

# DECISION DOCUMENT

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188 East 135th Street Redevelopment Site  
Brownfield Cleanup Program  
Bronx, Bronx County  
Site No. C203156  
January 2024



**Department of  
Environmental  
Conservation**

Prepared by  
Division of Environmental Remediation  
New York State Department of Environmental Conservation

# DECLARATION STATEMENT - DECISION DOCUMENT

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188 East 135th Street Redevelopment Site  
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Bronx, Bronx County  
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## **Statement of Purpose and Basis**

This document presents the remedy for the 188 East 135th Street Redevelopment Site, a brownfield cleanup site. The remedial program was chosen in accordance with the New York State Environmental Conservation Law and Title 6 of the Official Compilation of Codes, Rules and Regulations of the State of New York (6 NYCRR) Part 375.

This decision is based on the Administrative Record of the New York State Department of Environmental Conservation (the Department) for the 188 East 135th Street Redevelopment Site and the public's input to the proposed remedy presented by the Department.

## **Description of Selected Remedy**

The elements of the selected remedy are as follows:

### 1. Remedial Design

A remedial design program will be implemented to provide the details necessary for the construction, operation, optimization, maintenance, and monitoring of the remedial program. Green remediation principles and techniques will be implemented to the extent feasible in the design, implementation, and site management of the remedy as per DER-31. The major green remediation components are as follows;

- Considering the environmental impacts of treatment technologies and remedy stewardship over the long term;
- Reducing direct and indirect greenhouse gases and other emissions;
- Increasing energy efficiency and minimizing use of non-renewable energy;
- Conserving and efficiently managing resources and materials;
- Reducing waste, increasing recycling and increasing reuse of materials which would otherwise be considered a waste;
- Fostering green and healthy communities and working landscapes which balance ecological, economic and social goals; and
- Integrating the remedy with the end use where possible and encouraging green and sustainable re-development.
- Additionally, to incorporate green remediation principles and techniques to the extent feasible in the future development at this site, any future on-site buildings will include, at a minimum, a 20-mil vapor barrier/waterproofing membrane on the foundation to improve energy efficiency as an element of construction.

As part of the remedial design program, to evaluate the remedy with respect to green and sustainable remediation principles, an environmental footprint analysis will be completed. The environmental footprint analysis will be completed using an accepted environmental footprint analysis calculator such as SEFA (Spreadsheets for Environmental Footprint Analysis, USEPA), SiteWise™ (available in the Sustainable Remediation Forum [SURF] library) or similar Department accepted tool. Water consumption, greenhouse gas emissions, renewable and non-renewable energy use, waste reduction and material use will be estimated, and goals for the project related to these green and sustainable remediation metrics, as well as for minimizing community impacts, protecting habitats and natural and cultural resources, and promoting environmental justice, will be incorporated into the remedial design program, as appropriate. The project design specifications will include detailed requirements to achieve the green and sustainable remediation goals. Further, progress with respect to green and sustainable remediation metrics will be tracked during implementation of the remedial action and reported in the Final Engineering Report (FER), including a comparison to the goals established during the remedial design program.

Additionally, the remedial design program will include a climate change vulnerability assessment, to evaluate the impact of climate change on the project site and the proposed remedy. Potential vulnerabilities associated with extreme weather events (e.g., hurricanes, lightning, heat stress and drought), flooding, and sea level rise will be identified, and the remedial design program will incorporate measures to minimize the impact of climate change on potential identified vulnerabilities.

## 2. Excavation

The existing on-site building will be demolished and materials which cannot be beneficially reused on site will be taken off-site for proper disposal in order to implement the remedy.

Excavation and off-site disposal of contaminant source areas, including:

- any underground storage tanks (USTs), fuel dispensers, underground piping or other structures associated with a source of contamination; and
- soils which exceed the protection of groundwater soil cleanup objectives (PGWSCOs), as defined by 6 NYCRR Part 375-6.8 for those contaminants found in site groundwater above standards.

All soils in the upper two feet which exceed the restricted residential soil cleanup objectives (SCOs) will be excavated and transported off-site for disposal. Deeper excavation to 7 feet below grade will occur along the western boundary of the site and up to 9 feet below grade at hot spots to address polychlorinated biphenyls (PCB) contamination in one location and SVOC source material in the other locations.

Approximately 2,350 cubic yards of soil will be removed from the site. Collection and analysis of confirmation samples at the remedial excavation depth will be used to verify that SCOs for the site have been achieved. If confirmation sampling indicates that SCOs were not achieved at the stated remedial depth, the Applicant must notify the Department, submit the sample results and, in consultation with the Department, determine if further remedial excavation is necessary. Further excavation for development will proceed after confirmation samples demonstrate that SCOs for the site have been achieved.

To ensure proper handling and disposal of excavated material, waste characterization sampling will be completed for all identified contaminated site material. Waste characterization sampling will be performed exclusively for the purposes of off-site disposal in a manner suitable to receiving facilities and in conformance with applicable federal, state and local laws, rules, and regulations and facility-specific permits.

### 3. Backfill

Clean fill meeting the requirements of 6 NYCRR Part 375-6.7(d) will be brought in to replace the excavated soil and establish the designed grades at the site.

### 4. Cover System

A site cover will be required in areas where the upper two feet of exposed surface soil will exceed the applicable soil cleanup objectives (SCOs), to allow for future restricted residential use of the site. Where a soil cover is to be used it will be a minimum of two feet of soil placed over a demarcation layer, with the upper six inches of soil of sufficient quality to maintain a vegetative layer. Soil cover material, including any fill material brought to the site, will meet the SCOs for cover material for the use of the site as set forth in 6 NYCRR Part 375-6.7(d). Substitution of other materials and components may be allowed where such components already exist or are a component of the tangible property to be placed as part of site redevelopment. Such components may include, but are not necessarily limited to: pavement, concrete, paved surface parking areas, sidewalks, building foundations and building slabs.

### 5. Vapor Mitigation

Any on-site buildings will be required to have a sub-slab depressurization system (SSDS), or other acceptable measures, to mitigate the migration of vapors into the building from the subsurface.

### 6. Institutional Controls

Imposition of an institutional control in the form of an environmental easement for the controlled property which will:

- require the remedial party or site owner to complete and submit to the Department a periodic certification of institutional and engineering controls in accordance with Part 375-1.8 (h)(3);
- allow the use and development of the controlled property for restricted residential use as defined by Part 375-1.8(g), although land use is subject to local zoning laws;
- restrict the use of groundwater as a source of potable or process water, without necessary water quality treatment as determined by the NYSDOH or NYCDOHMH; and
- require compliance with the Department approved Site Management Plan.

### 7. Site Management Plan

A Site Management Plan is required, which includes the following:

- a. An Institutional and Engineering Control Plan that identifies all use restrictions and engineering controls for the site and details the steps and media-specific requirements necessary to ensure the following institutional and/or engineering controls remain in place and effective:
  - Institutional Controls: the Environmental Easement discussed in paragraph 6 above.

- Engineering Controls: the Cover System and Vapor Mitigation System discussed in paragraphs 4 and 5.

This plan includes, but may not be limited to:

- an Excavation Plan which details the provisions for management of future excavations in areas of remaining contamination;
- descriptions of the provisions of the environmental easement including any land use and groundwater use restrictions;
- a provision that should a building foundation or building slab be removed in the future, a cover system consistent with that described in Paragraph 4 above will be placed in any areas where the upper two feet of exposed surface soil exceed the applicable SCOs;
- provisions for the management and inspection of the identified engineering controls;
- maintaining site access controls and Department notification; and,
- the steps necessary for the periodic reviews and certification of the institutional and/or engineering controls.

b. A Monitoring Plan to assess the performance and effectiveness of the remedy. The plan includes, but may not be limited to:

- monitoring of soil vapor to assess the performance and effectiveness of the remedy; and
- a schedule of monitoring and frequency of submittals to the Department.

c. An Operation and Maintenance (O&M) Plan to ensure continued operation, maintenance, inspection, and reporting of any mechanical or physical components of the active vapor mitigation system. The plan includes, but is not limited to:

- procedures for operating and maintaining the system(s); and
- compliance inspection of the system(s) to ensure proper O&M as well as providing the data for any necessary reporting.

### **Declaration**

The remedy conforms with promulgated standards and criteria that are directly applicable, or that are relevant and appropriate and takes into consideration Department guidance, as appropriate. The remedy is protective of public health and the environment.

January 31, 2024

Date



R. Scott Deyette, Director  
Remedial Bureau B

# DECISION DOCUMENT

188 East 135th Street Redevelopment Site  
Bronx, Bronx County  
Site No. C203156  
January 2024

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## **SECTION 1: SUMMARY AND PURPOSE**

The New York State Department of Environmental Conservation (the Department), in consultation with the New York State Department of Health (NYSDOH), has selected a remedy for the above referenced site. The disposal of contaminants at the site has resulted in threats to public health and the environment that would be addressed by the remedy. The disposal or release of contaminants at this site, as more fully described in this document, has contaminated various environmental media. Contaminants include hazardous waste and/or petroleum.

The New York State Brownfield Cleanup Program (BCP) is a voluntary program. The goal of the BCP is to enhance private-sector cleanups of brownfields and to reduce development pressure on "greenfields." A brownfield site is real property, where a contaminant is present at levels exceeding the soil cleanup objectives or other health-based or environmental standards, criteria or guidance, based on the reasonably anticipated use of the property.

The Department has issued this document in accordance with the requirements of New York State Environmental Conservation Law and 6 NYCRR Part 375. This document is a summary of the information that can be found in the site-related reports and documents.

## **SECTION 2: CITIZEN PARTICIPATION**

The Department seeks input from the community on all remedies. A public comment period was held, during which the public was encouraged to submit comment on the proposed remedy. All comments on the remedy received during the comment period were considered by the Department in selecting a remedy for the site. Site-related reports and documents were made available for review by the public at the following document repositories:

DECInfo Locator - Web Application  
<https://gisservices.dec.ny.gov/gis/dil/index.html?rs=C203156>

Bronx Community Board 1

3024 Third Avenue  
Bronx, NY 10455  
Phone: (718) 665-4878

Mott Haven Library  
321 East 140th Street  
Bronx, NY 10454  
Phone: (718) 585-7117

### **Receive Site Citizen Participation Information By Email**

Please note that the Department's Division of Environmental Remediation (DER) is "going paperless" relative to citizen participation information. The ultimate goal is to distribute citizen participation information about contaminated sites electronically by way of county email listservs. Information will be distributed for all sites that are being investigated and cleaned up in a particular county under the State Superfund Program, Environmental Restoration Program, Brownfield Cleanup Program and Resource Conservation and Recovery Act Program. We encourage the public to sign up for one or more county listservs at <http://www.dec.ny.gov/chemical/61092.html>

### **SECTION 3: SITE DESCRIPTION AND HISTORY**

**Location:** The site is located at 188 East 135th Street in the Mott Haven neighborhood of the Bronx and is identified as Block 2323, Lot 13 on the New York City Tax Map. The site is bounded to the north by a lot owned and operated by Metro North Railroad, to the east by East 135<sup>th</sup> Street followed by Major Deegan Expressway (I-87), to the west by a lot owned by the Department of Citywide Administration Services (DCAS) including a railroad right-of-way that runs north to south, and to the south by a NYC-owned vacant lot and Park Avenue.

**Site Features:** The 0.580-acre site is currently developed with a vacant, 6,500 square foot single-story building located on the east-central portion of the parcel. The remainder of the site consists of asphalt-paved parking lot and a small unpaved yard area. The site is partially overgrown with tall weeds, small trees, and shrubbery along the perimeter of the site and through cracks in the asphalt. A sewer line traverses the site from northeast to southwest through the property, and a subway tunnel is located underneath Park Avenue and a portion of the southern section of the site.

**Current Zoning and Land Use:** The site is currently inactive and has a zoning designation of residential (R7-2) with a commercial (C2-4) overlay. The surrounding properties are generally industrial and commercial usage or are vacant land.

**Past Use of the Site:** Historic uses of the property include a railroad yard, a coal yard, a contractor's storage/supply yard, potential dry cleaner, an auto wrecker, and an iron and steel company. The site was developed with a rail spur associated the adjacent elevated railroad tracks by at least 1891. The rail spur was removed by 1908 and the site remained undeveloped until 1923, when it was developed with the existing one-story commercial building, occupied by a pipe cutter. By the mid-1930s, northern and western portions were developed with several small one-story structures identified as a coal yard. By 1944, a truck scale was installed adjacent to the pipe cutting building. The coal company buildings were demolished between 1951 and 1968 and the pipe cutters building occupied by an auto wrecker. The site was occupied by an iron and steel company in the early 1960s and by the late-1970s it was occupied by a moving and storage company until at least 2010. The city directory listed the site as being occupied by a dry cleaner in 2000.

Site Geology and Hydrogeology: The ground level elevation at the site is approximately 8 to 10 feet above mean sea level. The site is underlain by a layer of fill material consisting primarily of brown, dark brown and gray/brown silt-sand mixtures with brick, gravel, wood, glass fragments and pockets of crushed rock to variable depths between six and eleven feet below grade. Deeper native soils consist of primarily of brown and dark brown fine to medium sand and lean clay with varying amounts of silt, gravel, and brick to the boring terminus depth of 20 feet. Bedrock was not encountered. Groundwater was encountered at depths ranging from approximately 6.8 to 9.2 feet below ground surface and flow beneath the site is generally from the northeast to the southwest towards the Harlem River, which is located approximately 25 feet from the site.

A site location map is attached as Figure 1.

#### **SECTION 4: LAND USE AND PHYSICAL SETTING**

The Department may consider the current, intended, and reasonably anticipated future land use of the site and its surroundings when evaluating a remedy for soil remediation. For this site, alternatives (or an alternative) that restrict the use of the site to restricted-residential use (which allows for commercial use and industrial use) as described in Part 375-1.8(g) were/was evaluated in addition to an alternative which would allow for unrestricted use of the site.

A comparison of the results of the Remedial Investigation (RI) to the appropriate standards, criteria and guidance values (SCGs) for the identified land use and the unrestricted use SCGs for the site contaminants is available in the RI Report.

#### **SECTION 5: ENFORCEMENT STATUS**

The Applicant under the Brownfield Cleanup Agreement is a Volunteer. The Applicant does not have an obligation to address off-site contamination. However, the Department has determined that this site does not pose a significant threat to public health or the environment; accordingly, no enforcement actions are necessary.

#### **SECTION 6: SITE CONTAMINATION**

##### **6.1: Summary of the Remedial Investigation**

A remedial investigation (RI) serves as the mechanism for collecting data to:

- characterize site conditions;
- determine the nature of the contamination; and
- assess risk to human health and the environment.

The RI is intended to identify the nature (or type) of contamination which may be present at a site and the extent of that contamination in the environment on the site, or leaving the site. The RI reports on data gathered to determine if the soil, groundwater, soil vapor, indoor air, surface water or sediments may have been contaminated. Monitoring wells are installed to assess groundwater

and soil borings or test pits are installed to sample soil and/or waste(s) identified. If other natural resources are present, such as surface water bodies or wetlands, the water and sediment may be sampled as well. Based on the presence of contaminants in soil and groundwater, soil vapor will also be sampled for the presence of contamination. Data collected in the RI influence the development of remedial alternatives. The RI report is available for review in the site document repository and the results are summarized in section 6.3.

The analytical data collected on this site includes data for:

- groundwater
- soil
- soil vapor

### **6.1.1: Standards, Criteria, and Guidance (SCGs)**

The remedy must conform to promulgated standards and criteria that are directly applicable or that are relevant and appropriate. The selection of a remedy must also take into consideration guidance, as appropriate. Standards, Criteria and Guidance are hereafter called SCGs.

To determine whether the contaminants identified in various media are present at levels of concern, the data from the RI were compared to media-specific SCGs. The Department has developed SCGs for groundwater, surface water, sediments, and soil. The NYSDOH has developed SCGs for drinking water and soil vapor intrusion. For a full listing of all SCGs see: <http://www.dec.ny.gov/regulations/61794.html>

### **6.1.2: RI Results**

The data have identified contaminants of concern. A "contaminant of concern" is a contaminant that is sufficiently present in frequency and concentration in the environment to require evaluation for remedial action. Not all contaminants identified on the property are contaminants of concern. The nature and extent of contamination and environmental media requiring action are summarized below. Additionally, the RI Report contains a full discussion of the data. The contaminant(s) of concern identified at this site is/are:

hexane	arsenic
n-heptane	barium
benzo(a)anthracene	cadmium
benzo(a)pyrene	copper
benzo(b)fluoranthene	lead
chrysene	mercury
dibenz[a,h]anthracene	polychlorinated biphenyls (PCB)
indeno(1,2,3-cd)pyrene	acetone

The contaminant(s) of concern exceed the applicable SCGs for:

- groundwater
- soil

## **6.2: Interim Remedial Measures**

An interim remedial measure (IRM) is conducted at a site when a source of contamination or exposure pathway can be effectively addressed before issuance of the Decision Document.

There were no IRMs performed at this site during the RI.

## **6.3: Summary of Environmental Assessment**

This section summarizes the assessment of existing and potential future environmental impacts presented by the site. Environmental impacts may include existing and potential future exposure pathways to fish and wildlife receptors, wetlands, groundwater resources, and surface water. The RI report presents a detailed discussion of any existing and potential impacts from the site to fish and wildlife receptors.

### Nature and Extent of Contamination:

Soil and groundwater were analyzed for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), metals, polychlorinated biphenyls (PCBs), per- and polyfluoroalkyl substances (PFAS), and pesticides. Soil vapor was analyzed for VOCs. The primary contaminants of concern include SVOCs, PCBs and metals in soil, and SVOCs in groundwater.

### Soil:

Exceedances of the restricted residential use soil cleanup objectives (RRSCOs) and, for some contaminants, protection of groundwater soil cleanup objective (PGWSCOs), were identified sitewide at depths up to 10 ft bgs and in the northeastern portion of the site up to 14 ft bgs. Fill material varied in depth, with the majority of site-wide fill located in the upper 10 ft bgs.

SVOCs detected at concentrations exceeding their respective RRSCOs and/or PGWSCOs include benzo(a)anthracene up to 8.9 parts per million (ppm) (RRSCO and PGWSCO of 1 ppm), benzo(a)pyrene up to 12 ppm (RRSCO of 1 ppm), benzo(b)fluoranthene up to 12 ppm (RRSCO of 1 ppm and PGWSCO of 1.7 ppm), benzo(k)fluoranthene up to 4.2 ppm (RRSCO of 3.9 ppm and PGWSCO of 1.7 ppm), chrysene up to 8.8 ppm (RRSCO of 3.9 ppm and PGWSCO of 1 ppm), dibenzo(a,h)anthracene up to 2 ppm (RRSCO of 0.33 ppm), and indeno-(1,2,3-c,d)pyrene up to 6.1 ppm (RRSCO of 0.5 ppm).

Metals detected at concentrations exceeding RRSCOs include arsenic up to 112 ppm (RRSCO of 16 ppm), barium up to 509 ppm (RRSCO of 400 ppm) cadmium up to 9.55 ppm (RRSCO of 4.3 ppm), copper up to 2,530 ppm (RRSCO of 270 ppm), lead up to 6,380 ppm (RRSCO of 400 ppm), mercury up to 9.92 ppm (RRSCO of 0.81 ppm).

PCBs were detected at concentrations up to 14.7 ppm, exceeding the RRSCO of 1 ppm.

No VOCs, pesticides or PFAS were detected above their respective RRSCOs.

Data does not indicate any off-site impacts in soil related to this site.

#### Groundwater:

SVOCs detected above the Class GA Ambient Water Quality Standard and Guidance Value (AWQSGV) include: benzo(a)anthracene up to 0.16 ppb, benzo(a)pyrene up to 0.19 ppb, benzo(b)fluoranthene up to 0.21 ppb, benzo(k)fluoranthene up to 0.08 ppb, chrysene up to 0.16 ppb, and indeno(1,2,3-cd)pyrene up to 0.12 ppb all with an AWQSGV of 0.002 ppb.

The only dissolved metals detected at concentrations exceeding their respective AWQSGVs were naturally occurring minerals such as magnesium, manganese, and sodium and are not considered site related.

PFAS detected at concentrations exceeding their respective AWQSGVs include PFOS at 61.3 parts per trillion (ppt) (AWQSGV of 2.7 ppt) and PFOA up to 66.9 ppt (AWQSGV of 6.7 ppt).

No VOCs, pesticides, or PCBs were detected above their respective AWQSGV.

Data does not indicate any off-site impacts in groundwater related to this site.

#### Soil Vapor:

Various chlorinated VOCs were detected in soil vapor including PCE up to 63.1 micrograms per cubic meter ( $\mu\text{g}/\text{m}^3$ ) and vinyl chloride up to  $8.28 \mu\text{g}/\text{m}^3$ . Petroleum-related VOCs were also detected in soil vapor, most notably hexane up to  $36,300 \mu\text{g}/\text{m}^3$  and n-heptane up to  $11,400 \mu\text{g}/\text{m}^3$  both of which were detected near the northern site boundary and do not appear to be site related. Acetone was detected throughout the site, up to a maximum concentration of  $2,490 \mu\text{g}/\text{m}^3$  which is also not anticipated to be site related.

Data does not indicate any off-site impacts in soil vapor related to this site.

### **6.4: Summary of Human Exposure Pathways**

This human exposure assessment identifies ways in which people may be exposed to site-related contaminants. Chemicals can enter the body through three major pathways (breathing, touching or swallowing). This is referred to as *exposure*.

People are not drinking contaminated groundwater because the area is served by a public water supply that obtains its water from a different source. Since contaminated groundwater is approximately six feet or greater below the ground surface, it is unlikely that people will come into contact with the groundwater unless they dig below this level. The site is completely fenced, which restricts public access. However, persons who enter the site may come into contact with contaminants found in surface soil by walking on the site, digging or otherwise disturbing the soil at the site. Volatile organic compounds in soil vapor (air spaces within the soil) may move into buildings and affect the indoor air quality. Because the site is vacant, the inhalation of site-related contaminants due to soil vapor intrusion does not represent a current concern. However, the potential exists for the inhalation of site contaminants due to soil vapor intrusion for any future on-site redevelopment and occupancy. Furthermore, environmental sampling indicates soil vapor intrusion from site contaminants is not a concern for off-site buildings.

## **6.5: Summary of the Remediation Objectives**

The objectives for the remedial program have been established through the remedy selection process stated in 6 NYCRR Part 375. The goal for the remedial program is to restore the site to pre-disposal conditions to the extent feasible. At a minimum, the remedy shall eliminate or mitigate all significant threats to public health and the environment presented by the contamination identified at the site through the proper application of scientific and engineering principles.

The remedial action objectives for this site are:

### **Groundwater**

#### **RAOs for Public Health Protection**

- Prevent ingestion of groundwater with contaminant levels exceeding drinking water standards.

#### **RAOs for Environmental Protection**

- Remove the source of ground or surface water contamination.

### **Soil**

#### **RAOs for Public Health Protection**

- Prevent ingestion/direct contact with contaminated soil.

#### **RAOs for Environmental Protection**

- Prevent migration of contaminants that would result in groundwater or surface water contamination.

### **Soil Vapor**

#### **RAOs for Public Health Protection**

- Mitigate impacts to public health resulting from existing, or the potential for, soil vapor intrusion into buildings at a site.

## **SECTION 7: ELEMENTS OF THE SELECTED REMEDY**

The alternatives developed for the site and the evaluation of the remedial criteria are presented in the Alternative Analysis. The remedy is selected pursuant to the remedy selection criteria set forth in DER-10, Technical Guidance for Site Investigation and Remediation and 6 NYCRR Part 375.

The selected remedy is a Track 4: Restricted residential use with site-specific soil cleanup objectives remedy.

The selected remedy is referred to as the Excavation, Site Cover and Soil Vapor Mitigation remedy.

The elements of the selected remedy, as shown in Figure 2 and Figure 3, are as follows:

### **1. Remedial Design**

A remedial design program will be implemented to provide the details necessary for the construction, operation, optimization, maintenance, and monitoring of the remedial program.

Green remediation principles and techniques will be implemented to the extent feasible in the design, implementation, and site management of the remedy as per DER-31. The major green remediation components are as follows;

- Considering the environmental impacts of treatment technologies and remedy stewardship over the long term;
- Reducing direct and indirect greenhouse gases and other emissions;
- Increasing energy efficiency and minimizing use of non-renewable energy;
- Conserving and efficiently managing resources and materials;
- Reducing waste, increasing recycling and increasing reuse of materials which would otherwise be considered a waste;
- Fostering green and healthy communities and working landscapes which balance ecological, economic and social goals; and
- Integrating the remedy with the end use where possible and encouraging green and sustainable re-development.
- Additionally, to incorporate green remediation principles and techniques to the extent feasible in the future development at this site, any future on-site buildings will include, at a minimum, a 20-mil vapor barrier/waterproofing membrane on the foundation to improve energy efficiency as an element of construction.

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Additionally, the remedial design program will include a climate change vulnerability assessment, to evaluate the impact of climate change on the project site and the proposed remedy. Potential vulnerabilities associated with extreme weather events (e.g., hurricanes, lightning, heat stress and drought), flooding, and sea level rise will be identified, and the remedial design program will incorporate measures to minimize the impact of climate change on potential identified vulnerabilities.

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Excavation and off-site disposal of contaminant source areas, including:

- any underground storage tanks (USTs), fuel dispensers, underground piping or other

- structures associated with a source of contamination; and
- soils which exceed the protection of groundwater soil cleanup objectives (PGWSCOs), as defined by 6 NYCRR Part 375-6.8 for those contaminants found in site groundwater above standards.

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## 6. Institutional Controls

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- allow the use and development of the controlled property for restricted residential use as defined by Part 375-1.8(g), although land use is subject to local zoning laws;
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- require compliance with the Department approved Site Management Plan.

## 7. Site Management Plan

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- b. An Institutional and Engineering Control Plan that identifies all use restrictions and engineering controls for the site and details the steps and media-specific requirements necessary to ensure the following institutional and/or engineering controls remain in place and effective:
  - Institutional Controls: the Environmental Easement discussed in paragraph 6 above.
  - Engineering Controls: the Cover System and Vapor Mitigation System discussed in paragraphs 4 and 5.

This plan includes, but may not be limited to:

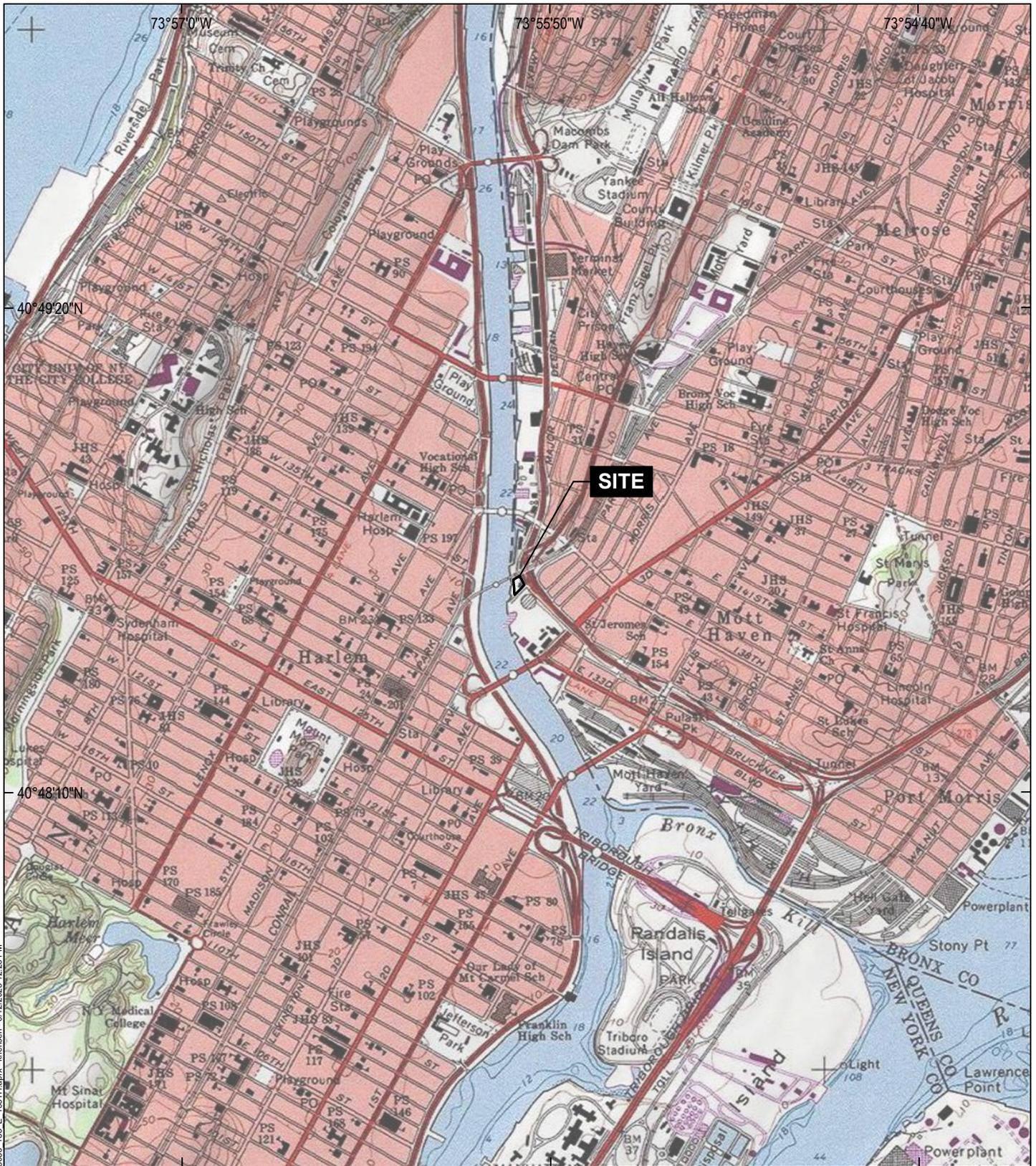
- an Excavation Plan which details the provisions for management of future excavations in areas of remaining contamination;
- descriptions of the provisions of the environmental easement including any land use and groundwater use restrictions;
- a provision that should a building foundation or building slab be removed in the future, a cover system consistent with that described in Paragraph 4 above will be placed in any areas where the upper two feet of exposed surface soil exceed the applicable SCOs;
- provisions for the management and inspection of the identified engineering controls;
- maintaining site access controls and Department notification; and,
- the steps necessary for the periodic reviews and certification of the institutional and/or engineering controls.

b. A Monitoring Plan to assess the performance and effectiveness of the remedy. The plan includes, but may not be limited to:

- monitoring of soil vapor to assess the performance and effectiveness of the remedy; and
- a schedule of monitoring and frequency of submittals to the Department.

c. An Operation and Maintenance (O&M) Plan to ensure continued operation, maintenance, inspection, and reporting of any mechanical or physical components of the active vapor mitigation system. The plan includes, but is not limited to:

- procedures for operating and maintaining the system(s); and
- compliance inspection of the system(s) to ensure proper O&M as well as providing the data for any necessary reporting.



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MAP SOURCE: USGS  
SITE COORDINATES: 40°48'40"N, 73°55'56"W

**HALEY  
ALDRICH**

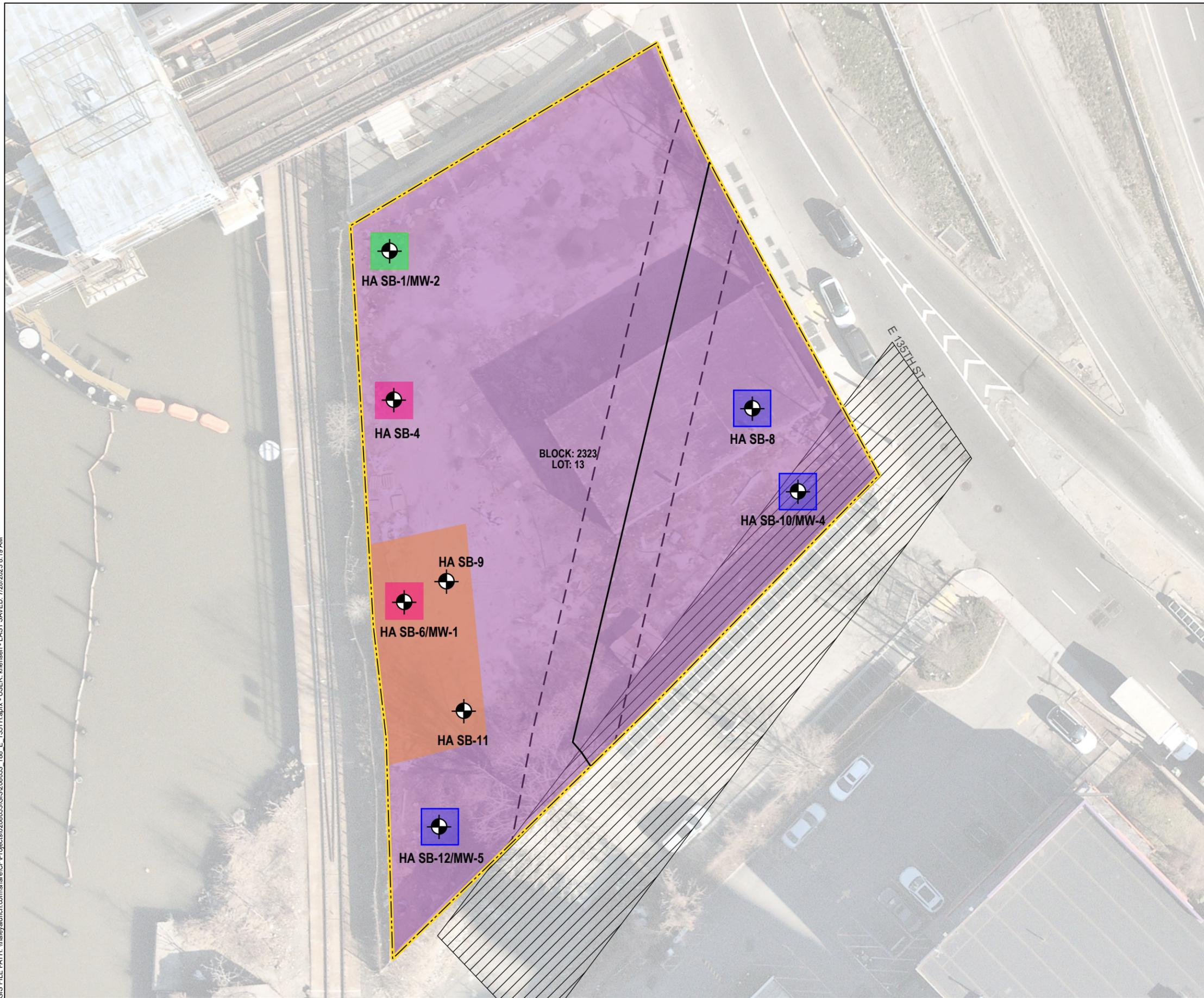
188 EAST 135TH STREET  
BRONX, NEW YORK

**PROJECT LOCATION**

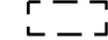
APPROXIMATE SCALE: 1 IN = 2000 FT  
JULY 2023

**FIGURE 1**

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**LEGEND**

-  UNDERGROUND 120" X 96" SEWER
-  EASEMENT
-  UNDERGROUND SUBWAY
-  SITE BOUNDARY
-  EXCAVATION DEPTH, 2 FEET BGS
-  EXCAVATION DEPTH, 7 FEET BGS TO REMOVE SVOC EXCEEDANCES OF PGWSCOS
-  HOTSPOT EXCAVATION TO 5 FEET BGS IN A 10 X 10 FOOT AREA CENTERED ON RI BORING LOCATIONS TO REMOVE SVOC EXCEEDANCES OF PGWSCOS
-  HOTSPOT EXCAVATION TO 7 FEET BGS IN A 10 X 10 FOOT AREA CENTERED ON RI BORING LOCATIONS TO REMOVE SVOC EXCEEDANCES OF PGWSCOS
-  HOTSPOT EXCAVATION TO 9 FEET BGS IN A 10 X 10 FOOT AREA CENTERED ON RI BORING LOCATIONS TO REMOVE SVOC EXCEEDANCES OF PGWSCOS

**NOTES**

1. ALL LOCATIONS AND DIMENSIONS ARE APPROXIMATE.
2. BGS = BELOW GROUND SURFACE
3. PGWSCO = PROTECTION OF GROUNDWATER SOIL CLEANUP OBJECTIVE
4. SVOC = SEMI-VOLATILE ORGANIC COMPOUND
5. ASSESSOR PARCEL DATA SOURCE: QUEENS COUNTY
6. AERIAL IMAGERY SOURCE: NEARMAP, 3 MAY 2023
7. NOTE THAT SOURCE MATERIAL REMOVAL IS ALSO REQUIRED IN THE AREA OF RI SOIL BORING HA SB-11 FOR PCB EXCEEDANCES OF PGWSCOS DETECTED UP TO 5 FEET BGS.

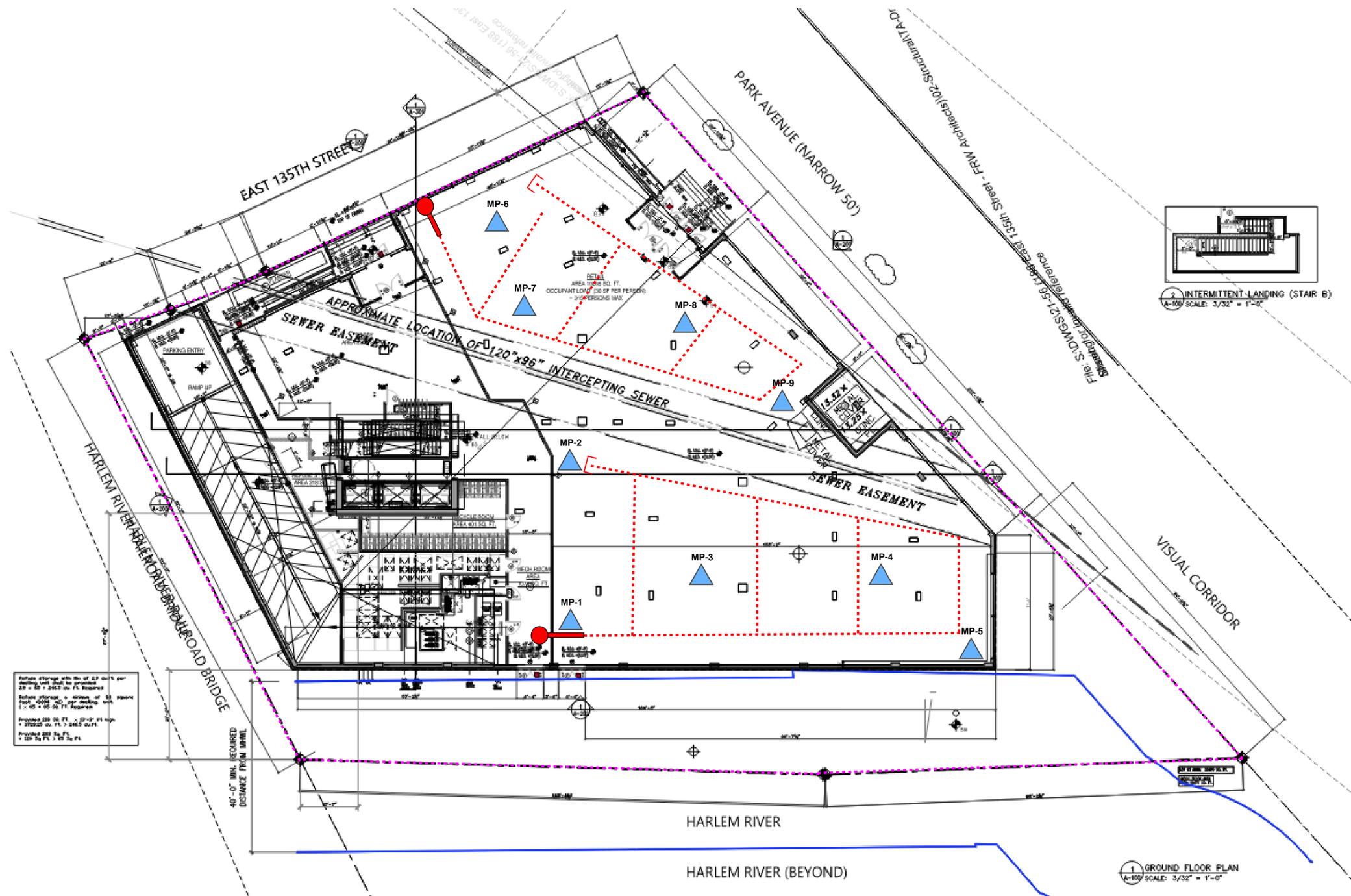


**HALEY ALDRICH**  
 188 EAST 135TH STREET  
 BRONX, NEW YORK

**ALTERNATIVE I EXCAVATION PLAN**

DECEMBER 2023

**FIGURE 2**



Before storage with min. of 23 cu ft  
 23" x 26" x 26" or 24" required  
 Before storage - volume of 21  
 21" x 24" x 24" or 20" required  
 1" x 26" x 26" or 21" required  
 Proposed 23" x 26" x 26" or 21" high  
 Proposed 21" x 24" x 24" or 20" high  
 Proposed 21" x 24" x 24" or 20" high

**LEGEND**

- ⋯⋯⋯ PROPERTY LINE
- ⋯⋯⋯ 3" PERFORATED PVC PIPE
- 4" SOLID PVC LEADER PIPE
- 4" CAST IRON VERTICAL RISER PIPE
- ┌┐ PIPE END CAP
- ▲ MP-1 SUB-SLAB MONITORING POINT

**NOTE:**

1. BASEMAP: 'FOUNDATION PLAN' BY GEA CONSULTING ENGINEERS DATED NOVEMBER 08, 2021.



188 EAST 135TH STREET REDEVELOPMENT SITE  
 188 EAST 135TH STREET  
 BRONX, NEW YORK

CONCEPTUAL SUB-SLAB  
 DEPRESSURIZATION SYSTEM  
 PIPING LAYOUT PLAN

DECEMBER 2023

FIGURE 3