DECISION DOCUMENT

South Brooklyn Marine Terminal
Brownfield Cleanup Program
Brooklyn, Kings County
Site No. C224360
March 2024

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

DECLARATION STATEMENT - DECISION DOCUMENT

South Brooklyn Marine Terminal
Brownfield Cleanup Program
Brooklyn, Kings County
Site No. C224360
March 2024

Statement of Purpose and Basis

This document presents the remedy for the South Brooklyn Marine Terminal 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 (NYSDEC) for the South Brooklyn Marine Terminal site and the public's input to the proposed remedy presented by NYSDEC.

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 at this site, any future on-site buildings shall be

constructed, at a minimum, to meet the 2020 Energy Conservation Construction Code of New York (or most recent edition) 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 NYSDEC 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

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

- grossly contaminated soil, as defined in 6 NYCRR Part 375-1.2(u);
- 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; and
- any underground storage tanks (USTs), fuel dispensers, underground piping or other structures associated with a source of contamination.

Excavation and off-site disposal of all on-site soils which exceed industrial SCOs, as defined by 6 NYCRR Part 375-6.8, in the upper 1 foot of the site where development-related soil disturbance will take place.

Approximately 70,000 cubic yards of contaminated soil will be removed from the site.

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 establish the designed grades at the site.

4. Cover System
A site cover will be required in areas where the upper one foot of exposed surface soil will exceed the applicable soil cleanup objectives (SCOs), to allow for future industrial use of the site. Where a soil cover is to be used it will be a minimum of one foot 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. 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 NYSDEC 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 industrial 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 NYSDEC approved Site Management Plan.

6. 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 Remedy Element 5 above.
— Engineering Controls: The Cover System discussed in Remedy Element 4 above.

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, or groundwater use restrictions;

- a provision for evaluation of the potential for soil vapor intrusion for any occupied buildings on the site, including provision for implementing actions recommended to address exposures related to soil vapor intrusion;
- maintaining site access controls and NYSDEC 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:
   - a schedule of monitoring and frequency of submittals to the NYSDEC;
   - monitoring for vapor intrusion for any buildings on the site, as may be required by the Institutional and Engineering Control Plan discussed above.

Declaration

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

March 29, 2024

Date

Jane H. O'Connell
Regional Remediation Engineer, Reg. 2

DECISION DOCUMENT

South Brooklyn Marine Terminal
Brooklyn, Kings County
Site No. C224360
March 2024

SECTION 1: SUMMARY AND PURPOSE

The New York State Department of Environmental Conservation (NYSDEC), 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.

NYSDEC 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

NYSDEC 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 NYSDEC 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=C224360

Community Board 7
4201 4th Avenue
Brooklyn, NY 11232
Phone: (718) 854-0003

Brooklyn Public Library - Sunset Park Branch
4201 4th Avenue
Brooklyn, NY 11232
Phone: (718) 435-3648 extension 55116

Receive Site Citizen Participation Information By Email

Please note that NYSDEC'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

Site Location:
The site is located at 269 37th Street in Brooklyn, NY. The site is irregular in shape, and is bounded by 2nd Avenue to the southeast, 39th Street to the southwest, a recycling facility and 29th Street to the northeast and the Gowanus Bay to the northwest. The total site area is approximately 71-acres and consists of Block 662, Portion of Lot 1, Portion of Lot 130, and Lots 136, 137, and 155. The site is in a highly developed urban area of Brooklyn consisting primarily of industrial and commercial structures.

Site Features:
The site is mostly covered in asphalt pavement, foundation remnants of demolished buildings, multiple railroad sidings, and several areas of chain link fencing that were used as part of the previous operations. There is a security guard continually stationed at the entrance at the end of 39th Street. The buildings located on the site consist of the J1 Shed, J2 Shed, N Shed, Graffiti Building, and the Tower Building at 632 2nd Avenue. All the buildings are currently vacant and unoccupied.

The site is directly adjacent to Upper New York Bay and is within flood zone AE, based on Federal Emergency Management Agency (FEMA) maps and the NYC Flood Hazard Mapper. AE flood zones are areas that present a 1% annual chance of flooding according to FEMA.

Past Use of the Site:
The site was primarily open water as early as 1888. Only the southern-most portion of the site along 39th Street and Second Avenue was developed with a pier as the New York & Brooklyn Ferry & Steam Transportation Company. By 1922, the site had been developed into a series of piers identified as the City of New York Piers. It is assumed that the piers were constructed on man-made filled areas.

As of 1940, petroleum bulk storage tanks were present where the current N Shed is located.

These tanks were identified as four 160,000 diesel aboveground storage tanks (ASTs) operated by the New York City Transit System, with a diesel fuel filling station located southeast of these tanks.

By 1953 the four ASTs had been replaced by the current N Shed. By 1974 the 33rd Street and 35th Street piers were replaced with urban fill to create a large asphalt paved pier with two operating cranes to remove cargo containers from docked ships.

As of 1979, the boundaries of the site were generally in its current configuration. The site has remained relatively unchanged since 1987 with the exception of two temporary structures and an office trailer located within a chain link fenced area near the corner of Second Avenue and 39th Street which were used for the maintenance of automobiles and large trucks. Since early 2018, the office trailer and both temporary structures have been removed from the site.

Site Geology and Hydrogeology:
Based on the field observations made during the advancement of soil borings, the upper 17 feet of soils consists of a mix of silt, sand, and gravel typically associated with urban fill. Groundwater was encountered at the site between 7 and 9 feet below ground surface and flows west towards Upper New York Bay.

A site location map is attached as Figure 1.

SECTION 4: LAND USE AND PHYSICAL SETTING

NYSDEC 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 that restrict the use of the site to industrial use as described in Part 375-1.8(g) were 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 Applicants under the Brownfield Cleanup Agreement are Volunteers. The Applicants do not have an obligation to address off-site contamination. However, NYSDEC 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. NYSDEC 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)anthracene
benzo(a)pyrene
benzo(b)fluoranthene
dibenz[a,h]anthracene
indeno(1,2,3-cd)pyrene
arsenic
lead
mercury

benzene
benzo(k)fluoranthene
chrysene
cadmium
manganese
perfluorooctanoic acid
perfluorooctane sulfonic acid
toluene

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

- air
- 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.

UST and Transformer Removal

Excavation
Excavation and removal of any underground storage tanks (USTs), fuel dispensers, underground piping and other structures associated with a source of contamination.

The IRM is ongoing, and results will be documented in the Final Engineering Report.

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.

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. Based upon investigations conducted to date, the primary contaminants of concern include SVOCs and metals in soil.

Nature and Extent of Contamination:

Soil - SVOCs above industrial use soil cleanup objectives (IUSCOs) were found in soil from 0-15 feet below ground surface (bgs) throughout the site including maximum concentrations of benzo(a)anthracene of 56 parts per million, or ppm (IUSCO of 1.1 ppm), benzo(a)pyrene of 50.7 ppm (IUSCO of 1.1 ppm), benzo(b)fluoranthene of 42.2 ppm (IUSCO of 11 ppm), dibenzo(a,h)anthracene of 7.91 ppm (IUSOC of 1.1 ppm), and indeno(1.2.3-cd)pyrene of 23.3

ppm (IUSCO of 11 ppm). Arsenic was found at a maximum concentration of 33.3 ppm (IUSCO of 16 ppm), lead at 4,430 ppm (IUSCO of 3,900 ppm), mercury at 1,220 ppm (IUSCO of 5.7 ppm). No volatile organic compounds, per- and polyfluoroalkyl substances (PFAS), PCBs, or pesticides were detected at concentrations exceeding Industrial SCOs.

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

Groundwater - One VOC, benzene, was detected above NYSDEC Ambient Water Quality Standards and Guidance Values (AWQSGVs) at a maximum concentration of 1.8 parts per billion (ppb) compared to the AWQSGVs of 1 ppb. Of the detected SVOCs, concentrations of five compounds were found exceeding AWQSGVs including benzo(a)anthracene at 3 ppb, benzo(b)fluoranthene at a maximum concentration of 3.6 ppb, benzo(k)fluoranthene at a maximum concentration of 1.6 ppm, chrysene at a maximum concentration of 2.8 ppb, and indeno(1,2,3-cd)pyrene at a maximum concentration of 2.3 ppb. Each of these SVOCs has an AWQSGV of 0.002 ppb. Metals were detected in all filtered groundwater samples. Excluding commonly occurring metals such as aluminum, iron, calcium, sodium, and magnesium, five were detected at concentrations above the AWQSGVs including arsenic at a maximum concentration of 34.9 ppb (AWQSGV is 25 ppb), beryllium at a maximum concentration of 3.5 ppb (AWQSGV is 3 ppb), cadmium at a maximum concentration of 7.3 ppb (AWQSGV is 5 ppb), and lead at a maximum concentration of 69.7 ppb (AWQSGV is 25 ppb). Three pesticides were detected at concentrations above the AWQSGVs including 4,4,4'-DDD at a maximum concentration of 0.062 (AWQSGV is 0.01 ppb), 4,4,4'-DDE at a maximum concentration of 0.015 (AWQSGV is 0.01 ppb), and 4,4,4'-DDT at a maximum concentration of 0.013 (AWQSGV is 0.01 ppb). For PFAS, perfluorooctanoic acid (PFOA) and perfluorooctanesulfonic acid (PFOS) were reported at concentrations of up to 43 and 52.1 parts per trillion (ppt), respectively, exceeding the AWQSGV of 6.7 ppt and 2.7 ppt, respectively. No PCBs were detected at concentrations exceeding their AWQSGVs.

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

Soil Vapor - The soil vapor investigations indicated that VOCs that were detected including toluene (maximum of 810 micrograms per cubic meter, or ug/m3), tetrachloroethylene (maximum of 4.8 ug/m3), trichloroethylene (maximum of 11 ug/m3), cis-1,2-dichloroethylene (maximum of 2.5 ug/m3), vinyl chloride (maximum of 6.9 ug/m3), benzene (maximum of 81.5 ug/m3), cyclohexane (maximum of 289 ug/m3), ethylbenzene (maximum of 5.2 ug/m3), hexane (maximum of 216 ug/m3).

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.*

Since the site is fenced and covered by asphalt or concrete, people will not come into contact with site-related soil and groundwater contamination unless they dig below the surface. 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. Volatile organic compounds in soil vapor (air spaces within the soil) may move into 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 there are currently no occupied building on-site, inhalation of site contaminants in indoor air 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 development. 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.
- Prevent contact with, or inhalation of volatiles, from contaminated groundwater.

RAOs for Environmental Protection

- Prevent the discharge of contaminants to surface water.

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 Industrial Use with site-specific soil cleanup objectives remedy.

The selected remedy is referred to as the Excavation, Cover System and Vapor Evaluation remedy.

The elements of the selected remedy, as shown in Figures 2 through 5, 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 at this site, any future on-site buildings shall be constructed, at a minimum, to meet the 2020 Energy Conservation Construction Code of New York (or most recent edition) 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 NYSDEC 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

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

- grossly contaminated soil, as defined in 6 NYCRR Part 375-1.2(u);
- 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; and
- any underground storage tanks (USTs), fuel dispensers, underground piping or other structures associated with a source of contamination.

Excavation and off-site disposal of all on-site soils which exceed industrial SCOs, as defined by 6 NYCRR Part 375-6.8, in the upper 1 foot of the site where development-related soil disturbance will take place.

Approximately 70,000 cubic yards of contaminated soil will be removed from the site.

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 establish the designed grades at the site.

4. Cover System

A site cover will be required in areas where the upper one foot of exposed surface soil will exceed the applicable soil cleanup objectives (SCOs), to allow for future industrial use of the site. Where a soil cover is to be used it will be a minimum of one foot 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. 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 NYSDEC 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 industrial 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 NYSDEC approved Site Management Plan.

6. 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 Remedy Element 5 above.
— Engineering Controls: The Cover System discussed in Remedy Element 4 above.

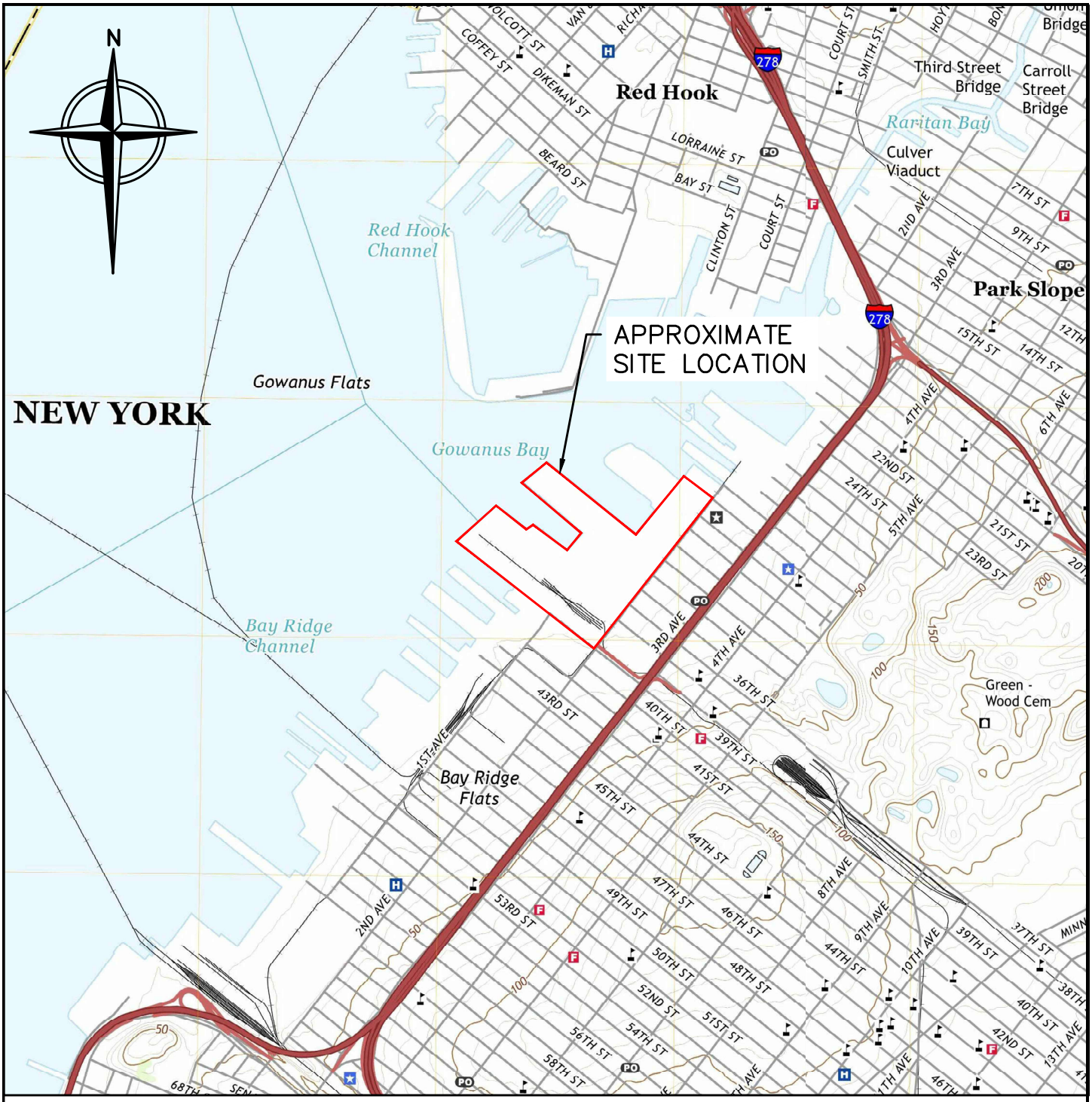
This plan includes, but may not be limited to:

- o an Excavation Plan which details the provisions for management of future excavations in areas of remaining contamination;
- o descriptions of the provisions of the environmental easement including any land use, or groundwater use restrictions;
- o a provision for evaluation of the potential for soil vapor intrusion for any occupied buildings on the site, including provision for implementing actions recommended to address exposures related to soil vapor intrusion;
- o maintaining site access controls and NYSDEC notification; and
- o 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:

- o a schedule of monitoring and frequency of submittals to the NYSDEC;
- o monitoring for vapor intrusion for any buildings on the site, as may be required by the

Institutional and Engineering Control Plan discussed above.



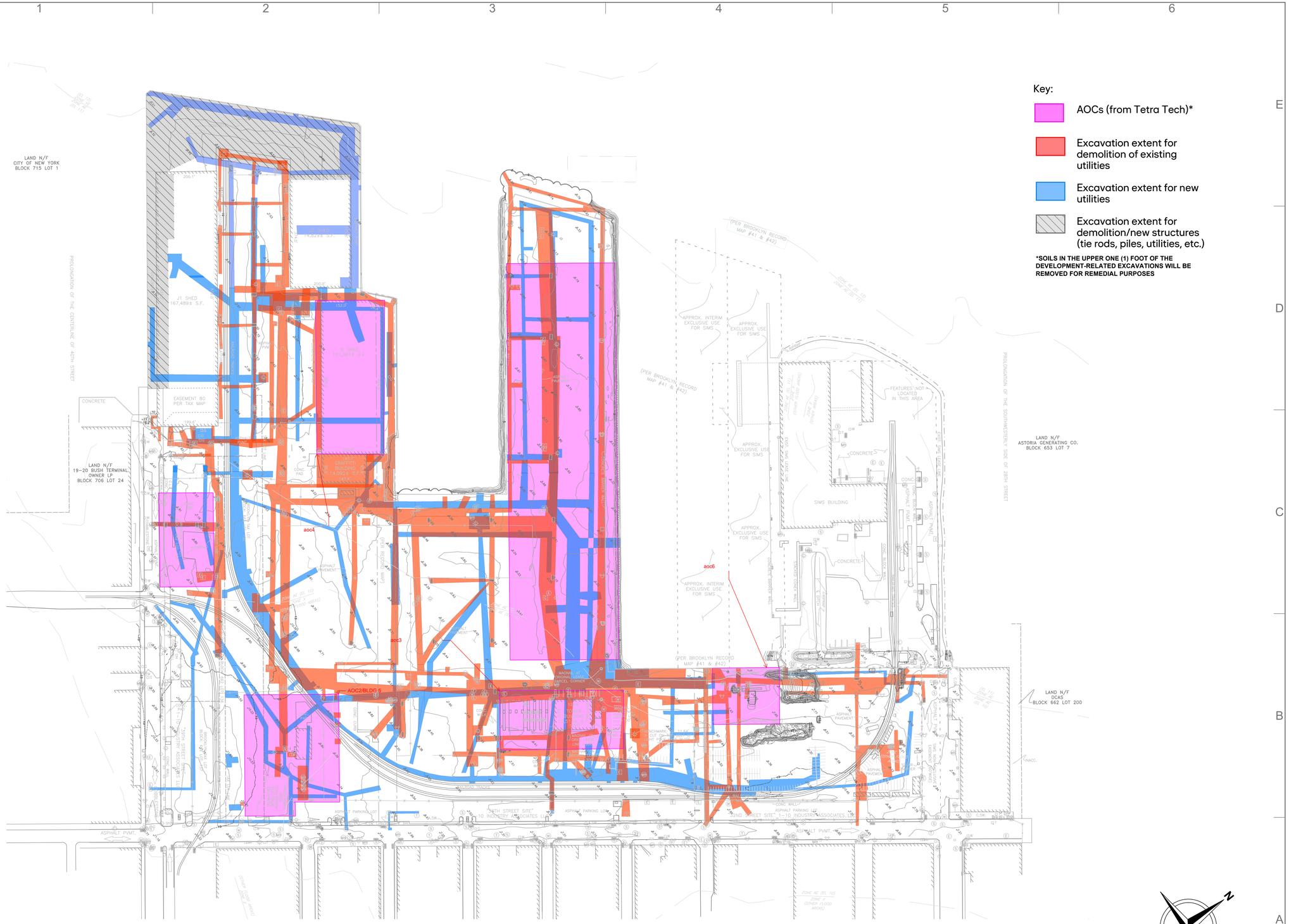
TETRA TECH

TETRA TECH, INC.
6 CENTURY DRIVE, SUITE 3
PARSIPPANY, NJ 07054
(973) 630-8000

FIGURE 1 - SITE LOCATION MAP

SOUTH BROOKLYN MARINE
TERMINAL
2ND AVENUE
BROOKLYN, NY 11232

SBMT Asset LLC & Empire Offshore Wind LLC
80 State Street
Albany, NY 12207



NOT FOR CONSTRUCTION

TETRA TECH

STAMP:

SOUTH BROOKLYN MARINE TERMINAL
NYSDEC SITE NO.: C224360
SBMT ASSET LLC & EMPIRE OFFSHORE WIND LLC
269 37TH STREET, KINGS COUNTY
BROOKLYN, NY 11232

PROJECT NUMBERS:
194-1247-0003

SHEET TITLE:
UTILITY AND STRUCTURE EXCAVATION PLAN

SHEET SIZE:
ARCH "D"
24" X 36" (610 x 914)
0 ½" 1"

NO.	REVISION	DATE	INIT.

DATE:	3/15/2024
DRAWN BY:	
ENGINEER:	
APPROVED BY:	

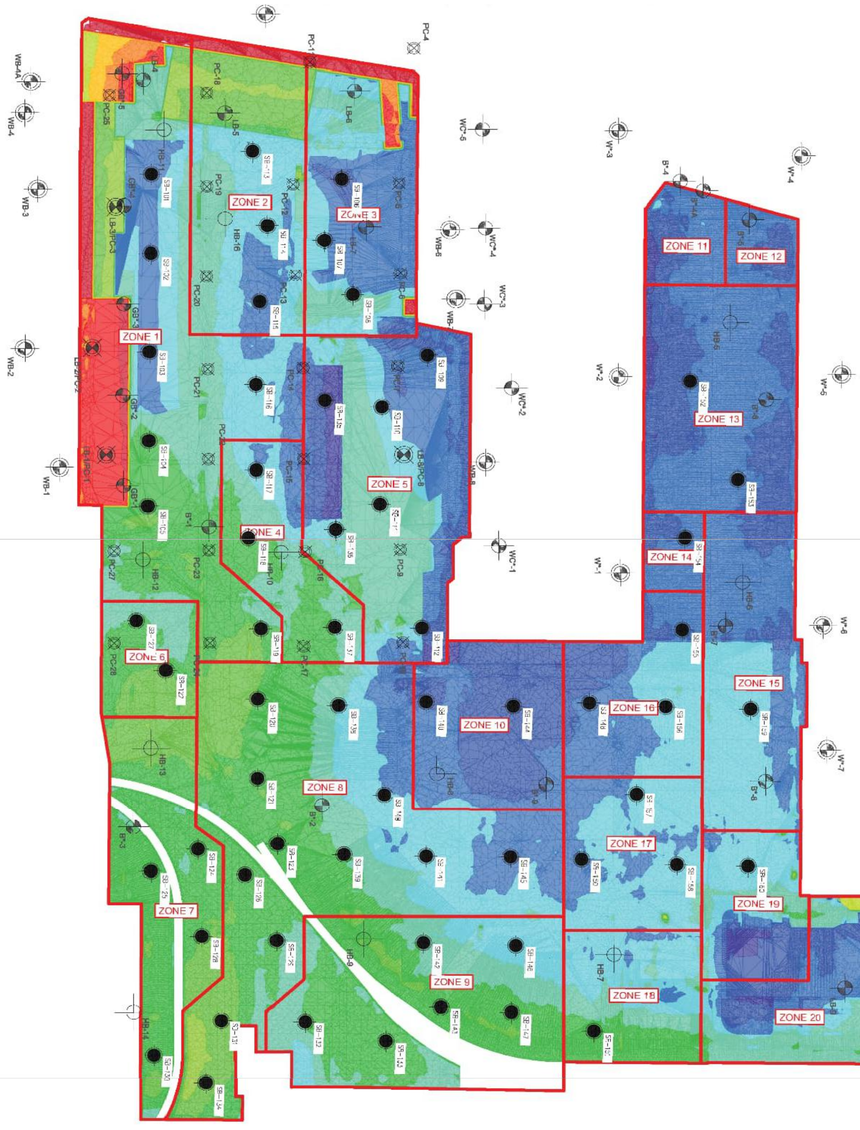
PROJECT PHASE: N/A

SCALE:

SHEET NO.:
FIGURE 2

P:\SBMT\SBMT Figures_13a_13b-13c.dwg

Printed: 3/18/2024 8:44 AM



DESIGN EXCAVATION DEPTHS
EXISTING GRADE vs. DESIGN SUBGRADE

Elevations Table

Number	Minimum Elevation	Maximum Elevation	Area	Color
1	-10.00	-9.00	35378.73	
2	-9.00	-8.00	46079.56	
3	-8.00	-7.00	12015.06	
4	-7.00	-6.00	7967.47	
5	-6.00	-5.00	5875.05	
6	-5.00	-4.00	32394.62	
7	-4.00	-3.00	159496.94	
8	-3.00	-2.00	507618.42	
9	-2.00	-1.00	495691.73	
10	-1.00	0.00	570177.74	
11	0.00	1.00	591025.69	
12	1.00	2.00	269815.69	
13	2.00	3.00	27560.20	
14	3.00	4.00	94.46	

***SOILS IN THE UPPER ONE (1) FOOT OF THE DEVELOPMENT-RELATED EXCAVATIONS WILL BE REMOVED FOR REMEDIAL PURPOSES**

Cut/Fill Summary

Name	Cut Factor	Fill Factor	3d Area	Cut	Fill	Net
VOL-DSGN-EXCAV	1.000	1.000	2778222.46 Sq. Ft.	145825.09 Cu. Yd.	27620.05 Cu. Yd.	118205.04 Cu. Yd.<Cut>
Totals			2778222.46 Sq. Ft.	145825.09 Cu. Yd.	27620.05 Cu. Yd.	118205.04 Cu. Yd.<Cut>

1"=150' 0 150 300 FT.

GRAPHIC SCALES
CHECK BEFORE USE

REFERENCE: "FIGURE 5-1 DESIGN EXCAVATION DEPTHS: 297-JE-Z-RA-00004"

NOT FOR CONSTRUCTION

TETRA TECH

STAMP:

SOUTH BROOKLYN MARINE TERMINAL
NYSDEC SITE NO.: C224360
SBMT ASSET LLC & EMPIRE OFFSHORE WIND LLC
269 37TH STREET, KINGS COUNTY
BROOKLYN, NY 11232

PROJECT NUMBERS:
194-1247-0003

SHEET TITLE:
DESIGN EXCAVATION DEPTHS

SHEET SIZE:
ARCH "D"
24" X 36" (610 x 914)
0 ½" 1"

NO.	REVISION	DATE	INIT.

DATE: 3/15/2024
DRAWN BY:
ENGINEER:
APPROVED BY:

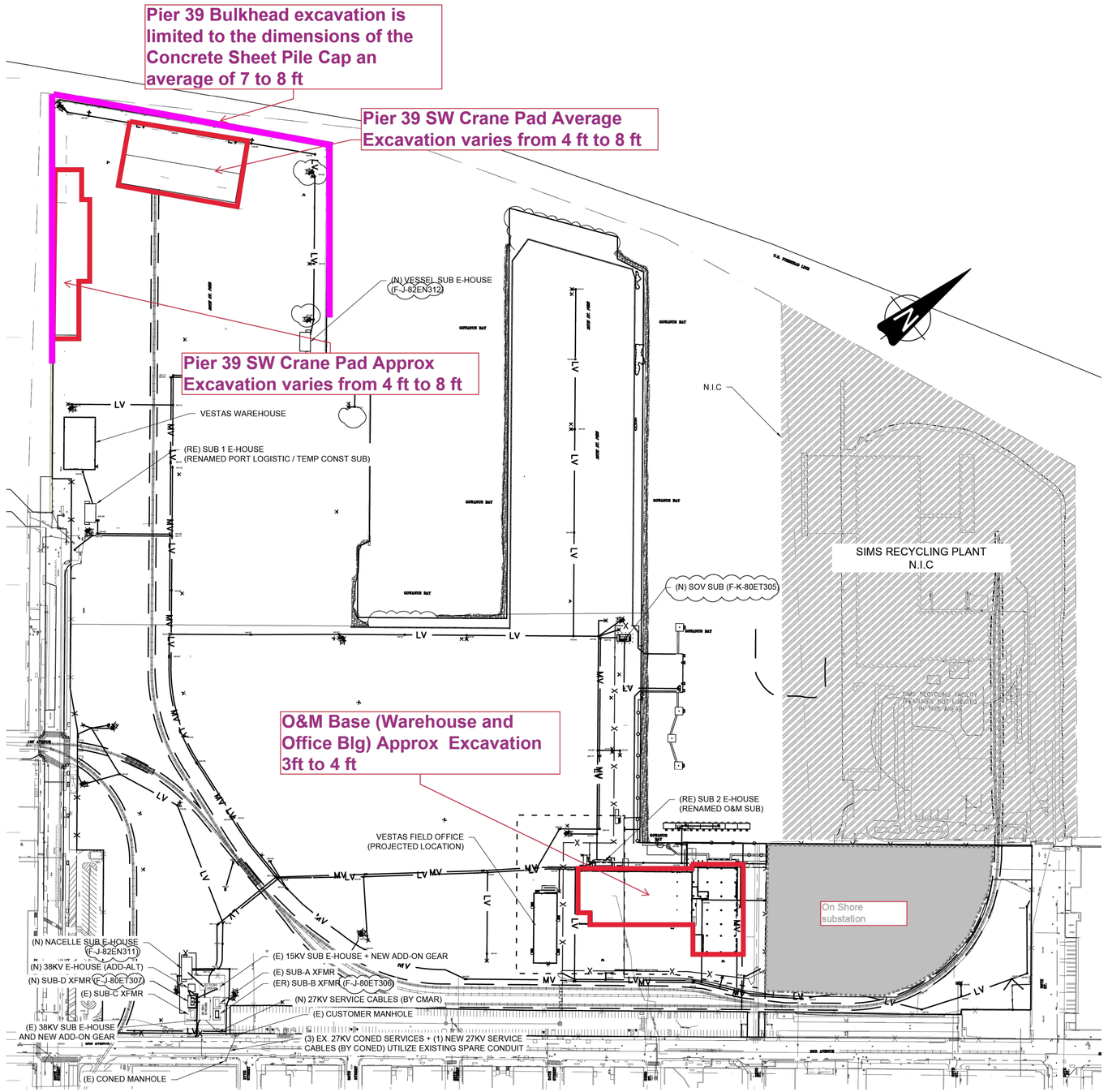
PROJECT PHASE:
N/A

SCALE:
1" = 150'

SHEET NO.:
FIGURE 3

P:\SBMT\SBMT Figures_13a_13b-13c.dwg

Printed: 3/18/2024 8:44 AM



***SOILS IN THE UPPER ONE (1) FOOT OF THE DEVELOPMENT-RELATED EXCAVATIONS WILL BE REMOVED FOR REMEDIAL PURPOSES**

REFERENCE: "JACOBS C250-EQ-Z-SP-00003"

NOT FOR CONSTRUCTION

TETRA TECH

STAMP:

SOUTH BROOKLYN MARINE TERMINAL
NYSDEC SITE NO.: C224360
SBMT ASSET LLC & EMPIRE OFFSHORE WIND LLC
269 37TH STREET, KINGS COUNTY
BROOKLYN, NY 11232

PROJECT NUMBERS:
194-1247-0003

SHEET TITLE:
SCHEMATIC MAIN EXCAVATION AREA

SHEET SIZE:
ARCH "D"
24" X 36" (610 x 914)
0 ½" 1"

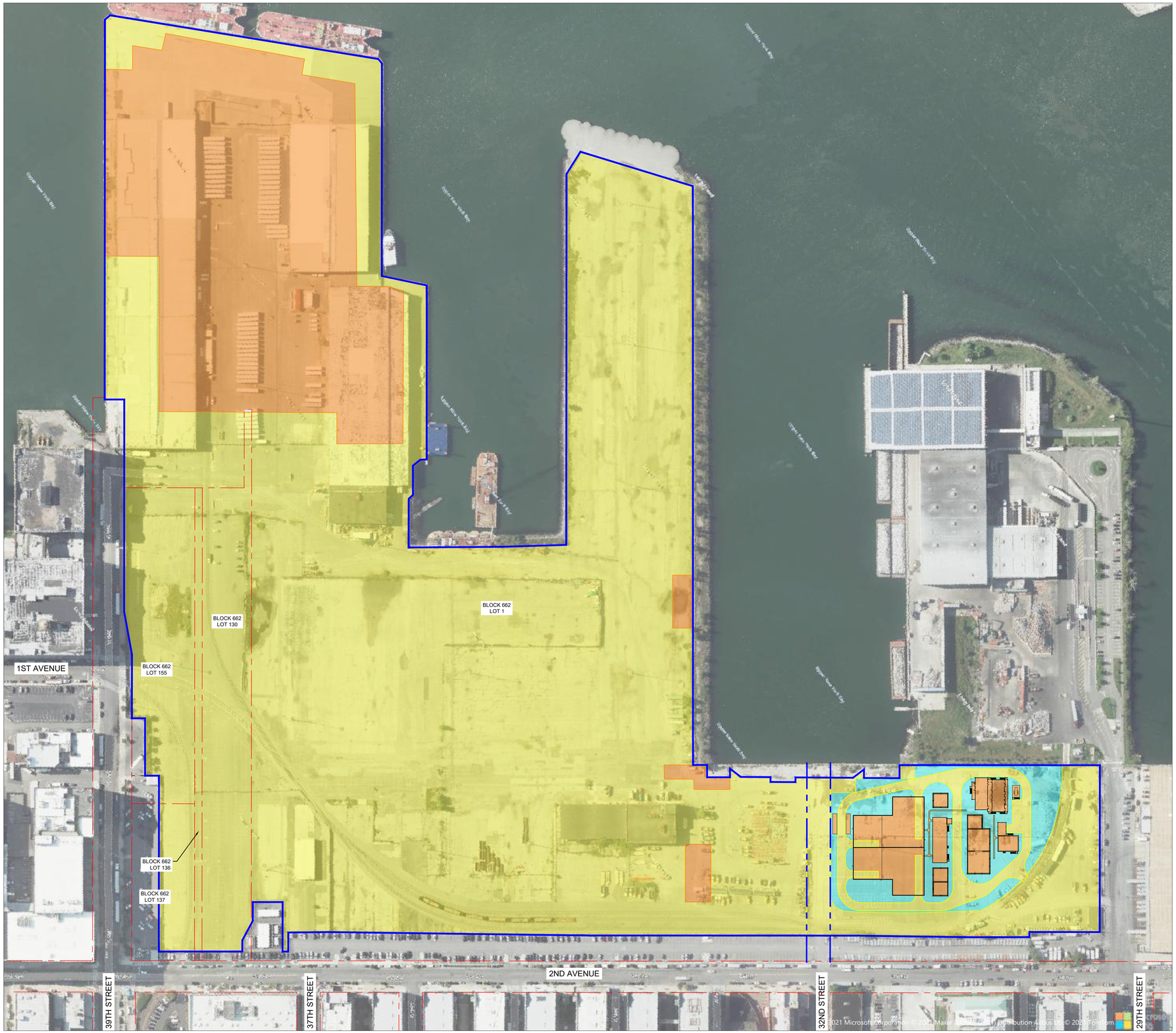
NO.	REVISION	DATE	INIT.

DATE: 3/15/2024
DRAWN BY:
ENGINEER:
APPROVED BY:

PROJECT PHASE:
N/A

SCALE:
1" = 150'

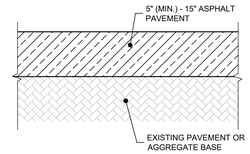
SHEET NO.:
FIGURE 4



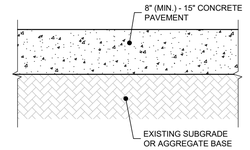
LEGEND

- PROJECT AREA (NEW)
- PARCEL BOUNDARIES
- NYCDEP STORMWATER EASEMENT
- ASPHALT CAP COVER
- CONCRETE CAP COVER
- AGGREGATE CAP COVER

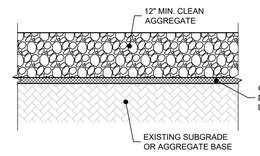
NOTE:
PLEASE REFER TO APPENDIX P FOR MORE DETAILED/SPECIFIC CAP CROSS SECTIONS.



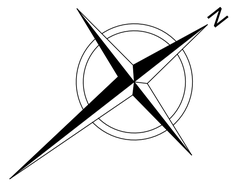
TYPICAL ASPHALT SECTION
NOT TO SCALE

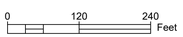


TYPICAL CONCRETE SECTION
NOT TO SCALE



TYPICAL AGGREGATE SECTION
NOT TO SCALE





TETRA TECH

STAMP:

DRAFT
NOT FOR CONSTRUCTION

SOUTH BROOKLYN MARINE TERMINAL
NYSDEC SITE NO.: C224360
SBMT ASSET LLC & EMPIRE OFFSHORE WIND LLC
269 37TH STREET
BROOKLYN, NY 11232

PROJECT NUMBERS:
194-1247-0003

SHEET TITLE:
COVER SYSTEM COMPOSITION

SHEET SIZE:
ARCH "D"
24" X 36" (610 x 914)
0 ½" 1"

NO.	REVISION	DATE	INIT.

DATE:	1/15/2024
DRAWN BY:	
ENGINEER:	
APPROVED BY:	

PROJECT PHASE:
N/A

SCALE:
1" = 120'

SHEET NO.:
FIGURE 5

Printed: 1/16/2024 2:43 PM
P:\SBMT\SBMT Cap Cover Figure.dwg