DECISION DOCUMENT

156-162 Perry Street
Brownfield Cleanup Program
New York, New York County
Site No. C231099
August 2017

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

DECLARATION STATEMENT - DECISION DOCUMENT

156-162 Perry Street
Brownfield Cleanup Program
New York, New York County
Site No. C231099
August 2017

Statement of Purpose and Basis

This document presents the remedy for the 156-162 Perry Street 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 156-162 Perry Street 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;
- Maximizing habitat value and creating habitat when possible;

- 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 of the site, and to be consistent with the requirements of an e-designation by New York City, any future on-site buildings will include, at a minimum, a 20-mil water/vapor barrier to improve energy efficiency as an element of construction.

2. Excavation

- The existing on-site building(s) will be demolished and materials which can't 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 all on-site soils, to a depth of 15 feet below grade, which exceed restricted-residential SCOs, as defined by 6 NYCRR Part 375-6.8, and the lower of restricted-residential SCOs or 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. If a Track 2 restricted residential, cleanup is achieved, a Cover System will not be a required element of the remedy.

  Approximately 2,100 cubic yards of soil will be removed from the site. Of those 2,100 cubic yards, 1,900 cubic yards will be removed for remedial purposes and the additional 200 cubic yards will be removed due to redevelopment requirements; and

- 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.

3. Cover System

A site cover will be required to allow for restricted residential use of the site in areas where the upper two feet of exposed surface soil will exceed the applicable soil cleanup objectives (SCOs). The site cover may consist of paved surface parking areas, sidewalks, or a soil cover. 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 as set forth in 6 NYCRR Part 375-6.7(d). In areas where building foundations or building slabs preclude contact with the soil, the requirements for a site cover will be deferred until such time that they are removed.

4. Institutional Control

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 NYCSDOH or NYCDOH; and

- require compliance with the Department approved Site Management Plan.

5. Site Management Plan

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

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 4 above;

Engineering Controls: The soil cover discussed in Paragraph 7, if required.

- This plan includes, but may not be limited to:
- 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 for evaluation of the potential for soil vapor intrusion for any buildings developed on the site, including provision for implementing actions recommended to address exposures related to soil vapor intrusion;
- a provision that should a building foundation or building slab be removed in the future, a cover system consistent with that described in Paragraph 7 will be placed in any areas where the upper two feet of exposed surface soil exceed the applicable soil cleanup objectives (SCOs); (only necessary for the Track 4 contingent remedy and a cover system);
- provisions for the management and inspection of the identified engineering controls; (only necessary for the Track 4 contingent remedy and a cover system);
- 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 for vapor intrusion for any buildings on the site, as may be required by the Institutional and Engineering Control Plan discussed above; a schedule of monitoring and frequency of submittals to the Department.

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4. Vapor Barrier

A vapor barrier will be placed under any future structures erected on the site. This is an element of the construction of the building and is independent of the cover system. This requirement will be, at a minimum, a 20-mil vapor barrier consistent with the technical requirements for building construction on an e-designation property by New York City.

5. Institutional Control

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- restrict the use of groundwater as a source of potable or process water, without necessary water quality treatment as determined by the NYCSDOH or NYCDOH; and
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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.

8/23/17

Date

Gerard Burke, Director
Remedial Bureau B

DECISION DOCUMENT

156-162 Perry Street
New York, New York County
Site No. C231099
August 2017

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, the redevelopment or reuse of which may be complicated by the presence or potential presence of a contaminant.

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:

Hudson Park Library
66 Leroy Street
New York, NY 10014
Phone: 212-243-6876

Manhattan Community Board 2
3 Washington Square Village, #1A
New York, NY 10012
Phone: 212-979-2272

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, Voluntary 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 in an urban area, in the West Village neighborhood of Manhattan.

Site Features: The approximately 0.16-acre site currently includes two three-story residential buildings (Lots 19 and 21), one two-story residential building (Lot 18), and a one story commercial building (Lot 20). Buildings on lots 20 and 21 are vacant. Lots 18 and 19 are occupied. The site is completely covered with buildings; there is no open space.

Current Zoning/Use: The site is zoned residential R6A with a commercial C1-5 Overlay and is currently occupied by private residences and commercial offices. This site has been given an e-designation by NYC.

Historic Use: Past uses include auto repair (Lot 20, 1970s), a chemical manufacturer (entire site, around 1950), and a turpentine company (Lot 20, around 1904 to 1921).

Site Geology and Hydrogeology: Subsurface strata at the site consists of historic urban fill characterized by brown silty sand with gravel, concrete, wood, and brick extending to depths ranging from approximately 10 to 16 feet below grade, underlain by interbedded strata of sand, gravel and silt materials. Bedrock is part of the Hartland Formation and consists of grey mica schist located at a depth of approximately 100 feet below the existing ground surface. Depth to groundwater is 13’ to 15’ and groundwater flow is toward the Hudson River, 500’ to the west.

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(s) 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 Participant. The Applicant has an obligation to address on-site and off-site contamination. 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
- sub-slab 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:

lead
dieldrin
indeno(1,2,3-CD)pyrene

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.

On-site soil and groundwater were analyzed for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), metals, polychlorinated biphenyls (PCBs), and pesticides. Based upon investigations conducted to date, the primary contaminants of concern include lead, dieldrin, and indeno(1,2,3-cd)pyrene.

Soil - 11 of 19 soil samples exceeded the unrestricted soil cleanup objectives (SCOs) for lead of 63 parts per million (ppm), and 5 of those samples also exceeded the restricted residential lead SCO of 400 ppm and the protection of groundwater SCO of 450 ppm. Maximum lead concentration was 3,410 ppm. 9 of the 11 samples exceeding lead SCOs were samples taken from historic fill present at the site, including all the restricted residential exceedances. Depths of lead contamination ranged from shallow (0-1') to a maximum of 13.5'-14'. Additionally, one sample exceeded the Toxicity Characteristic Leaching Procedure (TCLP) maximum

concentration for lead of 5 mg/l with a concentration of 9 mg/l. The soil sample taken at this location contained 151 ppm of lead.

Several samples taken from historic fill exceeded semi-volatile organic compounds (SVOC) SCOs. Most notably, indeno(1,2,3-cd)pyrene exceeded the restricted residential SCO of 0.5 ppm at 3 of 19 samples, with a maximum concentration of 3.9 ppm.

The pesticide dieldrin exceeded restricted residential SCO of 0.2 ppm and the protection of groundwater SCO of 0.1 ppm in one of the 19 samples with a concentration of 0.25 ppm.

No volatile organic compounds (VOCs) or PCB results exceeded SCOs.

Groundwater - Six on-site monitoring wells were sampled. Lead exceeded the groundwater standard of 25 parts per billion (ppb) in 1 of the 6 wells with a concentration of 140 ppb. Dieldrin exceeded the groundwater standard of 0.004 ppb in 4 of the 6 wells with a maximum concentration of 0.06 ppb. There were no VOC, SVOC, or PCB groundwater exceedances.

Soil Vapor and Subslab Vapor – Subslab vapor samples were collected from 9 locations, in existing buildings and on the sidewalk. Soil and sub slab vapor samples contained VOCs including p- & m- xylenes at a maximum concentration of 4100 micrograms per cubic meter (ug/m3) and tetrachloroethene at a maximum concentration of 18 ug/m3.

No off-site investigations were conducted. Based on the available data, there is no evidence that contamination has migrated off-site in any environmental media.

The Department, in consultation with NYSDOH, has determined that this site does not pose a significant threat to public health or the environment.

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.*

Direct contact with contamination in soils is unlikely because the majority of the site is covered with buildings and pavement. Contaminated groundwater at the site is not used for drinking or other purposes and the site is served by a public water supply that obtains water from a different source not affected by this contamination. Contaminants in soil vapor (air spaces within the soil) may move into overlying buildings and affect the indoor air quality. This process, which is similar to the movement of radon gas from the subsurface into the indoor air of buildings, is referred to as soil vapor intrusion. A soil vapor intrusion evaluation for occupied on-site buildings is warranted. Environmental sampling indicates soil vapor intrusion is not a concern off-site.

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

- Restore ground water aquifer to pre-disposal/pre-release conditions, to the extent practicable.

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 use with generic soil cleanup objectives remedy.

The selected remedy is referred to as the Excavation and Off-site Disposal remedy.

The elements of the selected remedy, as shown in Figure 2, 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;

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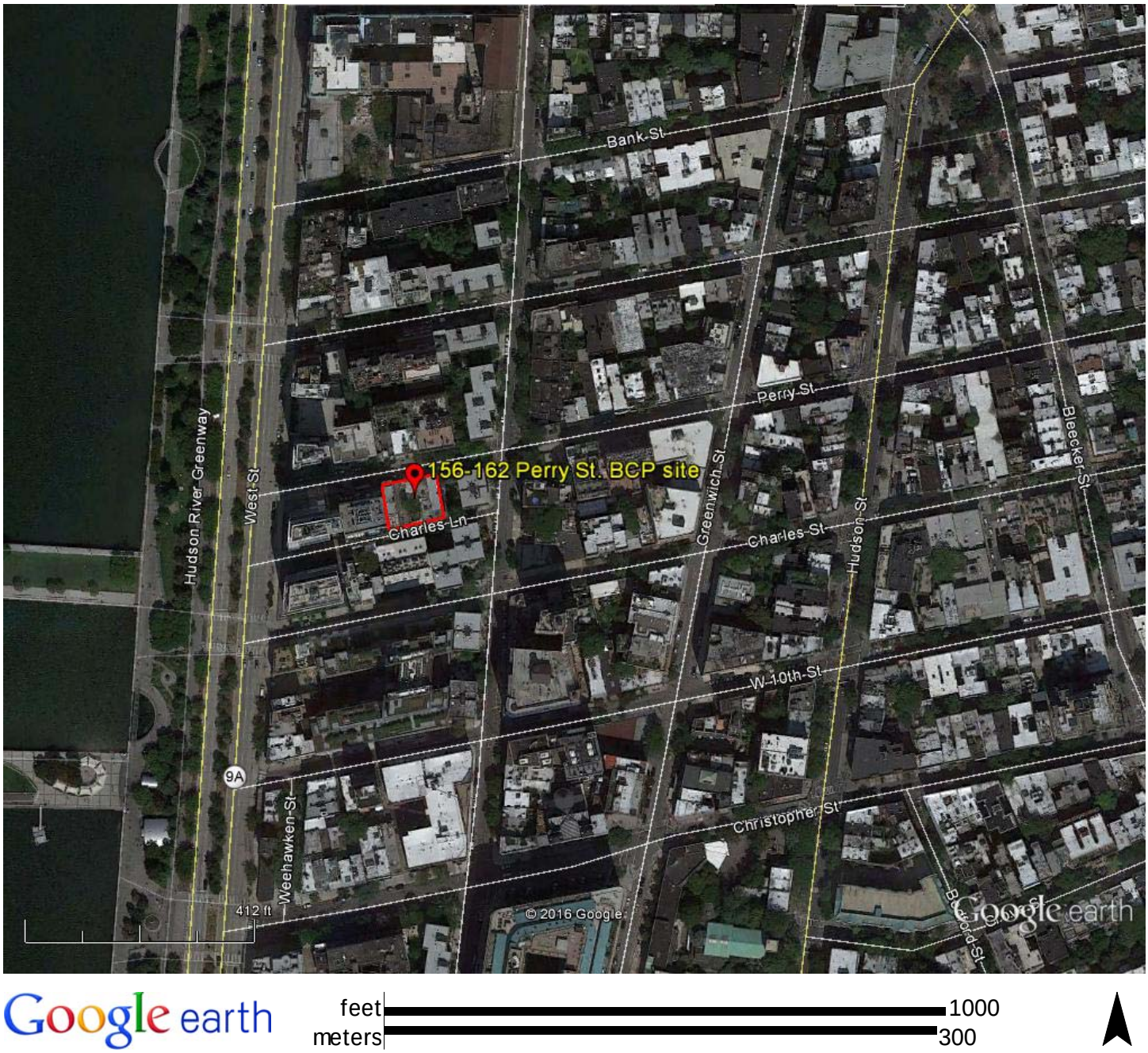
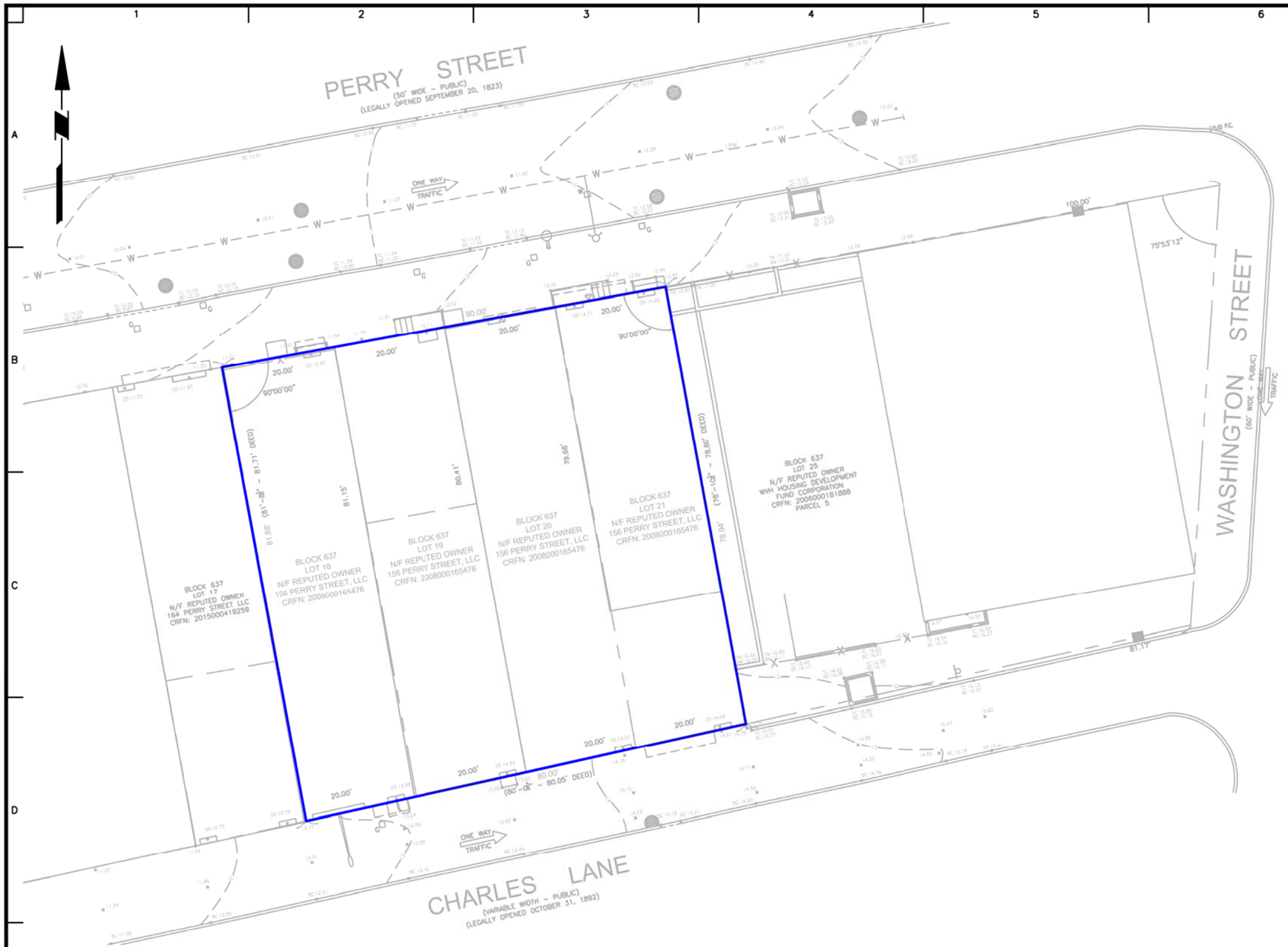


Figure 1 - Site Location



LEGEND

SITE BOUNDARY

NOTES

1. BASEMAP REFERENCE: BOUNDARY AND TOPOGRAPHIC SURVEY, PERFORMED BY GALLAS SURVEYING GROUP, DATED 3/15/2016.
2. ELEVATIONS ARE BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88)

WARNING: IT IS A VIOLATION OF THE NYS EDUCATION LAW ARTICLE 145 FOR ANY PERSON, UNLESS HE IS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS ITEM IN ANY WAY.

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SCALE IN FEET

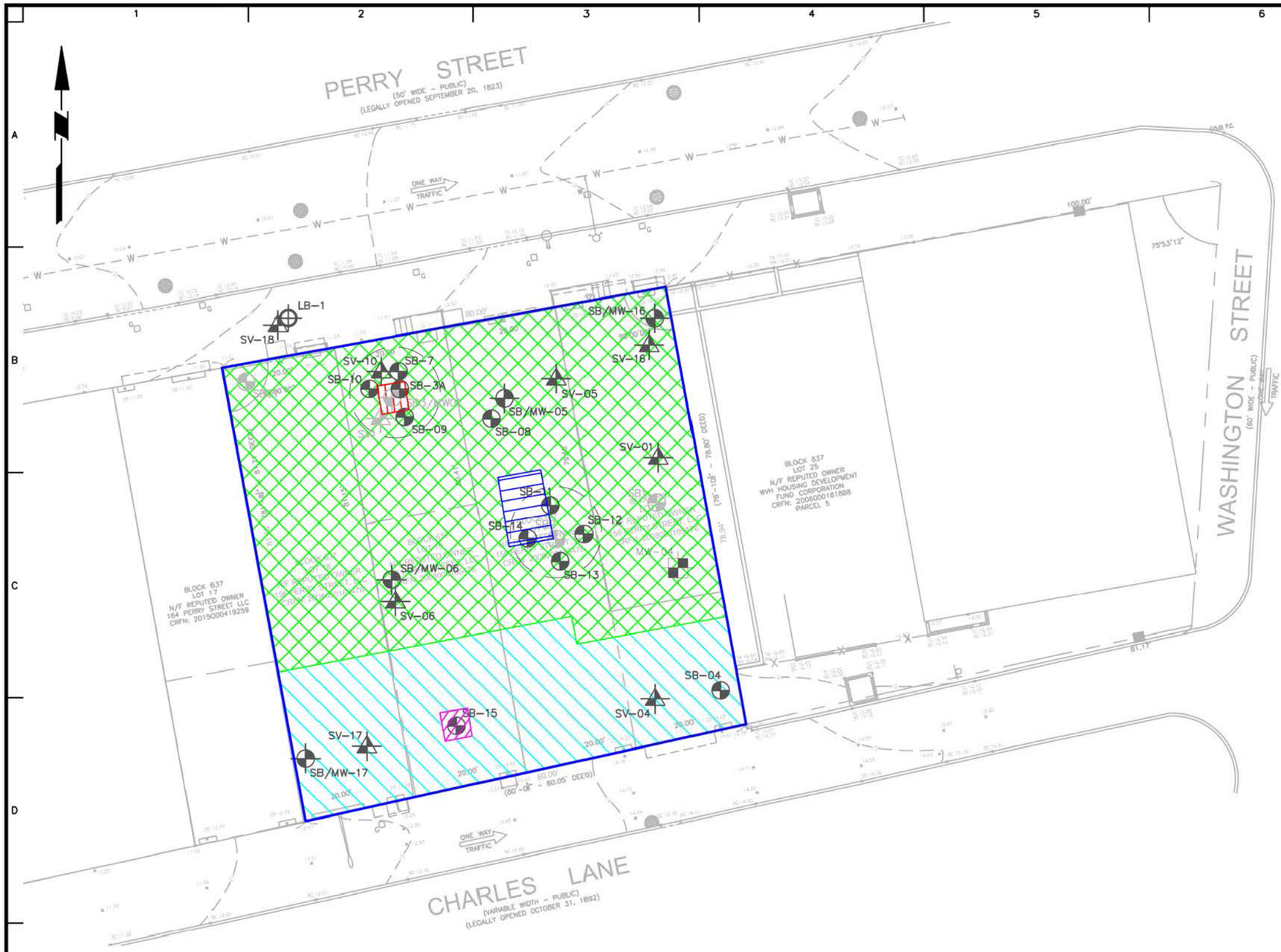
LANGAN
21 Penn Plaza, 360 West 31st Street, 8th Floor
New York, NY 10001
T: 212.479.5400 F: 212.479.5444 www.langan.com
Langan Engineering, Environmental, Surveying and Landscape Architecture, D.P.C. S.A.
Langan Engineering, Environmental, Surveying and Landscape Architecture, D.P.C.
Langan Engineering and Environmental Services, Inc.
Langan CT, Inc.
Langan International LLC
Collectively known as Langan

Project
156-162 PERRY STREET
BLOCK No. 637, LOT No.18, 19, 20 & 21
NEW YORK NEW YORK

Figure Title
SITE LAYOUT MAP

Project No. 170362801	Figure No. 2 Site Plan
Date 10/07/2016	
Scale 1"=20'	
Drawn By KMS / Checked By JA	
Submission Date	Sheet 2 of 13

Filename: \\langan.com\data\NYC\data8\170362801\Cadd Data - 170362801\SheetFiles\Environmental\RAWP\170362801-NI-0201.dwg Date: 10/10/2016 Time: 16:39 User: ksimmons Style Table: Langan.stb Layout: RAWP-F2



LEGEND

- SITE BOUNDARY
- SB–04 — RI SOIL BORING LOCATION
- SB/MW–05 — RI SOIL BORING WITH MONITORING WELL LOCATION
- SV–01 — RI SOIL VAPOR POINT LOCATION
- MW–04 — RI MONITORING WELL LOCATION
- SB1 — SSI SOIL BORING LOCATION (MAY 2015)
- SB3/MW01 — SSI SOIL BORING WITH MONITORING WELL LOCATION (MAY 2015)
- SV1 — SSI SOIL VAPOR POINT LOCATION (MAY 2015)
- AREA OF CONCERN (AOC) NO. 3 (OTHER AOCs ARE SITE-WIDE)
- EXCAVATOIN TO ABOUT 2 FEET BSG (ABOUT EL 10 FEET)
- EXCAVATION TO ABOUT 7 FEET BSG (ABOUT EL 5 FEET)
- EXCAVATION TO ABOUT 12 FEET BSG (ABOUT EL 0 FEET)
- EXCAVATION TO ABOUT 15 FEET BSG (ABOUT EL -3 FEET)
- EXCAVATION TO ABOUT 17 FEET BSG (ABOUT EL -5 FEET)
- LB–1 — GEOTECHNICAL OBSERVATION WELL (AUGUST 2015)

NOTES

1. BASEMAP REFERENCE: BOUNDARY AND TOPOGRAPHIC SURVEY, PERFORMED BY GALLAS SURVEYING GROUP, DATED 3/15/2016.
2. ELEVATIONS ARE BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88)
3. AOC 1 IS SITE-WIDE AND REPRESENTS HISTORICAL FILL BENEATH THE SITE
4. AOC 2 IS SITE-WIDE AND REPRESENTS HISTORICAL USE OF THE SITE
5. AOC 3 REPRESENTS LOCALIZED DETECTIONS OF POTENTIALLY HAZARDOUS LEAD IN SOIL.
6. BSG = BELOW SIDEWALK GRADE
7. ISOLATED LOCATIONS OF DEEPER EXCAVATION MAY BE REQUIRED FOR ELEVATOR PIT AND FOUNDATION ELEMENTS
8. IT IS ESTIMATED THAT ABOUT 2,100 CUBIC YARDS OF HISTORIC FILL MATERIAL AND SOIL WOULD BE EXCAVATED FOR THIS ALTERNATIVE.

20 0 5 10 20
SCALE IN FEET

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Langan International LLC
Collectively known as Langan

Project
156-162 PERRY STREET
BLOCK No. 637, LOT No.18, 19, 20 & 21
NEW YORK NEW YORK

Figure Title
ALTERNATIVE II - TRACK 2 CLEANUP

Project No. 170362801	Figure No. 3
Date 10/07/2016	
Scale 1"=20'	
Drawn By KMS / Checked By JA	Selected Remedy
Submission Date	Sheet 8 of 13

Filename: \\langan.com\data\NYC\data8\170362801\Cadd Data - 170362801\SheetFiles\Environmental\RAWP\170362801-NI-0201.dwg Date: 3/29/2017 Time: 11:48 User: ksimmons Style Table: Langan.stb Layout: RAWP-F8