

CORNERSTONE SITE B-1

3100 THIRD AVENUE BRONX, NEW YORK

Remedial Action Work Plan Addendum

NYSDEC BCP Number: C203044

Prepared for:

CS Melrose Site B LLC
1865 Palmer Avenue
Suite 203
Larchmont, New York 10538

Prepared by:

CA Rich Consultants, Inc. 17 Dupont Street Plainview, NY 11803 (516) 576-8844

JULY 2009

CERTIFICATIONS

I, Stephen J. Osmundsen, am currently a registered professional engineer licensed by the State of New York. I have primary direct responsibility for implementation of the remedial program for Cornerstone Site B1 (NYSDEC BCA Index No. W2-1126-08-10 Site No. C203044).

I certify that the Site description presented in this RAWP Addendum is identical to the Site descriptions presented in the Brownfield Cleanup Agreement for Cornerstone Site B-1 and related amendments.

I certify that the RAWP and RAWP Addendum includes proposed use restrictions, Institutional Controls, Engineering Controls, and plans for all operation and maintenance requirements applicable to the Site and provision for development of an Environmental Easement to be created and recorded pursuant ECL 71-3605 if Track 1 is not achieved. The RAWP and RAWP Addendum requires that all affected local governments, as defined in ECL 71-3603, will be notified that such Easement has been recorded. The RAWP and RAWP Addendum requires that a Site Management Plan must be submitted by the Applicant 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, for approval by the Department if Track 1 is not achieved.

I certify that the RAWP and RAWP Addendum have a plan for transport and disposal of all soil, fill, fluids and other material removed from the property under this Plan, and that all transport and disposal will be performed in accordance with all local, State and Federal laws and requirements. All exported material will be taken to facilities licensed to accept this material in full compliance with all Federal, State and local laws.

I certify that the RAWP and RAWP Addendum have a plan for import of all soils and other material from off-Site and that all activities of this type will be in accordance with all local, State and Federal laws and requirements.

I certify that that the RAWP and RAWP Addendum have a plan for nuisance control during the remediation and all invasive development work, including a dust, odor and vapor suppression plan and that such plan is sufficient to control dust, odors and vapors and will prevent nuisances from occurring.

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.

NYS Professional Engineer #

NYS P.E. # 056135

Date

Signature



It is a violation of Article 130 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 130, New York State Education Law.



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APPENDICES

A. METES AND BOUNDS



LIST OF ACRONYMS

Definition
Brownfield Cleanup Agreement
Brownfield Cleanup Program
Community Air Monitoring Plan
Citizen's Participation Plan
Certificate of Completion
Division of Solid & Hazardous Materials
Data Usability Summary Report
Environmental Laboratory Accreditation
Program
Health and Safety Plan
Interim Remedial Measure
New York Codes Rules and Regulations
New York State Department of Environmental
Conservation
New York State Department of Health
New York State Department of Transportation
Polychlorinated Biphenyls
Remedial Action Objective
Remedial Action Work Plan
Remedial Investigation
Standards, Criteria, and Guidance
Soil Cleanup Objectives
Site Management Plan
Soil/Materials Management Plan
Site Specific Action Levels
Semi-volatile Organic Compounds
Sub Slab Depressurization

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Acronym	Definition
SWPPP	Storm-Water Pollution Prevention Plan
TAL	Target Analyte List
TOGS	Technical and Operational Guidance Series
USGS	United States Geological Survey
VOCs	Volatile Organic Compounds
QAPP	Quality Assurance Project Plan

EXECUTIVE SUMMARY

Site Description/Physical Setting/Site History

Cornerstone Site B-1 is located at 3100 Third Avenue, which is in the Melrose section of the Bronx, NY (hereinafter referred to as the 'Site'). The Site is being redeveloped by CS Melrose Site B LLC, the BCP Volunteer, and has been assigned Brownfield Cleanup Program (BCP) ID number C203044. The Volunteer was accepted into the BCP on October 28, 2008 and the Brownfield Cleanup Agreement (BCA) was executed on December 18, 2008 and revised in July 2009.

The Site currently consists of two vacant lots totaling 16,028 square feet. A single story building with a basement totaling 7,613 square feet, was located on the western portion of the Site until its demolision in June 2009. The Site is located on the northeast corner of the intersection of East 158th Street with Third Avenue and spans westward. The Site is located in an urban setting and is currently zoned residential (R8) with a C1-4 overlay. Legally, the Site is designated as Block: 2364, Lots: 45 and 70. New York City Department of Housing Preservation and Development (NYCDHPD) took ownership of the Site in January 1999 when it was acquired through condemnation as part of the Melrose Commons Urban Renewal Plan. CS Melrose Site B LLC purchased Block: 2364; Lots: 45 and 70 from NYCHPD in June 2009. A Site Location Map is included as Figures 1A and 1B. A Site Plan is included as Figure 2. The metes and bounds of the Site are enclosed as Appendix A.

REMEDIAL ACTION WORK PLAN

1.0 INTRODUCTION

CS Melrose Site B, LLC entered into a Brownfield Cleanup Agreement (BCA) with the New York State Department of Environmental Conservation (NYSDEC), in December 2008; revised July 2009, to remediate an approximately 16,028 square foot lot located at 3100 Third Avenue in the Bronx New York. The approximately 16,028 square foot lot is currently vacant. A single story building with a basement totaling 7,613 square feet, was located on the western portion of the Site until its demolition in June 2009. CS Melrose Site B LLC is a Volunteer in the Brownfield Cleanup Program. Residential and commercial use is proposed for the Site. When completed, the Site will contain a 107-unit affordable housing building with retail shops and community facilities that will span the Site as well as two adjacent lots. Refer to the Brownfield Cleanup Program (BCP) application for additional details.

1.1 SITE LOCATION AND DESCRIPTION

The Site is located in the County of the Bronx, New York and is identified as Block: 2364, Lots: 45 and 70 on the Borough of the Bronx Tax Map. A United States Geological Survey (USGS) topographical quadrangle Site Location Map (Figure 1A) shows the Site location. In addition, Figure 1B shows the Site location on an Aerial photograph. The Site is situated on an approximately 16,028 square foot area bounded by a vacant lot to the north, East 158th Street to the south, and Third Avenue to the west (see Figure 2 – Site Plan). A boundary map is attached to the BCA as required by Environmental Conservation Law (ECL) Title 14 Section 27-1419. The 16,028 square foot Site is fully described in Appendix A – Metes and Bounds. A global positioning system coordinate for the starting point was not yet available.

1.3 DESCRIPTION OF SURROUNDING PROPERTY

The Site is currently zoned residential (R8) with a C1-4 overlay that is immediately surrounded by residential (R7-2 and R-8), commercial (C4-4), and manufacturing (M1-1) zones. A 2008 Zoning change included removing the C1 overlay along Brook Avenue, changing the zoning to R8 with a C1 overlay to a depth of 100 feet from Third Avenue, and R8 on the remainder of the lot.

Specific neighboring property usage is outlined below:

North: Vacant Lot followed by Commercial Stores

South: E. 158th Street and a NYC Parks and Recreation Playground (Across E. 158th Street)

East: Brook Avenue followed by St. Peter and St. Paul Church and School (Across

Brook Avenue) and Melrose Community School (Across Brook Avenue)

West: Third Avenue, La Puerta De Vitalidad Apartment Building (Across Third Avenue)

2.0 DESCRIPTION OF REMEDIAL INVESTIGATION FINDINGS

2.1 SUMMARY OF REMEDIAL INVESTIGATIONS PERFORMED

The RI was conducted at the Site (Lots 45 and 70) as well as at its adjacent lot (Lot 49). All three lots (45, 49, and 70) are referred to as the "Study Area". The goals of this Investigation were: characterization of the surface and subsurface; identification of the sources of contamination, migration pathways, and actual or potential receptors; evaluation of the actual and potential threats to public health and the environment; and production of data of sufficient quantity and quality to support the evaluation of proposed remedial alternatives.

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2.3.1 Past Uses and Ownership

Although the Site is currently unoccupied and vacant, historical records indicate that Lot 45 was originally developed circa 1951 with a single story building with a basement. According to the Phase I Environmental Site Assessment (ESA), the building was occupied as a store, upholstery business and an undertaker. Circa 1969, the building was also developed as a Dry Cleaners and in 1989, the building operated as a Medical Center and a Dry Cleaners.

2.3.2 Phase I and Phase II Reports

A Phase I ESA dated March 5, 2004 was prepared by Pressly and Associates, Inc. for the Site (Lots 45 and 70) as well as additional lots (Ref. 5).

2.5 CONTAMINATION CONDITIONS

2.5.1 Conceptual Model of Site Contamination

Off-Site

The applicant for this project entered into the BCP as a Volunteer. As such, the Volunteer was only responsible for investigating on-Site issues. However, as the planned redevelopment for this Site also includes the adjoining lot: 49, the RI Study Area extended to this lot as well.

2.5.6 On-Site and Off-Site Soil Vapor Contamination

Off-Site

The applicant for this project entered into the BCP as a Volunteer. As such, the RI and RAWP were both focused to address on-Site issues. However, as the redevelopment plans for the Site also include the adjacent Lot: 49, soil vapor testing was conducted on these lots as well. The soil vapor results indicate that perchloroethylene and its degradation products exist in the subsurface soil vapor. In addition, several other industrial solvents including, acetone, chloroform, trichloroethylene, and methyl ethyl ketone were also detected. A variety of petroleum related compounds such as benzene, toluene, ethylbenzene and xylene were detected as well.

3.0 DESCRIPTION OF REMEDIAL ACTION PLAN

3.1 EVALUATION OF REMEDIAL ALTERNATIVES

• Cost effectiveness;

The 16,028 square foot Site included a building with a basement floor approximately 10 feet below sidewalk grade located on Lot 45. For this alternative, the soil would have to be removed to the water table surface or bedrock surface, approximately 25 feet below grade. Due to the basement on Lot 45, approximately 15 feet of soil would need to be removed from this area. Based on these measurements, approximately 4,230 cubic yards of soil would have to be excavated from Lot 45. An additional approximately 6,297 cubic yards of soil would have to be excavated from Lot 70. Using a conversion factor of 1.5, this equates to approximately 15,789.45 tons of material.

The market rate for the transportation and disposal of non-hazardous, regulated soil is approximately \$55 per ton. Using this as an average rate, the soil disposal for this project would be approximately \$868,420. It is noted that this cost does not include dewatering,

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which may be needed to excavate to 25 feet. As the proposed depth of the foundation is 15 feet, approximately 10 feet of clean fill will be required. Using a market rate of \$12.50 per cubic yard, this equals approximately \$34,315.

The market rate for removing three ASTs is approximately \$15,000. The market rate for the Pre-Design investigation is approximately \$93,000. The market rate for one round of post-remedial monitoring is approximately \$12,000. The market rate for installation of a ventilated parking garage/foundation/waterproofing membrane (prorated for Lot 45 and 70 only) is approximately \$1,175,369. Inspection, testing and reporting associated with this work was estimated at a rate of 10% of total costs or approximately \$223,385.

In order to perform an excavation to 25 feet, excessive shoring, sheeting, and underpinning would have to be performed as this underpinning would be nearly 15 feet deep and would recreate foundations for existing roadways and adjacent properties, the costs – and especially the unknown liabilities – would be prohibitive. Instead, we would mitigate these with secant walls, which would shore surrounding properties and provide foundation support. At a depth of 15 feet, these walls are quoted at approximately \$100/linear feet. With a perimeter of 357 feet, the estimated fee for this is \$35,700.

The cost for this Alternative was estimated by combining these figures for an approximate total of \$2,457,189.

This assumes the work will be performed concurrent with the planned redevelopment of the Site and a groundwater treatment system will not need to be developed.

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Evaluation of Alterative 2 (Soil removal using Track 4 SSALs plus EC/IC with a Track 2 contingency) – this alternative was compared to the following criteria.

• Cost effectiveness;

The approximately 16,028 square foot Site is currently vacant. A single story building with a basement totaling 7,613 square feet was located on Lot 45 until its demolition in June 2009. The former building contained a basement floor approximately 10 feet below sidewalk grade. Due to the presence of the former basement, only 2.5 feet of soil needs to be removed from Lot 45 to reach the anticipated excavation depth of 12.5 feet below grade. Based on these measurements, approximately 705 cubic yards of soil will have to be excavated from Lot 45. An additional approximately 2,487.68 cubic yards of soil needs to be excavated from Lot 70. Using a conversion factor of 1.5, this equates to approximately 4,789 tons of material.

The market rate for the transportation and disposal of non-hazardous, regulated soil is approximately \$55 per ton. Using this as an average rate, the soil disposal for this project would be approximately \$263,396. The market rate for removing three ASTs is approximately \$15,000. The market rate for the Pre-Design investigation is approximately \$93,000. The market rate for one round of post-remedial monitoring is approximately \$12,000. The market rate for the purchase and installation of a vapor barrier (if needed) is approximately \$4.60 per square foot. In order for the vapor barrier to be effective it needs to be installed underneath the entire building (Lots 45, 49, and 70), not just on Lots 45 and 70. As the vapor barrier will need to be installed underneath the entire new building foundation (Lots 45, 49, and 70), using the entire new building foot print plus the wall portions that will be below grade, the area of vapor barrier is estimated to be of 26,960 square feet. The estimated cost of the vapor barrier is therefore \$124,016. Installation of a ventilated parking garage, foundation, and SSD system (prorated for Lots 45 and 70 only) is approximately \$ 1,175,369. Inspection, testing and reporting associated with this work was estimated at a rate of 10% of total costs or approximately \$ 171,929.

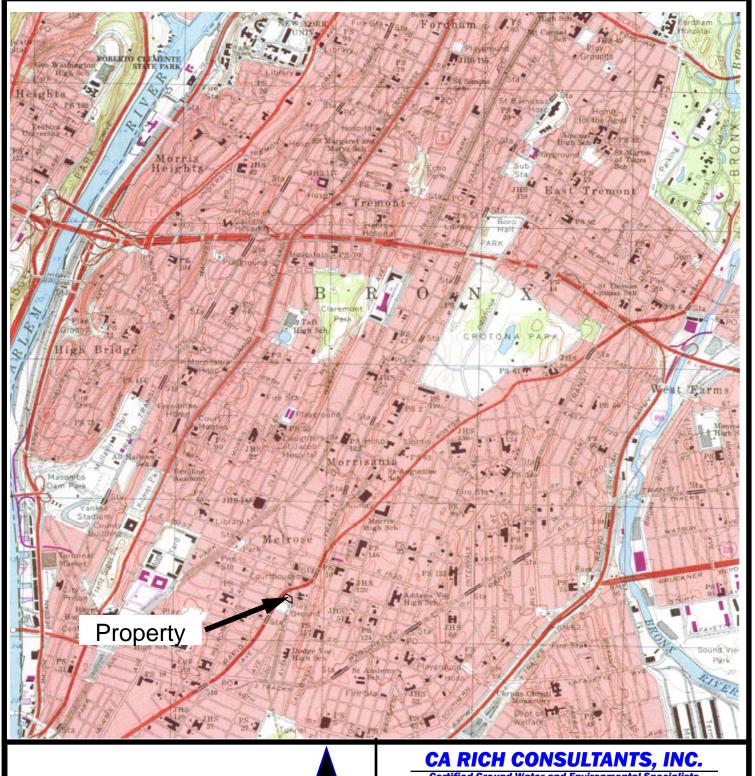
Soldier piles and tiebacks will be required to shore the excavation. At a market rate of \$100 per linear foot and a perimeter of 357 feet, the estimate for shoring is \$35,700. The cost for this Alternative was estimated by combining these figures for an approximate total of \$1,890,410.

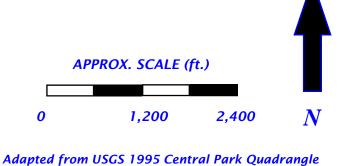
For planning purposes, no imported top soil is assumed for the Site. The existing soil/fill is not expected to be reused/relocated on Site. This assumes the work will be performed concurrent with the planned redevelopment of the Site and that groundwater treatment won't be necessary.

3.2 SELECTION OF THE PREFERRED REMEDY

Both Alterative 1 (cleanup to Track 1 SCOs) and Alterative 2 (cleanup to Track 4 Site-Specific Action Levels with a Track 2 contingency) achieve the RAOs presented in Section 2.7 of the RAWP. Alternative 1 (Track 1 SCOs) is not viewed to be implementable from a construction stand point as it will require extremely deep excavations which will likely extend to the water table. The estimated total for Alternative 1 (Track 1 SCOs) is \$2,457,189 including the disposal of additional soil beyond 15 feet below grade. The excavation cost to achieve Track 1 would make the project economically unfeasible. Alternative 2 (Track 4 SSALs) is believed to be implementable. The excavation of the impacted soil is incorporated into the planned development of the Site. The estimated cost of Alternative 2 (Track 4) is \$1,890,410, which is both cost effective and achieves the RAOs through the incorporation of institutional and engineering controls.

FIGURES





Adapted from USGS 1995 Central Park Quadrangle Map.

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17 Dupont Street, Plainview, NY 11803

TITLE:

SITE LOCATION MAP ON TOPOGRAPHIC QUAD

DATE:

7/14/09

SCALE:
AS SHOWN

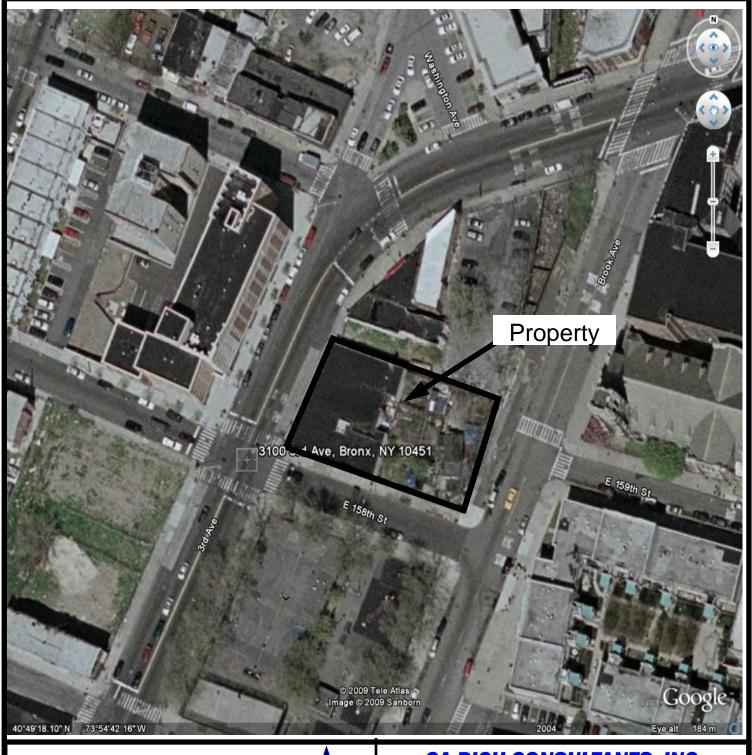
Cornerstone Site B-1

FIGURE: 1A

DRAWING: 3100 3rd Avenue
Bronx, New York

DRAWN BY:

APPR. BY: EAW





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APPROX. SCALE (miles)

0 0.15

0.3

3

FIGURE: 1B

DRAWING:

TITLE:

Cornerstone Site B-1 3100 Third Avenue Bronx, New York

SITE LOCATION MAP ON

AERIAL PHOTOGRAPH

DATE:

7/14/09

SCALE:

AS SHOWN

AS SHUWN

DRAWN BY:

APPR. BY:

EAW

Adapted from Google Earth 2009

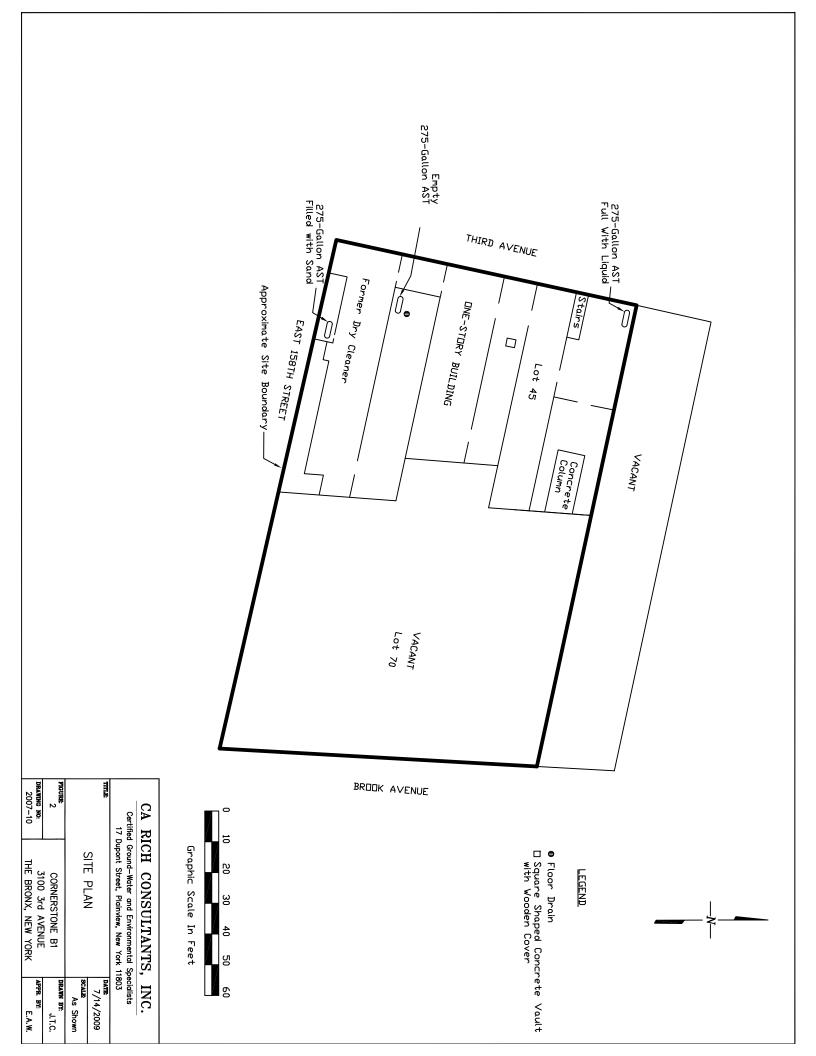
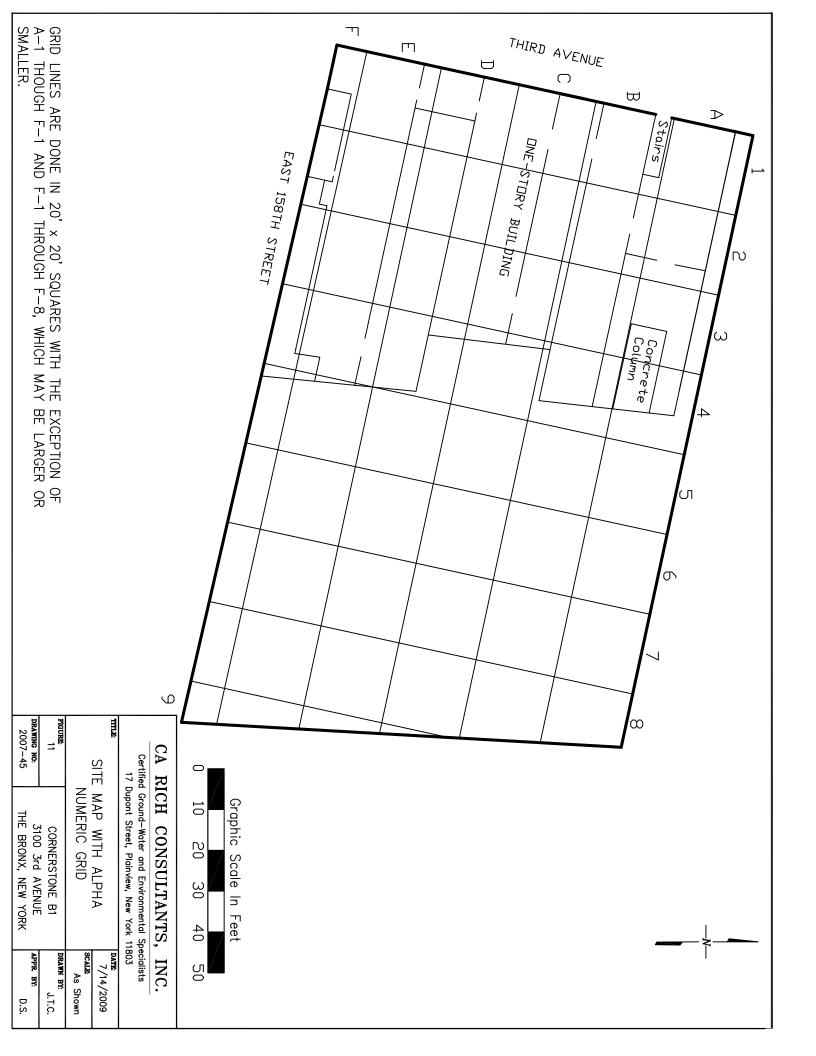
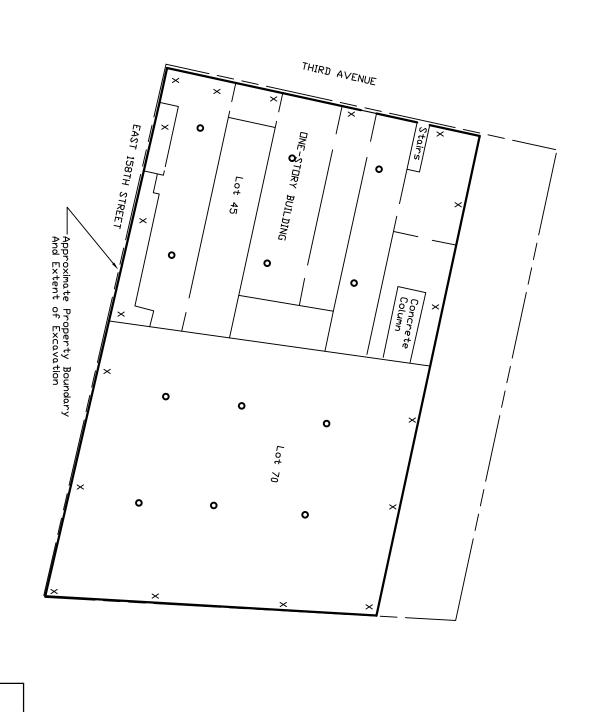


FIGURE 3B

FIGURE 3C





LEGEND

O Proposed bottom end-point sample location X Proposed sidewall sample location

Graphic Scale In Feet 0 10 20 30 40 50 60

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17 Dupont Street, Plainview, New York 11803

SITE MAP WITH PROPOSED END
POINT SAMPLE LOCATIONS
As Shown

APPR BY:

ACATE
AS Shown

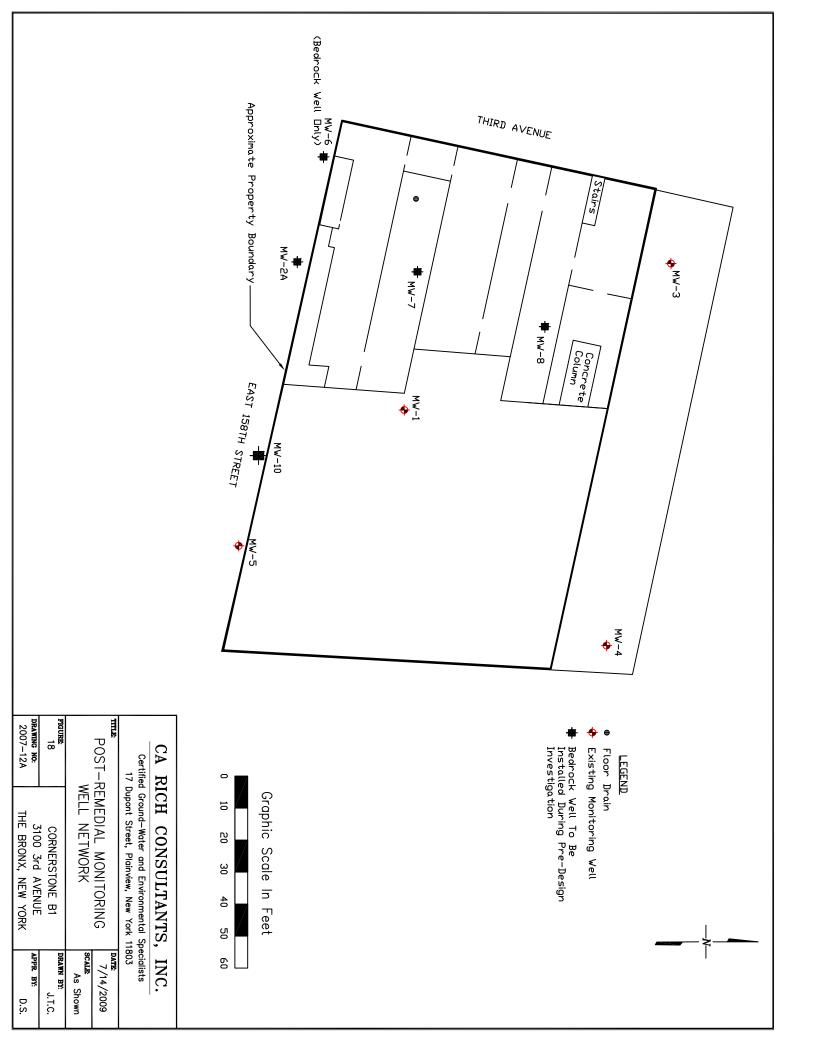
DRAWN BY:
J.T.C.
APPR BY:
APPR BY:

DRAWING NO: 2007-42

THE BRONX, NEW YORK

E.A.W.

FIGURE:



APPENDIX A

Metes and Bounds

[PARCEL A - SECTION 9, BLOCK 2364, LOT 45]

ALL that certain plot, piece or parcel of land situate, lying and being in the Borough and County of Bronx, City and State of New York, bounded and described as follows:

BEGINNING at the corner formed by the intersection of the easterly side of Third Avenue and the northerly side of East 158th Street;

THENCE easterly along the said northerly side of East 158th Street, 84 feet;

THENCE northerly at right angles to said northerly side of East 158th Street 98.54 feet;

THENCE westerly 70.51 feet to the easterly side of Third Avenue, at a point therein distant 99.53 feet northerly from the northeasterly corner of Third Avenue and East 158th Street;

THENCE southerly along the easterly side of Third Avenue 99.53 feet to the point or place of BEGINNING.

[PARCEL C - SECTION 9, BLOCK 2364, LOT 70[

ALL that certain plot, piece or parcel of land situate, lying and being in the Borough and County of Bronx, City and State of New York, more particularly designated on the Tax Map of the City of New York, for the Borough of the Bronx, as Section 9, Block 2364, Lot 70.