RECORD CONFIRMATION
MTA/LIRR East Side Access Projet

File Name: CM 5.54.55850
Letter No:
Sensitivity: None
Subject: MTA/LIRR East Side Access Projet
MTA/LIRR Contract No.:
Construction Contimination Site Management Plan
From Group: PMC - URS Corp
To Group: File
From Person: Lawrence, Garth
To Person: Distribution,
Work Package: CH053
Reference:
Method of Transmission:
Document Type: Construction Management
DATE: 2/26/2009 11:41:51 AM

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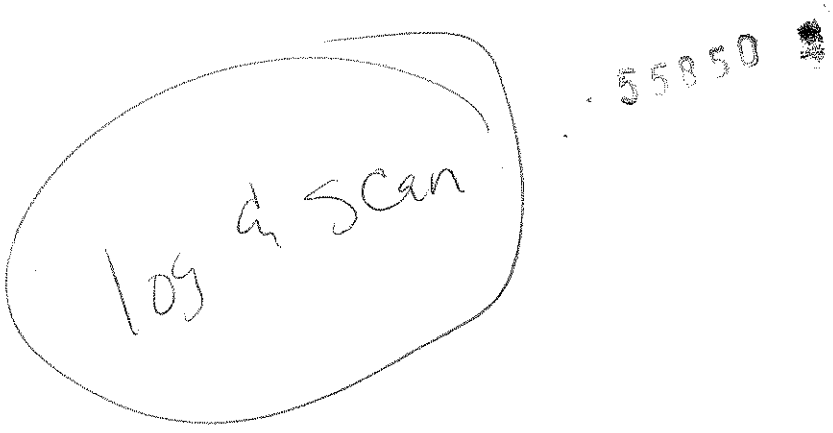

Capital Construction

55850

East Side Access

Queens Construction within Amtrak Sunnyside Yard

Construction Contamination Site Management Plan
&
Final Stipulations List

February 2008

Long Island Rail Road
East Side Access

2 Broadway, 8th Fl.
New York, NY 10004-2207

Dr. Michael F. Horodniceanu
President

MTA Capital Construction

February 9, 2009

Mr. Shaun Bollers
Environmental Engineer
New York State Department of Environmental Conservation, Region 2
Division of Environmental Remediation
47-40 21st Street
Long Island City, NY 11101-5401

Re: **Construction Contamination Site Management Plan**
MTA/LIRR East Side Access Construction within Amtrak Sunnyside Yard

Dear Mr. Bollers:

Enclosed please find the Construction Contamination Site Management Plan (CCSMP) that will govern East Side Access construction work in Amtrak's Sunnyside Yard in Queens. The CCSMP includes the final Stipulation list that was discussed and approved by your office on October 10, 2008.

The CCSMP will be distributed to our contractors working in Sunnyside Yard and its requirements have been incorporated into our construction specifications. A certification that this document has been placed in project repositories will be submitted to you shortly.

Sincerely,

Audrey Heffernan
Chief Environmental Officer
MTA Capital Construction

Cc w/attachment

Queens Public Library, Sunnyside Branch
Christopher Doroski, New York State Department of Health

MTA Long Island Rail Road (LIRR)
East Side Access

Construction Contaminant Site Management Plan (CCSMP)

for

Construction within Amtrak Sunnyside Yard

(NYSDEC Inactive Hazardous Waste Disposal Site Registry #2-41-006)

Prepared for:
NYSDEC Region 2
Division of Environmental Remediation
Hunters Point Plaza
47-40 21st Street
Long Island City, New York 11101

Prepared by:
MTA Capital Construction/East Side Access
469 7th Avenue
New York, New York 10018

FEBRUARY 2009

MTA Long Island Rail Road (LIRR)
East Side Access

Construction Contaminant Site Management Plan (CCSMP)

for

Construction within Amtrak Sunnyside Yard

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SEPTEMBER 2008

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APPENDICES

LIST OF ACRONYMS

Acronym	Definition
CCSMP	Construction Contaminant Site Management Plan
CSHP	Construction Safety and Health Plan
ESA	East Side Access
IHWDS	Inactive Hazardous Waste Disposal Site
LIRR	Long Island Rail Road
MTA	Metropolitan Transportation Authority
NJTC	New Jersey Transit Corporation
NYCDEP	New York City Department of Environmental Protection
NYCRR	New York Code of Rules and Regulations
NYS	New York State
NYSDEC	New York State Department of Environmental Conservation
PID	Photo ionization Detector
QAPP	Quality Assurance Project Plan
SPDES	Stormwater Pollution Discharge Elimination System
SWF	Solid Waste Facility
SWP	Safe Work Plan
SWPPP	Stormwater Pollution Protection Plan
TSDF	Treatment Storage and Disposal Facility

Stipulation List
The Construction Contamination Site Management Plan (CCSMP) Modifications
October 10, 2008

1. Any sewers encountered during excavation activities in the Sunnyside Yard will be identified, investigated and remediated, if required, (where remediation refers to soil clean-up if SSSALs are exceeded) as per the Sewer Remedial Plan attached as Appendix A.

2. The Construction Quality Assurance Plan that identifies the Construction Manager (CM) and includes the project structure for oversight of the Construction Contamination Site Management Plan (CCSMP) is attached as Appendix B. This oversight function is further emphasized in stipulations 66, 67 and 68.

3. The Explanation of Construction Work includes figures, text, map overlays of the proposed excavation, and identifies utilities, nature of the cut. The proposed project schedule is attached as Appendix C.

4. There will be no occupied structures included in the Construction Plan or otherwise addressed by this CCSMP. Approval by NYSDEC and NYSDOH on slab and sub-slab design for construction of any occupied structure is required.

5. The Site Specific Soil Action Levels (SSSALs) for the excavation will be :

   cPAH – 25 ppm; PCBs – 25 ppm; Lead – 1000 ppm
   VOCs – TAGM 4046; TVOCs – 10 ppm; TSVOCs – 500 ppm

6. Screening of soils and fill will be supervised by a qualified environmental professional, under the oversight of the CM, and will be performed (i.e. visual, olfactory, FID/PID) during all excavations and invasive work that may penetrate residual contamination, including excavations for construction and development. This will be performed regardless of when the invasive work is done and includes all excavation and invasive work performed.

7. Daily Reports will be provided to the Project Managers for NYSDEC and NYSDOH by email during all periods of major invasive activity for this project. These reports will include description of daily activities keyed to an alpha-numeric map for the site that identifies work areas. These reports will include a summary of air sampling results, odor and dust problems and corrective actions, and all complaints received from the public. Additional reporting requirements are stated in stipulations 79 through 86.

8. The Community Air Monitoring Plan (CAMP) including a map of proposed sampling locations is attached as Appendix D. Exceedances observed in the CAMP will be reported in the daily report to the NYSDEC and NYSDOH Project

Manager. The CAMP will be submitted to NYSDEC and NYSDOH for concurrence on the proposed methodology and action limits.

9. The Stockpile Management Plan is attached as Appendix E. Stipulations 36, 37 and 38 provide further details of this.

10. Letters will be provided to NYSDEC that fully demonstrate and document that the disposal of material derived from the site conforms to all applicable laws. This will include, at minimum: (a) a letter to the facility providing all pertinent site background information and soil chemistry data and noting that the soil/fill is a contaminated media being removed from a Class 2 Inactive Hazardous Waste site in New York State as part of a capital construction project; (b) a letter from the receiving facility stating that they understand the source and that the material is acceptable under the all appropriate permits.

11. If offsite disposal of any excavated soil is proposed, then it will be done in accordance with all local, state and federals laws. .

12. There will be no Beneficial Use Determination (BUD) for off-site re-use of excavated contaminated soil without written DEC approval.

13. There will be on-site re-use of excavated soil only in areas of construction. On-site reuse of soils meeting the SSSALs will be allowed provided that:
    (i) Access is denied to the general public by maintaining existing fences and guards;
    (ii) The facility will continue to be operated as a rail yard;
    (iii) The majority of the rail yard is covered and shall continue to be covered with ballast, minimizing the potential for surficial runoff transporting PCBs off-site and the tracking of PCB contaminated soil into buildings on-site or off-site.

14. The Final Engineering Report (FER) will include all certifications, manifests, destination of all material removed from the site, including excavated contaminated soil, historic fill, solid waste, and hazardous waste, non-regulated material, and fluids.

15. Material brought on site will meet the more stringent of Part 375 Track 2 Industrial Human Health or Groundwater Protection Standards. NYSDEC will be notified of all soil brought on site. Non-compliant soils will not be imported onto the site without prior approval by NYSDEC.

16. The details for all surface cover designs proposed for use at the site are shown in Appendix F. The details include the type of material and thickness of material used. A site map with locations and descriptive text is included in the appendix. The FER will include a site map and plan that shows the as-built design detail and location for each of the final surfaces for the site.

17. The Contingency Plan is attached as Appendix G and further emphasized in stipulations 47 and 48.

18. Summary data tables including SSSALs, exceedances, and locations and corresponding Spider maps of hot spots are attached as Appendix H.

19. Map overlays of contaminant groundwater plumes on-site are attached as Appendix I.

20. The process for handling the various classifications of soil excavated at the site including mixed petroleum contaminated and SSSAL exceedance soil/fill is included in Appendix E (as the "Stockpile Management and Soil Handling Plan/Process for Handling Hot Spots").

21. The estimated quantity of soil/fill to be removed from the site is 356,378 cubic yards. The estimated quantity of soil to be imported into the site for backfill and cover soil is 83,294 cubic yards. The estimated quantity of soil/fill expected to be relocated on site is 84,600 cubic yards.

22. A summary of approximate costs of remedial activities by contract will be submitted as an appendix to the FER. (We are unable to supply contract values since most haven't been awarded yet).

(Under the Public Authorities Law, MTA is exempt from local requirements, although MTA typically conforms to city requirements wherever practicable. Tunneling work in Sunnyside Yard is a 24-hour per day operation. Given that most of the work is well within the Yard boundaries, adverse environmental impacts on the surrounding community are not anticipated).

Construction Activities

23. The ESA and associated parties preparing the construction/excavation documents submitted to the State, and parties performing this work, are completely responsible for the safe performance of all invasive work and the structural integrity of excavations and structures that may be affected by those excavations (such as building foundations and bridge footings).

24. Site development activities must not interfere with, or otherwise impair or compromise, remedial activities.

25. Each hotspot and structure to be remediated (USTs, vaults and associated piping, transformers, etc.) will be removed and end-point remedial performance sampling completed before excavations related to site development commence proximate to the hotspot or structure.

26. The presence of utilities and easements on the site has been investigated by the ESA. It has been determined that no risk or impediment to the planned work under this CCSMP is posed by utilities or easements on the site.

27. In work areas adjacent to the Amtrak property line, silt fencing and hay bales will be installed around the perimeter of each construction/excavation area.

28. Mechanical processing of historical fill and contaminated soil on-site is prohibited.

29. The locations of all primary contaminant sources (including but not limited to tanks and hotspots) identified during site characterization, remedial investigation, or remedial action will be mapped and metes and bounds descriptions will be provided. East Side Access has installed about 90 construction monuments in the Sunnyside Yard project area and this project coordinate system is tied to the New York State Plane Coordinate System, Long Island Zone. The metes and bounds descriptions will be based on existing survey points, which were surveyed by a surveyor licensed to practice in the State of New York. The location of these sources will be reported in the Final Engineering Report.

Truck Management

30. All trucks leaving sites where SSSALs were exceeded will be lined with plastic and covered with plastic and will have tight-fitting covers. All other trucks will be covered with secure tarps.

31. All trucks will be cleaned prior to leaving the site. For trucks carrying soil that exceed SSSALs, wash waters will be collected and disposed offsite in an appropriate manner. Trucks will not operate in hotspot areas. Access roads in Sunnyside Yard will be paved or improved with crushed stone as per Appendix F.

32. All trucks loaded with site materials will exit the vicinity of the site using only approved truck routes. [Truck routes are shown on a map in Appendix J]

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

34. Queuing of trucks for disposal of soil in excess of SSSALs will be performed onsite in order to minimize off-site disturbance. Off-site queuing of trucks, awaiting loading of soil for disposal, is prohibited.

Pre-Construction Meeting

35. NYCDEC will be provided the opportunity to participate in a pre-construction meeting at the site. Advance notice and scheduling will be provided to enable NYSDEC attendance.

Stockpile Management

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

37. Soil stockpiles will be encircled with silt fences, as appropriate. Hay bales will be used as needed near catch basins, surface waters and other discharge points.

38. A dedicated water truck equipped with water cannon will be available on-site for dust control.

On-Site Roads

39. Gravel or RCA (certified by the supplier as coming from a clean source) will be used on unpaved roadways to provide a clean and dust-free road surface.

40. On-site roads will be minimized in number and total area in order to limit the area required for water truck sprinkling.

Odor Controls

41. Odor control methods will be capable of controlling emissions of nuisance odors. If nuisance odors are identified, work will be halted and the source of odors will be identified and corrected. Work will not resume until all nuisance odors have been abated. NYSDEC and NYSDOH will be notified of all odor events and of all other complaints about the project. Implementation of all odor controls, including the halt of work, will be the responsibility of the Remediation Engineer that will sign the certification of the Final Engineering Report.

42. All necessary means will be employed to control odors and eliminate associated nuisances on- and off-site. The means to be considered for odor control when odors are caused by remedial actions or associated work include, but are not limited to: (a) limiting the area of open excavations; (b) shrouding open excavations with tarps and other covers; (c) use of foams to cover exposed odorous soils; (d) use of chemical odorants in spray or misting systems; and, (e) use of staff to monitor odors in surrounding neighborhoods. If these and other methods are not successful, enclosures will be erected around remedial work areas to control odors.

Residual Contamination Demarcation

43. If residual contamination above the SSSALs is to be left in place, after the completion of soil removal and other invasive remedial activities and prior to backfilling, a land survey will be performed by a New York State licensed surveyor. The survey will define the top elevation of residual soils. A physical demarcation layer, consisting of orange snow fencing material or equivalent will be placed on this surface to provide a visual reference. This demarcation layer will constitute the top of the 'Residuals Management Zone', the zone that requires adherence to special conditions for disturbance of contaminated residual soils

defined in the CCSMP. The survey will measure the grade covered by the demarcation layer before the placement of cover soils, pavement and sub-soils, structures, or other materials. This survey and the demarcation layer placed on this grade surface will constitute the physical and written record of the upper surface of the 'Residuals Management Zone' in the Site Management Plan and Environmental Easements. A map showing the survey results will be included in the Final Engineering Report, the Site Management Plan, and Environmental Easement.

Underground Tank Management

44. UST closures will, at a minimum, conform to criteria defined in DER-10. See also stipulations 47 and 48, and Appendix G.

Contractor Management

45. The CM will be responsible to insure compliance with all provisions of the CCSMP and this list of stipulations, including those performed by contractors.

46. All contractor documents related to remedial work will be submitted to NYSDEC and NYSDOH.

Contingency Plans

47. If underground tanks or other previously unidentified contaminant sources are identified during onsite remedial excavation or development related construction at the site, sampling will be performed on product, sediment and surrounding soils, etc., with chemical analytical work for full scan parameters (TAL metals; TCL volatiles and semi-volatiles, TCL pesticides and PCBs). These analyses will not be limited to STARS parameters where tanks are identified without prior approval by NYSDEC. Analyses will not be otherwise limited without NYSDEC approval. Such tank(s) shall be registered, closed and disposed of in accordance with the applicable regulatory requirements as per 6NYCRR Parts 612 through 614 (for petroleum bulk storage) and 6NYCRR Parts 596 through 599 (for chemical bulk storage).

48. Identification of unknown or unexpected contaminated media identified by screening during invasive site work will be promptly communicated by phone to NYSDEC's project manager. These findings will be also included in daily or periodic electronic media reports.

Off-Site Disposal

49. See Stip 11.

50. The FER will include an accounting of the destination of all material removed from the site, including excavated contaminated soil, historic fill, solid waste, and hazardous waste, non-regulated material, and fluids. Documentation associated with disposal of all material must also include records and approvals for receipt of the material.

51. Bill of Lading system or equivalent will be used for off-site movement of non-hazardous wastes and contaminated soils. This information will be reported in the FER.

52. Hazardous wastes derived from on-site will be stored, transported, and disposed in full compliance with applicable local, state, and federal regulations.

53. All liquids to be removed from the site, including dewatering fluids, will be handled, transported and disposed in accordance with applicable local, state, and federal regulations. Liquids discharged into the New York City sewer system will be addressed through approval by NYCDEP.

54. Dewatered fluids will not be recharged back to the land surface or subsurface of the site. Dewatering fluids will be handled in accordance with NYSDEC and NYCDEP regulations.

55. Discharge of water generated during remedial construction to surface waters (i.e. a local pond, stream or river) is prohibited without a SPDES permit.

56. Appropriately licensed haulers will be used for material removed from this site and will be in full compliance with all applicable local, state and federal laws.

Onsite Materials Reuse

57. Demolition material proposed for reuse onsite, if any, will be sampled for asbestos.

58. Concrete crushing or processing onsite is prohibited. [NYSDEC will consider the use of specially designed devices that are self-contained and capable of providing misting for dust control. DEC approval must be obtained. If dust-free operations are not achieved with such devices, this exception will be revoked.]

59. Organic matter (wood, roots, stumps, etc.) or other solid waste derived during clearing and grubbing of the site is prohibited for reuse on-site.

60. See Stip 13.

Import of Soil

61. Solid waste will not be imported onto the site.

62. Trucks entering the site with imported soils will be securely covered.

Screening

63. Resumes will be provided for all personnel responsible for field screening (i.e. those representing the CM) of invasive work during remediation and development work for unknown contaminant sources.

Remedial Performance Monitoring

64. Chemical labs used for all end-point sample results and contingency sampling will be NYSDOH ELAP certified.

65. End point sampling, including bottom and side-wall sampling, will be performed in accordance with DER-10 sample frequency requirements. Side-wall samples will be collected a minimum of every 30 linear feet. Bottom samples will be collected at least one for every 900 square feet.

Project Oversight

66. The Chief of Staff of the East Side Access project will be responsible for providing all required P.E. certifications listed in the Plan.

67. All invasive work performed during remedy or subsequent development on this site will be witnessed by the CM or his/her qualified representative.

68. The Chief of Staff or his qualified representative, and the CM, will review all pre-remedial plans submitted by contractors for compliance with this CCSMP and Stipulation List (the Plan). Compliance will be certified in the FER.

Certifications

69. This CCSMP with Stipulation List (the Plan) has been P.E. certified by the East Side Access Chief of Staff. [Certification is attached in Appendix K.]

70. The FER will include a P.E. certification by the East Side Access Chief of Staff that the CCSMP and the Plan were provided to all East Side Access contractors and that all work performed by these contractors was field monitored by the MTA Construction Management team for compliance with these documents.

71. The FER will include a P.E. certification by the East Side Access Chief of Staff that all invasive work done during the remediation and development (i.e. grading cuts, utility trenches, footings, etc.) was field monitored by the MTA Management team for compliance with the contaminant field screening methodology defined in the approved Plan.

72. The FER will include a P.E. certification by the East Side Access Chief of Staff that all import of soils from offsite, including source approval and sampling, has been monitored by the MTA Construction Management team for consistency with the methodology defined in the approved Plan.

73. The FER will include a P.E. certification by the East Side Access Chief of Staff that all invasive work completed during the construction/excavation and all invasive development work was field monitored by the MTA Constructin Management team for compliance with dust and odor suppression methodology defined in the approved Plan.

Health and Safety

74. All remedial work performed under this plan will be in full compliance with governmental requirements, including site and worker safety requirements mandated by federal OSHA.

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

76. The Health and Safety Plan (HASP) and requirements defined in this Plan will pertain to all work performed on site until the FER is approved.

77. The Site Safety Coordinator will be identified. A resume will be provided to NYSDEC.

78. Confined space entry will comply with all OSHA requirements to address the potential for combustible gases.

Reporting

79. A separate list of all local, regional and national governmental permits, certificates or other approvals or authorizations required to perform the remedial and development work is attached in Appendix L. This list will be updated in the FER. It will include a citation of the law, statute or code to be complied with, the originating agency, and a contact name and contact phone number.

80. Daily reports are not intended as the primary means to convey sensitive or time-critical information (i.e. notification of an accident, spill or emergency) or notification of changes to approved plans. These communications must be made directly with project managers.

81. An emergency contact sheet will be submitted to NYSDEC's Project Manager. That document will define the specific project contacts for use by NYSDEC and NYSDOH in the case of a day or night emergency.

82. Before completion of a project (before approval of a FER), all project reports must be submitted to NYSDEC in digital form (PDF).

83. Photographs will be taken of all remedial action activities and submitted to NYSDEC in digital form. Photos will illustrate all remedial program elements and

will be of acceptable quality. Representative photos of the site prior to any remedial actions will be provided. Representative photos will be provided of each contaminant source and source area, and structures before, during and after remediation. Photos will be submitted to NYSDEC on CD and will be sent to NYSDECs project Manager (2 copies) and to NYSDOH Project Manager (1 copy). CD's should have a label and a general file inventory structure that separates photos into directories and sub-directories according to logical lines. A photo log keyed to photo file ID numbers should be prepared to provide explanation for all representative photos. For larger and longer projects, photos should be submitted on a monthly basis or other agreed upon time interval.

84. Mandatory job-site record keeping will be performed. These records must be maintained on-site at all times during the project and be available for inspection by NYSDEC and NYSDOH staff.

85. All digital and hard copy submittals will be made to assigned project managers for both the NYSDEC and the NYSDOH.

86. Project numbers will appear on the cover and face page of all reports.

Fact Sheets and Repositories

87. A certification of mailing will be sent by the ESA to the NYSDEC project manager following distribution of all Fact Sheets and notices, providing certification that the Fact Sheets were mailed, when they were mailed, a copy of the Fact Sheet, a list of recipients (contact list) and a statement that the repository was inspected and contained all of the applicable project documents.

88. No changes will be made to the approved Fact Sheets authorized for release by NYSDEC without the consent of the NYSDEC in writing. No other information, such as brochures and flyers, will be included with the Fact Sheet mailing.

1.0 INTRODUCTION

The East Side Access (ESA) Project (the Project) will provide direct Long Island Rail Road (LIRR) commuter rail service into Manhattan's Grand Central Terminal (GCT). Direct access to east midtown Manhattan will improve the regional mobility of Long Island and Queens County residents and commuters. The Project includes new tunnels and a terminal in Manhattan and new tunnels in Queens beneath MTA's Existing Rail Yard, Amtrak's Sunnyside Yard, and the Main Line Embankment/Harold Interlocking.

Construction of the Project is being managed by MTA Capital Construction for the LIRR, in conjunction with URS Corporation, the Program Management Consultant (PMC) and Jacobs Engineering Group, Inc., Edwards& Kelsey/LIRO, the Consultant Construction Management Services (CCM) firm. Reporting to the PM are the General Engineering Consultant (GEC) (the triventure team of PB Americas, Inc., STV Inc. and Parsons Transportation Group), and the Environmental Consultant (EC) (AKRF, Inc.). The EC's environmental responsibilities for the Project included the preparation of the Draft Environmental Impact Statement (DEIS) and Final Environmental Impact Statement (FEIS). The Federal Transit Administration (FTA) approved the FEIS in March 2001.

This Construction Contaminant Site Management Plan (CCSMP) is prepared in support of capital improvements to be undertaken for the ESA Project that occur in the Amtrak Sunnyside Yard (hereafter referred to as the "Site") under the New York State (NYS) Inactive Hazardous Waste Disposal Site (IHWDS) program administered by New York State Department of Environmental Conservation (NYSDEC). The Site is owned by the National Passenger Corporation (Amtrak) and is being remediated by Amtrak in accordance with the Order on Consent with Amtrak and New Jersey Transit Corporation (NJTC) (the respondents) Index# W2-0081-87-06, IHWDS Registry # 2-41-006, which was issued on September 21, 1989 and modified in August 1993 and February 1998 (collectively, the "Order") and the NYSDEC Part 375 regulations.

Amtrak entered into an Order with the NYSDEC to investigate and remediate the 100 acre Site. The Site is currently an active railroad yard and classified under New York City (NYC) zoning as industrial. This Order required Amtrak to investigate and remediate contaminated media at the Site. The ESA construction will not interfere with Amtrak railroad yard operations and will not alter the overall use of the Site. However, contaminated media may be encountered and appropriate management of this media is the purpose of this CCSMP.

1.1 Objectives

The CCSMP contains general procedures and requirements for the Construction Manager (CM) and the Contractors to manage contaminated or hazardous materials that may be encountered during proposed construction of the Contracts that intercept Amtrak Sunnyside Yard, which is a Class 2 Inactive Hazardous Waste Disposal Site.

The CCSMP contains the following components:

- On-site handling of contaminated media;
- Disposal and discharge criteria for soil, sediments, ballast, timber ties and groundwater;
- Construction Materials Management Plan including stormwater, sediment, groundwater and community air monitoring plan;
- Solid, universal and hazardous waste transportation and disposal guidelines; and
- Project Closeout report guidelines.

The CCSMP will be reviewed at pre-construction meetings with each contractor working at the Site , and will be implemented prior to the commencement of construction activities to ensure the contaminated (hazardous and non-hazardous) materials are properly managed in accordance with applicable environmental regulations.

Contaminated materials within the construction envelope may include, but are not limited to, the following: excavated soils, sediment, ballast, timber ties, groundwater, and/or stormwater generated during excavation and dewatering activities. Asbestos containing materials (ACMs) and lead based paint (LBP) (including steel structure underpinning) will be handled in accordance with local regulations and stringent protocols developed by MTA's operating agencies and is not addressed in this CCSMP.

Proper management of such materials includes excavation, waste characterization, handling, transportation, staging, erosion controls, dust controls, odor controls, temporary storage, reuse, and disposal. It is anticipated that contaminated groundwater will be encountered during excavation and construction, therefore groundwater controls and management will be implemented during dewatering activities. This CCSMP will address appropriate guidelines for the installation, maintenance, and operation of temporary water storage and treatment systems for dewatering and discharge operations during construction. Such systems will be designed to reduce contaminant concentrations to acceptable levels as specified in discharge permits.

Contractor's site-specific Construction Safety and Health Plan (CSHP) and a Safe Work Plan (SWP) will be developed by the Contractor pursuant to Contract Specification Sections 01540 and 01545 to protect the lives and health of all persons, prevent damage to property and materials, and to avoid work interruptions due to accidents. The Contractor will have their Safety Manager review and approve their CSHP/SWP prior to excavation and construction. The Contractor will be responsible for the worksite safety of all of its employees and any other party retained by the Contractor. The CSHP/SWP will be made available to all parties as they are developed by the contractor.

1.2 Site Description

The Site is located in the County of Queens (New York City), New York (Figure 1). The Site is an approximately 100-acre area bounded by the LIRR Existing Rail Yard to the north, Skillman

Avenue to the south, 43rd Street to the east, and Thomson Avenue to the west. The boundary of the Site is presented in Figure 2.

1.3 Site Background

The project site and adjacent area has been the subject of a series of investigations performed by Amtrak and MTA for East Side Access to characterize the type, degree and extent of contamination in the underlying soils and groundwater. These studies indicate that the Queens Alignment will pass through, under or nearby known or suspected areas of soils and groundwater contamination in Sunnyside Yard as summarized below.

Railroad rolling stock has been maintained and operated on portions of Sunnyside Yard for over 80 years. Following a site investigation, NYSDEC determined that railroad operations in Sunnyside Yard had resulted in the disposal of hazardous wastes in certain areas of the Yard, including various hydrocarbons and polychlorinated biphenyls (PCBs). Furthermore, NYSDEC determined that operation of diesel fuel storage tanks at the site prior to 1984 had resulted in a leakage of petroleum hydrocarbons in and near the Diesel Fuel Storage Area in the north-central portion of the Yard. As a result of the contamination, NYSDEC designated Sunnyside Yard as an inactive hazardous waste disposal site and entered into an Order on Consent with Amtrak and NJTC concerning roles and responsibilities for Sunnyside Yard environmental conditions. The Order divides Sunnyside Yard into six operable units (OUs) for the purposes of investigating levels of contamination, as follows:

- OU-1 is designated as the soils above the water table within the footprint of Amtrak's recently constructed High Speed Train Facility (HSTF) and Inspection (S&I) Building (for the new Acela service);
- OU-2 is designated as the soils above the water table with the footprint of the ancillary structures (i.e., the access road and utilities route, the parking area, and the construction lay down are) to the HSTF S&I Building;

- OU-3 is designated as the soils and the separate-phase petroleum (SPH) accumulation above the water table in the north central portion of Sunnyside Yard (referred to in this report as the "PCB-contaminated separate phase oil plume"). This plume extends beyond the northern boundary of Sunnyside Yard into the Existing Rail Yard. The plume appears to have originated at the former fuel storage area of Sunnyside Yard, in the vicinity of a former Engine House, from where it migrated northward. Investigations indicate that the plume includes approximately 73,000 gallons of PCB-contaminated oil, of which approximately 25,000 gallons have been estimated as recoverable;
- OU-4 is designated as the soils above the water table in the remainder of Sunnyside Yard, excluding the areas of OU-1, OU-2 and OU-3;
- OU-5 is designated as the sewer system beneath Sunnyside Yard; and
- OU-6 is designated as the saturated soils and the groundwater beneath Sunnyside Yard.

In 1997, a Proposed Remedial Action Plan (PRAP) and Record of Decision (ROD) were issued by NYSDEC for OU-1. Subsequently, the clean-up of OU-1 and OU-2 was completed by Amtrak (prior to construction for their new Acela service). A "No-Action Alternative" was issued for OU-2 since none of the contaminants of concern were detected above established cleanup levels. The ROD and NYSDEC letter dated March 27, 1998 established cleanup criteria for PCBs (25 parts per million (ppm)), total carcinogenic polycyclic Aromatic Hydrocarbons (cPAHs) (25 ppm), and lead (1000 ppm) -- recognizing the limited public exposure to the site and its continued use as a rail yard.

Amtrak has made significant progress in recovery of SPH at OU-3 to date. Three phases of Interim Remedial Measures (IRMs) have been implemented, starting in 1990. The historic outer boundary of the SPH plume was conservatively defined by the absence of a visible sheen, and encompassed an area of approximately three acres, when delineated in 1990. Since 1990, Amtrak has installed collection trenches and recovery wells that have been operated and collected over 11,500 gallons of SPH. The core of the plume, consisting of mobile SPH, is defined by the 0.5-foot apparent SPH thickness contour. Because of the IRMs undertaken by Amtrak, the mobile SPH plume is much smaller and now occupies only 0.5 acres. Amtrak will

be undertaking additional remedial activities at OU-3 to further remediate the area. The PRAP was released on February 23, 2007 for OU-3, a public comment meeting was held on March 24, 2007 and the ROD was subsequently issued.

Amtrak investigations of the groundwater (OU-6) detected the presence of chlorinated volatile organic compound (VOC) and BTEX (benzene, toluene, ethylbenzene & xylene) plumes . NYSDEC has not yet proposed remedial actions with regard to these plumes.

A ROD announcing the proposed remedies for OU-4, OU-5, and OU-6 has not yet been issued.

In 1998, MTA began its investigation of soils and groundwater within the footprint of the East Side Access alignment at the Site. Continuing to today, an extensive number of soil samples have been collected and analyzed for the project (see Figure 3).

1.4 Hydrogeologic Conditions

1.4.1 Topography

Sunnyside Yard and Harold Interlocking (the Site) is located in Sunnyside, Queens County, NY. The United States Geologic Survey (USGS) 7.5-Minute topographic maps for the Brooklyn, NY Quadrangle and Central Park, NY Quadrangle apply to this area. Both maps are dated 1967 and photo revised in 1979, and depict basic topographic features in the vicinity of the Site. Topographic maps of the alignments are provided in the report, "Geotechnical Data Summary Report" (TE, 2000c).

The topography is generally flat with a gentle slope to the west. Sunnyside Yard is located in a basin, with surface elevations approximately 10 to 25 feet below surrounding surface area. This equates to 20 to 50 feet above mean sea level (amsl) or the project elevation of 320 to 350 ft (project datum). The project datum is mean sea level elevation plus 300 feet. The Mainline tracks, including the Harold Interlocking, are on an

embankment, typically 20 feet above the adjacent yard elevations. The surface elevation of the Mainline tracks is approximately 40 to 60 ft-amsl or 340 to 360 ft-project datum (TE, 1999e).

1.4.2 Geology

The regional geology of western Queens County is composed of a thick layer of unconsolidated material (glacial and recent deposits) overlying dense, metamorphic crystalline bedrock. The bedrock surface dips gently toward the southeast at approximately 80 feet vertically for every mile horizontally (Roberts-Dolgin, 1989; Merguerian, 1992). Bedrock is mainly gneiss and schist with pegmatite sills and dikes scattered throughout the Site (TE, 2000c). The unconsolidated sediments thicken from a thin veneer in northwestern Queens to several hundred feet thick in the vicinity of Jamaica Bay in the southeast.

A thorough description of the site geology and the geology within the various construction segments is provided in the GEC report, "Geotechnical Design Summary Report, Preliminary Engineering, Queens Segment," November 2000 (TE, 2000c). The strata designations for the Site include: strata 1 (miscellaneous fill); strata 2 (mixed glacial deposits – coarse to fine sand); strata 3 (mixed glacial deposits – fine silty sand with some cobbles and boulders); strata 4 (silt and clay); strata 5 – glacial till/reworked till/outwash deposits; strata 6 – decomposed rock; strata 7 – bedrock; and strata 8 – peat and organic silt.

The depth to bedrock increases in depth to the southeast but is irregular and undulating in areas of the proposed construction. Depth to bedrock ranges from 40 ft-below grade to greater than 100 ft-below grade (TE, 1999g). In areas surrounding the yard, bedrock has been found to range from 30 to 150 ft-below grade (Roux, 1999). Additionally, bedrock was encountered at depths ranging from 41 ft-below msl at the intersection of Northern

Boulevard and 39th Street to 71 ft-below msl at 43rd Avenue (Louis and Berger Associates, 1994).

The unconsolidated materials in the vicinity of the Site are of Pleistocene (Wisconsin glaciation) and Holocene ages. The unconsolidated materials of the Pleistocene age are known as the Upper Pleistocene glacial (ground moraine) deposits (including fill and channel deposits). Ground moraine is an unsorted and unstratified mixture of clay, sand, gravel and boulders formed at the base of the ice sheet during periods of melting. Holocene (recent) deposits, when present, consist of artificial fill, salt marsh deposits, alluvium and shoreline deposits. The sediments are sand, gravel, clay, silt, organic silt, peat, loam and shells (Baskerville, 1982; Roberts-Dolgin, 1989).

1.4.3 Hydrology

Three surface water bodies are present within one mile of the Site. The East River is located approximately one mile to the northwest. Dutch Kills Creek is located approximately 1,000 feet to the southwest and Newtown Creek, a tributary of Dutch Kills Creek, is located approximately 3,500 feet to the west. The location of the Site is not designated wetlands as depicted on the Federal Fish and Wildlife National Wetland Inventory maps (AKRF, 1999a).

The most significant aquifer in this section of Queens County is the Upper Glacial Aquifer that is composed of unconsolidated Pleistocene age sediments. This aquifer is an unconfined aquifer subject to atmospheric effects. Groundwater is not used as a source of potable water in this area. The Upper Glacial Aquifer was an important groundwater source in western Queens until the mid-1940s. However, pumping rates as great as 1,500 gallons per minute (gpm) resulted in saltwater intrusion and the loss of the aquifer as a source of drinking water. There are several potentially active, private supply wells in the Upper Glacial. The wells were predominantly used to supply water for car washing and

cooling water. The current status of these wells is currently unavailable from the NYSDEC (Roux, 1999).

Previous studies conducted at the Site found the groundwater at approximately 5 to 20 ft-below grade (AKRF, 1999b). Groundwater flow within the saturated Upper Pleistocene deposits, comprising the Upper Glacial aquifer, is predominantly west at an average rate of 5.7 to 6.6 feet per day (ft/d) discharging to the buried flow path of Dutch Kills Creek in the western portion of Sunnyside Yard, and/or the East River.

The saturated fill and Upper Glacial Aquifer are highly transmissive based on the findings of pumping and slug test performed by Roux Associates, Inc. in 1997 (Roux, 1999). Hydraulic conductivity (K_H) was found to range from 2.36 to 577 ft/d, with average values of 410 ft/d for the water table aquifer and 500 ft/d for deeper deposits. Average transmissivity (T) was calculated to be 29,000 ft^2/d for the water table aquifer and 35,300 ft^2/d for deeper deposits (Roux, 1999).

Project-related geotechnical borings completed within the Mainline tracks and in the vicinity of 39th Street encountered groundwater at approximately 15 to 40 ft-below grade due to the elevated surface grade in these areas (TE, 1999g). The hydraulic conductivities, calculated from recent slug testing, were on the order of 10^{-2} to 10^{-4} cm/s (approximately 80 to 900 ft/day) typical of a clean to silty sand (TE, 2000c).

Upward and vertical gradients exist beneath the west and northwest portions of the yard and are influenced by filling activities of the Dutch Kills. One study found that groundwater flow mimicked topographic contours of the former Dutch Kills (Roux, 1999). Urban subsurface structures may additionally affect groundwater flow patterns. Sewer lines and water mains may provide permeable migration pathways while retaining walls and other structures may prevent and divert flow.

2.0 Proposed Excavation and Construction Activities

Provided below are descriptions of each East Side Access contract that will occur in Amtrak's Sunnyside Yard and will intersect subsurface environmental elements. Included are descriptions of the activities that will be completed to construct each component, and the techniques to be employed to minimize groundwater drawdown and prevent induced movement of contaminant plumes. There are other components including the force account and other smaller components which are not discussed here because they are irrelevant from an environmental standpoint. An overview plan of the proposed Queens Alignment and descriptions of each contract package affecting Sunnyside Yard is provided in Figure 4.

2.1 Queens Open-Cut Excavation - Northern Boulevard to Existing Rail Yard (Contract CQ028)

Contract CQ028 will consist of a relatively watertight excavation within a water cut-off and support wall system, only a small portion of which is in Amtrak's Sunnyside Yard. The maximum depth of excavation will be approximately 80 feet below ground surface (ft-bgs). The support walls will be constructed at the perimeter of the excavation. The walls will enclose the perimeter of the excavation area and will provide the following: 1) a continuous retaining structure; 2) a temporary excavation support; and 3) a groundwater cutoff during construction thereby comprising a watertight "bathtub" structure. This type of system is preferred because of the potential presence of contaminants within the limits of the Site and adjacent areas. Dewatering outside of the "bathtub" structure was not considered as an alternative because of potential concerns related to the following: 1) lowering the groundwater table; 2) disturbing the groundwater-flow regime; and 3) promoting contaminant migration.

2.2 Harold Structures (Contracts CH053, CH054, CH057, CH059)

2.2.1 Harold Structures – Part 1 & G.O.2 Substation (Contract CH053)

Temporary relocation of the LIRR mainline tracks will be required to maintain rail operations through the Harold Interlocking during construction of bored tunnels and associated work elements, while permanent reconfiguration of the LIRR mainline tracks will be required to provide service to GCT. CH053 includes: construction of tunnel boring machines (TBM) reception pits and approach structures, construction of foundations for Harold Interlocking Central Instrument Location (CIL) and new substation, relocation of utilities, demolition of two 2-story buildings, construction of new track bridges for relocated mainline tracks and a vehicular access bridge, and micro-tunneling for various duct banks and other utilities below mainline tracks. The contract will also include the design and installation of a pre-fabricated substation and installation of catenary pole and signal tower foundations and structures. Excavation required for the modifications to the existing rail bridges at 43rd and 48th Streets and for the new viaduct structures will not extend below the groundwater table, therefore, dewatering is not anticipated.

This contract will include the relocation of an existing 42-inch diameter gravity sewer that drains the portion of Sunnyside Yard between Honeywell and 39th Streets. The sewer must be relocated prior to the start of tunneling work since it is located within the alignment of the bored tunnel to be developed in the vicinity of Honeywell Street.

The replacement sewer will be constructed at least 20 feet below the mainline tracks using micro-tunneling techniques to avoid disruptions to LIRR operations. Invert elevations of the sewer as it passes through the mainline embankment will be approximately 12 feet above mean sea level (i.e., substantially above groundwater table level).

2.2.2 Harold Structures Part 2 (Contract CH054)

Contract CH054 will construct various civil infrastructure elements in Harold Interlocking and expand the existing LIRR/Amtrak Right of Way for the future TBM tunnels and Mainline track diversions. The scope of work includes construction of TBM reception pits and approach structures, retaining walls, construction of new track bridges for relocated mainline tracks, relocation of utilities, and relocation and construction of catenary and signal structures The construction of the at-grade tracks will require minor excavation, to a maximum depth of four feet below grade. Work will occur above the groundwater table in this area and the need for groundwater infiltration controls is not anticipated.

2.2.3 Harold Structures – Part 3 Eastbound Reroute and W/B Bypass Structures (Contract CH057); and Part 4 (Contract CH059)

Similar to CH053 and CH054, contracts CH057 and CH059 (representing staged work defined to minimize to service disruptions) will include work within Sunnyside Yard, principally: modification of the existing track underpass box structure between Queens Boulevard and Honeywell Street, new retaining walls close to the loop track and on the south side of the Main Line embankment, a train wash facility for Amtrak immediately east of Honeywell Street, and underpinning of bridge piers.

2.3 Queens Bored Tunnels, Structures and Track Work (Contract CQ031)

Three "revenue" tunnels between the LIRR mainline tracks and the 63rd Street tunnel (Tracks A, B/C and D) and a "non-revenue" tunnel (Yard lead) will be constructed beneath Sunnyside Yard. Each tunnel will be 19'-6" in diameter. The excavated diameter will be approximately 22'-6". Construction activities in this task also include the development of ancillary structures for emergency access.

Based on a detailed assessment of site conditions, the use of pressurized-face TBMs was selected as the preferred means to construct the soft ground-bored tunnels, since their use will result in less surface disruption to critical areas of the Harold Interlocking and Sunnyside Yard, will limit the movement of groundwater by controlling in-situ stress imbalances in the ground, and will minimize ground settlement and potential risk to railroad operations.

Pressurized-face TBMs provide their own resistance to soil and groundwater inflow by use of a sealed, pressurized chamber at the TBM's cutting head, filled with either a bentonite slurry (slurry shield TBM), or a portion of the excavated earth itself (earth-pressure-balance TBM). A cutting mechanism rotates within a large steel shield. The front part of the shield is sealed and pressurized to stabilize the face. Both TBM technologies can handle the mixed soil and rock conditions within groundwater that are prevalent at the Project site. The final selection of TBM type will be left to the contractor. Additives in the form of polymer mixes and foams may be added during the tunneling process to balance the groundwater and soil pressures.

Construction of each of the tunnels will begin from a common launch shaft at the southern end of the cut-and-cover tunnels. The launch shaft will be located at the northern edge of Sunnyside Yard at a depth of 80 feet below grade. The three revenue tunnels will continue eastward from the launch site under Amtrak's Sunnyside Yard Main Body area, through the mainline embankment, and emerge as tunnel transition structures after the Amtrak Loop Track.

Two emergency exit structures will be constructed from the tunnels surfacing near Honeywell Street Bridge (for Tracks A, YL, and B/C, and Track D). Another will be constructed for the Yard Lead at 39th Street.

An approach structure will be constructed for the Westbound Bypass East approach structure. Reception pits will be constructed for Track A and D.

Excavated soil and muck will consist primarily of glacial deposits. It is estimated that a total of 150,000 bank cubic yards of excavated material requiring disposal will be generated during construction of the soft-ground bored tunnels.

2.4 Amtrak Buildings Demolition (Contract CQ040)

Six Amtrak buildings will be demolished and utilities relocated in the northwest portion of Sunnyside Yard. The buildings include Building No.1 (radio communications), Building No. 2 (storehouse and commissary), Building No. 5 (electrical), Building No.6 (car cleaner) and Building No.7/8 (substation and boiler house).

3.0 Environmental Findings

This section provides a summary of the key findings from the environmental site investigations (ESIs) completed to date by the MTA for the Queens Alignment within Amtrak's Sunnyside Yard. MTA completed a substantial environmental sampling program in Sunnyside Yard in order to characterize soil and groundwater conditions within areas that will be disturbed during construction of the Queens Alignment (TE, 2002b). Supplemental ESIs were also conducted by MTA in order to provide further quantification of the extent and levels of soil and groundwater contamination within the proposed footprints prior to construction. Supplemental ESI were completed in 2006 for construction contract packages CH053 – Harold Structures Part 1 (GEC, 2007a) and CQ031 - Queens Bored Tunnels, Structures and Track Work (GEC, 2007b); and in 2007 for construction contract package CH054 – Harold Structures Part 2 (GEC, 2008a) and CQ040 - Amtrak Building Demolition (GEC, 2008b) after the initial ESI was completed for Sunnyside Yard. Additional supplemental ESIs are planned for contact packages CH057 and CH059 (i.e., Harold Structures Parts 3 and 4, respectively) situated within Sunnyside Yard. The ESIs were completed in accordance with applicable environmental regulations and protocols established in coordination with NYSDEC, and included detailed sampling and analysis of soils

and groundwater in Sunnyside Yard. The ESIs have been submitted to NYSDEC Region II for review.

The results of these investigations indicate that there are a number of locations where soil disturbance and excavation will require NYSDEC-approved procedures for testing, handling and disposal of contaminated materials and may require measures to protect worker and public safety. In addition, contaminant plumes in groundwater were confirmed within and near the footprint of the Queens Alignment. Although construction activities could potentially affect these plumes, the Project has been designed to prevent contaminant plume migration by minimizing groundwater drawdown during dewatering activities. In addition to the ESIs, a two-dimensional steady state groundwater flow model was used to simulate groundwater and contaminant flows from the cut-and-cover work area along the Queens Alignment.

3.1 Regulatory Thresholds Used to Characterize Soil and Groundwater

ESI findings for soil and groundwater are summarized below for each package. Soil sample results were compared to NYSDEC's proposed Site-Specific-Soil Action Levels (SSSALs) for excavations at the Sunnyside Yard IHWDS (NYSDEC, 2008). The SSSALs are derived in part from the site-specific NYSDEC Record of Decision (ROD) soil cleanup objectives established for OU-1 of Sunnyside Yard (NYSDEC, 1997; 1998a); and the NYSDEC Technical and Administrative Guidance Values Memorandum (TAGM): 94-4046 (NYSDEC, 1994). As such, the following SSSALs apply to the site:

- Total cPAHs – 25 ppm
- Total PCBs – 25 ppm
- Total Lead - 1,000 ppm
- Individual VOCs – TAGM 4046
- Total VOCs – 10 ppm
- Total SVOCs – 500 ppm

Groundwater results for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), and metals (dissolved and total) were compared to NYSDEC Division of Water, Technical and Operational Guidance Series (1.1.1) (TOGS): Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations (NYSDEC, 1998b) and New York City Department of Environmental Protection (NYCDEP) limitations for effluent to storm, combined or sanitary sewers as found in Title 15, Chapter 19 of the Rules of the City of New York. In the event that exceedances of NYCDEP Limitations for Effluent to Sanitary or Combined Sewers are encountered in groundwater, the contractor is to proceed as directed in Appendix E, Waste Management Plan. Construction for contract packages CH053, CH054, CH057 and CQ031 is situated in the same area as the Central Yard,Skillman/39th Street and Northern Boulevard/39th Street plumes (see Appendix I). Groundwater monitoring has been limited in Sunnyside Yard since the initial environmental status report and construction plan was issued to the NYSDEC (TE, 2002a) due to site and access restrictions. As a result, tracking any changes of these plumes has been challenged by the lack of significant groundwater quality data. However, data collection is expected to improve as more areas become accessible at the yard after the Amtrak Agreement was executed in January 2006.

3.2 SSSAL Exceedances

The extensive sampling completed in the path of the Queens Alignment did not identify any hazardous materials but confirmed the presence of areas of soil contamination identified in previous studies and also identified new areas. These investigations identified the following six areas in the ESA Alignment path (see drawing in Appendix H) in which the level of contamination is of concern based on exceedances of the SSSALs:

- The soil at ESA sample location UT-4 exceeds the SSSAL for individual VOC acetone. Also, the soil at Amtrak OU-4 sample locations QB-1 (1A and 1E), QB-2, QB-3 and QB-4 marginally exceed the SSSAL for total Lead. These samples were obtained by Amtrak in 1999 as part of the OU-4 investigation. All of these samples coincide with the ESA

excavation for a proposed sewer near Queens Boulevard and parallel to Skillman Avenue and are associated with contract package CH054.

- The soil at sample location TE-D-11 exceeds the SSSAL for total carcinogenic polycyclic aromatic hydrocarbons (cPAHs). The sample location coincides with proposed excavation to remove track associated with contract package CH053.
- The soil at sample location GE-31-5 exceeds the SSSAL for total cPAHs. The sample location coincides with grading for the proposed access road associated with contract package CH053.
- Soil exceeds SSSALs for the following analytical parameters and locations outside, at the east end of Amtrak Building No.7/8: individual VOC acetone at ESA soil sample locations GE-40-7-6 and PCBs at ESA soil sample locations GE-40-7-6 and GE-40-7-7. These sample locations coincide with the proposed demolition of Amtrak Building No. 7/8.
- Soil exceeds SSSALs for the following analytical parameters and locations inside at the west end of Amtrak Building No.7/8: individual VOCs benzene, ethyl benzene, m/p xylenes, o-xylene, toluene, tetrachloroethene, trichloroethene and total VOCs at ESA sample location GE-40-7-2S; individual VOC acetone at ESA soil sample locations GE-40-7-3S; and total Lead at ESA soil sample location GE-40-7-2S. These sample locations coincide with the proposed demolition of Amtrak Building No. 7/8.
- Soil exceeds SSSALs for cPAHs at Amtrak OU-4 soil sample location S-43 outside at the west end of Amtrak Building No.2. This sample location coincides with the proposed demolition of Amtrak Building No. 2.

One additional area within the Amtrak Loop Track was identified in the soil based on ESA sample location TE-ALT-11, where levels exceed the SSSAL for total cPAHs, and Amtrak OU-4 sample locations LLS-22, LLS-23 and LP2-3 where levels exceed the SSSAL for total cPAHs and LLS-21 and LP2-3 where levels exceed the SSSAL for PCBs. These shallow samples were originally intended for an at-grade track at the Amtrak Loop Track area, which is no longer called

for in the project design. The proposed Yard Lead Track will be in a tunnel located well beneath this area of concern, which will be built in Contract Package CQ031.

3.3 Groundwater Plumes

A total of four dissolved-phase groundwater plumes and one separate-phase plume of PCB-contaminated product floating on the water table have been identified in and nearby the Queens Alignment project footprint within Sunnyside Yard IHWDS (see drawing in Appendix I). MTA investigations generally confirmed the contaminant levels detected in prior studies at these locations. MTA's investigations provide further refinement to the inferred plume boundaries of prior studies. Of the five identified plumes only three (Central Yard, Skillman/39th Street and Northern Boulevard/39th Street plumes) will actually transect the Queens Alignment at Sunnyside Yard and be directly affected by construction work. These three plumes are described below:

- Central Yard plume: This plume is located beneath the Amtrak Main Body Track area within the Sunnyside Yard IHWDS and the ESA construction footprint. It extends from the Honeywell Street Bridge on the west, to the Queens Boulevard Bridge on the east, the Existing Rail Yard to the north, and Skillman Avenue to the south. This plume was originally identified by Roux Associates (Roux, 1999) and delineated further by the MTA in the deeper half of the aquifer (TE, 2002c). The plume consists primarily of dissolved chlorinated VOCs (trichloroethene (TCE), tetrachloroethene (PCE)). Concentrations of total chlorinated VOCs in the deep aquifer ranged from between 47 and 259 ppb under the Amtrak Main Body Track area while concentrations diminish to non-detectable levels southeast toward Honeywell Street Bridge and decrease to less than 50 ppb at the northern edge of the track area. Exceedances of the Class GA standards and guidance values for individual VOCs occurred in several monitoring wells.
- Skillman/39th Street plume: This plume is located along the southern perimeter of Sunnyside Yard in the vicinity of the 39th Street Bridge and is within the Sunnyside Yard IHWDS and the ESA construction footprint. This plume was originally identified by Roux Associates

(Roux, 1999) and delineated further by the MTA (TE, 2002c). The plume consists of low level concentration of dissolved chlorinated VOCs ranging from 5 ppb to 53 ppb. Exceedances of the Class GA standards and guidance values for individual chlorinated VOCs occurred in several monitoring wells.

- Northern Boulevard/39th Street plume: This plume is located along the northern perimeter of the Sunnyside Yard IHWDS and the ESA construction footprint. The plume is adjacent to a NYS Inactive Hazardous Waste site at 37-18 Northern Boulevard (Standard Motors). This plume was originally identified by Roux Associates (Roux, 1999). The plume consists of dissolved chlorinated VOCs in shallow groundwater ranging from 8.0 ppb to 13.9 ppb.

The remaining two plumes, while not directly involved with the planned construction, could potentially be disturbed as a result of groundwater movement in the area (e.g. from dewatering activities) if measures were not taken to minimize their migration. A description of these plumes is provided below.

- PCB-contaminated separate phase oil plume: This plume is located within the Amtrak Sunnyside Yard IHWDS (also known as OU-3) but is not within the ESA construction footprint. The separate-phase petroleum product plume with PCBs has been documented in this area in previous investigations by Amtrak (Roux, 1995; 1999). MTA investigations also detected floating petroleum product in several wells screened in shallow groundwater on the bordering LIRR property (TE, 2002b; 2002e; 2004a). The most recent product thickness plan available (dated November 2005) is presented in the Proposed Remedial Action Plan (PRAP) for OU-3 (NYSDEC, 2007) and shows that product thickness ranges from 0.1 to 2 feet. The aerial extent of the plume has decreased significantly due to remedial measures.
- Honeywell Street Bridge plume: This plume is located within MTA/LIRR's Existing Rail Yard and north of the Sunnyside Yard IHWDS and the ESA construction footprint. This plume was originally identified by MTA investigations in 2001 (TE, 2004a). The highest concentrations of chlorinated VOCs are consistently detected in the northern-most wells , at the property line of buildings that face Northern Boulevard. Total chlorinated VOCs range

from 800 ppb at this eastern end of the yard near Honeywell Street Bridge and decreases to 10 ppb to the west before the cut and cover construction area. Exceedances of the Class GA standards and guidance values for individual chlorinated VOCs (mainly TCE and 1,2-DCE) occur in several monitoring wells east of the cut and cover construction area.

4.0 Project Closeout

Construction contaminant oversight personnel (see section 2.1.3) will support the project closeout requirements through follow-up on all outstanding documentation due from the Contractor, waste transporters, disposal facilities, and regulatory agencies. For the preparation of the project closeout report, Construction Management personnel will document any hazardous waste, contaminated materials, petroleum-contaminated materials, and non-contaminated waste that was either handled, managed, and/or disposed during demolition, excavation, dewatering, and construction of the Site. All relevant waste manifests (i.e., for soil, sewer sediment, ballast, timber ties, LBP, groundwater, construction debris, residual materials, and miscellaneous materials) and related documentation will be compiled into an appendix of the project closeout report. The report will include a discussion of any post-contract management practices, periodic sampling, or additional studies that are needed to address any hazardous and contaminated materials encountered during future contracts.

Thorough inspection and complete documentation of construction activities is necessary to produce a complete Environmental Closure Report so that MTA/LIRR will be in compliance with applicable USEPA and New York State regulations as detailed below. Record keeping requirements for hazardous waste generators, transporters, and disposal/treatment facilities are described in USEPA 40 CFR Part 262, 263 and 264. Relevant New York State regulations include: 6 NYCRR Part 360.1.15, Beneficial Use Section, which describes procedures for reuse of non-hazardous, contaminated soil as backfill within the same excavation or excavations containing similar contaminants at the same site; 6 NYCRR Part 364, Waste Transporter Permits Section; 6 NYCRR Part 371, Identification and Listing of Hazardous Waste Section; and 6

NYCRR Part 372, Hazardous Waste Manifest System and Related Standards for Generators, Transporters and Facilities Section.

The Environmental Closure Report will be submitted, in hard-copy format, to the Region 2 NYSDEC offices, located at 41-40 21st Street, Long Island City, New York, and in electronic format to NYSDEC and NYSDOH.

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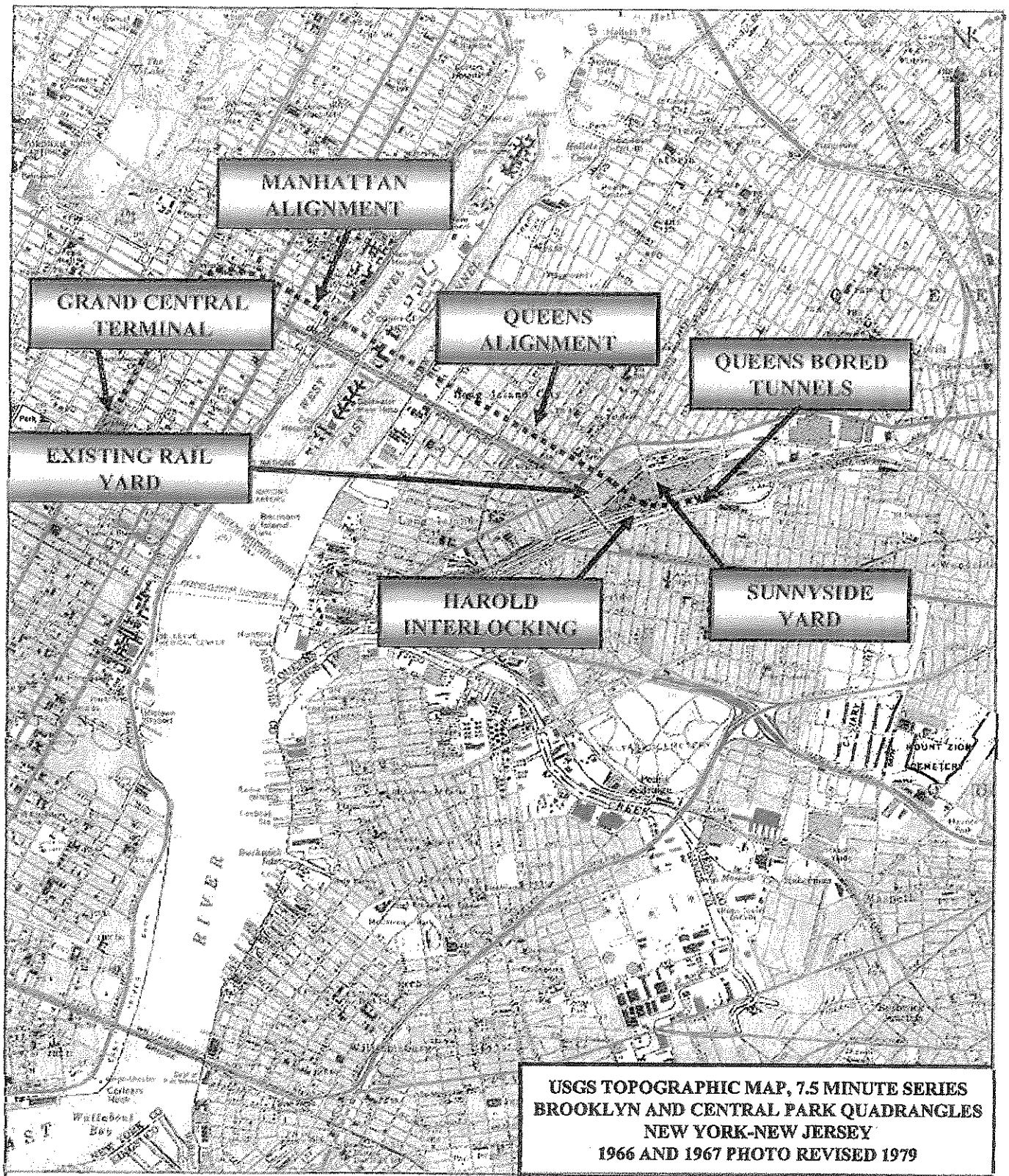
FIGURES



USGS TOPOGRAPHIC MAP, 7.5 MINUTE SERIES
BROOKLYN AND CENTRAL PARK QUADRANGLES
NEW YORK-NEW JERSEY
1966 AND 1967 PHOTO REVISED 1979

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East Side Access

SITE LOCATION

EAST SIDE ACCESS PROJECT

FIGURE 1

PB
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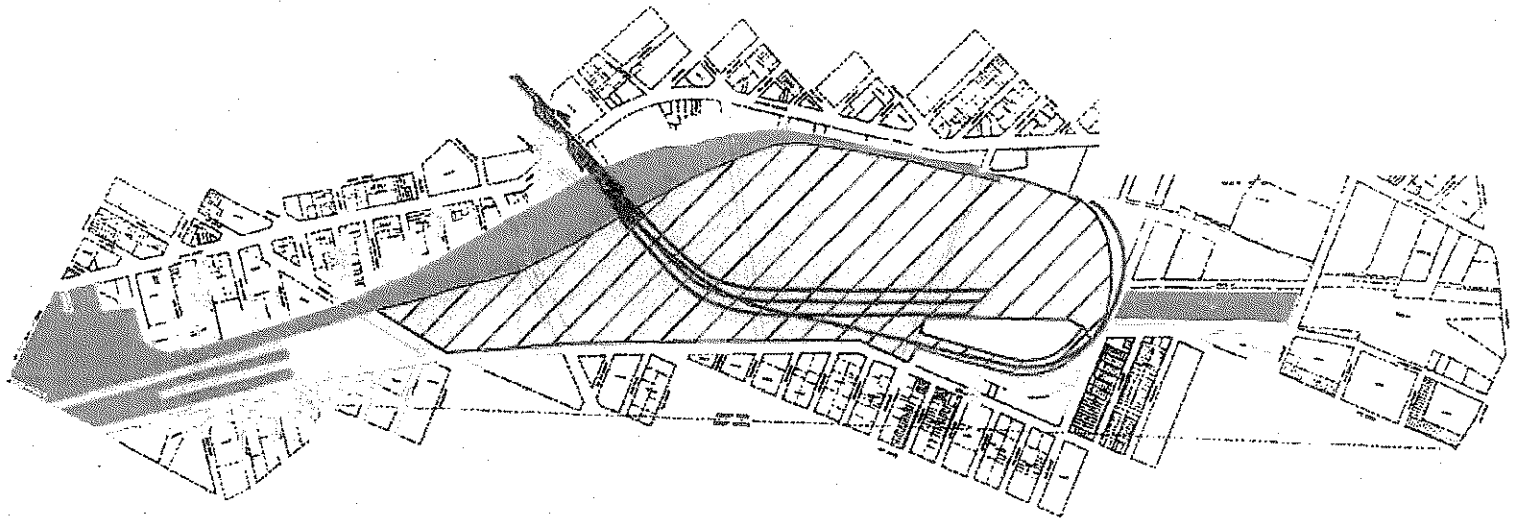

MTA PROPERTY

AMTRAK PROPERTY

NYC INACTIVE HAZARDOUS WASTE DISPOSAL SITE
(#2-41-006 AMTRAK SUNNYSIDE YARD)

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SITE BOUNDARY
FIGURE 2

GEC

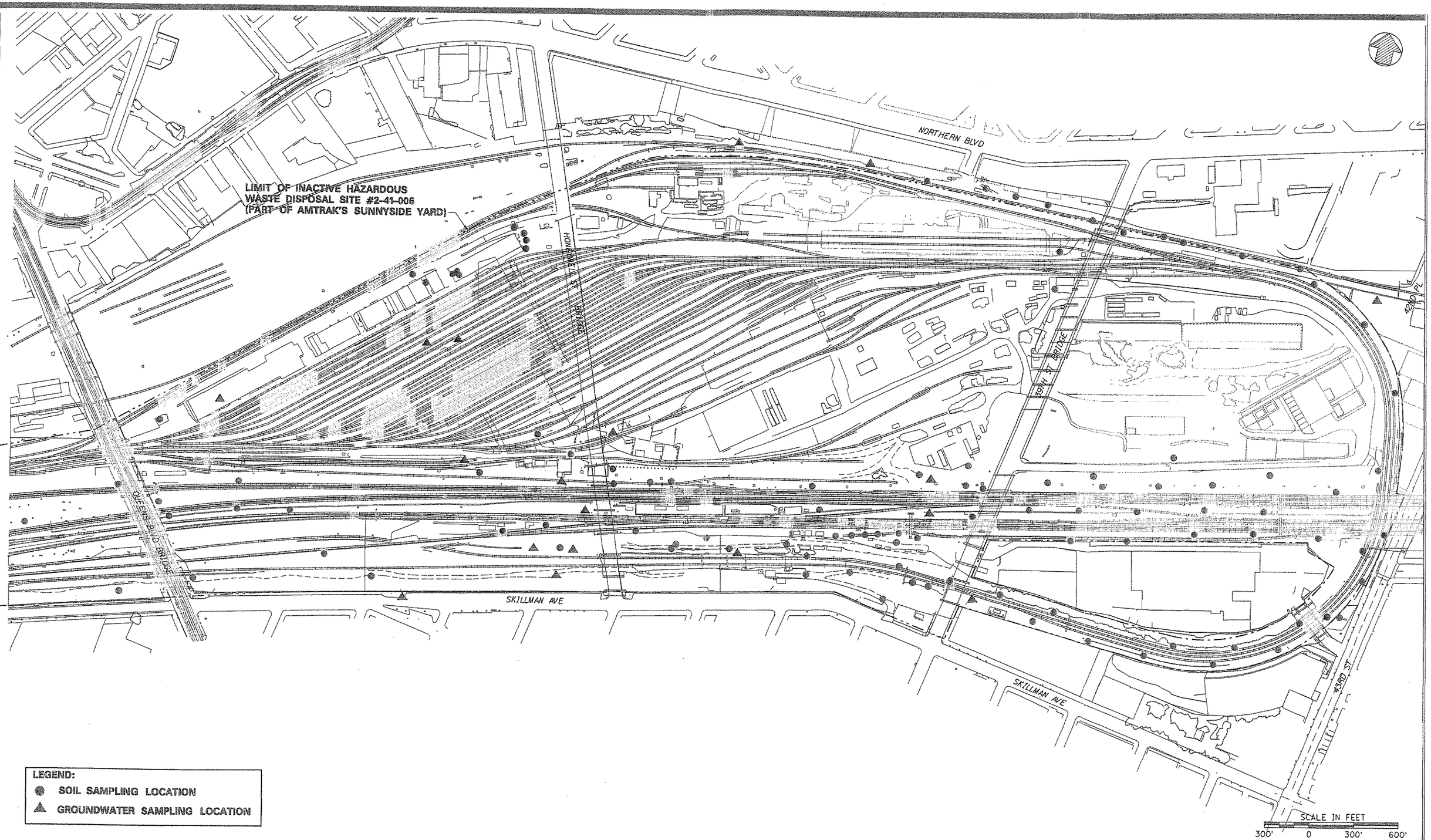

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FIGURE 3
SOIL AND GROUNDWATER SAMPLING LOCATION

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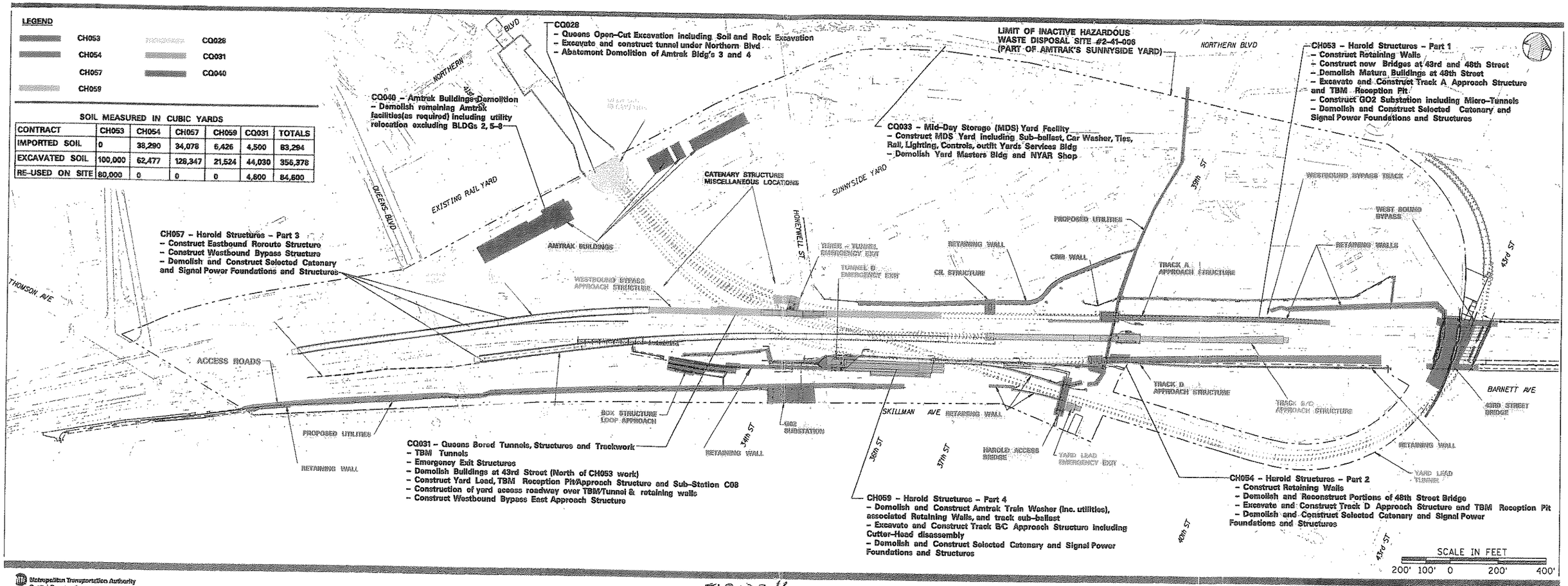

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FIGURE 4

CONSTRUCTION AND ANTICAPATED QUANTITIES OF EXCAVATED, ON-SITE RE-USED AND IMPORTED SOIL AT SUNNYSIDE YARD

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APPENDIX A

SEWER RELOCATION PLAN IN SUNNYSIDE YARD

Sewer Sediment Management Plan

1.0 Sewer Construction

The existing sewers in Sunnyside Yard and changes to the existing sewers that will result from ESA construction are shown on the attached plan. Four contract packages will affect sewers:

- Contract CH053: This contract will include the removal of an inactive 36" storm sewer located just west of the 39th Street Bridge in order to eliminate conflicts with Receiving Pit TBM Tunnel A and proposed Retaining Wall 39-N1.
- Contract CQ031: This contract will include the following modifications to the existing 42" combined sewer that drains the portion of Sunnyside Yard between Honeywell and 39th Streets

  a. Relocation and replacement of a section of the sewer, that conflicts with the proposed l Emergency Exits from three of the Tunnels.

  b. Enhancement of a section of the sewer by jacking a 39" steel pipe insertion into the existing 42" RCP to reinforced the sewer prior to tunneling operation. The section of the 42" sewer must be powered clean before insertion of the steel pipe.
- Contract CH054: Future WBBY and EBBY (Reroute Track) Tunnels are in conflict with existing 24"and 42"storm sewers, located in the western section of Sunnyside Yard. The storm flow is being diverted to a new 18"/36"/48" storm sewer to be constructed under this contract, which will run parallel to Skillman Ave. This contract will fill with concrete sections of an existing 24"and 42" storm sewer to be abandoned. We are filling the abandoned sewer with concrete to prevent washout and ground settlement under Harold mainlines tracks.
- Contract CH057: During this contract, WBBY and EBBY Tunnels will be constructed by cut and cover method. The concrete-filled sections of the sewers abandoned and left in place, under the prior contract (CH054) will be removed.
- The existing 42" and 48" Amtrak storm sewer that discharging rain water to the Dutch Kills Basin will be used to drain rain water from the proposed LIRR Storage Yard. Our responsibility as a designer is to check condition of the existing Amtrak sewer (100 years

old pipe) .We are planning to perform TV-inspection of this section of the Amtrak sewer. For the TV-inspection to be effective, the section of the sewer must be powered clean.

Whether the sewer section is abandoned and left in place, removed or relocated, the process will be the same. In each case, the sewer will be plugged (at the nearest manholes), and power washed against the flow. Soils, sediments, and liquids removed from the sewer systems (pipes, catch basins, manholes, regulators, etc.) will be considered contaminated materials that may be impacted with VOCs, SVOCs, metals, pesticides and PCBs. Proper management of such materials includes waste characterization, staging, temporary storage, transportation, and disposal, as follows.

1.1 Waste Characterization

Accumulated sediments, greases, oils, fats and grits removed from the sewer systems shall be characterized for disposal purposes. Waste characterization samples will be collected for analysis. Prior to sampling, the solid waste facility's (SWF's) analytical requirements will be obtained and sampling performed accordingly. Samples for waste characterization will be screened in the field for the presence of VOCs with a photo-ionization detector (PID) and observed for discoloration, staining, odors, and products.

During sewer cleaning operations, significant effort will be made to recycle wash water to prevent potentially contaminated water from exiting the sewer system in violation of applicable codes and regulations. Solids, fats, greases, oils, or other petroleum products captured during the cleaning operation will be separated from the liquids and properly characterized prior to disposal in accordance with the disposal facility's permit requirements. Contaminated wash water will be properly treated prior to ultimate discharge to the NYC sanitary/combined sewer system.

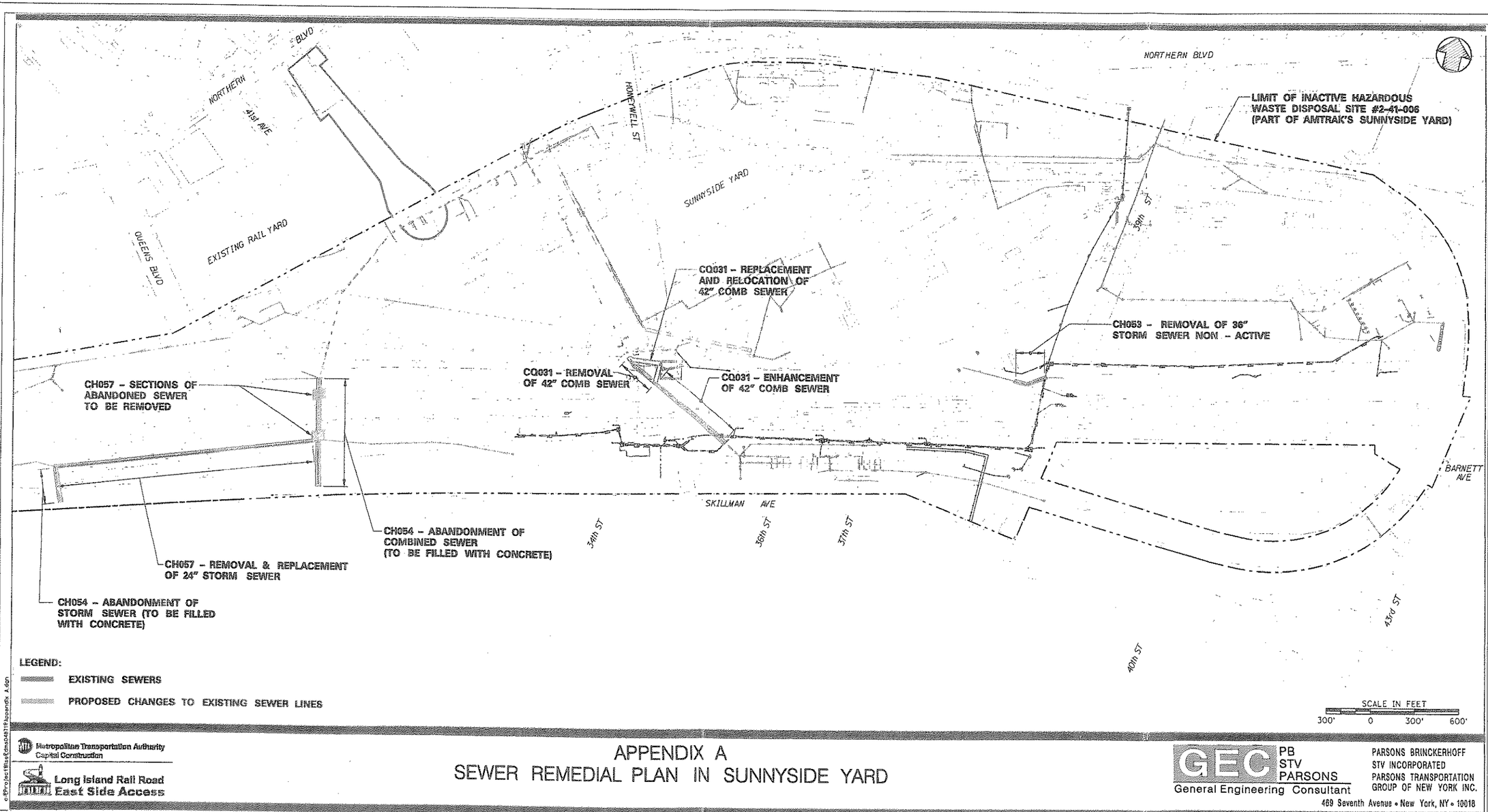
1.2 Handling, Staging, Temporary Storage and Disposal

During sewer cleaning operations, proper water–tight isolation of the sewer segment being cleaned will occur, thereby ensuring that impacted liquids are not discharged to surface waters or

downstream municipal water systems. Water-tight isolation methods may include temporary sealing or plugging of sewer lines and pumping impacted liquids and solids to temporary collection and treatment facilities. Operations personnel will use appropriate personal protective equipment (PPE) to limit exposure to contaminants within the sewer systems.

Solids staging prior to disposal will be adequately protected from wind and runoff erosion. Solids will be containerized during staging in preparation for off-site transportation and disposal. Solids dewatering may have to be provided by the sewer cleaning operation to ensure adequate dryness of solids prior to off-site transportation and disposal.

Liquids not meeting the sewer discharge criteria will be captured, containerized and transported off-site for further treatment and disposal. Solids and liquids will remain at the Site until it has been approved by MTA/LIRR or its agent for proper transportation and disposal at an off-site authorized SWF in accordance with 6 NYCRR Part 364.



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APPENDIX A
SEWER REMEDIAL PLAN IN SUNNYSIDE YARD

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APPENDIX B

ENVIRONMENTAL QUALITY ASSURANCE PLAN

Environmental Quality Assurance Plan[1]

This Environmental Quality Assurance Plan (EQAP) serves to ensure that all MTA/LIRR East Side Access project (ESA) construction activities performed within the bounds of Sunnyside Yard are environmentally compliant. Specifically, the EQAP shall ensure that ESA proceeds on schedule and as planned while protecting the environmental resources and communities in and around the project area.

A Program Management Team (PMT) consisting of an integrated staff from MTA Capital Construction Corporation (MTACC), MTA Long Island Rail Road (MTA/LIRR), URS Corporation - the Program Management Consultant (PMC) and Jacobs Engineering Group, Inc., Edwards& Kelsey/LIRO - the Consultant Construction Management Services (CCM) firm will manage all design and construction activities for ESA (Attachment 1). The PMT will oversee construction activities and ensure that all permit conditions are adhered to, mitigation measures are implemented and an open line of communication is maintained among the construction team, the MTA/LIRR, regulatory agencies and the community.

The Chief of Staff of ESA oversees the implementation of all ESA construction activities and has cetified that all contractors will be apprised of the projects's environmental requirements as outlined in the Construction Contamination Soil Management Plan and Stipulation List. All activities will be appropriately monitored by the MTA's Construction Management team for compliance with these project related requirements. Each Contractor involved in construction will also comply with all relevant environmental requirements as mandated by federal, state and local laws and regulations, project permits and community commitments.

1. Environmental Quality Assurance Process

The EQAP will promote and achieve ESA's environmental compliance objectives through:

- Incorporation of all applicable environmental requirements (e.g., permit conditions, laws/ regulations, community commitments) into project design specifications, construction planning and construction contract documents.
- Promotion of environmental awareness among all project participants.
- Regular, ongoing, and comprehensive oversight of all construction activities and their cumulative effect, to help ensure and enhance environmental compliance.
- Regular, open, and timely interface and communication between the PMT and regulatory agencies.
- Establishment of procedures, responsibilities, and accountability for project-wide environmental compliance and problem resolution.
- Review of construction planning for environmental elements and mitigation measures tailored to the particular work sites.
- Conducting site environmental inspections and managing construction Contractors.
- Communicating and working as a team within and external to the project team.
- Providing Construction Contractor Environmental Awareness Training

[1] The East Side Access Project has an extensive quality assurance plan which is available for review; however, this appendix focuses exclusively on environmental quality

2. Environmental Specifications and Construction Planning

Contractors are required to establish, implement and maintain a Contractor Quality Program (CQP) to ensure that all work complies with the requirements of the contract documents. The CQP shall consist of plans, procedures and the organization necessary to assure adequate control and assurance of quality for materials, equipment workmanship, fabrication and those operations that may adversely impact Sunnyside Yard and the surrounding environment.

Environmental requirements have been incorporated into design and construction specifications and all planning activities. Design and construction personnel and the Contractors are required to be familiar with project commitments and requirements for the locations where they are working. They will incorporate and tailor mitigation measures to particular work site locations as required and appropriate.

As part of construction planning, numerous and detailed work plans will be sequentially prepared that cover specific portions of the project alignment. These work plans will identify key construction activities, staging sequence, schedules, and work locations within specific work sites. Each work plan will include a spreadsheet of information, bar schedule, and sketch(es) for the particular work site.

Each work plan will note the environmental topics and mitigation measures requiring heightened attention for the particular work site. Sketches will be prepared by the ESA Environmental Manager (EM) and will be included with the work plan when necessary to highlight specific sensitive resources.

Construction planning compliance with environmental requirements and mitigation measures will be assessed by the EM prior to commencement of any major construction activity or work at any new construction site. The Program Manager - Queens (PM) and the contract specific Construction Manager (CM) or their designees will confirm Contractor awareness of these environmental requirements.

3. Contractor Environmental QC Inspections

Each Contractor will perform his or her own quality control (QC) inspections and daily monitoring to confirm compliance with environmental requirements. The contractor will adjust and deploy mitigation measures based on observations made and up-coming scheduled activities.

A qualified Safety Officer and a contractor's representative will be requested to participate during the periodic environmental compliance inspections performed by the EM. They will also be invited to participate during spot checks for environmental compliance as performed by the CM or his designee and the EM. This joint inspection process will be used to help ensure communication and timely action at the work site.

4. Construction Manager Environmental QA Inspections

Each CM will be responsible for enforcing compliance with all applicable permit conditions, project commitments, contractual obligations, and federal, state, and local laws and regulations. Each CM will have the authority to stop work if environmental non-compliance is observed and the Contractor does not correct the deficiency. In circumstances where the EM has notified the CM that repeated or serious problems are observed, the CM or his designee will prepare a Deficiency Report for transmittal to the offending Contractor (Attachment 2). The CM or his designee will also send a copy of the Deficiency Report and a copy of the Contractor's response to the Deficiency Report to the EM. The EM will assist the CM with preparation of Deficiency Reports and re-inspections to confirm the adequacy of corrective actions.

The EM, field engineers or field technicians will use a Spill Report Form (Attachment 3) to describe petroleum or hazardous material spills. This form will be attached to field reports and Deficiency Reports as warranted and will be used in reporting spills to the regulatory authorities.

The CM or his designee will review anticipated work with the Contractors as part of the inspection process, so that the need for mitigation measures can be effectively recognized, planned and implemented in advance.

5. Environmental Compliance Inspections

The EM will communicate directly with the Field Engineers/Technicians, CM, PM, the MTA CC Environmental Construction Manager (ECM) and the MTACC Chief Environmental Officer (CEO) regarding environmental issues. The MTACC CEO has stop work authority for any activity that is not compliant with environmental laws, regulations or good practices. The EM will ensure that the CM and all field engineers and technicians are fully informed about environmental issues on site and know what to look for. The MTA CC ECM and the EM will provide on-site training to Field Engineers/Technicians to ensure that they can operate and understand how a PID functions, evaluate stained soils and recognize field conditions that ultimately need to be brought to the attention of the CM. There will be a field engineer or technician on site at all times when the contractor is working. Observations at each active excavation area will be recorded daily by the field engineer on an Environmental Field Report form (Attachment 4). The Environmental Field Report will describe observations on environmental compliance, the use of mitigation measures, and evidence of stained soils or potential contamination. The completed reports will be reviewed by the EM and CM or his designee and will be included in a project-wide summary on environmental compliance. Upon evidence of potential contamination, the field engineer/technician will immediately inform the CM and the EM.

The EM will perform spot checks within the alignment and regularly monitor the work site to confirm that environmental compliance requirements are being met and that mitigation measures are being implemented and maintained. The EM spot checks will occur at a minimum on a weekly basis. The cumulative effect of construction activities will be monitored by the EM. In addition, the MTA CC ECM will periodically perform environmental inspections.

The CM will be notified of deficiencies when observed, so the Contractor can be promptly informed. The EM will re-inspect work sites as necessary to help ensure compliance and will elevate compliance issues to the PM, the MTA CC ECM and the MTACC CEO as warranted. If warranted, the CM will stop work when non-compliance is observed.

The EM will help to identify the anticipated need for mitigation measures, so that a pro-active approach to environmental compliance can be maintained. The EM will also provide the CM with technical assistance as warranted.

The EM will coordinate the compliance inspections requested by regulatory agencies. Contractors will immediately notify the CM or his designee whenever an unanticipated inspection by a regulatory agency occurs. The CM or his designee will in turn immediately advise the EM of the inspection. All such inspections must be in compliance with the project's safety requirements and agency personnel must be appropriately attired. The EM or CM or his designee will accompany agency personnel during the inspection, answer questions, and explain aspects of construction operations and mitigation practices.

At the completion of an agency inspection, the EM or CM or his designee will hold an exit briefing with regulatory personnel prior to their departure from the site. Agency comments will be recorded and included in the compliance summary report, a copy of which will be provided to the PM.

6. Environmental Compliance Tracking, Reporting, and Meetings

To help sustain continued environmental compliance, environmental compliance review will be a standard agenda item for construction progress meetings involving project personnel. Current and future work activities will be discussed as they relate to environmental mitigation and compliance. Any outstanding deficiency reports and required corrective actions will also be addressed.

An environmental compliance and coordination meeting will be held monthly or as required. The ECM will coordinate the meeting. Representatives from Construction, regulatory agencies, and MTA/LIRR will be invited to attend as appropriate. The status of construction activities, problems encountered, up-coming events, and mitigation efforts will be discussed.

The CM or his designee and ECM will attend meetings with regulatory agencies, municipal agencies, and citizen groups, as necessary, to help maintain communication concerning permit conditions, mitigation practices and problem resolution. Participation in such meetings will be coordinated with the MTACC CEO.

7. Environmental Quality Assurance

This quality assurance (QA) section presents the quality control (QC) protocols to be followed by MTA and subcontractors during collection of representative soil and groundwater samples for environmental analysis using NYSDEC Analytical Services Protocol (ASP) (NYSDEC, 1995) for the East Side Access Project (the Project) at Amtrak's Sunnyside Yard. The Project's QA program includes data quality objectives, documentation, decontamination, corrective action and field equipment maintenance procedures. Although generic field methodologies for screening and sampling environmental media are included herein as well, site-specific sampling and analysis plans (SAPs) will be developed by the Contractor for each construction contract package for the Project at Amtrak's Sunnyside Yard.

7.1 Data Quality Objectives

Data quality objectives (DQOs) are the quantitative and qualitative goals related to the environmental data utilized in the decision-making process and define the acceptable total data uncertainty for specific activities of the project. The sources of data uncertainty include errors in field sampling and laboratory analysis. Ideal field and lab conditions should result in zero uncertainty. However, similar investigations have demonstrated an inherent level of uncertainty in the data collection process both in the field and in the laboratory. Project data will be used to determine the presence and concentration of target compounds and elements in the soils and groundwater at specific locations and depths. The DQOs should keep the total uncertainty to an acceptably low level that will not impede the intended use of the data.

The DQO of the Project may be quantified according to the data quality requirements of accuracy, completeness, and comparability. These data quality requirements are discussed below in relation to the field activities.

7.1.1 Accuracy: Field Blanks

Field blanks (also referred to as equipment rinsate blanks) will be collected to quantify field accuracy and to ensure that sampling equipment is clean and the potential for cross-contamination has been minimized by the equipment decontamination procedures. After appropriate decontamination procedures are conducted on the sampling equipment, laboratory provided deionized water will be poured over the sampling equipment into a stainless-steel mixing bowl. The rinsate water will then be transferred into the appropriate sample containers, and the samples submitted as equipment blanks. Groundwater field blanks will be obtained using laboratory provided deionized water and the groundwater sampling equipment and procedures used to collect samples in the field. A soil sample equipment rinsate blank and a groundwater field blank will be collected at a frequency of one blank

per twenty samples. The equipment rinsate blanks will be analyzed for all soil analytical parameters, except for toxicity characteristic leaching procedure (TCLP) metals. Field blanks will be analyzed for all groundwater parameters.

7.1.2 Accuracy: Trip Blanks

Trip blanks of ultrapure deionized water will be transported along with each sample delivery group to demonstrate that on site atmospheric conditions did not impact the sample containers in any detectable way and that cross-contamination did not occur during the shipment of sample containers. The blanks will be prepared by the laboratory and shipped to the site within the sample-pack coolers. These blanks will be taken to the field during sampling activities and will be returned to the laboratory with the sample shipment. They will serve as a QC check on container cleanliness, external contamination and the analytical method. The trip blank will be identified as such on the chain-of-custody form. One trip blank will be submitted for every day of sampling and analyzed for VOCs only.

7.1.3 Accuracy: Field Duplicates

Sampling precision will be measured by the collection of one duplicate for every 20 soil samples taken in the field, analyzed for all soil (including TCLP) or groundwater analytical parameters and then compared with the analytical results of the other samples

The duplicate will be collected using the same procedures, equipment, in the same type of containers and preserved in the same manner. Precision is reported as relative percent difference (RPD) between two samples, or percent relative standard deviation (%RSD) if more than two are to be compared. The duplicates will be generated by homogenizing the sample and by preparing two identical sample aliquots for analysis. The sample will be assigned a fictitious sample number that will be recorded in the field notebook.

7.1.4 Accuracy: Matrix Spike/Matrix Spike Duplicate

A matrix spike duplicate is a second aliquot of the same matrix as the matrix spike that is spiked with identical concentrations of target analytes as the matrix spike, in order to document the precision and bias of the method in a given sample matrix. Sampling frequency will be one in 20 samples. The matrix spike and matrix spike duplicates will be analyzed for all parameters including TCLP analytical parameters for soil samples.

7.1.5 Data Completeness

The DQO for the complete sampling is 100%. In the event that 100% is not obtained, due to inaccessibility of sampling points or other field conditions, the effect of the uncollected data will be evaluated. Corrective actions will be implemented to resolve any data gaps found as a result of less than 100% data completeness.

7.1.6 Data Comparability

The methodologies used for the collection and analysis of samples as documented in the sampling and analysis plan are expected to provide comparable data. MTA will use standardized methods as per NYSDEC protocols for field analysis, sample collection, holding times and preservation. In addition, field conditions will be documented and considered when evaluating data to determine the effects of sample characteristics or analytical results. Whenever possible, the same sampling team will obtain all samples on consecutive days to reduce inconsistencies which may be caused by technique and time variables.

7.1.7 Laboratory Deliverables

Category B deliverables as per NYSDEC analytical services protocol (ASP) shall be submitted for any confirmatory (post remediation) samples. In addition, a Data Usability Summary Report shall be prepared by a party independent from the laboratory performing the analysis. Category A data deliverables shall be used for all other analyses.

7.2 Documentation and Chain-of-Custody Procedure

The primary objective of the sample chain-of-custody procedure is to create an accurate written record which can be used to trace the possession and handling of samples from the moment of their collection, through analysis, to their disposal. Field personnel will maintain notes pertaining to the samples and sample custody records. The field personnel are responsible for documenting each sample transfer and maintaining custody until samples are shipped to the laboratory.

7.2.1 Chain-of-Custody

Chain-of-custody forms will be maintained as samples are collected each field day. The chain-of-custody procedure provides an accurate written record that can be used to trace the possession and holding times of samples from the time of collection through data analysis and reporting.

The following information will be specified for each sample on the chain-of-custody form:

- Laboratory sample ID number (if provided)
- Project and site name
- Name, address, and phone number of sampling organization and Project contact name
- Sample matrix and type
- Sample date and time
- Sample location and depth
- Analysis requested
- Time and date sampled
- Sample preservation (if any)
- Laboratory analysis and method required
- Signature of the sampler(s)
- Signature of person relinquishing samples with date and time
- Signature of person receiving samples with date and time

A single set of chain-of-custody forms will be used each sampling day or for each laboratory shipment. Every participant handling the sample cooler should sign the chain-of-custody. The chain-of-custody set will be enclosed in a watertight plastic bag and taped to the underside of the cooler lid containing the samples designated on the form. The lid of the cooler will be securely taped shut. Sample coolers will be shipped to the laboratory on the same day as the sample collection.

7.2.2 Sample Labeling and Field Storage

Sample containers will be identified with laboratory-provided adhesive stickers labeled in waterproof ink with the following information:

- Laboratory sample ID number (if provided)
- Project and site name (e.g., East Side Access Project at Sunnyside Yard would be "ESA-SY").

- Name of sampling organization (e.g., "MTA")
- Sample matrix (e.g., soil sample would be "SS")
- Sample type (e.g., composite sample would be "comp")
- Sample collection location (e.g., soil boring within the proposed Track A alignment, number 10 would be "TE-A-10")
- Sample collection depth (e.g., sample from 8 to 12 feet would be "8-12 ft")
- Time and date sampled (e.g., 2:00 PM on July 4, 2000 would be "1400, 7/4/00)
- Laboratory analysis required (e.g., semi-volatile organic compounds would be "SVOCs")

Labeled sample containers will be placed in sealed clear plastic bags and placed in coolers containing at least two bags of ice, sealed in watertight plastic bags. Void space should be filled with appropriate packing material. The coolers should be packaged in such a way to ensure that samples remain between 1 and 4 degrees Celsius during transport to the laboratory.

7.2.3 Laboratory Documentation

Upon arrival at the laboratory, laboratory representatives will check in samples. Samples contained in the shipment will be compared to the chain-of-custody form to ensure that all designated samples have been received. Laboratory sample custody procedures include the following:

- Designation of sample custodian authorized to sign chain-of-custody of incoming field samples, obtain documents of shipment, and verify the data entered onto the sample custody records
- Provision for laboratory sample custody log consisting of numbered standard lab tracking report sheets
- Specification of laboratory sample custody procedures for sample handling, storage and disbursement of analytical results

Samples must be protected from light and refrigerated at 4 degrees Celsius until extraction or analysis. The laboratory will appropriately dispose of samples once the applicable holding times have been exceeded.

7.2.4 Field Log Book

The dedicated site log book is a controlled document used to record on-site activities during the investigation. The book will be permanently bound with consecutively numbered pages. Entries will be made in permanent pen or marker by field personnel overseeing environmental survey activities and will be initiated at the start of the first on-site activity. The cover of the site logbook will contain:

- Project name and site location
- Project job number
- Project contact address and phone number
- Logbook start and end dates

Entries will be made every field day as on-site activities occur. At the beginning of each day, the following information will be recorded:

- Date
- Start time
- Weather conditions
- Project personnel present with arrival and departure time
- Scope of work for field day
- Equipment on-site

- Level of personal protection
- Visitors present with arrival and departure time

7.2.5 Project Documentation

A Project file containing sample collection and analysis documentation will be maintained and managed by the East Side Access Environmental Manager (EM). The file will include project plans, specifications, field log books, data records, photographs, maps, drawings, sample identification documents, chain-of custody records, the laboratory data package including QA/QC documentation, relevant Project correspondence, and any other pertinent information.

7.3 Decontamination Procedures

Sample collection and processing equipment will be washed using laboratory-grade detergent and potable water followed by a rinse with deionized water prior to the commencement of sampling and at the end of the daily sampling activities. During field activities, clean equipment will be stored on polyethylene sheeting. Disposable sampling equipment, such as polyethylene tubing, tygon tubing acetate liners, and bailers will be dedicated to individual boring locations and discarded after each sampling event. Sampling personnel will change protective gloves frequently, including between sampling points and following equipment decontamination. All used or contaminated disposable sampling equipment and personnel protective equipment (PPE) and associated wash water shall be properly handled and disposed.

Sample containers will be obtained from the laboratory. The sample containers will be prepared, cleaned, labeled and stored in accordance with the requirements of the EPA OSWER Directive #9240.0-05 entitled "Specifications and Guidance for Obtaining Contaminant-Free Sample Containers."

7.4 Corrective Action

During daily field operations, field personnel will communicate with the EM and evaluate possible corrective actions required to improve field sample collection or handling procedures. Field personnel will immediately implement changes to field protocol when authorized. Any corrective actions will be documented in the field logbook and reported in the final report.

The steps in the corrective action system are as follows:

- Identify the problem
- Assign personnel to investigate and determine the cause of the problem
- Determine corrective action to eliminate the problem
- Assign personnel responsible to implement the corrective action
- Implement the corrective action
- Evaluate the corrective active and verify the problem is eliminated

When immediate corrective actions do not eliminate problems or fundamental protocol charges are required, the EM may temporarily suspend field operations for further review of the project protocol. The corrective action should not adversely affect the Project's DQOs or the health and safety of the Project personnel or the general public.

7.5 Field Equipment

7.5.1 Calibration

Documented and approved procedures will be used for calibrating, measuring and testing equipment. The equipment will be calibrated at prescribed intervals and/or as part of the operational use. The

calibration frequency is based on the manufacturer's recommendations, equipment type, equipment stability, industry or national standard, and intended use and experience.

Inoperable equipment will be removed from service and tagged to prevent inadvertent use. If on-site monitoring equipment should fail, the site EM will either locate replacement equipment or have the malfunction repaired immediately. Further monitoring equipment procedures are provided in the HASP for the Environmental Site Investigation of the East Side Access Project Alignment and Replacement Yards.

General maintenance and calibration records will be established for each piece of calibrated measuring and testing equipment that indicates established calibration procedures have been followed. A copy of these records will be maintained in the Project files.

7.5.2 Field Preventive Maintenance

Routine daily maintenance procedures conducted in the field will include the following:

- Store of equipment away from the elements
- Remove surface dirt and debris from exposed surfaces of the sampling equipment
- Inspect the sampling equipment daily for possible problems
- Conduct instrument calibrations

Spare and replacement parts that are required to be stored in the field so as to minimize downtime include:

- Locks
- Extra sample containers and preservatives
- Extra coolers, packing material and sample location stakes
- Additional supply of health and safety equipment (e.g. Tyvek, respirator cartridges, gloves, etc.)
- Additional equipment as necessary for specific field tasks

7.6 Sampling Methods

Generic field methodologies for screening and sampling environmental media are included herein. Note that site-specific SAPs will be developed by the Contractor for each construction contract package for the Project at Amtrak Sunnyside Yard. These SAPs will include more detailed information on the numbers of samples and any additional sampling methodologies that will be needed.

7.6.1 Soil

Soil samples will be screened in the field for the presence of volatiles with a photo-ionization detector (PID) and observed for discoloration, staining, odors, product, moisture and lithology. These field indicators will be used to modify the soil class, sampling depth, sampling frequency and sampling analytical parameters, if necessary.

Discrete or grab soil aliquots will be immediately collected from each soil core. Laboratory-provided, glass sampling jars will be filled for VOC analysis so that little or no headspace exists. The additional soil from the cores will be prepared for laboratory submission and analysis of remaining analytical parameters. Samples will be mixed in a contaminant-free, stainless steel container and gravel, wood, and construction debris will be removed. Composite soil samples will then be transferred into laboratory-provided, glass sampling jars. After filling the appropriate sample containers, all samples will be placed in a cooler and stored on ice at or below 4 degrees Celsius prior to laboratory submission.

Continuous soil samples can also be collected with a macro-core soil probe when utilizing the Geoprobe®. The Geoprobe® sampling system may consist of either a rubber-tired, standard truck-mounted rig or an all-terrain vehicle (ATV) rig depending upon access to boring locations. The macro-core soil sampler consists of a 4-foot long steel tube approximately 3-inches in diameter with a removable acetate liner. The macro-core will be attached to the Geoprobe® drive rods and advanced to the target sample depth to obtain a relatively undisturbed soil core driven into the sampler. The final sampling depth may vary from borehole to borehole depending upon site specific conditions such as depth to water. Each 4-foot soil core will be considered a unique soil sample and will be assigned a field identification number. Down-hole sampling equipment will be properly decontaminated prior to sample collection and between soil boring locations. Acetate liners will be disposed as municipal solid waste.

If an ESA excavation coincides with an SSSAL exceedance area, then end point sampling shall be conducted after excavation. All end point sampling shall be biased toward locations and depths of the highest expected contamination. End point sampling, including bottom and side-wall sampling, will be performed in accordance with the sample frequency requirements described in DER-10 section 5.4(a)(2) (Remedial Action Performance Compliance) (NYSDEC, 2002). Sampling frequency will depend on the size of the excavation. If the excavation is less than 20 feet in perimeter, one bottom sample and one side-wall sample biased in the direction of surface runoff will be collected. If the excavation is 20 to 300 feet in perimeter with a surface spill, one sample from the top of each sidewall for every 30 linear feet of sidewall and one bottom sample for every 900 square feet of bottom area will be collected. If the excavation is 20 to 300 feet in perimeter with a subsurface spill, one sample from the bottom of each sidewall for every 30 linear feet of sidewall and one bottom sample for every 900 square feet of bottom area will be collected. For larger excavations, the sampling frequency may be reduced if approved by the NYSDEC.

The end point soil samples will be analyzed for VOCs and any other SSSAL analytical parameters deemed necessary based on field observations. For VOC samples taken within 24 hours of excavation, samples will be taken from the zero to six inch interval of the excavation floor. Samples taken after 24 hours should be taken at six to twelve inches. For excavations open longer than two weeks, VOC sample depth shall be to 24 inches using a coring device.

7.6.2 Groundwater Sampling Procedures

Prior to groundwater sampling, the wells will be monitored for total depth, depth to water, and depth to NAPL, if any is present. Groundwater samples will not be collected if floating product is observed in a groundwater monitoring well prior to sampling. An appropriate pump (e.g., peristaltic or submersible) will be utilized to purge the well of approximately three well volumes. Water quality parameters will be measured using the Horiba U-10 Water Quality Checker. Temperature, pH, salinity, conductivity, turbidity, and dissolved oxygen will be measured and recorded in a field logbook. A dedicated (disposable) bailer will be used to sample each well. The bailer will be slowly lowered into the water column until it is completely submerged. Groundwater samples will be transferred directly from the bailer into the appropriate laboratory-provided containers.

Groundwater samples for VOC analysis will be collected first at each sampling location. The groundwater will be directly transferred to the VOC sample containers from the dedicated bailer, avoiding splashing and agitation of the sample and ensuring that no headspace exists in the sample

containers. Next, groundwater samples will be collected for all other analyses (e.g., SVOC, PCB and TAL Metals analyses, etc.).

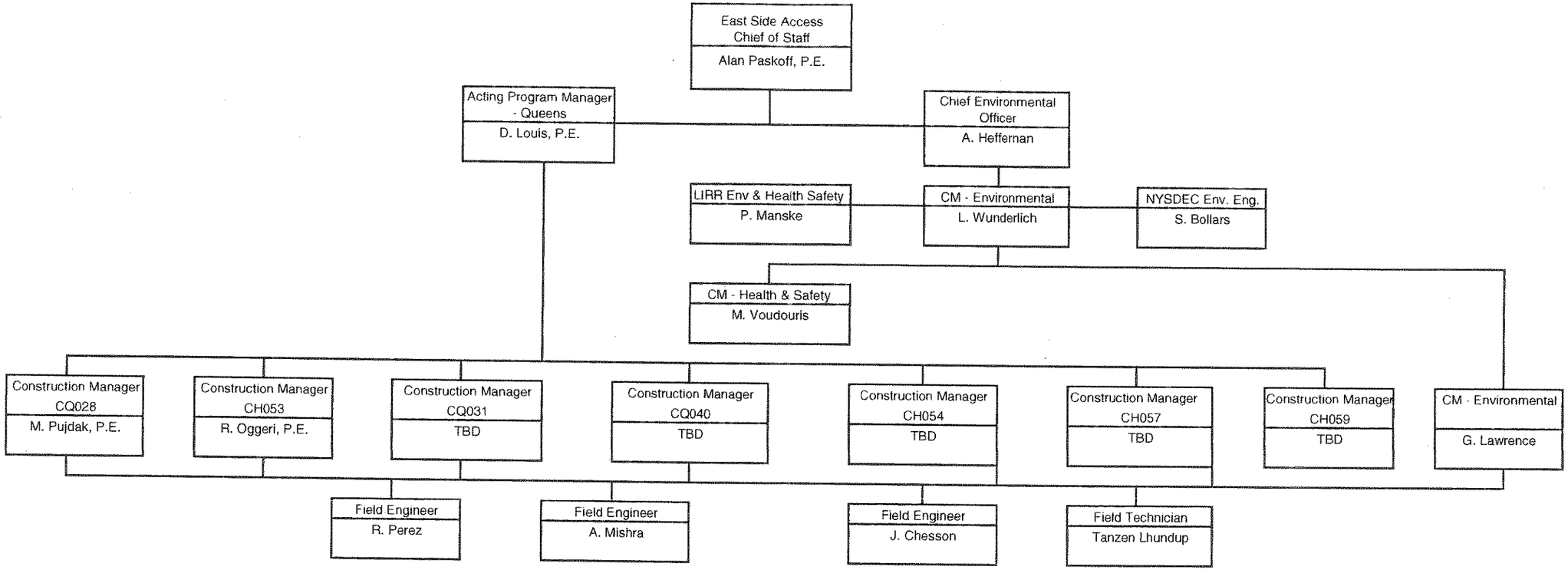
After filling the containers, all samples will be placed in coolers and stored on ice at or below 4 degrees Celsius prior to submission to the laboratory for analysis. Sampling equipment will be properly decontaminated or disposed of between well locations.

At selected soil boring locations where no temporary monitoring wells are installed, the Geoprobe® sampling system can be utilized to obtain groundwater samples. Samples will be collected immediately below the groundwater table boundary using the Geoprobe® screen-point or mill-slot sampling system. A steel, 2-foot long screen-point or mill-slot groundwater sampling apparatus will be installed to the target sample depth. The target sampling depth will be determined by the depth to water observed during sampling. At the target depth, 3/8-inch polyvinyl tubing will be inserted through the hollow Geoprobe® rods and connected to the groundwater sampler assembly. The sampling point of the tubing should be installed approximately in the middle of the screened interval of the Geoprobe® sampler. Utilizing a submersible pump, groundwater will be drawn to the surface and purged until the water is free of sediment or until 3 volumes of groundwater has been pumped from the sampler.

Attachment 1

Project Oversight & Reporting
Construction Contamination Site Management Plan

Project Oversight & Reporting
Construction Contamination Site Management Plan
ESA - Sunnyside Yard



Attachment 2

Resumes

LEWIS D. WUNDERLICH

QUALIFICATIONS SUMMARY

- 30 years experience in environmental compliance
- Technical advisor to senior management
- Agency liaison with government regulators
- Proven leadership, problem-solving and interpersonal skills

PROFESSIONAL EXPERIENCE

PROGRAM ADMINISTRATION & MANAGEMENT

- Administer all environmental engineering and operational compliance activities for the Long Island Rail Road (LIRR).
- Coordinate the LIRR's system-wide annual environmental audit of 300+ properties and Capital Program projects.
- Directed all environmental activities for the closure and transfer of Governors Island, a mixed use, industrial and residential community located in upper New York Harbor.
- Administered the Coast Guard's Environmental Compliance & Restoration (EC&R) Program in the Atlantic and Gulf regions for 9 years.
- Developed and managed a multimillion dollar annual EC&R budget. Scheduled restoration projects from an $80 million backlog on a "worst first" basis, minimizing adverse impacts to human health and the environment.
- Oversaw the Hazardous Waste, Underground Storage Tank, Environmental Audit, Clean Air Act and Historic Preservation programs at over 400 shore facilities, air stations and industrial centers. Negotiated violations and compliance activities with EPA and state regulators.
- Supervised a staff of 5 environmental professionals, developed annual requirements for personnel staffing and managed the deployment of 31 engineers and environmental specialists at field offices throughout the Atlantic Area.
- Implemented policy and procedures for compliance with applicable environmental statutes and Coast Guard Commandant requirements.
- Chaired the Maintenance and Logistics Command (MLC) Atlantic's Environmental Management Board, which has oversight for environmental compliance at facilities in 40 states.
- Served as a Board Member, Pollution Prevention Committee, USCG Headquarters.

PROJECT MANAGEMENT

- Administer the LIRR's RCRA Closure of the former paint stripping facility at the Morris Park Repair Yard.
- Oversee all investigative activities and related engineering services for compliance with a NYSDEC Consent Order at the former LIRR Yaphank landfill site.
- Supervised the site investigation and remediation of 20 mercury contaminated substations.
- Developed environmentally sound design options for shore facility engineering proposals, prepared over 150 NEPA documents for construction and rehabilitation projects and coordinated interagency review (SHPO, ACHP, EPA, CEQ, F&W) of Coast Guard initiatives in the mid-Atlantic and Northeast regions.
- Assumed project officer responsibilities for highly visible, environmentally sensitive and controversial projects: Governors Island Closure, South Ferry Tower Development, Fort Totten Emergency Drum Cleanup, Ice Resistant Aids to Navigation Program in Delaware Bay, Montauk Lighthouse Rehabilitation & Super 8 Motel construction in the Governors Island Landmark District.
- Coordinated environmental project review for acquisition, leasing and licensing of real property.
- Procured and supervised cleanup services for Hazmat spills and Hazwaste disposal.
- Prepared environmental inventories and impact assessments for Facility Plans funded under the EPA's Municipal Wastewater Treatment Works Construction Grants Program.
- Implemented the closure of over 100 Underground Storage Tanks on Governors Island.

TECHNICAL SUPPORT

- Provide 24 hour response for LIRR system-wide environmental emergencies and oversee remediation services & NYSDEC coordination through project closure.
- Drafted Spill Response and Fueling Plans for use at LIRR Long Island City Passenger Yard.
- Designed a fuel reconciliation system for use railroad-wide, ensuring compliance with state underground storage tank requirements.
- Conducted environmental audits and hazardous waste management surveys, resulting in the identification of new compliance projects.
- Developed a Hazwaste syllabus that is currently used as the Coast Guard's training standard. Instructed operational personnel, engineering staff and senior management in Environmental Law and the NEPA review process.
- Coordinated emergency response for hazardous materials and hazardous waste incidents and served as HAZMAT Response Team member during the closure of Governors Island.
- Designed coating systems for historic lighthouse properties and developed design criteria for hazardous waste storage facilities.
- Participated in a national study group whose mission was to investigate Aids to Navigation battery issues and resolve noncompliance with state disposal requirements.
- Represented the Coast Guard at EPA Region II's Federal Facility Roundtable meetings.
- Founded an E-Mail deliverable Environmental Newsletter that reaches Coast Guard units nationwide.

EMPLOYMENT HISTORY

2008- Present	Environmental Construction Manager	MTA Capital Construction
1997 – 2008	Environmental Engineer	Long Island Rail Road
1996 – 1997	Environmental Manager for Base Closure	USCG, Governors Island
1987 – 1996	Chief, Environmental Compliance Branch	USCG, MLC Atlantic
1978 – 1987	Environmental Protection Specialist	USCG, District Planning Office
1977 – 1978	Environmental Engineer	Bowe Walsh & Associates

EDUCATION

M.S., Marine Environmental Sciences, State University of New York, Stony Brook, 1976
B.A., Environmental Studies, State University of New York, Stony Brook, 1973

Hazwaste Annual Certification, LIRR
OSHA HAZWOPER Annual Refresher, LIRR
General Industry Safety and Health, OSHA
Construction Safety and Health, OSHA
Managing Diversity in the Workplace, LIRR
Emergency Response to Hazardous Material Incidents Certification, U.S. EPA
Environmental Management Systems Assessment, Arthur D. Little
Environmental Auditing, U.S. Department of Energy
Compliance with Right-to-Know Laws and Pollution Prevention Requirements, U.S. EPA
Hazardous Materials Incident Response Operations Certification, U.S. EPA
Federal Projects and Historic Preservation Law, ACHP
Environmental Project Cost Control, Groundwater Technology
Environmental Site Assessment, National Well Water Association
Underground Storage Tank Management, National Well Water Association
Hazardous Materials, Chemicals and Waste Management, Transportation Skills Inc.
Certification, Construction Management, New York University
Rehab and Renovation Techniques for Old Buildings, Hartford Architecture Conservancy
Historic and Archeological Preservation, U.S. DOT

AWARDS

Superior Achievement Award, U.S. Department of Transportation October 1996

Garth Lawrence
Environmental Manager

AREAS OF EXPERTISE

- Contract Specifications Development
- Construction Oversight
- Green Construction Design
- DEC Regulations
- RCRA Corrective Action
- Wastewater Treatment Plant Operations
- Soil and Ground Water Sampling and Field Supervision
- Soil Remediation and Remedial Activities

EDUCATION

MBA/Masters, Management, University of Phoenix. February 6, 2007

B.S., St. Johns University, Environmental Science, 1999

REGISTRATION/ CERTIFICATION

40 Hour OSHA HazWoper Training- 29 CFR 1920.120

NATABLE CLIENTS

- MTA New York City Transit
- Long Island Rail Road
- Chevron Texaco
- BP Amoco
- American Airlines

REPRESENTATIVE EXPERIENCE

Environmental Manager, MTA/LIRR East Side Access. Long Island City, New York. East Side Access is a $6.5 billion project that involves the construction of a passenger rail tunnel under the existing 69 Street Tunnel and down 7th Avenue to Grand Central Terminal, NYC. (1/2005-Present).

As the Environmental Manager for the East Side Access Project, I am responsible for handling all Environmentally Sensitive Issues on all East Side Access contracts. My responsibilities include, but are not limited to; scheduling and coordinating environmental activities. Providing technical support to the design engineering and construction teams. As a member of the Technical Review Group I evaluate changes to project baseline documents for environmental impact.

- Teaming with the Resident Engineers to develop the project specifications.
- Advising the Resident Engineers on Environmental Policies and develop protocols to mitigate Environmentally Sensitive Issues.
- Developing and scheduling Environmental monitoring programs.
- Designing tunneling and construction activities to minimize impact on sensitive structures and resources.
- Reviewing and acquiring the necessary permits form the regulatory agencies.
- Conducting regular field inspections of construction activities for compliance with existing permits and approvals, and all applicable Federal, State, and Local environmental regulations.
- Preparing quarterly and annual permitting reports for all applicable regulatory agencies.
- Tracking and identifying any hazardous and/or toxic materials associated with the project. Arranging for the safe transportation and final containment of such materials.

Environmental Scientist, URS Corporation, New York, New York. (6/2004-1/2005)

I have completed and managed a variety of field site assessment and remedial activities and am thoroughly knowledgeable of both NYSDEC and NJDEP assessment protocols and standards. I have extensive field experience in subsurface drilling inspection, soil and groundwater sampling and analysis, underground storage tank assessment and remedial activities and wastewater treatment plant

- Merck and Company
- Rohm and Hass
- State of New York
- State of California

operations. Have managed numerous subsurface projects in the New Jersey and New York City region. Served as Site Engineer and Health and Safety Officer on the very successful Rohm and Hass project in Freeport New York.

Interpreted and conveyed all the applicable Federal, State and Local Regulations to the various disciplines working on the project.

Chevron Texaco (CVX), RCRA Corrective Action Project in Perth Amboy, New Jersey. (1/2003 – 6/2004).

- Completed groundwater sampling following both USEPA and NJDEP methodology.
- Supervise subcontractor soil remedial activities.
- Maintained schedule for all fieldwork including groundwater and soil sampling and subcontractor activities.
- Coordinated with the laboratory for all analytical procedures.

American Airlines Redevelopment Project at JFK International Airport, Jamaica, New York (6/2002 - 12/2002).

- Supervised subcontractor activities for the removal and containment of contaminated soils to ensure adherence to the technical requirements for soil remediation as set forth by the NYSDEC.
- Performed environmental oversight for a variety on site field and remedial activities.
- Responsible for writing daily field reports.
- Responsible for keeping track of the classifications of all soils onsite, as well as coordinating the transportation of contaminated soils and clean fill off site.
- Supervise all excavations to prevent cross contamination of soils and to ensure excavated soil is correctly classified.

Manager- Waste Water Treatment Operations, The Tyree Organization, Farmingdale, New York. Manage the daily operations of a 12000-gallon capacity wastewater treatment plant (8/2001 – 6/2002).

- Ensure that all discharge form the treatment facility is in compliance with the applicable County, State and Federal specifications.
- Coordinated the removal of solid waste from the facility without disrupting the treatment process.
- Coordinated the safe extraction and transportation of hazardous materials.
- Performed daily safety inspections of the treatment facility.

Made sure that both reactors are safe for operation; valves and pipes and gauges are not defective.

- Responsible for ensuring that the facility operations are in accordance with Federal, State and Local Regulations.

Environmental Field Representative, ADS Environmental Services, San Jose, California 8/2000 – 5/2001

- Responsible for collecting electronic data and perform preliminary analysis of the gathered information.
- Responsible for programming and installing specialized flow diagnostic computers and sensors.
- Generated electronic maps based on field investigations. Investigate and approve monitoring sites based on testing requirements.

TENZIN LHUNDUP

OBJECTIVE: To attain an entry level geologist position

EDUCATION:
B.S in Environmental Geology, 2007
Stony Brook University
Over all G.P.A: 3.38
Major G.P.A: 3.52

MAJOR COURSES:

Hydrology	Engineering Geology
Geochemistry	Stratigraphy
Field Geology	Mineralogy/Petrology
Optical Mineralogy	Structural Geology

COMPUTER SKILLS:
Proficient in Microsoft Office and ArcGIS 9.0
MATLAB and MODFLOW

RELATED EXPERIENCE:

University of Idaho, Water Resources Program 5/5/2006-8/10/2006
Research Assistant
- Conducted research on initiation and development of desiccation cracks in clay liner and caps using Permeability cell, IR Heater as a function of different physical and chemical factors. Also used MATLAB to quantify X-ray images of desiccation cracks.

Stony Brook University, Mineral Physics Institute 5/29/2005-8/3/2005
Student Researcher
- Developed new high resolution digital elevation model map (2-feet elevation interval and a 1-meter grid spacing in latitude and longitude) of Stony Brook campus through ArcGIS software and also used ground penetrating radargram and resistively profile to interpret geology of Ashley Schiff Park and for future use in research and coursework.

WORK EXPERIENCE:

Stony Brook University, Athletic Department 3/2/2006-5/20/2007
Student Tutor
- Preparing supplementary notes and review classes for introductory geology classes.
- To assist student individually or in groups (5-7 students) with extra information for exams.

Stony Brook University, Geology Department
Teachers Assistant for Field Geology class 8/29/05- 12/22/05

- Helped students with ArcGIS Program in creating maps with different geographical layers, converting files from Microsoft excel to ArcGIS and writing field reports.

ACTIVITIES/ ACHIEVEMENTS
Deans List: Fall 04, Spring 05, Fall 05, Spring 06, Fall 06, Spring 07, Fall 2007
Public Relations Officer of Geology Club

Résumé of Michael R. Rosell

Experience: **Environmental Planning & Management (EPM)** 1983 Marcus Avenue Lake Success, NY 11042

Project Manager, performing Phase I and Phase II environmental site assessments, report closeouts for the School Construction Authority, and a broad range of environmental work for the MTA East Side Access Project in Long Island City and in Manhattan.

ATC Associates Inc. 104 East 25th Street, New York, NY 10010
January 2001 – 2007

Project Manager, with over five years of industry experience and cognizant of Federal, State and Local regulations. Current responsibilities include project management of lead-based paint inspections and risk assessments for the New York City Housing Authority (NYCHA) and other clients. As part of project management, responsibilities include:.

- Preparation of work proposals and scopes of work for new development testing.
- Scheduling and guidance of inspectors for field testing
- Quality control and troubleshooting of recorded data from field testing
- Analysis of large databases of XRF testing data and lead sampling data.
- Writing reports and conducting quality assurance reviews of report drafts and final submissions to client.
- Oversight of project budgets
- Used knowledge of Spanish to communicate to Spanish-speaking residents for the company, as well as designed resident notifications in Spanish to notify them of testing in their homes.

Education: **Long Island University at C.W. Post**
Attended from September 1998 – May 2000,
Received a graduate degree in Environmental Science
Cumulative average = 3.79

University at Albany (SUNY)
Attended January 1990 - December 1991 (Date of graduation)
Major: Spanish
Minor: Business Administration
Cumulative average ~ 3.14

Buffalo State College
(Attended August 1987 – Summer 1989)
Major: Spanish

References: Available Upon Request

JCMS, Inc.

ROLANDO PEREZ — INSPECTOR

Experience Highlights:
Extensive experience in Construction Engineering and Inspection services provided on Mass Transit, Aviation and Roadway projects

Total Experience:
25years

Education:
B.S. Civil Engineering, Manila, Philippines

Mr. Perez has over twenty five years experience in the field of construction engineering and construction management. As Field Engineer and Construction Inspector, he has been responsible for construction operations in the field including quality control inspection, reporting work-in-progress; review of shop drawings; review of change orders; review and preparation of monthly progress payments; preparing daily reports, liaison with owners, Architect/Engineer, and contractor(s). The types of projects Mr. Perez has provided Inspection services on include mass transit, aviation, roadways and nuclear plant construction.

Mr. Perez has experience in using various application software such as MS Word, Excel, Expedition etc.

DEP Plant Upgrade Newtown Creek WPCP, Greenpoint Ave., Brooklyn , New York. Mr. Perez served as Civil Inspector on the project. His responsibilities included inspection of demolition of existing structures i.e., sedimentation tanks, aeration tanks and grit buildings for the upgrading of the Water Pollution Control Plant ; inspection of rebar installation, forms and concrete placements to check if work is done in accordance to contract and specifications and approved shop drawings; monitor time & material work and keeping of the records; monitor site security and safety; keep records of as-built information; prepare daily construction reports.

NYCT - Restoration of Three (3) Historic Stations of Simpson St. Station in Bronx, NY. Prospect Ave. Station and Jackson Avenue Station in the Borough of Bronx (Contract # A-35953, A-35954 & A-35955-CM#37). Mr. Perez served as Construction Inspector for the project. Responsibilities included: a) inspection of all civil and architectural work to ensure conformance with the contract drawings and specifications. b) Review subcontractor's shop drawings and other submittals prior to submission to NYCT for approval by the A/E. c) Preparation of inspection checklist for civil and architectural work and compilation of quality control documents which include testing records, photographs, inspection checklists and other miscellaneous records. d) Inspection of materials delivered to site to verify conformance with the specifications. e) Preparation of daily quality/construction report submitted to the Project Quality Manager.

NYCT - Atlantic Avenue Subway Station Complex, NY: As Construction Engineer and Civil Inspector, Mr. Perez was involved in inspecting and monitoring demolition work of existing structures in the NYCT IRT and BMT Lines of the station complex, inspection of excavation and shoring, pile driving and structural steel erection, safety compliance, reinforcing steel installation and concrete placement, finishing work such as painting, tile installation, architectural hardware installation etc. Mr. Perez prepared daily reports using Expedition software.

LIRR - Station Reconstruction Project - Contract A-35695, Brooklyn, NY: As a construction Engineer and Civil Inspector Mr. Perez was involved in inspecting and monitoring demolition of existing structures on the Long Island Rail Road Station and BMT Lines of the station complex. He was responsible for inspection of all civil, structural and architectural aspects of the project, monitoring safety compliance and preparing daily reports using Expedition software.

NYCT - 34th Street and 8th Avenue Subway Station - Contract A-35790R, NY: As a field and office engineer Mr. Perez was responsible for conducting daily field inspection, coordinating field meetings to provide answers to RFI, prepared daily

and monthly construction activity report using Expedition software, prepared AWO log, submittal log, RFI log, issue log and FOR log using Expedition for this major station rehabilitation project. He also prepared Quality Assurance checklist for the construction activities, audited the Contractor's Quality and Safety Program, processed submittal transmittals, G.O. requests, Flagging requests, Work Train requests and coordinated regular meetings with RTO, prepared the punch list report prior to the pre-final and final inspection and coordinated the pre-final and final inspection with the User Departments to achieve acceptance of the project.

NYCT - Union Square Subway Station Complex Contract A-35705: As a field and office engineer Mr. Perez was responsible for construction inspection to insure contractor's daily work is in compliance with contractual documents. He also prepared AWO log, submittal log, RFI log, issue log and FOR log for the project, reviewed Shop and as-built drawings of the project, prepared preliminary punch list report prior to the pre-final and final inspection, processed paper works for submittal transmittal, G.O. requests, Flagging requests, Work Train requests and coordination with the RTO, monitor and audit contractor's Quality Assurance and Safety Program and prepared daily and monthly Construction Activity Reports.

NYSDOT - Reconstruction of Hempstead and Turnpike, Route 24, Nassau, Long Island, NY: As a field and quality engineer, Mr. Perez performed field inspection to monitor and verify contractor's daily activities and ensure that work undertaken is in accordance with the contract and specifications. Performed quantity survey to monitor and verify contractor's daily accomplishments. Prepared daily, weekly and monthly progress reports, reviewed shop drawings and as-built drawings of the project, attended regular coordination and progress meetings with DOT representatives and prepared progress charts and performed other miscellaneous tasks related to project documents.

Bechtel Corporation - San Francisco, CA, King Fahd International Airport Project at Dammam, Saudi Arabia and King Khaled International Airport Project at Riyadh, Saudi Arabia: Inspected and monitored contractor's daily activities to ensure that these activities are undertaken in accordance with contract documents. Safety inspection was also a part of the field work. Prepared daily construction and progress reports, reviewed Shop and As-Built Drawings of the project which included the construction of runways, taxiways and other support facilities in the airfield and attended regular construction and progress meetings with Saudi Government project representatives and the contractors.

Engineering and Construction Corp. of Asia (ECCO-ASIA) and Nuclear Power Plant Project - Bataan, Philippines: Mr. Perez supervised the construction of support facilities for the Nuclear Power Plant Project in the Philippines which include construction of roads, buildings and housing projects. Attended construction, progress and coordination meetings with Westinghouse Project Management.

Akhilesh Kumar Mishra

More than 13 years of cost control and budgeting experience with industrial contractors.
Construction for Haul Road, Stations rehabilitation and slurry wall construction for upcoming tunnels between Queens and Manhattan in NY.
Proficiency with Microsoft tools including Excel and Visual Basic Application and use of SQL server database and **Primavera Expedition**, a software for total construction management.
Cost analysis, preparation of monthly reports, according to contract documents, specification and agreement with general contractors.
Processing payments and Change Orders and reconciliation of various other services Processing payments to vendors per DCB.
Professional Experience:

PACO Group 110 William Street NY :
Sep 2006- Till Date
East Side Access Project –CQ028 under MTA ($6.3 Billion):
The East Side Access project in Queens NY is a long term project for connection of Long Island Railroad to Grand Central station in NY. It involves construction of tunnels in Queens (Sunny Side Yard) and Manhattan side for the Long Island Railroad.
Presently working as Field Quality Engineer coordinating the field activities, material and manpower accounting related to construction of slurry wall, track relocation, catenary foundation and installation of catenary structures and electrical load transfer for Amtrak inside Sunnyside Yard and Signal work in Harold Interlocking Phase1in Queens NY. The coordination between MTA, Contractor and Amtrak work forces is of prime importance.
Jan 2003 –Aug 2006
Intermodal Subway-Bus Station Complex, Queens, NY ($100 million)
Responsibilities:
As an Office Engineer/ Field Engineer at New York City Transit at Jackson Heights, Queens on construction of a new Bus/Subway transfer facility and renovation of the IRT and IND Subway stations at Roosevelt/74th Street, responsibilities included coordination and inspection of construction activities including asbestos abatement and other environmental activities, quality assurance, review of contractor invoices including quantities verification, office engineering support for proper maintenance of construction related files, managing and routing of submittals. Ensured adherence to drawing, specification, PMP and PMG when the Inspectors carried out inspection during the construction work by the contractor and his subcontractors.

Coordinated Periodic inspection by the Agency authorities.
Processed contractor payments per the DCB and helped in preparation of field change orders.
Proper coordination of activities between the contractor and NYCT was vital to this project in order to maximize the use of track and power outages in a typical workday while continually maintaining safety to both the working crew and passengers.
My responsibilities also included the coordination of Contractor's Drawing and other submittals for approval from the Designer.
Conducted field inspections and engineering audits

DBSI, New Brunswick, New Jersey Nov 2001- Dec 2002
Business Development Manager
Responsible for preparation and submission of technical proposals and contract administration. DBSI is a DBE. While working for DBSI, we participated in various tenders from NJ Transit and Port Authority.
While with DBSI, also worked for their client KC Toys, looking after their inventory and accounts. Worked on a large database on SQL Server for Inventory and Accounts Management. This database was created by me for the MIS for the CEO in addition to his regular needs through data filters on spreadsheet.

Akhilesh Kumar Mishra

Rungta Projects, India Feb 1996-Oct 2001
Senior Office Engineer
Rungta Projects are contractors for Coal India Limited, (Government of India) engaged in loading and transportation of coal from mining face to dump yard, also civil contractors for the same client for haul road and building constructions and other irrigation and road building projects. The overall responsibilities included the following:

- Contract Administration
- Generated contracts with subcontractors and major suppliers.
- Monitored and enforced submittals, ordered materials, field measurements and scheduled material deliveries.
- Worked with management and construction personnel with diverse and extensive construction experience.
- Coordinated with Engineers and Engineering firms and other Agencies responsible for administering construction contracts.
- Assisted in company's gr owth during a slow trend in construction industry.

GMMCO LTD April 1981- Jan 1996
Senior Office Engineer
GMMCO Limited (Dealer-Caterpillar Inc, USA) is a large size company in India with a turnover of over $200 million from their Contracts and Product Support Division.
Responsibilities:

- Analyzed bids and proposals, prepared techno-commercial comparisons for bid evaluation.
- Participated in both Local and International Competitive Bids.
- Worked on contractual terms and conditions of contractors and functional specifications.
- Interacted with various contractors for whom I did the cost benefit analysis and ownership & operating cost. The cost control and budgeting methods were implemented for the construction methods for large constructions
- Prepared budget for large civil and industrial Contractors, Engineers and Engineering firms. Conduct cost estimates, provision for overheads, work shop activities, rehabilitation.
- Prepared cost analysis and progress report for presentation to management.
- Implemented change orders(amendments) with the end user departments depending on various causes like field conditions, design errors, user request

Education :
B.E. (Electrical) India.
Certificate from Department of Continuing Education, India.
Certificate Management Skills development- Indian Institute of Management, India.
Certificate Quality Engineering- Ingersoll Rand-India
Member "The Institution o f Engineers" India
Certificate "Construc tion Management"-USA
Certificate in Quality Process from National Transit Institute USA

James Chesson
Construction Inspector
Interactive Elements Incorporated

137.00

Mr. Chesson is an experienced construction management professional with over 10 years of transit experience. Additionally, Mr. Chesson has a solid educational background in engineering from N.Y.U. and the University of Connecticut.

PROFESSIONAL EXPERIENCE

Construction Inspector — VN Engineers
September 2004 – Present — New York, N.Y.

Oversaw reconstruction of structural steel on Railroad bridges and civil engineering on relocation of utilities. Mr. Chesson was responsible for replacing the catenary structures from Noroton Heights to Westport along Metro North's main New Haven line.

Mr. Chesson is also currently involved in installing a state of the art constant tension system, replacing guy wires, support structures and building new concrete catenary foundations.

Additional involvement includes the reconstruction of three 100-year-old railroad bridges in Norwalk, Darien, and Rowayton and the relocating and replacing of all utility and communication pipes and conduits, as well as calculating payments of rock excavations, review of shop drawings, inspecting field work, and testing concrete according to ACI guidelines.

Senior Inspector — DY Engineers
January 2002 – August 2004 — Queens, N.Y.

Oversaw weekend work on $300 million project linking the Long Island railroad to the Air-train.

Coordinated activity between various contractors working on L.I.R.R. and N.Y.S.D.O.T. property, performed controlled inspections on steelwork, monitoring, & testing concrete for new platforms and roadwork as well as insuring safety precautions were met.

Mr. Chesson also wrote inspection reports to certify that railroad work sites were ready to be put back into service for weekday commutes.

Senior Construction Inspector — CTE Engineers
January 1998 – January 2001 — Stamford, Connecticut

Reconfigured platforms and turnouts to accommodate Amtrak's high speed rail service. Work included daily reports, tracking labor and material expenses coordinating monthly progress reports and acting as a liaison between several contractors and CT. DOT.

Additionally, Mr. Chesson checked concrete samples for refurbished bases of catenary support structures.

Inspector
January 1994 – January 1998

F.R. Harris
New Haven, Connecticut

Performed work on $200 million Connecticut Interlocking project involving the construction of 72 turnouts, new concrete platforms, signals and cable necessary for Amtrak's high speed rail service from Boston to Washington.

Monitored all contractor and force account activities, wrote inspection reports, developed quality control programs, tested concrete core samples, and tracked material & hours.

Inspector
August 1996 – August 1997

VN Engineers
New Haven, Connecticut

Performed work on $400 million C-21 & C-22 Track Improvement Programs project by installing continuous welded rail line replacement and crossing replacement for the Connecticut D.O.T.

C-21 Project:

Installed 8,500 new cross ties surfacing 25 track miles, installation of a new turnout and 7 ½ miles of new rail and the rehabilitation of seven grade crossings.

C-22 Project:

Installed approximately 20 miles of continuous welded rail on the Danbury Branch line. Project work involved the replacement of the relay code system which controlled the Woodmont Interlocking in Milford, Connecticut from New Haven since its installation in the mid 1950's.

Inspector

June 1995 – August 1996

C-19, C-20, & S4 Track Improvement Programs
New Haven, Connecticut

Performed construction work on $20 million project.

C-19 & C-20 Project:

Installed 28,500 cross ties, seven new turnouts, 110 track miles of surfacing, undercutting 12 miles of track and a new runaround in Waterbury.

S4 Project:

Repaired railroad bridges as recommended in completed inspection reports and those to be completed in the future.

Track Foreman
March 1983 – May 1995

Amtrak
Boston, Massachusetts

Performed track machine operations, thermite welding, CWR & tie installation, & surfacing and coordination with C & S Dept. on functions related to track production work & maintenance.

Attachment 3

Deficiency Report & Log

Long Island Rail Road
East Side Access

CM FORM Q.4.A

Deficiency Report

TO BE COMPLETED BY ORIGINATOR: Page 1 of _____

1. Contract No. & Name: _____
2. DR No.: _____ 3. Contractor _____
4. Date: _____ 5. Originator & Organization: _____
6. Hold Tag No _____ 7. Location: _____
8. Specification Section & Drawing No.: _____

9. Contract Requirement:

10. Description of Deficiency:

11. **Validation by Lead Inspector:** _____ Date: _____

TO BE COMPLETED BY RESIDENT ENGINEER:

12. Reply requested from: _____ Need Date: _____

TO BE COMPLETED BY CONTRACTOR: **(Address nonconforming Work & Contractor Quality Program)**

13. Root cause of the problem and action(s) to prevent recurrence:

14. Corrective action(s):

15. Prepared by: _____ Date: _____

17. Disposition status:

❑ Reject ❑ Rework ❑ Repair ❑ Use-As-Is

16. **CM Approval:** _____ Date: _____

TO BE COMPLETED BY ENGINEER OF RECORD (for Repair and Use-As-Is status)

18. Engineer Approval: _____ (Print Name) _____ (Signature) _____ (Date)

19. **Concurrence by Lead Inspector:** _____ Date: _____

TO BE COMPLETED BY CM QUALITY CONTROL:

20. Quality Control verification that nonconforming condition has been corrected:

Verified By: _____ (Print Name) _____ (Signature) _____ (Date)

(Rev. May 2003)

Long Island Rail Road
East Side Access

DEFICIENCY REPORT LOG (Environmental)

Deficiency Report Log No.	**Description of Environmental Compliance Deficiency** (Include site location, contract no., Contractor & environmental issue)	**Date of Deficiency**	
		Observed	Action Taken

NAME:_____

SIGNATURE:_____ **DATE COMPLETED:**_____

Attachment 4

Spill Report

Long Island Rail Road
East Side Access

SPILL REPORT FORM

1. DESCRIBE the spill:			
2. Did the spill exceed the RQ*?	* RQ = Reportable Quantity	Yes ❑	No ❑
3. Total amount released (units):			
4. Date & time of release:			
5. Project site & exact location on-site:			
6. Personnel/company involved:			
7. Any injuries? If yes explain.		Yes ❑	No ❑
8. Product identification and CAS number:			
9. How was the spill contained? Description of Corrective Actions Taken:		Yes ❑	No ❑
10. Was there any off-site impact?		Yes ❑	No ❑
11. Did release reach surface water?		Yes ❑	No ❑
12. Is there any other environmental impact?		Yes ❑	No ❑
13. Has the relevant railroad personnel (as per the list below) been notified?		Yes ❑	No ❑

14. Has the New York State Department of Environmental Conservation (DEC) been notified by the property owner (e.g. Railroad)? (Please note: Reportable[1] spills must be reported to the DEC within 2 hours of occurrence, according to State Environmental Legislation. Therefore, there is an obligation for anyone aware of a spill to ensure that it is reported within 2 hours.) If "yes" when was DEC notification made?: Date/Time Agency Notified: Case #: Notes:	Yes ❑	No ❑
15. Has the Lead Environmental Engineer (LEE) been notified?	Yes ❑	No ❑
16. Measures to Prevent Recurrence:		

NAME:_____ **SIGNATURE:**_____ **DATE :**_____

Railroad personnel

[1] All reports of releases of hazardous substances must be made to the NYSDEC hotline (800-457-7362 or 518-457-7362 outside New York State) within two (2) hours of the release. Reporting of suspected or probable release of a hazardous substance must be made to the NYSDEC hotline within twenty-four (24) hours of discovery.

Releases of hazardous substances must be reported if the release exceeds the reportable quantity of that hazardous substance, **or** for a lesser quantity if any of the following conditions exist:

a) The release may result in fire with potential off-site impacts.
b) The release may cause an explosion.
c) The release may cause a contravention of air quality standards.
d) The release may result in vapors, dust or gases that may cause illness or injury.
e) The runoff from fire control or dilution water may cause contravention of water quality standards.

Attachment 5

Environmental Field Report

Long Island Rail Road
East Side Access

ENVIRONMENTAL FIELD REPORT

Date/ Time	Location/ Contract No./ Contractor	Environmental Issue	Follow up Required?	
			NO	YES
			☐	☐
			☐	☐
			☐	☐
			☐	☐
			☐	☐
			☐	☐

NAME:_____

SIGNATURE:_____ DATE COMPLETED:_____

Daily field notation on environmental compliance should be documented in a unique and site or event specific logbook at the time of site inspection. The logbook should be paginated (showing consecutive page numbers), bound and properly identified and dated.

Attachment 6

Summary of Environmental, Quality Control and Performance Evaluation Samples

Attachment 6A - Summary of Environmental Samples
SUNNYSIDE YARD
East Side Access Project

MATRIX	ANALYTICAL PARAMETER	STANDARD LABORATORY METHOD	SAMPLE PRESERVATION	SAMPLE CONTAINER TYPE/VOLUME	HOLDING TIME	NUMBER OF SOIL SAMPLES
SOIL	TCL VOCs	8260B	Cool, 4 degrees Celsius	Glass, wide mouth, teflon liner/4 ounces	14 days	TBD
SOIL	TCL SVOCs	8270C	Cool, 4 degrees Celsius	Amber glasss/8 ounces	14 days	TBD
SOIL	TPH (GRO/DRO)	8015B	Cool, 4 degrees Celsius	Amber glasss/8 ounces	14 days	TBD
SOIL	PCBs/Pesticides	8082/8081A	Cool, 4 degrees Celsius	Plastic or glass/8 ounces	14 days	TBD
SOIL	TAL Metals	6010B	Cool, 4 degrees Celsius	Plastic or glass/8 ounces	6 months	TBD
SOIL	TCLP VOCs	1311	Cool, 4 degrees Celsius	Glass/4 ounces	14 days	TBD
SOIL	TCLP Metals, SVOCs, Pesticides, Herbicides	1311	Cool, 4 degrees Celsius	Glass/16 ounces	14 days	TBD
					Total No. of Samples:	**TBD**

MATRIX	ANALYTICAL PARAMETER	EPA METHOD/STANDARD LABORATORY METHOD	SAMPLE PRESERVATION	SAMPLE CONTAINER VOLUME AND TYPE	HOLDING TIME	NUMBER OF GROUNDWATER SAMPLES
WATER	TCL VOCs	624/8260B	Cool, 4 degrees Celsius; 0.008% $Na_2S_2O_3$; if residual chlorine present 1:1 HCl to pH<2	Glass, vial screw cap with center hole Tegflon-faced silicon septum; 40 mL	7 days without HCl; 14 days with HCl	TBD
WATER	TCL SVOCs	625/8270C	Cool, 4 degrees Celsius; 0.008% $Na_2S_2O_3$	Glass, amber Teflon-lined screw cap; 1000 mL	7 days until extraction, 40 days after extraction	TBD
WATER	PCBs/Pesticides	8082/8081A	Cool, 4 degrees Celsius; 0.008% $Na_2S_2O_3$; if aldrin is to be determined bind to pH 5-9	Glass, amber Teflon-lined screw cap; 1000 mL	7 days until extraction, 40 days after extraction	TBD
WATER	Herbicides	515.1/-	Cool, 4 degrees Celsius	Glass, amber Teflon-lined screw cap; 1000 mL	7 days until extraction, 40 days after extraction	TBD
WATER	TAL Metals - Filtered	200.7/7470 (Mercury)	HNO_3 to pH<2	Plastic/100mL	6 months	TBD
WATER	TAL Metals - Total	200.7/7470 (Mercury)	HNO_3 to pH<2	Plastic/100mL	6 months	TBD
					Total No. of Samples:	**TBD**

GRO/DRO = Gasoline Range Organics/Diesel Range Organics
PCBs = Polychlorinated biphenyls
SVOCs = Semi-volatile organic compounds
TAL = Target Analyte List
TCL = Target Compound List
TCLP = Toxicity Characteristic Leaching Procedure
TPH = Total petroleum hydrocarbons
VOCs = Volatile organic compounds
TBD = to be determined as per site-specific contract SAP

Attachment 6B

Summary of Quality Control and Performance EvaluationSamples

SUNNYSIDE YARD

East Side Access Project

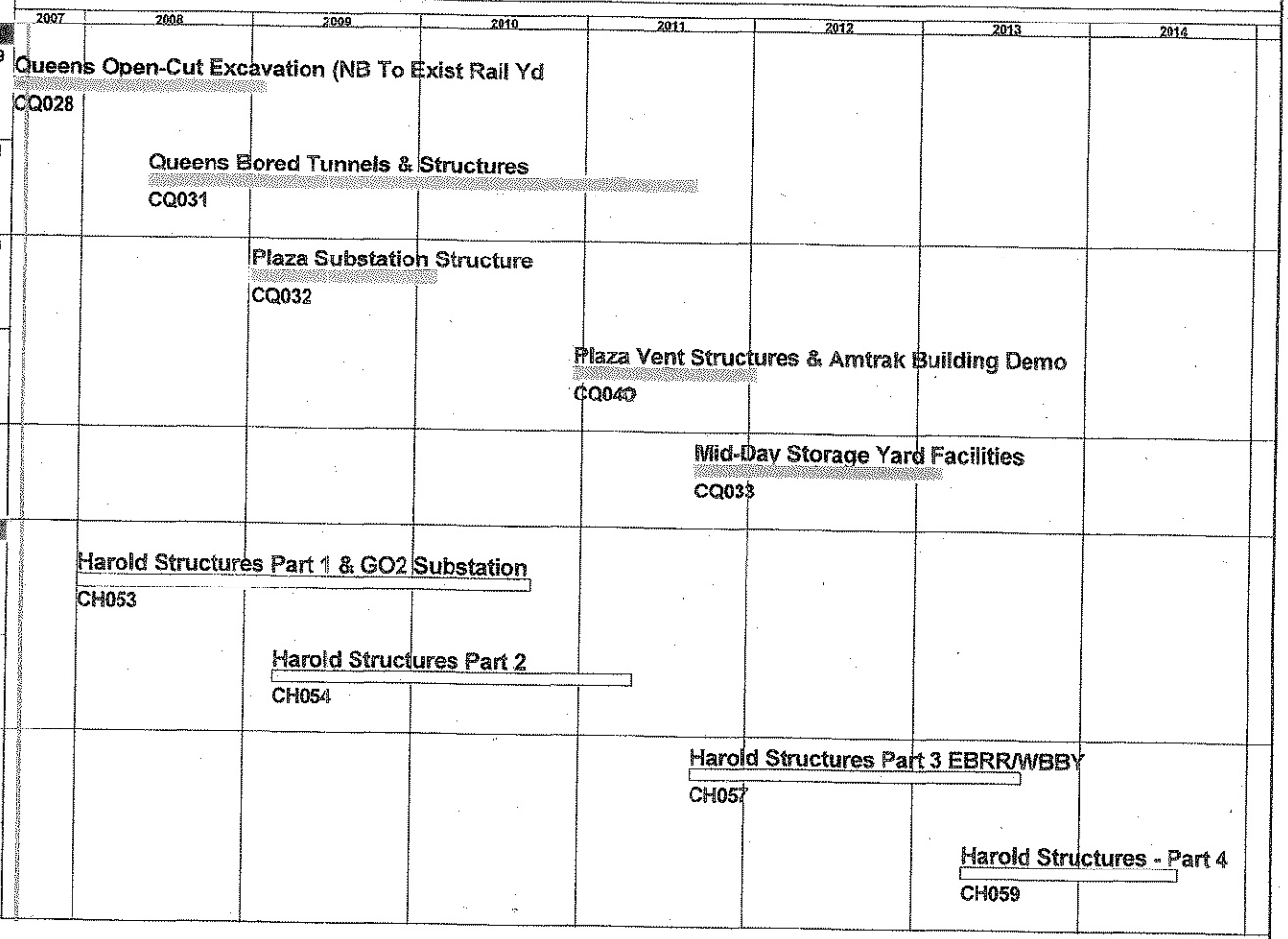
QA/QC SAMPLE	MATRIX	ANALYTICAL PARAMETERS	SAMPLING FREQUENCY[3]
Field (Equipment Rinsate) Blanks:	Soil (aqueous)	All analytical parameters (except TCLP)	One (1) set per 20 samples
	Water	All analytical parameters	One (1) set per 20 samples
Trip Blanks:	Soil (aqueous)	TCL VOCs	One (1) set per day
	Water	TCL VOCs	One (1) set per day
Field Duplicates	Soil	All analytical parameters	One (1) set per 20 samples
	Water	All analytical parameters	One (1) set per 20 samples
Matrix Spike/Matrix Spike Duplicates	Soil	All analytical parameters	One (1) set per 20 samples
	Water	All analytical parameters	One (1) set per 20 samples

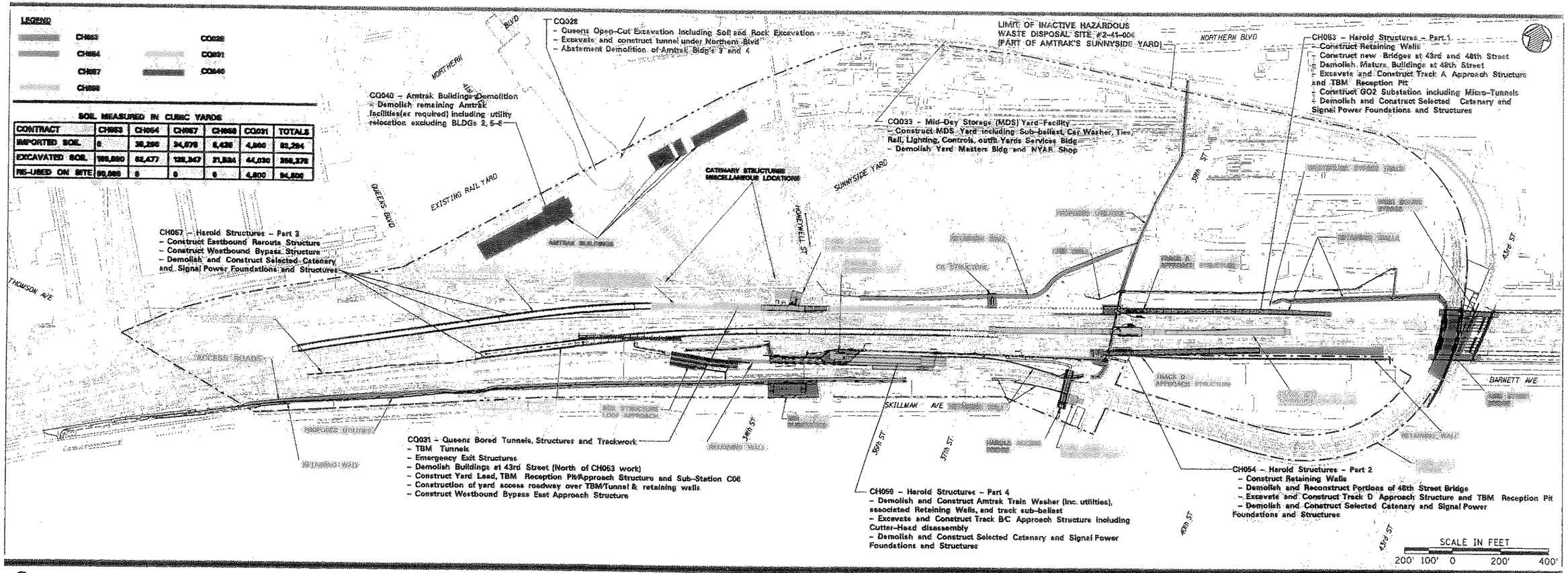
GRO/DRO = Gasoline Range Organics/Diesel Range Organics
QA/QC = Quality Assurance/Quality Control
PCBs = Polychlorinated biphenyls
RCRA = (U.S.EPA) Resource Conservation and Recovery Act
SVOCs = Semi-volatile organic compounds
TAL = Target Analyte List
TCL = Target Compound List
TCLP = Toxicity Characteristic Leaching Procedure
TPH = Total petroleum hydrocarbons
VOCs = Volatile organic compounds

APPENDIX C

CONSTRUCTION AND ANTICIPATED QUANTITIES OF EXCAVATED, ON-SITE RE-USED AND IMPORTED SOIL AT SUNNYSIDE YARD

Contract Number	Activity Description	Tentative Start	Tentative Finish
Queens Alignment Contracts			
CQ028	Queens Open-Cut Excavation (NB To Exist Rail Yd	27APR06A	03FEB09
CQ031	Queens Bored Tunnels & Structures	21MAY08	02SEP11
CQ032	Plaza Substation Structure	05JAN09	12FEB10
CQ040	Plaza Vent Structures & Amtrak Building Demo	10DEC10	13JAN12
CQ033	Mid-Day Storage Yard Facilities	05SEP11	28FEB13
Harold Interlocking Contracts			
CH053	Harold Structures Part 1 & GO2 Substation	02JAN08	13SEP10
CH054	Harold Structures Part 2	02MAR09	25APR11
CH057	Harold Structures Part 3 EBRR/WBBY	02SEP11	23AUG13
CH059	Harold Structures - Part 4	17APR13	04AUG14





Metropolitan Transportation Authority
Capital Construction

Long Island Rail Road
East Side Access

APPENDIX C
CONSTRUCTION AND ANTICAPATED QUANTITIES OF EXCAVATED, ON-SITE RE-USED AND IMPORTED SOIL AT SUNNYSIDE YARD

GEC PB STV PARSONS
General Engineering Consultant

PARSONS BRINCKERHOFF
STV INCORPORATED
PARSONS TRANSPORTATION
GROUP OF NEW YORK INC.
469 Seventh Avenue • New York, NY • 10018

MTA / LIRR East Side Access

BRONX, NEW YORK

Community Air Monitoring Plan

AKRF Project Number: 30262

Prepared for:

MTA Capital Construction

Prepared by:

AKRF, Inc.
440 Park Avenue South, 7th Floor
New York, NY 10016
212-696-0670

FEBRUARY 2008

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1.0 INTRODUCTION

1.1 Project Background

On behalf of Metropolitan Transportation Authority (MTA) Capital Construction (CC), AKRF, Inc. (AKRF) has prepared a Community Air Monitoring Program (CAMP) for portions of the East Side Access project in Queens, New York (see Figure 1). The majority of the construction work will occur within the boundaries of the 300-acre Sunnyside Yard (SSY) complex. SSY is a New York State Department of Environmental Conservation (NYSDEC) listed Class II Inactive Hazardous Waste Site and has had contamination from petroleum and PCBs.

The Sunnyside railroad complex extends from close to Hunters Point Avenue on the west to 43rd Street on the east, between Northern Boulevard and Skillman Avenue. Figure 2 provides an aerial view of the rail complex. SSY is used by Amtrak and New Jersey Transit (NJ Transit) for storage and maintenance of trains. SSY includes extensive tracks for train storage with associated overhead electric wire and numerous buildings and parking areas for railroad employees. Amtrak stores trains throughout the day at SSY, while NJ Transit uses the yard for midday storage of trains between the morning and evening peak periods.

The Harold Interlocking is an approximately 1.5-mile-long segment of tracks and associated switches and crossovers that runs through the SSY complex. This interlocking allows connections for: East River tunnel tracks; LIRR's Main Line and Port Washington Branch tracks; Amtrak's Northeast Corridor tracks servicing the New York-Boston route; and loop tracks leading into and out of the Amtrak's SSY and LIRR's Existing Rail Yard. The extensive Sunnyside rail complex, including the storage yards, associated buildings, and Harold Interlocking, is a self-contained facility that is separate from and substantially below the grade of the surrounding neighborhoods. Adjacent to SSY on the north is a separate, smaller train yard owned by Long Island Railroad (LIRR). This yard is known as LIRR's Existing Rail Yard and was previously referred to as Yard A.

In accordance with regulations governing Inactive Hazardous Waste Disposal Sites (Per 6 NYCRR 375-1.2(e)(2)(1)(a)), the project has been designed and will be constructed so as not to interfere significantly with any proposed or ongoing program to remediate conditions in SSY.

SSY's status as a Class II Inactive Hazardous Waste Site requires the preparation of a CAMP to be submitted and accepted by the NYSDEC a in compliance with the NYSDEC Draft DER-10 Technical Guidance for Site Investigation and Remediation (December 2002) Appendix 1A. Although the subject site is LIRR's Existing Rail Yard, rather than SSY, as a supplement to the Environmental Compliance Plan by AKRF, dated January 2006, this CAMP has been developed to address potential particulate matter less than 10 micrometers in size (PM_{10}) that may be released during construction activities. In addition, community air monitoring has been requested to monitor the stockpile and staging area behind the Outward Bound building at 29-46 Northern Boulevard.

1.2 Project Purpose and Objectives

The principal purpose of the CAMP is to monitor air quality along the site perimeter and in various locations in the surrounding community, including the Sunnyside Gardens Historic Gardens, Outward Bound building, the playground on the corner of Skillman and 43rd Street, during the site development. The CAMP will assess whether construction activities are resulting in unacceptable levels of (potentially contaminated) airborne dust. This project will include monitoring typically conducted for environmental remediation projects including air monitoring

for particulate matter/dust, laboratory chemical analysis for constituents of concern, observations for visible emissions, and documenting the contractor's work practices.

The principal objectives of the program are as follows:

- Monitor dust at various stations to determine whether dust associated with the construction/stockpiling activities are maintained below action levels.
- Assess actual contaminant concentrations in airborne particulates.
- In the event that dust levels exceed action levels, construction personnel will be immediately notified so that all necessary corrective actions can be taken.
- Adjust location of stations based upon construction/stockpile locations and wind direction when necessary.

1.3 Operations to be Monitored

The construction actions to be performed consist of:

- General earthwork during construction of the site.
- Open-cut tunnel excavation and tunnel construction by TBM.
- Construction of retaining walls and other structures associated with new track installation.
- Construction of ancillary facilities to support the new tunnel operation

2.0 AIR MONITORING PROCEDURES

Air monitoring stations will be established in perimeter and neighborhood locations, depending on the location(s) of ground intrusive activities and stockpiles. The locations may be adjusted based on wind direction to established upwind and downwind locations. A minimum of four (4) air monitoring locations will be used. Air monitoring will be accomplished with a real-time monitor (DustTrak) using one roving person to obtain 15-minute average PM_{10} levels at each location. To the extent that exceedances routinely occur, additional monitoring equipment/locations and/or collection of samples for laboratory analysis may be required. If collection of samples for laboratory analysis is performed dust samples will be analyzed for contaminants of concern in SSY, which include those related to fuel oil, PAHs, PCBs and lead. AKRF personnel would train MTA CC personnel to conduct this sampling.

The proposed air monitoring activities include real-time monitoring for particulates based on typical requirements for monitoring soil remediation sites. The site-specific action levels indicated herein trigger responses at various levels including increased monitoring, corrective actions to abate emissions, and/or work shutdown. Table 1 summarizes dust action levels and appropriate actions. As a supplement to Table 1, a flow chart summarizing action levels/actions provided on Figure 3.

2.1 Wind Meter

An on-site wind sock and meter will be utilized to determine upwind and downwind sample locations for the perimeter air monitoring. The wind sock and meter will be mounted on a portable meteorological tower set at a height of approximately 10 feet above grade. The wind speed data will be continuously recorded on a PC data logging system. Logged data will also be used to determine whether there is a correlation between wind speed and elevated particulate concentrations at the site perimeter.

2.2 Monitoring of Particulate (Dust)

Particulate (dust) concentrations will be monitored at the perimeter stations. The particulate monitoring will be performed using equipment capable of averaging over a period of 15 minutes (or less) for comparison to the airborne particulate action level established below. In addition, fugitive dust migration will be visually assessed during all work activities.

The primary standards for PM_{10} are 150 micrograms per cubic meter ($\mu g/m^3$) over a 24 hour averaging time and 50 $\mu g/m^3$ over an annual averaging time. Both of these standards are averaged arithmetically. The action level will be established at a total of 150 $\mu g/m^3$ above background upwind conditions, over the 15-minute averaging period. While conservative, this short-term interval will provide a real-time assessment of on-site air quality to assure both health and safety.

If the 15 minute average concentration is greater than 100 $\mu g/m^3$ above background upwind conditions, but less than 150 $\mu g/m^3$, additional dust suppression techniques will be implemented to reduce the generation of fugitive dust and corrective action taken to protect site personnel and reduce the potential for contaminant migration. Dust suppression may include the application of dust/erosion control agents to unpaved surfaces as well as the covering or watering down of piles of soil and aggregate that could cause fugitive dust generation through wind erosion. If the dust suppression measures being utilized at the site do not lower particulates to an acceptable level (i.e., below 150 $\mu g/m^3$ and no visible dust) from the construction/stockpiling areas and haul roads, work will be suspended until appropriate corrective measures can be implemented to remedy the situation.

2.3 Confirmatory Air Sampling

Confirmatory laboratory analysis will be conducted if levels of PM_{10} exceed the 150 $\mu g/m^3$ action level. Samples would be analyzed for contaminants of concern in SSY, which include those related to fuel oil, PAHs, PCBs and lead. Samples would be analyzed for PCBs, TPH (diesel and fuel oil), PAHs (by Method NIOSH 5506) with collection using an Airmetrics MiniVol Portable Air Sampler. Samples would be collected for lead (by Method NIOSH 7082) using a sampling pump (1 to 4 liters per minute) with flexible connecting tubing in a cassette filter holder. AKRF personnel would train MTA CC personnel to conduct this sampling.

The samples would be analyzed by a New York State Department of Health-certified analytical laboratory demonstrating proficiency for the specific methods. Confirmatory air sample analysis results will be received within approximately one to two weeks of the laboratory's receipt of the sample.

3.0 AIR MONITORING RECORDKEEPING AND OBSERVATIONS

All air-monitoring data will be logged in a dedicated log book. Field log sheets may also be utilized to record data from each of the stations and document observations as part of the walk-around air monitoring. Documentation shall be made clear and concise, and will provide the data, time of entry, location, personnel, weather conditions, and background concentrations for each monitoring station. Documentation will also include all observational data that has potential for affecting results, such as potential off-site interferences, on-site public interferences, damage to instruments, site equipment problems, or weather related interferences.

All pages will be numbered and initialed in ink. The last entry page for the shift or day that has blank space left at the bottom will have a line drawn diagonally across it and signed at the bottom of the page. All corrections must be made with a single line, initialed, and dated.

Monthly and daily wind data will be available for use on the Site as a reference for assessing the frequency of available wind directions. Instrumentation will also be used at the Site to determine the wind speed (anemometer) and wind direction (wind sock). These weather data will be obtained using a data logger while work is progressing and documented in the dedicated field log book.

Real time data from dust monitors will be downloaded from the data loggers at the end of each day. A summary report will be prepared following the first month of monitoring, and as necessary thereafter. Fifteen-minute averages from each station and instantaneous readings, if any, used for decision purposes will be recorded. Daily plots of real-time data will be generated.

If an exceedance occurs, MTA CC will prepare an Exceedance Summary Letter, following completion of the exceedance assessment, for submission to the NYSDEC within five working days of the exceedance. This will be a one to two page letter stating the nature of the exceedance, cause(s) of the exceedance and the corrective actions taken.

3.1 Equipment Operational Requirements

The air monitoring equipment will be operated by trained and qualified personnel. Personnel who perform air-monitoring functions described in this section will be experienced in the use of field air monitoring equipment, as well as the air monitoring procedures described above. There will also be appropriate staff for assessing the results of air monitoring and advising field personnel and the construction manager of air quality considerations.

All monitoring equipment will be calibrated on a daily basis in accordance with the manufacturer's operating instructions. A dedicated log book for each monitoring unit will be maintained that details the date, time, calibration gas, or other standard, and name of person performing the calibration.

4.0 DUST CONTROLS

The following section provides a summary of the proposed dust control measures that will be used during the soil disturbance activities associated with the site construction project. Dust control measures to protect air quality will be implemented by Contractors for earthmoving, stockpiling and trucking operations. Additionally, trucking and operation of heavy equipment will occur with consideration of air quality impacts on abutting residents and businesses.

Air quality mitigation measures will be tailored according to the specific work-site conditions and locations along the project alignment. Contractors will implement Best Management Practices and the methods described below:

1. All vehicles transporting soil to/from the work sites will have their loads covered to minimize spillage and fugitive dust.

2. Gravel cover or pavement will be applied to soil (unpaved) surfaces where they will be regularly traveled at egress and ingress routes from/to work sites; wheels will be cleaned as necessary prior to leaving sites to control tracking.

3. Water or a dust/erosion control agent will be applied as necessary by truck to unpaved surfaces used for trucking during dry weather conditions, with adequate frequency to limit the generation of dust from vehicle traffic.

4. All materials deposited on public roadways and sidewalks from construction-related activities will be cleaned up within one day or sooner except in designated lay-down areas. Laborers and/or street-sweeping equipment will be available and used where necessary to clean paved surfaces.

5. All piles of soil and aggregate that could cause fugitive dust generation through wind erosion will be covered with a tarp and watered-down as necessary. Contractors will be responsible for monitoring and controlling dust generation from their specific work areas and materials.

6. All stockpiles of soils designated for reuse will be placed on, and covered with, waterproof material until removed for placement elsewhere.

7. Dust screens will be used as feasible where added dust controls are needed when work abuts sensitive receptors.

8. Contractors will practice the following materials handling methods:

   - Reduce the amount/frequency of material handling operations (i.e. avoid multiple handling of materials).
   - Minimize the frequency of stockpile disturbance and the size of areas disturbed.
   - Reduce material drop height when loading-out to stockpiles and trucks.

9. All vehicles traveling onsite must obey speed limits for safety and to minimize dust generation.

10. Trucks and heavy equipment will not idle for extended periods (e.g., longer than five minutes) adjacent to residential and commercial buildings. Trucking schedules will be established to minimize cues.

11. Established truck routes will be used to minimize air quality impacts to local residents and businesses.

5.0 REFERENCES

1. New York State Department of Environmental Conservation Division of Environmental Remediation. *Draft DER-10 Technical Guidance for Site Investigation and Remediation, Appendix 1A*, December 2002.
2. Final Environmental Impact Statement, MTA / LIRR East Side Access Project Environmental Compliance Plan, AKRF Inc, March 2001.
3. Environmental Analysis of Design Changes in Queens, MTA / LIRR East Side Access Project, AKRF Inc., November 11, 2005.
4. Environmental Compliance Plan, MTA / LIRR East Side Access Project, AKRF Inc., January 2006.

TABLES

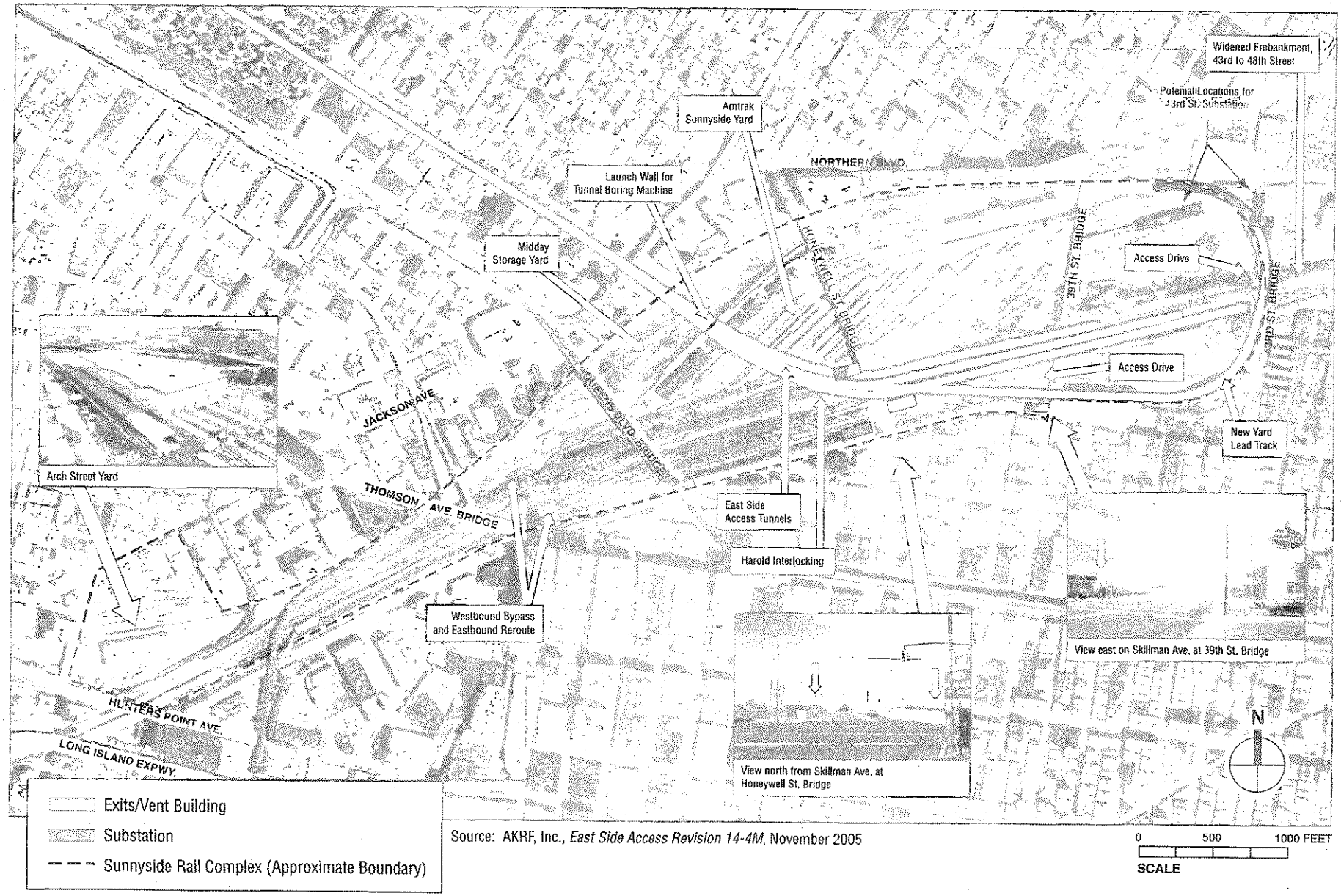
Table 1
Air Monitoring Summary Table for
MTA / LIRR East Side Access

Monitoring Device	Monitoring Frequency	Action Level	Action
PM-10 Aerosol/ Particulate Air Monitoring Unit with Audible Alarm	Continuous during all excavation or dust producing activities for 15 minute average readings Background is the upwind 15 minute average reading prior to the start of work	<100 $\mu g/m^3$ (15 min TWA) above background > 100 $\mu g/m^3$ (15min TWA) above background or visible dust leaving the work area > 150 (15min TWA) above upwind background level	Continue normal operations Implement dust control measures* Halt all dust disturbance work until downwind perimeter is < 150 $\mu g/m^3$ above upwind perimeter.

** See Dust Control in Section 4.0*
TWA - Time Weighted Average
$\mu g/m_3$ – Microgram per Cubic Meter

FIGURES

2.28.08



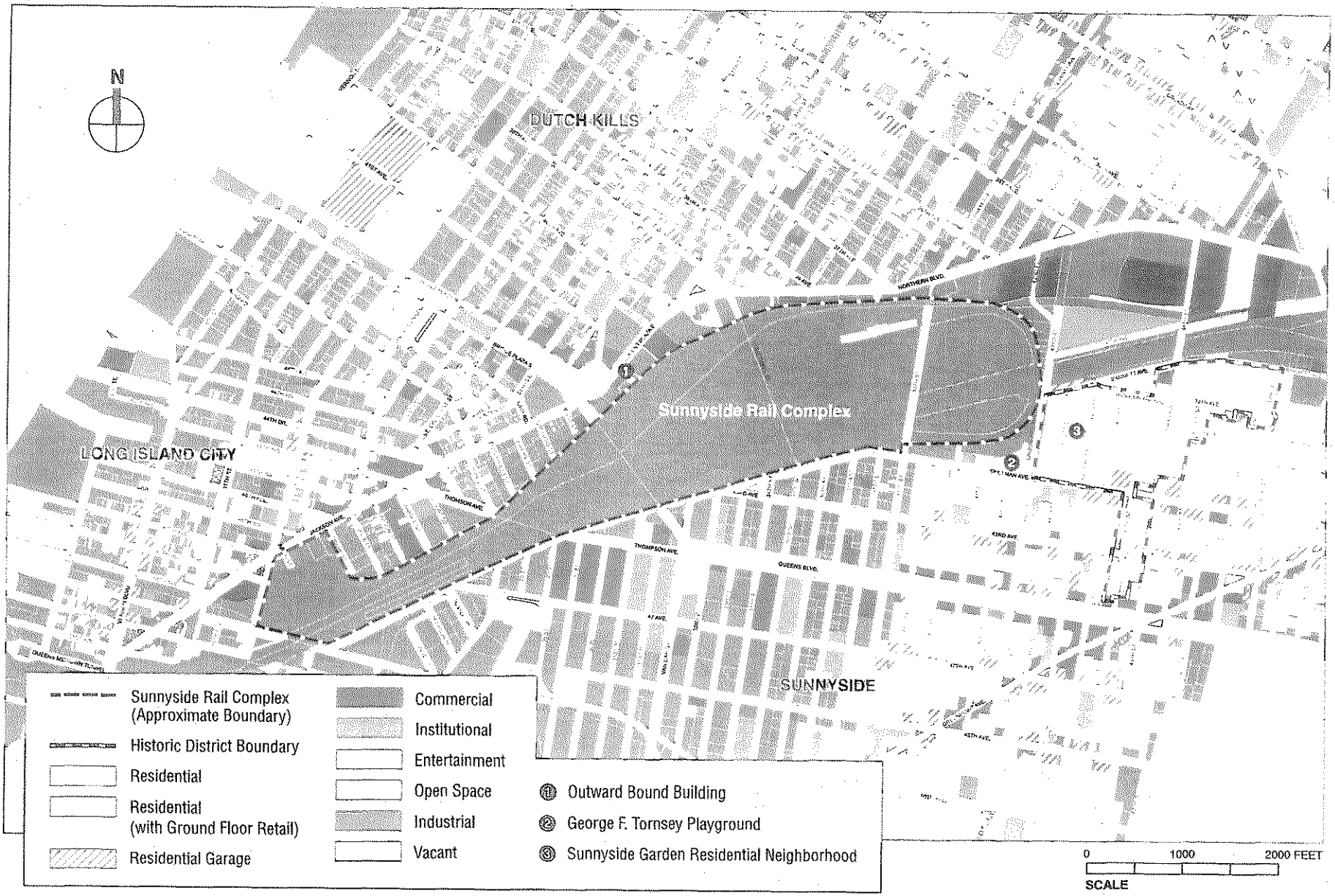
Source: AKRF, Inc., *East Side Access Revision 14-4M*, November 2005

EAST SIDE ACCESS
Air Monitoring Plan (CAMP)

East Side Access Project Elements in Sunnyside Rail Complex, Revision 14-4M

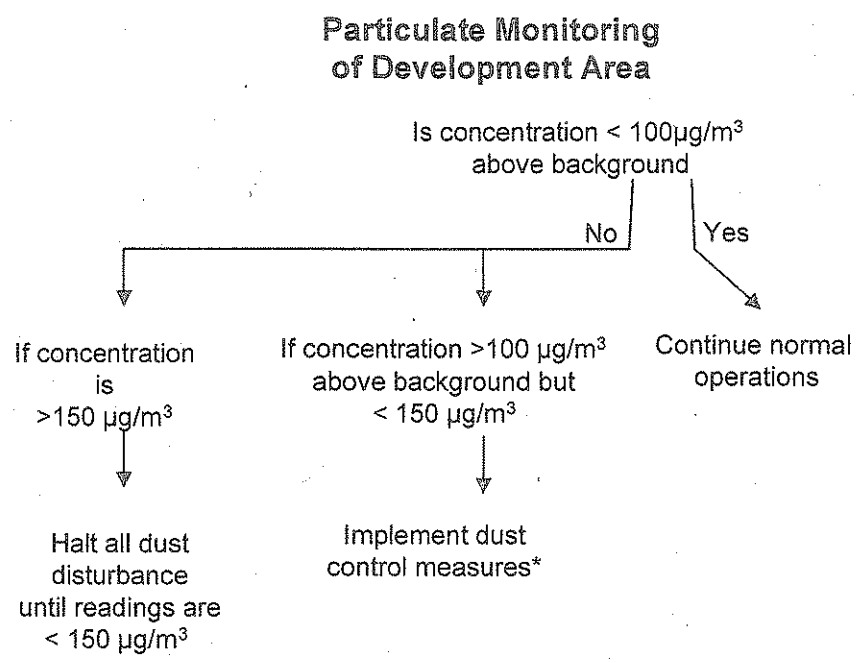
Figure 1

2.25.08



EAST SIDE ACCESS
Air Monitoring Plan (CAMP)

Land Use, Sunnyside Rail Complex and Surrounding Area
Figure 2



*See dust control section (Section 4.0)
particulate readings based on
15 minute time weighted average.

MTA / LIRR EAST SIDE ACCESS
QUEENS, NEW YORK

FLOW CHART FOR
PARTICULATE MONITORING
ACTION LEVELS

AKRF
Environmental Consultants
440 Park Avenue South, New York, New York 10016

DATE 02.11.08
SCALE. NONE
PROJECT No. 30262
FIGURE No. 3

APPENDIX E
WASTE MANAGEMENT PLAN
(Including Process for Handling Hot Spots)

Table Of Contents

WASTE MANAGEMENT PLAN
(Including Process for Handling Hot Spots)

Waste Management Plan
(Including Process for Handling Hot Spots)

1.0 Roles and Responsibilities

The Contractor will be responsible for implementing construction methodologies that comply with the Contract documents and Contract specifications. This will insure that all work is performed safely and in compliance with applicable health and safety and contaminant management protocols. East Side Access (ESA) personnel will be present during subsurface construction (e.g., excavation, grading, utility capping, foundation removal, utility relocation) and dewatering activities in order to document the Contractor's procedures and compliance with the Construction Safety and Health Plan and the Safe Work Plan. ESA personnel will inspect soil during excavation, stockpiling, sampling, and characterization; field screen soils (see Section 2.1) and provide daily inspection and weekly reports.

Additionally, ESA personnel will:

- Assist in the maintenance of on-site project records of waste manifests, laboratory analyses, chain-of-custody forms, photo documentation;
- Verify waste transporter permits, licenses, approvals and qualifications; verify disposal facility permits, licenses, approvals and qualifications; and
- Prepare weekly e-mail reports to NYSDEC and NYSDOH during all periods of major invasive activity.

2.0 Soil Management

2.1 Screening Methods

Soil samples for waste characterization will be screened in the field for the presence of VOCs with a photo-ionization detector (PID) and observed for discoloration, staining, odors, product, moisture and lithology. The lithology of the screened sample will be classified according to the Unified Soil Classification System (USCS).

Should sub-slab soil samples be required, concrete cores will be advanced prior to soil sampling. Information concerning concrete slab construction, such as slab thickness, location of structural roofings and the presence of rebar will be obtained prior to coring, if available from facility drawings or interviews with facility personnel. Depending on the estimated slab thickness, coring will be completed using a diamond-tipped core bit and drill press assembly. Water will be applied to the corehole to prevent dust generation. This water will be contained and collected to avoid disrupting site operations. Following soil sampling, the concrete corehole will be filled with concrete.

ESA Project Procedures and Contract Documents include additional requirements for this section.

2.2 Stockpile Management

Materials may be pre-classified by in-situ sampling. If not pre-characterized, excavated material will be sampled, classified and segregated by the Contractor into the stockpile classes that are presented in Table 1. These classes were confirmed through soil characterization sampling procedures and sampling results as described in the Findings Reports for the Environmental Site Investigations (ESI) and Supplemental ESIs of the Queens Alignment.

Erosion and sedimentation controls for all stockpile classes will provide temporary and permanent structural facilities and vegetative practices that will control erosion and sedimentation processes. Structural practices will be used to divert flows from exposed soils, store flows or otherwise limit runoff and the discharge of pollutants from exposed areas of the Site. Such measures may include the use of: silt fences, earth dikes, drainage swales, sediment traps, check dams, subsurface drains, pipe slope drains, level spreaders, storm drain inlet protection, rock outlet protection, reinforced soil retaining systems, gabions, and temporary sediment basins.

Vegetative stabilization practices during construction will consist of one or several of the following methods: temporary seeding, mulching, geotextile, sod stabilization, vegetative buffer strips, protection of trees, and the preservation of mature vegetation.

Table 1 - Stockpile Classes

Name	Definition
Hazardous Material	Material from areas where analytical results exceed RCRA and/or TSCA hazardous waste regulatory levels for at least one target compound, as defined by 40 CFR 261, 40 CFR Part 761 and 6 NYCRR Part 371.
Non-Hazardous Non-Petroleum Contaminated Materials (Including SSSAL Class)	Material, from areas where analytical results are below hazardous waste regulatory levels, but exceed Site Specific Soil Action Levels (SSSAL) established by the NYSDEC for Sunnyside Yard for total cPAHs, total PCBs, total lead, VOCs, total VOCs and total SVOCs.
Non-Hazardous Non-Petroleum Contaminated Materials (Excluding SSSAL Class)	Material from areas where the analytical results exceed Recommended Soil Cleanup Objectives (RSCOs) in NYSDEC TAGM No. 4046, NYSDEC Consolidation Memo and 6 NYCRR Part 375 Soil Cleanup Objectives (SCOs); and the results are below hazardous regulatory levels and the SSSALs established by the NYSDEC for Sunnyside Yard.
Petroleum Contaminated Material	Material from areas where field operations suggest petroleum contamination or material that exhibits objectionable nuisance characteristics of NYSDEC STARS Memo No. 1.
Non-Contaminated Material	Materials from areas where environmental investigations do not indicate the presence of contamination in the above four categories.
Rock/Construction & Demolition Debris	Rocks that are greater than or equal to 4 inches in diameter, timber ties, or other miscellaneous construction and demolition debris.

A summary of recommended temporary on-site storage, handling and waste characterization protocols is discussed for each of the soil and materials characterization classifications.

2.2.1 Hazardous Materials

No hazardous materials were identified during the extensive environmental investigatory sampling completed for the ESA Queens Alignment within the Sunnyside Yard IHWDS

However, material will be considered a hazardous waste if it exhibits characteristics of ignitability, corrosivity, reactivity, and/or toxicity, as defined by 6 NYCRR Part 371, Section 371.3, and 40 CFR Section 261. Prior to conducting soil stockpile sampling, the TSDF analytical requirements will be obtained by the Contractor. The recommended number of soil stockpile samples to be collected will be dependent upon the TSDF's requirements. Sample collection will be performed in accordance with 6 NYCRR Part 375 (NYSDEC and NYSDOH, 2006) and NYSDEC STARS Memo #1 (NYSDEC, 1992a).

Hazardous materials will be temporarily stockpiled on-site until soil characterization is completed, for a period not to exceed 90 days. Stockpiles are to be of manageable size, designed to protect the excavated soil from precipitation, runoff, and erosion. The stockpile containment system will be designed to protect the underlying and surrounding areas from the release of hazardous soils. The stockpiled material will be placed in a secure storage location identified as a temporary hazardous waste storage area. Access to the area will be restricted to authorized personnel only.

Soil storage areas will be designed to prevent leakage from the stockpiled materials from entering surrounding surface soils or waters. Stockpiled areas will be lined and covered with 4-mil. thick impervious, polyethylene sheeting placed over and beneath the soil. The cover system will prevent precipitation from entering the stockpile and will prevent stockpiled materials from being dispersed by wind. Stockpiles will have an impermeable bottom layer with appropriate berms, sumps, or ditches surrounding the stockpile to prevent discharge of water from the stockpile and to prevent surface water runoff from contacting the stockpiles. Any water infiltrating a hazardous soil stockpile area (if any) will be collected and directed into an appropriate water collection and storage system and a treatment or disposal system.

2.2.2 SSSAL Class and Other Non-Hazardous Contaminated Materials

The same stockpile containment system and methods described above for hazardous materials will be used for soils in these classes including, but not limited to, stockpile linings, access restrictions, and collection and treatment of stockpile runoff.

Waste characterization soil samples will be collected from the stockpile based on the solid waste facility's (SWF) analytical requirements. Non-hazardous contaminated soil will remain stockpiled at the Site until it has been approved by MTA/LIRR or its agent for proper transportation and disposal at an off-site authorized SWF in accordance with 6 NYCRR Part 364.

2.2.3 Non-Contaminated Materials

Materials determined to be non-contaminated are exempt under 6 NYCRR Part 360 and 6 NYCRR Part 364 (since it no longer meets the definition of a "solid waste"). Therefore, it may be reused as fill material for the original excavation, placed elsewhere at the Site, reused as highway sub-base material or reused off-site at a pre-approved location, provided it is beneficially used (NYSDEC, 1992a). Geotechnical (physical) considerations may affect determinations for the reuse of excavated material.

If off-site transportation and disposal of the non-contaminated material is necessary due to construction or spatial considerations, then the material will be staged and handled in the same manner as non-hazardous contaminated material.

2.2.4 Rock and Construction Debris

Rock debris will be stored separately on-site and not treated as solid waste. STARS Memo #1 defines rock debris as rocks that are greater than or equal to 4 inches in diameter (NYSDEC, 1992). Rock debris is to be separated from packed-on soil that could be contaminated. Rock debris is to be disposed as construction and demolition debris, not as solid waste. If rock debris cannot be separated from packed-on soil that is contaminated, it will be handled as a solid waste in accordance with 6 NYCRR Part 360 and/or Part 364 requirements.

Timber ties are within the construction and demolition (C&D) definition as per NYSDEC Division of Solid Waste Technical and Administrative Guidance Memorandum (TAGM; SW-89-2002; December 26, 1989). Timber ties to be removed will be segregated from excavated soils and ballast. If storage of timber ties on-site is necessary prior to disposal, storage areas will be

designed to prevent contaminants from entering surrounding soils or waters. Timber tie storage areas will be covered to prevent precipitation from entering the tie stockpile. Timber tie storage areas will have an impermeable bottom layer to prevent infiltration. A drainage system will be used to collect accumulated liquids from the timber tie storage area prior to transfer to an appropriate water collection, storage, and/or treatment system.

2.2.5 Other Materials

Any material classified as universal waste, will be managed according to the requirements established in 6 NYCRR 374-3, "Standards for Universal Wastes" where applicable.

2.3 Soil Handling and Materials Transport Off-Site

After proper waste identification and classification, appropriate off-site transportation and disposal will be implemented. Devices, containers, and other transportation-related vehicles utilized for the transport of non-hazardous and hazardous soil and materials will have current registrations approved by NYSDEC as required by Federal and New York State regulations under 40 CFR Part 263, 6 NYCRR Part 372, and 6 NYCRR Part 364. If proposed, inter-state transportation and disposal of soil and material will comply with applicable transport regulations of the respective state and local jurisdictions.

The disposal facility will be notified in writing that the material is being transported from a NYSDEC IHWDS. This notification letter, along with subsequent responses, will be maintained in the Project files.

All loaded vehicles leaving the Site, regardless of the classification of material they are carrying, will be tarped, securely covered, manifested, and placarded in accordance with appropriate federal, state, local, and NYSDOT requirements (and all other applicable transportation requirements). Trucks loaded with Hazardous material or Non-hazardous/Non-petroleum contaminated SSAAL Class material will also have their truck beds covered with a protective liner and will be tightly covered.

Prior to leaving the site, all vehicles will have their tires brushed or washed. Tires will only be cleaned in a designated cleaning area. Dirt and rinse water from vehicles that have come in

contact with hazardous and non-hazardous/non-petroleum contaminated material (SSSAL Class), will be collected, analyzed and appropriately disposed of off-site. All egress points for truck and equipment transport from the Site will be clean of dirt and other materials derived from the Site during remediation and development activities.

Locations where vehicles enter or exit the Site will be inspected daily for evidence of off-Site sediment tracking. Cleaning of the adjacent streets will be performed as needed to maintain a clean condition with respect to Site-derived materials.

Off-site backfill material will only be used in the unlikely event that on-site sources are exhausted. This will only be allowed when off-site material meets criteria as specified in the Contract Documents, off-site material is deemed not contaminated or hazardous, and NYSDEC approval is obtained.

2.3.1 Handling and Transport of Hazardous Materials

No hazardous materials were identified during the extensive environmental investigatory sampling completed for the ESA Queens Alignment within the Sunnyside Yard IHWDS

If the stockpiled material is classified as hazardous (i.e., if the regulatory levels are exceeded as per 40 CFR Part 261, 40 CFR 761 or 6 NYCRR Part 371), it will not be re-used on Site, but will be properly transported and disposed off-site in accordance with applicable state and federal regulations. The NYSDEC will be notified and the material will be transported off-site to a permitted TSDF within 90 days (6 NYCRR Part 372.2). No excavated materials will be removed from the Rail Yard unless authorized by MTA/LIRR or its agent. Characterization, storage, transport, and disposal methods will comply with all relevant codes, rules and regulations provided in 6 NYCRR Parts 371, 372, 373 and 375.

Classified waste containers will be prominently labeled "Hazardous Waste." A hazardous waste manifest system will be followed to track the off-site shipments of waste as directed by 40 CFR Part 262 Subpart B. All manifests will include the MTA/LIRR name and address, the name and address of the transporter with EPA identification number, proper USDOT waste shipping name, waste volume or weight and the name and address of the TSDF with EPA identification number, and the appropriate RCRA hazardous waste generator number.

For any hazardous waste identified at the Site, MTA/LIRR will obtain the appropriate RCRA

hazardous waste generator identification number. If a hazardous waste generator identification number does not exist for the site, then a new number will be obtained by the MTA/LIRR from the U.S. EPA. The generator identification number will be used to properly document the transportation and disposal of hazardous waste produced within the boundaries of the Site.

Transporters of hazardous waste are regulated under RCRA and the Hazardous Material Transportation Act, which is administered by the United States Department of Transportation (USDOT). Transporters will obtain an EPA Identification Number, comply with the manifest system for shipments of hazardous waste, retain copies of manifests for a period of three years from the date waste shipments were accepted for transport, and respond to transport related spills of hazardous waste from the Site.

Any residual wastes resulting from treatment activities including but not limited to spent carbon, filters, and sludge will be classified and, if required, handled as hazardous waste and transported and disposed off-site according to the New York State Regulations – 6 NYCRR Parts 371, 372, 373 and 375. Prior to removal and/or replacement of spent carbon containing hazardous components, the Contractor will remove and package the spent carbon in USDOT-approved and properly labeled containers. Spent carbon may be transported to a reactivation facility for recycling by appropriate processes if analytical data warrants, or will be disposed as per applicable regulations.

Requests for waste disposal clearances, approvals, and permits will be made through the following MTA/LIRR Contact:

Mr. Paul Manske
Sr. Director - Occupational and Environmental Safety
Long Island Rail Road
Department of System Safety (3147)
93-59 183rd Street
Hollis, New York 11423
(718) 558-3097

On the date of off-site shipment, the representative of MTA/LIRR will sign the hazardous waste manifests, retain one manifest copy, and the remaining manifest copies will accompany the waste to the TSDF. The representative of MTA/LIRR will track the volume of waste removed

from the Site, the locations from which the waste was removed, and a general description of the type of waste removed. If the MTA/LIRR representative is not from LIRR System Safety, then the manifest copy will be sent to LIRR System Safety to track the come-back copy, pay quarterly taxes and file an annual Hazwaste report with DEC.

Upon delivery of the waste, the operator of the TSDF will sign and date the manifest, and will then retain one final manifest copy, give one copy to the transporter, and send one copy to the representative of MTA/LIRR. Large quantity generators that do not receive a copy of the manifest signed and dated by the operator of the TSDF within 45 days of the date when the waste was shipped will file an exception report with the appropriate regulatory agency, as directed by 40 CFR Part 262.42. The MTA/LIRR representative will provide the East Side Access Environmental Manager (EM) with copies of the hazardous waste manifest documentation including the executed manifests for each shipment of material transported from the Site, the executed manifests signed by the operator of the receiving facility and a certificate of soil disposal for each manifest.

2.3.2 Handling and Transport of SSSAL Class Soil and Other Non-Hazardous Contaminated Materials

The extensive environmental investigatory sampling completed for the ESA Queens Alignment within the Sunnyside Yard IHWDS confirmed the presence of six areas of soil contamination in which the level of contamination exceeds SSSALs.

As indicated above, soil samples will be screened in the field for the presence of volatiles with a photo-ionization detector (PID) and observed for discoloration, staining, odors, product, moisture and lithology. These field indicators will be used to modify the soil class, sampling depth, sampling frequency and sampling analytical parameters, if necessary. All end point sampling shall be biased toward locations and depths of the highest expected contamination.

End point sampling, including bottom and side-wall sampling, will be performed in accordance with the sample frequency requirements described in DER-10 section 5.4(a)(2) (Remedial Action Performance Compliance) (NYSDEC, 2002). Sampling frequency will depend on the size of the excavation. If the excavation is less than 20 feet in perimeter, one bottom sample and one side-wall sample biased in the direction of surface runoff will be collected. If the excavation is 20 to 300 feet in perimeter with a surface spill, one sample from the top of each sidewall for every 30

linear feet of sidewall and one bottom sample for every 900 square feet of bottom area will be collected. If the excavation is 20 to 300 feet in perimeter with a subsurface spill, one sample from the bottom of each sidewall for every 30 linear feet of sidewall and one bottom sample for every 900 square feet of bottom area will be collected. For larger excavations, the sampling frequency may be reduced if approved by the NYSDEC.

The end point soil samples will be analyzed for the pre-identified SSSAL analytical parameters and any other analytical parameter deemed necessary based on field observations. For VOC samples taken within 24 hours of excavation, samples will be taken from the zero to six inch interval of the excavation floor. Samples taken after 24 hours should be taken at six to twelve inches. For excavations open longer than two weeks, VOC sample depth shall be to 24 inches using a coring device. If an UST(s) and contaminated soil are removed during demolition and excavation in this area, post remediation soil sampling will be done in accordance with DER-10 section 5.5 (UST Closure).

The Final Engineering Report will provide a tabular and map summary of all end-point sample results and exceedances of SSSALs.

The following alternatives are available for the proper handling of SSSAL and other Non-Hazardous Contaminated material:

- Disposal at an off-site authorized landfill; or
- With DEC approval, off-site processing and reuse in accordance with 6 NYCRR Part 360.

Although off-site reuse or disposal is the most viable alternative for non-hazardous contaminated material, on-site treatment without the need for a 6 NYCRR Part 360 permit may be possible with DEC approval. Other NYSDEC permits may be required for air emissions and water discharges depending on the soil treatment process utilized. Soil treatment may involve excavation, stockpiling prior to treatment, aboveground treatment, and/or placement of soil back into the excavation for treatment. On-site soil treatment may typically involve soil venting, bioremediation, soil washing, and/or low temperature thermal treatment.

The Contractor will provide the MTA/LIRR representative copies of all manifests, shipping papers, weigh tickets and SWF receipts for each shipment of material from the Site.

2.3.3 Non-Contaminated Material

If off-site transportation and disposal of the non-contaminated material is necessary due to construction or spatial considerations, then this material will be handled in the same manner as non-hazardous contaminated material. Refer to Section 2.3.2.

2.3.4 Rock and Construction Demolition Debris

Rock and construction demolition debris and timber ties will not be re-used on-site. It will be transported as construction and demolition debris, not as a solid waste. If rock debris cannot be separated from packed-on soil that is contaminated, it will be handled as a solid waste in accordance with 6 NYCRR Part 360 and/or Part 364 requirements.

Timber ties are also within the construction and demolition (C&D) definition as per NYSDEC Division of Solid Waste Technical and Administrative Guidance Memorandum (TAGM; SW-89-2002; December 26, 1989). Timber ties to be disposed off-site will be transported to C&D Solid Waste Management Processing facility (as per 6 NYCRR Part 360-12) or C&D Transfer Station (Part 360-11) prior to disposal at a C&D landfill (Part 360-7). Timber ties to be disposed at out-of-state facilities will be characterized in accordance with applicable state and local regulations as well as facility specific permit requirements.

2.4 Off-Site Disposal Facility Requirements

A list of proposed SWFs and TSDFs that the Contractor plans to use will be submitted to MTA/LIRR for their approval. MTA/LIRR's approval of the proposed SWF or TSDF will be contingent upon verifying the facility's environmental compliance by the MTA/LIRR or through its agent. Minimum requirements for all proposed facilities will include a current registration and permit approved by NYSDEC as required under 6 NYCRR Part 360 or 40 CFR Part 264 and 6 NYCRR Part 373/374 for operating such facilities. Facilities outside of New York will comply with the respective state or local jurisdictions in which it operates. Proposed facilities will have current National or State Pollutant Discharge Elimination System (NPDES/SPDES) permits as required. The selected disposal locations will be reported to the NYSDEC Project Manager

upon their request.

Additional LIRR requirements include the following:

- The SWF or TSDF will not have incurred more than five (5) Notice of Violations (NOVs) related to accepting non-permitted haulers or accepting waste containing residual constituents above the facility's permit limits during the last twelve months;
- The SWF or TSDF will not have incurred more than three (3) NOVs related to poor housekeeping during the last twelve months, such as spills of chemicals or petroleum products that contaminate soil and groundwater; and
- The SWF or TSDF will not have incurred an Administrative Consent Order (ACO) related to groundwater remediation.

The total quantity of material expected to be disposed off-Site will be provided to the NYSDEC Project Manager upon their request.

3.0 Fluids Management

All liquids to be removed from the Site, including dewatering fluids, will be handled, transported and disposed in accordance with applicable local, State, and Federal regulations. Liquids discharged into the New York City sewer system will be addressed through approval by NYCDEP.

Groundwater encountered during construction activities will be managed in accordance with applicable Long Island Well Permit (NYSDEC), if necessary, and NYCDEP discharge permit requirements. Treatment of groundwater prior to discharge to the combined or sanitary sewers will be evaluated with consideration of the analytical data. A typical Groundwater Treatment System is shown in schematic form on Figure E1.

Discharge of water generated during construction to surface waters (i.e. a local pond, stream or river) is prohibited without a SPDES permit.

Site-specific fluids management information is available for the ESA contract package CQ028 Open-Cut Excavation (refer to Long Island Well Permit No. 2-6304-00394/00005, effective

5/9/07, expiration 12/31/12). This particular permit applies primarily to the LIRR Existing Rail Yard property just north of the Amtrak Sunnyside Yard IHWDS.

3.1 Demarcation

A demarcation process is not applicable for the ESA Project.

3.2 Stormwater Pollution Prevention

The Contractor will prepare the stormwater construction permit package for NYSDEC, including a Notice of Intent (NOI) for stormwater discharges from construction activities in New York, a stormwater pollution prevention plan (SWPPP) and a Notice of Termination (NOT) to cancel a construction permit. Guidelines for the preparation of the permit documentation is provided in the "Instruction Manual for Stormwater Construction Permit" (NYSDEC, 2004) and the "New York State Stormwater Management Design Manual" (NYSDEC, 2003).

A SWPPP is required by NYSDEC General Stormwater Permit for Construction Activity (permit #GP-02-01) requirements and NYCDEP regulations, Chapter 18, Section 18-39: Storm Water Pollution Prevention Plan and Impervious Surfaces. The main objectives of the SWPPP, which includes an erosion and sediment control plan, are to qualify, quantify, and minimize the effects of stormwater run-off from the Site during excavation and construction activities defined in the contract documents. The management plan will be implemented by installing and maintaining properly designed stormwater management facilities on the Site during construction.

The Contractor will be required to incorporate the New York State Standards and Specifications for Erosion and Sediment Control (NYSDEC, 2005) requirements prior to and during all construction.

The guidelines for the SWPPP are delineated in the NYSDEC's SPDES General Permit for Stormwater Discharges from Construction Activities classified as "Associated with Construction Activity". The SPDES General Permit describes in detail the guidelines for flood control, managing stormwater quality, and controlling the first one-half inch of run-off. The SPDES General Permit also provides a description of temporary and permanent erosion and sedimentation control.

The Contractor will obtain a general permit for stormwater discharges by submitting the NOI to the address given on the NOI form. The permit may authorize all discharges of stormwater from construction activities.

3.3 Flood Control Guidelines

In accordance with the NYSDEC SPDES General Permit, the release of stormwater runoff from development should not exceed pre-development (natural) conditions. Consequently, the Site will generate no greater peak than prior to development for a 2-year, 10-year, and 100-year 24-hour storm considered individually.

3.4 Water Quality Management Guidelines

Water quality management guidelines provided in the New York State Stormwater Management Design Manual will be followed by the Contractor (NYSDEC, 2003).

The guidelines of the NYSDEC SPDES General Permit describe the control of the first ½ inch of runoff from all land surfaces for which the pervious nature has been changed over pre-development (natural) conditions due to land clearing, land grading and construction. The NYSDEC SPDES General Permit identifies, in descending order of preference, the following methods to control the first flush when designing stormwater facilities:

- Infiltration
- Retention
- Extended Detention

Infiltration systems capture the first ½ inch of stormwater runoff on-site by use of vegetated depressions and buffer areas, pervious surfaces, dry wells, infiltration basins, and trenches. This practice eliminates or minimizes direct stormwater discharges to a water body.

Retention is the preferred method of stormwater management when the water table or bedrock is too high for infiltration and soils are poorly drained. The method uses ponds and wetlands constructed in upland areas that provide the storage of collected runoff in a holding area prior to

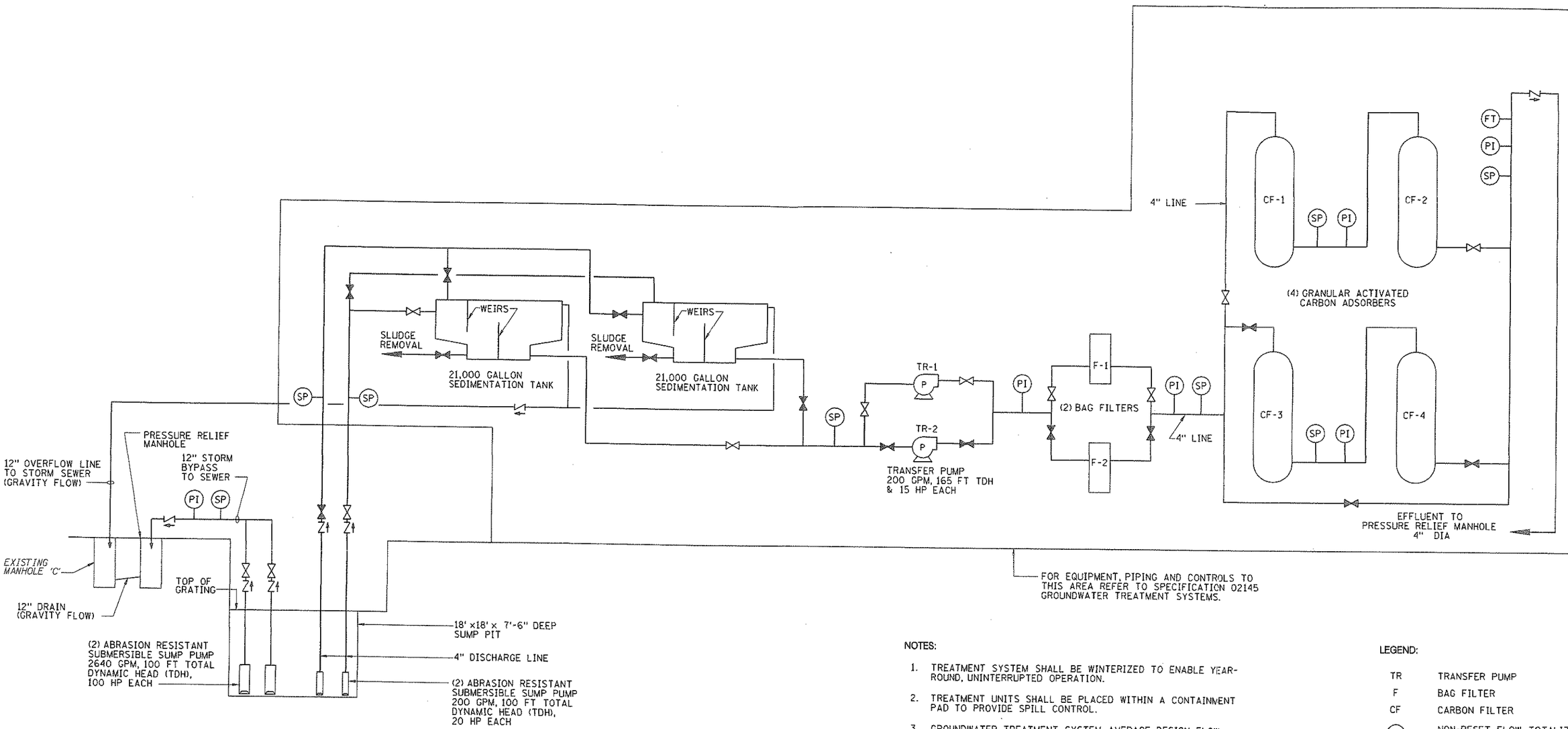
release in a waterway. It improves stormwater quality by gravity settling, naturally occurring chemical flocculation, and biological uptake.

Extended detentions enhance water quality in stormwater runoff by extending the detention time of dry or wet ponds that in effect remove particulate pollutants and controls increases in downstream bank erosion.

3.5 Erosion and Sedimentation Control

According to the NYSDEC SPDES General Permit, the erosion and sedimentation plan should provide temporary and permanent structural facilities and vegetative practices that will control erosion and sedimentation processes. Figure E2 in Appendix E illustrates soil erosion control details. Temporary structural and vegetative measures would be used to stabilize and to control runoff and sediment. Structural practices would be used to divert flows from exposed soils, store flows or otherwise limit runoff and the discharge of pollutants from exposed areas of the Site. Such measures may include the use of: silt fences, earth dikes, drainage swales, sediment traps, check dams, subsurface drains, pipe slope drains, level spreaders, storm drain inlet protection, rock outlet protection, reinforced soil retaining systems, gabions, and temporary sediment basins.

Vegetative stabilization practices during construction would consist of one or several of the following methods: temporary seeding, mulching, geotextile, sod stabilization, vegetative buffer strips, protection of trees, and the preservation of mature vegetation.



SYSTEM DESIGN NOTE:

THE GROUNDWATER TREATMENT SYSTEM DESIGN PROVIDED HEREIN IS A SCHEMATIC DESIGN INTENDED TO PROVIDE CONTRACTOR WITH AN INDUSTRY-ACCEPTED TREATMENT SCHEME TO ADDRESS SITE-SPECIFIC CONTAMINATED GROUNDWATER. THIS REFERENCE DESIGN IS NOT INTENDED TO BE THE CONTRACTOR'S FINAL DESIGN AND DOES NOT RELIEVE CONTRACTOR OF ITS CONTRACTUAL OBLIGATIONS FOR TREATMENT SYSTEM DESIGN AND SATISFACTORY OPERATION AND EFFLUENT QUALITY. REGARDLESS OF WHETHER CONTRACTOR EMPLOYS OR MODIFIES THE REFERENCE TREATMENT DESIGN SCHEME, CONTRACTOR IS REQUIRED TO PREPARE SCHEMATIC DIAGRAMS AND DESIGN CALCULATIONS TO DEMONSTRATE ADEQUACY OF THE PROPOSED TREATMENT SYSTEM BASED ON SITE-SPECIFIC CONDITIONS AT THE TIME OF CONSTRUCTION.

NOTES:

1. TREATMENT SYSTEM SHALL BE WINTERIZED TO ENABLE YEAR-ROUND, UNINTERRUPTED OPERATION.
2. TREATMENT UNITS SHALL BE PLACED WITHIN A CONTAINMENT PAD TO PROVIDE SPILL CONTROL.
3. GROUNDWATER TREATMENT SYSTEM AVERAGE DESIGN FLOW RATE = 200 GPM.
4. STORM BYPASS SYSTEM FLOW RATE = 2,640 GPM.
5. ALL EXPOSED PIPES TO BE HEAT TRACED AND INSULATED.
6. FOR TREATMENT SYSTEM FACILITY REQUIREMENTS, SEE SPECIFICATION 02145.
7. OUTLET FROM SEDIMENTATION TANKS SHALL BE SUCH THAT PUMP PRIMING IS NOT REQUIRED AND NET POSITIVE SUCTION HEAD (NPSH) REQUIREMENTS FOR THE PUMP ARE MET.
8. A pH ADJUSTMENT SYSTEM IS NOT SHOWN. HOWEVER THE CONTRACTOR MAY BE REQUIRED TO SUPPLY A pH ADJUSTMENT SYSTEM AS PER NYCDEP DISCHARGE REQUIREMENTS.

LEGEND:

TR	TRANSFER PUMP
F	BAG FILTER
CF	CARBON FILTER
(FT)	NON-RESET FLOW TOTALIZER WITH FLOWRATE INDICATOR
(SP)	SAMPLING PORT
(PI)	PRESSURE INDICATOR
	CLOSED VALVE
	OPEN VALVE
	CHECK VALVE

$PRFNAME$ $TBLNAME$ $TIME$ $DATE$ $DGNNAME$

Metropolitan Transportation Authority
Capital Construction

Long Island Rail Road
East Side Access

GROUNDWATER TREATMENT SYSTEM SCHEMATIC
FIGURE E-1

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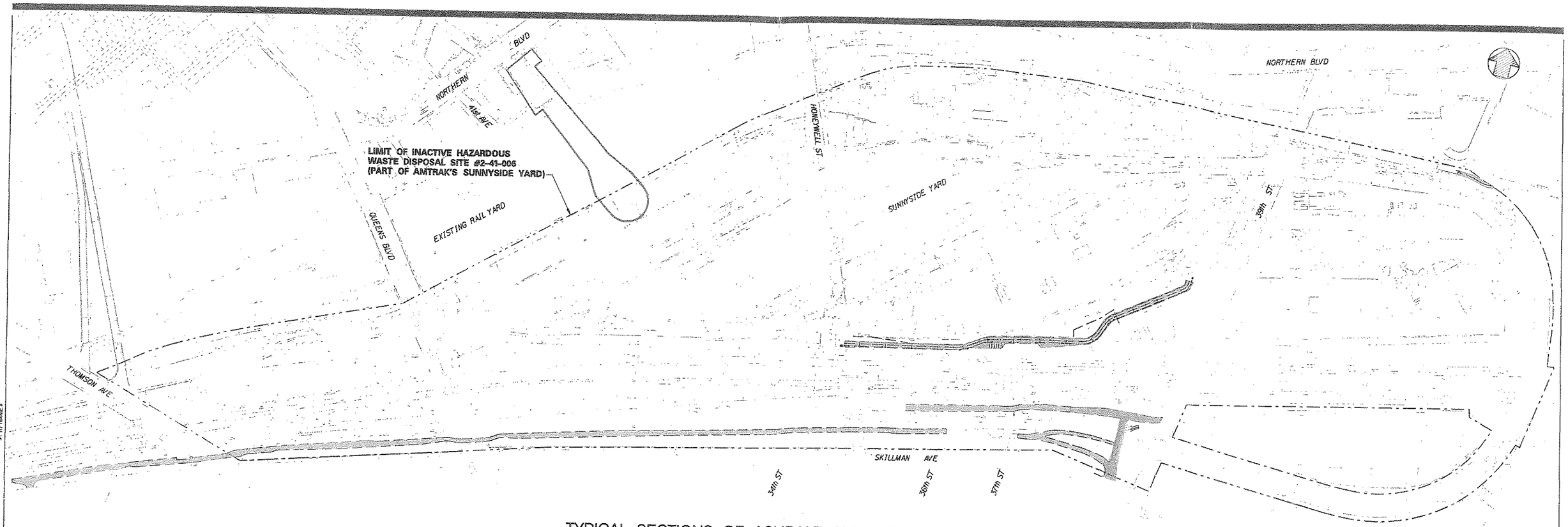
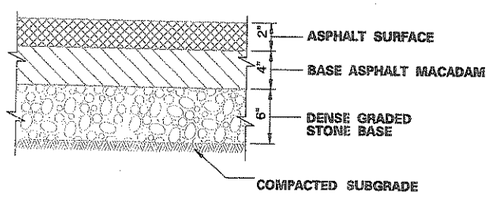
APPENDIX F

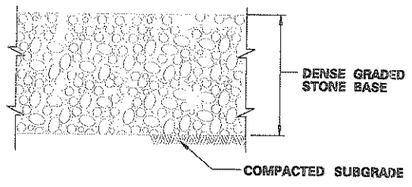
PROPOSED ACCESS ROADS ON SUNNYSIDE YARD



TYPICAL SECTIONS OF ASHPALT AND CRUSHED STONE PAVEMENT



ASPHALT ROADWAY PAVEMENT



CRUSHED STONE

LEGEND

CRUSHED STONE

ASPHALT ROADWAY PAVEMENT

$PREFNAMES
$TBLNAMES
$TIMES
$DATES
$DGNNAMES

Metropolitan Transportation Authority
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APPENDIX F
DESIGN DETAILS FOR ACCESS ROADS AND SITE PLAN

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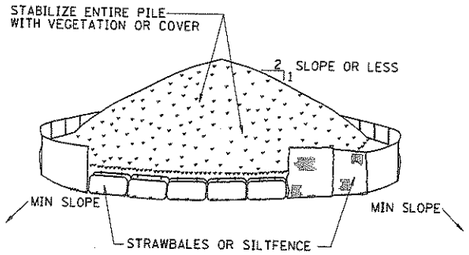
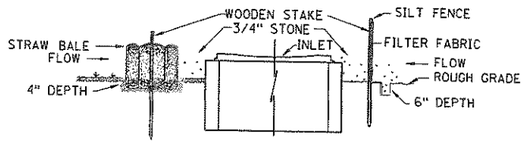


1. AREA CHOSEN FOR STOCKPILING OPERATIONS SHALL BE DRY AND STABLE.
2. MAXIMUM SLOPE OF STOCKPILE SHALL BE 1:2
3. UPON COMPLETION OF SOIL STOCKPILING, EACH PILE SHALL BE SURROUNDED WITH EITHER SILT FENCING OR STRAWBALES, THEN STABILIZED WITH VEGETATION OR COVERED.
4. FOR HAZARDOUS MATERIALS, NON-HAZARDOUS, NON-PETROLEUM CONTAMINATED MATERIALS AND PETROLEUM CONTAMINATED MATERIALS LINE AND COVER WITH 4-MIL POLYETHYLENE SHEETING.

SOIL STOCKPILING



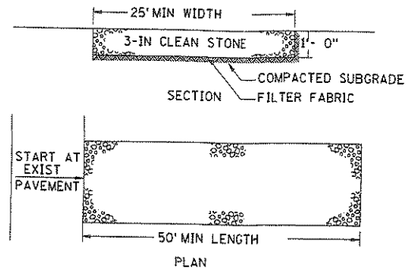
INLET PROTECTION

SILT FENCE INSTALLATION NOTES:

1. EXCAVATE A 6 INCH BY 6 INCH TRENCH, OFFSET APPROXIMATELY 2 FEET FROM THE INLET PERIMETER.
2. UNROLL A SECTION AT A TIME AND POSITION THE POSTS AGAINST THE BACK (DOWNSTREAM) WALL OF THE TRENCH (NET SIDE AWAY FROM DIRECTION OF FLOW).
3. DRIVE THE POST INTO THE GROUND UNTIL THE NETTING IS APPROXIMATELY 2 INCHES FROM THE TRENCH BOTTOM.
4. LAY THE TOE-IN FLAP OF FABRIC ONTO THE UNDISTURBED BOTTOM OF THE TRENCH, BACKFILL THE TRENCH AND TAMP THE SOIL STEEPER SLOPES REQUIRE AN INTERCEPT TRENCH.
5. JOIN SECTIONS AS SHOWN ABOVE. SUPPLEMENT WITH GRAVEL, PILED AGAINST THE FENCE.

STRAWBALES INSTALLATION NOTES:

1. PLACE BALES OF STRAW WITH ENDS TIGHTLY ABUTTING OTHER BALES TO SURROUND THE INLET. WHERE SLOPE AND SPACE PERMIT, ESTABLISH THE LINE OF BALES 2 TO 10 FEET AWAY FROM THE INLET. ANCHOR BALES IN PLACE BY DRIVING REBARS OR 2" BY 2" STAKES THROUGH THE BALES. SUPPLEMENT WITH GRAVEL, PILED AGAINST THE BALES.
2. SEDIMENT SHALL BE REMOVED AND THE TRAP RESTORED TO ITS ORIGINAL DIMENSIONS WHEN THE SEDIMENT HAS ACCUMULATED TO ½ THE DESIGN DEPTH OF THE TRAP. REMOVED SEDIMENT SHALL BE DEPOSITED IN A SUITABLE AREA AND IN SUCH A MANNER THAT IT WILL NOT ERODE.
3. THE STRUCTURE SHALL BE INSPECTED AFTER EACH RAIN AND REPAIRS MADE AS NEEDED.
4. CONSTRUCTION OPERATIONS SHALL BE CARRIED OUT IN SUCH A MANNER THAT EROSION AND WATER POLLUTION SHALL BE MINIMIZED.
5. THE SEDIMENT TRAP SHALL BE REMOVED AND THE AREA STABILIZED WHEN THE REMAINING DRAINAGE AREA HAS BEEN PROPERLY STABILIZED.



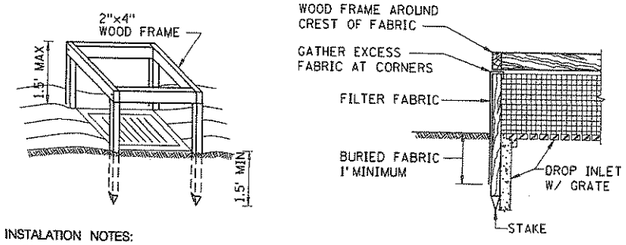
1. STONE SIZE - USE 3-IN STONE OR RECLAIMED OR RECYCLED CONCRETE EQUIVALENT

   LENGTH - AS REQUIRED, BUT NOT LESS THAN 50 FEET.

   THICKNESS - NOT LESS THAN SIX (6) INCHES.
2. WIDTH - 25 FOOT MINIMUM, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCUR.
3. FILTER FABRIC - WILL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACEMENT OF STONE.
4. SURFACE WATER - ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED ACROSS THE ENTRANCE. IF PIPING IS IMPRACTICAL, A MOUNTABLE BERM WITH 5:1 SLOPES WILL BE PERMITTED.
5. MAINTENANCE - THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHT OF WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHT OF WAY MUST BE REMOVED IMMEDIATELY.
6. WASHING - WHEELS SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC RIGHT OF WAY. WHEN WASHING IS REQUIRED IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE AND WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.
7. PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED AFTER EACH RAINFALL EVENT.

STABILIZED CONSTRUCTION ENTRANCE

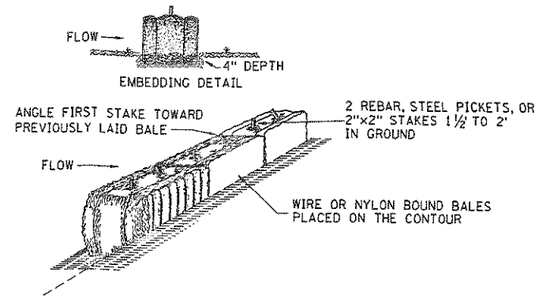
NTS



INSTALATION NOTES:

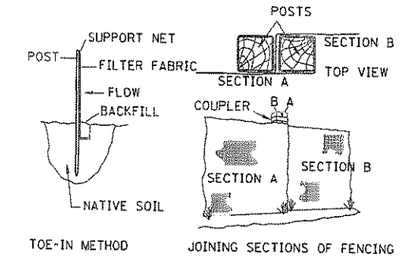
1. FILTER FABRIC SHALL HAVE AN EQUIVALENT OPENING SIZE OF 40-85. BURLAP MAY BE USED FOR SHORT TERM APPLICATIONS.
2. CUT FABRIC FROM A CONTINUOUS ROLL TO ELIMINATE JOINTS. IF JOINTS ARE NEEDED THEY SHALL BE OVERLAPPED TO THE NEXT STAKE.
3. STAKE MATERIAL SHALL BE STANDARD 2"x4" WOOD OR EQUIVALENT METAL WITH A MINIMUM LENGTH OF 3 FEET.
4. SPACE STAKES EVENLY AROUND INLET 3 FEET APART AND DRIVE A MINIMUM 18-INCH DEEP. SPANS GREATER THAN 3 FEET MAY BE BRIDGED WITH THE USE OF WIRE MESH BEHIND THE FILTER FABRIC FOR SUPPORT.
5. FABRIC SHALL BE EMBEDDED 1 FOOT MINIMUM BELOW GROUND AND BACK FILLED. IT SHALL BE SECURELY FASTENED TO THE STAKES AND FRAME.
6. A 2"x4" WOOD FRAME SHALL BE COMPLETED AROUND THE CREST OF THE FABRIC FOR OVER FLOW STABILITY.

FILTER FABRIC DROP INLET PROTECTION



1. BALES SHALL BE PLACED IN A ROW WITH ENDS TIGHTLY ABUTTING THE ADJACENT BALES
2. EACH BALE SHALL BE EMBEDDED IN THE SOIL A MINIMUM OF 4".
3. BALES SHALL BE SECURELY ANCHORED IN PLACE BY STAKES OR REBAR DRIVEN THROUGH THE BALES. THE FIRST STAKE IN EACH BALE SHALL BE ANGLED TOWARD THE PREVIOUSLY LAID BALE TO FORCE BALES TOGETHER.
4. BALES SHALL BE REMOVED WHEN THEY HAVE SERVED THEIR USEFULNESS SO AS NOT TO BLOCK OR IMPEDE STORM FLOW OR DRAINAGE.

STRAWBALE SEDIMENT BARRIER



INSTALATION NOTES:

1. EXCAVATE A 4 INCH BY 4 INCH TRENCH ALONG THE LOWER PERIMETER OF THE SITE.
2. UNROLL A SECTION AT A TIME AND POSITION THE POSTS AGAINST THE BACK (DOWNSTREAM) WALL OF THE TRENCH (NET SIDE AWAY FROM DIRECTION OF FLOW).
3. DRIVE THE POST INTO THE GROUND UNTIL THE NETTING IS APPROXIMATELY 2 INCHES FROM THE TRENCH BOTTOM.
4. LAY THE TOE-IN FLAP OF FABRIC ONTO THE UNDISTURBED BOTTOM OF THE TRENCH, BACKFILL THE TRENCH AND TAMP THE SOIL. STEEPER SLOPES REQUIRE AN INTERCEPT TRENCH.
5. JOIN SECTIONS AS SHOWN ABOVE.

SILT FENCE

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Capital Construction

Long Island Rail Road
East Side Access

SOIL EROSION AND SEDIMENT CONTROL DETAILS
FIGURE E-2

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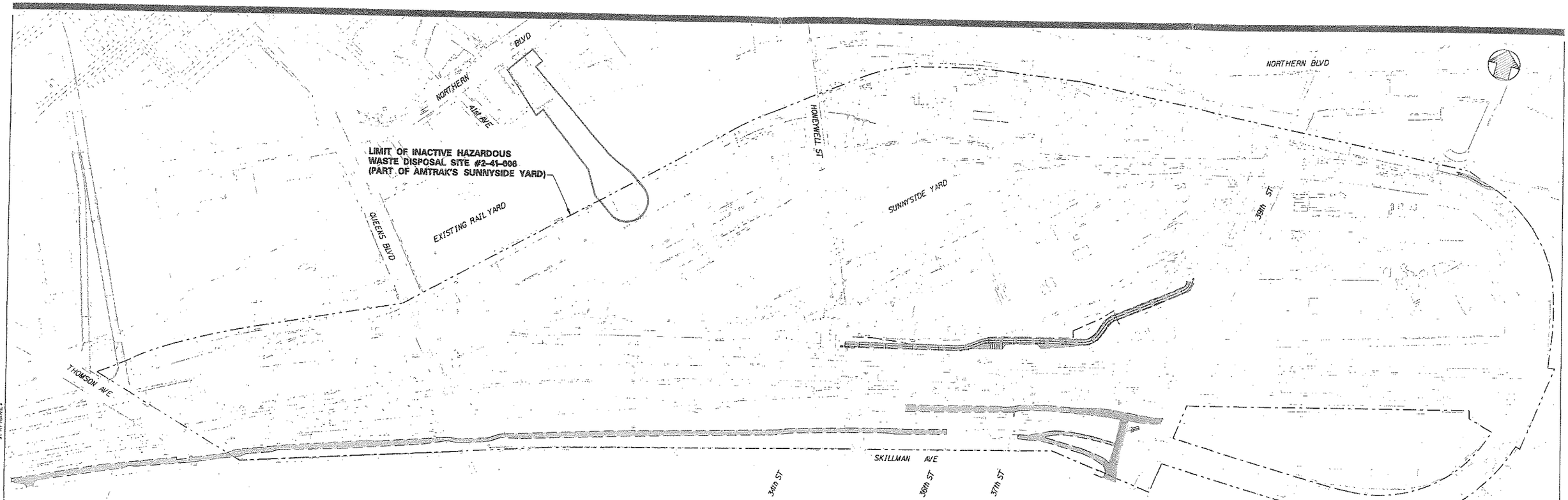
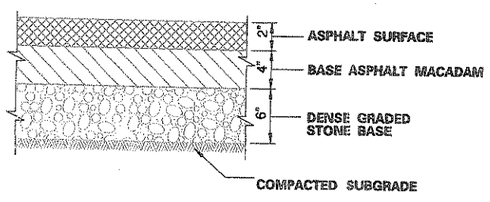
APPENDIX F

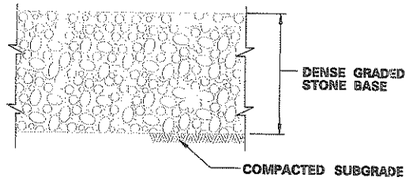
PROPOSED ACCESS ROADS ON SUNNYSIDE YARD



TYPICAL SECTIONS OF ASHPALT AND CRUSHED STONE PAVEMENT



ASPHALT ROADWAY PAVEMENT



CRUSHED STONE

LEGEND

CRUSHED STONE

ASPHALT ROADWAY PAVEMENT

$PRFNAME$
$TBLNAME$
$TIME$
$DATE$
$DGNNAME$

Metropolitan Transportation Authority
Capital Construction

Long Island Rail Road
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APPENDIX F
DESIGN DETAILS FOR ACCESS ROADS AND SITE PLAN

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APPENDIX G

CONTINGENCY PLAN

Contingency Plan

This Contingency Plan describes the procedures to be followed upon discovery of an unknown source of contamination. If underground tanks, drums, stained soils or other previously unidentified contaminant sources are found during construction activities, all work will cease in the area immediately surrounding the affected location. If the situation warrants emergency response for fire or medical assistance, the appropriate notifications will be initiated by the Contractor. The ESA Field Engineer will immediately advise the Remedial Engineer and/or the ESA Environmental Manager of the incident, as observed in the field. The Remedial Engineer or his representative will then notify the MTA/LIRR point-of-contact.

Upon the discovery of either leaking USTs or buried drums, the Contractor will be responsible for stabilizing the release and preventing the spread of further contamination. If Emergency Spill Response is beyond the Contractor's capability or specialized technical expertise is required, a licensed Third Party vendor will be summoned by the Contractor. Third Party response to the Site must be within 3 hours. The Contractor will be responsible for notifying DEC's Spill Hotline of any reportable spill within 2 hours of discovery, obtaining a DEC Spill Number and preparing a spill report, a copy of which will be provided to the Remedial Engineer. The Remedial Engineer or Environmental Manager will notify the DEC Project Engineer overseeing Sunnyside Yard remedial activities.

Work in the immediate area of discovery will be suspended until Notice to Proceed is granted by the New York State Department of Environmental Conservation (DEC). A work plan for drum, underground storage tank (UST), soil or other task specific removals will be developed by the Contractor under the supervision of the MTA and will be approved by the DEC. The work plan will address appropriate methods to establish the safe sampling, characterization, and disposal of any tanks, drums or stained soil encountered during demolition, excavation, and construction at the Site. Work plans will strictly adhere to the Contractor's Construction Safety and Health Plan and the Safe Work Plan.

The affected area will be cordoned off and will remain off-limits to personnel until the potential contaminants have been properly identified and the Site deemed safe for entry. Only Hazwoper qualified personnel will be allowed in the affected area. This precaution will remain in effect until considered no longer necessary by the project Remedial Engineer, the MTA/LIRR and the DEC.

Once the immediate threat to human health and the environment has been stabilized and the Contractor's Work Plan has been approved, remedial activities will proceed as proposed. Work Plans will include but not be limited to the following requirements:

Underground Storage Tanks

Upon receipt of Notice to Proceed from the DEC, the Contractor will immediately commence implementing the approved UST Removal Work Plan. Tank removal activities will be in compliance with 6 NYCRR Parts 612 through 614 for petroleum bulk storage tanks and 6 NYCRR Parts 596 through 599 for chemical bulk storage tanks.

Prior to commencing excavation, an area will be designated for the stockpiling of excavated material. If the fill port or tank vent cannot be found, soil will be removed down to the top surface of the tank, exercising extreme care not to further damage the tank. Excavation by hand may be required. Once the manway or piping have been exposed, the Contractor will sample the tanks contents and determine the size of the tank. If the tank meets DEC's requirements for tank registration, the tank will be promptly registered by the Contractor. Due to the circumstances under which the tank was found, DEC may waive their 30 day advance notice of permanent tank closure.

Identification of unknown or unexpected contaminated media identified by soil screening during invasive site work will be promptly communicated by phone to the DEC Region 2 project manager by the Remedial Engineer

All liquids, sludge and other waste products from the tank(s) and connecting lines will be removed and appropriately disposed in accordance with all state and federal

requirements. The MTA and DEC will have final approval of the disposal facility. The tanks will be rendered free of petroleum vapors and vented to ensure that they remain vapor free.

Prior to excavating the tank for removal and disposal, all piping will be disconnected and removed and manways will be securely fastened.

The tank will be excavated and soil will be stockpiled in designated storage areas. Stockpiles will be managed and disposed of in accordance with Stipulation Agreement Appendix E – Stockpile Management and Soil Handling Plan. Soil samples will be collected in accordance with DEC DER 10 Technical Guidance and analyzed. Soil from underneath the tank and from all four sides will be screened in the field for the presence of VOCs with a photo-ionization detector (PID) and observed for discoloration, staining, odors and product moisture. Once soil has been excavated down to what appears to be clean endpoints, soil samples from the four sidewalls and bottom of the tank will be collected. All soil will be analyzed for full scan parameters, including but not limited to TAL metals, TCL volatiles and semi-volatiles, TCL pesticides and PCBs. Analyses will not be limited to STARS parameters where tanks are identified, without prior approval by DEC.

The tank(s) will be removed in a safe manner and in accordance with all regulations and shoring will be used where necessary. Vehicles used to transport tanks off-site shall utilize maximum legal load limits for transport from the Site to the disposal facility. Upon tank removal and soil disposal, the Contractor will prepare a tank closure report for DEC review and approval, if required

Additional information is provided to the Contractor in Contract Specifications related to tank removal, chemical sampling and analysis, and the excavation, staging, stockpiling, handling, transportation and disposal of soil.

Buried Drums

At the time of discovery of any buried drums, Contractor personnel shall attempt to stabilize any leaking drums with pads, plugs or sorbent material if it is deemed safe to do

so. All ignition sources in the immediate area of the drum(s) will be turned off. Regardless of whether the drums are leaking or not, the Contractor's Hazwoper trained Spill Responders will evaluate the condition of the drum(s), attempt to permanently stop the leaks, evaluate the condition of the drum(s) and look for any markings or labels that may identify the drum(s)'s contents.

Spill Responders will field screen contaminated soil around the drum(s) for the presence of VOCs with a photo-ionization detector (PID) and observe the soil for discoloration, staining, odors and product moisture. If a bung hole is readily accessible and can be safely opened, the contents of the drums will be sampled in accordance with DEC DER 10 Technical Guidance. If observations indicate that soil surrounding the drum may be contaminated, it too will be sampled in accordance with DEC DER 10 Technical Guidance. Soil will be analyzed for full scan parameters, including but not limited to TAL metals, TCL volatiles and semi-volatiles, TCL pesticides and PCBs.

Upon receipt of Notice to Proceed from the DEC, the Contractor will immediately commence implementing the approved Work Plan for Drum Removal. Drums will be excavated by hand, if necessary, to ensure that they are not punctured. The drums will once again be evaluated for structural integrity and any identifying markings or labels. Drums that are severely deteriorated will be over-packed prior to being removed from the excavated area.

Once the drums have been safely excavated and removed, soil underneath and surrounding the drums will be screened for the presence of VOCs with a photo-ionization detector (PID) and observed for discoloration, staining, odors and product moisture. End point samples will be taken in accordance with DEC DER 10 Technical Guidance and soil will be analyzed for full scan parameters, including but not limited to TAL metals, TCL volatiles and semi-volatiles, TCL pesticides and PCBs. In the event that soil observations do not indicate that there was a release, soil samples will be held until DEC advises the MTA on the need for their analysis.

Pending disposal, drums will be stored in an MTA approved Hazmat Storage Container that provides protection from the elements and has adequate secondary containment to retain 10% of the volume of the containers or the volume of the largest container, whichever is greater. If contents of the drums are unknown and have been sent out for analysis, the drums will be labeled as Hazardous Waste, "contents pending analysis." Drums will be disposed at an MTA approved facility, capable of handling their particular waste classification.

Contaminated soil will be stockpiled in an MTA approved, designated area, pending waste characterization. Stockpiles will be managed and disposed of in accordance with Stipulation Agreement Appendix E – Stockpile Management and Soil Handling Plan.

Additional information is provided to the Contractor in Contract Specifications related to chemical storage and handling, sampling and analysis, and the excavation, staging, stockpiling, handling, transportation and disposal of contaminated soil.

Stained or Contaminated Soil

When unanticipated stained or contaminated soil is first observed, work will cease in the immediate area. Utilizing field screening techniques, the Contractor's Spill Team will determine if there is any immediate threat to human health and the environment and will screen for the presence of VOCs with a photo-ionization detector (PID) and observe the soil for discoloration, staining, odors and product moisture.

Upon receipt of Notice to Proceed from the DEC, the Contractor will immediately commence implementing the approved Soil Removal Work Plan. Soil point samples will be taken in accordance with DEC DER 10 Technical Guidance and soil will be analyzed for full scan parameters, including but not limited to TAL metals, TCL volatiles and semi-volatiles, TCL pesticides and PCBs.

Contaminated soil will be stockpiled in an MTA approved, designated area, pending waste characterization. Stockpiles will be managed and disposed of in accordance with

Stipulation Agreement Appendix E – Stockpile Management and Soil Handling Plan. After excavation of the contaminated soil, end point samples will be taken to determine if all contamination has been appropriately removed.

Additional information is provided to the Contractor in Contract Specifications related to soil handling, sampling and analysis, and the excavation, staging, stockpiling, handling, transportation and disposal.

ATTACHMENT 1
ENVIRONMENTAL EMERGENCY CONTACT LIST

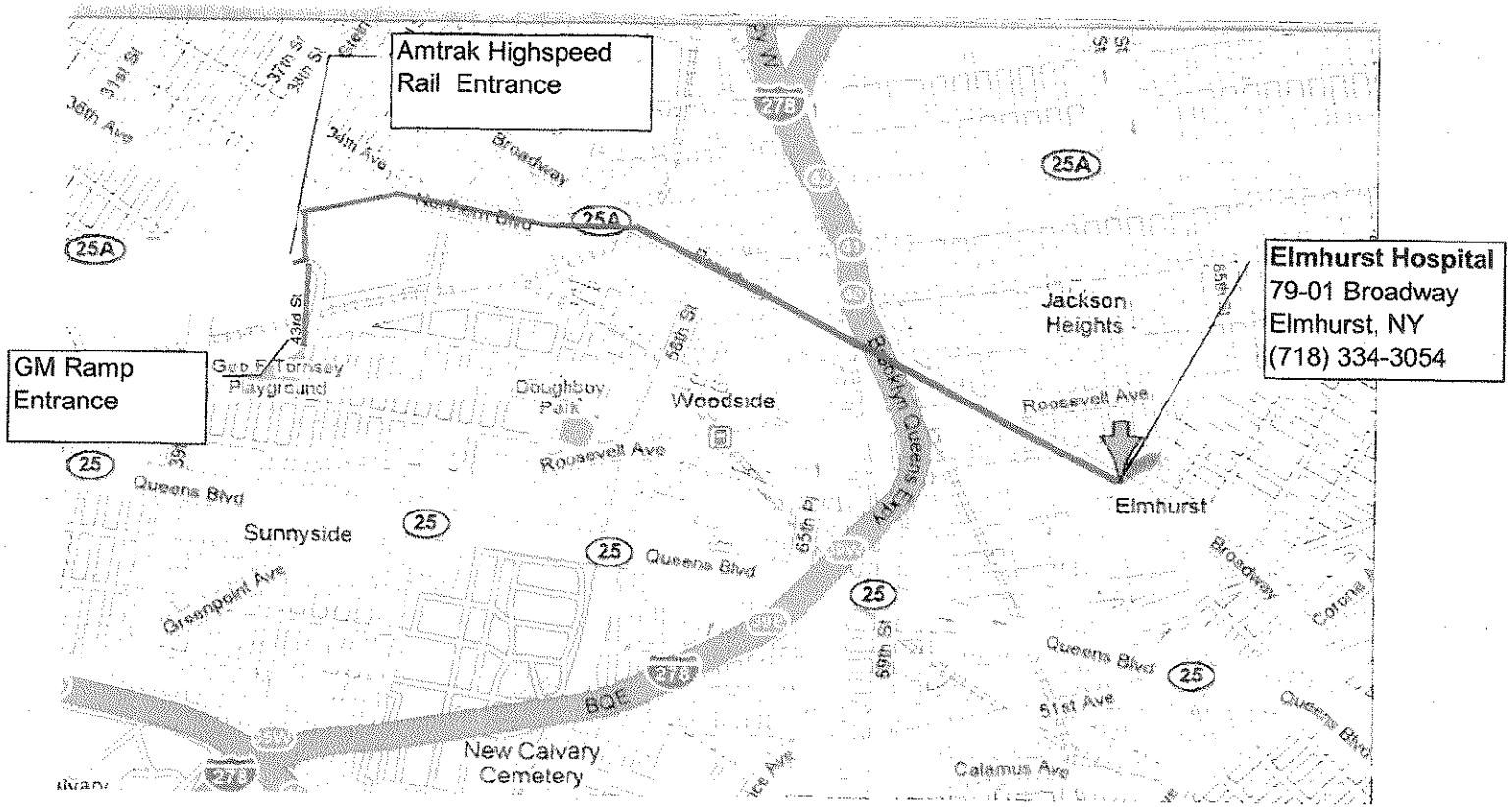
Environmental Emergency Contact List

Medical, Fire, and Police	911
One Call Center	(800) 272-4480 (3 day notice required for utility markout)
Poison Control Center	(800) 222-1222
Pollution Toxic Chemical Oil Spills	(800) 424-8802
NYSDEC Spills Hotline	(800) 457-7362
Garth Lawrence (ESA Environmental Manager)	office: (718) 391-4709 cell: (646) 378-9584
Lew Wunderlich (MTACC Env. Construction Manager)	office: (718) 361-4652 cell: (347) 237-6249
Shaun Bollers (Environmental Engineer NYSDEC)	office: (718) 482-4096

ATTACHMENT 2

HOSPITAL ROUTE

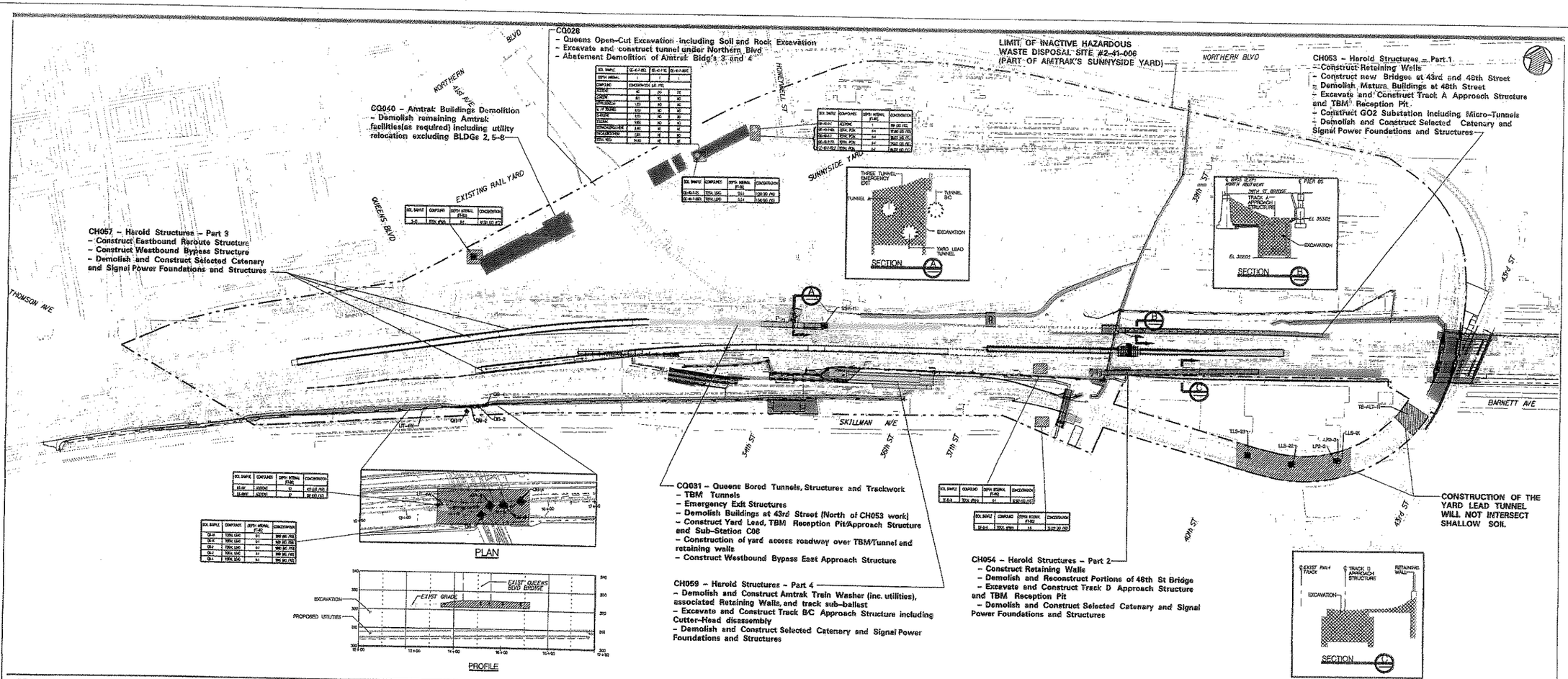
Hospital Route



Exit Site
Left on 43rd Street
Right on Northern Blvd.
Right on Broadway
Turn into **EMERGENCY ENTRANCE**- Elmhurst Hospital

APPENDIX H

SSSAL'S AT SUNNYSIDE YARD IN THE FOOTPRINT OF THE ESA PROJECT



LEGEND

CH053 CQ028
CH054 CQ031
CH057 CQ040
CH059

- LOCATION AND DESIGNATION OF SOIL BORING WITH ONE OR MORE SOIL SAMPLE RESULTS FOR PCBs GREATER THAN THE NYSDEC APPROVED CLEANUP CRITERIA (25,000 UGKG)
- LOCATION AND DESIGNATION OF SOIL BORING WITH ONE OR MORE SOIL SAMPLE RESULTS FOR cPAHs GREATER THAN THE NYSDEC APPROVED CLEANUP CRITERIA (25,000 UGKG)
- LOCATION AND DESIGNATION OF SOIL BORING WITH ONE OR MORE SOIL SAMPLE RESULTS FOR INDIVIDUAL AND TOTAL VOCs GREATER THAN THE NYSDEC APPROVED CLEANUP CRITERIA (10,000 UGKG FOR TOTAL VOCs)
- LOCATION AND DESIGNATION OF SOIL BORING WITH ONE OR MORE SOIL SAMPLE RESULTS FOR TOTAL LEAD GREATER THAN THE NYSDEC APPROVED CLEANUP CRITERIA (1,000 MGKG)

- DATA COLLECTED BY AMTRAK
- DATA COLLECTED BY GEC
- AREAS OF SSSAL's EXCEEDANCES IN SHALLOW SOIL
- CROSS-SECTION EXCAVATION

DL – SAMPLE WAS DILUTED BY THE LABORTORY FOR ANALYSIS
ND – NOT DETECTED
NE – DETECTED, DOES NOT EXCEED SSSAL
RE – SAMPLE WAS REANALYZED BY THE LABORATORY
W – BORING CONVERTED TO MONITORING WELL
FT-BG – FEET BELOW GRADE

MG /KG – MILLIGRAMS PER KILOGRAM
UG /KG – MICROGRAMS PER KILOGRAM
SSSAL – SITE SPECIFIC SOIL ACTION LEVEL
VOCs – VOLATILE ORGANIC COMPOUNDS
PCBs – POLYCHLORINATED BIPHENYLS
cPAHs – CARCINOGENIC POLYCYCLIC AROMATIC HYDROCARBONS

SCALE IN FEET
200' 100' 0 200' 400'

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APPENDIX H
SSSAL's EXCEEDANCES AT SUNNYSIDE YARD IN THE FOOTPRINT OF THE ESA PROJECT

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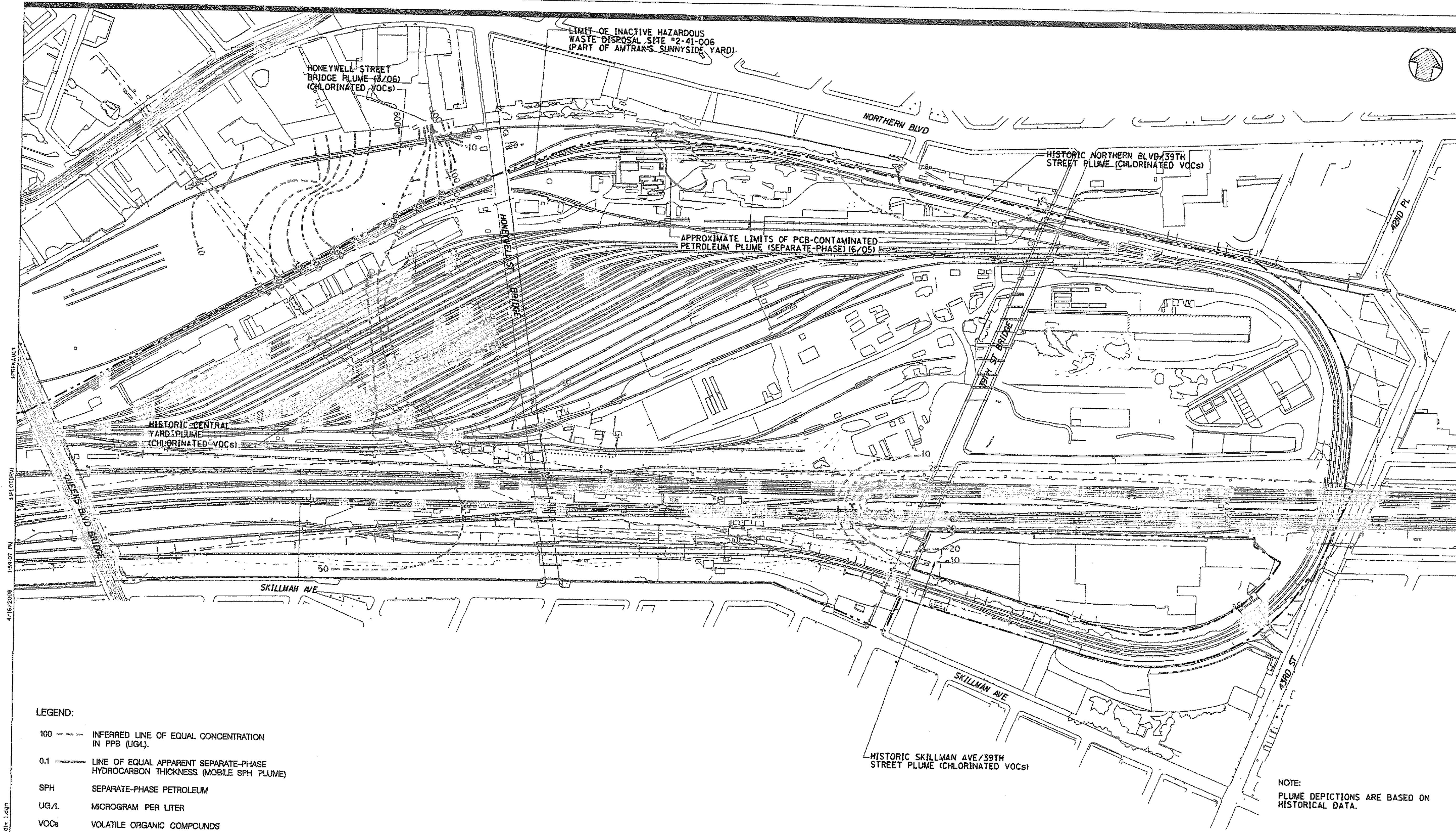
APPENDIX I

GROUNDWATER PLUMES AT SUNNYSIDE YARD



LEGEND:

100	INFERRED LINE OF EQUAL CONCENTRATION IN PPB (UG/L).
0.1	LINE OF EQUAL APPARENT SEPARATE-PHASE HYDROCARBON THICKNESS (MOBILE SPH PLUME)
SPH	SEPARATE-PHASE PETROLEUM
UG/L	MICROGRAM PER LITER
VOCs	VOLATILE ORGANIC COMPOUNDS

NOTE:
PLUME DEPICTIONS ARE BASED ON HISTORICAL DATA.

SCALE IN FEET
300' 0 300' 600'

Metropolitan Transportation Authority
Capital Construction

Long Island Rail Road
East Side Access

APPENDIX I
GROUNDWATER PLUMES

GEC PB STV PARSONS
General Engineering Consultant

PARSONS BRINCKERHOFF
STV INCORPORATED
PARSONS TRANSPORTATION GROUP OF NEW YORK INC.

469 Seventh Avenue • New York, NY • 10018

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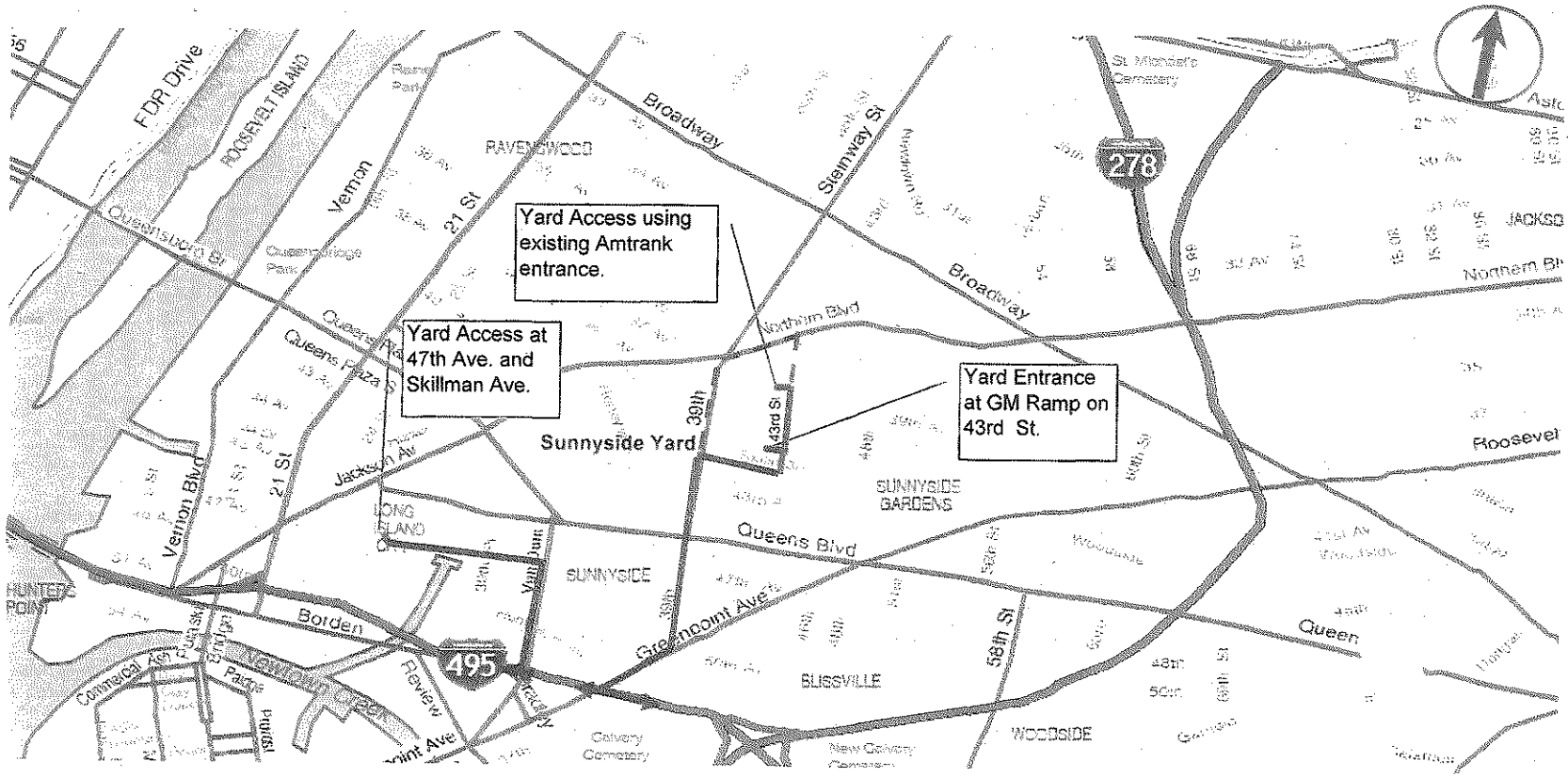
APPENDIX J

TRAFFIC MANAGEMENT PLAN

Traffic Management Plan



Blue Lines (bold) indicate Truck Routes

APPENDIX K

PROFESSIONAL ENGINEER CERTIFICATION

CERTIFICATION

I, Alan Paskoff, P.E., am currently a registered professional engineer licensed by the State of New York. As Chief of Staff of the East Side Access Project, I have direct responsibility for the oversight of implementation of the construction work for the East Side Access Project within the boundaries of Sunnyside Yard (Site No. 241006).

I certify that this Construction Contamination Site Management Plan and Stipulation List (CCSMP) dated February 4, 2009 that was prepared for the Project, has a plan for transport and disposal of all soil, fill, fluids and other material removed from the property, and provide that transport and disposal will be performed in accordance with all Federal, State and local laws and requirements. The CCSMP specifies that all exported material will be taken to facilities licensed to accept this material in full compliance with all Federal, State and local laws.

I certify that this CCSMP has a plan for import of all soils and other material from off-Site in accordance with all Federal, State and local laws.

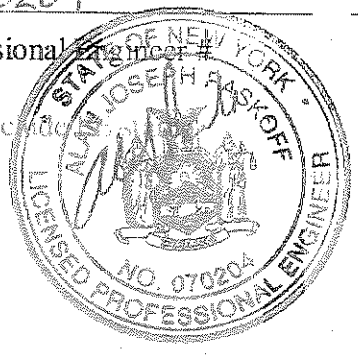
I certify that this CCSMP has a plan for nuisance control during the construction work, including a dust, odor and vector suppression plan and that such plan is sufficient to prevent nuisances from occurring.

I certify that all East Side Access contractors and the MTA Construction Management team working within the Site will be required to comply with all requirements of the CCSMP .

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

070204	1/29/09	Alan Paskoff
NYS Professional Engineer #	Date	Signature

Note: incl[illegible]



It is a violation of Article 130 of New York State Education Law for any person to alter this document in any way without the express written verification of adoption by any New York State licensed engineer in accordance with Section 7209(2), Article 130, New York State Education Law.

APPENDIX L

LIST OF PERMITS

Permit List

Long Island Well Permit* (LIWP)
NYCDEP Discharge Permit
NYCDEP Hydrant Connection Permit
NYCDEP Tunneling Permit*
Demolition Permit (NYS Code Compliance)
SPDES General Permit
NYCDOT Permit for traffic interruption (lane and sidewalk closure, traffic detour etc.)*
Bulk Storage Permit*
Waste Transporter Permit***

* May not apply based on the contractor's means and methods.
*** Required for Subcontractor.

MTA CAPITAL CONSTRUCTION EAST SIDE ACCESS ROUTING AND DISTRIBUTION LIST

File Code: CM554 55850

FUNCTION	NAME	LOC	W/A	W/O	FUNCTION	NAME	LOC	W/A	W/O
Director, Procurement & Risk	Cannon, David	2 B'way			Construction Security Manager	Barry, Hugh	QAO		
Chief Financial Officer	D'Amico, Anthony	2 B'way			Director, LIRR Force Account	Butler, Mike	QAO		
Field Contract Manager	DeLilla, Dan	2 B'way			CM Force Account Coordinator	Homatas, Gregory	QAO		
Changes & Claims Manager	DiFedele, Richard	2 B'way			CM Submittals & Shop Drawings	Kamath, Kris	QAO		
V.P. and General Counsel	Hakim, Veronique	2 B'way			Environmental Engineer	Lawrence, Garth	QAO		
Director Planning & External Relations	Heffernan, Audrey	2 B'way			Program Manager- Queens	Louis, Daniel	QAO		
President Capital Construction Company	Horodniceanu, Michael	2 B'way			Director Force Account	Magnifico, Robert	QAO		
MTA Risk Management	Pemberton, Laudwin	2 B'way			Construction Manager-CQ028	Pujdak, Michael	QAO		
Deputy VP - Finance & Administration	Petrocelli, Joseph	2 B'way			Project Manager- Force Account Coord	Scully Mark	QAO		
					Construction Manager - CM019	Shafei, Ihab	QAO		
					Program Manager - Construction	Thompson, Andrew	QAO		
					Quality Control Manager	Troitski, Leo	QAO		
Construction Coordination Outreach	Blugh-Willis, Lisa	11th Fl.			Field Contracts Manager	Tursi, Linda	QAO		
Graphic Specialist	Cordero, Luis	11th Fl.			Geotechnical Engineer	Weiler, Larry	QAO		
Program Manager - Railroad Systems	Craig, Philip	11th Fl.							
Quality Assurance Manager	Dawson, Barry	11th Fl.			Construction Manager - CH053	Oggeri, Robert	QAO		
Lead Scheduler	DeBernardo, Mark	11th Fl.							
Communications Manager	Eustace, Jeff	11th Fl.							
3rd Party Agency Coordination Mgr.	Josephs, Leroy	11th Fl.			Deputy Systems Engineer Manager	Coolidge, Paul	15th Fl.		
Budget Chief	Jurman, Susan	11th Fl.			Right of Way Coordinator	Coulston, Pat	15th Fl.		
Assistant Director Budgets	Lyons, Jim	11th Fl.			Design Management	Fieres, Anthony	15th Fl.		
Lead Cost Control Engineer	Matrale, Larry	11th Fl.			Contract Administrator	Gupta, Daisy	15th Fl.		
Chief of Staff, Program Manager	Paskoff, Alan	11th Fl.			Project Accountant	Josef, Maria	15th Fl.		
CCM Project Manager	Prybella, Robert	11th Fl.			Consultant Contract Administrator	Keenan, Kathryn	15th Fl.		
Deputy Chief of Staff	Sklavounakis, Chris	11th Fl.			Information Technology Manager	Mallari, Jun	15th Fl.		
Director Operations/RR Coordination	Spero, Robert	11th Fl.			Package Manager Signals	Miller, Charles	15th Fl.		
ESA Program Executive	Stead, William	11th Fl.			Sr. Engineering Manager/Administration	Shair, Said	15th Fl.		
Program Manager - GCT	Tilden, Douglas	11th Fl.			Program Manager - PMC	Vladyka, Jeffrey	15th Fl.		
PM/CM Contract Administator	Weisel, Barbara	11th Fl.			Procurement Administrator	Woodall, Shanelle	15th Fl.		
					Document Control Manager		16th Fl.		
Deputy Project Director	Bakas, Paul	14th Fl.			Office Services Manager	Alzamora, Martha	16th Fl.		
Project Director	Cap, Peter	14th Fl.			GEC Quality Assurance Manager	Juhasz, Sandor	16th Fl.		
Deputy Project Director	Chesner, Irv	14th Fl.			Administrative Services Manager	Newman, Cathy	16th Fl.		
Project Control/Admin. Manager	Galbraith, Elaine	14th Fl.							
Design Manager - Systems	Haggas, Kent	14th Fl.							
GEC Contract Administrator	Hildebrand, Howard	14th Fl.			Construction Manager - VM022 CS780/800	Daniels, Michael	470		
Eng'r. Project Controls Manager	Roy, Robert	14th Fl.			Office Engineer	Jean, Marie	470		
Eng'r Deputy Project Director	Schabib, Jesus	14th Fl.			General Conditions Manager	Nigro, Larry	470		
						Confidential			
						Non-Confidential		✓	

Other

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1/23/2009