GEOTECHNICAL INVESTIGATION WORK PLAN

Proposed Golf Entertainment Venue
Lot 1, Lot 4, and Lot 7
NYSDEC Site No. C360116 and C360066
Austin Avenue and Prior Place
City of Yonkers,
Westchester County, New York

Prepared By:
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61 Main Street
Sayreville, New Jersey
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May 2019

CERTIFICATION

I Meredith R. Anke, P.E. certify that I am currently a Qualified Environmental Professional as defined in 6 NYCRR Part 375 and that this Geotechnical Investigation Work Plan for the former Austin Avenue Landfill site located in Yonkers, Westchester County, New York (NYSDEC Site No. C360116 and C360066) was prepared in accordance with all applicable statutes and regulations and in substantial conformance with the previously approved Site Management Plans dated April 2015 (C360066) and August 2016 (C360116).

Meredith R. Anke, P.E.	5/17/19	M. Anke
Qualified Environmental Professional	Date	Signature

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1.0 INTRODUCTION

Arco Murray has retained Carlin-Simpson & Associates to perform a geotechnical investigation for a proposed development project that will consist of a new golf entertainment venue with a 67,375 square foot building, a golf range, associated parking, and landscaping areas. The proposed development project will span two adjacent Brownfield Cleanup Program (BCP) sites as shown in Figure 1.

The geotechnical investigation will include advancing 19 test borings throughout the subject property as shown in Figure 2. An additional 23 borings (one for each net pole) may also be performed as an add-on study at the same time or at a later date. Carlin-Simpson & Associates and their drilling subcontractor, General Borings Inc. of Prospect, Connecticut, will be completing the work. This work plan only covers topics related to compliance with New York State Department of Environmental Conservation (NYSDEC) Brownfield Cleanup Program (BCP) requirements as they relate to these parcels. This work plan is being submitted to the NYSDEC for review and approval.

This work plan outlines the scope of work and methods that will be used during the geotechnical investigation on the subject property. Objectives and methods have been developed in accordance with the NYSDEC DER-10 guidance document and the NYSDEC-approved Site Management Plans that were prepared by GHD Consulting Engineers, LLC in April 2015 (Lot 1, C360066) and August 2016 (Lot 4 and Lot 7, C360116). This work plan is also consistent with the methods that were used by Carlin-Simpson & Associates and General Borings Inc. during a geotechnical investigation at the site in 2012 for a previously proposed development project.

2.0 SITE DESCRIPTION AND HISTORY

2.1 Site Description

The subject property is situated in the City of Yonkers, Westchester County, New York and is identified as Block 3244, Lots 1, 4, and 7 on the City of Yonkers Tax Map. The property is approximately 27.3 acres in total area and is bounded by Austin Avenue to the north, Prior Place to the west, Sprain Brook and Sprain Road to the east, and retail parking lots to the south. The property location is also shown on Figure 1. The proposed development site includes all of Lot 4 and Lot 7 and a portion of Lot 1 as shown on Figure 1.

Lot 1 is currently undeveloped and covered with a soil cover engineering control that includes stormwater control features. The soil cover system consists of a minimum of 24 inches of clean soil over a demarcation layer of non-woven geotextile fabric. Surface grades generally slope down to the west and southwest.

Lot 4 and Lot 7 are currently undeveloped and mostly wooded with some cleared areas and a large shot rock stockpile in the central portion of the parcel. The stockpile is reportedly a result of construction on the adjacent lots to the south (Lot 2 and Lot 3) and consists of blasted bedrock and soil. A large portion of this parcel is covered with a soil cover engineering control that consists of a geotextile demarcation layer overlain by a minimum of 12 inches of clean soil

fill with established vegetation or a minimum of 3 feet of shot rock fill with no demarcation layer. The cover system for a discrete area in the southeastern corner of the parcel consists of 6 inches of asphalt pavement.

2.2 Site History

The following site history is from information previously provided by GHD Consulting Engineers, LLC and from the Site Management Plans.

The subject property consists of the former Austin Avenue Landfill, which was formerly owned and operated by the City of Yonkers. The landfill operated from at least the 1960s until 1979 when it ceased operations. The landfill property was transferred to Westchester County in 1979 and is currently owned by the Westchester County Industrial Development Agency (WIDA). The operator, Morris Industrial Builders, L.P., has a long-term lease arrangement that allows them to develop the site for future uses.

The main portion of the former Austin Avenue Landfill lies on Lot 1 and was remediated under BCP Site No. C360066. A Remedial Investigation (RI) conducted on Lot 1 determined that the underlying materials primarily consisted of incinerator ash and bulky waste, including trees, brush, and building debris. The findings of the Lot 1 RI also indicated measurable, but subtle, groundwater contamination with respect to inorganic constituents, including chloride, iron, manganese, and nitrate, as well as little or no evidence of methane gas. These findings are consistent with inorganic material typical of an ash landfill. Remediation involved placing a geotextile demarcation layer over areas that contained ash fill material and covering the geotextile with a minimum of 24 inches of clean imported fill, with some areas of imported fill exceeding 10 feet in thickness.

A smaller portion of the former Austin Avenue Landfill lies on the eastern half of Lot 4 and Lot 7 and was remediated under BCP Site No C360116. The RI for this parcel determined that underlying materials on the eastern half of the site consisted primarily of incinerator ash and miscellaneous refuse (i.e. building debris, broken glass, wood fragments, etc.), which contained concentrations of metals that exceeded Commercial Use Soil Cleanup Objectives (SCOs) in isolated locations. The soils underlying the western half of the site were found to meet Commercial Use SCOs, with the exception of one (1) metal in one (1) sample. The findings of the RI also indicated measurable, but subtle, groundwater contamination with respect to inorganic constituents, including iron, lead, magnesium, manganese, and sodium. Soil vapor samples collected from two (2) soil vapor wells located along the eastern property boundary detected multiple volatile organic compounds (VOCs) but the concentrations were relatively low. Remediation involved placing a geotextile demarcation layer over portions of the property and covering the geotextile with a minimum of 12 inches of clean fill. In other areas of the site, the cover system consists of a minimum of 3 feet of existing shot rock fill with no demarcation layer or 6 inches of asphalt pavement with no demarcation layer.

3.0 NYSDEC BCP COMPLIANCE APPROACH

This section outlines the necessary protocols for the proposed geotechnical investigation to be in compliance with the NYSDEC-approved Site Management Plans. A Community Air Monitoring Plan (CAMP) is included in Appendix A of this document, a Soil Management Plan is included in Appendix B, and a Health and Safety Plan is included in Appendix C. These documents will also be followed during the geotechnical investigation activities.

3.1 Pre-Investigation Activities

3.1.1 Utility Markout

By New York State law, the Dig Safely New York one-call center shall be notified to provide a markout of existing underground utilities prior to the start of the fieldwork. Carlin-Simpson & Associates or their drilling subcontractor will be responsible for notifying the one-call center with adequate notice (at least 3 days) to complete the markout. Fieldwork will not begin until a positive response has been received from each of the notified utilities.

3.1.2 Permits and Approvals

Fieldwork will not begin until this Geotechnical Investigation Work Plan has been approved in writing by the NYSDEC and boring permits have been obtained from the City of Yonkers. In addition, it is anticipated that the New York City Department of Environmental Protection (DEP) will want to review the boring plan since select borings will be performed near the existing aqueduct easement. If required, DEP approval will also be obtained prior to starting the fieldwork.

3.2 Geotechnical Investigation Activities Documentation

Carlin-Simpson & Associates personnel will be on-site for the duration of the geotechnical investigation and will perform the required air monitoring activities, document handling and management of soil cuttings, and document that the penetration of, and replacement of, the soil cover are completed in accordance with the site-specific Site Management Plans and this work plan.

Upon completion of the work and site restoration, Carlin-Simpson & Associates will prepare a documentation report to document the field activities completed and measures implemented to comply with this NYSDEC-approved work plan. The documentation report will include a description and photographs of the site activities, a figure showing the areas of soil cover disturbance, a detail documenting geotextile demarcation layer and soil cover restoration, and the CAMP monitoring data. The report will be submitted to the NYSDEC for inclusion in the files for Site No. C360066 and C360116.

3.3 Community Air Monitoring Plan

A Community Air Monitoring Plan (CAMP) is included in Appendix A of this work plan and is based on the NYSDOH Generic Community Air Monitoring Plan (December 2009). The CAMP describes the measures that must be undertaken during any ground intrusive

activities (i.e. test pit excavations, test borings, etc.) at the site, which includes conducting real-time monitoring of ambient air downwind and upwind of the work area. The objective of the CAMP is to provide a measure of protection for the downwind community from potential airborne contaminant releases that might arise as a result of the planned geotechnical investigation.

The CAMP will be implemented during all intrusive field work. The location of air sampling stations will be based on generally prevailing wind conditions during work activities. These locations will be adjusted on a daily (or more frequent) basis based on actual wind directions to provide one (1) upwind monitoring station and one (1) downwind monitoring station.

3.4 Soil Management Plan

The Soil Management Plan included in Appendix B has been extracted from the site-specific Site Management Plans. The Soil Management Plan describes the measures that must be undertaken during any ground intrusive activities (i.e. test pit excavations, test borings, etc.) that have the potential to encounter remaining contamination. The Soil Management Plan provides information for the handling, transport, and disposal of excavated material, as well as the requirements for backfill material. All ground intrusive activities that are to be performed as part of this geotechnical investigation are considered to have the potential to encounter remaining contamination (except for the soils above the demarcation layer) and shall be completed in compliance with the attached Soil Management Plan. Any fill that is imported to the site must also meet the requirements of the Soil Management Plan.

3.5 Health and Safety Plan

A preliminary Health and Safety Plan (HASP) is included as Appendix C. This HASP has been developed using the applicable general industry and construction standards of the Federal Occupational Safety and Health Administration (OSHA) to protect workers implementing field activities. The HASP will be finalized prior to starting the fieldwork.

3.6 Borings Advanced Through Demarcation Layer

Geotechnical investigation borings completed on Lot 1 and portions of Lot 4 and Lot 7 will encounter the geotextile demarcation layer. The following procedures will be followed for any borings completed through the geotextile demarcation layer.

3.6.1 Soil Cover Material

The geotextile demarcation layer is covered by a minimum of 12 inches of clean fill on Lot 4 and Lot 7 and a minimum of 24 inches of clean fill on Lot 1, with some areas covered by up to 10-feet of fill. The as-built plans provided in the Site Management Plans will be used to determine the limits and approximate cover soil thickness at each boring location. The cover soil material will be removed from the boring area, stockpiled nearby, and used to replace the soil cover once the boring is completed. The cover soil will be removed with either an excavator or by hand excavation. The material will be kept separate from drill cuttings removed from beneath the geotextile demarcation layer.

3.6.2 Geotextile Demarcation Layer Penetration

The geotextile demarcation layer will be cut and folded out of the way leaving room to advance augers without getting tangled in the remaining demarcation layer material. The geotextile demarcation layer will not be penetrated by spinning augers through it.

3.6.3 Investigation Derived Cuttings

Drill cuttings from the boring shall be placed near the boring on polyethylene sheeting and covered by polyethylene sheeting at the end of each day. Once the boring is complete, the removed material shall be used as fill in the borehole below the geotextile demarcation layer, in a first out last in manner. Any material not placed back in the boring shall be containerized, properly characterized, and properly disposed of off-site in accordance with the attached Soil Management Plan.

Any soil/fill removed from the borings that is determined to be grossly contaminated (i.e. readily observable evidence of contamination based on odors or visual inspection) will not be returned to the boring. This material shall be segregated, analyzed, handled, and transported off-site for disposal in accordance with the Soil Management Plan.

3.6.4 Geotextile Demarcation Layer and Soil Cover Repair

Once the borehole is backfilled to the elevation of the geotextile demarcation layer, a new piece of geotextile fabric shall be placed over the boring to allow for demarcation layer repair. The geotextile repair patch shall extend a minimum of 6-inches beyond any cuts in the existing geotextile. The segregated soil cover material shall then be used to return the area to the original grade.

3.7 Borings Not Advanced Through Demarcation Layer

Geotechnical investigation borings performed on portions of Lot 4 and Lot 7 will encounter soil cover without a geotextile demarcation layer. The as-built plans provided in the Site Management Plans will be used to determine the limits and approximate cover soil thickness at each boring location. The following procedures shall be followed for any borings completed in these areas.

3.7.1 Soil Cover Material

In areas, the site is covered by a minimum of 3 feet of existing soil and/or shot rock fill. A minimum of 3 feet of this material will be removed from the boring area, stockpiled nearby, and used to replace the soil cover once the boring is completed. The cover soil will be removed with an excavator. The material will be kept separate from drill cuttings removed from beneath the soil cover layer.

3.7.2 Investigation Derived Cuttings

Drill cuttings from the boring shall be placed near the boring on polyethylene sheeting and covered by polyethylene sheeting at the end of each day. Once the boring is complete, the

removed material shall be used as fill in the borehole to within 3 feet of the ground surface. The borehole shall be backfilled in a first out last in manner to the best practicable extent. Any material (excluding cuttings generated from the shot rock stockpile) not placed back in the boring shall be containerized, properly characterized, and properly disposed of off-site in accordance with the attached Soil Management Plan.

Any soil/fill removed from the borings that is determined to be grossly contaminated (i.e. readily observable evidence of contamination based on odors or visual inspection) will not be returned to the boring. This material shall be segregated, analyzed, handled, and transported off-site for disposal in accordance with the Soil Management Plan.

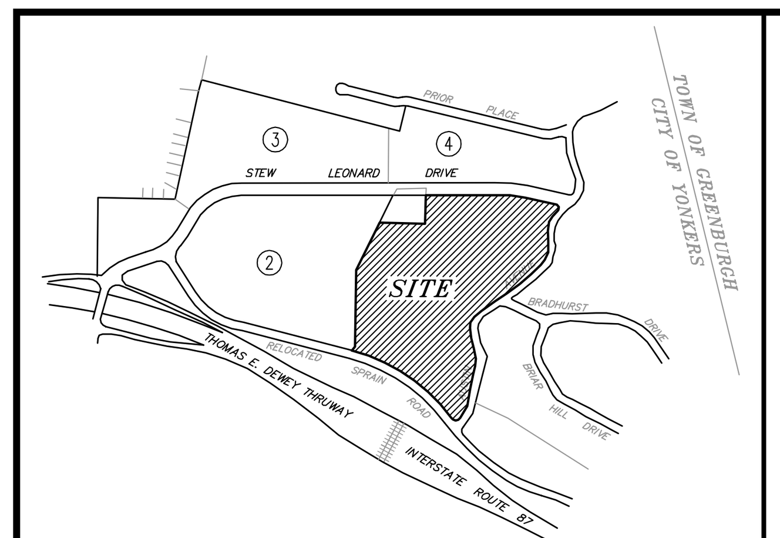
3.7.1 Soil Cover Repair

Once the borehole is backfilled to 3 feet below the ground surface, the segregated soil and/or shot rock cover material shall be used to return the area to the original grade.

3.8 Site Restoration

Any areas of the engineering control soil cover that are disturbed by equipment, including each borehole location, will be repaired to prior conditions, including grading to promote proper drainage and seeding with a winter mix grass seed to promote vegetative growth. Areas of soil cover that are rutted will also be re-graded and seeded with a winter mix grass seed to promote vegetative growth and control erosion.

Figures



VICINITY MAP

SURVEY CERTIFICATION:

THIS CERTIFICATION IS MADE TO THE PEOPLE OF THE STATE OF NEW YORK ACTING THROUGH ITS COMMISIONER OF THE DEPARTMENT OF ENVIRONMENTAL CONSERVATION, AMERICAN LAND SERVICES, INC. (TITLE NO. AL-41157) AND YONKERS CONTRACTING COMPANY, INC.

I HEREBY CERTIFY THAT THE SURVEY JOB NO. 10-1804, ENTITLED "FINAL ASBUILT (LOT 1, BLOCK 3244, SECTION 3) PREPARED FOR YONKERS CONTRACTING COMPANY, INC." WAS ACTUALLY MADE ON THE GROUND AND THAT IT AND THE INFORMATION, COURSES AND DISTANCES SHOWN THEREON ARE CORRECT AS DETERMINED BY SAID SURVEY; THAT THE PROPERTY DESCRIBED HEREON IS THE SAME PROPERTY DESCRIBED IN TITLE REPORT NO. AL-41157, EFFECTIVE MARCH 15, 2011 ISSUED BY AMERICAN LAND SERVICES, INC.; THAT ALL EASEMENTS, RIGHTS OF WAY, COVENANTS AND RESTRICTIONS REFERENCED IN SAID TITLE COMMITMENT HAVE BEEN PLOTTED HEREON OR OTHERWISE NOTED AS TO THERE EFFECT ON THE SUBJECT PROPERTY; THAT THE TITLE LINES AND LINES OF ACTUAL POSSESSION ARE THE SAME EXCEPT WHERE NOTED; THAT THE SIZE, LOCATION AND TYPE OF BUILDINGS AND IMPROVEMENTS ARE AS SHOWN AND ALL ARE WITHIN THE BOUNDARY LINES AND APPLICABLE SETBACK LINES OF THE PROPERTY; THE UNDERSIGNED IS NOT AWARE OF ANY VIOLATIONS OF ORDINANCES, RESTRICTIONS OR OTHER RULES AND REGULATIONS WITH REFERENCE TO THE LOCATION OF SAID BUILDINGS AND IMPROVEMENTS; THAT THERE ARE NOT ANY EASEMENTS OR USES AFFECTING THIS PROPERTY FROM A CAREFUL PHYSICAL INSPECTION OF THE SAME, OTHER THAN THOSE SHOWN AND DEPICTED THEREON; THAT THERE ARE NO ENCROACHMENTS OR PARTY WALLS AFFECTING THIS PROPERTY OTHER THAN AS SHOWN; THAT POTABLE AND WASTE WATER, ELECTRIC, GAS AND TELEPHONE UTILITIES ARE LOCATED ON THE TRACT AND APPEAR OPERATIONAL; THAT TO THE EXTENT KNOWN BY THE UNDERSIGNED, ANY UTILITY TRANSFORMERS LABELED AS CONTAINING PCB'S ARE SPECIFICALLY NOTED; THAT ANY DISCHARGE INTO STREAMS, RIVERS OR OTHER CONVEYANCE SYSTEM IS SHOWN ON THE SURVEY; THAT THE PARCEL DESCRIBED HEREON DOES NOT LIE WITHIN FLOOD HAZARD AREAS IN ACCORDANCE WITH ANY MAPS ENTITLED "FLOOD INSURANCE RATE MAP," "FLOOD HAZARD FLOODWAY BOUNDARY MAP," "FLOOD HAZARD BOUNDARY MAP," OR "FLOOD BOUNDARY AND FLOODWAY MAP" PUBLISHED BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY OR A FLOOD HAZARD BOUNDARY MAP PUBLISHED BY THE U.S. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT; THAT THE DESCRIBED PROPERTY IS LOCATED WITHIN AN AREA HAVING A ZONE DESIGNATION OF "ZONE C", AREA OF MINIMAL FLOODING, BY THE SECRETARY OF HOUSING AND URBAN DEVELOPMENT ON FLOOD INSURANCE RATE MAP WITH A DATE OF IDENTIFICATION OF AUGUST 15, 1980 FOR COMMUNITY PANEL NO. 360936-0005-B IN WESTCHESTER COUNTY, STATE OF NEW YORK, WHICH IS THE CURRENT FLOOD INSURANCE RATE MAP FOR THE COMMUNITY IN WHICH SAID PREMISES IS SITUATED; THE SAID PROPERTY CONSTITUTES ONE TAX LOT EXCEPT AS SHOWN ON THE SURVEY; AND THAT THE PROPERTY HAS DIRECT ACCESS TO SPRAIN ROAD AND STEW LEONARD DRIVE, PUBLIC ROADS MAINTAINED BY THE CITY OF YONKERS AND THE PROPERTY DESCRIBED IS THE SAME PROPERTY DESCRIBED IN TITLE REPORT NO. AL-41157 EFFECTIVE MARCH 15, 2011 ISSUED BY AMERICAN LAND SERVICES, INC.

THIS SURVEY WAS MADE IN ACCORDANCE WITH THE SURVEY REQUIREMENTS SET FORTH BY THE NEW YORK STATE DEPARTMENT OF ENVIROMENTAL CONSERVATION FOR AN ENVIRONMENTAL EASEMENT PACKAGE SUBMISSION.

[signature] DATE: APRIL 16, 2011

PRINT NAME: STEVEN J. WILLARD

REGISTERED PROFESSIONAL SURVEYOR

NO. 050054

CERTIFIED, AS NOTED AND LIMITED BELOW, ONLY TO:

- NEW YORK STATE - DEPARTMENT OF ENVIRONMENTAL CONSERVATION
- YONKERS CONTRACTING COMPANY, INC.

NOTES & REFERENCES:

THIS MAP IS BASED UPON A FIELD SURVEY COMPLETED IN MARCH 2011 AND UPON THE DEEDS AND TITLE INFORMATION PROVIDED BY AMERICAN LAND SERVICES, INC., TITLE NO. AL-41157, DATED MARCH 15, 2011.

PREMISES SHOWN HEREON IS LOT 1 OF BLOCK 3244 OF SECTION 3 OF THE CITY OF YONKERS TAX ASSESSMENT MAPS.

TOTAL SITE AREA - 759,552.90 S.F. (17.4369 ACRES)

DEMARCATION LAYER AREA (EASEMENT SITE No. C360066) - 615,072.38 S.F. (14.1201 ACRES)

CONTOURS AND ELEVATIONS SHOWN HEREON ARE FROM AN ACTUAL FIELD SURVEY PERFORMED BY THE OFFICE OF CONTRACTORS' LINE & GRADE SOUTH IN MARCH 2011 AND REFER TO THE U.S. COASTAL & GEODETIC SURVEY DATUM (NGVD-29).

THE FOLLOWING MAPS WERE USED AS REFERENCES IN THE PREPARATION OF THE SURVEY:

A) "COUNTY OF WESTCHESTER, SURVEY OF LANDS TO BE CONVEYED BY THE CITY OF YONKERS TO THE COUNTY OF WESTCHESTER," BY ARISTOTLE BOURNAZOS, P.L.S., DATED JANUARY 28, 1983, FILED IN THE WESTCHESTER COUNTY CLERK'S OFFICEON APRIL 27, 1983 AS MAP NO. 21197.

B) "COUNTY OF WESTCHESTER, SURVEY OF LANDS FOR AUSTIN AVENUE DEVELOPMENT," BY ARISTOTLE BOURNAZOS, P.L.S., DATED FEBRUARY 1984, FILED IN THE WESTCHESTER COUNTY CLERK'S OFFICE ON JUNE 13, 1986 AS MAP NO. 22357.

C) "COUNTY OF WESTCHESTER, SURVEY OF LANDS FOR AUSTIN AVENUE DEVELOPMENT," BY ARISTOTLE BOURNAZOS, P.L.S., DATED FEBRUARY 1984, FILED IN THE WESTCHESTER COUNTY CLERK'S OFFICE ON APRIL 18, 1989 AS MAP NO. 23665.

D) "MAP OF LANDS & EASEMENT TO BE CONVEYED BETWEEN THE CITY OF NEW YORK AND THE WESTCHESTER COUNTY INDUSTRIAL DEVELOPMENT AGENCY," BY ARISTOTLE BOURNAZOS, P.C., LAST REVISED AUGUST 15, 1991, FILED IN THE WESTCHESTER COUNTY CLERK'S OFFICE ON SEPTEMBER 5, 1991 AS MAP NO. 24504.

E) "MAP OF NEPPERHAN HEIGHTS," DATED FEBRUARY 1, 1869, FILED IN THE WESTCHESTER COUNTY REGISTERS OFFICE ON APRIL 19, 1869 AS MAP NO. 513.

F) "MAP OF NEPPERHAN HEIGHTS," BY M.K. COUZENS, CIVIL ENGINEER, DATED DECEMBER 13, 1872, FILED IN THE OFFICE OF REGISTER OF WESTCHESTER COUNTY ON APRIL 1, 1873 AS MAP NO. 57.

G) MAP ENTITLED "LAYING OUT AND OPENING OF CORPORATE DRIVE BETWEEN THOMAS E. DEWEY THRUWAY AND AUSTIN AVENUE AND THE STRAIGHTENING AND WIDENING OF SPRAIN ROAD BETWEEN CORPORATE DRIVE AND NORTH CITY LINE AND THE STRAIGHTENING AND WIDENING OF AUSTIN AVENUE BETWEEN SPRAIN ROAD AND PRIOR PLACE" FOR CITY OF YONKERS, DEPARTMENT OF ENGINEERING PREPARED BY ARISTOTLE BOURNAZOS P.C. DATED JANUARY 20, 1989 LAST REVISED MARCH 13, 1989 AND FILED IN THE OFFICE OF THE COUNTY CLERK OF WESTCHESTER COUNTY (DEPARTMENT OF LAND RECORDS) ON APRIL 12, 1989 AS FILED MAP NO. 23658.

SOURCES OF TITLE:

A) AMERICAN LAND SERVICES, INC TITLE NUMBER - AL-41157.

B) DEED FROM THE COUNTY OF WESTCHESTER TO THE COUNTY OF WESTCHESTER INDUSTRIAL DEVELOPMENT AGENCY, DATED MAY 3, 1989, RECORDED IN LIBER 9528 AT PAGE 268.

EASEMENTS OF RECORD:

A) SUBSURFACE EASEMENT RIGHTS IN REFERENCE TO THE NEW CROTON AQUEDUCT AND SURFACE EASEMENT RIGHTS IN REFERENCE TO SHAFT NO. 16 (LOCATED ON THE PARCEL OF LAND NORTH OF THE NORTHWEST CORNER OF THE SUBJECT PARCEL) CONTAINED IN DEED FROM THE CITY OF NEW YORK TO THE CITY OF YONKERS RECORDED IN LIBER 6605, PAGE 81.

B) SUBSURFACE EASEMENT RIGHTS OF THE NEW CROTON AQUEDUCT AS SHOWN ON FILED MAPS NO. 21197 & NO. 23665, AND AS DELINEATED ON THIS MAP.

C) COVENANTS AND RESTRICTIONS IN DEED IN LIBER 2799 PAGE 4, AS CORRECTED IN DEED IN LIBER 2982 PAGE 133.

D) RESERVATIONS AND RESTRICTIONS IN LIBER 6287 PAGE 330.

E) COVENANTS AND RESTRICTIONS AND EASEMENTS IN LIBER 6605 PAGE 81.

F) EASEMENT IN LIBER 11215 PAGE 59.

G) NOTICE OF APPROPRIATION IN LIBER 5337 PAGE 90.

H) EASEMENT RIGHTS (CROTON AQUEDUCT) AS SHOWN ON MAP NUMBERS 87 & 21197.

I) EASEMENT SITE NUMBER (DEMARCATION LAYER) - C360066.

THE LOCATION OF EASEMENTS OF RECORD ON THIS MAP ARE REPRODUCED FROM THE ABOVE MENTIONED DEEDS AND FILED MAPS AND DUE TO THE LACK OF PHYSICAL MONUMENTATION, THEIR EXACT LOCATION MAY DIFFER SLIGHTLY BETWEEN SURVEYORS.

THE LOCATION OF SUB-SURFACE UTILITIES ARE SHOWN PER PHYSICAL FEATURES FOUND, EVIDENCE VISIBLE FROM SURFACE INSPECTION AND AS MARKED IN THE FIELD BY AGENTS ON BEHALF OF THE UTILITY COMPANIES.

THIS PROPERTY FALLS WITHIN "ZONE C" IDENTIFIED AS AN AREA OF MINIMAL FLOODING AS SHOWN ON FLOOD INSURANCE RATE MAP, COMMUNITY PANEL NO. 360936-0005-B, EFFECTIVE DATE AUGUST 15, 1980.

ONLY COPIES OF THIS SURVEY MAP MARKED WITH BOTH THIS SURVEYOR'S ORIGINAL SEAL AND SIGNATURE SHALL BE CONSIDERED AS VALID TRUE COPIES.

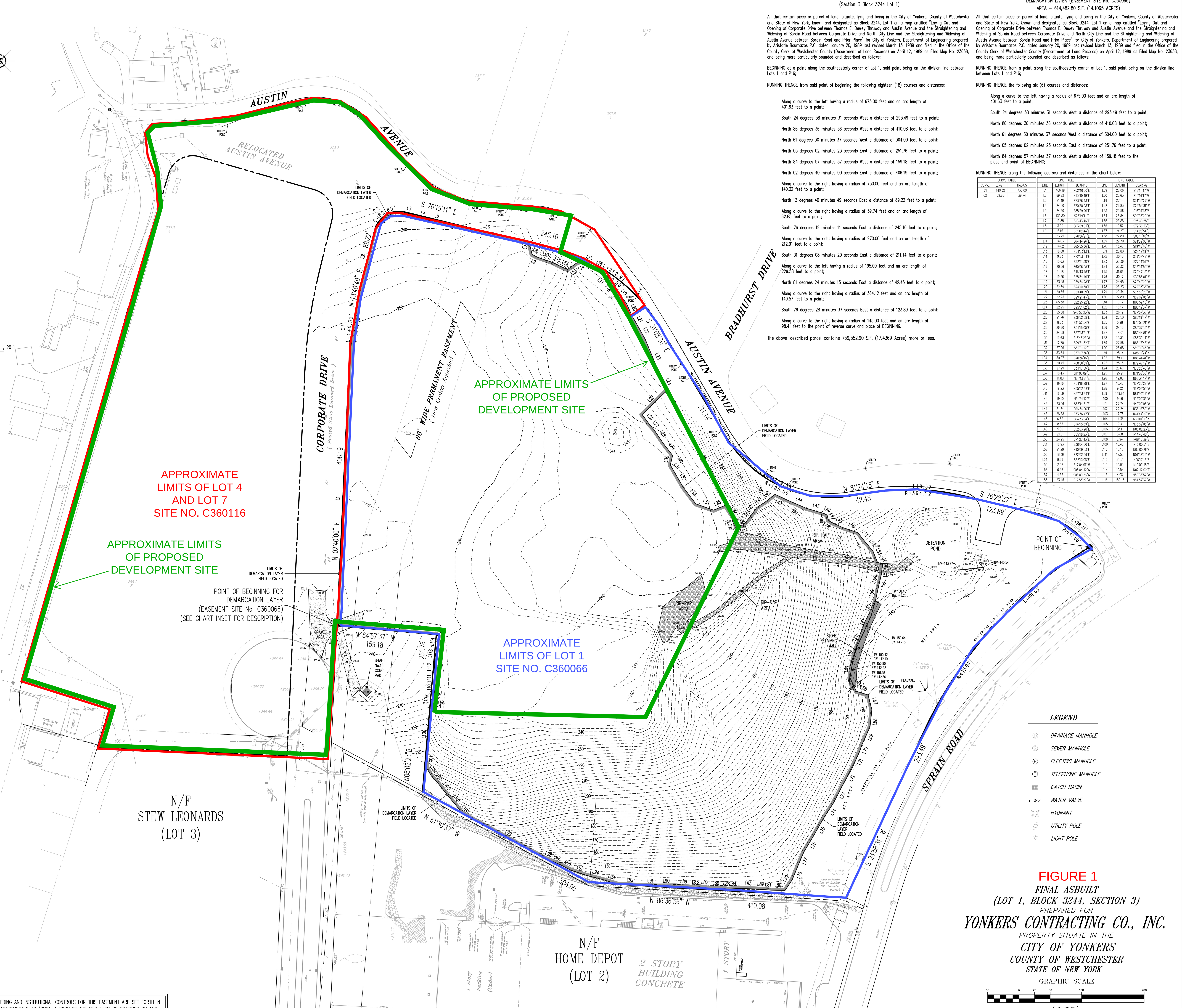
UNDERGROUND IMPROVEMENTS, STRUCTURES, UTILITIES OR ENCROACHMENTS, AND ANY EASEMENTS RELATED THERETO, ARE NOT SHOWN HEREON UNLESS OTHERWISE NOTED. THE LOCATION, EXTENT AND SIZES OF UNDERGROUND UTILITIES ARE NOT GUARANTEED OR CERTIFIED AS COMPLETE OR ACCURATE. CONSULT WITH THE APPROPRIATE UTILITY COMPANY OR AGENCY PRIOR TO DESIGNING IMPROVEMENTS, COMMENCING DEMOLITION, OR CONSTRUCTION.

THE PROPERTY SHOWN HEREON MAY BE SUBJECT TO RESTRICTIONS, COVENANTS AND/OR EASEMENTS, WRITTEN OR IMPLIED.

THE SURVEYOR'S SEAL, SIGNATURE AND ANY CERTIFICATION APPEARING HEREON SIGNIFY THAT, TO THE BEST OF HIS KNOWLEDGE AND BELIEF, THIS SURVEY WAS PREPARED IN ACCORDANCE WITH THE MINIMUM STANDARDS FOR LAND SURVEYS AS SET FORTH IN THE CODE OF PRACTICE ADOPTED BY THE NEW YORK STATE ASSOCIATION OF PROFESSIONAL LAND SURVEYORS, INC.

UNAUTHORIZED ALTERATION OR ADDITION TO A SURVEY MAP BEARING A LICENSED LAND SURVEYOR'S SEAL IS A VIOLATION OF SECTION 7209, SUB-DIVISION 2 OF THE NEW YORK STATE EDUCATION LAW.

CERTIFICATIONS SHALL RUN ONLY TO THE PERSON FOR WHOM THIS SURVEY WAS PREPARED, AND ON HIS BEHALF, TO THE TITLE COMPANY, LENDING INSTITUTION AND GOVERNMENTAL AGENCY LISTED HEREON; SAID CERTIFICATIONS ARE NOT INTENDED TO RUN TO ADDITIONAL TITLE COMPANIES, LENDING INSTITUTIONS, SUBSEQUENT OWNERS OR FUTURE CONTRACT VENDEES.



SUBJECT PARCEL DESCRIPTION

(Section 3 Block 3244 Lot 1)

All that certain piece or parcel of land, situate, lying and being in the City of Yonkers, County of Westchester and State of New York, known and designated as Block 3244, Lot 1 on a map entitled "Laying Out and Opening of Corporate Drive between Thomas E. Dewey Thruway and Austin Avenue and the Straightening and Widening of Sprain Road between Corporate Drive and North City Line and the Straightening and Widening of Austin Avenue between Sprain Road and Prior Place" for City of Yonkers, Department of Engineering prepared by Aristotle Bournazos P.C. dated January 20, 1989 last revised March 13, 1989 and filed in the Office of the County Clerk of Westchester County (Department of Land Records) on April 12, 1989 as Filed Map No. 23658, and being more particularly bounded and described as follows:

BEGINNING at a point along the southeasterly corner of Lot 1, said point being on the division line between Lots 1 and P16;

RUNNING THENCE from said point of beginning the following eighteen (18) courses and distances:

Along a curve to the left having a radius of 675.00 feet and an arc length of 401.63 feet to a point;

South 24 degrees 58 minutes 31 seconds West a distance of 293.49 feet to a point;

North 86 degrees 36 minutes 36 seconds West a distance of 410.08 feet to a point;

North 61 degrees 30 minutes 37 seconds West a distance of 304.00 feet to a point;

North 05 degrees 02 minutes 23 seconds East a distance of 251.76 feet to a point;

North 84 degrees 57 minutes 37 seconds West a distance of 159.18 feet to a point;

North 02 degrees 40 minutes 00 seconds East a distance of 406.19 feet to a point;

Along a curve to the right having a radius of 730.00 feet and an arc length of 140.32 feet to a point;

North 13 degrees 40 minutes 49 seconds East a distance of 89.22 feet to a point;

Along a curve to the right having a radius of 39.74 feet and an arc length of 62.85 feet to a point;

South 76 degrees 19 minutes 11 seconds East a distance of 245.10 feet to a point;

Along a curve to the right having a radius of 270.00 feet and an arc length of 212.91 feet to a point;

South 31 degrees 08 minutes 20 seconds East a distance of 211.14 feet to a point;

Along a curve to the left having a radius of 195.00 feet and an arc length of 229.58 feet to a point;

North 81 degrees 24 minutes 15 seconds East a distance of 42.45 feet to a point;

Along a curve to the right having a radius of 364.12 feet and an arc length of 140.57 feet to a point;

South 76 degrees 28 minutes 37 seconds East a distance of 123.89 feet to a point;

Along a curve to the right having a radius of 145.00 feet and an arc length of 98.41 feet to the point of reverse curve and place of BEGINNING.

The above-described parcel contains 759,552.90 S.F. (17.4369 Acres) more or less.

ENVIRONMENTAL EASEMENT DESCRIPTION & CHART

DEMARCATION LAYER (EASEMENT SITE No. C360066)

AREA - 614,482.80 S.F. (14.1065 ACRES)

All that certain piece or parcel of land, situate, lying and being in the City of Yonkers, County of Westchester and State of New York, known and designated as Block 3244, Lot 1 on a map entitled "Laying Out and Opening of Corporate Drive between Thomas E. Dewey Thruway and Austin Avenue and the Straightening and Widening of Sprain Road between Corporate Drive and North City Line and the Straightening and Widening of Austin Avenue between Sprain Road and Prior Place" for City of Yonkers, Department of Engineering prepared by Aristotle Bournazos P.C. dated January 20, 1989 last revised March 13, 1989 and filed in the Office of the County Clerk of Westchester County (Department of Land Records) on April 12, 1989 as Filed Map No. 23658, and being more particularly bounded and described as follows:

RUNNING THENCE from a point along the southeasterly corner of Lot 1, said point being on the division line between Lots 1 and P16;

RUNNING THENCE the following six (6) courses and distances:

Along a curve to the left having a radius of 675.00 feet and an arc length of 401.63 feet to a point;

South 24 degrees 58 minutes 31 seconds West a distance of 293.49 feet to a point;

North 86 degrees 36 minutes 36 seconds West a distance of 410.08 feet to a point;

North 61 degrees 30 minutes 37 seconds West a distance of 304.00 feet to a point;

North 05 degrees 02 minutes 23 seconds East a distance of 251.76 feet to a point;

North 84 degrees 57 minutes 37 seconds West a distance of 159.18 feet to the place and point of BEGINNING;

RUNNING THENCE along the following courses and distances in the chart below:

CURVE TABLE

CURVE	LENGTH	RADIUS
C1	140.32	730.00
C2	62.85	39.74

LINE TABLE

LINE	LENGTH	BEARING	LINE	LENGTH	BEARING
L1	406.19	N02°40'00"E	L59	22.06	S12°11'47"W
L2	89.22	N13°40'49"E	L60	25.63	S16°16'17"W
L3	21.49	S73°26'43"E	L61	27.14	S24°33'27"W
L4	24.50	S70°30'28"E	L62	26.83	S24°54'31"W
L5	24.60	S85°29'20"E	L63	23.56	S16°04'13"W
L6	139.80	S76°19'11"E	L64	26.84	S09°36'20"W
L7	19.85	S13°43'46"E	L65	23.88	S25°40'28"E
L8	3.90	S63°09'03"E	L66	19.57	S72°36'33"E
L9	5.15	S61°02'44"E	L67	24.27	S14°28'54"E
L10	23.75	S70°56'21"E	L68	27.80	S06°11'40"W
L11	14.03	S64°44'26"E	L69	29.79	S24°39'00"W
L12	14.62	S65°55'36"E	L70	13.46	S19°45'46"W
L13	18.80	N54°53'13"E	L71	28.80	S24°12'19"W
L14	9.23	N72°53'34"E	L72	30.10	S29°02'47"W
L15	15.63	S62°41'38"E	L73	32.36	S27°14'51"W
L16	20.06	S60°06'05"E	L74	30.32	S32°54'55"W
L17	21.18	S46°43'45"E	L75	31.06	S29°47'15"W
L18	19.26	S25°34'40"E	L76	30.17	S30°58'01"W
L19	23.45	S38°54'28"E	L77	24.95	S22°49'29"W
L20	22.39	S24°10'30"E	L78	23.23	S22°33'33"W
L21	20.65	S29°40'09"E	L79	20.34	S33°58'28"W
L22	22.23	S29°21'43"E	L80	22.80	N89°02'05"W
L23	65.58	S22°25'22"E	L81	10.17	N85°59'15"W
L24	22.95	S25°51'02"E	L82	13.17	N85°12'37"W
L25	55.88	S45°56'23"W	L83	26.19	N87°57'38"W
L26	21.76	S36°52'08"E	L84	20.50	S86°19'47"W
L27	8.63	S41°52'54"E	L85	5.98	N72°55'21"W
L28	26.90	S34°15'00"E	L86	24.15	S89°37'13"W
L29	24.28	S37°43'51"E	L87	14.01	N80°44'51"W
L30	15.63	S13°48'25"W	L88	12.30	S86°30'14"W
L31	12.70	S29°51'32"E	L89	27.56	N85°17'45"W
L32	27.96	S30°01'12"E	L90	26.68	S89°09'45"W
L33	33.64	S37°07'36"E	L91	25.14	N88°11'24"W
L34	30.07	S70°36'16"E	L92	39.41	N86°44'41"W
L35	20.45	N68°00'59"E	L93	25.15	N72°47'12"W
L36	27.29	S33°17'56"E	L94	26.67	N75°23'45"W
L37	10.43	S11°05'09"E	L95	25.91	N71°26'06"W
L38	11.88	N81°43'21"E	L96	19.05	N62°34'17"W
L39	16.16	N39°16'28"E	L97	18.42	N67°23'28"W
L40	19.23	N35°32'48"E	L98	9.32	N67°02'53"W
L41	16.59	N57°23'39"E	L99	149.94	N61°30'37"W
L42	19.10	N51°54'12"E	L100	9.56	N35°00'33"W
L43	23.26	S65°14'31"E	L101	27.74	N40°00'08"W
L44	31.24	S66°34'06"E	L102	22.24	N38°16'59"W
L45	28.58	S73°36'47"E	L103	17.78	N41°44'09"W
L46	6.52	S64°33'04"E	L104	14.36	N30°01'16"W
L47	8.37	S14°55'59"E	L105	17.41	N05°59'05"W
L48	5.39	S52°03'28"E	L106	88.11	N05°02'23"E
L49	21.01	S65°18'23"E	L107	3.68	N14°40'40"E
L50	24.95	S71°27'43"E	L108	2.94	N68°13'39"E
L51	16.93	S38°04'00"E	L109	10.43	N15°00'51"E
L52	21.29	S40°09'53"E	L110	13.15	N03°00'26"E
L53	18.36	S22°02'29"E	L111	17.52	N01°38'32"W
L54	9.69	S62°13'08"E	L112	21.51	N00°17'16"E
L55	2.58	S12°04'01"W	L113	19.03	N10°09'48"E
L56	6.56	S08°04'42"W	L114	19.54	N07°42'02"E
L57	4.35	S03°00'26"W	L115	4.08	N50°36'52"W
L58	23.45	S12°55'27"W	L116	159.18	N84°57'37"W

LEGEND

- DRAINAGE MANHOLE
- SEWER MANHOLE
- ELECTRIC MANHOLE
- TELEPHONE MANHOLE
- CATCH BASIN
- WV WATER VALVE
- HYDRANT
- UTILITY POLE
- LIGHT POLE

FIGURE 1

FINAL ASBUILT
(LOT 1, BLOCK 3244, SECTION 3)
PREPARED FOR
YONKERS CONTRACTING CO., INC.
PROPERTY SITUATE IN THE
CITY OF YONKERS
COUNTY OF WESTCHESTER
STATE OF NEW YORK

GRAPHIC SCALE
(IN FEET)
1 inch = 50 ft.

DATE: MAY 11, 2011

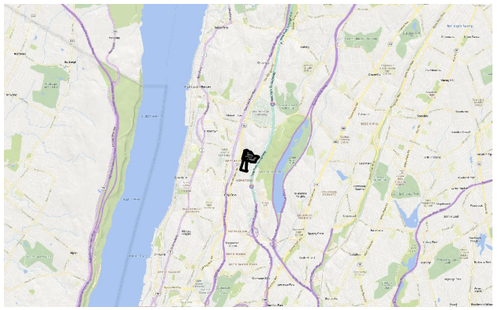
CONTRACTORS' LINE & GRADE SOUTH L.L.C.
23 Nepperhan Avenue
Elmsford, New York 10523
Phone: (914) 347-31412 Fax : (914) 347-3120

STATE OF NEW YORK · STEVEN J. WILLARD · 050054 · LICENSED LAND SURVEYOR

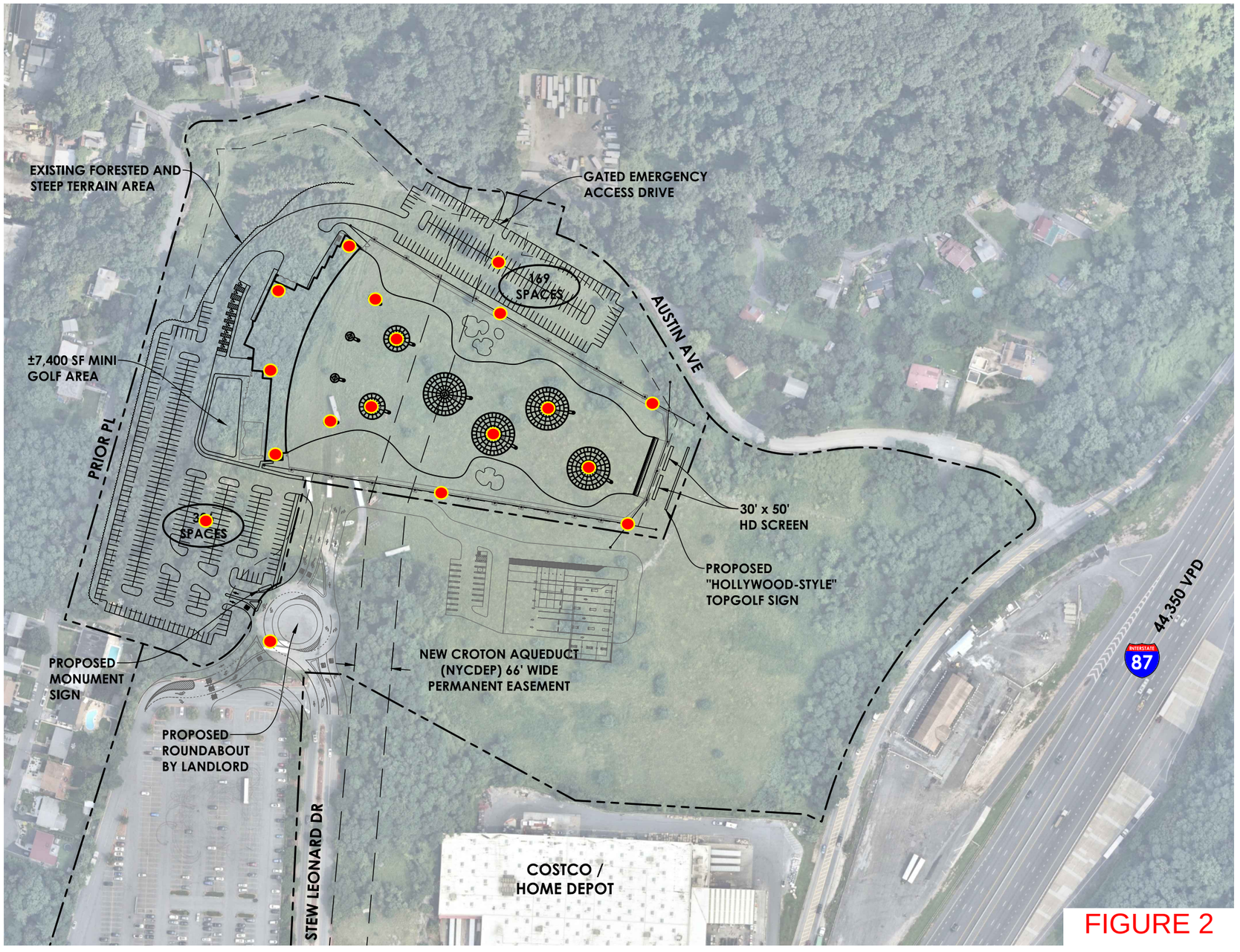
THE ENGINEERING AND INSTITUTIONAL CONTROLS FOR THIS EASEMENT ARE SET FORTH IN THE SITE MANAGEMENT PLAN (SMP). A COPY OF THE SMP MUST BE OBTAINED BY ANY PARTY WITH AN INTEREST IN THE PROPERTY. THE SMP CAN BE OBTAINED FROM THE NYS DEPARTMENT OF ENVIRONMENTAL CONSERVATION, DIVISION OF ENVIRONMENTAL REMEDIATION, SITE CONTROL SECTION, 625 BROADWAY, ALBANY, NY 12233 OR AT derweb@gw.dec.state.ny.us

NO.	DATE	DESCRIPTION	BY
2.	03/06/2014	REVISED ENVIRONMENTAL EASEMENT	TZ
1.	11/08/2013	REVISED PARCEL & EASEMENT DESCRIPTIONS	TZ

Land Projects R2004\10-1804 Yonkers AUSTIN AVE\dwg\1804-Final Survey.dwg



VICINITY MAP
1"=3 MILE



GRAPHIC SCALE
200 0 100 200 400
(IN FEET)
1 inch = 200 ft.

FIGURE 2

PROPOSED LAYOUT AND BORING LOCATIONS

YONKERS, NEW YORK

TEST FIT PLAN #15 - SHEET 2 OF 2

DRAWN BY:	DATE:	SCALE:
MAA	10/5/2021	1”=200’

Appendix A

Community Air Monitoring Plan (CAMP)

Appendix 1A
New York State Department of Health
Generic Community Air Monitoring Plan

Overview

A Community Air Monitoring Plan (CAMP) requires real-time monitoring for volatile organic compounds (VOCs) and particulates (i.e., dust) at the downwind perimeter of each designated work area when certain activities are in progress at contaminated sites. The CAMP is not intended for use in establishing action levels for worker respiratory protection. Rather, its intent is to provide a measure of protection for the downwind community (i.e., off-site receptors including residences and businesses and on-site workers not directly involved with the subject work activities) from potential airborne contaminant releases as a direct result of investigative and remedial work activities. The action levels specified herein require increased monitoring, corrective actions to abate emissions, and/or work shutdown. Additionally, the CAMP helps to confirm that work activities did not spread contamination off-site through the air.

The generic CAMP presented below will be sufficient to cover many, if not most, sites. Specific requirements should be reviewed for each situation in consultation with NYSDOH to ensure proper applicability. In some cases, a separate site-specific CAMP or supplement may be required. Depending upon the nature of contamination, chemical- specific monitoring with appropriately-sensitive methods may be required. Depending upon the proximity of potentially exposed individuals, more stringent monitoring or response levels than those presented below may be required. Special requirements will be necessary for work within 20 feet of potentially exposed individuals or structures and for indoor work with co-located residences or facilities. These requirements should be determined in consultation with NYSDOH.

Reliance on the CAMP should not preclude simple, common-sense measures to keep VOCs, dust, and odors at a minimum around the work areas.

Community Air Monitoring Plan

Depending upon the nature of known or potential contaminants at each site, real-time air monitoring for VOCs and/or particulate levels at the perimeter of the exclusion zone or work area will be necessary. Most sites will involve VOC and particulate monitoring; sites known to be contaminated with heavy metals alone may only require particulate monitoring. If radiological contamination is a concern, additional monitoring requirements may be necessary per consultation with appropriate DEC/NYSDOH staff.

Continuous monitoring will be required for all ground intrusive activities and during the demolition of contaminated or potentially contaminated structures. Ground intrusive activities include, but are not limited to, soil/waste excavation and handling, test pitting or trenching, and the installation of soil borings or monitoring wells.

Periodic monitoring for VOCs will be required during non-intrusive activities such as the collection of soil and sediment samples or the collection of groundwater samples from existing monitoring wells. “Periodic” monitoring during sample collection might reasonably consist of taking a reading upon arrival at a sample location, monitoring while opening a well cap or

overturning soil, monitoring during well baling/purging, and taking a reading prior to leaving a sample location. In some instances, depending upon the proximity of potentially exposed individuals, continuous monitoring may be required during sampling activities. Examples of such situations include groundwater sampling at wells on the curb of a busy urban street, in the midst of a public park, or adjacent to a school or residence.

VOC Monitoring, Response Levels, and Actions

Volatile organic compounds (VOCs) must be monitored at the downwind perimeter of the immediate work area (i.e., the exclusion zone) on a continuous basis or as otherwise specified. Upwind concentrations should be measured at the start of each workday and periodically thereafter to establish background conditions, particularly if wind direction changes. The monitoring work should be performed using equipment appropriate to measure the types of contaminants known or suspected to be present. The equipment should be calibrated at least daily for the contaminant(s) of concern or for an appropriate surrogate. The equipment should be capable of calculating 15-minute running average concentrations, which will be compared to the levels specified below.

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

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

3. If the organic vapor level is above 25 ppm at the perimeter of the work area, activities must be shutdown.

4. All 15-minute readings must be recorded and be available for State (DEC and NYSDOH) personnel to review. Instantaneous readings, if any, used for decision purposes should also be recorded.

Particulate Monitoring, Response Levels, and Actions

Particulate concentrations should be monitored continuously at the upwind and downwind perimeters of the exclusion zone at temporary particulate monitoring stations. The particulate monitoring should be performed using real-time monitoring equipment capable of measuring particulate matter less than 10 micrometers in size (PM-10) and capable of integrating over a period of 15 minutes (or less) for comparison to the airborne particulate action level. The equipment must be equipped with an audible alarm to indicate exceedance of the action level. In addition, fugitive dust migration should be visually assessed during all work activities.

1. If the downwind PM-10 particulate level is 100 micrograms per cubic meter (mcg/m^3) greater than background (upwind perimeter) for the 15-minute period or if airborne dust is observed leaving the work area, then dust suppression techniques must be employed. Work may continue with dust suppression techniques provided that downwind PM-10 particulate levels do not exceed 150 mcg/m^3 above the upwind level and provided that no visible dust is migrating from the work area.

2. If, after implementation of dust suppression techniques, downwind PM-10 particulate levels are greater than 150 mcg/m^3 above the upwind level, work must be stopped and a re-evaluation of activities initiated. Work can resume provided that dust suppression measures and other controls are successful in reducing the downwind PM-10 particulate concentration to within 150 mcg/m^3 of the upwind level and in preventing visible dust migration.

3. All readings must be recorded and be available for State (DEC and NYSDOH) and County Health personnel to review.

December 2009

Appendix B
Soil Management Plan

SOIL MANAGEMENT PLAN

1 NOTIFICATION

At least 15 days prior to the start of any activity that is anticipated to encounter remaining contamination, the Site owner or their representative will notify the Department. Currently, this notification will be made to:

Mr. Michael Squire, Project Manager

Division of Environmental Remediation

NYSDEC Remedial Section D, Remedial Bureau C

625 Broadway, 11th Floor

Albany, New York 12233-7014

This notification will include:

- A detailed description of the work to be performed, including the location and areal extent, plans for Site re-grading, intrusive elements or utilities to be installed below the soil cover, estimated volumes of contaminated soil to be excavated and any work that may impact an engineering control;
- A summary of environmental conditions anticipated in the work areas, including the nature and concentration levels of contaminants of concern, potential presence of grossly contaminated media, and plans for any pre-construction sampling;
- A schedule for the work, detailing the start and completion of all intrusive work;
- A summary of the applicable components of this Soil Management Plan;
- A statement that the work will be performed in compliance with this Soil Management Plan, and 29 CFR 1910.120;
- A copy of the contractor's health and safety plan, in electronic format, if it differs from the HASP provided in Appendix E of this Site Management Plan;
- Identification of disposal facilities for potential waste streams; and

- Identification of sources of any anticipated backfill, along with all required chemical testing results.

2 SOIL SCREENING METHODS

Site soil that is excavated must be managed, characterized, and properly disposed of in accordance with NYSDEC regulations and directives. Visual, olfactory and instrument-based soil screening will be performed by a qualified environmental professional during all remedial and development excavations into known or potentially contaminated material (remaining contamination). Soil screening will be performed regardless of when the invasive work is done, and will include all excavation and invasive work performed during development, such as excavations for foundations and utility work, after issuance of the COC.

Soils will be segregated based on previous environmental data and screening results into material that requires off-Site disposal, material that requires testing, material that can be returned to the subsurface, and material that can be used as cover soil.

For excavated soil with evidence of contamination (i.e., visual, olfactory, and/or PID indications), soil samples will be collected in accordance with Table 5.4 of NYSDEC's Division of Environmental Remediation *DER-10 Technical Guidance for Site Investigation and Remediation* (June 2010 or latest revision), as indicated below:

Recommended Number of Soil Samples for Soil Imported To or Exported From a Site as set forth in DER-10 Paragraphs 5.4(e) & 5.4(f)								
Contaminant	Semivolatiles		Volatiles		Inorganics		Pesticides/PCBs	
Soil Quantity (yd3)	Grab	Composite	Grab	Composite	Grab	Composite	Grab	Composite
0-50	1	1	1	NA	1	1	1	1
50-100	1	2	2	NA	1	2	1	2
100-200	1	3	3	NA	1	3	1	3
200-300	1	4	4	NA	1	4	1	4
300-400	2	4	4	NA	2	4	2	4
400-500	2	5	5	NA	2	5	2	5
500-800	2	6	6	NA	2	6	2	6
800-1,000	2	7	7	NA	2	7	2	7
> 1,000	Submit Proposed Sampling Plan							

NA = Not Applicable

For soil with no evidence of contamination (i.e., visual, olfactory, and/or PID indications), the number of required samples may be modified with NYSDEC concurrence, per DER-10 Section 5.4(f)2.

3 STOCKPILE METHODS

Soil stockpiles will be continuously encircled with a berm and/or silt fence. Hay bales will be used as needed near catch basins, surface waters, and other discharge points.

Stockpiles will be kept covered at all times with appropriately anchored tarps. Stockpiles will be routinely inspected, and damaged tarp covers will be promptly replaced.

Stockpiles will be inspected at a minimum once each week, and after every storm event. Results of inspections will be recorded in a logbook maintained at the Site and available for inspection by NYSDEC.

Stockpiled soil will not be transported off-Site until analytical results are received and evaluated.

4 MATERIALS EXCAVATION AND LOAD OUT

A qualified environmental professional or person under their supervision will oversee all invasive work and the excavation and load-out of all excavated material.

The owner of the property and its contractors are solely responsible for safe execution of all invasive and other work performed under this Plan.

The presence of utilities and easements on the Site will be investigated by the qualified environmental professional. It will be determined whether a risk or impediment to the planned work under this Soil Management Plan is posed by utilities or easements on the Site. The locations and clearing of utilities will be the responsibility of the contractor performing the work.

Loaded vehicles leaving the Site will be appropriately lined, tarped, securely covered, manifested, and placarded in accordance with appropriate Federal, State, local, and NYSDOT requirements (and all other applicable transportation requirements).

A truck wash will be operated on-Site. The qualified environmental professional will be responsible for ensuring that all outbound trucks will be washed at the truck wash before leaving the Site until the activities performed under this section are complete.

Locations where vehicles enter or exit the Site shall be inspected daily for evidence of off-Site soil tracking.

The qualified environmental professional will be responsible for ensuring that all egress points for truck and equipment transport from the Site are clean of dirt and other materials derived from the Site during intrusive excavation activities. Cleaning of the adjacent streets will be performed as needed to maintain a clean condition with respect to Site-derived materials.

5 MATERIALS TRANSPORT OFF-SITE

All transport of materials will be performed by licensed haulers in accordance with appropriate local, State, and Federal regulations, including 6 NYCRR Part 364. Haulers will be appropriately licensed and trucks properly placarded.

If analytical results indicate that concentrations exceed standards for RCRA characteristics, or the soils are determined to be a listed hazardous waste per 6NYCRR Part 371, the material will be considered a hazardous waste, and must be properly disposed off-Site at a permitted facility within 90 days of excavation.

Material transported by trucks exiting the Site will be secured with tight-fitting covers. Loose-fitting canvas-type truck covers will be prohibited. If loads contain wet material capable of producing free liquid, truck liners will be used.

All trucks will be washed prior to leaving the Site. Truck wash waters will be collected and disposed of off-Site in an appropriate manner.

All trucks loaded with Site materials will exit the vicinity of the Site using the most appropriate truck routes. This takes into account: (a) limiting transport through residential areas and past sensitive sites; (b) use of city mapped truck routes; (c) prohibiting off-Site queuing of trucks entering the facility; (d) limiting total distance to

major highways; (e) promoting safety in access to highways; and (f) overall safety in transport.

Trucks will be prohibited from stopping and idling in the neighborhood outside the project Site.

Egress points for truck and equipment transport from the Site will be kept clean of dirt and other materials during Site remediation and development.

Queuing of trucks will be performed on-Site in order to minimize off-Site disturbance. Off-Site queuing will be prohibited.

6 MATERIALS DISPOSAL OFF-SITE

All soil/fill/solid waste excavated and removed from the Site will be treated as contaminated and regulated material and will be transported and disposed in accordance with all local, State (including 6NYCRR Part 360), and Federal regulations. If disposal of soil/fill from this Site is proposed for unregulated off-Site disposal (i.e. clean soil removed for development purposes), a formal request with an associated plan will be made to the NYSDEC. Unregulated off-Site management of materials from this Site will not occur without formal NYSDEC approval.

Off-Site disposal locations for excavated soils will be identified in the pre-excavation notification. This will include estimated quantities and a breakdown by class of disposal facility if appropriate, i.e. hazardous waste disposal facility, solid waste landfill, petroleum treatment facility, C/D recycling facility, etc. Actual disposal quantities and associated documentation will be reported to the NYSDEC in the Periodic Review Report. This documentation will include: waste profiles, test results, facility acceptance letters, manifests, bills of lading and facility receipts.

Non-hazardous historic fill and contaminated soils taken off-Site will be handled, at minimum, as a Municipal Solid Waste per 6NYCRR Part 360-1.2. Material that does not meet Track 1 Unrestricted SCOs is prohibited from being taken to a New York State recycling facility (6NYCRR Part 360-16 Registration Facility).

7 MATERIALS REUSE ON-SITE

Soil excavated from above the demarcation layer is known to meet or exceed Restricted Residential SCOs, so there is no need for visual, olfactory, PID screening, or testing. This soil may be reused as backfill on-Site either above or below the demarcation layer. Soil excavated from outside the soil cover system area, or from below the demarcation layer, may be reused as backfill material on-Site below the demarcation layer provided it contains no readily observable (visual, olfactory, or having PID readings of 10 ppm above background or greater) evidence of contamination. These soils may be used as backfill above the demarcation layer provided they are tested and identify that they meet Unrestricted Use Soil Cleanup Objectives.

Soil with readily observable evidence of contamination will be analyzed as specified in Section A-2. If analytical results verify that no contaminants are present above NYS Restricted Residential soil cleanup objectives (SCOs) per 6NYCRR Part 375-6.8(b), the soil may be used as backfill on-Site.

Chemical criteria for on-Site reuse of material have been approved by NYSDEC and are listed in Table 2. The qualified environmental professional will ensure that procedures defined for materials reuse in this Soil Management Plan are followed and that unacceptable material does not remain on-Site. Contaminated on-Site material, including historic fill and contaminated soil, that is acceptable for re-use on-Site will be placed below the demarcation layer or impervious surface, and will not be reused within a cover soil layer, within landscaping berms, or as backfill for subsurface utility lines.

Any demolition material proposed for reuse on-Site will be sampled for asbestos and the results will be reported to the NYSDEC for acceptance. Concrete crushing or processing on-Site will not be performed without prior NYSDEC approval. Organic matter (wood, roots, stumps, etc.) or other solid waste derived from clearing and grubbing of the Site will not be reused on-Site.

8 FLUIDS MANAGEMENT

All liquids to be removed from the Site, including excavation dewatering and groundwater monitoring well purge and development waters, will be handled, transported

and disposed in accordance with applicable local, State, and Federal regulations. Dewatering, purge and development fluids will not be recharged back to the land surface or subsurface of the Site, but will be managed off-Site.

Discharge of water generated during large-scale construction activities to surface waters (i.e. a local pond, stream or river) will be performed under a SPDES permit.

9 COVER SYSTEM RESTORATION

After the completion of soil removal and any other invasive activities the cover system will be restored in a manner that complies with the RWP. The demarcation layer, consisting of black geotextile fabric or equivalent material will be replaced to provide a visual reference to the top of the 'Remaining Contamination Zone', the zone that requires adherence to special conditions for disturbance of remaining contaminated soils defined in this Site Management Plan. If the type of cover system changes from that which exists prior to the excavation (i.e., a soil cover is replaced by asphalt), this will constitute a modification of the cover element of the remedy and the upper surface of the 'Remaining Contamination Zone'. A figure showing the modified surface will be included in the subsequent Periodic Review Report, and in any updates to the Site Management Plan.

10 BACKFILL FROM OFF-SITE SOURCES

Backfill from off-Site sources imported to the Site must meet requirements of 6NYCRR Part 375-6.7(d), and as specified by DER-10 Section 5.4(e).

Soil imported to a Site for use in a soil cap, soil cover, or as backfill will be free of extraneous debris or solid waste; consist of soil or other unregulated material as set forth in 6NYCRR Part 360; and not exceed the allowable constituent levels for imported fill or soil for the use of the Site. The applicable level for Restricted Residential use Sites are the lower of the:

1. protection of groundwater standards; or
2. protection of public health soil cleanup objectives for the identified use of the Site as set forth in 6NYCRR Part 375 Table 375-6.8(b).

Soil samples from off-Site sources will be collected as indicated on the table presented in Section A-2 of this Soil Management Plan (Table 5.4 of DER-10 Section 5.4(e)) to verify they are suitable for use on-Site.

All materials proposed for import onto the Site will be approved by the qualified environmental professional, and will be in compliance with provisions in this SMP prior to receipt at the Site.

Material from industrial sites, spill sites, other environmental remediation sites, or potentially contaminated sites will not be imported to the Site.

All imported soils will meet the backfill and cover soil quality standards established in 6NYCRR 375-6.7(d). Based on an evaluation of the land use, protection of groundwater and protection of ecological resources criteria, the resulting soil quality standards are listed in Table 2 of the SMP. Soils that meet 'exempt' fill requirements under 6NYCRR Part 360, but do not meet backfill or cover soil objectives for this Site, will not be imported onto the Site without prior approval by NYSDEC. Solid waste will not be imported onto the Site.

Trucks entering the Site with imported soils will be securely covered with tight fitting covers. Imported soils will be stockpiled separately from excavated materials and covered to prevent dust releases.

11 STORMWATER POLLUTION PREVENTION

A Stormwater Pollution Prevention Plan for the Site will need to be developed as appropriate, based on the planned Site work.

Barriers and hay bale checks will be installed and inspected once a week, and after every storm event. Results of inspections will be recorded in a logbook and maintained at the Site and available for inspection by NYSDEC. All necessary repairs shall be made immediately.

Accumulated sediments will be removed as required to keep the barrier and hay bale check functional.

All undercutting or erosion of the silt fence toe anchor shall be repaired immediately with appropriate backfill materials.

Manufacturer's recommendations will be followed for replacing silt fencing damaged due to weathering.

Erosion and sediment control measures identified in the Stormwater Pollution Prevention Plan shall be observed to ensure that they are operating correctly. Where discharge locations or points are accessible, they shall be inspected to ascertain whether erosion control measures are effective in preventing significant impacts to receiving waters

Silt fencing or hay bales will be installed around the entire perimeter of the construction area.

12 CONTINGENCY PLAN

If underground tanks or other previously unidentified contaminant sources are found during post-remedial subsurface excavations or development related construction, excavation activities will be suspended until sufficient equipment is mobilized to address the condition.

Sampling will be performed on product, sediment and surrounding soils, etc. as necessary to determine the nature of the material and proper disposal method. Chemical analysis will be performed for a full list of analytes (TAL metals; TCL volatiles and semi-volatiles, TCL pesticides and PCBs), unless the Site history and previous sampling results provide a sufficient justification to limit the list of analytes. In this case, a reduced list of analytes will be proposed to the NYSDEC for approval prior to sampling.

Identification of unknown or unexpected contaminated media identified by screening during invasive Site work will be promptly communicated by phone to NYSDEC's Project Manager. Reportable quantities of petroleum product will also be reported to the NYSDEC spills hotline. These findings will be also included in the Periodic Review Report prepared pursuant to Section 5 of the SMP.

13 COMMUNITY AIR MONITORING PLAN

Air monitoring will be conducted during Site work, in accordance with a Community Air Monitoring Plan (CAMP), as required by Appendix A-1 of NYSDEC's DER-10. The CAMP is included in the SMP in Appendix E. The objective of this CAMP is to provide a measure of protection for the downwind community from potential airborne contaminant releases that might arise as a result of work conducted on-Site. The CAMP includes monitoring for volatile organic compounds (VOCs) and particulate matter (e.g. airborne "dust").

The CAMP also specifies methods that must be used to conduct air monitoring, and the specific instruments to be used, as well as action levels for VOCs and dust.

The location of air sampling stations should be based on generally prevailing wind conditions at the Site. These locations will be adjusted on a daily or more frequent basis based on actual wind directions to provide an upwind and at least two downwind monitoring stations.

Exceedances of action levels listed in the CAMP will be reported to NYSDEC and NYSDOH Project Managers.

14 ODOR CONTROL PLAN

This odor control plan is capable of controlling emissions of nuisance odors off-Site and on-Site, if there are residents or tenants on the property. If nuisance odors are identified at the Site boundary, or if odor complaints are received, work will be halted and the source of odors will be identified and corrected. Work will not resume until all nuisance odors have been abated. NYSDEC and NYSDOH will be notified of all odor events and of any other complaints about the project. Implementation of all odor controls, including the halt of work, is the responsibility of the property owner's Remediation Engineer, and any measures that are implemented will be discussed in the Periodic Review Report.

All necessary means will be employed to prevent on- and off-Site nuisances. At a minimum, these measures will include: (a) limiting the area of open excavations and size of soil stockpiles; (b) shrouding open excavations with tarps and other covers; and (c)

using foams to cover exposed odorous soils, or other measures. If odors develop and cannot be otherwise controlled, additional means to eliminate odor nuisances will include: (a) direct load-out of soils to trucks for off-Site disposal; (b) use of chemical odorants in spray or misting systems; and, (c) use of staff to monitor odors in surrounding neighborhoods, or other measures as necessary.

If nuisance odors develop during intrusive work that cannot be corrected, or where the control of nuisance odors cannot otherwise be achieved due to on-Site conditions or close proximity to sensitive receptors, odor control will be achieved by sheltering the excavation and handling areas in a temporary containment structure equipped with appropriate air venting/filtering systems.

15 DUST CONTROL PLAN

A dust suppression plan that addresses dust management during invasive on-Site work will include, at a minimum, the items listed below:

- Dust suppression will be achieved though the use of a dedicated on-Site water truck for road wetting. The truck will be equipped with a water cannon capable of spraying water directly onto off-road areas including excavations and stockpiles;
- Clearing and grubbing of larger Sites will be done in stages to limit the area of exposed, unvegetated soils vulnerable to dust production;
- Gravel will be used on roadways to provide a clean and dust-free road surface; and
- On-Site roads will be limited in total area to minimize the area required for water truck sprinkling.

16 OTHER NUISANCES

A plan will be developed and utilized by the contractor for all remedial work to ensure compliance with local noise control ordinances.

Appendix C
Health and Safety Plan (HASP)

SITE-SPECIFIC HEALTH AND SAFETY PLAN

Proposed Golf Entertainment Venue
Lot 1, Lot 4, and Lot 7
Site No. C360116 and C360066
Austin Avenue and Prior Place
City of Yonkers,
Westchester County, New York

Prepared By:
Carlin-Simpson & Associates
61 Main Street
Sayreville, New Jersey

February 2019

Carlin-Simpson & Associates
Site-Specific Health and Safety Plan

This Health and Safety Plan (HASP) presents information regarding known site-specific health and safety hazards using available information, and identifies the equipment, materials and procedures that will be used to eliminate or control these hazards during the Geotechnical Investigation at the subject site.

GENERAL INFORMATION

Site Name:	Austin Avenue Brownfield Redevelopment, BCP Site No. C360116 and C360066		
Site Address:	Austin Avenue and Prior Place, Yonkers, New York		
Job/Project #:	18-221		
Estimated Start Date:	March 2019	Estimated Completion Date:	May 2019

EMERGENCY INFORMATION

Phone Numbers:	Hospital #:	914-378-7000	Ambulance #:	911
	Fire #:	911	Police #:	911 or 914-377-7900
Hospital Name & Address:	St. Joseph's Medical Center, 127 South Broadway, Yonkers, New York			
Directions and Street Map of Route to Nearest Hospital Attached: ☒ Yes ☐ No (if no, do not proceed)				
Other Emergency Contact:	Robert Simpson, PE		Phone #:	732-432-5757
Location of Nearest Phone:	Cell phone on-site at all times			

Have Necessary Underground Utility Notifications for Subsurface Work Been Made? ☐ Yes ☐ Not Applicable
Specify Clearance Date & Time, Dig Safe Clearance I.D. #, And Other Relevant Information:
The utility markout will be performed prior to starting work

SCOPE OF WORK

Site Description:	Undeveloped parcel with flat to moderate slopes with some bedrock outcrops. Heavy metals in soil and groundwater.
Specific Tasks Performed by CSA:	Geotechnical investigation for a new golf entertainment venue.
Concurrent Tasks to be Performed by CSA	Drilling by General Borings Inc.
Subcontractors (List Subcontractors by Name):	Test pits and minor grading by General Borings Inc.
Concurrent Tasks to be Performed by Others:	None
Does this project include confined space entry?	☐ yes ☒ no

The subject site is occupied by a closed landfill. Investigations on the site have determined the contaminants of potential concern to be heavy metals and the potential for methane gases from the degradation of organic materials. However, a number of different chemical contaminants may be encountered during the geotechnical investigation of the subject site.

ROLES AND RESPONSIBILITIES

CSA PERSONNEL

Name	Project Title/Assigned Role	Telephone Numbers
Robert B. Simpson, P.E.	Principal-in-Charge	work: 732-432-5757 cell: 732-261-0974
Meredith Anke	Project Manager / Health and Safety Officer	work: 732-432-5757 cell: 908-334-1080
Kurt Anke	Site Safety Officer / Supervisor	work: 732-432-5757 cell: 908-377-0679
TBD	Field Inspector	work: cell:

Site Supervisors and Project Managers (SS/PM): Responsible for compliance with the HASP and applicable laws and regulations. This includes the need for effective oversight and supervision of project staff necessary to control the health and safety aspects of on-site activities. The Project Manager has the responsibility and authority to direct all CSA work operations at the site.

Site Safety Officers and Competent Persons (SSO/CP): The Site Safety Officer (SSO) or "Competent Person", as defined by the Occupational Safety and Health Administration (OSHA) 1926.20(b) - Accident Prevention Responsibilities, is the individual "who is capable of identifying existing and predictable hazards in surroundings or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them." The SSO is designated on a site-by-site basis based on the site conditions, scope-of-work, and the individual's ability to recognize site-specific hazards and take appropriate corrective actions.

Staff: Ultimate control of health and safety is in the hands of each individual employee. Therefore, each employee must become familiar with and comply with all health and safety requirements associated with their position and daily operations. Employees also have the responsibility to notify the appropriate management of unsafe conditions and accidents/injuries immediately. When employees are issued respirators or any other personal protective equipment (PPE), they are responsible for ensuring that said items are used properly, cleaned as required and maintained in good working order.

TRAINING

All personnel performing investigation activities at the site and who may be exposed to hazardous substances, health hazards, or safety hazards and their supervisors/managers responsible for the site shall receive training in accordance with 29 CFR 1910.120 before they are permitted to work at the site. This training includes an initial 40-hour Hazardous Waste Site Worker Protection Course, an 8-hour Annual Refresher Course subsequent to the initial 40-hour training, and 3 days of actual field experience under the direct supervision of a trained, experienced supervisor. Additional site-specific training shall also be provided by the SSO prior to the start of field activities, when required.

SITE VISITORS

A site-specific briefing will be provided to all site visitors who enter the site beyond the site entry point. The site-specific briefing will provide information about the site hazards and other pertinent safety and health requirements as appropriate. No unauthorized personnel shall be allowed within the established work area.

EQUIPMENT AND CONTROLS

Monitoring Equipment [1]	**Personal Protective Equipment**
☒ PID Type: MiniRae 3000 ☐ FID Type: ☐ Cal gas and equipment type: ☐ LEL/O_2 Meter ☒ Dust Monitor: TSI DustTrak II 8530 ☐ Others: **Other Equipment & Gear** [2] ☐ 10# ABC Fire Extinguisher when gasoline powered equipment is present ☐ Caution Tape ☐ Traffic Cones or Stanchions ☐ Warning Signs or Placards ☒ Decon Buckets, Brushes, Detergent, Towels and Plastic Bags ☐ Others:	☐ Respirator Type: ☐ Resp-Cartridge Type: ☒ Hearing Protection ☒ Hardhat ☐ Outer Gloves Type: ☐ Inner Gloves Type: latex or nitrile ☒ Steel-toed boots/shoes ☐ Coveralls Type: ☐ Outer Boots Type: ☐ Eye Protection ☐ Traffic Vest ☐ Personal Flotation Device (PFD) Others:

PERSONAL PROTECTIVE EQUIPMENT (PPE)

1. Equipment designed to protect individuals from contact with known or suspect chemical hazards are grouped into four categories according to the degree of protection afforded. These categories are designated A through D:

2. **Level A:** Should be selected when the highest level of respiratory, skin, and eye protection is required.

3. **Level B:** Should be selected when the highest level of respiratory protection is required, but a lesser level of skin protection is required. Level B protection is the minimum level recommended on initial site entries until the hazards have been further defined by on-site studies. Level B (or Level A) is also necessary for oxygen-deficient atmospheres.

4. **Level C:** Should be selected when the types of airborne substances are known, the concentrations have been measured and the criteria for using air-purifying respirators are met. In atmospheres where no airborne contaminants are present, Level C provides dermal protection only.

5. **Level D:** Should not be worn on any site with elevated respiratory or skin hazards. This is generally a work uniform providing minimal protection against chemical hazards.

RECOMMENDED LEVEL OF PROTECTION FOR THE SUBJECT SITE

Based on the known site conditions, the contaminants expected to be present at the site, and the planned tasks for the investigation of the site, Level D PPE is recommended.

As indicated above, Level D protection is primarily a work uniform. It can be worn in areas where only boots can be contaminated, where there are no inhalable toxic substances and where the atmospheric contains at least 19.5% oxygen. The recommended PPE for Level D includes safety boots/shoes, a hardhat, and optional gloves.

AIR MONITORING INSTRUMENTS AND ACTION LEVELS

Anticipated Chemical Hazards: NONE EXPECTED

Photoionization detector (PID) monitoring will be continuous during installation of soil borings, test pits, and/or ground intrusive work as per the Community Air Monitoring Plan (CAMP). See the Geotechnical Investigation Workplan for further information.

Dust (particulate) monitoring will be continuous during installation of soil borings, test pits, and/or ground intrusive work as per the Community Air Monitoring Plan (CAMP). See the Geotechnical Investigation Workplan for further information.

Photoionization Detector - Breathing Zone Readings:

0 to 35 units	Remain in Level D PPE.
35 to 250 units	Withdraw from work area and contact Project Management. Proceed to Level C protection for re-entry, or discontinue operation.
> 250 units	Secure operations, withdraw from work area, and discontinue work at that location until contaminants can be evaluated and a detailed site plan can be implemented.

Combustible Gas Indicator CGI/LEL Meter (if required) - Readings Near Vapor Source:

• < 10% LEL:	Continue to monitor with caution. Eliminate all ignition sources.
• 10% to 20% LEL:	Stop operations until appropriate vapor control measures (i e. foam, sand, polyethylene, film, portable blower etc.) and resample before resuming activity.
• > 20% LEL:	Stop operations and withdraw from area. Contact SSO before proceeding.

HAZARD ASSESSMENT

Due to the presence of certain contaminants at the subject site, the possibility exists that workers on the site could be exposed to hazardous substances during the geotechnical investigation. Exposure to contaminated soil could occur through direct contact, incidental ingestion, or inhalation of particulates. In addition, the use of a drill rig during the investigation will also present conditions for potential physical injury to workers and since the work will be performed outdoors, there is also a potential for other hazards such as heat/cold stress, insects, poisonous plants, etc. The potential hazards that could be encountered during the geotechnical investigation at the subject site are summarized below. Since it is impossible to list all potential sources of injury, it shall be the responsibility of each individual to exercise proper care and caution during the investigation.

HAZARD ASSESSMENT: PHYSICAL HAZARDS AND RELATED CONCERNS

Construction Hazards, Drill Rigs, Backhoes, etc. The use of drill rigs, backhoes and other heavy equipment represent potentially serious construction hazards. Whenever such equipment is used, personnel in the vicinity should be limited to those who must be there to complete their assigned duties. All personnel must avoid standing within the turning radius of the equipment or below any suspended load. Job sites must be kept as clean, orderly and sanitary as possible. When water is used, care must be taken to avoid creating muddy or slippery conditions. If slippery conditions are unavoidable, barriers and warning signs must be used to warn of these dangers.

Never turn your back to operating machinery. Never wear loose clothing, jewelry, hair or other personal items around rotating equipment or other equipment that could may catch or ensnare loose clothing, jewelry, hair or other personal items. Always stand far enough away from operating machinery to prevent accident contact which may result from mechanical or human error.

Additionally, the following basic personal protective measures must be observed: Hardhats must be worn to protect against bumps or falling objects. Safety glasses must be worn by all workers in the vicinity of drill rigs or other sources of flying objects. Goggles, face shields or other forms of eye protection must be worn when necessary to protect against chemicals or other hazards. Steel-toed safety shoes or boots are also required. The shoes must be chemically resistant or protected with appropriately selected boots/coverings where necessary. Unless otherwise specified, normal work clothes must be worn. Long sleeves and gloves are also required whenever necessary to protect against hazardous contact, cuts, abrasions or other possible skin hazards.

Drums and Buried Drums. As a precautionary measure, personnel must assume that labeled and unlabeled drums encountered during field activities contain hazardous materials until their contents can be confirmed and characterized. Personnel should recognize that drums are frequently mislabeled, particularly drums that are reused.

Only trained and authorized personnel should be allowed to perform drum handling. Prior to any handling, drums must be visually inspected to gain as much information as possible about their contents. Trained field personnel must look for signs of deterioration such as corrosion, rust or leaks, and for signs that the drum is under pressure such as swelling or bulging. Drum-type and drumhead configuration may provide the observer with information about the type of material inside, (i.e., a removable lid is designed to contain solids, while the presence of a bung indicates liquid storage).

Although not usually anticipated, buried drums can be encountered when digging test pits. Therefore, the following provisions must be observed if drums are encountered. Machine excavation (i.e., backhoe) should cease immediately anytime a drum is encountered. The appropriate management personnel should be notified immediately. All personnel should be instructed to immediately leave the work area.

Even authorized personnel must not enter an excavation where drums have been uncovered, even for monitoring purposes, unless all provisions of OSHA's trenching and excavation standard have been met and the appropriate level of personal protective equipment (PPE) is utilized. Sampling of unknown drums usually requires Level B protection. Buried drums must not be moved unless it can be accomplished in a safe manner and overpack drums are available.

Fire and Explosion. The possibility of flammable materials being encountered during field activities must be recognized and the appropriate steps necessary to minimize fire and explosion must be observed. This includes situations where organic vapors, free product or methane are, or may be, encountered. When this occurs, monitoring with a combustible gas indicator (CGI), is required.

In situations where hexane, methanol are needed for field activities, the following precautions must be observed: keep flammable and combustible materials away from heat, sparks and open flames; do not smoke around flammable or combustible materials; provide an ABC rated fire extinguisher appropriate for the materials present, and keep all flammable and combustible liquids in approved and properly labeled safety containers.

Landfill/Methane Hazards. Fire and explosion should be regarded as one of, if not the, most significant potential hazards associated with drilling operations and other intrusive work conducted at a landfill. Accordingly, all sources of ignition must be fully controlled. Failure to control ignition sources could result in fire, explosion and pose a serious threat to life and health. Control methods may include forced ventilation and/or filling the borehole with enough water to inhibit the release of methane and other gases which would otherwise escape through the top of the borehole.

If forced (mechanical) ventilation is to be used, all such equipment must be approved for Class I, Division I hazardous atmospheres. The blower must be positioned to blow across the top of the borehole so that gases and vapors may be diluted as they exit the borehole. Do not attempt to suck out the gases or vapors. Blowers, all other mechanical equipment, and tools which could release sparks or static electricity must be bonded and grounded.

Regardless of the gas/vapor control method used, the atmosphere surrounding the borehole must be frequently monitored using direct reading instruments approved for Class I, Division I hazardous atmospheres. Monitoring should be conducted within 1 to 2 feet of the top of the borehole. Do not insert sampling devices into the borehole. The use of tubing connected to a remote instrument is recommended. Never approach the auger or drill shaft while it is in operation. Always notify the operator when about to take a reading.

Regardless of actual instrument readings, if all sources of ignition can not be controlled, operations should be immediately shut down if readings equal or exceed 10% of LEL and the area evacuated until ignition sources have been eliminated. Ignition sources include, but are not limited to: smoking, static electricity, lighting, open flames, spontaneously ignitable substances, frictional heat or sparks, hot surfaces, radiant heat, electrical sparks, stray currents, cutting and welding, and ovens, furnaces and heating equipment.

Heat and Cold Stress. Exposure to temperature extremes can pose significant risks to personnel if simple precautions are not taken. Typical control measures designed to prevent heat stress include dressing properly, drinking plenty of water, and establishing an appropriate work/break schedule. Typical control measures designed to prevent cold stress also include dressing properly and establishing an appropriate work/break schedule.

Moving Vehicles, Traffic Safety. All vehicular traffic routes which could impact worker safety must be identified and communicated. Whenever necessary, barriers or other methods must be established to prevent injury from moving vehicles. Traffic vests must be worn by personnel working near moving vehicular traffic. This is particularly important when field activities are conducted in parking lots, driveways, ramps or roadways. OSHA 1926.201 specifies that when signs, signals or barricades do not provide adequate protection from highway or street traffic, flagmen must be utilized. Flagmen must wear red or orange garments. Garments worn at night must be reflective.

Noise. Noise exposure can be affected by many factors including the number and types of noise sources and the proximity to noise intensifying structures such as walls or buildings which cause noise to bounce back or echo. The single most important factor effecting noise exposure is distance from the source. The closer one is to the source, the louder the noise. The operation of a drill rig, backhoe or other mechanical equipment can be sources of significant noise exposure. In order to reduce the exposure to this noise, personnel working in areas of excessive noise must use hearing protection (ear plugs or ear muffs).

Rule-of-Thumb: Wherever actual data from sound level meters or noise dosimeters is unavailable and it is necessary to raise one's voice above a normal conversational level to communicate with others within 3 to 5 feet away, hearing protection should be worn.

Overhead Utilities and Hazards. Overhead hazards can include low hanging structures which can cause injury due to bumping into them. Other overhead hazards include falling objects, suspended loads, swinging loads and rotating equipment. Hardhats must be worn by personnel in areas were these types of physical hazards may be encountered. Barriers or other methods must also be used to exclude personnel from these areas were appropriate. Electrical wires are another significant overhead hazard. According to OSHA (29 CFR 1926.550), the minimum clearance which must be maintained from overhead electrical wires is 10 feet from an electrical source rated $\leq$ 50 kV.

Underground Utilities and Hazards. The identification of underground utilities and other underground hazards is critically important prior to all drilling, excavating, and other intrusive activities. In accordance with OSHA 29 CFR 1926.650, the estimated location of utility installations, such as sewer, telephone, electric, water lines and other underground installations that may reasonably be expected to be encountered during excavation work, must be determined prior to opening an excavation. The same requirements apply to drilling operations and the use of soil-gas probes. Where public utilities may exist, the utility agencies or operators must be contacted directly or through a utility-sponsored service such as Dig-Safe. Where other underground hazards may exist, reasonable attempts must be made to identify their locations as well. Failure to identify underground hazards can lead to fire, explosion, flooding, electrocution or other life-threatening accidents.

Pedestrian Traffic. The uncontrolled presence of pedestrians on a drilling or excavation site can be hazardous to both pedestrians and site workers. Prior to the initiation of site activities, the site should be surveyed to determine if, when and where pedestrian may gain access. This includes walkways, parking lots, gates and doorways. Barriers or caution tape should be used to exclude all pedestrian traffic. Exclusion of pedestrian traffic is intended to prevent injury to the pedestrians and eliminate distractions which could cause injury to site workers.

Test Pit and/or other Excavations. All provisions of the OSHA trenching and excavation standard (29 CFR 1926.650-652) must be followed during excavation activities. This includes all test pit excavation and sampling activities. The estimated location of utility installations, such as sewer, telephone, electric, water lines and other underground installations that may reasonably be expected to be encountered during excavation work, must be determined prior to opening an excavation.

Excavations in contaminated or potentially contaminated areas must be tested for confined spaces atmospheric hazards prior to entry. Excavations should not be entered if other means are available to perform the task requiring entry. If entry into an excavation is required, the atmosphere within the space must be monitored by a trained person to assure that oxygen concentrations are at greater than or equal to 19.5 percent, that combustible gas levels are less than 10 percent, and that vapor levels are within applicable safe exposure (PEL and TLV) limits.

A ladder or similar means of egress must be located in excavations greater than 4 feet in depth so as to require no more than 25 feet of lateral travel for employees. No person should be allowed to enter an excavation in type B or C soil greater than 5 feet in depth unless the walls of the excavation have been protected using an approved shield (trench box), an approved shoring system, or the walls have been sloped back to an angle of 34 degrees, the excavation is free of accumulated water, and the excavation has been tested for hazardous atmospheres as noted previously. If personnel enter an excavation, the spoils pile and all materials must be placed at least 2 feet from the edge of the excavation to prevent the materials from rolling into the excavation. Personnel must remain at least 2 feet away from the edge of the excavation at all times. Upon completion of a test pit exploration, the excavation should be backfilled and graded. Excavation should never be left open unless absolutely necessary, and then only with proper barricading and controls to prevent accidental injury.

Underground Utilities and Hazards. The identification of underground storage tanks (USTs), pipes, utilities and other underground hazards is critically important prior to all drilling, excavating and other intrusive activities. In accordance with OSHA 29 CFR 1926.650, the estimated location of utility installations, such as sewer, telephone, electric, water lines and other underground installations that may reasonably be expected to be encountered during excavation work, must be determined prior to opening an excavation. The same requirements apply to drilling operations and the use of soil-gas probes. Where public utilities may exist, the utility agencies or operators must be contacted directly or through a utility-sponsored service such as Dig-Safe. Where other underground hazards may exist, reasonable attempts must be made to identify their locations as well. Failure to identify underground hazards can lead to fire, explosion, flooding, electrocution or other life-threatening accidents.

HAZARD ASSESSMENT: CHEMICAL HAZARDS AND RELATED CONCERNS

Chemicals Subject to OSHA Hazard Communication. All chemicals used in field activities such as solvents, reagents, decontamination solutions, or any other hazardous chemical must be listed and accompanied by the required labels, Material Safety Data Sheets (MSDS), and employee training documentation (OSHA 1910.1200).

Hydrogen Sulfide (H_2S). Hydrogen sulfide, characterized by its "rotten egg" odor, is produced by the decomposition of sulfur-containing organic matter. It is found in many of the same areas where methane is found such as landfills, swamps, sewers and sewer treatment facilities. An important characteristic of H_2S is its ability to cause a decrease in ones ability to detect its presence by smell. So although one may no longer be able to smell it, it could still be present in harmful concentrations.

The symptoms of over exposure include headache, dizziness, staggering and nausea. Severe over exposure can cause respiratory failure, coma, and death. The current OSHA PEL is 10 ppm as an 8-hour TWA. The ACGIH TLV is the same.

Methane. Methane is an odorless, colorless, tasteless, gas that cannot be detected by an H-Nu or similar photoionizing detector (PID). When present in high concentrations in air, methane acts primarily as a simple asphyxiant without other significant physiologic effects. Simple asphyxiants dilute or displace oxygen below that required to maintain blood levels sufficient for normal tissue respiration.

Methane has a lower explosive limit (LEL) of 5 percent and an upper explosive limit (UEL) of 15 percent. The LEL of a substance is the minimum concentration of gas or vapor in air below which the substance will not burn when exposed to a source of ignition. This concentration is expressed in percent by volume. Below this concentration, the mixture is "too lean" to burn or explode. The UEL of a substance is the maximum concentration of gas or vapor in air above which the substance will not burn when exposed to a source of ignition. Above this concentration, the mixture is "too rich" to burn or explode. The explosive range is the range of concentrations between the LEL and UEL where the gas-air mixture will support combustion. For methane this range is 5 to 15 percent.

BTEX Compounds. Exposure to the vapors of benzene, ethylbenzene, toluene and xylenes above their respective permissible exposure limits (PELs), as defined by OSHA, may produce irritation of the mucous membranes of the upper respiratory tract, nose and mouth. Acute exposure may also result in the depression of the central nervous system. Symptoms of such exposure include drowsiness, headache, fatigue, confusion, and loss of coordination. Benzene has been determined to be carcinogenic, targeting blood-forming system and bone marrow. The odor threshold for benzene is higher than the PEL and employees may be overexposed to benzene without sensing its presence, therefore, detector tubes must be utilized to evaluate airborne concentrations.

The vapor pressures of these compounds are high enough to generate significant quantities of airborne vapor. On sites where high concentrations of these compounds are present, a potential inhalation hazard to the field team during subsurface investigations can result. If the site is open and the anticipated quantities of BTEX contamination are small (i.e., part per million concentrations in the soil or groundwater), overexposure potential will also be small.

Volatile Organic Compounds (VOCs). See BTEX compounds.

Polychlorinated Biphenyls (PCBs). Prolonged skin contact with PCBs may cause the formation of comedones, sebaceous cysts, and/or pustules (a condition known as chloracne). PCBs are considered to be suspect carcinogens and may also cause reproductive damage.

The OSHA permissible exposure limits (PELs) for PCBs are as follows:

Compound	PEL (8-hour time-weighted average)
Chlorodiphenyl (42% Chlorine)	1 mg/m^3-Skin
Chlorodiphenyl (54% Chlorine)	0.5 mg/m^3 -Skin

It should be noted that PCBs have extremely low vapor pressures (0.001 mm Hg @ 42% Chlorine and 0.00006 mm Hg @ 54% Chlorine). This makes it unlikely that any significant vapor concentration (i.e., exposures above the OSHA PEL) will be created in the ambient environment. This minimizes the potential for any health hazards to arise due to inhalation unless the source is heated or generates an airborne mist. If generated, vapor or mists above the PEL may cause irritation of the eyes, nose, and throat. The exposure limits noted above are considered low enough to prevent systemic effects, but it is not known if these levels will prevent local effects. It should also be noted that both PELs carry the Skin notation, indicating that these compounds adversely effect or penetrate the skin. OSHA specifies that skin exposure to substances carrying this designation be prevented or reduced through the use of the appropriate personal protective equipment (PPE).

Polycyclic Aromatic Hydrocarbons (PAHs). Due to the relatively low vapor pressure of PAH compounds, vapor hazards at ambient temperatures are not expected to occur. However, if site conditions are dry, the generation of contaminated dusts may pose a potential inhalation hazard. Therefore, dust levels should be controlled with wetting if necessary. Repeated contact with certain PAH compounds has been associated with the development of skin cancer. Contact of PAH compounds with the skin may cause photosensitization of the skin, producing skin burns after

subsequent exposure to ultraviolet radiation. Protective measures, such as the wearing of chemically resistant gloves, are appropriate when handling PAH contaminated materials.

Chromium Compounds. Hexavalent chromium compounds, upon contact with the skin can cause ulceration and possibly an allergic reaction. Inhalation of hexavalent chromium dusts is irritating and corrosive to the mucous membranes of the upper respiratory tract. Chrome ulcers and chrome dermatitis are common occupational health effects from prolonged and repeated exposure to hexavalent chromium compounds. Acute exposures to hexavalent chromium dusts may cause coughing or wheezing, pain on deep inspiration, tearing, inflammation of the conjunctiva, nasal itch and soreness or ulceration of the nasal septum. Certain forms of hexavalent chromium have been found to cause increased respiratory cancer among workers.

Trivalent chromium compounds (chromic oxide) are generally considered to be of lower toxicity, although dermatitis may occur as a result of direct handling.

Metal Compounds. Overexposure to metal compounds has been associated with a variety of local and systemic health hazards, both acute and chronic in nature, with chronic effects being most significant. Direct contact with the dusts of some metal compounds can result in contact or allergic dermatitis. Repeated contact with arsenic compounds may result in hyperpigmentation. Cases of skin cancer due to the trivalent inorganic arsenic compounds have been documented. The moist mucous membranes, particularly the conjunctivae, are most sensitive to the irritating effects of arsenic. Copper particles embedded in the eye result in a pronounced foreign body reaction with a characteristic discoloration of eye tissue.

Inhalation of copper and zinc dusts and fumes above their established PELs may result in flu-like symptoms known as "metal fume fever." Prolonged and repeated inhalation of the dusts of inorganic arsenic compounds above the established PEL may result in weakness, loss of appetite, a sense of heaviness in the stomach and vomiting. Respiratory problems such as cough, hoarseness and chest pain usually precede the gastrointestinal problems. Chronic overexposure to the dusts of inorganic arsenic may result in lung cancer.

The early symptoms of lead poisoning are usually nonspecific. Symptoms include sleep disturbances, decreased physical fitness, headache, decreased appetite and abdominal pains. Chronic overexposure may result in severe colic and severe abdominal cramping. The central nervous system (CNS) may also be adversely affected when lead is either inhaled or ingested in large quantities for extended periods of time. The peripheral nerve is usually affected. Lead has also been characterized as a male and female reproductive toxin as well as a fetotoxin. Exposure to lead (Pb) is regulated by a comprehensive OSHA standard (29 CFR 1910.1025).

HAZARD ASSESSMENT: BIOLOGICAL HAZARDS AND RELATED CONCERNS

Insects. Insects represent significant sources (vectors) of disease transmission. Therefore, precautions to avoid or minimize potential contact should be considered prior to all field activities. Disease or harmful effects can be transmitted through bites, stings, or through direct contact with insects or through ingestion of foods contaminated by certain insects. Examples of disease transmitted by insect bites include encephalitis and malaria from contaminated mosquitoes, Lyme disease and spotted fever from contaminated ticks. Stinging insects, such as bees and wasps, are prevalent throughout the country, particularly during the warmer months. The stings of these insects can be painful and cause serious allergic reactions to some individuals.

Lyme Disease. Lyme disease is an infection caused by the bite of certain ticks, primarily deer, dog and wood ticks. The symptoms of Lyme disease usually start out as a skin rash then progress to more serious symptoms. The more serious symptoms can include lesions, headaches, arthritis and permanent damage to the neurological system. If detected early the disease can be treated successfully with antibiotics. If a tick is attached to the skin it should be removed with fine tipped tweezers. You should be alert for early symptoms over the next month or so. If you suspect that you have been bitten by a tick you should contact a physician for medical advice.

Poisonous Plants. The possible presence of poisonous plants should be anticipated for field activities in wooded or heavily vegetated areas. Poison ivy is a climbing plant with alternate green to red leaves (arranged in threes) and white

berries. Poison oak is similar to poison ivy and sumac but its leaves are oak-like in form. The leaves of these poisonous plants produce an irritating oil which causes an intensely itching skin rash and characteristic blister-like lesions. Contact with these plants should be avoided.

Rats, Snakes and Other Vermin. Certain animals, particularly those that feed on garbage and other wastes, can represent significant sources (vectors) of disease transmission. Therefore, precautions to avoid or minimize potential contact with biting animals (such as rats) or animal waste (such as pigeon droppings) should be considered prior to all field activities. Rats, snakes and other wild animals can inflict painful bites. The bites can poisonous (as in the case of some snakes), or disease causing (as in the case of rabid animals). Avoidance of these animals is the best protection.

MISCELLANEOUS SITE CONTROL PROCEDURES

_____
_____
_____
_____
_____
_____

PLAN SIGN-OFF

PM/SSO:_____ AIC/PIC:_____

Attachment A Health and Safety Briefing/Site Orientation Record/Hazard Communication
Attachment B Hospital Map

Attachment A

Health and Safety Briefing/Site Orientation Record/Hazard Communication

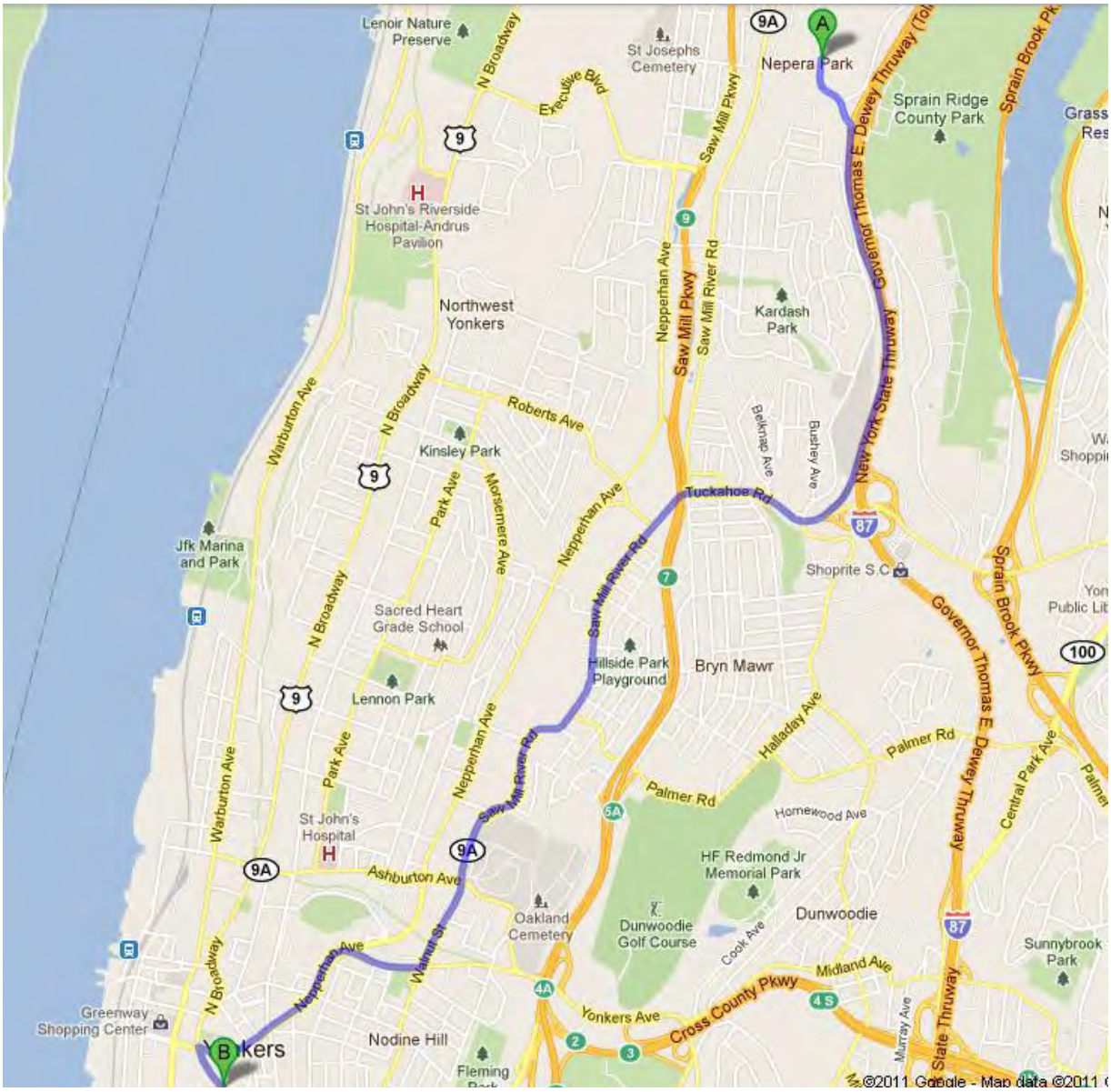
This is to verify that I, the undersigned, have been provided with a site briefing, including hazard communication, regarding the safety and health considerations at the referenced site in Yonkers, New York. I agree to abide by the site-specific health and safety plan and other safety or health requirements applicable to the site.

Name (Print)	Signature	Company	Date

Site (orientation) briefing conducted by: _____ Date:_____

Attachment B

Directions from Site to St. Joseph's Medical Center
127 South Broadway, Yonkers, NY



- Take NYS Thruway from site, and go SOUTH (I-87S)
- Get off at Exist 6W towards Yonkers (TUCKAHOE ROAD WEST)
- Turn slight RIGHT on TUCKAHOE ROAD
- TUCKAHOE ROAD becomes SAW MILL RIVER ROAD (NY 9A)
- Turn RIGHT on ASHBURTON AVE (NY 9A)
- Turn LEFT on NEPPERHAN AVE (NY 9A)
- Turn LEFT on US-9/S BROADWAY/ NY-9A
- Go to 127 S BROADWAY