CULTURAL RESOURCE MONITORING PLAN
GOWANUS CANAL SUPERFUND SITE
BOROUGH OF BROOKLYN, NEW YORK

Prepared For:

Gowanus Canal Environmental Remediation Trust (GCERT)

For Review By:

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1.0 INTRODUCTION

The United States Environmental Protection Agency (USEPA) issued a Record of Decision (ROD) for the Gowanus Canal Superfund Site in September 2013. The project site is located in the Borough of Brooklyn, New York (Site) as shown on the Area of Potential Effect (APE) map book (Appendix A). This Cultural Resource Monitoring Plan will outline the basic protocol to be implemented for cultural resources (historic and archaeological resources) encountered or anticipated during the archaeological monitoring for the dredging, excavation and debris removal activities related to the remediation efforts at the Site. This and any site-specific protocols proposed under the USEPA mandate will need to be reviewed and approved by the USEPA and the New York State Office of Parks Recreation and Historic Preservation (OPRHP aka SHPO) prior to implementation as per Section 106 of the National Historic Preservation Act (NHPA).

All work will be conducted in accordance the *Secretary of the Interior Standards and Guidelines for Archaeology and Historic Preservation 1983; as amended*, *Section 106 of the National Historic Preservation Act*; *New York State Historic Preservation Act of 1980, section 14.09,* the New York Archaeological Council's *Standards for Cultural Resource Investigations and the Curation of Archaeological Collections in New York State* (1994) and the *Guidelines for the use of Archaeological Monitoring as an Alternative to Other Field Techniques* (adopted by the New York Archaeological Council 2002*)*. Qualified Archaeologists who meet or exceed the *Secretary of the Interiors (SOI) Professional Qualifications Standards* published in the Code of Federal Regulations, 36 CFR Part 61 will conduct or oversee the archaeological monitoring.

Activities that could require archaeological monitoring are those with the potential to impact archaeologically sensitive soils or structures located along the water ward side of the Gowanus Canal, portions of the canal that have been filled in and will be restored, the first 10 feet on the landward side of the bulkhead walls of properties included in the APE and potential staging areas for heavy equipment and/or soil stockpiles not on previously hard packed surfaces within the Gowanus Canal Historic district Boundary. This monitoring plan sets forth a general protocol that may need to be altered or refined for activities in specific locations or for activities not anticipated under this plan. Site-specific monitoring plans may need to be created based on this plan.

2.0 PREVIOUS REPORTS

Several previous cultural resource studies have been conducted on the Gowanus Canal. They are the *National Register of Historic Places Eligibility Evaluation and Cultural Resources Assessment for the Gowanus Canal* by Hunter Research, Raber Associates and Northern Ecological Associates, Inc. (Hunter Research et al, 2004), which defined the extents of the potential historic district that was determined eligible for the National Register of Historic Places (NRHP) by the State Historic Preservation Office (SHPO) in 2006. The *Gowanus Canal Preliminary Bulkhead Study* (McVarish, 2010) and *Side Scan Sonar Report* (Cox, 2010) identified possible historic bulkheads and submerged cultural resources in the canal. The *Archaeological Sensitivity Study; Gowanus Canal* (Lee et al, 2011) identified areas of archaeological sensitivity for the canal and adjacent areas.

These known and potential cultural resources are depicted on APE map books (Appendix A) prepared for the project (AHRS 2016). Additional previously unidentified cultural resources may be encountered during the project. Any potential cultural resource encountered during the project will be reviewed by an AHRS archaeologist to determine if it qualifies as a cultural resource or not. Any debris removal, excavation/dredging or staging activities not on previously hard pack surfaces in or adjacent to these known or potential resources will be archaeologically monitored as needed.

Prehistoric Archaeological Sensitivity

According to the *Archaeological Sensitivity Study; Gowanus Canal* (Lee et al, 2011) the areas of prehistoric potential are depicted on the APE map books and consist of two areas (Appendix A):

- On the west side of the canal between Sackett Street and just north of Douglas Street; and
- On the east side of the canal an area from just south of 2nd Street (includes the former 1st Street Turning Basin) up to Degraw Street.

Neither of these areas are anticipated to be impacted by the dredging; however, if upland excavation is needed or if the former 1st Street Turning Basin is excavated beyond its original design dimension (length, width and depth) there is the potential to impact prehistoric cultural resources.

Historic Archaeological Sensitivity

According to the *Archaeological Sensitivity Study; Gowanus Canal* (Lee et al, 2011), "Of greater certainty are the survival of archaeological resources associated with the Gowanus Canal itself and the industries that grew beside it in the mid- to late-19th century. The canal and its basins include over two miles of timber cribwork bulkheads that have been identified as part of the canal's historic fabric and are likely to contain important information about the canal's design and construction. Within the canal itself are the remains of at least four shipwrecks and a high likelihood that several other ship hulls have survived within the fill of the 1st Street Basin." Based on this study there is a moderate to high potential for historic archaeological resources in the upland areas surrounding the canal and a moderate to high potential for submerged archaeological resources within the limits of the canal. Below is a list of historic and potential historic resources that that have been identified in the APE (Appendix A):

- Historic Bulkhead and Cribbing along the canal;
- Contributing Resources to the eligible Gowanus Canal Historic District;
  - The Independent Subway System 9th and 10th Street Viaducts;
  - The Kentile Building & Sign (no longer extant);
  - The Ice House/Brewery Complex;
  - The Carroll St Bridge;
  - The Former Burn Brothers Coal Pockets;

    - The 3rd Avenue Bridge; and
    - The Gowanus Canal Pumping Station.
- Areas of Historic Mill Complexes consisting of minimally a mill building, water wheel and water race, but also might have multiple mills, a dwelling, outbuildings, wells and privies in the area. The three Mill locations identified are:
    - Cole's Mill Complex by Huntington Street;
    - Denton's Mill Complex in the area of the former 1st Street Turning Basin; and
    - Brower's (Freeke's) Mill Complex just north and east of the Union Street Bridge.
- Locations of Colonial Farmsteads – mapped or recorded by other documentary means these locations could contain building foundations, wells, cisterns and privies, similar to those located at the mill complexes;
- Potential Burial Grounds – most likely historic and associated with the historic farmsteads, mill complexes or soldiers from Stirling's and/or Sullivan's retreat during the Revolutionary War;
- Stirling's and Sullivan's Avenue of Retreat during the Revolutionary War – these areas represent the path taken by retreating American soldiers under the command of Generals Stirling and Sullivan. Since the retreats were not organized, historic artifacts (weapons, utensils, coins, buckles, buttons, saddles, etc.) and/or archaeological sites (hearths, burials, privies, etc.) from the retreating army may exist in these areas; and
- Previously identified potential submerged cultural resources include;

Sonar Contact No.	Contact Type
37a	Wood barge, square end – Recommended not significant
39	Potential material from ships – Level 2 Monitoring recommended
37b	Wood barge, square end – Recommended not significant
37c	Potential material from ships – Level 2 Monitoring recommended
31	Potential material from ships - Removed
31a	60' long ship, round end - Removed
31b	Potential material from ships - Removed

The locations of the colonial farmsteads, potential burial grounds and the Cole's and Denton's Mill Complexes are outside of the current APE, therefore, no impacts to these resources are anticipated at this time. The Brower's Mill Complex and Stirling's and Sullivan's Avenue of Retreat during the Revolutionary War is mapped in the APE; however, unless deep upland excavation occurs, these resources are unlikely to be impacted by the remedial activities. Regardless, all of these have been depicted on the APE map book (Appendix A) for planning purposes. For the other identified resources, if excavation/dredging activities are proposed within 25 feet of the identified resource, the extent of excavation/dredging will be evaluated to determine if the excavation/dredging has the potential to be affected. If the potential to affect exists, then archaeological monitoring, archaeological surveys or other site-specific activities may be required for that work.

3.0 SCOPE OF WORK

Remediation efforts within the APE with the potential to affect cultural resources are subject to archaeological monitoring. The goal of archaeological monitoring is to avoid or mitigate effects to cultural resources within the APE, described in the section below. It should be noted that some elements related to the Gowanus Canal remediation are not included in this effort. For example, installation of combined sewage overflow retention tanks is the responsibility of New York City and thus are not considered in the APE for the purposes of this plan.

Dredging will be conducted starting from 3rd St to the head of the Canal extending from bank-to-bank. The dredging depth extends to depths of approximately 15 ft below the current bathymetry. In some select areas, the upper couple feet of the native sediment will also be removed to accommodate infrastructure around the Canal (e.g., the Flushing Tunnel). The dredging will be conducted in three phases:

- Phase I Dredging will be conducted to create navigational access for bulkhead support installation and other activities along the Canal;
- Phase II Dredging will be conducted to remove soft sediment to the pre-In Situ Stabilization (ISS) elevation, and
- Phase III Dredging will be conducted after ISS to remove the remainder of soft sediment.

All dredging will be conducted via mechanical means with sediment dredged via a bucket, placed in a scow, and transported to the processing location for stabilization prior to end disposal. Additional potential work included the installation of bulkhead supports, some of which may need tie-backs in the upland areas.

3.1 Area of Potential Effect (APE)

The APE includes any location where potentially ground disturbing/staging project-related activities are anticipated to be conducted within the defined boundary depicted on the APE map book in Appendix A. Areas of known cultural resources (historic or archaeological resources) are also depicted on the APE map book for reference and are discussed in Section 1.2. Some known cultural resources, including prehistoric sensitivity areas, colonial farmsteads and potential burials grounds, are located outside of the current APE and are depicted only for planning purposes as the project progresses. Additional previously unidentified cultural resources may be encountered during the project. A professional archaeologist will review any potential cultural resource encountered during the project in order to determine if it qualifies as a cultural resource. As the project progresses, the current APE may need to be adjusted in areas where bulkheads are replaced and tieback anchors are installed or to achieve other unforeseen project needs.

Archaeological monitoring will be conducted within the APE on one of two levels as described in Section 4 of this plan. Areas of archaeological monitoring potentially include any sonar contacts that could be potential cultural resources in the water, the bulkheads and the first 10 feet on the

landward side of the bulkhead walls included in the APE or any equipment or supply staging areas within the APE not previously reviewed for cultural resources. Additionally, any excavation activities (e.g. trenching) used to mitigate possible adverse effects to known historic properties may also require monitoring.

3.2 Definitions of Finds

The following definitions will be used by the AHRS archaeologist/archaeological monitor to establish whether a found object is an artifact, object of local interest or debris.

Artifacts

Artifacts are defined as meeting all of the following criteria:

- Identifiable by type, function, material and time period;
- Has an identifiable association with a specific building, site, event, or person along the Gowanus Canal during the canal's period of significance (1853 to 1965); and
- Confirms previously unconfirmed archival information along the canal or reveals new information that changes our understanding of the history/development of the area.

Objects of Local Interest

Objects of Local Interest are defined as meeting all of the following criteria:

- Identifiable by type, function, material and/or time period;
- Has a general association with the area, but not with a specific site, event, or person along the Gowanus Canal during the canal's period of significance (1853 to 1965); and
- Does not confirm previously unconfirmed archival information along the canal or reveal new facts that changes our understanding of the history of the area.

Debris

Debris is defined as any other item recovered from excavation/dredging, including unidentifiable objects, objects with no apparent association with the local area, construction debris, objects made after 1965 and natural items (such as trees, brush, rocks, etc.).

4.0 ARCHAEOLOGICAL MONITORING

During the archaeological monitoring, historic properties will be avoided to the greatest extent possible. Historic properties include districts, sites (including archaeological sites), buildings, structures and objects that are eligible for listing or listed in the National Register of Historic Places (NRHP).

Archaeological monitoring of varying degrees will be required for the debris, sediment and soil removal. Monitoring may need to be conducted on both land and in water for submerged resources. This plan includes the methodology for archaeological monitoring, weekly and final reporting, the treatment of finds, contingencies for unanticipated discoveries and the planning for the curation of artifacts, if needed. If significant historic features, prehistoric and historic

artifacts or artifact concentrations are present, consultation between AHRS, the USEPA, SHPO, GCERT and any other appropriate parties will be needed to determine the best way to proceed.

In the event that a potential find requires more time to investigate, an additional archaeological monitor and/or monitoring assistant will be assigned to help with the investigation. The Owner's Representative and the project team will be notified upon any encounters with unique features or similar buried structures that may require additional archaeological field staff.

4.1 Notice for Monitoring

AHRS will be notified for the need for an archaeological monitor five business days or more prior to the beginning of excavation, dredging or grading. Notice will be made by the Owner's Representative to schedule monitoring.

4.2 Training Onsite Personnel

As part of the archaeological monitoring, AHRS will conduct training briefings on the identification of potential cultural resources for the contractor staff engaged in excavation/dredging activities and any other relevant personnel working on material and sediment removal. Other staff identified by GCERT and the USEPA will also be trained as requested. Training should occur approximately 3 to 5 business days prior to the start of excavation or dredging activities and will consist of a PowerPoint presentation and discussion by an AHRS archaeologist reviewing the nature of potential cultural resources and how to recognize them. The intent of this training is to assist non-archaeological staff in identifying potential cultural resources during Level 1 monitoring and to provide an understanding of their importance. The training will also convey the protocol to be followed in the event any potential cultural resources are encountered during remediation activities and Level 1 monitoring.

4.3 Levels of Monitoring

Potential cultural resources can be prehistoric (stone tools, pottery, animal remains, fire cracked rock, etc.) or historic (stone or brick foundations, structures, metal tools, weapons [bayonets, pistols, swords, rifles], ceramics [plates, cups, jars], glass bottles and jars, leather products [shoes, jackets, saddles], kitchen implements, building materials, etc.). The archaeological monitoring of debris, sediment and soil removal, both on land and in the water, shall be carried-out at one of two levels.

4.3.1 Level 1 Monitoring

Level 1 monitoring for the dredging of soils and sediment within the APE will be conducted by remediation contractors trained in general archaeological protocols and recognition of potential resources noted in section 4.5. Areas of Level 1 monitoring includes any dredging in the existing canal that does not extend into the native alluvial soils or is within 25 feet of any previously identified sonar targets. Level 1 monitoring includes the areas identified for the

Brower's Mill Complex and Stirling's and Sullivan's Avenue of Retreat during the Revolutionary War unless it extends into native alluvial soils or is within 25 feet of any previously identified sonar targets. The dredging of native alluvial sediments, any soils within 25 feet of identified cultural resources of the Gowanus Canal Historic District, and within 25 feet of any previously identified sonar targets, that have not yet removed/resolved and all upland excavation is not included in Level 1 monitoring and becomes part of Level 2 monitoring.

Offsite screening of excavated or dredged soils and sediments will be conducted at the Clean Earth site in New Jersey. This screening will be conducted by contractors trained in Level 1 archaeological monitoring protocols and recognition of potential resources noted in section 4.2. Offsite screening will follow the screening protocol described in section 4.6. In the event that an unanticipated discovery is encountered (such as a concentration of objects or feature) the contractor staff will follow the unanticipated discovery protocol set forth in Section 4.8.

4.3.2 Level 2 Monitoring

Level 2 monitoring is reserved for areas of excavation/dredging that retain the potential for prehistoric or historic cultural resources and features. An AHRS archaeologist will monitor either from the barge or the shore depending on the situation at that time.

In the Canal

As a result of previous dredging and removal of sediments in the 1970's, Level 2 monitoring within the canal will only be conducted during the dredging of native alluvial sediments, within 25 feet of identified cultural resources of the Gowanus Canal Historic District, and within 25 feet of any previously identified sonar targets, that have not yet removed/resolved.

Upland Areas

Level 2 monitoring will include upland excavation within 10 feet of timber bulkhead walls, the former 1st Street Turning Basin near the fill/native soil interface and bulkhead walls, within 25 feet of any identified cultural resources of the Gowanus Canal Historic District and any areas identified for Level 2 monitoring as indicated in the map book (Appendix A).

If Level 2 monitoring uncovers any potentially significant finds, the on-site archaeological monitor will make any determinations of cultural value in consultation with the Principal Archaeologist. Offsite screening will follow the screening protocol described in section 4.6.

4.4 General Monitoring Protocol

Level 1 General Monitoring Protocol

The general Level 1 monitoring protocol during the debris, sediment and soil removal in Level 1 Areas will be monitored by the trained contractors. Each machine operator or other designated trained individual will monitor their machine or a machine assigned to them for monitoring purposes. If the monitoring contractor identifies any potential cultural materials during debris, soil or sediment removal, the contractors will place the object in a part of the scow where it will not be damaged so that it can be removed and photographed at the offsite screening location and reviewed by an AHRS archaeologist. In the event that portions of a vessel or other large feature is encountered during debris, soil or sediment removal during Level 1 monitoring, AHRS should be contacted immediately and the unanticipated discovery protocol in section 4.8 should be followed. The contractors will also take photographs before, during and after the daily debris, sediment and soil removal activities.

Level 2 General Monitoring Protocol

The general Level 2 monitoring protocol during the debris, sediment and soil removal in Level 2 areas includes close observation by experienced archaeologists. It is assumed that debris, sediment and soil removal will be conducted by one machine and operator, which will be monitored by one archaeological monitor. If additional machines are used during Level 2 monitoring, additional archaeological monitors will be used for the project. The archaeological monitor will take photographs before, during and after the daily debris, sediment and soil removal activities.

For activities within equipment and staging areas: The Principal Archaeologist or archaeological monitor will identify any known cultural resources within areas identified for staging within the APE. Based on professional judgment, the Principal Archaeologist or archaeological monitor will: 1) work with the contractor to identify suitable locations that meet the conditions set forth in this agreement 2) possibly establish a buffer zone around the historic property and enforce a no work zone or 3) determine if archaeological monitoring is needed.

Should the archaeological monitor observe structures or features of archaeological potential during the debris, soil or sediment removal activities, he or she may, request the machine operator to:

- Stop excavation/dredging as necessary;
- Avoid working in the area of the potential resource; or
- Alter the way in which the machine is operated.

When a machine operator is requested to stop, the monitoring archaeologist will log the time, the action taken, and the duration of the stoppage. This log will document work stoppages and record the impact of monitoring procedures and practices on the debris, soil or sediment removal.

To minimize delays for the debris removal or excavation/dredging work, any identified feature will be explored by way of either small scale exploratory hand-excavation (on land only) or targeted machine excavation/dredging or possibly both. The archaeological monitor will coordinate these investigations to expedite a determination of significance to the extent practicable. Should the exploratory examination reveal the area to not be significant, the area can be returned to manmade debris removal or excavation/dredging. If long-term stoppage (more than 2 hours) is required, and the archaeological monitor cannot determine the extent of the deposit or determine whether it may be archaeologically significant, AHRS will consult with the project team and USEPA/SHPO to determine the best path forward.

The archaeological monitor will also:

- Oversee the conduct of the monitoring and ensure a professional standard of recording;
- Recover any potential artifacts or objects of local interest observed and record their location, if possible; and
- Recover all finds associated with cultural resource deposits which have been disturbed by the excavation during monitoring;

4.5 Debris Removal in Water or on Land

The definition of debris is established in section 3.2 above. In areas where no cultural resources are anticipated field monitoring will follow the Level 1 protocol. In addition, certain restoration activities (driving sheet pile, back filling, grading back filled areas, etc.) will not require monitoring. The procedures outlined here for monitoring of debris removal will be included in any debris removal plans and provided in advance to the contractor(s) retained to perform the debris removal activities.

During Level 2 onsite monitoring should the archaeological monitor observe any features, artifact concentrations or structures of archaeological potential during debris removal activities, he or she, will follow the general protocol outlined in section 4.4.

In addition to the General Monitoring Protocol described in section 4.4, Debris Removal Activities on Land should follow the applicable procedures below:

1. When using heavy equipment, all work will be performed from hard or firm surfaces to the fullest extent possible, to avoid sinking into soft soils;
2. The Contractor will, to the fullest extent possible, ensure that soil disturbance is minimized when operating heavy equipment on wet soils (6 inches or less) in areas where excavation is not anticipated;
3. Potential resources identified by the archaeological monitor may require additional investigation (by way of small scale, exploratory hand-excavation) to identify the nature and extent of potential cultural resources. Should an exploratory examination reveal the site to be non-archaeological, this should be documented and the area returned for debris removal;

4. If intact cultural resource deposits or features are found, then hand excavation by the archaeological monitor or additional archaeologists may be needed to determine the extent of the deposits and features. Once an initial determination of the archaeological significance is made by the Principal Archaeologist, the Owner's Representative will be notified. The GCERT Representative is responsible for notifying the USEPA and SHPO. The project team will work with USEPA and SHPO to determine the best way to proceed; and,
5. For surface grading and site cleanup the Contractor will ensure, to the fullest extent possible, that site grading will be limited to the area of disturbance for that specific activity and to within the first six (6) inches of the existing surface elevation outside the area of disturbance.

In addition to the General Monitoring Protocol described in section 4.4, Debris Removal Activities in the Water should follow the applicable procedures below:

1. The Principal Archaeologist and the archaeological monitor will compare data related to the location(s) of known submerged historic properties/objects against debris removal target locations identified by side-scan sonar data;
2. The archaeological monitor will utilize the side scan sonar and target evaluation reports to identify both known and unknown historic properties within the APE; and,
3. For unknown or unanticipated resources additional investigation may be needed. This may be accomplished by removing relevant debris from the water for evaluation, if the deposit is small enough. For larger finds, additional side scan sonar or underwater archaeologists may be required to evaluate the potential resource in order to make a determination.

4.6 Sediment and Soil Removal in Water or on Land

The onsite archaeological monitoring of sediment and soil removal (on land and in the water) shall be carried out in accordance with the protocol described in Section 4.4. The same two-level approach for monitoring will be used for soil and sediment removal with trained contractors conducting the Level 1 monitoring and AHRS archeologists performing the Level 2 monitoring. The protocol below applies to any discoveries that could be cultural resources.

In some of the upland areas the risk of encountering potential buried artifacts and objects of local interest during soil and sediment removal exists. These buried resources could be impacted by the movements of heavy machinery. Therefore, it is imperative that once an area of potential buried artifacts and objects of local interest has been confirmed, it should be subject to the following protocol:

In addition to the General Monitoring Protocol described in section 4.4, Soil Removal Activities on Land should follow the applicable procedures below:

1. Potentially affected areas will be appropriately fenced off and clearly marked with warning signs;

2. The area will be photographed, recording time and date;
3. Features will be logged, numbered sequentially (i.e. in order of their discovery) and their extent and location surveyed;
4. Potential resources identified by the archaeological monitor may require additional investigation (by way of small scale, exploratory hand-excavation) to identify the nature and extent of potential cultural resources. Should an exploratory examination reveal the site to be non-archaeological, this should be documented and the area returned for debris removal; and,
5. If intact archaeological deposits or features are found, then hand excavation by the archaeological monitor or additional archaeologists may be needed to determine the extent of the deposits and features. Once an initial determination of the archaeological significance is made by the Principal Archaeologist, the Owner's Representative will be notified. The GCERT Representative is responsible for notifying the USEPA and SHPO. The project team will work with USEPA and SHPO to determine the best way to proceed.

In addition to the General Monitoring Protocol described in section 4.4, Soil or Sediment Activities in the Water should follow the applicable procedures below:

1. The Principal Archaeologist and the archaeological monitor will compare data related to the location(s) of known submerged cultural resources against sediment or soil removal target locations identified by the *Side Scan Sonar Report, Gowanus Canal Brooklyn, Kings County, New York* by J. Lee Cox 2010 of Dolan Research, Inc.;
2. If unanticipated cultural resources are identified, the monitoring plan may need to be altered to investigate or mitigate the effect of the soil or sediment removal on the cultural resource. If needed investigation can be completed by divers, additional side scan sonar or other appropriate underwater archaeological techniques;
3. For unknown or unanticipated resources additional investigation may be needed. This may be accomplished by removing relevant debris from the water for evaluation, if the deposit is small enough. For larger finds, additional side scan sonar or underwater archaeologists may be required to evaluate the potential resource in order to make a determination.

4.7 Soil and Sediment Screening

Any soils or sediments removed from the Level 1 and Level 2 monitoring will be observed by the trained contractors at the offsite screening location. Any soils or sediments removed from the Level 2 monitoring area will be monitored by AHRS archaeologists. Dredged and excavated soils removed from the canal will be loaded into 100 cubic yard scows or larger barges and taken to Clean Earth (NJ) for screening on 4-inch vibrating screens on the land for sorting and photographing as per Level 1 monitoring.

Currently screening will be conducted at the Clean Earth facility at 24 Middlesex Avenue, Carteret, NJ. The screening for potential resources will be reviewed by AHRS archaeologist prior to disposal. All objects, less debris manufactured after 1965 as defined in section 3.2, recovered

each day and not easily identifiable will be rinsed off. All recovered objects will be digitally photographed and posted daily on a project portal, file sharing site, or other appropriate site where AHRS archaeologists can review the photographs and tentatively identify any artifacts or objects of local interest. Objects identified as potential artifacts or objects of local interest will then be placed in a controlled holding area until an AHRS archaeologist can visit the holding area and establish either its cultural resource value or determine that it is debris and can be discarded. At the end of each week of screening, AHRS will schedule an archaeologist to visit the appropriate site (Clean Earth, etc.) to review any tentatively identified artifacts or objects of local interest and make any recommendations for retention or disposal in the weekly memo described in section 4.13.1.

If a significant number of objects are waiting for review at the holding site additional visits may be needed for that week. The reviewing archaeologist may need additional rinsing to identify and fully document objects in the holding site. Documentation potential includes taking measurements, additional photographs and preparing detailed descriptions of objects depending on the object. Small, non-porous objects of local interest may be retained and turned over to USEPA for eventual public display, subject to future cleaning and/or decontamination procedures to be established.

Removal and screening of potentially contaminated sediments may result in the emission of odors. Protocols approved by the USEPA as odor control measures include the use of odor-suppressing foams, such as Rusmar AC-645, to control migration of odors during dredging and screening activities. These foams form a viscous foam barrier when applied to soil, debris, or dredge materials being loaded or transported in trucks and barges. The non-hazardous foam naturally degrades and can be easily washed from debris for closer inspection if needed.

4.8 Site-Specific Monitoring Plans and Other Cultural Resource Investigations

In situations where the scope of work changes or deviates from that described in section 3.0 a site-specific monitoring plan or other cultural resource investigation may be required. Once an area is identified as potentially requiring a site-specific monitoring plan or other cultural resource investigation, AHRS will coordinate with the Owner's Representative, the GCERT, the remediation contractor and the USEPA to determine if the scope of work can be altered to avoid or minimize any potential impacts. If avoidance or minimization is not possible then SHPO may need to be consulted with to determine the best path forward. The USEPA will make the final decision on the necessity of the site-specific monitoring plan or other cultural resource investigation.

4.9 Unanticipated Discoveries or Unanticipated Effects Protocol

During any debris, soil or sediment removal the potential for an unanticipated discovery (unknown structure, vessel, foundation, shaft feature, artifact concentration) or effect (unanticipated damage to a historic property, building, structure, archaeological site, etc.) is always possible. In the event of an unanticipated discovery during monitoring (Level 1 or 2) the

trained Contractor conducting monitoring, archaeological monitor, and/or the Contractor's representative will follow the process outlined below:

1. Stop construction activities in the vicinity of the discovery or unanticipated effect;
2. Take all reasonable measures to avoid or minimize harm with traffic cones and caution tap, orange snow fencing or other protective measure to the historic property until documentation requirements are complete;
3. If the archaeological monitor is on site, they will make an initial determination of significance then contact the Principal Archaeologist, the Owner's Representative who will contact the GERT and the USEPA to inform them of the find;
4. If the archaeological monitor is not on-site, the Owner's Representative will contact AHRS, the GERT and the USEPA. The contractor or site supervisor will provide any information currently available (i.e. photographs, description, etc.) on the find. AHRS will then review the information provided and attempt to make an initial determination of significance. AHRS will then contact the Owner's Representative to inform them of the find and when an archaeologist will be onsite to investigate;
5. Once on site, if not already present, the Archaeological Monitor will document the find as best as possible including:
    a. GPS coordinates in decimal/degrees of the find.
    b. Photographs of the find.
    c. A written description of the find.
    d. If needed the completion of an archaeological site form to be filed with the New York State Museum as well as submitted to the NY SHPO.
6. Instruct the contractor to gently place the resources back into the general location from which they were removed (both on land and in water) until a decision is made by USEPA in consultation with SHPO of what to do about the find; and,
7. In the event that an unexpected discovery or unanticipated effect is determined after retrieval of the find and the find cannot be placed back in the general location from which it was removed, further consultation with USEPA, SHPO, and other consulting parties may be required.

The excavator/dredge will move to a different location until either the Principal Archaeologist can determine, through the information provided, that the find is not archaeologically significant or the Principal Archaeologist or archaeological monitor arrive on site and complete the documentation and consults with USEPA through the GCERT on how to proceed. It is possible that it may take a day or two after the find for archaeological monitor or Principal Archaeologist can arrive on site to investigate. Once on site, the Principal Archaeologist or archaeological monitor will record and document the findings with the assistance of the excavator/dredge under the archaeologist's observation and guidance. No one will be permitted to enter into this protected zone until the archaeologist arrives onsite. Excavation and grading cannot continue in this area until it is the area released back to the excavation/dredge team.

4.10 Disturbance or Removal of Historic Properties

If it is determined that a historic property must be removed or may be affected by a project activity further consultation with the SHPO, USEPA and other consulting parties as appropriate will be required to complete the Section 106 review for that specific historic property. The USEPA will determine if any identification and evaluation efforts will be required to inform the consultation process. The project team will not proceed with removal or disturbance of the historic property until this consultation process is completed.

4.11 Treatment of Finds

Prior to the building of the Gowanus Canal much of the canal was a part of the Gowanus Creek. The initial construction of the canal likely began about May 1853 (Lee et al, 2011). The canal experienced multiple episodes of improvement and expansion over the following decades. According to the *National Register of Historic Places Eligibility Evaluation and Cultural Resources Assessment for the Gowanus Canal* (Hunter Research, 2004) the period of significance associated with the canal design and construction and its association with the industrial nature of the area is from 1853 to 1965.

Objects from many different time periods are anticipated to be recovered during the dredging activities for the project. However, not all objects will have the same level of significance. Prehistoric or Precontact artifacts are some of the most sought out because they can help us better understand the history of the area. However, it is unlikely that there will be any Prehistoric or Precontact artifacts present in the areas where dredging is proposed because of the prior ground disturbance associated with the construction of the canal. There is a limited potential for Prehistoric or Precontact artifacts in the majority of the upland areas as well.

4.11.1 Artifacts/Objects of Local Interest to be Retained/Discarded

Any historic objects that were manufactured after 1965 would fall out of the period of significance. As a result, these objects would not provide any new information on the canal or the activities during its period of significance. Therefore, they would not be worth retaining and would be identified as debris, as defined in section 3.2. This debris may include: modern vehicles, tires, scrap lumber, plastic containers, modern bottles, plastic sheeting, cardboard, newspapers, shopping carts, buckets, modern ceramics, kitchen items, garbage, demolition debris, aluminum cans, furniture, clothing, personnel items, unidentifiable metal, etc. Natural objects including decaying wood from branches, trees, saturated logs and rocks are also included as objects not worth retaining. These objects, after being identified as debris, would be recommended for proper disposed.

There will also be a number of artifacts that will date to the period of significance and be associated with industrial activities in the area but will be contaminated and cannot easily be decontaminated. These contaminated artifacts could include cloth, yarn, wood, wood doors with business names on them, furniture, wagon parts, signs, other porous materials or any

other artifact that cannot be decontaminated. These artifacts will be inspected and documented in the field at the screening site. Following documentation these artifacts can be placed in the field storage site, however it recommended that these artifacts are properly disposed of instead due to the technical impracticability of decontamination. Similarly, there will be a number of objects of local interest, as defined in section 3.2, that will be from the period of significance but not qualify as artifacts. These objects should also be retained for review from the archaeological team.

Artifacts and objects of local significance that should be retained would include anything identifiable from the period of significance including industrial equipment, early motor vehicles and parts, ceramics, flatware, items from canal transportation (metal items from barges, boats and other shipping from the period of significance), nonporous personnel item (combs, jewelry, coins, belt buckles, etc.) and any other artifact determined potentially significant. Artifacts that are deemed not worth curating after all the field and laboratory work is completed can be turned over to interested parties for display or for their collection, subject to cleaning/decontamination procedures to be established, USEPA determination regarding the appropriateness of such an action, and an agreement among all interested parties (including, at a minimum, the GCERT and the interested party) is recommended.

4.11.2 Treatment of Artifacts

All artifacts, that meet the definition of artifact in section 3.2, at the minimum will be rinsed and stored in a location determined in consultation with the USEPA. Many of the retained artifacts will be water logged in salt water and may require storage in water tanks to ensure that they do not rapidly disintegrate from drying. In addition, these water logged artifacts may need to be desalinated to reduce the natural breakdown process.

Artifacts inspected by the archaeological team will fall into two different categories; those that can be inspected and documented in the field at the screening site and those that need to go to the archaeological lab for further analysis. For artifacts that can be inspected and documented in the field at the screening site, the removal of sediment or other debris will be completed using hand tools, hand sprayers or power washers in the screening area. Artifacts will then be documented and placed in storage for future analysis, until it is determined what artifacts are to be curated or if determined they cannot be decontaminated, properly disposed of.

Artifacts that need to go to the archaeological lab will require decontamination prior to being transported to the lab. Smaller waterlogged artifacts can be maintained while in the lab for the analysis, but will need to be transported upon completion of the specific artifact's information as AHRS's lab does not contain large water tanks to store or desalinate salt water logged artifacts. Long term storage of water logged artifacts is not feasible at AHRS's lab. If decontamination cannot be achieved the artifact will be documented in the field as best as possible and moved to the storage location.

Artifacts stored at the field storage location will be retained for a time period of up to four months after identification. Artifacts transported to AHRS's archaeology lab will be retained for a period of up to 1 year from completion of the lab work, unless they require storage in water. After that timeframe AHRS will ship or deliver any processed artifacts to a USEPA-designated facility to await a determination of curation, donation or disposal. Artifacts to be prepared for curation will be determined in consultation with the USEPA and SHPO (see 4.10.3). Currently no storage location has been identified. The archaeological monitoring staff is not responsible for the decontamination of artifacts.

4.11.3 Treatment of Objects of Local Interest

Objects of local interest, as defined in section 3.2, may include small, non-porous objects of local interest can potentially be turned over to interested parties for display or for their collection, subject to cleaning/decontamination procedures to be established, a USEPA determination regarding the appropriateness of such an action, and an agreement among all interested parties (including, at a minimum, the GCERT and the interested party) is recommended. Any such arrangements will need to be made quickly so that numerous objects with no archaeological significance do not overwhelm the storage facility.

Objects of local interest stored at the field storage location will be retained for a time period of up to four months after identification and field documentation. After that timeframe, if no agreement has been made with an interested party, these objects of local interest will be either disposed of properly (in consultation with the USEPA) or shipped or delivered to a USEPA-designated facility for storage, possible donation or proper disposal as determined by the USEPA.

4.11.4 Curation of Artifacts

If the artifacts are determined to be significant as determined by the USEPA and SHPO then they may need to be prepared for permanent curation and a permanent curation facility will need to be identified. Any artifacts determined for curation shall be curated in accordance with the *Secretary of the Interior's Standards and Guidelines for Archaeology and Historic Preservation* (Federal Register, vol. 48, no. 190) and SHPO guidelines for treatment of archaeological artifacts and features. Curation of artifacts, if needed, will be conducted in accordance with 36 CFR Part 79, Curation of Federally Owned and Administered Archaeological Collections. The need for curation is currently unknown and no curation facility has been identified for this project.

4.12 Treatment of Human Remains

According to the Cultural Resource Standards Handbook (New York State Archaeological Council, 2000) human remains discovered unexpectedly on an archaeological site must be treated with the utmost dignity and respect. Work should immediately halt leaving the remains in place so that a determination can be made as to prehistoric or historic affiliation, as well as any modern

conditions that could suggest a crime scene. This determination should be made by an expert, such as a physical anthropologist or coroner with the authority to make such a determination. Projects sponsored by a federal agency must follow the Section 106 regulations for the National Historic Preservation Act, calling for consultations with all parties who may have an interest in discovered human remains. In the event that human remains are encountered during cultural resource monitoring, the *State Historic Preservation Office/New York State Office of Parks, Recreation and Historic Preservation Human Remains Discovery Protocol* (August 2018) will be followed (Appendix B)

4.13 Reporting

Information collected during screening will be reported in a weekly recommendation memo. Information collected during the entire monitoring effort will be analyzed and compiled into a final monitoring report. All artifacts, objects of local interest and any additional debris identified during the monitoring and screening will be logged and at the minimum a general statistical analysis will be conducted on the artifact collection in the final monitoring report. Based on the results of various remediation activities it may also be appropriate for individual monitoring reports to be drafted prior to completion of the overall project. The need for these interim monitoring reports will be discussed with the project team and the requests of the USEPA and SHPO.

4.13.1 Weekly Reporting

During Level 1 monitoring, the trained operator performing debris removal/screening or dredging activities will maintain a field log of potentially significant discoveries and the general cultural resource monitoring process. During Level 2 monitoring, the onsite archaeologist will maintain these logs. At the end of each week of monitoring, an email summary of potential identified artifacts, objects of local interest and debris, including photographs will be provided. The weekly summary report will also include general observations about the effectiveness of the monitoring process, challenges or concerns from the archaeologist, and types of materials observed during dredging or debris removal activities.

Our archaeologist will prepare the following reports:

- Daily internal field logs to be used for the final monitoring report; and
- When excavation/dredging or screening occurs, AHRS will provide a weekly memo summarizing the activities and the recommendations for objects to be retained or disposed of that were reviewed that week.

End of field work summary memorandum(s) can also be prepared for specific completed areas as requested.

4.13.2 Final Monitoring Report

A final monitoring report will be prepared in accordance with the *Secretary of the Interior's Standards and Guidelines for Archaeology and Historic Preservation,* the New York State Historic Preservation Office *Phase I Archaeological Report Format Guidelines* (2005) and *Guidelines for the use of Archaeological Monitoring as an Alternative to Other Field Techniques (adopted by the New York Archaeological Council 2002)*. The report will describe the following:

- An overview of the landscape (physical and archaeological) in which the project took place;
- A description of the monitoring protocol;
- A description of the areas for debris, sediment and soil removal;
- The dates and duration of monitoring;
- The monitoring methodology, including the project team, machinery used and the types hours worked;
- An overview of the ground, weather and overall monitoring conditions, particularly with respect to any problems encountered;
- A description of any archaeological artifacts and features uncovered, including provenience information, if available;
- Subsequent decisions made with regard to any archaeological sites or features discovered during the work, including the cross-referencing (where available) with any official number designation to a site subsequently excavated;
- An overview (including tables) of all registered finds/archaeological objects;
- A general statistical analysis of the artifacts identified;
- Conclusion and any recommendations;
- Bibliography and references;
- Supporting maps, plans, photographs and illustrations; and
- Details on the location and content of the monitoring archive.

The draft report will be submitted to the Trust within 120 days of the field work or any needed laboratory work and will comply with the *Secretary of the Interior's Standards and Guidelines for Archaeology and Historic Preservation* (1983). The final report will be submitted to the Trust within 60 days of receipt of all comments.

4.14 Health and Safety

AHRS will follow any site-specific Health and Safety Plans (HASPs) and normal field monitoring (trenching techniques, placement of monitors, etc.) and OSHA Health and Safety (training, medical monitoring, briefings, etc.) procedures are anticipated. Any HASPs will be provided to the archaeological monitoring team no later than 14 days prior to monitoring. All archaeological monitoring personnel will follow the OSHA requirements for fieldwork and will be OSHA 40-hour HAZWOPER and 10-hour NYC Construction certified.

5.0 PROJECT MANAGEMENT

The AHRS archaeological team will meet with the USEPA, SHPO, GCERT, Geosyntec and the remediation contractor, prior to the start of debris removal/excavation work to review the cultural resource monitoring procedures. While on site Geosyntec and the remediation contractor will be verbally informed of the monitoring work and observations on a daily basis. Following is the list of Parties/Agencies involved and their contact information.

Project Coordinator:
Geosyntec Consultants
1750 American Blvd
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Dave Himmelheber
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Project Administrator:
de maximis, Inc.
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William Lee
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Engineering Consultant:
Geosyntec Consultants
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Joe Ivanowski, Technical Lead
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Archaeologist:
Archaeology & Historic Resource Services, LLC
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845-725-7694

Michael Audin, RPA, *Principal Archaeologist*
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michael.audin@AHRServices.com

Owner's Representative
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Stephen Raymond
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stephen.raymond@gza.com

Reviewers:
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Region 2
290 Broadway
New York, New York 10007-1866

John Vetter

New York State Office of
Parks Recreation and Historic Preservation
Peebles Island
Delaware Ave.
Cohoes, New York 12047

Philip Perazio, HP Program Arch.
518-268-2175
Philip.perazio@parks.ny.gov

Remediation Contractor:
Cashman Dredging and Marine
Contracting Co., LLC
549 South Street
Quincy, MA 02169

Christopher Sheedy, Project Manager
Office: (617) 890-0600
Cell: (781) 413-7508

NYC Office of the Chief Medical Examiner
421 East 26th Street
New York, New York 10016
(212) 447-2030

Bradley Adams, Forensic Anthropologist

New York City Police Department
76th Precinct - 191 Union St,
Brooklyn, New York 11231
(718) 834-3211

5.1 Timeline

The following tentative excavation/dredging timeline was provided for the cultural resource monitoring plan;

1. Mid November to early December 2020 – Access Dredge near TB1, and Phase 2 dredging between Canal and Union Streets
2. Early January to late February 2021 – Dredging between Union and DeGraw Streets and North of DeGraw to Head End
3. Late March thru April 2021 – Phase 2 dredging between 3rd and Carroll
4. December 2021 thru mid-Jan 2022 – Phase 2 dredging north of Union street
5. Phase 3 dredging runs from June 2022 to September 2022.

5.2 Resources

Field work will be conducted by AHRS archaeological monitors under the direction of or in coordination with the Principal Archaeologist. Additional archaeological monitors or archaeological monitoring assistants may be needed in some cases. AHRS will supply all non-mechanical field equipment (shovels, rakes, sifting screens, camera, etc.) necessary for the archaeological monitoring. This does not include excavation machinery.

5.3 Project Coordination

- The Owner's Representative is responsible for coordinating with the different functions of the project team (Engineer, Archaeologist, Contractor, etc.);
- The Project Coordinator is responsible for reporting and coordinating with the USEPA and passing all USEPA decisions to the Project Administrator for dissemination to the project team;
- The USEPA in consultation with NY SHPO will make all final decisions on the monitoring process and any determinations for the final disposition of artifacts and objects of local interest.
- The USEPA will be responsible for conducting all coordination and consulting with the SHPO, Tribal Nations and the public as needed;
- The USEPA will coordinate with SHPO to develop site-specific monitoring plans, preservation plans, avoidance plans, or other investigations as needed for all portions of the project where sub-surface disturbance or other potential adverse effects to historic properties will occur.

6.0 REFERENCES

Archaeology & Historic Research Services, LLC (AHRS)
2016a Area of Potential Effect & Bulkhead Materials/Existing Data Map Books

2016b *Identification and Historical Assessment of Targets 37a, 37b, 37c and 39, Located in the 6th Street and Targets 31 and 31b, Located in Turning Basin 4, of Gowanus Canal*. Prepared by Jason Flatt and Michael Audin.

Cox, J. Lee
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Dietrich, Gregory
2012 *Historic Resource Inventory and Limited Phase IA Documentary & Archaeological Sensitivity Report, Gowanus Canal Area, Borough of Brooklyn, Kings County, New York.* Gregory Dietrich Preservation Consulting

Hunter Research
2004 *National Register of Historic Places Eligibility Evaluation and Cultural Resources Assessment for the Gowanus Canal, Borough of Brooklyn, Kings County, New York in Connection with the Proposed Ecosystem Restoration Study.* Prepared for the US Army Corps of Engineers, New York District by Hunter Research, Raber Associates, and Northern Ecological Associates, Inc.

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2011 *Archaeological Sensitivity Study; Gowanus Canal, Brooklyn Borough, City of New York, Kings County, New York.* Prepared for CH2MHill and the USEPA by Hunter Research.

McVarish, Doug C.
2010 *Gowanus Preliminary Bulkhead Study.* Prepared for HDR, Inc. and the USEPA by John Milner Associates, Inc. in association with Dolan Research, Inc.

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

2000 *Cultural Resource Standards Handbook: Guidance for Understanding and Applying The New York State Standards For Cultural Resource Investigations.*

2002 *Guidelines for the use of Archaeological Monitoring as an Alternative to Other Field Techniques.* Adopted by the NYS Archaeological Council.

United States Secretary of the Interior
1983 Standards and Guidelines for Archaeology and Historic Preservation; as amended,

ATTACHMENT A

APE MAP BOOK

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Project
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Title
APE, KNOWN RESOURCES & IN-WATER PHASE 2 MONITORING AREA

Project No.	Figure
Date 09/07/2020	Sheet 1 of 7
Scale 1" = 120'	
Drawn By MDA	

Legend

- Area of Potential Effect (APE)
- Timber Bulkheads
- Sonar Potential Resource
- Level 2 Monitoring Inwater
- Gowanus Canal HD Resources
- Stirling's Avenue of Retreat
- Sullivan's Avenue of Retreat
- Potential Burial Grounds
- Colonial Farmsteads
- Historic Mill Complexes
- Prehistoric Sensitivity Areas
- Tax Blocks

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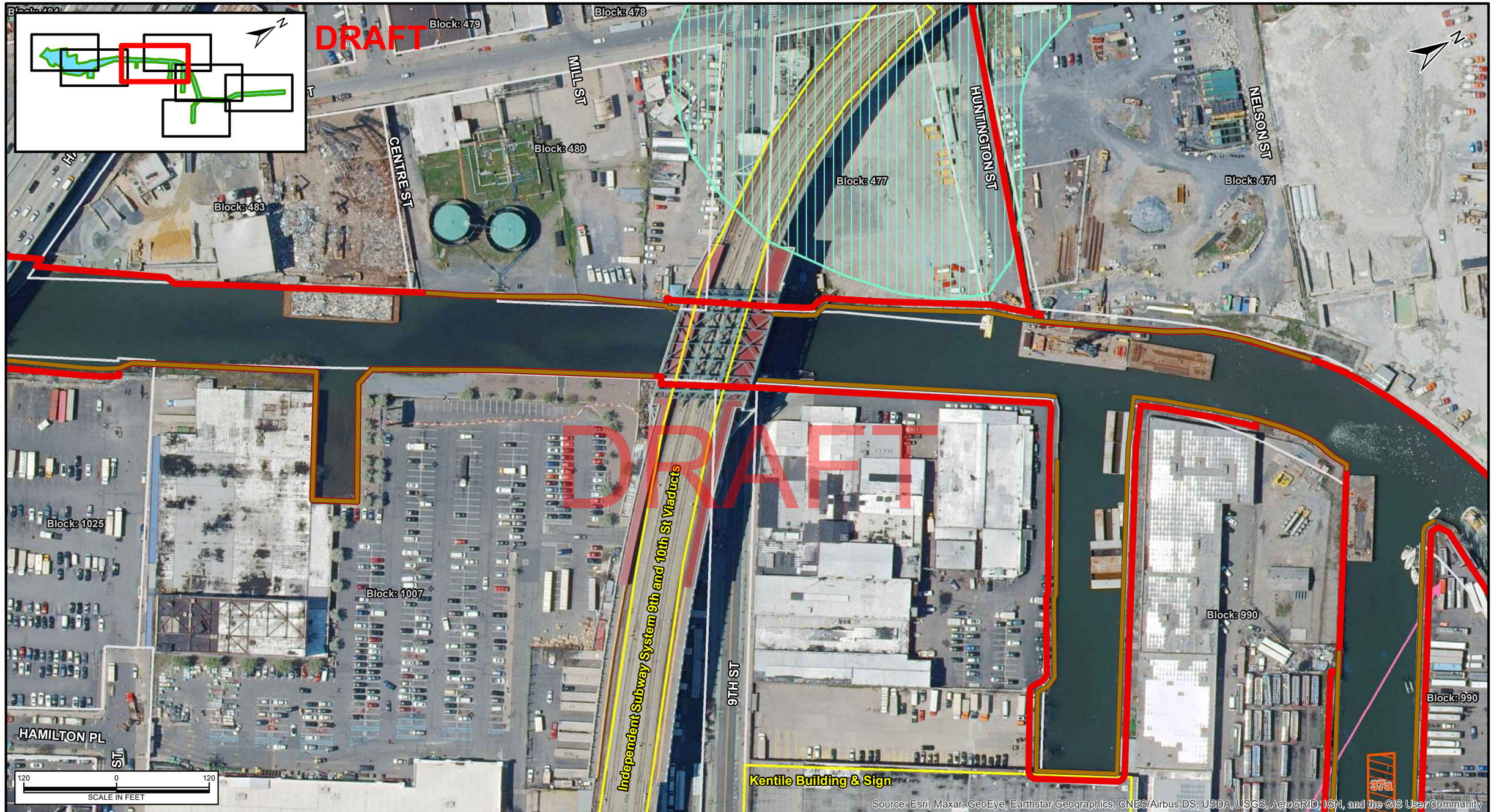

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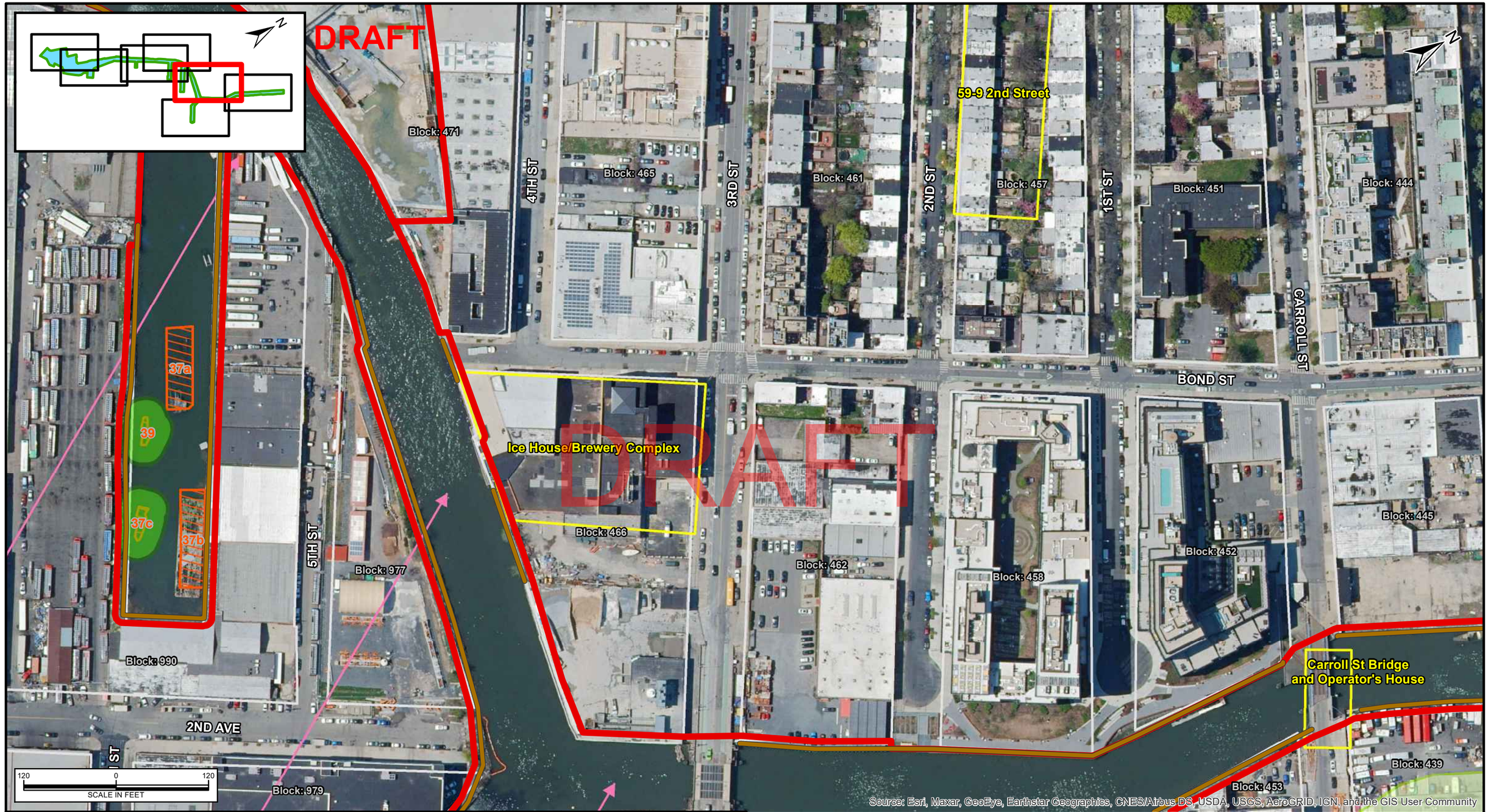

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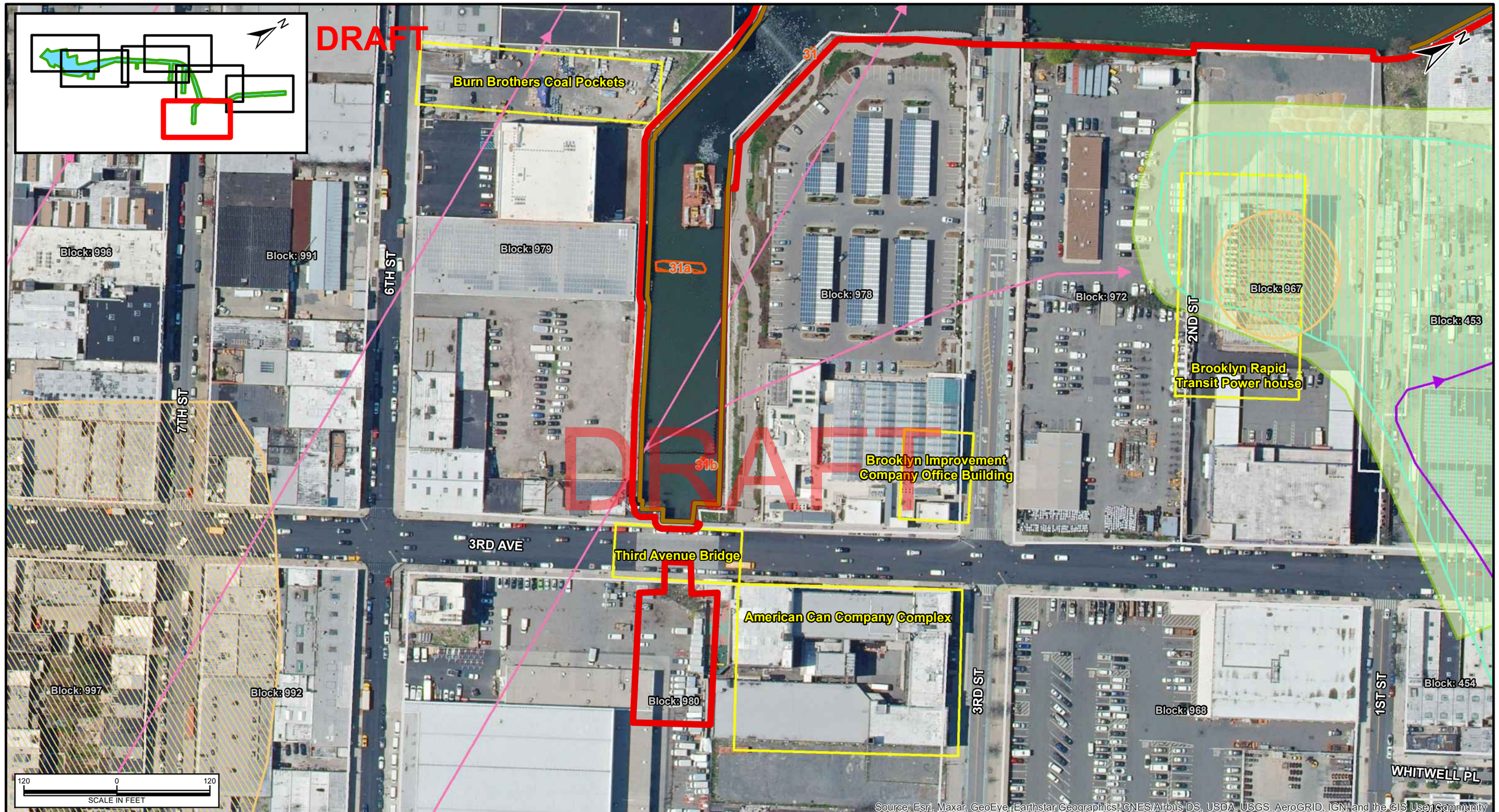

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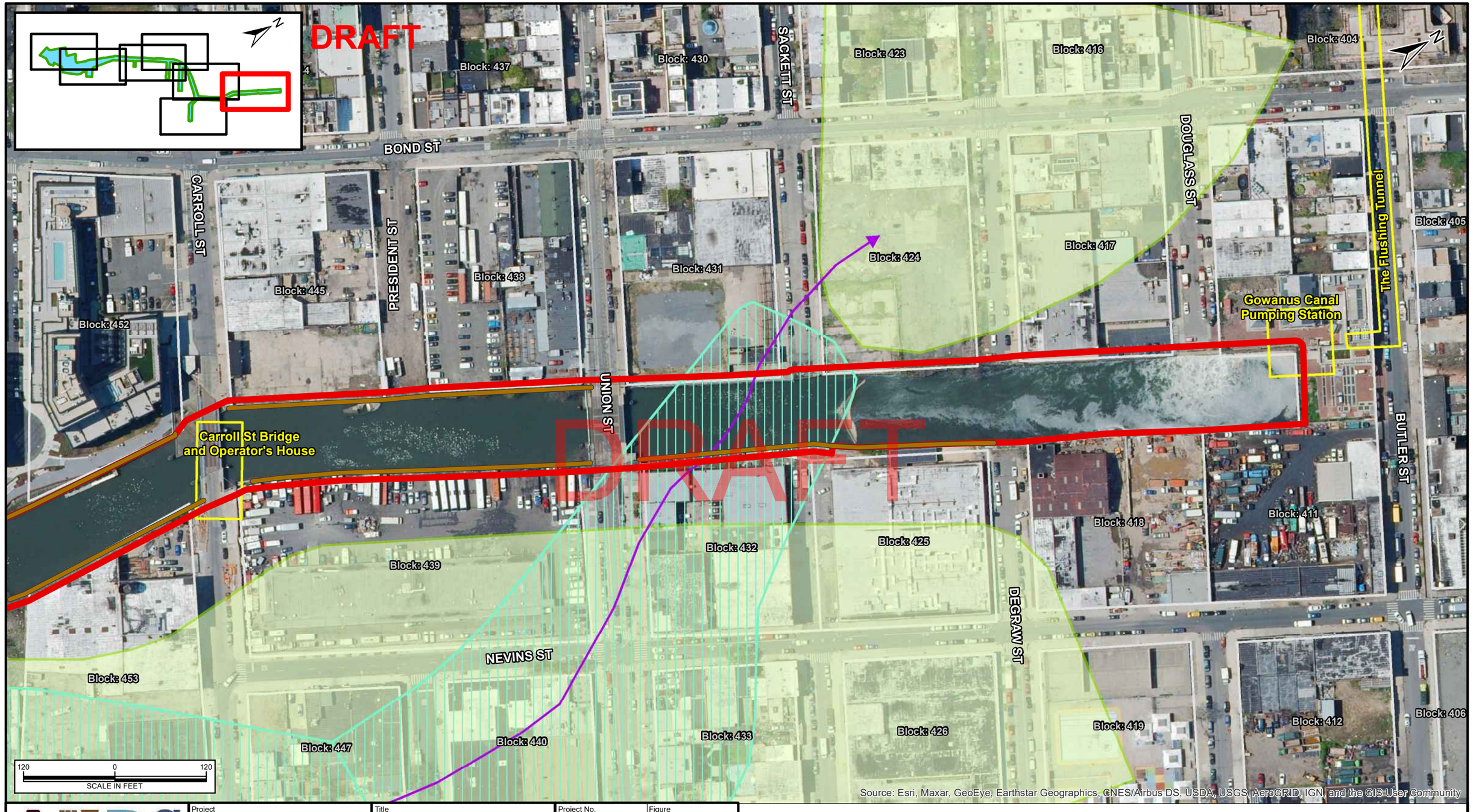

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ATTACHEMENT B

HUMAN REMAINS DISCOVERY PROTOCOL (AUGUST 2018)

State Historic Preservation Office/
New York State Office of Parks, Recreation and Historic Preservation
Human Remains Discovery Protocol
(August 2018)

If human remains are encountered during construction or archaeological investigations, the New York State Historic Preservation Office (SHPO) recommends that the following protocol is implemented:

- Human remains must be treated with dignity and respect at all times. Should human remains or suspected human remains be encountered, work in the general area of the discovery will stop immediately and the location will be secured and protected from damage and disturbance.

- If skeletal remains are identified and the archaeologist is not able to conclusively determine whether they are human, the remains and any associated materials must be left in place. A qualified forensic anthropologist, bioarchaeologist or physical anthropologist will assess the remains in situ to help determine if they are human.

- No skeletal remains or associated materials will be collected or removed until appropriate consultation has taken place and a plan of action has been developed.

- The SHPO, the appropriate Indian Nations, the involved state and federal agencies, the coroner, and local law enforcement will be notified immediately. Requirements of the corner and local law enforcement will be adhered to. A qualified forensic anthropologist, bioarchaeologist or physical anthropologist will assess the remains in situ to help determine if the remains are Native American or non-Native American.

- If human remains are determined to be Native American, they will be left in place and protected from further disturbance until a plan for their avoidance or removal can be generated. Please note that avoidance is the preferred option of the SHPO and the Indian Nations. The involved agency will consult SHPO and the appropriate Indian Nations to develop a plan of action that is consistent with the Native American Graves Protection and Repatriation Act (NAGPRA) guidance. Photographs of Native American human remains and associated funerary objects should not be taken without consulting with the involved Indian Nations.

- If human remains are determined to be non-Native American, the remains will be left in place and protected from further disturbance until a plan for their avoidance or removal can be generated. Please note that avoidance is the preferred option of the SHPO. Consultation with the SHPO and other appropriate parties will be required to determine a plan of action.

- To protect human remains from possible damage, the SHPO recommends that burial information not be released to the public.