DECISION DOCUMENT

Former Brighton Cleaners
Brownfield Cleanup Program
Brooklyn, Kings County
Site No. C224157
October 2013

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

DECLARATION STATEMENT - DECISION DOCUMENT

Former Brighton Cleaners
Brownfield Cleanup Program
Brooklyn, Kings County
Site No. C224157
October 2013

Statement of Purpose and Basis

This document presents the remedy for the Former Brighton Cleaners 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 Former Brighton Cleaners 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, 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 gas 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. **Excavation**

Restricted residential use soil cleanup objectives (SCOs) will be used to guide excavation of contaminated soils, with a cover system described in paragraph 3 below to allow restricted residential use of the site. To supplement the 597 tons of contaminated soil that were previously removed under the IRM, approximately 250 cubic yards will be excavated, including a hot spot in the western section of the site. Fill material brought in to replace the excavated soil and establish the designed grade at the site will meet the requirements for identified site use as set forth in 6 NYCRR Part 375-6.7 (d).

3. **Cover System**

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. **Soil Vapor Extraction (SVE)**

Soil Vapor extraction will be implemented to remove volatile organic compounds (VOCs) from the subsurface. VOCs will be physically removed from the soil by applying a vacuum to trenches and wells that have been installed into the vadose zone (the area below the ground but above the water table). The vacuum draws air through the soil matrix which carries the VOCs from the soil to SVE trenches and wells. The air extracted from the SVE trenches and wells is then treated as necessary prior to being discharged to the atmosphere. The SVE system will also serve as a sub-slab depressurization system to prevent the migration of vapors into any future on-site building from soil/or groundwater.

5. **Vapor Mitigation**

Any future on-site buildings will be required to have a sub-slab depressurization system, or a similar engineered system, to prevent the migration of vapors into the building from soil and/or groundwater. The SVE system discussed in paragraph 4, above, will act as an SSDS for the proposed on-site building.

6. **In-Situ Chemical Oxidation (ISCO)**

In-situ chemical oxidation (ISCO) will be implemented to treat VOCs in groundwater. Potassium permanganate will be injected via injection wells into the subsurface to destroy the contaminants. The method and depth of injection will be determined during the remedial design. The byproducts of the ISCO process are non-toxic.

7. **Institutional Control**

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 the use and development of the controlled property for restricted residential, commercial and industrial uses as defined by Part 375-1.8(g), although land use is subject to local zoning laws;
- Restricts the use of groundwater as a source of potable or process water, without necessary water quality treatment as determined by the NYSDOH or County DOH; and
- Requires compliance with the Department approved Site Management Plan.

8. **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:

i. Institutional controls:
   - o The Environmental Easement discussed above

ii. Engineering controls:
   - o The site cover discussed above
   - o Soil Vapor Extraction/sub-slab depressurization system above
   - o In-situ Chemical oxidation discussed above

This plan includes, but may not be limited to

- Excavation plan which details the provision for management of future excavations in area of remaining contamination;
- Description of the provision of the environmental easement including any land use, and groundwater use restrictions;
- Provision for 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 site cover 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, optimization, monitoring, inspection, and reporting of any mechanical or physical components of the remedy. The plan includes, but is not limited to:
   - Compliance monitoring of treatment systems to ensure proper O&M as well as providing the data for any necessary permit or permit equivalent reporting;
   - Maintaining site access controls and Department notification; and
   - Providing the Department access to the site and O&M records.

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.

October 24, 2013

Date

Robert J. Cozzy, Director
Remedial Bureau B

DECISION DOCUMENT

Former Brighton Cleaners
Brooklyn, Kings County
Site No. C224157
October 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:

Brooklyn Public Library – Brighton Beach Branch
Attn: Steve Stickney
16 Brighton First Rd. at Brighton Beach Ave.
Brooklyn, NY 11235
Phone: 718-946-2917

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 on the west side of Coney Island Ave., approximately 150 feet south of Ocean View Ave.

Site Features: The site is a vacant lot. The lot is enclosed with a plywood construction fence.

Current Zoning/Uses: The site is currently zoned for residential use. Surrounding parcels are single family homes and apartment buildings.

Historic Uses: The property was formerly improved with a 1-story commercial building. The building was most recently utilized as a dry cleaner by Brighton Cleaners. Sanborn maps show cleaning and dyeing operations within the building from 1950 to 2007. The building and a metal storage shed were demolished in 2009.

Site Geology and Hydrogeology: Soil at the site consists of a layer of urban fill extending from the surface to depths 5 feet below grade underlain by layers of fine to medium silty sands and silt. A thin clay/peat layer approximately 0.5 to 1 foot thick was observed at approximately 9.5 feet below grade. Groundwater is approximately 9 to 10 feet below grade surface and flows toward the south.

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 Volunteer. The Volunteer does not have an obligation to address off-site contamination. The Department has determined that

this site poses a significant threat to human health and the environment and there are off-site impacts that require remedial activities; accordingly, 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:

TETRACHLOROETHYLENE (PCE)	DICHLOROETHYLENE
TRICHLOROETHENE (TCE)	VINYL CHLORIDE
1,2,4-TRIMETHYLBENZENE	

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.

The following IRM has been completed at this site based on conditions observed during the RI.

IRM - Soil Excavation and Tank Removal

A 1,100 gallon fuel oil underground storage tank was removed as part of the IRM. Volatile Organic Compound (VOCs) impacted soils in the western portion of the site which exceed restricted residential SCOs, as defined by 6 NYCRR Part 375-6.8, were excavated down to 10 feet below grade surface for off-site disposal. A total of 597 tons of VOC impacted soil were removed as the result of the IRM. Prior to backfill the excavation with clean fill a demarcation barrier composed of orange snow fencing was place at the bottom and side of the excavation. Clean fill meeting the requirements of restricted residential SCOs in 6 NYCRR Part 375-6.7(d) was brought in to complete the backfilling of the excavation and to establish the designed grades at the site.

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:
Based on the investigations conducted to date, the primary contaminants of concern at the site are tetrachloroethylene (PCE) and its breakdown products. On-site soil, groundwater and soil vapor at the site are impacted by these contaminants.

Soil:
PCE and its breakdown products were detected in soil at concentrations exceeding the Part 375 unrestricted use soil cleanup objectives (UUSCOs), with a maximum PCE concentration of 3,400 parts per million (ppm) and a maximum trichloroethene (TCE) concentration of 290 ppm.

Groundwater:
PCE was detected in groundwater at a maximum concentration of 340,000 parts per billion (ppb); TCE at a maximum concentration of 2,600 ppb; and cis-1,2-dichloroethylene (DCE) at a maximum concentration of 2500 ppb. The impact to the groundwater appears to be throughout the entire site.

Soil Vapor:
PCE was detected in soil vapor at or near the property boundary with a maximum concentration of 2,660 micrograms per cubic meter (ug/m3); and TCE at a maximum concentration of 2,900 ug/m3.

Significant Threat:
NYSDEC and NYSDOH determined that this site poses a significant threat to human health and the environment due to the elevated concentrations of PCE in on-site soil, groundwater and soil vapor.

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*.

The site is completely fenced, which restricts public access. People are not drinking the contaminated groundwater because the area is served by a public water supply that is not affected by contamination. 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. Because the site is vacant, the inhalation of contaminants due to soil vapor intrusion does not represent a current concern. Vapor intrusion is a potential exposure pathway for any buildings constructed at the site. Data suggests that off-site vapor intrusion could also be an exposure pathway especially to structures located to the north and west of the site. However, access to sample these properties so far has been denied.

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

RAOs for Environmental Protection

- Restore ground water aquifer to pre-disposal/pre-release conditions, to the extent practicable.
- Remove the source of ground or surface water contamination.

Soil

RAOs for Public Health Protection

- Prevent ingestion/direct contact with contaminated soil.
- Prevent inhalation of or exposure from contaminants volatilizing from contaminants in 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 Excavation with Soil Vapor Extraction and In-Situ Chemical Oxidation remedy.

The elements of the selected remedy, as shown in Figures 2 through 4, are as follows:

1. **Remedial Design**

A remedial design program will be implemented to provide the details necessary for the

construction, operation, 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 gas and other emissions;
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- Reducing waste, increasing recycling and increasing reuse of materials which would otherwise be considered a waste;
- Maximizing habitat value and creating habitat when possible;
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- Integrating the remedy with the end use where possible and encouraging green and sustainable re-development.

2. **Excavation**

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from soil/or groundwater.

5. **Vapor Mitigation**

Any future on-site buildings will be required to have a sub-slab depressurization system, or a similar engineered system, to prevent the migration of vapors into the building from soil and/or groundwater. The SVE system discussed in paragraph 4, above, will act as an SSDS for the proposed on-site building.

6. **In-Situ Chemical Oxidation (ISCO)**

In-situ chemical oxidation (ISCO) will be implemented to treat VOCs in groundwater. Potassium permanganate will be injected via injection wells into the subsurface to destroy the contaminants. The method and depth of injection will be determined during the remedial design. The byproducts of the ISCO process are non-toxic.

7. **Institutional Control**

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 the use and development of the controlled property for restricted residential, commercial and industrial uses as defined by Part 375-1.8(g), although land use is subject to local zoning laws;
- Restricts the use of groundwater as a source of potable or process water, without necessary water quality treatment as determined by the NYSDOH or County DOH; and
- Requires compliance with the Department approved Site Management Plan.

8. **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:

   i. Institutional controls:
      - The Environmental Easement discussed above

   ii. Engineering controls:
      - The site cover discussed above
      - Soil Vapor Extraction/sub-slab depressurization system above
      - In-situ Chemical oxidation discussed above

   This plan includes, but may not be limited to

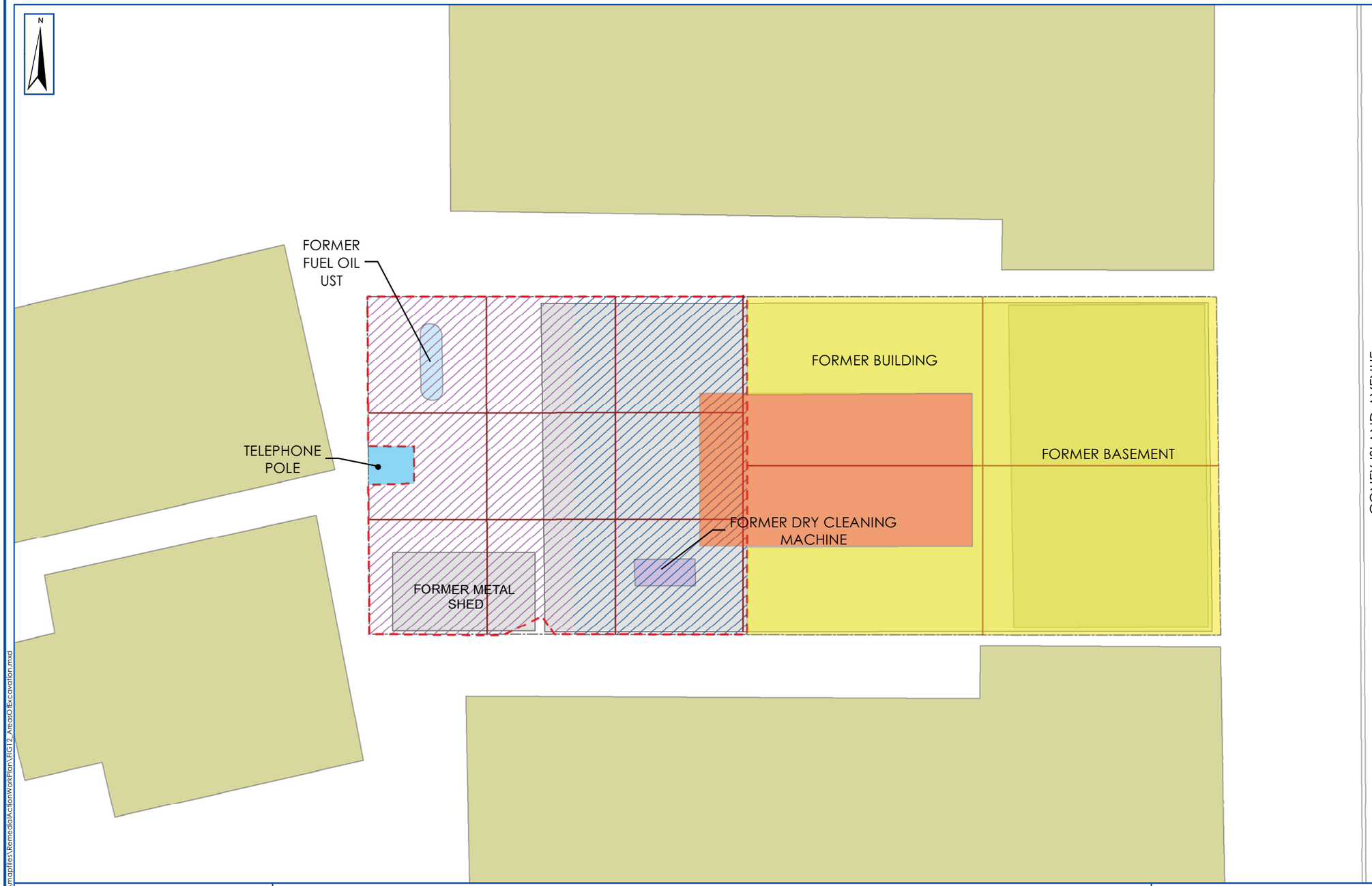
   - Excavation plan which details the provision for management of future excavations in area of remaining contamination;
   - Description of the provision of the environmental easement including any land use, and groundwater use restrictions;
   - Provision for management and inspection of the identified 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 site cover 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, optimization, monitoring, inspection, and reporting of any mechanical or physical components of the remedy. The plan includes, but is not limited to:
   - Compliance monitoring of treatment systems to ensure proper O&M as well as providing the data for any necessary permit or permit equivalent reporting;
   - Maintaining site access controls and Department notification; and
   - Providing the Department access to the site and O&M records.

Former Brighton Cleaner (site No. C224157) Figure 1



Proposed Excavation to 1 foot BGS
Proposed Excavation to 6 feet BGS
Proposed Excavation to 10 feet BGS
Excavated to 10 feet bgs
Excavated at a 2:1 Slope
Area of Excavation
Adjacent Buildings
Property Boundary

AREAS OF EXCAVATION

3140 CONEY ISLAND AVENUE
BROOKLYN, NEW YORK

0 10 20 30 40 Feet

Note:
bgs - Below Ground Surface
Area excavated at a 2:1 slope rises towards the east from an initial depth of 10 feet bgs.

Additional excavation to 11 feet bgs in sections for footings is anticipated.

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LONG ISLAND CITY, NEW YORK 11101-5407

REVISION	DATE	INITIAL	COMMENTS

DRAWING INFORMATION:

Project:	CIR1201	Designed by:	JLL
Date:	6/14/2013	Drawn by:	BB
Scale:	AS SHOWN	Approved by:	JLL

FIGURE NO:
2
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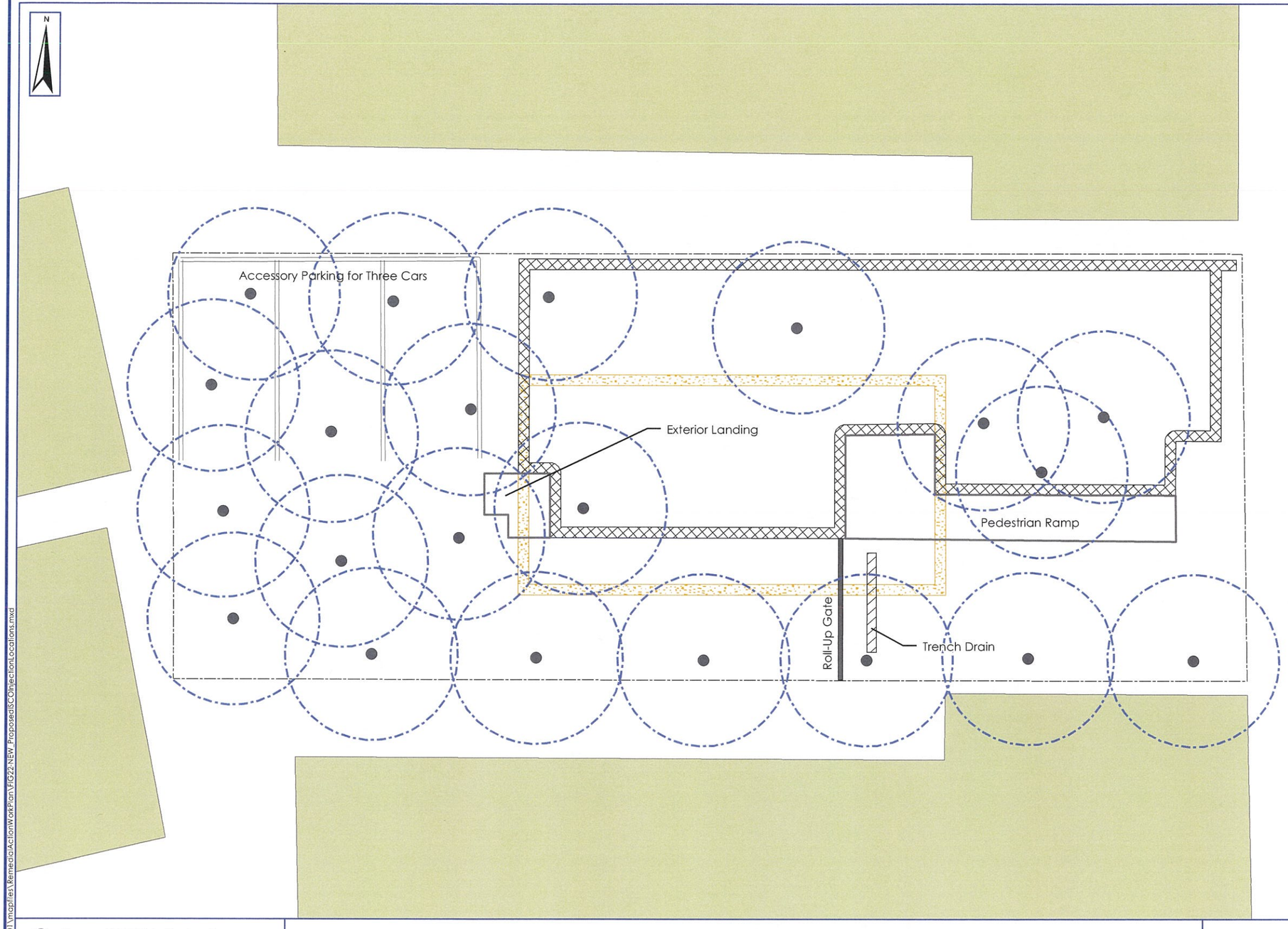

Proposed ISCO Injection Locations
Proposed ISCO Injection Radius of Influence
First Floor Exterior Wall
Cellar Footprint
Property Boundary
Adjacent Buildings

PROPOSED ISCO INJECTION LOCATIONS

3140 CONEY ISLAND AVENUE
BROOKLYN, NEW YORK

0 10 20 30 40 Feet

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CONEY ISLAND AVENUE

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Scale:	AS SHOWN	Approved by:	JLL

FIGURE NO: 3

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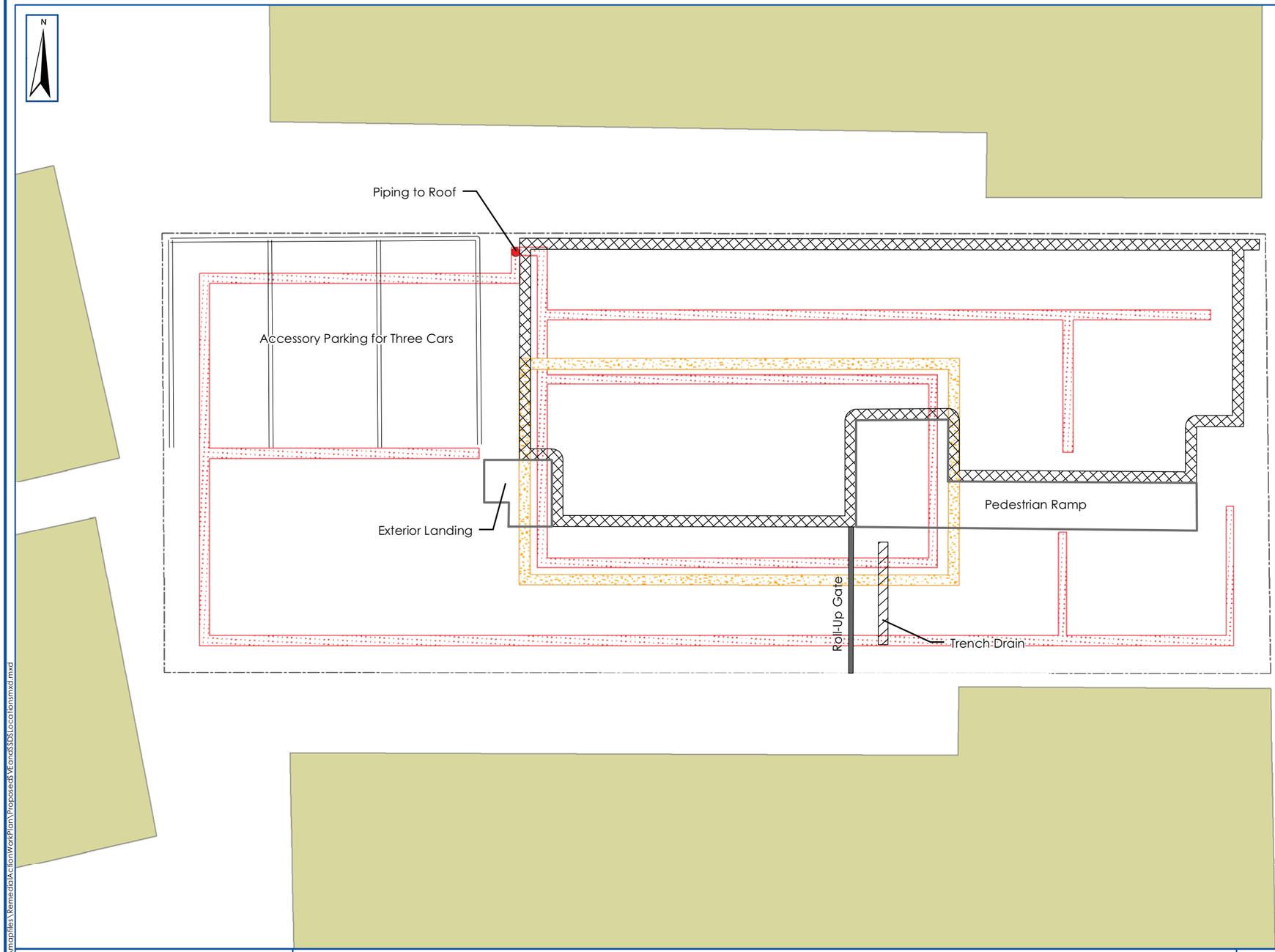

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First Floor Exterior Wall
Cellar Footprint (depth approximately 6 feet below sidewalk grade)
SVE / SSDS Trench
Adjacent Buildings
Property Boundary

PROPOSED SVE AND SSDS SYSTEM LOCATIONS

3140 CONEY ISLAND AVENUE
BROOKLYN, NEW YORK

0 10 20 30 40 Feet

Note:
SVE - Soil Vapor Extraction
SSDS - Sub-Slab Depressurization System
SVE/SSDS blowers will be mounted on building rooftop.

FIGURE NO: 4

SHEET:

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