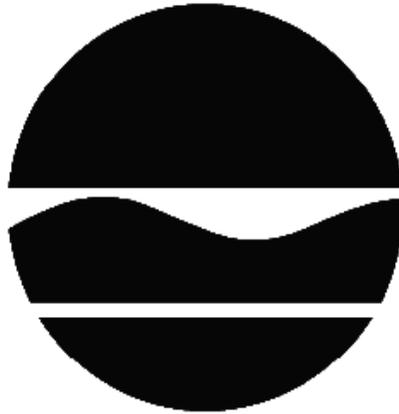


RECORD OF DECISION

Bronx Psychiatric Center
State Superfund Project
Bronx, Bronx County
Site No. 203005
March 2019



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

DECLARATION STATEMENT - RECORD OF DECISION

Bronx Psychiatric Center
State Superfund Project
Bronx, Bronx County
Site No. 203005
March 2019

Statement of Purpose and Basis

This document presents the remedy for the Bronx Psychiatric Center site, a Class 2 inactive hazardous waste disposal site. The remedial program was chosen in accordance with the New York State Environmental Conservation Law and Title 6 of the Official Compilation of Codes, Rules and Regulations of the State of New York (6 NYCRR) Part 375 and is not inconsistent with the National Oil and Hazardous Substances Pollution Contingency Plan of March 8, 1990 (40CFR300), as amended.

This decision is based on the Administrative Record of the New York State Department of Environmental Conservation (the Department) for the Bronx Psychiatric Center site and the public's input to the remedy presented by the Department. A listing of the documents included as a part of the Administrative Record is included in Appendix B of the ROD.

Description of Selected Remedy

The elements of the selected remedy are as follows:

1. Remedial Design

A remedial design program will be implemented to provide the details necessary for the construction, operation, optimization, maintenance, and monitoring of the remedial program. Green remediation principles and techniques will be implemented to the extent feasible in the design, implementation, and site management of the remedy as per DER-31. The major green remediation components are as follows;

- Considering the environmental impacts of treatment technologies and remedy stewardship over the long term;
- Reducing direct and indirect greenhouse gases and other emissions;
- Increasing energy efficiency and minimizing use of non-renewable energy;
- Conserving and efficiently managing resources and materials;
- Reducing waste, increasing recycling and increasing reuse of materials which would otherwise be considered a waste;
- Maximizing habitat value and creating habitat when possible;
- Fostering green and healthy communities and working landscapes which balance ecological, economic and social goals; and
- Integrating the remedy with the end use where possible and encouraging green and sustainable re-development.

2. Excavation

Prior to the excavation, the transformers will be taken out of service and removed. The concrete floor will be removed and disposed of, and the soils under the concrete floor will be excavated. The soils underneath the transformers will be sampled and excavated and end point samples will be collected. All on-site soils which exceed restricted-residential SCOs for PCBs (1 ppm), as defined by 6 NYCRR Part 375-6.8 and/or the presumptive remedy for PCBs as defined in CP-51 (1 ppm in the upper 2 feet, 10 ppm below that) will be excavated and transported off-site for disposal. Clean fill meeting the requirements of 6 NYCRR Part 375-6.7(d) will be brought in to replace the excavated soil and establish the designed grades at the site. The site will be re-graded to accommodate installation of a cover system as described in remedy element #4. All soils in the upper two feet below the building slab in Transformer Rooms No. 1 and 2 which exceed the restricted residential SCOs for PCBs will be excavated and transported off-site for disposal. The volume of contaminated soil removed from the site will be determined during the design phase.

3. Backfill

On-site soil which does not exceed the above excavation criteria may be used below the cover system described in remedy element #4 to backfill the excavation. On-site soil which does not exceed the above excavation criteria or the protection of groundwater SCOs for any constituent may be used anywhere beneath the cover system, including below the water table, to backfill the excavation or re-grade the site. Clean fill meeting the requirements of 6 NYCRR Part 375-6.7(d) will be brought in to replace the excavated soil and establish the designed grades at the site. The site will be re-graded to accommodate installation of a cover system as described in remedy element #4.

4. Cover System

A site cover currently exists and will be maintained and/or replaced to allow for restricted residential use of the site. Any site redevelopment will maintain the existing site cover, which consists either of the structures such as buildings, pavement, sidewalks or soil where the upper two feet of exposed surface soil meets the applicable soil cleanup objectives (SCOs) for restricted residential use. Any fill material brought to the site will meet the requirements for the identified site use as set forth in 6NYCRR part 375-6.7(d).

5. Institutional Controls

Imposition of an institutional control in the form of an environmental easement for the controlled property which will:

- require the remedial party or site owner to complete and submit to the Department a periodic certification of institutional and engineering controls in accordance with Part 375-1.8 (h)(3);
- allow the use and development of the controlled property for restricted residential use as defined by Part 375-1.8(g), although land use is subject to local zoning laws;
- restrict the use of groundwater as a source of potable or process water, without necessary water quality treatment as determined by the NYSDOH or NYCDOH; and
- require compliance with the Department approved Site Management Plan.

6. Site Management Plan

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

- a. an Institutional and Engineering Control Plan that identifies all use restrictions and engineering controls for the site and details the steps and media-specific requirements necessary to ensure the following institutional and/or engineering controls remain in place and effective:
- Institutional Controls: The Environmental Easement discussed in Paragraph 5 above.
 - Engineering Controls: The cover system discussed in Paragraph 4.

This plan includes, but may not be limited to:

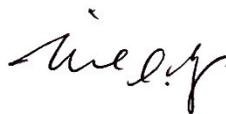
- an Excavation Plan which details the provisions for management of future excavations in areas of remaining contamination;
 - descriptions of the provisions of the environmental easement including any land use, and/or groundwater use restrictions;
 - a provision that should a building foundation or building slab be removed in the future, a cover system consistent with that described in Paragraph 3 above will be placed in any areas where the upper two feet of exposed surface soil exceed the applicable soil cleanup objectives (SCOs);
 - provisions for the management and inspection of the identified engineering controls;
 - maintaining site access controls and Department notification; and
 - the steps necessary for the periodic reviews and certification of the institutional and/or engineering controls.
- b. a Monitoring Plan to assess the performance and effectiveness of the remedy. The plan includes, but may not be limited to:
- a schedule of monitoring and frequency of submittals to the Department.

New York State Department of Health Acceptance

The New York State Department of Health (NYSDOH) concurs that the remedy for this site is protective of human health.

Declaration

The selected remedy is protective of human health and the environment, complies with State and Federal requirements that are legally applicable or relevant and appropriate to the remedial action to the extent practicable, and is cost effective. This remedy utilizes permanent solutions and alternative treatment or resource recovery technologies, to the maximum extent practicable, and satisfies the preference for remedies that reduce toxicity, mobility, or volume as a principal element.



March 30, 2019 _____

Date

Michael J. Ryan, P.E., Director
Division of Environmental Remediation

RECORD OF DECISION

Bronx Psychiatric Center
Bronx, Bronx County
Site No. 203005
March 2019

SECTION 1: SUMMARY AND PURPOSE

The New York State Department of Environmental Conservation (the Department), in consultation with the New York State Department of Health (NYSDOH), has selected a remedy for the above referenced site. The disposal of hazardous wastes at the site has resulted in threats to public health and the environment that would be addressed by the remedy. The disposal or release of hazardous wastes at this site, as more fully described in this document, has contaminated various environmental media. Contaminants include hazardous waste and/or petroleum.

The New York State Inactive Hazardous Waste Disposal Site Remedial Program (also known as the State Superfund Program) is an enforcement program, the mission of which is to identify and characterize suspected inactive hazardous waste disposal sites and to investigate and remediate those sites found to pose a significant threat to public health and environment.

The Department has issued this document in accordance with the requirements of New York State Environmental Conservation Law and 6 NYCRR Part 375. This document is a summary of the information that can be found in the site-related reports and documents.

SECTION 2: CITIZEN PARTICIPATION

The Department seeks input from the community on all remedies. A public comment period was held, during which the public was encouraged to submit comment on the remedy. All comments on the remedy received during the comment period were considered by the Department in selecting a remedy for the site. Site-related reports and documents were made available for review by the public at the following document repositories:

Westchester Square Library
2521 Glebe Avenue
Bronx, NY 10461
Phone: (718) 863-0436

Bronx Community board #11
1741 Colden Ave
Bronx, NY 10462
Phone: (718) 892-6262

A public meeting was also conducted. At the meeting, the findings of the remedial investigation (RI) and the feasibility study (FS) were presented along with a summary of the selected remedy. After the presentation, a question-and-answer period was held, during which verbal or written comments were accepted on the selected remedy.

Comments on the remedy received during the comment period are summarized and addressed in the responsiveness summary section of the ROD.

Receive Site Citizen Participation Information By Email

Please note that the Department's Division of Environmental Remediation (DER) is "going paperless" relative to citizen participation information. The ultimate goal is to distribute citizen participation information about contaminated sites electronically by way of county email listservs. Information will be distributed for all sites that are being investigated and cleaned up in a particular county under the State Superfund Program, Environmental Restoration Program, Brownfield Cleanup Program and Resource Conservation and Recovery Act Program. We encourage the public to sign up for one or more county listservs at <http://www.dec.ny.gov/chemical/61092.html>

SECTION 3: SITE DESCRIPTION AND HISTORY

Location:

The site consists of Transformer Room No. 1 and Transformer Room No. 2 in Building No. 1 of the Bronx Psychiatric Center, located at 1500 Waters Place in Bronx County of New York City, tax block 4226, lot 30. The site occupies 0.1 acre on the 5-acre Bronx Psychiatric Center campus, which is in an urban area.

Site Features:

Transformer Rooms No. 1 and No. 2 are in the east side of the basement of Building No. 1. Access to the transformer rooms is limited to maintenance personnel. Transformer Rooms No. 1 and No. 2 currently contain active transformers that supply electricity to Building No 1.

Current Zoning and Land Use:

The current zoning of the site is R-5, which is residential that includes multifamily housing. Building No. 1 is owned by the New York State Office of Mental Health (OMH) and is currently vacant. The Bronx Psychiatric Center site is located in a mixed-use area of Bronx County. There are currently 31 buildings on the campus. Surrounding uses outside the hospital campus include residential, commercial, light industrial, and utility and transportation rights-of-way. The nearest residential structure from Building No. 1 is approximately 1,000 feet away east of the Hutchinson River Parkway.

Past Use of the Site:

The site has been used as transformer rooms for the psychiatric center for over 50 years and is also currently in use for electric power supply to the building. There are transformers and associated electrical equipment in the rooms. The prior transformers used at the facility contained PCB dielectric fluid, which leaked within the rooms, impacting the concrete floors

beneath and near the transformers and the soils below the floor. The former transformers were replaced and the current transformers contain non-PCB oil.

Site Geology and Hydrogeology:

Soils beneath the site consist of urban fill and the groundwater flows to the northeast. Depth to groundwater is approximately 11 feet below ground surface and 3 feet below the basement slab.

A site location map is attached as Figure 1.

SECTION 4: LAND USE AND PHYSICAL SETTING

The Department may consider the current, intended, and reasonably anticipated future land use of the site and its surroundings when evaluating a remedy for soil remediation. For this site, alternatives (or an alternative) that restrict(s) the use of the site to restricted-residential use (which allows for commercial use and industrial use) as described in Part 375-1.8(g) were/was evaluated in addition to an alternative which would allow for unrestricted use of the site.

A comparison of the results of the RI to the appropriate standards, criteria and guidance values (SCGs) for the identified land use and the unrestricted use SCGs for the site contaminants is included in the Tables for the media being evaluated in Exhibit A.

SECTION 5: ENFORCEMENT STATUS

Potentially Responsible Parties (PRPs) are those who may be legally liable for contamination at a site. This may include past or present owners and operators, waste generators, and haulers.

The PRPs for the site, documented to date, include:

New York State Office of Mental Health

The Department and NYS OMH entered into a Consent Order on February 23, 2012, Index # R2-0668-06-11. The Order obligates the responsible party to implement a full remedial program.

SECTION 6: SITE CONTAMINATION

6.1: Summary of the Remedial Investigation

A Remedial Investigation (RI) has been conducted. The purpose of the RI was to define the nature and extent of any contamination resulting from previous activities at the site. The field activities and findings of the investigation are described in the RI Report.

The following general activities are conducted during an RI:

- Research of historical information,
- Geophysical survey to determine the lateral extent of wastes,
- Test pits, soil borings, and monitoring well installations,
- Sampling of waste, surface and subsurface soils, groundwater, and soil vapor,
- Sampling of surface water and sediment,

- Ecological and Human Health Exposure Assessments.

The analytical data collected on this site includes data for:

- groundwater
- soil
- indoor air

6.1.1: Standards, Criteria, and Guidance (SCGs)

The remedy must conform to promulgated standards and criteria that are directly applicable or that are relevant and appropriate. The selection of a remedy must also take into consideration guidance, as appropriate. Standards, Criteria and Guidance are hereafter called SCGs.

To determine whether the contaminants identified in various media are present at levels of concern, the data from the RI were compared to media-specific SCGs. The Department has developed SCGs for groundwater, surface water, sediments, and soil. The NYSDOH has developed SCGs for drinking water and soil vapor intrusion. The tables found in Exhibit A list the applicable SCGs in the footnotes. For a full listing of all SCGs see: <http://www.dec.ny.gov/regulations/61794.html>

6.1.2: RI Results

The data have identified contaminants of concern. A "contaminant of concern" is a hazardous waste that is sufficiently present in frequency and concentration in the environment to require evaluation for remedial action. Not all contaminants identified on the property are contaminants of concern. The nature and extent of contamination and environmental media requiring action are summarized in Exhibit A. Additionally, the RI Report contains a full discussion of the data. The contaminant(s) of concern identified at this site is/are:

PCB aroclor 1260

As illustrated in Exhibit A, the contaminant(s) of concern exceed the applicable SCGs for:

- soil

6.2: Interim Remedial Measures

An interim remedial measure (IRM) is conducted at a site when a source of contamination or exposure pathway can be effectively addressed before issuance of the Record of Decision.

The following IRM(s) has/have been completed at this site based on conditions observed during the RI.

IRM - Epoxy Coating

The transformers containing PCB oils were replaced in 1993. In 1995, the concrete floors were encapsulated (sealed) with a two-layer epoxy system in both transformer Rooms No. 1 and 2.

The entire floor in Room No. 1 was epoxy sealed, and a limited portion of the floor near the transformer in Room No. 2 was epoxy sealed. Openings between ventilation fan and exterior walls and the space between the floors and electrical equipment were sealed, and annual surface wipe sampling and maintenance of the epoxy coating was conducted.

6.3: Summary of Environmental Assessment

This section summarizes the assessment of existing and potential future environmental impacts presented by the site. Environmental impacts may include existing and potential future exposure pathways to fish and wildlife receptors, wetlands, groundwater resources, and surface water.

Based upon the resources and pathways identified and the toxicity of the contaminants of ecological concern at this site, a Fish and Wildlife Resources Impact Analysis (FWRIA) was deemed not necessary for OU 01.

Nature and Extent of Contamination:

Soil and groundwater were analyzed for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), metals, polychlorinated biphenyls (PCBs), and pesticides. Based upon investigations conducted to date, the primary contaminant of concern is PCBs.

Soil/Concrete - The transformers were reported to have leaked and in 1993, soil and concrete within and below the transformer rooms was sampled. In Transformer Room No. 1, soil had up to 21,000 parts per million (ppm) and in the soil beneath the floors up to 23,000 ppm of PCBs. In Transformer Room No. 2, concrete had up to 68,000 ppm, and in the soil beneath the floors up to 49 ppm of PCBs. The depth of contamination appears to be limited. Further investigation underneath the electrical equipment has been impeded by the active use of the transformers. Monitoring for seepage of PCBs through the concrete floors, which were epoxy-coated in 1995 and recoated in 2005, was reduced from semi-annual to annual in January 2007. Data does not indicate any off-site impacts in soil related to this site.

Groundwater - Groundwater was monitored quarterly for approximately 10 years. There were no detections of PCBs, except once, in November 2003. The PCB concentration was 3.8 parts per billion (ppb), and the groundwater standard is 0.09 ppb. Data does not indicate any off-site impacts in groundwater related to this site.

Indoor Air - Indoor air sampling had occurred once per year for approximately 10 years. There were no detections of PCBs, except once, in May 2004. The PCB concentration was 0.16 micrograms per cubic meter (ug/m³), which was just over the reporting limit.

6.4: Summary of Human Exposure Pathways

This human exposure assessment identifies ways in which people may be exposed to site-related contaminants. Chemicals can enter the body through three major pathways (breathing, touching or swallowing). This is referred to as *exposure*.

There is a potential for people to come into contact with polychlorinated biphenyls (PCB) contamination in the concrete floors of the transformer rooms. However, access is restricted and the floors have been sealed with an epoxy coating.

6.5: Summary of the Remediation Objectives

The objectives for the remedial program have been established through the remedy selection process stated in 6 NYCRR Part 375. The goal for the remedial program is to restore the site to pre-disposal conditions to the extent feasible. At a minimum, the remedy shall eliminate or mitigate all significant threats to public health and the environment presented by the contamination identified at the site through the proper application of scientific and engineering principles.

The remedial action objectives for this site are:

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.

SECTION 7: SUMMARY OF THE SELECTED REMEDY

To be selected the remedy must be protective of human health and the environment, be cost-effective, comply with other statutory requirements, and utilize permanent solutions, alternative technologies or resource recovery technologies to the maximum extent practicable. The remedy must also attain the remedial action objectives identified for the site, which are presented in Section 6.5. Potential remedial alternatives for the Site were identified, screened and evaluated in the feasibility study (FS) report.

A summary of the remedial alternatives that were considered for this site is presented in Exhibit B. Cost information is presented in the form of present worth, which represents the amount of money invested in the current year that would be sufficient to cover all present and future costs associated with the alternative. This enables the costs of remedial alternatives to be compared on a common basis. As a convention, a time frame of 30 years is used to evaluate present worth costs for alternatives with an indefinite duration. This does not imply that operation, maintenance, or monitoring would cease after 30 years if remediation goals are not achieved. A summary of the Remedial Alternatives Costs is included as Exhibit C.

The basis for the Department's remedy is set forth at Exhibit D.

The selected remedy is referred to as the Delineation of Hot Spots and Excavation remedy.

The estimated present worth cost to implement the remedy is \$2,276,000. The cost to construct the remedy is estimated to be \$2,193,000 and the estimated average annual cost is \$4,600.

The elements of the selected remedy are as follows:

1. Remedial Design

A remedial design program will be implemented to provide the details necessary for the construction, operation, optimization, maintenance, and monitoring of the remedial program. Green remediation principles and techniques will be implemented to the extent feasible in the design, implementation, and site management of the remedy as per DER-31. The major green remediation components are as follows;

- Considering the environmental impacts of treatment technologies and remedy stewardship over the long term;
- Reducing direct and indirect greenhouse gases and other emissions;
- Increasing energy efficiency and minimizing use of non-renewable energy;
- Conserving and efficiently managing resources and materials;
- Reducing waste, increasing recycling and increasing reuse of materials which would otherwise be considered a waste;
- Maximizing habitat value and creating habitat when possible;
- Fostering green and healthy communities and working landscapes which balance ecological, economic and social goals; and
- Integrating the remedy with the end use where possible and encouraging green and sustainable re-development.

2. Excavation

Prior to the excavation, the transformers will be taken out of service and removed. The concrete floor will be removed and disposed of, and the soils under the concrete floor will be excavated. The soils underneath the transformers will be sampled and excavated and end point samples will be collected. All on-site soils which exceed restricted-residential SCOs for PCBs (1 ppm), as defined by 6 NYCRR Part 375-6.8 and/or the presumptive remedy for PCBs as defined in CP-51 (1 ppm in the upper 2 feet, 10 ppm below that) will be excavated and transported off-site for disposal. Clean fill meeting the requirements of 6 NYCRR Part 375-6.7(d) will be brought in to replace the excavated soil and establish the designed grades at the site. The site will be re-graded to accommodate installation of a cover system as described in remedy element #4. All soils in the upper two feet below the building slab in Transformer Rooms No. 1 and 2 which exceed the restricted residential SCOs for PCBs will be excavated and transported off-site for disposal. The volume of contaminated soil removed from the site will be determined during the design phase.

3. Backfill

On-site soil which does not exceed the above excavation criteria may be used below the cover system described in remedy element #4 to backfill the excavation. On-site soil which does not exceed the above excavation criteria or the protection of groundwater SCOs for any constituent may be used anywhere beneath the cover system, including below the water table, to backfill the excavation or re-grade the site. Clean fill meeting the requirements of 6 NYCRR Part 375-6.7(d) will be brought in to replace the excavated soil and establish the designed grades at the site. The site will be re-graded to accommodate installation of a cover system as described in remedy element #4.

4. Cover System

A site cover currently exists and will be maintained and/or replaced to allow for restricted residential use of the site. Any site redevelopment will maintain the existing site cover, which consists either of the structures such as buildings, pavement, sidewalks or soil where the upper two feet of exposed surface soil meets the applicable soil cleanup objectives (SCOs) for restricted residential use. Any fill material brought to the site will meet the requirements for the identified site use as set forth in 6NYCRR part 375-6.7(d).

5. Institutional Controls

Imposition of an institutional control in the form of an environmental easement for the controlled property which will:

- require the remedial party or site owner to complete and submit to the Department a periodic certification of institutional and engineering controls in accordance with Part 375-1.8 (h)(3);
- allow the use and development of the controlled property for restricted residential use as defined by Part 375-1.8(g), although land use is subject to local zoning laws;
- restrict the use of groundwater as a source of potable or process water, without necessary water quality treatment as determined by the NYSDOH or NYCDOH; and
- require compliance with the Department approved Site Management Plan.

6. Site Management Plan

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

- a. an Institutional and Engineering Control Plan that identifies all use restrictions and engineering controls for the site and details the steps and media-specific requirements necessary to ensure the following institutional and/or engineering controls remain in place and effective:
 - Institutional Controls: The Environmental Easement discussed in Paragraph 5 above.
 - Engineering Controls: The cover system discussed in Paragraph 4.

This plan includes, but may not be limited to:

- an Excavation Plan which details the provisions for management of future excavations in areas of remaining contamination;
- descriptions of the provisions of the environmental easement including any land use, and/or groundwater use restrictions;
- a provision that should a building foundation or building slab be removed in the future, a cover system consistent with that described in Paragraph 3 above will be placed in any areas where the upper two feet of exposed surface soil exceed the applicable soil cleanup objectives (SCOs);
- provisions for the management and inspection of the identified engineering controls;
- maintaining site access controls and Department notification; and
- the steps necessary for the periodic reviews and certification of the institutional and/or engineering controls.

- b. a Monitoring Plan to assess the performance and effectiveness of the remedy. The plan includes, but may not be limited to:
- a schedule of monitoring and frequency of submittals to the Department.

Exhibit A

Nature and Extent of Contamination

This section describes the findings of the Remedial Investigation for all environmental media that were evaluated. As described in Section 6.1, samples were collected from various environmental media to characterize the nature and extent of contamination.

For each medium for which contamination was identified, a table summarizes the findings of the investigation. The tables present the range of contamination found at the site in the media and compares the data with the applicable SCGs for the site. The contaminants are polychlorinated biphenyls (PCBs). For comparison purposes, the SCGs are provided for each medium that allows for unrestricted use. For soil, if applicable, the Restricted Use SCGs identified in Section 4 and Section 6.1.1 are also presented.

Groundwater

Groundwater has been sampled for PCBs since 1993 and was monitored semi-annually from 1996 to 2005. Additional samples were collected from the downgradient wells in 2014 and analyzed for PCBs. In 2003, one exceedance of PCBs was reported as a detection in MW-3. The well was located outside the building and adjacent to Transformer Room No. 2. The well was redeveloped, and the detection was never repeated. In 2013 and 2014, sampling was conducted for metals, VOCs, SVOCs, and PCB/Pesticides. There were no exceedances of groundwater standards for VOCs, metals, and pesticides. One SVOC compound, benzo(b)fluoranthene, was detected.

Table 1- Groundwater (wells are “off-site,” downgradient, adjacent to transformer rooms)

Detected Constituents	Concentration Range Detected (ppb) ^a	SCG ^b (ppb)	Frequency Exceeding SCG
VOCs			
No exceedances			
SVOCs			
Benzo(b)fluoranthene	3.5-3.6	0.002	2 of 2
Inorganics			
No exceedances			
Pesticides/PCBs			
Arochlor 1260	ND - 3.8	0.09	1 of 50

a - ppb: parts per billion, which is equivalent to micrograms per liter, ug/L, in water.

b - SCG: Standard Criteria or Guidance - Ambient Water Quality Standards and Guidance Values (TOGs 1.1.1), 6 NYCRR Part 703, Surface water and Groundwater Quality Standards, and Part 5 of the New York State Sanitary Code (10 NYCRR Part 5).

No site-related groundwater contamination of concern was identified during the RI. Therefore, no remedial alternatives need to be evaluated for groundwater.

Soil

Soil samples were collected at the site in 1993, in 2000 (PSA), and in 2013-2014 (RI). Soil samples were taken from under the concrete slab, which ranges in thickness from 6.5 to 15 inches. The depth of soil samples taken ranged from just below the concrete slab to a maximum of 28 inches below the slab. Groundwater was encountered at three feet from the surface of the concrete. All sampling events included PCB analysis, with the 1993 and 2000 sampling for PCBs only. In 2000, field kits were used to guide which samples would be analyzed in the lab as well as some for confirmation purposes. There was no correlation between values in the field kits with values from the laboratory analyses. The highest concentrations of PCBs were found near the floor drains in previous sampling events.

Investigations conducted in 2013-2014 included analysis for VOCs, SVOCs, metals, pesticides and PCBs. Those investigations indicate that soils at the site meet soil cleanup objectives (SCOs) for VOCs, metals, and pesticides, but three semi-volatile organic compounds exceed the unrestricted SCG, and one SVOC compound (benzo(a)anthracene) exceeds restricted residential SCOs. SVOC exceedances were attributed to historic fill, which was observed in boring logs outside the building during the RI in 2013-2014.

Table 2 - Soil

Detected Constituents	Concentration Range Detected (ppm) ^a	Unrestricted SCG ^b (ppm)	Frequency Exceeding Unrestricted SCG*	Restricted Use SCG ^c (ppm)	Frequency Exceeding Restricted SCG*
VOCs**					
Acetone	0.46-1.3	0.05	4/4	100	0/4
SVOCs**					
Phenanthrene	0.96-2.3	100	0/4	100	0/4
Anthracene	0.23-0.4	100	0/4	100	0/4
Fluoranthene	1.5-2.4	100	0/4	100	0/4
Pyrene	1.6-2.8	100	0/4	100	0/4
Benzo(a)anthracene	0.94-1.2	1	1/4	1	1/4
Chrysene	0.98-1.3	1	1/4	3.9	0/4
Benzo(k)fluoranthene	0.49	0.8	0/4	3.9	0/4
Dibenzo(a,h)anthracene	0.21-0.23	0.33	0/4	0.33	0/4
Benzo(g,h,i)perylene	0.37-0.99	100	0/4	100	0/4
1,2,4-Trichlorobenzene	1.8	NS	NS	NS	NS
Benzo(a)Pyrene	0.97-1	1	0/4	1	0/4
Naphthalene	0.22	12	0/4	100	0/4
Benzo(b)fluoranthene	1.2-1.4	1	4/4	1.7 ^d	0/4
PCBs					
PCBs, total	0.1-23,000	0.1	27/41	1	17/41

a - ppm: parts per million, which is equivalent to milligrams per kilogram, mg/kg, in soil;

b - SCG: Part 375-6.8(a), Unrestricted Soil Cleanup Objectives.

c - SCG: Part 375-6.8(b), Restricted Use Soil Cleanup Objectives for the Protection of Public Health for Restricted-Residential Use, unless otherwise noted with d.

NS – No standard

*Per total number of samples analyzed.

** VOCs and SVOCs are attributed to the historic fill material upon which the Bronx Psychiatric Center was constructed. The remedy for the site was developed to address the release of PCBs beneath the transformer rooms.

The primary soil contaminant is polychlorinated biphenyls (PCBs) associated with releases from transformers used for electric generation for Building No.1. Figures 3 and 4 present the PCB sampling results for soil in Transformer Room No. 1 and Transformer Room No. 2, respectively.

Based on the findings of the Remedial Investigation, the past disposal of hazardous waste has resulted in the contamination of soil. The site contaminants identified in soil which are considered to be the primary contaminants of concern, to be addressed by the remedy selection process are PCBs.

Concrete

Concrete is a porous surface that was affected by releases to the building floor. Currently, most of the slab in the transformer rooms is covered with an epoxy coating. The epoxy coating is monitored with annual wipe sampling followed by clean up, if required. Annual monitoring is done to ensure the wipe samples taken on the surface meet the Toxic Substances Control Act (TSCA) requirement of 10 ug/100 cm². If there is an exceedance, the epoxy coating is cleaned and resampled to confirm it meets the requirement.

Concrete core samples were collected at the site during the PSA (2000) and RI (2013-2014). The thickness of the concrete ranges from 6.5 to 15 inches. Samples were collected from the surface of the concrete (or just under the epoxy coating where applicable) and at the bottom. The results indicate that concrete at the site is impacted with PCBs. Figure 5 and 6 show the results of the concrete core testing that is presented in the RIR for Transformer Room No. 1 and Transformer Room No. 2, respectively. The table below presents a summary of the analytical data for concrete.

Table # 3 - Concrete

Detected Constituents	Concentration Range Detected (ppm) ^a	Unrestricted SCG (ppm)	Frequency Exceeding Unrestricted SCG	Restricted Use SCG (ppm)	Frequency Exceeding Restricted SCG
PCBs					
PCBs, total	0.11-68,000	NA	NA	NA	NA

a - ppm: parts per million, which is equivalent to milligrams per kilogram, mg/kg, in concrete.

Based on the findings of the Remedial Investigation, the past disposal of hazardous waste has resulted in the contamination of the concrete floors in Transformer Room No. 1 and Transformer Room No. 2. The site contaminants identified in the concrete, which are considered the primary contaminants of concern to be addressed by the remedy selection process, are PCBs.

Surface Water

No site-related surface water contamination of concern was identified during the RI. Therefore, no remedial alternatives need to be evaluated for surface water.

Sediments

No site-related sediment contamination of concern was identified during the RI. Therefore, no remedial alternatives need to be evaluated for sediment.

Indoor Air

At this site, due to the impacted area being inside a building, indoor air samples were collected as part of a monitoring program prior to the RI to evaluate if site-related soil and concrete contamination was affecting the indoor air. PCBs were not detected in the indoor air samples collected between 1995-2003, except once, and just slightly above the reporting limit.

No site-related soil vapor contamination concerns were identified during the RI. Therefore, no remedial alternatives need to be evaluated for soil vapor.

Exhibit B

Description of Remedial Alternatives

The following alternatives were considered based on the remedial action objectives (see Section 6.5) to address the contaminated media identified at the site as described in Exhibit A.

Alternative 1: No Further Action

The No Further Action Alternative recognizes the remediation of the site completed by the IRM(s) described in Section 6.2. This alternative leaves the site in its present condition and does not provide any additional protection of the environment. Included in this Alternative are the costs for annual monitoring and occasional cleanup of, or reapplication of, the epoxy coating.

Present Worth: \$207,000
Annual Costs: \$11,500

Alternative 2: Containment and Site Management

The Site Management Alternative requires institutional controls for the site and an engineering control in the form of an epoxy coating. This alternative was developed to comply with TSCA regulations that allow the continued use of PCB-impacted porous surfaces (concrete) and underlying materials under certain conditions. This alternative includes institutional controls, in the form of an environmental easement and a site management plan, necessary to protect public health and the environment from any contamination identified at the site. The engineering control would include the cleaning of the entire concrete floors in Transformer Room No. 1 and Transformer Room No. 2, and the re-application and maintenance of the epoxy coat over those floors.

The “Containment and Site Management” Alternative recognizes the remediation of the site completed by the IRM described in Section 6.2 and Site Management and Institutional Controls and Engineering Controls are necessary to confirm the effectiveness of the IRM. This alternative maintains engineering controls which were part of the IRM and includes institutional controls, in the form of and environmental easement and site management plan, necessary to protect public health and the environment from contamination remaining at the site after the IRM. Under Alternative 2, the electrical equipment would be de-energized, removed, and replaced after remedial construction. The concrete surface would be scarified to remove the existing epoxy and then cleaned. A double epoxy layer would be applied. Waste would be disposed at appropriately permitted facilities.

Present Worth: \$1,510,000
Capital Cost: \$1,306,000
Annual Costs: \$11,500

The time frame for this alternative would be approximately five months beginning with contractor submittals, mobilization and start-up through restoration and closeout. This alternative would require long-term maintenance and monitoring that would take a week or less per year.

Alternative 3: Limited Removal, Site Cover, and Institutional Controls

This alternative would include Remedial Design, Excavation, Backfill, a Cover System, and Engineering and Institutional Controls. A remedial design program will be implemented to provide the details necessary for the

construction, operation, optimization, maintenance, and monitoring of the remedial program. Prior to the excavation, the transformers will be taken out of service and removed. The opening from the building will be expanded to accommodate movement of equipment. The concrete floor will be removed to the extent of the grade beams and properly disposed of, and the soils under the concrete floor will be excavated to the limits determined in the Pre-Design Investigation. The soils underneath the transformers and beneath the rooms (to the extent of the grade beams) will be sampled to determine the limits of the excavation. End-point samples will be collected after excavation. All soils in the upper two feet which exceed the restricted residential SCOs will be excavated and transported off-site for disposal. Subsurface soil with PCB concentrations greater than 10ppm would be removed. The site-specific cleanup SCO for PCBs is 1 ppm for surface soils and 10 ppm for soils greater than two feet below the concrete. The volume of contaminated soil to be removed from the site will be determined during the design phase. On-site soil which does not exceed the above excavation criteria may be used below the cover system, or clean fill meeting the requirements of 6 NYCRR Part 375-6.7(d) will be brought in to replace the excavated soil to establish the designed grades at the site. The site cover will be replaced to allow for restricted residential use of the site with a minimum of six inches concrete cover. Imposition of an institutional control in the form of an environmental easement and a Site Management Plan will be required.

Present Worth: \$2,276,000
Capital Cost: \$2,193,000
Annual Costs: \$4,600

The time frame to construct this alternative would be about 8.5 months beginning with contractor submittals, mobilization and start-up, through restoration and closeout. This alternative would require long-term maintenance and monitoring.

Alternative 4: Expanded Removal to Achieve Residential SCOs

This alternative achieves all the SCGs discussed in Section 6.1.1 and Exhibit A and the soil meets the unrestricted soil clean objectives listed in Part 375-6.8 (a). This alternative would include Remedial Design, Excavation, Backfill, a Cover System, and Engineering and Institutional Controls. A remedial design program will be implemented to provide the details necessary for the construction, operation, optimization, maintenance, and monitoring of the remedial program. Prior to the excavation, the transformers will be taken out of service and removed. The basement opening will be expanded, and structural support will be added to allow excavation around and to the building footers. After removal and proper disposal of the concrete floor, soils underneath the transformers and the rooms will be sampled to determine the limits of the excavation. End-point samples will be collected after excavation. All soils which exceed the residential SCO for PCBs (i.e., 1 ppm) will be excavated and transported off-site for disposal. The volume of contaminated soil to be removed from the site will be determined during the design phase. Under this alternative, no long-term engineering or institutional controls would be required, and the site would be delisted.

Capital Cost: \$7,990,000

The time frame to construct this alternative would be about 21 months beginning with contractor submittals, mobilization and start-up, through restoration and closeout.

Exhibit C**Remedial Alternative Costs**

Remedial Alternative	Capital Cost (\$)	Annual Costs (\$)	Total Present Worth (\$)
Alternative 1 – No Further Action	0	\$11,500	\$207,000
Alternative 2 – Containment and Site Management	\$1,306,000	\$11,500	\$1,510,000
Alternative 3 – Limited Removal, Site Cover, and Institutional Controls	\$2,193,000	\$4,600	\$2,280,000.
Alternative 4 – Expanded Removal to Achieve Residential SCOs	\$7,994,000	0	\$7,990,000

Exhibit D

SUMMARY OF THE SELECTED REMEDY

The Department selected Alternative 3, Limited Removal and Long-Term Management as the remedy for this site. Alternative 3 would achieve the remediation goals for the site by removing contaminated soil to the limits of the grade beams. The elements of this remedy are described in Section 7. The selected remedy is depicted in Figures 7 through 8.

Basis for Selection

Alternative 3 includes removal and off-site disposal of readily accessible concrete and of the more significantly impacted soil. This alternative is expected to achieve the cleanup level for PCBs in soil of 1 ppm in shallow soil (0-2 feet) and 10 ppm in subsurface soil, as set forth in NYSDEC's CP-51 and Part 375-6.8. The construction of a concrete cap meeting TSCA specifications over remaining impacted soil is protective of public health and complies with TSCA regulations. Alternative 3 presents construction challenges within the tight confines of working in the two basement transformer rooms. Excavation between pile caps, beneath grade beams, and possibly beneath the water table (depending on the outcome of the PDI) adds to the challenges, particularly because a substantial portion of the excavation may be performed by hand. Workers will follow a site-specific Health and Safety Plan during remedial construction. Alternative 3 relies on ICs/ECs and the SMP to provide protection to future workers.

Alternative 3 is the recommended remedy because it meets the RAO for the site with a lesser degree of building alteration and best value, and provides short and long-term protection to human health under current and future conditions through the removal of the highest concentrations of PCB-containing soil and the removal of the contaminated concrete floor to the extent of the grade beams. Furthermore, future workers are isolated from any remaining contaminated soil by the cover system, as well as by the ICs that prohibit uncontrolled excavation of contaminated soil and require periodic inspection and certification of the cover system.

This alternative would allow for re-classification of the site from a Class 3 to a Class 4 Inactive Hazardous Waste Disposal Site. This alternative meets the cleanup level of 10 ppm for PCBs in subsurface soil specified in CP-51 and is anticipated to result in a restricted-residential cleanup provided the ICs/ECs are implemented.

The selected remedy is based on the results of the RI and the evaluation of alternatives. The criteria to which potential remedial alternatives are compared are defined in 6 NYCRR Part 375. A detailed discussion of the evaluation criteria and comparative analysis is included in the FS report.

The first two evaluation criteria are termed "threshold criteria" and must be satisfied in order for an alternative to be considered for selection.

1. Protection of Human Health and the Environment. This criterion is an overall evaluation of each alternative's ability to protect public health and the environment.

The selected remedy (Alternative 3) would satisfy this criterion by removing the contaminated soils from below the concrete slab to meet the CP-51 cleanup level for PCBs in the subsurface. Alternative 4 addresses the PCB contamination in soil with removal to 1 ppm, which is the restricted residential soil cleanup objective in Part 375; however, significant structural shoring is required to excavate beyond the grade beams for the building.

Alternative 1 (No Further Action) does not provide adequate protection to public health and the environment and will not be evaluated further. Alternative 2 (Expanded Cover System with Site Management) includes no soil removal and does not meet soil cleanup values. Alternative 3, by removing all soil contaminated above the Restricted Residential soil cleanup objective specified in CP-51, meets the threshold criteria. Alternative 4 also complies with this criterion and to a greater degree. Alternatives 2 and 3 rely on an environmental easement with a restriction of groundwater use at the site, a cover system, and site management to protect human health.

2. Compliance with New York State Standards, Criteria, and Guidance (SCGs). Compliance with SCGs addresses whether a remedy will meet environmental laws, regulations, and other standards and criteria. In addition, this criterion includes the consideration of guidance which the Department has determined to be applicable on a case-specific basis.

Alternatives 1 and 2 do not comply with NYS SCGs for PCB cleanup, with concentrations up to 23,000 ppm remaining in soil. Alternative 3 complies with SCGs to the extent practicable by achieving the 1 ppm PCB SCO specified in 6NYCRR Part 375 for surficial soils and the 10 ppm PCB SCO specified in CP-51 for subsurface soils. It addresses removal of source areas of contamination and construction of a cover system over sub-surface soils containing between 1-10 ppm of PCBs. Alternative 4 also complies with SCGs by excavating to 1 ppm PCBs throughout the soil column. Because Alternatives 3 and 4 satisfy the threshold criteria, the remaining criteria are particularly important in selecting a final remedy for the site.

The next six "primary balancing criteria" are used to compare the positive and negative aspects of each of the remedial strategies.

3. Long-term Effectiveness and Permanence. This criterion evaluates the long-term effectiveness of the remedial alternatives after implementation. If wastes or treated residuals remain on-site after the selected remedy has been implemented, the following items are evaluated: 1) the magnitude of the remaining risks, 2) the adequacy of the engineering and/or institutional controls intended to limit the risk, and 3) the reliability of these controls.

Long-term effectiveness is best accomplished by those alternatives involving excavation of the contaminated soils (Alternatives 3 and 4). Most of the contamination identified to date are in the areas around the drains in the transformer rooms, and Alternative 3 results in removal of the contamination at the site to the areal extent of the grade beams to 10 ppm PCBs. This alternative requires property use restrictions, a cover system, and long-term monitoring. Alternative 4 would result in the removal of all of the contaminated soil at the site to 0.1 ppm and would provide the greatest degree of permanence.

4. Reduction of Toxicity, Mobility or Volume. Preference is given to alternatives that permanently and significantly reduce the toxicity, mobility or volume of the wastes at the site.

Alternative 3, excavation and off-site disposal, reduces the toxicity, mobility and volume of on-site waste by transferring the material to an approved off-site location. Alternative 4 also requires the excavation and disposal of contaminated soil. However, depending on the disposal facility, the volume of the material would not be reduced. With Alternative 3, a lesser volume would be removed, and the remaining contaminated soils require a concrete cover. Alternative 4 would reduce the toxicity, mobility and volume of contaminants to a greater extent by removal to 0.1 ppm PCBs.

5. Short-term Impacts and Effectiveness. The potential short-term adverse impacts of the remedial action upon the community, the workers, and the environment during the construction and/or implementation are evaluated. The length of time needed to achieve the remedial objectives is also estimated and compared against the other

alternatives.

Alternatives 3 and 4 have short-term impacts which involve expanding the entranceway to the transformer rooms for better access to the transformer replacements and soil and concrete removal. The time needed to achieve the remediation goals is the shorter for Alternative 3 and longer for Alternative 4 since Alternative 4 includes removal of a larger area of contamination to achieve the remediation goals.

Alternative 4 would present more construction challenges during the various phases of securing the structural integrity of the building, including underpinning work. Utilizing a low-clearance drill rig to install the mini-piles for temporary supports, transfer of the load from the original building pile caps to the temporary supports, and then back to newly constructed replacement pile caps, would be performed in a constrained space. Any dewatering that would be needed periodically throughout the project would be determined during the design phase, and depending on the depth of excavation, dewatering may have the potential to mobilize soil and undermine existing, temporary, and newly constructed foundation components.

In addition, Alternative 4 poses green remediation/sustainability issues in that an additional 1,815 cy of soil external to the building would have to be excavated in order to create access within the building to excavate 428 cy of PCB-contaminated soil and concrete. Removal of this additional soil requires substantially more excavation equipment and transportation vehicle equipment, in turn increasing fuel use and air emissions.

6. Implementability. The technical and administrative feasibility of implementing each alternative are evaluated. Technical feasibility includes the difficulties associated with the construction of the remedy and the ability to monitor its effectiveness. For administrative feasibility, the availability of the necessary personnel and materials is evaluated along with potential difficulties in obtaining specific operating approvals, access for construction, institutional controls, and so forth.

Alternative 3 presents a moderate level of construction implementation issues, while Alternative 4 would be more difficult to implement. The structural integrity of the building was assessed with regard to removing the concrete floor and excavating soil. Protection of the pile caps may be necessary for Alternative 4. Noise, traffic and safety concerns would be mitigated through adequate plans and specifications. Once suitable access was available, concrete removal and excavation of the volume of soil to the limits of the excavation as determined in the Remedial Design Investigation (RDI) which may extend deeper than the groundwater table. Additional excavation into the saturated zone would be challenging due to the space constraints and is assumed to be up to four feet for Alternative 4. Structural concerns are amplified for Alternative 4, where the removal of foundation components and/or the soil supporting the foundation components would be required, and the load supported by each building column affected would need to be transferred to an alternate support mechanism. This effort is limited to one location at a time per room. The complexity of step by step construction of new temporary foundation supports, transferring the load, performing removal, reconstructing the associate pile cap and grade beam, and then transferring the load back after the concrete has cured would approach technical infeasibility. Alternative 4 would have administrative challenges if, based upon the results of the pre-design investigation, a deeper excavation is necessary and the dewatering, that may be needed requires a permit from NYCDEP that stipulates treatment of discharge. Obtaining the permit would require a treatability study to document that the treatment train would be effective in treating water to the required discharge limits. Another potential administrative challenge would be identifying a specialty subcontractor skilled and experienced in underpinning work to meet the confidence level of the owner. Notification to USEPA of the intent to perform a self-implementing cleanup would be made prior to the start of work for Alternatives 3 and 4. For Alternative 3, in the event that circumstances beyond those anticipated are encountered during implementation that make achieving a

10 ppm cleanup objective for subsurface soil technically impracticable, the project objectives would be reviewed with NYSDEC and a risk-based approval from USEPA would be sought.

7. Cost-Effectiveness. Capital costs and annual operation, maintenance, and monitoring costs are estimated for each alternative and compared on a present worth basis. Although cost-effectiveness is the last balancing criterion evaluated, where two or more alternatives have met the requirements of the other criteria, it can be used as the basis for the final decision.

The capital costs of the alternatives vary significantly from just over two million dollars for Alternative 3 to eight million dollars for Alternative 4. The long-term maintenance cost of the capped area with Alternative 3 is less than \$5,000 per year.

8. Land Use. When cleanup to pre-disposal conditions is determined to be infeasible, the Department may consider the current, intended, and reasonable anticipated future land use of the site and its surroundings in the selection of the soil remedy.

Alternative 3 is expected to achieve the 10 ppm PCB cleanup level for subsurface soil specified in CP-51, which allows the site to be reclassified to a Class 4 Inactive Hazardous Waste Disposal Site. Alternative 3 relies, in part, on maintenance and monitoring to remain effective over time. Alternative 4 is expected to achieve the 6 NYCRR Part 375 restricted residential cleanup objective of 0.1 ppm PCBs that allows unrestricted use, meets TSCA criteria for high occupancy use without conditions, and the site would be delisted from the Registry of Inactive Hazardous Waste Disposal Sites.

The final criterion, Community Acceptance, is considered a "modifying criterion" and is taken into account after evaluating those above. It is evaluated after public comments on the Proposed Remedial Action Plan have been received.

9. Community Acceptance. Concerns of the community regarding the investigation, the evaluation of alternatives, and the PRAP are evaluated. A responsiveness summary will be prepared that describes public comments received and the manner in which the Department will address the concerns raised. If the selected remedy differs significantly from the proposed remedy, notices to the public will be issued describing the differences and reasons for the changes.

Alternative 3 is being selected because, as described above, it satisfies the threshold criteria and provides the best balance of the balancing criterion.

APPENDIX A

Responsiveness Summary

RESPONSIVENESS SUMMARY

**Bronx Psychiatric Center
State Superfund Project
Bronx County, New York
Site No. 203005**

The Proposed Remedial Action Plan (PRAP) for the Bronx Psychiatric Center site was prepared by the New York State Department of Environmental Conservation (the Department) in consultation with the New York State Department of Health (NYSDOH) and was issued to the document repositories on February 27, 2018. The PRAP outlined the remedial measure proposed for the contaminated soil and concrete at the Bronx Psychiatric Center site.

The release of the PRAP was announced by sending a notice to the public contact list, informing the public of the opportunity to comment on the proposed remedy.

A public meeting was held on March 18, 2019, which included a presentation of the remedial investigation feasibility study (RI/FS) for the Bronx Psychiatric Center site as well as a discussion of the proposed remedy. The meeting provided an opportunity for citizens to discuss their concerns, ask questions and comment on the proposed remedy. These comments have become part of the Administrative Record for this site. The public comment period ended on March 29, 2019.

This responsiveness summary responds to all questions and comments raised during the public comment period. The following are the comments received, with the Department's responses:

COMMENT 1: Regarding land use – can single family homes be built under this remedy?

RESPONSE 1: The remedy to be implemented will allow for restricted residential use of the property in the future. The restricted residential category allows for multi-family residential development under single ownership (i.e., apartments), as well as commercial or industrial uses. Single family housing is not allowed under the restricted-residential use category unless there is one certifying entity for the entire site, such as a Homeowners Association. The actual development is controlled by local zoning regulations.

COMMENT 2: Do PCBs volatilize in air?

RESPONSE 2: PCBs are not volatile compounds but can become airborne under certain circumstances, such as in dust particles or under extremely high heat. The air samples collected as part of the Remedial Investigation were intended to establish whether persons with access to the transformer rooms were exposed to PCBs. The results indicated that PCBs were not detected in the indoor air. Therefore, there was no exposure hazard for workers who periodically access the transformer rooms. The proposed remedy will remove the source of the PCBs in concrete and soil, further reducing the potential for exposure.

COMMENT 3: Have any maintenance personnel reported health problems related to PCBs?

RESPONSE 3: Signs are posted at the entrance of both transformer rooms to notify workers of the PCB hazards. No one has reported any adverse health effects related to the PCBs.

COMMENT 4: Why were PCBs banned?

RESPONSE 4: Manufacture of PCBs was banned by the US Environmental Protection Agency in 1979 due to both the potential health effects and the chemicals' environmental persistence.

COMMENT 5: Are PCBs heavier than water?

RESPONSE 5: PCBs in pure form are denser than water. However, in this case the PCBs were contained in a petroleum-based transformer oil carrier fluid, which is lighter than water.

APPENDIX B

Administrative Record

ADMINISTRATIVE RECORD

**Bronx Psychiatric Center
State Superfund Project
Bronx County, New York
Site No. 203005**

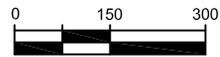
1. *Proposed Remedial Action Plan for the Bronx Psychiatric Center site*, dated September 2018, prepared by the Department
2. Order on Consent, Index No. R2-0668-06-11, between the Department and New York State Office of Mental Health, executed on February 23, 2012
3. *Preliminary Site Assessment Report*, dated December 2000, prepared by Dvirka and Bartilucci Consulting Engineers
4. *Citizen Participation Plan*, dated March 2013 (revised June 2013), prepared by URS Corporation (URS)
5. *Remedial Investigation Work Plan*, dated October 2013, prepared by URS
6. *Remedial Investigation Report*, dated November 2016, prepared by URS
7. *Feasibility Study Report*, dated February 2019, prepared URS

P:\60425929 Bronx Bldg 1 Transformer Rooms FS\900-CAD-GIS\Rev RI Fig 1\Fig1_RI-Rev3.dwg User:karen.peppin Feb 19, 2019 - 4:30pm



SITE LOCUS

IMAGE SOURCE: geology.com

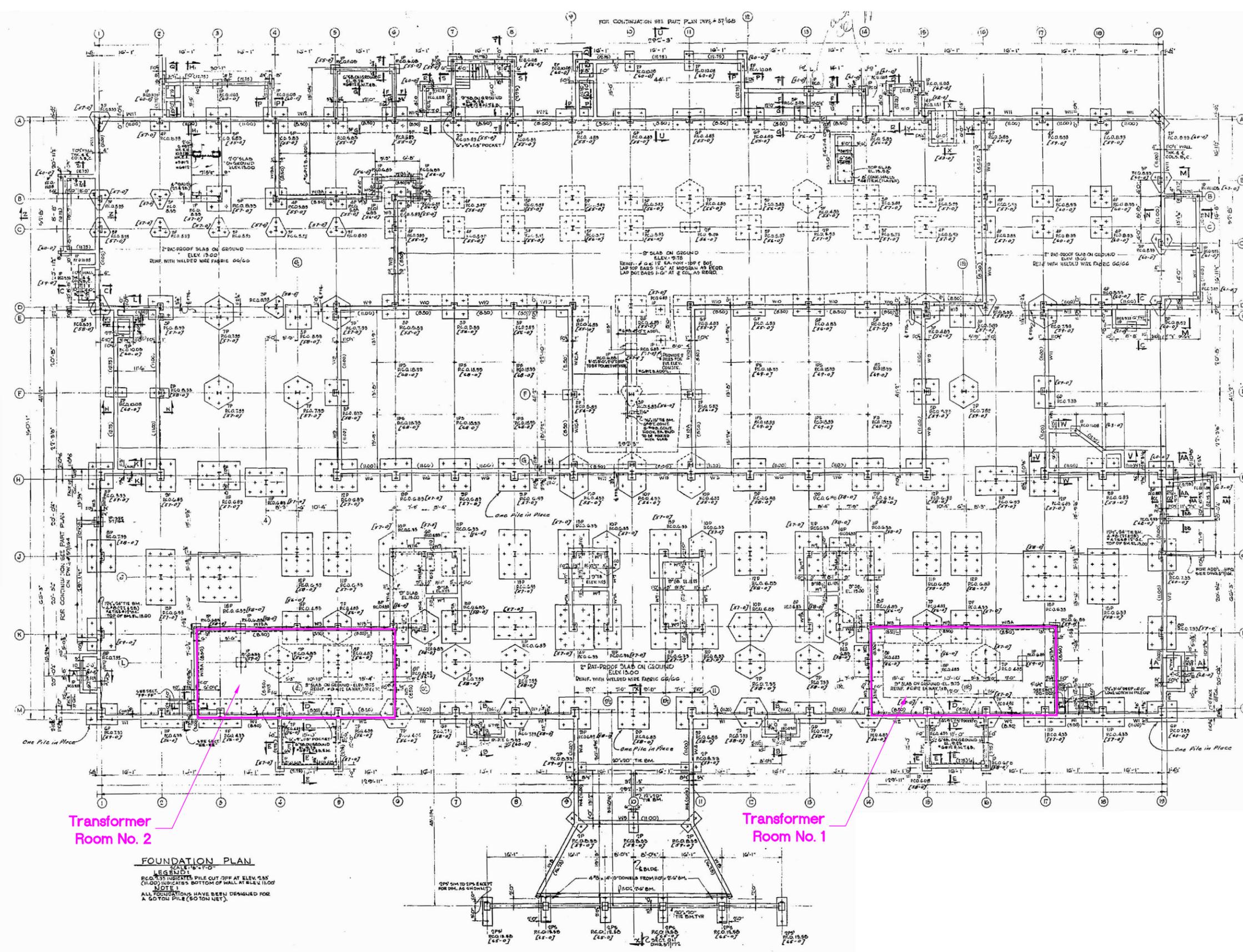


APPROXIMATE GRAPHIC SCALE IN FEET

IMAGE SOURCE: DISCOVER GIS DATA NY

Title: SITE LOCATION MAP	
Location: Bronx Psychiatric Center 1500 Waters Place Bronx, NY 10461-2796	
Client: NEW YORK STATE OFFICE OF MENTAL HEALTH	
Drafter: KP	Date: February 2019
Drg. Size: 8.5 x 11	Job No.: 60425929
FIGURE 1	





Transformer Room No. 2

Transformer Room No. 1

FOUNDATION PLAN
LEGEND
 PILE CUT-OFF AT ELEV. 11.00
 (11.00) INDICATES BOTTOM OF WALL AT ELEV. 11.00
 NOTE
 ALL FOUNDATIONS HAVE BEEN DRAGGED FOR A GUYON PILE (GUYON NET)

- REFERENCE NOTES**
1. FOR PILE CAP DETAILS SEE DRAWING U-57/06.
 2. FOR WALL DETAILS & SECTIONS SEE DRAWING U-57/07.
 3. FOR FIRST FLOOR FRAMING PLAN SEE DRAWING U-57/08.
 4. FOR GENERAL NOTES & DETAILS SEE DRAWING U-57/10.
 5. FOR COLUMN SCHEDULE SEE DRAWING U-57/09.
 6. [E]-[E] DENOTES ESTIMATED LENGTH OF PILE
 7. MAXIMUM LENGTH OF PILE 75'-0"

NOTES:
 Not to scale.

SOURCE:
 Urbahn, Brayton & Durrows, Hart & Jerman Associated Architects, 12/04/58

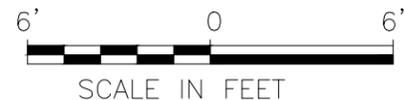
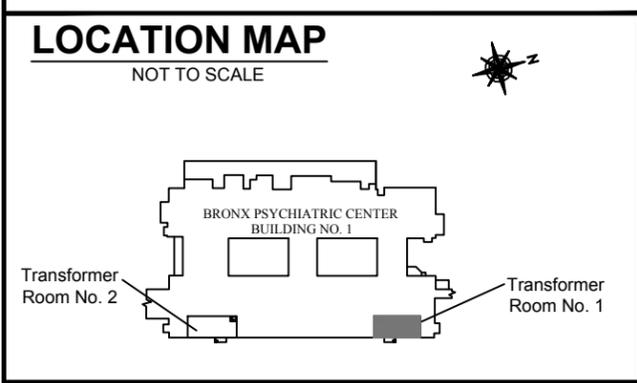
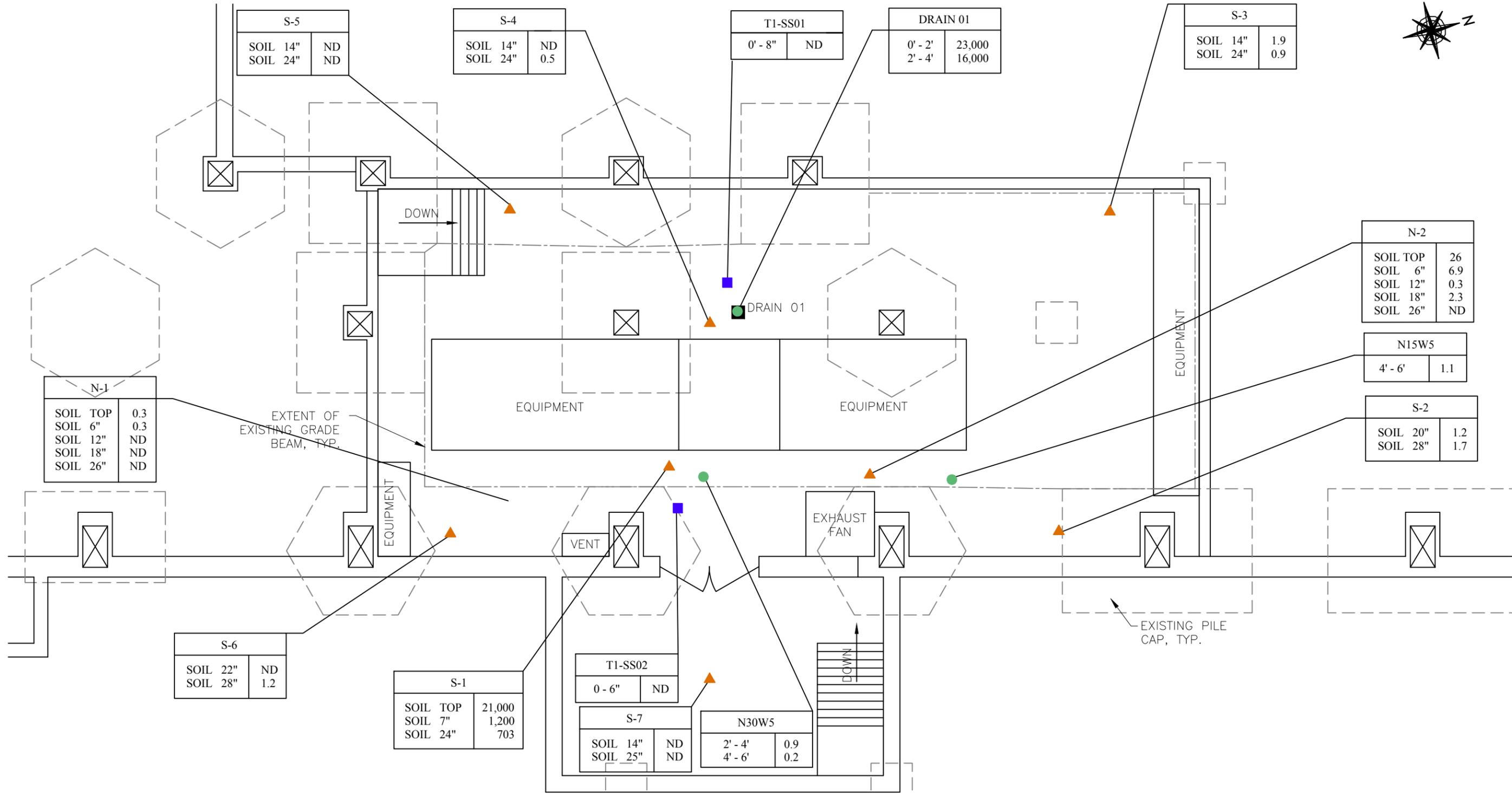
Title: TRANSFORMER ROOM LOCATIONS AND BUILDING FOUNDATION PLAN

Location: BRONX PSYCHIATRIC CENTER
 1500 WATERS PLACE
 NEW YORK, NEW YORK

Client: NEW YORK STATE OFFICE OF MENTAL HEALTH

URS URS Corporation 40 British American Boulevard Latham, New York 12110	Drafter: KP	Date: January 2017
	Dr. Size: 11 x 17	Job No.: 60425929

FIGURE 2



BASE MAP SOURCE:
Urbahn, Brayton & Durrows, Hart & Jerman Associated
Architects, December 1958

LEGEND

- Structural Column
- Soil Sample Location - 1993
- Soil Sample Location - 2000
- Soil Sample Location - 2013
- Former Drain

NOTES:
All locations are approximate.
Concentrations are in mg/kg.

ND - Not Detected
NA - Not Analyzed

Title: PCB CONCENTRATIONS IN SOIL SAMPLES
TRANSFORMER ROOM NO. 1

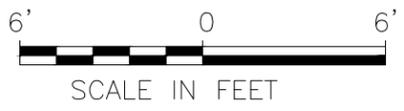
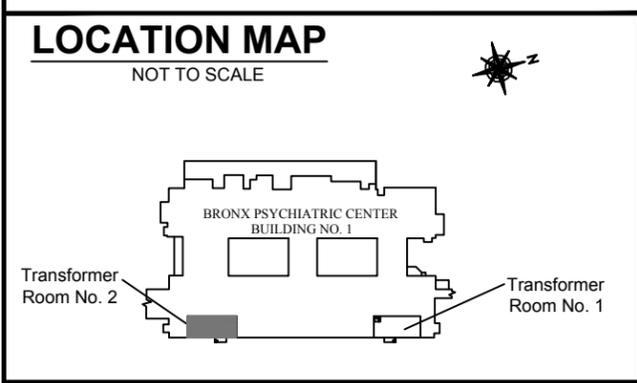
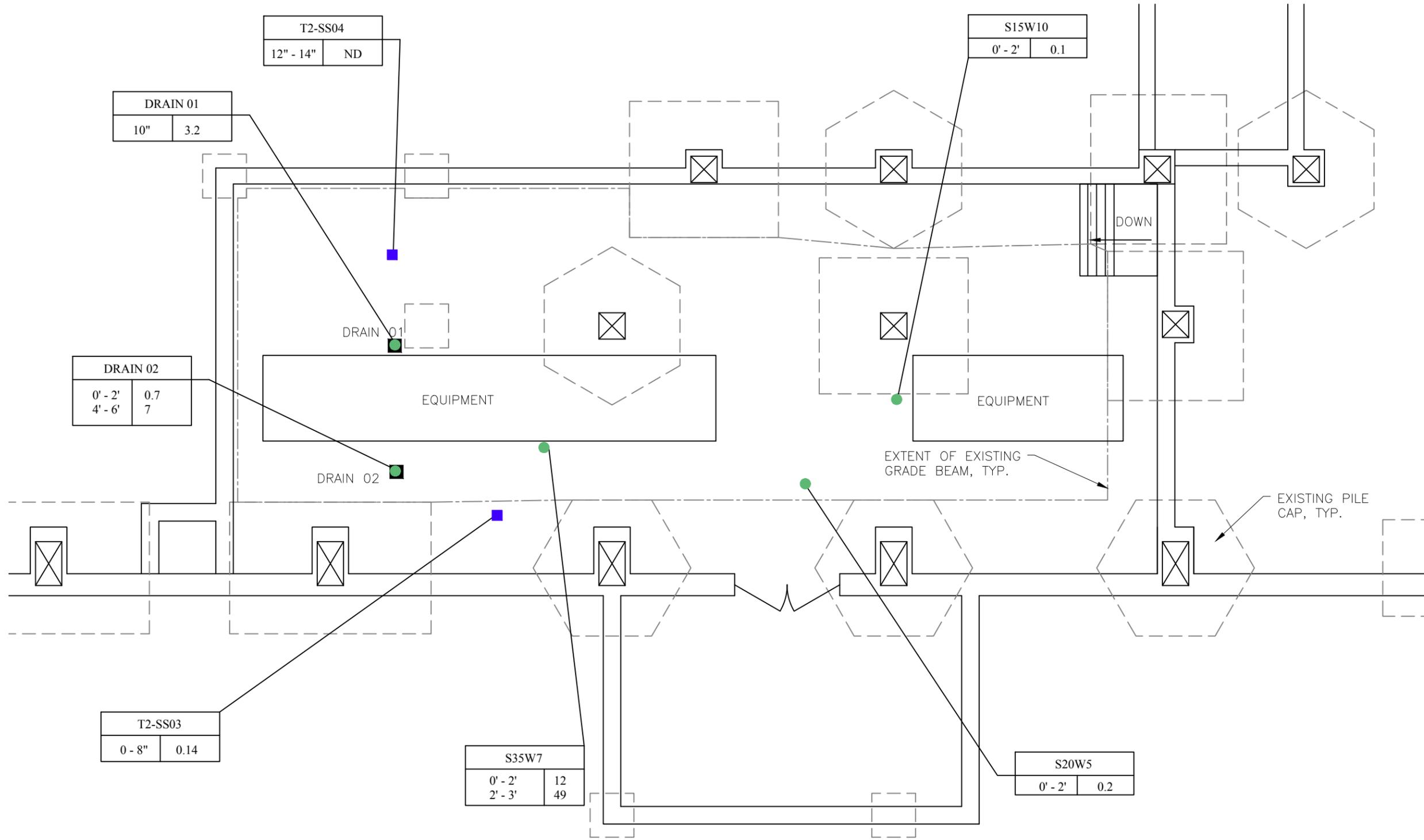
Location: BRONX PSYCHIATRIC CENTER
1500 WATERS PLACE
NEW YORK, NEW YORK

Client: NEW YORK STATE OFFICE
OF MENTAL HEALTH

Drafter: RAL/KP	Date: February 2018
Drg. Size: 11 x 17	Job No.: 60425929

URS
URS Corporation
40 British American Boulevard
Latham, New York 12110

FIGURE 3



BASE MAP SOURCE:
Urbahn, Brayton & Durrows, Hart & Jerman Associated
Architects, December 1958

LEGEND

	Structural Column		Former Drain
	Soil Sample Location - 2000		
	Soil Sample Location - 2013		

NOTES:
All locations are approximate.
Concentrations are in mg/kg.

ND - Not Detected
NA - Not Analyzed

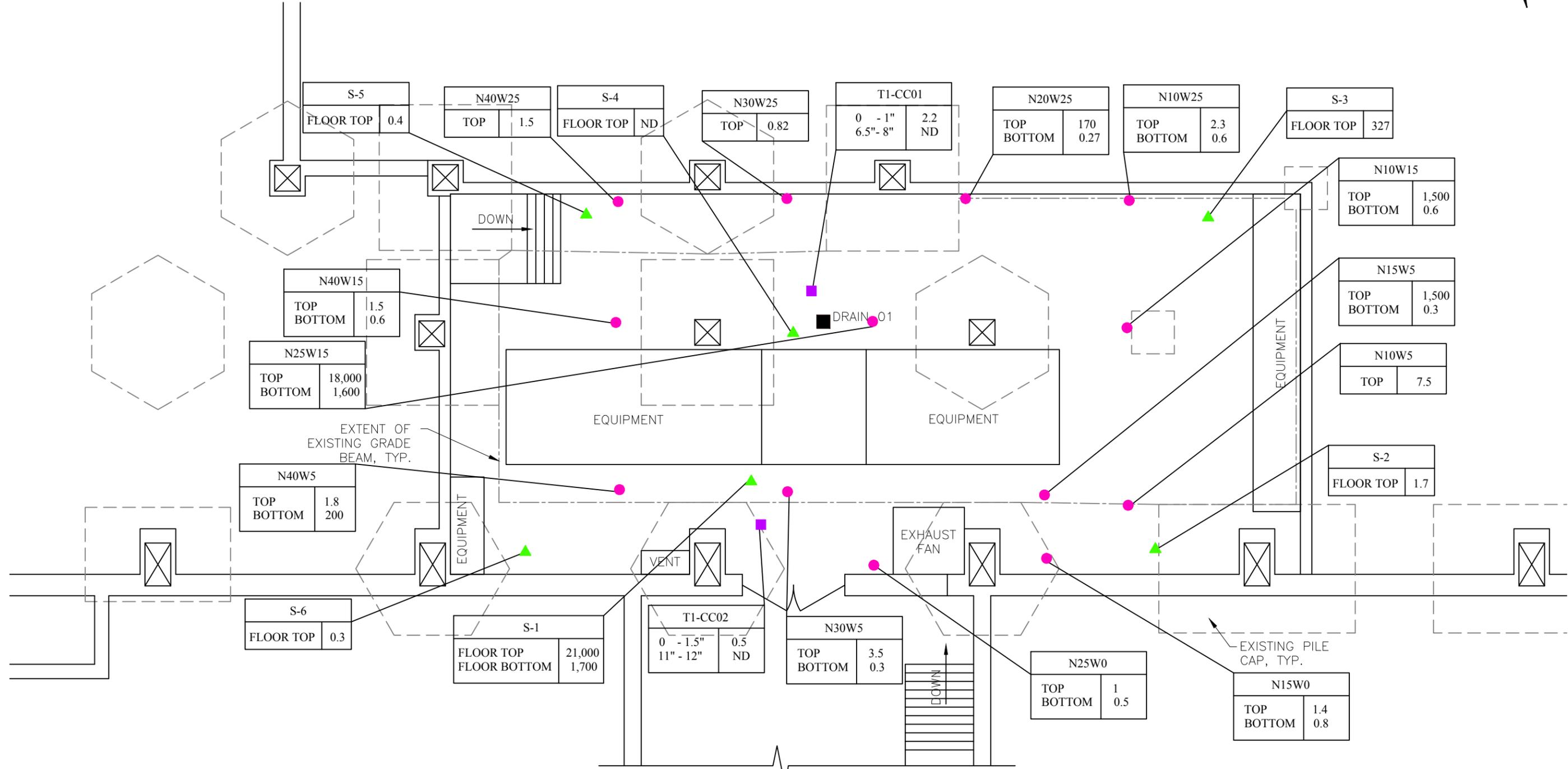
Title: PCB CONCENTRATIONS IN SOIL SAMPLES
TRANSFORMER ROOM NO. 2

Location: BRONX PSYCHIATRIC CENTER
1500 WATERS PLACE
NEW YORK, NEW YORK

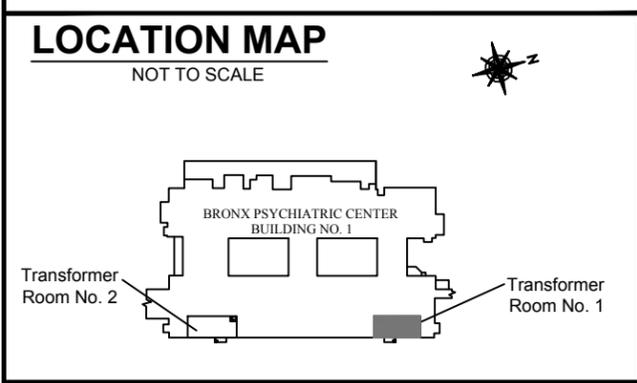
Client: NEW YORK STATE OFFICE
OF MENTAL HEALTH

URS <small>URS Corporation 40 British American Boulevard Latham, New York 12110</small>	Drafter: RAL/KP	Date: February 2018
	Dwg. Size: 11 x 17	Job No.: 60425929

FIGURE 4



P:\60425929 Bronx Bldg 1 Transformer Rooms FS\900-CAD-GIS\2018 CAD\FIGURE 3-11 14-15.dwg User:meisterk Mar 14, 2018 - 11:55am



BASE MAP SOURCE:
Urbahn, Brayton & Durrows, Hart & Jerman Associated
Architects, December 1958



LEGEND

- Structural Column
- ▲ Concrete Sample Location - 1993
- Concrete Sample Location - 2000
- Concrete Sample Location - 2013
- Former Drain

NOTES:
All locations are approximate.
Concentrations are in mg/kg.

ND - Not Detected
NA - Not Analyzed

Title: PCB CONCENTRATIONS IN CONCRETE
TRANSFORMER ROOM NO. 1

Location: BRONX PSYCHIATRIC CENTER
1500 WATERS PLACE
NEW YORK, NEW YORK

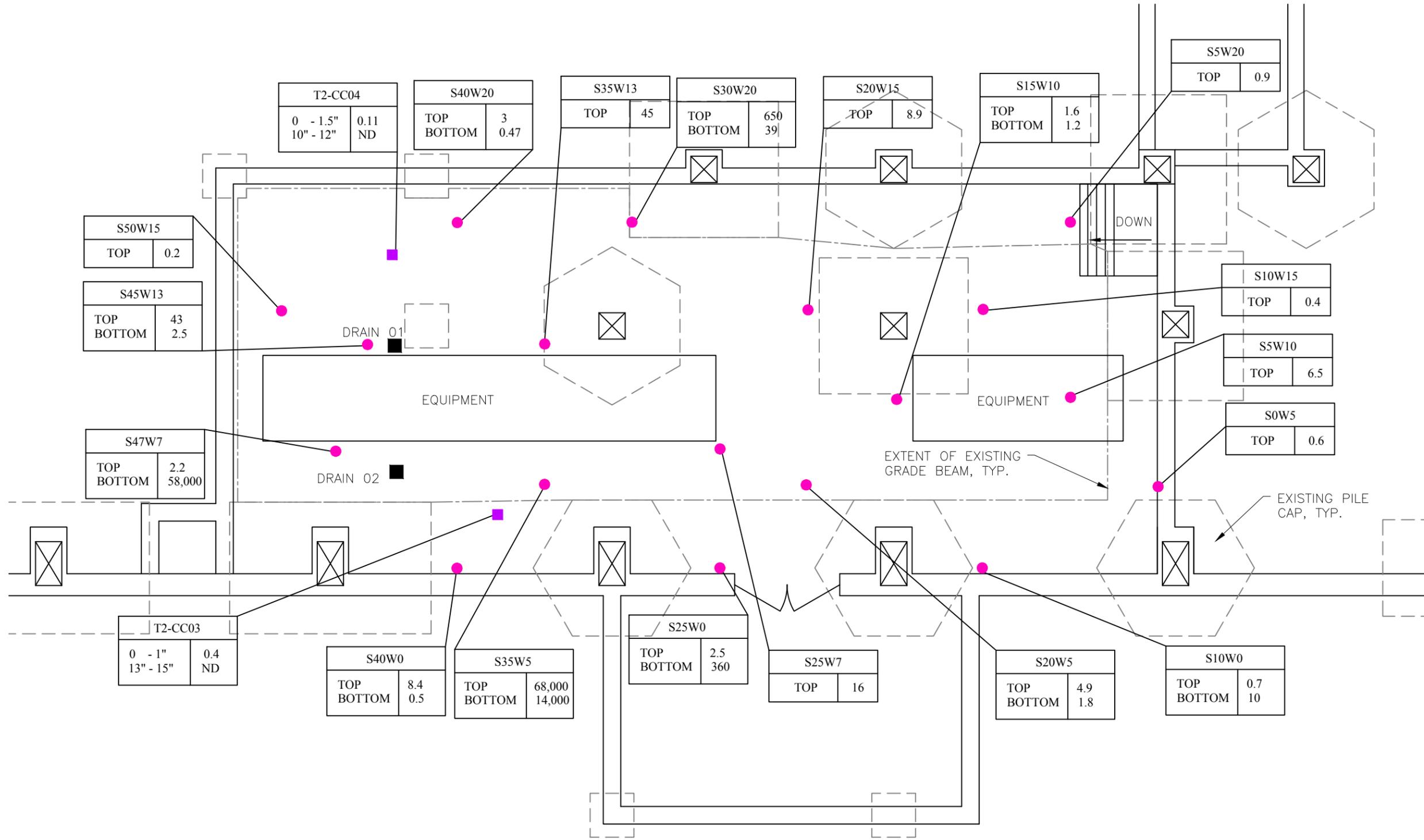
Client: NEW YORK STATE OFFICE
OF MENTAL HEALTH

Drafter: RAL/KP	Date: February 2018
Drg. Size: 11 x 17	Job No.: 60425929

URS
URS Corporation
40 British American Boulevard
Latham, New York 12110

FIGURE 5

P:\60425929 Bronx Bldg 1 Transformer Rooms FS\900-CAD-GIS\2018 CAD\FIGURE 3-11 14-15.dwg User:meisterk Mar 14, 2018 - 11:55am

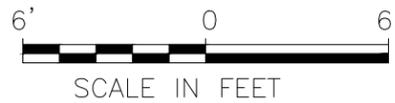


LOCATION MAP

NOT TO SCALE



BASE MAP SOURCE:
Urbahn, Brayton & Durrows, Hart & Jerman Associated
Architects, December 1958



LEGEND

- ☒ Structural Column
- Concrete Sample Location - 2000
- Concrete Sample Location - 2013
- Former Drain

NOTES:
All locations are approximate.
Concentrations are in mg/kg.

ND - Not Detected
NA - Not Analyzed

Title: PCB CONCENTRATIONS IN CONCRETE
TRANSFORMER ROOM NO. 2

Location: BRONX PSYCHIATRIC CENTER
1500 WATERS PLACE
NEW YORK, NEW YORK

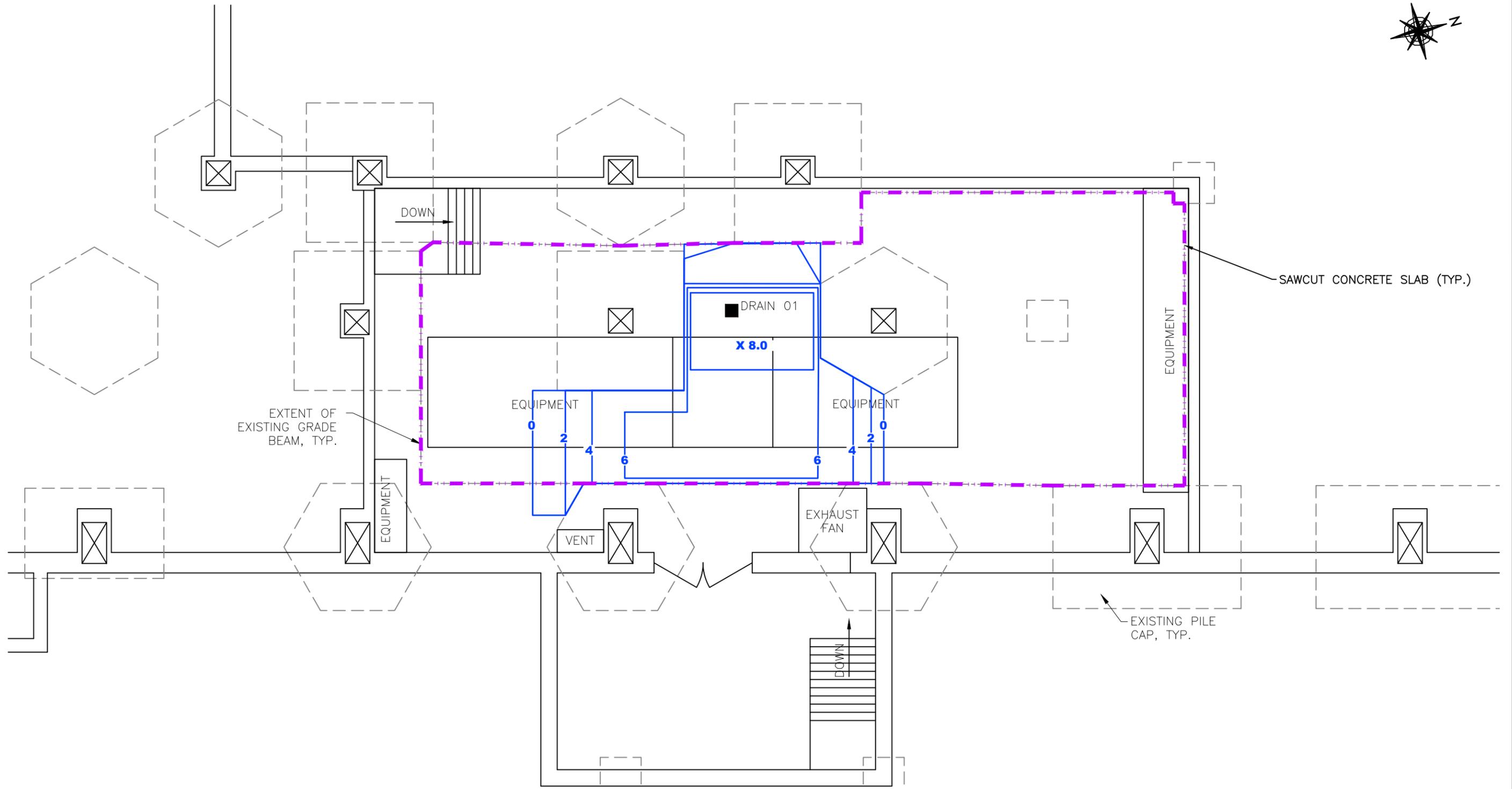
Client: NEW YORK STATE OFFICE
OF MENTAL HEALTH

Drafter: RAL/KP	Date: February 2018
Drg. Size: 11 x 17	Job No.: 60425929



FIGURE 6

P:\60425929 Bronx Bldg 1 Transformer Rooms FS\900-CAD-GIS\2018 CAD\FIGURE 3-11 14-15.dwg User:meisterk Mar 14, 2018 - 11:56am



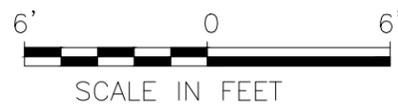
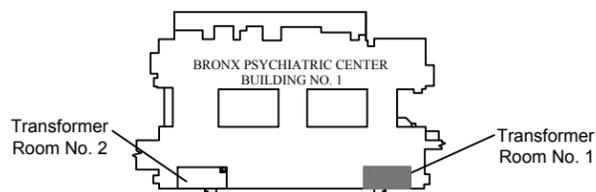
SAWCUT CONCRETE SLAB (TYP.)

EXTENT OF EXISTING GRADE BEAM, TYP.

EXISTING PILE CAP, TYP.

LOCATION MAP

NOT TO SCALE



BASE MAP SOURCE:
Urbahn, Brayton & Durrows, Hart & Jerman Associated
Architects, December 1958

LEGEND

- Structural Column
- Former Drain
- Floor Slab Removal (Estimated)
- Impacted Soil Excavation Depth Contours (Estimated)

NOTE:
All locations are approximate

Title: ALTERNATIVE 3 ESTIMATED REMOVAL
TRANSFORMER ROOM NO. 1

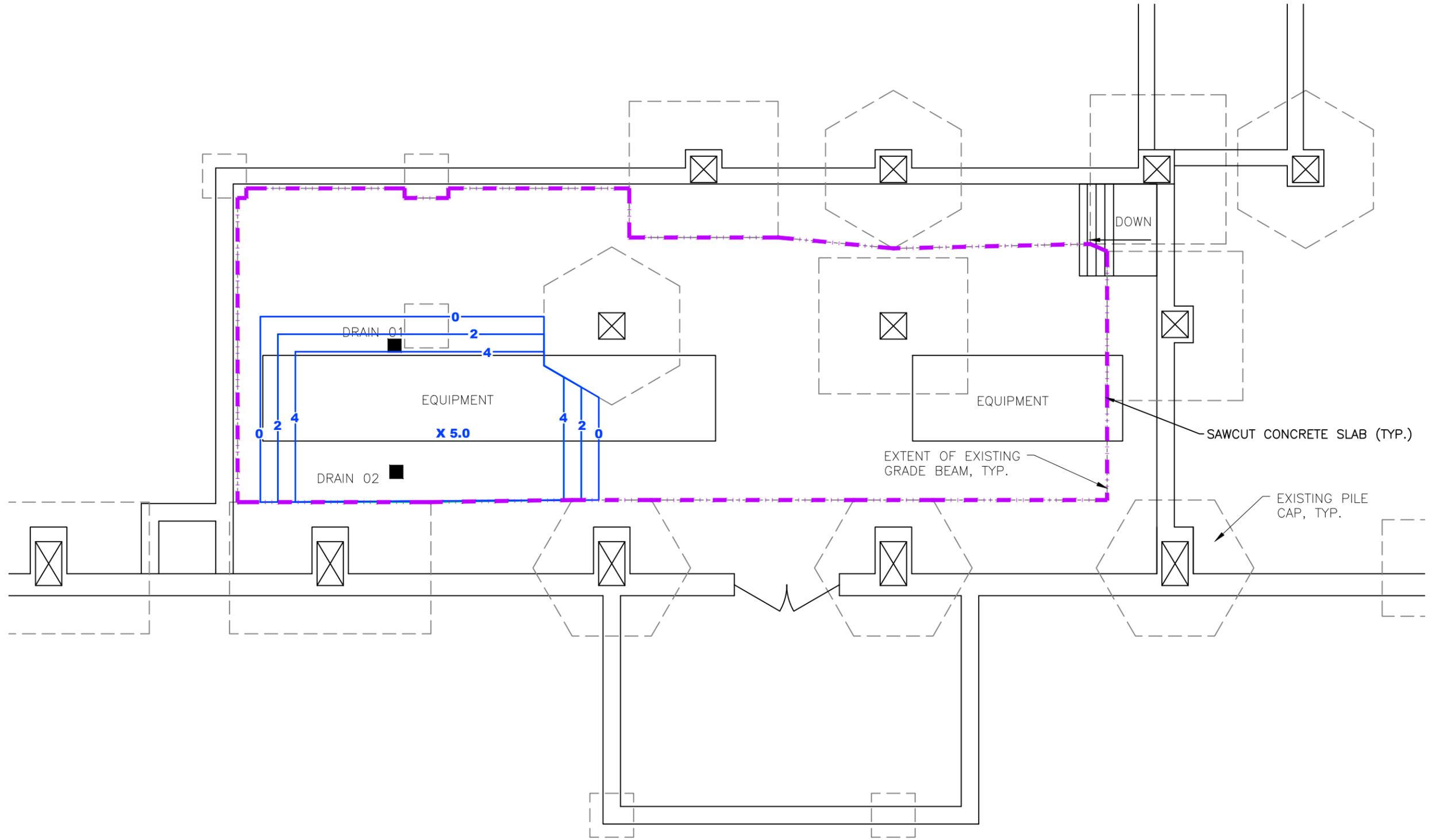
Location: BRONX PSYCHIATRIC CENTER
1500 WATERS PLACE
NEW YORK, NEW YORK

Client: NEW YORK STATE OFFICE
OF MENTAL HEALTH

URS
URS Corporation
40 British American Boulevard
Latham, New York 12110

Drafter: KP	Date: March 2018
Dwg. Size: 11 x 17	Job No.: 60425929

FIGURE 7

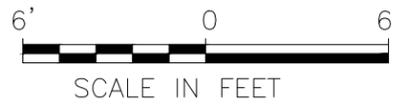


LOCATION MAP

NOT TO SCALE



BASE MAP SOURCE:
 Urbahn, Brayton & Durrows, Hart & Jerman Associated
 Architects, December 1958



LEGEND

- Structural Column
- Former Drain
- Floor Slab Removal (Estimated)
- Impacted Soil Excavation Depth Contours (Estimated)

NOTE:
 All locations are approximate.

Title: ALTERNATIVE 3 ESTIMATED REMOVAL
 TRANSFORMER ROOM NO. 2

Location: BRONX PSYCHIATRIC CENTER
 1500 WATERS PLACE
 NEW YORK, NEW YORK

Client: NEW YORK STATE OFFICE
 OF MENTAL HEALTH

URS
 URS Corporation
 40 British American Boulevard
 Latham, New York 12110

Drafter: KP Date: March 2018

Drg. Size: 11 x 17 Job No.: 60425929

FIGURE 8