Groundwater
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June 29, 2009

Mr. Randy Whitcher
Project Manager, NYSDEC
Remedial Bureau C, Section A
625 Broadway
Albany, NY 12233

Re: *Granite Point Subdivision – C360107*
Somers, Westchester County
Pre-Design Delineation Study

Dear Mr. Harkins:

Enclosed is the *Pre-Design Delinaeation Study* for your review.

If you have any questions or comments, please contact the undersigned at (866) 839-5195.

Sincerely,
GROUNDWATER & ENVIRONMENTAL SERVICES, INC.

Eric Harvey
Senior Project Manager

PROPOSED GRANITE POINTE SUBDIVISION

WESTCHESTER, NEW YORK

Pre-Design Delineation Study

NYSDEC BCP Number: C360107

Prepared for:

Suelain Realty

P.O. Box 807

Katonah, New York 10536

Prepared by:

Groundwater & Environmental Services, Inc.

70 Jon Barrett Road, Suite B

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JUNE 2009

PRE-DESIGN DELINEATION STUDY

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LIST OF ACRONYMS

Acronym	Definition
AOC	Areas of Concern
BCA	Brownfield Cleanup Agreement
BCP	Brownfield Cleanup Program
CAMP	Community Air Monitoring Program
DER	Division of Environmental Remediation
ECL	Environmental Conservation Law
ESA	Environmental Site Assessment
fbg	Feet Below Ground
GES	Groundwater and Environmental Services
HASP	Health and Safety Plan
IDW	Investigative Derived Waste
MTBE	Methyl tertiary butyl ether
NYCDEP	New York City Dept. of Environmental Protection
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
PAH	Polycyclic Aromatic Hydrocarbon
PCB	Polychlorinated Biphenyls
PID	Photo-Ionization Detector
QA/QC	Quality Assurance/Quality Control
QAPP	Quality Assurance Project Plan
RAP	Remedial Action Plan
RAWP	Remedial Action Work Plan
RCRA	Resource Conservation and recovery Act
RI	Remedial Investigation
RSCO	Recommended Soil Cleanup Objective
SCO	Soil Clean-up Objective
SVOC	Semi-Volatile Organic Compound
SWPPP	Storm Water Pollution Prevention Plan
TAGM	Technical Administrative Guidance Memorandum
TCL	Target Compound List

Acronym	Definition
TAL	Target Analyte List
TCLP	Toxicity Characteristic Leaching Procedure
TOGS	Technical and Operational Guidance Series
UST	Underground Storage Tank
USEPA	United States Environmental Protection Agency
VOC	Volatile Organic Compound
XRF	X-Ray Fluorescence

PRE-DESIGN DELINEATION STUDY

1.0 INTRODUCTION

Groundwater & Environmental Services, Inc. (GES) has been retained by Suelain Realty, Inc. to conduct remedial investigation activities at the Proposed Granite Pointe Subdivision (the "Property") in Somers, New York from 2003 to the present. The Property consists of the 28.8 acres of land in the Town of Somers, New York (**Figure 1**). The owners of the Property plan to develop 23 residential lots and have received preliminary subdivision approval for the development from the Town of Somers Planning Board. Suelain Realty has conducted extensive remedial investigations at the location and the results of these investigations indicate contamination on a portion of the Property. In July 2008 Suelain Realty, Inc. applied for and was accepted on May 7, 2009 into the Brownfield Cleanup Program (BCP) administered by the New York State Department of Environmental Conservation (NYSDEC) as a volunteer to remediate a 4.72 acre portion (the "BCP Site") of the 28.8 acre Property. A Remedial Action Work Plan (RAWP), prepared by GES, was submitted to the NYSDEC in July of 2008 along with the BCP application. This RAWP provides for a Track 1 remediation plan for contamination at the BCP Site and is currently under review by the NYSDEC.

This Pre-Design Delineation Study was prepared in response to NYSDEC comments, dated March 24, 2009, resulting from the NYSDEC's review of the RAWP and BCP application submitted by GES on behalf of Suelain Realty, Inc. Included in this document are summaries of the remedial investigation activities performed on the 28.8 acre Property between 1999 and July 2008. This document also describes proposed investigation activities to be performed on the BCP Site to ensure the nature and extent of existing contamination on the BCP site are delineated prior to implementation of the RAWP (GES, 2008). Activities outlined in this Delineation Study are in accordance with applicable Draft DER-10 Technical Guidance for Site Investigation and Remediation (DER-10) standards, criteria and guidance.

2.0 SITE HISTORY AND DESCRIPTION

2.1 SITE LOCATION

The BCP Site consists of a 4.72 acre portion of a larger 28.8 acre Property located within Westchester County in the Town of Somers, New York. The 28.8 acre Property, currently owned by Suelain Realty, Inc. (Suelain), comprises Section 27.05, Block 3, Lots 2 and 5 on local tax maps. It is bounded by residential properties to the north and south, New York City land, which adjoins the Amawalk Reservoir, to the east, and Tomahawk Street (Route 202) to the west (**Figure 1**). A former gasoline retail facility owned by Rex Oil is also located to the west of the Property. The Rex Oil parcel operated as a petroleum retail site from approximately 1967, when it was purchased by Rex Oil, until 1988 when the gasoline underground storage tanks (USTs) were removed. NYSDEC Spill No. 89-11019 is an active spill number associated with the Rex Oil Property. The Rex Oil Property currently operates as an auto repair facility.

The 4.72 acre BCP Site which is the focus of this Pre-Design Delineation Study is located adjacent to the Amawalk Reservoir in the northwestern corner of the larger 28.8 acre Property. A United States Geological Survey (USGS) topographical quadrangle map (**Figure 1**) shows the location of the BCP Site. It is identified as Lots 10 – 13 as defined in the Proposed Granite Point Subdivision development planned by Suelain (**Figure 2**). A redevelopment plan for the Property is provided as **Figure 3**. A boundary map is attached as an insert to **Figure 3** as required by Environmental Conservation Law (ECL) Title 14 Section 27-1419.

2.2 SITE HISTORY AND PROPOSED DEVELOPMENT

The abandoned remains of several residential and commercial buildings are located on the land surrounding the BCP Site. These buildings reportedly included a restaurant, which no longer exists but was located in the central portion of the Property, several dwellings, and some storage buildings. The approximate locations of the abandoned remains of the structures formerly located on the Property are indicated on the Site Map provided as **Figure 2** of this report. According to several eye-witnesses who worked at the restaurant and/or participated in recreational activities at the Property, trap and target shooting were conducted on portions of the land between approximately 1938 and 1968.

As previously stated, the 28.8 acre Property is currently owned by Suelain Realty, Inc. The Property is currently undeveloped and consists of mostly wooded land. The owners have proposed a residential development to be built on the Property. When completed, the Proposed Granite Pointe Development will consist of 23 lots improved with residential homes on the existing premises. This proposed use for the Property is consistent with surrounding land use designations. The development of the Property complies with the Town of Somers Comprehensive Plan and Zoning Ordinance.

2.3 PHYSICAL SETTING

2.3.1 Regional Geology

The subject Property is located within Hudson Highlands of the Reading Prong physiographic province. The province is characterized by a system of extremely folded and faulted rocks that have been metamorphosed to form a sequence of valleys and ridges. The Highlands are underlain by Precambrian age plutonic intrusive and metamorphic rocks. Regional bedrock has been classified as biotite-quartz-plagioclase gneiss. Beneath the subject Property, this bedrock also includes subordinated granitic gneiss, amphibolite and calcsilicate rock (Geologic Map of New York, Lower Hudson Valley, New York State Museum and Science Service, 1970).

Late Wisconsin age glacial till overlies the bedrock formations. The till was deposited in ground, terminal and recessional moraines at the end of the Pleistocene Epoch. It is generally discontinuous on ridges and in valleys. The till that overlies bedrock at the BCP Site varies in thickness and is characterized by a variable texture. It is described as poorly sorted diamict with a variable clast content that ranges from well rounded, abundant, diverse lithologies in valleys to angular, more limited lithologies in upland areas (Surficial Geologic Map of New York, Lower Hudson Valley, New York State Geologic Survey, 1989).

2.3.2 Local Geology

Bedrock was not encountered in any of the environmental investigations conducted by GES on the BCP Site or surrounding Property. However, zones of weathered bedrock were observed in the recovered soil. Soil recovered from the borings advanced during the

December 2003 site investigation consisted primarily of brown, fine to medium-sand with some silt, clay, and fine gravel. Some intervals of fine sand/silt/clay mixtures were encountered. Geoprobe© refusal was observed in the borings at depths ranging from 10 to 19 feet below grade (fbg). As described in the previous section, regional lithology is classified as glacial till. Soil boring logs may be referenced in the ESA (GES, 2003).

2.3.3 Hydrogeology

The subject Property lies within the Lower Hudson Watershed and is a subset of the Hudson/Mohawk River Basin. This drainage area, one of the largest on the eastern seaboard of the Unites States, dominates the counties of southeastern New York and the surrounding states. Locally, the groundwater flow is generally east-northeasterly towards the Amawalk Reservoir. The depth to groundwater at the BCP Site ranged from 7.51 fbg in GW-9 to 16.02 fbg in GW-7 during the most recent gauging event conducted on December 29, 2006. Groundwater elevations and the groundwater flow direction are shown on **Figure 4**.

2.3.4 Surface Water Bodies

Two surface water bodies are located near the subject Property. The Amawalk Reservoir is adjacent to the north, east and southeast margins of the Property. An unnamed stream is located approximately ¼-mile west-northwest of the Property. Federally-designated wetlands are located along the shore of the Amawalk Reservoir, approximately ¼-mile north and east of the BCP Site. In addition, town-designated wetlands are located ¼-mile west and ¾-mile southwest of the Property boundaries.

2.4 SUMMARY OF PREVIOUS INVESTIGATIONS AND RAWP RECOMMENDATIONS

The subject Property has been investigated, on behalf of Suelain Realty, Inc., in accordance with the scope of work presented in GES documents titled *Environmental Site Assessment Report* dated December 19, 2003 and *Supplemental Environmental Site Assessment Report* dated May 23, 2005. Additional site investigations, including the evaluation of additional groundwater and soil samples from the subject Property, were conducted by GES between December 2006 and May 2007. The results of these recent investigations are presented in the *Remedial Action Work*

Plan, dated July 2008. A summary of previous investigations is provided in the following sections.

2.4.1 Groundwater Test Well – July 1999

A single deep groundwater test well was installed in the western portion of the 28.8 acre parcel in 1999 due to anticipated site development activities. This well was installed into the bedrock aquifer to a total depth of approximately 750 feet below grade (fbg). A groundwater sample was collected from the deep test well on July 15, 1999. Analysis of this sample indicated the presence of naphthalene, methylene chloride, and tetrahydrofuran, at concentrations of 1.7, 1.1, and 2.0 micrograms per liter (µg/L), respectively. These concentrations are below the New York State Department of Environmental Conservation (NYSDEC) water quality guidelines and New York State Department of Health (NYSDOH) Drinking Water Standards.

2.4.2 Environmental Site Assessment – December 2003

GES performed an Environmental Site Assessment on the subject Property in December 2003. Twelve borings were advanced across the Property into overburden soil using a truck-mounted Geoprobe©. Two soil samples (shallow and deep) were collected from each boring and groundwater samples were taken from temporary wells installed in each location. Six of the twelve shallow soil samples taken from 0 to 2 fbg revealed lead concentrations ranging from 2.19 to 73.1 milligrams per kilogram (mg/kg). The deeper soil samples did not detect VOCs at concentrations above laboratory detection limits. Groundwater samples collected from the soil boring locations revealed VOCs below the NYSDEC groundwater quality guidelines and NYSDOH Drinking Water Standards. The results of December 2003 sample event may be referenced in *Environmental Site Assessment Report* (ESA), dated December 19, 2003.

2.4.3 Supplemental Environmental Site Assessment – January 2004 to February 2005

GES performed additional environmental investigation activities on the 28.8-acre parcel from January 2004 to February 2005. A summary of these activities may be referenced in the *Supplemental Environmental Site Assessment Report*, dated May 23, 2005.

- ***January and February 2004***

Soil samples were collected from 48 locations across the 28.8-acre parcel, including the expected shot fall region of the Property. Soil samples were collected from 0 to 1 fbg at all locations and from 1 to 2 fbg at selected locations. Laboratory analysis revealed lead concentrations ranging from below laboratory detection limits along the northern extent of the shooting range to 10,800 ppm along the eastern boundary of the subject Property in the expected location of potential shot fall. Lead concentrations in samples collected from 1 to 2 fbg were detected consistently lower than those collected from 0 to 1 fbg at the same location. Polycyclic aromatic hydrocarbons (PAHs), arsenic, antimony, nickel, copper, zinc, strontium and magnesium were found to be within the acceptable limits outlined in the NYSDEC Recommended Soil Cleanup Objective (RSCO)Technical and Administrative Guidance Memorandum 4046 (TAGM 4046).

- ***December 2004***

GES performed soil sampling of portions of lots 10, 11, 12 and 13 (Area 1), a small region of the southwest corner of the Property (Area 2) and the "cut and fill area" of the Property consisting of a rectangular region (Area 3) located in the center of the 28.8-acre parcel. The location of each of these areas may be reference on the Area Location Map (**Figure 5**). Refer to the Supplemental ESA (GES, 2005) for specific sampling locations.

Area 1

On December 13, 2004, GES personnel established a sampling grid, consisting of flags placed at fifteen-foot intervals, in the expected shot fall area (Area-1) comprising portions of lots 10, 11; 12 and 13. Based on the analytical results, the horizontal limit of the lead impacts was found to extend from the "cut and fill" area along the western portion of the sampling grid to the stone wall defining the eastern Property boundary. The highest lead concentrations (5,000 to >10,000 mg/kg) were located in the triangular region consistent with historic use of the Property as a firing range. Refer to **Figure 5** for the location of the shot fall area inside the BCP Site. The vertical limit of lead impacted soil was found to extend from grade to 1.5 fbg. The laboratory data clearly defined a downward trend of total and TCLP lead concentrations from 0.5 to 1.5 fbg. Analytical results also indicated that semi-volatile organic compounds (SVOCs) were present in soil at concentrations above the NYSDEC RSCO TAGM 4046 in samples collected from the southwestern

portion of the grid from grade to 1.5 fbg.

Area 2

Laboratory results of selected soil samples from Area 2 indicated the highest lead concentration was 237 mg/kg at one location. Benzo(a)anthracene, benzo(b)pyrene, benzo(b)fluoranthene and chrysene were also found to exceed the NYSDEC RSCO TAGM 4046 guidance values at this location.

Area 3

Fill material in Area 3 was found to reach a maximum depth of 17 fbg in the southeast corner and become shallower toward the north and northwest. Two soil samples from the area revealed total lead concentrations of 23.9 ug/kg and 6.43 mg/kg, respectively. VOCs were not detected at concentration above those outlined by the NYSDEC RSCO TAGM 4046.

- ***January 2005***

GES performed additional soil sampling to further define the area of SVOC impact within the southwest portion of Area 1 and to delineate the vertical extent of lead impact within the shot fall area. In the southwest portion of Area 1, additional soil samples were collected from both within and outside of the grid. Additional samples were also collected from the shot fall area of the grid. Laboratory analysis of the soils samples collected from the southwestern portion of the grid indicated that SVOC impacted soil was limited to the previously sampled area. SVOC impacted soil was found to be concentrated to the upper 0.5 feet of soil with somewhat less impact present at 1.5 fbg. It was determined that the shot fall area needed additional sampling to fully delineate the vertical extent of lead impacted soil.

- ***February 2005***

GES performed additional soil sampling to determine vertical extent of lead impact within the shot fall area on the Area 1 grid. Laboratory results of the sampling event indicated a downward trend of lead concentrations with depth. Forty-two of the fifty-three samples collected from 1.5 fbg exceeded 63 mg/kg while only four samples collect from 2.5 fbg exceeded 63 mg/kg. One sample, collected from 3.5 fbg exceeded 400 mg/kg. The lead concentration decreased significantly to less than 63 mg/kg at a depth of 4.0 fbg.

2.4.4 Groundwater Sampling – December 2006

On December 4th, 6th, and 7th of 2006, GES oversaw the advancement of ten (10) 1-inch diameter piezometers (GP-1 through GP-10) on the Property using a track-mounted Geoprobe©. Piezometers were set at depths ranging from 15 to 23 fbg. Groundwater samples were collected from each location and submitted for analysis of Resource Conservation and Recovery Act (RCRA) 8 Metals. Investigation details may be referenced in the submitted RAWP (GES, 2008).

Laboratory analytical results from the groundwater samples (see **Figure 4**) collected from piezometers GP-1 and GP-3 through GP-10 did not indicate the presence of RCRA 8 Metals at concentrations above laboratory detection limits. However, the lead concentration in groundwater collected from GP-2 was found to be 0.0983 mg/L. This exceeds the NYSDEC Technical and Operation Guidance (TOGS) 1.1.1 guidance value for lead in groundwater.

2.4.5 Additional Soil Sampling – May 2007

Forty surface soil samples were collected from the BCP Site and submitted for analysis of total lead. Refer to the RAWP (GES, 2008) for specific sampling locations and laboratory results. Soil samples collected from outside the perimeter of the areas that were previously defined as lead-impacted did not indicate the presence of lead at concentrations above 63 mg/kg (Brownfields Remedial Program Cleanup Objective – Track 1 Unrestricted Use). In addition, soil samples collected from sample locations at depths greater than the known lead-impacted depths did not indicate the presence of lead at concentrations greater than 63 mg/kg).

This data is summarized in **Table 4** and was used to further develop the Soil Impacts Map included as **Figure 6.**

2.4.6 Remedial Action Work Plan – Submitted July 2008

GES prepared and submitted a RAWP along with an application to enter the BCP to the NYSDEC in July of 2008. The 4.72 acre portion of the Proposed Granite Pointe Subdivision known to contain contamination was accepted into the BCP Program on May 7, 2009. The RAWP summarized the results of previous investigations and proposed a

Track 1 cleanup and a remedy compliant with the DER-10 and BCP guidelines. The Property is intended to be developed by the owner as a residential subdivision. In order to facilitate development of the Property, the proposed remedial action is to excavate and remove impacted soils above applicable regulatory guidelines from the BCP Site. Approximately 10,000 tons of impacted soils above applicable regulatory guidelines have currently been identified for excavation and off-site disposal. The proposed method of clean-up and excavation/soil removal of the BCP Site will achieve Track 1 and appropriate RAOs in the most efficient, timely and effective manner as compared to the other proposed remedial options. The RAWP is currently under review by the NYSDEC.

3.0 THE PRE-DESIGN DELINEATION STUDY

3.1 STUDY OBJECTIVES

This Area of Concern (AOC) specific Pre-Design Delineation Study was developed in accordance with NYSDEC comments, received on March 24, 2009, on the submitted RAWP (GES, 2008). The purpose of this Delineation Study, as per the recommendations of the NYSDEC, is to ensure full delineation of the contaminants of concern on the BCP Site and provide assurances that there are not any unknown contaminants present on the BCP Site.

3.2 DELINEATION OF SOIL IMPACTS

The potential sources of soil contamination discovered during previous investigations on the BCP site include the shot fall area of the former trap shooting range with detections of lead and historic dumping areas in the southwestern corner with detections of SVOCs. The majority of the lead impacts detected in on-site soils appear to exist from 0 to 2.0 fbg. TCLP analysis indicates that lead does not appear to be leaching through the soil greater than a maximum of 4 fbg. SVOC concentrations indicate impacted soil is commonly limited to the upper 2.0 feet of soil on the BCP site. The Soil Impacts Map (**Figure 6**) displays the extent of lead and SVOC impacted soils by depth based on the results of previous investigations at the BCP site. Lead impacted soils at the BCP Site are divided into areas impacted to 1 fbg, areas impacted to 2 fbg and areas impacted to 4 fbg. SVOC impacted soils are divided into areas impacted to 1 fbg and areas impacted to 2 fbg.

3.2.1 Delineation of Soil Impacts - Rationale

For the purposes of this Study, impacted soil on the site has been grouped into areas of concern based on the known depth of impacted areas. The Soil AOCs are referenced in Area of Concerns Map with Proposed Soil Borings (**Figure 7**). Soil AOC-A includes both lead and SVOC contaminated soil impacted to a depth of 1 fbg. Soil AOC-B includes lead and SVOC contaminated soil impacted to a depth of 2 fbg. Soil AOC-C includes lead contaminated soil impacted to a depth of 4 fbg. In addition to the AOCs defined above, a fourth AOC, AOC-D, will include areas of the BCP Site which have been sampled but at a relatively low frequency during previous investigations and found to have no detections of lead or SVOCs. These non-impacted areas of the BCP Site typically fall outside of the shot fall area (**Figure 5**).

GES proposes to delineate the extent of impacted soil on the BCP Site by sampling soil from pre-determined depths within each of the Soil AOCs. **Table 1** provides a Proposed Soil Sampling Summary. As stated in the previous paragraph, each Soil AOC is defined by the maximum depth of impacted soil based on the results of previous investigations. At each sampling location within AOC-A, AOC-B and AOC-C soil samples will be collected from the deepest one foot increment of known impacted soil and the next one foot increment of soil. In AOC-D soil samples will be collected from grade to 1 fbg to confirm there are no contaminants present. The soil sampling procedure for each of the Soil AOCs is outlined in the following sections.

3.2.2 Delineation of Soil Impacts - Scope

- ***Soil AOC-A, Delineation of Soil Impacts to 1 fbg***

Previous investigations at the BCP Site indicate that the Soil AOC-A contains both lead and SVOC impacted soil to a depth of 1 fbg. GES proposes to delineate impacted soil in this AOC by sampling soil from locations spaced at regular intervals of approximately 50 to 100 feet. At each of the sampling locations a hand auger will be used to collect soil samples from grade to 1 fbg and from 1 to 2 fbg. The intended sampling locations may be referenced in **Figure 7**.

- ***Soil AOC-B, Delineation of Soil Impacts to 2 fbg***

Previous investigations at the BCP Site indicate that the Soil AOC-B contains both lead and SVOC impacted soil to a depth of 2 fbg. GES proposes to delineate impacted soil in this AOC by sampling soil from locations spaced at regular intervals of approximately 50 to 100 feet. At each of the sampling locations a hand auger will be used to collect soil samples from 1 to 2 fbg and from 2 to 3 fbg.

- ***Soil AOC-C, Delineation of Soil Impacts to 4 fbg***

Previous investigations at the BCP Site indicate that the Soil AOC-C contains lead impacted soil to a depth of 4 fbg. GES proposes to delineate impacted soil in this AOC by sampling soil from locations spaced at regular intervals of approximately 15 feet. At each of the sampling locations (see **Figure 7**) a track mounted Geoprobe© will be used to collect soil samples from 3 to 4 fbg and from 4 to 5 fbg.

- ***Soil AOC-D, Confirmation Sampling of Non-Impacted Areas***

Previous investigations at the BCP indicate that the Soil AOC-D has not been impacted by lead or SVOC contamination. GES proposes in this AOC that soil sampling will be conducted from locations spaced at regular intervals of approximately 50 to 100 feet. At each of these sampling locations (see **Figure 7**) a hand auger will be used to collect soil samples from grade to 1 fbg.

All soil samples collected by the methods outlined above will be screened for the presence of VOCs using a photo ionization detector (PID) calibrated to a standard of 100 parts per million (ppm) isobutylene. Soil will be characterized in the field and observations including color, moisture content, and grain size will be recorded during soil sampling activities. Selected soil samples will be collected in appropriate glassware and submitted for laboratory analysis.

3.2.3 Confirmation of Potential Soil Contaminants

In addition to delineating the horizontal and vertical extent of lead and SVOCs in the soil on the BDP Site, GES intends to confirm that there are not any other contaminants present. All of the collected soil samples will be sent to Spectrum Analytical Laboratory of

Agawam, Massachusetts (Spectrum), a NYS Department of Health (DOH) Environmental Laboratory Approval Program (ELAP) certified laboratory, for analysis. Samples will be analyzed for full target compound list (TCL) and target analyte list (TAL) analytes. These include volatile organic compounds (including MTBE), SVOCs, pesticides, herbicides, PCBs and metals. Laboratory analytical methods may be referenced in **Table 3**.

3.3 INVESTIGATION OF GROUNDWATER QUALITY

The most recent groundwater sampling event (December 29, 2006) indicated that a single groundwater sample, located along the eastern side of the site, exceeded the NYSDEC TOGS 1.1.1 GWS for lead. This sample was taken from an area of the site found to have lead impacted soil to a depth of 4 fbg. Previous groundwater sampling events at the Property indicate that VOCs have not been found to exceed NYSDEC groundwater quality guidelines.

3.3.1 Investigation of Groundwater Quality - Rationale

GES proposes to investigate groundwater quality at the BCP Site. Six overburden monitoring wells will be installed at proposed locations and groundwater will be sampled from each well using NYSDEC recommended sampling methods. **Table 2** provides a Proposed Groundwater Sampling Summary. Monitoring well installation and groundwater sampling procedures are outlined in the following sections.

3.3.2 Investigation of Groundwater Quality - Scope

GES proposes the installation and sampling of one (1) overburden monitoring wells up-gradient and outside of the known impacted soil area. In addition, five (5) overburden monitoring wells will be installed in the area of known soil impacts. The proposed monitoring well locations are provided in the Soil Impacts Map with Proposed Monitoring Wells (**Figure 8**).

PMW-1: located along northern boundary of BCP site in known lead soil impacted area.

PMW-2: located along eastern boundary of BCP site in known lead soil impacted area.

PMW-3: located along southern boundary of BCP site in known lead and SVOC soil impacted area

PMW-4: located along south central portion of BCP site in known lead and SVOC soil impacted area

PMW-5: located along in northern portion of BCP site upgradient of known lead soil impacted area

PMW-6: located along eastern boundary of BCP site in known lead soil impacted area.

- ***Overburden Monitoring Well Installation***

Monitoring well installation at the BCP Site will be performed using a track mounted Geoprobe©. GES will call the New York Utility Clearance Hotline (Dig Safely New York) prior to monitoring well installation, to determine the location of any underground structures and utilities.

During advancement of the borings, continuous split spoon samples will be collected from the boreholes. Individual samples will be collected using a four-foot macro-core sampler equipped with dedicated polyethylene lines. Samples will be screened for the presence of VOCs using a photo ionization detector (PID) calibrated to a standard of 100 parts per million (ppm) isobutylene. Soil will be characterized in the field and observations including color, moisture content, and grain size will be recorded during soil sampling activities. Selected soil samples will be collected and submitted for laboratory analysis. These samples will be sent to Spectrum Analytical Laboratory of Agawam, Massachusetts (Spectrum), a NYSDOH ELAP certified laboratory, for analysis. Soil samples will be analyzed for full TCL and TAL analytes. These include volatile organic compounds (including MTBE), SVOCs, pesticides, herbicides, PCBs and metals.

Each of the overburden monitoring wells will be constructed 2" diameter schedule 40 PVC riser and 0.010 slot PVC screen. The wells will be installed with the well screen placed across the water table. The anticipated depth of each of the monitoring wells, based on previous investigations, is expected to be approximately 15-20 fbg. The wells will be completed with stick-up casings and secured with locking caps. Each well will be developed according to NYSDEC requirements to minimize turbidity. Qualified GES personnel will provide oversight of all monitoring well installation and sampling activities.

- ***Groundwater Sampling***

After completion of monitoring well installation and development, groundwater samples will be collected from each of the monitoring wells using low flow sampling methods. Each well will be purged and sampled at a very low flow rate. This will minimize drawdown and avoid disturbance in the well. Low flow sampling tends to yield groundwater samples that are more representative of the actual conditions, especially regarding metals and PAH concentrations, which are very sensitive to turbidity. Groundwater quality parameters, including dissolved oxygen, pH, specific conductivity, temperature and turbidity, will be monitored and recorded throughout purging. When monitored parameters indicate stabilization, groundwater from the well will be sampled.

Collected groundwater samples will be sent to Spectrum Analytical Laboratory of Agawam, Massachusetts (Spectrum), a NYSDOH ELAP certified laboratory, for analysis. Samples will be analyzed for full TCL and TAL analytes. These include volatile organic compounds (including MTBE), semi-volatile organic compounds (SVOCs), pesticides, herbicides, PCBs and metals.

4.0 QUALITY ASSURANCE/QUALITY CONTROL PROTOCOLS

Previous environmental investigation activities of the Proposed Granite Pointe Subdivision have revealed that a portion of the subject Property is impacted with lead and SVOCs at concentrations above applicable guidance values. This Delineation Study proposes additional groundwater and soil sampling at the BCP Site to further delineate the nature and extent of contamination at the locations and to assure there are not any additional contaminants present. The environmental activities proposed include the installation of six additional monitoring wells, groundwater sampling of the six newly installed monitoring wells and soil sampling at variable depths (**Table 1** and **Table 2**) at approximately 35 locations on the BCP Site. Sampling locations may be reference on **Figure 7 and 8**. This section describes the quality assurance/quality control measures which will be employed while conducting Pre-Design Delineation Study activities.

4.1 SAMPLING PROCEDURES

Soil and groundwater samples collected during the implementation of this Pre-Design Delineation Study will be analyzed for VOCs (including MTBE), SVOCs, pesticides, herbicides, PCBs and metals. Specific methods of laboratory analysis are provided in the Laboratory Methods and Quality Assurance Summary (**Table 3**). Samples will be placed in laboratory approved containers. Soil samples will be collected into two, 8 ounce glass jars. Groundwater samples will be collected in 8-oz plastic containers preserved with nitric acid for metals samples and amber glass liter containers will be provided for the analysis of SVOCs, pesticides, herbicides and PCBs. Groundwater samples for VOC analysis will be put into 40 mL vials preserved with hydrochloric acid. Collected soil and groundwater samples will be labeled and immediately placed in a cooler filled with ice to maintain sample temperatures near 4° Celsius. Samples will be shipped overnight under proper chain-of-custody (COC) to Spectrum Analytical Laboratory of Agawam, Massachusetts (Spectrum), a NYS Department of Health (DOH) Environmental Laboratory Approval Program (ELAP) certified laboratory, for analysis.

4.2 DECONTAMINATION PROCEDURES

Decontamination procedures are intended to prevent the cross-contamination of environmental samples, and minimize the exposure to individuals involved in sampling and communities living near the subject Property. Deionized water will be utilized for decontamination purposes during soil and groundwater sampling. The decontamination water will be handled as investigative derived waste (IDW) and containerized in an open-top 55-gallon steel drum, properly labeled and sealed. Any excess sample soil and/or drill cuttings will be included as IDW and containerized in a separate open-top 55-gallon steel drum, properly labeled and sealed. Disposable personal protective equipment (PPE) will be decontaminated to the extent possible and disposed of in a non-hazardous solid waste dumpster on the BCP Site. The characterization and disposition of the containerized IDW will be conducted by GES in accordance with NYSDEC waste disposal practices.

4.3 QUALITY ASSURANCE

Quality assurance and quality control (QA/QC) samples will be collected to facilitate an evaluation of the data generated. Additional blind field duplicates, field blanks, trip blanks and

matrix spikes will be collected at a rate of one per twenty samples collected. Additional field equipment rinsate blanks will be collected at a rate of one per twenty samples collected and/or one per day, per sample instrument utilized. The QA/QC sampling plan for soil and groundwater may be reference in **Table 3**.

Soil and groundwater samples will be evaluated as follows; VOCs (including MTBE) by method SW846 8260, SVOCs by method SW846 8270, pesticides by method SW846 8081, herbicides by method SW846 8151, PCBs by method Sw846 8082 and metals by method SW846 6010/7471 (method 6010/3050 for lead). Sample preservation, container volumes and holding times will all be in accordance with EPA sampling methodologies. Soil and groundwater sample container information for each analysis is provided in **Table 3**.

4.4 DOCUMENTATION

Each of the soil and groundwater samples collected will be assigned a unique sample designation. This will be recorded in a field notebook and on the chain-of-custody form generated for submission of samples to the laboratory. Chain-of-custody documentation will accompany all samples from the field to the laboratory. The ELAP certified laboratory will deliver all analytical results in electronic format.

5.0 PROJECT PLANS AND DOCUMENTS

5.1 HEALTH AND SAFETY PLAN

A site specific Health and Safety Plan (HASP) has been prepared by GES for the BCP Site and this Pre-Design Delineation Study as required by the NYSDEC DER-10. All work performed under this plan will be performed in full compliance with governmental requirements, including site and worker safety requirements mandated by Federal OSHA.

The Volunteer and associated parties preparing the remedial documents submitted to the State and those performing the construction work, are completely responsible for the preparation of an appropriate Health and Safety Plan and for the appropriate performance of work according to that plan and applicable laws.

6.0 PROJECT SCHEDULING AND REPORTING

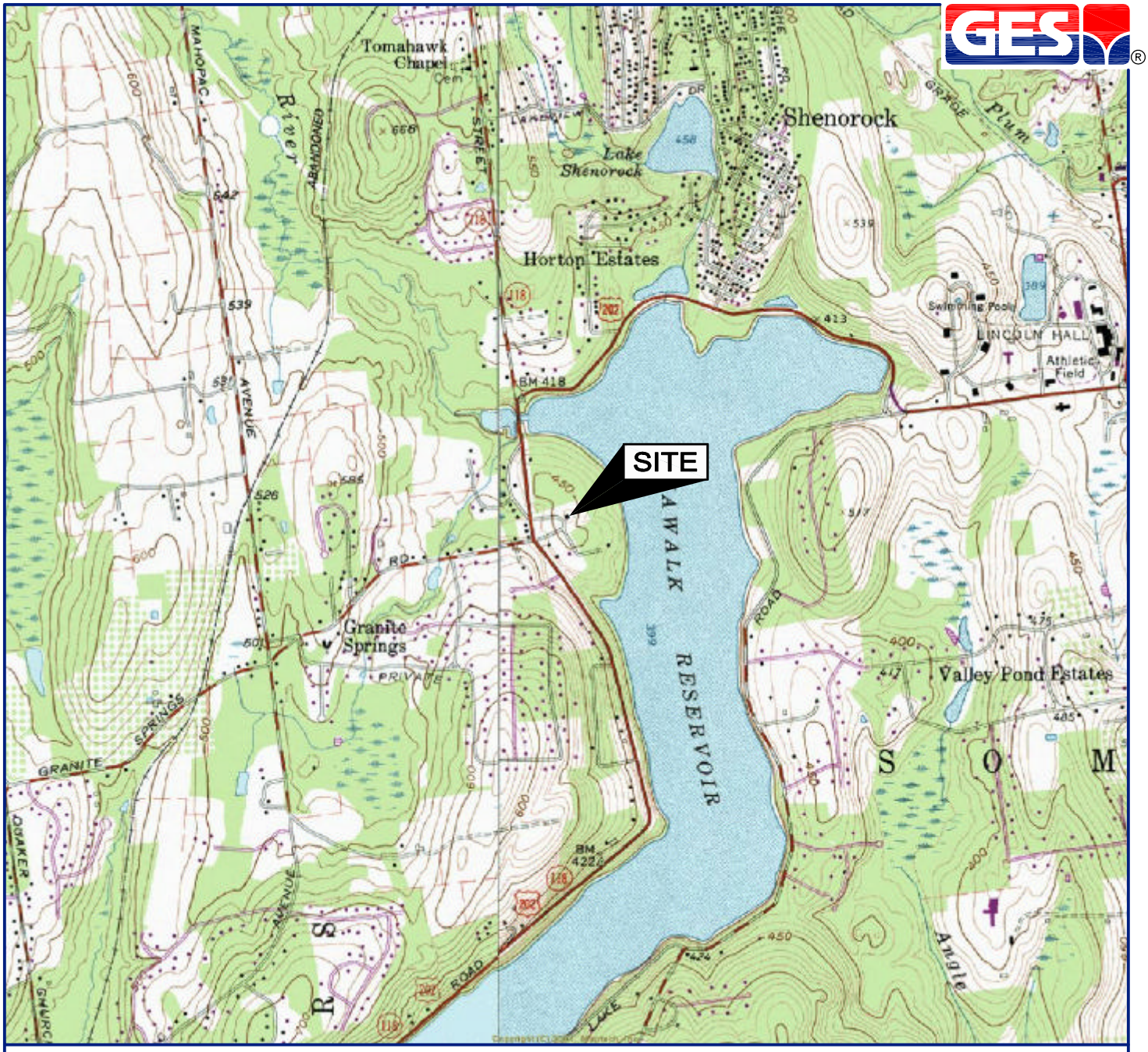
6.1 PRE-DESIGN DELINEATION STUDY SCHEDULE

All investigation activities associated with this Pre-Design Delineation Study are anticipated for completion in 2009. A detailed timeline of events for each phase of this investigation will be provided upon NYSDEC approval of this proposed Pre-Design Delineation Study and granting of any required local approvals.

6.2 PRE-DESIGN DELINEATION STUDY REPORTING

All of the work performed in association with this Pre-Design Delineation Study will be appropriately documented. These records will be maintained on the BCP Site at all times during on site activities and will be available for inspection by NYSDEC and NYSDOH staff. Upon completions of field activities, GES will submit a report to the NYSDEC summarizing the work performed as part of the Pre-Design Delineation Study in accordance of the requirements of the NYSDEC in DER-10. This report will include a description of all field activities, laboratory analytical results, associated boring logs, referenced site maps, conclusions and recommendations. All of the information submitted in association with this Pre-Design Delineation Study, including figures, maps and data will be submitted in an electronic format acceptable to the DER and bearing the NYSDEC assigned project number. A detailed timeline for reporting will be provided upon NYSDEC approval of this proposed Pre-Design Delineation Study and granting of any required local approvals.

LIST OF FIGURES



SOURCE: USGS 7.5 MINUTE SERIES
TOPOGRAPHIC QUADRANGLE 1981
CROFTON FALLS, NEW YORK
CONTOUR INTERVAL = 10'

QUADRANGLE LOCATION

DRAFTED BY: M.L.T. (N.J.)	SITE LOCATION MAP
CHECKED BY:	PROPOSED GRANITE POINTE DEVELOPMENT SOMERS, NEW YORK
REVIEWED BY:	Groundwater & Environmental Services, Inc. 70 JON BARRETT ROAD, ROBIN HILL CORP. PARK, PATTERSON, NY 12563
NORTH	SCALE IN FEET: 0 — 2000 / DATE: 6-15-09 / FIGURE: 1

AMAWALK RESERVOIR

EDGE OF RESERVOIR AS SURVEYED ON NOVEMBER 11, 1994

CITY OF NEW YORK

Lands of the

LEGEND

SURVEY POINT

PROPOSED MUNSON FROST DRIVE

PROPOSED STREET

TOMAHAWK STREET

(U.S. Route No. 202 & N.Y.S. Route No. 116, S.R. 149)

OLD TOMAHAWK STREET

GRANITE SPRINGS ROAD

Lot No. 7
Lot No. 8
Lot No. 9
Lot No. 10
Lot No. 11
Lot No. 12
Lot No. 13
Lot No. 14
Lot No. 15
Lot No. 16
Lot No. 17
Lot No. 18
Lot No. 19
Lot No. 20
Lot No. 21
Lot No. 22
Lot No. 23
Lot No. 24
Lot No. 25
Lot No. 26
Lot No. 27
Lot No. 28
Lot No. 29

Formerly J. BERGEN LENT "Subdivision Plat of SIBB REALTY, INC." Filed map no. 23595

Lands of the CITY OF NEW YORK

NOTE:

MUNSON FROST DRIVE IS A PROPOSED ROAD.

DRAFTED BY: W.G.S. (N.J.)	SITE MAP		
CHECKED BY:	PROPOSED GRANITE POINTE DEVELOPMENT SOMERS, NEW YORK		
REVIEWED BY:	Groundwater & Environmental Services, Inc. 25 JON BARRETT ROAD, ROBIN HILL CORP. PARK, PATTERSON, NY 12563		
NORTH	SCALE IN FEET 0 150	DATE 5-6-05	FIGURE 2

M:\Graphics\1100-Patterson-LHV\Misc\Granite Point Somers\granite point somers SM.dwg, 5/6/2005 8:02:21 AM, WShea

NOTES:

1. THE DEVELOPER SHALL REBUILD THE FOLLOWING PORTIONS OF THE STONE WALL: THE PORTIONS THAT WERE ORIGINALLY REMOVED FOR THE OLD RESTAURANT AND THE ACCESS FOR THE OLD CONTE RESIDENCE, THROUGH LOT 14 AND THE OTHER ACCESS FOR THE SAME RESIDENCE THROUGH LOT 23.

2. TREES TO BE REMOVED DURING ROAD AND DRAINAGE CONSTRUCTION SHALL BE SELECTIVELY TAGGED, CAREFULLY REMOVED AND PLACED IN A STOCKPILE. DURING THE PROPER GROWING SEASON, SELECTED TREES SHALL BE REPLANTED ALONG FRONTAGE OF LOTS 18 AND 27 AND BETWEEN HOUSE AND DETENTION BASINS ON LOTS 18 AND 27 NO REMOVAL OF THESE TREES, AFTER SAID PLANTING WILL BE PERMITTED WITHOUT THE APPROVAL OF THE SOMERS PLANNING BOARD.

3. LOTS 19, 27 AND 28 SHALL BE RESTRICTED SUCH THAT NO DIRECT ACCESS TO ROUTE 118 IS PERMITTED.

4. THE DRAINAGE EASEMENTS (OR THE DRAINAGE DISCHARGE POINTS) SHOWN HEREON ESTABLISH THE PERPETUAL RIGHT TO DISCHARGE STORMWATER RUNOFF FROM THE HIGHWAY AND FROM THE SURROUNDING AREA ONTO AND OVER THE AFFECTED PREMISES BY MEANS OF PIPES, CULVERTS OR DITCHES, OR A COMBINATION THEREOF, TOGETHER WITH THE RIGHT OF THE HOLDER OF FEE TITLE TO THE HIGHWAY, OR HIS AUTHORIZED REPRESENTATIVES, TO ENTER SAID PREMISES FOR PURPOSES OF MAKING SUCH INSTALLATIONS AND DOING SUCH MAINTENANCE WORK AS SAID HOLDER OF FEE TITLE MAY DEEM NECESSARY TO ADEQUATELY DRAIN THE HIGHWAY AND SURROUNDING AREA.

5. THE SIGHT EASEMENTS AS SHOWN HEREON ESTABLISH THE PERPETUAL RIGHT OF THE HOLDER OF FEE TITLE OF THE HIGHWAY, OR HIS AUTHORIZED REPRESENTATIVES, TO CLEAR, REGRADE AND MAINTAIN THE AREA WITHIN THESE EASEMENTS AT SUCH ELEVATION THAT THERE IS A CLEAR LINE OF SIGHT ANYWHERE ACROSS THE AREA BETWEEN AN OBSERVER'S EYE AT AN ELEVATION OF THREE AND FIVE-TENTHS (3.5) FEET ABOVE THE STREET SURFACE AT THE NEAREST EDGE OF THE STREET AND AN OBJECT ONE (1) FOOT ABOVE THE NEAREST EDGE OF PAVEMENT ON THE INTERSECTING STREET.

6. "EXISTING STRUCTURES SHALL BE REMOVED PRIOR TO THE INSSUANCE OF AND BUILDING PERMIT FOR A LOT SHOWN ON THE FINAL PLAT, THE AREAS SCARIFIED REGRADED, TOPSOILED AND REVEGATED TO THE SATISFACTION OF THE TOWN ENGINEER AND THE WCHD IF SDA IS APPLICABLE.

7. A DEED RESTRICTION WILL BE PLACED ON ALL LOTS WHICH ABUT THE HISTORIC ROADBED WHICH PO\ROHIBITS ANY DISTURBANCE OF THE STONE WALLS OTHER THAN THAT APPROVED BY THE PLANNING BOARD.

8. THE DEVELOPER SHALL POST THREE CAST METAL PLAQUES COMMEMORATING THE HISTORY OF THE ROAD, SUBJECT TO THE APPROVAL OF THE PLANNING BOARD AND THE TOWN HISTORIAN.

9. DEED RESTRICTION WILL BE PLACED ON ALL LOTS TO THE EFFECT THAT PESTICIDES AND FERTILIZERS BE SELECTED AND APPLIED BY HOMEOWNERS IN CONFORMANCE WITH THE LASTEST VERSION OF THE MANUAL ENTITLED, "1997 PEST MANAGEMENT RECOMMENDATIONS FOR COMMERICAL TURFGRASS," AS PUBLISHED BY CORNELL UNIVERSITY.

10. ALL SPECIFIC MATERIALS AND METHODS OF CONSTRUCTION TO BE IN ACCORDANCE WITH THE STANDARD SET FOR IN CHAPTER A174 (SUBDIVISION ROAD CONSTRUCTION SPECIFICATIONS) OF THE CODE OF THE TOWN OF SOMERS WITH EXCEPTION AS APPROVED BY THE TOWN ENGINEER AND WITH THE REQUIREMENTS OF THE PLANNING BOARD'S RESOLUTION OF CONDITIONAL APPROVAL, DATED__________.

11. THE AREA SHOWN WITHIN SIGHT EASEMENTS AT STREET INTERSECTIONS SHALL BE CLEARED, GRADED AND MAINTAINED IN ACCORDANCE WITH THE STANDARDS SET FORTH IN THE LAND SUBDIVISION REGULATIONS OF THE TOWN OF SOMERS.

12. ALL UTILITIES SHALL BE BURIED.

13. LOTS SHOWN HEREON SHALL NOT BE FURTHER SUBDIVIDED.

14. CLEAR CUTTING OF TREES AS DEFINED IN SECTION 170.49.1 OF TOWN CODE WILL REQUIRE A CLEAR CUTTING PERMIT FROM THE PLANNING BOARD PRIOR TO THE ISSUANCE OF A BUILDING PERMIT.

15) HEAVY EQUIPMENT SHALL NOT TRACK OVER OR ENTER INFILTRATION TRENCH AREAS.

16) IT IS THE INTENT OF THESE PLANS TO DIRECT ALL DRIVEWAY RUNOFF TO THE PROPOSED DRIVEWAY DRAINS WHERE NOTED. ALL DRIVEWAYS SHALL BE GRADED AND BERMED ACCORDINGLY. (SEE DETAIL SH. 4)

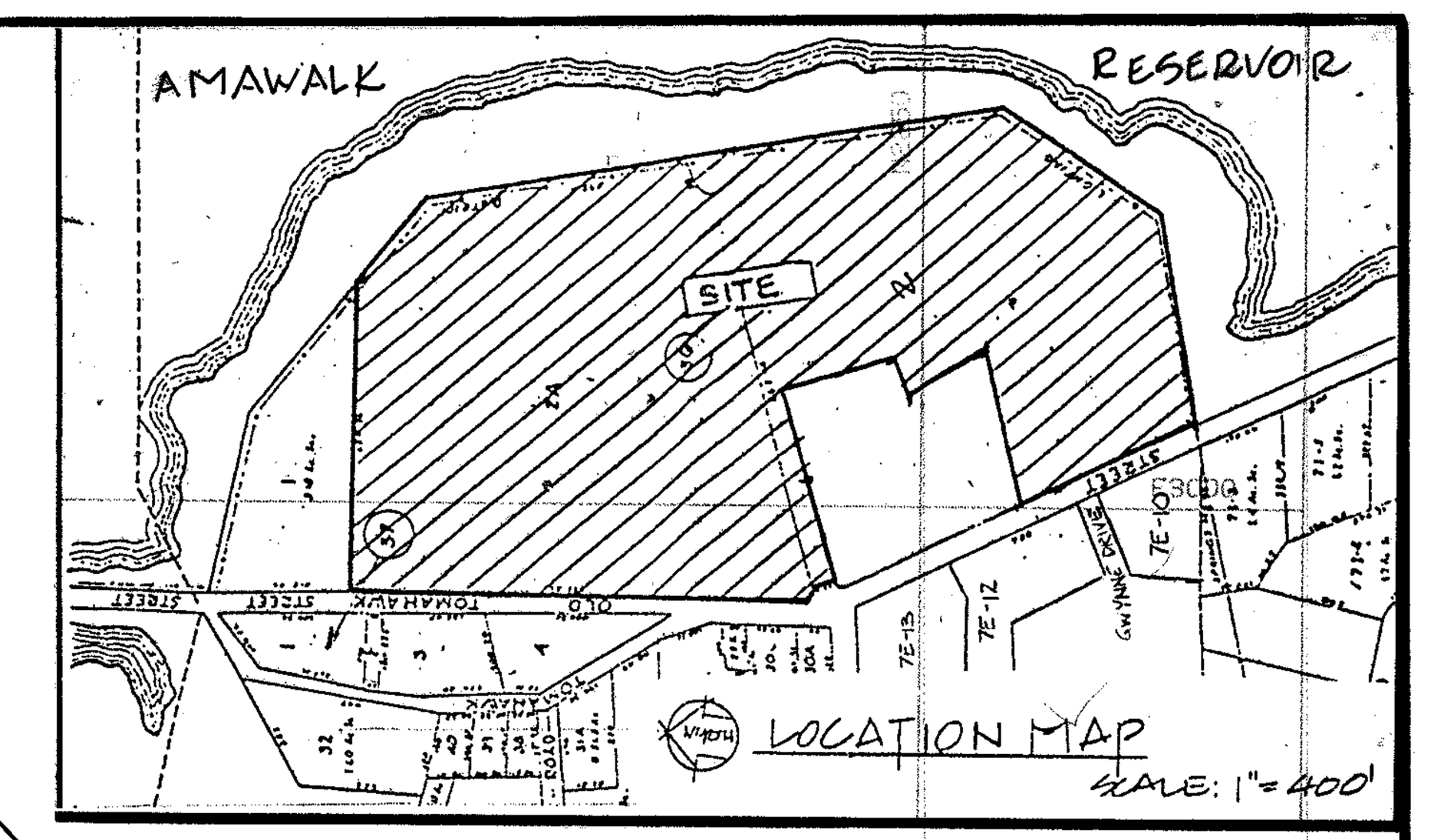
17) THE EXISTING PATHS ON LOTS 15, 16, 21, 23 SHALL BE BACK BLADED & RESTORED TO EXISTING CONDITIONS WITHIN SDA'S.

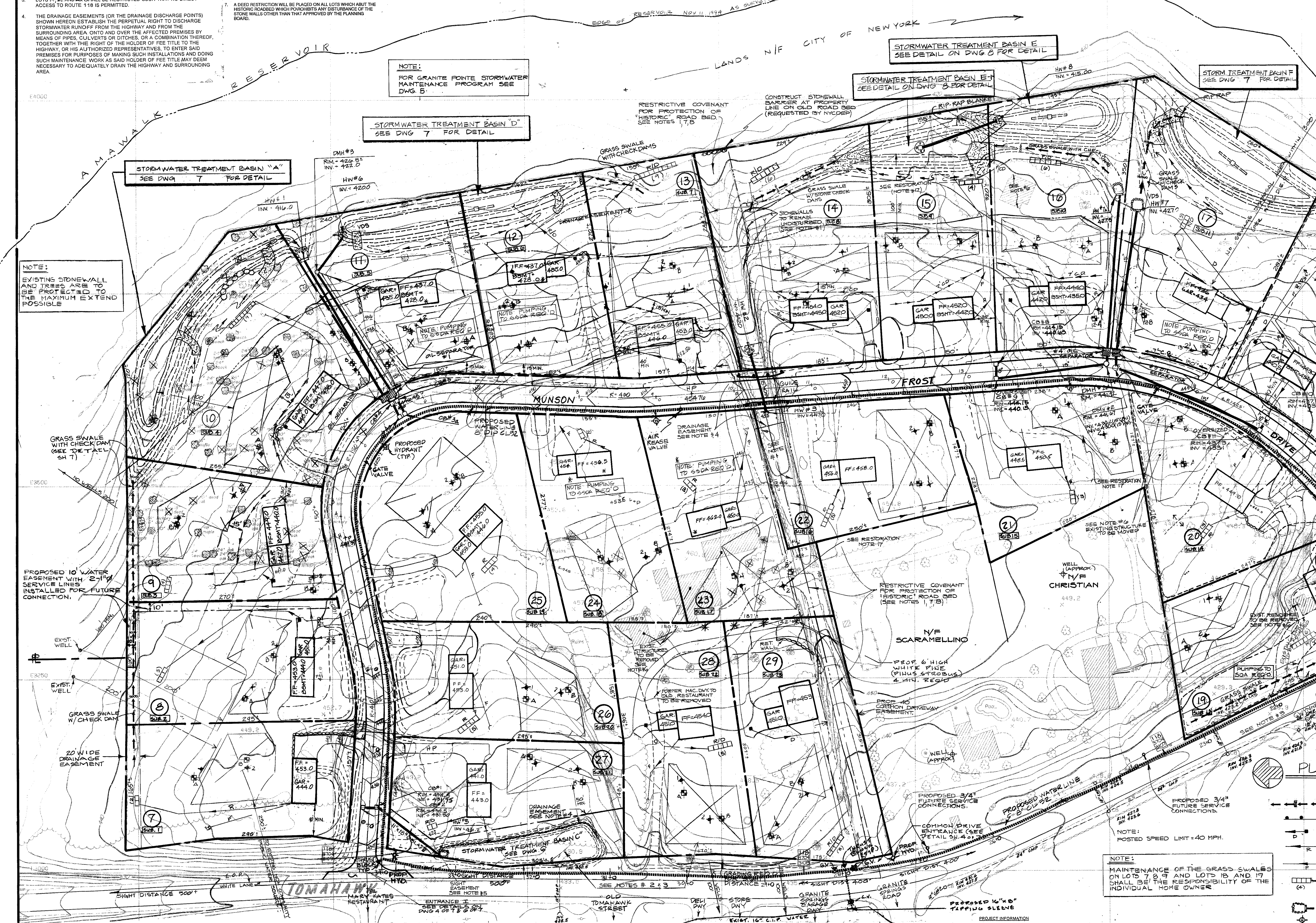
18. EXISTING SEPTIC SYSTEMS WILL BE REMOVED AND/ OR ABANDONED PRIOR TO SALE OF, OR CONSTRUCTION ON, THE APPLICABLE LOTS WHICH CONTAIN OLD SEPTIC SYSTEMS.

WCHD NOTES

1. THERE ARE NO KNOWN WELLS WITHIN THE RESTRICTIVE DISTANCES OF THE DISPOSAL AREA(S) PROPOSED ON THE PLAN.

2. THERE ARE NO KNOWN OFF-SITE SEWAGE DISPOSAL AREAS WITHIN THE RESTRICTIVE DISTANCES OF THE PROPOSED WELLS ON THE PLAN.





LIST OF DRAWINGS

1. CONSTRUCTION PLAN & INTERGRATED PLOT PLAN
2. EROSION CONTROL PLAN
3. ROAD PROFILES & DETAILS
4. MISCELLANEOUS DETAILS
5. STORMWATER TREATMENT DETAILS S.T.W. "B" ONLY
6. STORMWATER TREATMENT DETAILS S.T.W. "C" & HOUSE / DWY
7. STROMWATER TREATMENT DETAILS S. T.B. "A" "D" "F"
8. STORMWATER TREATMENT DETAILS & S.Q.B. "E" & "E-1"
9. EROSION CONTROL STANDARDS DWG. E-1
10. WATER DETAILS

ZONING CONFORMANCE TABLE

LOT #	LOT AREA (40,000 S.F. MIN.)	BUILDABLE AREA (20,000 S.F. MIN.)
7	42,683 S.F.	42,683 S.F.
8	42,983 S.F.	42,983 S.F.
9	43,846 S.F.	43,846 S.F.
10	75,737 S.F.	75,737 S.F.
		S.F.
11	45,935 S.F.	45,935 S.F.
12	40,006 S.F.	40,006 S.F.
13	44,153 S.F.	44,153 S.F.
14	61,455 S.F.	61,455 S.F.
15	47,712 S.F.	47,712 S.F.
16	56,986 S.F.	56,986 S.F.
17	66,438 S.F.	66,438 S.F.
18	85,667 S.F.	73,600 S.F.
19	41,834 S.F.	23,550 S.F.
20	43,306 S.F.	37,900 S.F.
21	40,057 S.F.	40,057 S.F.
22	40,124 S.F.	40,124 S.F.
23	44216 S.F.	44216 S.F.
24	41236 S.F.	41236 S.F.
25	57434 S.F.	57434 S.F.
26	42,500 S.F.	42,500 S.F.
27	46,450 S.F.	46,450 S.F.
28	47,689 S.F.	47,689 S.F.
29	49,584 S.F.	49,584 S.F.

LEGEND:

- EXIST. CONTOUR
- PROP. CONTOUR
- PROP. 8" WATER LINE (DIP CL52)
- DEEP TEST HOLE
- PERCOLATION TEST
- PROP. RETAINING WALL
- PROP. HOUSE W/DRIVEWAY
- 5000 S.F. MIN SDA
- TREE TO BE PRESERVED
- TREE TO BE REMOVED
- CATCH BASIN
- DRAINAGE MANHOLE
- GRASS SWALE W/CHECK DAMS (SEE DETAIL SH 7)
- GUIDE RAIL
- DRIVEWAY DRAIN
- ROOF DRAIN
- FOOTING DRAIN
- SLOPES > 25%
- BUILDABLE AREA (IF LESS THAN LOT AREA)
- ROOF (AND DWY) INFILTRATORS (SEE DWG. 6)
- HEADWALL W/VELOCITY DISSIPATION.
- PROPOSED HYDRANT
- EXISTING WATER LINE

NOTE:
MAINTENANCE OF THE GRASS SWALES ON LOTS 7 8 9 AND LOTS 18 AND 19 SHALL BE THE RESPONSIBILITY OF THE INDIVIDUAL HOME OWNER

LOT #	LOT AREA (Ac.)	TEST PIT DESCRIPTIONS	% SLOPE S.D.A.	* PERC RATE	DEPTH TO WATER	DEPTH TO IMPERV	LF OF FIELDS 4 BR	LF OF FIELDS ADDL BR	ROB FILL DPTH (FT)	ROB FILL VOL. (CY)	CUR. DR. DPTH (FT)	CUR. DR. LF (FT)	REMARKS
7	1.0	SANDY LOAM OVER F/M SAND W/S GRAVEL, COBBLES, TR.SILT	0.8	1-5	7+	7+	336	84	-	-	-	-	-
8	1.0	SANDY LOAM OVER F/M SAND & GRAVEL, TR. SILT	6.6	1-5	7+	7+	336	84	-	-	-	-	-
9	0.9	LOAM OVER F/M SAND, SILT MOD. COMPACTED	10.0	6-7	7+	7+	400	100	-	-	7'	110	
10	1.4	SANDY LOAM OVER COMP. SAND SOME SILT & GRAVEL	10	11-15	7+	7+	500	*	-	-	7'	130	*MAXIMUM 4 BEDROOMS
11	1.0	SANDY LOAM OVER COMP. SAND SOME SILT & GRAVEL	10	11-15	7+	7+	500	*			7'	130'±	*MAXIMUM 4 BEDROOMS
12	0.8	SANDY LOAM OVER F/M SAND & TR/S SILT -COMPACT	12.5	11-15	7+	7+	500	*			7'	100'±	MAX. 4 BDRMS. PUMPING TO SDA REQ'D
13	1.0	LOAM OVER F/M SAND SOME COARSE SAND & SOME SILT	10.9	16-20	7+	7+	**	**	-	-	7'	135'±	MAX. 4 BDRMS. DOSING MAY BE REQ'D

LOT #	LOT AREA (Ac.)	TEST PIT DESCRIPTIONS	% SLOPE S.D.A.	* PERC RATE	DEPTH TO WATER	DEPTH TO IMPERV	LF OF FIELDS 4 BR	LF OF FIELDS ADDL BR	ROB FILL DPTH (FT)	ROB FILL VOL. (CY)	CUR. DR. DPTH (FT)	CUR. DR. LF (FT)	REMARKS
14	1.0	LOAM OVER F/M SAND TR/S SILT MOD. COMPACTED	12.5	8-10	5.5+	7+	448	*	-	-	7'	130'	*MAXIMUM 4 BEDROOMS
15	1.1	LOAM OVER F/M SAND TR/S SILT MOD. COMPACTED	14.0	8-10	7+	7+	448	*	-	-	7'	80'	*MAXIMUM 4 BEDROOMS
16	1.3	SANDY LOAM OVER F/M AND TR/S SILT -COMPACT	3.0	8-10	7+	7+	448	*	-	-	7'	130'	*MAXIMUM 4 BEDROOMS
17	1.5	SANDY LOAM OVER F/M SAND W/S COARSE SAND & COBBLES, TR. SILT	6.2	1-5	7+	7+	336	84	-	-	7'	110'	PUMPING TO SDA REQUIRED
18	2.0	SANDY LOAM OVER F/M SAND W/S COARSE SAND & COBBLES, TR. SILT	15.1	1-5	7+	7+	336	84	-	-	-		-
19	1.0	SANDY LOAM OVER F/M/C SAND W/ COBBLES TR. SILT	13.3	8-10	7+	7+	448	112	-	-			PUMPING TO SDA REQUIRED
20	0.9	SANDY LOAM OVER F/M/C SAND W/ COBBLES TR. SILT	6.1	6-7	7+	7+	400	100	-	-	-	-	-
21	0.9	SANDY LOAM OVER F/M SAND W/S COARSE SAND & COBBLES, TR. SILT	5.0	8-10	7+	7+	448	112	-	-	-	-	-

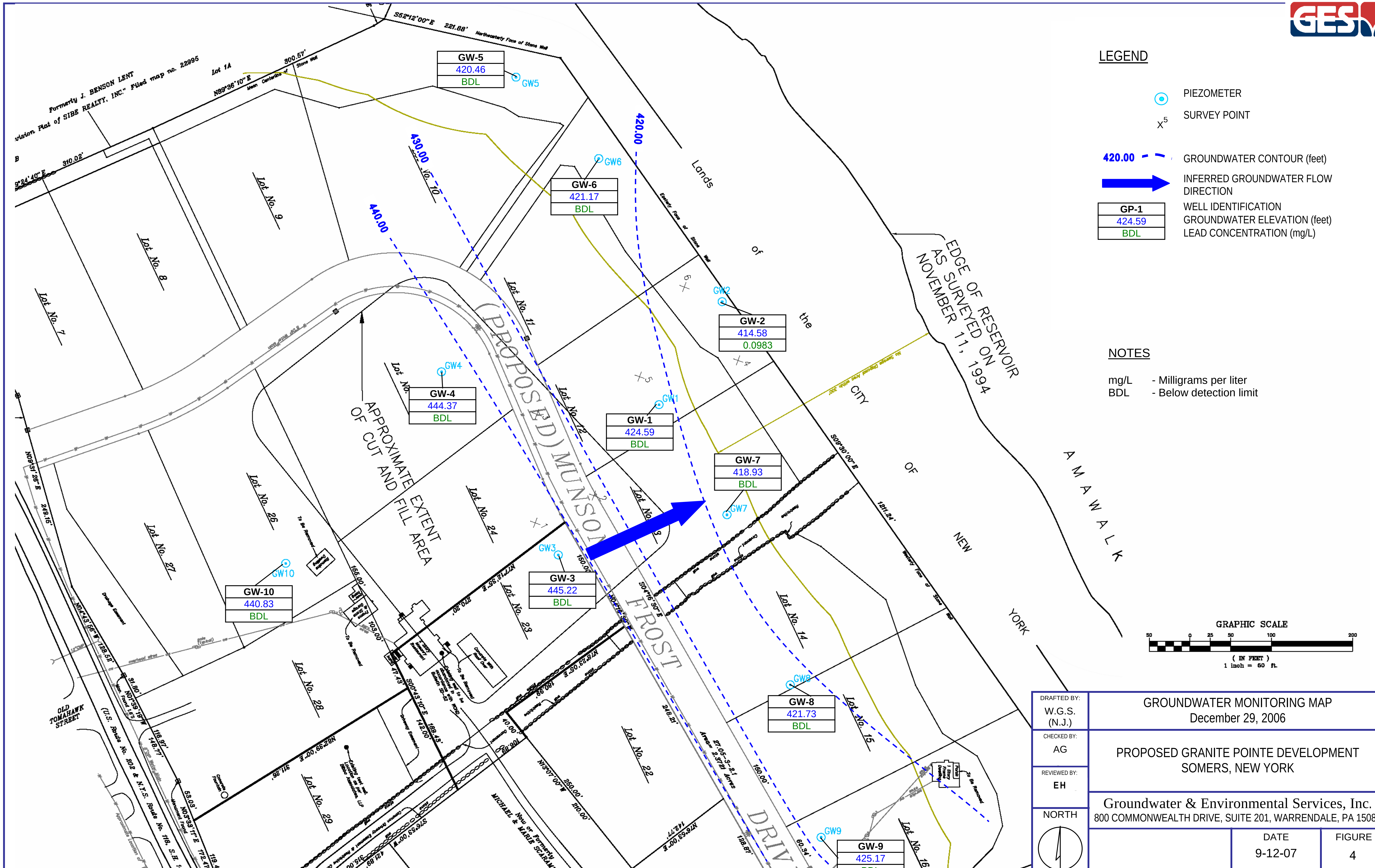
LOT #	LOT AREA (Ac.)	TEST PIT DESCRIPTIONS	% SLOPE S.D.A.	* PERC RATE	DEPTH TO WATER	DEPTH TO IMPERV	LF OF FIELDS 4 BR	LF OF FIELDS ADDL BR	ROB FILL DPTH (FT)	ROB FILL VOL. (CY)	CUR. DR. DPTH (FT)	CUR. DR. LF (FT)	REMARKS
22	0.9	LOAM OVER F/M SAND, SOME SILT MOD. COMP. AT 41"	5.0	11--15	7+	7+	500	125	-	-	-	-	DOSING MAY BE REQUIRED
23	1.0	LOAM OVER F/M SAND, SOME SILT MOD. COMP. (SOME TO AND SILT)	7.3	6-7	7+	7+	400	*	-	-	-	-	* MAXIMUM 4 BEDROOMS PUMPING TO SDA REQUIRED
24	0.9	LOAM OVER F/M SAND, SOME SILT MOD. COMP	5.7	1-5	7+	7+	336	84	-	-	-	-	PUMPING TO SDA REQUIRED
25	0.9	SANDY LOAM OVER MED COMP F-M SAND SOME SILT, SOME GRAVEL	6.7	11-15	7+	7+	500	125	-	-	-	-	REQUIRE DOSE
26	0.9	SANDY LOAM OVER F-M SAND S/ SILT COMP, S/ GRAV, TO LESS COMP F-M S, S	10.5	11--15	7+	7+	500	*	-	-	-	-	* MAXIMUM 4 BEDROOMS DOSING MAY BE REQUIRED
27	1.0	SANDY LOAM OVER F/M SAND W/S C/ SAND, GRAVEL & COBBLES, TR. SILT	6.0	1-5	7+	7+	336	84	-	-	-		0-2' R.O.B. FILL REQUIRED FOR GRADING
28	1.1	SANDY LOAM OVER MED COMP F-M SAND SOME SILT, SOME GRAVEL, SOME COBBL	5.0	6-7	7+	7+	400	100	-	-	-	-	-
29	1.1	SANDY LOAM OVER F-C SAND & GRAV TRACE SILT	8.9	6-7	7+	7+	400	100	-	-	-	-	-

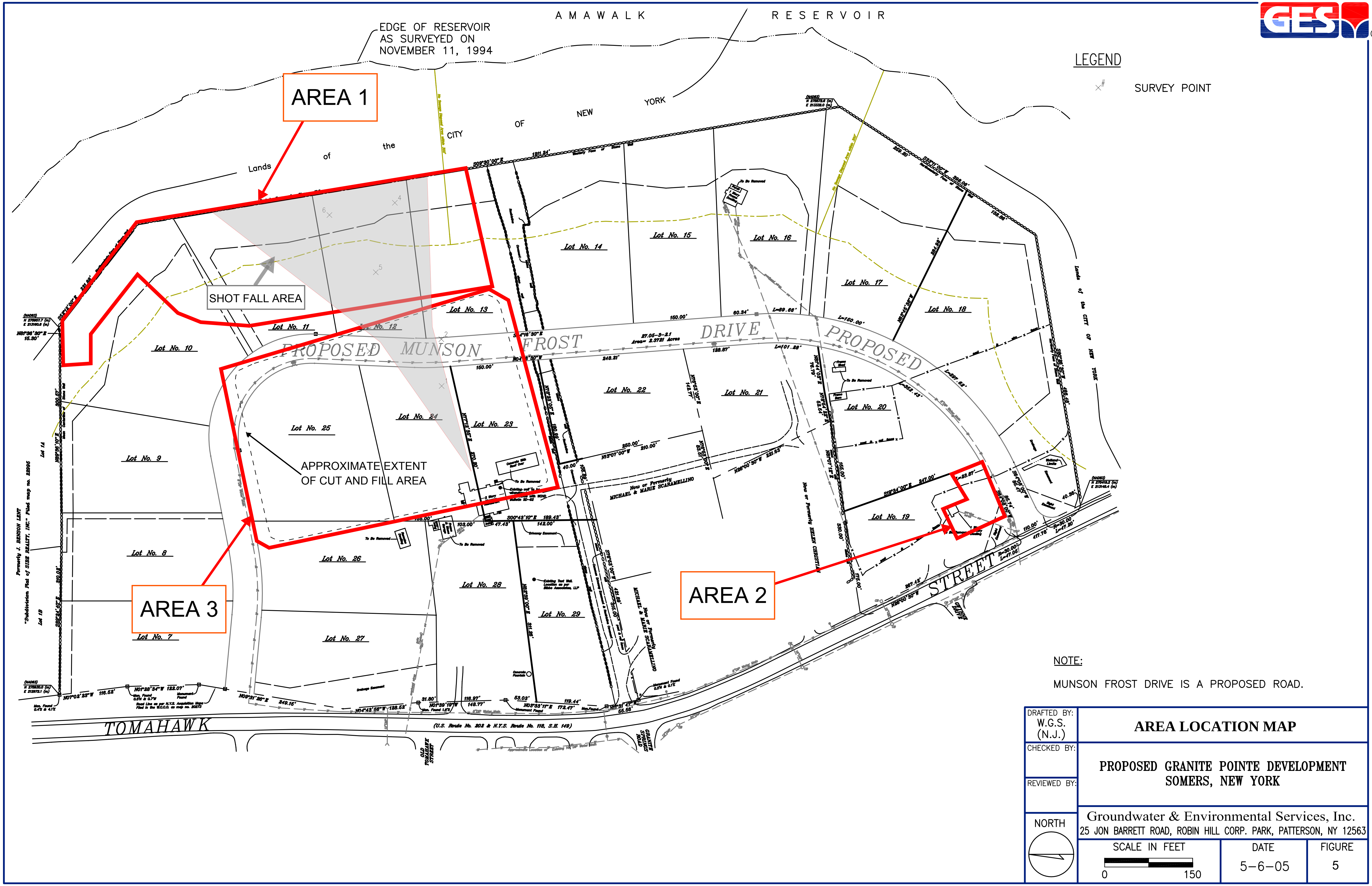
PROJECT INFORMATION

1. TOTAL ACREAGE OF PARCEL: 28.82 ACRES +/-
2. OWNER OF RECORD: SUELAIN REALTY, P.O. BOX 807, KATONAH, NY 10536
3. TAX ID #: SHEET 27.05, BLOCK 3, LOTS 2 AND 5
4. ZONING DISTRICT: R-40 RESIDENTIAL
5. PROPOSED DEVELOPMENT: 24 SINGLE FAMILY RESIDENTIAL LOTS
6. PROPOSED MINIMUM LOT SIZE: 40,000 S.F.
7. TOPOGRAPHIC SURVEY BY: DONALD J. DONNELLY, 1929 COMMERCE STREET, YORKTOWN HEIGHTS, NY 10598, NY LICENSE #49000

REVISIONS: 5-8-97, 10-10-97, 10-23-97, 11-20-97, 2-19-98, 4-13-98, 8-4-98, 12-1-98, 2-16-99, 3-22-99, 5-26-99, 8-19-99, 11-16-99, 5-5-00, 8-9-00, 12-11-00, 3-1-01, 8-14-01, 10-1-01, 2-13-02, 3-06-02, 1-14-03, 3-3-03, 4-29-03, 6-03-03

CONSTRUCTION PLAN & INTEGRATED PLOT PLAN	DATE: 2-16-95
GRANITE POINTE TOMAHAWK STREET (RT. 118) TOWN OF SOMERS, NEW YORK	REVISIONS 6-20-95, 4-9-96, 5-30-96, 1-23-97, 2-24-97
BIBBO ASSOCIATES LLP CONSULTING ENGINEERS & PLANNERS 589 ROUTE 22 CROTON FALLS, NEW YORK	SCALE: 1"=50' JOB# DWG. 1 OF: 10


LEGEND
PIEZOMETER
SURVEY POINT
420.00 GROUNDWATER CONTOUR (feet)
INFERRED GROUNDWATER FLOW DIRECTION
GP-1 424.59 BDL
WELL IDENTIFICATION
GROUNDWATER ELEVATION (feet)
LEAD CONCENTRATION (mg/L)
NOTES
mg/L - Milligrams per liter
BDL - Below detection limit
GW-1 424.59 BDL
GW-2 414.58 0.0983
GW-3 445.22 BDL
GW-4 444.37 BDL
GW-5 420.46 BDL
GW-6 421.17 BDL
GW-7 418.93 BDL
GW-8 421.73 BDL
GW-9 425.17 BDL
GW-10 440.83 BDL
420.00
430.00
440.00
Lands of the City of New York
EDGE OF RESERVOIR AS SURVEYED ON NOVEMBER 11, 1994
AMAWALK
APPROXIMATE EXTENT OF CUT AND FILL AREA
(PROPOSED) MUNSON FROST DRIVE
OLD TOMAHAWK STREET
(U.S. Route No. 202 & N.Y.S. Route No. 118, S.H.
Formerly J. BENSON LENT
Lot 1A
Lot No. 7
Lot No. 8
Lot No. 9
Lot No. 10
Lot No. 11
Lot No. 12
Lot No. 13
Lot No. 14
Lot No. 15
Lot No. 16
Lot No. 22
Lot No. 23
Lot No. 24
Lot No. 26
Lot No. 27
Lot No. 28
Lot No. 29
MICHAEL & MARIE SCARAMI Now or Formerly
GRAPHIC SCALE
(IN FEET)
1 inch = 60 ft.
DRAFTED BY: W.G.S. (N.J.)
CHECKED BY: AG
REVIEWED BY: EH
NORTH
GROUNDWATER MONITORING MAP
December 29, 2006
PROPOSED GRANITE POINTE DEVELOPMENT
SOMERS, NEW YORK
Groundwater & Environmental Services, Inc.
800 COMMONWEALTH DRIVE, SUITE 201, WARRENDALE, PA 15086
DATE 9-12-07
FIGURE 4



DRAFTED BY: W.G.S. (N.J.)	**AREA LOCATION MAP**
CHECKED BY:	PROPOSED GRANITE POINTE DEVELOPMENT SOMERS, NEW YORK
REVIEWED BY:	

Groundwater & Environmental Services, Inc.
25 JON BARRETT ROAD, ROBIN HILL CORP. PARK, PATTERSON, NY 12563

SCALE IN FEET	DATE	FIGURE
0 — 150	5-6-05	5

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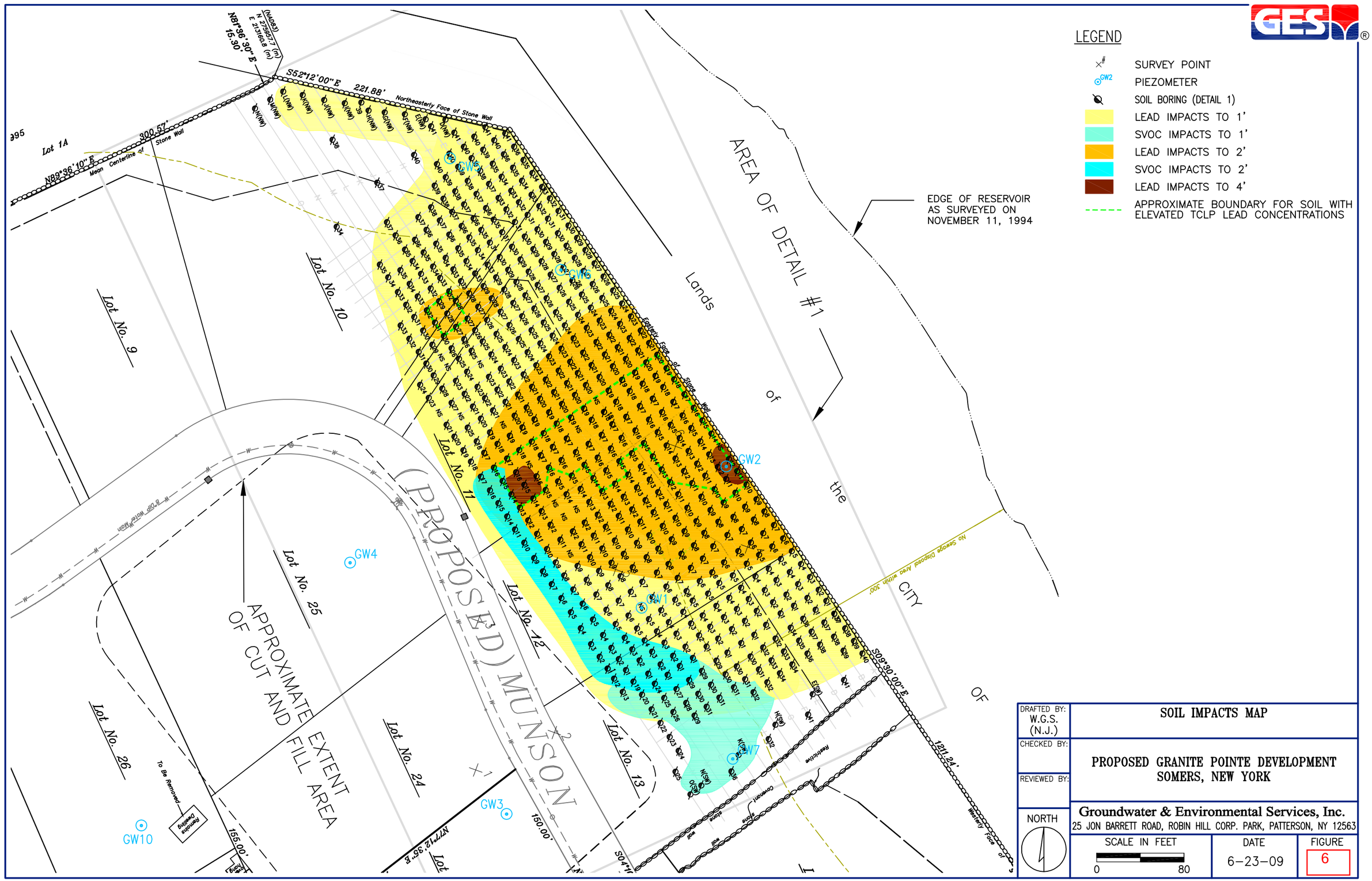

DRAFTED BY: W.G.S. (N.J.)	SOIL IMPACTS MAP
CHECKED BY:	PROPOSED GRANITE POINTE DEVELOPMENT SOMERS, NEW YORK
REVIEWED BY:	Groundwater & Environmental Services, Inc. 25 JON BARRETT ROAD, ROBIN HILL CORP. PARK, PATTERSON, NY 12563
NORTH	SCALE IN FEET: 0 80 / DATE: 6-23-09 / FIGURE: 6

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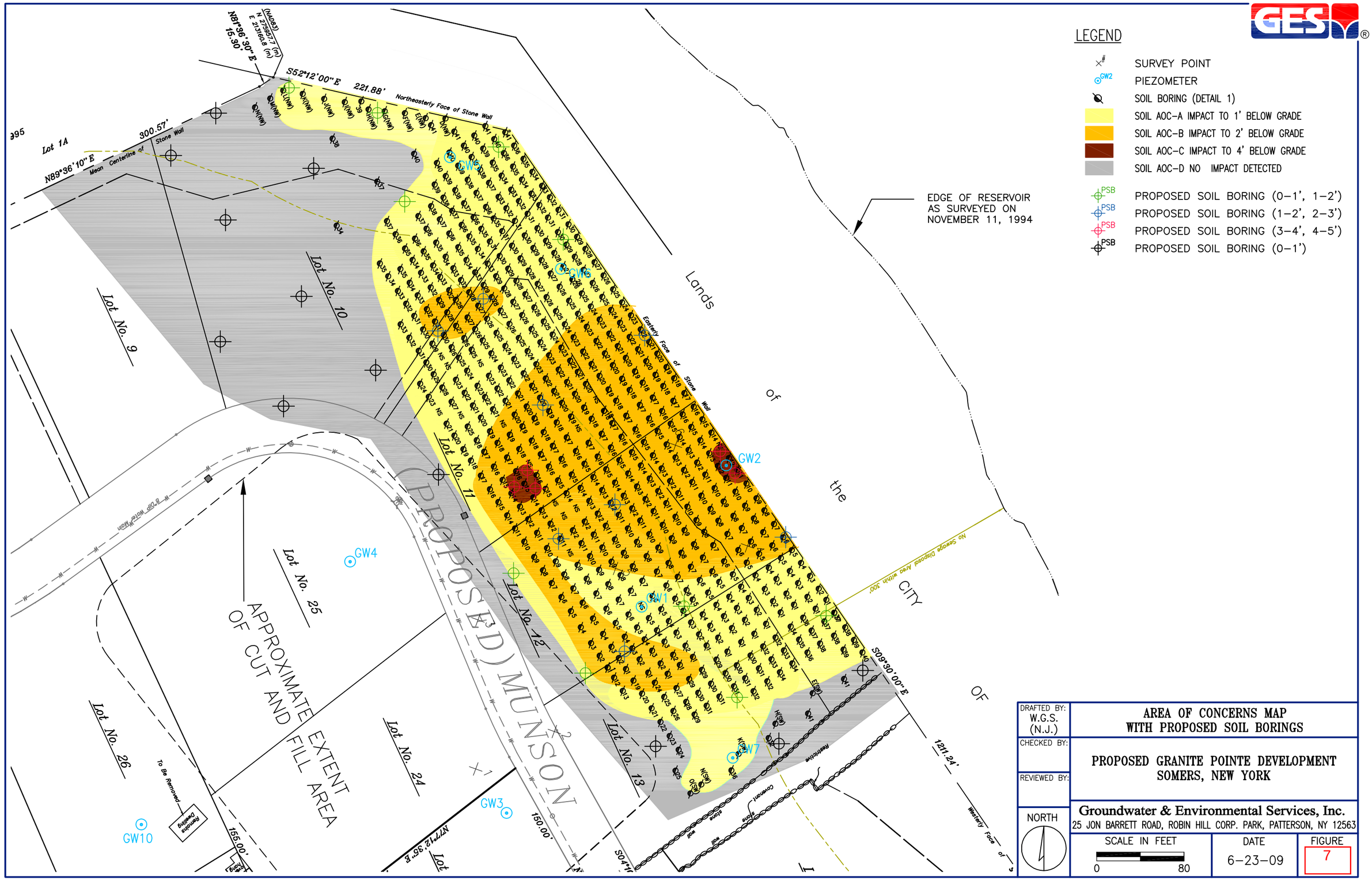

LEGEND

- SURVEY POINT
- PIEZOMETER
- SOIL BORING (DETAIL 1)
- SOIL AOC-A IMPACT TO 1' BELOW GRADE
- SOIL AOC-B IMPACT TO 2' BELOW GRADE
- SOIL AOC-C IMPACT TO 4' BELOW GRADE
- SOIL AOC-D NO IMPACT DETECTED
- PROPOSED SOIL BORING (0-1', 1-2')
- PROPOSED SOIL BORING (1-2', 2-3')
- PROPOSED SOIL BORING (3-4', 4-5')
- PROPOSED SOIL BORING (0-1')

DRAFTED BY: W.G.S. (N.J.)	AREA OF CONCERNS MAP WITH PROPOSED SOIL BORINGS
CHECKED BY:	PROPOSED GRANITE POINTE DEVELOPMENT SOMERS, NEW YORK
REVIEWED BY:	
NORTH	Groundwater & Environmental Services, Inc. 25 JON BARRETT ROAD, ROBIN HILL CORP. PARK, PATTERSON, NY 12563
SCALE IN FEET 0 80	DATE 6-23-09
	FIGURE 7

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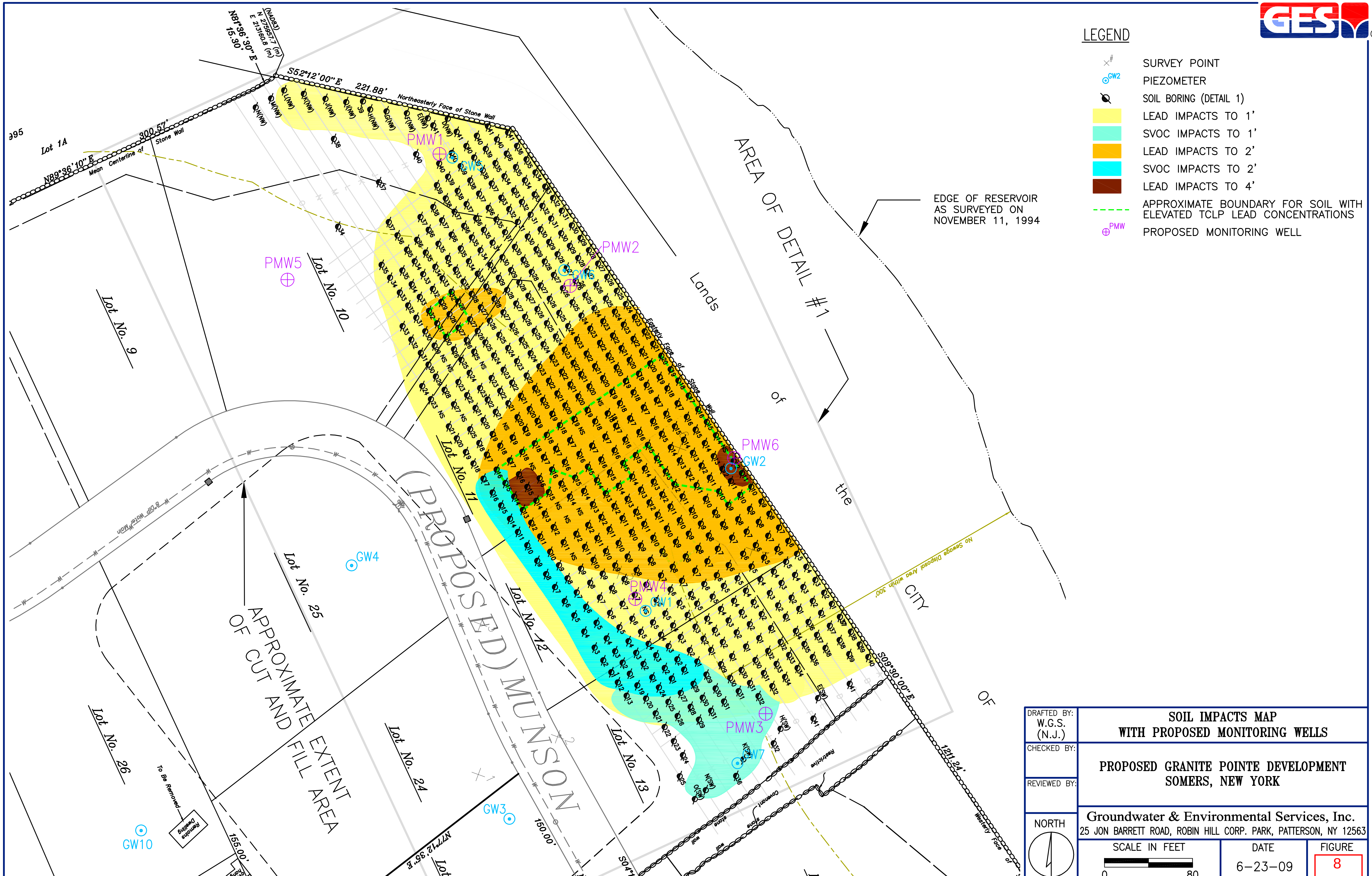

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LIST OF TABLES

Table 1
PROPOSED SOIL SAMPLING SUMMARY

Proposed Granite Pointe Subdivision
Somers, New York

Sample Location*	Sample Location Description/Sampling Rationale	Sample Depth (fbg)	Number of Samples	Sampling Method	Analysis [a b]
Area A	Delineate the nature and extent of contamination to 1 fbg on the site	0 to 1	11	Hand auger	TCL & TAL analytes
		1 to 2	11		TCL & TAL analytes
Area B	Delineate the nature and extent of contamination to 2 fbg on the site	1 to 2	8	Hand auger	TCL & TAL analytes
		2 to 3	8		TCL & TAL analytes
Area C	Delineate the nature and extent of contamination to 4 fbg on the site	3 to 4	5	Geoprobe©	TCL & TAL analytes
		4 to 5	5		TCL & TAL analytes
Area D	Confirm that there are NO contaminant impacts	0 to 1	13	Hand Auger	TCL & TAL analytes

NOTES:

See Table 3 for the Soil Sampling QA/QC Summary

[a] All samples will be analyzed for the full target compound list (TCL) and target analyte list (TAL) analytes, including volatile organic compounds (VOCs) with MTBE included, semi-volatile organic compounds (SVOCs), pesticides, herbicides, PCBs and metals.

[b] All analysis will be performed by Spectrum Analytical Laboratory of Agawam, Massachusetts, a New York State (NYS) Department of Health (DOH) Environmental Laboratory Approval Program (ELAP) certified laboratory.

* Sampling locations may be referenced on **Figure 7**. Additional soil samples will be taken at Proposed Monitoring Well Locations at the depth proposed in the Soil AOC that the individual PMW is located within or as deemed necessary during field activities.

fbg = feet below grade

Table 2
PROPOSED GROUNDWATER SAMPLING SUMMARY

Proposed Granite Pointe Subdivision
Somers, New York

Sample Designation*	Proposed Monitoring Well Depth (fbg)	Sampling Method	Analysis [a b]
PMW-1	15 - 20 (or refusal)	Low flow	TCL & TAL analytes
PMW-2	15 - 20 (or refusal)	Low flow	TCL & TAL analytes
PMW-3	15 - 20 (or refusal)	Low flow	TCL & TAL analytes
PMW-4	15 - 20 (or refusal)	Low flow	TCL & TAL analytes
PMW-5	15 - 20 (or refusal)	Low flow	TCL & TAL analytes
PMW-6	15 - 20 (or refusal)	Low flow	TCL & TAL analytes
PMW-7	15 - 20 (or refusal)	Low flow	TCL & TAL analytes

NOTES:

See Table 3 for the Groundwater Sampling QA/QC Summary

[a] All samples will be analyzed for the full target compound list (TCL) and target analyte list (TAL) analytes, including volatile organic compounds (VOCs) with MTBE included, semi-volatile organic compounds (SVOCs), pesticides, herbicides, PCBs and metals.

[b] All analysis will be performed by Spectrum Analytical Laboratory of Agawam, Massachusetts, a New York State (NYS) Department of Health (DOH) Environmental Laboratory Approval Program (ELAP) certified laboratory.

* Sampling locations may be referenced on Figure 8.

fbg = feet below grade

ft. = feet

Table 3
LABORATORY METHODS AND QUALITY ASSURANCE SUMMARY

Proposed Granite Pointe Subdivision
Somers, New York

Sample Matrix	Sample Location*	Sample Depth (fbg)	Number of Samples	Sampling Method	Analysis	Laboratory Method	Sample Container	Sample Preservation
SOIL	Area A	0 to 1	11	Hand auger	TCL & TAL analytes including "		Two 8 ounce containers for all listed analyses.	No preservative required
		1 to 2	11		VOCs	SW846 8260		
	Area B	1 to 2	8	Hand auger	SVOCs	SW846 8270		
		2 to 3	8		Pesticides	SW846 8081		
	Area C	3 to 4	18	Geoprobe©	Herbicides	SW846 8151		
		4 to 5	18		PCBs	SW846 8082		
	Area D	0 to 1	13	Hand Auger	Metals (includes lead)	SW846 6010 (3050)		
GROUNDWATER	PMW-1	10 - 20	1	Low flow	TCL & TAL analytes including "			
	PMW-2	'10 - 20	1		VOCs	SW846 8260	3 VOA Vials	HCl
	PMW-3	'10 - 20	1		SVOCs	SW846 8270	amber glass liter	No preservative
	PMW-4	'10 - 20	1		Pesticides	SW846 8081	amber glass liter	No preservative
	PMW-5	'10 - 20	1		Herbicides	SW846 8151	amber glass liter	No preservative
	PMW-6	'10 - 20	1		PCBs Metals (includes lead)	SW846 8082 SW846 6010 (3050)	amber glass liter 500 ml plastic	No preservative HNO_3

NOTES: Sample holding times will be in accordance with EPA methodologies and NYSDEC requirements.

All analysis will be performed by Spectrum Analytical Laboratory of Agawam, Massachusetts, a New York State (NYS) Department of Health (DOH) Environmental Laboratory Approval Program (ELAP) certified laboratory.

Sampling locations may be referenced in Figure 7 and Figure 8.

Additional soil samples will be taken at Proposed Monitoring Well Locations at the depth proposed in the Soil AOC that the individual PMW is located within or as deemed necessary during field activities.

Table 4

Suelain Realty
Proposed Granite Pointe Development
Somers, New York

Summary of Lead Concentrations in Soil
May 4 and 5, 2007

Sample ID	Date	Depth	Total Lead mg/kg
B-41	5/5/2007	1-2	12.1
BG-6	5/4/2007	0-1	7.51
C-41	5/4/2007	0-1	10.7
	5/4/2007	1-2	6.49
E-41	5/5/2007	1-2	13.4
F-41	5/5/2007	0-1	9.78
	5/4/2007	1-2	11.5
G-40	5/4/2007	0-1	11.9
	5/4/2007	1-2	8.92
H-39	5/5/2007	1-2	32
I-32	5/4/2007	0-1	39.1
	5/4/2007	1-2	6.08
I-37	5/4/2007	0-1	89.4
	5/4/2007	1-2	56.1
J-36	5/4/2007	1-2	7.02
	5/5/2007	2-3	9.69
J-37	5/4/2007	0-1	7.43
	5/4/2007	1-2	11.6
K-11	5/5/2007	0-1	2210
	5/5/2007	1-2	141
K-28	5/4/2007	2-3	18.3
	5/4/2007	3-4	10.6
K-38	5/4/2007	0-1	22.5
	5/4/2007	1-2	29.6
K-5	5/4/2007	0-1	739
	5/4/2007	1-2	26.1
L27	5/4/2007	1-2	7.24
L-35	5/4/2007	1-2	32.2
	5/4/2007	2-3	9.28
L-36	5/4/2007	0-1	48.4
	5/5/2007	1-2	16.7
M-15	5/4/2007	2-3	10.1
	5/5/2007	3-4	79.3
N34	5/4/2007	0-1	16.6
N34	5/4/2007	1-2	8.73
O13	5/4/2007	1-2	12.6
O25	5/5/2007	0-1	35.1
O25	5/4/2007	1-2	28.1
O5	5/4/2007	0-1	67.5
O5	5/4/2007	1-2	34.5