SITE MANAGEMENT PLAN

NORTHEASTERN INDUSTRIAL PARK
AREA OF CONCERN 1 (Southern Landfill)
AREA OF CONCERN 7 (Triangular Disposal Area)

GUILDERLAND, NEW YORK

Contract Number: W912WJ-12-C-0006
FUDS Property No. CO2NY00203
NYSDEC Site No. 401009

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Prepared for:

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LIST OF ACRONYMS and ABBREVIATIONS

AOC	Area of Concern
APP	Accident Prevention Plan
ARARs	Applicable or Relevant and Appropriate Requirements
CERCLA	Comprehensive Environmental Restoration, Compensation, and Liability Act of 1980
CFR	Code of Federal Regulations
COC	Contaminants of Concern
DCA	Dichloroethane
DCE	Dichloroethene
DERP-FUDS	Defense Environmental Restoration Program-Formerly Used Defense Sites
DD	Decision Document
DoD	Department of Defense
DOR	Designer of Record
DTB	Depth to Bottom
DTW	Depth to Water
EC	Engineering Controls
EC/IC	Engineering Control/Institutional Control
ECS	Engineering Control System
EDD	Electronic Data Deliverable
EPP	Environmental Protection Plan
FS	Feasibility Study
FSP	Field Sampling Plan
H2H	H2H Associates, LLC.
HGL	HydroGeologic, Inc.
HHRA	Human Health Risk Assessment
IC	Institutional Controls
LLDPE	Linear Low-Density Polyethylene
LUC	Land Use Controls
MCL	Maximum Contaminant Level
MNA	Monitored Natural Attenuation
MS/MSD	Matrix Spike/Matrix Spike Duplicate
NEIP	Northeast Industrial Park
NWP	Nationwide Permit
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
O&M	Operation and Maintenance
PAHs	Polycyclic Aromatic Hydrocarbon
PDI	Pre-Design Investigation

PM	Project Manager
PRR	Periodic Review Report
QA	Quality Assurance
QAPP	Quality Assurance Project Plan
QC	Quality Control
QEP	Qualified Environmental Professional
RI	Remedial Investigation
SADVA	Schenectady Army Depot-Voorheesville Area
SAP	Sampling and Analysis Plan
SARA	Superfund Amendments and Reauthorization Act
SCGs	Standards, Criteria and Guidance
SLERA	Screening Level Ecological Risk Assessment
SMP	Site Management Plan
SSHO	Site Safety and Health Officer
SSHP	Site Safety and Health Plan
SOW	Statement of Work
TCE	Trichloroethene
µg/kg	Microgram per Kilogram
µg/l	Microgram per Liter
USACE	United States Army Corps of Engineers
USEPA	United States Environmental Protection Agency
VC	Vinyl Chloride
VOC	Volatile Organic Compound

1.0 INTRODUCTION

This Site Management Plan (SMP) has been prepared for the Former Schenectady Army Depot (aka Northeastern Industrial Park), Area of Concern 1 – "Southern Landfill" Site (Site), located in the Town of Guilderland, New York. This SMP was prepared for the United States Army Corps of Engineers (USACE) New York District for FUDS Property No. CO2NY00203, New York State Department of Environmental Conservation (NYSDEC) Site No. 401009. The Site location is shown on Figure 1. The installation of the cap and cover remedy at AOC 1 was completed in 2013; AOC 7 (Triangular Disposal Area) is identified in this SMP due to its proximity to AOC 1, and its inclusion in the area covered by the environmental easement.

This SMP has been prepared in accordance with 6 New York Codes, Rules and Regulations (NYCRR) Part 375 and includes an Engineering Control/Institutional Controls (EC/IC) plan, a Groundwater Monitoring Plan, and an Operations and Maintenance (O&M) Plan. The SMP is part of the selected response action, after the construction of the landfill cap and soil cover, in the Area of Concern (AOC 1) Decision Document (DD). This SMP has been prepared to document the requirements and procedures for the Engineering Controls (ECs) and Institutional Controls (ICs) for the remediated portion of the AOC 1 as shown in Figure 2. This SMP does not supersede any federal, state, or local statutes, regulations, or ordinances pertaining to the environment, and current and future holders of interests of property within the Site will remain obligated to comply with the same.

This SMP has been prepared as a mechanism to assure that consistent and effective inspection and maintenance and enforcement activities are occurring and will occur in the future throughout the Site. These objectives and those detailed below will be achieved primarily through the implementation of EC/ICs, the groundwater monitoring plan and the maintenance practices defined in this SMP. As part of the ICs of the SMP, an Environmental Easement will be utilized to impose land use and groundwater use limitations on the AOC 1 and 7 site, to protect the present and future owners from potential environmental contamination. The environmental easement will reference the SMP. The United States Army Corps of Engineers (USACE) and the present owner and any future owners of the Site will be bound by the provisions of this SMP relevant to the portion of the property they own or control on the Site. Note that USACE responsibilities under this SMP will be executed subject to availability of funds.

1.1 OBJECTIVES

The specific objectives of this SMP are as follows:

- To describe ECs/ICs to be implemented to maintain the short-term and long-term effectiveness of the remedy established in the DD.
- To establish controls on groundwater use.
- To identify the specific mechanisms that will be used to establish and enforce the ECs/ICs contained in this SMP.
- To define the monitoring requirements.
- To outline the maintenance and inspection requirements for the Site.

2.0 SITE SUMMARY

2.1 SITE DESCRIPTION AND BACKGROUND

The Former Schenectady Army Depot-Voorheesville Area (SADVA) (also known as the former Voorheesville (Army) Depot) is located in the Town of Guilderland, one quarter mile southeast of the hamlet of Guilderland Center, Albany County, New York (refer to Figure 1). The Department of Defense (DoD) used the SADVA property primarily as a warehouse and storage complex from 1941 through 1969. The site was originally constructed as a regulating station and a holding and reconsignment point, and later became a general depot for the U.S. Department of the Army. The principal mission of the installation was the receipt, storage, maintenance, and distribution of supply items.

The SADVA site is now privately owned and known as the Northeastern Industrial Park or NEIP. AOC 1 is the former U.S. Army Southern Landfill located in the southeastern portion of NEIP (refer to Figure 2). AOC 7 is a triangular-shaped disposal area located on dry, open ground between existing and former railroad tracks at the south end of SADVA.

2.1.1 Site History

A 1980 report by the Albany County Environmental Management Council (ACEMC) prompted environmental concern at the SADVA property (ACEMC, 1980). This report described aerial photographs showing excavation and disposal activities that occurred in the southeastern areas of the SADVA. Most excavation and disposal activities occurred during the time SADVA was operated by DoD. However, according to a report by the U.S. Army Toxic and Materials Agency (1980), no written records were found that would indicate that disposal of wastes occurred at the former depot. For this reason, historical aerial photos were utilized to help identify periods of site disturbance that could correspond to waste disposal activities. In its report, Albany County discussed observations of an approximately 15-acre dump that was referred to as the U.S. Army Southern Landfill (later AOC 1), located in the southern part of SADVA (Figure 2). Next to the dumpsite was a 3-acre pond, which was located at the southwest edge of the dumpsite. The County also noted a (possible) 1.5-acre storage container and/or debris area at the northwest edge of this site.

The Southern Landfill (AOC 1) reportedly contains construction and demolition debris, industrial and domestic wastes, and wastes from the former burn pit area. The landfill boundaries have previously been determined by past investigations conducted from the early 1990's through 2007 by URS, Inc., Malcolm Pirnie and Parsons at the request of the USACE. Impacts by Volatile Organic Compounds (VOCs), Polycyclic Aromatic Hydrocarbons (PAHs) and/or metals in surface soil, subsurface soil and groundwater have been documented, particularly in the southern section. Prior to implementation of the remedy, direct contact with the surface soils, surface water, and sediment was considered the most likely exposure pathway for the contaminants of concern (COCs). A potential COC migration pathway considered was that groundwater may be discharging to, and impacting, adjacent surface water and sediment in the pond whose overflow ultimately flows to Black Creek, which flows to Watervliet Reservoir, a local public drinking water supply. The reservoir is located approximately four (4) miles downstream of the southern portion of the NEIP property.

2.2 NATURE AND EXTENT OF CONTAMINATION

AOCs 1 and 7 were included in a remedial investigation (RI) for the SADVA conducted by Parsons under contract to the USACE during the period 1999-2007. In addition, the AOC 1 was the subject of a separate RI completed in 1996 by Malcolm Pirnie and URS, Inc. under contract to the USACE. Based on these RIs conducted in 1997 (Malcolm Pirnie) and 2007 (Parsons), the primary COCs identified in soil at AOC 1

were PAHs, including benzo(a)pyrene, and the metal, arsenic. The COCs identified for groundwater at AOC 1 are chlorinated hydrocarbons: trichloroethene (TCE), 1,2-dichlorothene-Total (cis- and trans-1,2 DCE), 1,2-dichloroethane (1,2-DCA), and vinyl chloride (VC). This mix of VOC suggests that anaerobic dechlorination may be an active process at AOC 1. Meeting groundwater applicable or relevant and appropriate requirements (ARARs) is the primary driver in the remedial action.

The 1997 RI by Malcolm Pirnie identified the presence of a VOC groundwater plume beneath the southern part of the Southern Landfill. Subsequent sampling in June 2000 indicated that the VOC compounds detected in groundwater were limited to the same area of AOC 1 that was identified in 1997; however, benzene, toluene, ethylbenzene and xylene (BTEX) and acetone were not detected in the same wells in 2000.

Three shallow monitoring wells (GW-12, GW-13, and GW-14) were installed along the east side of AOC 1 in 2004 (see Figure 3 for monitoring well locations). The sampling results led to the conclusion that VOCs are not migrating offsite to the east in the shallow water table. Similarly, VOCs were not detected in these three wells during the 2006 sampling event. Furthermore, the multiple rounds of groundwater sampling and VOC analyses indicate that VOC concentrations within the plume area declined significantly between the 1997 RI and the 2006 sampling event. VOC degradation appears to be an active natural process at the site.

The primary objective of the human health risk assessment (HHRA) performed during the RI was to quantitatively characterize the human health risk associated with current and potential future exposure to contaminated media at AOC 1 and 7. All potentially complete exposure pathways for the site were evaluated based on more protective exposure scenarios (*e.g.*, the residential scenarios provide very conservative (health-protective) estimates for standard site worker scenarios). The HHRA concluded the following:

- AOC 7 poses no unacceptable health risk with respect to soil, groundwater, surface water and sediment exposures. In addition, the vegetative cover over AOC 7 is intact, and all soil sample concentrations within the limits of AOC 7 are below the Part 375 industrial land use cleanup objectives. Therefore, AOC 7 is not considered in the remedial action objectives.

- AOC 1 poses no unacceptable health risks with respect to surface water and sediment exposures. AOC 1 does not meet the minimum criteria for established ARARs with respect to groundwater, if used as a drinking water source. The calculated health risk for soils at AOC 1 was within the acceptable range; however, the soils/wastes in the center of the landfill were not fully characterized. In addition, soils at AOC 1 may exceed the NYSDEC Part 375 industrial land use criteria. Therefore, soils and groundwater at AOC 1 have been considered in the remedial action objectives.

After the HHRA was completed, the New York Department of Environmental Conservation (NYSDEC) promulgated new risk-based soil cleanup objectives under Title 6 NYCRR. Subsequent to the HHRA, NYSDEC requested that soil concentrations at AOC 1 be compared with the soil cleanup objectives. The concentrations of PAHs and/or arsenic were above the Part 375 industrial land use cleanup objectives for seven grab soil samples collected within the limits of AOC 1. Even though concentrations reported from some grab samples exceeded the Part 375 decision limits/cleanup goals, it is unknown whether a significant portion of the landfill exceeds these decision limits; the volume of material in the landfill that exceeds the cleanup goals was not quantified.

No buildings currently exist at AOC 1; however, a vapor intrusion screening was completed to assess the potential for a vapor intrusion health risk should a building be constructed in the area in the future. The

screening suggested that vapor intrusion could pose a risk if new buildings will be constructed within the lateral limits of the VOC groundwater plume emanating from the southern portion of the AOC 1 landfill.

The RI characterization found no contamination at AOC 7 that required remedial action.

2.3 REMEDIAL ACTION OBJECTIVES

Remedial action objectives were developed for the purpose of evaluating the applicability of remedial technologies and the effectiveness of remedial alternatives. These objectives consist of media-specific goals for protecting human health and the environment, and for meeting ARARs in a cost-effective manner.

Groundwater ARARs	
Chemical Parameter	**6 NYCRR 703.5 (f), Table 1**
1,2-Dichloroethane (1,2-DCA)	**0.6**
1,2-Dichloroethene (total 1,2-DCE)	**5**
	Federal MCL – 40 CFR 141.61
Trichloroethene (TCE)	**5**
Vinyl Chloride (VC)	**2**
Soil ARARs	
Chemical Parameter	**6 NYCRR 375-6.8(b)**
Benzo(a)pyrene (PAH)*	**1,100**
Total PAHs	**1,000,000**
Arsenic	**16,000**
Others ARARs	
Landfill Requirements for Closure/Post-Closure Care	U.S. Environmental Protection Agency 40 CFR 264.310

Note: all concentrations are in:
ug/L - micrograms per liter (groundwater)
ug/kg - micrograms per kilogram (soil)
MCL - maximum contaminant level
* PAHs - polycyclic aromatic hydrocarbons

A screening-level ecological risk assessment (SLERA) was conducted during the RI to evaluate potential adverse impacts to the ecological receptors at SADVA due to the presence of hazardous contaminants in soil, sediment, and surface water. The objective of the SLERA was to evaluate whether unacceptable adverse risks may be present, or if risks may be posed to ecological receptors in the future. The qualitative ecological risk assessment concluded that although there are chemicals in various media onsite that could pose a risk to aquatic and terrestrial wildlife, the AOC 1 site appears to support wildlife typical for the area and for the commercial/industrial setting that the site has retained for over 60 years. The results of the ecological risk assessment indicate there is no unacceptable risk to the environment and that remedial action is not warranted.

The remedial action objectives were established based on site-specific information, including the nature and extent of chemical constituents, existing site conditions, and future land use plans. Remedial action objectives typically focus on controlling exposure of receptors (for example, workers at AOC 1) to chemicals of concern via exposure routes such as dermal contact, ingestion, and inhalation. The remedial action objectives also focus on controlling the release of hazardous substances into the environment.

Remedial action objectives for AOC 1 were as follows:

- Eliminate or minimize the human health risks posed by trichloroethene, VC, 1,2-DCA and total-1,2-DCE in groundwater within the landfill by satisfying the Class GA groundwater standards ARARs for these analytes;

- Eliminate the soil exposure pathway;

- Mitigate the potential for future releases of contaminants in the landfill to groundwater; and

- Mitigate the potential for movement and offsite migration of TCE, VC, 1,2-DCA,and Total-1,2-DCE from the groundwater plume within the landfill.

2.4 PREVIOUS INVESTIGATIONS

The following is the history of investigations and reports prepared for the Site and upon which the SMP for AOC 1, Guilderland, New York was based:

- H2H, LLC, 2014 (In Preparation), Final Engineering Report, Landfill Cap and Soil Cover, Area of Concern, Northeast Industrial Park, Guilderland, New York (Pending)
- H2H, LLC, 2013, 100% Design Analysis Report Landfill Cap and Soil Cover Design Area of Concern 1, Northeast Industrial Park, Guilderland, NY, June 2013
- H2H, LLC, 2013, Final Pre-Design Investigation Report – Pre-Design Field Program, Northeast Industrial Park, Area of Concern 1, Guilderland, New York. January 2013
- Malcolm-Pirnie, 1997. *"Final Limited Remedial Investigation Report, Former Voorheesville Army Depot, U.S. Army Southern Disposal Landfill, Guilderland, New York"*, prepared for USACE-Baltimore District, April.
- Parsons, 2007. *Remedial Investigation Report, Former Schenectady Army Depot Voorheesville Area*. May 2007.
- Parsons, 2010. *Focused Feasibility Study, Former Schenectady Army Depot Voorheesville Area*.
- ACEMC, 1980. Albany County Environmental Management Council, "Northeastern Industrial Park (Voorheesville Depot) and Vicinity, Closed Landfill Study", June 25, 1980.
- Metcalf and Eddy, Inc., 1988. Engineering Final Report Site Investigation. Contamination Evaluation at the Former Schenectady Army Depot, New York by Metcalf & Eddy, Inc. February 1988.
- ERM-Northeast, 1990. "Report of Findings Environmental Liability Review Northeastern Industrial Park" dated March 15, 1990.
- OHM Remediation Services Corp, 1991. Phase II Draft Report, Schenectady Army Depot Site, Voorheesville, Guilderland, New York. April 1991.
- URS, March 1996. Final Chemical Data Acquisition Plan. Remedial Investigation at the Former
- Voorheesville Army Depot, U.S. Army Southern Disposal Landfill Guilderland, New York.
- Quantum Geophysics, Inc., 1997. Geophysical Investigation. April 1997.
- Malcolm-Pirnie, 1997 "Final Limited Remedial Investigation Report, Former Voorheesville Army Depot, U.S. Army Southern Disposal Landfill, Guilderland, New York", prepared for USACE-Baltimore District, April 97.
- EAEST, 2003. EA Engineering, Science and Technology "Final Investigation Report. Archival Search Former Schenectady Army Depot – Voorheesville Area", dated May 2003.
- Galesi Group 2005**.** Draft Generic Environmental Impact Statement, Northeastern Industrial Park, June 2005.

2.5 DESCRIPTION OF THE SELECTED REMEDY FROM THE DECISION DOCUMENT

Based on the evaluation presented in the FS and the Proposed Plan, the selected alternative for AOC 1 was Alternative 3 from the Feasibility Study – Landfill Cover and Cap / Groundwater Monitored Natural Attenuation (MNA)/Land Use Controls (LUCs). This alternative will institute the Containment Presumptive Remedy for the landfill, will provide the best balance of the threshold, primary balancing and modifying criteria, and will satisfy the remedial action objectives for this site, which are:

- Eliminate or minimize the human health risks posed by TCE, VC, 1,2-DCA, and total-1,2-DCE in groundwater within the landfill by satisfying the Class GA groundwater standards applicable or ARARs for these analytes. This remedial action objective will be satisfied by prohibiting potable use of groundwater in the vicinity of AOCs 1 & 7 (the VOC ARARs will be satisfied with a groundwater use easement granted by the property owner; the easement is considered an institutional control), and supplemented with groundwater MNA (and monitoring of VOC concentrations). Metals (arsenic, vanadium, selenium and antimony) also pose an unacceptable risk in groundwater. The presence of these metals will be addressed by the environmental easement prohibiting potable use of groundwater at AOC 1. Metals are not included as COCs for groundwater because the concentrations are not expected to be treated by MNA and therefore will not be monitored over time, as will be the case with VOCs;
- Although soils have not been completely characterized, the remedial action will eliminate the soil exposure pathway because the landfill cap and cover will prevent physical access to the affected soil;
- Mitigate the potential for future releases of contaminants in the landfill to groundwater. This remedial action objective will be satisfied with the landfill cap over the groundwater plume. If it is discovered that the landfill cap and soil cover system has been damaged, the need to resume groundwater monitoring activities will be reevaluated, and ;
- Mitigate the potential for movement and offsite migration of TCE, VC, 1,2-DCA, and total-1,2-DCE from the groundwater plume within the landfill. This remedial action objective will be satisfied with the landfill cap over the groundwater plume.

2.6 REMEDIAL ACTION

The remediation was performed pursuant to the USACE Decision Document for the Northeastern Industrial Park AOC 1 Site, dated 11 October 2011.

In June 2012, H2H Associates, LLC (H2H) prepared bid documents for the selected remedy. Remedial construction of the preferred alternative was awarded to H2H (Contractor) on 17 July 2012. HydroGeoLogic, Inc. (HGL) was subcontracted to be the Designer of Record (DOR) for the project. Maxymillian Technologies (Maxy) was subcontracted to construct the Impermeable Landfill Cap and Soil Cover while H2H, LLC oversaw construction and performed all other work associated with the contract documents.

Prior to design of the landfill cap/soil cover for AOC 1, additional information was needed. The pre-design investigation (PDI) was conducted October through December 2012. The purpose of the PDI was to collect information required to develop a final landfill cap and soil cover Remedial Design for AOC 1. A summary of activities conducted for this phase of the project:

- Mowing and Clearing
- Utility Clearance
- Pre-Design Topographic Survey and Mapping;
- Vibration Analysis;
- Rare Endangered Species Identification; and,
- Wetlands permit/V-19 Boundary Verification

- Landfill Gas Monitoring
- Pre-Design Sampling and Analysis

The pre-design field investigation was designed to achieve several objectives for the intended purpose: 1.) to refine the characterization of the nature and extent of groundwater contamination at the site through additional sampling of monitoring wells; 2.) to establish a base map for planning and design purposes; and 3.) conduct such investigations necessary to finalize the design of the landfill cap and soil cover. Results from the PDI investigation were incorporated into the final design of the cap and soil cover for AOC 1.

The Landfill Cover and Cap and Soil Cover Systems were designed by HGL for H2H under contract to the USACE New England District and under project management by the USACE New York District. The criteria used for final landfill cap and soil cover system design included compliance with relevant and appropriate sections of New York State codes and industry standards for environmental protection, Code of Federal Regulations (CFR), Title 40, Parts 264.310 and 258.2.

Two types of cap/cover systems were constructed. The landfill cap system included approximately 2.8 acres of final cover constructed on the southern portion of the site. The soil cover system included approximately 8 acres constructed on the northern portion of the site. Prior to the installation of the cap, approximately 10,400 cubic yards of fill material was brought to the site to bring the existing grade up to meet the 4% minimum grade requirement.

The landfill cap system in the southern portion of the site incorporated the following:

- A topsoil layer of at least 6 inches.
- A 2-ft thick protective layer, composed of silty sand material with the lower 6-inches free of stones larger than ½ inch.
- A subsurface drainage system consisting of a drainage geocomposite.
- A low-permeability layer consisting of a 40-mil thick textured linear low-density polyethylene (LLDPE) geosynthetic membrane.
- A 10-ounce per square yard (oz/yd^2) nonwoven geotextile blanket layer.
- A 6-inch minimum thickness soil subbase layer for the composite liner system that was free of rocks greater than ½-inch in diameter.

A topsoil layer of at least 6 inches was graded on top of the final cover layer to allow for vegetation growth. The final cover area was graded to allow for adequate drainage and vegetation growth. The slope was at least 4% (4 ft vertical fall per 100 ft of horizontal run) to adequately drain the surface water and meet the requirements of NYCRR Part 360-2. The final cover was vegetated with a blend of warm and cool season grasses and vegetation to prevent erosion of the protective layer of the final cover (i.e., upper 2 ft).

A majority of water that infiltrates through the protective layer will be captured and drain along the subdrain layer above the LLDPE geomembrane. The subdrain layer consists of drainage geocomposite material with single-sided textured nonwoven 6-oz/yd^2 geotextile. The low permeability layer consists of a 40-mil thick textured LLDPE geosynthetic membrane. LLDPE provides optimum serviceability and flexibility to allow the material to perform while differential settlement of the waste occurs.

Underneath the LLDPE there is a 10-oz/yd^2 nonwoven geotextile blanket layer. This layer provides a cushion for the low-permeability LLDPE geosynthetic membrane. The age, limited volume, and composition of the waste, along with recent soil gas sampling, indicate that landfill gas is not being generated at the site. Therefore, a waiver from inclusion of a gas management layer was requested from and granted by the NYSDEC via a letter dated 18 March 2013. The 6-inch thick soil subgrade layer provides a smooth foundation for the composite final cover, free of deleterious and protruding material.

The soil cover system in the northern portion of the site incorporated the following:

- A topsoil layer of at least 6-inches.
- A 1-ft thick protective layer.
- A gravel access road to allow limited vehicle access to the area and to the (southern area) landfill cap.

The soil cover system was constructed in the soil cover area by first clearing and grubbing the existing vegetation. Then a 1-ft thick soil protective layer was installed with an additional 6-inch thick topsoil layer placed on top and seeded for vegetative growth.

A gravel access road was constructed in the soil cover area to allow vehicle access through the soil cover system and to the landfill cap system. The road is approximately 12 ft wide, constructed in the location of the former access road by adding an 8-inch layer of crushed gravel (size 2 inches or less) over non-woven geotextile. The gravel was placed over an 8-inch compacted protective soil layer giving the access road a final elevation higher than the surrounding soil.

Particulate air monitoring was conducted from 6 June 2013 to 6 September 2013 during construction and ground intrusive activities, which included but were not limited to soil excavation and handling, or trenching. The perimeter air monitoring locations were random and were established with one (1) upwind and two (2) downwind of the active work area(s). Particulate air monitoring was performed and checked at a minimum of once per day, when site conditions changed (visual observance) or when a new task was started or the task(s) being performed changed. All air monitoring results were recorded daily in an air monitoring log. These air monitoring results are part of the project record.

During the remediation process, a total of 12 monitoring wells were decommissioned due to their locations being within the limits of work. All wells that were decommissioned during the remediation process were decommissioned in conformance with ASTM D 5299 – Standard Guide for Decommissioning of Groundwater Wells, Vadose Zone Monitoring Devices, Boreholes, and Other Devices for Environmental Activities. Any cuttings generated from the well decommissioning were placed in drums for proper disposal. A composite soil sample was collected from each drum of soil cuttings to determine if the soil was hazardous. The analysis concluded that the soil was non-hazardous. The soil cuttings were transported to CWM Chemical Services, LLC (Model City, NY) for proper disposal (Waste manifests are located in Appendix A). Any groundwater generated during the decommissioning process was disposed of adjacent to the borehole with NYSDEC approval. Care was taken so that there was no run-off into surface water bodies.

No equipment or other facilities were left in place at the completion of the project, and the site was restored as an open, grass-covered landfill, except for a gravel drive.

The Final Engineering Report documents construction activities for the Landfill Capping/Soil Cover Contract and provides certification that the construction, excavation, and backfill activities associated with the soil cover and landfill cap installation at the Site were performed in substantial conformance with the contract documents. The Final Engineering Report includes as-built drawings prepared by the Contractor, as well as well decommissioning logs from the well abandonment process, analytical data, copies of daily field/safety reports and photographs, and other detailed information.

3.0 ENGINEERING AND INSTITUTIONAL CONTROLS

The Owner, or USACE, and a Professional Engineer (P.E.) or the Qualified Environmental Professional (QEP), must review and complete the IC/EC Certification Form, sign the IC/EC Certifications Signature Page, and submit it as part of the Annual Certification Report to the NYSDEC. The Certification Form was developed based on NYS Division of Environmental Remediation (DER) DER-10 Technical Guidance for Site Investigation and Remediation (May 2010) and verifies that all Engineering Controls and Institutional Controls have been inspected annually and are considered applicable and complete. If there is any corrective action that is needed, this is noted and completed, followed by a subsequent inspection to verify the corrective measure has been implemented. Appendix B contains the IC/EC Certification Form for AOC 1.

3.1 ENGINEERING CONTROLS

Engineering Controls are physical mechanisms which restrict access to the Site and Site contaminants. Engineering Controls include any physical barrier or methods employed to actively or passively contain, stabilize, or monitor hazardous waste, restrict the movement of hazardous waste to ensure the long-term effectiveness of a remedial program, or eliminate potential exposure pathways to hazardous waste.

Engineering controls for this site include, but are not limited to:

- Site Access Controls – The existing six foot high chain link fence surrounding the NEIP property that will be maintained by the property owner as part of the engineering control plan. There is a locking gate at the entrance of the site.

- Signage – "Posted" signs will be placed on the perimeter fence and at the AOC 1 site entrance gate to notify the community that the Site has restricted access and that no trespassing is allowed.

- Monitoring Well Replacement – Three of the monitoring wells decommissioned during the Site remediation have been replaced to monitor the effectiveness of the remedial program on the groundwater at the Site.

- Groundwater Monitoring. The USACE will monitor groundwater quality at each of the Site monitoring wells (refer to Section 4) until data indicate that groundwater standards have been achieved. Each of the Site wells will be sampled annually during the first 5 years, to obtain a post-remediation baseline data set. The rate of sampling will then be re-evaluated in the 5 year Periodic Review Report and USACE will evaluate the need for continuing annual monitoring.

3.2 INSTITUTIONAL CONTROLS

Institutional controls are non-physical mechanisms which restrict the use of a site, limit human exposure, and prevent any actions which would threaten the effectiveness or operation and maintenance of a remedy at or pertaining to the site. Under NYSDEC policy, institutional controls apply when contaminants remain at a site at levels above the Standards, Criteria, and Guidance (SCGs) that would otherwise allow unrestricted human use of AOC 1. Institutional controls may include restrictions on the use of structures, land and groundwater as well as deed notices and covenants.

Institutional controls to protect human health and the environment will be implemented at the Site through an Environmental Easement prepared by the USACE and approved by the NYSDEC and presented in

Appendix D. The following institutional controls will be implemented and enforced through an Environmental Easement which will be granted by the current property owner:

1. Site Use Restriction. Only authorized use of the Controlled Property will be permitted. No intrusive ground disturbing activities will be permitted within the controlled property. No load bearing use will be permitted on the cap and covered area of the landfill. (See Appendix D for an enlarged figure depicting the capped and covered area of the AOC 1 landfill). Construction of buildings in the controlled area are prohibited. Included in Appendix D is a figure depicting the controlled property (Environmental Easement Description and Record Legal Description). The Environmental Easement shall be binding on all future owners of the property and will consign consent to enforcement by the NYSDEC of all prohibitions and restrictions and agreement not to contest the authority of the NYSDEC to seek enforcement.
2. Soil Management. Further excavation of soils at AOC 1 or removal of soil from the property will be prohibited.
3. Vapor Intrusion: Vapor intrusion risks must be considered during planning for any new (future) construction of buildings in the near vicinity of the VOC groundwater plume at AOC 1.
4. Groundwater Use Restriction. The use of groundwater, as defined by the easement boundary, will be prohibited until deemed acceptable by the NYSDEC.
5. Annual Certification Report: The Site owner will certify on a yearly basis that the institutional controls are in place and remain effective for the protection of public health and the environment. The USACE will identify any activities undertaken pursuant to the SMP during the past year, and identify anticipated forthcoming activities that may require implementation of the SMP.

The annual certification report will be prepared by a QEP, which must certify that the institutional controls and/or engineering controls employed are unchanged from the previous certification, unless otherwise approved by the Department; in place and effective; performing as designed; and that nothing has occurred that would impair the ability of the controls to protect the public health and environment; or constitute a violation or failure to comply with any maintenance plan for such controls. The report will include:

1. Groundwater monitoring and any other analytical results;
2. Analysis of groundwater contamination concentrations;
3. Description of site conditions and maintenance activities;
4. Recommendations for any corrective measures or changes in the Site Maintenance Plan.

The certification report will be distributed to:

NYSDEC
Heather Bishop
Project Manager
Division of Environmental Remediation, Bureau A
625 Broadway – 11th Floor
Albany, NY 12233-7015

Dean Brammer
Technical Leader
U.S. Army Corps of Engineers,
New England District (CENAE-EP-GE)
696 Virginia Road,
Concord, MA 01742-2751

Gregory J. Goepfert, P.E., PMP,
Project Manager
U.S. Army Corps of Engineers, New York District,
Room 1811 (CENAN-PP-E),
26 Federal Plaza, New York, NY 10278

Town of Guilderland
Town Supervisor, Kenneth D. Runion
Guilderland Town Hall – 2nd Floor
5209 Western Turnpike
Guilderland, NY 12084

Ms. Bridget Boyd
Public Health Specialist II
Bureau of Environmental Exposure Investigation
New York State Department of Health
Empire State Plaza, Corning Tower, Room 1787
Albany, NY 12237

After the property owner executes the Environmental Easement, it will be recorded and filed with the Albany County Clerk, and proof of the recording and filing will be submitted to the NYSDEC within thirty days of the NYSDEC's approval of the Environmental Easement.

4.0 GROUNDWATER MONITORING PLAN

4.1 INTRODUCTION

The Groundwater Monitored Natural Attenuation remedial action is intended to address the potential health risks related to groundwater exposure and includes the following components:

- Perform annual low flow groundwater sampling of groundwater plume at AOC 1 to evaluate and monitor attenuation of contaminants. Analyze samples for TCE, 1,2-DCA, Total 1,2-DCE and VC and natural attenuation parameters (see Table 2).
- Provide an annual report to USACE and NYSDEC including sample locations and methods, analytical results, comparison to baseline and previous sampling events.
- Continue monitoring until the designated volatile COCs meet the NYSDEC Class GA standards, that is, trichloroethene (standard - 5 micrograms per liter (µg/l)), cis-1,2-dichloroethene (5 µg/l), 1,2-dichloroethane (0.6 µg/l) and vinyl chloride (2 µg/l) .

To monitor the effectiveness of the remedial action and the Site's groundwater quality, selected monitoring wells will be sampled annually for the first 5 years after completion of the remedial action. The contractor will sample a total of 9 (nine) wells for long-term monitoring of the groundwater in the vicinity of the landfill; four Landfill Cap area monitoring wells (GW-12, MW-13-01, MW-13-02, and MW-13-03) and five Soil Cover area monitoring wells (GW-03, ACE-3, ACE-4, ACE-5, and GW-13). Three new monitoring wells, located along the perimeter of the landfill cap were drilled as part of the remediation and are included in the sampling scope (Refer to Figure 3). These wells are as follows:

- Well MW-13-01, located near the former AMW-4 located on the southern edge of the landfill cap.
- Well MW-13-02, located near the former AMW-3 located on the western edge of the landfill cap.
- Well MW-13-03, located near the former AMW-1 and AMW-2 located on the northeastern edge of the landfill cap.

Table 1
AOC 1 Long-Term Monitoring Wells

Monitoring Well ID	Rationale for Sampling	Easting	Northing
Landfill Cap Area			
GW-12	Assess Groundwater Quality	641507.22	1400557.37
MW-13-01	Assess Groundwater Quality	641294.2	1400330
MW-13-02	Assess Groundwater Quality	641073.3	1400500
MW-13-03	Assess Groundwater Quality	641398.5	1400687
Soil Cover Area			
GW-03	Assess Groundwater Quality	640427.01	1401197.67
ACE-3	Assess Groundwater Quality	640050.67	1402036.90
ACE-4	Assess Groundwater Quality	640007.28	1402347.53
ACE-5	Assess Groundwater Quality	640494.65	1402133.51
GW-13	Assess Groundwater Quality	641010.73	1401331.93

Well logs and well construction information, including well depths and screened intervals are locate in Appendix A.

The groundwater samples will be analyzed for the following VOC and MNA parameters:

- Volatile Organic Compounds - Method 8260
- Total Organic Carbon - Method 9060
- Dissolved Gases - Methane, Ethane, Ethene - Method RSK 175
- Nitrate - Method 353.2
- Nitrite – Method SM4500NO3-F
- Sulfate - Method 300.0 by Ion Chromatography
- Total Sulfide - Method 9030B
- Chloride - Method 300.0 by Ion Chromatography
- Total Alkalinity - Method SM2320B
- Total Manganese – Method 6010
- Iron Speciation (Total and Ferrous) – Method 6010.0/SM3500-FE

Field Measurements will include:

- Oxygen-Reduction Potential
- Dissolved Oxygen
- pH
- Temperature
- Specific Conductance

In addition, five (5) Quality Assurance samples (trip blank, field blank, blind duplicate, Matrix Spike/Matrix Spike Duplicate (MS/MSD)) will be collected for each round. A total of 16 samples with be analyzed for each annual sampling event (including the QC samples).

USACE will submit a report for each annual sampling round to the NYSDEC. The report will include a description of sampling methodology, results, discussion, conclusions, and any recommendations for the next sampling round. Appended to the report will be any new boring and well construction logs, a summary table of well construction details, tabulated water level measurements, well hydrographs when applicable, groundwater contour map, a table of cumulative analytical results, laboratory report with chain of custody forms, and projections for key analytes for reaching remedial goals.

A Five-Year Periodic Review Report (PRR) will be submitted to the NYSDEC by USACE every 5 years, beginning fifteen months after the Certificate of Completion or equivalent document is issued. This report will evaluate and suggest revisions to the monitoring schedule if deemed appropriate. The Monitoring program schedule is as follows for the first 5 years of monitoring:

Monitoring Program	Frequency*	Matrix	Analysis	Reporting
Groundwater Well Monitoring Network to be sampled (GW-12, MW-13-01, MW-13-02, MW-13-03, GW-03, ACE-3, ACE-4, ACE-5, GW-13)	Annually beginning spring 2014 Spring 2014 Summer 2015 Fall 2016 Winter 2017 Spring 2018	Water	Volatile Organic Compounds - Method 8260 Total Organic Carbon - Method 9060 Dissolved Gases - Methane, Ethane, Ethene - Method RSK 175 Nitrate - Method 353.2 Nitrite – Method SM4500NO3-F Sulfate - Method 300.0 by Ion Chromatography Total Sulfide - Method 9030B Chloride - Method 300.0 by Ion Chromatography Total Alkalinity - Method SM2320B Total Manganese – Method 6010 Iron Speciation (Total and Ferrous) – Method 6010.0/SM3500-FE	Annual Reports to be submitted to the USACE, NYSDEC and NYSDOH 90 days after sample collection. Summer 2014 Summer 2015 Summer 2016 Summer 2017 Periodic Review Report to be submitted: Summer 2018
Site Inspections	Annually	NA	NA	
* The frequency of events will continue as specified until groundwater quality standards are achieved.				

4.2 GROUNDWATER SAMPLING METHODOLOGY

Prior to each sampling event, depth to water (DTW) and depth to bottom of well (DTB) will be gauged with a decontaminated electronic water level probe to determine the static water level, and will be measured to the nearest 0.01 feet. All water levels will be recorded in a field book then transferred to sampling logs. These levels will be utilized to construct a water table map for the sampling date.

Groundwater samples will be collected from nine (9) monitoring wells listed on Table 1. Each well will be purged and sampled using a low-flow purging and sampling technique following the United States Environmental Protection Agency's (EPA's) Low-Flow (Minimal Drawdown) Ground-Water Sampling Procedures, EPA/540/S-95/504, dated April 1996, where possible. A bladder pump outfitted with dedicated Teflon-lined tubing will be used to purge and sample the monitoring wells. The tubing will be lowered into the well to the targeted sample point at the middle of the water column within the screen interval.

The wells will be purged at a target rate of less than 0.5 liter/minute. During purging, the water level will be monitored with the water level indicator to measure well drawdown and to guide the adjustment of purge rate to minimize drawdown while purging.

During purging, field water quality parameters, including pH, temperature, specific conductance, oxidation-reduction potential, dissolved oxygen, and turbidity, will be measured to determine when stabilization of the groundwater is achieved. All measurements will be recorded in a field logbook. Field parameters will be measured every 3 to 5 minutes during purging. Field parameters are considered stabilized when at least the pH, temperature, and specific conductance substantially stabilized for three successive readings within the following limits:

- pH: ±0.1 pH units
- Temperature: ±1 degree Celsius (°C)
- Specific Conductance: ±3%
- Turbidity: ±10%
- Dissolved oxygen: ±10%

Table 1
Specifics for Laboratory Analyses for Groundwater Sampling at AOC 1

Analyses	Methods	Container	Vol.	Preservative	Holding Time
Alkalinity	SM2320B	Plastic, no headspace	250 ml	4° C	14 Days
Chloride	300.0	Plastic	250 ml	4° C	28 Days
Nitrate	353.2	Plastic	250 ml	4° C	48 Hours
Nitrite	SM4500NO_3 -F	Plastic	250 ml	4° C	48 Hours
Sulfate	300.0	Plastic	250 ml	4° C	28 Days
Sulfide	9030B	Plastic	(2) 250 ml	ZnOAC, NaOH, pH>9, 4° C	7 Days
Iron Speciation (Total, Ferric, Ferrous)	6010.0 Total iron SM3500-Fe D Ferric by subtraction	Plastic	500 ml	4° C	(24hr HT on Ferric)
Total Organic Carbon (TOC)	9060	Amber Glass	(2) 40 ml VOA Vials	H_2SO_4, pH<2, 4° C	28 Days
Dissolved Gases	RSKSOP-175	Amber Glass, Teflon Lined	(2) 20 ml VOA Vials	HCL, pH<2, 4° C. If CO_2, 4° C.	14 Days preserved; 7 Days Unpreserved
Volatile Organics - 8260	8260C	Amber Glass, Teflon Lined	(3) 40 ml VOA Vials	HCL, pH<2, 4° C	14 Days
Manganese, Total	6010C	Plastic	500 ml	HNO_3, pH<2, 4° C	180 Days, Hg 28 days

Upon stabilization of field parameters, groundwater samples will be collected and placed directly into the appropriate (pre-preserved, as applicable) sample containers. All field parameters will be recorded on Groundwater Field Data Logs.

For wells that cannot be sampled using low-flow techniques, each well will be purged using a peristaltic pump a minimum of three well volumes prior to sample collection. During purging, field water quality parameters will measured as described above. It may not be possible to achieve the stabilization criteria outlined above using a peristaltic pump.

Groundwater samples will be collected and placed in laboratory supplied containers labeled with well number, date/time of sample collection, and method of analysis. Sample containers will then be placed in ice-filled coolers and prepared for shipment/delivery to the analytical laboratory, Alpha Analytical of Westborough, Massachusetts. Five (5) QC samples will be collected for each sampling event:

- Field Duplicates – One field duplicate will be collected per sampling round
- MS/MSD – One MS/MSD will be collected per sampling round.
- Blind Duplicate – One blind duplicate will be collected per sampling round.
- Trip Blanks – One trip blank will be collected per sampling round.

An ASP Category B Level data package will be requested for all groundwater analysis and data validation will conducted by a qualified third party validator. Data will be evaluated and qualification applied in accordance with the *USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review*, USEPA-540-R-07-003, July 2007 and *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review*, EPA-540-R-04-004, October 2004, as they applied to the analytical methods employed. A Data Usability Summary Report (DUSR) will be generated in accordance with USEPA Region II guidelines. All analytical data will be submitted to the New York State Department of Environmental Conservation (NYSDEC) in the standardized electronic data deliverable (EDD) format that is required for all data submitted, and this will be noted on the Chain of Custody.

The report will include a description of sampling methodology, results, discussion, conclusions, and recommendations for the next sampling round. Appended to the report will be any new boring and well construction logs, a summary table of well construction details, tabulated water level measurements, well hydrographs, groundwater contour map, a table of cumulative analytical results, graphs of cumulative concentrations for trend analysis, laboratory report with chain of custody forms, and projections for key analytes for reaching remedial goals.

The first Annual Report will include a Photolog in the appendices, showing each monitoring well in its current condition. In addition, a file with the Keyhole Markup Language – zipped (KMZ) for each will be provided so that the monitoring wells can be viewed in Google Earth Pro.

Each of the site wells are proposed to be sampled annually for the first five years to obtain a post-remediation baseline data set with the frequency of sampling being evaluated in the 5 year Periodic Review Report. The analytical parameters will be changed if deemed appropriate by the USACE or NYSDEC. Based on analytical results, select wells may be chosen to be sampled at a more or less frequent interval.

Data from the annual samplings will assist in further evaluating the post remedial aquifer conditions and determine the primary direction of groundwater flow. In addition, analytical data for the contaminants of concern in the groundwater at the site will be tabulated and graphed to assess the effectiveness of the monitored natural attenuation remedy for the groundwater. Any increasing or decreasing trends will be noted and related to the site groundwater flow conditions. Due to the varying nature of the flow at the site, modeling is not considered a good evaluation technique for determining the effectiveness of the remediation. Statistical analysis will be implemented if deemed appropriate based on the volume and nature of the data.

Per the DD for AOC 1, groundwater monitoring will continue until volatile COCs meet the NYSDEC Class GA standards, which are TCE (5 micrograms per liter (µg/l)), cis-1,2-DCE (5 µg/l) and VC (2 µg/l). If it is determined by the USACE, in coordination with the NYSDEC, that the criteria presented above has been met, then, monitoring of the groundwater beneath the landfill cap/soil cover will be terminated. All monitoring results will be provided to the property owner, NYSDEC, NYSDOH and the Albany County Health Department.

5.0 OPERATION AND MAINTENANCE PLAN

This Operation and Maintenance (O&M) Plan is intended to serve as a summary and guide for all the post-closure monitoring and maintenance at the Site. All aspects of the Site inspection and maintenance procedures shall be performed in accordance with this O&M Plan for the AOC 1 Landfill Cap/Soil Cover Site. O&M will be performed by USACE or its designee, subject to availability of funds. O&M will be undertaken by the property owner, in the event USACE is not funded to do so.

O&M shall be conducted following the monitoring, inspection, and maintenance procedures described in detail below, unless otherwise approved by the USACE and concurred by NYSDEC. Repairs to the cover system shall be performed with the materials of construction specified in the Closure Design Drawings and Specifications. The materials of construction, site grades, or construction methodology will not be modified without the approval of the USACE, unless otherwise directed in the O&M Plan.

All necessary equipment, personnel and materials to perform the monitoring, inspection, and maintenance of the landfill cover system will be utilized. Only equipment relative to the site O&M may be stored on-site. Care shall be taken to avoid damage to the site due to operations including, but not limited to, signs, fencing, vegetation (including trees and shrubs), wells, stormwater structures, landfill cover systems, etc.

If damage to the geosynthetic liner and underlying soil component is suspected, the affected area shall be exposed to allow for inspection and assessment of damage. Any damage to the geosynthetic layer or other cover materials must be repaired immediately by the party responsible for causing the damage. Specific monitoring, inspection, and maintenance procedures for the landfill cap system components are presented below.

5.1 COVER INSPECTION

Appendix C contains a site inspection checklist for the final cover system (Form-1) addressing the various operations and maintenance components for the cover system. Figure 3 shows the landfill area. The USACE shall establish a permanent marking system at the site clearly delineating the inspection area, and inspect that area on an annual basis for the first 5 years after closure. While the landfill cover and cap inspections will be conducted for the foreseeable future, the frequency will be modified based on recommendations to be presented in the 5 year PRR for the site, and subject to availability of funds.

The inspector shall perform the work in an orderly fashion completing all of the items in the inspection area. The USACE shall follow the inspection procedures described on Form -1 and the reporting procedures presented below. All significant deficiencies shall be recorded on a 24-inch by 36-inch, as built O&M Drawing of the site. The locations shall be surveyed or accurately measured from known features at the site and the information shown to scale on the Drawings.

5.2 GRASS COVER/TOPSOIL LAYER

The USACE shall visually inspect the grass cover on an annual basis using the approved inspection checklists (Appendix C, Form-1) for the first 5 years after closure per the DD, and with the inspection frequency modified based on any NYSDEC approved PRR recommendations, to continue for the foreseeable future, and subject to availability of funds.
The visual inspection shall include, but not be limited to, erosion, sinkholes, bare spots, dead species, and undesirable species. Bare or dead areas of vegetation shall be further examined for the possibility of leachate, erosion, or burrowing animals. The apparent cause of any damage shall be recorded in the inspection report.

The grass cover at the Site should only be mowed, at most, once yearly in the late fall. A two year rotation where one half of site is mowed each year would be optimal. Mowing should not be conducted when grass is wet. Trimming around existing features such as fences, equipment, drainage ditches, and other areas that cannot be reached with a mower, shall be completed as necessary with smaller (portable) equipment which will not damage the features (i.e., weed whips or grass trimmers). Additionally, vegetation greater than 2 inches in diameter shall be cut and treated with an approved herbicide. Mowers shall mulch grass and clippings shall be left in place. All other materials (i.e., cut vegetation) shall be properly disposed of off-site by the O&M Contractor, USACE contractor or the site owner.

If a need for fertilization is noted during the inspections, a soil test will utilized to determine what kind of fertilizer or liming may be needed. Only granular fertilizer shall be applied to maintain growth of the vegetation on the cover system. No liquid fertilizers shall be used. No fertilizer shall be applied within 10 feet of the stormwater drainage ditches or surface water. Application of herbicides and pesticides to control undesirable species shall not be permitted without written approval of USACE and the property owner. Any use of pesticides (i.e. herbicides and insecticides) shall be by a NYS licensed pesticide applicator.

Reseeding of the cover system shall be performed when deemed appropriate.

Sparsely vegetated areas shall be vegetated during the current or next planting season, as appropriate (e.g., if sparse vegetation is noted during the winter monitoring period, vegetation shall be initiated in the spring planting season). If seeding is not possible due to seasonal constraints, straw shall be spread over the sparsely vegetated areas to help control erosion. Vegetation shall be watered when required by the O&M Contractor to prevent loss due to drought conditions.

Insect infestation shall be addressed by USACE via contract with qualified licensed exterminators. Undesirable species discovered during visual inspections shall be exterminated if the USACE determines that their presence negatively impacts the integrity of the cover system. Insecticides shall not be applied until the insecticide contents have been approved by USACE and the property owner.

5.3 COVER SOIL AND CAP COMPONENTS

Similar to the grass cover, the cover soil and cap components shall also be visually inspected by USACE on an annual basis for the first 5 years after closure and per NYSDEC approved recommendations in the PRR for the foreseeable future, and subject to USACE's availability of funds. If damage to the geosynthetic and underlying soil component is suspected, the affected area shall be exposed to allow for inspection and assessment of damage. The inspection shall cover, but not be limited to, the following elements:

- Surface cracks and irregularities in the cover system;
- Presence and condition of vegetative growth;
- Presence of burrowing animals;
- Evidence of significant settlement, bulging or sinkholes;
- Signs of erosion damage;
- Signs of unstable conditions;
- Signs of leachate or waste breakthrough;
- Presence of ponded water or seepage;
- Evidence of unauthorized access such as vehicular tracks or disturbed cover soil;
- Presence of unauthorized dumping or vandalism; and,
- Damage to the underlying geosynthetic and soil components.
- Inundation caused by beaver activity

USACE shall complete the inspection checklist, Form-1 in Appendix C. Based on the inspection reports,

and the discretion of USACE, repairs to, or replacement of, the cover soil or cap components may be necessary. All repairs and/or replacements shall be made in accordance with USACE protocol in the Drawings and Specifications.

5.4 COVER REPAIR PROTOCOL

The USACE (or in its absence due to funding considerations, the property owner) shall exercise care in performing repair work to or over the geosynthetic materials installed in the cover system. Criteria for the materials and placement procedures, including equipment restrictions over the geosynthetics, are described in the Drawings and Specifications. The USACE (or in its absence due to funding considerations, the property owner) would be responsible for conducting any repair work in compliance with these Specifications. The cover repair protocol for listed items is described below.

5.4.1 Surface Cracks

When surface cracks are observed, investigate cracks for depth and length. Note orientation with respect to the slope. Cracks that are greater than about 10 feet long, 8 inches deep and 2 inches wide that are parallel to the slope should be noted on the checklist and immediately reported to the USACE. Refer to the procedures below for Slope Stability to repair cracks deeper than 12 inches that are on mild slopes (i.e., slopes of 10% or less), and which appear to be the result of localized settlement or dry conditions. Repair cracks not related to general slope movement by filling with like material, compacting and reseeding area in accordance with the Specifications.

Responsibility: USACE (or in its absence due to funding considerations, the property owner).

5.4.2 Vegetative Growth

When vegetative stress is observed, visually check for cause (i.e. gas odors, leachate seepage, insect infestation, extreme dry periods, etc.). If grasses are stressed due to lack of fertilization, apply fertilizer as needed. If stressed due to lack of water, reseed affected area after dry period ends, only if stand has not reestablished itself within 2 months.

5.4.3 Responsibility: USACE (or in its absence due to funding considerations, the property owner).Vector Penetration

When burrow holes are observed, check area for damage to geosynthetics by carefully hand excavating test pit near burrow holes. Note and repair any damage to geosynthetics in accordance with Specifications. Replace original soil materials and hand compact. Reseed if necessary. If significant damage is observed, notify USACE and contract with exterminator to remove burrowing animals subject to USACE approval.

Responsibility: USACE (or in its absence due to funding considerations, the property owner).

5.4.4 Settlement

When settlement which begins to pond water is observed, determine extent of affected area. Record areas of settlement on the O&M Drawings. Categorize as small or large depressions and repair accordingly as described below:

Small Depressions

In general, repair of small depressions (less than 1000 sq. ft, and capable of ponding 3 to 6 inches of water after a rainfall event) shall be as follows:

1. Clear vegetation.
2. Fill to grade with clean topsoil.
3. Compact with hand tools or a backhoe
4. Reseed.

Large Depressions

In general, repair or large depressions created by settlement or general surface sloughing, (greater than 1000 sq. ft and/or capable of ponding more than 6 inches of water), not erosion, shall be as follows:

1. Remove final cover layers with a backhoe and hand tools.
2. Stockpile layers separately.
3. Carefully cut any geocomposite drainage layer with "hook" blades so as not to damage any LLDPE liner beneath.
4. Roll back geosynthetic drainage layer.
5. Examine the LLDPE liner. If LLDPE liner is damaged, call LLDPE liner contractor and proceed as follows: If LLDPE liner is undamaged, proceed to Step 9.
6. Remove damaged LLDPE liner and regrade the subsoil layer beneath it to match the grades in the adjacent undamaged areas. Ensure that the prepared surface grades to drain. Place and compact subsoil materials in accordance with the Specifications.
7. Repair LLDPE liner in accordance with the Drawings and Specifications, and as recommended by the vendor.
8. Roll back any geocomposite drainage layer or install new geocomposite drainage layer.
9. Tie geocomposite where cut with cable ties spaced at 5-foot intervals. Overlay geotextiles as required in the Specifications.
10. Replace excavated barrier protection soil.
11. Replace excavated topsoil and match surrounding grade.
12. Reseed.
13. Install hay bales above the remediated area when on a side slope.
14. Remove hay bales after grass has grown 6 inches.

Responsibility: USACE (or in its absence due to funding considerations, the property owner).

5.4.5 Erosion

Erosion may indicate that some portion of the stormwater management system is not functioning correctly. Examples of this could be sediment impeding water flow through culverts or differential settlement along drainage ditches contributing to stormwater overtopping the drainage systems. When erosion is identified, investigate these or other possible causes. Record areas of erosion on the O&M Drawings.
Responsibility: USACE (or in its absence due to funding considerations, the property owner).

When erosion rills or gullies are observed at least 4 inches in depth and at least 10 feet in length, repair will be made utilizing best management practices made on a case by case basis.

Responsibility: USACE (or in its absence due to funding considerations, the property owner).

If general sloughing is associated with the erosion, or it is expected that the geosynthetics may have been

damaged, repair in conformance with "large depressions".

Responsibility: USACE (or in its absence due to funding considerations, the property owner).

Slope Stability

Any observable slope movement is serious in nature. Due to the low angle of slope at the AOC 1 site, slope movement is not considered a concern.

Seepage

Seepage is the subsurface movement of water from under the edge of the landfill cap. When seepage is observed by any party, notify the USACE and USACE (or in its absence due to funding considerations, the property owner) will repair this condition. Hand excavate materials to the level of the geosynthetics following the seepage path and check integrity of the membrane liner at the point of seepage origin. Take care not to damage geosynthetics during uncovering operations.

Responsibility: USACE (or in its absence due to funding considerations, the property owner).

Vandalism

Report any vandalism, illegal dumping, or off road vehicle use to the local police authorities immediately. Concurrently, inform owner's security personnel of each occurrence (Northeastern Industrial Park Security Office/Front Gate telephone number is: 518- 861-5103). Repair damage from vandals to original condition. Refer to Specifications for materials and methods of construction.

5.5 RESPONSIBILITY: ANY INDIVIDUAL OR CONCERN ASSOCIATED WITH PROPERTY OWNER.STORMWATER MANAGEMENT SYSTEM

During site closure, erosion and sediment transport off-site was minimized by proper land grading, stockpiling of materials, and vegetative practices. Sediment transport off-site is minimized by the installation of silt barriers (e.g., silt fence and straw bales), proper stabilization of waterways, and stabilized construction entrances. Upon reaching final grade, the construction area was seeded and mulched to provide final stabilization of all disturbed areas.

The USACE (or in its absence due to funding considerations, the property owner) shall perform the monitoring, inspection, and maintenance of the stormwater management cover system. Care shall be taken to avoid damage to the site including, but not limited to, placement of signs, fencing, vegetation (including trees and shrubs), wells, stormwater structures, landfill cover systems, etc.

Appendix C contains a checklist and associated instructions for performing inspections of the stormwater management system (Form-2).

6.0 MAINTENANCE ACTIVITIES

The existing site perimeter fencing, including gates and signs, shall be inspected annually to ensure security. Any damage that is observed shall be recorded and repaired immediately by restoring or replacing the damaged materials.

In addition, all monitoring wells will be inspected annually. If there is any damage to the casings or well, this will be repaired.

Responsibility: USACE (or in its absence due to funding considerations, the property owner)

6.1 REPORTING

All groundwater data generated during the reporting periods will be sent to NYSDEC in digital format (EDD) in accordance to the NYSDEC database standard.

A letter report shall be generated within 90 days of completion of each monitoring event which will summarize the groundwater analytical results. Monitoring reports shall present a comparison of the latest groundwater conditions with the New York State groundwater quality regulations. Additionally, all current and historical data generated in association with this SMP shall be presented in graphical and/or tabular format to highlight any groundwater quality trends that may arise.

The annual certification report will be generated to summarize the results of the long-term monitoring Program and O&M activities (e.g.: mowing, erosion control, week control, repairs to fence) performed. The objective of the Annual Report will be to confirm that the conditions of the IC/ECs are being met. An IC/EC Certification From and inspection form have been developed for the site for the assessment of overall site conditions or IC/EC's conditions, such as monitoring well and fence conditions (see Appendix B and C). These completed forms will be included with each annual report. The first annual report shall be submitted 90 days following the completion of the annual groundwater sampling event and inspection.

Periodic Review Report

A Periodic Review Report (PRR) will be submitted every five years after the start of annual sampling (anticpated to begin April 2014), unless the frequency is changed in a subsequent PRR. The PRR will be prepared in accordance with NYSDEC DER-10 and submitted within 45 days of the end of each certification period. Groundwater sampling results will also incorporated into the PRR. The report will include:

- Identification, assessment and certification of all ECs/ICs required by the remedy for the Site;
- Results of the required annual Site inspections and severe condition inspections, if applicable;
- All applicable inspection forms and other records generated for the Site during the reporting period in electronic format;
- Data summary tables and graphical representations of contaminants of concern which include a listing of all compounds analyzed, along with the applicable standards, with all exceedances highlighted. These will include a presentation of past data as part of an evaluation of contaminant concentration trends;
- Results of all analyses, copies of all laboratory data sheets, and the required laboratory data deliverables for all samples collected during the reporting period will be submitted electronically in a NYSDEC-approved format;
- A Site evaluation, which includes the following:

- The compliance of the remedy with the requirements of the Site-specific Decision Document;
- Any new conclusions or observations regarding Site contamination based on inspections or data generated for the groundwater being monitored;
- Recommendations regarding any necessary changes to the remedy and/or SMP; and
- The overall performance and effectiveness of the remedy.

The PRR will be submitted, in electronic format, to the USACE-New York District, the site owner, NYSDEC Central Office and the NYSDOH.

6.2 NOTIFICATIONS

Notifications will be submitted by the property owner to the NYSDEC as needed for the following reasons:

- 60-day advance notice of any proposed changes in site use that are required under the terms of 6 NYCRR Part 375, and/or Environmental Conservation Law.
- Notice within 48-hours of any damage or defect to any engineering control that reduces or has the potential to reduce the effectiveness of an Engineering Control and likewise any action to be taken to mitigate the damage or defect.
- Verbal notice by noon of the following day of any emergency, such as a fire, flood, or earthquake that reduces or has the potential to reduce the effectiveness of Engineering Controls in place at the site, with written confirmation within 7 days that includes a summary of actions taken, or to be taken, and the potential impact to the environment and the public.
- Follow-up status reports on actions taken to respond to any emergency event requiring ongoing responsive action shall be submitted to the NYSDEC within 45 days and shall describe and document actions taken to restore the effectiveness of the ECs.
- Any change in the ownership of the site or the responsibility for implementing this SMP will include the following notifications:

  At least 30 days prior to the change, the NYSDEC will be notified in writing of the proposed change. This will include a certification that the prospective purchaser has been provided with a copy of the Decision Document and all approved work plans and reports, including this SMP. Within 15 days after the transfer of all or part of the site, the new owner's name, contact representative, and contact information will be confirmed in writing.

A summary of the responsibilities of the Owner and the Remedial Party is presented in Appendix F.

6.3 SITE CLOSEOUT

The remediation goals, as stated in the Decision Document for the AOC 1 Site, were as follows:

To eliminate to the extent practicable:

- Eliminate or minimize the human health risks posed by TCE, VC, 1,2-DCA, and total-1,2-DCE in groundwater within the landfill by satisfying the Class GA groundwater standards ARARs for these analytes. This remedial action objective will be satisfied by prohibiting potable use of groundwater in the vicinity of AOC 1 (the VOC ARARs will be satisfied with a groundwater use easement granted by the property owner; the easement is considered an institutional control), and supplemented with groundwater MNA (and monitoring of VOC concentrations). Metals (arsenic, vanadium, selenium and antimony) also pose an unacceptable risk in groundwater. The presence of these metals will be

addressed by the environmental easement prohibiting potable use of groundwater at AOC 1. Metals are not included as COCs for groundwater because the concentrations are not expected to be treated by MNA and therefore will not be monitored over time, as will be the case with VOCs;

- Although soils have not been completely characterized, the remedial action will eliminate the soil exposure pathway because the landfill cap and cover will prevent physical access to the affected soil;
- Mitigate the potential for future releases of contaminants in the landfill to groundwater. This remedial action objective will be satisfied with the landfill cap over the groundwater plume. If it is discovered that the landfill cap and soil cover systems has been damaged, the need to resume groundwater monitoring activities will be reevaluated, and,
- Mitigate the potential for movement and offsite migration of TCE, VC, 1,2-DCA, and total-1,2-DCE from the groundwater plume within the landfill. This remedial action objective will be satisfied with the landfill cap over the groundwater plume.

To analyze the effectiveness of the remediation, groundwater monitoring and inspections will be conducted as presented in this SMP. Per the DD for AOC 1, groundwater monitoring will continue until volatile COCs meet the NYSDEC Class GA standards, which are TCE (5 micrograms per liter (µg/l)), Total-1,2-DCE (5 µg/l) and VC (2 µg/l).

If it is determined that the criteria presented above has been met, utilizing NYSDEC approved statistical validation, USACE, (in coordination with NYSDEC and NYSDOH), will terminate monitoring the groundwater beneath the landfill cap/soil cover. USACE will notify the NYSDEC, NYSDOH and the Albany County Health Department, when and if, groundwater monitoring activities are terminated. Inspections of the landfill cap and soil cover will be performed by USACE (or in its absence due to funding considerations, the property owner) for the foreseeable future. If it is discovered that the landfill cap and soil cover systems has been damaged, the need to resume groundwater monitoring activities will be reevaluated.

7.0 REFERENCES

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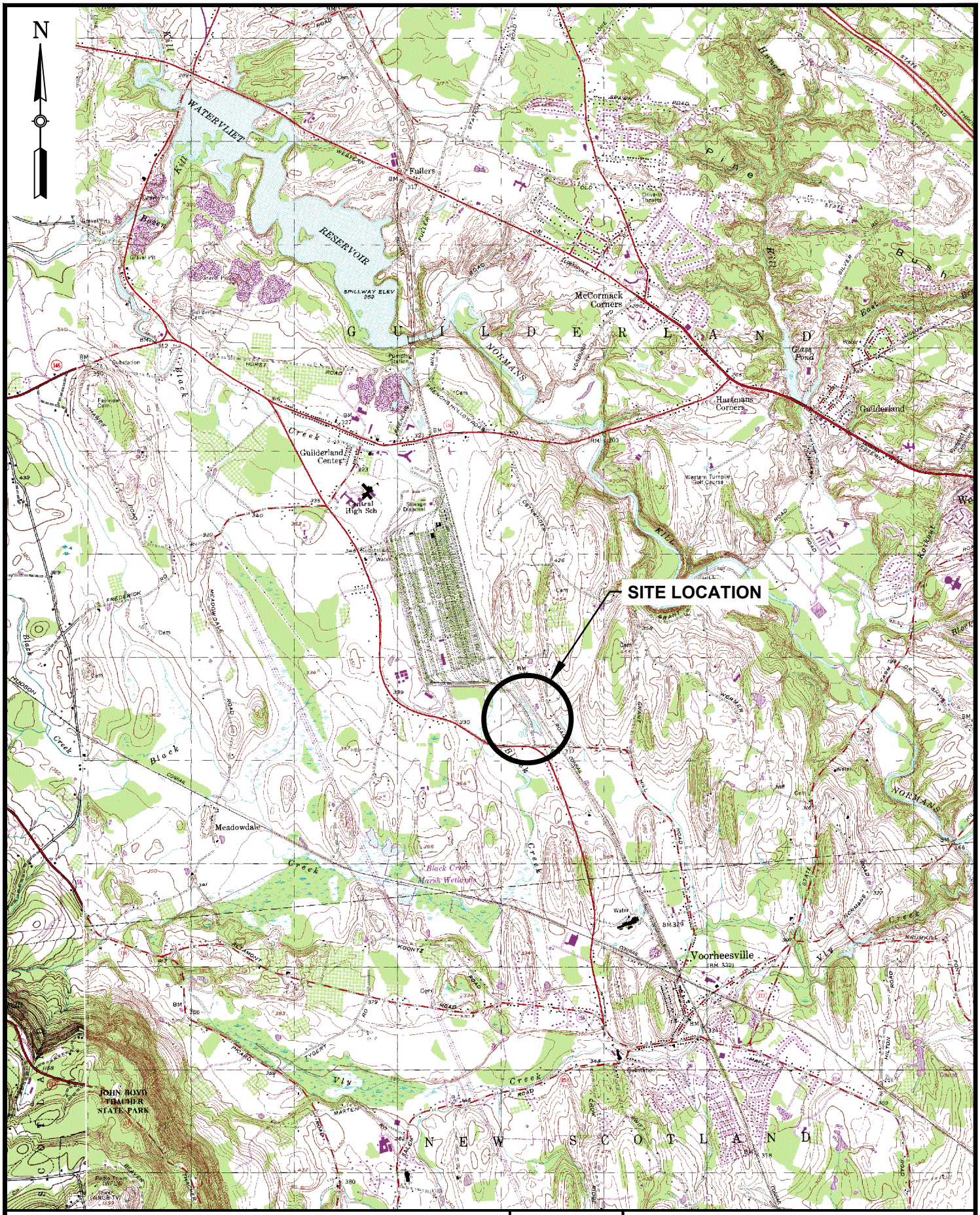
U.S. Army Toxic and Hazardous Materials Agency, 1980. "Historical Summary and Report of Findings at Schenectady General Depot, Guilderland, New York, July 1980.

FIGURES



DRAWN BY:	MVF
DESIGN BY:	MVF
CHECK BY:	LH
PROJ. NO:	650.12
SCALE:	NTS
DATE:	10-04-12

SITE LOCATION MAP

USACE - FORMER SAVDA SITE

GUILDERLAND — ALBANY COUNTY, NY

H2H Associates

FIGURE 1

AOC 1 US ARMY SOUTHERN LANDFILL

POND

AOC 7 TRIANGULAR DISPOSAL AREA

ENTRANCE AND GUARDHOUSE

TO U.S. ROUTE 20 & I-90

NYS ROUTE 146

CONRAIL MAINLINE

BLACK CREEK (AOC 8)

BLACK CREEK

7TH STREET

6TH STREET

5TH STREET

4TH STREET

3RD STREET

2ND STREET

1ST STREET

AVENUE A

AVENUE B

AVENUE C

AVENUE D

AVENUE E

WESTERN DITCH

TOWN OF GUILDERLAND WATER TOWER

GUILDERLAND CENTRAL SCHOOL

GUILDERLAND CENTER

SCHOOL ROAD

TO ALTAMONT & I-88

ALBANY COUNTY ROAD 201

US GOVERNMENT PROPERTY

DELAWARE & HUDSON RR

APPROXIMATE LIMITS OF RESIDENTIAL PROPERTY

TO NYS ROUTE 146

LEGEND

NORTHEASTERN INDUSTRIAL PARK BOUNDARY

FENCE LINE

BLACK CREEK

WETLANDS OR STANDING SURFACE WATER

APPROXIMATE AOC BOUNDARIES

N

SCALE IN FEET (APPROXIMATE)

0 400 800 1600

SOURCES:
USGS 7.5 MINUTE QUADRANGLE VOORHEESVILLE, N.Y. 1980 AND SITE PLAN PREPARED BY H & A OF N.Y. GEOTECHNICAL ENGINEERS & ENVIRONMENTAL CONSULTANTS COUNTY OF ALBANY, REAL PROPERTY TAX SERVICE, 1997

DRAWN BY:	MVF
DESIGN BY:	MVF
CHECK BY:	LH
PROJ. NO:	650.12
SCALE:	AS SHOWN
DATE:	10-04-12

SITE PLAN

USACE - FORMER SAVDA SITE

GUILDERLAND — ALBANY COUNTY, NY

H2H Associates

FIGURE 2

WELL I.D.	EASTING	NORTHING	GR. Elevation (feet AMSL)	MP Elevation (feet AMSL)	TOC Elevation (feet AMSL)
2BMW-9	640359.72	1401827.95	325.9	330.07	330.32
ACE-3	640050.67	1402036.90	321.6	324.24	324.43
ACE-4	640007.28	1402347.53	323.1	325.54	325.77
ACE-5	640494.65	1402133.51	321.0	322.72	323.17
ACE-6	641038.57	1400791.02	328.3	330.59	331.49
GW-3	640427.01	1401197.67	321.2	323.99	324.16
GW-11R	641037.65	1400806.10	328.3	329.81	332.23
GW-12	641507.22	1400557.37	323.5	325.11	326.71
GW-13	641010.73	1401331.93	320.8	323.53	323.77
GW-14	640794.77	1401668.21	320.4	323.74	323.85
MW 13-1	641294.22	1400330.11	326.8	329.53	329.73
MW-13-2	641073.34	1400500.12	325.7	328.17	328.46
MW-13-3	641398.46	1400687.05	322.0	324.01	324.94

NOTES:
1. VERIFIED NYSDEC V-19 WETLAND BOUNDARY BY STERLING ENVIRONMENTAL ENGINEERING, PC (2012).
2. 1FT CONTOURS SURVEYED BY H2H ASSOCIATES, LLC (OCT 2013)
3. 2FT CONTOURS FROM ALBANY COUNTY GIS DATA DERIVED FROM 2008 LIDAR DATA

HORIZONTAL DATUM: NAD83
VERTICAL DATUM: NAVD88

STONE RD
SURFACE WATER BOUNDARY
CANADIAN PACIFIC RAILWAY
GW-12
MW-13-3
MW-13-1
POND
ACE-6
MW-13-2
GW-13
GW-11R
DEPOT RD (ALBANY COUNTY ROAD 201)
GW-14
36" CULVERT TOP OF PIPE = 320.38
36" CULVERT TOP OF PIPE = 319.79
NYSDEC WETLAND V-19 MODIFIED BY STERLING, PC. 2012
FENCE
ACE-5
GW-3
2BMW-9
NYSDEC WETLAND V-19 MODIFIED BY STERLING, PC. 2012
NEIP RAIL SPUR
GATE
C&D LANDFILL
BLACK CREEK
ACE-3
ACE-4

LEGEND
- WETLAND BOUNDARY BY STERLING, PC. (2012)
- RAILROAD
- FENCE
- AREA OF CONCERN 1
- LIMIT OF LANDFILL CAP
- LIMIT OF LANDFILL SOIL COVER
- SITE BOUNDARY
- MONITORING WELL
- MONITORING WELL TO BE SAMPLED

N

SCALE IN FEET (APPROXIMATE)
0 100 200 400

DRAWN BY:	MVF
DESIGN BY:	MVF
CHECK BY:	LH
PROJ. NO:	650.80
SCALE:	AS SHOWN
DATE:	01-03-2013

MONITORING WELL LOCATION MAP
USACE - NORTHEAST INDUSTRIAL PARK AOC 1
GUILDERLAND ALBANY COUNTY, NY
H2H Associates
FIGURE 3

P:\2013\USACE-NAE\NEIP AOC 1&7 CapSoil Cover_D-B\CAD Drawings\Post Construction\01-03-14 monitoring well location map.dwg, 1/3/2014 4:57:28 PM, mvanflue

APPENDIX A

Monitoring Well Logs and Monitoring Well Construction Data

TABLE 1

Monitoring Well Survey and Construction Details
AOC 1 - Site Management Plan
Northeastern Industrial Park, Guilderland, New York

WELL I.D.	Hydrogeologic Unit	Boring Depth* (feet below ground surface)	Screen Length (in feet)	EASTING	NORTHING	GR. Elevation (feet AMSL)	MP Elevation (feet AMSL)	TOC Elevation (feet AMSL)
2BMW-9	Shallow (Till)	25	15	640359.70	1401828.14	325.9	330.07	330.32
ACE-3	Shallow (Glaciolacustrine)	15	10	640050.67	1402036.90	321.6	324.24	324.43
ACE-4	Shallow (Glaciolacustrine)	15	10	640007.28	1402347.53	323.1	325.54	325.77
ACE-5	Shallow (Till)	15	10	640494.65	1402133.51	321.0	322.72	323.17
ACE-6	Shallow (Till)	20	10	641038.60	1400791.15	328.3	330.59	331.49
GW-03	Shallow (Till)	25	5	640427.01	1401197.67	321.2	323.99	324.16
GW-11R	Bedrock (Upper 55')	142	Open Hole	641037.73	1400806.54	328.3	329.81	332.23
GW-12	Shallow (Till)	8	5	641507.22	1400557.37	323.5	325.11	326.71
GW-13	Shallow (Till)	8	5	641010.73	1401331.93	320.8	323.53	323.77
GW-14	Shallow (Till)	8	5	640794.77	1401668.21	320.4	323.74	323.85
MW-13-01 **	Shallow (Till)	10.3	5	641294.20	1400330.00	326.8	329.53	329.73
MW-13-02 **	Shallow (Till)	11	5	641010.73	1401331.93	325.7	328.17	328.46
MW-13-03 **	Shallow (Till)	13.6	10	640794.77	1401668.21	322.0	324.01	324.94

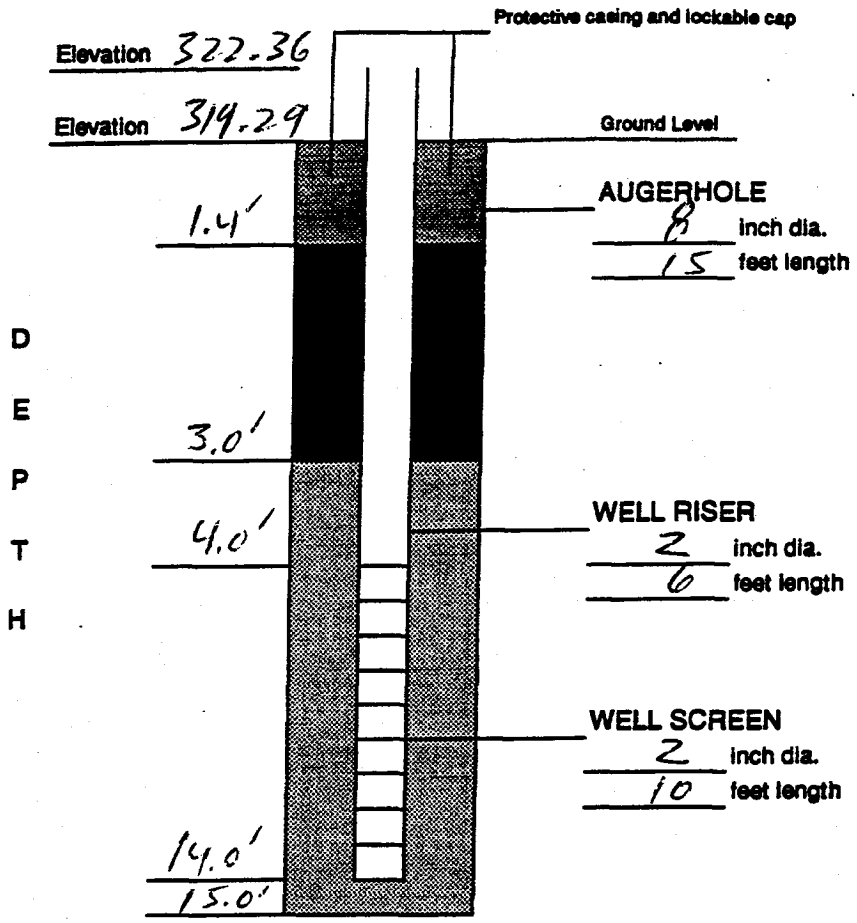
AMSL - Above Mean Sea Level
Survey data based on H2H topographic survey dated November 2012
* Based on original boring logs.
** Well drilled after remediation.

DRILLING SUMMARY

Geologist: DANIEL Sheldon
Drilling Company: Buffalo Drilling Co.
Driller: Joe Gardner
Date: 6/26/96

GEOLOGIC LOG

depth(ft.)	lithology
0-3.5	BRN re-graded silty sand and sandy silt some wood and gravel
3.5-5	Brown Silty Clay
5-9	Sandy silt and silty sand
9-15	Sandy Clay



Note: 3 Ft. by 3 Ft. concrete pad installed around the protective casing. Four guard posts installed around well pad.

WELL DESIGN

CASING MATERIAL	SCREEN MATERIAL	SEAL MATERIAL
Surface: Steel	Type: Sch. 40 PVC	Seal #1 Type: HYDRATED Bentonite Pellets
Monitor: Sch. 40 PVC	Slot Size: .010-inch	Setting: 1.4 - 3.0 Feet
		Seal #2 Type: NA
		Setting:

FILTER MATERIAL	ROCK CORING		LEGEND
Type: #00 Monie Sand	Cored Interval:	None	Cement/Bentonite Grout
	Core Diameter:	None	Bentonite Seal
Setting: 3.0 - 15.0 Feet	Reamed Diameter:	None	Silica Sandpack

Client: MPI / USACE	Project: Voorheesville Army Depot	Project No.: 35378.11
URS Consultants Inc.	Monitoring Well Constuction Details	Well Number: ACE-3

HTW DRILLING LOG

HOLE NO. ACE-3

1. COMPANY NAME: URS Consultants, Inc.	2. DRILLING SUBCONTRACTOR: Buffalo Drilling Company
SHEET 1 OF 3 SHEETS	
3. PROJECT: Former Voorheesville Army Depot - Southern Landfill	4. LOCATION: Guilderland, New York
5. NAME OF DRILLER: Joseph Gardner	6. MANUFACTURER'S DESIGNATION OF DRILL: CME-55
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: - 4 1/4-inch HSA - 2-inch Carbon Steel split-spoon Sampler	8. HOLE LOCATION
	9. SURFACE ELEVATION: 319.29 Feet AMSL
	10. DATE STARTED: 6/26/96 — 11. DATE COMPLETED: 6/26/96
12. OVERBURDEN THICKNESS: Not Determined	15. DEPTH GROUNDWATER ENCOUNTERED: ~5.0 feet below land surface (bls)
13. DEPTH DRILLED INTO ROCK: Not Applicable	16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: 4.19' (TOR) four days after drilling
14. TOTAL DEPTH OF HOLE: 15.0 feet	17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)

18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES
NONE			

20. SAMPLES FOR CHEMICAL ANALYSIS	VOC	METALS	OTHER (SPECIFY)	OTHER (SPECIFY)	OTHER (SPECIFY)	21. TOTAL CORE RECOVERY
NONE						%

22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR
Installed 2" PVC Monitoring Well		Screened 4.0-14.0 Ft.		David M. Keller

ELEV. a	DEPTH b	DESCRIPTION OF MATERIALS c	FIELD SCREENING RESULTS (ppm) Headspace/Sample	GEOTECH SAMPLE OR CORE BOX NO. e	ANALYTICAL SAMPLE NO. f	BLOW COUNTS g	REMARKS h
	1	Brown regraded silty SAND and sandy silt, some gravel and wood fragments	1.8 / 0.0	NONE	NONE	5 5 15 32	DRY
	2					36	
	3		0.0 / 0.0			27 16	
	4	Brown mottled silty clay. Medium stiff. (CL)	0.0 / 0.0			13 4 5	Slight Sulfur odor
	5						

PROJECT: Former Voorheesville Army Depot Southern Landfill Remedial Investigation — HOLE NO. ACE-3

HTW DRILLING LOG

HOLE NO. ACE-3

PROJECT: Former Veerheesville Army Depot - Southern Landfill

INSPECTOR: Daniel M. Sheldon

SHEET 2 OF 3 SHEETS

ELEV. a	DEPTH b	DESCRIPTION OF MATERIALS c	FIELD SCREENING RESULTS d	GEOTECH SAMPLE OR CORE BOX NO. e	ANALYTICAL SAMPLE NO. f	BLOW COUNTS g	REMARKS h
		Light brown SAND, Silt, Few silty SAND seams. Loose to Medium Dense (SM)	—			5	WET AT 5.0 Feet
						4	
	6		0.0			4	
						5	
	7		0.0			9	
						7	
	8	- Trace to some Clay				4	
			0.0			3	- WET
	9	GRAY SANDY CLAY (SC) Soft to Very Soft.	0.0	NONE	NONE	2	
						3	
	10						
	11		—			—	
	12						
	13		0.0			1	
			0.0			2	
	14						

HTW DRILLING LOG

HOLE NO. ACE-3

PROJECT Former Veerheesville Army Depot - Southern LANDFill

INSPECTOR DANIEL M. Sheldon

SHEET 3 OF 3 SHEETS

ELEV. a	DEPTH b	DESCRIPTION OF MATERIALS c	FIELD SCREENING RESULTS d	GEOTECH SAMPLE OR CORE BOX NO. e	ANALYTICAL SAMPLE NO. f	BLOW COUNTS g	REMARKS h
		GRAY Sandy Clay, AS ABOVE (SC)	—	NONE	NONE	1	
		↓				1	
	15	Boring Completed at 15.0 Feet. Installed 2" PVC Monitoring well. Well screened From 4-14 Ft.					

DRILLING SUMMARY

Geologist: DANIEL Sheldon

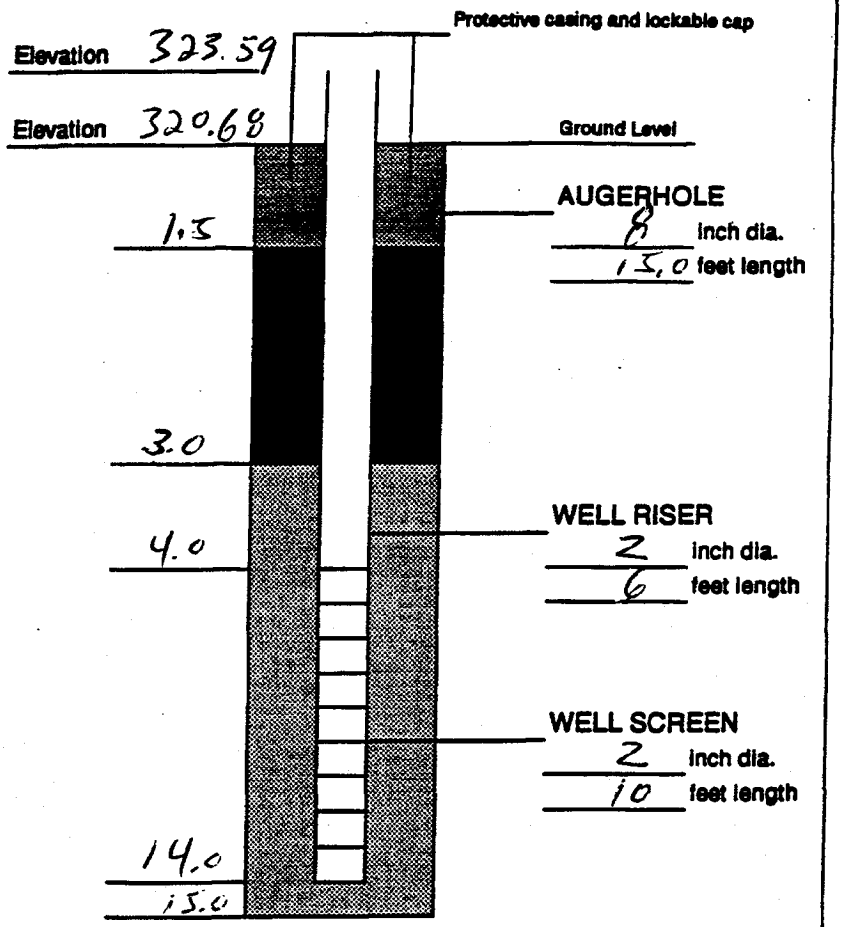
Drilling Company: Buffalo Drilling Co.

Driller: Joe Gardner

Date: 6/26/96

GEOLOGIC LOG

depth(ft.)	lithology
0 - 3	Fill; reginal -ed gray sandy silt and gravel
3 - 5	Brown clayey silt
5 - 10	Brn. sandy silt and silty sand
10 - 15	Gray clay w/ silty sand seams



NOTE: 3 Ft. by 3 Ft. concrete pad installed around the protective casing. Four guard posts installed around well pad.

WELL DESIGN

CASING MATERIAL	SCREEN MATERIAL	SEAL MATERIAL
Surface: Steel	Type: Sch. 40 PVC	Seal #1 Type: Hydrated Bentonite Pellets
Monitor: Sch. 40 PVC	Slot Size: .010-inch	Setting: 1.5 - 3.0 Feet
		Seal #2 Type: NA
		Setting:

FILTER MATERIAL	ROCK CORING		LEGEND
Type: #00 Morie Sand	Cored Interval:	None	Cement/Bentonite Grout
Setting: 3.0 - 15.0 Feet	Core Diameter:	None	Bentonite Seal
	Reamed Diameter:	None	Silica Sandpack

Client: MPI / USACE	Project: Voorheesville Army Depot	Project No.: 35378.11
URS Consultants Inc.	Monitoring Well Constuction Details	Well Number: ACE-4

HTW DRILLING LOG

HOLE NO. ACE-4

PROJECT: Former Veerhaeusville Army Depot - Southern LANDFILL

INSPECTOR: DANIEL M. Sheldon

SHEET 3 OF 3 SHEETS

ELEV. a	DEPTH b	DESCRIPTION OF MATERIALS c	FIELD SCREENING RESULTS d	GEOTECH SAMPLE OR CORE BOX NO. e	ANALYTICAL SAMPLE NO. f	BLOW COUNTS g	REMARKS h
		(Cont.) As ABOVE	———	NONE	NONE	1	
		↓				1	
	15	Boring Completed at 15.0 Feet. Installed 2" PVC monitoring well. Well screened from 4-14 Ft.					

DRILLING SUMMARY

Geologist: DANIEL Sheldon

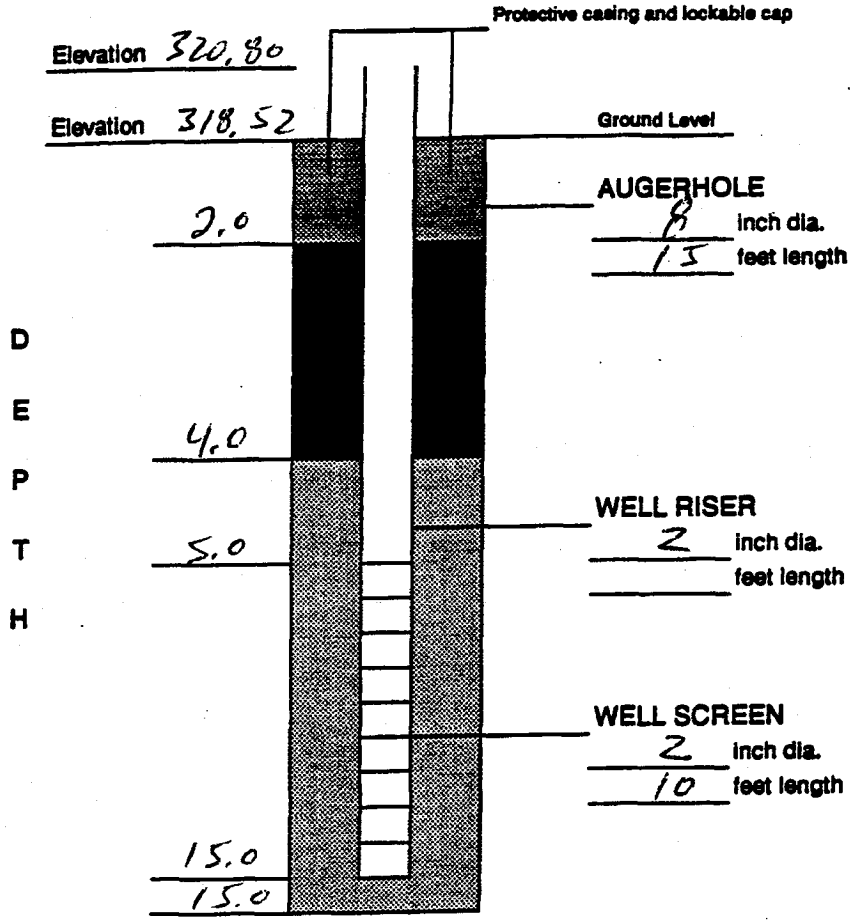
Drilling Company: Buffalo Drilling Co.

Driller: Joe Gardner

Date: 6/26/96

GEOLOGIC LOG

depth(ft.)	lithology
0-0.5	GRAVEL AND SILT
0.5-15	BROWN to GRAY SANDY SILT, SOME MEDIUM to COARSE GRAVEL (TILL)



NOTE: 3 Ft. by 3 Ft. concrete PAD installed Around the protective CASING. Four Guard posts installed AROUND well PAD.

WELL DESIGN

CASING MATERIAL

Surface: Steel

Monitor: Sch. 40 PVC

SCREEN MATERIAL

Type: Sch. 40 PVC

Slot Size: .010-inch

SEAL MATERIAL

Seal #1 Type: HYDRATED Bentonite Pellets

Setting: 2.0 - 4.0 Feet

Seal #2 Type:

Setting: NA

FILTER MATERIAL

Type: #00 Monie Sand

Setting: 4.0 - 15.0 Feet

ROCK CORING

Cored Interval: None

Core Diameter: None

Reamed Diameter: None

LEGEND

Cement/Bentonite Grout

Bentonite Seal

Silica Sandpack

Client: MPI / USACE

Project: Voorheesville ARMY DEPOT

Project No.: 35378.11

URS Consultants Inc.

Monitoring Well Constuction Details

Well Number: ACE-5

HTW DRILLING LOG

HOLE NO. ACE-5

1. COMPANY NAME: URS Consultants, Inc.	2. DRILLING SUBCONTRACTOR: Buffalo Drilling Company
SHEET 1 OF 3 SHEETS	
3. PROJECT: Former Voorheesville Army Depot - Southern Landfill	4. LOCATION: Guilderland, New York
5. NAME OF DRILLER: Joseph Gardner	6. MANUFACTURER'S DESIGNATION OF DRILL: CME-55
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: - 4¼-inch HSA; - 2-inch carbon steel split-spoon sampler	8. HOLE LOCATION: Northeast portion of landfill
	9. SURFACE ELEVATION: 318.52 Feet AMSL
	10. DATE STARTED: 6/26/96 — 11. DATE COMPLETED: 6/27/96
12. OVERBURDEN THICKNESS: Not Determined	15. DEPTH GROUNDWATER ENCOUNTERED: WET at ~8.0 Feet bls
13. DEPTH DRILLED INTO ROCK: Not Applicable	16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: 13.30 Ft. bls 14 hrs. After drilling
14. TOTAL DEPTH OF HOLE: 15.0 Feet	17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY): 2.75 Ft. (TOR) on 7/23/96

18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES
None			

20. SAMPLES FOR CHEMICAL ANALYSIS	VOC	METALS	OTHER (SPECIFY)	OTHER (SPECIFY)	OTHER (SPECIFY)	21. TOTAL CORE RECOVERY
None						%

22. DISPOSITION OF HOLE	BACKFILLED	X MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR
Installed 2" PVC Monitoring Well		Screened 5-15 Ft.		David M. Mellon

ELEV. a	DEPTH b	DESCRIPTION OF MATERIALS c	FIELD SCREENING RESULTS (ppm) Headspace/Sample	GEOTECH SAMPLE OR CORE BOX NO. e	ANALYTICAL SAMPLE NO. f	BLOW COUNTS g	REMARKS h
		Gravel AND Silt. Loose.				1	Moist-WET
		Brown Sandy Silt, some	0.0			5	
	1	medium to coarse gravel.				7	
		Few F-C Sand lamings.	0.0			15	
		TRACE Clay. Dense					
	2	to Very Dense (Till)					
		SM-GM		None	None	17	
			0.0			22	DAY
	3						
			0.0			27	
						35	
	4	Color change					
		to gray at	0.0			17	
		4.0 Feet					
			0.0			18	
	5						

HTW DRILLING LOG

HOLE NO. ACE-4

1. COMPANY NAME: URS Consultants, Inc.	2. DRILLING SUBCONTRACTOR: Buffalo Drilling Company
SHEET 1 OF 3 SHEETS	
3. PROJECT: Former Voorheesville Army Depot - Southern Landfill	4. LOCATION: Guilderland, New York
5. NAME OF DRILLER: Joesph Gardner	6. MANUFACTURER'S DESIGNATION OF DRILL: CME-55
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: - 4 1/4-inch HSA - 2-inch carbon steel split-spoon sampler	8. HOLE LOCATION
	9. SURFACE ELEVATION: 320.68 Feet AMSL
	10. DATE STARTED: 6/26/96 — 11. DATE COMPLETED: 6/26/96
12. OVERBURDEN THICKNESS: Not Determined	15. DEPTH GROUNDWATER ENCOUNTERED: ~ 5.0 Ft. below land surface (bls)
13. DEPTH DRILLED INTO ROCK: Not Applicable	16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: 7.41 Ft. (TOA) Four days After drilling
14. TOTAL DEPTH OF HOLE: 15.0 Feet	17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)

18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES
NONE			

20. SAMPLES FOR CHEMICAL ANALYSIS	VOC	METALS	OTHER (SPECIFY)	OTHER (SPECIFY)	OTHER (SPECIFY)	21. TOTAL CORE RECOVERY
NONE						%

22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR
Installed 2" PVC Monitoring Well		Screened 4.0-14.0 Ft.		David M. Mella

ELEV. a	DEPTH b	DESCRIPTION OF MATERIALS c	FIELD SCREENING RESULTS (ppm) Headspace / Sample d	GEOTECH SAMPLE OR CORE BOX NO. e	ANALYTICAL SAMPLE NO. f	BLOW COUNTS g	REMARKS h
	1	Fill; regraded dark gray sandy silt and gravel. Loose to medium dense	0.0 / 0.0	NONE	NONE	4 5 7 7	DRY
	2					7 10	
	3	Brown mottled clayey silt, some fine sand. Medium stiff (ML)	0.0 / 0.0			9 10	
	4		0.0 / 0.0			3 4	
	5						

PROJECT: Former Voorheesville Army Depot Southern Landfill Remedial Investigation — HOLE NO. ACE-4

HTW DRILLING LOG

HOLE NO. ACE-4

PROJECT Former Voorheesville Army Depot - Southern Landfill

INSPECTOR Daniel M. Sheldon

SHEET 2 OF 3 SHEETS

ELEV. a	DEPTH b	DESCRIPTION OF MATERIALS c	FIELD SCREENING RESULTS d	GEOTECH SAMPLE OR CORE BOX NO. e	ANALYTICAL SAMPLE NO. f	BLOW COUNTS g	REMARKS h
	6	Brown sandy silt with some F-C silty sand partings and seams (ML/SM)	—	None	None	3 7 5 5 6 7	WET at 5.0'
	7		0.0 / 0.0				
	8					7 7	
	9		0.0 / 0.0			4 3	
	10	GRAY CLAY, some silty sand seams (CL-SC)					CLAY/cy drill cuttings at 10 Ft.
	11		—			—	
	12						
	13		0.0 / 0.0			1 1	
	14						

HTW DRILLING LOG

HOLE NO. ACE-5

PROJECT Former Voorheesville Army Depot - Southern LANDFILL

INSPECTOR DANIEL M. Sheldon

SHEET 2 OF 3 SHEETS

ELEV. a	DEPTH b	DESCRIPTION OF MATERIALS c	FIELD SCREENING RESULTS d	GEOTECH SAMPLE OR CORE BOX NO. e	ANALYTICAL SAMPLE NO. f	BLOW COUNTS g	REMARKS h
		As ABOVE				21	Moist to
			—				Very Moist
						23	
	6						Starting 5.5
						21	to 6.0 Feet
			0.0				
			/			24	
	7						
			0.0			31	
						33	
	8						WET
						17	
			0.0				
			/			15	
	9						
			0.0	NONE	NONE	22	
						30	
	10						
	11						
			—			—	
	12						
	13						
			0.0			9	Slightly
			/				
			0.0			17	Moist
	14						

HTW DRILLING LOG

HOLE NO. ACE-5

PROJECT: Former Voorheesville Army Depot - Southern Landfill

INSPECTOR: Daniel M. Sheldon

SHEET OF SHEETS

ELEV. a	DEPTH b	DESCRIPTION OF MATERIALS c	FIELD SCREENING RESULTS d	GEOTECH SAMPLE OR CORE BOX NO. e	ANALYTICAL SAMPLE NO. f	BLOW COUNTS g	REMARKS h
		As Above ↓	—	None	None	29 31	Moist F-C Sand Partings 14.5 - 15.0 Feet
	15	Boring Completed at 15.0 Ft. Dry upon Completion. Installed 2" PVC monitoring well screened from 5-15 Ft.					

DRILLING SUMMARY

Geologist: Daniel Shelton

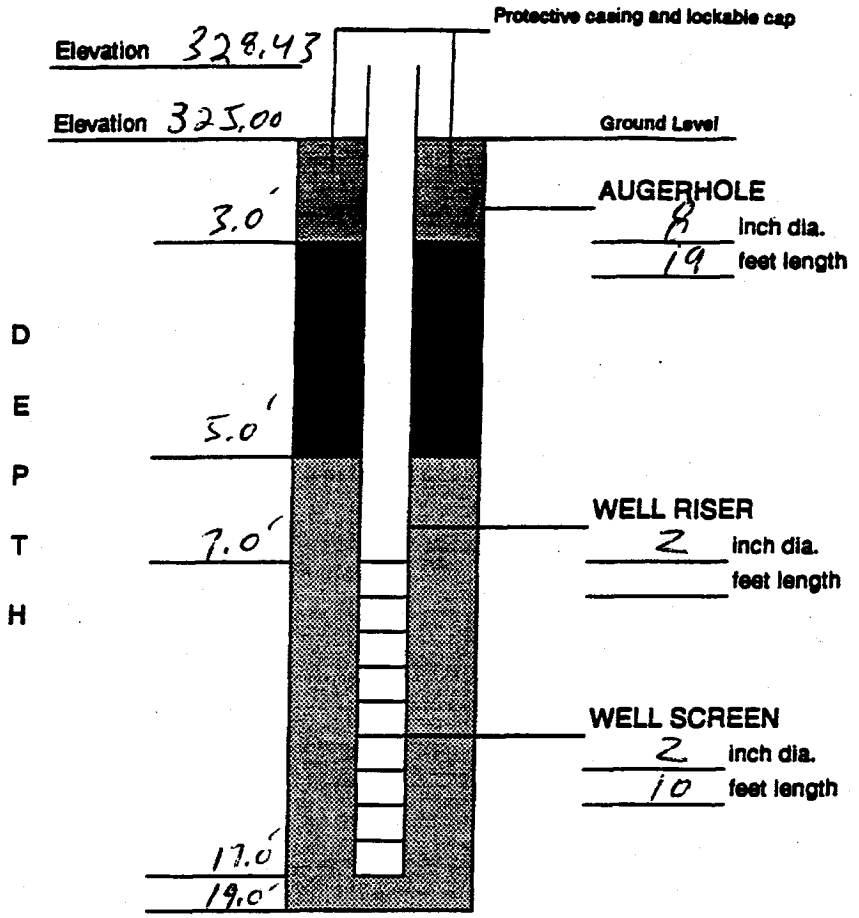
Drilling Company: Buffalo Drilling Co.

Driller: Joe Gardner

Date: 6/25/96

GEOLOGIC LOG

depth(ft.)	lithology
0-5	Fill; reworked sandy silt, with gravel.
5-20	Brn to dark gray sandy silt, some gravel (Till)



NOTE: 3 Ft. by 3 Ft. concrete pad installed around the protective casing. Four Guard posts installed around well pad.

WELL DESIGN

CASING MATERIAL	SCREEN MATERIAL	SEAL MATERIAL
Surface: Steel	Type: Sch. 40 PVC	Seal #1 Type: Hydrated Bentonite Pellets
Monitor: Sch. 40 PVC	Slot Size: .010-inch	Setting: 3.0-5.0 Feet
		Seal #2 Type: NA
		Setting:

FILTER MATERIAL	ROCK CORING		LEGEND
Type: #00 Morie Sand	Cored Interval:	None	Cement/Bentonite Grout
Setting: 5.0-19.0 Feet	Core Diameter:	None	Bentonite Seal
	Reamed Diameter:	None	Silica Sandpack

Client: MPI/USACE	Project: Voorheesville Army Depot	Project No.: 35378.11
URS Consultants Inc.	Monitoring Well Constuction Details	Well Number: ACE-6

HTW DRILLING LOG

HOLE NO. ACE-6

1. COMPANY NAME: URS Consultants, Inc.	2. DRILLING SUBCONTRACTOR: Buffalo Drilling Company
SHEET 1 OF 3 SHEETS	
3. PROJECT: Former Voorheesville Army Depot - Southern Landfill	4. LOCATION: Guilderland, New York
5. NAME OF DRILLER: Joseph Gardner	6. MANUFACTURER'S DESIGNATION OF DRILL: CME-55
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: - 4 1/4-inch HSA - 2-inch carbon steel split-spoon sampler	8. HOLE LOCATION: Adjacent to existing well AMW-11
	9. SURFACE ELEVATION: 325.00 Feet AMSL
	10. DATE STARTED: 6/25/96 — 11. DATE COMPLETED: 6/25/96
12. OVERBURDEN THICKNESS: Not Determined	15. DEPTH GROUNDWATER ENCOUNTERED: Not encountered
13. DEPTH DRILLED INTO ROCK: Not Applicable	16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: —
14. TOTAL DEPTH OF HOLE: 20.0 Feet	17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY): 8.15 Ft. (TOR) on 7/23/96

18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES
None	—	—	—

20. SAMPLES FOR CHEMICAL ANALYSIS	VOC	METALS	OTHER (SPECIFY)	OTHER (SPECIFY)	OTHER (SPECIFY)	21. TOTAL CORE RECOVERY
None	—	—	—	—	—	— %

22. DISPOSITION OF HOLE	BACKFILLED	X MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR
Installed 2" PVC Monitoring Well	—	Screened From 7-17 ft.	—	David M. Mella

ELEV. a	DEPTH b	DESCRIPTION OF MATERIALS c	FIELD SCREENING RESULTS (ppm) Hdsp./Sample	GEOTECH SAMPLE OR CORE BOX NO. e	ANALYTICAL SAMPLE NO. f	BLOW COUNTS g	REMARKS h
	1	Fill; regraded brown sandy silt and silty clay, some concrete, gravel and wood fragments. MEDIUM DENSE.	0.0 / 0.0			4 11 8 10	
	2					9 7	
	3		0.0 / 0.0			13 14	
	4		0.0 / 0.0			10 18	
	5						

HTW DRILLING LOG

HOLE NO. ACE-6

PROJECT: Former Veerheesville Army Depot - Southern Landfill

INSPECTOR: Daniel M. Sheldon

SHEET 2 OF 3 SHEETS

ELEV. a	DEPTH b	DESCRIPTION OF MATERIALS c	FIELD SCREENING RESULTS d	GEOTECH SAMPLE OR CORE BOX NO. e	ANALYTICAL SAMPLE NO. f	BLOW COUNTS g	REMARKS h
	6	Dense to Very Dense brown sandy silt, some gravel of varying lithologies (Till) SM-GM	0.0 / 0.0	NONE	NONE	24 / 29	
	7		0.0 / 0.0			69 / 67 / 77/3"	• Dry
	8						Augered to 10 Ft. for Next sample. Too hard.
	9		—			—	
	10					31	-Slightly Moist
	11		0.0 / 0.0			50/5"	Very hard Augering 11-14 Feet, 15-16.5 Feet.
	12						
	13		—			—	
	14						

HTW DRILLING LOG

HOLE NO. ACE-6

PROJECT: Former Voorheesville Army Depot - Southern LANDFILL

INSPECTOR: DANIEL M. Sheldon

SHEET 3 OF 3 SHEETS

ELEV. a	DEPTH b	DESCRIPTION OF MATERIALS c	FIELD SCREENING RESULTS d	GEOTECH SAMPLE OR CORE BOX NO. e	ANALYTICAL SAMPLE NO. f	BLOW COUNTS g	REMARKS h
		As Above, color change to dark gray at 15 Ft.	—	NONE	NONE	—	
	15		0.0			30	
	16		0.0			50/4"	DRY
	17		—			—	
	18		0.0			24	
	19		0.0			46	Dry to Slightly Moist
						60	
	20					50/5"	
		Boring completed at 20.0 Feet. Auger refusal at 19.5 Ft. Installed 2" PVC Well screened from 7-17 Feet. Well dry upon completion.					

OHM REMEDIATION SERVICES CORP.

PROJECT NUMBER 9285	BORE HOLE NO. 2BMW-9
CLIENT Schenectady 1	LOCATION Guilderland, New York
DRILLING CONTRACTOR OHM	DRILLING EQUIPMENT Mobile Drill B-53
HYDROGEOLOGIST Tokes Adesida	DRILLER Carlos Puente
DATE START / TIME 10/4/90 8:30	DATE FINISH / TIME 10/4/90 12:10
SURFACE ELEVATION 323.39	TOTAL DEPTH 25′
WELL CASING SCH 40	SCREEN TYPE SCH 40
LENGTH 15	SLOT 20

GROUNDWATER					CASING	CORE	SAMPLER	TUBE
DATE	TIME	DEPTH	WEATHER	TYPE	PVC		SS	
10/5/90	12:15	23.0′	SUNNY	DIAMETER	4"			
REMARKS				HAMMER WEIGHT			140 lb.	
				FALL			30′	

DEPTH	SAMPLE NO.	BLOW COUNT PER 6"	RECOVERY	BORE HOLE LOG: LITHOLOGIC DESCRIPTION	REMARKS	GRAPHIC LOG
1	S-1	6, 6, 7, 8	12"	0-2.0′: Loose dark gray silty sand, occasional medium-coarse gravel, numerous roots	12" Recovery PID=ND	Of SCH 40 PVC casing
2	S-2	8, 7, 8, 8	NR	2.0′-4.0′: Loose dark gray silty sand, occasional medium-coarse gravel, numerous roots		
4	S-3	2, 2, 2, 2	12"	4.0′-6.0′: Dark black-brown clayey silt with medium-coarse SAND becoming dark gray clay some medium-coarse sand layer, stain occasional decomposed roots.	Moist - wet at 5.0′ PID=ND	
6	S-5	5,10, 13,17	10"	6.0′-8.0′: Gray silty clay, trace fine-medium sand, few medium-coarse quartz gravel	Slightly wet PID=ND	
8	S-5	19,27, 37,50	10"	8.0′-10.0′: Gray silty clay, trace fine-medium sand, few medium-coarse quartz gravel, becoming light compact silty sand with gravel mottled	Slightly wet Auger down to 15.0′	15′ of .020 slot SCH 40 PVC

OHM REMEDIATION SERVICES CORP.

PROJECT NUMBER 9285

BORE HOLE NO. 2BMW-9

CLIENT Schenectady 1

LOCATION Guilderland, New York

REMARKS

DEPTH	SAMPLE NO.	BLOW COUNT PER 6"	RECOVERY	BORE HOLE LOG: LITHOLOGIC DESCRIPTION	BORE HOLE LOG: REMARKS	GRAPHIC LOG
15		70/3"	<1	15.0'-17.0': Coarse quartz gravel	Continue augering, formation very tight.	
20		26,37 50/2"	6"	20.0'-22.0': Brown-black silty sand with very gravel becoming gray hard very-fine sandy silt	Moist at 20.5' At 24.0' drilling very hard PID=0.4 ppm	

OHM REMEDIATION SERVICES CORP.

PROJECT NUMBER 9285

BORE HOLE NO. 2BMW-9

CLIENT Schenectady 1

LOCATION Guilderland, New York

REMARKS

DEPTH	SAMPLE NO.	BLOW COUNT PER 6"	RECOVERY	BORE HOLE LOG: LITHOLOGIC DESCRIPTION	BORE HOLE LOG: REMARKS	GRAPHIC LOG
24		40, 100/3"	6"	24.0'-26.0': Dark gray very stiff silty gravel	PID in augers= 100 ppm No water in hole. Decided to set well with sand pack and wait to see any recovery into the well. Set PVC screen 7'-22' PVC casing 7.0' to surface with 3.0' stick up. Sand pack from bottom up to 5'. Allow well to recover. Move to another location to drill 2BMW-10. 10/4/90 3:30 8" of water inside PVC decided to complete well with the bentonite seal from 3'-5' Allow to set for 1 hour then cement-bentonite grout to the surface.	
25						
26						
27						
28						
29						
30						
31						
32						
33						
34						
35						

OHM REMEDIATION SERVICES CORP.

PROJECT NUMBER 9285	BORE HOLE NO. AMW-11
CLIENT Schenectady 1	LOCATION Guilderland, New York
DRILLING CONTRACTOR 1)OHM 2)ECD & Boring, Inc.	DRILLING EQUIPMENT 1)Mobile Drill B-53 2)CME 75
HYDROGEOLOGIST Aaron A. Essel	DRILLER 1)Carlos Puente 2)Larry Fredericks
DATE START / TIME 10/6/90 10:20 / DATE FINISH / TIME 10/11/90 1300	SURFACE ELEVATION / TOTAL DEPTH 75'
WELL CASING / SCREEN TYPE	LENGTH / SLOT

GROUNDWATER					CASING	CORE	SAMPLER	TUBE
DATE	TIME	DEPTH	WEATHER	TYPE	SS	DTCB	SS	
10/6/90	1300	13'	Sunny	DIAMETER	4"	2 1/8"		
REMARKS Drilling activities was performed in Level "C". Vegetable oil Crisco was used to lubricate auger joints.				HAMMER WEIGHT		N/A	140 lb	
				FALL		N/A	30'	

DEPTH	SAMPLE NO.	BLOW COUNT PER 6"	RECOVERY	BORE HOLE LOG: LITHOLOGIC DESCRIPTION	BORE HOLE LOG: REMARKS	GRAPHIC LOG
		5		Dark brown fine-medium sand, some silt, traces of wood chips and gravels (dry, dense)	PID-ND SM	
		17				
1	S-1	17	6"			
		21				
2				Dark brown, medium-coarse sand, some gravels, trace of silt (dry, dense)	PID-ND SC	
		21				
		24				
3	S-2	24	4"			
		30				
4				Gray to brown fine-medium sand, some silt and gravels (dry, very dense)	PID-ND SC	4" SS casing and 3" NW casing
		24				
		27				
5	S-3	29	5"			
		34				
6				Dark brown fine-medium sand, some silt and gravels (dry, very dense)	PID-0.6 ppm Odor SC	
		20				
		23				
7	S-4	30	7"			
		45				
8					PID-0.5 ppm SC Water was added to help the drilling activities	
		40				
		20				
9	S-5	30	8"	Same lithology (dry, dense)		
		38				
10						

OBM REMEDIATION SERVICES CORP.

PROJECT NUMBER 9285

BORE HOLE NO. AMW-11

CLIENT Schenectady 1

LOCATION Guilderland, NY

REMARKS

DEPTH	SAMPLE NO.	BLOW COUNT PER 6"	RECOVERY	BORE HOLE LOG: LITHOLOGIC DESCRIPTION	BORE HOLE LOG: REMARKS	GRAPHIC LOG
11	S-6					
12						
13		20	18"	Gray fine-medium sand, some silt and clay, traces of fine to medium gravels (moist, dense)	PID-3.0 ppm Odor SC	
		25				
14	S-6	15			PID-55 ppm Sustain reading in the borehole. Air Monitoring-0.2 ppm	
		20				
15		21	4"	Gray fine-medium sand, some silt and clay, traces of gravels, sandstone and shale fragments (wet, very dense)		
	S-7	70/6				
16						
17						
18						
19						
20	S-8	110/0"	NR		Augered down 8" and installed 4" diameter stainless steel casing Grout with Portland cement/ bentonite mix and allowed to set for twenty-four hours.	3" NW casing
21				Start coring at 21.5 feet		
22				Time elasped first foot core run - 3.5 min. Time elasped 2nd foot core run - 2 min. Time elasped 3rd foot core run - 2 min. Time elasped 4th foot core run - 2 1/2 min. Time elasped 5th foot core run - 2 1/2 min.		
23				Core recovery consists of 6.5 inches of sand-		

OHM REMEDIATION SERVICES CORP.

PROJECT NUMBER 9285

BORE HOLE NO. AMW-11

CLIENT Schenectady 1

LOCATION Guilderland, NY

REMARKS

DEPTH	SAMPLE NO.	BLOW COUNT PER 6"	RECOVERY	BORE HOLE LOG: LITHOLOGIC DESCRIPTION	BORE HOLE LOG: REMARKS	GRAPHIC LOG
24				stone, shale, siltstone fragments and dark brown glacial till		
25						
26						
27						
28						
29				Glacial Till		
30						3" NW Casing
31						
32						
33						
34						
35						

OHM REMEDIATION SERVICES CORP.

PROJECT NUMBER 9285

BORE HOLE NO. AMW-11

CLIENT Schenectady 1

LOCATION Guilderland, NY

REMARKS

DEPTH	SAMPLE NO.	BLOW COUNT PER 6"	RECOVERY	BORE HOLE LOG		GRAPHIC LOG
				LITHOLOGIC DESCRIPTION	REMARKS	
36						
37				Start coring at 38.0 feet Time elasped first foot core run - 5 min. Time elasped 2nd foot core run - 2 1/2 min. Time elasped 3rd foot core run - 2 min. Time elasped 4th foot core run - 2 min. Time elasped 5th foot core run - 2 1/2 min. Top of core recovery consisted of 6" sandstone, shale, siltstone fragments and dark gray glacial till	OHM installed NW casing - 38' Core: 21.5'-26.5' 38.0'-43.0' East Coast Drilling Incorporated resumed the drilling activities 10/10/90 from 38'. The process involved installation of NW casing and coring at 68".	
38						
39						
40						
41						3"NW Casing
42						
43						
44						
45						
46				Glacial Till		
47						

OHM REMEDIATION SERVICES CORP.

PROJECT NUMBER 9285

BORE HOLE NO. AMW-11

CLIENT Schenectady 1

LOCATION Guilderland, NY

REMARKS

DEPTH	SAMPLE NO.	BLOW COUNT PER 6"	RECOVERY	BORE HOLE LOG		GRAPHIC LOG
				LITHOLOGIC DESCRIPTION	REMARKS	
48						
49						
50						
51						
52						3" NW Casing
53				Glacial Till		
54						
55						
56						
57						
58					Floating product on the drilling water.	
59						

OBM REMEDIATION SERVICES CORP.

PROJECT NUMBER 9285

BORE HOLE NO. AMW-11

CLIENT Schenectady 1

LOCATION Guilderland, NY

REMARKS

DEPTH	SAMPLE NO.	BLOW COUNT PER 6"	RECOVERY	BORE HOLE LOG: LITHOLOGIC DESCRIPTION	BORE HOLE LOG: REMARKS	GRAPHIC LOG
60				Glacial Till		3" NW Casing
61						
62						
63						
64						
65						
66						
67				Start coring at 68' Time elasped 1st foot core run - 2 min. Time elasped 2nd foot core run - 2 1/2 min. Time elasped 3rd foot core run - 2 min.		
68				Time elasped 4th foot core run - 2 1/2 min. Time elasped 5th foot core run - 2 min. Core recovery consisted of dark gray shale. ROD - 97% Rock quality was excellent	Bottom of NW casing at 68' Bottom of bore-hole - 75'	
69						
70						
71						
72						

PARSONS

DRILLING RECORD

Contractor: American Auger
Driller: Rocky Baye
Inspector: Scott Dillman
Rig Type: Ingersol Rand

PROJECT NAME: Schenectady Depot AOC-1
PROJECT NUMBER: 736741.03005

BORING/WELL NO. GW-11R Sheet 1 of 3

Location Description: Located in AOC1 on the west side of the pond.

Location Plan

See Site Plan

GROUNDWATER OBSERVATIONS

Water Level				
Date				
Time				
Meas. From				

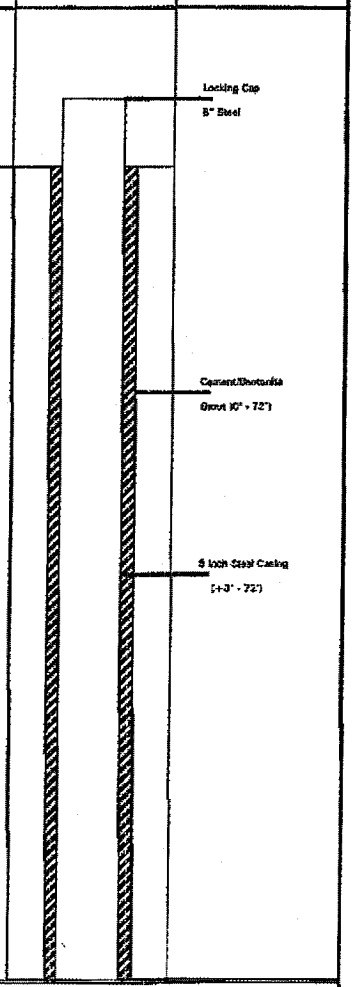
Weather: Day to Day

Date/Time Start: July 10th, 2000 at 10:00 a.m.

Date/Time Finish: June 11th, 2000 at 6:00 p.m.

Sample Depth	Sample I.D.	SPT	% Rec.	PID (ppm)	FIELD IDENTIFICATION OF MATERIAL
+9					
+6					
+3					
0					
		MR			
3		MR			
		MR		0	
6		MR			
		MR			
9		MR			
		MR			Drilled using a Mud Rotary technique through the overburden.
12		MR			According to soil borings in the area, the overburden is silty till.
		MR			
15		MR		0	
		MR			
18		MR			
		MR			
21		MR			
		MR			
24		MR			
		MR		0	
27		MR			
		MR			
30		MR			
		MR			
33		MR			
		MR		0	
36		MR			
		MR			
39		MR			
		MR			
42		MR			
		MR			
45		MR		0.1	
		MR			
48		MR			
		MR			
51		MR			
		MR			
54		MR			

SCHEMATIC



COMMENTS

SAMPLING METHOD
SS = SPLIT SPOON
A = AUGER CUTTINGS
C = CORED

COMMENTS:
MR = Mud Rotary Drilling
WR = Wet Rotary Drilling

Contractor: American Auger Driller: Rocky Baye Inspector: Scott Dillman Rig Type: Ingersol Rand	**PARSONS** **DRILLING RECORD**		**BORING/ WELL NO.** GW-11R Sheet 2 of 3
	PROJECT NAME: Schenectady Depot AOC-1 **PROJECT NUMBER:** 736741.03005		**Location Description:** Located in AOC1 on the west side of the pond.
GROUNDWATER OBSERVATIONS Water Level Date Time Meas. From	**Weather:** Day to Day **Date/Time Start:** July 10th, 2000 at 10:00 a.m. **Date/Time Finish:** June 11th, 2000 at 6:00 p.m.		**Location Plan** N See Site Plan

Sample Depth	Sample I.D.	SPT	% Rec.	PID (ppm)	FIELD IDENTIFICATION OF MATERIAL	SCHEMATIC	COMMENTS
		MR					
57		MR			Difficult identifying overburden due to the drilling technique.		Cement/Bentonite Grout (0' - 72')
		MR					
60		MR					
		MR					
63		MR					
		MR					
66		MR					
		MR			Top of bedrock at 67 feet.		
69		MR			Dark gray to black Shale, angular chips.		8 inch Steel Casing (+3' - 72')
		MR					
72		WR			Set casing at 72 feet in competent bedrock.		
		WR					
75		WR					
		WR					
78		WR					
		WR					
81		WR					
		WR					
84		WR					
		WR					
87		WR					
		WR					
90		WR					6 inch open hole in competent bedrock (72' - 142')
		WR					
93		WR					
		WR					
96		WR					
		WR					
99		WR					
		WR					
102		WR					
		WR					
105		WR					
		WR					
108		WR					
		WR					
111		WR					
		WR					
114		WR					
		WR					
117		WR					
		WR					

SAMPLING METHOD
SS = SPLIT SPOON
A = AUGER CUTTINGS
C = CORED

COMMENTS:
MR = Mud Rotary Drilling
WR = Wet Rotary Drilling

PARSONS
DRILLING RECORD

Contractor:	American Auger
Driller:	Rocky Baye
Inspector:	Scott Dillman
Rig Type:	Ingersol Rand

PROJECT NAME: Schenectady Depot AOC-1
PROJECT NUMBER: 736741.03005

BORING/WELL NO. GW-11R Sheet 3 of 3

Location Description: Located in AOC1 on the west side of the pond.

Location Plan

See Site Plan

Weather: Day to Day

Date/Time Start: July 10th, 2000 at 10:00 a.m.

Date/Time Finish: June 11th, 2000 at 6:00 p.m.

GROUNDWATER OBSERVATIONS

Water Level				
Date				
Time				
Meas. From				

Sample Depth	Sample I.D.	SPT	% Rec.	PID (ppm)	FIELD IDENTIFICATION OF MATERIAL	SCHEMATIC	COMMENTS
120		WR			Competent Bedrock.		8 inch open hole in competent bedrock (72' - 142')
		WR					
123		WR					
		WR					
126		WR					
		WR					
129		WR					
		WR					
132		WR					
		WR					
135		WR					
		WR					
138		WR					
		WR					
141		WR					
		WR					
144					Boring terminated at 142 feet.		
147							
150							
153							
156							
159							
162							
165							
168							
171							
174							
177							
180							
183							

SAMPLING METHOD
SS = SPLIT SPOON
A = AUGER CUTTINGS
C = CORED

COMMENTS:
MR = Mud Rotary Drilling
WR = Wet Rotary Drilling

PARSONS
DRILLING RECORD

BORING/ WELL NO GW-12 | Sheet 1 of 1

Contractor: NorthStar Drilling, Inc.
Driller: Scott Breeds
Inspector: Scott Dillman
Rig Type: ATV-CME-45B

PROJECT NAME: AOC-1, Schenectandy Army Depot
PROJECT NUMBER: 743440.00000

Location Description: See site plan

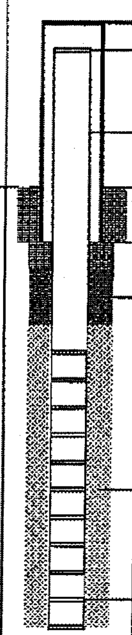
Location Plan
See site plan

Weather: Sunny, High 50's
Date/Time Start: November 23, 2004
Date/Time Finish: November 23, 2004

GROUNDWATER OBSERVATIONS				
Water Level	Dry			
Date	12/07/04			
Time	-			
Meas. From	TOC			

Sample Depth	Sample I.D.	SPT	Rec. %	PID (ppm)	FIELD IDENTIFICATION OF MATERIAL
0					
		1	75	1	0'-2": Soft, tan, Silt, some clay, vegetation thin, wet, lots of gravel and
1		3			cobbles on ground, native material.
		5			2"-2': Dark gray, Silt, trace sand, little coarse sand to fine gravel, little to trace clay,
2		9			stiff, (Till), damp, no odor or stain.
		8	100	8*	2'-4': Dark gray, Till, silt, little clay, little coarse sand to fine gravel, dense, damp,
3		13			stiff, no odor or stain.
		15			
4		18			
	GW12C	6	80	8*	4'-6': Till as above, trace coarse gravel in bottom of sample, no odor or stain.
5		10			
		14			
6		16			
		20	30	8*	6'-8': Till as above.
7		24			
		32			
8		30			
		A	-	-	Augered 8'-10'.
9		A			
		A			
10		A			
		10	100	250*	10'-12': Till as above.
11		14			
		20			
12		22			
		A	-	-	Augered 12'-14'.
13		A			
		A			
14		A			
		13	75	8*	14'-15.4': Dark gray, Till, silt, little clay, little coarse sand to fine gravel, damp, dense,
15		15			stiff, no odor or stain.
		50/.4			
16					Terminated soil boring at 15.5 feet bgs.
					Moved rig north ~ 8 feet. Redrilled to 8 feet and set well.
17					
18					

SCHEMATIC



COMMENTS

Locking Steel Cover
PVC Well Cap
2-inch ID PVC Riser (+2.5'-3')
Concrete (0'-1.5')
Bentonite Seal (1.5'-2.5')
U.S. Silica Filter Sand (NS#0) (2.5'-8')
2-in Sch. 40 PVC 0.01-in. slot well screen (3'-8')

COMMENTS:
* = Elevated PID measurement potentially caused by water vapor in sample container at the time of measurement.
Grouted borehole up to surface, moved drill rig approximately 8 feet away, and re-drilled borehole to install well as shown above.
Collected soil sample from 4'-6' bgs for VOC, SVOC, Pesticides, PCBs, and TAL Metal analysis.

SAMPLING METHOD
SS = SPLIT SPOON
A = AUGER CUTTINGS
GP = GEOPROBE - DIRECT PUSH

PARSONS

DRILLING RECORD

Contractor: NorthStar Drilling, Inc.	**BORING/ WELL NO** GW-13
Driller: Scott Breeds	Sheet 1 of 2
Inspector: Scott Dillman	**Location Description:** See site plan
Rig Type: ATV-CME-45B	

PROJECT NAME: AOC-1, Schenectandy Army Depot
PROJECT NUMBER: 743440.00000

GROUNDWATER OBSERVATIONS

Water Level	3.51			
Date	12/07/04			
Time	-			
Meas. From	TOC			

Weather: Partly Cloudy, light winds, 40's

Date/Time Start: November 22, 2004

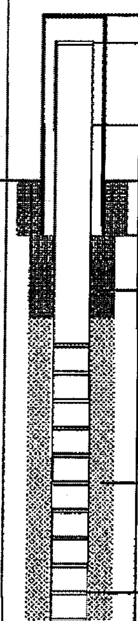
Date/Time Finish: November 22, 2004

Location Plan

See site plan

Sample Depth	Sample I.D.	SPT	Rec. %	PID (ppm)	FIELD IDENTIFICATION OF MATERIAL
0					
		1	90	0.2	0'-2": Brown topsoil.
1		2			2"-2': Tan, Silt, some clay, little coarse sand to fine gravel, moist, no odor or stain.
		3			
2		2			
		10	95	0.8	2'-4': Tan, Silt, very dense, little clay, little coarse sand to fine gravel, moist, (Till),
3		18			no odor or stain.
		22			
4		44			
		14	100	11	4'-6': Till as above grading to dark gray till, same as above, trace coarse gravel,
5		22			damp.
		20			
6		22			
		34	100	400*	6'-8': Till as above.
7		32			
		30			
8		37			
		A	-	-	Augereded 8'-10'.
9		A			
		A			
10		A			
		16	80	250*	10'-12': As above, dark gray Till, no odor or stain.
11		18			
		21			
12		28			
		A	-	-	Augered 12'-14'.
13		A			
		A			
14		A			
		16	100	240*	14'-16': As above, dense Till.
15		22			
		28			
16		30			
		A	-	-	Augered 16'-18'.
17		A			
		A			
18		A			

SCHEMATIC / **COMMENTS**



SAMPLING METHOD
SS = SPLIT SPOON
A = AUGER CUTTINGS
GP = GEOPROBE - DIRECT PUSH

COMMENTS:
* = Elevated PID reading potentially caused by water vapor in the sample container headspace at the time of measurement.
Grouted borehole up to surface, moved drill rig approximately 8 feet away, and re-drilled borehole to install well as shown above.

Contractor: NorthStar Drilling, Inc. Driller: Scott Breeds Inspector: Scott Dillman Rig Type: ATV-CME-45B	**PARSONS** **DRILLING RECORD** PROJECT NAME: AOC-1, Schenectandy Army Depot PROJECT NUMBE 743440.00000	BORING/ WELL NO GW-13 Sheet 2 of 2 Location Description: See site plan

GROUNDWATER OBSERVATIONS				
Water Level	3.51			
Date	12/07/04			
Time	-			
Meas. From	TOC			

Weather: Partly Cloudy, light winds, 40's

Date/Time Start: November 22, 2004

Date/Time Finish: November 22, 2004

Location Plan

See site plan

Sample Depth	Sample I.D.	SPT	Rec. %	PID (ppm)	FIELD IDENTIFICATION OF MATERIAL	SCHEMATIC	COMMENTS
		A			18-20': As above. Dense Till, damp.		
19		15	100	60*			
		18					
20		22					
		30					
21					Boring terminated at 20 feet bgs. Grouted to surface. Moved approximately 10 feet and drilled monitoring well boring to 8 feet and installed well.		
22							
23							
24							

SAMPLING METHOD
SS = SPLIT SPOON
A = AUGER CUTTINGS
GP = GEOPROBE - DIRECT PUSH

COMMENTS:
* = Elevated PID measurement potentially caused by moisture content in the air at the time of collection.
Grouted borehole up to surface, moved drill rig approximately 8 feet away, and re-drilled borehole to install well as shown above.

PARSONS
DRILLING RECORD

BORING/ WELL NO GW-14 Sheet 1 of 2

Contractor: NorthStar Drilling, Inc.
Driller: Scott Breeds
Inspector: Scott Dillman
Rig Type: ATV-CME-45B

PROJECT NAME: AOC-1, Schenectandy Army Depot
PROJECT NUMBER: 743440.00000

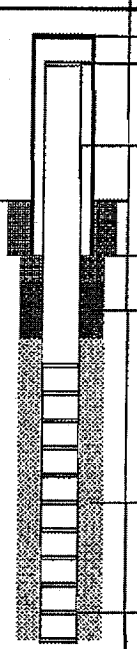
Location Description: See site plan

GROUNDWATER OBSERVATIONS				
Water Level	Dry			
Date	12/07/04			
Time	-			
Meas. From	TOC			

Weather: Cloudy, 40's to low 50's
Date/Time Start: November 19, 2004
Date/Time Finish: November 22, 2004

Location Plan: See site plan

Sample Depth	Sample I.D.	SPT	Rec. %	PID (ppm)	FIELD IDENTIFICATION OF MATERIAL
0		1	75	0.3	0'-2": Brown Silt (topsoil)
1		2			2"-2': Tan, Silt, little to some clay, little coarse rounded sand to fine gravel,
		2			weathered till, no odor or stain.
2		3			
		2	90	0.3	2'-4': Same as above grading to Silt to very fine Sand, little coarse rounded sand to
3		3			fine gravel, dense, damp, stiff, (Till), no odor or stain.
		16			
4		16			
		16	80	200*	4'-6': Till as above grading to dark gray Till, dense, similar materials, stiff,
5		22			dry to damp, no odor or stain.
		24			
6		20			
	GW14DE	24	90	150*	6-8: As above.
7		38			
		45			
8		25			
		8	50	250*	8'-10': Dense dark gray Till as above.
9		16			
		22			
10		22			
		10	100	45	10'-12': Dense dark gray Till, silt to very fine sand, little clay, little coarse
11		12			rounded sand to fine gravel, damp, trace coarse gravel, damp, no odor.
		12			or stain.
12		16			
		14	100	200*	12'-14': As above.
13		22			
		22			
14		29			
		12	50	134	14'-16': Dense dark gray Till as above, damp.
15		15			
		22			
16		22			
		22	5	0	16'-18': Dark gray Till as above, damp to dry.
17		24			
		28			
18		28			



NOTE:
Boring was drilled to 32 feet. The boring was grouted to the ground surface. A new boring was drilled to 8 feet for well GW-14.

SAMPLING METHOD
SS = SPLIT SPOON
A = AUGER CUTTINGS
GP = GEOPROBE - DIRECT PUSH

COMMENTS:
* = Elevated PID measurement potentially caused by water vapor in the sample container headspace.
Grouted borehole up to surface, moved drill rig approximately 8 feet away, and re-drilled borehole to install well as shown above.
Collected soil sample from 6'-10' bgs for VOC, SVOC, Pesticides, PCBs, and TAL Metal analysis.

PARSONS
DRILLING RECORD

BORING/WELL NO. GW-14 Sheet 2 of 2

Contractor: NorthStar Drilling, Inc.
Driller: Scott Breeds
Inspector: Scott Dillman
Rig Type: ATV-CME-45B

PROJECT NAME: AOC-1, Schenectady Army Depot
PROJECT NUMBER: 743440.00000

Location Description: See site plan

GROUNDWATER OBSERVATIONS				
Water Level	Dry			
Date	12/07/04			
Time	-			
Meas. From	TOC			

Weather: Cloudy, 40's to low 50's
Date/Time Start: November 19, 2004
Date/Time Finish: November 22, 2004

Location Plan: See site plan

Sample Depth	Sample I.D.	SPT	Rec. %	PID (ppm)	FIELD IDENTIFICATION OF MATERIAL	SCHEMATIC	COMMENTS
		10	100	0	18'-20': Dense dark gray Till, stiff, silt, little clay, little to some coarse sand to fine gravel, damp, no odor, no stain.		
19		10					
		14					
20		16					
		8	-	-	20'-22': As above.		
21		12					NOTE: Boring was drilled to 32 feet. The boring was grouted to the ground surface. A new boring was drilled to 8 feet for well GW-14.
		15					
22		20					
		22	100	0	22'-24': As above.		
23		27					
		38					
24		25					
		12	100	0	24'-26': As above.		
25		14					
		22					
26		20					
		30	100	0	26'-28': As above.		
27		28					
		40					
28		40					
		16	100	0	28'-30': As above.		
29		18					
		30					
30		40					
		20	100	0	30'-32': As above.		
31		20					
		35					
32		50					
					Terminated soil boring at 32 feet bgs.		

COMMENTS:

SAMPLING METHOD
SS = SPLIT SPOON
A = AUGER CUTTINGS
GP = GEOPROBE - DIRECT PUSH

PARSONS
DRILLING RECORD

BORING/ WELL NO. GW-01 Sheet 1 of 2

Contractor: North Star Drilling
Driller: Scott Breeds
Inspector: Scott Dillman
Rig Type: CME-45B ATV

PROJECT NAME: Schenectady Depot AOC-7
PROJECT NUMBER: 743440.03000

Location Description: Located at the northern end of AOC-1, between the dirt road and the woods near AOC-7.

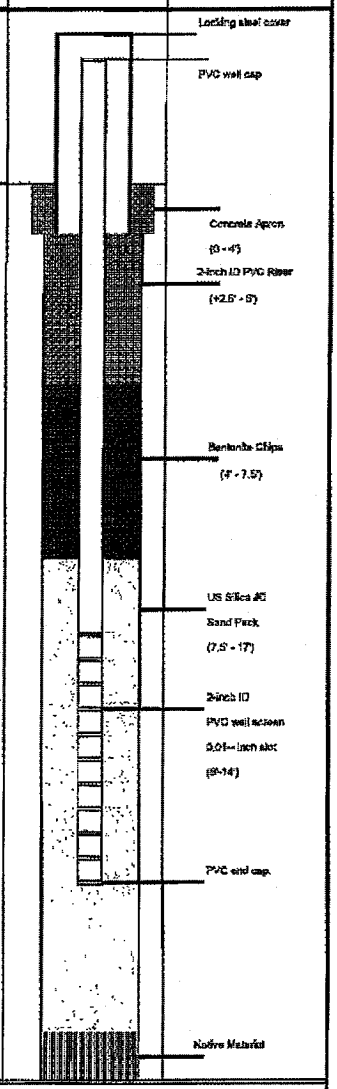
Location Plan: See Site Plan

GROUNDWATER OBSERVATIONS				
Water Level				
Date				
Time				
Meas. From				

Weather: Cloudy clearing later in day, temperature 60's to 80, breezy
Date/Time Start: 14 June 2004, 1200
Date/Time Finish: 14 June 2004, 1700

Sample Depth	Sample I.D.	SPT	% Rec.	PID (ppm)	FIELD IDENTIFICATION OF MATERIAL
+3					
+2					
+1					
0					
	SD-SSGW01-0-0.5	4	100	0	Gray-brown Silt, some fine to medium gravel, dense, no odor, no stain.
1		6			
		5			
2		6			
		3	75	0.1	Greenish with reddish varigations grading to yellowish-orange-light brown Silt,
3		3			some clay, sandy lense, trace coarse sand, semi-stiff, moist. Till.
		3			
4		5			
		3	75	1.3	As above, upper sample moist and semi-stiff, lower sample damp and stiff.
5		7			No odor, no stain.
		10			
6		15			
		16	100	2.3	Yellowish-orange-light brown Silt to very fine Sand, some clay, stiff, damp.
7		18			No odor, no stain.
		18			
8		20			
		25	100	1.6	Yellowish-orange-light brown Silt-Sand, trace gravel, shale cobbles, dense,
9		35			stiff, damp. Till
		50/0.3			
10		A			
		46	90	2.1	Silt-Sand, little clay, gravel and cobbles, soft. Water dripping from split spoon, wet.
11		50/0.3			Tough drilling. Free water in augers at 9.3' below GL.
		A			
12		A			
	SD-SSGW01-12-14	13	90	1.6	Dark gray Silt, little to some gravel, trace clay, dense, stiff. Moist in upper sample
13		20			and damp in lower sample. Till.
		28			
14		34			
		15	90	2.7	Dark gray Till as above.
15		18			
		25			
16		28			
		26	40	3.0	Dark gray till as above
17		34			
		49			
18		45			

SCHEMATIC



COMMENTS

COMMENTS:
PID readings effected by moisture.

SAMPLING METHOD
SS = SPLIT SPOON
A = AUGER CUTTINGS
C = CORED

PARSONS
DRILLING RECORD

BORING/ WELL NO. GW-01 Sheet 2 of 2

Contractor: North Star Drilling
Driller: Scott Breeds
Inspector: Scott Dillman
Rig Type: CME-45B ATV

PROJECT NAME: Schenectady Depot AOC-7
PROJECT NUMBER: 743440.03000

Location Description: Located at the northern end of AOC-1, between the dirt road and the woods near AOC-7.

Location Plan: See Site Plan

GROUNDWATER OBSERVATIONS

Water Level				
Date				
Time				
Meas. From				

Weather: Cloudy clearing later in day, temperature 60's to 80, breezy
Date/Time Start: 14 June 2004, 1200
Date/Time Finish: 14 June 2004, 1700

Sample Depth	Sample I.D.	SPT	% Rec.	PID (ppm)	FIELD IDENTIFICATION OF MATERIAL	SCHEMATIC	COMMENTS
		15	60	3.0	Dark gray Till as above.		Native Material
19		17					
		28					
20		35					
21					Boring terminated at 20 feet.		
22							
23							
24							
25							
26							
27							
28							
29							
30							
31							
32							
33							
34							
35							
36							
37							
38							
39							

SAMPLING METHOD
SS = SPLIT SPOON
A = AUGER CUTTINGS
C = CORED

COMMENTS:
PID readings effected by moisture.

PARSONS
DRILLING RECORD

Contractor:	North Star Drilling
Driller:	Scott Breeds
Inspector:	Scott Dillman
Rig Type:	CME-45B ATV

PROJECT NAME: Schenectady Depot AOC-2
PROJECT NUMBER: 743440.03000

BORING/ WELL NO. GW-03 Sheet 1 of 2

Location Description: Near crest of hill. North of big lone tree and east of bottle disposal area.

Location Plan

See Site Plan

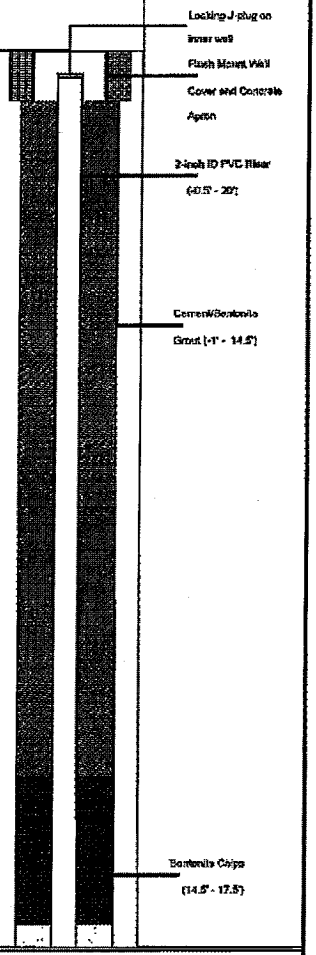
GROUNDWATER OBSERVATIONS

Water Level				
Date				
Time				
Meas. From	TOC			

Weather: Light rain, 70 degrees, calm.
Date/Time Start: June 17, 2004 0800
Date/Time Finish: June 17, 2004 1530

Sample Depth	Sample I.D.	SPT	% Rec.	PID (ppm)	FIELD IDENTIFICATION OF MATERIAL
+3					
+2					
+1					
0					
		3	60	0.7	Brown Silt (0-8")
1		4			Tan-brown silt, trace coarse sand-very fine gravel, trace clay, moist, dense,
		6			semi-stiff. Weathered till.
2		4			No odor, no stain.
		5	95	0.8	Tan silty till as above, damp, no odor, no stain, stiff.
3		7			
		8			
4		12			
		6	75	1.0	Tan-light brown silt, some gravel, trace clay, dense, stiff, damp. Till
5		9			No odor, no stain.
		10			
6		14			
		20	95	0.9	As above
7		22			
		26			
8		30			
		8	100	0.6	As above
9		15			
		15			
10		24			
		22	95	1.1	As above
11		17			
		18			
12		24			
		24	100	1.1	As above
13		28			Hard drilling with augers.
		30			
14		30			
		10	100	0.9	As above. Dense, stiff.
15		15			
		17			
16		25			
		33	100	1.2	As above grading to tan-light brown silt, trace coarse sand,
17		33			damp-moist, stiff. Till
		32			
18		29			

SCHEMATIC



COMMENTS:

SAMPLING METHOD
SS = SPLIT SPOON
A = AUGER CUTTINGS
C = CORED

PARSONS
DRILLING RECORD

BORING/ WELL NO. GW-03 Sheet 2 of 2

Contractor:	North Star Drilling
Driller:	Scott Breeds
Inspector:	Scott Dillman
Rig Type:	CME-45B ATV
PROJECT NAME:	Schenectady Depot AOC-2
PROJECT NUMBER:	743440.03000
Location Description:	Near crest of hill. North of big lone tree and east of bottle disposal area.

GROUNDWATER OBSERVATIONS

Water Level				
Date				
Time				
Meas. From				

Weather: Light rain, 70 degrees, calm.

Date/Time Start: June 17, 2004 0800

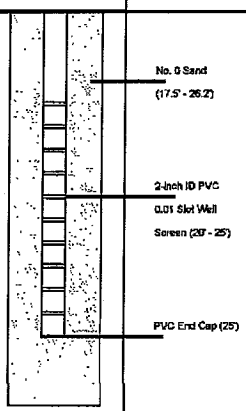
Date/Time Finish: June 17, 2004 1530

Location Plan N

See Site Plan

Sample Depth	Sample I.D.	SPT	% Rec.	PID (ppm)	FIELD IDENTIFICATION OF MATERIAL
		10	100	0.6	Tan-light brown Silt, trace coarse sand, damp-moist, stiff grading
19		50/0.3			to tan-brown Silt, some gravel, dense, stiff, damp. Till
20					
		20	100	0.8	Tan-brown Silt, some sand and gravel, shale cobbles, wet lenses.
21		55			Black-dark gray weathered Shale in end of sampler from cobble.
		50/0.3			~1.5 feet of free water in angers.
22					
		12	89	1.4	Gray-dark gray Silt, some gravel and cobbles, moist, dense. Till
23		35			Wet lenses.
		50/0.1			
24					
		100/0.2	100	2.0	Dark gray Shale, wet, thin horizontal bedding. Bedrock.
25					
26					
		100/0.2	100	0.5	As above.
27					Boring terminated at 26.2 feet.
28					
29					
30					
31					
32					
33					
34					
35					
36					
37					
38					
39					

SCHEMATIC



COMMENTS:

SAMPLING METHOD
SS = SPLIT SPOON
A = AUGER CUTTINGS
C = CORED

H2H Associates	179 River Street Troy New York, 12180 Tel: 518.270-1620 Fax: 518.270-1672	Boring Log	Boring No. MW-13-01

PROJECT: NEIP/AOC 1 Landfill Cap					Sheet 1 of 1
CLIENT: USACE					Job No. 650.40
DRILLING CONTRACTOR: Zebra Environmental					Meas. Pt. Elev: N/A
PURPOSE: Environmental Investigation					Ground Elev: N/A
DRILLING METHOD: Direct Push		SAMPLE	CORE	CASING	Datum: N/A
DRILL RIG TYPE: Geoprobe 7822DT	Type	Macro Core	---	---	Date Started: 8/19/2013
GROUNDWATER DEPTH: N/A	Diam.	1.5 inch	---	---	Date Finished: 8/19/2013
MEASURING POINT: N/A	Weight	N/A	Discret closed piston macro core with a 5 foot barrel length.		Driller: Zack Fordly
DATE OF MEASUREMENT: N/A	Fall	N/A			Inspector: Matt Montario

Depth (feet)	Run	Recovery (%)	PID (PPM)	USC	Geologic Description
	1	67% 3.3'/5.0'	0.0		Topsoil. Silty Sand. Dk. Brown.
					Sandy Silt. Lt. Brown. Damp.
					Very Fine Sand some silt with trace coarse gravel. Lt Brown. Damp.
5					No Recovery.
	2	85% 4.3'/5.0'	0.0		Very Fine Sand some silt with trace coarse gravel. Lt. Brown. Damp
					Fine to Medium grained sand with trace gravel. Brown
10					No Recovery.
	3	42% 2.1'/5.0'	0.0		Fine to Medium grained sand with trace gravel. Brown. Moist.
					Gravely Sand. Black.
					Gravelly Till. Very fine to medium grianed sand with some gravel. Grayish Brown.
15					No Recovery.
					End of Boring. Sampled to 15'. Auger refusal @ ~10.5'
20					

H2H Associates	179 River Street Troy New York, 12180 Tel: 518.270-1620 Fax: 518.270-1672	Boring Log	Boring No. MW-13-02

PROJECT: NEIP/AOC 1 Landfill Cap					Sheet 1 of 1
CLIENT: USACE					Job No. 650.40
DRILLING CONTRACTOR: Zebra Environmental					Meas. Pt. Elev: N/A
PURPOSE: Environmental Investigation					Ground Elev: N/A
DRILLING METHOD: Direct Push		SAMPLE	CORE	CASING	Datum: N/A
DRILL RIG TYPE: Geoprobe 7822DT	Type	Macro Core	---	---	Date Started: 8/19/2013
GROUNDWATER DEPTH: N/A	Diam.	1.5 inch	---	---	Date Finished: 8/20/2013
MEASURING POINT: N/A	Weight	N/A	Discret closed piston macro core with a 5 foot barrel length.		Driller: Zack Fordly
DATE OF MEASUREMENT: N/A	Fall	N/A			Inspector: Matt Montario

Depth (feet)	Run	Recovery (%)	PID (PPM)	USC	Geologic Description
					Topsoil. Silty Sand, Dk. Brown.
	1	75% 3.8'/5.0'	0.0		Silt with very fine sand, trace clay and gravel. Mottled Brown and Gray.
					Silty Sand with Trace gravel and cobbles. Brown
5					No Recovery.
	2	93% 4.7'/5.0'	0.0		Silty Sand with Trace gravel and cobbles. Brown
10					No Recovery.
					Silty Sand with Trace gravel and cobbles. Brown
	3	73% 3.7'/5.0'	0.0		Very Fine sand and silt with some weathered shale throughout, very hard. Dk. Gray to Black.
15					No Recovery.
					End of Boring. Sampled to 15'. Auger refusal @ ~11'
20					

H2H Associates	179 River Street Troy New York, 12180 Tel: 518.270-1620 Fax: 518.270-1672	Boring Log	Boring No. MW-13-03

PROJECT: NEIP/AOC 1 Landfill Cap					Sheet 1 of 1
CLIENT: USACE					Job No. 650.40
DRILLING CONTRACTOR: Zebra Environmental					Meas. Pt. Elev: N/A
PURPOSE: Environmental Investigation					Ground Elev: N/A
DRILLING METHOD: Direct Push		SAMPLE	CORE	CASING	Datum: N/A
DRILL RIG TYPE: Geoprobe 7822DT	Type	Macro Core	---	---	Date Started: 8/19/2013
GROUNDWATER DEPTH: N/A	Diam.	1.5 inch	---	---	Date Finished: 8/19/2013
MEASURING POINT: N/A	Weight	N/A	Discret closed piston macro core with a 5 foot barrel length.		Driller: Zack Fordly
DATE OF MEASUREMENT: N/A	Fall	N/A			Inspector: Matt Montario

Depth (feet)	Run	Recovery (%)	PID (PPM)	USC	Geologic Description
					Very Fine to fine sand with trace gravel and silt. Lt. Brown
	1	73% 3.7'/5.0'	0.0		Tilll, silt with very fine sand and trace gravel up to 1.5 inches in size. Dk. Gray
5					No Recovery.
	2	90% 4.5'/5.0'	0.0		Tilll, silt with very fine sand and trace gravel up to 1.5 inches in size. Dk. Gray
10					No Recovery.
	3	90% 4.5'/5.0'	0.0		Tilll, silt with very fine sand and trace gravel up to 1.5 inches in size. Dk. Gray
15					No Recovery.
20					End of Boring. Sampled to 15' Auger Refusal @ ~13.6'

H2H Associates

WELL CONSTRUCTION LOG

Facility/Project Name: NEIP/ACO 1 Landfill Cap

Well Name: MW-13-01

Facility License Number:

Well GPS Location: Lat.: Long.:

Type of Well:
Ground Water Monitoring ☑
Piezometer ☐ RPOC ☐

Date Well Installed: 8/19/13

Location of well relative to waste source: South
Upgradient ☐ Downgradient ☐ Side-gradient ☐ Unknown ☐

Distance from waste source boundary:

Well Installed By: *(name and company)*
First Name: Zach Last Name: Fordly
Company Name:
Zebra Environmental

A. Protective pipe, top elevation: ft. MSL

B. Well casing, top elevation: ft. MSL

C. Land Surface Elevation: ft. MSL

D. Surface seal, bottom: ft. MSL

12. USCS classification of soil near screen:
GP ☐ GM ☐ GC ☐ GW ☐ SP ☐ SM ☐
SC ☐ SW ☐ ML ☐ MH ☐ CL ☐ CH ☐
Bedrock ☐

13. Sieve analysis attached? Yes ☐ No ☑

14. Drilling method used: Rotary ☑ HSA ☐
Other: Auger

15. Drilling fluid used: N/A
Water ☐ Air ☑ Drilling Mud ☐ None ☐

16. Drilling additives used? Yes ☐ No ☑
Specify: N/A

17: Source of water: N/A

E. Bentonite seal: top 0.5 ft. BGS

F. Fine sand: top 2.5 ft. BGS

G. Filter pack: top 2.5 ft. BGS

H. Screen joint: top 3.62 ft. BGS

I. Well bottom: top 8.62 ft. BGS

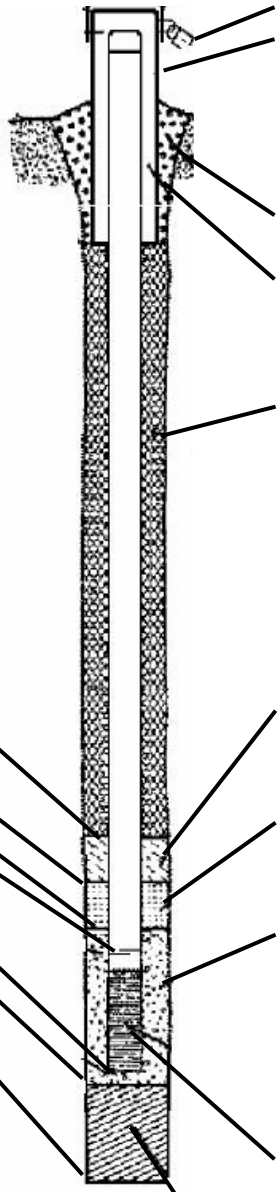
J. Filter pack: bottom 10.3 ft. BGS

K. Borehole: bottom 10.3 ft. BGS

L. Borehole diameter: 8 in.

M. O.D. well casing: 2.25 in.

N. I.D. well casing: 2 in.



1. Cap and lock? Yes ☑ No ☐

2. Protective cover pipe:
a. Inside diameter: 4 in.
b. Length: 5 ft.
c. Material: *Steel* ☑
Other: N/A

3. Surface seal: *Bentonite* ☐ *Concrete* ☑
Other: N/A

4. Material btw. well casing and protective pipe:
Bentonite ☑ *Annular space seal* ☐
Other: PDS/1 bag

5. Annular space seal:
a. Granular benonite ☑
b. N/A lbs/gal mud weight….bentonite/sand slurry ☐
c. N/A lbs/gal mud weight….bentonite slurry ☐
d. N/A % bentonite ……bentonite/cement grout ☐
e. N/A ft^3 volume added for any of the above ☐
f. How installed: *Tremie* ☐ *Tremie pumped* ☐
Gravity ☑

6. Bentonite seal: *Bentonite granules* ☐
☐ *¼ in.* ☐ *3/8 in.* ☐ *½ in.* *Bentonite pellets* ☑
Other: N/A

7. Fine sand material: *(Manufacturer, product name, mesh size)*
N/A
Volume added: N/A ft^3

8. Filter pack material: *(Manufacturer, product name, mesh size)* Fill Pro/US Silica Company #0
Volume added: 4.5 50 lbs bags ft^3

9. Well casing: Flush-threaded Sch 40 PVC ☑
Flush-threaded Sch 80 PVC ☐
Other: N/A

10. Screen material:
a. Screen type: factory cut ☑ continuous slot ☐
Other: N/A
b. Manufacturer: Unknown
c. Slot size: 0. 10 in.
d. Slotted length: 5 ft.

11. Backfill material: N/A *or* None ☑

CERTIFICATION:
I hereby certify that the information on this form is true and correct to the best of my knowledge:

(Signature)

H2H Associates, LLC

(Company Name)

H2H Associates

WELL CONSTRUCTION LOG

Facility/Project Name: NEIP/ACO 1 Landfill Cap

Well Name: MW-13-02

Facility License Number: **Well GPS Location:** Lat.: Long.:

Type of Well:
Ground Water Monitoring ☑
Piezometer ☐ RPOC ☐

Date Well Installed: 8/20/13

Location of well relative to waste source: West
Upgradient ☐ Downgradient ☐ Side-gradient ☐ Unknown ☐

Distance from waste source boundary:

Well Installed By: *(name and company)*
First Name: Zach Last Name: Fordly
Company Name:
Zebra Environmental

A. Protective pipe, top elevation: ft. MSL

B. Well casing, top elevation: ft. MSL

C. Land Surface Elevation: ft. MSL

D. Surface seal, bottom: ft. MSL

12. USCS classification of soil near screen:
GP ☐ GM ☐ GC ☐ GW ☐ SP ☐ SM ☐
SC ☐ SW ☐ ML ☐ MH ☐ CL ☐ CH ☐
Bedrock ☐

13. Sieve analysis attached? Yes ☐ No ☑

14. Drilling method used: Rotary ☑ HSA ☐
Other: Auger

15. Drilling fluid used: N/A
Water ☐ Air ☑ Drilling Mud ☐ None ☐

16. Drilling additives used? Yes ☐ No ☑
Specify: N/A

17: Source of water: N/A

E. Bentonite seal: top 0.0 ft. BGS

F. Fine sand: top 1.0 ft. BGS

G. Filter pack: top 1.0 ft. BGS

H. Screen joint: top 5.72 ft. BGS

I. Well bottom: top 10.72 ft. BGS

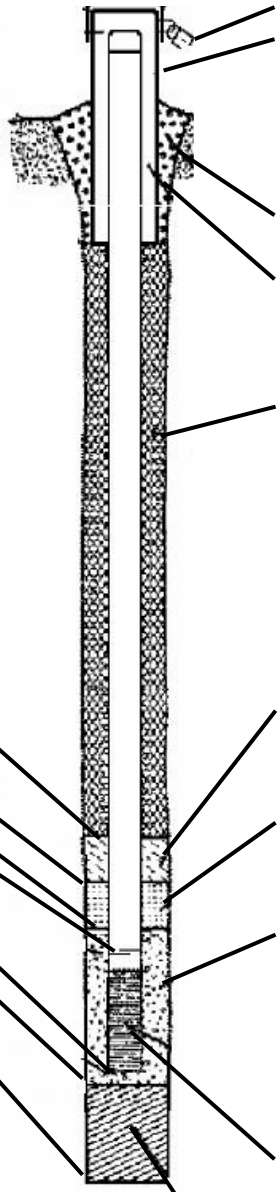
J. Filter pack: bottom 11.0 ft. BGS

K. Borehole: bottom 11.0 ft. BGS

L. Borehole diameter: 6.0 in.

M. O.D. well casing: 2.25 in.

N. I.D. well casing: 2.0 in.



1. Cap and lock? Yes ☑ No ☐

2. Protective cover pipe:
a. Inside diameter: 4 in.
b. Length: 5 ft.
c. Material: *Steel* ☑
Other: N/A

3. Surface seal: *Bentonite* ☐ *Concrete* ☑
Other: N/A

4. Material btw. well casing and protective pipe:
Bentonite ☑ *Annular space seal* ☐
Other: PDS/0.5 bag

5. Annular space seal:
a. Granular benonite ☑
b. N/A lbs/gal mud weight….bentonite/sand slurry ☐
c. N/A lbs/gal mud weight….bentonite slurry ☐
d. N/A % bentonite ……bentonite/cement grout ☐
e. N/A ft^3 volume added for any of the above ☐
f. How installed: *Tremie* ☐ *Tremie pumped* ☐
Gravity ☑

6. Bentonite seal: *Bentonite granules* ☐
☐ *¼ in.* ☐ *3/8 in.* ☐ *½ in.* *Bentonite pellets* ☑
Other: N/A

7. Fine sand material: *(Manufacturer, product name, mesh size)*
N/A
Volume added: N/A ft^3

8. Filter pack material: *(Manufacturer, product name, mesh size)* Fill Pro/US Silica Company #0
Volume added: 4.5 50 lbs bags ft^3

9. Well casing: Flush-threaded Sch 40 PVC ☑
Flush-threaded Sch 80 PVC ☐
Other: N/A

10. Screen material:
a. Screen type: factory cut ☑ continuous slot ☐
Other: N/A
b. Manufacturer: Unknown
c. Slot size: 0. 10 in.
d. Slotted length: 5 ft.

11. Backfill material: N/A *or* None ☑

CERTIFICATION:
I hereby certify that the information on this form is true and correct to the best of my knowledge:

(Signature)

H2H Associates, LLC
(Company Name)

H2H Associates

WELL CONSTRUCTION LOG

Facility/Project Name: NEIP/ACO 1 Landfill Cap

Well Name: MW-13-03

Facility License Number: **Well GPS Location:** Lat.: Long.:

Type of Well:
Ground Water Monitoring ☑
Piezometer ☐ RPOC ☐

Date Well Installed: 8/19/13

Location of well relative to waste source: North East
Upgradient ☐ Downgradient ☐ Side-gradient ☐ Unknown ☐

Distance from waste source boundary:

Well Installed By: *(name and company)*
First Name: Zach Last Name: Fordly
Company Name:
Zebra Environmental

A. Protective pipe, top elevation: ft. MSL

B. Well casing, top elevation: ft. MSL

C. Land Surface Elevation: ft. MSL

D. Surface seal, bottom: ft. MSL

12. USCS classification of soil near screen:
GP ☐ GM ☐ GC ☐ GW ☐ SP ☐ SM ☐
SC ☐ SW ☐ ML ☐ MH ☐ CL ☐ CH ☐
Bedrock ☐

13. Sieve analysis attached? Yes ☐ No ☑

14. Drilling method used: Rotary ☑ HSA ☐
Other: Auger

15. Drilling fluid used: N/A
Water ☐ Air ☑ Drilling Mud ☐ None ☐

16. Drilling additives used? Yes ☐ No ☑
Specify: N/A

17: Source of water: N/A

E. Bentonite seal: top 0 ft. BGS

F. Fine sand: top 2.0 ft. BGS

G. Filter pack: top 2.0 ft. BGS

H. Screen joint: top 3.16/8.16 ft. BGS

I. Well bottom: top 13.16 ft. BGS

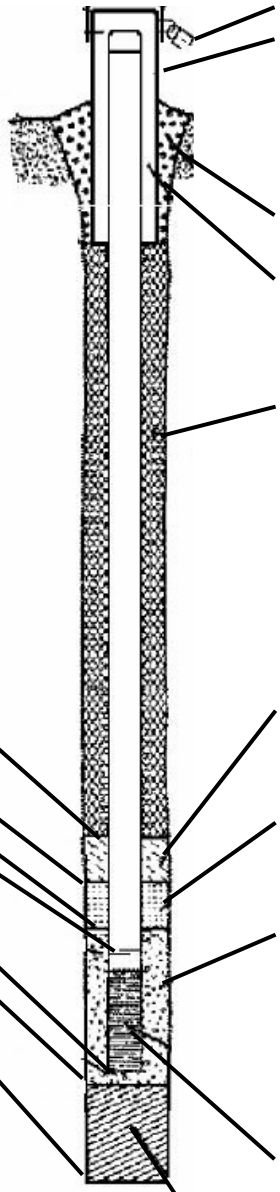
J. Filter pack: bottom 13.16 ft. BGS

K. Borehole: bottom 13.6 ft. BGS

L. Borehole diameter: 8 in.

M. O.D. well casing: 2.25 in.

N. I.D. well casing: 2 in.



1. Cap and lock? Yes ☑ No ☐

2. Protective cover pipe:
a. Inside diameter: 4 in.
b. Length: 5 ft.
c. Material: *Steel* ☑
Other: N/A

3. Surface seal: *Bentonite* ☐ *Concrete* ☑
Other: N/A

4. Material btw. well casing and protective pipe:
Bentonite ☑ *Annular space seal* ☐
Other: PDS/0.5 bag

5. Annular space seal:
a. Granular benonite ☑
b. N/A lbs/gal mud weight….bentonite/sand slurry ☐
c. N/A lbs/gal mud weight….bentonite slurry ☐
d. N/A % bentonite …….bentonite/cement grout ☐
e. N/A ft^3 volume added for any of the above ☐
f. How installed: *Tremie* ☐ *Tremie pumped* ☐
Gravity ☑

6. Bentonite seal: *Bentonite granules* ☐
☐ *¼ in.* ☐ *3/8 in.* ☐ *½ in.* *Bentonite pellets* ☑
Other: N/A

7. Fine sand material: *(Manufacturer, product name, mesh size)*
N/A
Volume added: N/A ft^3

8. Filter pack material: *(Manufacturer, product name, mesh size)* Fill Pro/US Silica Company #0
Volume added: 6.0 50 lbs bags ft^3

9. Well casing: Flush-threaded Sch 40 PVC ☑
Flush-threaded Sch 80 PVC ☐
Other: N/A

10. Screen material:
a. Screen type: factory cut ☑ continuous slot ☐
Other: N/A
b. Manufacturer: Unknown
c. Slot size: 0. 10 in.
d. Slotted length: 10 ft.

11. Backfill material: N/A *or* None ☑

CERTIFICATION:
I hereby certify that the information on this form is true and correct to the best of my knowledge:

(Signature)

H2H Associates, LLC
(Company Name)

Monitoring Well Development Log

Page ____ of ____

Project/No. 650.70 Well MW-13-01 Date 09/27/13 → 10/1/13

Total Depth 11.80 Casing Diameter (inches) 2 Purge Method Centrifugal ____

Water Level 6.58 Well Volume (gal) 0.85 Submersible ____

Water Column 5.22 Total Volume Purged 13 gal Other ____

Pump On ____ Pump Off ____ Developed By ____

Well Casing Volumes

gallon/foot			
1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

	Time	Minutes Elapsed	Rate (gpm) (mL/min)	DTW (ft)	Gallons Purged	pH	Specific Conductance (mS/cm)	Temp. (C) (F)	Turbidity (NTU)	REMARKS (PID readings, color, odor, etc.)
9/27/13 –	1130	0	—	6.58	0.0	—	—	—	—	Start
	1215	45	—	—	5.0	—	—	—	E3	
	1245	75	—	11.50	0.5	—	—	—	E2	recharge = .05'/min
9/30/13 –	1345	0	—	8.50	0.0	—	—	—	E3	Start
	1430	45	—	10.82	2.0	—	—	—	E2	
	1500	75	—	11.60	0.5	—	—	—	700	
	1615	—	—	10.57	—	—	—	—	—	Surged
10/1/13 –	0925	—	—	6.79	—	—	—	—	—	Surged
	0945	0	—	6.79	0.0	—	—	—	—	Start
	1020	35	—	11.35	3.5	—	—	—	230	
	1130	0	—	9.82	0.0	—	—	—	1100	Start
	1200	30	—	11.38	1.5	—	—	—	170	

Monitoring Well Development Log

Page ____ of ____

Project/No. 650.70 Well MW-13-02 Date 09/27/13 → 10/1/13

Total Depth 13.0 Casing Diameter (inches) 2 Purge Method Centrifugal ____

Water Level 5.48 Well Volume (gal) 1.22 Submersible ____

Water Column 7.52 Total Volume Purged 9.125 gal. Other ____

Pump On ____ Pump Off ____ Developed By DLW

Well Casing Volumes

gallon/foot			
1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

	Time	Minutes Elapsed	Rate (gpm) (mL/min)	DTW (ft)	Gallons Purged	pH	Specific Conductance (mS/cm)	Temp. (C) (F)	Turbidity (NTU)	REMARKS (PID readings, color, odor, etc.)
09/27/13 –	0930	0	—	5.48	0.0	—	—	—	—	Start
	1030	60	—	—	5.0	—	—	—	E3	
	1100	90	—	12.81	2.0	—	—	—	E3	
	1330	—	—	11.48	—	—	—	—	—	Surged
09/30/13 –	1215	0	—	10.44	0.0	—	—	—	E3	Start
	1245	30	—	12.11	1.75	—	—	—	E3	
	1330	75	—	13.0	0.25	—	—	—	E2	
	1600	—	—	12.51	—	—	—	—	—	Surged
10/1/13 –	0900	—	—	12.23	—	—	—	—	—	Surged
	1110	0	—	12.20	0.0	—	—	—	—	Start
	1130	20	—	12.42	0.125	—	—	—	E3	

Monitoring Well Development Log

Page ____ of ____

Project/No. 650.70 Well MW-13-03 Date 09/26/13 → 10/1/13

Total Depth 15.0 Casing Diameter (inches) 2 Purge Method Centrifugal ____

Water Level 4.76 Well Volume (gal) 1.66 Submersible ____

Water Column 10.24 Total Volume Purged 7.5 Other ____

Pump On ____ Pump Off ____ Developed By DLW

Well Casing Volumes

gallon/foot			
1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

	Time	Minutes Elapsed	Rate (gpm) (mL/min)	DTW (ft)	Gallons Purged	pH	Specific Conductance (mS/cm)	Temp. (C) (F)	Turbidity (NTU)	REMARKS (PID readings, color, odor, etc.)
09/26/13 -	1230	0	—	4.76	0.0	—	—	—	—	Start
	1330	60	—	—	3.5	—	—	—	E3	
	1430	120	—	13.11	1.5	—	—	—	E3	
	1545	—	—	11.73	—	—	—	—	—	Surged
	1600	0	—	11.73	0.0	—	—	—	—	Start
	1620	20	—	13.95	0.25	—	—	—	E3	
09/27/13 -	1300	—	—	12.48	—	—	—	—	—	Surged
	1400	0	—	9.82	0.0	—	—	—	—	Start
	1430	30	—	13.31	0.5	—	—	—	E3	
09/30/13 -	1000	0	—	11.31	0.0	—	—	—	E3	Start
	1100	60	—	13.71	1.0	—	—	—	E3	
	1200	120	—	14.49	0.5	—	—	—	E3	
	1545	—	—	14.22	—	—	—	—	—	Surged
10/1/13 -	0845	—	—	13.82	—	—	—	—	—	Surged
	1035	0	—	13.82	0.0	—	—	—	E3	Start
	1100	25	—	14.21	0.25	—	—	—	E3	

Summary of Water Level Measurements (September 26, 2013)

NEIP AOC 1 7

Guilderland, New York

Well ID	Time	Depth to Water (ft btoc)	Well ID	Time	Depth to Water (ft btoc)
ACE-6	1000	6.71			
GW-11R	1010	7.84			
2BMW-9	1050	10.21			
MW-13-01	0930	6.58			
MW-13-02	0945	5.48			
MW-13-03	0900	4.76			
GW-03	1040	7.95			
GW-12	0920	3.90			
GW-13	1215	3.45			
GW-14	1200	4.44			
ACE-3	1100	8.14			
ACE-4	1120	6.79			
ACE-5	1135	3.25			

Notes:

1. btoc = below top of casing (measuring point is top of PVC riser)
2. All measurements expressed in feet.

APPENDIX B

IC/EC Certification Form

Enclosure 1

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
Site Management Periodic Review Report Notice
Institutional and Engineering Controls Certification Form

Site No.	**401009**	**Site Details**	**Box 1**
Site Name	**Northeast Industrial Park – AOCs 1 & 7**		
Site Address:	County Road 201	Zip Code: 12085	
City/Town:	Guilderland		
County:	Albany County		
Current Use:	None		
Intended Use:	None		

Verification of Site Details **Box 2**

		YES	**NO**
1.	Are the Site Details above correct?	☐	☐
	If NO, are changes handwritten above or included on a separate sheet?	☐	
2.	Has some or all of the site property been sold, subdivided, merged, or undergone a tax map amendment since the initial/last certification?	☐	☐
3.	Have any federal, state, and/or local permits (e.g. building, discharge) have been issued for or at the property since the initial/last certification?	☐	☐
	If YES, is documentation or evidence that documentation has been previously submitted included with this certification?	☐	
4.	Has a change-of-use occurred since the initial/last certification?	☐	☐
	If YES, is documentation or evidence that documentation has been previously submitted included with this certification?	☐	
5.	For non-significant-threat Brownfield Cleanup Program Sites subject to ECL 27-1415.7(c), has any new information revealed that assumptions made in The Qualitative Exposure Assessment for offsite contamination is no longer valid?	☐	☐
	If YES, is the new information or evidence that new information has been previously submitted included with this Certification?	☐	
6.	For non-significant-threat Brownfield Cleanup Program Sites subject to ECL 27-1415.7(c), are the assumptions in the Qualitative Exposure Assessment still valid (must be certified every five years)?	☐	☐
	If NO, are changes in the assessment included with this Certification?	☐	

SITE NO. 401009

Description of Institutional Control	**Box 3 Control Certification**	
	YES	**NO**
Northeast Industrial Park – AOCs 1 and 7 Guilderland, NY Environmental Easement		
Site Use Restriction	☐	☐
Ground Water Use Restriction	☐	☐
Land Use Restriction	☐	☐

Description of Engineering Control	**Box 4 Control Certification**	
Northeast Industrial Park – AOCs 1 and 7 Guilderland, NY Environmental Easement	**YES**	**NO**
Fencing/Access Control (Adjacent to AOCs 1 & 7)	☐	☐
Signage	☐	☐
Monitoring Wells	☐	☐

Attach documentation if IC/ECs cannot be certified or why IC/ECs are no longer applicable. (Also see instructions)

Control Certification Statement

For each Institutional or Engineering control listed above, I certify by checking "Yes" that all of the following statements are true:

(a) The Institutional Control and/or Engineering Control employed at this site is unchanged since the date that the Control was put in-place, or was last approved by the Department;

(b) Nothing has occurred that would impair the ability of such Control, to protect public health and the environment;

(c) Nothing occurred that would constitute a violation or failure to comply with the Site Management Plan for this Control; and

(d) Access to the site will continue to be provided to the Department to evaluate the remedy, including access to evaluate the continued maintenance of this Control.

(e) If a financial assurance mechanism is required by the oversight document for the site, the mechanism remains valid and sufficient for its intended purpose established in the document.

IC/EC CERTIFICATIONS
SITE NO. 401009

Box 5

SITE OWNER OR DESIGNATED REPRESENTATIVE SIGNATURE

I certify that all information and statements in Boxes 2 and/or 3 are true. I understand that a false statement made herein is punishable as a Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law.

I _____at _____,
print name print business address
am certifying as _____(Owner or Remedial Party)
For the Site named in the Site Details Section of this form.

_____ _____
Signature of Owner or Remedial Party Rendering Certification Date

Box 6

QUALIFIED ENVIRONMENTAL PROFESSIONAL (QEP) SIGNATURE

I certify that al information and statements in Box 4 are true. I understand that a false statement made herein punishable as a Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law.

I _____ at _____,
print name print business address
am certifying as a Qualified Environmental Professional for the _____
(Owner or Remedial Party) for the Site Named in the Site Details Section of this form.

_____ _____ _____
Signature of Qualified Environmental Professional, for the Owner or Remedial Party, Rendering Certification | Stamp (If required) | Date

Enclosure 2

Certification of Institutional Controls/ Engineering Controls (IC/ECs)
Step-by-Step Instructions, Certification Requirements and Definitions

The Owner, or Remedial Party, and when necessary, a Professional Engineer (P.E.), or the Qualified Environmental Professional (QEP), must review and complete the IC/EC Certification Form, sign the IC/EC Certifications Signature Page, and return it, along with Annual Sampling Report, within 45 days of the date of this notice.

Please use the following instructions to complete the IC/EC Certification.

I. Verification of Site Details (Box 1 and Box 2):

1. Answer the six questions in the Verification of Site Details Section.
Questions 5 and 6 only refer to sites in the Brownfield Cleanup Program. Environmental Conservation Law (ECL) Section 27-1415-7(c) is included in Section **IV. IC/EC Certification Requirements,** below. The owner and/or your P.E. or QEP may include handwritten changes and/or other supporting documentation, as necessary.

II. Verification of Institutional/ Engineer Controls (Box 3 and Box 4)

1. Review the listed IC/ ECs, confirming that all exiting controls are listed, and that all existing controls are still applicable. If there is a control that is no longer applicable the Owner/ Remedial Party is to petition the Department requesting approval to remove the control.

2. Select "YES" or "NO" for **Control Certification** for each IC/EC, based on Sections (a)-(e) of the **Control Certification Statement.**

3. If you cannot certify "YES" for each Control, please continue to complete the remainder of this **Control Certification** form. Attach supporting documentation that explains why the **Control Certification** cannot be rendered, as well as a statement of proposed corrective measures, and an associated schedule for completing the corrective measures. Note that this **Control Certification** form must be submitted even if an IC or EC cannot be certified; however, the certification process will not be considered complete until corrective action is conducted.

If the Department concurs with the explanation, the corrective measures, and the proposed schedule, a letter authorizing the implementation of those corrective measures will be issued by the Project Manager. Once the corrective measures are complete, a new IC/EC Certification is to be submitted within 45 days to the Department. If the Department has any questions or concerns regarding the IC/EC Certification, the Project Manager will contact you.

III. IC/EC Certification by Signature (Box 5 and Box 6):

1. If you certified "YES" for each Control, please complete and sign the IC/EC Certification page. To determine WHO signs the **IC/EC Certification**, please use Table 1, Signature Requirements for the IC/EC Certification, below.

Table 1. Signature Requirements for Control Certification Page

Type of Control	Example of IC/EC	Required Signatures
IC	Environmental Easement Deed Restriction.	A site or property owner or remedial party
EC which does not include a treatment system or engineered caps.	Fence, Clean Soil Cover, Individual House Water treatment System , Vapor Mitigation System	A site or property owner or remedial part, and a QEP. (P.E. license not required)
EC that includes treatment system or an engineered cap.	Pump & Treat System providing hydraulic control of a plume, Part 360 Cap.	A site or property owner or remedial party, and a QEP with a P.E. license.

IV. IC/EC Certification Requirements:

ECL requires periodic certification of IC(s) and EC(s) as follows:

Environmental Restoration Program (ERP): ECL Section 56-0503. (Environmental restoration projects; state assistance)

State Superfund Program (SSF): ECL 27-1318. (Institutional and engineering controls)

Brownfields Cleanup Program (BCP): ECL Section 27-1415. (Remedial program requirements)

ECL Section 27-1415(c) states:

"At non-significant threat sites where contaminants in groundwater at the site boundary contravene drinking water standards, certification shall also certify that no new information has come to the owner's attention, including groundwater monitoring data from wells locates at the site boundary, if any, to indicate that the assumptions made in the qualitative exposure assessment of offsite contamination are no longer valid. Every five years the owners at such sites shall certify that the assumptions made in the qualitative exposure assessment remain valid. The requirement to provide such certifications may be terminated by a written determination by the Commissioner in consultation with the Commissioner of Health, after notice to the parties on the brownfield site contact list

Voluntary Cleanup Program (VCP): Applicable program guidance

Response Program – Petroleum Remediation: Applicable program guidance.

Federal Brownfields Program: Applicable program guidance.

Manufactures Gas Plant (MGP) Projects: Applicable division guidance (including non-registry listed MGPs).

WHERE to mail the signed Certification Form:

New York State Department of Environmental Conservation
Division of Environmental Remediation

Remedial Bureau A,
625 Broadway, 11th Floor,
Albany, NY 12233-7015

Attn: Heather Bishop, Project Manager

Please note that extra postage may be required.

V. Definitions

"Engineer Control" (EC) means any physical barrier or method employed to actively or passively contain, stabilize, or monitor contamination, restrict the movement of contamination to ensure the long-term effectiveness of a remedial program, or eliminate potential exposure pathways to contamination. Engineering controls include, but are not limited to, pavement, caps, covers, subsurface barriers, vapor barriers, slurry walls, building ventilation systems, fences, access controls, and provision of alternative water supplies via connection to an existing public water supply, adding treatment technologies to such water supplies, and installing filtration devices on private water supplies.

"Institutional Control" (IC) means any non-physical means of enforcing a restriction on the use of real property that limits human and environmental exposure, restricts the use of groundwater, provides notice to potential owners, operators, or members of the public, or prevents actions that would interfere with the effectiveness of a remedial program or with the effectiveness and/or integrity of operation, maintenance, or monitoring activities at or pertaining to a remedial site.

"Professional Engineer" (P.E.) means an individual or firm licensed, or otherwise authorized under article 145 of the Education Law of the State of New York, to practice engineering.

"Property Owner" means, for purposes of an IC/EC certification, the actual owner of a property. If the site has multiple properties with different owners, the Department requires that the owners be represented by a single representative to sign the IC/EC Certification.

"Oversight Document" means any document the Department issues pursuant to each Remedial Program to define the role of a person participating in the investigation and/or remediation of a site or area(s) of concern. Examples for the various programs are:

> **BCP** (after approval of the BCP application by Department) - Brownfield Site Cleanup Agreement.
>
> **ERP** (after approval of the ERP application by Department) - State Assistance Contract.

Federal Superfund Sites - Federal Consent Decrees, Administrative Orders on Consent or Unilateral Orders issued pursuant to CERCLA.

Response Program - Order on Consent, or Stipulation pursuant to Article 12 of the Navigation Law (and the ECL).

SSF Program - Administrative Consent Order, Record of Decision.

VCP (after approval of the VCP application by Department) - Voluntary Cleanup Agreement.

RCRA Corrective Action Sites- Federal Consent Decrees, Administrative Orders on Consent or permit conditions issued pursuant to RCRA.

"Qualified Environmental Professional" (QEP) means a person who possesses sufficient specific education, training, and experience necessary to exercise professional judgment to develop opinions and conclusions regarding the presence of releases or threatened releases to the surface or subsurface of a property or off-site areas, sufficient to meet the objectives and performance factors for the areas of practice identified by this Part. Such a person must:

(1) Hold a current professional engineer's or a professional geologist's license or registration issued by the State or another state, and have the equivalent of three years of full-time relevant experience in site investigation and remediation of the type detailed in this Part; or

(2) Be a site remediation professional licensed or certified by the federal government, a state or a recognized accrediting agency, to perform investigation or remediation tasks consistent with Department guidance, and have the equivalent of three years of full-time relevant experience.

"Qualitative Exposure Assessment" means a qualitative assessment to determine the route, intensity, frequency, and duration of actual or potential exposures of humans and/or fish and wildlife to contaminants.

"Remedial Party" means a person implementing a remedial program at a remedial site pursuant to an order, agreement or State assistance contract with the Department.

"Site Management" (SM) means the activities undertaken as the last phase of the remedial program at a site, which continue after a Certificate of Completion is issued. Site management is conducted in accordance with a site management plan, which identifies and implements the IC/ECs required for a site, as well as any necessary monitoring and/or operation and maintenance of the remedy.

"Site Management Plan" (SMP) means a document which details the steps necessary to assure that the institutional and engineering controls required for a site are in-place, and any physical components of the remedy are operated, maintained and monitored to assure their continued effectiveness, developed pursuant to Section 6 of DER-10, *Technical Guidance for Site Investigation and Remediation.*

"Site Owner" means the actual owner of a site. If the site has multiple owners of multiple properties with ICs and/or ECs, the Department requires that the owners designate a single representative for IC/EC Certification activities.

APPENDIX C

Landfill Cap/Soil Cover Inspection Forms

US Army Corps of Engineers

COVER SHEET

LANDFILL CAP/SOIL COVER INSPECTION
AOC 1, Northeast Industrial Park, Guilderland, New York

FORM	DESCRIPTION	COMPLETED?	DATE COMPLETED
Form -1	**Final Cover/Cap System**		
Form -2	**Stormwater Drainage Ditches**		
Form -3	**Deficiencies and Problems**		

Notes:

Attach and complete all Forms listed above. Check and date each Form at the time of completion.

WEATHER CONDITIONS:

Inspection Date:

INSPECTOR: _____

SIGNATURE: _____

US Army Corps of Engineers

FORM: Form-1

FINAL COVER/CAP SYSTEM – INSPECTION CHECKLIST
AOC 1, Northeast Industrial Park, Guilderland, New York

ITEM NO.	ITEM TITLE	Inspection Area	
		Landfill Cap	Soil Cover
1	Surface Cracks		
2	Vegetative Growth		
3	Vector Penetration		
4	Settlement		
5	Erosion		
6	Slope Stability		
7	Seepage		
8	Condition of Fencing and Gates		
9	Condition of Monitoring Wells		
10	Vandalism and Illegal entry/use		

US Army Corps of Engineers

11	**Change in Land Use since Last Inspection**		
12	**Wildlife Observations (Beaver Activity)**		

Notes:

1. **Check (✓): Area has been inspected for this condition and no problems were reported pertaining to the final cover system.**
2. **Not Satisfactory (NS): Area has been inspected for this condition and problems have been identified. * = viewed as a minor Not Satisfactory condition. A description of deficiencies is provided on Form 3.**

Inspection Date: **INSPECTOR: _____**

SIGNATURE: _____

US Army Corps of Engineers

FORM: Form-2

STORMWATER MANAGEMENT SYSTEM – INSPECTION CHECKLIST
AOC 1, Northeast Industrial Park, Guilderland, New York

ITEM NO.	ITEM TITLE	Inspection Area	
		Landfill Cap	Soil Cover
1	Overgrown Vegetation		
2	Standing Water		
3	Sediments and Debris		
4	Erosion/Washouts		
5	Culvert (where present)		
6	Damage to riprap (where applicable)		

Notes:

1. **Check (✓): Area has been inspected for this condition and no problems were reported pertaining to the stormwater management system.**
2. **Not Satisfactory (NS): Area has been inspected for this condition and problems have been identified. . * = viewed as a minor Not Satisfactory condition. A description of deficiencies is provided on Form-3.**

Inspection Date: **INSPECTOR:** _____

SIGNATURE: _____

US Army Corps of Engineers

FORM: Form-3

DESCRIPTION OF DEFICIENCIES AND PROBLEMS
AOC 1, Northeast Industrial Park, Guilderland, New York

FORM NO.	LOCATION	DESCRIPTION of DEFICIENCY and PROBLEMS	CORRECTIVE ACTION TAKEN

Inspection Date:

INSPECTOR: _____

SIGNATURE: _____

APPENDIX D

Environmental Easement

Pending

ENVIRONMENTAL EASEMENT GRANTED PURSUANT TO ARTICLE 71, TITLE 36 OF THE NEW YORK STATE ENVIRONMENTAL CONSERVATION LAW

THIS INDENTURE made this 21st day of July, 2015, between Owner(s) Northeastern IP Holdings, Inc., having an office at 695 Rotterdam Industrial Park, Schenectady, New York 12306, County of Albany, State of New York (the "Grantor"), and The People of the State of New York (the "Grantee."), acting through their Commissioner of the Department of Environmental Conservation (the "Commissioner", or "NYSDEC" or "Department" as the context requires) with its headquarters located at 625 Broadway, Albany, New York 12233,

WHEREAS, the Legislature of the State of New York has declared that it is in the public interest to encourage the remediation of abandoned and likely contaminated properties ("sites") that threaten the health and vitality of the communities they burden while at the same time ensuring the protection of public health and the environment; and

WHEREAS, the Legislature of the State of New York has declared that it is in the public interest to establish within the Department a statutory environmental remediation program that includes the use of Environmental Easements as an enforceable means of ensuring the performance of operation, maintenance, and/or monitoring requirements and the restriction of future uses of the land, when an environmental remediation project leaves residual contamination at levels that have been determined to be safe for a specific use, but not all uses, or which includes engineered structures that must be maintained or protected against damage to perform properly and be effective, or which requires groundwater use or soil management restrictions; and

WHEREAS, the Legislature of the State of New York has declared that Environmental Easement shall mean an interest in real property, created under and subject to the provisions of Article 71, Title 36 of the New York State Environmental Conservation Law ("ECL") which contains a use restriction and/or a prohibition on the use of land in a manner inconsistent with engineering controls which are intended to ensure the long term effectiveness of a site remedial program or eliminate potential exposure pathways to hazardous waste or petroleum; and

WHEREAS, Grantor, is the owner of real property located at the address of 2 Van Buren Blvd in the Town of Guilderland, County of Albany and State of New York, known and designated on the tax map of the County Clerk of Albany as tax map parcel numbers: Section 50 Block 1 Lot 14.21, being the same as that property conveyed to Grantor by deed dated September 30, 2001 and recorded in the Albany County Clerk's Office in Liber and Page 2720/1002. The property subject to this Environmental Easement (the "Controlled Property") comprises approximately 26.062 +/- acres, and is hereinafter more fully described in the Land Title Survey dated January 2, 2013 and last revised on March 31, 2014 prepared by Bruce W. Snyder, Delta Engineers, Architects, & Land Surveyors, which will be attached to the Site Management Plan. The Controlled Property description is set forth in and attached hereto as Schedule A; and

WHEREAS, the Department accepts this Environmental Easement in order to ensure the protection of public health and the environment and to achieve the requirements for remediation established for the Controlled Property until such time as this Environmental Easement is

extinguished pursuant to ECL Article 71, Title 36; and

NOW THEREFORE, in consideration of the mutual covenants contained herein, Grantor conveys to Grantee a permanent Environmental Easement pursuant to ECL Article 71, Title 36 in, on, over, under, and upon the Controlled Property as more fully described herein ("Environmental Easement")

1. Purposes. Grantor and Grantee acknowledge that the Purposes of this Environmental Easement are: to convey to Grantee real property rights and interests that will run with the land in perpetuity in order to provide an effective and enforceable means of encouraging the reuse and redevelopment of this Controlled Property at a level that has been determined to be safe for a specific use while ensuring the performance of operation, maintenance, and/or monitoring requirements; and to ensure the restriction of future uses of the land that are inconsistent with the above-stated purpose.

2. Institutional and Engineering Controls. The controls and requirements listed in the Department approved Site Management Plan ("SMP") including any and all Department approved amendments to the SMP are incorporated into and made part of this Environmental Easement. These controls and requirements apply to the use of the Controlled Property, run with the land, are binding on the Grantor and the Grantor's successors and assigns, and are enforceable in law or equity against any owner of the Controlled Property, any lessees and any person using the Controlled Property.

A. (1) The controlled property is currently zoned for industrial uses as described in 6 NYCRR Part 375-1.8 (g)(2)(iv) and Guilderland Code 280-23.I. The controlled property is subject to additional restrictions as set forth in this Environmental Easement and Site Management Plan.

(2) All Engineering Controls must be operated and maintained as specified in the Site Management Plan (SMP);

(3) All Engineering Controls must be inspected at a frequency and in a manner defined in the SMP;

(4) The use of groundwater underlying the property is prohibited without necessary water quality treatment as determined by the NYSDOH or the Albany County Department of Health to render it safe for use as drinking water or for industrial purposes, and the user must first notify and obtain written approval to do so from the Department;

(5) Groundwater and other environmental or public health monitoring must be performed as defined in the SMP;

(6) Data and information pertinent to Site Management of the Controlled Property must be reported at the frequency and in a manner defined in the SMP;

(7) All future activities on the property that will disturb remaining contaminated material must be conducted in accordance with the SMP;

(8) Monitoring to assess the performance and effectiveness of the remedy must be performed as defined in the SMP;

(9) Operation, maintenance, monitoring, inspection, and reporting of any mechanical or physical components of the remedy shall be performed as defined in the SMP;

(10) Access to the site must be provided to agents, employees or other representatives of the State of New York with reasonable prior notice to the property owner to assure compliance with the restrictions identified by this Environmental Easement.

B. The Controlled Property shall not be used for Residential or Restricted Residential purposes as defined in 6NYCRR 375-1.8(g)(2)(i) and (ii), and the above-stated engineering controls may not be discontinued without an amendment or extinguishment of this Environmental Easement.

C. The SMP describes obligations that the Grantor assumes on behalf of Grantor, its successors and assigns. The Grantor's assumption of the obligations contained in the SMP which may include sampling, monitoring, and/or operating a treatment system, and providing certified reports to the NYSDEC, is and remains a fundamental element of the Department's determination that the Controlled Property is safe for a specific use, but not all uses. The SMP may be modified in accordance with the Department's statutory and regulatory authority. The Grantor and all successors and assigns, assume the burden of complying with the SMP and obtaining an up-to-date version of the SMP from:

Site Control Section
Division of Environmental Remediation
NYSDEC
625 Broadway
Albany, New York 12233
Phone: (518) 402-9553

D. Grantor must provide all persons who acquire any interest in the Controlled Property a true and complete copy of the SMP that the Department approves for the Controlled Property and all Department-approved amendments to that SMP.

E. Grantor covenants and agrees that until such time as the Environmental Easement is extinguished in accordance with the requirements of ECL Article 71, Title 36 of the ECL, the property deed and all subsequent instruments of conveyance relating to the Controlled Property shall state in at least fifteen-point bold-faced type:

This property is subject to an Environmental Easement held by the New York State Department of Environmental Conservation

pursuant to Title 36 of Article 71 of the Environmental Conservation Law.

F. Grantor covenants and agrees that this Environmental Easement shall be incorporated in full or by reference in any leases, licenses, or other instruments granting a right to use the Controlled Property.

G. Grantor covenants and agrees that it shall, at such time as NYSDEC may require, submit to NYSDEC a written statement by an expert the NYSDEC may find acceptable certifying under penalty of perjury, in such form and manner as the Department may require, that:

(1) the inspection of the site to confirm the effectiveness of the institutional and engineering controls required by the remedial program was performed under the direction of the individual set forth at 6 NYCRR Part 375-1.8(h)(3).

(2) the institutional controls and/or engineering controls employed at such site:

(i) are in-place;

(ii) are unchanged from the previous certification, or that any identified changes to the controls employed were approved by the NYSDEC and that all controls are in the Department-approved format; and

(iii) that nothing has occurred that would impair the ability of such control to protect the public health and environment;

(3) the owner will continue to allow access to such real property to evaluate the continued maintenance of such controls;

(4) nothing has occurred that would constitute a violation or failure to comply with any site management plan for such controls;

(5) the report and all attachments were prepared under the direction of, and reviewed by, the party making the certification;

(6) to the best of his/her knowledge and belief, the work and conclusions described in this certification are in accordance with the requirements of the site remedial program, and generally accepted engineering practices; and

(7) the information presented is accurate and complete.

3. Right to Enter and Inspect. Grantee, its agents, employees, or other representatives of the State may enter and inspect the Controlled Property in a reasonable manner and at reasonable times to assure compliance with the above-stated restrictions.

4. Reserved Grantor's Rights. Grantor reserves for itself, its assigns, representatives, and successors in interest with respect to the Property, all rights as fee owner of the Property, including:

A. Use of the Controlled Property for all purposes not inconsistent with, or limited by the terms of this Environmental Easement;

B. The right to give, sell, assign, or otherwise transfer part or all of the underlying fee interest to the Controlled Property, subject and subordinate to this Environmental Easement;

5. Enforcement

A. This Environmental Easement is enforceable in law or equity in perpetuity by Grantor, Grantee, or any affected local government, as defined in ECL Section 71-3603, against the owner of the Property, any lessees, and any person using the land. Enforcement shall not be defeated because of any subsequent adverse possession, laches, estoppel, or waiver. It is not a defense in any action to enforce this Environmental Easement that: it is not appurtenant to an interest in real property; it is not of a character that has been recognized traditionally at common law; it imposes a negative burden; it imposes affirmative obligations upon the owner of any interest in the burdened property; the benefit does not touch or concern real property; there is no privity of estate or of contract; or it imposes an unreasonable restraint on alienation.

B. If any person violates this Environmental Easement, the Grantee may revoke the Certificate of Completion with respect to the Controlled Property.

C. Grantee shall notify Grantor of a breach or suspected breach of any of the terms of this Environmental Easement. Such notice shall set forth how Grantor can cure such breach or suspected breach and give Grantor a reasonable amount of time from the date of receipt of notice in which to cure. At the expiration of such period of time to cure, or any extensions granted by Grantee, the Grantee shall notify Grantor of any failure to adequately cure the breach or suspected breach, and Grantee may take any other appropriate action reasonably necessary to remedy any breach of this Environmental Easement, including the commencement of any proceedings in accordance with applicable law.

D. The failure of Grantee to enforce any of the terms contained herein shall not be deemed a waiver of any such term nor bar any enforcement rights.

6. Notice. Whenever notice to the Grantee (other than the annual certification) or approval from the Grantee is required, the Party providing such notice or seeking such approval shall identify the Controlled Property by referencing the following information:

County, NYSDEC Site Number, NYSDEC Brownfield Cleanup Agreement, State Assistance Contract or Order Number, and the County tax map number or the Liber and Page or computerized system identification number.

Parties shall address correspondence to:

Site Number: 401009
Office of General Counsel
NYSDEC
625 Broadway
Albany New York 12233-5500

With a copy to:

Site Control Section
Division of Environmental Remediation
NYSDEC
625 Broadway
Albany, NY 12233

All notices and correspondence shall be delivered by hand, by registered mail or by Certified mail and return receipt requested. The Parties may provide for other means of receiving and communicating notices and responses to requests for approval.

7. Recordation. Grantor shall record this instrument, within thirty (30) days of execution of this instrument by the Commissioner or her/his authorized representative in the office of the recording officer for the county or counties where the Property is situated in the manner prescribed by Article 9 of the Real Property Law.

8. Amendment. Any amendment to this Environmental Easement may only be executed by the Commissioner of the New York State Department of Environmental Conservation or the Commissioner's Designee, and filed with the office of the recording officer for the county or counties where the Property is situated in the manner prescribed by Article 9 of the Real Property Law.

9. Extinguishment. This Environmental Easement may be extinguished only by a release by the Commissioner of the New York State Department of Environmental Conservation, or the Commissioner's Designee, and filed with the office of the recording officer for the county or counties where the Property is situated in the manner prescribed by Article 9 of the Real Property Law.

10. Joint Obligation. If there are two or more parties identified as Grantor herein, the obligations imposed by this instrument upon them shall be joint and several.

IN WITNESS WHEREOF, Grantor has caused this instrument to be signed in its name.

Northeastern IP Holdings, Inc.:

By: _____

Print Name: David M. Buicko

Title: Exec Vice Pres/COO Date: 7/21/15

Grantor's Acknowledgment

STATE OF NEW YORK)
) ss:
COUNTY OF Schenectady)

On the 21 day of July, in the year 2015, before me, the undersigned, personally appeared DAVID BOICKO, personally known to me or proved to me on the basis of satisfactory evidence to be the individual(s) whose name is (are) subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their capacity(ies), and that by his/her/their signature(s) on the instrument, the individual(s), or the person upon behalf of which the individual(s) acted, executed the instrument.

Sandra D. Andi
Notary Public - State of New York

SANDRA D. ANDI
Notary Public, State of New York
No. 4737914
Qualified in Albany County
Commission Expires November 30, 2017

THIS ENVIRONMENTAL EASEMENT IS HEREBY ACCEPTED BY THE PEOPLE OF THE STATE OF NEW YORK, Acting By and Through the Department of Environmental Conservation as Designee of the Commissioner,

By: _____
Robert W. Schick, Director
Division of Environmental Remediation

Grantee's Acknowledgment

STATE OF NEW YORK)
) ss:
COUNTY OF ALBANY)

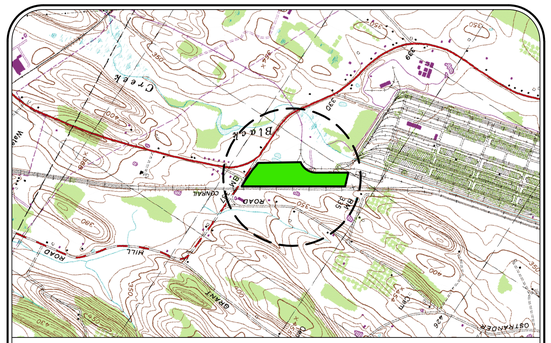
On the _____ day of _____, in the year 20__, before me, the undersigned, personally appeared Robert W. Schick, personally known to me or proved to me on the basis of satisfactory evidence to be the individual(s) whose name is (are) subscribed to the within instrument and acknowledged to me that he/she/ executed the same in his/her/ capacity as Designee of the Commissioner of the State of New York Department of Environmental Conservation, and that by his/her/ signature on the instrument, the individual, or the person upon behalf of which the individual acted, executed the instrument.

_____

Notary Public - State of New York

SCHEDULE "A" PROPERTY DESCRIPTION

See Attached.



LOCATION MAP:

NOT TO SCALE

ENVIRONMENTAL EASEMENT DESCRIPTION:

PROPOSED DESCRIPTION OF A PORTION OF THE LANDS OF
NORTHEASTERN IP HOLDINGS, INC.
DEPOT ROAD, TOWN OF GUILDERLAND, ALBANY COUNTY

"ENVIRONMENTAL EASEMENT PARCEL"

ALL THAT TRACT OR PARCEL OF LAND SITUATE IN THE TOWN OF GUILDERLAND, COUNTY OF ALBANY AND STATE OF NEW YORK, BOUNDED AND DESCRIBED AS FOLLOWS:

Beginning at a point on the northerly highway boundary of Stone Road (Depot Road) (Voorheesville - Guilderland Center County Road #201), said point standing at the intersection of the northerly highway boundary of Stone Road (Depot Road) (Voorheesville - Guilderland Center County Road #201) with the westerly boundary of the lands of CSX Transportation, Inc. (Reputed Owner) (New York Central Railroad Company - Now or Formerly) (West Shore Railroad); thence **S89°03'21"W 176.16 feet** along the northerly highway boundary of Stone Road (Depot Road) (Voorheesville - Guilderland Center County Road #201) to a metal fence post; thence **N88°25'41"W 300.02 feet** continuing along the northerly highway boundary of Stone Road (Depot Road) (Voorheesville - Guilderland Center County Road #201) to a metal fence post; thence **N80° 53'43"W 66.23 feet** to a metal fence post; thence **N81°55'11"W 88.99 feet** to an iron rod; thence **N03°09'49"E 1.00 feet** to an iron rod; thence **N87°55'11"W 70.55 feet** still along the northerly highway boundary of Stone Road (Depot Road) (Voorheesville - Guilderland Center County Road #201) to an iron rod; thence **N33°25'31"W 1,046.57 feet** to an iron rod; thence northerly **487.89 feet** along a curve to the left with a radius of **410.00 feet**, a delta angle of **68°10'48"** and a chord bearing and distance of **N01°40'04"E 459.61 feet** to an iron rod, thence **N32°25'20"W 785.00 feet** to an iron rod; thence **N70°57'28"E 343.83 feet** to an iron rod standing on the westerly boundary of the lands reputedly owned by CSX Transportation, Inc.; thence **S32°25'20"E 2,534.68 feet** along the westerly boundary of the lands of reputedly owned by CSX Transportation, Inc. to the **point and place of beginning.**

The above described **Environmental Easement** parcel containing **26.062 Acres** (1,135,281.3 sq.ft.) more or less.

Subject to a 15 ft. wide permanent easement, reserved to the United States of America, its successors and assigns, for joint use with the Town of Guilderland Urban Renewal Agency, its successors and assigns, of the existing railroad tracks, together with an easement for the installation, construction, maintenance, replacement, or relocation and patrol of such facilities, in, on, over, and through the above referenced premises.

Also **subject to** any other easements, covenants or restrictions of record.

RECORD LEGAL DESCRIPTION:

ALL THAT CERTAIN TRACT, PIECE OR PARCEL OF LAND situate lying and being in the Town of Guilderland, County of Albany, and State of New York, more particularly bounded and described as follows:

BEGINNING at the intersection of the westerly right-of-way line of the New York Central Railroad (West Shore Branch) with the northeasterly side of County Highway #201 and runs thence northwesterly and northerly along said highway to following courses and distances: S89°03'21"W, 176.16 feet: N88°25'41"W, 300.02 feet: N80°53'43"W, 66.23 feet; N87°55'11"W, 88 feet; N3°09'49"E, 1.0 feet; N87°55'11"W, 1,108.00 feet; N74°10'13"W, 293.00 feet; N67°26'13"W, 129.0 feet; N57°59'04"W, 272.37 feet; N58°02'00"W, 885.00 feet; N61°50'00"W, 38.95 feet; S73°37'00"W, 19.15 feet; N58°25'00"W, 113.27 feet; N76°03'00"W, 640.46 feet; N76°13'21"W, 301.67 feet; N83°07'21"W, 648.15 feet; N49°16'21 W, 244.51 feet; N41°34'21"W, 273.19 feet; N30°45'21"W, 135.55 feet; N31°33'21"W, 132.80 feet; N16°09'21"W, 447.43 feet; N16°17'20"W, 90.02 feet; N78°55'50"E, 1.0 feet; N00°11'50"E, 918.07 feet N03°23'50"E, 251.00 feet; N00°43'10"W, 604.00 feet; N9°23'00"W, 381.31 feet; N21°16'10"W, 1,155.00 feet; N74°05'10"W, 1.0 feet; N11°53'53"W, 293.54 feet; N19°19'08"W, 225.67 feet; N30°43'12"W, 314.53 feet to the lands formerly of Iva Bloomingdale, now of Central School District No. 2 of the Town of Guilderland, Bethlehem, and New Scotland; thence along said School District lands the following four courses and distances: (1) N59°03'08"E, 234.61 feet; (2) S85°10'41"E, 353.57 feet; (3) N14°36'26"E, 2,665.08 feet; (4) N27°32'54"W, 294.50 feet; thence N24°22'06"E, crossing Black Creek, 27.50 feet to the westerly boundary of the New York Central Railroad right-of-way (West Shore Branch); thence along said right-of-way the 7 following courses and distances: (1) S14°07'00"E, 235.15 feet: (2) N75°53'00"E, 13.00 feet; (3) S14°07'00", 4,848.91 feet; (4) thence southerly on the arc of a circle curving to the left having a radius of 4,649.56 feet, a central angle of 5°11'25" for an arc distance of 421.19 feet; (5) thence S19°18'35"E, a distance of 993.53 feet; (6) thence on the arc of a circle, curving to the left having a radius of 1,369.70 feet, a central angle of 13°06'45" for an arc distance of 313.46 feet; (7) thence S32°25'20"E, a distance of 3,607.10 feet to the point and place of beginning.

As shown on a map entitled Survey and Map of Lands Leased to Northeastern Industrial Park, Inc., showing buildings, easements, and exceptions prepared by Richard Danskin, P.C., dated August 15, 1980, and revised October 2, 1980, last revised January 26, 1998.

EXCEPTING AND RESERVING, therefrom, all the tract or parcel of land, situate in the Town of Guilderland, County of Albany, and State of New York, bounded and described as follows: BEGINNING at the centerline of a concrete monument on the easterly side of County Highway #201 at the northwesterly corner of the herein described parcel and runs thence N80°20'39"E, a distance of 923.58 feet; thence S19°39'21"E, along present fence a distance of 253.58 feet; thence S06°31'21"E, a distance of 91.43 feet; thence S5°40'39"W, a distance of 121.01 feet; thence S8°49'39"W, 211.50 feet; thence S6°57'39"W, a distance of 100.96 to a fence corner; thence N72°42'39"E, a distance of 360.02 feet; thence S53°16'21"E, a distance of 24.88 feet; thence N61°37'39"E, a distance of 130.32 feet; thence N89°15'39"E, a distance of 120.52 feet: thence S32°46'35"E, a distance of 909.79 feet to a fence corner; thence S75°18'36"W, a distance of 536.75 feet to the easterly side of County Highway #201; thence continuing along County Highway #201 marked by concrete monuments at all angle point the following 7 courses and distances: (1) N76°13'21"W, a distance of 301.67 feet; (2) N63°07'21"W, a distance of 648.15 feet; (3) N49°16'21"W, a distance of 244.51 feet; (4) N41°34'21"W, a distance of 273.19 feet; (5) N30°45'21"W, a distance of 135.55 feet; (6) N31°33'21"W, a distance of 132.80 feet; (7) N16°09'21"W, a distance of 447.43 feet to the point and place of beginning.

RESERVING to the United States of America, its successors and assigns, a permanent easement for joint use with Town of Guilderland Urban Renewal Agency, its successors and assigns, of the existing railroad tracks, together with an easement for the installation, construction, maintenance, replacement, or relocation and patrol of such facilities, in, on, over, and through two strips of land 15 feet in width, the center line of which are described as follows:

BEGINNING at a point on the center line of tracks of GSA PMDS Depot where it joins the east bound main line of the N.Y.C.R.R. and runs: thence southwesterly on the arc of a circle curving to the right, having a central angle of 6° and 5', radius of 608.60 feet for an arc distance of 64.61 feet; thence S8°08'E, a distance of 53.28 feet; thence on the arc of a circle curving to the left having a central angle of 1° 3' a radius of 2,223.94 feet for an arc distance of 40.11 feet; thence S9°11'E, a distance of 171.83 feet; thence on the arc of a circle curving to the right having a central angle of 1°51', a radius of 1,349.14 feet for an arc distance of 39.24 feet; thence S7°20'E, a distance of 36.27 feet; thence on the arc of a circle curving to the left, having a central angle of 6°53', a radius of 463.07 feet for an arc distance of 55.62 feet; thence S14°13'E, a distance of 74.60 feet; thence on the arc of a circle curving to the right, having a central angle of 6°58', a radius of 465.41 feet for an arc distance of 56.72 feet; thence S7°13'E, a distance of 45.49 feet; thence on the arc of a circle curving to the left, having a central angle of 7°0', a radius of 490.51 feet for an arc distance of 59.92 feet;

thence S14°13'E, for a distance of 3,215.54 feet; thence on the arc of a circle curving to the left, having a central angle of 2°50', a radius of 4,014.15 feet, for an arc distance of 198.49 feet; thence S17°03'E, a distance of 291.54 feet; thence on the arc of a circle curving to the left, having a central angle of 7°24', a radius of 498.22 feet for an arc distance of 64.34 feet; thence S24°27'E, a distance of 40.40 feet; thence on the arc of a circle curving to the right, having a central angle of 7°24', a radius of 480.28 feet for an arc distance of 62.02 feet; thence S17°03'E, a distance of 49.14 feet; thence on the arc of a circle curving to the left, having central angle of 7° and 24', a radius of 474.71 feet for an arc distance of 61.30 feet; thence S17°03'E, a distance of 1,554.40 feet; thence on the arc of a circle curving to the left, having a central angle of 15°30', a radius of 1,909.61 feet for an arc distance of 516.58 feet; thence S32°33'E, a distance of 223.83 feet to a point of intersection of the central line of tracks traveling from said point of intersection in a northwesterly direction; thence S32°33'E, a distance of 1,444.16 feet to the end of the tracks. All the above courses herein mentioned are along the center line of the tracks used by the GSA PMDS Depot, Voorheesville areas.

BEGINNING at a point on the center line of the tracks at the point of intersection of said center line of said tracks as above mentioned and running thence on the arc of a circle curving to the left, having a central angle of 42°, a radius of 611.39 feet for an arc distance of 455.63 feet; thence N75°15" W, a distance of 24.56 feet; thence on the arc of a circle curving to the left, having a central angle of 14°59', a radius of 463.99 feet for an arc distance of 121.33 feet; thence S89°46'W, a distance of 77.05 feet; thence the arc of a circle, curving to the left having a central angle of 6°2', a radius of 618.97 feet for an arc distance of 65.18 feet; thence S83°44'W, a distance of 73.74 feet; thence on the arc of a circle curving to the right having a central angle of 6°9', a radius of 1,680.04 feet for an arc distance of 180.31 feet; thence S89°53'W, a distance of 1,407.16 feet; thence on an arc of a circle curving to the left, having a central angle of 47°02', a radius of 401.16 feet for an arc distance of 329.30 feet to the easterly line of a 35 acre parcel to be deeded by GSA PMDS Depot Voorheesville Area, said last mentioned point being at a point near Gate 13. All of the above courses herein mentioned are along the center line of the tracks in use by the GSA PMDS Depot Voorheesville Area.

THE ABOVE excluded parcel and two strips of land are shown on a survey entitled "Survey and Map of Lands Leased to Northeastern Industrial Park, Inc.", showing buildings, easements and exceptions prepared by Richard Danskin, P.C., dated August 15, 1980, and revised October 2, 1980, last revised January 26, 1998.

ALSO, EXCEPTING AND RESERVING therefrom, all that tract or parcel of land situate in the Town of Guilderland, County of Albany, and State of New York and being located at or near Guilderland Center, New York, and more particularly described as follows:

BEGINNING at the northwest corner of the herein described parcel, said point being S18°24'11"E, a distance of 885.65 feet from the northeast corner of lands leased to Central School District No. 2 (Town of Guilderland, Bethlehem and New Scotland), by the Urban Renewal Agency, said course making an interior angle of 45°48" with the easterly boundary of the aforementioned lands of Central School District No. 2; thence through lands of the Urban Renewal Agency for the following 12 courses and distances: (1) N87°48'26"E, a distance of 252.77 feet to a point; (2) N80°53'51"E, a distance of 105.69 feet to a point; (3) S61°15'22"E, a distance of 175.63 feet to a point; (4) S23°37'56"E, a distance of 264.35 feet to a point; (5) S04°18'20"E, a distance of 181.43 feet to a point; (6) S48°07'12"W, a distance of 170.27 feet to a point; (7) N71°38'14"W, a distance of 184.88 feet to a point; (8) S70°34'30"W, a distance of 233.20 feet to a point; (9) N67°29'04"W, a distance of 125.08 feet to a point; (10) N01°54'14"W, a distance of 341.96 feet to a point; (11) N02°17'36"W, a distance of 164.04 feet to a point; (12) N20°43'14"E, a distance of 83.01 feet to the point and place of beginning.

ALSO EXCEPTING AND RESERVING therefrom, All that piece or parcel of land, situate, lying and being in the Town of Guilderland, County of Albany and State of New York, bounded and described as follows: Beginning at a point on the northwesterly line of Albany County Route #201 (Depot Road) as it is intersected by the southerly line of Lands of the United States Government and runs thence N85°22'00"E along said southerly line a distance of 716.48 feet; thence S1°37'00"E along a reserved 60 foot roadway a distance of 419.70 feet, thence S86°19'00"W a distance of 72.63 feet to a point on the Albany County Route #201 (Depot Road) thence N45°43'00"W along said roadway a distance of 113.27 feet to a concrete monument, thence N63°21'00"W continuing along the northwesterly line of said road a distance of 640.46 feet to the point and place of beginning.

THE CLOSING INSTRUMENT ONLY - NOT INSURED: Containing 353,260 square feet of 8.1 acres of land, more or less, and being shown as a parcel described upon a survey of the lands to be acquired by the Town of Guilderland from the Town of Guilderland Urban Renewal Agency, Scale - 1 inch equals 100 feet, dated October 18, 1971, map and survey by Selee and Carpenter, Land Surveyors and Planners, One Alton Road, Albany, New York and designated as Sheet 2 of 4.

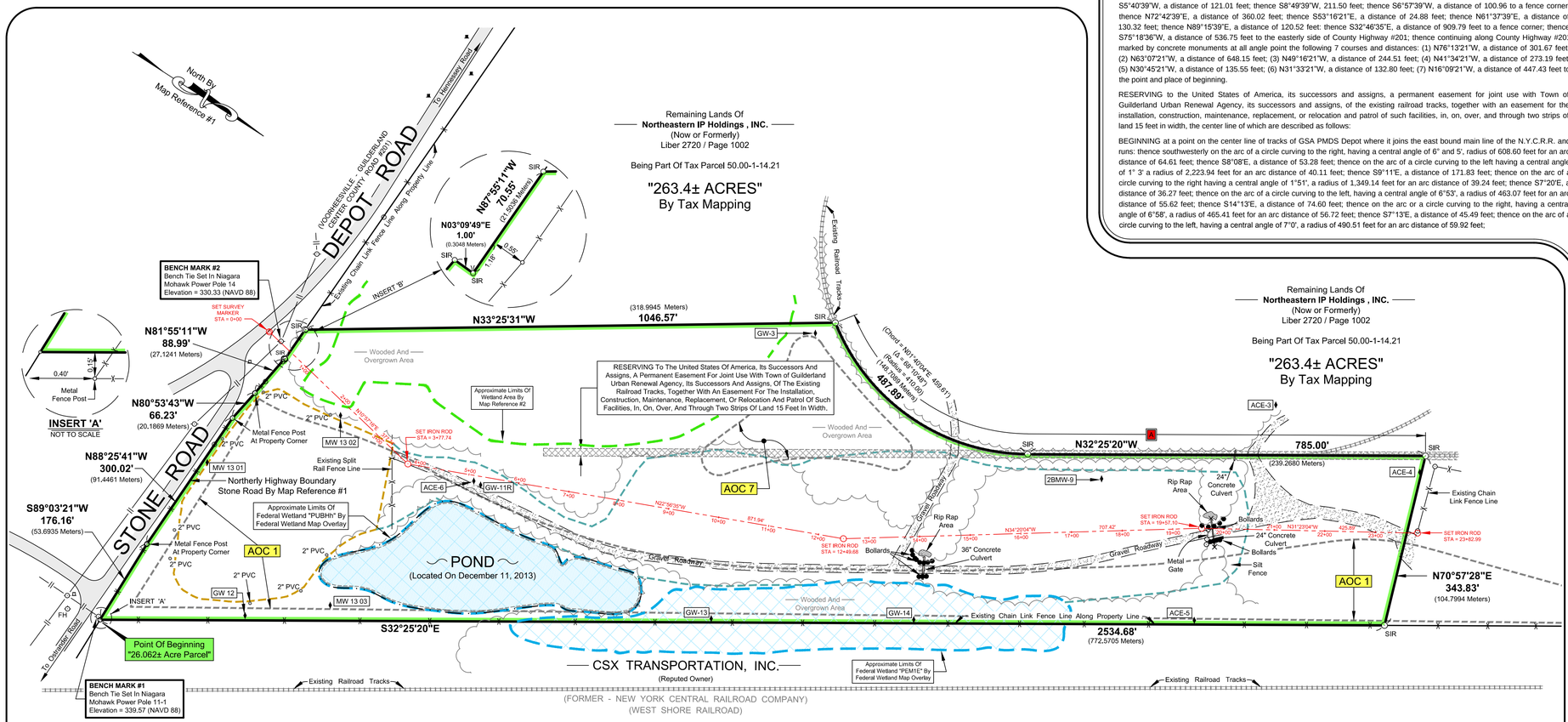
Excepting from the above those parcels conveyed to American Real Estate Investment, LP by deed recorded 5/14/98 in Liber 2603 page 251.

ALSO EXCEPTING AND RESERVING THEREFROM All that parcel of land situated in the Town of Guilderland, County of Albany, State of New York as follows:

Beginning at a point in the easterly right of way line of County Route 201 with its intersection with the division line between the lands now or formerly of the United States of America on the South and the lands now or formerly of Northeastern Industrial Park, Inc. on the North, thence from said point of beginning along said easterly highway right of way line the following three (3) courses; (1) North 16 degrees 17 minutes 20 seconds West, 90.02 feet, (2) North 78 degrees 55 minutes 50 seconds East, 1.0 feet, (3) North 00 degrees 11 minutes 50 seconds East, 675.42 feet to a point; thence through the lands of said Northeastern Industrial Park, Inc., the following four (4) courses: (1) North 80 degrees 03 minutes 50 seconds East, 76.19 feet, (2) South 00 degrees 11 minutes 50 seconds West, 513.82 feet, (3) South 89 degrees 48 minutes 12 seconds East, 95.00 feet, (4) South 00 degrees 11 minutes 55 seconds West, 236.26 feet to a point in the first mentioned division line; thence South 80 degrees 20 minutes 39 seconds West, 147.61 feet along said division line to the point of beginning.

EXCEPTING AND RESERVING THEREFROM All that certain plot, piece or parcel of land, situate, lying and being in the Town of Guilderland, County of Albany and State of New York, with the buildings and improvements thereon erected bounded and described as follows:

Beginning at a point in the division line between the lands now or formerly of the Central School District No. 2, Towns of Guilderland, Bethlehem and New Scotland on the Northwest and lands now or formerly of the United States of America (Schenectady General Depot-Voorheesville Area) on the Southeast, said point being 148.76 feet distant southwesterly measured along said division line from the most northerly corner of lands of the United States of America as the same is shown on a map entitled, "Schenectady General Depot-Voorheesville Area-Survey Utilities, Boundary Railroads-Boundary and Property Line", dated March 27, 1952, and made by E.W. Boutelle and Son; thence southwesterly along said division line 1,000.00 feet to a point; thence southeasterly with an interior angle on 90 deg. and through the lands now or formerly of the United States of America, a distance of 252.59 feet to a point; thence northeasterly with an interior angle of 111 deg. 14'44" continuing through lands now or formerly of the United States of America, a distance of 296.41 feet to a point; thence northeasterly with an interior angle of 158 deg. 45'16" along a line parallel to the aforementioned division line and continuing through the lands now or formerly of the United States of America for a distance of 613.67 feet to a point; thence northwesterly with the interior angle of 107 deg. 00'00" and continuing through the lands now or formerly of the United States of America, a distance of 376.45 feet to the point of beginning, the last mentioned course making an interior angle of 73 deg. 00'00" with the first mentioned course.



LEGEND:

- Denotes Existing Iron Rod
- SIR ○ Denotes Set Iron Rod
- SIR ⊙ Denotes Set Metal Survey Marker
- Denotes Existing Power Pole
- // Denotes Overhead Power Pole Line
- FH Denotes Existing Fire Hydrant
- GW 12 Denotes Existing Monitoring Well
- MW 13 03 Denotes Existing Monitoring Well
- Denotes Existing Bollard
- Denotes Existing Street Sign
- Denotes Location Of Landfill Cap Area By Map Reference #2
- Denotes Location Of Soil Cover Area By Map Reference #2
- AOC 7 Denotes Location Of Area Of Concern

Unauthorized Alteration Or Addition To A Survey Map Bearing A Licensed Land Surveyor's Seal Is A Violation Of Section 7209-2, Of The New York State Education Law.

Only Copies From The Original Of This Survey Marked With The Land Surveyor's Signature And An Original Embossed Or Ink Seal Shall Be Considered Valid True Copies.

DEED REFERENCE:

D.R. #1 — Northeastern Industrial Park, Inc.
To
Northeastern IP Holdings, Inc.
Quit Claim Deed - Dated: September 30, 2002
Liber 2720 Of Deeds At Page 1002

Subject to any state of facts a current Abstract of Title may show.

Subject to any other Easements, Covenants or Restrictions of Record

MAP REFERENCES:

M.R. #1 — "Survey And Map Of Lands Leased To Northeastern Industrial Park, Inc. Showing Buildings, Easements And Exceptions" By Richard Danskin, P.C., Dated August 15, 1980, Revised On October 2, 1980 And Last Revised On May 19, 2003

M.R. #2 — Northeast Industrial Park Area Of Concern 1 Landfill Cap / Soil Cover Site Plan" Town Of Guilderland - Albany County - State Of New York By U.S. Army Corps Of Engineers, New England District Concord, Massachusetts Dated January 23, 2014

SCALE: 1" = 120 FEET

120 0 120 240 360

SCALE: 1" = 36.58 METERS

36.58 M 0 M 36.58 M 73.15 M 109.73 M

STATEMENT OF ENCROACHMENTS:

A — Existing Railroad Tracks Encroach Over The Northwest Property Line Of The "Environmental Easement" Onto The Remaining Lands Of Northeastern IP Holdings , INC. A Distance Of 2.5 Feet By 1272.89 Feet.

TOTAL ACREAGE ENVIRONMENTAL EASEMENT IS "26.062± ACRES"
(1,135,281.3± Sq. Ft.)

"ENVIRONMENTAL EASEMENT"

Portion Of The Lands Of
Northeastern IP Holdings, Inc.

Town Of Guilderland - Albany County
State Of New York

Surveyor's Certification

TO: New York State Department Of Environmental Conservation

THE UNDERSIGNED HEREBY CERTIFIES THAT THIS IS AN ACCURATE MAP OF AN ACTUAL FIELD SURVEY DATED: January 2, 2013 AND THAT BOTH MAP AND SURVEY ARE CORRECT.

Bruce W. Snyder
Registered Land Surveyor No.050195
In The State Of New York
Date Of Survey: January 2, 2013
Date Of Last Revision: March 31, 2014
Project Number: 2013.453.001

STATE OF NEW YORK · BRUCE W. SNYDER · LICENSED LAND SURVEYOR · 050195

SHEET 1 OF 1

ADELTA
ENGINEERS, ARCHITECTS, & LAND SURVEYORS
4873 NYS Route 5, Vernon, NY 13476
Tel: 315.953.4200
Fax: 315.953.4202
Website: www.deltaengineers.com

APPENDIX E

Record Drawing As-Built – Area of Concern 1 – Landfill Cap/Soil Cover

RECORD DRAWING AS-BUILT - H2H ASSOCIATES, LLC.

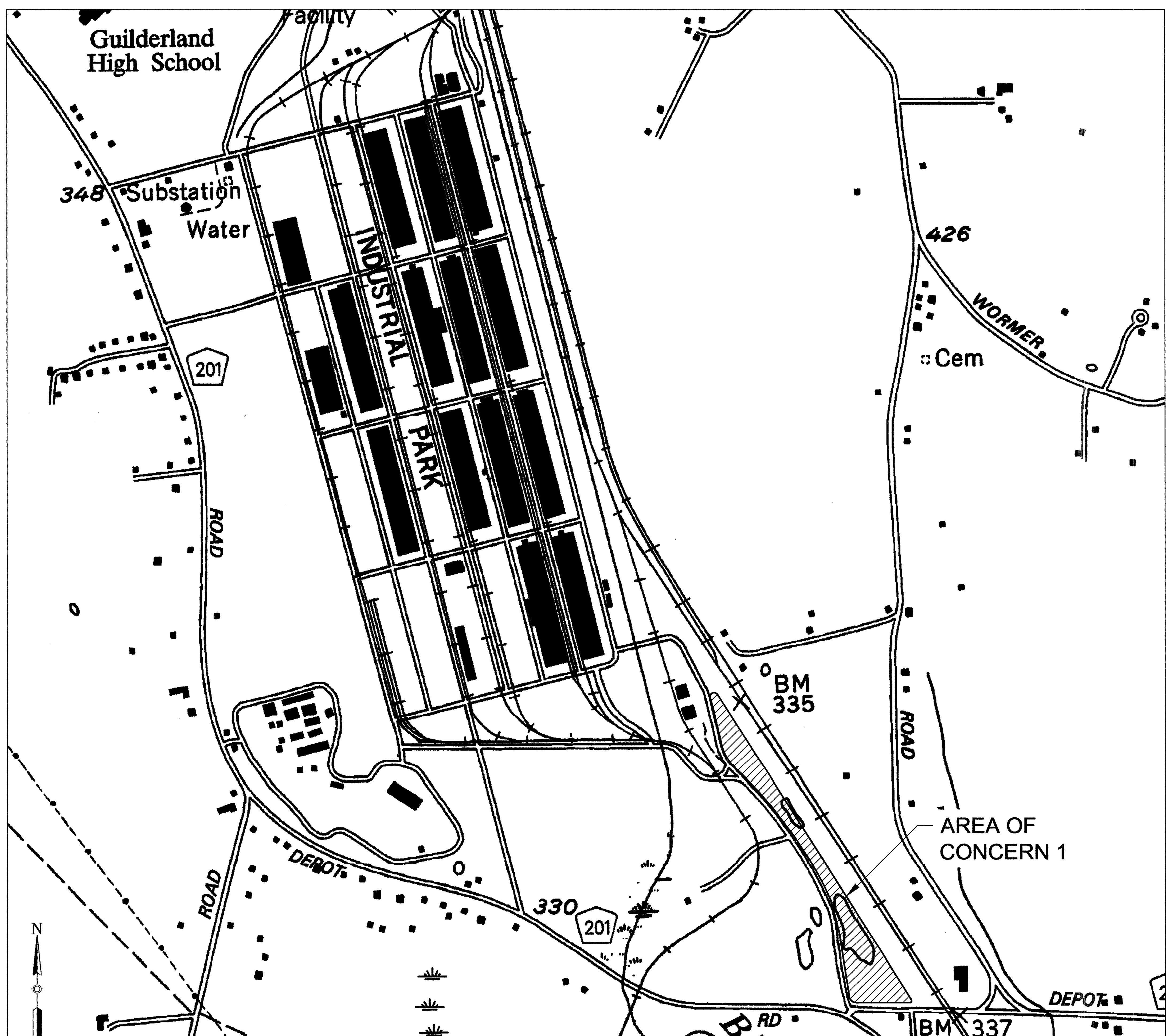
CONTRACT NO. W912WJ-12-C-0006

USACE - NORTHEAST INDUSTRIAL PARK

AREA OF CONCERN 1 - LANDFILL CAP/SOIL COVER

GUILDERLAND, NEW YORK

NORTHEAST INDUSTRIAL PARK



DRAWING INDEX

SHEET	DWG	DESCRIPTION
1	T-1	TITLE SHEET
2	C-1	SITE PLAN
3	C-2	FINAL COVER PLAN - LANDFILL CAP
4	C-3	FINAL COVER PLAN - SOIL COVER
5	C-4	GEOMEMBRANE LAYOUT - LANDFILL CAP
6	D-1	LANDFILL CAP DETAILS
7	D-2	SOIL COVER DETAILS
8	D-3	MISC. DETAILS
9	D-4	EROSION AND SEDIMENT CONTROL DETAILS

LOCATION MAP

STATE OF NEW YORK
MICHAEL PARK SYKES
074250
LICENSED PROFESSIONAL ENGINEER

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE	APPR.	MARK	DESCRIPTION	DATE	APPR.
	AS-BUILT RECORD DRAWINGS						
1	ADDED SHEET C-4, ADDED WELL TABLE TO C1	01-23-2014					

DESIGNED BY: MPS		DATE: 01-23-2014
DWN BY: MVF	CKD BY: MPS	SOLICITATION NO.: W912WJ-12-R-0005
SUBMITTED BY: AGH		CONTRACT NO.: W912WJ-12-C-0006
PLOT SCALE: NTS	PLOT DATE: 01-23-2014	FILE NUMBER: FILE_NO
SIZE: ANSI_D	FILE NAME: 01-23-2014_AB_NEIP_AOC_1_T1_R1	

U.S. ARMY CORPS OF ENGINEERS
NEW ENGLAND DISTRICT
CONCORD, MASSACHUSETTS

HGL HydroGeoLogic, Inc. | H2H Associates

NORTHEAST INDUSTRIAL PARK
AREA OF CONCERN 1
LANDFILL CAP/SOIL COVER

TITLE SHEET

SHEET IDENTIFICATION
T-1
SHEET 1 OF 9

WELL I.D.	EASTING	NORTHING	GR. Elevation (feet AMSL)	MP Elevation (feet AMSL)	TOC Elevation (feet AMSL)	Boring Depth (ft bgs)	Screen Interval (feet)	Sandpack Interval (ft bgs)
2BMW-9	640359.72	1401827.95	325.9	330.07	330.32	25	7 - 22	5 - 25
ACE-3	640050.67	1402036.90	321.6	324.24	324.43	15	4 - 14	3 - 15
ACE-4	640007.28	1402347.53	323.1	325.54	325.77	15	4 - 14	3 - 15
ACE-5	640494.65	1402133.51	321.0	322.72	323.17	15	5 - 15	4 - 15
ACE-6	641038.57	1400791.02	328.3	330.59	331.49	19	7 - 17	5 - 19
GW-3	640427.01	1401197.67	321.2	323.99	324.16	26.2	20 - 25	17.5 - 26.2
GW-11R	641037.65	1400806.10	328.3	329.81	332.23	142	NA (openhole)	NA
GW-12	641507.22	1400557.37	323.5	325.11	326.71	8	3 - 8	2.5 - 8
GW-13	641010.73	1401331.93	320.8	323.53	323.77	8	3 - 8	2.5 - 8
GW-14	640794.77	1401668.21	320.4	323.74	323.85	8	3 - 8	2.5 - 8
MW 13-01	641294.22	1400330.11	326.8	329.53	329.73	10.3	3.6 - 8.6	2.5 - 10.3
MW-13-02	641073.34	1400500.12	325.7	328.17	328.46	11	5.7 - 10.7	1 - 11
MW-13-03	641398.46	1400687.05	322.0	324.01	324.94	13.6	13.6 - 3.6	2 - 13.6

LEGEND:

- EXISTING MONITORING WELL, UNMODIFIED
- EXISTING MONITORING WELL WITH RISER
- NEW MONITORING WELL
- LIMIT OF LANDFILL CAP AREA
- LIMIT OF SOIL COVER AREA
- FENCE
- LIMIT OF H2H ASSOCIATES SURVEY
- WETLAND AREA
- STREAM
- 323 FINISHED GRADE INTERMEDIATE CONTOUR
- 323 FINISHED GRADE INDEX CONTOUR
- RIP RAP
- BOLLARDS
- GATE
- WOODEN FENCE

FEATURE NOTES:

1. WETLAND BOUNDARY FIELD VERIFIED BY STERLING ENVIRONMENTAL ENGINEERING P.C. (2012)
2. 1FT CONTOURS SURVEYED BY H2H ASSOCIATES, LLC (OCT 2013)
3. 2FT CONTOURS FROM ALBANY COUNTY GIS DATA DERIVED FROM 2008 LIDAR DATA

HORIZONTAL DATUM: NAD83
VERTICAL DATUM: NAVD88

STATE OF NEW YORK · MICHAEL PARK SYKES · 074250 · LICENSED PROFESSIONAL ENGINEER

SCALE IN FEET (APPROXIMATE)
0 75 150 300

N

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE	APPR.
	AS-BUILT RECORD DRAWINGS		
1	ADDED SHEET C-4, ADDED WELL TABLE TO C1		

U.S. ARMY CORPS OF ENGINEERS
NEW ENGLAND DISTRICT
CONCORD, MASSACHUSETTS

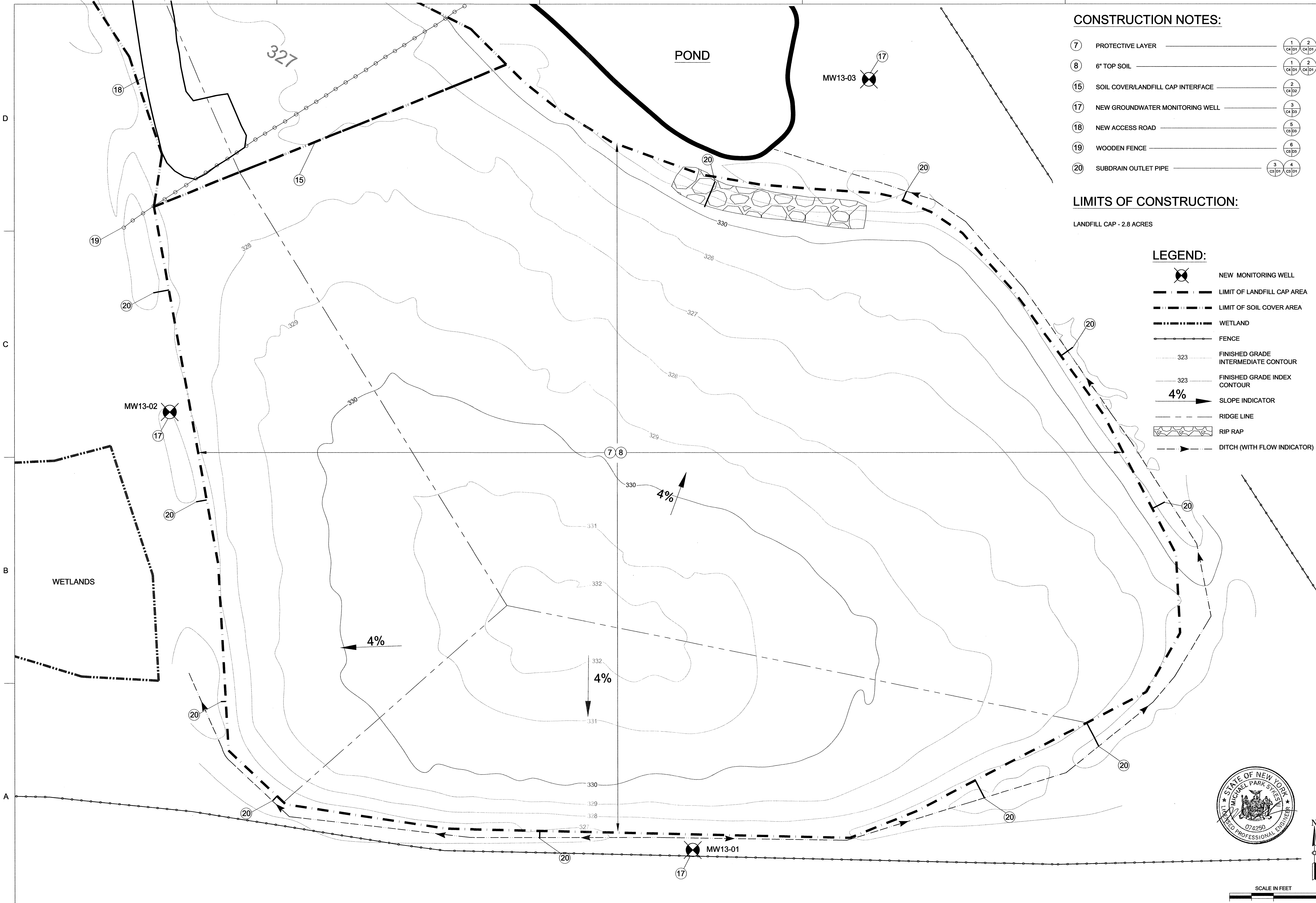
HGL HydroGeoLogic, Inc. | H2H Associates

DESIGNED BY: MPS
DWN BY: MVF
CKD BY: MPS
SUBMITTED BY: AGH
PLOT SCALE: 1"=150'-0"
PLOT DATE: 01-23-2014
SIZE: ANSI_D
FILE NAME: 01-23-2014_AB_NEIP_AOC_1_C1_R1
DATE: 01-23-2014
SOLICITATION NO.: W912WJ-12-R-0005
CONTRACT NO.: W912WJ-12-C-0006
FILE NUMBER: FILE_NO

NORTHEAST INDUSTRIAL PARK
AREA OF CONCERN 1
LANDFILL CAP/SOIL COVER

SITE PLAN

SHEET IDENTIFICATION
C-1
SHEET 2 OF 9



CONSTRUCTION NOTES:

- (7) PROTECTIVE LAYER
- (8) 6" TOP SOIL
- (15) SOIL COVER/LANDFILL CAP INTERFACE
- (17) NEW GROUNDWATER MONITORING WELL
- (18) NEW ACCESS ROAD
- (19) WOODEN FENCE
- (20) SUBDRAIN OUTLET PIPE

LIMITS OF CONSTRUCTION:

LANDFILL CAP - 2.8 ACRES

LEGEND:

- NEW MONITORING WELL
- LIMIT OF LANDFILL CAP AREA
- LIMIT OF SOIL COVER AREA
- WETLAND
- FENCE
- 323 FINISHED GRADE INTERMEDIATE CONTOUR
- 323 FINISHED GRADE INDEX CONTOUR
- 4% SLOPE INDICATOR
- RIDGE LINE
- RIP RAP
- DITCH (WITH FLOW INDICATOR)

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE	APPR.
1	AS-BUILT RECORD DRAWINGS ADDED SHEET C-4, ADDED WELL TABLE TO C1		

DESIGNED BY: MPS | DATE: 01-23-2014
DWN BY: MVF | CKD BY: MPS | SOLICITATION NO.: W912WJ-12-R-0005
SUBMITTED BY: AGH | CONTRACT NO.: W912WJ-12-C-0006
PLOT SCALE: 1"=20'-0" | PLOT DATE: 01-23-2014 | FILE NUMBER: FILE_NO
SIZE: ANSI_D | FILE NAME: 01-23-2014_AB_NEIP_AOC_1_C2_R1

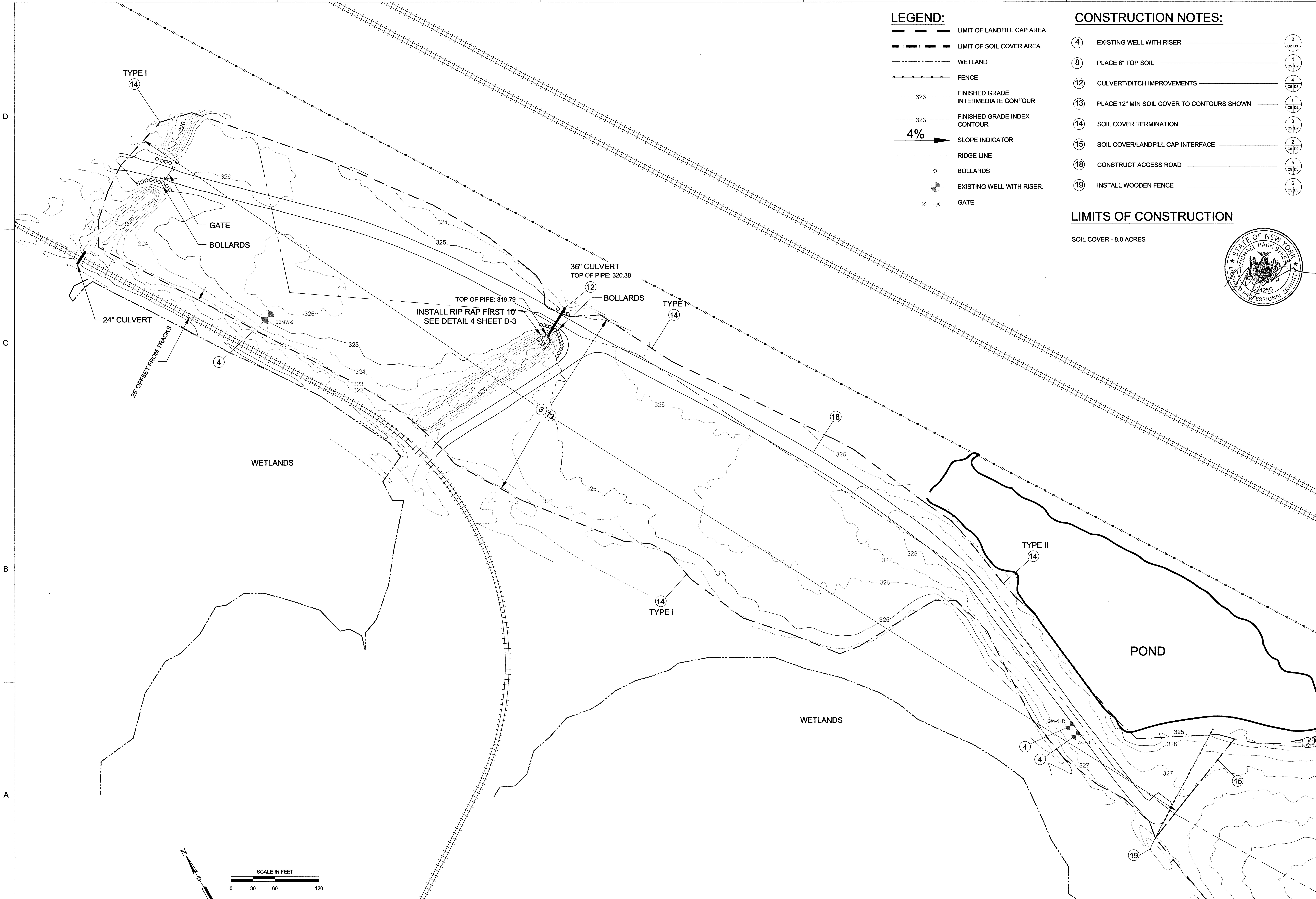
U.S. ARMY CORPS OF ENGINEERS
NEW ENGLAND DISTRICT
CONCORD, MASSACHUSETTS

HGL HydroGeoLogic, Inc. / H2H Associates

NORTHEAST INDUSTRIAL PARK
AREA OF CONCERN 1
LANDFILL CAP/SOIL COVER

FINAL COVER - LANDFILL CAP

SHEET IDENTIFICATION
C-2
SHEET 3 OF 9



LEGEND:
LIMIT OF LANDFILL CAP AREA
LIMIT OF SOIL COVER AREA
WETLAND
FENCE
FINISHED GRADE INTERMEDIATE CONTOUR
FINISHED GRADE INDEX CONTOUR
4%
SLOPE INDICATOR
RIDGE LINE
BOLLARDS
EXISTING WELL WITH RISER.
GATE
CONSTRUCTION NOTES:
4 EXISTING WELL WITH RISER
8 PLACE 6" TOP SOIL
12 CULVERT/DITCH IMPROVEMENTS
13 PLACE 12" MIN SOIL COVER TO CONTOURS SHOWN
14 SOIL COVER TERMINATION
15 SOIL COVER/LANDFILL CAP INTERFACE
18 CONSTRUCT ACCESS ROAD
19 INSTALL WOODEN FENCE
LIMITS OF CONSTRUCTION
SOIL COVER - 8.0 ACRES
TYPE I
GATE
BOLLARDS
24" CULVERT
25' OFFSET FROM TRACKS
28MW-9
36" CULVERT
TOP OF PIPE: 320.38
TOP OF PIPE: 319.79
INSTALL RIP RAP FIRST 10'
SEE DETAIL 4 SHEET D-3
BOLLARDS
TYPE I
WETLANDS
TYPE II
POND
GW-11R
WETLANDS
SCALE IN FEET
0 30 60 120

US Army Corps of Engineers

MARK	DESCRIPTION	DATE	APPR.
1	AS-BUILT RECORD DRAWINGS ADDED SHEET C-4, ADDED WELL TABLE TO C1		

U.S. ARMY CORPS OF ENGINEERS
NEW ENGLAND DISTRICT
CONCORD, MASSACHUSETTS

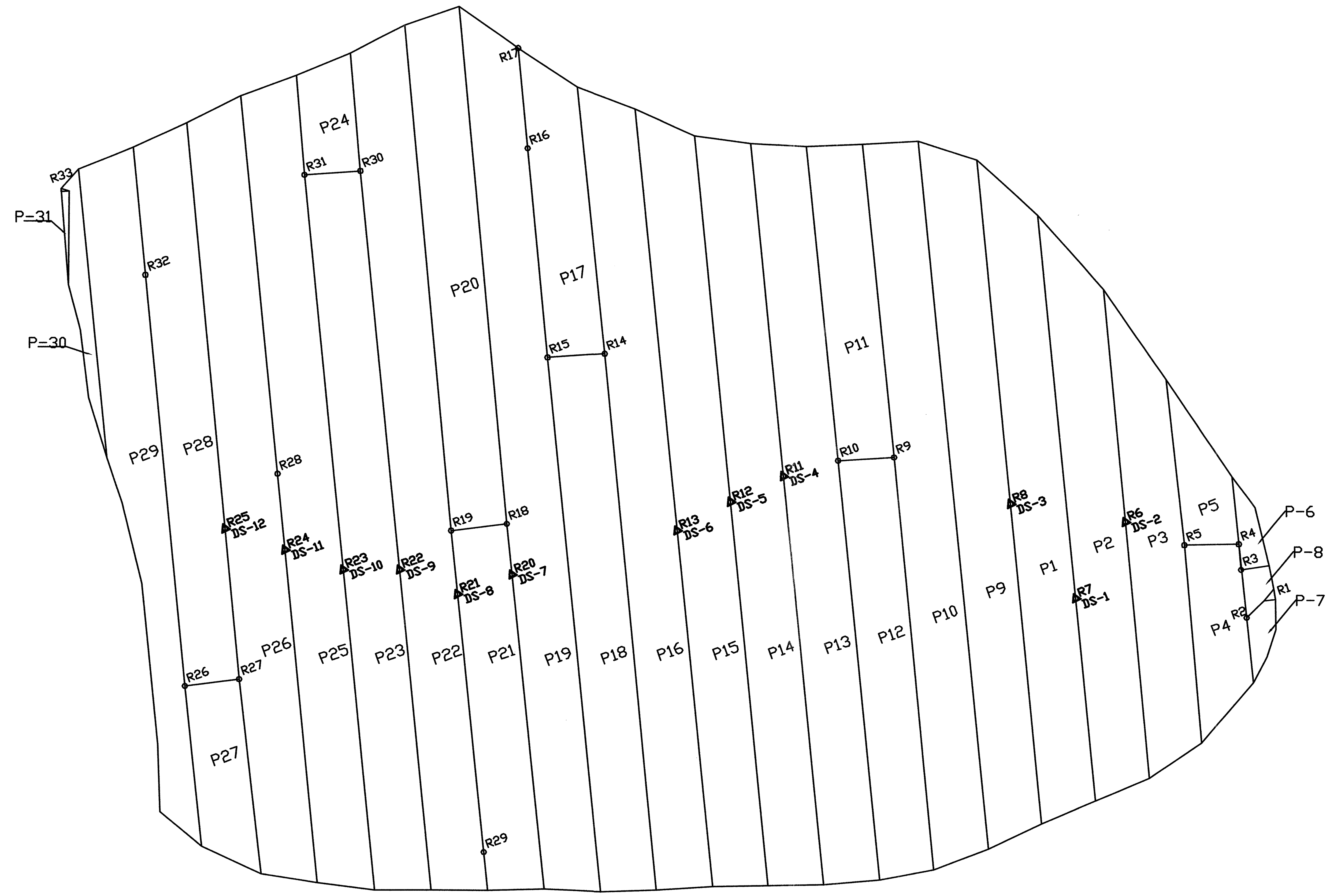
HGL HydroGeoLogic, Inc. H2H Associates

DESIGNED BY: MPS		DATE: 01-23-2014
DWN BY: MVF	CKD BY: MPS	SOLICITATION NO.: W912WJ-12-R-0005
SUBMITTED BY: AGH		CONTRACT NO.: W912WJ-12-C-0006
PLOT SCALE: 1"=60'-0"	PLOT DATE: 01-23-2014	FILE NUMBER: FILE_NO
SIZE: ANSI_D	FILE NAME: 01-23-2014_AB_NEIP_AOC_1_C2_R1	

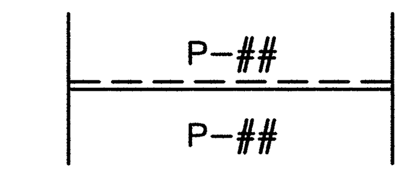
NORTHEAST INDUSTRIAL PARK
AREA OF CONCERN 1
LANDFILL CAP/SOIL COVER

FINAL COVER PLAN - SOIL COVER

SHEET IDENTIFICATION
C-3
SHEET 4 OF 9



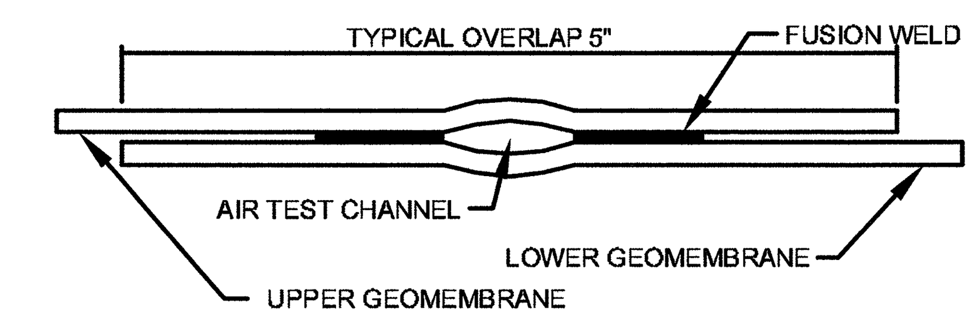
DETAIL A



N.T.S.

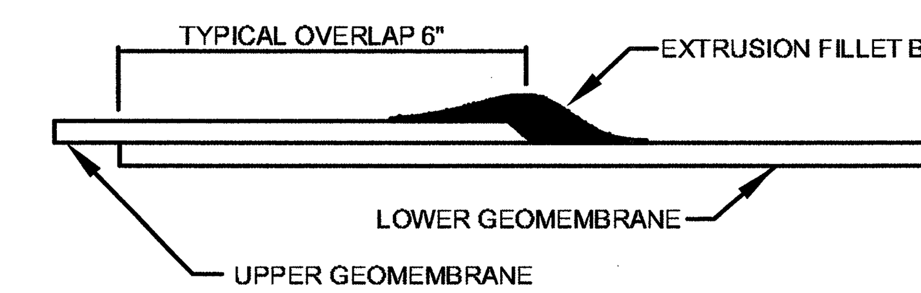
WHEN ROLL SPLICES ARE REQUIRED, PANEL NUMBERING WILL BE MODIFIED ACCORDINGLY.

DETAIL B

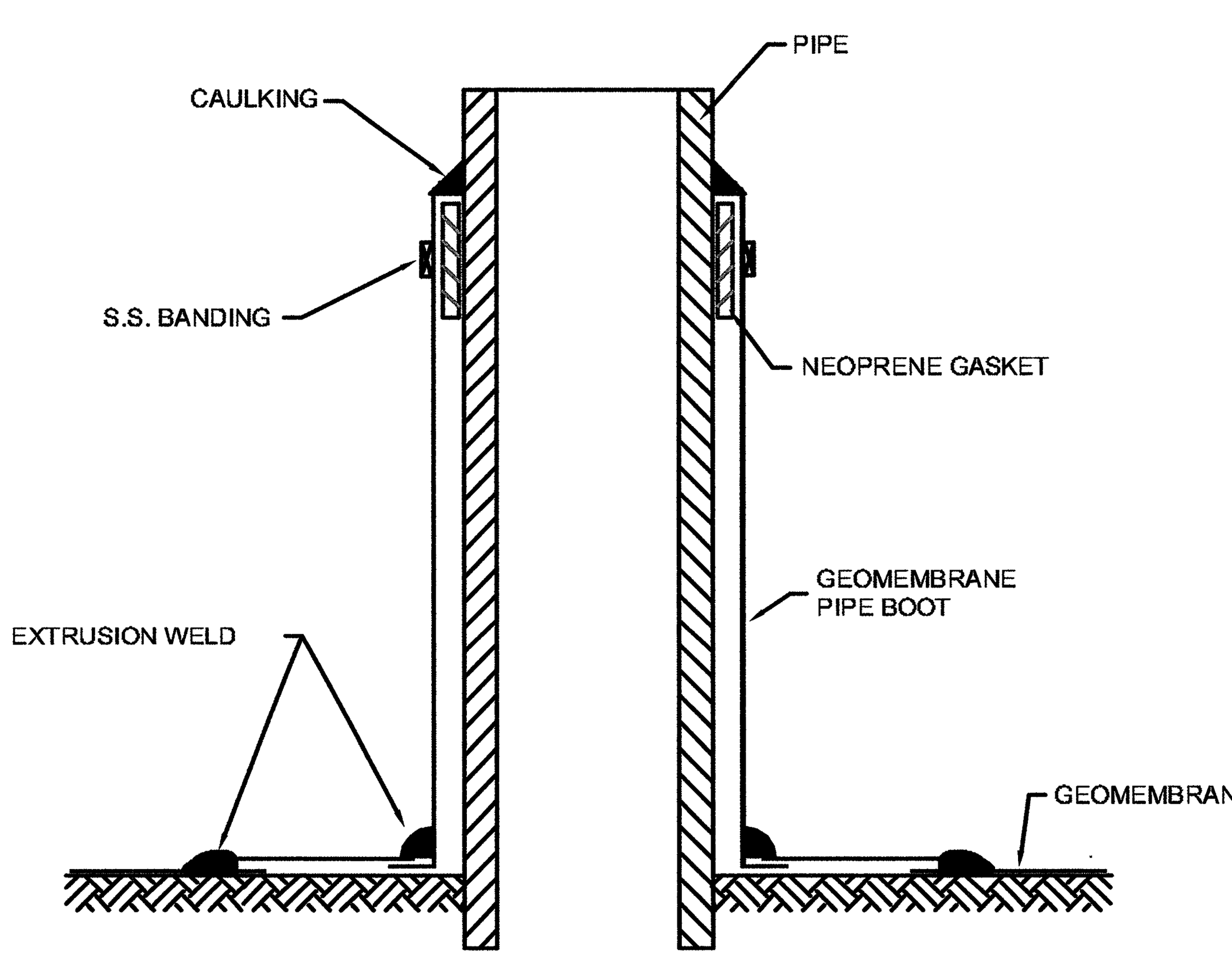


DOUBLE FUSION WELD
N.T.S.

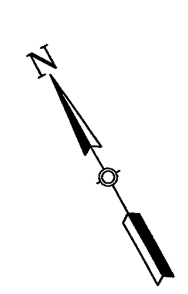
DETAIL C



EXTRUSION FILLET WELD
N.T.S.



BOOT DETAIL



SCALE IN FEET
0 30 60 120

LEGEND:

P##	PANEL IDENTIFICATION NUMBER
(line)	APPROXIMATE LOCATION OF LINER LIMIT
R18	REPAIR LOCATION
R11 DS-4	DESTRUCTIVE SEAM SAMPLE LOCATION

NOTES:

1. GEOMEMBRANE MATERIAL: SOLMAX TEXTURED 40-MIL LLDPE.
2. TYPICAL PANEL WIDTH IS 22.3'.
3. TYPICAL PANEL OVERLAP FOR DOUBLE FUSION WELD IS 5".
4. PRIMARY METHOD OF PANEL SEAMING FOR REPAIRS AND PENETRATIONS: EXTRUSION FILLET WELD, DETAIL C.
5. PIPE PENETRATIONS BUILT IN ACCORDANCE WITH CONTRACT DRAWINGS, SEE BOOT DETAIL.

US Army Corps of Engineers

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U.S. ARMY CORPS OF ENGINEERS
NEW ENGLAND DISTRICT
CONCORD, MASSACHUSETTS

HGL HydroGeoLogic, Inc. | H2H Associates

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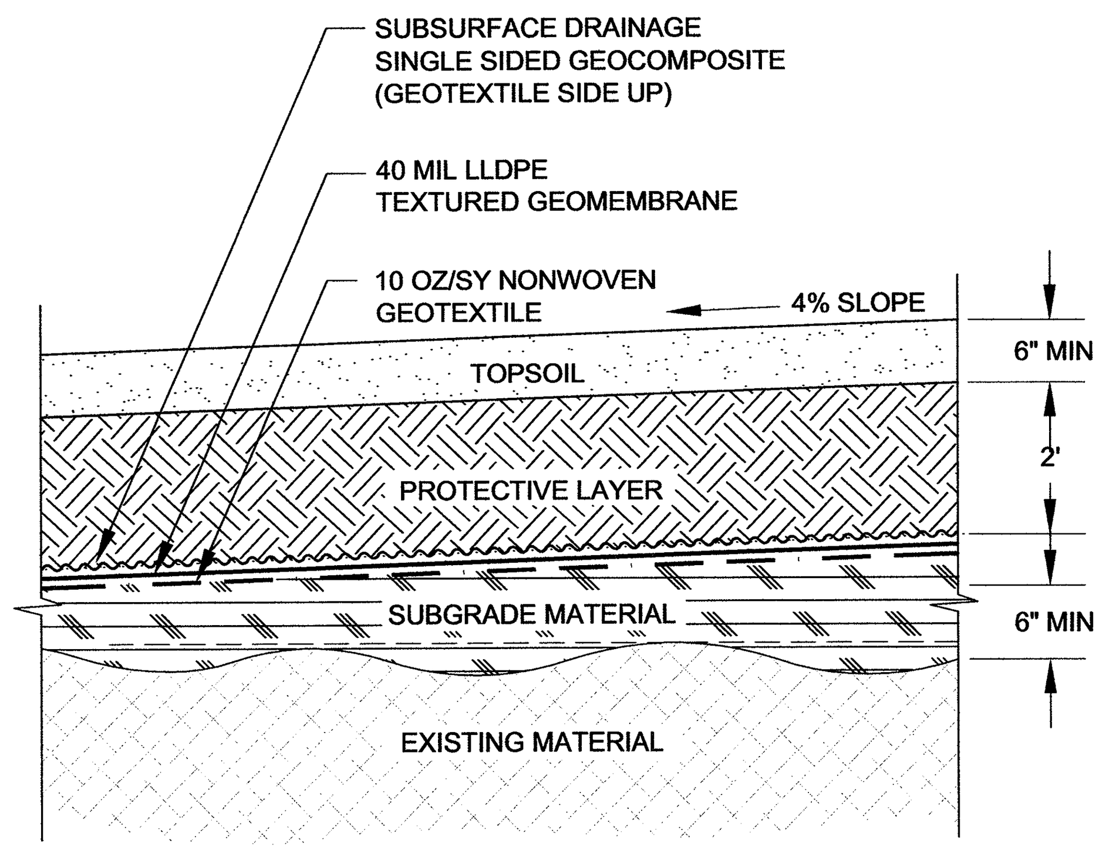
NORTHEAST INDUSTRIAL PARK
AREA OF CONCERN 1
LANDFILL CAP/SOIL COVER

GEOMEMBRANE LAYOUT - LANDFILL CAP

SHEET IDENTIFICATION
C-4
SHEET 5 OF 9

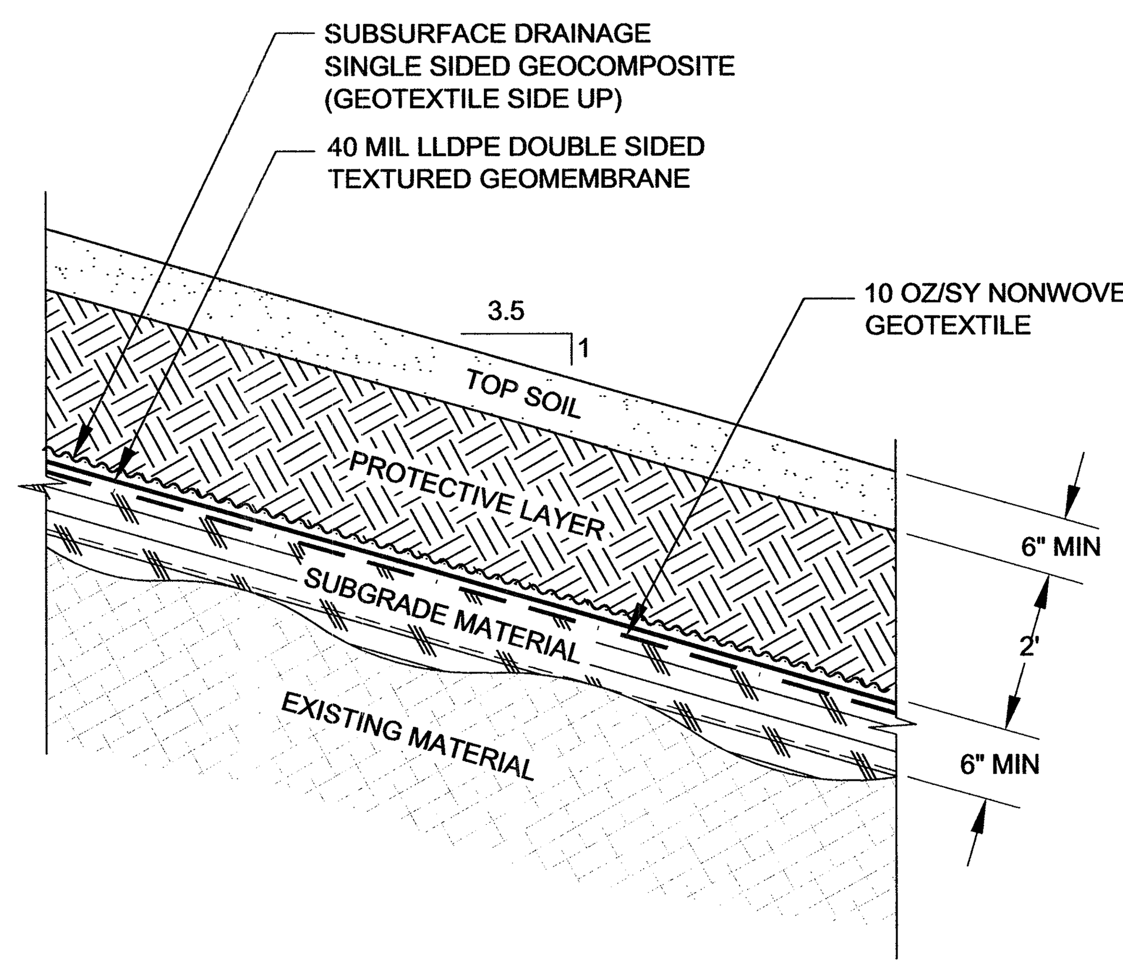


* THE FINAL COVER GRADING AND MATERIAL PROPERTIES SHALL CONFORM TO SECTION 31 00 00 *EARTHWORK* OF THE SPECIFICATIONS. THE SUBGRADE SHALL NOT CONTAIN ROCK GREATER THAN 1/2" AT THE SURFACE OR ROCKS GREATER THAN 3" IN THE UPPER 12"

LANDFILL CAP - DECK FINAL COVER

NTS

1 — C3,C4,C6 | D1

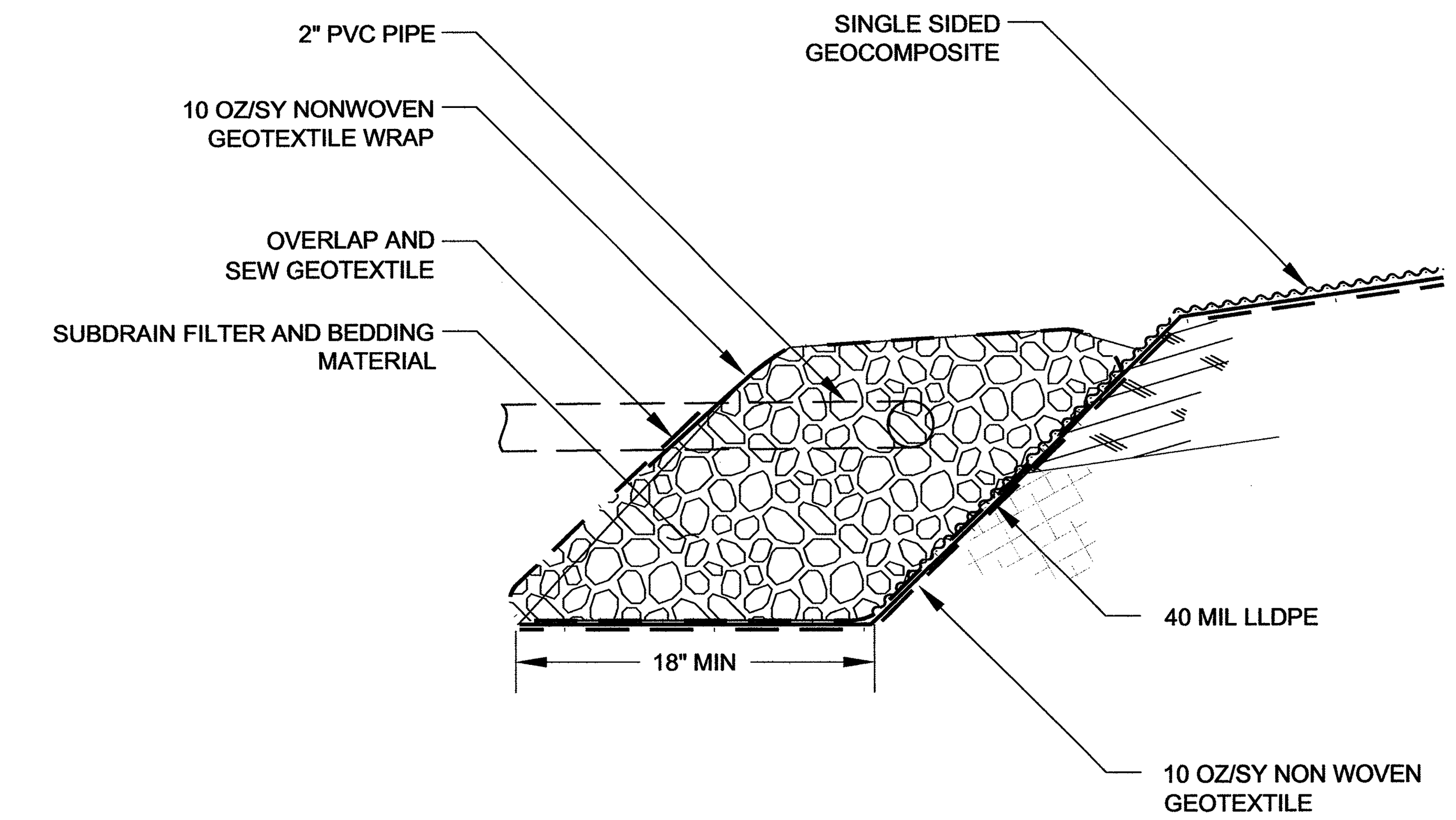


* THE FINAL COVER GRADING AND MATERIAL PROPERTIES SHALL CONFORM TO SECTION 31 00 00 *EARTHWORK* OF THE SPECIFICATIONS. THE SUBGRADE SHALL NOT CONTAIN ROCK GREATER THAN 1/2" AT THE SURFACE OR ROCKS GREATER THAN 3" IN THE UPPER 12"

LANDFILL CAP - SLOPE FINAL COVER

NTS

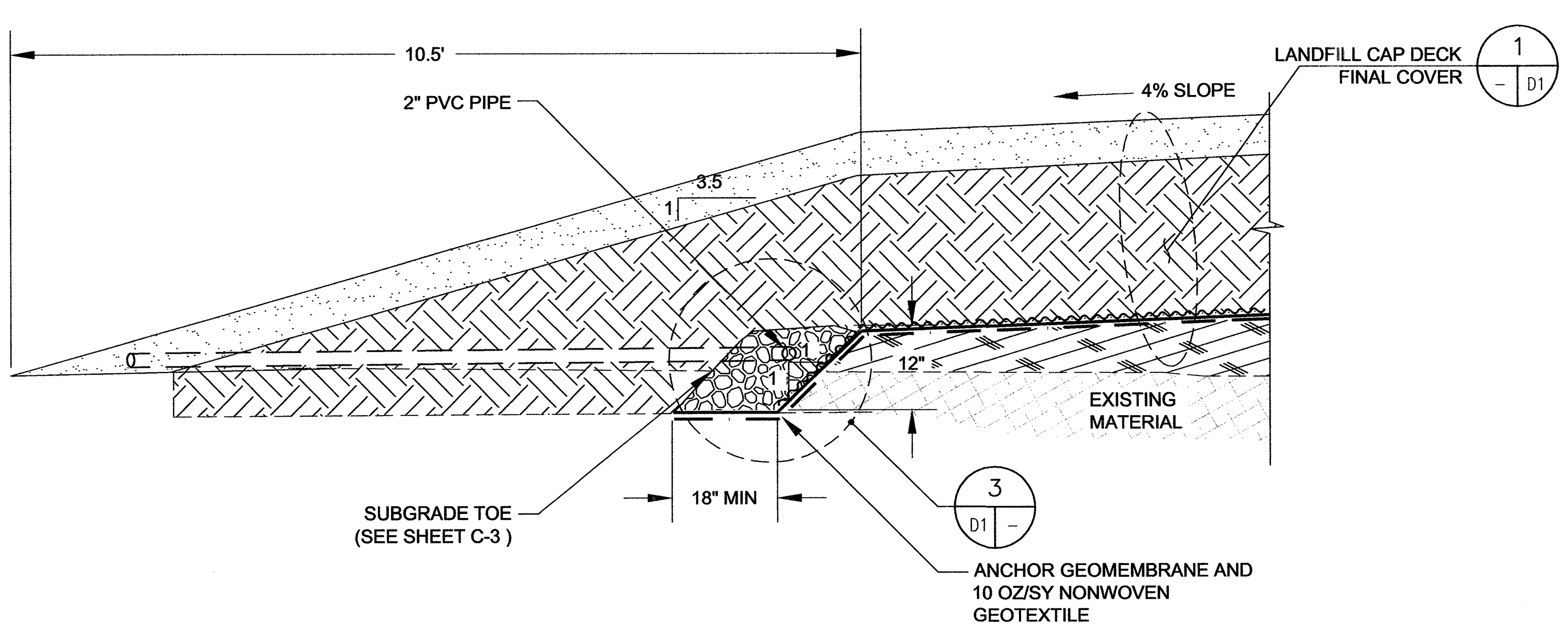
2 — C3,C4,C6,D1 | D1



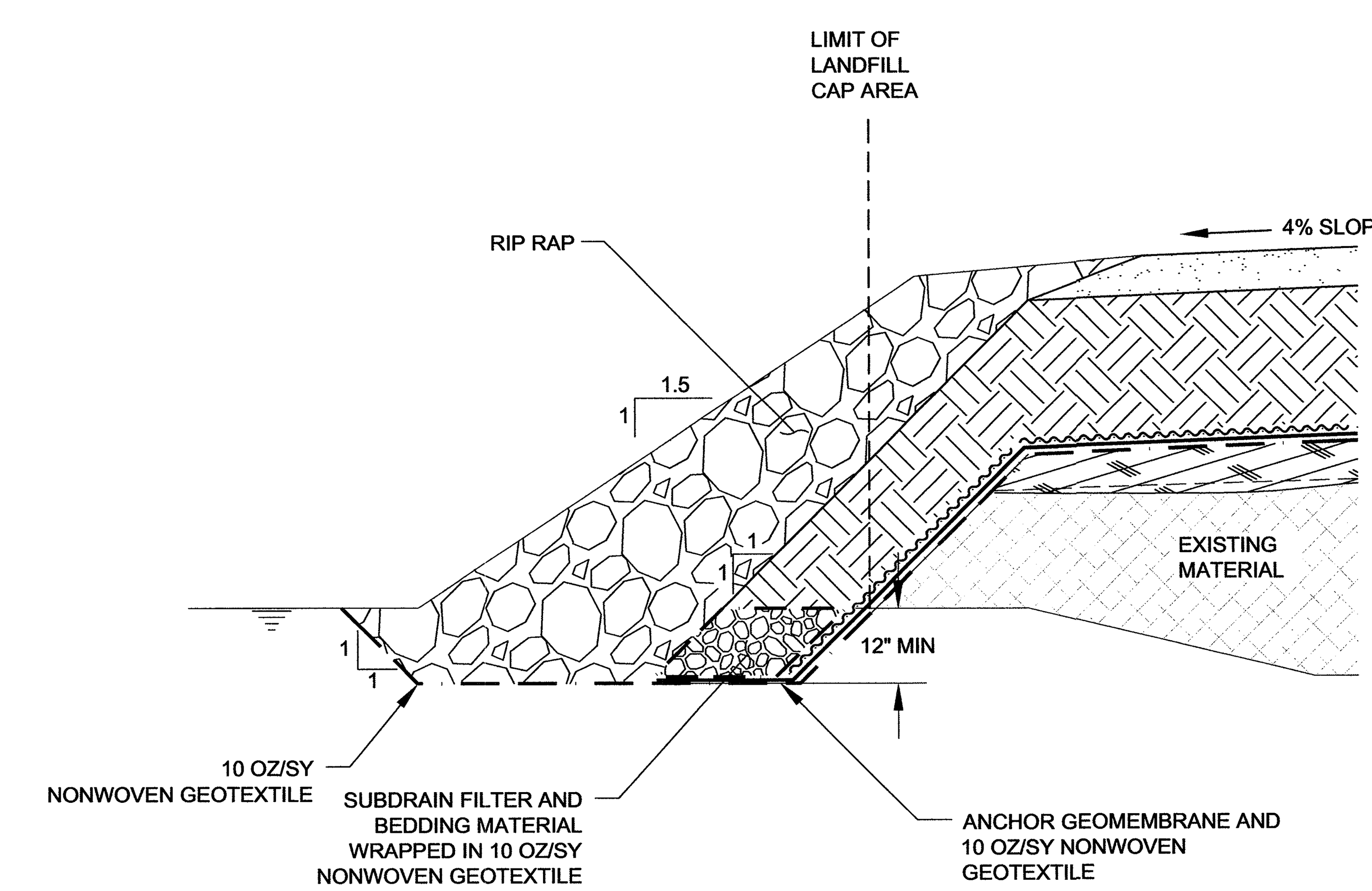
ANCHOR TRENCH

NTS

3 — C3,D1 | D1



SLOPE LINER TERMINATION TYPE I



SLOPE LINER TERMINATION TYPE II
(POND AREA)

LANDFILL CAP SLOPE LINER TERMINATION

NTS

4 — C3 | D1

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE	APPR.
1	AS-BUILT RECORD DRAWINGS ADDED SHEET C-4, ADDED WELL TABLE TO C1		

U.S. ARMY CORPS OF ENGINEERS
NEW ENGLAND DISTRICT
CONCORD, MASSACHUSETTS

HGL HydroGeoLogic, Inc. — H2H Associates

DESIGNED BY: MPS
DWN BY: MVF
CKD BY: MVF
SUBMITTED BY: AGH
PLOT SCALE: NTS
PLOT DATE: 01-23-2014
SIZE: ANSI_D
FILE NAME: 01-23-2014_AB_NEIP_AOC_1_D1_R1
DATE: 01-23-2014
SOLICITATION NO.: W912WJ-12-R-0005
CONTRACT NO.: W912WJ-12-C-0006
FILE NUMBER: FILE_NO

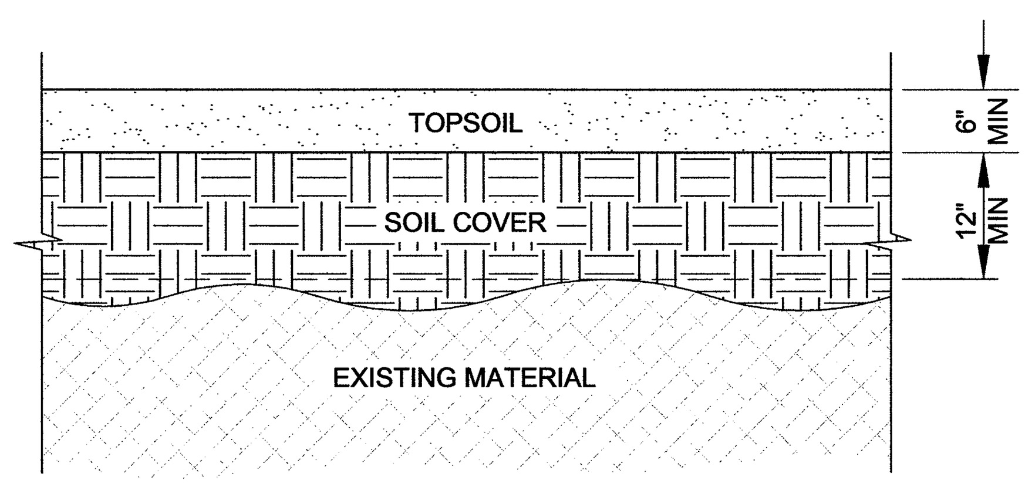
NORTHEAST INDUSTRIAL PARK
AREA OF CONCERN 1
LANDFILL CAP/SOIL COVER

LANDFILL CAP DETAILS

SHEET IDENTIFICATION
D-1
SHEET 6 OF 9

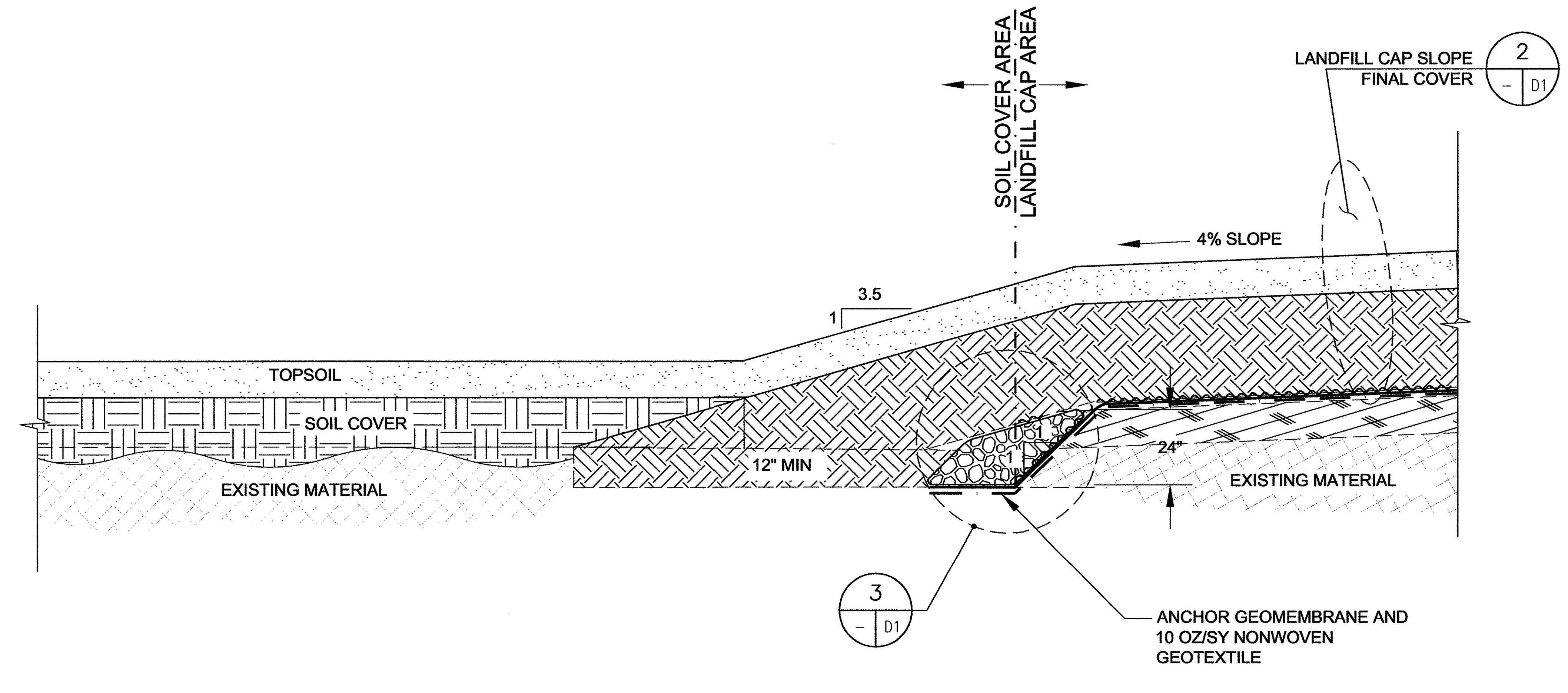
1 | 2 | 3 | 4 | 5

D



* THE FINAL COVER GRADING AND MATERIAL PROPERTIES SHALL CONFORM TO SECTION OF 31 00 00 EARTHWORK OF THE SPECIFICATIONS.

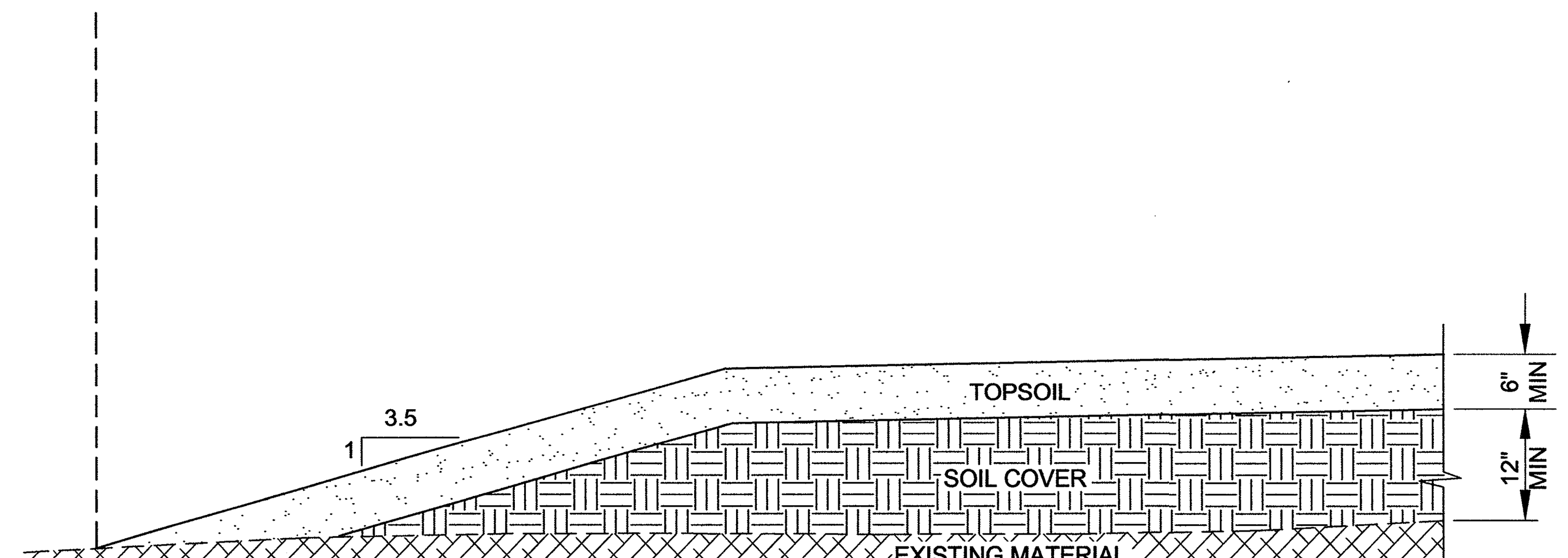
SOIL COVER - DECK FINAL COVER
NTS
1 | C5,C7 | D2



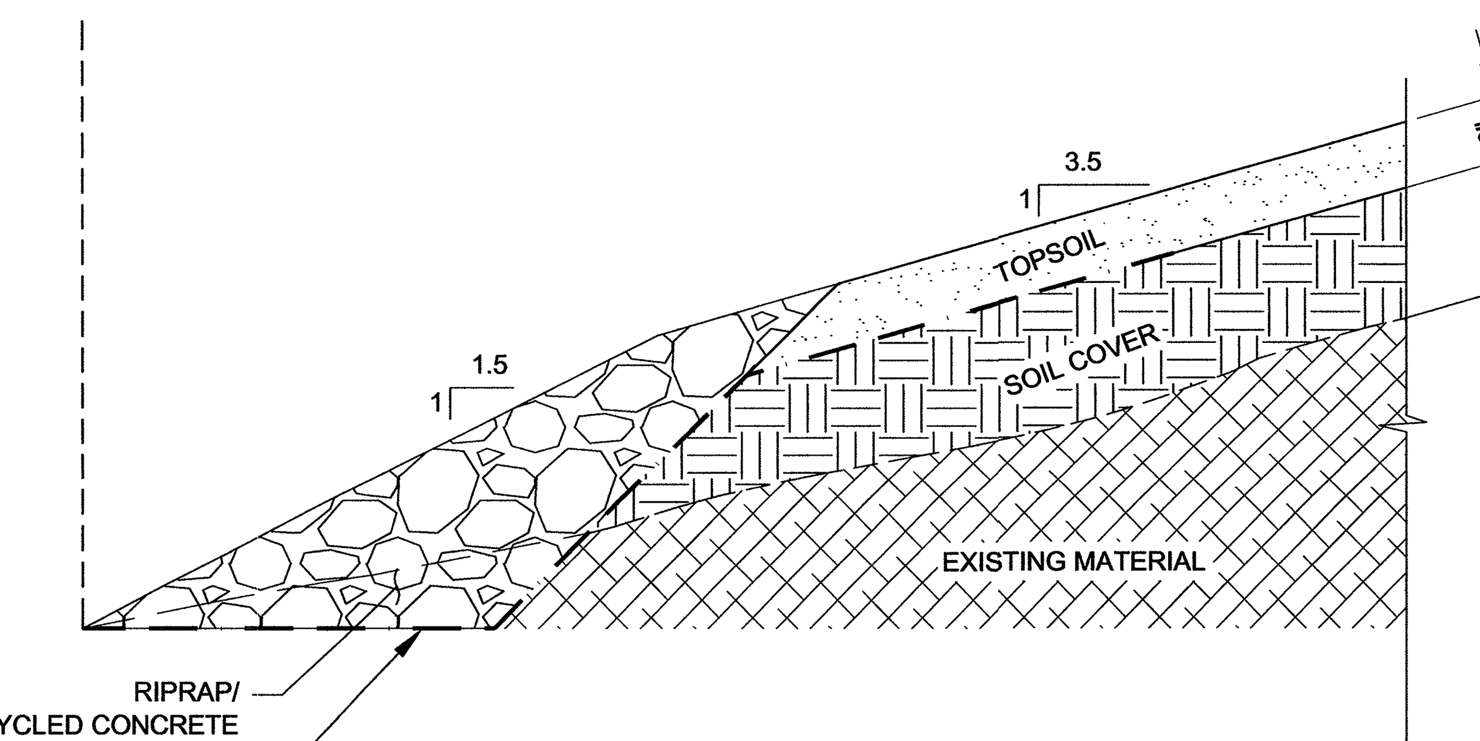
SOIL COVER/LANDFILL CAP INTERFACE
NTS
2 | C4,C5,C7 | D2

C

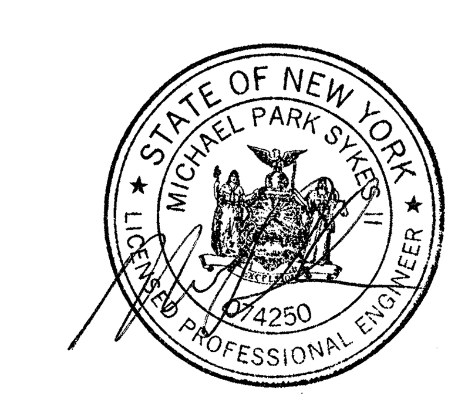
B



SOIL COVER TERMINATION TYPE I



SOIL COVER TERMINATION TYPE II
(POND AREA)



A

SOIL COVER TERMINATION
NTS
3 | C5 | D2

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE	APPR.
1	AS-BUILT RECORD DRAWINGS ADDED SHEET C-4, ADDED WELL TABLE TO C1		

MARK	DESCRIPTION	DATE	APPR.

U.S. ARMY CORPS OF ENGINEERS
NEW ENGLAND DISTRICT
CONCORD, MASSACHUSETTS

HGL HydroGeoLogic, Inc. | H2H Associates

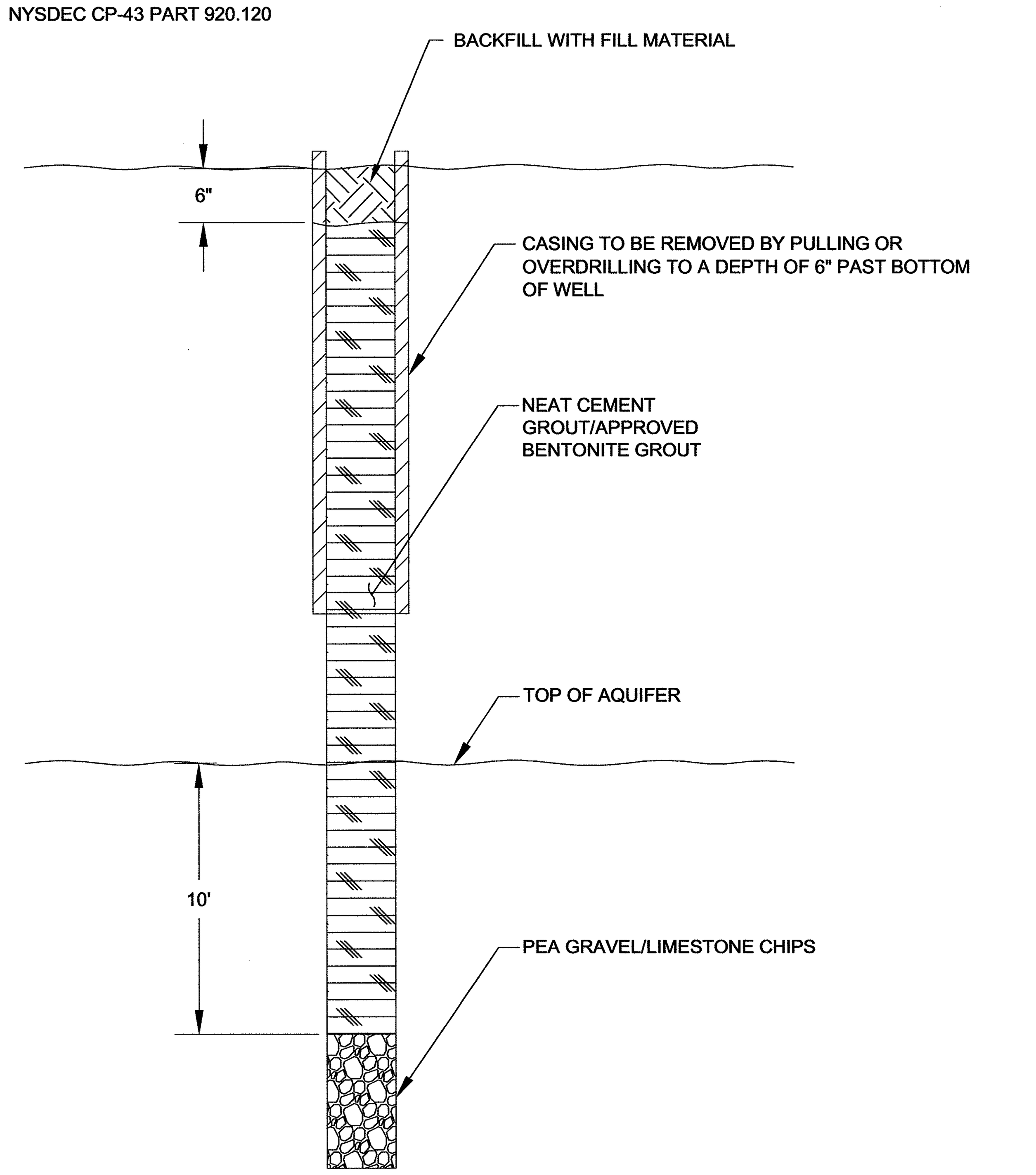
DESIGNED BY: MPS		DATE: 01-23-2014
DWN BY: MVF	CKD BY: MVF	SOLICITATION NO.: W912WJ-12-R-0005
SUBMITTED BY: AGH		CONTRACT NO.: W912WJ-12-C-0005
PLOT SCALE: NTS	PLOT DATE: 01-23-2014	FILE NUMBER: FILE_NO
SIZE: ANSI_D	FILE NAME: 01-23-2014_AB_NEIP_AOC_1_D1_R1	

NORTHEAST INDUSTRIAL PARK
AREA OF CONCERN 1
LANDFILL CAP/SOIL COVER

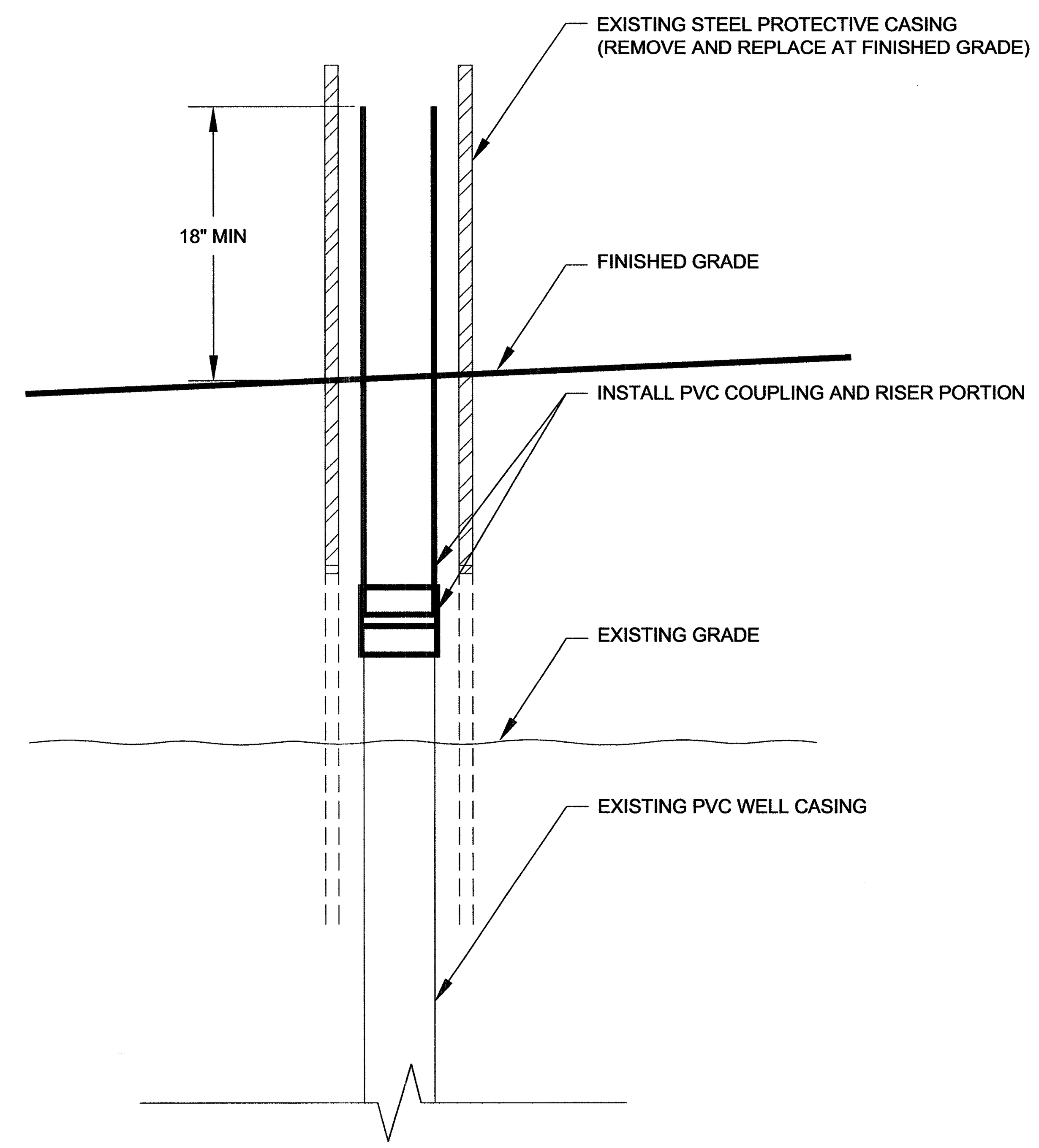
SOIL COVER DETAILS

SHEET IDENTIFICATION
D-2
SHEET 7 OF 9

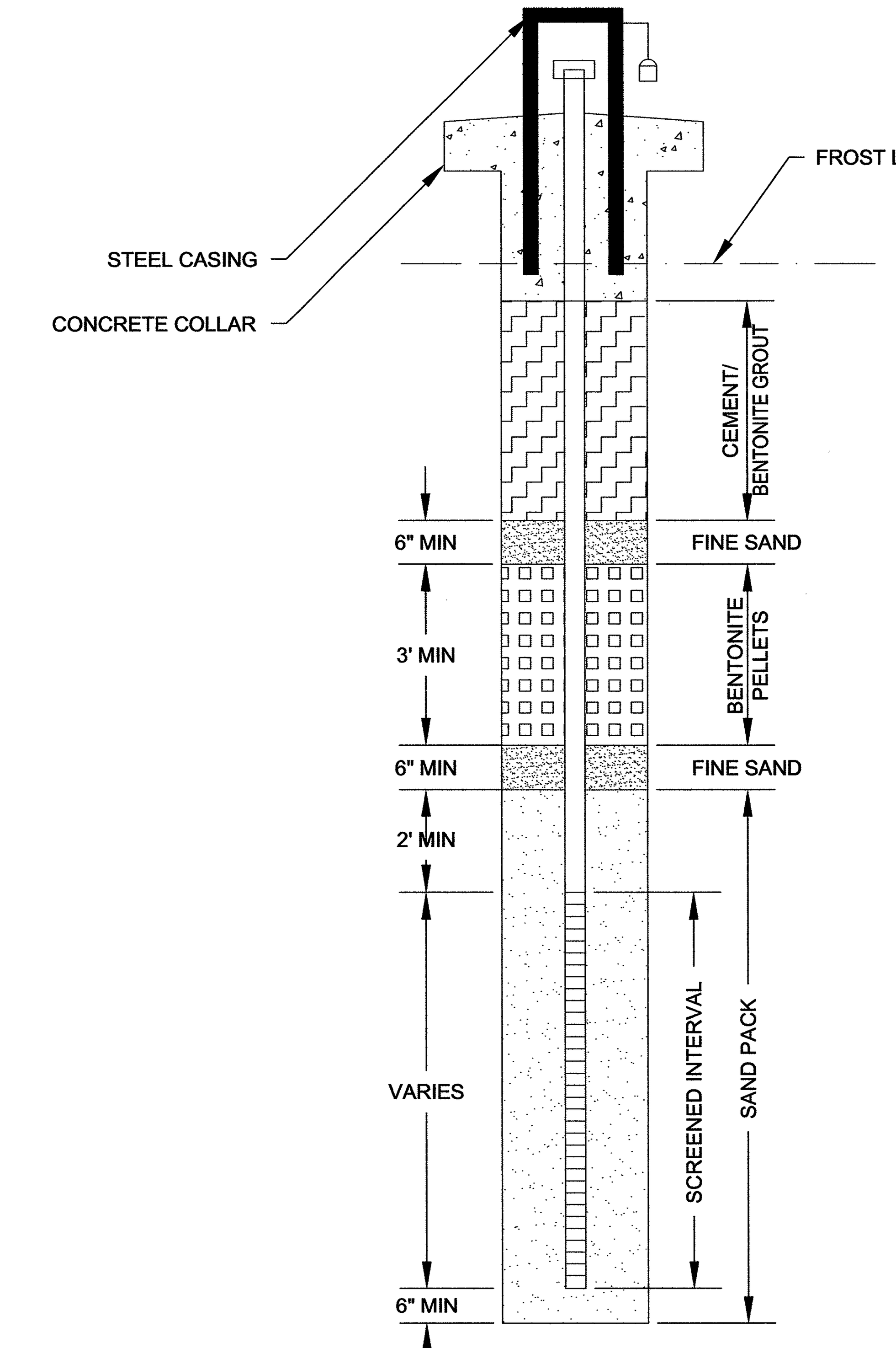
NOTE:
WELLS TO BE DECOMISSIONED PER NYSDEC CP-43 PART 920.120



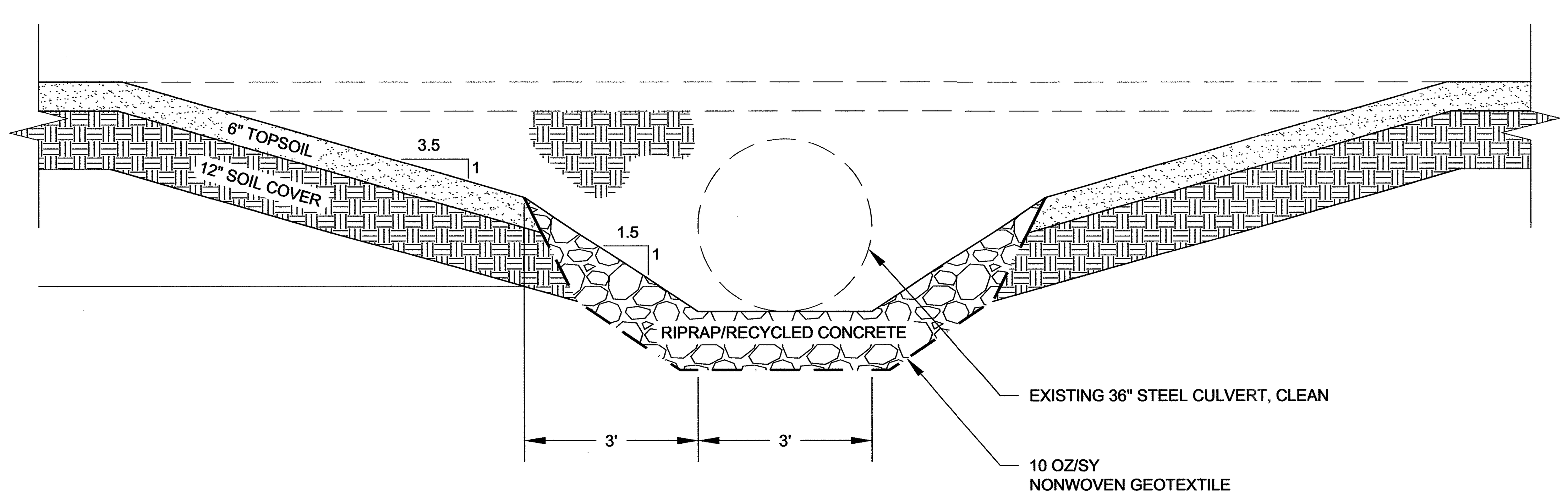
GROUNDWATER WELL DECOMMISSIONING
NTS
1 C2 D3



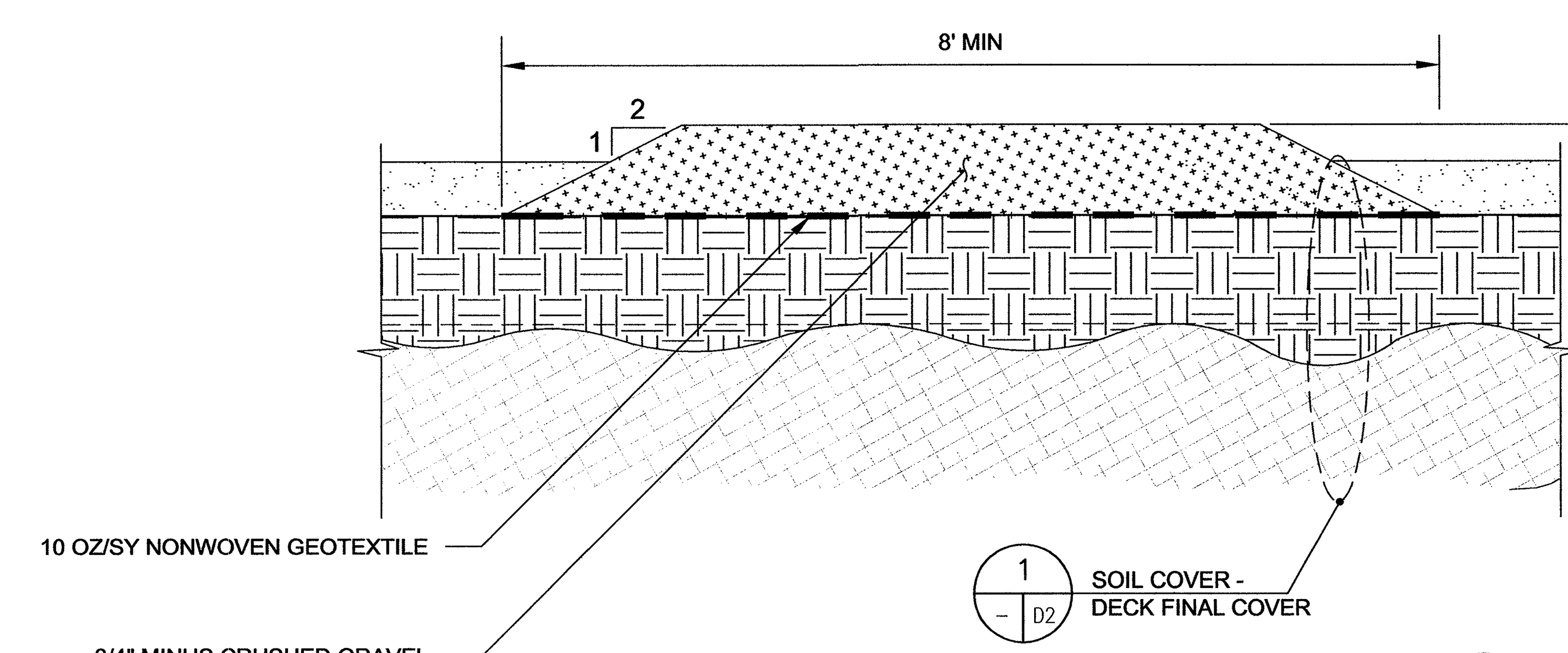
GROUNDWATER WELL CASING RISER
NTS
2 C2 D3



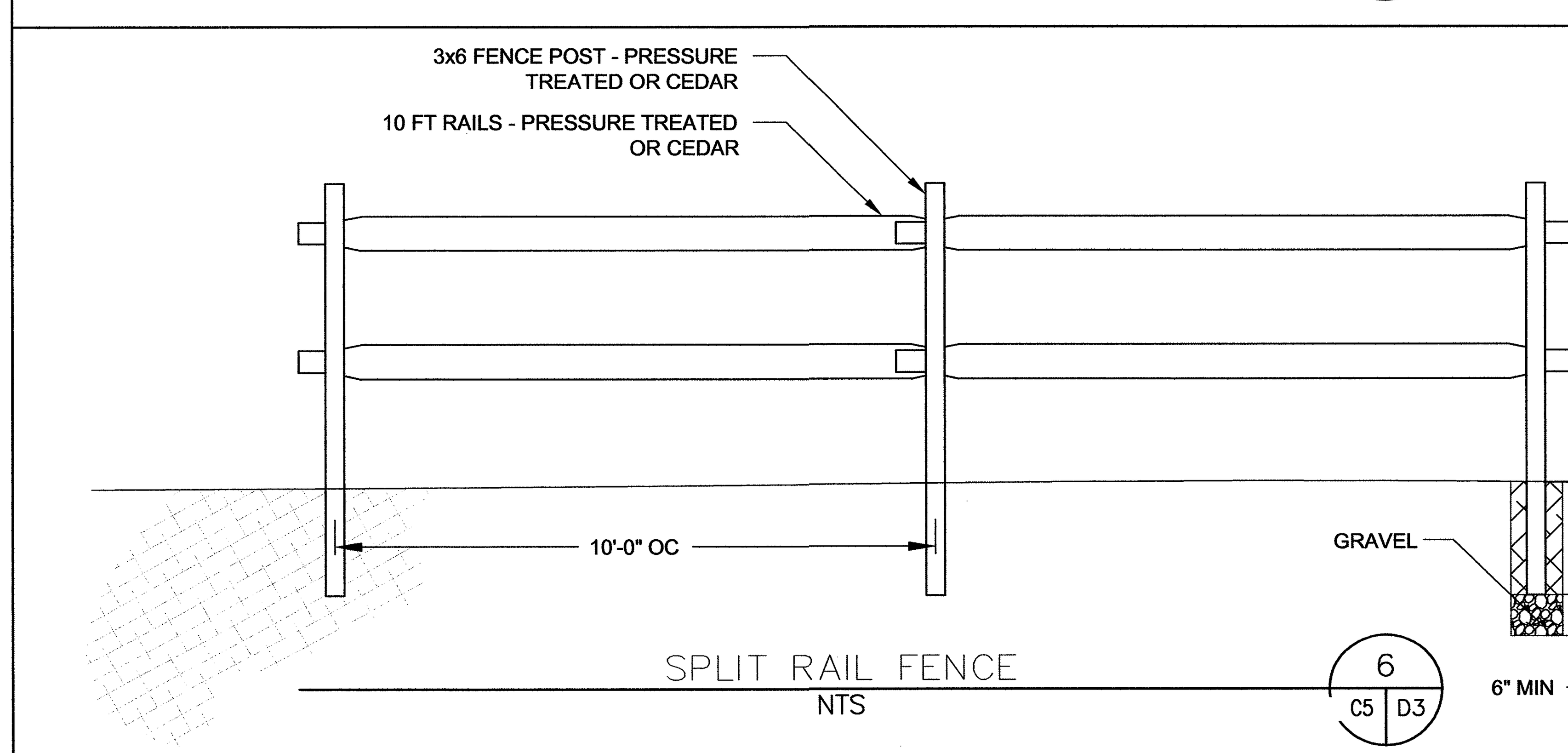
NEW GROUNDWATER WELL
NTS
3 C2, C4 D3



CULVERT/ DRAINAGE DITCH SECTION
NTS
4 C5 D3



ACCESS ROAD
NTS
5 C5 D3



SPLIT RAIL FENCE
NTS
6 C5 D3

STATE OF NEW YORK
MICHAEL PARK SYKES II
074250
LICENSED PROFESSIONAL ENGINEER

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE	APPR.
1	AS-BUILT RECORD DRAWINGS ADDED SHEET C-4, ADDED WELL TABLE TO C1		

MARK	DESCRIPTION	DATE	APPR.

U.S. ARMY CORPS OF ENGINEERS
NEW ENGLAND DISTRICT
CONCORD, MASSACHUSETTS

HGL HydroGeoLogic, Inc. | H2H Associates

DESIGNED BY: MPS		DATE: 01-23-2014
DWN BY: MVF	CKD BY: MPS	SOLICITATION NO.: W912WJ-12-R-0005
SUBMITTED BY: AGH		CONTRACT NO.: W912WJ-12-C-0006
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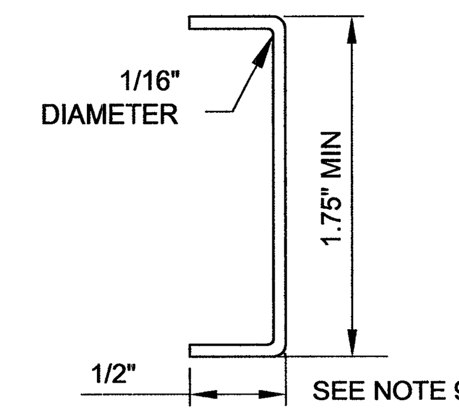
NORTHEAST INDUSTRIAL PARK
AREA OF CONCERN 1
LANDFILL CAP/SOIL COVER

MISC. DETAILS

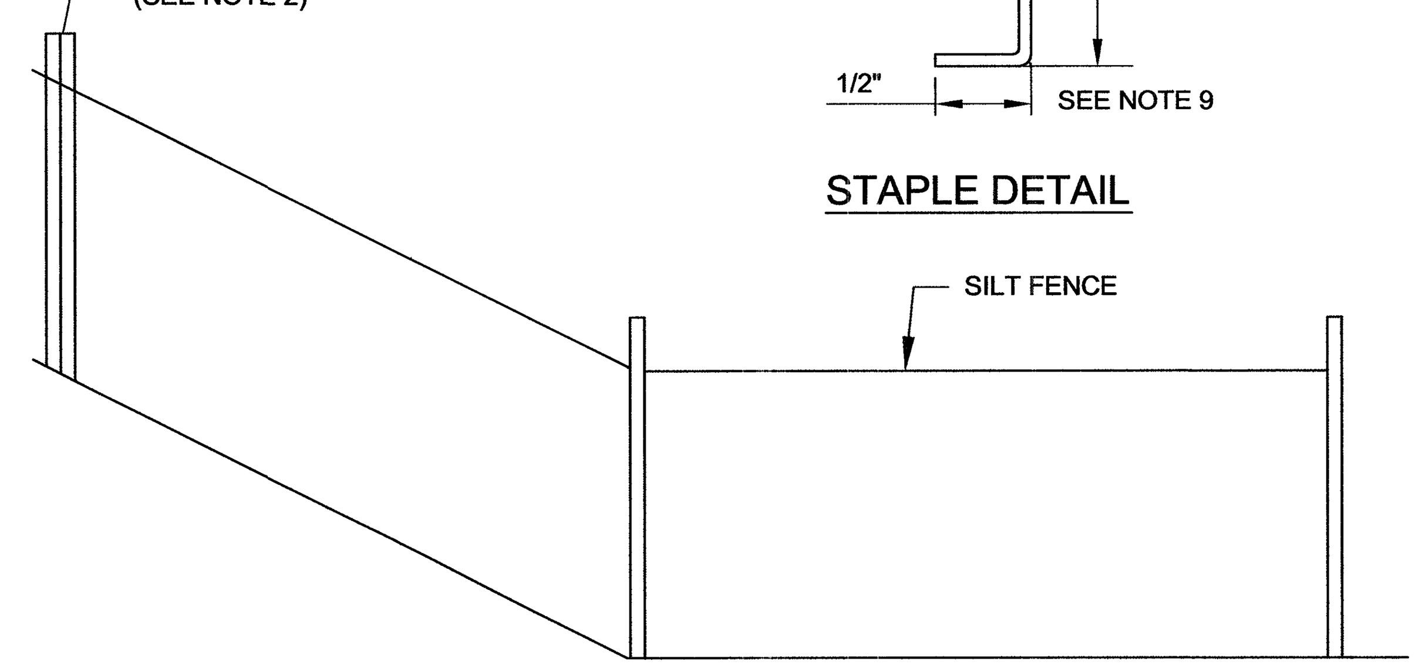
SHEET IDENTIFICATION
D-3
SHEET 8 OF 9

NOTES:

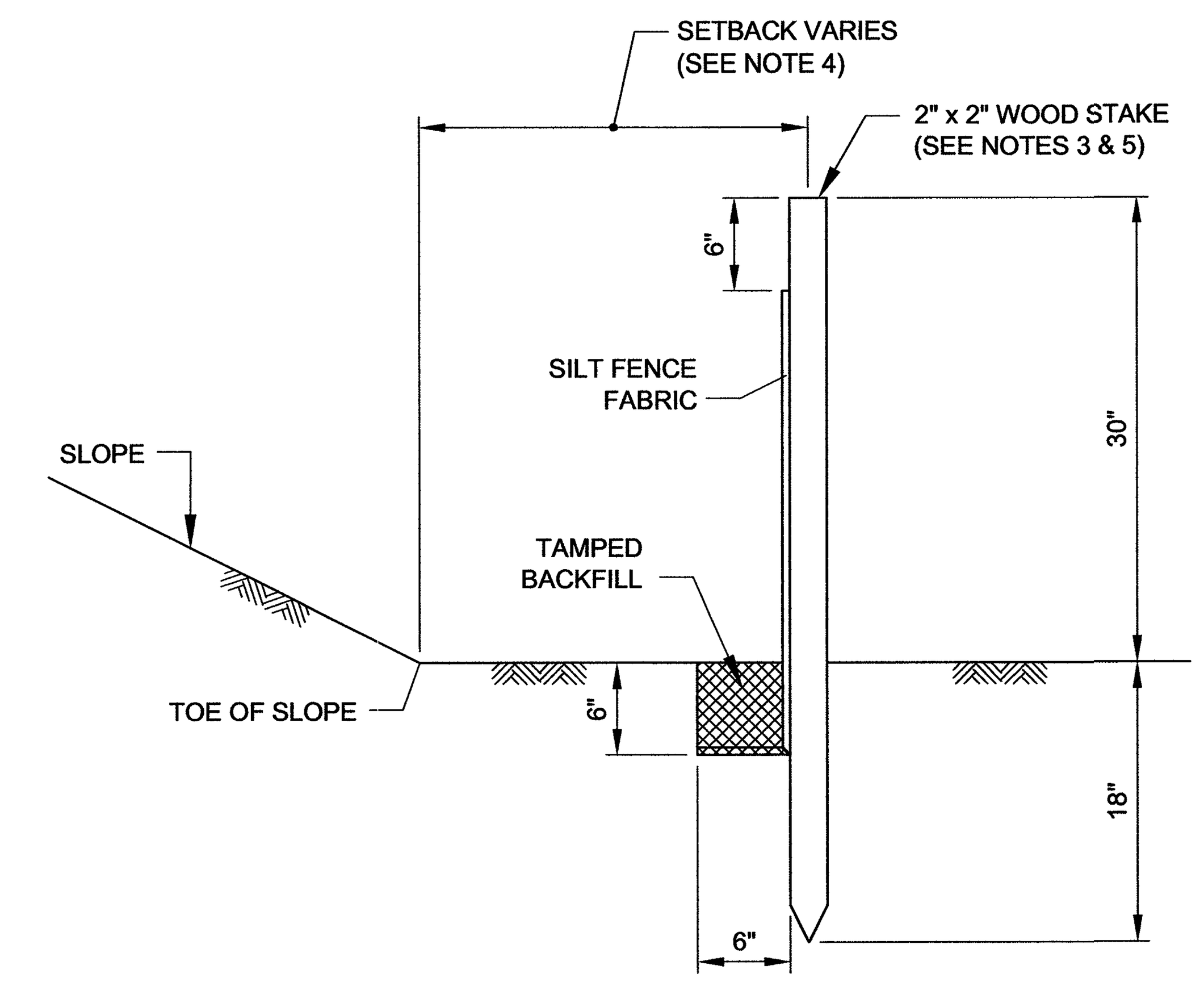
1. CONSTRUCT THE LENGTH OF EACH REACH SO THAT THE CHANGE IN BASE ELEVATION ALONG THE REACH DOES NOT EXCEED 1/3 THE HEIGHT OF THE LINEAR BARRIER, IN NO CASE SHALL THE REACH LENGTH EXCEED 490'.
2. THE LAST 8'-0" OF FENCE SHALL BE TURNED UP SLOPE.
3. STAKE DIMENSIONS ARE NOMINAL.
4. DIMENSIONS MAY VARY TO FIT FIELD CONDITION.
5. STAKES SHALL BE SPACED AT 8'-0" MAXIMUM AND SHALL BE POSITIONED ON DOWNSTREAM SIDE OF FENCE.
6. STAKES TO OVERLAP AND FENCE FABRIC TO FOLD AROUND EACH STAKE ONE FULL TURN. SECURE FABRIC TO STAKE WITH 4 STAPLES MINIMUM.
7. STAKES SHALL BE DRIVEN TIGHTLY TOGETHER TO PREVENT POTENTIAL FLOW-THROUGH OF SEDIMENT AT JOINT. THE TOPS OF THE STAKES SHALL BE SECURED WITH WIRE.
8. FOR END STAKE, FENCE FABRIC SHALL BE FOLDED AROUND TWO STAKES ON FULL TURN AND SECURED WITH 4 STAPLES.
9. MINIMUM 4 STAPLES PER STAKE. DIMENSIONS SHOWN ARE TYPICAL.
10. CROSS BARRIERS SHALL BE A MINIMUM OF 1/3 AND A MAXIMUM OF 1/2 THE HEIGHT OF THE LINEAR BARRIER.
11. MAINTENANCE OPENINGS SHALL BE CONSTRUCTED IN A MANNER TO ENSURE SEDIMENT REMAINS BEHIND SILT FENCE.
12. JOINING SECTIONS SHALL NOT BE PLACED AT SUMP LOCATIONS.
13. SANDBAG ROWS AND LAYERS SHALL BE OFFSET TO ELIMINATE GAPS.
14. ALL EROSION CONTROL MEASURES SHALL BE IN ACCORDANCE WITH THE SITE SWPPP.



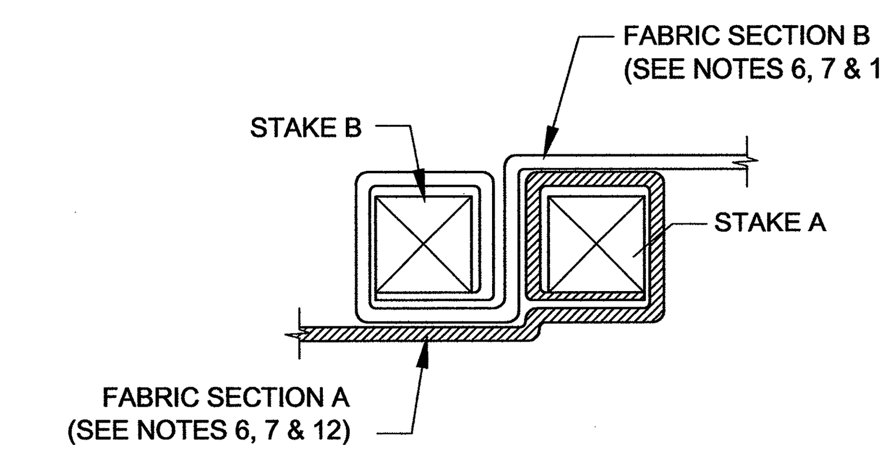
STAPLE DETAIL



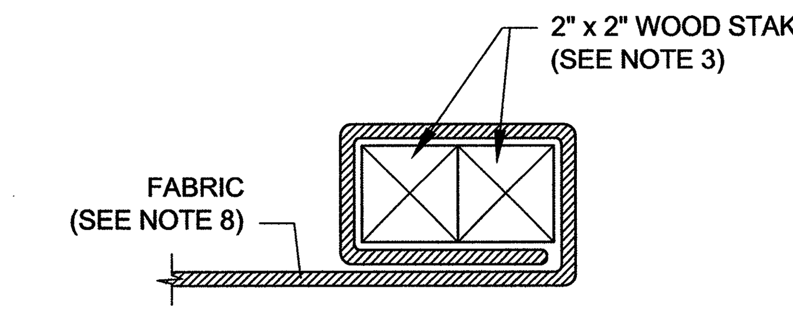
END DETAIL



SECTION A-A
(SETBACK)



JOINING SECTION DETAIL
(TOP VIEW)



JOINING SECTION DETAIL
(TOP VIEW)

SILT FENCE
NTS

1 C2,C3,C4,C5 D4

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE	APPR.
	AS-BUILT RECORD DRAWINGS		
1	ADDED SHEET C-4, ADDED WELL TABLE TO C1		

DESIGNED BY: MPS | DATE: 01-23-2014
DWN BY: MVF | CKD BY: MPS | SOLICITATION NO.: W912WJ-12-R-0005
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PLOT SCALE: NTS | PLOT DATE: 01-23-2014 | FILE NUMBER: FILE_NO
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U.S. ARMY CORPS OF ENGINEERS
NEW ENGLAND DISTRICT
CONCORD, MASSACHUSETTS

HGL HydroGeoLogic, Inc. | H2H Associates

NORTHEAST INDUSTRIAL PARK
AREA OF CONCERN 1
LANDFILL CAP/SOIL COVER

EROSION & SEDIMENT CONTROL DETAILS

SHEET IDENTIFICATION
D-4
SHEET 9 OF 9

STATE OF NEW YORK · MICHAEL PARK SYKES II · 074250 · LICENSED PROFESSIONAL ENGINEER

APPENDIX F

Responsibilities of Owner and Remedial Party

RESPONSIBILITIES of

OWNER and REMEDIAL PARTY

The responsibilities for implementing the Site Management Plan ("SMP") for AOCs 1 and 7, Northeastern Industrial Park, Guilderland, New York site (the "site"), NYSDEC site # 401009, are divided between the site owner(s) and a Remedial Party, as defined below. The owner(s) is/are currently listed as:

Northeast Industrial Park (the "owner").

Solely for the purposes of this document and based upon the facts related to a particular site, Remedial Party (RP) is designated as:

The United States Army Corps of Engineers (USACE), New York District, 26 Federal Plaza, New York, NY 10278

Nothing on this page shall supersede the provisions of an Environmental Easement, Consent Order, Consent Decree, agreement, or other legally binding document that affects rights and obligations relating to the site.

Site Owner's Responsibilities:

1) The owner shall follow the provisions of the SMP as they relate to future construction and excavation at the site.

2) In accordance with a periodic time frame determined by the NYSDEC, the owner shall periodically certify, in writing, that all Institutional Controls set forth in an Environmental Easement remain in place and continue to be complied with. The owner shall provide a written certification to the RP, upon the RP's request, in order to allow the RP to include the certification in the site's Periodic Review Report (PRR) certification to the NYSDEC.

3) In the event the site is delisted, the owner remains bound by the Environmental Easement and shall submit, upon request by the NYSDEC, a written certification that the Environmental Easement is still in place and has been complied with.

4) The owner shall grant access to the site to the RP and the NYSDEC and its agents for the purposes of performing activities required under the SMP and assuring compliance with the SMP.

5) The owner is responsible for assuring the security of the remedial components located on its property to the best of its ability. In the event that damage to the remedial components or vandalism is evident, the owner shall notify the site's RP and NYSDEC in accordance with the timeframes indicated in Section 6.2 Notifications.

6) In the event some action or inaction by the owner adversely impacts the site, the owner must notify the site's RP and the NYSDEC in accordance with the time frame indicated in Section 6.2 – Notifications and coordinate the performance of necessary corrective actions with the RP.

7) The owner must notify the RP and the NYSDEC of any change in ownership of the site property (identifying the tax map numbers in any correspondence) and provide contact information for the new owner of the site property. 6 NYCRR Part contains notification requirements applicable to any construction or activity changes and changes in ownership. Among the notification requirements is the following: Sixty days prior written notification must be made to the NYSDEC. Notification is to be submitted to the

NYSDEC Division of Environmental Remediation's Site Control Section. Notification requirements for a change in use are detailed in Section 6.2 of the SMP. A 60-Day Advance Notification Form and Instructions are found at http://www.dec.ny.gov/chemical/76250.html.

8) Coordination between the owner and the RP will be conducted to maintain fences, access gates and conduct annual mowing on behalf of the RP. The RP remains ultimately responsible for maintaining the engineering controls, subject to the availability of funds.

Remedial Party Responsibilities

1) The RP must follow the SMP provisions regarding any construction and/or excavation it undertakes at the site.

2) The RP shall report to the NYSDEC all activities required for remediation, operation, maintenance, monitoring, and reporting. Such reporting includes, but is not limited to, periodic review reports and certifications, electronic data deliverables, corrective action work plans and reports, and updated SMPs.

3) Before accessing the site property to undertake a specific activity, the RP shall provide the owner advance notification that shall include an explanation of the work expected to be completed. The RP shall provide to (i) the owner, upon the owner's request, (ii) the NYSDEC, and (iii) other entities, if required by the SMP, a copy of any data generated during the site visit and/or any final report produced.

4) If the NYSDEC determines that an update of the SMP is necessary, the RP shall update the SMP and provide the update to the NYSDEC. Within 5 business days after NYSDEC receipt of the updated SMP, the RP shall submit a copy of the updated SMP to the owner(s).

5) The RP shall notify the NYSDEC and the owner of any changes in RP ownership and/or control and of any changes in the party/entity responsible for the operation, maintenance, and monitoring of and reporting with respect to any remedial system (Engineering Controls). The RP shall provide contact information for the new party/entity. Such activity constitutes a Change of Use pursuant to 375-1.11(d) and requires 60-days prior notice to the NYSDEC. A 60-Day Advance Notification Form and Instructions are found at http://www.dec.ny.gov/chemical/76250.html.

6) The RP shall notify the NYSDEC of any damage to or modification of the systems as required under Section 6.2 Notifications of the SMP.

7) Prior to a change in use that impacts the remedial system or requirements and/or responsibilities for implementing the SMP, the RP shall submit an amended SMP to the NYSDEC.

8) Any change in use, change in ownership, change in site classification (*e.g*., delisting), reduction or expansion of remediation, and other significant changes related to the site may result in a change in responsibilities and, therefore, necessitate an update to the SMP and/or updated legal documents. The RP shall contact the Department to discuss the need to update such documents.

Change in RP control and/or site ownership does not affect the RP's responsibilities under this SMP.

Future site owners and their successors and assigns are required to carry out the activities set forth above. USACE will carry out their responsibilities under this SMP, subject to availability of funds.