

**Phase IB Archaeological Monitoring of The Reconstruction
of the Olde Towne of Flushing Burial Ground (aka Martin's
Field), located on 46th Avenue between 164th Street and
165th Street, Borough of Queens, Queens County, New York
(Contract Number: Q017-118M)**



Prepared for

City of New York - Landmarks Preservation Commission
City of New York – Department of Parks and Recreation
Perkan Concrete Corp.

Prepared by

Alyssa Loorya, Ph.D., R.P.A., President and Principal Investigator
Roseanne Quinn
Chrysalis Archaeological Consultants

Edited by

Lisa Geiger, M.A., R.P.A.,
Christopher Ricciardi, PhD, R.P.A.
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I. INTRODUCTION

Perkan Concrete Corp (Perkan) contracted with Chrysalis Archaeological Consultants, Inc., (Chrysalis) on behalf of the City of New York – Department of Parks and Recreation (NYC Parks) to provide all Cultural Resource Management (Archaeological) services for The Reconstruction of the Olde Towne of Flushing Burial Ground (aka Martin’s Field), located on 46th Avenue between 164th Street and 165th Street, Borough of Queens, Queens County, New York (Contract Number: Q017-118M). Perkan is undertaking the project on behalf of NYC Parks in order to landscape and reconstruct paved areas of the park at the project site (Maps 1 and 2) (Figure 1).

The Area of Potential Affect (APE) for this project, as determined by NYC Parks, is all areas where excavation is planned to impact park grounds. The project area is limited to the southern portion of the Olde Towne of Flushing Burial Ground Park. The Olde Towne of Flushing Burial Ground Park is located between 45th Avenue and 46th Avenue and 164th Street and 165th Street in the Flushing neighborhood of Queens. Until the late 2000s the park was commonly known as Martin’s Field.

The project area was considered to have archaeological sensitivity for historic remains related to Martin’s Field’s use as a cemetery from ca. 1840 to 1898. The area was referred to historically as a pauper’s cemetery, “Poor House Burying Ground”, and “Colored Cemetery” in various surveys. Studies have indicated more than 60% of individuals with death records who were interred in this cemetery were black residents (Stone 1996:23). Between 500 and 1200 people are estimated to have been buried in Martin’s Field (Stone 1999).

Based on the Scope of Work (SOW) provided by NYC Parks and the Phase IB Archaeological Work Plan, approved in May 2020, Archaeological Monitoring was undertaken for all excavation activities performed within the project APE. Monitored activities included removal of 17 trees, Trench 1 and 2 removal and reconstruction of a stone wall, Trench 3 manhole location excavation, Trench 4 excavation for a commemorative wall, removal of a concrete surface with decorative oyster shell in resin, and mechanical grubbing to remove vegetation along 165th Street. Excavation depths ranged from 0.5’ (0.15m) bgs for grubbing, 1.7’ (0.51m) bgs for tree and Trench 3 excavation, and 3.5’ (1.06m) bgs for Trench 4. No human remains or evidence of historic or prehistoric archaeological materials was identified.

Alyssa Loorya, PhD, R.P.A. served as Principal Investigator and Roseanne Quinn served as Field Director and authored this report. Lisa Geiger, M.A., R.P.A. and Christopher Ricciardi, PhD, R.P.A. edited this report for Chrysalis. See Appendix B for a summary of personnel and their qualifications.

PROJECT DESCRIPTION

Perkan is undertaking this project on behalf of NYC Parks in order to reconstruct paving and landscaped areas at the project site. The Removal and Layout plans supplied by Perkan and NYC Parks established that all planned excavation work was limited to the southern portion of Martin's Field, around an existing paved plaza (see Appendix A – Work Plan). Planned work activities involving ground surface impacts included:

- Excavation up to 1' below surface for a new full depth asphalt path
- Excavation up to 3' below surface for a commemorative wall
- Selective clearing and grubbing, up to 0.5' below surface impacts
- Excavation up to 3' below surface to remove selected trees measuring over 6" to 12" diameter at breast height
- Excavation up to 1' below surface for removal of granite pavement
- Excavation up to 1' below surface for removal of full depth asphalt
- Excavation up to 1' below surface for removal of reinforced concrete sidewalk
- Excavation up to 1' below surface for removal of oyster shell in resin on concrete
- Excavation up to 1' below surface for removal of interpretive sign and concrete footing
- Excavation up to 1' below surface for removal of stone wall

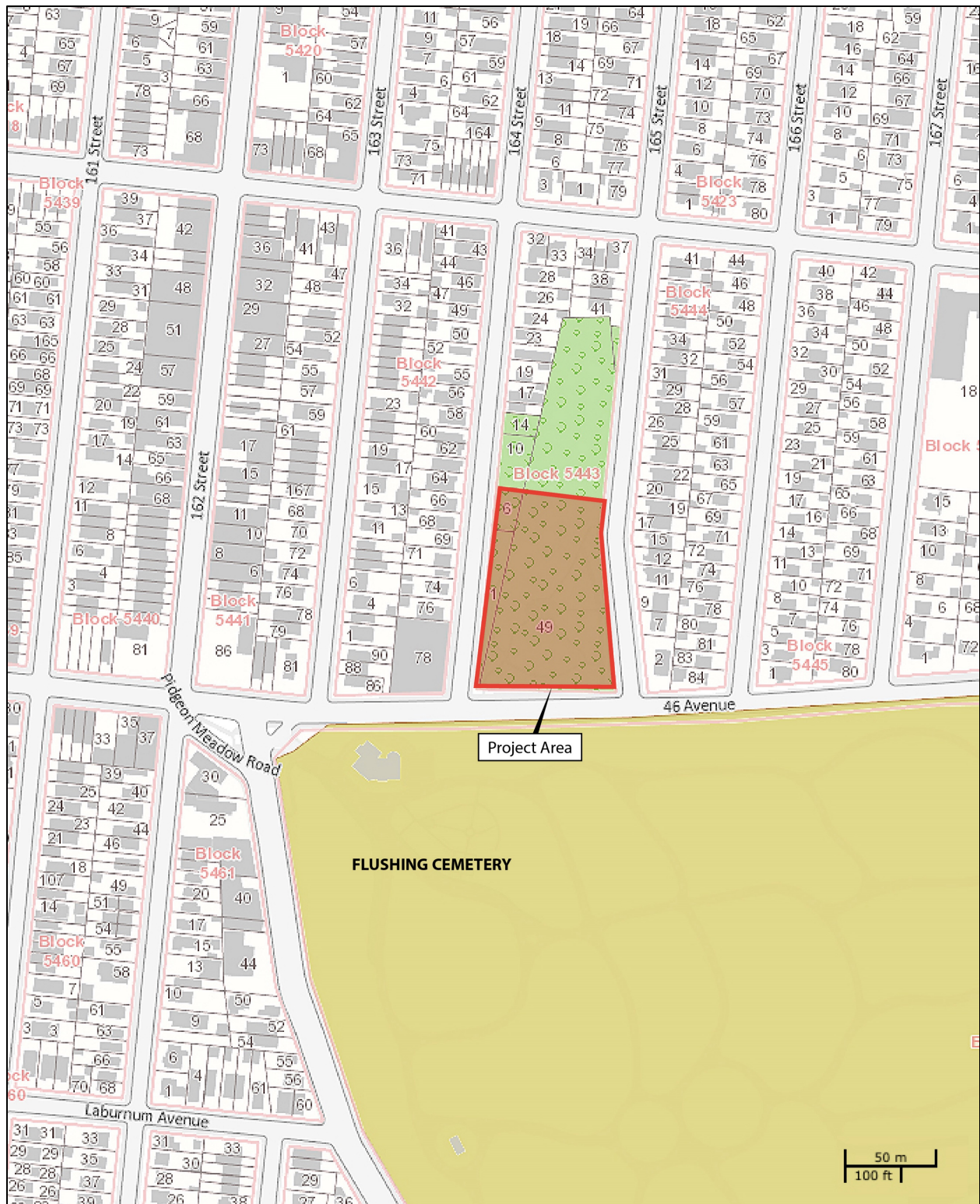
In general, excavation work was planned with anticipated impact depths of 0.5' below ground surface (bgs) for clearing and grubbing landscaping work across much of the unpaved southern portion of the park. Targeted excavation activities to remove and replace existing concrete, pavement, and asphalt surfaces were planned with anticipated impact depths up to 1' bgs. Removal of an existing commemorative wall and removal of specific large trees was planned with impacts anticipated up to 3' bgs.

PROJECT INFORMATION

Project Name	The Olde Towne of Flushing Burial Ground (aka Martin's Field), located on (Contract Number: Q017-118M).
Street Address	46th Avenue between 164th Street and 165th Street,
Borough/Block/Lot	Flushing, Queens, New York
LPC PUID (If Yet Assigned)	
Applicant Name	NYC Parks
Lead Agency (Contact Person)	NYC Parks
Principal Investigator	Alyssa Loorya, Ph.D., R.P.A.
Field Director	Roseanne Quinn



Map 1: Project area on *Flushing, NY 7.5" Topographic Quad* (USGS 2019).



Map 2: Project area within the footprint of Olde Towne Flushing Burial Ground Park (aka Martin's Field) (OASISnyc 2019).

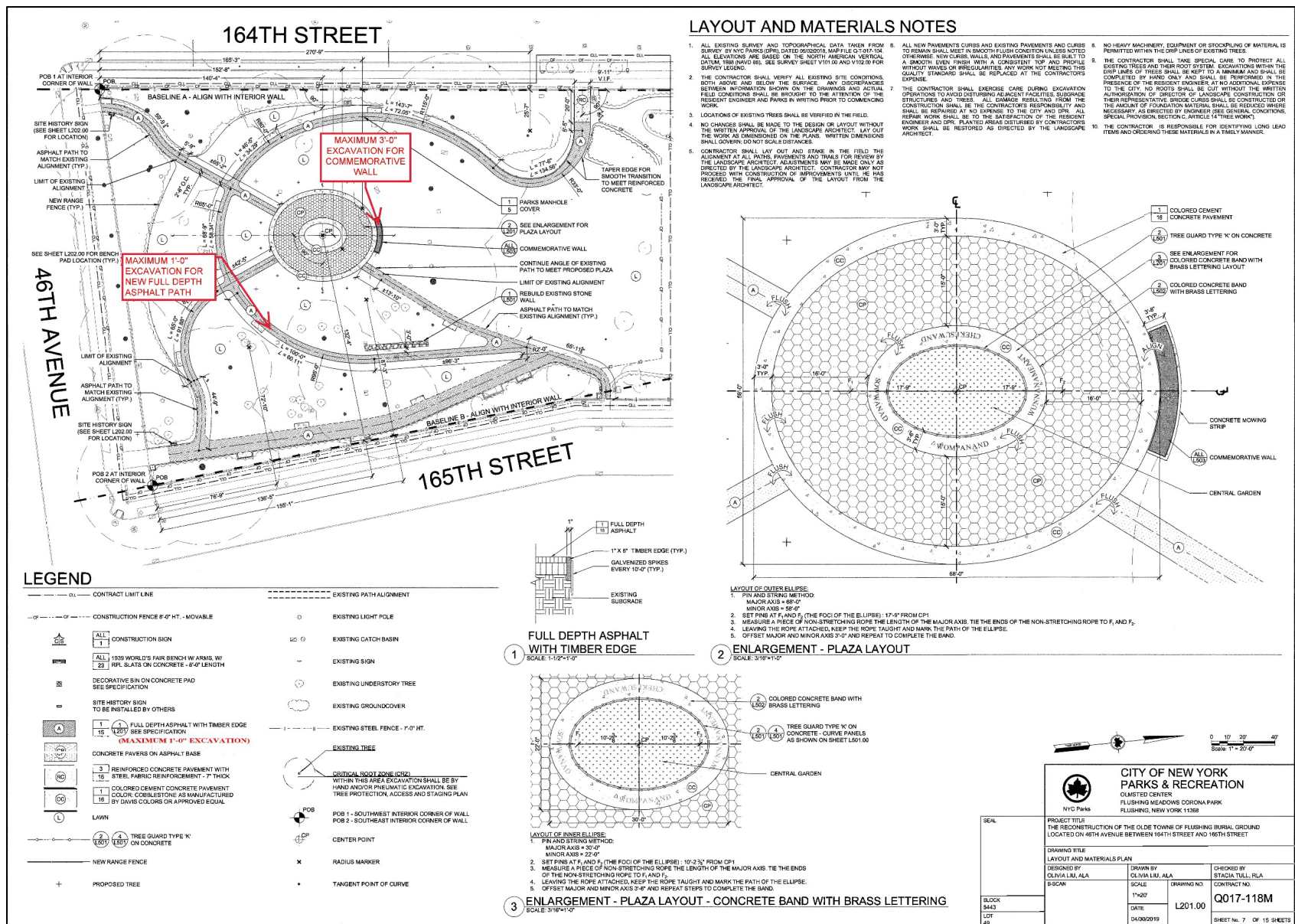


Figure 1: NYC Parks proposal for new park layout.

II. SYNTHESIS OF PREVIOUS WORK

Previous archaeological investigations covering the project area and nearby areas do not suggest potential for Native American or pre-contact resources. Historic archaeological potential was found based on Martins Field's usage as a pauper's burial ground and African American burial ground ca. 1840 to 1898.

PREHISTORIC SENSITIVITY

Due to their topography, proximity to fresh water, and animal and marine resources, New York City's boroughs have been settled by Native American populations at least as early as the Archaic period. However, documented prehistoric sites in Queens are rare (Stone 1996:10). There is some oral tradition of Native American habitation during the Contact period in and around Queens, notably by Reginald Bolton in his seminal book *New York City in Indian Possession*, but few current archaeological excavations have yielded definitive Prehistoric sites (Bolton 1920). The project APE has been modified for use as a burial ground and park in the historic era, likely impacting any extant prehistoric materials. Previous area investigations and the project Work Plan established the APE as having little potential for prehistoric cultural remains (Chrysalis 2020:8).

HISTORIC SENSITIVITY

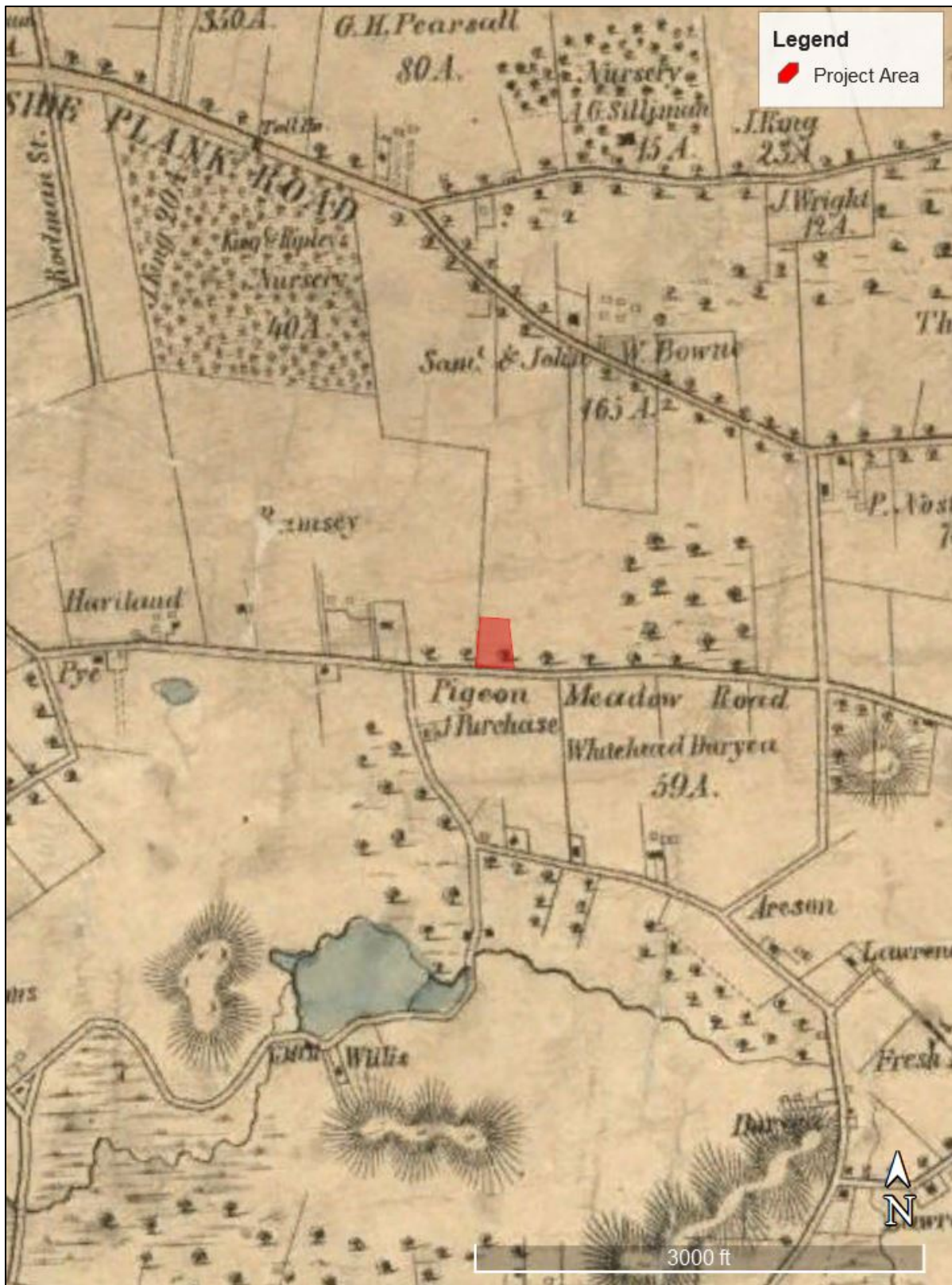
Land within the project was used as a cemetery during the nineteenth century. From the eighteenth to the mid-nineteenth century, the site was primarily undeveloped farmland (see Stone 1996). In 1840, title for the property was vested in the Town of Flushing. Historic maps show the project area in 1852 as undeveloped land in an area generally utilized for agriculture and tree nurseries (Map 3). The earliest known depiction of the project area as a developed lot, from an 1873 Beers atlas, indicates it was used as a Poor House Burying Ground (Map 4). The lot's title was changed to the City of New York in 1898.

During the early nineteenth century, most wealthy families in Queens used private burial grounds, as church-owned burial plots and large public plots had been banned in New York in 1822 due to the sanitation concerns around outbreaks of cholera and yellow fever (Stone 1996: 15). It is unclear if burials might have occurred in the project area as early as its 1840 title vestment, despite local burial laws. In 1847, the Rural Cemeteries Act was passed which allowed for private companies to buy land for burial and cemetery purposes. In 1853, Flushing Cemetery, located south of the project area, was one of the first burial grounds to be officially developed after the law took effect. By 1860, records indicate burials occurred at the project area associated with a Town Poor House.

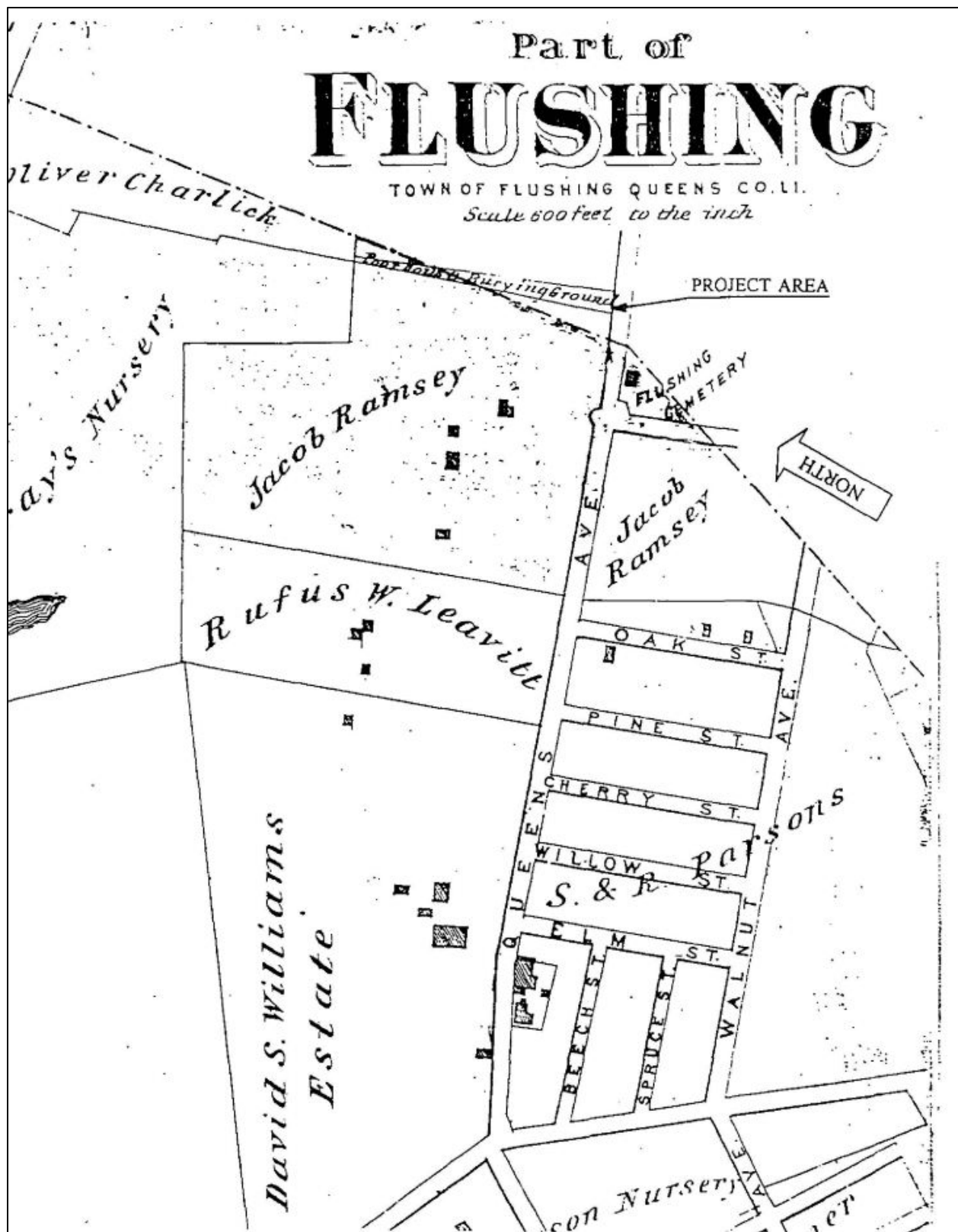
The last recorded burials at the "Paupers Burial Ground" in the project area were performed in 1898, with much of the property remaining open space through 1903. The land was transferred to NYC Parks in 1914. The area was renamed Martin's Field in 1931 and developed into a landscaped park and playground in the 1930s and early 1940s. It was later augmented in 1985, with news reports of workers encountering and disturbing human bones during park development (Stone 1996).

The burial ground which is now Martin's Field/Olde Towne Burial Ground has been referred to by several different names. In a 1919 survey, the project area land was referred to as a 'Colored Cemetery' (Stone 1996:21). The area is also sometimes referred to as a 'Pauper's Burial Ground.' Stone found that more than 60% of deaths recorded were listed as non-white. Stone hypothesized that around 1160 persons were buried on the grounds from as early as 1840, when the property was vested, to 1898, when the last interments took place (Stone 1996:23). This number was considered somewhat subjective and assumed that during times of epidemic, death and subsequent burials would have occurred at a more frequent pace. A more conservative estimate of 500 burials was given as a low estimate. Despite this range of 500 to over 1000 estimated burials, only four marked headstones were evident in a 1919 Queens Topographical Bureau survey (Stone 1999).

The APE's usage as a burial ground lead to the assessment of the site as archaeologically sensitive with respect to the possibility of disturbing human remains. The land was apparently used for burial of African American residents of Queens as early as 1840 to 1898. Specific interment information is sparse, and locations of burials within the property is not well documented or marked. Although limited excavation and monitoring in 2005 and 2006 indicated areas of wide disturbance (Chrysalis 2005 and 2006), likely from park work between the 1930s and 1980s, the limits of disturbance to the burial grounds and the depth of any potential extant remains is unknown.



Map 3: Detail of 1852 map of Queens, with project area in red (Dripps 1852).



Map 4: Detail of 1873 atlas depicting burying ground at project area (from Stone 1996:Figure 12).

III. CONTEXT AND RESEARCH DESIGN

Phase IB fieldwork is designed to ascertain the presence/absence of archaeological resources within an area. Its ultimate goal is to determine whether significant (i.e. National Register [NR] eligible) resources that could be adversely affected by project construction are extant within the APE. In this instance, resources considered likely to be found within the project area were buried human remains, possibly belonging to African American residents of Queens interred as early as 1840 to 1898. Previous studies found no evidence of historic development to the project area before its use as a burial ground. The general lack of Prehistoric sites in the surrounding area and level of disturbance associated with creating the historic burial ground lead to a determination that Prehistoric resources were not likely to be encountered.

As directed by NYC Parks, in their coordination with NYC LPC, Archaeological Monitoring was required for earth moving work in archaeologically sensitive portions of the project area. Since the entire park area was considered archaeologically sensitive due to the land parcel's historic use as a burial ground, Archaeological Monitoring was planned to accompany all project excavation activities.

IV. PROJECT METHODS

Phase IB Archaeological Monitoring was utilized for all project activities that involved subsurface impacts. Monitored work included the removal of sixteen trees, including excavation for stump grinding; the removal of two stone walls; clearing and grubbing landscaped areas; and excavation of an exploratory excavation trench dug to identify utilities around an existing manhole. For documentation purposes, the exploratory trench was divided into seven sections up to 20'6" long, based on daily excavation.

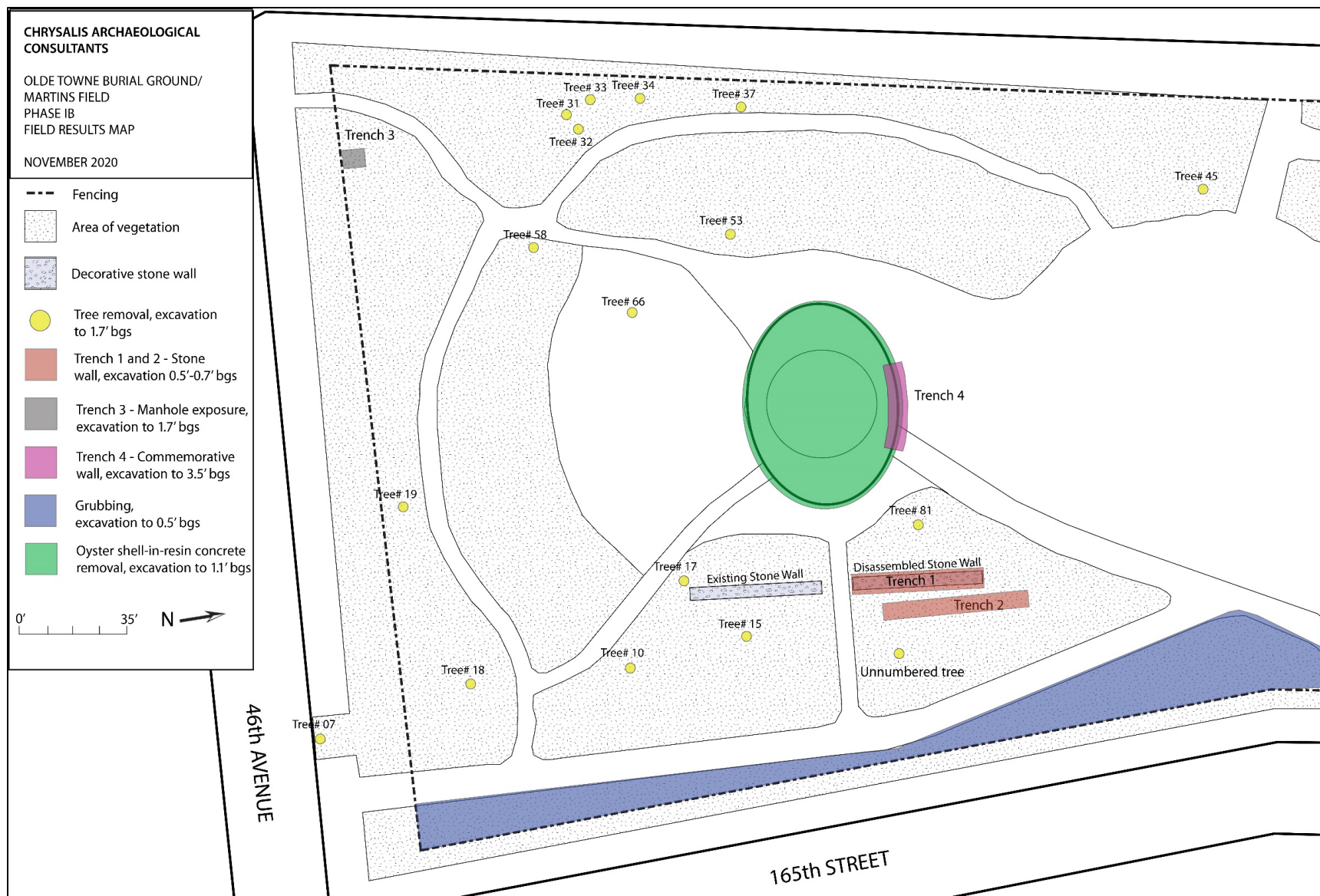
Chrysalis staff maintained field maps and profile drawings, photographs, and descriptions of the soils encountered and field conditions. Staff kept an up-to date log of all monitoring activities, including the date and duration of work episodes and an accompanying description of the activity being monitored and color, texture, and location and depth information for all soils exposed.

The project area elevation was very flat, and a NAVD88 elevation of 47.23', taken at the north side of Trench 4's center, was utilized as a ground surface measurement. All subsurface depths were recorded below ground surface from this starting elevation.

Any cultural materials encountered were documented and saved according to their unique provenience on field forms and in a project FS Log, using consecutive numbers for each context that yielded artifacts, in the other they were encountered in the field. Bulk refuse materials such as coal, coal ash, slag, broken brick and concrete were noted in the field but not retained unless they included temporal diagnostic details. Recovered artifacts were transported to Chrysalis' laboratory for processing and analysis. All monitoring activities were compliant with NYC LPC's Guidelines for Archaeological Work in New York City (NYC LPC 2018) and NYAC's Guidelines for the Use of Archaeological Monitoring (NYAC 2002).

V. FIELD RESULTS

Phase 1B Archaeological Monitoring took place between September 23 and November 9, 2020 at the Olde Towne of Flushing Burial Ground (aka Martin's Field). Results of monitoring are presented below, organized according to the excavation activity performed: Tree Removal, Trenches 1-2: Stone Wall Removal, Trench 3: Manhole Trench Excavation, Trench 4: Commemorative Wall, Removal of Oyster Shell-in-Resin on Concrete, and Grubbing. See Map 5 below for the location and extent of monitored excavation. Only one artifact, a clear glass bottle neck and finish, was recovered (see Trench 4, Fill III stratum).



Map 5: Field Results plan view map.

TREE REMOVAL

Tree removal within the park was organized by tree numbers, provided by the contractor. Tree excavation activities are presented here according to those numbers. Trees were cut down by chainsaw and their stumps ground to pieces for removal using a mechanical grinder. Removal and stump grinding excavation reached a maximum depth of 1.7' (0.51m) bgs.

TREE# 07

Tree# 7 was located at the southeast edge of the park along the crossroads of 165th St. and 46th Ave. The excavation area for the stump grinding extended 2.7' (0.82m) north to south and 3.4' (1.03m) east to west (Image 1). Two strata were exposed, with no indication of historic archaeological materials (Table 1).

Table 1: Tree# 07 removal stratigraphy.

STRATUM (NAVD 88)	DEPTH BGS	MUNSELL	DESCRIPTION
I (42.70-42.00)	0-0.7' (0-0.21m)	10YR 3/2 very dark grayish brown	Silty loam with few rocks.
II (42.00-41.00)	0.7-1'7' (0.21-0.51m)	10YR 4/6 dark yellowish brown	Silty loam with few rocks. One modern clear bottle glass fragment was encountered but not retained for analysis.



Image 1: Tree# 7 removal and stump grinding excavation area, facing north.

TREE# 10

The excavation for the stump grinding of Tree# 10 extended 3.9' (1.18m) north to south and 2.5' (0.76m) east to west. No cultural material was encountered. Only one stratum of landscaped A horizon was exposed (Table 2).

Table 2: Tree# 10 removal stratigraphy.

STRATUM (NAVD 88)	DEPTH BGS	MUNSELL	DESCRIPTION
I (42.20-41.10)	0-1.1' (0-0.33m)	10YR 2/2 very dark brown	Sandy loam landscaped A.

TREE # 15

Excavation for Tree#15 was located 12' – 15.5' (4-5m) east of the interior of the stone wall. The excavation area extended 3.5' (1m) east to west and 2.2' (0.67m) north to south (Image 2). One stratum of landscaped A horizon was exposed (Table 3).

Table 3: Tree# 15 removal stratigraphy.

STRATUM (NAVD 88)	DEPTH BGS	MUNSELL	DESCRIPTION
I (43.00-42.20)	0–0.8' (0-0.24m)	10YR 2/2 very dark brown	Silty loam landscaped A..



Image 2: Tree# 15 removal and stump grinding excavation area, facing north.

TREE# 17

Excavation for Tree# 17 was located northeast of the stone wall. The excavation area extended 2.8' (0.85m) north to south and 2.9' (0.88m) east to west. Two strata were exposed, a landscape A and sandy subsoil (Table 4). No cultural material was encountered.

Table 4: Tree# 17 removal stratigraphy.

STRATUM (NAVD 88)	DEPTH BGS	MUNSELL	DESCRIPTION
I (42.50-41.70)	0-0.8' (0-0.24m)	10YR 2/2 very dark brown	Loamy sand landscaped A.
II (41.70-41.10)	0.8-1.4' (0.24-0.42m)	10YR 5/6 yellowish brown	Loamy sand subsoil.

TREE# 18

The excavation area for Tree# 18 extended 2.4' (0.73m) north to south and 2.4' (0.73) east to west. Two strata, a landscape A and sandy subsoil, were exposed (Table 5). No cultural material was encountered.

Table 5: Tree# 18 removal stratigraphy.

STRATUM (NAVD 88)	DEPTH BGS	MUNSELL	DESCRIPTION
I (42.00-41.20)	0-0.8' (0-0.24m)	10YR 2/2 very dark brown	Loamy sand landscaped A.
II (41.20-40.60)	0.8-1.4' (0.24-0.42m)	10YR 5/6 yellowish brown	Loamy sand subsoil.

TREE # 19

The excavation area for Tree# 19 was located 4' (1.21m) north of the interior curb and fencing along 46th Avenue that frames the parameter of the park. The width of excavation measured 3' north to south and 5.5' east to west (0.91m by 1.67m) (Image 3). Two strata were exposed (Table 6). No cultural material was encountered.

Table 6: Tree# 19 removal stratigraphy.

STRATUM (NAVD 88)	DEPTH BGS	MUNSELL	DESCRIPTION
I (42.20-41.10)	0-1.1' (0-0.33m)	10YR 2/2 very dark brown	Sandy loam landscaped A.

TREE # 31

The excavation area for Tree# 31 extended 2.7' (0.82m) east to west and 2.3' (0.70m) north to south. One stratum of organic soil was exposed (Table 7). No cultural material was encountered.

Table 7: Tree# 31 removal stratigraphy.

STRATUM (NAVD 88)	DEPTH BGS	MUNSELL	DESCRIPTION
I (41.00-40.00)	0'– 1.0' (0-m)	10YR 4/3 brown	Sandy loam.

TREE# 32

The excavation area for Tree# 32 extended 3.6' (1.09m) east to west and 2.4' (0.73m) north to south. A total of two strata were exposed (Table 8). No cultural material was encountered.

Table 8: Tree# 32 removal stratigraphy.

STRATUM (NAVD 88)	DEPTH BGS	MUNSELL	DESCRIPTION
I (41.00-40.40)	0–0.6' (0-0.18m)	10YR 4/3 brown	Sandy loam landscape A.
II (40.40-40.00)	0.6 – 1.0' 0.18 –0.30m)	10YR 3/2very dark grayish brown	Silty loam.

TREE# 33

The excavation area for Tree# 33 extended 3.3' (1m) from east to west and 2.6' (0.79m) north to south. One stratum was exposed (Table 9). No cultural material was encountered.

Table 9: Tree# 33 removal stratigraphy.

STRATUM (NAVD 88)	DEPTH BGS	MUNSELL	DESCRIPTION
I (41.00-39.80)	0– 1.2' (0-0.36m)	10YR 3/2 very dark grayish brown	Silty loam landscape A.

TREE# 34

The excavation area for Tree# 34 extended 2.5' (0.76m) east to west and 4' (1.21m) north to south (Image 4). One stratum was exposed (Table 10). No cultural material was encountered.

Table 10: Tree# 34 removal stratigraphy.

STRATUM (NAVD 88)	DEPTH BGS	MUNSELL	DESCRIPTION
I (41.00-40.00)	0'- 1.0" (0-0.30m)	10YR 4/3 brown	Sandy loam landscape A.



Image 4: Tree# 34 removal and stump grinding excavation area, facing west.

TREE# 37

The excavation area for Tree# 37 extended 3.8' (1.15m) east to west and 3.4' (1.03m) north to south. Two strata were exposed, a loamy landscape A or topsoil above a grayer silty loam that contained two non-diagnostic brick fragments (discarded in the field) (Table 11).

Table 11: Tree# 37 removal stratigraphy.

STRATUM (NAVD 88)	DEPTH BGS	MUNSELL	DESCRIPTION
I (41.00-40.70)	0-0.3' (0-0.09m)	10YR 2/2 very dark brown	Sandy loam landscape A or topsoil.
II (40.70-39.90)	0.3 – 1.1' (0.09 – 0.33m)	10YR 3/2 very dark grayish brown	Silty loam with 2 discarded, non-diagnostic brick fragments.

TREE# 45

The excavation area for Tree# 45 extended 1.3' (0.39m) east to west and 4.4' (1.34m) north to south (Table 12). Excavation uncovered a thin silty loam organic layer above a more compact silty loam (Image 5). No cultural material was encountered.

Table 12: Tree# 45 removal stratigraphy.

STRATUM (NAVD 88)	DEPTH BGS	MUNSELL	DESCRIPTION
I (45.80-45.50)	0-0.3' (0-0.09m)	10YR 3/2 very dark grayish brown	Silty loam landscape A or topsoil.
II (45.50-44.40)	0.3 – 1.4' (0.09 – 0.42m)	10YR 4/6 dark yellowish brown	Silty loam, compact with few rocks.



Image 5: Tree# 45 removal and stump grinding excavation area, facing north.

TREE# 53

The excavation area for Tree# 53 extended 2.7' (0.82m) east to west and 2.5' (0.76m) north to south. Two strata were exposed, a silty topsoil with gravel inclusions atop a mixed clay loam (Table 13) (Image 6). No cultural material was encountered.

Table 13: Tree# 53 removal stratigraphy.

STRATUM (NAVD 88)	DEPTH BGS	MUNSELL	DESCRIPTION
I (42.40-41.60)	0-0.8' (0-0.24m)	10YR 2/2 very dark brown	Sandy silt with little gravel.
II (41.60-41.10)	0.8 – 1.3' (0.24-0.39m)	10YR 3/2 and 10YR 3/6 very dark grayish brown and dark yellowish brown	Clay loam.



Image 6: Tree# 53 removal and stump grinding excavation area, facing south.

TREE# 58

The excavation area extended 3.4' (1.03m) east to west and 2.4' (0.73m) north to south. One stratum of loamy topsoil was exposed (Table 14). No cultural material was encountered.

Table 14: Tree# 58 removal stratigraphy.

STRATUM (NAVD 88)	DEPTH BGS	MUNSELL	DESCRIPTION
I (41.50-41.00)	0 – 0.5' (0-.15m)	10YR 3/2 very dark grayish brown	Silty loam.

TREE# 66

The excavation area for Tree# 66 extended 2.4' (0.73m) east to west and 2.4' (0.73m) north to south. One stratum of loamy topsoil was exposed (Table 15). No cultural material was encountered.

Table 15: Tree# 66 removal stratigraphy.

STRATUM (NAVD 88)	DEPTH BGS	MUNSELL	DESCRIPTION
I (43.70-42.80)	0 – 0.9' (0-0.27m)	10YR 3/2 very dark grayish brown	Silty loam.

TREE # 81

The excavation area for Tree# 81 was located 15.5' (4.72m) west of the west exterior edge of the northern stone wall. Three strata were exposed (Table 16) (Image 7). A landscape A covered a thin layer of sand and gravel fill. Mixed silty loams lay below the fill layer with few rocks. This area appears to have been previously impacted by construction of the northern stone wall. No cultural material was encountered.

Table 16: Tree# 81 removal stratigraphy.

STRATUM (NAVD 88)	DEPTH RANGE (BGS)	MUNSELL	DESCRIPTION
I (42.60-41.70)	0–0. 9' (0-0.27m)	10YR 2/2 very dark brown	Sandy loam.
II (41.70-41.50)	0.9– 1.1' (0.27 -0.33m)	10YR 5/3 brown	Coarse sand fill with gravel.
III (41.50-41.10)	1.1 – 1.5' (0.33- 0.45m)	10YR 5/4 and 10YR 4/6 yellowish brown and dark yellowish brown	Silty loam with few rocks.



Image 7: Tree# 81 removal and stump grinding excavation area, facing southeast.

UPROOTED TREE

The soil matrix surrounding an un-numbered tree that had been uprooted by a storm prior to the project was inspected for potential human remains and cultural material. The base of the tree measured approximately 4' (1.21m) in diameter (Image 8). The soil matrix was 10YR 5/4 yellowish brown and 10YR 4/6 dark yellowish brown silty loam with pebbles and gravels. Two modern items were noted within the matrix: a window glass and clear bottle glass fragment. These modern items were not retained. No evidence of human remains or historic materials was evident.



Image 8: Uprooted tree inspected during monitoring, facing east.

TRENCHES 1 AND 2: STONE WALL REMOVAL

Trench 1 refers to excavation that occurred below a decorative stone wall disassembled as part of project work. Trench 1 measured 38' (11.58m) by 5' (1.5m), running north to south (Image 9). The existing stone wall's upper portion was removed using an excavator and its base stones disassembled by hand. A layer of gravel mixed with 10YR 2/2 very dark brown sandy silty loam was exposed in Trench 1 below the disassembled wall to 0.7' (0.21m) bgs.



Image 9: Trench 1 excavation, facing north.

Trench 2 was a 46' long (14m) by 5' (1.5m) shallow trench excavated to 0.5' (0.15m) bgs for reconstruction of the decorative stone wall. The exposed soil matrix was 10YR 2/2 very dark brown silty loam with gravel, consistent with the materials exposed below the original stone wall. The stone wall was rebuilt with stones from the south stone wall, whose upper portion had been deconstructed.

TRENCH 3: MANHOLE TRENCH EXCAVATION

Trench 3 was an exploratory trench excavated to locate an existing manhole adjacent to the north end of the park's concrete curb along 46th Avenue. Trench 3 extended 6' (1.82m) north of the interior park boundary and measured 8' (2.43m) east to west (Image 10). Two strata were exposed, a landscape A atop a previously disturbed silty loam surrounding the existing manhole to 1.7' (0.51m) bgs. Non-diagnostic brick fragments and an exposed utility pipe were noted in stratum II; these elements were recorded but not retained (Table 17). No evidence of human remains or historic archaeological material was found.

Table 17: Trench 3 stratigraphy.

STRATUM (NAVD 88)	DEPTH RANGE (BGS)	MUNSELL	DESCRIPTION
I (38.65-37.65)	0-1.0' (0-0.30m)	10YR 3/2 dark grayish brown	Silty loam landscape A.
II (37.65-36.95)	1.0-1.7' (0.30-0.51m)	10YR 5/6 yellowish brown	Compact silty loam with non-diagnostic brick fragments.



Image 10: Trench 3 excavation to locate existing manhole, facing south.

TRENCH 4: COMMEMORATIVE WALL

Trench 4 measured 27' (8.22m) in length from east to west and was located curving slightly around the north edge of the circular concrete and oyster shell-in-resin monument demolished as part of this project. Hand excavation extended to the maximum depth of 3.5' (1.06m) bgs. A layer of silty clay fill with cobbles, rocks, and a defunct 2" utility pipe formed the base of excavation across Trench 4. The shallower stratigraphy varied from west to east. The west side of Trench 4 had two strata overlying this fill layer, while the east side of the trench had a more distinct gravel layer between two sandy silt layers overlying this fill (Tables 18 and 19) (Image 11). The width of the trench varied from 5.2' to 5.6' (1.58 to 1.70m).

A 2.5' (0.76m) concrete sign post footing oriented east-west was exposed at the base of excavation beginning 10' (3m) from the western terminus of Trench 4 (Image 12). The concrete footing was determined to be loose within disturbed fill, not in situ, and likely related to earlier twentieth century park signage or paving.

Table 18: Trench 4 north profile, west end.

STRATUM (NAVD 88)	DEPTH RANGE (BGS)	MUNSELL	DESCRIPTION
I (43.06-41.86)	0'-1.2' (0-0.36m)	10YR 3/4 dark yellowish brown	Sandy silty loam.
II (41.86-41.36)	1.2 - 1.7' (0.36-0.51m)	10YR 2/1 black	Sandy silt in a gravel layer.
Fill III (41.36-39.56)	1.7 - 3.5' (0.51-1.06m)	10YR 4/4 and 10 YR 3/3 dark yellowish brown and dark brown	Silty clay, compact with cobbles and rocks.

A clear glass bottle neck and finish was encountered at 1.7' (0.51m) bgs in Fill III stratum within the easternmost 10' of Trench 4. The defunct 2" utility pipe associated with the same fill deposit was exposed at the base of excavation oriented from the northeast to southwest, indicative of prior disturbance reflected in the stratigraphy. No evidence of human remains or intact historic deposits was found.

Table 19: Trench 4 north profile, east end.

STRATUM (NAVD 88)	DEPTH RANGE (BGS)	MUNSELL	DESCRIPTION
I (43.06-42.56)	0'-0.5' (0-0.15m)	10YR 3/2 very dark grayish brown	Sandy silty loam.
II (42.56-41.86)	0.5-1.2' (0.15-0.36m)	10YR 5/4 yellowish brown	Coarse gravelly sand.
III (41.86-41.66)	1.2- 1.4' (0.36-0.42m)	10YR 2/1 black	Sandy silt.
Fill III (41.66-39.56)	1.4 - 3.5' (0.42-1.06m)	10YR 4/4 and 10 YR 3/3 dark yellowish brown and dark brown	Silty clay, compact with cobbles and rocks, FS# 1 bottleneck and lip.



Image 11: Trench 4 with defunct utility pipe at base, facing west.



Image 12: Concrete post footing found loose in fill at Trench 4 base, facing northwest.

REMOVAL OF OYSTER SHELL IN RESIN ON CONCRETE

Excavation to remove a decorative oyster shell-in-resin concrete feature was monitored near the park center. The concrete-covered area was broken up and removed mechanically. Three thin strata were exposed, including the top layer of concrete, with excavation reaching a maximum depth of 1.1' (0.33m) (Table 20). Exposed soils were silty loams and gravels likely associated with the bedding and construction for the concrete surface removed (Image 13). No evidence of human remains or historic materials was found.

Table 20: Excavation for removal of oyster shell-in-resin on concrete.

STRATUM (NAVD 88)	DEPTH RANGE (BGS)	MUNSELL	DESCRIPTION
I (43.24-42.84)	0'-0.4' (0-0.12m)	N/A	Concrete
II (42.84-42.44)	0.4 - 0.8' (0.12 -0.24m)	10YR 2/2 very dark brown	Silty loam with gravel.
III (42.44-42.14)	0.8 - 1.1' (0.24-0.33m)	10YR 3/4	Sandy silty loam.



Image 13: Oyster shell-in-resin and concrete area excavation, facing north.

GRUBBING

Landscaping grubbing was conducted to remove dense surface vegetation along 165th Street along the park's boundary, continuing south towards 46th Avenue (Image 14). Mechanical grubbing impact was generally limited to the ground surface, with subsurface impacts to a maximum of 0.5' (0.15m) bgs.



Image 14: Ground surface exposure after grubbing along 165th Street, facing southeast.

VI. LABORATORY RESULTS

Only one historic artifact was recovered during excavation, a clear bottle neck with finish recovered from Trench 4, Fill III stratum in the easternmost 10' of the trench. Upon review of the Trench 4 stratigraphy post-excavation, it was determined this glass bottle fragment came from a disturbed fill context, based on the presence of a defunct utility line at the base of Trench 4 excavation in the same stratum that produced this artifact. The clear glass bottle fragment was determined to be produced in the twentieth century based on its form and mold seam, supporting the theory that this central area of the park around Trench 4 was modified in the twentieth century, likely to install previous park paving and utilities. As the fragment was a twentieth century object from mixed fill, with little historic archaeological research value, it was culled after being removed from the field.

A modern clear window glass and clear bottle glass fragment were noted but not collected from around an uprooted tree examined during monitoring. Two small, non-diagnostic brick fragments were noted in Tree# 37 removal's stratum II. Non-diagnostic brick fragments were also identified in Trench 3 stratum II. As per the project methods, these non-diagnostic bulk items were noted but not retained, as they provide only temporally indistinct evidence of previous impacts to these soils.

VII. CONCLUSIONS AND RECOMMENDATIONS

Project excavation within the Olde Towne Flushing Burial Ground did not expose any evidence of human remains or intact historic contexts. Excavation for tree removal and stump grinding reached a maximum depth of 1.7' (0.51m) bgs. Trenches 1 and 2, excavated for the removal and reconstruction of a stone wall, reached maximum depths of 0.7' (0.21m) bgs and 0.5' (0.15m) bgs, respectively. Trench 3, excavated to locate an existing manhole, reached a depth of 1.7' (0.51m) bgs. Trench 4, excavated to remove a commemorative wall, reached a maximum depth of 3.5' (1.06m) bgs.

Additional excavation was monitored for the removal of an area of concrete featuring an oyster shell-in-resin decorative element, reaching a depth of 1.1' (0.33m) bgs. Landscape grubbing impacting up to 0.5' (0.15m) bgs was monitored along the park's east side.

Excavation exposed 10YR 2/2 silty loam landscape A or silty loam topsoils ranging in depth from 0.3' (0.09m) to 1' (0.3m) bgs. Below this in much of the landscaped areas of the park lay 10YR 4/6 to 10YR 5/6 silty loam subsoil to at least 1.7' (0.51m) bgs. Course sand and gravel layers were found below the removed concrete section, rebuilt stone wall, and commemorative wall excavation to as deep as 1.7' (0.51m) bgs, likely associated with land leveling and bedding for these elements. Silty clay fill extending to the base of Trench 4 excavation at 3.5' (1.06m) bgs, containing a clear bottle glass fragment and a defunct utility pipe, was found during wall removal, suggesting relatively deep prior disturbance in this area at the park's center.

Project excavation, while limited in impact depth, uncovered no evidence of human remains, burial markers, grave goods, or other historic features or contexts. The previously concrete-covered portions of the park and areas around the removed decorative wall elements appear to have been disturbed to at least 1.7' (0.51m) bgs, and up to 3.5' (1.06m) bgs, likely for installation of these decorative elements in the twentieth century. Limited excavation in the landscaped park areas revealed subsoil to at least 1.7' (0.51m) bgs. These areas may potentially contain as-yet undocumented burials from the park's burial period at depths or locations not impacted by this project.

Archaeological monitoring was conducted for all planned project excavation activities. As no additional excavation is anticipated, nor were any *in situ*, significant material and/or stratigraphic remains were uncovered, no further archaeological work is recommended for the current project area.

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Appendix A:
Archaeological Work Plan



To: City of New York - Landmarks Preservation Commission
City of New York – Department of Parks and Recreation
Perkan Concrete Corp

From: Alyssa Loorya, Ph.D., R.P.A., and Christopher Ricciardi, Ph.D., R.P.A.

Re: Phase IB Archaeological Work Plan for The Reconstruction of the Olde Towne of Flushing Burial Ground (aka Martin's Field), located on 46th Avenue between 164th Street and 165th Street, Borough of Queens, Queens County, New York (Contract Number: Q017-118M).

Date: December 5, 2020

I. INTRODUCTION

Perkan Concrete Corp (Perkan) contracted with Chrysalis Archaeological Consultants, Inc., (Chrysalis) on behalf of the City of New York – Department of Parks and Recreation (NYC Parks) to provide all Cultural Resource Management (Archaeological) services for The Reconstruction of the Olde Towne of Flushing Burial Ground (aka Martin's Field), located on 46th Avenue between 164th Street and 165th Street, Borough of Queens, Queens County, New York (Contract Number: Q017-118M). Based on the Scope of Work (SOW) provided by NYC Parks, Phase IB Archaeological Monitoring is required for the project. In addition, the SOW calls for analysis of any recovered material remains, human remains, if any, and a final report. NYC Parks established the overall project area and defined the Area of Potential Effect (APE) as all excavation impact areas within the project area (Maps 01 and 02).

The Olde Towne of Flushing Burial Ground Park is bounded between 45th Avenue and 46th Avenue and 164th Street and 165th Street in the neighborhood of Flushing, Queens and until the late 2000s was commonly known as Martin's Field.

The purpose of the overall cultural resources project is to determine whether the project area contains significant (i.e. National Register eligible) cultural resources, and to document and determine the extent of any potential significant archaeological resources, should they be encountered. The purpose of this Archaeological Work Plan is to: 1) outline the proposed archaeological tasks; 2) outline the lines of communication that will be employed throughout the project with regard to the cultural resources; 3) detail what steps will be taken in the event that significant archaeological remains are encountered; and 4) outline the laboratory process to be followed, if necessary.

As outlined in the SOW (see Appendix A), specific archaeological tasks required as part of this Phase IB project include:

1. Review existing documentation
2. Produce a Monitoring Plan;
3. Undertake Archaeological Monitoring of construction excavation within in the APE defined by the project.
4. Follow all regulations regarding the recovery of human remains, if any
5. Perform laboratory analysis of any material remains recovered (i.e. washing, cataloging, creation of a database);
6. Develop a historical and cultural context(s) for the interpretation and evaluation of any archaeological resources that may be present within the APE;
7. Produce a draft and final report of the results;
8. Provide all additional related cultural resource management services that may arise.

This Archaeological Work Plan (AWP) is provided to the City of New York - Landmarks Preservation Commission (NYC LPC) and NYC Parks for review and approval.

PROJECT DESCRIPTION

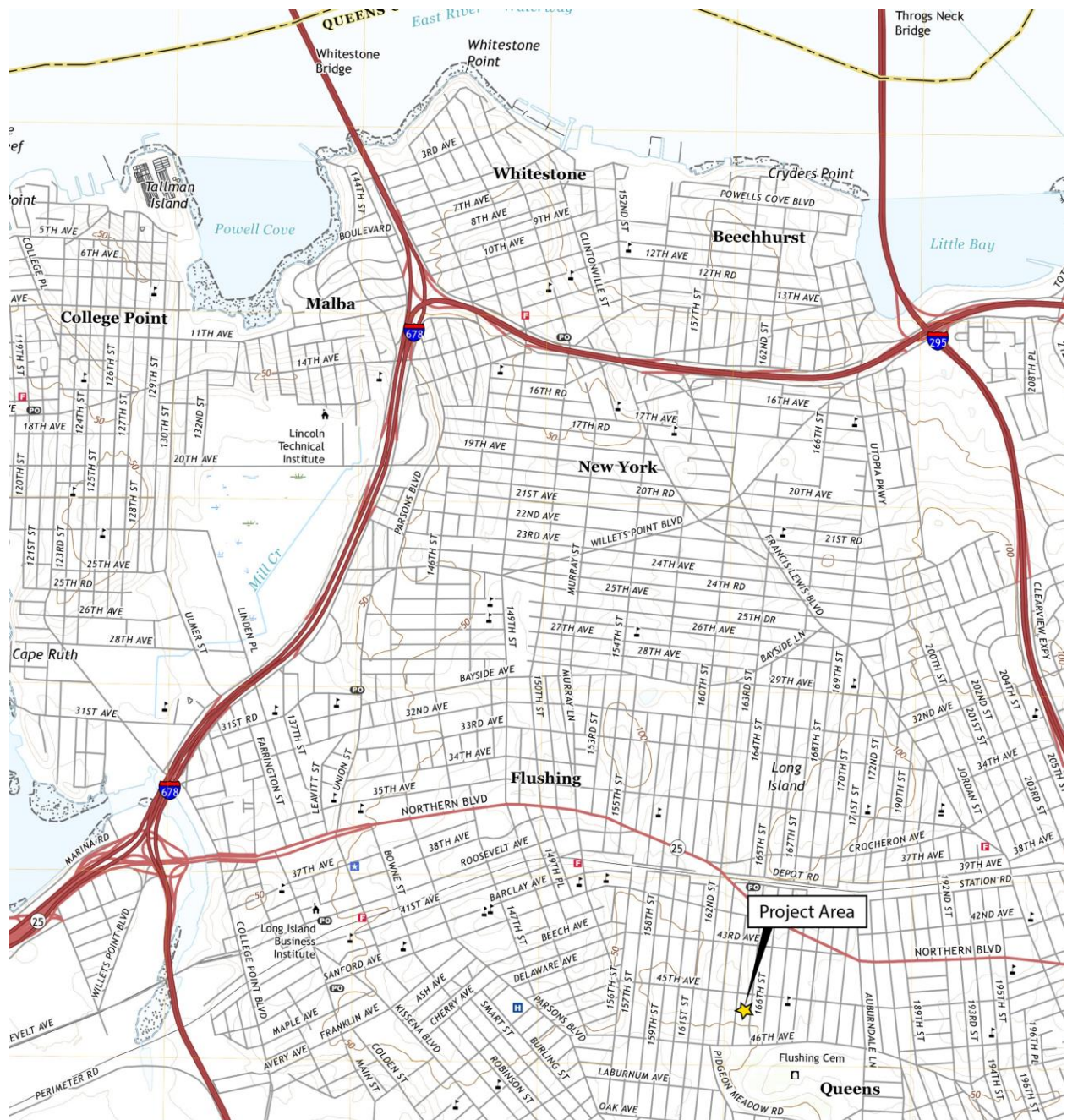
Perkan is undertaking this project on behalf of NYC Parks in order to reconstruct a playground on the project site. The Layout and Removal plan supplied by Perkan shows that the work will take place in the southern portion of Martin's Field, around the existing stone plaza (see Appendix A – Work Plan). Work to be performed includes:

- Excavation for a new full depth asphalt path
- Rebuild existing stone wall
- Excavation for a commemorative wall
- Selective clear and grub
- Tree removal over 6" to 12" diameter at breast height
- Removal of granite pavement
- Removal of full depth asphalt
- Removal of reinforced concrete sidewalk
- Removal of oyster shell in resin on concrete
- Removal of interpretive sign and concrete footing
- Removal of stone wall

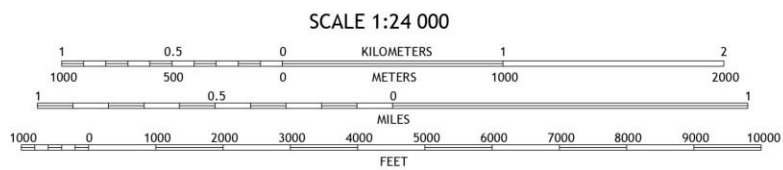
Excavation work will occur to a minimum depth of .5' and extend to a maximum depth of 3' below ground surface (bgs). Most of the work will reach a maximum depth of 1' bgs, except for excavation for a commemorative wall, which will each reach a maximum depth of 3' bgs.

PROJECT INFORMATION

Project Name	The Olde Towne of Flushing Burial Ground (aka Martin's Field), located on (Contract Number: Q017-118M).
Street Address	46th Avenue between 164th Street and 165th Street,
Borough/Block/Lot	Flushing, Queens, New York
LPC PUID (If Yet Assigned)	
Applicant Name	NYC Parks
Lead Agency (Contact Person)	NYC Parks
Principal Investigator	Alyssa Loorya, Ph.D., R.P.A.
Field Director	Leah Mollin-Kling M.A.A., R.P.A.
Proposed Project Schedule	See Section V

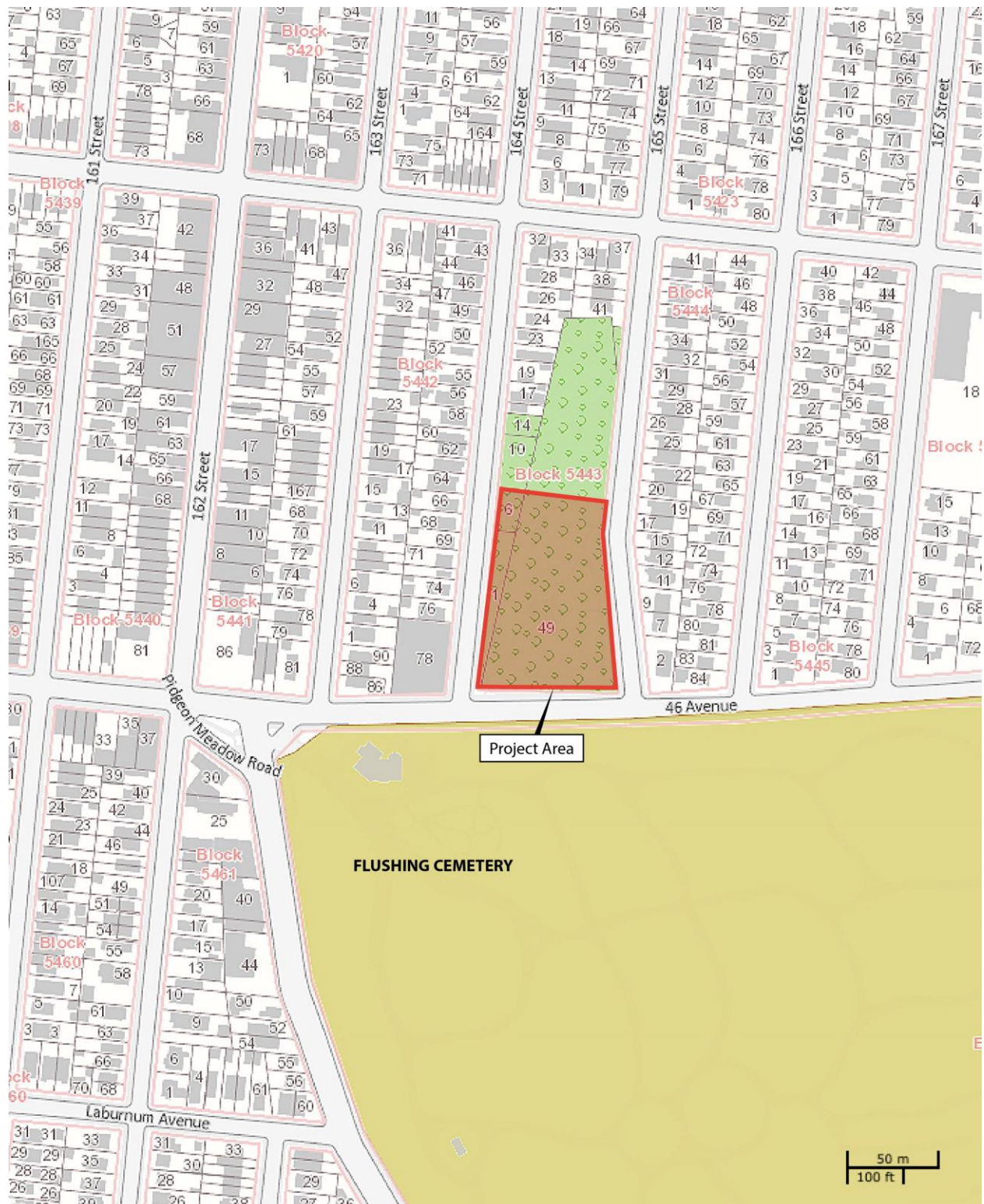


MN
 GN
 12°59'
 231 MILS
 0°47'
 14 MILS
 UTM GRID AND 2019 MAGNETIC NORTH
 DECLINATION AT CENTER OF SHEET



NEW YORK

Map 01: USGS Topographic Map 7.5, Flushing Quad
(United States Geological Survey 2019).



Map 02: OASIS map of project area.
(OASISnyc 2020).

CULTURAL RESOURCE REGULATIONS

This project will adhere to the 2018 LPC Guidelines for Archaeological Work in New York City, and will follow all federal and state regulations as they pertain to the retrieval of human remains. The proposed work will be conducted in accordance with the National Historic Preservation Act of 1966, as amended, and the Advisory Council on Historic Preservation’s “Protection of Historic and Cultural Properties” (36 CFR 800). The investigation will also be conducted pursuant to NYC LPC and the New York Archaeological Council (NYAC) guidelines for such projects (NYC LPC 2018; NYAC 1994; 2000; 2002). The cultural resources specialists who will perform this work will satisfy the qualifications specified in 36 CFR 61, Appendix A.

NYC Parks is completing this work due to the known archaeological sensitivity of the site due to its former usage as a historic burial ground.

II. ENVIRONMENTAL AND HISTORIC CONTEXT

The Olde Towne of Flushing Burial Ground (aka Martin’s Field) is located in the Flushing neighborhood of Queens, Queens County, New York. The project site is in a developed urban area; it is a typical urban playground landscape consisting of predominantly paved spaces offset by tree planted areas.

PREVIOUS ARCHAEOLOGICAL INVESTIGATIONS

Table 1: Summary of previous investigations of The Old Burial Ground, Martin's Field.

YEAR	AUTHOR	TITLE	RELEVANT FINDINGS
1996	Stone, Linda	Report on Phase IA Archaeological Documentary Research in Advance of the Reconstruction of Martin's Field Playground, Flushing Queens, New York (Contract Number: Q017-196)	Little potential for Native American and/or historic farmstead remains. Area used as burial ground for "colored" persons in 1840s. Estimated 500 to 1000+ individuals. No record of re-interment when property converted to park, accounts of workers encountering bones. Significant number of burials may still be present in previously undisturbed areas of the park, perhaps under shallow fill. Recommended non-invasive (i.e. GPR) testing be undertaken.
1999	Stone, Linda	Report on the Non-Invasive Archaeological Testing at The Marin's Field Playground, Flushing, Queens, New York (Contract Number: Q017-299 OMBP)	Non-invasive archaeological testing indicated potential locations of possible grave sites and of the stone wall boundary of the original 1840 cemetery. Recommended four locations for test excavations: two suspected individual graves, one a deep pit which could be mass grave, final test in the area of the former stone wall which bounded the eastern side of the original cemetery
2005	Chrysalis Archaeological Consultants	Martin's Field; Queens, New York – Phase IB Cultural Resource Monitoring Report - Project Number: Q017-104M	Work limited to the perimeter fence line surrounding the park and the upper handball court. Excavation from thirty centimeters to two and a half meters. No intact archaeological or human material remains were uncovered. Most of the artifact remains were mid to late twentieth century reflecting various disturbances that have occurred to the area since it was transformed into a public park in the 1930s. Highly disturbed area without intact strata.

YEAR	AUTHOR	TITLE	RELEVANT FINDINGS
2006	Chrysalis Archaeological Consultants	Martin's Field - Phase II Project; Queens, New York – Phase 1B Cultural Resource Monitoring Report - Project Number: Q017-105M	Work included monitoring the removal of topsoil and asphalt throughout much of the park, excavation for new utility lines and the removal of previously installed features such as curbing. Most of the artifact remains were mid to late twentieth century reflecting various disturbances that have occurred to the area since it was transformed into a public park in the 1930s. No human remains, or any indication of previously buried and/or removed graves, were uncovered during the excavations.

SUMMARY OF ARCHAEOLOGICAL SENSITIVITY

Previous Phase IA and IB reports covering areas near the project site do not suggest potential for Native American or pre-contact resources. However, there are potential historic resources – specifically, human remains interred in the nineteenth century when the site was used as a burial ground. This report considers the finding of human remains as a significant discovery, but it should be made clear that based on the results of previous archaeological excavations performed in the area, the likelihood of disturbing such remains is considered especially low.

PREHISTORIC SENSITIVITY

Due to its topography, proximity to fresh water, and animal and marine resources, New York City has a long history with regard to Native American populations. Still, documented prehistoric sites in Queens are rare (Stone 1996:10). There is some oral tradition of Native habitation during the contact period in and around Queens by Reginald Bolton in his seminal book *New York City in Indian Possession*, but no current archaeological excavations have yielded definitive Prehistoric finds (Bolton 1920). For this reason, this work plan does not regard the site as having potential for prehistoric cultural remains.

HISTORIC SENSITIVITY

Historic sensitivity is focused primarily on the APE's use as a cemetery during the nineteenth century. From the eighteenth to the mid-nineteenth century, the site was primarily undeveloped farmland (see Stone 1996 for a more complete history of the larger surrounding area). During the early nineteenth century, most families of wealth and prominence in Queens had their own private burial grounds, as church-owned burial plots and large public plots had been banned in New York in 1822 due to the sanitation concerns around outbreaks of cholera and yellow fever (Stone 1996: 15).

In 1847, the Rural Cemeteries Act was passed which allowed for private companies to buy land for burial and cemetery purposes. In 1853, Flushing Cemetery was one of the first burial grounds to be developed after the law took effect, located south of Martin's Field across 46th Avenue (then Queens Avenue). A farm to support the poor was established in Fresh Meadows between 1851 and 1860. By 1860, the burial options available for Flushing Queens residents were "private graveyards, church graveyards, Flushing Cemetery, and the Town Poor House" (Stone 1996:15). Most likely the 'Town Poor House' referred to the Town Poor House burial ground, which was located within Martins Field.

Few details of the burial grounds outside the "Flushing Cemetery" were apparently mapped until the 1873 Beers atlas depicted an area marked "Poor House Burying Ground". "Flushing Cemetery" was also marked on the atlas map to the south across Queens Avenue. The property was also augmented to the east and north in 1873 (Stone 1999). The last burials were performed in 1898, with much of the property remaining open space through 1903. Martins Field was later transferred to the New York City Parks Department in 1914. The area was developed into a playground in the 1930s and early 1940s, and later augmented in 1985, with news reports of workers encountering and disturbing human bones during park development (Stone 1996). A summary of land transactions provided by the Parks Department from Stone's 1996 Phase 1A is provided below:

Title was vested in the Town of Flushing in 1840 and 1873, and then vested in the City of New York upon consolidation on January 1, 1898. Jurisdiction as a Park is dated December 2, 1914. Portions were added in 1914, 1946, 1947 and 1983. Formerly Paupers Burial Ground, the name was changed to Martin's Field on May 5, 1931.

The playground was originally designed by the Department of Parks in 1935 and constructed in 1936. Early in the 1940's a comfort station and sand pit were added; they were demolished and removed in the Fall of 1985. A portion of the playground was removed after 165th Street was remapped in 1957. (New York City Parks Department n.d.).

The burial ground which is now Martins Field Playground has been referred to by several different names. In a 1919 survey, the APE was referred to as a 'Colored Cemetery' (Stone 1996:21). The area is also sometimes referred to as a 'Pauper's Burial Ground.' Stone found that more than 60% of deaths recorded were listed as non-white. Stone hypothesized that around 1160 persons were buried on the grounds as early as 1840, when the property was vested, to 1898, when the last internments took place (Stone 1996:23). This number was considered somewhat subjective, given that during times of epidemic, death and subsequent burials would have occurred at a more frequent pace. A more conservative estimate of 500 burials was given as a low estimate of burials on the site. Despite this range of 500 to over 1000 estimated burials, only four marked headstones were evident in a 1919 Queens Topographical Bureau mapping, three belonging to the Bunn family (Stone 1999).

The documented history of the APE's usage as a burial ground leads to the assessment of the site as archaeologically sensitive with respect to the possibility of disturbing human remains. The land was apparently used for burial of African American residents of Queens as early as 1840 to 1898. Specific interment information is sparse, and locations of burials within the property is not well documented or marked. Although limited excavation and monitoring in 2005 and 2006 indicated areas of wide disturbance (Chrysalis 2005 and 2006), likely from park work between the 1930s and 1980s, the limits of disturbance to the burial grounds remains unknown. Because the proposed work calls for excavations of no more than 3' bgs, and predominantly no more than 1' bgs, and due to the unknown location of the burials, and the lack of archaeological evidence of their existence currently, the likelihood of disturbing human interments remains low.

III. RESEARCH DESIGN

Phase IB fieldwork is designed to ascertain the presence/absence of archaeological resources within a site. Its ultimate goal is to determine whether significant (i.e. National Register [NR] eligible) resources that could be adversely affected by project construction are extant within the APE. In this instance, resources likely to be found within the project area are buried human remains, possibly belonging to African American residents of Queens interred as early as 1840 to 1898.

As directed by NYC Parks, in their coordination with NYC LPC, Archaeological Monitoring is required for earth moving work in archaeologically sensitive portions of the project area. Since the entire park area is considered archaeologically sensitive due to the land parcel's historic use as a burial ground, Archaeological Monitoring will accompany all planned project excavation activities.

IV. PROJECT METHODS

The following sets forth the plan for archaeological monitoring for the project, as directed by NYC Parks and NYC LPC. The AWP also describes additional mitigation measures that will be undertaken should archaeological resources be encountered during the project, including laboratory work, artifact analysis, written reports, and further documentary research, if necessary.

ARCHAEOLOGICAL MONITORING

Archaeological monitoring is defined as "the observation of construction excavation activities by an archaeologist in order to identify, recover, protect and/or document archaeological information or materials" (NYAC 2002:2). Archaeological monitoring will occur for all construction activities throughout the project area. The Perkan Resident Engineer (RE) will not conduct any excavation (i.e. earth moving) activity without the archaeologist present.

All monitoring activities will be in compliance with NYC LPC's Guidelines for Archaeological Work in New York City (LPC 2018) and NYAC's Guidelines for the Use of Archaeological Monitoring (NYAC 2002). The archaeologist(s) will maintain drawings, photographs, and descriptions of all encountered resources as well as an up-to date log of all monitoring activities, including the date, time, and duration of all monitoring episodes, accompanied with a description of the activity being monitored.

An archaeological monitor is required for each active excavation area. If excavations are to occur simultaneously in more than one area at a time, additional archaeological monitors will be required to ensure that each excavation area is monitored in accordance with the protocols. The project will provide at least 24 hours' notice prior to the beginning of excavation work so that the adequate resources can be provided.

In the event that archaeological deposits are encountered, the archaeologist(s) will be permitted to temporarily halt excavation to examine the soils and potential resource(s) in the trench more closely. The archaeologist will be permitted to halt excavation for a period of up to 24 hours to allow time for photography, drawing of plan views and profiles, screening of removed soil for artifacts, removal of soil samples, hand excavation, and any other actions deemed necessary to determine the nature, extent, and potential significance of the discovery. The archaeologist will determine the level of documentation required for each discovery.

If more than 24 hours is required to document a discovery, the archaeologist will notify and consult with the Perkan RE of the additional time needed.

If work stoppages occur, the construction contractor may relocate to an area or task where archaeological monitoring is not required. However, if excavation is to occur in another area, the archaeological team will provide additional staff, within the minimum mutually agreed upon notification period for staffing changes, to monitor this additional area while work documenting the cultural resource occurs.

If the resources encountered do not appear potentially significant, the on-site professional archaeologist will notify the appropriate construction personnel, and construction may resume.

If the resources encountered are deemed significant, it will be necessary to consult with NYC LPC and NYC Parks. Additional documentary research may be also necessary in order to further understand the potential significance of deposits. If significant archaeological resources (e.g. artifact deposits or features) are exposed, Chrysalis will notify NYC Parks in writing via email. The Perkan RE will cease all work in this area and protect the exposed archaeological resources at the direction of the on-site archaeologist. Procedures and protocol for significant archaeological discoveries is further clarified below.

GENERAL METHODOLOGY

During all excavation, the Perkan RE will provide assistance to the archaeological team, as needed. This may include, but is not limited to, pumping water from excavation areas, providing additional shoring to trenches, meeting all OSHA regulations, and machine or hand excavation of non-sensitive levels to further reveal resource(s). Construction personnel will allow the archaeologist access to the excavation area at a maximum of 60-minute intervals, as requested, to enter the excavation area to observe soils and stratigraphy within.

Though not anticipated, if excavation depths extend below 1.5 meters (5 feet), the archaeological monitor will observe the excavation from the street/ground level and may request that specific soil deposits be temporarily piled beside the excavation in order to more closely examine them. It may be necessary to temporarily halt excavation to enter the construction excavation area in order to observe and document deeper deposits.

Documentation of archaeological deposits may require soil sampling or the hand excavation of features, cultural layers or test units by the archaeologist. Screening of soils from the excavation will be based upon the judgment of the archaeologist. Soils will be screened through ¼ inch-mesh screen and excavated by natural strata or in pre-determined controlled levels. Soils will be described using the Munsell color system and standard texture classifications. All artifacts recovered during screening will be retained, with the exception of bulk materials such as concrete rubble, brick, large metal objects, ash coal, cinders, and slag. In the case of such materials, a sample will be described from each provenience and the remainder will be quantified and discarded in the field. Recovered artifacts will be bagged according to their unique provenience and transported to Chrysalis' laboratory for processing and analysis. An artifact catalog, recording the provenance of each recovered artifact, will be created. Soil profiles, cultural features, etc. will be described, photographed in digital format and illustrated by measured drawings in Imperial, metric or Engineers scale in plan and vertical perspective, as appropriate.

The project will provide a protected area within the project site or field office to temporarily store equipment and/or material remains recovered from the excavation trenches. Material remains may require temporary storage prior to transportation to Chrysalis' laboratory facility.

HUMAN REMAINS

Special consideration and care are required if human remains are uncovered. Any action related to the discovery of human remains is subject to the statute law as defined in the *Rules of the City of New York*, Title 24 - Department of Mental Health and Hygiene, specifically Title 24, Title V, Article 205. In addition, the NYC LPC regulations regarding human remains and the New York Archaeological Council's (NYAC) policy on the discovery of human remains and items of cultural patrimony, as defined by Section 3001 of the Native American Graves Protection and Repatriation Act (NAGPRA), will be taken into consideration – providing they do not conflict with the City of New York statute regulations. The protocols to be implemented in the event that human remains are discovered are more fully detailed in the Human Remains Protocol.

The City of New York Department of Parks and Recreation has been in constant contact with The Old Towne Flushing Burial Ground Conservancy in regard to all information regarding this project. "The Conservancy provided Parks with the names of the deceased and the descendants have been informed of what work is being done. The Conservancy has been kept in the loop during the design process and will be notified at the start of work. Should human remains be found, the Parks Department [will coordinate with] the Conservancy to inform the descendants. This communication would be led by the Parks Queens Borough office" (NYC Parks Dept. 14 May, 2020, Personal Communication). If human remains are discovered, the project will immediately halt excavation. It will be necessary to consult with NYC LPC and begin the coordination process with all relevant entities. A specific Scope of Work to address such a discovery will be developed,

in consultation with NYC LPC should the need arise. If intact human remains are found, they may not be disinterred until the consultation process has been completed. In the event of these finds, the forensic anthropologist Dr. Matthew Brown, PhD will perform the appropriate work from here forward. The assessment of or potential removal of remains and subsequent laboratory work - including identification and written results - will be performed under the guidance of Dr. Brown.

The discovery of intact, in situ human remains may require a redesign of portions of the project to ensure the remains are not disturbed. A reinterment plan, which is the responsibility of the landowner, will be created with the help and guidance of Dr. Brown, Chrysalis Personnel, the LPC and the Parks department.

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 (NR eligible), the archaeologist will notify Perkan and NYC Parks in writing, via email, of the discovery. NYC Parks will notify NYC LPC. All construction work in the area of the discovery will cease until the next steps are determined in consultation with NYC Parks and NYC LPC.

Perkan will protect the archaeological discovery by cordoning off the area and covering the discovery as directed by the on-site archaeologist. No further work may occur in this area until further notification. The construction contractor should plan, schedule, and execute their work in a manner such that work stoppages will not result in a total shutdown of the project.

NYC LPC and NYC Parks will be consulted to determine if further archaeological field testing and/or mitigation is necessary. If no additional testing is required, the archaeologist will notify the Perkan RE that work may resume once documentation of the resource(s) has been completed. The specific time required for the documentation effort will be coordinated with the project team and is based on the nature of the archaeological discovery.

If potential NR eligible archaeological resources are identified during construction monitoring, all work will cease in the area of the discovery until NR eligibility evaluation and, if necessary, mitigation or exploration through additional testing or data recovery is completed. A scope of work for the any additional testing or data recovery work will be developed in consultation with NYC LPC and NYC Parks and implemented to retrieve significant information before all or part of the site is impacted by construction. Preparation of a scope of work for potential additional testing or data recovery may cause a delay in construction, given the requirement for agency review and approval prior to initiating those tasks.

In summary, in the event of a significant discovery the following procedures will be followed:

1. Upon discovery, Chrysalis will halt excavation and notify Perkan and NYC Parks in writing (via email). NYC Parks will notify NYC LPC in writing (including email).
2. The contractor will protect the exposed archaeological resources as directed by Chrysalis. No further construction activity will occur in the area of the discovery until clearance is given by NYC LPC and NYC Parks.
3. A meeting may be held to discuss how to best address the discovery. NYC Parks and NYC LPC may wish to visit the site.
4. If NYC LPC determines that further excavation, documentation and/or recovery are required, Chrysalis will create a new AWP for the specific tasks required to include time and budget, within ten business days. The AWP will be provided to Perkan and NYC Parks for approval. NYC Parks will transmit this new AWP to NYC LPC for approval.
5. Upon written approval of the new AWP from NYC LPC, NYC Parks and Perkan will direct Chrysalis to proceed with the new AWP.

During this process construction excavation may continue in other areas of the project. Archaeological Monitoring will continue in these other areas. If excavation is to occur in more than one area of the site, or work documenting exposed archaeological resources is to occur at the same time that construction excavation is occurring elsewhere within the project area, additional archaeological personnel will be required.

No construction work may resume in the area of the discovery until the cultural resource process is completed and approval is received in writing from NYC LPC and/or NYC Parks.

LARGE SCALE DISCOVERIES

In the event of a large-scale significant discovery, defined as a significant discovery containing a large volume of materials and/or features that will require additional archaeological excavation for data recovery, all project shareholders including Perkan, NYC Parks and NYC LPC will be consulted to develop a path forward meeting the needs of the potential discovery. Following this consultation, it may be recommended that additional archaeological measures and resources be employed. This may include, but is not limited to, additional staffing, specialist consultants and expanded archaeological testing/excavation.

The ability to bring in a larger or additional archaeological staff and additional resources would allow for a more expeditious approach toward the recovery and documentation of any large-scale discoveries.

ARTIFACT ANALYSIS AND CURATION

All artifacts will be cleaned, catalogued and stored in archival safe materials. Pre-contact and historic artifacts will be analyzed in terms of material type, form, function, and temporal attributes (e.g., Noël Hume 1969, South 1977, Miller 1991). Detailed analysis will include the identification of the Terminus Post Quem (TPQ) of artifacts for each context and generation of mean beginning and end dates for assemblages. This information will be used to establish context and to determine whether such assemblages represent primary or secondary deposits.

Any artifact material removed from the project site will be the property of the project site owner, in accordance with NYC LPC guidelines. It is the responsibility of NYC Parks to arrange for the long-term curation of the collection in an appropriate facility. The New York City Archaeological Repository (NYCAR) will accept significant and representative materials recovered from the site for curation. Any significant deposits that will be curated at the NYCAR will be prepared in accordance with NYC LPC's curation guidelines and the standards of the receiving repository.

The artifacts will be returned to the project for transmittal to the long-term curation facility upon completion of the laboratory analysis and with the submission of the final report. There may be archaeological materials and deposits recovered that the NYCAR will not accept for curation. These materials will be returned to NYC Parks. It is the responsibility of NYC Parks to arrange for their storage, curation with another facility, or final disposition. The archaeological team will prepare any materials not being delivered to the NYCAR for long-term storage according to current archaeological standards.

REPORT RESULTS

A report documenting the results of the monitoring, analysis, any other background and/or documentary research, and field efforts will be prepared according to NYC LPC standards. In addition, the report will include recommendations regarding the potential National Register eligibility of any artifact deposits and/or features and recommendations for additional investigation or mitigation, as necessary. A digital, preliminary draft report will be submitted to Perkan and NYC Parks for initial review. Upon approval, the formal draft report will be submitted in digital format to NYC LPC. Upon approval of NYC LPC, one printed copy will be provided to NYC LPC for their records. Digital copies will be provided to all other parties unless printed copies are requested.

UNANTICIPATED DISCOVERIES

The Unanticipated Discoveries Plan is to be used as a guide for construction personnel during work when an archaeologist is not on site. Although this situation is not anticipated due to the need for an archaeological monitor to be on site during all excavation activities, it is provided here in case of unusual or unforeseen circumstances.

Unanticipated Discoveries are defined as any cultural resources, including human remains, found during construction in any portion of the project site not monitored by the archaeologist. Cultural resource discoveries that require immediate reporting and notification to the archaeological team and the construction coordinator include, but are not limited to, human remains and recognizable, potentially significant concentrations of artifacts, features, or other evidence of human occupation. All project team members and construction foremen should be made aware of this plan.

The Perkan RE will coordinate with the professional archaeologist for implementation of the Unanticipated Discoveries Plan. The Perkan RE will obtain, review, and file on site this Unanticipated Discoveries Plan. The Perkan RE will initiate implementation of the Unanticipated Discoveries Plan by sponsoring an awareness session with the archaeologist, on-site construction management personnel, equipment operators, and laborers.

Cultural resource discoveries that require reporting and notification to the Perkan RE include (but are not limited to):

1. Any recognizable, potential concentrations of artifacts, features, faunal material or other evidence of human occupation. This includes evidence of shaft features such as wells or privies.
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 skeletal or human remains including coffins, burial vaults or other evidence of burials.

In the event that previously unanticipated archaeological resources are found during construction in any portion of the project site, the following procedures will be followed:

1. If an unanticipated discovery of artifacts or historic structural remains, as defined above, occurs during construction, all work will immediately stop in the area of the find to protect the integrity of the find. Work may not resume in the area of the find until the archaeologist and the Perkan RE has granted clearance.
2. The construction foreman will immediately notify the designated on-site Perkan RE of the find. The Perkan RE will instruct the construction foreman to flag and fence off the area of the discovery to ensure safety and avoidance of impacts.
3. The Perkan RE will immediately notify NYC Parks and the archaeologist of the find. The notification will include the specific location of the discovery within the disturbed area of the project site and the nature of the discovery. The Perkan RE will identify the location and date of the discovery on the project plans.
4. The archaeologist will coordinate an on-site archaeological consultation to evaluate the find. A reasonable amount of time must be given to the archaeologist to not only arrange to return to site (generally within 24 hours) but to complete the assessment of the discovery (generally within 24 hours of arriving on site). These timeframes may vary based on the nature of the discovery (i.e. size, complexity, etc.).
5. The archaeologist will conduct an on-site assessment of the find. If necessary, the archaeologist will coordinate with the Perkan RE to direct the contractor to further flag or fence off the archaeological discovery location and direct the contractor to continue work in another portion of the project area. The contractor will not restart work in the area of the identified archaeological resource until the Perkan RE has granted clearance, after receiving word from the archaeologist that the archaeological resource has been fully examined.
6. The archaeologist will inform Perkan RE and NYC Parks of the preliminary significance, if any, of the find.

If the discovery is determined to lack potential significance by the archaeologist, the Perkan RE will grant clearance to the contractor to resume work.

If the unanticipated find is determined to be potentially significant, the following procedures will be followed:

1. The archaeologist will promptly notify Perkan. Perkan will notify NYC Parks. NYC Parks will notify NYC LPC. This notification will explain why the archaeologist believes the resource to be significant and define a Scope of Work for further evaluating the significance of the resource and project effects on it. All work to evaluate significance will be confined to the area of potential effect.

2. The archaeologist will conduct a more detailed assessment of the resource's significance and the potential effect of construction on the resource.
3. The archaeologist will document the find in accordance with the guidelines presented in the Archaeological Plan/Protocol.
4. Perkan will notify other parties, as directed by NYC Parks, or as indicated by City/State law.
5. If the find is determined to be significant, and continuing construction may damage the resource, then the archaeologist, Perkan, NYC Parks will consult with NYC LPC and project shareholders regarding further mitigation and appropriate measures for recovery and/or appropriate measures for site treatment. These measures may include:
 - Formal archaeological evaluation of the site
 - Visits to the site by NYC Parks, NYC LPC and other parties
 - Preparation of a mitigation plan for approval by NYC LPC
 - Implementation of the mitigation plan
 - Approval to resume construction following completion of the fieldwork component of the mitigation plan
6. If the find is determined to be isolated or completely disturbed by previous construction activities, the archaeologist will consult with the Perkan RE and will request approval to resume construction, subject to any further mitigation that may be required by NYC Parks and NYC LPC.
7. The Perkan RE will notify the Construction Contractor of clearance to resume work.

V. HUMAN REMAINS PROTOCOL

Any action related to the discovery of human remains is subject to the statute law as defined in the *Rules of the City of New York*, Title 24 - Department of Mental Health and Hygiene, specifically Title 24, Title V, Article 205. In addition, the NYC LPC regulations regarding human remains and the New York Archaeological Council's policy on the discovery of human remains will be taken into consideration – providing they do not conflict with the City of New York statute regulations.

This Human Remains Protocol is intended to provide a clear process for all project participants to follow in the event that human remains are exposed during the current testing project.

If human remains are discovered, Chrysalis will immediately halt excavation and begin the coordination process with all relevant entities. It will be necessary to consult with NYC LPC. A specific Scope of Work to address such a discovery will be developed, in consultation with NYC LPC should the need arise. If in situ human remains (intact burials) are found, they may not be disinterred until the consultation process has been completed. The discovery of intact, in situ human remains may result in a request to redesign portions of the project to ensure the remains are not disturbed. It is the preference of NYC LPC that human remains, if possible, remain in situ, and a project redesign be initiated.

As per New York City law (Title 24, Title V, Section 205.1 (a)) a burial is defined as a “means (of) interment of human remains in the ground or in a tomb, vault, crypt, cell or mausoleum, and includes any other usual means of final disposal of human remains other than cremation” (Rules of the City of New York 2015). For the purposes of this project and as per New York City law (Title 24, Title V, Section 205.1 (c)), human remains are defined as “any part of the dead body of a human being but does not include human ashes recovered after cremation” (Rules of the City of New York 2015). This includes any bone fragments, a single bone or tooth, partial skeleton, etc.

As per New York City law (Title 24, Title V, Section 205.7) a permit must be obtained for the disinterment of any human remains. A funeral director must obtain this permit. No human remains may be removed from the ground, from the area where they are first exposed, until this permit has been obtained. No work can occur in this area while the permit is being obtained and until the archaeologist, in consultation with NYC LPC, gives clearance for work to proceed.

INITIAL PROTOCOL

- If suspected human remains are exposed, the archaeologist will immediately halt all work in the area of the discovery.
- If the identified skeletal material is not human, the archaeologist will continue work.
- If the skeletal material is human, the archaeologist will inform the team that work must cease in the area, and the Human Remains Protocol will be implemented.

HUMAN REMAINS PROTOCOL

At all times, human remains must be treated with the utmost dignity and respect. The following procedures will be followed once it is confirmed that human remains have been exposed:

1. The archaeologist will immediately notify the project team and NYC Parks. NYC Parks will notify NYC LPC.
2. The archaeologist will also notify the New York City Police Department (NYPD) and the Medical Examiner's office (OME) of the find. The project team will cooperate with the OME and NYPD, providing access to the site if required.
3. Once the NYPD and OME have determined they have no concerns regarding the discovery¹, the archaeological team will proceed with an initial assessment of the remains, including if the remains represent an intact burial, multiple burials, or partial skeleton or fragmentary skeletal remains.
4. Chrysalis will draft a Memorandum email to the project team, NYC Parks and NYC LPC detailing the discovery the potential effect of the proposed construction on the remains, and recommendations as to how to proceed.
5. As noted above prior to removal, permits from the City of New York Department of Health and Mental Hygiene (DOH) are necessary for the disinterment and disposition of any human remains. Permits are required for intact burials, partial burials, and fragmentary remains.
6. Only the archaeologist or Forensic Anthropologist may excavate identified human remains.
7. However, it is noted that no disinterment of human remains will occur during this preliminary testing phase.
8. Only a funeral director can obtain the permits from DOH. Due to the nature of the site Chrysalis recommends contacting and coordinating with the Funeral Director prior to the onset of testing to obtain all necessary permits.
9. The project team will notify any parties, including next of kin, if known, as appropriate, as directed by the NYC LPC, or as indicated by City/State law.
10. The DOH permit requires that the descendant of the deceased or descendant organization be identified if possible. Research may be required to determine the descendant families or congregation.
11. Once the above steps have been followed, the archaeological team will proceed as appropriate depending on the context of the discovery and based on consultation with NYC LPC.

¹ NYC Department of Health requires that this be obtained in writing.

PROTOCOL FOR FRAGMENTARY HUMAN REMAINS

If the exposed skeletal remains are determined to be fragmentary and do not represent an intact or partial skeleton, the following procedures will be implemented:

1. Chrysalis will begin a detailed archaeological assessment of the discovery. This may include photography, scaled drawings and eventual removal of the remains. Only the archaeologist or Forensic Anthropologist may excavate identified human remains.
2. Once this is completed and the fragmentary remains have been removed, the archaeologist will further investigate the surrounding area to assess if any additional remains are present.
3. If no further human remains are present, the archaeologist will communicate plans to resume project work with the project team, NYC Parks and NYC LPC.

ADDITIONAL PROTOCOL FOR PARTIAL OR INTACT BURIALS AND IN SITU HUMAN REMAINS

As Phase IB testing is designed to determine presence or absence of cultural resource materials, and project plans include limited excavation generally to 1' bgs, it is not anticipated that this phase of the project would fully expose in situ burials. If it is determined that intact interments are present in the proposed project area, the archaeologist will consult with the NYC LPC and the project team regarding next steps, and/or additional measures to avoid or mitigate further damage. Additional archaeological excavation may be necessary to better identify the number of burials present.

If intact or fragmentary human remains are encountered, they will be removed to Chrysalis' laboratory in Brooklyn, NY following all DOH guidelines and permitting requirements. A Final disposition (i.e. re-interment) of the remains following conclusion of the project will be arranged.

V. ARCHAEOLOGICAL SCHEDULE AND PROJECT MANAGEMENT

Chrysalis will provide Perkan and NYC Parks with weekly email update during field work activities.

Calendar dates are not provided, as this is an unknown based upon Notice to Proceed. The schedule proposed below contains approximations of time needed to complete the necessary tasks. In the absence of adequate information to provide a time frame for a specific task, To Be Determined (TBD) is listed. Assumptions may be altered based upon field conditions, consultation or response time from various involved agencies.

It is noted that Chrysalis requires a minimum 72 hours, exclusive of Saturday and Sunday, notice to mobilize for the start of Phase IB Archaeological Monitoring. For example, for archaeological work to begin on a Monday, NYC Parks must provide Chrysalis Notice to Proceed via email the previous Wednesday.

ACTIVITY	DURATION	NOTES
Field Monitoring	TBD	Based upon contractor time and schedule
Laboratory work/analysis	TBD	To be determined based on number of materials recovered
Report	TBD	This will be based on the duration of the field work, the number of material remains recovered, the amount of laboratory analysis required.
Internal Draft Review	TBD	TBD by NYC Parks
Regulatory Review	TBD	
Response to comments	TBD	Time needed to respond to comments is dependent upon the nature of the comments and whether additional research is requested. Time to be completed can be determined upon receipt of comments from all regulatory agencies.

Upon a determination of time for the individual activities listed above, Chrysalis will notify Perkan and NYC Parks. Chrysalis has been directed that all project communications with NYC LPC be solely through Parks. NYC Parks will notify NYC LPC of any changes to scheduling.

VI. COMMUNICATION PLAN

Concurrent with the Phase IB Archaeological Monitoring, the project team will maintain its ongoing communication plan/strategy. Open lines of communication remain vital to ensure that information is available and transparent.

REGULATORY/PROJECT TEAM COORDINATION

Communication with the project team and the regulatory agencies involved will be three-fold, via email, conference calls, and in-person meetings, as necessary. When appropriate, written communication of memos (or written reports, etc.) may occur. The principal project coordination team and contact information is listed below. This list may expand depending on situation/circumstances.

Communication (i.e. notification) details have already been outlined above in the event of archaeological discoveries, including human remains. Also, as noted, the archaeological team will keep the project team, Perkan and NYC LPC informed via regular email updates. Meetings (conference calls and/or in person) will be scheduled as appropriate.

However, it should be noted that Chrysalis was directed by NYC Parks that all communication with NYC LPC will be through NYC Parks only and that no direct line of communication can occur between Chrysalis and NYC LPC, without the expressed approval of NYC Parks.

POTENTIAL STAKEHOLDER COMMUNICATION

As the potential exists for the recovery of human remains and/or physical building remains from the former burial ground, all communication with potential stakeholder will be through NYC Parks.

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City of New York – Department of Parks and Recreation
Missael Jean-Louis

City of New York – Department of Parks and Recreation
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City of New York – Landmarks Preservation Commission
Amanda Sutphin, Director of Archaeology
City of New York – Landmarks Preservation Commission
Municipal Building
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(212) 669-7823
Email: asutphin@lpc.nyc.gov

City of New York – Police Department
109th Police Precinct
37-05 Union Street
Flushing, NY 11354
Phone: (718) 321-2250

City of New York – Office of the Medical Examiner
Bradley Adams
City of New York – Office of the Medical Examiner
520 1st Avenue
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(212) 447-2760 or (646) 879-7873
Email: badams@ocme.nyc.gov

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Appendix A
City of New York – Department of Parks and Recreation
Scope of Work for Archaeological Services

ITEM NO. 62

ALLOWANCE FOR PHYSICAL ANTHROPOLOGICAL SERVICES

WORK: Under this Item, the Contractor, in consultation with the Archaeological Consultant, shall hire an approved Physical Anthropologist to perform services in accordance with the plans, specifications, and directions of the Engineer. Physical Anthropological Services will only be utilized if human remains are found. Work completed under this item shall be for work not specified under any other contract item.

QUALIFICATIONS/ APPROVALS: Anthropological services must be performed by a Physical Anthropologist who meets the requirements set by the NYC Landmarks Preservation Commission and have been employed within the past five years for projects of similar scope.

The Physical Anthropologist shall, at a minimum, meet the following criteria:

- ♦ A Physical Anthropologist with a graduate degree in Anthropology with a specialization in Physical Anthropology and a minimum of five (seven preferred) years of experience in the analysis of human remains, historic cemeteries and preparing final reports consistent with the *Secretary of the Interior's Standards and Guidelines for Archaeology and Historic Preservation*. The Physical Anthropologist shall meet the qualifications set forth by the NYC Landmarks Preservation Commission's Guidelines for Archaeological Work in New York City, 2018, contact person: Amanda Sutphin, ☎(212) 669-7823.

The NYC Landmarks Preservation Commission (LPC) will review all phases of the work and the anthropologist shall be held liable for unsatisfactory work and methods.

PHYSICAL ANTHROPOLOGICAL SERVICES: The approved Physical Anthropologist (minimum qualifications described above) shall be "on-call" in the event that human remains are found. The Physical Anthropologist shall conduct an examination of in-situ primary burials to learn whatever they can using non-invasive methods that will not disturb the burial. All designated soil excavation shall be done by hand by the archaeological team. All soil from contexts in which there is a potential for the recovery of human remains must be screened through a one-quarter inch (1/4") screen. The Physical Anthropologist shall oversee further treatment of any human remains and/or archeological resources found. Due to the sensitive nature of treating human remains, one of the two (2) following protocols must be used: (A) After conservation and stabilization, the human remains shall be analyzed in a respectful manner that will increase knowledge of any individuals found, their history, and culture. Final disposition of human remains shall be determined in consultation with LPC. (B) Human remains shall not be analyzed, but dry-brushed only, wrapped in acid-free tissue paper, and placed in acid-free boxes pending reburial. These two (2) options should be taken into account when bidding for this portion of the project. The decision of which protocol to follow will be made by DPR in conjunction with members of the public and descendant communities and the Landmarks Preservation Commission. All other archaeological remains found must be conserved and stored according to current professional standards. If significant resources have been found, the Physical Anthropologist must submit the results for the final archaeology report.

The Physical Anthropologist has the authority to stop all work in the vicinity until the questionable material has been identified and sufficiently analyzed. The maximum depth of excavation in the area shall not exceed eighteen inches (18") unless designated on the plans or approved prior to excavation by the NYC Landmarks Preservation Commission if it is determined that there is a potential for the recovery of human remains.

SUBMITTALS: All submittals shall conform to Section C, Special Provisions Article 11. The Contractor shall submit the following:

1. Names, social security numbers, title and qualifications of persons proposed to work under this item shall be submitted fifteen (15) days after award. All persons submitted shall comply with the Minimum Requirements listed above.
2. Submittal letter from person proposed to work summarizing their qualifications, and including curriculum vitae, and three (3) verifiable references from past clients.

MEASUREMENT AND PAYMENT: To receive payment under this item, the Contractor must perform the Work on a time and material basis according to the requirements of Article 28 of the Standard Construction Contract (the "Standards").

For Work satisfactorily performed and properly documented according to Article 28 of the Standards, the Contractor shall receive payment for the fair and reasonable cost of the items specified in Article 26.2 of the Standards.

Note: In lieu of renting, the City reserves the right to direct the purchase of non-operating equipment (scaffolding, sheeting systems, road plates, etc.), with payment on a purchase-salvage/life cycle basis, if less than the projected rental costs.

Material costs shall not be paid under Article 26.2.1 of the Standards unless substantiated by clear and legible copies of paid bills or invoices detailing the materials, their purpose, and the location, time and date installed.

Upon request, the Contractor agrees to provide the Agency with documentary evidence sufficient to substantiate the fairness and reasonableness of any cost submitted for payment under this item.

All payments made under this item are subject to pre-audit by the Engineering Audit Officer and may be post-audited by Comptroller or the Agency.

Note: Article 77 of the Standards states: "The Contractor agrees to retain all books, records, and other documents relevant to this Contract for six years after the final payment or termination of this Contract, whichever is later. City, state, and federal auditors and any other persons duly authorized by the City shall have full access to and the right to examine any such books, records, and other documents during the retention period."

The allowance for this item is a not to exceed amount of \$10,000.00. The allowance amount is the

maximum amount the Contractor may receive for its Work under this item for the life of this Contract.
After final payment of this item, any unexpended monies shall accrue to the City.

END OF PAGE

11/30/2018 CUSTOM \ OLDE TOWN OF FLUSHING BURIAL GROUND MONUMENT CONSTRUCTION
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PHYSICAL ANTHROPOLOGICAL SERVICES.docx

ITEM NO. 63

ARCHAEOLOGICAL SERVICES

WORK: Under this Item, the Contractor shall hire an approved Archaeological Contractor to perform **ARCHAEOLOGICAL SERVICES** on site, and to perform related off-site services, in accordance with the plans, specifications and directions of the Resident Engineer.

Archaeological work may include, but not be limited to: monitoring of excavation work and construction, research, field survey drawings, mapping, field testing, hand excavation, analyzing and processing evidence and artifacts, preparation of field notes and reports and approvals.

INTENT: The primary intent of this specification is to protect historical remains and artifacts unearthed by the General Contractor during excavation. Additional tasks include:

1. Archaeological Contractor is required to be on site when excavation is performed in archaeologically sensitive areas, as defined and delineated on the contract plans.
2. The Archaeological Contractor must come to the site if new artifacts are discovered elsewhere within the contract limit lines.

If potentially significant archaeological remains are encountered, construction must cease in the area and scientific excavation will be performed by the Archaeological Contractor or specialist sub-contractor.

QUALIFICATIONS: The Archaeological Contractor and their employees shall be regularly engaged in the business of archaeological investigations, and demonstrate ability to perform the scope of work. They shall meet Archaeological requirements set forth by the NYC Landmarks Preservation Commission (LPC) and the New York State Historic Preservation Office (SHPO) and demonstrate recent experience, within the past five years, on projects of a similar nature. Archaeological Contractor shall be Historical Perspectives, Inc., Westport CT, Hartgen Archaeological Associates, Inc., Rensselaer, NY, Chrysalis Archaeological Consultants, Inc., Brooklyn NY, or approved equal.

The Archaeological Contractor shall have the capability to provide all personnel and equipment required to perform the work. They shall identify the staff necessary to perform the specified work that may include, at minimum, a Principal Investigator (PI) and a Project Manager (PM), though these two may be the same person. The team shall meet the following minimum qualifications:

- ♦ **Principal Investigator (PI):** The PI shall be a professional archaeologist who is responsible for the archaeological research, monitoring, fieldwork and/or monitoring and for preparing and submitting archaeological reports. All archaeological investigators shall be under the direct supervision of the PI. All archaeological investigators shall comply with all requirements of the LPC and SHPO archaeological guidelines. The approved PI shall be the PI for the duration of the contract and shall be responsible for completing all obligations therein. The PI must have a current resume on file with the LPC.
- ♦ **Project Manager (PM):** The PM is responsible for assisting the PI with monitoring, fieldwork and monitoring and coordinating the archaeology with the General

Contractor and/or subcontractors and for all submittals to the NYC Department of Parks & Recreation (DPR), LPC and SHPO. In addition, they must ensure that the Resident Engineer is fully informed about the archaeological fieldwork schedule. The Project Manager shall have managed a minimum of four (4) projects in the past five (5) years of the same magnitude and scope as this project. The PM position may be fulfilled by the PI.

- ♦ **Field Technician (FT):** The FT shall provide technical assistance in the field and laboratory for processing artifacts. All work by the FT shall be performed under the direct supervision of the PI. Field Technicians shall have worked on at least two (2) projects within the last five (5) years on projects of a similar scope.

PRELIMINARY RESEARCH AND DOCUMENTATION: Prior to testing and construction excavations, the Archaeological Contractor shall conduct an extensive and thorough program of archival research, focusing on primary documents pertaining to the site and review and analyze previous historic research and archaeological work on the property with specific concentration on the proposed construction area. The Archaeological Contractor shall prepare and deliver a comprehensive preliminary report of their findings. The report shall be prepared in strict accordance with the standards, procedures and format of the NYC Landmarks Preservation Commission's *Guidelines for Archaeological Work in NYC* (2018).

If extensive professional archaeological work has previously been performed on-site and filed with LPC or SHPO, the documentation and research requirement may have been satisfied or require minor updating.

ARCHAEOLOGICAL FIELDWORK: The purpose of archaeological fieldwork is to determine whether significant archaeological resources are within the project area and, if so, to fully document them. After approval by DPR, the approved PI must submit a scope of work for the fieldwork to the LPC for review and approval prior to beginning the work. In addition, they must ensure that the Resident Engineer is fully aware of the schedule for the fieldwork for each day of work. The Archaeological Contractor shall provide all necessary archaeological equipment and qualified personnel. Fieldwork may include but not be limited to mechanical testing, shovel tests, hand excavation and remote sensing.

The Archaeological Contractor shall be responsible for performing all work and recording all archaeological activities according to professional standards and must provide a report documenting field testing and analysis of artifacts to DPR, LPC and SHPO for review and approval. The report shall also include recommendations for monitoring during construction if required and associated cost estimates to perform the work.

Special Note: In the event that human remains are encountered, the protocols described in the Landmarks Preservation Commission's Guidelines for Archaeological Work in NYC, 2002 must be adhered to and the archaeologist shall employ a physical anthropologist to work on site and document any primary burials in place as they will be protected and remain in place. The physical anthropologist shall also be responsible for analyzing any other human remains that may be found.

ARCHAEOLOGICAL MONITORING OF CONSTRUCTION EXCAVATION: The purpose of the archaeological monitoring is to ensure that construction activities will not destroy archaeological resources. The approved archeological monitoring team shall be responsible for supervising all subsurface excavation performed by the General Contractor as specified on the plans or as directed by the Engineer. Construction machinery may be employed in the excavation and each open excavation area within the specified area must be monitored at all times.

If potentially significant archeological remains are encountered, all work shall cease and scientific excavation and mitigation will be performed by the archeological team. The PI must visit the site within 24 hours of being notified of the find. The archaeological team in conjunction with the Resident Engineer, has the authority to stop any/all construction activity until the significance of potential archaeological resources has been determined. The PI must confer with DPR and LPC about the treatment of the artifacts/remains before construction activities may proceed in the area if the discovery is significant or may be significant. The PI shall submit a protocol detailing the proposed method of work and must define criteria to determine significance for approval by all agencies. The Archaeological Contractor shall provide all necessary archaeological equipment and crew, who must meet standards set forth above. They shall be responsible for recording all archaeological activities according to professional standards which shall be documented in the final report.

LABORATORY ANALYSIS: At the direction of the PI, newly unearthed historical artifacts found during excavation shall remain in place or shall be professionally cleaned, documented packaged, cataloged and boxed in an appropriate archival manner at an off-site laboratory. Contractor shall provide safe archival storage for the duration of the project. At the end of a project, unless otherwise indicated in writing by the Agency, all archaeological resources recovered shall be delivered to a storage location identified by DPR.

FINAL REPORT: Upon completion of the project, the PI shall provide to DPR and LPC for review and approval, a professional quality publishable final report, comprised of written, graphic and photographic documentation of the archaeological work. The report shall fully document additional archival research, results of predictive survey, excavation, construction monitoring and fieldwork operations, an inventory and analysis of encountered artifacts and remains, and recommendations for preservation and interpretation.

If required, a specialist shall be hired to analyze any special findings and to assist in the preparation of the summary report as recommended by the PI. Any specialists that may be necessary including, but not limited to, Forensic Anthropologist, Lithics Specialist, Pottery Specialist, and Masonry Specialist, Conservator shall submitted to DPR and LPC for approval, prior to performing any work and shall be paid for separately.

If archaeological resources are uncovered, the archaeologist and any necessary specialists shall analyze resources to place the findings into context. The final report is to include a synthesis of this work including recommendations for reburial of previously excavated human remains.

SUBMITTALS: All submittals shall conform to Section C, Special Provisions Article 11. The Contractor shall submit the following:

3/5

Prior to Site Mobilization:

1. Submittal letter from proposed Archaeological Contractor, summarizing their qualifications, and including curriculum vitae, and three (3) verifiable references from past clients within the last five (5) years.
2. Names, social security numbers, title and qualifications of persons proposed to work under this item shall be submitted to the Project Manager fifteen (15) days after award. All persons submitted shall comply with the minimum qualifications listed above. No excavation work in the designated areas shall be performed until approval is given.
3. Prior to commencing test pits or excavation, submit protocol for method of work and archaeological proposal for review and approval.

During Site Construction:

4. Sign-in sheets documenting amount of time spent at the job site monitoring excavation and off-site preparing the summary report and processing artifacts, if found. The sign-in sheet shall, at a minimum indicate the name and title of each person working on the project, amount of time spent, and tasks performed.
5. At each stage, submit four (4) bound copies of the preliminary and final reports, one (1) set of archival quality scaled/annotated survey mylar maps, and one (1) CD with digital copies of reports, photographs and maps for review and approval.
6. Artifact resources shall be turned over to the DPR no later than the Guarantee Inspection, unless otherwise indicated by the Agency.

PAYMENT SCHEDULE: The Contractor shall be paid at the following rates for the different work titles performed under this item:

♦ Principal Investigator	100% of bid price
♦ Project Manager	50% of bid price
♦ Field Technician	50% of bid price

MEASUREMENT AND PAYMENT: The quantity of **ARCHAEOLOGICAL SERVICES** to be paid for shall be the number of actual **HOURS** spent performing the work in accordance with the plans, specifications and directions of the Engineer.

The price bid shall be a unit price per **hour** for all time necessary to complete **ARCHAEOLOGICAL SERVICES** performed on the job site, any conservation, analysis and related work that may be required off site, including the preparation of all surveys, reports and approvals. The time paid will be a verifiable straight-time professional rate regardless of the number of hours on the onsite or offsite on any day including weekends and nights. Verifiable hours shall be as determined by the Agency. No overtime rates will be paid. No work shall be performed on legal holidays. The bid price for this item shall include profit, overhead, tolls, expenses, travel time, supplies, printing of reports, mylars, photographs, graphics, tools and equipment required or used for performing the archeology work and any other incidentals necessary to perform and complete the work in accordance with the specifications and to the satisfaction of the Engineer.

Daily time sheets in duplication must be filled out by the Archaeological Contractor on the job

describing the work performed and time involved for both on and off site work. The estimated number of hours in the bid book are based on an assumed number of hours which will naturally vary from the actual number of hours required during the year. The Contractor will be paid only for actual hours worked in accordance with daily sign-in sheets.

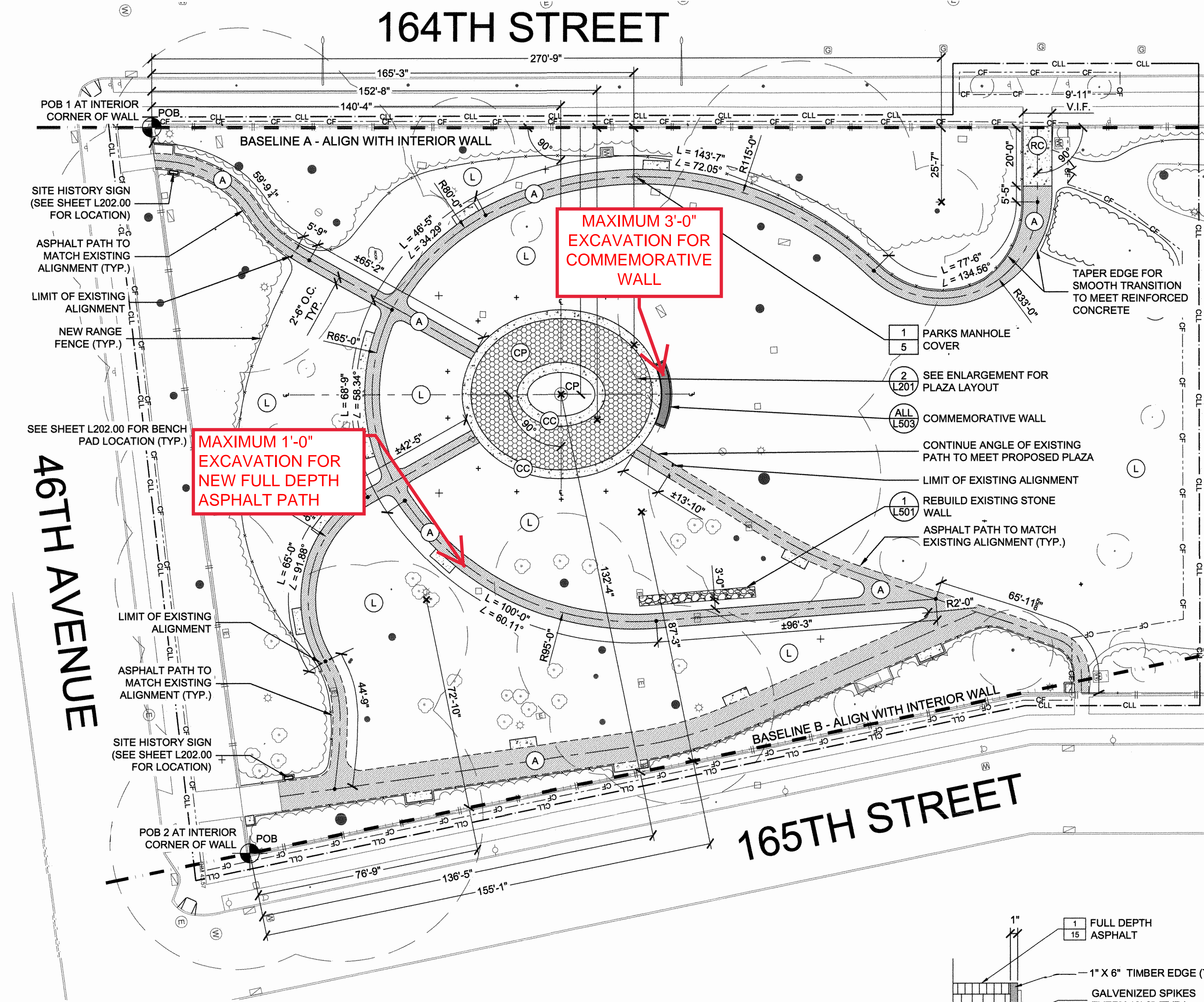
Soil or debris excavation which is free of artifacts, and which is in excess of that required for backfill, shall be paid under the item "Unclassified Excavation." Specialists, if necessary, shall be paid for separately.

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12/04/2018 CUSTOM \ OLDE TOWN OF FLUSHING BURIAL GROUND MONUMENT CONSTRUCTION

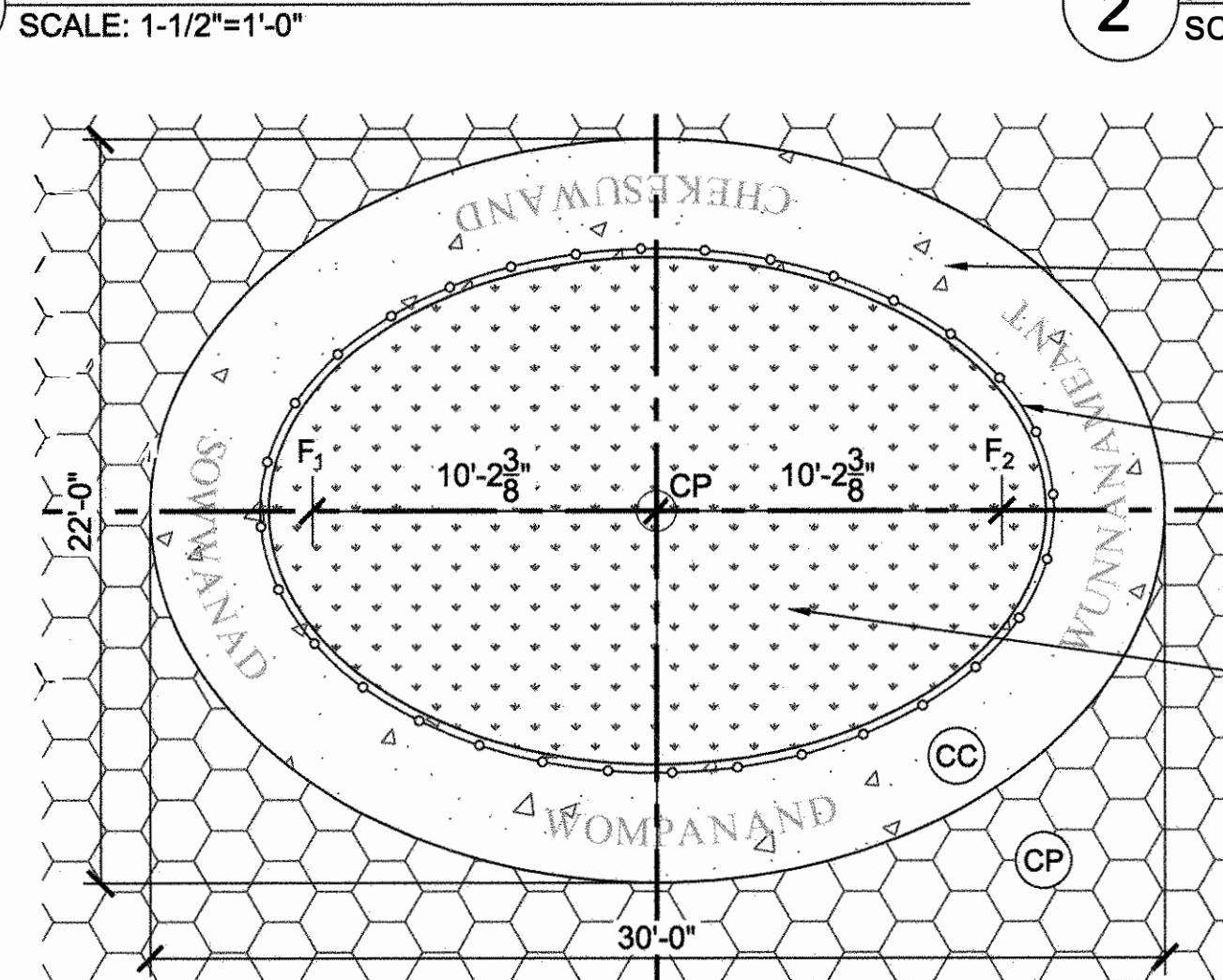
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Appendix B
Perkan Work Plan



- ### LEGEND
- | | | | |
|--------|---|-----|---|
| CLL | CONTRACT LIMIT LINE | --- | EXISTING PATH ALIGNMENT |
| CF | CONSTRUCTION FENCE 8'-0" HT. - MOVABLE | * | EXISTING LIGHT POLE |
| ALL 1 | CONSTRUCTION SIGN | ☐ | EXISTING CATCH BASIN |
| ALL 23 | 1939 WORLD'S FAIR BENCH W/ ARMS, W/ RPL SLATS ON CONCRETE - 8'-0" LENGTH | + | EXISTING SIGN |
| ☐ | DECORATIVE BIN ON CONCRETE PAD SEE SPECIFICATION | ○ | EXISTING UNDERSTORY TREE |
| + | SITE HISTORY SIGN TO BE INSTALLED BY OTHERS | ☁ | EXISTING GROUNDCOVER |
| A | 1 FULL DEPTH ASPHALT WITH TIMBER EDGE SEE SPECIFICATION (MAXIMUM 1'-0" EXCAVATION) | --- | EXISTING STEEL FENCE - 7'-0" HT. |
| CP | CONCRETE PAVERS ON ASPHALT BASE | ○ | EXISTING TREE |
| RC | 3 REINFORCED CONCRETE PAVEMENT WITH STEEL FABRIC REINFORCEMENT - 7" THICK | ○ | CRITICAL ROOT ZONE (CRZ) WITHIN THIS AREA EXCAVATION SHALL BE BY HAND AND/OR PNEUMATIC EXCAVATION. SEE TREE PROTECTION, ACCESS AND STAGING PLAN |
| CC | 1 COLORED CEMENT CONCRETE PAVEMENT COLOR: COBBLESTONE AS MANUFACTURED BY DAVIS COLORS OR APPROVED EQUAL | POB | POB 1 - SOUTHWEST INTERIOR CORNER OF WALL
POB 2 - SOUTHEAST INTERIOR CORNER OF WALL |
| L | LAWN | CP | CENTER POINT |
| 2 4 | TREE GUARD TYPE 'K' ON CONCRETE | x | RADIUS MARKER |
| + | NEW RANGE FENCE | • | TANGENT POINT OF CURVE |

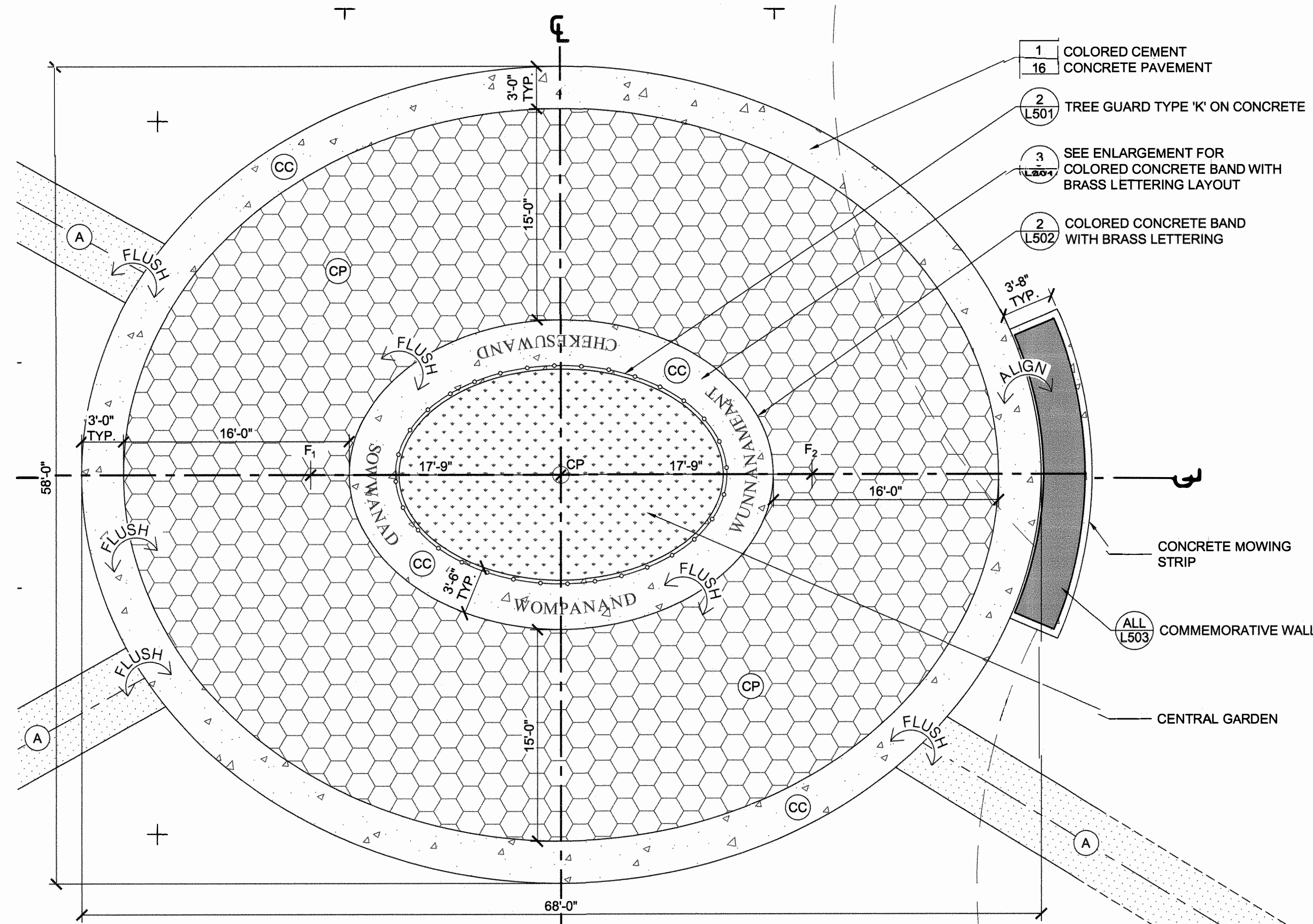
FULL DEPTH ASPHALT WITH TIMBER EDGE



- ### 2 ENLARGEMENT - PLAZA LAYOUT
- SCALE: 3/16"=1'-0"
- LAYOUT OF OUTER ELLIPSE:
- PIN AND STRING METHOD: MAJOR AXIS = 68'-0" MINOR AXIS = 58'-0"
 - SET PINS AT F₁ AND F₂ (THE FOCI OF THE ELLIPSE) : 17'-9" FROM CP1
 - MEASURE A PIECE OF NON-STRETCHING ROPE THE LENGTH OF THE MAJOR AXIS. TIE THE ENDS OF THE NON-STRETCHING ROPE TO F₁ AND F₂.
 - LEAVING THE ROPE ATTACHED, KEEP THE ROPE TAUGHT AND MARK THE PATH OF THE ELLIPSE.
 - OFFSET MAJOR AND MINOR AXIS 3'-0" AND REPEAT TO COMPLETE THE BAND.
- 2 COLORED CONCRETE BAND WITH BRASS LETTERING
- 2 4 TREE GUARD TYPE 'K' ON CONCRETE - CURVE PANELS AS SHOWN ON SHEET L501.00
- CENTRAL GARDEN
- ### 3 ENLARGEMENT - PLAZA LAYOUT - CONCRETE BAND WITH BRASS LETTERING
- SCALE: 3/16"=1'-0"
- LAYOUT OF INNER ELLIPSE:
- PIN AND STRING METHOD: MAJOR AXIS = 30'-0" MINOR AXIS = 22'-0"
 - SET PINS AT F₁ AND F₂ (THE FOCI OF THE ELLIPSE) : 10'-2 3/4" FROM CP1
 - MEASURE A PIECE OF NON-STRETCHING ROPE THE LENGTH OF THE MAJOR AXIS. TIE THE ENDS OF THE NON-STRETCHING ROPE TO F₁ AND F₂.
 - LEAVING THE ROPE ATTACHED, KEEP THE ROPE TAUGHT AND MARK THE PATH OF THE ELLIPSE.
 - OFFSET MAJOR AND MINOR AXIS 3'-6" AND REPEAT STEPS TO COMPLETE THE BAND.

LAYOUT AND MATERIALS NOTES

- ALL EXISTING SURVEY AND TOPOGRAPHICAL DATA TAKEN FROM SURVEY BY NYC PARKS (DPR), DATED 05/02/2018, MAP FILE Q-T-017-104. ALL ELEVATIONS ARE BASED ON THE NORTH AMERICAN VERTICAL DATUM, 1988 (NAVD 88). SEE SURVEY SHEET V101.00 AND V102.00 FOR SURVEY LEGEND.
- THE CONTRACTOR SHALL VERIFY ALL EXISTING SITE CONDITIONS, BOTH ABOVE AND BELOW THE SURFACE. ANY DISCREPANCIES BETWEEN INFORMATION SHOWN ON THE DRAWINGS AND ACTUAL FIELD CONDITIONS SHALL BE BROUGHT TO THE ATTENTION OF THE RESIDENT ENGINEER AND PARKS IN WRITING PRIOR TO COMMENCING WORK.
- LOCATIONS OF EXISTING TREES SHALL BE VERIFIED IN THE FIELD.
- NO CHANGES SHALL BE MADE TO THE DESIGN OR LAYOUT WITHOUT THE WRITTEN APPROVAL OF THE LANDSCAPE ARCHITECT. LAY OUT THE WORK AS DIMENSIONED ON THE PLANS. WRITTEN DIMENSIONS SHALL GOVERN; DO NOT SCALE DISTANCES.
- CONTRACTOR SHALL LAY OUT AND STAKE IN THE FIELD THE ALIGNMENT AT ALL PATHS, PAVEMENTS AND TRAILS FOR REVIEW BY THE LANDSCAPE ARCHITECT. ADJUSTMENTS MAY BE MADE ONLY AS DIRECTED BY THE LANDSCAPE ARCHITECT. CONTRACTOR MAY NOT PROCEED WITH CONSTRUCTION OF IMPROVEMENTS UNTIL HE HAS RECEIVED THE FINAL APPROVAL OF THE LAYOUT FROM THE LANDSCAPE ARCHITECT.
- ALL NEW PAVEMENTS CURBS AND EXISTING PAVEMENTS AND CURBS TO REMAIN SHALL MEET IN SMOOTH FLUSH CONDITION UNLESS NOTED OTHERWISE. NEW CURBS, WALLS, AND PAVEMENTS SHALL BE BUILT TO A SMOOTH EVEN FINISH WITH A CONSISTENT TOP AND PROFILE WITHOUT WAVES OR IRREGULARITIES. ANY WORK NOT MEETING THIS QUALITY STANDARD SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.
- THE CONTRACTOR SHALL EXERCISE CARE DURING EXCAVATION OPERATIONS TO AVOID DISTURBING ADJACENT FACILITIES, SUBGRADE STRUCTURES AND TREES. ALL DAMAGE RESULTING FROM THE CONSTRUCTION SHALL BE THE CONTRACTOR'S RESPONSIBILITY AND SHALL BE REPAIRED AT NO EXPENSE TO THE CITY AND DPR. ALL REPAIR WORK SHALL BE TO THE SATISFACTION OF THE RESIDENT ENGINEER AND DPR. PLANTED AREAS DISTURBED BY CONTRACTOR'S WORK SHALL BE RESTORED AS DIRECTED BY THE LANDSCAPE ARCHITECT.
- NO HEAVY MACHINERY, EQUIPMENT OR STOCKPILING OF MATERIAL IS PERMITTED WITHIN THE DRIP LINES OF EXISTING TREES.
- THE CONTRACTOR SHALL TAKE SPECIAL CARE TO PROTECT ALL EXISTING TREES AND THEIR ROOT SYSTEM. EXCAVATIONS WITHIN THE DRIP LINES OF TREES SHALL BE KEPT TO A MINIMUM AND SHALL BE COMPLETED BY HAND ONLY AND SHALL BE PERFORMED IN THE PRESENCE OF THE RESIDENT ENGINEER. AT NO ADDITIONAL EXPENSE TO THE CITY, NO ROOTS SHALL BE CUT WITHOUT THE WRITTEN AUTHORIZATION OF DIRECTOR OF LANDSCAPE CONSTRUCTION OR THEIR REPRESENTATIVE. BRIDGE CURBS SHALL BE CONSTRUCTED OR THE AMOUNT OF FOUNDATION MATERIAL SHALL BE REDUCED WHERE NECESSARY, AS DIRECTED BY ENGINEER (SEE GENERAL CONDITIONS, SPECIAL PROVISION, SECTION C, ARTICLE 14 "TREE WORK").
- THE CONTRACTOR IS RESPONSIBLE FOR IDENTIFYING LONG LEAD ITEMS AND ORDERING THESE MATERIALS IN A TIMELY MANNER.



- LAYOUT OF OUTER ELLIPSE:
- PIN AND STRING METHOD: MAJOR AXIS = 68'-0" MINOR AXIS = 58'-0"
 - SET PINS AT F₁ AND F₂ (THE FOCI OF THE ELLIPSE) : 17'-9" FROM CP1
 - MEASURE A PIECE OF NON-STRETCHING ROPE THE LENGTH OF THE MAJOR AXIS. TIE THE ENDS OF THE NON-STRETCHING ROPE TO F₁ AND F₂.
 - LEAVING THE ROPE ATTACHED, KEEP THE ROPE TAUGHT AND MARK THE PATH OF THE ELLIPSE.
 - OFFSET MAJOR AND MINOR AXIS 3'-0" AND REPEAT TO COMPLETE THE BAND.



CITY OF NEW YORK
PARKS & RECREATION
OLMSTED CENTER
FLUSHING MEADOWS CORONA PARK
FLUSHING, NEW YORK 11368



NYC Parks

PROJECT TITLE
THE RECONSTRUCTION OF THE OLDE TOWNE OF FLUSHING BURIAL GROUND
LOCATED ON 46TH AVENUE BETWEEN 164TH STREET AND 165TH STREET

DRAWING TITLE
LAYOUT AND MATERIALS PLAN

DESIGNED BY
OLIVIA LIU, ALA

B-SCAN

DRAWN BY
OLIVIA LIU, ALA

CHECKED BY
STACIA TULL, RLA

SCALE
1"=20'

DRAWING NO.
L201.00

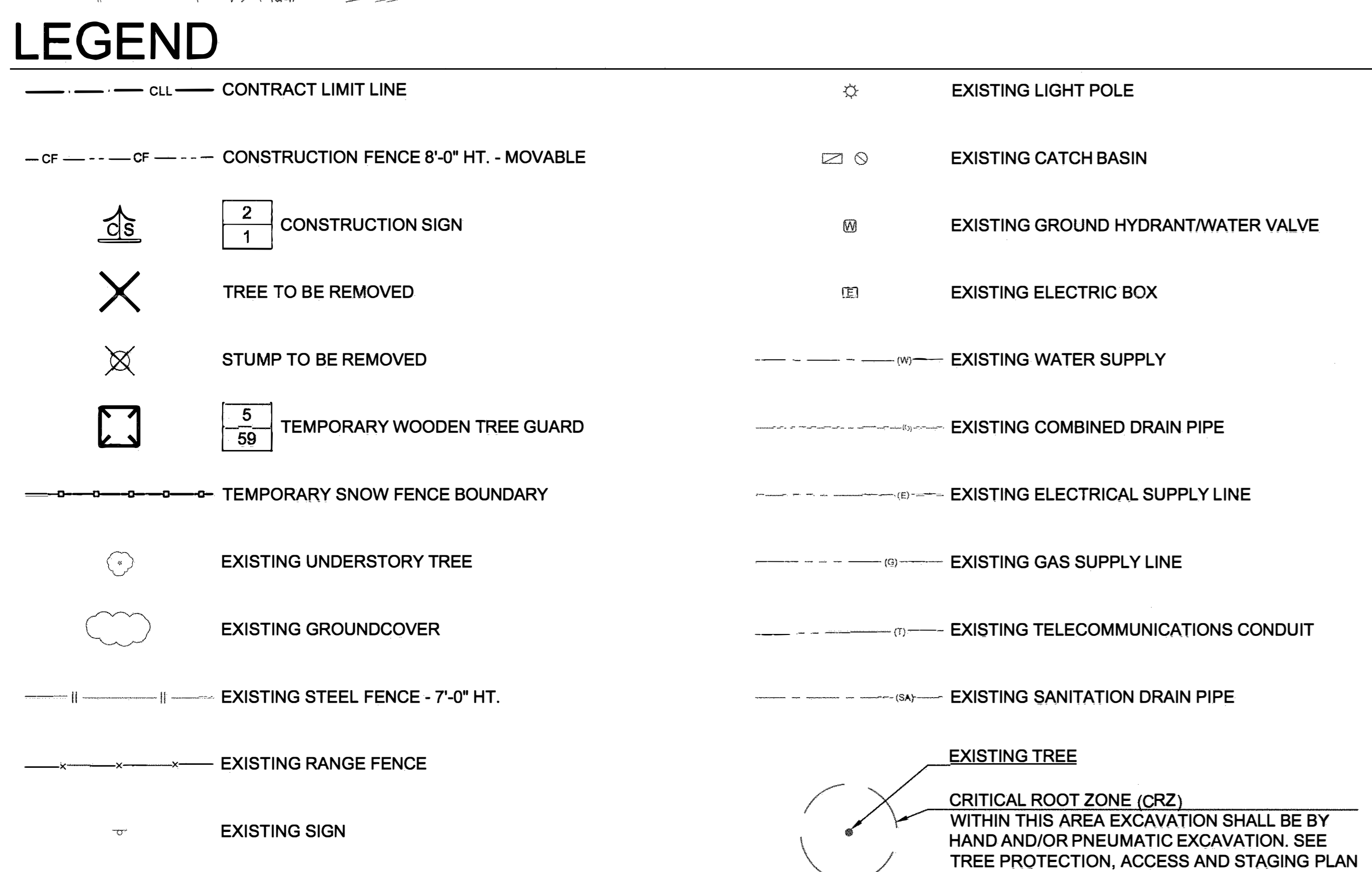
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Q017-118M

DATE
04/30/2019

SHEET No. 7 OF 15 SHEETS

BLOCK
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1. ALL EXISTING SURVEY AND TOPOGRAPHICAL DATA TAKEN FROM SURVEY BY NYC PARKS (DPR), DATED 05/02/2018, MAP FILE Q-T-017-104. ALL ELEVATIONS ARE BASED ON THE NORTH AMERICAN VERTICAL DATUM, 1988 (NAVD 88). SEE SURVEY SHEET V101.00 AND V102.00 FOR SURVEY LEGEND.
2. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY ALL EXISTING SITE CONDITIONS, BOTH ABOVE AND BELOW THE SURFACE, PRIOR TO COMMENCING WORK. ANY DISCREPANCIES BETWEEN THE INFORMATION SHOWN ON THE DRAWINGS SHALL BE BROUGHT TO THE ATTENTION OF THE RESIDENT ENGINEER AND DPR IN WRITING PRIOR TO COMMENCING WORK.
3. IT IS MANDATORY, AS PER NYS INDUSTRIAL CODE RULE 53, FOR THE CONTRACTOR TO NOTIFY NEW YORK 811 AT LEAST FORTY-EIGHT (48) HOURS BEFORE COMMENCING EXCAVATION (ITEM, "UNCLASSIFIED EXCAVATION"). THE EMAIL ADDRESS IS EMAIL@NEWYORK811.NC.COM AND THE WEB SITE IS HTTP://NEWYORK-811.COM (SEE ITEM "UNCLASSIFIED EXCAVATION").
4. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO REPAIR ANY DAMAGE AND/OR RESTORE ANY INTERRUPTION TO ANY UTILITY SERVICE THAT MAY BE CAUSED BY THE CONTRACTOR'S CONSTRUCTION OR EQUIPMENT, AT THE CONTRACTOR'S EXPENSE, WITH NO ADDITIONAL EXPENSE TO THE CITY OF NEW YORK.
5. ALL EXISTING SEWER, GAS, WATER, AND ELECTRIC UTILITY LINES, AS WELL AS STRUCTURES WITHIN THE CONTRACT AREA SHALL REMAIN, UNLESS REMOVAL OF SAME IS SPECIFICALLY NOTED. ALL STORM DRAINAGE PIPES TO BE ABANDONED OR REMOVED OR CUT OFF SHALL BE IDENTIFIED AND MARKED PRIOR TO BE ENCOUNTERED DURING EXCAVATION. THEN THE CONTRACTOR SHOULD REMOVE PIPE IN AREA OF EXCAVATION AND PLUG AT EACH END OF EXCAVATION. CONTRACTOR SHOULD ENSURE THAT THE PIPE REALLY IS ABANDONED BEFORE ATTEMPTING THIS OPERATION.
6. THE CONTRACTOR IS TO USE CARE DURING CONSTRUCTION TO AVOID DISTURBING OR DAMAGING ADJACENT ABOVE-GRADE OR SUBGRADE STRUCTURES, FACILITIES, CURBS, PAVEMENTS, AND PERIMETER FENCING. ANY DAMAGE RESULTING FROM THIS WORK WILL BE RESTORED TO THE SATISFACTION OF DPR AT THE CONTRACTOR'S EXPENSE.
7. WHERE NEW CONSTRUCTION ABUTS EXISTING PAVEMENTS, CURBS, OR WALLS, THE EXISTING MATERIALS SHALL BE CLEANLY SAWCUT TO PROVIDE A CLEAN, NEAT MATCH AND A SMOOTH, FLUSH TRANSITION, AS DIRECTED BY THE RESIDENT ENGINEER. ALL SAWCUTTING SHALL BE DONE TO NEAT, STRAIGHT, AND ACCURATE LINES. CONTRACTOR SHALL PROVIDE EXPANSION JOINTS (TIE ROD AND/OR SLIP JOINT) WHERE OLD AND NEW CURBS MEET.
8. THE CONTRACTOR SHALL REPLACE ANY EXISTING CURBS, FENCING, OR PAVEMENTS THAT WERE INTENDED TO REMAIN BUT ARE DAMAGED OR DISTURBED DURING CONSTRUCTION. IF REPLACEMENT IS NECESSARY, IT SHALL BE DONE AT THE CONTRACTOR'S EXPENSE, TO THE SATISFACTION OF DPR AND THE RESIDENT ENGINEER.
9. THE CONTRACTOR SHALL TAKE EXTREME CARE TO PROTECT THE ROOT SYSTEMS OF EXISTING TREES. MATERIAL, EQUIPMENT, OR VEHICLES SHALL NOT BE STOCKPILED OR PARKED WITHIN THE DRIPLINE OF ANY TREE.
10. SEE TREE PROTECTION AND STAGING PLAN FOR ADDITIONAL NOTES REGARDING PROTECTION, PRUNING AND DECOMPACTION OF EXISTING TREES.
11. THE CONTRACTOR SHALL ALWAYS EXCAVATE BY HAND OR PNEUMATICALLY WITHIN THE DRIPLINES OF EXISTING TREES, OR AS DIRECTED BY THE RESIDENT ENGINEER IN CONSULTATION WITH THE DIRECTOR OF LANDSCAPE CONSTRUCTION OR THEIR REPRESENTATIVE. NO ROOTS SHALL BE CUT WITHOUT THE WRITTEN AUTHORIZATION OF THE DIRECTOR OF LANDSCAPE CONSTRUCTION OR THEIR REPRESENTATIVE.
12. ALL FOOTINGS AND OTHER BELOW-GRADE STRUCTURES TO BE REMOVED SHALL BE EXCAVATED TO A DEPTH OF 4'-0" BELOW FINISHED GRADE AND BACKFILLED WITH APPROVED SUITABLE FILL MATERIAL.
13. THE CONTRACTOR SHALL DISPOSE OF ALL ITEMS AND MATERIALS REMOVED AND NOT SALVAGED, INCLUDING ALL EXCAVATED MATERIAL, OFF-SITE AND IN A LEGAL MANNER.
14. ALL MATERIALS TO BE SALVAGED FOR DPR MAINTENANCE & OPERATIONS (M&O) SHALL BE DELIVERED, AS DIRECTED BY M&O BY THE CONTRACTOR TO THE CHIEF OF OPERATIONS OF THE APPROPRIATE BOROUGH. ALL MATERIALS NOT NEEDED BY M&O SHALL BE REMOVED AS INDICATED IN REMOVALS ITEM.
15. THE CONTRACTOR SHALL REMOVE, EXCAVATE, AND DISPOSE OF ALL MATERIALS ACCORDING TO SPECIFICATION.
16. THE CONTRACTOR SHALL EXERCISE EXTREME CARE IN REMOVING CONCRETE OR ASPHALT WITHIN THE DRIPLINE OF EXISTING TREES - LIFTING RATHER THAN DRAGGING PIECES OF PAVING. TOOLS FOR THIS ACTIVITY SHALL BE APPROVED BY THE DIRECTOR OF LANDSCAPE CONSTRUCTION OR THEIR REPRESENTATIVE AND THE RESIDENT ENGINEER PRIOR TO THE START OF EXCAVATION.
17. WHERE NEW PATHS WILL ALIGN WITH EXISTING PATHS, THE CONTRACTOR SHALL TAKE EXTREME CARE NOT TO DISTURB THE ADJACENT AREA. SEE DRAWING L201.00.

SYMBOL	ITEMS	COMMENTS
	CONTRACT LIMIT LINE	NO EXCAVATION INVOLVED
	CONSTRUCTION FENCE 8'-0" HT. - MOVABLE	NO EXCAVATION INVOLVED
	SAW CUT PAVEMENT	NO EXCAVATION INVOLVED
	REMOVE RANGE FENCE	NO EXCAVATION INVOLVED
	STEEL FENCE PANEL, GATE AND CAGE	NO EXCAVATION INVOLVED
	ABANDON DRAIN PIPE	NO EXCAVATION INVOLVED
	SELECTIVE CLEAR AND GRUB	MAXIMUM 6" EXCAVATION
	REMOVE BENCH	NO EXCAVATION INVOLVED
	TREE REMOVAL OVER 6" TO 12" DBH - CUSTOM	MAXIMUM 3'-0" EXCAVATION
	STUMP REMOVAL - CUSTOM	NO EXCAVATION INVOLVED
	REMOVE GRANITE PAVEMENT	MAXIMUM 1'-0" EXCAVATION
	SALVAGE GRANITE DISC	NO EXCAVATION INVOLVED
	REMOVE FULL DEPTH ASPHALT	MAXIMUM 1'-0" EXCAVATION
	REMOVE REINFORCED CONCRETE SIDEWALK	MAXIMUM 1'-0" EXCAVATION
	REMOVE OYSTER SHELL IN RESIN ON CONCRETE	MAXIMUM 1'-0" EXCAVATION
	REMOVE INTERPRETIVE SIGN & CONCRETE FOOTING	MAXIMUM 1'-0" EXCAVATION
	REMOVE STONE WALL	MAXIMUM 1'-0" EXCAVATION

1. LIMITS OF CLEARING AND GRUBBING AND SPECIES REMOVAL TO BE REVIEWED BY LANDSCAPE CONSTRUCTION UNIT REP AND LANDSCAPE ARCHITECT PRIOR TO REMOVAL.
2. ALL EXISTING ITEMS ARE TO REMAIN UNLESS OTHERWISE NOTED.



**CITY OF NEW YORK
PARKS & RECREATION**
OLMSTED CENTER
FLUSHING MEADOWS CORONA PARK
FLUSHING, NEW YORK 11368

PROJECT TITLE
THE RECONSTRUCTION OF THE OLDE TOWNE OF FLUSHING BURIAL GROUND LOCATED ON 46TH AVENUE BETWEEN 164TH STREET AND 165TH STREET

DRAWING TITLE
REMOVALS PLAN

DRAWN BY OLIVIA LIU, ALA

CHECKED BY STACIA TULL, RLA

SCALE	DRAWING NO.
1"=20'	
DATE	L103.00

CONTRACT NO.
Q017-118M

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DATE	
04/30/2019	

SHEET No. 6 OF 15 SHEETS

Appendix B:
Personnel Summary

Alyssa Loorya, Ph.D., R.P.A. | President, Principal Investigator



Ms. Loorya is founder and president of Chrysalis Archaeological Consultants. For more than twenty years she has worked in cultural resource management and public education devoted to preserving cultural resources and communicating their value to local communities. She has completed over sixty technical and academic reports and has delivered dozens of presentations concerning preservation compliance, New York City historical development, and educational curricula. Her extensive experience lends itself to her roles in developing and executing research and excavation plans, project management, regulatory compliance and report production.

SELECTED PROJECTS

New York City:

Brooklyn Navy Yard (Steiner Studio) – Phase IB (2017-2018)
Coney Island Utility Upgrade – Phase IB/Monitoring (2017-2018)
Downtown Brooklyn Reconstruction – Phase IB/Monitoring (2012)
Elias Hubbard House – Phase IB (2001)
Hendrick I. Lott House – Phase IB/Monitoring (2004, 2013)
Marine Park – Phase IB/Monitoring (1997, 2003)
79 Christopher Street Burial Vault Project – Phase II (2008)
Chambers Street – Phase IB (2005)
City Hall Reconstruction Project – Phase IB and II (2010-2015)
Myrtle Avenue - Ingersol Senior Housing—Phase I/II (2016-2020)
Fulton Street Reconstruction – Phase I and II (2009-2018)
High Bridge Park – Phase IB/Monitoring (2014-2015)
Peck Slip – Phase I and II (2011-2018)
South, South Street – Phase IB/Monitoring (2017-2018)
Stone Street – Phase IB/Monitoring (1998)
Wall Street Water Main Project – Phase I (2007-2008)
Washington Square Park – Phase IB/Monitoring (2015-2020)
Worth Street—Phase I/Monitoring (2018 to 2020)
Bartow-Pell Mansion – Phase IB/Monitoring (2008, 2012)
Newtown Playground – Phase IB/Monitoring (2018-2019)
John Bowne House – Phase IB/Monitoring (2016)

Greater New York Region:

Hofstra University – Historical Research Report (2015-2017)
Fire Island National Seashore – Phase IB/Monitoring (2014)
Sharswood, Philadelphia Housing Authority – Phase IA (2018)
Tappan Zee Bridge Replacement – Phase I (2014-2016)

Over 100 publications and conference papers in CRM and popular magazines published. For full listing see:

www.chrysalisarchaeology.com

AREAS OF EXPERTISE

National Historic Preservation Act
Section 106 Compliance

Material Collections Analysis

Archaeological Survey and Excavation

Public Outreach

EDUCATION

Ph.D., Anthropology and Archaeology:
2018, CUNY Graduate School

M.A., Anthropology and Archaeology:
1998, Hunter College

CERTIFICATIONS

Register of Professional Archaeologists

10-Hour OSHA Construction Safety

30-Hour OSHA Construction Safety

40-Hour OSHA HAZWOPER

SWAC - Secure Worker Access
Consortium

PROFESSIONAL EXPERIENCE

1995-2001: Brooklyn College
Archaeological Research Center

2001-Present: Chrysalis Archaeological
Consultants, President and Principal
Investigator

2006-2010: URS Corporation, Principal
Investigator

2007-2010: Gray & Pape, Supervisory
Consultant

CONTACT INFORMATION

aloora@chrysalisarchaeology.com

New York Headquarters

4110 Quentin Road
Brooklyn, NY 11234-4322
Phone: 718.645.3962

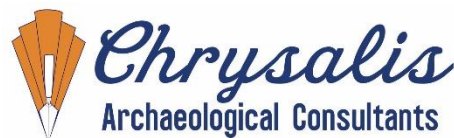
Brooklyn Laboratory

3604 Quentin Road
Brooklyn, NY 11234
www.chrysalisarchaeology.com

Rhode Island Regional Office

One Richmond Square – Suite 121F
Providence, RI 02906-5139
Phone: 401.499.4354

Roseanne Quinn, B.A. | Archaeologist



Ms. Quinn has over 10 years of experience working in all phases of archaeological excavation. Her specializations include both prehistoric and historic contexts in the Northeast, West and Mexico. Her professional focus centers on historic urban infrastructure and consumer culture. She has extensive knowledge of field methodologies for prehistoric and historic sites.

SELECTED PROJECT EXPERIENCE BY STATE

[St. Peter's Episcopal Church -Phase 1B \(2019 - 2020\)](#) **Bronx, NY**

Conducted excavation units to locate and expose possible remains of the early 18th Century Quaker Meeting House in an area of high sensitivity for human remains.

[Sailfish – Phase IB and Phase 11 \(2018 - 2019\)](#) **Montgomery, New York**

Conducted shovel testing and subsequent excavation units in areas that tested positive for historic and prehistoric cultural material and archaeological features.

[Governors Island Redevelopment Project \(2012 - 2016\)](#) **Governors Island, NY**

Monitored construction activities in areas of historical interest on Governors Island. Conducted excavation and laboratory analysis, report preparation and writing contributions.

[World Trade Center PHR Phase III \(2010 and 2013\)](#) **Staten Island, New York**

Sifting Operations; conducted screening operations directed towards the recovery of human remains and personal effects.

[North American Archaeology/AMNH \(2012\)](#) **New York, NY**

Laboratory processing (ceramic and lithic, cataloging, database management). Excavations on St. Catherines Island, Georgia.

[Wind Farm Survey Phase I \(2018\)](#) **Hand County, SD**

Conducted pedestrian surveys and shovel testing with tribal monitors investigating and mapping areas of prehistoric and historic sensitivity.

[Hawaii Scientific Drilling Project \(HSPD\) Phase II \(2005\)](#) **Hilo, Hawaii**

Assembled recovered core into trays aligning fracture faces, recorded composition and type of rock from Mauna Kea volcano core and determined what each stratigraphic section represents. Conducted rock slicing and shrink wrapping in preparation for core archival.

AREAS OF EXPERTISE

Archaeological Survey and Excavation
Public Outreach and Education
Prehistoric and Historic Materials
Identification

EDUCATION

B.A., Archaeology: 2006
Hunter College, CUNY

CERTIFICATIONS

10-Hour OSHA Construction Safety
Training (2019)

30-Hour OSHA Outreach Training for
the Construction Industry (2020)

PROFESSIONAL EXPERIENCE

2019 – Present: Chrysalis
Archaeological Consultants

2018 – Present: Archaeology and
Historic Resource Services, LLC
(AHRs)

2018 - Burns & Mc Donnell

2017 – 2018: AKRF Environmental
Planning and Engineering Consultants

2016 – 2017: Landmark Archaeology,
Inc

2012- 2016: Linda Stone, RPA

2013: Emal Archaeological Project

2012: SWCA Environmental
Consultants

2012: North American
Archaeology/American Museum of
Natural History

2011: Central Yucatecan Archaeological
Cave Project

2010 and 2013: NYC Dept of Health
and Mental Hygiene, Office of the Chief
Medical Examiner

2005: Hawaii Scientific Drilling Project

2005: University of Hawaii @ Hilo/
Archeology Internship

CONTACT INFORMATION

roseanne.quinn@gmail.com

Lisa Geiger, MA, MS, RPA |

Field Director

Ms. Geiger has ten years of experience working in all phases of archaeological excavation and reporting. Her specializations include both prehistoric and historic contexts in the Middle Atlantic, New England, and Midwest regions. Her professional focus centers on historic urban infrastructure and consumer culture. She has extensive knowledge of laboratory analysis and archival preparation techniques for prehistoric and historic artifacts.

SELECTED PROJECT EXPERIENCE

Washington Square Park Water Mains Improvements – Phase IB (2020)

New York City, NY

Conducted monitoring of street bed excavation surrounding three-quarters of Washington Square Park and surrounding roadways for water main upgrades and replacements. Excavation uncovered historic interments and potter's field burials.

Peck Slip Rehabilitation – Phase IA, Phase II (2011-2014)

New York City, NY

Conducted Phase II monitoring, mapping, and feature-specific excavations during road reconstruction and utility replacements at Peck Slip, an 18th and 19th century shipping area and Historic District in downtown Manhattan.

Lenape Farms Wetland Restoration Project – Phase IA/IB (2015)

Atlantic County, NJ

Conducted site assessment research and shovel test pit excavation in a WWI munitions plant historic district and prehistorically sensitive surrounding area in advance of wetland enhancement activities.

Archaeological Investigations, City Hall Park – Phase II-III (2010-2011)

New York City, NY

Performed Phase II and III excavations at City Hall pinpointing historic architecture and features. Highlighted discoveries include a pre-revolution British jail, early water management features, and large scale refuse deposits. Performed in conjunction with URS.

I-95/Girard Interchange Project – Phase II-III (2008-2011)

Philadelphia, PA

Performed extensive excavation across three miles of 18th and 19th century residential and commercial areas in one of Philadelphia's first communities. Conducted for PA Dept. of Transportation (PADOT).



AREAS OF EXPERTISE

Archaeological Survey and Excavation

Public Outreach and Education

Laboratory Preparation and Data curation

EDUCATION

M.S., Library and Information Science: 2018, University of Illinois at Urbana-Champaign

M.A., Anthropology: 2015, Hunter College (CUNY)

B.A., Archaeology, Classical Studies: 2008, Dickinson College

CERTIFICATIONS

30-Hour OSHA Construction Industry Training (2020)

40-Hour OSHA HAZWOPER Safety Training (2009)

10-Hour OSHA Construction Safety Training (2010)

SWAC - Secure Worker Access Consortium (2014)

PROFESSIONAL EXPERIENCE

2019-2020: Chrysalis Archaeological Consultants

2017-2019: Field Museum of Natural History

2011-2016: Chrysalis Archaeological Consultants

2013: AIA/Carr Plantation Outreach

2008-2011: URS Corporation

New York Headquarters

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www.chrysalisarchaeology.com

Christopher Ricciardi, Ph.D., RPA |

Principal Investigator

With over 30 years of experience in the field, Dr. Ricciardi is an expert on Section 106 and Federal, State, and Local regulatory criteria for compliance. His research has focused on 17th through 9th century rural communities, highlighting the development of New York City's outer boroughs and its surrounding area. Dr. Ricciardi served as an archeologist for the U.S. Army Corps of Engineers New York District from 2001 - 2009. He has been President of the Professional Archaeologists of New York and the Metropolitan Chapter of the New York State Archaeological Association and is committed to local historic preservation.

SELECTED PROJECT EXPERIENCE

New York:

63/65 Columbia Street – Phase IA (2004)
147 Hicks Street – Phase IB (1998)
Brooklyn Navy Yard (Steiner Studio) – Phase IB (2017-2018)
Downtown Brooklyn Reconstruction – Phase IB/Monitoring (2012)
Gravesend Cemetery – Phase IB (2001)
Gowanus Canal Study – Phase IA (2012)
Hendrick I. Lott House – Phase IB/Monitoring (2004, 2013)
Marine Park – Phase IB/Monitoring (1997, 2003)
156 Rivington Street – Phase IA (2012)
79 Christopher Street Burial Vault Project – Phase II (2008)
City Hall Reconstruction Project – Phase IB and II (2010-2015)
Columbus Park – Phase I (2007)
Dyckman Farmhouse Project – Phase IB/Monitoring (2007)
Fulton Street Reconstruction – Phase I and II (2009-2018)
High Bridge Park – Phase IB/Monitoring (2014-2015)
Liberty Island – Phase IB/Monitoring (2001)
Peck Slip – Phase I and II (2011-2018)
Roger Morris Park – Phase IB/Monitoring (2005)
Stone Street – Phase IB/Monitoring (1998)
Wall Street Water Main Project – Phase I (2007-2008)
West Village Housing – Phase IA (2007)
Worth Street—Phase I/Monitoring (2018 to 2020)
Bartow-Pell Mansion – Phase IB/Monitoring (Barn) (1993)
Bartow-Pell Mansion – Phase IB/Monitoring (Cemetery) (2004)
Bronx River Greenway – Phase IB/Monitoring (2015-2016)
Elmhurst Cemetery – Phase IA (1997)
Wayanda Park – Phase IB/Monitoring (2003)

Greater New York Region:

NYC DEP Water Tunnel – Catskill and Delaware (2013)
The Edwards Homestead; Sayville – Phase IB (2001)
Timothy Knapp House; Rye – Phase IB (1997)

Over 150 professional and public lectures/presentations. See www.chrysalisarchaeology.com for full listing.



AREAS OF EXPERTISE

Archaeological Survey and Excavation
Public Outreach
Laboratory Preparation
Section 106-National Historic Preservation Act

EDUCATION

B.A., 1987, Brooklyn College, CUNY
(History and Anthropology and Archaeology)
M.A., 1997, Syracuse University
(Anthropology and Archaeology)
Ph.D., 2004, Syracuse University
(Anthropology and Archaeology)

CERTIFICATIONS

Register of Professional Archaeologists
10-Hour OSHA Construction Safety Training
30-Hour OSHA Construction Safety Training
SWAC -Secure Worker Access Consortium

PROFESSIONAL EXPERIENCE

2001-Present: Chrysalis Archaeological Consultants
2001-Present: U.S. Army Corps of Engineers
1990-2001: Field and Laboratory Director – Brooklyn College Archaeological Research Center, Brooklyn College, CUNY

CONTACT INFORMATION

cricciardi@chrysalisarchaeology.com

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ADDENDUM:

End of Field Memorandum for the Record –
Phase IB Archaeological Monitoring for the Planting
Field Area as part of the Reconstruction of the
Olde Towne of Flushing Burial Ground
(aka Martin's Field), located on 46th Avenue between
164th Street and 165th Street,
Borough of Queens, Queens County, New York
(Contract Number: Q017-118M)

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Brooklyn, NY 11234



To: City of New York - Landmarks Preservation Commission
City of New York – Department of Parks and Recreation
Perkan Concrete Corp

From: Alyssa Loorya, Ph.D., R.P.A., Christopher Ricciardi, Ph.D., R.P.A. and Roseanne Quinn

Re: End of Field Memorandum –Phase IB Archaeological Monitoring for the Planting Field Area as part of the Reconstruction of the Olde Towne of Flushing Burial Ground (aka Martin’s Field), located on 46th Avenue between 164th Street and 165th Street, Borough of Queens, Queens County, New York (Contract Number: Q017-118M).

Date: June 5, 2021

I. INTRODUCTION

In 2020, Perkan Concrete Corp (Perkan) contracted with Chrysalis Archaeological Consultants, Inc., (Chrysalis) on behalf of the City of New York – Department of Parks and Recreation (NYC Parks) to provide all Cultural Resource Management (Archaeological) services for *The Reconstruction of the Olde Towne of Flushing Burial Ground* (aka Martin’s Field) project. The project site is located on 46th Avenue between 164th Street and 165th Street, Borough of Queens, Queens County, New York (Contract Number: Q017-118M) (Maps 01 and 02).

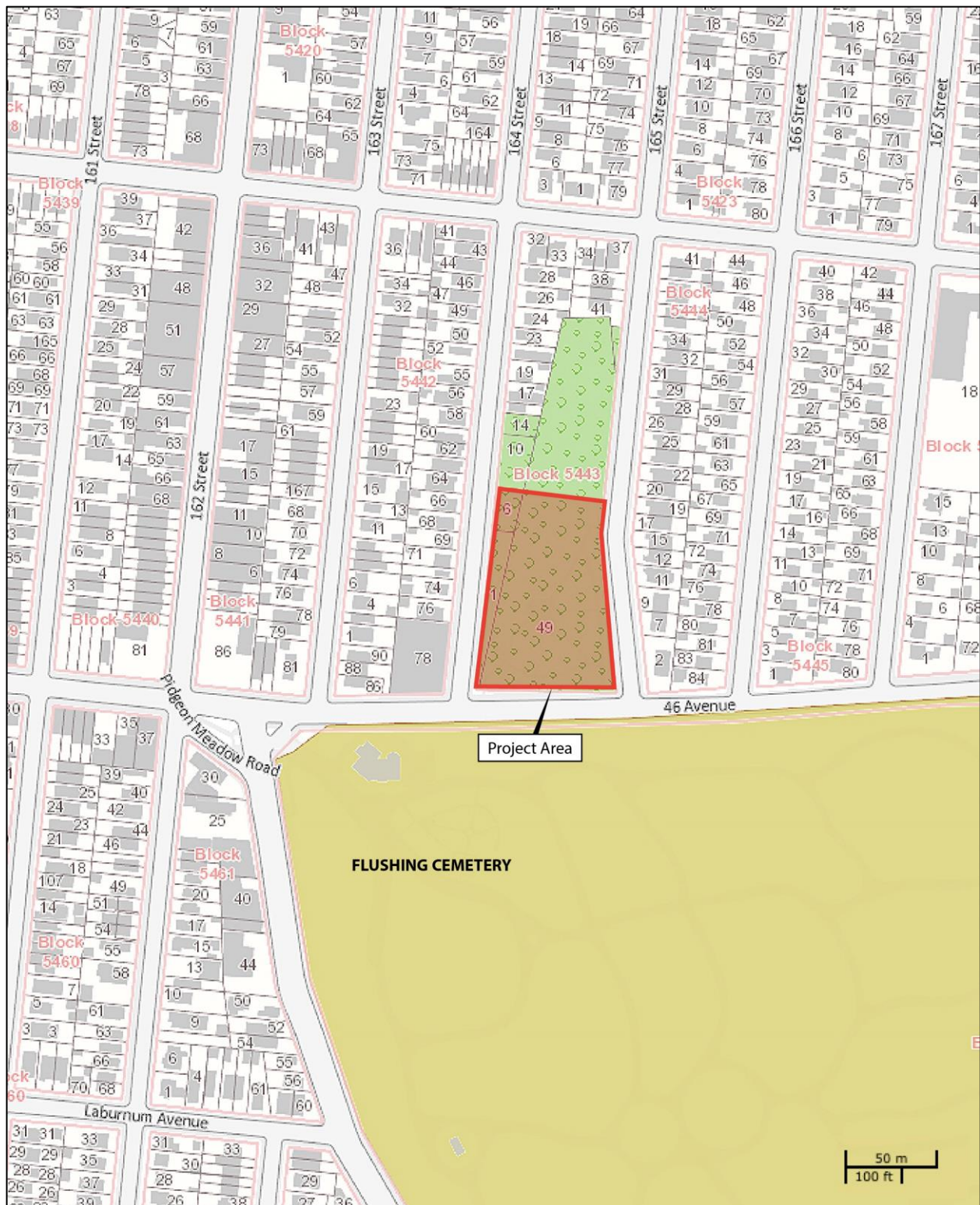
The Olde Towne of Flushing Burial Ground Park is situated between 45th and 46th Avenues and 164th and 165th Streets in the Flushing neighborhood of Queens. Until the late 2000s the park was commonly known as Martin’s Field.

Chrysalis completed archaeological monitoring that was detailed in the Scope of Work provided by Parks in 2020 (Chrysalis 2020). A Phase IB Report was developed, submitted, and subsequently approved by Parks and the City of New York – Landmarks Preservation Commission (NYC LPC) (NYC LPC 2020).

In May 2021, Perkan contacted Chrysalis requesting additional monitoring during the planting of several trees within the previously monitored Area of Potential Effect (APE) (Map 03). Chrysalis contacted the NYC LPC via email to inform them of the upcoming work and it was agreed that an End of Field Memorandum (EOF) would be developed at the conclusion of the one day planting project. This EOF will be addended to the original Phase IB Report.



Map 01: USGS Topographic Map 7.5, Flushing Quad
(United States Geological Survey 2019).



Map 02: OASIS map of project area (OASISnyc 2020).

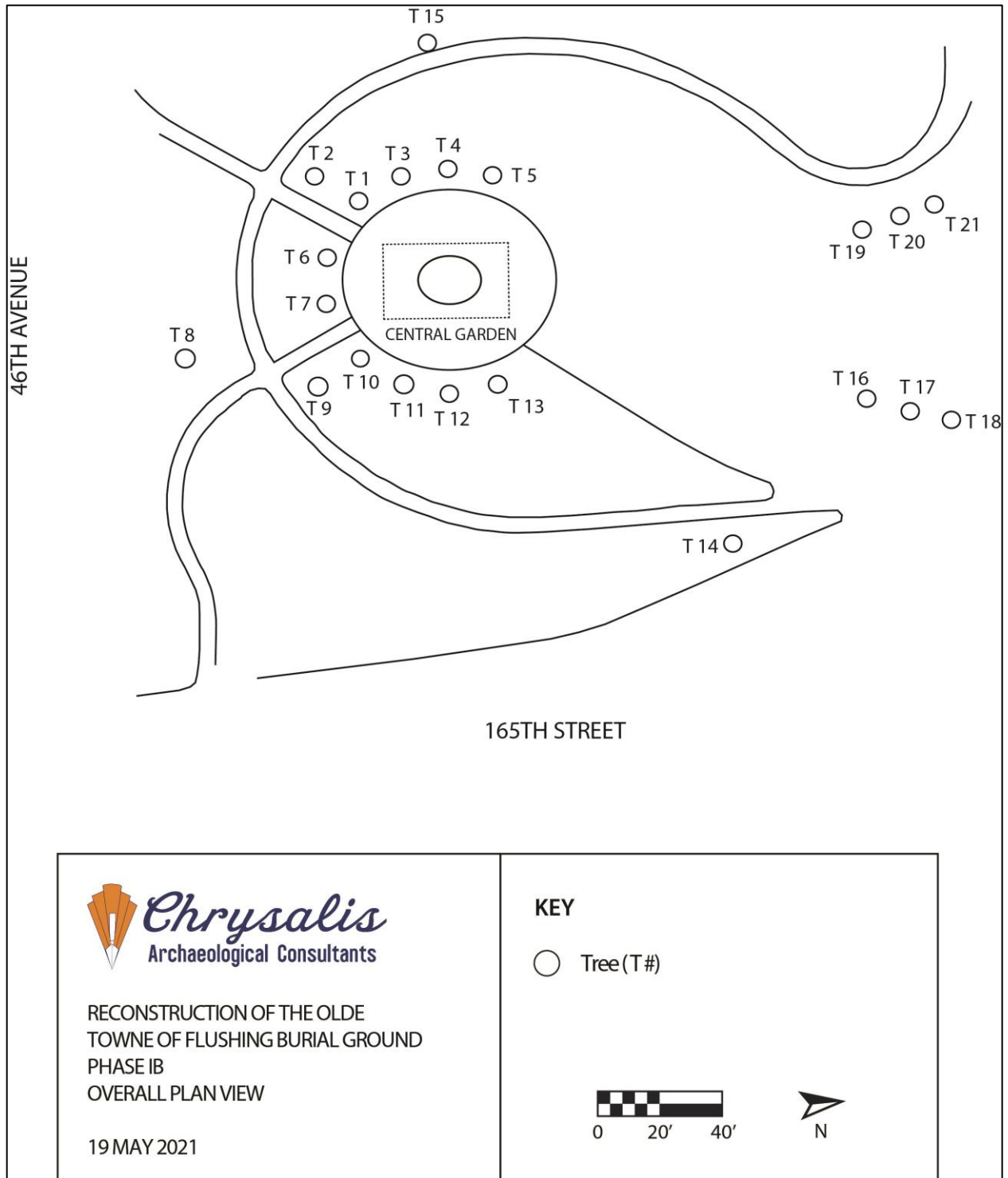
II. ARCHAEOLOGICAL MONITORING

Excavation for a total of 21 trees was monitored (Map 05 and Image 01). The excavation for each tree was conducted both mechanically, with a backhoe, and by hand, with shovels, to a maximum depth of 2.1' (0.6m) below ground surface. The monitoring results are organized in 2 areas for ease of discussion. Area 1 contains the results from Tree #'s 1 – 13, and 15. Area 2 contains the results from Tree #'s 14 and 16-21¹.



Image 01: Area of tree plantings.

¹ Note: Additional tree excavation images are presented in Appendix A.



Map 05: Archaeologically Monitored Areas of Tree Plantings

Excavation Results – Area 1

Two distinct strata were exposed in Area 1 during the excavation for Tree #'s 1-13 and 15 (Image 02, Table 01). Excavation reached a maximum depth of 2.1' (0.6m) below ground surface and extended 3.1' (0.9m) from north to south and 3.2' (0.1m) east to west.

The stratigraphy of the excavation areas encircling the central garden and monument, Tree #s 1, 3-5 and 10-13, was generally uniform and characterized by a loamy sand underlain with a deposit of sandy loam.

The area of excavation for Tree # 2, located southwest of Tree #1, had an upper stratum of loamy sand underlain with fill and/or redeposited mixed fill containing fragments of concrete.

The area of excavation for Tree #15 was located northwest of Tree #2. Three strata were exposed. A very dark grayish brown sandy loam was underlain with a dark yellowish brown silt loam with a few rocks. A deposit of yellowish clay loam extended to the base of excavation at 2.0' (0.6m) below ground surface.

Three strata were exposed in the excavation for Tree #8. A layer of sandy loam with gravel and pebbles was underlain with a dark yellowish brown fill deposit. The base stratum consisted of an ashy deposit of sandy loam.

No archaeologically significant historic material and features were recovered from Area 1.



Image 02: General soil conditions from Area 1

Table 01: Representative Stratigraphic Profile for Area 1.

STRATUM	DEPTH (BGS)	MUNSELL	SOIL TYPE	COMMENTS
I.	0 – 0.9' (0-0.3m)	10YR 3/2 Very Dark Grayish Brown	Loamy Sand	
II.	0.9 – 2.1' (0.3-0.6m)	10YR 4/4 Dark Yellowish Brown	Sandy Loam	Pebbles and Gravels

Excavation Results – Area 2

Three strata were exposed during excavation in Area 2 (Tree #s 14 and 16-21). A landscaped A Horizon was underlain with 2 fill deposits (Image 03, Table 02). Excavation reached a maximum depth of 2.0' (0.6m) below ground surface and extended 2.9' (0.9m) from north to south and 3.4' (1.0m) east to west.

The stratigraphy in the excavation area for Tree #'s 16-21 was generally uniform. A layer of topsoil measuring to 0.4' (0.1m) below ground surface was consistently present underlain with a dark yellowish brown silt loam. A few cobbles were present in the second stratum of Tree # 16. The base stratum consisted of a homogenous fill deposit.

Two strata were exposed in the excavation area for Tree #14, located southeast of Tree #s 16-21 . A layer of topsoil with a few gravels was underlain with a brownish yellow fill deposit. No cultural material was encountered.

A few brick fragments were observed in second stratum of the excavation area for tree #17. The brick was not part of an intact archaeological deposit, therefore was not retained. No additional archaeologically significant historic material and features were encountered in Area 2.



Image 03: General soil conditions from Area 2

Table 02: Representative Stratigraphic Profile for Area 2.

STRATUM	DEPTH (BGS)	MUNSELL	SOIL TYPE	COMMENTS
I.	0 – 0.4' (0-0.1m)	10YR 2/2 Very Dark Brown	Silt Loam	
II.	0.4 – 1.5' (0.1-0.5m)	10YR 4/4 Dark Yellowish Brown	Sandy Loam	Few Brick Fragments
III.	1.5 – 2.0' (0.5-0.6m)	10YR 4/6 Dark Yellowish Brown	Clay Loam	

III. SUMMARY and RECOMMENDATION

The 21 excavation units for the tree plantings did not reveal any indication of significant, *in situ*, stratigraphic levels and/or material remains. Nor were any human remains observed. Brick fragments and gravel were observed in some of the excavation pits.

The uniformity of the soil deposits, in association with the fragmented bricks and gravel, indicate that this area was previously excavated, and additional materials were placed here. This most likely occurred during the last major renovation of the park in the early 2000s, as described in the three previous Phase IB Reports (Chrysalis 2005, 2006 and 2020).

Based on the lack of stratigraphy and material remains recovered, the area does not warrant additional archaeological monitoring if excavation depths are to the level of approximately two feet (.05m) below ground surface. Excavation beyond that should be considered for potential monitoring due to the previous nature of the park as a burial ground.

IV. REFERENCES

City of New York – Geographic Information System.

2020 OASISnyc

City of New York – Landmarks Preservation Commission.

2020 Approval of the Phase IB Monitoring Report for the Reconstruction of the Olde Towne of Flushing Burial Ground (aka Martin’s Field), located on 46th Avenue between 164th Street and 165th Street, Borough of Queens, Queens County, New York (Contract Number: Q017-118M).

Chrysalis Archaeological Consultants.

2005 Martin’s Field; Queens, New York- Phase IB Cultural Resource Monitoring Report- Project Number: Q017-104M.

2006 Martin’s Field- Phase II Project; Queens, New York- Phase 1B Cultural Resource Monitoring Report- Project Number: Q017-105M.

2020 Phase IB Archaeological Work Plan for The Reconstruction of the Olde Towne of Flushing Burial Ground (aka Martin’s Field), located on 46th Avenue between 164th Street and 165th Street, Borough of Queens, Queens County, New York (Contract Number: Q017-118M).

United States Geological Survey (USGS).

2019 USGS Topographical Maps, Flushing Quadrant. U.S. Department of the Interior. Washington, D.C.

Appendix A:
Additional Tree Excavation Images



Image 04: Tree One – Final Depth



Image 05: Tree Two – Final Depth



Image 06: Tree Four – Final Depth



Image 07: Tree Seven – Final Depth



Image 08: Tree Ten – Final Depth



Image 09: Tree Fifteen – Final Depth



Image 10: Tree Nineteen – Final Depth



Image 11: Tree Twenty-One – Final Depth

ARCHAEOLOGY

Project number: ER.Q (NYC DEPT. OF PARKS AND RECREAT)
Project: OLDE TOWN FLUSHING CEMETERY
Address: 165 STREET **BBL:** 4054430049
Date Received: 6/7/2021

This document only contains Archaeological review findings. If your request also requires Architecture review, the findings from that review will come in a separate document.

☐ **No archaeological significance**

☐ **Designated New York City Landmark or Within Designated Historic District**

☐ **Listed on National Register of Historic Places**

☐ **Appears to be eligible for National Register Listing and/or New York City Landmark Designation**

☒ **May be archaeologically significant; requesting additional materials**

Comments: The LPC is in receipt of the, "End of Field Memorandum –Phase IB Archaeological Monitoring for the Planting Field Area as part of the Reconstruction of the Olde Towne of Flushing Burial Ground (aka Martin's Field), located on 46th Avenue between 164th Street and 165th Street, Borough of Queens, Queens County, New York (Contract Number: Q017-118M)." dated June 5, 2021 and prepared by Chrysalis Archaeological Consultants.

The LPC concurs with the memo. Would CAC please append this memo to the related IB report pdf and submit it to LPC for our archives?



6/15/2021

SIGNATURE

Amanda Sutphin, Director of Archaeology

DATE

File Name: 33826_FSO_ALS_06092021.docx