GEI Consultants

Geotechnical
Environmental
Water Resources
Ecological

Interim Remedial Measure Work Plan

East Hampton Hortonsphere Site

Town of East Hampton
Suffolk County, New York
AOC Index No.: A1-0595-08-07
Site No.: 152213

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Abbreviations and Acronyms

CAMP	Community Air Monitoring Plan
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
DER	Department of Environmental Remediation
ELAP	Environmental Laboratory Approval Program
GEI	GEI Consultants, Inc.
HASP	Health and Safety Plan
IRM	Interim Remedial Measure
LILCO	Long Island Lighting Company
LIPA	Long Island Power Authority
MGP	Manufactured Gas Plant
NAVD88	North Atlantic Vertical Datum of 1988
NYCRR	New York Codes, Rules, and Regulations
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
OSHA	Occupational Safety and Health Administration
PCB	Polychlorinated Biphenyl
PPE	Personal Protective Equipment
SC	Site Characterization
SCGs	Standards, Criteria, and Guidance
SCOs	Soil Cleanup Objective
SCDEE	Suffolk County Department of Environment and Energy
SCDHS	Suffolk County Department of Health Services
SVOC	Semi Volatile Organic Compound
TAGM	Technical and Administrative Guidance Memo
USDOT	United States Department of Transportation
VOCs	Volatile Organic Compounds
MEASUREMENTS	
ft	Feet
bgs	below ground surface

1. Introduction

National Grid will implement an Interim Remedial Measure (IRM) to address the presence of lead impacts in surface soils at the East Hampton Hortonsphere site (the Site) in the Village of East Hampton, Suffolk County, New York (Figure 1).

The Site is an industrial facility. As such, Title 6 of the New York Code of Rules and Regulations Part 375 (6 NYCRR Part 375) for Restricted Industrial Use Soil Cleanup Objectives (SCOs) are the most relevant to the Site and those that work there. However, the Site is not fenced, and is accessible to the public. Therefore, this IRM Work Plan (Work Plan) is designed to mitigate potential exposure to lead in surface soil at concentrations in excess of the 6 NYCRR Part 375 Restricted Residential Use SCOs.

The area containing lead impacted surface soil will be stripped to a depth of 6 inches below the existing grade, and then restored with gravel fill in the area immediately beneath the hortonsphere, and clean topsoil fill and grass seed in the remaining portion of the excavation, in order to prevent incidental contact between any remaining lead impacted soil left below the demarcation barrier and workers or the public. Pre-IRM sampling demonstrates that the concentrations of lead in the remaining soil are below the Restricted Residential Use SCOs.

This Work Plan has been prepared to be consistent with the Order on Consent, Index Number A1-0595-08-07 (the Order) signed by National Grid and the New York State Department of Environmental Conservation (NYSDEC), the factors set forth in 6 NYCRR Part 375 for remedial action, and the NYSDEC *Final DER-10* (Department of Environmental Remediation) *Technical Guidance for Site Investigation and Remediation,* dated May 3, 2010, effective June 18, 2010.

This Work Plan describes the IRM goals and objectives as well as the techniques used for material handling, waste characterization, processing, transportation, and disposal of the lead impacted soil. This effort will be performed under the approval and oversight of the NYSDEC and the New York State Department of Health (NYSDOH).

1.1 Work Plan Organization

This IRM Work Plan has been organized as follows:

- Section 1, the introduction, describes the purpose and objectives of the IRM. It also includes a Site description, relevant historical information, and a summary of previous investigations.
- Section 2 presents the IRM goals.

- Section 3 presents a summary of the IRM scope of work.
- Section 4 presents the dust management program.
- Section 5 describes the erosion and sediment control plan.
- Section 6 presents the Site security plan.
- Section 7 presents the contamination control plan.
- Section 8 includes the waste management practices for the IRM.
- Section 9 provides sample methodology and frequency for documentation sampling.
- Section 10 provides the water management plan.
- Section 11 outlines the traffic control measures for the Site.
- Section 12 discusses the completion of the IRM activities.
- Section 13 discusses the IRM Completion Report to be prepared following completion of the IRM.

1.2 Site Description and History

The hortonsphere is located on approximately 1.74 acres at the intersection of Fresno Place and Railroad Avenue (west of the intersection of Railroad Avenue and Race Lane) in the Town of East Hampton, New York. The hortonsphere facility encompasses a small portion of the overall parcel, which is also occupied by an active electrical substation (Figure 2). The parcel is bounded to the east and south by privately owned properties, which front on Race Lane to the east and Gingerbread Lane to the south. A crushed stone fill surface is present immediately beneath the hortonsphere. The current property boundaries of the Site are based on a survey conducted in 1972.

The East Hampton Electric Light Company plant operated at the Site from circa 1909 until sometime after 1920, based on 1909 and 1920 Sanborn Fire Insurance (Sanborn) maps. A railroad spur for loading and unloading materials, presumably coal for electric generation, is depicted on the maps. Beginning in 1929 and continuing through 1943 the Sanborn maps indicate that the Site was used as an electrical substation by the Long Island Lighting Company (LILCO).

A small gasometer (a term that was sometimes used interchangeably with “hortonsphere”) was first depicted on the 1936 Sanborn map of the Site. According to the Sanborn maps, the gasometer was present until at least 1943; however, no gas production facilities were depicted on the Sanborn maps of the Site.

The Site is currently owned by the Long Island Power Authority (LIPA). LIPA also owns and operates the adjacent electrical substation. The hortonsphere, associated compressor buildings, and security fencing around the hortonsphere are owned and maintained by National Grid, operating under an easement from LIPA. The hortonsphere is functional and is currently used for the storage of natural gas. Several inches of crushed stone fill cover the

ground beneath and immediately surrounding the hortonsphere. National Grid currently has no plans to decommission or alter the usage of the hortonsphere.

As part of the 2007 acquisition of KeySpan by National Grid, National Grid accepted responsibility for addressing the environmental issues at the Site. Therefore, National Grid is referenced in the performance of all past and future work throughout the remainder of this work plan.

1.2.1 Geology

Surficial geology at the Site was determined through the visual inspection of soil samples collected during the Site Characterization (SC) summarized below (section 1.3). A 2 foot layer of fill consisting of coal and ash fragments were observed in sample points positioned near the hortonsphere. These combustion by-products are consistent with the historic Site use for electrical generation. Fill was not present beyond 2.0 ft (feet) below ground surface (bgs), which indicates that there has been no extensive filling performed at the Site. Native material was found below the fill and consisted of predominantly dark brown sandy silt which extended to a maximum depth of 7 ft bgs. No indications of mottling were observed. A layer of sand and gravel was located below the sandy silt and was contiguous to the bottom of the deepest soil boring (55 ft bgs) advanced at the Site.

The soil boring logs are provided in Appendix A.

1.2.2 Hydrogeology

Monitoring wells EHS-GW-01 through EHS-GW-05, which were installed as part of the Site characterization work, straddle the overburden groundwater table encountered from approximately 41 to 44 ft bgs. Survey points measured from the top of the well casings were used to determine the absolute groundwater elevations which ranged from 7.05 to 7.65, ft as measured in the North Atlantic Vertical Datum of 1988 (NAVD 1988). There is no apparent tidal influence on groundwater elevations at the Site. Based on well gauging performed in 2008, groundwater flows southeast at a gradient of approximately 0.00055 ft per foot.

1.3 Site Characterization Summary

The *Final Site Characterization Report, East Hampton Hortonsphere Site, East Hampton, New York* (SC), prepared by GEI Consultants Inc. (GEI), was submitted by National Grid to the NYSDEC in January of 2010. NYSDEC approved the report in a letter to National Grid dated March 4, 2010.

The SC included surface soil sampling, soil borings and subsurface soil sampling, the installation and sampling of temporary monitoring wells, and the sampling and analysis of soil vapor. The SC boring and monitoring well logs have been included in Appendix A.

Surface Soils. The Site is an industrial facility and the 6 NYCRR Part 375 Restricted Industrial Use SCOs apply, however, members of the public do have access. As such, the Restricted Residential Use SCOs are the most relevant to this IRM.

The concentrations of lead detected in surface soils (0 to 2 inches bgs) below and near the hortonsphere exceed the 6 NYCRR Part 375 Restricted Residential Use SCO of 400 milligrams/per kilogram (mg/kg) for lead.

Subsurface Soils. Subsurface soils (defined as being deeper than 2 inches bgs) did not exhibit any unusual or petroleum like odors, staining, or sheen in any of the borings advanced on the Site. No volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), polychlorinated biphenyls (PCBs), metals, or pesticides were detected in samples collected on the Site at concentrations above the 6NYCRR Part 375 Residential SCOs. Therefore subsurface soils are not addressed in this IRM.

Groundwater. Benzene was detected in EHS-MW-02 at 2.8 micrograms per liter (µg/L), exceeding the Standard, Criteria, and Guidance (SCG) value of 1 µg/L. The duplicate sample collected from this monitoring well contained benzene at 0.79 µg/L, below the SCG. Benzene was not detected in subsurface soils or other groundwater samples; MW-02 is located upgradient at the Site and adjacent to Railroad Avenue. Benzene at this location is most likely the result of an upgradient, off-Site source. No other volatile or semivolatile compounds were detected in groundwater at concentrations above the applicable SCGs.

The insecticide dieldrin was detected in EHS-MW-02 at a concentration of 0.012 µg/L, exceeding the SCG of 0.004 µg/L. Insecticides are most likely related to past pesticide applications on the Site or in the surrounding community.

Common metals (sodium, manganese, and iron) were detected in four of the five groundwater samples above the NYSDEC SCGs. The broad detections suggest the constituents are naturally occurring and the relative uniformity of detected concentrations supports this conclusion.

Depth to groundwater at the Site was a minimum of 41 ft bgs during the SC. Since groundwater is located far beyond the depth of the lead-impacted surface soils, and potable water for the area is supplied by a municipal system, groundwater is not addressed as a separate medium in this IRM.

Soil Vapor. Several VOCs were detected in soil vapor. Many of the VOCs detected are not associated with gas holder operations. The sources of these chemicals are unknown and may be related to the surrounding land use.

For most detected VOCs, the concentrations are less than those typically found in ambient air. Those VOCs whose concentrations exceeded typical background air concentrations were nonetheless at levels well below the Occupational Safety and Health Agency's (OSHA) Permissible Exposure Limits, which are applicable in the utility/construction worker scenario.

1.4 Pre-Design and Confirmation Soil Sampling Summary

In order to further delineate the lead-impacts and confirm the quality of soil that would remain at and near the hortonsphere, National Grid performed pre-design and confirmation soil sampling at the Site. The results were reported to the NYSDEC in the *Pre-Design Surface Soil Sampling Results, East Hampton Hortonsphere Site, East Hampton, New York*, GEI, dated, July 7, 2010 and *Excavation Footprint Confirmation Sampling, East Hampton, New York*, GEI, dated February 24, 2011. Both documents are provided in Appendix A. The sampling results are presented in the table below. The sample locations and relevant results are shown on the Site Plan (Figure 2).

Sample ID	Sample Depth (inches)	Part 375 Industrial Use SCO (mg/kg)	Part 375 Restricted Residential Use SCO (mg/kg)	Lead Concentration (mg/kg)
EHS-SS-01	0 - 2	3900	400	40
EHS-SS-02	0 - 2	3900	400	36
EHS-SS-03	0 – 2	3900	400	928 J
EHS-SS-03A	6 – 12	3900	400	137
EHS-SS-03B	12 – 18	3900	400	105
EHS-SS-04	0 – 2	3900	400	1140
EHS-SS-04A	6 – 12	3900	400	163
EHS-SS-04B	12 – 18	3900	400	57.8
EHS-SS-05	0 – 2	3900	400	1220
EHS-SS-05A	6 – 12	3900	400	27.4
EHS-SS-05B	12 – 18	3900	400	72.2
EHS-SS-06	0 – 2	3900	400	103
EHS-SS-06A	6 – 12	3900	400	175
EHS-SS-06B	12 - 18	3900	400	55.2
EHS-SS-07	0 – 2	3900	400	36.6
EHS-SS-08	0 – 2	3900	400	193
EHS-SS-09	0 – 2	3900	400	25.4
EHS-SS-10	0 – 2	3900	400	82.2
EHS-SS-11	0 – 2	3900	400	223
EHS-SS-12	0 – 2	3900	400	298
EHS-SS-13	0 – 2	3900	400	200
EHS-SS-14	0 - 2	3900	400	81.2

The validated laboratory analytical results were used to determine the area of the Site where the IRM would be required. The limits of the work were set laterally and vertically at points where lead concentrations are less than the Restricted Residential SCO for lead, as seen on Figure 2 and as shown on the IRM Drawings.

1.5 Project Organizational Structure and Responsibility

National Grid will coordinate with NYSDEC, NYSDOH, Suffolk County Department of Health Services (SCDHS), Suffolk County Department of Environment and Energy (SCDEE) and other local regulatory agencies to conduct the IRM at the Site. Approval of this Work Plan by NYSDEC will be obtained prior to National Grid giving notice to proceed to the Contractor selected to perform the work. It is anticipated that NYSDEC may have representatives at the Site periodically during performance of the IRM.

The IRM will be performed as defined in the Contract Documents which will include the terms and conditions, the IRM Drawings located in Appendix B, the IRM Specifications located in Appendix C, and any approved change orders.

National Grid will have final responsibility and authority for all aspects of the IRM related activities at the Site, and is responsible for enforcement of the terms and conditions of the Contract Documents and negotiating and approving any change orders for construction, if necessary. A National Grid representative will be on-Site or accessible via phone throughout the performance of the IRM. When the National Grid representative is off-Site, the Engineer (GEI) will act as National Grid's representative. National Grid will be responsible for all communication with regulatory agencies, members of the surrounding community and the press.

A representative of LIPA and or National Grid Gas Operations may be on-Site during the IRM. Both the LIPA and National Grid Gas Operations representatives (utility representatives) may observe IRM activities and could stop work at any time if either representative deems that the work may interfere with utility operations or damage the existing utility facilities or appurtenances. The utility representatives will also provide an initial hazard briefing regarding their respective utility facilities present in the work area and at the Site prior to the start of work. All communications with the LIPA and National Grid Gas Operations representatives will be coordinated through the Engineer and National Grid.

The Contractor, under contract to National Grid, will be responsible for all on-Site construction activities including, but not limited to, compliance with all applicable Occupational Safety and Health Administration (OSHA) health and safety regulations, construction personnel health and safety, implementation of odor control measures (as necessary), traffic control, Site security, excavation, material handling, transportation and disposal activities associated with the IRM, and any other specified tasks outlined in this Work Plan or the Contract Documents.

The Engineer (GEI), under contract to National Grid, will serve as the Engineer of Record for the IRM. As such, the Engineer will be responsible for engineering design and oversight of the Contractor to ensure compliance with the Contract Documents. The Engineer will not

direct the Contractor on specific means and methods to perform the work, however, the Engineer will advise National Grid and the Contractor of non-compliance with the Contract Documents and identify required corrective action. GEI will also be responsible for the implementation of the Community Air Monitoring Plan (CAMP), and change order review (if requested) on behalf of National Grid.

The following are the key personnel or agencies involved with IRM at the Site:

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2. IRM Standards and Goals

2.1 Standards, Criteria, and Guidance

SCGs are defined in the 2010 NYSDEC Final DER-10. Standards and criteria values are New York State regulations or statutes, which dictate cleanup standards. Guidance values are not legal requirements, however, they are values that are determined to be applicable to the Site and should be considered, based on professional judgment.

The following is a list of major SCGs that apply to the IRM:

- 6 NYCRR Part 375 Table 6.8(b) Restricted Residential Use SCOs for Protection of Public Health.
- Final DER-10 – Technical Guidance for Site Investigation and Remediation (December 2002), revised May 2010, effective June 18, 2010.
- Technical and Administrative Guidance Memorandum (TAGM) 4031 – Fugitive Dust Suppression and Particulate Monitoring Program at Inactive Hazardous Waste Sites.

2.2 IRM Goals

National Grid and the NYSDEC have reviewed the SC data. The lead-impacted shallow soils at the Site near the hortonsphere represent a potential source for direct contact between contaminants and workers or the public. The results of the SC indicate that groundwater has not been impacted by the Site and is located well beyond the depth of average utility work. The potable water for the area is supplied by a municipal system. Therefore, groundwater is not addressed as a separate medium in this IRM.

The primary goal of the IRM for the Site is to eliminate the potential exposure pathway between humans and lead in surface soils. This goal will be achieved as follows:

- Strip the top 6 inches of soil beneath and around the hortonsphere, and re-grade the area containing the lead-impacted material to the lines and grades shown in the Contract Documents, and appropriately dispose of any removed soil.
- Restore the area with 6 inches of gravel fill in the area immediately beneath the hortonsphere, and clean topsoil fill and grass seed in the remaining portion of the excavation, in order to prevent direct contact between workers and any remaining lead impacted material, and to impede any of the soil from migrating off-Site in the form of fugitive dust.

This IRM Work Plan describes how each of the above goals will be achieved.

3. IRM Summary

This section provides a general overview of the IRM activities, which consists of stripping the top 6 inches of soil, re-grading the area around the hortonsphere, transporting any removed material for off-Site treatment and/or disposal, and restoring the area with 6 inches of gravel fill in the area beneath the hortonsphere, and certified clean topsoil fill and grass seed in all other work areas (Figure 3). More detailed information regarding the implementation of the IRM is provided in the Contract Documents.

3.1 Execution of the IRM

The proposed IRM will include stripping and re-grading the area of the Site beneath and around the hortonsphere that contains lead impacted surface soils at concentrations above the 6 NYCRR Part 375 Restricted Residential Use SCOs, and restoring with 6 inches of clean fill.

The hortonsphere is currently enclosed by a chain link security fence that will be demolished during the performance of the IRM, and then rebuilt in its current location to prevent the public from accessing the hrtonsphere and the crushed stone fill immediately beneath it. The area that contains the lead impacted surface soil will be cleared, grubbed, and stripped to a total depth of 6 inches below the current grade. Once the Site is clear and the proposed grade has been established, it will be covered with a 6 inch layer of gravel fill in the area immediately beneath the hortonsphere, and certified clean topsoil fill, in all other areas, which will then be compacted before grass seed is placed.

Site work may commence no earlier than 0700 Monday through Friday, and all work must be completed by 1800 unless otherwise authorized by National Grid.

During working hours, the Contractor will make every effort to minimize potential nuisance and community impacts. These include, but are not limited to, noise, traffic concerns, and odors associated with the execution of the IRM. Site work will not be conducted on weekends without prior approval and coordination of National Grid, LIPA, and the Village of East Hampton.

3.2 Mobilization and Site Access

Prior to mobilization, the Contractor will prepare and submit all required documents identified in the Contract Documents for review and approval by National Grid, the Engineer, and the NYSDEC. The Engineer will review final Contractor submittals to ensure conformance with the Contract Documents.

The Contractor or National Grid will apply for and obtain all necessary Federal, State, and local permits associated with the IRM. These permits may include, but are not limited to, traffic routing, construction, air emissions, noise, etc.

The Contractor will contact DigNet of New York City and Long Island to request that all utilities on the Site are located and marked. LIPA and National Grid Gas Operations will conduct a survey of the property to locate and mark underground utilities associated with the active substation. In addition, the Contractor will contract a private utility locator service to identify any utilities on private properties and confirm the LIPA and National Grid surveys.

The Engineer will conduct a pre-construction Site meeting with the Contractor, National Grid, utility representatives and NYSDEC, if in attendance, prior to the commencement of the IRM. The meeting will be conducted to review specified construction requirements and schedules, as well as to review the responsibilities of the Contractor, the Engineer, and National Grid with respect to the IRM implementation. During this meeting the Contractor will review all Health and Safety issues associated with the project

A New York State licensed surveyor will be contracted to establish a temporary baseline grid and benchmarks for the IRM work.

The grid and benchmarks will be established in English Units (ft) in the following datums:

- Horizontal: New York State Plane Coordinate System Long Island 3104.
- Vertical: North Atlantic Vertical Datum 1988, NAVD88.

The surveyors will return as needed to establish other reference points, layout work, and survey record information such as the grade of the demarcation barrier and the final restored grade of the work area. Other Site personnel may perform additional intermediate surveys as needed.

The Contractor will mobilize all necessary labor, equipment, supplies, and materials to complete the IRM upon receipt of notice to proceed from National Grid.

3.3 Site Preparation

The Contractor will be responsible for preparing the Site for the IRM. Site preparation activities necessary to support the work include, but are not limited to, the establishment of work zones, support facilities, and the installation of erosion control measures and temporary security fencing around the work area.

The Contractor will be responsible for removing/preserving any structures/appurtenances that may be affected by the work, prior to the start of the IRM.

Soil erosion and sediment control measures will be installed prior to excavation and maintained throughout the project in accordance with the Erosion and Sediment Control Plan in Section 5 and the Contract Documents.

The IRM Drawings (Appendix B) detail the placement of the erosion controls and temporary security fencing.

3.4 Certified Clean Topsoil Fill Placement

3.4.1 Grade Preparation

After the soil removal perimeter is identified and marked the area will be cleared, grubbed, and the soil stripped to a depth of 6 inches below the current grade. All the soil that is removed will be handled in accordance with the methods discussed in Subsection 3.4.2.

3.4.2 Material Handling

After the contract to perform the IRM has been awarded, the remediation contractor will pre-characterize the surface soil as per the analytical requirements of the National Grid-approved disposal facility identified in their bid proposal before work begins at the Site. The IRM will then be performed as a live-load operation with soil being placed into trucks or roll-off containers.

3.4.3 Fugitive Dust Control

When visible dust is observed, it will be controlled by the contractor using measures such as water spray, as called for in the Health and Safety Plan (HASP – Appendix D), or as directed by the Engineer and/or National Grid.

3.4.4 Demarcation Barrier

No demarcation barrier is required as confirmation sampling has already demonstrated that remaining soils meet the Restricted Residential SCO for lead.

3.4.5 Material Transportation and Disposal

All soil that is to be removed will be properly pre-characterized by the contractor for transport and disposal at a National Grid-approved disposal facility. The contractor will be responsible for meeting all the facility requirements including limitations on moisture content. Transportation and off-Site disposal of lead-impacted material will be coordinated by the Contractor and performed by New York State-licensed material transporters and handlers.

Material will be transported for disposal by trucks equipped with polyethylene liners that can be folded over in order to completely surround the excavated material. Additionally, each truck will also be equipped with a canvas or mesh cover which will prevent dust generation during transport and the wetting of material in the event of rain. If loads contain wet material capable of producing free liquids, they will be stabilized with water reducing amendments that are approved by the disposal facility and the NYSDEC, and applied by the Contractor prior to leaving the Site. Trucks leaving the property will be visually inspected (i.e., box sidewalls, box tailgate, and tires, etc.) and cleaned, if necessary, with brushes and brooms to remove loose soil, prior to being permitted to leave the property. The entrance to the property and adjacent streets will be inspected daily for evidence of the tracking of soils and then cleaned as needed.

If soil destined for disposal must be held at the Site for any period of time it will be covered with polyethylene sheeting to prevent wetting and/or dust generation. Any soil that is not immediately removed from the Site will be secured inside the temporary security fencing.

3.4.6 Impacted Materials Testing and Disposal

Representative surface soil samples will be collected by the Contractor from the area shown on the IRM Drawings and submitted to a NYSDOH Environmental Laboratory Approval Program (ELAP) certified laboratory for characterization prior to mobilization. Samples collected for disposal characterization will not require data validation. Each soil sample will be analyzed as required by the National Grid selected facility, which must agree to accept the material prior the contractor mobilizing to the Site.

Actual disposal quantities and associated documentation will be reported to the NYSDEC in the IRM Completion Report. This documentation will include waste profiles, characterization results, facility acceptance letters, manifests, bills of lading and facility receipts. Non-hazardous fill and contaminated soils transported off-Site will be handled, at minimum, as a Solid Waste per 6 NYCRR Part 360-1.2.

3.5 Construction Oversight

A representative of National Grid, or the Engineer acting as an agent of National Grid, will be on-Site during all IRM activities. The Engineer will be responsible for oversight of the IRM with respect to conformance with the Contract Documents, and will also sign manifests on behalf of National Grid. The specific responsibilities of the Engineer, Contractor, and National Grid are discussed in Subsection 1.5.

Additionally, representatives of the NYSDEC, NYSDOH, SCDHS, and SCDEE may be present during performance of the IRM.

4. Dust Management

Intrusive activities may generate airborne dust that has the potential to migrate off Site. In recognition of this potential hazard, a CAMP will be implemented during activities at the Site, as required by NYSDEC and NYSDOH. The requirements of the CAMP are contained in Appendix 1A of the 2010 Final DER-10 Technical Guidance for Site Investigations and Remediation.

4.1 CAMP Summary

A Site-specific CAMP has been prepared for the Site and is included in Appendix D. The CAMP is designed to provide monitoring procedures, Alert Limits, Action Limits, and contingency measures if Action Limits are approached. An Alert Limit is a contaminant concentration or odor intensity that triggers contingency measures. An Alert Limit does not suggest the existence of a health hazard, but serves instead as a screening tool to trigger contingency measures, if necessary, to assist in minimizing off-Site transport of contaminants and odors during IRM activities. An Action Limit is a contaminant concentration or odor intensity that triggers work stoppage.

During times of ground intrusive activities, fence line perimeter air monitoring will be conducted using real-time (continuous and almost instantaneous) air monitoring at fixed locations (upwind and downwind).

Historical Sanborn Fire Insurance maps of the Site indicate that manufactured gas was stored and not produced on the premises. However, to be conservative, common Manufactured Gas Plant (MGP) contaminates will be monitored in the work zone using hand-held instruments. This is discussed further in the Health and Safety Plan (Appendix E).

The CAMP includes a Contingency Plan that defines Alert Levels, Action Levels, and specific response activities to be implemented during working hours if an exceedance of an Alert Limit or Action Limit for a measured compound occurs. The response actions, potentially including work stoppage, are intended to prevent or significantly reduce the migration of dust from the Site.

If the real-time perimeter Action Limits are exceeded or significant nuisance odors are noted, National Grid, the Engineer, and the Contractor will consult to determine what type of emission control action is appropriate. Actions that may be taken to reduce emissions include the following:

- Spraying water on exposed soil surfaces and/or roadways to suppress windblown dust.
- Covering working areas containing exposed impacted soils, and covering trucks loaded with impacted soils.
- Temporarily relocating work to an area with potentially lower emission levels.
- Reduce the production rate or change the sequence of work activities.
- Change the work methods or equipment to alternatives that minimize air emissions.

In practice, these actions will typically be employed proactively to prevent action levels from being reached at the Site perimeter. The Alert and Action Level Concentrations are included in the CAMP and will be summarized in the Contract Documents.

4.2 Fugitive Dust Control

Construction activities will be performed so as to limit the potential for fugitive dust emissions. Dust control measures will be implemented to minimize the potential for dust generation during soil excavation and handling, and the placement of fill. Dust control measures will include water spraying. The Contractor will provide the materials necessary for dust suppression, which may include tarps and/or water, or other National Grid-approved methods. The selected Contractor will keep sufficient dust suppressant materials on Site to suppress fugitive dust which may be generated during the soil removal and re-grading. The material will be stored near the work and will be easily mobile in case of need.

On-Site truck routes will be inspected continuously for visible dust. Proper cleaning of trucks exiting the Site will aid in minimizing/eliminating dusty conditions on-Site and on adjacent roadways. Transport trucks exiting the Site will first be inspected to ensure tires and undercarriages are clean and that tarps are secured. Mud and loose dirt observed on the trucks will be manually removed with brooms and brushes as necessary.

5. Erosion and Sediment Control Plan

The erosion and sediment controls are intended to mitigate erosion and sedimentation from the Site as indicated in the Contract Documents.

5.1 Description of Construction Activities

This project involves soil removal, re-grading, and the backfilling of an area that contains lead-impacted soils. The amount of material generated during this IRM that will require disposal is expected to be minimal. The groundwater table is more than 40 ft below the maximum depth of intrusive work to be performed and is not expected to be encountered during performance of the IRM.

Stormwater infiltration at the Site is expected to be rapid because the subsurface soil consists of sand. However, if stormwater run-off is generated it will be routed and discharged into appropriate stormwater outlets prior to contact with any impacted materials.

5.2 Potential Areas for Erosion and Sedimentation

The portion of the Site where the IRM will be performed is currently at a nearly level grade. The Site is composed of a crushed stone fill cover beneath the hortonsphere, a partially paved asphalt access road, and a mixture of grass and exposed subgrade road for the remainder of the Site.

The potential sources for erosion and sedimentation created while conducting this IRM at the Site are the following:

- Temporary exposure of soil following removal of existing grass cover.
- Trucks/equipment exiting the work area could track soils onto traveled areas.
- Vegetation will be removed when the area around the hortonsphere is stripped and re-graded, which may create the potential of an increase in soil erosion during a rain event.

The erosion control methods detailed in the following section are specifically intended to mitigate the potential sources of erosion and sedimentation listed above.

5.3 Implementation of Erosion Control Measures

Sediment fence will be installed around the perimeter of the Site and all areas to be excavated. As discussed in subsection 4.2, the bodies and wheels of trucks will be inspected for loose dirt and mud, which will be removed before allowing the truck to exit the Site.

The Contractor will install and maintain the erosion control measures indicated in the Contract Documents for the duration of the work. Additional erosion control measures may be needed due to unforeseen conditions. Additional erosion control measures will be installed, as necessary, and as directed by National Grid, or the Engineer.

5.4 Restoration

Upon completion of the remedy, the Contractor will remove all sediment fencing and restore the area to pre-IRM conditions. Any sediment accumulated in the fencing will be bulked with lead-impacted soils that were generated during the IRM for transport and disposal.

6. Site Security Plan

The objectives of the Site security plan is to prevent the vandalism/destruction of construction equipment, prevent access, and minimize health and safety concerns for the surrounding residential neighborhood.

6.1 Perimeter Security

A temporary security fence will be erected around the perimeter of the work area while the IRM is being performed. Upon completion of the IRM, the temporary fence will be taken down and removed.

6.2 Equipment Security

All vehicles and/or equipment left on the Site must be secured at the end of each working day. These criteria can be met by vehicles and equipment remaining inside the perimeter of the temporary fence. No vehicles or equipment may be left overnight in an unsecured location. It is the responsibility of the Contractor to ensure that all non-essential equipment is de-energized when left on Site and not in use to prevent electrical/fire/explosive hazards. No equipment will run overnight and/or on non-working days without prior approval from National Grid.

7. Contamination Control Plan

The Site contaminant of concern is lead, which is limited to surface soils at levels below the NYCRR Part 375 SCOs for Industrial Use. The only means by which lead can leave the Site is in wind-blown dust, or on the bodies and wheels of trucks or other equipment used during performance of the IRM.

The objective of the Contamination Control Plan at the Site is to provide the procedures and tools necessary to prevent cross-contamination from the Site to public areas (i.e., highways, roads, support trailer, vehicles, etc.). This plan does not replace procedures outlined in the HASP, Appendix E. This plan provides additional guidelines on contamination control procedures and equipment.

7.1 Decontamination Procedures

The Contractor will establish contamination control areas for the following activities.

- Personnel decontamination.
- Equipment decontamination.

7.1.1 Personnel Decontamination Station

Personnel field decontamination/cleanup will take place at the exit of the established work zones. If possible, the personnel decontamination facilities will be located upwind of the work zone.

Any disposable Personal Protective Equipment (PPE) that has been worn in the work zone will be removed and placed in a disposal container before leaving the work zone. Once removed, disposable PPE will be collected at the field decontamination location in a drum or large plastic bag which will then be secured to prevent the accidental spread of contamination. Additional details for personnel decontamination are presented in the HASP contained in Appendix E.

The designated personnel field decontamination area will be equipped with a sink where workers will wash themselves as the primary means of decontamination and personal hygiene (e.g., hands, face, etc.).

The specific decontamination procedures and requirements for the disposal of decontamination wastewater are outlined in the HASP, Appendix E.

7.1.2 Equipment Decontamination Station

Equipment decontamination will take place within the work zone. Decontamination activities shall include the removal of contaminated soil, debris, and other miscellaneous materials from all construction equipment and tools utilized within the work zone using brushes and brooms. In addition, physical/mechanical agitation (scraping with hand tools) of soil may be utilized.

All equipment, hand tools, and miscellaneous small equipment leaving the Site will be decontaminated per these guidelines. In addition, any equipment previously utilized to excavate impacted material will be decontaminated prior to use in backfilling (e.g. excavator bucket).

Soils collected from the decontamination activities in the work zone will be bulked with the lead-impacted material generated during the IRM and sent to the properly licensed National Grid-approved disposal facility.

7.1.3 Material Transport Vehicle Decontamination

Trucks transporting soil off-Site will enter the excavation area as described in the Traffic Control Plan located in Section 11. Care will be exercised when performing soil loading so as not to spill material on the outside of the trucks. Prior to exiting the work zone, the vehicle will be visually inspected (i.e., box sidewalls, box tailgate, and tires, etc.), and excess dirt will be removed with brushes/brooms.

In addition, trucks will be required to cover their material loads with a solid plastic tarp prior to departing the work zone. All collected soil will be managed in accordance with the Waste Management Plan (Section 8).

7.2 Decontamination Equipment

The Contractor will be responsible for maintaining a sufficient supply of the materials/ equipment required to implement decontamination procedures, which may include, but are not limited to, the following items:

- Plastic trash barrels
- Liners for trash barrels
- Wash basins
- Hand pump sprayers
- Long handled soft bristle brushes
- Bench or stool(s)
- Stepladder(s)
- Liquid detergent and paper towels
- Plastic trash bags

8. Waste Management Plan

The objective of the waste management plan at the Site is to provide the Contractor guidelines for managing each waste stream. The Contractor will dispose of all waste materials generated as a result of the IRM in accordance with all applicable laws and regulations at a National Grid-approved disposal facility. The Contractor will prepare and submit to National Grid a generator profile of soils and wastes originating from the Site. After the generator profile is approved by National Grid the Contractor will submit it to the treatment/disposal facilities that are to be utilized during performance of the IRM.

8.1 Disposal Record Keeping

Manifests and/or bills of lading for all shipments will be submitted to the Engineer prior to any vehicle departing the Site. The manifest form and/or bills of lading will be signed by an approved agent for National Grid and by the truck driver before the material leaves the Site, and by a representative of the disposal facility when the load is received. A copy of the signed manifest will be maintained on file by the Engineer. Upon arrival at the disposal facility, the manifest will be signed and a copy returned to the Engineer, complete with all applicable signatures as proof of delivery. The returned manifests will be cross checked and matched with the original copy of the manifest already on file. Copies of all returned manifests will be provided to the Engineer.

A log of all shipments and copies of all manifests and/or bills of lading will be maintained by the Engineer on-Site for reference during the work. Upon completion of the IRM, National Grid will receive all logs and manifests and/or bills of lading. The logs, manifests, and bills of lading will be included in the Completion Report following the conclusion of the IRM to create a permanent record of disposal.

8.2 Material Shipping Procedures

Waste transporters, properly permitted by the NYSDEC, will be utilized to ship the impacted soils to approved disposal facilities. The selected Contractor will manage all disposal documentation including, but not limited to, all necessary manifests, bill-of-ladings, weight tickets, and certificates of treatment/destruction.

The selected Contractor will coordinate with the transporter and disposal facilities to determine if the material can be accepted and at what rate it can be sent for disposal. If multiple trucks are required for disposal of the waste soils, they will be scheduled in such a way as to prevent trucks idling on adjoining public streets. Complex scheduling is not anticipated.

Upon entry to the Site, the trucks will be inspected to ensure the proper placards, decals and permits are displayed. While on Site, transport trucks will remain in designated routes, and all loaded trucks leaving the Site will follow the Contamination Control Plan (Section 7). Transport trucks will utilize the most direct haul route to the disposal facility, and not stop while in transit.

All material transportation vehicles leaving the Site must be equipped with a polyethylene liner that can be folded over in order to completely surround the excavated material. Additionally, each truck will also be equipped with a canvas or mesh cover which will prevent dust generation during transport and the wetting of material in the event of rain. If a truck arrives at the Site without a suitable liner and cover it will be sent back to the facility, and will not be allowed to carry material off Site.

Individual waste streams will be handled as follows.

8.2.1 Impacted Soils and Bulky Waste

All excavated lead-impacted material will be live-loaded into trucks or roll-off containers, and transported to an appropriately licensed National Grid-approved disposal facility. The Contractor will have a primary and an alternate receiving facility prepared to receive the impacted soils prior to beginning the IRM.

Impacted soils that may have high water content must be amended on-Site within the work zone by the Contractor prior to shipment off-Site. All amendments used at the Site will meet NYSDEC and disposal facility requirements.

8.2.3 Uncontaminated Bulky Waste

Uncontaminated bulky waste which may be generated during performance of the IRM will be separated from impacted soil upon excavation, immediately placed in a roll-off container, and transported for recycling or to a National Grid-approved construction debris landfill at the direction of the Engineer.

8.3 Soil Disposal Characterization Analyses

The Contractor will collect pre-characterization soil samples from the lead-impacted surface soils prior to the start of the work. The frequency of the soil samples and analysis requirements will be as dictated by the National Grid-approved disposal facility selected to receive this material. All analysis will be performed by a NYSDOH ELAP accredited laboratory, and a copy of the lab reports will be provided to National Grid and the Engineer.

9. Sample Collection & Analysis Plan

The sample collection and analysis plan for the Site has been designed to support the requirements of the IRM. This plan describes the sampling and analysis procedures for collecting representative samples of backfill that is imported for use on the Site, and for collecting documentation samples of the subsurface soils at the extent of the excavation.

All analytical testing will be performed by a laboratory that holds a current NYSDOH ELAP certification.

9.1 Representative Sampling of Backfill

The area will be covered with either a 6 inch layer of certified clean topsoil, or gravel fill. The Contractor will identify the New York State Department of Transportation-approved borrow pit location(s) of imported material prior to the start of the IRM. The Contractor will provide certificates of clean fill for the imported material identifying said material as native, and that it meets the requirements identified in the Contract Documents.

9.2 Documentation Sampling

Documentation sampling of the excavation walls and bottom will not be necessary because existing data demonstrate acceptable conditions (refer to section 1.4).

10. Water Management Plan

The objective of the water management plan at the Site is to establish requirements for the collection and discharge of stormwater.

10.1 Stormwater Runoff Control

The work area is mostly grassed. Stormwater drainage is handled primarily through surface runoff to stormwater outlets and infiltration into subsurface soil. In preparation for, and throughout the duration of the IRM, the control and diversion of stormwater runoff is essential to reduce the potential for impacted material discharges off-Site.

Stormwater contact with the impacted soils will be limited due to the erosion and sediment control barriers around the area of excavation. Therefore, it is not anticipated that runoff from the exterior will come in contact with the excavation area. The Contractor will be required to utilize appropriate control measures to route the runoff to the appropriate outlet. Stormwater runoff control measures may include the installation of berms and/or barriers.

11. Traffic Control Plan

The objectives of the traffic plan at the Site are to describe the traffic objectives and concerns. The Traffic Control Plan indicates the traffic routes to and from the Site for:

- Trucking soil and bulky waste off-Site,
- Importing clean fill to the Site,
- Contractor access and parking, and
- Equipment access and storage.

Vehicles hauling impacted soil, fill materials, and supplies shall enter the Village of East Hampton from Route 27/Main Street. The vehicles will turn left onto Newton Lane, and then bear left onto Railroad Ave. The Site is on the left and can be entered from the access road immediately adjacent to the hortonsphere.

Vehicles shall retrace the Site entry route to exit the Village of East Hampton.

The Contractor shall provide traffic control personnel when all trucks are entering and exiting the Site onto Railroad Avenue. Traffic control personnel shall also direct traffic as needed upon delivery of equipment, trailers, etc. To maintain access and ensure that lines of sight are maintained, the Contractor shall arrange for and coordinate with the appropriate local authorities to ensure that on-street parking nearest to the entrance/exit gate is limited throughout the duration of the IRM.

The Contractor shall provide a detailed traffic route map for all vehicles transporting waste materials to the specific disposal facilities as well as maintain all signage and traffic controls required until the completion of the project.

12. Completion of the IRM

Upon completion of the IRM, the Site will be returned to the pre-IRM conditions. Restoration actions shall include, but may not be limited to:

- Removal of all erosion control measures,
- Demobilization of the CAMP equipment,
- Restoration of any Site features that have been damaged or removed, and
- Post restoration survey to document conditions following restoration.

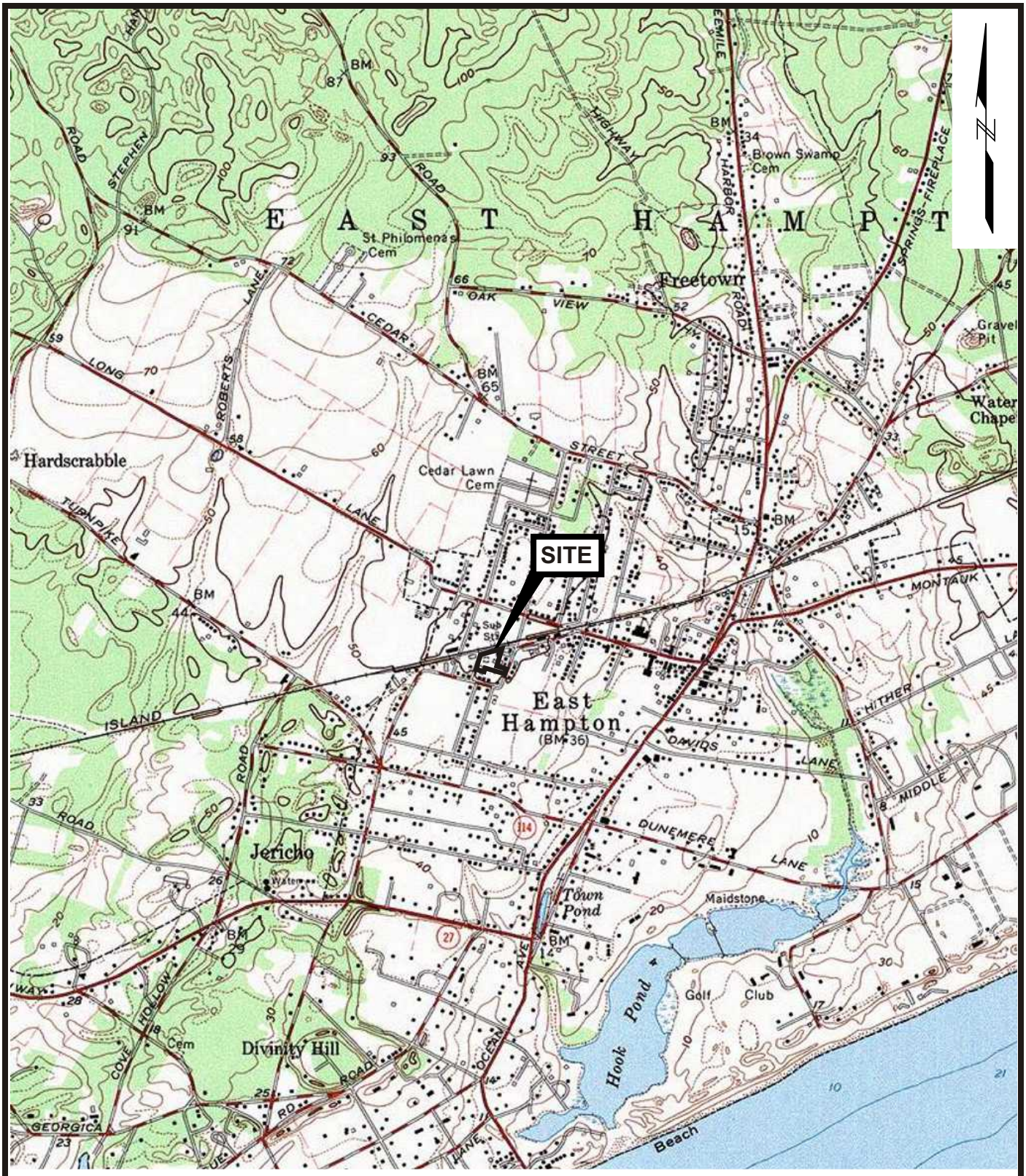
13. IRM Completion Report

Following the completion of IRM, an IRM Completion Report will be developed and stamped by an engineer licensed to practice in the State of New York. The report will include a summary of the field program, documentation of any changes to the Work Plan, documentation of the final disposal of the lead-impacted soil, and a statement that the work was performed in accordance with the IRM Work Plan, IRM Drawings, IRM Specifications, and any approved changes to those documents. The report will also contain an assessment of the degree to which the IRM activities met the objectives stated in Section 2.

Specific components of the IRM Completion Report will include:

- Record drawings, specifications, addenda, and approved changes.
- The actual volumes of material shipped to disposal facilities.
- Other plans and figures (if required), photographs, data summary tables, and appendices that will provide National Grid with an accurate accounting of the IRM implemented at the Site.
- Approved permits.
- Summary of construction work, meetings, and changes in work scope.
- Shipping manifests and bills of lading (contaminated soil and clean fill).
- Summary of Air Monitoring Data collected during the remedial activities.
- Certification that material transported off-Site was disposed of at a properly licensed National Grid-approved disposal facility.

Figures



SOURCE: Map created with TOPO! ® ©2001 National Geographic (www.nationalgeographic.com/topo)

0 2000 4000

SCALE, FEET

INTERIM REMEDIAL MEASURE
EAST HAMPTON HORTONSPHERE SITE
EAST HAMPTON, NEW YORK

nationalgrid

GEI Consultants

SITE LOCATION MAP

Project 102870-1

April 2011

Figure 1

I:\Project\National Grid\East Hampton\EH Hortonsphere\IRM\DESIGN REPORT\East Hampton Location Map.CDR

LEGEND:

PROPERTY BOUNDARY (APPROXIMATE)

GROUND SURFACE CONTOUR (FEET, NAVD)

EXISTING SECURITY FENCE

△ EHS-SS-01 (40)
△ EHS-SS-03 (928)
SOIL SAMPLE LOCATION WITH LEAD CONCENTRATION 0-2" BELOW GROUND

△ EHS-SS-03A (137)
SOIL SAMPLE LOCATION WITH LEAD CONCENTRATION 6-12" BELOW GROUND

△ EHS-SS-03B (105)
SOIL SAMPLE LOCATION WITH LEAD CONCENTRATION 12-18" BELOW GROUND

SOURCES:

1. Orthophoto obtained from New York State Interactive Mapping Gateway (http://www1.nysgis.state.ny.us/MainMap.cfm) photo date: 2004, accessed 1/09/08.
2. Long Island Lighting Co., Mineola, N.Y., East Hampton Substation and Gas Storage Site, Situated at East Hampton, Town of East Hampton, County of Suffolk, N.Y., Scale: 1" = 60', Date: 10-17-72.
3. Survey of existing conditions and sample locations conducted by GEI Consultants, Inc. on 12/14/07. Survey by New York state licensed land surveyor number 050146. Horizontal datum: New York State Plane coordinate system (Long Island Zone, North American Datum (NAD)83). Vertical datum: North American Vertical Datum (NAVD) 88.

0 60 120

SCALE, FEET

INTERIM REMEDIAL MEASURE
EAST HAMPTON HORTONSPHERE SITE
EAST HAMPTON, NEW YORK

nationalgrid

GEI Consultants

SITE PLAN AND LEAD ANALYTICAL RESULTS (mg/kg)

Project 102870-1 | April 2011 | Figure 2

I:\Project\National Grid\East Hampton\EH Hortonsphere\IRM\DESIGN REPORT\F2.dwg

LEGEND:

- PROPERTY BOUNDARY (APPROXIMATE)
- 50 — GROUND SURFACE CONTOUR (FEET, NAVD)
- EXISTING SECURITY FENCE
- CLEAR AND GRUB, REMOVE TOP 6 INCHES OF SOIL AND RE-GRADE, PLACE CLEAN FILL AND SEED
- EHS-SS-01 △ SURFACE SOIL SAMPLE LOCATION

NOTE:

LOCATIONS OF SURFACE SOIL SAMPLES EHS-SS-04, EHS-SS-05, AND EHS-SS-06 ARE BASED ON TAPED MEASUREMENTS FROM KNOWN POINTS.

SOURCES:

1. Orthophoto obtained from New York State Interactive Mapping Gateway (http://www1.nysgis.state.ny.us/MainMap.cfm) photo date: 2004, accessed 1/09/08.
2. Long Island Lighting Co., Mineola, N.Y., East Hampton Substation and Gas Storage Site, Situated at East Hampton, Town of East Hampton, County of Suffolk, N.Y., Scale: 1" = 60', Date: 10-17-72.
3. Survey of existing conditions and sample locations conducted by GEI Consultants, Inc. on 12/14/07. Survey by New York state licensed land surveyor number 050146. Horizontal datum: New York State Plane coordinate system (Long Island Zone, North American Datum (NAD)83). Vertical datum: North American Vertical Datum (NAVD) 88.

0 60 120

SCALE, FEET

INTERIM REMEDIAL MEASURE
EAST HAMPTON HORTONSPHERE SITE
EAST HAMPTON, NEW YORK

nationalgrid

GEI Consultants

IRM SUMMARY

Project 102870-1 | April 2011 | Figure 3

I:\Project\National Grid\East Hampton\EH Hortonsphere\IRM\DESIGN REPORT\F3.dwg

Appendix A

Previous Investigation Boring and Monitoring Well Logs (electronic only)

GEI Consultants, Inc.
455 Winding Brook Road
Glastonbury, CT 06033
(860) 368-5300

CLIENT: KeySpan
PROJECT NAME: East Hampton SC
CITY/STATE: East Hampton, New York
GEI PROJECT NUMBER: 072710-2-1102

BORING LOG
PAGE 1 of 3
EHS-GP-01

GROUND SURFACE ELEVATION (FT): 51.29 **LOCATION:** North of Hortonsphere
NORTHING: 295774.1416 **EASTING:** 1482530.992 **TOTAL DEPTH (FT):** 55.00
DRILLED BY: Fenley & Nicol Environmental, Inc. / Kevin Kegel **DATUM VERT. / HORZ.:**
LOGGED BY: Michael Williams & Chris Berotti **DATE START / END:** 11/13/2007 - 11/13/2007
DRILLING DETAILS: Geoprobe
WATER LEVEL DEPTHS (FT): ▽ 44.00

DEPTH FT.	SAMPLE INFO TYPE and NO.	PEN FT.	REC IN.	PID (ppm)	STRATA	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION
0		7.0					0 - 1 Topsoil and grass, HAND CLEARED. 1 - 7 SANDY SILT (ML); ~75% silt, ~20% fine sand, ~5% gravel, max. size 1.5 in., dry, dark brown to light brown, loose, 1 to 2 feet bgs dark brown with coal chips, HAND CLEARED.
5				0		EHS-GP-01 (4-5)	
	S-1	3.0	56	0			7 - 10 WIDELY GRADED SAND (SW); ~85% sand; ~5% fine to coarse gravel, ~10% fines, max. size 1.25 in., dry, brown to light brown, loose.
10	S-2	5.0	50				10 - 15 WIDELY GRADED SAND (SW); ~80% sand; ~15% fine to coarse gravel, ~5% fines, max. size 1 in., dry, light brown, loose.
15	S-3	5.0	38	0			15 - 20 WIDELY GRADED SAND (SW); ~90% sand; layered, ~5% fine to coarse gravel, ~5% fines, max. size 0.75 in., dry, brown to light brown, loose.
20	S-4	5.0	31				20 - 25 WIDELY GRADED SAND WITH GRAVEL (SW); ~70% sand; ~25% fine to coarse gravel, ~5% fines, max. size 1 in., dry, light brown, loose.

NOTES:

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL
REC = RECOVERY LENGTH OF SAMPLE
PID = PHOTOIONIZATION DETECTOR READING (JAR HEADSPACE)
ppm = PARTS PER MILLION
IN. = INCHES
FT. = FEET
NLO = NAPHTHALENE LIKE ODOR
PLO = PETROLEUM LIKE ODOR
TLO = TAR LIKE ODOR
CLO = CHEMICAL LIKE ODOR
ALO = ASPHALT LIKE ODOR
CrLO= CREOSOTE LIKE ODOR
OLO = ORGANIC LIKE ODOR
SLO = SULFUR LIKE ODOR
MLO = MUSTY LIKE ODOR

ENVIRONMENTAL BORING LOG EAST HAMPTON SC BORING LOGS.GPJ GEI CONSULTANTS.GDT 1/29/08

GEI Consultants

GEI Consultants, Inc.
455 Winding Brook Road
Glastonbury, CT 06033
(860) 368-5300

CLIENT: KeySpan
PROJECT NAME: East Hampton SC
CITY/STATE: East Hampton, New York
GEI PROJECT NUMBER: 072710-2-1102

BORING LOG

EHS-GP-01

DEPTH FT.	SAMPLE INFO TYPE and NO.	PEN FT.	REC IN.	PID (ppm)	STRATA	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION
				0			
25	S-5	5.0	12				25 - 30 WIDELY GRADED SAND (SW); ~85% sand; ~10% fine to coarse gravel, ~5% fines, max. size 0.75 in., dry, orange, loose.
30	S-6	5.0	29				30 - 35 WIDELY GRADED SAND (SW); ~85% sand; ~10% fine to coarse gravel, ~5% fines, max. size 1.5 in., dry, tan, loose.
35	S-7	5.0	38	0			35 - 40 WIDELY GRADED SAND (SW); ~90% sand; layered, ~5% fine to coarse gravel, ~5% fines, max. size 2 in., dry, tan to orange, loose.
40	S-8	5.0	29	0		EHS-GP-01 (44-45)	40 - 45 WIDELY GRADED SAND WITH GRAVEL (SW); ~70% sand; ~25% fine to coarse gravel, ~5% fines, max. size 1.5 in., wet, tan, loose; wet at 44' bgs.
45	S-9	5.0	21	0			45 - 50 WIDELY GRADED SAND (SW); ~85% sand; ~10% fine to coarse gravel, ~5% fines, max. size 1.5 in., wet, brown to tan, loose.
50	S-10	5.0	0				50 - 55 NO RECOVERY.

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MLO = MUSTY LIKE ODOR

ENVIRONMENTAL BORING LOG EAST HAMPTON SC BORING LOGS.GPJ GEI CONSULTANTS.GDT 1/29/08

GEI Consultants

GEI Consultants, Inc.
455 Winding Brook Road
Glastonbury, CT 06033
(860) 368-5300

CLIENT: KeySpan
PROJECT NAME: East Hampton SC
CITY/STATE: East Hampton, New York
GEI PROJECT NUMBER: 072710-2-1102

BORING LOG

EHS-GP-01

DEPTH FT.	SAMPLE INFO: TYPE and NO.	SAMPLE INFO: PEN FT.	SAMPLE INFO: REC IN.	SAMPLE INFO: PID (ppm)	STRATA	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION
55							Bottom of borehole at 55.0 feet.

NOTES:

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL
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PID = PHOTOIONIZATION DETECTOR READING (JAR HEADSPACE)

ppm = PARTS PER MILLION
IN. = INCHES
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MLO = MUSTY LIKE ODOR

ENVIRONMENTAL BORING LOG EAST HAMPTON SC BORING LOGS.GPJ GEI CONSULTANTS.GDT 1/29/08

GEI Consultants, Inc.
455 Winding Brook Road
Glastonbury, CT 06033
(860) 368-5300

CLIENT: KeySpan
PROJECT NAME: East Hampton SC
CITY/STATE: East Hampton, New York
GEI PROJECT NUMBER: 072710-2-1102

BORING LOG
PAGE 1 of 3
EHS-GP-02

GROUND SURFACE ELEVATION (FT): 50.93 **LOCATION:** Southwest of Hortonsphere
NORTHING: 295722.9404 **EASTING:** 1482508.374 **TOTAL DEPTH (FT):** 55.00
DRILLED BY: Fenley & Nicol Environmental, Inc. / Kevin Kegel **DATUM VERT. / HORZ.:**
LOGGED BY: Michael Williams & Chris Berotti **DATE START / END:** 11/15/2007 - 11/15/2007
DRILLING DETAILS: Geoprobe
WATER LEVEL DEPTHS (FT): ▽ 44.00

DEPTH FT.	SAMPLE INFO TYPE and NO.	PEN FT.	REC IN.	PID (ppm)	STRATA	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION
0							0 - 0.5 Topsoil and grass, HAND CLEARED. 0.5 - 1 Coal and ash, HAND CLEARED.
		7.0		0		EHS-GP-02 (4-5)	1 - 7 SANDY SILT (ML); ~75% silt, ~20% fine sand, ~5% gravel, max. size 1.5 in., dry, dark brown to light brown, loose, HAND CLEARED.
5	S-1	3.0	40				7 - 10 WIDELY GRADED SAND (SW); ~90% sand; ~5% fine to coarse gravel, ~5% fines, max. size 1.5 in., dry, light brown to tan, loose.
				0.9			
10	S-2	5.0	40				10 - 15 WIDELY GRADED SAND (SW); ~85% sand; ~10% fine to coarse gravel, ~5% fines, max. size 0.75 in., dry, tan, rust colored layering throughout, loose.
				1.0			
15	S-3	5.0	38				15 - 20 WIDELY GRADED SAND (SW); ~85% sand; ~10% fine to coarse gravel, ~5% fines, max. size 0.75 in., dry, tan, orange and light brown layering throughout, loose.
				1.1			
20	S-4	5.0	35				20 - 25 WIDELY GRADED SAND (SW); ~75% sand; ~25% fine to coarse gravel, max. size 1.25 in., dry, tan to orange, loose.
				1.2			

NOTES:

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TLO = TAR LIKE ODOR
CLO = CHEMICAL LIKE ODOR
ALO = ASPHALT LIKE ODOR
CrLO= CREOSOTE LIKE ODOR
OLO = ORGANIC LIKE ODOR
SLO = SULFUR LIKE ODOR
MLO = MUSTY LIKE ODOR

ENVIRONMENTAL BORING LOG EAST HAMPTON SC BORING LOGS.GPJ GEI CONSULTANTS.GDT 1/29/08

GEI Consultants

GEI Consultants, Inc.
455 Winding Brook Road
Glastonbury, CT 06033
(860) 368-5300

CLIENT: KeySpan
PROJECT NAME: East Hampton SC
CITY/STATE: East Hampton, New York
GEI PROJECT NUMBER: 072710-2-1102

BORING LOG

EHS-GP-02

DEPTH FT.	SAMPLE INFO TYPE and NO.	PEN FT.	REC IN.	PID (ppm)	STRATA	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION
25	S-5	5.0	36	2			25 - 30 WIDELY GRADED SAND WITH GRAVEL (SW); ~70% sand; ~25% fine to coarse gravel, ~5% fines, max. size 1.5 in., dry, orange to tan, loose.
30	S-6	5.0	33	1.1			30 - 35 WIDELY GRADED SAND WITH GRAVEL (SW); ~70% sand; ~25% fine to coarse gravel, ~5% fines, max. size 1.25 in., dry, tan to orange, loose.
35	S-7	5.0	27	1.2			35 - 40 WIDELY GRADED SAND (SW); ~85% sand; ~10% fine to coarse gravel, ~5% fines, max. size 1.25 in., dry, tan, loose.
40	S-8	5.0	26	1.1		EHS-GP-02 (43-45)	40 - 45 WIDELY GRADED SAND WITH GRAVEL (SW); ~70% sand; ~25% fine to coarse gravel, ~5% fines, max. size 1.5 in., wet, tan, loose; wet at 44' bgs.
45	S-9	5.0	24				45 - 50 WIDELY GRADED SAND WITH GRAVEL (SW); ~70% sand; ~25% fine to coarse gravel, ~5% fines, max. size 0.75 in., wet, tan, loose.
50	S-10	5.0	21				50 - 55 WIDELY GRADED SAND WITH GRAVEL (SW); ~70% sand; ~25% fine to coarse gravel, ~5% fines, max. size 1.25 in., wet, light brown, loose.

NOTES:

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL
REC = RECOVERY LENGTH OF SAMPLE
PID = PHOTOIONIZATION DETECTOR READING (JAR HEADSPACE)

ppm = PARTS PER MILLION
IN. = INCHES
FT. = FEET

NLO = NAPHTHALENE LIKE ODOR
PLO = PETROLEUM LIKE ODOR
TLO = TAR LIKE ODOR
CLO = CHEMICAL LIKE ODOR
ALO = ASPHALT LIKE ODOR

CrLO= CREOSOTE LIKE ODOR
OLO = ORGANIC LIKE ODOR
SLO = SULFUR LIKE ODOR
MLO = MUSTY LIKE ODOR

ENVIRONMENTAL BORING LOG EAST HAMPTON SC BORING LOGS.GPJ GEI CONSULTANTS.GDT 1/29/08

GEI Consultants

GEI Consultants, Inc.
455 Winding Brook Road
Glastonbury, CT 06033
(860) 368-5300

CLIENT: KeySpan
PROJECT NAME: East Hampton SC
CITY/STATE: East Hampton, New York
GEI PROJECT NUMBER: 072710-2-1102

BORING LOG

PAGE 3 of 3

EHS-GP-02

DEPTH FT.	SAMPLE INFO: TYPE and NO.	SAMPLE INFO: PEN FT.	SAMPLE INFO: REC IN.	SAMPLE INFO: PID (ppm)	STRATA	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION
				0.1			
55							Bottom of borehole at 55.0 feet.

NOTES:

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL
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PID = PHOTOIONIZATION DETECTOR READING (JAR HEADSPACE)

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ENVIRONMENTAL BORING LOG EAST HAMPTON SC BORING LOGS.GPJ GEI CONSULTANTS.GDT 1/29/08

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Glastonbury, CT 06033
(860) 368-5300

CLIENT: KeySpan
PROJECT NAME: East Hampton SC
CITY/STATE: East Hampton, New York
GEI PROJECT NUMBER: 072710-2-1102

BORING LOG
PAGE 1 of 2
EHS-GP-03

GROUND SURFACE ELEVATION (FT): 51.75 **LOCATION:** East of Hortonsphere
NORTHING: 295745.4214 **EASTING:** 1482561.232 **TOTAL DEPTH (FT):** 50.00
DRILLED BY: Fenley & Nicol Environmental, Inc. / Kevin Kegel **DATUM VERT. / HORZ.:**
LOGGED BY: Michael Williams & Chris Berotti **DATE START / END:** 11/14/2007 - 11/14/2007
DRILLING DETAILS: Geoprobe
WATER LEVEL DEPTHS (FT): ▽ 44.75

DEPTH FT.	SAMPLE INFO TYPE and NO.	PEN FT.	REC IN.	PID (ppm)	STRATA	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION
0							0 - 1 Topsoil and grass, HAND CLEARED.
		7.0					1 - 7 SANDY SILT (ML); ~75% silt, ~20% fine sand, ~5% gravel, max. size 1 in., dry, dark brown to light brown, coal fragments at 1.5' bgs, loose, HAND CLEARED.
				0		EHS-GP-03 (4-5)	
5							
	S-1	3.0	35				7 - 10 WIDELY GRADED SAND (SW); ~85% sand; ~10% fine to coarse gravel, ~5% fines, max. size 0.75 in., dry, light brown to tan, loose.
				0.1			
10	S-2	5.0	38				10 - 15 WIDELY GRADED SAND (SW); ~85% sand; layered, ~10% fine to coarse gravel, ~5% fines, max. size 2.25 in., dry, tan with orange, loose.
				0			
15	S-3	5.0	32	0.1			15 - 20 WIDELY GRADED SAND (SW); ~85% sand; ~10% fine to coarse gravel, ~5% fines, max. size 0.75 in., dry, tan, loose.
20	S-4	5.0	42				20 - 25 WIDELY GRADED SAND WITH GRAVEL (SW); ~70% sand; ~25% fine to coarse gravel, ~5% fines, max. size 2 in., dry, tan, brown gravel band at 24' bgs, loose.

NOTES:

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ENVIRONMENTAL BORING LOG EAST HAMPTON SC BORING LOGS.GPJ GEI CONSULTANTS.GDT 1/29/08

GEI Consultants

GEI Consultants, Inc.
455 Winding Brook Road
Glastonbury, CT 06033
(860) 368-5300

CLIENT: KeySpan
PROJECT NAME: East Hampton SC
CITY/STATE: East Hampton, New York
GEI PROJECT NUMBER: 072710-2-1102

BORING LOG

PAGE 2 of 2

EHS-GP-03

DEPTH FT.	SAMPLE INFO TYPE and NO.	PEN FT.	REC IN.	PID (ppm)	STRATA	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION
				0.1			
25	S-5	5.0	35	0.2			25 - 30 WIDELY GRADED SAND WITH GRAVEL (SW); ~70% sand; ~25% fine to coarse gravel, ~5% fines, max. size 2.25 in., dry, light brown to tan, loose.
30	S-6	5.0	36				30 - 35 WIDELY GRADED SAND WITH GRAVEL (SW); ~70% sand; ~25% fine to coarse gravel, ~5% fines, max. size 1.25 in., dry, light brown to tan, loose.
35	S-7	5.0	32	0.2			35 - 40 WIDELY GRADED SAND (SW); ~85% sand; ~10% fine to coarse gravel, ~5% fines, max. size 1 in., dry, tan, loose.
40	S-8	5.0	26				40 - 45 WIDELY GRADED SAND WITH GRAVEL (SW); ~70% sand; ~25% fine to coarse gravel, ~5% fines, max. size 0.75 in., wet, light brown to tan, loose; wet at 44.75' bgs.
45	S-9	5.0	23	0.1		EHS-GP-03 (44-45)	45 - 50 WIDELY GRADED SAND WITH GRAVEL (SW); ~70% sand; ~25% fine to coarse gravel, ~5% fines, max. size 1.75 in., wet, tan, loose.
				0.1			
50							Bottom of borehole at 50.0 feet.

NOTES:

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ENVIRONMENTAL BORING LOG EAST HAMPTON SC BORING LOGS.GPJ GEI CONSULTANTS.GDT 1/29/08

GEI Consultants, Inc.
455 Winding Brook Road
Glastonbury, CT 06033
(860) 368-5300

CLIENT: KeySpan
PROJECT NAME: East Hampton SC
CITY/STATE: East Hampton, New York
GEI PROJECT NUMBER: 072710-2-1102

BORING LOG
PAGE 1 of 2
EHS-GP-04

GROUND SURFACE ELEVATION (FT): 50.89 **LOCATION:** Center of Site
NORTHING: 295590.322 **EASTING:** 1482432.316 **TOTAL DEPTH (FT):** 45.00
DRILLED BY: Fenley & Nicol Environmental, Inc. / Kevin Kegel **DATUM VERT. / HORZ.:**
LOGGED BY: Chris Scharkoph & Michael Williams **DATE START / END:** 11/16/2007 - 11/16/2007
DRILLING DETAILS: Geoprobe
WATER LEVEL DEPTHS (FT): ▽ 40.00

DEPTH FT.	SAMPLE INFO TYPE and NO.	PEN FT.	REC IN.	PID (ppm)	STRATA	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION
0							0 - 1 Topsoil and grass, HAND CLEARED.
		7.0					1 - 7 SANDY SILT (ML); ~75% silt, ~20% fine sand, ~5% gravel, max. size 2.5 in., dry, dark brown to light brown, loose, HAND CLEARED.
				0		EHS-GP-04 (4-5)	
5				0.5			
	S-1	3.0	24				7 - 10 WIDELY GRADED SAND (SW); ~90% sand; ~5% fine to coarse gravel, ~5% fines, max. size 0.5 in., dry, light brown to tan, loose.
10	S-2	5.0	48	0.1			10 - 15 WIDELY GRADED SAND (SW); ~85% sand; ~10% fine to coarse gravel, ~5% fines, max. size 1 in., dry, light brown, rust and tan band, loose.
15	S-3	5.0	51	0.1			15 - 20 WIDELY GRADED SAND (SW); ~85% sand; ~10% fine to coarse gravel, ~5% fines, max. size 0.75 in., dry, tan, orange and light brown bands first 24" then throughout, loose.
20	S-4	5.0	48	0.5			20 - 25 WIDELY GRADED SAND WITH GRAVEL (SW); ~75% sand; ~25% fine to coarse gravel, max. size 1 in., dry, brown tan and orange, loose.

NOTES:

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL
REC = RECOVERY LENGTH OF SAMPLE
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ppm = PARTS PER MILLION
IN. = INCHES
FT. = FEET
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TLO = TAR LIKE ODOR
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ENVIRONMENTAL BORING LOG EAST HAMPTON SC BORING LOGS.GPJ GEI CONSULTANTS.GDT 1/29/08

GEI Consultants

GEI Consultants, Inc.
455 Winding Brook Road
Glastonbury, CT 06033
(860) 368-5300

CLIENT: KeySpan
PROJECT NAME: East Hampton SC
CITY/STATE: East Hampton, New York
GEI PROJECT NUMBER: 072710-2-1102

BORING LOG
PAGE 2 of 2
EHS-GP-04

DEPTH FT.	SAMPLE INFO TYPE and NO.	PEN FT.	REC IN.	PID (ppm)	STRATA	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION
25	S-5	5.0	26	0.7			25 - 30 WIDELY GRADED SAND WITH GRAVEL (SW); ~75% sand; ~25% fine to coarse gravel, max. size 1.5 in., dry, brown and orange, light brown and tan, loose.
30	S-6	5.0	25	0.8			30 - 35 WIDELY GRADED SAND (SW); ~85% sand; ~10% fine to coarse gravel, ~5% fines, max. size 1 in., dry, tan with dark brown, loose.
35	S-7	5.0	27	0.8			35 - 40 WIDELY GRADED SAND (SW); ~85% sand; ~10% fine to coarse gravel, ~5% fines, max. size 1.75 in., dry, light brown and tan, orange band, loose.
40	S-8	5.0	22	1			40 - 45 WIDELY GRADED SAND (SW); ~85% sand; max. size 1.75 in., tan and light brown, orange band, loose, wet at bottom.
45						EHS-GP-04 (44-45)	Bottom of borehole at 45.0 feet.

NOTES:

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL
REC = RECOVERY LENGTH OF SAMPLE
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ENVIRONMENTAL BORING LOG EAST HAMPTON SC BORING LOGS.GPJ GEI CONSULTANTS.GDT 1/29/08

GEI Consultants, Inc.
455 Winding Brook Road
Glastonbury, CT 06033
(860) 368-5300

CLIENT: KeySpan
PROJECT NAME: East Hampton SC
CITY/STATE: East Hampton, New York
GEI PROJECT NUMBER: 072710-2-1102

BORING LOG
PAGE 1 of 2
EHS-GP-05

GROUND SURFACE ELEVATION (FT): 49.55 **LOCATION:** Southeast corner of Site
NORTHING: 295512.8214 **EASTING:** 1482581.952 **TOTAL DEPTH (FT):** 45.00
DRILLED BY: Fenley & Nicol Environmental, Inc. / Kevin Kegel **DATUM VERT. / HORZ.:**
LOGGED BY: Chris Scharkoph & Michael Williams **DATE START / END:** 11/16/2007 - 11/16/2007
DRILLING DETAILS: Geoprobe
WATER LEVEL DEPTHS (FT): ▽ 44.00

DEPTH FT.	SAMPLE INFO: TYPE and NO.	PEN FT.	REC IN.	PID (ppm)	STRATA	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION
0							0 - 1 Asphalt, HAND CLEARED.
		7.0				EHS-GP-05 (4-5)	1 - 7 SANDY SILT (ML); ~75% silt, ~20% fine sand, ~5% gravel, max. size 3 in., dry, dark brown to light brown, loose, HAND CLEARED.
5							
	S-1	3.0	38	1.5			7 - 10 WIDELY GRADED SAND (SW); ~90% sand; ~5% fine to coarse gravel, ~5% fines, max. size 1 in., dry, light brown with tan, loose.
10				1.3			10 - 15 INTERVAL NOT SAMPLED.
15	S-2	5.0	46	0.6			15 - 20 WIDELY GRADED SAND (SW); ~90% sand; ~5% fine to coarse gravel, ~5% fines, max. size 0.75 in., dry, tan, orange bands, loose.
20							20 - 25 INTERVAL NOT SAMPLED.

NOTES:

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ENVIRONMENTAL BORING LOG EAST HAMPTON SC BORING LOGS.GPJ GEI CONSULTANTS.GDT 1/29/08

GEI Consultants

GEI Consultants, Inc.
455 Winding Brook Road
Glastonbury, CT 06033
(860) 368-5300

CLIENT: KeySpan
PROJECT NAME: East Hampton SC
CITY/STATE: East Hampton, New York
GEI PROJECT NUMBER: 072710-2-1102

BORING LOG

EHS-GP-05

DEPTH FT.	SAMPLE INFO: TYPE and NO.	PEN FT.	REC IN.	PID (ppm)	STRATA	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION
25	S-3	5.0	37				25 - 30 WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand; ~15% fine to coarse gravel, ~5% fines, max. size 1.5 in., dry, brown, dark brown bands, loose.
30							30 - 40 INTERVAL NOT SAMPLED.
35							
40	S-4	5.0	24				40 - 45 WIDELY GRADED SAND (SW); max. size 0.75 in., tan and light brown, orange bands, loose, wet at 44' bgs.
45						EHS-GP-05 (44-45)	Bottom of borehole at 45.0 feet.

NOTES:

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL
REC = RECOVERY LENGTH OF SAMPLE
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ENVIRONMENTAL BORING LOG EAST HAMPTON SC BORING LOGS.GPJ GEI CONSULTANTS.GDT 1/29/08

nationalgrid

Theodore O. Leissing
Manager, MGP Programs

April 20, 2010

Mr. Jamie Ascher
Engineering Geologist 2
New York State Department of Environmental Conservation
Division of Environmental Remediation, Region 1
Stony Brook University
50 Circle Road
Stony Brook, NY 11790-3409

Re: Pre-Design Surface Soil Sampling
East Hampton Hortonsphere Site
Index #: AI-0595-08-07; Site #: 152213
East Hampton, New York

Dear Mr. Ascher:

National Grid is submitting for your review and approval this letter work plan to conduct Pre-Design surface soil sampling at the former East Hampton Hortonsphere Site in East Hampton, New York. The Site location is shown in Figure 1. The current conditions of the property are shown in Figure 2.

This letter work plan was developed in response to a phone conversation between Walter Parish (NYSDEC), you, me, and Jerry Zak (GEI Consultants, Inc.) on April 2, 2010. During that discussion National Grid agreed to develop an Interim Remedial Measure (IRM) work plan to mitigate lead in surface soil near the Hortonsphere.

At this time, the IRM is expected to consist of expanded fencing and bluestone ballast around and beneath the Hortonsphere, and we have begun preliminary efforts to develop the work plan. However, we cannot generate a final IRM plan and mitigation measures without pre-design lead data for the Hortonsphere.

1.0 Additional Lead Characterization

The surface soil sampling for lead will be conducted in accordance with the NYSDEC-approved Site Characterization Work Plan (SCWP) dated November 2007, that includes the Health and Safety Plan, Quality Assurance Project Plan, and Field Sampling Plan. The following subsection describes surface soil sampling and laboratory analytical procedures in detail.

1.1 Surface Soil Sampling

Four surface soil samples (EHS-SS-11, EHS-SS-12, EHS-SS-13, and EHS-SS-14) are proposed to quantify lead concentrations in surface soil outside the fenced confines of the Hortonsphere. The locations of the proposed surface soil samples are shown in Figure 2. Three surface soil samples (EHS-SS-11, EHS-SS-12, and EHS-SS-14) will be collected ten feet from the fence around the Hortonsphere. One surface soil sample (EHS-SS-13) will be collected 10 feet south of previous surface soil sample location EHS-SS-03 – where the lead concentration exceeded the NYSDEC Part 375 Restricted Residential Soil Cleanup Objective (SCO) of 400 milligrams per kilogram (mg/kg) during site characterization studies.

175 East Old Country Road, Hicksville, NY 11801
T: 516.545.2555 ■ F: 516.545.2583 ■ theodore.leissing@us.ngrid.com ■ www.nationalgrid.com

The surface soil samples will be collected with a decontaminated stainless steel trowel or dedicated disposable sampling tool from 0 to 2 inches below the vegetative root mat. The grass will be removed prior to sampling and will be replaced following the completion of sampling activities.

These samples will be analyzed for lead only, using EPA Method 6010B.

Quality assurance/quality control samples will include one blind duplicate, and one rinsate blank. The batch Matrix Spike/Matrix Spike Duplicate (MS/MSD) data from the laboratory will be requested in lieu of a site-specific MS/MSD.

The surface soil samples will be submitted to TestAmerica Laboratories in Shelton, Connecticut for analysis. TestAmerica is a New York State Department of Health (NYSDOH) Environmental Laboratory Approval Program (ELAP) accredited laboratory.

The location of each sample point will be measured from known points and incorporated into the existing site base map.

2.0 Schedule and Reporting

We anticipate that field work can start within approximately 1 week of receiving NYSDEC approval. A number of factors can affect the actual start date including the approval of this work plan, property access, and/or weather that may hamper collection of surface soil samples. National Grid will have to coordinate access with the Long Island Power Authority. The field work is expected to take less than one day.

After completion of the field activities and receipt/validation of the laboratory analytical data, we will incorporate the results to determine the extent of additional fencing and ballast. We anticipate delivering a draft IRM work plan for your review by the end of June 2010.

Please call me or Jerry Zak (860.368.5404) if you have any questions or require additional information.

Sincerely,

FOR

Theodore Leissing
Manager, MGP Programs
National Grid Site Investigation & Remediation

Attachments

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T: 516.545.2555 ■ F: 516.545.2583 ■ theodore.leissing @us.ngrid.com ■ www.nationalgrid.com

cc: W. Parish, NYSDEC Region 1
C. Vasudevan, NYSDEC
L. Eckhaus, NYSDEC
R. Paulsen, SCDHS
A. Juchatz, SCDEE
R. Ockerby, NYSDOH
S. Shearer, NYSDOH
J. Zak, GEI

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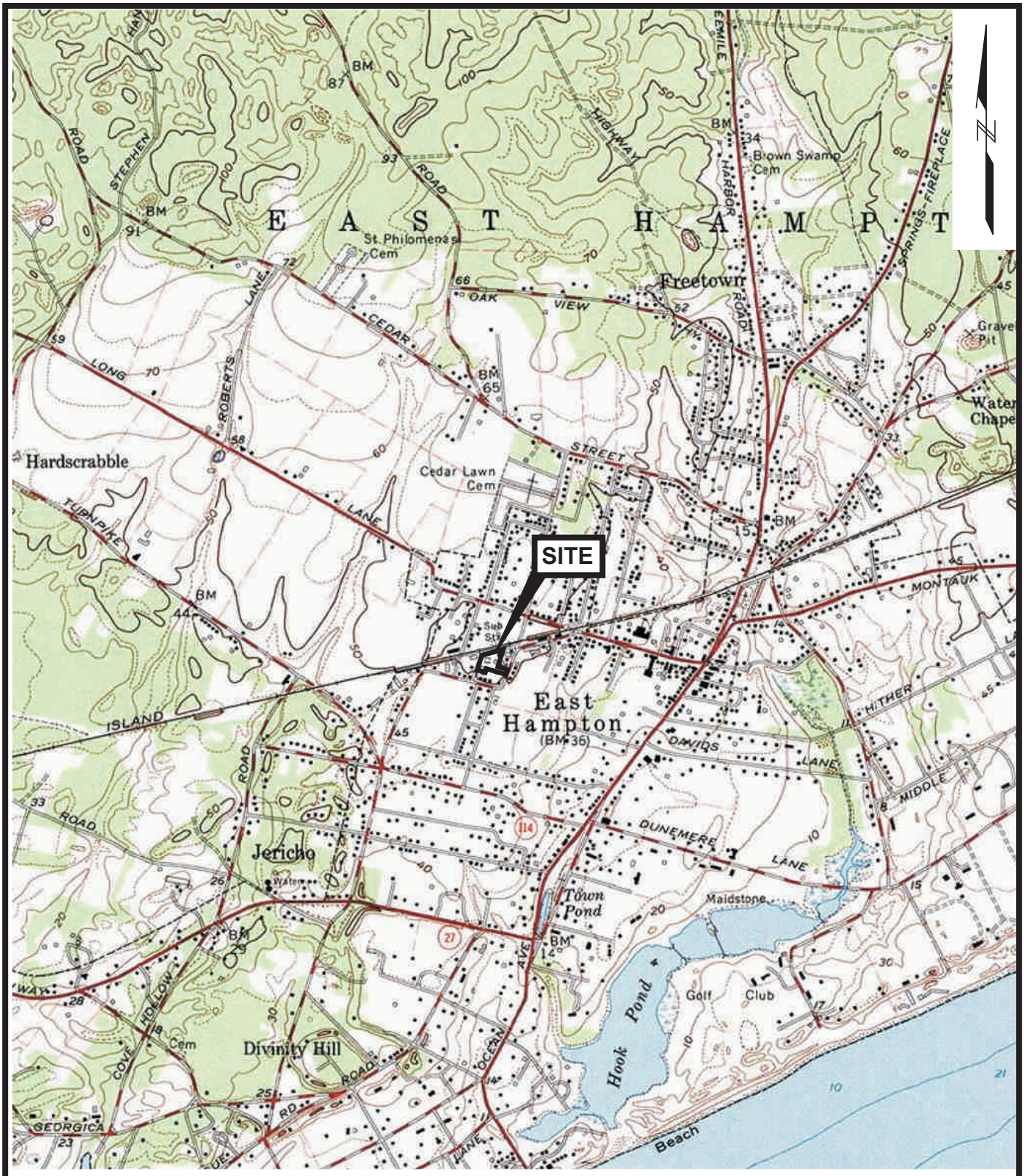

SOURCE: Map created with TOPO! ® ©2001 National Geographic (www.nationalgeographic.com/topo)

PRE-DESIGN SURFACE SOIL SAMPLING WORK PLAN
EAST HAMPTON HORTONSPHERE SITE
EAST HAMPTON, NEW YORK

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SITE LOCATION MAP

Project 093000-2-1202 | April 2010 | Figure 1

I:\Project\National Grid\East Hampton\EH Hortonsphere\Pre-Design SSWP\East Hampton Location Map.CDR

LEGEND:

- PROPERTY BOUNDARY (APPROXIMATE)
- FENCE
- EHS-SS-11 ▲ PROPOSED SURFACE SOIL SAMPLE LOCATION - LEAD ONLY
- EHS-SS-01 △ PREVIOUS SURFACE SOIL SAMPLE LOCATION

SOURCES:

1. Orthophoto obtained from New York State Interactive Mapping Gateway (http://www1.nysgis.state.ny.us/MainMap.cfm) photo date: 2004, accessed 1/09/08.
2. Long Island Lighting Co., Mineola, N.Y., East Hampton Substation and Gas Storage Site, Situated at East Hampton, Town of East Hampton, County of Suffolk, N.Y., Scale: 1" = 60', Date: 10-17-72.
3. Survey of existing conditions and sample locations conducted by GEI Consultants, Inc. on 12/14/07. Survey by New York state licensed land surveyor number 050146. Horizontal datum: New York State Plane coordinate system (Long Island Zone, North American Datum (NAD)83). Vertical datum: North American Vertical Datum (NAVD) 88.

0 60 120

SCALE, FEET

PRE-DESIGN SURFACE SOIL SAMPLING WORK PLAN
EAST HAMPTON HORTONSPHERE SITE
EAST HAMPTON, NEW YORK

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GEI Consultants

EXISTING AND PROPOSED SURFACE SAMPLE LOCATIONS - LEAD ONLY

Project 093000-2-1202 | April 2010 | Figure 2

I:\Project\National Grid\East Hampton\EH Hortonsphere\093000\ EHampton-Hortonsphere Surface Soil Samples 04-07-2010.dwg \Apr 20, 2010

New York State Department of Environmental Conservation
Division of Environmental Remediation, Region One
Stony Brook University
50 Circle Road, Stony Brook, New York 11790-3409
Phone: (631) 444-0240 • **Fax:** (631) 444-0248
Website: www.dec.ny.gov

Alexander B. Grannis
Commissioner

April 21, 2010

Mr. Theodore O. Leissing, Jr.
Manager – MGP Programs, L.I.
Environmental Asset Management
National Grid
175 East Old Country Road
Hicksville, NY 11801

Re: East Hampton Hortonsphere Site #1-52-213
Order on Consent Index #A1-0595-08-07
Pre-Design Surface Soil Sampling Proposal: April 20, 2010

Dear Mr. Leissing,

The New York State Department of Environmental Conservation has reviewed and hereby approves the referenced proposal. Please notify the Department three days prior to undertaking the sampling. If you should have any questions, feel free to contact me at (631) 444-0246.

Sincerely,

Jamie Ascher
Engineering Geologist 2

ec: C. Vasudevan, NYSDEC
G. Bobersky, NYSDEC
W. Parish, NYSDEC
D. Keehn, NYSDEC
R. Ockerby, NYSDOH
J. Zak, GEI Consultants

Theodore O. Leissing
Manager, MGP Programs

July 7, 2010

Mr. Jamie Ascher
Engineering Geologist 2
New York State Department of Environmental Conservation
Division of Environmental Remediation, Region 1
Stony Brook University
50 Circle Road
Stony Brook, NY 11790-3409

Re: Pre-Design Surface Soil Sampling Results
East Hampton Hortonsphere Site
Index #: AI-0595-08-07; Site #: 152213
East Hampton, New York

Dear Mr. Ascher:

National Grid is submitting for your review the validated analytical results of surface soil samples recently collected at the East Hampton Hortonsphere Site in East Hampton, New York.

The samples were collected to generate supplemental lead concentration data in surface soil surrounding the Hortonsphere. The data are intended to support design of an Interim Remedial Measure (IRM) for lead in surface soil, as mentioned in our April 20, 2010 letter work plan. The Department approved the work plan in a letter to me dated April 21, 2010.

For additional assurance that lead impacts would be adequately characterized, National Grid elected to collect three more samples than originally proposed in the April 20 letter work plan. Jerry Zak at GEI Consultants, Inc. (GEI) notified you of this additional sampling in an email dated April 21, 2010.

The Site location is shown in Figure 1. The current site conditions are shown in Figure 2.

Relevant Background and Purpose of Additional Lead Characterization

A Site Characterization study was completed in 2009 and a Final Site Characterization Report was submitted to the Department in February 2010. The Department accepted and approved the report in a letter dated April 4, 2010.

The report included a discussion of lead concentrations in soil at the site. None of the lead concentrations exceeded the NYSDEC Part 375 Restricted Use Soil Cleanup Objective for Industrial Use (Industrial Use SCOs) of 3,900 milligrams per kilogram (mg/kg). However, three samples collected at or near the Hortonsphere (EHS-SS-03, EHS-SS-04, and EHS-SS-05) contained lead concentrations in excess of the NYSDEC Part 375 Restricted Residential Use (Restricted-Residential Use SCOs) of 400 mg/kg.

175 East Old Country Road, Hicksville, NY 11801
T: 516.545.2555 ■ F: 516.545.2583 ■ theodore.leissing@us.ngrid.com ■ www.nationalgrid.com

Because site access is not fully restricted by fencing, the Department requested that National Grid pursue a mitigation effort that will result in attainment of the Restricted Residential SCO of 400 mg/kg for lead.

As such, additional surface soil samples were collected on May 4, 2010 at the locations depicted on Figure 3, in accordance with the NYSDEC-approved Site Characterization Work Plan (SCWP) dated November 2007. The following subsection describes surface soil sampling and laboratory analytical procedures in detail.

Surface Soil Sampling

As presented in our April 20, 2010 letter work plan, the sample locations were generally based on the primary compass points of north, east, south, and west (with the Hortonsphere as the center point of the "compass"). However, property boundaries to the north and east resulted in slight variations from those compass points, as follows:

- Samples EHS-SS-11 and EHS-SS-15 were collected slightly north*east*, to avoid Railroad Avenue and allow for ten feet between each point.
- Samples EHS-SS-12 and EHS-SS-16 were collected due west of the Hortonsphere fence, as proposed.
- Sample EHS-SS-13 was collected 10 feet due south of previous surface soil sample location EHS-SS-03 – where the lead concentration exceeded the NYSDEC Part 375 Restricted Residential SCO of 400 mg/kg during site characterization studies. Sample EHS-SS-17 was collected ten feet due south of EHS-SS-13.
- Sample EHS-SS-14 (east) was collected approximately six feet *south* of due east because a pile of scrap metal prevented access. The eastern property boundary prevented collection of additional samples to the east.

The surface soil sample locations are presented in Figure 2.

The surface soil samples were collected with a disposable clean plastic spoon from 0 to 2 inches below the vegetative root mat, which was removed prior to sampling.

The samples were analyzed for lead only, using EPA Method 6010B. Quality assurance/quality control samples including one blind duplicate, and one rinsate blank were collected. The batch Matrix Spike/Matrix Spike Duplicate (MS/MSD) data from the laboratory was requested in lieu of a site-specific MS/MSD.

The surface soil samples were submitted to TestAmerica Laboratories in Shelton, Connecticut for analysis. TestAmerica is a New York State Department of Health (NYSDOH) Environmental Laboratory Approval Program (ELAP) accredited laboratory. The laboratory was instructed to "hold" samples EHS-SS-15, EHS-SS-16, and EHS-SS-17 until the results for samples EHS-SS-11 through EHS-SS14, collected closest to the Hortonsphere, were available.

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If the lead concentrations in the closest samples were below the 400 mg/kg Restricted-Residential Use SCO, analysis of the other samples would not be necessary for delineation of impacts.

The analytical results were validated to confirm data quality.

Validated Analytical Results

The validated laboratory analytical results for all surface soil samples collected at the site are presented in the table below and in Figure 2.

Sample ID	Part 375 Industrial Use SCO (mg/kg)	Part 375 Restricted Residential Use SCO (mg/kg)	Lead Concentration (mg/kg)
EHS-SS-01	3900	400	40
EHS-SS-02	3900	400	36
EHS-SS-03	3900	400	928 J
EHS-SS-04	3900	400	1140
EHS-SS-05	3900	400	1220
EHS-SS-06	3900	400	103
EHS-SS-07	3900	400	36.6
EHS-SS-08	3900	400	193
EHS-SS-09	3900	400	25.4
EHS-SS-10	3900	400	82.2
EHS-SS-11	3900	400	223
EHS-SS-12	3900	400	298
EHS-SS-13	3900	400	200
EHS-SS-14	3900	400	81.2

J = estimated value

All lead concentrations in samples EHS-SS-11 through EHS-SS-14, collected on May 4, 2010, are well below the NYSDEC Part 375 Restricted Residential SCO of 400 mg/kg. Based on these results it was not necessary for the laboratory to analyze samples EHS-SS15 through EHS-SS-17.

National Grid believes that lead concentrations at and surrounding the Hortonsphere have been adequately delineated as a result of this sampling event. Existing data will support development of an IRM work plan to mitigate potential exposure to lead in surface soil at and near the Hortonsphere.

Schedule

National Grid will develop a draft IRM Work Plan for the Department to review. We plan to deliver the draft work plan by August 7, 2010 and believe that execution of the plan at the site can take place by year end, pending approvals and access from both the Long Island Power Authority (property owner) and National Grid Gas Operations (facility operator). Please provide acknowledgement that you have received this letter.

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Call me or Jerry Zak (860.368.5404) if you have any questions or require additional information.

Sincerely,

FOR

Theodore Leissing
Manager, MGP Programs
National Grid Site Investigation & Remediation

Attachment

cc: W. Parish, NYSDEC Region 1
C. Vasudevan, NYSDEC
D. Keehn, NYSDEC
R. Paulsen, SCDHS
A. Juchatz, SCDEE
R. Ockerby, NYSDOH
Fay Navratil, NYSDOH
J. Zak, GEI

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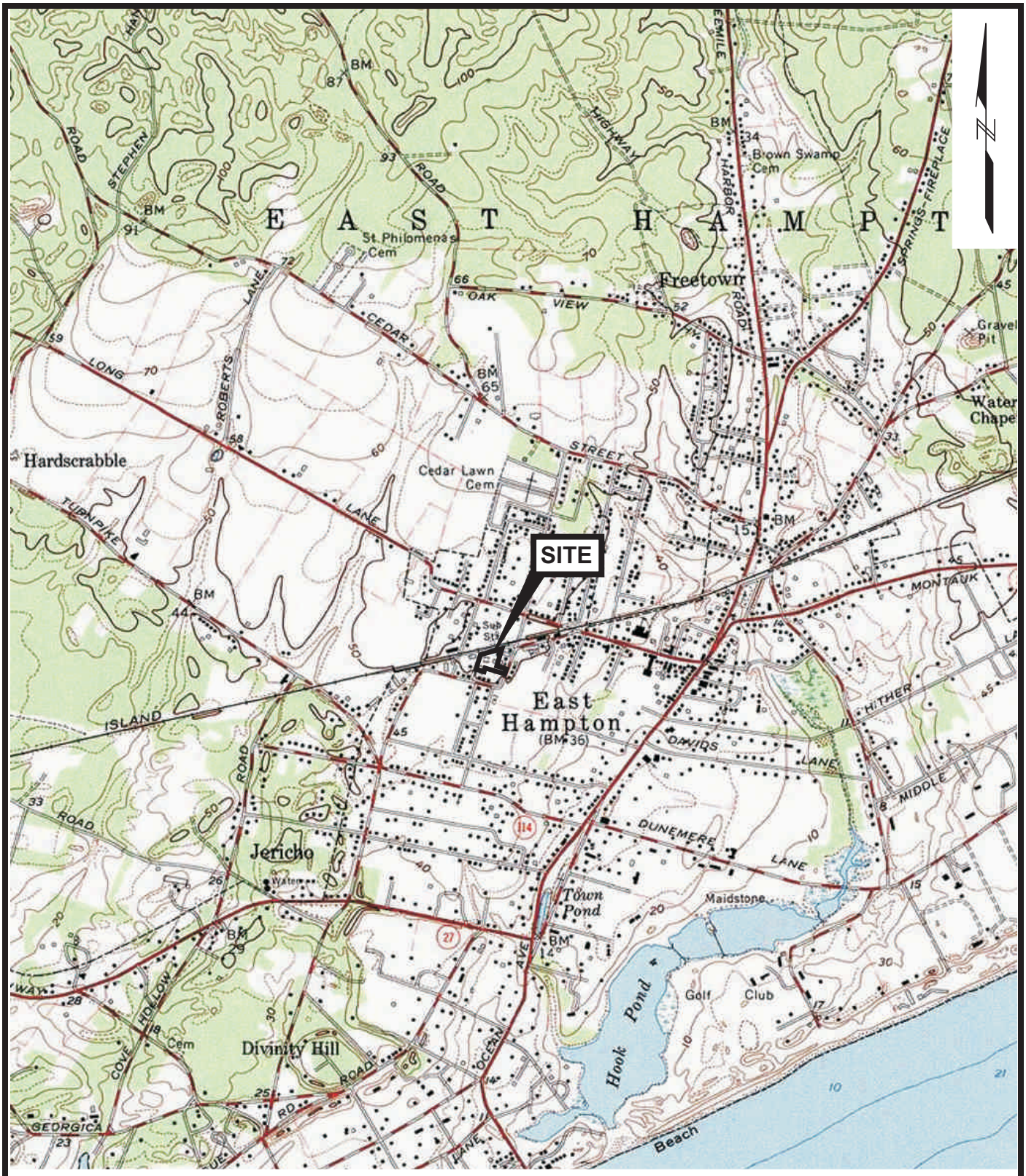

SOURCE: Map created with TOPO! ® ©2001 National Geographic (www.nationalgeographic.com/topo)

PRE-DESIGN SURFACE SOIL SAMPLING RESULTS
EAST HAMPTON HORTONSPHERE SITE
EAST HAMPTON, NEW YORK

nationalgrid

GEI Consultants

SITE LOCATION MAP

Project 093000-2-1202 | July 2010 | Figure 1

I:\Project\National Grid\East Hampton\EH Hortonsphere\093000\East Hampton Location Map.CDR

LEGEND:

- PROPERTY BOUNDARY (APPROXIMATE)
- FENCE
- EHS-SS-01 (40) — SURFACE SOIL SAMPLE LOCATION WITH LEAD CONCENTRATION
- EHS-SS-16 — SURFACE SOIL SAMPLE LOCATION - SAMPLE NOT ANALYZED

SOURCES:

1. Orthophoto obtained from New York State Interactive Mapping Gateway (http://www1.nysgis.state.ny.us/MainMap.cfm) photo date: 2004, accessed 1/09/08.
2. Long Island Lighting Co., Mineola, N.Y., East Hampton Substation and Gas Storage Site, Situated at East Hampton, Town of East Hampton, County of Suffolk, N.Y., Scale: 1" = 60', Date: 10-17-72.
3. Survey of existing conditions and sample locations conducted by GEI Consultants, Inc. on 12/14/07. Survey by New York state licensed land surveyor number 050146. Horizontal datum: New York State Plane coordinate system (Long Island Zone, North American Datum (NAD)83). Vertical datum: North American Vertical Datum (NAVD) 88.

0 60 120

SCALE, FEET

PRE-DESIGN SURFACE SOIL SAMPLING RESULTS
EAST HAMPTON HORTONSPHERE SITE
EAST HAMPTON, NEW YORK

nationalgrid

GEI Consultants

SURFACE SOIL SAMPLE LOCATIONS AND ANALYTICAL RESULTS LEAD ONLY (mg/kg)

Project 093000-2-1202 | July 2010 | Figure 2

I:\Project\National Grid\East Hampton\EH Hortonsphere\093000\ EHampton-Hortonsphere Surface Soil Samples 7-10.dwg \Jul 08, 2010

New York State Department of Environmental Conservation
Division of Environmental Remediation, Region One
Stony Brook University
50 Circle Road, Stony Brook, New York 11790-3409
Phone: (631) 444-0240 • **Fax:** (631) 444-0248
Website: www.dec.ny.gov

Alexander B. Grannis
Commissioner

July 14, 2010

Mr. Theodore O. Leissing, Jr.
Manager – MGP Programs, L.I.
Environmental Asset Management
National Grid
175 East Old Country Road
Hicksville, NY 11801

Re: East Hampton Hortonsphere Site #1-52-213
Order on Consent Index #A1-0595-08-07
Pre-Design Surface Soil Sampling Results: July 7, 2010

Dear Mr. Leissing,

The New York State Department of Environmental Conservation (DEC) and the New York State Department of Health have reviewed the referenced sampling results and have concluded that lead levels in surface soil have been adequately characterized for the purposes of the preparation of an Interim Remedial Measure Work Plan. The schedule outlined in your letter report is acceptable. If you should have any questions, or if the DEC can assist you in any way, please feel free to contact me at (631) 444-0246.

Sincerely,

Jamie Ascher
Engineering Geologist 2

ec: C. Vasudevan, NYSDEC
G. Bobersky, NYSDEC
W. Parish, NYSDEC
D. Keehn, NYSDEC
F. Navratil, NYSDOH
R. Ockerby, NYSDOH
A. Juchatz, SCDEE
R. Paulsen, SCDHS
J. Zak, GEI Consultants

Theodore O. Leissing
Manager, MGP Programs

December 9, 2010

Mr. Jamie Ascher
Engineering Geologist 2
New York State Department of Environmental Conservation
Division of Environmental Remediation, Region 1
Stony Brook University
50 Circle Road
Stony Brook, NY 11790-3409

RE: Interim Remedial Measure (IRM)
Excavation Footprint, Delineation Sampling of Subsurface Soil
East Hampton Hortonsphere Site
Index #: AI-0595-08-07; Site #: 152213
East Hampton, New York

Dear Mr. Ascher:

National Grid is submitting for your review and approval this letter work plan to collect additional shallow subsurface soil samples at the former East Hampton Hortonsphere Site in East Hampton, New York. The Site location is shown in Figure 1. The current conditions of the property are shown in Figure 2.

This letter work plan was developed in response to a phone conversation between you, me, and Jerry Zak (GEI Consultants, Inc.) on November 3, 2010. During that discussion, National Grid agreed to collect additional soil samples to confirm that the proposed excavation will adequately mitigate lead concentrations at and near the Hortonsphere. You followed-up with an e-mail on November 8, 2010, providing guidance from both your department and the New York State Department of Health (NYSDOH) on sample locations and depths.

At this time, the IRM is expected to consist of new and slightly expanded fencing and bluestone ballast around and beneath the Hortonsphere, which will be documented in a final IRM work plan based on the results of the sampling.

1.0 Additional Lead Characterization

The sampling for lead will be conducted in accordance with the NYSDEC-approved Site Characterization Work Plan (SCWP) dated November 2007, that includes the Health and Safety Plan, Quality Assurance Project Plan, and Field Sampling Plan. The following subsection describes surface soil sampling and laboratory analytical procedures in detail.

1.1 Surface Soil Sampling

Two shallow soil samples will be collected below each of the following previously collected samples: EHS-SS-03, EHS-SS-04, EHS-SS-05, and EHS-SS-06. One sample will be collected from 6 to 12 inches below ground and a second sample will be collected at 12 to 18 inches below ground. The following sample IDs will be used:

- EHS-SS-03A (6-12) and B (12-18).
- EHS-SS-04A (6-12) and B (12-18).
- EHS-SS-05A (6-12) and B (12-18).
- EHS-SS-06A (6-12) and B (12-18).

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T: 516.545.2555 ■ F: 516.545.2583 ■ theodore.leissing@us.ngrid.com ■ www.nationalgrid.com

The samples will be analyzed for lead only, using EPA Method 6010B. The locations of the proposed samples are shown in Figure 2.

The samples will be collected with a decontaminated stainless steel trowel and/or hand auger. Quality assurance/quality control samples will include one blind duplicate, and one rinsate blank. The batch Matrix Spike/Matrix Spike Duplicate (MS/MSD) data from the laboratory will be requested in lieu of a site-specific MS/MSD.

The samples will be submitted to TestAmerica Laboratories in Shelton, Connecticut for analysis. TestAmerica is a New York State Department of Health (NYSDOH) Environmental Laboratory Approval Program (ELAP) accredited laboratory.

The location of each sample point will be measured from known points and incorporated into the existing site base map.

We will also collect four waste characterization samples throughout the excavation footprint to assist in identifying a disposal facility.

2.0 Schedule and Reporting

We anticipate sample collection within approximately 1 week of receiving NYSDEC approval. A number of factors can affect the actual start date including the approval of this work plan, property access, and/or weather that may hamper collection of surface soil samples. National Grid will have to coordinate access with the Long Island Power Authority. The field work is expected to take one day.

After receipt/validation of the laboratory analytical data, we will generate a brief letter report for your review, prior to finalizing the IRM work plan.

Please call me or Jerry Zak (860.368.5404) if you have any questions or require additional information.

Sincerely,

FOR

Theodore Leissing
Manager, MGP Programs
National Grid Site Investigation & Remediation

Attachments

cc: W. Parish, NYSDEC Region 1
R. Ockerby, NYSDOH
J. Zak, GEI

JZ/ah H:\WPROC\Project\KEYSPAN\11 Site Characterizations\East Hampton Hortonsphere\IRM\PreDesignSampling\EastHampton-Add Lead-Waste Char Ltr WP 12-9-10.doc

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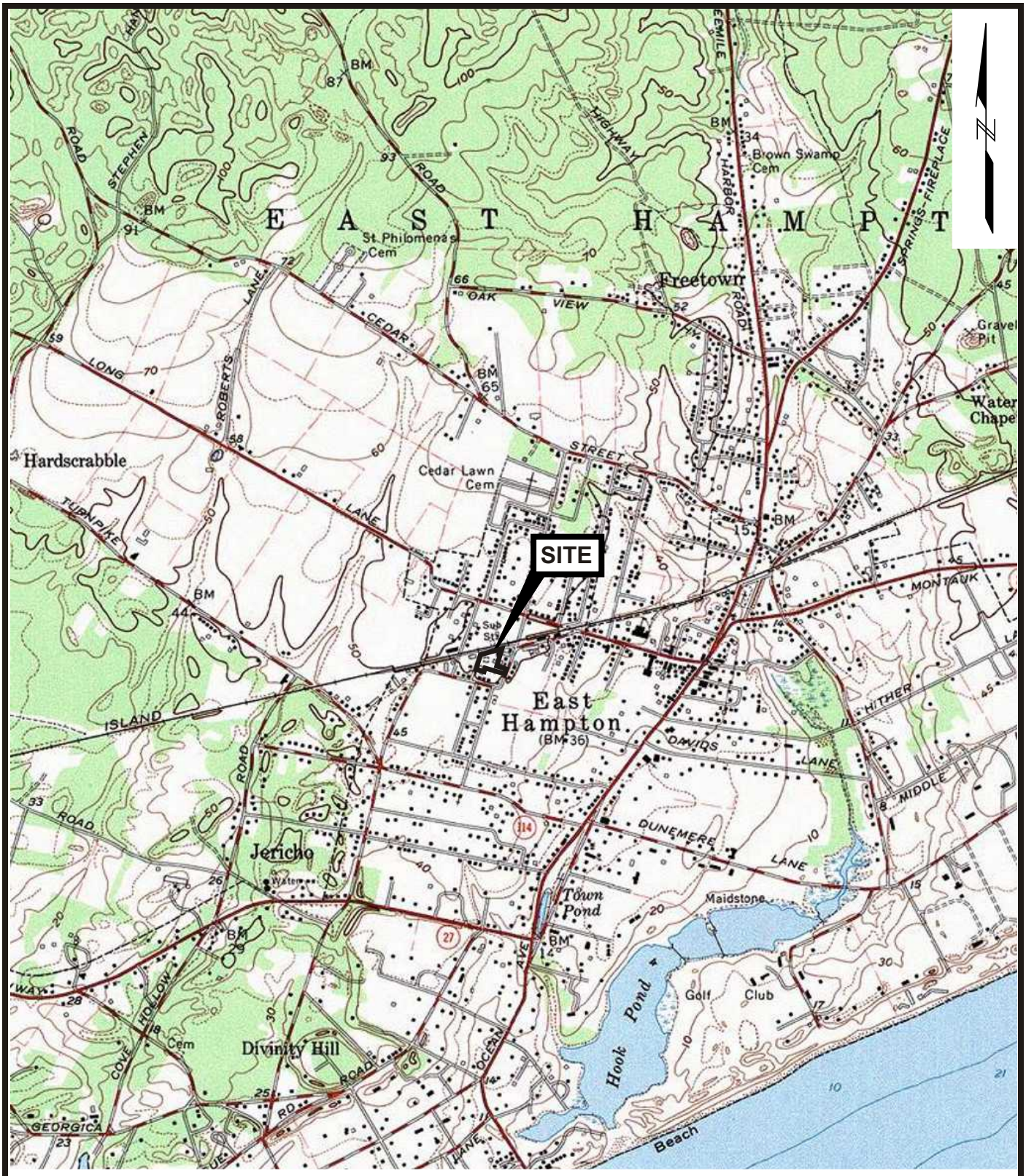

SOURCE: Map created with TOPO! ® ©2001 National Geographic (www.nationalgeographic.com/topo)

0 2000 4000

SCALE, FEET

EXCAVATION FOOTPRINT
DELINEATION SAMPLING OF SUBSURFACE SOIL
EAST HAMPTON HORTONSPHERE SITE
EAST HAMPTON, NEW YORK

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GEI Consultants

SITE LOCATION MAP

Project 102870-1-1105

December 2010 Figure 1

I:\Project\National Grid\East Hampton\EH Hortonsphere\102870\East Hampton Location Map.CDR

LEGEND:

- PROPERTY BOUNDARY (APPROXIMATE)
- FENCE
- EHS-SS-01 (40) — SURFACE SOIL SAMPLE LOCATION WITH PREVIOUS LEAD CONCENTRATION
- (A) — 6 TO 12" BELOW GROUND
- (B) — 12 TO 18" BELOW GROUND

SOURCES:

1. Orthophoto obtained from New York State Interactive Mapping Gateway (http://www1.nysgis.state.ny.us/MainMap.cfm) photo date: 2004, accessed 1/09/08.
2. Long Island Lighting Co., Mineola, N.Y., East Hampton Substation and Gas Storage Site, Situated at East Hampton, Town of East Hampton, County of Suffolk, N.Y., Scale: 1" = 60', Date: 10-17-72.
3. Survey of existing conditions and sample locations conducted by GEI Consultants, Inc. on 12/14/07. Survey by New York state licensed land surveyor number 050146. Horizontal datum: New York State Plane coordinate system (Long Island Zone, North American Datum (NAD)83). Vertical datum: North American Vertical Datum (NAVD) 88.

0 60 120

SCALE, FEET

EXCAVATION FOOTPRINT
DELINEATION SAMPLING OF SUBSURFACE SOIL
EAST HAMPTON HORTONSPHERE SITE
EAST HAMPTON, NEW YORK

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GEI Consultants

SURFACE SOIL SAMPLE LOCATIONS AND PREVIOUS ANALYTICAL RESULTS LEAD ONLY (mglkg)

Project 102870-1-1105 | December 2010 | Figure 2

I:\Project\National Grid\East Hampton\EH Hortonsphere\102870\EHampton-Hortonsphere Surface Soil Samples.dwg

Zak, Jerry

From: Jamie Ascher [jxascher@gw.dec.state.ny.us]
Sent: Friday, December 10, 2010 9:23 AM
To: Zak, Jerry
Cc: Walter Parish; Renata E Ockerby; Theodore Leissing
Subject: Re: East Hampton Hortonsphere, additional soil sampling

Jerry
DEC and DOH have reviewed the revised soil sampling plan dated December 9, 2010 and find it to be acceptable. If I can be of any assistance, feel free to contact me at 631-444-0246.

Jamie Ascher
Engineering Geologist 2
NYSDEC - Region 1

>>> "Zak, Jerry" <JZak@geiconsultants.com> 12/9/2010 11:55 AM >>>
Jamie:

I have attached the letter work plan.

An email approval back to Ted and I will work fine.

I'll let you know when we plan to collect the samples.

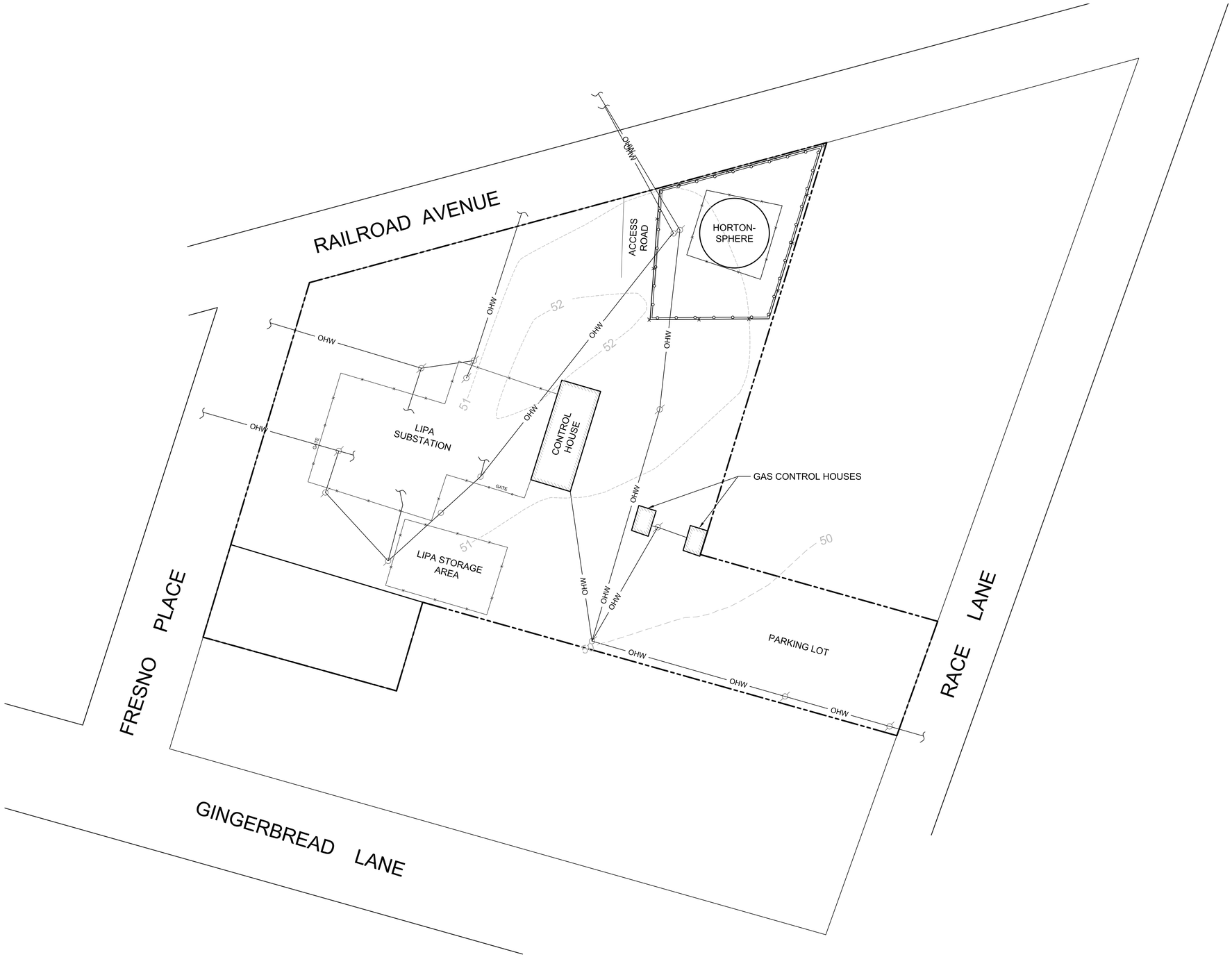
Thanks.

Jerry

Jerry Zak
Senior Project Manager
GEI Consultants, Inc.
455 Winding Brook Drive, Suite 201
Glastonbury, CT 06033
ph: 1-860-368-5404
fax: 1-860-368-5405
cell: 1-860-558-3866
www.geiconsultants.com

Appendix B

IRM Drawings



LEGEND:

- GROUND SURFACE CONTOUR - MAJOR (FEET, NAVD 88)
- GROUND SURFACE CONTOUR - MINOR (FEET, NAVD 88)
- FENCE
- UTILITY POLE
- PROPERTY LINE
- OVERHEAD WIRE

SITE MANAGEMENT LEGEND:

- SILT FENCE - SEE DETAIL 3
- TEMPORARY SECURITY FENCE

NOTES:

1. DO NOT BLOCK ACCESS TO SUBSTATION FACILITIES.
2. PROTECT EXISTING SECURITY FENCE SURROUNDING THE HORTONSPHERE.
3. PROTECT THE LIPA SUBSTATION AND GAS DISTRIBUTION INFRASTRUCTURE.

SOURCE:

1. DRAWING TITLED "EAST HAMPTON SUBSTATION AND GAS STORAGE SITE AT EAST HAMPTON, TOWN OF EAST HAMPTON, COUNTY OF SUFFOLK, NY", SCALE 1" = 60', DATED OCTOBER 17, 1972. PREPARED BY LONG ISLAND LIGHTING CO. MINEOLA, NY.

SCALE, FEET: 0, 30, 60

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NOT FOR CONSTRUCTION

NO.	DATE	DESCRIPTION	DES	DR	CH	APP
1	3/25/11	ISSUED FOR BID	CRP	DTE	JFZ	BMN

DESIGNED BY: CRP
DRAWN BY: DTE
CHECKED BY: JFZ
APPROVED BY: BMN
DATE: 3/25/11

nationalgrid

INTERIM REMEDIAL MEASURE
EAST HAMPTON HORTONSPHERE SITE
TOWN OF EAST HAMPTON, NEW YORK

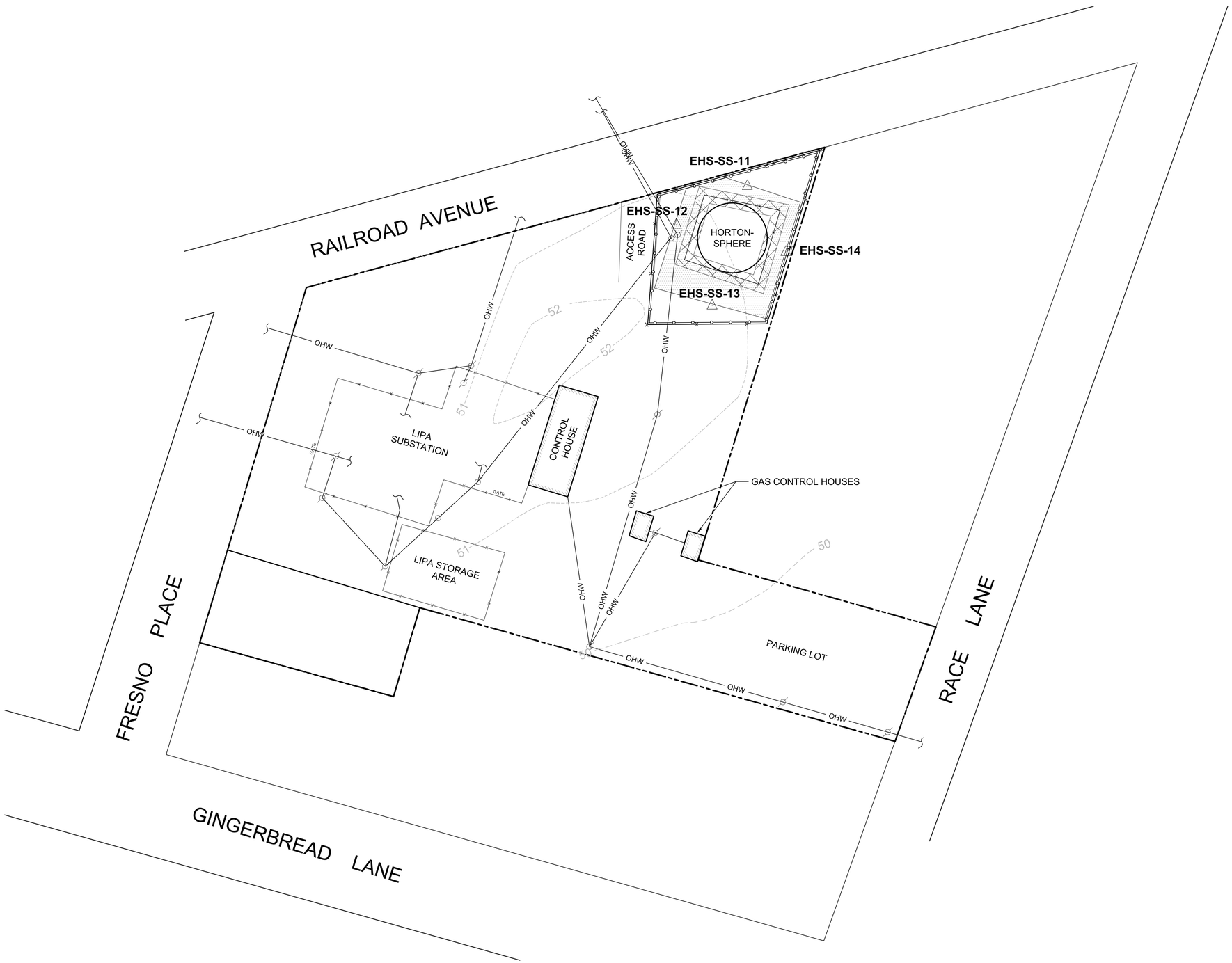
GEI Consultants
110 WALT WHITMAN ROAD
SUITE 204
HUNTINGTON STATION, NY 11746
631-760-9300, FAX 631-760-9301
WWW.GEICONSULTANTS.COM

SITE MANAGEMENT PLAN

FIG. NO. 1

GEI PROJECT: 102870-1-1101
SHEET NO.: 1 of 3
ISSUE: A

I:\Project\National Grid\East Hampton\EH Hortonsphere\IRM\CONTRACT DOCUMENTS\ EH HORTONSPHERE DESIGN SET.dwg \Mar 22, 2011



LEGEND:

- 50 — GROUND SURFACE CONTOUR - MAJOR (FEET, NAVD 88)
- 51 — GROUND SURFACE CONTOUR - MINOR (FEET, NAVD 88)
- FENCE
- UTILITY POLE
- PROPERTY LINE
- OHW — OVERHEAD WIRE

IRM SUMMARY LEGEND:

- △EHS-SS-14 — SURFACE SOIL SAMPLE USED TO DETERMINE LIMITS OF IRM
- CLEAR AND GRUB, REMOVE TOP 6-INCHES OF SOIL AND RE-GRADE, PLACE CLEAN FILL - SEE DETAIL
- DEMOLISH THE FENCE, AND REBUILD IN CURRENT LOCATION AFTER EXCAVATION AND BACKFILL AHVE BEEN COMPLETED - SEE DETAIL

A. NOTES:

1. LIMITS OF SOIL REMOVAL SHALL ENCOMPASS AT LEAST A 2 FOOT BUFFER OF SURFACE SOIL SAMPLES SHOWN, AS LIMITED BY PROPERTY LINE CONSTRAINTS.
2. PLACE GRAVEL FILL WITHIN THE PERIMETER OF THE SECURITY FENCE. BACKFILL THE REMAINDER OF THE EXCAVATION WITH TOPSOIL AND SEED.

TABLE 1 - SURFACE SOIL SAMPLE LOCATIONS

SAMPLE	NORTHING	EASTING
EHS–SS–11	295773.18	1482542.57
EHS–SS–12	295751.23	1482502.21
EHS–SS–13	295705.16	1482522.54
EHS–SS–14	295735.64	1482564.49

B. TABLE NOTES:

1. ALL COORDINATES ARE IN NEW YORK STATE PLANE COORDINATE SYSTEM, LONG ISLAND ZONE.

C. SOURCE:

1. DRAWING TITLED "EAST HAMPTON SUBSTATION AND GAS STORAGE SITE AT EAST HAMPTON, TOWN OF EAST HAMPTON, COUNTY OF SUFFOLK, NY", SCALE 1" = 60', DATED OCTOBER 17, 1972. PREPARED BY LONG ISLAND LIGHTING CO. MINEOLA, NY.

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NO.	DATE	DESCRIPTION	DES	DR	CH	APP
1	3/25/11	ISSUED FOR BID	CRP	DTE	JFZ	BMN

DESIGNED BY: CRP
DRAWN BY: DTE
CHECKED BY: JFZ
APPROVED BY: BMN
DATE: 3/25/11

nationalgrid

INTERIM REMEDIAL MEASURE
EAST HAMPTON HORTONSPHERE SITE
TOWN OF EAST HAMPTON, NEW YORK

GEI Consultants
110 WALT WHITMAN ROAD
SUITE 204
HUNTINGTON STATION, NY 11746
631-760-9300, FAX 631-760-9301
WWW.GEICONSULTANTS.COM

IRM SUMMARY

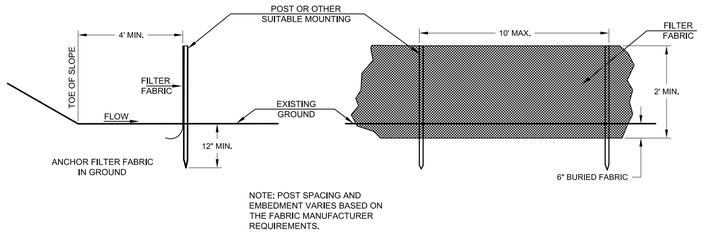
FIG. NO. 2

GEI PROJECT 102870-1-1101

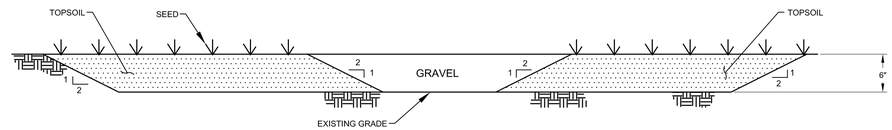
SHEET NO. 2 of 3

ISSUE A

I:\Project\National Grid\East Hampton\EH Hortonsphere\IRM\CONTRACT DOCUMENTS\ EH HORTONSPHERE DESIGN SET.dwg \Mar 22, 2011



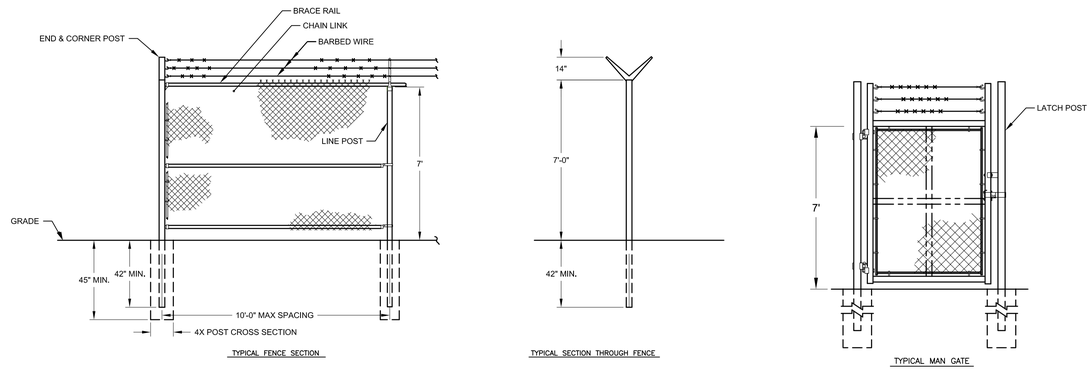
SILT FENCE DETAIL 1/3
SOURCE: NYSDEC



BACKFILL AND SEED 2/3
NOT TO SCALE

B. SEED NOTES:

1. SEED SHALL BE A MIX OF RED FESCUE, RYE, AND KENTUCKY BLUE. CONTRACTOR MAY SUBMIT REQUEST TO ENGINEER FOR ALTERNATE SEED MIXTURE TO TAKE ADVANTAGE OF PROVEN VARIETIES.
2. APPLY AT A RATE OF 75 LBS/ACRE.
3. HYDROSEEDING OR OTHER MECHANICAL METHODS OF APPLICATION THAT WILL NOT DAMAGE THE WORK ARE ACCEPTABLE.
4. MOW THE PROPERTY TWICE ONCE A SATISFACTORY STAND OF GRASS HAS BEEN ESTABLISHED.
5. WARRANTY PLANTINGS FOR 90 DAYS FOLLOWING ESTABLISHMENT OF A SATISFACTORY STAND OF GRASS.



CHAIN LINK FENCE AND GATE 3/3
NOT TO SCALE

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NOT FOR CONSTRUCTION

NO.	DATE	DESCRIPTION	DES	DR	CH	APP
1	3/25/11	ISSUED FOR BID	CRP	DTE	JFZ	BMN

DESIGNED BY: *CRP*
DRAWN BY: *DTE*
CHECKED BY: *JFZ*
APPROVED BY: *BMN*
DATE: *3/25/11*

nationalgrid

INTERIM REMEDIAL MEASURE
EAST HAMPTON HORTONSPHERE SITE
TOWN OF EAST HAMPTON, NEW YORK

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HUNTINGTON STATION, NY 11746
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WWW.GEICONSULTANTS.COM

IRM DETAILS

FIG. NO. 3

GEI PROJECT: 102870-1-1101
SHEET NO.: 3 of 3
ISSUE: A

I:\Project\National Grid\East Hampton\EH Hortonsphere\IRM\CONTRACT DOCUMENTS\ EH HORTONSPHERE DESIGN SET.dwg \Mar 22, 2011

Appendix C

IRM Specifications (electronic only)

nationalgrid

NATIONAL GRID USA
AND AFFILIATED COMPANIES

TERMS AND CONDITIONS

FOR

CONSTRUCTION PURCHASE ORDERS

DOCUMENT NO. 00700

Revised 09/30/08

GENERAL CONDITIONS - CONSTRUCTION

TABLE OF CONTENTS

GENERAL CONDITIONS

1.0 Definitions

Wherever used in the Agreement with initial capitalization, whether in the singular or the plural, these terms shall have the following meanings:

1.1. "Agreement" means the signed Agreement including all Contract Documents identified therein and attached thereto, including these General Conditions and any amendments thereto made pursuant to Article 6.0.

1.2. "Contract Documents" means all documents identified as such in the Agreement.

1.3. “Contract Price” means the total amount to be paid by the Owner to the Contractor as set forth in the Agreement.

1.4. “Contractor” means the party identified as such in the Agreement, and, if authorized by Owner, its successors and assigns.

1.5. “Day” means a calendar day, except that if an obligation of the Agreement falls due on a Saturday, Sunday or legal holiday in the jurisdiction where the Site is located such obligation shall be due the next regular working day.

1.6. "Dollars" and "$" means United States of America dollars.

1.7. "Drawings" means those drawings listed in the Specification. Said Drawings are incorporated by reference as if fully set forth in the Agreement.

1.8. "Engineer" means the technical representative of the Owner, if any.

1.9. “Field Representative" means the onsite representative of the Owner. Unless otherwise specified, all matters relating to the Agreement and coordination of Contractor activities with the Owner shall be directed through this individual.

1.10. "Final Acceptance" means that date when the Owner issues a certificate to the Contractor certifying that the Work has been fully performed in accordance with the terms and conditions of the Agreement.

1.11. “Owner” or “Owners” means the party or parties identified as such in the Agreement,

1.12. "Project" means the totality of an Owner defined venture, to be completed within a specified time and cost, and all things associated therewith, of which the Work performed under the Agreement may be the whole or a

part and which may include work performed by the Owner or its affiliates or by other contractors.

1.13. “Purchase Order” has the same meaning as Agreement.

1.14. “Purchase Order Number” means the number identified as such in the Agreement which may be used for Owner’s internal accounting and document tracking.

1.15. “Services" means all the labor and services provided by Contractor in connection with the Agreement.

1.16. "Site" means the geographical location where the Work will be performed.

1.17. "Specification" means the technical requirements and procedures including any accompanying appendices contained in the Agreement and incorporated by reference as if fully set forth therein.

1.18. "Subcontractor" means any organization, firm or individual, regardless of tier, which the Contractor retains during the term of the Agreement to provide labor, materials, Services, and/or equipment in connection with the Agreement.

1.19. “Substantial Completion” means that date as certified by Owner when the construction of the Work, or a specified portion of the Work, is sufficiently completed in accordance with the Agreement so the Owner can occupy or utilize the Project, or a specified portion of the Project, for its intended purpose.

1.20. “Supplemental Conditions” means those terms and conditions, if included in the Agreement, which add to or modify other Contract Documents and are incorporated by reference as if fully set forth in the Agreement. In the case of a conflict between the Supplemental Conditions and any other Contract Document the Supplemental Conditions shall prevail.

1.21. “Work” means all duties, responsibilities, and obligations to be performed by the Contractor as specified, stated, indicated or implied, whether temporary or permanent, by the Agreement including, but not limited to, equipment, labor, services, apparatus, machinery, and/or material supplied.

2.0 Term

2.1. The Agreement shall become effective when executed by both parties and shall continue in full force and effect until the expiration of all guarantees, warranties and indemnities provided for therein.

3.0 Scope of Work

3.1. The Contractor agrees to perform all the Work and do all that is necessary to complete its portion of the Project in accordance with the Agreement including all Contract Documents and any attached schedules, exhibits and appendices which are incorporated by reference as if fully set forth therein.

3.2. The Contractor assumes full responsibility for the Work until its Final Acceptance.

3.3. In addition to other requirements set forth in the Agreement, the Contractor shall perform all the Work in conformance with all applicable permits, Federal, state, and local engineering, construction, safety, environmental, building and electrical codes, regulations, standards, directives, requirements, rules, regulations, laws and ordinances, whether the same are in force upon the execution of the Agreement or may in the future be passed, enacted or directed and any other requirements listed or referred to in the Agreement.

3.4. The Contractor shall be solely responsible for all construction means, methods, techniques, sequences, procedures, safety and compliance programs in connection with the performance of the Work.

3.5. The Contractor shall supply and be fully responsible for temporary facilities. Such facilities shall be located only in approved areas if so designated by the Owner. Temporary facilities, located at the Site, shall be removed by the Contractor prior to final payment, unless otherwise authorized in writing by the Owner.

4.0 Personnel

4.1. The Contractor shall provide a competent full time superintendent and any necessary assistants, all satisfactory to the Owner, at the Site during the progress of the Work to ensure that the Work is being performed in accordance with the Agreement. The superintendent shall not be removed from the Project without the Owner’s prior written approval. The superintendent shall represent the Contractor, and all directions given the superintendent shall be binding as if given to the Contractor.

4.2. The Contractor and all Subcontractors shall employ only competent and experienced personnel. The Contractor's personnel on the Site shall include, but not be limited to, a quality assurance representative, a safety representative and an individual knowledgeable in environmental rules and regulations. In the event that the Owner believes, in its sole judgment, that any of the Contractor's personnel are objectionable, the Owner shall so notify the Contractor, where upon the Contractor shall promptly investigate and take appropriate corrective action including, where requested by the Owner, removal of such personnel and

replacement with personnel acceptable to the Owner.

4.3. Whenever required by law, regulations, or code, or any applicable governmental approval, the Contractor shall employ only licensed and properly trained personnel in the performance of the Work.

4.4. The Contractor and all Subcontractors shall have full responsibility for all employees employed on or in connection with the Project and shall employ only such employees who shall cooperate with all other individuals working at the Site.

4.5. Contractor shall perform, and its personnel shall be subject to, background checks in accordance with Article 55.0, Personnel Background Checks.

5.0 Familiarity with Work

5.1. The Contractor represents that it has fully acquainted itself with, and has carefully examined all documents and conditions relevant to its Work and this Project to insure that they are sufficient to properly complete the Work; all relevant plans, surveys, measurements, dimensions, calculations, and estimates to be sure that they contain no errors or inaccuracies; the nature and location of the Work, the character of equipment, materials and facilities needed preliminary to and during the prosecution of the Work; the general and local conditions (including environmental conditions and labor relations); and all other matters which can in any way affect the Project and the Work and its cost under the Agreement. The Owner assumes no responsibility whatsoever for ascertaining for the Contractor any facts which the Contractor could have ascertained for itself through such investigation. The Contractor shall notify its Subcontractors of the requirements of this Section.

5.2. Lack of knowledge of any of the foregoing matters shall not constitute an excuse for delay or failure of performance under the Agreement, nor shall it justify any increase in the price as determined under the Agreement.

5.3. The Contractor hereby represents that it has all information and documentation with respect to equipment, materials, facilities or any other matters which are or will be necessary to enable the Contractor to safely and reliably perform the Work.

5.4. Except as is otherwise specified within the Agreement, all loss or damage to the Contractor arising out of its performance of the Work, whether due to the elements, unforeseen circumstances, subsurface conditions or otherwise, shall be sustained and borne by the Contractor at its sole cost and expense.

5.5. Items of materials, equipment or otherwise shall not be substituted for those specified, nor shall "or equal" items be furnished pursuant to the Agreement without the Owner's prior written approval. The Owner's

decision on item equality shall be final and binding on the parties.

5.6. The Owner and its engineers make no warranty for the detail, accuracy, or completeness of the Contract Documents including, but not limited to, the Specification and Drawings.

6.0 Changes in the Work

6.1. No additions to, deletions from, or alterations in the Work and no amendment or repeal of, and no substitution for any terms, conditions, provisions or requirements of the Agreement shall be made unless first authorized in writing by the Owner. No verbal changes in the Agreement shall be recognized by the Owner unless in accordance with Section 17.2.

6.2. The Owner may at any time make additions to or deletions from or changes in the Project and/or Work, including changes to the Specification, Drawings or the schedule. If such changes add to or deduct from the Contractor's cost of the Work or affect the schedule the Contractor shall notify the Owner in writing within five (5) Days of such change and provide a written estimate of such cost and/or schedule modifications and, if the Owner approves, the Agreement will be adjusted accordingly. Any claim for an extension in the schedule caused thereby shall be adjusted at the time of ordering such change and the value of any such change shall be determined as provided in Section 6.5.

6.3. If the Contractor desires a change in the Work necessary to complete the Work or believes that any order, instruction, request, clarification or interpretation of the Owner, or its representatives or compliance with any laws, orders or regulations, constitutes a substantial change in the Work, the Contractor shall submit, to the Owner, prior to performance of any such Work, and within five (5) Days of receipt or discovery thereof, a written claim specifying the nature of the change, any increase or decrease in the cost of performing the Work, and any resulting change in the schedule. Within thirty (30) Days of receipt of said notice, the Owner shall determine whether the claim constitutes a change in the Work and if so to what extent the Agreement should be modified. The Owner shall then notify the Contractor, in writing, of its decision. Any change in the schedule shall be specified in the Owner's notice and any change in price as determined under the Agreement shall be determined in accordance with Section 6.5 below.

6.4. The Owner may require the Contractor to proceed with Work which is the subject of a proposed or claimed change in the Work prior to the Owner's consent to any change in the price or schedule, in which event the Owner shall so notify the Contractor in writing, and the Contractor shall then proceed with the Work, and keep an accurate account as required under Section 6.5 (c), including but not limited to, submittal to the Field Representative by 10:00 a.m. of the next Day worked an accurate daily account of the cost and time thereof for each day worked on each proposed or claimed change, and the Contractor and the Owner shall

then negotiate in good faith with respect to said change.

6.5. If the Owner authorizes a change in the Work as set forth in this Article 6.0 which adds to or decreases the cost of the Work, the Contractor shall proceed with the Work as changed, and the Owner shall, in its sole discretion, adjust the price by (a) a mutually agreed upon lump sum or unit price, (b) a unit price as set forth in the Agreement or, (c) in accordance with the following:

6.5.1. Reimbursement for all labor, based on the actual direct verifiable amount of time incurred in performing the changes, at the rates set forth in the Agreement. The rates shall include all indirect and overhead expenses, including, but not limited to, field supervision, an allowance for small tools and equipment with a value less than $1,000.00 new, and light duty vehicles up to 1½ tons gross weight, and such items shall not be separately charged. Labor not anticipated by or itemized in the Agreement shall not be utilized without the Owner's prior written approval. The rates shall be reduced for each individual when that individual reaches the maximum annual FICA, FUI and SUI contribution limits;

6.5.2. Except as otherwise provided in Section 6.5.1, reimbursement for Contractor owned tools and equipment not already employed at the Site (unless reimbursement is otherwise authorized by the Owner), based on the actual verifiable amount of time incurred in performing the changes, at the rates set forth in the Agreement, (The equipment rates shall include costs for fuel, oil, grease, repair, parts, taxes, insurance, service and maintenance of any kind and all necessary attachments, overheads and profit.). Reimbursement shall not be allowed for any equipment or tools with a new cost of the equivalent of one thousand Dollars ($1,000.00) or less, each. Contractor owned or purchased equipment not anticipated by or itemized in the Agreement shall not be utilized without the Owner's prior written approval, and the rate for such equipment shall in no event exceed the rates published in the most current "Rental Rate Blue Book for Construction Equipment" then in effect for the same or like equipment;

6.5.3. Reimbursement for rental of equipment, not set forth in the Agreement, based on the actual verifiable cost for rental and necessary attachments, to the extent actually incurred in performing changes, plus, if applicable, the hourly operating cost, less operator and any assistants included in 6.5.1, published in the then most current "Rental Rate Blue Book for Construction Equipment". (Reimbursement shall not be allowed for any equipment or tools with a new cost of the equivalent of one thousand Dollars ($1,000.00) or less, each.);

6.5.4. Reimbursement for all Subcontractor, subject to Owner's prior authorization to subcontract in each specific instance of change,

costs actually and reasonably incurred in performing changes. Applicable Subcontractor costs shall be subject to the same terms and conditions set forth in Sections 6.5.1 through 6.5.3, and 6.5.5 and 6.5.6, unless otherwise agreed to by Owner;

6.5.5. Reimbursement for the actual verifiable net (no mark-ups) cost of materials directly purchased in support of the extra Work as authorized by the Owner.

6.5.6. In the event that the Contractor is to be paid pursuant to Sections 6.5.1 through 6.5.5, the Contractor shall, on a daily basis, furnish the Field Representative with Daily Work Reports (in a format acceptable to the Owner) which briefly describe the Work rendered during the preceding day and which are itemized to reflect: the names of all the Contractor's and the Subcontractor's personnel who performed Work under this Section 6.5(c), their rate per hour, the individual and total number of hours worked, and the total labor cost for the day; equipment used, its rate per hour, the individual and total hours worked and the total equipment costs for the day; and quantity(ies) of Contractor furnished material(s) received and consumed for the day, and the cost thereof if requested by the Owner. All labor hours, equipment hours and material quantities shall be verified by signature of the Field Representative. A duplicate of the original signed Daily Work Report and receipts and invoices for Contractor furnished materials, rented equipment and Subcontractors shall accompany all invoices which the Contractor shall present for payment.

6.6. If the Owner authorizes a change in the Work which decreases the amount and cost of the Work, such decrease shall not constitute basis for a claim by the Contractor for any loss or damages including anticipated profit.

6.7. The Owner shall not accept any changes submitted by the Contractor pursuant to this Article 6.0 after final payment.

6.8. All additional work shall be performed in accordance with the terms and conditions of the Agreement insofar as they are applicable thereto.

7.0 Material and Services Furnished by the Owner

7.1. The Owner will provide the materials and services set forth in the Agreement.

8.0 Performance and Schedule

8.1. The Contractor shall submit a schedule and scheduling progress and update information as required and set forth in the Agreement.

8.2. The Contractor shall perform the Work in accordance with the schedule. Once commenced the Work shall be prosecuted continuously to completion unless otherwise agreed to by the Owner.

8.3. The Contractor shall maintain a labor force of sufficient size and competence to conform to and complete all Work on schedule and within the scheduled hours and days set forth in the schedule unless otherwise directed or approved by the Owner.

8.4. The Contractor shall limit its Work at the Site to eight (8) hours per day and forty (40) hours per week and normal working hours, between 7:00 a.m. - 5:00 p.m., Monday through Friday, unless otherwise specified elsewhere in the Agreement. Extended hours shall be subject to the Owner's written approval.

8.5. Time is of the essence as to performance by the Contractor of its obligations under the Agreement. If, at any time during the term of the Agreement, except for delays occurring pursuant to Sections 35.1 and 39.1, in the opinion of the Owner the Contractor does not meet the schedule, the Owner may for each incident of delay, at no additional cost to the Owner, at its sole option:

8.5.1. Require the Contractor to get back on schedule by working additional shifts and/or additional days and/or increasing its manpower, supervision, tools, and/or equipment.

and/or

8.5.2. Treat such failure as a material breach and repudiate and terminate the Agreement and recover damages in accordance with Article 36.0.

and/or

8.5.3. Require the Contractor to pay the Owner liquidated damages, as may be provided for in the Agreement, provided, however, once the Owner elects liquidated damages for an incident of delay its right to invoke the remedies under 8.5.1 or 8.5.2 for said delay shall be extinguished.

8.6. Any failure by the Owner to invoke any of the provisions of Section 8.5 shall not constitute a waiver of its right to subsequently invoke said provisions or its entitlement to any other damages provided for elsewhere in this Agreement.

8.7. No request for extension of time for completion of the Work, or any other change to an approved schedule, shall be granted to the Contractor unless in a signed writing and except as provided in Article 6.0 and Sections 35.1 and 39.1.

8.8. Notwithstanding the foregoing, if the Contractor incurs delays and believes that changes in the Project or changed conditions beyond the Contractor's control are the cause of the delay, the Contractor shall provide prompt written notice to the Owner in the manner set forth in Section 6.3 of the changes or changed conditions that justify excusing the Contractor from meeting the schedule. If the Owner agrees with the Contractor, the Owner will, in accordance with Section 6.3, approve an extension of time for completion of the Work. Such extensions of time however shall not include any additional payment for extended overhead.

8.9. When necessary to accommodate the Owner's operating requirements, the Owner shall have the option to order any portion of the Project performed at times other than normal working hours or on weekends or holidays, in which event extra costs, if any, for such work shall be paid to the Contractor in accordance with Section 6.5.

9.0 Delivery, Unloading and Storage

9.1. The Contractor shall deliver, receive, unload, store in a secure place, and deliver from storage all equipment and material, whether Owner or Contractor furnished, required for the performance of the Work in accordance with the Agreement, and all manufacturers' recommendations. Receiving of equipment and materials, whether Contractor or Owner furnished, shall include inspection for correctness of quantity, quality, and damage, all of which shall be reported in accordance with Article 15.0.

9.2. Deliveries shall be made between the hours of 7:00 am and 2:00 pm, Monday through Friday, unless otherwise arranged with the Field Representative.

9.3. The Contractor shall be solely responsible for storage and protection of equipment and material, whether Owner or Contractor furnished, against deterioration or damage from any cause, vandalism, and theft until Final Acceptance.

10.0 Contract Price

10.1. The Contract Price, as set forth in the Agreement, shall be equitably adjusted to cover any additions, deletions or changes to the Project pursuant to Article 6.0 and for any adjustments required under Article 35.0.

10.2. The Contract Price shall include sales, use and similar taxes, unless otherwise provided for in the Agreement.

10.3. The Owner shall not be responsible for any Federal, state, and/or local, personal property, license, privilege, or other like taxes, which may now or hereafter be applicable to the transactions under the Agreement.

10.4. The Contractor shall pay or cause to be paid all taxes and employer contributions imposed by present and future Federal, state, and local laws with respect to compensation of employees of the Contractor and all interest and penalties payable under said laws as a result of noncompliance therewith, and the Contractor shall indemnify and hold harmless the Owner from and against any and all claims, liabilities and expenses with respect to the foregoing.

11.0 Payment

11.1. The Contractor shall submit invoice(s) in accordance with the Agreement. Each invoice shall reference the Owner's Purchase Order Number. Said invoice(s) shall include cost breakdowns and unit quantities as specified by the Owner. The Contractor shall submit a completed and properly executed Partial Lien Release, as set forth in the Agreement, with each invoice, for the Work included in said invoice.

11.2. In addition to the specific requirements for each payment, the Contractor's submittal of an invoice shall represent a certification that it has complied with: a) the quality assurance requirements set forth in Article 30.0; b) all scheduling requirements set forth in Article 8.0; c) the safety requirements set forth in Article 32.0; d) all environmental requirements set forth in Article 34.0; and e) all other terms and conditions of the Agreement.

11.3. Ten percent (10%) of each invoice shall be retained by the Owner until Final Acceptance by the Owner.

11.4. Except as otherwise expressly provided for in the Agreement, all invoices, less monies withheld under Section 11.3, shall be due and payable thirty (30) Days from receipt by the Owner of a proper invoice and any required supporting documentation, subject to the Owner's right to contest, in good faith, all or any part of the charges set forth therein.

11.5. Payment by the Owner shall not relieve the Contractor of any responsibility or obligation under the Agreement, nor shall it constitute a waiver by the Owner of any claim arising hereunder.

11.6. No payment made hereunder, except for the final payment, shall be considered as acceptance of any Work. All payments shall be subject to correction or adjustment in subsequent payments.

11.7. The Owner shall, without waiver or limitation of any rights or remedies, be entitled from time to time to deduct from any amounts due or owing the Contractor under the Agreement any and all amounts owed by the Contractor to the Owner or an Owner's affiliate, whether or not in connection with the Agreement.

12.0 Payments Withheld Prior to Final Acceptance of Work

12.1. Notwithstanding any other provision of the Agreement, prior to Final Acceptance of the Work, the Owner may withhold or nullify the whole or part of any payment to such extent as may be necessary to protect itself from loss caused by, but not limited to:

(a) Defective work not remedied;

(b) Claims filed or reasonable evidence indicating probable filing of claims against the Owner or by the Owner or other parties against the Contractor;

(c) Failure of Contractor or Subcontractors (of any tier) to make payments properly to Subcontractors (of any tier) or for material or labor or for any taxes due;

(d) Damage to another contractor;

(e) Removal and replacement of condemned work and/or material;

(f) Incomplete documentation;

(g) Inadequate insurance coverage;

(h) Disputed work;

(i) Environmental damage;

(j) Bonding of Contractor lien;

(k) Failure to properly clean up the site;

(l) Damage to utilities;

(m) Damage to public or private property; and

(n) Liquidated damages assessed to the Contractor.

12.2. When the above grounds are removed or the Contractor provides a surety bond satisfactory to the Owner which protects the Owner in the amount withheld, payment shall be made within thirty (30) Days thereafter to the Contractor for the amount withheld.

13.0 Final Acceptance and Final Payment

13.1. Upon receipt of written notice from the Contractor that the Work is completed and ready for final inspection and acceptance, the Owner shall inspect the Work and determine if the Work has been fully performed in accordance with the terms and conditions of the Agreement.

13.2. If the Owner determines the Work is not complete, its written notice of rejection shall include a list of items that the Contractor shall finish in order for the Work to be complete under the terms and conditions of the Agreement. The Contractor shall within two (2) Days of said notice provide for the Owner's review and approval a schedule detailing when all defects will be corrected and/or the Work completed. Upon approval by the Owner, the Contractor shall remedy such defective and incomplete portions of the Work. The steps in Sections 13.1 and this Section 13.2 shall be repeated until the Owner accepts the Work as complete and so notifies the Contractor of its acceptance.

13.3. Upon acceptance, the Contractor shall deliver to the Owner a complete set of as-built drawings, and shall satisfy the Owner through the execution and filing with the Owner of the Release and Agreement form, as set forth in the Agreement, that all bills for labor, materials, licenses, taxes and other expenses and claims for which the Owner might be sued or for which a lien might be filed on account of the Agreement have been fully satisfied. Upon the Owner's acceptance of the Work and the Contractor's satisfactory fulfillment of the requirements of this Section 13.3 and Section 43.3, the Owner will notify the Contractor of its Final Acceptance of the Work.

13.4. Upon Final Acceptance, final payment, including money retained in accordance with Section 11.3, will be made.

13.5. Acceptance of the final payment shall constitute a waiver of all claims by the Contractor.

13.6. Final payment shall not relieve the Contractor of any warranty, guarantee or other continuing obligations under the Agreement.

14.0 Inquiries, Communication, and Regulatory Inspections

14.1. The Contractor shall immediately notify the Owner of all communications from regulatory agencies including, but not limited to, notices, postings, letters, telephone calls or visits.

14.2. The Contractor shall immediately notify the Owner of any inquiries from the media. Requests for information from the media shall be reviewed and approved by the Owner prior to response by the Contractor.

14.3. The Contractor shall immediately notify the Owner of any calls or other communications from the public. Requests for information from the public shall be reviewed and approved by the Owner prior to response by the Contractor.

14.4. The Contractor shall notify the Owner as soon as the Contractor becomes aware of a current or scheduled regulatory inspection. The Owner will arrange a time for the inspection and designate an Owner representative who will accompany the regulatory inspectors. The Contractor shall also

designate a representative who will accompany the regulatory inspectors. The Contractor shall fully cooperate with the Federal, state, and local regulatory agencies during inspections or other official functions. If an inspector from a Federal, state or local regulatory agency arrives at a location unannounced and wishes to conduct an inspection, the Contractor shall obtain and subsequently submit to the Owner the inspector's name, agency and telephone number and shall accommodate the inspector. If the conduct of an inspection will, for reasons such as safety considerations, put the inspector or the Contractor's representative at risk of injury, the Contractor shall attempt to reschedule the inspection at a date and time acceptable to all parties.

14.5. During an inspection, the inspector may request permission to sample fluids, soils or other materials. If samples are taken, the inspector shall be requested by the Contractor to provide duplicate samples which should then be forwarded to the Owner as soon as possible. The Contractor shall request the inspector to provide duplicate copies of all photographs and/or such other records or reports taken during or generated by an inspection and shall submit them to the Owner upon their receipt by the Contractor.

14.6. If a Notice of Noncompliance or any other official correspondence is received by the Contractor from a regulatory agency, a copy of the notice or correspondence shall be provided to the Owner within twenty four (24) hours of its receipt.

15.0 Meetings and Reports

15.1. The Contractor shall attend Project meetings as often as deemed necessary by the Owner during the term of the Agreement.

15.2. By 10:00 a.m. of the next day worked the Contractor shall submit a written daily report to the Field Representative for each day worked, which shall include, but not be limited to the date, weather, listing of all Contractor's and Subcontractor's construction force (itemized by craft, supervisory, and employer), Work performed (type, amounts, locations), equipment used (idle equipment so noted), materials received, delays encountered and their cause, recordable and "Lost Time" accidents or incidents, instructions given to Contractor, general remarks, and Project Site visitors. The Contractor shall also submit to the Owner a daily report for all days not worked by the end of the next day worked which shall include, but not be limited to, the date, weather, and the reason no work was performed.

15.3. The Contractor shall notify the Owner of an occurrence as set forth in the Agreement. The Contractor shall submit to the Owner a written report of each accident/incident involving personal injury or property damage. This report shall include, but not be limited to: the date, names of injured individuals, Contractor and Subcontractors involved, any third parties involved, employer, supervisor's name, description of injury and/or

property damage, description of how accident/incident occurred, names of witnesses, social security number or tax identification number of all individuals involved, and safety equipment employed or not utilized. The Contractor may suggest preventative procedures to be implemented to prevent reoccurrence.

15.4. The Contractor shall submit to the Owner specific reports as maybe required elsewhere in the Agreement.

16.0 Documents

16.1. The Contractor shall supply all documents in quantities and types, at times, according to instructions, and in the manner set forth in the Agreement. Upon the Owner's request, any other documents prepared by the Contractor in connection with the Project shall be delivered to the Owner upon completion, cancellation or termination of the Agreement.

16.2. Any document, which is prepared by the Contractor in connection with the Agreement, shall be submitted in accordance with the Agreement, with sufficient time for the Owner to review and comment.

16.3. The Owner's review of or comments on any document shall not relieve the Contractor of its sole responsibility for the correctness and adequacy of the Contractor's Work, including but not limited to the correctness of design, detail, dimensions, or erection or any other obligation of the Contractor hereunder.

16.4. All documents furnished by the Owner, including but not limited to the Specification and Drawings and copies thereof and documents produced by the Contractor for the Owner shall be the property of the Owner, shall be used by the Contractor only for performance of the Project, shall not be used on any other jobs, shall not be delivered to any third parties except as is necessary for performance of the Project hereunder, and shall be returned to the Owner upon completion, cancellation or termination of the Agreement.

16.5. The Contract Documents including, but not limited to, the Specification and Drawings may not be complete in every detail. The Contractor shall comply with their manifest intent and general purpose, taken as a whole, and shall not ignore or misuse any errors or omissions therein to the detriment of the Project. Should any error, omission, conflict or discrepancy appear in the Contract Documents, referenced documents, or codes, standards or instructions, the Contractor shall immediately notify the Owner in writing and the Owner shall issue written instructions, however, unless otherwise instructed the more stringent requirement shall apply. If the Contractor proceeds with any of the work in question prior to receiving such instructions, then required corrections shall be at the Contractor's expense.

16.6. If the Contractor observes that any requirement specified in the

Agreement is at variance with any governing laws, ordinances, rules, regulations, permits or licenses it shall promptly notify the Owner in writing before incurring any further liability, expense or obligation for the Contractor or the Owner.

16.7. All documents prepared, procured, or developed by the Contractor and furnished to the Owner in connection with the Project shall be the property of the Owner and may be used by the Owner without restriction, whether during the term of the Agreement or thereafter.

17.0 Discrepancies and Claims

17.1. If the Contractor, in the course of the Work, finds any discrepancy between the Agreement, or what could have been reasonably inferred or interpreted there from, and the physical conditions of the locality, or any errors or omissions in the Agreement or in the layout as given by survey points and instructions, or if the Contractor believes, determines or observes that performance of any part of the Project as required by the Agreement would or might result in the Project being deficient or unsafe or failing to comply with standard practice, law or regulation, the Contractor shall immediately notify the Field Representative in writing and shall suspend that part of the Work until otherwise directed by the Owner. Any Work done after such discovery or after the Contractor should have been reasonably expected to make such discovery, until authorized by the Owner, shall be done at the Contractor's risk, and the Contractor shall be liable for all costs arising there from, unless otherwise authorized in writing by the Owner.

17.2. Except in an emergency endangering life or property, if the Contractor claims that any instructions, written or verbal, or by Drawings or other media issued after the date of the Agreement involve extra cost and/or an extension of time, it shall give the Owner written notice thereof as set forth in Section 6.3. No such claim shall be valid unless so made.

18.0 Changed Conditions

18.1. The Contractor shall promptly, and before such conditions are disturbed, give the Field Representative written notice in accordance with Section 6.3 of subsurface or latent physical conditions at the Site differing materially from those indicated in the Agreement. The Owner shall promptly investigate the conditions, and if it finds that the Owner bears the risk under the terms of the Agreement of such unanticipated conditions and that such conditions do so materially differ and cause an increase or decrease in the cost of, or the time required for, performance of the Agreement, an equitable adjustment shall be made in accordance with Article 6.0. Any claim of the Contractor for adjustment hereunder shall not be allowed unless it has given notice as above required and before such conditions are disturbed.

19.0 Surveys

19.1. If specified, the Owner will furnish the primary control to be used for establishing lines and grades required for the Work. The Contractor shall preserve all monuments, benchmarks, reference points and stakes. From the information provided by the Owner, the Contractor shall develop and make all detail surveys needed for the performance of the Work.

20.0 Delivery of Clear Title

20.1. The Contractor shall deliver all equipment to the Owner with good, clear and marketable title, free from any defects, liens or encumbrances of any kind; shall indemnify and hold harmless the Owner and its affiliates and warrant and defend title against any claims or demands of third parties; and shall take such action at the Contractor's sole expense as may be necessary to discharge any defect in title, or lien or encumbrance on the Equipment.

21.0 Warranty

21.1. The Contractor warrants: (a) that it is aware of the purpose for which its Work is being used and that its work shall be suitable for said purpose; (b) that all Work shall conform to the Drawings, Specification, and other requirements of the Agreement; (c) that all Services shall be performed by qualified and competent personnel, and in accordance with the highest standards of care, skill, and diligence, and consistent with recognized and sound engineering and construction practices and procedures; (d) that all Work shall be of specified quality or, if not specified, of the best quality appropriate for its intended purpose; (e) that all Work shall be free from faults and defects of any kind, including faults and defects in design, engineering, workmanship, construction, erection, and/or materials; (f) that all equipment is installed to meet current OSHA regulations; and (g) that all equipment and material shall be new, current production, fit for the purpose for which they are intended, of size, capability, and materials sufficient to meet in all respects the requirements and conditions specified in the Agreement.

21.2. If the Contractor breaches any of the warranties set forth above, the Owner shall have available all remedies at law and equity.

21.3. Not limiting the foregoing, if prior to the expiration of two (2) years from the date of Final Acceptance, or such longer period if contained in a warranty furnished to or obtained by the Contractor from any Subcontractors, as provided in Section 21.7, the Owner gives the Contractor written notice that any part of the Contractor's Work fails to comply with the warranties set forth in Section 21.1, at the option of the Owner, (a) the Contractor shall promptly repair, replace, or otherwise cure or have cured, replaced, or repaired such nonconforming, defective, or erroneous Work to the Owner's satisfaction at no additional cost to the

Owner; (b) the Contractor shall refund the amount of money paid by the Owner attributable to such noncomplying, defective, or erroneous Work; or (c) the Owner shall have said nonconforming, defective, or erroneous Work remedied by a third-party and have the Contractor reimburse the Owner for the cost thereof.

21.4. If the Contractor should fail or refuse to commence or diligently proceed with any repair, replacement, or cure required by this Article 21.0, after having received notice from the Owner to do so, the Owner may, after a reasonable time but in any event not less than five (5) Days thereafter, repair, replace, or otherwise cure said Work or have said Work repaired, replaced, or otherwise cured without impairing the warranties stated herein, and the Contractor shall reimburse the Owner for the cost of such repair, replacement, or cure.

21.5. If the Owner selects Section 21.3 (a) or (c) or if Section 21.4 is applicable, repair, replacement or cure of the defective Work shall include but not be limited to the cost of material, transportation (if necessary), labor and equipment expenses, the Owner's administrative costs and incidentals for the removal and replacement of the affected Work. The Owner may require the Contractor to use overtime work at no cost to the Owner if such additional effort will shorten the time the Work is nonconforming.

21.6. If any warranty Work is required under this Article 21.0, the Contractor's warranties and responsibilities shall recommence upon all such Work and shall be in effect for the duration of the warranty period specified in Section 21.3 or for twenty four (24) months after the warranty Work is completed, whichever is later, as if such Work was initially performed without defect and no warranties were required.

21.7. The Contractor shall obtain from each Subcontractor, and extend to the Owner for its benefit, warranties for all Work performed or supplied by such Subcontractor. Any such warranties shall be in addition to and shall not be limited by or themselves limit, the warranties of the Contractor otherwise provided in the Agreement. The Contractor shall deliver to the Owner copies of any Subcontractor's warranties.

21.8. All warranty Work performed by the Contractor shall be scheduled by and at times acceptable to the Owner.

21.9. Notwithstanding any other provision of the Agreement, this Article 21.0 shall survive the termination or expiration of the Agreement.

22.0 Liability and Indemnification

22.1. If any act or omission to act on the part of the Contractor or its Subcontractors or any person under their control causes in whole or part, death or injury to any person, including but not limited to the Owner's or the Owner's affiliates' employees, or any damage to, environmental contamination of, or destruction of any property, including but not limited

to property of the Owner or the Owner's affiliates, the Contractor shall be liable for any claims, losses, damages and costs (including legal expenses) arising therefrom.

22.2. To the fullest extent permitted by law, the Contractor shall indemnify and hold harmless, and at the Owner's option, defend the Owner, its affiliates and their officers, directors, employees, agents, successors, assigns, and servants, from and against any and all claims and/or liability for damage to property, injury or death of any person, including, but not limited to, the Contractor's employees, Subcontractors, and the Subcontractor's employees, or any other liability incurred by the Owner or its affiliates, including expenses, legal or otherwise, caused wholly or in part, by any act or omission, negligent or otherwise of the Contractor, its Subcontractors and their officers, directors, employees, agents, servants, or assigns, arising out of or connected with the Agreement, regardless of whether caused in part by a party indemnified hereunder.

22.3. To the fullest extent permitted by law, the Contractor shall indemnify and hold harmless, and at the Owner's option, defend the Owner and its affiliates and their officers, directors, employees, agents, servants, and assigns from and against any liability, loss, or expense arising by reason of claims by any third party, including, but not limited to, the Contractor's employees, Subcontractors, and Subcontractors' employees as the result of the actual or asserted failure, omission, or neglect of the Contractor to comply with the Agreement.

22.4. The obligations under Article 22.0 shall not be limited in any way by any limitation on the Contractor's insurance or by a limitation on the amount or type of damages. In addition, the obligations under Section 22.2 and 22.3 shall not be limited in any way by any compensation or benefits payable by or for the Contractor or any Subcontractor under worker's compensation acts, disability benefit acts or other employee acts.

22.5. The Owner shall not be liable to the Contractor for consequential, special, incidental, multiple, or punitive damages (including attorney’s fees or litigation costs) for performance or non-performance of the Agreement or for any actions undertaken in connection with or related to the Agreement, including without limitation damage claims based on causes of action for breach of contract, tort (including negligence), Massachusetts Chapter 93A, or any other theory of recovery.

22.6. Except to the extent that an element of profit is included in the price for Work as determined under the Agreement and such amounts are past due and owing to the Contractor for Work actually performed, the Owner shall not be liable to the Contractor for claims of lost profits, whether such claims of lost profits are categorized under the Agreement as direct or consequential damages, or whatever the theory of recovery (including without limitation negligence, breach of contract, or actions under Massachusetts Chapter 93A, if applicable.).

22.7. In no case shall the Owner’s liability to the Contractor exceed the price for

Work as determined under the Agreement.

22.8. Notwithstanding any other provision of the Agreement, this Article 22.0 shall survive the termination or expiration of the Agreement.

23.0 Royalties and Patents

23.1. Royalties and fees for patents covering materials, articles, apparatus, devices, equipment or processes used in the Work shall be included in the Contract Price. Contractor shall satisfy all demands that may be made at any time for such royalties or fees.

23.2. The Contractor guarantees that all Work provided by the Contractor under the Agreement shall be free from claims of patent, copyright, and/or trademark infringement.

23.3. The Contractor shall indemnify, hold harmless, and, at the Owner's option, defend the Owner and its affiliates and their officers, directors, employees, agents, servants, successors and assigns from and against all claims, losses, costs, damages, suits, actions, and proceedings for actual or alleged infringement of any patent, copyright, or trademark resulting from any sale, use, or manufacture of any item delivered hereunder, and pay and discharge all judgments, decrees, and awards rendered therein and bear all expenses and legal fees associated therewith.

23.4. In the event of any adjudication that the Work, or any part thereof, infringes any patent, copyright, or trademark or in the event that the use of any part of the Project is enjoined as a result of any claim that the Work infringes any patent, copyright, or trademark the Contractor shall, at its sole expense, either: (a) procure for the Owner the right to continued use; or (b) without impairing performance capability, replace the infringed Work with substantially equivalent noninfringing Work; or modify such Work so it can become noninfringing.

23.5. The Contractor shall obtain from its Subcontractors, for the Owner's benefit, agreements similar to those contained in this Article 23.0.

23.6. Notwithstanding any other provision of the Agreement, this Article 23.0 shall survive the termination or expiration of the Agreement.

24.0 Passage of Title and Risk of Loss

24.1. Unless otherwise expressly stated herein or agreed to in writing, executed by both parties, title to all equipment, or portions thereof, shall pass to Owner upon its delivery to the Site. Passage of title shall not be construed to impair any rights which the Owner may otherwise have to recover damages or reject equipment which does not meet the requirements of the Agreement.

24.2. The Contractor shall bear all risk of loss or damage of any kind to the Work until Final Acceptance by the Owner, regardless of whether title has passed to the Owner.

24.3. The Contractor shall bear the cost of all packaging and shipment of equipment and material to the Site, of all unloading, storage, protection and installation of equipment and material at the Site, and of any insurance on the equipment prior to Final Acceptance by the Owner, regardless of whether title has passed to the Owner.

24.4. The Contractor shall bear the risk of loss or damage to any Work during its repair, replacement, or cure if the Contractor is responsible for such repair, replacement or cure.

24.5. The Contractor shall be responsible for the security of all (1) materials and equipment under its custody and control, and unless otherwise stated in the Agreement, (2) the Site. The Contractor shall cooperate with the Owner regarding all security measures instituted at the Site.

24.6. The Contractor shall at all times conduct operations in a manner to ensure the safety of the general public and to avoid the risk of loss, theft, or damage by vandalism, sabotage, or any other means. The Contractor shall continually inspect the Project, materials, and equipment to discover and determine any conditions that might involve such risks and shall be solely responsible for discovery, determination, and correction of any such conditions.

25.0 Contractor's Insurance

25.1. From the commencement of the Agreement, through final expiration or longer where specified below, the Contractor shall provide and maintain, at its own expense, insurance policies, intended to be primary (with no right of contribution by any other coverage available to National Grid USA its direct and indirect parents, subsidiaries and affiliates (the “Insured Entities”)), covering all Operations, Work and Services to be performed under or in connection with this Agreement, issued by reputable insurance companies with an A.M. Best Rating of at least B+, which at least meet or exceed the requirements listed herein:

(a) **Workers’ Compensation and Employers Liability insurance** as required by the State in which the work activities under this Agreement will be performed. If applicable, Coverage shall include the U.S. Longshoreman’s and Harbor Workers Compensation Act, and the Jones Act. The employer’s liability limit shall be at least $500,000 each per accident, per person disease, and disease by policy limit.

In the event any employee of the Contractor is loaned or leased to the Insured Entities, the Contractor will have an “alternate

employer" endorsement added to its workers' compensation policy in favor of such Insured Entity. In the event such endorsement has not been added to the policy at the time a claim arises, the Contractor shall indemnify and hold harmless the Insured Entities from any liability that would have otherwise been covered had that endorsement been added.

If the Contractor is exempt from having to obtain and maintain workers' compensation coverage due to their legal status as a sole proprietor or partnership, Contractor shall obtain:

1. Long term disability insurance covering any illness or injury incurred in connection with this Agreement that prevents the Contractor from working, with benefits of at least 50% of the Contractors monthly income on the last day before the disability begins.

2. Health Care Insurance, covering any loss occasioned by bodily injury, sickness or disease, and medial expense, with limits, coverage, deductibles, co-insurance payments, and any other cost sharing features customarily maintained by other Contractors of a similar size and business nature.

(b) **Commercial General Liability (CGL) Insurance,** covering all operations to be performed by or on behalf of Contractor under or in connection with this Agreement, with **minimum** limits of:

Bodily Injury (BI)	- $1,000,000 per occurrence
Property Damage (PD)	- $ 500,000 per occurrence
OR	
Combined Single Limit	- $1,000,000 per occurrence
OR	
BI & PD per Occurrence	- $1,000,000
General Aggregate &	
Product Aggregate	- $2,000,000 each

- Coverage shall include: contractual liability (with this Agreement, and any associated verbal agreements, being included under the definition of "Insured Contract" thereunder), products/completed operations, and if applicable, explosion, collapse and underground (XC&U).
- If the products-completed operations coverage is written on a claims-made basis, the retroactive date shall not precede the effective date of this Agreement and coverage shall be maintained continuously for the duration of this Agreement and for at least two years thereafter.
- Additional Insured as required in Article 25.3 below.
- The policy shall contain a separation of insureds condition.
- A liability insurance policy containing an annual aggregate limit of liability shall be amended to reflect that the annual aggregate limit applies on a per project basis.

- Contractor's protective (Independent Contractors) coverage in all cases where subcontractors are to perform any of the operations, work and services to be performed by or on behalf of the Contractor under or in connection with this Agreement.

(c) **Automobile Liability,** covering all owned, non-owned and hired vehicles used in connection with all operations, work or services to be performed by or on behalf of Contractor under or in connection with this Agreement with **minimum** limits of:

Bodily Injury aggregate	- $500,000 per occurrence; 1,000,000
Property Damage	- $500,000 per occurrence
	OR
Combined Single Limit	- $1,000,000 per occurrence

Additional Insured as required in Article 25.3 below.

(d) **Umbrella Liability or Excess Liability** coverage, with a **minimum** per occurrence limit of $4,000,000. This coverage shall run concurrent to the CGL required in Article 25.1(b) above, shall apply excess of the required automobile, CGL and employer's liability coverage required in this Article 25, and shall provide additional insured status as outlined in Article 25.3 below.

(e) **Watercraft Liability,** if used in connection with this Agreement, with the same **minimum** limits of liability as outlined in requirement 25.1(b) above, and naming the Insured Entities, including their officers and employees, as additional insured as outlined in article 25.3.

(f) **Aircraft Liability,** if used in connection with this Agreement, with a limit of liability of not less than $10,000,000 combined single limit per occurrence, and naming the Insured Entities, including their officers and employees, as additional insured's as required in Article 25.3 below. Such coverage shall not include a per passenger or per seat coverage limit.

(g) **Contractors Pollution Liability (CPL):** covering any sudden and accidental pollution liability which may arise out of, under, or in connection with this Agreement, including all operations to be performed by or on behalf of Contractor, or that arise out of the Contractors use of any owned, non-owned or hired vehicles, with a **minimum** liability limit of:

Bodily Injury (BI)	- $1,000,000 per occurrence
Property Damage (PD)	- $ 500,000 per occurrence
OR	
Combined Single Limit	- $1,000,000 per occurrence

This coverage shall apply on a per project basis.

This requirement may be satisfied by providing either this CPL policy, which would include naming the Insured Entities, including their officers and employees, as additional insured's as outlined in Article 25.3 below; **OR** by providing coverage for sudden and accidental pollution liability under the CGL and commercial automobile insurance policies required above - limited solely by the Insurance Services Organization (ISO) standard pollution exclusion, or its equivalent.

In the event the Contractor is unable to secure and/or maintain any or all of this sudden and accidental pollution liability coverage, the Contractor agrees to indemnify and hold the Insured Entities harmless against any and all liability resulting from any coverage deficiency that is out of compliance with this insurance requirement.

(h) **Risk of Loss:** The Contractor shall be responsible for all risk of loss to its equipment and materials, and any other equipment and materials owned by its employees or by other third parties that may be in their care, custody and control. If this coverage is excluded from the Commercial General Liability policy, then Owner will accept coverage under the Contractor's property policy.

In the event that any equipment or materials (Goods) are supplied by the Insured Entities, Owner will provide the insurable value of the Goods to the Contractor in writing, both cumulatively and on a maximum per item basis. The Contractor will provide replacement cost insurance for these Goods under a blanket builder's risk policy, an equipment floater, or other equivalent coverage, while such Goods are under the care, custody and control of the Contractor. Such insurance shall cover all Goods outlined in the Agreement or as noted on subsequent contract amendments. The coverage limit shall apply on either a per location basis or a maximum per item basis, and shall name the Insured Entities, as a Loss Payee with respect to their insurable interest as required in Article 25.3 below.

(i) The Contractor shall provide **professional liability** coverage with a limit of liability as required by Owner. However, this requirement will only apply if the limit of liability was either requested before this Agreement was executed, or added later by way of a mutually agreed contract change amendment.

(j) **Limits:** Any combination of Commercial General Liability, Automobile Liability and Umbrella Liability policy limits can be used to satisfy the limit requirements in items 25.1 b, c & d above.

If the term of this agreement is longer than five (5) years, in the fifth year, and every five (5) years thereafter, the Commercial General Liability and Umbrella/Excess Liability insurance limits required above shall be increased by the percentage increase in the Consumer Price Index from the month the Agreement was executed to the month immediately preceding the first month of the year in which the increase is required.

25.2. **Self-Insurance**: Proof of qualification as a qualified self-insurer, if approved in advance in writing by Owner**,** will be acceptable in lieu of securing and maintaining one or more of the coverages required in this Insurance Section. Such acceptance by Owner shall become a part of this insurance provision by reference herein.

For Workers' Compensation, such evidence shall consist of a copy of a current self-insured certificate for the State in which the work will be performed.

In order for self insurance to be accepted, the Contractors unsecured debt must have a financial rating of at least investment grade. For purposes of this section, "Investment Grade" means (i) if the Contractor has a Credit Rating from both S&P and Moody's then, a Credit Rating from S&P equal to or better than "BBB-" and a Credit Rating from Moody's equal to or better than "Baa3"; (ii) if the Contractor has a Credit Rating from only one of S&P and Moody's, then a Credit Rating from S&P equal to or better than "BBB-" or a Credit Rating from Moody's equal to or better than "Baa3; or (iii) if the Parties have mutually agreed in writing on an additional or alternative rating agency, then the equivalent credit rating assigned to an entity by such additional or alternative rating agency that is equal to or better than "BBB-" from S&P and/or "Baa3" from Moody's.

25.3. **Additional Insured, Loss Payee and Alternate Employer:** The intent of the Additional Insured requirement under the CGL, Auto, CPL, Umbrella/Excess, Aircraft and Watercraft policies is to include the Insured Entities, their directors, officers and employees, as Additional Insured's for liabilities associated with, or arising out of, all operations, work or services to be performed by or on behalf of the Contractor, including ongoing and completed operations, under this Agreement. The following language should be used when referencing the additional insured status: **National Grid USA, its subsidiaries and affiliates shall be named as additional insured.**

For the "alternate employer" endorsement, the following language should be used: **National Grid USA, its subsidiaries and affiliates.**

The Loss Payee language, as required in article 25.1.h, shall read as follows: **National Grid USA, its subsidiaries and affiliates shall be included as a Loss Payee as their interest may appear.**

To the extent the Contractor's insurance coverages do not provide the full Additional insured coverage as required herein, the Contractor agrees to indemnify and hold harmless the Insured Entities against any and all liability resulting from any deficiency in the Contractor's insurance coverage that may be out of compliance with this insurance requirement.

25.4. **Waiver of Recovery:** The Contractor and its insurance carrier(s) shall waive all rights of recovery against the Insured Entities and their directors, officers and employees, for any loss or damage covered under those policies referenced in this insurance provision, or for any required coverage that may be self-insured by the Contractor**.** To the extent the Contractor's insurance carriers will not waive their right of subrogation against the Insured Entities, the Contractor agrees to indemnify the Insured Entities for any subrogation activities pursued against them by the Contractor's insurance carriers. However, this waiver shall not extend to the gross negligence or willful misconduct of the Insured Entities or their employees, subcontractors or agents.

25.5. **Subcontractors**: In the event the Contractor uses subcontractors in connection with this Agreement, it is expressly agreed that the Contractor shall have the sole responsibility to make certain that all subcontractors are in compliance with these insurance requirements and remain in compliance throughout the course of this Agreement, and thereafter as required. The Contractor shall remain liable for the performance of the subcontractor, and such sub-contract relationship shall not relieve the Contractor of its obligations under this agreement.

Unless agreed to in writing the by the Risk Management Department of National Grid USA Service Company, any deductible or self insured retentions maintained by any subcontractor, which shall be for the account of the subcontractor, shall not exceed $100,000. In addition, subcontractor shall name both the Contractor and National Grid USA, (including their subsidiaries, affiliates, officers and employees), as additional insured's under the Commercial General Liability and Umbrella/Excess Liability insurance. If requested by Owner, the Contractor shall provide Owner with an insurance certificate from its subcontractor evidencing this coverage.

In the event any subcontractor is unable to maintain all of the same insurance coverage as required in this insurance article, the Contractor agrees to indemnify and hold the Insured Entities harmless against any and all liability resulting from any deficiency in subcontractor's insurance coverage that may be out of compliance with these insurance requirements.

25.6. **Insurance Certification**: Prior to starting work, the Contractor shall promptly provide Owner with (a) **Certificate(s) of Insurance** for all coverages required herein at the following address:

National Grid
Attn: Risk Management Bldg. B-3
300 Erie Boulevard West
Syracuse, NY 13202

Such certificates, and any renewals or extensions thereof, shall outline the amount of deductibles or self-insured retentions which shall be for the account of the Contractor. Such deductibles or self-insured retentions shall not exceed $100,000 unless agreed to in writing by the Risk Management Department of National Grid USA Service Company, whose approval shall not be unreasonably withheld, delayed or conditioned.

The Contractor shall provide Owner with at least 30 days prior written notice of any cancellation or diminution of the insurance coverage required in this insurance article.

25.7. **Insurance Obligation:** If any insurance coverage is not secured, maintained or is cancelled before Final Payment by the Contractor to the Owner, or the completion of all services, work or obligations provided for under this Agreement, whichever is later, and the Contractor fails immediately to procure other insurance as specified, Owner has the right, but not the obligation, to procure such insurance and to deduct the cost thereof from any sum due the Contractor under this Agreement or invoice the Contractor for said coverage.

25.8. **Incident Reports:** The Contractor shall furnish the Risk Management Department of National Grid USA Service Company with copies of any non-privileged accident or incident report(s)(collectively, the “Documents”) sent to the Contractor’s insurance carriers covering accidents, incidents or events occurring as a result of the performance of all operations, work and services to be performed by or on behalf of the Contractor under or in connection with this Agreement, excluding any accidents or incidents occurring on the Contractor property. If Owner is named in a lawsuit involving the operations and activities of the Contractor associated with this Agreement, the Contractor shall promptly provide copies of all insurance policies relevant to this accident or incident if requested by Owner. However, in the event such Documents are deemed privileged and confidential (Attorney Client Privilege), the Contractor shall provide the relevant facts of the accident or incident in a format that does not violate such Attorney Client Privilege.

25.9. **Other Coverage**: These requirements are in addition to any which may be required elsewhere in this Agreement. In addition, the Contractor shall comply with any governmental site specific insurance requirements even if not stated herein. This includes providing evidence of insurance and additional insured status, if necessary, to any third party property owner on which the Contractor’s work activities associated with this Agreement may be taking place.

25.10. **Coverage Representation:** The Contractor represents that it has the required policy limits available, and shall notify National Grid USA Service Company's Risk Management Department in writing when the minimum coverages required in this article herein have been reduced as a result of claims payments, expenses, or both. However, this obligation does not apply to any claims that would be handled solely with in the Contractor's deductible or self-insured retention.

25.11. **Responsibility:** The complete or partial failure of the Contractor's insurance carrier to fully protect and indemnify the Insured Entities, or the inadequacy of the insurance shall not in any way lessen or affect the obligations of the Contractor to Owner and the Insured Entities.

25.12. **Coverage Limitation**: Nothing contained in this article is to be construed as limiting the extent of the Contractor's responsibility for payment of damages resulting from all operations, work and services to be performed by or on behalf of the Contractor under or in connection with this Agreement, or limiting, diminishing, or waiving the Contractor's obligation to indemnify, defend, and save harmless Owner and the Insured Entities in accordance with this Agreement.

26.0 Assignment and Subcontracting

26.1. The Contractor shall not assign the Agreement or any part thereof or any rights or any monies due or to become due thereunder without the prior written consent of the Owner. The Owner may assign the Agreement or any part thereof to any affiliated company. Any assignment of the Agreement in violation of the foregoing shall be void at the option of the Owner.

26.2. If the Contractor terminates its existence as a corporate entity or if the Contractor is part of a merger, acquisition, sale, consolidation or take-over, or if all or substantially all of the Contractor's assets are transferred to another person, or business entity, the Owner shall, in its sole discretion, have the right to terminate the Agreement as set forth in Article 36.0 or to require the Contractor's successor to carry out the duties and obligations of the Contractor under the Agreement.

26.3. The Contractor shall not subcontract any of the Work under the Agreement without the prior written consent of the Owner. Any subcontracting of the Agreement in violation of the foregoing shall be at the option of Owner void.

26.4. If the Contractor proposes to subcontract any of the Work, it shall give written notice thereof to the Owner specifying the name, address, qualifications, and experience of the Subcontractor, and the specific Work which the Subcontractor is to perform. If the Owner consents in writing, the Contractor may subcontract the specific Work to the Subcontractor. All Work performed for the Contractor by a Subcontractor shall be pursuant to an agreement between the Contractor and Subcontractor which binds the Subcontractor to the applicable terms and conditions of

the Agreement for the benefit of the Owner and its affiliates.

26.5. If at any time during the performance of the Project, the Owner determines that any Subcontractor is not performing in accordance with the Agreement, the Owner may so notify the Contractor who shall take immediate steps to remedy the performance or to cancel the subcontract, whichever the Owner so requests.

26.6. All Subcontractors shall be subject to the foregoing provisions, and nothing contained in the Agreement shall create any contractual relation between any Subcontractor and the Owner or its affiliates, nor relieve the Contractor of any obligation to perform the Work. The Contractor shall be fully responsible to the Owner for the acts and/or omissions of any Subcontractor and of persons either directly or indirectly employed by them, as it is for the acts and omissions of persons directly employed by the Contractor as if no Subcontractors were in place. Any obligation imposed by the Agreement upon the Contractor, where applicable, shall be equally binding upon and shall be construed as having application to any Subcontractor.

26.7. No Subcontractor is intended to be or shall be deemed a third-party beneficiary of the Agreement. As a condition of any subcontract, the Contractor shall require any Subcontractor to remove any claim it might have, in law or equity directly against the Owner or its affiliates.

27.0 Subcontractor's Insurance and Indemnification

27.1. To the fullest extent permitted by law, the Contractor shall require Subcontractors to indemnify, defend at Owner's option, and hold the Owner and its affiliates and their officers, directors, employees, agents, servants, and assigns harmless from and against any and all claims, demands, actions, losses, damages and expenses, including attorney's fees and other expenses, resulting from or arising out of any of its Subcontractors' performance of Work, unless said loss is caused solely by the negligence of the Owner and provided that the Subcontractor is at least in part at fault. The complete or partial failure of any insurance carrier to fully protect and indemnify the Owner and its affiliates, or the inadequacy of the insurance, shall not in any way lessen or affect the obligation of the Contractor or its Subcontractors to indemnify the Owner and its affiliates.

27.2. Notwithstanding any other provision of the Agreement, Section 27.1 shall survive the termination or expiration of the Agreement.

28.0 Independent Contractor

28.1. The Contractor is, and shall at all times remain, an independent Contractor.

29.0 Examination, Inspection and Testing

29.1. The Contractor shall inspect all Work and make or cause to be made all tests required by the Agreement.

29.2. At any time during the term of the Agreement, the Owner or its designated representative shall be entitled to: (1) conduct and/or witness any test required by the Agreement; (2) otherwise inspect, witness and/or test the Work; (3) review the Contractor's and Subcontractor's procedures and documents pertaining to inspection, testing or witnessing of tests; and (4) review the Contractor's and Subcontractor's documents pertaining to the Work. For such purposes the Owner and its representatives shall be provided access to the Contractor's or Subcontractors' facilities or Work. In the event the Contractor employs Subcontractors for any part of the Work, the Contractor shall require Subcontractors to comply with the provisions of this Section 29.2.

29.3. The Contractor shall provide and maintain an examination, inspection and testing system acceptable to the Owner as required by the Agreement. The Contractor shall submit to the Owner the results of all such examinations, tests and inspections and shall maintain records of the same and make them available to the Owner.

29.4. In addition to any notice requirements otherwise set forth in the Agreement, the Contractor shall give the Owner (a) five (5) days prior written notice of any tests and inspections required by the Agreement, the Owner or its representatives' instructions, laws, regulations or ordinances to be witnessed or approved by the Owner, (b) timely notice of all other tests and inspections, and (c) forty-eight (48) hours additional notice prior to actual performance of any test or inspection. Inspections by the Owner shall be made promptly, and where practicable at the source of supply. If such Work should be covered up without approval or consent of the Owner, it shall, if required by the Owner, be uncovered for examination and properly restored at the Contractor's expense.

29.5. In all cases other than those specified in Section 29.4 (a), if the Owner requests Work to be uncovered for re-examination, the Contractor shall so comply. If such Work is found to be in accordance with the Agreement, the Owner shall pay the cost of re-examination and replacement. If such Work is not in accordance with the Agreement, the Contractor shall pay such cost. If the Owner is required to reimburse the Contractor for this Work, it shall be on the basis of Section 6.5.

29.6. All testing and inspections required under the Agreement shall be done in accordance with the Agreement. The Owner may perform technical inspection of the Work as may be set forth more fully in the Specification. The Field Representative shall have authority to reject all Work and materials which do not conform to the Agreement and respond to questions which arise in the execution of the Work.

29.7. Neither the Owner's nor its representative's inspection or testing, or witnessing of tests or inspections of the Work nor its failure to perform, require or approve tests or inspections shall (1) affect the warranties and guarantees of the Contractor, (2) relieve the Contractor from any responsibility or liability with respect to workmanship, materials or equipment, (3) constitute an acceptance of the Work by the Owner or an agreement by the Owner that the Work meets specified requirements, (4) impair the Owner's right to reject nonconforming or defective Work, (5) constitute a waiver by the Owner of any rights under the Agreement, or (6) relieve the Contractor of any of its obligations under the Agreement, notwithstanding the Owner's opportunity to inspect the Work, the Owner's knowledge of the nonconformance or defect, or the Owner's failure to earlier reject the Work.

29.8. The Owner shall have the right to inspect all materials, supplies, and equipment that are to be incorporated in the Project and make or cause to be made all tests required by the Agreement. The making of such inspections and tests by the Owner shall not relieve the Contractor of its responsibility for inspection and testing.

29.9. If the Owner determines that any Work has not satisfactorily passed any test or inspection or does not meet the requirements of the Agreement or that the Contractor has not conducted or has improperly conducted any required test or inspection, the Owner shall have the right, in addition to any other rights set forth in the Agreement, to (1) reject the Work and (2) stop the Work in accordance with Article 31.0.

29.10. The Owner reserves the right to inspect all Work prior to shipment. The Contractor shall notify the Owner in writing of all shipments not less than ten (10) Days prior to the date of shipment.

30.0 Quality Assurance

30.1. The Contractor shall maintain a formal quality assurance program throughout the duration of the Work. The quality assurance program shall provide continual inspection of construction operations and shall include coordination of the various trades involved in the Work.

30.2. The Owner shall have the right at any time during the term of the Agreement to review the Contractor's quality assurance program and to have the Contractor's Work tested and inspected by a third party. If such Work is found to be in accordance with the Agreement, the Owner shall pay the cost of re-examination and replacement. If such Work is not in accordance with the Agreement, the Contractor shall pay such cost.

30.3. The Owner shall have the right at any time during the term of the Agreement to review the Contractor's quality assurance program and to require the Contractor to remove and/or correct any Work at the Contractor's expense that is not performed in compliance with the Contractor's quality assurance program.

30.4. The Contractor shall retain all quality assurance documents, including but not limited to nondestructive examination records and testing records for the term of the Agreement. Upon Final Acceptance, termination, cancellation, expiration or as may be otherwise required by the Agreement, or sooner if requested by the Owner, the Contractor shall submit copies of all such documents to the Owner.

30.5. The Contractor shall designate a quality control representative who shall be responsible for the administration and performance of the quality control program. This person shall be authorized to stop the Work or any portion thereof without fear of retribution.

31.0 Default

31.1. If, during the term of the Agreement, the Owner notifies the Contractor that any part of the Work is defective or deficient or not in accordance with any provision of the Agreement, regardless of the stage of its completion or the time or place of discovery of such errors and regardless of whether Owner has previously accepted it, the Owner may order the Contractor to stop performing the Work until such defect or default has been corrected at the Contractor's sole expense. If the Contractor does not correct the default or defect within ten (10) Days of notice, the Owner may suspend its performance until such defect or default is corrected and/or remove and replace the defective Work at the Contractor's expense.

31.2. The Contractor shall, at its sole expense, promptly remove from the Project all Work condemned by the Owner as failing to meet the requirements of the Agreement, whether incorporated in the Project or not. The Contractor shall, at its sole expense, promptly replace and re-execute the condemned Work in accordance with the Agreement and shall make good all portions of the Project damaged by such removal and/or correction, including the work of other contractors.

31.3. If the Contractor does not take action to remove such condemned Work within ten (10) Days after written notice from the Owner, the Owner may remove said Work and store it at the Contractor's expense. If the Contractor does not pay the expense of such removal and storage within ten (10) Days thereafter, the Owner may, upon written notice, remove such Work, which cost shall be borne by the Contractor, or sell such Work at auction or at private sale and retain the proceeds.

31.4. If the Owner corrects Work or has Work corrected that has been damaged or that was not done in accordance with the Agreement, the Owner may deduct the cost from the price as determined under the Agreement or invoice Contractor for such costs, at its sole option. If Owner elects to invoice Contractor, Contractor shall remit to Owner such invoiced amount within thirty Days of the date of the invoice.

31.5 The Contractor shall not be entitled to an extension of time by reason of its Work being found defective, deficient or in any way not in accordance with the requirements of the Agreement.

32.0 Safety

32.1. The Contractor shall be solely responsible and assume all liability for the safety and supervision of its employees and other persons engaged in the Work or on the Site. The Contractor shall establish and effectively and continuously implement a safety program. The Contractor shall, and shall require its Subcontractors and their employees to comply with all applicable Federal, state and local safety directives, requirements, rules, regulations, laws and ordinances, whether the same are in force upon the execution of the Agreement or may in the future be passed, enacted or directed, including without limitation, compliance with the safety regulations and standards adopted under the Occupational Safety and Health Act of 1970 (OSHA), as amended from time to time. The Contractor shall continually inspect the Project and supervise its personnel to determine and enforce compliance with the above provisions.

32.2. The Contractor shall, and shall require its Subcontractors and their employees to comply with the Owner's Safety Requirements and all established Project safety rules as they may be amended from time to time and to take all necessary safety and other precautions to protect property and persons from damage or injury arising out of performance on the Project, whether the same are in force at the execution of this Agreement or may in the future be passed, enacted or directed.

32.3. The Contractor shall provide adequate safeguards, safety devices and protective equipment and enforce their use and take any other needed actions to protect the life, health and safety of the public and to protect property in connection with its performance on the Project.

32.4. The Contractor shall be responsible for providing adequate fire protection, shall take all necessary measures to prevent fire from occurring at the Site, and shall be responsible for all fires associated with or affecting its Work. The Contractor shall comply with the good practices recommended in National Fire Prevention Association Standard 241 and other national consensus standards for fire safety on construction projects.

32.5. The Contractor shall at its sole expense provide adequate first aid facilities and shall make those facilities available for the treatment of persons who may be injured or become ill at the Site or while engaged in the performance of Work.

33.0 Permits, Licenses, Laws, and Regulations

33.1. Permits and licenses of a temporary nature necessary for the prosecution of the Work shall be secured and paid for by the Contractor. Unless otherwise specified, permits, licenses and easements for permanent structures or permanent changes in existing facilities shall be secured and paid for by the Owner. In either case the Contractor shall be responsible for prosecuting its Work in accordance with the provisions of all applicable permits and licenses.

33.2. The Contractor shall complete the Work so that it complies with all applicable laws, rules, regulations, requirements, orders, directives, ordinances, codes and standards of all Federal, state, and local governmental agencies having jurisdiction over the Owner and its affiliates, the Contractor, the Subcontractors, or the Project, whether the same are in force at the execution of this Agreement or may in the future be passed, enacted or directed.

33.3. The Contractor shall not enter into negotiations with any governmental authority or agency for acceptance of variations from or revisions to safety or health, or air, water or noise pollution laws or regulations relating to the Agreement or to the performance thereof, without the Owner's prior written consent.

33.4. The Contractor shall, at its sole expense, defend, indemnify and hold harmless the Owner and its affiliates and their officers, directors, employees, agents, servants and assigns from and against all liabilities to third parties (including governmental entities) and all costs and expenses incurred by the Owner or its affiliates as a result of the Contractor's noncompliance with this Article 33.0.

34.0 Environmental Protection

34.1. The Contractor shall comply with all permit conditions, the Owner's policies set forth in the Agreement, and all applicable Federal, state and local environmental laws, requirements, orders, directives, rules, regulations, ordinances, and codes whether the same are in force at the execution of this Agreement or may in the future be passed, enacted or directed. The Contractor shall immediately notify the Owner of any citations or notices incurred on the Project and forward copies thereof immediately upon receipt to the Owner.

34.2. The Contractor shall conduct all operations in such a manner to minimize the impact upon the natural environment and shall comply with all solid waste, hazardous waste, health and safety, notice, training, and environmental protection laws, rules, regulations, requirements, orders, directives, ordinances, codes and standards, of all Federal, state, and local governmental agencies having jurisdiction over the Owner and its affiliates, the Contractor, the Subcontractors, or the Project, whether the

same are in force at the execution of this Agreement or may in the future be passed, enacted or directed ("hazardous waste" includes all substances which are or may be identified as such in 40 C.F.R. Part 261).

34.3. The Contractor shall provide the Owner with Material Safety Data Sheets covering all materials furnished under or otherwise associated with the Work under the Agreement, or provide the Owner with a document certifying that the Material Safety Data Sheets are not required for each such material. The Contractor shall submit a list to the Owner of all chemicals and other materials or products designated as hazardous in accordance with the OSHA hazardous Communication Standard and the EPA Superfund Amendments and Reauthorization Act, Title III that it brings on to the Site or any other property of the Owner, and the associated quantities. The Contractor shall handle, store, use and dispose of chemicals and hazardous products in accordance with the Agreement. The Contractor shall comply with all provisions of the OSHA, EPA and state regulations concerning Hazard Communication and Employee Right to Know Laws which cover training requirements for employees and communications requirements with employees, emergency responders and other potentially affected parties concerning toxic and otherwise hazardous materials or environments.

34.4. If any violation of environmental permits, licenses, and other environmental regulations or statutes occurs, the Contractor shall take immediate action to mitigate any further violation. The Contractor shall immediately notify the Owner of the violation and wait for further instructions from the Owner. If the Owner instructs the Contractor to remedy the violation, the Contractor shall contact the appropriate government agencies as required by law and report to the Owner, in writing, what actions it has performed and intends to take to remedy the violation. The Contractor shall also report to the Owner its intended procedures for preventing recurrence of such violations.

34.5. The Contractor shall, at its expense, take all actions necessary to protect the Owner, its affiliates and all third parties, including without limitation employees and representatives of the Owner, from any exposure to, or hazards of, hazardous and/or toxic wastes or substances, and the Contractor shall defend, indemnify, and hold harmless the Owner and its affiliates from any acts, claims, or damages claimed by the Contractor's employees, Subcontractors, and Subcontractors' employees, or any other liability incurred by the Owner, its affiliates or third parties arising from a discharge of, exposure to, handling, disposition or transportation of hazardous or toxic materials or waste.

34.6. In the event of a release or discovery of hazardous waste or substance, the Contractor shall respond in accordance with the Agreement.

34.7. If the Contractor fails to correct an environmental violation when directed by the Owner to do so, the Owner may direct a third party to do so at the Contractor's expense.

34.8. The Owner will notify the Contractor of any observed non-compliance; however, failure of the Owner to recognize or notify the Contractor of any non-compliance shall not relieve the Contractor of its contractual and legal responsibility for such non-compliance and to protect the environment.

34.9. The Contractor shall, at its sole expense, defend, indemnify and hold harmless the Owner and its affiliates and their officers, directors, employees, agents, servants and assigns from and against all liabilities to third parties (including governmental entities), whether civil or criminal, and all costs and expenses incurred by the Owner, its affiliates, third parties including other contractors and the Contractor as a result of the Contractor's noncompliance with this Article 34.0.

35.0 Owner's Right to Suspend Work

35.1. The Owner may at its sole discretion interrupt, suspend or delay execution of all or any part of the Project for any reason whatsoever upon written notice to the Contractor specifying the nature and expected duration of the interruption, suspension or delay. The Owner's notice of suspension shall designate the amount and type of labor and equipment to be committed to the Work, if any, during the period of suspension. The Contractor shall utilize its labor, equipment and any other resources so that costs are minimized during the suspension. Except as provided in Section 44.6, if, in the Contractor's opinion, such interruption would result in substantially increased cost, the Contractor shall promptly notify the Owner in writing in accordance with Article 6.0.

35.2. The Contractor shall immediately resume any of the Work so interrupted, suspended or delayed when directed to do so by the Owner. Except as provided in Section 35.4, the schedule and price as determined under the Agreement shall be revised to compensate for the interruption, suspension or delay. Adjustments to the price shall be adequate to compensate the Contractor for any verifiable reasonable costs or expenses the Contractor actually incurs as a direct result of the interruption, suspension or delay despite reasonable efforts to mitigate such costs and expenses. Said adjustment to the price and schedule shall constitute full settlement to Contractor for the suspension, however in no event shall the total paid to the Contractor exceed the Contract Price as set forth in the Agreement. In no event shall Contractor be entitled to any damages, including loss of anticipated profits.

35.3. In its notice of suspension, the Owner will designate what Work, if any, is to be continued. Upon receipt of such notice, the Contractor shall, unless otherwise directed by the Owner:

(a) Immediately discontinue the Work on the date and to the extent specified in the notice;

(b) Place no further orders or subcontracts for or in connection with the Project other than to the extent required in the notice of suspension;

(c) Promptly make every reasonable effort to obtain suspension upon terms satisfactory to the Owner of all orders and subcontracts to the extent required by the suspension; and

(d) Continue to protect and preserve the Project.

35.4. Notwithstanding any other provision of the Agreement, no compensation or extension of time will be granted to the Contractor for any suspension to the extent that the suspension is caused directly or indirectly by the Contractor's acts or failure to act, including, but not limited to, Contractor's failure to comply with the safety and environmental protection provisions of the Agreement or to the extent that an equitable adjustment is provided for or excluded under any other provision of the Agreement.

35.5. Notwithstanding the foregoing, if the Work may directly affect the continuity of electrical service, the Owner, at its option, may from time to time immediately suspend the Contractor's Work without prior written notice in order to avoid problems such as safety hazards or interruption of service.

36.0 The Owner's Right to Terminate Agreement for Cause

36.1. Notwithstanding any other provision of the Agreement, if the Contractor: (1) fails to prosecute the Work with diligence or has fallen behind the schedule and if in the opinion of the Owner, fails to take all necessary steps to get back on schedule; (2) fails to make prompt payment when due to Subcontractors; (3) fails to comply with any of the terms or conditions of the Agreement; (4) sells or transfers all or substantially all of its assets without the Owner's prior written consent; (5) enters into any voluntary or involuntary bankruptcy proceeding or receivership; (6) makes a general assignment for the benefit of its creditors; (7) should be experiencing a labor dispute which threatens adversely to affect the progress or cost of the Project hereunder or the Owner's operation; (8) abandons the Work; (9) loses control of the Work from any cause; (10) refuses or neglects to provide sufficient and properly skilled or other labor or sufficient materials of proper quality; or (11) directly or indirectly causes a disruption of the Project, or should its presence result in a disruption of the project or the Owner's operation, then the Owner shall have the right, without prejudice to any other right or remedy and after giving the Contractor written notice, to terminate the Agreement, in whole or part, and thereupon the Contractor shall be released, in whole or part, from the Agreement Such termination shall be effective upon the date set forth in the written notice and the Contractor shall immediately discontinue its Work to the extent specified in said notice. The Owner may exercise its right of partial termination under the Agreement any number of times.

36.2. In the event the Owner terminates all or any part of the Agreement for cause, the Owner may finish the Work or have the Work finished by a third party by whatever method it may deem expedient. The Owner shall not be required to obtain the lowest price for completion of the Work, but may make such reasonable expenditures as may best accomplish said completion; and the Contractor shall not be entitled to receive any further payment until the Work is finished. If the unpaid balance of the Contract Price as determined under the Agreement exceeds the expense of finishing the Work, including compensation for additional managerial and administrative services and all other costs and expenses actually incurred by the Owner as a direct result of the breach and termination, such excess shall be paid to the Contractor. If such expenses exceed the unpaid balance, the Contractor shall pay the difference to the Owner within thirty (30) Days of the Owner's notice thereof to the Contractor.

36.3. If all or any part of the Agreement is terminated for cause, the Owner shall be entitled, at its option, to (a) retain any Work previously delivered to the Project or paid for by the Owner, (b) require delivery of any Work and/or documents, regardless of their stage of completion which are in the Contractor's possession or control, (c) require the Contractor to assign to the Owner all or any of the Contractor's rights with respect to orders or subcontracts which relate to the Project, (d) reject all or any of the Work, regardless of whether it has been delivered to the Project, (e) require the Contractor to cooperate with a new contractor for the period of time necessary to familiarize the new contractor with the Project, (f) have another contractor complete the Agreement at the Contractor's expense, (g) require completion according to the terms of the Agreement of any Work which has not been terminated, and (h) take possession of all or part of the Contractor's equipment located at the Site for the purpose of completing the Work. The Contractor shall be required to refund to the Owner any payments theretofore made for rejected Work. The Owner shall be entitled to withhold from any payment otherwise due to the Contractor under this Article 36.0 an amount sufficient to protect the Owner from any outstanding or anticipated liens or claims in connection with Work which has not been rejected or anticipated costs to complete the Work in excess of the remaining Contract Price. The Owner shall not be liable for any loss or damage (including, but not limited to, special, indirect, incidental, or consequential damages or anticipated profits) incurred by reason of termination for cause of the Agreement.

36.4. No amount shall be paid or payable by the Owner for the Contractor's termination costs including, but not limited to, demobilization costs, costs associated with the transfer or termination of personnel or loss of anticipated profit.

36.5. All warranties and guarantees set forth in Article 21.0 shall survive termination of the Agreement to the extent that they relate to Work which has not been rejected or terminated, and any other provisions of the Agreement which survive the date of termination shall continue to be binding upon the Contractor.

36.6. In the event that a termination by the Owner of all or part of the Agreement under this Article 36.0 is determined to have been made without cause, such termination shall thereafter be treated as termination for convenience under Article 37.0.

37.0 The Owner's Right to Terminate Agreement for Convenience

37.1. Notwithstanding any other provision of the Agreement, the Owner may, at its sole discretion, at any time, for any reason, by notice to the Contractor, terminate the Agreement in whole or in part without cause, and such termination shall not constitute a breach of contract. Such termination shall be effective upon the date set forth in the written notice and the Contractor, unless otherwise directed by the Owner, shall immediately:

(a) Stop its Work hereunder on the date and to the extent specified in said notice;

(b) Place no further orders or subcontracts for any part of the Project other than for Work which has not been terminated;

(c) Terminate, as directed by the Owner, all orders and subcontracts to the extent that they relate to Work which has been terminated;

(d) Settle, with the approval or ratification of the Owner, to the extent the Owner may require, all outstanding liabilities and claims arising out of the Contractor's termination of orders and subcontracts pursuant to Section 37.1 (c);

(e) Assign to the Owner, as required by the Owner, any and all of the Contractor's rights with respect to orders or subcontracts which relate to terminated Work;

(f) Deliver to the Owner, as required by the Owner, any or all Work or documents, technical data or other information and materials regardless of their stage of completion, which are in the Contractor's possession or control;

(g) Use its best efforts to sell, transfer or otherwise dispose, for the Owner's credit, in the manner, at the times, to the extent and at the prices directed or authorized by the Owner, any or all of the Work, provided that the Contractor (a) shall not be required to extend credit to any buyer, and (b) may acquire any such Work upon the same terms as it would be entitled to sell or transfer such Work to a third party;

(h) Work with a new contractor for the period of time necessary to familiarize the new contractor with the Project;

(i) Complete any Work which has not been terminated pursuant to said notice; and

(j) Take whatever action may be necessary to preserve and protect the Work and to mitigate the Contractor's damages in connection with the partial or complete termination of the Agreement.

37.2. If a Notice to Proceed has been issued, the Contractor may be entitled to payment ("Partial Performance Payment") for any Work actually performed prior to termination under this Article 37.0. In no event shall the total of the "Partial Performance Payment" and/or "Termination Costs" (as defined in Section 37.6) exceed the price as determined under the Agreement.

37.3. The Contractor's claim for "Partial Performance Payment" and/or "Termination Costs" shall be contingent upon Contractor's good faith diligent compliance with the provisions of Section 37.1 (a) through (j) inclusive, to the Owner's satisfaction which will not be unreasonably withheld, and shall be submitted to the Owner within three (3) months of the effective date of termination under this Article 37.0. If said claim is not submitted within three (3) months, the Contractor waives any right to the claim for "Partial Performance Payment" and/or "Termination Costs".

37.4. All warranties and guarantees set forth in Article 21.0 shall survive termination of the Agreement to the extent that they relate to Work which has not been rejected or terminated, and any other provisions of the Agreement which survive the date of termination shall continue to be binding upon the Contractor.

37.5. A termination for convenience shall not entitle the Contractor to damage remedies that would normally arise as a result of breach of contract, whether such damage remedies are categorized as direct, special, indirect, incidental or consequential damages. Rather, the Contractor's rights are exclusively limited to "Partial Performance Payment" and/or "Termination Costs".

37.6. The Contractor's "Termination Costs" shall be limited to: (1) reasonable documented direct costs that are directly associated with termination responsibilities identified in Section 37.1 (d), (f). (g), (h), and (j); and (2) reasonable demobilization costs incurred within thirty days of the date of termination. In no case shall the Contractor be entitled to recover lost profits. In no case shall the Contractor be entitled to recover any costs and expenses associated with the inability of the Contractor to find work for idle employees and equipment that have been rendered idle as a result of termination of the Agreement.

38.0 Removal of Equipment

38.1. In the case of termination of the Agreement, the Contractor, if notified to do so by the Owner, shall promptly, but in any event not to exceed seven (7) Days, remove any part or all of its equipment, material, and supplies from the Site, failing which the Owner shall have the right to remove such equipment and supplies at the expense of the Contractor.

39.0 Force Majeure

39.1. Except as provided in Sections 31.1 and 44.6, any delay of either party in the performance of its required obligations hereunder shall be excused if and to the extent caused by unprecedented weather conditions, fire, explosion, riot, war, strike by the Owner or its affiliates' employees, court injunction or order, Federal and/or state law or regulation, or order by any Federal or state regulatory agency, but only to the extent that: (1) such events are beyond the reasonable control of the party affected; (2) such events were unforeseeable by the affected party and the effects were beyond its reasonable efforts to prevent, avoid or mitigate; (3) said affected party uses every reasonable effort to prevent, avoid or mitigate the effects; (4) prompt written notice of such delay be given by such affected party to the other; and (5) the party affected uses its best efforts to remedy the resulting effects in the shortest practicable time. Upon receipt of said notice, if necessary, the time for performing the affected activities shall be extended for a period of time reasonably necessary to overcome the effect of such delays. Notwithstanding the foregoing, the Owner shall have the right to terminate the Agreement under Article 36.0.

39.2. The Contractor shall not be entitled to additional compensation by reason of the Contractor having been delayed in performance of its obligations due to a force majeure event; nor shall the Contractor be entitled to any damages, including anticipated profits; an extension of time shall constitute the Contractor's sole remedy.

39.3. The written notice required under Section 39.1 shall be sent by the affected party within five (5) Days of the commencement of any such delay and shall specify the nature, cause, date of commencement and anticipated extent of such delay or nonperformance and whether it anticipates that any delays in scheduled delivery or performance will result. Such notice shall be submitted in ample time to permit full investigation and evaluation of any claimed delay or nonperformance. Failure to provide such notice shall constitute a waiver of any claim.

39.4. Within thirty (30) Days after the termination of any delay occasioned by an event of force majeure, the affected party shall give written notice to the other party specifying the actual duration and impact of the delay.

39.5. Notwithstanding the foregoing, neither the Contractor’s inability to obtain required permits on schedule, nor strikes and/or labor disputes involving the Contractor's and its Subcontractors' employees shall be considered a force majeure event.

40.0 Extensions of Time

40.1. The Owner shall extend the schedule for changes in the Project, as provided in Article 6.0, for force majeure events, as provided in Article 39.0, or for suspension of Work, as provided in Article 35.0. Unless

pursuant to Articles 6.0 or 35.0, extensions of time shall not be a basis for any increased payment under the Agreement.

40.2. The Contractor shall give the Owner prompt written notice of any occurrence or conditions which in the Contractor's opinion entitle it to an extension of time. Such notice shall be submitted in ample time to permit full investigation and evaluation of the Contractor's claim. Failure to provide such notice shall constitute a waiver by the Contractor of any claim. The Owner shall acknowledge receipt of the Contractor's notice within ten (10) Days of its receipt.

41.0 Publicity

41.1. Notwithstanding any other provision of the Agreement, the Contractor shall not, without the Owner's prior written consent, publish any information pertaining to the Agreement, whether during the term of the Agreement or thereafter.

41.2. The Contractor shall not display any sign, posters or other advertising matter in or around the Site without prior written approval of the Owner.

42.0 Proprietary and Confidential Information

42.1. Notwithstanding any other provision of the Agreement, the Contractor recognizes that the Owner, or its affiliates may find it necessary or desirable to make information available to the Contractor, its Subcontractors, or their employees which is deemed proprietary and/or confidential information. In this regard, it is agreed that neither the Contractor, nor its Subcontractors, nor their employees shall without the prior written approval of the Owner, at any time, disclose to third parties any information which may be disclosed to them or to which they are given access during the performance of the Agreement, or to publish this information or any photographs in any form, at any time, whether during the term of the Agreement or thereafter.

42.2. In no event shall data or information provided by the Contractor under the Agreement or generated as a result of performance of the Work thereunder be deemed as proprietary to the Contractor. Likewise, reports generated as a result of performance of the Work thereunder shall not be proprietary to the Contractor.

43.0 Cleaning Up

43.1. The Contractor shall at all times keep its work areas in a neat, clean, and safe condition in accordance with the Agreement.

43.2. The Contractor shall clean up and remove from the Site and adjoining property and ways all waste materials and rubbish on a daily basis.

43.3. Upon completion of the Work, the Contractor shall remove all excess material, equipment, temporary facilities and rubbish; shall repair or replace, in an acceptable manner, all property which may have been damaged or destroyed at the Site; and shall leave the Site in a neat and presentable condition and return disrupted or damaged areas to the condition existing before the start of its Work. Site clean-up approval is required from the Owner prior to Final Acceptance.

43.4. Work shall be performed in a manner which minimizes to the greatest extent possible any disruption to the surrounding communities and general public.

43.5. In the event of the Contractor's failure to comply with this Article 43.0 the Owner shall be entitled to withhold from the Contractor, or obtain reimbursement from the Contractor for, any costs incurred in accomplishing the same.

44.0 Labor Relations

44.1. The Contractor shall give the Owner prompt written notice of any labor dispute or anticipated labor dispute which may reasonably be expected to affect: (1) the cost, schedule or performance of the Project; (2) other activities at the Site; or (3) the Owner's ongoing operations.

44.2. The Contractor shall conduct its labor relations in accordance with its established labor agreements. The Contractor agrees to advise the Owner, prior to making any new commitments, whether the negotiation of new agreements or understandings with local or national labor organizations affect the Work to be performed under the Agreement.

44.3. In addition to the Contractor's legal obligations under the Labor Management Relations Act, in the event the Contractor is a subscriber to a multi-employer bargaining association or group, the Contractor shall, if the Owner so directs, participate to the fullest extent in the collective bargaining of that group with any of those labor organizations claiming jurisdiction over any portion of the Project under the Agreement or any subcontract.

44.4. To the extent applicable to Work being performed under the Agreement, the Contractor shall supply the Owner with copies of all national agreements to which it is a party. No later than thirty (30) Days before the expiration of any labor agreement which may affect the Project, the Contractor shall meet with the Owner to discuss the appropriate course of action.

44.5. The Contractor shall take any and all steps that may be available in connection with the resolution of violations of collective bargaining agreements and jurisdictional disputes, including, without limitation, the filing of appropriate process with any court or administrative agency having jurisdiction to settle, enjoin or to award damages resulting from

violations of collective bargaining agreements or jurisdictional disputes.

44.6. In the event of a labor dispute which threatens to adversely affect the progress or cost of the Project, the Owner reserves the right to restrict additional hiring of employees by the Contractor or any Subcontractors, or to suspend or delay the Project, or in the Owner's sole discretion to terminate the Agreement under Article 36.0, without incurring contractual liability to the Contractor or its Subcontractors or suppliers. This Section shall be applicable whether or not the Contractor or any Subcontractor is directly involved in said labor dispute and whether or not the dispute involves or affects employees or disputing parties standing in the proximate relation of employer and employee with the Contractor or Subcontractor.

45.0 Rights of Various Interests

45.1. Whenever work being done by the Owner's or by other contractors' forces is contiguous to Work covered by the Agreement, the respective rights of the various interests involved shall be established by the Owner to secure the completion of the various portions of the Project in an orderly and timely manner. At no time shall Contractor restrict the movement of other personnel and/or equipment in the performance of their work.

45.2. The Contractor shall be responsible for promptly notifying the Owner in the event that it shall be necessary to coordinate work between the Contractor and others.

46.0 Additional Contracts

46.1. The Owner reserves the right to enter into other contracts related to the Agreement or the Project and may require any other contractor, including the Owner or its affiliates, to provide labor or materials to the Project, and such other contracts shall not be cause for the Contractor to claim a change in the Project under Article 6.0. The Contractor shall afford other contractors, the Owner or its affiliates reasonable opportunity for the introduction and storage of their materials and the execution of their work, and the Contractor shall cooperate with the Owner, its affiliates and any other contractors in coordinating their activities.

46.2. The Contractor acknowledges that coordination with other contractors, the Owner or its affiliates and occasional rescheduling of the Work or Project may be required and that minor delays in performance of the Work may result. Any difference or conflict which may arise between the Contractor and other contractors, or between the Contractor and workmen of the Owner or its affiliates, in regard to their work, shall be resolved as determined by the Owner. Notwithstanding any other provision of the Agreement, the Contractor acknowledges that such coordination, occasional rescheduling and minor delays shall not justify an increase in the price as determined under the Agreement or an

extension of time for delivery or performance.

46.3. The Contractor shall promptly make good, at its sole expense, any injury or damage that may be sustained by other contractors or the Owner and its affiliates as a result of the Contractor's activities under the Agreement.

46.4. If the Contractor's Work depends upon the work of others, the Contractor shall inspect and give the Owner prompt written notice of any defects in the work that renders it unsuitable for the Contractor to perform its Work.

47.0 Liens

47.1. The Contractor, for itself, its Subcontractors and all other persons performing under the Agreement hereby waives, to the full extent permitted by law, all right to have filed or maintained any mechanics' or other liens or claims for or on account of the services, labor or materials to be furnished under the Agreement. The Contractor shall pay punctually for all labor, equipment and materials and all liabilities incurred by it in performance of the Agreement, and when requested shall furnish Owner with satisfactory evidence of such payment.

47.2. The Contractor shall (1) indemnify and save harmless the Owner and its affiliates and their officers, directors, employees, agents, servants, and assigns from all laborers', materialmen's, and mechanics' liens upon the real property upon which the Project is located arising out of the Services, equipment and materials furnished by the Contractor and its Subcontractors in connection with the Project, and (2) to the full extent permitted by law, keep said property free and clear of all liens, claims, and encumbrances arising from the performance of the Agreement by the Contractor and Subcontractors.

47.3. The Contractor shall give the Owner twenty (20) Days written notice prior to filing a lien on the property and shall use all reasonable efforts to give the Owner twenty (20) Days written notice prior to a Subcontractor filing a lien on the property.

47.4. If the Contractor places a lien on the Owner's or its affiliates' property or fails to provide a bond and subsequently discharge a Subcontractor lien, the Owner shall have the right to bond said lien or take other similar action to discharge the lien and withhold payment therefore from the Contractor as set forth in Section 12.1. The Contractor shall be liable to Owner for all costs and legal expenses incurred by Owner in discharging such liens.

47.5. If the Owner does not require a lien bond under Article 48.0 and if a lien is placed on the property by any Subcontractor, the Contractor shall within forty-eight (48) hours, or such other time as agreed to by the Owner, post a bond covering the lien and shall discharge the lien within thirty (30) Days.

47.6. The Contractor's indemnification obligations under this Article 47.0 shall survive the termination, cancellation or expiration of the Agreement.

48.0 Payment Bond, Performance Bond and Lien Bond

48.1. Within 15 Days of signing the Agreement, the Contractor shall, at the Owner's option, provide the Owner with a Payment Bond, a Performance Bond and a Lien Bond for the Work in the amount of the Contract Price covering the payment of, and performance of all obligations arising under the Agreement and to keep the Owner's property clear of any encumbrances relating to the Agreement. The Owner may require additional bonds if the value of the Agreement, in the Owner's opinion, is appreciably increased.

48.2. The Payment Bond and the Performance Bond form shall be AIA Document A312, as published by the American Institute of Architects, except that the definition of claimant, found in Section 15.1 of the Payment Bond, shall be modified to include all persons or entities, of any tier, having a direct contract with the Contractor or with a Subcontractor (including suppliers), of any tier, to furnish labor, materials or equipment for use in the performance of the Agreement. All other parts of the definition of claimant shall remain unmodified. The Lien Bond shall be on the form as set forth in the Agreement.

48.3. The Contractor shall furnish a copy of the Payment Bond to all Subcontractors (including suppliers) with whom it has a contract to furnish labor, equipment or materials for use in the performance of the Agreement, and shall require that all Subcontractors, of any tier, supply copies of the Payment Bond to their Subcontractors (including suppliers).

49.0 Records and Accounts

49.1. The Contractor shall, and shall require Subcontractors, for the Owner's benefit, at their own expense, to maintain a method of accounting in accordance with generally accepted accounting procedures and practices with respect to all matters pertinent to the Agreement. In so far as the Contractor's and Subcontractors' books, records, books of account, correspondence, contracts and subcontracts, and vouchers pertain to Work under the Agreement, or claims made by the Contractor for extension of time, costs, or expenses under any provisions of the Agreement, they shall be made available to the Owner or its authorized representative for inspection and audit and shall be kept in a manner which (1) adequately permits evaluation and verification of any invoices, payments or claims based on the Contractor's or Subcontractors' actual costs incurred in the performance of the Project and (2) permits the Contractor to furnish the Owner an accurate written allocation of the total amount paid for the Project and such further records as may be reasonably required by the Owner.

49.2. The Contractor shall maintain records during the term of the Agreement, including any records relating to the employment or hiring of minorities and/or females, until (I) three (3) years after the expiration of the last expiring warranty, or (2) the expiration of any period for which the Owner or its affiliates are required, by any regulatory agency, to have such records maintained, whichever is later. Additionally, records that relate to disputes, appeals, litigation, or the settlement of claims arising out of the performance of the Agreement shall be retained until such disputes, appeals, litigation, or claims have been finally settled. In lieu of retaining such records the Contractor may deliver such records to the Owner at any time after the expiration of the last expiring warranty. The Contractor agrees to make such records available to the Owner or its authorized representative at no cost to the Owner or its authorized representative for inspection or audit at any time during such period.

49.3. The Owner shall give the Contractor and Subcontractors reasonable notice of any intended inspection or audit of their records.

49.4. The Owner and its authorized representative shall have access, during normal working hours, to all necessary Contractor and Subcontractor facilities and shall be provided with an adequate and appropriate work space in order to conduct inspections and audits of such records.

49.5. The Contractor shall require Subcontractors to comply with the provisions of this Article 49.0 for the benefit of the Owner.

49.6 If the Owner's inspection or audit identifies any inconsistencies, errors or costs not expended in accordance with the Agreement, the Contractor shall make appropriate adjustments as may be required, including refund to the Owner.

50.0 Equal Employment Opportunity

50.1. The Contractor and Subcontractors shall comply with all applicable Federal, state and other anti-discrimination laws, the standards and regulations issued thereunder and the amendments thereto.

50.2. The Contractor and Subcontractors shall comply, to the extent applicable, with the provisions of the following Executive Orders, the standards and regulations issued thereunder and the amendments thereto:

(a) Executive Order 11141, relating to discrimination based on age;

(b) Executive Order 11246, relating to equal employment opportunity;

(c) Executive Order 11625, relating to minority business enterprises;

(d) Executive Order 11701, relating to employment of veterans;

(e) Executive Order 11758, relating to the employment of handicapped; and

(f) for any of the Work performed in New York the Human Rights Law of New York (Article 15 of the Executive Law).

50.3. The Executive Orders mentioned in Section 51.2 and the regulations thereunder are incorporated herein by reference with the same force and effect as if set forth herein verbatim.

51.0 Utilization of Small Business Concerns

51.1 It is the policy of the United States that small business concerns, veteran-owned small business concerns, service disabled veteran-owned small business concerns, HUBZone small business concerns, small disadvantaged business concerns, and women-owned small business concerns shall have the maximum practicable opportunity to participate in performing contracts let by any Federal agency, including contracts and subcontracts for subsystems, assemblies, components, and related services for major systems. It is further the policy of the United States that its prime contractors establish procedures to ensure the timely payment of amounts due pursuant to the terms of their subcontracts with small business concerns, veteran-owned small business concerns, service-disabled veteran-owned small business concerns, HUBZone small business concerns, small disadvantaged business concerns, and women-owned small business concerns.

51.2 The Contractor hereby agrees to carry out this policy in the awarding of subcontracts to the fullest extent consistent with efficient contract performance. The Contractor further agrees to cooperate in any studies or surveys as may be conducted by the United States Small Business Administration or the awarding agency of the United States as may be necessary to determine the extent of the Contractor's compliance with this clause.

51.3 *Definitions*. As used in this contract—
"HUBZone small business concern" means a small business concern that appears on the List of Qualified HUBZone Small Business Concerns maintained by the Small Business Administration.

"Service-disabled veteran-owned small business concern"—
(1) Means a small business concern—
(i) Not less than 51 percent of which is owned by one or more service-disabled veterans or, in the case of any publicly owned business, not less than 51 percent of the stock of which is owned by one or more service-disabled veterans; and
(ii) The management and daily business operations of which are controlled by one or more service-disabled veterans or, in the

case of a service-disabled veteran with permanent and severe disability, the spouse or permanent caregiver of such veteran.

(2) Service-disabled veteran means a veteran, as defined in 38 U.S.C. 101(2), with a disability that is service connected, as defined in 38 U.S.C. 101(16).

"Small business concern" means a small business as defined pursuant to Section 3 of the Small Business Act and relevant regulations promulgated pursuant thereto.

"Small disadvantaged business concern" means a small business concern that represents, as part of its offer that—

(1) It has received certification as a small disadvantaged business concern consistent with 13 CFR part 124, Subpart B;
(2) No material change in disadvantaged ownership and control has occurred since its certification;
(3) Where the concern is owned by one or more individuals, the net worth of each individual upon whom the certification is based does not exceed $750,000 after taking into account the applicable exclusions set forth at 13 CFR 124.104(c)(2); and
(4) It is identified, on the date of its representation, as a certified small disadvantaged business in the database maintained by the Small Business Administration (PRO-Net).

"Veteran-owned small business concern" means a small business concern—

(1) Not less than 51 percent of which is owned by one or more veterans (as defined at 38 U.S.C. 101(2)) or, in the case of any publicly owned business, not less than 51 percent of the stock of which is owned by one or more veterans; and
(2) The management and daily business operations of which are controlled by one or more veterans.

"Women-owned small business concern" means a small business concern—

(1) That is at least 51 percent owned by one or more women, or, in the case of any publicly owned business, at least 51 percent of the stock of which is owned by one or more women; and
(2) Whose management and daily business operations are controlled by one or more women.

51.4 Contractors acting in good faith may rely on written representations by their subcontractors regarding their status as a small business concern, a veteran-owned small business concern, a service-disabled veteran-owned small business concern, a HUBZone small business concern, a small disadvantaged business concern, or a women-owned small business concern.

52.0 Jurisdiction and Governing Laws

52.1. Unless other governing laws and/or other jurisdictions are specifically established in this Agreement, this Agreement shall be deemed to be executed in the Commonwealth of Massachusetts and the Agreement shall be interpreted and enforced according to the Laws of the Commonwealth of Massachusetts; provided, however, that in the event that the Work is to be performed solely in the State of New York' then this Agreement shall be deemed to be executed in the State of New York and shall be interpreted and enforced according to the laws of the State of New York.

52.2. Unless otherwise specifically established in this Agreement, only the courts in the State as determined in Section 52.1 shall have jurisdiction over the Agreement and the Work and any controversies arising out of the Agreement or Work shall be submitted only to the courts of such State.

52.3. The Contractor hereby waives personal service by manual delivery and agrees that service of process on the Contractor in any action arising out of the Agreement may be made by registered or certified return receipt requested, directed to Contractor at the Contractor's address set forth in the Agreement.

53.0 Headings

53.1. Paragraph headings are for the convenience of the parties only and are not to be construed as part of the Agreement.

54.0 Severability

54.1. In the event any portion or part of the Agreement is deemed invalid, against public policy, void or otherwise unenforceable by a court of law, the parties shall negotiate in good faith an equitable adjustment in the affected provision of the Agreement; however, the validity and enforceability of the remaining parts thereof and any other part or provision of the Agreement shall be otherwise fully enforceable.

55.0 Waiver and Election of Remedies

55.1. Waiver by the Owner or the Contractor of any term, condition or provision of the Agreement shall not be considered a waiver of that term, condition or provision in the future.

55.2. The failure of either party to enforce any of the terms, conditions or provisions of the Agreement or to require compliance with any of its terms, conditions or provisions at any time during the pendency of the

Agreement, shall in no way affect the validity of the Agreement, or any part thereof, and shall not be deemed a waiver of the right of such party thereafter to enforce any term, condition or provision of the Agreement.

55.3. No waiver, consent or modification of any of the provisions of the Agreement shall be binding unless in writing and signed by an authorized representative of the Owner and of the Contractor.

56.0 Personnel Background Checks

56.1. The Contractor shall, and shall require its Subcontractors to comply with the Owner's background check requirements as defined in the Owner's policies and procedures as set forth in this Agreement and as may be amended from time to time.

56.2. In the event of Contractor's non-compliance with any or all of these requirements, the Owner may cancel the Agreement for its convenience pursuant to the termination provisions contained in the Agreement except that in no event shall the Owner or its affiliates be liable for any termination cost/charges to the Contractor beyond compensation for goods or services provided up to the date of such cancellation.

56.3. The Contractor shall be wholly and solely responsible for all acts of its personnel while engaged in the Work. Any illegal acts, including but not limited to terrorism affecting property and/or personnel of National Grid USA, Contractor or third parties shall be considered grounds for finding the Contractor in default and terminating the Agreement in accordance with Article 36.0, in addition to all other rights and remedies available to National Grid USA under applicable law.

ACCEPTANCE OF CONDITIONS

The Contractor hereby agrees that any Work (as defined in the Purchase Order) performed for Company in compliance with any order, written or verbal, shall be governed by the terms and conditions cited in the Purchase Order whether or not specific reference is made to the below noted Terms and Conditions by the Purchase Order unless the Purchase Order specifically contains terms and conditions other than those contained in said Terms and Conditions; then those terms will apply to the extent that they are different.

Receipt of the below noted Terms and Conditions is hereby acknowledged on the date executed below, and the undersigned agrees to be bound to same and the signatory represents complete authority to sign on behalf of the Contractor.

_____
Contractor

By: _____

_____
Title

Date :_____

_____
Street Address

_____
City, State, Zip Code

Reference Terms and Conditions Document No. 00700

Revision Date 9/30/08

SUPPLEMENTAL CONDITIONS

TO

NATIONAL GRID
REMEDIAL CONSTRUCTION
PURCHASE ORDERS

SUPPLEMENTAL CONDITIONS – CONSTRUCTION

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SUPPLEMENTAL CONDITIONS
TO
NATIONAL GRID PURCHASE ORDERS
FOR REMEDIAL CONSTRUCTION

SC-1.0 SUPPLEMENTAL DEFINITIONS

Whenever the words defined or pronouns used in their stead, occur in these Contract Documents, they shall have the meaning given below:

AUTHORIZATION FOR CONTRACT CHANGE (ACC) shall mean a written order to the Contractor, signed by the Engineer and National Grid on which is stated the addition, deletion, or revision in the Work, together with any adjustment in Contract price or Contract time. One or more ACCs may be incorporated into a Change Order for making payments to the Contractor.

BID shall mean the offer or proposal submitted, signed and sealed, in the form prescribed in the Contract Documents setting forth the prices for the Work to be performed.

BONDS shall mean any or all of the following: performance, payment, labor and material bonds and other instruments of security furnished by the Contractor and his surety or sureties in accordance with the Contract Documents.

CHANGE ORDER shall mean the formal document executed by National Grid incorporating any Authorization For Contract Change (ACC) into the Contract.

CLAIM shall mean a demand or assertion by one of the parties seeking, as a matter of right, adjustment or interpretation of Contract terms, payment of money, extension of time or other relief with respect to the terms of the Contract. The term “Claim" also includes other disputes and matters in question between National Grid and the Contractor arising out of or relating to the Contract. The responsibility to substantiate Claims shall rest with the party making the Claim.

CONTRACT or CONTRACT DOCUMENTS shall mean any or all of the following: the Request For Quotations, Information For Bidders, Bid, Agreement, General Conditions, Special Conditions, Technical Specifications, Payment Items, contract Drawings, all interpretations or Addenda thereto and Change Orders issued by National Grid or the Engineer with the approval of National Grid.

Anything shown on the Contract Drawings and not mentioned in the Specifications or mentioned in the Specifications and not shown on the Contract Drawings, shall have the same effect as if shown or mentioned, respectively, on both.

CONTRACT DRAWINGS shall mean those plans and drawings which show the scope and character of the Work and are specifically referred to as such in these Documents or in any Addendum or Addenda.

ENGINEER shall mean the Consulting Engineer or Engineers engaged by National Grid for the project and shall include any properly authorized assistants acting for the Consulting Engineer within the scope of the particular duties assigned to them.

SITE shall mean the area included within the property lines shown on the Contract Drawings including temporary easements, and other such areas adjacent thereto as may be designated by National Grid in writing.

SPECIFICATIONS shall mean any or all of the following: the General Conditions, Supplemental Conditions, Material and Performance Sections, Measurement for Payment Sections, and any addenda pertaining thereto.

SURETY or SURETIES shall mean the Bondsmen or party or parties who have made secure the fulfillment of the Contract by a Bond and whose signatures are attached to said Bond.

SC-2.0 CARE AND PROTECTION OF WORK

From the commencement until the acceptance of the Work, the Contractor shall be solely responsible for the care of the Work covered by the Purchase Order and for the materials, supplies and equipment delivered at the Site intended to be used in the Work; and all injury or damage to the same from whatever cause, shall be the responsibility of the Contractor. The Contractor shall provide suitable means of protection for and shall protect all materials intended to be used in the Work, all Work in progress, and all completed Work. The Contractor shall take all necessary precautions to prevent injury or damage to the Work by flood, fire, freezing or from inclemencies of the weather.

The Contractor shall neither load nor permit any part of a structure to be loaded with weights that will endanger the structure, and shall not subject any part of the Work to stresses or pressures that will endanger it.

In the event that National Grid must take occupancy and the Contractor is behind schedule, the provisions of the Section still apply.

SC-3.0 POLLUTION CONTROL

The Contractor shall not permit pollutants introduced to the Work site by the Contractor (harmful to humans, fish and other life), such as chemicals, fuels, lubricants, calcium chloride, sewage, water containing sediments and other deleterious, poisonous, toxic or oxygen demanding substances to enter or leach into streams, lakes, other surface waters or into the ground water.

SC-4.0 WATER PRIVILEGES

Where the public water supply is available and under control of National Grid, it will be furnished the Contractor, or, when there is more than one Contractor, the General Contractor. Such water supply shall be subject at all times to the control and supervision

of the superintendent or manager of the water utility, and at a cost to be paid by the Contractor, as determined by the schedule of charges on file at the offices of the utility. Prior to making use of any public water for any particular purpose, the Contractor shall obtain written permission from the utility's superintendent or manager.

Where the public water supply is owned or controlled by a private company, corporation or individual or municipality other than National Grid, the Contractor or, when there is more than one Contractor on the Project, the General Contractor shall make such arrangements to service with the owners thereof, as the Contractor requires.

SC-5.0 TEMPORARY SANITARY FACILITIES

Sanitary conveniences in sufficient numbers and convenient locations for the use of all persons employed on the Work, properly screened from public observation, shall be provided, maintained, and removed by the Contractor or by the General Contractor. The contents of the same shall be removed and disposed of in accordance with applicable laws codes and regulations. The Contractor shall rigorously prohibit the committance of nuisances within, on, or about the Work.

The Contractor and each Subcontractor shall supply sufficient drinking water to all of his employees.

The Contractor shall also obey and enforce such other sanitary regulations and orders and shall take such precautions against infectious diseases as may be deemed necessary by the responsible authority.

SC-6.0 FIELD CONTROL OF THE WORK

All Work shall be constructed in accordance with the lines, grades and elevations shown on the Contract Drawings or as given by the Engineer in the field. The Contractor shall be fully and solely responsible for maintaining alignment and grade.

Control lines and elevations will be established by the Engineer as outlined in the Special Conditions. The Contractor shall, without additional compensation, provide all stakes, grade boards, cleats, nails, and such other materials and give such assistance to the Engineer as may be required to establish control lines and elevations. The Contractor shall inform the Engineer in writing a reasonable time in advance of the times and places at which he intends to do work in order that control lines and elevations may be established with the minimum of inconvenience to the Engineer or delay to the Contractor.

The Contractor shall protect and safeguard all points, stakes, grade marks, monuments, and bench marks at the Site of the Work, and shall re-establish, at its expense, any marks which are removed or destroyed due to construction operations. The Contractor shall bear the entire expense of rectifying Work improperly installed due to not maintaining or protecting marks, or to removing, without the Engineer's written approval, any such established points, stakes, or marks.

SC-7.0 LAND AVAILABLE TO CONTRACTOR

National Grid will provide reasonable effort to furnish not later than the date when needed by the Contractor, reasonable access to the lands upon which the Work is to be done, rights-of-way for reasonable access thereto, and such other lands which are designated for the use of the Contractor. Land and easements for permanent structures or permanent changes in existing facilities will be obtained and paid for by National Grid.

The Contractor shall provide at its expense all additional lands and access thereto that may be required for temporary construction facilities or storage of materials and equipment.

The Contractor shall confine its operations to such portions of the property of National Grid, as may be designated by National Grid from time to time for such use and to the rights-of-way or easements acquired for the Work. Private property adjacent to the Work shall not be entered upon or used by the Contractor for any purpose whatsoever without the written consent of National Grid thereof.

All Work in connection with the Purchase Order within or bordering on private or public property shall be conducted in such manner as will cause the minimum inconvenience and disturbance to it. No excavated materials or supplies of any kind shall be stored on private or public premises without National Grid's written consent and in accordance with all applicable regulations, and all walks and driveways shall be kept open to uninterrupted passage.

The Contractor shall at its expense whenever so required by National Grid, erect and maintain fences along the roadways and around the grounds occupied by the Contractor, which fences shall be sufficient for the protection of the adjoining property and all persons lawfully using the same.

SC-8.0 TRAVEL NOT TO BE OBSTRUCTED

The Contractor shall not allow travel upon any street, park, roadway, or alley to be hindered or inconvenienced needlessly, nor shall the same be wholly obstructed without the written permission of National Grid thereof. Upon receipt of such permission the Contractor shall cause plain and properly worded signs announcing such fact to be placed, with proper lighted barricades, at the nearest cross streets, upon each side of such obstructed portion, where travel can pass around the same in the shortest and easiest way.

The driveways to and from all fire department buildings and those required by all manufacturing plants, industrial establishments, and other business concerns for the proper continuance of their commerce shall be kept open and maintained in passable condition at all times unless modified by agreement between the Contractor and the property owner. The Contractor shall give reasonable notice to National Grid of all private ways before interfering with them.

The Contractor shall give reasonable written notice to concerned police, bus, fire, ambulance, and school bus departments before initiating any activity which will restrict public travel or access to private property.

SC-9.0 MAINTAINING FLOW OF SEWERS, WATER LINES AND DRAINS

The Contractor shall, at its expense, provide for and maintain the flow of all sewers, drains, house inlet connections, and water courses which may be met with during the progress of the Work. The Contractor shall not allow the contents of any sewer, drain, or house inlet connection to flow into trenches, sewers, or other structures to be constructed under the Purchase Order, and shall at its expense, immediately remove from the vicinity of the Work and cart away to a proper disposal site all offensive matter.

The Contractor shall, at its expense, provide for and maintain the flow in all water mains or laterals which may be met with during the progress of the Work. When water mains or laterals are to be disturbed to the extent that the water will be shut off, the superintendent of the water utility and all parties being served by the lines involved shall be notified 72 hours in advance concerning time and duration of the shut-off period. In cases involving fire hydrants, the fire department shall be so notified.

In the case of accidental damage to a water or sewer line, gas main or electrical conduit, the repairs of such break shall have priority over all other operations. The parties whose services are affected by the break shall be notified at once and all assistance given to supply emergency water, gas, or electricity where necessary by temporary lines, tank truck, or other means. The Contractor shall have the obligation at its expense to assure that all water, gas, electric and sewer connections serving private or public property shall be promptly and correctly restored to the utility company's specifications.

SC-10.0 SURFACE AND SUBSURFACE CONDITIONS

10.1 PROTECTION, EXISTING STRUCTURES

It shall be the sole responsibility of the Contractor and at its expense to protect adjacent and other property or premises from damage of any kind during the progress of the Work and shall erect and maintain guards around its Work in such a way as to afford protection to the public. The Contractor shall be held responsible for improper, illegal, or negligent conduct of itself, and its subcontractors, employees and agents in and about said Work or in the execution of the Work covered by this Purchase Order.

It shall be the sole responsibility of the Contractor, and at its expense to sustain in their places and permanently protect from direct or indirect injury any and all pipelines, subways, pavements, sidewalks, curbs, railways, buildings, trees, poles, wells, and other property in the vicinity of his Work, whether over- or underground, or which appear within the trench or excavations, and it shall assume all costs and expenses for direct or indirect damage which may be occasioned by injury to any of them.

The Contractor's liability shall also include the damage or injury sustained by any structure whatsoever due to settlement of trenches or excavations or to

settlement or lateral movement of the sides of such trenches or excavations, whether such movement occurs during or after excavation or backfilling of such trenches or excavations. The responsibility to so support and protect all such structures from damage or injury shall continue, without limitation, throughout the Purchase Order period and during the period of guarantee.

The Contractor shall at all times have available onsite suitable and sufficient material and shall use the same as may be necessary or required for sustaining and supporting any and all such structures which are uncovered, undermined, weakened, endangered, threatened, or otherwise materially affected.

In case injury occurs to any portion of a pipeline or structure, or to the material surrounding or supporting the same, through blasting or similar operations, the Contractor shall immediately notify the Engineer, and, at the Contractor's expense, shall remove such injured Work and shall rebuild the pipeline or structure and shall replace the material surrounding and supporting the same, or shall furnish such material and perform such work of repairs or replacements as the Engineer may order. In the case of utilities, the Contractor shall immediately notify the utility company, and provide all assistance for the repair of the utility by the utility company unless authorized to undertake such repairs directly by the utility company. Any damage whatsoever shall be promptly, completely, and satisfactorily repaired by the Contractor at its expense to the satisfaction of National Grid, or the owner of the utility.

10.2 EXISTING SUBSURFACE STRUCTURES

(a) General

Certain existing subsurface structures likely to be encountered during the performance of the Work embraced in this Purchase Order or located in close proximity to the Work hereunder as to require special precautions and methods for their protection, such as sewers, drains, water mains, and conduits, together with appurtenances, are shown on the Contract Drawings. The sizes, locations, and depths shown are approximate.

It is the obligation of the Contractor to verify the accuracy and completeness of the information shown, and the Contractor agrees that it shall neither have nor assert against National Grid or Engineer any claim for damages or extension of time or relief from any obligation of this Purchase Order by reason of the inaccuracy, inadequacy, incompleteness, or other deficiency of the information given or the failure to furnish additional or further information in the possession of National Grid or Engineer, except as set forth in (b) and (c) below.

Contractor is hereby given notice that subsurface structures and facilities may be located on the site which are either not identified or are mislocated on the Contract Documents.

Where any existing subsurface structure such as a sewer, drain, gas pipe, water pipe, conduit, or other structure is found which is not anticipated

by the Contract Documents or which is found to be materially different in size, location, or depth from that anticipated by the Contract Documents, the Contractor shall immediately notify the Engineer, and also the superintendent of the utility, before disturbing the structure.

Contractor shall use due care to avoid damage to subsurface facilities identified, not identified or mislocated on Contract Documents.

If ordered by the Engineer, such structure shall be uncovered and supported by the Contractor, at its cost and expense, as constituting a part of the Purchase Order, and the Contractor shall not become entitled to claim any damages for or on account of the presence of such structure or the uncovering and supporting of same.

(b) Existing subsurface structures which require changes in the Work of the Purchase Order.

The Engineer will determine whether changes should be made in the Contract Documents for construction of the Work of the Purchase Order to avoid the subsurface structure, whether the Work of the Purchase Order can proceed without changes in the Contract Documents, or whether the structure should be removed, realigned, or changed.

Any increase in cost of the Work resulting from any changes in the Contract Documents necessitated by the unanticipated presence or difference in size, location, or depth of the subsurface structure will be adjusted in the manner provided herein for changes in Purchase Order amount.

(c) Existing subsurface structures which require changes in the existing structure

Where the size, location, or depth of the existing subsurface structure has been anticipated and the Contract Documents require removal, realignment, or change, all Work under this Purchase Order shall be done in accordance with the Contract Documents in mutual cooperation with the utility or other parties concerned.

Where the presence of the subsurface structure or its size, location, or depth is not anticipated by the Contract Documents, any work by the Contractor required to remove, realign, or change the structure shall be done under the provisions for changes in the Work for the removal, realignment, or change and shall be done as mutually agreed by the Contractor, Engineer, and utility or other parties concerned.

(d) Interruption of Service

Where it is necessary to interrupt water, gas, or other public utility service to remove, realign, or change a subsurface structure, the Work shall proceed with expedience and shall be continuous after interruption of service until completion of the removal, realignment, or change and return of the utility service to its normal state.

10.3 SUBSURFACE CONDITIONS OTHER THAN STRUCTURES FOUND DIFFERENT

Reference is made to the Article SC-19.0 of these Supplemental Conditions and the obligations of the Contractor to perform all necessary subsurface investigations prior to bidding. Furthermore, the Contractor shall not be entitled to rely upon the subsurface investigation performed by National Grid or the Engineer.

10.4 PROTECTION OF UTILITIES

All utilities whose facilities may be affected by the Work of the Purchase Order shall be notified by the Contractor at least 72 hours in advance of the start of any operations which might affect such facilities.

The removal, replacement, support, or other handling of private and public utilities coming within the lines of the Work shall be accomplished by the Contractor at its expense in accordance with arrangements satisfactory to National Grid or operator of the utility involved. The Contractor, at its expense, shall remove, replace, or support all utilities as required.

The Contractor shall not permit nor cause any hindrance to or interference with any individual, municipal department, public service corporation, or other company or companies in protecting its or their mains, pipes, poles, posts, or other structures, nor in shifting, removing, or replacing the same. The Contractor shall allow said individual, department, company, or companies to take all such measures as they may deem prudent to protect their structures.

10.5 REPLACEMENT OF PROPERTY

The Contractor shall replace all pavement, driveways, fences, shrubs, lawns, trees, and any other public or private property damaged as a result of the Work under this Purchase Order. All such replacement shall be done in accordance with the applicable specifications and no separate or extra payment will be made unless specifically provided for in the Payment Items. In all cases said replacement shall be new and at least equal to the original conditions.

SC-11 PAYMENTS AND COMPLETION

11.1 ESTIMATED QUANTITIES

The Contractor agrees: 1) that it will make no claim of any nature against National Grid or Engineer because of a difference between the quantities for unit price items of Work actually furnished and the estimated quantities stated in the Bid even though the estimated quantities prove grossly different from the quantities actually used, and 2) that the quantity of any unit price item of Work may be increased or decreased as may be deemed necessary without alteration or modification of the Purchase Order.

In the event that the quantities of various items actually used are either higher or lower than the quantities stated in the Bid, the Contractor agrees as follows:

a. Where the change in quantities for any item in the original bid does not exceed 15% of the original bid quantity, the applicable unit prices bid shall be the sole basis for computing payment.

b. Where the change in quantities for any item in the original bid exceeds 15% of the original bid quantity, National Grid may review the unit price for said item to determine if a new unit price should be negotiated.

11.2 PRICES

The prices herein agreed to for the performance of the Work shown and as specified shall include not only the doing of the Work but also the furnishing of all labor, tools, and materials therefor, whether the same are required directly or indirectly, unless otherwise specified.

Where Work is to be measured for payment by units of length, area, volume, or weight (as stated in the Bid), only the net amount of Work actually done, as it shall appear in the finished Work and as measured only within the payment limits described in the Contract Documents or as is ordered, shall be paid for, local customs to the contrary notwithstanding.

Where a lump sum price is bid for an item in the Bid, the lump sum price shall be for the Work complete as described in the item and shall include the cost of all specified or implied equipment, materials, and labor incidental to the Work, complete and ready for service and in accordance with the Contract Documents.

11.3 BREAKDOWN OF LUMP SUM ITEMS

At least ten days prior to the submission of its first application for a progress payment, the Contractor shall present to the Engineer for its review a detailed schedule showing the breakdown of all lump sum bid prices in the Purchase Order. Such schedule shall contain the amount estimated for each part of the Work and an estimate of quantities for each part of the Work. Work to be performed by subcontractors shall be separately identified. Upon request of

the Engineer, said schedule shall be apportioned by the Contractor for labor and for materials. Such schedule shall be revised by the Contractor until the same shall be satisfactory to the Engineer and shall not be changed after the Engineer has approved the same without the express written consent of the Engineer. The approved schedule will be used in the preparation of the current estimate but will not be considered as fixing the basis for additions to or deductions from the Purchase Order.

11.4 CURRENT ESTIMATES

National Grid will establish dates during the respective months of the Project on which National Grid will accept applications for payment.

At least ten days before each date set for consideration for payment, the Contractor shall submit to the Engineer for review an application for payment, filled out and signed by the Contractor and covering the Work completed as of the date of the application, in satisfactory form and supported by such data as National Grid and Engineer may reasonably require.

The Engineer will, within ten days after receipt of each application for payment, either indicate in writing its recommendation of payment and present the application to National Grid or return the application to the Contractor, indicating in writing his reasons for not recommending payment. In the latter case, the Contractor shall make the necessary corrections and resubmit the application.

The Engineer's recommendation of any payment request shall constitute its advice to National Grid: that to the best of its knowledge, information, and belief, based on the Engineer's on-site observations of the Work in progress and on its reliance upon application for payment and supporting data, the Work has progressed to the point indicated; that the quality of the Work appears to be in substantial compliance with the Contract Documents (subject to any subsequent tests and qualifications stated in his final review); and that the Contractor is entitled to the payment of the amount recommended. However, by recommending any such payment, the Engineer shall not thereby be deemed to have represented that it made exhaustive or continuous on-site inspections to check the quality or quantity of the Work, that it has reviewed the means, methods, techniques and sequences, or that it has made any examination to ascertain how or for what purpose the Contractor has used the monies paid or to be paid to the Contractor on account of the Purchase Order price.

Where Work has been included in the current estimate recommended by the Engineer for payment, and where such Work is later found to be defective, and where such defective Work has not been corrected, the Engineer will recommend to National Grid that the value of such uncorrected Work be deducted from the amount due or to become due the Contractor.

The Engineer may decline to act upon requests for monthly payment if lists of vendors and subcontractors, shop drawings, samples, work schedules, instruction manuals, and breakdowns of lump sum bid items necessary for orderly prosecution of the Work, are not submitted as required.

11.5 PAYMENTS FOR MATERIALS DELIVERED TO SITE

In making estimates of the value of the Work done and materials incorporated in the Work, the Contractor may, subject to the approval of National Grid or as required by law, include in the current estimates the delivered cost, as modified below, of equipment and non-perishable materials which have been tested for adequacy and which have been delivered to the Site and adequately protected from fire, theft, vandalism, the effect of the elements, and any damage whatsoever, or similarly placed in approved storage facilities adjacent thereto. Such materials and equipment shall at all times be available for inspection by the Engineer and National Grid.

No progress payment shall, however, be made for said material and equipment until each of the following conditions has been fulfilled:

a. The Contractor shall have furnished to the Engineer invoices establishing the value of the said materials and equipment with the full amount the Contractor agrees to pay the vendor. Such invoices shall be furnished at least ten days in advance of the date of preparation of monthly estimates as established by the Engineer.

b. The Engineer shall have inspected said material and equipment and recommended payment therefor.

c. The Contractor shall have furnished to National Grid the fire and other casualty insurance policies, as provided in this Purchase Order and with the broad form extended coverage endorsement, for said material and equipment in an amount equal to 100% of the value thereof and which policies shall be maintained, at the sole cost and expense of the Contractor, until said material and equipment has been incorporated into the Project and which shall name National Grid as an additional insured and loss payee and shall also name the Engineer as additional insured.

Contractor shall submit with each application for payment, satisfactory evidence that all suppliers, materialmen and subcontractors have been paid all amounts previously invoiced with respect to their services and agreeing to defend and hold National Grid harmless from any liens and encumbrances placed against the Project on account of Contractor's failure to promptly pay its suppliers, materialmen and subcontractors. Satisfactory evidence shall be: a canceled check in the correct amount and including identification of the invoice or invoices paid; a letter or telegram, from the vendor and signed by his properly authorized employee, stating the amounts and invoices that have been paid; or a receipted invoice. Neither National Grid nor the Engineer shall have an obligation to pay or see to the payment of money to a Subcontractor except as may otherwise be required by law.

Should the above evidence of payment not be furnished, the Engineer will recommend the deduction of any funds included in previous estimates for such

materials and equipment for which said evidence has not been furnished from the current estimate or subsequent current estimates.

Any payment made for materials and equipment delivered will not relieve the Contractor of any responsibility for furnishing all the necessary equipment and materials required for prosecution of the Work in the same manner as if such payments had not been made.

11.6 NATIONAL GRID'S RIGHT TO WITHHOLD PAYMENTS

National Grid may withhold from the Contractor so much of any approved payments due it as may in the judgment of National Grid be necessary to assure the payment of any claims, liens or judgments against the Contractor, resulting from performance or non performance of the Work of the Purchase Order, which have not been suitably discharged. National Grid shall have the right as agent for the Contractor to apply any such amounts so withheld in such manner as National Grid may deem proper to satisfy such claims, liens or judgments. Such application of such money shall be deemed payments for the account of the Contractor.

National Grid may also withhold from the Contractor so much an amount of any payments due it as may in the judgment of National Grid be necessary:

a. To protect National Grid from loss due to previous payment for Work subsequently found to deviate from the Purchase Order requirements and which has not been corrected by the Contractor, and

b. To protect National Grid from loss due to previous payment for materials and/or equipment delivered to the Site for which evidence of payment to vendors has not been furnished by the Contractor.

11.7 DEDUCTIONS FOR UNCORRECTED WORK

If National Grid deems it expedient to accept uncorrected Work, the Purchase Order price shall be decreased by an amount, determined by National Grid, which is equal to the difference in value of the Work as performed by the Contractor and the value of the Work had it been satisfactorily performed in accordance with the Purchase Order, or which is equal to the cost of performing the corrective Work, whichever shall be the higher amount.

11.8 SUBSTANTIAL COMPLETION

The Work of the Purchase Order shall be deemed Substantially Complete when either of the following occurs:

a. When the Work of the Purchase Order is at least 99% complete as evidenced by a list of minor items to be completed with estimated value equal to or less than 1% of the value of the Purchase Order payments as shown in current estimates of Work completed.

b. When National Grid and Contractor reach mutual written agreement that the Work is Substantially Complete.

The Purchase Order will be considered as a single unit for determination of Substantial Completion except as follows:

c. Where a division of major parts of the Purchase Order is set forth in the Special Provisions for purposes of separate determinations of Substantial Completion for each part.

d. Where National Grid and Contractor reach mutual written agreement that a major part of the Purchase Order can be separately determined to be Substantially Complete.

e. Where part of the Work of the Purchase Order has been previously accepted into Beneficial Occupancy.

The date of Substantial Completion shall be evidenced by a Certificate of Substantial Completion signed by the Contractor, Engineer, and National Grid.

11.9 FINAL INSPECTION AND CERTIFICATE OF SUBSTANTIAL COMPLETION

National Grid, Engineer, and Contractor will make an inspection of the Work as soon as possible after written notification by the Contractor to National Grid that, in the judgment of the Contractor, the Work is 99% complete, or after National Grid and Contractor mutually agree that the Work appears Substantially Complete (the "Final Inspection"). Following said Final Inspection the Engineer will advise the Contractor of remaining items to be completed or corrected to arrive at completion of the Work inspected.

When the remaining items of Work to be completed or corrected are of sufficiently reduced value that Substantial Completion is indicated, the Engineer will prepare a detailed estimate (hereinafter referred to as Estimate of Work Remaining) of the value of said items showing each item's separate value as well as the total value of all items. The Contractor shall endorse said Estimate as evidence of agreement.

Substantial Completion will be evidenced by a Certificate of Substantial Completion signed by the Contractor, Engineer, and National Grid. The date of Substantial Completion shall be that date specified in the Certificate of Substantial Completion. The Estimate of Work Remaining will be attached to the Certificate of Substantial Completion.

11.10 PAYMENT AT SUBSTANTIAL COMPLETION

The Application for Payment at Substantial Completion shall be in a form satisfactory to National Grid and shall be accompanied by the following documents:

a. Certificate of Substantial Completion with Estimate of Work Remaining attached.

b. A schedule endorsed by the Contractor showing time of completion of all remaining Work.

c. An affidavit of the Contractor: 1) that the claims of all subcontractors, materialmen, laborers, and all other persons and parties furnishing labor and materials with respect to the Purchase Order have been paid in full except as noted; 2) that the Contractor will pay in full the exceptions stated from the proceeds of this payment; and 3) that the Contractor acknowledges that National Grid has made this payment in reliance upon this affidavit.

d. Releases or receipts evidencing payment of all liens which may have been filed as a result of the performance of the Work of the Purchase Order.

e. A written statement from Surety that the Labor and Material Bond and the Performance Bond, each in the amount of 100% of the value of the Purchase Order, are in force and will remain in force for a period of one year following the date of Substantial Completion or such later date as may be established by an extension of the guarantee period.

Payment at Substantial Completion will be an amount equal to the value of all of the Work of the Purchase Order which has been declared Substantially Complete including the estimated value of the minor items to be completed or corrected less an amount equal to twice the total Estimate of Work Remaining, less an amount withheld to satisfy any outstanding claims, liens, or judgments, less any charges for delay, and less all prior payments to or for the account of the Contractor. All prior estimates and payments including those related to Change Orders, shall be subject to correction by the payment at Substantial Completion.

11.11 ACCEPTANCE OF WORK

Acceptance by National Grid of the Work of the Purchase Order will occur on the dates as follows:

a. The date of Substantial Completion specified in the Certificate of Substantial Completion for all Work not included in b. or c. below.

b. The date of Beneficial Occupancy for all Work taken into Beneficial Occupancy.

c. The date of payment of the requisition of the Contractor at the time of 100% completion or correction for all Work included in the Estimate of Work Remaining.

11.12 CONTRACTUAL RELEASE TO NATIONAL GRID

The submission by the Contractor of an Application for Payment at Substantial Completion shall be, and shall operate as, a release to National Grid of all further claims and liability to the Contractor for all things done or furnished in connection with the Purchase Order, and for every act and neglect of National Grid and others relating or arising out of the Purchase Order excepting the Contractor's requests for payment for completion or correction of Work items included in the Estimate of Work Remaining, the Application for Payment at Substantial Completion, and interest on said Payment if payment is improperly delayed. However, no Application for Payment, or payment of same, shall operate to release the Contractor from any obligations under the Purchase Order or the Surety bonds.

11.13 PAYMENT FOR MINOR ITEMS WHEN COMPLETED OR CORRECTED

The minor items of Work contained in the Estimate of Work Remaining shall be completed or corrected by the Contractor in a timely manner in accordance with the schedule submitted with the application for Payment at Substantial Completion. Upon such completion or correction, and upon Application for Payment in a form satisfactory to National Grid, National Grid will pay an amount equal to the value, and only that value, of the item or items of Work completed or corrected. The remaining amount held as determined when making Payment at Substantial Completion will be retained by National Grid until the Contractor has completed all items of Work contained in the Estimate of Work Remaining and has submitted evidence that all claims, liens, and judgments have been satisfied. No payment will be made which is less than one thousand dollars, except upon 100% completion or correction of all items included in the Estimate of Work Remaining.

11.14 NATIONAL GRID'S RIGHT TO COMPLETE THE WORK

During the time period extending from the date of Substantial Completion to a date six months thereafter or to mutually acceptable later date, the Contractor shall complete or correct all items contained in the Estimate of Work Remaining in accordance with the schedule established at Substantial Completion as such Estimate of Work Remaining and Schedule may be modified or supplemented prior to the end of the warranty period. Where Work items are not completed or corrected in accordance with the established schedule, and following reasonable notice by National Grid to the Contractor, National Grid may complete or correct said Work items. The cost for such completion or correction may be paid by National Grid, without review by the Contractor, and the Contractor shall reimburse National Grid for all costs so incurred.

It is hereby mutually agreed that six months following the date of Substantial Completion or the mutually acceptable later date, and at any time thereafter, National Grid (having given prior notice as set forth in the preceding paragraph) may, without additional notice to the Contractor, complete and correct any items contained in the Estimate of Work Remaining which are remaining to be completed or corrected. The cost for such completion and correction may be paid by National Grid, without review by the Contractor, and the Contractor shall reimburse National Grid for all costs so incurred. In the event that National Grid

commences legal proceedings to recover all costs not reimbursed, there shall be included as an item of damage all reasonable attorneys' fees.

Any funds previously held by National Grid at the time of payment at Substantial Completion may be applied by National Grid to offset the costs incurred for completion or correction of items contained in the Estimate of Work Remaining. All costs incurred by National Grid in excess of funds previously held will be billed to the Contractor, and the Contractor shall promptly reimburse National Grid for said costs. National Grid may add reasonable amounts for administrative, engineering, and supervisory services to the cost of construction for those items completed or corrected by National Grid. In the event that National Grid commences legal proceedings to recover all costs not reimbursed, there shall be included as an item of damage all reasonable attorneys' fees.

11.15 BENEFICIAL OCCUPANCY

National Grid reserves the right to accept for Beneficial Occupancy any portion of the Work, whether or not Substantially Complete, at anytime without prejudice to National Grid in enforcing any provisions of the Purchase Order.

Beneficial Occupancy by National Grid shall occur when National Grid accepts a part of the Work, but not all Work of the Purchase Order, and places such accepted Work in the service therefor intended.

Upon Beneficial Occupancy by National Grid the following procedures will apply:

a. The Engineer, with the approval of National Grid, will notify the Contractor as to what portion, or portions of the Work have been accepted into Beneficial Occupancy.

b. The retained percentage for the completed Work taken into Beneficial Occupancy will be released.

c. The guarantee period applicable to that portion of the Work accepted into Beneficial Occupancy will start as of the date of Beneficial Occupancy.

d. As of the date of Beneficial Occupancy, National Grid will assume responsibility for maintenance, heat, utilities, and insurance on that portion of the Work accepted for occupancy.

e. The Contractor shall subsequently complete or correct all unfinished items in the Work accepted by National Grid for Beneficial Occupancy.

f. Such action by National Grid will in no way affect the obligations of the Contractor under the terms and provisions of the Purchase Order with respect to uncompleted Work.

g. Upon completion of unfinished items in the Work beneficially occupied, sufficient to establish Substantial Completion as defined herein, all procedures set forth herein for Work deemed Substantially Complete shall apply.

11.16 CONTRACTOR'S AUTHORITY TO SIGN

All Current Estimates, applications for payment, affidavits, and other documents required hereunder and the Certificate of Substantial Completion, shall be signed on behalf of the Contractor by a person evidencing its authority to do so and shall be acknowledged where required in form satisfactory to National Grid.

11.17 CHARGES FOR DELAY CAUSED BY THE CONTRACTOR

It is hereby agreed that time is of the essence of the Purchase Order with respect to the Work to be performed and that National Grid will suffer damages from failure to complete the Work in the time specified. When the Work embraced in the Purchase Order is not 100% Completed on or before the date specified herein or on or before the later date to which the time of 100% Completion may have been extended in writing by National Grid, the engineering and inspection expenses incurred by National Grid, upon the Work from said date to the date of 100% Completion of the Work shall be charged to the Contractor and be deducted by National Grid from monies due the Contractor, and in addition, the Contractor shall be charged the liquidated damages stated in the Purchase Order for the same period, said sums being not in the nature of a penalty, but a part of the consideration of the Purchase Order.

National Grid shall have the right to deduct such amounts from any monies due or to become due the Contractor and the amount still owing, if any, after such deduction shall be paid on demand by the Contractor or its Surety. Such payment shall not relieve the Contractor or its Surety from any other obligation under this Purchase Order.

11.18 DELAYS CAUSED BY OTHERS

If the Contractor is unreasonably delayed at any time in the progress of the Work by any act, omission, or neglect of National Grid or Engineer, its agents or employees which are beyond their control, or if the Contractor is delayed at any time in the progress of the Work by any act, omission or neglect of any separate contractor engaged by National Grid, or by strikes, fires, unusual delays in transportation, abnormal adverse weather conditions or unavoidable casualties not caused by the Contractor, or by any other cause beyond the Contractor's control, the time for Substantial Completion or 100% Completion, as applicable, shall be extended for the length of time that the substantial Completion or 100% Completion of the Work was actually delayed thereby and the Contractor shall not be charged with liquidated or actual damages for the delay during the period of such extension nor shall the Contractor be due compensation for extended general conditions expense, other expense related to the delay, overhead, or profit for the period covered by such extension. No extension shall be granted unless the Contractor demonstrates a delay in the Substantial Completion or

100% Completion of the Work, as applicable, by showing a delay on the critical path of the CPM schedule.

11.19 NATIONAL GRID'S RIGHT TO ACCELERATE

If National Grid or National Grid's Representative elects to direct the Contractor to accelerate the work at no additional cost to National Grid to eliminate delays pursuant to Paragraph 11.18, above, the Contractor shall immediately implement the acceleration. Acceleration can be in the form of additional manpower, overtime and/or additional shift work or a combination thereof. If the Contractor refuses to immediately proceed with the directed acceleration, National Grid may exercise its right to declare the Contractor in default as stipulated General Condition -Article 36.

SC-12.0 MATERIALS AND EQUIPMENT

12.1 QUALITY AND WORKMANSHIP

All items of equipment and materials of like type furnished under one Purchase Order shall be the product of one manufacturer, unless otherwise specified.

All materials furnished or incorporated in the Work shall be new, unused, of the best quality, and especially adapted for the service required; whenever the characteristics of any material are not particularly specified, such material shall be utilized as is customary in first class work of a nature for which the material is employed.

All materials and workmanship shall be subject to inspection, examination, and tests by the Engineer and other representatives of National Grid at any and all times during manufacture or construction and at any and all places where such manufacture or construction are carried on.

The selection of bureaus, laboratories, and agencies for the inspection and tests of supplies, materials, and equipment shall be subject to the approval of the Engineer. Satisfactory documentary evidence that the material has passed the required inspection and tests shall be furnished to the Engineer by the Contractor prior to the incorporation of the material in the Work.

All laboratory and field testing shall be at the sole cost and expense of the Contractor unless specifically stated otherwise in the Contract Documents.

12.2 EQUIVALENT PRODUCTS AND CHANGES TO SPECIFICATIONS

The words "similar and equal to," "or equal," "equivalent," and such other words of similar content and meaning (hereinafter, “or equal”) shall, for the purposes of this Purchase Order, be deemed to mean similar and equivalent to one of the named products.

Whenever any product is specified in the Contract Documents by a reference to the name, trade name, make or catalog number of any manufacturer or supplier, the intent shall not be to limit competition, but to establish a standard of quality which the Engineer has determined is necessary for the project. If any product other than that specified is proposed for use by the Contractor, it shall submit to the Engineer either its certification that the "or equal" strictly conforms to the Specifications, or a statement specifically identifying all differences between the "or equal" and the Specifications. Any variation of a proposed "or equal" from the Specifications which is not specifically noted in the Shop Drawing or Contractor's submittal shall be at the sole risk and expense of Contractor. Engineer's review and stamping of Shop Drawings or Contractor submittals shall not be deemed to be, or constitute Engineer's acceptance of any such "or equal" or deviation from the Specifications which are not specifically noted on Contractor's submittal. In addition Contractor shall provide all the information that the Engineer requests concerning the product. The proposed product shall not be used until it is accepted by the Engineer. Any "or equal" incorporated into the Work without Engineer's written acceptance shall be at the Contractor's sole risk, and Engineer may require the removal and replacement of any unaccepted "or equal".

In all cases, the Engineer will be the sole judge as to whether a proposed "or equal" is acceptable, and the Contractor shall have the burden of proving, at its expense, to the satisfaction of the Engineer that the proposed "or equal" is similar and equal to the named product. In making such determination the Engineer may establish such criteria as it deems proper for acceptance of the "or equal".

Any requested change in the Specifications not pertaining to an "or equal" must be submitted to Engineer in writing and must be stated with sufficient clarity and detail to permit proper consideration by Engineer. Unless accepted by Engineer after submission as herein provided, any deviation from the Specifications, or the use of any product which varies from the Specifications, shall be at Contractor's sole risk and expense.

With respect to the acceptance or rejection of "or equal" by Engineer, neither the review and stamping of Shop Drawings and/or Contractor submittals as provided in Article 62.5, nor Engineer's failure to observe and note any variation from the Specifications (unless such variation is specifically noted and identified in Contractor's Submittal), shall reduce, transfer, or modify Contractor's responsibility to provide products which fully comply with the Specifications.

"Or equal" or changes to Specifications proposed by Contractor, which are judged by the Engineer to represent no-cost improvements or enhancements to the design, shall be reviewed without cost to Contractor. All other submissions of "or equal" or changes to the Specifications shall be considered after review of specific products submitted at the same time or earlier, and regardless of whether such "or equal" are accepted or rejected, Contractor shall reimburse National Grid for the costs (including labor costs) and expenses of Engineer incurred in the review of "or equal" or changes to the Specifications, including the cost of Engineer's conflict review, and any revisions made as a result of such review,

plus a 10% administrative charge. Contractor shall reimburse National Grid for such sums upon demand.

Where the Engineer accepts an “or equal” by the Contractor and such “or equal” requires a revision or redesign of any part of the Work covered by the Purchase Order, all such revision and redesign and all new drawings and details required therefor shall be acceptable to the Engineer and shall be provided by the Contractor at its expense. If an acceptable substitution of an “or equal” requires a different quantity or arrangement of duct work, piping, wiring, or any part of the Work from that in the Contract Documents, the Contractor shall provide the same at its expense.

12.3 SUPPLIERS

All supplies and equipment shall be furnished by manufacturers who shall have at least three years' experience in the design, production, assembly, and field service of equipment of like type, size, and capacity. Where required by the Engineer, the Contractor shall supply a list of at least three successful installations.

12.4 TOOLS, ACCESSORIES AND SPARE PARTS

The Contractor shall, unless otherwise stated, furnish with each type, kind, and size of equipment, one complete set of any special tools and appliances which may be needed to adjust, operate, maintain, or repair the equipment.

Each piece of equipment shall be provided with a substantial nameplate, which is securely fastened in place and clearly inscribed with the manufacturer's name, year of manufacture, and principal rating data.

Where the Materials and Performance Specification Sections of this Purchase Order require spare parts to be furnished by the Contractor, said spare parts for each item of equipment shall be kept separate and tagged to identify the specific item of equipment to which they belong, shall be packaged so as to preclude damage from handling and storage, and shall be bagged or packaged together where items are small in dimension.

12.5 EQUIPMENT INSTALLATION

The Contractor shall have on hand sufficient proper equipment and machinery of ample capacity to facilitate the Work.

The General Contractor shall furnish, install, and protect all necessary concrete pads, which shall include guides, track rails, bearing plates, anchor and attachment bolts, and all other appurtenances needed for the installation of the devices included in the equipment specified. The location, size and templates for the concrete pads shall be furnished by the Contractor supplying the equipment along with all guides, track rails, bearing plates, anchor and attachment bolts and other appurtenances required.

Anchor bolts shall be made of ample size and strength for the purpose intended. Unless otherwise specified, anchor bolts in submerged locations shall be bronze or stainless steel; all other anchor bolts shall be cadmium plated. Substantial templates and working drawings for installation shall be furnished.

All equipment shall be correctly aligned, leveled and adjusted for satisfactory operation and shall be installed so that proper and necessary connections can be made readily between the various units.

The Contractor shall furnish all oils and greases for initial operation of each item of equipment and shall furnish the lubricant chart as indicated in Paragraph 12.8. Insofar as possible, all lubricants shall be obtained from one manufacturer approved by National Grid. Each item of equipment shall be tagged to show the date lubricated, the name and type of lubricant used and the recommended frequency of lubrication.

All mechanical and electrical equipment shall be checked for correctness of installation by a qualified representative of the manufacturer, and the manufacturer shall certify in writing to the Engineer that the equipment was installed according to its specifications. Where multiple manufacturers have supplied components for a piece of equipment, the manufacturer that assembled the components shall supply the certification.

12.6 OPERATING INSTRUCTIONS AND MANUALS

The Contractor shall furnish the services of qualified manufacturers' technicians to instruct designated employees of National Grid in the operation and care of all equipment. The Contractor shall also furnish and deliver to the Engineer three complete sets of instructions, bulletins; diagrams, and other data and information required for the proper operation and maintenance of the equipment, including spare parts lists and ordering of spare parts. These operating manuals shall be furnished to the Engineer at such time as the equipment is delivered and shall include references to models and serial numbers of equipment furnished, assembly drawings, lubrication instructions, and service recommendations. Such data shall be bound in booklet form for easy reference and shall be accompanied by a transmittal sheet listing an inventory of items included.

12.7 STORAGE AND MAINTENANCE OF EQUIPMENT

Equipment containing moving parts or bearings which is subject to damage by exposure or improper storage shall be protected as set forth herein:

The Contractor shall require that the manufacturers of all equipment to be incorporated into the Work of this Purchase Order supply detailed instructions concerning storage and maintenance required to maintain the equipment in good condition until it is placed in operation. These instructions shall be acceptable to the Engineer and shall be strictly enforced. Such acceptance shall not relieve the Contractor of its obligation to properly store and maintain the equipment.

Equipment which is intended for outdoor installation may be stored outside subject to and in accordance with the manufacturer's instructions. Equipment intended for indoor installation shall be stored in heated and ventilated warehouses or in heated and ventilated enclosures on the Site of the Work.
Equipment which is installed more than seven days prior to being placed in operation shall be protected in strict accordance with the manufacturers' recommendations and in a manner acceptable to the Engineer. Such protection, where dictated, shall consist of complete air-tight encapsulation with desiccants.

Equipment improperly stored or improperly protected after installation shall, at National Grid's option, be replaced by the Contractor at no cost to National Grid.

12.8 LUBRICATION CHART AND LUBRICATION

The Contractor shall furnish National Grid a lubrication chart(s) for all equipment furnished or installed by the Contractor. The chart(s) shall include the following for each item of equipment:

- name of the item;
- location of the item;
- each point of lubrication on the item;
- for each point of lubrication, the identification of the lubricant recommended and the recommended frequency of lubrication.

The information on the chart(s) shall be developed from manufacturers' printed data or from manufacturers' specific recommendations.

The identification of the lubricant by manufacturer's name and product identification number (such as Mobil X421) shall be furnished. Unless otherwise stated the name of the manufacturer to be used will be furnished to National Grid by the Contractor.

Following the initial operation of the equipment the Contractor shall relubricate, changing and adding lubricants, at the intervals or frequency as recommended by the manufacturer until acceptance.

SC-13 SHOP DRAWINGS AND SAMPLES

13.1 LISTING OF ITEMS

Following execution of the Purchase Order by the Contractor, the Engineer will submit to the Contractor a list of equipment, materials, and other items for which shop drawings, layouts, samples, will be required. This listing shall not be construed to be all-inclusive and may be added to, or deleted from, as may be required in the opinion of the Engineer.

13.2 ACCEPTANCE OF MANUFACTURERS OR VENDORS

The Contractor, with such promptness and in such sequence as to cause no delay in the Work, shall submit to the Engineer the name of the manufacturer or vendor for each item on the list or addition to the list submitted. No awards shall be made by the Contractor, and no work under any item shall proceed, until acceptance of the manufacturer or vendor has been given by the Engineer. Such acceptance will be only on the basis of the manufacturer's or vendor's experience and reputation and will not imply that the shop drawings or samples for the item will be acceptable. Review of shop drawings for an item will depend upon full compliance with the Contract Documents as demonstrated by material submitted.

13.3 ELECTRICAL INTERCONNECTIONS

Where the Project includes electrical equipment and electrical control systems and where the Work of the Project involves more than one Contractor, it shall be the responsibility of the Electrical Contractor to coordinate and complete power, control, and electrical signal interconnections for all equipment included in the Project.

13.4 SHOP DRAWING SUBMITTAL REQUIREMENTS

Shop drawings and data shall be submitted to the Engineer for each item on the latest revised list determined from Paragraph 13.1, above. Submittals shall be made sufficiently in advance of the time when items included therein are to be incorporated into the Work to permit proper review, necessary revisions, and resubmittals without causing a delay in the performance of the Work.

Shop drawings shall present complete and accurate information relative to all working dimensions, equipment weights, assembly, and section views, and all necessary details pertaining to coordinating the Work of the Purchase Order, lists of materials and finishes, parts lists and the description thereof, lists of spare parts and tools where such parts or tools are required, and any other items of information that are required to demonstrate detailed compliance with the Contract Documents. Drawings for electrical equipment shall include elementary and interconnection diagrams.

Contractor’s submittal of Shop Drawings shall constitute Contractor’s representation that submitted Shop Drawings and the specifications pertaining thereto have been thoroughly reviewed by Contractor for consistency with the Specifications and that submitted Shop Drawings strictly comply with the requirements of the Contract Documents; that the Contractor has determined and verified all quantities, dimensions, field construction criteria, materials catalog numbers, and similar data, and that Contractor has reviewed or coordinated each shop drawing with the requirements of the Work and the Contract Documents. The return to Contractor of Shop Drawings stamped “Reviewed” shall in no way relieve Contractor from sole responsibility for strictly complying with the specifications in the Contract Documents. Contractor shall reimburse National Grid for the costs (including labor costs) and expenses of Engineer incurred in the review of Shop Drawings which have been twice before returned marked as “Rejected” or “Resubmit”.

Unless otherwise permitted in specific cases, all data shall be transmitted to the Engineer by the Prime Contractor.

Each shop drawing submitted shall indicate the following:

1. Project name and Purchase Order number

2. Manufacturer of the equipment

3. Notation as to whether original submittal or resubmittal

4. Date received by Contractor from manufacturer or vendor

5. Date submitted to Engineer

Each shop drawing submittal shall be accompanied by a transmittal letter indicating the item or items submitted, with particular reference to latest revised list of equipment, materials, and other items described in Paragraph 13.1. above and the appropriate section of the Contract Documents to which the items apply. The transmittal letter shall also indicate whether the submittal constitutes a complete set of drawings for the item, a partial set of drawings for which additional submittals are to be expected by the Engineer, or a partial set of drawings to complete a previous submittal. In any case, the Contractor shall indicate by the transmittal letters when the submittals for an item are intended to be complete.

Unless otherwise stated in the Special Provisions, the Contractor shall submit at least five copies of drawings, catalog data, and similar items for review. This number includes one for return to the Contractor noted as "Reviewed" or request for amendment. If the Contractor desires more than one copy returned to it, it shall submit with the initial and any subsequent transmittals the additional number desired up to a maximum of three copies.

If the Engineer requires additional copies, it will so inform the Contractor upon return of the material noted as "Reviewed". Additional copies of "Reviewed" shop drawings will be requested in the cases where the subject matter shown thereon requires coordination of two or more prime Contracts. Copies of such drawings, when received, will be retransmitted by the Engineer.

A current file of "Reviewed" shop drawings will be maintained by the Engineer and, where so stated in the Special Provisions, said current file of "Reviewed" shop drawings will be at the job site. Any Contractor may have access to said "Reviewed" shop drawing file during normal office hours. It shall be the responsibility of each prime Contractor to avail itself of information in said "Reviewed" shop drawing file and to be aware of coordination requirements involving its work in the event it does not receive appropriate shop drawings from the Engineer.

13.5 ENGINEER'S REVIEW OF SHOP DRAWINGS

The Engineer's review of shop drawings is for general compliance with the Contract Documents only and is not a complete check of the method of assembly, erection, construction or detailed review of the specifications. Such review shall in no way be construed as permitting any departure whatsoever from the Contract Documents, except where the Contractor has previously requested and received written approval of the Engineer for such departure. When requested by Contractor, proposed departures from the Contract Documents will be considered by Engineer at Contractor's expense, whether or not accepted. The cost of Engineer's conflict review and any revisions made as a result of Contractor's requested departure shall be at the expense of Contractor. Contractor shall reimburse National Grid for the referenced costs and expenses of Engineer upon demand.

Review of shop drawings by the Engineer will be limited to completed submittals except where review of a partial submittal is specifically requested by the Contractor and where such review of a partial submittal is necessary for timely completion of the Work of the Purchase Order. Where shop drawings of related items are necessary for review of a particular submittal, the Engineer will so inform the Contractor, who will promptly submit such shop drawing of said related items.

Drawings and similar data will be reviewed and stamped by the Engineer as follows:

1. "Reviewed," if no change or rejection is made. All but four copies of the submitted data will be returned.

2. "Reviewed and Noted," if minor changes or additions are made but resubmittal is not considered necessary. All but four copies of the submitted data will be returned and all copies will bear the corrective marks.

3. "Resubmit," if the changes requested are extensive or if retransmittal of the submittal to another Contractor is required. In this case, the Contractor shall resubmit the items after correction, and the same number of copies shall be included in the resubmittal as in the first submittal. One copy of the first submittal will be retained by the Engineer and two copies will be returned to the Contractor.

4. "Rejected," if it is considered that the data submitted cannot, with reasonable revision, meet the requirements of the Contract Drawings and Specifications.

13.6 RESUBMITTALS

Any changes, other than those indicated as requested, made in drawings or other data shall be specifically brought to the attention of the Engineer upon resubmittal. Changes or additions shall not be made in, or to, "Reviewed" data without specific notice to the Engineer.

If, after reasonable correction and resubmittal of the shop drawings for an item of equipment, acceptance is not given, the Contractor shall submit the name of another manufacturer or vendor to supply the item. Should progress of the Work be delayed by the changing of the manufacturer or vendor, such a cause will not be considered an extenuating circumstance beyond the control of the Contractor, and charges for delay if otherwise applicable, will be levied and shall be born solely by the Contractor.

13.7 SAMPLES

Samples shall be submitted to the Engineer as required on the latest revised list determined from Paragraph 13.1. The samples shall be properly identified by tags and shall be submitted sufficiently in advance of the time when they are to be incorporated into the Work, so that rejections thereof will not cause delay. A letter of transmittal from the Contractor requesting review shall accompany such samples.

The procedures set forth in Paragraphs 13.5 and 13.6, above for shop drawings shall be used for processing samples.

SC-14.0 TEMPORARY SERVICES

14.1 TEMPORARY HEAT

It is the obligation and responsibility of the Contractor to provide and maintain temporary heat by means of portable electric, oil or gas-fired units. The General Contractor shall provide and pay for all fuel and electricity used in the temporary facilities and shall provide proper smoke pipes or other means to prevent smoke or smudge from marking up walls, ceilings, or other parts of equipment.

Should the temporary heating facilities require electric service, the General Contractor shall provide the necessary wiring and power.

After their installation and testing of the permanent heating system facilities, they may be used for temporary heating purposes with concurrence of National Grid. Any temporary wiring or piping required and all power consumed shall be the obligation and responsibility of the General Contractor.

If the General Contractor elects to utilize the permanent heating facilities included in the Project for temporary heat, it shall be the responsibility of the Contractor to guarantee the heating system for a period of one year following final acceptance of the Purchase Order or Beneficial Occupancy, whichever comes first. It shall be the responsibility of the Contractor to replace all filters before the final acceptance of the Purchase Order.

It shall be the responsibility of the General Contractor to repair any damage to heating and ventilating equipment suffered as the result of use by the General Contractor.

After the buildings are enclosed excepting windows, doors and similar apertures, temporary enclosures for all apertures shall be provided and temperatures in the entire building shall be continuously maintained at not less than 40 degrees Fahrenheit unless specific permission is granted in writing by the Engineer. The General Contractor shall install on each floor, near the center of the building, a suitable, securely fastened, and properly protected thermometer.

National Grid will supply all heat after final acceptance of the Purchase Order or upon Beneficial Occupancy of a structure by National Grid.

14.2 TEMPORARY ELECTRIC LIGHT AND POWER

It is the obligation and responsibility of the General Contractor to provide and maintain temporary facilities for furnishing light and power necessary for operations under the Purchase Order, and to make all necessary arrangements therefor, including all required connections, ordering the meter, and paying all fees and inspection charges.

The General Contractor shall make the temporary light and power facilities available to any and all subcontractors, for their use in connection with their contracts, and may charge each subcontractor for such service an amount not to exceed a fraction of the cost of the services, as billed by the utility, proportional to the value of the Project. Removal of temporary facilities shall be by the Contractor. The installation and meters shall remain until need for same has ceased or until completion of the Purchase Order.

14.3 POWER, FUEL AND WATER FOR TESTING

The permanent electrical service, or any part thereof, shall not be connected until the tests on wiring and grounding systems have been successfully completed and test data reviewed by the Engineer.

Where tests on equipment require electric power for testing, such power shall be supplied through the permanent electrical service and through the permanent electrical distribution and control equipment. All power for testing will be provided by National Grid. The use by National Grid of the permanent electrical service, electrical distribution system, and/or control equipment for the purpose of testing shall not constitute acceptance of the Work.

Where tests are specified on fuel-burning equipment, or where tests are specified on other equipment, and require simultaneous operation of the fuel burning equipment, all fuel for such tests will be provided by National Grid.

Unless otherwise specified, water of acceptable quality for testing shall be furnished by the Contractor.

14.4 TEMPORARY WATER FACILITIES

Where the public water supply is available and under control of National Grid, water will be furnished to General Contractor. Such water supply shall be subject at all times to the control and supervision of the superintendent or

manager of the water utility, and at a cost determined by the schedule of charges on a file at the office of the utility. Prior to making use of any municipal water, permission in writing to use the water for any particular purpose shall be obtained from the superintendent or manager. The cost, if any, of connection to the water supply shall be paid by the Contractor.

Where the public water supply is owned or controlled by a private company, corporation or individual or municipality other than National Grid, the Contractor shall make such arrangements at its cost for service with National Grids thereof as he requires.

The General Contractor shall make the temporary water service available to all subcontractors, for their reasonable use in connection with their Contracts. Removal of temporary facilities shall be the responsibility of the Contractor. The installation and meters shall remain until need for same has ceased or until completion of the Purchase Order. Each Contractor shall provide his own services after completion of the General Contract.

SC-15.0 WORK SCHEDULE

A Work Schedule shall be submitted to the Engineer by the Contractor a minimum of 10 days prior to the commencement of on-site activities. The work schedule shall be in the form of a neatly labeled bar graph and shall show the order and date on which the several salient tasks will be started and completed, including a block by block breakdown along the construction route. The Contractor is required to obtain written approval of the Work Schedule from the Engineer prior to initiating work at the Contract work area. The schedule shall be updated as needed (minimum of monthly), and resubmitted to the Engineer. As part of the required Work Schedule, the Contractor shall develop a detailed description of the proposed sequence of construction.

SC-16.0 PRE-CONSTRUCTION MEETINGS

Prior to the start of construction, a general information meeting shall be held with the Owner/Engineer, Contractor(s), Reglatory Agencies, and other interested parties in attendance. The meeting shall cover the general features of the project and the various requirements in the Contract(s).

SC-17.0 PROGRESS AND COORDINATION MEETINGS

Progress and coordination meetings will be held weekly or as scheduled by the Engineer at the project site to discuss the progress of the Work. Representatives of the Contractor who have decision-making authority shall be in attendance at these. A NYSDEC representative may also be in attendance.

In the preparation of the bid, the Contractor should assume participation in continuous coordination efforts with all on-site parties. Informal meetings will be held at the work sites. On-site representatives of the Contractor and Owner will attend these meetings to discuss day-to-day operations, schedule, health and safety items, outstanding issues,

and the general status of the project. Approximate weekly meetings will be held on-site among representatives of the Contractor, Owner, and Owner's Representative. These meetings will be held to discuss issues including, but not limited to, project status, schedule, scope of work, and overall project implementation issues.

At a minimum, Toolbox "safety meetings" will be held weekly at the project site to discuss the current safety precautions for work activity in accordance with the Health and Safety Plan.

SC-18.0 TEMPORARY SUPPORT FACILITIES

Upon mobilization to the Site and initiation of construction activities, the Contractor shall provide, but shall not be limited to, the following temporary facilities:

1. Field Office Trailers – The Contractor shall submit drawings within one week following award of Contract to the Engineer for review, showing the layout, furnishings, and facilities of the field office trailer and information concerning how the Contractor proposes to furnish the required utilities. Agency/Engineer and Contractor field office trailer shall be provided by the Contractor. The Agency's/Engineer's field office trailer shall be a minimum of 400 square feet of floor space and include the following:

    - Three rooms
    - Heat
    - Air conditioning
    - Electrical outlets
    - Office furniture
    - Office supplies

    Maintenance of the trailer shall include setup, OSHA-approved stairs at each outside door, adequate heating and cooling, electrical power, and lighting.

2. Telephone Service - The Contractor shall provide and maintain separate telephone service and equipment including one telephone unit and one answering machine to each of the Contractor's field office trailers, the Engineer's/Agency's field office trailer. Long distance phone charges made from the Agency/Engineer Trailer shall be submitted by the Contractor for payment.

3. Computer Service - The Contractor shall provide and maintain separate telephone service for laptop computer users for the Contractor's and Engineer's field office trailers.

4. Facsimile Service - The Contractor shall provide and maintain separate facsimile service for the Contractor's and Engineer's field office trailer. The Contractor shall provide a dedicated telephone line to the Engineer's field office trailer for their use.

5. Temporary Water Service - The Contractor shall provide and maintain bottled drinking water service including one five-gallon capacity bottled drinking water cooler for each field office trailer (including Agency/Engineer's field office trailer). It is the Contractor's responsibility to provide potable water service as deemed necessary for construction activities.

6. Temporary Sanitary Facilities - The Contractor shall provide and maintain temporary sanitary facilities and enclosures as required by OSHA. Portable Toilets - The Contractor shall provide a minimum of two portable sanitary toilets. The Contractor will be responsible for the removal and disposal of sanitary wastes off site on a periodic basis as required and in accordance with applicable laws and regulations.

7. Project Sign – The project sign shall be painted with black letters and emblems as shown on the Contract Drawings and as specified herein. The Contractor shall submit a sketch of sign location and orientation. The Contractor shall provide any and all patching, painting, lettering, and bracing required to maintain the sign in good condition throughout the duration of the Contract.

SC-19.0 BORINGS AND OTHER SUBSURFACE INVESTIGATION

It shall be each Contractor's obligation to satisfy himself as to the nature, character, quality, and quantity of subsurface conditions likely to be encountered. Any reliance upon the subsurface conditions information made available by the Owner or the Engineer shall be at each Contractor's risk.

Each Contractor agrees that he shall neither have nor assert against the Owner/Engineer any claim for damages for extra work or otherwise for relief from any obligation of this Contract based upon the failure by the Owner/Engineer to obtain or to furnish additional subsurface conditions information or to furnish all subsurface conditions information in the Owner's/Engineer's possession or based upon any inadequacy or inaccuracy of the information furnished.

Certain subsurface conditions information may be shown on separate sheets or otherwise made available by the Owner/Engineer to Bidders, Contractors, and other interested parties. Such information shall not be considered a part of the Contract Documents, it being understood that such information is made available only as a convenience, without express or implied representation, assurance, or guarantee that the information is adequate, complete, or correct, or that it represents a true picture of the subsurface conditions to be encountered, or that all pertinent subsurface conditions information in the possession of the Owner/Engineer has been furnished.

Any Bidder will be permitted to make test borings, Test Pits, soundings, and any other investigation it deems necessary at the Site of the Work if it so desires, subject to its first obtaining written approval from the Owner. It is understood that the party or parties receiving such approval must assume all risks and liabilities contingent thereto.

It shall be the obligation of each Contractor to inquire of the Owner/Engineer whether pertinent subsurface conditions information has been obtained by the Owner with respect to the Work.

SC-20.0 LINES, GRADES, AND ELEVATIONS

From the information provided by the Engineer, the Contractor shall verify benchmarks and develop and make all detail surveys needed for construction.

The Contractor shall set and maintain all necessary intermediate points, lines, grades and elevations, and provide slope stakes, offset stakes, batter boards, stakes for pipe locations, and other such items at his own expense. Where the Contractor uses the laser for control, he shall periodically check the grade and alignment during each day's operation.

The Contractor will be responsible for performing all survey activities for each work site, using a New York State-licensed land surveyor, during the performance of response actions. The survey activities will include, at a minimum, the following:

- Reviewing the technical drawing for each work site prior to initiating site activities, evaluating the existing surface drainage pattern, and identifying areas within the proposed limits of excavation that may potentially pond water and not promote positive drainage.
- Staking out the limits of excavation for each work site and maintaining the stakes during the performance of excavation activities;
- Performing detailed horizontal and vertical control surveys during the performance of excavation activities (for verification of removal limits);
- Installing additional stakes upon the completion of excavation activities to establish final elevations and facilitate site restoration activities;
- Performing survey following backfill and before topsoil is placed to verify grades and quantities for work. Both the volume of material that was excavated and the volume of material that was backfilled (separate volumes for fill material and topsoil) shall be included on the Record Drawings. The Engineer will compare the volumes to verify that the appropriate volume of material was placed and that pre-existing conditions have been achieved (i.e., there are no overfills or underfills).
- Performing a detailed survey following site restoration activities to verify that each work site is restored in accordance with the provisions of the Contract and to prepare Record Drawings. In addition, the surveyor should determine the volume (using units of in-situ cubic yards) of material that was excavated from each work site and include that volume versus the volume backfilled on the Record Drawing for each work site. The surveyor should also determine the final area (using units of square feet) of excavation; and
- Providing all survey notes (e.g., control points, baseline data, etc.) to National Grid to allow survey replication by National Grid.

National Grid's Representative may periodically audit the Contractor's surveyor, both in the field and office, to review all accumulated data and evaluate the surveyor's performance.

Based on the contents of this section, the Contractor should anticipate and schedule site work to accommodate survey activities. No claims by the Contractor for additional payment due to work interruption caused by survey activities will be considered by the Owner.

The Contractor shall furnish copies to the Engineer in advance of construction of grade letters and cut sheets prepared by the Contractor. The accuracy of the Contractor's survey and other furnishing of data to the Engineer does not constitute a transferal of responsibility for checking.

SC-21.0 EQUIVALENT PRODUCTS

There shall be no acceptance given by the Engineer during the bidding period or prior to award of Contracts for any names or equal equipment systems.

Whenever a product is specified or described in the Contract Documents by reference of name, trade name, make or catalog number of a particular manufacturer, supplier, fabricator or distributor, the naming of the item is intended to establish the type, function and quality required. Unless the name is followed by words indicating that no substitution is permitted, materials or equipment of the manufacturers, fabricators, suppliers or distributors may be accepted by the Engineer if sufficient information is submitted by the Contractor to allow the Engineer to determine that the material or equipment proposed is equivalent to that named. The procedure for the review by Engineer shall be described below.

Requests for review of substitute items of material and equipment will not be accepted by Engineer from anyone other than the Contractor. If Contractor wishes to furnish or use a substitute item of material or equipment, Contractor shall make written application to Engineer for review thereof.

Unless directed otherwise, the Contractor may propose the use of substitute products and materials other than as specified in the Contract. The Contractor may also submit substitute procedures for performing operations other than as described in the Contract. All proposed substitute materials and procedures must be effectively equivalent to the materials and procedures specified in this Contract. In submitting "equivalent" products or procedures, the Contractor recognizes that it is responsible for all costs associated with furnishing, installing, or performing the "equivalent" product or procedure.

The submittal or use of an "equivalent" product or procedure will in no way impact the overall implementation schedule. Potential time delays associated with the Engineer to review the proposed substitute should be considered by the Contractor in submitting an "equivalent" product or procedure.

In order to aid the Engineer in determining the equality of a proposed substitution (when compared to the item actually specified), the Contractor shall arrange for the performance of any tests requested by the Engineer. The nature, extent, testing, and supervision of such tests including engineering costs, shall be borne by the Contractor. Certified test results shall be mailed directly to the Engineer for all tests requested. Engineer may require Contractor to furnish at Contractor's expense additional data about the proposed substitute.

Engineer will be the sole judge of acceptability, and no substitute will be ordered or installed without Engineer's written acceptance. The Owner may require the Contractor to furnish at Contractor's expense a special performance guarantee or other surety with respect to any substitute.

Engineer will record time required by Engineer and Engineer's consultants in evaluating substitutions proposed by the Contractor and in making changes in the Contract Drawings or Specifications occasioned thereby. If Engineer determines the proposed substitute is not "equal," Contractor shall reimburse Owner for the charges of Engineer and Engineer's consultants for evaluating the proposed substitute.

SC-22.0 EMERGENCY CALLS

The Contractor shall maintain telephone service 24 hours a day, 7 days a week to responsible personnel who shall be in a position to dispatch men and machinery to the project area in the event of an emergency. The Contractor shall provide a list to the Owner and the Engineer of at least three contacts and corresponding telephone numbers. In addition, the Contractor shall have posted the following:

- National Grid **One-Call** number (315-460-1200).
- NYSDEC Spill Hotline number (1-800-457-7362).

SC-23.0 NOISE AND DUST CONTROL

It shall be the responsibility of the Contractor to take adequate measures for controlling dust and vapors produced by drilling, excavation, backfilling, loading, or other means. The use of calcium chloride or petroleum-based materials for dust control is prohibited.

The presence of visible dust during the performance of response actions is not acceptable and will require the suspension of work activities until appropriate dust control measures have been implemented. Appropriate dust control measures include the following:

- Spraying water on access roads;
- Spraying water on excavation faces, buckets during excavation, and excavated soil when loading transport vehicles;
- Spraying water on backfill stockpiles and on backfill materials that have been placed within excavated areas;
- Hauling excavated materials and clean backfill materials in properly tarped vehicles;
- Restricting vehicle speeds to 5 miles per hour; and
- Covering excavation faces with a layer of polyethylene sheeting (anchored appropriately to resist wind forces) after excavation activities cease for the day.

The Contractor should make a source of water (water tank truck, fire hydrant, water from property owner) available. The Contractor will be responsible for maintaining, in the immediate vicinity of the work, a supply of water and means of dispersion (e.g., a water tank and sprayer, fire hydrant using a fire hose) such that water may be applied for dust

control immediately as required. If the dust control measures being utilized by the Contractor do not lower particulates, based on visual observations and/or the results of airborne particulate monitoring, excavation activities must be suspended until the Contractor develops the appropriate corrective measure(s) to remedy the situation.

It shall be the responsibility of the Contractor to take adequate measures for keeping noise levels as produced by construction equipment to safe and tolerable limits as set forth by the Occupational Safety and Health Administration (OSHA), the Environmental Protection Agency (EPA), and the New York State Industrial Code Guidelines and Ordinances. All construction equipment presenting a potential noise nuisance shall be provided with noise muffling devices.

SC-24.0 SOIL, SEDIMENT, AND EROSION CONTROL

Erosion Control

Erosion control procedures shall be utilized on the Site as required elsewhere in the Contract Documents. Erosion control shall occur as required prior to commencement of any site work.

Sediment Control

Care should be taken not to damage or kill vegetation by excessive watering or by damaging silt accumulation in the discharge area. Temporary silt fence, erosion control mats, and/or hay bales shall be used where necessary to protect vegetation and to achieve environmental objectives to allow sediment to settle out of runoff waters that come in contact with construction, before such water leaves the site limits or enters any surface waters. Sediment control measures shall be performed in accordance with the requirements specified elsewhere in the Contract Documents.

SC-25.0 WORK WITHIN PUBLIC ROADWAYS

The use and protection of all public roadways involved in this Contract shall be in accordance with all applicable state, county, and local requirements. All transportation of equipment and materials along public roadways shall be preceded by the application and issuance of all necessary road and bridge crossing permits from the appropriate city/town/county if not already covered under permits as addressed in the site specific Special Conditions. The Contractor shall be responsible for all permits and associated fees not addressed in the site specific Special Conditions. Any damages to existing roadways or bridges shall be repaired (to its original or better condition) by the Contractor, at no expense to the Owner.

Additionally, the Contractor shall provide traffic plans and associated warnings and controls for all points of equipment access to the Site. Such warnings and controls shall include, but are not limited to, warning signs and the use of a flagman during all instances when heavy equipment enters and/or exits the Site. The use of such controls shall be maintained for the duration of the project.

SC-26.0 DISPOSAL OF CLEARED MATERIAL

All materials that are cleared in order to facilitate excavation of a given area must be disposed of according to the following criteria:

- All materials cleared from at or below grade (i.e., tree stumps/roots, surface debris, building slabs, etc.) must be disposed based on the planned removal actions for the soil from which the material was removed. For example, if a tree stump is removed from an area of soil that is subject to excavation and disposal as a impacted material, the tree stump will also be disposed of as an impacted material;
- All cleared materials subject to off-site disposal with the associated soils shall be broken into sufficiently small pieces (a maximum of 2 foot sections) so as to be acceptable to the disposal facility;
- The Contractor should dispose of all vegetative materials cleared from above grade (i.e., trees/brush/branches, etc.) at a local permitted resource recovery facility. These materials must be removed and handled in a manner that will prevent contact between cleared materials and the soils subject to excavation and disposal;
- Foreign materials and other surface debris must be disposed of as regulated materials (i.e., hazardous, nonhazardous) unless otherwise instructed by National Grid; and
- On-site open burning of cleared materials is prohibited.

SC-27.0 SUBMITTALS

Following award of the Contract, the Contractor will submit to the Engineer a list of equipment, materials, and other items for which shop drawings, layouts, samples, or shop drawings and samples will be required. This listing shall not be construed to be all-inclusive and may be added to, or deleted from, as may be required in the opinion of the Engineer.

The Contract requires that the Contractor submit various plans, documents, data, drawings, and other information related to the performance of remedial activities. Eight copies of each submittal (numbered in sequential order as submitted) shall be received by the Engineer at least 20 days prior to the Contractor's intended use of the item covered by the submittal. Copies of submittals should be submitted to the Engineer as identified by the Owner.

The Engineer will subsequently review the submittals in accordance with Article SC-13 to determine general compliance with the Contract conditions. The Engineer's review will not be a complete check of the detailed methods, materials, or procedures and shall in no way be construed as permitting any departure from the Contract, except where the Contractor has previously requested and received written approval of the Engineer for such departure. The Contractor will not be permitted to undertake any activity that is directly or indirectly related to the item covered by the submittal until such time that the Engineer provides notification to the Contractor.

The following provides a list of the required submittals subject to the provisions of this section:

- All applicable environmental and/or local permits to perform the work specified;
- Proposed substitutions for materials or modifications to procedures specified in the Contract Documents;
- Health and Safety Plan;
- Work Schedule;
- The name, location (as identified on a detailed map), and quantity of each source and type of backfill material and topsoil proposed by the Contractor;
- The name of subcontractor(s) to be utilized for the Work;
- Record Drawings;
- Remediation Plan;
- Waste Handling and Disposal Plan;
- Remedial Action Contingency Plan;
- All sample and analytical results, including all laboratory deliverables (e.g., wipe samples); and
- All other technical submittals.

The contractor will keep a Technical Submittal Register and will update the Register as necessary to reflect the receipt of new submittals and/or changes in submittal(s) status.

SC-28.0 RECORD KEEPING AND RECORD DRAWINGS

During construction, the Contractor for each Contract shall keep one set of the Contract Drawings at the project Site on which he shall show all changes in, or directly associated with, the work under this Contract. Such changes shall be neatly and clearly marked on the drawings using colored ink or pencil, and the entire set of drawings shall be kept current on a day-to-day basis in concert with the progress of the work. Where applicable, the change marked on a drawing is to carry the notation “per Change Order No. ___”, or similar reference that cites the reason for the change. The day to day construction record drawings shall be made available to the Engineer and/or Owner for review upon request.

The following items are examples of some of the types of changes that could occur and are to be recorded by the Contractor:

1. Change in location of project components

2. Change in elevation of project components.

3. Change in excavation volumes.

4.

5. Change in materials, such as backfill.

6. Change in topographic contours of finished earth surfaces.

7. Change in elevation of finished grades.

8. Additions to project.

9. Elimination of a project component.

10. Relocation of existing underground utilities made necessary because of interference with project components.

11.

12. Soil excavation activities including areas that require additional excavation beyond the specified limits and areas where ORC is applied;

13. Unforeseen modifications made to existing structures made necessary by requirements of the work.

14. Relocation of equipment.

15.

16. Abandonment of encountered piping.

In addition, the record drawings shall show the precise as-built locations of all buried, imbedded, or concealed features installed by the Contractor.

The Contractor shall include on the Record Drawings, both the volume of material that was excavated and the volume of material that was backfilled (separate volumes for fill material and topsoil. National Grid will compare the volumes to verify that the appropriate volume of material was placed.

The Owner retains the right to withhold a portion of progress payments to the Contractor if record drawings are not kept current in accordance with this section. Copies of the record drawings at the end of each payment period shall be submitted with this application for payment.

Upon substantial completion of the Contract, and as a condition of reduction of retainage, the Contractor shall deliver one (1) complete, accurate, and legible set of record drawings to the Engineer for transmittal by the Engineer to the Owner.

SC-29.0 MATERIALS ACCEPTABILITY TESTING

Contractor shall be responsible for and shall pay all costs in connection with any inspection or testing required in connection with Owner's or Engineer's acceptance of a manufacturer, fabricator, supplier, or distributor of material or equipment submitted for acceptance prior to Contractor's purchase thereof for incorporation in the Work.

Tests and certifications which will be required, the cost thereof to be borne by the Contractor, are as follows:

1. Testing of materials where required in the Specifications.

2. Certification of concrete materials.

3.

4. Certification of paving materials.

5. Gradation and conformance of all granular materials.

Conformance tests may be required, the cost thereof for initial testing being borne by the Owner, and are as follows:

6. Compaction and density tests of backfill.

7. Concrete cylinder tests of concrete work.

8. Tests ordered by the Engineer.

The Contractor is advised that any follow-up testing required due to unacceptability of initial test results will be performed at no additional expense to the Owner.

SC-30.0 REPLACEMENT OF PROPERTY

The Contractor shall replace all culverts, pavements, driveways, shrubs, lawns, fences, and any other property either public or private which is damaged as a result of the work of this Contract. All such replacement shall be made according to the applicable specifications and no extra payment will be made for such work. If applicable specifications do not address a replacement item, at a minimum, the Contractor will replace in kind, any property or items damaged as a result of the work of this Contract.

SC-31.0 CONTRACT WORK LIMITS AND SECURITY

Working limits where applicable have been depicted on the Contract Drawings. The Contractor shall restrict all work activities, including, but not limited to, storage of materials and equipment to be incorporated in the project, as well as parking of vehicles, heavy equipment, project trailers, etc., to these designated on the Contract Drawings. However, where appropriate and in accordance with SC-01710 Storage of Equipment, the Contractor may provide off-site storage of construction materials or equipment as necessary.

All access roads within and outside of the working limits shall be kept open to allow for uninterrupted passage.

The Contractor shall provide all elements of Work area security necessary to prevent the unauthorized entry of persons onto the Contract Work area during both working and nonworking hours. The Contractor shall be responsible for providing and maintaining, at minimum, one security guard on site during nonworking hours from the date of initial mobilization throughout the construction activities until the date of final demobilization, or as otherwise directed by the Engineer. The Contractor's trailer shall be maintained at the site as the main operating station for the security guard(s). The Contractor shall be responsible for providing the security guard(s) with access to an operating telephone.

The Contractor’s security guard(s) shall be responsible for performing periodic inspections (at a minimum, every twenty minutes) to check conditions at various areas throughout the site. The Contractor's site security guard shall be responsible for maintaining a log notebook. The security guard shall log, in the notebook, any unusual circumstances encountered during site inspections, any disturbances encountered, and any persons who enter the site (including arrival and departure times). In the event that

an on-site emergency occurs at any time during the construction activities, the security guard shall be responsible for notifying appropriate parties (including, but not limited to, the Engineer, project management personnel, law enforcement officials, the local fire department, the local ambulance squad, the local spill response team, etc.).

The Contractor shall inspect site perimeter fencing (including temporary fencing at the site perimeter) to verify that the fencing is in good condition. If perimeter fencing becomes disturbed and/or damaged at any time during the construction activities, the Contractor shall immediately repair and/or replace the disturbed/damaged section of fencing.

The Contractor shall be responsible for all costs associated with installation, maintaining, and removing Work area security measures instituted during the various phases of construction. This shall include, but is not limited to, the maintenance of existing fences, and providing additional temporary fencing along or near the perimeter of the work limits to completely enclose and secure the work area.

SC-32.0 DECONTAMINATION OF EQUIPMENT

As part of everyday Work activities, the Contractor shall provide a personnel decontamination area (as specified in each of the Contractor's Health and Safety Plans). The personnel decontamination area (within the contamination reduction zone) shall include those facilities necessary to decontaminate personnel upon exit of the Work area (exclusion zone), in accordance with the Contractor Health and Safety Plan, and in accordance with local, state, and federal laws and regulations.

The Contractor will establish procedures for decontamination of all vehicles and equipment used for construction activities. These procedures shall be reviewed by the Owner and Engineer prior to initiation of construction activities for equipment and materials that are being transferred from a remediation area to an Equipment Decontamination Area (discussed below) or moved within the Site from one remediation area to another, visual observation of the equipment shall be performed by the Contractor. This observation shall occur while the equipment is positioned in the Equipment Decontamination Area. Any visible soils or other debris shall be promptly removed and disposed in a manner consistent with materials excavated.

Unless otherwise directed by the Owner/Engineer, any equipment to be taken off site or moved within the Site from one remediation area to another, shall be subject to final visual observation and cleaning (if necessary) at a designated Equipment Decontamination Area. In general, this area will consist of an impermeable barrier which shall be sloped to a collection sump. The Equipment Decontamination Areas shall be placed as identified on the Contract Drawings and constructed in accordance with the Equipment Decontamination Area Detail as identified in the Contract Drawings. Precautions shall be taken to limit contact between the equipment, personnel performing the cleaning activities, and any cleaning liquids that may accumulate in the cleaning area. The Contractor shall be responsible for constructing and maintaining the cleaning area to accommodate all loads, equipment, and migration scenarios. The Contractor shall dismantle and properly dispose all materials associated with the cleaning area and shall restore the area to its original conditions.

The extent and method of cleaning shall be at the discretion of the Contractor; however, equipment and materials shall be observed by the Engineer's on-site representative prior to its departure from the Decontamination Area. In addition, the Owner/Engineer reserves the right to require additional decontamination if deemed necessary and perform sampling analysis as part of the pre-departure confirmation. Sampling would be performed by the Engineer's on-site representative at their discretion to demonstrate that equipment that contacted soils/sediments contain surface concentrations allowable to the regulatory agencies. Recleaning shall be at no additional expense to the Owner.

Wash water, solids, and other materials generated during equipment cleaning shall not contact native soils and existing facilities, and shall be collected by the Contractor and placed into designated containers. Disposal of collected wash water, solids, and other materials shall be in accordance with Special Condition 01739 – Waste Disposal.

Personnel engaged in vehicle decontamination shall use personal protective equipment including disposable clothing in accordance with the Contractor's Health and Safety Plan.

A special "clean area" within the remediation support area shall be established for performing equipment maintenance. This area shall be used when personnel are required by normal practices to expose themselves to contact with ground soil (e.g., crawling under a vehicle to change engine oil).

Should vehicles be required to transport materials over Site roadways or roadways traversed by local traffic, it is imperative that these roads be kept free of any potentially impacted as well as nonimpacted soils due to Contractor's operations. All Contractor vehicles shall be carefully loaded to avoid potential contamination of areas exterior to the remediation areas.

SC-33.0 WASTE DISPOSAL

The Contractor shall be responsible for proper stabilization, containerization, staging, preparation of waste material for treatment/disposal, loading, transportation, and disposal of waste material. Each waste medium (e.g., soil, decontamination water, groundwater, waste debris, PPE) shall be properly containerized via DOT-approved 55-gallon drums, temporary tanks, lined and covered roll-off containers, or lined and covered dump trailers and properly labeled and staged with like materials.

SC-34.0 HEALTH AND SAFETY PLAN

Due to the nature of the chemical constituents identified at the Site, the Owner, in compliance with regulations, requires that safety precautions be observed at all times by each Contractor and all persons, employees, and subcontractors that each Contractor directly or indirectly introduces to the Work while engaging in various aspects of the Work. It is understood that each Contractor shall be solely and totally responsible for safety compliance associated with the Work at the Site.

Prior to the start of construction, each Contractor shall submit a Health and Safety Plan that has been reviewed and certified by an Industrial Hygienist for review by the Owner. At a minimum, the Health and Safety Plan shall address the following topics:

1. Designation of Work-Specific Areas, including exclusion zone, contamination reduction zone, and health/safety/emergency facilities (such as equipment and personnel decontamination area[s]). Specific work areas (exclusion zone and contamination reduction zone) shall be designated through the use of a temporary barrier (e.g., temporary chain-link fence) with appropriate signage that identifies the specific area and details its restricted access and PPE requirements. Signage shall also be placed at the entrance/exit of the exclusion zone that details personnel and equipment decontamination procedures.

2. Description of Work Site Hazards, including hazardous materials present, physical hazards present, and evaluation of expected risks.

3. Protective Measures, including contact protection, respiratory protection, eye protection, and airborne dust prevention.

4. Health and Safety Program and Procedures, including on-site organization, training program, monitoring program, equipment and personnel decontamination procedures, entry and exit procedures, on-site health and safety concerns, and medical program.

5. Emergency Response Provisions, including a listing of equipment and personnel to be dispatched in the event of an emergency and to remove conditions creating any hazard to life, limb, or property.

Provisions must be made for work area monitoring during construction activities. Work area monitoring will be conducted by each Contractor to determine employee exposure to airborne constituents. The monitoring devices to be used, at a minimum, are a combustible gas/oxygen meter, a photoionization detector (PID), MIE MiniRAM portable dust monitor, and an LEL/Oxygen (O_2)/Carbon Monoxide (CO)/Hydrogen Sulfide (H_2S) monitor. Air monitoring will be conducted continuously with the LEL/O_2/CO/H_2S meter when flammable/explosive vapors, hydrogen sulfide, or carbon monoxide are suspected and during all intrusive (e.g., site grading, water-tight steel sheetpiling installation) activities. Monitoring for organic vapors for the purpose of estimating worker exposure level will be conducted in the breathing zone with the PID during field activities. During operations that may cause airborne particulate (e.g., site grading, water-tight steel sheetpiling installation), an MIE MiniRAM portable dust monitor will be used to measure concentrations of total particulate (dust) material. Additional air monitoring requirements may be detailed elsewhere in the Contract Documents.

Each Contractor shall provide a Health and Safety Officer to implement, monitor, and enforce its Health and Safety Plan. The Health and Safety Officer shall have working experience appropriate for the Work. The Health and Safety Officer shall have a sound working knowledge of any and all applicable federal and state occupational safety and health regulations and formal educational training in occupational safety and health.

Each Contractor shall provide documentation certifying that all on-site personnel have read and understood the provisions of the plan. Any personnel found to be disregarding provisions of the Health and Safety Plan shall, at the request of the Owner, be barred from the Site

SC-35.0 REMEDIATION PLANS

Based on the information presented on the Contract Drawings and the requirements of these Contract Documents, the Contractor will be required to develop and submit remediation plans for certain aspects of the project. The plans shall be accompanied with a written text and figures or other supporting materials, as necessary. The information in the plans shall include, but not be limited to, the proposed methods, equipment, sequence, and/or materials to perform the work:

1. Remediation Plan

   - Air Monitoring Program;
   - Staging area(s) and temporary construction roads/stabilized construction surfaces;
   - Soil Excavation Plan;
   - Excavation of soil/debris from the locations specified on the Contract Drawings including ingress and egress routes to specified areas;
   - Dewatering of soil excavation areas within the Site;
   - Methods to break apart/segregate debris and preparation of materials (including soil mixing, dewatering, stabilization) for treatment;
   - Erosion control to limit accelerated erosion of areas subject to remediation and to prevent excess sedimentation in Site drainage pathways. This shall include development of an erosion, sediment, and storm water control plan consistent with the requirements of this Contract Document;
   - Methods for dust and vapor control in accordance with the HASP;
   - Equipment decontamination procedures; and
   - Restoration of the Site.

2. Waste Handling and Disposal Plan

   A Waste Handling and Disposal Plan will be prepared to address wastes generated during implementation of the remedial design. The Waste Handling and Disposal Plan must identify each waste stream that has the potential to be generated as a result of construction activities. Using the list of National Grid pre-approved disposal facilities and waste haulers (as identified and included as “Not Part of the Contract Documents”), the Contractor must identify the name, address, and USEPA/NYSDEC number for each disposal facility and waste hauler to be utilized for each identified waste stream. For each of the Contractor’s identified disposal facilities and waste haulers, the Contractor must present acceptance/waste characterization criteria and any restrictions for acceptance of waste streams. Wastes that will be covered by the plan may include, but are not limited to, the following:

   - Soil and other materials excavated or encountered during implementation of the remedial design;
   - Groundwater from excavation dewatering;
   - Decontamination materials; and
   - Other wastes and refuse from implementation of remedial design activities.

The plan will include a description of and requirements for the following waste-related activities:

- Staging/containerization of waste materials;
- Sampling and analysis activities for waste characterization (including characterization for treatment/recycling);
- Waste stream preparation prior to transporting;
- Proposed waste stream characterization and profiling procedures (including a copy of the waste profile form);
- Manifesting and packing/shipping requirements for waste streams; and
- Identifying NYSDEC-permitted and National Grid-approved transporters and treatment/recycling facilities for the wastes.

3. Remedial Action Contingency Plan

The Contractor will prepare the Remedial Action Contingency Plan (RACP). This plan will describe the provisions required for responding to Site-related emergencies that could potentially occur during remedy implementation. The RACP will, at a minimum, present the following components:

- A spill response plan (SRP) for addressing spills that occur on site during remedial construction activities. The SRP will describe the methods, means, and facilities required to prevent soil, water, structure, equipment, and material impacts caused by spills; provide information regarding spill containment and cleanup; and provide information related to decontamination measures;
- Procedures that Contractor's personnel will take in response to an emergency;
- Designations of an emergency coordinator;
- Include a current list of all emergency equipment and evacuation plans;
- Procedures and routes for emergency vehicular access/egress;
- Procedures for the evacuation of personnel from the Site;
- A listing of contact personnel with phone numbers that, at a minimum, includes fire officials, ambulance service, local, county, and state police, local hospitals, a spill response team, NYSDEC 24-hour Spill Hotline, and procedures for notifying each party; and
- Routes to local hospitals, including written directions and a map that depicts the location of the Site relative to the hospital(s).

The selected Contractor will be required to submit all the complete plans at lease 20 days prior to mobilization to the Site.

SC-36.0 BACKFILL OF EXCAVATION AREAS

All excavations will be backfilled with material approved by the Engineer. The fill to be utilized for the backfill of excavations shall be obtained on-site in the form of the gravel materials utilized to construct the stabilized construction surfaces and access roadways (if deemed suitable) or an off-site location (as necessary), provided the selected source of fill meets the minimum requirements.

All on-site and off-site sources of fill materials utilized for the backfill of subsurface excavation areas shall be tested by the Contractor. This testing, at a minimum, shall include laboratory analytical data for two discrete soil samples representing a specific type and source of fill material. At a minimum, the laboratory analysis shall include all constituents necessary to provide data that indicates that the source of material meets NYSDEC *TAGM 4046.* The Engineer may request, at no additional cost to the Owner, that additional sampling and testing of proposed backfill be performed. The Engineer shall be present during all sampling activities.

All confirmation sampling associated with clean fill shall be reviewed by the Engineer prior to placement within excavation areas. Upon confirmation of the source of clean fill, this material must also be determined to be suitable in accordance with the requirements specified elsewhere in the Contract Documents. In addition, the clean fill shall be free from excessive moisture, frost, stumps, trees, roots, sod, muck, marl, vegetable matter, or other unsuitable materials as specified elsewhere in the Contract Documents.

Backfill and compaction of excavations with clean fill shall be performed in accordance with the backfilling requirements specified elsewhere in the Contract Documents. In addition, clean fill shall be placed and compacted within excavation areas in horizontal layers not exceeding twelve (12) inches in loose thickness and stones shall not exceed six (6) inches in greatest dimension and shall be distributed throughout the mass. Each layer of soil fill material shall be thoroughly tamped or rolled to the required degree of compaction. Clean fill placed within excavation areas, shall be compacted to a minimum of 95 percent of the maximum dry weight density in pounds per cubic foot in accordance with the testing requirements as specified in elsewhere in the Contract Documents.

SC-37.0 PRECEDENCE

In the case of identified discrepancies among any components of the final Contract Documents, the Contractor will provide notice to the Engineer. Unless otherwise directed, precedence among the components of the Contract Documents will be in the following order:

1. Change Orders;
2. National Grid, a National Grid Company's Purchase Order;
3. Addenda to the Contract Documents (later dates taking precedence over earlier dates);
4. Special Conditions (for specifically referenced project);
5. Supplemental Conditions to National Grid Remedial Construction Purchase Orders;
6. Technical Drawings;
7. Approved Submittals;

8. National Grid USA Terms and Conditions for Construction Purchase Orders; and
9. Material and Performance Specifications.

SPECIAL CONDITIONS
FOR
INTERIM REMEDIAL MEASURE

EAST HAMPTON HORTONSPHERE SITE

TO
NATIONAL GRID
INTERIM REMEDIAL MEASURE
PURCHASE ORDERS

TECHNICAL SPECIFICATIONS
TABLE OF CONTENTS

SECTION 01 11 00
SUMMARY OF WORK

PART 1 GENERAL

1.1. PROJECT DESCRIPTION

A. The East Hampton Hortonsphere Interim Remedial Measure (IRM) consists of removing lead-impacted surface soils that have the potential to come into contact with workers and nearby residents. This includes, but is not limited to removing the top 6 inches of soil from the area beneath and around the hortonsphere containing lead-impacts, and restoring with gravel fill, certified clean topsoil fill, and grass seed. All lead-impacted soil generated during performance of the IRM will be sent for disposal at an appropriately permitted National Grid-approved disposal facility. The Site is a level graded area which contains the active hortonsphere holder, gas control houses, and an active LIPA Substation. Additional information on the Site conditions and history are located in the *Interim Remedial Measure Work Plan, East Hampton Hortonsphere Site, Town of East Hampton, Suffolk County New York*, prepared by GEI Consultants, Inc, October 2010.

B. All tasks, requirements, deliverables, etc. contained in the Contract Documents are the sole responsibility of the Contractor unless specifically assigned to Others in the Contract Documents. Project Work performed by the Contractor includes:

1. Install, operate, and maintain temporary facilities and controls, including:
    a. Temporary perimeter fence.
    b. Storm water and erosion controls.
    c. Worker health and safety measures.
    d. Equipment and personnel decontamination.
    e. Site roadways and traffic controls.
    f. Sanitary facilities.
    g. Signage (including but not limited to the, Site control signs, and safety warnings).
    h. Dust, odor, and vapor control.
    i. Excavated material (soil and debris) management/loading areas.
2. Perform a pre-construction survey of the substation property and adjacent public roadway under the supervision of the Engineer and/or National Grid.
    a. Have the findings of the pre-construction survey reviewed and approved by the Engineer and National Grid prior to mobilization.

b. Include video/photographic documentation of the existing conditions of the hortonsphere and surrounding area, as needed.

c. Claims determined to be resulting from pre-existing structural and/or cosmetic damage, not identified during the pre-construction survey, are the responsibility of the Contractor.

3. Establish additional survey control points as necessary.

4. Obtaining all local permits required for completion of the IRM.

5. Provide contact information for all Subcontractors including transporters and disposal facilities for approval by National Grid.

6. Perform Site Work

a. Identify and protect existing utilities and Site features to remain after the Project is complete.

b. Site preparation.

c. Strip the vegetation, remove the top 6 inches of soil, and re-grade the portion of the Site to the lines and grades shown on the Contract Drawings.

d. Transport and dispose off-Site of lead-impacted material and debris.

e. Construction of a new security fence.

f. Plant grass seed over the imported topsoil fill and generate a satisfactory stand of grass.

7. Provide clear pathways for Emergency Vehicles entering and exiting the Site.

8. Provide and perform any other equipment, Work, or submittals required to facilitate items 1 through 7 above and the Work shown on the Contract Drawings.

9. Prepare and implement a Contractor Health and Safety Plan in accordance with Section SC-34.0 of the National Grid Supplemental Conditions.

10. Prepare and implement a Site Operations Plan.

1.2. CONTRACT DOCUMENTS:

A. The Contract Documents include all Specifications, Contract Drawings, figures, and conditions included or referenced in the Request for Proposal package and any subsequent approved Change Orders.

B. It is not the intent of the Contract Documents to show every pipe, wire, conduit, utility connection, detail, and appurtenance necessary to complete the Work for this Project. However, such connections and details that may be necessary to

complete the Work in accordance with Contract Documents, code requirements, and to the Engineer's satisfaction will be included in the Work.

C. The organization and division of Work contained within the Contract does not make the Engineer or National Grid an arbitrator to establish contract limits between the Contractor and any Subcontractor.

D. Perform work in accordance with the concepts and intent of the IRM Work Plan (IRMWP), which had been included with the bid documents.

1.3. CONTRACTOR REQUIREMENTS

A. The Work will be performed on a known contaminated Site.

B. Comply with the requirements of the Health and Safety Plan (HASP), along with any Site specific amendments, taking precautions as necessary to protect the public and work force personnel from potential hazards.

C. Comply with the requirements of the Community Air Monitoring Plan (CAMP), taking precautions as necessary to protect the public and work force personnel from potential hazards

D. For any Work performed in close proximity to commercial properties, utilities or any other third party property, utilize every precaution to protect the property, utility lines, trees, walls, and other structures and related appurtenances from damage. Any damage that the Contractor may cause directly or indirectly outside the Project limits will be repaired or replaced in kind in a prompt manner as directed by National Grid, and/or the Engineer at no additional cost to National Grid.

E. Identify storage, lay down, and material handling facilities and locations with this bid submittal.

F. Representatives of regulatory agencies from New York State, Suffolk County, and the Town of East Hampton and other local civic organizations may be on-Site to observe and inspect the Work. Communications with regulatory agency personnel will be directed to National Grid or their designee. Do not communicate with third parties without a National Grid representative present.

G. Do not conduct Work outside of the permitted working hours (Monday through Friday, 7:00 am to 6:00 pm, no work on Federal holidays) without advanced approval.

1.4. CONTRACT DRAWINGS AND SPECIFICATIONS:

A. Maintain at the Site two (2) copies of all Contract Drawings, Specifications, Addenda, approved Shop Drawings, Change Orders, and other modifications, schedules and instructions, in good order. Mark on set to record all changes made during construction. Keep one set clean of all markings. Have both sets available to National Grid, NYSDEC, and the Engineer at all times.

B. The Contract Drawings include notes. Refer to the Contract Drawings in conjunction with the Specifications.

1.5. SUBMITTALS

A. Submit Contractor Health and Safety Plan in accordance with Section SC-34.0 of the National Grid Supplemental Conditions.

PART 2 PRODUCTS

(Not Applicable)

PART 3 EXECUTION

(Not Applicable)

END OF SECTION 01 11 00

SECTION 01 20 00
PRICE AND PAYMENT PROCEDURES

PART 1 GENERAL

1.1. SUMMARY

A. The items listed in Price Schedule constitute all of the pay items for completion of the Work.

B. National Grid reserves the right to increase or decrease any quantity or to eliminate any line item as a result of actual conditions encountered during the performance of the Work.

1.2. PAYMENT TERMS

A. See National Grid Terms and Conditions, and Supplemental Conditions.

B. Payment will not be made unless the proper support documentation has been submitted and approved by National Grid.

C. Payment includes: Full compensation for all required labor, products, tools, equipment, transportation, services, and incidentals; erection, application, or installation of an item of the Work, including overhead and profit.

D. Payment will not be made for any of the following:

1. Products wasted or disposed of in a manner that is not acceptable.
2. Products determined as unacceptable before or after placement.
3. Products not completely unloaded from the transporting vehicle.
4. Products placed beyond the lines and levels of the required Work.
5. Loading, hauling, and disposing of rejected materials.
6. Products remaining on hand after completion of Work.
7. Additional Work undertaken to expedite Contractor's operations.
8. Repair or replacement of monitoring wells, utilities, or any other facilities property located within or adjacent to the Work Area.

E. Payment will be made by National Grid for all Work actually performed during a particular payment period. Payments for lump sum items will be made based on the percent completion of the pay item, upon approval by the Engineer. Judgments of percent completion of lump sum items will be made in reference to the Project Price Schedule.

F. Retainage (10 percent) shall be withheld from payments as specified in the Agreement.

1.3. SUBMITTALS

A. Invoices: Submit invoices in accordance with the provisions of the National Grid Terms and Conditions, and Supplemental Conditions. Include an update of Price Schedule with each invoice.

B. Bid Form: Submit a Price Schedule and Bid Form signed and sealed with a Company Seal by a Company Officer.

1.4. QUANTITY ESTIMATES

A. For all unit price Work, the Contract Price will include an amount equal to the sum of the unit price for each pay item times the estimated quantity of each item, as indicated in the Bid Form. The estimated quantities shown on the Project Price Schedule are not guaranteed and are solely for the purpose of comparison of bids, and determining an initial Contract Price. Quantities and measurements supplied or placed in the Work in accordance with the Contract Documents, and verified by the Engineer, will determine payment.

B. The Engineer will determine the actual quantities and classifications of unit price Work performed by the Contractor. The Engineer will review with the Contractor the Engineer's preliminary determinations before rendering a written decision on an Application for Payment.

C. If the actual Work requires more or fewer units than the estimated units indicated on the Project Price Schedule, provide the required units at the unit prices contracted. Under no circumstances may Contractor exceed stated quantities without prior written approval from the Engineer.

1.5 MEASUREMENT OF QUANTITIES

A. Measurement by Weight:

1. Weigh Scales: Utilize scales that have been certified in accordance with applicable laws and regulations for the state in which the scales are located. Certification will have been made within a period of not more than one year prior to date of use for weighing commodity.

2. The term "ton" will mean the short ton consisting of 2,000 pounds.

3. For shipments to off-Site disposal facilities, weigh trucks at the receiving facility for the purpose of measuring the quantity of Work for payment.

B. Measurement by Volume:

1. Volumes measured as in-place volumes will be determined by survey, and approved by the Engineer. Retain the services of an independent land surveyor, licensed or registered in the State of New York, whose determination of in-place volumes will be authoritative and final for the purpose of measurement for payment. To compute in-place volumes of excavation, the average end area method or other methods acceptable to the Engineer will be used.

C. Measurement by Area:

1. Measured by square dimension using length and width or radius, and verified by the Engineer.

D. Linear Measurement:

1. Measured by linear dimension, at the item centerline or mean chord, and verified by the Engineer.

E. Measurement by Time:

1. Measure by the actual time rounded to the nearest time unit and verified by the Engineer.

1.6 ASSESSMENT OF NON-CONFORMING WORK:

A. Replace Work, or portions of the Work, that do not conform to the requirements of the Contract Documents, as assessed by the Engineer.

B. If, in the opinion of the Engineer, it is not practical to remove and replace the non-conforming Work, the Engineer will direct one of the following remedies:

1. The non-conforming Work may remain, but the unit price will be adjusted to a new price, at the discretion of the Engineer.

2. The non-conforming Work will be partially repaired to the instructions of the Engineer, and the unit price will be adjusted to a new price, at the discretion of the Engineer.

C. The individual Specification sections may modify these options or may identify a specific formula or percentage price reduction.

D. The authority of the Engineer to assess non-conforming Work and identify payment adjustment is final.

1.7 ELIMINATED ITEMS:

A. Should any items contained in the Contract Drawings or Specifications be found unnecessary for the proper completion of the Work, the Engineer may, upon written order to the Contractor, eliminate such items from the Work, and such action will in no way invalidate the Agreement.

B. Contractor will be paid for actual Work done and all documented costs incurred, including mobilization of materials, prior to elimination of such items.

1.8 MEASUREMENT AND PAYMENT OF BID ITEMS:

A. The Project Price Schedule, lists the Bid Items and unit price Items for the Work. Measurement and payment of the Work covered by the Contract Documents is specified below.

B. At the direction of the Engineer, the Contractor may be asked to perform Change Order Work on a Time and Materials (T&M) basis. The unit rate schedule included in the Contractor's proposal will be the basis for measurement and payment of equipment and labor for T&M. Hourly prices for equipment and labor listed on the Contractor's unit rate schedule is to include Contractor's overhead and profit for such T&M Work.

C. The following paragraphs specify measurement and payment of Bid items listed on the Project Price Schedule:

Item 1 Mobilization

1. Work required to complete Mobilization includes, but is not limited to:
   a. Movement of personnel, equipment, and materials to the Site, if such movement is not included in any other Bid Item.
   b. Preconstruction coordination meetings.
   c. Preparation, submittal, and revision of all required pre-mobilization submittals as described in Specification 01 33 00 - Submittal Procedures.
2. Mobilization will be measured for payment as one unit, complete as specified.
3. Payment for Mobilization will be made in accordance with the lump sum price for the Bid item "Mobilization" listed on the Project Price Schedule. Payment of the lump sum price for "Mobilization" will constitute full compensation for all labor, supervision, materials, equipment, start up submittals, incidentals and all other costs necessary to complete Mobilization Work, including the transport of all equipment, labor, and temporary facilities and materials to and from the Site.

Item 2 Site Preparation

1. Work required to complete the Site Preparation includes, but is not limited to:
   a. Provide and maintain temporary fencing as shown on the Contract Drawings.
   b. Demolition of the existing fence which currently surrounds the Hortonsphere.
   c. Implement the health and safety requirements specified in the approved Contractor Site Operations Plan as detailed in Specification Section 01 50 00 - Temporary Facilities and Controls.

d. Install and maintain temporary facilities and controls specified in Specifications Section 01 50 00 - Temporary Facilities and Controls unless specifically identified as being provided by Others.

e. Project management and oversight as specified in Section 01 30 00 - Administrative Requirements.

f. Maintain and repair all temporary facilities and controls including those provided by Others during the period when Work is taking place at the Site.

g. Conduct any surveying needed to control and document the Work.

h. Clearing and grubbing the area shown on the Contract Drawings.

i. Removal and off-Site disposal of existing Site debris.

j. All other one-time and recurring activities required by the Contractor to complete the Work unless included in another pay item or specifically identified as being the responsibility of others.

2. Site Preparation will be measured for payment as one unit, complete as specified.

3. Payment for Site Preparation will be made in accordance with the lump sum price for the Bid item "Site Preparation" listed on the Project Price Schedule. Payment of the lump sum price for "Site Preparation" will constitute full compensation for all labor, supervision, materials, equipment, incidentals and all other costs necessary to complete the Site Preparation Work, as specified in Specifications Section 31 10 00.

Item 3 Excavation

1. Work required to complete Soil Removal includes but is not limited to:

   a. Excavation of lead impacted soils.

   b. Loading of the material for off-Site disposal.

2. Excavation will be measured for payment as one unit, complete as specified.

3. Payment for Soil Removal will be made in accordance with the lump sum price for the Bid item "Excavation" listed on the Project Price Schedule. Payment of the lump sum price for "Excavation" will constitute full compensation for all labor, supervision, materials, equipment, incidentals, approve and all other costs necessary to complete Excavation Work, as specified in Specifications Section 31 23 00.

Item 4 Backfill with Approved Off-Site Backfill Material - Topsoil

1. Work required to complete Backfill with Approved Off-Site Backfill Material - Topsoil includes, but is not limited to:

   a. Delivery, placement, and compaction of approved Topsoil, as specified in Specification Section 31 23 00 - Excavation and Fill.

2. Backfill with Approved Off-Site Backfill Material - Topsoil will be measured for payments on a per ton basis, as verified by borrow source scale weight tickets.

3. Payment for Backfill with Approved Off-Site Backfill Material - Topsoil Work will be made in accordance with the unit price for the Bid item "Backfill with Approved Off-Site Backfill Material - Topsoil" listed on the Project Price Schedule. Payment of the unit price for "Backfill with Approved Off-Site Backfill Material - Topsoil" will constitute full compensation for all labor, supervision, materials, equipment, incidentals and all other costs necessary to complete Backfill with Approved Off-Site Backfill Material - Topsoil Work, as specified in Specification Section 31 23 00 - Excavation and Fill.

Item 5 Backfill with Approved Off-Site Backfill Material - Gravel Fill

1. Work required to complete Backfill with Approved Off-Site Backfill Material – Gravel Fill includes, but is not limited to:

   a. Delivery, placement, and compaction of approved Gravel Fill, as specified in Specification Section 31 23 00 - Excavation and Fill.

2. Backfill with Approved Off-Site Backfill Material – Gravel Fill will be measured for payments on a per ton basis, as verified by borrow source scale weight tickets.

3. Payment for Backfill with Approved Off-Site Backfill Material – Gravel Fill Work will be made in accordance with the unit price for the Bid item "Backfill with Approved Off-Site Backfill Material – Gravel Fill" listed on the Project Price Schedule. Payment of the unit price for "Backfill with Approved Off-Site Backfill Material – Gravel Fill" will constitute full compensation for all labor, supervision, materials, equipment, incidentals and all other costs necessary to complete Backfill with Approved Off-Site Backfill Material – Gravel Fill Work, as specified in Specification Section 31 23 00 - Excavation and Fill.

Item 6 Miscellaneous Site Restoration

1. Work required to complete the Miscellaneous Site Restoration pay item includes but is not limited to:

   a. Planting grass seed, and growing and maintaining a satisfactory stand of grass as per Specification 32 90 00 – Planting.

b. Construction of a new security fence with one man-gate.

c. Any other Work required to restore the Site to pre-IRM conditions.

2. Miscellaneous Site Restoration will be measured for payment as one unit, complete as specified.

3. Payment for Miscellaneous Site Restoration will be made in accordance with the lump sum price for the Bid item "Miscellaneous Site Restoration" listed on Bid Form Schedule A. Payment of the lump sum price for "Miscellaneous Site Restoration" shall constitute full compensation for all labor, supervision, materials, equipment, incidentals and all other costs necessary to restore the Site to its original condition.

Item 7 Transportation and Disposal: Soil

1. Work required to complete the Transportation and Disposal: Soil pay item includes, but is not limited to:

   a. Performing any additional sampling of the soil to meet the frequency and analysis requirements of a National Grid-approved disposal facility, and obtaining acceptance from the facility for disposal of the material.

   b. Disposal of lead-impacted soil from the Site at disposal facilities approved by National Grid in accordance with Specification 02 61 00 – Removal and Disposal of Contaminated Materials.

   c. Identify the proposed disposal facilities and trucking companies on the list of Subcontractors provided with the Contractor's bid. It is the preference of National Grid that the material be used for beneficial reuse as opposed to landfill, if possible. Ensure that the selected disposal facility has capacity to accept materials and spoils at a rate sufficient to meet the Construction Milestones listed in the Contractor's schedule. If multiple disposal facilities are required to achieve the construction milestones, provide unit costs and percent of the total material and spoils shipped to each facility in the Site Operations Plan and in the Project Price Schedule.

2. Disposal will be measured for payment on a per ton basis, as documented by approved disposal facility scale weight tickets.

3. Payment for Transportation and Disposal: Soil will be made in accordance with the unit price for the Bid item "Transportation and Disposal: Soil" listed on Project Price Schedule. Payment of the unit price for "Transportation and Disposal: Soil" will constitute full compensation for all labor, supervision, materials, equipment, approved disposal facility fees, laboratory fees, incidentals, and all other costs necessary to complete

transportation and disposal of lead-impacted material as specified in Specifications Section 02 61 00.

Item 8 Transportation and Disposal: Debris

1. Work required to complete the Transportation and Disposal: Debris pay item includes, but is not limited to:

   a. Transportation and disposal of excavated debris from the Project Site at the National Grid approved disposal facility identified in the Contractor Site Operations Plan in accordance with Specification Section 02 61 00 – Removal and Disposal of Contaminated Materials.

2. Transportation and Disposal: Debris will be measured for payment on a per ton basis, as documented by disposal facility scale weight tickets.

4. Payment for Transportation and Disposal: Debris Work will be made in accordance with the unit price for the Bid item "Transportation and Disposal: Debris" listed on the Project Price Schedule. Payment of the unit price for "Transportation and Disposal: Debris" will constitute full compensation for all labor, supervision, materials, equipment, incidentals and all other costs necessary to complete Transportation and Disposal: Debris, as specified in Specification Section 02 61 00 – Removal and Disposal of Contaminated Materials.

D. The following paragraphs specify measurement and payment of the alternate price line items listed on the Project Price Schedule.

Alt 1 Standby Time - Day

1. Payment for the Work will be made on a per Day basis.

2. Payment for Excavation Standby Time - Day will be made in accordance with the unit price for the Bid item "Standby Time - Day" listed on the Project Price Schedule. Payment of the unit price for "Standby Time – Day" will constitute full compensation for cease Work at the direction of National Grid or the Engineer for reasons not chargeable to the Contractor. The Standby Time – Day pay item assumes that labor will be reassigned and thus labor costs will not be included in this pay item.

PART 2 PRODUCTS

(Not Applicable)

PART 3 EXECUTION

(Not Applicable)

END OF SECTION 01 20 00

SECTION 01 30 00
ADMINISTRATIVE REQUIREMENTS

PART 1 GENERAL

1.1. SUMMARY

A. This Section describes the minimum level of coordination and meetings required to execute the Work. Additional meetings and/or other coordination may be required.

1.2. ON-SITE CONSTRUCTION PERSONNEL

A. National Grid may maintain a representative on-Site for the duration of the Work. This representative will be responsible for contractual oversight of the Work. The National Grid representative will also be responsible for observing the Work relative to conformance with the technical requirements of the Contract Drawings and Specifications.

B. The Engineer will maintain a full-time on-Site representative for the duration of the Work. This representative will fulfill the contractual oversight role in the absence of the National Grid representative. The Engineer will be responsible for construction quality assurance, ensuring that the Work is completed in accordance with the Contract Documents, and final certification of the Work.

C. Maintain a full-time on-Site Superintendent, who will be responsible for QA/QC, Contractor health and safety, and Competent Person(s) for the duration of the Work. The Superintendent will be responsible for the supervision and/or coordination of all Contractor employees, Subcontractors, manufacturers, fabricators, suppliers, distributors, installers, and testing agencies whose services, materials or equipment are required to ensure the completion of the Work. The Superintendent will have sufficient qualifications, experience, and authority to act as a single point of contact for the on-Site staff, and to make adjustments to the means and methods as needed and as requested by National Grid, its representative, and the Engineer.

D. New York State Department of Environmental Conservation (NYSDEC) will maintain a part/full-time field representative for the duration of the Work. NYSDEC will be responsible for administration of the IRM.

E. Long Island Power Authority (LIPA) Representative – A representative of LIPA (Site Owner) may be on-Site for the duration of the Work. The LIPA representative will observe all Work conducted and may stop Work at any time if the LIPA representative deems the Work may interfere with electrical service or damage the existing substation facilities or appurtenances. The LIPA representative will provide health and safety oversight as it pertains to electrical substation hazards. All communications with the LIPA representative will be coordinated through the Engineer and National Grid.

1.3. MEETINGS

A. Attend Project meetings as often as deemed necessary by National Grid during the term of the Agreement.

B. A post-award meeting will be held at National Grid's Hicksville New York office, or the Site to discuss Project submittals, schedule, etc. Contractor's Officer-in-Charge, Project Manager, and Superintendent for the Project will attend the meeting.

C. A pre-construction meeting will be held, in accordance with Section SC-16.0 of the Supplemental Conditions, at the Site prior to start of Work. At a minimum, the Contractor's Project Manager and/or Superintendent for the Project will attend the meeting. It is recommended that the Contractor assemble input from the primary Subcontractors.

1. This meeting is intended to make certain that the IRM is properly scheduled, responsibilities are coordinated among Subcontractors and suppliers, and that those responsibilities are reflected on the Contractor's submittals. Questions concerning the administrative requirements outlined during the Pre-construction Conference or any other aspect of the Project may also be addressed.

D. Beginning with the mobilization to the Site, the representative of the Engineer will facilitate weekly construction meetings with the on-Site Contractor personnel for the duration of the Work. Prior to mobilization, if necessary, bi-weekly meetings may be held via teleconference. After mobilization, weekly meetings will be held at the Site. Present a progress update at weekly construction meetings to include tasks completed from the prior week, currently active tasks, and tasks/activities planned for the next two weeks along with an updated Project schedule.

E. Special meetings will be held at the Site or other designated location to discuss urgent issues related to the Work. The Contractor, National Grid or their representative, the Engineer, or NYSDEC may call special construction meetings. Coordination (agenda, meeting minutes, location, time, and attendance) of special construction meetings is the responsibility of the organization calling the meeting. Special construction meetings will be called judiciously.

F. Prepare a Critical Path Method (CPM) project schedule in accordance with Section SC-15.0 of the Supplemental Conditions, make physical arrangements for meetings, and prepare for agency meetings.

G. All expenses associated with attending the meetings, except those that are incurred by National Grid, their representatives or consultants, will be borne by the Contractor.

1.4. REQUESTS FOR INFORMATION, CLARIFICATIONS, AND CHANGES

A. All Contractor communications regarding discrepancies, claims, and change conditions shall be in accordance with Sections 17.0 and 18.0 of the Terms and Conditions.

B. All Contractor requests for Project information and clarifications or changes in the requirements of the Contract Documents must be made in writing to National Grid, and the Engineer.

C. Written requests must be provided regardless of any preceding conversations and preliminary decisions regarding the matter(s) subject to the requests.

D. At National Grid's discretion, email communications may qualify as "requests made in writing" for the purposes of this provision.

E. National Grid or the Engineer will provide written responses to the request.

F. At their discretion, National Grid or the Engineer may provide verbal approvals of requests to expedite the Work. In such cases, the Contractor is still required to provide written documentation of the request and approval from National Grid or the Engineer.

G. National Grid or the Engineer may also issue clarifications and/or amendments based on their own assessment of Project needs.

H. Any potential increases or decreases in Contractor compensation due to amendments will be in accordance with the provisions of the Terms and Conditions.

I. National Grid and/or their representative will issue the Contractor supplemental instructions authorizing minor changes in the Work that may or may not involve adjustments to the Contract Price or the schedule.

J. If latent or unforeseen conditions require modifications to the Contract, the Contractor may propose changes in the Work by submitting a detailed request to include labor rates, equipment rates, material costs, etc. for a change to National Grid and/or their representative.

K. Change Order requests shall be documented in accordance with the requirements of the Terms and Condition, Supplemental Conditions, and with the procedures set forth by National Grid during procurement.

L. The Engineer may issue an Authorization for Contract Change (ACC) on behalf of National Grid, which instructs the Contractor to proceed with a change in the Work, for subsequent inclusion in a Change Order. Any ACC must be authorized by National Grid in advance and signed by the Engineer and National Grid.

1.5. COMMUNITY RELATIONS

A. National Grid will provide all external communication with the media/press, project stakeholders, elected officials, public, etc. Do not communicate with the

media/press, project stakeholders, elected officials, public, etc. regarding the Work. Refer all external questions and comments to National Grid.

1.6. RECORDS

A. Maintain on-Site copies of all Project correspondence and Project documents generated during the Work.

1.7. DAILY REPORT

A. Prepare a daily report summarizing the staff and equipment used and the Work performed each Day and anticipated Work for the next Day. The daily report should also list all daily quantities applicable to pay items listed on the price schedule. The Contractor's internal documentation used for this purpose may be used to fulfill this requirement, subject to approval by National Grid, and/or the Engineer.

1.8. SUBMITTALS

A. Prepare a Critical Path Method (CPM) project schedule. Update and disseminate the schedule as needed.

B. Submit daily report for each working Day by 10 AM of the next Day worked.

PART 2 PRODUCTS

(Not Applicable)

PART 3 EXECUTION

(Not Applicable)

END OF SECTION 01 30 00

SECTION 01 33 00
SUBMITTAL PROCEDURES

PART 1 GENERAL

1.1. SUMMARY

A. This section summarizes the protocol and procedures for the preparation and delivery of required submittals to the Engineer.

1.2. GENERAL REQUIREMENTS

A. Provide all submittals in hardcopy format directly to the Engineer in accordance with the schedule and procedures contained in this Specification and in Section 27.0 of the Supplemental Conditions.

B. Include calculations, Contract Drawings, shop drawings, plans, reports, records, photographs, diagrams, and details with submittals where applicable to facilitate the review and/or approval.

C. For all submittals, provide eight (4) copies to the Engineer unless otherwise directed.

D. If directed by National Grid or the Engineer, provide submittals electronically in the format requested (i.e. document file, drawing file, image file, etc.). For electronic drawings, submit AutoCAD 2004 (or more recent version) file using e-transmit feature (i.e. include external references, image files, color table file, font file, line file, etc.). Convert all AutoCAD add on data to AutoCAD format. Use descriptive layer titles (i.e. not numbers or internal use acronyms). Use extensive layer control and use line color by layer and line type by layer management. AutoCAD files of Contract Drawings will be available to the Contractor upon request.

E. Certificates and Certifications: Provide a notarized statement that includes signature of entity responsible for preparing certification. Certificates and certifications shall be signed by an officer, or other individual, authorized to sign documents on behalf of that entity.

F. Schedule submittals to expedite Work. Provide the Engineer a minimum of 5 working Days, excluding transmittal time, for review.

1.3. SUBMITTAL SCHEDULE

A. See Table 013300-1 *Project Submittal Summary* attached at the end of this Section. Submittals are required on the items as described individually in each Section of the Specifications.

1.4. SUBMITTAL PROCEDURES

A. Use the submittal numbers assigned in Table 013300-1. For submittals not included in Table 013300-1, use the next sequential number as the submittal

number. For revised submittals, use original number and a sequential alphabetic suffix. For multiple submittals with the same submittal number, use the original number with a sequential numerical suffix.

B. Use a cover form for each submittal. Include Project identification, Project number, date, submittal number, submittal description/title, submittal exclusions, special issues, Contractor, Subcontractor, etc.

C. Include drawings and details as appropriate.

D. Use the same units of weights and measures used on all submittals as are used in the Contract Documents.

E. Submit all supplier and Subcontractor submittals.

F. Apply a signed/initialed Contractor's stamp certifying that review, verification of products required, field dimensions, adjacent construction Work, and coordination of information, are in accordance with the requirements of the Contract Documents.

G. Sign the following certification as part of the submittal form.

1. I hereby certify that I have carefully examined the enclosed submittal(s) and have determined and verified all field measurements, construction criteria, materials, catalog numbers and similar data, coordinated the submittal(s) with other submissions and the work of other trades and contractors, and to the best of my knowledge and belief, the enclosed submittal(s) is/are in full compliance with the Contract Documents, except as follows (enter “NONE” if there are no exceptions).

H. Identify variations from Contract Documents and product or system limitations that may be detrimental to successful performance of the completed Work.

I. Prepare submittals that are complete and in sufficient detail for ready determination of compliance with the contract requirements.

J. Resubmit based on Engineer review: revise, update, and resubmit, identifying all changes made since previous submission. For each re-submittal allow the same number of workdays required for review as the original submittal.

K. Submittals not requested will not be recognized or processed.

1.5. SUBMITTAL REGISTER

A. Maintain a technical submittal register at the Site including the submittal number, description, date submitted, status, date of approval/rejection in accordance with Section SC-27 of the Supplemental Conditions.

1.6. SUBMITTAL REVIEW

A. The Engineer will review all submittals solely for the purpose of determining whether the information contained in the submittal conforms to the design

concept of the contract documents. The Engineer will return the submittals with the following classifications:

1. Approved as Submitted: Work may proceed, no exceptions taken.
2. Approved as Noted: Work may proceed subject to comments, resubmittal not required.
3. Revise and Resubmit: Work may not proceed, resubmittal required for indicated items. Proceed with Work on other items subject to comments.
4. Rejected: Work may not proceed, resubmittal required, submittal unresponsive and/or not in conformance with Contract Documents.
5. For Information Only: Items not reviewed or items for which no submittal is required.

B. Engineer's review of submittals for conformance with Contract Documents does not relieve the Contractor from responsibility with regard to fulfillment of the terms of the Contract and proper and complete performance of the Work in accordance with the requirements of the applicable permits, and the general requirements of the Contract Documents.

C. Engineer's review of submittals does not relieve the Contractor from responsibility for errors or omissions in its designs, details, calculations, analyses, test methods, materials, and it's sole responsibility for means and methods of construction, and safe and successful construction of the Work.

1.7. CERTIFICATES OF COMPLIANCE

A. Execute any certificates required for demonstrating proof of compliance of materials with the requirements of the Contract Drawings and Specifications in three (3) copies.

B. Sign each certificate by an official authorized to certify on behalf of the manufacturing or testing company and provide the name and address of the Contractor, the Project name and location, and the quantity and data or dates of shipment or delivery to which the certificates apply.

C. Provide the name and address of the testing laboratory and the date or dates of the tests to which the report applies with copies of laboratory test reports that are submitted with certificates.

D. Certifications shall not be construed as relieving the Contractor from furnishing satisfactory material, if, after tests are performed on selected samples, the material is found not to meet the specified requirements.

1.8. INVOICES

A. Submit invoices in accordance with the provisions of the Terms and Conditions and Supplemental Conditions.

1. Include update of price schedule with each invoice.
2. Payment will not be made unless all the proper supporting documentation has been submitted and approved by National Grid.

PART 2 PRODUCTS

(Not Applicable)

PART 3 EXECUTION

(Not Applicable)

SUBMITTAL SUMMARY TABLE 01 33 00-1

Submittal Number	Description of Submittal	Submission Deadline	Referenced Specification Section
PRE-CONSTRUCTION			
1	Critical Path Method Project Schedule	Submitted with Bid, updated as needed	01 30 00
2	Site Operations Plan	1 week after award	01 50 00
3	Waste Characterization Analysis Results	Upon Receipt	02 61 00, 01 50 00
4	Disposal Facility Contracts	Upon Receipt	02 61 00, 01 50 00
5	Contractor Health and Safety Plan	1 week after award	01 11 00, 01 50 00
6	Borrow Source Evaluation	1 week prior to importing fill to the Site	31 23 00
7	Schedule of Permits	1 week after award	01 41 00, 01 50 00
8	Permits Submittals	Prior to submittal to agency	01 41 00
9	Final Executed Permits	Upon Receipt	01 41 00
INTERIM REMEDIAL MEASURE			
10	Waste Manifests, Bills of Lading, Weight Slips for off-Site disposal	As received with daily report	02 61 00
11	Daily Report	Prior to 10 AM of the next Day worked	01 30 00, 31 23 00,
PROJECT CLOSEOUT			
12	Substantial Completion	Work is at Substantial Completion	01 77 00
13	Record Documents	Prior to application for Final Acceptance	01 77 00
14	Permit Closeout	Prior to application for Final Acceptance	01 77 00
15	Final Acceptance	Work is complete	01 77 00
16	Final Invoice	After Final Acceptance	01 77 00

END OF SECTION 01 33 00

SECTION 01 41 00
REGULATORY REQUIREMENTS - PERMITS

PART 1 GENERAL

1.1. SUMMARY

A. This section establishes responsibility for obtaining major Project permits between National Grid, the Engineer, and the Contractor.

B. This section does not describe all permits required for performance of the Work. Any permits not identified in this section, or elsewhere in the Contract Documents, are the responsibility of Contractor. The Contractor will also be responsible for providing any technical and equipment related data required for National Grid or the Engineer to obtain the necessary permits.

C. Regardless of who is responsible for obtaining a permit, the Contractor is responsible for performing in accordance with the terms and conditions of all permits.

1.2. NATIONAL GRID /ENGINEER PERMITS

A. National Grid and/or the Engineer will obtain the following project permits:

1. Approvals from NYSDEC and/or NYSDOH, excluding approvals of Contractor submittals required by NYSDEC and/or NYSDOH.

1.3. CONTRACTOR PERMITS

A. Obtain the following Project permits in accordance Section 33.0 of the Terms and Conditions:

1. Local construction and demolition permits.

2. Permits required for temporary road or sidewalk closures, if necessary, but not anticipated.

3. Local variances for temporary fence installation.

4. Any other permits required for the Work.

1.4. COORDINATION/ASSISTANCE

A. National Grid and/or the Engineer will coordinate delivery of Contractor submittals to NYSDEC and/or NYSDOH.

B. Provide all data requested by National Grid or the Engineer required to support permit applications. When necessary, National Grid and/or the Engineer may provide data summaries or other Project information to the Contractor in support of Contractor data submittals.

C. Any coordination and/or assistance between the Contractor and National Grid or the Engineer is provided in the interest of expediting the Project. Provision of

coordination and/or assistance does not relieve the Contractor of any obligations regarding the timeliness and completeness relative to the permit submittals.

1.5. SUBMITTALS

A. Submit a schedule of applicable permits including approximate lead-time. Indicate any action items or information required from National Grid or the Engineer.

B. Submit copies of all supplemental data required by permits with documentation that the supplemental data was provided to the entity that issued the permit according to the schedule required by the permit.

C. Submit copies of complete permit applications to National Grid and the Engineer prior to submittal to the regulatory entity.

D. Submit copies of fully executed permit applications and final permits to National Grid and the Engineer.

PART 2 PRODUCTS

(Not Applicable)

PART 3 EXECUTION

(Not Applicable)

END OF SECTION 01 41 00

SECTION 01 50 00
TEMPORARY FACILITIES AND CONTROLS

PART 1 GENERAL

1.1. SUMMARY

A. The Work required under this section includes furnishing all labor, equipment, supplies, laboratory testing, materials, and performing all operations required for providing temporary facilities and controls during the performance of the Work.

B. For the purposes of this Specification, environmental protection is defined as the retention of the environment in its natural state to the greatest extent possible during the project construction and to enhance the natural appearance in its final condition. Environmental protection requires consideration of air, water, and land resources and involves noise, solid waste management, and management of other pollutants. Comply with all applicable or relevant and appropriate Federal, State, and local laws to provide for abatement and control of any environmental pollution arising from the construction activities in performance of the Work.

C. National Grid, National Grid's representative, or the Engineer may notify the Contractor in writing of any non-compliance with Federal, State, and/or local laws. Such notice, when delivered to the Contractor or Contractor's representative at the Site, shall be deemed sufficient for the purpose. After receipt of the notice, immediately inform National Grid, National Grid's representative, or the Engineer of the proposed corrective action and take such actions if they are approved. If the Contractor fails or refuses to comply promptly, National Grid and/or National Grid's representative, or the Engineer may issue an order suspending or halting all or parts of the Work until satisfactory corrective action has been taken. Claims for extensions of time or for excess costs or damages by the Contractor due to the stop orders described above, will be denied.

D. Ensure that all Subcontractors comply with the provisions of the Specifications.

E. Operate and maintain all equipment and systems to ensure that that the temporary facilities, controls, utilities, other services, etc. are provided without disruption.

1.2. ENVIRONMENTAL PROTECTION

A. Do not pollute any stream, river, waterway, roadway, or soil with fuel, oil, grease, lubricant, hydraulic fluid, bitumen, calcium chloride, acid, base, or other harmful materials. Comply with appropriate Federal, State, and local regulations and guidelines for the handling and disposal of all materials.

B. Properly dispose any debris resulting from the performance of the Work. Disposing any debris, soil, water, effluent, by product, waste, trash, chemical, fuel, oil, grease, lubricant, bitumen, calcium chloride, acid, base, or other harmful material etc., in or adjacent to the work area is not acceptable. Remove any

unauthorized dumped materials and restore the area as directed by the Engineer. If necessary, contaminated areas as a result of unauthorized activity or dumping by the Contractor shall be remediated or excavated at no additional cost to National Grid. Manage soil in accordance with Part 1.2 (A).

C. All contaminated materials (debris, soil, water, effluent, by-product, waste, trash, chemical, fuel, oil, grease, lubricant, bitumen, calcium chloride, acid, base or other harmful material etc.) resulting from the Work shall be disposed of in accordance with all applicable or relevant and appropriate Federal and State laws prior to completion of construction.

1.3. UTILITY PROTECTION

A. Maintain all utility markouts for the duration of the project. Provide copies of all one call numbers/tickets/utilities plates/private utility location information/test pit logs to the Engineer prior to beginning intrusive activities. The Engineer will maintain copies on-Site in a clearance package.

B. Conduct a utility search and identification prior to commencement of intrusive field activities and resolve all potential conflicts.

C. All existing underground electrical will be marked out by the Long Island Power Authority.

D. Conduct a utility survey of the re-grading, and security fence construction area using a private utility locating service and markout all suspected utility locations. Confirm all suspected utility locations with LIPA prior to beginning intrusive activities.

E. Markout the safe off-set distance, as determined by LIPA, for electrical facilities, substation equipment, and utility poles prior to beginning intrusive activities.

F. Hand clear locations of underground electrical cables or gas lines prior to performing any intrusive activities within 5 feet of the markout location. Cables, lines, and conduits must be visually located to confirm the markout. Locations must be permanently marked at the surface following hand clearing.

G. All Hand clearing will be performed using fiberglass non-conductive tools or vacuum extraction methods and/or air knife.

1.4. VEHICLE AND EQUIPMENT GROUNDING REQUIREMENTS

A. Ground all equipment involved in invasive activities using a LIPA approved grounding wire. Grounding wire must be a minimum of 100 feet long and have an ampacity equal to or greater than 4 AWG copper wire and be constructed in accordance with LIPA specifications (CS-3575) (Attachment C).

B. Whenever possible, the grounding wire will be connected to a known ground point at the substation. If the activities are located too far from a known ground

point, a (temporary) ground rod should be installed in the area of the work and the equipment or vehicle should be attached to the rod with the same 4 AWG ground.

C. All equipment requiring grounding shall be equipped with a LIPA-approved ground connection welded to the frame of the vehicle.

1.5. WORKING RESTRICTIONS – OVERHEAD ELECTRICAL UTILITIES

A. There are overhead distribution and transmission lines that run near the work area. Use extreme care during the implementation of the IRM activities so as not to damage or interfere with these utilities.

B. Maintain the minimum setbacks for all booms and trucks operating in the vicinity of energized lines as follows:

1. 10 feet for the 13 kV overhead electrical lines; and,

2. 10 feet for the 69 kV transmission cables.

C. Maintain the minimum physical clearance of 5 feet for personnel working within close proximity of energized conductors without any mechanical means.

D. Do not load or empty/dump trucks under the overhead electrical utilities, unless approved by National Grid and LIPA. Do not open truck covers under the overhead electrical utilities. Provide warning signs of overhead lines and clearances for truck drivers at the Site entrance.

1.6. SITE OPERATIONS PLAN

A. Prepare a narrative discussion and drawings describing the means and methods that will be used to execute the Work. The final design shall be based on the requirements, intent, and concepts contained in the Contract Documents. All drawings included in the Site Operations Plan shall be at a scale no less than 20 feet per inch. At a minimum, the Site Operations Plan must include final submittals with means and methods for the following project elements:

1. Schedule of permits required for work. Refer to Section 01 41 00 – Regulatory Requirements - Permits.

2. Traffic control plan for equipment delivery and disposal vehicle entry/egress.

3. Site specific Contractor Health and Safety Plan for all proposed and likely Site activities, prepared by a certified industrial hygienist.

4. Equipment Decontamination Plan to conduct gross level decontamination of delivery vehicle tires and chassis to remove surface soils prior to departing the Site

5. Temporary fence alignment, gate locations, construction details, and signage.

6. Security procedures and equipment specifications.
7. Sanitary facility locations.
8. On-Site parking and traffic layout.
9. Off-Site trucking contractors.
10. Primary and alternate disposal facility sites for the following:
    a. Non-Hazardous Soils.
    b. Debris.
11. Acceptance criteria for disposal.
12. Debris management.
13. List of planting materials intended for use on-Site.
14. Staff roles and responsibility summary, including explicit identification of Contractor or Subcontractor staff and qualifications, and who will personally perform and be responsible for the following tasks:
    a. Site health and safety.
    b. Quality control.
    c. Construction documentation.
    d. For each company performing one of the above roles, include company contact information (address, telephone number, facsimile number, website, etc.). For each person identified in the Site Operations Plan include resume with license number for surveyors and engineers.

B. Site Operations Plan may be submitted in parts, so long as all parts are submitted by the submittal deadline. Organize for use in the field and for review. Site Operations Plan will be reviewed for both technical content and organization. Include table of contents, technical sections and subsections, appendices (tables, drawings, data, etc.), etc.

1.7. SUBMITTALS

A. Submit a detailed Site Operations Plan for performing the Work.

PART 2 PRODUCTS

2.1. MATERIALS AND FACILITIES

A. All materials will be suitable for their intended use and conform to applicable codes and standards.

B. Provide appropriate first aid supplies in accordance with all applicable and relevant Federal, State, and local regulations.

C. Provide hand carried, portable, UL rated, Class ABC, dry chemical fire extinguishers or a combination of fire extinguishers of NFPA recommended classes for the exposures. Keep detailed records of maintenance and expiration dates.

D. Temporary Sanitary Facilities: Provide sufficient number of self contained, single occupancy toilets with chemical flush, aerated re-circulation, which are properly vented and fully enclosed with fiberglass or other nonabsorbent material. At a minimum provide two single occupancy toilets outside of exclusion zone. One toilet will be designated as "Women Only."

E. On-Site parking is sufficient to include all contractor vehicles, and one vehicle each for, Engineer, NYSDEC, and National Grid representative. Private vehicles should be parked in the lot on-Site that borders Race Lane.

F. Decontamination Equipment: Provide and maintain a sufficient supply of materials/equipment required to implement decontamination procedures, including, but not limited to, the following items:

a. Long handled soft bristle brushes.

G. Site Perimeter Fence, Gates, and Signage: Refer to Contract Drawings for locations.

H. Install temporary fencing at the locations shown on the Contract Documents.

1. Temporary fencing must be at least 8 feet in height, and firmly secured to withstand wind and prevent unauthorized access.

2. Cover both temporary and permanent fence with opaque privacy fabric around the entire Work area for the duration of the removal action.

3. Furnish, install, and maintain all other proposed temporary fencing, gates and barriers around impacted areas as required by the Contract Documents, and to complete the Work.

PART 3 EXECUTION

3.1. GENERAL

A. Design, furnish, install, and maintain all temporary Site facilities and controls required for the performance of the Work.

B. Provide and maintain all temporary environmental controls as necessary for protection of the environment throughout the performance of the Work.

C. Provide and maintain proper barricades and warning signs at all closures, holes, hazards, and equipment areas.

3.2. SANITARY FACILITIES

A. Empty the sanitary facilities before the capacity is exceeded, or on a weekly basis, whichever occurs first. Clean sanitation facilities concurrently with emptying.

3.3. TEMPORARY UTILITIES

A. Provide water suitable for decontamination for the duration of the Project.

B. Supply potable drinking water for on-Site personnel.

C. Provide all temporary utility services in accordance with the Specification for the duration of the Project. This includes, but is not limited to installation, operation, maintenance and removal of all equipment and/or systems required to assure uninterrupted service and all charges associated with installation, connection, service, and shut-off.

3.4. PERSONNEL DECONTAMINATION

A. Comply with all requirements of Site Specific Contractor Health and Safety Plan.

B. Provide the means and materials for National Grid and the Engineer, to comply with Site Specific Contractor Health and Safety Plan.

3.5. EQUIPMENT DECONTAMINATION

A. Remove heavy contamination using a broom and/or brushes within the work area.

3.6. NOISE CONTROL

A. Comply with local noise limitations for the Village of East Hampton at all times while performing the Work, which include:

§ 196-1. Prohibited Noises; evidence of violation

A. The following acts are declared to be loud, disturbing and unnecessary noises in violation of this chapter, but said enumeration shall not be deemed to be exclusive, namely

(9) During the period from May 15 to September 15 of each year, excavation, demolition, construction, repair or alteration work in connection with any building, structure or improvement other than between the hours of 7:00 a.m. and 8:00 p.m., Monday through Friday and between the hours of 8:00 a.m. and 5:00 p.m. on Saturday, and with regard to construction, repair or alteration work by a homeowner on his or her own dwelling or property, other than between the hours of 7:00 a.m. and 8:00 p.m., Monday through Friday, and between 9:00 a.m. and 6:00 p.m. on Saturday and Sunday.

B. Do not conduct Work outside of the permitted working hours (Monday through Friday, 7:00 am to 6 pm, no work on Federal holidays) without advanced approval.

A. Limit noise to 70 dBA at Project limit. Measure the noise level at project limit as needed. Provide noise barrier or apply for ordinance to exceed noise limit, if needed.

B. Equip vehicles and motorized equipment with appropriate noise control devices to maintain noise levels that conform to current OSHA standards and current State and local regulations. Immediately take steps to correct any deficiencies noticed or as directed by National Grid and/or the Engineer.

C. Properly maintain all mufflers and noise control devices and replace when necessary. Operate all construction equipment in the manner that it was intended. Excessive amount of noise and vibration due to improper use of vehicles and equipment is prohibited.

D. All equipment that is required to operate beyond standard Site work hours will be, to the maximum extent possible, electrically driven.

3.7. EQUIPMENT LEFT ON SITE

A. Secure all vehicles and/or equipment left on the Site outside of the standard Site work hours.

B. Ensure that all equipment, where feasible, is de energized when left on-Site and not in use to prevent electrical/fire/explosive hazards. Contractor will be responsible for security and operation and maintenance of any systems that require such services outside standard Site work hours. If systems are operational outside the standard Site work hours, provide oversight at all times when equipment is in operation, or provide an electronic monitoring system with remote communication of system failure. Repair system failures in a timely manner such that the Project schedule is not affected.

3.8. SITE SECURITY

A. Establish written Site security procedures as part of the Site Operations Plan. At a minimum the procedures will include:

1. Roles and responsibilities of personnel involved with Site Security.
2. Description of proposed daily security operations.
3. Method and frequency for conducting security checks.
4. Sign in/sign out procedures.
5. Description of how a breach of security will be handled. A breach of security will include, but not be limited to, unauthorized personnel located on the Site working area, unauthorized personnel attempting to gain access to the Site working area, broken fences and unlocked gates, and unauthorized personnel on the hazardous work zones.
6. Communications.

7. List of personnel to be contacted in case of emergency.

END OF SECTION 01 50 00

SECTION 01 77 00
CLOSEOUT PROCEDURES

PART 1 GENERAL

1.1. SUMMARY

A. Final Acceptance covers the administrative and technical requirements for final cleaning, inspection, Project as-built documents, system demonstrations and adjustments, warranties, bonds, final payment, and other procedures for Project close out in accordance with Section 13.0 of the Terms and Conditions.

B. Prepare the Site for Substantial Completion and Final Acceptance. Work includes record documents, cleaning the Site, and administrative provisions.

1.2. CLOSEOUT PROCEEDURES

A. Restore Site:

1. Return the Site to pre-IRM conditions or better.

B. Substantial Completion:

1. When the Contractor considers the Work or designated portion thereof to be at Substantial Completion, provide written notice, with a list of items to be completed or corrected (punch list), the value of items on the list, and reasons why the Work is not complete.

2. The Engineer will inspect to determine the status of completion.

3. Should the Engineer determine that Work is not Substantially Complete, Engineer will notify Contractor in writing.

4. The Contractor will within two (2) days of the notice provide a schedule for when all defects will be corrected and/or the Work completed for the Engineers review.

5. Upon approval of the Engineer, remedy any deficient and/or incomplete work and, upon completion, notify the Engineer. The Engineer will re-inspect the Work for the purpose of final acceptance.

C. Final Acceptance:

1. Submit written certification that confirms the following: Contract Documents have been reviewed, Work has been inspected, Work is complete in accordance with the Contract Documents including satisfactory compliance with performance guarantees, any previously noted deficiencies have been corrected or remediated, equipment has been tested in presence of the Engineer, and Work is complete and ready for final inspection.

2. The Engineer will inspect Work to verify status of completion.

3. Should the Engineer consider the Work to be incomplete or defective, the Contractor will be notified in writing identifying incomplete or defective Work.

4. Take immediate action to remedy incomplete and deficient Work and send written notice when Work is complete. The Engineer will re-inspect Work to verify status of completion.

5. Provide all submittals that are required by governing authorities in the Contract Documents.

6. Submit final application for payment identifying total Contract amount, previous payments and the amount due.

7. Submit evidence of final, continuing insurance coverage complying with insurance requirements.

1.3. SUBMITTALS

A. Record Documents: Submit all project record documents, drawings, specifications including system operations and maintenance manual, as builts, waste disposal records, analytical data, miscellaneous records, warranties, etc. Submit record surveys in electronic and hard copy format. Record surveys include:

1. Encountered structures left in place.

2. Encountered pipes not removed and cut/capped pipes.

3. Utility locations, elevations, and inverts (if encountered).

4. Backfill grade.

5. Location of new security fence.

6. Benchmark coordinates and elevation.

B. Project Closeout: Submit final completion submittals for Final Acceptance.

PART 2 MATERIALS

(Not Applicable)

PART 3 EXECUTION

3.1. POST CONSTRUCTION INSPECTION

A. After final cleaning and upon written notice from the Contractor that Work is complete, the Engineer will make a preliminary inspection. The Engineer will notify the Contractor in writing of defective and/or incomplete Work by generating a “punch list.”

B. Upon receiving written notice from the Engineer, remedy defects and/or incomplete Work to the satisfaction of the Engineer at no additional cost to National Grid in a time frame suitable to support the Project schedule.

C. Inform the Engineer in writing after the items listed in the "punch list" are corrected or completed. Upon receipt of notice, Engineer will make final inspection of the Work in the presence of the Contractor.

D. Should the Engineer find Work to be satisfactory, Contractor will be allowed to make application for final payment in accordance with provisions of the Contract. Should the Engineer still find deficiencies and incomplete Work, the Contractor will be notified in writing of deficient and/or incomplete Work and will not approve Contractor's request for final payment until such time that the Contractor has satisfactorily completed the required Work.

END OF SECTION 01 77 00

SECTION 02 61 00
REMOVAL AND DISPOSAL OF CONTAMINATED MATERIALS

PART 1 GENERAL

1.1. SUMMARY

A. The Work required under this section includes furnishing all labor, materials and equipment, and performing all operations required for the proper management, off-Site transportation, and disposal of waste materials generated during performance of the IRM.

1.2. SUBMITTALS

A. Designate and submit primary and alternate receiving facilities for excavated material. National Grid would prefer the excavated material be used for beneficial reuse, as opposed to being transported to a landfill, if possible. Upon final approval from National Grid, contract with the facilities prior to the start of Work. Provide copies of contracts or letters from each facility indicating acceptance of the total estimated volume of material from this Project to the Engineer.

B. Submit copies of all waste manifests, bills of lading, and certified weight slips from a scale approved for use by the Engineer and/or National Grid for all materials removed from the Site for disposal.

C. Submit copies of Part 364 Permits for all waste transporters.

PART 2 PRODUCTS

2.1. IMPACTED MATERIAL STORAGE

A. Vehicles utilized for the storage and/or transport of impacted materials will be structurally sound and tight to prevent leakage or spillage of materials.

B. Vehicles utilized for the transport of materials shall be provided with suitable covers to minimize the release of dust during transport.

C. Provide impermeable polyethylene liners for the interior of the vehicles to prevent leakage of entrained liquids. The liners must be large enough to fold over and completely cover the material during transit. The liner must be strong enough to withstand the placement of excavated material into the container without tearing, and chemically resistant to the contaminants within the material.

PART 3 EXECUTION

3.1. LOADING AND TRANSPORTATION OF MATERIAL

A. All trucks entering the Site will be free of contamination and/or visual dirt. The Engineer and/or National Grid reserve the right to reject and send away trucks that arrive to the Site in a dirty condition.

B. All trucks transporting excavated material will be outfitted with an impermeable liner as stated in subsection 2.1.

C. Provide traffic control at the Site entry to ensure a smooth flow of traffic and to minimize congestion at the Site entrance.

D. Appropriately cover trucks filled with impacted material prior to exiting the Site to prevent fugitive dust emissions during transport. Gross vehicle truck weights shall conform with the most current town, state, federal DOT, and bridge and tunnel requirements from the point of origin to the final disposal facility.

E. All Work in and around trucks shall be performed in appropriate personal protective equipment. These activities must be specifically addressed in the Site Specific Contractor HASP.

F. Prior to leaving the Site, visually inspect transport vehicles for evidence of contamination (including inside of wheels and undercarriage). Decontaminate all trucks leaving the Site within the work zone using the following procedures.

1. Brush off vehicles/equipment using a broom and/or brushes within the work area prior departing the Site.

2. All equipment leaving the Site will be decontaminated per these guidelines. In addition, any equipment previously utilized to excavate impacted material will be decontaminated prior to use in backfilling (e.g. excavator bucket).

G. Trucks will proceed directly to the designated treatment, storage, and disposal facility.

H. The Contractor is responsible for any and all actions necessary to remedy situations involving material spilled or leaked in transit, or mud or dirt tracked off-Site. This includes trucks carrying imported fill or other materials to the Site (i.e. dust generated from trucks entering the Site on adjacent roads). Perform cleanup in accordance with all applicable Federal, State, and local regulations at no additional costs to National Grid.

I. All transporters used will be properly licensed, permitted, and certified for the services provided.

J. Material from the Site will not be combined with any other material, without the Engineer's approval.

K. National Grid or a National Grid designated representative will sign transport bill of lading or manifests. National Grid will provide a hazardous waste generator number if required. Maintain on Site copies of all documents involving transportation of materials from the Site. Submit copies of these records to the Engineer at a frequency agreed to by the Contractor and National Grid. Turn over all records to National Grid at the completion of the IRM.

L. Ensure that transport vehicles are properly secured, labeled, and placarded prior to exiting the Site.

3.2. DISPOSAL OF MATERIALS

A. Dispose of soil excavated from the Site at a National Grid approved disposal facilities:

B. The Contractor is responsible for the acceptance of materials at the facilities. In the event that the identified and approved facilities cease to accept the materials, the Contractor is responsible for identifying alternate facilities, and making arrangements with such facilities to accept material from the Site with no change in the unit price submitted in the Contractor's Bid for this Project. Alternate facilities are subject to review and approval by National Grid.

C. In the event that an alternate facility is needed to accept the material, the Contractor will supply a written submission to National Grid on the material type, amount, location, and reason the approved facility ceased to accept the material. Alternate facilities not previously audited by National Grid will require an audit prior to allowing transport of materials to the facility. Any charges or fees incurred by the Contractor associated with delays to the Project schedule during this audit process will be the responsibility of the Contractor.

D. Previous sampling events have not identified any material on the Site that could be regarded as hazardous waste. If any materials are encountered during the performance of the Work that appear to exhibit hazardous characteristics, these materials should be segregated, stored on Site, and brought immediately to the attention of the Engineer.

3.3. SAMPLING AND CHEMICAL ANALYSIS

A. Any additional sampling and laboratory analyses as required by disposal facilities will be performed by the Contractor.

B. Perform any additional analysis at a laboratory certified by the New York State Environmental Laboratory Approval Program.

C. Forward results of the analysis to the Engineer upon receipt.

END OF SECTION 02 61 00

SECTION 31 23 00
EXCAVATION AND FILL

PART 1 GENERAL

1.1. SUMMARY

A. The Work required under this section includes furnishing all labor, materials, equipment, and performing all operations required for the handling and backfilling of material during performance of the IRM.

1.2. SUBMITTALS

A. Submit a stripping, re-grading, and backfilling plan showing sequencing, staging, and phasing of the stripping, re-grading and backfill activities. Incorporate into Site Operations Plan submittal described in Section 01 50 00 – Temporary Facilities and Controls.

B. Submit an estimate of the excavation, re-grading rate, number of trucks needed for transportation to the disposal facility, and the disposal facility production rate for each day. Notify the transportation and/or disposal contractors of anticipated needs.

C. Submit the results of the borrow source evaluation for each source to be used as imported clean backfill indicating the material is in compliance with the geotechnical and environmental criteria. Perform borrow source evaluation prior to the import of fill from the borrow source. Include the following:

1. Name, address, telephone number, facsimile number, and web site address of borrow source.

2. Certificate of clean fill from the borrow location stating that the soil is native in origin and free of contamination.

3. Analytical results (if applicable to the material type) from the borrow source, specific to the actual fill being imported to the Site, as confirmation that the material is free of contamination and in compliance with the clean fill environmental criteria.

4. Geotechnical test results from the borrow source, specific to the actual fill being imported to the Site, as confirmation that the material is in compliance with the clean fill geotechnical criteria.

D. Submit geotechnical laboratory test results for backfill as the test results become available.

E. Submit soil stripping rate for each working Day. Submit certified weight tickets for material exported for off-Site disposal and for each load of imported material for each working Day.

F. Provide National Grid and the Engineer the manufacturers' MSDS's and product information for all stabilization agents prior to their use on-Site.

PART 2 PRODUCTS

2.1. GENERAL

A. Equipment, and storage containers brought on-Site for the purpose of handling and/or storage of materials are to be clean and certified decontaminated prior to entry to the Site. Place construction equipment and materials to be incorporated into the Work in a location so as not to damage any part of the Work or existing facilities, store at a sufficiently safe distance from any contaminated location or material, cover against the weather, and elevate.

B. Provide a stabilization agent, such as cement kiln dust (CKD), or equivalent to amend soils too wet to transport in trucks, as necessary. The stabilization agent used must be acceptable to the disposal facility and in accordance with NYSDEC requirements for amendments. Provide National Grid and the Engineer the manufacturers' MSDS's and product information for all amendments prior to their use on-Site.

2.2. BACKFILL

A. Gravel Fill

1. Furnish Gravel Fill that consists of hard, durable particles of fragments of stone. Materials that break up when alternately frozen and thawed or wetted and dried may not be used. Utilize Gravel Fill that meets the following gradation requirements, or equivalent, as approved by the Engineer.

U.S. Standard Sieve	***Percent Finer by Dry Weight***
1.0 inch	100
3/4 inch	90 to 100
0.5 inch	10 to 50
3/8 inch	0 to 20
No. 4	0 to 5

B. Topsoil

1. Utilize topsoil which conforms to material designation 713-01 (Topsoil) in the May 1, 2008, Standard Specification prepared by the New York State Department of Transportation, and meets the following gradation requirements.

U.S. Standard Sieve	***Percent Finer by Dry Weight***
2 inch	100
1 inch	85 to 100
0.25 inch	65 to 100

No. 200	20 to 40

C. Environmental criteria sampling is not required for material from a New York State Department of Transportation approved source provided that the most recent analytical results are provided to National Grid in advance of importing fill.

D. If material originates from a non-NYSDOT approved source, at a minimum, collect a sample of the backfill at the beginning of backfill operations. Analyze backfill samples for RCRA 8 Metals, PCBs by EPA Method 8082, VOCs by EPA Method 8260 or NYSASP Method 95.1, and SVOCs by EPA Method 8270C or NYSASP Method 95-2.

E. At least one sample must be collected from each borrow source.

PART 1 EXECUTION

1.1. EXCAVATION

A. Limits of the soil excavation are as indicated on the Contract Drawings.

B. The anticipated extent of the excavation was established based on the existing Site data and limitations due the location of the property lines. The Contractor should be prepared to accommodate potential field adjustments, as necessary.

C. Excavate the soil to a depth of 6 inches below the existing grade, and load the material into trucks for disposal at a National Grid-approved disposal facility. Material handling includes:

D. Implement airborne dust suppression measures required to comply with the CAMP and as directed by National Grid or the Engineer. These actions may include any of the following or other measures to minimize air emissions:

1. Applying water on exposed soil surfaces and/or roadways to suppress dust.
2. Covering working areas of exposed soils with tarpaulins, vapor suppressant, or other vapor controls.
3. Modifying the means and methods of the Work (i.e. using different or additional equipment, etc.).
4. Modifying the production rate (i.e. re-grading rate, etc.).
5. Changing the sequence of activities.

E. Handle materials in a manner that will protect Site personnel, the public, and the environment in accordance with all applicable Federal, State, and local laws and regulations and to prevent cross contamination.

F. For weight submittals, provide documentation from the disposal facility and borrow source location.

1.2. BORROW SOURCE EVALUATION

A. Perform borrow source evaluation for geotechnical and environmental criteria, as required, to ensure that the imported material meets the Project criteria.

1.3. BACKFILL

A. Furnish imported clean backfill material for use on the Project.

1. Backfill the area with a 6 inch layer of the certified clean topsoil fill, or gravel fill, as shown on the Contract Drawings.

B. Do not place backfill without the approval of the Engineer. Placement of backfill prior to Engineer approval is at the Contractor's risk and may require removal at the Contractor's cost. Commence backfill placement and compaction upon confirmation of the horizontal and vertical limits of the excavation; whichever is applicable, and as directed by the Engineer.

C. Backfill re-graded area in accordance with the Contract Drawings.

D. Place backfill using a method that does not cross contaminate backfill, disturb, or damage the hortonsphere, or adjacent structures and property.

E. Place backfill in one, 6 inch lift and compact with a lightweight plate compactor, or tap into place with the back of an excavator bucket.

F. Field Control Quality

1. The Engineer reserves the right to reject backfill that differs visually from the identified source material and to randomly test backfill materials for conformance with the Specifications. Remove backfill that fails to meet the Specifications.

1.4. CONSTRUCTION METHODS

A. Establish, in consultation with the Engineer, manageable and appropriate re-grading stages to permit continuous Work to ensure effective coordination between soil excavation; documentation sampling, and material load out, while accommodating the receiving capacity of the selected treatment/disposal facilities.

B. Divert or otherwise prevent surface water from entering the Work area to the greatest extent practicable without causing damage or flooding to adjacent properties.

END OF SECTION 31 23 00

SECTION 32 31 13
CHAIN LINK FENCES AND GATES

PART 1 GENERAL

1.1 SUMMARY

A. This Specification includes performing all Work required to furnish and install chain link fences and gates in the locations shown on the Drawings.

1.2 REFERENCES

A. American Society for Testing and Materials (ASTM):

1. A 116 – Standard Specification for Metallic-Coated, Steel Woven Wire Fence Fabric
2. A 702 – Standard Specification for Steel Fence Posts and Assemblies, Hot Wrought
3. F 626 – Standard Specification for Fence Fittings
4. A 90/A 90 M – Standard Test Method for Weight (MASS) of Coatings on Iron and Steel Articles with Zinc or Zinc-Alloy Coatings
5. F 1083 – Standard Specification for Pipe, Steel, Hot-Dipping Zinc-Coated (Galvanized) Welded, for Fence Structures
6. A 153/A 153 M – Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware
7. F 1043 – Standard Specification for Strength and Protective Coatings on Steel Industrial Chain Link Fence Framework
8. A 121 – Standard Specification for Metallic-Coated Carbon Steel Barbed Wire
9. C 94/C 94 M – Standard Specification for Ready-Mixed Concrete

1.3 SUBMITTALS

A. Submit shop drawings to the Engineer for the erection and installation of the chain link fence and gates which includes, but is not limited to, the following items:

1. Fence assembly.
2. Location of gate, corner, end, and line posts.
3. Gate assembly.
4. Gate hardware and accessories.

B. Submit manufacturer’s catalog data to the Engineer for the following items:

1. Fence assembly.
2. Gate assembly.
3. Gate hardware and accessories.
4. Fence hardware and accessories.
5. Privacy fabric.

1.4 DELIVERY STORAGE AND HANDLING

A. Deliver materials to the Site in an undamaged condition. Store materials off the ground to provide protection against oxidation caused by ground contact.

1.5 QUALITY ASSURANCE

A. Submit reports from the manufacturer indicating the following:

1. Weight in ounces for the zinc coating.

B. The manufacturers catalog data may satisfy the requirements of the quality assurance submittal if, as determined by the Engineer, the information provided therein is sufficient to establish if the material meets the requirements of the Specification.

C. Manufacturer's Qualifications:

1. The manufacturer of the fencing and gates of the type specified or similar product will have at least five years experience in the manufacture of such materials.

D. Installer's Qualifications:

1. The fencing and gate installer will be the manufacturer, approved manufacturer's installer, or a Subcontractor approved by the Engineer to install the fencing and gates.

PART 2 MATERIALS

2.1 GENERAL

A. Furnish materials, in accordance with this Specification, to construct a 7 foot (excluding height added by barbed wire) high chain link fence at the location detailed in the Contract Drawings.

B. Furnish materials, in accordance with this Specification, required to construct a vehicle gate and man gate to match the width and style of the gates currently present on-Site.

C. Provide fencing materials that conform to the requirements of ASTM A 116, ASTM A 702, ASTM F 626, and as specified.

2.2 ZINC COATING

A. Provide hot-dip galvanized (after fabrication) ferrous-metal components and accessories, except as otherwise specified.

B. Provide zinc coating of weight as detailed in this Specification, as determined from the average result of two specimens when testing in accordance with ASTM A90/A90M.

C. Provide zinc coating that conforms to the requirements of the following:

1. Pipe: ASTM F1083.

2. Hardware and accessories: ASTM A 153/A 153M, Table 1

3. Surface: ASTM F 1043

D. Provide galvanized repair material that is cold-applied zinc-rich coating conforming to ASTM A 780/A 780M.

2.3 FABRIC

A. Provide fabric consisting of No. 9 gage wires woven into a 2 inch diamond mesh, with a Class 2 weight of zinc coating. The weight of zinc coating may not be less than 2.0 ounces per square foot of uncoated wire surface.

B. Provide one piece fabric widths for the fence height shown on the Drawings.

2.4 TOP AND BOTTOM SELVAGES

A. Provide twisted and barbed top selvage and knuckled bottom selvage.

2.5 LINE POSTS

A. Provide Type 1 round posts with a nominal outside diameter of 2.375 inches, a weight of 3.65 pounds per linear foot, and a minimum average zinc coating of 1.8 ounces per square foot.

2.6 END AND CORNER POSTS

A. Provide Type 1 round posts with a nominal outside diameter of 2.875 inches, a weight of 5.79 pounds per linear foot, and a minimum average zinc coating of 1.8 ounces per square foot.

2.7 TOP RAIL

A. Provide a round top rail with a nominal outside diameter of 1.66 inches, a weight of 2.27 pounds per square foot, and a minimum average zinc coating of 1.8 ounces per square foot.

B. Fit the top rails with couplings for connecting the lengths into a continuous run. The couple must not be less than 6 inches long with 0.070 inches minimum wall thickness, and allow for expansion and contraction of the rail.

C. Provide suitable wire ties in sufficient number for attaching the fabric securely to the rail at intervals not exceeding 24 inches.

D. Provide the means to attach the top rail to each gate, corner, end, and line post.

2.8 MIDDLE RAIL

A. Provide a round middle rail with a nominal outside diameter of 1.66 inches, a weight of 2.27 pounds per square foot, and a minimum average zinc coating of 1.8 ounces per square foot.

B. Provide suitable wire ties in sufficient number for attaching the fabric securely to the rail at intervals not exceeding 24 inches.

C. Provide the means to attach the middle rail to each gate, corner, end, and line post.

2.9 BOTTOM RAIL

A. Provide a round bottom rail with a nominal outside diameter of 1.66 inches, a weight of 2.27 pounds per square foot, and a minimum average zinc coating of 1.8 ounces per square foot.

B. Provide suitable wire ties in sufficient number for attaching the fabric securely to the rail at intervals not exceeding 24 inches.

C. Provide the means to attach the bottom rail to each gate, corner, end, and line post.

2.10 SLEEVES

A. Provide sleeves for setting into concrete which consist of the same material as the post sections, sized 1 inch greater than the diameter of the post.

B. Weld flat plates to each sleeve base to provide anchorage and prevent intrusion of concrete.

2.11 STRETCHER BARS

A. Provide bars that have one-piece lengths equal to the full height of the fabric with a minimum cross section of 3/16 by 3/4 inch.

2.12 STRETCHER BAR BANDS

A. Provide bar bands for securing stretcher bars to posts that are steel, wrought iron, or malleable iron spaced not over 15 inches on center. Provide bands with projected edges chamfered or eased.

2.13 WIRE TIES

A. Provide 16-gage galvanized steel wire for tying fabric to line posts at intervals not exceeding 12 inches. For tying fabric to rails and braces, space wire ties 24 inches on center.

2.14 POST TOPS

A. Provide galvanized steel combination tops with barbed wire supporting arms that fit over the outside of the posts and exclude moisture from the entering the inside of the posts.

B. Provide caps with an opening to permit through passage of the top rail.

C. Furnish barbed wire arms as detailed in the Contract Drawings, fitted with clips for attaching three strands of barbed wire per side.

D. Located top wires twelve inches horizontally from the fence line and the other wires spaced uniformly between the top of the fence fabric and the outside strand.

2.15 BARBED WIRE

A. Provide barbed wire consisting of two strands of twisted wire with 4 point barbs on 5 inch spacing. Use 12.5 gage wire with a zinc coating of 0.80 ounces per square foot, with 14 gage barbs that have a zinc coating of 0.65 ounce per square foot. Barbed wire furnished for use on the Project will conform ASTM A 121 Type I.

2.16 GATES

A. Furnish the design and materials required to construct one man-gate for the new security fence. Place the new gate in the approximately same position of the gate on the existing security fence.

B. Design the gate frame so that the outer members do not sag in excess of 1% of the gate leaf width or 2 inches, whichever is the lesser.

C. Provide gate frame assembly that is welded or assembled with special malleable or pressed-steel fittings and rivets to provide rigid connections. Install fabric with stretcher bars at vertical edges. Attach stretcher bars and fabric to gate frames at intervals not exceeding 15 inches. Attach hardware with rivets.

D. Provide diagonal cross-bracing, consisting of 3/8 inch diameter adjustable-length truss rods on welded gate frames.

E. Gate Posts:

1. Provide gate posts that are equivalent to the end/corner posts as specified in section 2.6.

F. Gate Leaves:

1. Provide a round gate leaf with a nominal outside diameter of 1.90 inches, a weight of 2.72 pounds per linear foot, and a minimum average zinc coating of 1.8 ounces per square foot.

G. Gate Hardware and Accessories:

1. Provide hinges to suit gate size, which are non-lift off type, and offset to permit 180° opening.
2. Provide a latch that permits operation from either side of the gate, with a padlock eye provided as an integral part of the latch.
3. Design stops automatically engage the gate and hold it in the open position until it is manually released.
4. Provide post tops that permit a vertical arrangement of barbed wire over the gated sections, so that a full opening (allowing for Site constraints) can be made without interference.
5. Provide miscellaneous hot-dip galvanized hardware as required.

2.17 CONCRETE

A. Provide concrete with a minimum 28 day compressive strength of 3,000 psi.

2.18 GROUT

A. Provide grout of proportions one part Portland cement to three parts clean, well graded sand and a minimum amount of water to produce a workable mix.

PART 3 EXECUTIONGENERAL

A. Verify the absence of defects or errors in the subgrade or other applicable Site features which would cause defective erection, installation, or application of products, or cause latent defects in workmanship and function.

B. Comply with manufacturer's written instructions, specifications, and recommendations for the erection and installation of the chain link fences and gates.

3.2 EXCAVATION

A. Provide excavation for post footings, which will be drilled holes in compacted soil.

B. Space footings for line posts at a maximum interval of 10 feet on center, and at closer intervals where required.

C. Set the bottom of each post not less than 42 inches below finished grade with the bottom of the hole at least 3 inches below the bottom of the posts. The diameter of borehole will be a minimum of 4 times the largest cross section of the post that is being set. Set posts deeper, as required, to support heavy lateral loads.

3.3 SETTING POSTS

A. Remove loose and foreign materials from the boreholes and moisten the soil prior to placing concrete.

B. Set sleeves in a vertical position, plumb and align while concrete is backfilled

C. Provide tops of footings that are trowel finished and sloped or domed to shed water away from posts.

D. Keep exposed concrete moist for at least 7 calendar days after placement, or cured with a membrane curing material.

E. Set poles into sleeves in a vertical position, plumb and align while backfilled with grout.

3.4 CONCRETE STRENGTH

A. Allow concrete to attain at least 75% of its minimum 28 day compressive strength, but in no case sooner than 7 calendar days after placement, before rails, wire, or fabric are installed.

B. Do not stretch fabric and wires or hang gates until the concrete has attained its full design strength.

3.5 TOP RAILS

A. Install top rails to run continuously through post caps, bending to radius for curved runs. Provide expansion couplings as recommended by the fencing manufacturer.

3.6 MIDDLE RAILS

A. Install middle rails between and set flush with posts on the fabric side, using special offset fittings where necessary.

B. Set the middle rail equidistant between, and parallel to, the top and bottom rails.

3.7 BOTTOM RAILS

A. Install bottom rails between, and set flush with posts on the fabric side, using special offset fittings where necessary.

B. Do not leave a space greater than 2 inches between the bottom of the fabric and the subgrade at any point at the Site.

3.8 FABRIC INSTALLATION

A. Install fabric in single lengths between stretch bars with bottom barbs placed approximately 1.0 to 1.5 inches above the ground.

B. Install fabric on the security side of the fence.

C. Pull fabric taunt and tie to posts and rails with wire ties.

D. Ensure fabric remains under tension after the pulling force is released.

3.9 STRETCHER BAR INSTALLATION

A. Thread stretcher bars through or clamped to fabric 4 inches on center and secured to posts with metal bands spaced 15 inches on center.

3.10 GATE INSTALLATION

A. Install gates plumb, level, and secure so that a full opening (allowing for Site constraints) can be made without interference.

B. Install ground set items in concrete for anchorage as recommended by the fence manufacturer.

C. Adjust hardware for smooth operation and lubricate where necessary.

3.11 WIRE TIE INSTALLATION

A. Install tie wires that are "U" shaped to the pipe diameters to which attached. Twist ends of tie wires not less than two full turns and bend so as not to present a hazard.

3.12 FASTENERS

A. Install nuts for tension bands and hardware on the side of the fence opposite the fabric side.

B. Peen ends of bolts to prevent removal of nuts.

3.13 ZINC COATING REPAIR

A. Clean and repair galvanized surfaces damaged by welding, abrasion, peening, and cut ends of fabric, or other cut sections with specified galvanized repair material applied in strict conformance with the manufacturer's printed instructions.

3.14 TOLERANCES

A. Provide posts that are straight and plumb within a vertical tolerance of 0.25 inch after the fabric has been stretched. Provide fencing and gates that are true to line with no more than 0.5 inch deviation from the established centerline between line posts.

B. Repair defects as directed by the Engineer.

3.15 CLEANUP

A. Remove waste fencing and gate materials from the Site.

END OF SECTION 32 31 13

SECTION 32 90 00
PLANTING

PART 1 GENERAL

1.1 SUMMARY

A. The Work required under this section includes furnishing all labor, materials and equipment, and performing all operations required for seeding and growing a stand of grass on the areas excavated and backfilled during performance of the IRM.

1.2 SUBMITTALS

A. Submit actual proposed types and rates of application of lime, fertilizer and seed based on local conditions and planting season.

1.3 QUALITY CONTROL

A. Seeding shall be accomplished according to standard local practice and in compliance with requirements of applicable state and federal regulations.

1.4 DELIVERY, STORAGE, AND HANDLING

A. Deliver packaged materials in containers showing weight, content analysis, and name of manufacturer.

B. Protect materials from deterioration during delivery, and while stored at the Site.

1.5 PROJECT CONDITIONS

A. Perform seedbed preparation and seeding as soon as possible after completion of remediation, backfilling and grading in disturbed areas.

B. Proceed with planting only when existing and forecasted weather conditions permit.

PART 2 PRODUCTS

2.1 FERTILIZER

A. Specify fertilizer requirements in the Contractor's Site Operations Plan, and conform to local codes.

2.2 LIME

A. Specify lime requirements in the Contractor's SOP, and conform to the local codes.

2.3 SEED

A. Seed mixes for permanent vegetation will be a blend of Red Fescue, Rye, and Kentucky Blue, applied at a rate of 75 lbs./acre, or approved equivalent as determined by the Engineer.

B. The variety and blends of seed may be added, deleted or substituted as appropriate to take advantage of proven varieties and mixtures and to account for changes of season and weather. Submit proposed changes to the seed mix to the Engineer for approval prior to use.

C. Seed that has become wet, moldy or otherwise damaged will not be acceptable.

2.4 WATER

A. Water shall be clean and potable.

2.5 MULCH

A. Mulch shall be clean long-fibered hay or straw, consisting of stalks of oats, wheat, barley, rye, or excelsior wood fibers, reasonably free of noxious weed seeds. Apply at a rate that conforms to the local requirements.

PART 3 EXECUTION

3.1 APPLICATION OF TEMPORARY GRASS SEED

A. Apply temporary seeding to areas lacking vegetation if no construction activities will be performed in the area for more than 30 days.

B. Uniformly apply seed during optimum planting season and at rates recommended by manufacturer, unless otherwise approved by Engineer.

3.2 APPLICATION OF PERMENANT SEED AND PROTECTIVE COVER

A. Uniformly apply fertilizer according to the manufacturer's direction. Apply fertilizer in a fashion that does not cause it to run-off into local storm sewer system.

B. Uniformly apply lime, if required, according to the manufacturer's direction. Apply lime in a fashion that does not cause it to run-off into local storm sewer system.

C. Fertilizer, lime, seed, and mulch may be placed using hydroseeding, or other suitable mechanical methods that will not damage the completed Work.

D. Perform seeding for permanent vegetation during the first optimum planting season following completion of the Work in an area.

E. Spread mulch uniformly over the seeded area immediately after seeding.

3.3 ESTABLISHMENT OF GRASS

A. Begin maintenance of seeded areas immediately after seed placement. Water; repair washed or eroded areas, and otherwise protect and maintain the seeded areas until a final satisfactory stand of grass, as determined by the Engineer, is obtained.

B. Engineer will periodically inspect the seeded areas to verify that a satisfactory stand of grass is obtained in all areas seeded. Re-seed bare and eroded areas as determined necessary by Engineer.

C. Mow the property twice once a satisfactory stand of grass has been established.

D. Warranty plantings for 90 days following establishment of a satisfactory stand of grass.

END OF SECTION 32 90 00

East Hampton Hortonsphere
Interim Remedial Measure
PROJECT PRICE SCHEDULE

Bid Item #	Description	Approximate Quantity Unit of Measurement	Unit of Measurement	Unit or Lump Sum Price Dollars & Cents	Extended Total Dollars & Cents
1	Mobilization	1	Lump Sum		
2	Site Preparation	1	Lump Sum		
3	Excavation	1	Lump Sum		
4	Backfill with Approved Off-Site Backfill Material - Topsoil	95	Ton		
5	Backfill with Approved Off-Site Backfill Material – Gravel Fill	65	Ton		
6	Miscellaneous Site Restoration	1	Lump Sum		
7	Transportation and Disposal: Soil	160	Ton		
8	Transportation and Disposal: Debris	1	Ton		
				TOTAL:	
Alt 1	Standby Time-Day	1	Day		

Appendix D

Community Air Monitoring Plan (electronic only)

GEI Consultants

Geotechnical
Environmental
Water Resources
Ecological

Community Air Monitoring Plan
Interim Remedial Action

East Hampton Hortonsphere

East Hampton, Suffolk County, New York

Submitted to:
National Grid Company

Hicksville, New York 13202

Submitted by:
GEI Consultants, Inc.
455 Winding Brook Drive, Suite 201
Glastonbury, CT 06033
860-368-5300

April 2011
Project #102870-1-1101

Jerry Zak
Project Manager

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Abbreviations and Acronyms

CAMP	Community Air-Monitoring Plan
COC	Constituents of Concern
HASP	Health and Safety Plan
IRM	Interim Remedial Measure
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health

MEASUREMENTS

mg/m^3	Milligrams per cubic meter

1. Introduction

This document provides the Community Air Monitoring Plan (CAMP) that will be implemented during the Interim Remedial Action (IRM) at the National Grid East Hampton Hortonsphere site, located on Railroad Avenue in East Hampton, New York. The location and layout of the site are shown on Figures 1 and 2.

The East Hampton Hortonsphere site is located in a commercial and residential neighborhood. This CAMP presents methods and procedures that will be used to provide protection to potential receptors by assuring that the IRM work activities do not spread constituents off-site through the air.

The CAMP specifically applies to the IRM work at the site. The IRM work is expected to occur in the fall of 2010, as described in the document "*Draft Interim Remedial Measure Work Plan, East Hampton Hortonsphere Site, East Hampton, New York*", dated September 30, 2010. The IRM work involves limited surface soil removal, placement of a demarcation barrier, backfill with certified clean soil, and revegetation with grass.

The objectives of this CAMP are to:

- Ensure that the airborne concentrations of constituents of concern (COC) are minimized to protect human health and the environment;
- Provide an early warning system so that potential emissions can be controlled on site at the source; and
- Measure and document the concentrations of airborne COC to confirm compliance with regulatory limits.

The community air monitoring will be performed at upwind and downwind locations around the site perimeter, and will measure the concentrations of dust during all ground-intrusive activities.

This CAMP is a companion to GEI's site-specific Health and Safety Plan (HASP). The HASP is a separate document and is directed primarily toward protection of on-site workers within the designated work zones.

2. Constituents of Concern and Action Levels

The East Hampton Hortonsphere site is known to have lead impacts in surface soil, caused by Hortonsphere maintenance (scraping and repainting) prior to lead-free paint. As such, the constituent of concern is lead. Airborne dust is a concern and must be monitored and controlled due to its ability to transport lead and because of its nuisance properties.

State and federal regulatory agencies have provided action levels for dust. The action levels are the allowable concentrations above which respiratory protection or other health and safety controls are required. For work at the site, the following dust level should not be exceeded for more than 15 consecutive minutes at the downwind perimeter of the site:

- Dust 150 micrograms per cubic meter ($\mu g/m^3$)

The action level cited here is above (in addition to) the background ambient (upwind) concentration.

3. Air Monitoring Equipment and Methods

Air quality monitoring will be performed for dust as outlined below.

Two perimeter locations will be established each day and National Grid's engineering representative will check the instrumentation at each of these locations frequently during the work to ensure they are operating properly. The monitoring instruments will be calibrated at the start of each work day, and again during the day if the performance of an instrument is in question.

Typically, there will be monitoring locations at one upwind site perimeter location and one downwind perimeter location. Upwind concentrations will be measured at the start of each workday and periodically thereafter to establish background conditions. The engineering representative will be prepared to monitor multiple locations in the event that there is little wind or if the wind direction changes frequently.

3.1 Particulate (Dust) Monitoring

Particulate (dust) monitoring will be performed during intrusive activities at the Site. Two particulate monitors (TSI DustTrak or equivalent) will be used for continuous real-time dust monitoring. The monitoring instruments will be periodically checked by the engineering representative periodically, and the real-time measurements recorded. If requested by the on-site NYSDEC representative, a 15-minute average concentration may be determined.

In addition, fugitive dust migration will be visually assessed during all work activities, and the observations recorded.

4. Emission Control Plan

Dust control is required for this project due to the proximity of commercial buildings and public roadways and sidewalks. Table 1 provides a list of emergency contacts.

Site perimeter dust concentrations will be monitored continuously. In addition, dust migration will be visually assessed during all work activities. If the downwind dust level is 150 µg/m^3 greater than the background level for a 15-minute period, or if airborne dust is observed leaving the work area, then dust suppression techniques will be employed. Work may continue with dust suppression techniques provided that downwind dust levels do not exceed 150 µg/m^3 above the background level and provided that no visible dust is migrating from the work area. If dust cannot be adequately controlled, work will be halted until conditions allow work to resume.

Typical dust control measures may include:

- Apply water for dust suppression;
- Relocate operations, if applicable; and
- Reassess the existing control measures.

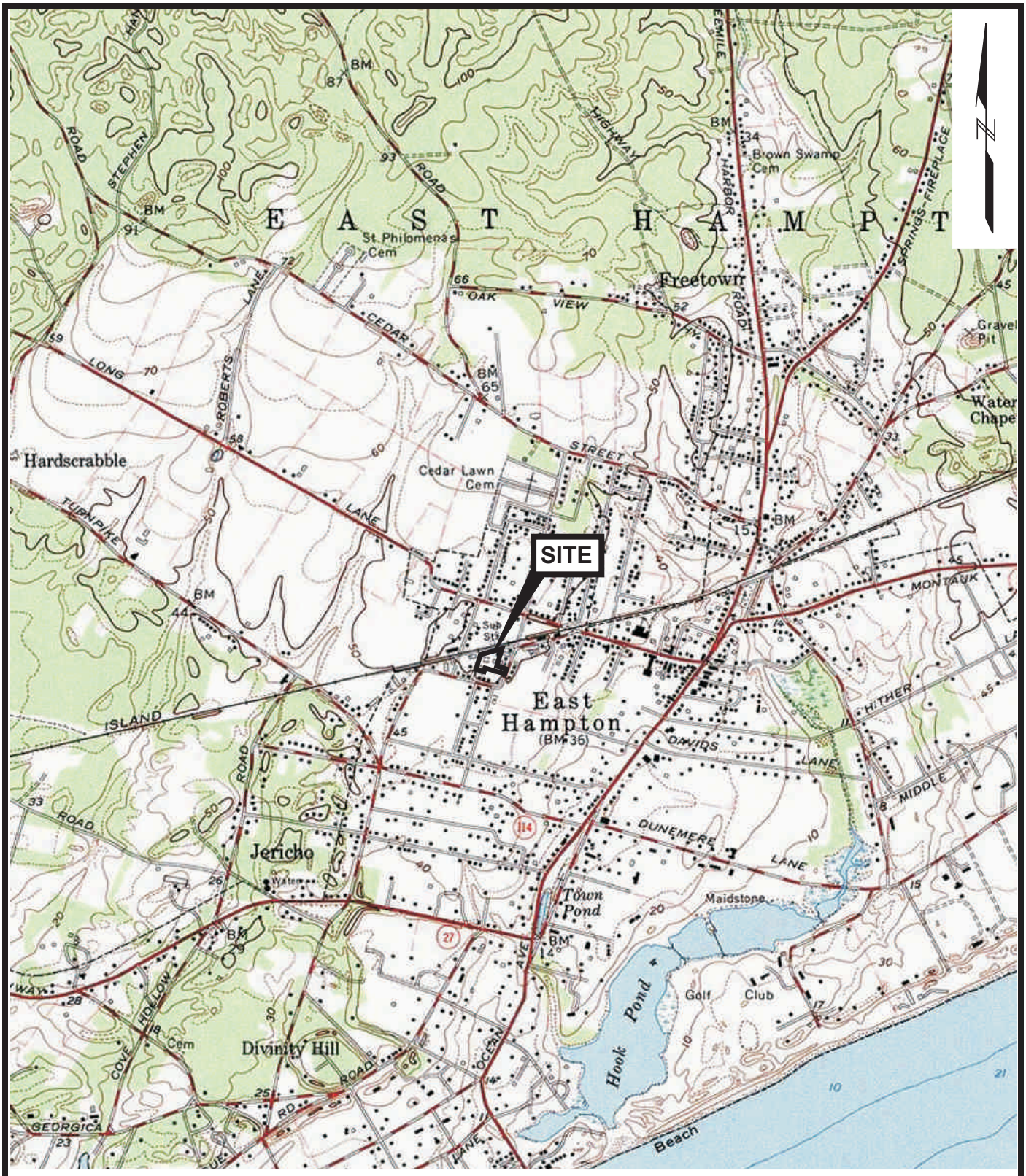
Table 1 Emergency Contact and Telephone Numbers

Fire:	911	
Police:	911	
Ambulance:	911	
Hospital:	Southampton Hospital 240 Meeting House Lane Southampton, New York 11968 P: (631) 726-8200	
GEI Contacts:	Jerry Zak Autumn Eberhart	(860) 558-3866 (cell) (607) 229-4678 (cell)
National Grid Contact:	Ted Leissing	(516) 545-2563 (office) (516) 734-3244 (cell)

5. Documentation and Reporting

Data generated during perimeter air monitoring will be recorded in field logs and summarized daily in spreadsheets. The electronic measurements from the dust meters will be downloaded each day, reviewed, and archived. Exceedances of the action levels, if any, and the actions to be taken to mitigate the situation, will be discussed immediately with the on-site representatives. Summaries of all air monitoring data will be provided to NYSDEC as requested.

Figures



SOURCE: Map created with TOPO! ® ©2001 National Geographic (www.nationalgeographic.com/topo)

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SCALE, FEET

COMMUNITY AIR MONITORING PLAN
EAST HAMPTON HORTONSPHERE SITE
EAST HAMPTON, NEW YORK

nationalgrid

GEI Consultants

SITE LOCATION MAP

Project 102870-1-1101 | April 2011 | Figure 1

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LEGEND:

PROPERTY BOUNDARY (APPROXIMATE)

EXISTING SECURITY FENCE

SOURCES:

1. Orthophoto obtained from New York State Interactive Mapping Gateway (http://www1.nysgis.state.ny.us/MainMap.cfm) photo date: 2004, accessed 1/09/08.
2. Long Island Lighting Co., Mineola, N.Y., East Hampton Substation and Gas Storage Site, Situated at East Hampton, Town of East Hampton, County of Suffolk, N.Y., Scale: 1" = 60', Date: 10-17-72.
3. Survey of existing conditions and sample locations conducted by GEI Consultants, Inc. on 12/14/07. Survey by New York state licensed land surveyor number 050146. Horizontal datum: New York State Plane coordinate system (Long Island Zone, North American Datum (NAD)83). Vertical datum: North American Vertical Datum (NAVD) 88.

0 60 120

SCALE, FEET

COMMUNITY AIR MONITORING PLAN
EAST HAMPTON HORTONSPHERE SITE
EAST HAMPTON, NEW YORK

nationalgrid

GEI Consultants

SITE PLAN

Project 102870-1-1101 | April 2011 | Figure 2

I:\Project\National Grid\East Hampton\EH Hortonsphere\IRM\CAMP\ EHH-CAMP Site Plan.dwg \Apr 12, 2011

Appendix E

Health and Safety Plan (electronic only)

SITE SPECIFIC HEALTH AND SAFETY PLAN (HASP)

Site:	**EAST HAMPTON HORTONSPHERE SITE, NATIONAL GRID CORPORATION**
Location:	**EAST HAMPTON, NEW YORK**
Date Prepared:	**April 2011**
Revision:	**0**
Project Description:	**Pre-Characterization Sampling, Interim Remedial Measure Oversight and CAMP**
Waste types:	Impacted Soils
Characteristics:	Toxic
Unusual Site Features:	Work near substation
Status:	Industrial (Off-site areas are mixed-use)
Background Review:	Site Investigations have been performed
Overall Hazard:	Low

NATIONAL GRID AND GEI DO NOT GUARANTEE THE HEALTH OR SAFETY OF ANY PERSON ENTERING THIS SITE. DUE TO THE NATURE OF THIS SITE AND THE ACTIVITY OCCURRING THEREON, IT IS NOT POSSIBLE TO DISCOVER, EVALUATE, AND PROVIDE PROTECTION FOR ALL POSSIBLE HAZARDS THAT MAY BE ENCOUNTERED. STRICT ADHERENCE TO THE HEALTH AND SAFETY GUIDELINES SET FORTH HEREIN WILL REDUCE, BUT NOT ELIMINATE, THE POTENTIAL FOR INJURY AT THIS SITE. THE HEALTH AND SAFETY GUIDANCE IN THIS PLAN WAS PREPARED TO SERVE AS AN EXAMPLE TO GEI EMPLOYESS THAT MAY WORK AT THIS SITE AND SHOULD NOT BE USED ON ANY SPECIFIC PROJECT WITHOUT PRIOR RESEARCH AND EVALUATION BY TRAINED HEALTH AND SAFETY SPECIALISTS.

GEI APPROVALS

By their signature, the undersigned hereby certify that this HASP has been reviewed and approved for use at the National Grid Corporation (National Grid) East Hampton, New York site.

JERRY ZAK
SENIOR PROJECT MANAGER
GEI CONSULTANTS, INC.

4/12/11
DATE

Robin B. DeHate

4/12/2011

ROBIN B. DEHATE, PhD, CMMM
CORPORATE HEALTH AND SAFETY OFFICER
GEI CONSULTANTS, INC.

DATE

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1. INTRODUCTION

1.1 PURPOSE

This Health and Safety Plan (HASP) addresses the health and safety practices that will be employed by GEI employees participating in construction oversight activities at the National Grid Corporation (National Grid) East Hampton Hortonsphere, New York site (Site). The HASP takes into account the specific hazards inherent to the Site, and presents procedures to be followed by GEI and all site visitors in order to avoid and if necessary, protect against health and/or safety hazards. Subcontractors are required to develop their own site-specific HASP. Activities performed under this HASP will comply with applicable parts of OSHA Regulations, primarily 29 CFR Parts 1910 and 1926 and attached National Grid policies and procedures. A copy of this HASP will be maintained on-site for the duration of work.

All workers who may participate in activities at the Site that are under the direction of GEI are required to comply with the provisions specified in this HASP. All site visitors who enter designated work zones must also comply with this HASP. Refusal or failure to comply with the HASP or violation of any safety procedures by field personnel and/or subcontractors performing work covered by this HASP may result in immediate removal from the site following consultation with GEI.

1.2 SCOPE

This HASP has been developed to address the health and safety concerns of construction oversight of work conducted by a National Grid contractor at the Site. Although the HASP addresses all activities listed below, work at the individual locations may include all, or only some of these tasks.

The HASP addresses the following activities:

Construction Oversight Activities

- Observe National Grid contractor during implementation of Work Plan activities

Air Monitoring and Community Air Monitoring

- Work Zone Monitoring
- Community Air Monitoring

Confirmation Soil Sample Collection

1.3 APPLICATION

The HASP applies to all personnel involved in the above tasks that are under the direction of GEI, or who wish to gain access to active work areas, including but not limited to:

- National Grid representatives and GEI**;**
- Federal, State or local representatives.

2. PROJECT ORGANIZATION AND RESPONSIBILITIES

This section specifies the GEI Project Organization.

2.1 PROJECT MANAGER (PM)

The Project Manager is Jerry Zak. The PM responsibilities include the following:

- Has overall project responsibility for Project Health and Safety.
- Ensures implementation of this program;
- Ensures the HASP has all of the required approvals before any site work is conducted;
- Ensures that personnel are informed of project changes which require modifications of the site safety plan;
- Conducts periodic inspections; and
- Participates in incident investigations;

2.2 CORPORATE HEALTH AND SAFETY OFFICER (CHSO)

The CHSO is a qualified health and safety professional with experience in hazardous waste site remediation activities. The CHSO is Robin DeHate. The CHSO responsibilities include the following:

- Provides for the development and approval of the HASP;
- Serves as the primary contact to review health and safety matters that may arise;
- Approves revised or new safety protocols for field operations;
- Coordinates revisions of this HASP with field personnel;
- Coordinates upgrading or downgrading of personal protective equipment with the PM; and
- Assists in the investigation of all accidents/incidents.

2.3 SITE PERSONNEL

The Site Personnel responsibilities include the following:

- Maintain knowledge of the information, instructions and emergency response actions contained in the HASP;
- Comply with rules, regulations and procedures as set forth in this HASP and any revisions;
- Report any unsafe or potentially hazardous conditions to the PM;
- Prevent admittance to work sites by unauthorized personnel; and
- Inspect all tools and equipment, including PPE, prior to use.

3. SITE HISTORY AND PROJECT DESCRIPTION

3.1 LOCATION

The National Grid East Hampton Hortonsphere Site is located in the village of East Hampton, Nassau Country, New York (Figure 1). See the Site-Specific Information provided in Appendix A for site and medical facilities locations (Figures A-1 and A-2).

3.2 BACKGROUND AND SITE DESCRIPTION

The hortonsphere is located on approximately 1.74 acres at the intersection of Fresno Place and Railroad Avenue (west of the intersection of Railroad Avenue and Race Lane) in the Town of East Hampton, New York. The hortonsphere facility encompasses a small portion of the overall parcel, which is also occupied by an active electrical substation (Figure 2). The parcel is bounded to the east and south by privately owned properties, fronting on Race Lane to the east and Gingerbread Lane to the south. A gravel surface is present beneath the hortonsphere.

The East Hampton Electric Light Company plant operated at the Site from circa 1909 until sometime after 1920, based on 1909 and 1920 Sanborn Fire Insurance (Sanborn) maps. Beginning in 1929 and continuing through 1943 the Sanborn maps indicate that the Site was used as an electrical substation by the Long Island Lighting Company (LILCO).

A small gasometer (a term that was sometimes used interchangeably with “hortonsphere”) was first depicted on the 1936 Sanborn map of the Site. According to the Sanborn maps, the gasometer was present until at least 1943, however, no gas production facilities were depicted on the Sanborn maps of the Site. The current property boundaries of the Site are based on a survey conducted in 1972.

The Site is currently owned by the Long Island Power Authority (LIPA). LIPA also owns and operates the adjacent electrical substation. The hortonsphere, associated compressor buildings, and security fencing around the hortonsphere are owned and maintained by National Grid, and is operated under an easement from LIPA. The hortonsphere is functional and is currently used for the storage of natural gas. Several inches of gravel cover the ground beneath and immediately surrounding the hortonsphere. National Grid currently has no plans to decommission or alter the usage of hortonsphere.

Through the 2007 acquisition of KeySpan, National Grid has accepted responsibility for addressing the environmental issues at the site. As such, National Grid will be referenced in the performance of all past and future work throughout the remainder of the document.

4. POTENTIAL HAZARDS AT THE SITE

This section presents an assessment of the chemical, biological, and physical (including electrical) hazards that may be encountered during the tasks specified under HASP Section 1.2. A Site-specific activity hazard analysis (AHA) was compiled to assess and control potential site hazards for each for each general project task, The site-specific AHA is located in Appendix A.

4.1 PROPERTIES OF CHEMICAL CONTAMINATION

The characteristics of compounds at the Site are discussed below for information purposes. Adherence to the safety and health guidelines in this HASP should reduce the potential for exposure to the compounds discussed below.

Elevated concentrations of arsenic and lead may be encountered within surface soils. Exposure to high concentrations of arsenic can cause dermatitis, gastrointestinal disturbances, peripheral neuropathy, respiratory irritation, and hyperpigmentation of skin. Chronic exposure to high concentrations of arsenic has resulted in lung cancer in humans.

Exposure to high concentrations of lead may cause acute symptoms such as eye irritation, weakness, weight loss, abdominal pain, and anemia. Chronic exposure to high concentrations of lead may result in kidney disease, effects to the reproductive system, blood forming organs, and CNS.

Chromium was detected at concentrations above the Residential SCO in three surface soil samples. Exposure to high concentrations of chromium can cause irritation of the eyes and skin, and lung fibrosis. Chronic exposure to high concentrations of chromium may produce effects on the liver, kidney, gastrointestinal and immune systems, and possibly the blood.

The primary route of exposure is through inhalation of dust particles when subsurface soils are disturbed and become airborne. Air monitoring will be completed as specified in Section 6 to minimize airborne exposures during site activities.

4.1.1 Other Chemical Hazards

Chemicals not identified in this HASP may be used during remediation activities. Prior to the initiation of these tasks, Material Safety Data Sheets will be obtained for each of the chemicals to be used, and all site workers and visitors who may potentially be exposed will be made aware of these hazards.

If the CHSO determines that monitoring will be required to determine if these chemicals are potentially migrating off site, a monitoring program will be established that is consistent with the provisions stated in Section 7.

Table 4-1
Chemical Data

Compound	CAS #	ACGIH TLV	OSHA PEL	Route of Exposure	Symptoms of Exposure	Target Organs	Physical Data
Arsenic	7440-38-2	0.01 mg/m^3	0.01 mg/m^3	Inhalation Skin Absorption Ingestion Skin Contact	Ulceration of nasal septum, dermatitis, GI disturbances, peripheral neuropathy, respiratory irritation, hyper pigmentation of skin, potential carcinogen	Liver, kidneys, skin, lungs, lymphatic system	Metal: Silver-gray or tin-white, brittle, odorless solid FP: NA IP: NA LEL: NA UEL: NA VP: 0 mmHg
Lead	7439-92-1	0.050 mg/m^3	0.05 mg/m^3	Inhalation Ingestion Skin Contact	Weak, lass, insomnia; facial pallor; pal eye, low-weight, malnutrition; constipation, abdomen pain, colic; anemia; gingival lead line; tremor; paralyzed wrist, ankles; irritant eyes	Eyes, GI tract, CNS, kidneys, blood, gingival tissue	A heavy, ductile, soft, gray solid. FP: NA IP: NA LEL: NA UEL: NA VP: 0 mmHg
Chromium (Chromic Acid and Chromates)	1333-82-0	0.05 mg/m^3	0.1 mg/m^3	Inhalation Ingestion Skin Contact	Irritates respiratory system, nasal, septum perforation, liver and kidney damage, leucocytosis (increased blood leucocytes), leukopenis (reduced blood leucocytes), moncytosis (increased monocytes), Eosinophilia, eye injury, conjunctivitis, skin ulcer, sensitivity dermatitis, potential carcinogen	Blood, respiratory system, liver, kidney, eyes, skin, lung cancer	FP:NA IP:NA VP: Very Low LEL: NA UEL: NA

Abbreviations	
C = ceiling limit, not to be exceeded	mg/m^3 = milligrams per cubic meter
CNS = Central Nervous System	mmHg = millimeters of mercury
CVS = Cardiovascular System	ppm = parts per million
eV = electron volt	Skin Absorption = Danger of cutaneous absorption
FP = Flash point	STEL = Short-term exposure limit (15 minutes)
IP = Ionization Potential	TWA = Time-weighted average (8 hours)
GI = Gastro-intestinal	UEL = Upper explosive limit
LEL = Lower explosive limit	VP = vapor pressure approximately 68° F in mm Hg (mercury)

4.2 BIOLOGICAL HAZARDS

During the course of the project, there is a potential for workers to come into contact with biological hazards such as animals, insects and plants. Workers will be instructed in hazard recognition, health hazards, and control measures during site-specific training.

4.2.1 Animals

During the conduct of site operations, wild animals such as stray dogs or cats, raccoons, and mice may be encountered. Workers shall use discretion and avoid all contact with wild animals. If these animals present a problem, efforts will be made to remove these animals from the site by contacting a licensed animal control technician.

4.2.2 Insects

Biting and stinging insects, including bees, wasps, hornets, mosquitoes, ticks, and spiders may be present at the Site. Some individuals may have a severe allergic reaction to an insect bite or sting that can result in a life threatening condition, any individuals who have been bitten or stung by an insect should notify the PM. The following is a list of preventive measures:

- Apply insect repellent prior to performing any field work and as often as needed throughout the work shift.
- Wear proper protective clothing (work boots, socks and light colored pants).
- When walking in wooded areas, avoid contact with bushes, tall grass, or brush as much as possible.
- Field personnel who may have insect allergies shall have bee sting allergy medication on site and should provide this information to the PM prior to commencing work.
- Periodically check clothing/boots/skin for the presence of ticks and remove as necessary. Perform final inspection of clothing/boots/skin at the end of the work shift.

4.2.3 Lyme Disease

Lyme disease is caused by infection from a deer tick that carries a spirochete. During the painless tick bite, the spirochete may be transmitted into the bloodstream that could lead to the worker contracting Lyme disease.

Lyme disease may cause a variety of medical conditions including arthritis, which can be treated successfully if the symptoms are recognized early and medical attention is received. Treatment with antibiotics has been successful in preventing more serious symptoms from developing. Early signs may include a flu-like illness, an expanding skin rash and joint pain. If left untreated, Lyme disease can cause serious nerve or heart problems as well as a disabling type of arthritis.

Symptoms can include a stiff neck, chills, fever, sore throat, headache, fatigue and joint pain. This flu-like illness is out of season, commonly happening between May and October when ticks are most active. A large expanding skin rash usually develops around the area of the bite.

More than one rash may occur. The rash may feel hot to the touch and may be painful. Rashes vary in size, shape, and color, but often look like a red ring with a clear center. The outer edges expand in size. It's easy to miss the rash and the connection between the rash and a tick bite. The rash develops from three days to as long as a month after the tick bite. Almost one third of those with Lyme disease never get the rash.

Joint or muscle pain may be an early sign of Lyme disease. These aches and pains may be easy to confuse with the pain that comes with other types of arthritis. However, unlike many other types of arthritis, this pain seems to move or travel from joint to joint.

Lyme disease can affect the nervous system. Symptoms include stiff neck, severe headache, and fatigue usually linked to meningitis. Symptoms may also include pain and drooping of the muscles on the face, called Bell's Palsy. Lyme disease may also mimic symptoms of multiple sclerosis or other types of paralysis.

The disease can also cause serious but reversible heart problems, such as irregular heartbeat. Finally, Lyme disease can result in a disabling, chronic type of arthritis that most often affects the knees. Treatment is more difficult and less successful in later stages. Often, the effects of Lyme disease may be confused with other medical problems.

It is recommended that personnel check themselves when in areas that could harbor deer ticks, wear light color clothing and visually check themselves and their buddy when coming from wooded or vegetated areas. If a tick is found biting an individual, the PM should be contacted immediately. The tick can be removed by pulling gently at the head with tweezers. The affected area should then be disinfected with an antiseptic wipe. The employee will be offered the option for medical treatment by a physician, which typically involves prophylactic antibiotics. If personnel feel sick or have signs similar to those above, they should notify the PM immediately. Workers' pants should be tucked into their socks to prevent ticks from crawling up their legs.

The deer tick can also cause Babesiosis, an infection of the parasite Babesia Microti. Symptoms of Babesiosis may not be evident, but may also include fever, fatigue and hemolytic anemia lasting from several days to several months. Babesiosis is most commonly diagnosed in the elderly or in individuals whose immune systems are compromised.

Ehrlichiosis is a tick-borne disease which can be caused by either of two different organisms. Human monocytic ehrlichiosis (HME) is caused by *Ehrlichia chaffeensis*, which is transmitted by the lone star tick (*Amblyomma americanum*). Human granulocytic anaplasmosis (HGA), previously known as human granulocytic ehrlichiosis (HGE), is caused by *Anaplasma phagocytophilia*, which is transmitted by the deer tick (*Ixodes scapularis*). In New York State, most cases of ehrlichiosis have been reported on Long Island and in the Hudson Valley. Ehrlichiosis is transmitted by the bite of infected ticks, including the deer tick and the lone star

tick. The symptoms of HME and HGE are the same and usually include fever, muscle aches, weakness and headache. Patients may also experience confusion, nausea, vomiting and joint pain.

Unlike Lyme disease or Rocky Mountain spotted fever, a rash is not common. Infection usually produces mild to moderately severe illness, with high fever and headache, but may occasionally be life-threatening or even fatal. Symptoms appear one to three weeks after the bite of an infected tick. However, not every exposure results in infection. Rocky Mountain spotted fever (RMSF) is a tick-borne disease caused by a rickettsia (a microbe that differs somewhat from bacteria and virus). Fewer than 50 cases are reported annually in New York State. In the eastern United States, children are infected most frequently, while in the western United States, disease incidence is highest among adult males. Disease incidence is directly related to exposure to tick-infested habitats or to infested pets. Most of the cases in New York State have occurred on Long Island. RMSF is characterized by a sudden onset of moderate to high fever (which can last for two or three weeks), severe headache, fatigue, deep muscle pain, chills and rash. The rash begins on the legs or arms, may include the soles of the feet or palms of the hands and may spread rapidly to the trunk or rest of the body. Symptoms usually appear within two weeks of the bite of an infected tick.

4.2.4 Plants

The potential for contact with poisonous plants exists when performing field work in undeveloped and wooded areas. Poison ivy, sumac, and oak may be present on site. Poison ivy can be found as vines on tree trunks or as upright bushes. Poison ivy consists of three leaflets with notched edges. Two leaflets form a pair on opposite sides of the stalk, and the third leaflet stands by itself at the tip. Poison ivy is red in the early spring and turns shiny green later in the spring. Poison sumac can be present in the form of a flat-topped shrub or tree. It has fern-like leaves, which are velvety dark green on top and pale underneath. The branches of immature trees have a velvety "down." Poison sumac has white, "hairy" berry clusters. Poison oak can be present as a sparingly branched shrub. Poison oak is similar to poison ivy in that it has the same leaflet configuration; however, the leaves have slightly deeper notches. Prophylactic application of Tecnu® may prevent the occurrence of exposure symptoms. Post exposure over the counter products are available and should be identified at the local pharmacist. Susceptible individuals should be identified by the PM.

Contact with poison ivy, sumac, or oak may lead to a skin rash, characterized by reddened, itchy, blistering skin which needs first aid treatment. If you believe you have contacted one of these plants, immediately wash skin thoroughly with soap and water, taking care not to touch your face or other body parts.

4.3 PHYSICAL HAZARDS

Physical hazards will be addressed as necessary. More detailed safety procedures are provided as appendices where applicable.

4.3.1 Cold Stress

At certain times of the year, workers may be exposed to the hazards of working in cold environments. Potential hazards in cold environments include frostbite, trench foot or immersion foot, hypothermia as well as slippery surfaces, brittle equipment, poor judgment and unauthorized procedural changes. The procedures to be followed are found in Appendix B, Cold Stress Guidelines.

4.3.2 Heat Stress

Heat stress is a significant potential hazard, which is greatly exacerbated with the use of PPE in hot environments. The potential hazards of working in hot environments include dehydration, cramps, heat rash, heat exhaustion, and heat stroke. A heat stress prevention program will be implemented when ambient temperatures exceed 70ºF for personnel wearing impermeable clothing. The procedures to be followed are found in Appendix C, the Heat Stress Guidelines.

4.3.3 Noise

Noise is a potential hazard associated with the operation of heavy equipment, power tools, pumps and generators. Site workers who will perform suspected high noise tasks and operations for short durations (less than 1-hour) will be provided with earplugs. If deemed necessary by the PM, the CHSO will be consulted on the need for additional hearing protection and the need to monitor sound levels for site activities.

4.3.4 Slips, Trips, and Falls

Working in and around the site will pose slip, trip and fall hazards due to slippery surfaces that may be oil covered, or from surfaces that are wet from rain or ice.

4.3.5 Fire and Explosion

When conducting re-grading activities, the opportunity of encountering fire and explosion hazards exists from contamination in the soil. The use of a diesel engine on grading equipment could present the possibility of encountering fire and explosion hazards.

4.3.6 Manual Lifting

Manual lifting of heavy objects such as air monitoring equipment may be required. Failure to follow proper lifting technique can result in back injuries and strains. Site workers will be instructed to use power equipment to lift heavy loads when possible and to evaluate loads before trying to lift them (i.e. they should be able to easily tip the load and then return it to its original position). Carrying heavy loads with a buddy and proper lifting techniques, 1) make sure footing is solid, 2) make back straight with no curving or slouching, 3) center body over feet, 4) grasp the object firmly and as close to your body as possible, 5) lift with legs, and 6) turn with your feet, don't twist, will be stressed. Back injuries are a serious concern as they are the most common

workplace injury, often resulting in lost or restricted work time, and long treatment and recovery periods.

4.3.7 Utilities (Electrocution and Fire Hazards)

The National Grid Contractor will oversee utility procedures as described below. This competent Person can delegate other qualified employees as necessary to serve as a Competent Person.

- Underground utilities at the site pose fire, explosion, and electrocution hazards. Potential adverse effects of electrical hazards include burns and electrocution, which could result in death. Underground utilities, facilities, equipment, and structures will be located prior to start of remedial excavation activities. The Underground Utilities Call Center will be notified a minimum of three (3) days before any subsurface disturbance. If utilities are detected, no post-hole excavation will take place within three (3) feet of such utilities. All underground utilities are initially going to be considered active. However, if two open ends of an underground utility are found, this conduit will be considered inactive and removed from the ground. All underground utilities will be surveyed and a site wide utility drawing will be made.

- Overhead transmission lines pose fire, explosion, and electrocution hazards. Potential adverse effects of electrical hazards include burns and electrocution, which could result in death. A competent Person/spotter will oversee equipment operation to ensure that safe working distances (at least ten (10) feet) are maintained with respect to work near energized overhead conductors.

The biological and physical hazards are summarized in the table below.

PHYSICAL/BIOLOGICAL HAZARDS AND CONTROL	
Potential Hazard	**Control Measures**
Construction Safety	• Identify yourself and your work location to heavy equipment operators, so they may incorporate you into their operations. Coordinate hand signals with operators. • Stay Alert! Pay attention to equipment backup alarms and swing radii. • Wear a high visibility vest when working near equipment or motor vehicle traffic. • Position yourself in a safe location when filling out logs and talking with the contractor. • Notify the contractor immediately if any problems arise. • Do not stand or sit under suspended loads or near any pressurized equipment lines.

PHYSICAL/BIOLOGICAL HAZARDS AND CONTROL	
Potential Hazard	**Control Measures**
Heat Stress	• Increase water intake while working. • Increase number of rest breaks and/or rotate workers in shorter work shifts. Rest in cool, dry areas. • Watch for signs and symptoms of heat exhaustion and fatigue. • Plan work for early morning or evening during hot months. • Use ice vests when necessary. • In the event of heat stroke, bring the victim to a cool environment and initiate first aid procedures.
Cold Stress	• Take breaks in heated shelters when working in extremely cold temperatures. • Wear loose layered clothing to promote heat convection and absorption of perspiration. • Drink warm liquids to reduce the susceptibility to cold stress.
Physical Injury	• Prevent slips, trips, and falls by: • Wearing work boots in good condition with non-slip soles. • Maintaining good visibility of the work area. • Avoiding walking on uneven or debris ridden ground surfaces.
Back Injury	• Use a mechanical lifting device or a lifting aid where appropriate. • If you must lift, plan the lift before doing it. • Check your route for clearance. • Bend at the knees and use leg muscles when lifting. • Use the buddy system when lifting heavy or awkward objects. • Do not twist your body while lifting.
Noise	• Wear hearing protection when equipment such as a drill rig, jackhammer, cut saw, air compressor, blower or other heavy equipment is operating on the site. • Wear hearing protection whenever you need to raise your voice above normal conversational speech due to a loud noise source; this much noise indicates the need for protection.
Vehicular Traffic	• Wear traffic safety vest at all times. • Use cones, flags, barricades, and caution tape to define work area. • Use a "spotter" to locate oncoming vehicles. • Use vehicle to block work area. • Engage police detail for all work conducted in appropriate

PHYSICAL/BIOLOGICAL HAZARDS AND CONTROL	
Potential Hazard	**Control Measures**
	areas.
Utilities	• Utilities are to be considered alive or active until documented otherwise. • For overhead utilities within 50 feet, determine with the utility company the appropriate distance. Minimum distance for clearance is based on voltage of the line.
Inclement Weather	• Stop outdoor work during electrical storms and other extreme weather conditions such as extreme heat or cold temperatures. • Take cover indoors or in vehicle. • Listen to local forecasts for warnings about specific weather hazards such as tornados, hurricanes, and flash floods. • Wait 30 minutes after the last clap of lightening before resuming work.
Insects	• Tuck pants into socks. • Wear long sleeves. • Use insect repellent.
Poisonous Plants (such as poison ivy, oak, or sumac)	• Avoid areas infested with poisonous plants. • Immediately wash with soap and water any areas that come into contact with poisonous plants.

5. PERSONAL PROTECTIVE EQUIPMENT

The personal protective equipment (PPE) specified in Table 5-1 represents the hazard analysis and PPE selection required by 29 CFR 1910.132. Specific information on the selection rationale for each activity can be found under Section 4 and in GEI's Health and Safety Manual. For the purposes of PPE selection, the CHSO and PM (if they have completed the 8-hour OSHA Site Supervisor Training) are considered competent persons. The signatures on the front of the HASP constitute certification of the hazard assessment. For activities not covered by Table 5-1, the PM will conduct the hazard assessment and select the PPE using the information provided in GEI's PPE Program found in the GEI Health and Safety manual. PPE selection will be made in consultation with the CHSO.

Modifications for initial PPE selection may also be made by the PM in consultation with the CHSO using the same form. A written justification for major downgrades will be provided to the CHSO for approval on a field change request form.

Table 5-1 describes the anticipated task-specific PPE.

5.1 PPE ABBREVIATIONS

HEAD PROTECTION HH = Hard Hat HEARING PROTECTION EP = ear plugs EM = ear muffs	EYE/FACE PROTECTION APR = Full Face Air Purifying Respirator MFS = Mesh Face shield PFS =Plastic Face shield SG = ANSI approved safety glasses with side shields	FOOT PROTECTION Neo = Neoprene OB = Overboot Poly = polyethylene coated boot Rub = rubber slush boots STB = Leather work boots with steel toe. STB-EHR = Electric hazard Resistant leather work boots with safety toe
HAND PROTECTION Cot = cotton But = Butyl LWG = Leather Work Gloves Neo = Neoprene Nit = Nitrile Sur = Surgical Nit Sur - Nitrile Surgical	BODY PROTECTION Cot Cov = Cotton Coveralls Poly = Polyethylene coated Tyvek® coveralls Saran = Saranex coated Tyvek® coveralls Tyvek® = Uncoated paper Tyvek® coveralls WC = Work clothes	RESPIRATORY PROTECTION Level D = No respiratory protection required Level C = Full face air purifying respirator with approved cartridges Level B = Full face air supplied respirator with escape bottle

TABLE 5-1
PERSONAL PROTECTIVE EQUIPMENT SELECTION

TASK	HEAD	EYE/FACE	FEET	HANDS	BODY	HEARING	RESPIRATOR
Soil Sample Collection							
	HH	SG	STB-EHR	LWG as needed	WC		
Work Zone and Community Air Monitoring Activities							
	HH	SG	STB-EHR	LWG as needed	WC	EP as needed	Level D
Construction Oversight Activities							
	HH	SG	STB-EHR	LWG as needed	WC	EP as needed	Level D

5.2 OSHA REQUIREMENTS FOR PERSONAL PROTECTIVE EQUIPMENT

All personal protective equipment used during the course of this field investigation must meet the following OSHA standards:

Type of Protection	Regulation	Source
Eye and Face	29 CFR 1910.133	ANSI Z87.1-1968
Respiratory	29 CFR 1910.134	ANSI Z88.1-1980
Head	29 CFR 1910.135	ANSI Z89.1-1969
Foot	29 CFR 1910.136	ANSI Z41.1-1967
Ear	29 CFR 1910.95	N/A

ANSI = American National Standards Institute

Any on-site personnel who have the potential to don a respirator must have a valid fit test certification and documentation of medical clearance. The CHSO will maintain such information on file for GEI personnel. The PM will obtain such information from the subcontractor's site supervisor prior to the initiation of any such work. Both the respirator and cartridges specified for use in Level C protection must be fit-tested prior to use in accordance with OSHA regulations (29 CFR 1910.1025; 29 CFR 1910.134). Air purifying respirators cannot be worn under the following conditions:

- Oxygen deficiency;
- IDLH concentrations; and
- If contaminant levels exceed designated use concentrations.

6. MONITORING

6.1 MONITORING REQUIREMENTS

Environmental Health and Safety Monitoring will be performed in the work zone by GEI in accordance with this section.

6.1.1 Work Zone Monitoring

The following monitoring instruments will be available for use during field operation as necessary:

- Dust Meter

All air monitoring equipment will be calibrated and maintained in accordance with manufacturer's requirements.

A dust meter shall be used to measure airborne particulate matter during activities. Monitoring will be continuous and readings will be averaged over a 15-minute period for comparison with the action levels. Monitoring personnel will collect dust monitoring data from both downwind and upwind locations of the intrusive activity, which will be logged by the equipment.

TABLE 6-1

REAL TIME AIR MONITORING ACTION LEVELS

Air Monitoring Instrument	Monitoring Location	Action Level	Site Action
Dust Meter	Excavation	> 1.5 mg/m^3	Implement work practices to reduce/minimize airborne dust generation, e.g., spray/misting of soil with water
		> 2.5 mg/m^3	Upgrade to Level C PPE

6.2 COMMUNITY AIR MONITORING PLAN

A "stand-alone" community air monitoring plan (CAMP) has been developed for use during the East Hampton Hortonsphere IRM work. The CAMP conforms to the guidelines presented by the New York State Department of Health in Appendix 1A of the Draft New York State Department of Conservation DER-10 Technical Guidance for Site Investigation and Remediation. A summary of the plan elements is presented below.

- Particulate (dust) monitoring will be performed during intrusive activities at the Site. Two particulate monitors (TSI DustTrak or equivalent) will be used for continuous real-time dust monitoring. The monitoring instruments will be periodically checked by the engineering representative periodically, and the real-time measurements recorded. If requested by the on-site NYSDEC representative, a 15-minute average concentration may be determined.

- If the downwind dust level is 150 µg/m^3 greater than the background level for a 15-minute period, or if airborne dust is observed leaving the work area, then dust suppression techniques will be employed. Work may continue with dust suppression techniques provided that downwind dust levels do not exceed 150 µg/m^3 above the background level and provided that no visible dust is migrating from the work area. If dust cannot be adequately controlled, work will be halted until conditions allow work to resume.

Typical dust control measures may include:

- Apply water for dust suppression;
- Relocate operations, if applicable; and
  Reassess the existing control measures.

6.3 DATA QUALITY ASSURANCE

6.3.1 Calibration

Instrument calibration shall be documented and included in the project field book on-site. All instruments shall be calibrated before each workday. Calibration checks may be used during the day to confirm instrument accuracy.

6.3.2 Operations

All instruments shall be operated in accordance with the manufacturer's specifications. Manufacturers' literature, including an operations manual for each piece of monitoring equipment will be maintained on-site for reference.

6.4 NOISE MONITORING

Work areas or tasks that pose an exposure risk greater than 85 dba will require hearing protection.

7. ZONES, PROTECTION, AND COMMUNICATION

7.1 SITE CONTROL

Site zones are intended to control the potential spread of contamination and to assure that only authorized individuals are permitted into potentially hazardous areas. A zoned approach will be utilized and will include a Support Zone and Construction Zone. Specific zones shall be established on the work site when operations begin, and remain consistent through the project due to the size of the site

The following shall be used for guidance in revising these preliminary zone designations, if necessary.

Support Zone - The SZ is an area that will be the field support area for most operations. The SZ provides for field team communications and staging for emergency response. Appropriate safety equipment will be located in this zone.

Construction Zone - All construction activities, including soil removal, removal and installation of fencing, will be conducted in this zone. This zone will be clearly delineated by cones, tapes or other means.

7.2 CONTAMINATION CONTROL

7.2.1 Minimization of Contact with Contaminants

During completion of all site activities, personnel should attempt to minimize the degree of contact with soil debris. This involves a conscientious effort to keep "clean" during site activities. All personnel should minimize kneeling, dust generation, and other physical contact with soil.

7.3 COMMUNICATIONS

The following communications equipment shall be specified as appropriate:

- Telephones - A cellular telephone will be located in the SZ for communication with emergency support services/facilities and the home office. Personnel in the EZ can carry cellular telephones for communication as well if Level D PPE has been determined to be appropriate.

8. EMERGENCY RESPONSE / CONTINGENCY PLAN

This section establishes procedures and provides information for use during a project emergency. Emergencies happen unexpectedly and quickly, and require an immediate response; therefore, contingency planning and advanced training of staff are essential. Specific elements of emergency support procedures which are addressed in the following subsections include communications, local emergency support units, preparation for medical emergencies, and first aid for injuries incurred on site, record keeping, and emergency site evacuation procedures.

8.1 RESPONSIBILITIES

8.1.1 Corporate Health and Safety Officer (CHSO)

The CHSO, or her representative, oversees and approves the Emergency Response/Contingency Plan and performs audits to determine that the plan is in effect and that all pre-emergency requirements are met. The CHSO acts as a liaison to applicable regulatory agencies and notifies OSHA of reportable accidents.

8.1.2 Project PM

The Project PM is responsible for ensuring that all personnel are evacuated safely and that machinery and processes are shut down or stabilized in the event of a stop work order or evacuation. The PM is required to immediately notify the PM and CHSO of any fatalities or catastrophes (three or more workers injured and hospitalized) so that the CHSO can notify OSHA within the required time frame. The CHSO will be notified of all OSHA recordable injuries, fires, spills, releases or equipment damage in excess of $500 within 24 hours. The PM also serves as the Emergency Coordinator.

8.1.3 Emergency Coordinator

In the event of an emergency, the Emergency Coordinator, with National Grid representatives, shall make contact with Local Emergency Response personnel. In these contacts, the Emergency Coordinator will inform response personnel about the nature of work on the Site, the type of contaminants and associated health or safety effects, and the nature of the emergency, particularly if it is related to exposure to contaminants.

The Emergency Coordinator shall review this plan and verify emergency phone numbers and identify hospital routes prior to beginning work on site. The Emergency Coordinator shall make necessary arrangements to be prepared for any emergencies that could occur.

The Emergency Coordinator shall implement the Emergency Response/Contingency Plan whenever conditions at the Site warrant such action.

8.1.4 Site Personnel

Site personnel are responsible for knowing the Emergency Response/Contingency Plan and the procedures contained herein. Personnel are expected to notify the Emergency Coordinator of situations that could constitute a Site emergency.

8.2 COMMUNICATIONS

The primary form of communication during an emergency between field groups in the Construction Zone and the Emergency Coordinator will be verbal communications. During an emergency situation, the lines will be kept clear so that instructions can be received by all field teams. In addition, a cellular telephone will be available on site.

8.3 PRE-EMERGENCY PLANNING

Before the field activities begin, the local emergency response personnel may be notified by National Grid of the schedule for field activities and about the materials that are thought to exist on the site so that they will be able to respond quickly and effectively in the event of a fire, explosion, or other emergency.

In order to be able to deal with any emergency that may occur during remedial activities at the Site, emergency telephone numbers are provided below. Hospital route maps will also be readily available in the GEI vehicle. The Emergency phone numbers listed are preliminary. Immediately prior to mobilization the PM shall verify all numbers, and document any changes in the field book.

Emergency Contact and Telephone Numbers

Fire:	911	
Police:	911	
Ambulance:	911	
Hospital:	Southampton Hospital 240 Meeting House Lane Southampton, New York 11968 P: (631) 726-8200	
GEI Contacts:	Jerry Zak, Project Manager	(860) 558-3866 (cell) (860) 368-5404 (office)
	Robin Dehate, Corporate Health and Safety Officer	(813) 323-6220 (cell) (813) 774-65674 (office)
	Autumn Eberhart, Field Engineer	(607) 229-4678 (cell)
National Grid Contact:	Ted Leissing, Project Manager	(516) 545-2563 (office) (516) 734-3244 (cell)
Utility Clearance	Dig Safely New York	811 1-800-272-4480

8.4 EMERGENCY MEDICAL TREATMENT

The procedures and rules in this HASP are designed to prevent employee injury. However, should an injury occur, no matter how slight, it will be reported to the PM immediately. First-aid equipment will be available on-site.

During the site safety briefing, project personnel will be informed of the location of the first aid kit. Unless they are in immediate danger, severely injured persons will not be moved until paramedics can attend to them. Some injuries, such as severe cuts and lacerations or burns, may require immediate treatment. Any first aid instructions that can be obtained from doctors or paramedics, before an emergency-response squad arrives at the site or before the injured person can be transported to the hospital, will be followed closely.

8.5 EMERGENCY SITE EVACUATION ROUTES AND PROCEDURES

In the event of a Site Emergency that would require the evacuation of personnel, the Emergency Coordinator will immediately contact the project-specific dedicated National Grid Corporation contact (this person may or may not be on site).

All project personnel will be instructed on proper emergency response procedures and locations of emergency telephone numbers during the initial site safety meeting. If an emergency occurs at the work area, including but not limited to fire, explosion or significant release of toxic gas into the atmosphere, immediate evacuation of all personnel is necessary due to an immediate or impending danger. All heavy equipment will be shut down and all personnel will evacuate the work areas and assemble at a pre-determined location.

8.6 FIRE PREVENTION AND PROTECTION

In the event of a fire or explosion, procedures will include immediately evacuating the work area; the Emergency Coordinator will immediately notify the local fire and police departments. No personnel will fight a fire beyond the stage where it can be put out with a portable extinguisher (incipient stage).

Fires will be prevented by adhering to the following precautions:

- Good housekeeping and storage of materials
- Storage of flammable liquids and gases away from oxidizers
- No smoking in the exclusion zone or any work area
- No hot work without a properly executed hot work permit
- Shutting off engines to refuel
- Grounding and bonding metal containers during transfer of flammable liquids
- Use of UL approved flammable storage cans
- Fire extinguishers rated at least 10 pounds ABC located on all heavy equipment, in all trailers and near all hot work activities
- Monthly inspections of all fire extinguishers

8.7 OVERT CHEMICAL EXPOSURE

The following are standard procedures to treat chemical exposures. Other, specific procedures detailed on the Material Safety Data Sheet will be followed as necessary. If first aid or emergency medical treatment is necessary the Emergency Coordinator will contact the appropriate emergency facilities.

SKIN AND EYE CONTACT:	Use copious amounts of soap and water. Wash/rinse affected areas thoroughly, and then provide appropriate medical attention. Eyes should be rinsed for 15 minutes upon chemical contamination. Skin should also be rinsed for 15 minutes if contact with caustics, acids or hydrogen peroxide occurs.
INHALATION:	Move to fresh air. Decontaminate and transport to hospital or local medical provider.
INGESTION:	Decontaminate and transport to emergency medical facility.
PUNCTURE WOUND OR LACERATION:	Decontaminate and transport to emergency medical facility.

8.8 ACCIDENT/INCIDENT REPORTING

Incident reporting will be done following the guidelines established in the Incident Reporting Program presented in Appendix D.

Written confirmations of verbal reports are to be submitted within 24 hours. The accident/incident report is found in Appendix D.

In addition to the incident reporting procedures and actions described in the HASP, the PM will coordinate with National Grid relative to reporting and notification for all environmental, safety, and other incidents. Also, the SM and PM will notify the CHSO and HR within 2 hour of the incident and submit the GEI Accident report form within 24 hours of the incident.
If necessary, a site safety briefing will be held to discuss accidents/incidents and any findings from the investigation of the incident. The HASP will be modified if deemed necessary by the CHSO.

8.9 ADVERSE WEATHER CONDITIONS

In the event of adverse weather conditions, the PM will determine if work can continue without potentially risking the safety of GEI field workers. Some of the items to be considered prior to determining if work should continue are:

- Potential for heat stress and heat-related injuries
- Potential for cold stress and cold-related injuries
- Treacherous weather-related working conditions (hail, rain, snow, ice, high winds)
- Limited visibility (fog)
- Potential for electrical storms
- Earthquakes
- Other major incidents

Site activities will be limited to daylight hours, or when suitable artificial light is provided, and acceptable weather conditions prevail. The PM will determine the need to cease field operations or observe daily weather reports and evacuate, if necessary, in case of severe inclement weather conditions.

8.10 SPILL CONTROL AND RESPONSE

All small hazardous spills/environmental releases shall be contained as close to the source as possible. Whenever possible, the MSDS will be consulted to assist in determining the best means of containment and cleanup. For small spills, absorbent materials such as sand, sawdust or commercial sorbents should be placed directly on the substance to contain the spill and aid recovery. Any acid spills should be diluted or neutralized carefully prior to attempting recovery. Berms of earthen or sorbent materials can be used to contain the leading edge of the spills. Drains or drainage areas should be blocked. All spill containment materials will be properly disposed. An exclusion zone of 50-100 feet around the spill area should be established depending on the size and type of the spill.
The following steps should be taken by the Emergency Coordinator:

- Determine the nature, identity and amounts of major spill components;
- Make sure all unnecessary persons are removed from the spill area;
- Notify appropriate response teams and authorities;
- Use proper PPE in consultation with the PM;
- If a flammable liquid, gas or vapor is involved, remove all ignition sources and use nonsparking and/or explosive proof equipment to contain or clean up the spill (diesel only vehicles, air operated pumps, etc.);
- If possible, try to stop the leak with appropriate material; and,
- Remove all surrounding materials that can react or compound with the spill.

Notify the Project-Specific National Grid Corporation Dedicated Contact.

8.11 EMERGENCY EQUIPMENT

The following minimum emergency equipment shall be kept and maintained on-site.

- Industrial first aid kit
- Portable eye wash
- Fire extinguishers (one per vehicle)

8.12 POSTINGS

The following information will available at in the GEI vehicle:

- Emergency telephone numbers
- Hospital Route Map

8.13 RESTORATION AND SALVAGE

After an emergency, prompt restoration of utilities, fire protection equipment, medical supplies and other equipment will reduce the possibility of further losses. Some of the items that may need to be addressed are:

- Refilling fire extinguishers;
- Refilling medical supplies;
- Recharging eyewashes and/or showers
- Replenishing spill control supplies
- Replacing used air horns

9. TRAINING

9.1 GENERAL HEALTH AND SAFETY TRAINING

In accordance with 29 CFR 1910.120, hazardous waste site workers shall, at the time of job assignment, have received a minimum of 40 hours of initial health and safety training for hazardous waste site operations unless otherwise noted in the above reference. At a minimum, the training shall have consisted of instruction in the topics outlined in the standard. GEI personnel who have not met the requirements for initial training shall not be allowed to work in any site activities in which they may be exposed to hazards (chemical or physical). Proof of training shall be submitted to the PM prior to the start of field activities.

9.2 ANNUAL EIGHT-HOUR REFRESHER TRAINING

Annual eight-hour refresher training will be required of all GEI field personnel in order to maintain their qualifications for fieldwork. The training will cover a review of 29 CFR 1910.120 requirements and related company programs and procedures.

9.3 SITE-SPECIFIC TRAINING

Prior to commencement of field activities, all GEI field personnel assigned to the project will have completed training that will specifically address the activities, procedures, monitoring, and equipment used in the site operations. It will include site and facility layout, hazards and emergency services at the site and will highlight all provisions contained within this HASP. This training will also allow field workers to clarify anything they do not understand and to reinforce their responsibilities regarding safety and operations for their particular activity. Personnel that have not received site-specific training will not be allowed on-site.

9.4 ON-SITE SAFETY BRIEFINGS

GEI project personnel and visitors will be given health and safety briefings daily by the PM or his representative to assist site personnel in safely conducting their work activities. The briefings will include information on new operations to be conducted, changes in work practices or changes in the site's environmental conditions, as well as periodic reinforcement of previously discussed topics. The briefings will also provide a forum to facilitate conformance with safety requirements and to identify performance deficiencies related to safety during daily activities or as a result of safety inspections. The meetings will also be an opportunity to periodically update the crews on monitoring results. All on-site briefings will be documented.

9.5 FIRST AID AND CPR

The PM will identify those individuals requiring first aid and CPR training in order to ensure that emergency medical treatment is available during field activities. The training will be consistent with the requirements of the American Red Cross Association and will include training on blood borne pathogens.

10. LOGS, REPORTS, AND RECORD KEEPING

The following is a summary of required health and safety logs, reports, and record keeping.

10.1 MEDICAL AND TRAINING RECORDS

Copies or verification of training (40 hour, 8 hour, supervisor, and site-specific training) and medical clearance for hazardous waste site work and respirator use will be maintained by the CHSO and copies provided to the PM prior to the initiation of work on-site.

10.2 ON-SITE LOG

A log of GEI personnel on-site each day will be kept by the PM or his representative in a field logbook.

10.3 EXPOSURE RECORDS

All personal monitoring results, laboratory reports, calculations and air sampling data sheets will be maintained by the PM during site work. At the end of the project they may be maintained in employee files if deemed necessary by the CHSO.

10.4 ACCIDENT/INCIDENT REPORTS

The incident reporting and investigation during site work will follow the Incident Reporting Program in Appendix D.

10.5 HAZARD COMMUNICATION PROGRAM/MSDS

Material Safety Data Sheets (MSDSs) will be obtained for applicable substances and included in the site hazard communication file. The hazard communication file will be maintained onsite in accordance with 29 CFR 1910.1200.

10.6 SAFETY OBSERVATION TOUR

GEI will participate in Safety Observations Tours as required by National Grid.

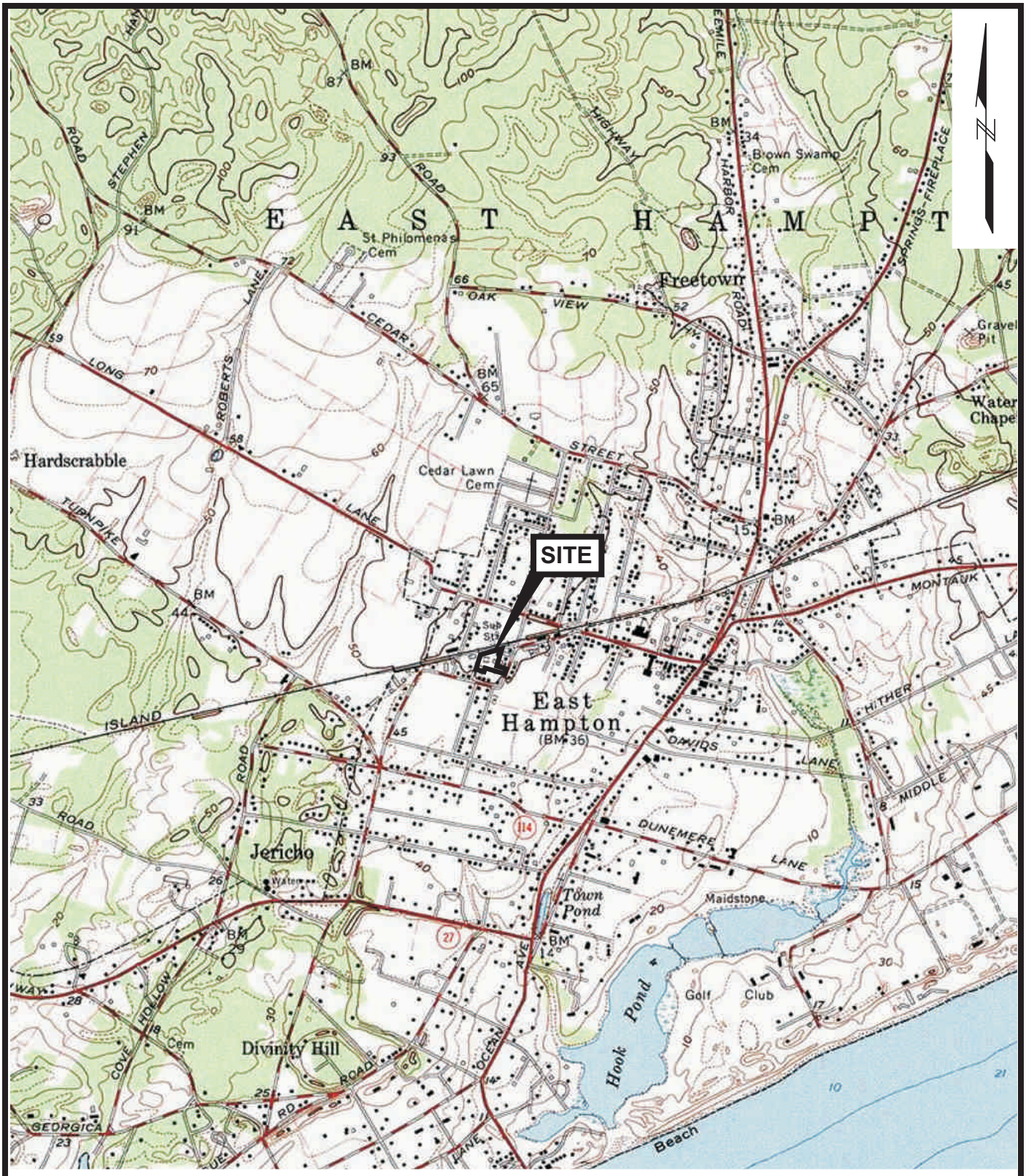
11. FIELD PERSONNEL REVIEW

This form serves as documentation that field personnel have read, or have been informed of, and understand the provisions of this HASP for the East Hampton Site. It is maintained on-site by the PM as a project record. Each field team member shall sign this section after training in the contents of this HASP has been completed. Site workers must sign this form after site-specific training is completed and before being permitted to work on-site.

I have read, or have been informed of, the Health and Safety Plan and understand the information presented. I have also completed site-specific training for the work detailed in the project Work Plan. I will comply with the provisions contained therein.

NAME (PRINT AND SIGN)	DATE

FIGURES



SOURCE: Map created with TOPO! ® ©2001 National Geographic (www.nationalgeographic.com/topo)

HEALTH AND SAFETY PLAN
EAST HAMPTON HORTONSPHERE SITE
EAST HAMPTON, NEW YORK

nationalgrid

GEI Consultants

SITE LOCATION MAP

Project 102870-1-1101 | April 2011 | Figure 1

I:\Project\National Grid\East Hampton\EH Hortonsphere\IRM\HASP\East Hampton Location Map.CDR

LEGEND:

PROPERTY BOUNDARY (APPROXIMATE)

EXISTING SECURITY FENCE

SOURCES:

1. Orthophoto obtained from New York State Interactive Mapping Gateway (http://www1.nysgis.state.ny.us/MainMap.cfm) photo date: 2004, accessed 1/09/08.
2. Long Island Lighting Co., Mineola, N.Y., East Hampton Substation and Gas Storage Site, Situated at East Hampton, Town of East Hampton, County of Suffolk, N.Y., Scale: 1" = 60', Date: 10-17-72.
3. Survey of existing conditions and sample locations conducted by GEI Consultants, Inc. on 12/14/07. Survey by New York state licensed land surveyor number 050146. Horizontal datum: New York State Plane coordinate system (Long Island Zone, North American Datum (NAD)83). Vertical datum: North American Vertical Datum (NAVD) 88.

0 60 120

SCALE, FEET

HEALTH AND SAFETY PLAN
EAST HAMPTON HORTONSPHERE SITE
EAST HAMPTON, NEW YORK

nationalgrid

GEI Consultants

SITE PLAN

Project 102870-1-1101 | April 2011 | Figure 2

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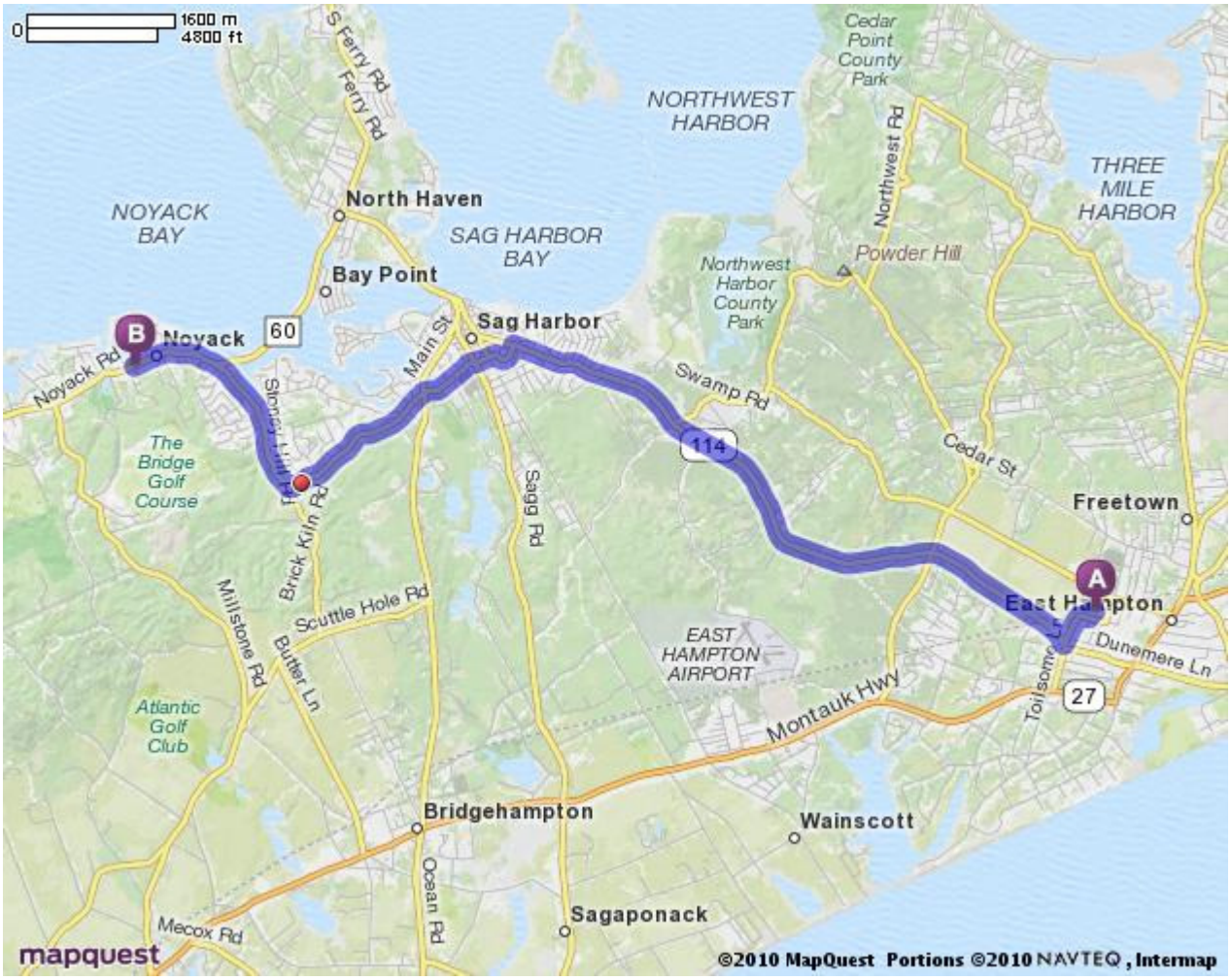
APPENDIX A

ACTIVITY HAZARD ANALYSIS

WORK TASK	POTENTIAL HAZARDS	CONTROLS
ACTIVITY: Excavation, Test Pitting, Backfilling, Grading, Sample Collection		
Observation of excavation, backfilling, grading	Utilities	Confirm with Contractor that One-Call was notified and confirm utility locations with National Grid prior to breaking ground.
	Adverse weather	Monitor weather daily. Discontinue work as necessary based on lightning, limited visibility, impaired mobility, etc.
	Cold stress/heat stress	Acclimatization, work/rest regimes, drinking warm/cold fluids
.	Slip, trip, fall	Maintain safe and orderly work areas. Unloading areas should be on even terrain. Identify and repair potential tripping hazards.
	Motor Vehicle Hazards	Safe driving practices, use of a spotter.
	Noise	Distancing from noise, hearing protection
	Biological Hazards	Proper clothes, body inspections, insect repellant
	Heavy equipment / Proximity to Heavy equipment	Distancing, safe work practices, inspections, wear hearing protection and steel-toed boots
	Excavation Hazards	Sloping/shoring practices, distancing personnel from excavation, hard hat
	Tool Use	Use proper guarding, inspections, wear safety glasses with side shields, hearing protection
	Exposure to hazardous chemicals	Wear protective coveralls (e.g., Tyvek®) (if needed) with shoe covers, nitrile gloves, and safety glasses when handling samples. Dispose of gloves after sampling. Personal protective equipment will be decontaminated and disposed of in general accordance with Section 9 of this HASP.
	Contact with equipment, especially moving parts. Overhead hazard (rods).	Stay alert and maintain suitable clearance from moving and overhead equipment. Do not wear loose clothing, jewelry, or equipment, which could get caught by moving equipment. Inspect equipment daily. Train all personnel on use of emergency shutoff switches.
	Weather related equipment hazards (slippage in rain, lightning).	Cease operations prior to and during electrical storms. Cease operations if equipment cannot be operated safely under wet conditions.
	Exposure to vapors and dust from contaminated soil.	Use work zone air monitoring equipment including PID and multiple gas meter (that monitors % oxygen, lower explosive limit, and hydrogen cyanide), and dust monitor to monitor the work zone as specified in Section 6.0 of the HASP. If air monitoring action levels are exceeded, then engineering controls will be implemented. If excursions of the action levels persist, then upgrade to half or full face respirator with HEPA/organic vapor cartridge as indicated in Section 5.0 of the HASP.
	Exposure to contaminated soil	Wear protective clothing with shoe covers, nitrile gloves, safety glasses, face shield when handling samples. Dispose of gloves after sampling. If exposed to soil, wash the exposed skin immediately with anti-bacterial wipes/gel and wash with soap and water.
Community Air Monitoring During Remedial Construction Activities	Same Potential Hazards as Mobilization Task	Same Potential Controls as Mobilization Task
	Potential Exposure to on-site contaminants	Training, PPE such as (protective coveralls (e.g., Tyvek®) (if needed) with shoe covers, nitrile gloves, and safety glasses when handling samples. Personal protective equipment will be decontaminated and disposed of in general accordance with Section 10 of this HASP.
	Potential Exposure to decontamination supplies	Training, PPE
	Noise	Training, PPE

WORK TASK	POTENTIAL HAZARDS	CONTROLS
ACTIVITY: Mobilization		
Mobilization/ demobilization of equipment and supplies. Establishment of site security, work zones and staging area	Noise hazards, heavy equipment hazards.	Wear hard hat, steel-toed/shank safety boots, reflective safety vest, and hearing protection near heavy equipment.



DIRECTIONS TO EMERGENCY ROOM AT SOUTHAMPTON HOSPITAL FROM SITE:

1.	TURN LEFT ONTO KING STREET.	0.0 MILES
2.	TURN RIGHT ONTO GINGERBREAD LANE.	0.3 MILES
3.	TURN RIGHT ONTO ROUTE 114.	5.5 MILES
4.	TURN LEFT ONTO JERMAINE AVENUE.	0.9 MILES
5.	JERMAINE BECOMES BRICK KILN ROAD.	1.4 MILES
6.	SLIGHT RIGHT ONTO STONEY HILL ROAD.	0.8 MILES
7.	STONEY HILL ROAD BECOMES NOYACK ROAD.	1.2 MILES

SOUTHAMPTON HOSPITAL, 3330 NOYACK ROAD, SAG HARBOR, NY (631) 752-7062

SOURCE:
MAPQUEST *(www.mapquest.com)*

HEALTH AND SAFETY PLAN EAST HAMPTON HORTONSPHERE SITE EAST HAMPTON, NEW YORK	GEI Consultants	**HOSPITAL ROUTE MAP**
nationalgrid	Project 102870-1-1101	April 2011 Figure A-1

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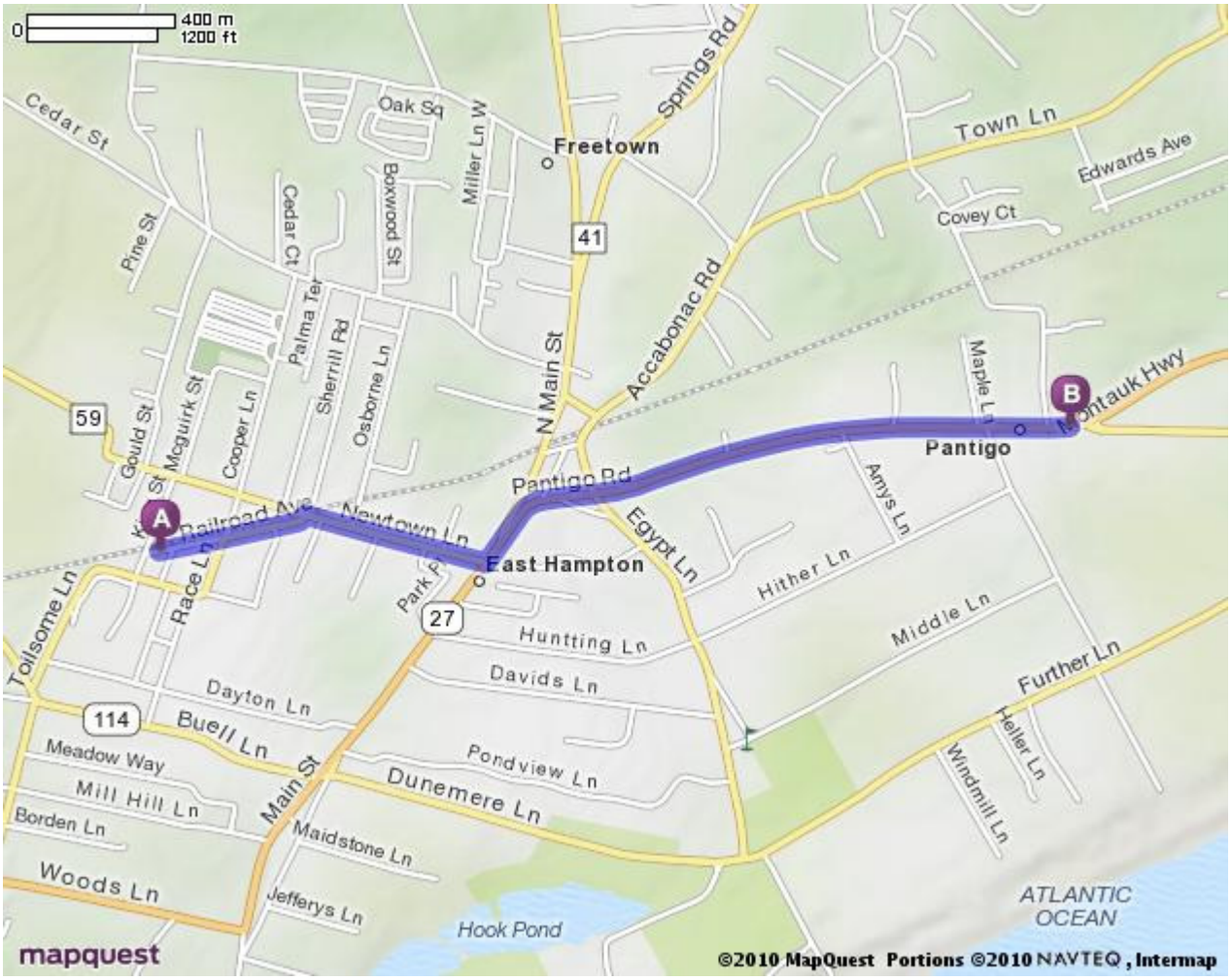

DIRECTIONS TO EAST HAMPTON URGENT CARE CENTER FROM SITE:

1.	TURN RIGHT ONTO NEWTOWN LANE.	0.4 MILES
2.	TURN LEFT ONTO NY-ROUTE 27/N MAIN STREET.	1.2 MILES
3.	470 PANTIGO ROAD IS ON THE RIGHT	0.0 MILES

EAST HAMPTON URGENT CARE CENTER, 470 PANTIGO ROAD, EAST HAMPTON, NY (631) 329 - 5900

SOURCE:
MAPQUEST *(www.mapquest.com)*

HEALTH AND SAFETY PLAN EAST HAMPTON HORTONSPHERE SITE EAST HAMPTON, NEW YORK	GEI Consultants	**URGENT CARE ROUTE MAP**
nationalgrid	Project 102870-1-1101	April 2011 Figure A-2

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APPENDIX B

COLD STRESS GUIDELINES

Cold Stress Guidelines

	Symptoms	What to do
Mild Hypothermia	• Body Temp 98-90°F • Shivering • Lack of coordination, stumbling, fumbling hands • Slurred speech • Memory loss • Pale, cold skin	• Move to warm area • Stay active • Remove we clothes and replace with dry clothes of blankets • Cover the head • Drink warm (not hot) sugary drink
Moderate Hypothermia	• Body temp 90-86°F • Shivering stops • Unable to walk of stand • Confused irrational	• All of the above, plus: • Call 911 • Cover all extremities complexly • Place very warm objects, such as hot packs on the victim's head, neck, chest and groin
Severe Hypothermia	• Body temp 86-78°F • Severe muscle stiffness • Very sleepy or unconscious • Ice cold skin • Death	• Call 911 • Treat victim very gently • Do not attempt to re-warm
Frostbite	• Cold, tingling, stinging or aching feeling in the frostbitten area, followed by numbness • Skin color turns red, then purple, then white or very pale skin • Cold to the touch • Blisters in severe cases	• Call 911 • Don not rub the area • Wrap in soft cloth • If help is delayed, immerse in warm, not hot, water
Trench Foot	• Tingling, itching or burning sensation • Blisters	• Soak feet in warm water, then wrap with dry cloth bandages • Drink a warm sugary drink

APPENDIX C
HEAT STRESS GUIDELINES

Heat Stress Guidelines

Form	Signs & Symptoms	Care	Prevention[1]
Heat Rash	Tiny red vesicles in affected skin area. If the area is extensive, sweating can be impaired.	Apply mild lotions and cleanse the affected area.	Cool resting and sleeping areas to permit skin to dry between heat exposures
Heat Cramps	Spasm, muscular pain (cramps) in stomach area and extremities (arms and legs).	Provide replacement fluids with minerals (salt) such as Gatorade.	Adequate salt intake with meals[2] ACCLIMATIZATION[3]
Heat Exhaustion	Profuse sweating, cool (clammy) moist skin, dizziness, confusion, pale skin color, faint, rapid shallow breathing, headache, weakness, muscle cramps.	Remove from heat, sit or lie down, rest, replace lost water with electrolyte replacement fluids (water, Gatorade) take frequent sips of liquids in amounts greater than required to satisfy thirst.	ACCLIMATIZATION[3] Adequate salt intake with meals [2] only during early part of heat season. Ample water intake, frequently during the day
Heat Stroke	HOT Dry Skin. Sweating has stopped. Mental confusion, dizziness, nausea, severe headache, collapse, delirium, coma.	HEAT STROKE IS A MEDICAL EMERGENCY - Remove from heat. - COOL THE BODY AS RAPIDLY AS POSSIBLE by immersing in cold (or cool) water, or splash with water and fan. Call for Emergency Assistance. Observe for signs of shock.	ACCLIMATIZATION[3] Initially moderate workload in heat (8 to 14 days). Monitor worker's activities.

Footnotes:

1.) Prevention: Method to Achieve Acclimatization - Moderate work or exercise in hot temperatures during early part of heat season. Adequate salt (mineral) and water intake. Gradually increasing work-time in hot temperatures. Avoid alcohol. Normally takes 8 to 14 days to achieve acclimatization. Lost rapidly, if removed from strenuous work (or exercise) in hot temperature for more than approximately five days.

2.) American diets are normally high in salt, sufficient to aid acclimatization. However, during the early part of the heat season, (May, June), one extra shake of salt during one to two meal per day may help, so long as this is permitted by your physician. Check with your personal physician.

3.) ACCLIMATIZATION - The process of adapting to heat is indicated by worker's ability to perform hot jobs less fluid loss, lower concentrations of salt loss in sweat, and a reduced core (body) temperature and heart rate.

APPENDIX D

INCIDENT REPORTING

ACCIDENT REPORT FORM
(continued)

Supervisor's Report of Accident

Supervisor's Name: _____

Basic Rules for Accident Investigation

- Find the cause to prevent future accidents - Use an unbiased approach during investigation
- Interview witnesses & injured employees at the scene - conduct a walkthrough of the accident
- Conduct interviews in private - Interview one witness at a time.
- Get signed statements from all involved.
- Take photos or make a sketch of the accident scene.
- What hazards are present - what unsafe acts contributed to accident
- Ensure hazardous conditions are corrected immediately.

Date & Time		**Location**	
Tasks performed		**Witnesses**	
Resulted in	**__ Injury __ Fatality** **__Property Damage**	**Property Damage**	
Injured		**Injured**	
Describe Accident Facts & Events			

Supervisor's Root Cause Analysis	*Check ALL that apply to this accident*		
Unsafe Acts		**Unsafe Conditions**	
Improper work technique		Poor Workstation design	
Safety rule violation		Unsafe Operation Method	
Improper PPE or PPE not used		Improper Maintenance	
Operating without authority		Lack of direct supervision	
Failure to warn or secure		Insufficient Training	
Operating at improper speeds		Lack of experience	
By-passing safety devices		Insufficient knowledge of job	
Protective equipment not in use		Slippery conditions	
Improper loading or placement		Excessive noise	
Improper lifting		Inadequate guarding of hazards	
Servicing machinery in motion		Defective tools/equipment	

ACCIDENT REPORT FORM
(continued)

Horseplay		Poor housekeeping	
Drug or alcohol use		Insufficient lighting	
Unsafe Acts require a written warning and re-training <u>before</u> the Employee resumes work			
Date		**Date**	
Re-Training Assigned		Unsafe Condition Guarded	
Re-Training Completed		Unsafe Condition Corrected	
Supervisor Signature		Supervisor Signature	

ACCIDENT REPORT FORM
(continued)

ACCIDENT REPORT FORM

Report No. _____

Site: _____ Project No. _____

Location: _____

Date of Report: _____ Preparer's Name: _____

Name and Address of Injured: _____ Age: _____

_____ Sex: _____

Years of Service: _____ Time on Present Job: _____ Title/Classification: _____

Division/Department _____ Date of Accident _____

Time: _____

Accident Category: ___ Motor Vehicle ___ Property Damage ___ Fire

___ Chemical Exposure ___ Near Miss ___ Other

Severity of Injury or Illness: ____ Non-disabling ___ Disabling

____ Medical Treatment ___ Fatality

Amount of Damage: $_____ Property Damaged: _____

Estimated Number of Days Away from Job: _____

Nature of Injury or Illness: _____

ACCIDENT REPORT FORM
(continued)

CLASSIFICATION OF INJURY:

____ Fractures	____ Heat Burns	____ Cold Exposure
____ Dislocations	____ Chemical Burns	____ Frostbite
____ Sprains	____ Radiation Burns	____ Heat Stroke
____ Abrasions	____ Bruises	____ Heat Exhaustion
____ Lacerations	____ Blisters	____ Concussion
____ Punctures	____ Toxic Respiratory Exposure	____ Faint/Dizziness
____ Bites	____ Toxic Ingestions	____ Toxic Respiratory
____ Toxic Ingestions	____ Dermal Allergy	

Part of Body Affected: _____

Degree of Disability: _____

Date Medical Care Was Received: _____

Where Medical Care Was Received: _____

Address (if off site): _____

ACCIDENT LOCATION:

Causative agent most directly related to accident (object substance, material, machinery, equipment conditions):

_____

_____

Was weather a factor? _____

Unsafe mechanical/physical/environmental condition at time of accident (be specific):

_____

ACCIDENT REPORT FORM
(continued)

Unsafe act by injured and/or others contributing to the accident (be specific, must be answered):

Personal factors (improper attitude, lack of knowledge or skill, slow reaction, fatigue):

Level of personal protection equipment required in Site Safety Plan: _____

Modifications: _____

Was injured using required equipment? _____

If not, how did actual equipment use differ from plan? _____

What can be done to prevent a recurrence of this type of accident (modification of machine; mechanical guards; correct environment training)?

Detailed narrative description (how did accident occur, why; objects, equipment, tools used, circumstance assigned duties) (be specific):

(Use separate sheet as required)

ACCIDENT REPORT FORM
(continued)

Witnesses to accident _____

Signature of Preparer _____

Signature of Site Leader _____