New York State Department of Environmental Conservation
Division of Environmental Remediation
Remedial Bureau B, 12th Floor
625 Broadway, Albany, New York 12233-7016
Phone: (518) 402-9768 • **Fax:** (518) 402-9773
Website: www.dec.ny.gov

Joe Martens
Commissioner

November 25, 2013

Bridge Land Hudson LLC
Attn: Mr. Bryan Cho
c/o Related Companies
60 Columbus Circle
New York, NY 10023

Re: 261 Hudson Street Development
Site ID No. C231084
New York, New York
Remedial Action Work Plan & Decision Document

Dear Mr. Cho:

The New York State Department of Environmental Conservation (Department) and the New York State Department of Health (NYSDOH) have reviewed the Remedial Action Work Plan (RAWP) for the 261 Hudson Street Development site dated June 25, 2013 and prepared by Langan Engineering, Environmental, Surveying and Landscape Architecture, D.P.C. on behalf of the volunteer, Bridge Land Hudson LLC. The RAWP is hereby approved. Please ensure that a copy of the approved RAWP is placed in the document repository. The draft plan should be removed.

Attached is a copy of the Department's Decision Document for the site. The remedy is to be implemented in accordance with this Decision Document. Please ensure that a copy of the Decision Document is placed in the document repository.

Please contact the Department's Project Manager, Randy Hough, at 518-402-9767 or rshough@gw.dec.state.ny.us at your earliest convenience to discuss next steps. Please recall the Department requires seven days notice prior to the start of field work.

Sincerely,

Robert J. Cozzy
Director
Remedial Bureau B
Division of Environmental Remediation

Enclosure

ec w/attachments:

R. Schick
M. Ryan
B. Cozzy
M. Komoroske
R. Hough
M. Joplin
J. Deming - DOH

Applicant's Contacts
B. Cho – bcho@related.com
J. Hayes – jahayes@langan.com
D. Freeman, Esq – dfreeman@gibbonslaw.com

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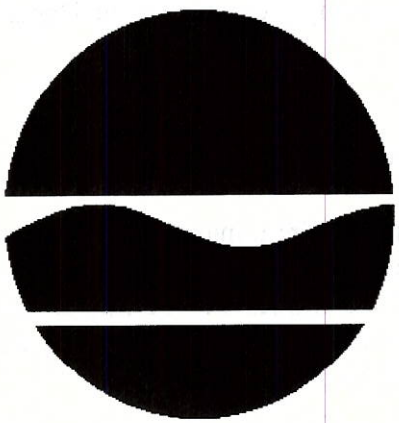
DECISION DOCUMENT

261 Hudson Street Development
Brownfield Cleanup Program
New York, New York County
Site No. C231084
November 2013



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

DECLARATION STATEMENT - DECISION DOCUMENT

261 Hudson Street Development
Brownfield Cleanup Program
New York, New York County
Site No. C231084
November 2013

Statement of Purpose and Basis

This document presents the remedy for the 261 Hudson Street Development 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 261 Hudson Street Development 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. 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.

2. Demolition of the existing on-site buildings to allow excavation and off-site disposal of contaminated soils exceeding the commercial soil cleanup objectives (SCOs) and/or those soils exceeding a total of 250 ppm semi-volatile organic compounds (SVOCs). Selected "hotspot" excavation at three locations to a specific depth to address known impacts at these spots. Approximately 10,000 cubic yards of soil will be removed from the site. On-site soil which does not exceed the commercial SCOs or the SVOC limit may be used to backfill the excavation and establish the redevelopment design grades at the site. Confirmation sampling will be performed to confirm the removal of the targeted soils. Additional soil vapor testing will be done post-excavation to assess soil vapor intrusion.

3. A site cover will be required to allow for restricted residential use of the site. The cover will consist either of the structures such as buildings, pavement, sidewalks comprising the site development or a soil cover in areas where the upper two feet of exposed surface soil will exceed the applicable soil cleanup objectives (SCOs). Where the soil cover is required it will be a minimum of two feet of soil, meeting the SCOs for cover material as set forth in 6 NYCRR Part 375-6.7(d) for restricted residential use. The soil cover will be placed over a demarcation layer, with the upper six inches of the soil of sufficient quality to maintain a vegetation layer. Any fill material brought to the site will meet the requirements for the identified site use as set forth in 6 NYCRR Part 375-6.7(d).

4. Imposition of an institutional control in the form of an environmental easement for the controlled property that:

- requires 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);

- allows for the use and development of the controlled property for restricted residential, commercial and industrial uses as defined in Part 375-1.8(g) and in accordance with applicable local zoning;

- restricts the use of groundwater as a source of potable or process water, without the necessary water quality treatment as determined by NYSDOH and

- requires compliance with the Department approved Site Management Plan.

5. Development and implementation of a Site Management Plan 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 4 above.

Engineering Controls: The composite cover systems described in Paragraph 3 above.

The plan will include, but may not be limited to:

- an Excavation Plan which details the provisions for the management of future excavations in areas where contamination remains;

- descriptions of the provisions of the environmental easement including any land use restrictions;

- a provision for evaluation of the potential for soil vapor intrusion for any buildings developed on the site, including provisions for implementing actions recommended to address exposures related to soil vapor intrusion;

- 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 for vapor intrusion for any buildings developed on the site, as may be required by the Institutional and Engineering Control Plan discussed above and

- a schedule of monitoring and frequency of submittals to the Department.

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.

November 25, 2013

Date

Robert J.Cozzy, Director
Remedial Bureau B

DECISION DOCUMENT

261 Hudson Street Development
New York, New York County
Site No. C231084
November 2013

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 repository:

New York Public Library
Hudson Park Branch
66 Leroy Street
New York, NY 10014-3929
Phone: (212) 243-6876

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 261 Hudson Street Development site is located on the west side of Manhattan in the Hudson Square section of the city. The site is bounded by commercial properties and Spring Street to the north, Hudson Street to the east, commercial/residential properties and Canal Street to the south, and Renwick Street to the west.

Site Features: The site is formally identified as 261 Hudson Street, Block 594, Lot 87. Lot 87 encompasses approximately 0.61 acres of property. On April 18, 2013, the NYC Department of Finance approved an application for a lot merger to consolidate lots 61, 69 and 94 into lot 87. Thus, the site (lot 87) includes parcels that which had been until recently, four separate properties.

The current status of the site and former parcels is as follows: Lot 87 (80% of site) includes a one story vacant building; lot 61 (<1%) is vacant property; lot 69 (11%) includes a vacant three story building and lot 94 (9%) is a parking lot.

The Manhattan bound tube of the Holland Tunnel, running northwest-southeast in the area is just north of the site. The tunnel exit is one block east of the site. The Hudson River is located approximately 0.2 miles west of the site.

Current Zoning and Land Use: The site is zoned C6-2A for commercial use, which has a residential equivalent of R8A. The block was included as part of the recent Hudson Square District rezoning. The intended use of the site is for commercial and restricted residential Use.

Past Use of the Site: Lot 69 (northwestern portion of the property) was used for unspecified manufacturing in 1950 and commercial/office space from 1968-2011. Lot 87 (central portion of the property) was occupied from 1950 through 1968 by a motor freight station which reportedly had two underground storage tanks for gasoline. From 1976 to 2005 the building was used as a NYC Waterfront Community Hiring Hall and was most recently used as event space up until 2012. Lot 94 (southern portion of the property) has been vacant since 1950 and is currently a parking lot. Prior to 1950, this lot was occupied by a multi-story residential building with ground-level stores. Lot 61 has always been vacant.

Site Geology and Hydrogeology: The ground level elevation on the property ranges from approximately 13 to 15 feet above mean sea level.
The topography of the site and the surrounding area slopes gently to the west towards the Hudson River.

The site is underlain by a layer of historic fill that is approximately 7 to 19 feet thick starting just below the ground and pavement surface. The historic fill generally consists of fine to coarse brown sand with some silt, gravel, brick, wood, asphalt, and concrete. The native soils below the historic fill consist of reddish brown sand with some silt and clay.

The average depth to groundwater is 13.7 feet below ground surface (bgs), with the range in depth from 11.8 feet to 16.4 feet. Groundwater flow is from the southeast to northwest towards the Hudson River.

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(s) under the Brownfield Cleanup Agreement is a/are Volunteer(s). The Applicant(s) does/do 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:

benzo(a)pyrene
chrysene
benzo(b)fluoranthene
benzo[k]fluoranthene
benzo(ghi)perylene
benz(a)anthracene
dibenz[a,h]anthracene
indeno(1,2,3-cd)pyrene
tetrachloroethylene (PCE)
trichloroethene (TCE)
lead

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 - A total of 20 subsurface soil samples were collected at the site. Fourteen of these samples were of the historic fill materials at various depths and six were of the native soils beneath. The fill materials are impacted above both the Part 375 unrestricted and restricted residential use SCOs for PAHs and selected metals. PAHs in the historic fill were found at concentrations up to approximately 400 times the cleanup standards (benzo[a]pyrene at 390 ppm) and lead was found above the cleanup standards (400 ppm) at 2,650 ppm. The native soils below the fill are generally not impacted.

Groundwater - PCE is found in groundwater at one monitoring well location in the north central end of the property. The 9.7 ppb concentration of PCE in this well is only marginally above the groundwater standard of 5.0 ppb. Filtered samples of groundwater exceeded SCGs for the common salts, sodium, manganese and magnesium as well as for iron and selenium.

Soil Vapor - Soil vapor on the property was found to be impacted by chlorinated solvents at all five locations sampled. PCE was detected at all locations in the range of 20 to 120 ug/cubic meter. TCE was detected at four of the five locations in the range of 28 to 63 ug/cubic meter.

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 the contaminated groundwater because the area is served by a public water supply that is not affected by this contamination. The site is fenced and mostly covered by asphalt or concrete, therefore it is unlikely that people will come into contact with contaminated soil. However, persons who enter the site could contact contaminants in the soil by walking on or otherwise disturbing exposed soil, or by digging beneath the surface. Volatile organic compounds in the groundwater may move into the soil vapor (air spaces within the soil), which in turn 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. The potential for soil vapor intrusion to occur on and off-site needs to be evaluated.

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 contact with, or inhalation of volatiles, from contaminated groundwater.

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 site-specific soil cleanup objectives remedy.

The selected remedy is referred to as the soil excavation with composite cover system remedy.

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

1. 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.

2. Demolition of the existing on-site buildings to allow excavation and off-site disposal of contaminated soils exceeding the commercial soil cleanup objectives (SCOs) and/or those soils exceeding a total of 250 ppm semi-volatile organic compounds (SVOCs). Selected "hotspot" excavation at three locations to a specific depth to address known impacts at these spots. Approximately 10,000 cubic yards of soil will be removed from the site. On-site soil which does not exceed the commercial SCOs or the SVOC limit may be used to backfill the excavation and establish the redevelopment design grades at the site. Confirmation sampling will be performed to confirm the removal of the targeted soils. Additional soil vapor testing will be done post-excavation to assess soil vapor intrusion.

3. A site cover will be required to allow for restricted residential use of the site. The cover will consist either of the structures such as buildings, pavement, sidewalks comprising the site development or a soil cover in areas where the upper two feet of exposed surface soil will exceed the applicable soil cleanup objectives (SCOs). Where the soil cover is required it will be a minimum of two feet of soil, meeting the SCOs for cover material as set forth in 6 NYCRR Part 375-6.7(d) for restricted residential use. The soil cover will be placed over a demarcation layer, with the upper six inches of the soil of sufficient quality to maintain a vegetation layer. Any fill material brought to the site will meet the requirements for the identified site use as set forth in 6 NYCRR Part 375-6.7(d).

4. Imposition of an institutional control in the form of an environmental easement for the controlled property that:

- requires 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);

- allows for the use and development of the controlled property for restricted residential, commercial and industrial uses as defined in Part 375-1.8(g) and in accordance with applicable local zoning;

- restricts the use of groundwater as a source of potable or process water, without the necessary water quality treatment as determined by NYSDOH and

- requires compliance with the Department approved Site Management Plan.

5. Development and implementation of a Site Management Plan 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 4 above.

Engineering Controls: The composite cover systems described in Paragraph 3 above.

The plan will include, but may not be limited to:

- an Excavation Plan which details the provisions for the management of future excavations in areas where contamination remains;

- descriptions of the provisions of the environmental easement including any land use restrictions;

- a provision for evaluation of the potential for soil vapor intrusion for any buildings developed on the site, including provisions for implementing actions recommended to address exposures related to soil vapor intrusion;

- 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 for vapor intrusion for any buildings developed on the site, as may be required by the Institutional and Engineering Control Plan discussed above and

- a schedule of monitoring and frequency of submittals to the Department.

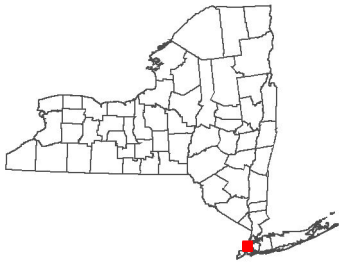


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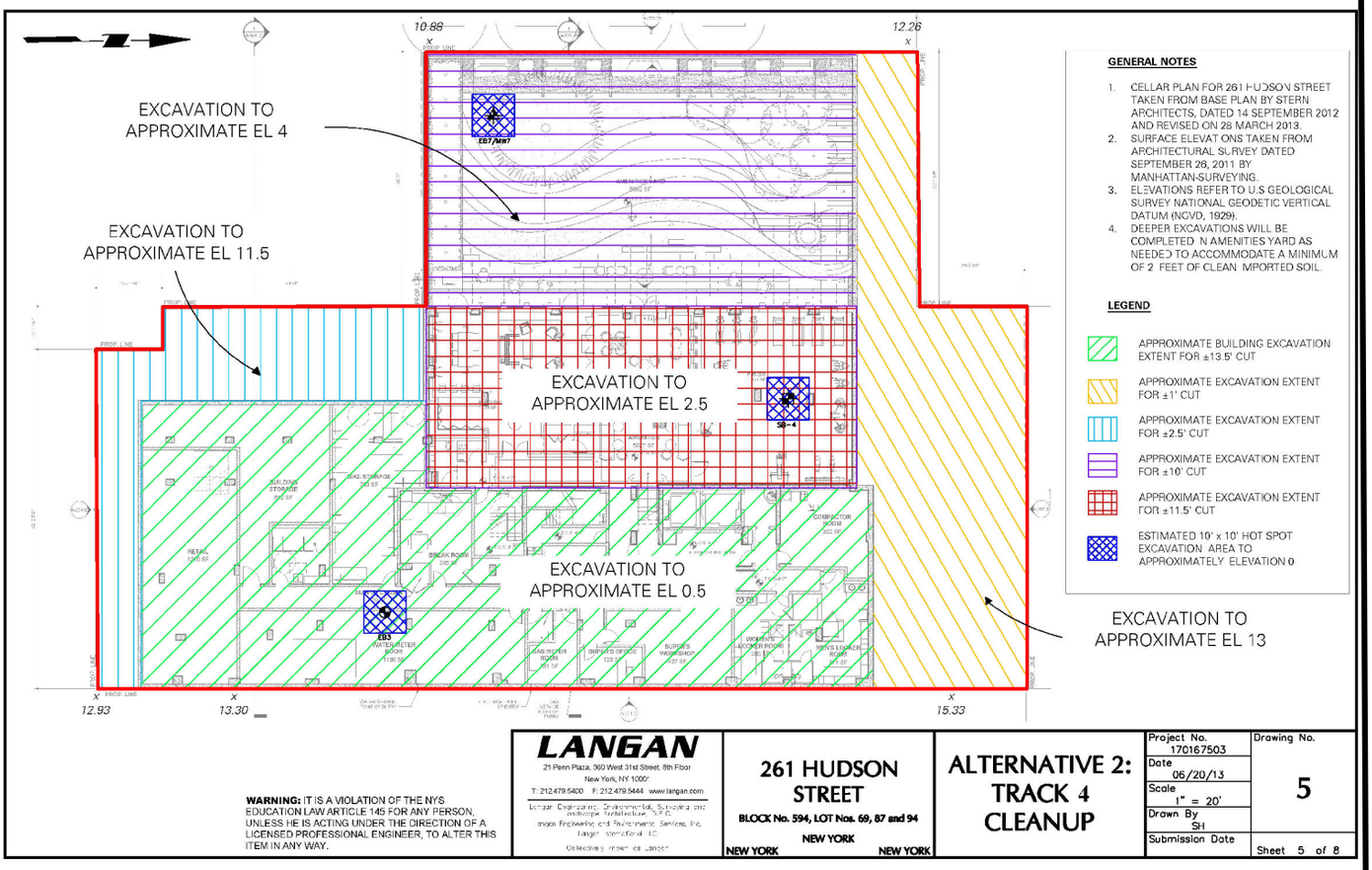
Figure 1

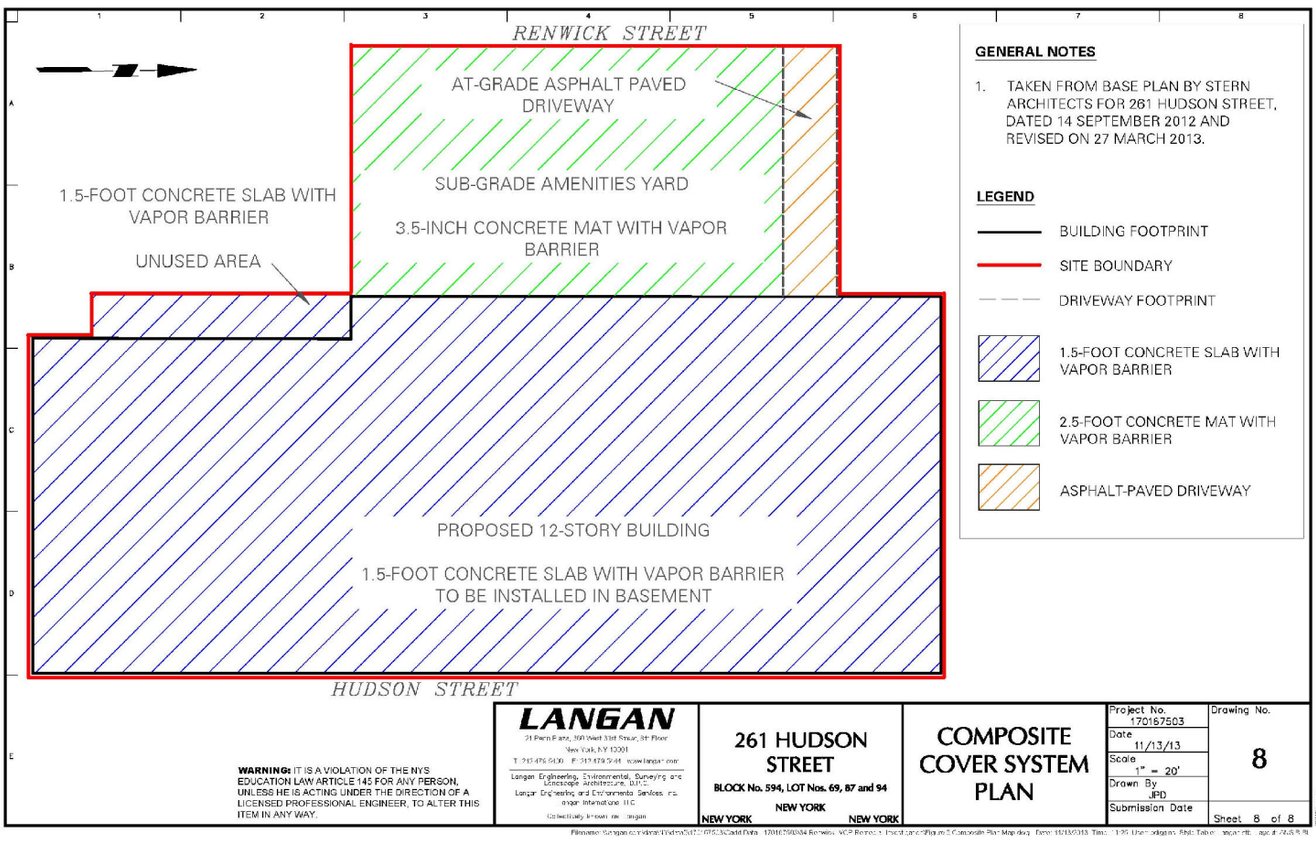
Site Location/Parcel Map

261 Hudson Street Development
Manhattan, New York
Site No. C231084

DEPARTMENT OF ENVIRONMENTAL CONSERVATION • NEW YORK STATE •



EXCAVATION AREAS



COMPOSITE COVER SYSTEM

Figure 2
Site Remedy
261 Hudson Street Development
Manhattan,New York
Site No. C231084

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