site; (3) to make a determination of the Project Site's potential archaeological sensitivity; and (4) to make recommendations for further archaeological analysis, if necessary. The steps taken to fulfill these goals are explained in greater detail below.

The first goal of this documentary study is to determine the likelihood that the Project Site was inhabited during the precontact and/or historic periods, and identify any activities that may have taken place in the vicinity that would have resulted in the deposition of archaeological resources.

The second goal of this Phase 1A Study is to determine the likelihood that archaeological resources could have survived intact within the Project Site after development and landscape alteration (e.g., erosion, grading, filling, etc.). Potential disturbance associated with grading, utility installation, and other previous development-related impacts was also considered. As described by NYAC in their *Standards for Cultural Resource Investigations and the Curation of Archaeological Collections in New York State*, published in 1994 and subsequently adopted by NYSOPRHP:

> *An estimate of the archaeological sensitivity of a given area provides the archaeologist with a tool with which to design appropriate field procedures for the investigation of that area. These sensitivity projections are generally based upon the following factors: statements of locational preferences or tendencies for particular settlement systems, characteristics of the local environment which provide essential or desirable resources (e.g., proximity to perennial water sources, well-drained soils, floral and faunal resources, raw materials, and/or trade and transportation routes), the density of known archaeological and historical resources within the general area, and the extent of known disturbances which can potentially affect the integrity of sites and the recovery of material from them* (NYAC 1994: 2).

The third goal of this study is to make a determination of the Project Site's archaeological sensitivity. As stipulated by the NYAC standards, sensitivity assessments should be categorized as low, moderate, or high to reflect "the likelihood that cultural resources are present within the project area" (NYAC 1994: 10). For the purposes of this study, those terms are defined as follows:

- Low: Areas of low sensitivity are those where the original topography would suggest that Native American sites would not be present (i.e., locations at great distances from fresh and salt water resources), locations where no historic period activity occurred before the installation of municipal water and sewer networks, or those locations determined to be sufficiently disturbed so that archaeological resources are not likely to remain intact.
- Moderate: Areas with topographical features that would suggest Native American occupation, documented historic period activity, and with some disturbance—but not enough to eliminate the possibility that archaeological resources are intact on the project site.
- High: Areas with topographical features that would suggest Native American occupation, documented historic period activity, and minimal or no documented disturbance.

As mentioned above, the fourth goal of this study is to make recommendations for additional archaeological investigations where necessary. According to NYAC standards, Phase 1B testing is generally warranted for areas determined to have moderate sensitivity or higher. Archaeological testing is designed to determine the presence or absence of archaeological resources that could be impacted by a proposed project. Should they exist on the Project Site, such archaeological resources could provide new insight into the precontact occupation Queens, the transition from Native American occupation to European colonization, or the historic period occupation of the Project Site.

To satisfy the goals as outlined above, documentary research was completed to establish a chronology of the Project Site's development, landscape alteration, and to identify any individuals who may have owned the land or worked and/or resided there, and to determine if buildings were present there in the past. Data was gathered from various published and unpublished primary and secondary resources, such as historic maps; topographical analyses (both modern and historical); historical and current photographs (including aerial imagery); newspaper articles; local histories; and previously conducted archaeological surveys. These published and unpublished resources were consulted at various repositories, including the Main Research Branch of the New York Public Library (including the Local History and Map Divisions), the Library of Congress, the New York City Municipal Archives, and the Queens Public Library Archives. Previously identified archaeological sites and previously conducted archaeological resources in the vicinity were collected from the files of NYSOPRHP, NYSM, and the New York City Landmarks Preservation Commission ("NYCLPC"). Information on previously identified archaeological sites and previous cultural resources assessments was accessed through the New York State Cultural Resource Information System (CRIS) maintained by NYSOPRHP.[1] Online

[1] https://cris.parks.ny.gov

textual archives, such as Google Books and the Internet Archive Open Access Texts, were also accessed.

Chapter 2: Environmental and Physical Settings

A. CURRENT CONDITIONS

The two sections of the Project Site are currently undeveloped, landscaped areas. The location of the proposed open air pavilion is generally level with a slight rise upward to the south (see **Photographs 1** through **3** on **Figure 3A**). Paved pathways and a haul road extend through and around this portion of the Project Site. The site of the kids culture garden is also situated in a generally level area north of a steep hill that rises up to the south and leads to Elder Avenue (see **Photographs 4** through **6** on **Figure 3B**). Both portions of the Project Site are grassy lawns with some trees or other landscaping elements.

B. GEOLOGY AND TOPOGRAPHY

The Borough of Queens is located within a geographical region known as the Atlantic Coastal Plain Physiographic Province. The Atlantic Coastal Plain, which includes all of Long Island, tends to include flat, gently sloping land (Isachsen, et al. 2000). Glacial till characterizes the surficial geology of the site (Cadwell 1989). The till in the western portion of the Project Site is specifically associated with the Monmouth Group, a combination of silty clay and gravel dating while the till in the eastern portion is associated with the Raritan Formation, composed of clay, silty clay, sand, and gravel (Fisher, et al. 1980). Both till types date to the Upper Cretaceous Period of the Mesozoic Era, which lasted between approximately 97 and 66 million years ago (Fisher, et al. 1980; Isachsen, et al. 2000). This till was deposited by the massive glaciers that retreated from the area towards the end of the Pleistocene 1.6 million years before present ("BP") to approximately 10,000 years BP. There were four major glaciations that affected New York City, culminating approximately 12,000 years ago with the end of the Wisconsin period. During the ice age, a glacial moraine bisected Long Island, running in a northeast-southwest direction through the center of what is now the borough of Queens (Isachsen, et al. 2000). The Project Site is situated to the north of the Terminal Moraine, the ridge of hills that runs through central Queens marking the southernmost extent of the glacial advancement.

In addition to the deposition of till, the retreating glaciers also left behind a trail of melting ice and water, resulting in the formations of wetlands and small bodies of water across the region. Between 12,000 and 6,000 years BP, sea levels fluctuated, followed by a rapid rise in sea levels, reaching their current state by approximately 3,000 years ago (Geoarcheological Research Associates 2007). As seen on the 1891 United States Geological Survey ("USGS")

maps of the area (see **Figure 4**), the Project Site was historically included in an inundated marsh associated with the larger wetland network known as Flushing Meadows.

The 1891 maps indicate that the elevation of the area was at sea level. Modern Lidar elevation data recorded by USGS in 2013 indicates that the site of the open air pavilion is situated at an elevation of 18 to 24 feet relative to the North American Vertical Datum of 1988 ("NAVD88") and the kids culture garden is largely situated between 18 and 22 feet NAVD88, with the steep hill near its southern side rising to elevations of 32 feet or more. Both portions of the Project Site include a slight rise to the south, and the areas of slightly higher elevation may overlap with areas of fast land as seen on the 1891 USGS maps. The 1891 maps appear to suggest that the elevations of these fast land areas was less than 20 feet above sea level in both locations. This appears to suggest that the majority of the Project Site contains between 18 and 24 feet of fill deposits and that additional fill deposits are expected to overlie the former areas of dry land at the southern boundary of the Project Site.

C. HYDROLOGY

A small creek known as either "Kissena Creek," "Ireland Mill Creek," or "Mill Creek" historically passed through the marshes through and in the vicinity of the Project Site (Kadinsky 2016). Portions of the creek continue to run through subsurface sewers and culverts throughout Flushing Meadows and Kissena Parks, including beneath the QBG (ibid).

D. SOILS

The Web Soil Survey maintained by the United States Department of Agriculture's Natural Resources Conservation Service[1] indicates that two soil complexes are present within the Project Site. The open air pavilion site is situated in an area where the soils are characterized as the "Laguardia-Ebbets complex." The typical profile of these types of soils includes 0 to 8 inches of "cobbly-artifactual coarse sandy loam" over layers of subsoil characterized as "very cobbly-artifactual coarse sandy loam." These well-drained soils are typically found in level areas with slopes ranging from 0 to 3 percent. The same soils are present within the northern portion of the kids cultural garden portion of the Project Site. The southern part of the kids culture garden portion of the Project Site is characterized by a similar soil complex known as "Laguardia artifactual coarse sandy loam." The typical profile of that soil type is the same as seen to the north; however soils associated with that complex are typically found in areas with 8 to 15 percent slopes.

[1] https://websoilsurvey.sc.egov.usda.gov/

A. PREVIOUSLY IDENTIFIED NATIVE AMERICAN ARCHAEOLOGICAL SITES NEAR THE PROJECT SITE

In general, Native American habitation sites are most often located in coastal areas with access to marine resources, near fresh water sources and areas of high elevation and level slopes (less than 12 to 15 percent) (NYAC 1994). Further indication of the potential presence of Native American activity near a Project Site is indicated by the number of precontact archaeological sites that have been previously identified in the vicinity. Information regarding such previously identified archaeological sites was obtained from various locations including the site files of NYSOPRHP, LPC, NYSM, and from published accounts. Seven sites have been identified within one mile of the Project Site in databases maintained by NYSOPRHP and NYSM (accessed via CRIS) and the Project Site is located within a generalized area of archaeological sensitivity as mapped by NYSOPRHP. These sites are summarized in **Table 3-1**, below.

Table 3-1
Precontact Archaeological Sites in the Vicinity of the Project Site

Site Name/ Number	Site Type	Approximate Distance from Project Site	Other	Source Information
Linnean Garden NYSM Site 4524	Burial Site	Location 1: 150 feet Location 2: 4,100 feet	The site is mapped in two different locations in CRIS; actual location appears to be Location 2	Furman 1875; Parker 1920; Bolton 1922;
Matinecock Settlements NYSM Site 4526	Villages	4,700 feet	Multiple village sites described along coasts of in northern Flushing and Long Island	Parker 1920
NYSM Site 4542	Camp	4,000 feet		Parker 1920
NYSM Site 4544	Camp	1,400 feet		Parker 1920
NYSM Site 4545	Traces of occupation	Overlaps		Parker 1920
New York Hall of Science Precontact Site NYSOPRHP: 08101.011526	Surface finds, possible camp	5,000 feet		
Flushing Friends Meeting House Precontact Site NYSOPRHP: 08101.011370	Woodland-era campsite with projectile points and other lithic artifacts	4,000 feet		

Source: CRIS (https://cris.parks.ny.gov)

The majority of these sites were mapped using descriptions provided by Parker (1920) based on reports from other archaeologists and avocational archaeologists in the late 19th and early 20th centuries. Little is known about these sites and they were not excavated according to modern archaeological standards or ethical guidelines. Two sites were documented through

modern archaeological surveys. The first (NYSOPRHP site 08101.011526) included a surface find—a possible lithic core—on the grounds of the New York Hall of Science nearly one mile west of the Project Site. The other site (NYSOPRHP site 08101.011370) included a small Woodland-period campsite that included projectile points and other precontact lithic artifacts that was documented by archaeologists Eugene Boesch and Jerome Wooden in the location of the Friends Meeting House, which also contains a historic-period cemetery.

THE FLUSHING OR LINNAEAN GARDEN SITE

DESCRIPTION OF THE LINNAEAN GARDEN SITE

The final site, known as the Flushing or Linnaean Garden Site (NYSM site 4524) has been reported to have been located in the vicinity of the Project Site. The site is believed to have been utilized as a "station," or occupation site, with planting fields that were later repurposed as botanical gardens in the historic period, long before the modern QBG was formed (Bolton 1922:182). The CRIS listing for the site is based on the description included in Parker (1920), which describes the site as: "Burial sites yielding 11 skeletons, in the Linnaean Garden in Flushing in 1841. All heads were to the east" (Parker 1920:672). Parker's source for information on the site was historian Gabriel Furman (1875), who described the site and its discovery as follows:

> *In the month of July 1841, eleven human skeletons were unearthed in excavating the ground to run a road through the Linnæn Garden, at Flushing, in Queens County. The place where they were found has been for fifty years used as a horticultural nursery. They were within a circle of thirty feet, their heads all lay to the east, and some nails and musket-balls were found with them. Conjecture has been foiled in speculating upon the circumstances under which they were inhumed* (Furman 1875: 5-6).

A similar narrative was published by historian Benjamin F. Thompson in 1843, only two years after the reported discovery of the remains. Additional similar reports have been repeated in other published works, including Bolton (1922). Fulton's account therefore appears to have been based on Thompson's:

> *In the autumn of 1841, while some persons were employed in excavating the ground, in the grading of Linnæus street, through a part of what was once the Linnæan Gardens, a dozen or more human skeletons were discovered and exhumed almost entire. From the fact of leaden bullets being found among the bones, it seems highly probably that the unfortunate individuals whose relics they were had fallen by an enemy in battle—and from the circumstance that a very considerable British force was stationed here during the Revolutionary war, it is no more reasonable to suppose, these bones may have been the remains of some of our countrymen, or of their opponents, who had fallen in a skirmish with each other* (Thompson 1843 II: 93-94).

THE LOCATION OF THE LINNAEAN GARDEN SITE

The Linnaean Garden site is mapped in CRIS in two different locations. The first is in the immediate vicinity of the Project Site and the second is mapped more than 4,000 feet north of the Project Site. The identification of the second location appears to be the result of research completed by William Roberts of Greenhouse Consultants, Inc. in 1997. Roberts also noted that the NYSOPRHP files indicate that the Linnaean Garden site was in the vicinity of Kissena Park to the east of the Project Site. However, Roberts speculated that the site was mapped in the incorrect location, as the 1873 Beers atlas depicted "Linnaeus Street" in downtown Flushing, in the location of what is now Prince Street north of Main Street. This location is more consistent with the second location of the site as mapped in CRIS more than 4,000 feet north of the site. Innes (1908) and Seyfried (2001) also indicate that the garden was located in the vicinity of modern Prince Street to the north of the Project Site. Smith's 1841 map of Flushing also depicts the garden in this area and depicts the proposed line of Linnaeus Street.

The confusion regarding the site's location appears to be related to the fact that there were multiple garden sites in Flushing during the 19th century, as the neighborhood had a long history as a place where domesticated crops and exotic plants were cultivated (Seyfried 2001). Named after biological classifier Carl Linnaeus, Linnaean gardens were popular precursors to modern botanical gardens in Europe and the Americas in the 18th and 19th centuries (Upsala 2021). An 8-acre "Linnaean Botanic Garden" was established in the Flushing area by William Prince ca. 1750 and was later operated by his children, William Prince, Jr. and Benjamin Prince, known collectively as "William Prince and Sons" (Thompson 1839; Seyfried 2001). The garden was initially noted for its extensive grove of English cherry trees and it later yielded a variety of ornamental trees and other crops as well (Thompson 1839). It was expanded to 24 acres in 1793 and covered more than 60 acres by the late 1830s (ibid). Revolutionary War activity was documented in the vicinity of the garden, as British General William Howe ordered his guards to protect the garden's ample resources after his arrival in Flushing in the summer of 1777 (ibid). It was Howe who gave the Linnaean Gardens its name, having previously been known as Prince's Gardens (Seyfried 2001).

Following the war, William and Benjamin Prince established additional nurseries in Flushing that were later consolidated into a single business (Seyfried 2001). After the Prince family embarked upon a silk business that was ultimately a failure, the nurseries were foreclosed upon in 1851 and later operated by Gabriel Winter operating as "Winter and Company" until 1862 (ibid). William Prince attempted to re-start his horticultural career by opening a new, 51-acre nursery south of 41st Avenue, though the size of the new parcel was significantly reduced following the construction of the a railroad line through the area (ibid). The 1852 Connor map of Queens County (see **Figure 5**) depicts "Prince's Nursery" on a 10-acre parcel situated to the south of the Project Site in an area situated between roads that appear to be precursors to modern Elder Avenue and Booth Memorial Avenue. The map continues to depict the Project Site as almost entirely, if not entirely, covered with marshland. The map continues to depict a small parcel of land in the vicinity of modern Prince and Main Streets north of the Project Site as "Prince's Nursery."

Furthermore, maps appear to indicate that the Project Site continued to be largely occupied by inundated marshland until the early 20th century, making it unlikely that it was the site of any historic-period burials. Therefore, it appears that the site where at least eleven graves were disinterred was more than 4,000 feet north of the Project Site and was unrelated to the Prince's gardens that was established to the south of the Project Site ca. 1851. AKRF notified NYSM of the mapping error and OPRHP has remapped the site in its correct location as OPRHP site 08101.013320.

B. DEVELOPMENT HISTORY OF THE PROJECT SITE

As described previously, the Project Site remained inundated marshland until the early 20th century. The 1891 Wolverton and 1904 Ullitz atlases continue to depict a creek running through a portion of what is now the QBG. Wolverton's atlas depicts a mill to the southwest of what is now the QBG, which appears to have given the adjacent creek its name. The Ullitz map also suggests that the areas of tidal marsh were divided into large privately-owned tracts that were presumably associated with salt hay farming and cultivation. The 1909 Bromley atlas of Queens (see **Figure 6**) depicts the Project Site in the same manner, though it reflects greater urban development surrounding the Project Site, including to the south of modern Elder Avenue. The map also identifies the stream in the vicinity of the Project Site as "Mill Creek." Sanborn maps published in 1917 and a 1924 aerial photograph taken by the City of New York[1] indicate that the creek and surrounding marshes were still present. The 1917 Sanborn map indicates that some residential development occurred by this time along the northern side of Elder Avenue within the modern QBG property but outside of the Project Site, which was still inundated by Mill Creek and its associated marshlands.

The dramatic transformation of the Flushing Meadows area occurred in the 1930s in preparation for the 1939 World's Fair. The fairgrounds extended as far east as College Point Boulevard, the western boundary of the modern QBG (Cotter 2009). Though it was situated east of the fairgrounds, modern Kissena Park, including the QBG, was filled at the same time.[2] A portion of the fairgrounds that had been filled and landscaped as part of the "Gardens on Parade" exhibit was transformed into the first site of the QBG after the fair concluded (ibid). Though the 1951 Sanborn map continues to depict Kissena Creek running through the Project Site, a 1951 aerial photograph depicts the modern location of the QBG as filled, but undeveloped. As part of the preparation for the 1964 World's Fair, which was also held in Flushing Meadows, the QBG was moved to its current location in 1961 (QBG 2021). At the time of the relocation, the modern QBG site was still largely occupied by "bog and dumps" and required significant grading and filling to create a landscape suitable for ornamental gardens (*New York Times* 1961: 16). Some of the trees planted in the garden exhibit for the 1939 fair

[1] Accessible here: https://maps.nyc.gov/then&now/.

[2] Photographs documenting the filling of marshes in the vicinity of Kissena Park can be found here: http://nycma.lunaimaging.com/luna/servlet/s/gs0x12 and here: http://nycma.lunaimaging.com/luna/servlet/s/a19k4z.

were replanted in the modern QBG (QBG 2021). As initially planned, the formal gardens were to be located in the QBG's southeast corner, near Main Street, while the remainder of the site, including the Project Site, was to be "informally landscaped" pending later development and associated landscape initiatives that do not appear to have been realized (*Ridgewood Times* 1962). Sanborn maps published between 1981 and the present and aerial photographs taken between 1996 and the present depict the Project Site as an undeveloped and landscaped portion of the park.

Chapter 4: Conclusions and Recommendations

A. CONCLUSIONS

As part of the background research for this Phase 1A Study, various primary and secondary resources were analyzed, including historic maps and atlases, historic photographs, newspaper articles, and local histories. The information provided by these sources was analyzed to reach the following conclusions.

ASSESSMENT OF PREVIOUS DISTURBANCE

The Project Site was inundated by a creek and surrounding marshlands until filling efforts transformed the landscape in the 1930s. These landfilling initiatives included the diversion of the creek into sewers and culverts that allow the stream to continue to run beneath the larger QBG property. The site of the QBG experienced further disturbance during its conversion to the modern botanical garden in the 1960s, at which time the QBG was graded and landscaped.

PRECONTACT SENSITIVITY ASSESSMENT

The precontact sensitivity of project sites in New York City is generally evaluated by a site's proximity to level slopes, watercourses, well-drained soils, and previously identified precontact archaeological sites. As described in **Chapter 3**, **"Background Research**,**"** the Project Site is located in the vicinity of a number of previously reported archaeological sites.[1] While the marshes within and surrounding the Project Site would have provided important resources for local indigenous groups during the precontact period, the Project Site was occupied by an active Creek and tidal marsh until the 1930s. The efforts made to transform the area into the QBG would therefore have resulted in significant landscape modification. Therefore, given the extent to which the Project Site has been disturbed as a result of both natural and anthropomorphic landscape modification associated with an active waterway, landfilling efforts, and the construction of the QBG, the Project Site is determined to have low sensitivity for archaeological resources associated with the precontact occupation of the area.

[1] The previously reported Linnean Garden archaeological site (NYSM 4524) containing human remains was determined by AKRF to have been mapped in the wrong place in NYSOPRHP's CRIS and was actually located more than 4,000 feet to the north of the Project Site.

HISTORIC SENSITIVITY ASSESSMENT

The Project Site was inundated until the 1930s and a review of historical maps indicated that no historical development occurred on the Project Site until the QBG was established there in the 1960s. The Project Site is therefore determined to have no archaeological sensitivity for resources associated with the historic period occupation of the area.

B. RECOMMENDATIONS

The Project Site is determined to have low sensitivity for precontact archaeological resources and no sensitivity for archaeological resources associated with the historic period. The impacts associated with the construction of the open air pavilion and the kids culture garden are therefore not expected to result in the disturbance of archaeological resources and no further archaeological analysis is recommended.

References

Beers, F.W.
1873 *Atlas of Long Island, New York From Recent and Actual Surveys and Records*. New York: Beers, Comstock, and Cline

Bolton, Reginald Pelham
1922 "Indian Paths in the Great Metropolis." *Indian Notes and Monographs*. Miscellaneous #22. New York: Museum of the American Indian, Heye Foundation.

Bromley, G.W. and W.S.
1909 Atlas of the City of New York: Borough of Queens. Philadelphia: G.W. Bromley & Co.

Caldwell, Daniel, compiler/editor.
1989 *Surficial Geologic Map of New York: Lower Hudson Sheet*. New York State Museum-Geological Survey, Map and Chart Series #40. Albany: New York State Museum.

Connor, R.F.O.
1852 *Map of Kings and Part of Queens Counties, Long Island, NY.* New York: M. Dripps.

Cotter, Bill
2009 *The 1939-1940 New York World's Fair*. Charleston, SC: Arcadia Publishing.

Fisher, Donald W., Yngvar W. Isachsen, and Lawrence V. Rickard, compilers/editors
1995 *Geologic Map of New York: Lower Hudson Sheet*. Originally published 1970, reprinted 1995. New York State Museum and Science Service Map and Chart Series No. 15. Albany: New York State Museum.

Furman, Gabriel
1875 *Antiquities of Long Island*. Frank Moore, editor. New York: J.W. Bouton.

Geoarcheological Research Associates
2007 "Geoarchaeological Study of Buried Landscapes for the Proposed 2nd Avenue Subway Between E 92nd and E 99th Streets, New York, New York." Prepared for: Metropolitan Transportation Authority (MTA) and DMJM+HARRIS·ARUP, JV, New York, NY.

Innes, J.H.
1908 "Plan of old Flushing showing the historic sites." In the collection of the Library of Congress.

Isachsen, Y.W., E. Landing, J.M. Lauber, L.V. Rickard, W.B. Rogers, editors.
2000 *Geology of New York: A Simplified Account*. Second Edition. New York: New York State Museum Educational Leaflet 28.

Kadinsky, Sergei
2016 *Hidden Waters of New York City*. Woodstock, VT: The Countryman Press.

New York Archaeological Council
1994 *Standards for Cultural Resource Investigations and the Curation of Archaeological Collections in New York State*. The New York Archaeological Council.

New York Times
1961 "Work Begins at Site for Relocated Queens Gardens." *New York Times* March 23, 1961: p.16. New York, NY.

Parker, Arthur C.
1920 *The Archaeological History of New York. A*lbany: The University of the State of New York.

Queens Botanical Garden (QBG)
2021 "Mission & History." Accessed January 28, 2021: https://queensbotanical.org/mission-history/

Ridgewood Times
1962 "Botanical Garden Administration Building Underway." *Ridgewood Times*. September 6, 1962: p. 17. Ridgewood, Queens, NY.

Roberts, William
1997 "Archaeological/Historical Sensitivity Study of the 136-21 Roosevelt Avenue Development; Flushing, Queens, New York." Prepared for: James Pi; Woodside, New York.

Sanborn Map Company
1917 *Insurance Maps of the Borough of Queens, City of New York*. New York: Sanborn Map Co.
1951-2020 *Insurance Maps of Borough of Queens, City of New York*. New York: Sanborn Map Co.

Schuberth, Christopher J.
1968 *The Geology of New York City and Environs*. Garden City, New York: The American Museum of Natural History, the Natural History Press.

Seyfried, Vincent F.
2001 *Flushing in the Civil War Era, 1837 to 1865*. Merrick, NY: Traction Year Book.

Smith, Elijah A.
1841 *The Village of Flushing, Queens County, LI.*

Thompson, Benjamin F.
1839 *History of Long Island*. New York: E. French.
1843 *The History of Long Island: Second Edition*. New York: Gould, Banks, & Co.

Ullitz, Hugo
1904 Atlas of the Borough of Queens, City of New York. Brooklyn, New York: E. Belcher Hyde.

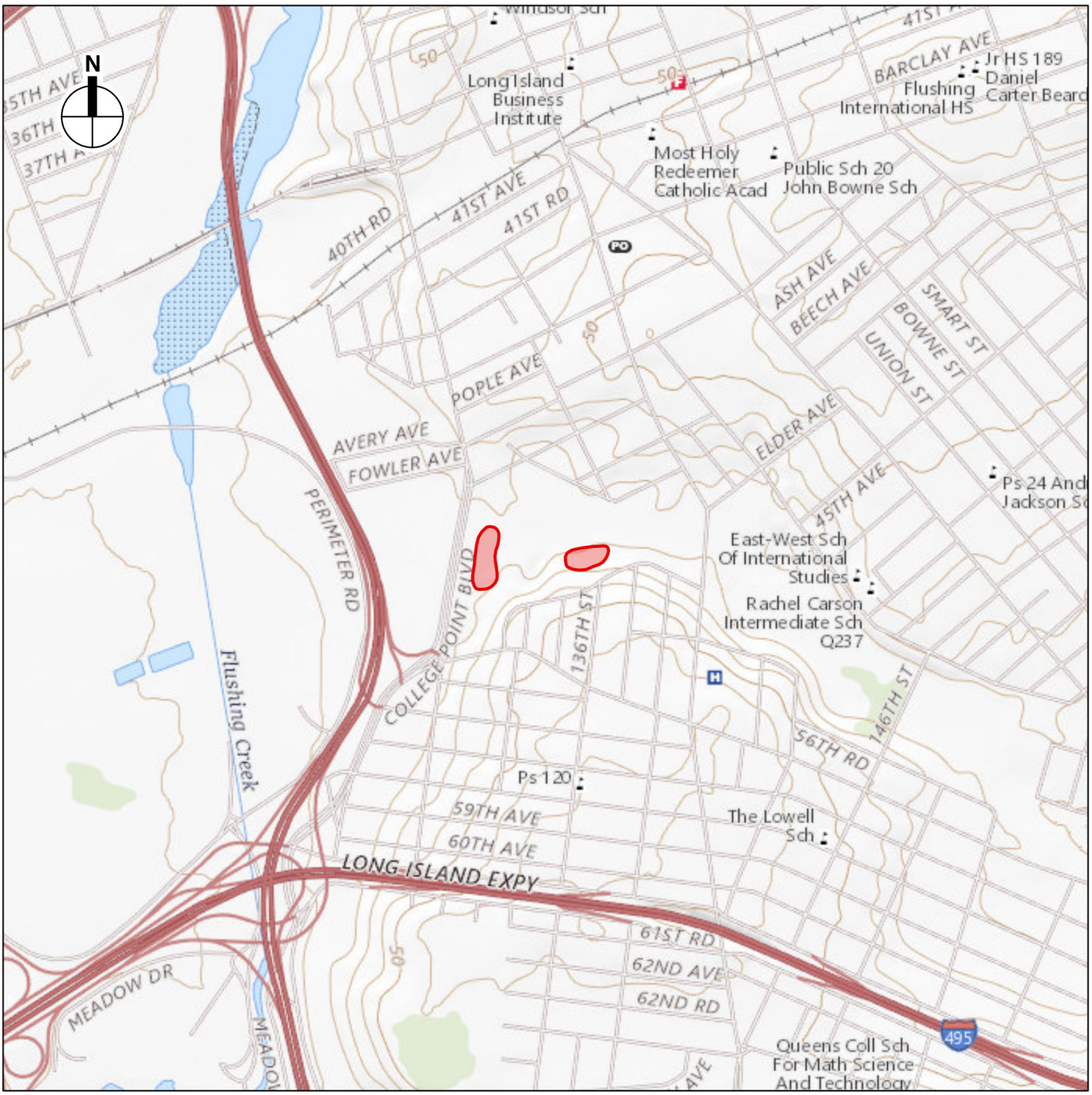
United States Geological Survey
1891 *New York: Harlem Sheet*. Washington, DC: United States Geological Survey.

United States Geological Survey
1891 *Harlem, NY-NJ Quadrangle, USGS 15 Minute Series*. Washington, DC: United States Geological Survey.
1891 *Brooklyn, NY-NJ Quadrangle, USGS 15 Minute Series*. Washington, DC: United States Geological Survey.
2013 "USGS New York CMGP Sandy Lidar." Accessed through: LAS.xml

Upsala
2021 "The Linnaeus Garden." Accessed January 27, 2021: https://destinationuppsala.se/en/activities/the-linnaeus-garden/.

Wolverton, Chester
1891 *Atlas of Queens County, Long Island, New York*. New York: Chester Wolverton.

Figures

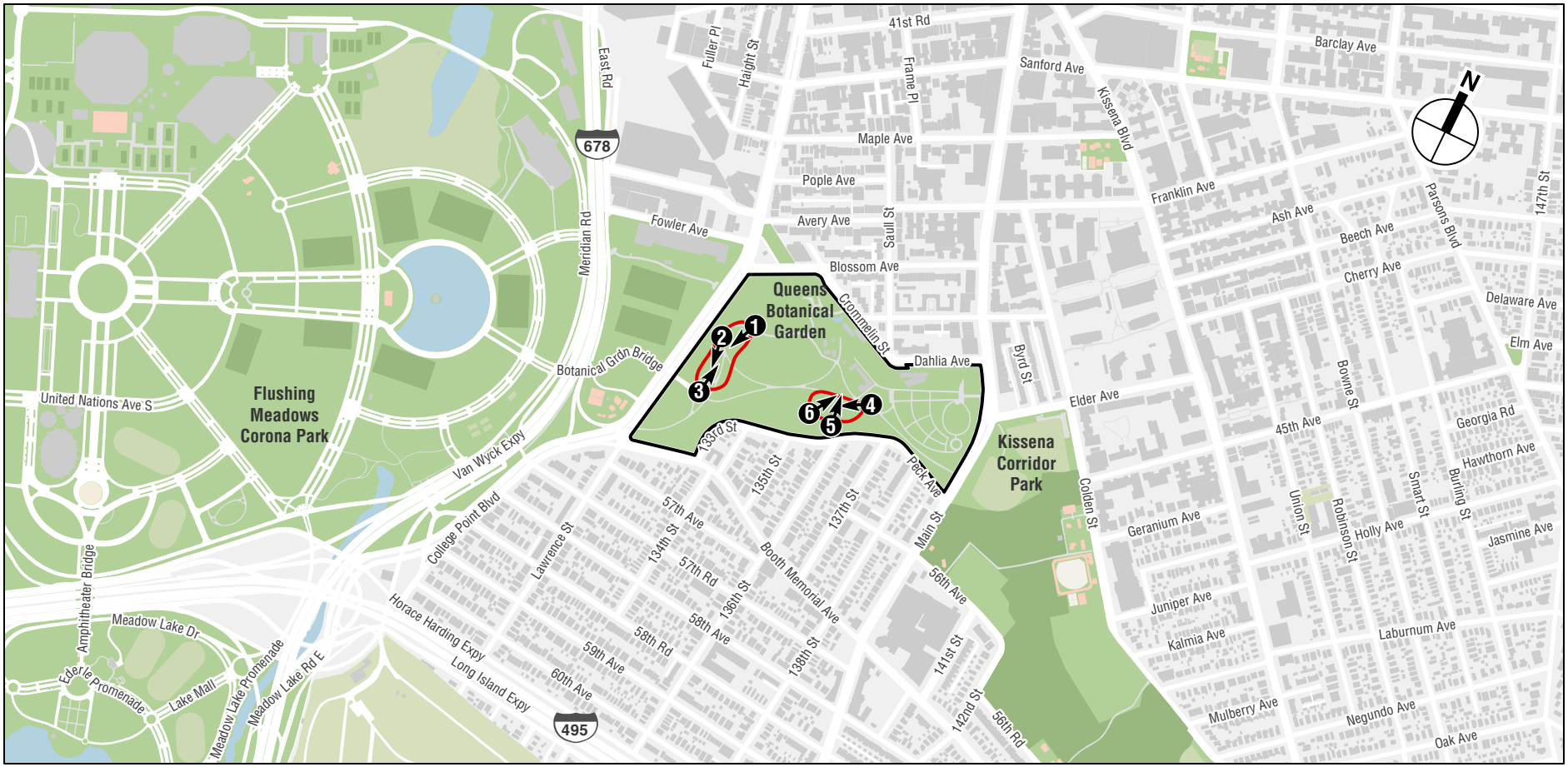


Approximate coordinates of Project Site:
73°49'49"W 40°45'1"N

USGS Topographic Map - Flushing and Jamaica Quadrangles

QUEENS BOTANICAL GARDEN – OPEN AIR PAVILION AND KIDS CULTURE GARDEN **Figure 1**

2.3.21



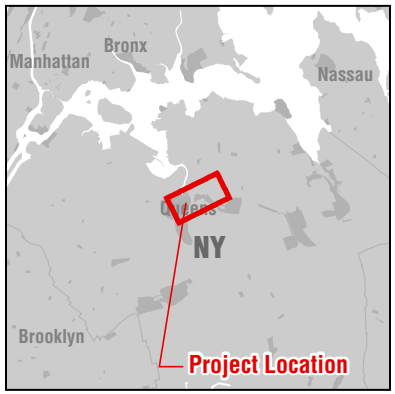
0 2,000 FEET

Project Site

Queens Botanical Garden

Photograph View Direction and Reference Number

Note: Approximate locations of the Proposed Open Air Pavilion and Kids Culture Garden.



Project Location

Figure 2

QUEENS BOTANICAL GARDEN – OPEN AIR PAVILION AND KIDS CULTURE GARDEN

View southwest from the Parking Garden **1**

View south from the haul road **2**

View north from area near the bridge over College Point Boulevard **3**

Note: Approximate location of the Proposed Open Air Pavilion

QUEENS BOTANICAL GARDEN - OPEN AIR PAVILION AND KIDS CULTURE GARDEN

Project Site Views – Open Air Pavilion Site

Figure 3a

View west including the hill on the left and the composting and farm areas in the far distance **4**

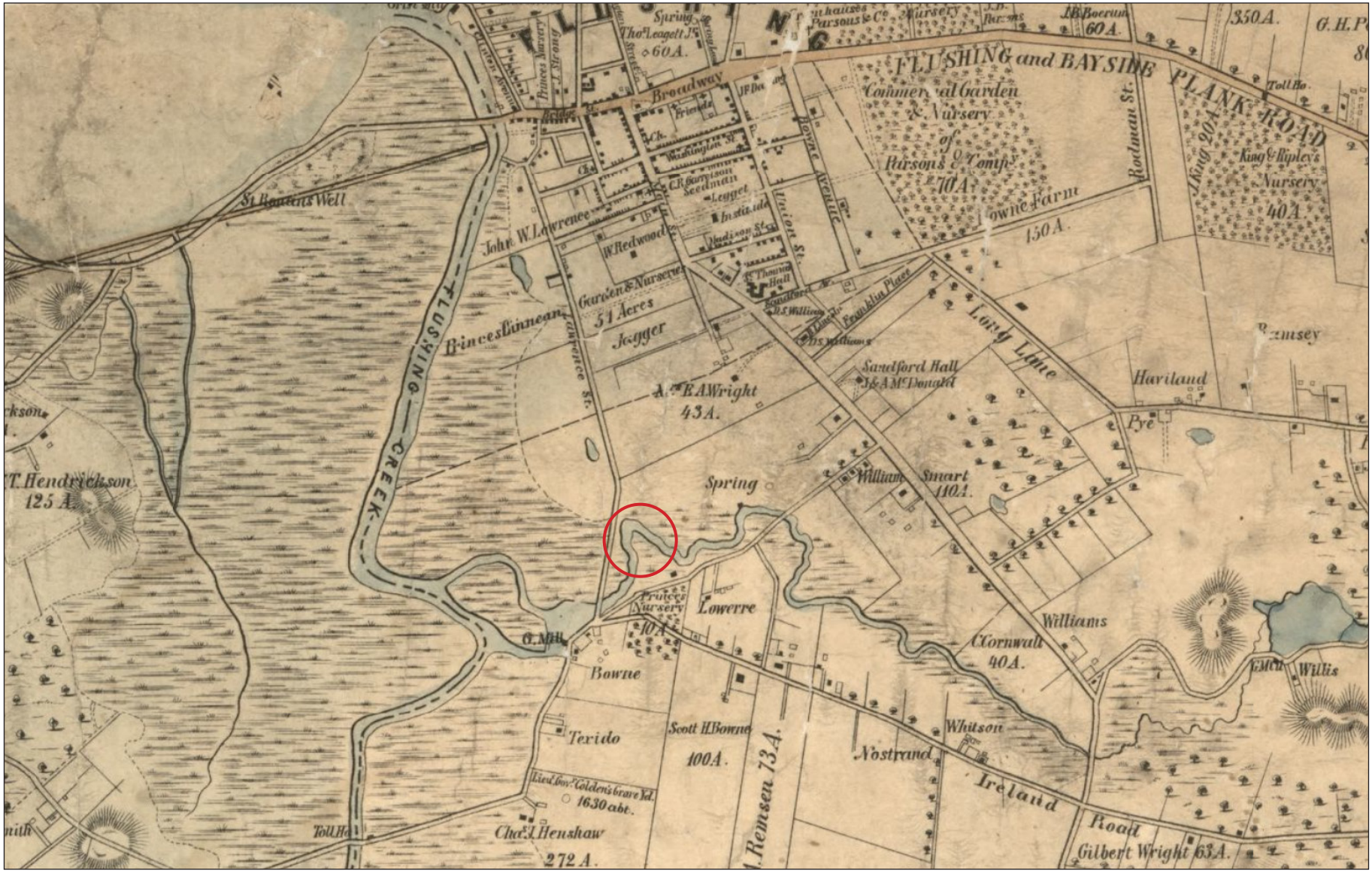
View east including crab apple trees on the left and the hill on the right **5**

View northeast from the hill including crab apple trees **6**

Note: Approximate location of the Proposed Open Air Pavilion

2.3.21

1891 USGS Maps, Brooklyn and Harlem

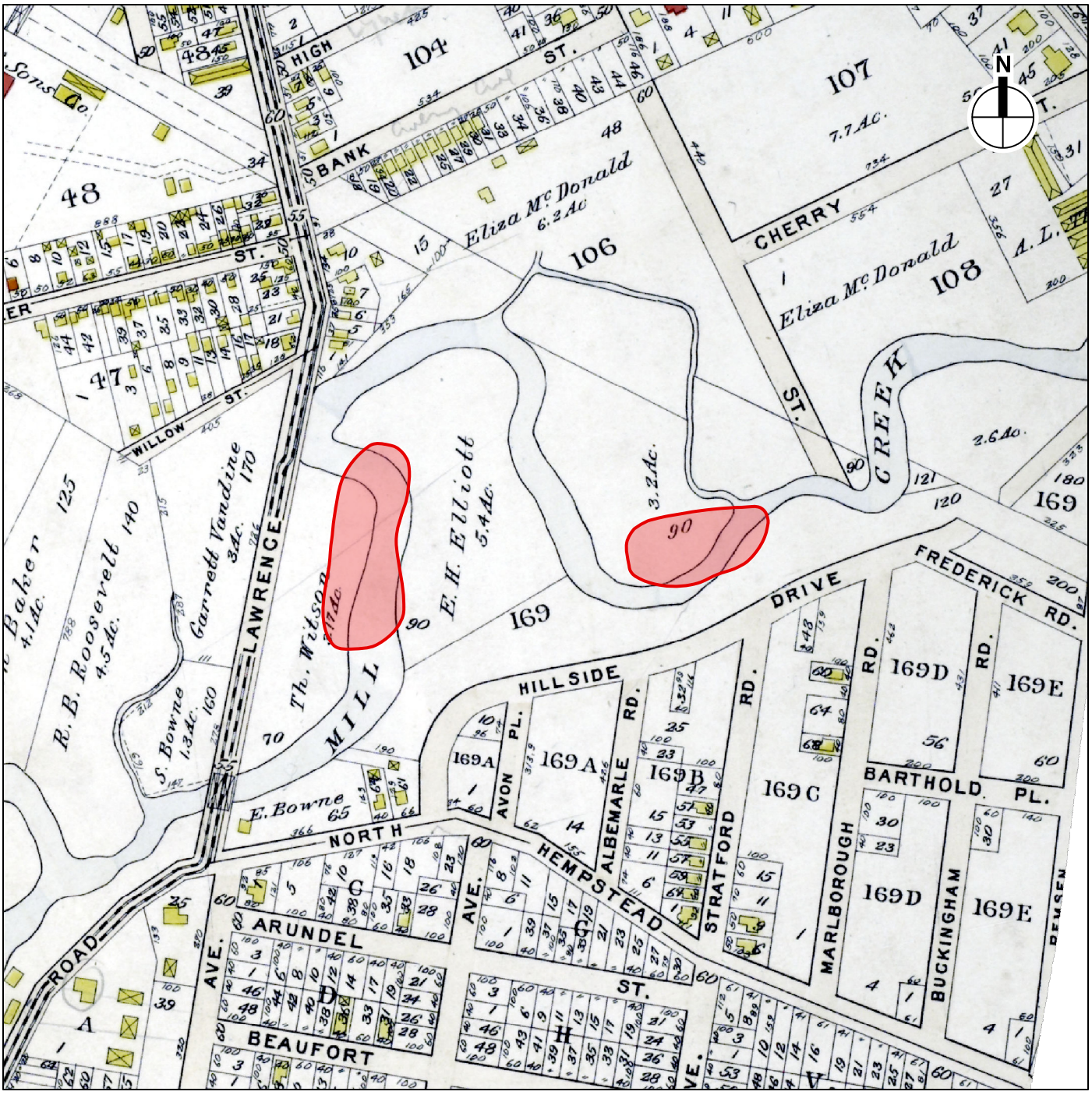


Approximate Location of Project Site

1852 Connor Map

Figure 5

2.23.21



1909 Bromley Atlas

QUEENS BOTANICAL GARDEN – OPEN AIR PAVILION AND KIDS CULTURE GARDEN

Figure 6

Appendix A:

Plan for the Unanticipated Discovery of Human Remains

Open Air Pavilion and Kids Culture Garden at the Queens Botanical Garden

43-50 Main Street (Block 5107, Lot 200)

KISSENA PARK, FLUSHING, QUEENS COUNTY, NEW YORK

Plan for the Unanticipated Discovery of Human Remains

Prepared for:

Dormitory Authority of the State of New York (DASNY)
One Penn Plaza, 52nd Floor
New York, New York 10119-0098

Prepared by:

AKRF, Inc.
440 Park Avenue South
New York, NY 10016
212-696-0670

March 2021

Queens Botanical Garden Open Air Pavilion and Kids Culture Garden Project: Plan for the Unanticipated Discovery of Human Remains

PART 1: INTRODUCTION AND PROJECT BACKGROUND

The Queens Botanical Garden Society, Inc. ("Queens Botanical Garden" or "QBG") is proposing to construct improvements on the QBG grounds within Kissena Park in the Flushing neighborhood of Queens, New York. The Proposed Project would provide the QBG with new garden amenities that would support the QBG's sustainability initiatives while enhancing the visitor experience of the garden, including opportunities for hands-on experiences for children visiting the garden. The Dormitory Authority of the State of New York ("DASNY") has received a funding request from QBG for its *Open Air Pavilion and Kids Culture Garden* as part of the Community Capital Assistance Program ("CCAP") and/or the State and Municipal Facilities Program "SAM") (DASNY project #8140). The Project Site therefore includes two non-contiguous locations within the QBG: 1) the open air pavilion site is located in the southwest portion of the QBG and 2) the kids culture garden site is located in the south-central portion of the QBG.

The Proposed Project is being reviewed pursuant to the *State Environmental Quality Review Act ("SEQRA")*, codified at Article 8 of the *New York Environmental Conservation Law ("ECL"),* and its implementing regulations, promulgated at Part 617 of Title 6 of the *New York Code, Rules and Regulations ("N.Y.C.R.R."),* which collectively contain the requirements for the *State Environmental Quality Review ("SEQR")* process. The environmental review of the Open Air Pavilion and Kids Culture Garden project ("Proposed Project") follows *SEQRA*, and the New York *City Environmental Quality Review ("CEQR") Technical Manual* generally is used as a guide with respect to environmental analysis methodologies and impact criteria for evaluating the Proposed Project.[1] The Proposed Project is also being reviewed in conformance with the *New York State Historic Preservation Act of 1980 ("SHPA")*, specifically the implementing regulations of Section 14.09 of the *Parks, Recreation and Historic Preservation Law ("PRHPL")*, as well as with the requirements of the Memorandum of Understanding ("MOU"), dated March 18, 1998, between DASNY and the New York State Office of Parks, Recreation, and Historic Preservation (NYSOPRHP).

Pursuant to these regulations, consultation was initiated with NYSOPRHP and the New York City Landmarks Preservation Commission ("NYCLPC") regarding the Project Site's potential archaeological sensitivity. In a comment letter dated January 20, 2021, NYSOPRHP determined that the Project Site is potentially archaeologically sensitive and requested that a Phase 1A Literature Search and Sensitivity Assessment (also known as a "Phase 1A Archaeological Documentary Study" or "Phase 1A Study") be prepared to further assess areas of archaeological sensitivity within the Project Site. Specifically, NYSOPRHP stated that the site was in close

[1] The City of New York, Mayor's Office of Environmental Coordination, *CEQR Technical Manual,* 2020.

proximity to New York State Museum ("NYSM") archaeological site number 4524, which was reported to include precontact archaeological resources and human remains potentially associated with military activity in the area during the Revolutionary War. NYCLPC made a similar request in a comment letter issued February 2, 2021. A Phase 1A Study was prepared by AKRF in February 2021 (Revised, March 2021) to satisfy these comments.[1]

The Phase 1A Study concluded that the Project Site is not sensitive for archaeological resources and determined that no additional archaeological analysis or testing was required. In separate comment letters issued February 22, 2021, NYCLPC and NYSOPRHP concluded that out of an abundance of caution, a plan for the unanticipated discovery of human remains be prepared and implemented in the unlikely event that human remains are encountered during the construction of the project. NYSOPRHP specifically requested that the Human Remains Discovery Protocol as issued by the New York State Historic Preservation Office ("SHPO") in January 2021 be implemented in the event that human remains are encountered during the project's construction. This protocol is included here as **Part 2: SHPO Human Remains Discovery Protocol**. The steps that would have to be followed in order to implement the SHPO protocol in compliance with the *Guidelines for Archaeological Work in New York City* as issued by NYCLPC in 2018[2] are included in **Part 3: Plan for the Unanticipated Discovery of Human Remains**.

PART 2: SHPO HUMAN REMAINS DISCOVERY PROTOCOL (JANUARY 2021)

In the event that human remains are encountered during construction or archaeological investigations, SHPO recommends that the following protocol is implemented:

- Human remains shall be treated with the utmost dignity and respect. Should human remains or suspected human remains be encountered, work in the general area of the discovery shall stop immediately and the location shall be secured and protected from damage and disturbance.
- If skeletal remains are identified and the archaeologist is not able to conclusively determine if they are human, the remains and any associated materials must be left in place. A qualified forensic anthropologist, bioarchaeologist or physical anthropologist shall assess the remains in situ to help determine if they are human.
- If the remains are determined to be human, law enforcement, the SHPO, the appropriate Indian Nations, and the involved state and federal agencies shall be notified immediately. If law enforcement determines that the burial site is not a criminal matter, no skeletal remains or associated materials shall be removed until appropriate consultation takes place.

[1] AKRF (2021): "Open Air Pavilion and Kids Culture Garden at the Queens Botanical Garden; 43-50 Main Street (Block 5107, Lot 200); Kissena Park, Flushing, Queens County, New York: Phase 1A Archaeological Documentary Study." Prepared for: Dormitory Authority State of New York; New York, NY.

[2] https://www1.nyc.gov/assets/lpc/downloads/pdf/2018_Guidelines%20for%20Archaeology_Final_high%20res.pdf

- If human remains are determined to be Native American, they shall be left in place and protected from further disturbance until a plan for their avoidance or removal is developed. Please note that avoidance is the preferred option of the SHPO and the Indian Nations. The involved agency shall consult SHPO and the appropriate Indian Nations to develop a plan of action. Photographs of Native American human remains and associated materials should not be taken without consulting with the involved Indian Nations.
- If human remains are determined to be non-Native American, the remains shall be left in place and protected from further disturbance until a plan for their avoidance or removal is developed. Please note that avoidance is the preferred option of the SHPO. The involved agency shall consult SHPO and other appropriate parties to develop a plan of action.
- The SHPO recommends that burial information is not released to the public to protect burial sites from possible looting.

PART 3: PLAN FOR THE UNANTICIPATED DISCOVERY OF HUMAN REMAINS

In the event that human remains or suspected human remains are encountered during construction, the following plan will be implemented to ensure that the Human Remains Discovery Protocol as issued by SHPO will be implemented in compliance with New York City laws and the guidelines of NYCLPC regarding the discovery and handling of human remains.

The following procedures will be adhered to if the discovery of human remains or suspected human remains occurs during construction efforts associated with the Proposed Project. This protocol outlines the notification procedures that will be in place to ensure that all involved parties are appropriately notified of the discovery of human remains or suspected human remains.

In the event of the discovery of human remains or suspected human remains:

1. The Contractor will stop work immediately in the area of the find to protect the integrity of the find. The location of the find will be flagged or fenced to ensure the safety of the human remains and to avoid potential impacts.
2. The Contractor will immediately notify QBG and QBG will notify the archaeological consultant of the find. Notification will include: specific location of discovery within the disturbed area of the work site; the nature of the discovery; and the location of the find flagged/fenced to insure safety and avoidance of impacts. At all times human remains must be treated with the utmost dignity and respect. The Contractor will not restart work in the area of the find until QBG has granted clearance.
3. The Contractor will immediately call 911 to notify both the New York City Police Department (“NYPD”) and the Office of the Chief Medical Examiner (“OCME”) of the find, and cooperate with OCME to notify, as required, any additional law enforcement agencies, as appropriate.

SHPO Contact:	Dr. Bradley Adams, Forensic Anthropologist
Telephone:	Primary: 212.447.2030; Secondary: 718.804.8050
Address:	520 First Avenue, New York, New York 10016
E-mail:	badams@ocme.nyc.gov

4. QBG will promptly notify NYSOPRHP and NYCLPC of the find.

NYSOPRHP Contact:	Philip A. Perazio, Historic Preservation Program Analyst—Archaeologist
Telephone:	(518) 268-2175
Address:	New York State Office of Parks, Recreation, and Historic Preservation, Division for Historic Preservation P. O. Box 189, Waterford, NY 12188-0189
Express Address:	Delaware Avenue, Cohoes, New York 12047
E-mail:	Philip.Perazio@parks.ny.gov

NYCLPC Contact:	Amanda Sutphin, Director of Archaeology
Telephone:	212.669.7823
Address:	New York City Landmarks Preservation Commission 1 Centre Street, 9th Floor, New York, NY 10007
E-mail:	asutphin@lpc.nyc.gov

5. If OCME/NYPD determine that they have no concerns for the remains, QBG will retain the services of an archaeological consultant (if one has not already been retained) and will direct the archaeological consultant to begin a more detailed archaeological assessment of the find's significance.
6. If it is determined that intact interments or disarticulated human remains are present and may be disturbed by continuing construction, then QBG will attempt to locate and identify next of kin or a descendant community (if known or if lineage can be determined), NYSOPRHP and NYCLPC regarding additional measures to avoid or mitigate further damage. These measures may include:
    - Formal archaeological evaluation of the site;
    - Visits to the site by NYSOPRHP, NYCLPC, and other parties as necessary;
    - Preparation of a mitigation plan by QBG, including procedures for disinterment and reinterment, for approval by NYSOPRHP and NYCLPC;
    - Implementation of the mitigation plan; and
    - Approval to resume construction following completion of the fieldwork component of the mitigation plan.
7. In the event that intact human remains are to be disinterred from the site, a funeral director will be retained by QBG. As necessary and required by New York City law, the

funeral director will apply for a disinterment permit from the New York City Department of Health ("NYCDOH") before human remains are removed from the site pending the implementation of a mitigation plan prepared pursuant to **Step 6** of this plan.

8. QBG will then grant clearance to the Contractor to restart work.

Attachment C:

Stockbridge-Munsee Community's Policy for Treatment and Disposition Of Human Remains and Cultural Items That May be Discovered Inadvertently

&

Delaware Nation Historic Preservation Department Inadvertant Discovery Policy

Stockbridge-Munsee Community
Band of Mohican Indians
Policy for
Treatment and Disposition of Human Remains and Cultural Items
That May be Discovered Inadvertently

Purpose

The purpose of this policy is to outline procedures that will be followed by all agencies, contractors or others in the event of an inadvertent discovery of human remains or cultural materials that are identified as potentially Stockbridge-Munsee (Mohican).

Treatment and Disposition of Human Remains and Cultural Items

1) The federal agency or contractor shall contact the Stockbridge-Munsee Community immediately, but no later than three days after the discovery of the remains and/or artifacts at the contact information below:

updated September 2022

Jeff Bendremer, Tribal Historic Preservation Officer (THPO)	thpo@mohican-nsn.gov	413-884-6029 office 715-881-2254 cell

If unavailable, contact:

Bonney Hartley, Tribal Historic Preservation Manager	Bonney.Hartley@mohican-nsn.gov	413-884-6048 office
Monique Tyndall, Cultural Affairs Director	Monique.Tyndall@mohican-nsn.gov	715-793-4270 office
Linda Mohawk Katchenago, Administrator	Linda.Katchenago@mohican-nsn.gov	715-793-4355 office

2) Place tobacco with human remains and/or funeral objects.

3) Cover remains and funeral objects with a natural fiber cloth such as cotton or muslin when possible.

4) No photographs will be taken.

5) The preferred treatment of inadvertently discovered cultural materials and/or human remains is to leave them *in-situ* (in place) and protect them from further disturbance.

6) Non-destructive "in-field" documentation of the remains and cultural items shall be carried out only in consultation with the Tribe, who will determine appropriate methods of recordation depending upon the circumstances.

7) If the remains and cultural items are to remain *in-situ*, the requirements of 43 CFR 10 Sections 10.4–10.6 will have been fulfilled.

8) The specific location(s) of discovery shall be withheld from disclosure (with the exception of local law officials and tribal officials as described above) and protected to the fullest extent by federal law.

9) If remains and funeral objects are to be removed from the site, specific procedures and considerations will be determined by Stockbridge-Munsee Tribe in consultation with the federal agency.

DELAWARE NATION
HISTORIC PRESERVATION DEPARTMENT

INADVERTANT DISCOVERY POLICY

Purpose:

The purpose of this policy is to outline procedures that will be followed by all agencies, contractors, or others in the event of an inadvertent discovery of human remains or cultural materials that are identified as potentially Lenape / Delaware.

Treatment and Disposition of Human Remains and Cultural Items:

1. The federal agency or contractor shall contact Delaware Nation immediately, but no later than three days after the discovery of remains and/or artifacts including all of the contacts listed below:

Carissa Speck, *Director of Historic Preservation*
cspeck@delawarenation-nsn.gov
405-247-2448 ext 1403

Katelyn Lucas, *Tribal Historic Preservation Officer*
klucas@delawarenation-nsn.gov
405-544-8115

2. Place tobacco with human remains and/or funerary objects

3. Cover remains and funerary objects with a natural fiber cloth such as cotton or muslin when possible.

4. Absolutely no photographs are to be taken.

5. The preferred treatment of inadvertently discovered cultural materials and/or human remains is to leave them in-situ (in place) and protect them from further disturbance.

6. Non-destructive "in-field" documentation of the remains and cultural items shall be carried out only in consultation with Delaware Nation, who will determine appropriate methods of recordation depending upon the circumstances.

7. If the remains and cultural items are to remain in-situ, the requirements of 43 CFR 10 Sections 10.4-10.6 will have been fulfilled.

8. The specific location(s) of discovery shall be withheld from disclosure (with the exception of local law officials and tribal officials as described above) and protected to the fullest extent by federal law.

9. If remains and funerary objects are to be removed from the site, specific procedures and considerations will be determined by Delaware Nation in consultation with the federal agency.

Attachment D:
Allowance For Unanticipated Archeological Discoveries
(the UDP)

ADDITIONAL SECTIONS/SUB-SECTIONS

The Contractor is advised that the additional Sub-Sections set forth below are included in the General Conditions and apply to the Project.

SECTION 01 31 00 PROJECT MANAGEMENT AND COORDINATION

Add Article 1.10:

1.10 ALLOWANCE FOR UNANTICIPATED ARCHEOLOGICAL DISCOVERIES

A. This Article outlines the procedures that must be followed in the event that archaeological resources, including human remains, are found during construction in any portion of the project. This Article constitutes the Unanticipated Discoveries Plan (UDP) for the Project and is to be used as a guide for construction personnel during excavation for this Project.

B. The Contractor is advised that the City will retain the services of an Archeologist for this Project.

C. The Contractor will keep this Plan on site. At Construction kickoff, the Contractor will hold a meeting with on-site construction management personnel, equipment operators, and laborers to review the Plan outlined in this Article.

D. The Archaeologist retained for this Project is authorized to halt construction at any time to record and/or recover any archaeological resources encountered during excavations, and to stabilize in place any human remains encountered. Contractor will stop construction activities during this time and until permission to proceed is granted pursuant to the provisions of this UDP.

E. Archaeological discoveries that require the Contractor to stop work, report to the DDC Senior Construction Project Manager, and notify the Archaeologist include, but are not limited to, the following:

1. Any skeletal or human remains including coffins, burial vaults or other evidence of burials.

2. Building or other structural foundations. These may be constructed of wood, stone or brick. It is possible that artifact deposits exist within these features. Foundation walls may be intact, but often only sections of a wall are uncovered and/or remain.

3. Any recognizable, potential concentrations of artifacts, features, faunal material (bones) or other evidence of human occupation, including indigenous artifacts such as stone tools or large concentrations of shell.

F. In the event that either significant or insignificant archaeological deposits are encountered during construction or archaeological investigations, the DDC Senior Construction Project Manager, the NYC Department of Cultural Affairs (DCLA) and NYC Landmarks Preservation Commission (LPC) must be notified as directed by the Archaeologist. If any indigenous or potentially indigenous materials are found, including human remains, the Inadvertent Discovery Policies, located in the Appendix to the Specifications, pages 106 and 107, (“Tribal Nation Protocols” for the Delaware Nation and Stockbridge-Munsee Community), must be followed.

G. In the event that human remains or other significant archaeological deposits are encountered, the following protocol will be implemented:

1. The Contractor must stop work immediately within a minimum of 15 feet of the discovery and notify the DDC Senior Construction Project Manager, and the Archaeologist. The DDC Senior Construction Project Manager will issue an official Stop Work Order for the area in question. The work cannot resume in the affected area until the Archaeologist or Landmarks Preservation Commission (LPC) has made a determination regarding significance of the discoveries.

2. The Contractor must immediately contact the DDC Senior Construction Project Manager, LPC and the Office of the Chief Medical Examiner (OCME) and the NYS Archaeologist, Dr. Christina Rieth, in accordance with the NYS "Unmarked Burial Site Protection Act," and must follow the requirements pursuant to that Act. Unless the OCME and NYS Archaeologist are certain the remains are not of indigenous ancestry, tribal consultation must also occur as provided for in the Tribal Nation Protocols. All remains will be treated with respect and protected to the greatest extent possible.

3. If any indigenous or potentially indigenous materials are found, including human remains, the Tribal Nation Protocols must be followed. These can be found in the Appendix, pages 106 and 107.

H. In the event of any discovery under this UDP:

1. Absolutely no photographs are to be taken except by the Archaeologist.

2. For evaluating and recording archaeological resources, and for protection of findings in place, the Archaeologist will be allowed to enter all trenches, and Contractor will ensure all standard safety requirements are met for this purpose.

3. The Archeologist will immediately document the discovery through photographs, sketches, and/or maps, and forward to the LPC, the DDC Senior Construction Project Manager, and DCLA's Capital Project Manager.

4. The Contractor will arrange to have the area tarped and protected as directed by the Archaeologist and ensure that construction work does not proceed within the area of discovery.

5. LPC will visit the site as soon as possible, in consultation with representatives from DCLA and the Archaeologist, to determine how to proceed if a determination cannot be made from photographs. No work may occur at the affected area until LPC has issued a determination.

6. The Contractor is prohibited from publicly disclosing the specific location(s) of discovery (except as provided for under this UDP).

I. Should any Extra Work be ordered by the Commissioner as a result of any archaeological discoveries, it will be payable under this Allowance in accordance with the requirements of Articles 25 and 26 in the Standard Construction Contract.

VIII. SPECIAL EXPERIENCE REQUIREMENTS FOR THE PROJECT

Refer to the PASSPort Questionnaire for Special Experience Requirements.

Appendix B:

Shovel Test Pit and Geo-probe Log

STP/Geo-probe Number	Level	Stratum	Base Depth in Feet (Ground Surface)	Elevation Based on NAVD88 - Project Datum: [+19.0']	Munsell Color	Soil Texture	Cultural Material	Comments
G1	1	Fill 1	0.5	18.5	10YR 3/2 m/w 10YR 5/6	Silt loam	NCM	Small pebbles
	2	Fill 2	0.8	18.2	10YR 2/2	Silt clay	NCM	Small pebbles
	3	Fill 3	2.2	16.8	10YR 3/2 m/w 10YR 5/6	Silt loam	Historic/Modern	Small pebbles
	4	Fill 4	4.8	14.2	10YR 3/2 m/w/ 10YR 2/1	Sandy loam	Historic/Modern	Roots, leaf litter
	5	Fill 5	7.2	11.8	Gl1 3/N	Clay	Historic/Modern	Very hydric
	6	Fill 6	18.0	1.0	Gl1 3/N m/w 10YR 3/2	Clay m/w Silty clay loam	Historic/Modern	Very hydric
	7	Fill 7	18.7	0.3	10YR 3/1	Gravel m/w Silt and Sand	Historic/Modern	Gravel and organic material, very hydric, ash
	8	Fill 8	20.3	-1.3	10YR 2/2 m/w 10YR 2/1	Silty sand m/w Gravel	Historic/Modern	Small pebbles, very hydric
G2	1	Fill 1	1.5	17.5	10YR 3/2 m/w 10YR 5/6 & 10YR 2/1	Silt loam m/w sand	NCM	Pebbles, roots
	2	Fill 2	3.5	15.5	10YR 2/2	Silt loam m/w sand	Coal not retained	Pebbles
	3	Fill 3	6.0	13.0	10YR 2/1 m/w Gl1 3/N	Clay loam	Coal not retained	Small pebbles wth gravel
	4	Fill 4	8.0	11.0	10YR 2/2 m/w Gl1 3/N	Clay loam m/w sand	Coal and slag not retained	Small and medium pebbles with charcoal flecking
	5	Fill 5	8.8	10.2	10YR 3/2 m/w 10YR 4/3 m/w 10YR 2/1 & Gl1 3/N	Silty clay loam	NCM	Medium and large pebbles with roots
	6	Fill 6	10.0	9.0	Gl1 3/N m/w 10YR 2/1	Clay	NCM	Small gravel
	7	Fill 7	11.5	7.5	10YR 3/2 m/w 10YR 2/1 m/w Gl1 3/N	Clay	NCM	
	8	Fill 8	12.0	7.0	10YR 2/1 m/w 2.5Y 6/2	Sand m/w clay	Wood, plastic, and modern bottle glass not retained	Organic material
	9	Fill 9	14.0	5.0	10YR 2/1 m/w 2.5Y 6/2	Sand m/w silty clay	Modern lime bottle glass and coal not retained	Coal ash with small pebbles
G3	1	Fill 1	0.5	18.5	10YR 2/1	Silt loam	NCM	Small pebbles
	2	Fill 2	2.0	17.0	10YR 5/6 m/w 10YR 3/2	Silty clay	Historic/Modern	Small pebbles
	3	Fill 3	8.0	11.0	10YR 2/1 m/w Gl1 3/N	Clay	Historic/Modern	Small pebbles, roots, and gravel
	4	Fill 4	10.0	9.0	10YR 3/2 m/w Gl1 3/N m/w 10YR 2/1	Silty clay loam	Historic/Modern	Roots and pebbles
	5	Fill 5	14.0	5.0	10YR 2/1 m/w Gl1 3/N	Clay	Historic/Modern	Pebbles and coal ash, very hydric
G4	1	Fill 1	0.9	18.1	10YR 3/3	Silt loam	Asphalt fragments not retained	On a sloped hill below steeper slope, small pebbles
	2	Fill 2	2.3	16.7	10YR 3/2 m/w 10YR 2/2	Silty clay loam	Machine-manufactured glass, slag, whiteware, and charcoal not retained	Iron staining with small pebbles and cobbles
	3	Fill 3	3.0	16.0	10YR 3/3 m/w 10YR 4/1	Silty clay	Asphalt, cement, machine-manufactured glass, wood, and slag not retained	Hydric with iron oxide staining and small pebbles
	4	Fill 4	4.5	14.5	10YR 3/3	Silt loam	Asphalt and concrete not retained	NOTE: offset after level due to unpenetrable asphalt and concrete. Very swampy, hydric
	5	Fill 5	5.3	13.7	10YR 3/2 m/w 10YR 2/2	Silty clay loam m/w sand	Brick fragment not retained	Roots, hydric with small pebbles
	6	Fill 6	8.1	10.9	2.5Y 2.5/1	Sandy clay	Rubber, copper wire, machine-manufactured glass not retained	Very hydric, little soil retention
	7	Fill 7	16.0	3.0	10YR 2/1	Coarse sandy clay	Rubber, machine-manufactured glass, whiteware, paperclip not retained	Very hydric, little soil retention
G5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Not excavated due to slope exceeding 45 percent
G6	1	Fill 1	1.3	17.7	10YR 3/2 m/w 10YR 3/3	Silty clay loam	Machine-manufactured glass not retained	Charcoal flecking
	2	Fill 2	2.8	16.2	10YR 3/2	Silty clay	Machine-manufactured glass, mouth blown glass, and shell fragment not retained	Hydric with iron oxide staining
	3	Fill 3	6.8	12.2	10YR 3/2 m/w 10YR 5/4	Sandy clay loam	Machine-manufactured glass, decaying wood, and redware sherd not retained	Hydric with charcoal flecking
	4	Fill 4	10.8	8.2	10YR 3/2 m/w 10YR 5/6 and 10YR 2/1	Sandy clay	Rubber, slag, machine-manufactured glass, and light bulb fragment not retained	Hydric with small pebbles
	5	Fill 5	12.5	6.5	10YR 2/1	Sandy clay loam	Machine-manufactured bottle glass, leather, and ironstone sherd not retained	Very hydric, iron oxide staining with small pebbles
	6	Fill 6	14.8	4.2	10yr 2/1 m/w 10YR 3/2 m/w Gl1 3/N	Sandy loam	Rubber, machine-manufactured bottle glass, and leather not retained	Hydric
	7	Fill 7	26.0	-7.0	Gl1 3/N	Clay	NCM	Very hydric, little soil retention
G7	1	Fill 1	4.5	14.5	10YR 3/2 m/w 10YR 2/1	Fine sandy clay loam	Machine-manufactured glass, flower pot sherd, wood, and stoneware sherd not retained	Iron oxide staining with small pebbles
	2	Fill 2	5.3	13.7	10YR 3/2 m/w 10YR 5/6	Silt loam	NCM	Small pebbles
	3	Fill 3	5.8	13.2	10YR 3/2 m/w 2.5Y 3/1	Sandy clay	Machine-manufactured bottle glass and slag not retained	Small pebbles and plant material, and terrestrial shell (non-artifactual)
	4	Fill 4	6.1	12.9	10YR 3/2 m/w 10YR 5/6	Sandy clay	Machine-manufactured glass and slag not retained	Small pebbles with non-artifactual small marsh shell
	5	Fill 5	8.1	10.9	10YR 2/1 m/w 10YR 3/2 and 10YR 5/6	Clay loam	Rubber, machine-manufactured bottle glass, slag, tar paper, wood, and stoneware sherd not retained	Small pebbles
	6	Fill 6	9.4	9.6	10YR 2/2 m/w 10YR 3/3 and 10YR 2/1	Clay	Glass, wood, leather, and stoneware sherd not retained	Hydric with small pebbles
	7	Fill 7	24.0	-5.0	10YR 2/1 m/w 2.5Y 3/1	Sandy clay loam	Plastic bead, book binding, paper, tin, leather, charcoal, aluminum, whiteware and stoneware sherds not retained	Excavation stopped - no soil retention, very hydric
G8	1	Fill 1	3.0	16.0	10YR 4/3 m/w 10YR 3/2	Silty clay loam	Asphalt and machine-manufactured bottle glass not retained	Asphalt inclusions
	2	Fill 2	4.0	15.0	10YR 3/2 m/w 10YR 2/1	Clay loam	Machine-manufactured bottle glass not retained	Roots and small pebbles
	3	Fill 3	6.0	13.0	10YR 2/1 m/w Gl1 3/N	Clay	Machine-manufactured bottle glass, slag not retained	Roots and small pebbles
	4	Fill 4	8.0	11.0	Gl1 3/N m/w 10YR 6/4 and 10YR 2/1	Clay m/w sand	Machine-manufactured bottle glass, slag, and wood not retained	Hydric with charcoal flecking and organic material and
	5	Fill 5	12.5	6.5	10YR 2/1 m/w Gl1 3/N	Clay m/w fine sand	Machine-manufactured bottle glass and stoneware sherd not retained	Excavation stopped by boulder or stone. Off set and reexcavated starting at 11 feet. Very wet and swampy with strong oil odor

	6	Fill 6	16.5	2.5	Gl1 3/N	Clay	Machine-manufactured bottle glass, leather, and transfer-printed whiteware sherd not retained	Very hydric with oil odor, organic material and cobbles
	7	Fill 7	23.0	-4.0	10YR 2/1 m/w Gl1 3/N	Clay m/w grit and fine sand	Aluminum foil, machine-manufactured bottle glass, crushed shell, rubber, leather, and flower pot sherd not retained	Very hydric with plant material
	8	Fill 8	26.1	-7.1	10YR 6/4 m/w Gl1 3/N	Sandy loam m/w fine sand	Machine-manufactured bottle glass and leather not retained	Very hydric and gritty
	9	Fill 9	27.0	-8.0	Gl1 3/N	Clay	Machine-manufactured lime green bottle glass, leather, and aluminum not retained	Very hydric with organic material
G9	1	Fill 1	2.5	16.5	10YR 3/3 m/w 10YR 5/6	Silty clay	Plastic, asphalt, slag not retained	Excavated near marked utlities. Clay pockets
	2	Fill 2	5.3	13.7	Gl2 3/10G	Clay	Asphalt and shell fragment not retained	Clay pockets, compact
	3	Fill 3	6.3	12.7	2.5Y 5/4	Coarse sand	Asphalt not retained	Offset at base of this level due to encountering impentrable asphalt. Very small marsh clam shell (non-artifactual) with small pebbles, very hydric
	4	Fill 4	7.9	11.1	2.5Y 5/4 m/w Gl2 3/10G	Clay	Machine-manufactured bottled glass and whiteware sherd not retained	Hydric with clay pockets and small cobbles and pebbles
	5	Fill 5	8.4	10.6	2.5Y 5/4	Coarse sand	NCM	Very small marsh clam shell (non-artifactual) with small pebbles, very hydric
	6	Fill 6	9.1	9.9	Gl2 3/10G m/w 10YR 2/1	Silty clay loam	NCM	Small pebbles, very hydric. Strong oil odor, little soil retention. Excavation stopped by concrete or stone
G10	1	Fill 1	1.3	17.7	10YR 5/6 m/w 10YR 3/2	Sand m/w silty clay loam	Asphalt, machine-manufactured bottle glass, brick fragment not retained	Iron oxide staining with small pebbles
	2	Fill 2	3.7	15.3	10YR 3/2 m/w 10YR 6/3	Silty clay loam	Machine-manufactured glass and brick fragment not retained	Hydric, iron oxide staining with small pebbles and cobbles
	3	Fill 3	4.0	15.0	10YR 2/1	Clay	Machine-manufactured glass, brick fragment, wood not retained	Compact. Small pebbles
	4	Fill 4	5.2	13.8	10YR 5/6 m/w 2.5Y 3/1	Sandy clay	Machine-manufactured glass, shell fragment, and ironstone sherd not retained	Small pebbles
	5	Fill 5	7.2	11.8	10YR 5/6 m/w 2.5Y 3/1	Clay	Asphalt, slag, and whiteware sherd not retained	Very hydric, small pebbles with clay pockets
	6	Fill 6	9.0	10.0	10YR 5/6 m/w 2.5Y 3/1	Sandy clay	Machine-manufactured bottle glass, wood, charcoal, and small butchered mammal bone fragment not retained	Very hydric, small pebbles
	7	Fill 7	11.7	7.3	10YR 3/2 m/w 2.5Y 3/1	Sandy clay	Rubber, machine-manufactured glass, slag, and shell fragment not retained	Very hydric
	8	Fill 8	12.4	6.6	10yr 2/1 m/w 10YR 3/2 m/w Gl1 3/N	Sandy loam	Machine-manufactured glass, wood, and small butchered mammal bone not retained	Very hydric with pockets of clay
	9	Fill 9	13.0	6.0	Gl1 3/N	Clay	Machine-manufactured glass, wood, and whiteware sherd not retained	Very hydric
	10	Fill 10	26.0	-7.0	10YR 3/2 m/w 10YR 2/1	Sandy loam	Machine-manufactured glass, wood, and whiteware sherd not retained	Very hydric
G11	1	Fill	2.8	16.2	10YR 3/2 m/w 10YR 3/4	Silt loam	Slag, glass, and ironstone sherd not retained	Excavation stopped by thick tree root
	1	Fill	2.0	17.0	10YR 3/2 m/w 10YR 3/4	Silt loam	Glass not retained	Offset 2nd attempt: excavation stopped by boulder or stone
G12	1	Fill 1	2.5	16.5	10YR 4/5 m/w 10YR 5/6 & 10YR 2/2	Silty clay	Modern lime and machine-manufactured bottle glass not retained	Roots and gravel
	2	Fill 2	4.0	15.0	10YR 4/3 m/w Gl1 3/N	Clay	Machine-manufactured bottle glass and whiteware sherd not retained	Roots
	3	Fill 3	5.2	13.8	10YR 4/3 m/w 10YR 2/2	Clay	Machine-manufactured bottle glass not retained	Roots
	4	Fill 4	6.0	13.0	Gl1 3/N	Clay	NCM	Roots with non-cultural marsh shell
	5	Fill 5	8.9	10.1	10YR 2/2 m/w Gl1 3/N	Clay	Concrete and machine-manufactured bottle glass not retained	Small pebbles
	6	Fill 6	10.0	9.0	5Y 4/2 m/w 10YR 2/2	Sandy loam	NCM	Decaying wood
	7	Fill 7	11.5	7.5	10YR 2/1 m/w 10YR 4/6 & Gl1 3/N	Clay	Machine-manufactured bottle glass not retained	Organic material, very hydric, ash
	8	Fill 8	26.0	-7.0	Gl1 3/N	Clay m/w sand	Rubber, machine-manufactured bottle glass, fabric, and mosaic tiles not retained	Very hydric with decaying wood, coal ash
G13	1	Fill 1	5.4	13.6	10YR 3/2	Silty clay loam m/w sand	Machine-manufactured glass, wood, and slag not retained	Pockets of clay with iron oxide staining and small pebbles and cobbles
	2	Fill 2	8.8	10.2	10YR 2/2 m/w 10YR 3/2	Silty clay loam m/w sand	Machine-manufactured glass, sewer pipe, aluminum foil, and brick fragment not retained	Hydric with iron oxide staining and small pebbles
	3	Fill 3	11.9	7.1	10YR 3/2 m/w 10YR 2/1	Coarse sandy clay	Plastic, rubber, machine-manufactured glass, aluminum foil, wire nail, shell fragment not retained	Strong oil odor, very hydric, with organic material and ash
	4	Fill 4	12.8	6.2	2.5Y 2.5/1	Compact clay	Machine-manfactured glass not retained	Strong oil odor, very hydric, with organic material and ash
	5	Fill 5	14.0	5.0	10YR 3/2 m/w 2.5Y 2.5/1	Coarse and fine sand	Plastic, rubber, machine-manufactured glass, wire nails, wood, shell fragment, redware sherd not retained	Strong oil odor, very hydric, with organic material and ash
	6	Fill 6	26.0	-7.0	2.5Y 2.5/1 m/w 10YR 2/1	Fine sand	Plastic, chicken bone, machine-manufactured glass, whiteware, shell fragment not retained	Strong oil odor, very hydric, with organic material and ash
G14	1	Fill 1	4.4	14.6	10YR 2/2 m/w 10YR 3/2	Silty clay loam m/w sand	Machine-manufactured glass, wood, brick fragment, flower pot sherds, and whiteware sherd not retained	Iron oxide staining with charcoal flecking and small pebbles
	2	Fill 2	5.3	13.7	10YR 5/8	Sand	Plastic and machine-manufactured glass not retained	Very hydric with small pebbles, cobbles, and pockets of clay. Compact
	3	Fill 3	9.7	9.3	10YR 3/2 m/w 10YR 5/4	Sandy clay loam	Machine-manufactured glass, plastic, hand blown glass, butchered rib bone, decayed wood, and whiteware sherd not retained	Very hydric with small pebbles
	4	Fill 4	10.3	8.7	10YR 5/6 m/w 2.5Y 3/1	Sandy loam	Plastic, machine-manufactured glass, charcoal, wood, and redware sherd not retained	Very hydric with small pebbles
	5	Fill 5	11.0	8.0	10YR 2/1 m/w 10YR 2/2	Sandy clay loam	Burnt wood and ceramics (unidentifable) not retained	Very hydric with small pebbles

	6	Fill 6	14.0	5.0	10YR 2/1	Clay	Decayed wood and leather not retained	Very hydric with small pebbles
	7	Fill 7	26.0	-7.0	Gl1 3/N	Clay	NCM	Very hydric with small pebbles
G15	1	Fill 1	1.8	17.2	10YR 3/2 m/w 10YR 5/6 and 10YR 2/1	Silty clay loam	Machine-manufactured modern bottle glass and slag not retained	Small pebbles and cobbles
	2	Fill 2	4.6	14.4	10YR 3/2 m/w 2.5Y 3/1	Silty clay	Machine-manufactured modern bottle glass, wood, and brick fragment not retained	Hydric with cobbles
	3	Fill 3	5.4	13.6	10YR 3/2 m/w 10YR 2/1	Fine sandy loam	Machine-manufactured bottle glass not retained	Very hydric with small pebbles
	4	Fill 4	6.0	13.0	10YR 5/6 m/w 10YR 3/2	Coarse sandy loam	NCM	Hydric with organic material and small pebbles
	5	Fill 5	20.0	-1.0	10YR 2/1	Fine and coarse sandy loam	Galvanized wire, wire nails, leather, bottle glass, shell fragment, brass key, and shell fragment not retained	Excavation stopped by thick wood and barbed wire. Very hydric and swampy with small pebbles, little soil retention
G16	1	Fill 1	0.7	18.3	10YR 4/3	Silt loam	Machine-manufactured bottle glass not retained	
	2	Fill 2	2.5	16.5	10YR 2/2	Clay loam	NCM	Roots and wood
	3	Fill 3	6.7	12.3	10YR 3/2 m/w 10YR 2/1	Clay	NCM	Hydric with roots and wood
	4	Fill 4	10.0	9.0	10YR 2/2 m/w Gl1 3/N and 10YR 4/3	Clay	Modern lime bottle glass and shell fragment not retained	Roots and wood
	5	Fill 5	12.0	7.0	10YR 2/1 m/w Gl1 3/N	Clay	Rubber and machine-manufactured bottle glass not retained	Hydric with organic material
	6	Fill 6	20.0	-1.0	Gl1 3/N	Clay	Aluminum can, plastic, rubber, machine-manufactured bottle glass, shell fragment, and milk glass not retained	Very hydric with organic material and wood
	7	Fill 7	26.0	-7.0	Gl1 3/N	Clay	Machine-manufactured bottle glass, flower pot sherd, butchered bone (likely pig pelvis)	Very hydric with wood
G17	1	Fill 1	4.0	15.0	10YR 4/3 m/w 10YR 5/4	Silt loam m/w sand	Concrete not retained	Pebbles and roots
	2	Fill 2	5.0	14.0	10YR 5/6	Sandy loam	NCM	Pebbles
	3	Fill 3	6.9	12.1	10YR 2/2 m/w Gl1 3/N and 10YR 6/4	Silty clay	Coal not retained	Roots
	4	Fill 4	7.3	11.7	10YR 6/4 m/w 10YR 2/2	Silt loam	Machine-manufactured bottle glass not retained	Auger ground 2-3" into stone (possibly a Belgian block). Test could not be offset due to trees and tree roots. Hydraulic spoon refusal.
G18	1	Fill 1	4.2	14.8	10YR 4/3 m/w 10YR 3/2 & 10YR 2/2	Silty clay loam	Machine-manufactured bottle glass, coal, and whiteware sherd not retained	Gravel and roots
	2	Fill 2	12.0	7.0	10YR 5/6 m/w 10YR 2/2 & 10YR 6/4	Silty clay loam m/w sand	Whiteware sherd and brick fragment not retained	Very hydric with pebbles and gravel
	3	Fill 3	14.0	5.0	Gl1 3/N	Silty clay	NCM	Very hydric with pebbles
	4	Fill 4	23.0	-4.0	Gl1 3/N m/w 10YR 6/4	Clay	Plastic, rubber, machine-manufactured bottle glass, aluminum, chicken bone, butchered pig rib fragment not retained	Very hydric with oil slicking, ash
	5	C	26.0	-7.0	10YR 5/6	Fine sand	NCM	Natural soil with very small pebbles
G19	1	Fill 1	3.4	15.6	10YR 3/2 m/w 10YR 5/6	Silt loam	Brick, coal, slag not retained	Cobble
	2	Fill 2	4.6	14.4	10YR 4/3 m/w Gl1 3/N	Silty clay loam	Slag not retained	Hydric, roots and organic material
	3	Fill 3	5.3	13.7	10YR 2/2 m/w Gl1 3/N	Clay loam	Natural wood (root) not retained	Very hydric
	4	Fill 4	6.0	13.0	7.5YR 6/2	Coarse sand	Concrete not retained	Compact with mortar and concrete
	5	Fill 5	8.0	11.0	10YR 2/2 m/w Gl1 3/N	Clay loam m/w sand	Brick flecking and sewer pipe not retained	Very hydric
	6	Fill 6	14.0	5.0	10YR 2/2 m/w 10YR 4/3 m/w Gl1 3/N	Clay loam m/w sand	Machine-manufactured glass and galvanized metal wire not retained	Very hydric
	6	Fill 6	26.0	-7.0	10YR 2/2 m/w Gl1 3/N	Clay loam m/w sand and clay	Machine-manufactured glass, rubber, sewer pipe, and terracotta fragment not retained	NOTE: At 14 feet, G19 was offset due to a galvanized wire impasse. Very wet with small pebbles
G20	1	Fill 1	4.0	15.0	10YR 4/6 m/w 10YR 5/6	Silty clay loam	Asphalt, mortar, and drain pipe fragment not retained	Roots, pebbles, and charcoal/asphalt flecking
	2	Fill 2	6.1	12.9	10YR 2/2 m/w 10YR 6/4 & Gl1 3/N	Silty clay loam	Machine-manufactured glass and small whiteware not retained	Refusal at 8 feet - offset to G20A
	3	Fill 3	10.0	9.0	10YR 4/3 m/w 10YR 2/1	Silty clay	Machine-manufactured glass, coal, and flower pot sherd not retained	Pebbles, very hydric
	4	Fill 4	12.0	7.0	10YR 2/2 m/w 7.5YR 5/1	Silty clay loam	Concrete, coal ash, and machine-manufactured glass not retained	Very hydric with organic material and ash
	5	Fill 5	26.0	-7.0	10YR 2/2 m/w Gl1 3/N	Clay loam m/w clay	Machine-manufactured glass, slag, whiteware, tar paper, rubber, sewer pipe, and mosaic bath tile not retained	Strong oil odor, very hydric, with organic material and ash
STP 1	1	Fill 1	0.5	18.5	10YR 2/2	Silt loam	NCM	
	2	Fill 2	0.9	18.1	10YR 3/6	Sand	Historic/Modern	Plastic not retained
	3	Fill 3	1.6	17.4	10YR 3/2	Silt loam	NCM	Water began infilling STP
	4	Fill 4	2.3	16.7	10YR 5/6	Sand	NCM	Water impasse
STP 2	1	Fill	1.7	17.3	10YR 2/2	Silt loam	Historic/Modern	Large root impasse (near mature tree)
STP 3	1	Fill 1	0.6	18.4	10YR 3/2	Silty clay	Historic/Modern	Topsoil
	2	Fill 2	1.8	17.2	10YR 3/2 m/w 10YR 5/4	Silty clay	Historic/Modern	Compact, hydric
	3	Fill 3	2.5	16.5	10YR 4/2 m/w 10YR 4/6	Silty clay	Historic/Modern	Water at 2.2 feet, large root impasse
STP 4	1	Fill 1	1.0	18.0	10YR 3/2	Silty clay	Historic/Modern	Topsoil
	2	Fill 2	1.9	17.1	10YR 3/2 m/w 10YR 4/4	Silty clay	Historic/Modern	Compact
	3	Fill 3	2.6	16.4	10YR 4/4 m/w 10YR 4/6	Silty clay	Historic/Modern	Compact
	4	Fill 4	4.0	15.0	10YR 4/1	Silt	Historic/Modern	Hydric soils with gravel
STP 5	1	Fill 1	0.6	18.4	10YR 3/2	Silty clay	Historic/Modern	Topsoil
	2	Fill 2	1.0	18.0	10YR 3/2 m/w 10YR 4/3	Sandy clay	Historic/Modern	Small pebbles
	3	Fill 3	1.4	17.6	10YR 3/2 m/w 10YR 5/6	Sandy clay	Historic/Modern	Water seeping at 2.4 feet, stopped by rock impasse
	4	Fill 4	3.2	15.8	10YR 3/1 m/w 10YR 4/4	Silty clay	Historic/Modern	Gravel
STP 6	1	Fill 1	1.0	18.0	10YR 2/2	Silt loam	Historic/Modern	Thick roots
	2	Fill 2	1.6	17.4	10YR 3/2 m/w 10YR 5/6	Silty clay loam	Historic/Modern	Roots; ashpalt, concrete, and plastic not retained
	3	Fill 3	3.0	16.0	Gl1 3/N	Clay	Historic/Modern	Hydric
	4	Fill 4	4.1	14.9	10YR 2/1	Clay	NCM	Hydric
STP 7	1	Fill 1	0.8	18.2	10YR 3/2	Silty clay	Historic/Modern	Topsoil

	1	Fill 2	1.0	18.0	10YR 4/6	Sand	NCM	Stopped due to evidence of buried electrical utilities
STP 8	1	Fill	0.9	18.1	10YR 2/2	Silt loam	Historic/Modern	Large root impasse (near mature tree)
STP 9	1	Fill 1	0.7	18.3	10YR 3/2	Silty clay	Historic/Modern	Plastic not retained. Topsoil
	2	Fill 2	1.0	18.0	10YR 4/3 m/w 10YR 3/2	Silty clay	NCM	Brick flecking not retained. Compact
	3	Fill 3	2.3	16.7	10YR 3/1 m/w 10YR 4/6	Silty clay	Historic/Modern	Compact
	4	Fill 4	2.8	16.2	10YR 4/1	Sandy clay	Historic/Modern	Hydric. Encountered rock impasse
STP 10	1	Fill 1	0.9	18.1	10YR 2/2	Silt loam	Historic/Modern	Plastic not retained
	2	Fill 2	1.5	17.5	10YR 5/6	Sandy loam	Historic/Modern	Iron oxide staining
	3	Fill 3	2.3	16.7	10YR 3/2	Silty clay loam	Historic/Modern	Iron oxide staining
	4	Fill 4	3.0	17.0	Gl1 3/N	Clay	Historic/Modern	Hydric
	5	Fill 5	4.2	14.8	10YR 2/1	Clay	NCM	Hydric
STP 11	1	Fill 1	0.9	18.1	10YR 3/2	Sandy clay	Historic/Modern	Topsoil
	2	Fill 2	2.2	16.8	10YR 3/2 m/w 10YR 4/6	Sandy clay	Historic/Modern	
	3	Fill 3	2.7	16.3	10YR 3/1	Sandy clay	NCM	Hydric/saturated. Water impasse
STP 12	1	Fill 1	1.1	17.9	10YR 2/2	Silt loam	Historic/Modern	Plastic not retained
	2	Fill 2	1.7	17.3	10YR 3/2	Sandy loam	Historic/Modern	Iron oxide staining, water impasse
STP 13	1	Fill 1	0.9	18.1	10YR 2/2	Silt loam	Historic/Modern	Plastic and slag not retained
	2	Fill 2	1.3	17.7	10YR 3/2	Silty clay	Historic/Modern	Charcoal flecking
	3	Fill 3	2.4	16.6	Gl1 3/N	Clay	Historic/Modern	Iron oxide, water impasse
STP 14	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Not excavated due to utilities and concrete pavers
STP 15	1	Fill 1	0.3	18.7	10YR 2/2	Clay loam	NCM	Plastic and brick flecks not retained
	2	Fill 2	1.3	17.7	10YR 3/2	Sandy clay	Historic/Modern	Clay inclusions
	3	Fill 3	1.8	17.2	10YR 4/2	Sandy clay	NCM	Iron oxide, water infilling at base and rock impasse
STP 16	1	Fill 1	0.7	18.3	10YR 3/2	Silty clay	Historic/Modern	
	2	Fill 2	1.8	17.2	10YR 3/2 m/w 10YR 5/6	Silty clay	Historic/Modern	Gravelly with water at 1.7 feet
	3	Fill 3	4.3	14.7	10YR 4/1 m/w 10YR 3/6 & 5/4	Silty clay	NCM	Gravel with muck and roots, very hydric
STP 17	1	Fill 1	1.0	18.0	10YR 2/2	Clay loam	Historic/Modern	Plastic not retained
	2	Fill 2	1.6	17.4	10YR 3/2	Sandy clay	Historic/Modern	Iron oxide staining, asphalt not retained
	3	Fill 3	2.7	16.3	10YR 4/2 m/w Gl1 3/N	Sandy clay	Historic/Modern	Iron oxide, water impasse
STP 18	1	Fill 1	1.1	17.9	10YR 3/2	Silty clay loam	Historic/Modern	Topsoil with roots
	2	Fill 2	1.4	17.6	10YR 3/2 m/w 10YR 6/3	Clay	Historic/Modern	Rocks
	3	Fill 3	3.2	15.8	10YR 3/6 m/w 10YR 4/1	Clay	Historic/Modern	Dense rock inclusions, hydric. Encountered rock impasse
STP 19	1	Fill 1	0.8	18.2	10YR 3/2	Clay	NCM	Topsoil, damp
	2	Fill 2	1.6	17.4	10YR 3/2 m/w 10YR 4/3	Silty clay	Historic/Modern	Large cobbles
	3	Fill 3	4.1	14.9	10YR 4/1 m/w 10YR 3/6	Silty clay	Historic/Modern	Gravel. Compact, water at 1.9 feet
STP 20	1	Fill 1	1.4	17.6	10YR 2/2	Clay loam	Historic/Modern	Plastic and slag not retained
	2	Fill 2	2.2	16.8	10YR 3/2	Sandy clay	Historic/Modern	Water impasse
STP 21	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Not excavated due to slope exceeding 45 percent
STP 22	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Not excavated due to slope exceeding 45 percent
STP 23	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Not excavated due to slope exceeding 45 percent
STP 24	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Not excavated due to slope exceeding 45 percent
STP 25	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Not excavated due to slope exceeding 45 percent
STP 26	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Not excavated due to slope exceeding 45 percent
STP 27	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Not excavated due to slope exceeding 45 percent
STP 28	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Not excavated due to concrete paving
STP 29	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Not excavated due to concrete paving
STP 30	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Not excavated due to concrete paving

m/w = Mottled with

NCM = No Cultural Material

Appendix C:

Artifact Catalog

SHOVEL TEST PIT (STP)/GEO-PROBE (G)	LEVEL	BASE DEPTH (ft)	STRATUM	COUNT	GROUP	ARTIFACT MATERIAL	ARTIFACT CLASS	ARTIFACT TYPE	DESCRIPTION	MEASUREMENTS/ COMMENTS/DATES	WEIGHT (g)
STP 1	2	0.85	Fill 2	2	DOM	Ceramic	Whiteware	Hollowware	Undecorated body sherds	1820-present (Miller et al. 2000:13)	
STP 2	1	1.7	Fill 1	1	DOM	Glass	Vessel	Bottle	Clear body fragment, machine-manufactured, cylindrical	Early 20th century-present (Lindsey 2020)	
STP 2	1	1.7	Fill 1	1	DOM	Glass	Vessel	Bottle	Clear body fragment, machine-manufactured, cylindrical, ribbing decoration	Early 20th century-present (Lindsey 2020)	
STP 3	1	0.6	Fill 1	1	DOM	Glass	Vessel	Bottle	Clear body fragment, machine-manufactured, cylindrical	Early 20th century-present (Lindsey 2020)	
STP 3	1	0.6	Fill 1	1	DOM	Glass	Vessel	Bottle	Aqua body fragment		
STP 3	1	0.6	Fill 1	1	DOM	Ceramic	Ironstone	Hollowware	Body sherd with black glaze	1840-present (Miller et al. 2000:13)	
STP 3	1	0.6	Fill 1	1	DOM	Ceramic	Whiteware	Hollowware	Undecorated body sherd	1820-present (Miller et al. 2000:13)	
STP 3	1	0.6	Fill 1	1	DOM	Ceramic	Porcelain	Hollowware	Rim sherd, hard paste, remnant blue glaze, burnt		
STP 3	2	1.8	Fill 2	1	DOM	Glass	Vessel	Bottle	Clear base fragment, cylindrical, mold produced		
STP 3	2	1.8	Fill 2	1	DOM	Glass	Vessel	Milk	Clear lip fragment, machine-manufactured	Early 20th century-present (Lindsey 2020)	
STP 3	2	1.8	Fill 2	2	DOM	Glass	Vessel	Bottle	Clear shoulder fragment, machine-manufactured, cylindrical	Early 20th century-present (Lindsey 2020)	
STP 3	2	1.8	Fill 2	2	DOM	Glass	Vessel	Bottle	Lime green body fragments, machine-manufactured	1930-present (Lindsey 2020)	
STP 3	2	1.8	Fill 2	1	DOM	Glass	Vessel	Bottle	Amber body fragment, machine-manufactured	Early 20th century-present (Lindsey 2020)	
STP 3	2	1.8	Fill 2	1	DOM	Glass	Vessel	Bottle	Cobalt blue body fragment, machine-manufactured, angular	Early 20th century-present (Lindsey 2020)	
STP 3	2	1.8	Fill 2	3	DOM	Ceramic	Whiteware	Hollowware	Undecorated body sherds	1820-present (Miller et al. 2000:13)	
STP 3	2	1.8	Fill 2	1	DOM	Ceramic	Porcelain	Hollowware	Undecorated body sherd, hard paste		
STP 3	3	2.5	Fill 3	1	DOM	Glass	Vessel	Bottle	Clear body fragment, paneled		
STP 3	3	2.5	Fill 3	1	DOM	Glass	Vessel	Bottle	Clear body fragment, machine-manufactured, cylindrical	Early 20th century-present (Lindsey 2020)	
STP 3	3	2.5	Fill 3	3	DOM	Ceramic	Whiteware	Hollowware	Undecorated rim and body sherds, burnt	1820-present (Miller et al. 2000:13)	
STP 4	1	1.0	Fill 1	3	DOM	Glass	Vessel	Bottle	Clear body fragments, machine-manufactured, cylindrical	Early 20th century-present (Lindsey 2020)	
STP 4	1	1.0	Fill 1	3	DOM	Glass	Vessel	Bottle	Amber body fragments, machine-manufactured, cylindrical	Early 20th century-present (Lindsey 2020)	
STP 4	1	1.0	Fill 1	1	MISC	Asphalt	Asphalt	Asphalt	Fragment	1917-present (Miller et al. 2000:16)	
STP 4	1	1.0	Fill 1	1	DOM	Ceramic	Whiteware	Hollowware	Undecorated body sherd, heavily fragmented	1820-present (Miller et al. 2000:13)	

STP 4	1	1.0	Fill 1	2	DOM	Plastic	Vessel	Cup	Plastic fragments	1915-present (Miller et al. 2000:16)	
STP 4	1	1.0	Fill 1	1	DOM	Glass	Vessel	Hollowware	Decorative white and amber swirl on exterior, amber interior		
STP 4	2	1.9	Fill 2	2	DOM	Glass	Vessel	Bottle	Clear body fragments, machine-manufactured, cylindrical	Early 20th century-present (Lindsey 2020)	
STP 4	2	1.9	Fill 2	1	DOM	Glass	Vessel	Bottle	Clear body fragment, machine-manufactured, cylindrical, remnant embossed "AM"	Early 20th century-present (Lindsey 2020)	
STP 4	2	1.9	Fill 2	3	DOM	Glass	Vessel	Bottle	Amber base fragments, machine-manufactured, cylindrical, embossed "RO..U.S. PAT"	Early 20th century-present (Lindsey 2020)	
STP 4	2	1.9	Fill 2	2	DOM	Glass	Vessel	Bottle	Cobalt blue body fragments, machine-manufactured, thick and cylindrical	Early 20th century-present (Lindsey 2020)	
STP 4	2	1.9	Fill 2	1	DOM	Glass	Vessel	Bottle	Aqua body fragment		
STP 4	2	1.9	Fill 2	1	DOM	Glass	Vessel	Bottle	Milk glass lip and neck fragment, threaded and machine-manufactued, cylindrical	Early 20th century-present (Lindsey 2020)	
STP 4	2	1.9	Fill 2	1	DOM	Ceramic	Stoneware	Utilitarian Hollowware	Base sherd, bristol-glazed	1835-present (Miller et al. 2000:10)	
STP 4	2	1.9	Fill 2	1	DOM	Ceramic	Terracotta	Flower Pot	Undecorated rim sherd		
STP 4	2	1.9	Fill 2	2	DOM	Ceramic	Whiteware	Hollowware	Undecorated rim and body sherds	1820-present (Miller et al. 2000:13)	
STP 4	2	1.9	Fill 2	1	DOM	Ceramic	Whiteware	Hollowware	Body sherd, blue glazed interior and exterior, heavily fragmented	1820-present (Miller et al. 2000:13)	
STP 4	2	1.9	Fill 2	1	ARCH	Ferrous Metal	Nail	Wire	Fragment, corroded	1879-present (Wells 1998:92)	
STP 4	3	2.6	Fill 3	1	DOM	Glass	Vessel	Bottle	Clear body sherd, machine-manufactured	Early 20th century-present (Lindsey 2020)	
STP 4	3	2.6	Fill 3	1	DOM	Glass	Vessel	Jar	Rim fragment, threaded, machine-manufactured	Early 20th century-present (Lindsey 2020)	
STP 4	3	2.6	Fill 3	1	DOM	Glass	Vessel	Bottle	Amber body fragment, machine-manufactured	Early 20th century-present (Lindsey 2020)	
STP 4	3	2.6	Fill 3	1	DOM	Glass	Vessel	Jar	Cobalt blue rim fragment, threaded, machine-manufactured	Early 20th century-present (Lindsey 2020)	
STP 4	3	2.6	Fill 3	1	DOM	Ceramic	Porcelain	Hollowware	Light brown glazed interior and exterior, hard paste		
STP 4	3	2.6	Fill 3	1	DOM	Ceramic	Earthenware	Tile	Thick, white glazed fragment with remnant mortar		
STP 4	4	4.0	Fill 4	1	DOM	Glass	Vessel	Bottle	Clear body fragment, machine-manufactured, cylindrical	Early 20th century-present (Lindsey 2020)	
STP 4	4	4.0	Fill 4	1	DOM	Ceramic	Whiteware	Hollowware	Undecorated body sherd	1820-present (Miller et al. 2000:13)	
STP 5	1	0.6	Fill 1	2	DOM	Glass	Vessel	Bottle	Clear rim and body fragments, machine-manufactured, cylindrical	Early 20th century-present (Lindsey 2020)	
STP 5	1	0.6	Fill 1	1	DOM	Ceramic	Whiteware	Hollowware	Undecorated body sherd	1820-present (Miller et al. 2000:13)	
STP 5	2	1.05	Fill 2	2	DOM	Glass	Vessel	Bottle	Milk glass body sherds, machine-manufactured	Early 20th century-present (Lindsey 2020)	

STP 5	2	1.05	Fill 2	2	DOM	Glass	Vessel	Bottle	Clear body fragments, machine-manufactured, cylindrical	Early 20th century-present (Lindsey 2020)	
STP 5	2	1.05	Fill 2	1	DOM	Ceramic	Whiteware	Hollowware	Undecorated body sherd	1820-present (Miller et al. 2000:13)	
STP 5	2	1.05	Fill 2	1	DOM	Ceramic	Red Earthenware	Refractory Brick	Fragment, remnant embossed "YMA"		
STP 5	3	1.4	Fill 3	3	DOM	Glass	Vessel	Bottle	Clear rim and body sherds, threaded, machine-manufactured, cylindrical	Early 20th century-present (Lindsey 2020)	
STP 5	3	1.4	Fill 3	3	DOM	Ceramic	Whiteware	Hollowware	Undecorated body sherds	1820-present (Miller et al. 2000:13)	
STP 5	3	1.4	Fill 3	1	DOM	Ceramic	Porcelain	Hollowware	Undecorated, hard paste, heavily fragmented		
STP 5	4	3.2	Fill 4	1	DOM	Glass	Vessel	Bottle	Clear body fragment, machine-manufactured, cylindrical	Early 20th century-present (Lindsey 2020)	
STP 5	4	3.2	Fill 4	1	DOM	Ceramic	Porcelain	Hollowware	Undecorated, hard paste, heavily fragmented		
STP 6	1	1.0	Fill 1	2	DOM	Glass	Vessel	Bottle	Clear lip and neck fragments, threaded, machine-manufactured	Early 20th century-present (Lindsey 2020)	
STP 6	1	1.0	Fill 1	1	DOM	Glass	Vessel	Hollowware	Milk glass body fragment		
STP 6	1	1.0	Fill 1	1	DOM	Glass	Vessel	Bottle	Lime green fragment, heavily fragment	1930-present (Lindsey 2020)	
STP 6	1	1.0	Fill 1	1	DOM	Ceramic	Yellowware	Hollowware	Undecorated	1830-1940 (Miller et al. 2000:12)	
STP 6	1	1.0	Fill 1	1	DOM	Ceramic	Whiteware	Hollowware	Undecorated body sherd, heavily fragmented	1820-present (Miller et al. 2000:13)	
STP 6	1	1.0	Fill 1	1	DOM	Ceramic	Redware	Hollowware	Both surfaces manganese glazed		
STP 6	1	1.0	Fill 1	1	DOM	Ceramic	Porcelain	Hollowware	Undecorated, hard paste		
STP 6	1	1.0	Fill 1	1	DOM	Ceramic	Redware	Flower Pot	Rim sherd, undecorated		
STP 6	1	1.0	Fill 1	1	DOM	Ceramic	Terracotta	Flower Pot	Undecorated body sherd		
STP 6	1	1.0	Fill 1	1	DRA	Ceramic	Coarse Earthenware	Drain pipe	Fragment, thick		
STP 6	1	1.0	Fill 1	5	ELEC	Ceramic	Porcelain	Insulator	Electrical insulator sherds	1888-present (Miller et al. 2000:15)	
STP 6	2	1.6	Fill 2	1	DOM	Glass	Vessel	Bottle	Clear base and body fragment, machine-manufactured, rectangular	Early 20th century-present (Lindsey 2020)	
STP 6	2	1.6	Fill 2	1	DOM	Glass	Vessel	Milk Bottle	Clear neck fragment with decorative embossing, machine-manufactured	Early 20th century-present (Lindsey 2020)	
STP 6	2	1.6	Fill 2	2	DOM	Glass	Vessel	Hollowware	Milk glass body fragments		
STP 6	2	1.6	Fill 2	1	DOM	Glass	Vessel	Indeterminate	Cobalt blue fragment		
STP 6	2	1.6	Fill 2	3	DOM	Glass	Vessel	Bottle	Lime green body fragments, machine-manufactured	1930-present (Lindsey 2020)	
STP 6	2	1.6	Fill 2	1	DOM	Glass	Vessel	Bottle	Lime green base fragment, machine-manufactured with stippling	1930-present (Lindsey 2020)	
STP 6	2	1.6	Fill 2	2	DOM	Ceramic	Whiteware	Hollowware	Undecorated body sherds	1820-present (Miller et al. 2000:13)	
STP 6	2	1.6	Fill 2	1	DOM	Ceramic	Yellowware	Hollowware	Undecorated	1830-1940 (Miller et al. 2000:12)	
STP 6	2	1.6	Fill 2	2	DOM	Ceramic	Porcelain	Hollowware	Undecorated body sherds, hard paste		
STP 6	2	1.6	Fill 2	3	DOM	Ceramic	Terracotta	Flower Pot	Undecorated body sherds		

STP 6	2	1.6	Fill 2	1	ARCH	Glass	Flat	Window	Clear fragment with pressed floral embossed design		
STP 6	2	1.6	Fill 2	1	ARCH	Ferrous Metal	Nail	Wire	Fragment, corroded, clinched	1879-present (Wells 1998:92)	
STP 6	2	1.6	Fill 2	1	ELEC	Ceramic	Porcelain	Insulator	Electrical insulator sherd	1888-present (Miller et al. 2000:15)	
STP 6	3	3.0	Fill 3	1	DOM	Glass	Vessel	Bottle	Clear body fragment, machine-manufactured, cylindrical	Early 20th century-present (Lindsey 2020)	
STP 6	3	3.0	Fill 3	1	DOM	Glass	Vessel	Hollowware	Milk glass body fragment, triangular embossed decoration on exterior		
STP 6	3	3.0	Fill 3	1	DOM	Ceramic	Redware	Flower Pot	Undecorated body sherd		
STP 6	3	3.0	Fill 3	1	DOM	Ceramic	Whiteware	Hollowware	Rim sherd, undecorated	1820-present (Miller et al. 2000:13)	
STP 6	3	3.0	Fill 3	1	DOM	Ceramic	Porcelain	Hollowware	Undecorated body sherd, hard paste		
STP 6	3	3.0	Fill 3	1	ELEC	Ceramic	Porcelain	Insulator	Electrical insulator sherd		
STP 6	3	3.0	Fill 3	1	ARCH	Glass	Flat	Window	Clear fragment with pressed floral embossed design		
STP 7	1	0.8	Fill 1	1	ARCH	Mortar and Fired Clay	Concrete and Red Earthenware	Refractory Brick and mortar	Fragment		
STP 7	1	0.8	Fill 1	1	ARCH	Glass	Flat	Window	Thick, aqua fragment		
STP 7	1	0.8	Fill 1	2	DOM	Glass	Vessel	Bottle	Amber body fragments		
STP 7	1	0.8	Fill 1	1	DOM	Glass	Vessel	Bottle	Clear body fragment, machine-manufactured	Early 20th century-present (Lindsey 2020)	
STP 7	1	0.8	Fill 1	1	DOM	Glass	Vessel	Bottle	Milk glass body fragment, machine-manufactured	Early 20th century-present (Lindsey 2020)	
STP 7	1	0.8	Fill 1	1	MISC	Plastic	Plastic	Plastic	Black fragment	1915-present (Miller et al. 2000:16)	
STP 8	1	0.85	Fill 1	1	DOM	Glass	Vessel	Bottle	Clear body fragment, machine-manufactured	Early 20th century-present (Lindsey 2020)	
STP 8	1	0.85	Fill 1	1	DOM	Glass	Vessel	Bottle	Milk glass body fragment, machine-manufactured	Early 20th century-present (Lindsey 2020)	
STP 9	1	0.7	Fill 1	2	DOM	Glass	Vessel	Bottle	Clear body fragments, machine-manufactured	Early 20th century-present (Lindsey 2020)	
STP 9	3	2.3	Fill 3	2	ARCH	Glass	Flat	Window	Clear fragments		
STP 9	3	2.3	Fill 3	1	ARCH	Fired Clay	Red Earthenware	Brick	Fragment		
STP 9	3	2.3	Fill 3	1	MISC	Plastic	Plastic	Indeterminate	Black fragment	1915-present (Miller et al. 2000:16)	
STP 9	3	2.3	Fill 3	1	DRA	Ceramic	Coarse Earthenware	Sewer pipe	Fragment, thick		
STP 9	3	2.3	Fill 3	7	DOM	Glass	Vessel	Bottle	Clear body and base fragments, machine-manufactured, cylindrical, tinted pink	Early 20th century (Lindsey 2020)	
STP 9	3	2.3	Fill 3	3	DOM	Glass	Vessel	Bottle	Aqua-tinted body fragments, machine-manufactured	Early 20th century (Lindsey 2020)	
STP 9	3	2.3	Fill 3	1	DOM	Glass	Vessel	Bottle	Clear body fragment, machine-manufactured, embossed "…RNS…", cylindrical	Early 20th century-present (Lindsey 2020)	

STP 9	3	2.3	Fill 3	1	DOM	Glass	Vessel	Bottle	Lime green body fragment, machine-manufactured	1930-present (Lindsey 2020)	
STP 9	3	2.3	Fill 3	2	DOM	Glass	Vessel	Bottle	Olive green body and lip fragments, threaded, machine-manufactured	Early 20th century-present (Lindsey 2020)	
STP 9	3	2.3	Fill 3	1	DOM	Glass	Vessel	Bottle	Amber body fragment, machine-manufactured	Early 20th century-present (Lindsey 2020)	
STP 9	3	2.3	Fill 3	1	DOM	Glass	Vessel	Jar	Clear lip fragment, threaded, machine-manufactured	Early 20th century-present (Lindsey 2020)	
STP 9	3	2.3	Fill 3	1	DOM	Glass	Vessel	Bottle	Olive green base fragment, mouth blown		
STP 9	3	2.3	Fill 3	4	DOM	Ceramic	Porcelain	Saucer	Rim and body sherds, floral decal	1908-present (Miller et al. 2000:13)	
STP 9	3	2.3	Fill 3	6	DOM	Ceramic	Whiteware	Saucer	Rim and body sherds, undecorated	1820-present (Miller et al. 2000:13)	
STP 9	3	2.3	Fill 3	3	DOM	Ceramic	Whiteware	Bowl	Body sherds, undecorated	1820-present (Miller et al. 2000:13)	
STP 9	3	2.3	Fill 3	1	DOM	Ceramic	Whiteware	Hollowware	Body sherd, underglaze transfer-printed maroon landscape on exterior, Romantic style	1820-present (Miller et al. 2000:13)	
STP 9	3	2.3	Fill 3	1	DOM	Ceramic	Whiteware	Hollowware	Base sherd, remnant green maker's marker "…LIMDO…", burnt	1820-present (Miller et al. 2000:13)	
STP 9	4	2.8	Fill 4	1	DOM	Glass	Vessel	Bottle	Clear body fragment, machine-manufactured	Early 20th century-present (Lindsey 2020)	
STP 9	4	2.8	Fill 4	1	DOM	Glass	Vessel	Bottle	Aqua body fragment, machine-manufactured	Early 20th century-present (Lindsey 2020)	
STP 10	1	0.9	Fill 1	1	ARCH	Ferrous Metal	Nail	Wire	Fragment, corroded	1879-present (Wells 1998:92)	
STP 10	2	1.5	Fill 2	1	DOM	Glass	Vessel	Bottle	Amber body fragment, machine-manufactured	Early 20th century-present (Lindsey 2020)	
STP 10	2	1.5	Fill 2	1	DOM	Glass	Vessel	Bottle	Clear body fragment, machine-manufactured	Early 20th century-present (Lindsey 2020)	
STP 10	2	1.5	Fill 2	1	DOM	Glass	Vessel	Jar	Milk glass body and rim fragment, threaded, machine-manufactured	Early 20th century-present (Lindsey 2020)	
STP 10	3	2.3	Fill 3	1	ARCH	Glass	Flat	Window	Clear fragment, safety glass	1892-present (Miller et al. 2000: 9)	
STP 10	3	2.3	Fill 3	2	DOM	Glass	Vessel	Bottle	Clear body fragments, machine-manufactured, cylindrical	Early 20th century-present (Lindsey 2020)	
STP 10	3	2.3	Fill 3	1	DOM	Glass	Vessel	Condiment Bottle	Clear body fragment, machine-manufactured, cylindrical with panel decoration	Early 20th century-present (Lindsey 2020)	
STP 10	3	2.3	Fill 3	2	DOM	Glass	Vessel	Hollowware	Milk glass body fragments		
STP 10	3	2.3	Fill 3	1	DOM	Glass	Vessel	Bottle	Amber body fragment, machine-manufactured	Early 20th century-present (Lindsey 2020)	
STP 10	3	2.3	Fill 3	4	DOM	Ceramic	Whiteware	Hollowware	Body and base sherds, undecorated	1820-present (Miller et al. 2000:13)	
STP 10	3	2.3	Fill 3	1	DOM	Ceramic	Whiteware	Hollowware	Rim sherd, blue underglaze	1820-present (Miller et al. 2000:13)	
STP 10	4	3.0	Fill 4	1	MISC	Rubber	Rubber	Indeterminate	Black fragment	1871-present (Miller et al. 2000:16)	

STP 10	4	3.0	Fill 4	1	DOM	Glass	Vessel	Bottle	Clear body fragment, machine-manufactured	Early 20th century-present (Lindsey 2020)	
STP 10	4	3.0	Fill 4	1	DOM	Glass	Vessel	Bottle	Clear lip and neck fragment, machine-manufactured, threaded	Early 20th century-present (Lindsey 2020)	
STP 10	4	3.0	Fill 4	1	DOM	Glass	Vessel	Bottle	Olive green body fragments, machine-manufactured	Early 20th century-present (Lindsey 2020)	
STP 10	4	3.0	Fill 4	1	DOM	Glass	Vessel	Bottle	Lime green body fragment, machine-manufactured	1930-present (Lindsey 2020)	
STP 10	4	3.0	Fill 4	1	DOM	Glass	Vessel	Bottle	Blue body fragment, remnant embossing, machine-manufactured	Early 20th century-present (Lindsey 2020)	
STP 10	4	3.0	Fill 4	2	DOM	Ceramic	Whiteware	Hollowware	Body sherds, undecorated	1820-present (Miller et al. 2000:13)	
STP 10	4	3.0	Fill 4	1	DOM	Ceramic	Terracotta	Flower Pot	Undecorated body sherd		
STP 11	1	0.9	Fill 1	1	ARCH	Ferrous Metal	Nail	Wire	Fragment, corroded	1879-present (Wells 1998:92)	
STP 11	1	0.9	Fill 1	2	DOM	Glass	Vessel	Bottle	Clear body fragments, machine-manufactured	Early 20th century-present (Lindsey 2020)	
STP 11	2	2.2	Fill 2	2	DOM	Glass	Vessel	Bottle	Clear body fragments, machine-manufactured	Early 20th century-present (Lindsey 2020)	
STP 11	2	2.2	Fill 2	1	DOM	Glass	Vessel	Bottle	Dark olive green body fragment, air inclusion		
STP 11	2	2.2	Fill 2	4	DOM	Ceramic	Whiteware	Plate	Rim and body sherds, undecorated	1820-present (Miller et al. 2000:13)	
STP 12	1	1.1	Fill 1	1	ARCH	Ferrous Metal	Nail	Wire	Fragment, corroded	1879-present (Wells 1998:92)	
STP 12	1	1.1	Fill 1	3	DOM	Glass	Vessel	Bottle	Clear body fragments, machine-manufactured	Early 20th century-present (Lindsey 2020)	
STP 12	1	1.1	Fill 1	1	DOM	Glass	Vessel	Bottle	Blue body fragment, machine-manufactured	Early 20th century-present (Lindsey 2020)	
STP 12	1	1.1	Fill 1	1	DOM	Glass	Vessel	Bottle	Clear lip fragment, machine-manufactured	Early 20th century-present (Lindsey 2020)	
STP 12	1	1.1	Fill 1	5	DOM	Ceramic	Whiteware	Bowl	Rim and body sherds, undecorated	1820-present (Miller et al. 2000:13)	
STP 12	1	1.1	Fill 1	1	DOM	Ceramic	Whiteware	Plate	Rim sherd, blue underglaze transfer-printed Chinoiserie	1820-present (Miller et al. 2000:13)	
STP 12	1	1.1	Fill 1	1	DRA	Ceramic	Coarse Earthenware	Sewer pipe	Fragment, thick, glazed		
STP 12	1	1.1	Fill 1	1	TOY	Glass	Toy Marble	Marble	Whole, white and green swirl		
STP 12	2	1.7	Fill 2	1	DOM	Glass	Vessel	Bottle	Amber body fragment, machine-manufactured	Early 20th century-present (Lindsey 2020)	
STP 12	2	1.7	Fill 2	1	DOM	Glass	Vessel	Bottle	Clear body fragment, machine-manufactured	Early 20th century-present (Lindsey 2020)	
STP 12	2	1.7	Fill 2	1	DOM	Ceramic	Whiteware	Hollowware	Body sherd, undecorated	1820-present (Miller et al. 2000:13)	
STP 13	1	0.9	Fill 1	1	DOM	Glass	Vessel	Bottle	Clear body fragment, machine-manufactured, rectangular	Early 20th century-present (Lindsey 2020)	
STP 13	1	0.9	Fill 1	1	DOM	Glass	Vessel	Bottle	Aqua lip fragment, machine-manufactured	Early 20th century-present (Lindsey 2020)	
STP 13	1	0.9	Fill 1	2	ARCH	Ceramic	Terracotta	Paver	Undecorated fragments, mend		

STP 13	1	0.9	Fill 1	1	DOM	Ceramic	Whiteware	Hollowware	Body sherd, undecorated	1820-present (Miller et al. 2000:13)	
STP 13	2	1.3	Fill 2	1	DOM	Glass	Vessel	Bottle	Clear body fragment, ribbed, machine-manufactured, cylindrical	Early 20th century-present (Lindsey 2020)	
STP 13	2	1.3	Fill 2	1	DOM	Ceramic	Whiteware	Hollowware	Body sherd, undecorated	1820-present (Miller et al. 2000:13)	
STP 13	2	1.3	Fill 2	1	DOM	Ceramic	Whiteware	Hollowware	Body sherd, blue underglaze painted landscape on exterior	1820-present (Miller et al. 2000:13)	
STP 13	3	2.4	Fill 3	1	ARCH	Ferrous Metal	Nail	Wire	Fragment, corroded	1879-present (Wells 1998:92)	
STP 13	3	2.4	Fill 3	2	DOM	Glass	Vessel	Bottle	Clear body fragments, machine-manufactured, slightly burnt	Early 20th century-present (Lindsey 2020)	
STP 13	3	2.4	Fill 3	1	DOM	Ceramic	Whiteware	Hollowware	Body and base sherd, undecorated	1820-present (Miller et al. 2000:13)	
STP 15	2	1.3	Fill 2	1	DOM	Ceramic	Whiteware	Hollowware	Body sherd with remnant brown and green underglaze painted decoration on exterior	1820-present (Miller et al. 2000:13)	
STP 15	2	1.3	Fill 2	1	DOM	Ceramic	Whiteware	Hollowware	Body sherd, undecorated, burnt	1820-present (Miller et al. 2000:13)	
STP 15	2	1.3	Fill 2	1	DOM	Glass	Vessel	Bottle	Clear body fragment, machine-manufactured	Early 20th century-present (Lindsey 2020)	
STP 15	2	1.3	Fill 2	1	DOM	Glass	Vessel	Bottle	Lime green body fragment, machine-manufactured	1930-present (Lindsey 2020)	
STP 16	1	0.7	Fiil 1	7	DOM	Glass	Vessel	Bottle	Clear body fragments, machine-manufactured	Early 20th century-present (Lindsey 2020)	
STP 16	1	0.7	Fiil 1	1	DOM	Glass	Vessel	Bottle	Clear base fragment, machine-manufactuerd with large embossed "4", Owens	Early to mid 20th century (Lindsey 2020)	
STP 16	1	0.7	Fiil 1	1	DOM	Glass	Vessel	Bottle	Lime green body fragment, machine-manufactured	1930-present (Lindsey 2020)	
STP 16	1	0.7	Fiil 1	2	DOM	Glass	Vessel	Bottle	Amber body fragments, machine-manufactured	Early 20th century-present (Lindsey 2020)	
STP 16	1	0.7	Fiil 1	3	DOM	Ceramic	Whiteware	Hollowware	Body sherds, undecorated	1820-present (Miller et al. 2000:13)	
STP 16	1	0.7	Fiil 1	1	ELEC	Graphite	Graphite	Rod	Fragment	Early 20th century-present (Miller et al. 2000)	
STP 16	2	1.8	Fill 2	2	DOM	Glass	Vessel	Bottle	Clear body fragments, machine-manufactured	Early 20th century-present (Lindsey 2020)	
STP 16	2	1.8	Fill 2	1	DOM	Ceramic	Whiteware	Hollowware	Body sherd, undecorated	1820-present (Miller et al. 2000:13)	
STP 16	2	1.8	Fill 2	1	DOM	Ceramic	Porcelain	Hollowware	Body sherd, undecorated		
STP 16	2	1.8	Fill 2	1	MISC	Plastic	Plastic	Indeterminate	Black fragment	1915-present (Miller et al. 2000:16)	
STP 17	1	1.05	Fill 1	5	DOM	Glass	Vessel	Bottle	Clear body fragments, machine-manufactured	Early 20th century-present (Lindsey 2020)	
STP 17	2	1.6	Fill 2	1	DOM	Glass	Vessel	Bottle	Green body fragment, machine-manufactured	Early 20th century-present (Lindsey 2020)	
STP 17	2	1.6	Fill 2	1	ARCH	Glass	Flat	Window	Clear thick fragment with wire embedded within	1892-present (Miller et al. 2000: 9)	

STP 17	2	1.6	Fill 2	5	DOM	Ceramic	Whiteware	Plate	Rim and body sherds, undecorated	1820-present (Miller et al. 2000:13)	
STP 17	3	2.7	Fill 3	1	DOM	Glass	Vessel	Bottle	Clear body fragment, machine-manufactured	Early 20th century-present (Lindsey 2020)	
STP 17	3	2.7	Fill 3	1	DOM	Glass	Vessel	Bottle	Amber body and base fragment, machine-manufactured	Early 20th century-present (Lindsey 2020)	
STP 17	3	2.7	Fill 3	2	DOM	Ceramic	Whiteware	Hollowware	Body sherds, undecorated	1820-present (Miller et al. 2000:13)	
STP 18	1	1.0	Fill 1	3	DOM	Glass	Vessel	Bottle	Clear body fragments, machine-manufactured	Early 20th century-present (Lindsey 2020)	
STP 18	1	1.0	Fill 1	2	DOM	Glass	Vessel	Bottle	Amber body fragments, machine-manufactured	Early 20th century-present (Lindsey 2020)	
STP 18	1	1.0	Fill 1	1	DOM	Glass	Vessel	Bottle	Green body fragment, machine-manufactured	Early 20th century-present (Lindsey 2020)	
STP 18	1	1.0	Fill 1	1	DOM	Glass	Vessel	Bottle	Cobalt blue body fragment, machine-manufactured	Early 20th century-present (Lindsey 2020)	
STP 18	1	1.0	Fill 1	1	DOM	Glass	Vessel	Bottle	Aqua body fragment		
STP 18	1	1.0	Fill 1	1	DOM	Glass	Vessel	Indeterminate	Milk glass fragment		
STP 18	1	1.0	Fill 1	1	ELEC	Graphite	Graphite	Rod	Fragment	Early 20th century-present (Miller et al. 2000)	
STP 18	1	1.0	Fill 1	1	MISC	Copper Alloy	Hardware	Hook	"S" hook		
STP 18	2	1.4	Fill 2	2	ARCH	Ferrous Metal	Nail	Wire	Fragment, corroded	1879-present (Wells 1998:92)	
STP 18	2	1.4	Fill 2	1	ARCH	Glass	Flat	Window	Aqua fragment		
STP 18	2	1.4	Fill 2	1	CLO	Leather	Footware	Shoe	Sole fragment		
STP 18	2	1.4	Fill 2	8	DOM	Glass	Vessel	Bottle	Clear body and base fragments, machine-manufactured, remnant embossing	Early 20th century-present (Lindsey 2020)	
STP 18	2	1.4	Fill 2	2	DOM	Glass	Vessel	Bottle	Lime green body fragments, machine-manufactured	1930-present (Lindsey 2020)	
STP 18	2	1.4	Fill 2	1	DOM	Ceramic	Whiteware	Hollowware	Rim sherd, undecorated, burnt	1820-present (Miller et al. 2000:13)	
STP 18	3	3.2	Fill 3	1	BIO	Fauna	Shell	Oyster	Small fragment		
STP 18	3	3.2	Fill 3	4	DOM	Glass	Vessel	Bottle	Clear body fragments, machine-manufactured, remnant embossing	Early 20th century-present (Lindsey 2020)	
STP 18	3	3.2	Fill 3	2	DOM	Glass	Vessel	Bottle	Green body fragments, machine-manufactured	Early 20th century-present (Lindsey 2020)	
STP 18	3	3.2	Fill 3	1	DOM	Glass	Vessel	Bottle	Amber shoulder fragment, machine-manufactured	Early 20th century-present (Lindsey 2020)	
STP 18	3	3.2	Fill 3	1	DOM	Ceramic	Whiteware	Hollowware	Body sherd, undecorated	1820-present (Miller et al. 2000:13)	
STP 18	3	3.2	Fill 3	1	DOM	Ceramic	Terracotta	Indeterminate	Undecorated sherd		
STP 18	3	3.2	Fill 3	1	DOM	Ceramic	Ironstone	Plate	Rim sherd, overglaze green decal decoration	1840-present (Miller et al. 2000:13)	
STP 18	3	3.2	Fill 3	1	DOM	Ceramic	Ironstone	Tile	White floor or wall tile, embossed "E" on unglazed base		
STP 18	3	3.2	Fill 3	2	DRA	Ceramic	Coarse Earthenware	Sewer pipe	Fragment, thick, glazed		
STP 18	3	3.2	Fill 3	1	MISC	Copper Alloy	Tag	Tag	Fragment with incised "3 - 5"		

STP 19	2	1.6	Fill 2	1	ARCH	Asphalt	Asphalt	Roof Shingle	Fragment	1917-present (Miller et al. 2000:16)	
STP 19	2	1.6	Fill 2	11	ARCH	Ferrous Metal	Nail	Wire	Fragments, corroded	1879-present (Wells 1998:92)	
STP 19	2	1.6	Fill 2	2	ARCH	Glass	Flat	Window	Clear fragments		
STP 19	2	1.6	Fill 2	4	DOM	Glass	Vessel	Bottle	Clear body fragments, machine-manufactured	Early 20th century-present (Lindsey 2020)	
STP 19	2	1.6	Fill 2	2	DOM	Glass	Vessel	Bottle	Amber body fragments, machine-manufactured	Early 20th century-present (Lindsey 2020)	
STP 19	2	1.6	Fill 2	2	DOM	Ceramic	Whiteware	Hollowware	Rim and base sherds, undecorated	1820-present (Miller et al. 2000:13)	
STP 19	2	1.6	Fill 2	1	DOM	Ceramic	Whiteware	Hollowware	Body sherd, remnant overglaze pink decal	1840-present (Miller et al. 2000:13)	
STP 19	2	1.6	Fill 2	1	DOM	Ceramic	Ironstone	Hollowware	Body sherd, undecorated	1840-present (Miller et al. 2000:13)	
STP 19	2	1.6	Fill 2	1	DOM	Ceramic	Terracotta	Flower Pot	Undecorated rim sherd		
STP 19	3	4.1	Fill 3	9	ARCH	Ferrous Metal	Nail	Wire	Fragments, corroded	1879-present (Wells 1998:92)	
STP 19	3	4.1	Fill 3	1	ARCH	Concrete	Concrete	Concrete	Large fragment		
STP 19	3	4.1	Fill 3	1	DOM	Glass	Vessel	Bottle	Clear body fragment, machine-manufactured	Early 20th century-present (Lindsey 2020)	
STP 20	1	1.4	Fill 1	4	DOM	Glass	Vessel	Bottle	Clear body fragments, machine-manufactured	Early 20th century-present (Lindsey 2020)	
STP 20	1	1.4	Fill 1	1	DOM	Glass	Vessel	Bottle	Lime green body fragment, machine-manufactured	1930-present (Lindsey 2020)	
STP 20	1	1.4	Fill 1	1	DOM	Glass	Vessel	Medicine Bottle	Cobalt blue body fragment, small and cylindrical, remnant embossed "…SON…CO."		
STP 20	1	1.4	Fill 1	2	DOM	Ceramic	Porcelain	Cup	Body sherds, undecorated		
STP 20	1	1.4	Fill 1	1	DOM	Ceramic	Whiteware	Hollowware	Base sherd, undecorated	1820-present (Miller et al. 2000:13)	
STP 20	1	1.4	Fill 1	1	DRA	Ceramic	Coarse Earthenware	Sewer pipe	Fragment, thick, glazed		
STP 20	2	2.2	Fill 2	1	ARCH	Ferrous Metal	Nail	Wire	Fragment, corroded	1879-present (Wells 1998:92)	
STP 20	2	2.2	Fill 2	1	ARCH	Glass	Flat	Window	Clear fragment, safety glass	1892-present (Miller et al. 2000: 9)	
STP 20	2	2.2	Fill 2	1	DOM	Glass	Vessel	Bottle	Clear body fragment, machine-manufactured	Early 20th century-present (Lindsey 2020)	
STP 20	2	2.2	Fill 2	1	DOM	Glass	Vessel	Condiment Bottle	Clear base fragment, machine-manufactured, paneled decoration	Early 20th century-present (Lindsey 2020)	
STP 20	2	2.2	Fill 2	2	DOM	Glass	Vessel	Bottle	Clear base fragments, mend, machine-manufactured, embossed "U.S. PATENT OFF"	Early 20th century-present (Lindsey 2020)	
STP 20	2	2.2	Fill 2	1	DOM	Glass	Vessel	Bottle	Green body fragment, machine-manufactured	Early 20th century-present (Lindsey 2020)	
STP 20	2	2.2	Fill 2	3	DOM	Ceramic	Whiteware	Hollowware	Body sherds, undecorated	1820-present (Miller et al. 2000:13)	
STP 20	2	2.2	Fill 2	2	DOM	Ceramic	Porcelain	Hollowware	Rim sherds, remnant overglaze linear decoration		

STP 20	2	2.2	Fill 2	1	DOM	Ceramic	Porcelain	Floor Tile	Thick and flat, fragment		
STP 20	2	2.2	Fill 2	1	DOM	Ceramic	Tin-glazed Earthenware	Hollowware	Body sherd, undecorated, soft orange paste	1628-1830 (Miller et al. 2000:11)	
STP 20	2	2.2	Fill 2	2	DRA	Ceramic	Coarse Earthenware	Sewer pipe	Fragments, thick, glazed		
G1	3	2.2	Fill 3	1	DOM	Glass	Vessel	Indeterminate	Milk glass fragment		
G1	4	4.8	Fill 4	1	DOM	Glass	Vessel	Bottle	Cobalt blue lip fragment, threaded, machine-manufactured	Early 20th century-present (Lindsey 2020)	
G1	4	4.8	Fill 4	1	DOM	Glass	Vessel	Bottle	Amber body fragment, machine-manufactured, slightly burnt	Early 20th century-present (Lindsey 2020)	
G1	4	4.8	Fill 4	1	DOM	Ceramic	Terracotta	Flower Pot	Undecorated base sherd		
G1	5	7.2	Fill 5	1	BIO	Fauna	Shell	Mudsnail	Mudsnail shell, possibly non-artifactual		
G1	5	7.2	Fill 5	2	DOM	Glass	Vessel	Bottle	Clear body fragments, machine-manufactured	Early 20th century-present (Lindsey 2020)	
G1	6	18.0	Fill 6	6	ARCH	Fired Clay	Red Earthenware	Brick	Fragments		
G1	6	18.0	Fill 6	1	BIO	Fauna	Chicken	Lumbar Bone	Fragment		
G1	6	18.0	Fill 6	2	BIO	Fauna	Chicken	Femur Bone	Fragments, mend (likely broken during excavation)		
G1	6	18.0	Fill 6	1	BIO	Fauna	Chicken	Pelvic Bone	Fragment		
G1	6	18.0	Fill 6	1	BIO	Fauna	Shell	Oyster	Fragment		
G1	6	18.0	Fill 6	3	CLO	Leather	Footware	Shoe	Sole fragments		
G1	6	18.0	Fill 6	14	DOM	Glass	Vessel	Bottle	Clear body fragments, machine-manufactured, remnant embossing	Early 20th century-present (Lindsey 2020)	
G1	6	18.0	Fill 6	3	DOM	Glass	Vessel	Bottle	Amber body fragments, machine-manufactured	Early 20th century-present (Lindsey 2020)	
G1	6	18.0	Fill 6	1	DOM	Glass	Vessel	Jar	Cobalt blue body fragment, machine-manufactured	Early 20th century-present (Lindsey 2020)	
G1	6	18.0	Fill 6	3	DOM	Ceramic	Whiteware	Hollowware	Body sherds, undecorated	1820-present (Miller et al. 2000:13)	
G1	6	18.0	Fill 6	1	DOM	Ceramic	Rockingham Ware	Hollowware	Body sherd, molded	1840s-1936 (MACL 2002)	
G1	6	18.0	Fill 6	3	DOM	Aluminum	Vessel	Can	Fragments	1928-present (Miller et al. 2000:14)	
G1	6	18.0	Fill 6	1	FUEL	Coal	Coal	Coal	Fragment		
G1	6	18.0	Fill 6	1	MISC	Rubber	Rubber	Indeterminate	White linear fragment, similar stretch to a rubber band, possible for a door or window seal	1917-present (Miller et al. 2000:16)	
G1	6	18.0	Fill 6	1	MISC	Plastic	Plastic	Wrapper	White wrapper fragment	1915-present (Miller et al. 2000:16)	
G1	6	18.0	Fill 6	1	MISC	PVC	Pipe	Pipe	White fragment, threaded elbow	1915-present (Miller et al. 2000:16)	
G1	7	18.7	Fill 7	1	ARCH	Composite	Roofing	Tar Paper	Black fragment	1917-present (Miller et al. 2000:16)	
G1	7	18.7	Fill 7	1	DOM	Ceramic	Redware	Flower Pot	Undecorated sherd		
G1	7	18.7	Fill 7	2	DOM	Glass	Vessel	Bottle	Clear body fragments, machine-manufactured	Early 20th century-present (Lindsey 2020)	
G1	8	20.3	Fill 8	2	ARCH	Composite	Roofing	Tar Paper	Black fragment	1917-present (Miller et al. 2000:16)	

G1	8	20.3	Fill 8	1	DOM	Glass	Vessel	Bottle	Clear body fragment, machine-manufactured	Early 20th century-present (Lindsey 2020)	
G1	8	20.3	Fill 8	1	DOM	Glass	Vessel	Bottle	Amber body fragment, machine-manufactured	Early 20th century-present (Lindsey 2020)	
G3	4	10.0	Fill 4	1	DOM	Ceramic	Porcelain	Figurine	White hard paste, molded		
G3	4	10.0	Fill 4	1	DOM	Ceramic	Terracotta	Flower Pot	Base sherd, undecorated		
G3	4	10.0	Fill 4	1	DOM	Glass	Vessel	Bottle	Clear body fragment, machine-manufactured	Early 20th century-present (Lindsey 2020)	
				440							

Key:

ARCH = architectural
BIO = fauna
CLO = clothing
DOM = domestic
DRA = drainage/sewer
ELEC = electrical
FUEL = coal
MISC = Miscellaneous
TOY = toy

Artifact Catalog References

Lindsey, Bill
2020 Bottle Body Characteristics & Mold Seams. Historic Glass Bottle Identification & Information Website. Electronic document, https://sha.org/bottle/body.htm, accessed February 2024.

Maryland Archaeological Conservation Lab (MACL)
2002 Rockingham Ware. Electronic document https://apps.jefpat.maryland.gov/diagnostic/Post-Colonial%20Ceramics/Less%20Commonly%20Found/Rockingham/index-Rockingham.html, accessed April 2024.

Miller, George L. with contributions by Patricia Samford, Ellen Shlasko, and Andrew Madsen
2000 Telling Time for Archaeologists. Northeast Historical Archaeology 29:1-22.

Wells, Tom
1998 *Nail Chronology: The Use of Technologically Derived Features*. Historical Archaeology 32(2): 78-99.