



Office of General Services

DESIGN & CONSTRUCTION GROUP
THE GOVERNOR NELSON A. ROCKEFELLER
EMPIRE STATE PLAZA
ALBANY, NY 12242

ADDENDUM NO. 2 TO PROJECT NO. Q1953

CONSTRUCTION WORK
DEMOLISH BUILDING
JACKIE ROBINSON YOUTH CENTER
1024 FULTON STREET
BROOKLYN, NY

April 24, 2026

NOTE: This Addendum forms a part of the Contract Documents. Insert it in the Project Manual. Acknowledge receipt of this Addendum in the space provided on the Bid Form.

GENERAL REQUIREMENTS

1. SECTION 015213 STATE FIELD OFFICE: Add the accompanying Section (pages 015213 – 1 and 015213 – 3) to the Project Manual.
2. SECTION 017716 CONTRACT CLOSEOUT: Discard the Section bound in the Project Manual and substitute the accompanying Section (pages 017716 – 1 thru 017716 – 4) noted “Revised 4/23/2026”.

SPECIFICATION GROUP

3. SECTION 310000 EARTHWORK: Discard the Section bound in the Project Manual and substitute the accompanying Section (pages 310000 – 1 thru 310000 – 15) noted “Revised 4/23/2026”.

APPENDIX

4. ESD PRE-DESIGN INVESTIGATION SCOPES OF WORK: Add the accompanying Document (pages 1 through 8).

DRAWINGS

5. Drawing No. C-110, noted “REVISED PER ADDENDUM 2, 4/22/2026” accompanies this Addendum and supersedes the same numbered originally issued drawing.

END OF ADDENDUM

Brady Sherlock, P.E.
Director, Division of Design
Design & Construction

SECTION 015213 - STATE FIELD OFFICE

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Provide and maintain a field office comprised of new or refurbished custom built mobile or relocatable office units, new furniture, and new equipment, stair, and ramp for the sole use of the Director's Representative and staff. Include temporary services and accessories necessary for use of the items specified.
- B. If desired, the contractor may provide a temporary office trailer for their use. If such is provided, it shall be consistent with that outlined within this Section.

1.2 SUBMITTALS

- A. Waiver of Submittals: The "Waiver of Certain Submittal Requirements" in Section 013300 does not apply to this Section.
- B. Shop Drawings:
 - 1. Site Plan: Show location of field office where directed. Indicate holding tank, utility services, connections and accessible stairs and ramps.
- C. Product Data: Catalog sheets, specifications, and installation instructions, for all major items of the field office including furnishings and equipment. Submit within 15 days after award of Contract.

1.3 SCHEDULING

- A. Provide units, ready for occupancy by the Director's Representative and staff, within 30 days after shop drawings specified above are approved.

1.4 QUALITY ASSURANCE

- A. Accessibility Requirements: Provide fully accessible units including stairs and ramps that comply with ICC/ANSI A117.1 as referenced by the Building Code of New York State.
- B. Provide units and all related utility connections in accordance with the NYS Uniform Fire Prevention and Building Code.
- C. Provide certification insignia from New York Department of State that certifies trailer unit is code compliant.

PART 2 - PRODUCTS

2.1 MOBILE OR RELOCATABLE OFFICE UNITS

A. Manufacturers/Companies:

1. Williams Scotsman, Corporate Headquarters, 8211 Town Center Dr., Baltimore, MD 21236, (800) 782-1500, www.willscot.com.
2. Anchor Modular Buildings, PO Box 100, Medford, NJ 08055, (866) 396-0227, www.anchormodular.com.

B. Number, Approximate Size and Model:

1. One, 8 x 20 feet, office unit by Willscot.

C. Office Unit Requirements:

1. Ceiling Height: 8'-0" minimum.
2. Insulation: Exceed code required minimums for insulation. If wood frame construction, exceed the following values, walls > R - 11, floor > R - 19 and roof > R - 19. Provide code requirements and provided insulation values.
3. Exterior Door: Minimum 34 inches wide, with key-in-lever locksets, and security mesh on door glass.
4. Windows: Approximately 7 percent of exterior wall area with insect screens and security mesh on all windows..
5. Complete ducted heating, ventilating, and air conditioning system with sufficient capacity to maintain a summer office temperature of 75 degrees F and a winter office temperature of 70 degrees F.
6. VCT or sheet vinyl floor finish.
7. Interior partitions to be wood 2 x 4 framing with ½" vinyl covered gypsum board.
8. Fluorescent lights in all rooms as required to maintain a minimum of 60-foot candles at desktop level.
9. Bulletin board (4 feet x 6 feet).
10. Insulated skirting from bottom of units to grade, around entire unit. Skirting is to be 2' x 4' wood framing with 2" rigid insulation type SM and white ventilated vinyl siding to match unit.
11. Electric energy for the duration of the Contract.
12. Pre-wire unit for data (2 connections each) as shown on approved shop drawings.

2.2 FURNITURE AND EQUIPMENT

A. Furniture:

1. Two swivel type chairs with arms suitable for use at office desks.
2. Four straight back stackable chairs.
3. Two lockable metal office desk, 30 x 60 inches, double pedestal type with keys.
4. One drafting table, 37 x 60 inches.
5. Two lockable 4-drawer letter size file cabinets.
6. One 4'x 6' wall mounted dry erase board.

B. Office Equipment:

1. One first aid kit.
2. Fire Extinguisher: Multipurpose Dry-Chemical Type in Steel Container UL-rated 20-A:120-B:C, 20-lb nominal capacity, with monoammonium phosphate-based dry chemical in enameled-steel container.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Install units where directed. Remove wheels and store them where directed.
- B. Provide manufacturer's stair with platform at one exterior door.
- C. Maintain contract space where trailer is located for the duration of the contract, including snow removal.
- D. Provide electric service to unit from temporary power provided at the site. Retain and pay licensed electrician to make electrical connections.

3.2 MAINTENANCE AND CLEANING

- A. Maintain and clean the office units for the duration of this Contract. Include the following:
 1. Daily removal of rubbish.
 2. Weekly mopping of floors.
 3. Weekly dusting of offices and other rooms.
- B. Maintain approaches free of mud and snow.

3.3 REMOVALS

- A. Remove the units, furniture, and equipment when directed.

END OF SECTION 015213

SECTION 017716 – CONTRACT CLOSEOUT

PART 1 - GENERAL

1.1 RELATED REQUIREMENTS SPECIFIED ELSEWHERE

- A. Other provisions pertaining to this Section are included in Article 9 of the General Conditions.

1.2 CONTRACT CLOSEOUT INSPECTIONS

- A. The following 3 inspections will be made in addition to the normal inspections to ensure that all Contract requirements are met and that the Work is complete and acceptable. The purpose of each of these inspections is to furnish the Contractor a written list of Contract exceptions, omissions, and incomplections so that the Work can be progressed to timely completion in accordance with the Contract Documents.
 - 1. Detailed Inspection: The “Detailed Inspection” will be made when the Work is substantially complete. A copy of the detailed inspection list will be furnished to the Contractor. When this inspection progresses over any length of time, copies of the list will be furnished as the inspection progresses so that the Contractor may proceed with the required Work without delay.
 - 2. Final Inspection: The Contractor will be advised by letter of the date and time of final inspection. A copy of the final inspection list containing all incomplete or unsatisfactory items and the time allowed to complete the Work will be furnished to the Contractor.
 - 3. Joint Inspection for Physical Completion: The joint inspection for physical completion may be made to verify completion of the exception items listed on the final inspection list so that the physical completion date (defined in the General Conditions) may be established.

1.3 FINAL CLEANING

- A. Perform final cleaning prior to joint inspection for physical completion. Leave the premises in a neat, unobstructed condition, the work areas broom clean (except where more thorough cleaning is specified), and everything in perfect repair and adjustment.
- B. Clean site; sweep paved areas, rake clean landscaped surfaces.
- C. Remove tools, equipment, waste and surplus materials, rubbish, and construction facilities from the premises as soon as possible upon completion of the Work.

1.4 PROJECT RECORD DOCUMENTS

- A. Maintain on site, 2 sets of the following record documents; record actual revisions to the Work.
 - 1. Contract Drawings.

2. Project Manual.
 3. Addenda.
 4. Change Orders and other modifications to the Contract.
 5. Reviewed shop drawings, product data, and samples.
- B. Store record documents separate from documents used for construction.
- C. Record information concurrent with construction progress.
- D. Record Documents and Shop Drawings: Legibly mark each item to record actual construction including.
1. Measured depths of foundations in relation to finish (first) (main) floor datum.
 2. Measured horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements.
 3. Measured locations of internal utilities and appurtenances concealed in construction, referenced to visible and accessible features of the Work.
 4. Field changes of dimension and detail.
 5. Details not on original Contract Drawings.
- E. Upon completion of the work, create electronic versions of the project record documents. Black and white documents are to be scanned into TIFF format using CCIT Group 4 compression. Documents with color, which include black line documents with color notations, are to be scanned into TIFF format using a minimum of 8 colors and “packbits” compression test.
1. The scanned images are to be put on a USB flash drive using NTFS/NTFS5 format. Name the electronic files with the same name as the drawing. Create a folder on the USB flash drive for each trade and one for Shop Drawings.
 2. Label the USB flash drive with the project number, name, and title as it appears on the project manual cover. If there is more than one USB flash drive include notation to that effect on the label; i.e., 1 of 3, 2 of 3, 3 of 3. The project record documents, and USB flash drive(s) are to be turned over to the Director’s Representative.
- F. When the final grades have been obtained, a detailed as-built survey shall be prepared by a licensed land surveyor and shall include the following:
1. Survey as-built location and mapping of all new site improvements resulting from the subject project. This work can be performed prior to completion as required.
 - a. Underground utilities not visible as surface evidence shall be surveyed prior to being buried and located to plus or minus 1 foot horizontal accuracy.
 - b. New sanitary and storm sewer utilities with rim elevation, invert elevations, pipe sizes and materials, service lines into buildings, stand pipes and sanitary pump or lift stations.
 - c. New watermains, water services, water line sizes and material, hydrant and valve locations, service lines into buildings.
 - d. New gas lines, steam lines and tunnels, service lines into buildings.
 - e. New underground electric and communications conduit including electric and communications manholes and handholds, with rim elevations and invert elevations to conduit, service lines into buildings.

- f. Light standards, signage, pedestrian features such as benches and kiosks.
 - g. New paved areas, pavement striping, walkways.
 - h. Buildings with first floor elevations.
 - i. Location of landscaped areas and individual trees, tree species and diameter at breast height (DBH).
 - j. Location of irrigation lines, valves and controls.
2. 1-foot contour interval topography and 3-D surface for any areas where construction resulted in changes in grade.
 3. Elevations at 25-foot intervals along roadway centerlines, top and bottom of curb. 25-foot spot grade grid on paved areas, 50-foot spot grade grid on grass or unpaved areas.
 4. Mapping shall be completed in compliance with OGS CAD Standards (as defined in Section 5.4 of the OGS Design Procedure Manual) and should meet the requirements of the ESD Pre-Design Investigations Scopes of work Appendix, page 1 “Survey”.
 5. Horizontal and vertical datums shall be consistent with the project datums.
 6. Deliverables will be provided as certified hard copy and digital format. Drawings are to be prepared in compliance with OGS CAD Standards. These standards are an interpretation of the National CAD Standard. The Standard incorporates the CAD Layer Guidelines published by the American Institute of Architects, the Uniform Drawing System published by the Construction Specifications Institute, and the Tri-Service Plotting Guidelines published by the Tri-Service CADD/GIS Technology Center and U.S. Coast Guard.
 7. All information is to be provided in tabular format (excel). Format and examples are to be provided upon award of contract.
- G. Applications for progress payments will not be approved if the record documents are not kept current. Application for final payment will not be approved until the project record documents are delivered to the Director’s Representative.

1.5 WARRANTIES

- A. Furnish warranty certification and copies of warranties that extend beyond the one year period required by the General Conditions. Warranties submitted without warranty certification will not be accepted.
1. Warranty Certification: Written certification from the warrantor that invoices for installation, service, supplies, and warranty fees have been paid in full to persons or firms due payment, and that the warranty is in effect and non-retractable due to any of the specified conditions.
- B. Prepare printed Table of Contents and assemble warranty certifications and warranty copies in a binder with a durable plastic cover.
- C. Deliver the binder to the Director’s Representative prior to final Application for Payment.
- D. For items of Work delayed beyond date of Substantial Completion, provide updated submittal within 10 days after acceptance, indicating date of acceptance as start of warranty period.
- E. Applications for final payment will not be approved until the warranty certification and warranty documents are delivered to the Director’s Representative.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION 017716

SECTION 310000 - EARTHWORK

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:

1. Disconnecting, capping, sealing, and/or removing existing utilities.
2. Site Clearing:
 - a. Protecting existing vegetation to remain.
 - b. Removing existing vegetation.
 - c. Clearing and grubbing.
 - d. Stripping and stockpiling topsoil and rock.
 - e. Removing above- and below-grade improvements.
 - f. Disconnecting, capping or sealing, and removing or abandoning site utilities in place.
3. Fill and Backfill:
 - a. Backfilling for building and site structures to subgrade elevations.
 - b. Backfilling for trenches.
 - c. Fill under slabs-on-grade.
 - d. Fill under pavements.
 - e. Fill for over-excavation.
 - f. Subsurface drainage backfill for walls and trenches.
4. Preparation of subgrades.
5. Compaction.
6. Riprap placement.
7. Rough and final grading.

1.3 REFERENCE STANDARDS

- A. ASTM International:

1. ASTM C88 - Standard Test Method for Soundness of Aggregates by Use of Sodium Sulfate or Magnesium Sulfate
2. ASTM C136 - Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates.
3. ASTM D698 - Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft³).

4. ASTM D1557 - Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft³).
5. ASTM D2419 – Standard Test Method for Sand Equivalent Value of Soils and Fine Aggregate.
6. ASTM D2434 - Standard Test Method for Permeability of Granular Soils (Constant Head).
7. ASTM D2487 – Standard Practice for Classification of Soils for Engineering Purposes (Unified Soil Classification System).
8. ASTM D2974 – Standard Test Methods for Determining the Water (moisture) Content, Ash Content, and Organic Material of Peat and Other Organic Soils.
9. ASTM D4318 - Standard Test Methods for Liquid Limit, Plastic Limit, and Plasticity Index of Soils.
10. ASTM D4373 - Standard Test Method for Rapid Determination of Carbonate Content of Soils
11. ASTM D4873 – Standard Guide for Identification, Storage, and Handling of Geosynthetic Rolls and Samples.
12. ASTM D6938 - Standard Test Methods for In-Place Density and Water Content of Soil and Soil-Aggregate by Nuclear Methods (Shallow Depth).

B. Related Requirements:

1. Local utility standards when working in close proximity to utility lines.
2. Occupational Safety and Health Administration: Comply with the applicable requirements of the Code of Federal Regulations Title 29 – Labor, Part 1926 Safety and Health Regulations for Construction (OSHA).

C. New York State Department of Transportation (NYS DOT)

1. NYS DOT 620 - Bank and Channel Protection
2. NYS DOT 703 - Aggregates
3. NYS DOT 733 - Earthwork Materials

1.4 DEFINITIONS

- A. Surface Soil: Soil that is present at the top layer of the existing soil profile.
- B. Subsurface: Soil beneath the level of subgrade; soil beneath the topsoil layers of a naturally occurring soil profile.
- C. Topsoil: Top layer of the soil profile consisting of existing native surface topsoil or existing in-place surface soil; the zone where plant roots grow. Its appearance is generally friable, pervious, and black or a darker shade of brown, gray, or red than underlying subsurface; reasonably free of subsurface soils, clay lumps, gravel, weeds, roots, toxic materials, or other non-soil materials.
- D. Borrow Soil: Approved soil imported from off-site for use as fill or backfill.
- E. Backfill: Soil material or controlled low-strength material used to fill an excavation.
 1. Initial Backfill: Backfill placed beside and over pipe in a trench, including haunches to support sides of pipe.

2. Final Backfill: Backfill placed over initial backfill to fill a trench.
- F. Fill: Soil materials used to raise existing grades.
 - G. Suitable Material (Fill and Backfill for Landscaped Areas): Material generally consisting of mineral soil (inorganic), blasted or broken rock and similar materials of natural or man-made origin, including mixtures thereof. Maximum particle size will not exceed 2/3 of the specified layer thickness prior to compaction. Topsoil and organic silt may be used as suitable material in landscaped areas provided it is placed as the surface soil.
 - H. Unsuitable Material: Material containing cinders, industrial waste, sludge, building/construction rubble, land fill, muck, and peat.
 - I. Subgrade: Uppermost surface of an excavation or the top surface of a fill or backfill immediately below subbase, drainage material, or topsoil materials.
 - J. Subbase Course: Aggregate layer placed between the subgrade and asphaltic or concrete pavement section or concrete structure.
 - K. Bedding Course (Cushion Material): Aggregate layer placed over the excavated subgrade in a trench before laying pipe.
 - L. Drainage Material: Aggregate layer with minimal material passing the #200 sieve to promote downward water flow and minimizes upward capillary flow of pore water.
 - M. Classified Earth Excavation: Removal of all surface and subsurface material not classified as rock, to the lines and dimensions indicated.
 - N. Rock: Limestone, sandstone, shale, granite and similar material in solid beds or masses in its original or stratified position which can be removed only by blasting operations, drilling, wedging, or use of pneumatic tools, and boulders with a volume greater than 1.0 cu yd. Concrete building foundations and concrete slabs, not indicated, with a volume greater than 1.0 cu yd shall be classified as rock.
 1. Limestone, sandstone, shale, granite, and similar material in a broken or weathered condition which can be removed with an excavator or backhoe equipped with a bucket with ripping teeth or any other style bucket shall be classified as earth excavation.
 2. Masonry building foundations, whether indicated or not, shall be classified as earth excavation.
 - O. Unclassified Earth Excavation: Removal of all surface and subsurface material, of any description, necessary to perform the work of this contract. This will include:
 1. All soil deposits of any description both above and below groundwater levels. These may be naturally deposited or placed by previous construction operations.
 2. Ledge rock of all quality. (Limestone, Sandstone, Shale, Granite and similar materials in solid beds or masses in its original or stratified position which can only be removed by drilling, wedging, use of pneumatic tools or heavy ripping equipment). Blasting operations will not be permitted to loosen any ledge rock necessary to be removed in this contract.
 3. Boulders of any size.

- 4. Any materials of man-made origin.
- P. Authorized Additional Excavation: Excavation below subgrade elevations or beyond indicated lines and dimensions as directed by Director's Representative. Authorized additional excavation and replacement material will be paid for according to Contract provisions for changes in the Work.
- Q. Bulk Excavation: Excavation more than 10 feet in width and more than 30 feet in length.
- R. Unauthorized Excavation: Excavation below subgrade elevations or beyond indicated lines and dimensions without direction by Director's Representative. Unauthorized excavation, as well as remedial work directed by Director's Representative, shall be without additional compensation.
- S. Structures: Buildings, footings, foundations, retaining walls, slabs, tanks, curbs, mechanical and electrical appurtenances, or other man-made stationary features constructed above or below the ground surface.
- T. Utilities: On-site underground pipes, conduits, ducts, and cables as well as underground services within buildings.
- U. Plant-Protection Zone: Area surrounding individual trees, groups of trees, shrubs, or other vegetation to be protected during construction.
- V. Vegetation: Trees, shrubs, groundcovers, grass, and other plants.
- W. Landscaped Areas: Areas not covered by structures, walks, roads, paving, or parking.
- X. Grading Limit Line (Shown on Drawings): Limits of grading, excavations and filling required for the Work. Unless specifically noted otherwise, the Grading Limit Line and Contract Limit Line shall be considered the same.

1.5 MATERIAL OWNERSHIP

- A. Except for materials indicated to be stockpiled or otherwise remain State's property, cleared materials shall become Contractor's property and shall be removed from Project site.

1.6 SUBMITTALS

- A. Submittals for this Section are subject to the re-evaluation fee identified in Article 4 of the General Conditions.
- B. Manufacturer's installation instructions shall be provided along with product data.
- C. Submittals shall be provided in the order in which they are specified and tabbed (for combined submittals).
- D. Existing Conditions: Submit documentation before earthwork activities begin of existing trees and plantings, adjoining construction, and site improvements that establishes preconstruction conditions that might be misconstrued as damage caused by the Work of this Section.

1. Use sufficiently detailed photographs or video recordings.
 2. Include plans and notations to indicate specific wounds and damage conditions of each tree or other plant designated to remain.
- E. Qualification Data: For qualified testing agency.
- F. ESD Pre-Design Investigation Scopes of Work:
1. Submit a bid breakdown for the costs specifically associated with the ESD Pre-Design Investigation Scopes of Work Appendix within 10 days after approval of the Contract by the Comptroller.
 2. Work Plan: ESD Pre-Design Investigation Scopes of Work Phase 2 Investigation Work Plan prepared by the contractor to indicate how the work is to be provided in accordance with the Appendix Document.
 3. Quality Assurance Project Plan: ESD Pre-Design Investigation Scopes of Work Phase 2 Investigation Quality Assurance Project Plan per the Appendix Document.
 4. ESD Pre-Design Investigation Scopes of Work Phase 2 Investigation Report: Report to include all data per the Appendix Document.
 5. ESD Pre-Design Investigation Scopes of Work Phase 2 Investigation Raw Data: Provide all raw data digitally.
 6. Work Plan: ESD Pre-Design Investigation Scopes of Work Geotechnical Borings Work Plan prepared by the contractor to indicate how the work is to be provided in accordance with the Appendix Document.
 7. ESD Pre-Design Investigation Scopes of Work Geotechnical Borings Report: Report to include all data per the Appendix Document.
 8. ESD Pre-Design Investigation Scopes of Work Geotechnical Borings Raw Data: Provide all raw data digitally.

1.7 QUALITY ASSURANCE

- A. Geotechnical Testing Agency Qualifications: Qualified according to ASTM E329 and ASTM D3740 for testing indicated.

1.8 FIELD CONDITIONS

- A. Traffic: Minimize interference with adjoining roads, streets, walks, and other adjacent occupied or used facilities during earth-moving operations.
1. Do not close or obstruct streets, walks, or other adjacent occupied or used facilities without permission from Director's Representative and authorities having jurisdiction.
 2. Provide alternate routes around closed or obstructed traffic ways if required by Director's Representative or authorities having jurisdiction.
- B. Improvements on Adjoining Property: Authority for performing earth moving indicated on property adjoining State's property will be obtained by Director's Representative before award of Contract.

1. Do not proceed with work on adjoining property until directed by Director's Representative.
- C. Salvageable Improvements: Carefully remove items indicated to be salvaged and store.
- D. Utility Locator Service: Locate underground utilities, in accordance with Section 023313 – Underground Utility Locator Service, before beginning site clearing or earth-moving operations.
- E. Do not commence operations until temporary site fencing and erosion and sedimentation control measures are in place.
- F. Do not commence earthwork operations until plant-protection measures specified herein are in place.
- G. The following practices are prohibited within protection zones:
 1. Storage of construction materials, debris, or excavated material.
 2. Parking vehicles or equipment.
 3. Foot traffic.
 4. Erection of sheds or structures.
 5. Impoundment of water.
 6. Excavation or other digging unless otherwise indicated.
 7. Attachment of signs to or wrapping materials around trees or plants unless otherwise indicated.
- H. Do not direct vehicle or equipment exhaust towards protection zones.
- I. Prohibit heat sources, flames, ignition sources, and smoking within or near protection zones.
- J. Soil Stripping, Handling, and Stockpiling: Perform only when the soil is dry or slightly moist.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. See Section 310001 - Earthwork Materials.
- B. Protection-Zone Fencing:
 1. Plastic Protection-Zone Fencing: Plastic construction fencing constructed of high-density extruded and stretched polyethylene fabric with 2-inch maximum opening in pattern and weighing a minimum of 0.4 lb/ft.; remaining flexible from minus 60 to plus 200 deg F; inert to most chemicals and acids; minimum tensile yield strength of 2000 psi and ultimate tensile strength of 2680 psi; secured with plastic bands or galvanized-steel or stainless-steel wire ties; and supported by tubular or T-shape galvanized-steel posts spaced not more than 96 inches apart.
 - a. Height: 48 inches.
 - b. Color: High-visibility orange, nonfading.

2. Chain-Link Protection-Zone Fencing: As specified in Section 015000 - Construction Facilities and Temporary Controls.
- C. Protection-Zone Gates: Single-swing access gates matching material and appearance of fencing, to allow for maintenance activities within protection zones; leaf width 36 inches As indicated.
- D. Protection-Zone Signage: Shop-fabricated, rigid plastic or metal sheet with attachment holes prepunched and reinforced; legibly printed with nonfading lettering and as follows:
 1. Size and Text: As shown on Drawings
 2. Lettering: 3-inch-high minimum, black characters on white background.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Protect and maintain benchmarks and survey control points from disturbance during construction.
- B. Verify that trees, shrubs, and other vegetation to remain or to be relocated have been flagged and that protection zones have been identified and enclosed as required.
- C. Protect existing site features, to remain, from damage during construction. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by earthwork operations.
 1. Restore damaged improvements to their original condition, as acceptable to the Director's Representative.
- D. Protect and maintain erosion and sedimentation controls during earth-moving operations.
- E. Protect subgrades and foundation soils from freezing temperatures and frost. Remove temporary protection before placing subsequent materials.

3.2 TEMPORARY EROSION AND SEDIMENTATION CONTROL

- A. Provide and maintain temporary erosion and sedimentation control measures to prevent soil erosion and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways, in accordance with the Contract Drawings and requirements of authorities having jurisdiction. If the erosion and sedimentation controls specified by the authorities having jurisdiction are more stringent than those specified in the Contract Documents, contact the Director's Representative.
 1. Verify that flows of water redirected from construction areas or generated by construction activity do not enter or cross protection zones.
 2. Inspect, maintain, and repair erosion and sedimentation control measures during construction until permanent vegetation has been established.

3. Remove erosion and sedimentation controls, and restore and stabilize areas disturbed during removal.

3.3 PLANT PROTECTION

- A. Locate and clearly identify trees, shrubs, and other vegetation to remain and be protected. Flag each tree trunk at 54 inches above the ground.
- B. Protect tree root systems from damage caused by runoff or spillage of noxious materials while mixing, placing, or storing construction materials. Protect root systems from ponding, eroding, or excessive wetting caused by dewatering operations.
- C. Trunk Protection: Protect the trunk of each tree to remain as follows:
 1. Install 2-by-4-inch wood planks around trunk at maximum 3 inches apart. Minimum three planks per tree. Band together with no less than three steel bands stapled to the planks to hold them securely in place. Wrap orange plastic construction fencing to a minimum of three layers outside slats. Fasten wrap with wire.
 - a. Height: 48 inches.
- D. Protection-Zone Fencing: Install protection-zone fencing along edges of protection zones before materials or equipment are brought on the site and construction operations begin in a manner that will prevent people from easily entering protected areas except by entrance gates. Construct fencing so as not to obstruct safe passage or visibility at vehicle intersections where fencing is located adjacent to pedestrian walkways or in close proximity to street intersections, drives, or other vehicular circulation. Install access gates where indicated.
- E. Install protection-zone signage in visibly prominent locations in a manner approved by Director's Representative. Install one sign spaced approximately every 20 feet on protection-zone fencing, but no fewer than four signs with each facing a different direction.
- F. Maintain protection zones free of weeds and trash.
- G. Maintain protection-zone fencing and signage in good condition as acceptable to Director's Representative and remove when construction operations are complete and equipment has been removed from the site.
 1. Do not remove protection-zone fencing, even temporarily, to allow deliveries or equipment access through the protection zone.
 2. Temporary access is permitted subject to preapproval in writing by arborist if a root buffer effective against soil compaction is constructed as directed by arborist. Maintain root buffer so long as access is permitted.
- H. For any tree disturbance, beyond that shown on the contract drawings, the Contractor shall coordinate with NYC Parks and attain appropriate permits and approvals.
- I. Repair or replace trees, shrubs, and other vegetation indicated to remain or be relocated that are damaged by construction operations.

1. Small Trees: Provide new trees of same size and species as those being replaced for each tree that measures 6 inches or smaller in caliper size.
2. Large Trees: Provide one new tree(s) of 6-inch caliper size for each tree being replaced that measures more than 6 inches in caliper size.
 - a. Species: to match existing, unless otherwise directed by Director's Representative.

3.4 EXISTING UTILITIES

- A. Locate, identify, disconnect, and seal or cap utilities indicated to be removed or abandoned in place.
 1. Arrange with utility companies to shut off indicated utilities as necessary
- B. Interrupting Existing Utilities: Do not interrupt utilities serving occupied facilities unless permitted under the following conditions and then only after arranging to provide temporary utility services according to requirements indicated:
 1. Notify Director's Representative not less than seven days in advance of proposed utility interruptions.
 2. Do not proceed with utility interruptions without the Director's Representative's written permission.
- C. Excavate for and remove underground utilities indicated to be removed.

3.5 STORAGE OF SOIL MATERIALS

- A. Stockpile borrow soil materials and excavated suitable materials away from the edge of excavations and without intermixing. Place, grade, and shape stockpiles to drain surface water. Cover to prevent windblown dust and erosion by water.
 1. Limit height of soil stockpiles to 180 inches.
 2. Do not stockpile soil material within protection zones.
 3. Dispose of surplus soils. Surplus soil is that which exceeds quantity indicated to be stockpiled or reused.

3.6 BACKFILL & SOIL FILL

- A. Place and compact backfill in excavations promptly, but not before completing the following:
 1. Construction below finish grade including, where applicable, subdrainage, dampproofing, waterproofing, and perimeter insulation.
 2. Surveying locations of underground utilities for Record Documents.
 3. Testing and inspecting underground utilities.
 4. Removing concrete formwork.
 5. Removing trash and debris.
 6. Removing temporary shoring, bracing, and sheeting.
 7. Cutting off top of permanent sheeting or sheetpiling.

8. Installing permanent or temporary horizontal bracing on horizontally supported walls.
 9. Acceptance by the Director's Representative of construction below finish grade.
- B. Plow, scarify, bench, or break up sloped surfaces steeper than 1 vertical to 4 horizontal so fill material will bond with existing material.
 - C. Place fill and backfill on subgrades free of mud, frost, snow, or ice.
 - D. Place fill and backfill materials in layers not more than eight inches thick in loose depth, unless otherwise specified. Before compaction, moisten or aerate each layer as necessary to facilitate compaction to the specified density.
 1. Place fill and backfill against foundation walls and in confined areas such as trenches not easily accessible by larger compaction equipment in maximum 6-inch-thick loose depth layers.
 2. For large fill and backfill areas, the layer thickness may be modified by the Director's Representative, at the Contractor's written request, if in the Director's Representative's judgment, the equipment used is capable of compacting the fill material in a greater layer thickness. This request will include the type and specifications of compaction equipment intended for use.
 3. For Open Graded Stone/Clean Stone (Item B-12, No. 1 crushed stone, No. 2 crushed stone, etc.) in excess of six inches: Material must be wrapped in separation fabric.
 - E. Landscaped Areas: Place Suitable Material when required to complete fill or backfill areas up to subgrade surface elevation. Do not use material containing particles over four inches in diameter within the top 12 inches of suitable material.

3.7 SOIL MOISTURE CONTROL

- A. Where fill or backfill must be moisture conditioned before compaction, uniformly apply water to the surface and to each layer of fill or backfill to within 2 percent of optimum moisture content.
- B. Prevent ponding or other free water on surface during and after compaction operations.
- C. Remove and replace, or scarify and air dry, soil that is too wet to permit compaction to specified density. Soil that has been removed because it is too wet to permit compaction may be stockpiled or spread and allowed to dry. Assist drying by discing, harrowing or pulverizing, until moisture content is reduced to a value which will permit compaction to the percentage of maximum density specified.
- D. When the existing ground surface to be compacted has a density less than that specified for the particular area classification, break up and pulverize, and moisture condition to facilitate compaction to the required percentage of maximum density.

3.8 COMPACTION OF SOIL BACKFILLS AND FILLS

- A. Compact soil materials to not less than the following percentages of maximum density according to ASTM D698 for the following:

1. Under structures, including area within 10-ft outside perimeter: 95 percent.
2. Under concrete slabs, steps, and pavements: 95 percent.
3. Under walkways: 95 percent.
4. Under landscaped areas, turf, or unpaved areas: 90 percent.
5. Pipe bedding: 95 percent.
6. Behind retaining walls: As specified on the design drawings

3.9 RIPRAP PLACEMENT

- A. Do not place riprap over frozen or spongy subgrade surfaces.
- B. Install separation geotextile over properly prepared subgrade.
- C. Spread layer of bedding course prior to placing riprap at depth indicated on Drawings. Prevent mixing of bedding course with subgrade.
- D. Place riprap into position at thickness as indicated on Drawings.
- E. End Dumped: End dump riprap to conform to the lines, grades and thicknesses indicated. End dumped riprap shall be a well graded mass of variable size stones with no areas of uniform size material. Rearrange individual stones, if necessary, by hand or with mechanical equipment to obtain the specified results.
- F. Hand Placed: Hand place riprap with the largest stones placed at the bottom of slope. Align stones to obtain a close fit and to minimize voids. Fill spaces between stones with spalls of suitable size.

3.10 GRADING

- A. General: Uniformly grade areas to a smooth surface, free of irregular surface changes. Comply with compaction requirements and grade to cross sections, lines, and elevations indicated.
 1. Provide a smooth transition between adjacent existing grades and new grades.
 2. Cut out soft spots, fill low spots, and trim high spots to comply with required surface tolerances.
- B. Rough Grading:
 1. Interior Grading: Trim unexcavated spaces within the building to levels indicated.
 - a. Subgrade for Interior Slabs: Compact as specified to receive fill material. Finish subgrade surface within 1 inch above or below level specified for fill required.
 2. Exterior Grading: Trim and grade area within the Grading Limit Line and excavations outside the limit line, required by this Contract, to a level of 4 inches below the finish grades indicated unless otherwise specified herein or where greater depths are indicated. Provide smooth uniform transition to adjacent areas.

- a. Slope cut and fill in transition areas, outside of the grading limit line, to meet corresponding levels of existing grades at a slope of 1 vertical to 2 horizontal unless otherwise indicated.
- b. Landscaped Areas: Provide uniform subgrade surface within 1 inch of required level to receive topsoil thickness specified. Compact fill as specified to within 3 inches of subgrade surface. Remove objectionable material detrimental to proper compaction or to placing full depth of topsoil. If the top 3 inches of subgrade has become compacted before placement of topsoil, harrow or otherwise loosen rough graded surface to receive topsoil to a depth of three inches immediately prior to placing topsoil.

C. Subgrade Surface for Walks and Pavement

1. Shape and grade subgrade surface as follows:
 - a. Walks: Shape the surface of areas under walks to required line, grade and cross section, with the finish surface not more than 1 inch above or below the required subgrade surface elevation.
 - b. Pavements: Shape the surface of areas under pavement to required line, grade and cross section, with the finish surface not more than 1/2 inch above or below the required subgrade surface elevation.
2. Grade Control: During construction, maintain lines and grades including crown and cross-slope of subbase course.
3. Thoroughly compact subgrade surface for walks and pavement by mechanical rolling, tamping, or with vibratory equipment as approved to the density specified.
4. Shoulders: Place shoulders along edges of filled subgrades to prevent lateral movement. Construct shoulders of Selected Fill material, placed in such quantity to compact to thickness of each subgrade course layer. Compact and roll at least a 2-foot wide additional layer of each subgrade course.

D. Finish Grading:

1. Uniformly grade rough graded areas within limits of the Grading Limit Line to finish grade elevations indicated.
2. Grade and compact to smooth finished surface within tolerances specified, and to uniform levels or slopes between points where finish elevations are indicated or between such points and existing finished grade.
3. Grade areas adjacent to building lines so as to drain away from structures and to prevent ponding.
4. Finish surfaces free from irregular surface changes, and as follows:
 - a. Walks: Place and compact subbase material as specified. Shape surface of areas under walks to required line, grade and cross section, with the finish surface not more than 1/4 inch above or below the required subbase elevation.
 - b. Pavements: Place and compact subbase material as specified. Shape surface of areas under pavement to required line, grade and cross section, with the finish surface not more than 1/4 inch above or below the required subbase elevation.

- c. Building Slabs: Grade subbase material smooth and even, free of voids, compacted as specified, and to required subbase elevation. Finish final grades within a tolerance of 1/4 inch when tested with a ten-foot straightedge.
 - d. Surfaces To Receive Vapor Barrier: Provide smooth surfaces graded, tamped and/or rolled, entirely free of obstructions or protruding objects.
5. Spread topsoil directly upon prepared subgrade surface to a depth measuring 4 inches after natural settlement of the topsoil has occurred in areas to be seeded or to receive sod. Perform topsoil spreading operations only during dry weather. Place to greater depth when necessary to adjust grades to required elevations.
- a. Approved existing topsoil within the Grading Limit Line may be used. Provide additional topsoil from outside sources as required.
6. Finish topsoil surface free of depressions that would trap water, free of stones over 1 inch in any dimension, and free of debris or other objectionable material. Finished surfaces shall conform to the contour lines and elevations indicated on the drawings or as directed by the Director's Representative.

3.11 FIELD QUALITY CONTROL

- A. Special Inspections: Director's Representative will engage a qualified Special Inspector to perform the following special inspections:
 - 1. Determine prior to placement of fill that site has been prepared in compliance with requirements.
 - 2. Determine that fill material classification and maximum lift thickness comply with requirements.
 - 3. Determine, during placement and compaction, that in-place density of compacted fill complies with requirements.
- B. Testing Agency: Director's Representative will engage a qualified geotechnical engineering testing agency to perform tests and inspections.
- C. Coordinate with and allow testing agency to inspect and test subgrades and each fill or backfill layer; provide testing agency minimum three working days advanced notice prior to all phases of filling and backfilling operations. Proceed with subsequent earthwork activities only after test results for previously completed work comply with requirements.
- D. Footing Subgrade: At footing subgrades, at least one test of each soil stratum will be performed to verify design bearing capacities. Subsequent verification and approval of other footing subgrades may be based on a visual comparison of subgrade with tested subgrade when approved by Director's Representative.

- E. Testing agency will test compaction of soils in place according to ASTM D698 or ASTM D1557, as applicable. Tests will be performed at the following locations and frequencies:
 - 1. Paved and Building Slab Areas: At subgrade and at each compacted fill and backfill layer, at least one test for every 1000 sq. ft. or less of paved area or building slab but in no case fewer than three tests.
 - 2. Foundation Wall Backfill: At each compacted backfill layer, at least one test for every 50 feet or less of wall length but no fewer than two tests.
 - 3. Trench Backfill: At each compacted initial and final backfill layer, at least one test for every 50 feet or less of trench length but no fewer than two tests.
- F. When testing agency reports that subgrades, fills, or backfills have not achieved degree of compaction specified, scarify and moisten or aerate, or remove and replace soil materials to depth required; recompact and retest until specified compaction is obtained.

3.12 PROTECTION

- A. Protecting Graded Areas: Protect newly graded areas from traffic, freezing, and erosion. Keep free of trash and debris.
- B. Repair and reestablish grades to specified tolerances where completed or partially completed surfaces become eroded, rutted, settled, or where they lose compaction due to subsequent construction operations or weather conditions.
 - 1. Scarify or remove and replace soil material to depth as directed by Director's Representative; reshape and recompact.
- C. Where settling occurs before Project correction period elapses, remove finished surfacing, backfill with additional soil material, compact, and reconstruct surfacing.
 - 1. Restore appearance, quality, and condition of finished surfacing to match adjacent work, and eliminate evidence of restoration to greatest extent possible.

3.13 ESD PRE-DESIGN INVESTIGATION SCOPES OF WORK

- A. In addition to the work outlined on the project drawing and within this project manual, the contractor shall also undertake and execute the scope of work outlined in the ESD Pre-Design Investigation Scopes of Work Document of the Project Manual to include Phase II Investigation and Geotechnical Engineering. This work shall be completed as soon as feasible when site conditions allow. All raw data from these Investigations is required to be submitted to the Director's Representative as a digital submittal.

3.14 DISPOSAL OF SURPLUS AND WASTE MATERIALS

- A. Remove from State property and dispose of excess and unsuitable materials, including materials resulting from clearing, grubbing and removal of existing improvements; soil; trash; and debris.

- B. Transport excess and unsuitable materials, including materials resulting from clearing and grubbing and removal of existing improvements, to spoil areas on State property designated by the Director's Representative, and dispose of such materials as directed.
- C. Transport excess topsoil to areas on State property designated by the Director's Representative. Smooth grade deposited topsoil.
- D. Separate recyclable materials produced during site clearing from other nonrecyclable materials. Store or stockpile without intermixing with other materials and transport them to recycling facilities. Do not interfere with other Project work.

END OF SECTION 310000

Survey

Project Location: 1024 Fulton Street
Tax Block: 2015 Lot: 28
Brooklyn, NY

Requirements:

The preparation of the following for the above-mentioned premises:

Topographical/Architectural Survey. The Topographical Survey will meet the requirements of the Department of Buildings and Department of Transportation/Builder's Pavement Plan with Elevations at 25-foot intervals on Street.

Phase II Investigation Fieldwork

Task 1: Phase II Site Investigation Field Work

The consultant and its subcontractors will conduct a Phase II Site Investigation at the Site. The Phase II field activities will consist of sampling and analysis to evaluate the potential for soil, groundwater, and soil vapor contamination. Prior to field work, a subcontractor will complete a one-call utility mark-out in accordance with local laws to locate buried electric, natural gas, telecommunications utilities, etc. The Phase II Site Investigation is assumed to require up to eight field days with the following scope:

Geophysical Survey

A geophysical survey (e.g., magnetometer and ground penetrating radar [GPR] surveys, radio frequency [RF] line tracers, fiber-optic cameras, etc.) will be conducted by a subcontractor to identify subgrade features at proposed sample locations.

The geophysical survey will be focused specifically on areas where known utility and infrastructure is present to reduce the potential for encountering subgrade structures during the soil boring program.

Soil Borings

Soil borings are required at approximately seven locations distributed across the entire development Site, including all proposed tax lots. Soil borings will be advanced using a Geoprobe® hydraulic push drill rig to a depth of approximately 20 feet below grade surface (bgs).

Site, including all proposed tax lots. Soil borings will be advanced by a subcontractor using a Geoprobe® hydraulic push drill rig to a depth of approximately 20 feet below grade surface (bgs). Borings will be advanced within locations proposed for excavation as part of the new development activities, as well as locations where slab-on-grade construction is proposed. Continuous soil cores will be collected at each soil boring location using factory-new macrocores. Non-dedicated field equipment will be field decontaminated between boring locations. The consultant will collect 14 soil samples for laboratory analysis in association with the seven soil borings. One surficial (zero-to-two feet below ground surface [bgs], or just below the building slab) and one deeper sample at the anticipated terminal excavation depth (assumed 20 feet below existing grade), saturated zone, or at refusal (whichever is encountered first) will be collected at each soil boring location.

Sample depths may be modified in the field should soils be observed with suspect characteristics (e.g., staining, odors, positive photoionization detector [PID] readings, etc.). The consultant will collect soil samples directly from factory-new macrocores and transfer them directly into laboratory supplied containers, stored in an ice-packed cooler and transported via courier to a New York State Department of Health (NYSDOH) Environmental Laboratory Approval Program (ELAP)-approved laboratory under appropriate chain-of-custody protocols.

Soil samples will be submitted with a standard turnaround time for the following analysis:

- > Target Compound List (TCL) VOCs using United States Environmental Protection Agency (USEPA) Method 8260;
- > TCL semi-volatile organic compounds (SVOCs) using USEPA Method 8270;
- > Target Analyte List (TAL) Metals using USEPA Methods 6010 and 7471;
- > Pesticides using USEPA Method 8081; and
- > Polychlorinated biphenyls (PCBs) using USEPA Method 8082.

No sampling or analysis for emerging contaminants is planned as part of this project. Quality assurance and quality control (QA/QC) samples will be collected consistent with NYSDEC Division of Environmental Remediation guidance to support submission to the Brownfield Cleanup Program (BCP). Soil QA/QC samples will include: (1) one field duplicate soil sample collected blind at a randomly selected boring

location (1 per 20 field samples); (2) one equipment rinsate blank collected from decontaminated non-dedicated field equipment to verify decontamination procedures; (3) matrix spike/matrix spike duplicate (MS/MSD) samples requested on at least one soil sample per analytical method to assess laboratory accuracy and precision; and (4) one trip blank per cooler per shipment for VOC samples. All QA/QC samples will be submitted to the laboratory under separate sample identifications and appropriate chain-of-custody protocols.

Groundwater Investigation

The subcontractor will install three permanent groundwater monitoring wells at the Site. **THE MONITORING WELLS WILL BE INSTALLED TO AN APPROXIMATE DEPTH OF 75 FEET BELOW GROUND SURFACE (BGS) BASED ON THE ANTICIPATED DEPTH OF WATER AT 60-65 FEET BGS VIA A TRACK-MOUNTED SONIC, OR OTHER CAPABLE, DRILL RIG.** The construction of the monitoring wells will be 2-inch diameter, screened at appropriate depth, and developed. Two monitoring wells (MW-1 and MW-3) will be installed in the parking lot on the west side of the property. Given the limited access within the building and the technical challenges of drilling deep wells into bedrock, one monitoring well (MW-2) is proposed to be installed on the sidewalk along the north property boundary on Bergen Street pending OER approval. This task includes obtaining the sidewalk permit from NYC Department of Transportation (NYCDOT) and flag replacement within 30 days of completion of the well installation. Four days of field work are included for the installation and development of the three monitoring wells.

Prior to installation of the monitoring wells, a geophysical survey will be conducted to clear boring locations. The monitoring wells will be surveyed by The consultant's NY licensed surveyors to determine the top of casing elevations in order to evaluate the site-specific groundwater flow direction.

After a minimum 48-hour following well development, the consultant will return to the site to collect one round of groundwater samples from each of the monitoring wells. Groundwater samples will be collected using factory-new, disposable polyethylene tubing and an inertial or other capable groundwater sampling pump. The consultant will collect groundwater samples directly into laboratory supplied containers, stored in ice-packed coolers and transported to an NYSDOH ELAP-approved laboratory via courier under appropriate chain-of-custody protocols.

Three groundwater samples will be collected using factory-new, disposable polyethylene tubing and an inertial or other capable groundwater sampling pump. The consultant will collect groundwater samples directly into laboratory supplied containers, stored in ice-packed coolers and transported to an NYSDOH ELAP-approved laboratory via courier under appropriate chain-of-custody protocols.

Groundwater samples associated with the subsurface investigation will be submitted for the following analysis:

- > TCL VOCs using USEPA Method 8260;
- > TCL SVOCs using USEPA Method 8260;
- > TAL Metals (total and dissolved concentrations (lab filtered and unfiltered) using USEPA Methods 6010 and 7471;
- > Pesticides using USEPA Method 8081; and
- > PCBs using USEPA Method 8082.

No sampling or analysis for emerging contaminants is planned as part of this project. Groundwater QA/QC samples will be collected consistent with NYSDEC DER guidance to support BCP submission. Groundwater QA/QC samples will include: (1) one field duplicate groundwater sample collected from one of the three monitoring wells, submitted blind to the laboratory; (2) one equipment blank collected from the sampling pump and tubing after decontamination; (3) MS/MSD samples requested on at least one groundwater sample per analytical suite; and (4) one trip blank per cooler per VOC shipment. All QA/QC samples will be

submitted to the laboratory under separate sample identifications and appropriate chain-of-custody protocols.

Soil Vapor Investigation

The consultant will conduct a soil vapor study to assess the potential for the presence of VOCs in soil vapor at the Site. A total of six soil vapor probes are assumed in this proposal. The soil vapor study will consist of the collection of soil vapor samples from just below the existing foundation and/or from probes set at the proposed excavation depth or just above the groundwater table/bedrock interface (whichever is shallower). A total of six soil vapor samples will be collected to evaluate for the potential for soil vapor intrusion into the proposed building.

The consultant's subcontractor will install soil vapor sample points at locations identified in the ESD-approved Phase II WP. The vapor implants will consist of a VaporPin™ or a field-decontaminated stainless retract-a-tip soil vapor screen attached to factory new polyethylene tubing. The annular space surrounding the tubing will be filled with washed #1 crushed stone or washed gravel. The sample points will be sealed into the ground using non-toxic modeling clay or clay bentonite to reduce the potential for ambient air being drawn into the boreholes and mixing with the potential soil vapor. The areas immediately above each sample point will be sealed with bentonite clay and a canister, thus creating an annular space. Helium will be introduced into each annular space as a tracer gas for quality assurance/quality control (QA/QC) analysis.

Prior to sampling, the consultant will purge each soil vapor sampling point no more than one to three equipment volumes of soil vapor. A 2.7-liter, laboratory supplied vacuum Summa canister will then be connected to the polyethylene tubing, and the sample will be collected over a two-hour period using a laboratory-calibrated flow controller and consistent with NYSDOH Guidance. The consultant will submit the Summa vacuum canisters to an ELAP-certified laboratory under appropriate chain-of-custody protocols for analysis of VOCs using USEPA Method TO-15.

In addition to the six soil vapor samples, the following QA/QC samples will be collected concurrent with soil vapor sampling to support BCP submission consistent with NYSDEC DER guidance and NYSDOH vapor intrusion guidance: (1) at least one ambient/outdoor air sample collected upwind of the site to characterize background VOC concentrations; (2) one field duplicate Summa canister collected at a selected soil vapor probe location, submitted blind to the laboratory; and (3) one laboratory canister blank per analytical batch to confirm canister cleanliness prior to sample collection. Helium tracer gas results will be reported for each sample to confirm sample integrity. All QA/QC samples will be submitted under appropriate chain-of-custody protocols for analysis by USEPA Method TO-15.

Quality Assurance Project Plan

Prior to the commencement of field activities, the consultant will prepare a site-specific Quality Assurance Project Plan (QAPP) or Field Sampling Plan (FSP) consistent with NYSDEC DER-10 Technical Guidance for Site Investigation and Remediation and applicable NYSDOH guidance. The QAPP/FSP will document all QA/QC procedures, data quality objectives (DQOs), sample collection and handling protocols, and laboratory reporting requirements. All laboratory data will be provided in a NYSDEC-compatible electronic data deliverable (EDD) format suitable for BCP submittal. The laboratory analytical turnaround time will be a minimum of 10 business days; expedited turnaround may be requested for select samples should field screening results indicate conditions warranting more rapid data review.

Investigation Derived Waste

Investigation derived waste (IDW), including drill cuttings from the permanent well installation, purge water, and well development water will be containerized in 55-gallon drums for off-site disposal. Drill cuttings from the soil boring investigation will be placed back into the borehole if no contamination is observed. If

contaminated soil is encountered, these drill cuttings will be containerized in a 55-gallon drum for off-site disposal.

The consultant will collect up to four waste characterization samples from the containerized soil and water for laboratory analysis to properly classify the IDW for off-site disposal. This Scope of Services does not include transportation and disposal (T&D) which is dependent on the results of the waste characterization, sampling and analysis. A separate client authorization will be prepared for T&D. An estimated 10 drums of IDW will be generated and must be stored on site in a secure location pending T&D. All drums shall be properly labeled and removed by a licensed waste hauler within 90 days upon facility approval and signed client authorization. Storage and maintenance of drums on site is the Client's responsibility.

Please note: the above field work scope will be tightly coordinated with and proceed pursuant to a remedial investigation work plan prepared by a to-be-named Environmental Consultant.

Geotechnical Engineering

Geotechnical Borings

Based on the building size of 12,759 square feet, we recommend performing seven (7) borings to satisfy Code. An approval from NYCT will be required for the borings. For structures having an average area load of 1,000 pounds per square foot or more, at least one boring for every 10,000 square feet of footprint area shall penetrate at least 100 feet below the curb grade, or 5 feet into bedrock of class 1c or better, whichever is less. Due to the depth of bedrock, two of 7 borings will be 100 feet deep. One (1) monitoring well will be installed in a completed boring to a depth of about 60-65 feet to monitor groundwater level.

We recommend a site visit to visually inspect the proposed boring locations to assess the feasibility of the scope recommended herein prior to mobilization of rigs. We understand that the current building is undergoing a safety review and may need to be demolished prior to the start of the investigation.

