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REMEDIAL ACTION WORK PLAN
180 EAST 125TH STREET DEVELOPMENT SITE
180 EAST 125TH STREET
NEW YORK, NEW YORK
NYSDEC BCP SITE NO. C231160

by
H & A of New York Engineering and Geology, LLP
New York, New York

for
180 E125 Propco LLC
Brooklyn, New York

File No. 0209815-000
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List of Acronyms and Abbreviations

Acronym	**Definition**
#	
6 NYCRR	Title 6 of the New York Codes, Rules and Regulations
Symbol	
µg/L	micrograms per liter
$\mu g/m^3$	micrograms per cubic meter
A	
AOC	Area of Concern
ASP	Analytical Services Protocol
AWQS	Ambient Water Quality Standards
B	
BCA	Brownfield Cleanup Agreement
BCP	Brownfield Cleanup Program
BTEX	Benzene, toluene, ethylbenzene, xylenes
btoc	below top of casing
C	
CAMP	Community Air Monitoring Plan
CFR	Code of Federal Regulations
CHASP	Construction Health & Safety Plan
CP-51	Commissioners Policy-51 *(specifically "October 2010 NYSDEC Commissioners Policy 51")*
CP	Community Participation
CPP	Citizen Participation Plan
CQAP	Construction Quality Assurance Plan
CSM	Conceptual Site Model
Cu Yd	Cubic Yard
CVOC	Chlorinated Volatile Organic Compound
D	
DER	Division of Environmental Remediation
DER-10	Division of Environmental Remediation-10 *(specifically "May 2010 NYSDEC Technical Guidance for Site Investigation and Remediation")*
DUSR	Data Usability Summary Report

List of Acronyms and Abbreviations (Continued)

Acronym	Definition
E	
EC	Engineering Controls
ECL	Environmental Conservation Law
EcoTerra	EcoTerra Consulting, LLC
EDD	Electronic Data Deliverable
EE	Environmental Easement
ELAP	Environmental Laboratory Approval Program
ESA	Environmental Site Assessment
Eurofins	Eurofins Scientific
F	
FDNY	Fire Department of the City of New York
FER	Final Engineering Report
ft bgs	feet below ground surface
FWRIA	Fish and Wildlife Resource Impact Analysis
G	
GV	Guidance Value
H	
Haley & Aldrich of New York	H & A of New York Engineering and Geology, LLP
HASP	Health and Safety Plan
HAZWOPER	Hazardous Waste Operations and Emergency Response
I	
IC	Institutional Control
in.	inches
L	
Langan	Langan Engineering, Environmental, Surveying, Landscape Architecture and Geology, D.P.C.
Lakewood	Lakewood Environmental Services, Corp.
LSDF	low-sulfur diesel fuel
M	
mg/kg	milligrams per kilogram
MW	Monitoring Well

List of Acronyms and Abbreviations (continued)

Acronym	**Definition**
N	
NYCDEP	New York City Department of Environmental Protection
NYCDOB	New York City Department of Buildings
NYCDOT	New York City Department of Transportation
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
NYSDOT	New York State Department of Transportation
O	
OSHA	Occupational Health and Safety Administration
P	
PAH	Polycyclic Aromatic Hydrocarbon
PBS	Petroleum Bulk Storage
PCB	Polychlorinated Biphenyl
PCE	Perchloroethylene/Tetrachloroethene
PFAS	Per- and polyfluoroalkyl substances
PFOA	Perfluorooctanoic Acid
PFOS	Perfluorooctane Sulfonate
PGWSCOs	Protection of Groundwater Soil Cleanup Objectives
PID	Photoionization Detector
PM-10	Particles with diameters generally less than 10 micrometers and smaller
PPE	Personal Protective Equipment
ppm	parts per million
ppt	parts per trillion
PVC	Polyvinyl Chloride
Q	
QA/QC	Quality Assurance/Quality Control
QAPP	Quality Assurance Project Plan
QEP	Qualified Environmental Professional
QHHEA	Qualitative Human Health Exposure Assessment
R	
RAO	Remedial Action Objective
RAWP	Remedial Action Work Plan
RCA	Recycled Concrete Aggregate
RCRA	Resource Conservation and Recovery Act
RE	Remedial Engineer
RI	Remedial Investigation
RIR	Remedial Investigation Report
RIWP	Remedial Investigation Work Plan
RRSCO	Restricted Residential Soil Cleanup Objective

List of Acronyms and Abbreviations (continued)

Acronym	Definition
S	
SCG	Standards, Criteria, and Guidelines
SCO	Soil Cleanup Objective
SDS	Safety Data Sheet
Site	180 East 125th Street, New York, New York
S/MMP	Soil/Materials Management Plan
SMP	Site Management Plan
SOE	Support-of-Excavation
SPDES	State Pollutant Discharge Elimination System
sq ft	square feet
SVI	Soil Vapor Intrusion Analysis
SVOC	Semi-Volatile Organic Compound
SWPPP	Stormwater Pollution Prevention Plan
T	
TAL	Total Analyte List
TCE	Trichloroethylene
TCL	Target Compound List
TOGS 1.1.1	Technical and Operational Guidance Series 1.1.1 *(Specifically "June 1998 NYSDEC Division of Water Technical and Operational Guidance Series 1.1.1 Ambient Water Quality Standards and Guidance Values, Class GA for the protection of a source of drinking water modified per the April 2000 addendum")*
U	
USEPA	United States Environmental Protection Agency
USGS	U.S. Geological Survey
USPS	United States Postal Service
UST	Underground Storage Tank
UUSCO	Unrestricted Use Soil Cleanup Objective
V	
VOC	Volatile Organic Compound
Volunteer	180 E125 Propco LLC

Certification

I, Suzanne M. Bell, certify that I am currently a New York State-registered professional engineer and that this Remedial Action Work Plan was prepared in accordance with all applicable statutes and regulations and in substantial conformance with the DER Technical Guidance for Site Investigation and Remediation (DER-10) and Green Remediation (DER-31).

I certify that all information and statements in this certification are true. I understand that a false statement made herein is punishable as a Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law.

	July 29, 2025	
NYS Professional Engineer No. 106301	Date	Signature

It is a violation of Article 145 of New York State Education Law for any person to alter this document in any way without the express written verification of adoption by any New York State-licensed engineer in accordance with Section 7209(2), Article 145, New York State Education Law.

Executive Summary

This Remedial Action Work Plan (RAWP) was developed by H & A of New York Engineering and Geology, LLP (Haley & Aldrich of New York) on behalf of 180 E125 Propco LLC for the 180 East 125th Street Development Site, located at 180 East 125th Street, New York, New York (the "Site"). 180 E125 Propco LLC applied to and was accepted into the New York State Department of Environmental Conservation (NYSDEC) Brownfield Cleanup Program (BCP). A Brownfield Cleanup Agreement (BCA) was executed by the NYSDEC on January 22, 2025, with 180 E125 Propco LLC (the "Volunteer") (BCP Site No. C231160).

This RAWP summarizes the nature and extent of contamination on the Site as determined from data gathered during the Remedial Investigation (RI) performed by Haley & Aldrich of New York in February 2025. It provides an evaluation of a Track 1 cleanup and other applicable remedial action alternatives, their associated costs, and the recommended and preferred remedy. The remedies described in this document are consistent with the procedures defined in the NYSDEC Division of Environmental Remediation (DER) Program Policy: Technical Guidance for Site Investigation and Remediation (DER-10) and comply with applicable federal, state, and local laws, regulations, and requirements.

SITE DESCRIPTION AND SITE HISTORY

The Site is located in the Harlem neighborhood of New York and is identified as Block 1773 Lot 27 on the New York City tax map. The Site is approximately 42,540 square feet (sq ft) (0.98 acres) and is bound by East 125th Street followed by mixed-use commercial and residential buildings and offices to the north; East 124th Street followed by mixed-use commercial and residential buildings and warehousing to the south; Fire Department of the City of New York (FDNY) Engine 35 Fire House and Third Avenue followed by mixed-use commercial and residential buildings to the east; and a vacant undeveloped lot to the west. The Project Locus is shown on Figure 1, and existing Site features are displayed on the Site Plan provided as Figure 2. A Site survey map is provided in Appendix A.

The Site is currently zoned within a commercial and residential C4-4D zoning district. The Site is located in an urban area characterized by multi-story commercial and residential buildings. A copy of the zoning map is included in Appendix B.

Based on the findings of the Phase I Environmental Site Assessment (ESA) completed by Haley & Aldrich of New York in August 2024, the Site was first developed as early as 1896 with multiple two- to four-story dwellings on the eastern portion of the Site, a school on the southern portion of the Site, and the northwestern portion of the Site was undeveloped. The 1911 Sanborn Map shows buildings constructed on the northern portion of the Site which were indicated as vacant, and the school was converted to a lodging house. A railroad station was present in the street adjacent to the Site on the corner of East 125th Street and Third Avenue. The Site remained relatively unchanged until the early 1950s when the former lodging house and several buildings on the eastern portion of the Site were labeled as "furniture" on Sanborn Maps and printing operations were indicated on the northern portion of the subject property. By 1968, a building was constructed on the southwest portion of the Site and was occupied by the United States Postal Service (USPS). Additionally, the railroad station was no longer present. According to aerial photographs, between 1984 and 1991, the structures on the northern and eastern portions of the Site were demolished and the Site was converted into a parking lot. By 2013, the

Site was occupied by a Pathmark supermarket and a Rainbow clothing store with a rooftop parking area. According to the New York City Department of Finance, Office of the City Register, the USPS sold the property in 2014. Since that time, all structures have been demolished, and the Site is currently vacant.

There are three sensitive receptors that are within a 500-foot (ft) radius of the Site:

1) Northern Manhattan Nursing – Charles O. Dewey, 116 East 125th Street, New York, New York 10035, listed as a nursing home.
2) Dr. Ronald E. McNair Playground – Lexington Avenue between East 122 Street and East 123rd Steet, New York, New York 10035, listed as a playground.
3) FDNY Engine 35/Ladder 14/Battalion 12 – adjacent to the southeast of the Site - 2282 Third Avenue, New York, New York 10035, listed as a fire station.

Properties immediately surrounding the Site are zoned for commercial and residential use.

SUMMARY OF REMEDIAL INVESTIGATION FINDINGS

The RI was completed in accordance with Title 6 of the New York Codes, Rules, and Regulations (6 NYCRR) Part 375, DER-10, the New York State Department of Health (NYSDOH) Guidance for Evaluating Soil Vapor Intrusion in the State of New York (October 2006 and subsequent updates), and the January 2025 Remedial Investigation Work Plan (RIWP), prepared by Haley & Aldrich of New York. The RI was performed from February 5, 2025, through February 13, 2025.

The RI consisted of the following:

- Advancement of 11 soil borings to various depths ranging from 15 to 20 ft below ground surface (bgs) with samples collected from surface soil (0 to 2 inches [in.] bgs), the bottom 2-ft interval of fill material ranging from 4 to 15 ft bgs, and from the 2-ft interval above the groundwater interface. A total of 33 soil samples were collected (plus quality assurance/quality control [QA/QC] samples) for laboratory analysis.
- Installation of five 2-in. diameter groundwater monitoring wells to varied depths of approximately 19 to 22 ft bgs and collection of five groundwater samples (plus QA/QC samples).
- Installation of seven soil vapor probes to depths ranging from approximately 12 to 14 ft bgs, or approximately 2 ft above the water table, and collection of seven soil vapor samples.

A summary of environmental findings of the RI includes the following:

- The Site is underlain by a layer of fill material generally consisting of mainly light brown to brown, medium to fine sand, with silt and varying amounts of gravel, concrete, rock fragments, and brick. Fill extends from the surface to variable depths between 5 to 12 ft bgs. The fill is underlain by a native layer consisting of fine to medium sand, with varying amounts of fine and coarse gravels extending up to the terminus depth in each boring of approximately 15 to 20 ft bgs.
- Groundwater was encountered at depths ranging from approximately 15.28 to 17.06 ft below top of casing (btoc) during the RI and groundwater beneath the Site generally flows from east to west as shown on Figure 4.

- Soil analytical results were compared to NYSDEC 6 NYCRR Part 375 Unrestricted Use Soil Cleanup Objectives (UUSCOs), Protection of Groundwater Soil Cleanup Objectives (PGWSCOs), and Restricted Residential Soil Cleanup Objectives (RRSCOs). Perfluorooctanoic Acid (PFOA) and Perfluorooctanesulfonic Acid (PFOS) soil sample results were compared to the UUSCO, RRSCO, and PGWSCO guidance values (GVs) outlined in the April 2023 Per- and Polyfluoroalkyl Substances (PFAS) Guidance. Soil analytical results are summarized below and shown on Figure 5.

  Volatile Organic Compounds (VOCs)

  No VOCs were detected above the UUSCOs, RRSCOs, and/or PGWSCOs in the soil samples collected at the Site.

  Semi-Volatile Organic Compounds (SVOCs)

  Seven SVOCs, specifically polycyclic aromatic hydrocarbons (PAHs), were detected at concentrations above the UUSCOs, RRSCOs, and/or PGWSCOs in 18 soil samples collected from the fill layer. Maximum concentrations of SVOCs were all detected in soil sample SB-05_0-0.16, including benzo(a)anthracene (13 milligrams per kilogram [mg/kg]), benzo(a)pyrene (12 mg/kg), benzo(b)fluoranthene (14 mg/kg), benzo(k)fluoranthene (4.4 mg/kg), chrysene (13 mg/kg), dibenzo(a,h)anthracene (1.6 mg/kg), and indeno(1,2,3-cd)pyrene (6.9 mg/kg).

  No other SVOCs were detected above the UUSCOs, RRSCOs, and/or PGWSCOs in the soil samples analyzed.

  Metals

  Six metals were detected above the UUSCOs, RRSCOs, and/or PGWSCOs in up to 19 soil samples collected between 0 to 17 ft bgs. Barium was detected above both the UUSCO and RRSCO in four soil samples at a maximum concentration of 731 mg/kg in SB-08_11-13. Lead was detected above the UUSCO, RRSCO, and PGWSCO in two soil samples at a maximum concentration of 479 mg/kg in SB-08_11-13. Two metals were detected above the UUSCOs, only, in multiple soil samples: mercury (maximum concentration of 0.714 mg/kg in SB-04_0-0.16) and zinc (maximum concentration of 535 mg/kg in SB-08_11-13). Silver was detected above the UUSCO in one soil sample at a concentration of 2.2 mg/kg in SB-10_0-0.16.

  No other metals were detected above the UUSCOs, RRSCOs, and/or PGWSCOs in the soil samples analyzed.

  Polychlorinated Biphenyls (PCBs)

  PCBs were detected above the UUSCOs in eight soil samples collected. Maximum concentration of PCBs was estimated at 0.486 mg/kg in SB-04_0-0.16.

Pesticides

Four pesticides were detected at concentrations exceeding the UUSCOs in up to 20 soil samples collected between 0 to 17 ft bgs, including 4,4'-DDD (maximum concentration of 0.0776 mg/kg in SB-08_11-13), 4,4'-DDE (maximum concentration of 0.0447 mg/kg in SB-06_9-11), 4,4'-DDT maximum concentration of 0.148 mg/kg in SB-06_9-11), and dieldrin (maximum concentration of 0.0476 in SB-08_11-13).

No other pesticides were detected above the UUSCOs, RRSCOs, and/or PGWSCOs in the soil samples analyzed.

Emerging Contaminants

The emerging contaminant 1,4-dioxane was not detected above laboratory detection limits in the soil samples analyzed.

PFOS was detected above the UUSCO GV in 11 soil samples, nine of which also exceeded the PGWSCO GV, at a maximum concentration of 0.00503 mg/kg in SB-01_9-11.

PFOA was not detected above the UUSCOs, RRSCOs, and/or PGWSCO GVs in any of the soil samples collected.

- Groundwater analytical results were compared to 6 NYCRR Part 703.5 NYSDEC Technical and Operational Guidance Series 1.1.1 Ambient Water Quality Standards (AWQS). Emerging contaminants PFOA and PFOS were compared to the GVs for PFOA and PFOS outlined in the NYSDEC April 2023 PFAS Guidance. Emerging contaminant 1,4-dioxane was compared to the GV as set by NYSDEC in March 2023. Groundwater analytical results are summarized below and shown on Figure 6:

Volatile Organic Compounds

One VOC, tetrachloroethene (PCE), was detected above the AWQS in one groundwater sample collected from MW-04 at a concentration of 5.6 micrograms per liter (µg/L).

No other VOCs were detected above the AWQS in the groundwater samples analyzed.

Semi-Volatile Organic Compounds

No SVOCs were detected above the AWQS in the groundwater samples analyzed.

Polychlorinated Biphenyls

No PCBs were detected above the AWQS in the groundwater samples analyzed.

Dissolved Metals

Four dissolved metals were detected in multiple groundwater samples above the AWQS: dissolved manganese (maximum concentration of 422.9 µg/L in MW-02), dissolved magnesium (maximum concentration of 43,100 µg/L in MW-01), dissolved sodium (maximum concentration of 123,000 µg/L in MW-04), and dissolved antimony in one groundwater sample (concentration of 4.24 µg/L in MW-03).

No other dissolved metals were detected above the AWQS in the groundwater samples analyzed.

Total Metals

Three metals were detected above the AWQS in multiple groundwater samples: total sodium (maximum concentration of 128,000 µg/L in MW-04), total magnesium (maximum concentration of 48,200 µg/L in MW-01), and total manganese (maximum concentration of 476 µg/L in DUP-01, parent sample is MW-02).

No other total metals were detected above the AWQS in the groundwater samples analyzed.

Pesticides

No pesticides were detected above the AWQS in the groundwater samples analyzed.

Emerging Contaminants

Concentrations of emerging contaminants PFOA and PFOS were compared to the NYSDEC GVs of 6.7 parts per trillion (ppt) for PFOA and 2.7 ppt for PFOS. PFOA and PFOS were both detected above the NYSDEC GVs in all six groundwater samples (including the duplicate sample). PFOA was detected at a maximum concentration of 177 ppt in MW-05 and PFOS was detected at a maximum concentration of 785 ppt in MW-05.

Emerging contaminant 1,4-dioxane was compared to the NYSDEC GV of 350 ppt; 1,4-dioxane was not detected above laboratory detection limits in the groundwater samples analyzed.

- No standard currently exists for soil vapor samples in New York State. Soil vapor analytical results are summarized below and shown on Figure 7.

  Total VOC concentrations in soil vapor samples ranged from 87.18 micrograms per cubic meter (µg/m^3) in sample SV-06 to 272.71 µg/m^3 in SV-05. Total benzene, toluene, ethylbenzene, and xylenes (BTEX) concentrations ranged from 18.62 µg/m^3 in SV-07 to 45.4 µg/m^3 in sample SV-01. Total chlorinated volatile organic compound (CVOC) concentrations in soil vapor samples ranged from 1.72 µg/m^3 in SV-04 to 14.76 µg/m^3 in SV-02.

  CVOCs were detected in all seven soil vapor samples collected during the RI. PCE was detected in all seven soil vapor samples at a maximum concentration of 14 µg/m^3 in SV-02. Trichloroethylene (TCE) was detected in four soil vapor samples at a maximum concentration of

0.39 µg/m^3 in SV-02. Methylene chloride was detected in three soil vapor samples at a maximum concentration of 1.9 µg/m^3 in SV-05. Carbon tetrachloride was detected in five soil vapor samples at a maximum concentration of 0.33 µg/m^3 in SV-06. 1,1,1-trichloroethane was detected in two soil samples at a maximum concentration of 3 µg/m^3 in SV-03.

QUALITATIVE HUMAN HEALTH EXPOSURE ASSESSMENT

The potential exposure pathways for the current and future use conditions are discussed below.

Current Use Scenario

Site contamination includes SVOCs, pesticides, PCBs, metals, and PFAS in soil related to fill and historical Site operations. Under current conditions, the likelihood of exposure to soil or groundwater is limited, as the Site is affixed with a perimeter fence secured with a lock. Site access is only granted to personnel associated with the planned development. Potable water for New York County will continue to be sourced from reservoirs in the Catskill and Delaware watersheds. All intrusive work on the Site is done in accordance with a Site-Specific Health and Safety Plan (HASP) and the donning of personal protective equipment (PPE).

Construction/Remediation Scenario

The exposure elements described under the current use scenario also exist for all elements during the construction/remediation scenario (i.e., exposure to soil and groundwater during construction and remedial action). The overall risk will be minimized by the implementation of a Site-Specific Construction Health and Safety Plan (CHASP), localized monitoring of organic vapors, community air monitoring on the Site perimeter for particulates and VOCs, vapor and dust suppression techniques, installation of a stabilized entrance, cleaning truck tires and undercarriages, and donning of appropriate PPE. Additionally, the Site will be under a RAWP that will include a Soil Materials Management Plan (S/MMP) that will highlight measures for PPE, covering of stockpiles, housekeeping, suppression techniques (particulates and vapor), and measures to prevent off-Site migration of contaminants. In addition, the Site will be secured and inaccessible to the public during remedial construction.

Future Use Scenario

Under the proposed future condition (after construction/remediation), residual contaminants may remain on Site depending on the remedy achieved. The remaining contaminants would include those listed in the current conditions. If contaminants remain on Site after construction/remediation, the route of exposure will be mitigated by proper installation of engineering controls, such as a Site capping system foundation, implementation of institutional controls, such as land use and groundwater use restrictions, and implementation of a Site Management Plan (SMP) to manage referenced controls.

SUMMARY OF THE REMEDY

Alternative I, a Track 1 remedy, will include the following tasks:

- Development and implementation of a CHASP and Community Air Monitoring Plan (CAMP) for the protection of on-Site workers, the community, residents, and the environment during remediation and construction activities.

- Design and construction of a support-of-excavation (SOE) system to facilitate the Track 1 remediation.
- Implementation of soil erosion, pollution, and sediment control measures in compliance with applicable laws and regulations.
- Decommissioning of existing on-Site monitoring wells, as necessary, in accordance with NYSDEC Commissioner Policy (CP)-43.
- Excavation, stockpiling, off-Site transport, and disposal of approximately 20,700 cubic yards (cu yd) of contaminated fill material Site-wide that exceeds UUSCOs as defined by 6 NYCRR Part 375-6.8. This includes excavation to a depth of 15 ft bgs on the eastern and central portions of the Site, excavation to a depth of 12 ft bgs on the northwestern portion of the Site, and excavation to a depth of 7 ft bgs on the southwestern portion of the Site. A hotspot excavation will also be completed to 18 ft bgs at RI boring location SB-03 to remove soil with pesticides and metals exceeding UUSCOs.
- If encountered, removal, decommissioning, and off-Site disposal of any underground storage tanks (USTs) and/or associated appurtenances (e.g., fill lines, vent line, and electrical conduit) in accordance with DER-10, 6 NYCRR Part 613.9, NYSDEC CP-51, and other applicable NYSDEC UST closure requirements.
- Implementation of a preliminary waste characterization to facilitate off-Site disposal of excavated soil/fill.
- Screening for indications of contamination (by visual means, odor, and monitoring with photoionization detectors [PIDs]) of excavated material during intrusive Site work.
- Dewatering, characterization, and treatment of water accumulated in excavations prior to discharge to a NYSDEC-approved sewer/sanitary line (pending permits), or localized dewatering with containerization, classification, and disposal at an approved receiving facility.
- Appropriate off-Site disposal of material removed from the Site in accordance with federal, state, and local rules and regulations for handling, transport, and disposal.
- Backfilling of excavated areas, as necessary for development, with certified-clean material (i.e., meeting UUSCOs), recycled concrete aggregate (RCA), or virgin, native crushed stone.
- Collection and analysis of confirmation soil samples from the excavation base in accordance with DER-10, to document post-excavation conditions to confirm a Track 1 remedy was achieved.

1. Introduction

This Remedial Action Work Plan (RAWP) was developed by H & A of New York Engineering and Geology, LLP (Haley & Aldrich of New York) on behalf of 180 E125 Propco LLC for the proposed development located at 180 East 125th Street (Block 1773, Lot 27) within the Harlem neighborhood of New York, New York (the Site).

In January 2025, the project (Site No. C231160) was accepted into the New York State Department of Environmental Conservation (NYSDEC) Brownfield Cleanup Program (BCP) and a countersigned Brownfield Cleanup Agreement (BCA) was issued with 180 E125 Propco LLC classified as a "Volunteer." The Volunteer proposes to remediate the Site for commercial and residential use.

This RAWP summarizes the nature and extent of contamination as determined from data gathered during the Remedial Investigation (RI) completed by Haley & Aldrich of New York at the Site in February 2025. The RAWP provides an evaluation of Track 1 cleanup and other applicable remedial alternatives, their associated costs, and the recommended and preferred remedy. The remedy described in this document is consistent with the procedures defined by the Division of Environmental Remediation *(*specifically *"May 2010 NYSDEC Technical Guidance for Site Investigation and Remediation")* (DER-10) and complies with all applicable standards, criteria, and guidance (SCG). The remedy described in this document also complies with all applicable federal, state, and local laws, regulations, and requirements.

1.1 SITE LOCATION AND DESCRIPTION

The Site is located in the Harlem neighborhood of New York and is identified as Block 1773, Lot 27 on the New York City tax map. The Site is approximately 42,540 square feet (sq ft) (0.98 acres) and is bound by East 125th Street followed by mixed-use commercial and residential buildings and offices to the north; East 124th Street followed by mixed-use commercial and residential buildings and warehousing to the south; Fire Department of the City of New York (FDNY) Engine 35 Fire House and Third Avenue followed by mixed-use commercial and residential buildings to the east; and a vacant undeveloped lot to the west. The Project Locus is shown on Figure 1, and existing Site features are displayed on the Site Map provided as Figure 2. A Site survey map is provided in Appendix A.

The Site is within a commercial and residential zoning district (C4-4D). The Site is located in an urban area characterized by multi-story commercial and residential buildings. A copy of the zoning map is included in Appendix B.

1.2 REDEVELOPMENT PLAN

The project will consist of a new 15-story mixed-use commercial and residential building with a one-level cellar encompassing the entire Site footprint and extending approximately 15 feet (ft) below current grade. A copy of the proposed development plans is included in Appendix C.

1.3 DESCRIPTION OF SURROUNDING PROPERTY

The Site is located on East 125th Street in an urban area identified as the Harlem neighborhood in the borough of New York. There are three sensitive receptors that are within a 500-ft radius of the Site:

1) Northern Manhattan Nursing – Charles O. Dewey, 116 East 125th Street, New York, New York 10035, listed as a nursing home.
2) Dr. Ronald E. McNair Playground – Lexington Avenue between East 122 Street and East 123rd Steet, New York, New York 10035, listed as a playground.
3) FDNY Engine 35/Ladder 14/Battalion 12 – adjacent to the southeast of the Site - 2282 Third Avenue, New York, New York 10035, listed as a fire station.

Properties immediately surrounding the Site consist of residential and commercial uses.

Direction	Adjoining Properties	Surrounding Properties
North	East 125th Street followed by mixed-use commercial, office, and residential buildings.	Residential and commercial buildings
South	East 124th Street followed by mixed-use commercial and office buildings, warehouses, and a self-storage building.	Residential and commercial buildings
East	The FDNY Engine 35 Fire House on the corner of Third Avenue and East 124th Street, and Third Avenue followed by mixed-use commercial and residential buildings.	Residential and commercial buildings
West	Vacant undeveloped property.	Residential and commercial buildings

1.4 SITE HISTORY

Based on the findings of the July 2024 Phase I Environmental Site Assessment (ESA) prepared by Haley & Aldrich of New York, the Site was first developed as early as 1896 with multiple two- to four-story dwellings on the eastern portion of the Site, a school on the southern portion of the Site, and the northwestern portion of the Site was undeveloped. The 1911 Sanborn Map shows buildings constructed on the northern portion of the Site which were indicated as vacant, and the school was converted to a lodging house. A railroad station was present in the street adjacent to the Site on the corner of East 125th Street and Third Avenue. The Site remained relatively unchanged until the early 1950s when the former lodging house and several buildings on the eastern portion of the Site were labeled as “furniture” on Sanborn Maps and printing operations were indicated on the northern portion of the subject property. By 1968, a building was constructed on the southwest portion of the Site and was occupied by the United States Postal Service (USPS). Additionally, the railroad station was no longer present. According to aerial photographs, between 1984 and 1991, the structures on the northern and eastern portions of the Site were demolished and the Site was converted into a parking lot. By 2013, the Site was occupied by a Pathmark supermarket and a Rainbow clothing store with a rooftop parking area. According to the New York City Department of Finance, Office of the City Register, the USPS sold the property in 2014. Since that time, all structures have been demolished, and the Site is currently vacant.

1.5 PREVIOUS ENVIRONMENTAL REPORTS

The following reports were prepared for the Site prior to submission of the 2025 Remedial Investigation Report (RIR):

- *Phase I Environmental Site Assessment Report*, prepared by EBI Consulting, prepared for JP Morgan Chase Bank, June 21, 2018

- *Remedial Investigation Report*, prepared by Langan Engineering, Environmental, Surveying, Landscape Architecture and Geology, D.P.C. (Langan), prepared for 160 East 125th Owner LLC, December 18, 2020
- *Remedial Action Work Plan*, prepared by Langan, prepared for 125th Street Lessee LLC, October 2021
- *Tank Affidavit*, prepared by MVC Heating Corporation, prepared for FDNY, February 22, 2022
- *Waste Characterization Sampling Report*, prepared by EcoTerra Consulting , LLC (EcoTerra), September 20, 2022
- *ASTM Phase l Environmental Site Assessment Report,* prepared by Haley & Aldrich of New York, prepared for 180 E125th Realty LLC, August 15, 2024

Previous investigation findings are included in Section 3 of the RIR dated March 2025, prepared by Haley & Aldrich of New York.

2. Description of Remedial Investigation Findings

The Site was investigated in accordance with the scope of work presented in the NYSDEC-approved Remedial Investigation Work Plan (RIWP) dated January 2025. The 2025 RI investigation was conducted between February 5, 2025, and February 13, 2025. The draft RIR was submitted to NYSDEC on March 3, 2025.

2.1 SUMMARY OF REMEDIAL INVESTIGATIONS PERFORMED

The RI consisted of the following:

- Advancement of 11 soil borings to various depths ranging from 15 to 20 ft below ground surface (bgs) with samples collected from surface soil (0 to 2 inches [in.] bgs), the bottom 2-ft interval of fill material ranging from 4 to 15 ft bgs, and from the 2-ft interval above the groundwater interface. A total of 33 soil samples were collected (plus quality assurance/quality control [QA/QC] samples) for laboratory analysis.
- Installation of five 2-in. diameter groundwater monitoring wells to varied depths of approximately 19 to 22 ft bgs and collection of five groundwater samples (plus QA/QC samples).
- Installation of seven soil vapor probes to depths ranging from approximately 12 to 14 ft bgs, or approximately 2 ft above the water table, and collection of seven soil vapor samples.

All soil, groundwater, and soil vapor samples were relinquished under standard chain-of-custody protocol and delivered via courier to Pace Analytical Services, LLC/Alpha Analytical Laboratories, Inc. (Pace/Alpha) of Westborough, Massachusetts, or Eurofins Scientific (Eurofins) of Edison, New Jersey, both New York State Department of Health (NYSDOH) Environmental Laboratory Approval Program (ELAP)-certified laboratories for analysis. Air monitoring was conducted during all ground-intrusive activities.

2.1.1 Soil Investigation

Eleven soil borings were advanced to various depths ranging from 15 to 20 ft bgs using a track-mounted direct-push drill rig (Geoprobe® model 6610DT) operated by a licensed operator provided by Lakewood Environmental Services, Corp. (Lakewood). Soil samples were collected from dedicated acetate liners using a stainless-steel trowel or sampling spoon.

Soils were logged continuously by field personnel using the Modified Burmister Soil Classification System. The presence of staining, odors, and photoionization detector (PID) response was noted in soil boring logs. Soil boring logs are provided in Appendix C of the RIR.

Soil samples representative of Site conditions were collected at 11 locations widely distributed across the Site, as shown on Figure 3. Three soil samples were collected at each boring, including from surface soil (0 to 2 in. bgs), the bottom 2-ft interval of fill material ranging from 4 to 15 ft bgs, and from the 2-ft interval above the groundwater interface.

2.1.2 Groundwater Investigation

Five 2-in. diameter permanent monitoring wells were installed to depths ranging from approximately 19 to 22 ft bgs using a track-mounted direct-push drill rig (GeoProbe® model 6610DT) operated by a licensed operator provided by Lakewood. Each monitoring well was constructed using a 2-in. diameter polyvinyl chloride (PVC) riser pipe with 10-ft-long, 10-slot (0.01-in.) slotted screens. Each monitoring well was constructed within a 2-in. annular space backfilled with #0 certified clean sand fill followed by bentonite plugs. Monitoring well screens were installed to straddle the water table. During a monitoring well gauging event concurrent with the well survey on February 13, 2025, groundwater was encountered at depths ranging from 15.28 to 17.06 ft below top of casing (btoc). Regional groundwater flow is presumed to be from the southwest to northeast based on proximity to the Harlem River; however, based on data collected during the RI, groundwater generally flows from east to west within the Site. Well construction logs are provided in Appendix D of the RIR. A groundwater contour map and groundwater elevation data are provided on Figure 4.

2.1.3 Soil Vapor Investigation

NYSDEC DER-10 requires an assessment of soil vapor for contaminated sites to evaluate the health risk associated with potential exposure to volatile organic compounds (VOCs) through vapor intrusion into occupied spaces. Seven soil vapor probes were installed to assess soil vapor conditions.

Seven soil vapor probes (SV-01 through SV-07) were installed by Lakewood using a direct-push drilling rig (Geoprobe® model 6610DT) to advance the stainless-steel probes to approximately 12 to 14 ft bgs, or approximately 2 ft above the water table. The stainless-steel soil vapor probes were sealed with bentonite, and a tracer gas was used in accordance with NYSDOH protocols to serve as a QA/QC measure to verify the integrity of the temporary soil vapor probe seal. In addition, one to three implant volumes were purged prior to the collection of the soil vapor samples. Sampling occurred for the duration of two hours. At the conclusion of the sampling round, tracer monitoring was performed a second time to confirm the integrity of the probe seals. The soil vapor purge log is included in Appendix G of the RIR.

2.2 SAMPLES COLLECTED

During the RI, a total of 33 soil samples (plus QA/QC samples) were collected from surface soil (0 to 2 in. bgs) from the bottom 2-ft interval of fill material ranging from 4 to 15 ft bgs, and from the 2-ft interval above the groundwater interface. Samples were collected using laboratory-provided clean bottle ware, and VOC grab samples were collected using Terra Cores®.

A total of five groundwater samples, one from each monitoring well, were collected for laboratory analysis, along with QA/QC samples. Groundwater monitoring wells were sampled using low-flow sampling methods. Monitoring wells were purged, and physical and chemical parameters stabilized before samples were taken.

A total of seven soil vapor samples were collected for laboratory analysis, one from each soil vapor probe. Samples were collected in appropriately sized Summa® canisters that were batch-certified clean by the laboratory. Sampling occurred for the duration of two hours.

2.3 CHEMICAL ANALYSIS

The laboratory analyses performed on the soil, groundwater, and soil vapor samples are summarized below.

Soil samples were analyzed for the following parameters:

- Target Compound List (TCL) VOCs by U.S. Environmental Protection Agency (USEPA) Method 8260B;
- TCL Semi-Volatile Organic Compounds (SVOCs) by USEPA Method 8270C;
- Total Analyte List (TAL) Metals by USEPA Method 6010;
- TCL Polychlorinated Biphenyl (PCBs) by USEPA Method 8082;
- TCL Pesticides by USEPA Method 8081B;
- Per- and Polyfluoroalkyl Substances (PFAS) by USEPA Method 1633; and
- 1,4-dioxane by USEPA Method 8270 SIM.

Groundwater samples collected were analyzed for the following parameters:

- TCL VOCs by USEPA Method 8260B;
- TCL SVOCs by USEPA Method 8270C;
- Total and Dissolved TAL Metals by USEPA Methods 6010/7471;
- PCBs by USEPA Method 8082;
- TCL Pesticides by USEPA Method 8081B;
- 1,4-dioxane by USEPA Method 8260B; and
- PFAS by USEPA Method 1633.

Soil vapor samples were analyzed for VOCs using USEPA Method TO-15.

2.4 REMEDIAL INVESTIGATION FINDINGS SUMMARY

Below is a summary of the RI findings.

2.4.1 Soil Sampling Results

Soil analytical results were compared to NYSDEC Title 6 of the New York Codes, Rules and Regulations (6 NYCRR) Part 375 Unrestricted Use Soil Cleanup Objectives (UUSCOs), Restricted Residential Soil Cleanup Objective (RRSCOs), and Protection of Groundwater Soil Cleanup Objectives (PGWSCOs). Perfluorooctanoic Acid (PFOA) and Perfluorooctane Sulfonate (PFOS) soil sample results were compared to the unrestricted use, restricted residential, and protection of groundwater guidance values (GVs) outlined in the April 2023 PFAS Guidance. Soil analytical results are summarized below and shown on Figure 5.

Volatile Organic Compounds

No VOCs were detected above the UUSCOs, RRSCOs, and/or PGWSCOs in the soil samples collected at the Site.

Semi-Volatile Organic Compounds

Seven SVOCs, specifically polycyclic aromatic hydrocarbon (PAHs), were detected at concentrations above the UUSCOs, RRSCOs, and/or PGWSCOs in 18 soil samples collected from the fill layer. Maximum concentrations of SVOCs were all detected in soil sample SB-05_0-0.16, including benzo(a)anthracene (13 milligrams per kilogram [mg/kg]), benzo(a)pyrene (12 mg/kg), benzo(b)fluoranthene (14 mg/kg), benzo(k)fluoranthene (4.4 mg/kg), chrysene (13 mg/kg), dibenzo(a,h)anthracene (1.6 mg/kg), and indeno(1,2,3-cd)pyrene (6.9 mg/kg).

No other SVOCs were detected above the UUSCOs, RRSCOs, and/or PGWSCOs in the soil samples analyzed.

Metals

Six metals were detected above the UUSCOs, RRSCOs, and/or PGWSCOs in up to 19 soil samples collected between 0 to 17 ft bgs. Barium was detected above both the UUSCO and RRSCO in four soil samples at a maximum concentration of 731 mg/kg in SB-08_11-13. Lead was detected above the UUSCO, RRSCO, and PGWSCO in two soil samples at a maximum concentration of 479 mg/kg in SB-08_11-13. Two metals were detected above the UUSCOs, only, in multiple soil samples: mercury (maximum concentration of 0.714 mg/kg in SB-04_0-0.16) and zinc (maximum concentration of 535 mg/kg in SB-08_11-13). Silver was detected above the UUSCO in one soil sample at a concentration of 2.2 mg/kg in SB-10_0-0.16.

No other metals were detected above the UUSCOs, RRSCOs, and/or PGWSCOs in the soil samples analyzed.

Polychlorinated Biphenyls

PCBs were detected above the UUSCOs in eight soil samples collected. Maximum concentration of PCBs was estimated at 0.486 mg/kg in SB-04_0-0.16.

Pesticides

Four pesticides were detected at concentrations exceeding the UUSCOs in up to 20 soil samples collected between 0 to 17 ft bgs: 4,4'-DDD (maximum concentration of 0.0776 mg/kg in SB-08_11-13), 4,4'-DDE (maximum concentration of 0.0447 mg/kg in SB-06_9-11), 4,4'-DDT (maximum concentration of 0.148 mg/kg in SB-06_9-11), and dieldrin (maximum concentration of 0.0476 in SB-08_11-13).

No other pesticides were detected above the UUSCOs, RRSCOs, and/or PGWSCOs in the soil samples analyzed.

Emerging Contaminants

The emerging contaminant 1,4-dioxane was not detected above laboratory detection limits in the soil samples analyzed.

PFOS was detected above the UUSCO GV in 11 soil samples, nine of which also exceeded the PGWSCO GV, at a maximum concentration of 0.00503 mg/kg in SB-01_9-11.

PFOA was not detected above the UUSCOs, RRSCOs, and/or PGWSCO GVs in any of the soil samples collected.

2.4.2 Groundwater Sampling Results

Groundwater analytical results were compared to 6 NYCRR Part 703.5 NYSDEC Technical and Operational Guidance Series 1.1.1 Ambient Water Quality Standards (AWQS). Emerging contaminants PFOA and PFOS were compared to the GVs for PFOA and PFOS outlined in the NYSDEC April 2023 PFAS Guidance. Emerging contaminant 1,4-dioxane was compared to the GV as set by NYSDEC in March 2023. Groundwater analytical results are summarized below and shown on Figure 6.

Volatile Organic Compounds

One VOC, tetrachloroethene (PCE), was detected above the AWQS in one groundwater sample collected from MW-04 at a concentration of 5.6 micrograms per liter (µg/L).

No other VOCs were detected above the AWQS in the groundwater samples analyzed.

Semi-Volatile Organic Compounds

No SVOCs were detected above the AWQS in the groundwater samples analyzed.

Polychlorinated Biphenyls

No PCBs were detected above the AWQS in the groundwater samples analyzed.

Dissolved Metals

Four dissolved metals were detected in multiple groundwater samples above the AWQS: dissolved manganese (maximum concentration of 422.9 µg/L in MW-02), dissolved magnesium (maximum concentration of 43,100 µg/L in MW-01), dissolved sodium (maximum concentration of 123,000 µg/L in MW-04), and dissolved antimony in one groundwater sample (concentration of 4.24 µg/L in MW-03).

No other dissolved metals were detected above the AWQS in the groundwater samples analyzed.

Total Metals

Three metals were detected above the AWQS in multiple groundwater samples: sodium (maximum concentration of 128,000 µg/L in MW-04), total magnesium (maximum concentration of 48,200 µg/L in

MW-01), and total manganese (maximum concentration of 476 µg/L in DUP-01, parent sample is MW-02).

No other total metals were detected above the AWQS in the groundwater samples analyzed.

Pesticides

No pesticides were detected above the AWQS in the groundwater samples analyzed.

Emerging Contaminants

Concentrations of emerging contaminants PFOA and PFOS were compared to the NYSDEC GVs of 6.7 parts per trillion (ppt) for PFOA and 2.7 ppt for PFOS. PFOA and PFOS were both detected above the NYSDEC GVs in all six groundwater samples (including the duplicate sample). PFOA was detected at a maximum concentration of 177 ppt in MW-05 and PFOS was detected at a maximum concentration of 785 ppt in MW-05.

Emerging contaminant 1,4-dioxane was compared to the NYSDEC GV of 350 ppt; 1,4-dioxane was not detected above laboratory detection limits in the groundwater samples analyzed.

2.4.3 Soil Vapor Sampling Results

Total VOC concentrations in soil vapor samples ranged from 87.18 micrograms per cubic meter (µg/m^3) in sample SV-06 to 272.71 µg/m^3 in SV-05. Total benzene, toluene, ethylbenzene, and xylenes (BTEX) concentrations ranged from 18.62 µg/m^3 in SV-07 to 45.4 µg/m^3 in sample SV-01. Total chlorinated volatile organic compound (CVOC) concentrations in soil vapor samples ranged from 1.72 µg/m^3 in SV-04 to 14.76 µg/m^3 in SV-02.

CVOCs were detected in all seven soil vapor samples collected during the RI. PCE was detected in all seven soil vapor samples at a maximum concentration of 14 µg/m^3 in SV-02. TCE was detected in four soil vapor samples at a maximum concentration of 0.39 µg/m^3 in SV-02. Methylene chloride was detected in three soil vapor samples at a maximum concentration of 1.9 µg/m^3 in SV-05. Carbon tetrachloride was detected five soil vapor samples at a maximum concentration of 0.33 µg/m^3 in SV-06. 1,1,1-trichloroethane was detected in two soil samples at a maximum concentration of 3 µg/m^3 in SV-03.

Figure 7 provides the soil vapor sampling locations as well as a summary of soil vapor data from the sampling event.

2.5 SIGNIFICANT THREAT

The NYSDEC and NYSDOH have determined that the Site does not pose a significant threat to human health and the environment.

2.6 GEOLOGY AND HYDROLOGY

2.6.1 Contaminated Fill Material

Based on field observations from the RI, the Site is underlain by a layer of fill material consisting of mainly light brown to brown, medium to fine sand, with silt and varying amounts of gravel, concrete, rock fragments, and brick. Fill extends from the surface to variable depths between 5 to 12 ft bgs.

2.6.2 Native Soil

The native layer consisting of fine to medium sand with varying amounts of fine and coarse gravels was observed to extend to the terminus depth in each boring of approximately 15 to 20 ft bgs. No PID readings above background levels were observed during soil sampling activities.

2.6.3 Bedrock

Based on previous reports, bedrock was encountered at depths ranging from 20 to 80 ft bgs. According to the U.S. Geological Survey (USGS) Bedrock and Engineering Geologic Maps of New York County and Parts of Kings and Queens Counties, New York, the bedrock beneath the Site is part of the Inwood Marble formation.

2.6.4 Hydrogeology

Groundwater was encountered at depths ranging from approximately 15.28 to 17.06 ft btoc during the RI. Groundwater beneath the Site generally flows from east to west, with depth to water measurements ranging from 15.28 ft btoc at MW-03 to 17.06 ft btoc at MW-01. A groundwater contour map is provided as Figure 4.

2.7 CONTAMINANT CONDITIONS

2.7.1 Conceptual Site Model

A conceptual site model (CSM) was developed based on the findings of the RI. The purpose of this model is to develop a simplified framework for understanding the sources of contamination, potential migration pathways, and potentially complete exposure pathways. The following is a description of each.

2.7.1.1 Potential Sources of Contamination

Subsurface soils are impacted with elevated concentrations of metals, SVOCs, pesticides, PCBs, and PFAS, consistent with characteristics of contaminated fill found throughout the New York City area. Contaminated fill material varies throughout the Site extending up to 12 ft bgs. Groundwater is impacted with metals, PFAS, and one VOC (specifically PCE) which was detected in one monitoring well slightly above the AWQS standard. The source of PFAS in groundwater is unknown but may have resulted from historical uses at the Site or nearby properties. The Site historically contained buildings operating in furniture sales and/or furniture manufacturing as indicated on Sanborn Fire Insurance Maps from 1939 to 1979. With the introduction of products such as 3M's Scotchgard™, which was widely used as a stain repellent to protect fabric, furniture, and carpets, historical furniture sales/manufacturing operations are a potential source of PFAS contamination on the Site.

2.7.1.2 Description of Areas of Concern

Based on Site observations, Site development history, and the findings of the previous environmental reports, three areas of concern (AOCs) were identified.

AOC 1 – Site-Wide Contaminated Fill in Subsurface Soils

Subsurface soils throughout the Site are impacted with elevated concentrations of metals (primarily lead), SVOCs (specifically PAHs), and, in some areas, PCBs, pesticides, and PFAS. These findings are consistent with characteristics of contaminated fill found throughout the New York City area. Contaminated fill material varies in depth throughout the Site, generally extending from surface grade to about 12 ft bgs.

AOC 2 – Groundwater Impacts

Metals, PFAS, and one CVOC, PCE, were detected above the AWQS in groundwater. PCE was detected in one monitoring well slightly above the AWQS standard. There have been no historical Site operations that would have indicated the use of CVOCs. PFAS groundwater contamination is widespread and may have resulted from historical uses at the Site or nearby properties..

2.7.2 Qualitative Human Health Exposure Assessment

A qualitative human health exposure assessment (QHHEA) consists of characterizing the exposure setting (including the physical environment and potentially exposed human populations), identifying exposure pathways, and evaluating chemical fate and transport. An exposure pathway describes the means by which an individual may be exposed to contaminants originating from a site. An exposure pathway has the following five elements:

1. Receptor population;
2. Contaminant source;
3. Contaminant release and transport mechanism;
4. Point of exposure; and
5. Route of exposure.

An exposure pathway is complete when all five elements of an exposure pathway are documented; a potential exposure pathway exists when any one or more of the five elements comprising an exposure pathway is not documented but could reasonably occur. An exposure pathway may be eliminated from further evaluation when any one of the five elements comprising an exposure pathway does not exist in the present and will not exist in the future.

2.7.2.1 Receptor Population

The receptor population includes the people who are or may be exposed to contaminants at a point of exposure. The identification of potential human receptors is based on the characteristics of the Site, the surrounding land uses, and the probable future land uses. The Site is currently vacant and undeveloped. Since the Site is vacant, individual receptors would currently only include construction/maintenance workers who may be employed to perform work on the property.

The Site owner plans to develop the property as a new mixed-use commercial and residential building, consistent with surrounding property use and zoning. Exposed receptors under the future use scenario may comprise residents of the future building, indoor employees, outdoor employees (e.g., groundskeepers or maintenance staff), and construction workers who may be employed at or perform work on the property. Site visitors may also be considered receptors; however, their exposure would be similar to that of the indoor employees but at a lesser frequency and duration.

2.7.2.2 Contaminant Sources

The source of contamination is defined as either the source of contaminant release to the environment (such as a waste disposal area or point of discharge) or the impacted environmental medium (soil, air, water) at the point of exposure. Section 2.0 discusses the COCs present in the Site media at elevated concentrations above background levels. In general, these are metals, SVOCs, pesticides, and PCBs in soil and VOCs, PFAS, and total/dissolved metals in groundwater.

2.7.2.3 Contaminant Release and Transport

Contaminant release and transport mechanisms carry contaminants from the source to points where people may be exposed and are specific to the type of contaminant and Site use. For VOCs present in soil vapor, the potential exists for exposure through pathways associated with soil vapor intrusion (SVI) including the indoor vapor intrusion pathway.

2.7.2.4 Exposure Route and Mechanisms

The point of exposure is a location where actual or potential human contact with a contaminated medium may occur. Based on the exceedances of RRSCOs for metals and SVOCs and exceedances of UUSCOs for pesticides and PCBs in soil, the exceedance of AWQS for metals and VOCs in groundwater, and CVOCs and BTEX above laboratory detection limits in soil vapor, the point of exposure is defined as the entire Site.

The route of exposure is the manner in which a contaminant actually enters or contacts the human body (e.g., ingestion, inhalation, dermal absorption). Based on the types of receptors and points of exposure identified above, potential routes of exposure are listed below.

<u>Current Use Scenario</u>

The Site is currently vacant, covered with dirt and grass, and secured with a perimeter fence. There is potential for exposure to the contaminated surface soil on the Site; however, Site access is restricted by the perimeter fencing. Release and transport mechanisms include contaminated surface soil transported as dust, contaminated groundwater flow, and volatilization of contaminants from soil and/or groundwater into the vapor phase. Persons at risk of exposure, via the indicated exposure routes, are noted below:

- Occupant/Employee/Visitor – skin contact, inhalation, and incidental ingestion
- Construction/Utility Worker – skin contact, inhalation, and incidental ingestion

Construction/Remediation Scenario

In the continued absence of engineering controls (ECs) and institutional controls (ICs), there will be continued exposure pathways during construction/remediation specifically related to surface soil. Planned construction/remedial activities include removal of underground storage tanks (USTs; if present), excavation and off-Site disposal of soil, and dewatering of impacted groundwater (if required) to facilitate the construction of the foundation elements. Release and transport mechanisms include disturbed and exposed soil during excavation, contaminated soil transported as dust, contaminated groundwater flow (dewatering, if required), and volatilization of contaminants from soil and/or groundwater into the vapor phase. Persons at risk of exposure, via the indicated exposure routes, are noted below.

- Construction/Utility Worker – skin contact, inhalation, and incidental ingestion
- Public Adjacent to the Site – inhalation

Future Use Scenario

The anticipated future use as a new mixed-use commercial and residential building will include a cellar extending to approximately 15 ft bgs. In the absence of remedial removal of impacted material, remaining contaminant release and transport would include potential migration of contaminated groundwater and volatilization of contaminants from soil and/or groundwater into the vapor phase. Routes of future exposure include cracks in the foundation or slab, or emergency repairs to the foundation walls or slab. Persons at risk of exposure, via the indicated exposure routes, are noted below.

- Construction/Utility Worker – skin contact, inhalation, and incidental ingestion
- Occupant/Employee/Visitor – inhalation
- Public Adjacent to the Site – inhalation

SVI is a relevant transport mechanism under the current and future use scenarios. Concerning skin contact, inhalation, and incidental ingestion of volatile organics present in soil and groundwater, the potential is low for exposure to VOCs for construction workers involved in subsurface activities where volatiles are present at elevated concentrations, given the results of the 2025 RI.

2.7.2.5 Exposure Assessment

Based on the above assessment, the potential exposure pathways for the current and future use conditions are discussed below.

Current Use Scenario

Site contamination includes SVOCs, pesticides, PCBs, metals, and PFAS in soil related to fill and the historical Site operations. Under current conditions, the likelihood of exposure to soil or groundwater is limited, as the Site is affixed with a perimeter fence secured with a lock. Site access is only granted to personnel associated with the planned development. Potable water for New York County will continue to be sourced from reservoirs in the Catskill and Delaware watersheds. All intrusive work on the Site is done in accordance with a Site-Specific Health and Safety Plan (HASP) and the donning of personal protective equipment (PPE).

Construction/Remediation Scenario

The exposure elements described under the current use scenario also exist for all elements during the construction/remediation scenario (i.e., exposure to soil and groundwater during construction and remedial action). The overall risk will be minimized by the implementation of a Site-Specific Construction Health and Safety Plan (CHASP), localized monitoring of organic vapors, community air monitoring on the Site perimeter for particulates and VOCs, vapor and dust suppression techniques, installation of a stabilized entrance, cleaning truck tires and undercarriages, and donning of appropriate PPE. Additionally, the Site will be under a RAWP that will include a Soil Materials Management Plan (S/MMP) that will highlight measures for PPE, covering of stockpiles, housekeeping, suppression techniques (particulates and vapor), and measures to prevent off-Site migration of contaminants. In addition, the Site will be secured and inaccessible to the public during remedial construction.

Future Use Scenario

Under the proposed future condition (after construction/remediation), residual contaminants may remain on Site depending on the remedy achieved. The remaining contaminants would include those listed in the current conditions. If contaminants remain on Site after construction/remediation, the route of exposure will be mitigated by proper installation of ECs, such as a Site capping system foundation, implementation of ICs, such as land use and groundwater use restrictions, and implementation of a Site Management Plan (SMP) to manage referenced controls.

2.8 FISH & WILDLIFE REMEDIAL IMPACT ANALYSIS

NYSDEC DER-10 requires an on-Site and off-Site Fish and Wildlife Resource Impact Analysis (FWRIA) if certain criteria are met. The Site was developed as early as the late 1800s and has been utilized mainly for commercial purposes until the mid-2010s. The Site is located in the Harlem neighborhood of New York, New York. The Site provides little or no wildlife habitat or food value and/or access to the detected subsurface contamination. No natural waterways are present on or adjacent to the Site. The proposed future use of the Site is for residential and commercial purposes. As such, no unacceptable ecological risks are expected under the current and future use scenarios.

2.9 REMEDIAL ACTION OBJECTIVES

Based on the results of the RI, the following Remedial Action Objectives (RAOs) have been identified for the Site.

2.9.1 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.

2.9.2 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.

2.9.3 Soil Vapor

RAOs for Public Health Protection:

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

3. Summary of Remedial Action

3.1 ALTERNATIVE I – TECHNICAL DESCRIPTION

Alternative I, a Track 1 remedy, will include the following tasks:

- Development and implementation of a CHASP and Community Air Monitoring Plan (CAMP) for the protection of on-Site workers, the community, residents, and the environment during remediation and construction activities.
- Design and construction of a support-of-excavation (SOE) system to facilitate the Track 1 remediation.
- Implementation of soil erosion, pollution, and sediment control measures in compliance with applicable laws and regulations.
- Decommissioning of existing on-Site monitoring wells, as necessary, in accordance with NYSDEC Commissioner Policy (CP)-43.
- Excavation, stockpiling, off-Site transport, and disposal of approximately 20,700 cu yd of contaminated fill material Site-wide that exceeds UUSCOs as defined by 6 NYCRR Part 375-6.8. This includes excavation to a depth of 15 ft bgs on the eastern and central portions of the Site, excavation to a depth of 12 ft bgs on the northwestern portion of the Site, and excavation to a depth of 7 ft bgs on the southwestern portion of the Site. A hotspot excavation will also be completed to 18 ft bgs at RI boring location SB-03 to remove soil with pesticides and metals exceeding UUSCOs.
- If encountered, removal, decommissioning, and off-Site disposal of any USTs and/or associated appurtenances (e.g., fill lines, vent line, and electrical conduit) in accordance with DER-10, 6 NYCRR Part 613.9, NYSDEC CP-51, and other applicable NYSDEC UST closure requirements.
- Implementation of a preliminary waste characterization to facilitate off-Site disposal of excavated soil/fill.
- Screening for indications of contamination (by visual means, odor, and monitoring with PIDs) of excavated material during intrusive Site work.
- Dewatering, characterization, and treatment of water accumulated in excavations prior to discharge to a NYSDEC-approved sewer/sanitary line (pending permits), or localized dewatering with containerization, classification, and disposal at an approved receiving facility.
- Appropriate off-Site disposal of material removed from the Site in accordance with federal, state, and local rules and regulations for handling, transport, and disposal.
- Backfilling of excavated areas, as necessary for development, with certified-clean material (i.e., meeting UUSCOs), recycled concrete aggregate (RCA), or virgin, native crushed stone.
- Collection and analysis of confirmation soil samples from the excavation base in accordance with DER-10, to document post-excavation conditions to confirm a Track 1 remedy was achieved.

The Alternative I remediation extent is shown on Figure 8 and is based on data presented in the RIR and the proposed development plans. The requirements for each of the Alternative I tasks are described below.

On-Site Worker, Public Health, and Environmental Protection

A Site-specific CHASP is appended to this RAWP (Appendix D) and will be implemented during excavation and foundation construction to protect on-Site workers from accidents and acute and chronic exposures to the identified contaminated media. Public health will be protected by implementing and enforcing dust, odor, and organic vapor control and monitoring procedures included in the CAMP. The CAMP will include continuous perimeter monitoring of dust and organic vapor using Aeroqual® AQS1 Air Quality Monitors capable of recording data and calculating 15-minute averages. Field personnel will monitor Site perimeters for visible dust and odors.

Support of Excavation

To accommodate removal of soil that exceeds Track 1 UUSCOs, an SOE system will be required. Excavations are anticipated to be completed into the water table throughout the Site. Additional SOE to support hotspot excavation areas throughout the Site may be constructed, as necessary.

Waste Characterization

Waste characterization will be performed for off-Site disposal in a manner suitable to the receiving facility and in conformance with applicable permits. Sampling and analytical methods, sampling frequency, and analytical results will be reported. Data available for excavated material to be disposed of at a given facility will be submitted to the disposal facility with suitable explanation prior to shipment and receipt.

Hazardous soil, if present, will be managed in accordance with applicable federal, state, and local regulations. As such, the handling, transport, and disposal of hazardous fill material is subject to USEPA and Occupational Safety and Health Administration (OSHA) Hazardous Waste Operations and Emergency Response (HAZWOPER) regulations. The excavated material would be segregated in the field and temporarily placed in stockpiles, or direct loaded, and transported by Part 364-permitted trucks to a facility permitted by the Resource Conservation and Recovery Act (RCRA) to accept hazardous waste.

Fill and Soil Removal

Metals, SVOCs, and, in some areas, pesticides and PCBs were detected in contaminated fill material at concentrations that exceed the UUSCOs. To achieve Track 1, soil removal and disposal will extend from surface grade to 7 ft bgs on the southwestern portion of the Site, to 12 ft bgs on the northwestern portion of the Site, and to 15 ft bgs on the eastern and central portions of the Site. Additionally, a hotspot excavation will be performed to 18 ft bgs to remove soil impacted with pesticides and metals above UUSCOs detected at RI boring SB-03. The hotspot excavation will consist of a 100-sq-ft area (10 ft by 10 ft). The Alternative I excavation plan is shown on Figure 8.

The estimated volume of material requiring removal and off-Site disposal for a Track 1 cleanup is approximately 20,700 cu yd. The soil will be screened for visual, olfactory, and instrumental evidence of environmental impacts. Excavation is expected to extend below the water table during remedial excavation and construction; therefore, installation of a dewatering system is anticipated to achieve remedial depth.

UST Removal

If encountered, USTs and/or associated appurtenances (e.g., fill lines, vent line, and electrical conduit), would be decommissioned in accordance with applicable NYSDEC tank closure requirements, including DER-10 Section 5.5, 6 NYCRR Part 613.9, and NYSDEC CP-51. USTs and/or associated appurtenances would be registered and administratively closed with the NYSDEC Petroleum Bulk Storage (PBS) unit. Petroleum-impacted soil would be excavated and disposed of off the Site at a permitted disposal facility in accordance with applicable regulations. Closure documentation, such as contractor affidavits, bills of lading for sludge disposal, and tank disposal receipts, would be provided as appendices in the Final Engineering Report (FER).

Excavation Backfill

As required for construction purposes in the hotspot excavation area, imported material will consist of clean fill that meets the UUSCOs or other acceptable fill material such as virgin stone from a quarry or RCA. If RCA is imported to the Site, it will come from an NYSDEC-registered facility in compliance with 6 NYCRR Part 360 registration and permitting requirements for the period of RCA acquisition. RCA imported from compliant facilities will not require chemical testing unless required by NYSDEC under its terms for operation of the source facility. Imported RCA must be derived from recognizable and uncontaminated concrete (less than 10 percent by weight passing through a No. 100 sieve). RCA is not acceptable for, and will not be used as, Site cover or drainage material. NYSDEC Request to Import/Reuse forms will be submitted, and a template is provided in Appendix E.

Fluids Management

Liquids removed from the Site, including dewatering fluids, would be handled, transported, and disposed of in accordance with applicable local, state, and federal regulations. Fluids will not be recharged back to the land surface or subsurface. Discharge of water generated during remedial construction to surface waters (i.e., a local pond, stream, and/or river) is prohibited without a State Pollutant Discharge Elimination System (SPDES) permit.

Based on the depth to water, dewatering is anticipated to facilitate the excavation of material that exceeds the UUSCOs and construction of foundation components. Dewatering fluids discharged into the New York City sewer system will be addressed through approval by the New York City Department of Environmental Protection (NYCDEP). No dewatering discharge will commence prior to NYCDEP approval.

Confirmation Soil Sampling

Per NYSDEC DER-10, confirmation soil samples will be collected from the bottom of the proposed remedial excavation at a frequency of one sample per 900 sq ft to confirm Track 1 UUSCOs were achieved. An estimated 48 confirmation soil samples, plus QA/QC samples, would be collected and analyzed for the Part 375 list of VOCs, SVOCs, PCBs, pesticides, metals, PFAS, and 1,4-dioxane. The proposed confirmation sample locations are included on Figure 9.

3.2 ALTERNATIVE II – TECHNICAL DESCRIPTION

Alternative II, a Track 2 remedy, will include the following tasks:

- Development and implementation of a CHASP and CAMP for the protection of on-Site workers, the community, residents, and the environment during remediation and construction activities.
- Design and construction of a SOE system to facilitate the Track 2 remediation.
- Implementation of soil erosion, pollution, and sediment control measures in compliance with applicable laws and regulations.
- Decommissioning of existing on-Site monitoring wells, as necessary, in accordance with NYSDEC CP-43 Policy.
- Excavation, stockpiling, off-Site transport, and disposal of approximately 15,700 cu yd of contaminated fill material Site-wide that exceeds RRSCOs as defined by 6 NYCRR Part 375-6.8. This includes excavation to a depth of 2 ft bgs on the northeast and southwest portions of the Site and excavation to a depth of 13 ft bgs on the remainder of the Site. A hotspot excavation will also be completed to 16 ft bgs at RI boring location SB-03 to remove soil with SVOCs exceeding RRSCOs.
- If encountered, removal, decommissioning, and off-Site disposal of any USTs and/or associated appurtenances (e.g., fill lines, vent line, and electrical conduit) in accordance with DER-10, 6 NYCRR Part 613.9, NYSDEC CP-51, and other applicable NYSDEC UST closure requirements.
- Implementation of a preliminary waste characterization to facilitate off-Site disposal of excavated soil/fill.
- Screening for indications of contamination (by visual means, odor, and monitoring with PIDs) of excavated material during intrusive Site work.
- Dewatering, characterization, and treatment of water accumulated in excavations prior to discharge to an NYSDEC-approved sewer/sanitary line (pending permits), or localized dewatering with containerization, classification, and disposal at an approved receiving facility.
- Appropriate off-Site disposal of material removed from the Site in accordance with federal, state, and local rules and regulations for handling, transport, and disposal.
- Backfilling of excavated areas, as necessary for development, with certified-clean material (i.e., meeting UUSCOs), RCA, or virgin, native crushed stone.
- Construction of a composite cover system consisting of a minimum of 4 in. of subbase (RCA) overlain by a 12-in. concrete slab and installation of a waterproofing/vapor barrier (20-mil thick) to mitigate the potential for a soil vapor exposure pathway under the buildings and a Site-wide cover consisting of hardscape and 2 ft of clean soil outside of the building footprint.

  Collection and analysis of confirmation soil samples from the excavation base in accordance with DER-10, to document post-excavation conditions to confirm RRSCOs were achieved. If a Track 2 Residential cleanup is achieved, ECs will not be a required element of the remedy and NYSDEC will issue a Track 2 Certificate of Completion.

- Establishment of use restrictions, if necessary, including prohibitions on the use of groundwater from the Site and prohibitions on sensitive Site uses, such as farming or vegetable gardening in residual Site soil, to significantly reduce the potential for future exposure pathways.
- Establish an SMP for ICs and ECs that includes an Institutional and Engineering Control Plan, a Monitoring Plan, and an Operations and Maintenance Plan.
- Recording of an Environmental Easement (EE) to ensure future owners of the Site continue to maintain ECs/ICs as required.

The Alternative II remediation extent is shown on Figure 10 and is based on data presented in the RIR, and the proposed development plans. The requirements for each of the Alternative II tasks are described below.

On-Site Worker, Public Health, and Environmental Protection

A Site-specific CHASP is appended to this RAWP (Appendix D) and will be implemented during excavation and foundation construction to protect on-Site workers from accidents and acute and chronic exposures to the identified contaminated media. Public health will be protected by implementing and enforcing dust, odor, and organic vapor control and monitoring procedures included in the CAMP. The CAMP will include continuous perimeter monitoring of dust and organic vapor using Aeroqual® AQS1 Air Quality Monitors capable of recording data and calculating 15-minute averages. Field personnel will monitor Site perimeters for visible dust and odors.

Support of Excavation

To accommodate removal of soil that exceeds Track 2 RRSCOs, an SOE system will be required. Excavations are anticipated to be completed into the water table throughout the Site. Additional SOE to support hotspot excavation areas throughout the Site may be constructed, as necessary.

Waste Characterization

Waste characterization will be performed for off-Site disposal in a manner suitable to the receiving facility and in conformance with applicable permits. Sampling and analytical methods, sampling frequency, and analytical results will be reported. Data available for excavated material to be disposed of at a given facility will be submitted to the disposal facility with suitable explanation prior to shipment and receipt.

Hazardous soil, if present, will be managed in accordance with applicable federal, state, and local regulations. As such, the handling, transport, and disposal of hazardous fill material is subject to USEPA and OSHA HAZWOPER regulations. The excavated material would be segregated in the field and temporarily placed in stockpiles, or direct loaded, and transported by Part 364-permitted trucks to a facility permitted by the RCRA to accept hazardous waste.

Fill and Soil Removal

Metals and SVOCs were detected in contaminated fill material at concentrations that exceeded the RRSCOs. To achieve Track 2, soil removal and disposal will extend from surface grade to 2 ft bgs in the northeastern and southwestern portions of the Site and to 13 ft bgs on the remainder of the Site. Additionally, a hotspot excavation will be performed to 16 ft bgs to remove soil impacted with SVOCs above RRSCOs detected at RI boring SB-03. The hotspot excavation will consist of a 100 sq ft area (10 ft by 10 ft). The Alternative II excavation plan is shown on Figure 10.

The estimated volume of material requiring removal and off-Site disposal for a Track 2 cleanup is approximately 15,700 cu yd. The soil will be screened for visual, olfactory, and instrumental evidence of environmental impacts. Excavation is expected to extend below the water table during remedial excavation and construction; therefore, installation of a dewatering system is anticipated to achieve remedial depth.

UST Removal

If encountered, USTs and/or associated appurtenances (e.g., fill lines, vent line, and electrical conduit), would be decommissioned in accordance with applicable NYSDEC tank closure requirements, including DER-10 Section 5.5, 6 NYCRR Part 613.9, and NYSDEC CP-51. USTs and/or associated appurtenances would be registered and administratively closed with the NYSDEC PBS unit. Petroleum-impacted soil would be excavated and disposed of off the Site at a permitted disposal facility in accordance with applicable regulations. Closure documentation, such as contractor affidavits, bills of lading for sludge disposal, and tank disposal receipts, would be provided as appendices in the FER.

Excavation Backfill

As required for construction purposes in the hotspot excavation area, imported material will consist of clean fill that meets the RRSCOs or other acceptable fill material such as virgin stone from a quarry or RCA. If RCA is imported to the Site, it will come from an NYSDEC-registered facility in compliance with 6 NYCRR Part 360 registration and permitting requirements for the period of RCA acquisition. RCA imported from compliant facilities will not require chemical testing unless required by NYSDEC under its terms for operation of the source facility. Imported RCA must be derived from recognizable and uncontaminated concrete (less than 10 percent by weight passing through a No. 100 sieve). RCA is not acceptable for, and will not be used as, Site cover or drainage material. NYSDEC Request to Import/Reuse forms will be submitted, and a template is provided in Appendix E.

Fluids Management

Liquids removed from the Site, including dewatering fluids, would be handled, transported, and disposed of in accordance with applicable local, state, and federal regulations. Fluids will not be recharged back to the land surface or subsurface. Discharge of water generated during remedial construction to surface waters (i.e., a local pond, stream, and/or river) is prohibited without an SPDES permit.

Based on the depth to water, dewatering is anticipated to facilitate the excavation of material that exceeds the RRSCOs and construction of foundation components. Dewatering fluids discharged into the New York City sewer system will be addressed through approval by NYCDEP. No dewatering discharge will commence prior to NYCDEP approval.

Confirmation Soil Sampling

Per NYSDEC DER-10, confirmation soil samples will be collected from the bottom of the proposed remedial excavation at a frequency of one sample per 900 sq ft to confirm Track 2 RRSCOs were achieved. An estimated 48 confirmation soil samples, plus QA/QC samples, would be collected and analyzed for the Part 375 list of VOCs, SVOCs, PCBs, pesticides, metals, PFAS, and 1,4-dioxane. The proposed confirmation sample locations are included on Figure 9.

Composite Cover System

As part of the construction, a composite cover system would be installed, consisting of a minimum of 4 in. of clean subbase (RCA or virgin stone) overlain by a 12-in. concrete slab including installation of a waterproofing/vapor barrier (20-mil thick) to act as the sealing layer required to mitigate the potential for a soil vapor exposure pathway. Under the Track 2 remedy, assuming the documentation sampling results meet RRSCOs, the composite cover system would not function as an EC. Should Track 2 not be achieved and a Track 4 remedy completed, the composite cover would function as an EC to be monitored under Site management.

Site Management Plan and Environmental Easement

If confirmation sampling identifies remaining Site contamination above RRSCOs, an EE would be recorded referencing ICs that are part of the selected remedy, which would be binding upon all subsequent owners and occupants of the property. The ICs would: 1) restrict the Site’s use to restricted residential, commercial, and industrial uses, although land use is subject to local zoning laws; 2) restrict the use of groundwater as a source of potable or process water, unless it undergoes necessary water quality treatment as determined by the NYSDEC or NYSDOH; 3) require implementation of an NYSDEC-approved SMP; 4) require the completion and submission to the NYSDEC of a periodic certification of ICs and ECs in accordance with Part 375; and 5) include notice-of-use restrictions of the Site’s soil.

The SMP would identify all use restrictions, ECs, and long-term monitoring and maintenance requirements to ensure the ICs and/or ECs remain in place and are effective. The SMP will include, but may not be limited to:

1. An Excavation Work Plan which details the provisions for management of future excavations in areas of remaining contamination;
2. Descriptions of the provisions of the EE including any land use and/or groundwater use restrictions;
3. Provision for evaluation of the potential for SVI for any buildings developed on the Site, including provision for implementing actions recommended to address exposures related to SVI;
4. Provision for the management and inspection of the identified ECs;
5. Maintaining Site access controls and NYSDEC notification; and
6. The steps necessary for the periodic reviews and certification of the ICs and ECs.

3.3 EVALUATION OF THE PREFERRED REMEDY

The following is an evaluation of the proposed remedy based on the BCP remedy evaluation criteria listed below. The first two criteria are considered "threshold criteria" and the remaining criteria are "balancing criteria." A remedial alternative must meet the threshold criteria to be considered and evaluated further under the balancing criteria.

- Protection of human health and the environment
- Compliance with SCG
- Short-term effectiveness and impacts
- Long-term effectiveness and permanence
- Reduction of toxicity, mobility, or volume of contaminated material
- Implementability
- Cost-effectiveness
- Community acceptance
- Green and Sustainable Remediation (including climate resiliency)
- Land use

3.3.1 Protection of Human Health and the Environment

Alternative I – The remedy would significantly reduce the potential for each of the identified pathways of exposure to on-Site contaminated media. Remediating the Site to Track 1 standards would result in the elimination of Site soil that exceeds UUSCOs. USTs, if encountered, would be decommissioned, removed, and disposed off Site. Dewatering would be required for the remedial excavation as well as for the proposed development. The RAOs for public health and environmental protection would be met through the removal of contaminated media at the Site to meet UUSCOs and AWQS, which would significantly reduce the potential for exposure pathways via possible ingestion, inhalation, or dermal contact.

Since no ECs or ICs will be required for this remedy to maintain the Site in the future, this remedy is protective of human health and the environment.

Alternative II – The Track 2 remedy will provide similar overall protection to public health and the environment as Alternative I. Remediating the Site to Track 2 standards will result in the removal of Site soil that exceeds RRSCOs. USTs, if encountered, would be decommissioned, removed, and disposed off Site. Dewatering would be required for the remedial excavation as well as for the proposed development. The RAOs for public health and environmental protection would be met through the removal of contaminated media at the Site to meet RRSCOs and AWQS, which would significantly reduce the potential for exposure pathways via possible ingestion, inhalation, or dermal contact.

Construction of a composite cover system consisting of 4 in. of subbase (RCA) overlain by a 12-in. concrete slab and installation of a waterproofing/vapor barrier that will exceed the performance expectations of a 20-mil vapor barrier to mitigate the SVI exposure pathway. With the cover system, this remedy is protective of human health and the environment.

Public health will be protected during remediation under both alternatives by implementing and enforcing dust, odor, and organic vapor control and monitoring procedures when needed.

3.3.2 Compliance with Standards, Criteria, and Guidance

Both alternatives will be in compliance with applicable SCGs listed in Section 4.1 by removing Site sources of contamination to achieve the RAOs. While implementing either remedy, the protection of public health and the environment will be maintained by enforcing a Site-specific CHASP and CAMP. OSHA requirements for on-Site construction safety will be followed by Site contractors performing work.

3.3.3 Short-Term Effectiveness and Impacts

Alternative I – The most significant short-term adverse impacts and risks to the community will be the potential complications and risks involved with designing and constructing the SOE and underpinning for the building and structures adjoining the Site. Potential impositions on roadway and pedestrian traffic associated with construction may result from the remedial excavation to achieve Track 1 cleanup. Increased truck traffic in Alternative I, relative to Alternative II, would be necessary to haul out the additional soil that exceeds UUSCOs to achieve Track 1 standards.

Under Alternative I, the excavated soil and fill would require up to approximately 1,035, 20-cu-yd truck trips for disposal. Implementing Alternative I would require approximately four months of effort (assuming normal work hours). Truck traffic will be routed on the most direct course using major thoroughfares where possible and appropriate (see Section 5.4.4 for a full discussion of truck routing), and flaggers will be used to protect pedestrians at Site entrances and exits. Waiting times associated with the analysis of confirmation sampling and resampling may delay construction, leaving soil exposed for a longer time resulting in a potential increase in dust, odors, and/or organic vapor from the excavation and construction-related noise. The effects of these potential adverse impacts on the community, workers, and the environment will be minimized by implementing the respective control plans.

Alternative II – Alternative II will result in similar, though lesser, short-term adverse impacts and risks to the community. The excavated soil and fill would require approximately 785, 20-cu-yd truck trips. Implementing the Alternative II concept would require approximately three to four months of effort (assuming normal work hours).

Under both remedial alternatives, dust will be controlled by the on-Site application of water spray as needed. ECs, such as slowing the pace of work, applying foam and/or dust suppressant, and/or covering portions of the excavation, will be used to suppress odors/dust when required. Work will be modified or stopped according to the action levels defined in the CAMP. Therefore, short-term impacts are similar for both alternatives.

3.3.4 Long-Term Effectiveness and Performance

Alternative I will remove contaminated soil from the Site exceeding UUSCOs while Alternative II will remove contaminated soil from the Site exceeding RRSCOs and will be documented in post-excavation confirmation soil sampling.

3.3.5 Reduction of Toxicity, Mobility, or Volume of Contaminated Material

Both remedial alternatives would permanently and significantly reduce the toxicity, mobility, and volume of contamination through the removal of contaminated fill and buried solid waste through excavation and off-Site disposal.

3.3.6 Implementability

Alternative I – Implementing a Track 1 remedy will be technically challenging because of SOE requirements associated with the protection of the neighboring buildings and streets; however, the SOE requirements will be comparable to those required for construction. This remedy will consist primarily of excavation with standard bucket excavators. The availability of local contractors, personnel, and equipment suitable for working in a structurally challenging environment is high due to the frequency of this type of remediation in the region. The excavation and SOE are not expected to require schedule extensions or additional costs. And if deeper contamination above UUSCOs is encountered requiring unanticipated over-excavation, the cost will be marginal compared to the benefit of achieving an unrestricted use remediation and avoiding long-term ECs and ICs. Additional coordination between trades may be required. This alternative is considered feasible.

Alternative II – The technical feasibility of implementing the Alternative II remedy is similar to Alternative I, if not more feasible, as less excavation and SOE will be required to achieve the Track 2 RRSCOs. This alternative will consist primarily of excavation with standard bucket excavators. The availability of local contractors, personnel, and equipment suitable for working in a structurally challenging environment is high due to the frequency of this type of remediation in the region. Additional coordination between trades may be required. This alternative is considered feasible.

3.3.7 Cost-Effectiveness

Alternative I – Based on the assumptions detailed for Alternative I, the estimated remediation cost of a Track 1 cleanup is approximately $8,083,000. A detailed cost estimate for a Track 1 cleanup is provided in Table 1.

Alternative II – Based on the assumptions detailed for Alternative II, the estimated remediation cost of a Track 2 cleanup is approximately $7,883,000. Alternative I is more cost effective in the long term as Alternative II may require long-term operation, maintenance, and monitoring for Site management if Track 2 RRSCOs are not achieved. A detailed cost estimate for a Track 2 cleanup is provided in Table 2.

3.3.8 Community Acceptance

Both remedial alternatives should be acceptable to the community because the potential exposure pathways to on-Site contamination will be addressed upon completion of the respective remedies and the Site will be remediated to allow for a higher-level use. The selected remedy will be subject to a 45-day public comment period in accordance with the Citizen Participation Plan (CPP), included as Appendix F. Substantive public comments will be addressed before the remedy is approved.

3.3.9 Green and Sustainable Remediation

An environmental footprint analysis was conducted for both remedial alternatives. Alternative I, a Track 1 remedy, would potentially export a greater volume (up to approximately 20,700 cu yd) of non-hazardous waste off the Site to a recycling facility than Alternative II, a Track 2 remedy, due to the expected requirement of greater excavation depths. Additionally, Alternative I will potentially result in slightly more air emissions than Alternative II due to the expected additional excavation and off-Site disposal required. Both Alternative I and Alternative II will require dewatering as part of construction.

3.3.10 Land Use

The current, intended, and reasonably anticipated future residential land use of the Site and its surroundings are compatible with both remedial alternatives. The proposed development will include the construction of a new mixed-use commercial and residential building with a cellar extending approximately 15 ft bgs. High-rise residential and commercial use buildings are present in the surrounding neighborhood.

3.4 SELECTION OF THE PREFERRED REMEDY

Both alternatives will be protective of human health and the environment and meet the remedy selection criteria. Alternative I achieves the remedial action goals established for the redevelopment project and is effective in the short term. Alternative I effectively reduces contaminant mobility and is a better alternative in the reduction of contaminant volume. Alternative I is more effective in the long term because the Site achieves unrestricted use. The excavation depths for both remedial alternatives are comparable and will produce similar remedial costs. Alternative I is preferred over Alternative II if it can be feasibly and practically implemented at a similar cost while providing greater overall protection to human health and the environment. Therefore, Alternative I is the recommended remedial alternative for this Site. However, if Alternative I is not achievable, Alternative II is similarly protective of human health and the environment.

Figure 8 depicts the Alternative I (Track 1) soil cleanup plan. Figure 10 depicts the Alternative II (Track 2) soil cleanup plan. The Alternative I and II remediation extents are based on data presented in the RIR (Haley & Aldrich of New York, 2025).

3.4.1 Zoning

The Site is currently zoned C4-4D for commercial and residential use. The Site is located in an urban area characterized by multi-story commercial and residential buildings.

3.4.2 Surrounding Property Uses

The current, intended, and reasonably anticipated future land use of the Site and its surroundings are compatible with the selected remedy. The construction of a new mixed-use commercial and residential building conforms to recent development patterns in the area and current zoning.

3.4.3 Environmental Justice Concerns

Per the "Potential Environmental Justice Areas in New York County, New York," the Site is in a potential Environmental Justice area, identified as Census Block Group 15000US360610196003, with 43.094 percent of the population below the poverty level and a minority population of 85.425 percent. The NYSDEC's Office of Environmental Justice acts as an advocate on behalf of these areas, which are disproportionately affected by environmental burdens. The proposed remedy will best reduce the environmental burden on the surrounding area.

3.4.4 Land Use Designations

There are no federal or state land use designations.

3.4.5 Population Growth Patterns

The population growth patterns and projections support the current and anticipated future land use.

3.4.6 Accessibility to Existing Infrastructure

The Site is accessible to existing infrastructure.

3.4.7 Proximity to Cultural Resources

The Site is not in close proximity to a registered landmark.

3.4.8 Proximity to Natural Resources

The Site is not located in close proximity to important federal, state, or local natural resources including waterways, wildlife refuges, wetlands, and critical habitats of endangered or threatened species.

3.4.9 Off-Site Groundwater Impacts

Municipal water supply wells are not present in this area of New York City; therefore, groundwater from the Site does not affect municipal water supply wells or recharge areas.

3.4.10 Proximity to Floodplains

The Site is not located in a floodplain.

3.4.11 Geography and Geology of the Site

The Site geology is described in Section 2.6.

3.4.12 Current Institutional Controls

There are currently no ICs being implemented at the Site.

3.5 SUMMARY OF SELECTED REMEDIAL ACTIONS

The selected Track 1 (Alternative I) remedy will include the following:

- Development and implementation of a CHASP and CAMP for the protection of on-Site workers, the community, residents, and the environment during remediation and construction activities.
- Design and construction of an SOE system to facilitate the Track 1 remediation.
- Implementation of soil erosion, pollution, and sediment control measures in compliance with applicable laws and regulations.
- Decommissioning of existing on-Site monitoring wells, as necessary, in accordance with NYSDEC CP-43.
- Excavation, stockpiling, off-Site transport, and disposal of approximately 20,700 cu yd of contaminated fill material Site-wide that exceeds UUSCOs as defined by 6 NYCRR Part 375-6.8. This includes excavation to a depth of 15 ft bgs on the eastern and central portions of the Site, excavation to a depth of 12 ft bgs on the northwestern portion of the Site, and excavation to a depth of 7 ft bgs on the southwestern portion of the Site. A hotspot excavation will also be completed to 18 ft bgs at RI boring location SB-03 to remove soil with pesticides and metals exceeding UUSCOs.
- If encountered, removal, decommissioning, and off-Site disposal of any USTs and/or associated appurtenances (e.g., fill lines, vent line, and electrical conduit) in accordance with DER-10, 6 NYCRR Part 613.9, NYSDEC CP-51, and other applicable NYSDEC UST closure requirements.
- Implementation of a preliminary waste characterization to facilitate off-Site disposal of excavated soil/fill.
- Screening for indications of contamination (by visual means, odor, and monitoring with PIDs) of excavated material during intrusive Site work.
- Dewatering, characterization, and treatment of water accumulated in excavations prior to discharge to an NYSDEC-approved sewer/sanitary line (pending permits), or localized dewatering with containerization, classification, and disposal at an approved receiving facility.
- Appropriate off-Site disposal of material removed from the Site in accordance with federal, state, and local rules and regulations for handling, transport, and disposal.
- Backfilling of excavated areas, as necessary for development, with certified-clean material (i.e., meeting UUSCOs), RCA, or virgin, native crushed stone.
- Collection and analysis of confirmation soil samples from the excavation base in accordance with DER-10, to document post-excavation conditions to confirm a Track 1 remedy was achieved.

4. Remedial Action Program

4.1 GOVERNING DOCUMENTS

The primary documents governing the remedial action are summarized in this section.

4.1.1 Standards, Criteria and Guidance

- 29 Code of Federal Regulations (CFR) Part 1910.120 – Hazardous Waste Operations and Emergency Response
- 6 NYCRR Part 364 – Waste Transporter Permits
- 6 NYCRR Part 371 – Identification and Listing of Hazardous Wastes
- 6 NYCRR Part 372 – Hazardous Waste Manifest System and Related Standards for Generators, Transporters and Facilities
- 6 NYCRR Subpart 373-4 – Facility Standards for the Collection of Household Hazardous Waste and Hazardous Waste from Conditionally Exempt Small Quantity Generators
- 6 NYCRR Subpart 374-1 – Standards for the Management of Specific Hazardous Wastes and Specific Types of Hazardous Waste Management Facilities
- 6 NYCRR Subpart 374-3 – Standards for Universal Waste
- 6 NYCRR Part 375 – Environmental Remediation Programs
- 6 NYCRR Part 376 – Land Disposal Restrictions
- 6 NYCRR Part 750 –SPDES Permits
- CFR Title 29 Part 1926 - Safety and Health Regulations for Construction
- CP-43 – Commissioner Policy on Groundwater Monitoring Well Decommissioning (December 2009)
- NYSDEC Spill Response Guidance Manual
- NYSDEC Sampling, Analysis, and Assessment of Per- and Polyfluoroalkyl Substances Under NYSDEC's Part 375 Remedial Programs (April 2023)
- CP-51 – Soil Cleanup Guidance (2010)
- DER-10 – Technical Guidance for Site Investigation and Remediation (May 3, 2010)
- DER-23 – Citizen Participation Handbook for Remedial Programs (March 2010)
- DER-31 – Green Remediation (2011)
- NYSDOH Guidance for Evaluating Soil Vapor Intrusion in the State of New York (October 2006)
- TOGS 1.1.1 – AWQS and GVs and Groundwater Effluent Limitations

- Screening and Assessment of Contaminated Sediment (Division of Fish, Wildlife and Marine Resources, June 2014)

4.1.2 Site-Specific Construction Health & Safety Plan

A site-specific CHASP has been prepared (Appendix D). The CHASP will apply to remedial and construction-related work on the Site. The CHASP provides a mechanism for establishing on-Site safe working conditions, safety organization, procedures, and PPE requirements during the implementation of the remedy. The CHASP meets the requirements of 29 CFR 1910 and 29 CFR 1926 (which includes 29 CFR 1910.120 and 29 CFR 1926.65, respectively). The CHASP includes, but is not limited to, the following components:

- Organization and identification of key personnel;
- Training requirements;
- Medical surveillance requirements;
- List of Site hazards;
- Excavation safety;
- Drill rig safety;
- Work zone descriptions and monitoring procedures;
- Personal safety equipment and PPE requirements;
- Decontamination requirements;
- Standard operating procedures;
- Contingency plan;
- CAMP; and
- Safety data sheets (SDS).

The Volunteer and associated parties preparing the remedial documents submitted to the State and those performing the construction work are responsible for the preparation of a CHASP and the performance of the work according to the CHASP and applicable laws. The CHASP and requirements defined in this RAWP pertain to remedial and ground-intrusive work performed at the Site until the issuance of a Certificate of Completion. The Haley & Aldrich of New York Safety Coordinator will be Brian Ferguson, a resume for whom is included in Appendix H. If required, confined space entry will comply with OSHA requirements to address the potential risk posed by combustible and toxic gasses.

4.1.3 Quality Assurance Project Plan

A Quality Assurance Project Plan (QAPP) has been prepared that describes the QC components that will ensure that the proposed remedy accomplishes the remedial goals and RAOs and is completed in accordance with the design specifications. The QAPP is provided as Appendix I and includes:

- Responsibilities of key personnel and their organizations for the proposed remedy.

- Qualifications of the QA Officer.
- Sampling requirements including methodologies, quantity, volume, locations, frequency, and acceptance and rejection criteria.
- Description of the reporting requirements for QA activities including weekly QA review reports.

4.1.4 Construction Quality Assurance Plan

A Construction Quality Assurance Plan (CQAP) has been prepared that describes the QC components that will ensure that the proposed remedy accomplishes the remedial goals and RAOs and is completed in accordance with the design specifications. Because the remedy will be accomplished concurrently with building construction, the contractor and Construction Manager will have the primary responsibility to provide construction quality. A list of engineering personnel involved in the implementation of the CQAP and procedures that will be carried out by the remedial engineering team are listed in Section 4.2.1. Project personnel resumes are provided in Appendix H.

4.1.5 Soil/Materials Management Plan

An S/MMP has been prepared that includes detailed plans for managing soils/materials that are disturbed at the Site, including excavation, handling, storage, transport, and disposal. The S/MMP also includes controls that will be applied to these efforts to facilitate effective, nuisance-free performance in compliance with applicable federal, state, and local laws and regulations (see Section 5.4).

4.1.6 Storm-Water Pollution Prevention Plan

Erosion and sediment controls will be implemented as necessary in conformance with requirements presented in the New York State Guidelines for Urban Erosion and Sediment Control. Best management practices for soil erosion and sediment control will be selected to minimize erosion and sedimentation off the Site from the outset of remediation to the completion of development. Stormwater pollution prevention will be implemented as described below in Section 5.4.10. A Stormwater Pollution Prevention Plan (SWPPP) is not necessary because the project will disturb less than 1 acre, and stormwater discharge will be to a combined sewer in accordance with the New York City generic SPDES permit.

4.1.7 Community Air Monitoring Plan

Details of the CAMP are discussed in section 5.4.12.

4.1.8 Contractors Site Operations Plan

The Remedial Engineer (RE) will review plans and submittals for this remedial project, contractor and subcontractor document submittals, and will confirm that plans and submittals are in compliance with this RAWP. The RE is responsible for ensuring that all later document submittals for this remedial project, including contractor and subcontractor document submittals, are in compliance with this RAWP. Remedial documents, including contractor and subcontractor document submittals, will be submitted to the NYSDEC and NYSDOH in a timely manner and prior to the start of work associated with the remedial document.

4.1.9 Citizen Participation Plan

Document repositories were established at the following locations and contain the applicable project documents:

1. Manhattan Community Board 11
   Attn: Xavier A. Santiago, Board Chair
   1664 Park Avenue, Ground Floor
   New York, New York 10035
   Phone: 212.831.8929
   Email: mn11@cb.nyc.gov

2. Harlem Public Library
   Attn: Laurel Hambright
   9 West 124th Street
   New York, New York 10027
   Phone: 212.348.5620
   Email: harlem@nypl.org
   Hours: Monday to Thursday – 11 a.m. to 7 p.m.
   Friday to Saturday – 10 a.m. to 5 p.m.
   Sunday – Closed

3. NYSDEC Region 2
   1 Hunter's Point Plaza
   47-20 21st Street
   Long Island City, New York 11101-5401
   Hours: Monday to Friday - 8:30 a.m. to 4:45 p.m.
   Call for appointment

In addition, an electronic repository can be accessed via DECInfo Locator at the following link: https://extapps.dec.ny.gov/data/DecDocs/C231160/.

A certification of mailing will be sent by the Volunteer to the NYSDEC Project Manager following the distribution of all Fact Sheets and notices that includes: (1) certification that the Fact Sheets were mailed, (2) the date they were mailed; (3) a copy of the Fact Sheet, (4) a list of recipients (contact list); and (5) a statement that the repository was inspected on (date to be determined) and that it contained all of applicable project documents.

No changes will be made to approved Fact Sheets authorized for release by NYSDEC without written consent of the NYSDEC. No other information, such as brochures and flyers, will be included with the Fact Sheet mailing.

4.2 GREEN AND SUSTAINABLE REMEDIATION AND CLIMATE RESILIENCY

The work completed as part of this work plan will comply with all NYSDEC guidance documents, including DER-31: Green Remediation (NYSDEC, 2011). To ensure compliance with DER-31, the work will be completed using the best practices and techniques described below. Specific reporting methods relative to DER-31 are further described below.

4.2.1 Best Practices and Techniques

DER-31 provides examples of best practices and techniques that could be applied during all phases of remediation (Attachment 1 of the DER-31 policy). In addition, the NYSDEC expects that the techniques identified below will be implemented at sites unless a site-specific evaluation demonstrates impracticability or favors an alternative green approach:

Practice/Technique	Potential Benefits[1]	Applicable to this Work Plan
Use renewable energy where possible or purchase Renewable Energy Credits	Reduce/supplement purchased energy use	
Use of remediation technologies with an intermittent energy supply (i.e., energy use during peak energy generation only)	Reduce energy use	
Incorporate green building design	Reduce future use impacts	X
Reuse existing buildings and infrastructure to reduce waste	Reduce waste and material use	
Reuse and recycle construction and demolition debris and other materials (i.e., grind waste wood and other organics for on-site use)	Reduce waste and material use	
Design cover systems to be usable (i.e., habitat or recreation)	Reduce construction impacts of future development	X
Reduce vehicle idling	Reduce air emissions and fuel use	X
Use of Low-Sulfur Diesel Fuel (LSDF) or alternate fuels (i.e., biodiesel or E85) when possible	Reduce air emissions	X
Sequence work to minimize double-handling of materials	Reduce construction impacts	X
Use energy-efficient systems and office equipment in the job trailer	Reduce energy use	X
[1]*Potential benefits listed are not comprehensive and will vary depending upon the site and implementation of the practice or technique.*		

In order to comply with the requirements of DER-31, the following actions will be taken:

1. All vehicles and fuel-consuming equipment on the Site will be shut off if not in use for more than three minutes;

2. If necessary, any soil cover placed on the Site will meet 6 NYCRR Part 375 residential use soil standards and will allow future use of the Site in a residential setting;
3. Work will be sequenced, to the extent practicable, to allow the direct loading of waste containers for off-Site disposal;
4. To the extent practicable, energy-efficient systems and office equipment will be utilized within the Site trailers; and
5. All vehicles and equipment that consume diesel fuel will be required to use ultra-LSDF.

4.2.2 Reporting

All green and sustainable practices and techniques employed will be discussed in the FER.

4.3 GENERAL REMEDIAL CONSTRUCTION INFORMATION

4.3.1 Project Organization

A project team for the Site was created based on qualifications and experience with personnel suited for the successful completion of the project.

The following project personnel are anticipated for oversight of the RAWP implementation. Project personnel resumes are provided in Appendix H.

NYSDEC Case Manager	Abdulla Elbuytari
NYSDOH Case Manager	Harolyn Hood
Remedial Engineer	Suzanne M. Bell, P.E.
Principal/Qualified Environmental Professional (QEP)	James M. Bellew
Project Manager	Sarah A. Commisso, G.I.T.
Haley & Aldrich of New York Health & Safety Director	Brian Fitzpatrick, CHMM
Health & Safety Officer	Brian Ferguson
Field Team Leader/Quality Assurance Officer	Joe Mastro

Haley & Aldrich of New York personnel, under the direct supervision of the QEP and the RE, will be on the Site during the implementation of the RAWP to monitor particulates and organic vapor in accordance with the CAMP. CAMP results that exceed specified action levels will be reported to the NYSDEC and NYSDOH.

Haley & Aldrich of New York personnel will meet with the Construction Superintendent daily to discuss the plans for that day and schedule upcoming activities. Field personnel will document remedial activities. Field activities will be forwarded to the Field Team Leader and Project Manager daily and to the QEP and the RE on a weekly basis. Daily reports will also be submitted to the NYSDEC and NYSDOH Case Managers by noon the following business day.

Field personnel will screen excavations with a PID during ground-intrusive work. PID readings, including specifically elevated readings, will be recorded in the project field book (or on separate logs) and reported to the NYSDEC and NYSDOH. Field personnel under the direct supervision of the RE and QEP will collect endpoint samples from the base of the excavation in accordance with this RAWP.

Field observations and laboratory tests will be recorded in the project field book or on separate logs. Recorded field observations may take the form of notes, charts, sketches, and/or photographs. A photo log will be kept to document construction activities during remediation.

The Field Team Leader will maintain original field paperwork during performance of the remedy. Remedial activities will be documented in the monthly BCP progress reports. The Project Manager will maintain the field paperwork after completion and will maintain submittal document files.

4.3.2 Remedial Engineer

The RE for this project will be Suzanne M. Bell. The RE is a registered professional engineer licensed by the state of New York. The RE will have primary direct responsibility for the implementation of the remedial program at the Site. The RE will certify in the FER that the remedial activities were observed by qualified environmental professionals under their supervision and that the remediation requirements set forth in this RAWP and other relevant provisions of Environmental Conservation Law (ECL) 27-1419 have been achieved in substantial conformance with the RAWP.

Under the direction of the RE, the work of other contractors and subcontractors involved in aspects of the remedial construction will be documented, including soil excavation, stockpiling, confirmation sample collection, air monitoring, emergency spill response services, import of backfill, and management of waste transport and disposal. The RE will be responsible for all appropriate communication with NYSDEC and NYSDOH.

The RE will review the pre-remedial plans submitted by contractors and subcontractors for substantial conformance with this RAWP and will provide a certification in the FER. The RE will provide the certifications listed below in Section 9.1.

4.3.3 Remedial Action Construction Schedule

The remedial action construction schedule is discussed below in Section 10.0 and included in Appendix J. The NYSDEC will be promptly notified of proposed changes, delays, and/or deviations to the schedule.

4.3.4 Work Hours

The hours for operation of remedial construction will conform to the New York City Department of Buildings (NYCDOB) construction code requirements or according to specific variances issued by that agency. The NYSDEC will be notified by the Volunteer of any variances issued by the NYCDOB. The NYSDEC reserves the right to deny alternate remedial construction hours.

4.3.5 Site Security

Site access will be controlled by gate entrances to the property. The Site perimeter will be secured with gated and signed plywood fencing with restricted points of entry in accordance with the NYCDOB and New York City Department of Transportation (NYCDOT) permits and requirements. The purpose of the fencing is to limit Site access to authorized personnel, protect pedestrians from Site activities, and maintain Site security.

4.3.6 Traffic Control

Site traffic will be controlled through designated points of access along 124th Street, 125th Street, and/or Third Avenue. Access points will be continuously monitored and if necessary, a flagging system will be used to protect workers, pedestrians, and authorized guests. Traffic will also be required to adhere to applicable local, state, and federal laws.

4.3.7 Contingency Plan

Contingency plans, as described below, have been developed to effectively deal with the potential unexpected discovery of additional contaminated media or USTs.

4.3.8 Discovery of Additional Contaminated Soil

During remediation and construction, the soil will be continuously monitored by the RE’s field representatives via visual, olfactory, and instrumental field screening techniques to identify additional soil that may not be suitable for disposal at the NYSDEC-approved disposal facility. If such soil is identified, the suspected impacts will be confirmed by collecting and analyzing samples in accordance with the NYSDEC-approved facility’s requirements. If the previously approved facility is not permitted to receive the impacted soil, the soil will be excavated and disposed of off Site at a permitted facility that can receive the material.

Identification of unknown or unexpected contaminated media identified by screening during ground-intrusive Site work will be promptly communicated to the NYSDEC Project Manager. These findings will be detailed in the monthly report.

4.3.9 UST Discovery

Previous investigations did not identify the presence of USTs on the Site. In the event a UST is discovered during excavation, it will be decommissioned as per the 6 NYCRR Parts 612.2 and 613.9 and DER-10 Section 5.5. After removal of the tank and residual contents, confirmatory post-excavation soil samples will be collected as outlined in DER-10 if deemed necessary by the NYSDEC and/or the RE.

Post-excavation soil samples are not expected where the proposed excavation would extend below the UST unless visual, olfactory, or instrumental field screening techniques indicate the potential for contamination. If petroleum-impacted soils are encountered, they will be segregated, characterized, and disposed of at an appropriate off-Site facility. Closure documentation including affidavits, bills of lading, and tank disposal receipts will be included in the FER. If necessary, the NYSDEC PBS registration will be updated.

In the event USTs are encountered during ground-intrusive activities, the NYSDEC Project Manager will be promptly notified, and pertinent information will be included in the monthly report.

4.3.10 Worker Training and Monitoring

Worker training and monitoring will be conducted in accordance with the Site-specific CHASP.

4.3.11 Agency Approvals

Permits or government approvals required for remedial construction have been or will be obtained prior to the start of remedial construction.

4.3.12 Pre-Construction Meeting with NYSDEC

Prior to the start of remedial construction, a meeting will be held among the NYSDEC, RE, the Volunteer, the Construction Manager, and the remediation contractor to discuss project roles, responsibilities, and expectations associated with this RAWP.

4.3.13 Emergency Contact Information

An emergency contact sheet that states the specific project contacts (with names and phone numbers) for use by NYSDEC and NYSDOH in the case of an emergency is included in the CHASP.

4.3.14 Remedial Action Costs

A detailed summary of the total estimated costs of the Track 1 and Track 2 remedies are included in Tables 1 and 2, respectively.

4.4 SITE PREPARATION

4.4.1 Mobilization

Prior to commencing remedial construction, the remediation contractor will mobilize to the Site and prepare for remedial activities. Mobilization and Site preparation activities may include the following:

- Identifying the location of aboveground and underground utilities (e.g., power, gas, water, sewer, and telephone), equipment, and structures as necessary to implement remediation;
- Mobilizing necessary remediation personnel, equipment, and materials to the Site;
- Constructing one or more stabilized construction entrance(s) consisting of non-hazardous material at or near the Site exit, which takes into consideration the Site setting and Site perimeter;
- Constructing an equipment decontamination pad for trucks, equipment, and personnel that come into contact with impacted materials during remediation; and/or,
- Mark-out excavation hotspot areas (if identified during the RI or preliminary waste characterization sampling event).

4.4.2 Monitoring Well Decommissioning

Monitoring wells be decommissioned in accordance with NYSDEC CP-43 by an experienced driller with oversight from Haley & Aldrich of New York. Decommissioning documentation will be provided in the FER.

4.4.3 Erosion and Sedimentation Controls

Since the planned earthwork activities will be below the adjacent sidewalk grade, full-time erosion and sedimentation measures are not anticipated. Best management practices for soil erosion will be implemented to minimize erosion and sedimentation off the Site.

4.4.4 Temporary Stabilized Construction Entrance(s)

Temporary stabilized construction entrances will be installed at the existing curb cuts along 124th Street, 125th Street and/or Third Avenue. The entrances will be covered with NYSDEC-approved gravel or RCA and graded so that runoff water will be directed on the Site. Vehicles exiting construction areas will be cleaned using clean water or dry brushing, as needed, to remove Site soil from the tires and undercarriages. The contractor will protect and maintain the existing sidewalks and roadways at both Site access points.

4.4.5 Utility Marker and Easements Layout

180 E125 Propco LLC and its contractors are solely responsible for the identification of utilities and/or easements that might be affected by work under this RAWP and implementation of the required, appropriate, or necessary health and safety measures during the performance of the work under this RAWP. 180 E125 Propco LLC and its contractors are solely responsible for the safe execution of the work performed under this RAWP. 180 E125 Propco LLC and its contractors must obtain the necessary local, state, and/or federal permits or approvals that may be required to perform the work detailed in this RAWP. Approval of this RAWP by the NYSDEC does not constitute satisfaction of these requirements.

4.4.6 Excavation Support

Appropriate management of the structural stability of on-Site or off-Site structures during Site activities is the sole responsibility of 180 E125 Propco LLC and its contractors. 180 E125 Propco LLC and its contractors are solely responsible for the safe execution of the work performed under this RAWP. 180 E125 Propco LLC and its contractors must obtain the necessary local, state, and/or federal permits or approvals that may be required to perform the work detailed in this RAWP. Additionally, 180 E125 Propco LLC and its contractors are solely responsible for the implementation of the required, appropriate, or necessary health and safety measures during the performance of work conducted under this RAWP.

4.4.7 Equipment and Material Staging

The contractor will notify the RE and 180 E 125 Propco LLC in writing with receipt confirmed at least 30 calendar days in advance of pending Site work mobilization. During mobilization, construction equipment will be delivered to the Site, temporary facilities constructed, and temporary utilities installed. The contractor will place and maintain temporary toilet facilities within the work areas for usage by Site personnel.

4.4.8 Truck-Inspection Station

An outbound-truck inspection station will be set up at or near the Site exit. Before exiting the Site, trucks will be required to stop at the truck inspection station and will be examined for evidence of contaminated soil on the undercarriage, body, and wheels. If observed, soil and debris will be removed. Brooms, shovels, and potable water will be utilized for the removal of soil from vehicles and equipment, as necessary. The contractor is responsible for collecting soil that is tracked immediately off the Site and returning the soil to the Site.

4.4.9 Site Fencing

The Site will continue to be secured with a gated fence, with appropriate signage added and maintained by the contractor. The fence will limit access to authorized personnel and protect pedestrians from Site activities.

4.4.10 Demobilization

After remediation and construction are completed, the contractor will be responsible for demobilizing equipment and materials not designated for off-Site disposal. The RE's representative will document that the contractor performs follow-up coordination and maintenance for the following activities:

- Removal of sediment and erosion control measures and disposal of materials in accordance with applicable rules and regulations;
- Equipment decontamination;
- Refuse disposal; and
- Removal of remaining contaminated material or waste.

4.5 REPORTING

Periodic reports and an FER will be required to document the remedial action. The RE, Suzanne M. Bell, will be responsible for certifying the FER and is licensed to practice engineering in the state of New York. Should Ms. Bell become unable to fulfill this responsibility, another suitably qualified New York State Professional Engineer will take her place. Field reports will be included as appendices to the FER. In addition to the periodic reports and the FER, copies of the relevant contractor documents will be submitted to the NYSDEC.

4.5.1 Daily Reports

Reports providing a summary of activities for each day of active remedial work will be emailed to the NYSDEC and NYSDOH Project Managers on a daily basis. These reports will include:

- The project number, statement of activities, an update of the progress made, locations of excavation, and other remedial work performed;

- Quantities of material imported and exported from the Site;
- Status of on-Site soil/fill stockpiles;
- A summary of citizen complaints including relevant details (i.e., name, phone number, basis of complaint, actions taken);
- A summary of CAMP results noting exceedances; and
- Photographs of notable Site conditions and activities.

Reports are not intended to be the primary mode of communication for notifying NYSDEC of emergencies, requests for changes to the RAWP, or time-critical information. However, these conditions if to occur, will be included in the daily reports. Emergency conditions and changes to the RAWP will be directly communicated to the NYSDEC Project Manager.

4.5.2 Monthly Reports

Monthly reports will consist of a summary of remedial work performed at the Site throughout the month and will include:

- Investigative or remedial actions relative to the Site during the reporting period;
- Actions relative to the Site anticipated for the next reporting period;
- Approved changes of work scope or schedule, if applicable;
- Results of sampling or testing;
- Deliverables submitted during the reporting period;
- The approximate percentage of completion of the project at the Site;
- Unresolved delays encountered that may affect the schedule; and
- CPP activities during this reporting period and activities anticipated in support of the CPP for the next reporting period.

4.5.3 Photographs

Photographs of the remedial activities will be taken and included in the Daily Reports and FER with provided descriptions of the representative photographs.

4.5.4 Complaint Management Plan

Complaints from the public regarding nuisance or other Site conditions will be addressed by notifying the NYSDEC of the complaint and investigating the cause/source of the issue. Records will be kept regarding the date and time of the complaint, the nature of the complaint, the type of communication (i.e., telephone, email, letter, etc.), and the name and contact information of the complaint provider. Corrective measures will then be formulated and put into place to address the complaint as soon as possible. The resolution will be documented and submitted to the NYSDEC. A representative of the Volunteer will reply within two weeks of receipt to the complaint provider to ensure resolution.

4.5.5 Deviations from the RAWP

Deviations from the RAWP will be communicated to and coordinated with the NYSDEC in advance. Notification will be provided to the NYSDEC by telephone and email for conditions requiring immediate action (e.g., conditions judged to be a danger to the surrounding community). Based on the significance of the deviation, an addendum to this RAWP may be necessary and will include:

- Reasons for deviating from the approved RAWP;
- Approval process to be followed for changes/editions to the RAWP; and
- Effect of the deviations on the overall remedy.

5. Remedial Action: Material Removal from Site

As part of the preferred Alternative I remedy, excavation, stockpiling, off-Site transport, and disposal of up to approximately 20,700 cu yd of contaminated fill/native material that exceed UUSCOs as defined by 6 NYCRR Part 375-6.8 will be required. Excavation of material that exceeds UUSCOs is estimated to range from approximately 12 to 15 ft bgs Sitewide, with a hotspot excavation to 18 ft bgs.
The soil will be screened for visual, olfactory, and instrumental evidence of environmental impacts.

5.1 SOIL CLEANUP OBJECTIVES

Soil Cleanup Objectives (SCOs) for the Site will be the Track 1 UUSCO concentrations listed in Table 3. Soil and materials management will be conducted in accordance with the S/MMP as described below. Soil sample locations and results that exceed the UUSCOs are shown on Figure 5. UST closures, as applicable, will, at a minimum, conform to the criteria defined in DER-10.

5.2 REMEDIAL PERFORMANCE EVALUATION (CONFIRMATION SAMPLING)

5.2.1 Soil Sampling Frequency

One endpoint soil sample will be collected for every 900 sq ft of excavation base Sitewide in accordance with NYSDEC DER-10, or at an alternative frequency approved by NYSDEC. Endpoint samples will be collected to confirm that UUSCOs have been achieved. A total of 48 confirmation soil samples, plus QA/QC samples, will be collected from the remedial excavation base. The proposed endpoint sample locations are shown on Figure 9.

5.2.2 Methodology

Confirmation soil samples will be collected from the base of the remedial excavations in accordance with NYSDEC DER-10 to document remedial performance and will be analyzed for the Part 375 list of VOCs, SVOCs, pesticides, metals, PCBs, PFAS, and 1,4-dioxane. Samples will be collected into laboratory-provided bottle ware. VOCs will be collected into Terra Cores ® or Encores ®. Samples will be transported under chain-of-custody protocol to an ELAP-certified laboratory. Should additional soil samples be deemed necessary (e.g., additional tank closure, an unknown environmental condition through visual evidence of a remaining source, or over-excavation of a failed confirmation sample), confirmation sampling will be conducted in accordance with NYSDEC DER-10.

5.2.3 QA/QC

QC procedures for confirmation soil sampling are included in the QAPP (refer to Appendix I). Confirmation analytical results will be provided in the NYSDEC's electronic data deliverable (EDD) format for EQuIS™. Guidance on the sampling frequency is presented in NYSDEC DER-10 Section 5.4.

The QA/QC procedures required by the NYSDEC Analytical Services Protocol (ASP) and SW-846 methods will be followed. This will include instrument calibration, standard compound spikes, surrogate compound spikes, and analysis of QC samples. The laboratory will provide sample bottles, which will be pre-cleaned and preserved. Where there are differences in the SW-846 and NYSDEC ASP requirements, the NYSDEC ASP will take precedence.

5.2.4 Data Validation

ASP Category B deliverables will be prepared for remedial performance samples collected during the implementation of this RAWP. Data Usability Summary Reports (DUSRs) will be prepared by a qualified data validator and the findings will be reported in the FER.

5.2.5 Reporting

Analytical laboratories that analyze confirmation soil samples, prepare results, and perform contingency sampling will be NYSDOH ELAP-certified.

5.3 ESTIMATED MATERIAL REMOVAL QUANTITIES

The preferred Alternative I remedy includes the excavation, stockpiling, off-Site transport, and disposal of 20,700 cu yd of contaminated fill material.

5.4 SOIL/MATERIALS MANAGEMENT PLAN

This section presents the approach to management, disposal, and reuse of soil, fill, and materials excavated from the Site. This plan is based on the current knowledge of Site conditions and will be altered as necessary. Field personnel, under the direction of the RE, will monitor and document the handling and transport of material removed from the Site for disposal as a regulated solid waste. Field personnel, under the direction of the RE, will assist the remediation contractor in identifying impacted materials during remediation, determining materials suitable for direct load out versus temporary on-Site stockpiling, selecting of samples for waste characterization, if necessary, and determining the proper off-Site disposal facility. Separate stockpile areas will be constructed as needed for the various materials to be excavated or generated to avoid commingling impacted with non-impacted soil.

5.4.1 Soil Screening Methods

Visual, olfactory, and instrumental soil screening and assessment will be performed during remediation-related ground intrusive activities into known or potentially contaminated material. Soil screening will be performed regardless of when the invasive work is done and will include excavation and invasive work performed during the remedy, such as excavations for foundations and utility work.

5.4.2 Stockpile Methods

Stockpiles will be used as necessary to separate and stage excavated material pending loading or characterization sampling. Separate stockpile areas will be constructed to avoid commingling materials. Stockpile areas will meet the following minimum requirements:

- Excavated soil will be placed onto a minimum thickness of 6-mil low-permeability liner of sufficient strength and thickness to prevent puncture during use; separate stockpiles will be created where material types are different. The use of multiple layers of thinner liners is permissible.

- Efforts will be made to place and remove the soil to minimize the potential to jeopardize the integrity of the liner.
- Stockpiles will be covered at the designated times (see below) with minimum 6-mil plastic sheeting or tarps which will be securely anchored to the ground. Stockpiles will be routinely inspected, and broken sheeting covers will be promptly replaced.
- Stockpiles will be covered upon reaching their capacity (approximately 1,000 cu yd) until ready for loading. Stockpiles that have not reached their capacity will be covered at the end of each workday.
- Each stockpile will be encircled with silt fences and hay bales, as needed, to contain and filter particulates from rainwater that has drained off the soils and to mitigate the potential for surface water run-off.
- Stockpiles will be inspected at a minimum of once daily and after every storm event.
- If hazardous material is encountered, stockpiling on the Site will be avoided to the extent possible, in favor of live-loading into trucks permitted to transport hazardous waste.

5.4.3 Materials Excavation and Load Out

Field personnel, under the supervision of the RE, will monitor ground-intrusive work and the excavation and load-out of excavated material.

Loaded vehicles leaving the Site will be appropriately lined, securely covered, manifested, and placarded in accordance with the appropriate federal, state, and local requirements, including applicable transportation requirements (i.e., New York State Department of Transportation [NYSDOT] and NYCDOT requirements). Trucks hauling contaminated fill material will not be lined unless free liquids are present, or the material is grossly impacted. Hazardous wastes derived from the Site will be stored, transported, and disposed of in compliance with applicable local, state, and federal regulations.

An outbound-truck inspection and wash station will be operated on the Site. Trucks will be washed, as necessary, before leaving the Site, and Site ingress and egress points will be cleaned of dirt and other materials to prevent material generated during remediation and development from being tracked off the Site.

The Volunteer and its contractors are solely responsible for the safe performance of all invasive and other work performed under this QAPP and for the structural integrity of excavations and structures that may be affected by excavations (such as building foundations and bridge footings).

The Volunteers and associated parties will ensure that Site development activities will not interfere with, or otherwise impair or compromise, remedial activities proposed in this RAWP. Development-related grading cuts and fills will not be performed without NYSDEC approval and will not interfere with, or otherwise impair or compromise, the performance of remediation required by this RAWP. Mechanical processing of contaminated fill and contaminated soil on the Site is prohibited unless otherwise approved by NYSDEC.

The excavation will be surveyed, and survey information will be shown on maps to be included with the FER.

5.4.4 Materials Transport Off Site

Transport of materials will be performed by licensed haulers in accordance with appropriate local, state, and federal regulations, including 6 NYCRR Part 364. Haulers will be appropriately licensed and trucks properly placarded. Trucks heading to disposal facilities will travel east on East 125th Street, north over the Willis Avenue Bridge, and north on the Major Deegan Expressway (or other NYSDEC-approved routes). Truck routes are shown on Figure 11.

Loaded trucks will exit in the vicinity of the Site using approved truck routes. These routes are the most appropriate route to and from the Site and take into account the following:

- Limiting transport through residential areas and past sensitive sites;
- Use of city-mapped truck routes;
- Prohibiting off-Site queuing of trucks entering the facility;
- Limiting total distance to major highways;
- Promoting safety in access to highways;
- Overall safety in transport; and
- Community input (where necessary).

Trucks will be prohibited from excessive stopping and idling in the neighborhood outside of the Site. Material transported by trucks exiting the Site will be secured with tight-fitting covers. Loose-fitting canvas-type truck covers will be prohibited. If loads contain wet material capable of producing free liquid, or hazardous metals-impacted material, truck liners will be used.

5.4.5 Materials Disposal Off Site

Disposal facilities have not been determined at the time of this report submittal; however, facility determination will be reported to the NYSDEC Project Manager prior to off-Site transport and disposal of excavated material. About 20,700 cu yd of impacted soil will be excavated and disposed of off Site. Soil, fill, or solid waste excavated and removed from the Site will be treated as contaminated and regulated material and will be disposed of in accordance with local, state (including 6 NYCRR Part 360), and federal regulations.

Hazardous soil, if encountered, will be managed in accordance with applicable federal, state, and local regulations. As such, the handling, transport, and disposal of hazardous fill material is subject to USEPA and the OSHA HAZWOPER regulations. As such, the handling, transport, and disposal of this fill material is subject to USEPA and the OSHA HAZWOPER regulations. The presence of hazardous waste requires compliance with both federal and state regulations and the following requirements:

1. Hazardous waste disposal requires obtaining a USEPA RCRA generator ID number;

2. Hazardous waste must be transported to a facility permitted by RCRA to accept hazardous waste;
3. Hazardous waste must be segregated and cannot be commingled with other Site material; and
4. Hazardous waste must be transported and disposed by properly permitted (Part 364) transporters and facilities.

Unregulated off-Site management of materials from this Site is prohibited without formal NYSDEC approval. Material that does not meet UUSCOs, such as non-hazardous contaminated fill material, contaminated soil, and hazardous lead-impacted material, is prohibited from being taken to a New York State recycling facility (6 NYCRR Part 360-16 Registration Facility). Non-hazardous contaminated fill material, contaminated soil, and hazardous lead-impacted material transported off Site will be handled, at a minimum, as a solid waste per 6 NYCRR Part 360.

The following documentation, to be included in the FER, will be obtained for each disposal location used in this project to fully demonstrate and document that the disposal of material derived from the Site conforms to applicable laws:

- A letter from the RE or one or more of the Volunteers to the receiving facility describing the material to be disposed of and requesting formal written acceptance of the material. This letter will state that material to be disposed of is contaminated material generated at an environmental remediation site located in New York State. The letter will provide the project identity and the name and phone number of the RE. The letter will include as an attachment a summary of chemical data for the material being transported (including waste characterization and RI data).
- A letter from each receiving facility stating that it is in receipt of the correspondence (above) and acceptance of the material is approved.

5.4.6 Materials Reuse On Site

Materials reuse is not anticipated at the Site. If on-Site material is proposed for reuse, material will be stockpiled and sampled at a frequency consistent with the recommendations of Table 5.4(e)10 in DER-10 in order to confirm UUSCOs are achieved prior to placing backfill. It is noted that only soils meeting the requirements in this section may be reused. Soil proposed for reuse must be non-hazardous, must not be grossly contaminated, and must meet UUSCOs. Soil proposed for reuse will not contain organic matter, including wood, roots, stumps, etc., or other solid waste derived from clearing and grubbing. Soil removed during implementation of the remedy will not be reused in a cover soil layer, within landscaping berms, or as backfill for subsurface utility lines.

5.4.7 Fluids Management

Liquids to be removed from the Site, including dewatering fluids, will be handled, transported, and disposed of in accordance with applicable local, state, and federal regulations. Liquids discharged into the New York City sewer system will be addressed through approval by NYCDEP. Based on the depth to water, dewatering is anticipated to facilitate the excavation of material that exceeds the UUSCOs and construction of foundation components. If necessary, a dewatering and treatment system will be designed by the remediation contractor’s New York State-licensed Professional Engineer.

Dewatered fluids will not be recharged back to the land surface or subsurface. Dewatering fluids will be managed off the Site. Discharge of water generated during remedial construction to surface waters (i.e., a local pond, stream, and/or river) is prohibited without an SPDES permit.

5.4.8 Backfill from Off-Site Sources

Materials proposed for import onto the Site are anticipated for the Track 1 remedy. Documentation of the material will be provided to the NYSDEC for approval prior to its use on the Site. Imported soil for backfill must meet the requirements of 6 NYCRR Part 375-6.7(d) and NYSDEC DER-10 Section 5.4(e), Table 5.4(e)10. Material from industrial sites, spill sites, other environmental remediation sites, or other potentially contaminated sites will not be imported to the Site. Solid waste will not be imported onto the Site.

Backfill material will consist of clean fill (as described in the following paragraph) or other acceptable fill material such as virgin stone from a quarry or RCA. If RCA is imported to the Site, it will be from a NYSDEC-registered facility in compliance with 6 NYCRR Part 360 registration and permitting requirements for the period of acquisition of RCA. RCA imported from compliant facilities will not require chemical testing unless required by the NYSDEC under the terms for operation of the facility. RCA imported to the Site must be derived from recognizable and uncontaminated concrete, with no more than 10 percent by weight passing through a No. 80 sieve. RCA is not acceptable for and will not be used as cover or drainage material.

Imported soil (i.e., clean fill) will meet the UUSCOs. Non-compliant soils will not be imported to the Site. Clean fill will be segregated at a source/facility that is free of environmental contaminants. Qualified environmental personnel will collect representative samples at a frequency consistent with NYSDEC CP-51. The samples will be analyzed for Part 375 VOCs, SVOCs, pesticides/herbicides, PCBs, cyanide, metals including trivalent and hexavalent chromium, 1,4-dioxane, and PFAS by an NYSDOH ELAP-certified laboratory. Upon meeting these criteria, the certified-clean fill will be transported to the Site and segregated from impacted material, as necessary, on plastic sheeting until used as backfill. Trucks entering the Site with imported soils will be secured with tight-fitting covers.

Soils that meet “exempt” fill requirements under 6 NYCRR Part 360, but do not meet backfill or cover soil objectives for this Site, will not be imported onto the Site without prior approval by the NYSDEC. The contents of this RAWP and NYSDEC approval of this RAWP should not be considered an approval for this purpose.

5.4.9 Stormwater Pollution Prevention

A silt fence or hay bales will be installed around the perimeter of the remedial construction area, as required. Barriers and hay bale checks will be installed and inspected once a week and after every storm event. Results of inspections will be recorded in a logbook maintained at the Site and available for inspection by the NYSDEC. Necessary repairs to the silt fence and/or hay bales will be made immediately. Accumulated sediments will be removed as required to keep the barriers and hay bale checks functional. The manufacturer's recommendations will be followed for replacing the silt fence damaged due to weathering. Erosion and sediment control measures identified in the RAWP will be observed to ensure that they are operating correctly. Where discharge locations or points are accessible, they will be inspected to ascertain whether erosion control measures are effective in preventing significant impacts to the sewer system.

5.4.10 Contingency Plan

As discussed above in Section 4.3.7, if USTs or other previously unidentified contaminant sources are encountered, sampling will be performed on the product, if encountered, and surrounding subsurface materials (e.g., soil, stone). Chemical analyses will include Part 375 VOCs, SVOCs, PCBs, pesticides, metals, and PFAS. Analyses will not be otherwise limited without NYSDEC approval. Identification of unknown or unexpected contaminated media identified by screening during ground-intrusive work will be promptly communicated by phone to the NYSDEC Project Manager. These findings will also be detailed in the monthly BCP progress report.

5.4.11 Community Air Monitoring Plan

The CAMP will require real-time monitoring for particulates (i.e., dust) and VOCs at the upwind and downwind perimeters when ground-intrusive activities, including soil/waste excavation, soil handling, test pit excavation and/or trenching, are in progress at the Site during remedial construction activities. The CAMP aims to provide protection for residents in the designated work area and residents of the downwind community from potential airborne releases that directly result from the remedial construction activities conducted at the Site. Adherence to the monitoring action levels specified in the CAMP requires monitoring and, when necessary, corrective actions to abate emissions, and/or shutdown work. The CAMP also helps to confirm that work activities do not spread contamination off the Site through the air. In addition, visual and olfactory observations will be made to keep dust and odors at a minimum around the work areas. VOCs and particulates will be monitored using Aeroqual® AQS1 Air Quality Monitors or other equivalent equipment. Readings will be recorded every 15 minutes at the Site by field personnel.

The following actions will be taken based on monitoring of particulate concentrations:

- If the downwind inhalable particles with diameters generally less than 10 micrometers and smaller (PM-10) particulate level is 100 µg/m^3 greater than background (upwind perimeter) for the 15-minute period or if airborne dust is observed leaving the work area, then dust suppression techniques will be employed. Work will continue with dust suppression techniques provided that downwind PM-10 particulate levels do not exceed 150 µg/m^3 above the upwind level and provided that no visible dust is migrating from the work area.
- If, after implementation of dust suppression techniques, downwind PM-10 particulate levels are greater than 150 µg/m^3 above the upwind level, work will be stopped, and a re-evaluation of activities initiated. Work will resume if dust suppression measures and other controls are successful in reducing the downwind PM-10 particulate concentration to within 150 µg/m^3 of the upwind level and in preventing visible dust migration.

The following actions will be taken based on VOC monitoring:

- If the ambient air concentration of total organic vapors at the downwind perimeter of the work area or exclusion zone exceeds 5 parts per million (ppm) above background for the 15-minute average, work activities will be temporarily halted and monitoring continued. If the total organic vapor level readily decreases (per instantaneous readings) below 5 ppm over background, work activities will resume with continued monitoring.

- If total organic vapor levels at the downwind perimeter of the work area or exclusion zone persist at levels in excess of 5 ppm over background but less than 25 ppm, work activities will be halted, the source of vapors identified, corrective actions taken to abate emissions, and monitoring continued. After these steps, work activities will resume provided that the total organic vapor level 200 ft downwind of the exclusion zone or half the distance to the nearest potential receptor or residential/commercial structure, whichever is less, but in no case less than 20 ft, is below 5 ppm over background for the 15-minute average.
- If the organic vapor level is above 25 ppm at the perimeter of the work area, activities will be shut down.

5.4.12 Odor, Dust, and Nuisance Control Plan

Dust, odor, and nuisance controls will be accomplished by the remediation contractor as described in this section.

Odor Control

This odor control plan is capable of controlling emissions of nuisance odors off Site. Specific odor control methods to be used if needed will include the application of foam suppressants or tarps over the odor or VOC source areas. If nuisance odors are identified, work will be halted, and the source of the odors will be identified and corrected. Work will not resume until nuisance odors have been abated. The NYSDEC and NYSDOH will be notified of odor events and other complaints about the project. Implementation of odor controls is the responsibility of the contractor. Monitoring odor emission, including the halt of work, will be the responsibility of the RE or his/her designated representative.

Necessary means will be employed to prevent on- and off-Site nuisances. At a minimum, procedures will include: (a) limiting the area of open excavations; (b) shrouding open excavations with tarps and other covers; and (c) using foams to cover exposed odorous soils. If odors develop and cannot be otherwise controlled, additional means to eliminate odor nuisances will include: (a) direct load-out of soils to trucks for off-Site disposal; (b) use of chemical odorants in spray or misting systems; and (c) use of staff to monitor odors in surrounding neighborhoods. Odor control suppressant will be available on Site during ground-intrusive work, as necessary.

Where odor nuisances have developed during remedial work and cannot be corrected, or where the release of nuisance odors cannot otherwise be avoided due to on-Site conditions or close proximity to sensitive receptors, odor control will be achieved by sheltering excavation and handling areas under tented containment structures equipped with appropriate air venting/filtering systems.

Dust Control

A dust suppression plan that addresses dust management during demolition and ground-intrusive on-Site work will include, at a minimum: (a) use of a dedicated water distribution system, an on-Site water truck for road wetting, or an alternate source with suitable supply and pressure for use in dust control; (b) gravel used for on-Site roads to provide a clean and dust-free road surface; and (c) on-Site roads will be limited in total area to minimize the area required for water spraying.

Other Nuisances

A plan for rodent control will be developed and used by the remediation contractor during Site preparation (including clearing and grubbing) and remedial work. A plan for noise control will be developed and used by the remediation contractor during Site preparation and remedial work and will conform, at a minimum, to the NYCDEP noise control standards.

6. Residual Contamination to Remain on the Site

Residual contaminated soil will not exist beneath the development footprint after the Track 1 remedy is complete; therefore, ECs and ICs will not be required to protect human health and the environment.

7. Engineering Controls

If Track 1 SCOs are unable to be met and a Track 2 remedy is achieved, a composite cover system consisting of 4 in. of subbase (RCA) overlain by a 12-in. concrete slab and installation of a waterproofing/vapor barrier will be installed.

8. Institutional Controls

Following completion of the Track 1 UUSCO remedy, ICs will not be required as part of the remedial action. In the event that a Track 2 Cleanup (Restricted-Residential) is required (if a Track 1 cleanup cannot be achieved), implementation of ICs may be required, such as:

- Establishment of use restrictions, if necessary, including prohibitions on the use of groundwater from the Site and prohibitions on sensitive Site uses, such as farming or vegetable gardening in residual Site soil, to significantly reduce the potential for future exposure pathways;
- Establish an SMP for ICs and ECs that includes an Institutional and Engineering Control Plan, a Monitoring Plan, and an Operations and Maintenance Plan; and
- Recording of an EE to ensure future owners of the Site continue to maintain ECs/ICs as required.

9. Final Engineering Report

An FER will be submitted to the NYSDEC following the implementation of the remedy defined in this RAWP. The FER will be prepared in conformance with NYSDEC DER-10 and will include the following:

- Documentation that the remedial work required under this RAWP has been completed and has been performed in substantial conformance with this plan.
- A summary of the locations and characteristics of material removed from the Site including the surveyed map(s) of each area, as necessary.
- As-built drawings for constructed elements, certifications, manifests, and bills of lading.
- A description of the changes to the remedy from the elements provided in the RAWP and associated design documents, if any.
- A tabular summary of performance evaluation sampling results, material characterization results, and other sampling and chemical analyses performed as part of the remedy.
- Written and photographic documentation of remedial work performed under this remedy.
- A summary of confirmation sampling results to show that remaining soil left on the Site meets the Track 1 UUSCOs.
- Documentation of treatment and/or disposal of material removed from the Site, including excavated contaminated soil, historical fill, solid waste, hazardous waste, non-regulated material, and fluids. Documentation associated with the disposal of material must also include records and approvals for receipt of the material.
- Documentation of the origin and chemical quality of each material type imported onto the Site.
- Discussion of the green remediation practices/technologies employed throughout the remedial program. A final footprint analysis using a DER-accepted model, and any tracking methods used through the construction including restoration activities.

Before approval of the FER and issuance of a Certificate of Completion, the daily or weekly reports and monthly BCP progress reports must be submitted in digital format (i.e., PDF).

9.1 CERTIFICATIONS

The following certification will appear in front of the Executive Summary of the FER. The certification will be signed by the RE, Suzanne M. Bell, who is a Professional Engineer registered in New York State. This certification will be appropriately signed and stamped. The certification will include the following statements:

I, __________________________, am currently a registered professional engineer licensed by the State of New York. I had primary direct responsibility for implementation of the remedial program for the 650 Southern Boulevard Site (NYSDEC BCA Index No. C203170-12-23 Site No. C203170).

I certify that the Site description presented in this FER is identical to the Site descriptions presented in the Environmental Easement, the Site Management Plan, and the Brownfield Cleanup Agreement for the 180 East 125th Street Development Site and related amendments.

I certify that the Remedial Action Work Plan dated [month day year] and Stipulations [if any] in a letter dated [month day year] and approved by the NYSDEC were implemented and that all requirements in those documents have been substantively complied with.

I certify that the remedial activities were observed by qualified environmental professionals under my supervision and that the remediation requirements set forth in the Remedial Action Work Plan and any other relevant provisions of ECL 27-1419 have been achieved.

I certify that all use restrictions, Institutional Controls, Engineering Controls, and all operation and maintenance requirements applicable to the Site are contained in an Environmental Easement created and recorded pursuant ECL 71-3605 and that all affected local governments, as defined in ECL 71-3603, have been notified that such easement has been recorded. A Site Management Plan has been submitted by the [Applicant / Volunteer / Participant] for the continual and proper operation, maintenance, and monitoring of all Engineering Controls employed at the Site, including the proper maintenance of all remaining monitoring wells, and that such plan has been approved by the NYSDEC.

I certify that the export of all contaminated soil, fill, water or other material from the property was performed in accordance with the Remedial Action Work Plan, and were taken to facilities licensed to accept this material in full compliance with all Federal, State and local laws.

I certify that all import of soils from off-Site, including source approval and sampling, has been performed in a manner that is consistent with the methodology defined in the Remedial Action Work Plan.

I certify that all invasive work during the remediation and all invasive development work were conducted in accordance with dust and odor suppression methodology and soil screening methodology defined in the Remedial Action Work Plan.

I certify that all information and statements in this certification are true. I understand that a false statement made herein is punishable as Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law.

It is a violation of Article 145 of New York State Education Law for any person to alter this document in any way without the express written verification of adoption by any New York State licensed engineer in accordance with Section 7209(2), Article 145, New York State Education Law.

10. Schedule

Mobilization for implementation of the RAWP is expected to take about one to two weeks. Once mobilization is complete, remediation of the Site will proceed. The remedy, which will be implemented in accordance with this RAWP, is anticipated to take about four months to complete. After completion of the remedy, an FER will be drafted and subsequently submitted to the NYSDEC for review and approval. A proposed project schedule is included in Appendix J.

References

1. Brownfield Cleanup Program Application. Proposed 180 East 125th Street Development Site. 180 East 125th Street, New York, New York. Prepared for 180 E125th Realty LLC by H & A of New York Engineering and Geology LLP for submission to the New York State Department of Environmental Conservation. Submitted in September 2024.

2. New York State Department of Environmental Conservation, Part 375 of Title 6 of the New York Compilation of Codes, Rules, and Regulations, Effective December 14, 2006.

3. New York State Department of Environmental Conservation, Sampling, Analysis, and Assessment of Per- and Polyfluoroalkyl Substances (PFAS), revised April 2023.

4. New York State Department of Health, Final Guidance for Evaluating Soil Vapor Intrusion in the State of New York, dated October 2006 (February 2024 matrices).

5. New York State Division of Water Technical and Operational Guidance Series (TOGS) (1.1.1) dated June 1998.

6. Phase I Environmental Site Assessment. 167 East 124th Street & 160 East 125th Street, New York, New York. Prepared by EBI Consulting, prepared for JP Morgan Chase Bank NA, June 21, 2018.

7. Phase I Environmental Site Assessment – 180 East 125th Street, New York, New York. Prepared by H & A of New York Engineering and Geology LLP, prepared for 180 E125th Realty LLC, August 15, 2024.

8. Program Policy DER-10, “Technical Guidance for Site Investigation and Remediation,” New York State Department of Environmental Conservation. May 2010.

9. Remedial Action Work Plan. 180 East 125th Street, New York, New York. Prepared by Langan Engineering, Environmental, Surveying, Landscape Architecture and Geology, D.P.C., prepared for 125th Street Lessee LLC, October 2021

10. Remedial Investigation Report – 180 East 125th Street, New York, New York. Prepared by H & A of New York Engineering and Geology LLP, prepared for 180 E125 Propco LLC, March 3, 2025.

11. Remedial Investigation Report. Proposed 125th Street Development, New York, New York. Prepared by Langan Engineering, Environmental, Surveying, Landscape Architecture and Geology, D.P.C., prepared for 160 East 125th Owner LLC, December 18, 2020.

12. Tank Affidavit. 180 East 125th Street, New York, New York. Prepared by MVC Heating Corp., prepared for Fire Department City of New York, February 22, 2022.

13. United States Environmental Protection Agency, Low Flow Purging and Sampling Procedure for the Collection of Groundwater Samples from Monitoring Wells, EQASOP-GW 001, September 19, 2017.

14. Waste Characterization Sampling Report. 180 East 125th Street, New York, New York. Prepared by EcoTerra Consulting, LLC, prepared for Monadnock Construction, Inc., September 20, 2022.

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TABLES

TABLE 1
ALTERNATIVE I REMEDIAL COST ESTIMATE
180 EAST 125TH STREET, NEW YORK, NEW YORK
NYSDEC BCP SITE C231160

Consulting/Engineering Costs					
Task	**Description**	**Unit**	**Unit Cost**	**Quantity**	**Total Cost**
1	Waste Characterization	Lump Sum	$ 80,000	1	$ 80,000
2	Program Management (NYSDEC/NYSDOH Correspondence, Daily/Weekly/Monthly Reporting, etc.)	Month	$ 5,000	10	$ 50,000
3	Remedial Oversight	Month	$ 34,000	6	$ 204,000
4	Confirmation Sampling	Sample	$ 1,500	65	$ 97,500
5	Final Engineering Report and COC Coordination	Lump Sum	$ 75,000	1	$ 75,000
		Consulting/Engineering Subtotal			$ 506,500
Contractor Costs					
Task	**Description**	**Unit**	**Unit Cost**	**Quantity**	**Total Cost**
1	Mobilization/Demobilization, Site Maintenance, Security, etc.	Allowance	$ 300,000	1	$ 300,000
2	Truck Wash Station	Month	$ 25,000	6	$ 150,000
3	Management/Handling Contaminated Material	Cubic Yard	$ 40	20,700	$ 828,000
4	Support of Excavation	Linear Foot	$ 4,000	894.0	$ 3,576,000
5	Transport and Disposal of Urban Fill	Ton	$ 46	33,000	$ 1,518,000
6	Transport and Disposal of Non-Hazardous Petroleum Impacted Fill Material	Ton	$ 55	0	$ -
7	Transport and Disposal of Hazardous Material (F Listed and/or Lead)	Ton	$ 275	0	$ -
8	Backfill Procurement, Placement and Compaction	Cubic Yard	$ 28	12	$ 330
9	Dewatering System	Lump Sum	$ 100,000	1	$ 100,000
10	Underground Storage Tank (Contingency Budget)	Allowance	$ 50,000	1	$ 50,000
			Contractor Subtotal		$ 6,522,330
				Total	$ 7,028,830
				15% Contingency	$ 1,054,325
				Estimated Total (Rounded to the nearest $1,000)	$ 8,083,000

Notes:

1. Assuming a Track 1 Remedy.

2. Assumes density of 1.5 tons per cubic yard of fill/soil.

3. Assumes residual soil will meet Track 1 Unrestricted Use Soil Cleanup Objectives

4. SOE Costs are based on a conventional soldier pile and timber lagging system with lateral bracing provided by either steel rakers or tiebacks; costs calculated by average cost per linear ft.

5. Costs are estimated and subject to change. Costs do not include new building construction.

6. RAWP implementation is assumed to take 6 months.

7. This cost estimate was prepared to compare various remedial alternatives as was based on available information at the time of preparation. The estimate may be +/- 30-50% of the actual cost. This estimate was not prepared for financial or legal consulting purposes and was not intended for use regarding compliance with financial reporting requirements or liability services.

8. This estimate does not include legal fees associated with attorneys involved in the project, insurance fees or outside consulting fees.

TABLE 2
ALTERNATIVE II REMEDIAL COST ESTIMATE
180 EAST 125TH STREET, NEW YORK, NEW YORK
NYSDEC BCP SITE C231160

Task	Description	Unit	Unit Cost	Quantity	Total Cost
Consulting/Engineering Costs					
Task	**Description**	**Unit**	**Unit Cost**	**Quantity**	**Total Cost**
1	Waste Characterization	Lump Sum	$ 80,000	1	$ 80,000
2	Program Management (NYSDEC/NYSDOH Correspondence, Daily/Weekly/Monthly Reporting, etc.)	Month	$ 5,000	10	$ 50,000
3	Remedial Oversight	Month	$ 34,000	5	$ 170,000
4	Endpoint Sampling	Sample	$ 1,500	65	$ 97,500
5	Final Engineering Report and COC Coordination	Lump Sum	$ 75,000	1	$ 75,000
6	Site Management Plan	Allowance	$ 20,000	1	$ 20,000
7	Annual Site Management (engineering control monitoring, reporting)	Year (Allowance)	$ 25,000	5	$ 125,000
		Consulting/Engineering Subtotal			$ 617,500
Contractor Costs					
Task	**Description**	**Unit**	**Unit Cost**	**Quantity**	**Total Cost**
1	Mobilization/Demobilization, Site Maintenance, Security, etc.	Allowance	$ 300,000	1	$ 300,000
2	Truck Wash Station	Month	$ 25,000	5	$ 125,000
3	Management/Handling Contaminated Material	Cubic Yard	$ 40	15,700	$ 628,000
4	Support of Excavation	Linear Foot	$ 4,000	894.00	$ 3,576,000
5	Transport and Disposal of Urban Fill	Ton	$ 46	23,550	$ 1,083,300
6	Transport and Disposal of Non-Hazardous Petroleum Impacted Fill Material	Ton	$ 55	0	$ -
7	Transport and Disposal of Hazardous Material (F Listed and/or Lead)	Ton	$ 275	0	$ -
8	Backfill Procurement, Placement and Compaction	Cubic Yard	$ 28	4	$ 110
9	Dewatering System	Lump Sum	$ 100,000	1	$ 100,000
10	Underground Storage Tank (Contingency Budget)	Allowance	$ 75,000	1	$ 75,000
11	Composite Cover System (inc. vapor barrier/waterproofing membrane)	Allowance	$ 350,000	1	$ 350,000
			Contractor Subtotal		$ 6,237,410
				Total	$ 6,854,910
				15% Contingency	$ 1,028,237
				Estimated Total	$ 7,883,000

Notes:

1. Assuming a Track 2 Remedy with site management to remove soil exceeding RRSCOs.

2. Assumes density of 1.5 tons per cubic yard of fill/soil

3. Assumes residual soil will meet Track 2 Restricted Residential Use Soil Cleanup Objectives

4. SOE Costs are based on a conventional soldier pile and timber lagging system with lateral bracing provided by either steel rakers or tiebacks.

5. Costs are estimated and subject to change. Costs do not include new building construction.

6. RAWP implementation is assumed to take 5 months.

7. This cost estimate was prepared to compare various remedial alternatives as was based on available information at the time of preparation. The estimate may be +/- 30-50% of the actual cost. This estimate was not preparec for financial or legal consulting purposes and was not intended for use regarding compliance with financial reporting requirements or liability services.

8. This estimate does not include legal fees associated with attorneys involved in the project, insurance fees or outside consulting fees.

TABLE 3
TRACK 1 SOIL CLEANUP OBJECTIVES
180 EAST 125TH STREET DEVELOPMENT SITE
180 EAST 125TH STREET, NEW YORK, NEW YORK

Pesticides (mg/kg)	
4,4'-DDD	0.0033
4,4'-DDE	0.0033
4,4'-DDT	0.0033
Aldrin	0.005
Alpha-BHC	0.02
alpha-Chlordane	0.094
Beta-BHC	0.036
Delta-BHC	0.04
Dieldrin	0.005
Endosulfan I	2.4
Endosulfan II	2.4
Endosulfan sulfate	2.4
Endrin	0.014
gamma-BHC (Lindane)	0.1
Heptachlor	0.042

Volatile Organic Compounds (mg/kg)	
1,1,1-Trichloroethane	0.68
1,1-Dichloroethane	0.27
1,1-Dichloroethene	0.33
1,2,4-Trimethylbenzene	3.6
1,2-Dichlorobenzene	1.1
1,2-Dichloroethane	0.02
1,3,5-Trimethylbenzene	8.4
1,3-Dichlorobenzene	2.4
1,4-Dichlorobenzene	1.8
1,4-Dioxane	0.1
2-Butanone (Methyl Ethyl Ketone)	0.12
2-Phenylbutane (sec-Butylbenzene)	11
Acetone	0.05
Benzene	0.06
Carbon tetrachloride	0.76
Chlorobenzene	1.1
Chloroform (Trichloromethane)	0.37
cis-1,2-Dichloroethene	0.25
Ethylbenzene	1
Methyl tert butyl ether (MTBE)	0.93
Methylene chloride (Dichloromethane)	0.05
Naphthalene	12
n-Butylbenzene	12
n-Propylbenzene	3.9
tert-Butylbenzene	5.9
Tetrachloroethene	1.3
Toluene	0.7
trans-1,2-Dichloroethene	0.19
Trichloroethene	0.47
Vinyl chloride	0.02
Xylenes, Total	0.26

Semivolatile Organic Compounds (mg/kg)	
1,2-Dichlorobenzene	1.1
1,3-Dichlorobenzene	2.4
1,4-Dichlorobenzene	1.8
1,4-Dioxane	0.1
2-Methylphenol	0.33
Acenaphthene	20
Acenaphthylene	100
Anthracene	100
Benzo(a)anthracene	1
Benzo(a)pyrene	1
Benzo(b)fluoranthene	1
Benzo(ghi)perylene	100
Benzo(k)fluoranthene	0.8
Chrysene	1
Dibenzo(a,h)anthracene	0.33
Dibenzofuran	7
Fluoranthene	100
Fluorene	30
Hexachlorobenzene	0.33
Indeno(1,2,3-cd)pyrene	0.5
Naphthalene	12
Pentachlorophenol	0.8
Phenanthrene	100
Phenol	0.33
Pyrene	100

Metals (mg/kg)	
Arsenic, Total	13
Barium, Total	350
Beryllium, Total	7.2
Cadmium, Total	2.5
Copper, Total	50
Lead, Total	63
Manganese, Total	1600
Mercury, Total	0.18
Nickel, Total	30
Selenium, Total	3.9
Silver, Total	2
Zinc, Total	109

Per- and Polyfluoroalkyl Substances (PFAS) (mg/kg)	
Perfluorooctanoic acid (PFOA)	0.00066
Perfluorooctanesulfonic acid (PFOS)	0.00088

Notes:

1. Criteria are 6 NYCRR Part 375 Unrestricted Use Soil Cleanup Objectives

2. Proposed Sampling, Analysis, and Assessment of PFAS Guidance, November 2022

3. mg/kg: milligram per kilogram

FIGURES

MAP SOURCE: ESRI
SITE COORDINATES: 40°48'13"N, 73°56'12"W

HALEY ALDRICH

180 EAST 125TH STREET
NEW YORK, NEW YORK

PROJECT LOCUS

APPROXIMATE SCALE: 1 IN = 2000 FT
MARCH 2025

FIGURE 1

GIS: \\haleyaldrich.com\share\CF\Projects\0209815\GIS\209815_000_180_E_125TH_STREET.aprx - khensen - 6/26/2024 11:33 AM

LEGEND

SITE BOUNDARY

PARCEL BOUNDARY

NOTES

1. ALL LOCATIONS AND DIMENSIONS ARE APPROXIMATE.
2. ASSESSOR PARCEL DATA SOURCE: NEW YORK COUNTY
3. AERIAL IMAGERY SOURCE: NEARMAP, 16 JUNE 2024

HALEY ALDRICH

180 EAST 125TH STREET
NEW YORK, NEW YORK

SITE PLAN

MARCH 2025

FIGURE 2

GIS FILE PATH: \\haleyaldrich.com\share\CF\Projects\0209815\GIS\209815_000_180_E_125TH_STREET.aprx - USER: khensen - LAST SAVED: 6/26/2024 11:33 AM

LEGEND

SAMPLING LOCATIONS

- SOIL BORING
- SOIL BORING/MONITORING WELL
- SOIL VAPOR PROBE
- SITE BOUNDARY
- PARCEL BOUNDARY

NOTES

1. ALL LOCATIONS AND DIMENSIONS ARE APPROXIMATE.
2. ASSESSOR PARCEL DATA SOURCE: NEW YORK COUNTY
3. AERIAL IMAGERY SOURCE: NEARMAP, 16 JUNE 2024

N

0 40 80

SCALE IN FEET

HALEY ALDRICH

180 EAST 125TH STREET
NEW YORK, NEW YORK

SAMPLE LOCATION MAP

MARCH 2025

FIGURE 3

GIS FILE PATH: \\haleyaldrich.com\share\CF\Projects\0209815\GIS\0209815_000_180_E_125TH_STREET.aprx - USER: ayabu - LAST SAVED: 3/3/2025 9:14 AM

LEGEND

- MONITORING WELL
- GROUNDWATER FLOW DIRECTION
- GROUNDWATER ELEVATION CONTOUR, IN FEET. DASHED WHERE INFERRED.
- SITE BOUNDARY
- PARCEL BOUNDARY

NOTES

1. ALL LOCATIONS AND DIMENSIONS ARE APPROXIMATE.
2. ASSESSOR PARCEL DATA SOURCE: NEW YORK COUNTY
3. AERIAL IMAGERY SOURCE: NEARMAP, 16 JUNE 2024

N

0 40 80
SCALE IN FEET

HALEY ALDRICH

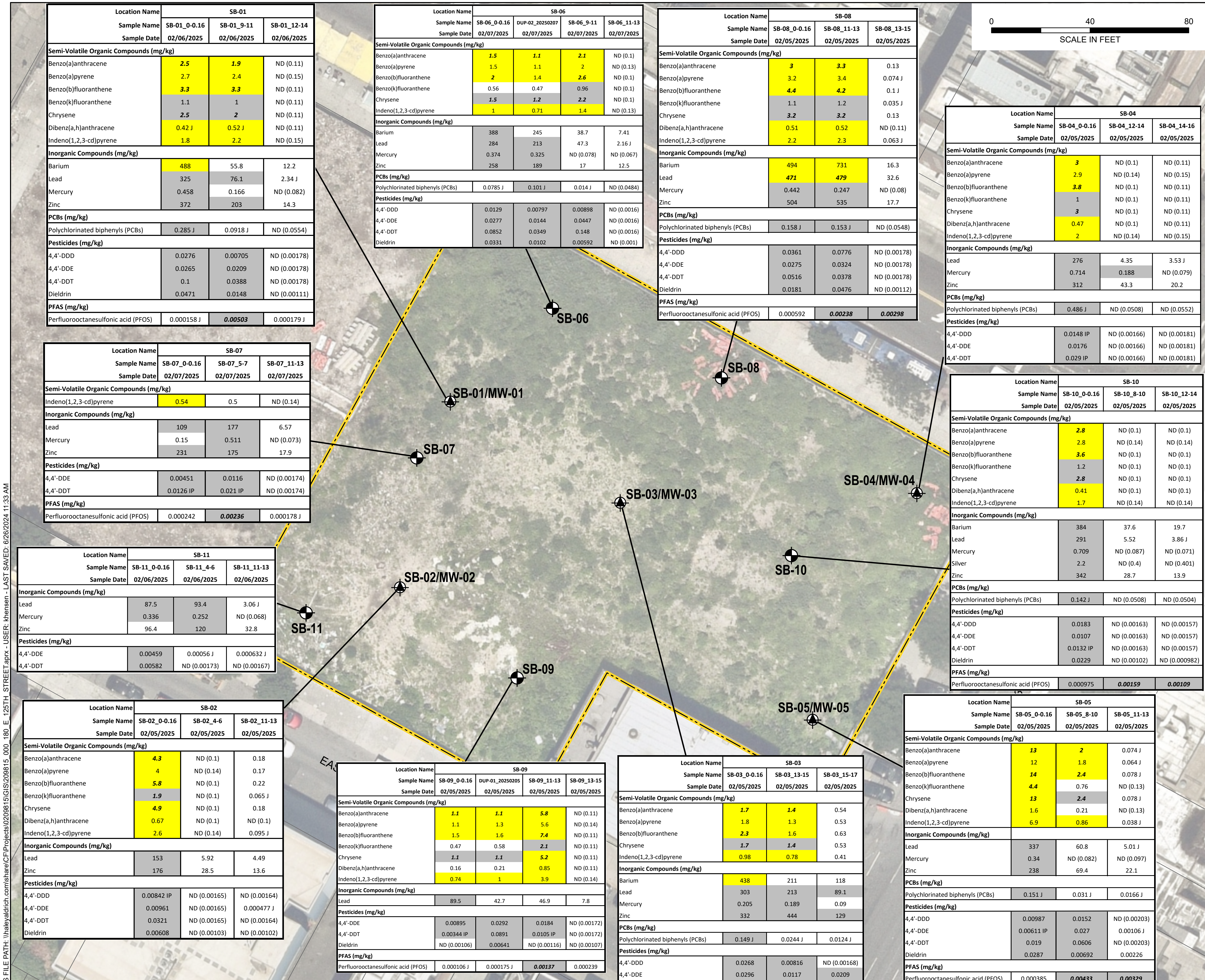
180 EAST 125TH STREET
NEW YORK, NEW YORK

GROUNDWATER CONTOUR MAP

MARCH 2025

FIGURE 4

GIS FILE PATH: \\haleyaldrich.com\share\CF\Projects\0209815\GIS\209815_000_180_E_125TH_STREET.aprx - USER: ayabu - LAST SAVED: 2/28/2025 1:29 PM



Location Name	SB-01		
Sample Name	SB-01_0-0.16	SB-01_9-11	SB-01_12-14
Sample Date	02/06/2025	02/06/2025	02/06/2025
Semi-Volatile Organic Compounds (mg/kg)			
Benzo(a)anthracene	**2.5**	**1.9**	ND (0.11)
Benzo(a)pyrene	2.7	2.4	ND (0.15)
Benzo(b)fluoranthene	**3.3**	**3.3**	ND (0.11)
Benzo(k)fluoranthene	1.1	1	ND (0.11)
Chrysene	**2.5**	**2**	ND (0.11)
Dibenz(a,h)anthracene	0.42 J	0.52 J	ND (0.11)
Indeno(1,2,3-cd)pyrene	1.8	2.2	ND (0.15)
Inorganic Compounds (mg/kg)			
Barium	488	55.8	12.2
Lead	325	76.1	2.34 J
Mercury	0.458	0.166	ND (0.082)
Zinc	372	203	14.3
PCBs (mg/kg)			
Polychlorinated biphenyls (PCBs)	0.285 J	0.0918 J	ND (0.0554)
Pesticides (mg/kg)			
4,4'-DDD	0.0276	0.00705	ND (0.00178)
4,4'-DDE	0.0265	0.0209	ND (0.00178)
4,4'-DDT	0.1	0.0388	ND (0.00178)
Dieldrin	0.0471	0.0148	ND (0.00111)
PFAS (mg/kg)			
Perfluorooctanesulfonic acid (PFOS)	0.000158 J	**0.00503**	0.000179 J

Location Name	SB-06			
Sample Name	SB-06_0-0.16	DUP-02_20250207	SB-06_9-11	SB-06_11-13
Sample Date	02/07/2025	02/07/2025	02/07/2025	02/07/2025
Semi-Volatile Organic Compounds (mg/kg)				
Benzo(a)anthracene	**1.5**	**1.1**	**2.1**	ND (0.1)
Benzo(a)pyrene	1.5	1.1	2	ND (0.13)
Benzo(b)fluoranthene	**2**	1.4	**2.6**	ND (0.1)
Benzo(k)fluoranthene	0.56	0.47	0.96	ND (0.1)
Chrysene	**1.5**	**1.2**	**2.2**	ND (0.1)
Indeno(1,2,3-cd)pyrene	1	0.71	1.4	ND (0.13)
Inorganic Compounds (mg/kg)				
Barium	388	245	38.7	7.41
Lead	284	213	47.3	2.16 J
Mercury	0.374	0.325	ND (0.078)	ND (0.067)
Zinc	258	189	17	12.5
PCBs (mg/kg)				
Polychlorinated biphenyls (PCBs)	0.0785 J	0.101 J	0.014 J	ND (0.0484)
Pesticides (mg/kg)				
4,4'-DDD	0.0129	0.00797	0.00898	ND (0.0016)
4,4'-DDE	0.0277	0.0144	0.0447	ND (0.0016)
4,4'-DDT	0.0852	0.0349	0.148	ND (0.0016)
Dieldrin	0.0331	0.0102	0.00592	ND (0.001)

Location Name	SB-08		
Sample Name	SB-08_0-0.16	SB-08_11-13	SB-08_13-15
Sample Date	02/05/2025	02/05/2025	02/05/2025
Semi-Volatile Organic Compounds (mg/kg)			
Benzo(a)anthracene	**3**	**3.3**	0.13
Benzo(a)pyrene	3.2	3.4	0.074 J
Benzo(b)fluoranthene	**4.4**	**4.2**	0.1 J
Benzo(k)fluoranthene	1.1	1.2	0.035 J
Chrysene	**3.2**	**3.2**	0.13
Dibenz(a,h)anthracene	0.51	0.52	ND (0.11)
Indeno(1,2,3-cd)pyrene	2.2	2.3	0.063 J
Inorganic Compounds (mg/kg)			
Barium	494	731	16.3
Lead	**471**	**479**	32.6
Mercury	0.442	0.247	ND (0.08)
Zinc	504	535	17.7
PCBs (mg/kg)			
Polychlorinated biphenyls (PCBs)	0.158 J	0.153 J	ND (0.0548)
Pesticides (mg/kg)			
4,4'-DDD	0.0361	0.0776	ND (0.00178)
4,4'-DDE	0.0275	0.0324	ND (0.00178)
4,4'-DDT	0.0516	0.0378	ND (0.00178)
Dieldrin	0.0181	0.0476	ND (0.00112)
PFAS (mg/kg)			
Perfluorooctanesulfonic acid (PFOS)	0.000592	**0.00238**	**0.00298**

Location Name	SB-04		
Sample Name	SB-04_0-0.16	SB-04_12-14	SB-04_14-16
Sample Date	02/05/2025	02/05/2025	02/05/2025
Semi-Volatile Organic Compounds (mg/kg)			
Benzo(a)anthracene	**3**	ND (0.1)	ND (0.11)
Benzo(a)pyrene	2.9	ND (0.14)	ND (0.15)
Benzo(b)fluoranthene	**3.8**	ND (0.1)	ND (0.11)
Benzo(k)fluoranthene	1	ND (0.1)	ND (0.11)
Chrysene	**3**	ND (0.1)	ND (0.11)
Dibenz(a,h)anthracene	0.47	ND (0.1)	ND (0.11)
Indeno(1,2,3-cd)pyrene	2	ND (0.14)	ND (0.15)
Inorganic Compounds (mg/kg)			
Lead	276	4.35	3.53 J
Mercury	0.714	0.188	ND (0.079)
Zinc	312	43.3	20.2
PCBs (mg/kg)			
Polychlorinated biphenyls (PCBs)	0.486 J	ND (0.0508)	ND (0.0552)
Pesticides (mg/kg)			
4,4'-DDD	0.0148 IP	ND (0.00166)	ND (0.00181)
4,4'-DDE	0.0176	ND (0.00166)	ND (0.00181)
4,4'-DDT	0.029 IP	ND (0.00166)	ND (0.00181)

Location Name	SB-07		
Sample Name	SB-07_0-0.16	SB-07_5-7	SB-07_11-13
Sample Date	02/07/2025	02/07/2025	02/07/2025
Semi-Volatile Organic Compounds (mg/kg)			
Indeno(1,2,3-cd)pyrene	0.54	0.5	ND (0.14)
Inorganic Compounds (mg/kg)			
Lead	109	177	6.57
Mercury	0.15	0.511	ND (0.073)
Zinc	231	175	17.9
Pesticides (mg/kg)			
4,4'-DDE	0.00451	0.0116	ND (0.00174)
4,4'-DDT	0.0126 IP	0.021 IP	ND (0.00174)
PFAS (mg/kg)			
Perfluorooctanesulfonic acid (PFOS)	0.000242	**0.00236**	0.000178 J

Location Name	SB-11		
Sample Name	SB-11_0-0.16	SB-11_4-6	SB-11_11-13
Sample Date	02/06/2025	02/06/2025	02/06/2025
Inorganic Compounds (mg/kg)			
Lead	87.5	93.4	3.06 J
Mercury	0.336	0.252	ND (0.068)
Zinc	96.4	120	32.8
Pesticides (mg/kg)			
4,4'-DDE	0.00459	0.00056 J	0.000632 J
4,4'-DDT	0.00582	ND (0.00173)	ND (0.00167)

Location Name	SB-10		
Sample Name	SB-10_0-0.16	SB-10_8-10	SB-10_12-14
Sample Date	02/05/2025	02/05/2025	02/05/2025
Semi-Volatile Organic Compounds (mg/kg)			
Benzo(a)anthracene	**2.8**	ND (0.1)	ND (0.1)
Benzo(a)pyrene	2.8	ND (0.14)	ND (0.14)
Benzo(b)fluoranthene	**3.6**	ND (0.1)	ND (0.1)
Benzo(k)fluoranthene	1.2	ND (0.1)	ND (0.1)
Chrysene	**2.8**	ND (0.1)	ND (0.1)
Dibenz(a,h)anthracene	0.41	ND (0.1)	ND (0.1)
Indeno(1,2,3-cd)pyrene	1.7	ND (0.14)	ND (0.14)
Inorganic Compounds (mg/kg)			
Barium	384	37.6	19.7
Lead	291	5.52	3.86 J
Mercury	0.709	ND (0.087)	ND (0.071)
Silver	2.2	ND (0.4)	ND (0.401)
Zinc	342	28.7	13.9
PCBs (mg/kg)			
Polychlorinated biphenyls (PCBs)	0.142 J	ND (0.0508)	ND (0.0504)
Pesticides (mg/kg)			
4,4'-DDD	0.0183	ND (0.00163)	ND (0.00157)
4,4'-DDE	0.0107	ND (0.00163)	ND (0.00157)
4,4'-DDT	0.0132 IP	ND (0.00163)	ND (0.00157)
Dieldrin	0.0229	ND (0.00102)	ND (0.000982)
PFAS (mg/kg)			
Perfluorooctanesulfonic acid (PFOS)	0.000975	**0.00159**	**0.00109**

Location Name	SB-02		
Sample Name	SB-02_0-0.16	SB-02_4-6	SB-02_11-13
Sample Date	02/05/2025	02/05/2025	02/05/2025
Semi-Volatile Organic Compounds (mg/kg)			
Benzo(a)anthracene	**4.3**	ND (0.1)	0.18
Benzo(a)pyrene	4	ND (0.14)	0.17
Benzo(b)fluoranthene	**5.8**	ND (0.1)	0.22
Benzo(k)fluoranthene	**1.9**	ND (0.1)	0.065 J
Chrysene	**4.9**	ND (0.1)	0.18
Dibenz(a,h)anthracene	0.67	ND (0.1)	ND (0.1)
Indeno(1,2,3-cd)pyrene	2.6	ND (0.14)	0.095 J
Inorganic Compounds (mg/kg)			
Lead	153	5.92	4.49
Zinc	176	28.5	13.6
Pesticides (mg/kg)			
4,4'-DDD	0.00842 IP	ND (0.00165)	ND (0.00164)
4,4'-DDE	0.00961	ND (0.00165)	0.000477 J
4,4'-DDT	0.0321	ND (0.00165)	ND (0.00164)
Dieldrin	0.00608	ND (0.00103)	ND (0.00102)

Location Name	SB-09			
Sample Name	SB-09_0-0.16	DUP-01_20250205	SB-09_11-13	SB-09_13-15
Sample Date	02/05/2025	02/05/2025	02/05/2025	02/05/2025
Semi-Volatile Organic Compounds (mg/kg)				
Benzo(a)anthracene	**1.1**	**1.1**	**5.8**	ND (0.11)
Benzo(a)pyrene	1.1	1.3	5.6	ND (0.14)
Benzo(b)fluoranthene	1.5	1.6	**7.4**	ND (0.11)
Benzo(k)fluoranthene	0.47	0.58	**2.1**	ND (0.11)
Chrysene	**1.1**	**1.1**	**5.2**	ND (0.11)
Dibenz(a,h)anthracene	0.16	0.21	0.85	ND (0.11)
Indeno(1,2,3-cd)pyrene	0.74	1	3.9	ND (0.14)
Inorganic Compounds (mg/kg)				
Lead	89.5	42.7	46.9	7.8
Pesticides (mg/kg)				
4,4'-DDE	0.00895	0.0292	0.0184	ND (0.00172)
4,4'-DDT	0.00344 IP	0.0891	0.0105 IP	ND (0.00172)
Dieldrin	ND (0.00106)	0.00641	ND (0.00116)	ND (0.00107)
PFAS (mg/kg)				
Perfluorooctanesulfonic acid (PFOS)	0.000106 J	0.000175 J	**0.00137**	0.000239

Location Name	SB-03		
Sample Name	SB-03_0-0.16	SB-03_13-15	SB-03_15-17
Sample Date	02/05/2025	02/05/2025	02/05/2025
Semi-Volatile Organic Compounds (mg/kg)			
Benzo(a)anthracene	**1.7**	**1.4**	0.54
Benzo(a)pyrene	1.8	1.3	0.53
Benzo(b)fluoranthene	**2.3**	1.6	0.63
Chrysene	**1.7**	**1.4**	0.53
Indeno(1,2,3-cd)pyrene	0.98	0.78	0.41
Inorganic Compounds (mg/kg)			
Barium	438	211	118
Lead	303	213	89.1
Mercury	0.205	0.189	0.09
Zinc	332	444	129
PCBs (mg/kg)			
Polychlorinated biphenyls (PCBs)	0.149 J	0.0244 J	0.0124 J
Pesticides (mg/kg)			
4,4'-DDD	0.0268	0.00816	ND (0.00168)
4,4'-DDE	0.0296	0.0117	0.0209
4,4'-DDT	0.068	0.0316	0.00441
Dieldrin	0.0307	0.0118	0.00611
PFAS (mg/kg)			
Perfluorooctanesulfonic acid (PFOS)	0.000477	**0.00127**	0.000464

Location Name	SB-05		
Sample Name	SB-05_0-0.16	SB-05_8-10	SB-05_11-13
Sample Date	02/05/2025	02/05/2025	02/05/2025
Semi-Volatile Organic Compounds (mg/kg)			
Benzo(a)anthracene	**13**	**2**	0.074 J
Benzo(a)pyrene	12	1.8	0.064 J
Benzo(b)fluoranthene	**14**	**2.4**	0.078 J
Benzo(k)fluoranthene	**4.4**	0.76	ND (0.13)
Chrysene	**13**	**2.4**	0.078 J
Dibenz(a,h)anthracene	1.6	0.21	ND (0.13)
Indeno(1,2,3-cd)pyrene	6.9	0.86	0.038 J
Inorganic Compounds (mg/kg)			
Lead	337	60.8	5.01 J
Mercury	0.34	ND (0.082)	ND (0.097)
Zinc	238	69.4	22.1
PCBs (mg/kg)			
Polychlorinated biphenyls (PCBs)	0.151 J	0.031 J	0.0166 J
Pesticides (mg/kg)			
4,4'-DDD	0.00987	0.0152	ND (0.00203)
4,4'-DDE	0.00611 IP	0.027	0.00106 J
4,4'-DDT	0.019	0.0606	ND (0.00203)
Dieldrin	0.0287	0.00692	0.00226
PFAS (mg/kg)			
Perfluorooctanesulfonic acid (PFOS)	0.000385	**0.00433**	**0.00329**

LEGEND

SITE BOUNDARY

PARCEL BOUNDARY

SOIL BORING LOCATION

SOIL BORING/PERMANENT MONITORING WELL LOCATION

Analyte	*NY-PGW*	NY-RESR	NY-UNRES
Semi-Volatile Organic Compounds (mg/kg)			
Benzo(a)anthracene	1	1	1
Benzo(a)pyrene	22	1	1
Benzo(b)fluoranthene	1.7	1	1
Benzo(k)fluoranthene	1.7	3.9	0.8
Chrysene	1	3.9	1
Dibenz(a,h)anthracene	1000	0.33	0.33
Indeno(1,2,3-cd)pyrene	8.2	0.5	0.5
Inorganic Compounds (mg/kg)			
Barium	820	400	350
Lead	450	400	63
Mercury	0.73	0.81	0.18
Arsenic	16	16	13
Zinc	2480	10000	109
Nickel	140	310	30
Copper	270	270	50
Silver	8.3	180	2
PCBs (mg/kg)			
Polychlorinated biphenyls (PCBs)	3.2	1	0.1
Pesticides (mg/kg)			
4,4'-DDD	14	13	0.0033
4,4'-DDE	17	8.9	0.0033
4,4'-DDT	136	7.9	0.0033
Dieldrin	0.1	0.2	0.005
PFAS (mg/kg)			
Perfluorooctanesulfonic acid (PFOS)	0.001	0.044	0.00088

NOTES

1. ALL LOCATIONS AND DIMENSIONS ARE APPROXIMATE.
2. ASSESSOR PARCEL DATA SOURCE: NEW YORK COUNTY
3. AERIAL IMAGERY SOURCE: NEARMAP, 16 JUNE 2024
4. SOIL SAMPLE ANALYTICAL RESULTS ARE COMPARED TO THE NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION (NYSDEC) TITLE 6 OF THE OFFICIAL COMPILATION OF NEW YORK CODES, RULES, AND REGULATIONS (NYCRR) PART 375 UNRESTRICTED USE SOIL CLEANUP OBJECTIVES (SCOS), RESTRICTED-RESIDENTIAL SCOS, AND PROTECTION OF GROUNDWATER SCOS.
5. NY-RESR = NYSDEC PART 375 RESTRICTED-RESIDENTIAL USE SCO
6. NY-UNRES = NYSDEC PART 375 UNRESTRICTED USE SCO
7. NY-PGW = NYSDEC PART 375 PROTECTION OF GROUNDWATER SCOS
8. EXCEEDANCES OF THE NY-UNRES SCOS ARE SHADED GRAY
9. EXCEEDANCES OF THE NY-UNRES AND NY-RESR ARE SHADED YELLOW
10. EXCEEDANCES OF THE NY-PGW ARE BOLDED.
11. J = ESTIMATED RESULT
12. ND = NON-DETECT

N

HALEY ALDRICH

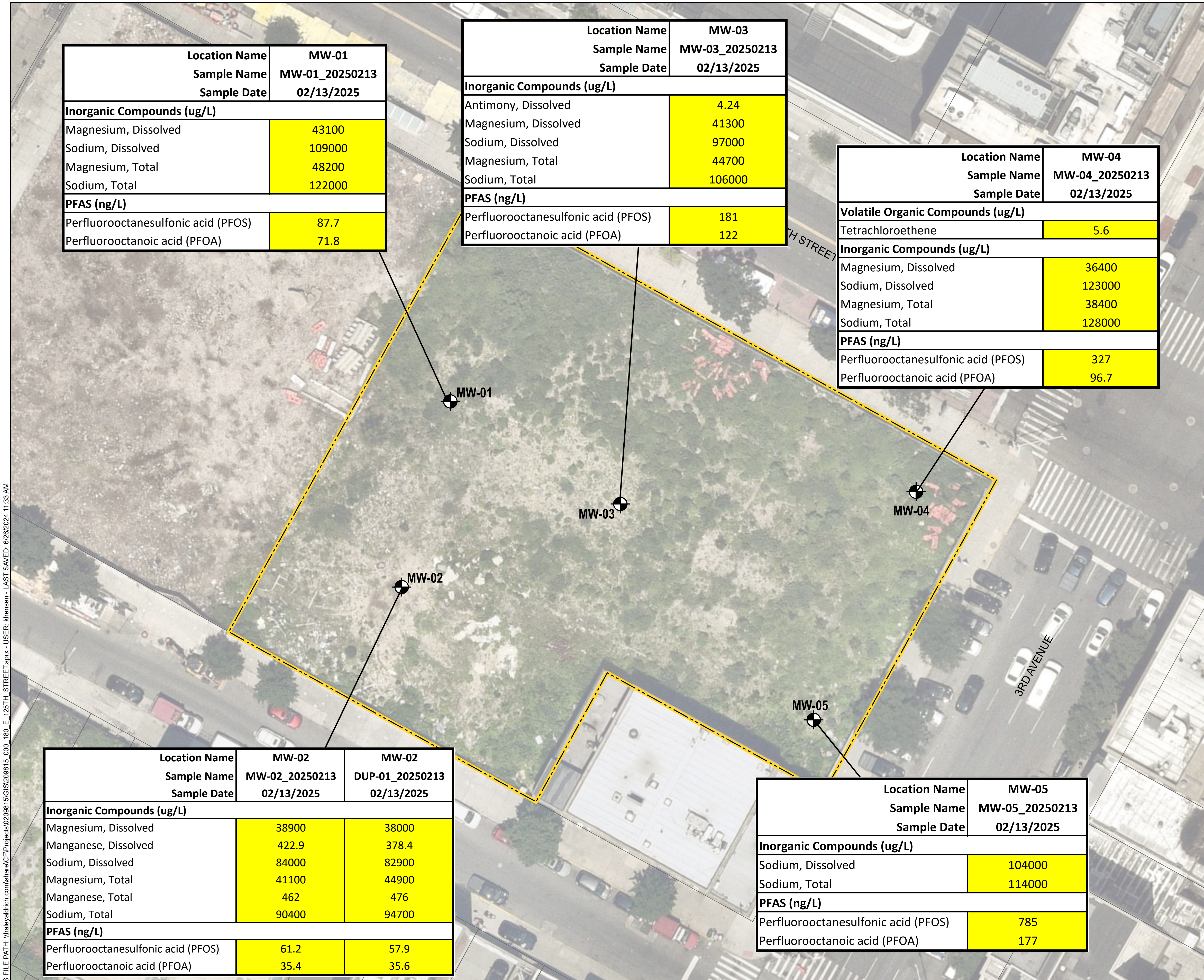
180 EAST 125TH STREET
NEW YORK, NEW YORK

SOIL RESULTS EXCEEDANCE MAP

MARCH 2025

FIGURE 5

GIS FILE PATH: \\haleyaldrich.com\share\CF\Projects\0209815\GIS\209815_000_180_E_125TH_STREET.aprx - USER: khensen - LAST SAVED: 6/26/2024 11:33 AM



Location Name	MW-01
Sample Name	MW-01_20250213
Sample Date	02/13/2025
Inorganic Compounds (ug/L)	
Magnesium, Dissolved	43100
Sodium, Dissolved	109000
Magnesium, Total	48200
Sodium, Total	122000
PFAS (ng/L)	
Perfluorooctanesulfonic acid (PFOS)	87.7
Perfluorooctanoic acid (PFOA)	71.8

Location Name	MW-03
Sample Name	MW-03_20250213
Sample Date	02/13/2025
Inorganic Compounds (ug/L)	
Antimony, Dissolved	4.24
Magnesium, Dissolved	41300
Sodium, Dissolved	97000
Magnesium, Total	44700
Sodium, Total	106000
PFAS (ng/L)	
Perfluorooctanesulfonic acid (PFOS)	181
Perfluorooctanoic acid (PFOA)	122

Location Name	MW-04
Sample Name	MW-04_20250213
Sample Date	02/13/2025
Volatile Organic Compounds (ug/L)	
Tetrachloroethene	5.6
Inorganic Compounds (ug/L)	
Magnesium, Dissolved	36400
Sodium, Dissolved	123000
Magnesium, Total	38400
Sodium, Total	128000
PFAS (ng/L)	
Perfluorooctanesulfonic acid (PFOS)	327
Perfluorooctanoic acid (PFOA)	96.7

Location Name	MW-02	MW-02
Sample Name	MW-02_20250213	DUP-01_20250213
Sample Date	02/13/2025	02/13/2025
Inorganic Compounds (ug/L)		
Magnesium, Dissolved	38900	38000
Manganese, Dissolved	422.9	378.4
Sodium, Dissolved	84000	82900
Magnesium, Total	41100	44900
Manganese, Total	462	476
Sodium, Total	90400	94700
PFAS (ng/L)		
Perfluorooctanesulfonic acid (PFOS)	61.2	57.9
Perfluorooctanoic acid (PFOA)	35.4	35.6

Location Name	MW-05
Sample Name	MW-05_20250213
Sample Date	02/13/2025
Inorganic Compounds (ug/L)	
Sodium, Dissolved	104000
Sodium, Total	114000
PFAS (ng/L)	
Perfluorooctanesulfonic acid (PFOS)	785
Perfluorooctanoic acid (PFOA)	177

LEGEND

SITE BOUNDARY

PARCEL BOUNDARY

PERMANENT GROUNDWATER MONITORING WELL LOCATION

Analyte	NY-AWQS
Inorganic Compounds (ug/L)	
Magnesium, Dissolved	35000
Manganese, Dissolved	300
Sodium, Dissolved	20000
Magnesium, Total	35000
Manganese, Total	300
Sodium, Total	20000
Antimony, Dissolved	3
Volatile Organic Compounds (ug/L)	
Tetrachloroethene	5
PFAS (ng/L)	
Perfluorooctanesulfonic acid (PFOS)	2.7
Perfluorooctanoic acid (PFOA)	6.7

NOTES

1. ALL LOCATIONS AND DIMENSIONS ARE APPROXIMATE.
2. ASSESSOR PARCEL DATA SOURCE: NEW YORK COUNTY
3. AERIAL IMAGERY SOURCE: NEARMAP, 16 JUNE 2024
4. GROUNDWATER SAMPLE ANALYTICAL RESULTS ARE COMPARED TO THE NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION (NYSDEC) TECHNICAL AND OPERATIONAL GUIDANCE SERIES (TOGS) 1.1.1. AMBIENT WATER QUALITY STANDARDS (AWQS).
5. EMERGING CONTAMINANTS ANALYTICAL RESULTS COMPARED TO THE NYSDEC APRIL 2023 GUIDANCE VALUES (NYSDEC GVS) FOR PFOA, PFOS, AND 1,4-DIOXANE.
5. RESULTS SHADED YELLOW EXCEED NYSDEC AWQS OR NYSDEC GVS.
6. RESULTS ARE DISPLAYED IN MICROGRAMS PER LITER (µg/L).
7. PFAS RESULTS ARE DISPLAYED IN NANOGRAMS PER LITER (ng/L).

0 40 80
SCALE IN FEET

HALEY ALDRICH

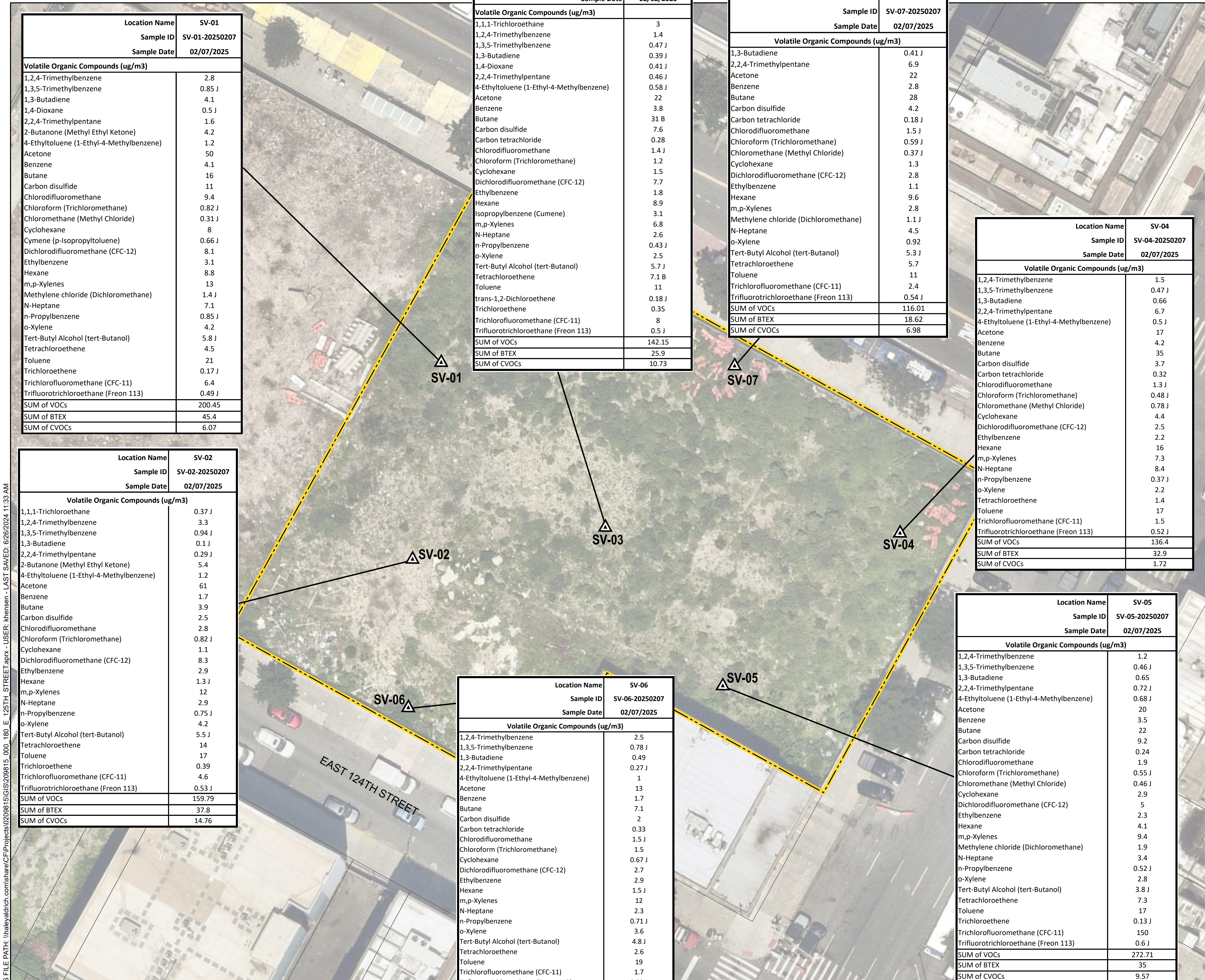
180 EAST 125TH STREET
NEW YORK, NEW YORK

GROUNDWATER RESULTS EXCEEDANCE MAP

MARCH 2025

FIGURE 6

GIS FILE PATH: \\haleyaldrich.com\share\CF\Projects\0209815\GIS\209815_000_180_E_125TH_STREET.aprx - USER: khensen - LAST SAVED: 6/26/2024 11:33 AM



Location Name	SV-01
Sample ID	SV-01-20250207
Sample Date	02/07/2025
Volatile Organic Compounds (ug/m3)	
1,2,4-Trimethylbenzene	2.8
1,3,5-Trimethylbenzene	0.85 J
1,3-Butadiene	4.1
1,4-Dioxane	0.5 J
2,2,4-Trimethylpentane	1.6
2-Butanone (Methyl Ethyl Ketone)	4.2
4-Ethyltoluene (1-Ethyl-4-Methylbenzene)	1.2
Acetone	50
Benzene	4.1
Butane	16
Carbon disulfide	11
Chlorodifluoromethane	9.4
Chloroform (Trichloromethane)	0.82 J
Chloromethane (Methyl Chloride)	0.31 J
Cyclohexane	8
Cymene (p-Isopropyltoluene)	0.66 J
Dichlorodifluoromethane (CFC-12)	8.1
Ethylbenzene	3.1
Hexane	8.8
m,p-Xylenes	13
Methylene chloride (Dichloromethane)	1.4 J
N-Heptane	7.1
n-Propylbenzene	0.85 J
o-Xylene	4.2
Tert-Butyl Alcohol (tert-Butanol)	5.8 J
Tetrachloroethene	4.5
Toluene	21
Trichloroethene	0.17 J
Trichlorofluoromethane (CFC-11)	6.4
Trifluorotrichloroethane (Freon 113)	0.49 J
SUM of VOCs	200.45
SUM of BTEX	45.4
SUM of CVOCs	6.07

Location Name	SV-03
Sample ID	SV-03-20250212
Sample Date	02/12/2025
Volatile Organic Compounds (ug/m3)	
1,1,1-Trichloroethane	3
1,2,4-Trimethylbenzene	1.4
1,3,5-Trimethylbenzene	0.47 J
1,3-Butadiene	0.39 J
1,4-Dioxane	0.41 J
2,2,4-Trimethylpentane	0.46 J
4-Ethyltoluene (1-Ethyl-4-Methylbenzene)	0.58 J
Acetone	22
Benzene	3.8
Butane	31 B
Carbon disulfide	7.6
Carbon tetrachloride	0.28
Chlorodifluoromethane	1.4 J
Chloroform (Trichloromethane)	1.2
Cyclohexane	1.5
Dichlorodifluoromethane (CFC-12)	7.7
Ethylbenzene	1.8
Hexane	8.9
Isopropylbenzene (Cumene)	3.1
m,p-Xylenes	6.8
N-Heptane	2.6
n-Propylbenzene	0.43 J
o-Xylene	2.5
Tert-Butyl Alcohol (tert-Butanol)	5.7 J
Tetrachloroethene	7.1 B
Toluene	11
trans-1,2-Dichloroethene	0.18 J
Trichloroethene	0.35
Trichlorofluoromethane (CFC-11)	8
Trifluorotrichloroethane (Freon 113)	0.5 J
SUM of VOCs	142.15
SUM of BTEX	25.9
SUM of CVOCs	10.73

Location Name	SV-07
Sample ID	SV-07-20250207
Sample Date	02/07/2025
Volatile Organic Compounds (ug/m3)	
1,3-Butadiene	0.41 J
2,2,4-Trimethylpentane	6.9
Acetone	22
Benzene	2.8
Butane	28
Carbon disulfide	4.2
Carbon tetrachloride	0.18 J
Chlorodifluoromethane	1.5 J
Chloroform (Trichloromethane)	0.59 J
Chloromethane (Methyl Chloride)	0.37 J
Cyclohexane	1.3
Dichlorodifluoromethane (CFC-12)	2.8
Ethylbenzene	1.1
Hexane	9.6
m,p-Xylenes	2.8
Methylene chloride (Dichloromethane)	1.1 J
N-Heptane	4.5
o-Xylene	0.92
Tert-Butyl Alcohol (tert-Butanol)	5.3 J
Tetrachloroethene	5.7
Toluene	11
Trichlorofluoromethane (CFC-11)	2.4
Trifluorotrichloroethane (Freon 113)	0.54 J
SUM of VOCs	116.01
SUM of BTEX	18.62
SUM of CVOCs	6.98

Location Name	SV-04
Sample ID	SV-04-20250207
Sample Date	02/07/2025
Volatile Organic Compounds (ug/m3)	
1,2,4-Trimethylbenzene	1.5
1,3,5-Trimethylbenzene	0.47 J
1,3-Butadiene	0.66
2,2,4-Trimethylpentane	6.7
4-Ethyltoluene (1-Ethyl-4-Methylbenzene)	0.5 J
Acetone	17
Benzene	4.2
Butane	35
Carbon disulfide	3.7
Carbon tetrachloride	0.32
Chlorodifluoromethane	1.3 J
Chloroform (Trichloromethane)	0.48 J
Chloromethane (Methyl Chloride)	0.78 J
Cyclohexane	4.4
Dichlorodifluoromethane (CFC-12)	2.5
Ethylbenzene	2.2
Hexane	16
m,p-Xylenes	7.3
N-Heptane	8.4
n-Propylbenzene	0.37 J
o-Xylene	2.2
Tetrachloroethene	1.4
Toluene	17
Trichlorofluoromethane (CFC-11)	1.5
Trifluorotrichloroethane (Freon 113)	0.52 J
SUM of VOCs	136.4
SUM of BTEX	32.9
SUM of CVOCs	1.72

Location Name	SV-02
Sample ID	SV-02-20250207
Sample Date	02/07/2025
Volatile Organic Compounds (ug/m3)	
1,1,1-Trichloroethane	0.37 J
1,2,4-Trimethylbenzene	3.3
1,3,5-Trimethylbenzene	0.94 J
1,3-Butadiene	0.1 J
2,2,4-Trimethylpentane	0.29 J
2-Butanone (Methyl Ethyl Ketone)	5.4
4-Ethyltoluene (1-Ethyl-4-Methylbenzene)	1.2
Acetone	61
Benzene	1.7
Butane	3.9
Carbon disulfide	2.5
Chlorodifluoromethane	2.8
Chloroform (Trichloromethane)	0.82 J
Cyclohexane	1.1
Dichlorodifluoromethane (CFC-12)	8.3
Ethylbenzene	2.9
Hexane	1.3 J
m,p-Xylenes	12
N-Heptane	2.9
n-Propylbenzene	0.75 J
o-Xylene	4.2
Tert-Butyl Alcohol (tert-Butanol)	5.5 J
Tetrachloroethene	14
Toluene	17
Trichloroethene	0.39
Trichlorofluoromethane (CFC-11)	4.6
Trifluorotrichloroethane (Freon 113)	0.53 J
SUM of VOCs	159.79
SUM of BTEX	37.8
SUM of CVOCs	14.76

Location Name	SV-06
Sample ID	SV-06-20250207
Sample Date	02/07/2025
Volatile Organic Compounds (ug/m3)	
1,2,4-Trimethylbenzene	2.5
1,3,5-Trimethylbenzene	0.78 J
1,3-Butadiene	0.49
2,2,4-Trimethylpentane	0.27 J
4-Ethyltoluene (1-Ethyl-4-Methylbenzene)	1
Acetone	13
Benzene	1.7
Butane	7.1
Carbon disulfide	2
Carbon tetrachloride	0.33
Chlorodifluoromethane	1.5 J
Chloroform (Trichloromethane)	1.5
Cyclohexane	0.67 J
Dichlorodifluoromethane (CFC-12)	2.7
Ethylbenzene	2.9
Hexane	1.5 J
m,p-Xylenes	12
N-Heptane	2.3
n-Propylbenzene	0.71 J
o-Xylene	3.6
Tert-Butyl Alcohol (tert-Butanol)	4.8 J
Tetrachloroethene	2.6
Toluene	19
Trichlorofluoromethane (CFC-11)	1.7
Trifluorotrichloroethane (Freon 113)	0.53 J
SUM of VOCs	87.18
SUM of BTEX	39.2
SUM of CVOCs	2.93

Location Name	SV-05
Sample ID	SV-05-20250207
Sample Date	02/07/2025
Volatile Organic Compounds (ug/m3)	
1,2,4-Trimethylbenzene	1.2
1,3,5-Trimethylbenzene	0.46 J
1,3-Butadiene	0.65
2,2,4-Trimethylpentane	0.72 J
4-Ethyltoluene (1-Ethyl-4-Methylbenzene)	0.68 J
Acetone	20
Benzene	3.5
Butane	22
Carbon disulfide	9.2
Carbon tetrachloride	0.24
Chlorodifluoromethane	1.9
Chloroform (Trichloromethane)	0.55 J
Chloromethane (Methyl Chloride)	0.46 J
Cyclohexane	2.9
Dichlorodifluoromethane (CFC-12)	5
Ethylbenzene	2.3
Hexane	4.1
m,p-Xylenes	9.4
Methylene chloride (Dichloromethane)	1.9
N-Heptane	3.4
n-Propylbenzene	0.52 J
o-Xylene	2.8
Tert-Butyl Alcohol (tert-Butanol)	3.8 J
Tetrachloroethene	7.3
Toluene	17
Trichloroethene	0.13 J
Trichlorofluoromethane (CFC-11)	150
Trifluorotrichloroethane (Freon 113)	0.6 J
SUM of VOCs	272.71
SUM of BTEX	35
SUM of CVOCs	9.57

LEGEND

SITE BOUNDARY

PARCEL BOUNDARY

SOIL VAPOR PROBE LOCATION

NOTES

1. ALL LOCATIONS AND DIMENSIONS ARE APPROXIMATE.
2. ASSESSOR PARCEL DATA SOURCE: NEW YORK COUNTY
3. AERIAL IMAGERY SOURCE: NEARMAP, 16 JUNE 2024
4. ALL DETECTED ANALYTES ARE SHOWN ON FIGURE
5. RESULTS ARE DISPLAYED IN MICROGRAMS PER CUBIC METER (ug/m3)
6. TOTAL DETECTED CONCENTRATIONS OF BENZENE, TOLUENE, ETHYLBENZENE AND XYLENES (BTEX)
7. TOTAL VOCs IS THE SUM OF ALL DETECTED CONCENTRATIONS.
8. SUM OF CVOCS IS THE SUM OF ALL DETECTED CHLORINATED VOCS
9. J = ESTIMATED RESULT
10. B = COMPOUND DETECTED IN THE BLANK AND THE SAMPLE

N

0 40 80

SCALE IN FEET

HALEY ALDRICH

180 EAST 125TH STREET
NEW YORK, NEW YORK

SOIL VAPOR RESULTS SUMMARY MAP

MARCH 2025

FIGURE 7

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LEGEND

SITE BOUNDARY

PARCEL BOUNDARY

PROPOSED REMEDIAL EXCAVATION DEPTHS IN FEET BELOW GROUND SURFACE (FT BGS)

15 FT BGS

12 FT BGS

7 FT BGS

HOTSPOT EXCAVATION TO 18 FT BGS

NOTES

1. ALL LOCATIONS AND DIMENSIONS ARE APPROXIMATE.
2. ASSESSOR PARCEL DATA SOURCE: NEW YORK COUNTY
3. AERIAL IMAGERY SOURCE: NEARMAP, 16 JUNE 2024

N

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SCALE IN FEET

HALEY ALDRICH

180 EAST 125TH STREET
NEW YORK, NEW YORK

ALTERNATIVE I EXCAVATION PLAN

MARCH 2025

FIGURE 8

GIS FILE PATH: \\haleyaldrich.com\share\CF\Projects\0209815\GIS\209815_000_180_E_125TH_STREET.aprx - USER: khensen - LAST SAVED: 6/26/2024 11:33 AM

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LEGEND

SITE BOUNDARY

PARCEL BOUNDARY

PROPOSED CONFIRMATION SAMPLE LOCATION

NOTES

1. ALL LOCATIONS AND DIMENSIONS ARE APPROXIMATE.
2. ASSESSOR PARCEL DATA SOURCE: NEW YORK COUNTY
3. AERIAL IMAGERY SOURCE: NEARMAP, 16 JUNE 2024

N

0 40 80

SCALE IN FEET

HALEY ALDRICH

180 EAST 125TH STREET
NEW YORK, NEW YORK

CONFIRMATION SAMPLE LOCATION PLAN

MARCH 2025

FIGURE 9

LEGEND

SITE BOUNDARY

PARCEL BOUNDARY

PROPOSED REMEDIAL EXCAVATION DEPTHS IN FEET BELOW GROUND SURFACE (FT BGS)

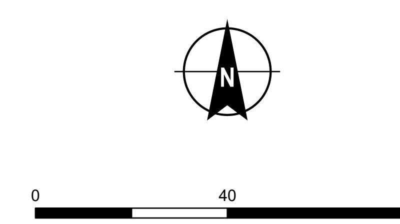
13 FT BGS

2 FT BGS

HOTSPOT EXCAVATION TO 16 FT BGS

NOTES

1. ALL LOCATIONS AND DIMENSIONS ARE APPROXIMATE.
2. ASSESSOR PARCEL DATA SOURCE: NEW YORK COUNTY
3. AERIAL IMAGERY SOURCE: NEARMAP, 16 JUNE 2024



HALEY ALDRICH

180 EAST 125TH STREET
NEW YORK, NEW YORK

ALTERNATIVE II EXCAVATION PLAN

MARCH 2025

FIGURE 10

GIS FILE PATH: \\haleyaldrich.com\share\CF\Projects\0209815\GIS\209815_000_180_E_125TH_STREET.aprx - USER: khensen - LAST SAVED: 6/26/2024 11:33 AM

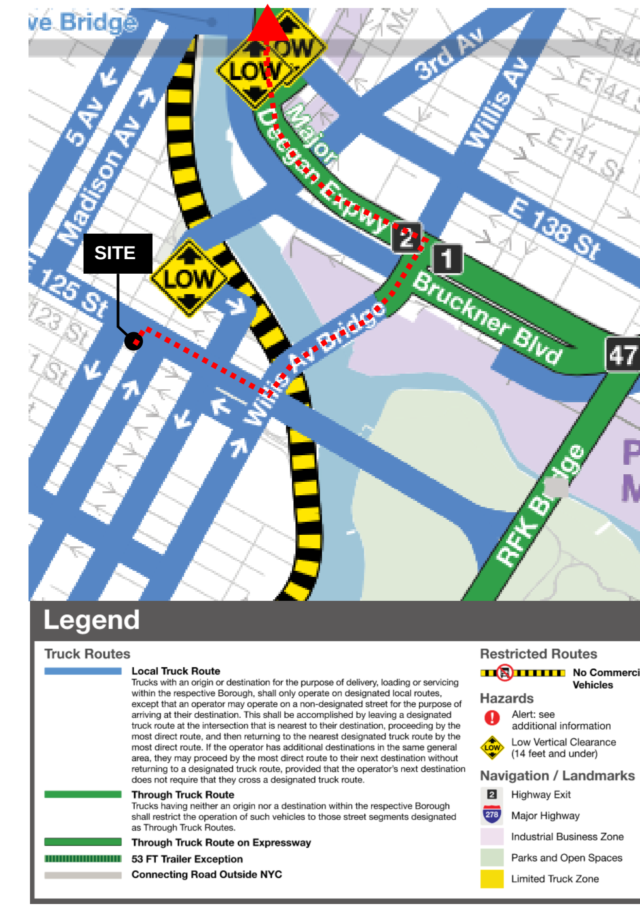
LEGEND

SITE BOUNDARY

PARCEL BOUNDARY

TRUCK INGRESS

TRUCK EGRESS



NOTES

1. ALL LOCATIONS AND DIMENSIONS ARE APPROXIMATE.
2. ASSESSOR PARCEL DATA SOURCE: NEW YORK COUNTY
3. AERIAL IMAGERY SOURCE: NEARMAP, 16 JUNE 2024

0 40 80

SCALE IN FEET

HALEY ALDRICH

180 EAST 125TH STREET
NEW YORK, NEW YORK

TRUCK ROUTE MAP

MARCH 2025

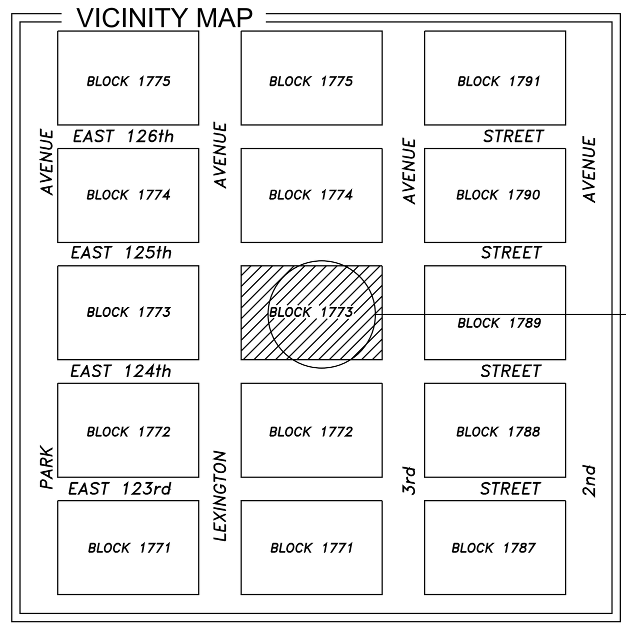
FIGURE 11

GIS FILE PATH: \\haleyaldrich.com\share\CF\Projects\0209815\GIS\209815_000_180_E_125TH_STREET.aprx - USER: khensen - LAST SAVED: 6/26/2024 11:33 AM

APPENDIX A
Survey Map

JOB NUMBER: M1773-27
PROPERTY ADDRESS: 180 EAST 125th STREET
COMMITMENT NO. 24-7406-62985-NYM
BY: **FIDELITY NATIONAL TITLE INSURANCE COMPANY**
EFFECTIVE DATE: OCTOBER 2, 2024

VICINITY MAP



1. MONUMENTS REFERENCE:
POINT OF BEGINNING DISTANCE IS NOTED IN THE WRITTEN LEGAL DESCRIPTION AND SHOWN ON THE SURVEY.

2. ADDRESSES OF THE SURVEYED PROPERTY:
SEE SURVEY PLOT

3. FLOOD ZONE CLASSIFICATION:
NO PORTION OF THE PROPERTY SHOWN ON THE SURVEY LIES WITHIN A SPECIAL HAZARD AREA, AS DESCRIBED ON THE FLOOD INSURANCE RATE MAP FOR THE COMMUNITY IN WHICH THE SUBJECT PROPERTY IS LOCATED THE PROPERTY IS LOCATED IN ZONE X (AREAS DETERMINED TO BE OUTSIDE THE 0.2%ANUUAL CHANCE FLOODPLAIN) OF THE FLOOD INSURANCE RATE MAP COMMUNITY PANEL NO. 3604970091 F EFFECTIVE DATE OF 9/5/2007. DUE TO THE COMPLEXITY OF THE REGULATIONS, GRAPHIC REPRESENTATION CANNOT BE SHOWN.

4. GROSS LAND AREA:
SEE SURVEY PLOT

5. VERTICAL RELIEF:
SEE SURVEY PLOT

6.(a)(b) ZONING INFORMATION:
THE SUBJECT PROPERTY LIES WITHIN ZONE C4-4D OF THE ZONING RESOLUTION MAP NO. 6B, MAP UPDATE EFFECTIVE 03-19-2024 AS PER THE NEW YORK CITY PLANNING COMMISSION, ZONING RESOLUTION AND MAPS, AT WWW.NYC.GOV

7.(a)(b1)(c) BUILDING INFORMATION:
SEE SURVEY PLOT

8. SUBSTANTIAL FEATURES OBSERVED IN THE PROCESS OF CONDUCTING THE FIELDWORK:
SEE SURVEY PLOT

9. ON SITE PARKING INFO:
REGULAR PARKING SPACES-
HANDICAPPED PARKING SPACES-
TOTAL PARKING SPACES-
SEE SURVEY PLOT

10. DETERMINATION OF THE RELATIONSHIP AND LOCATION OF CERTAIN DIVISION OR PARTY WALLS:
SEE SURVEY PLOT

11. LOCATION OF UTILITIES EXISTING ON OR SERVING THE SURVEYED PROPERTY.
SEE SURVEY PLOT

12.ADDITIONAL SURVEY RELATED REQUIREMENTS
SEE SURVEY PLOT

13. NAMES OF ADJOINING OWNERS:
SEE SURVEY PLOT

14. DISTANCE TO THE INTERSECTING STREET PER TITLE COMMITMENT:
SEE SURVEY PLOT

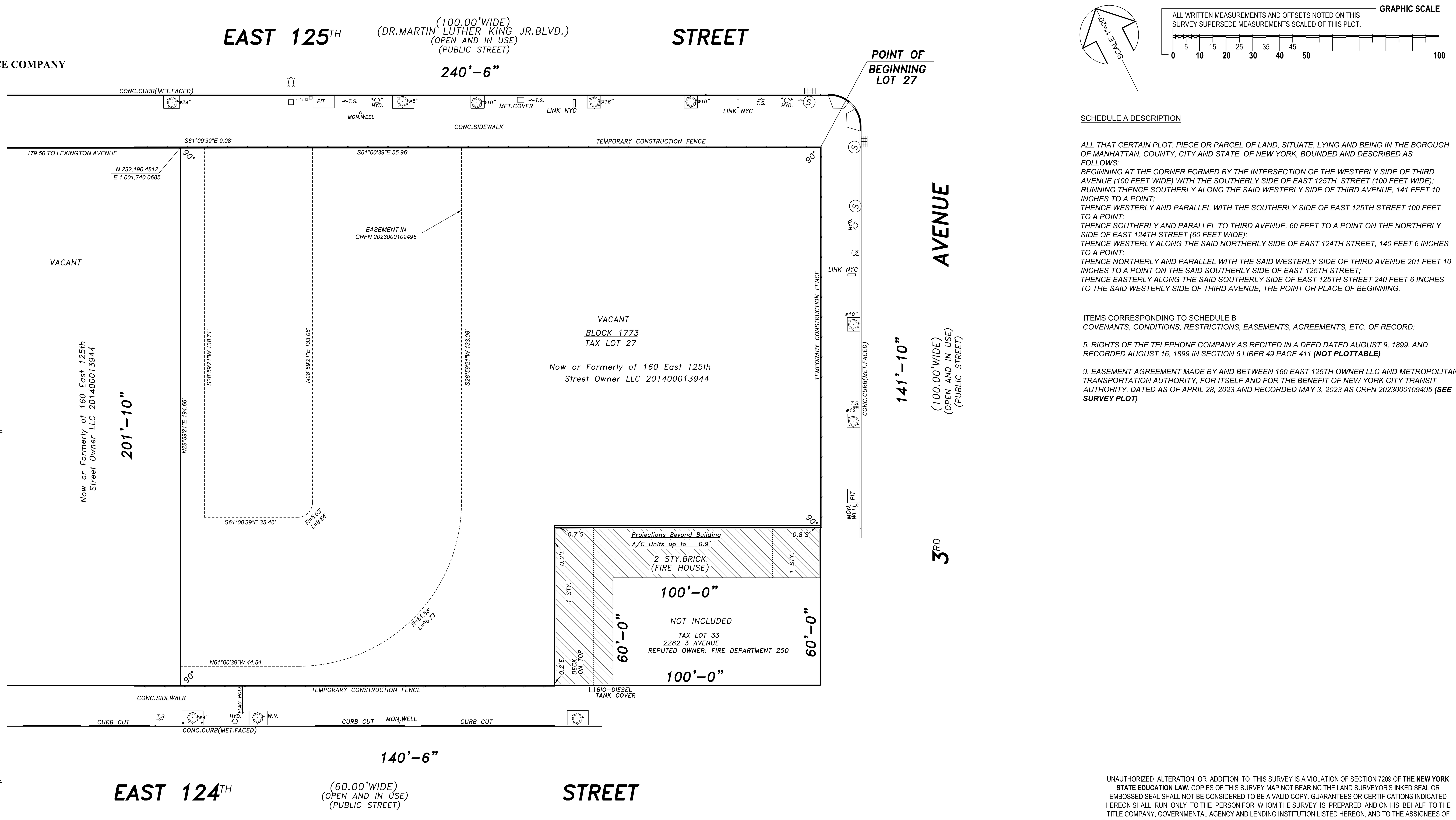
15. RECTIFIED ORTHOPHOTOGRAPHY, PHOTOGRAMMETRIC MAPPING, REMOTE SENSING, AIRBORNE/MOBILE LASER SCANNING AND OTHER SIMILAR PRODUCTS, TOOLS OR TECHNOLOGIES AS THE BASIS FOR SHOWING THE LOCATION OF CERTAIN FEATURES
NONE.

16. OBSERVED EVIDENCE OF RECENT EARTH MOVING WORK, BUILDING CONSTRUCTION OF BUILDING ADDITION:
NONE. AT TIME OF SURVEY, THERE WAS NO OBSERVABLE EVIDENCE OF EARTH MOVING WORK, BUILDING CONSTRUCTION OR BUILDING ADDITIONS WITHIN RECENT MONTHS.

17. PROPOSED CHANGES IN THE STREET RIGHT OF WAY LINES AND RECENT SIDEWALK CONSTRUCTION AND REAPAIR:
AT TIME OF SURVEY, THERE WAS NO OBSERVABLE EVIDENCE OF ANY CHANGES AND SIDEWALK WORK

18. PLOTTABLE OFFSIDE EASEMENTS:
SEE SURVEY PLOT.

19.PROFFESIONAL LIABILITY INSURANCE:
$1,000 000 TO BE EFFECT THROUGHOUT THE CONTRACT TERM. CERTIFICATE OF INSURANCE TO BE FURNISHED UPON REQUEST.



SUBJECT PROPERTY AREA =42540.1 SQ.FT.=0.98 ACRES

SYMBOLS AND ABBREVIATIONS

- FENCE — C.L.FENCE — WOOD FE.
- UTILITY POLE — U.P.
- CATCH BASIN — C.B.
- PARKING METER — P.M.
- TRAFFIC LIGHT — T.L.
- LIGHT
- STREET LIGHT
- FIRE HYDRANT — HYD.
- SIAMESE CONNECTION
- SHUT OFF VALVE — G.V. — W.V.
- HANDICAPPED PARKING
- EXISTING TREE — #12
- DRAINS — DR. EL.
- PEDESTRIAN RAMP
- EXISTING ELEVATIONS — ×TC.7.03 TOP OF CURB — ×BC.6.72 BOTTOM OF CURB — ×EL.7.03
- CITY ESTABLISHED GRADES — L.G.7.52
- CURB AND CURB CUT — CURB CUT
- OVERHEAD SERVICE — O.H.S.W.
- CABLE TV MANHOLE — CTV
- MANHOLES — G E T W S — RIM EL. INV.EL.

- M.C. — METAL COVER
- CITY MONUMENT
- CUT MONUMENT
- SET NAIL
- SET STAKE
- SET MARK (PAINTED)
- SET BENCHMARK
- C.L.FE. — CHAIN LINK FENCE
- F.E. — FIRE ESCAPE
- PL. or PLTF. — PLATFORM
- C.E. — CELLAR ENTRANCE
- A.W. — AIR WAY
- CONC. — CONCRETE
- PVMT. — PAVEMENT
- AC — AIR CONDITION
- MET. — METAL
- N — NORTH OF PROPERTY LINE
- S — SOUTH OF PROPERTY LINE
- E — EAST OF PROPERTY LINE
- W — WEST OF PROPERTY LINE

NOTES:
SURVEYED AS IN POSSESSION. OFFSETS AND/OR DIMENSIONS SHOWN BETWEEN THE STRUCTURES AND PROPERTY LINES ARE FOR SPECIFIC PURPOSE AND USE AND THEREFORE ARE NOT INTENDED TO GUIDE ERECTION OF FENCES, RETAINING WALLS, POOLS, PLANTING AREAS, ADDITIONS TO STRUCTURES, SHEDS, GARAGES AND ANY OTHER CONSTRUCTION AND/OR DESIGN..
PLUMBNESS OF WALLS NOT VERIFIED.
UNDERGROUND AND SIDEWALK VAULTS NOT LOCATED AS PART OF THIS SURVEY.
PROPERTY CORNER MONUMENTS WERE NOT PLACED AS PART OF THIS SURVEY.
THIS SURVEY HAS BEEN PREPARED WITHOUT A FULL ABSTRACT OF TITLE. OTHER AGREEMENTS, COVENANTS AND/OR RESTRICTIONS AFFECTING AND/OR BENEFITING PARCEL SURVEYED, IF ANY, NOT INDICATED HEREON.
EASEMENTS IF ANY IF NOT SHOWN ON THIS SURVEY ARE NOT GUARANTEED.
SOME DIMENSIONS, FEATURES AN/OR LOCATIONS MAY NOT BE DRAWN TO SCALE TO PROVIDE CLARITY.
PARTY WALL(S) HEREON ARE SHOWN SCHEMATICALLY ONLY AND WERE NOT SURVEYED. LOCATION AND EXTENTS OF PARTY WALL(S) ARE NOT SHOWN ON THE SURVEY AND DENOTED BASED UPON RECORD DOCUMENTS IF AVAILABLE AND/OR EXTERIOR OBSERVATION ONLY, IF POSSIBLE. PARTY WALL(S) AND LOCATION/EXTENTS OF SAME MUST BE CONFIRMED AND VERIFIED BY THE USER OF THIS SURVEY. PARTY WALL(S) AND LOCATION/EXTENTS OF SAME ARE NOT VERIFIED OR CERTIFIED BY THE LAND SURVEYOR.
DO NOT USE THIS SURVEY UNLESS YOU AGREE AND CONSENT TO ALL OF THE ABOVE.

SCHEDULE A DESCRIPTION

ALL THAT CERTAIN PLOT, PIECE OR PARCEL OF LAND, SITUATE, LYING AND BEING IN THE BOROUGH OF MANHATTAN, COUNTY, CITY AND STATE OF NEW YORK, BOUNDED AND DESCRIBED AS FOLLOWS:
BEGINNING AT THE CORNER FORMED BY THE INTERSECTION OF THE WESTERLY SIDE OF THIRD AVENUE (100 FEET WIDE) WITH THE SOUTHERLY SIDE OF EAST 125TH STREET (100 FEET WIDE);
RUNNING THENCE SOUTHERLY ALONG THE SAID WESTERLY SIDE OF THIRD AVENUE, 141 FEET 10 INCHES TO A POINT;
THENCE WESTERLY AND PARALLEL WITH THE SOUTHERLY SIDE OF EAST 125TH STREET 100 FEET TO A POINT;
THENCE SOUTHERLY AND PARALLEL TO THIRD AVENUE, 60 FEET TO A POINT ON THE NORTHERLY SIDE OF EAST 124TH STREET (60 FEET WIDE);
THENCE WESTERLY ALONG THE SAID NORTHERLY SIDE OF EAST 124TH STREET, 140 FEET 6 INCHES TO A POINT;
THENCE NORTHERLY AND PARALLEL WITH THE SAID WESTERLY SIDE OF THIRD AVENUE 201 FEET 10 INCHES TO A POINT ON THE SAID SOUTHERLY SIDE OF EAST 125TH STREET;
THENCE EASTERLY ALONG THE SAID SOUTHERLY SIDE OF EAST 125TH STREET 240 FEET 6 INCHES TO THE SAID WESTERLY SIDE OF THIRD AVENUE, THE POINT OR PLACE OF BEGINNING.

ITEMS CORRESPONDING TO SCHEDULE B
COVENANTS, CONDITIONS, RESTRICTIONS, EASEMENTS, AGREEMENTS, ETC. OF RECORD:

5. RIGHTS OF THE TELEPHONE COMPANY AS RECITED IN A DEED DATED AUGUST 9, 1899, AND RECORDED AUGUST 16, 1899 IN SECTION 6 LIBER 49 PAGE 411 ***(NOT PLOTTABLE)***

9. EASEMENT AGREEMENT MADE BY AND BETWEEN 160 EAST 125TH OWNER LLC AND METROPOLITAN TRANSPORTATION AUTHORITY, FOR ITSELF AND FOR THE BENEFIT OF NEW YORK CITY TRANSIT AUTHORITY, DATED AS OF APRIL 28, 2023 AND RECORDED MAY 3, 2023 AS CRFN 2023000109495 ***(SEE SURVEY PLOT)***

TO:

KENNEDY-WILSON CAPITAL, A CALIFORNIA CORPORATION, AS AGENT FOR ITSELF AND THE LENDERS, AND ITS SUCCESSORS AND ASSIGNS
180 E125TH REALTY LLC, A NEW YORK LIMITED LIABILITY COMPANY
FIDELITY NATIONAL TITLE INSURANCE COMPANY
EXECUTIVE ABSTRACT GROUP, INC, AS AGENT FOR STEWART TITLE INSURANCE COMPANY
180 EAST 125 AGENT LLC, A DELAWARE LIMITED LIABILITY COMPANY, AS AGENT FOR THE BENEFIT OF THE MEZZANINE LENDERS, AND ITS SUCCESSORS AND ASSIGNS

THIS IS TO CERTIFY THAT THIS MAP OR PLAT AND THE SURVEY ON WHICH IT IS BASED WERE MADE IN ACCORDANCE WITH THE 2021 MINIMUM STANDARD DETAIL REQUIREMENTS FOR ALTA/NSPS LAND TITLE SURVEYS, JOINTLY ESTABLISHED AND ADOPTED BY ALTA AND NSPS, AND INCLUDES ITEMS
1, 2, 3, 4, 6(A), 6(B), 7(A), 7(B)(1), 8, 9, 10, 11(A), 13, 14, 16, 17, 19 AND 20 OF TABLE A THEREOF.
THE FIELDWORK WAS COMPLETED ON OCTOBER 17, 2024
DATE OF PLAT OR MAP: OCTOBER 17, 2024

JAROSLAW W KRAWCZYK REGISTRATION/LICENSE NO.050750

UNAUTHORIZED ALTERATION OR ADDITION TO THIS SURVEY IS A VIOLATION OF SECTION 7209 OF **THE NEW YORK STATE EDUCATION LAW.** COPIES OF THIS SURVEY MAP NOT BEARING THE LAND SURVEYOR'S INKED SEAL OR EMBOSSED SEAL SHALL NOT BE CONSIDERED TO BE A VALID COPY. GUARANTEES OR CERTIFICATIONS INDICATED HEREON SHALL RUN ONLY TO THE PERSON FOR WHOM THE SURVEY IS PREPARED AND ON HIS BEHALF TO THE TITLE COMPANY, GOVERNMENTAL AGENCY AND LENDING INSTITUTION LISTED HEREON, AND TO THE ASSIGNEES OF THE LENDING INSTITUTION. GUARANTEES OR CERTIFICATIONS ARE NOT TRANSFERABLE TO ADDITIONAL INSTITUTIONS OR SUBSEQUENT OWNERS.

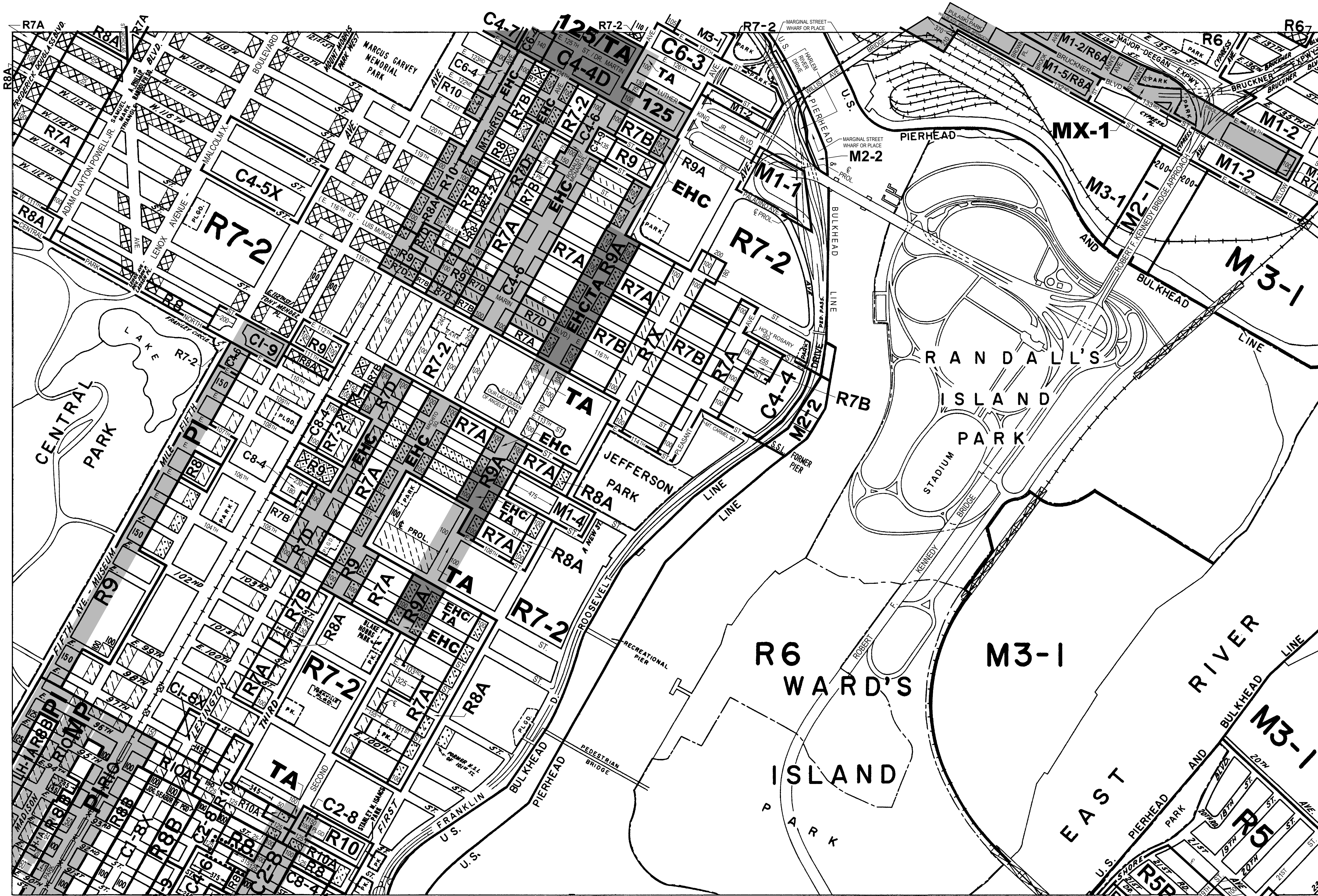
BOROUGH: MANHATTAN	TOWN: NEW YORK	
SECTION:	BLOCK: 1773	LOTS: 27
FILED MAP INFO:		

ALTA/NSPS LAND TITLE SURVEY
PREPARED BY
kaBA surveying
phone:718-354-7279 718-470-2358
fax:718-247-5854 718-470-2264
338 JERICHO TURNPIKE, FLORAL PARK, NY 11001
PROFESSIONAL LAND SURVEYOR
brooklyn bronx manhattan queens nassau
WWW.KABAPLS.COM
SURVEYS@KABAPLS.COM

STATE OF NEW YORK · JAROSLAW W. KRAWCZYK · No. 050750 · LICENSED LAND SURVEYOR

SURVEYED ON: OCTOBER 17, 2024

APPENDIX B
Zoning Map



600 0 600 1200 1800 FEET

C1-1	C1-2	C1-3	C1-4	C1-5	C2-1	C2-2	C2-3	C2-4	C2-5

NOTE: Where no dimensions for zoning district boundaries appear on the zoning maps, such dimensions are determined in Article VII, Chapter 6 (Location of District Boundaries) of the Zoning Resolution.

ZONING MAP

THE NEW YORK CITY PLANNING COMMISSION

Major Zoning Classifications:

The number(s) and/or letter(s) that follows an R, C or M District designation indicates use, bulk and other controls as described in the text of the Zoning Resolution.

R – RESIDENTIAL DISTRICT

C – COMMERCIAL DISTRICT

M – MANUFACTURING DISTRICT

SPECIAL PURPOSE DISTRICT
The letter(s) within the shaded area designates the special purpose district as described in the text of the Zoning Resolution.

AREA(S) REZONED

Effective Date(s) of Rezoning:

03-19-2024 C 230241 ZMM

Special Requirements:

For a list of lots subject to CEQR environmental requirements, see APPENDIX C.

For a list of lots subject to "D" restrictive declarations, see APPENDIX D.

For Inclusionary Housing designated areas and Mandatory Inclusionary Housing areas on this map, see APPENDIX F.

MAP KEY

5c	6a	6c
5d	**6b**	6d
8c	9a	9c

N

ZONING MAP

6b

NOTE: Zoning information as shown on this map is subject to change. For the most up-to-date zoning information for this map, visit the Zoning section of the Department of City Planning website: **www.nyc.gov/planning** or contact the Zoning Information Desk at (212) 720-3291.

APPENDIX C
Proposed Development Plans

180 EAST 125TH STREET, MANHATTAN, NY-10035

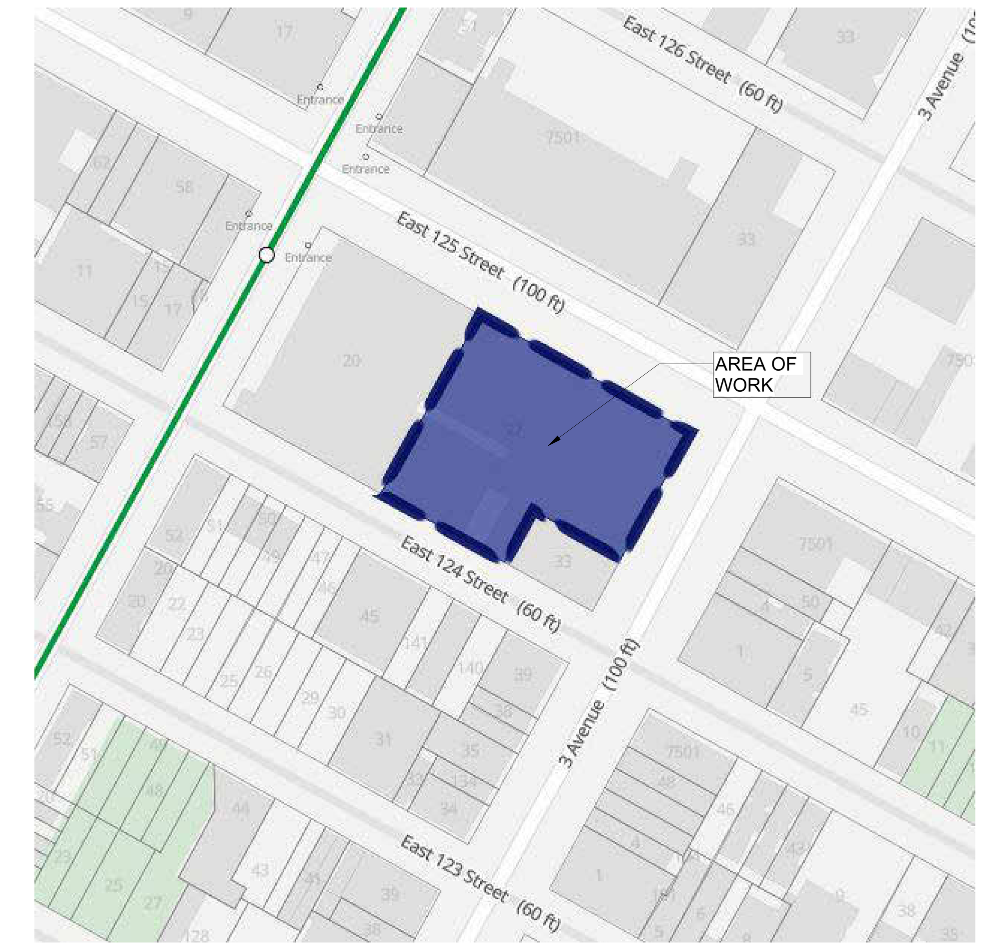
SCOPE OF WORK:

GENERAL: THE PROPOSED BUILDING IS LOCATED TO THE NORTH OF E124TH STREET,
AND TO THE EAST OF 3RD AVENUE.

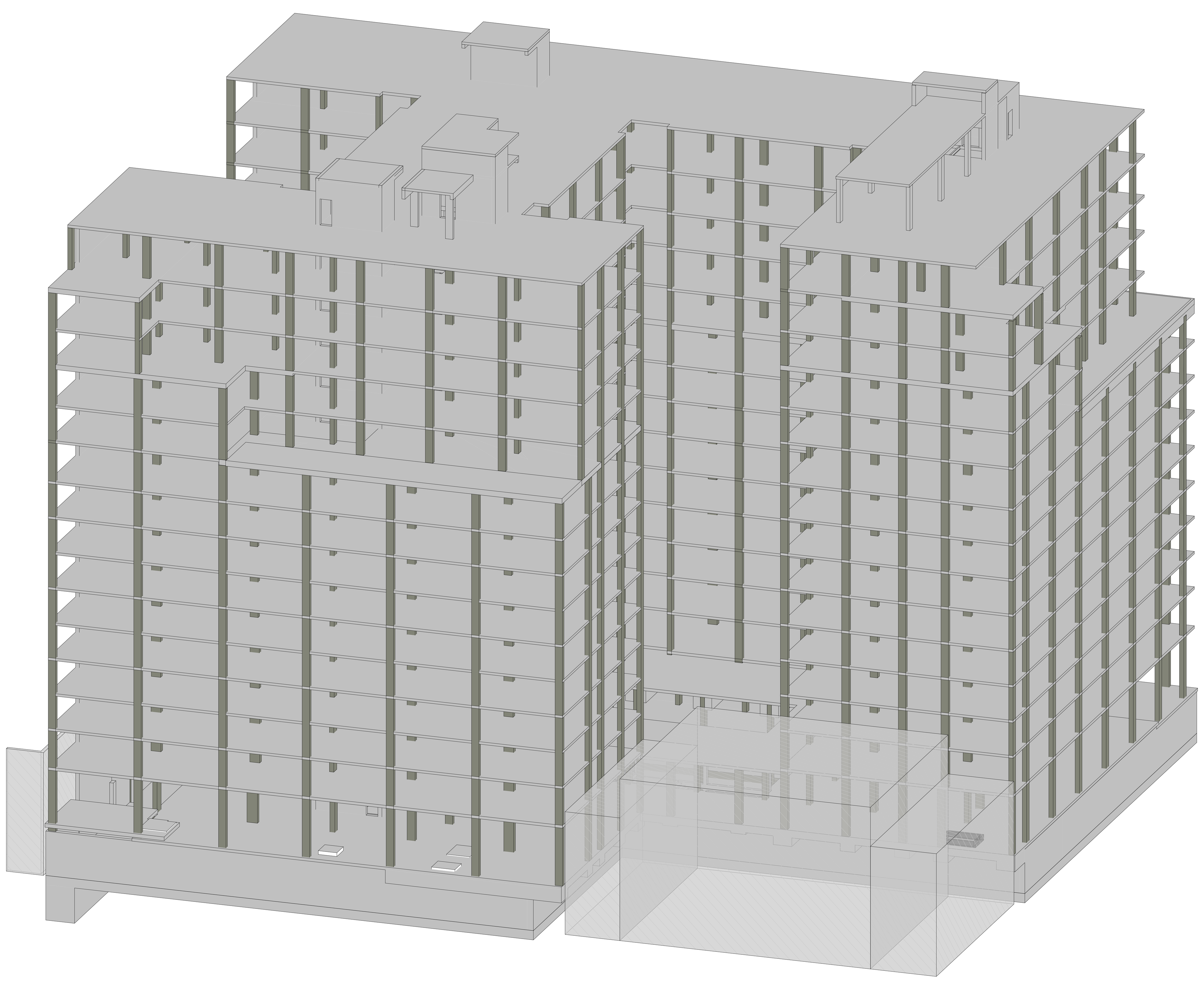
FOUNDATION: THE FOUNDATION FOR THIS PROPOSED BUILDING SHALL BE CAST IN PLACE CONCRETE MAT FOUNDATION, AND CONCRETE FOUNDATION WALLS. MAT FOUNDATION SHALL COVER THE ENTIRE FOOTPRINT OF THE BUILDING. FOUNDATION WORK TYPE ONLY FILED IN CONJUNCTION WITH ____________

SHEET LIST		
MARK	SHEET NUMBER	SHEET NAME
1	FO-001.00	TITLE SHEET
2	FO-002.00	GENERAL NOTES
3	FO-003.00	GENERAL NOTES
4	FO-004.00	TA GENERAL NOTES
5	FO-101.00	FOUNDATION PLAN
6	FO-101A.00	ENLARGED FOUNDATION PLAN W/ TA STRUCTURE
7	FO-201.00	TYPICAL FOUNDATION DETAILS
8	FO-202.00	FOUNDATION SECTIONS
9	FO-203.00	TA SECTION

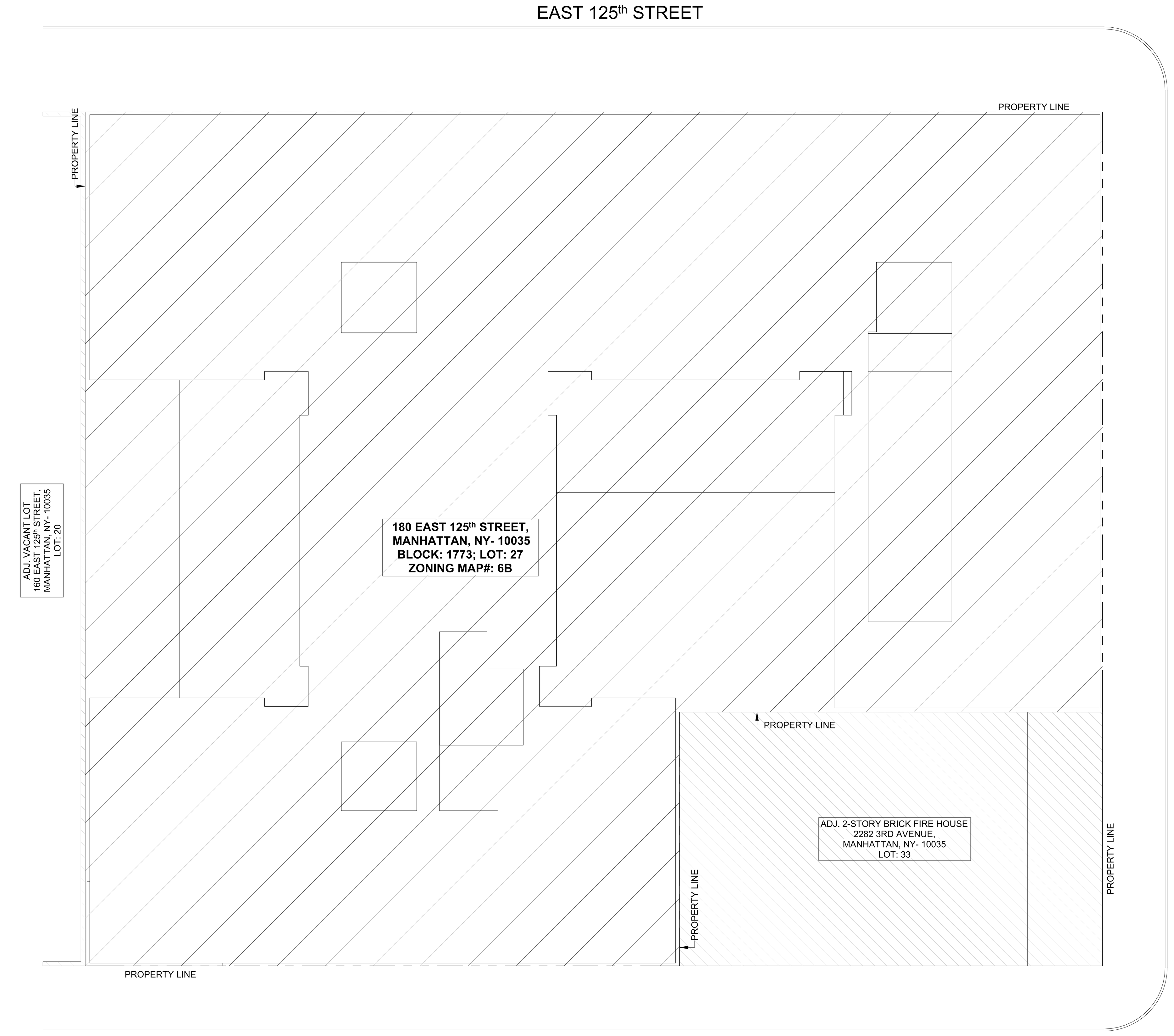
LIST OF RELATED JOB NOS.	
JOB TYPE	JOB NUMBER
MS	M00603731
PL	M00603842
PL UDG	M00604174
SPSD	M00604254
TSD	M00604254



KEY PLAN:

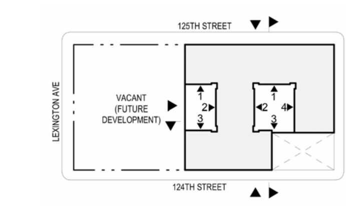


PROPOSED STRUCTURE



PLOT PLAN
1/16" = 1'-0"

NO.	DATE	ISSUANCES/ REVISIONS
1	01-21-2025	BIDDING SET



KEY PLAN

S9ARCHITECTURE
322 8TH AVENUE
NEW YORK, NY 10001
T 212.457.4077
S9ARCHITECTURE.COM

Owner:
JCS REALTY GROUP
199 LEE AVE
BROOKLYN, NY 11211
718-701-5680

Architect/Interior Designer:
S9 ARCHITECTURE
322 8TH AVENUE
NEW YORK, NY
212-457-4077

Structural Engineer:
SET P.C.
40-12 28TH STREET
LONG ISLAND CITY, NY-11101
718-706-7196

MEP Engineer:
EP ENGINEERING
100 WILLIAM STREET
NEW YORK, NY 10038
212-257-6190

PROJECT TITLE:
180 EAST 125TH STREET, MANHATTAN, NY-10035

PROJECT ADDRESS

PROJECT NO: Project Number

DOB NO:

DRAWING TITLE:
TITLE SHEET

SCALE: AS NOTED PAGE: 1 OF 09

FO-001.00

DOB SCAN STICKER

SEAL

NOT FOR CONSTRUCTION

CHECKED BY: G.J.C

1/22/2025 12:58:09 AM
Autodesk Docs://180 East 125th St/SET_2024_180 EAST 125TH STREET.rvt

SPECIAL INSPECTIONS:

1. PRIOR TO BEGINNING ANY WORK, THE OWNER SHALL RETAIN THE SERVICES OF S.E.T. , P.C., OR ANOTHER ACCEPTABLE LICENSED PROFESSIONAL ENGINEER WHO SHALL HAVE PROVEN EXPERIENCE ACCEPTABLE TO THE OWNER AND ARCHITECT. MINIMUM REQUIRED QUALIFICATIONS SHALL INCLUDE A PROFESSIONAL LIABILITY INSURANCE COVERAGE OF 1 MILLION DOLLARS AND A MINIMUM PROVEN EXPERIENCE OF 5 YEARS WITH SIMILAR WORK.

2. SPECIAL AND PROGRESS (CONTROLLED) INSPECTIONS REQUIRED BY THE NYC BUILDING CODE SHALL BE PERFORMED BY A TESTING AGENCY AND / OR PROFESSIONAL ENGINEER RETAINED BY THE OWNER AT NO COST TO THE CONTRACTOR FOR THE FOLLOWING CHECKED ITEMS:

	LIST OF SPECIAL INSPECTIONS	
	ALTERNATIVE MATERIALS - OTCR BUILDING BULLETIN# ___________	BC 1705.1.1
	STRUCTURAL STEEL - WELDING	BC 1705.2.1
	STRUCTURAL STEEL - DETAILS	BC 1705.2.2
	STRUCTURAL STEEL - HIGH STRENGTH BOLTING	BC 1705.2.3
	STRUCTURAL STEEL - SPECIAL INSPECTION FOR SEISMIC RESISTANCE	BC 1705.2.4
	STRUCTURAL STEEL - TESTING FOR SEISMIC RESISTANCE	BC 1705.2.5
	STRUCTURAL COLD-FORMED STEEL	BC 1705.2.6
	OPEN-WEB STEEL JOISTS AND JOIST GIRDERS	BC 1705.2.7
X	CONCRETE - CAST-IN-PLACE, PRE-STRESSED, PRECAST	BC 1705.3
	MASONRY	BC 1705.4
	WOOD CONSTRUCTION - PREFABRICATED WOOD I- JOISTS, METAL-PLATE-CONNECTED WOOD TRUSSES, AND HIGH-LOAD DIAPHRAGMS	BC 1705.5
	WOOD - HIGH LOAD DIAPHRAGMS	BC 1705.5.1
	WOOD - METAL-PLATE-CONNECTED WOOD TRUSSES	BC 1705.5.2
	WOOD - PREFABRICATED I- JOISTS	BC 1705.5.3
	WOOD - SEISMIC RESISTANCE	BC 1705.5.5
	CONSTRUCTION UTILIZING CLT OR SCL, TYPE IV	BC 1705.5.6
X	SUBSURFACE INVESTIGATION -- BORINGS AND TEST PITS	BC 1705.6, ITEM 1
X	SUBSURFACE CONDITIONS -- FILL PLACEMENT	BC 1705.6, ITEM 2
X	SUBSURFACE CONDITIONS -- IN-PLACE DENSITY	BC 1705.6, ITEM 3
	SUBGRADE INSPECTION	BC 1705.6, ITEM 4
	DEEP FOUNDATION ELEMENTS	BC 1705.7
	PRE-STRESSED ROCK AND SOIL ANCHOR	BC 1705.8
	HELICAL PILES (BB #2014-020)	BC 1705.9
	DESIGNATED SEISMIC SYSTEMS	BC 1705.12.1
	ACCESS FLOORS	BC 1705.12.2
	SEISMIC ISOLATION SYSTEMS	BC 1705.12.5
	VERTICAL MASONRY FOUNDATION ELEMENTS	BC 1705.19
	ALTERATIONS OF EXISTING BUILDINGS	BC 1705.25.1
	CONSTRUCTION OPERATIONS INFLUENCING ADJACENT STRUCTURES	BC 1705.25.2
	EXCAVATIONS	BC 1705.25.3, BC3304.4.1, BC 3304.5.2, BC 3304.12
	UNDERPINNING AND ALTERNATE METHODS OF SUPPORT OF BUILDINGS AND ADJACENT PROPERTY	BC 1705.25.4, BC 1817.10
	MECHANICAL DEMOLITION	BC 1705.25.5
	RAISING AND MOVING OF A BUILDING	BC 1705.25.6
	TENANT PROTECTION PLAN COMPLIANCE	BC 1705.26
	SOIL PERCOLATION TESTS- PRIVATE ON-SITE WATER DRAINAGE DISPOSAL SYSTEMS AND DETENTION FACILITIES	BC 1705.27.1.2
	ON-SITE PRIVATE SEWAGE DISPOSAL SYSTEMS	BC 1705.28
	CHIMNEYS AND VENTS	BC 1705.32
	ALUMINUM CONSTRUCTION	BC 1705.33
	LUMINOUS EXIT PATH MARKINGS	BC 1705.35
	POST-INSTALLED ANCHORS (BB #2014-018, 2014-019)	BC 1705.37
X	CONCRETE DESIGN MIX (TR-3)	BC 1905.3, BC 1913.5
X	CONCRETE SAMPLING AND TESTING (TR-2)	BC 1905.6, BC 1913.10
	LIST OF PROGRESS INSPECTIONS	
X	FOOTING AND FOUNDATION	BC 110.3.1
	STRUCTURAL WOOD FRAME	BC 110.3.3
X	FINAL	28-116.2.4.2,
		BC 110.5, DIRECTIVE 14 OF 1975, AND 1 RCNY § 101-10

THE TESTING AGENCY FOR CONTROLLED INSPECTIONS SHALL FILE ALL APPROPRIATE FORMS WITH THE NEW YORK CITY BUILDINGS DEPARTMENT.

3. THE CONTRACTORS ENGINEER SHALL PREPARE PLANS, CALCULATIONS, AND NOTES IN THE FORM OF SHOP DRAWINGS, FOR ALL ITEMS OF WORK WHICH DIFFER FROM WHAT IS SHOWN ON THE STRUCTURAL DRAWINGS DUE TO FIELD CONDITIONS. HE SHALL ALSO PREPARE PLANS IN THE FORM OF SHOP DRAWINGS, CALCULATIONS AND NOTES FOR ALL TEMPORARY SHORES AND BRACES AND CLEARLY INDICATE METHOD OF INSTALLATION, SEQUENCE OF OPERATIONS, AND QUALITY CONTROL.

4. THESE SHOP DRAWINGS SHALL BE REVIEWED BY THE ENGINEER OF RECORD AND ARCHITECT PRIOR TO CONSTRUCTION. WORK SHALL BE EXECUTED FROM REVIEWED SHOP DRAWINGS ONLY.

5. COPIES OF SUCH DRAWINGS WHICH INCLUDE THE ARCHITECT'S AND ENGINEER'S COMMENTS SHALL BE FILED WITH THE DEPARMENT OF BUILDINGS (ON AMENDMENT FORMS). ADDITIONALLY, AT COMPLETION OF WORK, FORMS INCLUDING ALL INSPECTION REPORTS PREPARED BY THE CONTRACTOR'S ENGINEER SHALL BE FILED WITH THE DEPARTMENT OF BUILDINGS.

6. THE SPECIAL INSPECTIONS ENGINEER SHALL DETERMINE THE FREQUENCY OF INSPECTIONS NEEDED AND WHETHER HE OR SHE SHOULD INSPECT THE SITE PERSONALLY OR SEND A PERSON UNDER HIS OR HER DIRECT SUPERVISION. AT A MINIMUM, THE SITE MUST BE INSPECTED TWICE, ONCE AT A PRE-CONSTRUCTION MEETING WITH THE CONTRACTOR AND ONCE DURING CONSTRUCTION OPERATIONS.

7. THE SPECIAL INSPECTIONS ENGINEER, SHALL MAINTAIN A LOG IN HIS OR HER OFFICE WHICH INCLUDES THE FOLLOWING INFORMATION:

   A. ADDRESS OF THE PREMISES, JOB NUMBER, CONTRACTOR NAME AND ADDRESS
   B. DATE AND TIME OF EACH INSPECTION INCLUDING
      a. NAMES OF PERSONNEL WHO INSPECTED THE SITE
      b. ANY SIGNIFICANT OBSERVATIONS OR INSTRUCTIONS GIVEN RELATING TO ANY OF THE FOLLOWING:
         - DEVIATIONS FROM THE CONTRACT DOCUMENTS.
         - ANTICIPATED FIELD CONDITIONS;
         - PROPER EXECUTION OF THE STRUCTURAL WORK;
         - GOOD ENGINEERING PRACTICE;
         - PRECAUTIONS TAKEN TO MAINTAIN SAFE CONDITIONS, IF WORK IS STOPPED FOR ANY REASON.
   C. THE DATE OF AND PARTICIPANTS IN ANY CONVERSATIONS WITH THE SPECIAL INSPECTIONS ENGINEER OCCURING OFF-SITE AND RELATING TO ANY SIGNIFICANT OBSERVATIONS OR INSTRUCTIONS.

SPECIAL INSPECTIONS (CONT'D):

8. THE SPECIAL INSPECTIONS ENGINEER SHALL RETAIN A COPY OF THE DOCUMENTS DESCRIBED ABOVE IN HIS OR HER OFFICE AND SHALL PROVIDE A COPY TO THE CONTRACTOR AND / OR OWNER TO BE KEPT AT THE CONSTRUCTION SITE.

9. THE SPECIAL INSPECTIONS ENGINEER RESPONSIBLE FOR SPECIAL INSPECTION SHALL REPORT UNSAFE CONDITIONS, WHEN AND IF OBSERVED DURING HIS / HER SITE VISITS, TO THE DEPARTMENT OF BUILDINGS AND / OR ANY OTHER AFFECTED PARTIES OR AGENCIES. IT IS TO BE NOTED THAT THE SPECIAL INSPECTIONS ENGINEER AND ENGINEER OF RECORD ARE NOT RESPONSIBLE IN ANY WAY FOR SITE SAFETY. SITE SAFETY SHALL REMAIN THE RESPONSIBILITY OF THE CONTRACTOR.

10. UPON REQUEST OF THE BUILDINGS DEPARTMENT, THE SPECIAL INSPECTIONS ENGINEER SHALL MAKE AVAILABLE FOR REVIEW BY THE BUILDINGS DEPARTMENT DOCUMENTS AND THE LOG DESCRIBED ABOVE.

1705.25.7 INSPECTION PROGRAM:

PRIOR TO COMMENCEMENT OF WORK, THE SPECIAL INSPECTOR SHALL REVIEW THE CONTRACTOR'S PROPOSED SEQUENCE OF OPERATIONS AND DETERMINE THE AREAS OF WORK THAT REQUIRE DESIGN. A WRITTEN STATEMENT SHALL BE PREPARED, MUTUALLY ACCEPTABLE TO THE CONTRACTOR AND SPECIAL INSPECTOR, INDICATING:

1. THE PORTIONS OF WORK REQUIRING DESIGN DOCUMENTS IN ACCORDANCE WITH SECTION 1704.20.7.
2. THE NAMES AND ADDRESSES OF THE LICENSED PROFESSIONALS THAT HAVE BEEN ENGAGED TO SUPPLY DESIGN DOCUMENTS FOR APPLICABLE WORK.
3. THE APPROXIMATE DATES FOR DELIVERY OF DOCUMENTS.
4. A SCHEDULE OF PERIODIC SPECIAL INSPECTIONS, AT AGREED INTERVALS, INCLUDING ADEQUATE FREQUENCY TO ASSURE THE CONTRACTOR'S CONTINUED COMPLIANCE WITH THE PROPOSED DESIGNS AND SEQUENCE OF OPERATIONS. AT A MINIMUM, THE SITE MUST BE INSPECTED TWICE, ONCE AT PRE-CONSTRUCTION MEETING WITH THE CONTRACTOR AND ONCE DURING CONSTRUCTION OPERATIONS.

GENERAL CONDITIONS

1. THESE DRAWINGS ARE INTENDED TO BE USED BY ONLY AN EXPERIENCED CONTRACTOR AFTER CONSULTATION WITH THIS OFFICE. THIS OFFICE WILL NOT BE RESPONSIBLE FOR JOB SITE PROBLEMS DUE TO FAILURE TO INTERPRET THE DOCUMENTS CORRECTLY. REPRESENTATIVES OF S.E.T., P.C. ARE AVAILABLE TO ANSWER QUESTIONS AND TO ASSIST THE CONTRACTOR BY EXPLAINING THE DESIGN INTENT. FAILURE BY THE CONTRACTOR TO UNDERSTAND THE COMPLEXITIES OF THE PROJECT AND THE SEQUENCE OF CONSTRUCTION CAN RESULT IN INJURY OR DEATH TO WORKERS. PROCEEDING WITH CONSTRUCTION WITHOUT FULL UNDERSTANDING OF THE PROJECT AND WITHOUT A COMPLETE SET OF DESIGN DOCUMENTS WILL PUT BOTH THE PROJECT AND INDIVIDUALS IN PERIL. THE CONTRACTOR ASSUMES TOTAL RESPONSIBILITY FOR ANY CONSEQUENCE OF THAT ACTION.

2. ALL CONTRACTORS AND SUBCONTRACTORS ARE RESPONSIBLE FOR ADHERING TO THE REQUIREMENTS AS SPELLED OUT ON THESE NOTES. ALL PARTIES MUST CAREFULLY STUDY ALL DRAWINGS AND NOTES FOR ITEMS WHICH MAY PERTAIN TO THEIR TRADES. FAILURE TO READ THESE DRAWINGS AND NOTES DOES NOT PERMIT THE CONTRACTOR TO DEVIATE FROM THEIR REQUIREMENTS. QUESTIONS WILL BE CHEERFULLY ANSWERED BY THE ENGINEER.

3. ALL CONTRACTORS MUST VISIT SITE AND NOTE ALL EXISTING CONDITIONS AS WELL AS ALL CONDITIONS TO BE MET BEFORE SUBMITTING BID. LACK OF THOROUGH UNDERSTANDING OF THE PROJECT REQUIREMENTS SHALL NOT CONSTITUTE AN EXCUSE FOR ERRORS OR OMISSIONS, NOR JUSTIFY A REQUEST FOR EXTRA COMPENSATION.

4. GENERAL CONTRACTOR SHALL VERIFY ALL CONDITIONS AND CHECK ALL MEASUREMENTS ON JOB AND SHALL BE RESPONSIBLE FOR SAME.

5. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE CURRENT BUILDING CODE OF ALL GOVERNING AUTHORITIES.

6. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE SPECIFICATIONS, AND DRAWINGS.

7. ALL CONTRACTORS AND SUBCONTRACTORS ON THIS PROJECT SHALL BE RESPONSIBLE FOR THE PROPER PERFORMANCE OF THEIR WORK, COORDINATION WITH OTHER TRADES, METHODS, SAFETY AND SECURITY ON THE JOB SITE. S.E.T., P.C. AND ITS AGENTS AND EMPLOYEES ARE NOT RESPONSIBLE OR LIABLE FOR THE ABOVE AND SHALL BE HELD HARMLESS AND INDEMNIFIED BY ALL CONTRACTORS AND SUBCONTRACTORS FROM ANY AND ALL CLAIMS, LOSSES, SUITS AND LEGAL ACTION WHATSOEVER ARISING FROM THE PERFORMANCE OF WORK ON THIS PROJECT.

8. ACCEPTANCE OF DEVIATIONS FROM ANY OF THE REQUIREMENTS OF THESE NOTES SHALL BE AT THE SOLE DISCRETION OF THE ENGINEER. ACCEPTANCE OF A DEVIATION FROM ANY REQUIREMENT SHALL NOT BE CONSTRUED AS PERMITTING ANY OTHER DEVIATION.

PRECONSTRUCTION NOTES:

1. DURING THE DESIGN PHASE, AND PRIOR TO CONSTRUCTION, THE FOLLOWING STEPS, AT A MINIMUM, MUST BE TAKEN:

   A. PRIOR TO CONSTRUCTION IT IS REQUIRED THAT OWNER CONDUCT A PRE-CONDITION SURVEY AND ADJACENT BUILDINGS EVALUATION REPORT (ABE) OF ADJACENT PROPERTIES, INCLUDING DATED PHOTOGRAPHS, IN ORDER TO DOCUMENT PRE-EXISTING CONDITIONS, STRUCTURAL STABILITY OF ALL ADJACENT STRUCTURES AND THEIR FOUNDATIONS, AND ASSESSMENT OF ADJACENT STRUCTURES & FOUNDATIONS ABILITY TO SAFELY WITHSTAND THE EFFECTS OF PROPOSED CONSTRUCTION, AND RECOMMENDED BRACING & SHORING, IF REQUIRED. IF CRACKS EXIST ON ADJACENT PROPERTIES, IT IS REQUIRED THAT CRACK MONITORS BE INSTALLED AT LOCATIONS DICTATED BY ENGINEER OF RECORD, AND BE PERIODICALLY MONITORED
   B. OWNER TO OBTAIN SITE SURVEY SHOWING, AT A MINIMUM, ALL PROPERTY LINES, PARTY WALLS WITH THEIR DIMENSIONS ON EACH SIDE OF PROPERTY LINE, INDEPENDENT WALLS, ENCROACHMENTS BEYOND PROPERTY LINE FOR ENTIRE HEIGHT OF ALL ADJOINING PROPERTIES, NAVD ELEVATIONS, UTILITIES, ETC.
   C. SOIL BORINGS, TEST PITS, AND EXPLORATORY PROBING THAT MAY BE REQUIRED.
   D. MONITORING PLAN, SHOWING TYPE OF MONITORS AND THEIR LOCATIONS

2. MANDATORY PRE-CONSTRUCTION MEETING (TO BE ORGANIZED BY OWNER AND CONTRACTOR) TO BE HELD PRIOR TO CONSTRUCTION, AND TO BE ATTENDED BY OWNER, DESIGN TEAM, SPECIAL INSPECTIONS AGENCY (SIA), AND CONSTRUCTION TEAM INCLUDING ALL PERTINENT SUB-CONTRACTORS. AT A MINIMUM, THE FOLLOWING ITEMS MUST BE DISCUSSED AND AGREED UPON BY ALL ATTENDING PARTIES:

   A. RESULTS OF FINDINGS OF PRE-CONDITION SURVEY AND ADJACENT BUILDINGS EVALUATION (ABE) REPORT FOR ADJOINING PROPERTIES, AND IMPLEMENTATION OF ANY REMEDIAL MEASURES, BRACING, SHORING, ETC. THAT MAY BE REQUIRED.
   B. CONSTRUCTION TEAM TO CONFIRM THAT THEIR MARK-OUTS, ELEVATIONS, ANY ENCROACHMENTS, ETC. HAVE BEEN COORDINATED WITH SITE SURVEY, PRE-CONDITION SURVEY, AND ACTUAL SITE CONDITIONS.
   C. TYPES, LOCATIONS, AND FREQUENCY OF MONITORING TO BE FINALIZED.
   D. TIMETABLE OF SHOP DRAWINGS AND MATERIAL SUBMITTALS.
   E. COORDINATION WITH SIA FOR TYPES OF INSPECTIONS, FREQUENCY OF INSPECTIONS, SUBMISSION OF NON-CONFORMANCE REPORTS (NCR), ETC. SIA TO ALSO SUBMIT NAME AND CONTACT INFO FOR INSPECTOR TO BE USED FOR THIS PROJECT.
   F. COORDINATION WITH CONSTRUCTION TEAM FOR FULL-TIME PRESENCE AT SITE DURING WORK, AND SUBMISSION OF NAME(S) AND CONTACT INFO FOR SITE SUPERINTENDENT TO BE USED FOR THIS PROJECT.

SHOP DRAWING NOTES:

SUBMISSION AND REVIEW OF SHOP DRAWINGS IS REQUIRED BECAUSE IT WILL BETTER ENSURE A MORE SUCCESSFUL PROJECT COMPLETION, AND WILL ENABLE THE SPECIAL INSPECTIONS AGENCY (SIA) AND ENGINEER OF RECORD (EOR) TO PERFORM THEIR RESPECTIVE SITE INSPECTION AND OBSERVATION DUTIES IN A CLEAR, DEFINITIVE WAY.

IF OWNER AND/OR CONTRACTOR CHOOSE TO NOT PROVIDE SHOP DRAWINGS:

a. SIA MUST INFORM EOR, OWNER, AND CONTRACTOR IF THEIR INSPECTIONS CAN BE PERFORMED PROPERLY OR NOT, AND WRITTEN AGREEMENT MUST BE REACHED WITH ALL INVOLVED PARTIES AS TO HOW TO PROCEED FURTHER
b. IF CONSTRUCTION ERRORS, OMISSIONS, AND UNSAFE CONDITIONS, OCCUR DUE TO LACK OF SHOP DRAWING SUBMISSIONS, OR LACK OF REQUIRED RE-SUBMISSIONS, OR FOR ANY OTHER REASON NOT DUE TO FAULT OF EOR AND SIA, THEN SIA MUST SUBMIT NON-CONFORMANCE REPORT (NCR) ON THE SAME DAY OF OCCURRENCE TO ALL INVOLVED PARTIES, AND EOR RESERVES THE RIGHT TO STOP WORK UNTIL DEFECTIVE CONDITIONS ARE CORRECTED. ALL TIME SPENT BY EOR FOR THESE CONDITIONS WILL BE BILLED AS ADDITIONAL SERVICES.

1. SUBMIT ONE REPRODUCIBLE AND TWO (2) PRINTS EACH OR AN ELECTRONIC DRAWING SUBMISSION, OF ALL SHOP DRAWINGS TO ARCHITECT AND ENGINEER OF RECORD (EOR) FOR REVIEW. THE EOR WILL SEND HIS/HER REVIEWED SHOP DRAWINGS TO THE ARCHITECT, WHO WILL PERFORM HIS/HER REVIEW OF THESE DRAWINGS AND SEND TO THE CONTRACTOR FOR HIS OR HER REVIEW, AND TO ALL OTHERS REQUIRING COPIES. SHOP DRAWINGS MUST BE CHECKED BY THE DETAILER PRIOR TO SUBMISSION, FAILURE TO DO SO WILL BE CAUSE FOR REJECTION.
2. REPRODUCTIONS OF STRUCTURAL CONTRACT DOCUMENTS MAY BE SUBMITTED AS ERECTION PLANS PROVIDED THAT S.E.T., P.C. IS CONTACTED AND GRANTS APPROVAL. A NOMINAL FEE WILL BE CHARGED FOR THIS RELEASE OF FILES IN ELECTRONIC FORMAT. DETAILER MUST USE COLUMN AND LINTEL DESIGNATIONS AS SHOWN ON ARCHITECTURAL AND STRUCTURAL DRAWINGS.
3. ALL REVISIONS TO SHOP DRAWINGS AFTER FIRST SUBMISSION MUST BE SO IDENTIFIED ON SUBSEQUENT SUBMISSIONS (I.E. WITH REVISION BUBBLES).
4. REVIEW OF SHOP DRAWINGS SHALL NOT RELIEVE THE CONTRACTOR OF ANY CONTRACT RESPONSIBILITIES, EVEN IF SUCH ITEMS ARE NOT SHOWN ON SHOP DRAWINGS.
5. ANY DESIGN CHANGES PROPOSED BY THE DETAILER, MUST BE CLEARLY IDENTIFIED ON THE SHOP DRAWINGS AND, UPON REQUEST OF THE EOR, SUBSTANTIATED BY SUBMISSION OF THE CALCULATIONS USED TO DESIGN SUCH CHANGES.
6. ALL SUBCONTRACTORS MUST WORK WITH A FULL SET OF DRAWINGS, INCLUDING, STRUCTURAL, ARCHITECTURAL AND MECHANICAL, ELECTRICAL, PLUMBING. IT IS THE SUBCONTRACTOR'S RESPONSIBILITY TO REQUEST ANY DRAWINGS NOT FURNISHED BY THE GENERAL CONTRACTOR.
7. CONTRACTORS SHALL SUBMIT SHOP DRAWINGS FOR REVIEW AT LEAST TEN WORKING DAYS PRIOR TO THE REQUIRED DATE FOR RETURN FROM REVIEW. THE CONTRACTOR WILL BE RESPONSIBLE FOR DEADLINES MISSED DUE TO LATE SHOP DRAWING SUBMISSION.
8. SHOP DRAWINGS MUST BE SUBMITTED TO THE E.O.R. FOR STRUCTURAL WORK RELATED TO THE FOLLOWING:
   A. STRUCTURAL STEEL.
   B. STRUCTURAL CONCRETE
   C. STRUCTURAL MASONRY.
   D. STRUCTURAL COLD FORMED AND/OR LIGHT GAGE STEEL (I.E. STEEL DECKING).
   E. STRUCTURAL LUMBER, TIMBER AND WOOD.
   F. SUPPORT OF EXCAVATION AND PILES.
   G. ANY OTHER STRUCTURAL WORK NOT PREVIOUSLY MENTIONED.

MINIMUM SHOP DRAWINGS REQUIREMENTS
AT A MINIMUM, THE FOLLOWING INFO IS TO BE PROVIDED ON SHOP DRAWINGS:

1. CONCRETE STRUCTURES:
   A. SLAB AND BEAM TOP & BOTTOM REINFORCEMENT, CONCRETE STRENGTH, PLANS AND SECTIONS, WITH BAR SPLICE LENGTHS AND LOCATIONS CLEARLY SHOWN.
   B. COLUMN REINFORCEMENT & TIES SECTIONS, WITH BAR SPLICE LENGTHS, ELEVATIONS, AND LOCATIONS CLEARLY SHOWN.
   C. REBAR SCHEDULES:
      a. EDGE OF SLAB LOCATION PLANS.
      b. COLUMN LOCATION PLANS (COORDINATES OR GRID).
      c. FORMWORK, FOR LOCATIONS OF "STA-FORM" SYSTEM, OR ANY OTHER FORM SYSTEMS THAT WILL ELIMINATE LATERAL LOADS AGAINST EXISTING STRUCTURES DURING POURING OF CONCRETE.
      d. SEE ALSO CONCRETE NOTES AND DETAILS FOR MORE INFO.

SAFETY DURING EXECUTION OF WORK:

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING CONDITIONS OF PUBLIC AND WORKER SAFETY DURING EXECUTION OF THE WORK. THIS SHALL INCLUDE COMPLIANCE WITH CHAPTER 33 OF THE NEW YORK CITY BUILDING CODE: SAFEGUARDS DURING CONSTRUCTION.

2. THE CONTRACTOR SHALL PROVIDE SIDEWALK PROTECTION AND PROTECTION OF ADJOINING PROPERTIES, AS REQUIRED BY THE CURRENT NYC BLDG. CODE.

3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PREPARING AND FILING A SITE SAFETY PLAN AND/OR PROVIDING OTHER WRITTEN ASSURANCES OF SAFE OPERATIONS AS MAY BE REQUIRED BY THE AUTHORITIES HAVING JURISDICTION.

4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING A SAFE WORKING ENVIRONMENT FOR ALL WORKERS. THIS SHALL INCLUDE COMPLIANCE WITH ALL OSHA, STATE AND LOCAL LABOR LAWS WHICH MAY GOVERN THIS TYPE OF WORK.

5. THE CONTRACTOR SHALL PROVIDE REGULAR PERIODIC INSPECTION OF CONSTRUCTION OPERATIONS AS REQUIRED TO ENSURE ONGOING MAINTENANCE OF ALL SAFETY OPERATIONS AND EQUIPMENT. SUCH INSPECTIONS SHALL BE UNDERTAKEN BY AN AGENT OF THE CONTRACTOR WHO IS QUALIFIED TO EVALUATE SUCH OPERATIONS AND EQUIPMENT. THIS INSPECTOR SHALL PREPARE WRITTEN SAFETY REPORTS WHICH SHALL BE MAINTAINED AT THE JOB SITE FOR REVIEW BY THE AUTHORITIES HAVING JURISDICTION.

SUPERSTRUCTURE DETAILS:

FOR TYPICAL SUPERSTRUCTURE DETAILS AT ALL FLOORS INCLUDING DETAILS AT INTERSECTIONS OF STRUCTURAL ELELMENTS SEE S-400 DRAWINGS.

EXTERIOR WALL DETAILS:

EXTERIOR WALL DETAILS INCLUDING MATERIALS USED IN ASSEMBLY (ANCHORAGE) PER NB APPLICATION # X00526919-I1 SHALL COMPLY WITH BC CHAPTER 14 AND BC 705.

ROOF DETAILS:

ROOF ASSEMBLY DETAILS INCLUDING MATERIALS USED IN ASSEMBLY (ANCHORAGE) PER NB APPLICATION #X00526919-I1 SHALL COMPLY WITH BC CHAPTER 15.

SEISMIC INFORMATION:

FOR SEISMIC INFORMATION SEE DRAWING S-401.
FOR SEISMIC DETAILS AT INTERSECTIONS OF STRUCTURAL ELEMENTS SEE S-400 DRAWINGS.

BIDDERS WARRANTY:

BY THE ACT OF SUBMITTING A BID FOR THE PROPOSED CONTRACT, THE BIDDER WARRANTS THAT:

1. THE BIDDER AND ALL SUBCONTRACTORS HE INTENDS TO USE HAVE CAREFULLY AND THOROUGHLY REVIEWED THE DRAWINGS, SPECIFICATIONS AND OTHER CONSTRUCTION CONTRACT DOCUMENTS AND HAVE FOUND THEM COMPLETE AND FREE FROM AMBIGUITIES AND SUFFICIENT FOR THE CONTRACTOR TO BID, FABRICATE, AND INSTALL THE WORK ON TIME, FURTHER THAT,

2. THE BIDDER AND ALL WORKMEN, EMPLOYEES AND SUBCONTRACTORS HE INTENDS TO USE ARE SKILLED AND EXPERIENCED IN THE TYPE OF CONSTRUCTION REPRESENTED BY THE CONSTRUCTION CONTRACT DOCUMENTS BID UPON; FURTHER THAT,

3. NEITHER THE BIDDER NOR ANY OF HIS EMPLOYEES, AGENTS INTENDED SUPPLIERS OR SUBCONTRACTORS HAVE RELIED UPON ANY VERBAL REPRESENTATIONS, ALLEGEDLY AUTHORIZED OR UNAUTHORIZED FROM THE OWNER, HIS EMPLOYEES OR AGENTS INCLUDING ARCHITECTS, ENGINEERS OR CONSULTANTS, IN ASSEMBLING THE BID FIGURE; AND FURTHER THAT,THE BID FIGURE IS BASED SOLELY UPON THE CONSTRUCTION CONTRACT DOCUMENTS AND PROPERLY ISSUED WRITTEN ADDENDA AND NOT UPON ANY OTHER WRITTEN REPRESENTATION.

4. THE BIDDER ALSO WARRANTS THAT HE HAS CAREFULLY EXAMINED THE SITE OF THE WORK AND THAT FROM HIS OWN INVESTIGATIONS HE HAS SATISFIED HIMSELF AS TO THE NATURE AND LOCATION OF THE WORK AND THE CHARACTER, QUALITY, QUANTITIES OF MATERIALS AND DIFFICULTIES TO BE ENCOUNTERED, THE KIND AND EXTENT OF EQUIPMENT AND OTHER FACILITIES NEEDED FOR THE PERFORMANCE OF THE WORK, THE GENERAL AND LOCAL CONDITIONS, AND OTHER ITEMS WHICH MAY, IN ANY WAY, AFFECT THE WORK OR ITS PERFORMANCE.

5. DISCLAIMER:
THE DRAWINGS HEREIN ARE RELATED TO A **NEW BUILDING**. THE STRUCTURAL DESIGN WAS BASED UPON AS MUCH OBSERVATION, MEASUREMENT, TESTING, ETC. AS CIRCUMSTANCES PERMITTED, HOWEVER, THERE WERE ASSUMPTIONS MADE ABOUT UNKNOWN CONDITIONS. SHOULD THE OWNER DECIDE NOT TO UTILIZE S.E.T. , P.C. TO VERIFY AND INSPECT THESE CONDITIONS IN THE FIELD, S.E.T. , P.C. WILL NOT BE RESPONSIBLE FOR ANY FAILURE, DAMAGE, INJURY, DELAY, LOSS OF INCOME, EXTRA COST, OR ANY OTHER LOSS DUE TO EXISTING CONDITIONS.

6. SHOP DRAWING REVIEW:
THE ENGINEER WILL REVIEW CONTRACTOR'S SHOP DRAWINGS AND RELATED SUBMITTALS WITH RESPECT TO CONFORMANCE WITH THE STRUCTURAL DRAWINGS AND THE SPECIFICATIONS. IF REQUIRED BY SPECIFICATIONS, SHOP DRAWINGS SHALL BEAR THE SEAL AND SIGNATURE OF A LICENSED ENGINEER WHO IS LICENSED IN THE STATE WHERE THE PROJECT IS TO BE CONSTRUCTED. BEFORE SUBMITTING A SHOP DRAWING OR ANY RELATED MATERIAL TO THE ENGINEER, CONTRACTOR SHALL: REVIEW EACH SUCH SUBMISSION FOR CONFORMANCE WITH THE MEANS, METHODS, TECHNIQUES, SEQUENCES AND OPERATIONS OF CONSTRUCTION, AND SAFETY PRECAUTIONS AND PROGRAMS INCIDENTAL THERETO, INCLUDING REFLECTION OF EXISTING FIELD CONDITIONS, ALL OF WHICH ARE THE SOLE RESPONSIBILITY OF CONTRACTOR; APPROVE EACH SUCH SUBMISSION BEFORE SUBMITTING IT; AND SO STAMP EACH SUCH SUBMISSION BEFORE SUBMITTING IT. THE ENGINEER WILL ASSUME THAT NO SHOP DRAWING OR RELATED SUBMITTAL COMPRISES A VARIATION FROM THE CONTRACT UNLESS CONTRACTOR ADVISES THE ENGINEER OTHERWISE VIA A WRITTEN INSTRUMENT WHICH IS ACKNOWLEDGED BY THE ENGINEER IN WRITING. IN THE EVENT THAT THE ENGINEER WILL REQUIRE MORE THAN TEN (10) WORKING DAYS TO PERFORM REVIEW, THE ENGINEER WILL SO NOTIFY THE CONTRACTOR. THE ENGINEER WILL RETURN WITHOUT REVIEW MATERIAL WHICH HAS NOT BEEN APPROVED BY GENERAL CONTRACTOR OR CONSTRUCTION MANAGER

7. FIDUCIARY LIABILITY DECLINED:
S.E.T., P.C. MAKES NO WARRANTY, EITHER EXPRESSED OR IMPLIED AS TO S.E.T.. P.C. FINDINGS, RECOMMENDATIONS, PLANS, SPECIFICATIONS, OR PROFESSIONAL ADVICE. S.E.T., P.C. HAS ENDEAVORED AND WILL ENDEAVOR TO PERFORM ITS SERVICES IN ACCORDANCE WITH GENERALLY ACCEPTED STANDARDS OF PRACTICE IN EFFECT AT THE TIME OF PERFORMANCE. BY UTILIZING THESE DOCUMENTS (OR HAVING OTHERS UTILIZE THEM) FOR ANY PURPOSE WHATSOEVER THE OWNER OR DEVELOPER RECOGNIZES THAT NEITHER S.E.T., P.C. OR ANY OF S.E.T., P.C. SUBCONSULTANTS OR SUBCONTRACTORS OWES ANY FIDUCIARY RESPONSIBILITY TO THE OWNER OR DEVELOPER.

NEW YORK CITY BUILDING CODE COMPLIANCE NOTES:

1. DEWATERING NOTES:
AS PER BC 3303.14.5, THE PERSON CAUSING THE SOIL OR FOUNDATION WORK TO BE PERFORMED SHALL DEWATER THE SITE, AS NEEDED, FOR THE PROGRESS OF THE WORK. MEASURES SHALL BE TAKEN TO PREVENT SETTLEMENT, SLOPE FAILURE, AND DAMAGE TO ADJACENT BUILDINGS, STRUCTURES, AND PROPERTY AFFECTED BY DEWATER OPERATIONS.

2. **DRAINAGE NOTES:**
AS PER BC 3303.14.1, NO CONDITION SHALL BE CREATED AS A RESULT OF CONSTRUCTION OR DEMOLITION OPERATIONS THAT WILL INTERFERE WITH NATURAL SURFACE DRAINAGE. WATER COURSES, DRAINAGE DITCHES, ETC., SHALL NOT BE OBSTRUCTED BY REFUSE, WASTE BUILDING MATERIALS, EARTH, STONES, TREE STUMPS, BRANCHES, OR OTHER DEBRIS THAT MAY INTERFERE WITH SURFACE DRAINAGE OR CAUSE THE IMPOUNDMENT OF SURFACE WATERS.

2.1 **PROTECTION OF FOUNDATIONS**
AS PER BC 3303.14.2, PROVISION SHALL BE MADE TO PREVENT THE ACCUMULATION OF WATER OR WATER DAMAGE TO ANY FOUNDATIONS ON THE PREMISES OR TO ADJOINING PROPERTY.

2.2 **DRAINAGE OF EXCAVATIONS**
AS PER 3303.14.3, ALL EXCAVATIONS SHALL BE DRAINED, AND THE DRAINAGE SHALL BE MAINTAINED AS LONG AS THE EXCAVATION CONTINUES OR REMAINS. WHERE NECESSARY, PUMPING SHALL BE USED, PROVIDED PROPER PERMITS ARE OBTAINED FROM THE NEW YORK CITY DEPARTMENT OF ENVIRONMENTAL PROTECTION.

2.3 **CLOGGING**
AS PER 3303.14.4, PRECAUTIONS SHALL BE TAKEN TO PREVENT CONCRETE OR MORTAR WASHINGS, SAND, GRIT, OR ANY OTHER MATERIAL THAT WOULD CAUSE CLOGGING FROM ENTERING A SEWER OR DRAIN. CONCRETE WASHOUT WATER SHALL ALSO MEET THE REQUIREMENTS OF NYC BC SECTION 3303.15.

3. FLOOD-RESISTANT CONSTRUCTION NOTES:
AS PER BC APPENDIX G, CONDITIONS SHALL PROMOTE THE PUBLIC HEALTH, SAFETY AND GENERAL WELFARE AND TO MINIMIZE PUBLIC AND PRIVATE LOSSES DUE TO FLOOD CONDITIONS IN SPECIFIC FLOOD HAZARD AREAS THROUGH THE ESTABLISHMENT OF COMPREHENSIVE REGULATIONS FOR MANAGEMENT OF FLOOD HAZARD DESIGNED TO:

3.1 **PURPOSE**
3.1.1 PREVENT UNNECESSARY DISRUPTION OF COMMERCE, ACCESS AND PUBLIC SERVICE DURING TIMES OF FLOODING;

3.1.2 MANAGE THE ALTERATION OF NATURAL FLOOD PLAINS, STREAM CHANNELS AND SHORELINES;

3.1.3 MANAGE FILLING, GRADING, DREDGING AND OTHER DEVELOPMENT WHICH MAY INCREASE FLOOD DAMAGE OR EROSION POTENTIAL;

3.1.4 PREVENT OR REGULATE THE CONSTRUCTION OF FLOOD BARRIERS WHICH WILL DIVERT FLOODWATERS OR WHICH CAN INCREASE FLOOD HAZARDS;

3.1.5 CONTRIBUTE TO IMPROVED CONSTRUCTION TECHNIQUES IN THE FLOOD PLAIN; AND

3.1.6 COMPLY WITH AND EXCEED THE MINIMUM STANDARDS OF THE NATIONAL FLOOD INSURANCE PROGRAM AS ADMINISTERED BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA).

3.2 **SITE IMPROVEMENT - RETAINING WALLS, DRIVEWAYS, GRADING & FILL**

3.2.1 RETAINING WALL'S GRADING AND FILL COMPLIES WITH REQUIREMENTS IN BC G303.6 & G303.7.

4. SOILS & FOUNDATIONS DESIGN LOAD NOTES:
AS PER BC CHAPTER 18 & BC 107.7.1, FOUNDATION PLANS SHALL DEMONSTRATE CODE COMPLIANCE REGARDING DESIGN LOADS, DESIGN ELEVATIONS, AND DETAILS AS TO SIZES, CURE STRENGTHS AND REINFORCEMENTS.

4.1 **ALLOWABLE BEARING PRESSURES, ALLOWABLE STRESSES AND DESIGN FORMULAS**
AS PER BC CHAPTER 18, DESIGN FORMULAS SHALL BE USED WITH THE ALLOWABLE STRESS DESIGN LOAD COMBINATIONS SPECIFIED IN SECTION 1605.3. THE QUALITY AND DESIGN OF MATERIALS USED STRUCTURALLY IN EXCAVATIONS AND FOUNDATIONS SHALL CONFORM TO THE REQUIREMENTS SPECIFIED IN CHAPTERS 16, 19, 21, 22 AND 23. OTHERWISE, AS PER PROJECT SPECIFIED.

5. CONSTRUCTION OPERATIONS NOTES:
AS REQUIRED IN BC 3303.14 & BC 3304.10, CONSTRUCTION OPERATIONS HAVE ACCOUNTED FOR THE PREVENTION OF ACCUMULATION OF WATER, WHICH COULD CAUSE DAMAGE TO NEARBY BUILDING FOUNDATIONS ON THE SUBJECT PROPERTY OR ON ADJACENT PROPERTIES.

6. RODENT-PROOFING NOTES:
AS PER BC F102.1, FOR WALLS OR PORTIONS THEREOF WITHIN 2 FEET OF THE OUTSIDE GROUND LEVEL, AND FOR WALLS BELOW THE OUTSIDE GROUND LEVEL, ALL OPENINGS, INCLUDING BUT NOT LIMITED TO, ANNULAR SPACES AROUND PIPES, ELECTRIC CABLES, AND CONDUITS, SHALL BE PROTECTED BY CLOSING SUCH OPENINGS WITH CEMENT MORTAR, CONCRETE MASONRY, METAL PLATES OR SCREENING DESIGNED TO PREVENT THE PASSAGE OF RODENTS.

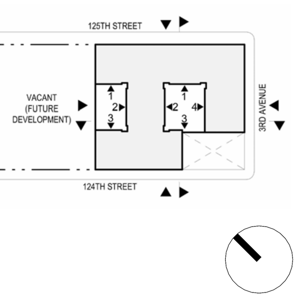
7. SEISMIC LOAD NOTES:
AS PER BC 1613, EVERY STRUCTURE, AND PORTION THEREOF, INCLUDING NONSTRUCTURAL COMPONENTS THAT ARE PERMANENTLY ATTACHED TO STRUCTURES AND THEIR SUPPORTS AND ATTACHMENTS, SHALL BE DESIGNED AND CONSTRUCTED TO RESIST THE EFFECTS OF EARTHQUAKE MOTIONS IN ACCORDANCE WITH ASCE 7-16, EXCLUDING CHAPTER 14 AND APPENDIX 11A. THE SEISMIC DESIGN CATEGORY FOR A STRUCTURE SHALL BE DETERMINED IN ACCORDANCE WITH EITHER SECTION 1613 OR ASCE 7-16.

7.1. SEISMIC LOAD IS COMPLIANCE WITH NEW YORK CITY SEISMIC CODE: LOCAL LAW 17/95 AND ASCE 7-16.

8. SHORING & BRACING NOTES:
AS PER BC 3305.3.2.6, WHEN PATENTED OR COMMERCIAL DEVICES THAT ARE NOT SUSCEPTIBLE TO DESIGN ARE USED FOR SHORING, BRACING, OR SPLICING, THEY SHALL BE APPROVED BY THE NYC DOB COMMISSIONER. SPLICES SHALL DEVELOP THE FULL STRENGTH OF THE SPLICED MEMBERS. WHERE SHORE HEIGHT EXCEEDS 10 FEET OR WHEN NECESSARY TO PROVIDE STRUCTURAL STABILITY, DIAGONAL BRACING SHALL BE PROVIDED. STRUTS, ANCHORED INTO MASONRY OR TO PANEL JOINTS OF ADJACENT BRACED BAYS MAY BE USED TO PREVENT BUCKLING OF INDIVIDUAL MEMBERS NOT SUPPORTED BY THE DIAGONAL BRACING, BUT BRACING AN ENTIRE TIER OF SHORES WITH STRUTS WITHOUT DIAGONAL BRACING SHALL BE PROHIBITED UNLESS THE SYSTEM CAN BE DEMONSTRATED TO BE BRACED BY OTHER RIGID CONSTRUCTION. THE UNBRACED LENGTH OF SHORES SHALL NOT EXCEED THE MAXIMUM LENGTH DETERMINED IN ACCORDANCE WITH THE REQUIREMENTS OF NYC BC 3305.3.2.6 FOR THE STRUCTURAL MATERIAL USED.

9. **SOIL & ROCK SAMPLING NOTES:**
AS PER BC 1802.5, THE SOIL ROCK CLASSIFICATIONS, NEEDED TO DETERMINE THE PROPER FOUNDATION DESIGN, ARE BASED ON MATERIALS OBTAINED FROM BORINGS, TEST PITS OR OTHER SUBSURFACE EXPLORATION METHODS AS ALLOWED.

NO.	DATE	ISSUANCES/ REVISIONS
1	01-21-2025	BIDDING SET



KEY PLAN

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PROJECT TITLE:

180 EAST 125TH STREET, MANHATTAN, NY-10035

PROJECT ADDRESS

PROJECT NO: Project Number

DOB NO:

DRAWING TITLE:

GENERAL NOTES

SCALE: AS NOTED PAGE: 2 OF 09

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DOB SCAN STICKER

SEAL

NOT FOR CONSTRUCTION

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GENERAL NOTES:

1. ALL WORK TO CONFORM TO CURRENT NEW YORK CITY BUILDING CODE REQUIREMENTS.
2. THE DESIGN PLANS AND NOTES, TO THE BEST OF ENGINEER'S KNOWLEDGE, COMPLY WITH THE APPLICABLE REQUIREMENTS OF THE CURRENT NEW YORK CITY BUILDING CODE.
3. WORK NOT INDICATED ON A PART OF THE DRAWINGS BUT REASONABLY IMPLIED TO BE SIMILAR TO THAT SHOWN AT CORRESPONDING PLACES SHALL BE REPEATED.
4. SECTIONS AND DETAILS NOT DRAWN TO SCALE ARE FOR DIAGRAMMATIC PURPOSES ONLY AND SHOULD NOT BE UNDERSTOOD TO SHOW SPECIFIC DETAILED INFORMATION. INFORMATION PERTAINING TO SIZES, DIMENSIONS, NUMBER OF BOLTS AND OR REBAR, ETCETERA, MAY BE FOUND IN SCHEDULES PROVIDED.
5. CONTRACTOR SHALL MAKE NO DEVIATION FROM DESIGN DRAWINGS WITHOUT WRITTEN APPROVAL OF THE ENGINEER OF RECORD.
6. ALL DIMENSIONS INDICATED ON THE DRAWINGS ARE APPROXIMATE AND SHOULD NOT BE USED FOR ORDERING AND/OR FABRICATING MATERIAL. THE CONTRACTOR SHALL FIELD VERIFY ALL EXISTING DIMENSIONS PRIOR TO ORDERING AND/OR FABRICATING MATERIALS.
7. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND ELEVATIONS BY MEASUREMENTS AT THE JOB SITE AND SHALL TAKE ANY AND ALL OTHER MEASUREMENTS NECESSARY TO VERIFY THE DRAWINGS AND TO PERFORM HIS WORK PROPERLY.
8. THE EXCAVATION / UNDERPINNING / SHEETING CONTRACTOR SHALL EXERCISE CAUTION IN THE PROCESS OF THE WORK. IF DAMAGE OCCURS TO THE ADJACENT BUILDING ELEMENTS OR CONTENTS, DUE TO THE NEGLIGENCE OF THE CONTRACTOR, THE CONTRACTOR SHALL BE HELD RESPONSIBLE TO RECTIFY ALL DAMAGE AND/OR REIMBURSE PROPERTY OWNERS FOR ANY AND ALL DAMAGES, TO THE SATISFACTION OF ALL CONCERNED PARTIES.
9. THE EXCAVATION / UNDERPINNING / PILING / SHEETING CONTRACTOR SHALL BE COMPLETELY RESPONSIBLE FOR THE SAFETY OF ALL ADJACENT STRUCTURES.
10. ANY AND ALL WORK PERFORMED WHICH AFFECTS THE ADJACENT BUILDING OPERATIONS SHALL CAUSE A MINIMUM OF DISTURBANCE TO THE NORMAL OPERATION OF AFFECTED PARTS OF THE BUILDING

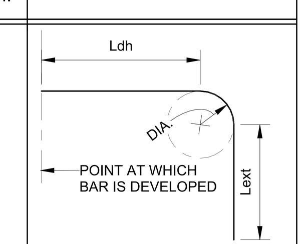
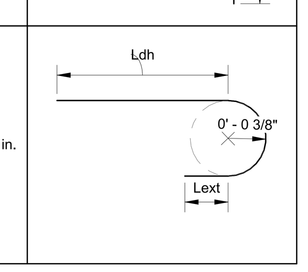
FOUNDATION NOTES:

1. FOOTING SHALL BEAR ON UNDISTURBED SOIL AND/OR SUPERVISED COMPACTED FILL, FREE OF FROST, SOIL BEARING CAPACITY IS **3.0 TSF** IN THIS PROJECT OR UNDISTURBED ROCK. ROCK BEARING CAPACITY 8TSF IN THIS PROJECT. RETAINING/BASEMENT WALLS HAVE BEEN DESIGNED UTILIZING AN ACTIVE FLUID PRESSURE OF 40 PCF AND AN AT REST PRESSURE OF 50 PCF. ELEVATIONS ARE FOR ESTIMATING AND ARE SUBJECT TO REVISION WHEN THE TRUE CONDITIONS ARE REVEALED BY EXCAVATION. CONTRACTOR SHALL NOTIFY ARCHITECT AND ENGINEER OF ANY DOUBTFUL CONDITIONS.
2. ALL REINFORCEMENT SHALL CONFORM TO ASTM A615 GRADE 60, WELDED WIRE FABRIC SHALL CONFORM TO ASTM A185.
3. BEFORE ANY FOOTING IS PLACED, THE CONTRACTOR SHALL ESTABLISH BY SURVEY THE EXACT LOCATION OF ALL UNDERGROUND UTILITIES, TRENCHES AND PIPING TO REMAIN IN THE FINISHED WORK. THESE LOCATIONS SHALL BE SUBMITTED ON DRAWINGS TO THE ARCHITECT FOR REVIEW. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE SAFETY OF ALL EXISTING CONSTRUCTION AND SHALL REPAIR ANY DAMAGE TO THE SATISFACTION OF THE OWNER AT NO EXTRA COST TO THE OWNER.
4. THE ELEVATIONS OF THE FOOTINGS ARE BASED ON THE BORINGS WHICH CONSTITUTE THE BEST POSSIBLE INFORMATION AVAILABLE. ACTUAL SITE CONDITIONS MAY NECESSITATE DEVIATIONS FROM THESE ELEVATIONS. ANY DEVIATIONS FROM THE ELEVATIONS SHALL BE NOTED ON DRAWINGS AND SUBMITTED TO THE ARCHITECT AND EOR. FOR THEIR APPROVAL PRIOR TO CONSTRUCTION.
5. SOIL UNDER FOOTINGS SHALL BE PROTECTED FROM FREEZING.
6. BOTTOMS OF ALL EXTERIOR FOOTINGS SHALL BE AT LEAST 4 FEET BELOW FINISHED GRADE.
7. CHANGES TO LEVEL OF FOOTINGS MUST BE KEPT WITHIN THE SAFE ANGLE OF REPOSE OF THE SOIL (ONE VERTICAL TO ONE HORIZONTAL).
8. DO NOT BACKFILL BASEMENT OR RETAINING WALLS WITHOUT AUTHORIZATION OF THE ENGINEER. FLOOR SLABS PROVIDING SUPPORT FOR SUCH WALLS MUST BE IN PLACE PRIOR TO BACKFILLING, OR DIAGONAL BRACING MUST BE PROVIDED TO HOLD THE FULL FORCE OF THE BACKFILL UNTIL THE FLOOR SLABS HAVE ATTAINED FULL STRENGTH.
9. CONTRACTOR MUST ADEQUATELY PROTECT WALLS, PIERS, ETC. FROM DAMAGE DUE TO BACKFILLING.
10. CONTRACTOR MUST PREVENT THE FOUNDATIONS FROM BEING PUT IN JEOPARDY BY THE EXCAVATIONS FOR UTILITIES, ETC.
11. WHERE PIPES PASS THROUGH NEW WALLS, DROP FOOTINGS SO THAT PIPES PASS OVER THE TOP OF THE FOOTINGS.
12. DEWATERING PROCEDURES, IF REQUIRED, SHALL NOT DISTURB THE SOIL STRUCTURE.
13. THE CONTRACTOR SHALL EMPLOY ALL MEANS NECESSARY TO INSURE THAT THE STRUCTURAL INTEGRITY OF ANY AND ALL ADJACENT STRUCTURES WILL NOT BE COMPROMISED.
14. DOWELS FROM FOOTINGS INTO PIERS AND GRADE BEAMS SHALL BE THE SAME SIZE AND NUMBER AS VERTICAL REINFORCEMENT IN PIERS, BUTTRESSES, AND WALLS, AND SHALL BE EXTENDED 30 BAR DIAMETER IF NOT OTHERWISE NOTED.
15. CENTERLINES OF FOOTINGS, AND CENTERLINES OF PIERS, COLUMNS, AND BEAMS SHALL BE THE SAME UNLESS OTHERWISE NOTED.
16. ALL REINFORCING BARS SHALL BE LAPPED AS PER EMBEDMENT AND SPLICE LENGTH SCHEDULE ON THE DRAWINGS. LAP GRADE BEAM TOP REINFORCEMENT AT CENTER OF SPAN. LAP GRADE BEAM BOTTOM REINFORCEMENT AT SUPPORT. TERMINATE CONTINUOUS BARS AT DISCONTINUOUS ENDS WITH STANDARD HOOKS.
17. CONTRACTOR SHALL SUBMIT DRAWINGS SHOWING INTENDED PLACEMENT SEQUENCE AND LOCATION OF CONSTRUCTION JOINTS TO THE ARCHITECT FOR APPROVAL. FOUNDATION WALL CONSTRUCTION JOINTS SHALL BE LOCATED SO AS TO PROVIDE A 60'-0" MAXIMUM LENGTH OF CONCRETE PLACEMENT.
18. VERTICAL CONSTRUCTION JOINTS IN FOUNDATION WALLS SHALL BE USED ONLY WHEN UNAVOIDABLE AND SHALL BE LOCATED AT LEAST 8'-0" FROM ANY COLUMN LINE AND AT CENTER LINES BETWEEN SUPPORTS FOR GRADE BEAMS.
19. NO HORIZONTAL CONSTRUCTION JOINT WILL BE PERMITTED IN WALLS AND SLABS UNLESS SPECIFICALLY SHOWN ON STRUCTURAL DRAWINGS.
20. NO BACK FILLING SHALL BE DONE AGAINST UNBRACED FOUNDATION WALLS UNTIL CONCRETE HAS ATTAINED AT LEAST 75% OF ITS 28 DAY STRENGTH, AND WALLS SUSTAIN NO MORE THAN 3'-0" OF EARTH PRESSURE. PROVIDE BRACING AT TOP OF WALLS (OR PROVIDE FLOOR FRAMING) FOR WALLS SUSTAINING MORE THAN 3'-0" OF BACKFILL.
21. PROVIDE 6" MINIMUM DRAINAGE FILL BENEATH CONCRETE SLAB ON GROUND.
22. CONTRACTOR SHALL USE RIGID TEMPLATE TO INSTALL ANCHOR BOLTS.
23. CONTRACTOR SHALL BE RESPONSIBLE TO ADEQUATELY PROTECT ALL EXCAVATION SLOPES
24. IN NO CASE SHALL BULLDOZERS OR OTHER HEAVY EQUIPMENT BE PERMITTED CLOSER THAN 8'-0" FROM ANY FOUNDATION WALL. IF IT IS NECESSARY TO OPERATE SUCH EQUIPMENT CLOSER THAN 8'-0" TO THE WALL, THE CONTRACTOR SHALL BE THE SOLE RESPONSIBLE PARTY AND AT HIS OWN EXPENSE SHALL PROVIDE ADEQUATE SUPPORTS OR BRACE THE WALL TO WITHSTAND THE ADDITIONAL LOADS SUPERIMPOSED FROM SUCH EQUIPMENT.
25. FOR LOCATION OF FLOOR DRAINS, CURBS, CONCRETE PADS AND FLOOR DEPRESSIONS SEE ARCHITECTURAL AND MECHANICAL DRAWINGS
26. TOP REINFORCEMENT. IN SLAB AT PARKING OR CAR AREAS SHALL HAVE MINIMUM CLEAR COVER OF 1 1/2 INCHES.
27. SOIL UNDER SLAB-ON-GRADE SHALL BE COMPACTED TO 95% COMPACTION.

CONCRETE NOTES:

1. CONCRETE DESIGN DETAIL AND CONSTRUCTION TO CONFORM TO THE LATEST PROVISIONS OF THE AMERICAN CONCRETE INSTITUTE BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE, ACI 318, "SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS", ACI 315, THE SPECIFICATIONS, AND THE BUILDING CODE OF THE CITY OF NEW YORK.
2. ALL CAST-IN-PLACE CONCRETE SHALL BE STONE CONCRETE WITH A MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS OF **6,000 PSI**.
   - A. FOOTINGS, FOUNDATION WALLS, BUTTRESSES, SLAB ON GRADE: 6000 PSI, NORMAL WT.
   - B. COLUMNS, SHEAR WALLS, STRUCTURAL SLABS: 6000 PSI, NORMAL WT.
   - C. CONC. TOPPING PADS & OTHER NON STRUCTURAL ELEMENTS: 3000 PSI, NORMAL WT.
   - D. ALL OTHER CONCRETE: 5000 PSI, NORMAL WT.
3. ALL REINFORCEMENT SHALL BE A-615 GRADE 60 STEEL. WELDED WIRE FABRIC SHALL CONFORM TO ASTM STANDARD A-185.
4. ALL REINFORCEMENT SHALL BE SECURELY HELD IN PLACE WHILE PLACING CONCRETE. IF REQUIRED, ADDITIONAL BARS OR STIRRUPS SHALL BE PROVIDED BY THE CONTRACTOR TO FURNISH SUPPORT FOR ALL BARS.
5. THE CONCRETE CONTRACTOR SHALL COOPERATE WITH ALL OTHER TRADES IN PERMITTING THE FORMING AND SETTING OF SLOTS, RECESSES, CHASES, SLEEVES, INSERTS, BOLTS, HANGERS, OPENINGS AND EQUIPMENT. THE CONTRACTOR SHALL CUT OR FORM POCKETS IN WALLS TO RECEIVE BEAMS OR COLUMNS WHERE REQUIRED.
6. WHERE STIRRUPS OR TIES EXTEND BEYOND THE MAIN TOP REINFORCEMENT, ADD 2 #5 REBAR CONT. IN ALL CONCRETE BEAMS AND GIRDERS FOR THE LENGTH OF THE STIRRUP OR TIE SPACING.
7. MINIMUM CONCRETE COVER FOR REINFORCING STEEL SHALL BE 3/4" FOR SLABS, 1-1/2" FOR BEAMS AND 1" FOR WALLS. ALL CONCRETE EXPOSED TO WEATHER OR EARTH FILL SHALL HAVE MINIMUM CONCRETE COVER OF 2" FOR BARS LARGER THAN #5, 1-1/2" FOR #5 BARS OR SMALLER, AND 3" FOR ALL CONCRETE PLACED AGAINST EARTH. ALL CONCRETE PLACED AGAINST PERMANENT SHEETING SHALL HAVE MINIMUM CONCRETE COVER OF 4".
8. ALL CONTINUOUS REINFORCING BARS SHALL BE LAPPED AS PER EMBEDMENT AND SPLICE LENGTH SCHEDULE ON DRAWING S-XXX. LAP CONTINUOUS TOP REINFORCEMENT AT CENTER OF SPAN AS REQUIRED. LAP CONTINUOUS BOTTOM BARS AT SUPPORTS AS REQUIRED. TERMINATE CONTINUOUS BARS AT NON-CONTINUOUS END WITH STANDARD HOOK.
9. ALL CONCRETE EXPOSED TO WEATHER SHALL HAVE AN AIR-ENTRAINMENT AGENT.
10. VERTICAL CONSTRUCTION JOINTS USING APPROVED BULKHEADS MAY BE MADE AT CENTER OF BEAM AND SLAB SPANS WHERE STOP IN CONCRETE WORK IN NECESSARY. LOCATION OF VERTICAL CONSTRUCTION JOINTS IN EXPOSED STRUCTURAL ELEMENTS SHALL BE COORDINATED WITH ARCHITECTURAL DRAWINGS. VERTICAL WALL CONSTRUCTION JOINTS SHALL BE LOCATED SO AS TO PROVIDE A 60'-0" MAXIMUM LENGTH OF CONCRETE PLACEMENT. SUCH JOINTS SHALL BE LOCATED AT CENTERLINES OF WALL SPANS BETWEEN SUPPORTS.
11. CONTRACTOR SHALL SUBMIT DRAWINGS SHOWING INTENDED POURING SEQUENCE AND LOCATION OF CONSTRUCTION JOINTS TO THE ARCHITECT FOR APPROVAL.
12. NO HORIZONTAL CONSTRUCTION JOINT WILL BE PERMITTED IN BEAMS, WALLS, AND SLABS UNLESS SPECIFICALLY SHOWN ON PLANS OR SECTIONS.
13. ALL BEAMS AND SLABS TO BE POURED MONOLITHICALLY UNLESS OTHERWISE NOTED.
14. CONTRACTOR SHALL VERIFY DIMENSIONS AND LOCATIONS OF ALL SLOTS, PIPE SLEEVES, ETC., AS REQUIRED FOR MECHANICAL TRADES BEFORE CONCRETE IS PLACED.
15. PIPES OR CONDUITS PLACED IN SLAB SHALL NOT BE SPACED CLOSER THAN 3 X DIAMETER OF PIPES AND CONDUITS PLACED IN SLAB SHALL NOT HAVE AN OUTSIDE DIAMETER LARGER THAN 1/3 OF SLAB THICKNESS. ALUMINUM CONDUITS SHALL NOT BE PLACED IN CONCRETE. NO CONDUITS SHALL BE PLACED IN SLAB WITHIN 12" OF COLUMN FACE.
16. CONTRACTOR SHALL BE RESPONSIBLE TO CHECK AND COORDINATE ALL DIMENSIONS WITH ARCHITECTURAL AND MECHANICAL DRAWINGS.
17. FOR LOCATION AND DETAILS OF REGLETS AND DRIPS SEE ARCHITECTURAL DRAWINGS.
18. FOR WATERPROOFING DETAILS AND LOCATIONS, SEE ARCHITECTURAL DRAWINGS.
19. PROVIDE MINIMUM 6 X 6- W1.4 X W1.4 WELDED WIRE FABRIC IN CONCRETE FILL. PLACE MESH 1" CLEAR FROM TOP OF FILL. SEE ARCHITECTURAL DRAWINGS FOR DETAILS.
20. WHEN REQUIRED BY OTHER TRADES, PROVIDE PADS FOR MECHANICAL EQUIPMENT. PAD SHALL BE 4" MIN. IN THICKNESS AND SHALL BE REINFORCED WITH A 6 X 6- W1.4 X W1.4 WWF 1" FROM TOP OF PAD.
21. FOR LOCATION OF FLOOR DRAINS, CURBS, CONCRETE PADS AND FLOOR DEPRESSIONS SEE ARCHITECTURAL AND MECHANICAL DRAWINGS.
22. CHAMFER ALL EXPOSED CONCRETE CORNERS. SEE ARCHITECTURAL DRAWINGS FOR DETAILS.
23. REINFORCED CONCRETE DESIGN IS ULTIMATE STRENGTH DESIGN AS PER A.C.I. BUILDING CODE. (A.C.I. 318).
24. COORDINATE LOCATION OF SLOTTED INSERTS, WELD PLATES, AND ALL OTHER ITEMS TO BE EMBEDDED IN CONCRETE WITH ARCHITECTURAL AND MECHANICAL DRAWINGS.
25. THE CONTRACTOR SHALL BE COMPLETELY RESPONSIBLE FOR THE SAFETY OF ADJACENT STRUCTURES.
26. ALL CONTRACTORS ARE REQUESTED TO EXAMINE THE DRAWINGS AND SPECIFICATIONS CAREFULLY, VISIT THE SITE, FULLY INFORM THEMSELVES AS TO ALL EXISTING CONDITIONS AND LIMITATIONS, PRIOR TO SUBMITTING THE PROPOSAL. FAILURE TO VISIT THE SITE AND NOT FAMILIARIZING WITH THE EXISTING CONDITIONS AND LIMITATIONS WILL IN NO WAY RELIEVE SUCCESSFUL BIDDER FROM FURNISHING ANY MATERIALS OR PERFORMING ANY WORK THAT MAY BE REQUIRED TO COMPLETE WORK IN ACCORDANCE WITH DRAWINGS AND SPECIFICATIONS WITHOUT ADDITIONAL COST TO OWNER.
27. PROVIDE WATERSTOPS AT ALL CONSTRUCTION JOINTS IN BASEMENT WALLS AND CONCRETE SLABS ON GROUND.

STANDARD HOOK GEOMETRY FOR DEVELOPMENT OF DEFORMED BARS IN TENSION

TYPE OF STANDARD HOOK	BAR SIZE	MINIMUM INSIDE BEND DIAMETER. in.	STRAIGHT EXTENSION [1] L_{ext}, in.	TYPE OF STANDARD HOOK
90 - DEGREE HOOK	NO. 3 THROUGH NO. 8	6 d_b	12 d_b	
	NO. 9 THROUGH NO. 11	8 d_b		
	NO. 14 AND NO. 18	10 d_b		
180 - DEGREE HOOK	NO. 3 THROUGH NO. 8	6 d_b	GREATER OF 4 d_b AND 2.5 in.	
	NO. 9 THROUGH NO. 11	8 d_b		
	NO. 14 AND NO. 18	10 d_b		

[1] A STANDARD HOOK FOR DEFORMED BARS IN TENSION INCLUDES THE SPECIFIC INSIDE BEND DIAMETER AND STRAIGHT EXTENSION LENGTH. IT SHALL BE PERMIITED TO USE A LONGER STRAIGHT EXTENSION AT THE END OF A HOOK. A LONGER EXTENSION SHALL NOT BE CONSIDERED TO INCREASE THE ANCHORAGE CAPACITY OF THE HOOK.

CONCRETE DEVELOPMENT AND SPLICE LENGTH NOTES:

LAP SPLICE LENGTH 'Ls' (in)

SIZE	4000 PSI			5000 PSI			6000 PSI		
	TENSION 'Lts		COMP. 'Lcs'	TENSION 'Lts		COMP. 'Lcs'	TENSION 'Lts'		COMP. 'Lcs'
	TYP.	TOP.		TYP.	TOP.		TYP.	TOP.	
#3	18	24	12	17	22	12	17	20	12
#4	25	32	15	22	29	15	20	26	15
#5	31	40	19	28	36	19	25	33	19
#6	46	60	23	42	54	23	38	50	23
#7	54	70	27	49	63	27	45	58	27
#8	62	80	30	56	72	30	51	66	30
#9	70	91	34	63	81	34	57	74	34
#10	79	102	39	71	92	39	64	84	39
#11	109	142	62	98	127	53	89	116	53
#14	MECHANICAL SPLICE ONLY								
#18									
#20									

STRAIGHT BAR DEVELOPMENT LENGTH 'Ld' (in)

SIZE	4000 PSI			5000 PSI			6000 PSI		
	TENSION 'Ldt		COMP. 'Ldc'	TENSION 'Ldt		COMP. 'Ldc'	TENSION 'Ldt'		COMP. 'Ldc'
	TYP.	TOP.		TYP.	TOP.		TYP.	TOP.	
#3	14	18	8	13	17	8	12	16	8
#4	19	25	9	17	22	9	15	20	9
#5	24	31	12	21	29	11	19	25	10
#6	36	47	14	32	42	13	29	38	12
#7	42	54	17	38	49	15	34	45	14
#8	48	62	19	43	56	17	39	51	15
#9	54	70	21	48	63	19	44	57	17
#10	61	79	24	54	71	22	50	64	20
#11	84	109	27	75	98	24	69	89	22
#14	101	131	32	90	117	29	82	107	26
#18	134	174	43	120	156	39	110	143	35
#20	159	206	48	142	184	45	130	168	45

SIZE	HOOKED TENSION DEVELOPMENT LENGTHS 'Ldh' (in)			HOOKED BAR STRAIGHT EXTENSIONS 'Lext' (in)		
	4000 PSI	5000 PSI	6000 PSI	4000 PSI	5000 PSI	6000 PSI
#3	8	7	6	6	6	6
#4	10	9	8	8	8	8
#5	12	11	10	10	10	10
#6	15	13	12	12	12	12
#7	17	15	14	14	14	14
#8	19	17	16	15	15	15
#9	22	20	18	19	19	19
#10	25	22	20	21	21	21
#11	34	30	28	23	23	23
#14	NOT PERMITTED					
#18						
#20						

NOTES FOR THE BAR LENGTH TABLES:

1. THESE DEVELOPMENT AND SPLICE LENGTHS ARE COMPUTED FOR UNCOATED BARS IN THE ELEMENTS OF NORMAL WEIGHT CONCRETE WITH THE MINIMUM CLEAR COVER OF ONE BAR DIAMETER,THE MINIMUM CLEAR SPACING OF ONE BAR DIAMETER IN BEAMS AND COLUMNS, AND TWO TIMES THE BAR DIAMETER IN OTHER ELEMENTS.
2. THESE DEVELOPMENT AND SPLICE LENGTHS SHALL BE MULTIPLIED BY ALL OF THE APPLICABLE FACTORS THAT FOLLOW:
   - A. REINFORCING WITH COVER OR SPACING LESS THAN THAT SPECIFIED IN NOTE1:....................X 1.30
   - B. EPOXY-COATED REINFORCING FOR TYPICAL REINFORCEMENT:..X 1.50
   - C. EPOXY-COATED REINFORCING FOR TOP REINFORCEMENT:..X 1.31
   - D. REINFORCING PLACED IN LIGHTWEIGHT CONCRETE:...X 1.30
3. 'Ld' CAN BE USED AS ACI CLASS A SPLICE; 'Ls' CAN BE USED AS ACI CLASS B SPLICE.
4. USE TOP CONDITION FOR ANY HORIZONTAL BARS WITH MORE THAN 12 INCH OF FRESH CONCRETE BELOW.

LATERAL LOAD DESIGN AND CRITERIA:

SEISMIC LOADS
SEISMIC CODE: ASCE 7-16
RISK CATEGORY: II
IMPORTANCE FACTOR: 1.00
SITE CLASS: D
DESIGN CATEGORY: B
SPECTRAL RESPONSE COEFFICIENTS:
Ss = 0.296g   Sds = 0.308g
S1 = 0.061g   Sd1 = 0.098g
MFRS: ORDINARY REINFORCED CONCRETE SHEAR WALLS
R = 5

Cs= 0.0207
BASE SHEAR X-DIRECTION: 1981 KIP
BASE SHEAR Y-DIRECTION: 1981 KIP

EQUIVALENT LATERAL FORCE ANALYSIS
A SEISMIC SEPARATION OF 3.5" WAS USED BETWEEN THIS STRUCTURE AND THE PROPERTY LINE FOR FIRST 50'-0" THEN INCREASED BY 1" FOR EACH 50'-0".

WIND LOADS:
WIND ANALYSIS ACCORDING TO: 2022 NYC BUILDING CODE
WIND DESIGN CODE: ASCE 7-16
BASIC WIND SPEED: 117 MPH
IMPORTANCE FACTOR: 1.0
EXPOSURE CATEGORY: B
INTERNAL PRESSURE COEFFICIENT: GCpi = +/-0.18

COMPONENTS AND CLADDING
Pnet = XXXpsf
BASE SHEAR X-DIRECTION = 991 KIP
BASE SHEAR Y-DIRECTION = 1227 KIP

GRAVITY LOADS:

UNIFORMLY DISTRIBUTED LIVE LOADS:
GROUND FLOOR LOBBY 100 PSF.
ELEVATOR LOBBIES 100 PSF.
CORRIDORS ABOVE FIRST FLOOR 75 PSF. SAME AS OCCUPANCY SERVED U.O.N.
EXIT FACILITIES 100 PSF.
MECHANICAL FLOORS 150 PSF. OR ACTUAL WEIGHT
MECHANICAL / FAN ROOMS 75 PSF. FT. OR ACTUAL WEIGHT
SIDEWALKS 600 PSF.
ROOFS 30 PSF. PLUS DRIFT
OCCUPIED ROOFS 100 PSF.
RESIDENTIAL 40 PSF.
BALCONIES / PRIVATE TERRACE 60 PSF.
PUBLIC TERRACE 100 PSF.

DEAD LOADS AND SUPERIMPOSED:
12 PSF PARTITIONS
8 PSF MISCELLANEOUS

SNOW LOAD CRITERIA:
SNOW DESIGNING CODE: NYC BUILDING CODE 2014
GROUND SNOW LOAD: 25 PSF
SNOW EXPOSURE FACTOR: Ce = 1.0
THERMAL FACTOR: Ct = 1.0
SNOW LOAD IMPORTANCE FACTOR: Is = 1.0

RISK CATEGORY	BASIC DESIGN WIND SPEED (MPH)
I	110
II	117
II	127
II	132

ABBREVIATIONS LIST:

ARCH.	ARCHITECTURAL	ID.	INSIDE DIAMETER
		IN.	INCH
BC.	BUILDING CODE		
BLDG.	BUILDING	LGS	LIGHT GAUGE STEEL
BM.	BEAM		
BOT.	BOTTOM	MAX.	MAXIMUM
		MC	MOMENT CONNECTION
CC.	CENTER TO CENTER	MTL.	METAL
C/C	CENTER TO CENTER	MIN.	MINIMUM
CFS	COLD FORMED STEEL	MISC.	MISCELLANEOUS
CL.	CENTER LINE		
CMU.	CONCRETE MASONRY UNIT	N.T.S	NOT TO SCALE
CLR	CLEAR	NO.	NUMBER
COL.	COLUMN	No.	NUMBER
CONC.	CONCRETE	NYCBC	NEW YORK CITY BUILDING CODE
CONST.	CONSTRUCTION	#	NUMBER
CONT'D	CONTINUED		
		OC.	ON CENTER
DBO	DESIGNED BY OTHERS	O/C	ON CENTER
DIA.	DIAMETER	OD.	OUTSIDE DIAMETER
DIST.	DISTANCE		
∅	DIAMETER	PL.	PROPERTY LINE
DIM.	DIMENSION	PSF.	POUND PER SQUARE FOOT
DET.	DETAIL	PROP.	PROPOSED
DTL.	DETAIL		
DWG	DRAWING	REINF.	REINFORCED
		RQD.	REQUIRED
EJ.	EXPANSION JOINT	RQ'D.	REQUIRED
EL.	ELEVATION		
ELEV.	ELEVATION OR ELEVATOR	SQ-FT	SQUARE FOOT
E.O.R.	ENGINEER OF RECORD		
EQ.	EQUAL	TOC.	TOP OF CURB
EXIST.	EXISTING	T.O.S	TOP OF SLAB
		TOFF.	TOP OF FINISHED FLOOR
FL.	FLOOR	TOW.	TOP OF WALL
FLR.	FLOOR	TSF	TON PER SQUARE FOOT
FND'N	FOUNDATION	TYP.	TYPICAL
FT.	FEET/FOOT		
		VIF.	VERIFY IN FIELD
GC.	GENERAL CONTRACTOR	VERT.	VERTICAL
GA.	GAUGE		
GALV.	GALVANIZED	U.O.N	UNLESS OTHERWISE NOTED
HORIZ.	HORIZONTAL	W/	WITH
		WT.	WEIGHT

NOTES ON EMBEDMENT AND SPLICE LENGTH

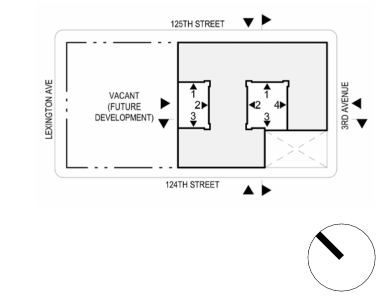
LAP SPLICE LENGTHS FOR CONCRETE 'Ls' (in.)

SIZE	fy (ksi)	4000 psi			5000 psi			6000 psi			7000 psi			8000 psi			10000 psi			12000 psi		
		TENSION		COMP.	TENSION		COMP.	TENSION		COMP.	TENSION		COMP.	TENSION		COMP.	TENSION		COMP.	TENSION		COMP.
		TYP.	TOP		TYP.	TOP		TYP.	TOP		TYP.	TOP		TYP.	TOP		TYP.	TOP		TYP.	TOP	
#3	60	18	24	12	17	22	12	17	20	12	16	21	12	16	21	12	16	20	12	16	20	12
#4	60	25	32	15	22	29	15	20	26	15	20	26	15	17	24	15	17	21	15	17	21	15
#5	60	31	40	19	28	36	19	25	33	19	24	32	19	22	28	19	20	25	19	18	23	19
#6	60	46	60	23	42	54	23	38	50	23	29	38	23	33	43	23	30	39	23	27	36	23
#7	60	54	70	27	49	63	27	45	58	27	42	55	27	39	50	27	35	45	27	31	40	27
#8	60	62	80	30	56	72	30	51	66	30	47	62	30	44	57	30	39	51	30	36	46	30
#9	60	70	91	34	63	81	34	57	74	34	54	71	34	50	64	34	44	58	34	40	52	34
#10	60	79	102	39	71	92	39	64	84	39	59	77	38	56	72	39	50	65	39	45	59	39
#11	75	109	142	62	98	127	53	89	116	53	81	106	42	77	100	53	69	90	53	63	82	53
#14	75	MECHANICAL SPLICES ONLY																				
#18	75																					
#20	80																					

STRAIGHT BAR DEVELOPMENT LENGTHS FOR CONCRETE 'Ld' (in.)

SIZE	fy (ksi)	4000 psi			5000 psi			6000 psi			7000 psi			8000 psi			10000 psi			12000 psi		
		TENSION		COMP.	TENSION		COMP.	TENSION		COMP.	TENSION		COMP.	TENSION		COMP.	TENSION		COMP.	TENSION		COMP.
		TYP.	TOP		TYP.	TOP		TYP.	TOP		TYP.	TOP		TYP.	TOP		TYP.	TOP		TYP.	TOP	
#3	60	14	18	8	13	17	8	12	16	8	12	16	8	12	16	8	12	15	8	12	16	8
#4	60	19	25	9	17	22	9	15	20	9	15	20	9	13	17	8	12	16	8	13	17	8
#5	60	24	31	12	21	29	11	19	25	10	18	24	12	17	22	9	15	20	8	14	18	8
#6	60	36	47	14	32	42	13	29	38	12	22	29	14	26	33	10	23	29	9	21	27	9
#7	60	42	54	17	38	49	15	34	45	14	32	42	16	30	39	12	27	35	11	24	31	10
#8	60	48	62	19	43	56	17	39	51	15	36	47	18	34	44	13	30	39	12	27	36	11
#9	60	54	70	21	48	63	19	44	57	17	41	54	21	38	50	15	34	44	14	31	40	12
#10	60	61	79	24	54	71	22	50	64	20	45	59	23	43	56	17	39	50	15	35	45	14
#11	75	84	109	27	75	98	24	69	89	22	62	81	25	60	77	19	53	69	17	48	63	15
#14	75	101	131	32	90	117	29	82	107	26	79	103	32	71	93	23	64	83	20	58	75	19
#18	75	134	174	43	120	156	39	110	143	35	101	132	41	95	124	30	85	111	27	77	100	25
#20	80	159	206	48	142	184	45	130	168	45	120	156	45	112	146	45	100	130	45	100	130	45

NO.	DATE	ISSUANCES/ REVISIONS
1	01-21-2025	BIDDING SET



KEY PLAN

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PROJECT TITLE:

180 EAST 125TH STREET, MANHATTAN, NY-10035

PROJECT ADDRESS

PROJECT NO: Project Number

DOB NO:

DRAWING TITLE:

GENERAL NOTES

SCALE: AS NOTED   PAGE: 3 OF 09

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DOB SCAN STICKER

SEAL

NOT FOR CONSTRUCTION

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NEW YORK TRANSIT GENERAL NOTES

ADJENCY GENERAL NOTES

ALL NOTES LISTED BELOW SHALL BE INCLUDED IN THE PROJECT'S CONTRACT DRAWINGS.

1. THE NYC TRANSIT (NYCT) RESERVES THE RIGHT TO PLACE INSPECTORS, FLAGMEN OR OTHER PERSONNEL IN THE SUBWAY STRUCTURES DURING CONSTRUCTION OF THE PROJECT LINKED BY A TELEPHONE SYSTEM, IF DEEMED NECESSARY, TO OBSERVE THE EFFECTS OF THE CONSTRUCTION ON THE TRANSIT FACILITIES. NYCT FURTHER RESERVES THE RIGHT TO PLACE SUCH PERSONNEL WHENEVER, IN ITS OPINION, THE PROJECT CONDITIONS WARRANT SUCH PLACEMENT, REGARDLESS OF DISTANCE. THE COST OF SUCH PERSONNEL, TELEPHONE INSTALLATION AND ANY RE-ROUTES, DIVERSIONS OF SERVICE, WORK TRAINS, ETC., MADE NECESSARY BY THE PROJECT, MUST BE BORNE BY THE PROJECT OR THE RESPONSIBLE NEW YORK CITY/STATE AGENCY.

2. ALL ROCK EXCAVATION ADJACENT TO THE TRANSIT STRUCTURE SHALL BE CHANNEL DRILLED TWO FEET BELOW SUBGRADE.

3. IF TOP OF ROCK IS FOUND BELOW SUBWAY STRUCTURE, THE SUBWAY STRUCTURE SHALL BE UNDERPINNED IN ACCORDANCE WITH DRAWINGS SUBMITTED TO NYCT FOR REVIEW AND APPROVAL. UNDERPINNING DRAWINGS SHALL BE SIGNED AND SEALED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF NEW YORK.

4. IF THE ROCK STRATUM QUALITY IS SOFT OR SEAMY, LATERAL SUPPORTS SHALL BE PROVIDED BELOW THE SUBWAY STRUCTURE IN ACCORDANCE WITH DRAWINGS AND CALCULATIONS SUBMITTED TO NYCT FOR REVIEW AND APPROVAL. LATERAL SUPPORT SYSTEM DRAWINGS AND CALCULATIONS SHALL BE SIGNED AND SEALED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF NEW YORK.

5. BLASTING WITH LIGHT CHARGES ONLY SHALL BE PERMITTED SUBJECT TO THE APPROVAL OF NYCT'S ENGINEER AND IN ACCORDANCE WITH THE REGULATIONS OF THE FIRE DEPARTMENT. THE CONTRACTOR SHALL PROVIDE A DETAILED MONITORING PLAN, PROVIDING FOR MEASUREMENTS OF BOTH PARTICLE VELOCITY AND DISPLACEMENTS AT CRITICAL LOCATIONS OF THE NYCT STRUCTURE. THE MONITORING PLAN SHALL INCLUDE THRESHOLD AND UPSET LEVELS OF BOTH PARTICLE VELOCITY AND SETTLEMENT TOGETHER WITH AN ACTION PLAN FOR THEIR IMPLEMENTATION. THE CONTRACTOR SHALL SECURE AN APPROVED SEISMOLOGIST TO INSTALL AND OPERATE SUITABLE VELOCITY GAUGES TO CONTINUOUSLY MONITOR PARTICLE VELOCITY AND AN INDEPENDENT LICENSED SURVEYOR TO MONITOR DISPLACEMENTS. A QUALIFIED TECHNICIAN FROM THE MONITORING COMPANY SHALL BE ON SITE TO PROVIDE VIBRATION READINGS UPON THE REQUEST OF A NYCT ENGINEER. THE THRESHOLD MAXIMUM PARTICLE VELOCITY ABOVE THE AMBIENT CAUSED BY THE BLASTING SHALL BE 0.5 INCH PER SECOND. VALUES EXCEEDING THIS LEVEL SHALL BE REVIEWED AND EVALUATED BY NYCT'S ENGINEER. MEASURED PARTICLE VELOCITIES UNDER THE BLASTING WORK SHALL NOT EXCEED THE UPSET LEVEL OF 2.0 INCHES PER SECOND AT ANY TIME.

6. BEFORE PLACING CONCRETE, THE SUBGRADE OF THE FOUNDATIONS IN THE VICINITY OF THE SUBWAY STRUCTURE SHALL BE INSPECTED AND APPROVED BY NYCT'S ENGINEER.

7. ANY DAMAGE TO NYCT STRUCTURES OR ARCHITECTURAL ELEMENTS SHALL BE REPAIRED AND/OR REPLACED WITH THE SAME IN KIND, SUBJECT TO THE APPROVAL OF THE NYCT ENGINEER AT THE EXPENSE OF THE PROJECT.

8. EXCAVATION EMBANKMENTS SHALL BE SHORED AND BRACED. DRAWINGS INDICATING A SUGGESTED METHOD OF CONSTRUCTION SHALL BE SUBMITTED TO NYCT FOR REVIEW AND APPROVAL IN CONJUNCTION WITH THE PROJECT'S CONTRACT DRAWINGS. IF IT IS DETERMINED THAT EXCAVATION MAY UNDERMINE NYCT'S STRUCTURAL FOUNDATION, UNDERPINNING SHALL BE REQUIRED. DRAWINGS AND CALCULATIONS FOR THE UNDERPINNING SHALL BE SUBMITTED TO NYCT FOR REVIEW AND APPROVAL PRIOR TO EXCAVATION. DRAWINGS AND CALCULATIONS SHALL BE SIGNED AND SEALED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF NEW YORK.

9. TEMPORARY SHORING MAY BE PLACED IN DIRECT CONTACT WITH NYCT STRUCTURES ONLY IF THE NYCT STRUCTURE IS SHOWN TO BE ABLE TO SUPPORT ALL ANTICIPATED (EXISTING AND TEMPORARY) LOADS THAT CAN BE TRANSFERRED THROUGH THE TEMPORARY STRUCTURES WITHOUT DAMAGING OR ALTERING THE EXISTING STRUCTURE. ALL CALCULATIONS AND DRAWINGS FOR THE TEMPORARY SHORING INSTALLATION AND REMOVAL SHALL BE SIGNED AND SEALED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF NEW YORK. THE CALCULATIONS AND DRAWINGS SHALL BE SUBMITTED TO NYCT FOR REVIEW AND APPROVAL. AT THE COMPLETION OF THE PROJECT, THESE TEMPORARY SHORING AND BRACING SYSTEMS SHALL BE REMOVED, OR CUT-OFF AS APPROVED BY NYCT. ANY DAMAGES INCURRED DURING THE INSTALLATION AND REMOVAL OF THE TEMPORARY SHORING SHALL BE REPAIRED AND/OR REPLACED TO THE SATISFACTION OF THE NYCT ENGINEER AT THE EXPENSE OF THE CONTRACTOR.

10. WHEN PILES ARE DRIVEN OR DRILLED ADJACENT TO THE SUBWAY STRUCTURE, BORING DATA, PILE LAYOUTS, SPECIFICATIONS AND INSTALLATION PROCEDURES SHALL BE SUBMITTED TO NYCT FOR APPROVAL. VELOCITY METERS SHALL BE INSTALLED IN THE SUBWAY TUNNEL AT CRITICAL LOCATIONS TO MONITOR INDUCED VIBRATIONS. INDUCED DISPLACEMENTS ALONG THE TUNNEL STRUCTURE AND TRACK INVERT SHALL BE MONITORED DURING DRIVING OR DRILLING. THE THRESHOLD MAXIMUM PARTICLE VELOCITY ABOVE THE AMBIENT CAUSED BY THE DRIVING OR DRILLING SHALL BE 0.5 INCH PER SECOND. VALUES EXCEEDING THIS LEVEL SHALL BE REVIEWED AND EVALUATED BY THE NYCT ENGINEER. MEASURED PARTICLE VELOCITIES DUE TO DRIVING OR DRILLING PILE WORK SHALL NOT EXCEED THE UPSET LEVEL OF 2.0 INCHES PER SECOND AT ANY TIME

11. NO PILES SHALL BE INSTALLED BY ANY METHOD WITHIN THREE FEET OF SUBWAY STRUCTURE, MEASURED FROM THE EDGE OF THE PILE OR CASING TO THE WALL. CLOSED-END PILES SHALL NOT BEDRIVEN WITHIN TEN FEET OF THE SUBWAY STRUCTURE.

12. ALL PILES SHALL BE PLACED WITHIN A PRE-AUGERED CASED HOLE TO THE INFLUENCE LINE. THE CASING SHALL BE CLEANED WITHOUT DISTURBING THE SOIL OUTSIDE THE CASING AND THE PILE SHALL BE PLACED WITHIN THE CASING FOR INSTALLATION. THE PILES MAY THEN BE DRIVEN BEYOND THE INFLUENCE LINE WITHIN THE CASING.

13. THE INFLUENCE LINE SHALL START AT THE BOTTOM OF THE SUBWAY STRUCTURE AND EXTEND FROM 1H:1V TO 2H:1V SLOPE DEPENDING ON THE SOIL PROPERTIES AND GROUND WATER TABLE. FOR PILES INSTALLED WITHIN TEN FEET OF THE SUBWAY STRUCTURE, THE CASING SHALL EXTEND TO THE BOTTOM OF THE SUBWAY STRUCTURE.

14. ALL PILES SHALL BE DRIVEN OR DRILLED A MINIMUM OF TEN FEET BELOW THE INTERSECTION OF THE PILE CENTERLINE AND THE INFLUENCE LINE OF THE SUBWAY STRUCTURE.

15. THE USE OF "DOWN-THE-HOLE-HAMMERS" FOR INSTALLATION OF PILES THROUGH OVERBURDEN AND FILL SHALL BE PERMITTED ONLY TO REMOVE BOULDERS. THIS METHOD SHALL NOT BE PERMITTED AS A MATTER OF COURSE TO ADVANCE THE HOLE. FURTHERMORE, THIS METHOD USED TO CONSTRUCT ROCK SOCKETS SHALL NOT BE ALLOWED WITHIN 5 FEET OF THE NYCT STRUCTURE. THE USE OF MACHINE UTILIZING AIR FOR SOIL REMOVAL SHALL NOT BE ALLOWED.

16. VIBRATORY HAMMERS SHALL NOT BE PERMITTED WITHIN 75 FEET OF SUBWAY STRUCTURES. HOE RAMS SHALL NOT BE PERMITTED WITHIN 25 FEET OF SUBWAY STRUCTURES.

17. DYNAMIC COMPACTION METHODS USING DROPPED HEAVY WEIGHTS SHALL NOT BE CONDUCTED WITHIN 1000 FEET OF ANY NYCT STRUCTURE UNLESS IT IS SHOWN THAT INDUCED SETTLEMENTS AND VIBRATIONS WILL NOT DAMAGE THESE STRUCTURES. A SUITABLE MONITORING PLAN INCLUDING SETTLEMENT AND VIBRATION MEASUREMENTS SHALL BE APPROVED BY THE NYCT ENGINEER FOR ALL SUCH OPERATIONS WITHIN THESE DISTANCES PRIOR TO WORK.

18. THERE SHALL BE NO MACHINE EXCAVATION WITHIN 3 FEET OF NYCT STRUCTURES, POWER DUCT LINES, OR ANY OTHER FACILITIES UNTIL THEY HAVE BEEN CAREFULLY EXPOSED BY HAND EXCAVATION.

19. ALL DEWATERING OPERATIONS CONDUCTED WITHIN 500 FEET OF THE NYCT STRUCTURE SHALL BE PERFORMED IN ACCORDANCE WITH DRAWINGS, CALCULATIONS AND PROCEDURES SIGNED AND SEALED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF NEW YORK. THESE DRAWINGS, CALCULATIONS AND PROCEDURES SHALL BE SUBMITTED TO NYCT FOR REVIEW AND APPROVAL. THE DISTANCE FROM THE STRUCTURE TO THE DEWATERING OPERATION MAY BE REDUCED PROVIDED THAT SOIL CONDITIONS AT THE SITE INDICATE THAT THE RADIUS OF INFLUENCE OF THE DEWATERING IS LESS THAN 500 FEET. FOR DEWATERING WITHIN THE RADIUS OF INFLUENCE, THE DEWATERING PROGRAM SHALL BE SHOWN TO HAVE NEGLIGIBLE INFLUENCE ON SETTLEMENTS OF THE NYCT STRUCTURE.

20. SUBWAY ENTRANCES, VENTILATORS, VAULTS AND ANY NYCT APPURTENANCES AT THE SIDEWALK SHALL BE UNDERPINNED OR SHORED AND BRACED IF DIRECTED BY NYCT'S ENGINEER.

21. NYCT, AT ITS DISCRETION, RESERVES THE RIGHT TO REQUIRE THE PROJECT TO CLOSE OR MAINTAIN AND PROTECT EXISTING SUBWAY ENTRANCES, VENTILATORS, STRUCTURES AND PROPERTY ADJACENT TO THE PROJECT DURING CONSTRUCTION. SUCH CONSTRUCTION MAY INCLUDE UNDERPINNING, SHORING, BRACING AND ERECTION OF SUITABLE BARRICADES AND/OR CANOPIES AND SHIELDS. SUCH PROTECTION SHALL BE IN ACCORDANCE WITH DRAWINGS AND CALCULATIONS SUBMITTED TO NYCT FOR REVIEW AND APPROVAL. ALL DRAWINGS AND CALCULATIONS SUBMITTED TO NYCT SHALL BE SIGNED AND SEALED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF NEW YORK.

22. TEMPORARY AND PERMANENT SHIELD INSTALLATION PLANS AND CALCULATIONS PROTECTING NYCT FACILITIES AND/OR THE PUBLIC SHALL BE SUBMITTED TO NYCT FOR APPROVAL. THE PLANS SHALL INCLUDE THE LOCATION, DESIGN LOAD, TYPE AND METHOD OF ATTACHMENT TO THE TRANSIT STRUCTURE. THESE PLANS AND CALCULATIONS SUBMITTED TO NYCT SHALL BE SIGNED AND SEALED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF NEW YORK.

23. ALL LUMBER AND PLYWOOD USED FOR PROTECTION OF SUBWAY FACILITIES SHALL BE FIRE RETARDANT.

24. SUBWAY EMERGENCY EXITS SHALL BE KEPT CLEAR AT ALL TIMES.

25. SPECIAL CARE SHALL BE EXERCISED WHEN EXCAVATING OVER OR NEAR THE SUBWAY ROOF SO THAT THE THIN CONCRETE PROTECTION OF THE SUBWAY WATERPROOFING IS NOT DAMAGED. REPAIR PLANS FOR DAMAGE TO THE WATER PROTECTION WATERPROOFING LAYER DURING EXCAVATION SHALL BE SUBMITTED FOR NYCT APPROVAL. REPAIR WORK SHALL BE PERFORMED BEFORE EXCAVATED AREA IS FILLED, CLOSED OR COVERED UP AT NO EXPENSE TO NYCT.

26. BURNING OF, WELDING TO OR DRILLING THROUGH EXISTING STEEL STRUCTURES SHALL NOT BE PERMITTED EXCEPT AS SHOWN ON DRAWINGS APPROVED BY NYCT.

27. HORIZONTAL AND VERTICAL CONTROL SURVEY DATA OF THE EXISTING NYCT STRUCTURE SHALL BE PERFORMED BY A LICENSED LAND SURVEYOR TO MONITOR ANY MOVEMENTS THAT OCCUR DURING CONSTRUCTION AND TO CERTIFY THAT THE INDUCED MOVEMENTS ARE WITHIN THE LIMITS NOTED BELOW. IF ANY MOVEMENTS REQUIRE WORK TO BE STOPPED BASED ON THE VALUES BELOW, A REMEDIATION PLAN SHALL BE SUBMITTED TO NYCT FOR APPROVAL BY NYCT PRIOR TO THE REHABILITATION AND REPAIR WORK.

STRUCTURAL TYPE	MONITORED & MEASURED MOVEMENT	ACTION TO TAKE
ELEVATED	1/8 INCH OR MORE	NOTIFY NYCT ENGINEER
ELEVATED	1/4 INCH OR MORE	STOP WORK
SUBWAY	1/4 INCH OR MORE	NOTIFY NYCT ENGINEER
SUBWAY	1/4 INCH OR MORE	STOP WORK

28. BUS ROUTES AFFECTED BY THE PROJECT MAY REQUIRE BUS DIVERSIONS. THESE ARRANGEMENTS SHALL BE MADE THROUGH:

MS. SARAH WYSS
SENIOR DIRECTOR, OPERATIONS PLANNING
NEW YORK CITY TRANSIT
2 BROADWAY, ROOM A17.82 NEW YORK, NEW YORK 10004
TELEPHONE NUMBER (646) 252-5517

WHEN IMPACTING ANY BUS STOP, SPECIAL OPERATIONS SHALL BE NOTIFIED TWO WEEKS IN ADVANCE.

29. DUCT LINES SHALL BE MAINTAINED AND PROTECTED DURING CONSTRUCTION. ANY INTERFERENCE WITH DUCT LINES SHALL BE REPORTED TO THE NYCT ENGINEER. WHEN A DUCT LINE CONTAINING CABLES IS TO BE REMOVED, OR WHEN MASONRY ADJACENT THERETO IS
TO BE REMOVED, PENETRATED, OR DRILLED, THE WORK SHALL BE DONE WITH HAND LABOR ENTIRELY, USING HAMMER AND CHISEL. JACKHAMMERS, BULL POINTS OR OTHER POWER EQUIPMENT SHALL NOT BE USED.

30. WHERE MANHOLES ARE ENCOUNTERED:

a) THEY SHALL BE PROTECTED AND RAISED OR LOWERED AS REQUIRED, TO MATCH THE NEW STREET GRADE.

b) IF MANHOLE COVERS ARE RAISED OR LOWERED, PROTECT CABLES IN MANHOLE BY WOOD SHEETING OF 2 " NOMINAL THICKNESS.

c) PRIOR TO THE START OF CONSTRUCTION OPERATIONS AFFECTING MANHOLES AND DUCT LINES, SEVEN DAYS NOTICE MUST BE GIVEN TO MR. LIONEL SAINT LOUIS P.E., ASSISTANT CHIEF OFFICER, INSPECTIONS AND EMERGENCY RESPONSE, MOW ENGINEERING, AT 347-672-2448, LIONEL.SAINTLOUIS@NYCT.COM.

31. CONSTRUCTION WORK DONE NEAR VENT GRATINGS AND HATCHES SHALL BE AS FOLLOWS:

a) UNLESS APPROVED BY THE NYCT ENGINEER, ALL VENT GRATINGS AND HATCHES SHALL REMAIN OUTSIDE THE CONSTRUCTION SITE, SEPARATED BY A CONSTRUCTION FENCE. PROTECTIVE SHIELDS SHALL BE PROVIDED OVER VENT GRATINGS AS REQUIRED BY THE NYCT ENGINEER.

b) NO BUILDING MATERIAL, VEHICLES OR CONSTRUCTION EQUIPMENT SHALL BE STORED OR COVER OVER VENT, GRATINGS, HATCHES OR EMERGENCY EXITS.

c) DETAILS OF SIDEWALK RECONSTRUCTION AROUND VENT GRATINGS, ENTRANCES, HATCHES AND EMERGENCY EXITS SHALL BE SUBMITTED TO NYCT FOR APPROVAL.

32. TRACTORS, CRANES, EXCAVATORS, AND ANY HEAVY EQUIPMENT USED IN THE VICINITY OF THE ELEVATED STRUCTURES SHALL BE ISOLATED FROM THE GROUND. SINCE THE ELEVATED STRUCTURE IS USED AS A NEGATIVE RETURN PATH, WITH A CONSEQUENT POTENTIAL BETWEEN IT AND THE GROUND, ANY CONTACT BETWEEN THE STRUCTURE AND GROUNDED EQUIPMENT COULD RESULT IN BURNING OF THE STEEL.

33. TEMPORARY CONSTRUCTION SHEDS, BARRICADES OR PLYWOOD PARTITIONS SHALL BE A MINIMUM OF 5'-0 " FROM EDGE OF FINISHED PLATFORM. ALL BARRICADE PLANS SHALL BE SUBMITTED TO NYCT'S OFFICE OF STATION PROGRAMS FOR REVIEW AND APPROVAL.

34. THE GENERAL REQUIREMENTS FOR NYCT STATION AREAS OR STAIRWAY/CLOSINGS ARE AS FOLLOWS:

a) ONLY ONE STAIRWAY AT EACH STATION SHALL BE PERMITTED TO BE CLOSED AT THE SAME TIME. APPROVALS FOR CLOSING ANY STAIRWAY SHALL BE OBTAINED FROM THE DIVISION OF STATION PROGRAMS AT LEAST THREE WEEKS IN ADVANCE.

b) MS. SUSANNAH HARRINGTON, DIRECTOR, OFFICE OF STATION PROGRAMS; TELEPHONE 718-694-4891, EMAIL SUSANNAH.HARRINGTON@NYCT.COM OF THE DIVISION OF STATIONS SHALL BE NOTIFIED THREE WEEKS PRIOR TO THE ACTUAL CLOSING AND REOPENING OF THE ENTRANCE.

c) SIGNAGE SHALL BE SUPPLIED AND POSTED AT LEAST TWO WEEKS IN ADVANCE, ADVISING THE PUBLIC OF THE PROPOSED SUBWAY STAIR CLOSING. HOWEVER, IF IT IS AN ENTIRE ENTRANCE CLOSING, SIGNAGE SHALL BE POSTED TWO WEEKS IN ADVANCE.

d) THE STREET ENTRANCE STAIRWAY SHALL NOT BE CLOSED UNLESS MANPOWER AND MATERIALS ARE AVAILABLE TO COMMENCE WORK ON DATES PERMITTED.

e) ONCE THE CLOSING IS EFFECTIVE, CONSTRUCTION SIGNS SHALL BE PLACED AT APPROPRIATE LOCATIONS ON THE BARRICADES AT THE STREET AND MEZZANINE LEVELS, STATING THE CONTRACTOR'S NAME, 24 HOUR EMERGENCY TELEPHONE NUMBER, CONTRACT NUMBER, THE DURATION OF THE CLOSING, DIRECTION TO AN ALTERNATE ENTRANCE/EXIT, AND AN APOLOGY FOR THE INCONVENIENCE TO OUR CUSTOMERS.

f) EXISTING STATION SIGNAGE SHALL BE ADJUSTED TO REFLECT ANY CHANGES IN ACCESS/EGRESS.
g) BARRICADES SHALL BE PAINTED FEDERAL BLUE AND BE MADE OF FIRE RATED MATERIAL. BARRICADES SHALL BE KEPT GRAFFITI FREE AT ALL TIMES. THE CONTRACTOR SHALL MAINTAIN THE BARRICADED AREA CLEAN OF ALL DEBRIS.

h) ALL MATERIALS SHALL BE PROPERLY STORED AND SECURED AWAY FROM CUSTOMER TRAFFIC.

i) THE CONTRACTOR SHALL REMOVE ALL WASTE MATERIAL AND BARRICADES FROM ALL STATION AREAS WHEN CONSTRUCTION IS COMPLETED.

j) INSPECTION OF THE AREA UNDER CONSTRUCTION BY AUTHORIZED NYCT STATION DEPARTMENT EMPLOYEES SHALL NOT BE INHIBITED.

k) IF STREETLIGHTS ON THE SIDEWALKS ARE AFFECTED, TEMPORARY LIGHTS SHALL BE PROVIDED.

35. IF NEW CONCRETE CONSTRUCTION IS DESIGNED TO JOIN TO EXISTING CONCRETE, DOWELS, LAP SPLICES AND KEYWAYS SHALL BE USED IN ACCORDANCE WITH NYCT STANDARDS. OTHERWISE, COLD JOINTS SHALL BE DESIGNED IN ACCORDANCE WITH NYCT STANDARDS.

36. IF THE PROJECT INVOLVES CONSTRUCTION OR ALTERATION OF A SUBWAY FACILITY ON PRIVATE PROPERTY, THE PROPERTY OWNERS SHALL ENTER INTO AN AGREEMENT WITH NYCT PERTAINING TO ALL WORK AFFECTING THE TRANSIT FACILITIES WITH CLEARLY DEFINED LIMITS AND RESPONSIBILITY FOR MAINTENANCE AND LIABILITY.

37. WHEREVER A NEW SIDEWALK IS BEING PLACED ADJACENT TO NYCT STRUCTURES THE FOLLOWING SHALL BE REQUIRED:

a) THE TOP OF THE NEW SIDEWALK SHALL BE FLUSH WITH THE SUBWAY VENT GRATINGS, HATCHES AND EMERGENCY EXITS.

b) THE SLOPE OF THE NEW SIDEWALK SHALL BE SUCH THAT THE DRAINAGE BE AWAY FROM THESE STRUCTURES.

c) A 1/2" PREMOLDED FILLER SHALL BE INSTALLED BETWEEN THE NEW SIDEWALK AND THE NYCT STRUCTURE.

d) WHERE SIDEWALK ELEVATIONS ARE BEING CHANGED, DETAILS OF PROPOSED WORK AROUND NYCT STRUCTURES SHALL BE SUBMITTED FOR APPROVAL.

38. BEFORE ENTERING NYCT PROPERTY, CONTRACTOR OR SUBCONTRACTOR'S PERSONNEL SHALL HAVE ATTENDED NYCT TRACK SAFETY TRAINING AND EXPECT TO FOLLOW NYCT RULES AND REGULATIONS AS PER TRAINING AND INSTRUCTIONS.

39. BEFORE THE START OF ANY WORK, THE CONTRACTOR SHALL MAKE AN EXAMINATION, IN THE PRESENCE OF NYCT'S ENGINEER, OF THE INTERIOR AND EXTERIOR OF NYCT SUBWAY OR OTHER STRUCTURE ADJACENT TO THE PROPOSED WORK. THE PERSON OR PERSONS AUTHORIZED BY THE CONTRACTOR TO MAKE THESE EXAMINATIONS SHALL BE APPROVED BY THE ENGINEER. THE CONTRACTOR SHALL TAKE ALL PHOTOGRAPHS AS MAY BE NECESSARY OR ORDERED TO INDICATE THE EXISTING CONDITION OF NYCT STRUCTURE. ANY STRUCTURALLY DEFICIENT CONDITION SHALL BE MADE SAFE PRIOR TO THE COMMENCEMENT OF THE WORK. A COPY OF THE FIELD REPORT WITH PHOTOS SHALL BE SUBMITTED TO MR. LIONEL SAINT LOUIS, P.E., ASSISTANT CHIEF OFFICER, INSPECTIONS AND EMERGENCY RESPONSE, MOW ENGINEERING, 130 LIVINGSTON STREET, ROOM 8046, BROOKLYN, NEW YORK 11201, TELEPHONE 347-672- 2448, EMAIL LIONEL.SAINTLOUIS@NYCT.COM BEFORE THE START OF CONSTRUCTION.

40. ALL ARCHITECTURAL DETAILS (SERVICE BOOTHS, RAILINGS, DOORS, ETC.) SHALL CONFORM TO THE LATEST NYCT STANDARDS. THESE STANDARDS ARE AVAILABLE AT NYCT.

41. STANDARD NYCT INSURANCE CLAUSES SHALL BE MADE PART OF THE PROJECT'S CONTRACT DRAWINGS. PROOF THAT THE NECESSARY INSURANCE IS IN EFFECT SHALL BE REQUIRED BEFORE WORK CAN COMMENCE.

42. AT THE CLOSE OF ANY PROJECT INVOLVING CONSTRUCTION OR ALTERATIONS TO TRANSIT FACILITIES, A PDF AND ELECTRONIC COPIES COMPLYING TO MICROSTATION.DGN FORMAT OF "APPROVED AS-BUILTS" MUST BE PROVIDED TO NYCT FOR ITS RECORDS. FOR DETAILS OF SPECIFIC REQUIREMENTS, CONTACT MTA CONSTRUCTION AND DEVELOPMENT EXTERNAL PARTNER PROGRAM.
43. AT LEAST THREE WEEKS PRIOR TO THE START OF CONSTRUCTION OPERATIONS, NOTIFICATION SHALL BE GIVEN TO MR. LIONEL SAINT LOUIS, P.E., ASSISTANT CHIEF OFFICER, INSPECTIONS AND EMERGENCY RESPONSE, MOW ENGINEERING.

44. IF CHANGED FIELD CONDITIONS ARE FOUND OR DEVIATIONS ARE MADE FROM THE APPROVED DRAWINGS, REVISED DRAWINGS SHALL BE RESUBMITTED FOR MTA APPROVAL.

NYCT "NOT FOR BENEFIT" INSURANCE REQUIREMENTS

INSURANCE REQUIREMENTS

THE PERMITTEE, AT ITS SOLE COSTAND EXPENSE, SHALL OBTAINANDMAINTAIN AT ALL TIMES DURING THE PERFORMANCE OF THE WORKSUCH POLICIES OF INSURANCE AS SET FORTH BELOW:

1. WORKERS' COMPENSATION INSURANCE AS REQUIRED BY STATUTE IN THE STATE IN WHICH THE WORK WILL BE PERFORMED. EMPLOYER'S LIABILITY INSURANCE WITH LIMITS OF NOT LESS THAN $1,000,000 BODILY INJURY PER ACCIDENT; $1,000,000 BODILY INJURY PER DISEASE; AND $1,000,000 ANNUAL AGGREGATE. FOR WORK CONDUCTED OUTSIDE THE STATE OF NEW YORK, EMPLOYER'S LIABILITY INSURANCE REQUIRES LIMITS OF NOT LESS THAN $2,000,000 BODILY INJURY PER ACCIDENT; $2,000,000 BODILY INJURY PER DISEASE; AND $2,000,000 ANNUAL AGGREGATE AND MUST PROVIDE PROOF THAT ITS WORKERS' COMPENSATION INSURANCE POLICY HAS BEEN ENDORSED TO INCLUDE "OTHER STATES COVERAGE." IF THE REQUESTING PARTY LEASES ONE OR MORE EMPLOYEES THROUGH THE USE OF A PAYROLL, EMPLOYEE MANAGEMENT, OR OTHER SIMILAR COMPANY, THEN THE PERMITTEE MUST PROCURE WORKER'S COMPENSATION INSURANCE WRITTEN ON AN "IF ANY" POLICY FORM, INCLUDING AN ENDORSEMENT PROVIDING COVERAGE FOR ALTERNATE EMPLOYER/LEASED EMPLOYEE LIABILITY.

2. COMMERCIAL GENERAL LIABILITY ("CGL") INSURANCE, COVERING CLAIMS FOR PERSONAL AND ADVERTISING INJURY, BODILY INJURY (INCLUDING DEATH) AND PROPERTY DAMAGE ARISING OUT OF THE WORK AND IN A FORM PROVIDING COVERAGE NO LESS BROAD THAN THAT OF THE CURRENT ISO COMMERCIAL GENERAL LIABILITY INSURANCE POLICY (OCCURRENCE FORM, NUMBER CG 00 01). SUCH INSURANCE SHALL PROVIDE COVERAGE FOR ALL OPERATIONS INCLUDING THE PRODUCTS-COMPLETED OPERATIONS HAZARD, AND SHALL BE MAINTAINED FOR A PERIOD OF AT LEAST THREE (3) YEARS AFTER FINAL COMPLETION, SUBJECT TO THE LIMITATION OF ANY APPLICABLE STATUTE. THE LIMITS OF SUCH INSURANCE SHALL RENEW ANNUALLY AND NOT BE LESS THAN $2,000,000 EACH OCCURRENCE; $4,000,000 PRODUCTS AND COMPLETED OPERATIONS AGGREGATE; AND $4,000,000 PER PROJECT GENERAL AGGREGATE. THIS REQUIREMENT MAY BE SATISFIED BY A COMBINATION OF A PRIMARY CGL POLICY COVERAGE WITH LIMITS OF NOT LESS THAN $1,000,000 PER OCCURRENCE, AND FOLLOWING-FORM EXCESS OR UMBRELLA LIABILITY INSURANCE POLICY(IES) WHICH EQUAL THE TOTAL LIMITS REQUIRED ABOVE AND FOR EXCESS OR UMBRELLA LIABILITY INSURANCE IN SECTION 4 BELOW. THE CGL AND EXCESS OR UMBRELLA LIABILITY INSURANCE POLICIES MUST BE WRITTEN AN OCCURRENCE BASIS FORM, AND MUST COMPLY WITH THE FOLLOWING PROVISIONS:

- THE POLICY SHALL INCLUDE INDEPENDENT CONTRACTOR AND CONTRACTUAL LIABILITY COVERAGES;
- THE POLICY SHALL NOT CONTAIN ANY CONTRACTUAL EXCLUSION RELATIVE TO LABOR LAWS OR ANY OTHER EXCLUSIONS OR LIMITATIONS DIRECTED TOWARD ANY TYPES OF PROJECTS, MATERIALS OR PROCESSES INVOLVED IN THE WORK;
- THE POLICY SHALL NOT CONTAIN ANY OF THE FOLLOWING EXCLUSIONS: SUBCONTRACTOR'S EXCLUSION; CONSTRUCTION DEFECT EXCLUSION; LEASED WORKER EXCLUSION; CROSS LIABILITY EXCLUSION; CRANE EXCLUSION; AND DEMOLITION EXCLUSION OR "EXPLOSION, COLLAPSE AND UNDERGROUND" EXCLUSION;
- CONSTRUCTION WORK TAKING PLACE WITHIN 50 FEET OF A RAILROAD MUST INCLUDE:
  - CONTRACTUAL LIABILITY - RAILROADS CG 24 17 LISTING THE SCHEDULED RAILROAD AND DESIGNATED JOB SITE.
  - COVERAGE FOR CLAIMS FOR BODILY INJURY ASSERTED BY A RAILROAD EMPLOYEE OF AN ADDITIONAL INSURED AND ANY EMPLOYER'S LIABILITY EXCLUSION WHICH MAY OTHERWISE OPERATE TO EXCLUDE SUCH COVERAGE SHALL BE REMOVED.

3. BUSINESS AUTOMOBILE LIABILITY INSURANCE, IF ANY OWNED, NON-OWNED OR HIRED VEHICLES ARE USED BY THE PERMITTEE WHETHER ON OR OFF-SITE, COVERING THE LIABILITY OF THE PERMITTEE ARISING OUT OF ANY VEHICLE THAT BEARS, OR IS REQUIRED TO BEAR, LICENSE PLATES ACCORDING TO THE LAWS OF THE JURISDICTION IN WHICH THEY ARE OPERATED, AND WHICH ARE NOT COVERED BY THE PERMITTEE'S COMMERCIAL GENERAL LIABILITY. SUCH INSURANCE SHALL PROVIDE COVERAGE AT LEAST AS BROAD AS THE STANDARD ISO COMPREHENSIVE AUTOMOBILE LIABILITY POLICY (CA 00 01, CA 00 05, CA 00 12, CA 0020), WITH LIMITS NOT LESS THAN $2,000,000 EACH ACCIDENT ON A COMBINED SINGLE BASIS. IF THE WORK INVOLVES TRANSPORTATION OF HAZARDOUS OR REGULATED SUBSTANCES, HAZARDOUS OR REGULATED WASTES AND/OR HAZARDOUS OR REGULATED MATERIALS, THE PERMITTEE SHALL PROVIDE POLLUTION AUTO COVERAGE EQUIVALENT TO THAT PROVIDED UNDER THE ISO POLLUTION LIABILITY-BROADENED COVERAGE FOR COVERED AUTOS ENDORSEMENT (CA 99 48), AND THE MOTOR CARRIER ACT ENDORSEMENT (MCS 90). ANY STATUTORILY REQUIRED "NO-FAULT" BENEFITS AND UNINSURED/UNDERINSURED MOTORIST COVERAGE SHALL BE INCLUDED.

4. UMBRELLA/EXCESS LIABILITY INSURANCE, WITH LIMITS NOT LESS THAN $3,000,000 PER OCCURRENCE IN EXCESS OF THE LIMITS FOR COMMERCIAL GENERAL LIABILITY, EMPLOYER'S LIABILITY, AND BUSINESS AUTOMOBILE LIABILITY INSURANCE WHICH IS AT LEAST AS BROAD AS EACH OF THE UNDERLYING POLICIES. THE UMBRELLA/EXCESS LIABILITY POLICIES SHALL BE WRITTEN ON A "DROP-DOWN" AND "FOLLOWING FORM" BASIS, WITH ONLY SUCH EXCEPTIONS EXPRESSLY APPROVED BY THE AUTHORITY/MTA.

5. RAILROAD PROTECTIVE LIABILITY INSURANCE (ISO-RIMA OR EQUIVALENT FORM), IF ANY WORK WILL BE TAKING PLACE WITHIN 50 FEET OF A RAILROAD, SUBWAY OR SIMILAR TRACKED CONVEYANCE OR REQUIRES FLAG OR PROTECTIVE MEASURES BY THE AUTHORITY OR ITS AFFILIATES OR THEIR RESPECTIVE EMPLOYEES, COVERING THE WORK TO BE PERFORMED AT THE DESIGNATED JOB SITE AND AFFORDING PROTECTION FOR DAMAGES ARISING OUT OF BODILY INJURY OR DEATH, PHYSICAL DAMAGE TO OR DESTRUCTION OF PROPERTY, INCLUDING DAMAGE TO THE INSURED'S OWN PROPERTY AND CONFORMING TO THE FOLLOWING:

- THE POLICY SHALL BE ISSUED TO AND SHALL NAME AS THE "NAMED INSUREDS" EACH OF THE INDEMNIFIED PARTIES LISTED UNDER SECTION D BELOW.
- THE LIMIT OF LIABILITY SHALL BE NOT LESS THAN $2,000,000 PER OCCURRENCE, SUBJECT TO A $6,000,000 ANNUAL AGGREGATE;
- POLICY MUST BE ENDORSED TO PROVIDE COVERAGE FOR CLAIMS ARISING FROM INJURY TO EMPLOYEES COVERED BY FEDERAL EMPLOYER'S LIABILITY ACT (FELA), WHEN APPLICABLE.
- INDICATE THE NAME AND ADDRESS OF THE DESIGNATED CONTRACTOR, LOCATION OF THE WORK, THE CONTRACT DESCRIPTION AND CONTRACT NUMBER, IF APPLICABLE.

6. CONTRACTOR'S POLLUTION LIABILITY INSURANCE, IF DISPOSAL OF HAZARDOUS MATERIALS FROM THE DESIGNATED JOB SITE IS UNDERTAKEN OR IF THE WORK BEING PERFORMED IN THE IMPACT AREA INVOLVES ENVIRONMENTAL OR POLLUTION EXPOSURES, WITH LIMITS NOT LESS THAN $2,000,000 PER OCCURRENCE AND GENERAL AGGREGATE ON A PER PROJECT BASIS INCLUDING COMPLETED OPERATIONS COVERAGE TO BE MAINTAINED FOR AT LEAST THREE (3) YEARS AFTER COMPLETION OF THE WORK. POLICY SHALL COVER ENVIRONMENTAL DAMAGE RESULTING FROM POLLUTION CONDITIONS THAT ARISE FROM THE OPERATIONS OF THE PERMITTEE AND DESCRIBED UNDER THE SCOPE OF SERVICES OF THIS AGREEMENT. COVERAGE MUST APPLY TO SUDDEN AND NON-SUDDEN POLLUTION CONDITIONS INCLUDING THE DISCHARGE, DISPERSAL, RELEASE OR ESCAPE OF SMOKE, VAPORS, SOOT, FUMES, ACIDS, ALKALIS, TOXIC CHEMICALS, LIQUIDS OR GASES, WASTE MATERIALS OR OTHER IRRITANTS, CONTAMINANTS OR POLLUTANTS, SILT OR SEDIMENT INTO OR UPON LAND, THE ATMOSPHERE OR ANY WATERCOURSE OR BODY OF WATER, PROVIDED SUCH CONDITIONS ARE NOT NATURALLY PRESENT IN THE ENVIRONMENT IN THE CONCENTRATION OR AMOUNTS DISCOVERED, UNLESS SUCH NATURAL CONDITION(S) ARE RELEASED OR DISPERSED AS A RESULT OF THE PERFORMANCE OF COVERED OPERATIONS. SUCH INSURANCE SHALL INCLUDE BUT NOT BE LIMITED TO:

- BODILY INJURY, SICKNESS, DISEASE, MENTAL ANGUISH OR SHOCK SUSTAINED BY ANY PERSON, INCLUDING DEATH; MEDICAL MONITORING;
- PHYSICAL INJURY TO OR DESTRUCTION OF TANGIBLE PROPERTY OF PARTIES OTHER THAN THE INSURED INCLUDING THE RESULTING LOSS OF USE AND DIMINUTION IN VALUE THEREOF; LOSS OF USE, BUT NOT DIMINUTION IN VALUE, OF TANGIBLE PROPERTY OF PARTIES OTHER THAN THE INSURED THAT HAS NOT BEEN PHYSICALLY INJURED OR DESTROYED;
- NATURAL RESOURCE DAMAGES;
- CLEANUP COSTS;
- TRANSPORTATION AND NON-OWNED DISPOSAL SITE COVERAGE (WITH NO SUNSET CLAUSE/RESTRICTED COVERAGE TERM) IF THE PERMITTEE IS DISPOSING OF CONTAMINATED MATERIAL (S);
- NO EXCLUSIONS FOR ASBESTOS, LEAD PAINT, SILICA OR MOLD/FUNGUS/LEGIONELLA;
- DEFENSE INCLUDING COSTS, CHARGES AND EXPENSES INCURRED IN THE INVESTIGATION, ADJUSTMENT OR DEFENSE OF CLAIMS FOR SUCH COMPENSATORY DAMAGES.

SECTION B. GENERAL INSURANCE REQUIREMENTS

THE FOLLOWING REQUIREMENTS ARE APPLICABLE TO ALL INSURANCE COVERAGES REQUIRED DURING THE PERFORMANCE OF THE WORK, EXCEPT TO THE EXTENT OTHERWISE INDICATED:

i. INSURER REQUIREMENTS. ALL POLICIES OF INSURANCE SHALL BE PLACED WITH INSURERS ACCEPTABLE TO THE AUTHORITY/MTA. THE INSURANCE UNDERWRITER(S) MUST BE DULY LICENSED OR APPROVED SURPLUS LINES INSURER TO DO BUSINESS IN THE STATE WHERE THE WORK IS TO BE PERFORMED AND MUST HAVE A FINANCIAL RATING OF A-/VII OR BETTER IN THE MOST RECENT EDITION OF BEST'S KEY RATING GUIDE OR OTHERWISE SATISFACTORY TO THE AUTHORITY/MTA.

i. RIGHT TO REQUEST ADDITIONAL INSURANCE. THE PERMITTEE SHALL INCREASE REQUIRED INSURANCE AMOUNTS UPON DIRECTION BY THE AUTHORITY/MTA.

i. ADDITIONAL INSUREDS. ALL INSURANCE REQUIRED UNDER SECTION A (EXCEPT FOR WORKERS' COMPENSATION, PROFESSIONAL LIABILITY OR OTHERWISE NOTED), SHALL NAME THE PARTIES LISTED IN SECTION D AS ADDITIONAL INSUREDS AND SHALL INCLUDE THEIR RESPECTIVE SUBSIDIARY AND AFFILIATED COMPANIES, THEIR BOARDS OF DIRECTORS, OFFICERS, EMPLOYEES, REPRESENTATIVES, AND AGENTS (HEREINAFTER, COLLECTIVELY THE "ADDITIONAL INSUREDS"). FOR THE COMMERCIAL GENERAL LIABILITY INSURANCE, ADDITIONAL INSURED COVERAGE MUST BE PROVIDED ON ISO FORMS OR THEIR EQUIVALENT AT LEAST AS BROAD AS CG 20 26. NO OTHER GENERAL LIABILITY ADDITIONAL INSURED ENDORSEMENT WILL BE ACCEPTED UNLESS APPROVED BY THE AUTHORITY/MTA.

iv. PRIMARY AND NON-CONTRIBUTORY. EACH POLICY REQUIRED IN SECTION A, INCLUDING PRIMARY, EXCESS, AND/OR UMBRELLA, SHALL PROVIDE THAT THE INSURANCE PROVIDED TO THE ADDITIONAL INSUREDS IS PRIMARY AND NON-CONTRIBUTORY, SUCH THAT NO OTHER INSURANCE OR SELF-INSURED RETENTION CARRIED OR HELD BY THE AUTHORITY /MTA SHALL BE CALLED UPON TO CONTRIBUTE TO A LOSS COVERED BY INSURANCE FOR THE NAMED INSURED.

v. WAIVER OF SUBROGATION. TO THE FULLEST EXTENT PERMITTED BY APPLICABLE LAW, THE AUTHORITY WILL REQUIRE ALL INSURANCE POLICIES REQUIRED IN SECTION A TO INCLUDE CLAUSES STATING EACH INSURER WILL WAIVE ALL RIGHTS OF RECOVERY. ALL WAIVERS PROVIDED HEREIN SHALL BE EFFECTIVE AS TO ANY INDIVIDUAL OR ENTITY EVEN IF SUCH INDIVIDUAL OR ENTITY (A) WOULD OTHERWISE HAVE A DUTY OF INDEMNIFICATION, CONTRACTUAL OR OTHERWISE, OR (B) DID NOT PAY THE INSURANCE PREMIUM DIRECTLY OR INDIRECTLY, AND WHETHER OR NOT SUCH INDIVIDUAL OR ENTITY HAS AN INSURABLE INTEREST IN ANY PROPERTY DAMAGED.
vi. SELF-INSURED RETENTIONS. NONE OF THE INSURANCE REQUIRED IN SECTION A SHALL BE SUBJECT TO ANY SELF-INSURED RETENTION GREATER THAN $100,000 WITHOUT THE AUTHORITY/MTA WRITTEN APPROVAL.

vi. SUBCONTRACT AGREEMENTS. THE PERMITTEE SHALL BY APPROPRIATE WRITTEN AGREEMENTS FLOW DOWN THE REQUIREMENTS FOR (A) THE WAIVER OF SUBROGATION FOR ALL REQUIRED INSURANCE, (B) ADDITIONAL INSURED COVERAGE FOR ALL REQUIRED INSURANCE, AND (C) OTHER REQUIREMENTS OF THIS SECTION TO ALL TIERS OF CONTRACTORS, FOR ALL INSURANCE REQUIRED OF SUCH CONTRACTORS BY THE PERMITTEE FOR THE WORK.

V I. NO LIMITATION. NOTHING IN THIS SECTION SHALL BE CONSTRUED AS LIMITING IN ANY WAY THE EXTENT TO WHICH THE PERMITTEE MAY BE HELD RESPONSIBLE FOR PAYMENT OF DAMAGES RESULTING FROM THEIR OPERATIONS. THE PERMITTEE'S/CONTRACTOR'S OBLIGATIONS TO PROCURE INSURANCE ARE SEPARATE AND INDEPENDENT OF, AND SHALL NOT LIMIT THE PERMITTEE'S CONTRACTUAL INDEMNITY AND DEFENSE OBLIGATIONS. THE AUTHORITY/MTA DOES NOT REPRESENT THAT COVERAGES AND LIMITS REQUIRED IN THIS ENTRY PERMIT WILL NECESSARILY BE ADEQUATE TO PROTECT THE PERMITTEE.

ix. NOTICE OF CANCELLATION OR NON-RENEWAL. THE PERMITTEE AGREES TO NOTIFY THE AUTHORITY
/MTA THIRTY DAYS PRIOR TO ANY CANCELLATION, NON-RENEWAL OR MATERIAL CHANGE TO ANY INSURANCE POLICIES REQUIRED IN SECTION A. NOTICE SHALL BE SENT ELECTRONICALLY TO THE CONTRACT-SPECIFIC EMAIL ADDRESS PROVIDED TO THE PERMITTEE VIA MTA CERTIFICATE OF INSURANCE MANAGEMENT SYSTEM (CIMS), COMPLIANZTM.

x. NOTICE OF OCCURRENCE. THE PERMITTEE SHALL IMMEDIATELY FILE WITH THE AUTHORITY'S TORT DIVISION (WITH A COPY TO THE AUTHORITY'S ENGINEER), 130 LIVINGSTON STREET, 11TH FLOOR, BROOKLYN, NY 11201, A NOTICE OF ANY OCCURRENCE LIKELY TO RESULT IN A CLAIM AGAINST THE AUTHORITY /MTA, AND SHALL ALSO FILE WITH THE TORTS DIVISION DETAILED SWORN PROOF OF INTEREST AND LOSS WITH THE CLAIM. THIS PARAGRAPH SHALL SURVIVE THE EXPIRATION OR EARLIER TERMINATION OF THE PERMIT AGREEMENT/ENTRY PERMIT.

xi. INSURANCE NOT IN EFFECT: IF AT ANY TIME DURING THE PERFORMANCE OF THE WORK, INSURANCE AS REQUIRED IS NOT IN EFFECT OR PROOF THEREOF IS NOT PROVIDED, THE AUTHORITY /MTA SHALL HAVE THE OPTIONS TO: (A) DIRECT THE PERMITTEE TO SUSPEND WORK OR OPERATION WITH NO ADDITIONAL COST OR EXTENSION OF TIME DUE ON ACCOUNT THEREOF; OR (B) TERMINATE THE PERMISSION GRANTED TO THE PERMITTEE TO PERFORM THE WORK.

xi. CONFORMANCE TO LAW. IF APPLICABLE LAW LIMITS THE ENFORCEABILITY OF ANY OF THE FOREGOING REQUIREMENTS, THE PERMITTEE SHALL BE REQUIRED TO COMPLY WITH THE FOREGOING REQUIREMENTS TO THE FULLEST EXTENT OF COVERAGE AND LIMITS ALLOWED BY APPLICABLE LAW AND THE PROVISIONS OF INSURANCE SHALL BE LIMITED ONLY TO THE EXTENT REQUIRED TO CONFORM TO APPLICABLE LAW.

SECTION C. EVIDENCE OF INSURANCE

1. SUBMISSION OF INSURANCE: THE PERMITTEE MUST SUBMIT EVIDENCE OF ALL REQUIRED INSURANCE TO THE MTA C&D EXTERNAL PARTNER PROGRAM VIA THE ASITE PORTAL. ADDITIONAL INFORMATION AND INSTRUCTIONS CAN BE FOUND AT: HTTPS://NEW.MTA.INFO/AGENCY/CONSTRUCTION-AND-DEVELOPMENT/ BUILDING-NEAR-TRANSIT/EXTERNAL-PARTNER-PROGRAM

a. ACCEPTABLE FORMS OF INSURANCE:

- ACORD 25: CERTIFICATE OF INSURANCE
- ACORD 855: NY CONSTRUCTION CERTIFICATE OF LIABILITY ADDENDUM
- ACORD 28: CERTIFICATE OF COMMERCIAL PROPERTY INSURANCE
- ACORD BINDER OR INSURANCE POLICY
- WORKERS' COMPENSATION (ALTERNATIVE OPTIONS):
  - C-105.2 - CERTIFICATE OF WORKERS' COMPENSATION INSURANCE; OR
  - U-26.3 - CERTIFICATE OF WORKERS' COMPENSATION FROM THE STATE INSURANCE FUND; OR
  - GSI-105/SI-12 - CERTIFICATE OF WORKERS' COMPENSATION SELF INSURANCE; OR
  - CE-200 - ATTESTATION OF EXEMPTION WHEN CONTRACTOR MEETS THE REQUIREMENTS (E.G.) SOLE PROPRIETOR

b. CERTIFICATE OF INSURANCE - THE FOLLOWING MINIMUM DETAILS MUST BE REFERENCED ON THE CERTIFICATE:
- POLICY COVERAGE DETAILS (E.G.) POLICY TERM, PER OCCURRENCE/PER PROJECT; LIMITS/SUB- LIMITS, AGGREGATE LIMITS, DEDUCTIBLES, SELF-INSURED RETENTIONS, AND INSURANCE CARRIER NAME AND CORRESPONDING NAIC #
- CONTRACT IDENTIFIER (E.G.) CONTRACT #, RFP #, OR ENTRY PERMIT #
- LOCATION AND DESCRIPTION OF WORK
- INDEMNIFIED PARTIES AS AN ADDITIONAL INSURED INCLUDING PRIMARY AND NONCONTRIBUTORY COVERAGE AND WAIVER OF SUBROGATION IN FAVOR OF THE AUTHORITY/MTA
- CERTIFICATE HOLDER MUST LIST THE AUTHORITY/MTA NAME AND ADDRESS
- CERTIFICATE OF INSURANCE MUST BE SIGNED BY AN AUTHORIZED INSURANCE REPRESENTATIVE

c. ENDORSEMENTS (WHERE APPLICABLE):
- GENERAL LIABILITY ADDITIONAL INSURED (CG 20 26)
- GENERAL LIABILITY - PRIMARY AND NON-CONTRIBUTORY CG 2001 OR EQUIVALENT
- GENERAL LIABILITY - PER PROJECT AGGREGATE, WHERE APPLICABLE
- GENERAL LIABILITY - INDEMNIFIED PARTY
- AUTOMOBILE LIABILITY - MCS 90 AND CA 99 48
- CONTRACTOR'S POLLUTION - NON-OWNED DISPOSAL SITE AND TRANSPORTATION COVERAGE
- WAIVER OF SUBROGATION (MOST RECENT NCCI/ISO OR EQUIVALENT AS APPLICABLE)
- JOINT VENTURE (JV) - IF THE CONTRACTOR/CONSULTANT IS A JOINT VENTURE, GENERAL LIABILITY INSURANCE MUST BE PROVIDED IN THE NAME OF THE JOINT VENTURE. ALTERNATIVELY, A NAMED INSURED ENDORSEMENT LISTING THE JOINT VENTURE MAY BE ACCEPTED.

d. INSURANCE BINDER/POLICY (APPLICABLE TO RAILROAD PROTECTIVE LIABILITY AND BUILDER'S RISK/INSTALLATION FLOATER). IF A POLICY IS NOT SUBMITTED, THE INSURANCE BINDER MUST INCLUDE THE FOLLOWING MINIMUM DETAILS:

- POLICY COVERAGES AND DETAILS (E.G.) POLICY TERM, LIMITS/SUB-LIMITS, AGGREGATE LIMITS, DEDUCTIBLES, SELF-INSURED RETENTIONS, INSURANCE CARRIER NAME AND APPLICABLE NAIC #
- CONTRACT NUMBER OR ENTRY PERMIT NUMBER; DESIGNATED CONTRACTOR; LOCATION AND DESCRIPTION OF WORK
- INDEMNIFIED PARTIES AS EITHER A NAMED INSURED OR ADDITIONAL NAMED INSURED
- BINDER MUST BE ISSUED AND SIGNED BY THE AUTHORIZED INSURANCE COMPANY OR THEIR AUTHORIZED INSURANCE AGENT
- BINDER MAY BE ACCEPTED PENDING ISSUANCE OF THE POLICY. POLICY MUST BE SUBMITTED WITHIN 30 DAYS FROM BINDER EFFECTIVE DATE.

2. INSURANCE COMPLIANCE: THE PERMITTEE WILL BE NOTIFIED WHEN INSURANCE IS COMPLIANT THROUGH THE ASSIGNED "CONTRACT SPECIFIC" EMAIL ADDRESS VIA THE MTA CERTIFICATE OF INSURANCE MANAGEMENT SYSTEM (CIMS) COMPLIANZ™.

3. RENEWAL INSURANCE: THE PERMITTEE WILL BE NOTIFIED VIA CIMS TWO (2) WEEKS PRIOR TO THE EXPIRATION OF THEIR INSURANCE AND SHALL ENDEAVOR TO PROVIDE RENEWAL OR REPLACEMENT POLICIES OF INSURANCE WITH TERMS AND CONDITIONS NO LESS FAVORABLE THAN THE EXPIRING COVERAGES. THE PERMITTEE MUST SUBMIT EVIDENCE OF RENEWAL INSURANCE USING THE "CONTRACT SPECIFIC" EMAIL ADDRESS ASSIGNED TO THIS AGREEMENT.

DO NOT USE THE ASSIGNED "CONTRACT SPECIFIC" EMAIL ADDRESS FOR OTHER AGREEMENTS. EACH INSURANCE SUBMISSION MUST BE SENT SEPARATELY AND MAY NOT BE COMBINED WITH OTHER AGREEMENTS.

4. FAILURE OF THE AUTHORITY/MTA TO DEMAND SUCH COIS OR OTHER EVIDENCE OF FULL COMPLIANCE WITH THESE INSURANCE REQUIREMENTS, OR FAILURE OF THE AUTHORITY/MTA TO IDENTIFY A DEFICIENCY FROM EVIDENCE PROVIDED, WILL NOT BE CONSTRUED AS A WAIVER OF THE PERMITTEE'S OBLIGATION TO MAINTAIN SUCH INSURANCE. THE AUTHORITY/MTA ACCEPTANCE OF ANY COI EVIDENCING THE REQUIRED COVERAGES AND LIMITS DOES NOT CONSTITUTE APPROVAL OR AGREEMENT BY THE AUTHORITY/MTA THAT THE INSURANCE REQUIREMENTS HAVE BEEN MET OR THAT THE INSURANCE POLICIES SHOWN IN THE COI ARE IN COMPLIANCE WITH THE REQUIREMENTS.

5. THE AUTHORITY/MTA HAS THE RIGHT, BUT NOT THE OBLIGATION, OF PROHIBITING THE PERMITTEE FROM ENTERING THE AUTHORITY PROPERTY UNTIL THE AUTHORITY/MTA RECEIVES ALL COIS OR OTHER EVIDENCE THAT INSURANCE HAS BEEN PLACED IN COMPLETE COMPLIANCE WITH THESE REQUIREMENTS.

SECTION D. REQUIRED ADDITIONAL INSUREDS/INDEMNIFIED PARTIES:

THE NEW YORK CITY TRANSIT AUTHORITY ("NYCT"), THE MANHATTAN AND BRONX SURFACE TRANSIT OPERATING AUTHORITY ("MABSTOA"), THE STATEN ISLAND RAPID TRANSIT OPERATING AUTHORITY ("SIRTOA"), THE METROPOLITAN TRANSPORTATION AUTHORITY ("MTA") INCLUDING ITS SUBSIDIARIES AND AFFILIATES, MTA CONSTRUCTION & DEVELOPMENT COMPANY ("MTA C&D"), MTA BUS COMPANY ("MTA BUS"), AND THE CITY OF NEW YORK ("CITY" AS OWNER) AND THE RESPECTIVE AFFILIATES AND SUBSIDIARIES EXISTING CURRENTLY OR IN THE FUTURE OF AND SUCCESSORS TO EACH INDEMNIFIED PARTIES LISTED HEREIN.

GUIDELINES FOR SUBMISSION OF INSURANCE

1. INSURANCE REQUIREMENTS:
REFER TO YOUR AGREEMENT FOR REQUIRED INSURANCE COVERAGES, LIMITS, AND ENDORSEMENTS AND REVIEW WITH YOUR AUTHORIZED INSURANCE BROKER FOR COMPLIANCE.

2. ACCEPTABLE FORMS OF INSURANCE:

- ACORD 25: CERTIFICATE OF INSURANCE
- ACORD 855: NY CONSTRUCTION CERTIFICATE OF LIABILITY ADDENDUM
- ACORD 28: CERTIFICATE OF COMMERCIAL PROPERTY INSURANCE
- ACORD BINDER OR INSURANCE POLICY
- WORKERS' COMPENSATION (ALTERNATIVE OPTIONS):
  - C-105.2 - CERTIFICATE OF WORKERS' COMPENSATION INSURANCE; OR
  - U-26.3 - CERTIFICATE OF WORKERS' COMPENSATION FROM THE STATE INSURANCE FUND; OR
  - GSI-105/SI-12 - CERTIFICATE OF WORKERS' COMPENSATION SELF INSURANCE; OR
  - CE-200 - ATTESTATION OF EXEMPTION WHEN CONTRACTOR MEETS THE REQUIREMENTS (E.G.) SOLE PROPRIETOR

3. CERTIFICATE OF INSURANCE MUST INCLUDE AT A MINIMUM:

- POLICY COVERAGE DETAILS (E.G.) POLICY TERM, PER OCCURRENCE/PER PROJECT; LIMITS/SUB-LIMITS, AGGREGATE LIMITS, DEDUCTIBLES, SELF-INSURED RETENTIONS, AND INSURANCE CARRIER NAME AND CORRESPONDING NAIC #
- CONTRACT IDENTIFIER (E.G.) CONTRACT #, RFP #, OR ENTRY PERMIT #
- LOCATION AND DESCRIPTION OF WORK
- INDEMNIFIED PARTIES AS AN ADDITIONAL INSURED INCLUDING PRIMARY AND NONCONTRIBUTORY COVERAGE AND WAIVER OF SUBROGATION IN FAVOR OF THE MTA AGENCY
- CERTIFICATE HOLDER MUST LIST THE MTA AGENCY'S NAME AND ADDRESS
- CERTIFICATE OF INSURANCE MUST BE SIGNED BY AN AUTHORIZED INSURANCE REPRESENTATIVE

4. INSURANCE BINDER / POLICY MUST INCLUDE AT A MINIMUM:
(APPLICABLE FOR RAILROAD PROTECTIVE LIABILITY AND BUILDER'S RISK/INSTALLATION FLOATER)

- POLICY COVERAGES AND DETAILS (E.G.) POLICY TERM, LIMITS/SUB-LIMITS, AGGREGATE LIMITS, DEDUCTIBLES, SELF- INSURED RETENTIONS, INSURANCE CARRIER NAME AND APPLICABLE NAIC #
- CONTRACT NUMBER OR ENTRY PERMIT NUMBER; DESIGNATED CONTRACTOR; LOCATION AND DESCRIPTION OF WORK
- INDEMNIFIED PARTIES AS EITHER A NAMED INSURED OR ADDITIONAL NAMED INSURED
- BINDER MUST BE ISSUED AND SIGNED BY THE AUTHORIZED INSURANCE COMPANY OR THEIR AUTHORIZED INSURANCE AGENT

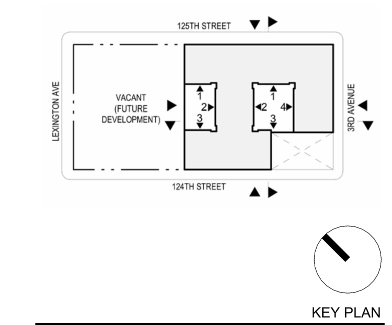
5. SUBMISSION OF INSURANCE:
(EVIDENCE OF ALL REQUIRED INSURANCE MUST BE SENT TO YOUR AGENCY OR PROCUREMENT REPRESENTATIVE)

- ACORD CERTIFICATE OF INSURANCE
- ADDITIONAL INSURED ENDORSEMENTS (E.G.) CG 20 26
- PRIMARY AND NON-CONTRIBUTORY ENDORSEMENTS
- WAIVER OF SUBROGATION ENDORSEMENTS
- ENVIRONMENTAL ENDORSEMENTS (E.G.) MCS 90 AND CA 99 48, AND OR NODS, WHEN APPLICABLE
- INSURANCE POLICY - A BINDER MAY BE ACCEPTED PENDING ISSUANCE OF THE POLICY. POLICY MUST BE SUBMITTED WITHIN 30 DAYS FROM BINDER EFFECTIVE DATE.
- JOINT VENTURE (JV) - IF THE CONTRACTOR/CONSULTANT IS A JOINT VENTURE, GENERAL LIABILITY INSURANCE MUST BE PROVIDED IN THE NAME OF THE JOINT VENTURE. ALTERNATIVELY, A NAMED INSURED ENDORSEMENT LISTING THE JOINT VENTURE MAY BE ACCEPTED.

6. INSURANCE COMPLIANCE:

THE PERMITTEE WILL BE NOTIFIED WHEN INSURANCE IS COMPLIANT THROUGH THE ASSIGNED "CONTRACT SPECIFIC" EMAIL ADDRESS.

NO.	DATE	ISSUANCES/ REVISIONS
1	01-21-2025	BIDDING SET



KEY PLAN

S9ARCHITECTURE
322 8TH AVENUE
NEW YORK, NY 10001
T 212.457.4077
S9ARCHITECTURE.COM

Owner:
JCS REALTY GROUP
199 LEE AVE
BROOKLYN, NY 11211
718-701-5680

Architect/Interior Designer:
S9 ARCHITECTURE
322 8TH AVENUE
NEW YORK, NY
212-457-4077

Structural Engineer:
SET P.C.
40-12 28TH STREET
LONG ISLAND CITY, NY-11101
718-706-7196

MEP Engineer:
EP ENGINEERING
100 WILLIAM STREET
NEW YORK, NY 10038
212-257-6190

PROJECT TITLE:

**180 EAST 125TH STREET,
MANHATTAN, NY-10035**

PROJECT ADDRESS

PROJECT NO: Project Number

DOB NO:

DRAWING TITLE:
TA GENERAL NOTES

SCALE: AS NOTED PAGE: 4 OF 09

FO-004.00

DOB SCAN STICKER

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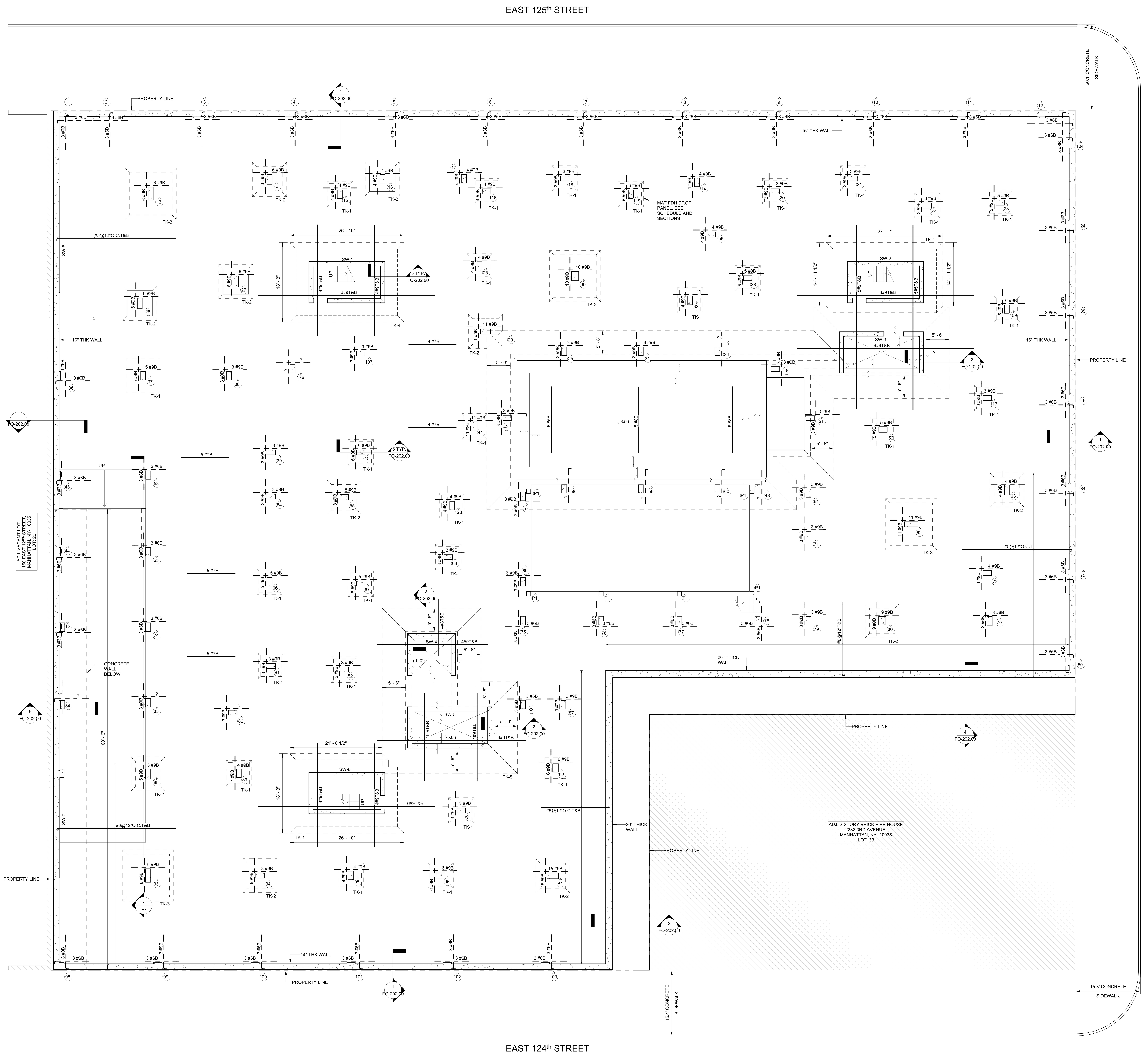

FOUNDATION PLAN
1/8" = 1'-0"

NOTES:

1. TOP OF MAT SLAB = 4.5'. SEE PLAN FOR OTHER ELEVATIONS
2. DENOTES TOP OF EXIST. GRADE/ SIDEWALK ELEVATION WITH RESPECT TO NAVD 88.
3. BOTTOM OF FOOTING ELEVATION NOTED THUS 2.0' U.O.N. ON PLAN.
4. ALL FOOTINGS TO BEAR ON SOIL CLASS 3B & 3A AND ROCK CLASS 1D, U.O.N. ON PLAN, BASED ON SOIL BORINGS/ GEOTECHNICAL REPORT PREPARED BY LANGAN, DATED 9 APRIL 2020.
5. MAT SHALL BE 30" THICK REINFORCED WITH #9@12"O.C. TOP & BOTTOM EA. WAY, TYP. U.O.N. ON PLAN, FOLLOW PLAN FOR ADDITIONAL REINFORCEMENTS.
6. PRIOR TO CONSTRUCTION, IT IS REQUIRED THAT OWNER CONDUCT A PRE-CONDITION SURVEY AND ADJACENT BUILDINGS EVALUATION (ABE) REPORT OF ALL ADJACENT PROPERTIES INCLUDING DATED PHOTOGRAPHS, IN ORDER TO DOCUMENT PRE-EXISTING CONDITIONS SUCH AS CRACKS, WALL BULGING, DETERIORATIONS, ETC. IF ABE REPORT RECOMMENDS ANY TEMPORARY BRACING, SHORING, REPAIRS, ETC. OF ADJACENT BUILDINGS OR PROPERTIES, THEN OWNER, CONTRACTOR, AND ENGINEER TO COORDINATE AND IMPLEMENT SAID TEMPORARY WORK PRIOR TO START OF ANY SUPPORT OF EXCAVATION WORK.
IF ANY CRACKS EXIST ON THE ADJACENT PROPERTIES, IT IS REQUIRED THAT CRACK MONITORS BE INSTALLED AT LOCATIONS DICTATED BY ENGINEER OR CRACK MONITORING COMPANY, AND BE MONITORED AT LEAST ONCE A WEEK DURING CONSTRUCTION (BY ENGINEER OR CRACK MONITORING COMPANY). SEE ALSO MONITORING PLAN FOR ADDITIONAL REQUIREMENTS.
7. PRIOR TO CONSTRUCTION, NEW YORK STATE LICENSED LAND SURVEYOR TO ESTABLISH VERTICAL WALL PLANES ALONG PROPERTY LINES, IN ORDER TO LOCATE ANY LINE INCURSIONS BY ADJACENT BUILDINGS ON TO THIS SITE. IF SUCH INCURSIONS OCCUR (I.E. TOP OF ADJACENT BUILDING "LEANS" INTO THIS SITE, ETC.) CONTRACTOR MUST ADJUST NEW BUILDING WALL LINE ACCORDINGLY.
8. OWNER/ CONTRACTOR TO OBTAIN WRITTEN PERMISSION/CONSENT FROM ADJACENT PROPERTY OWNER TO PLACE SOLDIER PILES, LAGGINGS, AND UNDERPINNING WITHIN THEIR PROPERTY, AND WRITTEN PERMISSION TO RESTORE SAME PROPERTY TO ORIGINAL CONDITIONS.
9. PRIOR TO CONSTRUCTION, IT IS REQUIRED THAT A MONITORING PLAN BE ESTABLISHED BY OWNER, ENGINEER AND CONTRACTOR FOR MONITORING VIBRATION, OPTICAL MOVEMENT, ETC. DURING EXCAVATION, UNDERPINNING, SHEETING, AND LAGGING OPERATIONS, AND FOR DRILLING/DRIVING OF PILES (IF PROJECT REQUIRES PILES).
10. FOR FOUNDATION DETAILS AND SECTIONS, SEE FO-200 SERIES DRAWINGS ON FOUNDATION DRAWINGS.
11. FOR COLUMN AND SHEAR WALL INFORMATION, SEE S-300 SERIES DRAWINGS ON STRUCTURAL DRAWINGS.

MAT PROPERTIES SCHEDULE

MARKS	SIZE	DEPTH	BOTT. REINF.		TOP REINF.		REMARK
			SHORT DIR.	LONG DIR.	SHORT DIR.	LONG DIR.	
TK-1	8'-0" X 8'-0"	48"	#9 @12"O.C.	#9 @12"O.C.	#9 @12"O.C.	#9 @12"O.C.	SEE PLAN FOR ADDITIONAL REINF.
TK-2	8'-0" X 8'-0"	42"	#9 @12"O.C.	#9 @12"O.C.	#9 @12"O.C.	#9 @12"O.C.	SEE PLAN FOR ADDITIONAL REINF.
TK-3	6'-0" X 6'-0"	36"	#9 @12"O.C.	#9 @12"O.C.	#9 @12"O.C.	#9 @12"O.C.	SEE PLAN FOR ADDITIONAL REINF.
TK-4	SEE PLAN	48"	#9 @12"O.C.	#9 @12"O.C.	#9 @12"O.C.	#9 @12"O.C.	SEE PLAN FOR ADDITIONAL REINF.

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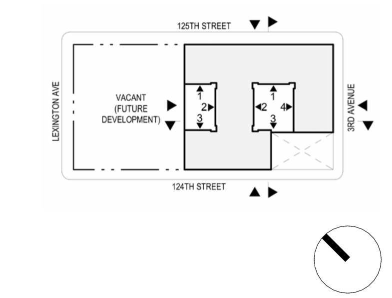

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NEW YORK, NY
212-457-4077

Structural Engineer:
SET P.C.
40-12 28TH STREET
LONG ISLAND CITY, NY-11101
718-706-7196

MEP Engineer:
EP ENGINEERING
100 WILLIAM STREET
NEW YORK, NY 10038
212-257-6190

PROJECT TITLE:

180 EAST 125TH STREET, MANHATTAN, NY-10035

PROJECT ADDRESS

PROJECT NO: Project Number

DOB NO:

DRAWING TITLE:
FOUNDATION PLAN

SCALE: AS NOTED PAGE: 5 OF 09

FO-101.00

DOB SCAN STICKER

SEAL

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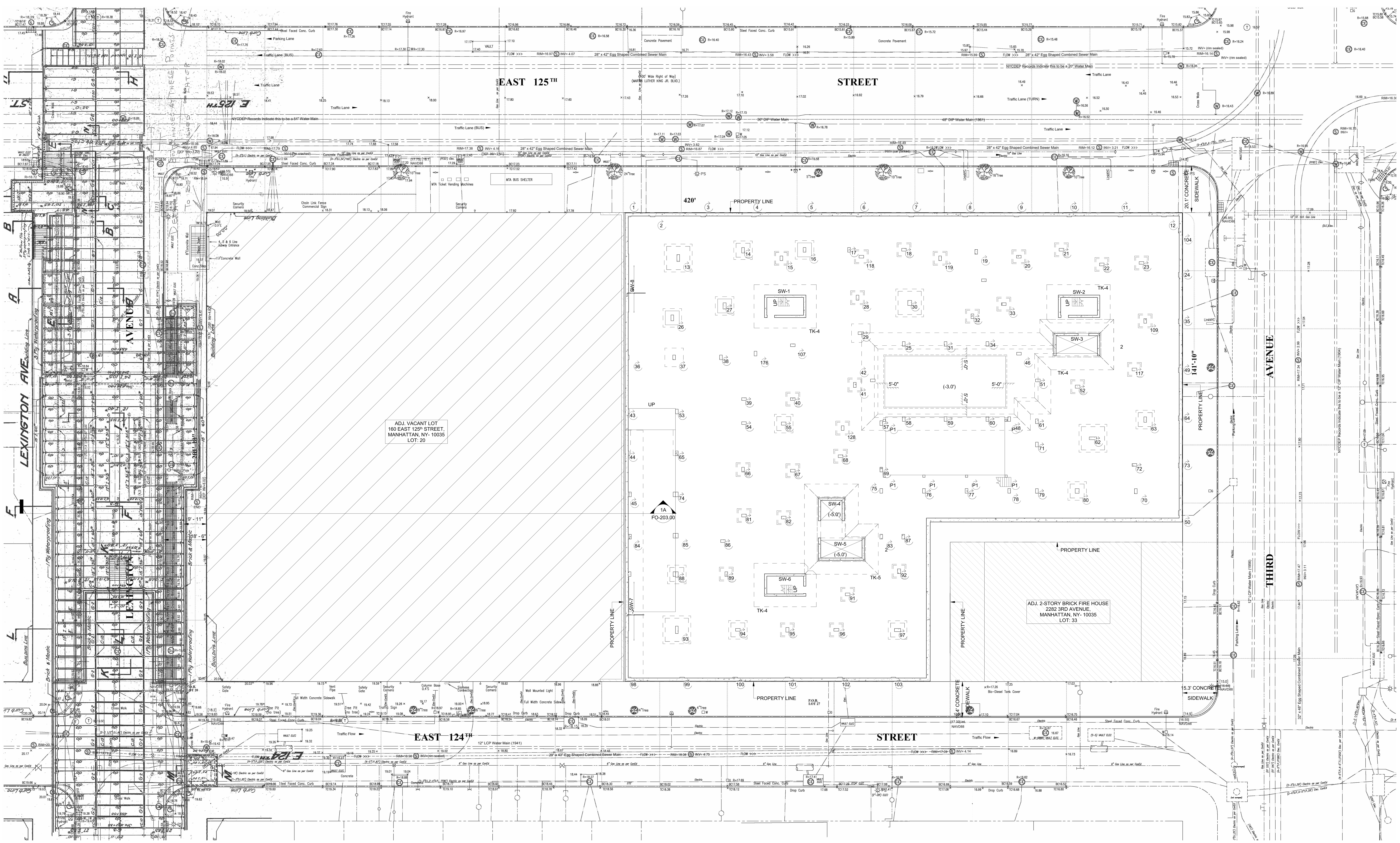

FOUNDATION PLAN W/ TA STRUCTURE
1/16" = 1'-0"

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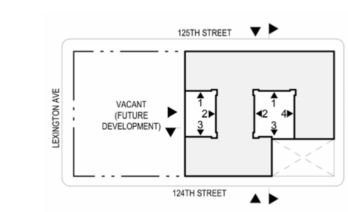

KEY PLAN

S9ARCHITECTURE
322 8TH AVENUE
NEW YORK, NY 10001
T 212.457.4077
S9ARCHITECTURE.COM

Owner:
JCS REALTY GROUP
199 LEE AVE
BROOKLYN, NY 11211
718-701-5680

Architect/Interior Designer:
S9 ARCHITECTURE
322 8TH AVENUE
NEW YORK, NY
212-457-4077

Structural Engineer:
SET P.C.
40-12 28TH STREET
LONG ISLAND CITY, NY-11101
718-706-7196

MEP Engineer:
EP ENGINEERING
100 WILLIAM STREET
NEW YORK, NY 10038
212-257-6190

PROJECT TITLE:

180 EAST 125TH STREET,
MANHATTAN, NY-10035

PROJECT ADDRESS

PROJECT NO: Project Number

DOB NO:

DRAWING TITLE:
ENLARGED FOUNDATION PLAN W/ TA STRUCTURE

SCALE: AS NOTED PAGE: 6 OF 09

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DOB SCAN STICKER

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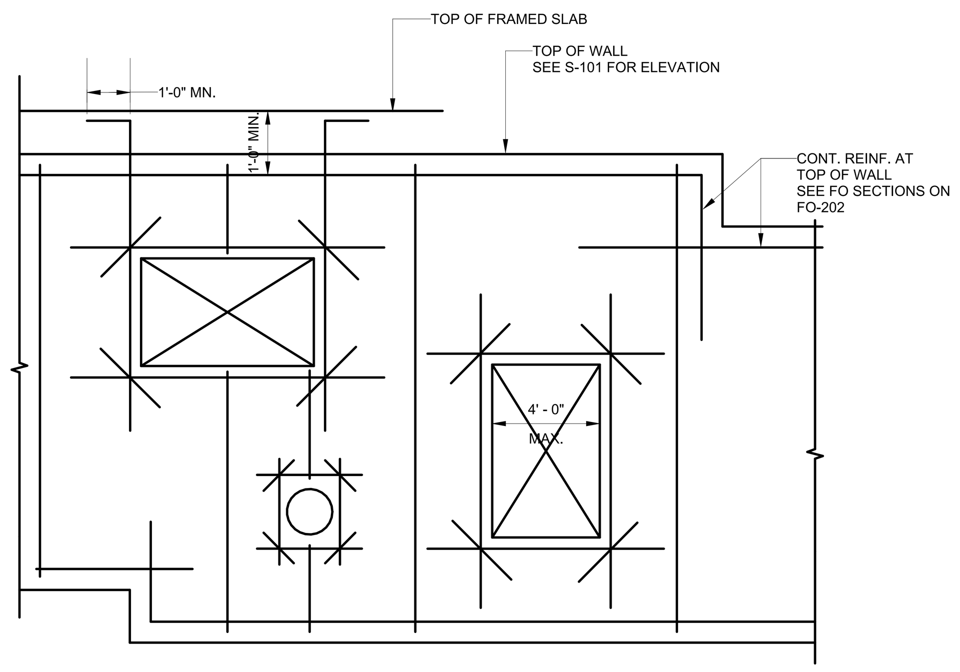
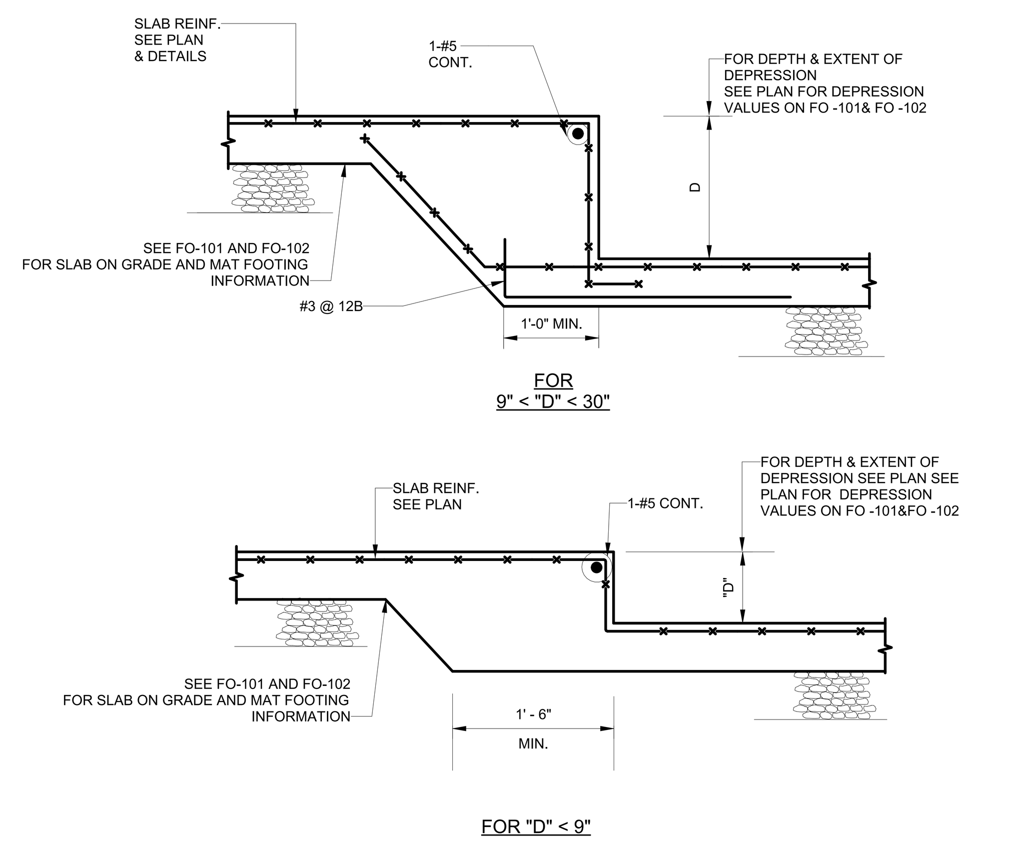


NOTES:
1. ALL INTERRUPTED BARS IN EACH DIRECTION SHALL BE COMPENSATED BY ADD'L BARS EQUAL TO 1/2 THE INTERRUPTED AREA, (OR #7 MIN.) AT EACH SIDE OF OPENING.
2. ALL ADD'L CORNER BARS AT OPENINGS ARE 2-#43 X 4'-0" (EACH FACE).
3. FOR LENGTH OF SPLICES SEE SCHEDULE OF EMBEDMENT AND SPLICE LENGTHS THIS DRAWING.
4. WHERE FDN. WALL OPENINGS ARE WIDER THAN 4'-0" CONTRACTOR SHALL SUBMIT LOCATIONS & DIMENSIONS TO ENGINEER FOR REDESIGN.

TYPICAL DETAIL OF ADD'L REINFORCEMENT AT CONCRETE FOUNDATION WALL OPENINGS
SCALE: N.T.S.



TYPICAL DETAILS OF DEPRESSION IN SLAB-ON-GRADE
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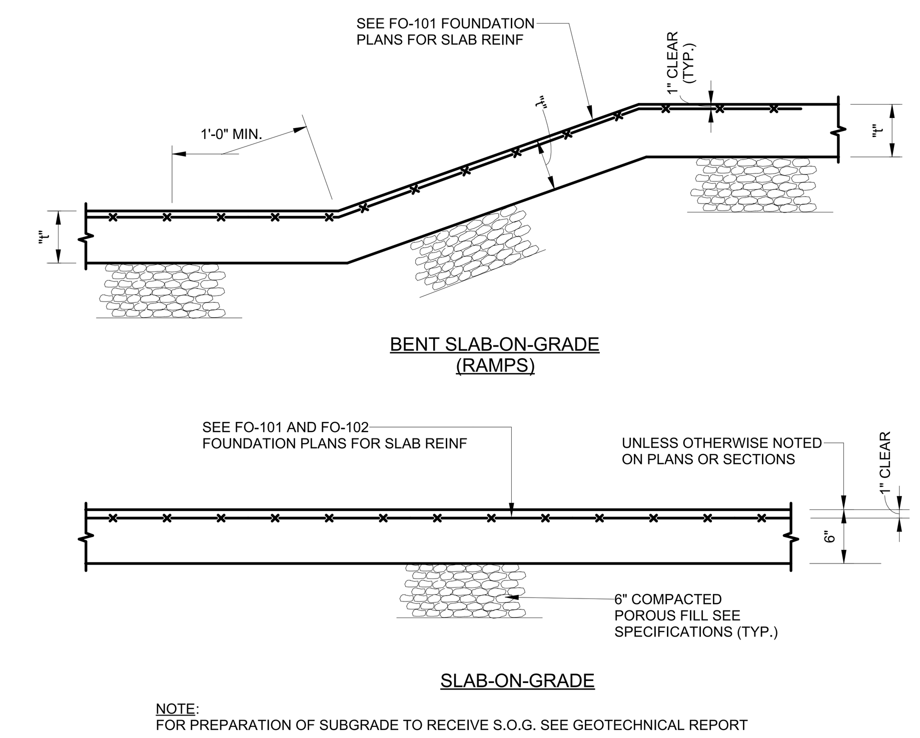

TYPICAL SLAB-ON-GRADE
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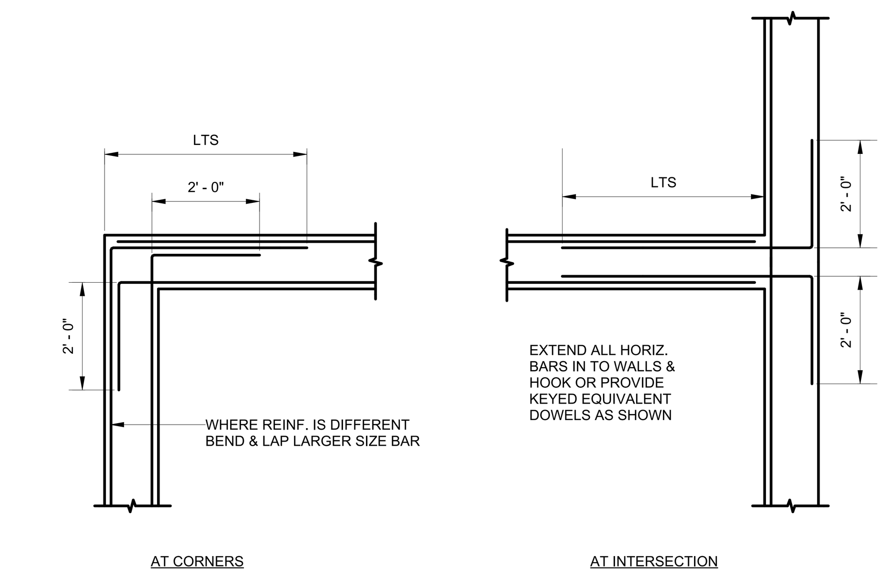

HORIZONTAL WALL REINFORCEMENT DETAIL
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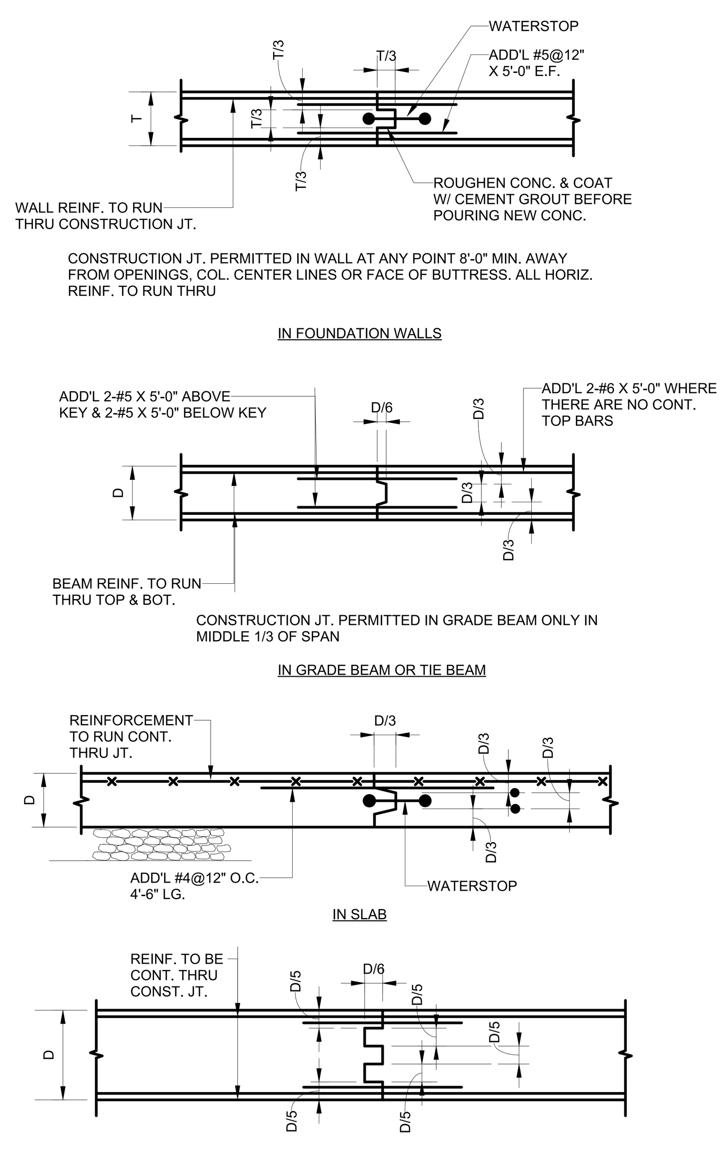

TYPICAL DETAIL OF CONSTRUCTION JOINT IN SLAB-ON-GRADE
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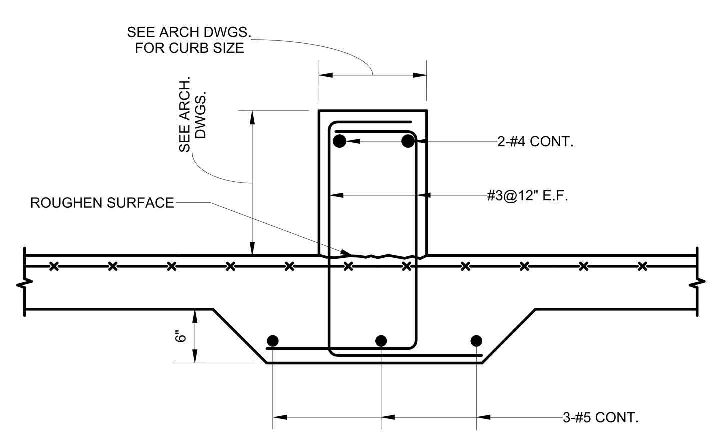

TYPICAL DETAIL AT CURB ON SLAB-ON-GRADE
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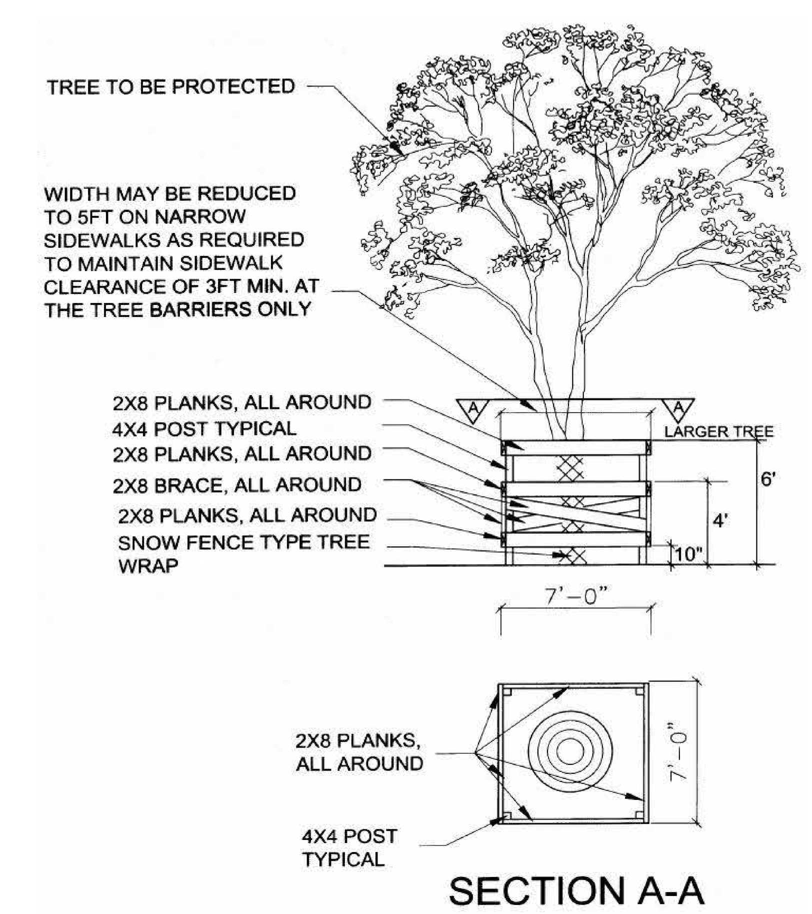
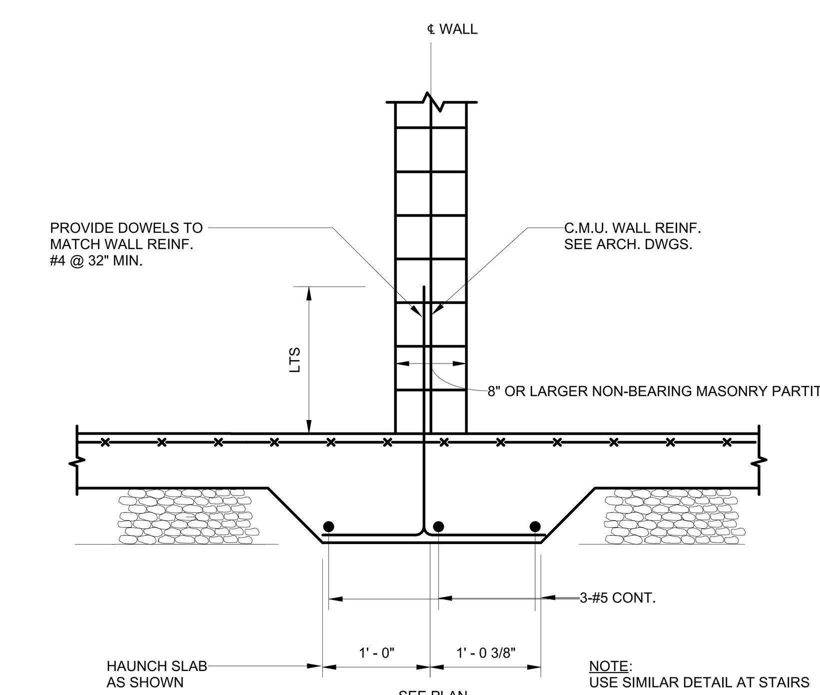
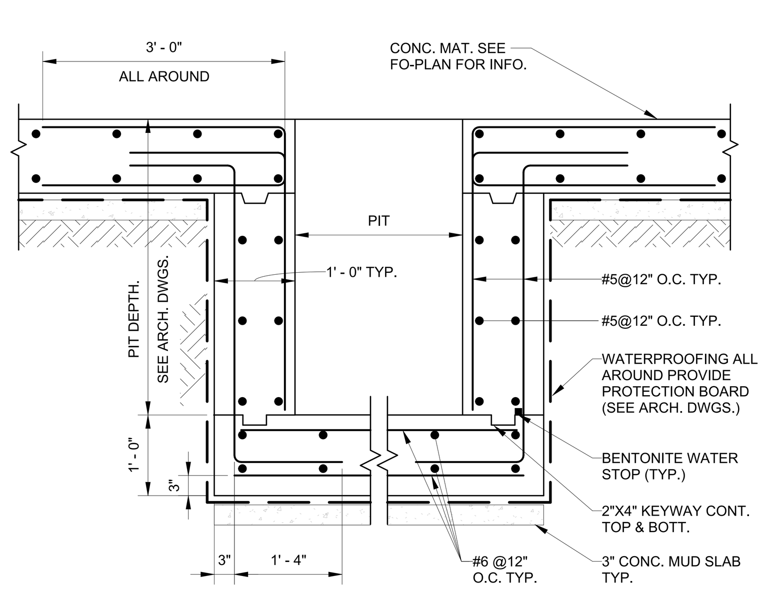


TREE PROTECTION DETAIL



MASONRY PARTITION BEARING ON SLAB-ON-GRADE
SCALE: N.T.S.



TYPICAL PIT DETAIL
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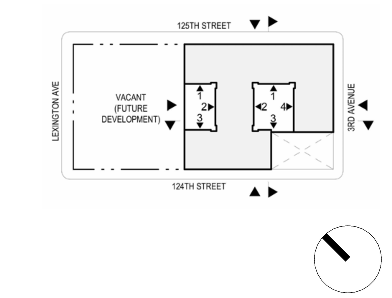

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MEP Engineer:
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100 WILLIAM STREET
NEW YORK, NY 10038
212-257-6190

PROJECT TITLE:
180 EAST 125TH STREET, MANHATTAN, NY-10035

PROJECT ADDRESS

PROJECT NO: Project Number

DOB NO:

DRAWING TITLE:
TYPICAL FOUNDATION DETAILS

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NO.	DATE	ISSUANCES/ REVISIONS
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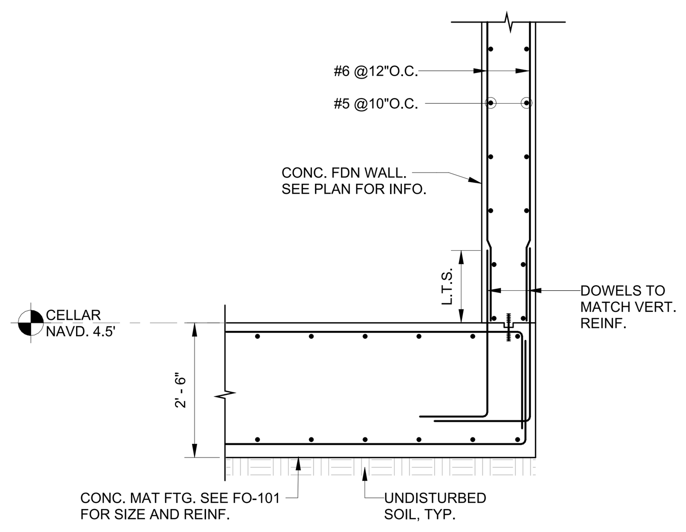

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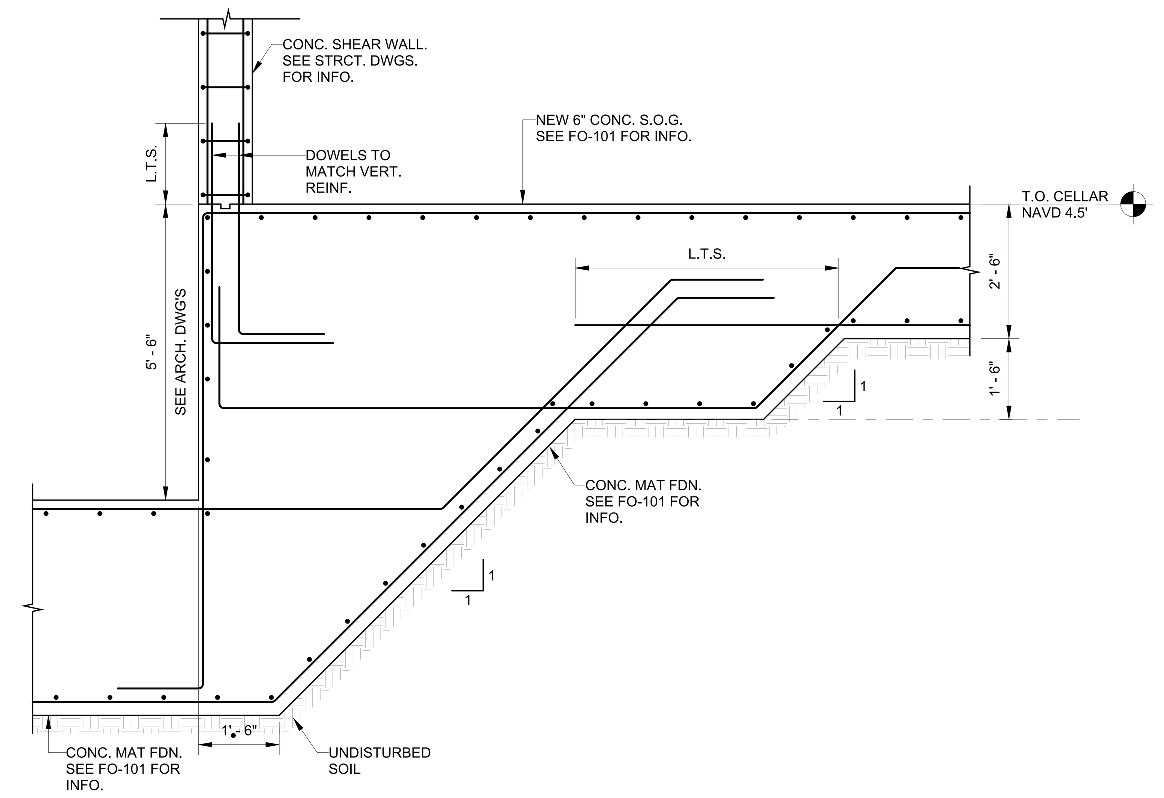

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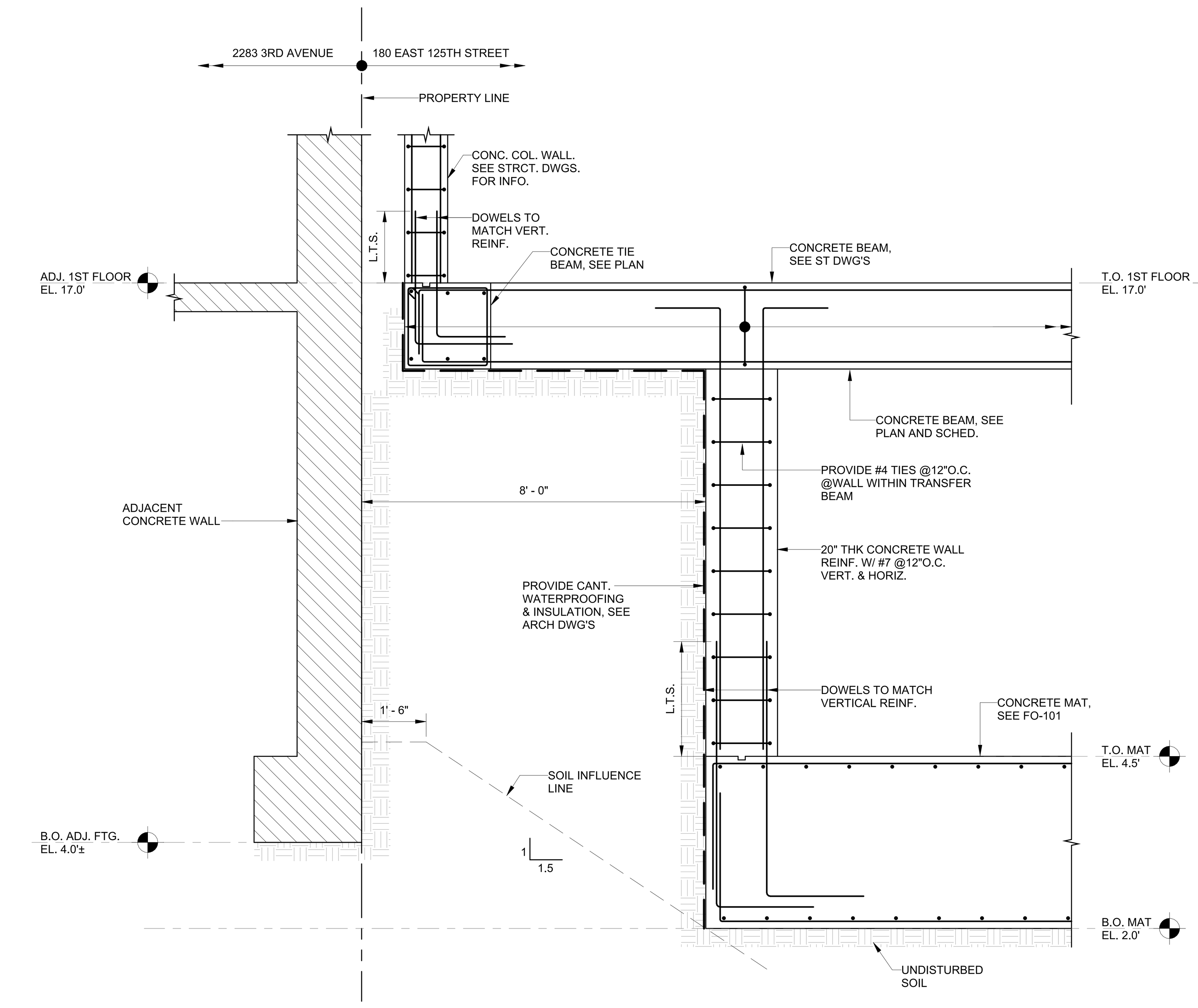

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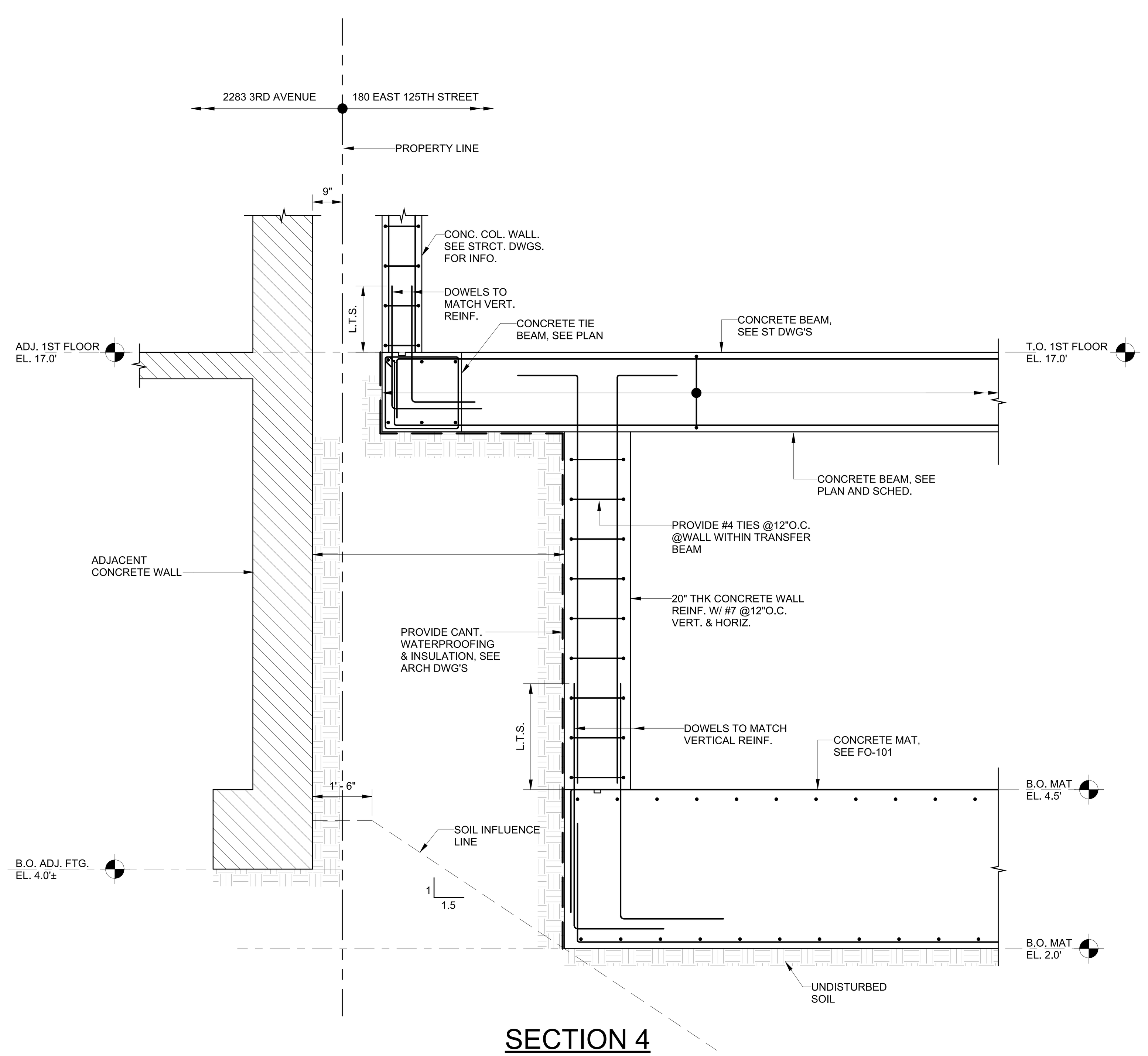

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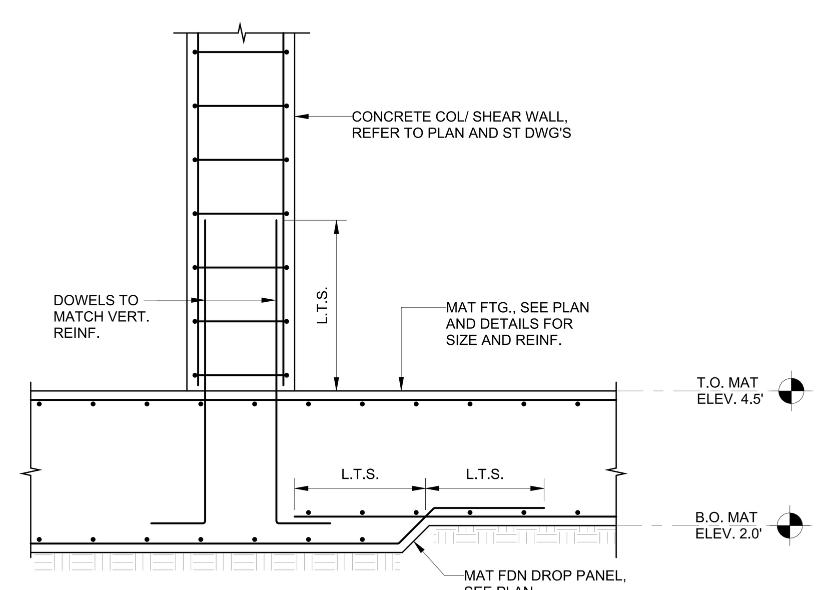

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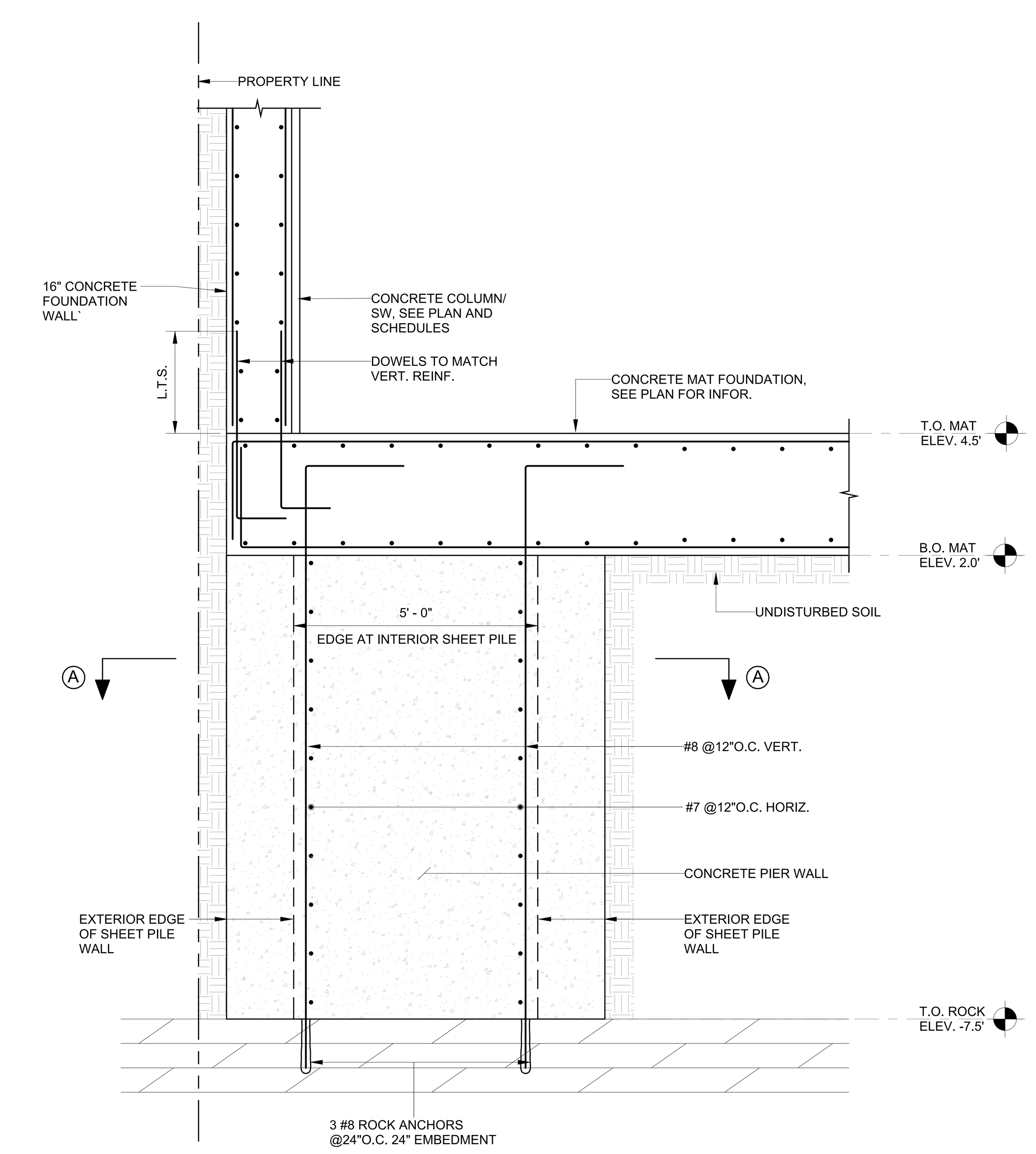

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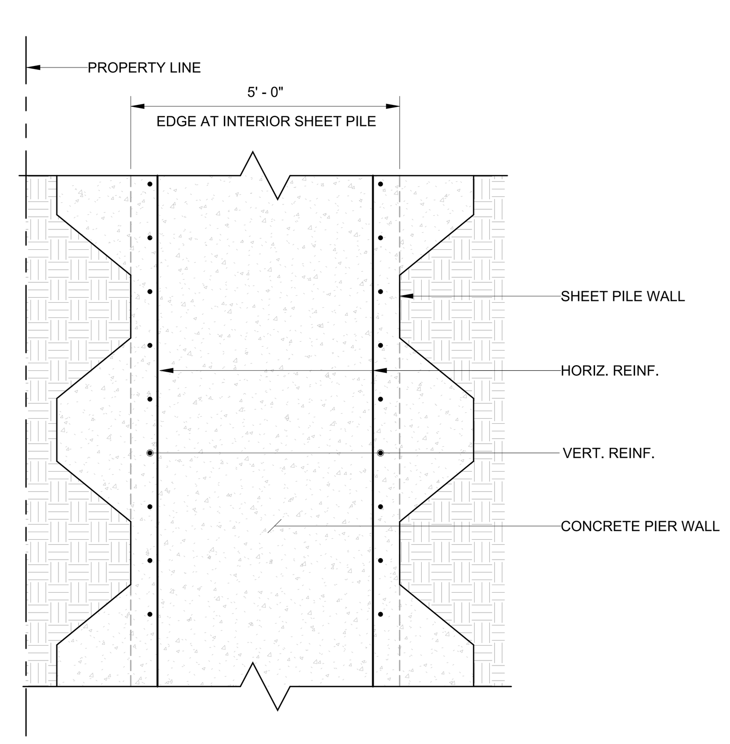

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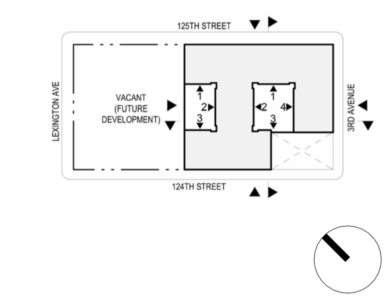

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MEP Engineer:
EP ENGINEERING
100 WILLIAM STREET
NEW YORK, NY 10038
212-257-6190

PROJECT TITLE:

180 EAST 125TH STREET, MANHATTAN, NY-10035

PROJECT ADDRESS

PROJECT NO: Project Number

DOB NO:

DRAWING TITLE:
FOUNDATION SECTIONS

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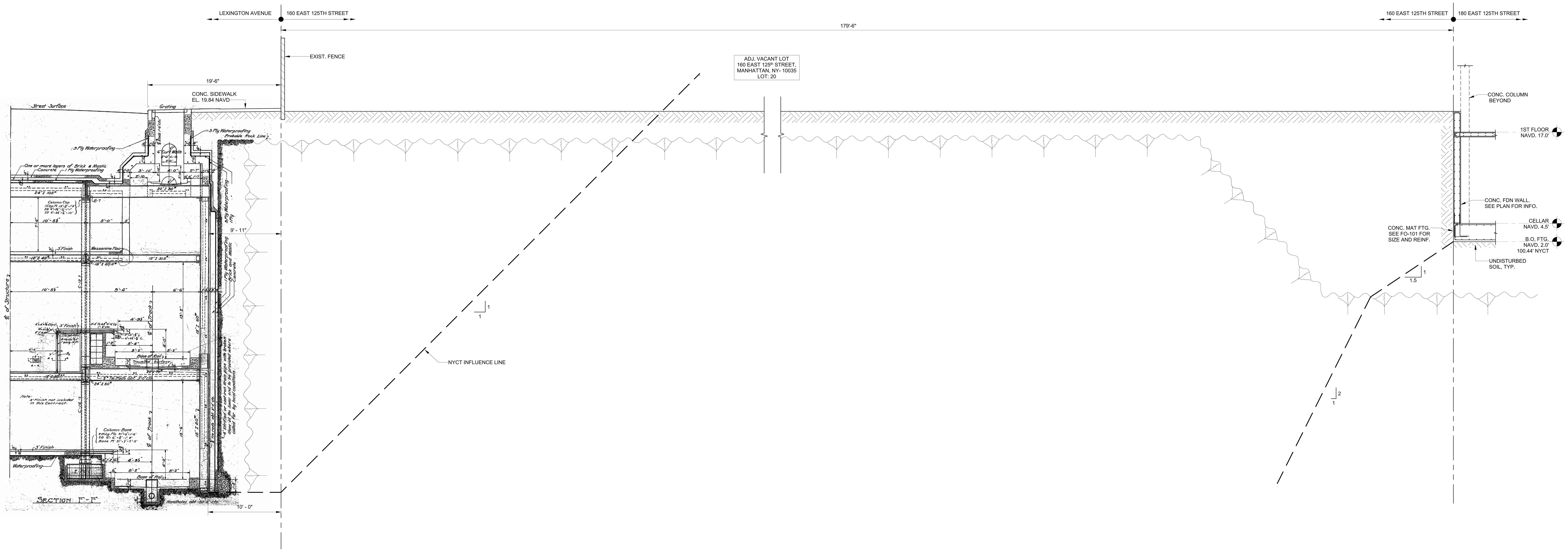

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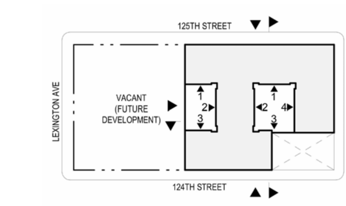

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718-706-7196

MEP Engineer:
EP ENGINEERING
100 WILLIAM STREET
NEW YORK, NY 10038
212-257-6190

PROJECT TITLE:

180 EAST 125TH STREET, MANHATTAN, NY-10035

PROJECT ADDRESS

PROJECT NO: Project Number

DOB NO:

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APPENDIX D
Construction Health and Safety Plan

HALEY ALDRICH

H & A OF NEW YORK ENGINEERING AND GEOLOGY, LLP
(HALEY & ALDRICH)
CONSTRUCTION HEALTH AND SAFETY PLAN

FOR

180 East 125th Street Development Site

180 East 125th Street, New York, New York 10035

Project/File No. 0209815

Gensuite EZ Scan®

BI - Developers

Prepared By: Calvin Jackson	**Date: 2/24/2025**
Approvals: The following signatures constitute approval of this Health & Safety Plan.	
Insert Field Safety Managers electronic signature.	
Field Safety Manager: Brian Ferguson	**Date:**
Insert Project Manager's electronic signature.	
Project Manager: Sarah Commisso	**Date:** Click or tap to enter a date.
HASP Valid Through: 12-31-2025	

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EMERGENCY EVENT PROCEDURES **III**

PROJECT INFORMATION AND CONTACTS **IV**

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Attachment C	Roles and Responsibilities
Attachment D	Job Safety Analyses
Attachment E	Project Site Forms
Attachment F	Site-Specific Operating Procedures

STOP WORK AUTHORITY

In accordance with H & A of New York Engineering and Geology, LLP (Haley & Aldrich) Stop Work Authority Operating Procedure (OP1035), any individual has the right to refuse to perform work that he or she believes to be unsafe without fear of retaliation. He or she also has the authority, obligation, and responsibility to stop others from working in an unsafe manner.

STOP Work Authority is the stop work policy for all personnel and subcontractors on the Site. When work has been stopped due to an unsafe condition, Haley & Aldrich site management (e.g., Project Manager [PM], Site Health & Safety Officer [SHSO], etc.) and the Haley & Aldrich Senior Project Manager (SPM) will be notified immediately.

Reasons for issuing a stop work order include, but are not limited to:

- The belief/perception that injury to personnel or accident causing significant damage to property or equipment is imminent.
- A Haley & Aldrich subcontractor is in breach of site safety requirements and/or their own site Health and Safety Plan (HASP).
- Identifying a substandard condition (e.g., severe weather) or activity that creates an unacceptable safety risk as determined by a qualified person.

Work will not resume until the unsafe act has been stopped OR sufficient safety precautions have been taken to remove or mitigate the risk to an acceptable degree. Stop work orders will be documented as part of an on-site stop work log, on daily field reports to include the activity/activities stopped, the duration, the person stopping work, the person in charge of stopped activity/activities, and the corrective action agreed to and/or taken. Once work has been stopped, only the Haley & Aldrich SPM or SHSO can give the order to resume work. Haley & Aldrich senior management is committed to supporting anyone who exercises his or her “Stop Work” authority.

ISSUANCE AND COMPLIANCE

This HASP has been prepared in accordance with Occupational Safety and Health Administration (OSHA) regulations (CFR 29, Parts 1904, 1910, and 1926) if such are applicable.

The specific requirements of this HASP include precautions for hazards that exist during this project and may be revised as new information is received or as site conditions change.

- This HASP must be signed by all Haley & Aldrich personnel involved in the implementation of the Scope of Work (SOW; Section 2 of this HASP).
- This HASP, or a current signed copy, must be retained at all times when Haley & Aldrich staff are present.
- Revisions to this HASP must be outlined within the contents of the HASP. If immediate or minor changes are necessary, the Field Safety Manager (FSM), Haley & Aldrich Site Safety Officer (SSO), and/or PM may use Attachment 1 (HASP Amendment Form), presented at the end of this HASP. Any revision to the HASP requires employees and subcontractors to be informed of the changes so that they understand the requirements of the change.
- Deviations from this HASP are permitted with approval from the Haley & Aldrich FSM, PM, or Senior Health & Safety Manager (SHSM). Unauthorized deviations may constitute a violation of Haley & Aldrich company procedures/policies and may result in disciplinary action.
- This HASP will be relied upon by Haley & Aldrich's subcontractors and visitors to the site. Haley & Aldrich's subcontractors must have their own HASP which will address hazards specific to their trade that are not included in this HASP. This HASP will be made available for review to Haley & Aldrich's subcontractors and other interested parties (e.g., facility personnel and regulatory agencies) to ensure that Haley & Aldrich has properly informed our subcontractors and others of the potential hazards associated with the implementation of the SOW to the extent that Haley &Aldrich is aware.

This site-specific HASP provides only site-specific descriptions and work procedures. General safety and health compliance programs in support of this HASP (e.g., injury reporting, medical surveillance, personal protective equipment [PPE] selection, etc.) are described in detail in the Haley &Aldrich Corporate Health and Safety Program Manual and within Haley & Aldrich's Standard Operating Procedures (SOPs). Both the manual and SOPs can be located on the Haley & Aldrich's Company Intranet. When appropriate, users of this HASP should always refer to these resources and incorporate them to the extent possible. The manual and SOPs are available to clients and regulators upon request.

EMERGENCY EVENT PROCEDURES

1 - ASSESS THE SCENE

- **STOP WORK**
- Review the situation and ascertain if it is safe to enter the area.
- Evacuate the site if the conditions are unsafe.

2 - EVALUATE THE EMERGENCY

- **Call 911, or designated emergency number, if required.**
- **Provide first aid for the victim if qualified and safe to do so.**
  - First aid will be addressed using the on-site first aid kit. *
    - If providing first aid, remember to use proper first aid universal precautions if blood or bodily fluids are present.
- **If exposure to hazardous substance is suspected, immediately vacate the contaminated area.**
  - Remove any contaminated clothing and/or equipment.
  - Wash any affected dermal/ocular area(s) with water for at least 15 minutes.
  - Seek immediate medical assistance if any exposure symptoms are present.

* *Note: Haley & Aldrich employees are not required or expected to administer first aid / CPR to any Haley & Aldrich staff member, Contractor, or Civilian personnel at any time; it is Haley & Aldrich´s position that those who do, are doing so on their own behalf and not as a function of their job.*

3 - SECURE THE AREA

- **Cordon off the incident area, if possible.**
  - Notify any security personnel, if required.
  - Escort all non-essential personnel out of the area, if able.

4 - REPORT ON-SITE ACCIDENTS / INCIDENTS TO PM / SSO

- **Notify the PM and SSO as soon as it is safe to do so.**
  - Assist PM and SSO in completing any additional tasks, as required.

5 - INVESTIGATE / REPORT THE INCIDENT

- **Record details of the incident for input to the Gensuite.**
  - Complete any additional forms as requested by the PM and SSO.

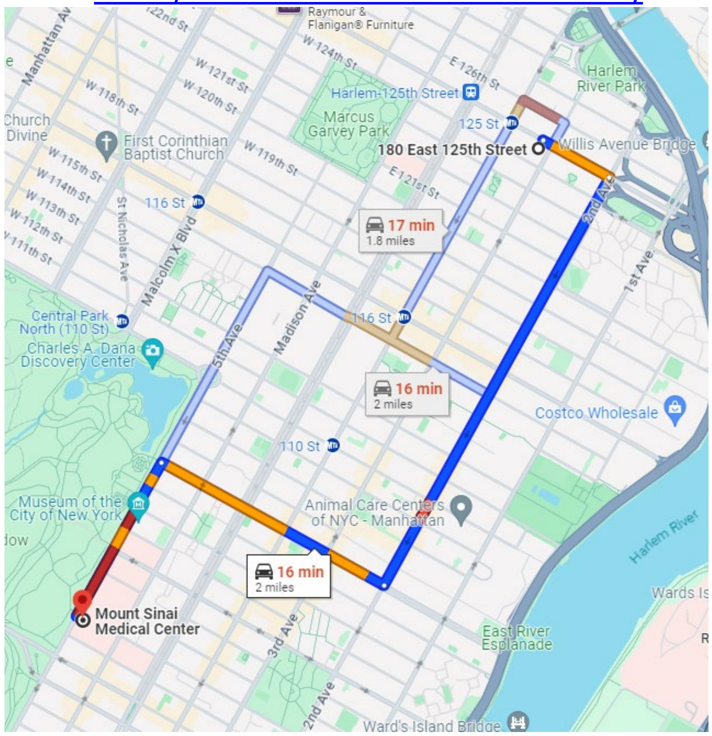
6 - TAKE CORRECTIVE ACTION

- **Implement corrective actions per the PM following root cause analysis.**
  - Complete "Lessons Learned" form.

PROJECT INFORMATION AND CONTACTS	
Project Name: 180 East 125th Street Development Site	**Haley & Aldrich File No.:** 0209815
Location: 180 East 125th Street, New York, New York 10035	
Client/Site Contact: Phone Number:	JCS Realty NY 917.7770.8702
Haley & Aldrich Field Representative: Phone Number: Emergency Phone Number:	Calvin Jackson 929.729.1243 914.343.4057
Haley & Aldrich Project Manager: Phone Number: Emergency Phone Number:	Sarah Commisso 646.277.5693 516.317.9861
Field Safety Manager: Phone Number: Emergency Phone Number:	Luke McCartney 646.568.9357 551.655.7720
Nearest Hospital: Address: (see map on next page) Phone Number:	Mount Sinai Medical Center 1 Gustave L Levy Place New York, New York 10029 212.241.6500
Nearest Occ. Health Clinic: **http://www.talispoint.com/liberty/ext/** Address: (see map on next page) Phone Number:	CityMD Urgent Care East 79th 1143 Lexington Avenue New York, New York 10075 646.350.4815
Liberty Mutual Claim Policy	**WC6-Z11-254100-035**
WorkCare Injury & Illness Hotline	**1-888-449-7787**
Emergency Response Number:	**911**
Other Local Emergency Response Numbers:	N/A
Other Ambulance, Fire, Police, or Environmental Emergency Resources:	911

DIRECTIONS TO THE NEAREST HOSPITAL

[Liberty Mutual Medical Location Directory]



Directions to the Nearest Hospital:

180 E 125th St
New York, NY 10035

↑ Head southeast on E 125th St/Dr Martin Luther King Jr Blvd toward 3rd Ave

0.2 mi

↱ Turn right onto 2nd Ave

1.0 mi

↱ Turn right onto E 106th St
Pass by Chase Bank (on the right)

0.5 mi

↰ Turn left onto 5th Ave/Museum Mile
Destination will be on the left

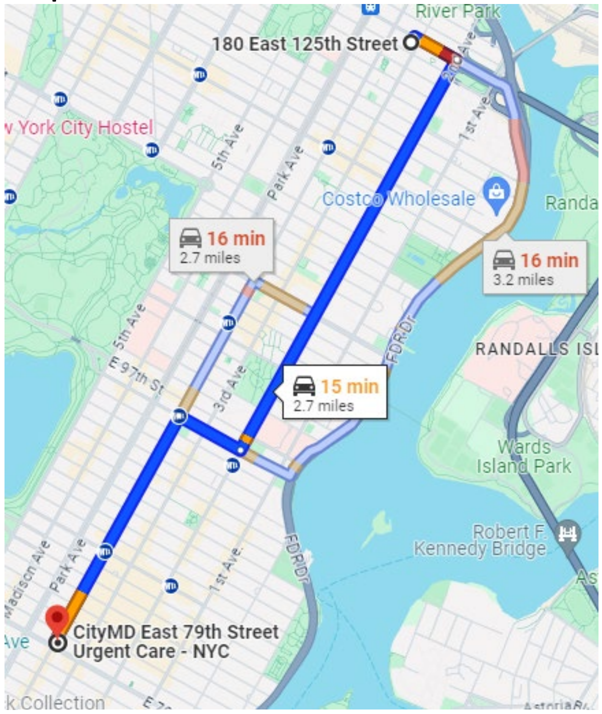
0.4 mi

Mount Sinai Medical Center
1 Gustave L. Levy Pl, New York, NY 10029

DIRECTIONS TO THE NEAREST URGENT CARE

[Liberty Mutual Medical Location Directory]

Directions to the Nearest Occupational Clinic:



180 E 125th St
New York, NY 10035

↑ Head southeast on E 125th St/Dr Martin Luther King Jr Blvd toward 3rd Ave

0.2 mi

↱ Turn right onto 2nd Ave

1.5 mi

↱ Turn right onto E 96th St

0.2 mi

↰ Turn left at the 2nd cross street onto Lexington Ave
ⓘ Destination will be on the left

0.8 mi

CityMD East 79th Street Urgent Care - NYC
1143 Lexington Ave, New York, NY 10021

1. WORK SCOPE

This Site-Specific HASP addresses the health and safety practices and procedures that will be exercised by all Haley & Aldrich employees participating in all work on the Project Site. This plan is based on an assessment of the site-specific health and safety risks available to Haley & Aldrich and Haley & Aldrich's experience with other similar project sites. The scope of work includes the following:

Remedial Oversight, Soil, Groundwater, & Soil Vapor Sampling (if required)

Project Task Breakdown

Task No.	Task Description	Employee(s) Assigned	Work Date(s) or Duration
1.	Remedial Oversight	Calvin Jackson	5 to 6 months
2.	Soil Sampling	Calvin Jackson	5 to 6 months

Subcontractor(s) Tasks

Firm Name	Work Activity	Work Date(s) or Duration
N/A	Enter task description.	Enter dates/duration.

Projected Start Date:	Click or tap to enter a date.
Projected Completion Date:	Click or tap to enter a date.

2. SITE OVERVIEW / DESCRIPTION

Site Classification

Commercial

Site Description

The Site is located in the Harlem neighborhood of Manhattan and is identified as Block 1773, Lot 27 on the New York City tax map. The Site is approximately 42,540 square feet (sq ft) (0.98 acres) and is currently a vacant undeveloped lot. The Site is bound by East 125th Street followed by mixed-use commercial and residential buildings and offices to the north, East 124th Street followed by mixed-use commercial and residential buildings and warehousing to the south, Fire Department of the City of New York (FDNY) Engine 35 Fire House and Third Avenue followed by mixed-use commercial and residential buildings to the east, and a vacant undeveloped lot followed by Lexington Avenue to the west.

Background and Historic Site Usage

Based on the findings of the July 2024 Phase I Environmental Site Assessment (ESA) prepared by H & A of New York Engineering and Geology, LLP (Haley & Aldrich), the Site was first developed as early as 1896 with multiple two to four story dwellings on the eastern portion of the Site, a school on the southern portion of the Site, and the northwestern portion of the Site was undeveloped. The 1911 Sanborn Map shows buildings constructed on the northern portion of the Site which were indicated as vacant, and the school was converted to a lodging house. A railroad station was present in the street adjacent to the Site on the corner of East 125th Street and 3rd Avenue. The Site remained relatively unchanged until the early 1950s when the former lodging house and several buildings on the eastern portion of the Site were labeled as “furniture” on Sanborn Maps and printing operations were indicated on the northern portion of the subject property. By 1968, a building was constructed on the southwest portion of the Site and was occupied by the United States Postal Service. Additionally, the railroad station was no longer present. According to aerial photographs, between 1984 and 1991, the structures on the northern and eastern portions of the Site were demolished and the Site was converted into a parking lot. By 2013, the Site was occupied by a Pathmark supermarket and a Rainbow clothing store with a rooftop parking area. According to the NYC Department of Finance Office of the City Register, the United States Postal Service sold the property in 2014. Since this time, all structures have been demolished and the Site is currently vacant.

Site Status

Indicate current activity status and describe operations at the site:

Inactive

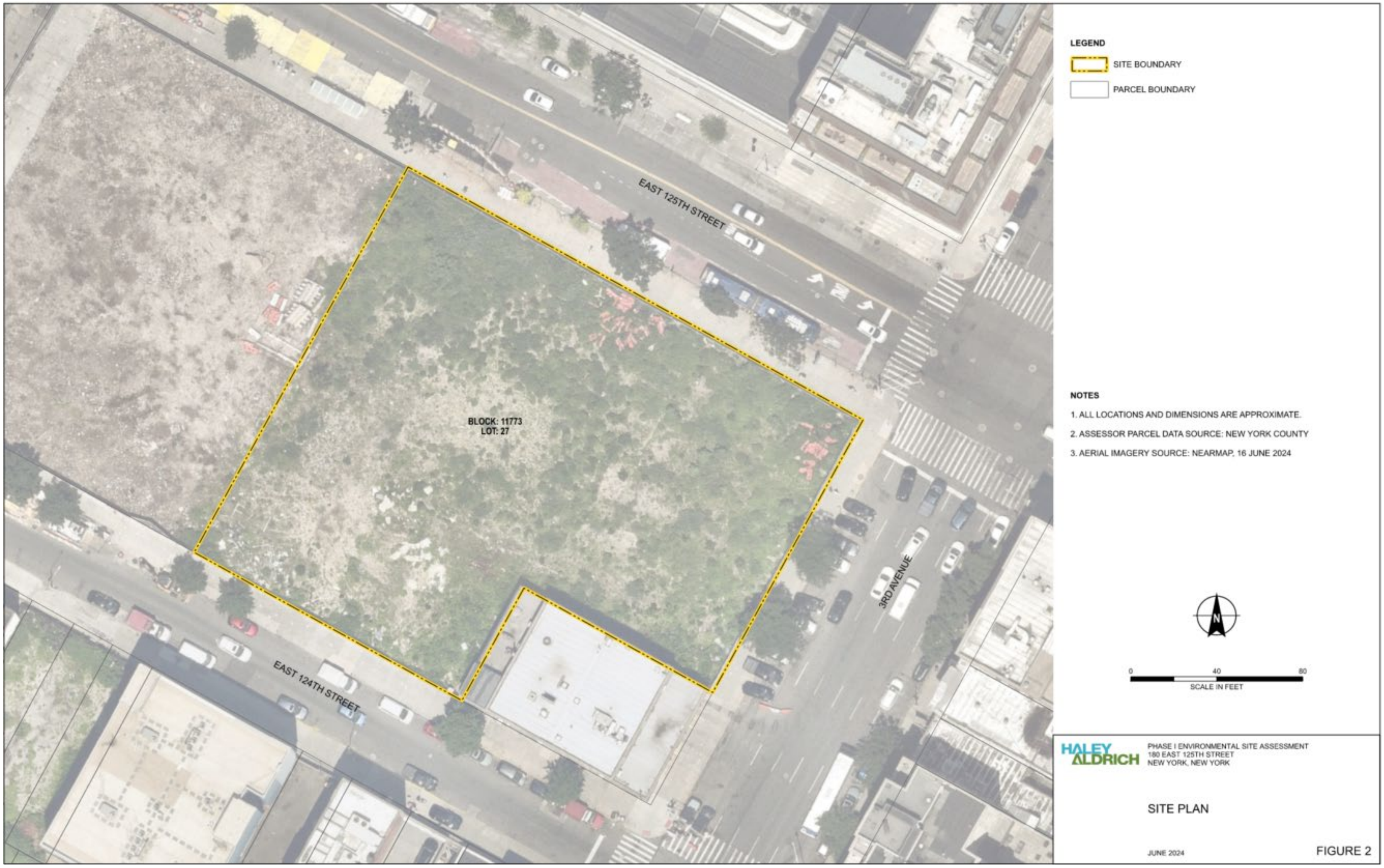
Vacant

Site Plan

Is a site plan or sketch available? Yes

Work Areas
List and identify each specific work areas(s) on the job site and indicate its location(s) on the site plan: The entire Site will be utilized as an active work area.

Site Plan



Note: This HASP has been developed for Haley & Aldrich purposes only and is not for use by others.

3. HAZARD ASSESSMENT

Indicate all hazards that may be present at the site and for each task. If any of these potential hazards are checked, it is the Project Manager's responsibility to determine how to eliminate / minimize the hazard to protect onsite personnel.

Site Chemical Hazards

Is this Site impacted with chemical contamination? Yes

Source of information about contaminants: Previous Investigation

Contaminant of Concern	Location/Media	Concentration	Units
Polycyclic aromatic hydrocarbons (PAHs)	**Soil**	**24**	**mg/kg**
Barium	**Soil**	**1440**	**mg/kg**
Lead	**Soil**	**3040**	**mg/kg**
Mercury	**Soil**	**2.75**	**mg/kg**
Polycyclic aromatic hydrocarbons (PAHs)	**Groundwater**	**0.37**	**ug/L**
Organochlorine Pesticides	**Groundwater**	**0.015**	**ug/L**
Polychlorinated biphenyls (PCBs)	**Groundwater**	**0.282**	**ug/L**
Chromium	**Groundwater**	**57**	**ug/L**
Lead	**Groundwater**	**194**	**ug/L**
BTEX/VOCs	**Soil Vapor**	**2910**	**ug/m3**
Tetrachloroethylene	**Soil Vapor**	**254**	**ug/m3**
Trichloroethylene	**Soil Vapor**	**29**	**ug/m3**

Polycyclic aromatic hydrocarbons (PAHs): are a class of chemicals that occur naturally in coal, crude oil, and gasoline. They also are produced when coal, oil, gas, wood, garbage, and tobacco are burned. PAHs generated from these sources can bind to or form small particles in the air. High-temperature cooking will form PAHs in meat and in other foods. Naphthalene is a PAH that is produced commercially in the United States to make other chemicals and mothballs. Cigarette smoke contains many PAHs.

Barium: is a soft, silvery metal that rapidly tarnishes in air and reacts with water. It is mostly used in drilling fluids for oil and gas wells and used in paint and in glassmaking. All barium compounds are toxic; however, barium sulfate is insoluble and so can be safely swallowed. A suspension of barium sulfate is sometimes given to patients suffering from digestive disorders.

Barium has no known biological role, although barium sulfate has been found in one type of algae. Barium is toxic, as are its water- or acid-soluble compounds. Barium occurs only in combination with other elements. The major ores are barite (barium sulfate) and witherite (barium carbonate). Barium metal can be prepared by electrolysis of molten barium chloride, or by heating barium oxide with aluminum powder.

Lead: The effects of lead are the same whether it enters the body through breathing or swallowing. Lead can affect almost every organ and system in your body. The main target for lead toxicity is the nervous system. Long-term exposure to lead can result in decreased performance in some tests measuring functions of the nervous system in adults. It may also cause weakness in fingers, wrists, or ankles. Lead exposure also causes small increases in blood pressure, particularly in middle-aged and older people and can cause anemia. Exposure to high lead levels can severely damage the brain and kidneys and ultimately cause death.

Mercury: is an odorless, silver metallic liquid. It can be inhaled or absorbed through the skin. Contact may cause irritation to the skin or eyes. Toxic if ingested. Fume inhalation may cause irritation in the nose, throat or lungs. This is a corrosive chemical. Symptoms of poisoning include, muscle tremors, loss of appetite, and nausea. Long-term exposure may have effects on the central nervous system and kidneys. The PEL is 0.1 mg/m^3 averaged over an 8 hour shift.

Organochlorine Pesticides: are chlorinated hydrocarbons used extensively from the 1940s through the 1960s in agriculture and mosquito control. Representative compounds include DDT, methoxychlor, dieldrin, chlordane, toxaphene, mirex, kepone, lindane, and benzene hexachloride. As neurotoxicants, many organochlorine pesticides were banned in the United States, few are still registered for use.

People can be exposed to organochlorine pesticides through accidental inhalation exposure if in an area where they were recently applied. The chemicals can also be ingested in fish, dairy products, and other fatty foods that are contaminated. Organochlorine pesticides accumulate in the environment and are very persistent and move long distances in surface runoff or groundwater.

Exposure to these chemicals over a short period may produce convulsions, headache, dizziness, nausea, vomiting, tremors, confusion, muscle weakness, slurred speech, salivation and sweating. Long-term exposure may damage the liver, kidney, central nervous system, thyroid and bladder. Many of these pesticides have been linked to elevated rates of liver or kidney cancer in animals. There is some evidence indicating that organochlorine pesticides may also cause cancer in humans.

Chromium: Occupational exposures to chromium occur primarily in the metal and chemical manufacturing industries, although exposures are also possible in other industries where chromium compounds are used. All forms of chromium can be toxic at high levels, but chromium(VI) is more toxic than others. Breathing very high levels of chromium(VI) in air can damage and irritate your nose, lungs, stomach, and intestines. People who are allergic to chromium may also have asthma attacks after breathing high levels of either chromium(VI) or (III). Long term exposures to high or moderate levels of chromium(VI) cause damage to the nose (bleeding, itching, sores) and lungs, and can increase your risk of non-cancer lung diseases. Ingesting very large amounts of chromium can cause stomach upsets and ulcers, convulsions, kidney and liver damage, and even death. It is not known whether chromium harms the fetus or our ability to reproduce. Skin contact with liquids or solids containing chromium(VI) may lead to skin ulcers. Some people have allergic reactions including severe redness and swelling.

BTEX/VOCs: BTEX is an acronym for benzene, toluene, ethylbenzene and xylenes. These compounds are VOCs, are common in petroleum-related products (e.g., oil, gasoline, coal-tar DNAPL, etc.), and frequently co-occur at hazardous waste sites. Benzene, toluene, ethylbenzene, and xylenes have acute and chronic harmful effects on the central nervous system. Benzene is classified as a carcinogen. Short-term health effects of low-level BTEX exposure include drowsiness, dizziness, accelerated heart rate, headaches, tremors, confusion, and unconsciousness.

VOCs: include all organic compounds (substances made up of predominantly carbon and hydrogen) with boiling temperatures in the range of 50-260 degrees C, excluding pesticides. This means that they are likely to be present as a vapor or gas in normal ambient temperatures. Substances which are included in the VOC category include aliphatic hydrocarbons (such as hexane), aldehydes, aromatic hydrocarbons (such as benzene, toluene, and the xylenes or BTEX), and oxygenated compounds (such as acetone and similar ketones). The term VOC often is used in a legal or regulatory context and in such cases the precise definition is a matter of law.

VOCs are released from oil and gasoline refining, storage and combustion as well as from a wide range of industrial processes. Processes involving fuels, solvents, paints or the use of chemicals are the most significant sources. VOCs may also be emitted from cleaning products, degreasing products, fabrics, carpets, plastic products, glues, printed material, varnishes, wax, disinfectants, and cosmetics.

Typically, VOCs are present in gas or vapor and will enter the body by breathing contaminated air. Higher concentrations of VOCs may occur in areas of poor ventilation.

Tetrachloroethylene: is a colorless liquid with a sharp sweet odor. Tetrachloroethylene vapor is heavier than air and will be found in low lying areas.

Trichloroethylene: is a nonflammable colorless liquid with a sweet odor. Trichloroethylene vapor is heavier than air and is found in low lying areas.

Site Hazards Checklist			
Weather			
Hot Temperatures	Cold Temperatures	High Winds	Select Hazard

Hot Temperatures

Heat stress may occur at any time work is being performed at elevated ambient temperatures. Because heat stress is one of the most common and potentially serious illnesses associated with outdoor work during hot seasons, regular monitoring and other preventative measures are vital. Site workers must learn to recognize and treat the various forms of heat stress. The best approach is preventative heat stress management.

Haley & Aldrich employees and their subcontractors should be aware of potential health effects and/or physical hazards of working when there are hot temperatures or a high heat index. Refer OP1015-Heat Stress for a discussion on hot weather hazards.

Cold Temperatures

Cold stress may occur at any time work is being performed at low ambient temperatures and high-velocity winds. Because cold stress is common and has potentially serious illnesses associated with outdoor work during cold seasons, regular monitoring and other preventative measures are vital.

Refer to OP1003-Cold Stress for additional information and mitigation controls.

High Winds

While high winds are commonly associated with severe thunderstorms and hurricanes they may also occur as a result of differences in air pressures, such as when a cold front passes across the area. They can cause downed trees and power lines, and flying debris (such as dust or larger debris), which adds additional risks and could lead to power outages, transportation disruptions, damage to buildings and vehicles, and serious injury.

Wind Advisory are issued for sustained winds 25 to 39 mph and/or gusts to 57 mph. High Wind warnings are issued by the National Weather Service when high wind speeds may pose a hazard or is life threatening. The criteria for this warning will varies by state. The Beaufort Wind Scale is a helpful tool to when dealing with high winds.

Biological			
Mosquitoes	Stinging Insects	Large/Small Mammals	Choose an item.

Mosquitos

Work outdoors with temperatures above freezing will likely bring staff into contact with mosquitos. There are a variety of mosquito species that can transmit a range of diseases. Birds act as reservoirs for the viruses that can be collected by the mosquito and transmitted to a person. Majority of mosquitos are mainly a nuisance but staff need to take appropriate precautions to minimize the potential transmission of a virus that can result in one of the following diseases: West Nile, Eastern Equine Encephalitides, and Western Encephalitides. Knowing some key steps that can minimize the risk of mosquito bites is, therefore, important in reducing the risks. Workers working outdoors should be aware that the use of PPE techniques is essential to preventing mosquito bites especially when working at sites where mosquitoes may be active and biting.

Use repellents containing DEET, picaridin, IR3535, and some oil of lemon eucalyptus and para-menthane-diol products provide longer-lasting protection. To optimize safety and effectiveness, repellents should be used according to the label instructions. Cover as much of your skin as possible by wearing shirts with long-sleeves, long pants, and socks whenever possible. Avoid use of perfumes and colognes when working outdoors during peak times when mosquitoes may be active; mosquitoes may be more attracted to individuals wearing perfumes and colognes.

Stinging Insects

Stinging Insects fall into two major groups: Apidae (honeybees and bumblebees) and vespids (wasps, yellow jackets, and hornets). Apidae are docile and usually do not sting unless provoked. The stinger of the honeybee has multiple barbs, which usually detach after a sting. Vespids have few barbs and can inflict multiple stings.

There are several kinds of stinging insects that might be encountered on the project site. Most stings will only result in a temporary injury. However, sometimes the effects can be more severe, even life-threatening depending on where you are stung and what allergies you have. Being stung in the throat area of the neck may cause edema (swelling caused by fluid build-up in the tissues) around the throat and may make breathing difficult.

In rare cases, a severe allergic reaction can occur. This can cause "anaphylaxis" or anaphylactic shock with symptoms appearing immediately or up to 30 minutes later. Symptoms include; Hives, itching and swelling in areas other than the sting site, swollen eyes/eyelids, wheezing, chest tightness, difficulty breathing, hoarse voice, swelling of the tongue, dizziness or sharp drop in blood pressure, shock, unconsciousness or cardiac arrest. Reactions can occur the first time you are stung or with subsequent stings. If you see any signs of reaction, or are unsure, call or have a co-worker call emergency medical services (e.g., 911) right away. Get medical help for stings near the eyes, nose or throat. Stay with the person who has been stung to monitor their reaction.

Staff who are allergic to bee stings are encouraged to inform their staff/project manager. If staff member carries an Epi-pen (i.e., epinephrine autoinjector) they are encouraged to inform their colleagues in case they are stung and are incapable of administering the injection. Examine site for any signs of activity or a hive/nest. If you see several insects flying around, see if they are entering/exiting from the same place. Most will not sting unless startled or attacked. Do not swat, let insects fly away on their own. If you must, walk away slowly or gently "blow" them away. If a nest is disturbed and you hear "wild" buzzing, protect your face with your hands and run from the area immediately. Wear long sleeves, long pants, and closed-toed boots. Wear light colored clothes such as khakis. Avoid brightly colored, patterned, or black clothing. Tie back long hair to avoid bees or wasps from entanglement. Do not wear perfumes, colognes or scented soaps as they contain fragrances that are attractive. If bee or wasp is found in your car, stop and leave windows open.

Small Mammals

Rodents, are the most abundant order of mammals. There are hundreds of species of rats; the most common are the black and brown rat. Other rodents you may encounter are mice, beavers, squirrels, guinea pigs, capybaras and coypu.

The Brown Rat has small ears, blunt nose, and short hair. It is approximately 14-18” long (with tail). They frequently infest garbage/rubbish, slaughterhouses, domestic dwellings, warehouses, and supermarkets. They also frequent any space with an easy meal and potential nesting sites. The Black Rat is identified by its tail, that is always longer than the length from the head to the body. It is also slimmer and more agile than the Brown rat. Its size varies according to its environment and food supply.

The House Mouse has the amazing ability to adapt and can frequently be found in human dwellings. In buildings, mice will live anywhere and difficult to keep out. Mice are omnivorous, they will eat anything. Rats and mice often become a serious problem in cold winter months when they seek food and warmth inside buildings. They may suddenly appear in large numbers when excavation work disturbs their in-ground nesting locations or their food source is changed.

Some major problems caused by rats and mice are contaminating the food they eat with urine and excrement. Gnawing into materials such as paper, wood, or upholstery, to use as nest material. Also gnawing plastic, cement, soft metals such as lead and aluminum, and wiring, which may cause a fire hazard. Occasionally biting people and may kill small animals. They, or the parasites they carry, like fleas, mites and worms, spread many diseases such as salmonella, trichinosis, rat bite fever, hantavirus, Weil's disease, and bubonic plague. They damage ornamental plants by burrowing among the roots or feeding on new growth. They also eat garden vegetables, such as corn and squash. These rodents have been a problem for centuries, because of their incredible ability to survive and are so difficult to eliminate. In addition, they are extremely compatible with human behavior and needs.

Avoid contact with rodents, if possible. Avoid contact with rodent excrement. Do not eat food or water that may have encountered rodent excrement. If exposed, wash hands and avoid touching your face with your hands.

Location/Terrain			
Slip/Trip/Falls	SIMOPS	Economically Depressed	Choose an item.

Slips, Trips & Falls

Slip and trip injuries are the most frequent injuries to workers. Statistics show most falls happen on the same level resulting from slips and trips. Both slips and trips result from unintended or unexpected changes in the contact between the feet and the ground or walking surface. Good housekeeping, quality of walking surfaces (flooring), awareness of surroundings, selection of proper footwear, and appropriate pace of walking are critical for preventing fall accidents.

Site workers will be walking on a variety of irregular surfaces, that may affect their balance. Extra care must be taken to walk cautiously near rivers because the bottom of the riverbed may be slick and may not be visible. Rocks, gradient changes, sandy bottoms, and debris may be present but not observable.

Take your time and pay attention to where you are going. Adjust your stride to a pace that is suitable for the walking surface and the tasks you are doing. Check the work area to identify hazards - beware of trip hazards such as wet floors, slippery floors, and uneven surfaces or terrain. Establish and utilize a pathway free of slip and trip hazards. Choose a safer walking route. Carry loads you can see over. Keep work areas clean and free of clutter. Communicate hazards to on-site personnel and remove hazards as appropriate.

SIMOPS

SIMOPS are described as the potential class of activities which could bring about an undesired event or set of circumstances, e.g., safety, environment, damage to assets, schedule, commercial, financial, etc. SIMOPS are defined as performing two or more operations concurrently.

SIMOPS should be identified at an early stage before operations commence to understand issues such as schedule and physical clashes, maintenance activities, failure impacts, interferences between vessels, contracts and third-party interfaces, and environmental impacts.

Coordinate project with site activities. Identify and understand the hazards associated with the host and client's activities. Integrate site emergency response protocols where appropriate and communicate to all project staff. Integrate site communication protocols and communicate to all project staff.

Economically Depressed Areas

Economically depressed areas may have high crime rates. Projects involving work in and around inactive industrial sites may bring staff into contact with indigent and homeless persons. Staff could be subjected to crime that includes but may not be limited to thievery, vandalism, and violence. Prior to the start of work staff need to understand the work locations and the potential for exposure to low level crime.

Staff members should never work alone in these areas. A buddy system is required. Conduct during daylight hours. Secure equipment and vehicles. If warranted, contact the local police department for a security detail. Leave the work area immediately and contact the local authorities if staff members feel threatened or are threatened.

Click + to Add Additional Hazard Language

Miscellaneous			
Extended Shift	Choose an item.	Choose an item.	Choose an item.

Extended Shift

An extended shift can include extending a workday beyond eight hours. Extended or unusual work shifts may be more stressful physically, mentally, and emotionally. Non-traditional shifts and extended work hours may disrupt the body's regular schedule, leading to increased fatigue, stress, and lack of concentration. This leads to an increased risk of operator error, injuries, and/or accidents. The degree to which an individual is exposed to fatigue risk factors depends upon the work schedule. As both the duration of the workday and the number of days worked increase so does the fatigue risk factors. Staff Managers need to be aware of the fatigue risk factors and ensure projects are structured to mitigate these factors. Staff Members also have a responsibility to manage the personal fatigue risk factors that they can control outside of work (e.g, duration and quality of sleep, diet, drugs, and alcohol)

Fatigue is a message to the body to rest and can be eliminated with proper rest. However, if rest is not possible, fatigue can increase and becomes distressing and eventually debilitating. Fatigue symptoms, both mental and physical, vary and depend on the person and degree of overexertion. Examples include weariness, sleepiness, irritability, reduced alertness, lack of memory, concentration and motivation, increased susceptibility to illness, depression, headache, loss of appetite, and digestive problems.

When possible, managers should limit use of extended shifts and increase the number of days worked. Working shifts longer than 8 hours generally result in reduced productivity and alertness. Additional breaks and meals should be provided when working extended shift periods. Tasks requiring heavy physical labor or intense concentration should be performed at the beginning of the shift if possible. This is an important consideration for pre-emergency planning.

Make efforts, when feasible, to ensure that unavoidable extended work shifts and shift changes allow affected employees time for adequate rest and recovery. Project Managers need to plan to have an adequate number of personnel available to enable workers to take breaks, eat meals, relax, and sleep.

Plan for regular and frequent breaks throughout the work shift. If at remote sites, ensure if possible, that there is a quiet, secluded area designated for rest and recuperation. In addition to formal breaks such as lunch or dinner, encourage use of micro-breaks to change positions, move about, and shift concentration. Personnel should look to obtain an adequate quantity and quality of sleep.

Task Hazard Summary

Task 1 – Excavation/Trenching (Remedial Oversight)

There are multiple hazards associated with working in and around excavations and trenches including cave-ins, potential running soils, dislodged excavated soils, lack of proper access and egress. Nonfatal, and even fatal, injuries may occur in association with excavation and trenching activities with a greater frequency than one might expect. Causes of bodily injury, illness, or death include asphyxiation, internal injuries due to physical crushing, falling objects, and toxic exposures.

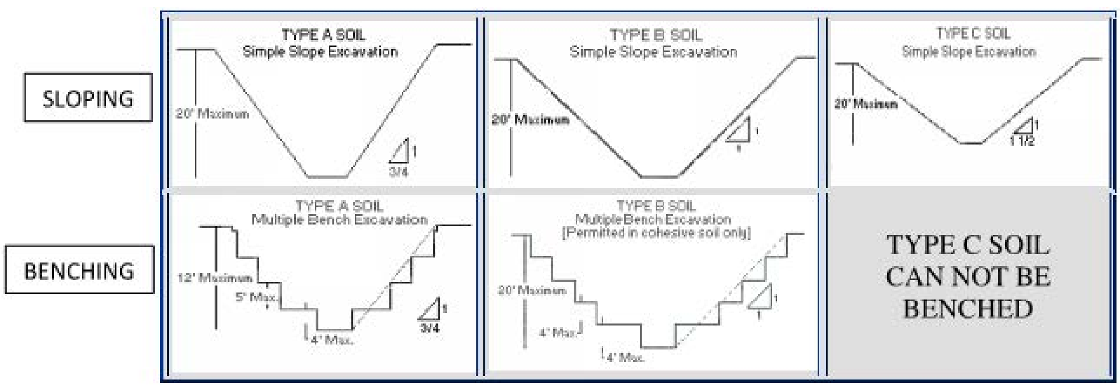
Excavations 5 feet deep or greater require a protective system unless the excavation is made entirely in stable rock. If the depth is less than 5 feet deep, a competent person may determine that a protective system is not required. Trenches 20 feet deep or greater require that the protective system be designed by a registered professional engineer or be based on tabulated data prepared and/or approved by a registered professional.

<u>Haley & Aldrich Staff Members shall not enter a trench that is five feet deep or greater unless a protective system is used or the soil(s) have been characterized and benched and/or sloped appropriately.</u>

The following list identifies the types of protective measures that can be used in the event a staff member is required to enter an excavation or trench.

- **Sloping** involves cutting back the trench wall at an angle inclined away from the excavation.

- **Benching** means a method of protecting workers from cave-ins by excavating the sides of an excavation to form one or a series of horizontal levels or steps, usually with vertical or near vertical surfaces between levels. Benching cannot be done in Type C soil. Below is a diagram indicating the appropriate slope angle for both sloping and benching.



- **Shoring** requires installing aluminum hydraulic or other types of supports to prevent soil movement and cave-ins.

- **Shielding** protects workers by using trench boxes or other types of supports to prevent soil cave-ins.

Designing a protective system can be complex because you must consider many factors: soil classification, depth of cut, water content of soil, changes caused by weather or climate, surcharge loads (e.g., spoil, other materials to be used in the trench) and other operations in the vicinity.

See OP 1001 Excavation and Trenching Safety for more information.

Task 1A - Hauling Soils Off-site (Remedial Oversight)

Hauling Soils Off-site is conducted for a range of services that can include but are not limited to building, foundation, utility excavation, and environmental cleanup. Familiarity with basic heavy construction safety is an essential component of all hauling projects. Potential hazards related to hauling soils off-site operations include, but are not limited to encountering underground or overhead utilities, traffic and heavy equipment, generated waste, and the use or unexpected encountering of toxic or hazardous substances. While staff members do not operate heavy equipment, they may work in close proximity to the equipment and may be exposed to many of the same hazards as the Contractor. Care should be taken during loading of truck/container that the staff is not in the line of fire of the loading equipment (swing radius/traffic pattern) or of the falling spoils/soil from the loading bucket or truck bed. The staff should be aware at all times of subsurface stability as a truck may tip during truck loading and unloading due to items such as but not limited to uneven surface, poorly or uncompacted subsurface, thawing soils, saturated soils, and proximity to excavation. It is imperative that staff are aware of emergency / communication protocols with the Contractor prior to the start of work.

Task 1B – Stockpiling (Remedial Oversight)

Stockpiling of soils is conducted for a range of services that can include but are not limited to building, foundation, utility excavation, drilling spoils containment, and environmental cleanup. Familiarity with basic heavy construction safety is an essential component of all hauling projects. Potential hazards related to stockpiling operations include, but are not limited to encountering underground or overhead utilities, traffic and heavy equipment, and the use or unexpected encountering of toxic or hazardous substances. While staff members do not operate heavy equipment, they may work in close proximity to the equipment and may be exposed to many of the same hazards as the Contractor. Care should be taken during material stockpiling so that the staff is not in the line of fire of the loading equipment (swing radius/traffic pattern). The staff should be aware of any setback requirements of stockpile surcharges near trenches and excavations.

Task 2 – Soil Sampling

Soil sampling by Haley & Aldrich staff on active construction sites can be conducted in conjunction with a wide range of activities such as building construction, earthwork, and soil management-related activities. These activities can include, but are not limited to: drill spoil characterization and management during building foundation element installation, characterization of excavated soils for management/disposal/reuse during earthwork activities, and as part of environmental remedial activities such as delineation and confirmation sampling. Familiarity with basic heavy construction safety, site conditions (geotechnical and environmental), and potential soil contaminants are essential components of soil sampling performed on active sites. Potential hazards related to soil sampling at construction sites include, but are not limited to: encountering site vehicle traffic and heavy equipment operations, manual lifting, generated waste, contact or exposure to impacted soil, and encountering unknown toxic or hazardous substances. Although soil sampling is commonly performed within active excavations, from stockpiles, or within trench excavations, sampling locations and situations will vary depending on site conditions. Care should be taken while entering and exiting excavations or trenches, and when accessing (climbing up or down) soil stockpiles, ensuring that the sampling area is not being actively accessed by construction equipment. Care should also be taken with handling potentially environmentally impacted soil during sampling, with appropriate PPE identified and used. At no time during classification activities are personnel to reach for debris near machinery that is in operation, place any samples in their mouth, or come in contact with the soils without the use of gloves. Staff will have to carry and use a variety of sampling tools, equipment, containers, and potentially heavy sample bags. It is imperative that staff are aware of emergency / communication protocols with the Contractor prior to the start of work.

Task Physical Hazards Checklist		
Potential Task Hazards	**Task 1** **Remedial Oversight**	**Task 2** **Soil Sampling**
Compressed Gas	☐	☐
Congested Area	☒	☒
Ergonomics	☒	☒
Excavation/Trenching	☒	☒
Energized Equipment	☒	☐
Generated Wastes	☒	☐
Ground Disturbance	☒	☐
Hand/Power Tools	☒	☒
Heavy Equipment	☒	☐
Line of Fire	☒	☒
Manual Lifting	☒	☒
Noise	☒	☐
Overhead Utilities	☒	☐
Slippery Surfaces	☒	☒
Sharp Objects	☒	☒

Task Physical Hazards Checklist		
Potential Task Hazards	**Task 1** **Remedial Oversight**	**Task 2** **Soil Sampling**
Underground Utilities	☒	☐
Other: Specify	☐	☐

Summary of Physical Hazards & Controls

Compressed Gas

Hazards associated with compressed gases include oxygen displacement, fires, explosions, and toxic gas exposures, as well as the physical hazards associated with pressurized containers. In most instances, accidents are caused by improper application, misuse of the gas, or its container by inadequately trained personnel. Special storage, use, and handling precautions are necessary to minimize accidents and control these hazards above.

See OP 1048 Compressed Gas Safety for more information.

Controls

- Visually inspect the cylinder prior to and after use for any damage. Report any damage to the vendor for direction.
- Ensure that cylinders are clearly identified. Labels must not be defaced or removed.
- Leave valve protection caps in place (if provided) until cylinders are secured and connected for use.
- Keep cylinder valves closed except when the cylinder is being used.
- When opening a cylinder valve, stand so the valve outlet is pointed away from yourself and all other employees. Open valves slowly.
- Replace protective caps and outlet caps or plugs before returning empty cylinders to the supplier.
- Never tamper with or alter cylinders, valves, or safety relief devices.
- Do not tighten connections or leaking fittings or attempt repairs while the system is under pressure.
- Do not subject cylinders to artificially low temperatures or temperatures above 125 F. Do not place them next to heat sources or allow a flame to contact any part of the cylinder.
- Avoid dragging or sliding cylinders. Do not lift cylinders by the caps.
- Firmly secure the cylinder and move with a suitable hand truck, lift truck, or crane with a cradle or platform.

Storage

- Provide adequate space or segregate by partitions and post a conspicuous sign that identifies the gas or hazard class.
- Storage areas should be dry, well-drained, ventilated, and fire-resistant.
- Cylinders can be stored in the open, but they should be protected from the ground or continuous dampness to prevent rusting.
- Cylinders can usually be stored in the sun; but, cylinders must not exceed temperatures >125 F.
- Always refer to the manufacturers’ storage requirements and SDSs.

- Storage areas should protect cylinders from damage. Do not store on unprotected platform edges or obstruct walkways or exits.
- Use brackets, chains, or straps around the upper third of the cylinder to secure cylinders in storage or in use.

Transport
- Cylinders must be stored upright, firmly secured, and be capped during transport.

Congested Areas
Working in congested areas can expose both workers and the public to a wide range of hazards depending upon the specific activities taking place. Staff Members need to understand the work scope, work areas, equipment on-site, and internal traffic patterns to minimize or eliminate exposure potential.

Controls
- Provide barricades, fencing, warning signs/signals, and adequate lighting to protect people while working in or around congested areas.
- Vehicles and heavy equipment with restricted views to the rear should have functioning back-up alarms that are audible above the surrounding noise levels. Whenever possible, use a signaler to assist heavy equipment operators and/or drivers in backing up or maneuvering in congested areas.
- Lay out traffic control patterns to eliminate excessive congestion.
- Workers in congested areas should always wear high-visibility clothing.
- Be aware of Line of Fire hazards when performing work activities in congested areas.
- Hazards associated with SIMOPs should be discussed daily at Tailgate Safety Meetings.

Ergonomics
Most Work-related Musculoskeletal Disorders (WMSDs) are caused by Ergonomic Stressors. Ergonomic Stressors are caused by poor workplace practices and/or insufficient design, which may present ergonomic risk factors. These stressors include, but are not limited to, repetition, force, extreme postures, static postures, quick motions, contact pressure, vibration, and cold temperatures.

WMSDs are injuries to the musculoskeletal system, which involves bones, muscles, tendons, ligaments, and other tissues in the system. Symptoms may include numbness, tightness, tingling, swelling, pain, stiffness, fatigue, and/or redness. WMSDs are usually caused by one or more Ergonomic Stressors. There may be individual differences in susceptibility and symptoms among employees performing similar tasks. Any symptoms are to be taken seriously and reported immediately.

See OP1053 Ergonomics for more information.

Controls
- Ensure workstations are ergonomically correct so bad posture is not required to complete tasks.
- Take periodic breaks over the course of the day.
- Stretch during break times.
- Break up tasks that require repetitive motion.
- Contact Corporate Health and Safety with any ergonomic concerns

Excavation & Trenches

There are multiple hazards associated with working in and around excavations and trenches including cave-ins, potential running soils, dislodged excavated soils, lack of proper access and egress. Nonfatal, and even fatal, injuries may occur in association with excavation and trenching activities with a greater frequency than one might expect. Causes of bodily injury, illness, or death include asphyxiation, internal injuries due to physical crushing, falling objects, and toxic exposures.

See OP1001 Excavation and Trenching Safety for more information.

Controls

- Do not enter an exaction unless it has been inspected and has appropriate protective measures in place: shoring, benching, or sloping.
  - Protective measures are required for excavations that are 5 feet or deeper.
- If entry is required verify with the on-site competent person that:
  - no atmospheric hazards exist or have the potential to exist
  - there is no standing water or water removal operations are in place
  - the daily inspection has occurred
  - spoil piles, equipment or other is at least 2 feet from the edge
  - There is safe access and egress to the excavation which can include ladders, steps, ramps or other safe means. The means of access and egress shall be no more than 25' away.
- If there is any doubt about the safety of the excavation personnel will not enter the excavation or trench and will contact the PM and the Regional Safety Manager.
- Do not stand on the long side of the cut. If required ensure there are no tension cracks.

Generated Waste

Activities on environmental sites may generate waste that requires regulated handling and disposal. Excess sample solids, decontamination materials, poly sheeting, used PPE, etc. that are determined to be free of contamination through field or laboratory screening can usually be disposed into client-approved, on-site trash receptacles. Uncontaminated wash water may be discarded onto the ground surface away from surface water bodies in areas where infiltration can occur. Contaminated materials must be segregated into liquids or solids and drummed separately for off-site disposal.

Controls

- Manage waste properly through good work practices.
- Collect, store, containerize waste, and dispose of it properly.
- All wastes generated shall be containerized in an appropriate container (i.e. open or closed top 55-gallon drum, roll-off container, poly tote, cardboard box, etc.) as directed by the PM.
- Containers should be inspected for damages or defects
- Waste containers should be appropriately labeled indicating the contents, date the container was filled, owner of the material (including address), and any unique identification number, if necessary.
- Upon completion of filling the waste container, the container should be inspected for leaks and an appropriate seal.

Ground Disturbance

Ground disturbance is defined as any activity disturbing the ground. Ground disturbance activities include, but are not limited to, excavating, trenching, drilling (either mechanically or by hand), digging, plowing, grading, tunneling, and pounding posts or stakes.

Because of the potential hazards associated with striking an underground utility or structure, the operating procedure for underground utility clearance shall be followed prior to performing any ground disturbance activities.

See OP1020 Working Near Utilities

Controls

Prior to performing ground disturbance activities, the following requirements should be applied:

- Confirm all approvals and agreements (as applicable) either verbal or written have been obtained.
- Request for line location has been registered with the applicable One-Call or Dial Before You Dig organization, when applicable.
  - Whenever possible, ground disturbance areas should be adequately marked or staked prior to the utility locators site visit.
- Notification to underground facility operator/owner(s) that may not be associated with any known public notification systems such as the One-Call Program regarding the intent to cause ground disturbance within the search zone.
- Notifications to landowners and/or tenant, where deemed reasonable and practicable.
- Proximity and Common Right of Way Agreements shall be checked if the line locator information is inconclusive.
-

Hand and Power Tools

Hand and power tools can expose staff to a wide range of hazards depending upon the tool used. Hazards can include but are not limited to falling, flying, abrasive, and splashing objects, or harmful dusts, fumes, mists, vapors, or gases.

Serious accidents often occur before steps are taken to evaluate and avoid or eliminate tool-related hazards. Staff must recognize the hazards associated with the different types of tools and the safety precautions necessary to prevent those hazards.

See OP 1026 Hand and Power Tools for more information.

Controls

- Keep all tools in good condition with regular maintenance.
- Use the right tool for the job. Do not use a tool for a task which it was not designed for.
- Examine each tool for damage before use and do not use damaged tools.
- For tools that are damaged or defective, red tag the tool and take it out of service.
- Operate tools per the manufacturers' instructions.
- Use the appropriate personal protective equipment.
- All electrically powered tools will be connected through a ground fault circuit interrupter (GFCI).
- All personnel must be trained on the use of the tool they are utilizing.

Heavy Equipment

Staff must be careful and alert when working around heavy equipment, failure or breakage and limited visibility can lead to accidents and worker injury. Heavy equipment such as cranes, drills, haul trucks, or others can fail during operation increasing the chances of worker injury. Equipment of this nature shall be visually inspected and checked for proper working order prior to commencement of field work. Those operating heavy equipment must meet all requirements to operate the equipment. Haley & Aldrich, Inc. staff that supervise projects or are associated with high-risk projects that involve digging or drilling should use due diligence when working with a construction firm.

See OP1052 Heavy Equipment for additional information.

Controls

- Only approach equipment once you have confirmed contact with the operator (e.g., operator places the bucket on the ground).
- Always maintain visual contact with operators and keep out of the strike zone whenever possible.
- Always be alert to the position of the equipment around you.
- Always approach heavy equipment with an awareness of the swing radius and traffic routes of all equipment and never go beneath a hoisted load.
- Avoid fumes created by heavy equipment exhaust.

Line of Fire

Line of fire refers to the path an object will travel. Examples of line of fire situations typically observed on project sites include lifting/hoisting, lines under tension, objects that can fall or roll, pressurized objects or lines, springs or stored energy, work overhead, vehicles, and heavy equipment.

Controls

- Never walk under a suspended load.
- Be aware and stay clear of tensioned lines such as cable, chain, and rope.
- Be cautious of torque stresses that drilling equipment and truck augers can generate. Equipment can rotate unexpectedly long after applied torque force has been stopped.
- Springs and other items can release tremendous energy if compressed and suddenly released
- Items under tension and pressure can release tremendous energy if it is suddenly released.
- Not all objects may be overhead; be especially mindful of top-heavy items and items being transported by forklift or flatbed.
- Secure objects that can roll such as tools, cylinders, and pipes.
- Stay clear of soil cuttings or soil stockpiles generated during drilling operations and excavations, be aware that chunks of soil, rocks, and debris can fall or roll.

Manual Lifting/Moving

Most materials associated with investigation, remedial, or construction-related activities are moved by hand. The human body is subject to damage in the form of back injury, muscle strains, and hernia if caution is not observed in the handling process.

Controls

- Under no circumstances should any one person lift more than 49 pounds unassisted.
- Always push, not pull, the object when possible.

- Size up the load before lifting. If it is heavy or clumsy, get a mechanical aid or help from a worker.
- Bend the knees; it is the single most important aspect of lifting.
- When performing the lift:
    - Place your feet close to the object and center yourself over the load.
    - Get a good handhold.
    - Lift straight up, smoothly and let your legs do the work, not your back!
    - Avoid overreaching or stretching to pick up or set down a load.
    - Do not twist or turn your body once you have made the lift.
    - Make sure beforehand that you have a clear path to carry the load.
    - Set the load down properly.

Noise

Working around heavy equipment (drill rigs, excavators, etc.) often creates excessive noise. The effects of noise include physical damage to the ear, pain, and temporary and/or permanent hearing loss. Workers can also be startled, annoyed, or distracted by noise during critical activities. Noise monitoring data that indicates that working within 25 feet of operating heavy equipment results in exposure to hazardous levels of noise (levels greater than 85 dBA).

See OP 1031 Hearing Conservation for additional information.

Controls

- Personnel are required to use hearing protection (earplugs or earmuffs) within 25 feet of any operating piece of heavy equipment.
- Limit the amount of time spent at a noise source.
- Move to a quiet area to gain relief from hazardous noise sources.
- Increase the distance from the noise source to reduce exposure.

Overhead Utilities

When work is undertaken near overhead electrical lines, the distance maintained from those lines shall also meet the minimum distances for electrical hazards as defined in Table 1 below. Note: utilities other than overhead electrical utilities need to be considered when performing work.

Table 1 Minimal Radial Clearance Distances *

Normal System Voltage Kilovolts (kV)	Required Minimal Radial Clearance Distance (feet/meters)
0 – 50	10/3.05
51 – 100	12/3.66
101 – 200	15/4.57
201 – 300	10/6.1
301 – 500	25/7.62
501 – 750	35/10.67
750 - 1000	45/13.72

** For those locations where the utility has specified more stringent safe distances, those distances shall be observed.*

Controls

- To prevent damage, guy wires shall be visibly marked, and work barriers or spotters provided in those areas where work is being conducted.
  - When working around guy wires, the minimum radial clearance distances for electrical power shall be observed.
- The PM shall research and determine if the local, responsible utility or client has more restrictive requirements than those stated in Table 1.
- If equipment cannot be positioned in accordance with the requirements established in Table 1 the lines need to be de-energized.

Slippery Surfaces

Both slips and trips result from unintended or unexpected changes in the contact between the feet and ground or walking surface. Good housekeeping, quality of walking surfaces, selection of proper footwear, and appropriate pace of walking are critical for preventing fall accidents. Slips happen where there is too little friction or traction between the footwear and walking surface.

Common causes of slips are wet or oily surfaces, spills, weather hazards, loose unanchored rugs or mats and flooring or other walking surfaces that do not have the same degree of traction in all areas.

Weather-related slips and falls become a serious hazard as winter conditions often make for wet or icy surfaces outdoors. Even wet organic material or mud can create hazardous walking conditions. Spills and leaks can also lead to slips and falls.

Controls

- Evaluate the work area to identify any conditions that may pose a slip hazard.
- Address any spills, drips, or leaks immediately.
- Mark areas where slippery conditions exist.
- Select proper footwear or enhance traction with additional PPE.
- Where conditions are uncertain or environmental conditions result in slippery surfaces walk slowly, take small steps, and slide feet on wet or slippery surfaces.

Sharp Objects

Workers who handle sharp-edged objects like sheets of steel or glass are at risk of cuts. Workers who handle sharp-edged objects are also at risk of cuts. Injuries may occur to hands, fingers, or legs when they are in the way of the blade, when the blade slips, or if an open blade is handled unexpectedly. Other hazards at job sites include stepping on sharp objects (e.g. wooden boards with protruding nails, sharp work-tools, chisels, etc.) and colliding with sharp and/or protruding objects.

Controls

Always be alert when handling sharps. Never look away or become distracted while handling sharp objects. Use caution when working with tools; use the right tool for the job. Keep tools sharp, dull blades are a safety hazard, requiring more force to make cuts which can lead to tool slippage. Wear appropriate PPE and do not handle sharp objects (i.e., broken glass) with bare hands. Use mechanical devices, when possible. Stay away from building debris; avoid handling site debris or placing your hand where you cannot see. Watch out for barbed wire and electrical fences; cover with a car mat or equivalent to cross or walk around; use the buddy system to avoid entanglement; wear gloves. Do not leave unprotected sharps unattended. Use protective shields, cases, styrofoam blocks, etc. Pass a sharp by handing it over carefully by the handle with the blade down or retracted. Fixed open blades are prohibited. Always cut away from the body, making several passes when cutting thicker materials. Make sure blades are fitted properly into the knife. Never cut items with a blade or other sharp object on your lap. Never try to catch a blade or cutting tool that is falling.

Underground Utilities

Various forms of underground/overhead utility lines or conveyance pipes may be encountered during site activities. Prior to the start of intrusive operations, utility clearance is mandated, as well as obtaining authorization from all concerned public utility department offices. Should intrusive operations cause equipment to come into contact with utility lines, the SHSO, Project Manager, and Regional H&S Manager shall be notified immediately. Work will be suspended until the client and applicable utility agency are contacted and the appropriate actions for the situation can be addressed.

See OP1020 Work Near Utilities for complete information.

Controls

- Obtain as-built drawings for the areas being investigated from the property owner;
- Visually review each proposed soil boring location with the property owner or knowledgeable site representative;
- Perform a geophysical survey to locate utilities;
- Hire a private line locating firm to determine location of utility lines that are present at the property;
- Identifying a no-drill or dig zone;
- Hand dig or use vacuum excavation in the proposed ground disturbance locations if insufficient data is unavailable to accurately determine the location of the utility lines.

4. PROTECTIVE MEASURES

The personal protective equipment and safety equipment (if listed) are specific to the associated task. The required PPE and equipment listed must be onsite during the task being performed. Work shall not commence unless the required PPE or Safety Equipment is present.

Required Safety & Personal Protective Equipment

Required Personal Protective Equipment (PPE)	**Task 1**	**Task 2**	**Task 3**	**Task 4**
	Remedial Oversight	Soil Sampling	Enter task description.	Enter task description.
Hard hat	☒	☒	☐	☐
Safety Glasses	☒	☒	☐	☐
Safety Toed Shoes	☒	☒	☐	☐
Class 2 Safety Vest	☒	☒	☐	☐
Hearing Protection	☒	☐	☐	☐
Nitrile Gloves	☒	☒	☐	☐
Cut Resistant Gloves	☒	☒	☐	☐
Level of protection required	D	D	D	D
Required Safety Equipment				
First Aid Kit	☒	☒	☐	☐

5. TRAINING REQUIREMENTS

The table below lists the training requirements staff must have respective to their assigned tasks and that are required to access the Site.

Site Specific Training Requirements

HAZWOPER - 40 Hour (Initial)
HAZWOPER - 8 Hour (Annual Refresher)
Site Specific Orientation
40 Hour SST

Task-Specific Training Requirements

Required Training Type	Task 1	Task 2	Task 3	Task 4
	Remedial Oversight	Soil Sampling	Enter task description.	Enter task description.
RCRA Haz Waste Generator	☒	☐	☐	☐

6. AIR MONITORING PLAN AND EQUIPMENT

Exposures to airborne substances shall be fully characterized throughout project operations to ensure that exposure controls are effectively selected and modified as needed.

Is air/exposure monitoring required at this work site for personal protection? Yes

Is perimeter monitoring required for community protection? Yes

Air monitoring plan not applicable No

Air Monitoring/Screening Equipment Requirements

Photo-Ionization Detector (PID) 10.6eV

Dust Monitor (DustTrak)

The required equipment listed above must be on site. Work shall not commence unless the equipment is present and in working order.

Monitoring Plans

Parameter/ Contaminant	Equipment	Action Level	Response Activity
VOCs	PID 10.6 eV	< 10 ppm	Continue work and monitoring.
		>10 ppm for 5 minutes	Clear Instrument and Re-Monitor the Area. Implement PPE upgrades
		>10 ppm for >5 minutes	Evacuate the area and call the FSM and/or PM for further guidance. Implement engineering controls.

Zone Location and Monitoring Interval
Breathing zone and edge of Exclusion Zone.

***If chemical does not have an action level use TLV or REL, whichever is lowest, to be used as an action level. If TLV or REL are the same as PEL, cut the PEL in half for an action level.**

7. DECONTAMINATION & DISPOSAL METHODS

All possible and necessary steps shall be taken to reduce or minimize contact with chemicals and contaminated/impacted materials while performing field activities (e.g., avoid sitting or leaning on, walking through, dragging equipment through or over, tracking, or splashing potential or known contaminated/impacted materials.)

Personal Hygiene Safeguards

The following minimum personal hygiene safeguards shall be adhered to:

1. No smoking or tobacco products in any project work areas.
2. No eating or drinking in the exclusion zone.
3. It is required that personnel present on site wash hands before eating, smoking, taking medication, chewing gum/tobacco, using the restroom, or applying cosmetics and before leaving the site for the day.

It is recommended that personnel present on site shower or bathe at home at the end of each day of working on the site.

Decontamination Supplies

All decontamination should be conducted at the project site in designated zones or as dictated by Client requirements. Decontamination should not be performed on Haley & Aldrich-owned or leased premises.

☐ Acetone	☒ Distilled Water	☐ Polyethylene Sheeting
☒ Alconox Soap	☐ Drums	☐ Pressure/Steam Cleaner
☒ Brushes	☐ Hexane	☒ Tap Water
☒ Disposal Bags	☐ Methanol	☐ Wash tubs
☒ 5 Gallon Buckets	☒ Paper Towels	☐ Other: Specify

Location of Decontamination Station

To be communicated during Site kick-off meeting.

Standard Personal Decontamination Procedures

Outer gloves and boots should be decontaminated periodically as necessary and at the end of the day. Brush off solids with a hard brush and clean with soap and water or other appropriate cleaner whenever possible. Remove inner gloves carefully by turning them inside out during removal. Wash hands and forearms frequently. It is good practice to wear work-designated clothing while on-site which can be removed as soon as possible. Non-disposable overalls and outer work clothing should be bagged onsite prior to laundering. If gross contamination is encountered on-site contact the Project Manager and Field Safety Manager to discuss proper decontamination procedures.

The steps required for decontamination will depend upon the degree and type of contamination but will generally follow the sequence below.

1. Remove and wipe clean hard hat
2. Rinse boots and gloves of gross contamination
3. Scrub boots and gloves clean
4. Rinse boots and gloves
5. Remove outer boots (if applicable)
6. Remove outer gloves (if applicable)
7. Remove Tyvek coverall (if applicable)
8. Remove respirator, wipe clean and store (if applicable)
9. Remove inner gloves (if outer gloves were used)

PPE that is not grossly contaminated can be bagged and disposed in regular trash receptacles.

Small Equipment Decontamination

Pretreatment of heavily contaminated equipment may be conducted as necessary:

1. Remove gross contamination using a brush or wiping with a paper towel
2. Soak in a solution of Alconox and water (if possible)
3. Wipe off excess contamination with a paper towel

Standard decontamination procedure:

4. Wash using a solution of Alconox and water
5. Rinse with potable water
6. Rinse with methanol (or equivalent)
7. Rinse with distilled/deionized water

Inspect the equipment for any remaining contamination and repeat as necessary.

Disposal Methods
Procedures for disposal of contaminated materials, decontamination waste, and single use personal protective equipment shall meet applicable client, locate, State, and Federal requirements.
Disposal of Single Use Personal Protective Equipment
PPE that is not grossly contaminated can be bagged and disposed in regular trash receptacles. PPE that is grossly contaminated must be bagged (sealed and field personnel should communicate with the Project Manager to determine proper disposal.

8. SITE CONTROL

The overall purpose of site control is to minimize potential contamination of workers, protect the public from the site's hazards, and prevent vandalism. Site control is especially important in emergency situations. The degree of site control necessary depends on site characteristics, site size, and the surrounding community. The following information identifies the elements used to control the activities and movements of people and equipment at the project site.

Communication
Internal Haley & Aldrich site personnel will communicate with other Haley & Aldrich staff members and/or subcontractors or contractors with: Face to Face Communication
External Health and Safety site personnel will use the following means to communicate with off-site personnel or emergency services. Cellular Phones
Visitors
Project Site Will visitors be required to check-in prior to accessing the project site? Yes
Visitor Access Authorized visitors who require access to the project site need to be provided with known information with respect to the site operations and hazards as applicable to the purpose of their site visit. Authorized visitors must have the required PPE and appropriate training to access the project site.
Zoning
Work Zone The work zone will be clearly delineated to ensure that the general public or unauthorized worker access is prevented. The following will be used: Cones Barricades Temporary Fencing

9. SITE-SPECIFIC EMERGENCY RESPONSE PLAN

The Emergency Response Plan addresses potential emergencies at this site, procedures for responding to these emergencies, roles, responsibilities during emergency response, and training. This section also describes the provisions this project has made to coordinate its emergency response with other contractors onsite and with offsite emergency response organizations (as applicable).

During the development of this emergency response plan, local, state, and federal agency disaster, fire, and emergency response organizations were consulted (if required) to ensure that this plan is compatible and integrated with plans of those organizations. Documentation of the dates of these consultations are the names of individuals contacted is kept on file and available upon request.

The site has been evaluated for potential emergency occurrences, based on site hazards, and the major categories of emergencies that could occur during project work are:

- Fire(s)/Combustion
- Hazardous Material Event
- Medical Emergency
- Natural Disaster

A detailed list of emergency types and response actions are summarized in Table X below. Prior to the start of work, the SSO will update the table with any additional site-specific information regarding evacuations, muster points, or additional emergency procedures. The SSO will establish evacuation routes and assembly areas for the Site. All personnel entering the Site will be informed of these routes and assembly areas.

Pre-Emergency Planning

Before the start of field activities, the Project Manager will ensure preparations have been made in anticipation of emergencies. Preparatory actions include the following:

Meeting with the subcontractor/and or client concerning the emergency procedures in the event a person is injured. Appropriate actions for specific scenarios will be reviewed. These scenarios will be discussed, and responses determined before the sampling event commences. A form of emergency communication (i.e.; Cell phone, Air horn, etc.) between the Project Manager and subcontractor and/or client will be agreed upon before the work commences.

A training session (i.e., “safety meeting”) given by the Project Manager or their designee informing all field personnel of emergency procedures, locations of emergency equipment and their use, and proper evacuation procedures.

Ensuring field personnel are aware of the existence of the emergency response HASP and ensuring a copy of the HASP accompanies the field team(s).

Onsite Emergency Response Equipment

Emergency procedures may require specialized equipment to facilitate work rescue, contamination control, and reduction or post-emergency cleanup. Emergency response equipment stocked

Table 9.1 Emergency Equipment and Emergency PPE			
Emergency Equipment	**Specific Type**	**Quantity Stocked**	**Location Stored**
First Aid Kit	ANSI	1 Kit	With Haley & Aldrich Staff
Emergency PPE	**Specific Type**	**Quantity Stocked**	**Location Stored**
Gloves	Nitrile	1 box	With Haley & Aldrich Staff

EVACUATION ALARM
Will be communicated during the Onsite Kickoff Meeting
EVACUATION ROUTES
Will be given a map after site-specific training
EVACUATION MUSTER POINT(S)/ SHELTER AREA(S)
Will be given locations after site-specific training
EVACUATION RESPONSE DRILLS
The Site relies on outside emergency responders and a drill is not required.

Table 9-2 – Emergency Planning

Emergency Type	Notification	Response Action	Evacuation Plan/Route
Chemical Exposure	Report event to SSO immediately	Refer to Safety Data Sheet for required actions	Remove personnel from work zone
Fire - Small	Notify SSO and contact 911	Use fire extinguisher if safe and qualified to do so	Mobilize to *Muster Point*
Fire – Large/Explosion	Notify SSO and contact 911	Evacuate immediately	Mobilize to *Muster Point*
Hazardous Material – Spill/Release	Notify SSO; SSO will contact PM to determine if additional agency notification is	If practicable don PPE and use spill kit and applicable procedures to contain the release	See Evacuation Map for route, move at least 100 ft upwind of spill location
Medical – Bloodborne Pathogen	Notify SSO	If qualified dispose in container or call client or city to notify for further instruction.	None Anticipated
Medical – First Aid	Notify SSO	If qualified perform first aid duties	None Anticipated
Medical – Trauma	If life-threatening or transport is required call 911, immediately	Wait at site entrance for ambulance	Noe Anticipated
Security Threat	Notify SSO who will call 911 as warranted	Keep all valuables out of site and work zones delineated.	None Anticipated
Weather – Earthquake/Tsunami's	STOP WORK and evacuate Site upon any earthquake	Turn off equipment and evacuate as soon as is safe to do so	Mobilize to *Shelter Location*
Weather – Lightning Storm	STOP WORK	Work may resume 30 minutes after the last observed lightning.	None Anticipated
Weather – Tornadoes/Hurricanes	Monitor weather conditions STOP WORK and evacuate the site	Evacuate to shelter location or shelter in place immediately	Mobilize to *Shelter Location*
MUSTER POINT To be communicated during Site kick-off meeting.		*SHELTER LOCATION* To be communicated during Site kick-off meeting.	
In case of site emergencies, site personnel shall be evacuated per this table and will not participate in emergency response activities. Site emergencies shall be reported to local, state, and federal governmental agencies as required.			

10. HASP ACKNOWLEDGEMENT FORM

All Haley & Aldrich employees onsite must sign this form prior to entering the site.

I hereby acknowledge receipt of, and briefing on, this HASP prior to the start of on-site work. I declare that I understand and agree to follow the provisions, processes, and procedures set forth herein at all times while working on this site.

Printed Name	Signature	Date

ATTACHMENT A
HASP AMENDMENT FORM

HASP AMENDMENT FORM

This form is to be used whenever there is an immediate change in the project scope that will require an amendment to the HASP. For project scope changes associated with "add-on" tasks, the changes must be made in the body of the HASP. Before changes can be made, a review of the potential hazards must be initiated by the Haley & Aldrich Project Manager.

This original form must remain on site with the original HASP. If additional copies of this HASP have been distributed, it is the Project Manager's responsibility to forward a signed copy of this amendment to those who have copies.

Amendment No.	
Site Name	
Work Assignment No.	
Date	
Type of Amendment	
Reason for Amendment	
Alternate Safeguard Procedures	
Required Changes in PPE	

Project Manager Name (Print)	Project Manager Signature	Date

Health & Safety Approver Name (Print)	Health & Safety Approver Signature	Date

ATTACHMENT B
TRAINING REQUIREMENTS

TRAINING REQUIREMENTS

Health and Safety Training Requirements

Personnel will not be permitted to supervise or participate in field activities until they have been trained to a level required by their job function and responsibility. Haley & Aldrich staff members, contractors, subcontractors, and consultants who have the potential to be exposed to contaminated materials or physical hazards must complete the training described in the following sections.

The Haley & Aldrich Project Manager/FSM will be responsible for maintaining and providing to the client/site manager documentation of Haley & Aldrich staff members' compliance with required training as requested. Records shall be maintained per OSHA requirements.

40-Hour Health and Safety Training

The 40-Hour Health and Safety Training course provides instruction on the nature of hazardous waste work, protective measures, proper use of personal protective equipment, recognition of signs and symptoms which might indicate exposure to hazardous substances, and decontamination procedures. It is required for all personnel working on-site, such as equipment operators, general laborers, and supervisors, who may be potentially exposed to hazardous substances, health hazards, or safety hazards consistent with 29 CFR 1910.120.

8-hour Annual Refresher Training

Personnel who complete the 40-hour health and safety training are subsequently required to attend an annual 8-hour refresher course to remain current in their training. When required, site personnel must be able to show proof of completion (i.e., certification) at an 8-hour refresher training course within the past 12 months.

8-Hour Supervisor Training

On-site managers and supervisors directly responsible for, or who supervise staff members engaged in hazardous waste operations, should have eight additional hours of Supervisor training in accordance with 29 CFR 1910.120. Supervisor Training includes, but is not limited to, accident reporting/investigation, regulatory compliance, work practice observations, auditing, and emergency response procedures.

Additional Training for Specific Projects

Haley & Aldrich personnel will ensure their personnel have received additional training on specific instrumentation, equipment, confined space entry, construction hazards, etc., as necessary to perform their duties. This specialized training will be provided to personnel before engaging in the specific work activities including:

- Client-specific training or orientation
- Competent person excavations
- Confined space entry (entrant, supervisor, and attendant)
- Heavy equipment including aerial lifts and forklifts
- First aid/ CPR
- Use of fall protection
- Use of nuclear density gauges
- Asbestos awareness

ATTACHMENT C
ROLES AND RESPONSIBILITIES

SITE ROLES AND RESPONSIBILITIES

Haley & Aldrich Personnel

Field Safety Manager (FSM)

The Haley & Aldrich FSM is a full-time Haley & Aldrich staff member, trained as a safety and health professional, who is responsible for the interpretation and approval of this Safety Plan. Modifications to this Safety Plan cannot be undertaken by the PM or the SSO without the approval of the FSM.

Specific duties of the FSM include:

- Approving and amending the Safety Plan for this project
- Advising the PM and SHSOs on matters relating to health and safety
- Recommending appropriate personal protective equipment (PPE) and air monitoring instrumentation
- Maintaining regular contact with the PM and SSO to evaluate the conditions at the property and new information which might require modifications to the HASP and
- Reviewing and approving JSAs developed for the site-specific hazards.

Project Manager (PM)

The Haley & Aldrich PM is responsible for ensuring that the requirements of this HASP are implemented at that project location. Some of the PM´s specific responsibilities include:

- Assuring that all personnel to whom this HASP applies have received a copy of it;
- Providing the FSM with updated information regarding environmental conditions at the site and the scope of site work;
- Providing adequate authority and resources to the on-site SHSO to allow for the successful implementation of all necessary safety procedures;
- Supporting the decisions made by the SHSO;
- Maintaining regular communications with the SHSO and, if necessary, the FSM;
- Coordinating the activities of all subcontractors and ensuring that they are aware of the pertinent health and safety requirements for this project;
- Providing project scheduling and planning activities; and
- Providing guidance to field personnel in the development of appropriate Job Safety Analysis (JSA) relative to the site conditions and hazard assessment.

Site Health & Safety Officer (SHSO)

The SHSO is responsible for field implementation of this HASP and enforcement of safety rules and regulations. SHSO functions may include some or all of the following:

- Act as Haley & Aldrich´s liaison for health and safety issues with client, staff, subcontractors, and agencies.
- Verify that utility clearance has been performed by Haley & Aldrich subcontractors.
- Oversee day-to-day implementation of the Safety Plan by Haley & Aldrich personnel on site.

- Interact with subcontractor project personnel on health and safety matters.
- Verify use of required PPE as outlined in the safety plan.
- Inspect and maintain Haley & Aldrich safety equipment, including calibration of air monitoring instrumentation used by Haley & Aldrich.
- Perform changes to HASP and document in Appendix A of the HASP as needed and notify appropriate persons of changes.
- Investigate and report on-site accidents and incidents involving Haley & Aldrich and its subcontractors.
- Verify that site personnel are familiar with site safety requirements (e.g., the hospital route and emergency contact numbers).
- Report accidents, injuries, and near misses to the Haley & Aldrich PM and FSM as needed.

The SHSO will conduct initial site safety orientations with site personnel (including subcontractors) and conduct toolbox and safety meetings thereafter with Haley & Aldrich employees and Haley & Aldrich subcontractors at regular intervals and in accordance with Haley & Aldrich policy and contractual obligations. The SHSO will track the attendance of site personnel at Haley & Aldrich orientations, toolbox talks, and safety meetings.

Field Personnel

Haley & Aldrich personnel are responsible for following the health and safety procedures specified in this HASP and for performing their work in a safe and responsible manner. Some of the specific responsibilities of the field personnel are as follows:

- Reading the HASP in its entirety prior to the start of on-site work;
- Submitting a completed Safety Plan Acceptance Form and documentation of medical surveillance and training to the SHSO prior to the start of work;
- Attending the pre-entry briefing prior to beginning on-site work;
- Bringing forth any questions or concerns regarding the content of the Safety Plan to the PM or the SHSO prior to the start of work;
- Stopping work when it is not believed it can be performed safely;
- Reporting all accidents, injuries and illnesses, regardless of their severity, to the SHSO;
- Complying with the requirements of this safety plan and the requests of the SHSO; and
- Reviewing the established JSAs for the site-specific hazards on a daily basis and prior to each shift change, if applicable.

Visitors

Authorized visitors (e.g., Client Representatives, Regulators, Haley & Aldrich management staff, etc.) requiring entry to any work location on the site will be briefed by the Site Supervisor on the hazards present at that location. Visitors will be escorted at all times at the work location and will be responsible for compliance with their employer´s health and safety policies. In addition, this safety plan specifies the minimum acceptable qualifications, training and personal protective equipment which are required for entry to any controlled work area; visitors must comply with these requirements at all times. Unauthorized visitors, and visitors not meeting the specified qualifications, will not be permitted within established controlled work areas.

SUBCONTRACTOR PERSONNEL

Subcontractor Site Representative

Each contractor and subcontractor shall designate a Contractor Site Representative. The Contractor Site Representative will interface directly with Insert Staff Name Here, the Subcontractor Site Safety Manager, with regards to all areas that relate to this safety plan and safety performance of work conducted by the contractor and/or subcontractor workforce. Contractor Site Representatives for this site are listed in the Contact Summary Table at the beginning of the Safety Plan.

Subcontractor Site Safety Manager

Each contractor / subcontractor will provide a qualified representative who will act as their Site Safety Manager (Sub-SSM). This person will be responsible for the planning, coordination, and safe execution of subcontractor tasks, including preparation of job hazard analyses (JHA), performing daily safety planning, and coordinating directly with the Haley & Aldrich SHSO for other site safety activities. This person will play a lead role in safety planning for Subcontractor tasks, and in ensuring that all their employees and lower-tier subcontractors are in adherence with applicable local, state, and/or federal regulations, and/or industry and project-specific safety standards or best management practices.

General contractors / subcontractors are responsible for preparing a site-specific HASP and/or other task-specific safety documents (e.g., JHAs), which are, at a minimum, in compliance with local, state, and/or federal other regulations, and/or industry and project specific safety standards or best management practices. The contractor(s)/subcontractor(s) safety documentation will be at least as stringent as the health and safety requirements of the Haley & Aldrich Project specific HASP.

Safety requirements include, but are not limited to: legal requirements, contractual obligations and industry best practices. Contractors/subcontractors will identify a site safety representative during times when contractor/subcontractor personnel are on the Site. All contractor/subcontractor personnel will undergo a field safety orientation conducted by the Haley & Aldrich SHSO and/or PM prior to commencing site work activities. All contractors / subcontractors will participate in Haley & Aldrich site safety meetings and their personnel will be subject to training and monitoring requirements identified in this Safety Plan. If the contractors / subcontractors means and methods deviate from the scope of work described in Section 1 of this Safety Plan, the alternate means and methods must be submitted, reviewed and approved by the Haley & Aldrich SHSO and/or PM prior to the commencement of the work task. Once approved by the Haley & Aldrich SHSO and/or PM, the alternate means and methods submittal will be attached to this Safety Plan as an Addendum.

ATTACHMENT D
JOB SAFETY ANALYSES

Safety
in everything we do

180 EAST 125TH STREET DEVELOPMENT SITE

KEY TASK ENTER TASK NUMBER.: ENTER TASK NAME.		
Subtask Category	**Potential Hazards**	**Controls**
Enter subtask information.	Choose category.	• Enter control(s) for each hazard.
Enter subtask information.	Choose category.	• Enter control(s) for each hazard.
Enter subtask information.	Choose category.	• Enter control(s) for each hazard.
Enter subtask information.	Choose category.	• Enter control(s) for each hazard.
Enter subtask information.	Choose category.	• Enter control(s) for each hazard.
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Enter subtask information.	Choose category.	• Enter control(s) for each hazard.
Enter subtask information.	Choose category.	• Enter control(s) for each hazard.
Enter subtask information.	Choose category.	• Enter control(s) for each hazard.

Enter subtask information.	Choose category.	• Enter control(s) for each hazard.

ATTACHMENT E
PROJECT SITE FORMS

ATTACHMENT F
SITE-SPECIFIC OPERATING PROCEDURES

APPENDIX E
NYSDEC Request to Import/Reuse Form

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Request to Import/Reuse Fill or Soil

This form is based on the information required by DER-10, Section 5.4(e). Use of this form is not a substitute for reading the applicable Technical Guidance document.

SECTION 1 – SITE BACKGROUND

The allowable site use is: Choose an item

Have Ecological Resources been identified? Choose an item

Is this soil originating from the site? Choose an item

How many cubic yards of soil will be imported/reused? Choose an item

If greater than 1000 cubic yards will be imported, enter volume to be imported:

SECTION 2 – MATERIAL OTHER THAN SOIL

Is the material to be imported gravel, rock or stone? Choose an item

Does it contain less than 10%, by weight, material that would pass a size 80 sieve? Choose an item

Is this virgin material from a permitted mine or quarry? Choose an item

Is this material recycled concrete or brick from a DEC registered processing facility? Choose an item

SECTION 3 - SAMPLING

Provide a brief description of the number and type of samples collected in the space below:

Example Text: 5 discrete samples were collected and analyzed for VOCs. 2 composite samples were collected and analyzed for SVOCs, Inorganics & PCBs/Pesticides.

If the material meets requirements of DER-10 section 5.4(e)5 (other material), no chemical testing needed.

SECTION 3 CONT'D - SAMPLING

Provide a brief written summary of the sampling results or attach evaluation tables (compare to DER-10, Appendix 5):

Example Text: Arsenic was detected up to 17 ppm in 1 (of 5) samples; the allowable level is 16 ppm.

If Ecological Resources have been identified use the "If Ecological Resources are Present" column in Appendix 5.

SECTION 4 – SOURCE OF FILL

Name of person providing fill and relationship to the source:

Location where fill was obtained:

Identification of any state or local approvals as a fill source:

If no approvals are available, provide a brief history of the use of the property that is the fill source:

Provide a list of supporting documentation included with this request:

The information provided on this form is accurate and complete.

Signature

Date

Print Name

Firm

APPENDIX F
Citizen Participation Plan

Brownfield Cleanup Program - Citizen Participation Plan Template Instructions

Note: This template is to be used to prepare the site Citizen Participation (CP) Plan. The CP Plan template was designed for the typical scenario of a site that would be investigated and remediated under the BCP.

The draft site CP Plan must be reviewed and approved by NYSDEC. The NYSDEC project manager determines when a draft site CP Plan is final, regardless of who prepares draft versions of the document. The site CP Plan may be revised during the implementation of the brownfield site's remedial program. This determination will be made by the NYSDEC project manager, in consultation with the assigned NYSDEC Citizen Participation Specialist and other NYSDEC staff as appropriate.

Preparation:

- Unless directed otherwise, the Applicant will submit to NYSDEC for review and approval the site CP Plan within 20 days after the effective date of the site's Brownfield Cleanup Agreement.

- Insert or delete information within brackets as appropriate, then delete the brackets and any accompanying instructions, including each "Instruction to preparer:". Unless instructed otherwise, remove **bolding** from text that is inserted or contained within brackets.

- Assume the reader does not have specialized technical and environmental knowledge. **Insert plain, understandable language into the template.** Avoid jargon and acronyms. Don't "cut and paste" from technical reports -- they are not written for a general audience. Explain/define any technical terms that must be used. For example, don't assume the reader knows what a "non-aqueous phase liquid (NAPL)" is, or what "air sparging" means. An NYSDEC Citizen Participation Specialist, in consultation with the NYSDEC project manager, may revise or identify portions of the draft that require revision before it can be approved.

- Do not delete or alter "boilerplate" language unless the activity referenced (e.g. investigation, cleanup) does not apply to the BCP site and project.

- When the site CP Plan has been drafted, address page breaks, heading locations and other formatting issues as needed.

- When final edits have been made to the draft site CP Plan, insert or edit page numbers in the Contents page. Recheck page breaks, heading locations and other formatting issues. Be sure to format and print the site CP Plan double-sided.

Distribution:

- The NYSDEC project manager will notify the Applicant when to distribute the approved site CP Plan to the site's document repository(ies). Alternately, NYSDEC may distribute the site CP Plan to the repository(ies).

- **External distribution:** The site CP Plan can be distributed to the site's document repository(ies) in paper form and/or electronic form (such as on disc). Be sure the repository(ies) have the means to provide the public with electronic access to the site CP Plan if this format is selected.

  Additional distribution may be considered if the BCP site or its remedial program is comprehensive and/or there is significant public interest. One option is to post the site CP Plan electronically on the DER public web site. Another option is to distribute the site CP Plan to a subset of the site contact list that includes community leaders and others as appropriate. Such distribution should be done electronically through email, if possible.

  The method(s) and extent of external distribution is determined by the NYSDEC project manager, following consultation with others as appropriate.

- **Internal distribution:** NYSDEC and NYSDOH staff always should receive electronic copies of the site CP Plan, whether NYSDEC staff are managing the distribution or the distribution is being managed by the Applicant or a contractor. Hard copies should not be distributed internally. NYSDEC staff should provide the Applicant or contractor with appropriate NYSDEC and NYSDOH email addresses when the Applicant or contractor is managing the distribution.

- Place electronic copy of the site CP Plan in the appropriate folder of DecDocs.

An Applicant preparing a draft BCP CP Plan should direct related questions and requests for additional information to the NYSDEC project manager.

NEW YORK STATE | Department of Environmental Conservation

Brownfield Cleanup Program

Citizen Participation Plan
for
180 East 125th Street Development Site
180 East 125th Street, New York, NY

November 2024

BCP Site C231160
180 East 125th Street
New York, New York 10035

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* * * * *

Note: The information presented in this Citizen Participation Plan was current as of the date of its approval by the New York State Department of Environmental Conservation. Portions of this Citizen Participation Plan may be revised during the site's investigation and cleanup process.

Applicant: **180 E125th PROPCO LLC**
Site Name: **180 East 125th Street Development Site**
Site Address: **180 East 125th Street, New York, NY 10035**
Site County: **New York**
Site Number: **C231160**

1. What is New York's Brownfield Cleanup Program?

New York's Brownfield Cleanup Program (BCP) works with private developers to encourage the voluntary cleanup of contaminated properties known as "brownfields" so that they can be reused and developed. These uses include recreation, housing, and business.

A *brownfield* is any real property that is difficult to reuse or redevelop because of the presence or potential presence of contamination. A brownfield typically is a former industrial or commercial property where operations may have resulted in environmental contamination. A brownfield can pose environmental, legal, and financial burdens on a community. If a brownfield is not addressed, it can reduce property values in the area and affect economic development of nearby properties.

The BCP is administered by the New York State Department of Environmental Conservation (NYSDEC) which oversees Applicants who conduct brownfield site investigation and cleanup activities. An Applicant is a person who has requested to participate in the BCP and has been accepted by NYSDEC. The BCP contains investigation and cleanup requirements, ensuring that cleanups protect public health and the environment. When NYSDEC certifies that these requirements have been met, the property can be reused or redeveloped for the intended use.

For more information about the BCP, go online at:
http://www.dec.ny.gov/chemical/8450.html .

2. Citizen Participation Activities

Why NYSDEC Involves the Public and Why It Is Important

NYSDEC involves the public to improve the process of investigating and cleaning up contaminated sites, and to enable citizens to participate more fully in decisions that affect their health, environment, and social well-being. NYSDEC provides opportunities for citizen involvement and encourages early two-way communication with citizens before decision makers form or adopt final positions.

Involving citizens affected and interested in site investigation and cleanup programs is important for many reasons. These include:

- Promoting the development of timely, effective site investigation and cleanup programs that protect public health and the environment

- Improving public access to, and understanding of, issues and information related to a particular site and that site's investigation and cleanup process

- Providing citizens with early and continuing opportunities to participate in NYSDEC's site investigation and cleanup process

- Ensuring that NYSDEC makes site investigation and cleanup decisions that benefit from input that reflects the interests and perspectives found within the affected community

- Encouraging dialogue to promote the exchange of information among the affected/interested public, State agencies, and other interested parties that strengthens trust among the parties, increases understanding of site and community issues and concerns, and improves decision making.

This Citizen Participation (CP) Plan provides information about how NYSDEC will inform and involve the public during the investigation and cleanup of the site identified above. The public information and involvement program will be carried out with assistance, as appropriate, from the Applicant.

Project Contacts

Appendix A identifies NYSDEC project contact(s) to whom the public should address questions or request information about the site's investigation and cleanup program. The public's suggestions about this CP Plan and the CP program for the site are always welcome. Interested people are encouraged to share their ideas and suggestions with the project contacts at any time.

Locations of Reports and Information

The locations of the reports and information related to the site's investigation and cleanup program also are identified in Appendix A. These locations provide convenient access to important project documents for public review and comment. Some documents may be placed on the NYSDEC web site. If this occurs, NYSDEC will inform the public in fact sheets distributed about the site and by other means, as appropriate.

Site Contact List

Appendix B contains the site contact list. This list has been developed to keep the community informed about, and involved in, the site's investigation and cleanup process. The site contact list will be used periodically to distribute fact sheets that provide updates about the status of the project. These will include notifications of upcoming activities at the site (such as fieldwork), as well as availability of project documents and announcements about public comment periods.
The site contact list includes, at a minimum:

- chief executive officer and planning board chairperson of each county, city, town and village in which the site is located;
- residents, owners, and occupants of the site and properties adjacent to the site;
- the public water supplier which services the area in which the site is located;
- any person who has requested to be placed on the site contact list;
- the administrator of any school or day care facility located on or near the site for purposes of posting and/or dissemination of information at the facility;
- location(s) of reports and information.

The site contact list will be reviewed periodically and updated as appropriate. Individuals and organizations will be added to the site contact list upon request. Such requests should be submitted to the NYSDEC project contact(s) identified in Appendix A. Other additions to the site contact list may be made at the discretion of the NYSDEC project manager, in consultation with other NYSDEC staff as appropriate.

Note: The first site fact sheet (usually related to the draft Remedial Investigation Work Plan) is distributed both by paper mailing through the postal service and through DEC Delivers, its email listserv service. The fact sheet includes instructions for signing up with the appropriate county listserv to receive future notifications about the site. See http://www.dec.ny.gov/chemical/61092.html .

Subsequent fact sheets about the site will be distributed exclusively through the listserv, except for households without internet access that have indicated the need to continue to receive site information in paper form. Please advise the NYSDEC site project manager identified in Appendix A if that is the case. Paper mailings may continue during the investigation and cleanup process for some sites, based on public interest and need.

CP Activities

The table at the end of this section identifies the CP activities, at a minimum, that have been and will be conducted during the site's investigation and cleanup program. The flowchart in Appendix D shows how these CP activities integrate with the site investigation and cleanup process. The public is informed about these CP activities through fact sheets and notices distributed at significant points during the program. Elements of the investigation and cleanup process that match up with the CP activities are explained briefly in Section 5.

- **Notices and fact sheets** help the interested and affected public to understand contamination issues related to a site, and the nature and progress of efforts to investigate and clean up a site.

- **Public forums, comment periods and contact with project managers** provide opportunities for the public to contribute information, opinions and perspectives that have potential to influence decisions about a site's investigation and cleanup.

The public is encouraged to contact project staff at any time during the site's investigation and cleanup process with questions, comments, or requests for information.

This CP Plan may be revised due to changes in major issues of public concern identified in Section 3 or in the nature and scope of investigation and cleanup activities. Modifications may include additions to the site contact list and changes in planned citizen participation activities.

Technical Assistance Grant

NYSDEC must determine if the site poses a significant threat to public health or the environment. This determination generally is made using information developed during the investigation of the site, as described in Section 5.

If the site is determined to be a significant threat, a qualifying community group may apply for a Technical Assistance Grant (TAG). The purpose of a TAG is to provide funds to the qualifying group to obtain independent technical assistance. This assistance helps the TAG recipient to interpret and understand existing environmental information about the nature and extent of contamination related to the site and the development/implementation of a remedy.

An eligible community group must certify that its membership represents the interests of the community affected by the site, and that its members' health, economic well-being or enjoyment of the environment may be affected by a release or threatened release of contamination at the site.

As of the date the declaration (page 2) was signed by the NYSDEC project manager, the significant threat determination for the site had not yet been made.

To verify the significant threat status of the site, the interested public may contact the NYSDEC project manager identified in Appendix A.

For more information about TAGs, go online at
http://www.dec.ny.gov/regulations/2590.html

Note: The table identifying the citizen participation activities related to the site's investigation and cleanup program follows on the next page:

Citizen Participation Activities	Timing of CP Activity(ies)
Application Process:	
• Prepare site contact list • Establish document repository(ies)	At time of preparation of application to participate in the BCP.
• Publish notice in Environmental Notice Bulletin (ENB) announcing receipt of application and 30-day public comment period • Publish above ENB content in local newspaper • Mail above ENB content to site contact list • Conduct 30-day public comment period	When NYSDEC determines that BCP application is complete. The 30-day public comment period begins on date of publication of notice in ENB. End date of public comment period is as stated in ENB notice. Therefore, ENB notice, newspaper notice, and notice to the site contact list should be provided to the public at the same time.
After Execution of Brownfield Site Cleanup Agreement (BCA):	
• Prepare Citizen Participation (CP) Plan	Before start of Remedial Investigation **Note:** Applicant must submit CP Plan to NYSDEC for review and approval within 20 days of the effective date of the BCA.
Before NYSDEC Approves Remedial Investigation (RI) Work Plan:	
• Distribute fact sheet to site contact list about proposed RI activities and announcing 30-day public comment period about draft RI Work Plan • Conduct 30-day public comment period	Before NYSDEC approves RI Work Plan. If RI Work Plan is submitted with application, public comment periods will be combined and public notice will include fact sheet. Thirty-day public comment period begins/ends as per dates identified in fact sheet.
After Applicant Completes Remedial Investigation:	
• Distribute fact sheet to site contact list that describes RI results	Before NYSDEC approves RI Report
Before NYSDEC Approves Remedial Work Plan (RWP):	
• Distribute fact sheet to site contact list about draft RWP and announcing 45-day public comment period • Public meeting by NYSDEC about proposed RWP (if requested by affected community or at discretion of NYSDEC project manager) • Conduct 45-day public comment period	Before NYSDEC approves RWP. Forty-five day public comment period begins/ends as per dates identified in fact sheet. Public meeting would be held within the 45-day public comment period.
Before Applicant Starts Cleanup Action:	
• Distribute fact sheet to site contact list that describes upcoming cleanup action	Before the start of cleanup action.
After Applicant Completes Cleanup Action:	
• Distribute fact sheet to site contact list that announces that cleanup action has been completed and that NYSDEC is reviewing the Final Engineering Report • Distribute fact sheet to site contact list announcing NYSDEC approval of Final Engineering Report and issuance of Certificate of Completion (COC)	At the time the cleanup action has been completed. **Note:** The two fact sheets are combined when possible if there is not a delay in issuing the COC.

3. Major Issues of Public Concern

This section of the CP Plan identifies major issues of public concern that relate to the site. Additional major issues of public concern may be identified during the course of the site's investigation and cleanup process.

Based on analytical results from a Remedial Investigation (RI) performed at the site in December 2020, the primary contaminants of concern at the Site are metals and semi-volatile organic compounds (SVOCs) in soil; SVOCs, metals, Per- and polyfluoroalkyl Substances (PFAS), and pesticides in groundwater, and petroleum volatile organic compounds (VOCs) and chlorinated VOCs (CVOCs) in soil vapor. Issues of concern would be regarding the nearby local residents and property owners.

The Site is located along 3rd Avenue between East 124th and East 125th Street in an urban area of the Harlem neighborhood of New York, NY. There are two sensitive receptors within a 500-foot (ft) radius of the site, Northern Manhattan Nursing and Dr. Ronald E. McNair Playground. The area surrounding the Site has been characterized by residential and commercial properties.

The Site is located in a Potential Environmental Justice Area (Census Block Group #360610222002). There is a sizable Hispanic population nearby. Future fact sheets will be translated into Spanish.

Environmental justice is defined as the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies.

Environmental justice efforts focus on improving the environment in communities, specifically minority and low-income communities, and addressing disproportionate adverse environmental impacts that may exist in those communities.

For additional information, visit: https://statisticalatlas.com/zip/10035/Race-and-Ethnicity

In addition, there may be concerns regarding odor, noise and truck-related traffic.

4. Site Information

Appendix C contains a map identifying the location of the site.

Site Description

The Site is located at 180 East 125th Street in an urban area characterized by mixed-use commercial and residential buildings. The Site, identified as Block 1773, Lot 27 on the New York City tax map in a C4-4D zoning area, is approximately 42,540 square feet (sq ft) (0.98 acres) and currently vacant with no structures present.

Section	Block	Lot	Official Address	Acreage
1	1773	27	180 East 125th Street, NY, NY 10035	0.98

The Site is located in the Harlem neighborhood of New York, NY. Adjacent properties include:

Direction	Adjoining Property	Surrounding Properties
North	East 125th Street followed by mixed-use commercial, office and residential buildings.	Commercial/residential buildings
South	East 124th Street followed by mixed-use commercial and office buildings, warehouses, and a self-storage building.	Commercial/residential buildings
East	The FDNY Engine 35 Fire House on the corner of 3rd Avenue and East 124th Street and 3rd Avenue followed by mixed-use commercial and residential buildings	Commercial/residential buildings
West	Vacant undeveloped property	Commercial/residential buildings

History of Site Use, Investigation, and Cleanup

The Site was first developed as early as 1896 with multiple two- to four-story dwellings on the eastern portion of the Site, a school on the southern portion of the Site, and the northwestern portion of the Site was undeveloped. The 1911 Sanborn Map shows buildings constructed on the northern portion of the Site which were indicated as vacant, and the school was converted to a lodging house. A railroad station was present in the street adjacent to the Site on the corner of East 125th Street and 3rd Avenue. The Site remained relatively unchanged until the early 1950s when the former lodging house and several buildings on the eastern portion of the Site were labeled as “furniture” on Sanborn Maps and printing operations were indicated on the northern portion of the subject property. By 1968, a building was constructed on the southwest portion of the Site and was occupied by the USPS. Additionally, the railroad station was no longer present. According to aerial photographs, between 1984 and 1991, the structures on the northern and eastern portions of the Site were demolished and the Site was converted into a parking lot. By 2013, the Site was occupied by a Pathmark supermarket and a Rainbow clothing store with a rooftop parking area. According to the New York City Department of Finance, Office of the City Register, the USPS sold the property in 2014. Since that time, all structures have been demolished and the Site is currently vacant.

A Phase I Environmental Site Assessment (ESA) report was completed on 21 June 2018 by EBI Consulting, a Remedial Investigation Report (RIR) was completed on 18 December 2020 by Langan Engineering, Environmental, Surveying, Landscape Architecture and Geology, D.P.C. (Langan) for the New York City Office of Environmental Remediation (NYCOER), a Remedial Action Work Plan (RAWP) was prepared in October 2021 by Langan for the NYCOER, a Waste Characterization Sampling Report was prepared on 20 September 2022 by EcoTerra Consulting (EcoTerra) LLC, and a Phase I ESA was completed on 15 August 2024 by Haley & Aldrich of New York. Based on the results of the previous investigations the primary contaminants of concern for the Site are metals and SVOCS in soil; SVOCs, metals, PFAS and pesticides in groundwater; and chlorinated VOCs and petroleum-VOCs in soil vapor. A draft Remedial Investigation Work Plan (RIWP) has been submitted to the NYSDEC.

5. Investigation and Cleanup Process

Application

The Applicant has applied for and been accepted into New York's Brownfield Cleanup Program as a Volunteer. This means that the Applicant was not responsible for the disposal or discharge of the contaminants or whose ownership or operation of the site took place after the discharge or disposal of contaminants. The Volunteer must fully characterize the nature and extent of contamination onsite, and must conduct a "qualitative exposure assessment," a process that characterizes the actual or potential exposures of people, fish and wildlife to contaminants on the site and to contamination that has migrated from the site.

The Applicant in its Application proposes that the site will be used for unrestricted purposes.

To achieve this goal, the Applicant will conduct investigation and cleanup activities at the site with oversight provided by NYSDEC. The Brownfield Cleanup Agreement executed by NYSDEC, and the Applicant sets forth the responsibilities of each party in conducting these activities at the site.

Investigation

The Applicant has completed a partial site investigation before it entered into the BCP. For the partial investigation, NYSDEC will determine if the data is useable.

The Applicant will conduct an investigation of the site officially called a "remedial investigation" (RI). This investigation will be performed with NYSDEC oversight. The Applicant must develop a remedial investigation workplan, which is subject to public comment.

The site investigation has several goals:

1) define the nature and extent of contamination in soil, surface water, groundwater and any other parts of the environment that may be affected;
2) identify the source(s) of the contamination;
3) assess the impact of the contamination on public health and the environment; and
4) provide information to support the development of a proposed remedy to address the contamination or the determination that cleanup is not necessary.

The Applicant submits a draft "Remedial Investigation Work Plan" to NYSDEC for review and approval. NYSDEC makes the draft plan available to the public review during a 30-day public comment period.

When the investigation is complete, the Applicant will prepare and submit a report that summarizes the results. This report also will recommend whether cleanup action is needed to address site-related contamination. The investigation report is subject to review and approval by NYSDEC.

NYSDEC will use the information in the investigation report to determine if the site poses a significant threat to public health or the environment. If the site is a "significant threat," it must be cleaned up using a remedy selected by NYSDEC from an analysis of alternatives prepared by the Applicant and approved by NYSDEC. If the site does not pose a significant threat, the Applicant may select the remedy from the approved analysis of alternatives.

Interim Remedial Measures

An Interim Remedial Measure (IRM) is an action that can be undertaken at a site when a source of contamination or exposure pathway can be effectively addressed before the site investigation and analysis of alternatives are completed. If an IRM is likely to represent all or a significant part of the final remedy, NYSDEC will require a 30-day public comment period.

Remedy Selection

When the investigation of the site has been determined to be complete, the project likely would proceed in one of two directions:

1. The Applicant may recommend in its investigation report that no action is necessary at the site. In this case, NYSDEC would make the investigation report available for public comment for 45 days. NYSDEC then would complete its review, make any necessary revisions, and, if appropriate, approve the investigation report. NYSDEC would then issue a “Certificate of Completion” (described below) to the Applicant.

or

2. The Applicant may recommend in its investigation report that action needs to be taken to address site contamination. After NYSDEC approves the investigation report, the Applicant may then develop a cleanup plan, officially called a “Remedial Work Plan”. The Remedial Work Plan describes the Applicant’s proposed remedy for addressing contamination related to the site.

When the Applicant submits a draft Remedial Work Plan for approval, NYSDEC would announce the availability of the draft plan for public review during a 45-day public comment period.

Cleanup Action

NYSDEC will consider public comments, and revise the draft cleanup plan if necessary, before approving the proposed remedy. The New York State Department of Health (NYSDOH) must concur with the proposed remedy. After approval, the proposed remedy becomes the selected remedy. The selected remedy is formalized in the site Decision Document.

The Applicant may then design and perform the cleanup action to address the site contamination. NYSDEC and NYSDOH oversee the activities. When the Applicant completes cleanup activities, it will prepare a final engineering report that certifies that cleanup requirements have been achieved or will be achieved within a specific time frame. NYSDEC will review the report to be certain that the cleanup is protective of public health and the environment for the intended use of the site.

Certificate of Completion

When NYSDEC is satisfied that cleanup requirements have been achieved or will be achieved for the site, it will approve the final engineering report. NYSDEC then will issue a Certificate of Completion (COC) to the Applicant. The COC states that cleanup goals have been achieved, and relieves the Applicant from future liability for site-related contamination, subject to certain conditions. The Applicant would be eligible to redevelop the site after it receives a COC.

Site Management

The purpose of site management is to ensure the safe reuse of the property if contamination will remain in place. Site management is the last phase of the site cleanup program. This phase begins when the COC is issued. Site management incorporates any institutional and engineering controls required to ensure that the remedy implemented for the site remains protective of public health and the environment. All significant activities are detailed in a Site Management Plan.

An *institutional control* is a non-physical restriction on use of the site, such as a deed restriction that would prevent or restrict certain uses of the property. An institutional control may be used when the cleanup action leaves some contamination that makes the site suitable for some, but not all uses.

An *engineering control* is a physical barrier or method to manage contamination. Examples include: caps, covers, barriers, fences, and treatment of water supplies.

Site management also may include the operation and maintenance of a component of the remedy, such as a system that pumps and treats groundwater. Site management continues until NYSDEC determines that it is no longer needed.

Appendix A -
Project Contacts and Locations of Reports and Information

Project Contacts

For information about the site's investigation and cleanup program, the public may contact any of the following project staff:

New York State Department of Environmental Conservation (NYSDEC):

Abdulla Elbuytari
Project Manager
NYSDEC (Remedial Bureau B) Project Manager
Division of Environmental Remediation
Central Office
625 Broadway Albany, NY 12233-7016
Phone 518-402-9612
Email: Abdulla.elbuytari@dec.ny.gov

Thomas V. Panzone
Division of Communications, Education and Engagement
NYSDEC – Region 2
47-40 21st Street
Long Island City, NY 11101
Thomas.panzone@dec.ny.gov
718-482-4953

New York State Department of Health (NYSDOH):

Harolyn Hood Project Manager
NYSDOH
Bureau of Environmental Exposure
Investigation Empire State Plaza
Corning Tower Room 1787
Albany, NY 12237
Phone: 518-402-7860
Email: BEEI@health.ny.gov

Locations of Reports and Information

The facilities identified below are being used to provide the public with convenient access to important project documents:

Manhattan Community Board 11
1664 Park Avenue, Ground Floor
New York, NY 10035
Attn: Xavier A. Santiago
Phone: 212-831-8929
Email: mn11@cb.nyc.gov
Hours: Monday-Friday, 12pm-4pm

Harlem Public Library
9 West 124th Street
New York, NY 10027
Attn: Laurel Hambright
Phone: 212-348-5620
Email: harlem@nypl.org

Days of week	Open hours
Monday	11 AM - 7 PM
Tuesday	11 AM - 7 PM
Wednesday	11 AM - 7 PM
Thursday	11 AM - 7 PM
Friday	10 AM - 5 PM
Saturday	10 PM - 5 PM
Sunday	Closed

Appendix B - Site Contact List

Local Government and Elected Officials:

Mayor Eric Adams
NYC Mayor
City Hall
New York, NY 10007

Marisa Lago
NYC Department of City Planning Chairperson
120 Broadway 31st Floor
New York, NY 10271

Mark Levine
Manhattan Borough President
1 Centre Street 19th Floor
New York, NY

Xavier A. Santiago
Manhattan Community Board 11 District Manager
1664 Park Avenue, Ground Floor
New York, NY 10035

Diana Ayala
New York City Council District 8
105 East 116th Street
New York, NY 10029

Cordell Cleare
NY Senate District 17 Senator
163 West 125th Street, Suite 912
New York, NY 10027

Edward Gibbs
NY State Assembly District 68 Member
55 East 115th Street, Ground Level
New York, NY 10029

Ashwin Vasan, M.D., PhD Commissioner

NYC Department of Health and Mental Hygiene (DOHMN)
42-09 28th Street
Queens, NY 11101

Owners, Residents, Occupants:

Maxwell Miller
160 East 125th Owner LLC
805 Third Avenue, 7th Floor
New York, NY 10022

Adjacent Properties:

Owner/Entity Name	Contact Name	Site Use	Property Address	Owner Mailing Address
Metropolitan Transportation Authority	Not available	Vacant	160 E125th Street, New York, NY 10035	2 Broadway New York, NY 10004
Salvation Army	Not available	Office Buildings	2306 3rd Avenue, New York, NY 10035	120 West 14th Street New York, NY 10011
Unavailable Owner	Not available	Commercial and office buildings	159 East 125th Street New York, NY 10035	Unknown
East Harlem MEC Parcel B-West HDFC	Not available	Mixed use residential and commercial buildings	201 East 125th Street, New York, NY 10035	Unknown
Unavailable Owner	Not available	Mixed residential and commercial buildings	2293 3rd Avenue. New York, NY 10035	Unknown
2289 JV LLC	Not available	Commercial and office buildings	2291 3rd Avenue, New York, NY 10035	1000 Central Ave Woodmere, NY 11598
2289 JV LLC	Not available	Commercial and office buildings	2289 3rd Avenue, New York, NY 10035	1000 Central Ave Woodmere, NY 11598
Rockfeld 2283 LLC	Not available	Mixed Residential and Commercial buildings	2283 3rd Avenue New York, NY 10035	280 Madison Avenue, Suite 600, New York, NY 10016
Fire Department of New York	Not available	Public Facilities and Institutions	2282 3rd Avenue New York, NY 10035	9 Metrotech Center Brooklyn NY, 11201
Unavailable Owner	Not available	Mixed Residential and commercial buildings	2279 3rd Avenue New York, NY 10035	Unknown
2276-80 3rd Avenue LLC	Not available	Commercial and office buildings	2276 3rd Avenue New York, NY 10035	63 Birch Lane Greenwich, CT 06830
178 East 124th Street LLC	Not available	Commercial & office buildings	182 East 124th Street New York, NY 10035	40 Quaker Ridge Road Manhasset, NY 11030
178 East 124th Street LLC	Not available	Commercial and office buildings	178 East 124th Street, New York, NY 10035	40 Quaker Ridge Road Manhasset, NY 11030
William Somerville Maintenance Corp.	Not available	Parking facilities	176 East 124th Street New York, NY 10035	166-176 East 124th Street, New York, NY 10035
Randlee Property Owner LLC	Not available	Industrial and manufacturing	166 East 124th Street New York, NY 10035	137 Riverside Drive, Apt 6B New York, NY 10024
Mahoney Realty LLC	Not available	Non Residential	164 East 124th Street New York, NY 10035	1080 Madison Ave, New York, NY 10028

Local News and Media:

Amsterdam News
2340 Frederick Douglas Blvd.
New York, NY 10027

ABC7 WABC-TV
7 Lincoln Square
New York, NY 10023

School or Day Care Located Proximal to the Site:

The following schools or day care facilities are located within ½-mile radius to the Site:

School/Day Care Name	Approximate distance from Site in feet and (directional)	Administrator	Phone	Address
Success Academy Charter School – Harlem 2 Elementary	~787 ft (northeast)	Amella Cohen, Principal	646-442-6600	144 E 128th St #3, New York, NY 10035
P.S. 30 Hernandez Hughes	~782 ft (northeast)	Leonna Austin, Principal	212-876-1825	144-176 E 128th St, New York, NY 10035
PS/MS 007 Samuel Stern School	~1,022 (northwest)	Michelle Martinez, Principal	212-860-5827	160 E 120th St, New York, NY 10035
Public School 96 Joseph Lanzetta	~1,127 (south)	James Konstantinakos, Principal	212-860-5851	216 E 120th St, New York, NY 10035
Sunshine Learning Center	~975 (southeast)	Not Available	646-757-3168	2205 3rd Ave, New York, NY 10035
Tiny Hands & Tiny Toes Group Family Daycare	~990 (southeast)	Not Available	917-204-3986	234 E 119th St, New York, NY 10035
Pequenos Souls Day Care Center	~415 (southwest)	Not Available	212-427-7644	114 E 122nd St # 1, New York, NY 10035
Banyan Tree Day Care	~1,232 (northwest)	Not Available	Not Available	123 E 129th St, New York, NY 10035
Paradise Child Care	~2,111 (northwest)	Not Available	973-957-1863	2 W 129th St, New York, NY 10027
Angel Keepers Child Care	~2,200 (southwest)	Not Available	347-669-2558	1652 Park Ave, New York, NY 10035
Clarita's Daycare	~2,450 (southwest)	Not Available	914-342-7234	70 E 116th St Apt 3D, New York, NY 10029
Joyce Walker Daycare	2500 (south)	Not Available	212-369-7315	210 E 115th St, New York, NY 10029

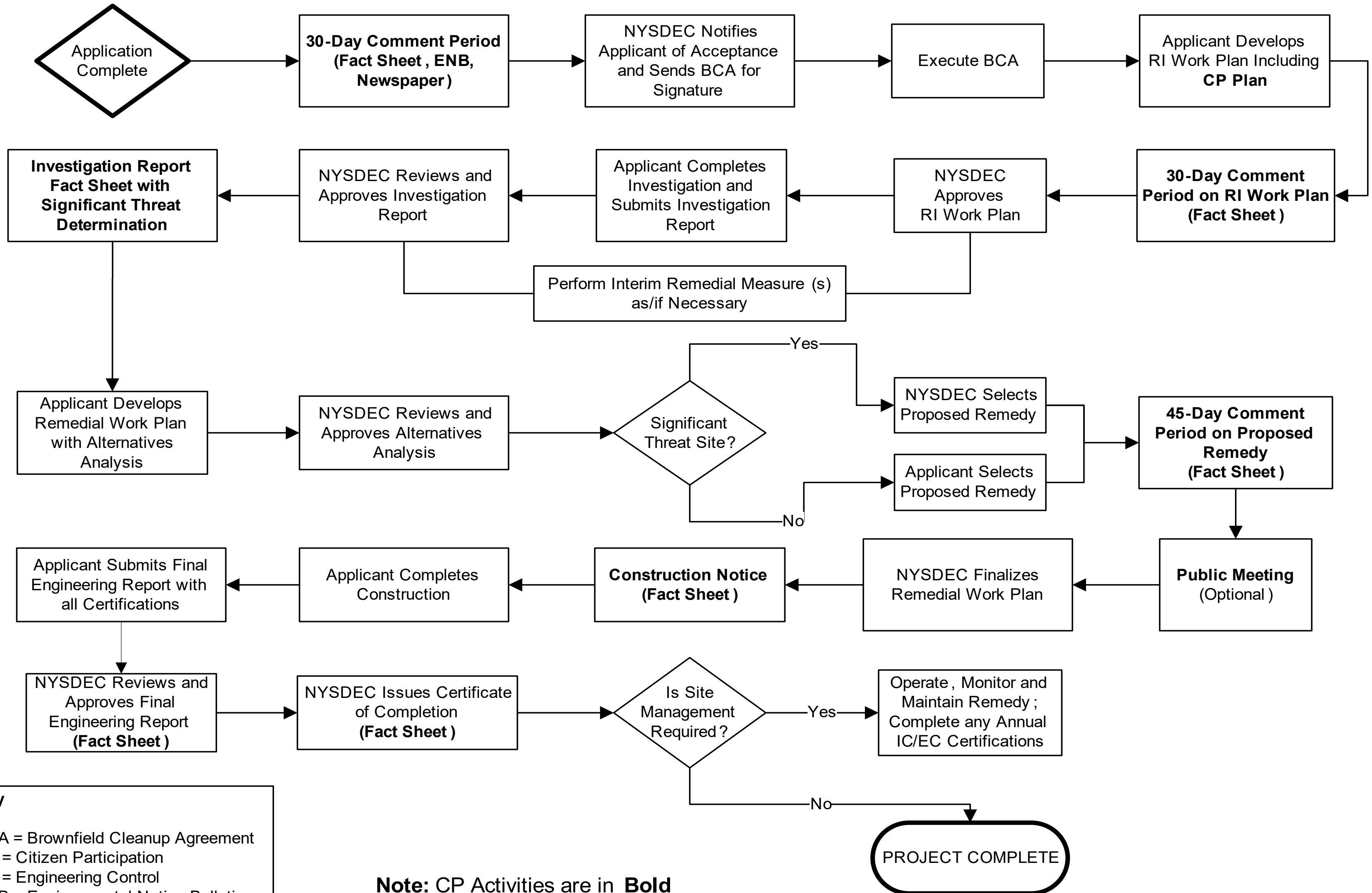
Community, Civic, Religious and Other Environmental Organizations:

Engine 35/Ladder 14/Battalion 12
FDNY
2282 3rd Avenue
New York, NY

Metro Hope Church
178 East 124th Street
New York, NY 10035

Appendix C - Site Location Map

Appendix D– Brownfield Cleanup Program Process



Key

BCA = Brownfield Cleanup Agreement
CP = Citizen Participation
EC = Engineering Control
ENB = Environmental Notice Bulletin
IC = Institutional Control
RI = Remedial Investigation

Note: CP Activities are in **Bold**

Division of Environmental Remediation

Remedial Programs
Scoping Sheet for Major Issues of Public Concern

Instructions

This Scoping Sheet assesses major issues of public concern; impacts of the site and its remedial program on the community; community interest in the site; information the public needs; and information needed from the public.

The information generated helps to plan and conduct required citizen participation (CP) activities, and to choose and conduct additional CP activities, if appropriate. The scoping sheet can be revisited and updated as appropriate during the site's remedial process to more effectively implement the site's CP program.

Note: Use the information as an aid to prepare and update the Major Issues of Public Concern section of the site CP Plan.

General Instructions

- When to prepare: During preparation of the CP Plan for the site. It can be revisited and updated anytime during the site remedial process.
- Fill in site name and other information as appropriate.
- The Scoping Sheet may be prepared by DEC or a remedial party, but must be reviewed and approved by the DER site project manager or his/her designee.

Instructions for Numbered Parts

Consider the bulleted issues and questions below and any others that may be unique or appropriate to the site and the community to help complete the five Parts of this Scoping Sheet. Identify the issue stakeholders in Parts 1 through 3 and adjust the site's contact list accordingly.

Part 1. List Major Issues of Public Concern and Information the Community Wants.

- Is our health being impacted? (e.g. Are there problems with our drinking water or air? Are you going to test our water, yards, sumps, basements? Have health studies been done?)
- There are odors in the neighborhood. Do they come from the site and are they hazardous?
- Are there restrictions on what we may do (e.g. Can our children play outside? Can we garden? Must we avoid certain areas? Can we recreate (fish, hunt, hike, etc. on/around the site?)
- How and when were the site's contamination problems created?
- What contaminants are of concern and why? How will you look for contamination and find out where it is going? What is the schedule for doing that?
- The site is affecting our property values!
- How can we get more information (e.g. who are the project contacts?)
- How will we be kept informed and involved during the site remedial process?
- Who has been contacted in the community about site remedial activities?
- What has been done to this point? What happens next and when?
- The site is going to be cleaned up for restricted use. What does that mean? We don't want redevelopment on a "dirty" site.

Part 2. List Important Information Needed <u>From</u> the Community, if Applicable.

- Can the community supplement knowledge about past/current uses of the site?
- Does the community have knowledge that the site may be significantly impacting nearby people, properties, natural resources, etc.?
- Are activities currently taking place at the site or at nearby properties that may need to be restricted?
- Who may be interested or affected by the site that has not yet been identified?
- Are there unique community characteristics that could affect how information is exchanged?
- Does the community and/or individuals have any concerns they want monitored?
- Does the community have information about other sources in the area for the contamination?

Part 3. List Major Issues and Information That Need to be Communicated <u>to</u> the Community.

- Specific site investigation or remediation activities currently underway, or that will begin in the near future.
- The process and general schedule to investigate, remediate and, if applicable, redevelop the site.
- Current understanding about the site contamination and effects, if any, on public health and the environment.
- Site impacts on the community and any restrictions on the public's use of the site and/or nearby properties.
- Planned CP activities, their schedule, and how they relate to the site's remedial process.
- Ways for the community to obtain/provide information (document repositories, contacts, etc.).

Part 4. Community Characteristics

a. - e. Obtain information from local officials, property owners and residents, site reports, site visits, "windshield surveys," other staff, etc.

f. Has the affected community experienced other **significant** present or past environmental problems unrelated to this site? Such experiences could significantly affect public concerns and perspectives about the site; how the community will relate to project staff; the image and credibility of project staff within the community; and the ways in which project staff communicate with the community.

g. In its remedial programs, DER seeks to integrate, and be consistent with, environmental justice principles set forth in *DEC Commissioner Policy 29 on Environmental Justice* and *DER 23 – Citizen Participation Handbook for Remedial Programs*. Is the site and/or affected community wholly or partly in an Environmental Justice (EJ) Area? Use the Search feature on DEC's public web site for "environmental justice". DEC's EJ pages define an EJ area, and link to county maps to help determine if the site and/or community are in an EJ area.

h. Consider factors such as:

- Is English the primary language of the affected community? If not, provisions should be considered regarding public outreach activities such as fact sheets, meetings, door-to-door visits and other activities to ensure their effectiveness.
- The age demographics of the community. For example, is there a significant number of senior citizens in the community? It may be difficult for some to attend public meetings and use document repositories. This may suggest adopting more direct interaction with the community with activities such as door-to-door visits, additional fact sheets, visits to community and church centers, nursing homes, etc.
- How do people travel about the community? Would most people drive to a public meeting or document repository? Is there adequate public transportation?

Part 5. Affected/Interested Public.

Individuals and organizations who need or want information and input can change during the site's remedial process. This need is influenced by real, potential, or perceived impacts of the site or the remedial process. Some people may want information and input throughout the remedial process. Others may participate only during specific remedial stages, or may only be interested in particular issues.

It is important to revisit this question when reviewing this scoping sheet. Knowing who is interested in the site – and the issues that are important to them – will help to select and conduct appropriate outreach activities, and to identify their timing and the information to be exchanged.

Check all affected/interested parties that apply to the site. **Note: Adjust the site's contact list appropriately.** The following are some ways to identify affected/interested parties:

- Tax maps of adjacent property owners
- Attendees at public meetings
- Telephone discussions
- Letters and e-mails to DER, the remedial party, and other agencies
- Political jurisdictions and boundaries
- Media coverage
- Current/proposed uses of site and/or nearby properties (recreational, commercial, industrial)
- Discussions with community organizations: grass roots organizations, local environmental groups, environmental justice groups, churches, and neighborhood advisory groups

Division of Environmental Remediation

Remedial Programs
Scoping Sheet for Major Issues of Public Concern (see instructions)

Site Name: 180 East 125th Street Development

Site Number: C231160

Site Address and County: 180 East 125th Street, New York, NY 10035

Remedial Party(ies): 180 E125th Realty LLC

Note: For Parts 1. – 3. the individuals, groups, organizations, businesses and units of government identified should be added to the site contact list as appropriate.

Part 1. List major issues of public concern and information the community wants. Identify individuals, groups, organizations, businesses and/or units of government related to the issue(s) and information needs. **Use this information as an aid to prepare or update the Major Issues of Public Concern section of the site Citizen Participation Plan.**

Based on analytical results of the Remedial Investigation (RI) performed at the Site in December 2020, the primary contaminants of concern at the Site are metals and SVOCS in soil; SVOCs, metals, PFAS and pesticides in groundwater; and chlorinated VOCs and petroleum- VOCs in soil vapor

How were these issues and/or information needs identified?
These issues were identified through the previous subsurface investigation results, correspondence with NYSDEC and from resources available through the NYSDEC Office of Environmental Justice.

Part 2. List important information needed **from** the community, if applicable. Identify individuals, groups, organizations, businesses and/or units of government related to the information needed.
The source of the contaminants of concern detailed in Part 1 likely has to do with former Site operations

How were these information needs identified?
The information need was identified through review of the results of the previous subsurface investigation.

Part 3. List major issues and information that need to be communicated **to** the community. Identify individuals, groups, organizations, businesses and/or units of government related to the issue(s) and/or information.
The anticipated schedule for the proposed RIWP is winter of 2025. The Site is privately owned and vacant. All remedial actions will be in accordance with applicable regulations
and contingent on NYSDEC and NYSDOH approvals of the aforementioned work plan. Additional communications will be made to the public as necessary

How were these issues and/or information needs identified?
These issues were identified through review of the project schedule, site background and contaminants of concern.

Part 4. Identify the following characteristics of the affected/interested community. This knowledge will help to identify and understand issues and information important to the community, and ways to effectively develop and implement the site citizen participation plan (mark all that apply):

a. Land use/zoning at and around site:
☒ **Residential** ☐ **Agricultural** ☐ **Recreational** ☒ **Commercial** ☐ **Industrial**

b. Residential type around site:
☒ **Urban** ☐ **Suburban** ☐ **Rural**

c. Population density around site:
☒ **High** ☐ **Medium** ☐ **Low**

d. Water supply of nearby residences:
☒ **Public** ☐ **Private Wells** ☐ **Mixed**

e. Is part or all of the water supply of the affected/interested community currently impacted by the site?
☐ **Yes** ☒ **No**

Provide details if appropriate:
Click here to enter text.

f. Other environmental issues significantly impacted/impacting the affected community?
☐ **Yes** ☒ **No**

Provide details if appropriate:
Click here to enter text.

g. Is the site and/or the affected/interested community wholly or partly in an Environmental Justice Area?
☒ **Yes** ☐ **No**

h. Special considerations:
☒ **Language** ☐ **Age** ☐ **Transportation** ☐ **Other**

Explain any marked categories in **h:**
The Site is located in a Potential Environmental Justice Area. There is a sizable Hispanic population nearby. Future Fact Sheets will be translated to Spanish.

Part 5. The site contact list must include, at a minimum, the individuals, groups, and organizations identified in Part 2. of the Citizen Participation Plan under 'Site Contact List'. Are *other* individuals, groups, organizations, and units of government affected by, or interested in, the site, or its remedial program? (Mark and identify all that apply, then adjust the site contact list as appropriate.)

☐ **Non-Adjacent Residents/Property Owners:** Click here to enter text.

☒ **Local Officials:** Click here to enter text.

☒ **Media:** Click here to enter text.

☒ **Business/Commercial Interests:** Click here to enter text.

☐ **Labor Group(s)/Employees:** Click here to enter text.

☐ **Indian Nation:** Click here to enter text.

☒ **Citizens/Community Group(s):** Click here to enter text.

☐ **Environmental Justice Group(s):** Click here to enter text.

☐ **Environmental Group(s):** Click here to enter text.

☒ **Civic Group(s):** Click here to enter text.

☐ **Recreational Group(s):** Click here to enter text.

☐ **Other(s):** Click here to enter text.

Prepared/Updated By: Owen Hennigan **Date:** 6 December 2024

Reviewed/Approved By: Sarah Commisso, G.I.T. **Date:** 6 December 2024

APPENDIX G
Environmental Footprint Analyses and Climate Screening Checklist

H & A OF NEW YORK ENGINEERING
AND GEOLOGY, LLP
213 W. 35th Street
7th Floor
New York, NY 10001
646.277.5685

April 29, 2025
File No. 0209815

New York State Department of Environmental Conservation
Division of Environmental Remediation
625 Broadway
Albany, New York 12233

Attention: Abdulla Elbuytari

Subject: Green Site Remediation
180 East 125th Street Development Site
180 East 125th Street
New York, New York
NYSDEC Site C231160

H & A of New York Engineering and Geology, LLP (Haley & Aldrich of New York) presents the following environmental footprint analysis[1] in accordance with U.S. Environmental Protection Agency (EPA) 542-R-12-002 for the preferred Track 1 Remedy of the above-referenced site at 180 East 125th Street, New York, New York (Site).

180 EAST 125TH STREET DEVELOPMENT SITE REMEDY – TRACK 1 CLEANUP

The preferred remedy will result in estimated totals of:

- 12,261.6 Metric Million British Thermal Units (MMBtus) of energy used;
- 966.4 tons of total greenhouse gas emissions (CO2e [includes consideration of carbon dioxide, methane, and nitrous oxide emissions]);
  25,657 pounds (lbs) of nitrogen oxides (NOx) + sulfur oxides (SOx) + particulate matter (PM) emissions; and
- 122.7 lbs of hazardous air pollutant (HAP) emissions.

Energy

- 5,437.7 MMBtus used for on-Site activities, such as excavation;
- 236.2 MMBtus used for grid electricity generation;
- 751.2 MMBtus used for transportation of personnel, remedy materials, and waste disposal; and
- 5,836.5 MMBtus used for off-Site activities.

[1] *Spreadsheets for Environmental Footprint Analysis (SEFA) Version 3.0, November 2019.*

Greenhouse Gas Emissions (CO2e)

- 425,7 tons of CO2e are estimated to be produced from on-Site activities, such as excavation;
- 19.2 tons of CO2e are estimated to be produced from grid electricity generation;
- 60.8 tons of CO2e are estimated to be produced from transportation of personnel, remedy materials, and waste disposal; and
- 460.8 tons are estimated to be produced from off-Site activities.

Water Usage

- 28,410 gallons of water are estimated to be used to wash down trucks and tires on an imported gravel truck wash pad, for grout production for monitoring well installation, and for groundwater remediation injections.

The preferred Track 1 remedy will result in an estimated 3,555.1 MMBtus, 295.6 tons of CO2e, 6,725.8 lbs of NOx, SOx, and PM emissions, and 34.3 lbs of HAP emissions increase compared to the alternative Track 2 remedy due to increased excavation as a means to achieve greater overall protection of human health and the environment.

Roughly 43 percent of the energy use and 43 percent of CO2e generation will originate from on-Site activities for the Track 1 Remedy. Overall, the footprint of the Site Remedy is relatively even between on-Site and off-Site activities, of which diesel use is the largest contributor to each category.

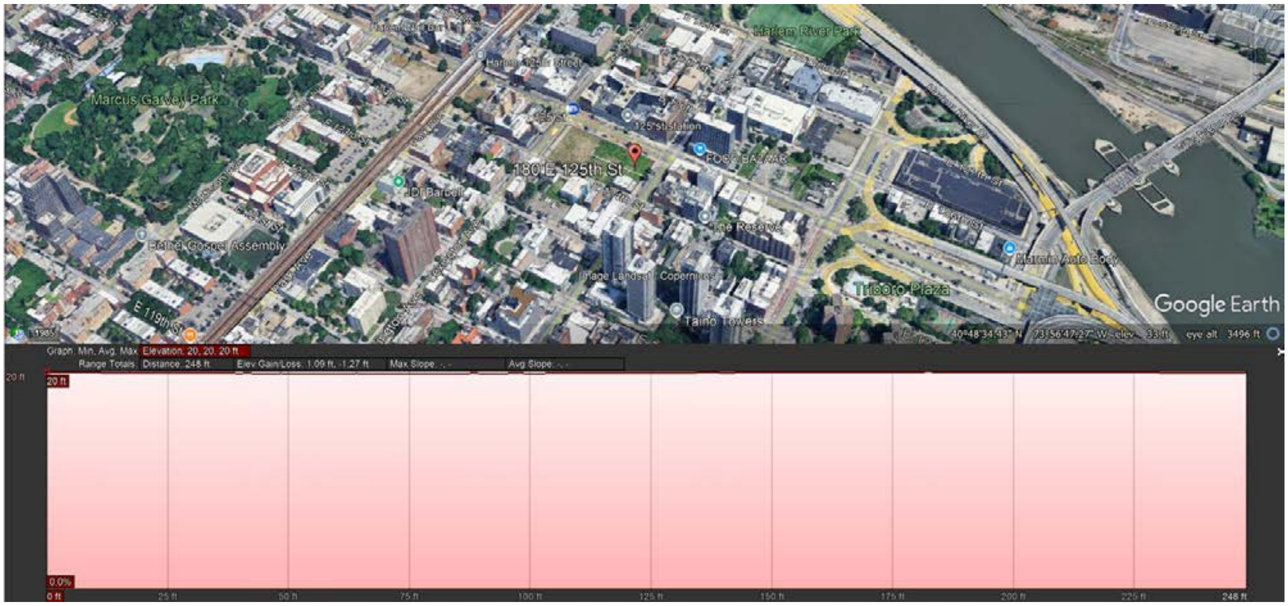
Sincerely yours,
H & A OF NEW YORK ENGINEERING AND GEOLOGY, LLP

Sarah A. Commisso, G.I.T.	Suzanne M. Bell, P.E.	James M. Bellew
Assistant Project Manager	Senior Associate	Principal

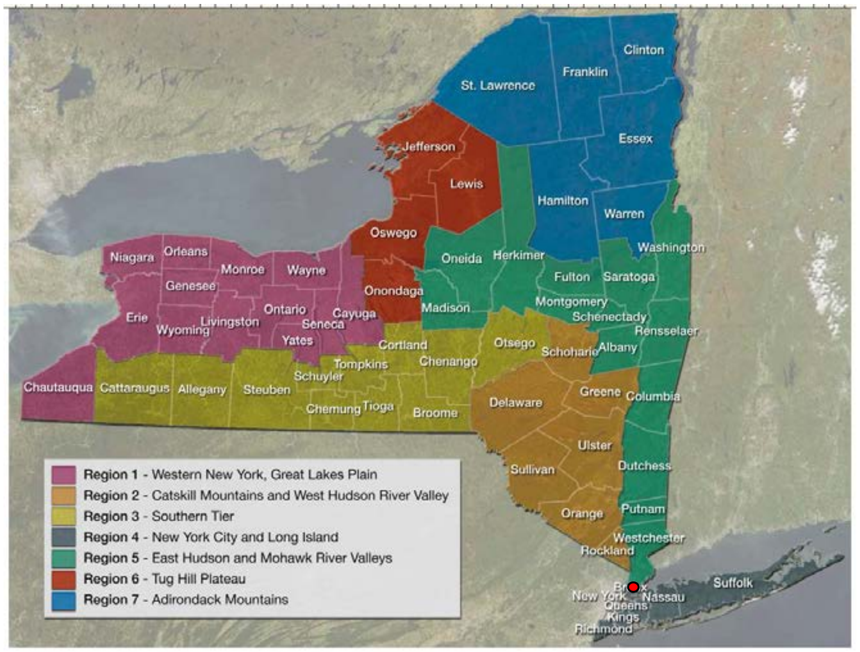
Climate Screening Checklist

Background Information

- Project Manager: Sarah A. Commisso, G.I.T.
- Site Name: 180 East 125th Street Redevelopment Site (the "Site")
- Site Number: C231160
- Site Location: 180 East 125th Street, New York, New York, 10035
- Site Elevation (average above sea level): Approximately 18 feet above sea level (Google Earth)



- ClimAID Region (Responding Climate Change in New York State (ClimAID) - NYSERDA): Region 4 – New York City and Long Island



- Remedial Stage/Site Classification: Remediation
- Contamination – Media-Impacted/ Contaminants of Concern: Soil – metals, semi-volatile organic compounds (SVOCs; specifically polycyclic aromatic hydrocarbons [PAHs]), pesticides, and polychlorinated biphenyls (PCBs); groundwater – VOCs (specifically chlorinated VOCs [CVOCs] and tetrachloroethene [PCE]), PFAS, and total/dissolved metals; and soil vapor – VOCs.
- Proposed/Current Remedy: Track 1 Remedy – Remedy will consist of excavation, stockpiling, off-Site transport, and disposal of contaminated fill material Site-wide that exceeded the Unrestricted Use Soil Cleanup Objectives (UUSCOs); dewatering, characterization, and treatment of water prior to discharge to a New York State Department of Environmental Conservation (NYSDEC)-approved sewer/sanitary line (pending permits), or localized dewatering with containerization, classification, and disposal at an approved facility; and removal of underground storage tanks (USTs) and/or associated appurtenances, if encountered, and decommissioning and off-Site disposal.
- What is the predicted timeframe of the remedy? Will components of the remedy still be in place in 10+ years? The Track 1 Remedy will take approximately six months to complete. If Response Action Objectives (RAOs) are met, achieving a Track 1 cleanup in accordance with the NYSDEC Brownfield Cleanup Program (BCP), no engineering or institutional controls will be required, and no components of the remedy will be in place in 10+ years.
- Is the site in proximity to any sensitive receptors? (e.g., wetlands, waterbodies, residential properties, hospitals, schools, drinking water supplies, etc.) The Site is not located in close proximity to important federal, state, or local natural resources, including waterways, wildlife refuges, wetlands, and critical habitats of endangered or threatened species. Surrounding properties include commercial and residential buildings. One nursing home is located within a 500-foot radius of the Site: Northern Manhattan Nursing. One playground is located within a 500-foot radius of the Site: Dr. Ronald E. McNair Playground. One fire station is located within a 500-foot radius of the Site: FDNY Engine 35/Ladder 14/Battalion 12.

Is the site in a disadvantaged community (DAC) or potential environmental justice area (PEJA) (Use DECinfolocator: [DECinfo Locator (ny.gov)](#))?

X Yes ☐ No

If the site is in a DAC or PEJA, will climate impacts be magnified? If yes, list how and why.

☐ Yes X No

Should thresholds of concern be lowered to account for magnification of impacts? If yes, indicate how lower thresholds will be used in the screening.

☐ Yes X No

Climate Screening Table*

Potential Climate Hazards	**Relevant to the Site Location** (Y/N/NA)[1]	**Projected Change** (Resilience Analysis and Planning Tool (RAPT)/arcgis.com[3]	**Potential to Impact Remedy** (Y/N)	**Is remedy/site already resilient?** (Y/N)[4]
Precipitation	Y	None	N/A	N/A
Temperature[2] (Extreme Heat or Cold Weather Impacts)	Y	None	N/A	N/A
Sea Level Rise	N	N/A	N/A	N/A
Flooding	N	N/A	N/A	N/A
Storm Surge	N	N/A	N/A	N/A
Wildfire	N	N/A	N/A	N/A
Drought	N	N/A	N/A	N/A
Storm Severity	N	N/A	N/A	N/A
Landslides	N	N/A	N/A	N/A
Other Hazards:	N/A	N/A	N/A	N/A

* Links to potential data sources can be found on the following page

[1] If the first column is N --> The rest of the columns will be N/A, the hazard is not applicable to the site.

[2] Extreme Heat: periods of three or more days above 90°F- Extreme Cold: Individual days with minimum temperatures at or below 0 degrees F (NYSERDA ClimAID report)

[3] List the projected change in specific terms or units e.g. inches of rainfall, feet of sea level rise, etc.

[4] If final column is Y, provide reasoning, if the final column is N --> Climate Vulnerability Assessment (CVA) required.

Required Next Steps (If no further action is required, provide justification):

Conduct severe weather storm inspections during the active remedy. Inspect dewatering systems prior to anticipated storm events that could result in a power outage and after storm events.

Potential Data Sources (not an exhaustive list)- from Superfund Climate Resilience: Vulnerability Assessment | US EPA

Department of Agriculture Forest Service Wildfire Risk to Communities

EPA Climate Change Indicators in the United States

EPA Climate Resilience Evaluation & Awareness Tool (CREAT) | U.S. Climate Resilience Toolkit

EPA National Stormwater Calculator

FEMA- National Flood Hazard Layer | FEMA.gov

National Integrated Drought Information System U.S. Drought Portal

National Interagency Coordination Center National Interagency Fire Center

National Oceanic and Atmospheric Administration Coastal Services Digital Coast

National Oceanic and Atmospheric Administration National Centers for Environmental Information website

National Oceanic and Atmospheric Administration Sea Level Trends

National Weather Service Climate Prediction Center

National Weather Service National Hurricane Center

National Weather Service Sea, Lake, and Overland Surges from Hurricanes (SLOSH)

National Weather Service Storm Surge Hazard Maps

NOAA- National Storm Surge Risk Maps - Version 3 (noaa.gov)

NYS Department of State- Assess | Department of State (ny.gov)

NYSDEC Coastal Erosion Hazards- Coastal Areas Regulated By The CEHA Permit Program - NYDEC

NYSDOH Heat Index- health.ny.gov/environmental/weather/vulnerability_index/county_maps.htm

NYSERDA ClimAID report- Responding Climate Change in New York State (ClimAID) - NYSERDA

NYSERDA NY Costal Floodplain Mapper- Home Page (ny.gov)

- Resources to help communities assess coastal hazards, such as the Sea Level Rise Viewer for visualizing community-level impacts of flooding or sea level rise and downloadable LIDAR data

U.S. Army Corps of Engineers Climate Preparedness and Resilience

U.S. Federal Government Climate Resilience Toolkit: The Climate Explorer

U.S. Geological Survey Coastal Change Hazards Portal

U.S. Geological Survey Landslide Hazards Program

U.S. Geological Survey National Climate Change Viewer

U.S. Geological Survey National Ground-water Monitoring Network Data Portal

U.S. Geological Survey National Water Dashboard

U.S. Geological Survey StreamStats

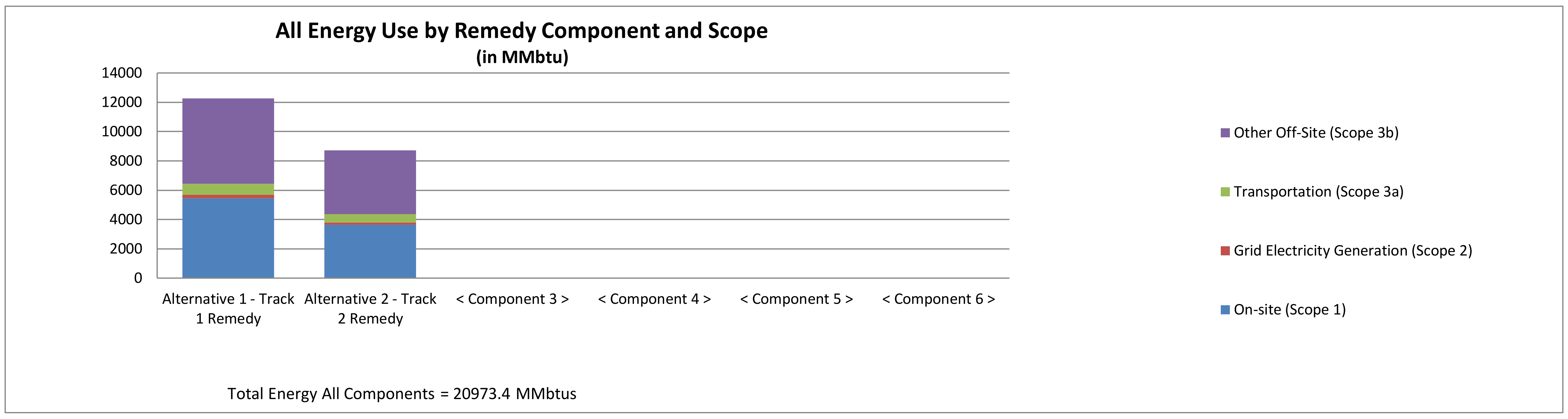
Environmental Footprint Summary

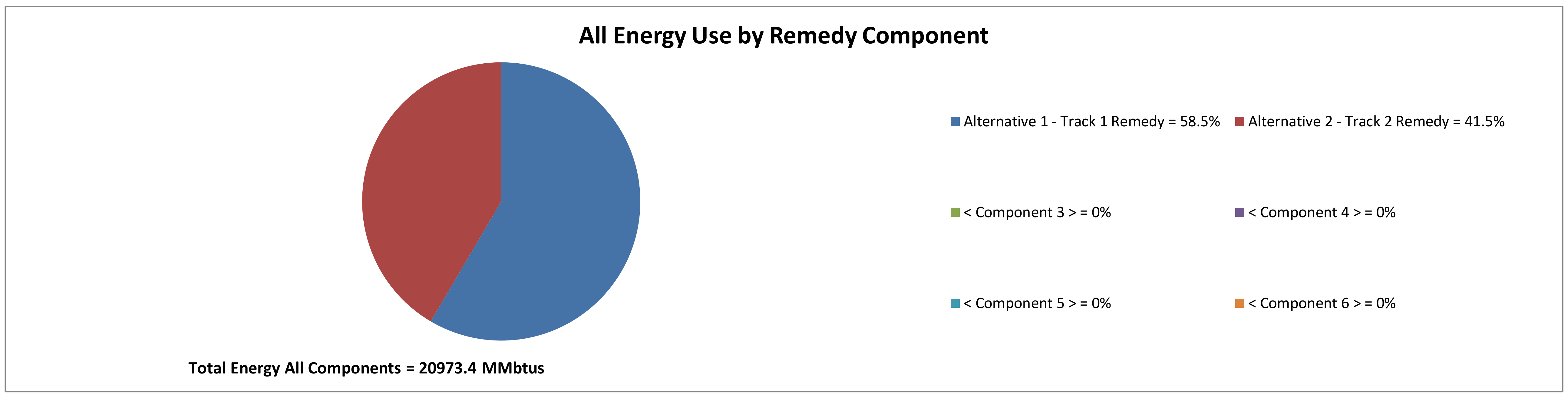
Core Element	Metric		Unit of Measure	Footprint: Alternative 1 - Track 1 Remedy	Alternative 2 - Track 2 Remedy	< Component 3 >	< Component 4 >	< Component 5 >	< Component 6 >	Total
Materials & Waste	M&W-1	Refined materials used on-site	Tons	0.0	60.0	0.0	0.0	0.0	0.0	60.0
	M&W-2	% of refined materials from recycled or reused material	%		0.0%					0.0%
	M&W-3	Unrefined materials used on-site	Tons	0.000	2,757.219	0.000	0.000	0.000	0.000	2,757.2
	M&W-4	% of unrefined materials from recycled or reused material	%		0.0%					0.0%
	M&W-5	On-site hazardous waste disposed of off-site	Tons	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	M&W-6	On-site non-hazardous waste disposed of off-site	Tons	31,050.0	23,550.0	0.0	0.0	0.0	0.0	54,600.0
	M&W-7	Recycled or reused waste	Tons	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	M&W-8	% of total potential waste recycled or reused	%	0.0%	0.0%					0.0%
Water (used on-site)	W-1	Public water use	MG	0.02841	0.01316	0.0	0.0	0.0	0.0	0.04157
	W-2	Groundwater use	MG	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	W-3	Surface water use	MG	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	W-4	Reclaimed water use	MG	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	W-5	Storm water use	MG	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	W-6	User-defined water resource #1	MG	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	W-7	User-defined water resource #2	MG	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	W-8	Wastewater generated	MG	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Energy	E-1	Total energy used (on-site and off-site)	MMBtu	12,261.6	8,711.9	0.0	0.0	0.0	0.0	20,973.4
	E-2	Energy voluntarily derived from renewable resources								
	E-2A	On-site renewable energy generation or use + on-site biodiesel use + biodiesel and other renewable resource use for transportation	MMBtu	0.0	82.6	0.0	0.0	0.0	0.0	82.6
	E-2B	Voluntary purchase of renewable electricity	MWh	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	E-3	Voluntary purchase of RECs	MWh	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	E-4	On-site grid electricity use	MWh	34.087	22.725	0.000	0.000	0.000	0.000	56.8
Air	A-1	On-site NOx, SOx, and PM emissions	Pounds	4,332.2	2,897.2	0.0	0.0	0.0	0.0	7,229.3
	A-2	On-site HAP emissions	Pounds	1.5	1.0	0.0	0.0	0.0	0.0	2.6
	A-3	Total NOx, SOx, and PM emissions	Pounds	25,657.0	18,931.2	0.0	0.0	0.0	0.0	44,588.2
	A-3A	Total NOx emissions	Pounds	9,611.1	6,937.8	0.0	0.0	0.0	0.0	16,548.9
	A-3B	Total SOx emissions	Pounds	3,147.4	2,243.1	0.0	0.0	0.0	0.0	5,390.5
	A-3C	Total PM emissions	Pounds	12,898.5	9,750.2	0.0	0.0	0.0	0.0	22,648.7
	A-4	Total HAP emissions	Pounds	122.7	88.4	0.0	0.0	0.0	0.0	211.1
	A-5	Total greenhouse gas emissions	Tons CO2e*	966.4	670.8	0.0	0.0	0.0	0.0	1,637.2
Land & Ecosystems		Qualitative Description								

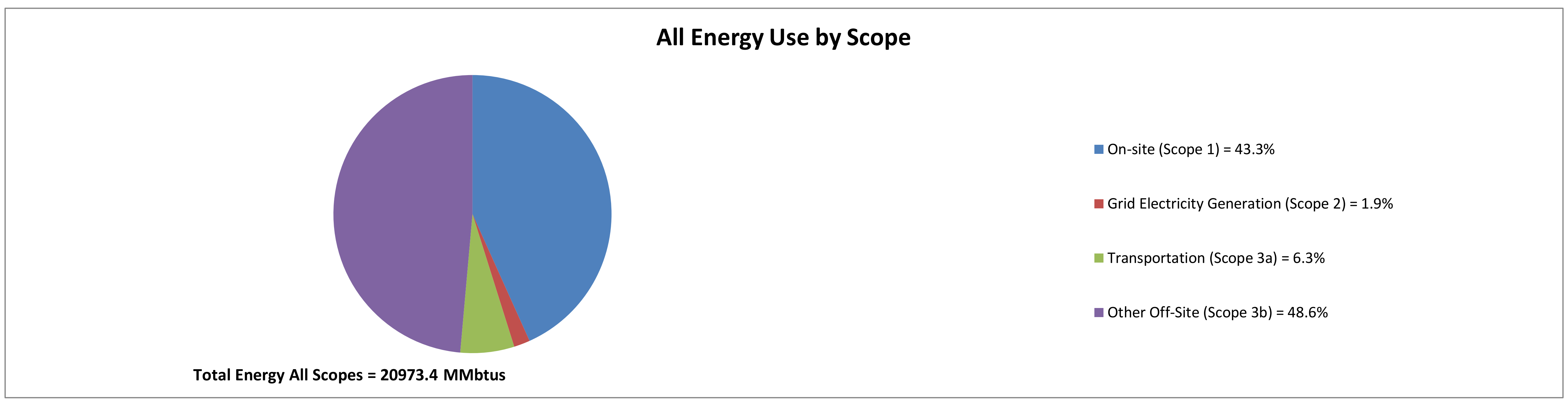
** Total greenhouse gases emissions (in CO2e) include consideration of CO2, CH4, and N2O (Nitrous oxide) emissions.*
"MMBtu" = millions of Btus
"MG" = millions of gallons
"CO2e" = carbon dioxide equivalents of global warming potential
"MWh" = megawatt hours (i.e., thousands of kilowatt-hours or millions of Watt-hours)
"Tons" = short tons (2,000 pounds)

The above metrics are consistent with EPA's Methodology for Understanding and Reducing a Project's Environmental Footprint (EPA 542-R-12-002), February 2012

Notes:


All Energy Use by Remedy Component and Scope
(in MMbtu)
14000
12000
10000
8000
6000
4000
2000
0
Alternative 1 - Track 1 Remedy
Alternative 2 - Track 2 Remedy
< Component 3 >
< Component 4 >
< Component 5 >
< Component 6 >
Other Off-Site (Scope 3b)
Transportation (Scope 3a)
Grid Electricity Generation (Scope 2)
On-site (Scope 1)
Total Energy All Components = 20973.4 MMbtus


All Energy Use by Remedy Component
Alternative 1 - Track 1 Remedy = 58.5%
Alternative 2 - Track 2 Remedy = 41.5%
< Component 3 > = 0%
< Component 4 > = 0%
< Component 5 > = 0%
< Component 6 > = 0%
Total Energy All Components = 20973.4 MMbtus


All Energy Use by Scope
On-site (Scope 1) = 43.3%
Grid Electricity Generation (Scope 2) = 1.9%
Transportation (Scope 3a) = 6.3%
Other Off-Site (Scope 3b) = 48.6%
Total Energy All Scopes = 20973.4 MMbtus

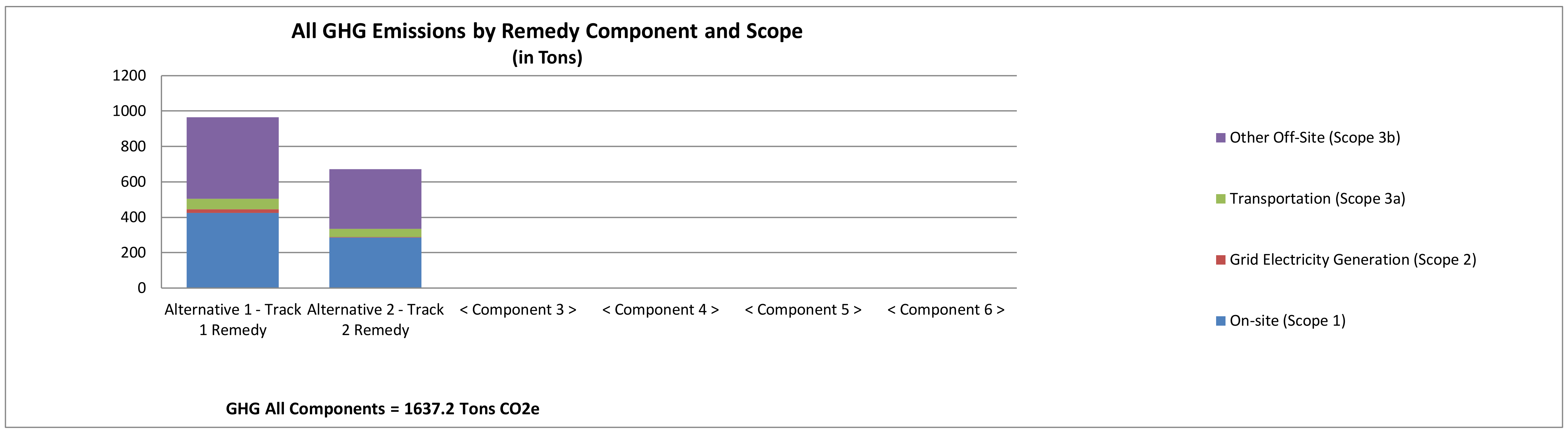
Total Energy
MMbtus

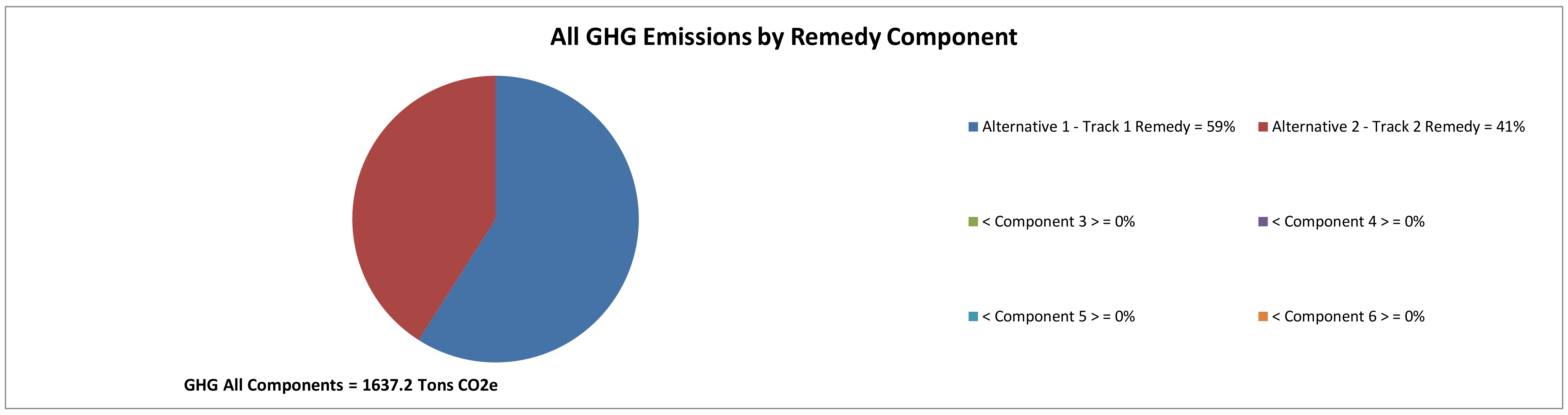
	Alternative 1 - Track 1 Remedy	Alternative 2 - Track 2 Remedy	< Component 3 >	< Component 4 >	< Component 5 >	< Component 6 >	Total
On-site (Scope 1)	5,437.7	3,636.5	0.0	0.0	0.0	0.0	9,074.2
Grid Electricity Generation (Scope 2)	236.2	157.5	0.0	0.0	0.0	0.0	393.7
Transportation (Scope 3a)	751.2	563.1	0.0	0.0	0.0	0.0	1,314.3
Other Off-Site (Scope 3b)	5,836.5	4,354.8	0.0	0.0	0.0	0.0	10,191.3
Total	12,261.6	8,711.9	0.0	0.0	0.0	0.0	20,973.4

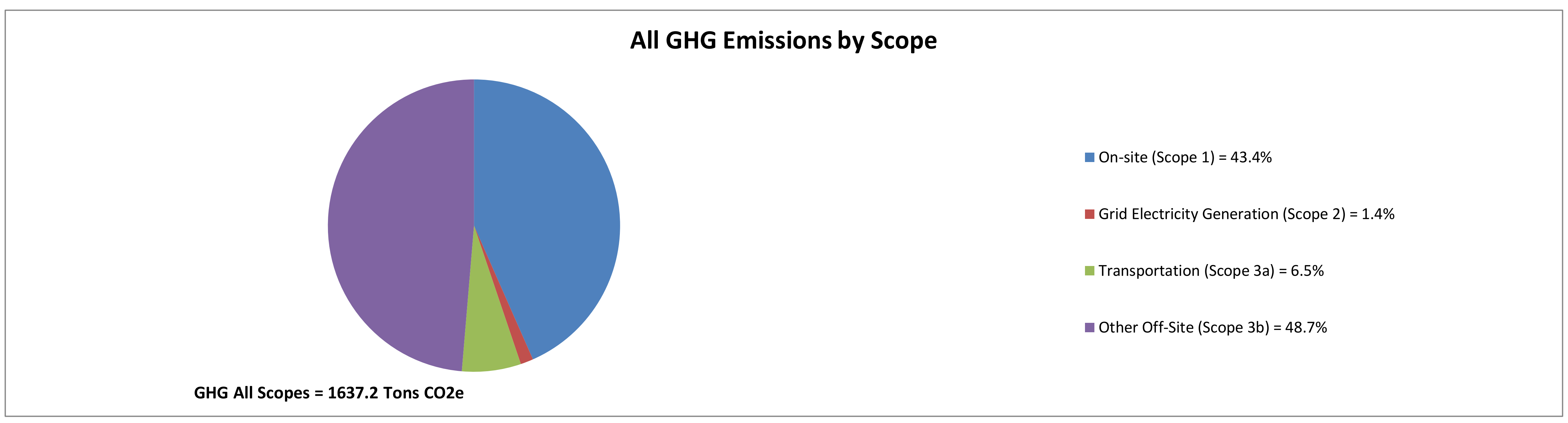
Alternative 1 - Track 1 Remedy = 58.5%
Alternative 2 - Track 2 Remedy = 41.5%
< Component 3 > = 0%
< Component 4 > = 0%
< Component 5 > = 0%
< Component 6 > = 0%

On-site (Scope 1) = 43.3%
Grid Electricity Generation (Scope 2) = 1.9%
Transportation (Scope 3a) = 6.3%
Other Off-Site (Scope 3b) = 48.6%

Total Energy All Components = 20973.4 MMbtus
Total Energy All Scopes = 20973.4 MMbtus


All GHG Emissions by Remedy Component and Scope
(in Tons)
1200
1000
800
600
400
200
0
Alternative 1 - Track 1 Remedy
Alternative 2 - Track 2 Remedy
< Component 3 >
< Component 4 >
< Component 5 >
< Component 6 >
Other Off-Site (Scope 3b)
Transportation (Scope 3a)
Grid Electricity Generation (Scope 2)
On-site (Scope 1)
GHG All Components = 1637.2 Tons CO2e


All GHG Emissions by Remedy Component
Alternative 1 - Track 1 Remedy = 59%
Alternative 2 - Track 2 Remedy = 41%
< Component 3 > = 0%
< Component 4 > = 0%
< Component 5 > = 0%
< Component 6 > = 0%
GHG All Components = 1637.2 Tons CO2e


All GHG Emissions by Scope
On-site (Scope 1) = 43.4%
Grid Electricity Generation (Scope 2) = 1.4%
Transportation (Scope 3a) = 6.5%
Other Off-Site (Scope 3b) = 48.7%
GHG All Scopes = 1637.2 Tons CO2e

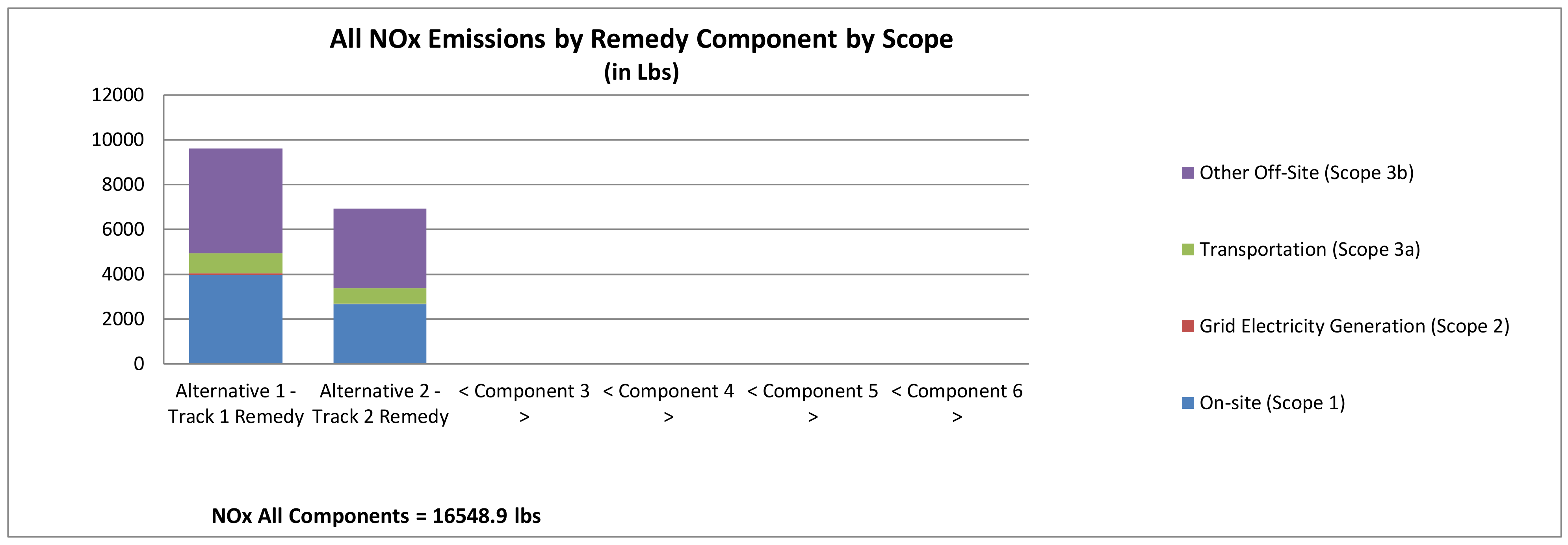
GHG
Tons CO2e

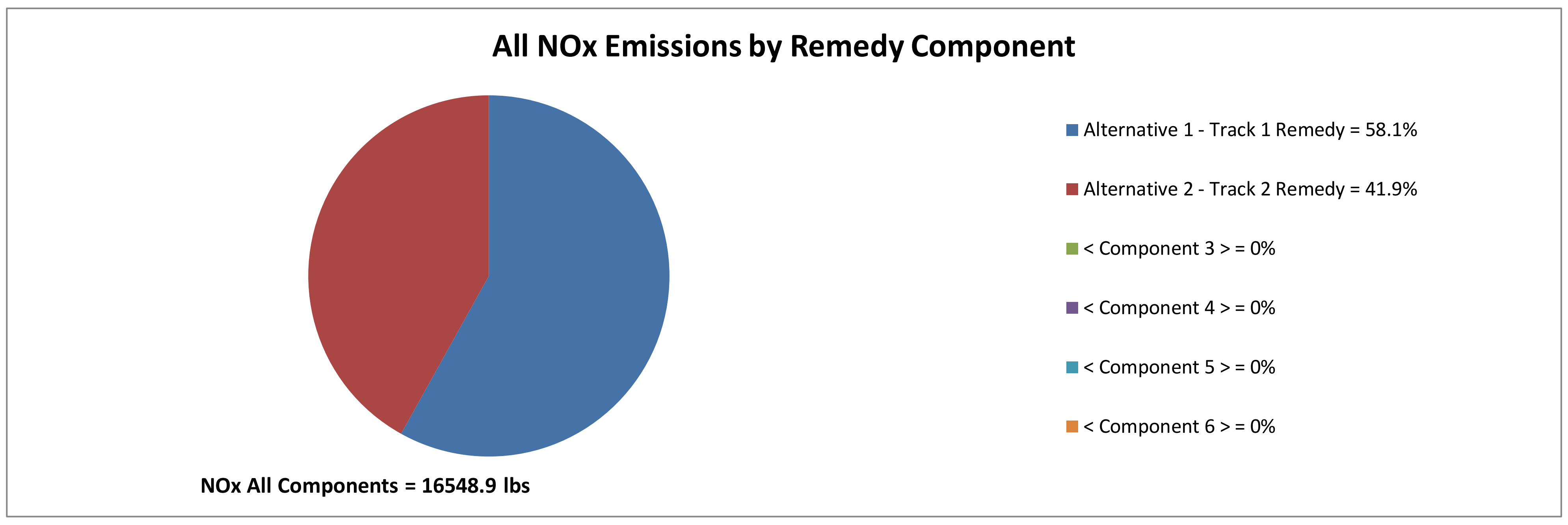
	Alternative 1 - Track 1 Remedy	Alternative 2 - Track 2 Remedy	< Component 3 >	< Component 4 >	< Component 5 >	< Component 6 >	Total
On-site (Scope 1)	425.7	284.7	0.0	0.0	0.0	0.0	710.4
Grid Electricity Generation (Scope 2)	19.2	4.0	0.0	0.0	0.0	0.0	23.2
Transportation (Scope 3a)	60.8	46.1	0.0	0.0	0.0	0.0	106.9
Other Off-Site (Scope 3b)	460.8	336.0	0.0	0.0	0.0	0.0	796.8
Total	966.4	670.8	0.0	0.0	0.0	0.0	1,637.2

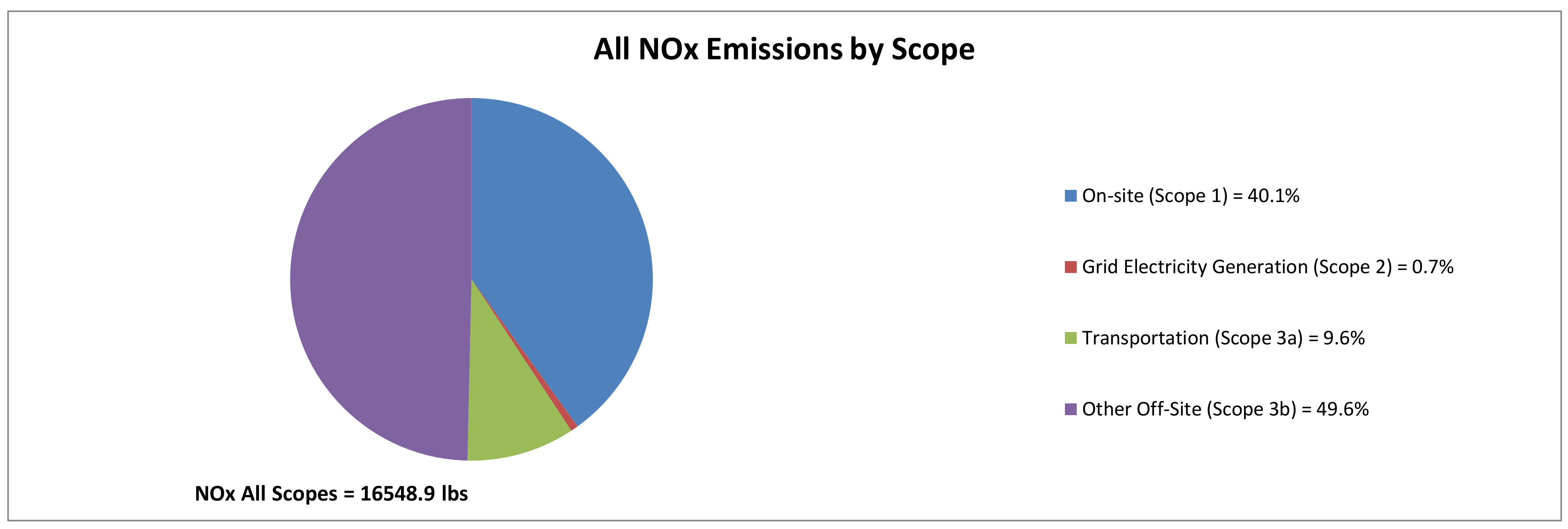
Alternative 1 - Track 1 Remedy = 59%
Alternative 2 - Track 2 Remedy = 41%
< Component 3 > = 0%
< Component 4 > = 0%
< Component 5 > = 0%
< Component 6 > = 0%

GHG All Components = 1637.2 Tons CO2e
GHG All Scopes = 1637.2 Tons CO2e

On-site (Scope 1) = 43.4%
Grid Electricity Generation (Scope 2) = 1.4%
Transportation (Scope 3a) = 6.5%
Other Off-Site (Scope 3b) = 48.7%


All NOx Emissions by Remedy Component by Scope
(in Lbs)
12000
10000
8000
6000
4000
2000
0
Alternative 1 - Track 1 Remedy
Alternative 2 - Track 2 Remedy
< Component 3 >
< Component 4 >
< Component 5 >
< Component 6 >
Other Off-Site (Scope 3b)
Transportation (Scope 3a)
Grid Electricity Generation (Scope 2)
On-site (Scope 1)
NOx All Components = 16548.9 lbs


All NOx Emissions by Remedy Component
Alternative 1 - Track 1 Remedy = 58.1%
Alternative 2 - Track 2 Remedy = 41.9%
< Component 3 > = 0%
< Component 4 > = 0%
< Component 5 > = 0%
< Component 6 > = 0%
NOx All Components = 16548.9 lbs


All NOx Emissions by Scope
On-site (Scope 1) = 40.1%
Grid Electricity Generation (Scope 2) = 0.7%
Transportation (Scope 3a) = 9.6%
Other Off-Site (Scope 3b) = 49.6%
NOx All Scopes = 16548.9 lbs

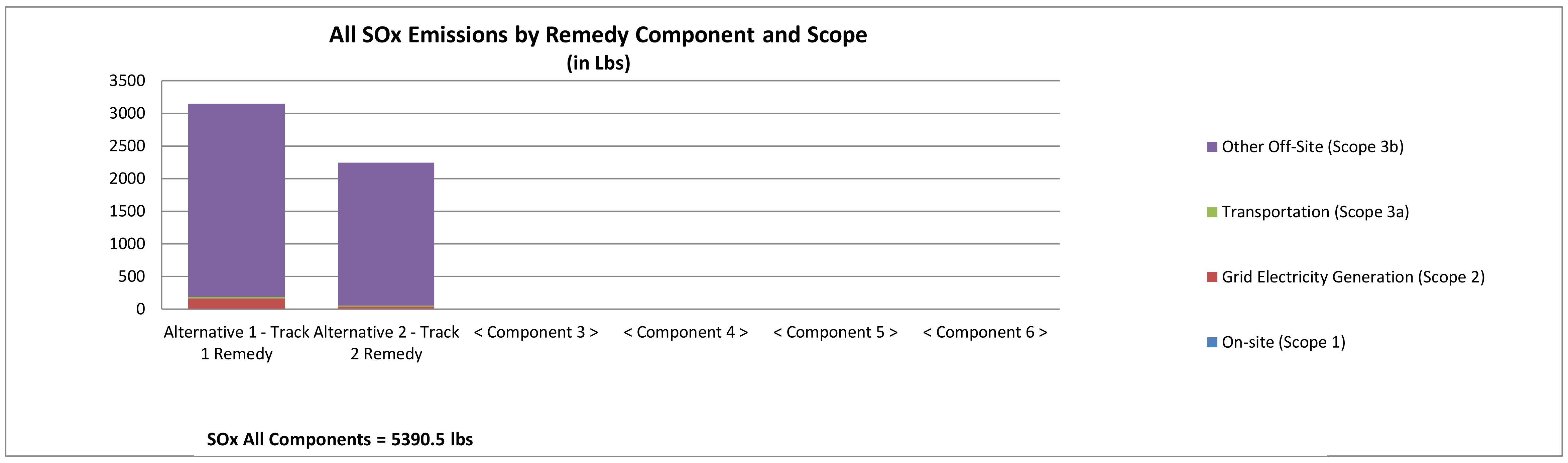
NOx
lbs

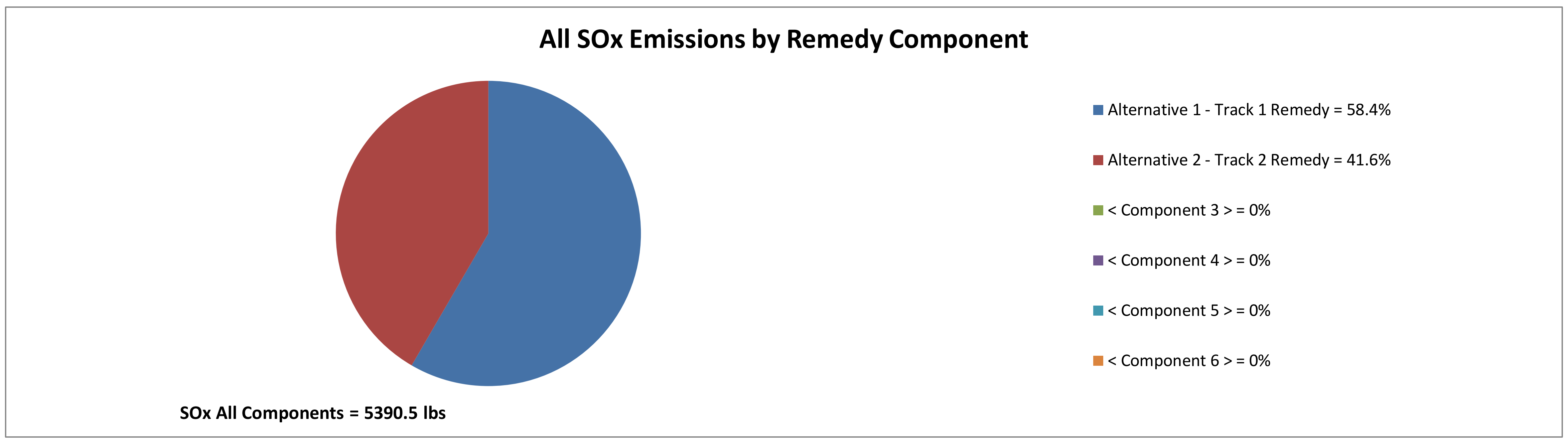
	Alternative 1 - Track 1 Remedy	Alternative 2 - Track 2 Remedy	< Compon	< Compon	< Component 5 >	< Compon	Total
On-site (Scope 1)	3,972.2	2,656.4	0.0	0.0	0.0	0.0	6,628.6
Grid Electricity Generation (Scope 2)	76.4	34.2	0.0	0.0	0.0	0.0	110.6
Transportation (Scope 3a)	892.8	700.6	0.0	0.0	0.0	0.0	1,593.4
Other Off-Site (Scope 3b)	4,669.8	3,546.6	0.0	0.0	0.0	0.0	8,216.4
Total	9,611.1	6,937.8	0.0	0.0	0.0	0.0	16,548.9

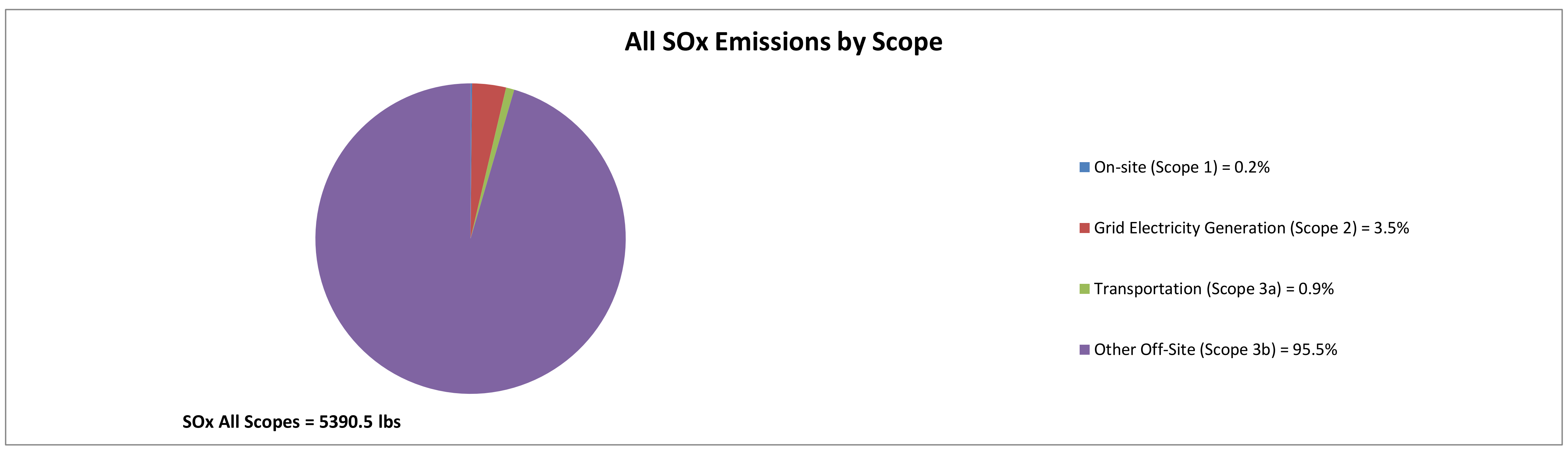
Alternative 1 - Track 1 Remedy = 58.1%
Alternative 2 - Track 2 Remedy = 41.9%
< Component 3 > = 0%
< Component 4 > = 0%
< Component 5 > = 0%
< Component 6 > = 0%

On-site (Scope 1) = 40.1%
Grid Electricity Generation (Scope 2) = 0.7%
Transportation (Scope 3a) = 9.6%
Other Off-Site (Scope 3b) = 49.6%

NOx All Components = 16548.9 lbs
NOx All Scopes = 16548.9 lbs


All SOx Emissions by Remedy Component and Scope
(in Lbs)
3500
3000
2500
2000
1500
1000
500
0
Alternative 1 - Track 1 Remedy
Alternative 2 - Track 2 Remedy
< Component 3 >
< Component 4 >
< Component 5 >
< Component 6 >
Other Off-Site (Scope 3b)
Transportation (Scope 3a)
Grid Electricity Generation (Scope 2)
On-site (Scope 1)
SOx All Components = 5390.5 lbs


All SOx Emissions by Remedy Component
Alternative 1 - Track 1 Remedy = 58.4%
Alternative 2 - Track 2 Remedy = 41.6%
< Component 3 > = 0%
< Component 4 > = 0%
< Component 5 > = 0%
< Component 6 > = 0%
SOx All Components = 5390.5 lbs


All SOx Emissions by Scope
On-site (Scope 1) = 0.2%
Grid Electricity Generation (Scope 2) = 3.5%
Transportation (Scope 3a) = 0.9%
Other Off-Site (Scope 3b) = 95.5%
SOx All Scopes = 5390.5 lbs

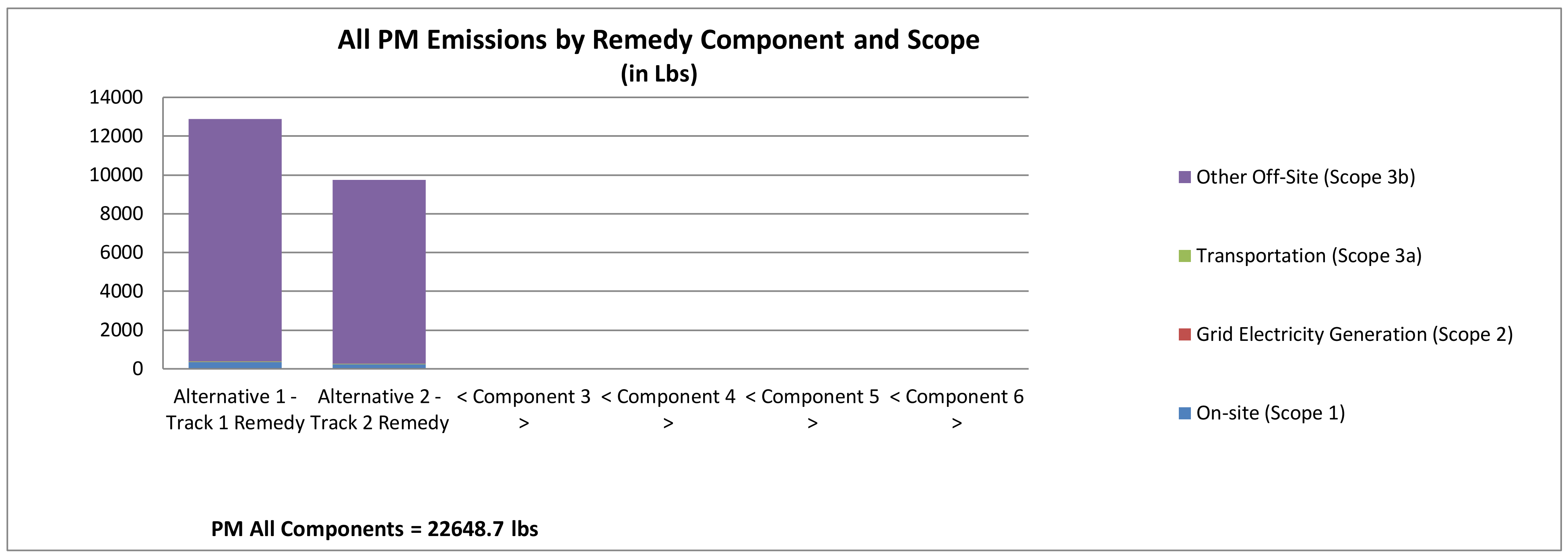
SOx
lbs

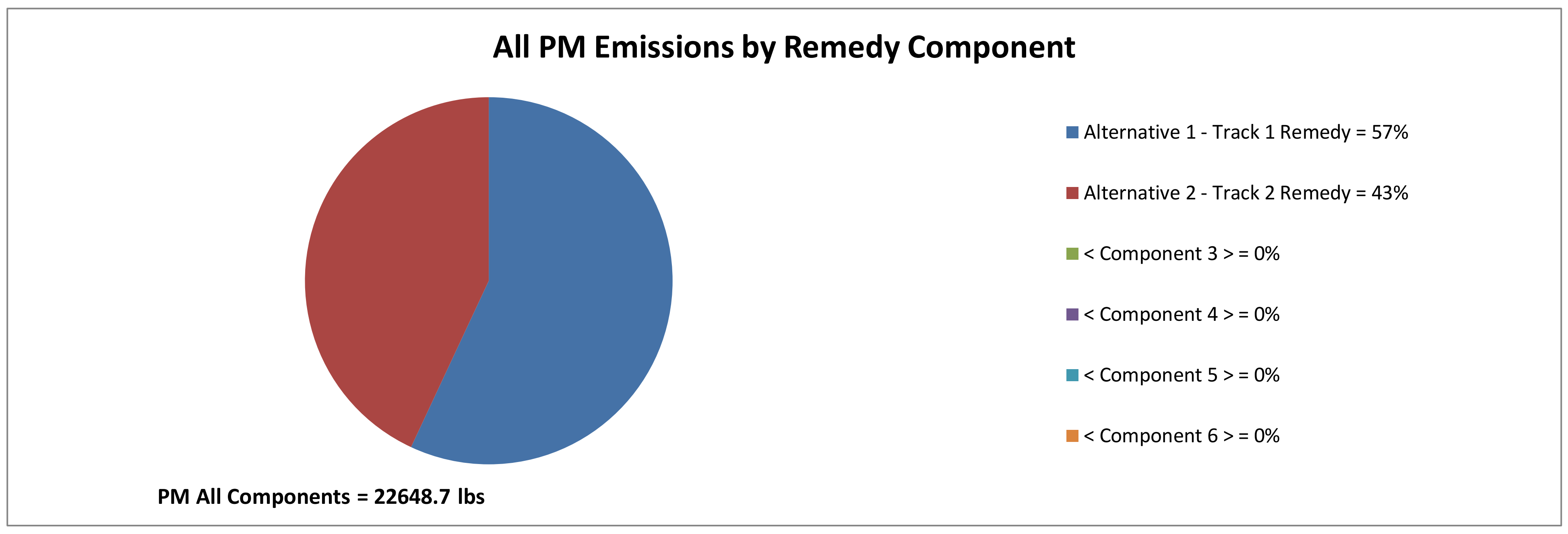
	Alternative 1 - Track 1 Remedy	Alternative 2 - Track 2 Remedy	< Compon	< Compon	< Component 5 >	< Compon	Total
On-site (Scope 1)	5.0	3.3	0.0	0.0	0.0	0.0	8.4
Grid Electricity Generation (Scope 2)	157.1	33.4	0.0	0.0	0.0	0.0	190.5
Transportation (Scope 3a)	28.2	18.0	0.0	0.0	0.0	0.0	46.3
Other Off-Site (Scope 3b)	2,957.1	2,188.4	0.0	0.0	0.0	0.0	5,145.4
Total	3,147.4	2,243.1	0.0	0.0	0.0	0.0	5,390.5

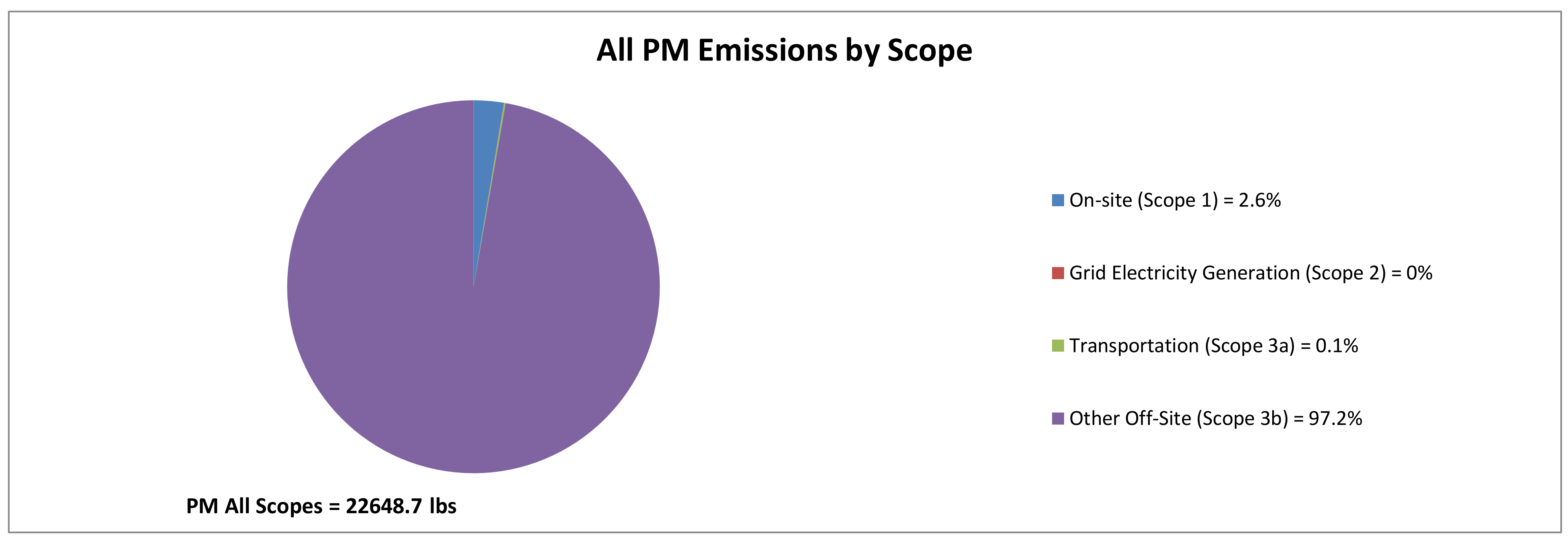
Alternative 1 - Track 1 Remedy = 58.4%
Alternative 2 - Track 2 Remedy = 41.6%
< Component 3 > = 0%
< Component 4 > = 0%
< Component 5 > = 0%
< Component 6 > = 0%

SOx All Components = 5390.5 lbs
SOx All Scopes = 5390.5 lbs

On-site (Scope 1) = 0.2%
Grid Electricity Generation (Scope 2) = 3.5%
Transportation (Scope 3a) = 0.9%
Other Off-Site (Scope 3b) = 95.5%


All PM Emissions by Remedy Component and Scope
(in Lbs)
14000
12000
10000
8000
6000
4000
2000
0
Alternative 1 - Track 1 Remedy
Alternative 2 - Track 2 Remedy
< Component 3 >
< Component 4 >
< Component 5 >
< Component 6 >
Other Off-Site (Scope 3b)
Transportation (Scope 3a)
Grid Electricity Generation (Scope 2)
On-site (Scope 1)
PM All Components = 22648.7 lbs


All PM Emissions by Remedy Component
Alternative 1 - Track 1 Remedy = 57%
Alternative 2 - Track 2 Remedy = 43%
< Component 3 > = 0%
< Component 4 > = 0%
< Component 5 > = 0%
< Component 6 > = 0%
PM All Components = 22648.7 lbs


All PM Emissions by Scope
On-site (Scope 1) = 2.6%
Grid Electricity Generation (Scope 2) = 0%
Transportation (Scope 3a) = 0.1%
Other Off-Site (Scope 3b) = 97.2%
PM All Scopes = 22648.7 lbs

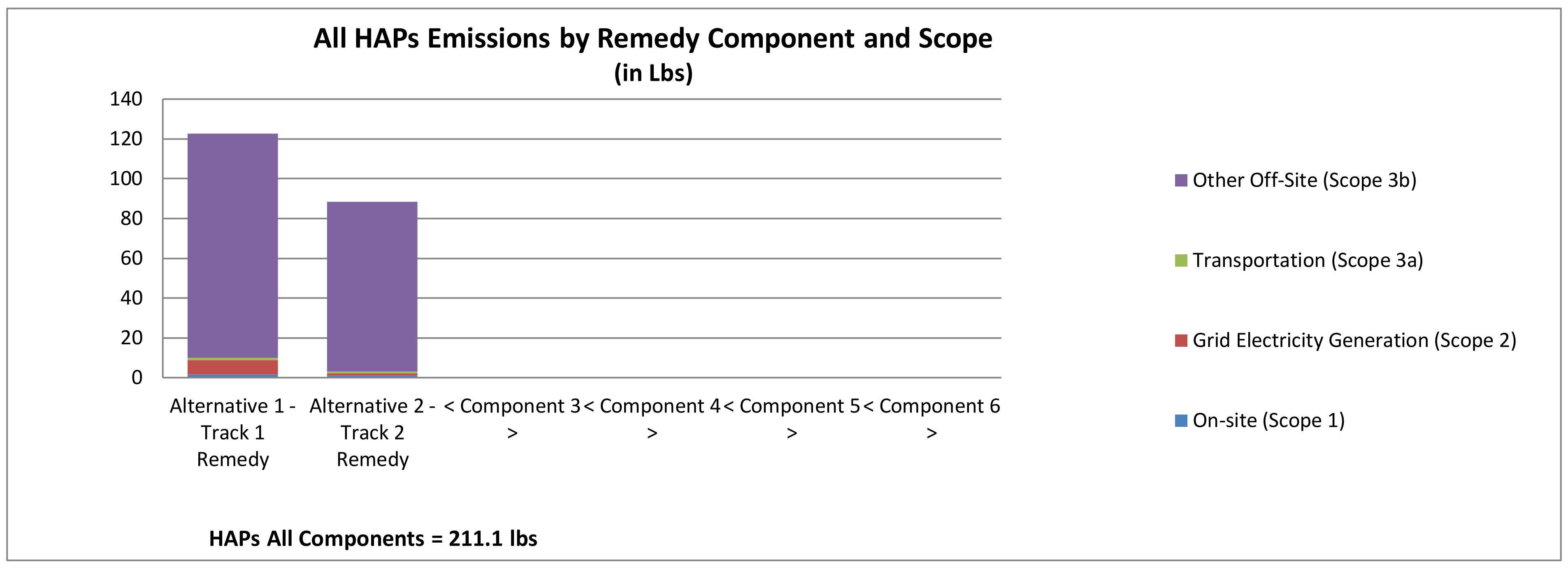
PM
lbs

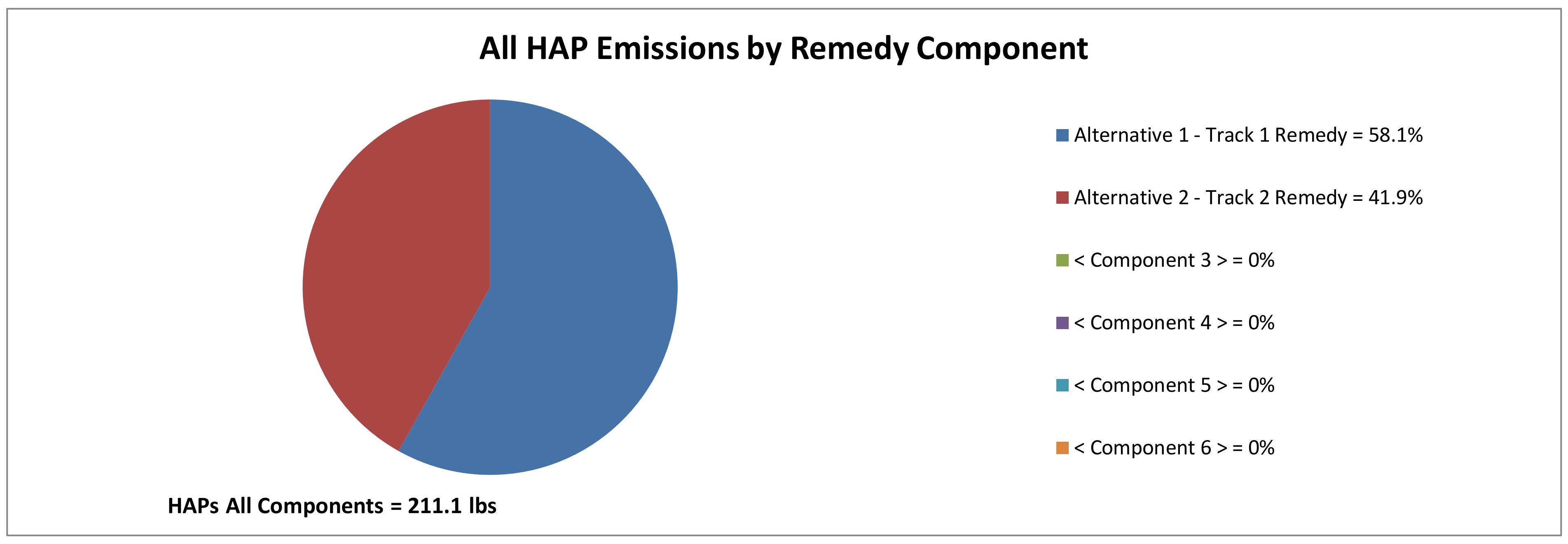
	Alternative 1 - Track 1 Remedy	Alternative 2 - Track 2 Remedy	< Compon	< Compon	< Component 5 >	< Compon	Total
On-site (Scope 1)	355.0	237.4	0.0	0.0	0.0	0.0	592.4
Grid Electricity Generation (Scope 2)	2.0	1.7	0.0	0.0	0.0	0.0	3.7
Transportation (Scope 3a)	18.4	12.4	0.0	0.0	0.0	0.0	30.8
Other Off-Site (Scope 3b)	12,523.2	9,498.7	0.0	0.0	0.0	0.0	22,021.9
Total	12,898.5	9,750.2	0.0	0.0	0.0	0.0	22,648.7

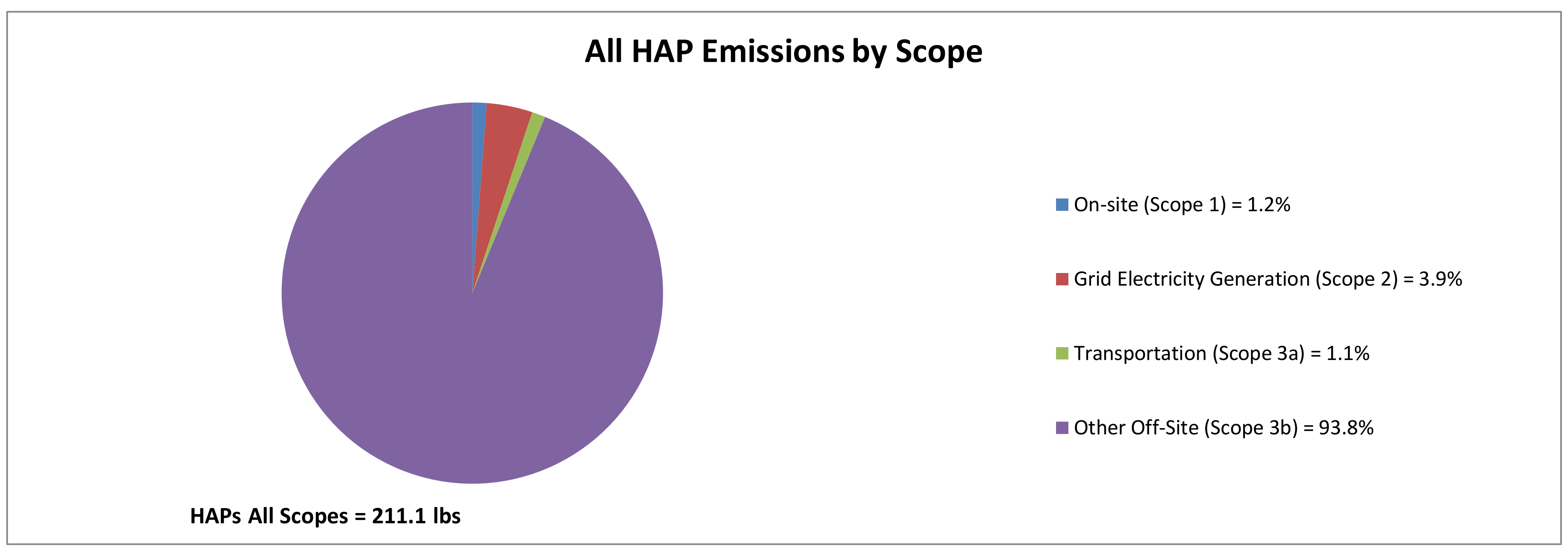
Alternative 1 - Track 1 Remedy = 57%
Alternative 2 - Track 2 Remedy = 43%
< Component 3 > = 0%
< Component 4 > = 0%
< Component 5 > = 0%
< Component 6 > = 0%

PM All Components = 22648.7 lbs
PM All Scopes = 22648.7 lbs

On-site (Scope 1) = 2.6%
Grid Electricity Generation (Scope 2) = 0%
Transportation (Scope 3a) = 0.1%
Other Off-Site (Scope 3b) = 97.2%


All HAPs Emissions by Remedy Component and Scope
(in Lbs)
140
120
100
80
60
40
20
0
Alternative 1 - Track 1 Remedy
Alternative 2 - Track 2 Remedy
< Component 3 >
< Component 4 >
< Component 5 >
< Component 6 >
Other Off-Site (Scope 3b)
Transportation (Scope 3a)
Grid Electricity Generation (Scope 2)
On-site (Scope 1)
HAPs All Components = 211.1 lbs


All HAP Emissions by Remedy Component
Alternative 1 - Track 1 Remedy = 58.1%
Alternative 2 - Track 2 Remedy = 41.9%
< Component 3 > = 0%
< Component 4 > = 0%
< Component 5 > = 0%
< Component 6 > = 0%
HAPs All Components = 211.1 lbs


All HAP Emissions by Scope
On-site (Scope 1) = 1.2%
Grid Electricity Generation (Scope 2) = 3.9%
Transportation (Scope 3a) = 1.1%
Other Off-Site (Scope 3b) = 93.8%
HAPs All Scopes = 211.1 lbs

HAPs
lbs

	Alternative 1 - Track 1 Remedy	Alternative 2 - Track 2 Remedy	< Compon	< Compon	< Component 5 >	< Compon	Total
On-site (Scope 1)	1.5	1.0	0.0	0.0	0.0	0.0	2.6
Grid Electricity Generation (Scope 2)	7.2	1.0	0.0	0.0	0.0	0.0	8.2
Transportation (Scope 3a)	1.4	0.9	0.0	0.0	0.0	0.0	2.4
Other Off-Site (Scope 3b)	112.6	85.4	0.0	0.0	0.0	0.0	197.9
Total	122.7	88.4	0.0	0.0	0.0	0.0	211.1

Alternative 1 - Track 1 Remedy = 58.1%
Alternative 2 - Track 2 Remedy = 41.9%
< Component 3 > = 0%
< Component 4 > = 0%
< Component 5 > = 0%
< Component 6 > = 0%

HAPs All Components = 211.1 lbs
HAPs All Scopes = 211.1 lbs

On-site (Scope 1) = 1.2%
Grid Electricity Generation (Scope 2) = 3.9%
Transportation (Scope 3a) = 1.1%
Other Off-Site (Scope 3b) = 93.8%

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Input Summary

Remedy Component Number →		1	2	3	4	5	6									Remedy Component Subtotals						
		Column headings in Row 6 must match the name of "Input" tabs in this workbook for Columns C - P in this table to be populated ("0" in Row 4 means "Input" tab is turned Off and will not be grouped to a Remedy Component (Columns Q - V) or used in subsequent calculations)																				
Item		Input Template	Input Template (2)	Input Template (3)	Input Template (4)	Input Template (5)	Input Template (6)	Input Template (7)	Input Template (8)	Input Template (9)	Input Template (10)	Input Template (11)	Input Template (12)	Input Template (13)	Input Template (14)	1	2	3	4	5	6	Total
On-Site																						
On-site Renewable Energy																						
Renewable electricity generated on-site	MWh	0	0													0	0	0	0	0	0	0
Landfill gas combusted on-site for energy use	ccf CH_4	0	0													0	0	0	0	0	0	0
On-site biodiesel use	gal	0	0													0	0	0	0	0	0	0
On-site biodiesel use - Other	gal	0	0													0	0	0	0	0	0	0
User-defined on-site renewable energy use #1	TBD	0	0													0	0	0	0	0	0	0
User-defined on-site renewable energy use #2	TBD	0	0													0	0	0	0	0	0	0
On-Site Conventional Energy																						
Grid electricity	MWh	34.0872	22.7248													34.0872	22.7248	0	0	0	0	56.812
On-site diesel use - Other	Gal	0	0													0	0	0	0	0	0	0
On-site diesel use <75 hp	Gal	1902.3853	1268.2569													1902.3853	1268.2569	0	0	0	0	3170.6422
On-site diesel use 75<hp<750	Gal	36380.571	24335.802													36380.571	24335.802	0	0	0	0	60716.374
On-site diesel use >750 hp	Gal	0	0													0	0	0	0	0	0	0
On-site gasoline use - Other	Gal	0	0													0	0	0	0	0	0	0
On-site gasoline use <25 hp	Gal	0	0													0	0	0	0	0	0	0
On-site gasoline use >25 hp	Gal	0	0													0	0	0	0	0	0	0
On-site natural gas use	ccf	0	0													0	0	0	0	0	0	0
On-site compressed natural gas use - Other	ccf	0	0													0	0	0	0	0	0	0
On-site compressed natural gas use	ccf	0	0													0	0	0	0	0	0	0
On-site liquified petroleum gas use - Other	gal	0	0													0	0	0	0	0	0	0
On-site liquified petroleum gas use	gal	0	0													0	0	0	0	0	0	0
Other forms of on-site conventional energy use #1	TBD	0	0													0	0	0	0	0	0	0
Other forms of on-site conventional energy use #2	TBD	0	0													0	0	0	0	0	0	0
Other On-site Emissions																						
On-site HAP process emissions	Lbs	0	0													0	0	0	0	0	0	0
On-site GHG emissions	Lbs CO2e	0	0													0	0	0	0	0	0	0
On-site carbon storage	Lbs CO2e	0	0													0	0	0	0	0	0	0
GHG avoided by flaring on-site landfill methane	ccf CH4	0	0													0	0	0	0	0	0	0
Other on-site NOx emissions or reductions	Lbs	0	0													0	0	0	0	0	0	0
Other on-site SOx emissions or reductions	Lbs	0	0													0	0	0	0	0	0	0
Other on-site PM emissions or reductions	Lbs	0	0													0	0	0	0	0	0	0
Electricity Generation																						
Grid electricity	MWh	34.0872	22.7248													34.0872	22.7248	0	0	0	0	56.812
Voluntary purchase of renewable electricity	MWh	0	0													0	0	0	0	0	0	0
Voluntary purchase of RECs	MWh	0	0													0	0	0	0	0	0	0
Transportation																						
Transportation Fuel Use Breakdown																						
Biodiesel use - Personnel Transport	gal	0	0													0	0	0	0	0	0	0
Biodiesel use - Personnel Transport - User Defined	gal	0	0													0	0	0	0	0	0	0
Biodiesel use - Equipment Transport	gal	0	0													0	0	0	0	0	0	0
Biodiesel use - Equipment Transport - User Defined	gal	0	0													0	0	0	0	0	0	0
Biodiesel use - Material Transport	gal	0	650													0	650	0	0	0	0	650
Biodiesel use - Material Transport - User Defined	gal	0	0													0	0	0	0	0	0	0
Biodiesel use - Waste Transport	gal	0	0													0	0	0	0	0	0	0
Biodiesel use - Waste Transport - User Defined	gal	0	0													0	0	0	0	0	0	0
Diesel use - Personnel Transport - other vehicles	gal	0	0													0	0	0	0	0	0	0
Diesel use - Personnel Transport - car	gal	0	0													0	0	0	0	0	0	0
Diesel use - Personnel Transport - passenger truck	gal	0	0													0	0	0	0	0	0	0
Diesel use - Personnel Transport - User Defined	gal	0	0													0	0	0	0	0	0	0
Diesel use - Equipment Transport	gal	40	40													40	40	0	0	0	0	80
Diesel use - Equipment Transport - User Defined	gal	0	0													0	0	0	0	0	0	0
Diesel use - Material Transport	gal	0	21.5													0	21.5	0	0	0	0	21.5
Diesel use - Material Transport - User Defined	gal	0	0													0	0	0	0	0	0	0
Diesel use - Waste Transport	gal	5175	3270.8													5175	3270.8	0	0	0	0	8445.8
Diesel use - Waste Transport - User Defined	gal	0	0													0	0	0	0	0	0	0
Gasoline use - Personnel Transport - other vehicles	gal	2.842E-14	0													2.842E-14	0	0	0	0	0	2.842E-14
Gasoline use - Personnel Transport - car	gal	153.1	93.5													153.1	93.5	0	0	0	0	246.6
Gasoline use - Personnel Transport - passenger truck	gal	59.5	46.3													59.5	46.3	0	0	0	0	105.8
Gasoline use - Personnel Transport - User Defined	gal	0	0													0	0	0	0	0	0	0
Gasoline use - Equipment Transport	gal	0	0													0	0	0	0	0	0	0
Gasoline use - Equipment Transport - User Defined	gal	0	0													0	0	0	0	0	0	0
Natural Gas use - Personnel Transport	ccf	0	0													0	0	0	0	0	0	0
Natural Gas use - Personnel Transport - User Defined	ccf	0	0													0	0	0	0	0	0	0
Natural Gas use - Equipment Transport	ccf	0	0													0	0	0	0	0	0	0

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Input Summary

Remedy Component Number →		1	2	3	4	5	6															
		Column headings in Row 6 must match the name of "Input" tabs in this workbook for Columns C - P in this table to be populated ("0" in Row 4 means "Input" tab is turned Off and will not be grouped to a Remedy Component (Columns Q - V) or used in subsequent calculations)														Remedy Component Subtotals						
Item		Input Template	Input Template (2)	Input Template (3)	Input Template (4)	Input Template (5)	Input Template (6)	Input Template (7)	Input Template (8)	Input Template (9)	Input Template (10)	Input Template (11)	Input Template (12)	Input Template (13)	Input Template (14)	1	2	3	4	5	6	Total
Conventional Energy																						
Transportation diesel use	gal	5215	3332.3													5215	3332.3	0	0	0	0	8547.3
Transportation gasoline use	gal	212.6	139.8													212.6	139.8	0	0	0	0	352.4
Transportation natural gas use	ccf	0	0													0	0	0	0	0	0	0
User-defined conventional energy transportation #1	TBD	10	10													10	10	0	0	0	0	20
User-defined conventional energy transportation #2	TBD	0	0													0	0	0	0	0	0	0
Renewable Energy																						
Transportation biodiesel use	gal	0	650													0	650	0	0	0	0	650
User-defined renewable energy transportation #1	TBD	0	0													0	0	0	0	0	0	0
User-defined renewable energy transportation #2	TBD	0	0													0	0	0	0	0	0	0
Off-Site																						
Construction Materials																						
Aluminum, Rolled Sheet	lb	0	0													0	0	0	0	0	0	0
Asphalt, mastic	lb	0	0													0	0	0	0	0	0	0
Asphalt, paving-grade	lb	0	0													0	0	0	0	0	0	0
Ethanol, Corn, 95%	lb	0	0													0	0	0	0	0	0	0
Ethanol, Corn, 99.7%	lb	0	0													0	0	0	0	0	0	0
Ethanol, Petroleum, 99.7%	lb	0	0													0	0	0	0	0	0	0
Gravel/Sand Mix, 65% Gravel	lb	0	0													0	0	0	0	0	0	0
Gravel/sand/clay	lb	0	0													0	0	0	0	0	0	0
HDPE	lb	0	0													0	0	0	0	0	0	0
Photovoltaic system (installed)	W	0	0													0	0	0	0	0	0	0
PVC	lb	0	0													0	0	0	0	0	0	0
Portland cement, US average	lb	0	5514438																			
Ready-mixed concrete, 20 MPa	ft3	0	0													0	0	0	0	0	0	0
Round Gravel	lb	0	120000													0	120000	0	0	0	0	120000
Sand	lb	0	0													0	0	0	0	0	0	0
Stainless Steel	lb	0	0													0	0	0	0	0	0	0
Steel	lb	0	0													0	0	0	0	0	0	0
Other refined construction materials	lb	0	0													0	0	0	0	0	0	0
Other unrefined construction materials	lb	0	0													0	0	0	0	0	0	0
Treatment Materials & Chemicals																						
Cheese Whey	lbs	0	0													0	0	0	0	0	0	0
Emulsified vegetable oil	lbs	0	0													0	0	0	0	0	0	0
Granular activated carbon, primary	lbs	0	0													0	0	0	0	0	0	0
Granular activated carbon, regenerated	lbs	0	0													0	0	0	0	0	0	0
Hydrogen Peroxide, 50% in H2O	lbs	0	0													0	0	0	0	0	0	0
Iron (II) Sulfate	lbs	0	0													0	0	0	0	0	0	0
Lime, Hydrated, Packed	lbs	0	0													0	0	0	0	0	0	0
Molasses	lbs	0	0													0	0	0	0	0	0	0
Phosphoric Acid, 70% in H2O	lbs	0	0													0	0	0	0	0	0	0
Potassium Permanganate	lbs	0	0													0	0	0	0	0	0	0
Sodium Hydroxide, 50% in H2O	lbs	0	0													0	0	0	0	0	0	0
Other Treatment Chemicals & Materials	lbs	0	0													0	0	0	0	0	0	0
Material Type																						
Total Virgin Refined Materials	tons	0	60													0	60	0	0	0	0	60
Total Recycled Refined Materials	tons	0	0													0	0	0	0	0	0	0
Total Reused Refined Materials	tons	0	0													0	0	0	0	0	0	0
Total Refined Material	tons	0	60													0	60	0	0	0	0	60
Total Virgin Unrefined Materials	tons	0	2757.219													0	2757.219	0	0	0	0	2757.219
Total Recycled Unrefined Materials	tons	0	0													0	0	0	0	0	0	0
Total Reused Unrefined Materials	tons	0	0													0	0	0	0	0	0	0
Total Unrefined Material	tons	0	2757.219													0	2757.219	0	0	0	0	2757.219
Fuel Processing																						
Biodiesel produced	gal	0	650													0	650	0	0	0	0	650
Diesel produced	gal	43497.957	28936.359													43497.957	28936.359	0	0	0	0	72434.316
Gasoline produced	gal	212.6	139.8													212.6	139.8	0	0	0	0	352.4
Compressed natural gas produced	ccf	0	0													0	0	0	0	0	0	0
Liquified petroleum gas produced	gal	0	0													0	0	0	0	0	0	0
Natural gas produced	ccf	0	0													0	0	0	0	0	0	0
Water Use																						
Public Water Supply	gal x 1000	28.41	13.16													28.41	13.16	0	0	0	0	41.57
Extracted Groundwater	gal x 1000	0	0													0	0	0	0	0	0	0
Surface Water	gal x 1000	0	0													0	0	0	0	0	0	0
Reclaimed Water	gal x 1000	0	0													0	0	0	0	0	0	0
Collected/Diverted Storm Water	gal x 1000	0	0													0	0	0	0	0	0	0
User-defined water resource #1	gal x 1000	0	0													0	0	0	0	0	0	0
User-defined water resource #2	gal x 1000	0	0													0	0	0	0	0	0	0

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Input Summary

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Item		Input Template	Input Template (2)	Input Template (3)	Input Template (4)	Input Template (5)	Input Template (6)	Input Template (7)	Input Template (8)	Input Template (9)	Input Template (10)	Input Template (11)	Input Template (12)	Input Template (13)	Input Template (14)	1	2	3	4	5	6	Total
Waste/Recycle Handling																						
Hazardous waste incineration	lbs	0	0													0	0	0	0	0	0	0
Off-site waste water treatment (POTW)	gal x 1000	0	0													0	0	0	0	0	0	0
Off-site non-hazardous waste landfill	tons	31050	23550													31050	23550	0	0	0	0	54600
Off-site hazardous waste landfill	tons	0	0													0	0	0	0	0	0	0
Recycled/Reused On-Site	tons	0	0													0	0	0	0	0	0	0
Recycled/Reused Off-Site	tons	0	0													0	0	0	0	0	0	0
Solid Waste Totals																						
Total Non-Hazardous Waste	tons	31050	23550													31050	23550	0	0	0	0	54600
Total Hazardous Waste	tons	0	0													0	0	0	0	0	0	0
Total Recycled/Reused	tons	0	0													0	0	0	0	0	0	0
Total Waste (all types)	tons	31050	23550													31050	23550	0	0	0	0	54600
Lab Services																						
Off-site Laboratory Analysis - Other	sample	130	130													130	130	0	0	0	0	260
Off-site Laboratory Analysis - Metals	sample	65	65													65	65	0	0	0	0	130
Off-site Laboratory Analysis - Mercury	sample	0	0													0	0	0	0	0	0	0
Off-site Laboratory Analysis - Inorganic Anions	sample	0	0													0	0	0	0	0	0	0
Off-site Laboratory Analysis - Alkalinity	sample	0	0													0	0	0	0	0	0	0
Off-site Laboratory Analysis - Perchlorate	sample	0	0													0	0	0	0	0	0	0
Off-site Laboratory Analysis - Nitrogen/Nitrate	sample	0	0													0	0	0	0	0	0	0
Off-site Laboratory Analysis - Sulfate	sample	0	0													0	0	0	0	0	0	0
Off-site Laboratory Analysis - PCBs	sample	65	65													65	65	0	0	0	0	130
Off-site Laboratory Analysis - VOCs	sample	65	65													65	65	0	0	0	0	130
Off-site Laboratory Analysis - SVOCs	sample	65	65													65	65	0	0	0	0	130
Resource Extraction for Electricity																						
Coal extraction and processing	MWh	10.396596	1.363488													10.396596	1.363488	0	0	0	0	11.760084
Natural gas extraction and processing	MWh	11.555561	2.27248													11.555561	2.27248	0	0	0	0	13.828041
Nuclear fuel extraction and processing	MWh	6.7492656	0.454496													6.7492656	0.454496	0	0	0	0	7.2037616
Oil extraction and processing	MWh	0.2386104	1.13624													0.2386104	1.13624	0	0	0	0	1.3748504
Other fuel extraction and processing	MWh	0.0340872	0													0.0340872	0	0	0	0	0	0.0340872
Electricity Transmission																						
Transmission and distribution losses	MWh	34.0872	22.7248													34.0872	22.7248	0	0	0	0	56.812

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Remedy Component Number →		1	2	3	4	5	6									Remedy Component Subtotals						
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Item		Input Template	Input Template (2)	Input Template (3)	Input Template (4)	Input Template (5)	Input Template (6)	Input Template (7)	Input Template (8)	Input Template (9)	Input Template (10)	Input Template (11)	Input Template (12)	Input Template (13)	Input Template (14)	1	2	3	4	5	6	Total
Other																						
User-defined material #1	TBD	0	0													0	0	0	0	0	0	0
User-defined material #2	TBD	0	0													0	0	0	0	0	0	0
User-defined material #3	TBD	0	0													0	0	0	0	0	0	0
User-defined material #4	TBD	0	0													0	0	0	0	0	0	0
User-defined material #5	TBD	0	0													0	0	0	0	0	0	0
User-defined material #6	TBD	0	0													0	0	0	0	0	0	0
User-defined material #7	TBD	0	0													0	0	0	0	0	0	0
User-defined material #8	TBD	0	0													0	0	0	0	0	0	0
User-defined material #9	TBD	0	0													0	0	0	0	0	0	0
User-defined material #10	TBD	0	0													0	0	0	0	0	0	0
User-defined material #11	TBD	0	0													0	0	0	0	0	0	0
User-defined material #12	TBD	0	0													0	0	0	0	0	0	0
User-defined material #13	TBD	0	0													0	0	0	0	0	0	0
User-defined material #14	TBD	0	0													0	0	0	0	0	0	0
User-defined material #15	TBD	0	0													0	0	0	0	0	0	0
User-defined material #16	TBD	0	0													0	0	0	0	0	0	0
User-defined material #17	TBD	0	0													0	0	0	0	0	0	0
User-defined material #18	TBD	0	0													0	0	0	0	0	0	0
User-defined material #19	TBD	0	0													0	0	0	0	0	0	0
User-defined material #20	TBD	0	0													0	0	0	0	0	0	0
User-defined Waste Destinations																						
User-defined recycled/reused on-site #1	TBD	0	0													0	0	0	0	0	0	0
User-defined recycled/reused on-site #2	TBD	0	0													0	0	0	0	0	0	0
User-defined recycled/reused on-site #3	TBD	0	0													0	0	0	0	0	0	0
User-defined recycled/reused off-site #1	TBD	0	0													0	0	0	0	0	0	0
User-defined recycled/reused off-site #2	TBD	0	0													0	0	0	0	0	0	0
User-defined recycled/reused off-site #3	TBD	0	0													0	0	0	0	0	0	0
User-defined non-hazardous waste destination #1	TBD	0	0													0	0	0	0	0	0	0
User-defined non-hazardous waste destination #2	TBD	0	0													0	0	0	0	0	0	0
User-defined non-hazardous waste destination #3	TBD	0	0													0	0	0	0	0	0	0
User-defined hazardous waste destination #1	TBD	0	0													0	0	0	0	0	0	0
User-defined hazardous waste destination #2	TBD	0	0													0	0	0	0	0	0	0
User-defined hazardous waste destination #3	TBD	0	0													0	0	0	0	0	0	0

APPENDIX H
Project Personnel Resumes

HALEY ALDRICH

JAMES BELLEW

Principal

EDUCATION

M.S., Environmental Geology, Queens College
B.S., Geology, Pre-Law, Environmental Science, Binghamton University

PROFESSIONAL SOCIETIES

American Council of Engineering Companies, Member, 2017
Urban Land Institute, Member, 2016
Business Council of New York, Member, 2018

SPECIAL STUDIES AND COURSES

40-Hour OSHA Hazardous Waste Operations and Emergency Response Training (29 CFR 1910.120)
30-Hour OSHA Construction Safety and Heath
8-hour OSHA Site Supervisor Certification
OSHA Confined Space Entry Training Certification
Erosion and Sediment Control, New York, No. 006925
USDOT/IATA Training on the Shipping and/or Transportation of Hazardous Materials

James has a hands-on approach to every project. He believes that being present and putting himself into his clients' shoes is the best way to understand their needs. As a Principal, James's expertise includes due diligence, environmental risk development, building surveys, remedial investigations, remedial design, and technical oversight. Mr. Bellew has completed over 50 NYCOER E-Designation Sites and NYSDEC Brownfield Cleanup Program Sites which include preparation of all reports through to the certificate of completion and a certificate of occupancy.

Clients appreciate James' strategies from the inception of a project through closure under various regulatory programs nationwide. That comprehensive approach is what James loves the most about his job. He enjoys taking on complex projects and finding rational, cost-effective, remedial solutions. His biggest reward? When he can bring a client cost relief through value engineering.

RELEVANT PROJECT EXPERIENCE

Development, NYCDDC Shirley Chisholm Recreational Center, Brooklyn, New York. Principal for the project released by the New York City Department of Design and Construction, on behalf of the NYC Parks Department, for the design and construction of a new recreational center located at 3002 Foster Avenue in Brooklyn New York. Scope of services included execution of a Phase II Environmental Site Assessment, soil characterization, remedial oversight, geotechnical percolation testing and closure with the NYC Department of Environmental Protection.

Development's, New York State Superfund Site, Former NuHart Plastics Site, New York State Superfund Site (NuHart West) and Brownfield Cleanup Program Site (NuHart East), Brooklyn, New York. Principal for the preparation of the feasibility study, offsite investigation reports, RCRA (Resource Conservation and Recovery Act) Closure Work Plan, execution of the RCRA Closure, preparation of the Brownfield Cleanup Application (NuHart East), 100% Remedial Design, preparation of all BCP related work plans (NuHart East), coordination to vest the Site for 421-a and all community outreach programs for a former plasticizer facility with on- and off-site pollutant concerns. Responsible for all remedial cost and alternative analysis with the client to bring the Site to a certificate of completion. NuHart is a high-profile Site that requires coordination with the New York State Department of Environmental Conservation (NYSDEC), the New York City Office of Environmental Remediation (NYCOER), local regulatory agencies, community stakeholders and local elected officials. The NuHart East Site has completed the remediation and received the Certificate of Completion with the NYSDEC and the NuHart West Site is close to completion with an anticipated 2024 transition from a Class 2 to a Class 4 Inactive Hazardous waste Site.

Development's, 101 Fleet Place, Brooklyn, New York. Principal responsible for the due diligence during acquisition, preparation of the Brownfield Cleanup Program Application, Change of Use Documents, BCA Amendments, remedial investigation, and remedial action design (BCP and OER) for a former bus depot Site under the New York State Brownfield Cleanup program and NYCOER E-Designation Programs (Air/Noise). The Site has a footprint of 20,000 SF with a planned development of a 21-story mixed use building with approximately 292 units which include affordable housing.

Development's, Speedway Portfolio, Multiple Boroughs, New York. Principal responsible for the expedited due diligence during acquisition of 5 former Speedway Sites of Phase I ESA's and Limited Phase II ESI's, preparation of the Brownfield Cleanup Program Applications, Remedial Investigation Work Plans, Interim Remedial Measure Work Plans and Air/Noise Remedial Action Work Plans (NYCOER). Five of the Sites were accepted into the NYSDEC Brownfield Cleanup program. Remedial Investigations for compliance with the Brownfield Cleanup Program have been completed and the remedial design on the Sites include a variety of remedial approaches which include in situ chemical treatment for groundwater, soil vapor extraction, excavation and dewatering removal and treatment.

Development, 138 Bruckner Boulevard, Bronx, New York. Principal responsible for the due diligence during acquisition, preparation of the Brownfield Cleanup Program Application, Change of Use Documents, coordination to vest the Site for 421-a, BCA Amendments, remedial investigation, and remedial action design (BCP and OER) for the former Zaro's Bakery Site under the New York State Brownfield Cleanup program and NYCOER E-Designation Programs (Air/Noise). The Site has a footprint of 50,000 SF with a planned development of a 12-story mixed use building with approximately 447 units which include affordable housing.

Development, 310 Grand Concourse, Bronx, New York. Principal responsible for environmental and construction management services required to successfully navigate this two-building redevelopment project through the NYSDEC Brownfield Cleanup Program (BCP) and NYCOER E-Designation Program (Air/Noise). Project included site investigation, design, and remediation for development of two buildings within a 30,000 square-foot lot in the Bronx, New York. Remediation included excavation of approximately 20,000 cubic yards of soil, groundwater extraction and treatment, underground storage tank (UST) removal, design, and installation an ex-situ chemical in situ soil stabilization process for elevated levels of metals.

Development, 40 Bruckner Boulevard, Bronx, New York. Principal responsible for the due diligence during acquisition, preparation of the Brownfield Cleanup Program Application, Change of Use Documents, BCA Amendments, remedial investigation, and remedial action design (BCP and OER) for the former Mill Sanitary Wiping Cloth Site under the New York State Brownfield Cleanup program and NYCOER E-Designation Programs (Air/Noise). The Site has a footprint of 45,000 SF with a planned development of a 12-story mixed use building with approximately 480 units which include affordable housing.

Development, 297 Wallabout Street, Brooklyn New York. Principal responsible for the due diligence during acquisition, preparation of the Brownfield Cleanup Program Application, Change of Use Documents, BCA Amendments, remedial investigation, and remedial action design (BCP and OER) for the 297 Wallabout Street Site under the New York State Brownfield Cleanup program and NYCOER E-Designation Programs (Air). Successfully delineated the onsite tetrachloroethene (PCE) plume in soil and groundwater. The Site is currently in the remedial implementation phase.

Developments, 89-91 Gerry & 93 Gerry Street, Brooklyn New York. Principal responsible for the due diligence during acquisition, preparation of the Brownfield Cleanup Program Application, Change of Use Documents, BCA Amendments, remedial investigation, and remedial action design (BCP and OER) for two Sites (adjacent to each other) located at 89-91 Gerry Street and 93 Gerry Street under the New York State Brownfield Cleanup program and NYCOER E-Designation Programs (Air). The Sites are currently preparing to execute the remedial action.

Development, Former Techtronics Site (8 Walworth Street), Brooklyn, New York. Principal for the remedial investigation, remedial action design and remedial action implementation for the former Techtronics Site under the New York State Brownfield Cleanup program as a Participant where trichloroethene (TCE) and tetrachloroethene (PCE) were encountered in soil and groundwater. James successfully delineated the vertical and lateral extents of the plumes which were identified as an upgradient, on-site. For this Site we have designed source removal to 20'bgs, Zero Valent Iron (ZVI) Reactive Barrier Wall, in situ ZVI injections sitewide and a vertical vapor mitigation system. The Site is currently in the remedial implementation phase.

Development, 346 Grand Concourse, Bronx, New York. Principal for the proposed 9-story, 60 key commercial building with one-level deep cellar. Design phase environmental services consist of guiding the Site through the New York City Office of Environmental of Remediation Voluntary Cleanup and E-Designation Programs, including Hazmat, Air Quality and Noise requirements. This program included submission of a Remedial Investigation Work Plan, implementation of a Remedial Investigation, submittal of a Remedial Investigation Report, Remedial Action Work Plans (Hazmat Air and Noise) and the Final Installation Report for the Certificate of Occupancy.

Development, 3294 Atlantic Avenue, Brooklyn, New York. Principal for the proposed 12-story, 80 key commercial building with one-level deep cellar. Design phase environmental services consist of guiding the Site through the New York City Office of Environmental of Remediation Voluntary Cleanup and E-Designation Programs, including Hazmat, Air Quality and Noise requirements. This program included submission of a Remedial Investigation Work Plan, implementation of a Remedial Investigation, submittal of a Remedial Investigation Report, Remedial Action Work Plans (Hazmat Air and Noise) and the Final Installation Report for the Certificate of Occupancy.

590-594 Myrtle Avenue, Brooklyn, New York. Principal for the proposed 6-story, 12-unit residential building with one-level deep cellar. Design phase environmental services consist of guiding the Site through the New York City Office of Environmental of Remediation Voluntary Cleanup and E-Designation Programs, including Hazmat, Air Quality and Noise requirements. This program included submission of a Remedial Investigation Work Plan, implementation of a Remedial Investigation, submittal of a Remedial Investigation Report, Remedial Action Work Plans (Hazmat Air and Noise) and the Final Installation Report for the Certificate of Occupancy.

Development, 3530 Webster Avenue, Bronx, New York. Principal for the proposed 8-story, 75 key commercial building with one-level deep cellar. Design phase environmental services consist of guiding the Site through the New York City Office of Environmental of Remediation Voluntary Cleanup and E-Designation Programs, including Hazmat, Air Quality and Noise requirements. This program included submission of a Remedial Investigation Work Plan, implementation of a Remedial Investigation, submittal of a Remedial Investigation Report, Remedial Action Work Plans (Hazmat Air and Noise). The project is currently in the construction phase of the NYCOER program.

Development, Former BP Station, Elmhurst Queens, New York. Principal for the preparation of a full environmental impact statement with respect to a mixed-use development proposed in Elmhurst Queens for submission to the NYC Department of City Planning to rezone the project. The work included a full impact assessment of the proposed construction with respect to the neighborhood, evaluation of green/open spaces for the community and environmental site investigation and remediation services.

New York State Brownfield Site, Former Delta Metals Site, Brooklyn, New York. Senior Project manager for the remedial investigation and remedial action design for the former Delta Metal Products Company. Project is under the New York State Brownfield Cleanup program as a Participant where TCE and tetrachloroethene (PCE) were encountered in soil and groundwater. James successfully delineated the vertical and lateral extents of the plumes which were identified as an upgradient, on-site and downgradient plume. Investigation results triggered the NYSDEC to utilize its call-out contract to perform a plume track down for the immediate area and identify additional Potentially Responsible Parties. The design for an Air Sparge Soil Vapor Extraction system has been accepted and the project is currently under construction.

Manufacturing-Industrial, Hess Amerada, Bogota and Edgewater, New Jersey. Senior Project Manager and technical Lead for the construction management services for the demolition of two waterfront terminals on the Hackensack and Hudson rivers. Services included demolition design, submittal review, site execution and coordination of activities related to asbestos abatement, demolition of buildings, thirty holding tanks, piping structures, containment structures and storm water structures.

Manufacturing-Industrial, PQ Corporation, Northeastern United States. Senior Project Manager responsible for the design and implementation of a three phased program for handling polychlorinated biphenyl (PCB) containing materials on approximately 100 tank structures at large, active industrial sites, which included coating removal, encapsulation, demolition, and Toxic Substances Control Act (TSCA) remediation. He was responsible for development of the overall program, specifications, drawings, bid packages, construction oversight and project administration until closure. The program also included design and oversight of a new façade and roof upgrades completed concurrently to client operations.

Development, New York State Brownfield Site, Former Cascade Laundry, Brooklyn, New York. Senior Project Manager responsible for environmental and construction management services required to successfully navigate a seven-building redevelopment project through the NYSDEC Brownfield Cleanup Program (BCP) and NYCOER E-Designation Program (Air/Noise). Project included site investigation, design, and remediation for development of seven buildings within a 2-acre site in Brooklyn, New York. Remediation included excavation of approximately 40,000 cubic yards of soil, groundwater extraction and treatment, underground storage tank (UST) removal, design, and installation of a sub slab depressurization system (SSDS) and ex situ chemical oxidation of groundwater impacted by petroleum.

Development, New York City Brownfield Site - 520-534 West 29th Street, New York, New York. James was responsible for environmental site investigation and remediation activities required to successfully navigate the project through the NYCOER's E-Designation and Voluntary Cleanup Programs. This program included submission of a Remedial Investigation Work Plan, implementation of a Remedial Investigation, submittal of a Remedial Investigation Report, Remedial Action Work Plans (Hazmat Air and Noise). The project is currently in the construction phase of the NYCOER program.

Development, New York State Brownfield Site, BJ's Wholesale, Brooklyn, New York. Senior Project Manager for the remedial execution within the NYSDEC BCP and NYCOER E-Designation programs at an 8-acre peninsula in Gravesend Bay being redeveloped by BJ's Wholesale Club (BJ's) into a "big-box" warehouse and parking garage, and a publicly accessible, waterfront open space. He implemented a comprehensive community air monitoring plan (CAMP), managed the design and installation of a passive sub slab depressurization system, and oversaw handling and off-site disposal of impacted material generated by BJ's (the Lessee for the subject site) during their foundation construction activities.

Development, New York State Brownfield Site, Coney Island, Brooklyn, New York. Senior Project Manager responsible for the environmental design during the rehabilitation and expansion of a 1970s-era mixed-use complex, which covers an area equivalent to three city blocks. He facilitated the BCP applications for two adjacent parcels within the complex impacted by historic dry-cleaning uses. Site investigations performed had documented the presence of PCE in soil gas and was delineated over three separate structural slabs in commercial and residential space utilizing a mobile laboratory. He designed and installed two sub-slab depressurization systems and prepared Remedial Investigation Work Plan which outlined work required to delineate the vertical and horizontal extent of the impacted soils, soil vapor and groundwater at both BCP sites. The system was designed with below slab suction pits, remote sensing vacuum monitoring points, and a variable frequency drive blower tied into the monitoring points for optimization and power savings.

Development, New York City Brownfield Site, Hospitals, Memorial Sloan Kettering Cancer Center (MSKCC), New York, New York. Project Manager for environmental remediation for this MSKCC development project. James was solely responsible for subsurface investigation and remediation activities, large, manufactured gas plant (MGP) gas holder removal (from former Con Edison Operations), UST removal, daily status updates to the NYCOER, implementation of the CAMP and the management, handling, characterization, and off-site disposal of MGP impacted soil and dewatering fluids.

New York State Spill Remediation, Metropolitan Transportation Agency Bridges and Tunnels, New York, New York. Project Manager responsible for execution of a remedial action scope which included UST removal, excavation of 600 cubic yards of petroleum impacted soil, design and installation of a groundwater extraction and treatment system and post remediation samples. He implemented the In Situ Chemical Oxidation program for the injection of 54,000 gallons of 8 percent solution Fenton's Reagent and the O&M (Operation & Maintenance) of the petroleum spill with respect to Fenton's performance and the plume migration.

Various Public Schools, New York City School Construction Authority, New York, New York. Project Manager responsible for environmental remediation proposed several school developments sites, including PS 312, P.S. 281, and PS 27K. Assisted in the design and implementation of the remediation programs for the sites for petroleum spills, PCB TSCA contamination and hazardous lead hot spots.

Development, i.Park Edgewater, Edgewater, New Jersey. Project Manager responsible for the design and environmental remediation on-site. Implemented the construction plan for remediation of arsenic, pitch- and PCB-impacted soil for excavation and off-site disposal of 20,000 tons. He managed the air monitoring system on-site which consisted of four permanent stations set upwind and downwind on-site for volatile organic compounds (VOCs) and particulate migration off-site. Also, James performed redesigns throughout the project to keep within the current schedule and budget.

Development, New York State Brownfield, Queens West, Long Island City, New York. Project Manager responsible for oversight of the Environmental Remediation on-site. James implemented the construction plan for remediation of 20,000 cubic yards of LNAPL on the Site; he assisted in design and oversight of the In Situ Chemical Oxidation mixing on-site. The project was eventually developed into three large towers and a new school.

Manufactured Gas Plant, National Grid, Rockaway, New York. James aided in the design and implementation of the soil characterization plan for MGP impacted sands. After delineation of the contamination plume, drafted work plans and site layout of the negative pressure tent. He performed and trained the on-site staff on the use of personal air monitoring equipment and aided with design considerations on the installation of a waterloo barrier to be advanced to minus 80 feet below grade surface. James also helped with the design and permitting for the groundwater treatment system installed on-site.

Manufactured Gas Plant, Con Edison, New York, New York. Environmental engineer for responsible party for all environmental issues associated with this job, including transportation and disposal of 8,000 tons of MGP contaminated soil from former Con Edison operations. James scheduled weekly work for all civil and environmental tasks on the job. He was responsible for the design and installation of the dewatering treatment system with a daily discharge of 25,000 gallons per day of MGP -impacted water.

New York State Superfund Project, NYSDEC, Hicksville, New York. James performed O&M and reporting on the Site's Potassium Permanganate Injection system, which was on a timed system; maintained the system, troubleshooting problems and ensuring that the proper ratios were being injected. He performed the fieldwork for analysis and drafted interim reports for the project manager.

Retail Petroleum, New York State Spills Program, Hess Amerada, Various Locations, New York. Environmental Engineer responsible for the design and installation of groundwater and soil vapor remedial systems at over 30 retail petroleum stations for Hess. Responsible for ensuring that the remedial systems were operating properly and performing repairs as necessary during operation. He performed groundwater and soil vapor monitoring and drafted O&M reports for the NYSDEC. Plume size ranged from within the retail station property with monitoring off-site impacts in local neighborhoods greater than a 3-mile radius.

Retail Petroleum, New York State Spills Program, British Petroleum (BP), Various Locations, New York. Environmental Engineer responsible for the design and installation of groundwater and soil vapor remedial systems at over 10 retail petroleum stations for BP. He was responsible for ensuring that the remedial systems were operating properly and performing repairs necessary during operation. He performed groundwater and soil vapor monitoring and drafted O&M reports for the NYSDEC. Plume size ranged from within the retail station property with monitoring off-site impacts in local neighborhoods greater than a 2-mile radius.

Development, 524 West 19th Street, New York, NY (Metal Shutter Homes). Project Engineer responsible party for all environmental and civil issues associated with this job, including transportation and disposal of 5,000 tons of MGP contaminated soil from former Con Edison operations. James scheduled weekly work for all civil and environmental tasks on the job. He successfully redesigned the grout cutoff wall connections to the installed steel sheeting with a secant wall installed off-site. He provided technical guidance for drilling 4-foot diameter exploratory casings for subsurface anomalies. Additionally, James was responsible for the design and installation of the dewatering treatment system with a daily discharge of 25,000 gallons per day of MGP impacted water.

EPA Superfund Site, Newtown Creek Superfund, Brooklyn, New York. Environmental Engineer who aided in the design of the pump and treat system installed at Peerless Importers. He also aided in the design and installation of the harbor boom set up. Operated and Maintained groundwater/LNAPL extraction systems on-site and performed monthly site gauging as part of the O&M plan.

SUZANNE BELL, PE

Senior Project Manager

EDUCATION

B.S., Biosystems Engineering, University of Arizona

PROFESSIONAL REGISTRATIONS

AZ: Environmental Engineer (Reg. No. 61995)
NY: Professional Engineer (Reg No. 106301)

SPECIAL STUDIES AND COURSES

40-Hour OSHA Hazardous Waste and Operations Emergency Response Training (29 CFR 1910.120 and 40 CFR 265.16)
8-Hour HAZWOPER Refresher Course

Suzanne is a senior project manager with over 14 years of experience in the environmental consulting industry. She has worked on soil and groundwater environmental investigations, remediation projects, and prepared reports for private, industrial, and government clients. Her technical experience includes remediation systems; soil and groundwater feasibility studies; Phase I site investigations; environmental file review and historical research; stormwater assessments and SWPPP preparation; reclamation planning for the sand and gravel mining industry; air permitting; and data interpretation.

RELEVANT PROJECT EXPERIENCE

Waterfront Property Management, 89-91 Gerry Street and 93 Gerry Street, Brooklyn, New York. Suzanne served as project manager for execution of Remedial Action Work Plans at the former Just4Wheels Site and Just4Wheels Site 2 under the New York State Brownfield Cleanup Program (NYSBCP). Responsible for remedial oversight of excavation and removal of non-hazardous and hazardous soil, endpoint sample collection, air monitoring, dewatering system installation support, communication with soil brokerage firm and environmental laboratory, preparation of Daily Field Reports (DFRs and the Final Engineering Report (FER).

Multiple Clients, Remedial Investigation Work Plans and BCP Applications, New York City, New York. As project manager and engineer, Suzanne has prepared NYSBCP Applications and Remedial Investigation Work Plans for the New York State Department of Environmental Conservation (NYSDEC) for sites within the New York City boroughs.

Excavation Oversight and CAMP Monitoring, Various Sites, New York City, New York. Suzanne has served as project manager for projects under the New York City Office of Environmental Remediation (NYCOER) program and NYSBCP. Her responsibilities included managing excavation oversight, air monitoring, and logging trucks for off-site disposal.

Aerospace Manufacturing Facility, Feasibility Study and Remedial Action Plan, Chula Vista, CA. Suzanne co-authored feasibility studies for soil and ground water impacted by chlorinated solvents, metals, and PCBs. She screened ex-situ and in-situ remedial alternatives for effectiveness, implementability, and protectiveness of human health. She also assessed alternative cleanup levels for technical and economic feasibility of achieving background concentrations in accordance with State Water Resources Control Board Resolution 92-49. Additionally, she evaluated groundwater remedial alternatives, including bioremediation, monitored natural attenuation (MNA), pump and treat, chemical oxidation, chemical reduction, and engineered and institutional controls. Lastly, she prepared engineering cost estimates and conceptual designs. Assisted with the preparation of remedial action plans: a bioremediation remedy and MNA program for groundwater, and excavation of contaminated soil.

Aerospace Manufacturing Facility, Groundwater Remediation and Bioremediation Pilot Test, Riverside, CA. Suzanne assisted with data analysis and reporting for the bioremediation pilot test study for groundwater impacted by chlorinated solvents, hexavalent chromium, and 1,4-dioxane. She evaluated site data for trends indicative of MNA using statistical analysis.

Goodyear Tire & Rubber Company, Phoenix Goodyear Airport South Superfund Site, Goodyear, Arizona. Suzanne prepared reports and performed data analysis related to the groundwater monitoring program and operation and maintenance of groundwater treatment systems. Currently, two groundwater extraction and remediation systems are capable of treating more than 1MGD of groundwater contaminated with trichloroethylene. The upper groundwater zone is treated with an air stripper, while the lower zone is treated with granulated activated carbon. Treated groundwater is reinjected into their respective zones.

Soil and Groundwater Remediation Systems, Arizona. Suzanne **p**erformed operation, maintenance, and sampling activities for two soil vapor extraction systems to remove tetrachloroethylene from subsurface soils at two different dry-cleaning facilities. She prepared soil vapor extraction GAC system test reports in accordance with Maricopa County Air Quality Department Permits.

ASTM Phase I Environmental Site Assessments, Arizona. Suzanne assisted with ASTM Phase I ESAs at various industrial facilities in central and southern Arizona. She evaluated site conditions and regulatory implications as they related to the owner's or potential buyer's property development plans.

Phoenix-Goodyear Airport-North Superfund Site, Focused Feasibility Study, Goodyear, Arizona. Suzanne was a member of team that prepared a source area remediation focused feasibility study report. She evaluated several technologies and alternatives to treat groundwater contaminated with trichloroethylene (TCE) and perchlorate. She analyzed remedial alternatives, including in-well air stripping, a hydraulic barrier, nano- and macro-scale zero-valent iron, anaerobic reductive dechlorination, in-situ chemical oxidation (permanganate), and electrical resistive heating. She prepared cost estimates, conceptual designs, remediation technology summaries, and sustainability evaluation of the alternatives.

Enhanced In-Situ Bioremediation (EISB) and Chemical Reduction Using a Nanoscale, Zero-Valent Metallic Alloy to Treat Co-disposed Chloroethanes and Chloroethenes in Groundwater, Manufacturing Facility, Canton, MA. Suzanne performed data analysis and prepared status reports on effectiveness of EISB in treating chlorinated solvents in shallow groundwater. She reported on the performance monitoring results for the permeable reactive barrier in deep zone groundwater.

Hayden Facilities RI/FS, ASARCO LLC, Hayden, Arizona. Suzanne served as Quality Assurance Officer for the air monitoring program at a copper smelting facility. She developed site-specific data validation procedures according EPA guidelines for several analytical methods.

Market Evaluation for Nanoscale Zero-Valent Iron, Stamford, Connecticut. Suzanne used EPA CERCLIS Public Access Database and select State databases to estimate the market size for potential use of nanoscale zero-valent iron (nZVI) as a remediation technology. She compiled competing vendor information and quotes to estimate the average cost of similar products. She utilized the U.S. Patent and Trademark Office database to analyze competing technologies.

AZPDES and NPDES Permits, Arizona. Suzanne prepared Arizona Pollutant Discharge Elimination System (AZPDES) and National Pollutant Discharge Elimination System (NPDES) permit renewal applications for a copper mining facility in Southern Arizona, which included updates to the facility's Storm Water Pollution Prevention Plan (SWPPP) and QA Manual.

Spill Prevention, Control and Countermeasure Plans, Aggregate Mining Facilities, Arizona. Suzanne assisted with a Spill Prevention, Control and Countermeasure Plans (SPCC) for aggregate mining facilities in Arizona. She performed site visit, evaluated fuel and oil tanks and secondary containment areas, assisted with calculations to verify compliance, and prepared report.

Copper Mining Facility, Miami, Arizona. Suzanne assisted with Toxic Release Inventory (TRI) and Toxic Substances Control Act (TSCA) reporting, both submitted to the EPA.

Storm Water Pollution Prevention Plan, Franciscan Friars of California, Gila County, Arizona. Suzanne updated the SWPPP for construction activities related to the closure of a historic Gibson copper mine, authorized under the Arizona Pollutant Discharge Elimination System "General Permit for Discharge from Construction Activities to Waters of the United States." The Former Gibson Mine is a small, historic copper mine, located approximately 7 miles southwest of Miami, Arizona, in Gila County. Construction activities covered under the updated SWPPP consisted of the excavation, hauling, and removal of approximately 80,000 tons of soil cover from the Mineral Creek side of the site to mine-scarred areas on the Pinto Creek side of the site. Also included was final grading of the site, which consisted of re-contouring and re-defining any portion of the drainages that were on site; and revegetation.

Stormwater Pollution Prevention Plans, Vulcan Materials Company, Western Division, Arizona. Suzanne prepared SWPPP for 11 aggregate mining facilities in Arizona. Performed site visits, analyzed stormwater flows, prepared reports, and completed Notices of Intent for the Arizona Department of Environmental Quality under a Multi-Sector General Permit.

Uranium Enrichment Facility, Lea County, New Mexico. Suzanne prepared quarterly and annual groundwater monitoring reports, semi-annual radioactive effluent release reports, and radiological environmental monitoring program reports in accordance with New Mexico Environment Department regulations and the Nuclear Regulatory Commission. Performed quarterly data validation on a variety of matrices and analytical methods. She prepared site-specific environmental monitoring procedures, which included field sampling techniques; data collection, management and validation; and an air modeling software package.

Rocket Testing and Research Facility, Western U.S. Suzanne analyzed and evaluated groundwater quality data, prepared reports, and managed data for this Resource Conservation and Recovery Act (RCRA) site. Assisted with management of sampling, analysis, and reporting of constituents of concern for fractured sandstone bedrock aquifer impacted by chlorinated solvents and emergent chemicals 1,4-dioxane, perchlorate, and n-nitrosodimethylamine (NDMA). Performed data validation of water quality data according to U.S. EPA National Functional Guidelines. Queried data from client environmental data management system and prepared summary tables, concentration plots, and water level hydrographs using Microsoft Excel programs. She prepared a quarterly analytical schedule using an Access database application, updated the site-specific Health & Safety Plan, and participated in lean training, which reduced cost of groundwater monitoring tasks by 25 percent.

Federal Superfund Site, Eastern Massachusetts. Suzanne performed data validation and quality assurance/quality control of soil and groundwater data according to U.S. EPA National Functional Guidelines. She performed third-party database updates.

Great Western Bank, Cortaro Ranch Property, Marana, Arizona. For site characterization of undeveloped land, Suzanne performed surficial soil sampling, analytical laboratory coordination, data analysis, and report preparation.

Twin Buttes Properties, Inc., Southern Arizona. Suzanne assisted with report and analytical table preparation for the characterization and analysis of current and historical hydrologic conditions at an inactive mine site near Sahuarita, Arizona in support of regulatory compliance.

Skyworks Solutions, Inc. Site, Newbury Park, California. Suzanne assisted with report and analytical table preparation for a subsurface investigation characterizing the lateral and vertical extent of soil and groundwater impacts from known releases of TCE, 1,4-dioxane and other organic compounds.

PUBLICATIONS

“Mixed Redox Catalytic Destruction of Chlorinated Solvents in Soils and Groundwater,” with S. Gao, E. Rupp, M. Willinger, T. Foley, B. Barbaris, A.E., Saez, R.G. Arnold and E. Betterton. In Environmental Challenges In The Pacific Basin, 2008; Annals of the New York Academy of Sciences, Vol. 1140, pp 435-445. PMID: 18991945

INVITED LECTURER OR SPEAKER

“Catalytic Destruction of Perchloroethylene,” with E. Betterton, R. Arnold and Eduardo Saez, Presenter - NASA Space Grant Student Symposium, Phoenix, Arizona. April 2007.

HALEY ALDRICH

SARAH COMMISSO, GIT

Senior Geologist

EDUCATION

B.S., Geological Sciences with a minor in Chemistry, State University of New York-Binghamton

PROFESSIONAL REGISTRATIONS

2021/ NY: Geologist in Training (GIT) Certification

SPECIAL STUDIES AND COURSES

40-Hour OSHA Hazardous Waste Operations and Emergency Response Training (29 CFR 1910.120)
8-Hour OSHA HAZWOPER Refresher Training
10-Hour OSHA Construction Safety Training
8-Hour DOT Hazmat Employee & RCRA Hazardous Waste Generator Training

Sarah is a geologist with experience in soil, groundwater, and soil vapor investigation, and preparation of technical reports. She also has extensive experience with conducting Phase I Environmental Site Assessments (ESAs) and Phase II Environmental Site Investigations (ESIs), site characterization, and hazardous materials analysis. She has performed soil, groundwater, and soil vapor sampling events, geotechnical drilling projects, and has drafted site investigation plans and reports.

RELEVANT PROJECT EXPERIENCE

Environmental Experience

Madison Realty Capital, New York State Superfund Site, Former NuHart Plastics Site, New York State Superfund Site (NuHart West) and Brownfield Cleanup Program (BCP) Site (NuHart East), Brooklyn, New York. Sarah served as a staff geologist for the preparation of offsite investigation reports, RCRA (Resource Conservation and Recovery Act) Closure Work Plan, execution of the RCRA Closure, preparation of the BCP Application (NuHart East), 30% Remedial Design, preparation of all BCP related work plans (NuHart East), coordination to vest the Site for 421-a and all community outreach programs for a former plasticizer facility with on- and off-site pollutant concerns. She was responsible for assisting in the remedial cost and alternative analysis with the client to bring the site to a certificate of completion. NuHart is a high-profile site that requires coordination with the New York State Department of Environmental Conservation (NYSDEC), the New York City Office of Environmental Remediation (NYCOER), local regulatory agencies, community stakeholders and local elected officials.

The Jay Group, Speedway Portfolio, Multiple Boroughs, New York. As staff geologist, Sarah was responsible for the expedited due diligence during acquisition of five former Speedway Sites of Phase I ESAs and Limited Phase II ESIs, preparation of the BCP Applications, Remedial Investigation Work Plans, Interim Remedial Measure Work Plans and Air/Noise Remedial Action Work Plans (NYCOER). Four of the sites were accepted into the NYSDEC BCP with one currently pursuing the program pending the acquisition. Remedial Investigations for compliance with the BCP have been completed and the Remedial Investigation Reports are being drafted.

JCS Realty, 40 Bruckner Boulevard, Bronx, New York. As staff geologist, Sarah was responsible for the due diligence during acquisition, preparation of the BCP Application, Change of Use Documents, BCA Amendments, remedial investigation, and remedial action design (BCP and Office of Environmental Remediation [OER]) for the former Mill Sanitary Wiping Cloth Site under the New York State BCP (NYSBCP) and NYCOER E-Designation Programs (Air/Noise). The site has a footprint of 45,000 sf with a planned development of a 12-story mixed use building with approximately 480 units which include affordable housing.

Toldos Yehuda, Former Techtronics Site (8 Walworth Street), Brooklyn, New York. Sarah served as staff geologist for the remedial investigation, remedial action design and remedial action implementation for the former Techtronics Site under the NYSBCP as a participant where trichloroethene (TCE) and tetrachloroethene (PCE) were encountered in soil and groundwater. Successfully delineated the vertical and lateral extents of the plumes which were identified as an upgradient, on-site. For this site we have designed source removal to 20 ft below ground surface, zero valent Iron (ZVI) reactive barrier wall, in situ ZVI injections sitewide and a vertical vapor mitigation system. The site is currently in the remedial implementation phase.

Waterfront Management of NY, 590-594 Myrtle Avenue, Brooklyn, New York. As lead field geologist, Sarah was responsible for the oversight of the excavation and remediation of the property under the NYCOER. During remediation, Sarah observed and documented the excavation and proper disposal of on-site soil required for the installation of foundation elements. In addition, she oversaw the proper cleaning and removal of three underground storage tanks encountered during site wide excavation. After excavation was complete, she inspected the installation of a sub-slab vapor barrier and conducted the community air monitoring program during the course of remedial action.

Madison Realty Capital, 644 East 14th Street, New York, New York. Sarah is the lead drafter of the Remedial Investigation Work Plan and the Remedial Investigation Report for site, which is enrolled in the NYSDEC BCP. She coordinated field staff and subcontractors for the execution of the Remedial Investigation Work Plan which included installation of soil borings, groundwater monitoring wells, and soil vapor points, and sampling of each.

Madison Realty Capital, River North, Staten Island, New York. Sarah coordinates field staff and subcontractors for the execution of the Remedial Investigation at this approximately 2-acre site enrolled in the NYSDEC BCP. The Remedial Investigation involved the installation of approximately fifty soil borings, twenty soil vapor points, including soil borings extending to bedrock.

Oxford Property Group, Naval Yard Phase I Portfolio. Sarah conducted two of five Phase I ESAs for Oxford Property Group in the Philadelphia Naval Yard part of due diligence for potential acquisition of the properties. Each property was approximately 8 acres in size developed with active life sciences facilities. Sarah conducted site reconnaissance of the properties and reviewed historical site documentation to identify recognized environmental conditions at each site.

Target, Multiple Location in New York and New Jersey. Sarah conducted Phase I ESAs part of due diligence for potential acquisition of properties by Target in Jersey City, performed oversight of upgrades and construction at various Target stores in Brooklyn, Queens, Long Island, and Jersey City, including methane monitoring, air monitoring, collection of endpoint soil samples, and groundwater sampling. Sarah performed all oversight work in accordance with the Site-specific Soil Materials Management Plan.

BCP Applications and Remedial Investigation Work Plans for NYSDEC. Sarah has completed writing several BCP Applications for various clients in New York State. In writing the applications, Sarah reviews previous subsurface investigations of the site, and historical information to help get underutilized and abandoned contaminated properties into the BCP to be remediated and redeveloped under NYSDEC. After completing the application, she prepares a Remedial Investigation Work Plan to strategically investigate site contamination so proper Remedial Action can take place.

Excavation Oversight and CAMP Monitoring, Various Sites, Bronx and Brooklyn, New York. Sarah served as field geologist for several projects under the NYCOER program and NYSBCP. Her responsibilities included performing excavation oversight, air monitoring, vapor barrier installation oversight, and logging trucks for off-site disposal.

Multiple Clients, Phase I ESAs and Due Diligence, Multiple Locations in New York, New Jersey, Pennsylvania and Massachusetts. Sarah conducted Phase I ESAs, for buyers on a variety of properties including commercial, industrial, and residential sites in New York, New Jersey, Pennsylvania, and Massachusetts. She has experience conducting site reconnaissance and reviewing historical site documentation to identify recognized environmental conditions at the sites.

Multiple Clients, Phase II, Multiple Locations, New York. As field geologist, Sarah conducted Phase II ESAs on a variety of different sites. She assisted with the development of sampling plans primarily based off previous environmental investigations and due diligence. Primary responsibilities for Phase II investigations included oversight of the installation of test borings and/or test pits, the installation of groundwater monitoring wells, and soil vapor points.

Geotechnical Engineering Experience

Smithsonian Institution Revitalization of the Historic Core, Washington, D.C. Sarah supported a team providing geotechnical engineering services for the renovation of several Smithsonian Institution buildings adjacent to the National Mall. Sarah was responsible for the oversight of geotechnical borings using hollow stem augur and mud rotary techniques as well as rock coring operations. Sarah classified soil samples using the Unified Soil Classification System, analyzed bedrock samples, and analyzed the geology of the Washington D.C area.

Parcel B Development, Washington, D.C. Sarah was the lead field Geologist for the geotechnical investigation for the development of the Parcel B Site adjacent to the D.C. United Stadium in Washington D.C. Sarah was responsible for the oversight of geotechnical borings using hollow stem augur and mud rotary techniques. She observed and coordinated Pressure meter testing of several borings and observed the installation of several groundwater monitoring wells to investigate impacted groundwater on the property. Additionally, based on her soil classifications in the field, she drafted boring logs and analyzed subsurface conditions at the site.

BRIAN FITZPATRICK, CHMM

Corporate Director, Health and Safety

EDUCATION

M.P.A., Environmental Policy, Syracuse University
B.S., Environmental Science, University of Massachusetts-Amherst
A.S., Chemistry, Valley Forge Military Junior College
Commissioned Officer, United States Army

CERTIFICATIONS

Certified Hazardous Materials Manager (Reg. No. 13454)
Certified Department of Transportation Shipper
Certified International Air Transport Authority Shipper

PROFESSIONAL SOCIETIES

Alliance of Hazardous Materials Professionals
Academy of Certified Hazardous Materials Managers, New England Chapter

SPECIAL STUDIES AND COURSES

Department of Transportation
International Air Transport Authority
Incident Commander
Confined Space Entry and Rescue
Radiation Safety Officer
RCRA Hazardous Waste
Massachusetts Industrial Waste Water Operator Grade 2I (expired)

AWARDS

Presidents Club Award (one million hours worked without a recordable injury), Cabot Corporation
Chancellors Award for Excellence, Syracuse University

Brian ensures the work we do for our clients is done safely – knowing this reduces costs, improves service quality and site conditions, and ultimately protects our clients' reputations. In addition to building the Haley & Aldrich Health & Safety (H&S) culture, Brian is hands-on with clients to help improve their and their partners' safety cultures.

He has extensive expertise in the Occupational Safety and Health Administration (OSHA) general industry, process safety management, and construction safety programs. He is an active member of the Alliance of Hazardous Materials Professionals and the New England chapter of the Academy of Certified Hazardous Materials Managers.

Brian knows an organization's success is predicated on empowering its people to safely work within the complex, living processes in which they operate. He is a student of human factors in the workplace, of the phenomena of human error and drift into failure, and of the safety applications of Lean techniques.

RELEVANT PROJECT EXPERIENCE

Haley & Aldrich, Inc., Burlington, Massachusetts. As Chief Health and Safety Officer, Brian has led and facilitated the development and implementation of corporate health and safety (H&S) improvement plans to enhance compliance and improve H&S performance. In Brian's time with Haley & Aldrich, Inc., the company has realized dramatic improvement on H&S goals and in Key Performance Indicators. Brian is responsible for developing a risk competence culture, where our staff are empowered to look for and engage to address risk before anyone is injured. Brian oversees the development, implementation and continuous improvement of all H&S programs for the company. Additional responsibilities include:

- Developing a safety culture through incident reporting, root cause analysis, behavior-based safety, hazard recognition and risk assessment, communication, and developing leaders;

- Monitoring proposed and existing SH&E regulations and legislation to determine their impact on operations and to ensure continued compliance;
- Overseeing the safety, industrial hygiene, and toxicology programs for over 600 staff members engaged in remediation, construction, health and safety, consulting, and general office work across 28 offices in the United States and on assignment to international project sites;
- Continuously seeks to improve H&S performance as measured by the OSHA Incident Rating (IR) and Worker's Compensation Experience Modification Rating (EMR), as well as Leading Indicators developed with the management team; and
- Participating in the corporate audit program as an auditor or lead auditor;

Energy Client, California. As Chief Health and Safety Officer, Brian led and facilitated the Alliance Partnership Safety Council in 2017, is still an active contributor to the council, and hosts routine contractor safety forums for the client. Brian is actively involved in the development and implementation of program safety, health, and environmental (SH&E) plans to ensure safe operations on project sites. Brian developed permits and Health and Safety Plans for large projects and routinely audits the site safety. Additional responsibilities include:

- Driving reporting and behavior-based safety initiatives to support our internal safety culture and developing monthly summary reports to illustrate performance to our client.
- Develop, assess and continuously improve site safety plans and practices, including specific safety protocols for working safely over and around water.
- Worked as an extension of the client's organization to provide assurance that the remedy was completed safely and consistent with client-specific requirements.
- Support on-site safety personnel in ensuring the health and safety of the general public, our staff, and our sub-contracted employees.
- Audits and visits sites to ensure compliance with our internal policies and client-specific requirements.

Energy Client, Ohio. As Chief Health and Safety Officer, Brian supports the project team in developing and executing client and project specific health and safety measures, such as a site specific Health and Safety Plan, Job Hazard Analyses, Industrial Hygiene program, and site specific training. Brian also routinely visits the site to assess current practices and condition and to ensure continuous improvement. Additional responsibilities include:

- Develop, assess, and continuously improve site safety plans and practices, including specific safety protocols to comply with supplemental EH&S requirements such as the Duke Health and Safety Handbook, Environmental Supplemental, and EHS Keys to Life.
- Develop, assess, and continuously improve site safety plans and practices to address the risks associated with the work being performed on site, as well as the environmental conditions and simultaneous operations, including trenching and excavation, hot work, work over and near water, heavy equipment, HAZWOPER, etc.
- Worked as an extension of the client's organization to provide assurance that the remedy was completed safely and consistent with client-specific requirements.
- Support on-site safety personnel in ensuring the health and safety of the general public, our staff, and our sub-contracted employees.
- Audits and visits site to ensure compliance with our internal policies and client-specific requirements.

BRIAN A. FERGUSON

Senior Engineer

EDUCATION

M. S. Geotechnical Engineering, Tufts University, Medford, Massachusetts; 2012
B. S. Civil Engineering, State University of New York - Environmental, Science, and Forestry, Syracuse, New York; 2000
Ass. Science Degree in Applied Science and Technology (Nuclear Engineering), Thomas A. Edison State College, Trenton, New Jersey; 2000

PROFESSIONAL SOCIETIES

Order of the Engineer – 2000
Boston Society of Civil Engineers (BSCE)
American Society of Civil Engineers (ASCE)

SPECIAL STUDIES AND COURSES

American Concrete Institute – Certified Field Technician Certified Grade 1
Radiation Safety and Operations of Nuclear Testing Equipment – Troxler
40-Hour OSHA Hazardous Waste Operations Training (+ 8-Hour annual refresher)
10-Hour OSHA Construction training
Confined Space Entry Training
16-Hour Asbestos Operations and Maintenance

Mr. Ferguson has over six years of experience serving as project engineer on a variety of real estate development projects. His project experience has included monitoring field investigations and performing construction oversight, performing due diligence and engineering analyses, performing geotechnical analyses and developing geotechnical recommendations, and preparing geotechnical reports and project specifications.

In addition to providing engineering design support, Mr. Ferguson has managed and participated in a number of field service activities. Field work has included construction monitoring and documentation of contractors' deep and shallow foundation related construction, including slurry walls, caissons, pile driving, pile cap installation, earthwork, backfilling and compaction, installation of soldier pile and wood lagging support systems, installation of tie backs, reading inclinometers, conducting in-place field unit weight tests, tie-back load testing, seismograph installation, monitoring, and evaluating, and preparation of footing bearing surfaces. Other responsibilities have included site development activities, including placement of utilities and subgrade preparation for roads; observations and testing to determine that work is completed in compliance with contract documents; on-site soil management; sampling of soil and groundwater for chemical laboratory testing and conducting in situ field screening; maintenance of job records including pile driving logs, results of field density tests, records of caisson and footing installations; preparation of daily field reports; in contact with key personnel; and resolution of field related problems.

RELEVANT PROJECT EXPERIENCE

St. Elizabeths Hostpital – West Campus Forensic Evaluations, Washington, D.C. Project Engineer for forensic evaluations on the adaptive reuse of former hospital buildings. Responsibilities included coordination of a field exploration program, including test borings and test pits to obtain subsurface information for project design and construction, overseeing multiple field personnel, subcontractors, assisting with project management, reviewing subcontractors invoices, reviewing and summarizing subsurface data and writing data reports.

TUFTS University, New Central Energy Plant, Medford, MA. Project engineer for a new Central Energy Plant that will house new co-generation steam boilers, centralized chilled water and electrical transformer switchgear that is planned to occupy approximately 20,000 square feet across two or three levels. Responsibilities included coordination of construction monitoring, observing SOE and footing installation, assisting with project management, reviewing weekly field construction reports, reviewing and responding to geotechnical design submittals and attending project meetings.

Lahey Hospital and Medical Center – Stilts Infill Project, Burlington, MA Project Engineer for an addition to the existing Stilts building on the Lahey campus. Responsibilities included coordination and overseeing geotechnical and environmental subsurface investigations, coordination of construction monitoring, observing footing installation, assisting with project management, reviewing weekly field construction reports, reviewing and responding to geotechnical design submittals and attending project meetings.

Gloucester Beauport Hotel, Gloucester, MA Project engineer for a four story hotel with a seawall constructed adjacent to tidal beach. Responsibilities included coordination and overseeing geotechnical and environmental subsurface investigations, coordination of construction monitoring, assisting with project management, reviewing weekly field construction reports, reviewing and responding to geotechnical design submittals and attending project meetings, design and implementation of a sub-slab gas mitigation system.

275 Wyman Street, New Office Building, Waltham, MA. Project engineer for a new office building and parking garage founded on a shallow foundation system. Responsibilities included preparing proposals, assisting with management and planning of a subsurface investigation program, summarizing subsurface data and reviewing geotechnical test boring logs, coordination of construction monitoring and instrumentation monitoring programs, reviewing weekly field construction reports, reviewing and responding to specialty geotechnical design submittals and RFIs by others and attending project meetings.

Suffolk University - 20 Somerset Street, Boston, MA Project engineer for design of 8-story academic building with two levels of below grade finished space. Responsibilities included coordination of construction monitoring, observing SOE and footing installation, assisting with project management, reviewing weekly field construction reports, reviewing and responding to geotechnical design submittals and attending project meetings.

Worcester State University, New Student Housing, Worcester, MA Project engineer for design and construction of a 7-story residence/dining hall with a single level basement and a major site retaining wall structure. Responsibilities included overseeing geotechnical subsurface investigations, provided foundation recommendations and specifications, and prepared a retaining wall contract document. Responsibilities included coordination of construction monitoring, excavation and construction of footings, and soil reuse and management, assisting with project management, reviewing weekly field construction reports, reviewing and responding to geotechnical design submittals and attending project meetings.

University of Massachusetts Boston, General Academic Building No.1, Boston, MA. Project engineer responsible for assisting project manager in preliminary foundation engineering recommendations and construction considerations for a new academic building on a part of Columbia Point, a historic landfill area. Assisted in design phase services that included preparing foundation support design recommendations including the use of high allowable stresses for 190-ft long end-bearing H-piles and application of Slickcoat coating to address downdrag concerns and reduce foundation costs.

Waltham Watch Factory, Waltham, MA project engineer for redevelopment of former watch factory. Responsibilities included construction oversight of new precast parking garage, utilitiy upgrades, soil remediation and management, installation of gas mitigation systems, assisting with project management, reviewing weekly field construction reports, reviewing and responding to geotechnical design submittals and attending project meetings.

Massachusetts Green High Performance Computing Center, Holyoke, MA. Project engineer for 60,000 sq. ft high level computing center and associated support utilities. Redevelopment of the site included recycling 50,000 cy of construction debris into the site fills at this historic site along the Connecticut River. Responsibilities included coordinating geotechnical and environmental field investigations, coordination of construction monitoring, seismic analysis, reviewing weekly field construction reports, reviewing and responding to geotechnical design submittals and attending project meetings.

The Shops at Riverwood, Hyde Park, MA. The project consisted of the redevelopment of a colonial era paper mill. The multi-building complex was demolished and the concrete and brick from the previous buildings were recycled. The project involved crushing 50,000 cy of brick and concrete and placement of excavated soils and recycled brick and concrete as compacted fill materials to support proposed buildings, pavement areas, and achieve 5 to 9 ft. raises in grade. Field Representative was responsible for management and reuse of brick and concrete stockpiles, in-place density testing, coordination of test pits, installation of soldier pile and versa-lok walls, and backfilling of underground vaults. Remedial activities included: excavation of 5,000 cy of petroleum contaminated soils, on-site cement batching in a pug mill, and placement of compacted recycled materials in roadway areas; delineation, excavation and off-site disposal of TSCA-regulated PCB contaminated soils associated with historical Askarel transformers and dioxin-contaminated soils associated with historical bleaching operations; and disposition of 1,000 tons of paper mill sludge encountered within an abandoned granite-walled sluiceway structure. In addition, assisted with weekly project meetings, maintaining a record of material reuse, and providing weekly field reports.

Harvard Law School, Cambridge, MA. The Harvard Law School project is located on Massachusetts Avenue in Cambridge. The project consisted of a multistory building above ground with 5 levels below ground for a parking garage. Field Representative was responsible for overseeing the installation of slurry walls into bedrock and LBEs with three installation rigs while monitoring the removal of urban fill and transfer to several different receiving facilities from another portion of the site. The slurry walls were constructed into bedrock. Other Field Representative activities were: testing of the slurry, management of the excavated soils, and record keeping of the Contractor’s obstruction and down time of the equipment. In addition, assisted with weekly project meetings, maintaining a record of obstruction and machine time, and providing weekly field reports.

APPENDIX I
Quality Assurance Project Plan

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REPORT ON

QUALITY ASSURANCE PROJECT PLAN
180 EAST 125TH STREET DEVELOPMENT SITE
180 EAST 125TH STREET
NEW YORK, NEW YORK

by
H & A of New York Engineering and Geology, LLP
New York, New York

for
180 E125 Propco LLC
Brooklyn, New York

File No. 0209815
April 2025

Executive Summary

This Quality Assurance Project Plan outlines the scope of the quality assurance and quality control activities associated with the site monitoring activities of the Remedial Action Work Plan for the 180 East 125th Street Development Site in New York, New York (Site).

Protocols for sample collection, sample handling and storage, chain of custody (COC) procedures, and laboratory and field analyses are described herein or specifically referenced to related project documents.

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A	Project Team Resumes

1. Project Description

This Quality Assurance Project Plan (QAPP) presents the organization, objectives, planned activities, and specific quality assurance/quality control (QA/QC) procedures associated with the Remedial Action (RA) at the 180 East 125th Street Development Site, New York, New York (Site). Protocols for sample collection, sample handling and storage, chain of custody (COC) procedures, and laboratory and field analyses are specifically described or referenced to related investigation documents.

This QAPP addresses the QA/QC elements in the U.S. Environmental Protection Agency (EPA) QAPP policy and other relevant guidance documents.

1.1 INTRODUCTION

The Site is approximately 0.98 acres (42,540 square feet [sq ft]), addressed 180 East 125th Street, and identified as Block 1773, Lot 27 on the New York City tax map. The Site is currently vacant and undeveloped.

This QAPP has been prepared on behalf of 180 E125 Propco LLC. The QAPP is a component of the Remedial Action Work Plan (RAWP) that also includes field sampling procedures.

1.1.1 Project Objectives

The primary objective for data collection activities include:

- Document that a Track 1 cleanup was achieved in accordance with the RAWP.

Associated specific objectives for field and laboratory data collection are discussed in Section 1.4 of this plan.

1.2 SITE DESCRIPTION AND SITE HISTORY

The general Site description and Site history are provided in the RAWP and incorporated herein by reference.

1.3 PROJECT OBJECTIVES AND INTENDED DATA USE

1.3.1 Target Parameter List

The remedial program includes the sampling and analysis of environmental media for the presence of volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), polychlorinated biphenyls (PCBs), metals, pesticides, and/or per- and polyfluoroalkyl substances (PFAS) constituents.

1.3.1.1 Laboratory Parameters

The laboratory parameters for soil include:

- Target Compound List (TCL) VOCs using EPA Method 8260;
- TCL SVOCs using EPA Method 8270;

- Total Analyte List (TAL) Metals using EPA Methods 6010/7471;
- TCL Pesticides using EPA Method 8081;
- PCBs using EPA Method 8082;
- PFAS using EPA Method 1633; and
- 1,4-dioxane using EPA Method 8270.

1.4 SAMPLING LOCATIONS

The RAWP provides confirmation sample locations. It is possible, however, that depending on the nature of encountered field conditions, sampling locations may change, or additional sampling locations may be added. The person responsible for making such decisions will be the QA Officer whose responsibilities are described in Section 2 of this QAPP. Any change in the sampling strategy will only be implemented after approval from the Project Manager.

2. Project Organization and Responsibilities

This section defines the roles and responsibilities of the individuals who will perform the RAWP monitoring activities. A New York State Department of Health (NYSDOH)-certified analytical laboratory will perform the analyses of environmental samples collected at the Site.

2.1 PROJECT TEAM

The following project personnel are anticipated for oversight of the RAWP implementation. Project team resumes are included in Attachment A.

NYSDEC Case Manager	Abdulla Elbuytari
NYSDOH Case Manager	Harolyn Hood
Qualified Environmental Professional (QEP)	James M. Bellew
Project Manager	Sarah A. Commisso, G.I.T.
Haley & Aldrich of New York* Health and Safety Director	Brian Fitzpatrick, CHMM
Health and Safety Officer (HSO)	Brian Ferguson
QA Officer	Joe Mastro
Third-Party Validator	Katherine Miller

**H & A of New York Engineering and Geology, LLP (Haley & Aldrich of New York)*

2.2 MANAGEMENT RESPONSIBILITIES

The Project Manager is responsible for managing the implementation of the RAWP and monitoring and coordinating the collection of data. The Project Manager is responsible for technical QC and project oversight. The Project Manager's responsibilities include the following:

- Acquire and apply technical and corporate resources as needed to ensure performance within budget and schedule restraints;
- Review work performed to ensure quality, responsiveness, and timeliness;
- Communicate with the client point of contact concerning the progress of the monitoring activities;
- Assure corrective actions are taken for deficiencies cited during audits of RAWP monitoring activities; and
- Assure compliance with the Site Construction Health and Safety Plan (CHASP).

2.3 QA RESPONSIBILITIES

The QA team will consist of a QA Officer and the Data Validation Staff. QA responsibilities are described as follows:

2.3.1 QA Officer

The QA Officer reports directly to the Project Manager and will be responsible for overseeing the review of field and laboratory data. Additional responsibilities include the following:

- Assure the application and effectiveness of the QAPP by the analytical laboratory and the project staff;
- Provide input to the Project Manager as to corrective actions that may be required as a result of the above-mentioned evaluations; and

The QA Officer will be assisted by the Data Validation Staff in the evaluation and validation of field and laboratory-generated data.

2.3.2 Data Validation Staff

The Data Validation Staff will be independent of the laboratory and familiar with the analytical procedures performed. The validation will include a review of each validation criterion as prescribed by the guidelines presented in Section 9.2 of this document and be presented in a Data Usability Summary Report (DUSR) for submittal to the QA Officer.

2.4 LABORATORY RESPONSIBILITIES

The Environmental Laboratory Accreditation Program (ELAP)-approved laboratory to be used will be Alpha Analytical Inc. (Alpha), located in Westborough, Massachusetts. Laboratory services in support of the RAWP monitoring include the following personnel:

2.4.1 Laboratory Project Manager

The Laboratory Project Manager will report directly to the QA Officer and Project Manager and will be responsible for ensuring all resources of the laboratory are available on an as-required basis. The Laboratory Project Manager will also be responsible for the approval of the final analytical reports and adhering to the QAPP.

2.4.2 Laboratory QA Officer

The Laboratory QA Officer will have sole responsibility for the review and validation of the analytical laboratory data generated as part of the investigation. The Laboratory QA Officer will also define appropriate QA procedures, overview QA/QC documentation, and perform audits.

2.4.3 Laboratory Sample Custodian

The Laboratory Sample Custodian will report to the Laboratory Operations Manager and will be responsible for the following:

- Receive and inspect the incoming sample containers;
- Record the condition of the incoming sample containers;
- Sign appropriate documents;
- Verify COC and its correctness;
- Notify the Project Manager and Operations Manager of sample receipt and inspection;
- Assign a unique identification number and enter each into the sample receiving log;

- Initiate transfer of samples to laboratory analytical sections; and
- Control and monitor access/storage of samples and extracts.

2.4.4 Laboratory Technical Personnel

The Laboratory Technical Personnel will have the primary responsibility for the performance of sample analysis and the execution of the QA procedures developed to determine the data quality. These activities will include the proper preparation and analysis of the project samples in accordance with the laboratory's Quality Assurance Manual (QAM) and associated Standard Operating Procedures (SOPs).

2.5 FIELD RESPONSIBILITIES

2.5.1 Field Coordinator

The Field Coordinator is responsible for the overall operation of the field team and reports directly to the Project Manager. The Field Coordinator works with the project HSO to conduct operations in compliance with the project Health and Safety Plan (HASP). The Field Coordinator will facilitate communication and coordinate efforts between the Project Manager and the field team members.

Other responsibilities include the following:

- Develop and implement field-related work plans, ensuring schedule compliance, and adhering to management-developed project requirements;
- Coordinate and manage field staff;
- Perform field system audits;
- Oversee QC for technical data provided by the field staff;
- Prepare and approve text and graphics required for field team efforts;
- Coordinate and oversee technical efforts of subcontractors assisting the field team;
- Identify problems in the field, resolve difficulties in consultation with the Project QA Officer and Project Manager, and implement and document corrective action procedures; and
- Participate in preparation of the final reports.

2.5.2 Field Team Personnel

Field Team Personnel will be responsible for the following:

- Perform field activities as detailed in the RAWP and in compliance with the Field Sampling Plan (FSP; Appendix A of the Remedial Investigation Work Plan [RIWP]) and QAPP.
- Immediately report any accidents and/or unsafe conditions to the Site HSO and take reasonable precautions to prevent injury.

3. Sampling Procedures

The FSP in Appendix A of the RIWP provides the SOPs for sampling required by the RAWP. Sampling will be conducted in general accordance with the NYSDEC Technical Guidance for Site Investigation and Remediation (Division of Environmental Remediation [DER]-10) and the "Sampling, Analysis and Assessment of PFAS under NYSDEC Part 375 Remedial Program" (April 2023) when applicable. Proposed sample locations are shown on Figure 3 of the RAWP.

3.1 SAMPLE CONTAINERS

Sample containers for each sampling task will be provided by the laboratory performing the analysis. The containers will be cleaned by the manufacturer to meet or exceed the analyte specifications established in the EPA's "Specifications and Guidance for Obtaining Contaminant-Free Sample Containers," April 1992, OSWER Directive #9240.0-0.5A.

Certificates of analysis for each lot of sample containers used during the sampling program will be maintained by the laboratory and will be available upon request. The appropriate sample containers, preservation method, maximum holding times, and shipping information for each target parameter and sampling task are provided in Table I.

3.2 SAMPLE LABELING

Each sample will be labeled with a unique sample identifier that will facilitate tracking and cross-referencing of sample information. Field blanks and field duplicate samples also will be numbered with a unique sample identifier to prevent analytical bias of field QC samples.

Refer to the FSP (Appendix A of the RIWP) for the sample labeling procedures.

3.3 FIELD QC SAMPLE COLLECTION

3.3.1 Field Duplicate Sample Collection

3.3.1.1 Soil Samples

Soil field duplicates will be collected as specified in the following procedure:

- Soil for VOC analysis will be removed from the sampling device as specified in the FSP provided as Appendix A of the RIWP.
- Soil for non-VOC analysis will be removed from the sampling device and collected into clean laboratory-provided containers.

3.4 GENERAL DECONTAMINATION PROCEDURES

Care must be taken to minimize the potential for transfer of contaminated materials to the ground or onto other materials. Regardless of the size or nature of the equipment being decontaminated, the process will utilize a series of steps that involve removal of gross material (dirt, grease, oil, etc.), washing with a detergent, and multiple rinsing steps. In lieu of a series of washes and rinse steps, steam cleaning with low-volume, high-pressure equipment (i.e., steam cleaner) is acceptable.

Exploration equipment and all monitoring equipment in contact with the sampling media must be decontaminated prior to initiating Site activities, in between exploration locations to minimize cross-contamination, and prior to mobilizing off Site after completion of Site work.

The following specific decontamination procedure is recommended for sampling equipment and tools:

- Brush loose soil off equipment;
- Wash equipment with laboratory-grade detergent (i.e., Alconox or equivalent);
- Rinse with tap water;
- Rinse equipment with distilled water;
- Allow water to evaporate before reusing equipment; and
- Wrap equipment in aluminum foil when not being used.

4. Custody Procedures

Custody is one of several factors necessary for the admissibility of environmental data as evidence in a court of law. Custody procedures help to satisfy the two major requirements for admissibility: relevance and authenticity. Sample custody is addressed in three parts: field sample collection, laboratory analysis, and final project files. Final evidence files, including all originals of laboratory reports, are maintained under document control in a secure area.

Custody of a sample begins when it is collected by or transferred to an individual and ends when that individual relinquishes or disposes of the sample. A sample is under custody if:

- The item is in actual possession of a person;
- The item is in the view of the person after being in actual possession of the person;
- The item was in actual possession and subsequently stored to prevent tampering; or
- The item is in a designated and identified secure area.

4.1 FIELD CUSTODY PROCEDURES

Field personnel will be required to keep written records of field activities on applicable pre-printed field forms, in a bound field notebook, or in an electronic format. The records provide the means of recording data collecting activities. Non-electronic records will be written legibly in ink and will contain pertinent field data and observations. Written entry errors or changes will be crossed out with a single line, dated, and initialed by the person making the correction. The records will be periodically reviewed by the Field Coordinator.

Each title page will include the field member's name, project name, project start date, project end date, and unique page number.

The beginning of each entry in the record will contain the following information:

- Date;
- Start time;
- Weather;
- Names of field personnel (including subcontractors);
- Level of personal protection used at the Site; and
- Names of all visitors and the purpose of their visit.

For each measurement and sample collected, the following information will be recorded:

- Detailed description of sample location;
- Equipment used to collect sample or make measurement, and the date equipment was calibrated;
- Time sample was collected;

- Description of the sample conditions;
- Depth sample was collected (if applicable);
- Volume and number of containers filled with the sample; and
- Sampler's identification.

4.1.1 Field Procedures

The data quality can be affected by sample collection activities. If the integrity of collected samples is questionable, the data, regardless of its analytical quality, will also be questionable. The following procedure describes the process to maintain the integrity of the samples:

- Upon collection, samples are placed in the proper containers. In general, samples collected for organic analysis will be placed in pre-cleaned glass containers and samples collected for inorganic analysis will be placed in pre-cleaned plastic (polyethylene) bottles. Refer to the FSP in Appendix A of the RIWP for sample packaging procedures.
- Samples will be assigned a unique sample number and will be affixed to a sample label affixed to the sample container. Refer to the FSP in Appendix A of the RIWP for sample labeling procedures.
- Samples will be properly and appropriately preserved by field personnel in order to minimize loss of the constituent(s) of interest due to physical, chemical, or biological mechanisms.
- Appropriate volumes will be collected to ensure that the appropriate reporting limits can be successfully achieved and that the required QC sample analyses can be performed.

4.1.2 Transfer of Custody and Shipment Procedures

- A COC record will be completed at the time of sample collection and will accompany each shipment identifying the contents of the shipment. The COC record will accompany the samples to the laboratory. The field personnel collecting the samples will be responsible for the custody of the samples until the samples are relinquished to the laboratory. Sample transfer will require the individuals relinquishing and receiving the samples to sign, date, and note the time of sample transfer on the COC record.
- Samples will be shipped or delivered in a timely fashion to the laboratory so that holding times and/or analysis times as prescribed by the methodology can be met.
- Soil and groundwater samples will also be transported in containers (coolers) packed with ice. Samples will be packaged for shipment and shipped to the appropriate laboratory for analysis. The samples will be packed to prevent breakage and movement during shipping. The number of coolers must be written on the COC. Samples in polyethylene containers will be placed upright directly in the sample cooler and limited to one layer of samples per cooler. Additional bubble wrap or packaging material will be added to fill the cooler. Shipping containers may be secured with strapping tape and/or custody tape for shipment to the laboratory.
- When samples are split with a regulatory agency and Site representatives, a separate COC will be prepared and marked to indicate with whom the samples are shared. The person relinquishing the samples to the regulatory agency or the Site will require the representative's signature acknowledging sample receipt.

- If samples are sent by a commercial carrier, a bill of lading will be used. A copy of the bill of lading will be retained as part of the permanent record. Commercial carriers will not sign the custody record as long as the custody record is sealed inside the sample cooler and the custody tape remains intact.
- Samples will be picked up by a laboratory courier or transported to the laboratory the same day they are collected (and never longer than a one-day delay) unless collected on a weekend or holiday. In these cases, the samples will be stored in a secure location until delivery to the laboratory. Additional ice will be added to the cooler as needed to maintain proper preservation temperatures.

4.2 LABORATORY COC PROCEDURES

A full-time Sample Custodian will be assigned the responsibility of sample control. It will be the responsibility of the Sample Custodian to receive all incoming samples. Once received, the custodian will document that the custody tape on the coolers is unbroken, that each sample is received in good condition (i.e., unbroken, cooled, etc.), that the associated paperwork, such as COC forms, has been completed, and will sign the COC forms. In special cases, the custodian will document from appropriate sub-samples that the COC with proper preservation has been accomplished. The custodian will also document that sufficient sample volume has been received to complete the analytical program. The Sample Custodian will then place the samples into secure, limited-access storage (refrigerated storage, if required). The Sample Custodian will assign a unique number to each incoming sample for use in the laboratory. The unique number will then be entered into the sample-receiving log with the verified time and date of receipt also noted.

Consistent with the analyses requested on the COC form, analyses by the laboratory's analysts will begin in accordance with the appropriate methodologies. Samples will be removed from secure storage with internal COC sign-out procedures followed.

4.3 STORAGE OF SAMPLES

Sample containers with volume remaining will be returned to secure and limited-access storage. Upon completion of all laboratory analyses for each sample submittal and generation of the laboratory report, samples will be stored by the Sample Custodian. The length of time that samples are held will be at least 30 days after reports have been submitted. Disposal of remaining samples will be completed in compliance with all federal, state, and local requirements.

4.4 FINAL PROJECT FILES CUSTODY PROCEDURES

The final project files will be the central repository for all documents with information relevant to sampling and analysis activities as described in this QAPP. The Haley & Aldrich of New York Project Manager will be the custodian of the project file. The project files including all relevant records, reports, logs, field notebooks, pictures, subcontractor reports, and data reviews will be maintained in a secured, limited-access area and under the custody of the Project Director or their designee.

The final project file will include the following:

- Project plans and drawings;

- Field data records;
- Sample identification documents and soil boring/monitoring well logs;
- All COC documentation;
- Correspondence;
- References, literature;
- Laboratory data deliverables;
- Data validation and assessment reports;
- Progress reports, QA reports; and
- A final report.

The laboratory will be responsible for maintaining analytical logbooks, laboratory data, and sample COC documents, both hard copy and electronic. Raw laboratory data files and copies of hard copy reports will be inventoried and maintained by the laboratory for a period of six years at which time the laboratory will contact the QA Officer regarding the disposition of the project-related files.

5. Calibration Procedures and Frequency

This section describes procedures for maintaining the accuracy of all the instruments and measurement equipment, which will be used for conducting field tests and laboratory analyses. These instruments and equipment will be calibrated prior to each use or according to a periodic schedule.

5.1 FIELD INSTRUMENT CALIBRATION PROCEDURES

Field instruments will be used for real-time sample measurement during the sampling of all media and for health and safety monitoring, as described in the CHASP. On-Site air monitoring for health and safety purposes may be accomplished using a vapor detection device, such as a photoionization detector (PID).

Field instruments will be calibrated prior to use and the calibration will be verified, after a minimum, at the beginning of the day and/or the middle of the day.

Satisfactory completion of the pre-operation inspection will be noted on the Field Sampling Record, along with results of each field measurement.

5.2 LABORATORY INSTRUMENT CALIBRATION PROCEDURES

Calibration procedures for a specific laboratory instrument will consist of initial calibration, initial calibration verification, and continuing calibration verification. The Laboratory SOPs present the specific calibration procedures for each method of analysis. The SOP for each analysis performed in the laboratory describes calibration procedures, their frequency, acceptance criteria, and the conditions that will require calibration. In all cases, the initial calibration will be verified using an independently prepared calibration verification solution.

The use of materials of known purity and quality will be utilized for the analysis of environmental samples. The laboratory will carefully monitor the preparation and use of reference materials including solutions, standards, and reagents through well-documented procedures.

All solid chemicals and acids/bases used by the laboratory will be rated as “reagent grade” or better. All gases will be “high” purity or better. All Standard Reference Materials (SRMs) or Performance Evaluation (PE) materials will be obtained from approved vendors of the National Institute of Standards and Technology (NIST, formerly National Bureau of Standards), the EPA Environmental Monitoring Support Laboratories (EMSL), or reliable Cooperative Research and Development Agreement (CRADA)-certified commercial sources.

All materials including standards or standard solutions will be dated upon receipt, and will be identified by material name, lot number, purity or concentration, supplier, receipt/preparation date, recipient/preparer’s name, expiration date, and all other pertinent information.

6. Analytical Procedures

Analytical procedures to be utilized for the analysis of environmental samples will be based on referenced EPA analytical protocols and/or project-specific SOPs.

6.1 FIELD ANALYTICAL PROCEDURES

Field analytical procedures include the measurement of pH, temperature, oxidation reduction potential (ORP), dissolved oxygen (DO), and specific conductivity during sampling of groundwater, and the qualitative measurement of VOCs during the collection of soil samples.

6.2 LABORATORY ANALYTICAL PROCEDURES

Laboratory analyses will be based on the EPA methodology requirements promulgated in:

- "Test Methods for Evaluating Solid Waste," SW-846 EPA, Office of Solid Waste, and promulgated updates, 1986.

6.2.1 List of Project Target Compounds and Laboratory Detection Limits

The method detection limits (MDLs) studies are performed by the laboratories in accordance with the procedures established in the Code of Federal Regulations, Title 40, Part 136.

Laboratory parameters for soil samples are listed in the RAWP. Laboratory parameters for disposal samples will be determined by the disposal facility after an approved facility has been determined.

6.2.2 List of Method-Specific QC Criteria

The laboratory SOPs include a section that presents the minimum QC requirements for the project analyses. Section 7.0 references the frequency of the associated QC samples for each sampling effort and matrix.

7. Internal Quality Control Checks

This section presents the internal QC checks that will be employed for field and laboratory measurements.

7.1 FIELD QUALITY CONTROL

Field QC is monitored and enforced by equipment calibration checks, QC samples, a review of QA/QC concerns in the field, and any corrective action(s) required. Haley & Aldrich of New York personnel familiar with the field protocols will perform these tasks. Compliance QC checks will be implemented during the investigations.

Field sampling precision, accuracy, and overall data quality will be evaluated using trip blanks, field blanks, equipment rinsate blanks, and potentially field duplicates and Matrix Spike (MS)/Matrix Spike Duplicates (MSDs) as necessary that are outlined in Table II.

7.1.1 Field Blanks

Internal QC checks will include analysis of field blanks to validate equipment cleanliness. Whenever possible, dedicated equipment will be employed to reduce the possibility of cross-contamination of samples.

7.1.2 Trip Blanks

Trip blanks will be prepared by the project laboratory using ASTM International (ASTM) Type II or equivalent water placed within pre-cleaned 40-milliliter (mL) VOC vials equipped with Teflon™ septa. Trip blanks will accompany each sample delivery group (SDG) of environmental samples collected for analysis of VOCs.

Trip blank samples will be placed in each cooler that stores and transports project samples that are to be analyzed for VOCs.

7.1.3 Equipment Blanks

Equipment blanks are prepared by pouring analyte-free water into, over, or pumping through the sampling device, collecting in a sample container, and transporting to the laboratory for analysis in the same manner as the environmental samples. Equipment blanks are used to assess the effectiveness of equipment decontamination procedures. One equipment blank sample per type of sampling equipment utilized may be collected at the initiation of each sampling event or when deemed necessary.

7.2 LABORATORY PROCEDURES

Procedures which contribute to maintenance of overall laboratory QA/QC include appropriately cleaned sample containers, proper sample identification and logging, applicable sample preservation, storage and analysis within prescribed holding times, and use of controlled materials.

7.2.1 Field Duplicate Samples

The precision or reproducibility of the data generated will be monitored through the use of field duplicate samples. Field duplicate analysis will be performed at a frequency of one in 20 project samples.

Precision will be measured in terms of the absolute value of the relative percent difference (RPD) as expressed by the following equation:

$$RPD = [|R1-R2|/[(R1+R2)/2]] \times 100\%$$

Acceptance criteria for duplicate analyses performed on solid matrices will be 100 percent, air matrices will be 35 percent, and aqueous matrices will be 35 percent (or the absolute difference rule was satisfied if detects were less than five times the Reporting Limit [RL] for solid and aqueous matrices only). RPD values outside these limits will require an evaluation of the sampling and/or analysis procedures by the project QA Officer and/or Laboratory QA Director. Corrective actions may include re-analysis of additional sample aliquots and/or qualification of the data for use.

7.2.2 Matrix Spike Samples

Five percent of each project sample matrix for each analytical method performed will be spiked with known concentrations of the specific target compounds/analytes.

The amount of the compound recovered from the sample compared to the amount added will be expressed as a percent recovery. The percent recovery of an analyte is an indication of the accuracy of an analysis within the Site-specific sample matrix. Percent recovery will be calculated for MS/MSD samples using the following equation.

$$\%\ Recovery = \frac{Spiked\ Sample\ -\ Background}{Known\ Value\ of\ Spike} \times 100\%$$

If the QC value falls outside the control limits (Upper Control Limit [UCL] or Lower Control Limit [LCL]) due to sample matrix effects, the results will be reported with appropriate data qualifiers. To determine the effect a non-compliant MS recovery has on the reported results, the recovery data will be evaluated as part of the validation process.

7.2.3 Laboratory Control Sample Analyses

The laboratory will perform Laboratory Control Sample (LCS) analyses prepared from SRMs. The SRMs will be supplied from an independent manufacturer and traceable to NIST materials with known concentrations of each target analyte to be determined by the analytical methods performed. In cases where an independently supplied SRM is not available, the LCS may be prepared by the laboratory from a reagent lot other than that used for instrument calibration.

The laboratory will evaluate LCS analyses in terms of percent recovery using the most recent laboratory-generated control limits.

LCS recoveries that do not meet acceptance criteria will be deemed invalid. Analysis of project samples will cease until an acceptable LCS analysis has been performed. If sample analysis is performed in association with an out-of-control LCS sample analysis, the data will be deemed invalid.

Corrective actions will be initiated by the Haley & Aldrich of New York QA Officer and/or Laboratory QA Officer to investigate the problem. After the problem has been identified and corrected, the solution will be noted in the instrument run logbook and re-analysis of project samples will be performed, if possible.

The analytical anomaly will be noted in the SDG Case Narrative and reviewed by the Data Validator. The Data Validator will confirm that appropriate corrective actions were implemented and recommend the applicable use of the affected data.

7.2.4 Surrogate Compound Recoveries

For VOCs, surrogates will be added to each sample prior to analysis to establish purge and trap efficiency.

The recovery of surrogate compounds will be monitored by laboratory personnel to assess possible Site-specific matrix effects on instrument performance.

For SVOC analyses, surrogates will be added to the raw sample to assess extraction efficiency.

Method-specific QC limits are provided in the attached laboratory method SOPs. Surrogate compound recoveries that do not fall within accepted QC limits for the analytical methodology performed will have the analytical results flagged with data qualifiers as appropriate by the laboratory and will not be noted in the laboratory report Case Narrative.

To ascertain the effect non-compliant surrogate compound recoveries may have on the reported results, the recovery data will be evaluated as part of the validation process. The Data Validator will provide recommendations for corrective actions including but not limited to additional data qualification.

7.2.5 Laboratory Method Blank Analyses

Method blank sample analysis will be performed as part of each analytical batch for each methodology performed. If target compounds are detected in the method blank samples, the reported results will be flagged by the laboratory in accordance with SOPs. The Data Validator will provide recommendations for corrective actions including but not limited to additional data qualification.

8. Data Quality Objectives

Sampling that will be performed as described in the RAWP is designed to produce data of the quality necessary to achieve the minimum standard requirements of the field and laboratory analytical objectives described below. These data are being obtained with the primary objective to assess levels of contaminants of concern associated with the Site.

The overall project data quality objective (DQO) is to implement procedures for field data collection, sample collection, handling, and laboratory analysis and reporting that achieve the project objectives. The following section is a general discussion of the criteria that will be used to measure achievement of the project DQO.

8.1 PRECISION

8.1.1 Definition

Precision is defined as a quantitative measure of the degree to which two or more measurements are in agreement. Precision will be determined by collecting and analyzing field duplicate samples and by creating and analyzing laboratory duplicates from one or more of the field samples. The overall precision of measurement data is a mixture of sampling and analytical factors. The analytical results from the field duplicate samples will provide data on sampling precision. The results from duplicate samples created by the laboratory will provide data on analytical precision. The measurement of precision will be stated in terms of RPD. RPD is defined as the absolute difference of duplicate measurements divided by the mean of these analyses normalized to percentage.

8.1.2 Field Precision Sample Objectives

Field precision will be assessed through collection and measurement of field duplicate samples at a rate of one duplicate per 20 investigative samples. The RPD criteria for the project field duplicate samples will be +/- 100 percent for soil, +/- 35 percent for groundwater for parameters of analysis detected at concentrations greater than five times the laboratory RL, and +/- 35 percent for air for parameters of analysis detected at any concentration.

8.1.3 Laboratory Precision Sample Objectives

Laboratory precision will be assessed through the analysis of LCS and laboratory control duplicate samples (LCSD) and MS/MSD samples for groundwater and soil samples and the analysis of laboratory duplicate samples for air and soil vapor samples. Air and soil vapor laboratory duplicate sample analyses will be performed by analyzing the same Summa canister twice. The RPD criteria for the air/soil vapor laboratory duplicate samples will be +/- 35 percent for parameters of analysis detected at any concentration.

8.2 ACCURACY

8.2.1 Definition

Accuracy relates to the bias in a measurement system. Bias is the difference between the observed and the “true” value. Sources of error are the sampling process, field contamination, preservation techniques, sample handling, sample matrix, sample preparation, and analytical procedure limitations.

8.2.2 Field Accuracy Objectives

Sampling bias will be assessed by evaluating the results of field equipment rinse and trip blanks. Equipment rinse and trip blanks will be collected as appropriate based on sampling and analytical methods for each sampling effort.

If non-dedicated sampling equipment is used, equipment rinse blanks will be collected by passing ASTM Type II water over and/or through the respective sampling equipment utilized during each sampling effort. One equipment rinse blank will be collected for each type of non-dedicated sampling equipment used for the sampling effort. Equipment rinse blanks will be analyzed for each target parameter for the respective sampling effort for which environmental media have been collected. (Note: If dedicated or disposable sampling equipment is used, equipment rinse samples will not be collected as part of that field effort.)

Trip blank samples will be prepared by the laboratory and provided with each shipping container that includes containers for the collection of groundwater samples for the analysis of VOCs. Trip blank samples will be analyzed for each VOC for which groundwater samples have been collected for analysis.

8.3 LABORATORY ACCURACY OBJECTIVES

Analytical bias will be assessed through the use of LCS and Site-specific MS sample analyses. LCS analyses will be performed with each analytical batch of project samples to determine the accuracy of the analytical system.

One set of MS/MSD analyses will be performed with each batch of 20 project samples collected for analysis to assess the accuracy of the identification and quantification of analytes within the Site-specific sample matrices. Additional sample volume will be collected at sample locations selected for the preparation of MS/MSD samples so that the standard laboratory RLs are achieved.

The accuracy of analyses that include a sample extraction procedure will be evaluated through the use of system monitoring or surrogate compounds. Surrogate compounds will be added to each sample, standard, blank, and QC sample prior to sample preparation and analysis. Surrogate compound percent recoveries will provide information on the effect of the sample matrix on the accuracy of the analyses.

8.4 REPRESENTATIVENESS

8.4.1 Definition

Representativeness expresses the degree to which sample data represent a characteristic of a population, a parameter variation at a sampling point, or an environmental condition. Representativeness is a qualitative parameter that is dependent upon the design of the sampling program. The representativeness criterion is satisfied through the proper selection of sampling locations, the quantity of samples, and the use of appropriate procedures to collect and analyze the samples.

8.4.2 Measures to Ensure Representativeness of Field Data

Representativeness will be addressed by prescribing sampling techniques and the rationale used to select sampling locations. Sampling locations may be biased (based on existing data, instrument surveys, observations, etc.) or unbiased (completely random or stratified-random approaches).

8.5 COMPLETENESS

8.5.1 Definition

Completeness is a measure of the amount of valid (usable) data obtained from a measuring system compared to the total amount anticipated to be obtained. The completeness goal for all data uses is that a sufficient amount of valid data be generated so that determinations can be made related to the intended data use with a sufficient degree of confidence. Valid data are determined by independent confirmation of compliance with method-specific and project-specific DQOs. The calculation of data set completeness will be performed by the following equation.

$$\frac{\textit{Number of Valid Sample Results}}{\textit{Total Number of Samples Planned}} \; X\ 100 = \%\ \textit{Complete}$$

8.5.2 Field Completeness Objectives

Completeness is a measure of the amount of valid measurements obtained from measurements taken in this project versus the number planned. Field completeness objective for this project will be greater than 90 percent.

8.5.3 Laboratory Completeness Objectives

Laboratory data completeness objective is a measure of the amount of valid data obtained from laboratory measurements. The evaluation of the data completeness will be performed at the conclusion of each sampling and analysis effort. Corrective actions such as revised sample handling procedures will be implemented if problems are noted.

The completeness of the data generated will be determined by comparing the amount of valid data, based on independent validation, with the total laboratory data set. The completeness goal will be greater than 90 percent.

8.6 COMPARABILITY

8.6.1 Definition

Comparability is a qualitative parameter expressing the confidence with which one data set can be compared to another.

8.6.2 Measures to Ensure Comparability of Laboratory Data

Comparability of laboratory data will be measured from the analysis of SRMs obtained from either EPA CRADA suppliers or the NIST. The reported analytical data will also be presented in standard units of mass of contaminant within a known volume of environmental media. The standard units for various sample matrices are as follows:

- Solid Matrices – micrograms per kilogram (µg/kg) for PFAS analyses, milligrams per kilogram (mg/kg) of media (Dry Weight).

8.7 LEVEL OF QUALITY CONTROL EFFORT

If non-dedicated sampling equipment is used, equipment rinse blanks will be prepared by field personnel and submitted for analysis of target parameters. Equipment rinse blank samples will be analyzed to check for potential cross-contamination between sampling locations that may be introduced during the investigation. One equipment rinse blank will be collected per sampling event to the extent that non-dedicated sampling equipment is used.

If necessary, a separate equipment rinse blank sample will be collected for PFAS to assess potential contamination introduced from utilized equipment. (Note: If dedicated or disposable sampling equipment is used, equipment rinse samples will not be collected as part of that field effort.)

Trip blanks will be used to assess the potential for contamination during sample storage and shipment. Trip blanks will be provided with the sample containers to be used for the collection of groundwater samples for the analysis of VOCs. Trip blanks will be preserved and handled in the same manner as the project samples. One trip blank will be included along with each shipping container containing project samples to be analyzed for VOCs.

Method blank samples will be prepared by the laboratory and analyzed concurrently with all project samples to assess potential contamination introduced during the analytical process.

Field duplicate samples will be collected and analyzed to determine sampling and analytical reproducibility. One field duplicate will be collected for every 20 or fewer investigative samples collected for off-Site laboratory analysis.

MS will provide information to assess the precision and accuracy of the analysis of the target parameters within the environmental media collected. One MS/MSD will be collected for every 20 or fewer investigative samples per sample matrix.

(Note: Soil MS/MSD samples require triple sample volume for VOCs only.~~)~~

9. Data Reduction, Validation, and Reporting

All data generated through field activities or by the laboratory operation shall be reduced and validated prior to reporting in accordance with the following procedures:

9.1 DATA REDUCTION

9.1.1 Field Data Reduction Procedures

Field data reduction procedures will be minimal in scope compared to those implemented in the laboratory setting. Only direct read instrumentation will be employed in the field. The pH, conductivity, temperature, turbidity, and PID readings collected in the field will be generated from direct read instruments following calibration per manufacturer's recommendations. The data will be written into field logbooks immediately after measurements are taken. If errors are made, data will be legibly crossed out, initialed and dated by the field member, and corrected in a space adjacent to the original entry. Later, when the results forms required for this study are being filled out, the Project Coordinator will review the forms to determine whether any transcription errors have been made by the field crew.

9.1.2 Laboratory Data Reduction Procedures

Laboratory data reduction procedures are provided by the appropriate chapter of EPA's "Test Methods for Evaluating Solid Waste," SW-846, Third Edition. Errors will be noted and corrections made with the original notations crossed out legibly. Analytical results for soil samples will be calculated and reported on a dry weight basis.

9.1.3 Quality Control Data

QC data (e.g., laboratory duplicates, surrogates, MS, and MSD) will be compared to the method acceptance criteria or laboratory acceptance criteria when no method criteria are available. Data determined to be acceptable will be entered into the laboratory information management system. Data summaries will be sent to the Laboratory QA Officer for review. If approved, data are logged into the project database format.

Unacceptable data will be appropriately qualified in the project report. Case Narratives will be prepared which will include information concerning data that fell outside acceptance limits and any other anomalous conditions encountered during sample analysis.

9.2 DATA VALIDATION

Data validation procedures of the analytical data will be performed by the Haley & Aldrich of New York QA Officer or designee using the following documents as guidance for the review process:

- "U.S. EPA National Functional Guidelines for Organic Data Review," "Analysis of Volatile Organic Compounds in Air Contained in Canisters by Method TO-15," "Sampling, Analysis, and Assessment of Per- and Polyfluoroalkyl Substances Under NYSDEC's Part 375 Remedial Programs," and the "U.S. EPA National Functional Guidelines for Inorganic Data Review."

- The specific data qualifiers used will be applied to the reported results as presented and defined in the EPA National Functional Guidelines. Validation will be performed by qualified personnel at the direction of the Haley & Aldrich of New York QA Officer. Tier 1 data validation (the equivalent of EPA's Stage 2A validation) will be performed to evaluate data quality.
- The completeness of each data package will be evaluated by the Data Validator. Completeness checks will be administered on all data to determine that the deliverables are consistent with the NYSDEC Analytical Services Protocol (ASP) Category A and Category B data package requirements. The validator will determine whether the required items are present and request copies of missing deliverables (if necessary) from the laboratory.

9.3 DATA REPORTING

Data reporting procedures will be carried out for field and laboratory operations as indicated below:

- Field Data Reporting: Field data reporting will be conducted principally through the transmission of report sheets containing tabulated results of measurements made in the field and documentation of field calibration activities.
- Laboratory Data Reporting: The laboratory data reporting package will enable data validation based on the protocols described above. The final laboratory data report format will include the QA/QC sample analysis deliverables to enable the development of a DUSR based on NYSDEC DER-10, Appendix 2B.

10. Performance and System Audits

A performance audit is an independently obtained quantitative comparison with data routinely obtained in the field or the laboratory. Performance audits include two separate, independent parts: internal and external audits.

10.1 FIELD PERFORMANCE AND SYSTEM AUDITS

10.1.1 Internal Field Audit Responsibilities

Internal audits of field activities will be initiated at the discretion of the Project Manager and will include the review of sampling and field measurements. The audits will verify that all procedures are being followed. Internal field audits will be conducted periodically during the project. The audits will include an examination of the following:

- Field sampling records, screening results, instrument operating records;
- Sample collection;
- Handling and packaging in compliance with procedures;
- Maintenance of QA procedures; and
- COC reports.

Follow-up audits will be conducted to correct deficiencies and to verify that procedures are maintained throughout the investigation.

10.1.2 External Field Audit Responsibilities

External audits may be conducted by the Project Coordinator at any time during the field operations. These audits may or may not be announced and are at the discretion of the NYSDEC. The external field audits can include (but are not limited to) the following:

- Sampling equipment decontamination procedures;
- Sample bottle preparation procedures;
- Sampling procedures;
- Examination of HASPs;
- Procedures for verification of field duplicates; and
- Field screening practices.

10.2 LABORATORY PERFORMANCE AND SYSTEM AUDITS

10.2.1 Internal Laboratory Audit Responsibilities

The laboratory system audits are typically conducted by the Laboratory QA Officer or designee on an annual basis. The system audit will include an examination of laboratory documentation including sample receiving logs, sample storage, COC procedures, sample preparation and analysis, and instrument operating records.

At the conclusion of internal system audits, reports will be provided to the laboratory's operating divisions for appropriate comment and remedial/corrective action where necessary. Records of audits and corrective actions will be maintained by the Laboratory QA Officer.

10.2.2 External Laboratory Audit Responsibilities

External audits will be conducted as required by the NYSDEC, NYSDOH, or designee. External audits may include any of the following:

- Review of laboratory analytical procedures;
- Laboratory on-site visits; and
- Submission of performance evaluation samples for analysis.

An audit may consist of but not limited to:

- Sample receipt procedures;
- Custody, sample security, and log-in procedures;
- Review of instrument calibration logs;
- Review of QA procedures;
- Review of logbooks;
- Review of analytical SOPs; and
- Personnel interviews.

A review of a data package from samples recently analyzed by the laboratory can include (but not be limited to) the following:

- Comparison of resulting data to the SOP or method;
- Verification of initial and continuing calibrations within control limits;
- Verification of surrogate recoveries and instrument timing results;
- Review of extended quantitation reports for comparisons of library spectra to instrument spectra, where applicable; and
- Assurance that samples are run within holding times.

11. Preventive Maintenance

11.1 FIELD INSTRUMENT PREVENTIVE MAINTENANCE

The field equipment preventive maintenance program is designed to ensure the effective completion of the sampling effort and to minimize equipment downtime. Program implementation is concentrated in three areas:

- Maintenance responsibilities;
- Maintenance schedules; and
- Inventory of critical spare parts and equipment.

The maintenance responsibilities for field equipment will be assigned to the task leaders in charge of specific field operations. Field personnel will be responsible for daily field checks and calibrations and for reporting any problems with the equipment. The maintenance schedule will follow the manufacturer's recommendations. In addition, the field personnel will be responsible for determining that an inventory of spare parts will be maintained with the field equipment. The inventory will primarily contain parts that are subject to frequent failure, have limited useful lifetimes, and/or cannot be obtained in a timely manner.

11.2 LABORATORY INSTRUMENT PREVENTIVE MAINTENANCE

Analytical instruments at the laboratory will undergo routine and/or preventive maintenance. The extent of the preventive maintenance will be a function of the complexity of the equipment.

Generally, annual preventive maintenance service will involve cleaning, adjusting, inspecting, and testing procedures designed to deduce instrument failure and/or extend useful instrument life. Between visits, routine operator maintenance and cleaning will be performed according to manufacturer's specifications by laboratory personnel.

12. Quality Assurance Reports and Corrective Actions

Critically important to the successful implementation of the QAPP is a reporting system that provides the means by which the program can be reviewed, problems identified, and programmatic changes made to improve the plan.

QA reports to management can include:

- Audit reports, internal and external audits with responses;
- Performance evaluation sample results, internal and external sources; and
- QA/QC exception reports/corrective actions.

QA/QC corrective action reports will be prepared by the Haley & Aldrich of New York QA Officer when appropriate and presented to the project and/or laboratory management personnel so that performance criteria can be monitored for all analyses from each analytical department. The updated trend/QA charts prepared by the laboratory QA personnel will be distributed and reviewed by various levels of laboratory management.

Program activities are properly assessed using a review and evaluation process of field QA/QC forms, nonconformance reports (NCR) and subsequent corrective actions, internal peer review, and laboratory oversight. This process ensures this QAPP is adhered to, the quality of the data is adequate, and corrective actions, when needed, are implemented effectively and in a timely manner.

Any project team member can initiate the field corrective action process by identifying a problem, acting to eliminate the problem, documenting the corrective action, monitoring the effectiveness of the corrective action, and verifying the problem has been eliminated. Some examples of corrective actions for field measurements may include the following:

- Repetition of a measurement to check for error;
- Checking all proper adjustments for ambient conditions such as temperature;
- Checking batteries;
- Checking calibrations;
- Recalibration;
- Replacing instruments or measurement devices;
- Stop work (if necessary);
- Revising information submitted on COC forms; and
- Amending of sampling procedures or Work Plans.

Technical staff and project personnel are responsible for reporting all technical or QA nonconformances or suspected deficiencies of any activity or issued document by reporting the situation to the Haley & Aldrich of New York QA Officer on an NCR. The Haley & Aldrich of New York Project Manager, in coordination with the Haley & Aldrich of New York QA Officer, is responsible for assessing the suspected difficulty and its impact on the data quality in consultation with the Haley & Aldrich of New York

Program Manager. A corrective action decision, if necessary, will be determined by the Haley & Aldrich of New York Project Manager and QA Officer and implemented by the PM. The Haley & Aldrich PM has the authority to initiate stop work orders, if necessary, and is responsible for initiating a corrective action for a nonconformance, which may include the following actions:

- Evaluating all reported nonconformances;
- Determining disposition or action to be taken;
- Maintaining a log of nonconformances; and
- Reviewing nonconformance reports and corrective actions taken.

References

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3. New York State Department of Environmental Conservation, 2023. Division of Environmental Remediation, Sampling, Analysis and Assessment of Per- and Polyfluoroalkyl Substances (PFAS) under NYSDEC Part 375 Remedial Program. April.

4. United States Environmental Protection Agency, 1986. Test Methods for Evaluating Solid Waste, Office of Solid Waste, U.S. EPA, SW-846, November 1986, with updates.

5. United States Environmental Protection Agency, 1991. Preparation Aids for the Development of Category I Quality Assurance Project Plans. U.S. EPA/600/8-91/003, Risk Reduction Engineering Laboratory, Office of Research and Development, Cincinnati, Ohio. February.

6. United States Environmental Protection Agency, 1992. Specifications and Guidance for Contaminant-Free Sample Containers. OSWER Directive 9240.0-05A. April.

7. United States Environmental Protection Agency, 1993. Data Quality Objectives Process for Superfund Interim Final Guidance. U.S. EPA/540/R-93-071, Office of Solid Waste and Emergency Response (OSWER). September.

8. United States Environmental Protection Agency, 1999. EPA Requirements for Quality Assurance Project Plans for Environmental Data Operations. EPA QA/R-5 Interim Final. November.

9. United States Environmental Protection Agency, 2014a. Analysis of Volatile Organic Compounds in Air Contained in Canisters by Method TO-15, SOP NO. HW-31, Revision. 6. June.

10. United States Environmental Protection Agency, 2020a. National Functional Guidelines for Inorganic Superfund Methods Data Review. EPA-542-R-20-006. November.

11. United States Environmental Protection Agency, 2020b. National Functional Guidelines for Organic Superfund Methods Data Review. EPA-540-R-20-005. November.

TABLES

TABLE I
SUMMARY OF ANALYSIS METHOD, PRESERVATION METHOD, HOLDING TIME, SAMPLE SIZE REQUIREMENTS, AND SAMPLE CONTAINERS
180 EAST 125TH STREET DEVELOPMENT SITE
180 EAST 125TH STREET
NEW YORK, NEW YORK

Analysis/Method[3]	Sample Type	Preservation	Holding Time	Volume/Weight	Container[4]
Volatile Organic Compounds/8260	Soil	1 - 1 Vial MeOH/2 Vial Water, Cool, 4 ± 2 °C	14 days[1]	120 mL	3 - 40ml glass vials
Semivolatile Organic Compounds/8270	Soil	Cool, 4 ± 2 °C	14 days extraction / 40 days analysis	250 mL	1 - 8 oz Glass
Pesticides/8081	Soil	Cool, 4 ± 2 °C	14 days extraction / 40 days analysis	250 mL	1 - 4 oz Glass
Polychlorinated Biphenyls/8082	Soil	Cool, 4 ± 2 °C	14 days extraction / 40 days analysis	250 mL	1 - 4 oz Glass
TAL Metals/6010, 7471	Soil	Cool, 4 ± 2 °C	180 days	60 mL	1 - 4 oz Glass
PFAS/1633	Soil	Cool, 4 ± 2 °C	28 days extraction / 40 days analysis	To be determined by laboratory	1 - HDPE container
1,4-Dioxane/8270	Soil	Cool, 4 ± 2 °C	14 days extraction / 40 days analysis	250 mL	1 - 8 oz Glass

Notes:

1. Terracores and encores must be frozen within 48 hours of collection
2. Refer to text for additional information.
3. Equivalent method can be used.
4. Volume may vary by laboratory and/or equivalent method.

TABLE II
LABORATORY AND FIELD QUALITY CONTROL OBJECTIVES
180 EAST 125TH STREET DEVELOPMENT SITE
180 EAST125TH STREET
NEW YORK, NEW YORK

Quality Control Sample/Process Assessed	Measurement Quality Indicator	Frequency	Acceptance Criteria	Corrective Action
LABORATORY QA/QC				
Method Blank	Accuracy and Representativeness	1 per analytical batch of 20 samples	No target analyte above one-tenth the amount in any sample	Reanalyze blank and samples. Qualify as necessary.
LCS or LCS/LCSD	Accuracy or Accuracy and Precision	1 per analytical batch of 20 samples	Method Specific Criteria per lab SOP or NYSDEC's Part 375 Remedial Programs	Re-prepare and reanalyze blank and samples. Qualify as necessary.
MS/MSD	Accuracy and Precision	1 per analytical batch of 20 samples	Method Specific Criteria per lab SOP or NYSDEC's Part 375 Remedial Programs	Qualify as necessary.
Laboratory Duplicate	Precision	1 per analytical batch of 20 samples	RPD <20% (or absolute difference <5x RL)	Qualify as necessary.
Surrogate	Accuracy	Each sample	Method Specific Criteria per lab SOP or NYSDEC's Part 375 Remedial Programs	Re-extract and reanalyze. Qualify as necessary.
FIELD QA/QC				
Trip Blank	Accuracy	1 per cooler when submitting samples for volatile analysis	No target analyte above one-tenth the amount in any sample	Qualify as necessary
Field Blank	Accuracy	As necessary	No target analyte above one-tenth the amount in any sample	Qualify as necessary
Equipment Rinse Blank	Accuracy	As necessary	No target analyte above one-tenth the amount in any sample	Qualify as necessary
Field Duplicate	Accuracy and Precision	1 in 20 project samples	RPD <35% for water (or absolute difference <5x RL) RPD <100% for solid (or absolute difference <5x RL) RPD <35% for air	Qualify as necessary

Notes:
% = percent
LCS/LCSD = Laboratory Control Sample/Laboratory Control Sample Duplicate
MDL = Method Detection Limit
ML = Method Minimum Level
MS/MSD = Matrix Spike/Matrix Spike Duplicate
QA/QC = Quality Assurance/Quality Control
RL = Reporting Limit
RPD = Relative Percent Difference
** QA/QC only analyzed as relevant per method requirements*

ATTACHMENT A
Project Team Resumes

JAMES BELLEW

Principal

EDUCATION

M.S., Environmental Geology, Queens College
B.S., Geology, Pre-Law, Environmental Science, Binghamton University

PROFESSIONAL SOCIETIES

American Council of Engineering Companies, Member, 2017
Urban Land Institute, Member, 2016
Business Council of New York, Member, 2018

SPECIAL STUDIES AND COURSES

40-Hour OSHA Hazardous Waste Operations and Emergency Response Training (29 CFR 1910.120)
30-Hour OSHA Construction Safety and Heath
8-hour OSHA Site Supervisor Certification
OSHA Confined Space Entry Training Certification
Erosion and Sediment Control, New York, No. 006925
USDOT/IATA Training on the Shipping and/or Transportation of Hazardous Materials

James has a hands-on approach to every project. He believes that being present and putting himself into his clients' shoes is the best way to understand their needs. As a Principal, James's expertise includes due diligence, environmental risk development, building surveys, remedial investigations, remedial design, and technical oversight. Mr. Bellew has completed over 50 NYCOER E-Designation Sites and NYSDEC Brownfield Cleanup Program Sites which include preparation of all reports through to the certificate of completion and a certificate of occupancy.

Clients appreciate James' strategies from the inception of a project through closure under various regulatory programs nationwide. That comprehensive approach is what James loves the most about his job. He enjoys taking on complex projects and finding rational, cost-effective, remedial solutions. His biggest reward? When he can bring a client cost relief through value engineering.

RELEVANT PROJECT EXPERIENCE

Development, NYCDDC Shirley Chisholm Recreational Center, Brooklyn, New York. Principal for the project released by the New York City Department of Design and Construction, on behalf of the NYC Parks Department, for the design and construction of a new recreational center located at 3002 Foster Avenue in Brooklyn New York. Scope of services included execution of a Phase II Environmental Site Assessment, soil characterization, remedial oversight, geotechnical percolation testing and closure with the NYC Department of Environmental Protection.

Development's, New York State Superfund Site, Former NuHart Plastics Site, New York State Superfund Site (NuHart West) and Brownfield Cleanup Program Site (NuHart East), Brooklyn, New York. Principal for the preparation of the feasibility study, offsite investigation reports, RCRA (Resource Conservation and Recovery Act) Closure Work Plan, execution of the RCRA Closure, preparation of the Brownfield Cleanup Application (NuHart East), 100% Remedial Design, preparation of all BCP related work plans (NuHart East), coordination to vest the Site for 421-a and all community outreach programs for a former plasticizer facility with on- and off-site pollutant concerns. Responsible for all remedial cost and alternative analysis with the client to bring the Site to a certificate of completion. NuHart is a high-profile Site that requires coordination with the New York State Department of Environmental Conservation (NYSDEC), the New York City Office of Environmental Remediation (NYCOER), local regulatory agencies, community stakeholders and local elected officials. The NuHart East Site has completed the remediation and received the Certificate of Completion with the NYSDEC and the NuHart West Site is close to completion with an anticipated 2024 transition from a Class 2 to a Class 4 Inactive Hazardous waste Site.

Development's, 101 Fleet Place, Brooklyn, New York. Principal responsible for the due diligence during acquisition, preparation of the Brownfield Cleanup Program Application, Change of Use Documents, BCA Amendments, remedial investigation, and remedial action design (BCP and OER) for a former bus depot Site under the New York State Brownfield Cleanup program and NYCOER E-Designation Programs (Air/Noise). The Site has a footprint of 20,000 SF with a planned development of a 21-story mixed use building with approximately 292 units which include affordable housing.

Development's, Speedway Portfolio, Multiple Boroughs, New York. Principal responsible for the expedited due diligence during acquisition of 5 former Speedway Sites of Phase I ESA's and Limited Phase II ESI's, preparation of the Brownfield Cleanup Program Applications, Remedial Investigation Work Plans, Interim Remedial Measure Work Plans and Air/Noise Remedial Action Work Plans (NYCOER). Five of the Sites were accepted into the NYSDEC Brownfield Cleanup program. Remedial Investigations for compliance with the Brownfield Cleanup Program have been completed and the remedial design on the Sites include a variety of remedial approaches which include in situ chemical treatment for groundwater, soil vapor extraction, excavation and dewatering removal and treatment.

Development, 138 Bruckner Boulevard, Bronx, New York. Principal responsible for the due diligence during acquisition, preparation of the Brownfield Cleanup Program Application, Change of Use Documents, coordination to vest the Site for 421-a, BCA Amendments, remedial investigation, and remedial action design (BCP and OER) for the former Zaro's Bakery Site under the New York State Brownfield Cleanup program and NYCOER E-Designation Programs (Air/Noise). The Site has a footprint of 50,000 SF with a planned development of a 12-story mixed use building with approximately 447 units which include affordable housing.

Development, 310 Grand Concourse, Bronx, New York. Principal responsible for environmental and construction management services required to successfully navigate this two-building redevelopment project through the NYSDEC Brownfield Cleanup Program (BCP) and NYCOER E-Designation Program (Air/Noise). Project included site investigation, design, and remediation for development of two buildings within a 30,000 square-foot lot in the Bronx, New York. Remediation included excavation of approximately 20,000 cubic yards of soil, groundwater extraction and treatment, underground storage tank (UST) removal, design, and installation an ex-situ chemical in situ soil stabilization process for elevated levels of metals.

Development, 40 Bruckner Boulevard, Bronx, New York. Principal responsible for the due diligence during acquisition, preparation of the Brownfield Cleanup Program Application, Change of Use Documents, BCA Amendments, remedial investigation, and remedial action design (BCP and OER) for the former Mill Sanitary Wiping Cloth Site under the New York State Brownfield Cleanup program and NYCOER E-Designation Programs (Air/Noise). The Site has a footprint of 45,000 SF with a planned development of a 12-story mixed use building with approximately 480 units which include affordable housing.

Development, 297 Wallabout Street, Brooklyn New York. Principal responsible for the due diligence during acquisition, preparation of the Brownfield Cleanup Program Application, Change of Use Documents, BCA Amendments, remedial investigation, and remedial action design (BCP and OER) for the 297 Wallabout Street Site under the New York State Brownfield Cleanup program and NYCOER E-Designation Programs (Air). Successfully delineated the onsite tetrachloroethene (PCE) plume in soil and groundwater. The Site is currently in the remedial implementation phase.

Developments, 89-91 Gerry & 93 Gerry Street, Brooklyn New York. Principal responsible for the due diligence during acquisition, preparation of the Brownfield Cleanup Program Application, Change of Use Documents, BCA Amendments, remedial investigation, and remedial action design (BCP and OER) for two Sites (adjacent to each other) located at 89-91 Gerry Street and 93 Gerry Street under the New York State Brownfield Cleanup program and NYCOER E-Designation Programs (Air). The Sites are currently preparing to execute the remedial action.

Development, Former Techtronics Site (8 Walworth Street), Brooklyn, New York. Principal for the remedial investigation, remedial action design and remedial action implementation for the former Techtronics Site under the New York State Brownfield Cleanup program as a Participant where trichloroethene (TCE) and tetrachloroethene (PCE) were encountered in soil and groundwater. James successfully delineated the vertical and lateral extents of the plumes which were identified as an upgradient, on-site. For this Site we have designed source removal to 20'bgs, Zero Valent Iron (ZVI) Reactive Barrier Wall, in situ ZVI injections sitewide and a vertical vapor mitigation system. The Site is currently in the remedial implementation phase.

Development, 346 Grand Concourse, Bronx, New York. Principal for the proposed 9-story, 60 key commercial building with one-level deep cellar. Design phase environmental services consist of guiding the Site through the New York City Office of Environmental of Remediation Voluntary Cleanup and E-Designation Programs, including Hazmat, Air Quality and Noise requirements. This program included submission of a Remedial Investigation Work Plan, implementation of a Remedial Investigation, submittal of a Remedial Investigation Report, Remedial Action Work Plans (Hazmat Air and Noise) and the Final Installation Report for the Certificate of Occupancy.

Development, 3294 Atlantic Avenue, Brooklyn, New York. Principal for the proposed 12-story, 80 key commercial building with one-level deep cellar. Design phase environmental services consist of guiding the Site through the New York City Office of Environmental of Remediation Voluntary Cleanup and E-Designation Programs, including Hazmat, Air Quality and Noise requirements. This program included submission of a Remedial Investigation Work Plan, implementation of a Remedial Investigation, submittal of a Remedial Investigation Report, Remedial Action Work Plans (Hazmat Air and Noise) and the Final Installation Report for the Certificate of Occupancy.

590-594 Myrtle Avenue, Brooklyn, New York. Principal for the proposed 6-story, 12-unit residential building with one-level deep cellar. Design phase environmental services consist of guiding the Site through the New York City Office of Environmental of Remediation Voluntary Cleanup and E-Designation Programs, including Hazmat, Air Quality and Noise requirements. This program included submission of a Remedial Investigation Work Plan, implementation of a Remedial Investigation, submittal of a Remedial Investigation Report, Remedial Action Work Plans (Hazmat Air and Noise) and the Final Installation Report for the Certificate of Occupancy.

Development, 3530 Webster Avenue, Bronx, New York. Principal for the proposed 8-story, 75 key commercial building with one-level deep cellar. Design phase environmental services consist of guiding the Site through the New York City Office of Environmental of Remediation Voluntary Cleanup and E-Designation Programs, including Hazmat, Air Quality and Noise requirements. This program included submission of a Remedial Investigation Work Plan, implementation of a Remedial Investigation, submittal of a Remedial Investigation Report, Remedial Action Work Plans (Hazmat Air and Noise). The project is currently in the construction phase of the NYCOER program.

Development, Former BP Station, Elmhurst Queens, New York. Principal for the preparation of a full environmental impact statement with respect to a mixed-use development proposed in Elmhurst Queens for submission to the NYC Department of City Planning to rezone the project. The work included a full impact assessment of the proposed construction with respect to the neighborhood, evaluation of green/open spaces for the community and environmental site investigation and remediation services.

New York State Brownfield Site, Former Delta Metals Site, Brooklyn, New York. Senior Project manager for the remedial investigation and remedial action design for the former Delta Metal Products Company. Project is under the New York State Brownfield Cleanup program as a Participant where TCE and tetrachloroethene (PCE) were encountered in soil and groundwater. James successfully delineated the vertical and lateral extents of the plumes which were identified as an upgradient, on-site and downgradient plume. Investigation results triggered the NYSDEC to utilize its call-out contract to perform a plume track down for the immediate area and identify additional Potentially Responsible Parties. The design for an Air Sparge Soil Vapor Extraction system has been accepted and the project is currently under construction.

Manufacturing-Industrial, Hess Amerada, Bogota and Edgewater, New Jersey. Senior Project Manager and technical Lead for the construction management services for the demolition of two waterfront terminals on the Hackensack and Hudson rivers. Services included demolition design, submittal review, site execution and coordination of activities related to asbestos abatement, demolition of buildings, thirty holding tanks, piping structures, containment structures and storm water structures.

Manufacturing-Industrial, PQ Corporation, Northeastern United States. Senior Project Manager responsible for the design and implementation of a three phased program for handling polychlorinated biphenyl (PCB) containing materials on approximately 100 tank structures at large, active industrial sites, which included coating removal, encapsulation, demolition, and Toxic Substances Control Act (TSCA) remediation. He was responsible for development of the overall program, specifications, drawings, bid packages, construction oversight and project administration until closure. The program also included design and oversight of a new façade and roof upgrades completed concurrently to client operations.

Development, New York State Brownfield Site, Former Cascade Laundry, Brooklyn, New York. Senior Project Manager responsible for environmental and construction management services required to successfully navigate a seven-building redevelopment project through the NYSDEC Brownfield Cleanup Program (BCP) and NYCOER E-Designation Program (Air/Noise). Project included site investigation, design, and remediation for development of seven buildings within a 2-acre site in Brooklyn, New York. Remediation included excavation of approximately 40,000 cubic yards of soil, groundwater extraction and treatment, underground storage tank (UST) removal, design, and installation of a sub slab depressurization system (SSDS) and ex situ chemical oxidation of groundwater impacted by petroleum.

Development, New York City Brownfield Site - 520-534 West 29th Street, New York, New York. James was responsible for environmental site investigation and remediation activities required to successfully navigate the project through the NYCOER's E-Designation and Voluntary Cleanup Programs. This program included submission of a Remedial Investigation Work Plan, implementation of a Remedial Investigation, submittal of a Remedial Investigation Report, Remedial Action Work Plans (Hazmat Air and Noise). The project is currently in the construction phase of the NYCOER program.

Development, New York State Brownfield Site, BJ's Wholesale, Brooklyn, New York. Senior Project Manager for the remedial execution within the NYSDEC BCP and NYCOER E-Designation programs at an 8-acre peninsula in Gravesend Bay being redeveloped by BJ's Wholesale Club (BJ's) into a "big-box" warehouse and parking garage, and a publicly accessible, waterfront open space. He implemented a comprehensive community air monitoring plan (CAMP), managed the design and installation of a passive sub slab depressurization system, and oversaw handling and off-site disposal of impacted material generated by BJ's (the Lessee for the subject site) during their foundation construction activities.

Development, New York State Brownfield Site, Coney Island, Brooklyn, New York. Senior Project Manager responsible for the environmental design during the rehabilitation and expansion of a 1970s-era mixed-use complex, which covers an area equivalent to three city blocks. He facilitated the BCP applications for two adjacent parcels within the complex impacted by historic dry-cleaning uses. Site investigations performed had documented the presence of PCE in soil gas and was delineated over three separate structural slabs in commercial and residential space utilizing a mobile laboratory. He designed and installed two sub-slab depressurization systems and prepared Remedial Investigation Work Plan which outlined work required to delineate the vertical and horizontal extent of the impacted soils, soil vapor and groundwater at both BCP sites. The system was designed with below slab suction pits, remote sensing vacuum monitoring points, and a variable frequency drive blower tied into the monitoring points for optimization and power savings.

Development, New York City Brownfield Site, Hospitals, Memorial Sloan Kettering Cancer Center (MSKCC), New York, New York. Project Manager for environmental remediation for this MSKCC development project. James was solely responsible for subsurface investigation and remediation activities, large, manufactured gas plant (MGP) gas holder removal (from former Con Edison Operations), UST removal, daily status updates to the NYCOER, implementation of the CAMP and the management, handling, characterization, and off-site disposal of MGP impacted soil and dewatering fluids.

New York State Spill Remediation, Metropolitan Transportation Agency Bridges and Tunnels, New York, New York. Project Manager responsible for execution of a remedial action scope which included UST removal, excavation of 600 cubic yards of petroleum impacted soil, design and installation of a groundwater extraction and treatment system and post remediation samples. He implemented the In Situ Chemical Oxidation program for the injection of 54,000 gallons of 8 percent solution Fenton's Reagent and the O&M (Operation & Maintenance) of the petroleum spill with respect to Fenton's performance and the plume migration.

Various Public Schools, New York City School Construction Authority, New York, New York. Project Manager responsible for environmental remediation proposed several school developments sites, including PS 312, P.S. 281, and PS 27K. Assisted in the design and implementation of the remediation programs for the sites for petroleum spills, PCB TSCA contamination and hazardous lead hot spots.

Development, i.Park Edgewater, Edgewater, New Jersey. Project Manager responsible for the design and environmental remediation on-site. Implemented the construction plan for remediation of arsenic, pitch- and PCB-impacted soil for excavation and off-site disposal of 20,000 tons. He managed the air monitoring system on-site which consisted of four permanent stations set upwind and downwind on-site for volatile organic compounds (VOCs) and particulate migration off-site. Also, James performed redesigns throughout the project to keep within the current schedule and budget.

Development, New York State Brownfield, Queens West, Long Island City, New York. Project Manager responsible for oversight of the Environmental Remediation on-site. James implemented the construction plan for remediation of 20,000 cubic yards of LNAPL on the Site; he assisted in design and oversight of the In Situ Chemical Oxidation mixing on-site. The project was eventually developed into three large towers and a new school.

Manufactured Gas Plant, National Grid, Rockaway, New York. James aided in the design and implementation of the soil characterization plan for MGP impacted sands. After delineation of the contamination plume, drafted work plans and site layout of the negative pressure tent. He performed and trained the on-site staff on the use of personal air monitoring equipment and aided with design considerations on the installation of a waterloo barrier to be advanced to minus 80 feet below grade surface. James also helped with the design and permitting for the groundwater treatment system installed on-site.

Manufactured Gas Plant, Con Edison, New York, New York. Environmental engineer for responsible party for all environmental issues associated with this job, including transportation and disposal of 8,000 tons of MGP contaminated soil from former Con Edison operations. James scheduled weekly work for all civil and environmental tasks on the job. He was responsible for the design and installation of the dewatering treatment system with a daily discharge of 25,000 gallons per day of MGP -impacted water.

New York State Superfund Project, NYSDEC, Hicksville, New York. James performed O&M and reporting on the Site's Potassium Permanganate Injection system, which was on a timed system; maintained the system, troubleshooting problems and ensuring that the proper ratios were being injected. He performed the fieldwork for analysis and drafted interim reports for the project manager.

Retail Petroleum, New York State Spills Program, Hess Amerada, Various Locations, New York. Environmental Engineer responsible for the design and installation of groundwater and soil vapor remedial systems at over 30 retail petroleum stations for Hess. Responsible for ensuring that the remedial systems were operating properly and performing repairs as necessary during operation. He performed groundwater and soil vapor monitoring and drafted O&M reports for the NYSDEC. Plume size ranged from within the retail station property with monitoring off-site impacts in local neighborhoods greater than a 3-mile radius.

Retail Petroleum, New York State Spills Program, British Petroleum (BP), Various Locations, New York. Environmental Engineer responsible for the design and installation of groundwater and soil vapor remedial systems at over 10 retail petroleum stations for BP. He was responsible for ensuring that the remedial systems were operating properly and performing repairs necessary during operation. He performed groundwater and soil vapor monitoring and drafted O&M reports for the NYSDEC. Plume size ranged from within the retail station property with monitoring off-site impacts in local neighborhoods greater than a 2-mile radius.

Development, 524 West 19th Street, New York, NY (Metal Shutter Homes). Project Engineer responsible party for all environmental and civil issues associated with this job, including transportation and disposal of 5,000 tons of MGP contaminated soil from former Con Edison operations. James scheduled weekly work for all civil and environmental tasks on the job. He successfully redesigned the grout cutoff wall connections to the installed steel sheeting with a secant wall installed off-site. He provided technical guidance for drilling 4-foot diameter exploratory casings for subsurface anomalies. Additionally, James was responsible for the design and installation of the dewatering treatment system with a daily discharge of 25,000 gallons per day of MGP impacted water.

EPA Superfund Site, Newtown Creek Superfund, Brooklyn, New York. Environmental Engineer who aided in the design of the pump and treat system installed at Peerless Importers. He also aided in the design and installation of the harbor boom set up. Operated and Maintained groundwater/LNAPL extraction systems on-site and performed monthly site gauging as part of the O&M plan.

HALEY ALDRICH

SARAH COMMISSO, GIT

Senior Geologist

EDUCATION

B.S., Geological Sciences with a minor in Chemistry, State University of New York-Binghamton

PROFESSIONAL REGISTRATIONS

2021/ NY: Geologist in Training (GIT) Certification

SPECIAL STUDIES AND COURSES

40-Hour OSHA Hazardous Waste Operations and Emergency Response Training (29 CFR 1910.120)
8-Hour OSHA HAZWOPER Refresher Training
10-Hour OSHA Construction Safety Training
8-Hour DOT Hazmat Employee & RCRA Hazardous Waste Generator Training

Sarah is a geologist with experience in soil, groundwater, and soil vapor investigation, and preparation of technical reports. She also has extensive experience with conducting Phase I Environmental Site Assessments (ESAs) and Phase II Environmental Site Investigations (ESIs), site characterization, and hazardous materials analysis. She has performed soil, groundwater, and soil vapor sampling events, geotechnical drilling projects, and has drafted site investigation plans and reports.

RELEVANT PROJECT EXPERIENCE

Environmental Experience

Madison Realty Capital, New York State Superfund Site, Former NuHart Plastics Site, New York State Superfund Site (NuHart West) and Brownfield Cleanup Program (BCP) Site (NuHart East), Brooklyn, New York. Sarah served as a staff geologist for the preparation of offsite investigation reports, RCRA (Resource Conservation and Recovery Act) Closure Work Plan, execution of the RCRA Closure, preparation of the BCP Application (NuHart East), 30% Remedial Design, preparation of all BCP related work plans (NuHart East), coordination to vest the Site for 421-a and all community outreach programs for a former plasticizer facility with on- and off-site pollutant concerns. She was responsible for assisting in the remedial cost and alternative analysis with the client to bring the site to a certificate of completion. NuHart is a high-profile site that requires coordination with the New York State Department of Environmental Conservation (NYSDEC), the New York City Office of Environmental Remediation (NYCOER), local regulatory agencies, community stakeholders and local elected officials.

The Jay Group, Speedway Portfolio, Multiple Boroughs, New York. As staff geologist, Sarah was responsible for the expedited due diligence during acquisition of five former Speedway Sites of Phase I ESAs and Limited Phase II ESIs, preparation of the BCP Applications, Remedial Investigation Work Plans, Interim Remedial Measure Work Plans and Air/Noise Remedial Action Work Plans (NYCOER). Four of the sites were accepted into the NYSDEC BCP with one currently pursuing the program pending the acquisition. Remedial Investigations for compliance with the BCP have been completed and the Remedial Investigation Reports are being drafted.

JCS Realty, 40 Bruckner Boulevard, Bronx, New York. As staff geologist, Sarah was responsible for the due diligence during acquisition, preparation of the BCP Application, Change of Use Documents, BCA Amendments, remedial investigation, and remedial action design (BCP and Office of Environmental Remediation [OER]) for the former Mill Sanitary Wiping Cloth Site under the New York State BCP (NYSBCP) and NYCOER E-Designation Programs (Air/Noise). The site has a footprint of 45,000 sf with a planned development of a 12-story mixed use building with approximately 480 units which include affordable housing.

Toldos Yehuda, Former Techtronics Site (8 Walworth Street), Brooklyn, New York. Sarah served as staff geologist for the remedial investigation, remedial action design and remedial action implementation for the former Techtronics Site under the NYSBCP as a participant where trichloroethene (TCE) and tetrachloroethene (PCE) were encountered in soil and groundwater. Successfully delineated the vertical and lateral extents of the plumes which were identified as an upgradient, on-site. For this site we have designed source removal to 20 ft below ground surface, zero valent Iron (ZVI) reactive barrier wall, in situ ZVI injections sitewide and a vertical vapor mitigation system. The site is currently in the remedial implementation phase.

Waterfront Management of NY, 590-594 Myrtle Avenue, Brooklyn, New York. As lead field geologist, Sarah was responsible for the oversight of the excavation and remediation of the property under the NYCOER. During remediation, Sarah observed and documented the excavation and proper disposal of on-site soil required for the installation of foundation elements. In addition, she oversaw the proper cleaning and removal of three underground storage tanks encountered during site wide excavation. After excavation was complete, she inspected the installation of a sub-slab vapor barrier and conducted the community air monitoring program during the course of remedial action.

Madison Realty Capital, 644 East 14th Street, New York, New York. Sarah is the lead drafter of the Remedial Investigation Work Plan and the Remedial Investigation Report for site, which is enrolled in the NYSDEC BCP. She coordinated field staff and subcontractors for the execution of the Remedial Investigation Work Plan which included installation of soil borings, groundwater monitoring wells, and soil vapor points, and sampling of each.

Madison Realty Capital, River North, Staten Island, New York. Sarah coordinates field staff and subcontractors for the execution of the Remedial Investigation at this approximately 2-acre site enrolled in the NYSDEC BCP. The Remedial Investigation involved the installation of approximately fifty soil borings, twenty soil vapor points, including soil borings extending to bedrock.

Oxford Property Group, Naval Yard Phase I Portfolio. Sarah conducted two of five Phase I ESAs for Oxford Property Group in the Philadelphia Naval Yard part of due diligence for potential acquisition of the properties. Each property was approximately 8 acres in size developed with active life sciences facilities. Sarah conducted site reconnaissance of the properties and reviewed historical site documentation to identify recognized environmental conditions at each site.

Target, Multiple Location in New York and New Jersey. Sarah conducted Phase I ESAs part of due diligence for potential acquisition of properties by Target in Jersey City, performed oversight of upgrades and construction at various Target stores in Brooklyn, Queens, Long Island, and Jersey City, including methane monitoring, air monitoring, collection of endpoint soil samples, and groundwater sampling. Sarah performed all oversight work in accordance with the Site-specific Soil Materials Management Plan.

BCP Applications and Remedial Investigation Work Plans for NYSDEC. Sarah has completed writing several BCP Applications for various clients in New York State. In writing the applications, Sarah reviews previous subsurface investigations of the site, and historical information to help get underutilized and abandoned contaminated properties into the BCP to be remediated and redeveloped under NYSDEC. After completing the application, she prepares a Remedial Investigation Work Plan to strategically investigate site contamination so proper Remedial Action can take place.

Excavation Oversight and CAMP Monitoring, Various Sites, Bronx and Brooklyn, New York. Sarah served as field geologist for several projects under the NYCOER program and NYSBCP. Her responsibilities included performing excavation oversight, air monitoring, vapor barrier installation oversight, and logging trucks for off-site disposal.

Multiple Clients, Phase I ESAs and Due Diligence, Multiple Locations in New York, New Jersey, Pennsylvania and Massachusetts. Sarah conducted Phase I ESAs, for buyers on a variety of properties including commercial, industrial, and residential sites in New York, New Jersey, Pennsylvania, and Massachusetts. She has experience conducting site reconnaissance and reviewing historical site documentation to identify recognized environmental conditions at the sites.

Multiple Clients, Phase II, Multiple Locations, New York. As field geologist, Sarah conducted Phase II ESAs on a variety of different sites. She assisted with the development of sampling plans primarily based off previous environmental investigations and due diligence. Primary responsibilities for Phase II investigations included oversight of the installation of test borings and/or test pits, the installation of groundwater monitoring wells, and soil vapor points.

Geotechnical Engineering Experience

Smithsonian Institution Revitalization of the Historic Core, Washington, D.C. Sarah supported a team providing geotechnical engineering services for the renovation of several Smithsonian Institution buildings adjacent to the National Mall. Sarah was responsible for the oversight of geotechnical borings using hollow stem augur and mud rotary techniques as well as rock coring operations. Sarah classified soil samples using the Unified Soil Classification System, analyzed bedrock samples, and analyzed the geology of the Washington D.C area.

Parcel B Development, Washington, D.C. Sarah was the lead field Geologist for the geotechnical investigation for the development of the Parcel B Site adjacent to the D.C. United Stadium in Washington D.C. Sarah was responsible for the oversight of geotechnical borings using hollow stem augur and mud rotary techniques. She observed and coordinated Pressure meter testing of several borings and observed the installation of several groundwater monitoring wells to investigate impacted groundwater on the property. Additionally, based on her soil classifications in the field, she drafted boring logs and analyzed subsurface conditions at the site.

HALEY ALDRICH

KATHERINE R. MILLER

Senior Project Manager

EDUCATION

BS, Chemistry, University of Arizona

SPECIAL STUDIES AND COURSES

40-Hour OSHA Hazardous Waste Operations and Emergency Response Training (29 CFR 1910.120 and 40 CFR 265.16)

8-Hour OSHA Refresher Training (29 CFR 1910.120)

Level IV Data Validation Training

AWARDS

Pinnacle Award, 2009

Pathfinder Award, 2014

In her 10+ years at Haley & Aldrich, Katherine has worked on soil and groundwater environmental investigations and the preparation of environmental reports for private, industrial, and government-based project clients. She is a qualified Data Validator capable of performing various levels of validation on laboratory water quality data according to US Environmental Protection Agency (EPA) National Functional Guidelines and to U.S. Department of Energy radiochemical guidelines. She also has experience designing and maintaining databases for project-specific needs.

Project management responsibilities for a $1.5 million per year stormwater project include preparation of subcontractor bids and contracts; preparation of cost estimates, proposals, and reports; coordination of field testing programs; and interpretation of chemical testing results. She has interacted with local regulatory agencies.

RELEVANT PROJECT EXPERIENCE

Confidential Aerospace Manufacturer, Groundwater Monitoring, Western U.S. Katherine served as project manager for the comprehensive stormwater management program. Responsibilities included project finance management and data management including quality assurance/quality control (QA/QC) and interpretation of chemical testing results. Evaluated QA/QC of groundwater quality data, prepared reports and managed data for the site. Performed data validation of quarterly water quality data from over 300 locations according to EPA National Functional Guidelines and to DOE radiochemical guidelines over a six-year period. Also, responsible for updating and maintaining the integrity of over 200,000 records during that time period. Assisted with management of sampling, analysis, and reporting of constituents of concern, ensured compliance with post-closure permit monitoring and reporting requirements, Data Management Plan, QAPP, and Environmental Data Management System, and ensured and maintained 100% compliance with the QAPP and Data Management Plan. Additionally, prepared groundwater data summaries for proposed extraction wells including comparisons to site NPDES outfall limits in support of Groundwater Interim Measures planning.

Asarco Hayden Plant Site, Hayden, Arizona. Katherine assisted with field preparation, QA/QC of analytical data, and data validation as part of the Remedial Investigation/Feasibility Work Plan including soil, sediment, air, process water, surface water, and stormwater.

Former MGP Site, California. Katherine assisted with report preparation, QA/QC of soil and/or groundwater quality data, and data validation for the investigation of three large former MGP sites in an urban, residential setting; includes over 200 residential properties.

General Manufacturing, Leitchfield, Kentucky. Katherine assisted with report preparation, QA/QC of soil and/or groundwater quality data, and data validation for a soil and groundwater RCRA site. Groundwater monitoring is conducted annually at more than 50 locations for volatile organic compounds (VOCs), including 1,4-dioxane and semi-volatile organic compound (SVOCs).

Skyworks Solutions, Inc., Newbury Park, California. Katherine assisted with report preparation, QA/QC of soil and/or groundwater quality data, and data validation at groundwater remediation site. She monitored for VOCs, including 1,4-dioxane, and inorganic chemicals, including hexavalent chromium.

Teledyne Scientific Company, Thousand Oaks, California. Katherine assisted with report preparation for this groundwater assessment site. Monitored natural attenuation has been instituted as the long-term site remedy.

Port of Redwood City, Permitting and Sediment Characterization, California. Katherine assisted with report preparation, QA/QC of sampling data, and data validation.

Kiewit Infrastructure West, Sediment Quality Study, California. Katherine assisted with report preparation, QA/QC of sampling data, and data validation.

Aeolian Yacht Harbor, Permitting, Eel Grass Conservation and Sediment Characterization, California. Katherine assisted with report preparation, QA/QC of sampling data, and data validation.

Marin County, Paradise Cay Permitting and Sediment Characterization, California. Katherine assisted with report preparation, QA/QC of sampling data, and data validation.

HALEY ALDRICH

BRIAN FITZPATRICK, CHMM

Corporate Director, Health and Safety

EDUCATION

M.P.A., Environmental Policy, Syracuse University
B.S., Environmental Science, University of Massachusetts-Amherst
A.S., Chemistry, Valley Forge Military Junior College
Commissioned Officer, United States Army

CERTIFICATIONS

Certified Hazardous Materials Manager (Reg. No. 13454)
Certified Department of Transportation Shipper
Certified International Air Transport Authority Shipper

PROFESSIONAL SOCIETIES

Alliance of Hazardous Materials Professionals
Academy of Certified Hazardous Materials Managers, New England Chapter

SPECIAL STUDIES AND COURSES

Department of Transportation
International Air Transport Authority
Incident Commander
Confined Space Entry and Rescue
Radiation Safety Officer
RCRA Hazardous Waste
Massachusetts Industrial Waste Water Operator Grade 2I (expired)

AWARDS

Presidents Club Award (one million hours worked without a recordable injury), Cabot Corporation
Chancellors Award for Excellence, Syracuse University

Brian ensures the work we do for our clients is done safely – knowing this reduces costs, improves service quality and site conditions, and ultimately protects our clients' reputations. In addition to building the Haley & Aldrich Health & Safety (H&S) culture, Brian is hands-on with clients to help improve their and their partners' safety cultures.

He has extensive expertise in the Occupational Safety and Health Administration (OSHA) general industry, process safety management, and construction safety programs. He is an active member of the Alliance of Hazardous Materials Professionals and the New England chapter of the Academy of Certified Hazardous Materials Managers.

Brian knows an organization's success is predicated on empowering its people to safely work within the complex, living processes in which they operate. He is a student of human factors in the workplace, of the phenomena of human error and drift into failure, and of the safety applications of Lean techniques.

RELEVANT PROJECT EXPERIENCE

Haley & Aldrich, Inc., Burlington, Massachusetts. As Chief Health and Safety Officer, Brian has led and facilitated the development and implementation of corporate health and safety (H&S) improvement plans to enhance compliance and improve H&S performance. In Brian's time with Haley & Aldrich, Inc., the company has realized dramatic improvement on H&S goals and in Key Performance Indicators. Brian is responsible for developing a risk competence culture, where our staff are empowered to look for and engage to address risk before anyone is injured. Brian oversees the development, implementation and continuous improvement of all H&S programs for the company. Additional responsibilities include:

- Developing a safety culture through incident reporting, root cause analysis, behavior-based safety, hazard recognition and risk assessment, communication, and developing leaders;

- Monitoring proposed and existing SH&E regulations and legislation to determine their impact on operations and to ensure continued compliance;
- Overseeing the safety, industrial hygiene, and toxicology programs for over 600 staff members engaged in remediation, construction, health and safety, consulting, and general office work across 28 offices in the United States and on assignment to international project sites;
- Continuously seeks to improve H&S performance as measured by the OSHA Incident Rating (IR) and Worker's Compensation Experience Modification Rating (EMR), as well as Leading Indicators developed with the management team; and
- Participating in the corporate audit program as an auditor or lead auditor;

Energy Client, California. As Chief Health and Safety Officer, Brian led and facilitated the Alliance Partnership Safety Council in 2017, is still an active contributor to the council, and hosts routine contractor safety forums for the client. Brian is actively involved in the development and implementation of program safety, health, and environmental (SH&E) plans to ensure safe operations on project sites. Brian developed permits and Health and Safety Plans for large projects and routinely audits the site safety. Additional responsibilities include:

- Driving reporting and behavior-based safety initiatives to support our internal safety culture and developing monthly summary reports to illustrate performance to our client.
- Develop, assess and continuously improve site safety plans and practices, including specific safety protocols for working safely over and around water.
- Worked as an extension of the client's organization to provide assurance that the remedy was completed safely and consistent with client-specific requirements.
- Support on-site safety personnel in ensuring the health and safety of the general public, our staff, and our sub-contracted employees.
- Audits and visits sites to ensure compliance with our internal policies and client-specific requirements.

Energy Client, Ohio. As Chief Health and Safety Officer, Brian supports the project team in developing and executing client and project specific health and safety measures, such as a site specific Health and Safety Plan, Job Hazard Analyses, Industrial Hygiene program, and site specific training. Brian also routinely visits the site to assess current practices and condition and to ensure continuous improvement. Additional responsibilities include:

- Develop, assess, and continuously improve site safety plans and practices, including specific safety protocols to comply with supplemental EH&S requirements such as the Duke Health and Safety Handbook, Environmental Supplemental, and EHS Keys to Life.
- Develop, assess, and continuously improve site safety plans and practices to address the risks associated with the work being performed on site, as well as the environmental conditions and simultaneous operations, including trenching and excavation, hot work, work over and near water, heavy equipment, HAZWOPER, etc.
- Worked as an extension of the client's organization to provide assurance that the remedy was completed safely and consistent with client-specific requirements.
- Support on-site safety personnel in ensuring the health and safety of the general public, our staff, and our sub-contracted employees.
- Audits and visits site to ensure compliance with our internal policies and client-specific requirements.

HALEY ALDRICH

BRIAN A. FERGUSON

Senior Engineer

EDUCATION

M. S. Geotechnical Engineering, Tufts University, Medford, Massachusetts; 2012
B. S. Civil Engineering, State University of New York - Environmental, Science, and Forestry, Syracuse, New York; 2000
Ass. Science Degree in Applied Science and Technology (Nuclear Engineering), Thomas A. Edison State College, Trenton, New Jersey; 2000

PROFESSIONAL SOCIETIES

Order of the Engineer – 2000
Boston Society of Civil Engineers (BSCE)
American Society of Civil Engineers (ASCE)

SPECIAL STUDIES AND COURSES

American Concrete Institute – Certified Field Technician Certified Grade 1
Radiation Safety and Operations of Nuclear Testing Equipment – Troxler
40-Hour OSHA Hazardous Waste Operations Training (+ 8-Hour annual refresher)
10-Hour OSHA Construction training
Confined Space Entry Training
16-Hour Asbestos Operations and Maintenance

Mr. Ferguson has over six years of experience serving as project engineer on a variety of real estate development projects. His project experience has included monitoring field investigations and performing construction oversight, performing due diligence and engineering analyses, performing geotechnical analyses and developing geotechnical recommendations, and preparing geotechnical reports and project specifications.

In addition to providing engineering design support, Mr. Ferguson has managed and participated in a number of field service activities. Field work has included construction monitoring and documentation of contractors' deep and shallow foundation related construction, including slurry walls, caissons, pile driving, pile cap installation, earthwork, backfilling and compaction, installation of soldier pile and wood lagging support systems, installation of tie backs, reading inclinometers, conducting in-place field unit weight tests, tie-back load testing, seismograph installation, monitoring, and evaluating, and preparation of footing bearing surfaces. Other responsibilities have included site development activities, including placement of utilities and subgrade preparation for roads; observations and testing to determine that work is completed in compliance with contract documents; on-site soil management; sampling of soil and groundwater for chemical laboratory testing and conducting in situ field screening; maintenance of job records including pile driving logs, results of field density tests, records of caisson and footing installations; preparation of daily field reports; in contact with key personnel; and resolution of field related problems.

RELEVANT PROJECT EXPERIENCE

St. Elizabeths Hostpital – West Campus Forensic Evaluations, Washington, D.C. Project Engineer for forensic evaluations on the adaptive reuse of former hospital buildings. Responsibilities included coordination of a field exploration program, including test borings and test pits to obtain subsurface information for project design and construction, overseeing multiple field personnel, subcontractors, assisting with project management, reviewing subcontractors invoices, reviewing and summarizing subsurface data and writing data reports.

TUFTS University, New Central Energy Plant, Medford, MA. Project engineer for a new Central Energy Plant that will house new co-generation steam boilers, centralized chilled water and electrical transformer switchgear that is planned to occupy approximately 20,000 square feet across two or three levels. Responsibilities included coordination of construction monitoring, observing SOE and footing installation, assisting with project management, reviewing weekly field construction reports, reviewing and responding to geotechnical design submittals and attending project meetings.

Lahey Hospital and Medical Center – Stilts Infill Project, Burlington, MA Project Engineer for an addition to the existing Stilts building on the Lahey campus. Responsibilities included coordination and overseeing geotechnical and environmental subsurface investigations, coordination of construction monitoring, observing footing installation, assisting with project management, reviewing weekly field construction reports, reviewing and responding to geotechnical design submittals and attending project meetings.

Gloucester Beauport Hotel, Gloucester, MA Project engineer for a four story hotel with a seawall constructed adjacent to tidal beach. Responsibilities included coordination and overseeing geotechnical and environmental subsurface investigations, coordination of construction monitoring, assisting with project management, reviewing weekly field construction reports, reviewing and responding to geotechnical design submittals and attending project meetings, design and implementation of a sub-slab gas mitigation system.

275 Wyman Street, New Office Building, Waltham, MA. Project engineer for a new office building and parking garage founded on a shallow foundation system. Responsibilities included preparing proposals, assisting with management and planning of a subsurface investigation program, summarizing subsurface data and reviewing geotechnical test boring logs, coordination of construction monitoring and instrumentation monitoring programs, reviewing weekly field construction reports, reviewing and responding to specialty geotechnical design submittals and RFIs by others and attending project meetings.

Suffolk University - 20 Somerset Street, Boston, MA Project engineer for design of 8-story academic building with two levels of below grade finished space. Responsibilities included coordination of construction monitoring, observing SOE and footing installation, assisting with project management, reviewing weekly field construction reports, reviewing and responding to geotechnical design submittals and attending project meetings.

Worcester State University, New Student Housing, Worcester, MA Project engineer for design and construction of a 7-story residence/dining hall with a single level basement and a major site retaining wall structure. Responsibilities included overseeing geotechnical subsurface investigations, provided foundation recommendations and specifications, and prepared a retaining wall contract document. Responsibilities included coordination of construction monitoring, excavation and construction of footings, and soil reuse and management, assisting with project management, reviewing weekly field construction reports, reviewing and responding to geotechnical design submittals and attending project meetings.

University of Massachusetts Boston, General Academic Building No.1, Boston, MA. Project engineer responsible for assisting project manager in preliminary foundation engineering recommendations and construction considerations for a new academic building on a part of Columbia Point, a historic landfill area. Assisted in design phase services that included preparing foundation support design recommendations including the use of high allowable stresses for 190-ft long end-bearing H-piles and application of Slickcoat coating to address downdrag concerns and reduce foundation costs.

Waltham Watch Factory, Waltham, MA project engineer for redevelopment of former watch factory. Responsibilities included construction oversight of new precast parking garage, utilitiy upgrades, soil remediation and management, installation of gas mitigation systems, assisting with project management, reviewing weekly field construction reports, reviewing and responding to geotechnical design submittals and attending project meetings.

Massachusetts Green High Performance Computing Center, Holyoke, MA. Project engineer for 60,000 sq. ft high level computing center and associated support utilities. Redevelopment of the site included recycling 50,000 cy of construction debris into the site fills at this historic site along the Connecticut River. Responsibilities included coordinating geotechnical and environmental field investigations, coordination of construction monitoring, seismic analysis, reviewing weekly field construction reports, reviewing and responding to geotechnical design submittals and attending project meetings.

The Shops at Riverwood, Hyde Park, MA. The project consisted of the redevelopment of a colonial era paper mill. The multi-building complex was demolished and the concrete and brick from the previous buildings were recycled. The project involved crushing 50,000 cy of brick and concrete and placement of excavated soils and recycled brick and concrete as compacted fill materials to support proposed buildings, pavement areas, and achieve 5 to 9 ft. raises in grade. Field Representative was responsible for management and reuse of brick and concrete stockpiles, in-place density testing, coordination of test pits, installation of soldier pile and versa-lok walls, and backfilling of underground vaults. Remedial activities included: excavation of 5,000 cy of petroleum contaminated soils, on-site cement batching in a pug mill, and placement of compacted recycled materials in roadway areas; delineation, excavation and off-site disposal of TSCA-regulated PCB contaminated soils associated with historical Askarel transformers and dioxin-contaminated soils associated with historical bleaching operations; and disposition of 1,000 tons of paper mill sludge encountered within an abandoned granite-walled sluiceway structure. In addition, assisted with weekly project meetings, maintaining a record of material reuse, and providing weekly field reports.

Harvard Law School, Cambridge, MA. The Harvard Law School project is located on Massachusetts Avenue in Cambridge. The project consisted of a multistory building above ground with 5 levels below ground for a parking garage. Field Representative was responsible for overseeing the installation of slurry walls into bedrock and LBEs with three installation rigs while monitoring the removal of urban fill and transfer to several different receiving facilities from another portion of the site. The slurry walls were constructed into bedrock. Other Field Representative activities were: testing of the slurry, management of the excavated soils, and record keeping of the Contractor’s obstruction and down time of the equipment. In addition, assisted with weekly project meetings, maintaining a record of obstruction and machine time, and providing weekly field reports.

APPENDIX J
Proposed Remedial Action Project Schedule

REMEDIAL ACTION PROJECT SCHEDULE

180 EAST 125TH STREET DEVELOPMENT SITE

180 EAST 125TH STREET, NEW YORK, NEW YORK

BCP PROJECT C231160

Task	Duration	Start	End	2025										
				Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Design and Permitting	90	2/1/2025	5/1/2025											
NYSDEC BCP RAWP Review	50	3/12/2025	5/1/2025											
45-Day Public Comment for RAWP	45	5/7/2025	6/23/2025											
Final RAWP Submission	7	6/23/2025	6/30/2025											
Implementation of RAWP	120	7/15/2025	11/15/2025											
Preparation of FER and SMP/ EE (if required)	90	9/1/2025	12/1/2025											
NYSDEC & NYSDOH Review of FER & SMP/ EE (if required)	30	11/15/2025	12/15/2025											
NYSDEC Issues COC	15	12/15/2025	12/30/2025											

Notes:

1. *Schedule is preliminary and subject to change.*
2. *Implementation of RAWP does not include completion of building construction.*
3. *NYSDEC - New York State Department of Environmental Conservation*
4. *NYSDOH - New York State Department of Health*
5. *BCP - Brownfield Cleanup Program*
6. *RAWP - Remedial Action Work Plan*
7. *FER - Final Engineering Report*
8. *SMP - Site Management Plan*
9. *EE - Environmental Easement*

11. *COC - Certificate of Completion*
12. *COC issuance estimated prior to December 31, 2025*