

BATTERY PARK CITY AUTHORITY

REQUEST FOR PROPOSALS

FOR

NYMEX Terrace - Depression Remediation Project

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I. SUMMARY

Battery Park City Authority d/b/a Hugh L. Carey Battery Park City Authority (“BPCA”) requests proposals (each individually, a “Proposal” or collectively, the “Proposals”) from contractors (each individually, a “Proposer” or collectively, the “Proposers”) to provide site construction services for the NYMEX Terrace - Depression Remediation project (the “Project”). The purpose of this Project is to remediate the settlement of the terrace area adjacent to the NYMEX building in Battery Park City (the “Site”). The scope of services shall include, but not be limited to, providing all site construction services necessary to remediate settlement issues around the NYMEX building, tree pruning, removal of existing plant material, and replacement of appropriate top soils and grass.

Minority-Owned Business Enterprises (“MBE”) and Women-Owned Business Enterprises (“WBE”) are encouraged to submit Proposals.

This request for proposals, the attachments and any additional information submitted herewith, (collectively, the “RFP”) do not obligate BPCA to complete the selection and contract award process. BPCA reserves the right: 1) to accept or reject any and all Proposals; 2) to request additional information from any or all Proposers to assist BPCA in its evaluation process; 3) to amend or withdraw this RFP prior to the announcement of the selected Proposer; and 4) to award the proposed services, in whole or in part, to one or more firms. In case of an amendment to the RFP, all Proposers will be provided with a copy of any such amendment(s) and will be afforded the opportunity to revise their Proposals in response to the RFP amendment.

II. DESCRIPTION OF BPCA

BPCA is a public benefit corporation created in 1968 under the laws of the State of New York for the purpose of financing, developing, constructing, maintaining, and operating a planned community development of the Battery Park City site as a mixed commercial and residential community.

Under the Battery Park City Authority Act (the “Act”), BPCA has the following powers, among others: to borrow money and to issue negotiable bonds, notes or other obligations and to provide for the rights of the holders thereof; to acquire, lease, hold, mortgage and dispose of real property and personal property or any interest therein for its corporate purposes; to construct, improve, enlarge, operate and maintain Battery Park City; to make bylaws for the management and regulation of its affairs, and, subject to agreements with bondholders, for the regulation of Battery Park City; to make contracts and to execute all necessary or convenient instruments, including leases and subleases; to accept grants, loans and contributions from the United States, or the State of New York or the City of New York (the “City”), or any agency or instrumentality of any of them, or from any other source and to expend the proceeds for any corporate purpose; to fix, establish and collect rates, rentals, fees and other charges; and to do all things necessary or convenient to carry out the powers expressly granted by the Act. BPCA has no taxing power.

Since its inception, BPCA has caused the staged development of Battery Park City, in individual parcels, creating a richly diversified mixed use community providing residential and commercial space, with related amenities such as parks, plazas, recreational areas and a waterfront esplanade. Most individual parcels of land in Battery Park City were developed into residential and commercial buildings by tenants (“Ground Lease Tenants”) under long-term ground leases with BPCA. The Ground Lease Tenants are responsible for the maintenance, insurance and defense and indemnification of BPCA with regard to those leased parcels.

One of BPCA’s key responsibilities under the Act is to operate, maintain and repair the parks and opens spaces in and around Battery Park City’s residential and commercial areas. This function has been delegated by BPCA to the Battery

Park City Parks Conservancy Corporation (“BPCPC”) through a written Management Agreement. The BPCPC carries out its mission by maintaining 36 acres of parks, playgrounds and open spaces, including a mile-long waterfront esplanade. The BPCPC also develops programs and manages public events for the Battery Park City community. BPCA owns and has built out a commercial condominium unit in a residential building in Battery Park City, which serves as the BPCPC headquarters.

To obtain a copy of BPCA’s most recently completed audited financial statements, please visit BPCA’s official website at www.batteryparkcity.org. The audited financial statements and related reports found on BPCA’s website will provide you with an overview of the operations for which BPCA is responsible and the areas of expertise in which the selected Proposer must be proficient. For an overview of BPCPC’s operations, please visit its website at www.bpcparks.org.

III. SERVICES REQUIRED

- A. The selected Proposer will be responsible for the services delineated in Exhibit A (the “Scope of Work”), attached hereto.
- B. All work to be performed by the selected Proposer shall be performed under the supervision of a Project Manager in charge of this engagement (the “Lead PM”) who must ensure that the work completed for BPCA is performed competently and in a timely manner.
- C. All work to be performed under the contract awarded pursuant to this RFP (the "Contract") shall be substantially complete by May 23, 2014

IV. KEY DATES, CONTRACT TERM AND MINIMUM QUALIFICATIONS

A. Key Dates

The following is a list of key dates, up to and including the date Proposals are due to be submitted, which is subject to change at BPCA’s discretion:

- Request for Proposals issued: Friday, February 21, 2014
- Pre-proposal meeting: Wednesday, February 26, 2014 at 9:30 AM. Meeting Location: BPCA Offices, 200 Liberty Street, 24th floor New York, NY 10281 (attendance is highly recommended).
- Deadline to submit questions to BPCA: Friday, February 28, 2013 by 5:00 p.m. (by email only).
All questions regarding this RFP should be submitted in writing via email to the “Designated Contact”: Michael LaMancusa, Battery Park City Authority, at Michael.lamanchusa@bpca.ny.gov.
- Deadline for BPCA’s response to substantive questions: Thursday March 6, 2014 (via BPCA Website).
 - **DUE DATE FOR RESPONSES TO RFP: Thursday, March 14, 2014 by 3:00 p.m. (the “Due Date”).**
- Selection and notification of successful Proposer: To be determined.
- Contract start date: March 2014
- Substantial Completion Date: May 23, 2014

B. Anticipated Contract Term

It is anticipated that the term of the Contract will be for a period of six (6) months. BPCA reserves the right to terminate the Contract at any time, with or without cause, upon thirty (30) days written notice. BPCA reserves the right to terminate the Contract at any time, without prior notice, if the employee identified in the Proposal as the Lead PM for this engagement ceases to be employed by the selected Proposer.

C. Minimum Qualification Requirements

The following are the Minimum Qualification Requirements for this RFP. Proposals that fail to comply with these requirements will be rejected.

- 1) The firm must be licensed to do business in the City of New York.

V. GENERAL REQUIREMENTS

A. Questions regarding MBE/WBE participation, joint ventures and sub-contracting goals

Please see Exhibit B (attached) (“Diversity Exhibit”) for contractor requirements and procedures for business participation opportunities for New York State certified MBEs/WBEs and equal employment opportunities for minority group members and women.

For questions relating to MBE/WBE participation, joint ventures and sub-contracting goals ONLY, please contact “MBE/WBE Designated Contact” Mr. Anthony Peterson at 212.417.2337.

B. Restricted Period

Applicants are restricted from making contact with anyone other than the Designated Contact or MBE/WBE Designated Contact specified above during the period from the date of publication of the notice of this RFP in the New York State Contract Reporter through approval of the Contract by BPCA (the “Restricted Period”). Employees of BPCA are required to record certain contacts during the Restricted Period, including, but not limited to, any oral, written or electronic communication with a governmental entity under circumstances where a reasonable person would infer that the communication was intended to influence BPCA’s conduct or decision regarding the governmental procurement, and to make a determination of responsibility based, in part, upon any such contact. Failure to abide by this process may result in a finding that the firm is a non-responsive Proposer.

C. Submission of Proposals

Proposals are due no later than 3:00 p.m. on March 14, 2014.

Proposers must submit six (6) paper copies of their Proposals and one (1) electronic CD-Rom copy in a sealed package clearly marked **“Proposal Enclosed – NYMEX Terrace - Depression Remediation Project”** to the Designated Contact by messenger, overnight courier or certified mail to the following address:

Michael LaMancusa
Battery Park City Authority
One World Financial Center, 24th Floor
New York, NY 10281

BPCA is not responsible for any internal or external delivery delays which may cause any Proposal to arrive beyond the stated Due Date. To be considered, Proposals must arrive at the time and place specified herein and be time stamped by BPCA’s time stamp prior to the Due Date. Please leave ample time for building security, as late Proposals will not be accepted. Proposals submitted by fax or electronic transmission will NOT be accepted. A

Proposer may, after submitting a Proposal, amend its Proposal by submitting a second, amended Proposal, clearly labeled “**Amended Proposal Enclosed – NYMEX Terrace - Depression Remediation Project**” as long as the amended Proposal is submitted by the Due Date.

Public access to Proposals shall be governed by the relevant provisions of the Freedom of Information Law, Article 6 of the New York State Public Officers Law, and regulations adopted pursuant thereto.

D. Mandatory Forms

Proposers must complete and include with their Proposal all “Mandatory Forms,” which can be found at the following URL address: http://www.batteryparkcity.org/pdf_n/Mandatory_Forms_Packet.pdf, by the Due Date.

These Mandatory Forms include the following:

- 1) NYS Standard Vendor Responsibility Questionnaire – Submit with the Cost Proposal (as described below), one (1) original unbound set of a completed NYS Standard Vendor Responsibility Questionnaire with original ink signatures. Do not include the Standard Vendor Responsibility Questionnaire in the bound copies of the Cost Proposal. The NYS Standard Vendor Responsibility Questionnaire must be notarized and signed by the individual(s) authorized to bind the firm contractually. Indicate the title or position that the signer holds within the firm.
- 2) State Finance Law § 139 Form 1 – one original unbound completed SFL 139 Form 1: Professional’s Certifications Pursuant to SFL § 139-j and § 139-k with original signature. State Finance Law § 139 Forms 1 must be signed by the individual(s) authorized to bind the firm contractually.
- 3) W-9 form.
- 4) Statement of Non-Collusion.
- 5) Diversity Forms.

VI. PROPOSAL FORMAT AND CONTENTS

A. Proposal Format

The Proposal must be printed on either 8½” x 11” or 8½” x 14” paper. The Proposal will be evaluated on the basis of its content, not length. BPCA reserves the right to disqualify Proposals that fail to comply with any of these instructions.

B. Proposal Content

A Proposal in response to this RFP must include the following sections in the order listed:

- 1) Cover Letter, as follows:

The Proposal must include a signed Cover Letter from a person within the firm who is authorized to bind the Proposer. Cover letters must be signed. **Proposals with unsigned Cover Letters will be rejected.**

The Cover Letter must include a representation by the Proposer that, except as disclosed in the Proposal, no officer or employee of the Proposer is directly or indirectly a party to or in any other manner interested financially or otherwise in this RFP.

- 2) Corporate Overview.
- 3) Proposer's discussion of its understanding of the Services Required (see Section III).
- 4) Proposer's Responses to the RFP Questions and RFP Additional Information Request, set forth below.
- 5) Proposer's Cost Proposal, as described below.
- 6) Proposer's response to the question regarding the use of New York State businesses set forth in Section X of the RFP.

C. **RFP Questions**

1. Briefly describe your firm's background, size, and history as it may be relevant to the Services Required, with an emphasis on site construction work within around New York City ("NYC").
2. Briefly describe your firm's experience and history with an emphasis on work within hardscaped and landscaped public spaces in and around NYC.
3. Describe your firm's experience and expertise relevant to the Project.
4. Has your firm or any of the firm's partners/employees been disciplined or censured by any regulatory body or filed for bankruptcy or reorganization or has had bankruptcy proceedings initiated against it/them within the last 5 years? If so, please describe the relevant facts.
5. Within the past three years, have there been any significant developments in your firm such as changes in ownership or restructuring? Do you anticipate any significant changes in the near future? If so, please describe.
6. Within the last five years, has your firm, or a partner or employee in your firm, been involved in litigation or other legal proceedings relating to the provision of site construction services? If so, please provide an explanation and the current status or disposition of the matter
7. Are there any potential conflict of interest issues in representing BPCA?
8. Are any of your employees or principals former employees of BPCA? If so, please list their names, current titles, and dates of employment with BPCA.
9. List any professional or personal relationships your firm's employees may have with BPCA's Board and/or staff members of BPCA.
10. Identify the following persons: the Lead PM who will be the primary contact and lead person in providing services to BPCA, and the person who will be listed as a "key person" in any contract with BPCA.
11. Describe your proposed team's experience (including both direct contract work and work performed under subcontracts) with similar work for other public agencies and authorities, with a particular emphasis on New York State and City agencies and authorities or Federal government agencies or authorities. Include contract dates, the nature of the work performed, the contracting agency, the contract number (if known) and the agency supervisor for each.
12. Describe your firm's "backup plan" in the event one or more of the Lead PM or key personnel assigned to this engagement leave the firm.
13. Submit a discussion of your approach to the work that briefly addresses your conceptual step-by-step approach toward completion of the work, and outline your proposed procedures for executing the work.
14. Itemize the work you intend to perform with your firm's resources and/or workforce as well as the work for which you propose to utilize subcontractors.
15. Provide a list of all proposed subcontractors for the completion of the work..
16. Provide a list of all proposed suppliers for the completion of the work.
17. Submit a separate **bar chart schedule** for completion of the work pursuant to both Option I and Option II as described in the Scope of Work (Exhibit A). Each bar chart schedule should include sequencing of the work, manpower staffing level, work shifts, and show all project milestones and successful overall completion.
18. Discuss your ability to take stringent safety measures into account as to work done on public streets and in public parks.

19. Identify any and all exceptions taken to BPCA's Standard Form of Contract attached hereto as Exhibit C and detail the reasons for such exceptions. No exceptions to the contract will be considered by BPCA after submission of the Proposals. BPCA maintains the right to reject Proposals based on non-conformance with the Standard Form of Contract.
20. Please provide any additional information which would serve to distinguish your firm from other Proposers and that you believe may be relevant to this RFP and your capability to perform the Required Services.

D. RFP Additional Information Request

1) Insurance/Bonding:

- a. Do you impose any limitations on liability through your contracts?
- b. Describe the levels of coverage for any insurance your firm carries. List the insurance carrier(s) or provide an insurance certificate showing your firm's coverage in accordance with the following:
 - Commercial General Liability Insurance limits shall not be less than **\$1,000,000** per each occurrence and **\$1,000,000** in the aggregate;
 - Umbrella Liability limits shall not be less than **\$1,000,000**;
 - Automobile liability (Combined Single Injury, Bodily Injury and Property Damage) limits shall not be less than **\$1,000,000**;
 - Workman's Compensation shall not be less than statutory limits;
 - Employers Liability shall not be less than **\$1,000,000**; and
 - Disability Insurance as required by applicable provisions of law;.

The costs of the insurance shall be included in the Cost Proposal. BPCA, BPCPC and the State of New York shall be listed as Additional Insured on CG 2010 (11/85) or similar form and should be included as such on all subcontracts. Policies should contain no limitations/exclusions for Labor Law claims.

- c. State whether or not you can provide payment and performance bonds, the amounts thereof (both single and aggregate) and the name of your bonding company. Provide a letter from your surety stating that you are able to provide 100% bonding for this Project.

2) References:

Please provide at least three (3) client references for whom your firm has performed similar work to that requested in this RFP. For each client, please provide the name, address and telephone number.

3) Appendices:

- a. Include resumes for all key management personnel listed in your Proposal, including the staff that your firm is proposing to assign to this Project.
- b. Provide a copy of each addenda submitted by BPCA with regard to this Proposal (if applicable) and a signed acknowledgment of receipt of each addenda.

4) Financial Statements: Please provide a copy of your firm's most recent Audited Financial Statements (within the last year).

E. Cost Proposal

Each “Cost Proposal” must be a lump sum with an itemized schedule of values for the services contemplated herein. The Cost Proposal must set forth separate lump sum amounts and itemized schedules of values for both Option I and Option II as described in Exhibit A. **To submit a complete Cost Proposal, Proposer must submit each of the following:**

- 1) Cost proposal in the form attached hereto as Exhibit D (“Cost Proposal Form”).
- 2) Labor rates in the form attached hereto as Exhibit E (“Form of Technical Salaries”).

VII. THE EVALUATION PROCESS

A. Objectives

The primary objective of the evaluation process is to select a Proposer that:

- Demonstrates a thorough understanding of the scope of the engagement and the specific responsibilities which it entails;
- Possesses adequate resources to handle assigned responsibilities and to handle unforeseen circumstances that may arise;
- Assigns highly skilled, experienced, diligent, responsible and professional personnel to perform the Services Required;
- Maintains high ethical standards and has an unblemished reputation; and
- Has no conflict of interest between its representation of BPCA and that of other clients.

The selection process will begin with the review and evaluation of each of the written Proposals. The purpose of this evaluation process is twofold: (1) to examine the responses for compliance with this RFP and (2) to identify the complying firms that have the highest probability of satisfactorily performing the Services Required at a reasonable cost to BPCA. The evaluation process will be conducted in a comprehensive and impartial manner. The evaluation process will be conducted by a committee of BPCA’s employees selected by BPCA (the “Committee”). **The Committee will evaluate the Proposals based upon the evaluation criteria for selection set forth below.**

BPCA reserves the right to reject and return unopened to the Proposer any Proposal received after the RFP Due Date. All timely submitted Proposals will be reviewed to determine if they contain all required submittals specified herein. Incomplete Proposals may be rejected.

B. Interviews

BPCA reserves the right to determine whether interviews will be necessary for any or all of the Proposers. The purpose of the interview is to further document a Proposer’s ability to provide the Services Required, and to impart to the Committee an understanding of how specific services will be furnished. The proposed Lead PM, as well all other key personnel proposed to provide the services must be present and participate in the interview. The firm will be evaluated on the basis of whether the interview substantiates the characteristics and attributes claimed by the Proposer in its written response to this RFP and any other information requested by the Committee prior to the interview.

C. Evaluation Criteria for Selection

Selection will be based upon the following criteria:

1 Cost Proposal:	35%
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2	Expertise, Experience & Methodology:	30%
3	Schedule:	25%
4	Proposed MBE/WBE utilization plan (the “Utilization Plan”) and/or Firm MBE/WBE status:	10%

D. Basis for Contract Award

The Contract will be awarded to the highest technically rated Proposer whose Proposal is determined to be responsive and in the best interests of BPCA, subject to a determination that the Cost Proposal is fair and reasonable.

VIII. NON-COLLUSION

By submitting a Proposal, Proposers hereby warrant and represent that any ensuing Contract has not been solicited or secured directly or indirectly in a manner contrary to the laws of the State of New York, and that said laws have not been violated and shall not be violated as they relate to the procurement or the performance of the Contract by any conduct, including the paying or giving of any fee, commission, compensation, gift, or gratuity or consideration of any kind, directly or indirectly, to any member of the board of directors, employee, officer or official of BPCA. IX. IRAN DISINVESTMENT ACT

By submitting a Proposal or by assuming the responsibility of any Contract awarded hereunder, Proposers hereby certify that they are not on the “Entities Determined To Be Non-Responsive Bidders/Offerers Pursuant to The New York State Iran Divestment Act of 2012” list (“Prohibited Entities List”) posted on the New York State Office of General Services website at: <http://www.ogs.ny.gov/about/regulations/docs/ListofEntities.pdf> and further certify that they will not utilize any subconsultant that is identified on the Prohibited Entities List on this Contract. The selected Proposer agrees that should it seek to renew or extend any Contract awarded hereunder, it must provide the same certification at the time the Contract is renewed or extended. The selected Proposer also agrees that any proposed assignee of the Contract will be required to certify that it is not on the Prohibited Entities List before BPCA may approve a request for assignment of the Contract.

During the term of any Contract awarded hereunder, should BPCA receive information that a person (as defined in State Finance Law §165-a) is in violation of the above-referenced certifications, BPCA will review such information and offer the person an opportunity to respond. If the person fails to demonstrate that it has ceased its engagement in the investment activity which is in violation of the New York State Iran Divestment Act of 2012 within 90 days after the determination of such violation, then BPCA shall take such action as may be appropriate and provided for by law, rule, or contract, including, but not limited to, seeking compliance, recovering damages, or declaring the selected Proposer in default of the awarded Contract.

BPCA reserves the right to reject any request for renewal, extension, or assignment for an entity that appears on the Prohibited Entities List prior to the renewal, extension, or assignment of the Contract, and to pursue a responsibility review with the selected Proposer should it appear on the Prohibited Entities List hereafter.

X. ENCOURAGING USE OF NEW YORK STATE BUSINESSES IN CONTRACT PERFORMANCE

New York State businesses have a substantial presence in State contracts and strongly contribute to the economies of the state and the nation. In recognition of their economic activity and leadership in doing business in New York State, Proposers for this Contract for commodities, services or technology are strongly encouraged and expected to consider New York State businesses in the fulfillment of the requirements of the Contract. Such partnering may be as subcontractors, suppliers, protégés or other supporting roles.

Proposers need to be aware that all authorized users of this Contract will be strongly encouraged, to the maximum extent practical and consistent with legal requirements, to use responsible and responsive New York State businesses in

purchasing commodities that are of equal quality and functionality and in utilizing services and technology. Furthermore, Proposers are reminded that they must continue to utilize small, minority and women-owned businesses, consistent with current State law.

Utilizing New York State businesses in State contracts will help create more private sector jobs, rebuild New York's infrastructure, and maximize economic activity to the mutual benefit of the contractor and its New York State business partners. New York State businesses will promote the contractor's optimal performance under the Contract, thereby fully benefiting the public sector programs that are supported by associated procurements.

Public procurements can drive and improve the State's economic engine through promotion of the use of New York businesses by its contractors. The State therefore expects bidders/proposers to provide maximum assistance to New York businesses in their contracts. The potential participation by all kinds of New York businesses will deliver great value to the State and its taxpayers.

Proposers can demonstrate their commitment to the use of New York State businesses by responding to the question below:

Will New York State businesses be used in the performance of this contract? Yes No

If yes, identify New York State businesses that will be used and attach identifying information.

EXHIBIT A

Scope of Work

The selected Proposer ("Contractor") shall provide all labor, materials and equipment, as well as all debris removal and safety precautions, necessary to complete the NYMEX Terrace - Depression Remediation Project (the "Project"). As shown below, this RFP contains two proposed options ("Option I" and "Option II") for execution and performance of the Project's Site-Related Work. Contractor shall perform Site-Related Work pursuant to the Option elected by BPCA and shown in the Scope of Work which shall be attached to and incorporated as part of the Contract. In addition to Site Construction services, Option 2 includes engineering design services for compression/compensation grouting.

Contractor shall provide settlement remediation services, in accordance with the Drawings and Specifications, including but not limited to the work items listed below.

CONSTRUCTION SEQUENCE

GENERAL:

Pre-Construction Conference:

Before commencing any work at the Site, Contractor shall attend a pre-construction conference with BPCA and other governmental and utility company representatives, to be determined by BPCA, for full explanation and discussion of all special requirements, scheduling and details concerning maintenance and protection of traffic throughout performance of the Project.

Site-Maintenance:

At all times throughout performance of the Project, Contractor shall:

- Keep the Site and adjacent premises free from all debris, rubbish and unnecessary materials;
- Remove any materials, debris or rubbish from the Site, or any portion of the Site, if directed to do so by BPCA;
- Remove from the Site all materials and temporary structures that are no longer needed for the Project and restore the Site, or any affected portion of the Site, to a neat and orderly condition.

Upon conclusion of work at the Site, Contractor shall remove all erection plants, tools, temporary structures, and materials belonging to the Contractor, and remove and promptly dispose of all water, dirt, rubbish or any other foreign substances at the Site.

SITE RELATED WORK (OPTION I):

OPTION I - Complete Removal

1. Perform pre-construction survey;
2. Erect work zone safety control devices;
3. Remove vegetation in the area affected by excavation;
4. Install temporary plastic barrier fence;
5. Install Type III construction barricades;

6. Install temporary silt fence;
7. Saw-cut existing asphalt pavement, asphalt surface course, concrete pavement or asphalt overlay on concrete pavement;
8. Remove, refurbish and, if necessary, store existing 2 ½-inch thick asphalt pavers;
9. Remove and dispose existing 5-inch thick concrete underlayment from asphalt pavers sidewalk area;
10. Install excavation protection sheeting / excavation protection system;
11. Excavate area along NYMEX building to expose seawall and concrete decking;
12. Prune tree roots along planters;
13. Provide all necessary seawall and expansion joint repairs, as described in the Drawings and Specifications, and as directed by the Project's Engineer;
14. Place sheet applied waterproofing membrane;
15. Install prefabricated composite structural drain along foundation of NYMEX building and seawall;
16. Backfill excavated area under appropriate items;
17. Place geogrid mechanically stabilized layer six inches below bottom of concrete slab / underlayment;
18. Complete backfill and place geotextile bedding material;
19. Place Hot Mix Asphalt (HMA) Sidewalk Type, asphalt paver's underlayment;
20. Reinstall asphalt concrete pavers;
21. Place manufactured topsoil;
22. Establish grass;
23. Remove temporary silt fence, temporary plastic barrier fence, Type III barricades and work zone safety control devices.
24. Clean and remove all materials and debris deposited into catch basins and manholes resulting from the Project at the Project's completion.

SITE RELATED WORK (OPTION 2):

OPTION II - Pressure Grout

1. Perform pre-construction survey;
2. Erect work zone safety control devices;
3. Remove vegetation in the area affected by excavation;
4. Install temporary plastic barrier fence;
5. Install Type III construction barricades;
6. Install temporary silt fence;
7. Saw-cut existing asphalt pavement, asphalt surface course, concrete pavement or asphalt overlay on concrete pavement;
8. Remove, refurbish and store existing 2½ thick asphalt pavers; remove and dispose of existing underlayment;
9. Install excavation protection sheeting / excavation protection system;

10. Excavate area along curbing and planters 12" wide to expose concrete decking;
11. Prune tree roots along planters;
12. Backfill previously excavated 12" wide trench with Controlled Low Strength Material – CLSM;
13. Design compaction / compensation grouting protection of structures from settlement due to soft ground and submit to BPCA for review and approval. Laboratory soil test results are available at BPCA for information, to be used by Contractor's engineer;
14. Install compaction / compensation grouting protection of structures from settlement due to soft ground as designed by Contractor's engineer and approved by BPCA;
15. Place Hot Mix Asphalt (HMA) Sidewalk Type, asphalt pavers underlayment over existing concrete slab to proper elevation;
16. Reinstall asphalt concrete pavers;
17. Place manufactured topsoil;
18. Establish grass;
19. Remove temporary silt fence, temporary plastic barrier fence, Type III barricades and work zone safety control devices.
20. Clean and remove all materials and debris deposited into catch basins and manholes resulting from the Project at the Project's completion.

EXHIBIT B

CONTRACTOR REQUIREMENTS AND PROCEDURES FOR BUSINESS PARTICIPATION OPPORTUNITIES FOR NEW YORK STATE CERTIFIED MBEs/WBEs AND EQUAL EMPLOYMENT OPPORTUNITIES FOR MINORITY GROUP MEMBERS AND WOMEN

Pursuant to New York State Executive Law Article 15-A, BPCA recognizes its obligation under the law to promote opportunities for maximum feasible participation of certified MBE/WBEs and the employment of minority group members and women in the performance of BPCA contracts.

In 2006, the State of New York commissioned a disparity study to evaluate whether minority and women-owned business enterprises had a full and fair opportunity to participate in state contracting. The findings of the study were published on April 29, 2010, under the title “The State of Minority and Women-Owned Business Enterprises: Evidence from New York” (the “Disparity Study”). The report found evidence of statistically significant disparities between the level of participation of minority-and women-owned business enterprises in state procurement contracting versus the number of minority-and women-owned business enterprises that were ready, willing and able to participate in state procurements. As a result of these findings, the Disparity Study made recommendations concerning the implementation and operation of the statewide certified minority- and women-owned business enterprises program. The recommendations from the Disparity Study culminated in the enactment and the implementation of New York State Executive Law Article 15-A, which requires, among other things, that BPCA establish goals for maximum feasible participation of New York State Certified MBEs/WBEs and the employment of minority groups members and women in the performance of New York State contracts.

Business Participation Opportunities for MBE/WBEs and minorities and women

For purposes of this solicitation, BPCA hereby establishes an overall goal of 20% for MBE/WBE participation, 10 % for MBE participation and 10% for WBE participation (based on the current availability of qualified MBEs and WBEs). A contractor (“Contractor”) on the Contract must document good faith efforts to provide meaningful participation by MBE/WBEs as subcontractors or suppliers in the performance of the Contract and Contractor agrees that BPCA may withhold payment pending receipt of the required MBE/WBE documentation. The directory of New York State Certified MBE/WBEs can be viewed at: <http://www.esd.ny.gov/mwbe.html>.

For guidance on how BPCA will determine a Contractor’s “good faith efforts,” refer to 5 NYCRR §142.8.

In accordance with 5 NYCRR §142.13, Contractor acknowledges that if it is found to have willfully and intentionally failed to comply with the MBE/WBE participation goals set forth in the Contract, such finding constitutes a breach of Contract and BPCA may withhold payment from the Contractor as liquidated damages.

Such liquidated damages shall be calculated as an amount equaling the difference between: (1) all sums identified for payment to MBE/WBEs had the Contractor achieved the contractual MBE/WBE goals; and (2) all sums actually paid to MBEs/WBEs for work performed or materials supplied under the Contract.

By submitting a bid or Proposal, a Proposer agrees to submit the following documents and information as evidence of compliance with the foregoing:

- A. Proposers are required to submit a Utilization Plan with their bid or Proposal. Any modifications or changes to the Utilization Plan after the Contract award and during the term of the Contract must be reported on a revised Utilization Plan and submitted to BPCA.
- B. BPCA will review the submitted Utilization Plan and advise the Proposer of BPCA’s acceptance or issue a notice of deficiency within 30 days of receipt.

C. If a notice of deficiency is issued, Proposer agrees that it shall respond to the notice of deficiency within seven (7) business days of receipt by submitting to BPCA, at the address specified in this RFP, or by facsimile at 212-417-2279 a written remedy in response to the notice of deficiency. If the written remedy that is submitted is not timely or is found by BPCA to be inadequate, BPCA shall notify the Proposer and direct the Proposer to submit, within five (5) business days, a request for a partial or total waiver of MBE/WBE participation goals. Failure to file the waiver form in a timely manner may be grounds for disqualification of the bid or Proposal.

D. BPCA may disqualify a Proposer as being non-responsive under the following circumstances:

- 1) If a Proposer fails to submit a Utilization Plan;
- 2) If a Proposer fails to submit a written remedy to a notice of deficiency;
- 3) If a Proposer fails to submit a request for waiver; or
- 4) If BPCA determines that the Proposer has failed to document good faith efforts.

Contractors shall attempt to utilize, in good faith, any MBE/WBE identified within its Utilization Plan, during the performance of the Contract. Requests for a partial or total waiver of established goal requirements made subsequent to the Contract award may be made at any time during the term of the Contract to BPCA, but must be made no later than prior to the submission of a request for final payment on the Contract.

Contractors are required to submit a Contractor's MBE/WBE Contractor Compliance & Payment Report to BPCA on a monthly basis over the term of the Contract documenting the progress made toward achievement of the MBE/WBE goals of the Contract.

Equal Employment Opportunity Requirements

The Contractor is required to ensure that it and any subcontractors awarded a subcontract over \$25,000 for the construction, demolition, replacement, major repair, renovation, planning or design of real property and improvements thereon (the "Work") except where the Work is for the beneficial use of the Contractor, shall undertake or continue programs to ensure that minority group members and women are afforded equal employment opportunities without discrimination because of race, creed, color, national origin, sex, age, disability or marital status. For these purposes, equal opportunity shall apply in the areas of recruitment, employment, job assignment, promotion, upgrading, demotion, transfer, layoff, termination, and rates of pay or other forms of compensation. This requirement does not apply to: (i) work, goods, or services unrelated to the Contract or (ii) employment outside New York State.

Proposer further agrees to submit with the Proposal a staffing plan identifying the anticipated work force to be utilized on the Contract and if awarded a Contract, will submit to BPCA a workforce utilization report identifying the workforce actually utilized on the Contract. Contractor will be required to make good faith efforts to achieve a participation goal of 30% of the total number of employees required for the work who are minority group members and a participation goal of 5% of the total number of employees required for the work who are women to perform the work.

Further, pursuant to Article 15 of the Executive Law (the "Human Rights Law"), all other New York State and Federal statutory and constitutional non-discrimination provisions, the Contractor and sub-contractors will not discriminate against any employee or applicant for employment because of race, creed (religion), color, sex, national origin, sexual orientation, military status, age, disability, predisposing genetic characteristic, marital status or domestic violence victim status, and shall also follow the requirements of the Human Rights Law with regard to non-discrimination on the basis of prior criminal conviction and prior arrest.

Battery Park City Authority Request For Proposals

Please Note: Failure to comply with the foregoing requirements may result in a finding of non-responsiveness, non-responsibility and/or a breach of the Contract, leading to the withholding of funds, suspension or termination of the Contract or such other actions or enforcement proceedings as are allowed by the Contract.

For questions on MBE/WBE participation, joint ventures and sub-contracting goals ONLY, please contact Mr. Anthony Peterson at 212.417.2337.

EXHIBIT C

BPCA's Standard Form of Contract

(attached)

CONSTRUCTION AGREEMENT

between

BATTERY PARK CITY AUTHORITY,
d/b/a HUGH L. CAREY BATTERY PARK CITY AUTHORITY

and

[CONTRACTOR COMPANY NAME]

Dated as of _____
Contract No. [xx-xxxx]

[PROJECT NAME]

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EXHIBITS

CONSTRUCTION AGREEMENT

AGREEMENT made as of the _____ day of _____, 2014, between BATTERY PARK CITY AUTHORITY, d/b/a HUGH L. CAREY BATTERY PARK CITY AUTHORITY, a body corporate and politic, constituting a public benefit corporation and having a place of business at One World Financial Center, 24th Floor, New York, New York 10281 ("Authority," "BPCA" or "Owner") and CONTRACTOR COMPANY NAME, a corporation incorporated under the laws of STATE, having an office at Street Address, City, Zip, Phone, ("Contractor").

W I T N E S S E T H:

WHEREAS, BPCA has fee title to certain real property located in the City, County and State of New York, generally consisting of approximately 92 acres of land located on the west side of lower Manhattan, bounded by Pier A to the South, the westerly extension of Reade Street to the North, the United States Bulkhead Line to the East and the United States Pierhead Line to the West (collectively, "Battery Park City"); and

WHEREAS, BPCA has caused the staged development of Battery Park City, in individual parcels, creating a richly diversified mixed use community providing residential and commercial space, with related amenities such as parks, plazas, recreational areas and a waterfront esplanade; and

WHEREAS, BPCA intends to hire a contractor to perform [type of services], consisting of the Work, as hereinafter defined, for the [structure] upon which work will be performed (the "Project"), located in and adjacent to [location], in Battery Park City, in the Borough of Manhattan, County, City and State of New York (the "Site"); and

WHEREAS, Contractor has been selected to perform the Work, as hereinafter defined, upon the terms and conditions hereinafter provided; and

NOW, THEREFORE, in consideration of the mutual covenants hereinafter set forth, Contractor and BPCA hereby agree as follows:

ARTICLE 1 - DEFINITIONS

The following terms, wherever used in the Contract Documents, as defined herein, shall have the meanings set forth below or in the Section enumerated below next to each term:

- (a) Agreement - as defined in Section 2.2(a).
- (b) Agreement Termination Date - as defined in Section 3.1(a)
- (c) Architect - Name, address, etc. or n/a.
- (d) Artist - n/a.
- (e) Authority - as defined in the introductory clause of this Agreement.
- (f) BPCA - as defined in the introductory clause of this Agreement. BPCA hereby designates BPCA Person and Title, Project Manager, as the representative of BPCA for the purpose of acting on behalf of BPCA whenever action is required to be taken hereunder by BPCA. Such designation may be revoked in writing at any time after notice given by BPCA to Contractor. In addition, such representative of BPCA shall have full power and authority to delegate in writing any or all of her responsibilities hereunder to any one or more persons after notice to Contractor.
- (g) Certificate of Substantial Completion - as defined in Section 8.6.
- (h) Change Order - as defined in Section 9.1(b).
- (i) Construction Manager - [name and address]
- (j) Contract Documents - as defined in Section 2.2.
- (k) Contract Price - as defined in Article 4.
- (l) Contract Time - the duration of time during which Construction Manager schedules and coordinates the Work of Contractor pursuant to Section 7.2 hereof.
- (m) Contractor - as defined in the introductory clause of this Agreement.
- (n) Drawings - Project drawings comprising part of Exhibit [x].
- (o) Engineer - [name and address]
- (p) Extra Work - Any work in addition to the Work to be performed by Contractor pursuant to the Contract Documents.
- (q) Field Order - as defined in Section 9.3.
- (r) Final Acceptance - as defined in Section 8.7.
- (s) Final Requisition - as defined in Section 5.2.
- (t) Guarantor - as defined in Section 27.3.
- (u) Joint Venture - an entity created pursuant to a written agreement among two or more contractors pursuant to which each shares in the direction and performance of the Work and shares in a stated percentage of profits or losses.
- (v) Key Person/Personnel - as defined in Section 27.25.
- (w) Intentionally Omitted.

(x) Materialman - Supplier of Materials.

(y) Materials - All products, materials, fixtures, tools, equipment, apparatus, and furnishings intended to form a part of the Work.

(z) Minority Business Enterprise or Minority Owned Business Enterprise or MBE - as defined in Article 26.

(aa) Minority or Minority Group Member - as defined in Article 26.

(bb) Notice to Proceed - A written directive from BPCA to Contractor signed by a duly authorized BPCA representative directing Contractor to begin performance of the Work set forth in this Agreement on a particular date.

(cc) Payment Bond - as defined in Section 13.3.

(dd) Performance Bond - as defined in Section 13.3.

(ee) Preceding Covered Date - as defined in Section 5.5.

(ff) Product Data - Illustrations, standard schedules, performance charts, instructions, brochures, diagrams and other information furnished by Contractor to illustrate a Material, product or system for some portion of the Work.

(gg) Progress Schedule - as defined in Section 3.1(a).

(hh) Project - as defined in the third Recital of this Agreement.

(ii) Purchase Order - as defined in Section 10.1(e).

(jj) Requisitions - as defined in Section 5.2.

(kk) Samples - Physical examples which illustrate Materials or workmanship and establish standards by which the Work will be judged.

(ll) Site - as defined in the third whereas clause of this Agreement.

(mm) Specifications - the specifications comprising part of Exhibit [x].

(nn) Subcontract - An Agreement between the Contractor and a Subcontractor (as defined in subsection (nn), below) for work on the Site.

(oo) Subcontractor - A person, firm, partnership or corporation under contract with Contractor.

(pp) Term - as defined in Section 3.1(i).

(qq) Trade Payment Breakdown - as defined in Section 5.3.

(rr) Women's Business Enterprise or Women Owned Business Enterprise or WBE - as defined in Article 26.

(ss) Work - as defined in Section 2.1.

(tt) Work Completion Date - as defined in Section 3.1(a).

ARTICLE 2 - SCOPE OF WORK, MATERIALS AND LABOR

2.1 Definition of Work

Contractor shall perform and complete (and shall cause all Subcontractors to perform and complete) for BPCA the work more particularly described in Exhibit [x] - Scope of Work

annexed hereto and made a part hereof, required by and in conformity with the Contract Documents in connection with the construction of the Project on the Site. All materials to be furnished and labor and work to be performed and completed by Contractor and/or Subcontractors as required in the Contract Documents and in conformity with all requirements applicable with respect thereto are herein collectively referred to as the "Work."

2.2 Contract Documents

The "Contract Documents" shall consist of the following:

(a) This instrument (the "Agreement"), which includes, in addition to the text comprising Articles 1 through 27, the following:

(1) Exhibit A:

(2) Exhibit B:

Etc...

(b) The Payment and Performance Bonds (as defined in Section 13.3).

(c) Change Orders adopted pursuant to Article 9.

The Contract Documents form the contract between BPCA and Contractor. References in the Contract Documents to "the Contract", "this Contract" or "the Construction Contract" shall be deemed to include all of the Contract Documents. References to "this Agreement" or "the Agreement" shall refer to this instrument (including the Exhibits attached hereto), which is one of the Contract Documents.

2.3 Intent of Contract Documents

(a) The intent of the Contract Documents is to include in the Work all labor and materials, insurance, tools, equipment, permits, licenses, taxes, approvals, transportation, surveys, testing, field Engineering and other professional services (other than the services of BPCA's Architect, Construction Manager, Engineers and attorneys, and the inspection, survey and testing services of BPCA) and any other items required to execute and complete the Work satisfactorily and in accordance with the Contract Documents. Contractor shall perform and complete the Work in accordance with the true intent and meaning of the Contract Documents and shall perform all Work incident thereto or as is usually performed in connection therewith or as is reasonably inferable therefrom, it being the intention that all work usually performed by the trade covered by this Agreement and necessary to produce the intended result be performed by Contractor whether or not specifically covered by the Contract Documents.

(b) The Contract Documents are complementary and what is called for by one shall be as binding as if called for by all.

(c) If any conflicts or ambiguities are found in or between the Drawings and Specifications, or among any of the Contract Documents, they shall be brought to the attention of Construction Manager immediately for resolution. Architect and Construction Manager will interpret the Contract Documents so as to secure in all cases the most substantial and complete performance of the Work as is most consistent with the needs and requirements of the Work. In the event that Architect and Construction Manager shall disagree as to the interpretation of the Contract Documents, such dispute shall be presented to BPCA, which shall have sole authority to resolve the dispute.

(d) Addenda to parts of the Contract Documents are for the purpose of varying, modifying, rescinding or adding to the affected portion of the Contract Documents. All addenda should be read together with the portions of the Contract Documents to which they pertain. Where an addendum modifies a portion of a paragraph or a Section, the remainder of the paragraph or Section shall remain in force unless otherwise stated in the addendum.

(e) Captions, headings, cover pages, tables of contents and footnote instructions

contained in the Contract Documents are inserted only to facilitate reference and for convenience and in no way define, limit or describe the scope, intent or meaning of any provision of the Agreement.

(f) Words and abbreviations which have well-known technical or trade meanings are used in the Contract Documents in accordance with such recognized meanings.

(g) Drawings and Specifications are complementary. Anything shown in the Drawings and not mentioned in the Specifications, or mentioned in the Specifications and not shown in the Drawings, shall have the same effect as if shown or mentioned in both.

(h) A typical or representative detail indicated on the Drawings shall constitute the standard for workmanship and Materials throughout corresponding parts of the Work. Where necessary, and where reasonably inferable from the Drawings or Specifications, Contractor shall adapt such representative detail for application to such corresponding parts of the Work. The details of such adaptation shall be subject to prior approval by Architect. Repetitive features shown in outline on the Drawings shall be in exact accordance with corresponding features completely shown.

(i) The layout of mechanical and electrical systems, equipment, fixtures, piping, ductwork, conduit, specialty items, and accessories indicated on the Drawings is diagrammatic, and all variations in alignment, elevation, and detail required to avoid interferences and satisfy Architectural and structural limitations are not necessarily shown. Actual layout of the Work shall be carried out without affecting the Architectural and structural integrity and limitations of the Work and shall be performed in such sequence and manner as to avoid conflicts, provide clear access to all control points, including valves, strainers, control devices, and specialty items of every nature related to such systems and equipment, obtain maximum headroom, and provide adequate clearances as required for operation and maintenance.

2.4 Completion of Drawings and Specifications

Contractor acknowledges that there are items of work which are not drawn or specified with complete detail in the Drawings and Specifications but which are required for the completion of the Work. Any such item, when identified as part of the reasonable development of the Work, shall be drawn or specified by Architect in consultation with Contractor, in a manner consistent with contemplated kind and quality and customary standards. When such drawing or specification is approved by BPCA, the drawing or specification so approved shall thereupon be part of the Contract Documents and the item of work shall be performed by Contractor as part of the Work without further action or order of Construction Manager or BPCA and without any increase in the Contract Price (as hereinafter defined) as if such drawing and specification were originally included in the Contract Documents.

2.5 Title to Materials

Title to all Materials shall immediately vest in BPCA upon payment in respect of such Materials, whether or not then incorporated or installed into the Project. The Materials shall then become the sole property of BPCA subject to the right of BPCA, Construction Manager or Architect to reject same for failure to conform to the standards of any or all of the Contract Documents. Title to all Work and Materials shall be in BPCA, free and clear of all liens, claims, security interests or encumbrances. Contractor warrants that no Work or Materials shall be fabricated or delivered to the Site by Contractor or any Subcontractor or Materialman subject to any security interest, lien or similar encumbrance.

2.6 Contractor's Obligations

(a) Contractor shall in a good and workmanlike manner perform all the Work required by this Agreement in accordance with the best practice of Contractor's trade within the time specified herein. Contractor shall supervise and direct the Work using its best skill and attention. Contractor shall be solely responsible for all construction means, methods, techniques, sequences and procedures within the scope of Contractor's Work.

(b) Contractor shall furnish, erect, maintain, and remove such construction plant and such temporary Work as may be required for the performance of the Work. Contractor shall be responsible for the safety, efficiency and adequacy of Contractor's plant, appliances and methods, and for damage which may result from failure or improper construction, maintenance or operation of such plant, appliances and methods. Contractor shall comply with all terms of the Contract Documents, and shall do, carry on and complete the entire Work under the direction of and to the satisfaction of BPCA.

(c) Contractor shall provide all equipment, tools and materials and whatever else may be required for proper performance of the Work unless stated otherwise in the Contract Documents.

(d) Contractor shall deliver all Materials at such times and in such quantities as will insure the speedy and uninterrupted progress of the Work. All Materials shall be delivered to the Site in proper order and quantity and shall be stored at the Site, if storage space is available in Construction Manager's opinion, in such places as Construction Manager shall direct; provided, that no delivery of Materials shall be made to the Site without prior approval by Construction Manager. Contractor has been advised and is aware that the Project is located in a congested metropolitan area, and there may not be sufficient space to store Materials on Site. If storage space is unavailable on Site, Contractor shall make arrangements to store materials off Site at Contractor's own cost. Contractor shall not be entitled to additional compensation for moving Materials from one storage area to another, whether such storage areas are on or off Site. No Materials shall be removed from the Site without the consent of Construction Manager. Contractor shall handle and take care of all Materials used in performance of the Work whether furnished by Contractor or BPCA, as the same are delivered to the Site or to any applicable offsite storage location and shall be solely responsible for the security and condition of the same. After final completion and acceptance of the Work, or sooner if requested by Construction Manager, Contractor shall remove all surplus Materials and scaffolding furnished by it which have not been incorporated in the Work.

(e) Contractor shall follow and perform the Work in accordance with the Contract Documents as interpreted by Architect, Construction Manager, and BPCA.

(f) Unless otherwise provided in the Contract Documents, Contractor shall secure and pay for all permits and governmental fees, licenses and inspections necessary for the proper execution and completion of the Work. Contractor shall give all notices and comply with all laws, ordinances, rules, regulations and lawful orders of any public authority bearing on the performance of the Work. If Contractor observes that any of the Contract Documents are at variance with any applicable laws in any respect, Contractor shall promptly notify Architect and Construction Manager in writing, and any necessary changes shall be accomplished by appropriate modification. If Contractor performs any Work knowing it to be contrary to such laws, ordinances, rules and regulations, and without such notice to Architect and Construction Manager, Contractor shall assume full responsibility therefor and shall bear all costs attributable thereto.

(g) Contractor shall be responsible for collecting all paper, cartons and other debris caused by its Work or personnel, placing the same in a location designated by Construction Manager and keeping the portion of the Site upon which Contractor is performing the Work free from all debris.

(h) Contractor shall attend meetings as directed by BPCA or Construction Manager.

2.7 “Or Equal” Clause

(a) The Materials of manufacturers referred to in the Specifications and on the Drawings are intended to establish the standard of quality and design required by Architect; however, Materials of manufacturers, other than those specified, may be used if equivalent and approved by Architect, Construction Manager and BPCA.

(b) It is deemed that the term “or approved equal” is included after all Materials referred to in the Specifications or on the Drawings.

(c) Architect will initially judge the equivalency of proposed substitute Materials. Architect will make written recommendation of acceptance or rejection to Construction Manager and/or BPCA. Construction Manager and/or BPCA will then authorize Architect to issue to Contractor written approval or rejection of the substitution.

(d) If Contractor desires to use a substitute item, Contractor shall make application to Architect in writing in sufficient time (with regard to the progress of the Work, the period of delivery of the goods concerned and adequate time for Architect's review) stating and fully identifying the proposed substitute, cost changes (if any), and submitting substantiating data, samples, brochures of the item proposed. It is Contractor's responsibility to provide at its sole expense sufficient evidence by tests or other means to support any request for approval of substitutions.

(e) Prior to proposing any substitute item, Contractor shall satisfy itself that the item Contractor proposes is, in fact, equal to that specified and had been used satisfactorily in similar applications to the application proposed for the Work, for at least three years, that it will fit into the space allocated and within the load allocated for the same, that it affords comparable ease of operations, maintenance and service, that its appearance, longevity and suitability for the climate and use are comparable to that specified, and that the substitution requires no change in dimension or design of any other Work of Contractor, of any other contractor or in the time required for the performance thereof.

(f) The burden of proof that a proposed substitution is equal to a specified item shall be upon Contractor, who shall support its request with sufficient test data and other means to permit Architect to make a fair and equitable decision on the merits of the proposal. Any item by the manufacturer other than those cited in the Contract Documents, or of brand name or model number or of generic species other than those cited in the Contract Documents, will be considered a substitution.

(g) Acceptance of substitutions shall not relieve Contractor from responsibility for compliance with all the requirements of the Contract Documents. If, notwithstanding the provisions of subsection (e) above, changes in other parts of the Work or the work of other contractors are required by its substitutions, Contractor shall be responsible for the costs of any such changes including the cost of all design and redesign services related thereto incurred by the Architect and his consultants.

(h) The Contract Time shall not be extended by any circumstances resulting from a proposed substitution, nor shall Contractor be entitled to any compensation for any delay caused thereby or related thereto.

2.8 Quality and Labeling

All Materials furnished shall be new and the quality thereof shall be in accordance with the Contract Documents. When Materials are specified to conform to a given standard, the Materials delivered to the Site shall bear manufacturer's labels stating that the Materials meet such standard. The above requirements shall not restrict or affect BPCA's right to test Materials as provided in this Agreement.

ARTICLE 3 - COMMENCEMENT AND COMPLETION OF THE WORK

3.1 Commencement, Completion and Progress Schedule

(a) Contractor shall prepare and submit a progress schedule for the Work ("Progress Schedule for the Work") and agrees to be bound by and comply with the Work Completion Date and the Progress Schedule for the Project (as the Progress Schedule for the Project shall be updated pursuant to subsection (b)) and waives any right to charge or claim damages or any increased cost, charges or expenses against BPCA, Construction Manager, or Architect, for delays or disruptions from any cause whatsoever. Contractor's sole remedy as against BPCA, Construction Manager, or Architect for any delays or disruptions shall be as provided in Section 3.4 hereof. Notwithstanding the foregoing, the Work shall be completed by no later than [date] (the "Work Completion Date") with time being of the essence in respect of said Work

Completion Date, as more fully set forth in subsection (h) below; this Agreement shall terminate by [date] (the “Agreement Termination Date”).

(b) The Progress Schedule for the Work shall be formatted in a detailed precedence-style critical path method, or such other format satisfactory to BPCA and Construction Manager and shall also (a) provide a graphic representation of all activities and events including float values that will affect the critical path of the Work, (b) incorporate and coordinate all pertinent information involving each phase of Work, and (c) identify dates that are critical to ensuring the timely and orderly completion of the work in accordance with the requirements of the Contract Documents, including the dates for Substantial Completion of each respective phase of the Work. The Progress Schedule for the Work shall be updated weekly, or at any other time at the request of Construction Manager or BPCA, and submitted to Construction Manger and BPCA for review and approval. Failure to submit any requested update shall constitute a material breach of this Agreement. The Contractor shall promptly give written notice of any actual or potential delays to BPCA and Construction Manager. After submission of the Progress Schedule for the Work, Construction Manager shall coordinate the Progress Schedule for the Work with the Progress Schedule for the Project. The Progress Schedule for the Work may be revised by Construction Manager from time to time.

(c) Contractor shall commence the Work upon receipt of a written Notice to Proceed signed by BPCA, and shall prosecute the Work diligently and in accordance with the time and place requirements of the Project as determined and directed by Construction Manager, by using such means and methods of construction as will assure that the Work will be performed hereunder in accordance with the Contract Documents and Progress Schedule for the Work, and to the satisfaction of BPCA, Architect, and Construction Manager.

(d) If, in the opinion of Construction Manager, Contractor falls behind the Progress Schedule for the Project then in effect, Contractor shall take whatever steps may be necessary to improve its progress and shall, if requested by Construction Manager, submit operational plans to demonstrate the manner in which the lost time may be regained. It is the responsibility of Contractor to maintain its schedule so as not to delay the progress of the Project or the schedules of other contractors. If Contractor delays the progress of its Work or the work of other contractors, it shall be the responsibility of Contractor to increase the number of workers, the number of shifts, the days of Work and/or, to the extent permitted by law, to institute or increase overtime operations, all without additional cost to BPCA, in order to regain any time lost and maintain the Progress Schedule for the Project then in effect as established by Construction Manager.

(e) If Contractor shall fail to complete the Work by the Work Completion Date, or within the time to which such completion may have been extended, BPCA may, at its option, withhold from any sums otherwise due and owing to Contractor hereunder, so much of the balance thereof as BPCA shall deem necessary to secure it against any costs, expenses, or damages which may be incurred by BPCA as a result of said failure, but any such withholding shall not be deemed to be a waiver of any rights hereunder, and Contractor shall be liable to and shall indemnify and hold BPCA harmless from any and all cost, expense or damage incurred by BPCA by reason of such failure.

(f) If Contractor shall neglect, fail or refuse to complete the Work on or before the Work Completion Date or any changes thereto in accordance with, or upon the expiration of, any proper extension granted by BPCA, Contractor agrees to pay to BPCA \$_____, not as a penalty, **but as liquidated** damages for loss of beneficial use of the Project, for each and every calendar day that the Contractor is in default. Default shall include abandonment of the Work by Contractor.

(g) Said amount of liquidated damages is agreed upon by and between Contractor and BPCA because of the impracticability and extreme difficulty of fixing and ascertaining the actual damages which BPCA would sustain for loss of beneficial use of the Project in the event of delay in completion, and said amount is agreed to be the amount of damages sustained by BPCA and said amount may be retained from time to time by BPCA. The foregoing liquidated damages are intended to compensate BPCA only for the loss of beneficial use of the Project. In addition, Contractor shall be liable to BPCA, to the fullest extent permitted by law, for whatever actual damages (other than actual loss of beneficial use) BPCA may incur as a result of any actions or

inactions of Contractor or its Subcontractors including, without limitation, interest expense and carrying costs, liabilities to other Contractors working on the Project or other third parties, job extension costs, and other losses incurred by BPCA. The provisions of this paragraph are exclusive to BPCA, and shall not accrue to other contractors or third parties.

(h) It is further agreed that time is of the essence for each and every portion of the Work. In any instance in which additional time is allowed for the completion of any Work, the new time of completion established by said extension shall be of the essence. Contractor shall not be charged with liquidated damages or any excess cost if BPCA determines that Contractor is without fault and that the delay in completion of the Work is due:

(1) to any preference, priority or allocation order duly issued by the Government of the United States or the State of New York;

(2) to an unanticipated cause beyond the control and without the fault of, or negligence of Contractor, and approved by BPCA, including, but not limited to, acts of God or of public enemy, fires, epidemics, quarantine, strikes, freight embargoes and unusually severe weather; and

(3) to any delays of Subcontractors or Materialmen occasioned by any of the causes specified in Subsections 1 and 2 of this paragraph.

(i) Notwithstanding the foregoing, and whether or not, at any given time, a Progress Schedule, or update thereto (as appropriate) has been submitted, the Work shall be completed by the Work Completion Date (with the period between commencement of the Work and the Work Completion Date being referred to herein as the "Term").

(j) Notwithstanding anything to the contrary, a schedule submitted by Contractor showing a time of completion earlier than that specified in the Contract shall not entitle Contractor to any additional compensation in the event the earlier time of completion is not realized.

3.2 Coordination with Other Contractors

Contractor shall coordinate the Work to be performed hereunder with the work of other contractors performing work for the Project in such manner as Construction Manager shall direct. Contractor shall indemnify and hold BPCA, Construction Manager and Architect harmless from any and all claims or judgments for damages, costs and expenses to which BPCA, Construction Manager or Architect may be subjected or which they may suffer or incur by reason of Contractor's failure to promptly comply with Construction Manager's directions. If Contractor notifies Construction Manager in writing that another contractor is failing to coordinate its work with the Work to be performed hereunder, Construction Manager shall promptly investigate the charge. If Construction Manager finds that charge to be true, it shall promptly issue such direction to the other contractor with respect thereto as the situation may require. BPCA, Construction Manager and Architect shall not, however, be liable for any damages suffered by Contractor by reason of the other contractor's failure to promptly comply with the directions so issued by Construction Manager or by reason of another contractor's default in performance. Should Contractor sustain any damage through any act or omission of any other contractor, Contractor shall have no claim against BPCA, Construction Manager or Architect for such damage but shall have a right to recover such damage from the other contractor, under a provision similar to a provision contained in the following sentence which is part of this Agreement and which has been or will be inserted in the contracts with the other contractors engaged in the Project.

Should any other contractor having or who shall hereafter have a contract with BPCA for the performance of work upon the Project sustain any damage through any act or omission of Contractor hereunder, Contractor agrees to reimburse such other contractor for all such damages and to indemnify and hold BPCA, Construction Manager and Architect harmless from all such claims. Any claim against a performance bond surety made by any contractor shall be subordinated to any claim of BPCA then existing or that may arise in the future against such other contractor or its performance bond surety.

3.3 Notice of Delay

Should Contractor be or anticipate being delayed or disrupted in performing the Work hereunder for any reason, including, without limitation, its financial condition or Contractor's general nonpayment of its debts as such debts become due, it shall promptly and in no event more than three (3) days after the commencement of any condition which is causing or is threatening to cause such delay or disruption notify Construction Manager in writing of the effect of such condition upon BPCA's Progress Schedule for the Project, stating why and in what respects the condition is causing or is threatening to cause delay, provided, however, that notwithstanding the above, if such delay or disruption, or anticipated delay or disruption, should be the result of any change or anticipated change in Contractor's financial condition, Contractor shall notify Construction Manager forthwith of such cause or anticipated cause. Failure to strictly comply with this notice requirement shall be sufficient cause to deny Contractor a change in schedule and to require it to conform to the Progress Schedule for the Project then in effect established by Construction Manager.

3.4 Extension of Time

(a) An extension of time under the Progress Schedule for the Project then in effect may be granted by BPCA subject to the provisions hereof upon written application therefor by Contractor. An application for an extension of time under the Progress Schedule for the Project then in effect must set forth in detail the nature of each cause of delay in the performance of the Work, the date or dates upon which each cause of delay began and ended and the number of days delay attributable to each such cause. After the application is submitted, Contractor shall supply any other data that Construction Manager may request.

(b) Contractor shall be entitled to an extension of time under the Progress Schedule for the Project then in effect for delays in the performance of the Work, if caused:

- (1) solely by unanticipated acts or omissions of BPCA, Construction Manager or Architect; or
- (2) by the unanticipated acts or omissions of other contractors or unanticipated causes beyond the control and without the fault or negligence of Contractor including, but not limited to, acts of God, acts of public enemy, acts of any Government body, fires, floods, epidemics, quarantine restrictions, strikes, freight embargoes, unusually severe weather, or delays of Subcontractors or Materialmen arising from unforeseeable causes beyond the control and without the fault or negligence of both Contractor and such Subcontractors or Materialmen; provided, that Contractor shall have used its best efforts and diligently sought to have minimized any such period of delay, by taking whatever measures are necessary, including without limitation, if applicable, seeking alternate sources of Materials, other Subcontractors or other facilities in which to perform the required construction operations; and provided, further, that an application is made pursuant to the requirements of the immediately preceding paragraph.

ARTICLE 4 - CONTRACT PRICE

For the performance and completion of the Work, BPCA shall pay Contractor a lump sum amount of \$ _____, (such sum is herein sometimes referred to as the "Contract Price"), which amount shall include any monies earned by or paid to Contractor prior to the execution of this Agreement, provided, that if the Contract Price shall be expressly revised by a Change Order in accordance with Article 9 hereof, the Contract Price shall thereafter mean the Contract Price as so revised. Contractor will submit appropriate Time Sheets in the form of Exhibit [x].

ARTICLE 5 - METHOD, SCHEDULE AND TERMS OF PAYMENTS

5.1 Partial Payment

(a) In accordance with Requisitions (as defined in Section 5.2) submitted and approved as provided below for Work performed in accordance with this Agreement, Contractor shall be entitled to partial payment on account of the Contract Price in an amount equal to the value, as determined in accordance with the Trade Payment Breakdown (as defined in Section 5.3), of the portions of the Work completed and acceptable to BPCA and Construction Manager for purposes of such payment, less a retainage equal to ten percent (10%) of the total amount of all prior partial payments. Partial payments shall constitute advances against the Contract Price until final payment is made and accepted. No partial payment made, nor approval of a portion of the Work given for purposes of making a partial payment, shall constitute an acceptance of any Work not in accordance with the Contract Documents.

(b) Upon completion of fifty percent of the Work, Contractor may make written application to BPCA requesting reduction of the retainage set forth in Section 5.1(a) hereof. Approval of such reduction of retainage and the percentage to which the retainage shall be reduced is in the sole discretion of BPCA. If BPCA approves a reduction of retainage as herein described, BPCA shall so notify Contractor in writing. Any reduction of retainage pursuant to this paragraph (b) shall not be deemed to be a waiver of retainage requirements for future partial payments.

5.2 Requisitions

Applications for partial payments (“Requisitions”) and application for final payment (“Final Requisition”) shall be in the form previously supplied by BPCA and shall be submitted by Contractor to Construction Manager or its designee in five original copies in the manner hereinafter provided for the approval of BPCA and Construction Manager. Each Requisition shall be supported by such data substantiating Contractor’s right to payment as BPCA and Construction Manager may require.

5.3 Trade Payment Breakdown

Prior to the submission of the first Requisition, Contractor shall present to Construction Manager for approval a trade payment breakdown (the “Trade Payment Breakdown”) of the various portions of the Work, aggregating the Contract Price, prepared in such form as specified by BPCA and supported by such data to substantiate its correctness as Construction Manager may require. After approval by BPCA and Construction Manager, the Trade Payment Breakdown shall not be changed or revised in any way without the written consent of Construction Manager. The Trade Payment Breakdown, when approved by Construction Manager, shall be used only as a basis for Requisitions and shall not be considered as a basis for reducing or increasing the Contract Price.

5.4 Payment for Stored Materials

If approved in advance of delivery by BPCA and Construction Manager, payments will be made on account of 80% of the value of Materials not incorporated in the Work, but delivered and suitably stored at the Site or at some other offsite location agreed upon in writing by BPCA and Construction Manager. Such payments shall be conditioned upon submission by Contractor of bills of sale or other supporting documentation satisfactory to BPCA and Construction Manager to establish BPCA’s title to such Materials including applicable insurance and transportation to the Site for those Materials stored offsite. In the event that Contractor, with approval of BPCA, stores any Materials offsite, the conditions for payment of Material stored off-site shall include but not be limited to the following: (a) the Material shall be properly stored in a secured location approved by the BPCA and/or Construction Manager; (b) the Material will be covered under the BPCA’s builder’s risk policy subject to policy limits and restrictions; and (c) the Material may be inspected by the BPCA and /or Construction Manager to assure compliance with Contract Documents.

5.5 Receipts and Releases of Liens

With each Requisition, Contractor shall furnish its affidavit of payment and waiver of lien for Work done and Materials furnished through the date covered by the last preceding partial payment (the “Preceding Covered Date”) and shall furnish its affidavit certifying that all Subcontractors and Materialmen have been paid for Work performed and Materials furnished through the Preceding Covered Date except for any permitted retainage. BPCA may also require Contractor to attach to each Requisition (i) affidavits of payment and waivers of lien from all Subcontractors and Materialmen dealing directly or indirectly with Contractor for Work performed and Materials furnished through the Preceding Covered Date and/or (ii) the consent of the surety issuing the Payment Bond to such payment. BPCA may require Contractor to execute a waiver of lien at the time payment is made for a Requisition for all Work performed through the date of the Requisition in respect of which payment is being made.

In addition to the documents required to be furnished by the preceding paragraph, with the Final Requisition, Contractor shall furnish (y) its affidavit that there are no liens, claims or demands by, and that there is no indebtedness to, Subcontractors, Materialmen, laborers, other employees or third persons for which BPCA, Construction Manager, or Architect might in any way be responsible and (z) releases from all Subcontractors and Materialmen dealing directly or indirectly with Contractor. Should any such Subcontractor or Materialman fail or refuse to furnish such release, Contractor may be required to furnish a bond satisfactory to BPCA to indemnify it against any such lien, claim or demand. If any such lien, claim or demand remains unsatisfied after all payments are made to Contractor, Contractor shall refund to BPCA all monies that BPCA may be compelled to pay in discharging such lien, claim or demand including all costs, expenses and attorneys’ fees which BPCA may incur in connection therewith.

5.6 Time of Payment

Requisitions shall be submitted by Contractor to BPCA and Construction Manager by the seventh day of each calendar month for Work completed up to the last calendar day of the previous month or other day approved by BPCA, and payment shall be made on or about twenty days after BPCA receives the Requisition together with the documents required pursuant to Sections 5.2 and 5.5 hereof. Contractor shall be entitled to payment only in the amount approved by BPCA, and Construction Manager with respect to such Requisitions, each of which must be signed by BPCA, and Construction Manager before payment is made. The value of any Work included in a Requisition for partial payment which is found unacceptable by BPCA, or Construction Manager may be deducted from that or any subsequent Requisition.

5.7 Reduction of Retainage

Upon the issuance of a Certificate of Substantial Completion, as defined in Section 8.6, Contractor shall submit a Requisition in an amount equal to the Contract Price less five percent (5%) of the total contract amount (including all approved change orders and pending change order proposals), and less the total amount of all prior payments. Upon approval of the same by BPCA, BPCA shall pay to Contractor the amount approved less any amount which BPCA is entitled to withhold hereunder.

5.8 Final Payment

(a) The final balance due Contractor under this Agreement shall be payable to Contractor by BPCA, as final payment hereunder, within thirty days after all of the following have taken place:

- (1) Contractor’s Final Requisition has been submitted by Contractor and approved by BPCA, and Construction Manager;
- (2) the affidavit provided for in Section 5.5 hereof has been submitted by Contractor, and any other documents or actions expressly specified in the Contract Documents as preconditions to final payment have been submitted or completed; and

- (3) any inspections or approvals with respect to any of the Work that BPCA deems legally required or appropriate by governmental authorities or by the applicable Board of Fire Underwriters have been performed or obtained.
- (b) The acceptance of final payment shall constitute a waiver of all claims by Contractor.

5.9 Release and Consent of Surety

Notwithstanding any other provision of this Agreement, before final payment pursuant to Section 5.8 shall become due pursuant hereto or before reduction of retainage, Contractor shall submit to BPCA a consent of surety to final payment or reduction of retainage in a form and substance acceptable to BPCA.

5.10 BPCA's Right to Audit and Inspect Records

Contractor shall maintain and shall keep for a period of at least six years after the date of Final Acceptance of the Work, pursuant to Section 8.7, all records and other data relating to the Work. BPCA or its designee shall have the right to inspect and audit all records and other data of Contractor relating to the Work at any time and from time to time until the end of such six year period. Contractor shall promptly respond to any inquiries of BPCA or any representative of BPCA arising out of any such inspection or audit.

5.11 Withholding of Payments

(a) BPCA may withhold payment or, because of subsequently discovered evidence, may nullify the whole or any part of any previously approved Requisition to such extent as may, in the judgment of BPCA, be necessary:

- (1) to assure payment of just claims or liens of any persons supplying labor or Materials for the Work;
- (2) to protect BPCA from loss due to defective Work or to reimburse BPCA, Construction Manager and Architect for fines on account of non-compliance with applicable laws, rules and regulations, including rules promulgated by the Office of Safety & Health Administration;
- (3) to protect BPCA from loss due to death or injury to persons or damage to the Work or property of BPCA, other contractors or others caused by the act or neglect of the Contractor;
- (4) in the event that there is reasonable evidence that the Work will not be completed for the unpaid balance of the Contract Price;
- (5) in the event that there is reasonable evidence that the Work will not be completed within the time provided; or
- (6) in the event that Contractor persistently fails to perform the Work in accordance with the Contract Documents.

In any of such events, BPCA shall have the right to apply any such amounts so withheld in such manner as BPCA may deem proper to satisfy such claims, to secure such protection, to complete the Work or to compensate BPCA for any loss suffered by reason of Contractor's delay. Such application shall be deemed payment for the account of Contractor. In the event that BPCA gives Contractor notice that it intends to make such application, Contractor shall be estopped from disputing liability or the amount of liability unless, within three days after receipt of such notice, it indicates to BPCA in writing that it is not liable or that the amount of its liability is different from that set forth in the notice.

(b) The provisions of this Section 5.11 are solely for the benefit of BPCA, and any action or non-action by BPCA shall not give rise to any liability on the part of BPCA. Failure to

so act shall not be deemed a waiver of any present or future claims of BPCA.

ARTICLE 6 – CONTRACTOR

6.1 Superintendence by Contractor, Discipline and Employee Skills

Contractor shall provide a competent construction superintendent to be in charge of the Work. The construction superintendent shall devote full time to the Work, shall be present at the Site during the time the Work is required to be performed and shall have full authority to accept instructions, make decisions and act for Contractor at all times. If at any time the construction superintendent is not satisfactory to BPCA or Construction Manager, Contractor shall, if requested by BPCA, replace such superintendent with another satisfactory to BPCA. Contractor shall enforce strict discipline and good order at all times among Contractor's employees and all Subcontractors. Contractor shall not engage any employee not skilled in the task assigned.

6.2 Representations and Warranties

Contractor represents and warrants that:

- (a) Contractor is financially solvent and is experienced in, and competent to perform the Work and has the staff, manpower, equipment, Subcontractor, and suppliers available to complete the Work within the time specified in the Agreement for the Contract Price;
- (b) Contractor is familiar with all Federal, State or other laws, ordinances, orders, rules and regulations, which may in any way affect the Work;
- (c) any temporary and permanent Work required by this Agreement can be satisfactorily constructed, and such construction will not injure any person or damage any property; and
- (d) Contractor has carefully examined the Contract Documents and the Site and, from Contractor's own investigations, is satisfied as to the nature and location of the Work, the character, quality and quantity of surface and subsurface materials likely to be encountered, the character of equipment and other facilities needed for the performance of the Work, the general and local conditions, and all other conditions or items which may affect the Work. Prior to submitting its bid for performance of the Work, Contractor notified BPCA or Construction Manager in writing of any discrepancies or errors in the Contract Documents.

6.3 Verifying Dimensions and Site Conditions

Before proceeding with the Work, Contractor will check all previous and surrounding work and determine the correctness of the same; failure on its part to detect or report discrepancies will relieve BPCA of liability from any and all claims to recover cost, expense, loss or damage resulting therefrom. Contractor shall take, determine, investigate and verify all field measurements, dimensions, field construction criteria and Site conditions for the performance of the Work and shall check and coordinate the information contained in the Contract Documents and the boring logs which shall be available for inspection with the requirements of the Work. Contractor shall be responsible for determining the exact location of and to verify the spatial relationships of all Work. If any conflicts or discrepancies are found in the Contract Documents or if Contractor has any questions concerning the foregoing, it shall immediately notify Construction Manager and shall thereafter perform the Work in accordance with the directions of Construction Manager.

6.4 Copies of Contract Documents for Contractor

BPCA shall furnish to Contractor, without charge, two sets of the Contract Documents. Any sets in excess of the number mentioned above may be furnished to Contractor at the cost of reproduction and mailing.

6.5 Meetings

Contractor shall attend all meetings as directed by BPCA or Construction Manager, including meetings set forth in Section 26.3, and shall be represented at such meetings by a person having knowledge of the Work and authorized to act for Contractor at all times. If at any time such person is not satisfactory to BPCA or Construction Manager, Contractor shall, if requested by BPCA, be represented by another person satisfactory to BPCA, having knowledge of the Work and authorized to act for Contractor at all times.

6.6 Related Work

Contractor shall examine the Contract Documents for related work to ascertain the relationship of such work to the Work under the Contract Documents.

6.7 Surveys and Layout

Unless otherwise expressly provided in this Agreement, Owner shall furnish Contractor survey points necessary for the Work, but Contractor shall lay out the Work.

6.8 Reports and Access

Contractor shall furnish BPCA and Construction Manager with daily and monthly manpower reports on forms provided by BPCA or Construction Manager and such other reports as may be required by BPCA or Construction Manager. BPCA, Construction Manager and Architect shall have full and free access to the shops, plants and factories of Contractor, any Materialmen and Subcontractors to inform themselves as to the progress of the Work.

6.9 Financial Information

Until completion of the Work, Contractor agrees to notify BPCA forthwith in writing of any event which has caused or is reasonably anticipated to cause a material adverse change in Contractor's business or financial condition from that shown in the then most recent financial statements furnished by Contractor to BPCA. Contractor has furnished to BPCA financial statements regarding the period from [date] to [date]. Contractor agrees to furnish to BPCA, at BPCA's request from time to time hereafter, quarterly, or annual financial statements (which shall be audited, if such is the practice of Contractor for financial statements covering the applicable period) and such additional information as BPCA shall deem necessary or desirable to satisfy itself of Contractor's continuing ability to complete the Work.

ARTICLE 7 - CONTRACT ADMINISTRATION

7.1 Architect's Responsibilities and Functions

Contractor acknowledges that the role of Architect with respect to the Work shall be as specified in this Agreement. Contractor will comply with the instructions of Architect pursuant hereto.

Architect's duties and services shall in no way supersede or dilute Contractor's obligation to perform and complete the Work in conformity with the Contract Documents.

7.2 Construction Manager's Responsibilities and Functions

(a) Construction Manager shall coordinate and schedule construction to insure that the completion of the Project is on schedule and that the Project is well constructed in accordance with the Contract Documents. Contractor acknowledges that the role of Construction

Manager with respect to the Work shall be as specified in this Agreement. Contractor hereby agrees to comply with the directions and instructions of Construction Manager.

(b) Construction Manager shall call for meetings of Contractor, other contractors, Subcontractors and Materialmen as necessary for the proper coordination of the Work. Such meetings shall be held at the Site on regular working days, during regular working hours, unless otherwise directed by BPCA. Attendance shall be mandatory for all parties notified to attend.

7.3 Scope of Responsibility of Architect and Construction Manager

In no event shall any act or omission on the part of the Construction Manager or Architect relieve Contractor of its obligation to perform the Work in full compliance with the Contract Documents. Neither Architect nor Construction Manager will be responsible for construction means, methods, techniques, sequences or procedures, or for safety precautions and programs in connection with the Work, and neither will be responsible for Contractor's failure to carry out the Work in accordance with the Contract Documents or the failure to fulfill any of the requirements of this Agreement.

ARTICLE 8 - INSPECTION AND ACCEPTANCE

8.1 Access to the Work

BPCA, Construction Manager, Architect or their authorized representatives shall at all times have access to and the right to observe the Work and all facilities where the Work or any part thereof is being fabricated or stored, and Contractor shall provide proper facilities for such access and observation.

8.2 Notice of Required Inspections and Tests

If the Contract Documents, or any laws, rules, ordinances or regulations, require that any Work be inspected or tested, Contractor shall give BPCA, Construction Manager and Architect at least five days prior written notice of readiness of the Work for inspection or testing and the date fixed for such inspection or testing.

8.3 Additional Inspections and Tests

(a) Whenever, in the opinion of BPCA, Construction Manager or Architect, it is desirable to require inspection or testing of the Work or its individual components in addition to any such testing which may be originally included in the Work, they shall have authority to do so whether or not such Work be then fabricated, installed, covered or completed. If such inspection or testing reveals a failure of the Work to comply (1) with the requirements of the Contract Documents, or (2) with respect to the performance of the Work, with laws, ordinances, rules, regulations or orders of any public authority having jurisdiction, Contractor shall bear all costs thereof, including Architect's and Construction Manager's additional services made necessary by such failure; otherwise BPCA shall bear such costs, and an appropriate Change Order shall be issued.

(b) In the event that any item of the Work fails inspection or testing, BPCA, Architect or Construction Manager may require inspection or testing of any or all of the other items of the Work at Contractor's cost and expense.

8.4 Uncovering of Work

(a) If any Work shall be covered or concealed contrary to the request of BPCA, Architect or Construction Manager, such Work shall, if required by BPCA, Architect or Construction Manager, be uncovered by examination, inspection or testing. Any examination, testing or inspection shall not relieve Contractor of the responsibility to maintain quality control over the Work. If any test results are below specified minimums, BPCA may order additional testing. The cost of such additional examination, inspection or testing, any additional professional services required, and any other expenses incurred by BPCA as a result of such

examination, inspection or testing shall be borne by Contractor.

(b) In the event that a typical detail fails inspection or testing, BPCA, Architect or Construction Manager may require inspection or testing of any or all of other such typical details at Contractor's cost and expense.

8.5 Correction of Work

Any Work not approved by BPCA, Architect and Construction Manager shall immediately be reconstructed, made good, replaced or corrected by Contractor including all Work of other contractors destroyed or damaged by such removal or replacement. Rejected material shall be removed immediately from the Site. Acceptance of Materials and workmanship by BPCA shall not relieve Contractor from Contractor's obligation to replace all Work which is not in full compliance with the Contract Documents.

8.6 Certificate of Substantial Completion

Upon their receipt of written notice from Contractor stating that in Contractor's estimation the Work has been substantially performed in conformity with the Contract Documents, Architect and/or Construction Manager shall perform an inspection for the purposes of determining whether the Work has been so performed, commencing such inspection within ten (10) days of receipt of such notice and completing it with all due diligence. When Architect and/or Construction Manager find upon inspection that, to the best of their knowledge and belief, the Work is so performed, they shall prepare and deliver to BPCA for delivery to Contractor a certificate specifying the date of substantial completion of the Work for purposes of this Agreement ("Certificate of Substantial Completion") and a punch list of items of Work remaining to be completed prior to the completion of the Work.

The delivery of a Certificate of Substantial Completion shall not terminate or alter Contractor's obligation under this Agreement to complete the Work in conformity with the Contract Documents and to fulfill all terms and conditions of this Agreement.

8.7 Completion of Work and Acceptance

Upon their receipt of written notice from Contractor stating its belief that the Work has been fully performed in conformity with the Contract Documents, and confirming that Contractor has completed any items of Work previously noted to it by Architect and Construction Manager as not having been acceptably completed in any punch list or otherwise, Architect and Construction Manager shall perform an inspection for purposes of determining whether the Work has been so performed. Architect and Construction Manager shall commence such inspection within ten (10) days of receipt of such notice and shall pursue and complete it with all due diligence. When BPCA and Construction Manager find upon inspection that, to the best of their knowledge and belief, the Work has been so performed, they shall prepare a certificate of final completion, and, upon delivery by BPCA to Contractor of said certificate, the Work shall be deemed to be finally accepted by BPCA (such delivery of the certificate of final completion to Contractor is hereinafter referred to as "Final Acceptance").

Final Acceptance shall not terminate or alter Contractor's obligation under this Agreement to complete the Work in conformity with the Contract Documents and to fulfill all terms and conditions of this Agreement.

ARTICLE 9 - CHANGES IN THE WORK

9.1 Change Orders

(a) BPCA may, at any time, in any quantity or amount, without notice to the sureties and without invalidating or abandoning the contract, order Extra Work. Notwithstanding the terms of subsection 3.1(a) hereof, BPCA may, but shall be under no obligation to, change the manner, sequence or method of performance of the Work or direct acceleration of the Work and Contractor shall, therefor, be entitled to a Change Order (as defined in Section 9.1(b)) provided that such change or acceleration was not ordered to maintain the Progress Schedule for the

Project, the Progress Schedule for the Work or to coordinate the Work with the work of other contractors. Contractor shall be obligated to perform changed Work promptly in conformity with any Change Order or Field Order issued in accordance herewith and may not suspend or otherwise refuse to perform the Work contained therein or any other aspect of the Work required under this Agreement because a Change Order has yet to be fully executed.

(b) "Change Order" shall mean a written order issued by the Authority to Contractor after execution of this Agreement, authorizing or requiring:

- (i) Extra Work,
- (ii) items which were erroneously deleted or omitted from the Work,
- (iii) items which were included in the Work but were subsequently deleted,
- (iv) an extension or decrease of time to complete Work,
- (v) an increase or reduction in the payment to Contractor, or
- (vi) any other change in the Contract Documents or in the sequence of performing or phasing of the Work.

(c) All Change Orders shall be prepared, signed and issued by Construction Manager at the instruction of BPCA, and to be valid, must be countersigned by BPCA and Contractor.

9.2 Change in Contract Price and Time

(a) The Contract Price will not be revised due to any change of the Work except as and to the extent expressly provided in the Change Orders. The amount by which the Contract Price is to be increased or decreased by any Change Order shall be determined by BPCA and Construction Manager by one or more of the following methods:

- (1) by accepting an amount agreed upon by BPCA and Contractor;
- (2) by applying the applicable unit prices and alternates where the Work involved is covered by unit prices in this Agreement;
- (3) by receiving from Contractor a detailed breakdown satisfactory to BPCA and Construction Manager, including actual time slips and invoices, itemizing the direct cost of labor and Materials to perform the changed Work and adding thereto fifteen percent (15%) to cover profit and all indirect and overhead costs, except that where the changed Work is performed by a Subcontractor or Materialman, the direct cost of labor and Materials to perform the changed Work plus fifteen percent (15%) for profit and all indirect and overhead costs to Subcontractor or Materialman and an additional sum for profit and all indirect and overhead costs of Contractor equal to ten percent (10%) of the first \$100,000, five percent (5%) of the second \$100,000 and three percent (3%) of any cost in excess of \$200,000 to Contractor. No allowance shall be paid on the premium portion of overtime pay. Where the changed Work involves both an increase and a reduction in any contract Work, the above percentage override shall be applied only on the amount, if any, by which the cost of the increase exceeds the cost of the reduction.
- (4) by receiving from Contractor a true copy of its bid work sheets to determine the contract price for the elimination of any contract Work. The amount of reduction shall not include the overhead or profit of Contractor for the eliminated Work. Should Contractor fail to furnish BPCA with such bid work sheets, then Construction Manager shall determine the amount of the reduction. The determination of Construction Manager shall be final and binding unless erroneously or fraudulently arrived at, or arbitrary and capricious;

- (5) by adding to the Contract Price only the amount of the premium portion of overtime pay resulting from an acceleration of the Work; or
 - (6) by adding to the Contract Price, the actual incremental labor and equipment costs incurred by the Contractor resulting from a change in the manner, sequence or method of performing the Work.
- (b) The compensation specified in a Change Order shall constitute a release and full payment for the Extra Work covered thereby and for any delay and disruption cost or expense occasioned by reason of said change in the Work.
- (c) No time extension shall be granted Contractor by reason of the issuance of any Change Order unless it is expressly stated therein.

9.3 Field Orders

Construction Manager shall have the authority to order minor changes in the Work by the issuance of written field orders (“Field Orders”), which may be issued without prior approval by BPCA. Field Orders must be countersigned by Contractor. Minor changes in the Work for purposes of this Section shall mean only changes which do not necessitate or warrant any revision in the Contract Price in excess of \$5,000 or affect the time of performance of Contractor’s Work, any change in the basic character or design of the Project, or deviation from design standards established for the Project. Except as otherwise provided in the preceding sentence relating to an increase in the Contract Price, no claim for an increase in the Contract Price may be based upon any Field Order. If Contractor, on receipt of a Field Order, claims that the change of Work involved necessitates a Change Order, it shall proceed in accordance with the Field Order under protest and notify BPCA immediately of its claim for additional compensation for Extra Work pursuant to Article 14.

9.4 Changed Conditions

- (a) BPCA assumes no responsibility for the correctness of any boring or other subsurface information and makes no representation of any kind regarding subsurface conditions and test borings, reports, rock cores, foundation investigation and topographical maps which may be made available to Contractor.
- (b) Contractor shall promptly, and before such conditions are disturbed, notify Construction Manager of: (1) subsurface or latent physical conditions differing materially from those indicated in the Contract Documents, or (2) unknown physical conditions of an unusual nature, differing materially from those ordinarily encountered and generally recognized as inherent in work of the character provided for in this Agreement. Construction Manager shall promptly investigate the conditions, and if it finds that such conditions do materially so differ and cause an increase or decrease in Contractor’s cost of, or the time required for, performance of any part of the Work under this Agreement, Contractor shall be paid in the manner provided for payment with respect to any Change Order and receive, if warranted, a time extension.
- (b) No claim of Contractor under this clause shall be allowed unless Contractor has given the notice required in subsection (a) above.

ARTICLE 10 - SUBCONTRACTS AND PURCHASE ORDERS

10.1 Selection of Subcontractors and Materialmen and Approval of Subcontracts and Purchase Orders

- (a) Contractor shall submit to Construction Manager, within 21 calendar days of Notice to Proceed, the names of all persons with whom it has contracted or intends to contract or hereafter contracts with respect to the Work.
- (b) Except as specifically provided herein, Contractor shall not enter into any Subcontracts or issue any Purchase Orders (as hereinafter defined) to any Materialmen in

connection with the performance of Contractor's obligations hereunder without the prior written consent of BPCA to the use of each such Subcontractor or Materialman, and to the agreement to be entered into between Contractor and any such Subcontractor or Materialman. Contractor shall inform BPCA in writing of any interest it may have in a proposed Subcontractor or Materialman. No such consent by BPCA, or employment, contract, or use by Contractor, shall relieve Contractor of any of its obligations hereunder nor may BPCA be held responsible in any way for the performance of a Subcontractor or Materialman to whom BPCA gave its consent.

(c) Contractor shall be responsible for the performance of the Work of any Subcontractors or Materialmen engaged, including the maintenance of schedules, coordination of their Work and resolutions of all differences between or among Contractor and any Subcontractors. It is expressly understood and agreed that any and all Subcontractors or Materialmen engaged by Contractor hereunder shall at all times be deemed engaged by Contractor and not by BPCA.

(d) Upon the request of BPCA, Contractor shall cause any Subcontractor or Materialman employed by the Contractor in connection with this Agreement to execute a copy of the Agreement wherein such Subcontractor or Materialman shall acknowledge that it has read and is fully familiar with the terms and provisions hereof and agrees to be bound thereby as such terms and provisions are or may be applicable to such Subcontractors or Materialmen.

(e) Contractor shall submit to BPCA promptly following execution, three copies of every revision, amendment, modification or cancellation executed or issued by Contractor with respect to any Subcontractor or Materialman. BPCA is not obligated to make payment on account of Work performed or Materials furnished by a Subcontractor or a Materialman under a Subcontract or contract for construction supplies or Materials (hereinafter "Purchase Order(s)") unless there shall have been filed with BPCA prior to the submission of a Requisition for each payment, three copies of such Subcontract or Purchase Order containing the provisions required by this Agreement to be contained therein, except as may otherwise be specified by BPCA with respect to Purchase Orders for minor purchases.

10.2 Access by BPCA and Others

Contractor shall include a provision in all Subcontracts and Purchase Orders stating that, to permit verification of Contractor's costs, BPCA shall have the right to have its representatives inspect and audit the books of account and records of the Subcontractor and Materialmen, including the right to make excerpts from such books and records. All payments by Contractor to a Subcontractor or Materialman shall be by check specifically indicating that payment is attributable to this Agreement and identifying the invoice(s) for which payment is being made. Contractor shall include a provision in all Subcontracts and Purchase Orders that will enable representatives of the State of New York, Construction Manager and BPCA, as the case may be, to obtain access during working hours to the appropriate books of account and records of the Subcontractors or Materialmen relating to the Work to determine if there is compliance with the requirements of law or this Agreement.

10.3 Retainage

Contractor may provide for a retainage under any of its Subcontracts or Purchase Orders provided that where a Subcontract or Purchase Order provides for a retainage, the retainage shall be no greater in percentage than that provided for under Sections 5.1 or 5.7 hereof with respect to Contractor itself, unless otherwise approved in writing by BPCA. Contractor shall submit with each Requisition a statement setting forth the amounts of all retainage, if any, under its Subcontracts and Purchase Orders.

10.4 Miscellaneous

(a) Contractor shall be fully responsible for the work, acts and omissions of Subcontractors and Materialmen, and of persons either directly or indirectly employed by Subcontractors and Materialmen.

(b) Contractor's use of Subcontractors and Materialmen shall not diminish Contractor's obligation to complete the Work in accordance with the Contract Documents.

Contractor shall control and coordinate the work of Subcontractors and Materialmen.

(c) Nothing contained in this Agreement shall create any contractual relationship between Subcontractors or Materialmen and BPCA, Construction Manager or Architect. Nothing in this Section shall obligate BPCA to pay or to see to the payment of any sums to any Subcontractor or Materialmen.

(d) Contractor shall include a provision in all Subcontracts and Purchase Orders exceeding \$50,000, requiring the Subcontractor or Materialman, if requested by BPCA, until the Subcontractor or Materialman finishes its portion of the Work, to deliver to Contractor unaudited and, if available, audited financial statements of the Subcontractor or Materialman similar to the obligation of Contractor under Section 6.8 and promptly upon receipt thereof Contractor shall deliver copies thereof to BPCA.

ARTICLE 11 - ASSIGNMENT

11.1 No Assignment of Duties

Contractor shall not assign this Agreement or the performance of any obligations of Contractor under this Agreement, nor enter into any Subcontract in respect of the Work or any part thereof except in compliance with Article 10 hereof and with the prior written consent of BPCA, and each and every such assignment, Purchase Order and Subcontract without such compliance and consent shall be void and shall revoke and annul this Agreement.

11.2 No Assignment of Monies

Contractor shall not assign any monies payable hereunder nor execute and deliver any order for payment unless Contractor and the assignee shall have complied with the following terms and conditions:

(a) the assignee shall be a commercial bank or finance company regularly engaged in the business of provided financing to construction contractors and shall be providing such financing to Contractor;

(b) the assignee shall, simultaneously with the assignment, execute and deliver to BPCA an undertaking, in favor of BPCA, in form and substance satisfactory to BPCA, providing that:

(1) assignee will cause Contractor to apply for trust purposes, as defined in New York Lien Law Article 3-A (the "Lien Law"), all funds advanced by assignee to Contractor;

(2) assignee will file a copy of the assignment, containing the covenant required by the Lien Law, with the County Clerk of New York County and the head of the agency having charge of the underlying project;

(c) the assignee shall agree with BPCA in writing that BPCA and Contractor may modify any of the terms of this Agreement, including any of the terms of payment, without the consent of assignee;

(d) the assignee shall agree with BPCA in writing that after the effective date of the assignment, BPCA may make payment directly to any Subcontractor or Materialman without any liability to the assignee;

(e) the assignee shall agree with BPCA in writing that the assignee shall require and cause Contractor to keep his books and records in the form and manner described in New York Consolidated Laws Service Lien Law Article 3-A Section 75; and

(f) the assignee shall agree with BPCA in writing that the assignee will indemnify and hold BPCA harmless from and against any loss, claim or expense incurred as a result of any

failure of performance in accordance with the terms of such undertaking.

11.3 Assignment by BPCA

This Agreement or any rights of BPCA under this Agreement, including any guaranties or warranties of workmanship or material, may at any time be assigned by BPCA to the State of New York or any political subdivision, public corporation or agency of the State.

ARTICLE 12 - MECHANICS' LIENS AND CLAIMS

If any mechanic's lien or other claim shall be filed for or on account of the Work, Contractor shall discharge such lien or claim within thirty days of receiving written notice of such lien or other claim.

ARTICLE 13 – INSURANCE AND CONTRACT SECURITY

13.1 Insurance

(a) Contractor shall procure and maintain all of the insurance required under this Article 13 until Final Acceptance of the Work, except with respect to Completed Operations Coverage, as described in 13.1(f)(3) below.

(b) Contractor shall not commence physical performance of the Work at the Site until Contractor has obtained, and required each Subcontractor to obtain, all the insurance required under this Article and until it has furnished to BPCA the certificate or certificates of insurance required by Section 13.1(c) hereof.

(c) Contractor shall furnish to BPCA, before or upon execution of this Agreement, attention: [name], a certificate or certificates of the insurance required under this Article and, upon BPCA's request, certified copies of the original policies of insurance, within the time period required by BPCA and before commencing physical performance of the Work at the Site. Such certificate or certificates shall be in form satisfactory to BPCA, shall list the various coverages and shall contain, in addition to any other provisions required hereby, a provision that the policy shall not be changed, canceled or reduced and that it shall be automatically renewed upon expiration and continued in force until two years after Final Acceptance unless BPCA is given 90 days' written notice to the contrary. Such policies and certificates should name as additional insureds BPCA, Battery Park City Parks Conservancy Corporation (the "Conservancy"), the State of New York, Construction Manager, and Architect.

(d) All insurance required to be procured and maintained must be procured from insurance companies which have a financial rating by A.M. Best Company as published in the most current key rating guide of "A-X" or better and which are authorized to do business in the State of New York.

(e) If at any time any of the required insurance policies should be canceled, terminated or modified so that insurance is not in effect as required, then, if BPCA shall so direct, Contractor shall suspend performance of the Work. If the Work is not suspended then BPCA may, at BPCA's option, obtain insurance affording coverage equal to that required, the cost of such insurance to be payable by Contractor to BPCA.

(f) Contractor and each Subcontractor shall secure in a form satisfactory to BPCA:

(1) Worker's Compensation and Employer's Liability Insurance, including United States Longshoreman & Harbor Workers ("USL & H") and Jones Act Coverages, during the Term for the benefit of such employees as are required to be insured by the applicable provisions of law and voluntary compensation for employees excluded from statutory benefits. Employer's Liability Insurance and benefits resulting from disease shall

not be less than an annual aggregate amount of \$ _____ for each consecutive 12-month period.

- (2) Disability Benefit Insurance during the life of this Agreement for the benefit of such employees as are required to be insured by the applicable provisions of law.

- (3) Commercial General Liability Insurance as follows:

Standard commercial general liability insurance policy with contractual, products and completed operations and explosion, blasting, collapse, excavation and underground damage liability coverages, under the occurrence policy format, issued to and covering the liability of Contractor for all the Work and operations relating thereto and all obligations assumed by Contractor under this Agreement including, but not limited to indemnity obligations in an amount which shall not be less than the following limits:

**Combined Single Limits, Bodily Injury
and Property Damage Liability**

\$ _____ per each occurrence and \$ _____ in the aggregate.

The completed operations coverage shall continue in force until three years after Final Acceptance of the Work and shall contain, in addition to any other provisions required hereby, a provision that the policy shall not be changed, canceled or reduced. As a condition precedent to the making of Final Payment, Contractor shall furnish BPCA with a certified copy of the completed operations policy.

- (4) Automobile Liability Insurance as follows:

A policy covering the use in connection with the Work of all owned, non-owned and hired vehicles bearing license plates, or under the circumstances that such vehicles are being used they are required by the Motor Vehicle Laws of the State of New York to bear license plates. The coverage under such policy shall not be less than the following limits:

**Combined Single Limits,
Bodily Injury and Property Damage Liability**

\$ _____ per each occurrence.

- (5) Marine Protection and Indemnity ("P&I") insurance of not less than [amount] per occurrence, if Contractor or any of its Subcontractors utilizes floating equipment, barges or floats, or performs marine-related construction, covering any and all claims for personal injury, death and property damage arising out of or in connection with this Agreement.

- (6) Pollution Liability Insurance, on an occurrence basis, providing coverage for bodily injury liability, property damage or environmental damage caused by pollution conditions with a limit of liability of not less than [amount] per occurrence and in the aggregate. The policy shall include coverage for environmental clean-up on land, in air and on water. The policy shall include coverage for completed operations for two (2) years after the completion of the performance of the Work, gradual and sudden and accidental pollution coverage, with a time element of no less than seven (7) days' notice and thirty (30) days' reporting. The policy shall not contain a sunset provision, or any other provision, which would prohibit the reporting of a claim and the subsequent defense and indemnity that would normally be provided by the policy. The policy shall provide

transportation coverage for the hauling of hazardous materials from the Project Site to the final disposition location.

- (7) Vessel Pollution Liability Insurance, on an occurrence basis, providing coverage for bodily injury liability, property damage or environmental damage caused by pollution conditions, emanating from any floating equipment, barges or floats, utilized by Contractor or Subcontractors in the performance of Marine related construction, with a limit of liability of not less than [amount] per occurrence and in the aggregate. The policy shall include coverage for environmental clean-up on land, in air and on water.
- (8) Umbrella Liability Insurance, excess of general liability, automobile liability, Protection and Indemnity (“Marine Liability”), vessel pollution and Employer’s Liability, in an amount of not less than [amount].

(g) The insurance required under subsections 13.1(f)3, 4 and 5 shall be of a type which shall protect Contractor and Subcontractors, respectively, against damage claims which may arise from operations under this Agreement, whether such operations be by the insured or by anyone directly or indirectly employed by the insured. Each of the aforesaid policies shall provide that the insurance company or an attorney approved and retained by the insurance company shall defend any suit or proceeding against BPCA or any officers, agents or employees of BPCA whether or not such suit is groundless, false or fraudulent. Notwithstanding the foregoing, BPCA shall have the right to engage its own attorneys for the purpose of defending any suit or proceeding against it or its respective officers, agents or employees, and, in such event, Contractor shall, indemnify BPCA for all attorneys’ fees and disbursements and other costs incurred by it arising out of, or incurred in connection with, any such defense. The said insurance shall name BPCA, the Conservancy, the State of New York, Construction Manager and Architect as additional insureds as respects this location and shall, where applicable, be written on an occurrence basis and shall contain a provision that it is primary and that any similar insurance which BPCA, the Conservancy, the State of New York, Construction Manager, Architect, Contractor or Subcontractor elect to carry for their own benefit is secondary or excess and not contributing insurance.

(h) BPCA, at BPCA’s cost and expense, may, at its sole option, procure and maintain such insurance as shall in the opinion of BPCA, protect BPCA from contingent liability of BPCA to others for damages arising from bodily injury, including death and property damages which may arise from operations under this Agreement. The procurement and maintenance of such insurance by BPCA shall not in any way be construed or be deemed to relieve Contractor from, or to be a limitation on the nature or extent of, such obligations and risk.

(i) BPCA shall, at all times during the period of construction and until completion and Final Acceptance of the Work procure and maintain at the cost and expense of BPCA “Builders Risk” insurance, or its functional equivalent, against direct physical loss or damage to the Work and on all Materials to be made a part of the Work in the names of BPCA, Construction Manager, Contractor and Subcontractors, said amount of insurance to be procured and maintained on a one hundred percentage (100%) completed value basis on the insurable portion of the Work, which insurance shall contain a deductible provision for all losses except flood and earthquake in the amount of \$10,000 and a deductible provision for flood and earthquake in the amount of \$10,000. BPCA recognizes that the deductible applicable to flood and earthquake may be greater than \$10,000 due to insurance market conditions and shall notify Contractor if such deductible is greater than \$10,000. Losses up to and including the amounts of such deductible provisions shall be borne by Contractor. The insurance specified above may, in certain instances, include other parties as named insureds, as the interests of such parties may appear. Loss, if any, is to be made adjustable with and payable to BPCA on behalf and for the named insureds as the interests of such insureds may appear. BPCA shall, in BPCA’s sole discretion, have power to adjust and to settle with the insureds any loss or claim under such insurance. The above is not intended to be a complete, full or accurate description of the coverage provided by the policies of insurance, copies of which are on file with BPCA. This subsection (i) is not intended to create or give any rights to Contractor or Subcontractors other than those which may be made available to such Contractors or Subcontractors under the terms of such policies. BPCA assumes no obligation to obtain insurance other than that evidenced by said policies. Contractor and Subcontractors shall not violate or permit to be violated any term or

condition of such policies and shall at all times satisfy the safety requirements of BPCA and of the insurance companies issuing the aforementioned policies. The Contractor shall, upon notification by BPCA, obtain such insurance at BPCA's expense on a date determined by BPCA, which date shall not be less than thirty (30) days after notice to Contractor of such determination by the BPCA.

13.2 Effect of Procurement of Insurance

Neither the procurement nor the maintenance of any type of insurance by BPCA or Contractor shall in any way be construed or be deemed to limit, discharge, waive or release Contractor from any of the obligations and risks impressed upon Contractor by this Agreement or to be a limitation on the nature or extent of such obligations and risks.

13.3 Contract Security

Contractor shall, if it already has not done so, furnish to BPCA, with the execution of this Agreement, to BPCA, a bond in the form annexed hereto as Exhibit [x] in an amount at least equal to one hundred percent (100%) of the Contract Price for performance of the Work (the "Performance Bond"), and a labor and material payment bond in the form annexed hereto as Exhibit [y] in an amount at least equal to one hundred percent (100%) of the Contract Price for the payment of all persons performing labor or providing Materials in connection with the Work (the "Payment Bond"). The surety on said bond shall be a surety company authorized to do business in the State of New York and shall be rated at last B+ by A.M. Best and Company, or meet such other requirements as are acceptable to BPCA.

13.4 Additional or Substitute Bond

If at any time BPCA shall be or shall become dissatisfied with any surety or sureties then obligated upon the Performance Bond or the Payment Bond, or if for any other reason such bonds shall cease to be adequate security to BPCA, Contractor shall within five (5) days after notice from BPCA to do so, substitute an acceptable bond or bonds in such form and sum and signed by such other surety or sureties as may be satisfactory to BPCA, except that the penal sum of said bond shall not exceed the Contract Price as adjusted by Change Orders. No further payments shall be deemed due nor shall be made until the new surety or sureties shall have furnished such an acceptable bond or bonds to BPCA.

ARTICLE 14 - CLAIMS FOR EXTRA WORK

(a) If Contractor is of the opinion that (i) any work which it has been ordered to perform is Extra Work and not Work as set forth in the Contract Documents, (ii) any action or omission of BPCA, Construction Manager or Architect is contrary to the terms and provisions of the Contract Documents and will require the performance of Extra Work or will cause additional expense to Contractor or (iii) any determination, order or directive of BPCA, Construction Manager or Architect is contrary to the terms of the Contract Documents and will require the performance of Extra Work or will cause additional expense to Contractor, Contractor shall:

- (1) not suspend Work but promptly comply with each determination, order or directive and proceed diligently with the performance of the Work in accordance with BPCA's instructions,
- (2) notify BPCA, Construction Manager and Architect in writing within 72 hours of such determination, order, act or omission that Contractor believes such will require it to perform Extra Work or incur additional expense and the basis for Contractor's conclusion and request a final determination thereon by BPCA, and
- (3) present to the Construction Manager for signature daily time and Material tickets to confirm quantities of Material and hours of labor in cases where Contractor is performing the Work which it considers to be Extra Work.

If BPCA determines that (x) work is Work required to be performed hereunder and not Extra Work, (y) action or omission is proper, or (z) a determination, order or directive is proper, Contractor, in order to reserve its right to claim compensation for or damages resulting from the performance of such work or the compliance with such determination, order or directive, must notify BPCA in writing within three (3) working days after receiving notice of BPCA's determination that it is performing such work or complying with such determination, order or directive under protest.

In addition to the foregoing, Contractor must submit to BPCA, Construction Manager and Architect within thirty (30) days after it has performed such work or complied with such determination, order or directive, a detailed statement of the extra expense claimed to have been incurred and of any claimed damages resulting from the performance of such work or the compliance with such determination, order or directive.

(b) No claim for Extra Work shall be allowed unless the same was done pursuant to written order approved in writing by BPCA. Contractor's failure to comply with any provision of this Article:

- (1) shall constitute a conclusive and binding determination on the part of Contractor that such action, omission, determination, order or directive does not involve Extra Work, has not caused extra expense or damages to Contractor, and is not contrary to the terms and provisions of the Contract Documents; and
- (2) shall constitute an irrevocable waiver by Contractor of any claim for compensation for or damages resulting from the performance of such work or the compliance with such determination, order or directive.

(c) The value of claims for Extra Work, if allowed, shall be determined by the methods described in Section 9.2.

ARTICLE 15 - TERMINATION

15.1 Termination for Cause

(a) If any of the following events shall occur (an "Event of Default") then BPCA or Construction Manager may serve written notice upon Contractor and upon Contractor's surety, if any, terminating this Agreement at a specified date. The notice shall contain the reasons for termination but shall not be effective to terminate this Agreement if Contractor cures all Events of Default stated in the notice prior to the date specified in the notice of termination.

- (1) Contractor shall violate any substantial provision of this Agreement, including, without limitation, by failing to maintain the Progress Schedule for the Project or Progress Schedule for the Work then in effect in accordance with, or failing to discharge any of its responsibilities under, Section 3.1(d) hereof, or by failing to indemnify and hold harmless BPCA (as required by Sections 3.1(e), 3.2, 17.5, 21.1, 21.2., 22(c) or any other provision of this Agreement) from and against any and all claims, liabilities, losses, costs or damages arising out of Contractor's performance of, or failure to perform, its obligations under this Agreement in accordance with its terms, or if the Contractor fails to maintain the insurance required by the provisions of Section 13; or
- (2) any material adverse change shall take place in the financial condition of the Contractor;
- (3) Contractor takes any action which would result in it becoming the subject of any insolvency proceeding. The term "insolvency proceeding" as used herein shall include the filing of a petition for relief under Title 11 of the United States Code by Contractor or the consent, acquiescence or taking

of any action by Contractor, or the filing by or against Contractor of petition or action, looking to or seeking any reorganization, arrangement, composition, readjustment, liquidation, dissolution, or similar relief under any other regulation; or the appointment, with or without the consent of Contractor, of any trustee, custodian, receiver or liquidator of Contractor or of any property or assets of Contractor; or Contractor's making of an assignment for the benefit of creditors or its inability to pay its debts as they become due.

(4) Contractor misrepresented or omitted information in its submission of the Statement of Qualifications of Contractor submitted by Contractor to BPCA in connection with this Agreement; or

(5) Any partner, principal, director, officer or shareholder owning in excess of five percent (5%) of the stock of Contractor shall have been convicted of a felony.

(b) Upon the occurrence of an Event of Default, at BPCA's option exercised by written notice to Contractor, title to any or all of Contractor's Materials, equipment, work product, work in process and dies and tools, whether on the Site or off site, which are necessary or useful in completing the Work shall vest in BPCA and BPCA may take possession of and utilize the same for completion of the Work; provided that title to such items shall revert to Contractor upon effectuation of a cure of the Event of Default prior to the termination of this Agreement. If no cure has been effected, this Agreement has been terminated and BPCA has taken possession of the same, then after BPCA has taken possession and the Work shall have been completed by or on behalf of BPCA, BPCA shall pay to Contractor, in respect to the items for which title has vested in BPCA, an amount equal to the sum of:

(1) the direct costs of Contractor for such Materials and Work in progress, and

(2) the depreciated book value of such tools and dies less, if BPCA elects to return the tools and dies to Contractor, the salvage value thereof. BPCA shall have the right to set off against such payment due to Contractor any amounts then due and payable by Contractor to BPCA which may accrue as damages owing by Contractor to BPCA under the terms of this Agreement. Contractor shall execute any further documents (including Form UCC-1 Financing Statements to give public notice of the potential ownership interest of Owner as set forth herein) required by BPCA to confirm the terms of this subsection 15.1(b).

(c) Upon termination of this Agreement, BPCA shall have the right, in addition to all other rights and remedies, to complete or have the Work completed by such means and in such manner, by contract or otherwise, with or without public letting as permitted by law, as BPCA deems advisable. BPCA may deduct any loss it incurs thereby from any payment then or thereafter due to Contractor without prejudice to any other remedy BPCA may have.

(d) Immediately upon termination in accordance with the provisions of this Section, each and every Subcontract and Purchase Order entered into by Contractor shall, at BPCA's option, be automatically assigned to BPCA, and Contractor shall insert a provision to this effect in all Subcontracts and Purchase Orders. In the event that it shall be determined that a termination under this paragraph was wrongful or not justified, such termination shall be conclusively deemed to be a termination for convenience of BPCA under Section 15.2 hereof and the sole right, remedy and recourse of Contractor against BPCA shall be governed and determined by Section 15.2 hereof.

(e) Contractor shall, upon the date when such termination shall take effect, promptly notify the union or unions, if any, having jurisdiction over the work by its employees that it releases the Project and consents that the Work be performed by others and Contractor expressly authorizes BPCA to notify the union or unions of such release in the name of Contractor. The failure, neglect or refusal of Contractor to issue such release or the disclaimer by it of the effectiveness of the release issued by BPCA shall subject Contractor to all damages sustained by BPCA.

(f) If this Agreement shall have been terminated by BPCA pursuant to this Section 15.1 and it shall be finally determined by BPCA or a court of competent jurisdiction that adequate grounds for such termination did not exist, then such termination shall be deemed a termination for convenience of BPCA under Section 15.2 hereof and the sole right, remedy and recourse of Contractor against BPCA shall be governed and determined by Section 15.2 hereof.

15.2 Termination for Convenience of BPCA

(a) BPCA, at any time, may terminate this Agreement for its own convenience. Any such termination shall be effected by delivering to Contractor a notice of termination specifying the extent to which performance of Contractor's Work under the Contract is terminated and the date upon which such termination becomes effective. Upon receipt of the notice of termination, Contractor shall:

- (1) stop work under this Agreement on the date specified in the notice of termination;
- (2) place no further Purchase Orders or Subcontracts for Materials, services or facilities;
- (3) unless directed otherwise by BPCA, terminate all Purchase Orders and Subcontracts;
- (4) assign to BPCA, in the manner, at the times, and to the extent directed by Construction Manager, all of the right, title and interest of Contractor under the Purchase Orders and Subcontractors so terminated, in which case BPCA shall have the right, in its sole discretion, to settle or pay any or all claims arising out of the termination of such Purchase Orders and Subcontracts;
- (5) to the extent required by Construction Manager, settle all outstanding liabilities and all claims arising out of such termination of Purchase Orders and Subcontracts, with the approval or ratification of Construction Manager, which approval or ratification shall be final for all the purposes of this Section 15.2;
- (6) transfer title to BPCA and deliver in the manner, at the time, and to the extent, if any, directed by the Construction Manager (i) the fabricated or unfabricated parts, Work in process, completed Work, supplies, and other Material produced as a part of, or acquired in connection with the performance of, the Work terminated by the notice of termination, and (ii) the completed or partially completed plans, drawings, work product, information and other property, which if this Agreement had been completed, would have been required to be furnished to BPCA;
- (7) take such action as may be necessary, or as the Construction Manager may direct, for the protection and preservation of the property related to this Agreement which is in the possession of Contractor and in which BPCA has or may acquire an interest.

(b) In the event of a termination of this Agreement pursuant to this Section 15.2, Contractor shall be paid by BPCA only the apportioned Contract Price for Work installed, the fair and reasonable value of Materials stored on the Site and under order for which Contractor is responsible for payment, less any sums properly deductible by BPCA, except that in no event shall Contractor be entitled to compensation in excess of the total Contract Price.

15.3 Suspension of Work

(a) BPCA may at any time and for any reason direct Contractor to suspend, stop, or interrupt the Work or any part thereof for a period of time. Such direction shall be in writing and

shall specify the period during which the Work is to be stopped. Upon receipt of a direction of suspension, Contractor shall, as soon as practicable, cease performance of the Work as ordered and take immediate affirmative measures to protect the Work from loss or damage. Contractor shall resume the Work upon the date specified in such direction or upon such other date as BPCA may thereafter specify in writing.

(b) The period during which the Work shall have been suspended, stopped or interrupted may, if warranted, be added to the time fixed for performance. A suspension, stoppage or interruption of the Work pursuant to this provision shall not give rise to any claim against BPCA for additional compensation.

ARTICLE 16 - COMPOSITE DRAWINGS AND COOPERATION

Where Contractor shall perform Work in close proximity to work of other contractors or subcontractors, or where there is evidence that Contractor's Work may interfere with work of other contractors, or subcontractors, Contractor shall assist in arranging space conditions to make satisfactory adjustment for the performance of such work and the Work. Contractor shall prepare composite scale working drawings and Sections as directed by Construction Manager, clearly showing how Contractor's Work is to be performed in relation to work of other contractors or Subcontractors. Such direction may include the following: the scale of the drawings, where the drawings are to be drafted, the number of prints or reproducibles, and the requirement of attendance at meetings. The determination as to who shall provide the composite drawings and the contents of the same shall rest exclusively with Construction Manager. Upon request by Construction Manager, Contractor shall sign and be bound by such composite drawings. Such signature shall indicate Contractor's acknowledgment that such drawing is acceptable as related to its Work covered or included in such drawing. If Contractor performs work in a manner which causes interference with the work of other contractors, or Subcontractors, Contractor shall make the changes necessary to correct the condition as directed by Construction Manager.

ARTICLE 17 - PROTECTION OF RIGHTS, PERSONS AND PROPERTY

17.1 Accident Prevention

Contractor shall at all times take every precaution against injuries to persons or damage to property and for the safety of persons engaged in the performance of the Work.

17.2 Safety Programs

Contractor shall be responsible for the initiation, maintenance and supervision of safety precautions and programs as prescribed by Construction Manager in connection with the Work.

17.3 Protection of Work and Property

(a) Contractor shall at all times guard BPCA's property from injury or loss in connection with the Work. Contractor shall at all times guard and protect the Site, the Work and adjacent property. Contractor shall replace or make good any such loss or injury unless such loss or injury is caused directly by BPCA.

(b) Contractor shall have full responsibility to install, protect and maintain all Materials in proper condition and forthwith repair, replace and make good any damage thereto until Final Acceptance of the Work.

(c) No provision is included for stresses or loads imposed by construction operations. If Contractor desires to place such loads in excess of the design load (as shown on the Drawings or Specifications), Contractor shall submit to Architect drawings and calculations prepared by, and bearing the seal of a professional engineer, showing the proposed method for supporting

such loads, for Architect's review and approval. No loading of any kind in excess of design loads shall be placed on any part of the Project prior to Architect's approval of such submitted drawings and calculations. The costs of the Architect's review shall be reimbursed to BPCA by Contractor.

(d) Contractor shall be responsible for all cutting, fitting or patching that may be required to complete the Work, to make its several parts fit together properly and to make the Work fit together properly with previous and surrounding work. The requirement to cut, fit or patch shall be determined by Construction Manager; provided, that structural elements of the Project shall not be cut, patched, or otherwise altered or repaired without prior authorization by BPCA. Authorization to proceed with remedial operation on any damaged or defective element or portion of the Project shall not constitute a limitation or a waiver of BPCA's, Construction Manager's or Architect's right to require the removal and replacement of any Work which fails to fulfill the requirements of the Contract Documents.

17.4 Adjoining Property

Contractor shall protect all adjoining property and shall repair or replace any such property damaged or destroyed during the progress of the Work.

17.5 Risks Assumed by Contractor

(a) Contractor solely assumes the following risk whether such risk arises from acts or omissions (whether negligent or not and whether supervisory or otherwise) of BPCA, Construction Manager, of Architect or Contractor, of any Subcontractor, of any Materialman, of third persons or from any other cause, including unforeseen obstacles and difficulties which may be encountered in the prosecution of the Work, whether such risk is within or beyond the control of Contractor and whether such risk involves any legal duty, primary or otherwise, imposed upon BPCA:

the risk of loss or damage, direct or indirect, of whatever nature, to the Work or to any Materials furnished, used, installed or received by BPCA, Contractor or any Subcontractor, Materialmen or workmen performing services or furnishing Materials for the Work, whether such Work or Materials are stored at the Site or at an offsite location in accordance with Section 5.4 hereof. Contractor shall bear such risk of loss or damage until Final Acceptance of the Work by BPCA or until completion of such Materials or removal of such Materials from the Site following a determination that they will no longer be needed for the Project and delivery to the location at which they are to be subsequently stored or disposed of, whichever event occurs last. A portion of the risk of such loss or damage may be insured against under the terms of a "builder's risk" insurance policy maintained in the name of Contractor, among others, as described in Section 13.1(i). Notwithstanding the status of any actual or potential recovery or claim under the said "builder's risk" insurance policy, in the event of any loss or damage, Contractor immediately shall repair, replace or make good any such loss or damage.

(b) Contractor shall not, without obtaining express advance permission of BPCA, raise any defense involving in any way jurisdiction of any court in which BPCA brings an action arising under this Agreement, governmental nature of BPCA or the provisions of any statutes respecting suits against BPCA.

(c) Contractor's obligations under this Article 17 shall not be deemed waived, limited or discharged by the enumeration or procurement of any insurance for liability for damages.

(d) Neither Final Acceptance of the Work nor any payment made hereunder shall release Contractor from Contractor's obligations under this Article 17. The enumeration elsewhere in this Agreement of particular risks assumed by Contractor or of particular claims for which Contractor is responsible shall not be deemed to limit the effect of the provisions of this Article 17 or to imply that Contractor assumes or is responsible for only risks or claims of the

type enumerated; and neither the enumeration in this Article 17 nor the enumeration elsewhere in this Agreement of particular risks assumed by Contractor of particular claims for which Contractor is responsible shall be deemed to limit the risks which Contractor would assume or the claims for which Contractor would be responsible in the absence of such enumerations.

(e) The Contractor is advised that the Work under this Agreement may impose certain obligations and requirements mandated by the U.S. Department of Labor Occupational Safety and Health Administration regulations, Title 29 CFR Part 1926.62 Lead Exposure in Construction, relative to the potential exposure to lead by its employees. The Contractor assumes entire responsibility and liability for complying fully in all respects with these regulations.

(f) Contractor agrees that any unsatisfied claims of the BPCA arising from Contractor's obligations under this Article 17 or Article 13 (Insurance) may be offset or deducted by BPCA from any payments due to Contractor hereunder.

ARTICLE 18 - USE PRIOR TO ACCEPTANCE BY BPCA

(a) If before Final Acceptance of Work, BPCA desires to use the Site or any part thereof which is completed or partly completed, or to place or install therein or thereon equipment, BPCA shall have the right to do so, and Contractor shall in no way interfere with or object to such use by BPCA.

(b) Such use (1) shall not constitute acceptance of space, systems, Materials or elements of the Work, nor shall such use affect the start of any guaranty period and (2) shall not affect the obligations of Contractor for work which is not in accordance with the requirements of this Agreement or other obligations of Contractor under the Contract Documents.

(c) Contractor shall continue the performance of the Work in a manner which shall not unreasonably interfere with such use by BPCA.

ARTICLE 19 - EXEMPTION FROM SALES AND COMPENSATING USE TAXES

19.1 BPCA Exempt

BPCA is exempt from payment of sales and compensating use taxes of the State of New York and of cities and counties thereof on all Materials which will become an integral component of the completed Project pursuant to this Agreement.

19.2 Certificates

Contractor, Subcontractors and Materialmen shall obtain any and all necessary certificates or other documentation from the appropriate governmental agency or agencies, and use such certificates or other documentation as required by law, rule or regulations to obtain said tax exemption.

ARTICLE 20 - WARRANTIES AND GUARANTIES

20.1 In General

(a) Contractor guarantees that all Work performed and all Materials furnished will conform to the Contract Documents as to kind, quality, functions, design and characteristics of material and workmanship. Contractor shall remove, replace and repair, at its sole cost and expense, all defects in workmanship, Materials, ratings, capacities, or design characteristics occurring in or to the Work including, without limitation, any portion of the Work furnished or performed by any Subcontractor or Materialman, within one year from the date of Final

Acceptance. Contractor guarantees that all Work performed and all Materials furnished will conform to the Contract Documents as to kind, quality, functions, design and characteristics of material and workmanship. Contractor hereby acknowledges that BPCA may be required to incur substantial expense if correction of the Work is required particularly if such correction involves the uncovering, removal or replacement of concrete, wiring and piping installed at the Site. If Contractor shall fail to reimburse BPCA for any such expense which may become payable as provided in this paragraph, BPCA shall be entitled to deduct such expense from any payments required to be made by BPCA to Contractor pursuant to this Agreement. Contractor, upon demand, shall pay for all damage to all other Work resulting from such defects and all expenses necessary to remove, replace and repair such other Work which may be damaged in removing, replacing or repairing such defects.

(b) The benefits of this Article 20 shall inure to the benefit of BPCA and its respective successors and assigns. In addition, any bond or guaranty which may be required of Contractor or any Subcontractor or Materialman under the Contract Documents shall inure to the benefit of BPCA and its respective successors and assigns.

(c) The rights and remedies afforded BPCA under this Section are in addition to and not in lieu of and do not in any way affect, change, alter, modify, vary or prejudice any right, remedy or recourse which BPCA may have under other provisions of this Agreement or pursuant to law.

20.2 Additional Guaranties

In addition to the general guaranty set forth in Section 20.1, any other guaranties set forth in the Contract Documents shall be applicable.

20.3 Repair by Another

If BPCA has requested Contractor to correct any Work and Contractor shall not have completed any correction of the Work as shall be required pursuant to this Article 20 within ten (10) working days after receipt of written notice from BPCA specifying the defect or damage required to be removed, replaced or repaired, or if such defect or damage is of such a nature that it cannot be completely removed, repaired and replaced within such ten (10) day period and Contractor shall not have diligently commenced removing, repairing and replacing such defect and damage within such ten (10) day period or shall not thereafter with reasonable diligence and in good faith proceed to do such work, BPCA may employ such other person, firm or corporation as it may choose, to perform such removal, replacement and repair, and Contractor shall, upon demand, pay to BPCA all amounts which BPCA expends for such removal, replacement and repair.

ARTICLE 21 - INDEMNITY

21.1 Delay or Failure

Contractor and its sureties shall be responsible for and pay to BPCA, all loss, damage and additional cost incurred by reasons or on account of (i) the unexcused delays of Contractor (determined as set forth in Section 3.1 hereof) or (ii) Contractor's failure to fully and completely carry out the terms of this Agreement.

21.2 Inventions

In addition to the indemnity set forth in Section 17.5(a), Contractor shall indemnify and hold BPCA harmless from all claims, demands or liabilities of any kind or nature, including costs and expenses, for or on account of any patented or unpatented plan, design, invention, article, arrangement, appliance, Material, or preparation, manufactured, used or followed in the performance of or incident to the Work hereunder, and shall defend any and all actions arising out of the same. In the event of any injunction or legal action by reason thereof, which shall operate to stop or retard the Work, BPCA shall have the right to substitute such other articles of like kind as will enable it to complete the Project, and all costs and expenses occasioned thereby shall be borne by Contractor.

21.3 Liability

Contractor shall hold BPCA, the Conservancy, the State of New York, Construction Manager and Architect and their servants, agents and employees harmless from and shall indemnify them against any and all liability, loss, cost, damage or expense, including attorneys' fees, by reason of claims of Contractors employees or employees of its Subcontractors or Materialmen for injuries or death or by reason of claims of any other person or persons, including BPCA, the Conservancy, the State of New York, Construction Manager, and Architect and their servants, agents or employees, for injuries to person or property or for death occasioned in whole or in part by any act or omission of Contractor, its Subcontractors and Materialmen and their servants, agents and employees whether or not it is contended that BPCA contributed thereto or was responsible therefor by reason of nondelegable duty. If, however, this indemnification is limited by applicable law, then the said indemnification hereby shall be similarly limited to conform with such law, it being the intention that this indemnification shall be as permitted by applicable law. BPCA may retain any monies due or to become due hereunder sufficient to indemnify BPCA, the Conservancy, the State of New York, Construction Manager, and Architect and their servants, agents and employees against such injuries, claims, suits, actions, costs or damages should any such claim arise. Contractor shall, at the sole option of BPCA and upon written demand of BPCA, assume the defense in behalf of BPCA, the Conservancy, the State of New York, Construction Manager, and Architect or their servants, agents or employees of any action or proceeding commenced against them whether or not Contractor is named as a party therein as part of Contractor's aforementioned obligation to indemnify and hold them harmless.

ARTICLE 22 - PATENTS AND ROYALTIES

(a) In the prosecution of the Work, Contractor will not use or furnish any patented appliance, article, device or method of construction unless it has authorization for such use. Contractor shall pay all royalty and license fees.

(b) Any approval of Materials by Architect shall be construed merely as an approval of their adequacy for the Work.

(c) Contractor will be responsible for all claims against BPCA for the infringement of any patents. Contractor shall defend all suits and claims for infringement of any patent rights and shall indemnify and hold BPCA harmless from loss on account thereof. Any expenses incurred by Contractor in connection with suits and claims will not offset the Contract Price.

(d) Contractor hereby and presently grants to BPCA an irrevocable and non-exclusive license to utilize all of the Contractor's rights in and to:

- (1) all United States patents and patents registered in any other foreign country;
- (2) all proprietary knowledge, data and trade secrets; and
- (3) all Engineering data and information necessary in connection with and solely in connection with, all work performed by BPCA or other contractors hired by BPCA to complete the work after termination of this Agreement pursuant to Section 15.1.

Each Purchase Order and Subcontract shall contain a similar clause with respect to the rights of Subcontractor and Materialman in and to the foregoing, in form and substance acceptable to BPCA, granting BPCA the aforesaid license. BPCA shall not be obligated to pay any royalties, license fees or any other consideration to Contractor or any Subcontractor or Materialman for this license. Contractor and each Subcontractor and Materialman shall execute a separate license agreement, in form and substance satisfactory to BPCA, concurrently with the execution of this Agreement, or any Subcontract or Purchase Order, or within ten (10) days thereafter, embodying the terms of this Section. On request, Contractor and each Subcontractor and Materialman shall furnish BPCA with copies of all related Engineering and technical data required to complete the work.

ARTICLE 23 - AS-BUILT DRAWINGS

(a) Contractor shall be furnished by BPCA, at BPCA's expense, with one physical set and two electronic copies (on disk) of 48" x 36" Drawings, on which Contractor, where applicable, shall record the installation of underground utilities, concealed piping, concealed valves and control equipment and record changes in the Work. Such recording shall be kept current and include final and actual sizes as well as the location and elevation of the above figures and offset distances in feet and inches to permanent surface improvements such as buildings, retaining walls or curbs. During the progress of the Work, at the request of Construction Manager and prior to the approval of any Requisition of Contractor, Contractor shall provide a 48" x 36" PDF to BPCA of the up to-date Drawings showing the Work as installed. At completion of the Work, Contractor shall complete, sign and date the 48" x 36" physical set of Drawings and deliver it to Architect.

(b) After review by Architect and return to Contractor for any required changes, Contractor shall furnish to BPCA, at Contractor's expense, at least one physical set and two electronic copies (on disk) of 48" x 36" final Drawings.

ARTICLE 24 - SHOP DRAWINGS AND SAMPLES

24.1 Contractor Submittal

Contractor shall submit to Construction Manager the shop drawings, Product Data and Samples required by the Contract Documents and shall adhere to all submittal and scheduling requirements with respect thereto. After review of such shop drawings, Product Data and Samples by Construction Manager and their approval by Architect, each of such items shall be returned in accordance with the procedures established therefor.

24.2 Contractor's Responsibility

Architect's approval of shop drawings, Product Data and Samples shall not relieve Contractor of responsibility for deviation from the requirements of the Contract Documents. Contractor shall be responsible for the accuracy of the shop drawings, Product Data and Samples and for the conformity of Documents unless Contractor has notified Architect of the deviation in writing at the time of submission and has received from Architect written approval by separate letter of the specified deviations. Architect's approval shall not relieve Contractor of responsibility for errors or omissions in the shop drawings, Product Data or Samples.

ARTICLE 25 – NOTICES

Whenever it is provided herein that notice, demand, request, consent, approval or other communication shall or may be given to, or served upon, either of the parties by the other, or whenever either of the parties desires to give or serve upon the other any notice, demand, request, consent, approval or other communication with respect hereto, each such notice, demand, request, consent, approval or other communication shall be in writing and shall be effective for any purpose only if given or served by hand with proof of delivery, by delivery by an overnight courier service which obtains receipts, or by mailing the same by express or certified mail, postage prepaid, return receipt requested, addressed to:

(a) If to BPCA:

[Name & Title of BPCA Person], Battery Park City Authority, One World Financial Center, 24th floor, New York, NY 10281

with a copy to: General Counsel, at the same address

or to such other address as BPCA may from time to time designate in the manner set forth above.

(b) If to Contractor:

[Name, Company and Address]

or to such other addresses as Contractor may from time to time designate in the manner set forth above.

(c) if to Construction Manager

[Name, Company and Address]

or to such other addresses as the Construction Manager may from time to time designate in the manner set forth above.

(d) if to Architect/Engineer/etc.

[Name, Company and Address]

or to such other addresses as Architect or Engineer may from time to time designate in the manner set forth above.

(e) Every notice, demand, request, consent, approval or other communication hereunder shall be deemed to have been given or served (i) in the case of express or certified mail, on the date the receipt is dated by the Post Office or express mail carrier, as the case may be, and (ii) in the case of notice by hand or by overnight courier service, upon delivery, as evidenced by a signed receipt.

ARTICLE 26 - EMPLOYMENT AND DIVERSITY

26.1 Definitions

The following terms shall have the meanings set forth below for the purposes of this Article 26:

(a) “Certified Business.” A business verified as a minority or women-owned business enterprise by the Division or such other New York State agency authorized to make such certification.

(b) “Diversity Program.” The program by which Owner shall monitor Contractor’s compliance with the requirements set forth in (i) the MBE/WBE Required Participation Plan and (ii) the Utilization Plan.

(c) “Division.” The Division of Minority and Women’s Business Development of the New York State Department of Economic Development.

(d) “Director.” The Director or the Executive Director of the Division.

(e) “Directory.” The directory of certified businesses prepared by the Director for use by Owner and contractor in complying with the provisions of the Executive Law of the State of New York, Article 15-A.

(f) “MBE/WBE Required Participation Plan.” The plan previously submitted by Contractor to Owner listing the certified MBEs and/or WBEs which the Contractor intends to use in the performance of this agreement in order to ensure that MBEs and WBEs are awarded a fair share of the total dollar value that is to be paid for the Work.

(g) “Minority” or “Minority Group Member.” A United States citizen or permanent resident alien who is and can demonstrate membership in one of the following groups:

- (1) Black persons having origins in any of the Black African racial groups;
- (2) Hispanic persons of Mexican, Puerto Rican, Dominican, Cuban, Central or South American descent of either Indian or Hispanic origin, regardless of race;
- (3) Native American or Alaskan native persons having origins in any of the original peoples of North America; or
- (4) Asian and Pacific Islander persons having origins in any of the Far East countries, South East Asia, the Indian subcontinent or the Pacific Islands.

(h) “Minority-owned Business Enterprise” (“MBE”). A business enterprise, including a sole proprietorship, partnership or corporation that is:

- (1) at least 51 percent owned by one or more Minority Group Members;
- (2) an enterprise in which such Minority ownership is real, substantial and continuing;
- (3) an enterprise in which such Minority ownership has and exercises the authority to control and operate, independently, the day-to-day business decisions of the enterprise; and
- (4) an enterprise authorized to do business in the State of New York and is independently owned and operated.

(i) “Subcontract.” An agreement providing for a total expenditure in excess of \$25,000 for the construction, demolition, replacement, major repair, renovation, planning or design of real property and improvements thereon between a contractor or consultant and any individual or business enterprise, including a sole proprietorship, partnership, corporation, or not-for-profit corporation, in which a portion of a contractor’s obligation is undertaken or assumed, but shall not include any construction, demolition, replacement, major repair, renovation, planning or design or real property or improvements thereon for the beneficial use of the contractor.

(j) “Utilization Plan.” A plan previously submitted by Contractor to Owner which sets forth the proposed percentages of employees who are either Minority Group Members or women and who will be used by Contractor to perform the Work.

(k) “Women-owned Business Enterprise” (“WBE”). A business enterprise, including a sole proprietorship, partnership or corporation that is:

- (1) at least 51 percent owned by one or more United States citizens or permanent resident aliens who are women;
- (2) an enterprise in which the ownership interest of such women is real, substantial and continuing;
- (3) an enterprise in which such women ownership has and exercises the authority to control and operate, independently, the day-to-day business decisions of the enterprise; and
- (4) an enterprise authorized to do business in the State of New York and which is independently owned and operated.

26.2 Equal Employment Opportunities for Minority Group Members and Women

(a) During the performance of the Work, Contractor agrees as follows:

- (1) Contractor shall not discriminate against any employee or applicant for employment because of race, creed, color, national origin, sex, age,

disability or marital status; shall undertake or continue existing programs to ensure that Minority Group Members and women are afforded equal employment opportunities without discrimination because of race, creed, color, national origin, sex, age, disability or marital status; and shall make and document its good faith effort to achieve prompt and full utilization of Minority Group Members and women at all levels and in all segments of its work force where deficiencies exist.

- (2) At the request of Owner, Contractor shall request each employment agency, labor union, or authorized representative of workers with which it has a collective bargaining or other agreement or understanding, to furnish a written statement that such employment agency, labor union, or representative will not discriminate on the basis of race, creed, color, national origin, sex, age, disability or marital status and that such union or representative will affirmatively cooperate in the implementation of Contractor's obligations herein.
- (3) Contractor shall state in all solicitations or advertisements for employees that in the performance of the Work, all qualified applicants will be afforded equal employment opportunities without discrimination because of race, creed, color, national origin, sex, age, disability or marital status.
- (4) Contractor and any Subcontractor shall be required to submit compliance reports in accordance with this Section 26 relating to their operations and the implementation of the Diversity Program in effect as of the date of execution of this Agreement.
- (5) Contractor shall submit an EEO policy statement to Owner within seventy-two hours of notice from Owner of the awarding of this contract to Contractor. If Contractor does not have an existing EEO policy statement, Owner may provide to Contractor a model statement.

(b) Contractor shall include the provisions of Section 26.2(a) in every Subcontract in such a manner that the provisions will be binding upon each Subcontractor as to the Work in connection with this contract's execution.

(c) Contractor shall comply with the provisions of the Human Rights Law, all other State and Federal statutory and constitutional non-discrimination provisions. Contractor and subcontractors shall not discriminate against any employee or applicant for employment because of race, creed (religion), color, sex, national origin, sexual orientation, military status, age, disability, predisposing genetic characteristic, marital status or domestic violence victim status, and shall also follow the requirements of the Human Rights Law with regard to non-discrimination on the basis of prior criminal conviction and prior arrest

(d) Miscellaneous

- (1) The provisions of this Section shall not be binding upon Contractor or its Subcontractors in the performance of Work or the providing of services, or any other activities that are unrelated, separate or distinct from this Agreement as expressed by its terms.
- (2) The requirements of this Section shall not apply to any employment outside New York State, or application for employment outside such state, or solicitations, or advertisements therefore, or any existing programs of diversity regarding employment outside New York State and the effect of contract provisions required by this section shall be so limited.

(e) Enforcement

The parties agree to be bound by provisions of Article 15-A of the Executive Law of the State of New York and by the regulations adopted thereunder.

26.3 Workforce Participation

(a) Contractor is required to make and document good faith efforts to achieve the participation of _____ % Minority Group Members and _____ % women in the workforce for each trade or services utilized by Contractor in the Work as set forth in the Utilization Plan.

(b) To ensure compliance with this Section, Contractor shall submit a staffing plan to document the composition of the proposed workforce to be utilized in the performance of this contract by the specified categories listed, including ethnic background, gender, and Federal occupational categories. Contractors shall complete the staffing plan form and submit it as part of their bid or proposal or within a reasonable time, but no later than the time of award of the contract.

(c) The participation for Minority Group Members and women employees must be substantially uniform throughout the work.

(d) Contractor shall not participate in the transfer of Minority Group Member employees or women employees from employer to employer or from project to project for the sole purpose of satisfying the participation goals above set forth.

(e) In achieving such participation, Contractor is required to make good faith efforts to find and employ qualified Minority Group Members and women supervisory personnel and journeymen.

(f) Contractor shall meet with Owner, and such other persons as Owner may invite, on a periodic basis as required by Owner to discuss issues relating to Minority Group Members and women workforce participation. At such meetings, Contractor shall report on the names of its Subcontractors then engaged in construction on the project to which the Work relates or which within 60 days are scheduled to be engaged in construction of such project, on the nature of the work and anticipated construction schedule of Contractor and Subcontractors, on the anticipated hiring needs of Contractors and Subcontractors, on the names of the responsible foremen directly employed by Contractor, and such information requested by Owner that will then promote the employment of Minority Group Members and women. Contractor shall use its best efforts to obtain the above information and shall, upon Owner's request, cause its Subcontractors to attend said meetings and provide the above information.

(g) Compliance reports with respect to the Utilization Plan ("Utilization Compliance Reports") which shall be submitted to Owner's Diversity officer on a monthly basis and shall be in accordance with the following:

- (1) Owner may require that Contractor submit Utilization Compliance Reports for the duration of this contract to Owner regarding Contractor's operation and implementation of the Utilization Plan portion of the Diversity Program in effect as of the date of execution of this Agreement.
- (2) The Utilization Compliance Reports shall include information on any Subcontractor involved in the performance of the contract with regard to the Subcontractor's compliance with the Diversity Program.
- (3) The Utilization Compliance Reports shall include, but are not limited to the following:
 - (i) a breakdown of the Subcontractors by ethnic background, gender or such other categories as may be required by Owner;
 - (ii) the actions the Contractor and Subcontractors have taken to meet the components of the Diversity Program;
 - (iii) how Contractor and Subcontractors intend to utilize participation of Minority Group Members and women in their workforce in connection with the performance of the Work and timetables therefor

during the remainder of their performance of the Work.

(h) Any failure by Consultant to submit a required Utilization Compliance Report, including information on any of its Subcontractor's compliance, may be deemed a breach of contract with respect to this agreement.

(i) Contractor shall include the provisions in Section 26.3 in every Subcontract, and such provisions shall be binding upon each Subcontractor.

26.4 Minority Business Enterprise (MBE) Participation and Women's Business Enterprise Participation

(a) Contractor shall make good faith efforts to attain the participation of _____ % MBE and _____ % WBE in the total dollar value of the Work.

(b) The total dollar value of the Work for purposes of determining compliance with the MBE/WBE Required Participation Plan shall be calculated as follows:

- (1) if an MBE and WBE is not the Contractor -- the dollar value of the Work subcontracted to MBEs and WBEs; provided, however, that where materials are purchased from an MBE and WBE which acts merely as a conduit for goods manufactured or produced by a non-MBE and non-WBE, only that portion of the price paid for such materials which will accrue as profit to the MBE or WBE and/or the Fee received by the MBE and WBE shall be included;
- (2) if Contractor is a joint venture including one or more MBEs and WBEs as joint venturers -- the Fee multiplied by the percentage of the joint venture's profits (or losses) which are to accrue to the MBE and WBE joint venturer(s) under the joint venture agreement; and
- (3) if an MBE and WBE is Contractor or where Contractor is a joint venture consisting entirely of MBEs and WBEs -- the Fee.

(c) Compliance reports with respect to the MBE/WBE Required Participation Plan ("MBE/WBE Compliance Reports") shall be required as follows:

- (1) MBE/WBE Compliance Reports shall be submitted to Owner on a monthly basis and shall include information with respect to:
 - (i) dividing the Work to be subcontracted into smaller portions, where economically and technically feasible;
 - (ii) actively and affirmatively making a good faith effort to solicit bids for subcontracts from qualified MBEs and WBEs identified in the directory of certified businesses available at the office of the Owner's Diversity Officer, including the circulation of solicitations to Minority contractor associations. Contractor shall maintain records detailing the efforts made to provide for meaningful MBE and WBE participation in the Work, including the names and addresses of all MBEs and WBEs contacted and, if any such MBE or WBE is not selected as a joint venture or subcontractor, the reasons for such decision;
 - (iii) making plans and specifications for prospective work available to MBEs and WBEs in sufficient time for review;
 - (iv) utilizing the services and cooperating with those organizations providing technical assistance to Owner in connection with the participation of MBEs and WBEs in the project to which the Work relates;
 - (v) encouraging the formation of joint ventures, partnerships or

other similar arrangements among subcontractors where appropriate;

(vi) ensuring that provision is made to provide progress payments to MBEs and WBEs on a timely basis; and

(vii) not requiring bonds from and/or providing bonds and insurance for MBEs and WBEs where appropriate, and/or assisting in obtaining bonds and insurance for MBEs and WBEs where feasible.

(2) MBE/WBE Compliance Reports which shall be submitted to the Diversity Department on a monthly basis.

(3) MBE/WBE Compliance Reports shall also include, but not be limited to, the following information:

(i) the name, address and telephone number of each certified MBE and WBE which Contractor is using or intends to use to comply with the MBE/WBE Required Participation Plan.

(ii) a brief description of the contract scope of work to be performed for the Contractor by each certified MBE and WBE and the scheduled dates for performance;

(iii) a statement of whether the Contractor has a written agreement with each certified MBE and WBE which Contractor is using or intends to use, and if requested, copies of such agreements;

(iv) the actual total cost of the contract scope of work to be performed by each certified MBE and WBE for this Agreement; and

(v) The actual amounts of any payments made by Contractor to each certified MBE and WBE as of the date the MBE/WBE Compliance Report was submitted.

(d) Contractor shall provide Owner with Monthly MBE/WBE and Workforce Utilization Reports, by the last calendar day of each month, **in the form of Exhibit [x]** hereto. Failure to provide such reports shall be an event of default of Contractor's obligations pursuant to Article 15.1 (a) (1) hereof.

(e) Contractor shall provide proof of payment to all subcontractors and materialmen in the form of a waiver of lien or cancelled check, with each request for payment. Failure to provide such proof of payment shall be an event of default of Contractor's obligations pursuant to Article 15.1 (a) (1) hereof.

26.5 Failure to Comply

(a) In accordance with 5 NYCRR §142.13, Contractor acknowledges that if it is found to have willfully and intentionally failed to comply with the M/WBE participation goals set forth herein or any other requirements set forth in this Article 26, such finding constitutes a breach of contract and Owner may withhold payment from the Contractor as liquidated damages.

(b) Such liquidated damages shall be calculated based on the actual cost incurred by Owner related to Owner's expenses for personnel, supplies and overhead related to establishing, monitoring, and reviewing certified MBE/WBE programmatic goals and Diversity and Equal Opportunity compliance.

ARTICLE 27 - STANDARD PROVISIONS

27.1 Provision Required by Law Deemed Inserted

Each and every provision of law and governmental regulation required by law to

be inserted in the Contract Documents shall be deemed to be inserted therein and this Agreement shall read and shall be enforced as though so included therein, and if through mistake or otherwise any such provision is not inserted, or is not correctly inserted, then upon the application of either party, this Agreement shall be deemed to be amended to make such insertion or correction. If this Agreement contains any unlawful provision, the same shall be deemed of no effect and shall, upon the application of either party, be deemed stricken from this Agreement without affecting the binding force of the remainder.

27.2 Compliance with Laws, Rules and Regulations

Contractor and each Subcontractor and Materialman shall comply fully with all applicable laws, rules and regulations pertaining to the Project and the Work.

27.3 Applicable Law, Forum and Jurisdiction

This Agreement shall be governed by the laws of the State of New York. All actions or proceedings relating, directly or indirectly, to this Agreement shall be litigated only in courts located within the County of New York. Contractor, any guarantor of the performance of its obligations hereunder (including sureties for Payment and Performance Bonds) ("Guarantor") and their successors and assigns hereby subject themselves to the jurisdiction of any state or federal court located within such county, waive the personal service of any process upon them in any action or proceeding therein and consent that such process be served by certified or registered mail, return receipt requested, directed to the Contractor and any successor at Contractor's address hereinabove set forth, to Guarantor and any successor at the address set forth in the instrument of guaranty and to any assignee at the address set forth in the instrument of assignment. Such service shall be deemed made as of the date of the return receipt.

27.4 No Third Party Rights

Nothing in this Agreement shall create or shall give to third parties any claim or right of action against BPCA, Construction Manager, or Architect beyond such as may legally exist irrespective of this Agreement.

27.5 Exculpation; Limitation of Liability

In no event shall any claim be asserted under this Agreement by Contractor or any Subcontractor or Materialman against any member, officer, employee, lessee, consultant or agent of BPCA, Construction Manager, or Architect. By execution of this Agreement, Contractor agrees to look solely to BPCA with respect to any claim which may arise. It is hereby understood by and between the parties hereto that BPCA shall only be liable to the extent of monies available to BPCA.

27.6 Protection of Lives and Health

(a) Contractor's, Subcontractor's and Materialman's attention is specifically called to the rules and regulations, codes and bulletins of the New York State Department of Labor. Attention is also directed to the standards imposed under the Federal Occupational Safety and Health Act of 1970, as amended.

(b) Contractor shall maintain an accurate record of all cases of death, occupational disease, and injury requiring medical attention or causing loss of time from work, arising out of and in the course of employment on work under this Agreement, and shall immediately notify BPCA in writing of any injury which results in hospitalization or death.

(c) Contractor alone shall be responsible for the safety, efficiency and adequacy of contractor's work, plant, appliances and methods, and for any damage which may result from the failure, or the improper construction, maintenance, or operation of such work, plant, appliances and methods.

27.7 Waiver of Immunity Clause

Contractor hereby agrees to the provisions of New York Public Authorities Law Section 2875 which require that upon the refusal of a person, when called before a grand jury, head of a State department, temporary State commission, or other State agency, the Organized Crime Task Force in the State Department of Law, head of a department or other City agency, which is empowered to compel the attendance of witnesses and examine them under oath, to testify in an investigation concerning any transaction or contract had with the State, any political subdivision thereof, or with any public department, agency or official of the State, a public authority or with any public department, agency or official of the State or of any political subdivision thereof or of a public authority, that person must sign a waiver of immunity against subsequent criminal prosecution or to answer any relevant questions concerning such transaction or contract:

(a) such person, and any firm, partnership or corporation of which such person is a member, partner, director or officer shall be disqualified from thereafter selling to or submitting bids to or receiving awards from or entering into any contracts with any public authority or official thereof, for goods, work or services, for a period of five (5) years after such refusal; and

(b) any and all contracts made with any public authority or official thereof, by such person, and by any firm, partnership or corporation of which such person is a member, partner, director or officer may be canceled or terminated by the public authority without incurring any penalty or damages on account of such cancellation or termination, but any monies owing by the public authority for goods delivered or work done prior to the cancellation or termination shall be paid.

27.8 Prohibited Interests

No official of BPCA who is authorized in such capacity and on behalf of BPCA to negotiate, make, accept, or approve, or take part in negotiating, making, accepting, or approving any Architectural, Engineering, inspection, Purchase Order or any Subcontract in connection with the work, shall become directly or indirectly interested personally in the Agreement. Contractor is advised that no official or employee of BPCA is permitted to indirectly solicit, accept, or receive gifts whether in the form of money, service, loan, travel, entertainment, hospitality, thing or promise, or in any other form. No officer, employee, architect, attorney, engineer, inspector or consultant of or for BPCA who is authorized in such capacity and on behalf of BPCA to exercise any legislative, executive, supervisory or other similar functions in connection with the Work, shall become directly or indirectly interested personally in the Agreement, any Purchase Order, Subcontract, insurance contract, or any other contract pertaining to the Work.

27.9 Labor Provisions

(a) It is hereby agreed that all applicable provision of the Labor Law of the State of New York shall be carried out in the performance of the Work.

(b) Contractor specifically agrees, as required by New York Labor Law Sections 220 and 220-d as amended, that:

- (1) no laborer, workman or mechanic, in the employ of Contractor, Subcontractor, Materialman or other person doing or contracting to do the whole or any part of the Work contemplated by the Contract Documents shall be permitted or required to work more than eight (8) hours in any one calendar day or more than five (5) days in any one week, except in the emergencies set forth in the Labor Law.
- (2) the wages paid for a legal day's work shall be not less than the prevailing rate of wages as defined by law;
- (3) the minimum hourly rate of wage to be paid shall be not less than that stated in the Contract Documents and as shall be designated by the Industrial Commissioner of the State of New York; and

(4) Contractor shall post at appropriate conspicuous points at the Site, a schedule showing all determined minimum wage rates for the various classes of laborers and mechanics to be engaged in the Work and all deductions, if any, required by law to be made from unpaid wages actually earned by the laborers and mechanics so engaged.

(c) The minimum wage rates, if any, herein specified for apprentices shall apply only to persons working with the tools of the trade which such persons are learning under the direct supervision of journeymen mechanics. Except as otherwise required by law, the number of apprentices in each trade or occupation employed by Contractor or any Subcontractor or Materialman shall not exceed the number permitted by the applicable standards of the New York State Department of Labor, or, in the absence of such standards, the number permitted under the usual practice prevailing between the unions and the employers' association of the respective trades or occupations.

(d) All employees of Contractor and each Subcontractor and Materialman shall be paid in accordance with the provisions of the Labor Law.

(e) Contractor agrees that, in case of underpayment of wages to any worker engaged in the Work by Contractor or any Subcontractor or Materialman, BPCA shall withhold from Contractor out of payments due an amount sufficient to pay such worker the difference between the wages actually paid such worker for the total number of hours worked, and that BPCA may disburse such amount so withheld by BPCA for and on account of Contractor to the employee to whom such amount is due. Contractor further agrees that the amount to be withheld pursuant to this paragraph may be in addition to the percentages to be retained by BPCA pursuant to other provisions of the Contract Documents.

(f) The Labor Law provides that this Agreement may be terminated for cause and no sum paid for any Work done thereunder upon a second conviction for willfully paying less than:

- (1) the stipulated wage scale as set forth in New York Labor Law Section 220, subdivision 3, as amended, or
- (2) less than the stipulated minimum hourly wage scale as specified in Labor Law, Section 220-d, as amended.

(g) Contractor specifically agrees, as required by the New York Labor Law Section 220-e, as amended, that:

- (1) in the hiring of employees for the performance of Work under this Agreement or any Subcontract or Purchase Order hereunder, or for the manufacture, sale or distribution of Materials, equipment or supplies hereunder, but limited to operations performed within the territorial limits of the State of New York, no Contractor, Subcontractor, Materialman or any person acting on behalf of such Contractor or Subcontractor, or Materialman, shall by reason of race, creed, color, sex or national origin discriminate against any citizen of the State of New York who is qualified and available to perform the work to which the employment relates;
- (2) no Contractor, Subcontractor, Materialman, or any person on behalf of such Contractor, Subcontractor or Materialman shall, in any manner, discriminate against or intimidate any employee hired for the performance of work under this Agreement on account of race, creed, color, sex or national origin;
- (3) there may be deducted from the amount payable to Contractor, by BPCA under this Agreement, a penalty of \$50.00 for each person for each calendar day during which such person was discriminated against or intimidated in violation of the terms of this Agreement; and
- (4) this Agreement may be canceled or terminated for cause by BPCA and all

monies due or to become due hereunder may be forfeited for a second or any subsequent violation of the terms or conditions of this Section of this Agreement.

(h) Where applicable, Contractor agrees to settle labor disputes in accordance with the provisions of The New York Plan For The Settlement of Jurisdictional Disputes Between The Building And Construction Trades Council Of Greater New York And The Building Trades Employers' Association Of The City of New York.

27.10 Disputes Resolution Procedure

(a) The provisions of this Article shall constitute Contractor's sole means for challenging any determination, order or other act or omission of BPCA or otherwise asserting against BPCA any claim of whatever nature arising under, or in any way relating to, this Agreement (any such challenge or assertion by Contractor being herein referred to as a "Dispute(s)"). Exhaustion of these dispute resolution procedures, including the judicial review set forth below, shall be the parties' sole remedy in connection with any Dispute.

(b) The parties to this Agreement hereby authorize and agree to the resolution of all Disputes arising out of, under or in connection with, this Agreement in accordance with the following and pursuant to the procedures set forth in paragraph (c) of this Section 27.10. With respect to any Dispute which relates in whole or primary part to technical issue(s) under this Agreement including, without limitation, determinations as to the acceptability or fitness of any Work, the meaning or interpretation of the Contract Documents, the question of whether any Work falls within the scope of the Specifications set forth in the Contract Documents, the acceptability of any proposed substitutions, modifications or other submissions under this Agreement, the disapproval of proposed Subcontractors or Materialmen (to the extent such disapproval is related to technical issues), the extension of time to the extent related to a technical matter, the question of whether substantial completion or final completion has been achieved, the parties hereby authorize the General Counsel of BPCA, or his/her designee, (hereinafter referred to as the "Arbiter"), acting personally, to render a final and binding decision.

(c) All Disputes shall be initiated through a written submission by either party (such submission to be hereinafter referred to as the "Dispute Notice") to the Arbiter within ten (10) days of the determination, order or other act or omission which is the subject of the Dispute. Within ten (10) days after the submission of such Dispute Notice, the party initiating the Dispute shall provide the Arbiter with all evidence and other pertinent information in support of the party's position and/or claim. Within thirty (30) days from the date of the Dispute Notice, the party against whom the Dispute Notice was filed shall submit any and all materials which it deems pertinent to the Arbiter. Upon submission of a Dispute Notice to the Arbiter, the Arbiter shall render its decision in writing and deliver a copy of same to the parties within a reasonable time not to exceed sixty (60) days after the receipt of all materials. In rendering such decision, the Arbiter may seek such technical or other expertise as it shall deem necessary or appropriate (notifying both parties to the Dispute when he/she so seeks such other information or expertise) and seek any such additional oral and/or written argument or materials from either or both parties to the Dispute as he/she deems fit. The Arbiter shall have the discretion to extend the time for submittals required hereunder. The Arbiter's ability to render and the effect of a decision hereunder shall not be impaired or waived by any negotiations or settlement offers in connection with the matter presented, whether or not the Arbiter participated therein, or by any prior decision of others, or by any termination or cancellation of this Agreement. The decision of the Arbiter shall be final and binding on both parties to this Agreement.

(d) It is expressly understood and agreed that the pendency of a Dispute hereunder shall at no time and in no respect constitute a basis for any modification, limitation or suspension of Contractor's obligation to fully perform in accordance with this Agreement and that Contractor shall remain fully obligated to perform the Work notwithstanding the existence of any such Dispute.

27.11 Additional Provisions Relating to the Prosecution of Claims for Money Damages

(a) Except as otherwise provided in this Agreement, if Contractor claims or intends to claim compensation or money damages for any damage or loss sustained by reason of any determination, order or other act or omission of BPCA, Contractor shall furnish a written notice to the Arbiter setting forth the nature of the claim and the extent of the damage sustained within ten (10) days of the occurrence of such loss or damages. This written notice shall constitute Contractor's submission to the Arbiter for the purposes of requesting the Arbiter's determination in accordance with Section 27.10 above. Any such claim shall state as fully as then possible all information relating thereto and shall be supported by any then available documentation, including daily records showing all costs incurred. Such information shall be supplemented with any and all further information, including information relating to the quantum of losses or damages sustained, as soon as practicable after the information becomes or reasonably should become known to the Contractor.

(b) Any claim for compensation or monetary damages, the successful prosecution of which necessarily depends upon a technical determination favorable to Contractor, may not proceed unless and until Contractor first obtains such a favorable determination with respect to the technical issue and must be made within ten (10) days of such determination; moreover, Contractor must submit to the Arbiter any documentation or proof in support of the monetary claim within fifteen (15) days of such determination in order to proceed with such a claim. This written notice shall constitute Contractor's submission to the Arbiter for the purposes of requesting the Arbiter's determination in accordance with Section 27.10 above.

(c) Compliance with the provisions hereof shall constitute a condition precedent to the Contractor's submission of a Dispute pursuant to Section 27.10 with respect to any claim for compensation or monetary damages and the Contractor shall be deemed to have waived any claim not submitted in accordance herewith.

(d) Any final determination of the Arbiter with respect to a Dispute initiated pursuant to this Article 27 shall be subject to review solely in the form of a challenge following the decision by the Arbiter in a Court of competent jurisdiction of the State of New York, County of New York, under Article 78 of the New York Civil Practice Law and Rules or a United States Court located in New York City under the procedures and laws applicable in that court, it being understood the review of such Court shall be limited to the question of whether or not the Arbiter's determination is arbitrary, capricious or lacks a rational basis. No evidence or information shall be introduced or relied upon in such proceeding which has not been duly presented to the Arbiter in accordance with this Article 27.

27.12 Limitation on Actions

(a) Subject to the provisions of Section 27.11, no action or proceeding shall lie or shall be maintained by Contractor against BPCA, Construction Manager, or Architect unless (i) such action or proceeding shall be commenced within six (6) months of the date of the issuance of the Certificate of Substantial Completion to Contractor; or (ii) in the case of an action or proceeding for monies due pursuant to Section 5.7 hereof, or arising exclusively from or pertaining exclusively to work performed after the date of issuance of the Certificate of Substantial Completion, unless such action or proceeding is commenced no later than six (6) months after the issuance of the certificate of final completion to Contractor; or (iii) if this Agreement is terminated by BPCA prior to the issuance of the Certificate of Substantial Completion, unless such action or proceeding is commenced within six (6) months after the date of such termination.

(b) Nothing in this Section 27.12 shall be construed to modify or lengthen a shorter limitations period provided by applicable law.

(c) No action or proceeding shall be commenced by Contractor against BPCA, Construction Manager, or Architect except in the Supreme Court of the State of New York, County of New York.

(d) Nothing in this Section 27.12 shall be construed to suggest that Contractor, under any circumstances, may bring an action or proceeding against Construction Manager, or Architect.

27.13 Waiver of Remedies

Contractor acknowledges that it can be compensated adequately by money damages for any breach of this Agreement which may be committed by BPCA, Construction Manager, or Architect. Contractor agrees that no default, act or omission of BPCA, Construction Manager, or Architect shall constitute a material breach of contract entitling Contractor to cancel or rescind this Agreement or to suspend or abandon performance thereof, other than the failure of BPCA to make a payment of the Contract Price in accordance with the terms hereof solely because sufficient funds to pay the Contract Price have not been appropriated or will otherwise not be made available to BPCA. Contractor hereby waives any and all rights and remedies to which Contractor might otherwise be or become entitled to because of any wrongful act or omission of BPCA, Construction Manager, or Architect except as provided in this Section 27.13 and Contractor's right to money damages.

27.14 Modification of Agreement

No change in or modification, termination or discharge of this Agreement in any form whatsoever shall be valid or enforceable unless it is in writing and signed by the party to be charged therewith or its duly authorized representative, provided, however, that any change in or modification, termination or discharge of this Agreement expressly provided for in this Agreement shall be effective as so provided.

27.15 Signs and Parking

Contractor agrees that it shall not display on or about the Site any sign, trademark or other advertisement without the approval of BPCA and Construction Manager. Contractor shall not and shall not permit any of its Subcontractors or Materialmen to park any vehicles on the Site.

27.16 Entire Agreement

The Contract Documents constitute the entire Agreement between the parties and incorporate all prior understandings in connection with the subject matter hereof.

27.17 Rights and Remedies

The duties and obligations imposed by the Contract Documents and the rights and remedies available thereunder shall be in addition to and not a limitation of any duties, obligations, rights and remedies otherwise imposed or available by law. No action or failure to act by BPCA, Construction Manager, or Architect or Contractor including, but not limited to, the making of any payment or permitting Contractor to continue with the performance of the Work shall constitute a waiver of any right or duty afforded any of them under this Agreement, nor shall any such action or failure to act constitute an approval of or acquiescence in any breach thereunder, except as may be specifically agreed in writing.

27.18 Participation in International Boycott Prohibited

Contractor agrees, as a material condition of this Agreement, that neither Contractor nor any substantially owned or affiliated person, firm, partnership or corporation has participated or is participating or shall participate in an international boycott in violation of the provisions of the United States Export Administration Act of 1969, as amended, or the United States Export Administration Act of 1979, as amended, or the Regulations of the United States Department of Commerce promulgated thereunder. This Agreement shall be rendered forfeit and void by the Comptroller of the State of New York if, subsequent to execution, such person, firm, partnership or corporation has been convicted of a violation of the provisions of either of such federal acts or such Regulations or has been found upon the final determination of the United States Commerce Department or any other appropriate agency of the United States to have violated the provisions of either of such federal acts or such Regulations.

27.19 Compliance with “Buy-American” Statutes

Contractor and any substantially owned or affiliated person, firm, partnership or corporation agrees to comply with the New York Public Authorities Law, Section 2603-A as amended (affects steel or steel products).

27.20 Permitted Successors

References to parties and entities herein shall be deemed to include their permitted successors.

27.21 MacBride Fair Employment Principles

If the amount payable to Contractor under this agreement is greater than \$15,000, Contractor hereby certifies that it and/or any individual or legal entity in which it holds a 10% or greater ownership interest, and any individual or legal entity that holds a 10% or greater ownership in it, either have no business operations in Northern Ireland; or shall take lawful steps in good faith to conduct any business operations they have in Northern Ireland in accordance with the MacBride Fair Employment Principles relating to nondiscrimination in employment and freedom of workplace opportunity regarding such operations in Northern Ireland, as set forth in New York State Finance Law Article XI Section 165(5), and shall permit independent monitoring of their compliance with such Principles.

27.22 Iran Divestment Act

By signing this contract, each person and each person signing on behalf of any other party certifies, and in the case of a joint bid or partnership each party thereto certifies as to its own organization, under penalty of perjury, that to the best of its knowledge and belief that each person is not on the list created pursuant to paragraph (b) of subdivision 3 of Section 165-a of the State Finance Law.

27.23 Termination for Failure to Disclose Under State Finance Law §139k

BPCA reserves the right to terminate this contract in the event it is found that the certification filed by Contractor pursuant to New York State Finance Law §139-k was intentionally false or intentionally incomplete. Upon such finding, BPCA may exercise its termination right by providing written notification to the Contractor in accordance with the written notification terms of this contract. If a contract is terminated in accordance with State Finance Law §139k(5), BPCA, its subsidiaries and affiliates, will include a statement in BPCA’s procurement record describing the basis for any action taken under the termination provision.

27.24 Labor Peace

The Contractor and its Subcontractors and Materialmen shall not employ on the Work any labor, materials or means whose employment, or utilization during the course of this Agreement, may tend to or in any way cause or result in strikes, Work stoppages, delays, suspension of Work or similar troubles by workers employed by the Contractor or its Subcontractors, Materialmen, or by any of the trades working in or about the buildings and premises where Work is being performed under this Agreement, or by other contractors or their subcontractors pursuant to other agreements, or on any other building or premises owned or operated by BPCA, its contractors or affiliates. Any violation by the Contractor of this requirement may be considered as proper and sufficient cause for declaring the Contractor to be in default, and for BPCA to take action against Contractor as set forth in Article 15 of this Agreement, or such other Section of this Agreement as BPCA may deem proper.

27.25 Comptroller’s Approval

If this Agreement is considered an “eligible contract,” as defined by New York Code, Rules and Regulations Title 2 Part 206.2, it is subject to the New York State Comptroller’s approval, and therefore shall not be valid and enforceable until that approval has been obtained. A contract is considered an “eligible contract,” as defined by Title 2 of NYCRR Part 206.2, if it is not a specifically exempt contract, is executed by a state authority on or after March 1, 2010

where the aggregate consideration under the contract may reasonably be valued in excess of one million dollars (including all reasonably anticipated renewals and amendments), AND the contract (A) was or shall be awarded on a single-source basis, sole-source basis or pursuant to any other method of procurement that is not a competitive procurement OR (B) shall be paid in whole or in part with monies appropriated by the State, either directly to a state authority or to a state agency which pays the money to a state authority.

27.26 Key Person/Personnel

The parties understand that in entering into this Agreement, BPCA has relied upon Contractor's representation that [name(s) and title(s)] (hereinafter the "Key Personnel") will be directly and consistently involved in supervising the Work and actively engaged in the day-to-day management of the Work, which shall include attending mandatory Project meetings. If the Key Personnel is/are not available as described herein, or if the Key Personnel depart from the firm or severs his/her/their relationship with the Contractor, or for whatever other reason is/are not available to work on the Project, then BPCA shall have the right to terminate this Agreement. The parties also agree that at any time during the course of the Work, BPCA may designate additional or substitute key personnel to perform the Work. Contractor agrees to make the additional or substituted key personnel available under the same conditions set forth herein.

27.27 Form of Agreement Not an Offer

Notwithstanding anything herein to the contrary, the submission of this form of Agreement by BPCA to Contractor shall not constitute an offer, and execution hereof by Contractor shall not be considered acceptance of an offer. A binding contract between the parties shall exist only if and at such time as both parties have executed this document.

27.28 General Responsibility

(a) The Contractor shall at all times during the Agreement term remain responsible. The Contractor agrees, if requested by BPCA or its designee, to present evidence of Contractor's continuing legal authority to do business in New York State, integrity, experience, ability, prior performance, and organizational and financial capacity.

(b) BPCA or its designee, in its sole discretion, reserves the right to suspend any or all activities under this Agreement, at any time, when BPCA discovers information that calls into question the responsibility of Contractor. In the event of such suspension, Contractor will be given written notice outlining the particulars of such suspension. Upon issuance of such notice, Contractor must comply with the terms of the suspension order. Activity under the Agreement may resume at such time as BPCA or its designee issues a written notice authorizing a resumption of performance under the Agreement.

(c) Upon written notice to the Contractor, and a reasonable opportunity to be heard with appropriate BPCA officials or staff, the Agreement may be terminated by BPCA or its designee at Contractor's expense where Contractor is determined by BPCA or its designee to be nonresponsible. In such event, BPCA or its designee may complete the contractual requirements in any manner BPCA may deem advisable and pursue available legal or equitable remedies for breach.

SIGNATURE PAGE FOLLOWS

IN WITNESS WHEREOF, the parties hereto have executed this Agreement, as of the date first above written.

BATTERY PARK CITY AUTHORITY, d/b/a
HUGH L. CAREY BATTERY PARK CITY AUTHORITY

By: _____

Name: _____

Title: _____

CONTRACTOR NAME

By: _____

Name: _____

Title: _____

FEIN # _____

EXHIBIT D

Cost Proposal

COST PROPOSAL

(Proposer to submit executed Cost Proposal on its letterhead)

Date:

Battery Park City Authority
One World Financial Center - 24th Floor
New York, New York 10281

Attention: Mr. Michael LaMancusa
 Contracts Administrator

Dear Mr. LaMancusa:

The undersigned (the "Proposer") hereby proposes to provide all specified work necessary to perform the work for the **NYMEX Terrace - Depression Remediation Project**. The Proposer agrees to commence the Work immediately upon receipt of the Notice to Proceed in accordance with the Contract and the terms stipulated in the following pages, for the sum written below.

A. Base Proposal

Option 1 - Complete Removal

A total Not to Exceed amount of \$ _____ (_____ Dollars and ____ Cents) to perform all Work described in the Authority's Request for Proposals' Scope of Work (Exhibit A), including all Site-Related Work described in Option I.

Option 2 - Pressure Grout

A total Not to Exceed amount of \$ _____ (_____ Dollars and ____ Cents) to perform all Work described in the Authority's Request for Proposals' Scope of Work (Exhibit A), including all Site-Related Work described in Option II.

Allowance For Seawall/Expansion Joint Repair

A total Not to Exceed amount of Twenty Thousand Dollars (\$20,000.00) to perform unanticipated seawall/expansion joint repair as described in the Authority's Request for Proposals' Scope of Work (Exhibit A).

B. Itemized Proposal and Labor Rates

1. The Proposer has submitted with its Proposal an itemized cost for the Work, according to the attached schedule of values, for the Scope of Work in Exhibit A.

Battery Park City Authority Request For Proposals

2. With its Proposal, the Proposer has submitted a completed Form of Technical Salaries (Exhibit E), showing labor rates for all trades, including all costs except overhead and profit. Prices shown in this Cost Proposal include base hourly rate(s), overtime rate(s), insurance and benefits.

Name of Proposer:

By: _____

Title: _____

EXHIBIT E
FORM OF TECHNICAL SALARIES
LABOR RATES

The following labor rates are to be listed by craft and classification (Foreman, Journeyman, etc.) and are to include base wages, benefits, taxes, insurance and payroll costs complete. Overhead and profit are not to be included:

<u>CRAFT</u>	<u>CLASSIFICATION</u>	<u>HOURLY RATES</u>	<u>OVERTIME</u>
<u>LABORER</u>			
<u>CONCRETE</u>			
<u>CARPENTER</u>			
<u>IRON WORKER</u>			
<u>LABORER</u>			
<u>LABORERS - LESS SKILLED</u>			
<u>OPERATING ENGINEER</u>			
<u>FIELD SUPERVISOR</u>			
<u>FOREMAN</u>			
<u>TEAMSTER</u>			
<u>ELECTRICIAN</u>			
<u>PLUMBER</u>			

<Name of Company>
<Name of Proposer>

Signed Date

By: <Printed Name>

EXHIBIT F

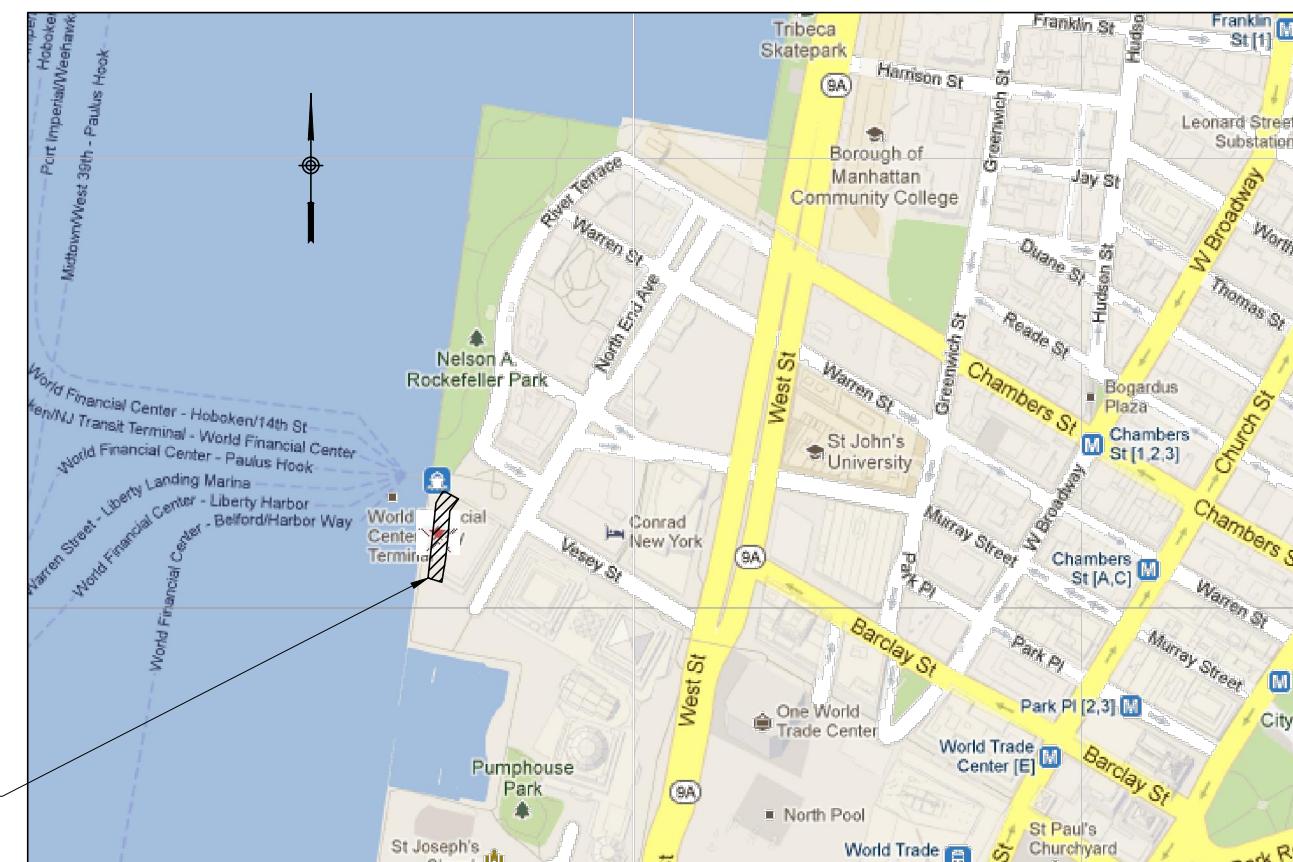
DRAWINGS AND SPECIFICATIONS (OPTION I)

(Attached)

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BATTERY PARK CITY AUTHORITY
 PRIORITY 1 REPAIR AT
NYMEX TERRACE, DEPRESSION
REMEDIATION
CITY OF NEW YORK, BOROUGH OF
MANHATTAN

PROJECT SITE



LOCATION MAP
N.T.S.

DESIGNED BY:	DRAWN BY:	CHECKED BY:	BATTERY PARK CITY AUTHORITY CONTRACT XX-XXXX		
			NYMEX TERRACE, DEPRESSION REMEDIATION OPTION I - FULL REMOVAL		
			COVER SHEET		
			CITY OF NEW YORK, BOROUGH OF MANHATTAN		
			KSE KS ENGINEERS, P.C.		
			Engineers • Surveyors • Construction Managers 65 Broadway, Suite 401, New York, N.Y. 10006 Phone: (212) 616-2657, Fax: (212) 616-3060		
SCALE:	AS SHOWN	DATE:	01/31/2014	PROJECT NO.:	1254-13
			SHEET NO.: 1		

ESTIMATE OF QUANTITIES			
ITEM NUMBER	ITEM DESCRIPTION	UNIT	QUANTITY
201.06	CLEARING AND GRUBBING	L.S.	1.00
203.02	UNCLASSIFIED EXCAVATION AND DISPOSAL	C.Y.	380.00
203.01125413	COMPACTATION/COMPENSATION GROUTING PROTECTION OF STRUCTURES FROM SETTLEMENT DUE TO SOFT GROUND-ITEM REQUIRES DESIGN BY CONTRACTOR	L.S.	0
203.07	SELECT GRANULAR FILL	C.Y.	510.00
203.21	SELECT STRUCTURAL FILL	C.Y.	170.00
204.01	CONTROLLED LOW STRENGTH MATERIAL-CLSM	C.Y.	0.00
206.01	STRUCTURE EXCAVATION	C.Y.	340.00
206.02	TRENCH AND CULVERT EXCAVATION	C.Y.	0.00
207.20	GEOTEXTILE BEDDING	S.F.	3,680.00
207.26	PREFABRICATED COMPOSITE STRUCTURAL DRAIN	S.F.	1,540.00
207.96000099	GEOGRID MECHANICALLY STABILIZED LAYER	S.F.	3,680.00
209.13	SILT FENCE-TEMPORARY	L.F.	270.00
520.50140008	SAW CUTTING ASPHALT PAVEMENT, ASPHALT SURFACE COURSE, CONCRETE PAVEMENT OR ASPHALT OVERLAY ON CONCRETE PAVEMENT	L.F.	230.00
552.16000199	SHEETING/EXCAVATION PROTECTION SYSTEM	S.F.	1,800.00
555.0105	CONCRETE FOR STRUCTURES, CLASS A; UNDERLayment	C.Y.	72.00
595.50000018	SHEET APPLIED WATERPROOFING MEMBRANE	S.Y.	575.00
605.1701	OPTIONAL UNDERDRAIN PIPE, 4 INCH DIAMETER	L.F.	310.00
607.41010010	TEMPORARY PLASTIC BARRIER FENCE	L.F.	360.00
608.020102	HOT MIX ASPHALT (HMA) SIDEWALKS, DRIVEWAYS, BICYCLE PATHS, AND VEGETATION CONTROL STRIPS	TON	25.00
610.1403	MANUFACTURED TOPSOIL-LAWNS, BPCA CONSERVANCY GROUP-SPECIAL MIX DESIGN; APPROVED SUPPLIERS	C.Y.	12.00
610.1602	TURF ESTABLISHMENT-LAWNS	S.F.	630.00
610.19	WATERING VEGETATIONS	GAL.	1,000.00
614.09	TREE ROOT PRUNING	L.F.	450.00
619.0101	WORK ZONE SAFETY/TRAFFIC CONTROL, WZSC	L.S.	1.00
619.04	TYPE III CONSTRUCTION BARRICADES	L.F.	90.00
623.12	CRUSHED STONE (IN-PLACE MEASURE)	C.Y.	23.00
1254/10-01	MOBILIZATION	L.S.	1.00
1254/10-03	PRECONSTRUCTION SURVEY	L.S.	1.00
1254/10-05	REMOVE AND DISPOSE EXISTING CONCRETE UNDERLayment, 5 INCH THICK, IN ASPHALT PAVERS SIDEWALK AREA	S.F.	3,680.00
1254/10-06	REMOVE, REFURBISH AND STORE EXISTING ASPHALT PAVERS, 2 1/2 INCH THICK	S.F.	3,680.00
1254/10-16	REINSTALL ASPHALT CONCRETE PAVERS (UP TO 50% OF REPLACEMENT NEW PAVERS TO BE INCLUDED IN THE PRICE BID)	S.F.	3,680.00
556.01	SEE WALL EXPANSION JOINT REPAIRS	L.F.	450.00

SCOPE OF WORK/CONSTRUCTION SEQUENCE:

GENERAL:

WORK REQUIRED:

THE CONTRACTOR SHALL NOT COMMENCE ANY WORK UNDER THE CONTRACT PRIOR TO A PRE-CONSTRUCTION CONFERENCE AMONG THE CONTRACTOR, THE BPCA REPRESENTATIVES AND OTHER CONCERNED GOVERNMENTAL AND UTILITY COMPANY REPRESENTATIVES. AT THIS CONFERENCE ALL SPECIAL REQUIREMENTS, SCHEDULING AND DETAILS CONCERNING MAINTENANCE AND PROTECTION OF TRAFFIC WILL BE FULLY EXPLAINED AND DISCUSSED.

CHANGES, CONTINGENCIES, EXTRA WORK AND DEDUCTIONS:

THE COUNTY RESERVES THE RIGHT, AT ANY TIME DURING THE PROGRESS OF THE WORK, TO ALTER THE PLANS OR OMIT ANY PORTION OF THE WORK AS IT MAY DEEM REASONABLY NECESSARY FOR THE PUBLIC INTEREST, MAKING ALLOWANCE FOR ADDITIONS AND DEDUCTIONS AT THE PRICES NAMED IN THE PROPOSAL FOR THE WORK, WITHOUT CONSTITUTING GROUNDS FOR CLAIM BY THE CONTRACTOR FOR DAMAGES OR FOR LOSS OF ANTICIPATED PROFITS ARISING FROM DIFFERENCES BETWEEN ESTIMATED QUANTITIES AND THE ACTUAL QUANTITIES PLACED IN THE FINAL WORK.

SITE HOUSEKEEPING:

DURING PROGRESSION OF WORK, THE CONTRACTOR SHALL, AT ALL TIMES, KEEP THE SITE AND ADJACENT PREMISES FREE FROM MATERIALS, DEBRIS AND RUBBISH AND SHALL REMOVE THE AFOREMENTIONED FROM ANY PORTION OF THE SITE, IF IN THE OPINION OF THE BPCA, SUCH MATERIALS, DEBRIS, OR RUBBISH CONSTITUTES A NUISANCE OR IS OBJECTIONABLE.

THE CONTRACTOR SHALL REMOVE FROM THE SITE ALL OF HIS SURPLUS MATERIALS AND TEMPORARY STRUCTURES WHEN NO FURTHER NEED THEREOF DEVELOPS AND SHALL RESTORE THE SITE TO A NEAT ORDERLY CONDITION.

AT THE CONCLUSION OF THE WORK, ALL ERECTION PLANT, TOOLS, TEMPORARY STRUCTURES, AND MATERIALS BELONGING TO THE CONTRACTOR SHALL BE PROMPTLY TAKEN AWAY, AND HE SHALL REMOVE AND PROMPTLY DISPOSE OF ALL WATER, DIRT, RUBBISH OR ANY OTHER FOREIGN SUBSTANCES.

AFTER COMPLETION OF ALL OTHER WORK UNDER THE CONTRACT, THE CONTRACTOR SHALL CLEAN AND REMOVE FROM ALL CATCH BASINS AND MANHOLES, WITHIN THE LIMITS OF THE CONTRACT, ALL MATERIALS AND DEBRIS DEPOSITED THEREIN AS THE DIRECT RESULT OF HIS OPERATIONS. NO SEPARATE PAYMENT WILL BE MADE FOR THIS WORK UNLESS SPECIFIC PAY ITEMS ARE INCLUDED IN THE CONTRACT.

SCOPE OF WORK - SITE RELATED

1. COMMENCE PRECONSTRUCTION SURVEY.
2. ERECT WORK ZONE SAFETY CONTROL DEVICES.
3. REMOVE VEGETATION IN THE AREA Affected BY EXCAVATION.
4. INSTALL TEMPORARY PLASTIC BARRIER FENCE.
5. INSTALL TYPE III CONSTRUCTION BARRICADES.
6. INSTALL TEMPORARY SILT FENCE.
7. SAW CUTTING ASPHALT PAVEMENT, ASPHALT SURFACE COURSE CONCRETE PAVEMENT OR ASPHALT OVERLAY ON CONCRETE PAVEMENT.
8. REMOVE, REFURBISH AND STORE EXISTING ASPHALT PAVERS, 2 1/2 INCH THICK.
9. REMOVE AND DISPOSE EXISTING CONCRETE UNDERLayment, 5 INCH THICK, IN ASPHALT PAVERS SIDEWALK AREA.
10. INSTALL EXCAVATION PROTECTION SHEETING/EXCAVATION PROTECTION SYSTEM.
11. EXCAVATE AREA ALONG NYMEX BUILDING TO EXPOSE SEAWALL AND CONCRETE DECKING.
12. PROVIDE TREE ROOT PRUNING ALONG PLANTERS.
13. PROVIDE ALL NECESSARY SEAWALL AND EXPANSION JOINT REPAIRS AS ORDERED BY BPCA ENGINEER.
14. PLACE SHEET APPLIED WATERPROOFING MEMBRANE.
15. INSTALL PREFABRICATED COMPOSITE STRUCTURAL DRAIN ALONG FOUNDATION OF NYMEX BUILDING AND SEAWALL.
16. BACKFILL EXCAVATED AREA UNDER APPROPRIATE ITEMS.
17. PLACE GEOGRID MECHANICALLY STABILIZED LAYER SIX INCHES BELOW BOTTOM OF CONCRETE SLAB/UNDERLayment.
18. COMPLETE BACKFILL AND PLACE GEOTEXTILE BEDDING MATERIAL.
19. PLACE HOT MIX ASPHALT (HMA) SIDEWALK TYPE, ASPHALT PAVER'S UNDERLayment.
20. REINSTALL ASPHALT CONCRETE PAVERS.
21. PLACE MANUFACTURED TOPSOIL.
22. ESTABLISH GRASS.
23. REMOVE TEMPORARY SILT FENCE, TEMPORARY PLASTIC BARRIER FENCE, TYPE III BARRICADES AND WORK ZONE SAFETY CONTROL DEVICES.

DESIGNED BY:	DRAWN BY:	CHECKED BY:	BATTERY PARK CITY AUTHORITY CONTRACT XX-XXXX				
			REVISIONS	NYMEX TERRACE, DEPRESSION REMEDIATION OPTION I – FULL REMOVAL			
				ESTIMATE OF QUANTITIES			
				CITY OF NEW YORK, BOROUGH OF MANHATTAN			
			KSE	Engineers • Surveyors • Construction Managers 65 Broadway, Suite 401, New York, N.Y. 10006 Phone: (212) 616-2657, Fax: (212) 616-3060			
			DIEGO ALAIMO PROFESSIONAL ENGINEER N.Y. LICENSE NO. 053085-1	SCALE: AS SHOWN	DATE: 01/31/2014	PROJECT NO.: 1254-13	SHEET NO.: 2

ALIGNMENT	
ABBR.	DESCRIPTION
AH	AHEAD
AZ	AZIMUTH
BK	BACK
b	BASELINE
BRG	BEARING
c	CENTERLINE
CS	CURVE TO SPIRAL
e	SUPERELEVATION RATE (CROSS SLOPE)
EQ	EQUALITY
EXT	EXTERNAL
HCL	HORIZONTAL CONTROL LINE
HSD	HEADLIGHT SIGHT DISTANCE
L	LENGTH OF CIRCULAR CURVE
LS	LENGTH OF SPIRAL
LVC	LENGTH OF VERTICAL CURVE
E	CENTER CORRECTION OF VERTICAL CURVE
f	MAIN LINE
PC	POINT OF CURVATURE
PI	POINT OF INTERSECTION
POL	POINT ON LINE
PSD	PASSING SIGHT DISTANCE
PT	POINT OF TANGENT
PVC	POINT OF VERTICAL CURVE
PVI	POINT OF VERTICAL INTERSECTION
PVT	POINT OF VERTICAL TANGENT
R	RADIUS
SC	SPIRAL TO CURVE
SSD	STOPPING SIGHT DISTANCE
ST	SPIRAL TO TANGENT
STA	STATION
T	TANGENT LENGTH
TGL	THEORETICAL GRADE LINE
TS	TANGENT TO SPIRAL
VC	VERTICAL CURVE
UTILITIES	
ABBR.	DESCRIPTION
E	ELECTRIC
EMH	ELECTRIC MANHOLE
G	GAS
GP	GUY POLE
GSB	GAS SERVICE BOX (HOUSE LINE)
GV	GAS VALVE (MAIN LINE)
HH	HAND HOLE
HYD	HYDRANT
LP	LIGHT POLE
POTS	PLAIN OLD TELEPHONE SERVICE
PP	POWER POLE
SA	SANITARY SEWER
SMH	SANITARY MANHOLE
ST	STORM SEWER
T	TELEPHONE
TCB	TRAFFIC CONTROL BOX
TELBOX	TELEPHONE BOX
TEL P	TELEPHONE POLE
TMH	TELEPHONE MANHOLE
CTV	CABLE TELEVISION
W	WATER
WSB	WATER SERVICE BOX (HOUSE LINE)
WV	WATER VALVE (MAIN LINE)

TOPOGRAPHY (DRAINAGE) CON'T	
ABBR.	DESCRIPTION
BB	BOTTOM OF BANK (STREAM)
BC	BOTTOM OF CURB
BO	BOTTOM OF OPENING
CAP	CORRUGATED ALUMINUM PIPE
CB	CATCH BASIN
CIP	CAST IRON PIPE
c STRM	CENTERLINE OF STREAM
CMP	CORRUGATED METAL PIPE
CP	CONCRETE PIPE
CSP	CORRUGATED STEEL PIPE
CULV	CULVERT
DIA	DIAMETER
DMH	DRAINAGE MANHOLE
DS	DRAINAGE STRUCTURE PIPE
D'XING	DITCH CROSSING
EHW	EXTREME HIGH WATER
EL	ELEVATION
ELEV	ELEVATION
ELW	EXTREME LOW WATER
ES	END SECTION
HW	HEADWALL
INV	INVERT
MH	MANHOLE
MHW	MEAN HIGH WATER
OHW	ORDINARY HIGH WATER
OLW	ORDINARY LOW WATER
RCP	REINFORCED CONCRETE PIPE
TB	TOP OF BANK (STREAM)
TC	TOP OF CURB
TG	TOP OF GRATE
VCP	VITRIFIED CLAY PIPE
SICPP	SMOOTH INTERIOR CORRUGATED PE

TOPOGRAPHY (MISCELLANEOUS)	
ABBR.	DESCRIPTION
ABUT	ABUTMENT
AOBE	AS ORDERED BY ENGINEER
ASPH	ASPHALT
BDY	BOUNDARY
BLDG	BUILDING
BM	BENCH MARK
CC	CENTER TO CENTER
CONC	CONCRETE
CONST	CONSTRUCTION
CR	COUNTY ROAD
D	DEED DISTANCE
DM	DIRECT MEASUREMENT
DWY	DRIVEWAY
EOP	EDGE OF PAVEMENT
ES	EDGE OF SHOULDER
EB	EAST BOUND
FEE WO/A	FEES ACQUISITION WITHOUT ACCESS
FP	FENCE POST
FD	FOUNDATION
FL	FENCE LINE
GAR	GARAGE
GR	GRAVEL
HO	HOUSE
HWY	HIGHWAY
IP	IRON PIN OR IRON PIPE
MB	MAILBOX
MON	MONUMENT
N&W	NAIL AND WASHER
OG	ORIGINAL GROUND
O/H	OVERHEAD
P	PARCEL
PAV'T	PAVEMENT
PE	PERMANENT EASEMENT
PED POLE	PEDESTRIAN POLE
p	PROPERTY LINE
POR	PORCH
RR	RAILROAD
RTE	ROUTE
ROW	RIGHT OF WAY
RW	RETAINING WALL
SH	STATE HIGHWAY
SHLDR	SHOULDER
SPK	SPIKE
ST	STREET
STK	STAKE
STY	STORY
SW	SIDEWALK
TE	TEMPORARY EASEMENT
TO	TEMPORARY OCCUPANCY
U/G	UNDERGROUND
WW	WING WALL
WB	WEST BOUND

ITS	
ABBR.	DESCRIPTION
AWG	AMERICAN WIRE GAUGE
B	BLACK
BL	BLUE
BR	BROWN
C	CONDUCTOR
CAB.	CABINET
CCTV	CLOSED CIRCUIT TELEVISION
CH	CHANNEL
CODEC	ENCODER/DECODER
COMM.	COMMUNICATION
CSU	CHANNEL SERVICE UNIT
DB	DIRECT SERIAL
DET.	DETECTOR
DIA.	DIAMETER
DMS	DYNAMIC MESSAGE SIGN
DSU	DATA SERVICE UNIT
EXT.	EXTENDER
F/O OR F.O.	FIBER-OPTIC
FOUND.	FOUNDATION
GR. MTD.	GROUND MOUNTED
M.E.P.	MODEM ON EXISTING POLE
MT.	MONTE
MVMS	MODEM FOR VMS
NEC	NATIONAL ELECTRIC CODE
NESC	NATIONAL ELECTRIC SAFETY CODE
NO.	NUMBER
NYT	NEW YORK TELEPHONE
O.H.	OVERHEAD MOUNTED
PB	PULLBOX
PED	PEDESTRIAN
PR.	PAIR
PROG.	PROGRAMMED
PTZ	PAN/TILT/ZOOM
P.V.C.	CONDUIT, PLASTIC RIGID
R	RED
RF	RADIO FREQUENCY
TDS	TRAFFIC DATA STATION
TMS	TRAFFIC MONITORING STATION
TOC	TRAFFIC OPERATIONS CENTER
TV	TELEVISION
UPS	UNINTERRUPTIBLE POWER SUPPLY
VMS	VARIABLE MESSAGE SIGN

DESIGNED BY:	DRAWN BY:	CHECKED BY:	BATTERY PARK CITY AUTHORITY CONTRACT XX-XXXX		
			REVISIONS		
				NYMEX TERRACE, DEPRESSION REMEDIATION OPTION I - FULL REMOVAL	
				ABBREVIATIONS	
			CITY OF NEW YORK, BOROUGH OF MANHATTAN		
			KSE KS ENGINEERS, P.C.		Engineers • Surveyors • Construction Managers 65 Broadway, Suite 401, New York, N.Y. 10006 Phone: (212) 616-2657, Fax: (212) 616-3060
SCALE:	AS SHOWN	DATE:	01/31/2014	PROJECT NO.:	1254-13
SHEET NO.:					3

ALIGNMENT			ROADWAY CONT'D.			LANDSCAPE CONT'D.			UTILITIES CONT'D.		
STYLE	NAME	DESCRIPTION	STYLE	NAME	DESCRIPTION	STYLE	NAME	DESCRIPTION	STYLE	NAME	DESCRIPTION
— — —	AC	CONTROL (CENTERLINE)	— — —	RRER	RAIL ROAD, 3RD RAIL	— — —	LFNC	FENCE	— — —	UFO	FIBER OPTIC, UNDERGROUND
— — —	AD_P	DETOUR	— — —	RRPLS_P	RAIL, PHOTO, LARGE SCALE	— — —	LTRC	TREE ROW, CONIFEROUS	— — —	UFO_P	FIBER OPTIC, UNDERGROUND, PROPOSED
— — —	AT_P	TRANSITION CONTROL	— — —	RRPSS	RAIL, PHOTO, SMALL SCALE	— — —	LTRD	TREE ROW, DECIDUOUS	— — —	UFOH	FIBER OPTIC, HANGING
BRIDGE			— — —	RRS	RUMBLE STRIP	— — —	LWH	WALL, H PILE	— — —	UFOO	FIBER OPTIC, OVERHEAD
□ □ □	BR	RAIL	— — —	RRSLS_P	RAIL, SURVEY, LARGE SCALE	— — —	LWR	WALL, RETAINING	— — —	UG	GAS, UNDERGROUND
~~~~~	BSHT	SHEET PILING	— — —	RRSSS	RAIL, SURVEY, SMALL SCALE	— — —	LWS	WALL, STONE	— — —	UGH	GAS, HANGING
CONTROL			ROW MAPPING			SIGNALS			UIC		
— — —	CB	BASELINE	— — —	SBLB	BILLBOARDS	— — —	PE	MEE	— — —	UICH	INFORM CABLE, UNDERGROUND
— — —	CBPR	BASELINE, PROJECTION	— — —	SM	MULTIPLE POST	— — —	PE	MEP_P	— — —	UO	OIL LINE, UNDERGROUND
— ST —	DCP	CULVERT PIPE	— — —	SSO	STRUCTURE, OVERHEAD	— — —	APE	MEPA_P	— — —	UOH	OIL LINE, HANGING
— ST —	DCP_P	CULVERT PIPE (DIR)	— — —	SSOC	STRUCTURE, OVHD. CANTILEVER	— — —	TE	MET_P	— — —	UPBP	POLE, BRACE, PUSH BRACE
	DDG_P	DITCH, GRASS LINED	STRIPING			— — —	ATE	META_P	— — —	UPBW	POLE, GUY WIRE
	DDP_P	DITCH, PAVED INVERT	— — —	STB*	BROKEN LINE	— — —	FEE	MF_P	— — —	USA	SANITARY SEWER, UNDERGROUND
	DDS_P	DITCH, STONE LINED	— — —	STDB*	DOUBLE BROKEN LINE	— — —	AFFEE	MFA_P	— — —	USAH	SANITARY SEWER, HANGING
— — —	DFL_P	FLOW LINE	— — —	STDL*	DOTTED LINE LONG	— — —	—	MFS_P	— — —	USAF	SANITARY SEWER, FORCE MAIN, UGND
— — —	DSSD	SLOTTED DRAIN	— — —	STDSS*	DOTTED LINE SHORT	— — —	—	MFWOA_P	— — —	USAFH	SANITARY SEWER, FORCE MAIN, HANG
— UD —	DUP_P	UNDERDRAIN	— — —	STFB*	FULL BARRIER LINE	— — —	HB	MHB	HIGHWAY BOUNDARY	UT	TELEPHONE, UNDERGROUND
ENVIRONMENTAL			— — —	STH*	HATCH LINE	— — —	AHB	MHBA	HIGHWAY BOUNDARY, APPROX.	UTH	TELEPHONE, HANGING
— — —	EBLHS	BALE, HAY/STRAW	— — —	STPB*	PARTIAL BARRIER LINE	— — —	—	MHBW	HIGHWAY BOUNDARY, FACE OF WALL	UTO	TELEPHONE, OVERHEAD
— — —	ECT	CURTAIN, TURBIDITY	— — —	STRCT	ROUNDABOUT, CAT TRACKS	— — —	—	MHBWO	HIGHWAY BOUNDARY, W/O ACCESS	UTV	CABLE TV, UNDERGROUND
— — —	EDMC	DAM, COFFER TYPE	— — —	STRYL	ROUNDABOUT, YIELD LINE	— — —	—	MJC	JURISDICTION, CITY	UTVH	CABLE TV, HANGING
	EDMEC_P	DAM, EARTHEN, CHECK	— — —	STS	STOP BAR	— — —	—	MJCY	JURISDICTION, COUNTY	UTVO	CABLE TV, OVERHEAD
	EDMPC_P	DAM, PREFAB, CHECK	— — —	STSE	SOLID, EDGE	— — —	—	MJHD	JURISDICTION, HISTORIC DISTRICT	UUU	UNKNOWN, UNDERGROUND
	EDMSC_P	DAM, STONE, CHECK	— — —	STXL*	X WALK, LADDER LINE	— — —	—	MJLL	JURIS., (GREAT, MILITARY) LOT LINE	UUH	UNKNOWN, HANGING
♦ ♦	EFNS	FENCE, SILT	— — —	* = W (WHITE) OR Y (YELLOW)		— — —	—	MJN	JURISDICTION, NATION	UUO	UNKNOWN, OVERHEAD
TRAFFIC CONTROL			— — —	TCSW	SIGNAL, SPAN WIRE	— — —	—	MJPB	JURISDICTION, PUBLIC LANDS	UW	WATER LINE, UNDERGROUND
♦ ♦	EFNSV	FENCE, SILT & VEGETATION	TRAFFIC MAINTENANCE			— — —	—	MJS	JURISDICTION, STATE	UWH	WATER LINE, HANGING
♦ ♦	EFNV	FENCE, VEGETATION	— — —	TMBCD_P	BARRICADES	— — —	—	MJT	JURISDICTION, TOWN	UWO	WATER LINE, OVERHEAD
FW FW	EWAA_P	WETLAND, ADJACENT AREA	— — —	MPL	PROPERTY LOT LINE	— — —	—	MJV	JURISDICTION, VILLAGE		
FW FW	EWF	WETLAND, FEDERAL	— — —	MPLA	PROPERTY LOT LINE, APPROXIMATE	— — —	—				
SW SW	EWFS	WETLAND, FEDERAL AND STATE	— — —	MSL	SUB LOT LINE	— — —	—				
SW SW	EWM	WETLAND, MITIGATION AREA	ROADWAY			— — —	RG	GUIDE RAIL, MISCELLANEOUS			
— — —	EWS	WETLAND, STATE	— — —	TMBT_P	BARRIER, TEMPORARY	— — —	RGB	GUIDE RAIL, BOX BEAM			
LANDSCAPE			— — —	TMDB_P	DEVICE, BARRELS	— — —	RGBM	GUIDE RAIL, BOX BEAM, MEDIAN			
— — —	LABL	AREA, BRUSH LINE	— — —	TMDC_P	DEVICE, CONES	— — —	RGC	GUIDE RAIL, CABLE			
— — —	LAHR	AREA, HEDGE ROW	— — —	UC	CONDUIT, UNDERGROUND	— — —	RGCB	GUIDE RAIL, CONCRETE BARRIER			
— — —	LAPB	AREA, PLANTING BED	— — —	UC_P	COMM. & ELEC. CONDUITS IN ONE COMMON TRENCH	— — —	RGP_P	GUIDE POST			
— — —	LAWA	AREA, WOODED AREA OUTLINE	— — —	UCD_P	JACKED CASING OR DIRECTIONALLY DRILLED CROSSING	— — —	RGW	GUIDE RAIL, W BEAM			
— — —	LAWE	AREA, WATERS EDGE	— — —	UCH	CONDUIT, HANGING	— — —	RGWM	GUIDE RAIL, W BEAM, MEDIAN			
— — —	LCUT_P	CUT LIMIT	— — —	UCO	CONDUIT, OVERHEAD	— — —	RPB	PARKING BUMPER			
— — —	LFILL_P	FILL LIMIT	— — —	UE	ELECTRIC LINE, UNDERGROUND	— — —	RRC	RAIL ROAD, CATENARY			
— — —			— — —	UE_P	ELECTRIC LINE, UNDERGROUND, PROPOSED	— — —					
— — —			— — —	UEH	ELECTRIC LINE, HANGING	— — —					
— — —			— — —	UEO	ELECTRIC LINE, OVERHEAD	— — —					
— — —			— — —	UEO_P	ELECTRIC TRANSMISSION, OVERHEAD, PROPOSED	— — —					
— — —			— — —	UETO	ELECTRIC TRANSMISSION, OVERHEAD	— — —					
— — —			— — —	UESS	ELECTRIC, SUBSTATIONS	— — —					

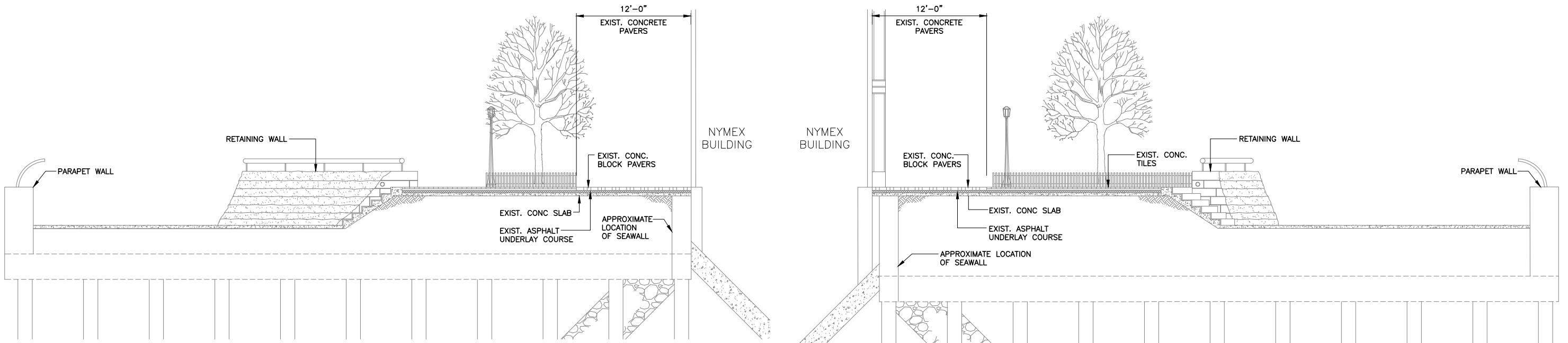
1. THE LEGEND ILLUSTRATES MAPPING FEATURES (EXISTING AND PROPOSED).
2. FEATURES ARE SHOWN AS EITHER LINEAR (ROADWAY GUIDERAIL, ROADWAY SIDEWALK, UTILITY LINES, ETC.) OR POINT (SIGN, UTILITY POLE, ETC.).
3. FEATURES SHOWN ON THE LEGEND AS EXISTING FEATURES MAY ALSO HAVE CORRESPONDING PROPOSED FEATURES.
4. PROPOSED FEATURE SYMBOLOGY IS IDENTICAL TO EXISTING FEATURE SYMBOLOGY EXCLUDING LINE WEIGHT. LINE WEIGHT FOR PROPOSED FEATURES IS THICKER (0.40 MM ON B SIZE DRAWINGS).
5. MAPPING FEATURES NOT INCLUDED ON THE LEGEND SHEET DO NOT HAVE A UNIQUE SYMBOLICITY (SUCH AS THE PAVEMENT EDGE, PAVEMENT EDGE OF TRAVEL WAY) AND SHOULD BE LABELED ON THE PLANS.
6. FEATURES SHOWN AT THE HEAVIER WEIGHT ARE PROPOSED ONLY AND DO NOT HAVE CORRESPONDING EXISTING FEATURES.

ITS					
FEATURE	SYMBOL	EXISTING		PROPOSED	
ANTENNAS					
CABINET AND PAD					
CCTV SITE					
COMMUNICATION PULL BOX					
SOLAR PANEL					
FIBER OPTIC CROSS CONNECT CABINET					
TELEPHONE DEMARCAION BLOCK					

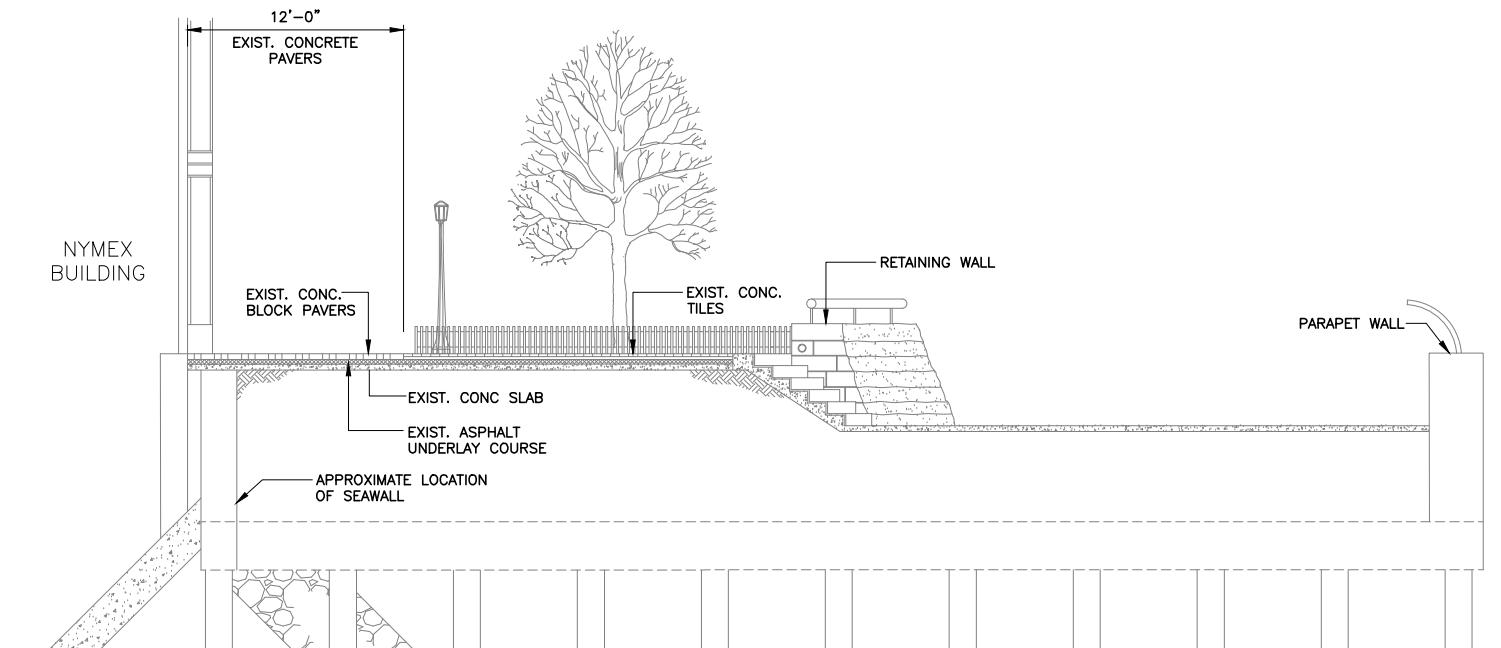
PROPOSED DRAINAGE	
RIP-RAP	(# # # #)
UNDERDRAIN	

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			REVISIONS		
				NYMEX TERRACE, DEPRESSION REMEDIATION OPTION I - FULL REMOVAL <b>LEGEND LINE SYMBOLOGY</b>	
				CITY OF NEW YORK, BOROUGH OF MANHATTAN	
			KSE KS ENGINEERS, P.C.		Engineers • Surveyors • Construction Managers 65 Broadway, Suite 401, New York, N.Y. 10006 Phone: (212) 616-2657, Fax: (212) 616-3060
SCALE:	AS SHOWN	DATE:	01/31/2014	PROJECT NO.:	1254-13
SHEET NO.:	4				

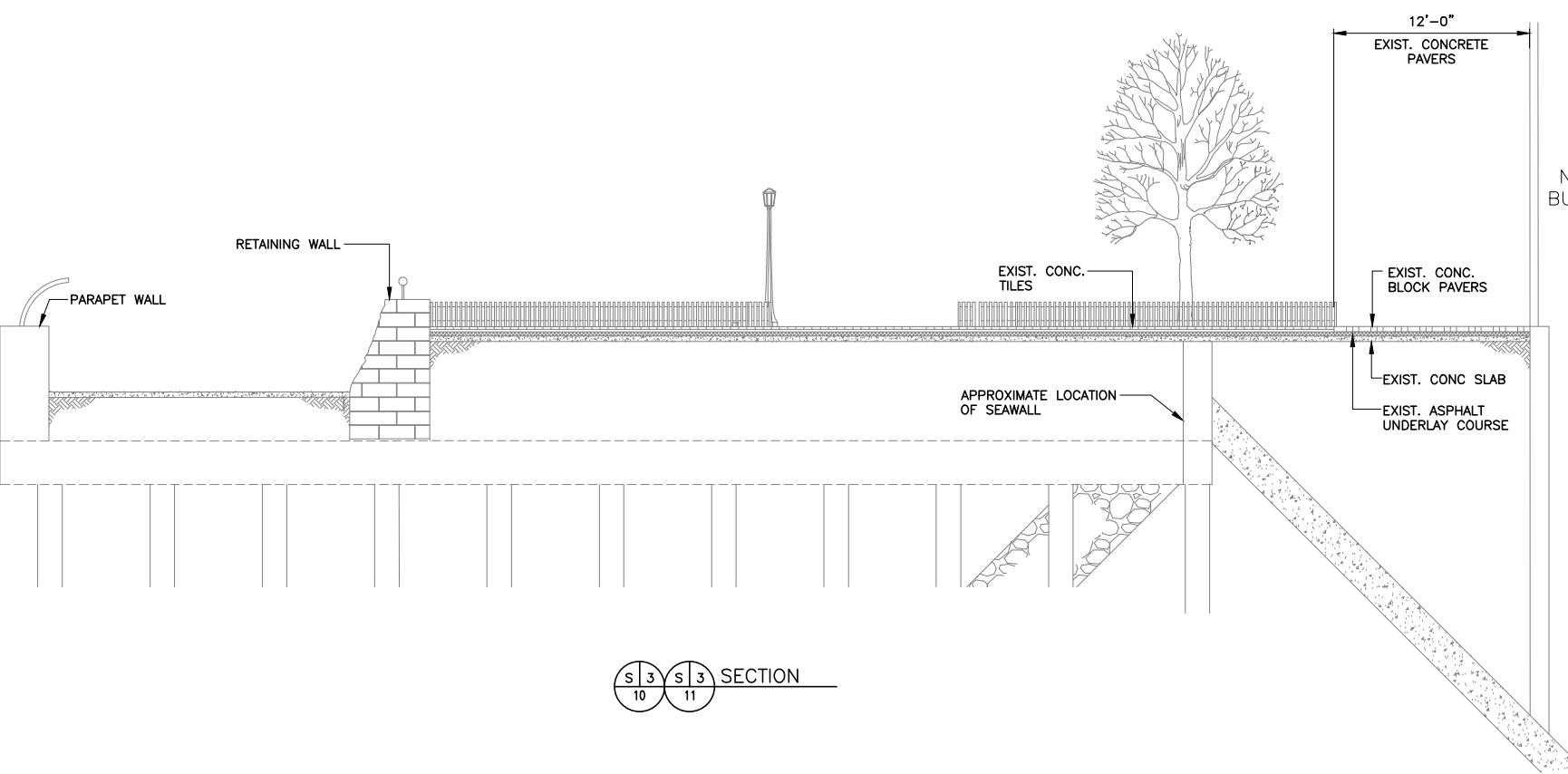
ALIGNMENT			BRIDGE			ROADWAY			ITS			UTILITIES			ROW MAPPING		
CELL	NAME	DESCRIPTION	CELL	NAME	DESCRIPTION	CELL	NAME	DESCRIPTION	CELL	NAME	DESCRIPTION	CELL	NAME	DESCRIPTION	CELL	NAME	DESCRIPTION
● ACC	CENTER OF CURVATURE		□ BSC	BRIDGE, SCUPPER		○ RES_P	ELEVATION, SPOT		○ IANT_P	ANTENNAS		□ UEB	ELECTRIC, BOX		○ MDL1P	DEED LINE, TYPE 1	
+ ACOGO	COGO		DRAINAGE			□ RGA	GUIDE RAIL, ANCHOR		○ IASCTS	ACCOU. SPEED/COUNT SNSR.S		□ UEM	ELECTRIC, METER		○ MDL2P	DEED LINE, TYPE 2	
● ACS	CURVE TO SPIRAL		+ DINV	INVERT		○ RGP	GUIDE POST, SINGLE		□ ICABPAD	CABINET & PAD		○ UEMH	ELECTRIC, MANHOLE		○ MDL3P	DEED LINE, TYPE 3	
△ ADPL_P	DETOUR, POINT OF INTERSECT.		DS	STRUCTURE, RECTANGULAR		SIGNS			● CCTV	CCTV SITE WITH POLE		○ UEPT	ELECTRIC, POLE, TRANS.		○ MDL4P	DEED LINE, TYPE 4	
○ ADPL_P	DETOUR, POINT ON LINE		+ DSI	STRUCTURE, INVERT		○ S	SINGLE POST		○ CDPD	CDPD TRANSCEIVER		□ UGM	GAS, METER		○ MDL5P	DEED LINE, TYPE 5	
○ AEQN	EQUATION		+ DSM	STRUCTURE, MANHOLE		○ S.P.	SINGLE POST, PROPOSED		○ ICELLT	CELL PHONE TOWER		○ UGMH	GAS, MANHOLE		○ MEEP	EASEMENT, EXISTING	
Ⓐ AEQNAHD	EQUATION AHEAD		DSMTXX_P	STRUCTURE, MANHOLE, TYPE "XX", "XX" = 48, 60, 72, 96		○ SB_P	BACK TO BACK, PROPOSED		→ ICJB	CONDUIT JACK OR BORING		○ UGLM	GAS, LINE MARKER		Ⓐ MEPA_P	EASEMENT, PERM., APPROX.	
Ⓑ AEQNBK	EQUATION BACK		DSR	STRUCTURE, ROUND		○ SDEL	DELINEATORS		□ ICNTLCAB	CONTROLLER CABINET		□ UGP	GAS/FUEL PUMP		○ MEPP_P	EASEMENT, PERM., BACK LINE	
○ AEVT	EVENT STATION		DST"X"CB_P	STRUCTURE, RECT., WITH CURB TYPE "X", "X" = F, G, N, O, P, R		○ SPM	PARKING METER		○ ICPB	COMMUNICATION PULL BOX		□ UGV	GAS, VALVE		○ MEPSP_P	EASEMENT, PERM., SHAPE	
○ APCC	POINT OF COMPOUND CURVATURE		SRM	REFERENCE MARKERS		○ SRSC3	SHLD, CTY, 123 DIG.		○ ICTD	CONDUIT TURNING DOWN		○ UGVT	GAS, VENT		○ MFAP_P	FEES ACQUISITION, APPROX.	
△ API	POINT OF INTERSECTION		SRSC4	SHLD, CTY, 4 DIG.		○ SRSC2	SHLD, CTY TOUR, 1-2 DIG.		○ ICTU	CONDUIT TURNING UP		○ ULP	LIGHTING, POLE		○ MFP_P	FEES ACQUISITION, BACK LINE	
△ APOB	POINT OF BEGINNING		SRSC4_P	STRUCTURE, RECT., TYPE "X", "X" = I, K, L, M, O, P, U		○ SRSCT2	SHLD, CTY TOUR, 1-2 DIG.		○ ICVTRT	COMM. VEH. ROAD TRANSCVR.		○ ULPM	LIGHTING, POLE, MEDIAN		○ MFSP_P	FEES ACQUISITION, SHAPE	
○ APOC	POINT OF CURVATURE		ENVIRONMENTAL			○ SRSCT4	SHLD, CTY TOUR, 3-4 DIG.		+	DEFAULT	DEFAULT	○ ULPP	LIGHTING, POLE, PED.		○ MHBP	HIGHWAY BNDRY., APPROX.	
△ APOE	POINT OF END		○ SRSI	SHLD, INTERSTATE		○ SRSN2	SHLD, NATIONAL, 2 DIG.		EZ	EZ-PASS READER		□ UMFC	MISC. FILLER CAP		○ MHBCP	HISTORICAL, BLDG. CORNERS	
○ APOL	POINT ON LINE		○ SRSN3	SHLD, NATIONAL, 3 DIG.		○ SRSS2	SHLD, STATE, 2 DIG.		EZ-T	EZTR	TRANSMITTAL READER	○ UOLM	OIL, LINE MARKER		○ MHBP	HIGHWAY BNDRY., PT.	
○ APOS	POINT ON SPIRAL		○ SRSS3	SHLD, STATE, 3 DIG.		○ SRSS4	SHLD, STATE, 4 DIG.		XC	IFOXCAB	FIBER OPTIC X-CONNECT CAB.	○ UP	POLE, WITH UTILITY		○ MJCP	PT., JURIS. CITY	
○ APOT	POINT ON TANGENT		○ SRSS4_P	SHLD, STATE, 4 DIG.		TRAFFIC			○ IFUSSL	FUSION SPLICE		○ UPD	POLE, DEAD (NO UTILITY)		○ MPBC	PT., BUILDING CORNER	
△ APOVC	POINT ON VERTICAL CURVE		○ EIPGB_P	STR., INLET PROT., GRAVEL BAG		ROW ACQUISITION			○ IHARADV	HAR ADVISORY SIGN		○ UPL	POLE, WITH LIGHT		○ MPCC	PT., CROSS CUT	
△ APOVT	POINT ON VERTICAL TANGENT		○ EIPHS_P	STR., INLET PROT., HAY/STRAW		○ EIPP_P	STR., INLET PROT., PREFAB.		○ IHARST	HAR SITE		○ USMH	SANITARY SEWER MANHOLE		○ MPDH	PT., DRILL HOLE	
Y APORC	POINT ON REVERSE CURVE		○ EIPSF_P	STR., INLET PROT., SILT FENCE		○ PRFB	STR., INLET PROT., PREFAB.		○ ILC	LOAD CENTER		○ UTB	TELEPHONE, BOOTH		○ MPF	PT., FENCE LOCATION	
○ APT	POINT OF TANGENCY		○ ERCB	RISER, CONCRETE BOX		○ TCBJ	BOX, JUNCTION		○ IMCSPL	MECHANICAL SPLICE		○ UTLML	TELEPHONE, LINE MARKER		○ MPIP	PT., IRON PIPE	
○ APVC	POINT OF VERTICAL CURVATURE		○ ETRS_P	TRAP, SEDIMENT		○ TCBP	BOX, PULL BOX		○ IMCS	PORT. SPEED & COUNT SENS		○ UTMH	TELEPHONE, MANHOLE		○ MPIR	PT., IRON ROD	
△ APVI	POINT OF VERT. INTERSECTION		○ EWFG	WETLAND FLAG		○ TCBS	BOX, SPLICING		○ IMCTS	MICRO SPEED & COUNT SNSR.		○ UTVM	CABLE TV, LINE MARKER		○ MPMM	PT., MONUMENT	
△ APVRC	POINT OF VERT. REVERSE CURVE		GEOTECHNICAL			○ TCMC	MICROCOMPUTER CABINET		○ IMT	MICROWAVE TRANSCEIVER		○ UTPB	CABLE TV, PULL BOX		○ MPMM	PT., MONUMENT, MISC.	
○ APVT	POINT OF VERTICAL TANGENCY		○ ERB	RISER, CONCRETE BOX		○ TCPP	PED POLE		○ IOVHMS	PERM. OVERHEAD VMS		○ UUB	UNKNOWN, BOX		○ MPN	PT., NAIL	
○ ASC	SPIRAL TO CURVE		○ ETRS_P	TRAP, SEDIMENT		○ TCSH	SIGNAL HEADS		○ IPASCS	PORT. ACC. SPD & CNT SNSR.		○ UUJB	UNKNOWN, JUNCTION BOX		○ MPRS	PT., RAILROAD SPIKE	
△ ASPI	SPIRAL POINT OF INTERSECTION		○ ASTS	SPIRAL TO SPIRAL		○ TCSP	SIGNAL POLE		○ IPEDS	PEDESTRIAN SIGNAL HEAD		○ UUPB	UNKNOWN, MANHOLE		○ MPSP	PT., SPIKE	
○ AST	SPIRAL TO TANGENT		○ GDH	DRILL HOLE		○ TCR	SOIL TESTER		○ IPSS	PAVEMENT SURFACE SNSR.		○ UUMH	UNKNOWN, PULL BOX		○ MPST	PT., STAKE	
○ ATS	TANGENT TO SPIRAL		LANDSCAPE			○ LELA	ELEVATION, SPOT		○ PVMS	PERM. VMS		○ UUVL	UNKNOWN, VALVE		○ MPTW	PT., TREE W/ WIRE	
△ AVEVT	VERTICAL EVENT POINT		○ LFP	FLAG POLE		○ LMB	MAILBOX		○ IRM	RAMP METER		○ UUVT	UNKNOWN, VENT		○ MPWL	PT., WALL LOCATION	
○ AVHIGH	VERTICAL HIGH POINT		○ LPB	PAPER BOX		○ LELA_P_T	EASEMENT, PERMANENT		△ RWIS	RDWY WEATHER INFO. SNSR.		○ UUW	UNKNOWN, WELL		ROW ACQUISITION		
○ AVLOW	VERTICAL LOW POINT		○ LPST	POST, SINGLE		○ METS_P_T	EASEMENT, TEMPORARY		○ ISP	SOLAR PANEL		○ UWFH	WATER, FIRE HYDRANT		○ FEE NO/A	FEES ACQUISITION W/O ACCESS	
CONTROL			○ LRB	ROCK, BOULDER		○ METS_P_T	OCCUPANCY, TEMPORARY		○ ISST	SPREAD SPECT. TRANSCEIVER		○ UWM	WATER, METER		○ FEE NO/A	FEES ACQUISITION W/O ACCESS	
△ CBP	BASELINE, POINT		○ LSHC	SHRUB, CONIFEROUS		○ MFS_P_T	FEES ACQUISITION W/O ACCESS		○ ITDB	TELEPHONE DEMARCTION BLK		○ UWMH	WATER, MANHOLE		○ FEE NO/A	FEES ACQUISITION W/O ACCESS	
○ CBPOL	BASELINE, POINT ON LINE		○ LSHD	SHRUB, DECIDUOUS		○ LTP	SUBSURFACE TEMP. PROBE		○ ITRT	VEHICLE TO RDWY TRANSCEIVER		○ UWV	WATER, VALVE		○ FEE NO/A	FEES ACQUISITION W/O ACCESS	
○ CBSP	BASELINE, SPUR POINT		○ LTC	TREE, CONIFEROUS		○ WIMD	WEIGHT IN MOTION DETECTOR		○ IWVR	WIRELESS VIDEO REPEATER		○ UWW	WATER, WELL		○ FEE NO/A	FEES ACQUISITION W/O ACCESS	
○ CBTP	BASELINE, TIE POINT		○ LTD	TREE, DECIDUOUS		○ WVR	WIRELESS VIDEO RECEIVER		○ IWVRC	WIRELESS VIDEO TRANSMITTER		DESIGNED BY: DRAWN BY: CHECKED BY:			BATTERY PARK CITY AUTHORITY CONTRACT XX-XXXX		
○ CPBM	BENCHMARK		○ LTS	TREE, STUMP		○ LTR	TRASH RECEPTICLE		○ LUVTT	WIRELESS VIDEO TRANSMITTER		REVISIONS			NYMEX TERRACE, DEPRESSION REMEDIATION OPTION I – FULL REMOVAL		
○ CPH	POINT, HORIZ. PHOTOGRAMMETRY		○ LTW_P	TREE, WELL OR WALL		○ LUKE	UNKNOWN POINT		LEGEND POINT SYMBOLOGY			CITY OF NEW YORK, BOROUGH OF MANHATTAN			KSE KS ENGINEERS, P.C.		
○ CPSM	POINT, SURVEY MARKER, PERM.		○ LUKE_P	UNKNOWN POINT		DIEGO ALAIMO PROFESSIONAL ENGINEER N.Y. LICENSE NO. 053085-1			Engineers • Surveyors • Construction Managers 65 Broadway, Suite 401, New York, N.Y. 10006 Phone: (212) 616-2657, Fax: (212) 616-3060			SCALE: AS SHOWN	DATE: 01/31/2014	PROJECT NO.: 1254-13	SHEET NO.: 5		



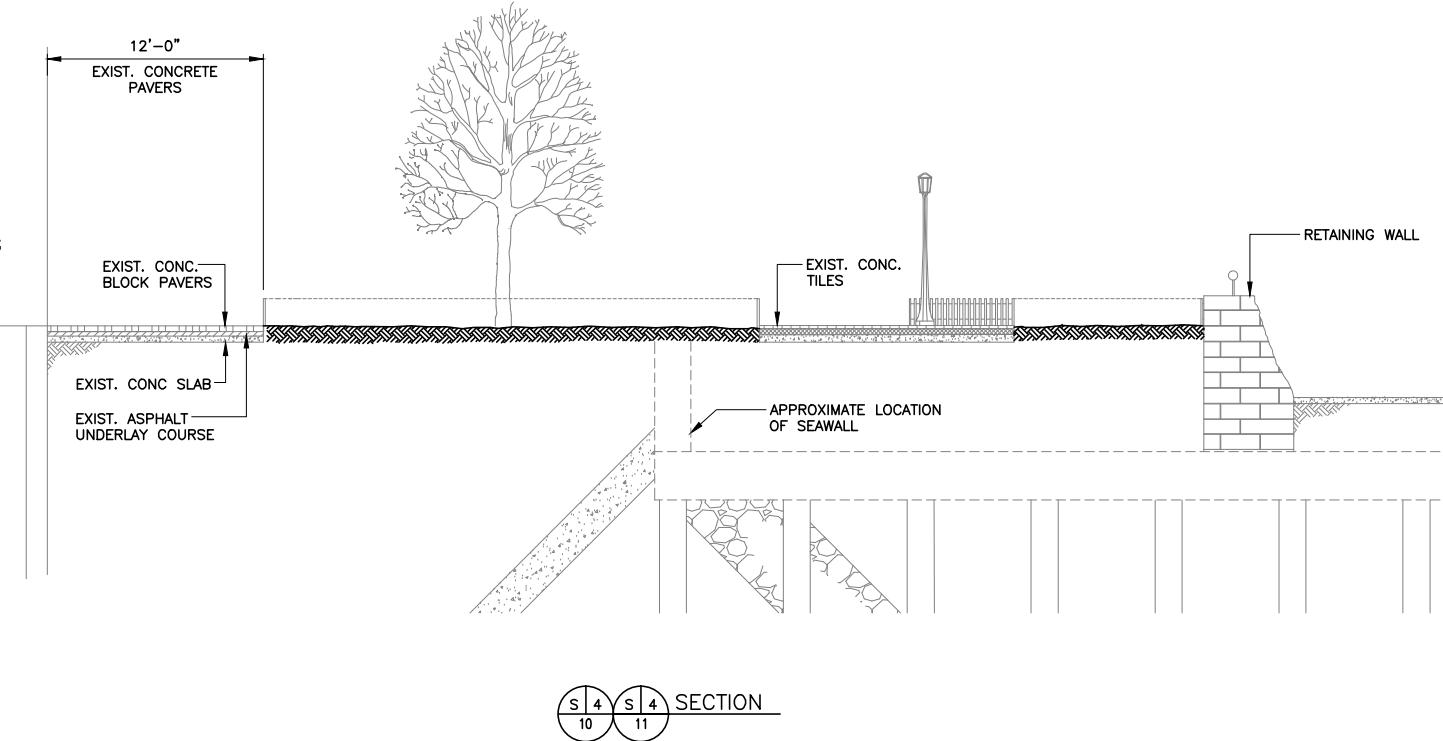
(S1)  
10 (S1)  
12 SECTION



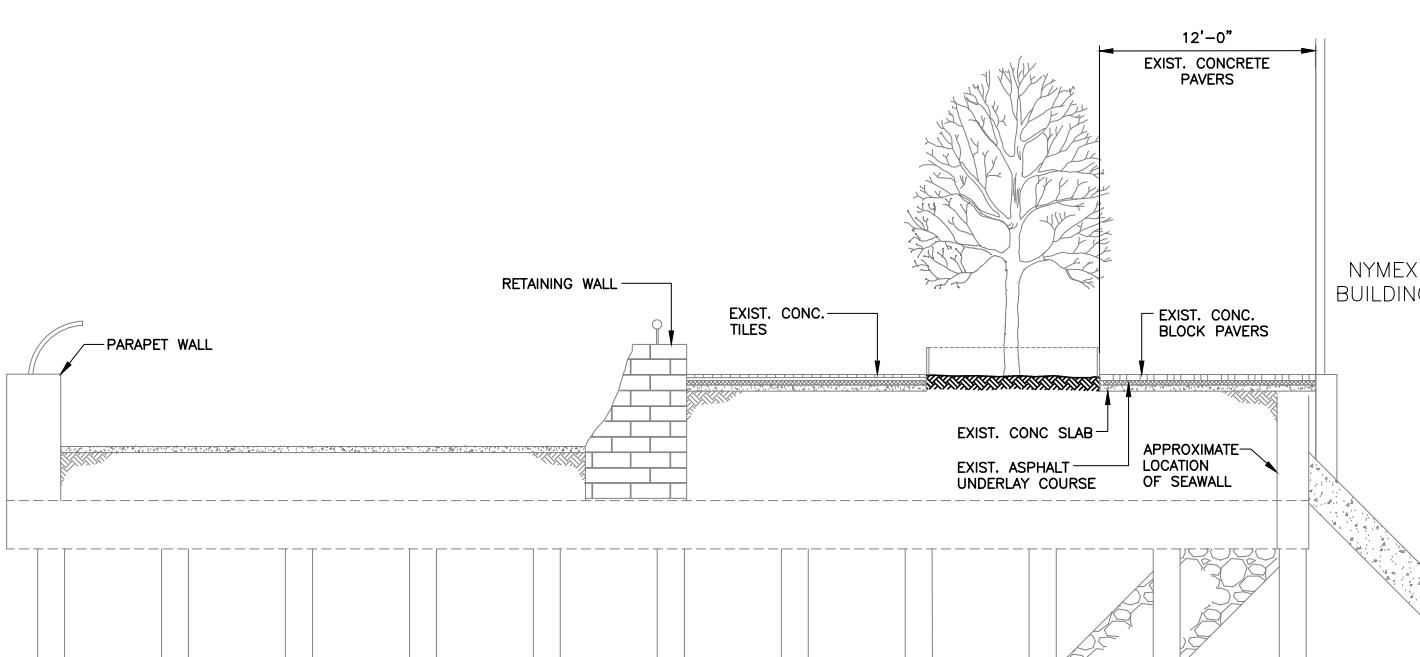
(S2)  
10 (S2)  
12 SECTION



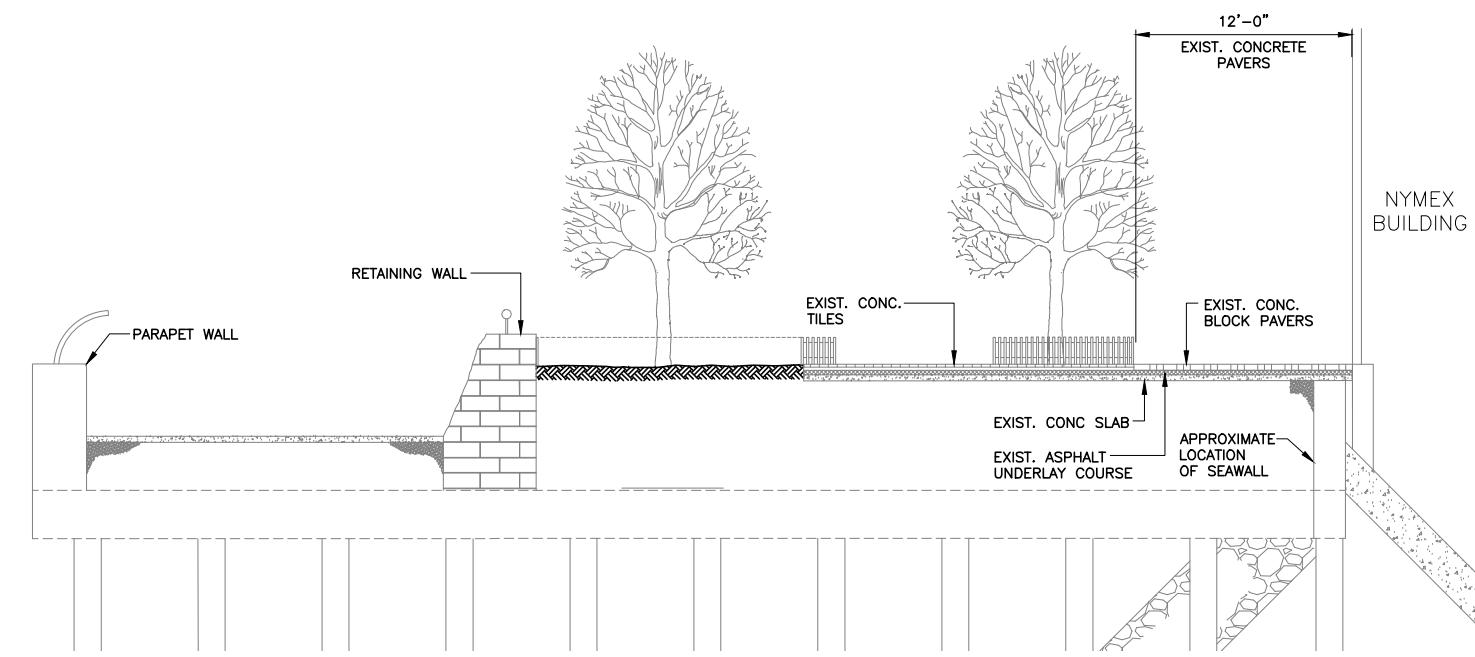
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REVISIONS			NYMEX TERRACE, DEPRESSION REMEDIATION OPTION I - FULL REMOVAL		
			<b>TYPICAL SECTIONS</b>		
			CITY OF NEW YORK, BOROUGH OF MANHATTAN		
<b>KSE</b> <b>KS ENGINEERS, P.C.</b>		Engineers • Surveyors • Construction Managers 65 Broadway, Suite 401, New York, N.Y. 10006 Phone: (212) 616-2657, Fax: (212) 616-3060			
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S 4 S 4 SECTION



S 5 S 5 SECTION



S 6 S 6 SECTION

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				TYPICAL SECTIONS	
				CITY OF NEW YORK, BOROUGH OF MANHATTAN	
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## GENERAL NOTES

1. ALL WORK CONTEMPLATED UNDER THIS CONTRACT SHALL BE COVERED BY AND IN CONFORMITY WITH THE NYSDOT STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS DATED MAY 1, 2008 AND ANY MODIFICATIONS AND ADDENDA THERE TO, EXCEPT AS MODIFIED BY THE CONSTRUCTION DOCUMENTS FOR THIS PROJECT.
  2. THE LATEST REVISIONS OF THE STANDARD SHEETS MAINTAINED BY THE NYSDOT, WHICH ARE CURRENT ON THE DATE OF ADVERTISEMENT FOR BIDS, SHALL BE CONSIDERED TO BE IN EFFECT. ALL PAY ITEMS AND WORK CONTAINED IN THE CONTRACT AND ANY ADDITIONAL PAY ITEMS AND WORK ENCOUNTERED DURING THE COURSE OF THE CONTRACT SHALL BE SUBJECT TO THE APPLICABLE STANDARD SHEET(S) UNLESS OTHERWISE SPECIFIED IN THE CONTRACT DOCUMENTS.
  3. THE CONTRACTOR'S ATTENTION IS DIRECTED TO THE FACT THAT, DUE TO THE NATURE OF RECONSTRUCTION PROJECTS, THE EXACT EXTENT OF RECONSTRUCTION WORK CANNOT ALWAYS BE ACCURATELY DETERMINED PRIOR TO THE COMMENCEMENT OF WORK. THESE CONTRACT DOCUMENTS HAVE BEEN PREPARED BASED ON FIELD INSPECTION AND OTHER INFORMATION AVAILABLE AT THE TIME. ACTUAL FIELD CONDITIONS MAY REQUIRE MODIFICATIONS TO CONSTRUCTION DETAILS AND WORK QUANTITIES. THE CONTRACTOR SHALL PERFORM THE WORK IN ACCORDANCE WITH FIELD CONDITIONS.
  4. THE CONTRACTOR SHALL PERFORM ALL WORK WITH CARE SO THAT ANY MATERIALS WHICH ARE TO REMAIN IN PLACE, OR WHICH ARE TO REMAIN THE PROPERTY OF THE COUNTY WILL NOT BE DAMAGED. IF THE CONTRACTOR DAMAGES ANY MATERIALS WHICH ARE TO REMAIN IN PLACE, OR WHICH ARE TO REMAIN THE PROPERTY OF THE COUNTY, THE DAMAGED MATERIALS SHALL BE REPAIRED OR REPLACED IN A MANNER SATISFACTORY TO THE ENGINEER AT THE EXPENSE OF THE CONTRACTOR.
  5. WHENEVER ITEMS IN THE CONTRACT REQUIRE MATERIALS TO BE REMOVED AND DISPOSED OF, THE COST OF SUPPLYING A DISPOSAL AREA AND TRANSPORTATION TO THE DISPOSAL AREA SHALL BE INCLUDED IN THE UNIT PRICES BID FOR THOSE ITEMS.
  6. ACCESS TO THE SITE MAY INVOLVE REMOVAL AND REINSTALLATION OF GUiderailaing, FENCING AND REMOVAL OF MISCELLANEOUS MATERIALS. PLANTS OR MINOR STRUCTURES AS DEEMED NECESSARY BY THE CONTRACTOR. THE BIDDER IS RESPONSIBLE FOR DETERMINING THE EXTENT OF WORK REQUIRED TO ACCESS THE SITE AND MUST PREPARE HIS/HER BID ACCORDINGLY.
  7. THE CONTRACTOR SHALL REPAIR AND RESTORE TO ORIGINAL CONDITION ANY DAMAGE BEYOND THE WORK LIMITS. CAUSED BY HIS/HER OPERATION. AT NO COST TO THE COUNTY.
  8. THE E.I.C. MAY INCREASE OR DECREASE THE LIMIT OF WORK AS DEEMED NECESSARY.
  9. APPROXIMATE LOCATION OF RIGHT-OF-WAY, PROPERTY LINES, AND EASEMENTS ARE SHOWN ON THE PLANS BASED ON AVAILABLE INFORMATION.
  10. ALL RIGHT-OF-WAY MONUMENTS AND PROPERTY CORNERS ARE TO BE SAFEGUARDED AND PRESERVED. PRIOR TO START OF CONSTRUCTION. THE CONTRACTOR SHALL LOCATE AND SUBMIT A CONDITION INVENTORY OF ALL MONUMENTS AND SURVEY CONTROL WITHIN THE PROJECT LIMITS. ALL RIGHT-OF-WAY MONUMENTS OR PROPERTY CORNERS THAT ARE DISTURBED BY THE CONTRACTOR DURING CONSTRUCTION ARE TO BE REPLACED BY A N.Y.S. LICENSED SURVEYOR AT THE CONTRACTOR'S EXPENSE.
  11. CONCRETE AND ASPHALT SURFACE TREATMENT AREAS ARE NOTED ON THE PLANS. LIMITS OF REQUIRED TOPSOIL AND SEEDING SURFACE TREATMENTS ARE NOT SHOWN, HOWEVER, ALL DISTURBED AREAS ADJACENT TO CURBING, DRIVEWAY, AND SIDEWALK INSTALLATION SHALL BE RESTORED TO THEIR EXISTING TREATMENT, TO THE TREATMENT SHOWN ON THE PLANS, BY TOPSOIL AND SEEDING, OR A.O.B.E.
  12. ANY ADDITIONAL TREE REMOVALS BEYOND THOSE LISTED IN THE PLANS MUST BE APPROVED BY THE E.I.C. PRIOR TO REMOVAL. THE CONTRACTOR IS TO PROVIDE PROTECTION FOR ALL OF THE EXISTING TREES WITHIN THE PROJECT LIMITS THROUGHOUT THE COURSE OF THE PROJECT, TO MINIMIZE AS MUCH AS POSSIBLE ANY DAMAGE OCCURRING TO THE TREES AS A RESULT OF CONSTRUCTION ACTIVITIES. PROTECTION IS TO BE IN PLACE BEFORE ANY WORK IS STARTED, AND IS TO BE IN THE FORM OF WOOD RAIL OR ORANGE CONSTRUCTION SAFETY FENCING PLACED AROUND EACH TREE PER THE DETAIL ON DRAWING MD-3.
  13. THE CONTRACTOR SHALL PRUNE BRANCHES ON EXISTING TREES, TO PROVIDE VERTICAL AND HORIZONTAL CLEARANCE ALONG THE PROPOSED SIDEWALK. THE MINIMUM CLEARANCE PROVIDED SHALL BE EIGHT (8) FEET ABOVE PROPOSED GRADE AND FOUR (4) FEET FROM CENTERLINE OF SIDEWALK. NO ADDITIONAL PRUNING SHALL BE DONE BEYOND THOSE NECESSARY TO PROVIDE THE CLEARANCES LISTED. THE CONTRACTOR SHALL PRUNE BRANCHES AT THE TRUNK OF TREE OR NEAREST PARENT STEM, A.O.B.E. COST SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 201.06.
  14. THE CONTRACTOR SHALL ABIDE BY ALL CONDITIONS OF THE NYSDEC AND COUNTY PERMITS.
  15. ALL ROADWAY SURFACES ARE TO BE KEPT CLEAN OF MUD AND DEBRIS AT ALL TIMES.

## UTILITY NOTES

1. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING ALL UTILITY WORK. ALL COSTS FOR UTILITY COORDINATION SHALL BE INCLUDED IN ITEM 625.01
  2. EXISTING UTILITIES (LOCATIONS, SIZES AND INVERTS) SHOWN ON THE PLANS HAVE BEEN PLOTTED FROM FIELD SURVEYS AND RECORD MAPS AND ARE NOT CERTIFIED AS TO THE ACCURACY OF THEIR LOCATION OR COMPLETENESS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE EXACT LOCATIONS AND DEPTHS OF ALL UTILITIES AND STRUCTURES IN THE PATH OF, OR CLOSELY PARALLEL TO, OR UNDER THE PROPOSED CONSTRUCTION, WHETHER ABANDONED OR IN SERVICE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY THE VARIOUS UTILITY OWNERS IN AMPLE TIME FOR THEM TO LOCATE AND MARK THEIR FACILITIES. THE CONTRACTOR SHALL ALSO NOTIFY DIG SAFELY NEW YORK AT LEAST 48 HOURS IN ADVANCE OF COMMENCING ANY WORK. TEL. NO. 1-800-962-7962 COST SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 625.01.
  3. WORK SHALL NOT COMMENCE UNTIL ALL UNDERGROUND UTILITIES HAVE BEEN STAKED TO SHOW THEIR LOCATION EITHER INSIDE OR OUTSIDE THE WORK AREAS.
  4. THE CONTRACTOR SHALL DIG TEST PITS AT POTENTIAL UTILITY CONFLICT LOCATIONS NOT ALREADY IDENTIFIED AS BEING RELOCATED ON THE PLANS. COST FOR TEST PIT EXCAVATION SHALL BE INCLUDED IN THE PRICE BID FOR ITEM 206.02. BACKFILL AND SURFACE RESTORATION SHALL BE INCLUDED IN THE PRICE BID FOR THE APPROPRIATE PAY ITEMS. THE CONTRACTOR SHALL NOTIFY THE UTILITY COMPANY IF A CONFLICT EXISTS.
  5. THE CONTRACTOR SHALL CONDUCT THEIR OPERATIONS AND TAKE ALL PRECAUTIONS NECESSARY TO PROTECT AND PRESERVE THE INTEGRITY OF EXISTING UTILITIES TO REMAIN, AND NEWLY INSTALLED UTILITIES AND SHALL PROVIDE UNINTERRUPTED SERVICE TO ALL USERS OF THE UTILITIES. UTILITIES ENCOUNTERED DURING CONSTRUCTION AND/OR EXCAVATION OPERATIONS SHALL BE SUPPORTED A.O.B.E. AND IN ACCORDANCE WITH THE UTILITY COMPANIES REQUIREMENTS, REGULATIONS, AND THE SPECIAL NOTE IN THE CONTRACT DOCUMENTS TITLED "EXCAVATION PROTECTION SYSTEMS". COST FOR SUPPORTING UTILITIES SHALL BE INCLUDED IN ITEMS 552.16000199 AND 552.16000299. NO SEPARATE PAYMENT SHALL BE MADE FOR ANY ADDITIONAL WORK REQUIRED TO AVOID EXISTING UTILITIES TO REMAIN OR NEWLY INSTALLED UTILITIES.
  6. ALL PRIVATE UTILITY WORK TO BE PERFORMED BY THE UTILITY COMPANY, EXCEPT AS NOTED ON THE PLANS. UTILITY FACILITIES CONSTRUCTED BY OTHERS ARE SHOWN ON THE PLANS TO AID THE CONTRACTOR IN COORDINATING THE WORK. THE CONTRACTOR SHALL PROVIDE ALL SURVEY AND STAKEOUT AS NECESSARY AND/OR A.O.B.E. FOR THE UTILITY COMPANIES TO CONSTRUCT THEIR FACILITIES AS SHOWN ON THE PLANS, AND AT ELEVATIONS COMPATIBLE WITH ROADWAY AND DRAINAGE IMPROVEMENTS. CHANGES TO UTILITY LOCATIONS MUST BE APPROVED BY THE ENGINEER AND THE COUNTY.
  7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSURING THAT THE UTILITY COMPANIES RELOCATE THEIR FACILITIES AT THE LOCATIONS SHOWN ON THE PLANS AND AT LOCATIONS THAT WILL NOT CONFLICT WITH OTHER COMPLETED OR FUTURE WORK ON THE PROJECT.

## ENVIRONMENTAL NOTES

1. CONTRACTOR SHALL EMPLOY MEASURES TO PREVENT CONTAMINATION OF THE SITE BY SILT, SEDIMENT, FUELS, SOLVENTS, LUBRICANTS, EPOXY COATINGS, CONCRETE, CONCRETE LEACHATE OR ANY OTHER POLLUTANT ASSOCIATED WITH THE PROJECT.
  2. SILT FENCE OR OTHER SEDIMENT CONTROL MEASURES SHALL BE INSTALLED PRIOR TO ANY SOIL DISTURBANCES AND MAINTAINED UNTIL PERMANENT STABILIZATION IS ESTABLISHED.
  3. TEMPORARY SOIL AND EROSION AND WATER POLLUTION CONTROL SHALL BE USED WHERE SHOWN ON THE PLANS AND AS DIRECTED BY THE E.I.C.

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		REVISIONS	NYMEX TERRACE, DEPRESSION REMEDIATION OPTION I – FULL REMOVAL		
 <b>KSE</b> <i>KS ENGINEERS, P.C.</i>			Engineers • Surveyors • Construction Managers 65 Broadway, Suite 401, New York, N.Y. 10006 Phone: (212) 616-2657, Fax: (212) 616-3060		
<b>DIEGO ALAIMO</b> PROFESSIONAL ENGINEER N.Y. LICENSE NO. 053085-1		SCALE:	DATE:	PROJECT NO.:	SHEET NO.:
		AS SHOWN	01/31/2014	1254-13	8

## GENERAL

1. THE CONTRACTOR SHALL MAINTAIN TRAFFIC THROUGHOUT THE DURATION OF THE CONTRACT IN ACCORDANCE WITH THE REQUIREMENTS OF SECTION 619 OF THE STANDARD SPECIFICATIONS, THE TRAFFIC CONTROL REQUIREMENTS CONTAINED IN THE PLANS AND/OR PROPOSAL OF THIS CONTRACT, APPLICABLE NYSDOT STANDARD SHEETS, AND THE NATIONAL MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS. THE NEW YORK STATE SUPPLEMENT. AND ALL APPLICABLE ADDENDA. HEREIN TOGETHER KNOWN AS THE MUTCD.
  2. THE CONTRACTOR MAY SUBMIT TO THE ENGINEER, IN WRITING, PROPOSED REVISIONS TO THE TRAFFIC CONTROL PLAN FOR REVIEW AND APPROVAL BY THE ROCKLAND COUNTY DRAINAGE AGENCY AT LEAST FIVE (5) WORKING DAYS PRIOR TO THE PLANNED IMPLEMENTATION. OF SUCH PROPOSED REVISIONS, EXCEPT FOR CHANGES THAT ALTER THE SCOPE OF THE TRAFFIC CONTROL PLAN. SUCH CHANGES IN SCOPE MUST BE SUBMITTED TO THE ENGINEER FOR APPROVAL BY THE ROCKLAND COUNTY DRAINAGE AGENCY AT LEAST THIRTY (30) WORKING DAYS PRIOR TO IMPLEMENTATION.
  3. THE TYPICAL DETAILS DEPICTED IN THESE PLANS, ON THE NYSDOT STANDARD SHEETS, AND IN THE MUTCD REFLECT MINIMUM REQUIREMENTS FOR TYPICAL APPLICATIONS OF TRAFFIC CONTROL DEVICES IN CONSTRUCTION AREAS NOT SPECIFIED IN THE PLANS OR NYSDOT STANDARD SHEETS. THE PROVISION OF PART 6 OF THE MUTCD SHALL APPLY. THE ENGINEER MAY ORDER ADDITIONAL DEVICES AND/OR METHODS TO MEET FIELD CONDITIONS, WHICH SHALL BE PROVIDED AT NO ADDITIONAL COST.
  4. THE CONTRACTOR SHALL MAINTAIN POSITIVE STORM DRAINAGE THROUGHOUT ALL PHASES OF CONSTRUCTION.
  5. ALL SIGNS ARE BLACK LEGEND AND BORDER ON ORANGE BACKGROUND, EXCEPT FOR SIGNS MARKED WITH AN * THAT ARE BLACK LEGEND AND BORDER ON A WHITE BACKGROUND.

## INGRESS AND EGRESS

1. THE CONTRACTOR SHALL MAINTAIN PUBLIC ACCESS TO THE GREATEST EXTENT FEASIBLE TO INTERSECTING ROADS, RESIDENCES, BUSINESS ESTABLISHMENTS, AND ADJACENT PROPERTY, FOR VEHICLES, PEDESTRIANS, AND BICYCLISTS IN ACCORDANCE WITH SECTION 619 OF THE NYSDOT STANDARD SPECIFICATIONS.
  2. THE CONTRACTOR SHALL PROVIDE RESIDENT/PROPERTY OWNERS WITH A MINIMUM OF FORTY-EIGHT (48) HOURS ADVANCE NOTICE BEFORE STARTING ANY WORK THAT IMPACTS AN ACTIVE DRIVEWAY OR ENTRANCE WALK.
  3. DURING WINTER SEASON (NOVEMBER 1 THRU APRIL 19), ALL DRIVEWAY AREAS DISTURBED BY CONSTRUCTION ACTIVITIES SHALL BE RESTORED IN ACCORDANCE WITH THE TEMPORARY SIDEWALK/ DRIVEWAY DETAIL ON DWG. NO. WZ-4, A.C.B.E.

## DELINEATION AND CHANNELIZATION

1. TAPER LENGTHS AND LONGITUDINAL BUFFER SPACES SHALL CONFORM TO NYSDOT STANDARD SHEET 619-11.
  2. IF ADVANCE SIGNING OBSTRUCTS THE VISIBILITY OF A FLAGGER OR CONFLICTS WITH DRIVEWAYS OR SIDE ROADS, SIGNS SHOULD BE MOVED UPSTREAM AS DIRECTED BY THE ENGINEER.

## TEMPORARY LANE CLOSURES

1. THE CONTRACTOR SHALL LOCATE LANE CLOSURES TO PROVIDE OPTIMUM VISIBILITY. I.E. BEFORE CURVES AND CRESTS. TO THE EXTENT CONDITIONS PERMIT.

## PEDESTRIAN AND BICYCLE ACCESS

1. THE CONTRACTOR SHALL MAINTAIN, AT ALL TIMES, A MARKED, CONVENIENT, SAFE,

## PEDESTRIAN AND BICYCLE ACCESS

3. THE CONTRACTOR WILL BE WORKING IN AREA WHERE RESIDENTS AND CHILDREN MUST BE KEPT AWAY FROM THE PROJECT AREA. TEMPORARY (SAFETY) FENCING ADJACENT TO ANY TEMPORARY OR PERMANENT PEDESTRIAN FACILITY IS NECESSARY TO SEPARATE THE PROJECT AREA FROM LOCAL RESIDENTS. THE FOLLOWING REQUIREMENTS SHALL BE MET:

ADJACENT TO ANY EXCAVATION OR VERTICAL DROP-OFF. THE CONTRACTOR SHALL PROVIDE A CONTINUOUS CHAIN LINK FENCE. THE FENCING WILL BE 6 FEET HIGH AND INCLUDE A TOP AND BOTTOM RAIL TO PROVIDE ADEQUATE SUPPORT (A.O.B.E.).

AT ALL OTHER LOCATIONS. SAFETY FENCING SHALL BE CONTINUOUS PLASTIC FLUORESCENT ORANGE SUPPORTED BY METAL OR WOODEN POSTS SPACED AT 3 FEET ON CENTER (A.D.B.E.)

THE CONTRACTOR SHALL SUBMIT A PLAN FOR IMPLEMENTING ALL SAFETY PROCEDURES AND DEVICES TO THE COUNTY FOR REVIEW.

ALL FENCING (CHAIN LINK AND PLASTIC) AND ASSOCIATED WORK SHALL BE INCLUDED IN ITEMS 607.11000008 AND 607.41010010.

4. "SIDEWALK CLOSED" SIGNS SHALL BE USED AT ALL WORK ZONES WHERE NO PEDESTRIAN TRAFFIC IS PERMITTED THROUGH THE WORK AREA.

EMERGENCY ACCESS

## EMERGENCY ACCESS

1. AT ALL TIMES DURING CONSTRUCTION, THE CONTRACTOR MUST PROVIDE SAFE AND CONVENIENT EMERGENCY ACCESS. LOCAL FIRE, POLICE, AND AMBULANCE AGENCIES SHALL BE NOTIFIED IN WRITING BY THE CONTRACTOR PRIOR TO THE START OF WORK IN ORDER TO COORDINATE AND MAINTAIN SUFFICIENT EMERGENCY SERVICES. A COPY OF THIS NOTIFICATION SHALL BE PROVIDED TO THE ENGINEER.

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		REVISIONS	NYMEX TERRACE, DEPRESSION REMEDIATION OPTION I – FULL REMOVAL		
			<b>WORK ZONE TRAFFIC CONTROL GENERAL NOTES</b>		
			CITY OF NEW YORK, BOROUGH OF MANHATTAN		
			 <b>KSE</b> <i>KS ENGINEERS, P.C.</i>		Engineers • Surveyors • Construction Managers 65 Broadway, Suite 401, New York, N.Y. 10006 Phone: (212) 616-2657, Fax: (212) 616-3060
<hr/> <b>DIEGO ALAIMO</b> PROFESSIONAL ENGINEER N.Y. LICENSE NO. 053085-1		SCALE:	DATE:	PROJECT NO.:	SHEET NO.:
		AS SHOWN	01/31/2014	1254-13	9

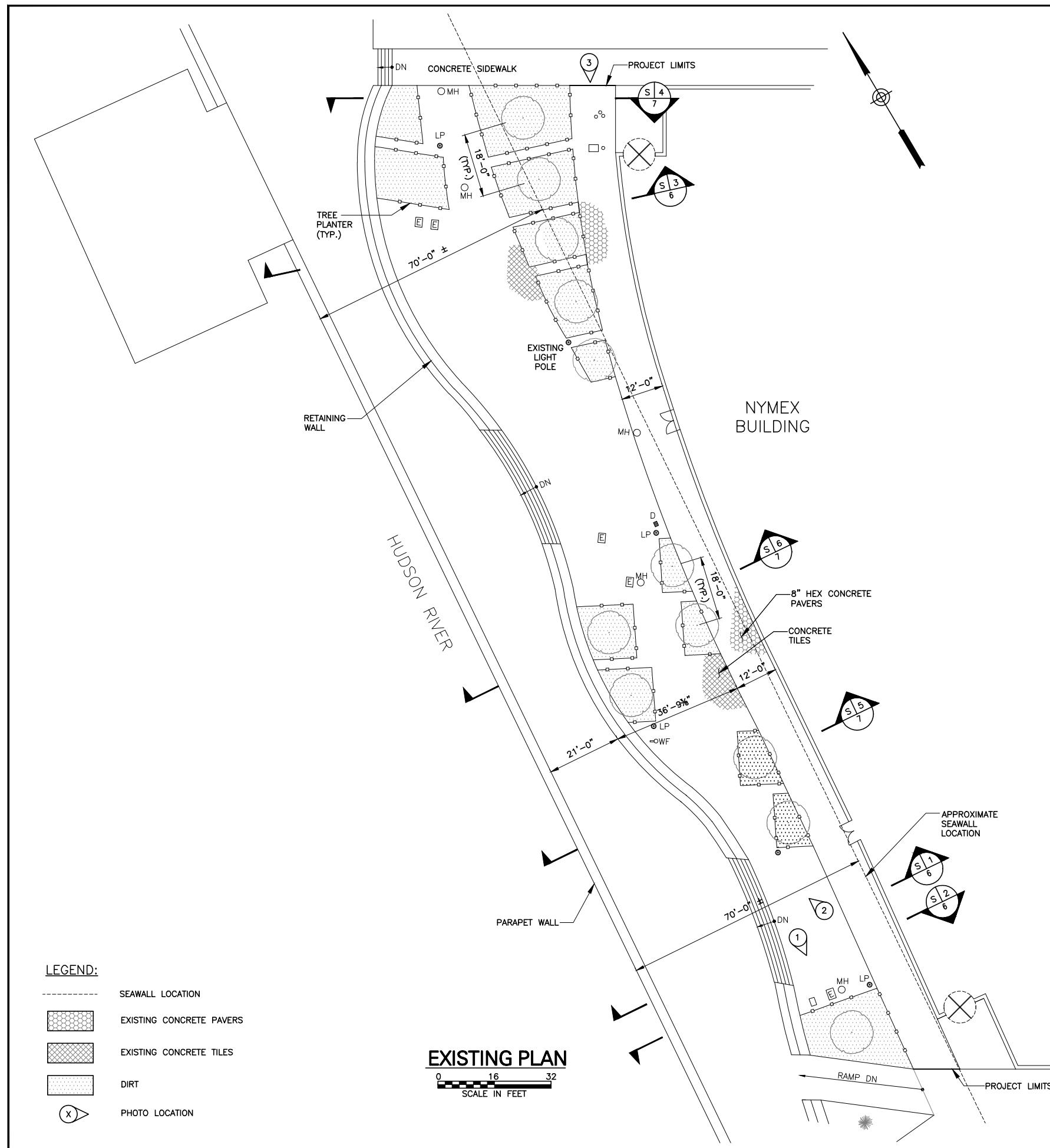


PHOTO 1



## PHOTO 2

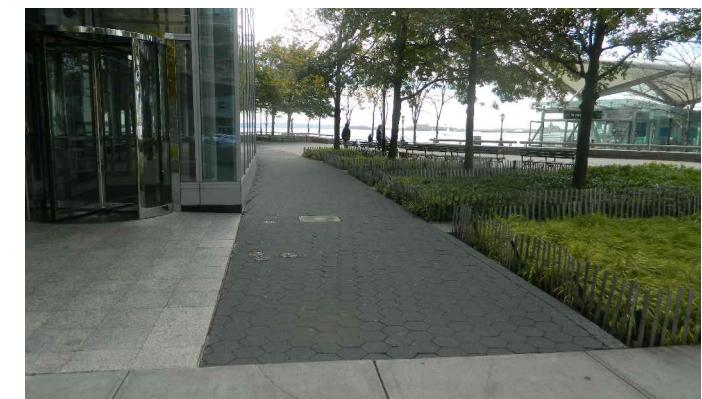


PHOTO 3

## LEGEND:

----- SEAWALL LOCATION



#### **EXISTING CONCRETE TILES**

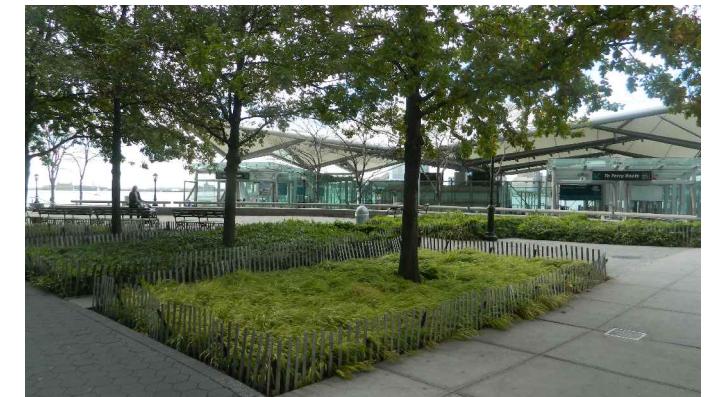
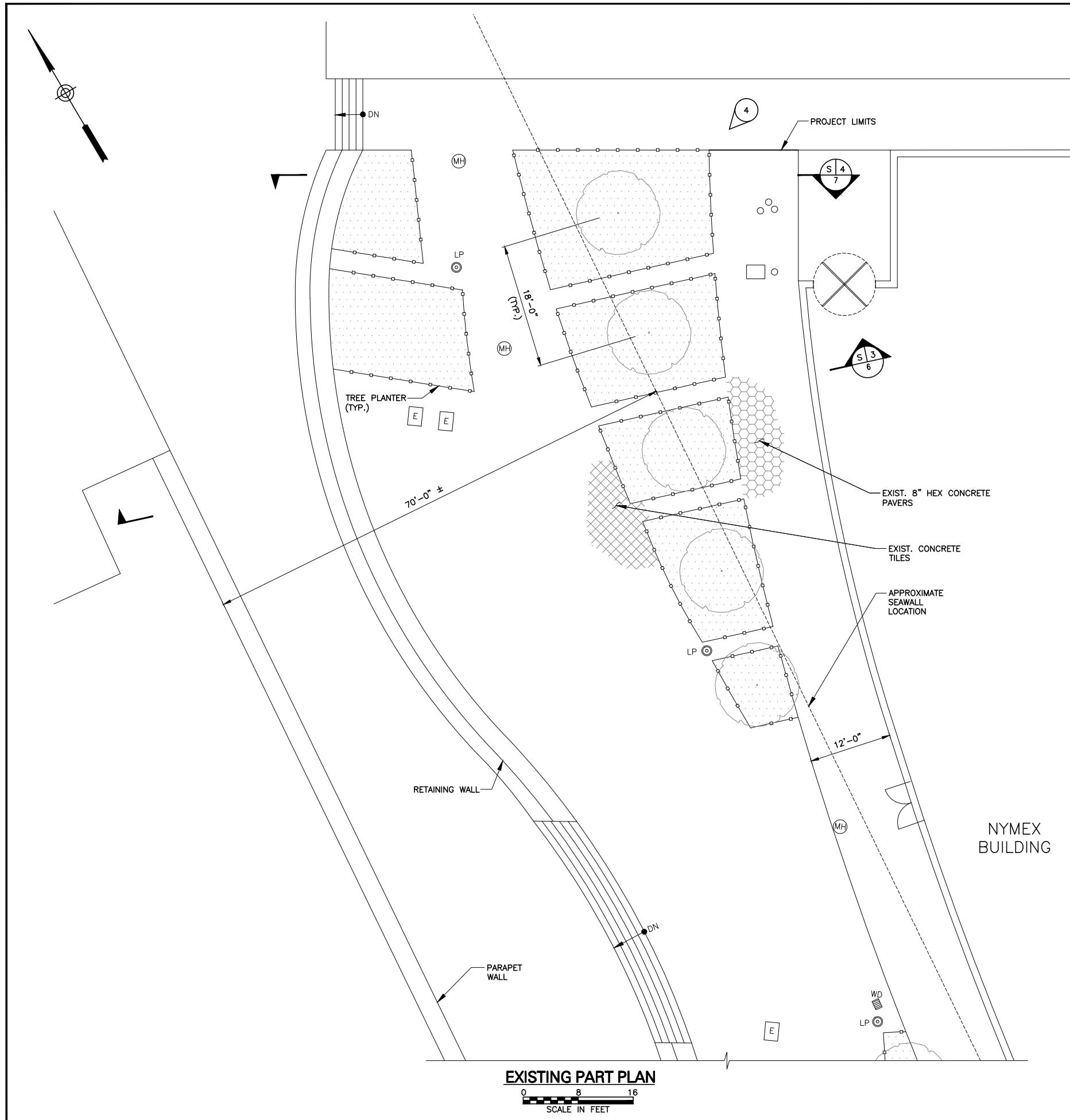


PHOTO LOCATION

## **EXISTING PLAN**

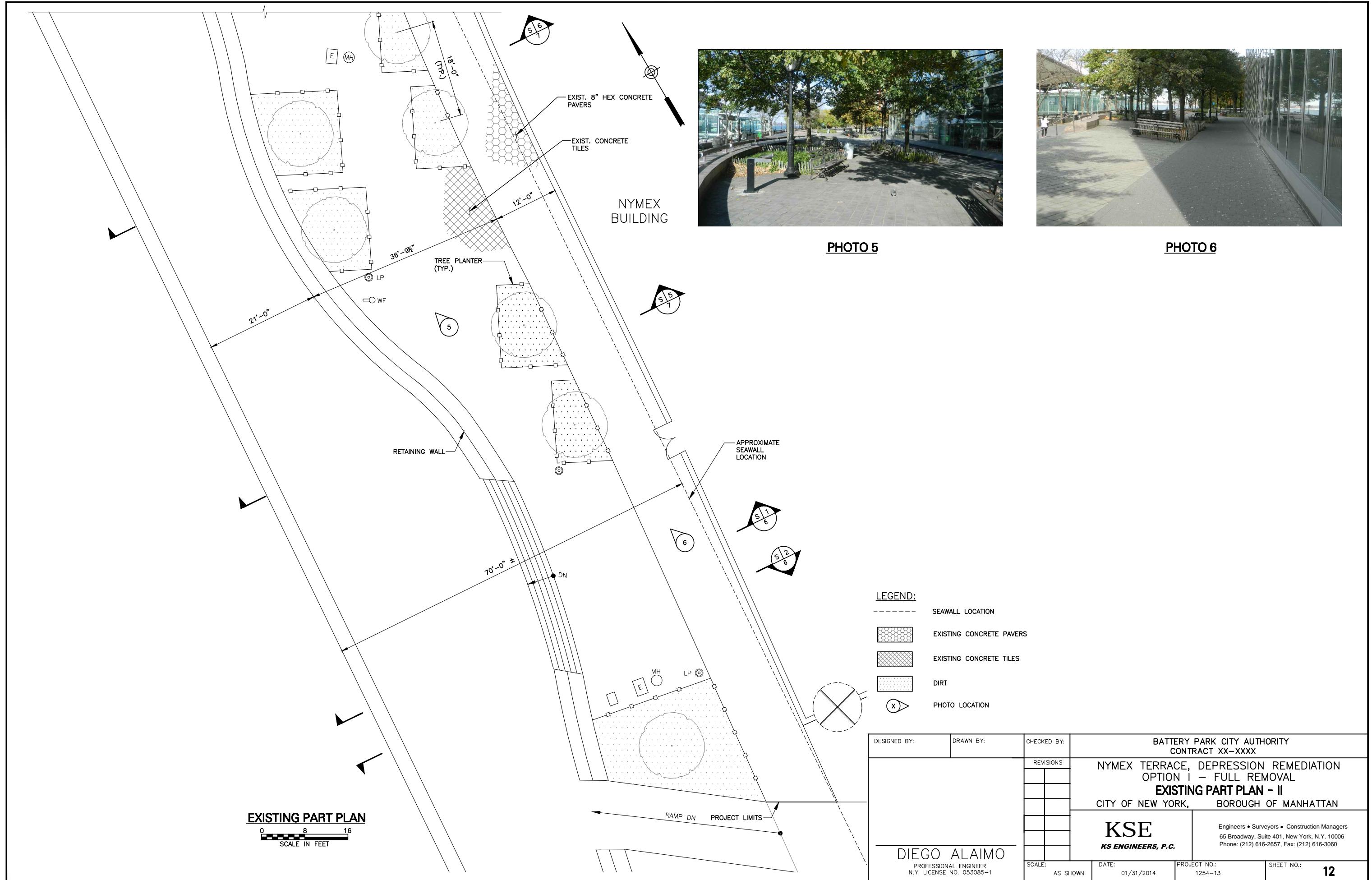
A scale bar representing 32 feet, divided into four segments of 8 feet each. The segments are marked with vertical dashed lines and labeled 0, 16, and 32 at their respective ends. Below the bar, the text "SCALE IN FEET" is centered.

Drawing File: Z:\2012-1254\Task 13; NYMEX Depression Remediation, Design and Construction Support\Preliminary Data Collection Work, Task 8, NYMEX10 GENERAL EXISTING PLAN.dwg Feb 11, 2014 - 12:21pm



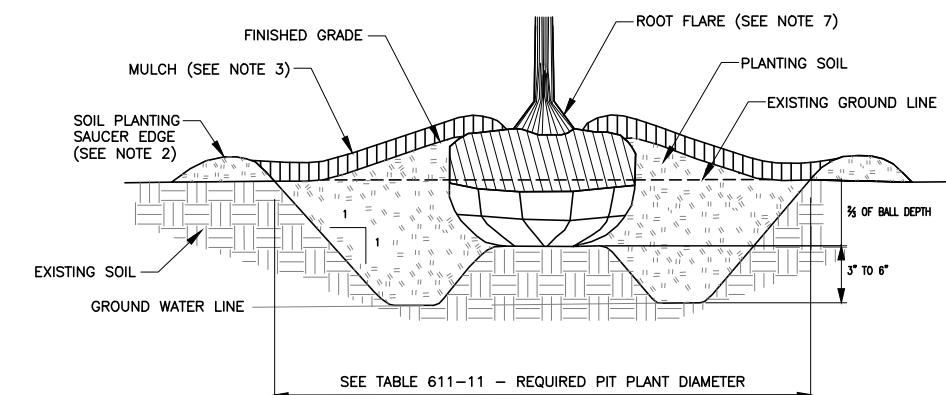
**PHOTO 4**

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			REVISIONS	NYMEX TERRACE, DEPRESSION REMEDIATION OPTION I - FULL REMOVAL <b>EXISTING PART PLAN - I</b>	
				CITY OF NEW YORK, BOROUGH OF MANHATTAN	
			KSE KS ENGINEERS, P.C.	Engineers • Surveyors • Construction Managers 65 Broadway, Suite 401, New York, N.Y. 10006 Phone: (212) 616-2657, Fax: (212) 616-3060	
			DIEGO ALAIMO PROFESSIONAL ENGINEER N.Y. LICENSE NO. 053085-1	SCALE: AS SHOWN	DATE: 01/31/2014
				PROJECT NO.: 1254-13	SHEET NO.: 11

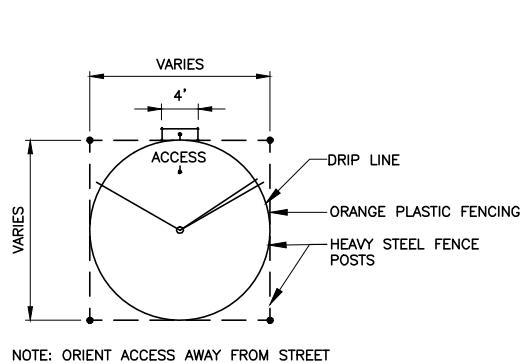


## LANDSCAPE NOTES

1. ALL PLANTS SHALL BE HEALTHY, VIGOROUS, AND FREE OF PESTS AND DISEASE.
2. PLANTS PITS SHALL BE 2-3 TIMES THE WIDTH OF THE ROOT BALL (SEE TABLE 611-11, THIS SHEET) AND DEEP ENOUGH FOR TOP OF ROOT FLARE TO PLANTED LEVEL WITH ADJACENT GRADE. REMOVE ALL EXISTING SOIL, LOOSEN SIDES OF PIT WITH PICK, AND BACKFILL WITH AMENDED EXISTING SOIL EXCAVATED FROM PLANT PIT AS FOLLOWS ONE (1) PART COMPOST-TYPE A (713-15), TO FIVE (5) PARTS EXISTING SOIL EEND/ECTO MYCORRHIZAL FUNGAL TRANSPLANT INOCULANT SHALL BE THOROUGHLY MIXED WITH THE PLANTING SOIL AT THE RATE RECOMMENDED BY THE MANUFACTURER.
3. PLANTING BALL - B&B MATERIAL, BURLAP AND WIRE BASKET OR OTHER CONTAINER SHALL BE REMOVED TO REVEAL THE ROOT FLARE.
4. HEIGHT OF PLANTING SAUCER SHALL BE 3".
5. SHREDDED HARDWOOD MULCH, TYPE A (713-05) SHALL BE A MAXIMUM OF 3" DEEP AND TAPERED TO LEAVE THE ROOT FLARE EXPOSED. WHEN PLANTING ON SLOPES, DOWNHILL SIDE MUST BE STABILIZED APPROPRIATELY.
6. STAKE ALL TREES WITH AN ABOVE GROUND SUPPORT METHOD (713-08) PER DETAIL ON SHEET 14 MISCELLANEOUS DETAILS.
7. ALL PLANTS AND WORKMANSHIP SHALL BE CARED FOR PER THE POST PLANTING CARE WITH REPLACEMENT SPECIFICATION, ITEM 611.190X0024.
8. NO PLANTS EXISTING ON THE SITE SHALL BE REMOVED, EXCEPT FOR THOSE SPECIFICALLY IDENTIFIED ON THE DRAWINGS FOR REMOVAL. TREES AND VEGETATED AREAS WHICH ARE IN OR NEAR CONSTRUCTION AREAS SHALL BE PROTECTED WITH TEMPORARY PLASTIC BARRIER FENCING PLACED AROUND THE TREES TRUNK AT THE DRIP LINE OF THE TREES. WHERE FENCING MUST BE PLACED CLOSER THAN THE DRIP LINE, PLACE 4 INCHES OF WOOD CHIPS OVER ROOT ZONE TO EXTEND TO THE DRIP LINE. REMOVAL OF WOOD CHIPS, RESTORATION SHALL INCLUDE SCARIFYING EXISTING SOIL SURFACE AND APPLYING LAWN SEED MIX. RESTORATION WORK SHALL BE INCLUDED IN ITEM 610.1602 TURF ESTABLISHMENT - LAWNS.
9. ALL LANDSCAPE INSTALLATIONS SHALL BE MAINTAINED ON A REGULAR BASIS, AND SHALL NOT BE ALLOWED TO TAKE ON AN UNSIGHTLY APPEARANCE (EXCEPT FOR NATURAL AREAS WHICH SHALL BE ALLOWED TO GROW NATURALLY WITH A MINIMUM OF MAINTENANCE).
10. ALL DISTURBED AND UNDISTURBED AREAS SHALL RECEIVE 4" OF TOPSOIL-LAWNS SEED MIX, MULCH, AND WATER UNTIL A HEALTHY STAND OF GRASS IS OBTAINED. SEED SHALL BE DISPENSED AT A RATE OF 5 LBS. PER 1,000 SQUARE FEET WITH THE LAWN SEED MIX (713-04). MULCH NEWLY SEDED LAWN WITH TYPE 1 WOOD FIBER MULCH (713-11) AND MULCH ANCHORAGE (713-12) AT MANUFACTURER'S RECOMMENDED RATE.
11. THE CONTRACTOR IS RESPONSIBLE TO PLANT THE TOTAL QUANTITIES OF ALL PLANTS SHOWN ON THE LANDSCAPE PLAN. CHANGES TO THE SITE PLAN FROM THAT SHOWN ON THE PLANTING PLAN WHICH CAUSE DIFFERENT SITE AREAS AVAILABLE FOR PLANTING SHALL HAVE PLANTING ADJUSTED ON SITE A.D.B.E. THE QUANTITIES OF PLANTING SHOWN GRAPHICALLY ON THE PLAN SHALL GOVERN.
12. PLANTING SEASONS: PER TABLE 611-11 OF SECTION 611.
13. ALL TAGS, LABELS, ETC SHALL BE REMOVED FROM THE PLANTS.
14. ALL TEMPORARY SEEDING, TURF ESTABLISHMENT - LAWNS AND PLANTING PIT/BEDS SHALL BE PROVIDED WITH WATERING VEGETATION, ITEM 610.19, IN ACCORDANCE WITH THE SPECIFICATION.

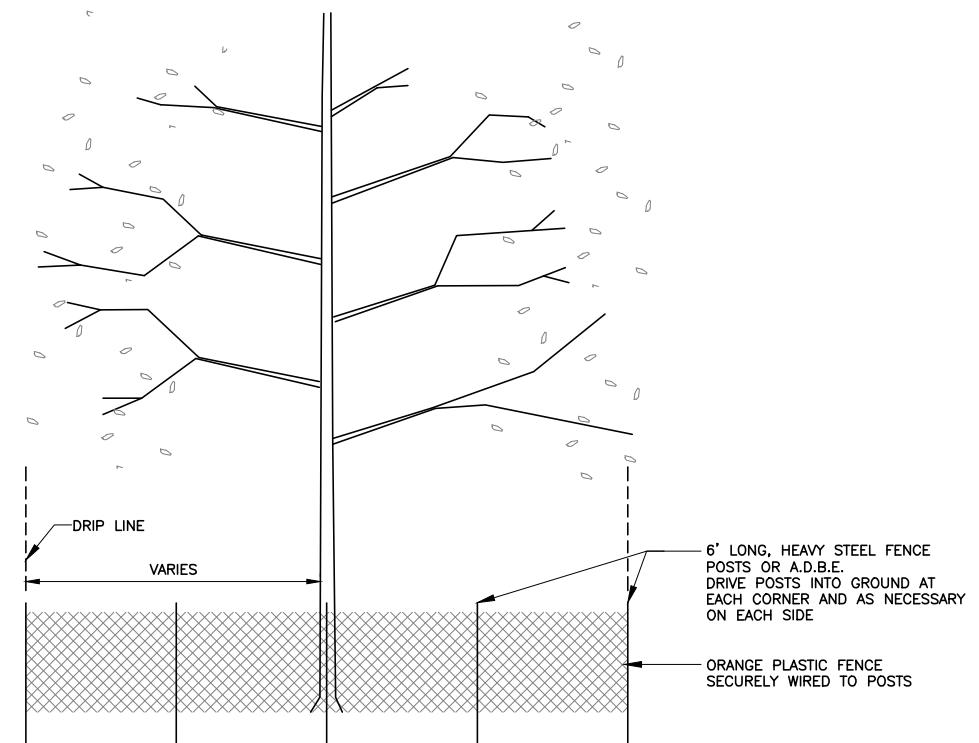


**TREE PLANTING IN HEAVY - CLAY SOILS**



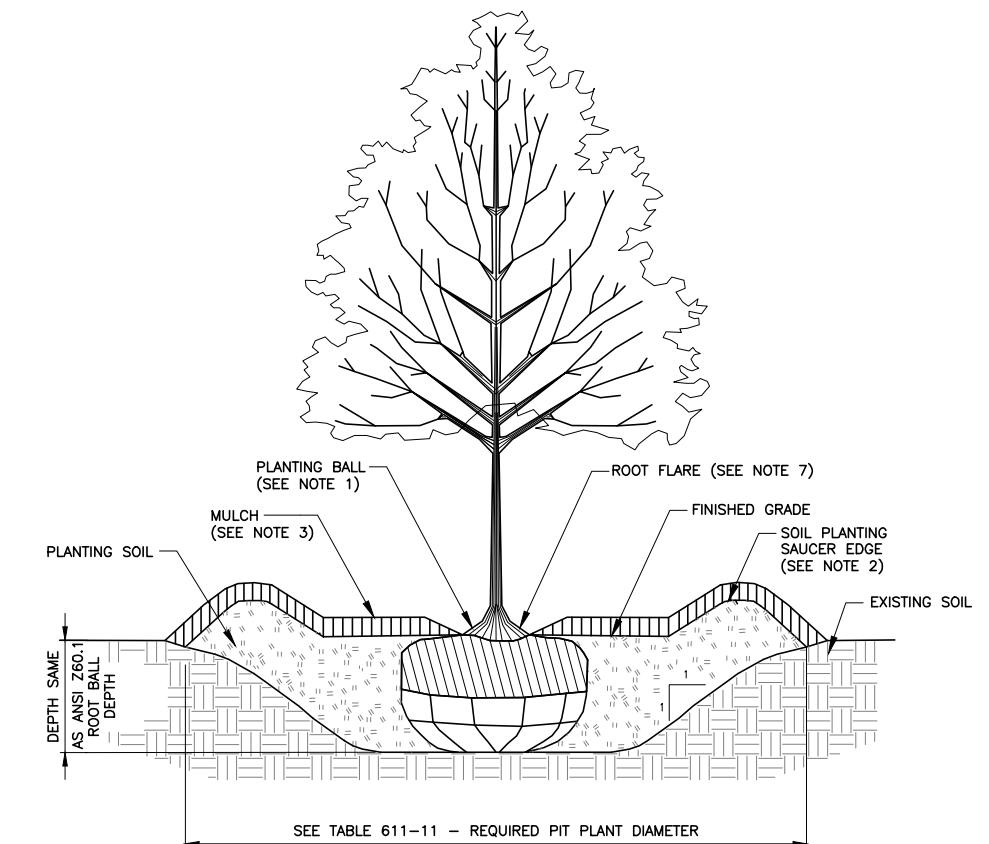
**PLAN**

NOTE:  
BARRIER SHALL BE EXTEND TO DRIP  
LINE OF TREE OR A.D.B.E.



**ELEVATION**

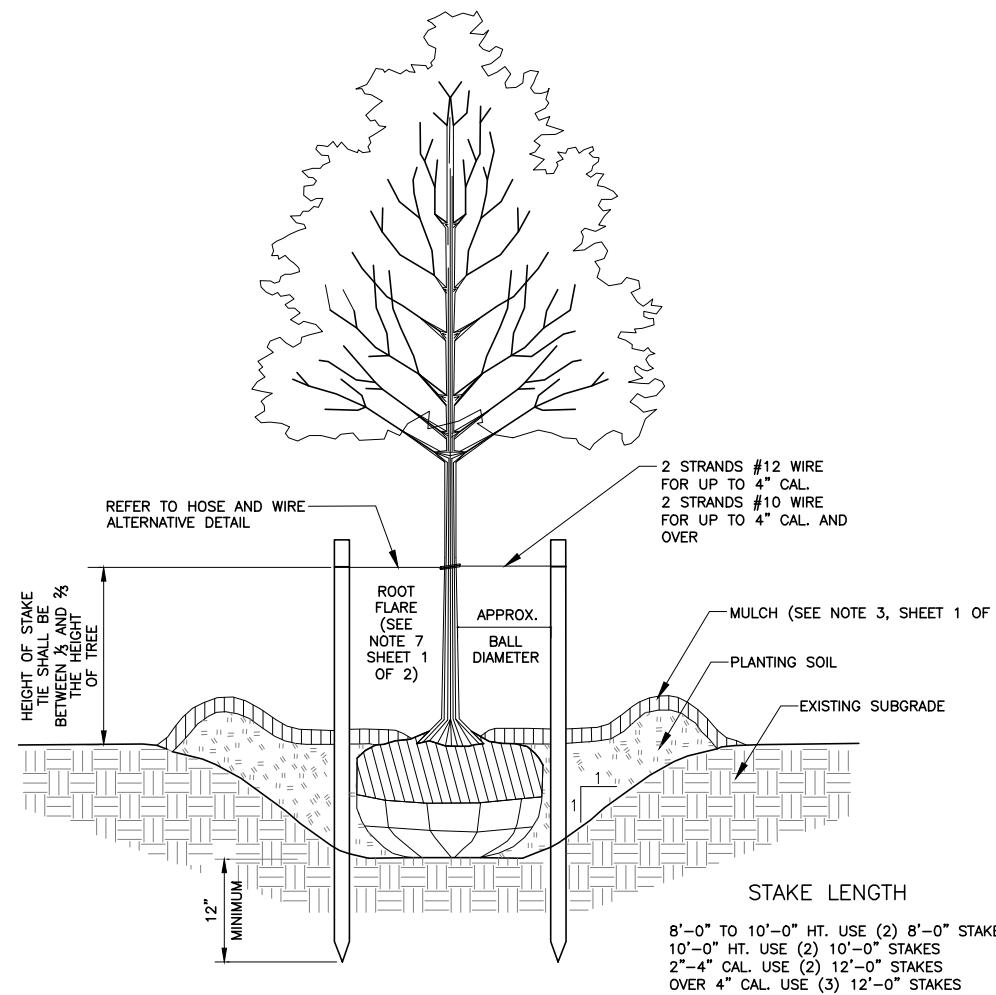
TREE VEGETATION PROTECTION BARRIER ITEM 00.0000



**GENERAL TREE PLANTING**

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			REVISIONS		
				NYMEX TERRACE, DEPRESSION REMEDIATION OPTION I - FULL REMOVAL <b>MISCELLANEOUS DETAILS</b>	
				CITY OF NEW YORK, BOROUGH OF MANHATTAN	
			<b>KSE</b> KS ENGINEERS, P.C.		Engineers • Surveyors • Construction Managers 65 Broadway, Suite 401, New York, N.Y. 10006 Phone: (212) 616-2657, Fax: (212) 616-3060
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			AS SHOWN	01/31/2014	SHEET NO.: 13

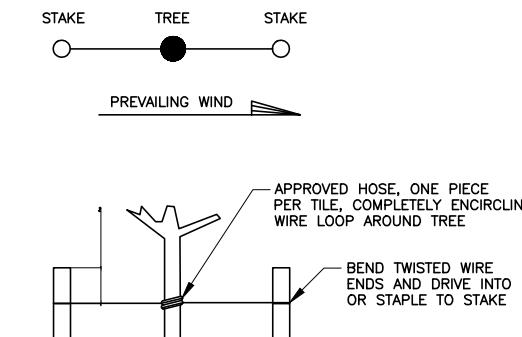
DIEGO ALAIMO  
PROFESSIONAL ENGINEER  
N.Y. LICENSE NO. 053085-1



### TEMPORARY TREE SUPPORT DETAIL

(SEE NOTE 2 THIS SHEET)

NOTES:  
 1. MATERIALS FOR PROTECTION OF PLANTS SHALL BE A COMMERCIAL AVAILABLE PRODUCT OR SYSTEM.  
 2. THIS DETAIL SHOWS ONE ABOVE GROUND TREE SUPPORT METHOD, ANY OTHER METHOD MUST USE COMMERCIALY AVAILABLE PRODUCTS INSTALLED PER THE MANUFACTURER'S SPECIFICATIONS.



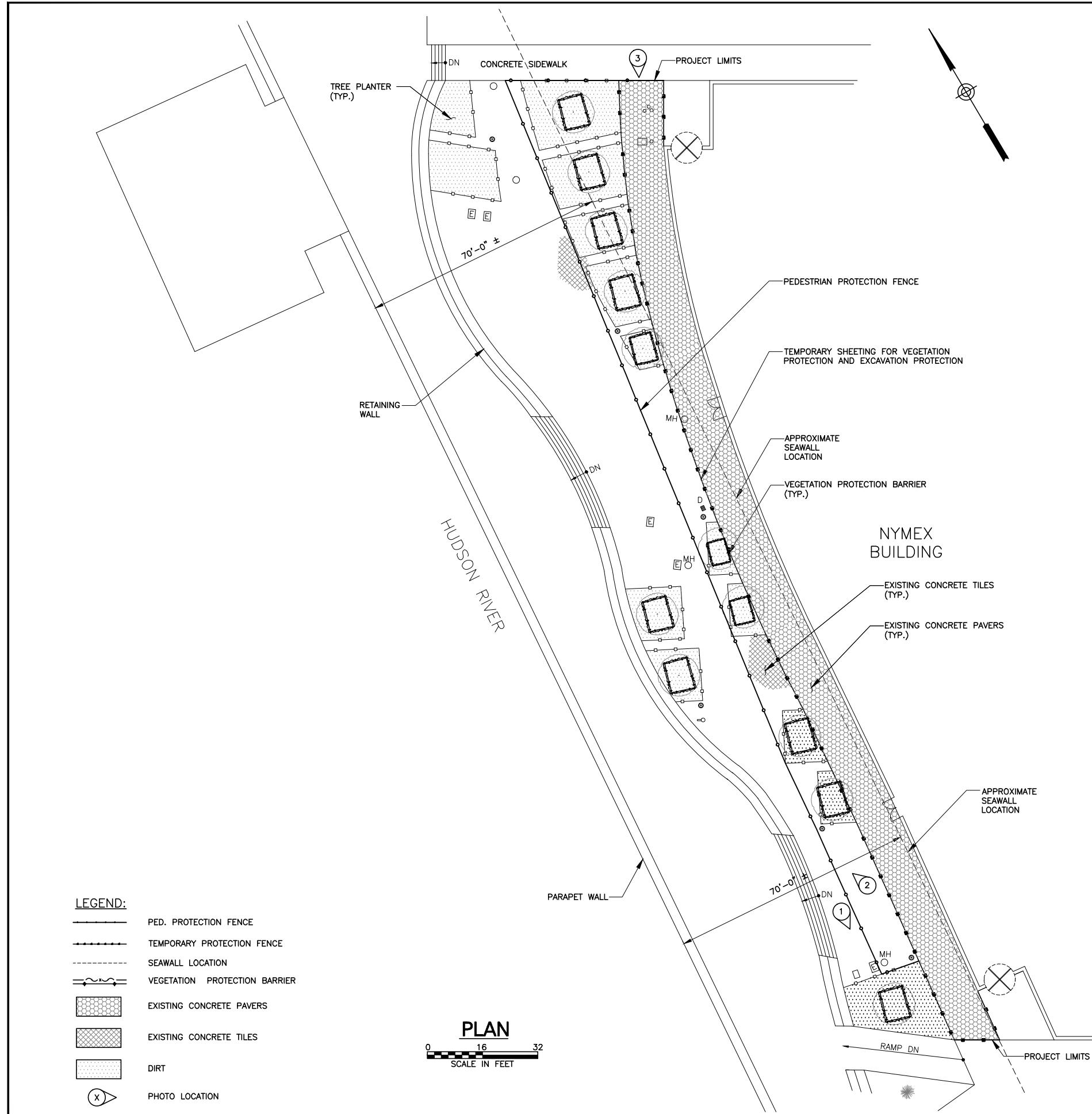
### HOSE AND WIRE ALTERNATIVE

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REVISIONS					
NYMEX TERRACE, DEPRESSION REMEDIATION OPTION I - FULL REMOVAL					MISCELLANEOUS DETAILS - II
CITY OF NEW YORK, BOROUGH OF MANHATTAN					KSE
DIEGO ALAIMO PROFESSIONAL ENGINEER N.Y. LICENSE NO. 053085-1					Engineers • Surveyors • Construction Managers 65 Broadway, Suite 401, New York, N.Y. 10006 Phone: (212) 616-2657, Fax: (212) 616-3060
SCALE:	AS SHOWN	DATE:	01/31/2014	PROJECT NO.:	1254-13
					SHEET NO.: 14

## SOIL EROSION AND SEDIMENT CONTROL NOTES

1. ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES MUST BE IMPLEMENTED, INSPECTED, MONITORED, AND MAINTAINED AS SPECIFIED IN THE NYSDOT SPECIFICATIONS.
  2. THE LOCATIONS OF EROSION AND SEDIMENT CONTROL MEASURES, AS INDICATED IN THE CONTRACT DOCUMENTS MAY REQUIRE FIELD ADJUSTMENTS DEPENDING ON THE SEQUENCE OF CONSTRUCTION ACTIVITIES, CONSTRUCTION METHODS AND/OR ACTUAL FIELD CONDITIONS.
  3. THE ENGINEER IN CHARGE SHALL BE NOTIFIED OF ANY SIGNIFICANT CHANGES TO THE EROSION AND SEDIMENT CONTROL MEASURES INDICATED IN THE CONTRACT DOCUMENTS.
  4. THE CONTRACTOR SHALL SUBMIT FOR APPROVAL TO THE ENGINEER IN CHARGE HIS WRITTEN SCHEDULE AND PROPOSED MEASURES FOR TEMPORARY AND PERMANENT EROSION AND SEDIMENT CONTROL WORK AND SCHEDULE OF OPERATIONS AS REQUIRED BY SECTION 209 OF THE NYSDOT STANDARD SPECIFICATIONS.
  5. ALL DREDGED AND EXCAVATED MATERIAL THAT IS DISPOSED OF ON AN UPLAND SITE SHALL BE SUITABLY STABILIZED WITH SEED AND MULCH IN ACCORDANCE WITH SECTION 209 OF THE NYSDOT STANDARD SPECIFICATIONS SO THAT IT CANNOT REASONABLY RE-ENTER ANY WATER BODY OR WETLAND AREA.
  6. INSPECTION, PERIODIC CLEANING AND MAINTENANCE OF TEMPORARY SOIL EROSION AND POLLUTION DEVICES SHALL BE PERFORMED ON A SCHEDULED BASIS IN ACCORDANCE WITH SECTION 209 OF THE NYSDOT STANDARD SPECIFICATIONS. THE COST OF INSTALLING, CLEANING AND REMOVING TEMPORARY SOIL EROSION AND WATER POLLUTION CONTROL DEVICES SHALL BE PAID FOR UNDER THE ITEMS SHOWN.
  7. ALL CONTROL MEASURES SHALL BE PLACED TO STARTING EARTH WORK OPERATIONS AND SHALL REMAIN IN PLACE UNTIL THE NEW SLOPES ARE STABILIZED WITH SEEDING, MULCH AND/OR SLOPE PROTECTION, IN ACCORDANCE WITH SECTION 209 OF THE NYSDOT STANDARD SPECIFICATIONS.
  8. REFER TO NYSDOT STANDARD SHEETS 209-1 THRU 209-7 FOR SOIL EROSION AND SEDIMENT CONTROL DETAILS.
  9. WHEELS SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO ADJACENT ROADWAYS. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE AND WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.
  10. ALL NECESSARY PRECAUTIONS SHALL BE TAKEN TO PREVENT CONTAMINATION OF ANY STREAM OR WATERWAY BY SILT, SEDIMENT, FUELS, SOLVENTS, LUBRICANTS, EPOXY COATINGS, CONCRETE LEACHATE OR ANY OTHER POLLUTANT ASSOCIATED WITH CONSTRUCTION AND CONSTRUCTION PROCEDURES.
  11. DURING CONSTRUCTION, NO WET OR FRESH CONCRETE OR LEACHATE SHALL BE ALLOWED TO ESCAPE INTO ANY WATERS, NOR SHALL WASHINGS FROM CONCRETE TRUCKS, MIXERS OR OTHER DEVICES BE ALLOWED TO ENTER ANY WETLAND OR WATERS.
  12. DUMP TRUCKS HAULING MATERIAL FROM THE CONSTRUCTION SITE WHICH ARE PRONE TO BLOWING FROM THE WIND WILL BE COVERED BY A TARPAULIN.
  13. SILT FENCING MUST BE INSTALLED PARALLEL TO EXISTING CONTOURS OR CONSTRUCTED IN LEVEL ALIGNMENTS. ENDS OF FENCING MUST BE EXTENDED 10 FT., TRAVELING UPSLOPE AT 45 DEGREES TO THE ALIGNMENT OF THE MAIN FENCING SECTION.
  14. WHERE SILT FENCE IS USED IN AREAS OF CONCENTRATED FLOW, THE ENGINEER IN CHARGE MAY CALL FOR BACKING THE SILT FENCE WITH STRAW BALES. AN APPROVED GEOTEXTILE OR FILTER FENCE MAY BE SUBSTITUTED FOR STRAW BALES AT NO ADDITIONAL COST. GEOTEXTILE SHALL SATISFY THE REQUIREMENTS OF SECTION 207-2 OF THE STANDARD SPECIFICATIONS.
  15. CONTROL MEASURES SHALL BE USED AS NECESSARY AND SHALL FOLLOW DITCH EXCAVATING OPERATIONS. THEY SHALL REMAIN IN PLACE UNTIL THE NEW SLOPES HAVE BEEN STABILIZED BY SEEDING, MULCH AND OR SLOPE PROTECTION IN ACCORDANCE WITH SECTION 209 OF THE NYSDOT STANDARD SPECIFICATIONS.
  16. IF CONSTRUCTION ACTIVITIES ARE DISCONTINUED IN AREAS OF SOIL DISTURBANCE BEFORE FINAL GRADING IS COMPLETE, THEN TEMPORARY GRADING SHALL INCLUDE TEMPORARY SEEDING AND MULCH (ITEM 209.1003) THAT WILL BE STABILIZED WITHIN 7 DAYS OF EXPOSURE. MULCH SHALL BE MAINTAINED UNTIL SUITABLE VEGETATIVE COVER IS ESTABLISHED. THIS PAY ITEM IS ESTIMATED AND THE QUANTITY MAY VARY BASED ON ACTUAL CONSTRUCTION CONDITIONS.
  17. CONTAIN ANY TEMPORARY STOCKPILES OF TOPSOIL OR FILL WITH SILT FENCES AS SHOWN IN THE SILT FENCE DETAIL IN THE NYSDOT STANDARD SHEETS AND STANDARD SPECIFICATIONS. PILES EXPOSED FOR LONGER THAN TWO WEEKS SHALL BE STABILIZED BY SEEDING, MULCH AND OR SLOPE PROTECTION IN ACCORDANCE WITH SECTION 209 OF THE NYSDOT STANDARD SPECIFICATIONS .
  18. ALL METHODS AND EQUIPMENT PROPOSED BY THE CONTRACTOR TO ACCOMPLISH THE WORK SHALL BE SUBJECT TO THE APPROVAL OF THE ENGINEER IN CHARGE.
  19. AT THE COMPLETION OF CONSTRUCTION AND PERMANENT SOIL STABILIZATION. SEDIMENT SHALL BE REMOVED FROM NEW DRAINAGE PIPES, DRAINAGE STRUCTURES, AND CHECK DAMS. THE COST FOR SEDIMENT REMOVAL SHALL BE INCLUDED IN THE COST BID FOR THE EROSION CONTROL ITEMS.
  20. THE LOCATION OF EROSION AND SEDIMENT CONTROL MEASURES AS INDICATED IN THE CONTRACT DOCUMENTS. MAY REQUIRE FIELD ADJUSTMENTS DEPENDING ON THE SEQUENCE OF CONSTRUCTION ACTIVITIES, CONSTRUCTION METHODS AND/OR ACTUAL FIELD CONDITIONS. NO MODIFICATIONS WILL BE MADE WITHOUT THE APPROVAL OF THE ENGINEER.
  21. THE SIDEWALKS MUST BE KEPT CLEAN OF MUD, DIRT, AND OTHER DEBRIS AT ALL TIMES.
  22. REFER TO DUST CONTROL REQUIREMENTS IN STANDARD SPECIFICATIONS 203 AND 619.

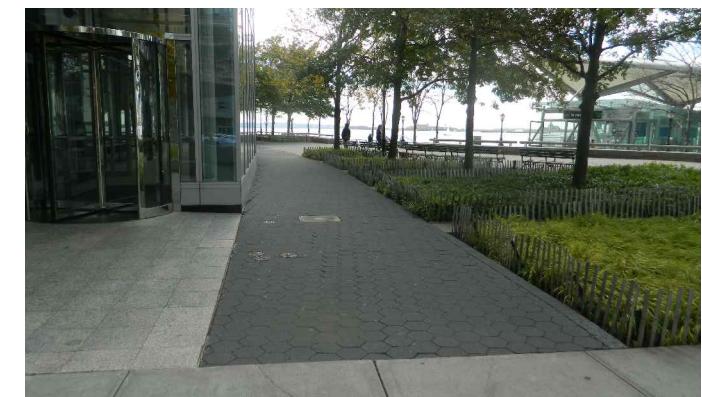
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		REVISIONS	NYMEX TERRACE, DEPRESSION REMEDIATION OPTION I – FULL REMOVAL		
			<b>EROSION AND SEDIMENT CONTROL GENERAL NOTES</b>		
			CITY OF NEW YORK, BOROUGH OF MANHATTAN		
			<b>KSE</b> <b>KS ENGINEERS, P.C.</b>		Engineers • Surveyors • Construction Managers 65 Broadway, Suite 401, New York, N.Y. 10006 Phone: (212) 616-2657, Fax: (212) 616-3060
<hr/> DIEGO ALAIMO		SCALE: AS SHOWN	DATE: 01/31/2014	PROJECT NO.: 1254-13	SHEET NO.: <b>15</b>



**PHOTO 1**

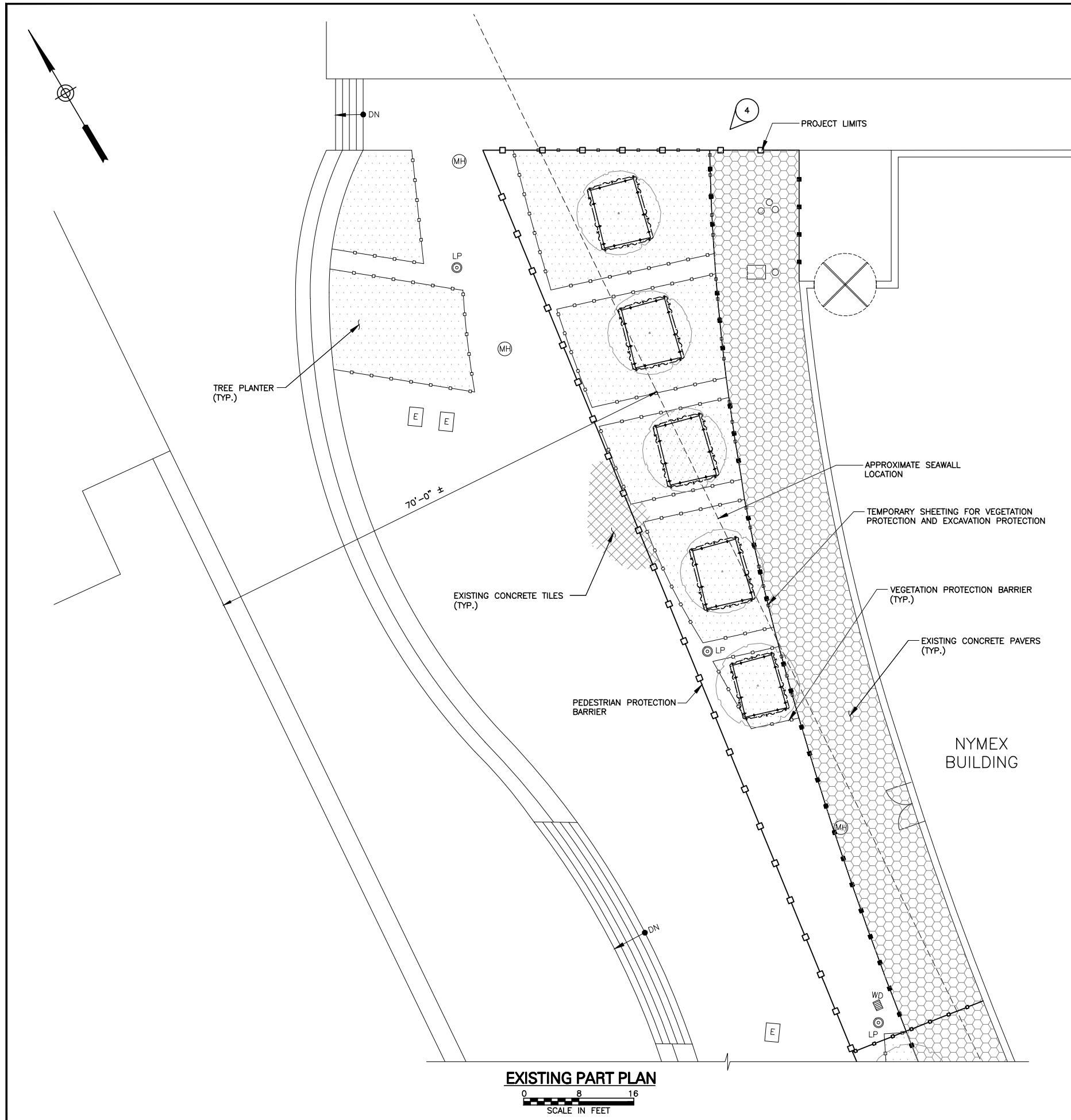


**PHOTO 2**



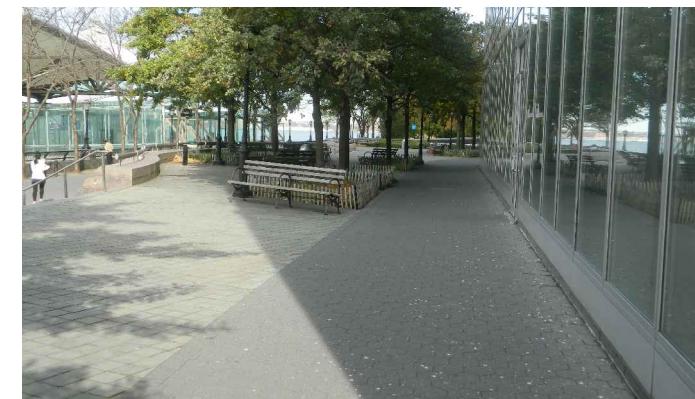
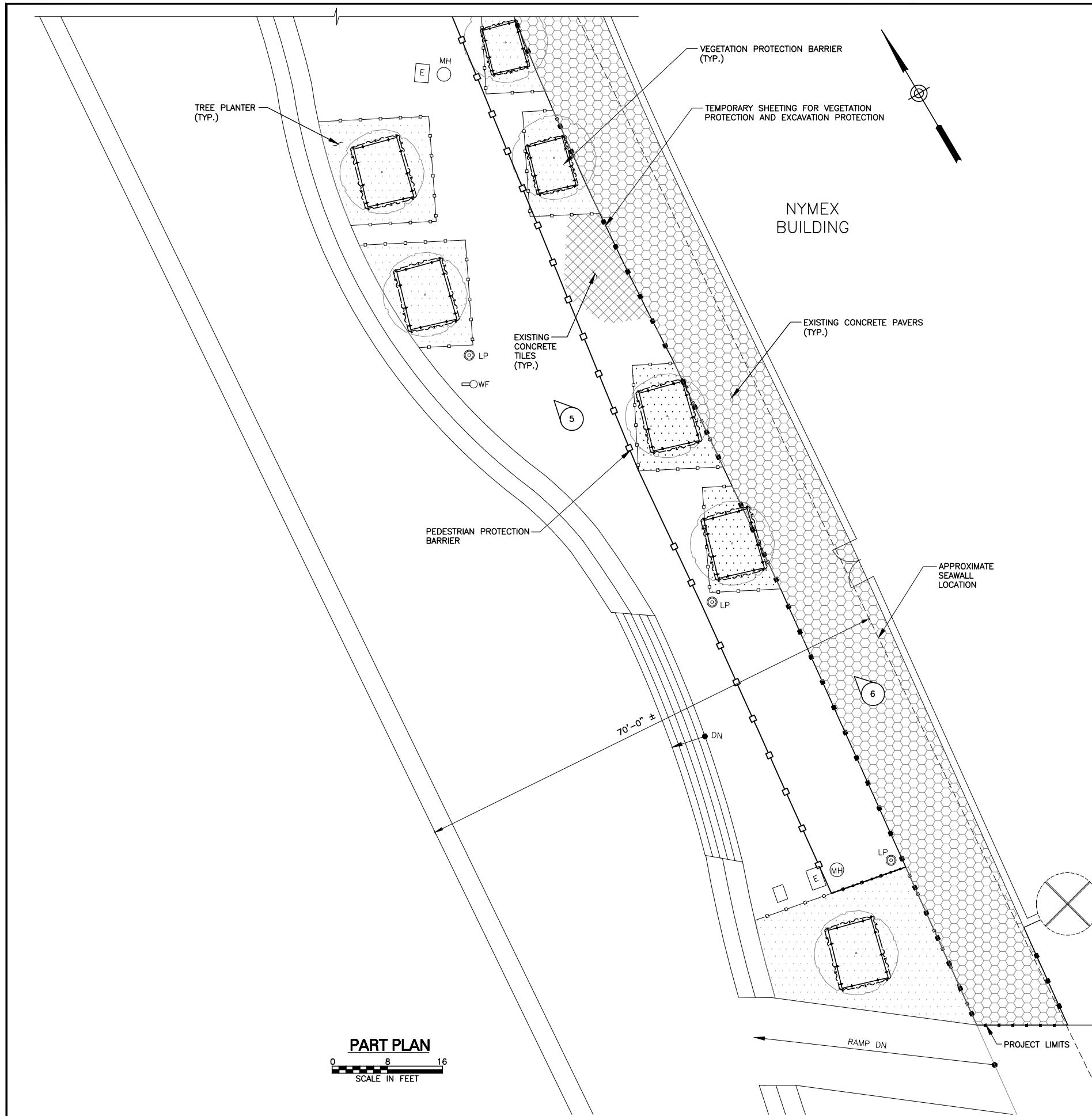
**PHOTO 3**

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			REVISIONS	NYMEX TERRACE, DEPRESSION REMEDIATION OPTION I – FULL REMOVAL <b>VEGETATION PROTECTION PLAN</b> CITY OF NEW YORK, BOROUGH OF MANHATTAN	
<b>KSE</b> <b>KS ENGINEERS, P.C.</b>					Engineers • Surveyors • Construction Managers 65 Broadway, Suite 401, New York, N.Y. 10006 Phone: (212) 616-2657, Fax: (212) 616-3060
<b>DIEGO ALAIMO</b> PROFESSIONAL ENGINEER N.Y. LICENSE NO. 053085-1					SCALE: AS SHOWN DATE: 01/31/2014 PROJECT NO.: 1254-13 SHEET NO.: 16
Drawing File: Z:\2012-1254\Task 13; NYMEX Depression Remediation, Design and Construction Support\Preliminary Data Collection Work, Task 8, NYMEX16 VEGETATION PROTECTION PLAN.dwg Feb 11, 2014 - 12:21pm					

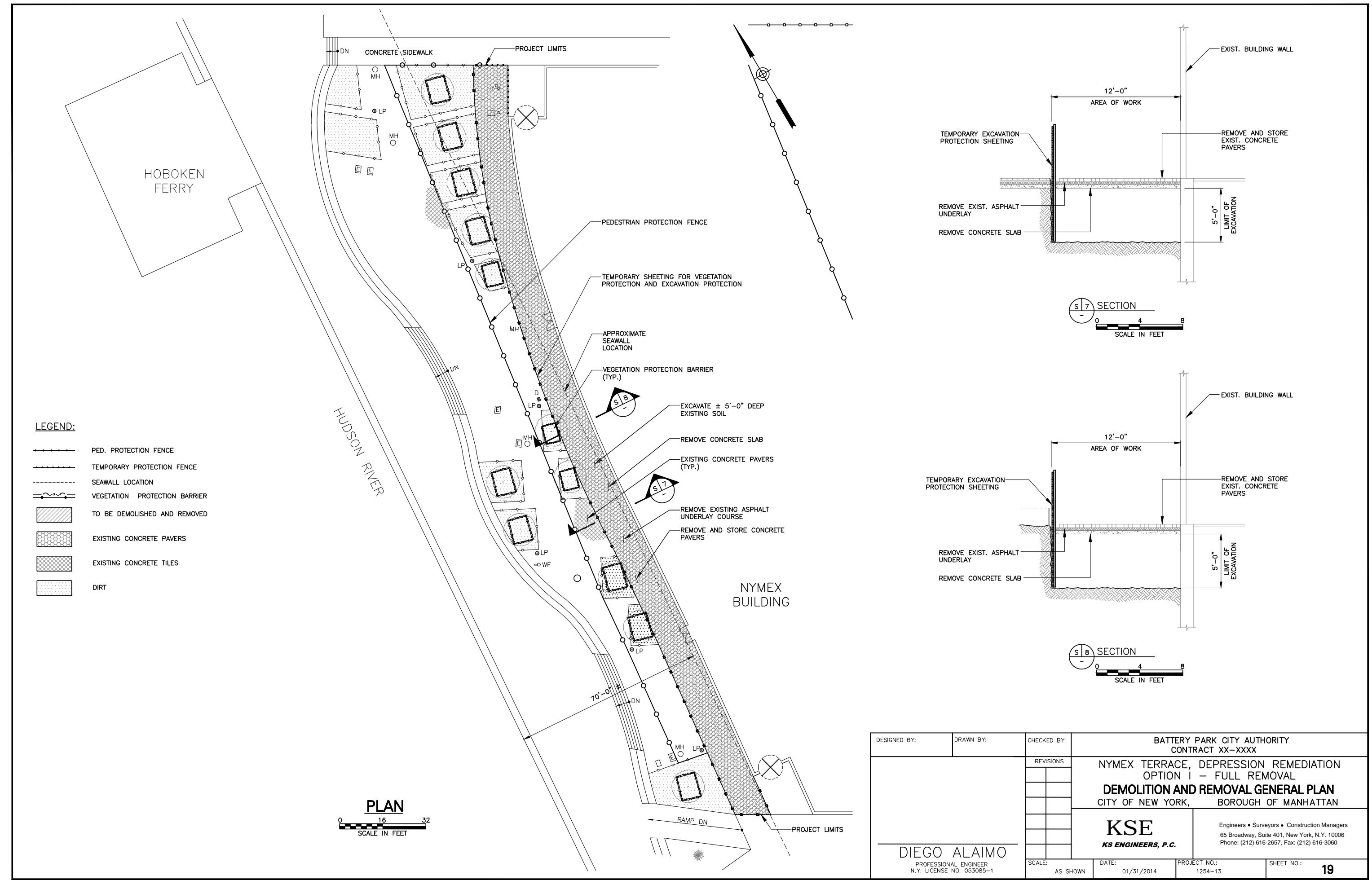


**PHOTO 4**

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			REVISIONS	NYMEX TERRACE, DEPRESSION REMEDIATION OPTION I – FULL REMOVAL	
				<b>VEGETATION PROTECTION PART PLAN - I</b>	
				CITY OF NEW YORK, BOROUGH OF MANHATTAN	
				KSE <b>KS ENGINEERS, P.C.</b>	Engineers • Surveyors • Construction Managers 65 Broadway, Suite 401, New York, N.Y. 10006 Phone: (212) 616-2657, Fax: (212) 616-3060
			SCALE: AS SHOWN	DATE: 01/31/2014	PROJECT NO.: 1254-13
			SHEET NO.: 17		

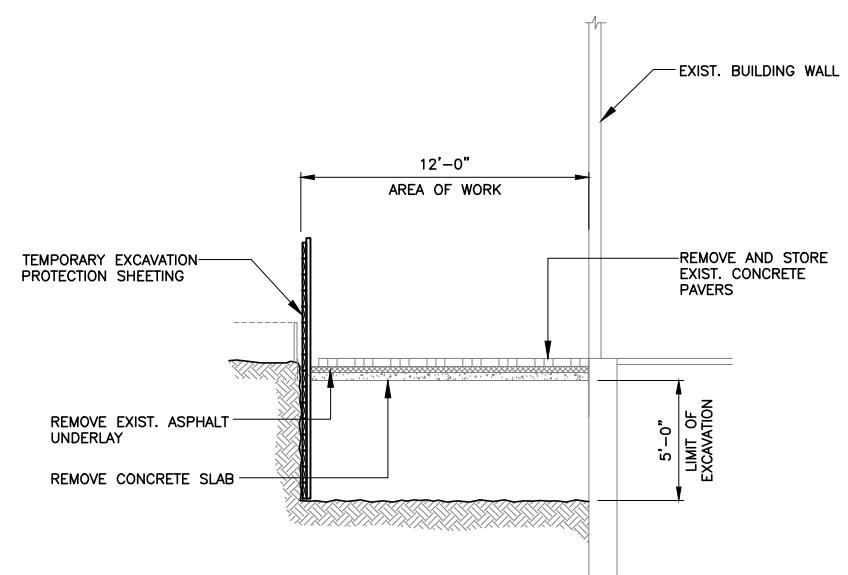
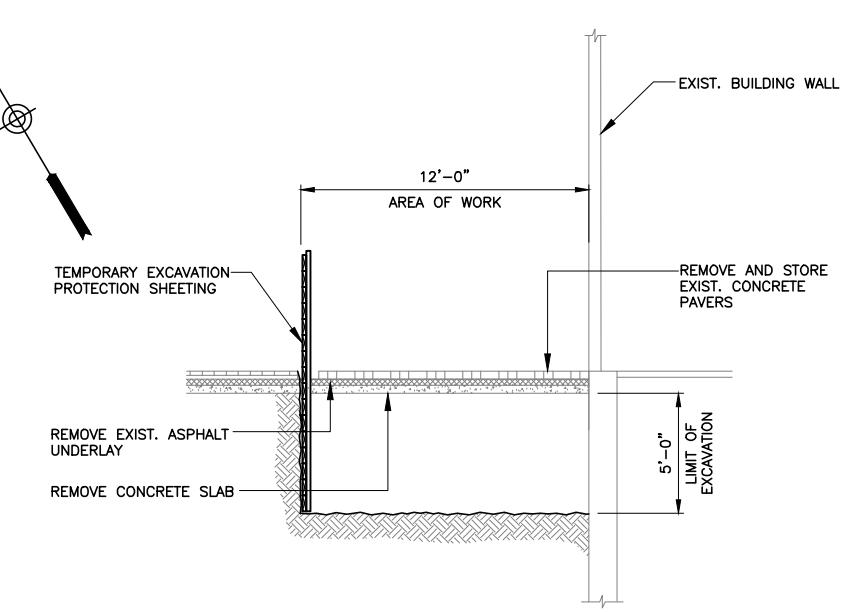
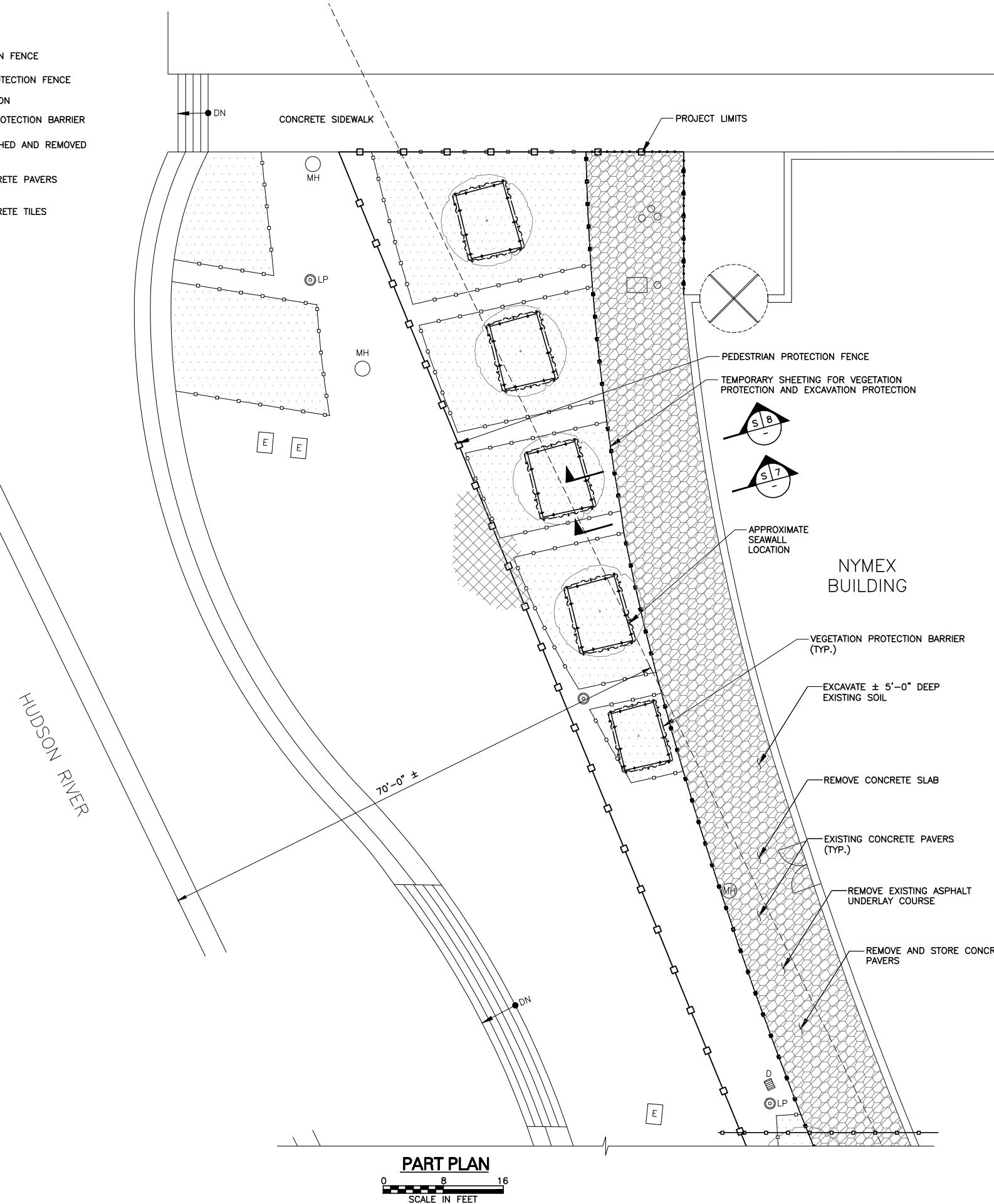


DESIGNED BY:	DRAWN BY:	CHECKED BY:	BATTERY PARK CITY AUTHORITY CONTRACT XX-XXXX		
			REVISIONS	NYMEX TERRACE, DEPRESSION REMEDIATION OPTION I – FULL REMOVAL <b>VEGETATION PROTECTION PART PLAN - II</b> CITY OF NEW YORK, BOROUGH OF MANHATTAN	
<b>KSE</b> <b>KS ENGINEERS, P.C.</b>					Engineers • Surveyors • Construction Managers 65 Broadway, Suite 401, New York, N.Y. 10006 Phone: (212) 616-2657, Fax: (212) 616-3060
DIEGO ALAIMO PROFESSIONAL ENGINEER N.Y. LICENSE NO. 053085-1	SCALE: AS SHOWN	DATE: 01/31/2014	PROJECT NO.: 1254-13	SHEET NO.: 18	

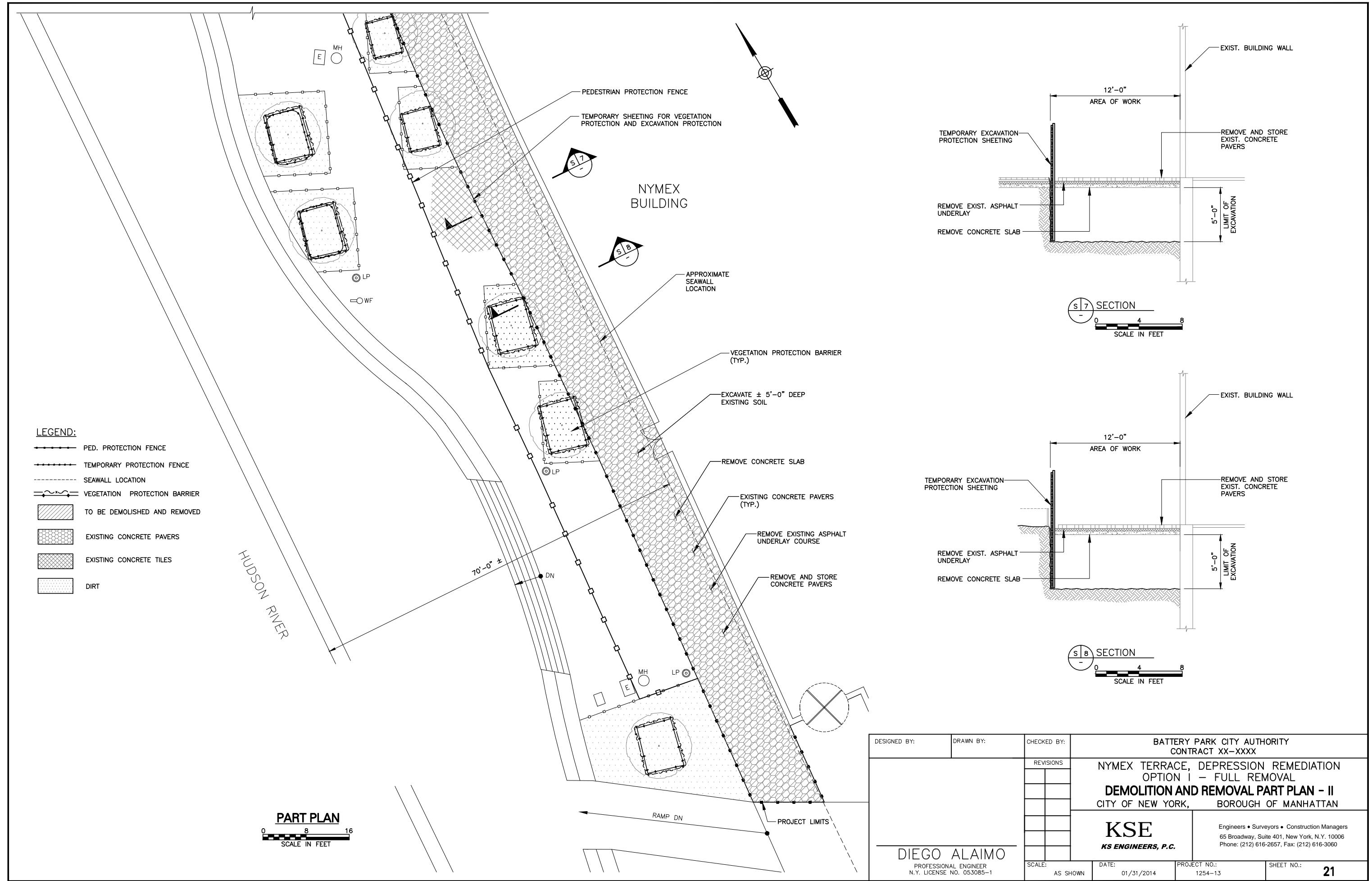


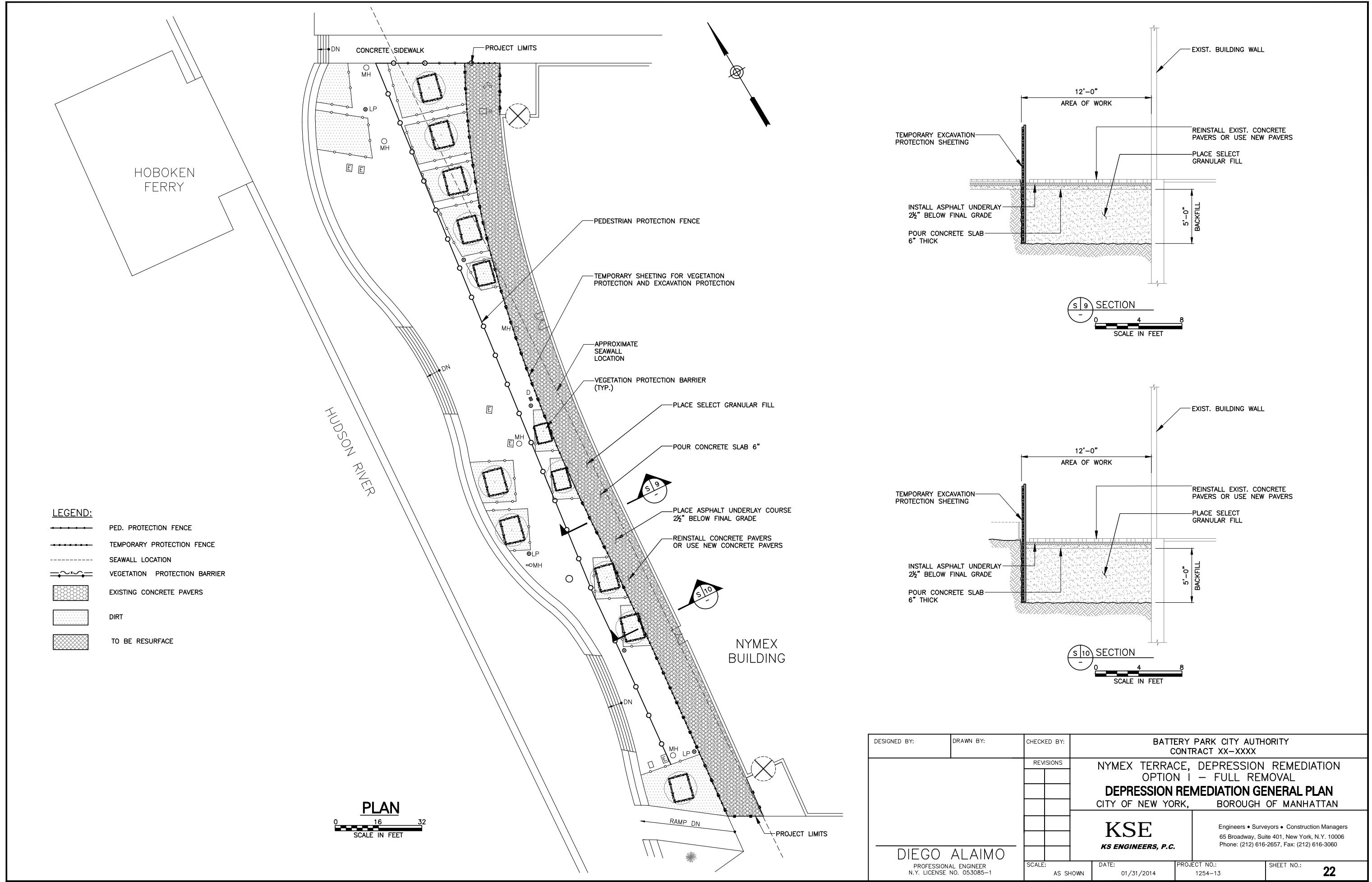
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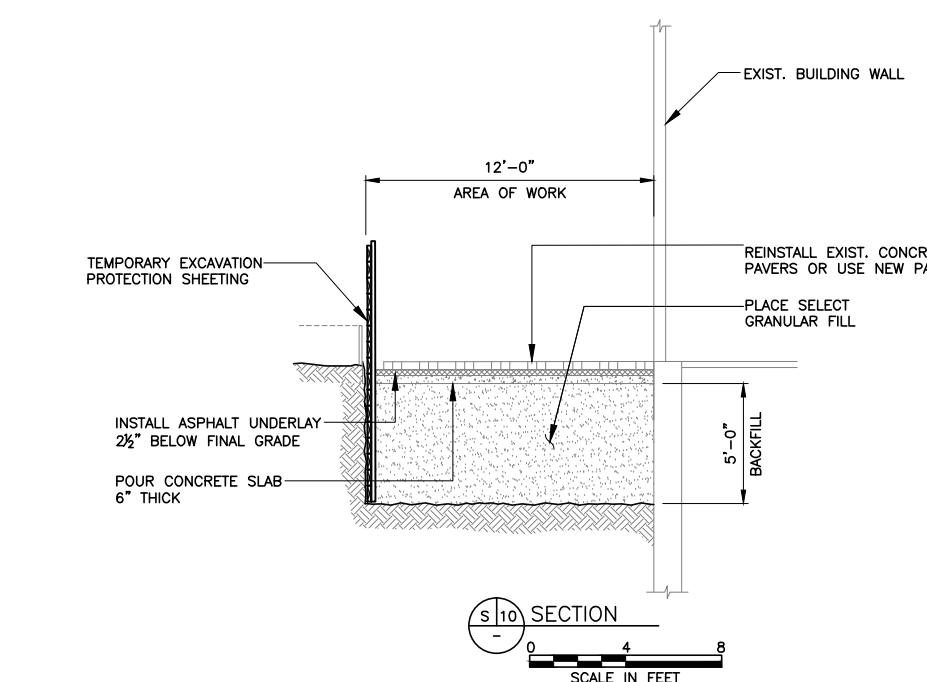
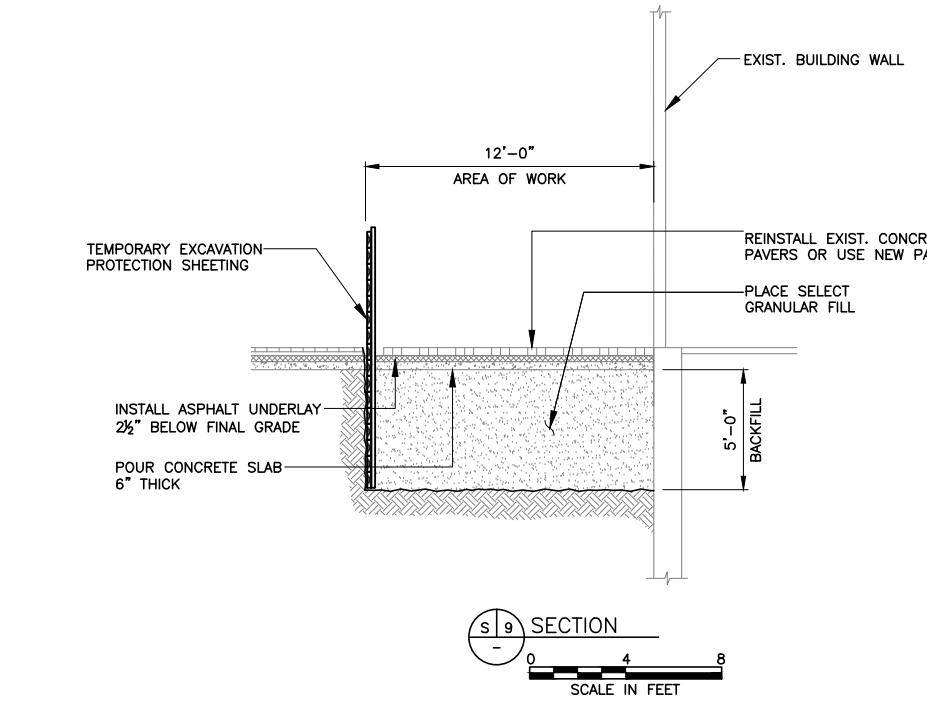
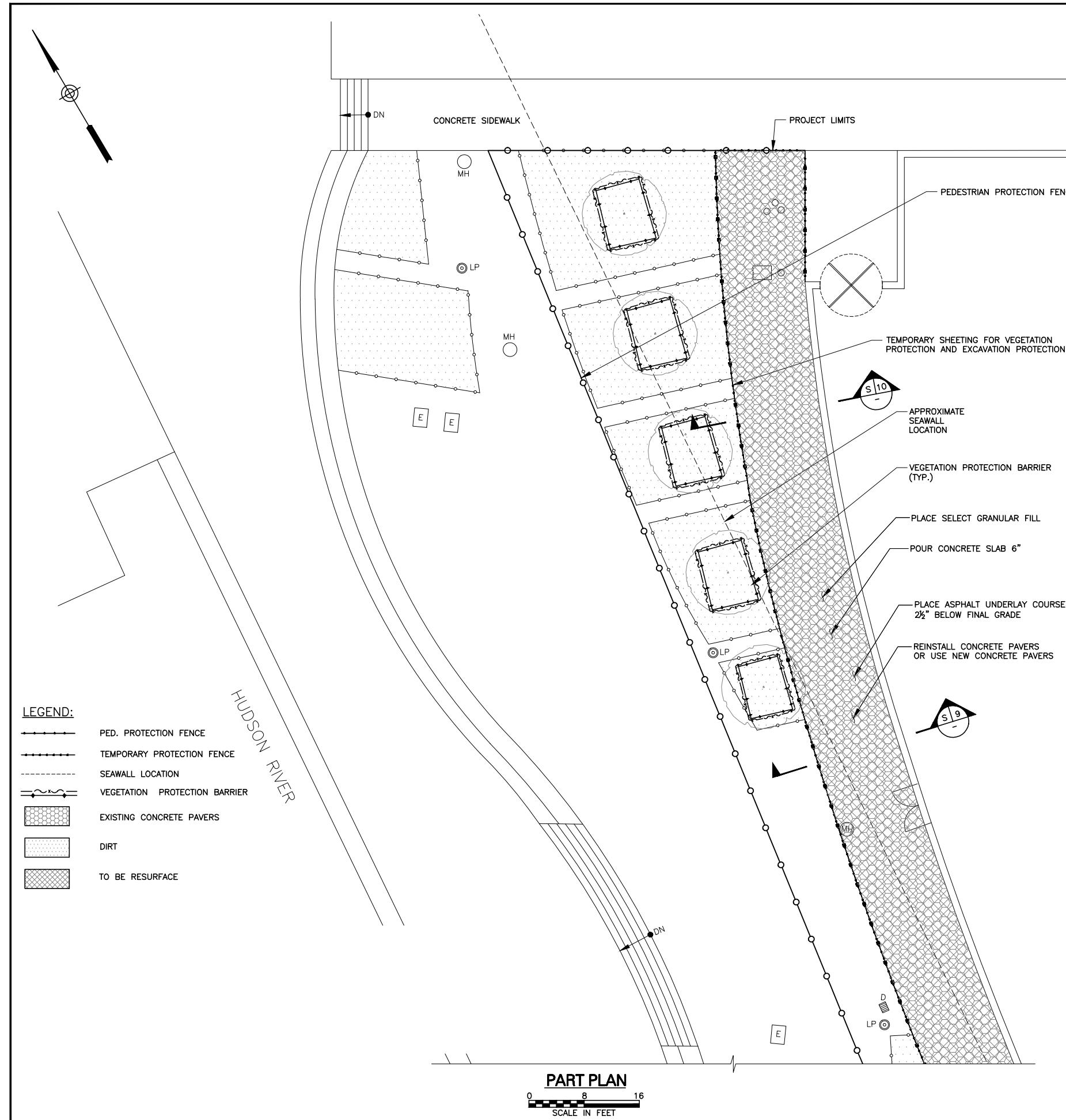
- PED. PROTECTION FENCE
- TEMPORARY PROTECTION FENCE
- SEAWALL LOCATION
- VEGETATION PROTECTION BARRIER
- TO BE DEMOLISHED AND REMOVED
- EXISTING CONCRETE PAVERS
- EXISTING CONCRETE TILES
- DIRT



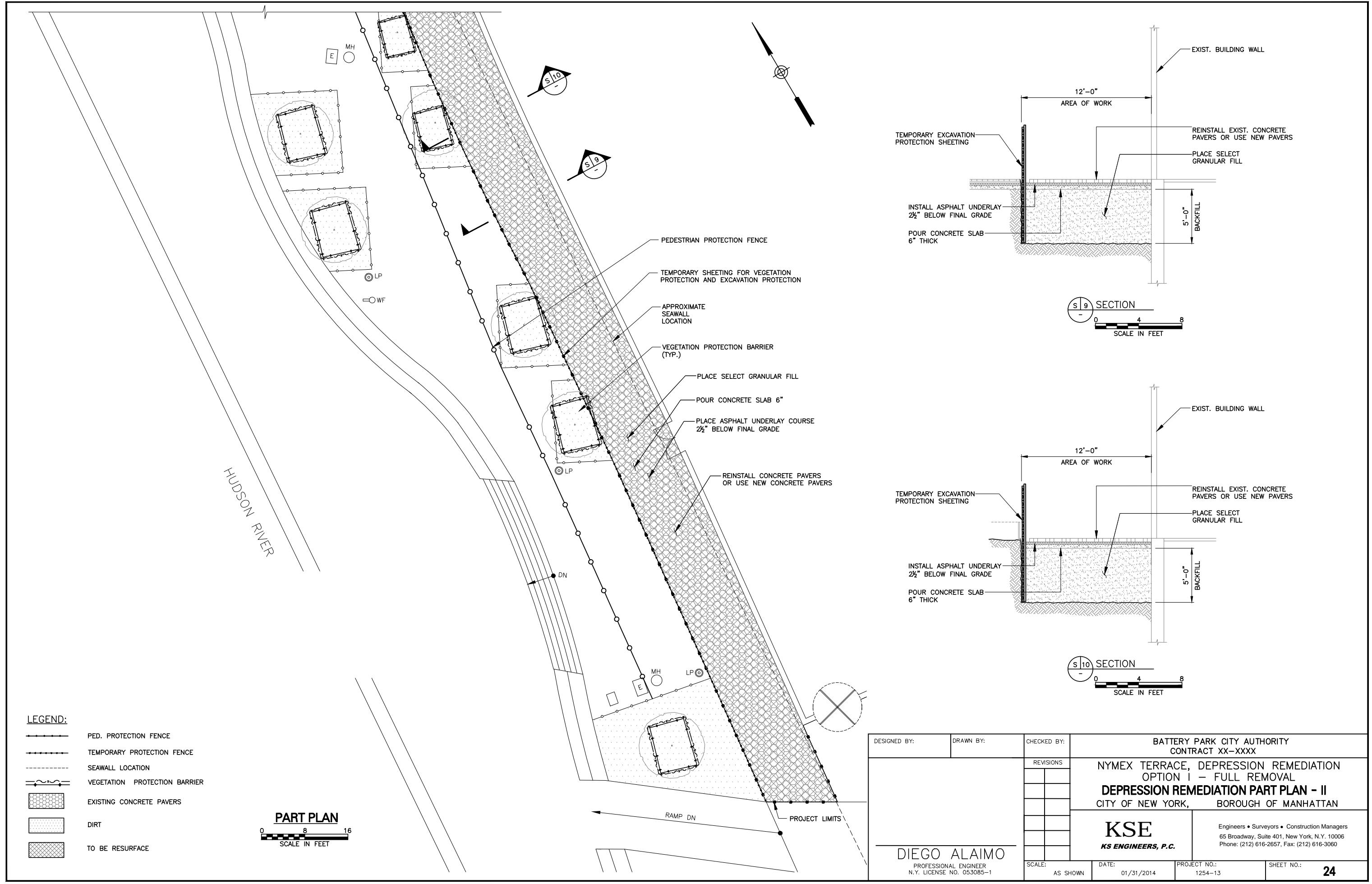
DESIGNED BY:	DRAWN BY:	CHECKED BY:	BATTERY PARK CITY AUTHORITY CONTRACT XX-XXXX		
			REVISIONS	NYMEX TERRACE, DEPRESSION REMEDIATION OPTION I - FULL REMOVAL	
				<b>DEMOLITION AND REMOVAL PART PLAN - I</b>	
				CITY OF NEW YORK, BOROUGH OF MANHATTAN	
				<b>KSE</b> <b>KS ENGINEERS, P.C.</b>	Engineers • Surveyors • Construction Managers 65 Broadway, Suite 401, New York, N.Y. 10006 Phone: (212) 616-2657, Fax: (212) 616-3060
			SCALE: AS SHOWN	DATE: 01/31/2014	PROJECT NO.: 1254-13
			SHEET NO.: <b>20</b>		

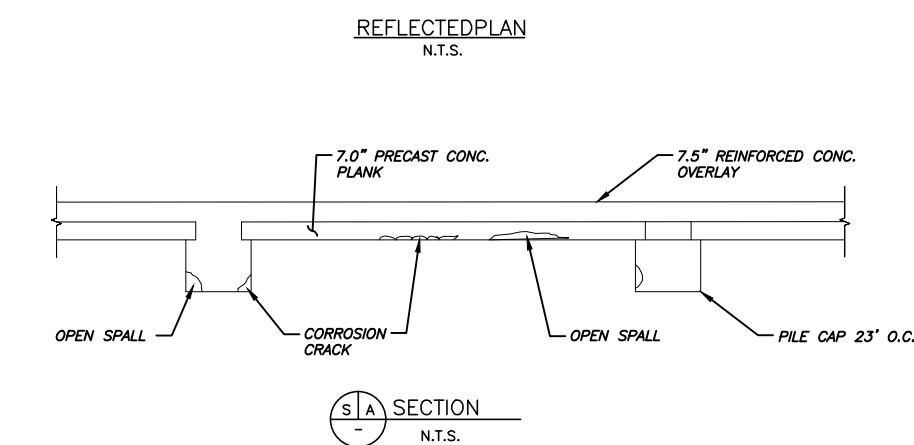
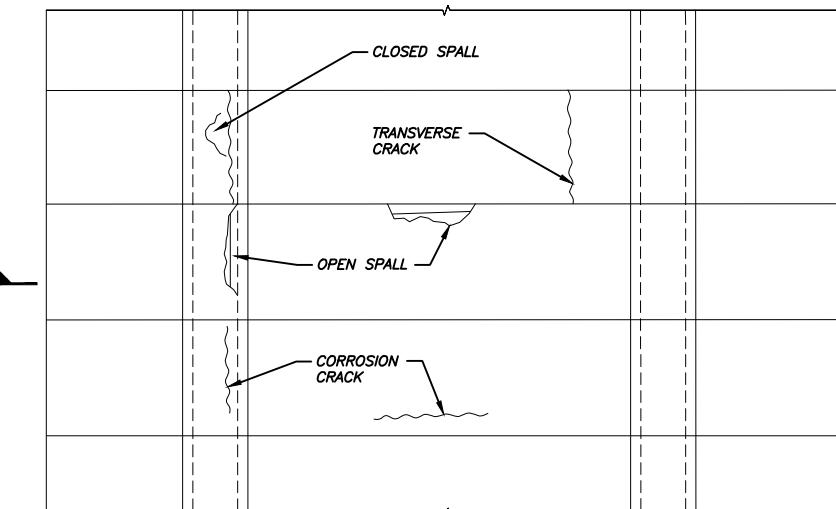
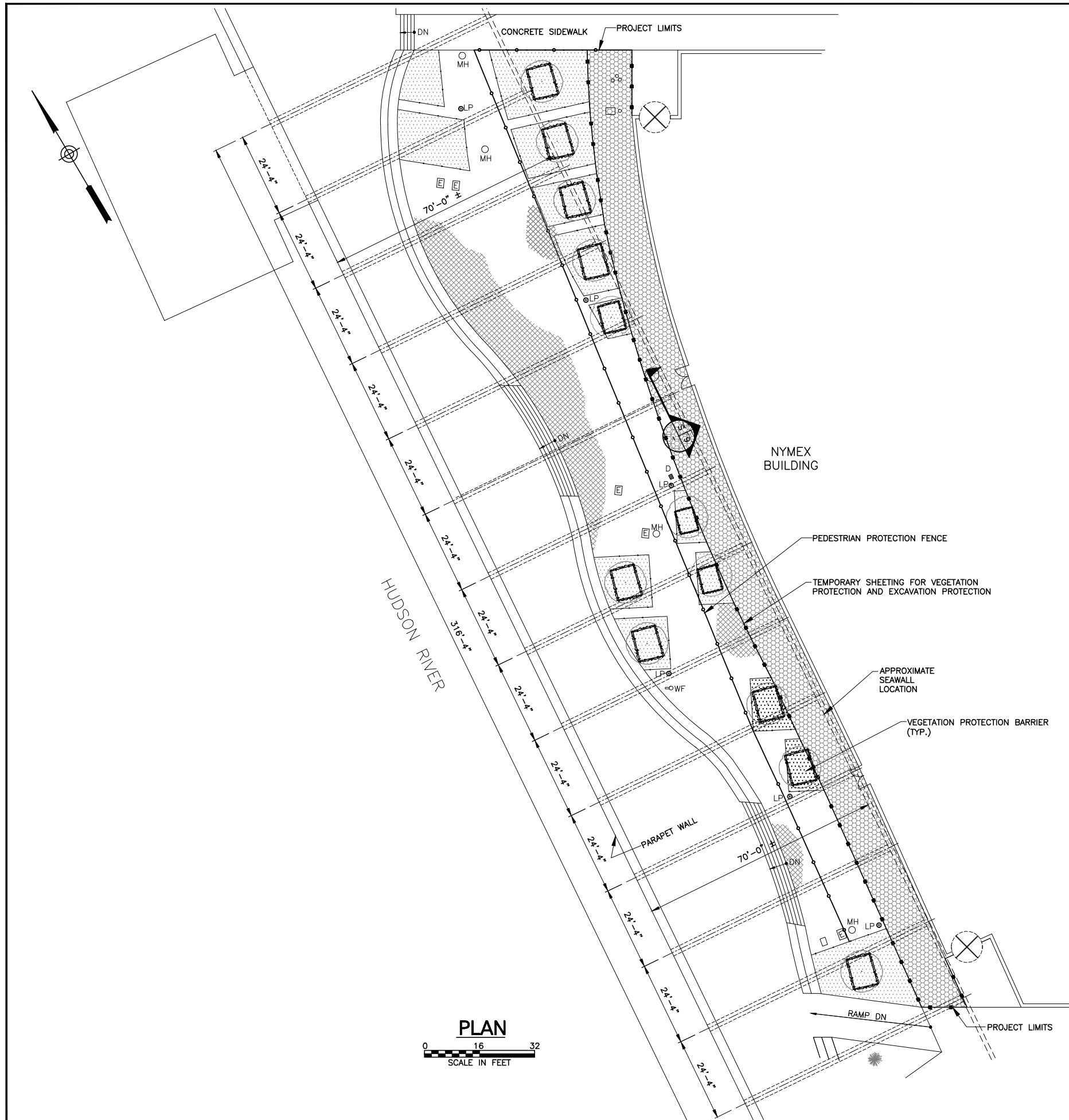






DESIGNED BY:	DRAWN BY:	CHECKED BY:	BATTERY PARK CITY AUTHORITY CONTRACT XX-XXXX		
			REVISIONS NYMEX TERRACE, DEPRESSION REMEDIATION OPTION I – FULL REMOVAL <b>DEPRESSION REMEDIATION PART PLAN - I</b> CITY OF NEW YORK, BOROUGH OF MANHATTAN		
			 <b>KS ENGINEERS, P.C.</b>		
			Engineers • Surveyors • Construction Managers 65 Broadway, Suite 401, New York, N.Y. 10006 Phone: (212) 616-2657, Fax: (212) 616-3060		
<b>DIEGO ALAIMO</b> PROFESSIONAL ENGINEER N.Y. LICENSE NO. 053085-1			SCALE:	DATE:	PROJECT NO.:
			AS SHOWN	01/31/2014	1254-13
					SHEET NO.:
					<b>23</b>



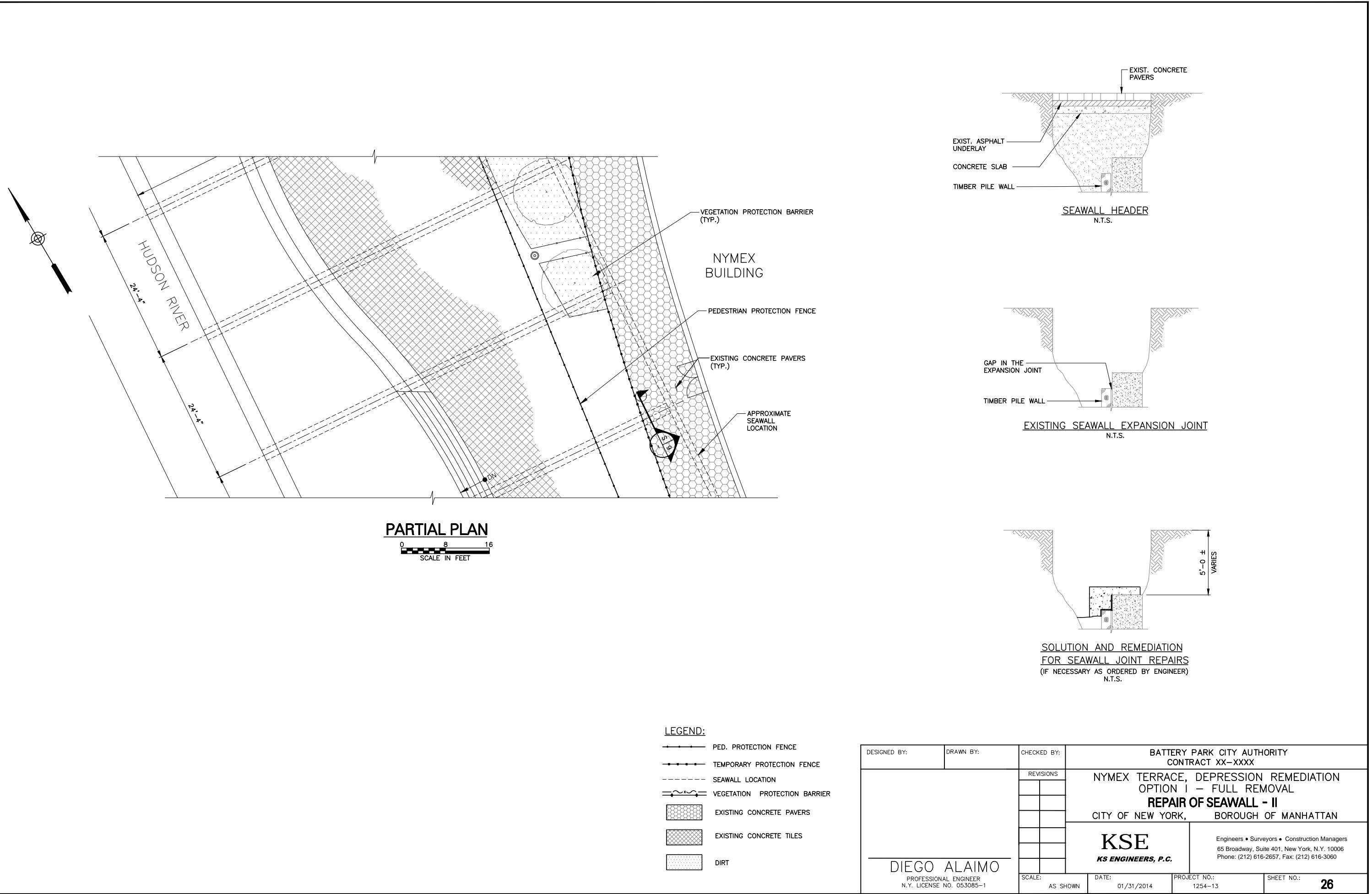


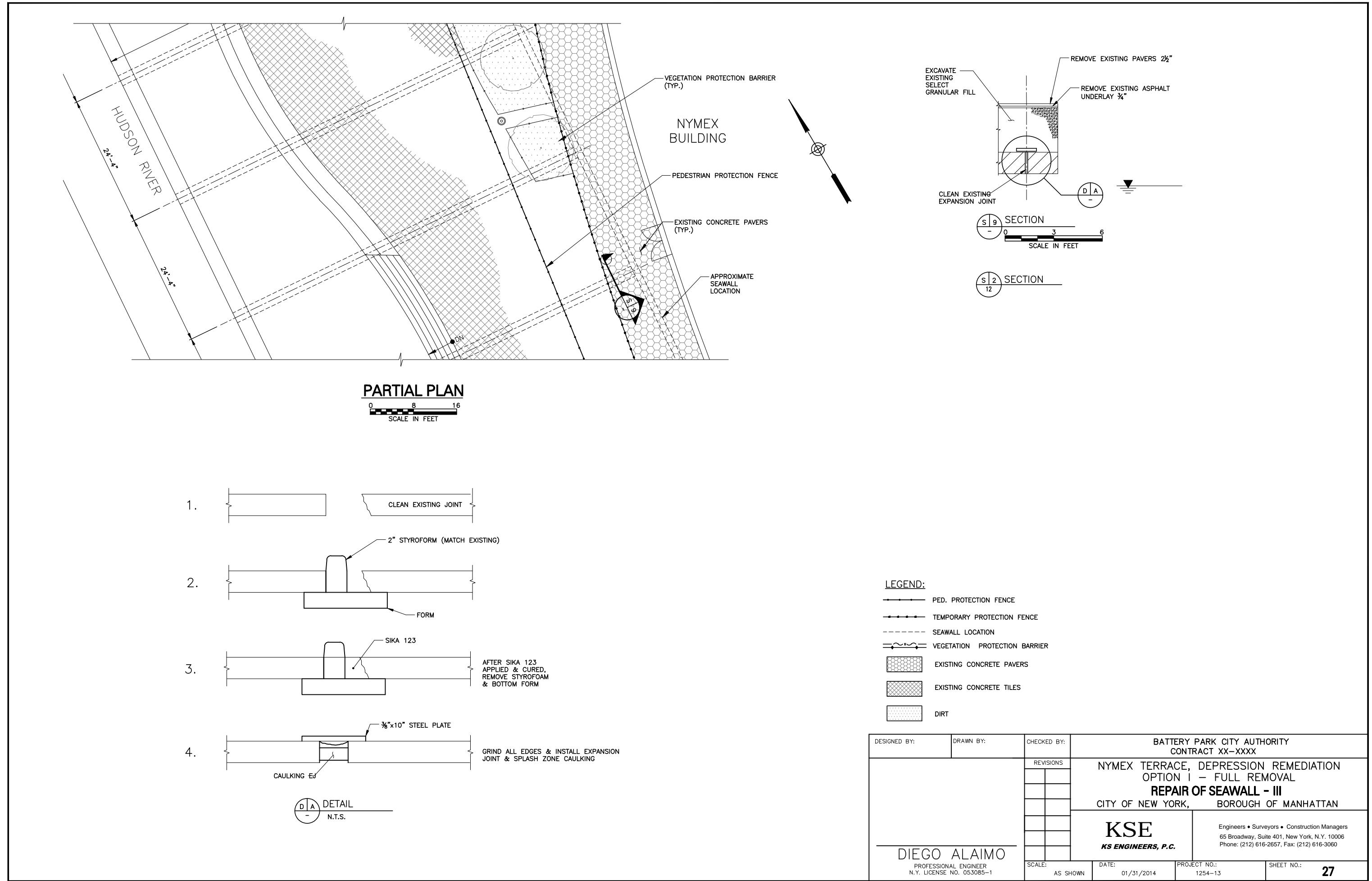
### TYPE OF DEFECTS TO BE REPAIRED

#### LEGEND:

- PED. PROTECTION FENCE
- - - TEMPORARY PROTECTION FENCE
- - - - SEAWALL LOCATION
- ~~~~~ VEGETATION PROTECTION BARRIER
- [Hatched Box] EXISTING CONCRETE PAVERS
- [Cross-hatched Box] EXISTING CONCRETE TILES
- [Dotted Box] DIRT

DESIGNED BY:	DRAWN BY:	CHECKED BY:	BATTERY PARK CITY AUTHORITY CONTRACT XX-XXXX		
			REVISIONS	NYMEX TERRACE, DEPRESSION REMEDIATION OPTION I – FULL REMOVAL <b>REPAIR OF SEAWALL - I (IF NECESSARY)</b> CITY OF NEW YORK, BOROUGH OF MANHATTAN	
<b>KSE</b> KS ENGINEERS, P.C.					Engineers • Surveyors • Construction Managers 65 Broadway, Suite 401, New York, N.Y. 10006 Phone: (212) 616-2657, Fax: (212) 616-3060
<b>DIEGO ALAIMO</b> PROFESSIONAL ENGINEER N.Y. LICENSE NO. 053085-1					SCALE: AS SHOWN DATE: 01/31/2014 PROJECT NO.: 1254-13 SHEET NO.: 25





**NYMEX Depression Remediation**

**Option I – Full Removal**

**Owner: Battery Park City Authority**

**Construction Estimate of Quantities:**

<b><u>Item Number:</u></b>	<b><u>Item Description:</u></b>	<b><u>Unit:</u></b>	<b><u>Quantity:</u></b>	<b><u>Price \$ per Unit:</u></b>	<b><u>Total \$ per Item:</u></b>
201.06	Clearing and Grubbing	L.S.	1.00		
203.02	Unclassified Excavation and Disposal	C.Y.	380.00		
203.01125413	Compaction / Compensation Grouting Protection of Structures from Settlement due to Soft Ground - Item Requires Design by Contractor	L.S.	0.00		
203.07	Select Granular Fill	C.Y.	510.00		
203.21	Select Structural Fill	C.Y.	170.00		
204.01	Controlled Low Strength Material - CLSM	C.Y.	0.00		
206.01	Structure Excavation	C.Y.	340.00		
206.02	Trench and Culvert Excavation	C.Y.	0.00		
207.20	Geotextile Bedding	S.F.	3,680.00		
207.26	Prefabricated Composite Structural Drain	S.F.	1,540.00		
207.96000099	Geogrid Mechanically Stabilized Layer	S.F.	3,680.00		
209.13	Silt Fence - Temporary	L.F.	270.00		
520.50140008	Saw Cutting Asphalt Pavement, Asphalt Surface Course, Concrete Pavement or Asphalt Overlay on Concrete Pavement	L.F.	230.00		
552.16000199	Sheeting / Excavation Protection System	S.F.	1,800.00		
555.0105	Concrete for Structures, Class A; Underlayment	C.Y.	72.00		
595.50000018	Sheet Applied Waterproofing Membrane	S.Y.	575.00		
605.1701	Optional Underdrain Pipe, 4 Inch Diameter	L.F.	310.00		
607.41010010	Temporary Plastic Barrier Fence	L.F.	360.00		
608.020102	Hot Mix Asphalt (HMA) Sidewalks, Driveways, Bicycle Paths, and Vegetation Control Strips	Ton	25.00		
610.1403	Manufactured Topsoil – Lawns, BPCA Conservancy Group – Special Mix Design; Approved Suppliers	C.Y.	12.00		

**The Battery Park City Authority**    *Contract No.* _____

**NYMEX Depression Remediation**    **Option I – Full Removal**

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<b>Item Number:</b>	<b>Item Description:</b>	<b>Unit:</b>	<b>Quantity:</b>	<b>Price \$ per Unit:</b>	<b>Total \$ per Item:</b>
610.1602	Turf Establishment - Lawns	S.F.	630.00		
610.19	Watering Vegetations	Gal.	1,000.00		
614.09	Tree Root Pruning	L.F.	450.00		
619.0101	Work Zone Safety / Traffic Control, WZSC	L.S.	1.00		
619.04	Type III Construction Barricades	L.F.	90.00		
623.12	Crushed Stone (In-Place Measure)	C.Y.	23.00		
1254/10-01	Mobilization	L.S.	1.00		
1254/10-03	Preconstruction Survey	L.S.	1.00		
1254/10-05	Remove and Dispose Existing Concrete Underlayment, 5 Inch Thick, In Asphalt Pavers Sidewalk Area	S.F.	3,680.00		
1254/10-06	Remove, Refurbish and Store Existing Asphalt Pavers, 2 ½ Inch Thick	S.F.	3,680.00		
1254/10-16	Reinstall Asphalt Concrete Pavers (up to 50% of Replacement New Pavers to be Included in the Price Bid)	S.F.	3,680.00		
556.01	See Wall Expansion Joint Repairs	L.F.	450.00		
	<b>Total Construction cost:</b>				

**Additional Items to be provided by Contractors for Bid Evaluation:**  
**Time and Materials Prices for Additional Work ONLY**

<b>A</b>	<b><u>LABOR COST:</u></b>	<b><u>Unit</u></b>	<b><u>\$ Per Unit</u></b>
1	Laborer Foremen (1 Foremen x 4 Days x 8 Hr)	Per Hr	\$ -
2	Laborer (1 Laborers x 4 Days x 8 Hr)	Per Hr	\$ -
3	Operating Engineer (1 Operator x 4 Days x 8 Hr)	Per Hr	\$ -
4	Mason	Per Hr	\$ -
5	Teamster	Per Hr	\$ -
<b>C</b>	<b><u>EQUIPMENT COST:</u></b>	<b><u>Unit:</u></b>	<b><u>\$ Per Unit</u></b>
1	Utility/Compressor Truck with Small Tools including Operating Cost	Per Day	\$ -
2	Aluminum Sheeting Box (12' Long x 8' Deep x 4' to 8' Wide)	Per Day	\$ -
3	Excavator Cat 450 including Operating Cost	Per Day	\$ -
4	Dump Truck	Per Day	\$ -

* Materials cost will be reimbursed upon installation and invoices to be presented to BPCA with the 10% overhead plus 5% profit allowance.

## **GENERAL PROVISIONS - MEASUREMENT AND PAYMENT**

### **MEASURING QUANTITIES.**

All contract payments, including the final, will be made for quantities of work performed and materials placed in accordance with the contract documents as determined by the measurements of the Engineer, and the resulting quantities shall be accepted as final, conclusive and binding upon the Contractor.

Various methods of quantity computation may be used by the Engineer, including but not limited to: manual arithmetic calculations, manual measuring tools such as a planimeter, and computer tools/software.

The Engineer will choose the computation method, and the method may vary by contract and by contract pay item as appropriate.

The Engineer will choose the method by which the work will be measured, such as: measure from documents/data (contract plans, cross sections, CADD files, etc.) or measure from field survey of completed work, with the goal of obtaining reasonably accurate quantities of work for payment using a commensurate amount of effort and resources.

### **COMPENSATION FOR ALTERED QUANTITIES.**

The BPCA reserves the right to order changes in quantities of contract pay items as is necessary to complete the work, in accordance with the intent of the contract documents.

**A. Major Items.** For Major Items (Any contract pay item for which the original unit bid price multiplied by the original item quantity exceeds \$100,000.00), payment will be made for all extra work at the contract unit bid price for work up to 125% of the original contract quantity.

For Major Item quantities less than 75% or more than 125% of the original contract quantity, consideration of contract adjustment will be in accordance to renegotiation procedures set by BPCA for Major Items.

Total payments made for all work on a Major Item that decreases to below 75% of the original contract item quantity, will not exceed the total payments which would have been made if the original contract quantity had been completed at the original unit price bid.

**B. Minor Items.** For Minor Items (Any contract pay item that does not meet the definition of a Major Item), payment will be made for extra work at the contract unit bid price, except for any extra work that is both: (1) more than 200% of the original contract quantity and (2) results in an increase of more than \$1,000 from the original contract amount, will be considered a Significant Change.

For Minor Items where the contract bid price does not exceed 125% of either the statewide or regional weighted average bid price, the contract bid price may be extended up to a increase of \$5,000 from the original contract amount.

**EXTRA WORK AND TIME RELATED COMPENSATION.**

The Contractor will be compensated for extra work under existing unit prices in accordance with Compensation for Altered Quantities, by agreed price in accordance with Agreed Price Work, or by force account in accordance with Force Account Work.

**A. Agreed Price Work.** Agreed prices for new items of work or materials in accordance with one of the methods outlined below may be accepted by the Engineer and incorporated into an order-on-contract as the BPCA may deem them to be just and fair and beneficial to the Authority. An order-on-contract containing an agreed price not supported by one of the following may be subsequently rejected by the BPCA.

**1. Original Contract Bid Price.** The original contract bid price, adjusted for documented increase or decrease in material cost, equipment rate, mobilization, and/or site conditions.

**2. Weighted Average Bid Price.** Reference to the statewide or regional weighted average bid price for a minimum of 3 contracts for similar type, quantity, and/or location of work from the Weighted Average Item Price Report or other recent contracts, adjusted for documented increase or decrease in labor, materials, equipment, mobilization, and/or site conditions.

**3. Average of 3 Bidders.** For work in unusual circumstances or unusual site conditions, the average bid price for the 3 lowest responsible bidders presented in the Tabulation of Bids for that contract. If less than 3 responsible bids were received, this option shall not be used.

**4. Price Analysis.** A price analysis shall be based on an estimated breakdown of charges listed in Force Account Work below, using the equipment and other rates in effect when the agreed price is developed by the Contractor. The analysis shall be based on crew composition, material prices, equipment production and overall production rates that are reasonable in comparison with contract bid price work.

Equipment rates shall be used with no rate adjustment factor and no regional adjustment factor. An appropriate type and size of equipment similar to that available on the contract site, if present, shall be used.

Labor rates may be determined using 15% of wages and supplemental (fringe) benefits for FICA, Medicare, paid holidays, Federal unemployment tax, and State unemployment insurance in lieu of a detailed accounting. Overhead and profit will not be allowed on the labor markup.

Due to the cost and effort associated with development, a price analysis should generally be reserved for extra work under an individual contract pay item or a single price analysis, of more than \$1,000.

The Contractor shall provide a price analysis within 10 work days of request by the Engineer. The BPCA will accept or reject the Contractor's proposed agreed price within 10 work days of receipt of a complete price analysis.

**B. Force Account Work.** Where there are no applicable unit prices for extra work and agreed prices cannot be readily established or substantiated, the Contractor will be paid by Force Account for the actual, reasonable and verifiable cost of the items listed below. The Contractor shall maintain and submit force account records in accordance with §109-05C. Force Account Report.

**1. Contractor Charges.** At the preconstruction meeting, the Contractor should provide the Engineer documentation supporting its Commercial General Liability Insurance rates for the current period, and provide updates within 30 days after the renewal date, to assist in timely preparation and review of force account

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reports.

- a. **Labor.** Necessary labor costs include wages, supplemental (fringe) benefits, payroll taxes, state unemployment insurance, workers compensation insurance and other such reasonable charges that are paid by the Contractor pursuant to existing written agreements with its employees and/or labor organizations.

Each class of labor shall be billed separately at actual payroll rates; average rates based on different classes of labor will not be accepted. The wage rate for an individual worker may be up to 110% of the prevailing wage, provided the Contractor documents through certified payrolls that the worker has and continues to be paid more than the prevailing wage for contract work.

No reimbursement will be made for travel, lodging, signing bonuses, or other similar payments made to workers.

At the Contractor's option, a labor markup of 15% of all wages, not including supplemental (fringe benefits), for FICA, Medicare, paid holidays, Federal unemployment tax, and State unemployment insurance in lieu of a detailed accounting. Overhead and profit will not be paid on the labor markup.

Workers compensation insurance rate will be the base rate and the territorial differential only established by the NYS Workers Compensation Insurance Rating Board, subject to the Construction Employment Limitation Program limits. No other additional charges or modifiers will be included.

Insurance and other costs incurred or limited on a weekly basis will be reimbursed based on the percentage of the employees weekly gross wages paid under force account.

- b. **Materials.** Materials are necessary products incorporated in the temporary or permanent work, including transportation to the site.

Transportation may be accounted for under materials as either a unit price for transportation or equipment/operator charges. Equipment charges for transportation of materials shall be accounted for as equipment in accordance with Section Equipment with no allowance for overhead and profit.

Materials will be measured as quantities incorporated, with no reduction for required overlap, and appropriate waste due to construction and/or installation.

Oxygen, acetylene, propane, welding rods, grinding wheels, saw blades, hammer and drill bits, drill steel, and tooth-bits consumed in progressing the work are considered to be materials for which reimbursement will be made.

Other materials which are consumed in progressing the work are considered to be included in overhead and no separate reimbursement will be made. Material acquired by direct purchase shall be documented by bills or acceptable invoices.

All prices on used material incorporated in either temporary or permanent work shall be billed at a fair value, less than the original cost when new. A reasonable salvage credit will be determined by the Engineer in coordination with the Contractor for substantial salvageable material recovered.

- c. **Equipment.** Equipment, other than small tools, used by the Contractor shall be of suitable size and suitable capacity required for the work to be performed. If the Contractor elects to use equipment of a

higher rate than the equipment suitable for the work, payment will be made at the rate applicable to the suitable equipment.

The equipment actually used and the suitable equipment upon which the rate is based will be recorded as a part of the force account report. Usage will be recorded in hours to the nearest whole hour.

The Engineer will determine the suitability of the equipment. If there is a differential in the rate of pay of the operator of oversize or higher rate equipment, the rate paid for the operator will likewise be related to the suitable equipment.

**(1) Contractor Owned Equipment.** The Contractor will be reimbursed for its ownership costs and for its operating costs for self owned equipment at the rates listed in the a Rental Rate Blue Book for Construction Equipment at published by PRIMEDIA Information, Inc. (hereafter referred to as the Blue Book) in effect at the time the work is performed.

**a) Ownership Costs.** The rates for ownership costs will reimburse the Contractor for all non-operating costs of owning equipment, including depreciation on the original purchase, major overhaul repairs, cost of facilities capital, normal risk insurance, property taxes, storage, licenses, record keeping costs, overhead, and profit.

In the event that the Contractor does not have a needed type or piece of equipment on the contract site, the Contractor will be paid for the reasonable cost of moving the equipment onto and away from the contract site.

The hourly rate for the first 8 hour shift will be the Blue Book monthly rate divided by 176 multiplied by the rate adjustment factor and then multiplied by the regional adjustment factor.

The hourly rate for subsequent shifts during the same day will be 75% of the first shift hourly rate. Equipment required to be present, but idle, will be paid at 50% of the first shift hourly rate. Reimbursement will be made for the product of the hours of actual use or hours it is required to be present, and not available for mobilization elsewhere, multiplied by the hourly rate.

**b) Operating Costs.** The rate for operating costs includes preventative and field maintenance, fuel, lubricants, and other operating expendables. Operating cost does not include the operators wages. Reimbursement will be made for the product of the number of hours of actual use multiplied by the operating rate.

The hourly rate will be paid for all hours of operation, including those during subsequent shifts on the same day.

**c) No Established Rate.** In the event that rates are not established in the Blue Book for a particular piece of equipment, the Contractor shall contact the Blue Book publisher to establish rates. If the publisher will not establish rates, the BPCA will establish rates for ownership costs and operating costs for that piece of equipment consistent with its cost and expected life.

**(2) Rented Equipment.** In the event that the Contractor does not own a specific type of equipment and must obtain it by rental, the Contractor will be paid for the time that the equipment is used to accomplish the work or is required to be present, plus the reasonable cost of moving the equipment onto and away from the contract site.

**(3)**

**a) Rental Costs.** The Contractor will be paid the invoiced rental rate for the equipment, not to exceed the Blue Book ownership rate.

- b) Operating Costs.** The Contractor will be paid for the operating cost of the equipment in accordance with Section B.1.c.(1)b) unless reflected in the rental price.
- c) Rates Including Operator.** In the event that the Contractor rents equipment with an operator or fully fueled and/or maintained equipment such as cranes, concrete pumper, trucks, etc. payment will be made on the basis of an invoice for the rental of the equipment and the costs of moving to and from the site, provided the total rate is substantiated by area practice.

The rate including operator will not exceed the total of the ownership rate and the operating rate from the Blue Book, and the prevailing wage rate of an appropriate operator, if an operator is supplied.

- (4) Maximum Ownership/Rental Costs.** The maximum amount paid for the ownership costs of Contractor owned or the rental costs of rented equipment, is limited to the original purchase price as listed in the a Green Guide for Construction Equipment at published by PRIMEDIA Information, Inc.

If the ownership or rental reimbursement is limited by the original purchase price, the Contractor will be reimbursed for the operating cost per hour for each hour of actual use.

- d. Sales Taxes.** Sales taxes, if any, required to be paid on rented equipment or materials not permanently incorporated into the work.

- d. Overhead.** Overhead will be computed at ten percent (10%) of items B.1.a. Labor (but not including the premium portion of overtime) and §109-05B.1.b. Materials, and will be defined to include the following:

- (1) Additional premium on bond, additional premium for insurance required by the BPCA other than Workers Compensation Insurance and Commercial General Liability Insurance;
- (2) All salary and expenses of executive officers, supervising officers/ employees, superintendents, and clerical or administrative employees, including payroll taxes, unemployment insurance, workers compensation insurance, and charges that are paid by the Contractor to or on behalf of those employees pursuant to written agreement with its employee(s) and/or labor organizations;
- (3) Minor equipment such as small tools, including shovels, picks, axes, saws, bars, sledges, lanterns, jacks, etc., and other miscellaneous supplies and services;
- (4) Contractor's field office rental, utility charges, potable water, sanitation, cleaning, computers, CADD equipment, drafting equipment reproduction costs, etc.

- e. Profit.** Profit will be computed at ten percent (10%) of items Section B.1.a. Labor (but not including the premium portion of overtime) and Section B.1.b. Materials.

- g. Commercial General Liability (CGL) Insurance.** Commercial General Liability (CGL) insurance will be reimbursed at the rate paid by the Contractor in accordance with the method procured from its insurer.

- (1) Contractors that pay commercial general liability on the basis of a percentage of payrolls will be paid that percentage of item Section B.1.a. Labor.

(2) Contractors that pay commercial general liability on the basis of a percentage of gross sales will be paid that percentage of items Section B.1.a. through f.

**2. Subcontractor Charges.** When the work is performed by a Subcontractor, the Contractor will be paid the actual and reasonable cost of such subcontracted work as outlined above in Section B.1.a through Section B.1.g, plus an additional overhead of five percent (5%) of the cost of items Section B.1.a. Labor and Section B.1.b. Materials.

**3. Service Charges.** When work is performed by, and a fee is paid to, a service provider, the Contractor will be paid the actual cost of the service fee plus five percent (5%) for contract supervision, overhead and profit. This 5% will be applied once to the service fee regardless of the firm making direct payments to the service provider.

**C. Force Account Report.** Payment for force account work will be made on the basis of the following reports. Reports shall be submitted in a format acceptable to the Department. Appropriate forms are available from the Department.

If the Engineer disagrees with the accuracy, applicability, or reasonableness of any portion of a Contractor's submission, he/she shall promptly notify the Contractor. The Engineer will make any notations, remarks or comments on the records that may assist in final payments and then sign and date to indicate receipt, but not necessarily concurrence.

**1. Daily Summary.** The Contractor shall deliver a daily summary of force account work to the Engineer not later than close of business on the work day following that for which the work is reported. This summary shall be dated and signed by the Contractor's authorized representative. The summary shall contain:

- a. The contract number, other contract information, and the Contractor name/information.
- b. A brief description of the work performed and the work location for that day.
- c. A list of personnel by name, including the hours worked, and labor classification.
- d. A list of materials used indicating the quantity and nature. The cost shall be documented later by proper receipts.
- e. A list of equipment used indicating the number of hours used and the type, manufacturer, model, model year, size of equipment, and any required attachments.

**2. Weekly Labor Summary.** Within 5 calendar days after the end of each pay period, the Contractor should deliver to the Engineer a Force Account Summary of Labor used on the work, which shall include the name, labor classification, hours worked, hourly rate of pay, supplemental (fringe) benefits, and/or other items as shown on the certified payroll. If the Contractor does not provide the Engineer with Weekly Labor Summaries, no progress payments on that force account will be made.

**3. Force Account Report Submission.** On completion of the specific force account work, the Contractor shall deliver to the Engineer a Force Account Report, wherein all labor, materials, equipment, and other charges are shown and totaled. The Force Account Report shall be dated and signed by the Contractors authorized representative. When the Contractor and the Engineer agree on the Force Account Report, the Engineer will prepare and submit an order-on-contract containing the Force Account Report to the Regional Construction Engineer for approval.

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**4. Force Account Review.** The BPCA will review the Force Account Report and make any notations, remarks or comments on this form that may assist in final payments. The emphasis of this review will be on labor rates, payroll taxes, material costs, equipment rates, insurance rates, conformance with payment provisions of technical specifications, and overall documentation.

**5. Late Submissions.** In the event the Contractor fails to deliver the required force account documentation to the Engineer in a timely manner, and as a result the order-on-contract for the force account work is not fully approved at the date of final acceptance, the required final payment date will be extended by the number of calendar days between final acceptance and the issuance of this force account order-on-contract, attributable to the Contractor=s late force account submissions.

#### **ELIMINATED MATERIALS.**

Materials required by the contract documents and not incorporated into the work due to changes caused by field conditions or revisions to the design by the State after the material was ordered or purchased may be eligible for reimbursement. Materials will be eligible for reimbursement if they are determined by the BPCA to be unique to the contract, and meet one or more of the following conditions:

- The material order cannot be canceled or changed to reflect the revised quantity required.
- The material cannot be restocked or the cost of restocking is excessive.
- The Contractor or Subcontractor does not maintain a supply of the material.
- The cost of the material exceeds \$1000.00 or five percent (5%) of the item, whichever is greater.

The Contractor will be reimbursed its material cost minus salvage value, or the material cost plus necessary delivery costs to a site identified by the Engineer, if the Department opts to take the material.

Overhead and profit will be paid once, at a maximum of five percent (5%) for all materials not incorporated into the work, regardless of whether the Contractor or the Subcontractor pays for the material and/or delivery costs.

## **SECTION 201 - CLEARING AND GRUBBING**

### **201-1 DESCRIPTION**

**201-1.01 General.** This work shall consist of clearing, grubbing, removing and disposing of all trees, brush, stumps, fences, debris, and miscellaneous structures not covered under other contract items within the construction area and such other areas as specified or directed. The Contractor shall clear such additional areas within the limits of the right-of-way and easement lines as specified or directed.

**201-1.02 No Burning Requirement.** Materials generated by the work, including construction and demolition debris, shall not be disposed of by burning on or off the site. Off site burning in a permitted solid waste incinerator or in another lawful manner as refuse derived fuel will be permitted.

### **201-2 MATERIALS (Not specified)**

### **201-3 CONSTRUCTION DETAILS**

**201-3.01 Limits of Work Areas.** The Engineer will establish the limits of areas to be cleared and grubbed, to be cleared but not grubbed, or areas, objects or features that are designated to remain undisturbed. In general, the work areas shall include the road section, stream channels, ditches, temporary approaches to bridges, detours and other areas as shown in the contract documents or directed by the Engineer. The Engineer will designate fences, structures, debris, trees and brush to be cleared where grubbing is not required. Clearing beyond the areas of construction shall be done only where specified or directed.

**201-3.02 Clearing and Grubbing.** During the life of the contract the Engineer may order the clearing of any trees within the R.O.W. that the Engineer determines to be hazardous or dead and unsightly.

The Contractor shall carefully prune all branches of trees less than 15 feet above any part of the roadway and all branches which have been broken or injured during construction. The work shall be done as specified under §614-3.01A Equipment and B. Pruning.

Whenever trees are felled or trimmed on/or adjacent to highways, all wood shall be immediately removed from the roadway or any area that would present a hazard to traffic. Grubbed stumps shall be moved immediately at least 30 feet from the edge of pavement. No trees, tree trunks, stumps or other debris shall be felled, side cast or placed outside the limits of the road section. No grubbing will be required beneath the embankment where the finished grade will be 6 feet or more above the original ground surface unless otherwise specified in the contract documents. Where trees or existing stumps are cleared and grubbing is not required, the tree trunk or existing stump shall be cut off not more than 6 inches above the original ground surface unless otherwise approved. Exposed stumps not required to be removed, but which are within 30 feet of the edge of the pavement or are in a built-up area, shall be chipped out to a depth of not less than 6 inches below the finished grade and the holes backfilled if directed by the Engineer. This work shall be completed within one week after start of work on the tree.

**201-3.03 Disposal**

- A. **General.** All wood including grubbed stumps shall be removed from the contract site or otherwise disposed of.

**B. Methods of Disposal of Wood and Brush.**

1. Disposal (No Burning). All wood and brush shall be disposed of within fifteen (15) days after cutting or felling unless otherwise approved. No burning of land clearing materials that result from the clearing and grubbing operations, except in a permitted solid waste incinerator or as refuse derived fuel, will be permitted. The Contractor will have the following options or combination of options for disposal of this material:

- a. The Contractor shall make every effort to salvage marketable timber as specified in paragraph B4 of this subsection.
- b. When permitted by a note in the contract documents, disposable material may be placed at locations approved by the Engineer within the right-of-way but outside of the embankment area. When permitted by a note in the contract documents, disposable material may be placed in the embankment side slope area.

The contract documents will define the embankment side slope area and the procedures for the concurrent construction of the embankment and disposal section.

This type of disposal will require certain preparatory work. Preparation for direct burial of woody materials shall consist of cutting main trunks and limbs and chipping smaller limbs, branches, foliage and brush. Under conditions when disposal space and earth cover are limited in size and quantity, stumps will have to be ranked in size and placed in layers so as to make best use of the space available and the quantity of materials to be buried.

- c. The Contractor may bury disposable material off the right-of-way at locations obtained by the Contractor at no expense to the State. Such locations are to be approved in writing by the Engineer. The disposal work will require the same preparatory work as stated in option b. above except that the Engineer may waive such requirements for miscellaneous work which may be accommodated in a satisfactory manner by other methods. The disposal area is to be covered with earth as hereinafter specified.
- d. The Contractor may reduce all woody materials to chips and dispose of the chips as specified in paragraph B2 of this subsection.
- e. The material may be sent to a refuse derived fuel processing facility or to other processing facility for eventual beneficial re-use as fuel or for other lawful re-use.

Under no circumstances is disposal to be made in swamp or wet lands. When the disposal area is within the embankment section or is formed by flattening the embankment slopes, the elevation of the normal embankment construction shall always equal or exceed that of the disposal area.

There is to be absolutely no end dumping of disposable material over the sides of the embankment. All disposal areas are to be finally covered with a minimum of 2 feet of earth and graded to drain properly.

2. Chipping. Wood may be reduced to chips by the use of an approved chipping machine or stump grinder. Chips shall be 1/2 inch maximum thickness or of other approved thicknesses.

Chips resulting therefrom may be disposed of by being stockpiled and used as mulch for planting, by distribution on the ground surface in wooded areas within the right-of-way as approved by the Engineer, or by disposal at a location off the contract site satisfactory to the Engineer.

3. Burying. No tree trunks, stumps or other debris shall be buried inside the right-of-way limits without the written approval of the Engineer. Disposal areas outside the right-of-way limits shall be approved in writing by the Engineer and shall be acquired by the Contractor at no expense to the State.

4. Salvage of Marketable Timber. In the interest of conservation, the Contractor shall make every effort possible to salvage marketable timber produced as a result of clearing operations, provided the amount of timber is great enough to make the hauling practical.

In general, marketable timber is construed to mean logs 8 to 16 feet in length, plus appropriate trimming allowance, having a diameter inside the bark, at the small end, of approximately 10 inches. In the event that the Contractor is not successful in salvaging marketable timber, the Contractor shall advise the Engineer, in writing, of the efforts to salvage and indicate the reason why the timber could not be salvaged.

Any wood that is cut up in firewood lengths or other marketable lengths may be neatly piled adjacent to the right-of-way in an area provided by the Contractor for periods in excess of one week but shall be removed prior to completion of the contract.

#### **201-4 METHOD OF MEASUREMENT**

201-4.01 Per Acre. Payment for Clearing and Grubbing will be made at the unit price bid per acre computed to the nearest one tenth acre.

201-4.02 Per Lump Sum. Payment for Clearing and Grubbing will be made on a lump sum basis for work satisfactorily completed. Monthly payments will be made in proportion to the amount of work done as determined by the Engineer.

201-4.03 Borrow Areas. Borrow pits or other pit areas from which material is secured shall not be included for measurement of clearing and grubbing.

#### **201-5 BASIS OF PAYMENT.**

201-5.01 Clearing and Grubbing. Payment will be made at the contract price to furnish all materials, labor and equipment necessary to satisfactorily complete the work as specified. No separate payment will be made for any excavation, backfill or earth cover necessary to complete the work of disposal outside the embankment area nor for the work in handling, storing, rehandling and hauling of disposable material within or outside the right-of-way.

Payment will be made under:

<b>Item No.</b>	<b>Item</b>	<b>Pay Unit</b>
201.06	Clearing and Grubbing	Lump Sum
201.07	Clearing and Grubbing	Acre

1254/10-05

**Remove and Dispose Existing Concrete Underlayment,**  
**5 Inch Thick, In Asphalt Pavers Sidewalk Area**

**DESCRIPTION:**

The work shall consist of the removal and disposal of concrete underlayment, reinforcement, if present, and any miscellaneous materials encountered, as shown on the contract plans.

**MATERIALS:**

Not specified.

**CONSTRUCTION DETAILS:**

Not specified.

**METHOD OF MEASUREMENT:**

The work shall be measured by the area of concrete underlayment, removed and disposed of. The quantities will be determined from field measurements.

**BASIS OF PAYMENT:**

The unit price bid shall include the cost of furnishing all labor and equipment to complete the work.

**Payment will be made under:**

<b><u>Item No.</u></b>	<b><u>Item</u></b>	<b><u>Pay Unit</u></b>
1254/10-05	Remove and Dispose Existing Concrete Underlayment, 5 Inch Thick, In Asphalt Pavers Sidewalk Area	Sq. Ft.

**203.01125413 - COMPACTION/COMPENSATION GROUTING PROTECTION  
OF STRUCTURES FROM SETTLEMENT DUE TO SOFT GROUND – ITEM  
REQUIRES CONTRACTORS DESIGN**

**PART 1 GENERAL**

**1.01 INTRODUCTION**

- A. Compaction grouting involves the injection under high pressure of a low-slump, mortar-like grout to compact and displace the adjacent soils. The grout does not penetrate soil pores but displaces the subsurface soils by forming a homogeneous grout bulb near the grout pipe tip.
- B. In situ soil types: Compaction grouting is typically very effective in porous soil with permeability greater than  $10^{-4}$  and in situ vertical stresses greater than 15 psi (100 kPa).
- C. Applications: Loose fill stabilization; remediation of settling structures and utilities; sinkhole remediation; improvement of soil in kastic regions; building/utility protection during tunneling; soil densification for site improvement; liquefaction mitigation. In certain cases, procedures can be designed to intentionally lift structures and/or utilities.

**1.02 INTENT**

The intent of the compaction grouting program specified herein is to provide soil improvement within the limits indicated on drawings No's. 22 to 24 achieve the required degree of improvement detailed in section 3.02 of these specifications, in order to protect subjacent structures from damaging settlements caused by soft ground operations. The concept is to re-compact the loosened soils within the vicinity of structure, rather than to wait for settlements to reach building foundations and then grouting under individual footings. Such a compaction grouting program can, in certain circumstances, replace conventional underpinning or other settlement control programs for soft ground tunneling, by significantly reducing the vertical and lateral movements (settlement trough) that develop above the structure.

**1.03 STANDARDS AND REFERENCES**

- A. The most recent version of the following testing methods or standards may be employed:

1. ASTM D1586 Standard Penetration Testing (SPT)
2. ASTM D344 Static Cone Penetration Testing (CPT)
3. ASTM C150 Compliance Standard for Portland Cement
4. ASTM C143 Test Method for Slump of Portland Cement Concrete

- B. Reference documents as provided to the Compaction Grouting Contractor shall include:

1. This specification.
2. Project drawings:

- a. Engineer's site plan, drawings No's. 22 to 24
  - b. Engineer's existing underground utilities plan in the work area.
  - c. Grout injection point layout, as detailed in the Submittals section 1.06 of these specifications – designed by Contractor's Licensed Professional Engineer.
3. Project geotechnical report – Soil Test Results taking in the area.
  4. Form of contract between Owner and General Contractor, Owner and Compaction Grouting Contractor, and General Contractor and Compaction Grouting Contractor as appropriate.

#### **1.04 DEFINITIONS**

- A. **Compaction Grout:** A material blend of fine aggregate, fines and water to achieve a pumpable, thixotropic, viscous grout of a low slump to enable pumping at high pressure and remain intact after injection. Material components can include sand, silt, clay, cement, ground slag, flyash, water and other ad mixtures. Strength of grout is intended only to be greater than existing strengthened soil conditions.
- B. **Field Quality Control Representative (FQCR):** The individual given specific inspection tasks identified in this specification.

#### **1.05 SCOPE OF WORK**

- A. The work shall consist of installation, monitoring and testing of compaction grouting within the limits indicated on drawings No's. 22 to 24 meet the acceptance criteria presented in Section 3.02 of these specifications.
- B. In connection with the compaction grouting program, as shown on the drawings, the Compaction Grouting Contractor shall provide all labor, materials and equipment to accomplish the following items of work:
  1. Implement ground/structure movement monitoring system.
  2. Install and remove grout pipes.
  3. Furnish and inject compaction grout.
  4. Monitor surface ground/structure movements during tunneling and compaction grouting operations.
  5. Follow compaction grouting sequence of operations.
- C. It shall be the Compaction Grouting Contractor's responsibility to determine and implement the systems and criteria to ensure that specified improvement is achieved.

## **1.06 SUBMITTALS**

- A. The following shall be submitted to the Owner's representative by the Compaction Grouting Contractor *with the bid documents*:
1. A list of at least three previously completed projects of similar scope and purpose for approval by the Owner's representative. The list shall include a description of the project, relative size, and contact person with phone number.
- B. The following shall be submitted to the Owner's representative by the Compaction Grouting Contractor two weeks *prior to the start of the work*:
1. Resumes of the management, supervisory, and key personnel, for approval by the Owner's representative.
  2. A ground movement monitoring plan, as detailed in section 3.03 of these specifications.
  3. A mix design for the project indicating sources and types of grout materials, with volumetric proportions, and field test data from previous projects indicating compressive strength and slump of 1 to 3 inches (50 to 100 mm) or less achieved.

If the Compaction Grouting Contractor intends to deviate from the gradation provided in Section 2.03 of this specification, it shall submit, with the bid, evidence of satisfactory use of the proposed material from past projects with similar soil conditions.

4. Work procedures and control criteria (including volumes and pressure for each stage).
5. A general Work Procedures Plan outlining the spacing, location, depth and estimated quantity of grout to achieve the specified criteria detailed in Section 3.02 of this specification.

Grout hole locations shall be dimensionally referenced to the structural foundation shown on the contract drawings.

- C. The following shall be submitted to the Owner's representative by the Compaction Grouting Contractor *during the work*:
1. Accurate daily records of all grout pipe installation, compaction grouting quantities, including stage data, volume, pressure and depth for each grout pipe location.
  2. Any change in the predetermined grouting program necessitated by a change in the subsurface conditions.

## **1.07    QUALITY ASSURANCE**

- A. The compaction grouting program, including installation of grout pipes, shall be performed by a specialist Compaction Grouting Contractor with at least three continuous years of documented experience in compaction grouting.
- B. The Compaction Grouting Contractor shall provide experienced management, supervisory and key personnel as required to implement the compaction grouting program, as follows:
  - 1. The project manager shall have at least two years of continuous experience in compaction grouting, with at least the last one year in the full-time employ of the Compaction Grouting Contractor.
  - 2. The superintendent shall have at least two years of experience in compaction grouting.
  - 3. As detailed in Section 1.06 of these specifications, the Compaction Grouting Contractor shall provide:
    - a. Evidence of previous compaction grouting project experience.
    - b. Evidence of management, supervisory and key personnel experience.
- C. The Owner's representative will ensure that procedures and documentation conform to these specifications.

## **PART 2    EQUIPMENT AND MATERIALS**

### **2.01    GROUTING EQUIPMENT**

- A. The Compaction Grouting Contractor shall supply equipment capable of advancing the grout pipe through overburden, soils and other natural obstructions to the specified depth or as is required to meet the project objectives.
- B. The Compaction Grouting Contractor shall supply all equipment required to operate a compaction grouting system capable of supplying the specified grout at variable flow rates and pressures, measured at the pump, up to 800 psi and at rates of 0.5 to 12 cubic feet (0 to 0.34 cubic meters) per minute, as required to suit the application.
- C. The mixer shall be a continuous auger type to ensure complete uniform mixing of the materials used and shall be of sufficient capacity to continuously provide the pumping unit with mixed grout at its normal pumping range. The mixer must be capable of volumetrically proportioning the grout materials. Ready mixed grout is also acceptable with an approved mix design.
- C. The Compaction Grouting Contractor shall provide gauges or other instrumentation (measuring devices) to measure:

1. Continuous grout pressure close to the top of the injection casing.
  2. Flow rate of grout.
  3. Volume of grout injected.
- E.** The Compaction Grouting Contractor shall supply and install structural monitoring equipment in accordance with Section 3.03 of these specifications.
- F.** An adequate communication system shall be maintained between the pumping and batching plant and the injection location. As an alternate, the contractor may furnish a remote control system to allow full control (start, stop, flow rate, reversing) of the pump directly by the grouting technical from the injection point).

## **2.02 GROUT PIPES**

- A.** Grout pipes and connections shall be steel casing of adequate strength to maintain the hole and to withstand the required jacking and pumping pressures. The pipes shall be at least 2.0 inches (50 mm) inside diameter in order to adequately handle the specified low slump material without plugging. All casing shall be flush joint threaded or a single piece tubing to provide a smooth inner wall and unobstructed inside diameter. It shall be the contractor's responsibility to install casing that does not detrimentally impact the grouting procedure.
- B.** Pipes shall be installed such that grout material will not travel in the annular space between the pipe and adjacent ground and escape at the surface when pumped.

## **2.03 GROUT MATERIALS**

- A.** Portland Cement, Type I or II (ASTM C150)
- B.** Fine aggregate shall be sand with fines content (percent passing No. 200 sieve) of not less than 10 percent and not more than 25 percent. Natural fines may be supplemented with Fly/ash, a minimal amount of bentonite, or aggregate washings.
- C.** Proportions of the mixture shall be as required to achieve a pumpable mix with not more than a 7 inch (18 mm) slump.
- D.** Upon discharge into the pump hopper or holding tank, the grout must be continuously agitated. Mixed grout may not be held in the agitator for more than 2 hours unless a set retarder, approved by the Owner's representative, is used.

## **PART 3 EXECUTIONS**

### **3.01 SITE EXAMINATION**

- A.** Prior to submitting a bid price for the compaction grouting, the Compaction Grouting Contractor shall conduct a site inspection.
- B.** If a building in distress is involved, a relevant building survey may be in order prior to initiating work.

### **3.02 COMPACTION GROUTING**

Compaction grout shall be injected through the grout pipes into the target soil as the shield passes the grout pipe locations so as to re-compact loosened adjacent soils and limit surface settlements to acceptable values. If necessary to initiate the flow of grout at the start of pumping, the grout pipe will be pulled a few feet with the grout pressure applied, or an initial cavity produced by jetting or blowing. Pumping will continuously proceed at a rate between 0.1 and 4.0 cubic feet per minute. Accurate records of pumping time, pressures, volumes, locations, slumps, etc., shall be kept and submitted to the engineer.

**A.** Compaction grouting shall be performed in accordance with the approved grout injection point layout scheme to achieve the following acceptance criteria in the in situ soil between the injection points:

- 1.** Post-grouting average, corrected Standard Penetration values exceeding (Contractors P.E. Design) in typical site soils.

Locations to be agreed upon between the Compaction Grouting Contractor and the Owner/Engineer. Averaging shall be with values above and below each value.

- 2.** Post-grouting, average corrected static Cone Penetrometer tip resistance, in silts with friction ratio less than 1:1, exceeding (Contractors P.E. Design) tsf ((Contractors P.E. Design) kPa).

Locations to be agreed upon between the Compaction Grouting Contractor and the Owner/Engineer. Averaging shall include above and below two feet, eliminating values in soils with permeability's less than  $1 \times 10^{-3}$  cm/sec.

**B.** The grout shall be injected at a stage depth until one of the following occurs:

- 1.** Grout flow ceases at a header pressure reading of 800 psi (4,824 kPa).
- 2.** Surface ground heave of (Contractors P.E. Design) inches is observed.
- 3.** An injected grout volume equal to 25 percent of the soil volume being treated by that injection stage is reached.
- 4.** A maximum cumulative heave of (Contractors P.E. Design) inches is observed.

*Note: 3.02B1 to 3 may be deleted by reference to the contractor's work plan*

- C.** Compaction grouting shall be sequenced so that grouting does not take place within (Contractors P.E. Design) ft of locations grouted within the previous 12 hours.
- D.** As compaction grouting is completed at each location, the Compaction Grouting Contractor shall completely fill the grout hole to the ground surface.

### **3.03 FIELD QUALITY CONTROL**

- A. All compaction grouting shall be performed under the inspection of the FQCR.
- B. Monitoring and logging of compaction grouting operations for both test areas and production work shall be done by the FQCR.
- C. The FQCR will perform slump tests of grout and take measurements of grout mix quantities to verify the Compaction Grouting Contractor's grout mix, as follows:
  - 1. Slump tests will be performed:
    - a. once for every 50 cubic ft of grout injected, or
    - b. at any change in mix design, or
    - c. at least twice during each grout shift.
  - 2. Grout mix proportions will be checked at least once daily.
- D. The FQCR will require the Compaction Grouting Contractor to cast minimum size 3 inch by 6 inch ( 75 mm by 150 mm) grout test cylinders *or* 2 inch by 2 inch cube molds for strength testing. One set of four cylinders or molds will be cast during each slump test.
- E. Layout of grout injection points shall be by the Compaction Grouting Contractor and checked by the FQCR with sufficient control points provided by the Owner.
- F. As detailed in Section 1.06C, daily records shall be maintained by the Compaction Grouting Contractor and submitted to the Owner's representative.
- G. The Compaction Grouting Contractor shall monitor nearby structures as follows:
  - 1. A level control system will be installed by the contractor for each structure / planting bed within 1 ft of the operations.
  - 2. Monitoring shall be carried out on a continuing basis whenever compaction grouting is occurring within a horizontal distance equal to the depth of treatment.
  - 3. After completion of the compaction grouting program, the monitoring system and grout pipes will be removed and all holes will be filled and patched.

### **3.04 TESTING AND INSPECTION**

- A. The effectiveness of the proposed grouting layout scheme shall be verified as follows:
  - 1. The Owner may retain a soil testing firm to perform the in situ testing as

directed by the Owner's engineer. Test sections will be performed before and during production work, as follows:

- a. Test section locations will be agreed upon by the (FQCR/Compaction Grouting Contractor) within the treatment area. A test section shall consist of a single module comprised of at least three grout injection points for isolated footings and sixteen grout injection points for area applications. Tests will be performed at the center of the module prior to and after grouting.
  - b. All testing to determine specification compliance will be provided by an independent testing agency retained by the Owner. Regardless of the method selected, the same test method shall be utilized both before and after the soil improvement work in order to provide the most accurate assessment of the degree of improvement obtained.
  - c. The method of installation of the test section shall comply with Section 3.02 of this specification and shall be performed using the same grout line sizes, grout mix drilling and grouting equipment and procedures as that to be used for production work.
  - d. Prior to commencement of production grouting, one test section shall be performed. If the pre-production test sections indicate that the required ground improvement has not been achieved, the Compaction Grouting Contractor shall revise the Work procedure Plan and re-test.
- B. Monitoring and logging of compaction grouting operations in the test areas and for production work shall be done by the Compaction Grouting Contractor.

### **3.05 RESTRICTIONS**

- A. The Owner *or* General Contractor *or* Specialty Contractor shall be responsible for obtaining any State and municipal permits (if required) and conforming to all State and local regulations.
- B. The owner will be responsible for the precise delineation of all above and below ground utilities and obstructions.
- C. The following shall also be listed within this section when applicable:
  1. Environmental restrictions.
  2. Work boundaries.
  3. Hours for construction.

**PART 4      PAYMENT**

**4.01    METHOD OF PAYMENT**

- A.** Layout of grout injection locations and installation of the grout casings required under the Contractor-proposed grout injection point layout scheme, and any required secondary grouting within the limits indicated as requiring compaction grouting on drawings No's. 22 to 24 shall be a lump sum unit.
- B.** Injected grout shall be paid as a lump sum.
- C.** Installation of additional grout casings, placed under the direction of the Owner's engineer outside the limits indicated on drawings No's. 22 to 24 as requiring compaction grouting (such as areas identified as 'marginal - may require compaction grouting), shall be at a lump sum.
- D.** Mobilization and demobilization shall be a separate lump sum item.
- E.** Testing is included in a cost of Compaction Grouting based on the lump sum.
- F.** NYS Licensed Professional Engineer design cost is included in a cost of Compaction Grouting based on the methods selected by Contractor and reimbursed as lump sum.

**ITEM 207.96000099 – GEOGRID MECHANICALLY STABILIZED LAYER**

**DESCRIPTION**

This work consists of installing Mechanically Stabilized Layers (MSL) in accordance with requirements set forth in "The Geosynthetic Design and Construction Guidelines" reference manual (FHWA NHI-07-092) chapter 5 for geogrid reinforcement of an aggregate base layer and in compliance with AASHTO Standard Practice R50-09 to achieve the specified traffic benefit at the locations indicated on the Plans and/or as directed by the Engineer, all in accordance with this specification.

**MATERIALS**

Basis of design for the MSL is a geogrid reinforcement system by Tensar International Corporation Technologies, Inc.; utilizing the TX 5 geogrid is calibrated and validated to Giroud-Han and to AASHTO 1993 Flexible Pavement Design Method and as shown on the plan drawings. Alternate products shall be considered as equal provided they meet the following requirements:

- 1) The products submitted must be punched and drawn extrusions of polypropylene or another non-biodegradable/chemically inert material. Coated/woven products shall not be considered. Products with ribs mechanically bonded at the joints shall not be considered.
- 2) The product submitted must be calibrated to Giroud-Han as provide for by "The Geosynthetic Design and Construction Guidelines" reference manual (FHWA NHI-07-092) and shall be calibrated to AASHTO 1993 Flexible Pavement Design Method.
- 3) The products must be able to meet the specified performance, elevations, sections, and profiles as shown on the plan drawings and as defined in this specification.
- 4) Aperture dimension must be 1.7" maximum and 1.20" minimum to permit the effective use of NYSDOT specification Item 4 well-graded road construction aggregate, 1.5" minus.

**CONSTRUCTION DETAILS**

**1. SUBMITTALS.**

- a. Product Data: Manufacturer's data sheets on each product to be used, including:
    - i. Published site preparation procedures and recommendations.
    - ii. Storage and handling requirements and recommendations.
    - iii. Published installation methods.
  - iv. A letter from the manufacturer that the product has achieved calibration to the AASHTO 1993 Flexible Pavement Design Method and achieved a traffic benefit ratio sufficient to perform equally to the specified geosynthetic in accordance with the plans and specifications herein.
- b. Samples: Provide 2 samples of each geogrid that will be used to complete the pavement section as specified or proposed. Each sample shall be 12 inch by 8 inch (305 mm by 203

mm) and include a minimum of 5 ribs per junction.

c. Manufacturer's Certificate: Certify products meet or exceed specified requirements.

Provide a separate certificate for each lot of material furnished.

## **2. QUALITY ASSURANCE**

### **a. Manufacturer Qualifications**

- i. The geogrid manufacturer shall have no less than five years documented experience in the manufacture of punched and drawn geogrids and installation of geogrid products in the state of New York. Include a brief description of each project and name and phone number of owner's representative knowledgeable in each listed project.
- ii. The geogrid manufacturer shall provide documented evidence of an established quality control program to assure products with consistent compliance with the requirements of this specification.

### **b. Installer Qualifications**

- i. Installer shall have documented experience in the installation of geogrid MSL systems with at least two projects in New York State of similar construction and scope.
- ii. Include brief description of each project and name and phone number of owner's representative who is knowledgeable in each listed project.

### **c. Pre-Construction Meeting**

- i. Prior to construction of the MSL reinforcement system, conduct a meeting at the site with the materials supplier, the installer, and the Contractor to review the preparation and installation requirements.
- ii. Notify the Engineer at least 3 days in advance of the time of the meeting.

## **3. DELIVERY, STORAGE, AND HANDLING**

- a. Store products in manufacturer's unopened packaging until ready for installation.

## **4. PROJECT CONDITIONS**

- a. Install in accordance with published installation guidelines of the MSL product manufacturer.

- b. Do not place asphalt during wet or freezing weather that prevents conformance with specified requirements.

## **5. CONSTRUCTION METHODS**

- a. Construct geogrid MSL in accordance with the manufacturer's published installation guidelines. Do not begin MSL system installation until reclamation has been completed for the area specified on the plans.

### **METHOD OF MEASUREMENT**

This work will be measured as the number of square yards of geogrid MSL satisfactorily installed (measured to the nearest 1 sq yd.). No deductions will be made for holes less than 1 square yard in area.

### **BASIS OF PAYMENT**

The unit price bid per square yard for this item shall include the cost of furnishing all labor, materials, and equipment necessary to complete the work.

**ITEM 520.50140008 - SAW CUTTING ASPHALT  
PAVEMENT, CONCRETE PAVEMENT AND ASPHALT  
OVERLAY ON CONCRETE PAVEMENT**

**DESCRIPTION:**

Under this item, the contractor shall saw cut existing asphalt pavement, concrete pavement, asphalt surface course, or asphalt concrete overlay on concrete pavement at the locations indicated on the plans or where directed by the Engineer.

**MATERIALS:**

None specified.

**CONSTRUCTION DETAILS:**

Existing pavement and overlay shall be saw cut perpendicular to the roadway surface along neat lines, and to the depth indicated on the plans and typical sections. A power saw approved by the Engineer shall be used for cutting asphalt surface course and asphalt overlay.

A power saw shall be used for cutting concrete pavement. After the existing asphalt pavement, concrete pavement, asphalt surface course or overlay has been saw cut through, the contractor may use pry bars, pneumatic tools or other methods approved by the Engineer, to pry loose the existing pavement from that pavement which is to remain.

A pavement breaker, under the supervision of the Engineer, may be used to break up the pavement to be removed after the pavement has been completely saw cut through and completely free from the pavement to remain.

Any existing pavements and curbs not indicated to be removed that are damaged by the contractor's operations, shall be repaired by him to the satisfaction of the Engineer at no additional cost to the State.

**METHOD OF MEASUREMENT:**

The quantity to be measured will be the number of feet of saw cutting done in accordance with the plans, typical sections and the directions of the Engineer. No saw cutting will be measured for payment under this item which the contractor may choose to do for his own convenience.

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**The Battery Park City Authority**    *Contract No.* _____

**NYMEX Depression Remediation**    **Option I – Full Removal**

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**BASIS OF PAYMENT:**

The unit price bid per feet of saw cutting shall include the cost of all labor, materials, and equipment necessary to complete the work. Payment for removal and disposal of cut pavement shall be paid for under the appropriate excavation item.

## **ITEM 552.1600099 – SHEETING / EXCAVATION PROTECTION SYSTEM**

### **DESCRIPTION**

The Contractor shall furnish and install Excavation Protection Systems (EPS) within the project area for the construction of various elements of the work as shown on the contract drawings, unless another form of protection is specified.

All the provisions of Section 552 with respect to Excavation Protection System shall apply, except as modified below.

### **MATERIALS**

All the provisions of Section 552 with respect to Excavation Protection System shall apply.

### **CONSTRUCTION DETAILS**

In addition to the provisions of Section 552 with respect to Excavation Protection System, the Contractor shall also provide temporary support within the limits of excavation protected by the EPS of any existing utilities that are to remain in service.

Contractor shall submit plan for temporary support of existing utilities encountered during construction as required by the utility owner. Design shall be stamped by a New York State licensed professional engineer and be submitted for approval to the utility owner.

### **METHOD OF MEASUREMENT**

All the provisions of Section 552 with respect to Excavation Protection System shall apply.

### **BASIS OF PAYMENT**

All the provisions of Section 552 with respect to Excavation Protection System shall apply except that payment shall be made under:

**552.16000299 -    EPS**

## **ITEM 595.50000018 – SHEET-APPLIED WATERPROOFING MEMBRANE**

### **DESCRIPTION**

Furnish and install a manually or machine-applied sheet waterproofing membrane in accordance with the contract documents. Include all surface preparation.

### **MATERIALS**

Use a sheet-applied waterproofing membrane appearing on the Department's Approved List of Materials and Equipment.

### **CONSTRUCTION DETAILS**

**General** - On new structural concrete, the provisions of §557-3.11, Curing, shall be met prior to membrane system placement. Work will not be done during wet-weather conditions. No work will be done when the concrete structural slab surface temperature is below 50°F, or ambient temperatures are below 50°F. The concrete structural slab shall be surface dry at the time of application of the membrane. The Engineer will verify that atmospheric conditions are favorable for placement of the system based on the manufacturer's recommendations.

Arrange for the membrane manufacturer to have a competent technical representative at the job site during all phases of preparation and installation.

Supply Material Safety Data Sheets (MSDS) and approved Material Detail Sheets prepared by the membrane manufacturer to the Engineer a minimum of two (2) weeks prior to the scheduled commencement of work. The Material Detail Sheets will contain all material requirements and installation information for each specific waterproofing membrane. The Material Detail Sheets will be accessible at the Department's Approved List website for reference.

**(Bridge Decks)** – Begin work no less than (7) calendar days after placement of Portland cement concrete, Portland cement mortar, or epoxy mortar for structural concrete repair. The Engineer may waive the seven-day requirement if the areas of repair can sustain loads without damage or deformation. Subject to the concurrence of the Engineer, if an alternate concrete repair material is used, follow the manufacturer's instructions for allowable loading.

**(Structures)** - Fill the joints between precast culvert sections flush to the culvert slab and sidewall surfaces with a grout conforming to §701-08 Vertical and Overhead Patching Material. In areas where the joints do not line up evenly, taper the grout with a maximum slope of 2:1, from the high side of the joint to the low side, to provide a smooth transition from one unit to the next. Place the

waterproofing membrane over the joints of precast or cast-in-place units following the guidelines of Chapter 19 of the Highway Design Manual, or as indicated on the contract plans and Material Detail Sheets.

**Membrane Protection** – To protect the waterproofing membrane from punctures, the following procedures will be used:

1. On vertical surfaces, the waterproofing membrane will be covered with material conforming to §705-07 Premoulded Resilient Joint Filler.
2. On horizontal surfaces,
  - a. If select granular fill is specified over the culvert, a 6 inch thick protective layer of concrete sand, meeting the requirements of §703-07 Concrete Sand, will be placed on the membrane. Or
  - b. If asphalt pavement using aggregate larger than 3/8 inch is specified directly above the membrane, or if clearances don't allow for 6 inches of concrete sand, a 1 inch thick (minimum) course of HMA with a maximum nominal aggregate size of 3/8 inch will be placed on top of the membrane. The hot mix asphalt will be thoroughly compacted with mechanical tampers.

## **METHOD OF MEASUREMENT**

This work will be measured as the number of square feet of sheet-applied, waterproofing membrane satisfactorily installed (measured to the nearest 1 sq ft.). No separate measurement of the vertical faces of curbs, joints, concrete barriers, headers, scuppers, or for the inside surfaces of subdrainage outlets, shall be made. No deductions will be made for holes less than 1 square foot in area.

## **BASIS OF PAYMENT**

The unit price bid per square foot for this item shall include the cost of furnishing all labor, materials, and equipment necessary to complete the work. No additional payments will be made for any re-priming done in conformance with the requirements of the manufacturer's detail sheets.

## **ITEM 607.41010010 - TEMPORARY PLASTIC BARRIER FENCE**

### **DESCRIPTION**

This work shall consist of furnishing, installing, and maintaining Temporary Plastic Barrier Fences of the type and at the locations shown in the plans or where directed by the Engineer.

### **MATERIALS**

Materials for Temporary Plastic Barrier Fences shall meet the following requirements:

- **Fence:** High-density polyethylene mesh, ultraviolet-stabilized min. 2 years; minimum height 4.0 feet. Color: high-visibility orange or green. When used to protect trees or other vegetation, color shall be high-visibility orange.
- **Posts:** Rigid metal or wood posts, minimum length 6.0 feet.
- **Ties:** Steel wire, #14 gauge or nylon cable ties.
- **Warning signs:** Sheet metal, plastic or other rigid, waterproof material, 1.5 feet by 2.0 feet with 4 inch black letters on a white background. Text shall be: "Protected Site - Keep Out" unless otherwise specified.

### **CONSTRUCTION DETAILS**

Fences shall be erected prior to moving construction equipment onto any area designated for protection.

The line of fences as indicated on the plans shall be staked or marked out on the ground by the Contractor and approved by the Engineer before any fence is installed. Where used for protection of individual trees, fence shall be placed at the drip line (extent of canopy). If not possible, placement shall be as close to the drip line as possible and in no case less than 5.0 feet away from the tree trunk.

On approval of the stakeout, posts shall be securely driven on 6.0 foot-maximum centers, normal to the ground, to a depth 1/3 of the total post length. Plastic barrier fence shall be placed along the side of all posts. Ends of fencing segments shall overlap a distance of at least one half the fence height.

Fencing shall be secured to posts with wire or cable ties at top, middle and bottom of post. Fastener shall be tight enough to prevent the fencing from slipping down. Overlaps shall also be securely fastened.

Barrier fence which is not orange in color shall be flagged at 6.0 foot intervals with red or orange florescent tape. Warning signs shall be mounted on the fence at no more than 100 foot intervals.

Maintenance shall commence immediately after erection of the fence and continue until one week prior to acceptance of the contract, and shall consist of: replacing damaged post(s) and fencing; re-fastening and tightening fencing; and restoring fence to its intended height.

Fencing used for tree or other vegetation protection shall not be temporarily removed to allow equipment access over a protected area, except as required for items of work specifically shown on the plans and approved by the Engineer in writing.

#### **METHOD OF MEASUREMENT**

The quantity to be measured for payment will be the number of feet of Temporary Plastic Barrier Fence erected, measured along the top, to the nearest whole foot.

#### **BASIS OF PAYMENT**

The unit price bid shall include the cost of all labor, materials and equipment necessary to satisfactorily complete the work. Relocation of a fence from one location to another as directed by the Engineer shall be considered as a new location and will be separately paid.

Seventy percent (70%) of the price bid will be paid after satisfactory installation of the fence. The remaining Thirty percent (30%) will be paid after complete removal of the fence.

## **Item 1254/10-01 - MOBILIZATION**

### **DESCRIPTION.**

Under this work the Contractor shall provide necessary bonds, insurance, and pre-financing and shall set up his necessary general plant, including shops, storage areas, office and such sanitary and other facilities as are required by local or state law or regulation.

### **MATERIALS.**

Such materials as required for mobilization and that are not to be part of the completed contract shall be as determined by the Contractor, except that they shall conform to any pertinent local or State Law, regulation or code.

### **CONSTRUCTION DETAILS.**

The work required to provide the above facilities and service for mobilization shall be done in a safe and workmanlike manner and shall conform with any pertinent local or State Law, regulation or code. Good housekeeping consistent with safety shall be maintained.

### **METHOD OF MEASUREMENT.**

Payment for mobilization will be made on a lump sum basis.

### **BASIS OF PAYMENT.**

The amount bid for mobilization shall not exceed four percent (4%) of the total contract bid price excluding the bid price for mobilization. Should the bidder exceed the foregoing four percent (4%), the BPCA will make the necessary adjustment to determine the total amount bid based on the arithmetically correct proposal.

The amount bid shall include the furnishing and maintaining of services and facilities noted under DESCRIPTION SECTION, to the extent and at the time the Contractor deems them necessary for his operations, consistent with the requirements of this work and the respective contract.

The amount bid shall be payable to the Contractor with the first contract payment made for other contract work.

Payment will be made under:

<b>Item No.</b>	<b>Item</b>	<b>Pay Unit</b>
<b>1254/10-01</b>	<b>Mobilization</b>	<b>Lump Sum</b>

## **Item 1254/10-03 – PRECONSTRUCTION SURVEY**

### **DESCRIPTION**

#### **Survey Operations.**

This work shall consist of providing all necessary surveying to establish, spatially position, measure, navigate to and verify the locations of existing and proposed features and measure quantities of items in accordance with the contract documents or as directed by the Engineer.

This work includes but is not limited to the establishment or reestablishment of primary and secondary control, the stakeout of proposed features, the location or verification of existing items or of constructed items, and the coordination and sharing of engineering data with the Authority or other contract project Engineers.

### **MATERIALS**

None specified

### **CONSTRUCTION DETAILS**

None specified

### **BASIS OF PAYMENT**

The price bid shall include the cost of furnishing all labor, materials and equipment necessary to satisfactorily complete the work.

Progress payments will be made in proportion to the amount of work completed as determined by the Engineer.

**Payment will be made under:**

<b>Item No.</b>	<b>Item Description</b>	<b>Pay Unit</b>
1254/10-03	Pre-Construction Survey	Lump Sum

**1254/10-06**

**Remove, Refurbish and Store Existing Asphalt Pavers, 2  
½ Inch Thick**

**1254/10-16**

**Reinstall Asphalt Concrete Pavers (up to 20% of  
Replacement New Pavers to be Included in the Price Bid)**

## **DESCRIPTION**

This work shall consist of furnishing and installing asphalt block pavement on asphalt concrete base in accordance with the contract documents and as directed by the Engineer.

## **MATERIALS**

Base Course: The materials for the base course shall meet the requirements of a NYS Standard Specifications 25.0 Binder Course F9 HMA. The mixture shall be designed and produced in accordance with NYS Standard Specifications Section 401, Plant Production. The mixture shall be designed for <0.3 million ESALs (50 gyrations) in accordance with MM 5.16, Hot Mix Asphalt (HMA) Mixture Design and Mixture Verification Procedures.

The asphalt mixture may contain a maximum of 20% of Recycled Asphalt Pavement (RAP) by weight mixture. Before placement of the base course begins, the Contractor shall submit the job mix formula for the Engineer's approval.

Performance Graded (PG) Binder: Use a PG 64-22 in the production of the Base Course.

Alternate PG binder grades may be allowed by the Engineer in lieu of PG 64-22. The PG binder will meet the requirements outlined in NYS Standard Specifications, Section 702 Bituminous Materials, Table 702-1 Performance-Graded Binders for Paving.

Bituminous Setting Bed: The setting bed shall consist of PG 64-22 mixed with fine aggregate meeting the requirements of §703-01. Alternate PG binder grades may be allowed by the Engineer in lieu of PG 64-22.

The PG binder will meet the requirements outlined in NYS Standard Specifications, Section 702 Bituminous Materials, Table 702-1 Performance-Graded Binders for Paving.

The PG binder content shall be no less than 7.0% of the total batch weight. The mix shall be heated to approximately 325° F Neoprene Modified Asphalt Adhesive: shall consist of 2% neoprene, grade WM1, oxidized asphalt with R & B softening point of 155°F minimum and a penetration of 80, and 10% asbestos-free fibers.

Asphalt Block: Unless otherwise noted on the plans, all pavers shall be hexagonally shaped asphaltic concrete blocks, 8 inches between parallel sides and 2 inches in thickness, with a permissible

tolerance of  $\pm 1/16$  inch in any dimension.

The blocks shall be composed of approximately  $6.5 \pm 0.5\%$  high melting point oxidized asphalt conforming to ASTM Designation D-312 for Type 3 asphalt and 94% graded crushed rock aggregate and mineral filler; at the temperature of 300° F the mix is compressed 4,000 lbs. per square inch by high speed hydraulic presses.

Top of exposed surface of blocks shall have a ground finish, exposing a small aggregate. Color shall be noted in the Contract Drawings.

**Forms:** The forms for this work shall be wood of an approved type and a minimum length of 10 feet for tangents and curves, unless otherwise shown on the plans.

All forms shall be straight, free from bends and warps at all times, and shall be cleaned thoroughly and oiled before pavement is placed against them. This cleaning and oiling shall be repeated daily as the forms are moved ahead.

The forms shall rest firmly upon the thoroughly compacted subgrade throughout their entire length, shall be joined neatly and tightly and staked securely to line and grade at least 200 hundred feet in advance of the point of placement by using a least three (3) bracing pins or stakes to each 10-foot length of side form, so that they will resist the pressure of the pavement and the impact of the roller without springing.

**Transporting:** Shipments of material shall be made in tight vehicles previously cleaned of all foreign material and delivered to the work so that it will not become contaminated in any way.

**Submittals:** All submittals shall be in accordance with the requirements of the General Conditions, Section C, Special Provisions, Article 11.

The Contractor shall submit the following for the Landscape Architect's review and approval prior to manufacture. The Contractor shall submit samples of each type of paver they propose to use for approval by the Designer.

The samples shall be clearly labeled with Contract No., manufacturer, and finish. All pavers used on the work shall conform to the approved samples.

**Sample Pavement:** Prior to installing the asphalt block pavement, the Contractor shall construct a 10-foot sample pavement that demonstrates the paving patterns and colors in accordance with the plans and specifications, in order to verify the aesthetic effect and quality of materials.

The contractor shall notify the Landscape Architect and Engineer seven days in advance of the date when the sample pavement is to be constructed. The sample shall be located as directed by the Engineer and may be part of the final work. It shall contain mortar joints and expansion joints as included in the final work.

The Contractor shall obtain written approval of the sample prior to commencing with the final work. If the sample is disapproved, it shall be removed and reinstalled as directed by the Engineer.

The Contractor shall maintain the approved sample pavement in an undisturbed condition as a standard for judging the completed work. After completion and approval of the finished work, the sample pavement shall be demolished and removed by the Contractor, or included as part of the work, as directed by the Engineer.

## **CONSTRUCTION DETAILS**

**Subgrade Preparation:** The subgrade shall be compacted in accordance with NYS Standard Specifications, §203-3.11 Subgrade Area.

**Spreading of Base Course:**

The asphalt cement base course shall be laid by means of an approved mechanical spreader to a depth, which after compaction shall be equal to the specified depth. In areas where the use of a mechanical spreader is impractical, as determined by the Engineer, other approved means of spreading and compacting may be permitted.

The use of hand rakes will not be permitted. The Contractor shall use lutes where necessary.

**Rolling of Base Course:**

The asphalt concrete base course when properly spread shall be rolled using 80 Series compaction method as specified in the NYS Standard Specification §402-3.07 Compaction.

Rolling shall proceed continuously not in excess of the following rates:

Method of Placement Square Yd/Hr/Roller

Hand 800 Yd/Hr/Roller

Machine 1200 Yd/Hr/Roller

After compaction of the base course and before the placing of the asphaltic block, the binder course shall be checked for depressions and high spots.

The Contractor shall check the entire surface using a 10-foot wood or metal straight edge. Any depressions or high spots greater than 3/16 inch shall be satisfactorily corrected before placing the asphalt block.

**Bituminous Setting Bed:** To install the setting bed over the surface of the base, place ¾-inch deep control bars directly over the base course. If grades must be adjusted, set wood chocks under depth control bars to proper grade. Set two bars parallel to each other approximately 11 feet long (2" x 6"

board). The depth of control bars must be set carefully to bring the paver, when laid, to the proper grade.

Place some bituminous material between the parallel depth control bars. Pull this bed with the striking board over these bars several times. After each passage, low porous spots must be showered with fresh bituminous materials to produce smooth, firm and even setting bed.

As soon as this initial panel is completed, advance the first bar to the next position in readiness for striking the next panel.

Carefully fill up any depressions that remain after removing the depth control bars and wood chocks. Bed shall be spread in a continuous workmanlike manner. Installation of base in spotted, different and isolated areas will not be accepted. Bed depth greater than 1-1/8 inch will not be acceptable.

After setting bed has cooled, it shall be rolled by hand with a 100-lb roller to eliminate sponginess and to prepare the surface for the installation of the adhesive.

Setting bed shall be protected against all pedestrian traffic and construction equipment to insure a level surface for setting pavers.

Adhesive: The neoprene-modified asphalt adhesive shall be applied by mopping, squeegeeing or troweling over the top of the bituminous setting bed so as to provide a bond between the bituminous setting bed and the paver.

Setting Pavers: When modified asphalt adhesive is dry to touch, carefully place the pavers by hand, ground finish side up unless otherwise specified, in straight course, with hand tight joints and uniform top surfaces, keeping full alignment according to the patterns shown on the plans.

Pavers may vary slightly in shade and tonality. Installer shall work from at least four (4) pallets at a time in order to create a uniform blend of paver shades.

Joints between blocks shall have a maximum width of 1/8 inch.

All blocks shall be cleaned when placed on the pavement.

In no case shall the bituminous setting bed in front of the pavement be disturbed or walked on during the laying of the blocks.

Joint Filler: Upon the completion of the work of laying the blocks in each section to the satisfaction of the Engineer, the surface of the blocks shall be swept clean, and the joints filled with fine sand.

All joints shall be filled the same day as the blocks are laid. Filler shall not be applied if the blocks are wet or if the air conditions are such that the filler does not readily enter the joints.

Filler shall be well worked into the joints by means of squeegees or other approved devices operating slowly backward and forward. Squeegeeing shall continue until the joints are flush with top surface.

Immediately after the joints are filled, the pavement shall be lightly sprayed and cleaned.

**Defects:** Where defects in composition, compression or finished appear in the complete work, such finished areas shall be removed to the full depth of the course and the defective material replaced with the required thickness of pavement at the expense of the Contractor for such removing and replacing.

**Cold Weather:** Asphalt base course shall be mixed and placed in accordance with minimum placement temperature as specified by the Engineer.

Unless notified by the Engineer in writing, no material shall be mixed or placed when the temperature is at, or lower than 50 F.

**Precipitation Probability:** Placement of asphalt mixture shall not be scheduled when the Precipitation Probability, obtained by the Contractor from the U.S. Weather Bureau within three (3) Hours prior to the start of such operations, equals or exceeds 50%. The Contractor shall notify the Engineer of the exact time at which the above information was obtained.

## **METHOD OF MEASUREMENT**

Payment will be measured by the number of square feet placed as shown in the contract documents and as ordered by the Engineer

## **BASIS OF PAYMENT**

The price bid shall include all labor, material, equipment and incidental expenses necessary to complete the work, including production and placement of asphalt base and bituminous setting bed, neoprene adhesive and asphalt block pavers, all in accordance with the plans and specifications to the satisfaction of the Engineer.

Asphalt block curb, if required, will be paid separately under the item "Asphalt Block Curb". Excavation will be paid for under its own item.

### **Payment will be made under:**

<b>Item No.</b>	<b>Item</b>	<b>Pay Unit</b>
1254/10-06	Remove, Refurbish and Store Existing Asphalt Pavers, 2 ½ Inch Thick	Sq. Ft.
1254/10-16	Reinstall Asphalt Concrete Pavers (up to 20% of Replacement New Pavers to be Included in the Price Bid)	Sq. Ft.

**See NYSDOT 2008 Standard Specifications (US Customary)**

for the following Items:

<b>Item Number:</b>	<b>Item Description:</b>
201.06	Clearing and Grubbing
203.02	Unclassified Excavation and Disposal
203.07	Select Granular Fill
203.21	Select Structural Fill
204.01	Controlled Low Strength Material - CLSM
206.01	Structure Excavation
206.02	Trench and Culvert Excavation
207.20	Geotextile Bedding
207.26	Prefabricated Composite Structural Drain
209.13	Silt Fence - Temporary
555.0105	Concrete for Structures, Class A
605.1701	Optional Underdrain Pipe, 4 Inch Diameter
608.020102	Hot Mix Asphalt (HMA) Sidewalks, Driveways, Bicycle Paths, and Vegetation Control Strips
610.1403	Manufactured Topsoil – Lawns, BPCA Conservancy Group – Special Mix Design; Approved Suppliers
610.1602	Turf Establishment - Lans
610.19	Watering Vegetations
614.09	Tree Root Pruning
619.0101	Work Zone Safety / Traffic Control, WZSC
619.04	Type III Construction Barricades
623.12	Crushed Stone (In-Place Measure)
556.01	See Wall Expansion Joint Repairs

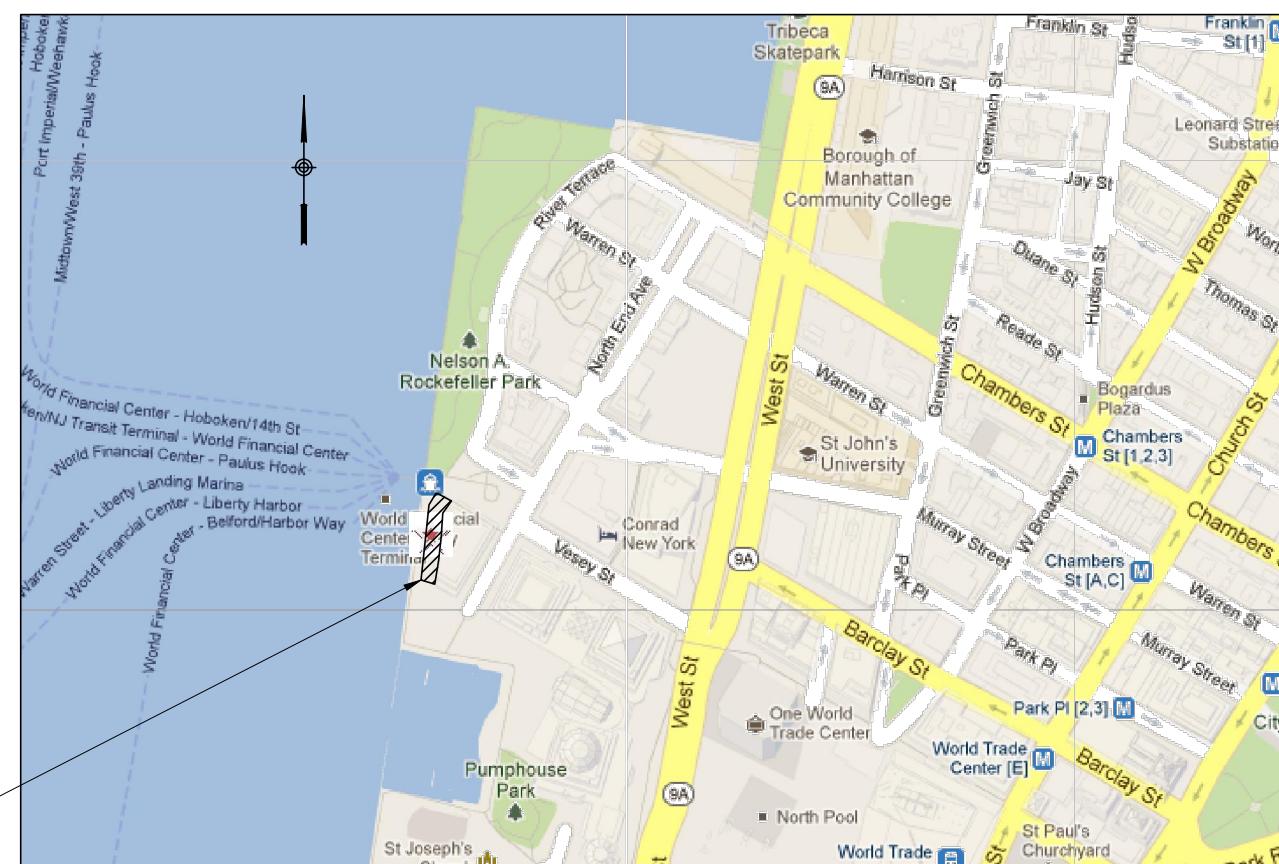
**EXHIBIT G**

**DRAWINGS AND SPECIFICATIONS (OPTION II)**

(Attached)

DRAWING NO.	DESCRIPTION	SHEET NO.
C-1	COVER SHEET	1
C-2	ESTIMATE OF QUANTITIES	2
C-3	ABBREVIATIONS	3
C-4	LEGEND LINE SYMBOLS	4
C-5	LEGEND POINT SYMBOLS	5
C-6	TYPICAL SECTIONS	6
C-7	TYPICAL SECTIONS	7
C-8	GENERAL NOTES	8
C-9	WORK ZONE TRAFFIC CONTROL GENERAL NOTES	9
C-10	GENERAL PLAN	10
C-11	EXISTING PART PLAN - I	11
C-12	EXISTING PART PLAN - II	12
C-13	MISCELLANEOUS DETAILS - I	13
C-14	MISCELLANEOUS DETAILS - II	14
C-15	EROSION AND SEDIMENT CONTROL GENERAL NOTES	15
C-16	VEGETATION PROTECTION GENERAL PLAN	16
C-17	VEGETATION PROTECTION PLAN - I	17
C-18	VEGETATION PROTECTION PLAN - II	18
C-19	DEMOLITION AND REMOVAL GENERAL PLAN	19
C-20	DEMOLITION AND REMOVAL PLAN - I	20
C-21	DEMOLITION AND REMOVAL PLAN - II	21
C-22	DEPRESSION REMEDIATION GENERAL PLAN	22
C-23	DEPRESSION REMEDIATION PLAN - I	23
C-24	DEPRESSION REMEDIATION PLAN - II	24
C-25	DEPRESSION REMEDIATION PLAN - GENERAL NOTES	25
C-26	REPAIR OF SEAWALL JOINT AND JOINT BETWEEN CONCRETE SLAB - I	26
C-27	REPAIR OF SEAWALL JOINT AND JOINT BETWEEN CONCRETE SLAB - II	27
C-28	REPAIR OF SEAWALL JOINT AND JOINT BETWEEN CONCRETE SLAB - III	28

**BATTERY PARK CITY AUTHORITY**  
**PRIORITY 1 REPAIR AT**  
**NYMEX TERRACE, DEPRESSION**  
**REMEDIATION**  
**CITY OF NEW YORK, BOROUGH OF**  
**MANHATTAN**



LOCATION MAP  
N.T.S.

DESIGNED BY:	DRAWN BY:	CHECKED BY:	BATTERY PARK CITY AUTHORITY CONTRACT XX-XXXX		
			REVISIONS		
				NYMEX TERRACE, DEPRESSION REMEDIATION OPTION II – PRESSURE GROUT	
				COVER SHEET	
			CITY OF NEW YORK, BOROUGH OF MANHATTAN		
			<b>KSE</b> <b>KS ENGINEERS, P.C.</b>		Engineers • Surveyors • Construction Managers 65 Broadway, Suite 401, New York, N.Y. 10006 Phone: (212) 616-2657, Fax: (212) 616-3060
SCALE:	AS SHOWN	DATE:	01/31/2014	PROJECT NO.:	1254-13
			SHEET NO.: 1		

## **SCOPE OF WORK/CONSTRUCTION SEQUENCE**

## **GENERAL**

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## WORK REQUIRED

WORK REQUIRED:  
THE CONTRACTOR SHALL NOT COMMENCE ANY WORK UNDER THE CONTRACT PRIOR TO A PRE-CONSTRUCTION CONFERENCE AMONG THE CONTRACTOR, THE BPCA REPRESENTATIVES AND OTHER CONCERNED GOVERNMENTAL AND UTILITY COMPANY REPRESENTATIVES. AT THIS CONFERENCE ALL SPECIAL REQUIREMENTS, SCHEDULING AND DETAILS CONCERNING MAINTENANCE AND PROTECTION OF TRAFFIC WILL BE FULLY EXPLAINED AND DISCUSSED.

## CHANGES, CONTINGENCIES, EXTRA WORK AND DEDUCTION

THE COUNTY RESERVES THE RIGHT, AT ANY TIME DURING THE PROGRESS OF THE WORK, TO ALTER THE PLANS OR OMIT ANY PORTION OF THE WORK AS MAY DEEM REASONABLY NECESSARY FOR THE PUBLIC INTEREST, MAKING ALLOWANCE FOR ADDITIONS AND DEDUCTIONS AT THE PRICES NAMED IN THE PROPOSAL FOR THE WORK, WITHOUT CONSTITUTING GROUNDS FOR CLAIM BY THE CONTRACTOR FOR DAMAGES OR FOR LOSS OF ANTICIPATED PROFITS ARISING FROM DIFFERENCES BETWEEN ESTIMATED QUANTITIES AND THE ACTUAL QUANTITIES PLACED IN THE FINAL WORK.

## SITE HOUSEKEEPING

DURING PROGRESSION OF WORK, THE CONTRACTOR SHALL, AT ALL TIMES, KEEP THE SITE AND ADJACENT PREMISES FREE FROM MATERIALS, DEBRIS AND RUBBISH AND SHALL REMOVE THE AFOREMENTIONED FROM ANY PORTION OF THE SITE, IF IN THE OPINION OF THE BPCA, SUCH MATERIALS, DEBRIS, OR RUBBISH CONSTITUTES A NUISANCE OR IS OBJECTIONABLE.

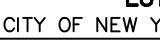
THE CONTRACTOR SHALL REMOVE FROM THE SITE ALL OF HIS SURPLUS MATERIALS AND TEMPORARY STRUCTURES WHEN NO FURTHER NEED THEREOF DEVELOPS AND SHALL RESTORE THE SITE TO A NEAT ORDER CONDITION.

AT THE CONCLUSION OF THE WORK, ALL ERECTION PLANT, TOOLS, TEMPORARY STRUCTURES, AND MATERIALS BELONGING TO THE CONTRACTOR SHALL BE PROMPTLY TAKEN AWAY, AND HE SHALL REMOVE AND PROMPTLY DISPOSE OF ALL WATER, DIRT, RUBBISH OR ANY OTHER FOREIGN SUBSTANCES.

AFTER COMPLETION OF ALL OTHER WORK UNDER THE CONTRACT, THE CONTRACTOR SHALL CLEAN AND REMOVE FROM ALL CATCH BASINS AND MANHOLES, WITHIN THE LIMITS OF THE CONTRACT, ALL MATERIALS AND DEBRIS DEPOSITED THEREIN AS THE DIRECT RESULT OF HIS OPERATION. NO SEPARATE PAYMENT WILL BE MADE FOR THIS WORK UNLESS SPECIFIC PAY ITEMS ARE INCLUDED IN THE CONTRACT.

## **SCOPE OF WORK - SITE RELATED**

1. COMMENCE PRECONSTRUCTION SURVEY.
  2. ERECT WORK ZONE SAFETY CONTROL DEVICES.
  3. REMOVE VEGETATION IN THE AREA AFFECTED BY EXCAVATION.
  4. INSTALL TEMPORARY PLASTIC BARRIER FENCE.
  5. INSTALL TYPE III CONSTRUCTION BARRICADES.
  6. INSTALL TEMPORARY SILT FENCE.
  7. SAW CUTTING ASPHALT PAVEMENT, ASPHALT SURFACE COURSE CONCRETE PAVEMENT OR ASPHALT OVERLAY ON CONCRETE PAVEMENT.
  8. REMOVE, REFURBISH AND STORE EXISTING ASPHALT PAVERS,  $2\frac{1}{2}$ " INCH THICK.
  9. INSTALL EXCAVATION PROTECTION SHEETING/EXCAVATION PROTECTION SYSTEM.
  10. EXCAVATE AREA ALONG NYMEX BUILDING TO EXPOSE SEAWALL AND CONCRETE DECKING.
  11. PROVIDE TREE ROOT PRUNING ALONG PLANTERS.
  12. BACKFILL PREVIOUSLY EXCAVATED 12" WIDE TRENCH WITH CONTROLLED LOW STRENGTH MATERIAL—CLSM.
  13. DESIGN COMPACTION/COMPENSATION GROUTING PROTECTION OF STRUCTURES FROM SETTLEMENT DUE TO SOFT GROUND AND SUBMIT TO BPCA FOR REVIEW AND APPROVAL. LABORATORY SOIL TEST RESULTS ARE AVAILABLE AT BPCA FOR INFORMATION, TO BE USED BY CONTRACTOR'S DESIGNER.
  14. INSTALL COMPACTION/COMPENSATION GROUTING PROTECTION OF STRUCTURES FROM SETTLEMENT DUE TO SOFT GROUND AS DESIGN BY CONTRACTOR'S DESIGNER.
  15. PLACE HOT MIX ASPHALT (HMA) SIDEWALK TYPE, ASPHALT PAVER'S UNDERLAYMENT OVER EXISTING CONCRETE SLAB TO PROPER ELEVATION.
  16. REINSTALL ASPHALT CONCRETE PAVERS.
  17. PLACE MANUFACTURED TOPSOIL.
  18. ESTABLISH GRASS.
  19. PLACE HOT MIX ASPHALT (HMA) SIDEWALK TYPE, ASPHALT PAVER'S UNDERLAYMENT.
  20. REMOVE TEMPORARY SILT FENCE, TEMPORARY PLASTIC BARRIER FENCE, TYPE III BARRICADES AND WORK ZONE SAFETY CONTROL DEVICES.

DESIGNED BY:	DRAWN BY:	CHECKED BY:	BATTERY PARK CITY AUTHORITY CONTRACT XX-XXXX		
			REVISIONS 		
			<b>NYMEX TERRACE, DEPRESSION REMEDIATION OPTION II – PRESSURE GROUT ESTIMATE OF QUANTITIES</b> <b>CITY OF NEW YORK, BOROUGH OF MANHATTAN</b>		
					Engineers • Surveyors • Construction Managers 65 Broadway, Suite 401, New York, N.Y. 10006 Phone: (212) 616-2657, Fax: (212) 616-3060
<b>DIEGO ALAIMO</b> <small>PROFESSIONAL ENGINEER N.Y. LICENSE NO. 053085-1</small>			SCALE:  AS SHOWN	DATE:  01/31/2014	PROJECT NO.:  125A-13
					SHEET NO.:  2

ALIGNMENT	
ABBR.	DESCRIPTION
AH	AHEAD
AZ	AZIMUTH
BK	BACK
b	BASELINE
BRG	BEARING
c	CENTERLINE
CS	CURVE TO SPIRAL
e	SUPERELEVATION RATE (CROSS SLOPE)
EQ	EQUALITY
EXT	EXTERNAL
HCL	HORIZONTAL CONTROL LINE
HSD	HEADLIGHT SIGHT DISTANCE
L	LENGTH OF CIRCULAR CURVE
LS	LENGTH OF SPIRAL
LVC	LENGTH OF VERTICAL CURVE
E	CENTER CORRECTION OF VERTICAL CURVE
f	MAIN LINE
PC	POINT OF CURVATURE
PI	POINT OF INTERSECTION
POL	POINT ON LINE
PSD	PASSING SIGHT DISTANCE
PT	POINT OF TANGENT
PVC	POINT OF VERTICAL CURVE
PVI	POINT OF VERTICAL INTERSECTION
PVT	POINT OF VERTICAL TANGENT
R	RADIUS
SC	SPIRAL TO CURVE
SSD	STOPPING SIGHT DISTANCE
ST	SPIRAL TO TANGENT
STA	STATION
T	TANGENT LENGTH
TGL	THEORETICAL GRADE LINE
TS	TANGENT TO SPIRAL
VC	VERTICAL CURVE

UTILITIES	
ABBR.	DESCRIPTION
E	ELECTRIC
EMH	ELECTRIC MANHOLE
G	GAS
GP	GUY POLE
GSB	GAS SERVICE BOX (HOUSE LINE)
GV	GAS VALVE (MAIN LINE)
HH	HAND HOLE
HYD	HYDRANT
LP	LIGHT POLE
POTS	PLAIN OLD TELEPHONE SERVICE
PP	POWER POLE
SA	SANITARY SEWER
SMH	SANITARY MANHOLE
ST	STORM SEWER
T	TELEPHONE
TCB	TRAFFIC CONTROL BOX
TELBOX	TELEPHONE BOX
TEL P	TELEPHONE POLE
TMH	TELEPHONE MANHOLE
CTV	CABLE TELEVISION
W	WATER
WSB	WATER SERVICE BOX (HOUSE LINE)
WV	WATER VALVE (MAIN LINE)

TOPOGRAPHY (DRAINAGE) CON'T	
ABBR.	DESCRIPTION
BB	BOTTOM OF BANK (STREAM)
BC	BOTTOM OF CURB
BO	BOTTOM OF OPENING
CAP	CORRUGATED ALUMINUM PIPE
CB	CATCH BASIN
CIP	CAST IRON PIPE
c STRM	CENTERLINE OF STREAM
CMP	CORRUGATED METAL PIPE
CP	CONCRETE PIPE
CSP	CORRUGATED STEEL PIPE
CULV	CULVERT
DIA	DIAMETER
DMH	DRAINAGE MANHOLE
DS	DRAINAGE STRUCTURE PIPE
D'XING	DITCH CROSSING
EHW	EXTREME HIGH WATER
EL	ELEVATION
ELEV	ELEVATION
ELW	EXTREME LOW WATER
ES	END SECTION
HW	HEADWALL
INV	INVERT
MH	MANHOLE
MHW	MEAN HIGH WATER
OHW	ORDINARY HIGH WATER
OLW	ORDINARY LOW WATER
RCP	REINFORCED CONCRETE PIPE
TB	TOP OF BANK (STREAM)
TC	TOP OF CURB
TG	TOP OF GRATE
VCP	VITRIFIED CLAY PIPE
SICPP	SMOOTH INTERIOR CORRUGATED PE

TOPOGRAPHY (MISCELLANEOUS)	
ABBR.	DESCRIPTION
ABUT	ABUTMENT
AOBE	AS ORDERED BY ENGINEER
ASPH	ASPHALT
BDY	BOUNDARY
BLDG	BUILDING
BM	BENCH MARK
CC	CENTER TO CENTER
CONC	CONCRETE
CONST	CONSTRUCTION
CR	COUNTY ROAD
D	DEED DISTANCE
DM	DIRECT MEASUREMENT
DWY	DRIVEWAY
EOP	EDGE OF PAVEMENT
ES	EDGE OF SHOULDER
EB	EAST BOUND
FEE WO/A	FEES ACQUISITION WITHOUT ACCESS
FP	FENCE POST
FD	FOUNDATION
FL	FENCE LINE
GAR	GARAGE
GR	GRAVEL
HO	HOUSE
HWY	HIGHWAY
IP	IRON PIN OR IRON PIPE
MB	MAILBOX
MON	MONUMENT
N&W	NAIL AND WASHER
OG	ORIGINAL GROUND
O/H	OVERHEAD
P	PARCEL
PAV'T	PAVEMENT
PE	PERMANENT EASEMENT
PED POLE	PEDESTRIAN POLE
p	PROPERTY LINE
POR	PORCH
RR	RAILROAD
RTE	ROUTE
ROW	RIGHT OF WAY
RW	RETAINING WALL
SH	STATE HIGHWAY
SHLDR	SHOULDER
SPK	SPIKE
ST	STREET
STK	STAKE
STY	STORY
SW	SIDEWALK
TE	TEMPORARY EASEMENT
TO	TEMPORARY OCCUPANCY
U/G	UNDERGROUND
WW	WING WALL
WB	WEST BOUND

ITS	
ABBR.	DESCRIPTION
AWG	AMERICAN WIRE GAUGE
B	BLACK
BL	BLUE
BR	BROWN
C	CONDUCTOR
CAB.	CABINET
CCTV	CLOSED CIRCUIT TELEVISION
CH	CHANNEL
CODEC	ENCODER/DECODER
COMM.	COMMUNICATION
CSU	CHANNEL SERVICE UNIT
DB	DIRECT SERIAL
DET.	DETECTOR
DIA.	DIAMETER
DMS	DYNAMIC MESSAGE SIGN
DSU	DATA SERVICE UNIT
EXT.	EXTENDER
F/O OR F.O.	FIBER-OPTIC
FOUND.	FOUNDATION
GR. MTD.	GROUND MOUNTED
M.E.P.	MODEM ON EXISTING POLE
MT.	MONTE
MVMS	MODEM FOR VMS
NEC	NATIONAL ELECTRIC CODE
NESC	NATIONAL ELECTRIC SAFETY CODE
NO.	NUMBER
NYT	NEW YORK TELEPHONE
O.H.	OVERHEAD MOUNTED
PB	PULLBOX
PED	PEDESTRIAN
PR.	PAIR
PROG.	PROGRAMMED
PTZ	PAN/TILT/ZOOM
P.V.C.	CONDUIT, PLASTIC RIGID
R	RED
RF	RADIO FREQUENCY
TDS	TRAFFIC DATA STATION
TMS	TRAFFIC MONITORING STATION
TOC	TRAFFIC OPERATIONS CENTER
TV	TELEVISION
UPS	UNINTERRUPTIBLE POWER SUPPLY
VMS	VARIABLE MESSAGE SIGN

DESIGNED BY:	DRAWN BY:	CHECKED BY:	BATTERY PARK CITY AUTHORITY CONTRACT XX-XXXX		
			REVISIONS		
				NYMEX TERRACE, DEPRESSION REMEDIATION OPTION II – PRESSURE GROUT <b>ABBREVIATIONS</b>	
				CITY OF NEW YORK, BOROUGH OF MANHATTAN	
			<b>KSE</b> <b>KS ENGINEERS, P.C.</b>		Engineers • Surveyors • Construction Managers 65 Broadway, Suite 401, New York, N.Y. 10006 Phone: (212) 616-2657, Fax: (212) 616-3060
SCALE:	AS SHOWN	DATE:	PROJECT NO.:	1254-13	SHEET NO.: 3
01/31/2014		01/31/2014	1254-13		

ALIGNMENT			ROADWAY CONT'D.			LANDSCAPE CONT'D.			UTILITIES CONT'D.			
STYLE	NAME	DESCRIPTION	STYLE	NAME	DESCRIPTION	STYLE	NAME	DESCRIPTION	STYLE	NAME	DESCRIPTION	
—	AC	CONTROL (CENTERLINE)	—	RRER	RAIL ROAD, 3RD RAIL	—	LFNC	FENCE	—	UFO	FIBER OPTIC, UNDERGROUND	
—	AD_P	DETOUR	—	RRPLS_P	RAIL, PHOTO, LARGE SCALE	—	LTRC	TREE ROW, CONIFEROUS	—	UFO_P	FIBER OPTIC, UNDERGROUND, PROPOSED	
—	AT_P	TRANSITION CONTROL	—	RRPSS	RAIL, PHOTO, SMALL SCALE	—	LTRD	TREE ROW, DECIDUOUS	—	UFOH	FIBER OPTIC, HANGING	
BRIDGE			—	RRS	RUMBLE STRIP	—	LWH	WALL, H PILE	—	UFOO	FIBER OPTIC, OVERHEAD	
□ □ □	BR	RAIL	—	RRSLS_P	RAIL, SURVEY, LARGE SCALE	—	LWR	WALL, RETAINING	—	UG	GAS, UNDERGROUND	
~~~~~	BSHT	SHEET PILING	—	RRSSS	RAIL, SURVEY, SMALL SCALE	—	LWS	WALL, STONE	—	UGH	GAS, HANGING	
CONTROL			ROW MAPPING			SIGNALS			UIC			
—	CB	BASELINE	—	SBLB	BILLBOARDS	—	MEE	EASEMENT, EXISTING	—	UICH	INFORM CABLE, HANGING	
—	CBPR	BASELINE, PROJECTION	—	SM	MULTIPLE POST	—	MEP_P	EASEMENT, PERMANENT	—	UO	OIL LINE, UNDERGROUND	
—	DCP	CULVERT PIPE	—	SSO	STRUCTURE, OVERHEAD	—	MEPA_P	EASEMENT, PERMANENT, APPROX.	—	UOH	OIL LINE, HANGING	
—	DCP_P	CULVERT PIPE (DIR)	—	SSOC	STRUCTURE, OVHD. CANTILEVER	—	MET_P	EASEMENT, TEMPORARY	—	UPBP	POLE, BRACE, PUSH BRACE	
—	DDG_P	DITCH, GRASS LINED	STRIPING			—	META_P	EASEMENT, TEMPORARY, APPROX.	—	UPBW	POLE, GUY WIRE	
—	DDP_P	DITCH, PAVED INVERT	—	STB*	BROKEN LINE	—	MF_P	FEE ACQUISITION, W/ ACCESS	—	USA	SANITARY SEWER, UNDERGROUND	
—	DDS_P	DITCH, STONE LINED	—	STDB*	DOUBLE BROKEN LINE	—	MFA_P	FEE ACQUISITION, APPROXIMATE	—	USAH	SANITARY SEWER, HANGING	
—	DFL_P	FLOW LINE	—	STDL*	DOTTED LINE LONG	—	MFS_P	FEE ACQUISITION, SHAPE	—	USAF	SANITARY SEWER, FORCE MAIN, UGND	
—	DSSD	SLOTTED DRAIN	—	STDs*	DOTTED LINE SHORT	—	MFWOA_P	FEE ACQUISITION, W/O ACCESS	—	USAFH	SANITARY SEWER, FORCE MAIN, HANG	
—	DUP_P	UNDERDRAIN	—	STFB*	FULL BARRIER LINE	—	MHB	HIGHWAY BOUNDARY	—	UT	TELEPHONE, UNDERGROUND	
ENVIRONMENTAL			—	STH*	HATCH LINE	—	MHBA	HIGHWAY BOUNDARY, APPROX.	—	UTH	TELEPHONE, HANGING	
—	EBLHS	BALE, HAY/STRAW	—	STPB*	PARTIAL BARRIER LINE	—	MHBW	HIGHWAY BOUNDARY, FACE OF WALL	—	UTO	TELEPHONE, OVERHEAD	
—	ECT	CURTAIN, TURBIDITY	—	STRCT	ROUNDABOUT, CAT TRACKS	—	MHBWO	HIGHWAY BOUNDARY, W/O ACCESS	—	UTV	CABLE TV, UNDERGROUND	
—	EDMC	DAM, COFFER TYPE	—	STRYL	ROUNDABOUT, YIELD LINE	—	MJC	JURISDICTION, CITY	—	UTVH	CABLE TV, HANGING	
—	EDMEC_P	DAM, EARTHEN, CHECK	—	STS	STOP BAR	—	MJCY	JURISDICTION, COUNTY	—	UTVO	CABLE TV, OVERHEAD	
—	EDMPC_P	DAM, PREFAB, CHECK	—	STSE	SOLID, EDGE	—	MJHD	JURISDICTION, HISTORIC DISTRICT	—	UUU	UNKNOWN, UNDERGROUND	
—	EDMSC_P	DAM, STONE, CHECK	—	STXL*	X WALK, LADDER LINE	—	MJLL	JURIS., (GREAT, MILITARY) LOT LINE	—	UUH	UNKNOWN, HANGING	
—	EFNS	FENCE, SILT	—	* = W (WHITE) OR Y (YELLOW)		—	MJN	JURISDICTION, NATION	—	UUO	UNKNOWN, OVERHEAD	
—	EFNSV	FENCE, SILT & VEGETATION	TRAFFIC CONTROL			—	MJPB	JURISDICTION, PUBLIC LANDS	—	UW	WATER LINE, UNDERGROUND	
—	EFNV	FENCE, VEGETATION	—	TCSW	SIGNAL, SPAN WIRE	—	MJS	JURISDICTION, STATE	—	UWH	WATER LINE, HANGING	
—	EWAA_P	WETLAND, ADJACENT AREA	TRAFFIC MAINTENANCE			—	MJT	JURISDICTION, TOWN	—	UWO	WATER LINE, OVERHEAD	
—	EWF	WETLAND, FEDERAL	—	TMBCD_P	BARRICADES	—	MJV	JURISDICTION, VILLAGE	ITS			
—	EWFS	WETLAND, FEDERAL AND STATE	—	TMBCDL_P	BARRICADES, LIGHTED	—	FEATURE	SYMBOL	EXISTING			
—	EWM	WETLAND, MITIGATION AREA	—	TMBT_P	BARRIER, TEMPORARY	—	ANTENNAS	▲	PROPOSED			
—	EWS	WETLAND, STATE	—	TMBTl_P	BARRIER, TEMPORARY, LIGHTED	—	CABINET AND PAD	■ P				
LANDSCAPE			—	TMDB_P	DEVICE, BARRELS	—	CCTV SITE	□ ▲				
—	LABL	AREA, BRUSH LINE	—	TMDBL_P	DEVICE, BARRELS, LIGHTED	—	COMMUNICATION PULL BOX	□ □				
—	LAHR	AREA, HEDGE ROW	—	TMDC_P	DEVICE, CONES	—	SOLAR PANEL	■ ■				
—	LAPB	AREA, PLANTING BED	—	UC	CONDUIT, UNDERGROUND	—	FIBER OPTIC CROSS CONNECT CABINET	□ XC				
—	LAWA	AREA, WOODED AREA OUTLINE	—	UC_P	COMM. & ELEC. CONDUITS IN ONE COMMON TRENCH	—	TELEPHONE DEMARCATON BLOCK	□ TC				
—	LAWE	AREA, WATERS EDGE	—	UCD_P	JACKED CASING OR DIRECTIONALLY DRILLED CROSSING	—	PROPOSED DRAINAGE					
—	LCUT_P	CUT LIMIT	—	UCH	CONDUIT, HANGING	—	RIP-RAP	■ ■ ■				
—	LFILL_P	FILL LIMIT	—	UCO	CONDUIT, OVERHEAD	—	UNDERDRAIN	■ ■ ■				
—	UE	ELECTRIC LINE, UNDERGROUND	—	UE_P	ELECTRIC LINE, UNDERGROUND, PROPOSED	—	BATTERY PARK CITY AUTHORITY CONTRACT XX-XXXX					
—	UEH	ELECTRIC LINE, HANGING	—	UEO	ELECTRIC LINE, OVERHEAD	—	REVISIONS					
—	UEO_P	ELECTRIC LINE, UNDERGROUND, PROPOSED	—	UEO_P	ELECTRIC TRANSMISSION, OVERHEAD, PROPOSED	—	NYMEX TERRACE, DEPRESSION REMEDIATION OPTION II – PRESSURE GROUT					
—	UETO	ELECTRIC TRANSMISSION, OVERHEAD	—	UETO	ELECTRIC TRANSMISSION, OVERHEAD	—	LEGEND LINE SYMBOLOGY					
—	UESS	ELECTRIC, SUBSTATIONS	—	RRC	RAIL ROAD, CATENARY	—	CITY OF NEW YORK, BOROUGH OF MANHATTAN					

1. THE LEGEND ILLUSTRATES MAPPING FEATURES (EXISTING AND PROPOSED).
2. FEATURES ARE SHOWN AS EITHER LINEAR (ROADWAY GUIDERAIL, ROADWAY SIDEWALK, UTILITY LINES, ETC.) OR POINT (SIGN, UTILITY POLE, ETC.).
3. FEATURES SHOWN ON THE LEGEND AS EXISTING FEATURES MAY ALSO HAVE CORRESPONDING PROPOSED FEATURES.
4. PROPOSED FEATURE SYMBOLOGY IS IDENTICAL TO EXISTING FEATURE SYMBOLOGY EXCLUDING LINE WEIGHT. LINE WEIGHT FOR PROPOSED FEATURES IS THICKER (0.40 MM ON B SIZE DRAWINGS).
5. MAPPING FEATURES NOT INCLUDED ON THE LEGEND SHEET DO NOT HAVE A UNIQUE SYMBOLICITY (SUCH AS THE PAVEMENT EDGE, PAVEMENT EDGE OF TRAVEL WAY) AND SHOULD BE LABELED ON THE PLANS.
6. FEATURES SHOWN AT THE HEAVIER WEIGHT ARE PROPOSED ONLY AND DO NOT HAVE CORRESPONDING EXISTING FEATURES.

DESIGNED BY: DRAWN BY: CHECKED BY:
 PROPOSED
 DRAWING NO.: DATE: 01/31/2014 PROJECT NO.: 1254-13 SHEET NO.: 4
DIEGO ALAIMO
 PROFESSIONAL ENGINEER
 N.Y. LICENSE NO. 053085-1

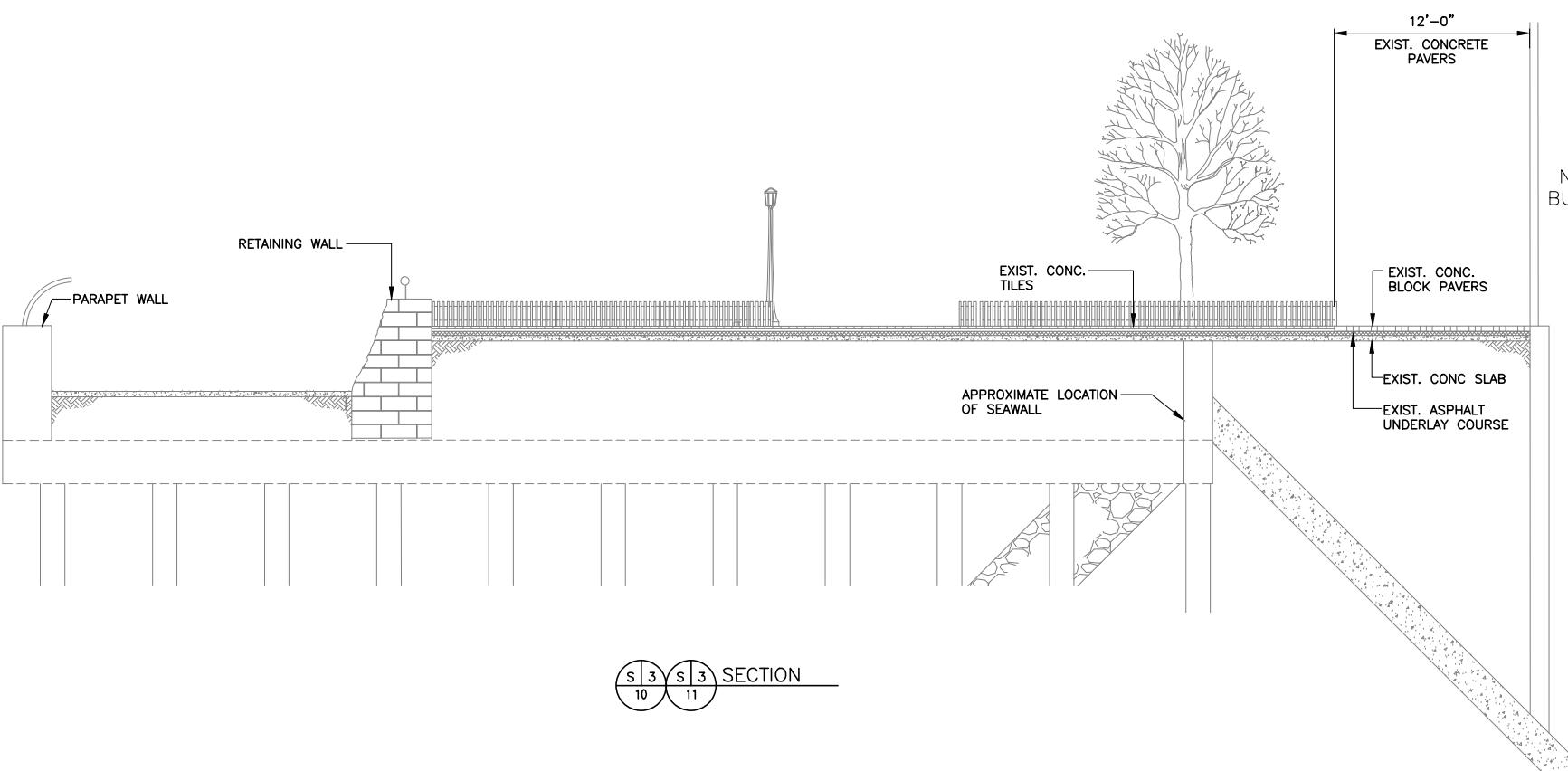
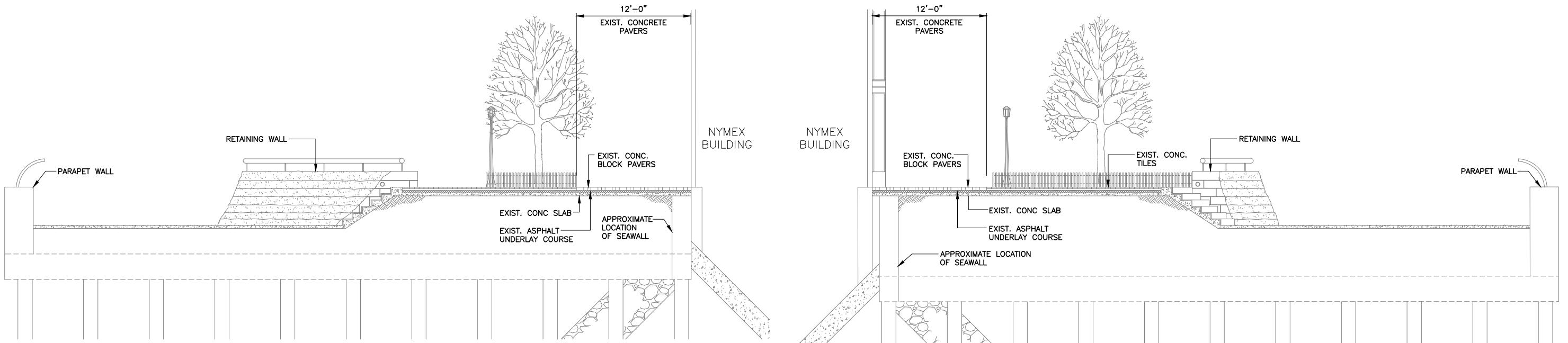
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 KS ENGINEERS, P.C.
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ALIGNMENT			BRIDGE			ROADWAY			ITS			UTILITIES			ROW MAPPING			
CELL	NAME	DESCRIPTION	CELL	NAME	DESCRIPTION	CELL	NAME	DESCRIPTION	CELL	NAME	DESCRIPTION	CELL	NAME	DESCRIPTION	CELL	NAME	DESCRIPTION	
● ACC	CENTER OF CURVATURE		□ BSC	BRIDGE, SCUPPER		○ RES_P	ELEVATION, SPOT		○ IANT_P	ANTENNAS		□ UEB	ELECTRIC, BOX		○ MDL1P	DEED LINE, TYPE 1		
+ ACOGO	COGO		DRAINAGE			□ RGA	GUIDE RAIL, ANCHOR		□ IASCTS	ACCOU. SPEED/COUNT SNSR.S		□ UEM	ELECTRIC, METER		○ MDL2P	DEED LINE, TYPE 2		
● ACS	CURVE TO SPIRAL		+ DINV	INVERT		○ RGP	GUIDE POST, SINGLE		□ ICABPAD	CABINET & PAD		○ UEMH	ELECTRIC, MANHOLE		○ MDL3P	DEED LINE, TYPE 3		
△ ADPL_P	DETOUR, POINT OF INTERSECT.		DS	STRUCTURE, RECTANGULAR		SIGNS			● CCTV	CCTV SITE WITH POLE		○ UEPT	ELECTRIC, POLE, TRANS.		○ MDL4P	DEED LINE, TYPE 4		
○ ADPL_P	DETOUR, POINT ON LINE		+ DSI	STRUCTURE, INVERT		○ S	SINGLE POST		○ CDPD	CDPD TRANSCEIVER		□ UGM	GAS, METER		○ MDL5P	DEED LINE, TYPE 5		
○ AEQN	EQUATION		+ DSM	STRUCTURE, MANHOLE		○ S.P.	SINGLE POST, PROPOSED		○ ICELLT	CELL PHONE TOWER		○ UGMH	GAS, MANHOLE		○ MEEP	EASEMENT, EXISTING		
Ⓐ AEQNAHD	EQUATION AHEAD		DSMTXX_P	STRUCTURE, MANHOLE, TYPE "XX", "XX" = 48, 60, 72, 96		○ SB_P	BACK TO BACK, PROPOSED		→ ICJB	CONDUIT JACK OR BORING		○ UGLM	GAS, LINE MARKER		Ⓐ MEPA_P	EASEMENT, PERM., APPROX.		
Ⓑ AEQNBK	EQUATION BACK		DSR	STRUCTURE, ROUND		○ SDEL	DELINEATORS		□ ICNTLCAB	CONTROLLER CABINET		□ UGP	GAS/FUEL PUMP		○ MEPP_P	EASEMENT, PERM., BACK LINE		
○ AEVT	EVENT STATION		DST"X"CB_P	STRUCTURE, RECT., WITH CURB TYPE "X", "X" = F, G, N, O, P, R		○ SPM	PARKING METER		○ ICPB	COMMUNICATION PULL BOX		□ UGV	GAS, VALVE		○ MEPSP_P	EASEMENT, PERM., SHAPE		
○ APCC	POINT OF COMPOUND CURVATURE		SRM	REFERENCE MARKERS		○ RFM	SRM		○ ICTD	CONDUIT TURNING DOWN		○ UGVT	GAS, VENT		○ MFAP_P	FEEL ACQUISITION, APPROX.		
△ API	POINT OF INTERSECTION		SRSC3	SHLD, CTY, 123 DIG.		○ SRSC4	SHLD, CTY, 4 DIG.		○ ICTU	CONDUIT TURNING UP		○ ULP	LIGHTING, POLE		○ MFP_P	FEEL ACQUISITION, BACK LINE		
△ APOB	POINT OF BEGINNING		SRSC2	SHLD, CTY TOUR, 1-2 DIG.		○ SRSCT2	SHLD, CTY TOUR, 1-2 DIG.		○ ICVTRT	COMM. VEH. ROAD TRANSCVR.		○ ULPM	LIGHTING, POLE, MEDIAN		○ MFSP_P	FEEL ACQUISITION, SHAPE		
○ APOC	POINT OF CURVATURE		SRSC4	SHLD, CTY, 4 DIG.		○ SRSCT4	SHLD, CTY TOUR, 3-4 DIG.		+	IDEFAULT	DEFAULT	○ ULPP	LIGHTING, POLE, PED.		○ MHBP	HIGHWAY BNDRY., APPROX.		
△ APOE	POINT OF END		SRSS2	SHLD, STATE, 2 DIG.		○ SRSI	SHLD, INTERSTATE		EZ	IEZR	EZ-PASS READER		□ UMFC	MISC. FILLER CAP		○ MHBCP	HISTORICAL, BLDG. CORNERS	
○ APOL	POINT ON LINE		SRSS3	SHLD, STATE, 3 DIG.		○ SRSN2	SHLD, NATIONAL, 2 DIG.		EZ-T	IEZTR	TRANSMITTAL READER		○ UOLM	OIL, LINE MARKER		○ MHBP	HIGHWAY BNDRY, PT.	
○ APOS	POINT ON SPIRAL		SRSS4	SHLD, STATE, 4 DIG.		○ SRSN3	SHLD, NATIONAL, 3 DIG.		XC	IFOX CAB	FIBER OPTIC X-CONNECT CAB.		○ UP	POLE, WITH UTILITY		○ MJCP	PT., JURIS. CITY	
○ APOT	POINT ON TANGENT		SRSS2	SHLD, STATE, 2 DIG.		○ SRSN4	SHLD, STATE, 4 DIG.		IFUSSL	FUSION SPLICE		○ UPD	POLE, DEAD (NO UTILITY)		○ MPBC	PT., BUILDING CORNER		
△ APOVC	POINT ON VERTICAL CURVE		SRSS3	SHLD, STATE, 3 DIG.		○ IARADV	HAR ADVISORY SIGN		IRAD	IMC SPL	MECHANICAL SPLICE		○ UPL	POLE, WITH LIGHT		○ MPCC	PT., CROSS CUT	
△ APOVT	POINT ON VERTICAL TANGENT		SRSS4	SHLD, STATE, 4 DIG.		○ IARST	HAR SITE		IMC SPL	IMCS	PORT. SPEED & COUNT SENS		○ UPLM	POLE, WITH LINE MARKER		○ MPDH	PT., DRILL HOLE	
Y APORC	POINT ON REVERSE CURVE		TCBJ	BOX, JUNCTION		○ ICB	LOAD CENTER		IMCS	IMCS	MICRO SPEED & COUNT SNSR.		○ UTM	TELEPHONE, BOOTH		○ MPF	PT., FENCE LOCATION	
○ APT	POINT OF TANGENCY		TCBP	BOX, PULL BOX		○ IMT	MICROWAVE TRANSCEIVER		IMCS	IMCTS	PORT. SPEED & COUNT SNSR.		○ UTVL	TELEPHONE, LINE MARKER		○ MPIP	PT., IRON PIPE	
○ APVC	POINT OF VERTICAL CURVATURE		TCBS	BOX, SPLICE		○ IOVHMS	PERM. OVERHEAD VMS		IPASCS	IPASCS	PORT. ACC. SPD & CNT SNSR.		○ UUB	UNKNOWN, BOX		○ MPR	PT., MONUMENT	
△ APVCC	POINT OF VERT. CMPND CURVE		TCMC	MICROCOMPUTER CABINET		○ IPEDS	PEDESTRIAN SIGNAL HEAD		IPEDS	IPEDS	PEDESTRIAN SIGNAL HEAD		○ UUJB	UNKNOWN, JUNCTION BOX		○ MPR	PT., MONUMENT, MISC.	
○ APVI	POINT OF VERT. INTERSECTION		TCPP	PED POLE		○ IPSS	PAVEMENT SURFACE SNSR.		IPSS	IPSS	PAVEMENT SURFACE SNSR.		○ UUMH	UNKNOWN, PULL BOX		○ MPSP	PT., RAILROAD SPIKE	
△ APVRC	POINT OF VERT. REVERSE CURVE		TCSH	SIGNAL HEADS		○ TCSP	SIGNAL POLE		IPVMS	IPVMS	PERM. VMS		○ UUVL	UNKNOWN, VALVE		○ MPST	PT., SPIKE	
○ APVT	POINT OF VERTICAL TANGENCY		TCSP	SIGNAL POLE		RM	IRM	RAMP METER	IRWIS	IRWIS	RDWY WEATHER INFO. SNSR.		○ UUVT	UNKNOWN, VENT		○ MPTW	PT., STAKE	
○ ASC	SPIRAL TO CURVE		ETRS_P	TRAP, SEDIMENT		○ RWIS	RDWY WEATHER INFO. SNSR.		ISP	ISP	SOLAR PANEL		○ UUW	UNKNOWN, WELL		○ MPWL	PT., WALL LOCATION	
△ ASPI	SPIRAL POINT OF INTERSECTION		EWFG	WETLAND FLAG		○ ISST	SPREAD SPECT. TRANSCEIVER		ITDB	ITDB	TELEPHONE DEMARCTION BLK		○ UWFH	WATER, FIRE HYDRANT				
○ ASTS	SPIRAL TO SPIRAL		GDH	DRILL HOLE		○ TC	ITDB	TELEPHONE DEMARCTION BLK	IPEDS	IPEDS	PADESTRIAN SIGNAL HEAD		○ UWM	WATER, METER				
○ AST	SPIRAL TO TANGENT		LANDSCAPE			○ TO	ITP	SUBSURFACE TEMP. PROBE	IPSS	IPSS	PAVEMENT SURFACE SNSR.		○ UWMH	WATER, MANHOLE				
○ ATS	TANGENT TO SPIRAL		LELS	ELEVATION, SPOT		○ WIM	IWIMD	WEIGHT IN MOTION DETECTOR	IVTRT	IVTRT	VEHICLE TO RDWY TRANSCIVER		○ UWV	WATER, VALVE				
△ AVEVT	VERTICAL EVENT POINT		LFP	FLAG POLE		○ WIR	IWVR	WIRELESS VIDEO REPEATER	IWVRC	IWVRC	WIRELESS VIDEO RECEIVER		○ UWW	WATER, WELL				
○ AVHIGH	VERTICAL HIGH POINT		LMB	MAILBOX		○ WIVTT	IWVTT	WIRELESS VIDEO TRANSMITTER										
○ AVLOW	VERTICAL LOW POINT		LPB	PAPER BOX														
CONTROL			LPST	POST, SINGLE														
△ CBP	BASELINE, POINT		LRB	ROCK, BOULDER														
○ CBPOL	BASELINE, POINT ON LINE		LSHC	SHRUB, CONIFEROUS														
○ CBSP	BASELINE, SPUR POINT		LSHD	SHRUB, DECIDUOUS														
○ CBTP	BASELINE, TIE POINT		LTC	TREE, CONIFEROUS														
○ CPBM	BENCHMARK		LTD	TREE, DECIDUOUS														
○ CPH	POINT, HORIZ. PHOTOGRAMMETRY		LTS	TREE, STUMP														
○ CPSM	POINT, SURVEY MARKER, PERM.		LTR	TRASH RECEPTICLE														
○ CPSV	POINT, VERT., PHOTOGRAMMETRY		LTW_P	TREE, WELL OR WALL														
			LUKP	UNKNOWN POINT														

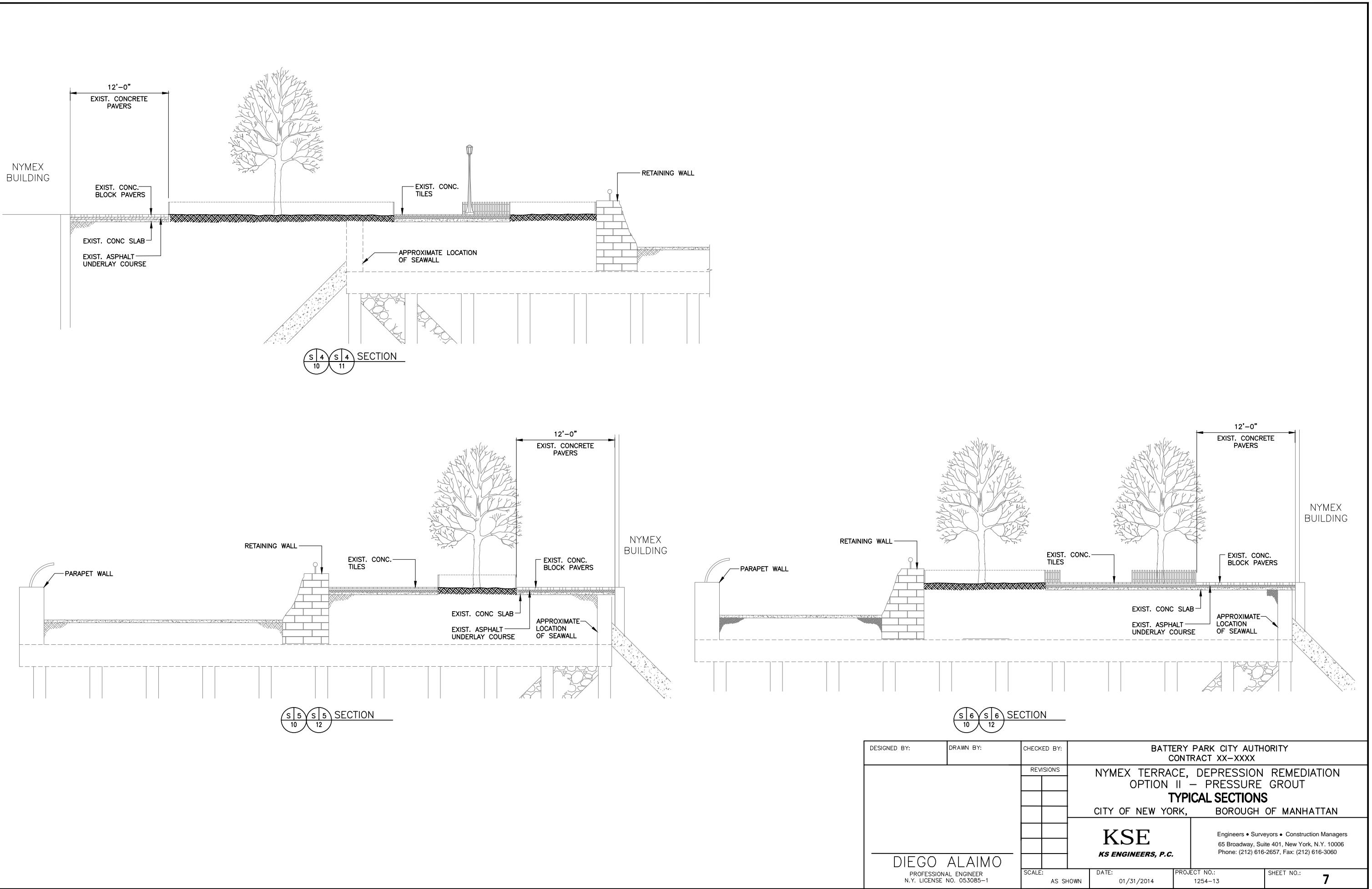
- THE LEGEND ILLUSTRATES MAPPING FEATURES (EXISTING AND PROPOSED).
- FEATURES ARE SHOWN AS EITHER LINEAR (ROADWAY GUIDERAIL, ROADWAY SIDEWALK, UTILITY LINES, ETC.) OR POINT (SIGN, UTILITY POLE, ETC.).
- FEATURES SHOWN ON THE LEGEND AS EXISTING FEATURES MAY ALSO HAVE CORRESPONDING PROPOSED FEATURES.
- PROPOSED FEATURE SYMBOLOGY IS IDENTICAL TO EXISTING FEATURE SYMBOLOGY EXCLUDING LINE WEIGHT. LINE WEIGHT FOR PROPOSED FEATURES IS THICKER (0.40 MM ON B SIZE DRAWINGS).
- MAPPING FEATURES NOT INCLUDED ON THE LEGEND SHEET DO NOT HAVE A UNIQUE SYMBOLOGY (SUCH AS THE PAVEMENT EDGE, PAVEMENT EDGE OF TRAVEL WAY) AND SHOULD BE LABELED ON THE PLANS.
- FEATURES SHOWN AT THE HEAVIER WEIGHT ARE PROPOSED ONLY AND DO NOT HAVE CORRESPONDING EXISTING FEATURES.

DESIGNED BY: DRAWN BY: CHECKED BY:
 BATTERY PARK CITY AUTHORITY
 CONTRACT XX-XXXX
 NYMEX TERRACE, DEPRESSION REMEDIATION
 OPTION II – PRESSURE GROUT
LEGEND POINT SYMBOLOGY
 CITY OF NEW YORK, BOROUGH OF MANHATTAN
KSE
 KS ENGINEERS, P.C.
 DIEGO ALAIMO
 PROFESSIONAL ENGINEER
 N.Y. LICENSE NO. 053085-1
 SCALE: AS SHOWN DATE: 01/31/2014 PROJECT NO.: 1254-13 SHEET NO.: 5

Engineers • Surveyors • Construction Managers
 65 Broadway, Suite 401, New York, N.Y. 10006
 Phone: (212) 616-2657, Fax: (212) 616-3060



DESIGNED BY:	DRAWN BY:	CHECKED BY:	BATTERY PARK CITY AUTHORITY CONTRACT XX-XXXX		
REVISIONS			NYMEX TERRACE, DEPRESSION REMEDIATION OPTION II – PRESSURE GROUT		
			TYPICAL SECTIONS		
			CITY OF NEW YORK, BOROUGH OF MANHATTAN		
KSE KS ENGINEERS, P.C.		Engineers • Surveyors • Construction Managers 65 Broadway, Suite 401, New York, N.Y. 10006 Phone: (212) 616-2657, Fax: (212) 616-3060			
SCALE:	AS SHOWN	DATE:	01/31/2014	PROJECT NO.:	1254-13
SHEET NO.:					6



GENERAL NOTES

1. ALL WORK CONTEMPLATED UNDER THIS CONTRACT SHALL BE COVERED BY AND IN CONFORMITY WITH THE NYSDOT STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS DATED MAY 1, 2008 AND ANY MODIFICATIONS AND ADDENDA THERE TO, EXCEPT AS MODIFIED BY THE CONSTRUCTION DOCUMENTS FOR THIS PROJECT.
2. THE LATEST REVISIONS OF THE STANDARD SHEETS MAINTAINED BY THE NYSDOT, WHICH ARE CURRENT ON THE DATE OF ADVERTISEMENT FOR BIDS, SHALL BE CONSIDERED TO BE IN EFFECT. ALL PAY ITEMS AND WORK CONTAINED IN THE CONTRACT AND ANY ADDITIONAL PAY ITEMS AND WORK ENCOUNTERED DURING THE COURSE OF THE CONTRACT SHALL BE SUBJECT TO THE APPLICABLE STANDARD SHEET(S) UNLESS OTHERWISE SPECIFIED IN THE CONTRACT DOCUMENTS.
3. THE CONTRACTOR'S ATTENTION IS DIRECTED TO THE FACT THAT, DUE TO THE NATURE OF RECONSTRUCTION PROJECTS, THE EXACT EXTENT OF RECONSTRUCTION WORK CANNOT ALWAYS BE ACCURATELY DETERMINED PRIOR TO THE COMMENCEMENT OF WORK. THESE CONTRACT DOCUMENTS HAVE BEEN PREPARED BASED ON FIELD INSPECTION AND OTHER INFORMATION AVAILABLE AT THE TIME. ACTUAL FIELD CONDITIONS MAY REQUIRE MODIFICATIONS TO CONSTRUCTION DETAILS AND WORK QUANTITIES. THE CONTRACTOR SHALL PERFORM THE WORK IN ACCORDANCE WITH FIELD CONDITIONS.
4. THE CONTRACTOR SHALL PERFORM ALL WORK WITH CARE SO THAT ANY MATERIALS WHICH ARE TO REMAIN IN PLACE, OR WHICH ARE TO REMAIN THE PROPERTY OF THE COUNTY WILL NOT BE DAMAGED. IF THE CONTRACTOR DAMAGES ANY MATERIALS WHICH ARE TO REMAIN IN PLACE, OR WHICH ARE TO REMAIN THE PROPERTY OF THE COUNTY, THE DAMAGED MATERIALS SHALL BE REPAIRED OR REPLACED IN A MANNER SATISFACTORY TO THE ENGINEER AT THE EXPENSE OF THE CONTRACTOR.
5. WHENEVER ITEMS IN THE CONTRACT REQUIRE MATERIALS TO BE REMOVED AND DISPOSED OF, THE COST OF SUPPLYING A DISPOSAL AREA AND TRANSPORTATION TO THE DISPOSAL AREA SHALL BE INCLUDED IN THE UNIT PRICES BID FOR THOSE ITEMS.
6. ACCESS TO THE SITE MAY INVOLVE REMOVAL AND REINSTALLATION OF GUiderailaing, FENCING AND REMOVAL OF MISCELLANEOUS MATERIALS, PLANTS OR MINOR STRUCTURES AS DEEMED NECESSARY BY THE CONTRACTOR. THE BIDDER IS RESPONSIBLE FOR DETERMINING THE EXTENT OF WORK REQUIRED TO ACCESS THE SITE AND MUST PREPARE HIS/HER BID ACCORDINGLY.
7. THE CONTRACTOR SHALL REPAIR AND RESTORE TO ORIGINAL CONDITION ANY DAMAGE BEYOND THE WORK LIMITS, CAUSED BY HIS/HER OPERATION, AT NO COST TO THE COUNTY.
8. THE E.I.C. MAY INCREASE OR DECREASE THE LIMIT OF WORK AS DEEMED NECESSARY.
9. APPROXIMATE LOCATION OF RIGHT-OF-WAY, PROPERTY LINES, AND EASEMENTS ARE SHOWN ON THE PLANS BASED ON AVAILABLE INFORMATION.
10. ALL RIGHT-OF-WAY MONUMENTS AND PROPERTY CORNERS ARE TO BE SAFEGUARDED AND PRESERVED. PRIOR TO START OF CONSTRUCTION, THE CONTRACTOR SHALL LOCATE AND SUBMIT A CONDITION INVENTORY OF ALL MONUMENTS AND SURVEY CONTROL WITHIN THE PROJECT LIMITS. ALL RIGHT-OF-WAY MONUMENTS OR PROPERTY CORNERS THAT ARE DISTURBED BY THE CONTRACTOR DURING CONSTRUCTION ARE TO BE REPLACED BY A N.Y.S. LICENSED SURVEYOR AT THE CONTRACTOR'S EXPENSE.
11. CONCRETE AND ASPHALT SURFACE TREATMENT AREAS ARE NOTED ON THE PLANS. LIMITS OF REQUIRED TOPSOIL AND SEEDING SURFACE TREATMENTS ARE NOT SHOWN, HOWEVER, ALL DISTURBED AREAS ADJACENT TO CURBING, DRIVEWAY, AND SIDEWALK INSTALLATION SHALL BE RESTORED TO THEIR EXISTING TREATMENT, TO THE TREATMENT SHOWN ON THE PLANS, BY TOPSOIL AND SEEDING, OR A.O.B.E.
12. ANY ADDITIONAL TREE REMOVALS BEYOND THOSE LISTED IN THE PLANS MUST BE APPROVED BY THE E.I.C. PRIOR TO REMOVAL. THE CONTRACTOR IS TO PROVIDE PROTECTION FOR ALL OF THE EXISTING TREES WITHIN THE PROJECT LIMITS THROUGHOUT THE COURSE OF THE PROJECT, TO MINIMIZE AS MUCH AS POSSIBLE ANY DAMAGE OCCURRING TO THE TREES AS A RESULT OF CONSTRUCTION ACTIVITIES. PROTECTION IS TO BE IN PLACE BEFORE ANY WORK IS STARTED, AND IS TO BE IN THE FORM OF WOOD RAIL OR ORANGE CONSTRUCTION SAFETY FENCING PLACED AROUND EACH TREE PER THE DETAIL ON DRAWING MD-3.
13. THE CONTRACTOR SHALL PRUNE BRANCHES ON EXISTING TREES, TO PROVIDE VERTICAL AND HORIZONTAL CLEARANCE ALONG THE PROPOSED SIDEWALK. THE MINIMUM CLEARANCE PROVIDED SHALL BE EIGHT (8) FEET ABOVE PROPOSED GRADE AND FOUR (4) FEET FROM CENTERLINE OF SIDEWALK. NO ADDITIONAL PRUNING SHALL BE DONE BEYOND THOSE NECESSARY TO PROVIDE THE CLEARANCES LISTED. THE CONTRACTOR SHALL PRUNE BRANCHES AT THE TRUNK OF TREE OR NEAREST PARENT STEM, A.O.B.E. COST SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 201.06.
14. THE CONTRACTOR SHALL ABIDE BY ALL CONDITIONS OF THE NYSDEC AND COUNTY PERMITS.
15. ALL ROADWAY SURFACES ARE TO BE KEPT CLEAN OF MUD AND DEBRIS AT ALL TIMES.

UTILITY NOTES

1. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING ALL UTILITY WORK. ALL COSTS FOR UTILITY COORDINATION SHALL BE INCLUDED IN ITEM 625.01
2. EXISTING UTILITIES (LOCATIONS, SIZES AND INVERTS) SHOWN ON THE PLANS HAVE BEEN PLOTTED FROM FIELD SURVEYS AND RECORD MAPS AND ARE NOT CERTIFIED AS TO THE ACCURACY OF THEIR LOCATION OR COMPLETENESS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE EXACT LOCATIONS AND DEPTHS OF ALL UTILITIES AND STRUCTURES IN THE PATH OF, OR CLOSELY PARALLEL TO, OR UNDER THE PROPOSED CONSTRUCTION, WHETHER ABANDONED OR IN SERVICE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY THE VARIOUS UTILITY OWNERS IN AMPLE TIME FOR THEM TO LOCATE AND MARK THEIR FACILITIES. THE CONTRACTOR SHALL ALSO NOTIFY DIG SAFELY NEW YORK AT LEAST 48 HOURS IN ADVANCE OF COMMENCING ANY WORK. TEL. NO. 1-800-962-7962. COST SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 625.01.
3. WORK SHALL NOT COMMENCE UNTIL ALL UNDERGROUND UTILITIES HAVE BEEN STAKED TO SHOW THEIR LOCATION EITHER INSIDE OR OUTSIDE THE WORK AREAS.
4. THE CONTRACTOR SHALL DIG TEST PITS AT POTENTIAL UTILITY CONFLICT LOCATIONS NOT ALREADY IDENTIFIED AS BEING RELOCATED ON THE PLANS. COST FOR TEST PIT EXCAVATION SHALL BE INCLUDED IN THE PRICE BID FOR ITEM 206.02. BACKFILL AND SURFACE RESTORATION SHALL BE INCLUDED IN THE PRICE BID FOR THE APPROPRIATE PAY ITEMS. THE CONTRACTOR SHALL NOTIFY THE UTILITY COMPANY IF A CONFLICT EXISTS.
5. THE CONTRACTOR SHALL CONDUCT THEIR OPERATIONS AND TAKE ALL PRECAUTIONS NECESSARY TO PROTECT AND PRESERVE THE INTEGRITY OF EXISTING UTILITIES TO REMAIN, AND NEWLY INSTALLED UTILITIES AND SHALL PROVIDE UNINTERRUPTED SERVICE TO ALL USERS OF THE UTILITIES. UTILITIES ENCOUNTERED DURING CONSTRUCTION AND/OR EXCAVATION OPERATIONS SHALL BE SUPPORTED A.O.B.E. AND IN ACCORDANCE WITH THE UTILITY COMPANIES REQUIREMENTS, REGULATIONS, AND THE SPECIAL NOTE IN THE CONTRACT DOCUMENTS TITLED "EXCAVATION PROTECTION SYSTEMS". COST FOR SUPPORTING UTILITIES SHALL BE INCLUDED IN ITEMS 552.16000199 AND 552.16000299. NO SEPARATE PAYMENT SHALL BE MADE FOR ANY ADDITIONAL WORK REQUIRED TO AVOID EXISTING UTILITIES TO REMAIN OR NEWLY INSTALLED UTILITIES.
6. ALL PRIVATE UTILITY WORK TO BE PERFORMED BY THE UTILITY COMPANY, EXCEPT AS NOTED ON THE PLANS. UTILITY FACILITIES CONSTRUCTED BY OTHERS ARE SHOWN ON THE PLANS TO AID THE CONTRACTOR IN COORDINATING THE WORK. THE CONTRACTOR SHALL PROVIDE ALL SURVEY AND STAKEOUT AS NECESSARY AND/OR A.O.B.E. FOR THE UTILITY COMPANIES TO CONSTRUCT THEIR FACILITIES AS SHOWN ON THE PLANS, AND AT ELEVATIONS COMPATIBLE WITH ROADWAY AND DRAINAGE IMPROVEMENTS. CHANGES TO UTILITY LOCATIONS MUST BE APPROVED BY THE ENGINEER AND THE COUNTY.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSURING THAT THE UTILITY COMPANIES RELOCATE THEIR FACILITIES AT THE LOCATIONS SHOWN ON THE PLANS AND AT LOCATIONS THAT WILL NOT CONFLICT WITH OTHER COMPLETED OR FUTURE WORK ON THE PROJECT.

ENVIRONMENTAL NOTES

1. CONTRACTOR SHALL EMPLOY MEASURES TO PREVENT CONTAMINATION OF THE SITE BY SILT, SEDIMENT, FUELS, SOLVENTS, LUBRICANTS, EPOXY COATINGS, CONCRETE, CONCRETE LEACHATE OR ANY OTHER POLLUTANT ASSOCIATED WITH THE PROJECT.
2. SILT FENCE OR OTHER SEDIMENT CONTROL MEASURES SHALL BE INSTALLED PRIOR TO ANY SOIL DISTURBANCES AND MAINTAINED UNTIL PERMANENT STABILIZATION IS ESTABLISHED.
3. TEMPORARY SOIL AND EROSION AND WATER POLLUTION CONTROL SHALL BE USED WHERE SHOWN ON THE PLANS AND AS DIRECTED BY THE E.I.C.

DESIGNED BY:	DRAWN BY:	CHECKED BY:	BATTERY PARK CITY AUTHORITY CONTRACT XX-XXXX				
			REVISIONS	NYMEX TERRACE, DEPRESSION REMEDIATION OPTION II – PRESSURE GROUT GENERAL NOTES			
				CITY OF NEW YORK, BOROUGH OF MANHATTAN			
				KSE KS ENGINEERS, P.C.			
				Engineers • Surveyors • Construction Managers 65 Broadway, Suite 401, New York, N.Y. 10006 Phone: (212) 616-2657, Fax: (212) 616-3060			
SCALE:	AS SHOWN	DATE:	01/31/2014	PROJECT NO.:	1254-13	SHEET NO.:	8

GENERAL

1. THE CONTRACTOR SHALL MAINTAIN TRAFFIC THROUGHOUT THE DURATION OF THE CONTRACT IN ACCORDANCE WITH THE REQUIREMENTS OF SECTION 619 OF THE STANDARD SPECIFICATIONS, THE TRAFFIC CONTROL REQUIREMENTS CONTAINED IN THE PLANS AND/OR PROPOSAL OF THIS CONTRACT, APPLICABLE NYSDOT STANDARD SHEETS, AND THE NATIONAL MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS. THE NEW YORK STATE SUPPLEMENT. AND ALL APPLICABLE ADDENDA. HEREIN TOGETHER KNOWN AS THE MUTCD.
2. THE CONTRACTOR MAY SUBMIT TO THE ENGINEER, IN WRITING, PROPOSED REVISIONS TO THE TRAFFIC CONTROL PLAN FOR REVIEW AND APPROVAL BY THE ROCKLAND COUNTY DRAINAGE AGENCY AT LEAST FIVE (5) WORKING DAYS PRIOR TO THE PLANNED IMPLEMENTATION. OF SUCH PROPOSED REVISIONS, EXCEPT FOR CHANGES THAT ALTER THE SCOPE OF THE TRAFFIC CONTROL PLAN. SUCH CHANGES IN SCOPE MUST BE SUBMITTED TO THE ENGINEER FOR APPROVAL BY THE ROCKLAND COUNTY DRAINAGE AGENCY AT LEAST THIRTY (30) WORKING DAYS PRIOR TO IMPLEMENTATION.
3. THE TYPICAL DETAILS DEPICTED IN THESE PLANS. ON THE NYSDOT STANDARD SHEETS, AND IN THE MUTCD REFLECT MINIMUM REQUIREMENTS. FOR TYPICAL APPLICATIONS OF TRAFFIC CONTROL DEVICES IN CONSTRUCTION AREAS NOT SPECIFIED IN THE PLANS OR NYSDOT STANDARD SHEETS. THE PROVISION OF PART 6 OF THE MUTCD SHALL APPLY. THE ENGINEER MAY ORDER ADDITIONAL DEVICES AND/OR METHODS TO MEET FIELD CONDITIONS, WHICH SHALL BE PROVIDED AT NO ADDITIONAL COST.
4. THE CONTRACTOR SHALL MAINTAIN POSITIVE STORM DRAINAGE THROUGHOUT ALL PHASES OF CONSTRUCTION.
5. ALL SIGNS ARE BLACK LEGEND AND BORDER ON ORANGE BACKGROUND, EXCEPT FOR SIGNS MARKED WITH AN * THAT ARE BLACK LEGEND AND BORDER ON A WHITE BACKGROUND.

INGRESS AND EGRESS

1. THE CONTRACTOR SHALL MAINTAIN PUBLIC ACCESS TO THE GREATEST EXTENT FEASIBLE TO INTERSECTING ROADS, RESIDENCES, BUSINESS ESTABLISHMENTS, AND ADJACENT PROPERTY, FOR VEHICLES, PEDESTRIANS, AND BICYCLISTS IN ACCORDANCE WITH SECTION 619 OF THE NYSDOT STANDARD SPECIFICATIONS.
2. THE CONTRACTOR SHALL PROVIDE RESIDENT/PROPERTY OWNERS WITH A MINIMUM OF FORTY-EIGHT (48) HOURS ADVANCE NOTICE BEFORE STARTING ANY WORK THAT IMPACTS AN ACTIVE DRIVEWAY OR ENTRANCE WALK.
3. DURING WINTER SEASON (NOVEMBER 1 THRU APRIL 19), ALL DRIVEWAY AREAS DISTURBED BY CONSTRUCTION ACTIVITIES SHALL BE RESTORED IN ACCORDANCE WITH THE TEMPORARY SIDEWALK/ DRIVEWAY DETAIL ON DWG. NO. WZ-4, A.O.B.E.

DELINEATION AND CHANNELIZATION

1. TAPER LENGTHS AND LONGITUDINAL BUFFER SPACES SHALL CONFORM TO NYSDOT STANDARD SHEET 619-11.
2. IF ADVANCE SIGNING OBSTRUCTS THE VISIBILITY OF A FLAGGER OR CONFLICTS WITH DRIVEWAYS OR SIDE ROADS, SIGNS SHOULD BE MOVED UPSTREAM AS DIRECTED BY THE ENGINEER.

TEMPORARY LANE CLOSURES

1. THE CONTRACTOR SHALL LOCATE LANE CLOSURES TO PROVIDE OPTIMUM VISIBILITY. I.E. BEFORE CURVES AND CRESTS. TO THE EXTENT CONDITIONS PERMIT.

PEDESTRIAN AND BICYCLE ACCESS

1. THE CONTRACTOR SHALL MAINTAIN, AT ALL TIMES, A MARKED, CONVENIENT, SAFE, ACCESSIBLE PEDESTRIAN FACILITY ALONG ONE SIDE. CONTRACTOR SHALL SCHEDULE THE OPERATIONS TO MINIMIZE THE INTERRUPTION OF PEDESTRIAN TRAFFIC. THE SIDEWALK ON AT LEAST ONE SIDE OF THE ROADWAY SHALL REMAIN OPEN AND PASSABLE AT ALL TIMES (A.O.B.E.) UNLESS OTHERWISE NOTED IN CONTRACT DOCUMENTS. TEMPORARY STORAGE OF CONSTRUCTION EQUIPMENT OR MATERIAL IS NOT PERMITTED ON A SIDEWALK OR PATH THAT IS DESIGNATED AS OPEN.
2. CONTINUOUS PEDESTRIAN AND BICYCLE ACCESS THAT CONFORMS TO THE AMERICANS WITH DISABILITIES ACT ACCESSIBILITY GUIDELINES (A.D.A.A.G.) SHALL BE MAINTAINED AT ALL TIMES (A.O.B.E.). THE CONTRACTOR IS ADVISED THAT HE MAY NEED TO CONSTRUCT PORTIONS OF THE PROPOSED SIDEWALK OR PROVIDE A TEMPORARY PEDESTRIAN AND BICYCLE FACILITY DURING THE VARIOUS STAGES IN ORDER TO ENSURE ACCOMMODATIONS OF THE REQUIRED CONTINUOUS PEDESTRIAN ACCESS ROUTE.
3. ANY TEMPORARY PEDESTRIAN FACILITY SHALL MEET THE FOLLOWING CRITERIA:
 - A. MINIMUM WIDTH = 5 FEET UNLESS OTHERWISE INDICATED
 - B. CROSS SLOPE = 2% MAX
 - C. SURFACE CONDITION =STABLE, FIRM AND SLIP RESISTANT
4. THE CONTRACTOR SHALL SUBMIT A WORK ZONE TRAFFIC CONTROL PLAN FOR PEDESTRIAN ACCESS PRIOR TO CLOSING ANY SECTION OF SIDEWALK. (SEE NYSDOT STANDARD SHEETS 619-50 AND 619-51).
5. CONTRACTOR SHALL MAINTAIN TEMPORARY FACILITIES AS INDICATED IN SUGGESTED CONSTRUCTION SEQUENCE AND AS ORDERED BY THE ENGINEER.
6. AT CERTAIN LOCATIONS IT MAY BE NECESSARY TO BUILD A TEMPORARY WOODEN WALKWAY TO BRIDGE OVER CURING CONCRETE OR EXCAVATION. THE CONTRACTOR SHALL MAINTAIN A.D.A.A.G. COMPLIANT ACCOMMODATIONS AND BUILD SUCH A WALKWAY (A.O.B.E.) COST TO BE INCLUDED UNDER ITEM 619.01.
7. THE CONTRACTOR SHALL MAINTAIN THE SIDEWALK AND ADJACENT LAND AREAS RUT-FREE WITH NO BROKEN SIDEWALK. ANY DISRUPTION THAT RESULTS IN BREAKAGE OF SIDEWALK OR RUTTING OF ADJACENT LAND SHALL BE REPAIRED IMMEDIATELY IN CONFORMANCE WITH THE A.D.A.A.G.

PEDESTRIAN AND BICYCLE ACCESS

8. THE CONTRACTOR WILL BE WORKING IN AREA WHERE RESIDENTS AND CHILDREN MUST BE KEPT AWAY FROM THE PROJECT AREA. TEMPORARY (SAFETY) FENCING ADJACENT TO ANY TEMPORARY OR PERMANENT PEDESTRIAN FACILITY IS NECESSARY TO SEPARATE THE PROJECT AREA FROM LOCAL RESIDENTS. THE FOLLOWING REQUIREMENTS SHALL BE MET:

ADJACENT TO ANY EXCAVATION OR VERTICAL DROP-OFF. THE CONTRACTOR SHALL PROVIDE A CONTINUOUS CHAIN LINK FENCE. THE FENCING WILL BE 6 FEET HIGH AND INCLUDE A TOP AND BOTTOM RAIL TO PROVIDE ADEQUATE SUPPORT (A.O.B.E.).

AT ALL OTHER LOCATIONS. SAFETY FENCING SHALL BE CONTINUOUS PLASTIC FLUORESCENT ORANGE SUPPORTED BY METAL OR WOODEN POSTS SPACED AT 3 FEET ON CENTER (A.D.B.E.).

THE CONTRACTOR SHALL SUBMIT A PLAN FOR IMPLEMENTING ALL SAFETY PROCEDURES AND DEVICES TO THE COUNTY FOR REVIEW.

ALL FENCING (CHAIN LINK AND PLASTIC) AND ASSOCIATED WORK SHALL BE INCLUDED IN ITEMS 607.11000008 AND 607.41010010.
9. "SIDEWALK CLOSED" SIGNS SHALL BE USED AT ALL WORK ZONES WHERE NO PEDESTRIAN TRAFFIC IS PERMITTED THROUGH THE WORK AREA.

EMERGENCY ACCESS

1. AT ALL TIMES DURING CONSTRUCTION, THE CONTRACTOR MUST PROVIDE SAFE AND CONVENIENT EMERGENCY ACCESS. LOCAL FIRE, POLICE, AND AMBULANCE AGENCIES SHALL BE NOTIFIED IN WRITING BY THE CONTRACTOR PRIOR TO THE START OF WORK IN ORDER TO COORDINATE AND MAINTAIN SUFFICIENT EMERGENCY SERVICES. A COPY OF THIS NOTIFICATION SHALL BE PROVIDED TO THE ENGINEER.

DESIGNED BY:	DRAWN BY:	CHECKED BY:	BATTERY PARK CITY AUTHORITY CONTRACT XX-XXXX			
			NYMEX TERRACE, DEPRESSION REMEDIATION OPTION II – PRESSURE GROUT			
WORK ZONE TRAFFIC CONTROL GENERAL NOTES CITY OF NEW YORK, BOROUGH OF MANHATTAN						
KSE KS ENGINEERS, P.C.			Engineers • Surveyors • Construction Managers 65 Broadway, Suite 401, New York, N.Y. 10006 Phone: (212) 616-2657, Fax: (212) 616-3060			
DIEGO ALAIMO PROFESSIONAL ENGINEER N.Y. LICENSE NO. 053085-1	SCALE: AS SHOWN	DATE: 01/31/2014	PROJECT NO.: 1254-13	SHEET NO.: 9		

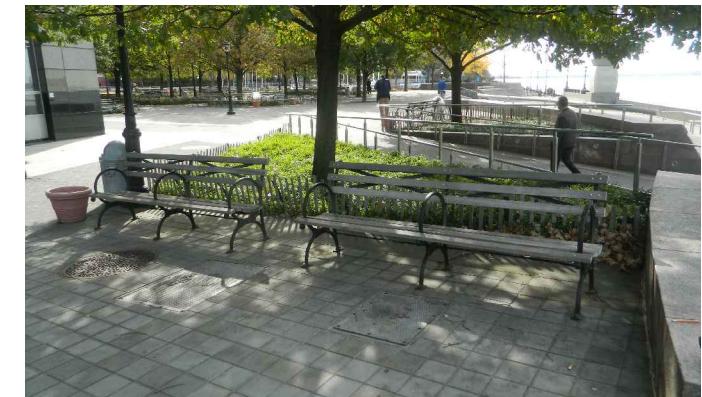
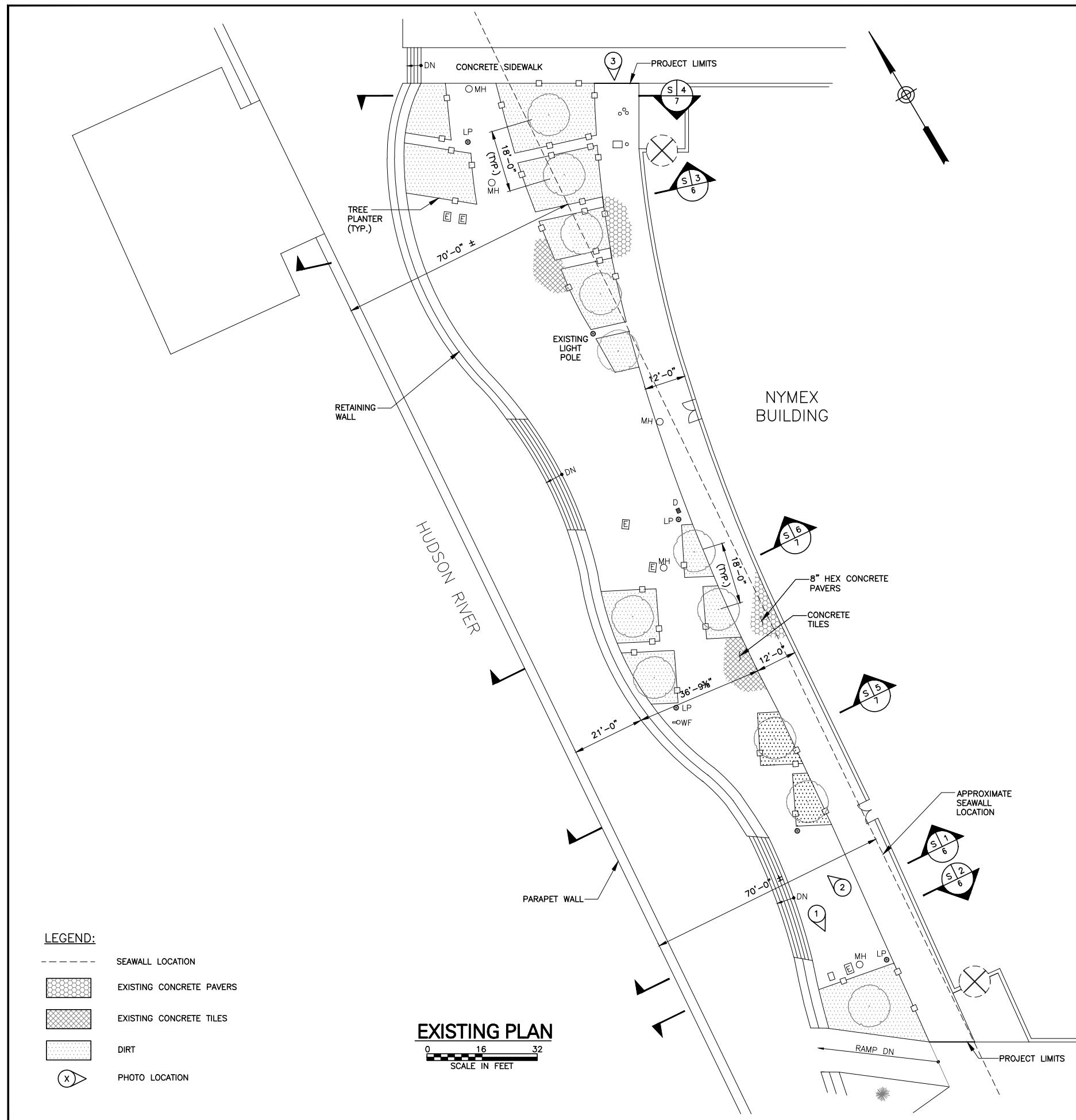


PHOTO 1



PHOTO 2

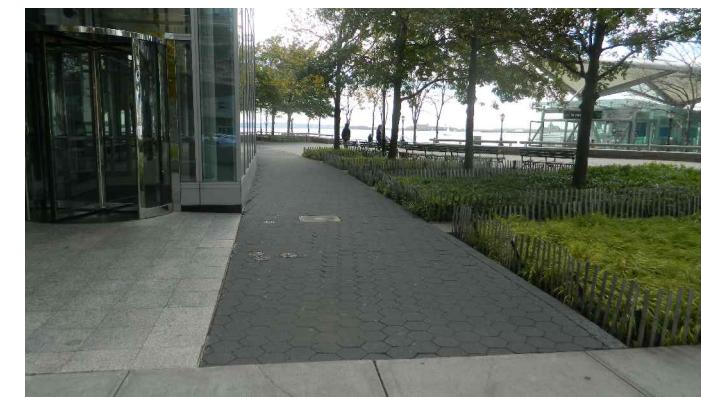


PHOTO 3

LEGEND:

- | | |
|---|--------------------------|
| — — — — — | SEAWALL LOCATION |
|  | EXISTING CONCRETE PAVERS |
|  | EXISTING CONCRETE TILES |
|  | DIRT |
|  | PHOTO LOCATION |

EXISTING PLAN

A scale bar consisting of a horizontal line with tick marks at 0, 16, and 32, labeled "SCALE IN FEET" below it.

DESIGNED BY:	DRAWN BY:	CHECKED BY:	BATTERY PARK CITY AUTHORITY CONTRACT XX-XXXX	
		REVISIONS	NYMEX TERRACE, DEPRESSION REMEDIATION OPTION II – PRESSURE GROUT GENERAL EXISTING PLAN	
			CITY OF NEW YORK, BOROUGH OF MANHATTAN	
			KSE KS ENGINEERS, P.C.	Engineers • Surveyors • Construction Managers 65 Broadway, Suite 401, New York, N.Y. 10006 Phone: (212) 616-2657, Fax: (212) 616-3060
<hr/> DIEGO ALAIMO		SCALE: AS SHOWN	DATE: 01/31/2014	PROJECT NO.: 1254-13
		SHEET NO.:	10	

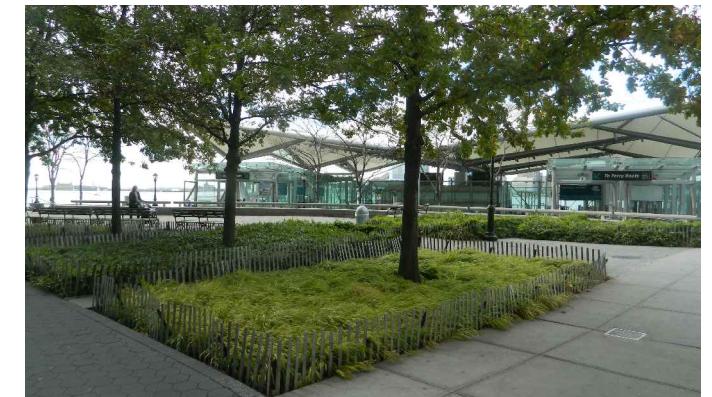
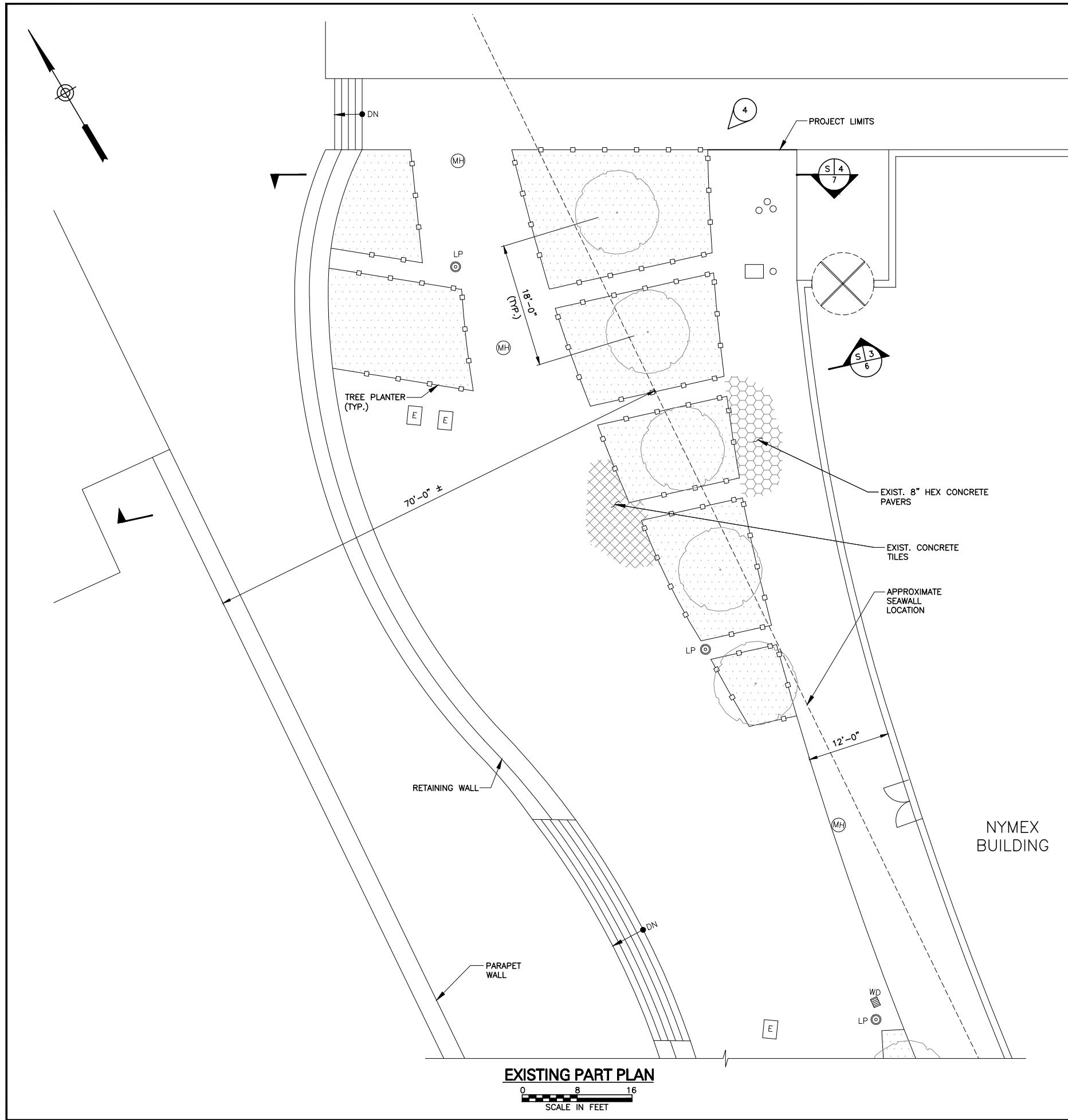
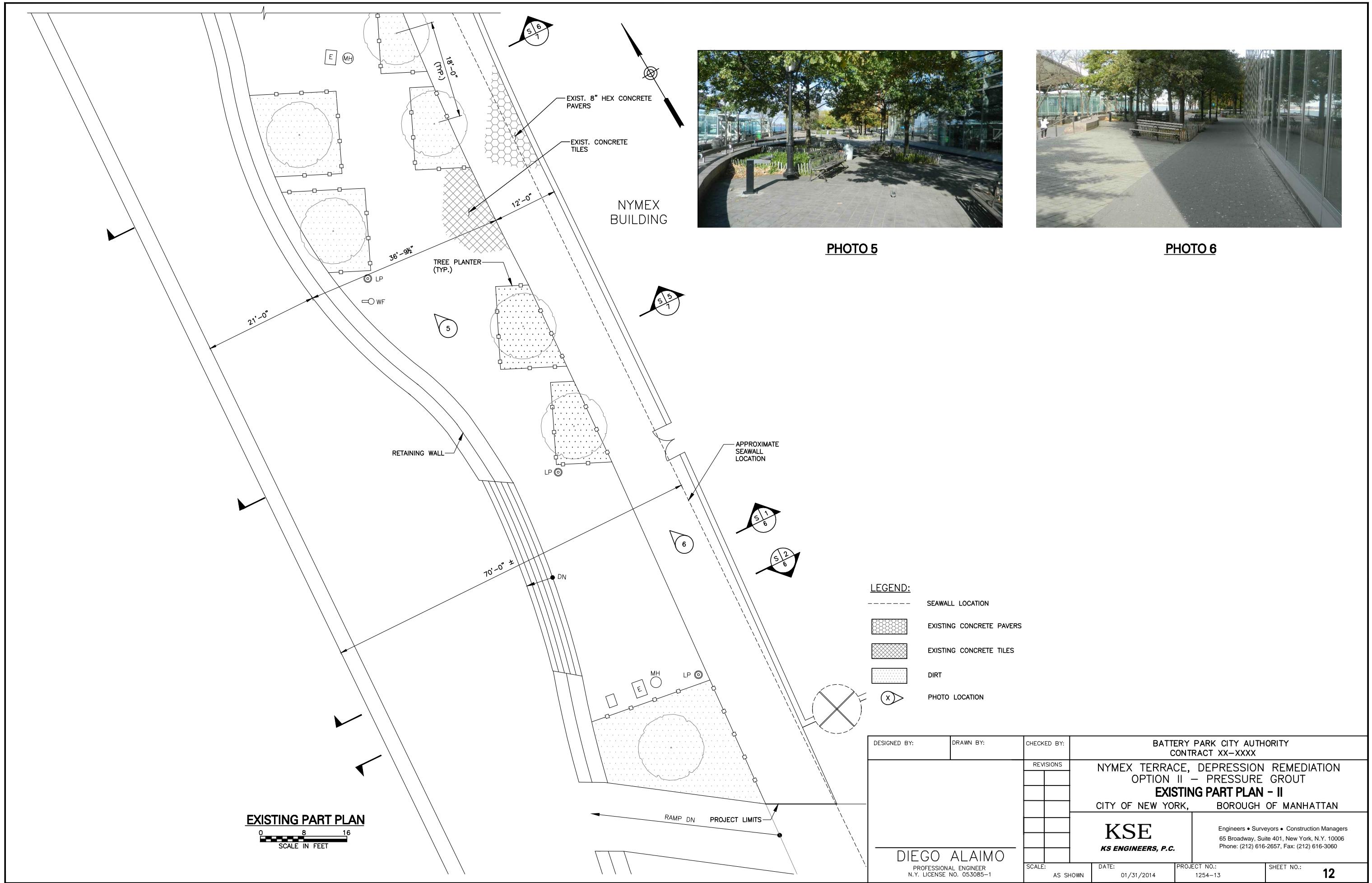


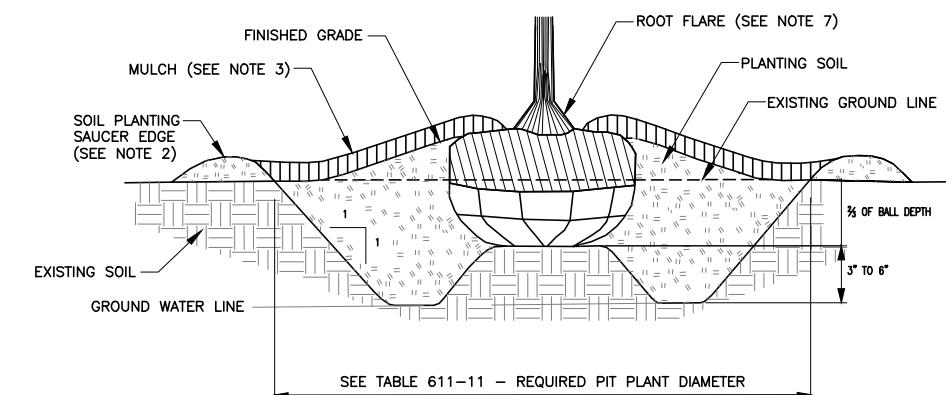
PHOTO 4

DESIGNED BY:	DRAWN BY:	CHECKED BY:	BATTERY PARK CITY AUTHORITY CONTRACT XX-XXXX		
			REVISIONS	NYMEX TERRACE, DEPRESSION REMEDIATION OPTION II – PRESSURE GROUT EXISTING PART PLAN - I	
				CITY OF NEW YORK, BOROUGH OF MANHATTAN	
			KSE KS ENGINEERS, P.C.	Engineers • Surveyors • Construction Managers 65 Broadway, Suite 401, New York, N.Y. 10006 Phone: (212) 616-2657, Fax: (212) 616-3060	
			DIEGO ALAIMO PROFESSIONAL ENGINEER N.Y. LICENSE NO. 053085-1	SCALE: AS SHOWN	DATE: 01/31/2014
				PROJECT NO.: 1254-13	SHEET NO.: 11

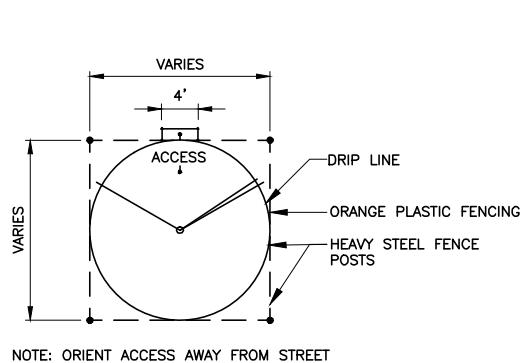


LANDSCAPE NOTES

1. ALL PLANTS SHALL BE HEALTHY, VIGOROUS, AND FREE OF PESTS AND DISEASE.
2. PLANTS PITS SHALL BE 2-3 TIMES THE WIDTH OF THE ROOT BALL (SEE TABLE 611-11, THIS SHEET) AND DEEP ENOUGH FOR TOP OF ROOT FLARE TO PLANTED LEVEL WITH ADJACENT GRADE. REMOVE ALL EXISTING SOIL, LOOSEN SIDES OF PIT WITH PICK, AND BACKFILL WITH AMENDED EXISTING SOIL EXCAVATED FROM PLANT PIT AS FOLLOWS ONE (1) PART COMPOST-TYPE A (713-15), TO FIVE (5) PARTS EXISTING SOIL EEND/ECTO MYCORRHIZAL FUNGAL TRANSPLANT INOCULANT SHALL BE THOROUGHLY MIXED WITH THE PLANTING SOIL AT THE RATE RECOMMENDED BY THE MANUFACTURER.
3. PLANTING BALL - B&B MATERIAL, BURLAP AND WIRE BASKET OR OTHER CONTAINER SHALL BE REMOVED TO REVEAL THE ROOT FLARE.
4. HEIGHT OF PLANTING SAUCER SHALL BE 3".
5. SHREDDED HARDWOOD MULCH, TYPE A (713-05) SHALL BE A MAXIMUM OF 3" DEEP AND TAPERED TO LEAVE THE ROOT FLARE EXPOSED. WHEN PLANTING ON SLOPES, DOWNHILL SIDE MUST BE STABILIZED APPROPRIATELY.
6. STAKE ALL TREES WITH AN ABOVE GROUND SUPPORT METHOD (713-08) PER DETAIL ON SHEET 14 MISCELLANEOUS DETAILS.
7. ALL PLANTS AND WORKMANSHIP SHALL BE CARED FOR PER THE POST PLANTING CARE WITH REPLACEMENT SPECIFICATION, ITEM 611.190X0024.
8. NO PLANTS EXISTING ON THE SITE SHALL BE REMOVED, EXCEPT FOR THOSE SPECIFICALLY IDENTIFIED ON THE DRAWINGS FOR REMOVAL. TREES AND VEGETATED AREAS WHICH ARE IN OR NEAR CONSTRUCTION AREAS SHALL BE PROTECTED WITH TEMPORARY PLASTIC BARRIER FENCING PLACED AROUND THE TREES TRUNK AT THE DRIP LINE OF THE TREES. WHERE FENCING MUST BE PLACED CLOSER THAN THE DRIP LINE, PLACE 4 INCHES OF WOOD CHIPS OVER ROOT ZONE TO EXTEND TO THE DRIP LINE. REMOVAL OF WOOD CHIPS, RESTORATION SHALL INCLUDE SCARIFYING EXISTING SOIL SURFACE AND APPLYING LAWN SEED MIX. RESTORATION WORK SHALL BE INCLUDED IN ITEM 610.1602 TURF ESTABLISHMENT - LAWNS.
9. ALL LANDSCAPE INSTALLATIONS SHALL BE MAINTAINED ON A REGULAR BASIS, AND SHALL NOT BE ALLOWED TO TAKE ON AN UNSIGHTLY APPEARANCE (EXCEPT FOR NATURAL AREAS WHICH SHALL BE ALLOWED TO GROW NATURALLY WITH A MINIMUM OF MAINTENANCE).
10. ALL DISTURBED AND UNDISTurbed AREAS SHALL RECEIVE 4" OF TOPSOIL-LAWNS SEED MIX, MULCH, AND WATER UNTIL A HEALTHY STAND OF GRASS IS OBTAINED. SEED SHALL BE DISPENSED AT A RATE OF 5 LBS. PER 1,000 SQUARE FEET WITH THE LAWN SEED MIX (713-04). MULCH NEWLY SEeded LAWN WITH TYPE 1 WOOD FIBER MULCH (713-11) AND MULCH ANCHORAGE (713-12) AT MANUFACTURER'S RECOMMENDED RATE.
11. THE CONTRACTOR IS RESPONSIBLE TO PLANT THE TOTAL QUANTITIES OF ALL PLANTS SHOWN ON THE LANDSCAPE PLAN. CHANGES TO THE SITE PLAN FROM THAT SHOWN ON THE PLANTING PLAN WHICH CAUSE DIFFERENT SITE AREAS AVAILABLE FOR PLANTING SHALL HAVE PLANTING ADJUSTED ON SITE A.D.B.E. THE QUANTITIES OF PLANTING SHOWN GRAPHICALLY ON THE PLAN SHALL GOVERN.
12. PLANTING SEASONS: PER TABLE 611-11 OF SECTION 611.
13. ALL TAGS, LABELS, ETC SHALL BE REMOVED FROM THE PLANTS.
14. ALL TEMPORARY SEEDING, TURF ESTABLISHMENT - LAWNS AND PLANTING PIT/BEDS SHALL BE PROVIDED WITH WATERING VEGETATION, ITEM 610.19, IN ACCORDANCE WITH THE SPECIFICATION.

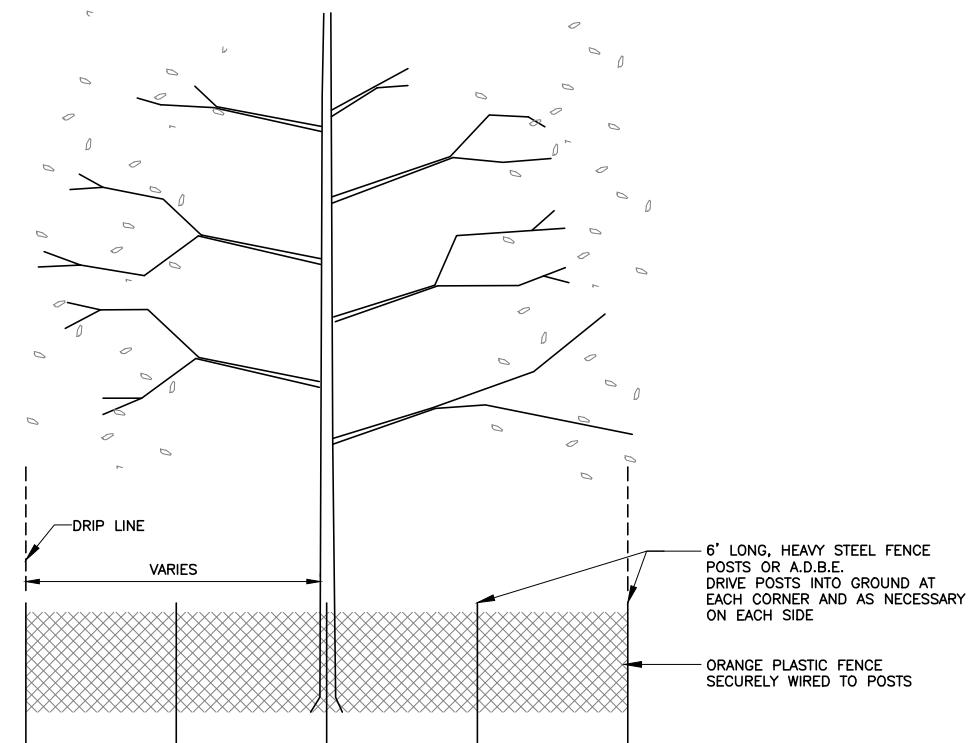


TREE PLANTING IN HEAVY - CLAY SOILS



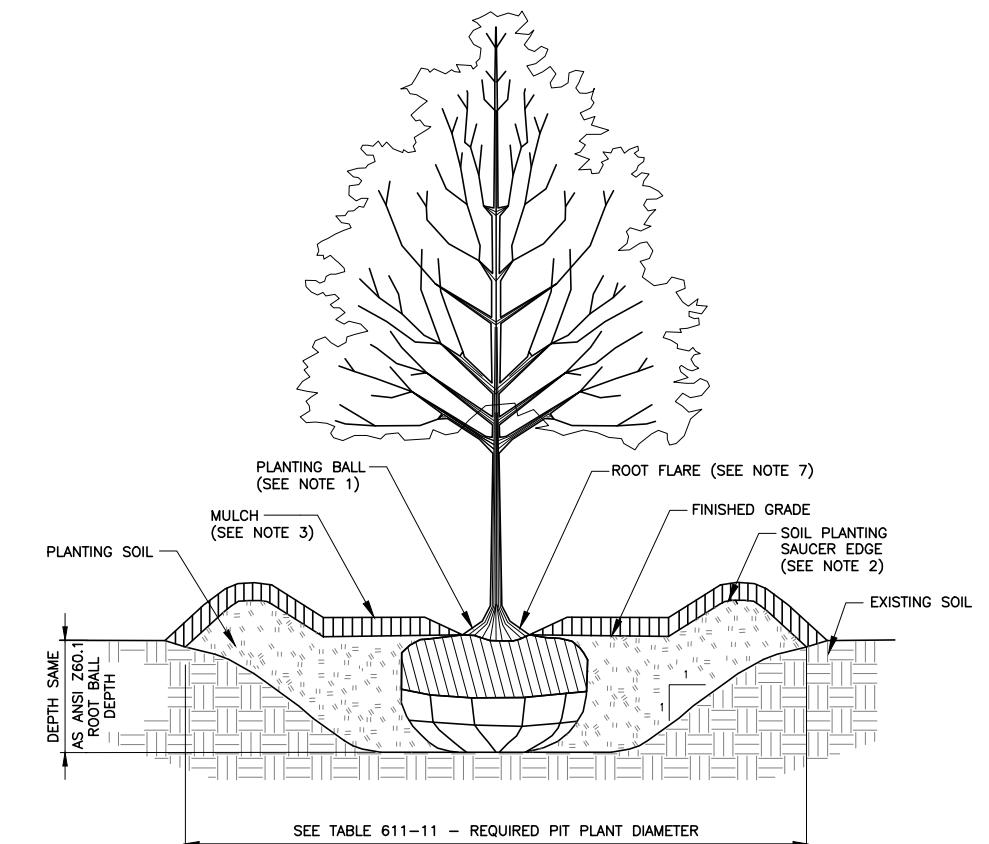
PLAN

NOTE:
BARRIER SHALL BE EXTEND TO DRIP
LINE OF TREE OR A.D.B.E.



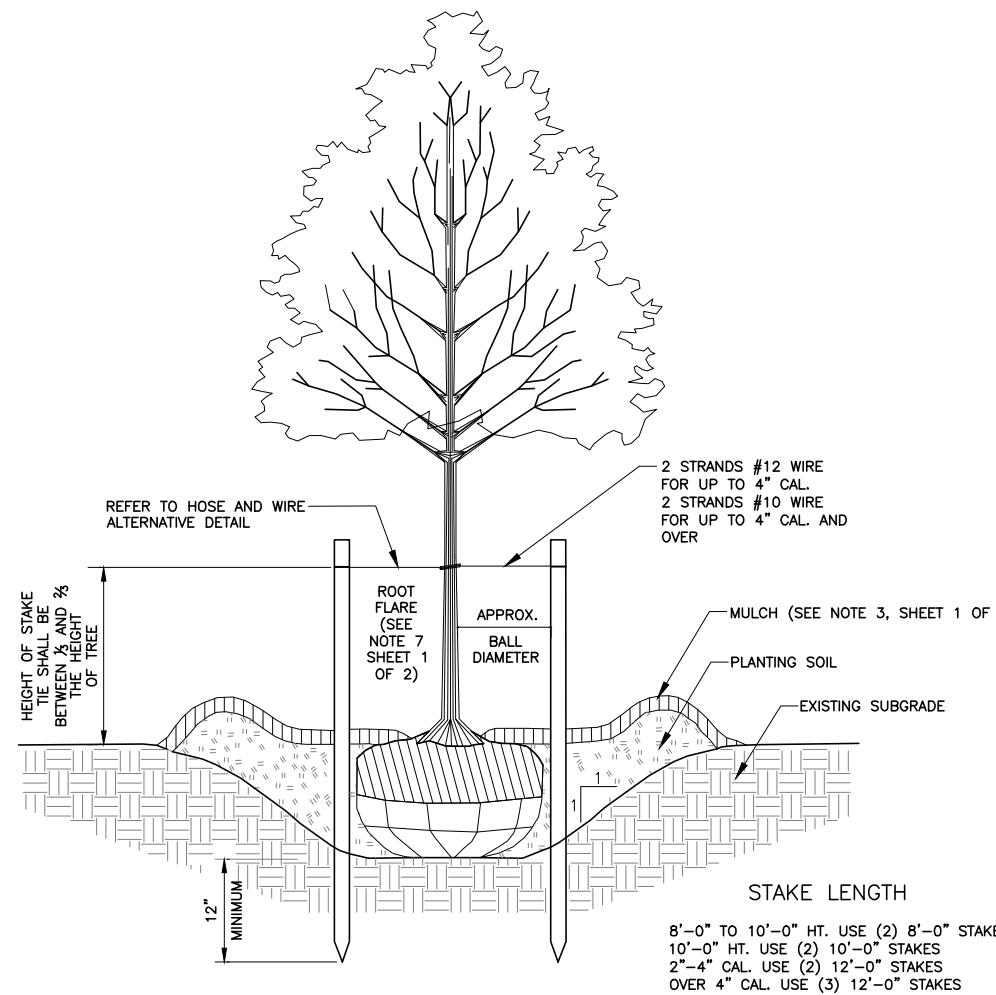
ELEVATION

TREE VEGETATION PROTECTION BARRIER ITEM 00.0000



GENERAL TREE PLANTING

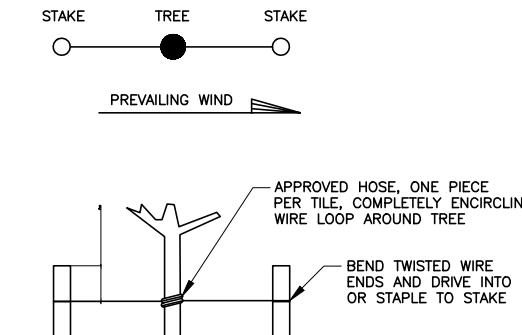
DESIGNED BY:	DRAWN BY:	CHECKED BY:	BATTERY PARK CITY AUTHORITY CONTRACT XX-XXXX		
			REVISIONS	NYMEX TERRACE, DEPRESSION REMEDIATION OPTION II - PRESSURE GROUT MISCELLANEOUS DETAILS	
				CITY OF NEW YORK, BOROUGH OF MANHATTAN	
			KSE KS ENGINEERS, P.C.		Engineers • Surveyors • Construction Managers 65 Broadway, Suite 401, New York, N.Y. 10006 Phone: (212) 616-2657, Fax: (212) 616-3060
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			SHEET NO.: 13		



TEMPORARY TREE SUPPORT DETAIL

(SEE NOTE 2 THIS SHEET)

NOTES:
 1. MATERIALS FOR PROTECTION OF PLANTS SHALL BE A COMMERCIAL AVAILABLE PRODUCT OR SYSTEM.
 2. THIS DETAIL SHOWS ONE ABOVE GROUND TREE SUPPORT METHOD, ANY OTHER METHOD MUST USE COMMERCIALY AVAILABLE PRODUCTS INSTALLED PER THE MANUFACTURER'S SPECIFICATIONS.



HOSE AND WIRE ALTERNATIVE

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MISCELLANEOUS DETAILS - II					
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SHEET NO.:	14				

SOIL EROSION AND SEDIMENT CONTROL NOTES

1. ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES MUST BE IMPLEMENTED, INSPECTED, MONITORED, AND MAINTAINED AS SPECIFIED IN THE NYSDOT SPECIFICATIONS.
 2. THE LOCATIONS OF EROSION AND SEDIMENT CONTROL MEASURES, AS INDICATED IN THE CONTRACT DOCUMENTS MAY REQUIRE FIELD ADJUSTMENTS DEPENDING ON THE SEQUENCE OF CONSTRUCTION ACTIVITIES, CONSTRUCTION METHODS AND/OR ACTUAL FIELD CONDITIONS.
 3. THE ENGINEER IN CHARGE SHALL BE NOTIFIED OF ANY SIGNIFICANT CHANGES TO THE EROSION AND SEDIMENT CONTROL MEASURES INDICATED IN THE CONTRACT DOCUMENTS.
 4. THE CONTRACTOR SHALL SUBMIT FOR APPROVAL TO THE ENGINEER IN CHARGE HIS WRITTEN SCHEDULE AND PROPOSED MEASURES FOR TEMPORARY AND PERMANENT EROSION AND SEDIMENT CONTROL WORK AND SCHEDULE OF OPERATIONS AS REQUIRED BY SECTION 209 OF THE NYSDOT STANDARD SPECIFICATIONS.
 5. ALL DREDGED AND EXCAVATED MATERIAL THAT IS DISPOSED OF ON AN UPLAND SITE SHALL BE SUITABLY STABILIZED WITH SEED AND MULCH IN ACCORDANCE WITH SECTION 209 OF THE NYSDOT STANDARD SPECIFICATIONS SO THAT IT CANNOT REASONABLY RE-ENTER ANY WATER BODY OR WETLAND AREA.
 6. INSPECTION, PERIODIC CLEANING AND MAINTENANCE OF TEMPORARY SOIL EROSION AND POLLUTION DEVICES SHALL BE PERFORMED ON A SCHEDULED BASIS IN ACCORDANCE WITH SECTION 209 OF THE NYSDOT STANDARD SPECIFICATIONS. THE COST OF INSTALLING, CLEANING AND REMOVING TEMPORARY SOIL EROSION AND WATER POLLUTION CONTROL DEVICES SHALL BE PAID FOR UNDER THE ITEMS SHOWN.
 7. ALL CONTROL MEASURES SHALL BE PLACED TO STARTING EARTH WORK OPERATIONS AND SHALL REMAIN IN PLACE UNTIL THE NEW SLOPES ARE STABILIZED WITH SEEDING, MULCH AND/OR SLOPE PROTECTION, IN ACCORDANCE WITH SECTION 209 OF THE NYSDOT STANDARD SPECIFICATIONS.
 8. REFER TO NYSDOT STANDARD SHEETS 209-1 THRU 209-7 FOR SOIL EROSION AND SEDIMENT CONTROL DETAILS.
 9. WHEELS SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO ADJACENT ROADWAYS. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE AND WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.
 10. ALL NECESSARY PRECAUTIONS SHALL BE TAKEN TO PREVENT CONTAMINATION OF ANY STREAM OR WATERWAY BY SILT, SEDIMENT, FUELS, SOLVENTS, LUBRICANTS, EPOXY COATINGS, CONCRETE LEACHATE OR ANY OTHER POLLUTANT ASSOCIATED WITH CONSTRUCTION AND CONSTRUCTION PROCEDURES.
 11. DURING CONSTRUCTION, NO WET OR FRESH CONCRETE OR LEACHATE SHALL BE ALLOWED TO ESCAPE INTO ANY WATERS, NOR SHALL WASHINGS FROM CONCRETE TRUCKS, MIXERS OR OTHER DEVICES BE ALLOWED TO ENTER ANY WETLAND OR WATERS.
 12. DUMP TRUCKS HAULING MATERIAL FROM THE CONSTRUCTION SITE WHICH ARE PRONE TO BLOWING FROM THE WIND WILL BE COVERED BY A TARPAULIN.
 13. SILT FENCING MUST BE INSTALLED PARALLEL TO EXISTING CONTOURS OR CONSTRUCTED IN LEVEL ALIGNMENTS. ENDS OF FENCING MUST BE EXTENDED 10 FT., TRAVELING UPSLOPE AT 45 DEGREES TO THE ALIGNMENT OF THE MAIN FENCING SECTION.
 14. WHERE SILT FENCE IS USED IN AREAS OF CONCENTRATED FLOW, THE ENGINEER IN CHARGE MAY CALL FOR BACKING THE SILT FENCE WITH STRAW BALES. AN APPROVED GEOTEXTILE OR FILTER FENCE MAY BE SUBSTITUTED FOR STRAW BALES AT NO ADDITIONAL COST. GEOTEXTILE SHALL SATISFY THE REQUIREMENTS OF SECTION 207-2 OF THE STANDARD SPECIFICATIONS.
 15. CONTROL MEASURES SHALL BE USED AS NECESSARY AND SHALL FOLLOW DITCH EXCAVATING OPERATIONS. THEY SHALL REMAIN IN PLACE UNTIL THE NEW SLOPES HAVE BEEN STABILIZED BY SEEDING, MULCH AND OR SLOPE PROTECTION IN ACCORDANCE WITH SECTION 209 OF THE NYSDOT STANDARD SPECIFICATIONS.
 16. IF CONSTRUCTION ACTIVITIES ARE DISCONTINUED IN AREAS OF SOIL DISTURBANCE BEFORE FINAL GRADING IS COMPLETE, THEN TEMPORARY GRADING SHALL INCLUDE TEMPORARY SEEDING AND MULCH (ITEM 209.1003) THAT WILL BE STABILIZED WITHIN 7 DAYS OF EXPOSURE. MULCH SHALL BE MAINTAINED UNTIL SUITABLE VEGETATIVE COVER IS ESTABLISHED. THIS PAY ITEM IS ESTIMATED AND THE QUANTITY MAY VARY BASED ON ACTUAL CONSTRUCTION CONDITIONS.
 17. CONTAIN ANY TEMPORARY STOCKPILES OF TOPSOIL OR FILL WITH SILT FENCES AS SHOWN IN THE SILT FENCE DETAIL IN THE NYSDOT STANDARD SHEETS AND STANDARD SPECIFICATIONS. PILES EXPOSED FOR LONGER THAN TWO WEEKS SHALL BE STABILIZED BY SEEDING, MULCH AND OR SLOPE PROTECTION IN ACCORDANCE WITH SECTION 209 OF THE NYSDOT STANDARD SPECIFICATIONS .
 18. ALL METHODS AND EQUIPMENT PROPOSED BY THE CONTRACTOR TO ACCOMPLISH THE WORK SHALL BE SUBJECT TO THE APPROVAL OF THE ENGINEER IN CHARGE.
 19. AT THE COMPLETION OF CONSTRUCTION AND PERMANENT SOIL STABILIZATION, SEDIMENT SHALL BE REMOVED FROM NEW DRAINAGE PIPES, DRAINAGE STRUCTURES, AND CHECK DAMS. THE COST FOR SEDIMENT REMOVAL SHALL BE INCLUDED IN THE COST BID FOR THE EROSION CONTROL ITEMS.
 20. THE LOCATION OF EROSION AND SEDIMENT CONTROL MEASURES AS INDICATED IN THE CONTRACT DOCUMENTS, MAY REQUIRE FIELD ADJUSTMENTS DEPENDING ON THE SEQUENCE OF CONSTRUCTION ACTIVITIES, CONSTRUCTION METHODS AND/OR ACTUAL FIELD CONDITIONS. NO MODIFICATIONS WILL BE MADE WITHOUT THE APPROVAL OF THE ENGINEER.
 21. THE SIDEWALKS MUST BE KEPT CLEAN OF MUD, DIRT, AND OTHER DEBRIS AT ALL TIMES.
 22. REFER TO DUST CONTROL REQUIREMENTS IN STANDARD SPECIFICATIONS 203 AND 619.

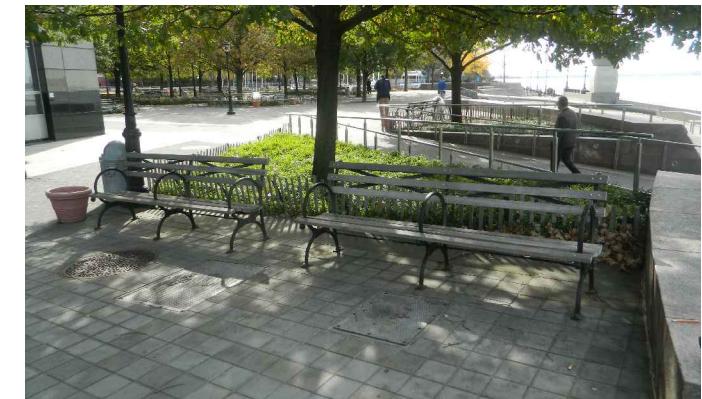
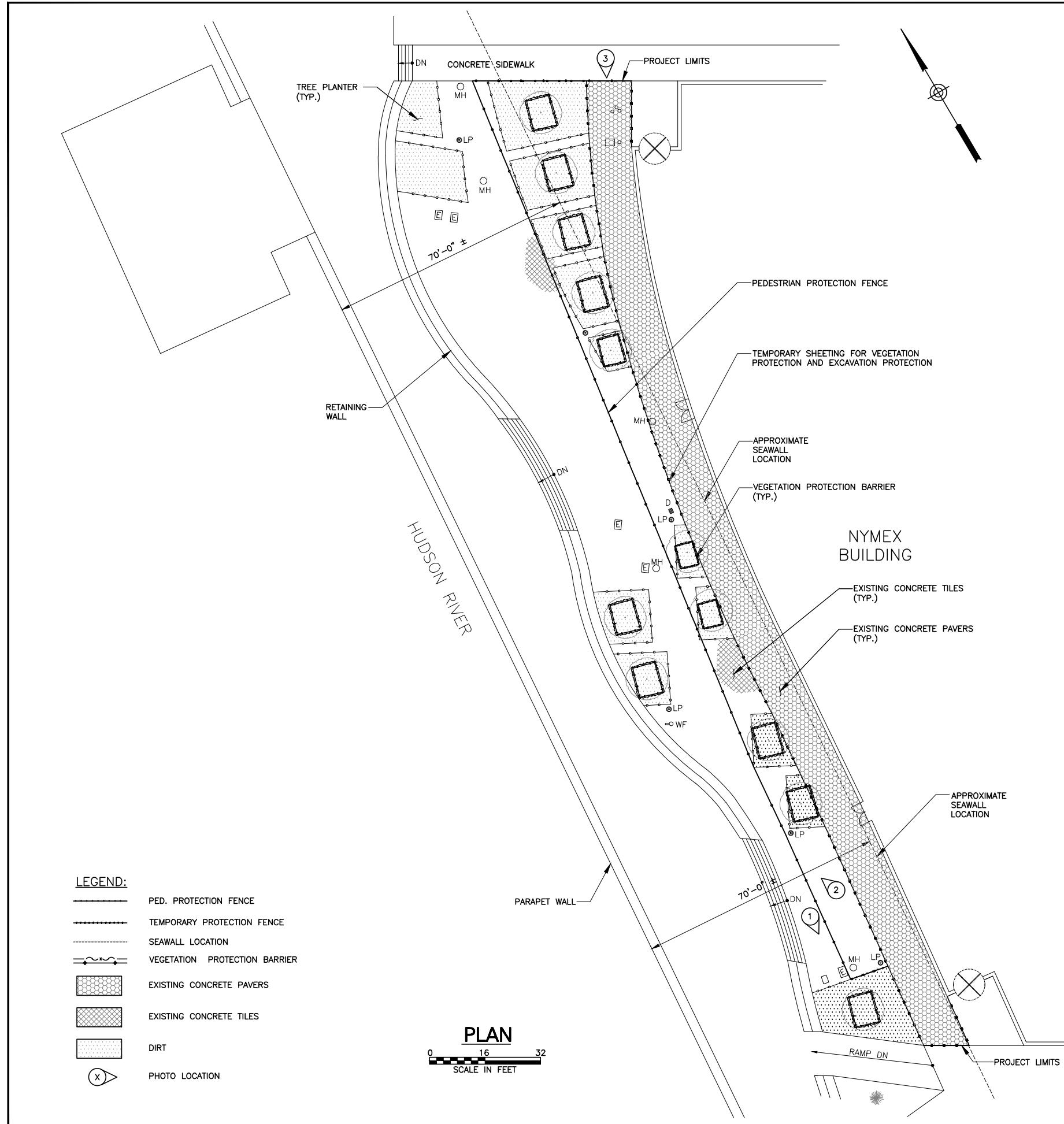


PHOTO 1



PHOTO 2

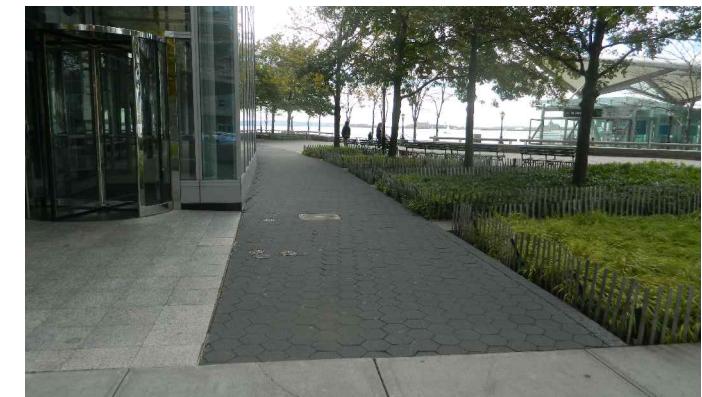


PHOTO 3

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			REVISIONS	NYMEX TERRACE, DEPRESSION REMEDIATION OPTION II – PRESSURE GROUT VEGETATION PROTECTION PLAN	
				CITY OF NEW YORK, BOROUGH OF MANHATTAN	
				KSE KS ENGINEERS, P.C.	Engineers • Surveyors • Construction Managers 65 Broadway, Suite 401, New York, N.Y. 10006 Phone: (212) 616-2657, Fax: (212) 616-3060
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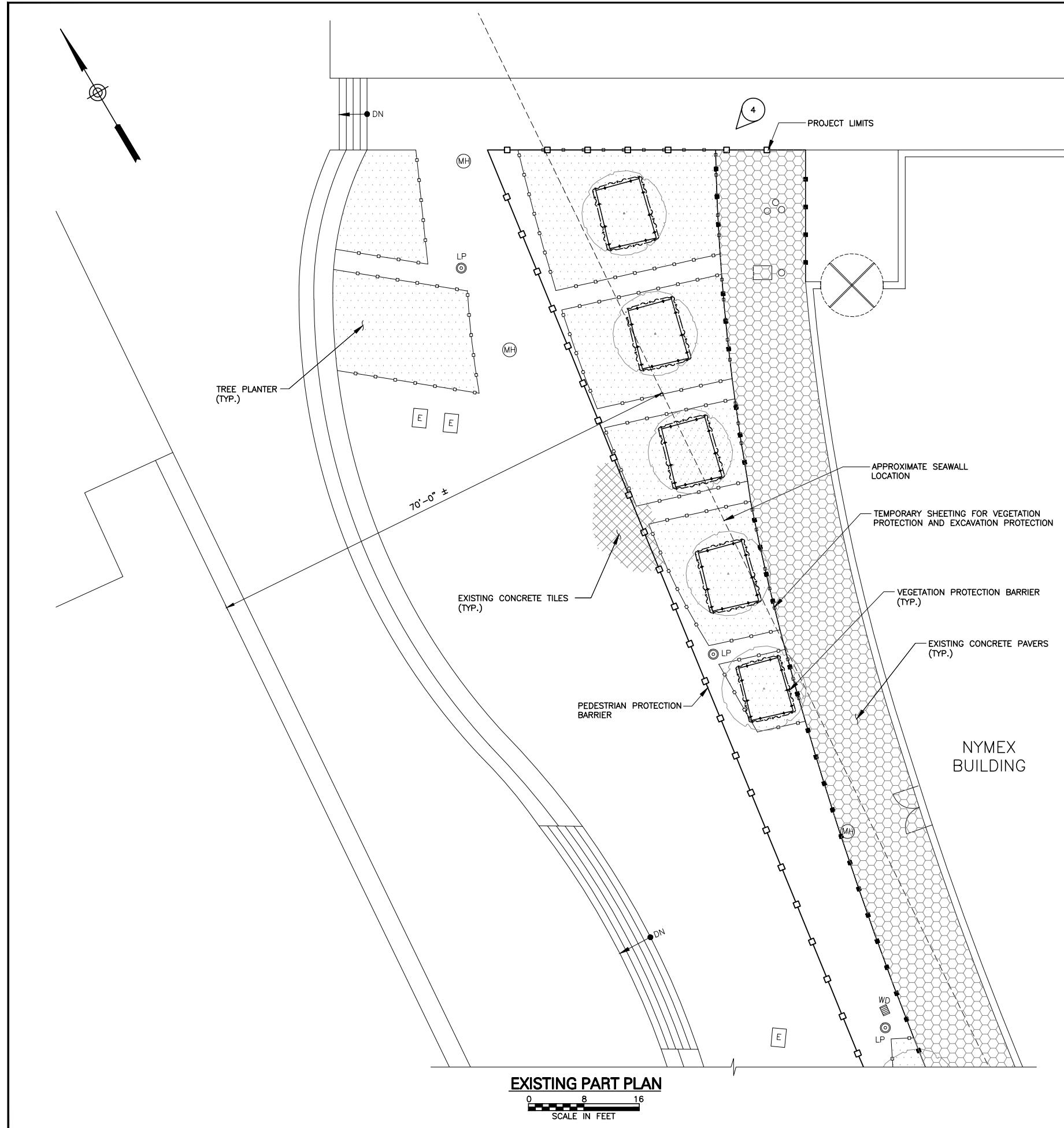
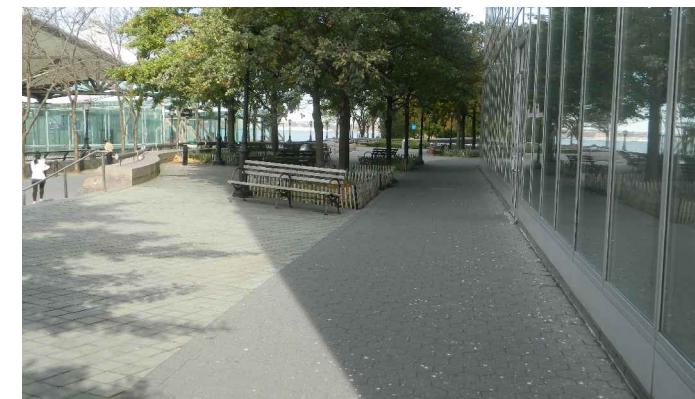
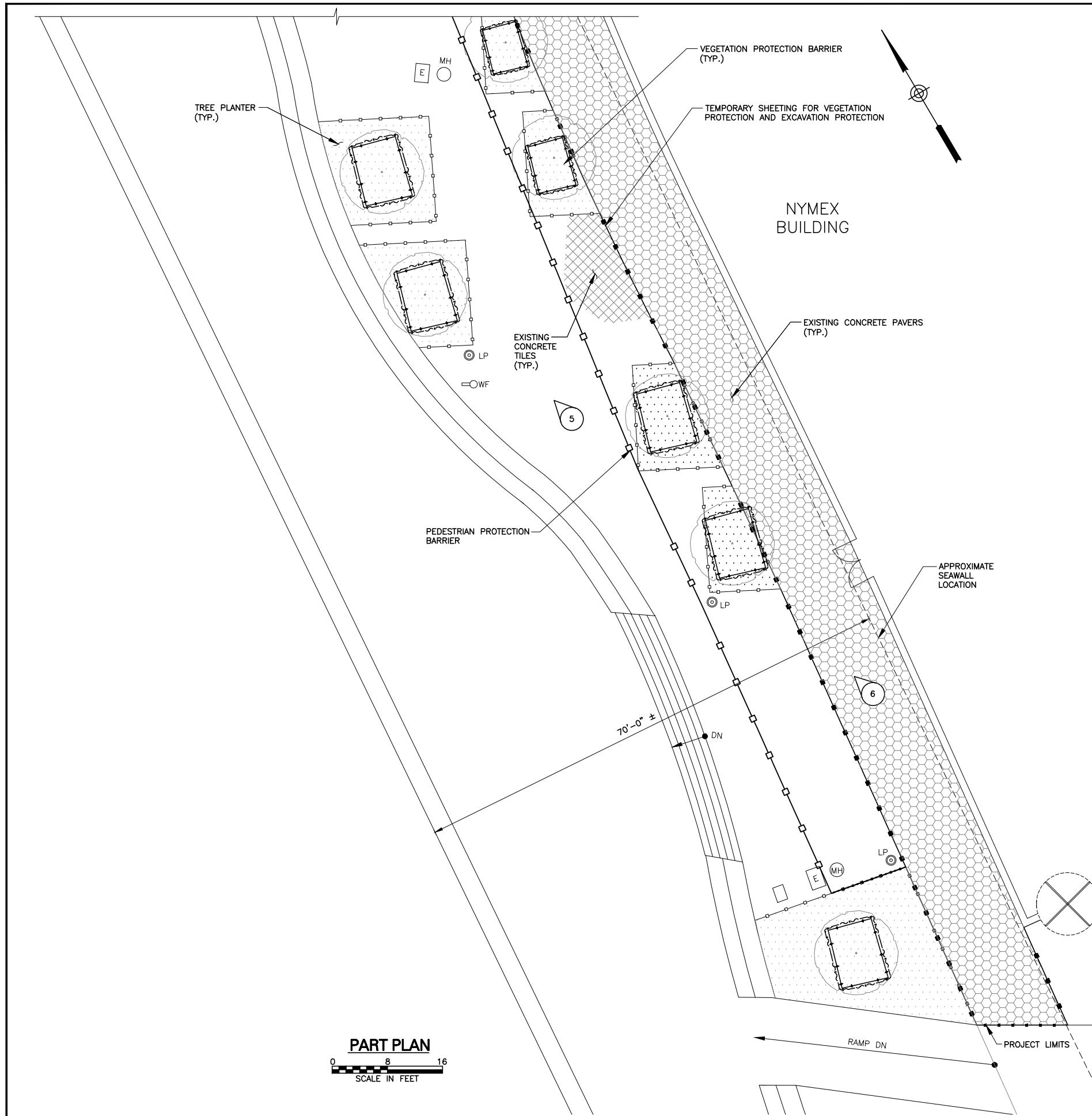
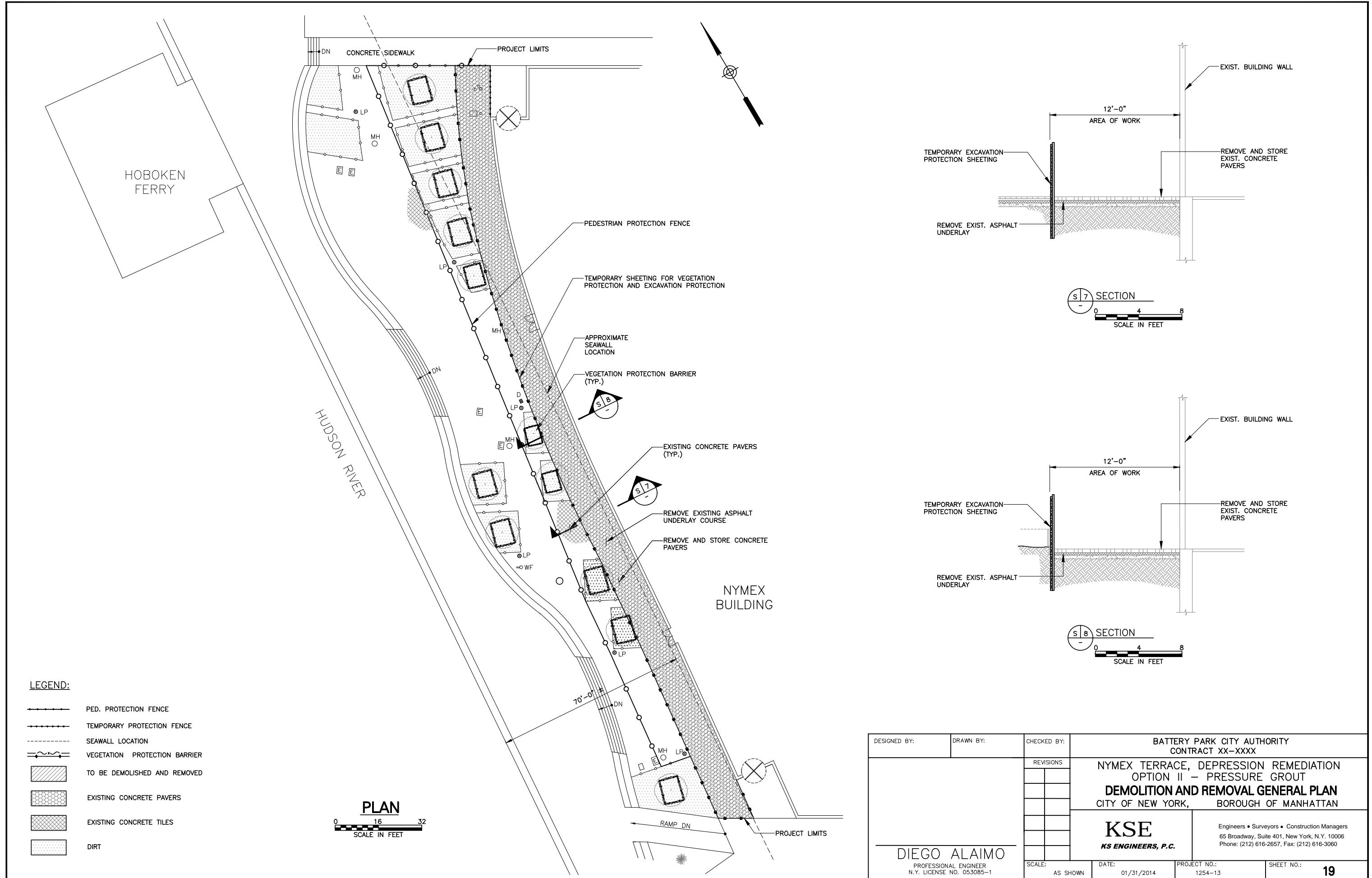


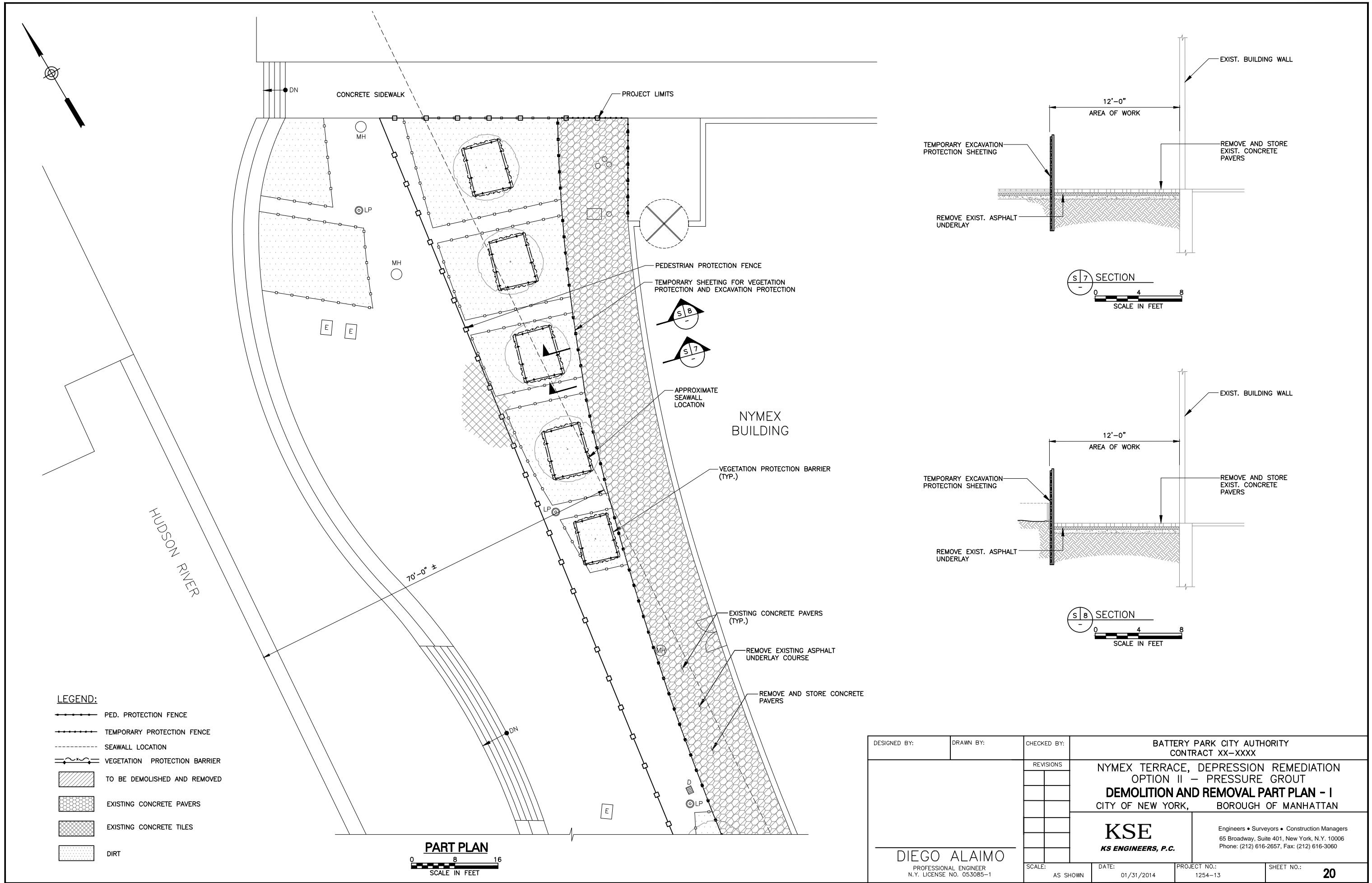
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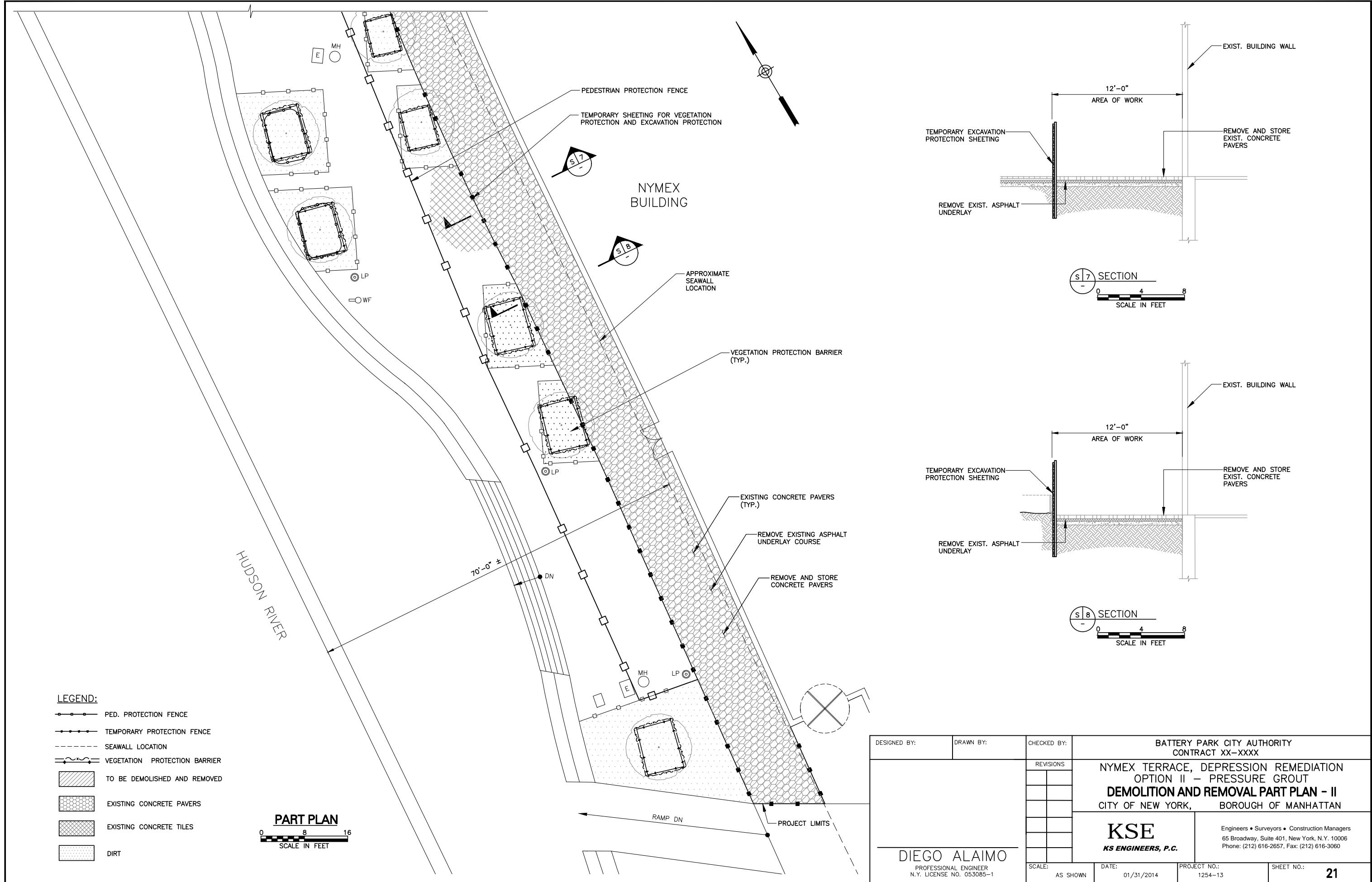
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			REVISIONS	NYMEX TERRACE, DEPRESSION REMEDIATION OPTION II – PRESSURE GROUT VEGETATION PROTECTION PART PLAN - I CITY OF NEW YORK, BOROUGH OF MANHATTAN	
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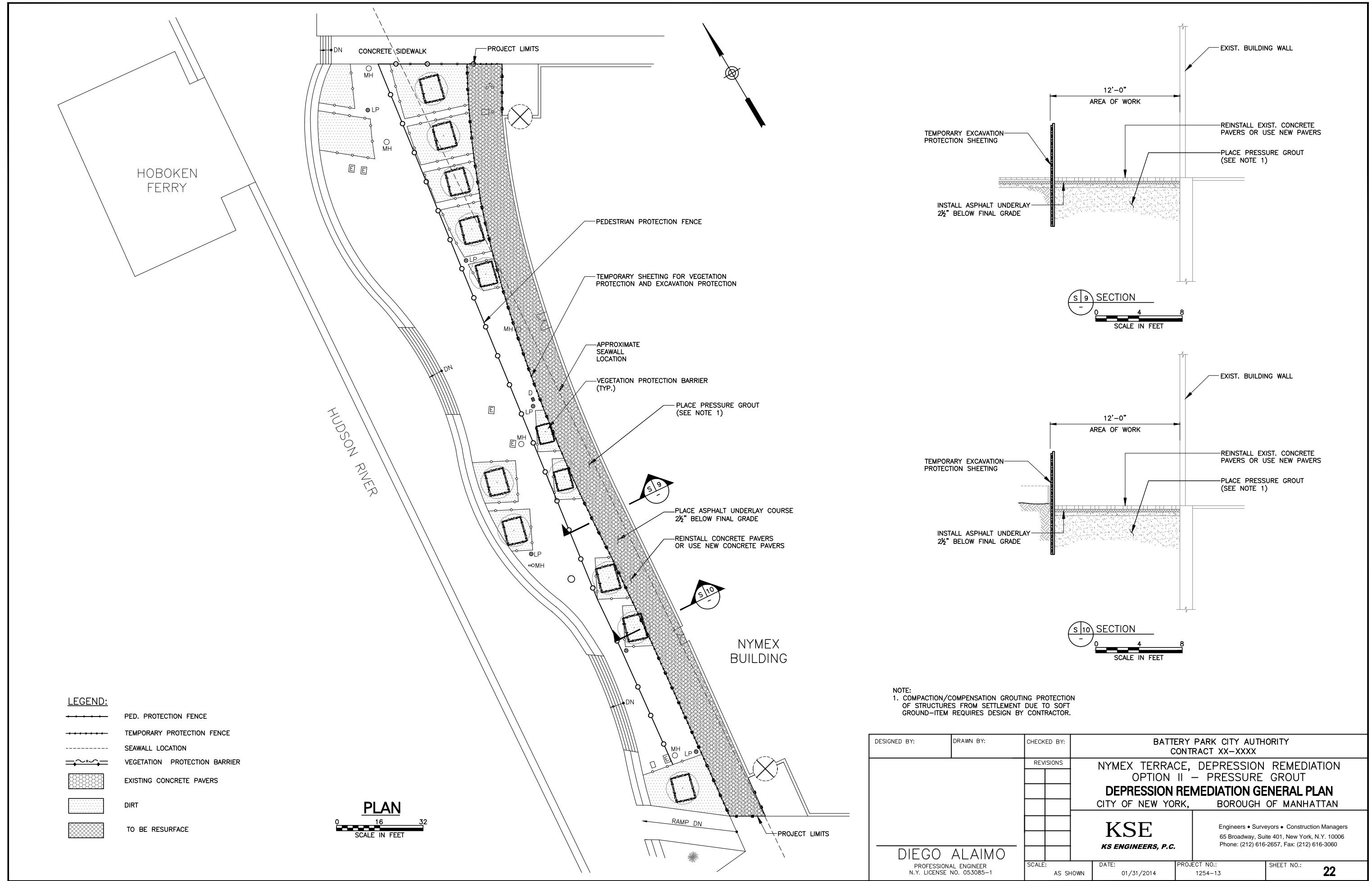


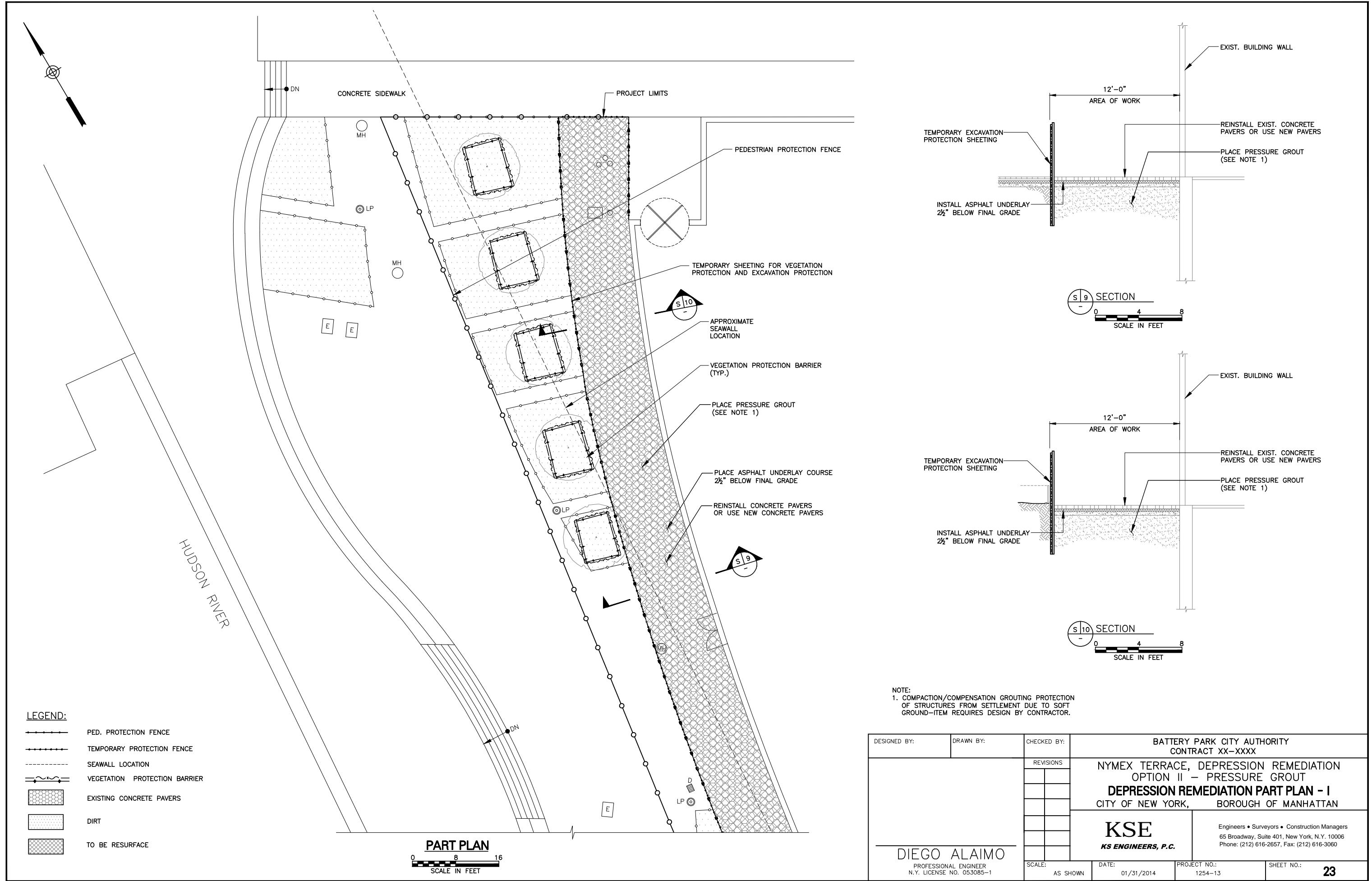
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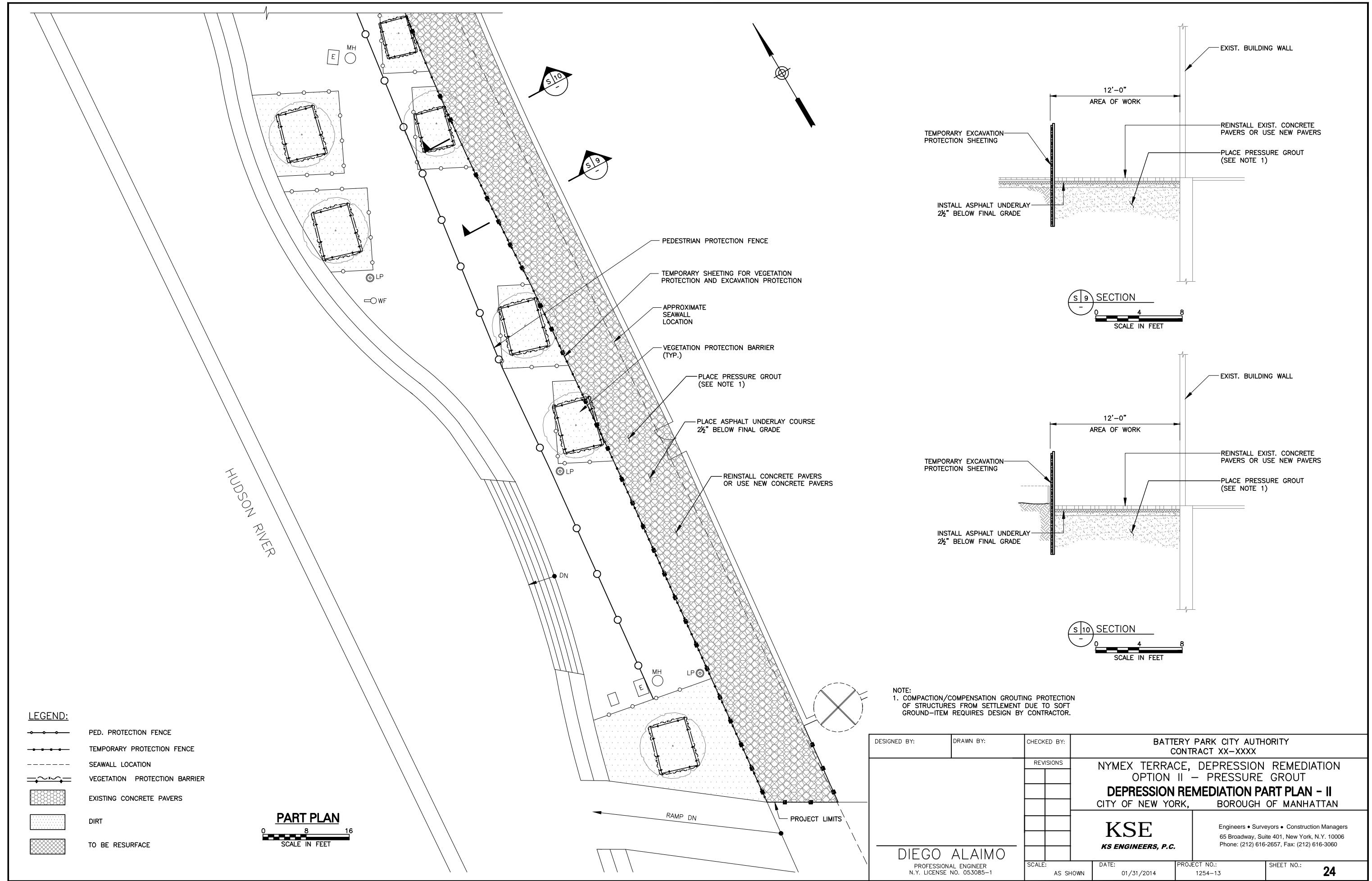












PART 1 GENERAL

1.01 INTRODUCTION

- A. COMPACTION GROUTING INVOLVES THE INJECTION UNDER HIGH PRESSURE OF A LOW-SLUMP, MORTAR-LIKE GROUT TO COMPACT AND DISPLACE THE ADJACENT SOILS. THE GROUT DOES NOT PENETRATE SOIL PORES BUT DISPLACES THE SUBSURFACE SOILS BY FORMING A HOMOGENEOUS GROUT BULB NEAR THE GROUT PIPE TIP.
- B. IN SITU SOIL TYPES: COMPACTION GROUTING IS TYPICALLY VERY EFFECTIVE IN POROUS SOIL WITH PERMEABILITY GREATER THAN 10-4 AND IN SITU VERTICAL STRESSES GREATER THAN 15 PSI (100 KPA).
- C. APPLICATIONS: LOOSE FILL STABILIZATION; REMEDIATION OF SETTLING STRUCTURES AND UTILITIES; SINKHOLE REMEDIATION; IMPROVEMENT OF SOIL IN KASTIC REGIONS; BUILDING/UTILITY PROTECTION DURING TUNNELING; SOIL DENSIFICATION FOR SITE IMPROVEMENT; LIQUEFACTION MITIGATION. IN CERTAIN CASES, PROCEDURES CAN BE DESIGNED TO INTENTIONALLY LIFT STRUCTURES AND/OR UTILITIES.

1.02 INTENT

THE INTENT OF THE COMPACTION GROUTING PROGRAM SPECIFIED HEREIN IS TO PROVIDE SOIL IMPROVEMENT WITHIN THE LIMITS INDICATED ON DRAWINGS NOS. TO ACHIEVE THE REQUIRED DEGREE OF IMPROVEMENT DETAILED IN SECTION 3.02 OF THESE SPECIFICATIONS, IN ORDER TO PROTECT SUBJACENT STRUCTURES FROM DAMAGING SETTLEMENTS CAUSED BY SOFT GROUND OPERATIONS. THE CONCEPT IS TO RE-COMPACT THE LOOSEND SOILS WITHIN THE VICINITY OF STRUCTURE, RATHER THAN TO WAIT FOR SETTLEMENTS TO REACH BUILDING FOUNDATIONS AND THEN GROUTING UNDER INDIVIDUAL FOOTINGS. SUCH A COMPACTION GROUTING PROGRAM CAN, IN CERTAIN CIRCUMSTANCES, REPLACE CONVENTIONAL UNDERPINNING OR OTHER SETTLEMENT CONTROL PROGRAMS FOR SOFT GROUND TUNNELING, BY SIGNIFICANTLY REDUCING THE VERTICAL AND LATERAL MOVEMENTS (SETTLEMENT TROUGH) THAT DEVELOP ABOVE THE STRUCTURE.

1.03 STANDARDS AND REFERENCES

A. THE MOST RECENT VERSION OF THE FOLLOWING TESTING METHODS OR STANDARDS MAY BE EMPLOYED:

1. ASTM D158 STANDARD PENETRATION TESTING (SPT)
2. ASTM D344 STATIC CONE PENETRATION TESTING (CPT)
3. ASTM C150 COMPLIANCE STANDARD FOR PORTLAND CEMENT
4. ASTM C143 TEST METHOD FOR SLUMP OF PORTLAND CEMENT CONCRETE

B. REFERENCE DOCUMENTS AS PROVIDED TO THE COMPACTION GROUTING CONTRACTOR SHALL INCLUDE:

1. THIS SPECIFICATION.
2. PROJECT DRAWINGS:
 - a. ENGINEER'S SITE PLAN, DRAWING NO.....
 - b. ENGINEER'S EXISTING UNDERGROUND UTILITIES PLAN IN THE WORK AREA.
 - c. GROUT INJECTION POINT LAYOUT, AS DETAILED IN THE SUBMITTALS SECTION 1.06 OF THESE SPECIFICATIONS – DESIGNED BY CONTRACTOR'S LICENSED PROFESSIONAL ENGINEER.
3. PROJECT GEOTECHNICAL REPORT – SOIL TEST RESULTS TAKING IN THE AREA.
4. FORM OF CONTRACT BETWEEN OWNER AND GENERAL CONTRACTOR, OWNER AND COMPACTION GROUTING CONTRACTOR, AND GENERAL CONTRACTOR AND COMPACTION GROUTING CONTRACTOR AS APPROPRIATE.

1.04 DEFINITIONS

A. COMPACTION GROUT: A MATERIAL BLEND OF FINE AGGREGATE, FINES AND WATER TO ACHIEVE A PUMPABLE, THIXOTROPIC, VISCOUS GROUT OF A LOW SLUMP TO ENABLE PUMPING AT HIGH PRESSURE AND REMAIN INTACT AFTER INJECTION. MATERIAL COMPONENTS CAN INCLUDE SAND, SILT, CLAY, CEMENT, GROUND SLAG, FLYASH, WATER AND OTHER AD MIXTURES. STRENGTH OF GROUT IS INTENDED ONLY TO BE GREATER THAN EXISTING STRENGTHENED SOIL CONDITIONS.

B. FIELD QUALITY CONTROL REPRESENTATIVE (FQCR): THE INDIVIDUAL GIVEN SPECIFIC INSPECTION TASKS IDENTIFIED IN THIS SPECIFICATION.

1.05 SCOPE OF WORK

A. THE WORK SHALL CONSIST OF INSTALLATION, MONITORING AND TESTING OF COMPACTION GROUTING WITHIN THE LIMITS INDICATED ON DRAWING NO..... TO MEET THE ACCEPTANCE CRITERIA PRESENTED IN SECTION 3.02 OF THESE SPECIFICATIONS.

B. IN CONNECTION WITH THE COMPACTION GROUTING PROGRAM, AS SHOWN ON THE DRAWINGS, THE COMPACTION GROUTING CONTRACTOR SHALL PROVIDE ALL LABOR, MATERIALS AND EQUIPMENT TO ACCOMPLISH THE FOLLOWING ITEMS OF WORK:

1. IMPLEMENT GROUND/STRUCTURE MOVEMENT MONITORING SYSTEM.
2. INSTALL AND REMOVE GROUT PIPES.
3. FURNISH AND INJECT COMPACTION GROUT.
4. MONITOR SURFACE GROUND/STRUCTURE MOVEMENTS DURING TUNNELING AND COMPACTION GROUTING OPERATIONS.
5. FOLLOW COMPACTION GROUTING SEQUENCE OF OPERATIONS.

C. IT SHALL BE THE COMPACTION GROUTING CONTRACTOR'S RESPONSIBILITY TO DETERMINE AND IMPLEMENT THE SYSTEMS AND CRITERIA TO ENSURE THAT SPECIFIED IMPROVEMENT IS ACHIEVED.

1.06 SUBMITTALS

A. THE FOLLOWING SHALL BE SUBMITTED TO THE OWNER'S REPRESENTATIVE BY THE COMPACTION GROUTING CONTRACTOR WITH THE BID DOCUMENTS:

6. A LIST OF AT LEAST THREE PREVIOUSLY COMPLETED PROJECTS OF SIMILAR SCOPE AND PURPOSE FOR APPROVAL BY THE OWNER'S REPRESENTATIVE. THE LIST SHALL INCLUDE A DESCRIPTION OF THE PROJECT, RELATIVE SIZE, AND CONTACT PERSON WITH PHONE NUMBER.

B. THE FOLLOWING SHALL BE SUBMITTED TO THE OWNER'S REPRESENTATIVE BY THE COMPACTION GROUTING CONTRACTOR ____ WEEKS PRIOR TO THE START OF THE WORK:

1. RESUMES OF THE MANAGEMENT, SUPERVISORY, AND KEY PERSONNEL FOR APPROVAL BY THE OWNER'S REPRESENTATIVE.
2. A GROUND MOVEMENT MONITORING PLAN AS DETAILED SECTION 3.03 OF THESE SPECIFICATIONS.
3. A MIX DESIGN FOR THE PROJECT INDICATING SOURCES AND TYPES OF GROUT MATERIALS, WITH VOLUMETRIC PROPORTIONS, AND FIELD TEST DATA FROM PREVIOUS PROJECTS INDICATING COMPRESSIVE STRENGTH AND SLUMP OF 1 TO 3 INCHES (50 TO 100 MM) OR LESS ACHIEVED. IF THE COMPACTION GROUTING CONTRACTOR INTENDS TO DEVIATE FROM THE GRADATION PROVIDED IN SECTION 2.04 OF THIS SPECIFICATION, IT SHALL SUBMIT, WITH THE BID, EVIDENCE OF SATISFACTORY USE OF THE PROPOSED MATERIAL FROM PAST PROJECTS WITH SIMILAR SOIL CONDITIONS.
4. WORK PROCEDURES AND CONTROL CRITERIA (INCLUDING VOLUMES AND PRESSURE FOR EACH STAGE).
5. A GENERAL WORK PROCEDURES PLAN OUTLINING THE SPACING, LOCATION, DEPTH, AND ESTIMATED QUANTITY OF GROUT TO ACHIEVE THE SPECIFIED CRITERIA DETAILED IN SECTION 3.02 OF THIS SPECIFICATION. GROUT HOLE LOCATIONS SHALL BE DIMENSIONALLY REFERENCED TO THE STRUCTURAL FOUNDATION SHOWN ON THE CONTRACT DRAWINGS.

C. THE FOLLOWING SHALL BE SUBMITTED TO THE OWNER'S REPRESENTATIVE BY THE COMPACTION GROUTING CONTRACTOR DURING THE WORK:

1. ACCURATE DAILY RECORDS OF ALL GROUT PIPE INSTALLATION, COMPACTION GROUTING QUANTITIES, INCLUDING STAGE DATA, VOLUME, PRESSURE AND DEPTH FOR EACH GROUT PIPE LOCATION.
2. ANY CHANGE IN THE PREDETERMINED GROUTING PROGRAM NECESSITATED BY A CHANGE IN THE SUBSURFACE CONDITIONS.

1.07 QUALITY ASSURANCE

A. THE COMPACTION GROUTING PROGRAM, INCLUDING INSTALLATION OF GROUT PIPES, SHALL BE PERFORMED BY A SPECIALIST COMPACTION GROUTING CONTRACTOR WITH AT LEAST THREE CONTINUOUS YEARS OF DOCUMENTED EXPERIENCE IN COMPACTION GROUTING.

B. THE COMPACTION GROUTING CONTRACTOR SHALL PROVIDE EXPERIENCED MANAGEMENT, SUPERVISORY AND KEY PERSONNEL AS REQUIRED TO IMPLEMENT THE COMPACTION GROUTING PROGRAM, AS FOLLOWS:

1. THE PROJECT MANAGER SHALL HAVE AT LEAST TWO YEARS OF CONTINUOUS EXPERIENCE IN COMPACTION GROUTING, WITH AT LEAST THE LAST ONE YEAR IN THE FULL-TIME EMPLOY OF THE COMPACTION GROUTING CONTRACTOR.
2. THE SUPERINTENDENT SHALL HAVE AT LEAST TWO YEARS OF EXPERIENCE IN COMPACTION GROUTING.
3. AS DETAILED IN SECTION 1.06 OF THESE SPECIFICATIONS, THE COMPACTION GROUTING CONTRACTOR SHALL PROVIDE:
 - A. EVIDENCE OF PREVIOUS COMPACTION GROUTING PROJECT EXPERIENCE.
 - B. EVIDENCE OF MANAGEMENT, SUPERVISORY AND KEY PERSONNEL EXPERIENCE.

C. THE OWNER'S REPRESENTATIVE WILL ENSURE THAT PROCEDURES AND DOCUMENTATION CONFORM TO THESE SPECIFICATIONS.

PART 2 EQUIPMENT AND MATERIALS

2.01 GROUTING EQUIPMENT

- A. THE COMPACTION GROUTING CONTRACTOR SHALL SUPPLY EQUIPMENT CAPABLE OF ADVANCING THE GROUT PIPE THROUGH OVERBURDEN, SOILS AND OTHER NATURAL OBSTRUCTIONS TO THE SPECIFIED DEPTH OR AS IS REQUIRED TO MEET THE PROJECT OBJECTIVES.
- B. THE COMPACTION GROUTING CONTRACTOR SHALL SUPPLY ALL EQUIPMENT REQUIRED TO OPERATE A COMPACTION GROUTING SYSTEM CAPABLE OF SUPPLYING THE SPECIFIED GROUT AT VARIABLE FLOW RATES AND PRESSURES, MEASURED AT THE PUMP, UP TO 800 PSI AND AT RATES OF 0.5 TO 12 CUBIC FEET (0 TO 0.34 CUBIC METERS) PER MINUTE, AS REQUIRED TO SUIT THE APPLICATION.
- C. THE MIXER SHALL BE A CONTINUOUS AUGER TYPE TO ENSURE COMPLETE UNIFORM MIXING OF THE MATERIALS USED AND SHALL BE OF SUFFICIENT CAPACITY TO CONTINUOUSLY PROVIDE THE PUMPING UNIT WITH MIXED GROUT AT ITS NORMAL PUMPING RANGE. THE MIXER MUST BE CAPABLE OF VOLUMETRICALLY PROPORTIONING THE GROUT MATERIALS. READY MIXED GROUT IS ALSO ACCEPTABLE WITH AN APPROVED MIX DESIGN.

D. THE COMPACTION GROUTING CONTRACTOR SHALL PROVIDE GAUGES OR OTHER INSTRUMENTATION (MEASURING DEVICES) TO MEASURE:

1. CONTINUOUS GROUT PRESSURE CLOSE TO THE TOP OF THE INJECTION CASING.
2. FLOW RATE OF GROUT.
3. VOLUME OF GROUT INJECTED.

E. THE COMPACTION GROUTING CONTRACTOR SHALL SUPPLY AND INSTALL STRUCTURAL MONITORING EQUIPMENT IN ACCORDANCE WITH SECTION 3.03 OF THESE SPECIFICATIONS.

F. AN ADEQUATE COMMUNICATION SYSTEM SHALL BE MAINTAINED BETWEEN THE PUMPING AND BATCHING PLANT AND THE INJECTION LOCATION. AS AN ALTERNATE, THE CONTRACTOR MAY FURNISH A REMOTE CONTROL SYSTEM TO ALLOW FULL CONTROL (START, STOP, FLOW RATE, REVERSING) OF THE PUMP DIRECTLY BY THE GROUTING TECHNICAL FROM THE INJECTION POINT.

2.02 GROUT PIPES

A. GROUT PIPES AND CONNECTIONS SHALL BE STEEL CASING OF ADEQUATE STRENGTH TO MAINTAIN THE HOLES AND TO WITHSTAND THE REQUIRED JACKING AND PUMPING PRESSURES. THE PIPES SHALL BE AT LEAST 2.0 INCHES (50 MM) INSIDE DIAMETER IN ORDER TO ADEQUATELY HANDLE THE SPECIFIED LOW SLUMP MATERIAL WITHOUT PLUGGING. ALL CASING SHALL BE FLUSH JOINT THREADED OR A SINGLE PIECE TUBING TO PROVIDE A SMOOTH INNER WALL AND UNBLOCKED INSIDE DIAMETER. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO INSTALL CASING THAT DOES NOT DETRIMENTALLY IMPACT THE GROUTING PROCEDURE.

B. PIPES SHALL BE INSTALLED SUCH THAT GROUT MATERIAL WILL NOT TRAVEL IN THE ANNULAR SPACE BETWEEN THE PIPE AND ADJACENT GROUND AND ESCAPE AT THE SURFACE WHEN PUMPED.

2.03 GROUT MATERIALS

A. PORTLAND CEMENT, TYPE I OR II (ASTM C150)

B. FINE AGGREGATE SHALL BE SAND WITH FINES CONTENT (PERCENT PASSING NO. 200 SIEVE) OF NOT LESS THAN 10 PERCENT AND NOT MORE THAN 25 PERCENT. NATURAL FINES MAY BE SUPPLEMENTED WITH FLY/ASH, A MINIMAL AMOUNT OF BENTONITE, OR AGGREGATE WASHINGS.

C. PROPORTIONS OF THE MIXTURE SHALL BE AS REQUIRED TO ACHIEVE A PUMPABLE MIX WITH NOT MORE THAN A 7 INCH (18 MM) SLUMP.

D. UPON DISCHARGE INTO THE PUMP HOPPER OR HOLDING TANK, THE GROUT MUST BE CONTINUOUSLY AGITATED. MIXED GROUT MAY NOT BE HELD IN THE AGITATOR FOR MORE THAN 2 HOURS UNLESS A SET RETARDER, APPROVED BY THE OWNER'S REPRESENTATIVE, IS USED.

PART 3 EXECUTIONS

3.01 SITE EXAMINATION

- A. PRIOR TO SUBMITTING A BID PRICE FOR THE COMPACTION GROUTING, THE COMPACTION GROUTING CONTRACTOR SHALL CONDUCT A SITE INSPECTION.
- B. IF A BUILDING IN DISTRESS IS INVOLVED, A RELEVANT BUILDING SURVEY MAY BE IN ORDER PRIOR TO INITIATING WORK.

3.02 COMPACTION GROUTING

COMPACTION GROUT SHALL BE INJECTED THROUGH THE GROUT PIPES INTO THE TARGET SOIL AS THE SHIELD PASSES THE GROUT PIPE LOCATIONS SO AS TO RE-COMPACT LOOSEND ADJACENT SOILS AND LIMIT SURFACE SETTLEMENTS TO ACCEPTABLE VALUES. IF NECESSARY TO INITIATE THE FLOW OF GROUT AT THE START OF PUMPING, THE GROUT PIPE WILL BE PULLED A FEW FEET WITH THE GROUT PRESSURE APPLIED, OR AN INITIAL CAVITY PRODUCED BY JETTING OR BLOWING. PUMPING WILL CONTINUOUSLY PROCEED AT A RATE BETWEEN 0.1 AND 4.0 CUBIC FEET PER MINUTE. ACCURATE RECORDS OF PUMPING TIME, PRESSURES, VOLUMES, LOCATIONS, SLUMPS, ETC., SHALL BE KEPT AND SUBMITTED TO THE ENGINEER.

A. COMPACTION GROUTING SHALL BE PERFORMED IN ACCORDANCE WITH THE APPROVED GROUT INJECTION POINT LAYOUT SCHEME TO ACHIEVE THE FOLLOWING ACCEPTANCE CRITERIA IN THE IN SITU SOIL BETWEEN THE INJECTION POINTS:

1. POST-GROUTING AVERAGE, CORRECTED STANDARD PENETRATION VALUES EXCEEDING (CONTRACTORS P.E. DESIGN) IN TYPICAL SITE SOILS. LOCATIONS TO BE AGREED UPON BETWEEN THE COMPACTION GROUTING CONTRACTOR AND THE OWNER/ENGINEER. AVERAGING SHALL BE WITH VALUES ABOVE AND BELOW EACH VALUE.
2. POST-GROUTING, AVERAGE CORRECTED STATIC CONE PENETROMETER TIP RESISTANCE, IN SILTS WITH FRICTION RATIO LESS THAN 1:1, EXCEEDING (CONTRACTORS P.E. DESIGN) TSF ((CONTRACTORS P.E. DESIGN) KPA). LOCATIONS TO BE AGREED UPON BETWEEN THE COMPACTION GROUTING CONTRACTOR AND THE OWNER/ENGINEER. AVERAGING SHALL INCLUDE ABOVE AND BELOW TWO FEET, ELIMINATING VALUES IN SOILS WITH PERMEABILITY LESS THAN 1×10^{-3} CM/SEC.
3. THE GROUT SHALL BE INJECTED AT A STAGE DEPTH UNTIL ONE OF THE FOLLOWING OCCURS:
 1. GROUT FLOW CEASES AT A HEADER PRESSURE READING OF 800 PSI (4,824 KPA).
 2. SURFACE GROUND HEAVE OF (CONTRACTORS P.E. DESIGN) INCHES IS OBSERVED.
 3. AN INJECTED GROUT VOLUME EQUAL TO 25 PERCENT OF THE SOIL VOLUME BEING TREATED BY THAT INJECTION STAGE IS REACHED.
 4. A MAXIMUM CUMULATIVE HEAVE OF (CONTRACTORS P.E. DESIGN) INCHES IS OBSERVED.

NOTE: 3.02B1 TO 3 MAY BE DELETED BY REFERENCE TO THE CONTRACTOR'S WORK PLAN

- C. COMPACTION GROUTING SHALL BE SEQUENCED SO THAT GROUTING DOES NOT TAKE PLACE WITHIN (CONTRACTORS P.E. DESIGN) FT OF LOCATIONS GROUTED WITHIN THE PREVIOUS 12 HOURS.
- D. AS COMPACTION GROUTING IS COMPLETED AT EACH LOCATION, THE COMPACTION GROUTING CONTRACTOR SHALL COMPLETELY FILL THE GROUT HOLE TO THE GROUND SURFACE.

3.03 FIELD QUALITY CONTROL

A. ALL COMPACTION GROUTING SHALL BE PERFORMED UNDER THE INSPECTION OF THE FQCR.

B. MONITORING AND LOGGING OF COMPACTION GROUTING OPERATIONS FOR BOTH TEST AREAS AND PRODUCTION WORK SHALL BE DONE BY THE FQCR.

C. THE FQCR WILL PERFORM SLUMP TESTS OF GROUT AND TAKE MEASUREMENTS OF GROUT MIX QUANTITIES TO VERIFY THE COMPACTION GROUTING CONTRACTOR'S GROUT MIX, AS FOLLOWS:

1. SLUMP TESTS WILL BE PERFORMED:
 - a. ONCE FOR EVERY 50 CUBIC FT OF GROUT INJECTED, OR
 - b. AT ANY CHANGE IN MIX DESIGN, OR
 - c. AT LEAST TWICE DURING EACH GROUT SHIFT.
2. GROUT MIX PROPORTIONS WILL BE CHECKED AT LEAST ONCE DAILY.
3. THE FQCR WILL REQUIRE THE COMPACTION GROUTING CONTRACTOR TO CAST MINIMUM SIZE 3 INCH BY 6 INCH (75 MM BY 150 MM) GROUT TEST CYLINDERS OR 2 INCH BY 2 INCH CUBE MOLDS FOR STRENGTH TESTING. ONE SET OF FOUR CYLINDERS OR MOLDS WILL BE CAST DURING EACH SLUMP TEST.
4. LAYOUT OF GROUT INJECTION POINTS SHALL BE BY THE COMPACTION GROUTING CONTRACTOR AND CHECKED BY THE FQCR WITH SUFFICIENT CONTROL POINTS PROVIDED BY THE OWNER.

F. AS DETAILED IN SECTION 1.06C, DAILY RECORDS SHALL BE MAINTAINED BY THE COMPACTION GROUTING CONTRACTOR AND SUBMITTED TO THE OWNER'S REPRESENTATIVE.

G. THE COMPACTION GROUTING CONTRACTOR SHALL MONITOR NEARBY STRUCTURES AS FOLLOWS:

1. A LEVEL CONTROL SYSTEM WILL BE INSTALLED BY THE CONTRACTOR FOR EACH STRUCTURE / PLANTING BAD WITHIN 1 FT OF THE OPERATIONS.
2. MONITORING SHALL BE CARRIED OUT ON A CONTINUING BASIS WHENEVER COMPACTION GROUTING IS OCCURRING WITHIN A HORIZONTAL DISTANCE EQUAL TO THE DEPTH OF TREATMENT.
3. AFTER COMPLETION OF THE COMPACTION GROUTING PROGRAM, THE MONITORING SYSTEM AND GROUT PIPES WILL BE REMOVED AND ALL HOLES WILL BE FILLED AND PATCHED.

3.04 TESTING AND INSPECTION

A. THE EFFECTIVENESS OF THE PROPOSED GROUTING LAYOUT SCHEME SHALL BE VERIFIED AS FOLLOWS:

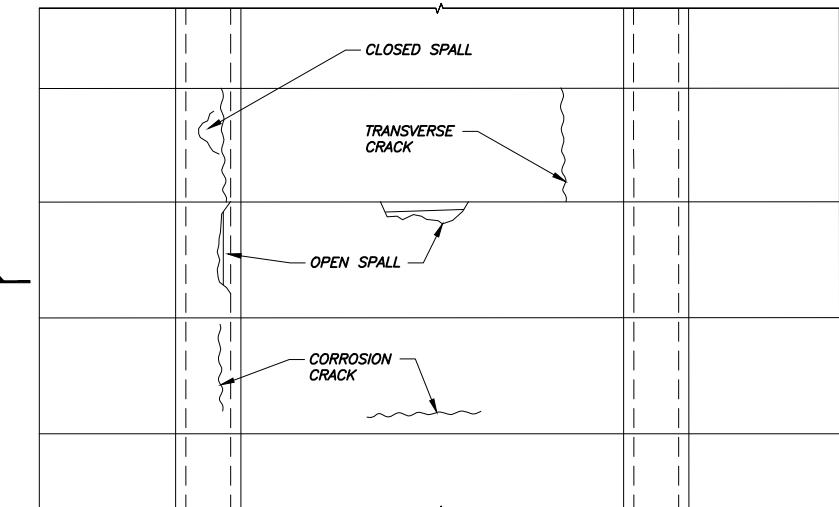
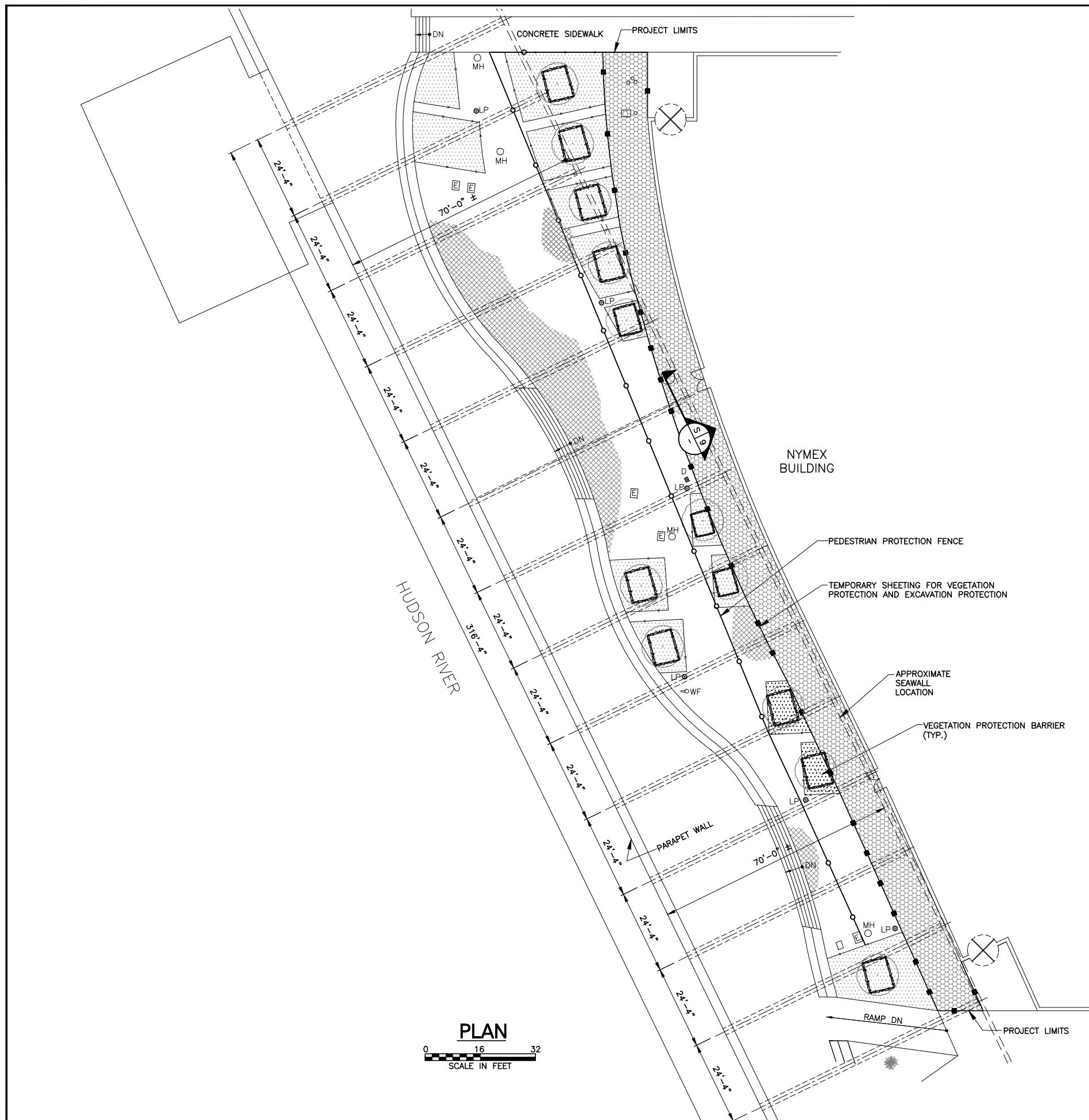
1. THE OWNER MAY RETAIN A SOIL TESTING FIRM TO PERFORM THE IN SITU TESTING AS DIRECTED BY THE OWNER'S ENGINEER. TEST SECTIONS WILL BE PERFORMED BEFORE AND DURING PRODUCTION WORK, AS FOLLOWS:
 - a. TEST SECTION LOCATIONS WILL BE AGREED UPON BY THE (FQCR/COMPACTING GROUTING CONTRACTOR) WITHIN THE TREATMENT AREA. A TEST SECTION SHALL CONSIST OF A SINGLE MODULE COMPRISED OF AT LEAST THREE GROUT INJECTION POINTS FOR ISOLATED FOOTINGS AND SIXTEEN GROUT INJECTION POINTS FOR AREA APPLICATIONS. TESTS WILL BE PERFORMED AT THE CENTER OF THE MODULE PRIOR TO AND AFTER GROUTING.
 - b. ALL TESTING TO DETERMINE SPECIFICATION COMPLIANCE WILL BE PROVIDED BY AN INDEPENDENT TESTING AGENCY RETAINED BY THE OWNER, REGARDLESS OF THE METHOD SELECTED. THE SAME TEST METHOD SHALL BE UTILIZED BOTH BEFORE AND AFTER THE SOIL IMPROVEMENT WORK IN ORDER TO PROVIDE THE MOST ACCURATE ASSESSMENT OF THE DEGREE OF IMPROVEMENT OBTAINED.
 - c. THE METHOD OF INSTALLATION OF THE TEST SECTION SHALL COMPLY WITH SECTION 3.02 OF THIS SPECIFICATION AND SHALL BE PERFORMED USING THE SAME GROUT LINE SIZES, GROUT MIX DRILLING AND GROUTING EQUIPMENT AND PROCEDURES AS THAT TO BE USED FOR PRODUCTION WORK.
 - d. PRIOR TO COMMENCEMENT OF PRODUCTION GROUTING, ONE TEST SECTION SHALL BE PERFORMED. IF THE PRE-PRODUCTION TEST SECTIONS INDICATE THAT THE REQUIRED GROUND IMPROVEMENT HAS NOT BEEN ACHIEVED, THE COMPACTION GROUTING CONTRACTOR SHALL REVISE THE WORK PROCEDURE PLAN AND RE-TEST.
- B. MONITORING AND LOGGING OF COMPACTION GROUTING OPERATIONS IN THE TEST AREAS AND FOR PRODUCTION WORK SHALL BE DONE BY THE COMPACTION GROUTING CONTRACTOR.

3.05 RESTRICTIONS

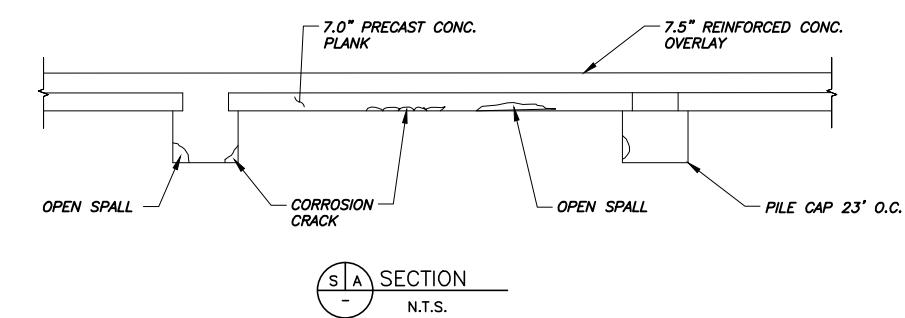
- A. THE OWNER OR GENERAL CONTRACTOR OR SPECIALTY CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ANY STATE AND MUNICIPAL PERMITS (IF REQUIRED) AND CONFORMING TO ALL STATE AND LOCAL REGULATIONS.
- B. THE OWNER WILL BE RESPONSIBLE FOR THE PRECISE DELINEATION OF ALL ABOVE AND BELOW GROUND UTILITIES AND OBSTRUCTIONS.
- C. THE FOLLOWING SHALL ALSO BE LISTED WITHIN THIS SECTION WHEN APPLICABLE:
 1. ENVIRONMENTAL RESTRICTIONS.
 2. WORK BOUNDARIES.
 3. HOURS FOR CONSTRUCTION.

PART 4 PAYMENT

4.01 METHOD OF PAYMENT



REFLECTEDPLAN
N.T.S.



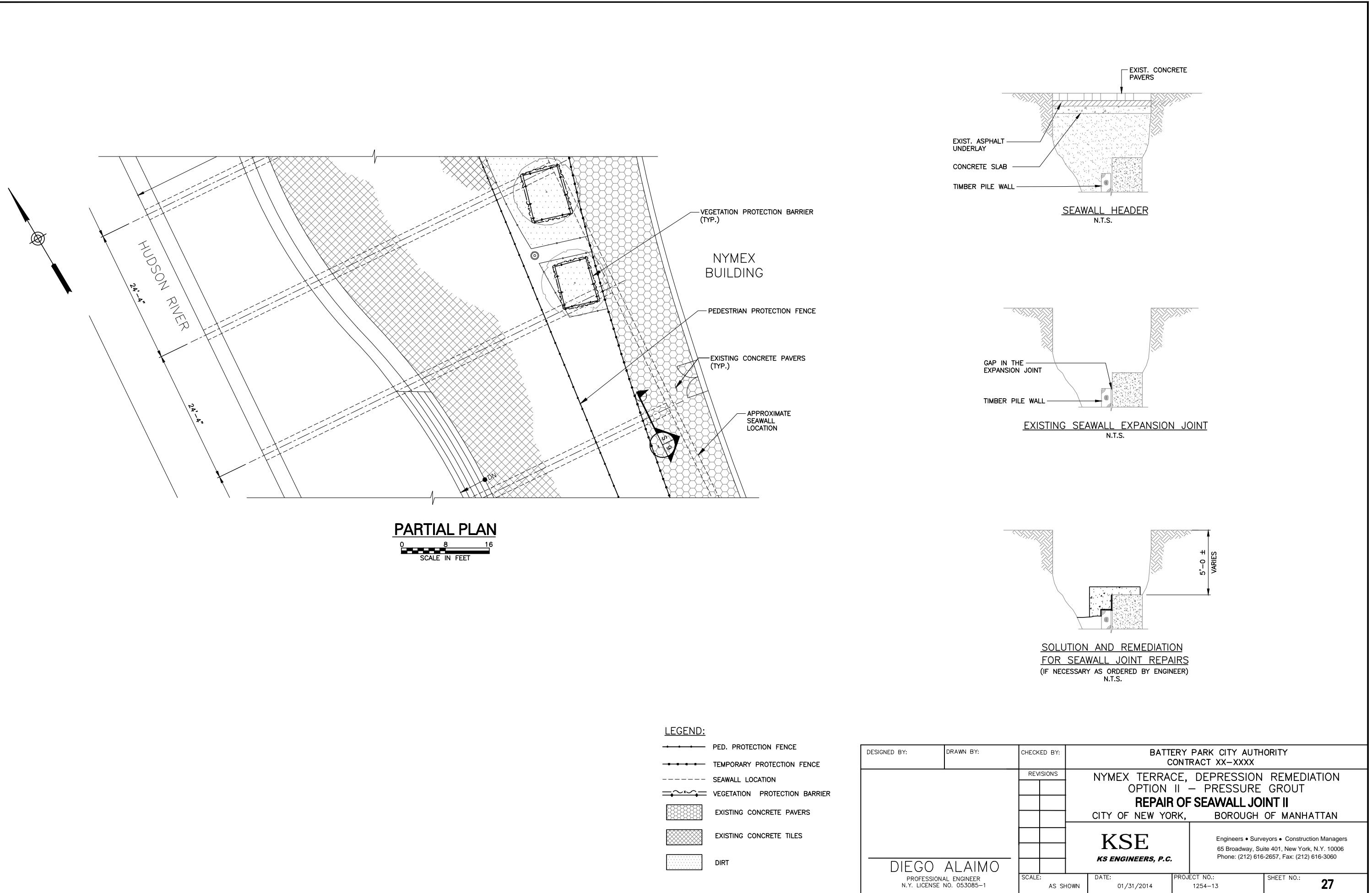
TYPE OF DEFECTS TO BE REPAIRED

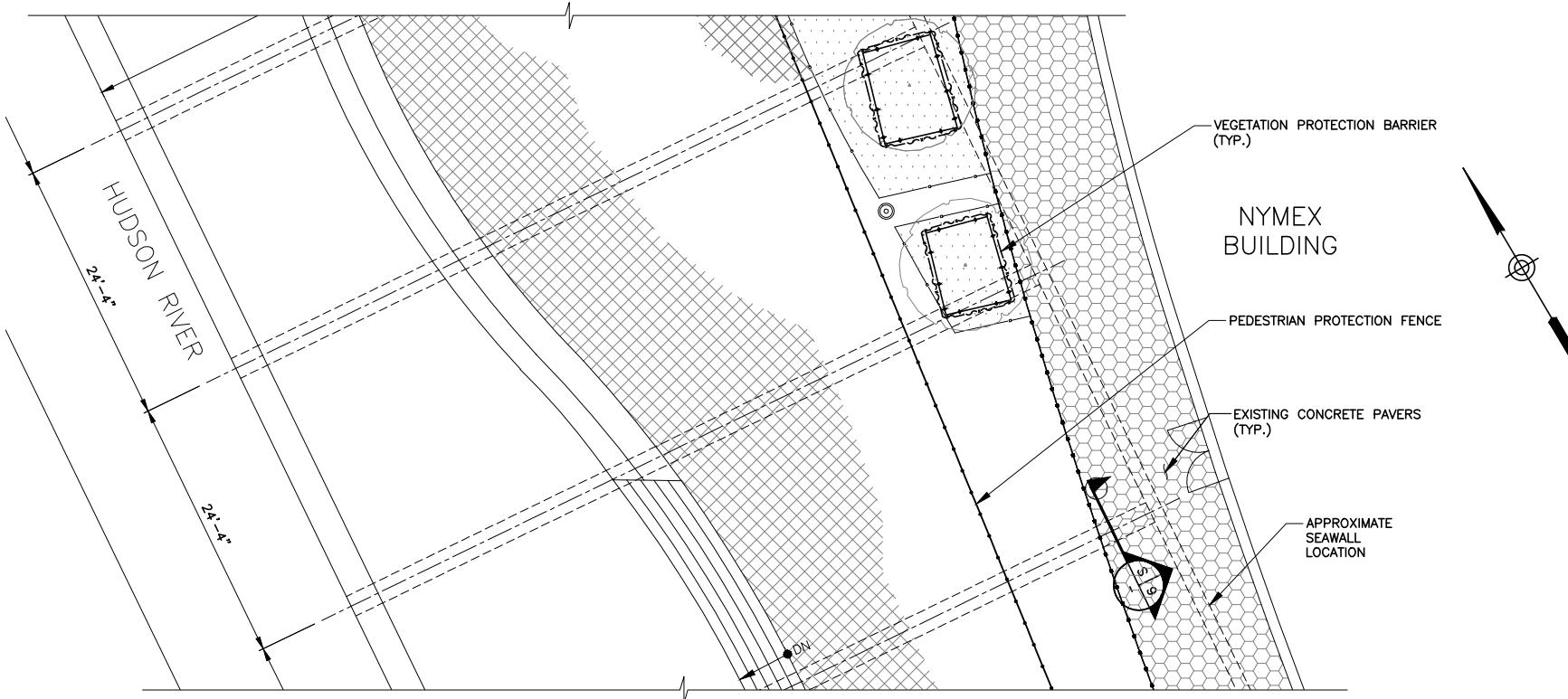
LEGEN

- The legend consists of seven entries, each with a line drawing icon and a text label:

 - PED. PROTECTION FENCE: A solid horizontal line with four dots.
 - TEMPORARY PROTECTION FENCE: A solid horizontal line with five dots.
 - SEAWALL LOCATION: A dashed horizontal line.
 - VEGETATION PROTECTION BARRIER: A line with a zigzag pattern and two arrows at the ends.
 - EXISTING CONCRETE PAVERS: A hexagonal grid pattern.
 - EXISTING CONCRETE TILES: A diamond-shaped grid pattern.
 - DIRT: A dotted square.

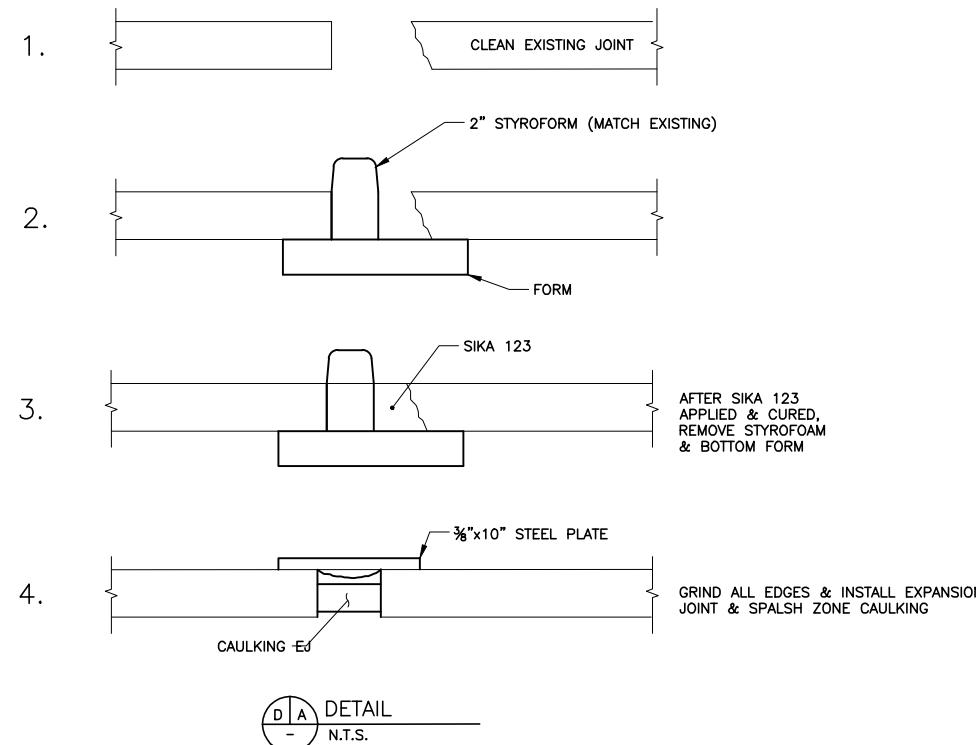
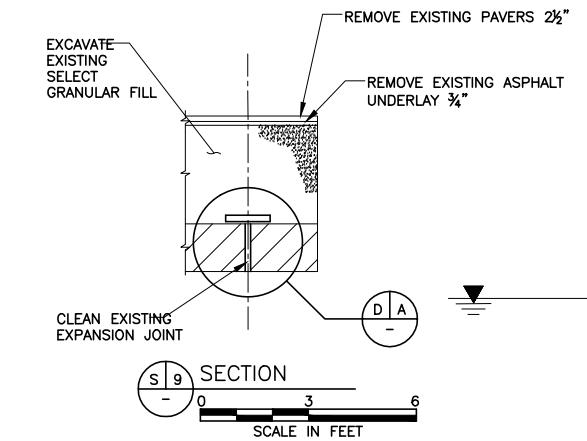
DESIGNED BY:	DRAWN BY:	CHECKED BY:	BATTERY PARK CITY AUTHORITY CONTRACT XX-XXXX		
REVISIONS			NYMEX TERRACE, DEPRESSION REMEDIATION OPTION II – PRESSURE GROUT REPAIR OF SEAWALL JOINT I CITY OF NEW YORK, BOROUGH OF MANHATTAN		
 KSE <i>KS ENGINEERS, P.C.</i>			Engineers • Surveyors • Construction Managers 65 Broadway, Suite 401, New York, N.Y. 10006 Phone: (212) 616-2657, Fax: (212) 616-3060		
SCALE:	AS SHOWN	DATE:	01/31/2014	PROJECT NO.:	1254-13
SHEET NO.:					26





PARTIAL PLAN

0 8 16
SCALE IN FEET



LEGEND:

- PED. PROTECTION FENCE
- TEMPORARY PROTECTION FENCE
- - - SEAWALL LOCATION
- ~~~~ VEGETATION PROTECTION BARRIER
- [Hatched pattern] EXISTING CONCRETE PAVERS
- [Cross-hatched pattern] EXISTING CONCRETE TILES
- [Dotted pattern] DIRT

DESIGNED BY:	DRAWN BY:	CHECKED BY:	BATTERY PARK CITY AUTHORITY CONTRACT XX-XXXX			
			REVISIONS	NYMEX TERRACE, DEPRESSION REMEDIATION OPTION II – PRESSURE GROUT REPAIR OF SEAWALL JOINT III		
				CITY OF NEW YORK, BOROUGH OF MANHATTAN		
				KSE KS ENGINEERS, P.C.		
				Engineers • Surveyors • Construction Managers 65 Broadway, Suite 401, New York, N.Y. 10006 Phone: (212) 616-2657, Fax: (212) 616-3060		
			SCALE: AS SHOWN	DATE: 01/31/2014	PROJECT NO.: 1254-13	SHEET NO.: 28

The Battery Park City Authority *Contract No.* _____

NYMEX Depression Remediation **Option II – Pressure Grout**

NYMEX Depression Remediation
Option II – Pressure Grout

Owner: Battery Park City Authority

Construction Estimate of Quantities:

<u>Item Number:</u>	<u>Item Description:</u>	<u>Unit:</u>	<u>Quantity:</u>	<u>Price \$ per Unit:</u>	<u>Total \$ per Item:</u>
201.06	Clearing and Grubbing	L.S.	1.00		
203.02	Unclassified Excavation and Disposal	C.Y.	0.00		
203.01125413	Compaction / Compensation Grouting Protection of Structures from Settlement due to Soft Ground - Item Requires Design by Contractor	L.S.	1.00		
203.07	Select Granular Fill	C.Y.	0.00		
203.21	Select Structural Fill	C.Y.	0.00		
204.01	Controlled Low Strength Material - CLSM	C.Y.	63.00		
206.01	Structure Excavation	C.Y.	0.00		
206.02	Trench and Culvert Excavation	C.Y.	63.00		
207.20	Geotextile Bedding	S.F.	0.00		
207.26	Prefabricated Composite Structural Drain	S.F.	0.00		
207.96000099	Geogrid Mechanically Stabilized Layer	S.F.	3,680.00		
209.13	Silt Fence - Temporary	L.F.	270.00		
520.50140008	Saw Cutting Asphalt Pavement, Asphalt Surface Course, Concrete Pavement or Asphalt Overlay on Concrete Pavement	L.F.	230.00		
552.16000199	Sheeting / Excavation Protection System	S.F.	1,630.00		
555.0105	Concrete for Structures, Class A; Underlayment	C.Y.	0.00		
595.50000018	Sheet Applied Waterproofing Membrane	S.Y.	0.00		
605.1701	Optional Underdrain Pipe, 4 Inch Diameter	L.F.	0.00		
607.41010010	Temporary Plastic Barrier Fence	L.F.	360.00		
608.020102	Hot Mix Asphalt (HMA) Sidewalks, Driveways, Bicycle Paths, and Vegetation Control Strips	Ton	36.00		
610.1403	Manufactured Topsoil – Lawns, BPCA Conservancy Group – Special Mix Design; Approved Suppliers	C.Y.	12.00		

The Battery Park City Authority *Contract No.* _____

NYMEX Depression Remediation **Option II – Pressure Grout**

Item Number:	Item Description:	Unit:	Quantity:	Price \$ per Unit:	Total \$ per Item:
610.1602	Turf Establishment - Lawns	S.F.	630.00		
610.19	Watering Vegetations	Gal.	1,000.00		
614.09	Tree Root Pruning	L.F.	450.00		
619.0101	Work Zone Safety / Traffic Control, WZSC	L.S.	1.00		
619.04	Type III Construction Barricades	L.F.	90.00		
623.12	Crushed Stone (In-Place Measure)	C.Y.	0.00		
1254/10-01	Mobilization	L.S.	1.00		
1254/10-03	Preconstruction Survey	L.S.	1.00		
1254/10-05	Remove and Dispose Existing Concrete Underlayment, 5 Inch Thick, In Asphalt Pavers Sidewalk Area	S.F.	0.00		
1254/10-06	Remove, Refurbish and Store Existing Asphalt Pavers, 2 ½ Inch Thick	S.F.	3,680.00		
1254/10-16	Reinstall Asphalt Concrete Pavers (up to 50% of Replacement New Pavers to be Included in the Price Bid)	S.F.	3,680.00		
556.01	See Wall Expansion Joint Repairs	L.F.	0.00		
	Total Construction cost:				

Additional Items to be provided by Contractors for Bid Evaluation:
Time and Materials Prices for Additional Work ONLY

A	<u>LABOR COST:</u>	<u>Unit</u>	<u>\$ Per Unit</u>
1	Laborer Foremen (1 Foremen x 4 Days x 8 Hr)	Per Hr	\$ -
2	Laborer (1 Laborers x 4 Days x 8 Hr)	Per Hr	\$ -
3	Operating Engineer (1 Operator x 4 Days x 8 Hr)	Per Hr	\$ -
4	Mason	Per Hr	\$ -
5	Teamster	Per Hr	\$ -
C	<u>EQUIPMENT COST:</u>	<u>Unit:</u>	<u>\$ Per Unit</u>
1	Utility/Compressor Truck with Small Tools including Operating Cost	Per Day	\$ -
2	Aluminum Sheeting Box (12' Long x 8' Deep x 4' to 8' Wide)	Per Day	\$ -
3	Excavator Cat 450 including Operating Cost	Per Day	\$ -
4	Dump Truck	Per Day	\$ -

* Materials cost will be reimbursed upon installation and invoices to be presented to BPCA with the 10% overhead plus 5% profit allowance.

GENERAL PROVISIONS - MEASUREMENT AND PAYMENT

MEASURING QUANTITIES.

All contract payments, including the final, will be made for quantities of work performed and materials placed in accordance with the contract documents as determined by the measurements of the Engineer, and the resulting quantities shall be accepted as final, conclusive and binding upon the Contractor.

Various methods of quantity computation may be used by the Engineer, including but not limited to: manual arithmetic calculations, manual measuring tools such as a planimeter, and computer tools/software.

The Engineer will choose the computation method, and the method may vary by contract and by contract pay item as appropriate.

The Engineer will choose the method by which the work will be measured, such as: measure from documents/data (contract plans, cross sections, CADD files, etc.) or measure from field survey of completed work, with the goal of obtaining reasonably accurate quantities of work for payment using a commensurate amount of effort and resources.

COMPENSATION FOR ALTERED QUANTITIES.

The BPCA reserves the right to order changes in quantities of contract pay items as is necessary to complete the work, in accordance with the intent of the contract documents.

A. Major Items. For Major Items (Any contract pay item for which the original unit bid price multiplied by the original item quantity exceeds \$100,000.00), payment will be made for all extra work at the contract unit bid price for work up to 125% of the original contract quantity.

For Major Item quantities less than 75% or more than 125% of the original contract quantity, consideration of contract adjustment will be in accordance to renegotiation procedures set by BPCA for Major Items.

Total payments made for all work on a Major Item that decreases to below 75% of the original contract item quantity, will not exceed the total payments which would have been made if the original contract quantity had been completed at the original unit price bid.

B. Minor Items. For Minor Items (Any contract pay item that does not meet the definition of a Major Item), payment will be made for extra work at the contract unit bid price, except for any extra work that is both: (1) more than 200% of the original contract quantity and (2) results in an increase of more than \$1,000 from the original contract amount, will be considered a Significant Change.

For Minor Items where the contract bid price does not exceed 125% of either the statewide or regional weighted average bid price, the contract bid price may be extended up to a increase of \$5,000 from the original contract amount.

EXTRA WORK AND TIME RELATED COMPENSATION.

The Contractor will be compensated for extra work under existing unit prices in accordance with Compensation for Altered Quantities, by agreed price in accordance with Agreed Price Work, or by force account in accordance with Force Account Work.

A. Agreed Price Work. Agreed prices for new items of work or materials in accordance with one of the methods outlined below may be accepted by the Engineer and incorporated into an order-on-contract as the BPCA may deem them to be just and fair and beneficial to the Authority. An order-on-contract containing an agreed price not supported by one of the following may be subsequently rejected by the BPCA.

1. Original Contract Bid Price. The original contract bid price, adjusted for documented increase or decrease in material cost, equipment rate, mobilization, and/or site conditions.

2. Weighted Average Bid Price. Reference to the statewide or regional weighted average bid price for a minimum of 3 contracts for similar type, quantity, and/or location of work from the Weighted Average Item Price Report or other recent contracts, adjusted for documented increase or decrease in labor, materials, equipment, mobilization, and/or site conditions.

3. Average of 3 Bidders. For work in unusual circumstances or unusual site conditions, the average bid price for the 3 lowest responsible bidders presented in the Tabulation of Bids for that contract. If less than 3 responsible bids were received, this option shall not be used.

4. Price Analysis. A price analysis shall be based on an estimated breakdown of charges listed in Force Account Work below, using the equipment and other rates in effect when the agreed price is developed by the Contractor. The analysis shall be based on crew composition, material prices, equipment production and overall production rates that are reasonable in comparison with contract bid price work.

Equipment rates shall be used with no rate adjustment factor and no regional adjustment factor. An appropriate type and size of equipment similar to that available on the contract site, if present, shall be used.

Labor rates may be determined using 15% of wages and supplemental (fringe) benefits for FICA, Medicare, paid holidays, Federal unemployment tax, and State unemployment insurance in lieu of a detailed accounting. Overhead and profit will not be allowed on the labor markup.

Due to the cost and effort associated with development, a price analysis should generally be reserved for extra work under an individual contract pay item or a single price analysis, of more than \$1,000.

The Contractor shall provide a price analysis within 10 work days of request by the Engineer. The BPCA will accept or reject the Contractor's proposed agreed price within 10 work days of receipt of a complete price analysis.

B. Force Account Work. Where there are no applicable unit prices for extra work and agreed prices cannot be readily established or substantiated, the Contractor will be paid by Force Account for the actual, reasonable and verifiable cost of the items listed below. The Contractor shall maintain and submit force account records in accordance with §109-05C. Force Account Report.

1. Contractor Charges. At the preconstruction meeting, the Contractor should provide the Engineer documentation supporting its Commercial General Liability Insurance rates for the current period, and provide updates within 30 days after the renewal date, to assist in timely preparation and review of force account

reports.

- a. **Labor.** Necessary labor costs include wages, supplemental (fringe) benefits, payroll taxes, state unemployment insurance, workers compensation insurance and other such reasonable charges that are paid by the Contractor pursuant to existing written agreements with its employees and/or labor organizations.

Each class of labor shall be billed separately at actual payroll rates; average rates based on different classes of labor will not be accepted. The wage rate for an individual worker may be up to 110% of the prevailing wage, provided the Contractor documents through certified payrolls that the worker has and continues to be paid more than the prevailing wage for contract work.

No reimbursement will be made for travel, lodging, signing bonuses, or other similar payments made to workers.

At the Contractor's option, a labor markup of 15% of all wages, not including supplemental (fringe benefits), for FICA, Medicare, paid holidays, Federal unemployment tax, and State unemployment insurance in lieu of a detailed accounting. Overhead and profit will not be paid on the labor markup.

Workers compensation insurance rate will be the base rate and the territorial differential only established by the NYS Workers Compensation Insurance Rating Board, subject to the Construction Employment Limitation Program limits. No other additional charges or modifiers will be included.

Insurance and other costs incurred or limited on a weekly basis will be reimbursed based on the percentage of the employees weekly gross wages paid under force account.

- b. **Materials.** Materials are necessary products incorporated in the temporary or permanent work, including transportation to the site.

Transportation may be accounted for under materials as either a unit price for transportation or equipment/operator charges. Equipment charges for transportation of materials shall be accounted for as equipment in accordance with Section Equipment with no allowance for overhead and profit.

Materials will be measured as quantities incorporated, with no reduction for required overlap, and appropriate waste due to construction and/or installation.

Oxygen, acetylene, propane, welding rods, grinding wheels, saw blades, hammer and drill bits, drill steel, and tooth-bits consumed in progressing the work are considered to be materials for which reimbursement will be made.

Other materials which are consumed in progressing the work are considered to be included in overhead and no separate reimbursement will be made. Material acquired by direct purchase shall be documented by bills or acceptable invoices.

All prices on used material incorporated in either temporary or permanent work shall be billed at a fair value, less than the original cost when new. A reasonable salvage credit will be determined by the Engineer in coordination with the Contractor for substantial salvageable material recovered.

- c. **Equipment.** Equipment, other than small tools, used by the Contractor shall be of suitable size and suitable capacity required for the work to be performed. If the Contractor elects to use equipment of a

higher rate than the equipment suitable for the work, payment will be made at the rate applicable to the suitable equipment.

The equipment actually used and the suitable equipment upon which the rate is based will be recorded as a part of the force account report. Usage will be recorded in hours to the nearest whole hour.

The Engineer will determine the suitability of the equipment. If there is a differential in the rate of pay of the operator of oversize or higher rate equipment, the rate paid for the operator will likewise be related to the suitable equipment.

(1) Contractor Owned Equipment. The Contractor will be reimbursed for its ownership costs and for its operating costs for self owned equipment at the rates listed in the a Rental Rate Blue Book for Construction Equipment at published by PRIMEDIA Information, Inc. (hereafter referred to as the Blue Book) in effect at the time the work is performed.

a) Ownership Costs. The rates for ownership costs will reimburse the Contractor for all non-operating costs of owning equipment, including depreciation on the original purchase, major overhaul repairs, cost of facilities capital, normal risk insurance, property taxes, storage, licenses, record keeping costs, overhead, and profit.

In the event that the Contractor does not have a needed type or piece of equipment on the contract site, the Contractor will be paid for the reasonable cost of moving the equipment onto and away from the contract site.

The hourly rate for the first 8 hour shift will be the Blue Book monthly rate divided by 176 multiplied by the rate adjustment factor and then multiplied by the regional adjustment factor.

The hourly rate for subsequent shifts during the same day will be 75% of the first shift hourly rate. Equipment required to be present, but idle, will be paid at 50% of the first shift hourly rate. Reimbursement will be made for the product of the hours of actual use or hours it is required to be present, and not available for mobilization elsewhere, multiplied by the hourly rate.

b) Operating Costs. The rate for operating costs includes preventative and field maintenance, fuel, lubricants, and other operating expendables. Operating cost does not include the operators wages. Reimbursement will be made for the product of the number of hours of actual use multiplied by the operating rate.

The hourly rate will be paid for all hours of operation, including those during subsequent shifts on the same day.

c) No Established Rate. In the event that rates are not established in the Blue Book for a particular piece of equipment, the Contractor shall contact the Blue Book publisher to establish rates. If the publisher will not establish rates, the BPCA will establish rates for ownership costs and operating costs for that piece of equipment consistent with its cost and expected life.

(2) Rented Equipment. In the event that the Contractor does not own a specific type of equipment and must obtain it by rental, the Contractor will be paid for the time that the equipment is used to accomplish the work or is required to be present, plus the reasonable cost of moving the equipment onto and away from the contract site.

(3)

a) Rental Costs. The Contractor will be paid the invoiced rental rate for the equipment, not to exceed the Blue Book ownership rate.

- b) Operating Costs.** The Contractor will be paid for the operating cost of the equipment in accordance with Section B.1.c.(1)b) unless reflected in the rental price.
- c) Rates Including Operator.** In the event that the Contractor rents equipment with an operator or fully fueled and/or maintained equipment such as cranes, concrete pumper, trucks, etc. payment will be made on the basis of an invoice for the rental of the equipment and the costs of moving to and from the site, provided the total rate is substantiated by area practice.

The rate including operator will not exceed the total of the ownership rate and the operating rate from the Blue Book, and the prevailing wage rate of an appropriate operator, if an operator is supplied.

- (4) Maximum Ownership/Rental Costs.** The maximum amount paid for the ownership costs of Contractor owned or the rental costs of rented equipment, is limited to the original purchase price as listed in the a Green Guide for Construction Equipment at published by PRIMEDIA Information, Inc.

If the ownership or rental reimbursement is limited by the original purchase price, the Contractor will be reimbursed for the operating cost per hour for each hour of actual use.

- d. Sales Taxes.** Sales taxes, if any, required to be paid on rented equipment or materials not permanently incorporated into the work.

- d. Overhead.** Overhead will be computed at ten percent (10%) of items B.1.a. Labor (but not including the premium portion of overtime) and §109-05B.1.b. Materials, and will be defined to include the following:

- (1) Additional premium on bond, additional premium for insurance required by the BPCA other than Workers Compensation Insurance and Commercial General Liability Insurance;
- (2) All salary and expenses of executive officers, supervising officers/ employees, superintendents, and clerical or administrative employees, including payroll taxes, unemployment insurance, workers compensation insurance, and charges that are paid by the Contractor to or on behalf of those employees pursuant to written agreement with its employee(s) and/or labor organizations;
- (3) Minor equipment such as small tools, including shovels, picks, axes, saws, bars, sledges, lanterns, jacks, etc., and other miscellaneous supplies and services;
- (4) Contractor's field office rental, utility charges, potable water, sanitation, cleaning, computers, CADD equipment, drafting equipment reproduction costs, etc.

- e. Profit.** Profit will be computed at ten percent (10%) of items Section B.1.a. Labor (but not including the premium portion of overtime) and Section B.1.b. Materials.

- g. Commercial General Liability (CGL) Insurance.** Commercial General Liability (CGL) insurance will be reimbursed at the rate paid by the Contractor in accordance with the method procured from its insurer.

- (1) Contractors that pay commercial general liability on the basis of a percentage of payrolls will be paid that percentage of item Section B.1.a. Labor.

(2) Contractors that pay commercial general liability on the basis of a percentage of gross sales will be paid that percentage of items Section B.1.a. through f.

2. Subcontractor Charges. When the work is performed by a Subcontractor, the Contractor will be paid the actual and reasonable cost of such subcontracted work as outlined above in Section B.1.a through Section B.1.g, plus an additional overhead of five percent (5%) of the cost of items Section B.1.a. Labor and Section B.1.b. Materials.

3. Service Charges. When work is performed by, and a fee is paid to, a service provider, the Contractor will be paid the actual cost of the service fee plus five percent (5%) for contract supervision, overhead and profit. This 5% will be applied once to the service fee regardless of the firm making direct payments to the service provider.

C. Force Account Report. Payment for force account work will be made on the basis of the following reports. Reports shall be submitted in a format acceptable to the Department. Appropriate forms are available from the Department.

If the Engineer disagrees with the accuracy, applicability, or reasonableness of any portion of a Contractor's submission, he/she shall promptly notify the Contractor. The Engineer will make any notations, remarks or comments on the records that may assist in final payments and then sign and date to indicate receipt, but not necessarily concurrence.

1. Daily Summary. The Contractor shall deliver a daily summary of force account work to the Engineer not later than close of business on the work day following that for which the work is reported. This summary shall be dated and signed by the Contractor's authorized representative. The summary shall contain:

- a. The contract number, other contract information, and the Contractor name/information.
- b. A brief description of the work performed and the work location for that day.
- c. A list of personnel by name, including the hours worked, and labor classification.
- d. A list of materials used indicating the quantity and nature. The cost shall be documented later by proper receipts.
- e. A list of equipment used indicating the number of hours used and the type, manufacturer, model, model year, size of equipment, and any required attachments.

2. Weekly Labor Summary. Within 5 calendar days after the end of each pay period, the Contractor should deliver to the Engineer a Force Account Summary of Labor used on the work, which shall include the name, labor classification, hours worked, hourly rate of pay, supplemental (fringe) benefits, and/or other items as shown on the certified payroll. If the Contractor does not provide the Engineer with Weekly Labor Summaries, no progress payments on that force account will be made.

3. Force Account Report Submission. On completion of the specific force account work, the Contractor shall deliver to the Engineer a Force Account Report, wherein all labor, materials, equipment, and other charges are shown and totaled. The Force Account Report shall be dated and signed by the Contractors authorized representative. When the Contractor and the Engineer agree on the Force Account Report, the Engineer will prepare and submit an order-on-contract containing the Force Account Report to the Regional Construction Engineer for approval.

4. Force Account Review. The BPCA will review the Force Account Report and make any notations, remarks or comments on this form that may assist in final payments. The emphasis of this review will be on labor rates, payroll taxes, material costs, equipment rates, insurance rates, conformance with payment provisions of technical specifications, and overall documentation.

5. Late Submissions. In the event the Contractor fails to deliver the required force account documentation to the Engineer in a timely manner, and as a result the order-on-contract for the force account work is not fully approved at the date of final acceptance, the required final payment date will be extended by the number of calendar days between final acceptance and the issuance of this force account order-on-contract, attributable to the Contractor=s late force account submissions.

ELIMINATED MATERIALS.

Materials required by the contract documents and not incorporated into the work due to changes caused by field conditions or revisions to the design by the State after the material was ordered or purchased may be eligible for reimbursement. Materials will be eligible for reimbursement if they are determined by the BPCA to be unique to the contract, and meet one or more of the following conditions:

- The material order cannot be canceled or changed to reflect the revised quantity required.
- The material cannot be restocked or the cost of restocking is excessive.
- The Contractor or Subcontractor does not maintain a supply of the material.
- The cost of the material exceeds \$1000.00 or five percent (5%) of the item, whichever is greater.

The Contractor will be reimbursed its material cost minus salvage value, or the material cost plus necessary delivery costs to a site identified by the Engineer, if the Department opts to take the material.

Overhead and profit will be paid once, at a maximum of five percent (5%) for all materials not incorporated into the work, regardless of whether the Contractor or the Subcontractor pays for the material and/or delivery costs.

SECTION 201 - CLEARING AND GRUBBING

201-1 DESCRIPTION

201-1.01 General. This work shall consist of clearing, grubbing, removing and disposing of all trees, brush, stumps, fences, debris, and miscellaneous structures not covered under other contract items within the construction area and such other areas as specified or directed. The Contractor shall clear such additional areas within the limits of the right-of-way and easement lines as specified or directed.

201-1.02 No Burning Requirement. Materials generated by the work, including construction and demolition debris, shall not be disposed of by burning on or off the site. Off site burning in a permitted solid waste incinerator or in another lawful manner as refuse derived fuel will be permitted.

201-2 MATERIALS (Not specified)

201-3 CONSTRUCTION DETAILS

201-3.01 Limits of Work Areas. The Engineer will establish the limits of areas to be cleared and grubbed, to be cleared but not grubbed, or areas, objects or features that are designated to remain undisturbed. In general, the work areas shall include the road section, stream channels, ditches, temporary approaches to bridges, detours and other areas as shown in the contract documents or directed by the Engineer. The Engineer will designate fences, structures, debris, trees and brush to be cleared where grubbing is not required. Clearing beyond the areas of construction shall be done only where specified or directed.

201-3.02 Clearing and Grubbing. During the life of the contract the Engineer may order the clearing of any trees within the R.O.W. that the Engineer determines to be hazardous or dead and unsightly.

The Contractor shall carefully prune all branches of trees less than 15 feet above any part of the roadway and all branches which have been broken or injured during construction. The work shall be done as specified under §614-3.01A Equipment and B. Pruning.

Whenever trees are felled or trimmed on/or adjacent to highways, all wood shall be immediately removed from the roadway or any area that would present a hazard to traffic. Grubbed stumps shall be moved immediately at least 30 feet from the edge of pavement. No trees, tree trunks, stumps or other debris shall be felled, side cast or placed outside the limits of the road section. No grubbing will be required beneath the embankment where the finished grade will be 6 feet or more above the original ground surface unless otherwise specified in the contract documents. Where trees or existing stumps are cleared and grubbing is not required, the tree trunk or existing stump shall be cut off not more than 6 inches above the original ground surface unless otherwise approved. Exposed stumps not required to be removed, but which are within 30 feet of the edge of the pavement or are in a built-up area, shall be chipped out to a depth of not less than 6 inches below the finished grade and the holes backfilled if directed by the Engineer. This work shall be completed within one week after start of work on the tree.

201-3.03 Disposal

- A. **General.** All wood including grubbed stumps shall be removed from the contract site or otherwise disposed of.

B. Methods of Disposal of Wood and Brush.

1. Disposal (No Burning). All wood and brush shall be disposed of within fifteen (15) days after cutting or felling unless otherwise approved. No burning of land clearing materials that result from the clearing and grubbing operations, except in a permitted solid waste incinerator or as refuse derived fuel, will be permitted. The Contractor will have the following options or combination of options for disposal of this material:

- a. The Contractor shall make every effort to salvage marketable timber as specified in paragraph B4 of this subsection.
- b. When permitted by a note in the contract documents, disposable material may be placed at locations approved by the Engineer within the right-of-way but outside of the embankment area. When permitted by a note in the contract documents, disposable material may be placed in the embankment side slope area.

The contract documents will define the embankment side slope area and the procedures for the concurrent construction of the embankment and disposal section.

This type of disposal will require certain preparatory work. Preparation for direct burial of woody materials shall consist of cutting main trunks and limbs and chipping smaller limbs, branches, foliage and brush. Under conditions when disposal space and earth cover are limited in size and quantity, stumps will have to be ranked in size and placed in layers so as to make best use of the space available and the quantity of materials to be buried.

- c. The Contractor may bury disposable material off the right-of-way at locations obtained by the Contractor at no expense to the State. Such locations are to be approved in writing by the Engineer. The disposal work will require the same preparatory work as stated in option b. above except that the Engineer may waive such requirements for miscellaneous work which may be accommodated in a satisfactory manner by other methods. The disposal area is to be covered with earth as hereinafter specified.
- d. The Contractor may reduce all woody materials to chips and dispose of the chips as specified in paragraph B2 of this subsection.
- e. The material may be sent to a refuse derived fuel processing facility or to other processing facility for eventual beneficial re-use as fuel or for other lawful re-use.

Under no circumstances is disposal to be made in swamp or wet lands. When the disposal area is within the embankment section or is formed by flattening the embankment slopes, the elevation of the normal embankment construction shall always equal or exceed that of the disposal area.

There is to be absolutely no end dumping of disposable material over the sides of the embankment. All disposal areas are to be finally covered with a minimum of 2 feet of earth and graded to drain properly.

2. Chipping. Wood may be reduced to chips by the use of an approved chipping machine or stump grinder. Chips shall be 1/2 inch maximum thickness or of other approved thicknesses.

Chips resulting therefrom may be disposed of by being stockpiled and used as mulch for planting, by distribution on the ground surface in wooded areas within the right-of-way as approved by the Engineer, or by disposal at a location off the contract site satisfactory to the Engineer.

3. Burying. No tree trunks, stumps or other debris shall be buried inside the right-of-way limits without the written approval of the Engineer. Disposal areas outside the right-of-way limits shall be approved in writing by the Engineer and shall be acquired by the Contractor at no expense to the State.

4. Salvage of Marketable Timber. In the interest of conservation, the Contractor shall make every effort possible to salvage marketable timber produced as a result of clearing operations, provided the amount of timber is great enough to make the hauling practical.

In general, marketable timber is construed to mean logs 8 to 16 feet in length, plus appropriate trimming allowance, having a diameter inside the bark, at the small end, of approximately 10 inches. In the event that the Contractor is not successful in salvaging marketable timber, the Contractor shall advise the Engineer, in writing, of the efforts to salvage and indicate the reason why the timber could not be salvaged.

Any wood that is cut up in firewood lengths or other marketable lengths may be neatly piled adjacent to the right-of-way in an area provided by the Contractor for periods in excess of one week but shall be removed prior to completion of the contract.

201-4 METHOD OF MEASUREMENT

201-4.01 Per Acre. Payment for Clearing and Grubbing will be made at the unit price bid per acre computed to the nearest one tenth acre.

201-4.02 Per Lump Sum. Payment for Clearing and Grubbing will be made on a lump sum basis for work satisfactorily completed. Monthly payments will be made in proportion to the amount of work done as determined by the Engineer.

201-4.03 Borrow Areas. Borrow pits or other pit areas from which material is secured shall not be included for measurement of clearing and grubbing.

201-5 BASIS OF PAYMENT.

201-5.01 Clearing and Grubbing. Payment will be made at the contract price to furnish all materials, labor and equipment necessary to satisfactorily complete the work as specified. No separate payment will be made for any excavation, backfill or earth cover necessary to complete the work of disposal outside the embankment area nor for the work in handling, storing, rehandling and hauling of disposable material within or outside the right-of-way.

Payment will be made under:

Item No.	Item	Pay Unit
201.06	Clearing and Grubbing	Lump Sum
201.07	Clearing and Grubbing	Acre

1254/10-05

Remove and Dispose Existing Concrete Underlayment,
5 Inch Thick, In Asphalt Pavers Sidewalk Area

DESCRIPTION:

The work shall consist of the removal and disposal of concrete underlayment, reinforcement, if present, and any miscellaneous materials encountered, as shown on the contract plans.

MATERIALS:

Not specified.

CONSTRUCTION DETAILS:

Not specified.

METHOD OF MEASUREMENT:

The work shall be measured by the area of concrete underlayment, removed and disposed of. The quantities will be determined from field measurements.

BASIS OF PAYMENT:

The unit price bid shall include the cost of furnishing all labor and equipment to complete the work.

Payment will be made under:

<u>Item No.</u>	<u>Item</u>	<u>Pay Unit</u>
1254/10-05	Remove and Dispose Existing Concrete Underlayment, 5 Inch Thick, In Asphalt Pavers Sidewalk Area	Sq. Ft.

**203.01125413 - COMPACTION/COMPENSATION GROUTING PROTECTION
OF STRUCTURES FROM SETTLEMENT DUE TO SOFT GROUND – ITEM
REQUIRES CONTRACTORS DESIGN**

PART 1 GENERAL

1.01 INTRODUCTION

- A. Compaction grouting involves the injection under high pressure of a low-slump, mortar-like grout to compact and displace the adjacent soils. The grout does not penetrate soil pores but displaces the subsurface soils by forming a homogeneous grout bulb near the grout pipe tip.
- B. In situ soil types: Compaction grouting is typically very effective in porous soil with permeability greater than 10^{-4} and in situ vertical stresses greater than 15 psi (100 kPa).
- C. Applications: Loose fill stabilization; remediation of settling structures and utilities; sinkhole remediation; improvement of soil in kastic regions; building/utility protection during tunneling; soil densification for site improvement; liquefaction mitigation. In certain cases, procedures can be designed to intentionally lift structures and/or utilities.

1.02 INTENT

The intent of the compaction grouting program specified herein is to provide soil improvement within the limits indicated on drawings No's. 22 to 24 achieve the required degree of improvement detailed in section 3.02 of these specifications, in order to protect subjacent structures from damaging settlements caused by soft ground operations. The concept is to re-compact the loosened soils within the vicinity of structure, rather than to wait for settlements to reach building foundations and then grouting under individual footings. Such a compaction grouting program can, in certain circumstances, replace conventional underpinning or other settlement control programs for soft ground tunneling, by significantly reducing the vertical and lateral movements (settlement trough) that develop above the structure.

1.03 STANDARDS AND REFERENCES

- A. The most recent version of the following testing methods or standards may be employed:

1. ASTM D1586 Standard Penetration Testing (SPT)
2. ASTM D344 Static Cone Penetration Testing (CPT)
3. ASTM C150 Compliance Standard for Portland Cement
4. ASTM C143 Test Method for Slump of Portland Cement Concrete

- B. Reference documents as provided to the Compaction Grouting Contractor shall include:

1. This specification.
2. Project drawings:

- a. Engineer's site plan, drawings No's. 22 to 24
 - b. Engineer's existing underground utilities plan in the work area.
 - c. Grout injection point layout, as detailed in the Submittals section 1.06 of these specifications – designed by Contractor's Licensed Professional Engineer.
3. Project geotechnical report – Soil Test Results taking in the area.
 4. Form of contract between Owner and General Contractor, Owner and Compaction Grouting Contractor, and General Contractor and Compaction Grouting Contractor as appropriate.

1.04 DEFINITIONS

- A. **Compaction Grout:** A material blend of fine aggregate, fines and water to achieve a pumpable, thixotropic, viscous grout of a low slump to enable pumping at high pressure and remain intact after injection. Material components can include sand, silt, clay, cement, ground slag, flyash, water and other ad mixtures. Strength of grout is intended only to be greater than existing strengthened soil conditions.
- B. **Field Quality Control Representative (FQCR):** The individual given specific inspection tasks identified in this specification.

1.05 SCOPE OF WORK

- A. The work shall consist of installation, monitoring and testing of compaction grouting within the limits indicated on drawings No's. 22 to 24 meet the acceptance criteria presented in Section 3.02 of these specifications.
- B. In connection with the compaction grouting program, as shown on the drawings, the Compaction Grouting Contractor shall provide all labor, materials and equipment to accomplish the following items of work:
 1. Implement ground/structure movement monitoring system.
 2. Install and remove grout pipes.
 3. Furnish and inject compaction grout.
 4. Monitor surface ground/structure movements during tunneling and compaction grouting operations.
 5. Follow compaction grouting sequence of operations.
- C. It shall be the Compaction Grouting Contractor's responsibility to determine and implement the systems and criteria to ensure that specified improvement is achieved.

1.06 SUBMITTALS

- A.** The following shall be submitted to the Owner's representative by the Compaction Grouting Contractor *with the bid documents*:
 - 1.** A list of at least three previously completed projects of similar scope and purpose for approval by the Owner's representative. The list shall include a description of the project, relative size, and contact person with phone number.
- B.** The following shall be submitted to the Owner's representative by the Compaction Grouting Contractor two weeks *prior to the start of the work*:
 - 1.** Resumes of the management, supervisory, and key personnel, for approval by the Owner's representative.
 - 2.** A ground movement monitoring plan, as detailed in section 3.03 of these specifications.
 - 3.** A mix design for the project indicating sources and types of grout materials, with volumetric proportions, and field test data from previous projects indicating compressive strength and slump of 1 to 3 inches (50 to 100 mm) or less achieved.

If the Compaction Grouting Contractor intends to deviate from the gradation provided in Section 2.03 of this specification, it shall submit, with the bid, evidence of satisfactory use of the proposed material from past projects with similar soil conditions.

- 4.** Work procedures and control criteria (including volumes and pressure for each stage).
- 5.** A general Work Procedures Plan outlining the spacing, location, depth and estimated quantity of grout to achieve the specified criteria detailed in Section 3.02 of this specification.

Grout hole locations shall be dimensionally referenced to the structural foundation shown on the contract drawings.

- C.** The following shall be submitted to the Owner's representative by the Compaction Grouting Contractor *during the work*:
 - 1.** Accurate daily records of all grout pipe installation, compaction grouting quantities, including stage data, volume, pressure and depth for each grout pipe location.
 - 2.** Any change in the predetermined grouting program necessitated by a change in the subsurface conditions.

1.07 QUALITY ASSURANCE

- A.** The compaction grouting program, including installation of grout pipes, shall be performed by a specialist Compaction Grouting Contractor with at least three continuous years of documented experience in compaction grouting.
- B.** The Compaction Grouting Contractor shall provide experienced management, supervisory and key personnel as required to implement the compaction grouting program, as follows:
 - 1.** The project manager shall have at least two years of continuous experience in compaction grouting, with at least the last one year in the full-time employ of the Compaction Grouting Contractor.
 - 2.** The superintendent shall have at least two years of experience in compaction grouting.
 - 3.** As detailed in Section 1.06 of these specifications, the Compaction Grouting Contractor shall provide:
 - a.** Evidence of previous compaction grouting project experience.
 - b.** Evidence of management, supervisory and key personnel experience.
- C.** The Owner's representative will ensure that procedures and documentation conform to these specifications.

PART 2 EQUIPMENT AND MATERIALS

2.01 GROUTING EQUIPMENT

- A.** The Compaction Grouting Contractor shall supply equipment capable of advancing the grout pipe through overburden, soils and other natural obstructions to the specified depth or as is required to meet the project objectives.
- B.** The Compaction Grouting Contractor shall supply all equipment required to operate a compaction grouting system capable of supplying the specified grout at variable flow rates and pressures, measured at the pump, up to 800 psi and at rates of 0.5 to 12 cubic feet (0 to 0.34 cubic meters) per minute, as required to suit the application.
- C.** The mixer shall be a continuous auger type to ensure complete uniform mixing of the materials used and shall be of sufficient capacity to continuously provide the pumping unit with mixed grout at its normal pumping range. The mixer must be capable of volumetrically proportioning the grout materials. Ready mixed grout is also acceptable with an approved mix design.
- C.** The Compaction Grouting Contractor shall provide gauges or other instrumentation (measuring devices) to measure:

1. Continuous grout pressure close to the top of the injection casing.
 2. Flow rate of grout.
 3. Volume of grout injected.
- E.** The Compaction Grouting Contractor shall supply and install structural monitoring equipment in accordance with Section 3.03 of these specifications.
- F.** An adequate communication system shall be maintained between the pumping and batching plant and the injection location. As an alternate, the contractor may furnish a remote control system to allow full control (start, stop, flow rate, reversing) of the pump directly by the grouting technical from the injection point).

2.02 GROUT PIPES

- A.** Grout pipes and connections shall be steel casing of adequate strength to maintain the hole and to withstand the required jacking and pumping pressures. The pipes shall be at least 2.0 inches (50 mm) inside diameter in order to adequately handle the specified low slump material without plugging. All casing shall be flush joint threaded or a single piece tubing to provide a smooth inner wall and unobstructed inside diameter. It shall be the contractor's responsibility to install casing that does not detrimentally impact the grouting procedure.
- B.** Pipes shall be installed such that grout material will not travel in the annular space between the pipe and adjacent ground and escape at the surface when pumped.

2.03 GROUT MATERIALS

- A.** Portland Cement, Type I or II (ASTM C150)
- B.** Fine aggregate shall be sand with fines content (percent passing No. 200 sieve) of not less than 10 percent and not more than 25 percent. Natural fines may be supplemented with Fly/ash, a minimal amount of bentonite, or aggregate washings.
- C.** Proportions of the mixture shall be as required to achieve a pumpable mix with not more than a 7 inch (18 mm) slump.
- D.** Upon discharge into the pump hopper or holding tank, the grout must be continuously agitated. Mixed grout may not be held in the agitator for more than 2 hours unless a set retarder, approved by the Owner's representative, is used.

PART 3 EXECUTIONS

3.01 SITE EXAMINATION

- A.** Prior to submitting a bid price for the compaction grouting, the Compaction Grouting Contractor shall conduct a site inspection.
- B.** If a building in distress is involved, a relevant building survey may be in order prior to initiating work.

3.02 COMPACTION GROUTING

Compaction grout shall be injected through the grout pipes into the target soil as the shield passes the grout pipe locations so as to re-compact loosened adjacent soils and limit surface settlements to acceptable values. If necessary to initiate the flow of grout at the start of pumping, the grout pipe will be pulled a few feet with the grout pressure applied, or an initial cavity produced by jetting or blowing. Pumping will continuously proceed at a rate between 0.1 and 4.0 cubic feet per minute. Accurate records of pumping time, pressures, volumes, locations, slumps, etc., shall be kept and submitted to the engineer.

A. Compaction grouting shall be performed in accordance with the approved grout injection point layout scheme to achieve the following acceptance criteria in the in situ soil between the injection points:

- 1.** Post-grouting average, corrected Standard Penetration values exceeding (Contractors P.E. Design) in typical site soils.

Locations to be agreed upon between the Compaction Grouting Contractor and the Owner/Engineer. Averaging shall be with values above and below each value.

- 2.** Post-grouting, average corrected static Cone Penetrometer tip resistance, in silts with friction ratio less than 1:1, exceeding (Contractors P.E. Design) tsf ((Contractors P.E. Design) kPa).

Locations to be agreed upon between the Compaction Grouting Contractor and the Owner/Engineer. Averaging shall include above and below two feet, eliminating values in soils with permeability's less than 1×10^{-3} cm/sec.

B. The grout shall be injected at a stage depth until one of the following occurs:

- 1.** Grout flow ceases at a header pressure reading of 800 psi (4,824 kPa).
- 2.** Surface ground heave of (Contractors P.E. Design) inches is observed.
- 3.** An injected grout volume equal to 25 percent of the soil volume being treated by that injection stage is reached.
- 4.** A maximum cumulative heave of (Contractors P.E. Design) inches is observed.

Note: 3.02B1 to 3 may be deleted by reference to the contractor's work plan

- C.** Compaction grouting shall be sequenced so that grouting does not take place within (Contractors P.E. Design) ft of locations grouted within the previous 12 hours.
- D.** As compaction grouting is completed at each location, the Compaction Grouting Contractor shall completely fill the grout hole to the ground surface.

3.03 FIELD QUALITY CONTROL

- A. All compaction grouting shall be performed under the inspection of the FQCR.
- B. Monitoring and logging of compaction grouting operations for both test areas and production work shall be done by the FQCR.
- C. The FQCR will perform slump tests of grout and take measurements of grout mix quantities to verify the Compaction Grouting Contractor's grout mix, as follows:
 - 1. Slump tests will be performed:
 - a. once for every 50 cubic ft of grout injected, or
 - b. at any change in mix design, or
 - c. at least twice during each grout shift.
 - 2. Grout mix proportions will be checked at least once daily.
- D. The FQCR will require the Compaction Grouting Contractor to cast minimum size 3 inch by 6 inch (75 mm by 150 mm) grout test cylinders *or* 2 inch by 2 inch cube molds for strength testing. One set of four cylinders or molds will be cast during each slump test.
- E. Layout of grout injection points shall be by the Compaction Grouting Contractor and checked by the FQCR with sufficient control points provided by the Owner.
- F. As detailed in Section 1.06C, daily records shall be maintained by the Compaction Grouting Contractor and submitted to the Owner's representative.
- G. The Compaction Grouting Contractor shall monitor nearby structures as follows:
 - 1. A level control system will be installed by the contractor for each structure / planting bed within 1 ft of the operations.
 - 2. Monitoring shall be carried out on a continuing basis whenever compaction grouting is occurring within a horizontal distance equal to the depth of treatment.
 - 3. After completion of the compaction grouting program, the monitoring system and grout pipes will be removed and all holes will be filled and patched.

3.04 TESTING AND INSPECTION

- A. The effectiveness of the proposed grouting layout scheme shall be verified as follows:
 - 1. The Owner may retain a soil testing firm to perform the in situ testing as

directed by the Owner's engineer. Test sections will be performed before and during production work, as follows:

- a. Test section locations will be agreed upon by the (FQCR/Compaction Grouting Contractor) within the treatment area. A test section shall consist of a single module comprised of at least three grout injection points for isolated footings and sixteen grout injection points for area applications. Tests will be performed at the center of the module prior to and after grouting.
 - b. All testing to determine specification compliance will be provided by an independent testing agency retained by the Owner. Regardless of the method selected, the same test method shall be utilized both before and after the soil improvement work in order to provide the most accurate assessment of the degree of improvement obtained.
 - c. The method of installation of the test section shall comply with Section 3.02 of this specification and shall be performed using the same grout line sizes, grout mix drilling and grouting equipment and procedures as that to be used for production work.
 - d. Prior to commencement of production grouting, one test section shall be performed. If the pre-production test sections indicate that the required ground improvement has not been achieved, the Compaction Grouting Contractor shall revise the Work procedure Plan and re-test.
- B. Monitoring and logging of compaction grouting operations in the test areas and for production work shall be done by the Compaction Grouting Contractor.

3.05 RESTRICTIONS

- A. The Owner *or* General Contractor *or* Specialty Contractor shall be responsible for obtaining any State and municipal permits (if required) and conforming to all State and local regulations.
- B. The owner will be responsible for the precise delineation of all above and below ground utilities and obstructions.
- C. The following shall also be listed within this section when applicable:
 1. Environmental restrictions.
 2. Work boundaries.
 3. Hours for construction.

PART 4 PAYMENT

4.01 METHOD OF PAYMENT

- A.** Layout of grout injection locations and installation of the grout casings required under the Contractor-proposed grout injection point layout scheme, and any required secondary grouting within the limits indicated as requiring compaction grouting on drawings No's. 22 to 24 shall be a lump sum unit.
- B.** Injected grout shall be paid as a lump sum.
- C.** Installation of additional grout casings, placed under the direction of the Owner's engineer outside the limits indicated on drawings No's. 22 to 24 as requiring compaction grouting (such as areas identified as 'marginal - may require compaction grouting), shall be at a lump sum.
- D.** Mobilization and demobilization shall be a separate lump sum item.
- E.** Testing is included in a cost of Compaction Grouting based on the lump sum.
- F.** NYS Licensed Professional Engineer design cost is included in a cost of Compaction Grouting based on the methods selected by Contractor and reimbursed as lump sum.

ITEM 207.96000099 – GEOGRID MECHANICALLY STABILIZED LAYER

DESCRIPTION

This work consists of installing Mechanically Stabilized Layers (MSL) in accordance with requirements set forth in "The Geosynthetic Design and Construction Guidelines" reference manual (FHWA NHI-07-092) chapter 5 for geogrid reinforcement of an aggregate base layer and in compliance with AASHTO Standard Practice R50-09 to achieve the specified traffic benefit at the locations indicated on the Plans and/or as directed by the Engineer, all in accordance with this specification.

MATERIALS

Basis of design for the MSL is a geogrid reinforcement system by Tensar International Corporation Technologies, Inc.; utilizing the TX 5 geogrid is calibrated and validated to Giroud-Han and to AASHTO 1993 Flexible Pavement Design Method and as shown on the plan drawings. Alternate products shall be considered as equal provided they meet the following requirements:

- 1) The products submitted must be punched and drawn extrusions of polypropylene or another non-biodegradable/chemically inert material. Coated/woven products shall not be considered. Products with ribs mechanically bonded at the joints shall not be considered.
- 2) The product submitted must be calibrated to Giroud-Han as provide for by "The Geosynthetic Design and Construction Guidelines" reference manual (FHWA NHI-07-092) and shall be calibrated to AASHTO 1993 Flexible Pavement Design Method.
- 3) The products must be able to meet the specified performance, elevations, sections, and profiles as shown on the plan drawings and as defined in this specification.
- 4) Aperture dimension must be 1.7" maximum and 1.20" minimum to permit the effective use of NYSDOT specification Item 4 well-graded road construction aggregate, 1.5" minus.

CONSTRUCTION DETAILS

1. SUBMITTALS.

- a. Product Data: Manufacturer's data sheets on each product to be used, including:
 - i. Published site preparation procedures and recommendations.
 - ii. Storage and handling requirements and recommendations.
 - iii. Published installation methods.
 - iv. A letter from the manufacturer that the product has achieved calibration to the AASHTO 1993 Flexible Pavement Design Method and achieved a traffic benefit ratio sufficient to perform equally to the specified geosynthetic in accordance with the plans and specifications herein.
- b. Samples: Provide 2 samples of each geogrid that will be used to complete the pavement section as specified or proposed. Each sample shall be 12 inch by 8 inch (305 mm by 203

mm) and include a minimum of 5 ribs per junction.

c. Manufacturer's Certificate: Certify products meet or exceed specified requirements.

Provide a separate certificate for each lot of material furnished.

2. QUALITY ASSURANCE

a. Manufacturer Qualifications

- i. The geogrid manufacturer shall have no less than five years documented experience in the manufacture of punched and drawn geogrids and installation of geogrid products in the state of New York. Include a brief description of each project and name and phone number of owner's representative knowledgeable in each listed project.
- ii. The geogrid manufacturer shall provide documented evidence of an established quality control program to assure products with consistent compliance with the requirements of this specification.

b. Installer Qualifications

- i. Installer shall have documented experience in the installation of geogrid MSL systems with at least two projects in New York State of similar construction and scope.
- ii. Include brief description of each project and name and phone number of owner's representative who is knowledgeable in each listed project.

c. Pre-Construction Meeting

- i. Prior to construction of the MSL reinforcement system, conduct a meeting at the site with the materials supplier, the installer, and the Contractor to review the preparation and installation requirements.
- ii. Notify the Engineer at least 3 days in advance of the time of the meeting.

3. DELIVERY, STORAGE, AND HANDLING

- a. Store products in manufacturer's unopened packaging until ready for installation.

4. PROJECT CONDITIONS

- a. Install in accordance with published installation guidelines of the MSL product manufacturer.

- b. Do not place asphalt during wet or freezing weather that prevents conformance with specified requirements.

5. CONSTRUCTION METHODS

- a. Construct geogrid MSL in accordance with the manufacturer's published installation guidelines. Do not begin MSL system installation until reclamation has been completed for the area specified on the plans.

METHOD OF MEASUREMENT

This work will be measured as the number of square yards of geogrid MSL satisfactorily installed (measured to the nearest 1 sq yd.). No deductions will be made for holes less than 1 square yard in area.

BASIS OF PAYMENT

The unit price bid per square yard for this item shall include the cost of furnishing all labor, materials, and equipment necessary to complete the work.

**ITEM 520.50140008 - SAW CUTTING ASPHALT
PAVEMENT, CONCRETE PAVEMENT AND ASPHALT
OVERLAY ON CONCRETE PAVEMENT**

DESCRIPTION:

Under this item, the contractor shall saw cut existing asphalt pavement, concrete pavement, asphalt surface course, or asphalt concrete overlay on concrete pavement at the locations indicated on the plans or where directed by the Engineer.

MATERIALS:

None specified.

CONSTRUCTION DETAILS:

Existing pavement and overlay shall be saw cut perpendicular to the roadway surface along neat lines, and to the depth indicated on the plans and typical sections. A power saw approved by the Engineer shall be used for cutting asphalt surface course and asphalt overlay.

A power saw shall be used for cutting concrete pavement. After the existing asphalt pavement, concrete pavement, asphalt surface course or overlay has been saw cut through, the contractor may use pry bars, pneumatic tools or other methods approved by the Engineer, to pry loose the existing pavement from that pavement which is to remain.

A pavement breaker, under the supervision of the Engineer, may be used to break up the pavement to be removed after the pavement has been completely saw cut through and completely free from the pavement to remain.

Any existing pavements and curbs not indicated to be removed that are damaged by the contractor's operations, shall be repaired by him to the satisfaction of the Engineer at no additional cost to the State.

METHOD OF MEASUREMENT:

The quantity to be measured will be the number of feet of saw cutting done in accordance with the plans, typical sections and the directions of the Engineer. No saw cutting will be measured for payment under this item which the contractor may choose to do for his own convenience.

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NYMEX Depression Remediation **Option II – Pressure Grout**

BASIS OF PAYMENT:

The unit price bid per feet of saw cutting shall include the cost of all labor, materials, and equipment necessary to complete the work. Payment for removal and disposal of cut pavement shall be paid for under the appropriate excavation item.

**ITEM 552.1600099 – SHEETING / EXCAVATION
PROTECTION SYSTEM**

DESCRIPTION

The Contractor shall furnish and install Excavation Protection Systems (EPS) within the project area for the construction of various elements of the work as shown on the contract drawings, unless another form of protection is specified.

All the provisions of Section 552 with respect to Excavation Protection System shall apply, except as modified below.

MATERIALS

All the provisions of Section 552 with respect to Excavation Protection System shall apply.

CONSTRUCTION DETAILS

In addition to the provisions of Section 552 with respect to Excavation Protection System, the Contractor shall also provide temporary support within the limits of excavation protected by the EPS of any existing utilities that are to remain in service.

Contractor shall submit plan for temporary support of existing utilities encountered during construction as required by the utility owner. Design shall be stamped by a New York State licensed professional engineer and be submitted for approval to the utility owner.

METHOD OF MEASUREMENT

All the provisions of Section 552 with respect to Excavation Protection System shall apply.

BASIS OF PAYMENT

All the provisions of Section 552 with respect to Excavation Protection System shall apply except that payment shall be made under:

552.16000299 - EPS

ITEM 595.50000018 – SHEET-APPLIED WATERPROOFING MEMBRANE

DESCRIPTION

Furnish and install a manually or machine-applied sheet waterproofing membrane in accordance with the contract documents. Include all surface preparation.

MATERIALS

Use a sheet-applied waterproofing membrane appearing on the Department's Approved List of Materials and Equipment.

CONSTRUCTION DETAILS

General - On new structural concrete, the provisions of §557-3.11, Curing, shall be met prior to membrane system placement. Work will not be done during wet-weather conditions. No work will be done when the concrete structural slab surface temperature is below 50°F, or ambient temperatures are below 50°F. The concrete structural slab shall be surface dry at the time of application of the membrane. The Engineer will verify that atmospheric conditions are favorable for placement of the system based on the manufacturer's recommendations.

Arrange for the membrane manufacturer to have a competent technical representative at the job site during all phases of preparation and installation.

Supply Material Safety Data Sheets (MSDS) and approved Material Detail Sheets prepared by the membrane manufacturer to the Engineer a minimum of two (2) weeks prior to the scheduled commencement of work. The Material Detail Sheets will contain all material requirements and installation information for each specific waterproofing membrane. The Material Detail Sheets will be accessible at the Department's Approved List website for reference.

(Bridge Decks) – Begin work no less than (7) calendar days after placement of Portland cement concrete, Portland cement mortar, or epoxy mortar for structural concrete repair. The Engineer may waive the seven-day requirement if the areas of repair can sustain loads without damage or deformation. Subject to the concurrence of the Engineer, if an alternate concrete repair material is used, follow the manufacturer's instructions for allowable loading.

(Structures) - Fill the joints between precast culvert sections flush to the culvert slab and sidewall surfaces with a grout conforming to §701-08 Vertical and Overhead Patching Material. In areas where the joints do not line up evenly, taper the grout with a maximum slope of 2:1, from the high side of the joint to the low side, to provide a smooth transition from one unit to the next. Place the

waterproofing membrane over the joints of precast or cast-in-place units following the guidelines of Chapter 19 of the Highway Design Manual, or as indicated on the contract plans and Material Detail Sheets.

Membrane Protection – To protect the waterproofing membrane from punctures, the following procedures will be used:

1. On vertical surfaces, the waterproofing membrane will be covered with material conforming to §705-07 Premoulded Resilient Joint Filler.
2. On horizontal surfaces,
 - a. If select granular fill is specified over the culvert, a 6 inch thick protective layer of concrete sand, meeting the requirements of §703-07 Concrete Sand, will be placed on the membrane. Or
 - b. If asphalt pavement using aggregate larger than 3/8 inch is specified directly above the membrane, or if clearances don't allow for 6 inches of concrete sand, a 1 inch thick (minimum) course of HMA with a maximum nominal aggregate size of 3/8 inch will be placed on top of the membrane. The hot mix asphalt will be thoroughly compacted with mechanical tampers.

METHOD OF MEASUREMENT

This work will be measured as the number of square feet of sheet-applied, waterproofing membrane satisfactorily installed (measured to the nearest 1 sq ft.). No separate measurement of the vertical faces of curbs, joints, concrete barriers, headers, scuppers, or for the inside surfaces of subdrainage outlets, shall be made. No deductions will be made for holes less than 1 square foot in area.

BASIS OF PAYMENT

The unit price bid per square foot for this item shall include the cost of furnishing all labor, materials, and equipment necessary to complete the work. No additional payments will be made for any re-priming done in conformance with the requirements of the manufacturer's detail sheets.

ITEM 607.41010010 - TEMPORARY PLASTIC BARRIER FENCE

DESCRIPTION

This work shall consist of furnishing, installing, and maintaining Temporary Plastic Barrier Fences of the type and at the locations shown in the plans or where directed by the Engineer.

MATERIALS

Materials for Temporary Plastic Barrier Fences shall meet the following requirements:

- **Fence:** High-density polyethylene mesh, ultraviolet-stabilized min. 2 years; minimum height 4.0 feet. Color: high-visibility orange or green. When used to protect trees or other vegetation, color shall be high-visibility orange.
- **Posts:** Rigid metal or wood posts, minimum length 6.0 feet.
- **Ties:** Steel wire, #14 gauge or nylon cable ties.
- **Warning signs:** Sheet metal, plastic or other rigid, waterproof material, 1.5 feet by 2.0 feet with 4 inch black letters on a white background. Text shall be: "Protected Site - Keep Out" unless otherwise specified.

CONSTRUCTION DETAILS

Fences shall be erected prior to moving construction equipment onto any area designated for protection.

The line of fences as indicated on the plans shall be staked or marked out on the ground by the Contractor and approved by the Engineer before any fence is installed. Where used for protection of individual trees, fence shall be placed at the drip line (extent of canopy). If not possible, placement shall be as close to the drip line as possible and in no case less than 5.0 feet away from the tree trunk.

On approval of the stakeout, posts shall be securely driven on 6.0 foot-maximum centers, normal to the ground, to a depth 1/3 of the total post length. Plastic barrier fence shall be placed along the side of all posts. Ends of fencing segments shall overlap a distance of at least one half the fence height.

Fencing shall be secured to posts with wire or cable ties at top, middle and bottom of post. Fastener shall be tight enough to prevent the fencing from slipping down. Overlaps shall also be securely fastened.

Barrier fence which is not orange in color shall be flagged at 6.0 foot intervals with red or orange florescent tape. Warning signs shall be mounted on the fence at no more than 100 foot intervals.

Maintenance shall commence immediately after erection of the fence and continue until one week prior to acceptance of the contract, and shall consist of: replacing damaged post(s) and fencing; re-fastening and tightening fencing; and restoring fence to its intended height.

Fencing used for tree or other vegetation protection shall not be temporarily removed to allow equipment access over a protected area, except as required for items of work specifically shown on the plans and approved by the Engineer in writing.

METHOD OF MEASUREMENT

The quantity to be measured for payment will be the number of feet of Temporary Plastic Barrier Fence erected, measured along the top, to the nearest whole foot.

BASIS OF PAYMENT

The unit price bid shall include the cost of all labor, materials and equipment necessary to satisfactorily complete the work. Relocation of a fence from one location to another as directed by the Engineer shall be considered as a new location and will be separately paid.

Seventy percent (70%) of the price bid will be paid after satisfactory installation of the fence. The remaining Thirty percent (30%) will be paid after complete removal of the fence.

Item 1254/10-01 - MOBILIZATION

DESCRIPTION.

Under this work the Contractor shall provide necessary bonds, insurance, and pre-financing and shall set up his necessary general plant, including shops, storage areas, office and such sanitary and other facilities as are required by local or state law or regulation.

MATERIALS.

Such materials as required for mobilization and that are not to be part of the completed contract shall be as determined by the Contractor, except that they shall conform to any pertinent local or State Law, regulation or code.

CONSTRUCTION DETAILS.

The work required to provide the above facilities and service for mobilization shall be done in a safe and workmanlike manner and shall conform with any pertinent local or State Law, regulation or code. Good housekeeping consistent with safety shall be maintained.

METHOD OF MEASUREMENT.

Payment for mobilization will be made on a lump sum basis.

BASIS OF PAYMENT.

The amount bid for mobilization shall not exceed four percent (4%) of the total contract bid price excluding the bid price for mobilization. Should the bidder exceed the foregoing four percent (4%), the BPCA will make the necessary adjustment to determine the total amount bid based on the arithmetically correct proposal.

The amount bid shall include the furnishing and maintaining of services and facilities noted under DESCRIPTION SECTION, to the extent and at the time the Contractor deems them necessary for his operations, consistent with the requirements of this work and the respective contract.

The amount bid shall be payable to the Contractor with the first contract payment made for other contract work.

Payment will be made under:

Item No.	Item	Pay Unit
1254/10-01	Mobilization	Lump Sum

Item 1254/10-03 – PRECONSTRUCTION SURVEY

DESCRIPTION

Survey Operations.

This work shall consist of providing all necessary surveying to establish, spatially position, measure, navigate to and verify the locations of existing and proposed features and measure quantities of items in accordance with the contract documents or as directed by the Engineer.

This work includes but is not limited to the establishment or reestablishment of primary and secondary control, the stakeout of proposed features, the location or verification of existing items or of constructed items, and the coordination and sharing of engineering data with the Authority or other contract project Engineers.

MATERIALS

None specified

CONSTRUCTION DETAILS

None specified

BASIS OF PAYMENT

The price bid shall include the cost of furnishing all labor, materials and equipment necessary to satisfactorily complete the work.

Progress payments will be made in proportion to the amount of work completed as determined by the Engineer.

Payment will be made under:

Item No.	Item Description	Pay Unit
1254/10-03	Pre-Construction Survey	Lump Sum

1254/10-06

**Remove, Refurbish and Store Existing Asphalt Pavers, 2
½ Inch Thick**

1254/10-16

**Reinstall Asphalt Concrete Pavers (up to 20% of
Replacement New Pavers to be Included in the Price Bid)**

DESCRIPTION

This work shall consist of furnishing and installing asphalt block pavement on asphalt concrete base in accordance with the contract documents and as directed by the Engineer.

MATERIALS

Base Course: The materials for the base course shall meet the requirements of a NYS Standard Specifications 25.0 Binder Course F9 HMA. The mixture shall be designed and produced in accordance with NYS Standard Specifications Section 401, Plant Production. The mixture shall be designed for <0.3 million ESALs (50 gyrations) in accordance with MM 5.16, Hot Mix Asphalt (HMA) Mixture Design and Mixture Verification Procedures.

The asphalt mixture may contain a maximum of 20% of Recycled Asphalt Pavement (RAP) by weight mixture. Before placement of the base course begins, the Contractor shall submit the job mix formula for the Engineer's approval.

Performance Graded (PG) Binder: Use a PG 64-22 in the production of the Base Course.

Alternate PG binder grades may be allowed by the Engineer in lieu of PG 64-22. The PG binder will meet the requirements outlined in NYS Standard Specifications, Section 702 Bituminous Materials, Table 702-1 Performance-Graded Binders for Paving.

Bituminous Setting Bed: The setting bed shall consist of PG 64-22 mixed with fine aggregate meeting the requirements of §703-01. Alternate PG binder grades may be allowed by the Engineer in lieu of PG 64-22.

The PG binder will meet the requirements outlined in NYS Standard Specifications, Section 702 Bituminous Materials, Table 702-1 Performance-Graded Binders for Paving.

The PG binder content shall be no less than 7.0% of the total batch weight. The mix shall be heated to approximately 325° F Neoprene Modified Asphalt Adhesive: shall consist of 2% neoprene, grade WM1, oxidized asphalt with R & B softening point of 155°F minimum and a penetration of 80, and 10% asbestos-free fibers.

Asphalt Block: Unless otherwise noted on the plans, all pavers shall be hexagonally shaped asphaltic concrete blocks, 8 inches between parallel sides and 2 inches in thickness, with a permissible

tolerance of $\pm 1/16$ inch in any dimension.

The blocks shall be composed of approximately $6.5 \pm 0.5\%$ high melting point oxidized asphalt conforming to ASTM Designation D-312 for Type 3 asphalt and 94% graded crushed rock aggregate and mineral filler; at the temperature of 300° F the mix is compressed 4,000 lbs. per square inch by high speed hydraulic presses.

Top of exposed surface of blocks shall have a ground finish, exposing a small aggregate. Color shall be noted in the Contract Drawings.

Forms: The forms for this work shall be wood of an approved type and a minimum length of 10 feet for tangents and curves, unless otherwise shown on the plans.

All forms shall be straight, free from bends and warps at all times, and shall be cleaned thoroughly and oiled before pavement is placed against them. This cleaning and oiling shall be repeated daily as the forms are moved ahead.

The forms shall rest firmly upon the thoroughly compacted subgrade throughout their entire length, shall be joined neatly and tightly and staked securely to line and grade at least 200 hundred feet in advance of the point of placement by using a least three (3) bracing pins or stakes to each 10-foot length of side form, so that they will resist the pressure of the pavement and the impact of the roller without springing.

Transporting: Shipments of material shall be made in tight vehicles previously cleaned of all foreign material and delivered to the work so that it will not become contaminated in any way.

Submittals: All submittals shall be in accordance with the requirements of the General Conditions, Section C, Special Provisions, Article 11.

The Contractor shall submit the following for the Landscape Architect's review and approval prior to manufacture. The Contractor shall submit samples of each type of paver they propose to use for approval by the Designer.

The samples shall be clearly labeled with Contract No., manufacturer, and finish. All pavers used on the work shall conform to the approved samples.

Sample Pavement: Prior to installing the asphalt block pavement, the Contractor shall construct a 10-foot sample pavement that demonstrates the paving patterns and colors in accordance with the plans and specifications, in order to verify the aesthetic effect and quality of materials.

The contractor shall notify the Landscape Architect and Engineer seven days in advance of the date when the sample pavement is to be constructed. The sample shall be located as directed by the Engineer and may be part of the final work. It shall contain mortar joints and expansion joints as included in the final work.

The Contractor shall obtain written approval of the sample prior to commencing with the final work. If the sample is disapproved, it shall be removed and reinstalled as directed by the Engineer.

The Contractor shall maintain the approved sample pavement in an undisturbed condition as a standard for judging the completed work. After completion and approval of the finished work, the sample pavement shall be demolished and removed by the Contractor, or included as part of the work, as directed by the Engineer.

CONSTRUCTION DETAILS

Subgrade Preparation: The subgrade shall be compacted in accordance with NYS Standard Specifications, §203-3.11 Subgrade Area.

Spreading of Base Course:

The asphalt cement base course shall be laid by means of an approved mechanical spreader to a depth, which after compaction shall be equal to the specified depth. In areas where the use of a mechanical spreader is impractical, as determined by the Engineer, other approved means of spreading and compacting may be permitted.

The use of hand rakes will not be permitted. The Contractor shall use lutes where necessary.

Rolling of Base Course:

The asphalt concrete base course when properly spread shall be rolled using 80 Series compaction method as specified in the NYS Standard Specification §402-3.07 Compaction.

Rolling shall proceed continuously not in excess of the following rates:

Method of Placement Square Yd/Hr/Roller

Hand 800 Yd/Hr/Roller

Machine 1200 Yd/Hr/Roller

After compaction of the base course and before the placing of the asphaltic block, the binder course shall be checked for depressions and high spots.

The Contractor shall check the entire surface using a 10-foot wood or metal straight edge. Any depressions or high spots greater than 3/16 inch shall be satisfactorily corrected before placing the asphalt block.

Bituminous Setting Bed: To install the setting bed over the surface of the base, place ¾-inch deep control bars directly over the base course. If grades must be adjusted, set wood chocks under depth control bars to proper grade. Set two bars parallel to each other approximately 11 feet long (2" x 6"

board). The depth of control bars must be set carefully to bring the paver, when laid, to the proper grade.

Place some bituminous material between the parallel depth control bars. Pull this bed with the striking board over these bars several times. After each passage, low porous spots must be showered with fresh bituminous materials to produce smooth, firm and even setting bed.

As soon as this initial panel is completed, advance the first bar to the next position in readiness for striking the next panel.

Carefully fill up any depressions that remain after removing the depth control bars and wood chocks. Bed shall be spread in a continuous workmanlike manner. Installation of base in spotted, different and isolated areas will not be accepted. Bed depth greater than 1-1/8 inch will not be acceptable.

After setting bed has cooled, it shall be rolled by hand with a 100-lb roller to eliminate sponginess and to prepare the surface for the installation of the adhesive.

Setting bed shall be protected against all pedestrian traffic and construction equipment to insure a level surface for setting pavers.

Adhesive: The neoprene-modified asphalt adhesive shall be applied by mopping, squeegeeing or troweling over the top of the bituminous setting bed so as to provide a bond between the bituminous setting bed and the paver.

Setting Pavers: When modified asphalt adhesive is dry to touch, carefully place the pavers by hand, ground finish side up unless otherwise specified, in straight course, with hand tight joints and uniform top surfaces, keeping full alignment according to the patterns shown on the plans.

Pavers may vary slightly in shade and tonality. Installer shall work from at least four (4) pallets at a time in order to create a uniform blend of paver shades.

Joints between blocks shall have a maximum width of 1/8 inch.

All blocks shall be cleaned when placed on the pavement.

In no case shall the bituminous setting bed in front of the pavement be disturbed or walked on during the laying of the blocks.

Joint Filler: Upon the completion of the work of laying the blocks in each section to the satisfaction of the Engineer, the surface of the blocks shall be swept clean, and the joints filled with fine sand.

All joints shall be filled the same day as the blocks are laid. Filler shall not be applied if the blocks are wet or if the air conditions are such that the filler does not readily enter the joints.

Filler shall be well worked into the joints by means of squeegees or other approved devices operating slowly backward and forward. Squeegeeing shall continue until the joints are flush with top surface.

Immediately after the joints are filled, the pavement shall be lightly sprayed and cleaned.

Defects: Where defects in composition, compression or finished appear in the complete work, such finished areas shall be removed to the full depth of the course and the defective material replaced with the required thickness of pavement at the expense of the Contractor for such removing and replacing.

Cold Weather: Asphalt base course shall be mixed and placed in accordance with minimum placement temperature as specified by the Engineer.

Unless notified by the Engineer in writing, no material shall be mixed or placed when the temperature is at, or lower than 50 F.

Precipitation Probability: Placement of asphalt mixture shall not be scheduled when the Precipitation Probability, obtained by the Contractor from the U.S. Weather Bureau within three (3) Hours prior to the start of such operations, equals or exceeds 50%. The Contractor shall notify the Engineer of the exact time at which the above information was obtained.

METHOD OF MEASUREMENT

Payment will be measured by the number of square feet placed as shown in the contract documents and as ordered by the Engineer

BASIS OF PAYMENT

The price bid shall include all labor, material, equipment and incidental expenses necessary to complete the work, including production and placement of asphalt base and bituminous setting bed, neoprene adhesive and asphalt block pavers, all in accordance with the plans and specifications to the satisfaction of the Engineer.

Asphalt block curb, if required, will be paid separately under the item "Asphalt Block Curb". Excavation will be paid for under its own item.

Payment will be made under:

Item No.	Item	Pay Unit
1254/10-06	Remove, Refurbish and Store Existing Asphalt Pavers, 2 ½ Inch Thick	Sq. Ft.
1254/10-16	Reinstall Asphalt Concrete Pavers (up to 20% of Replacement New Pavers to be Included in the Price Bid)	Sq. Ft.

See NYSDOT 2008 Standard Specifications (US Customary)

for the following Items:

Item Number:	Item Description:
201.06	Clearing and Grubbing
203.02	Unclassified Excavation and Disposal
203.07	Select Granular Fill
203.21	Select Structural Fill
204.01	Controlled Low Strength Material - CLSM
206.01	Structure Excavation
206.02	Trench and Culvert Excavation
207.20	Geotextile Bedding
207.26	Prefabricated Composite Structural Drain
209.13	Silt Fence - Temporary
555.0105	Concrete for Structures, Class A
605.1701	Optional Underdrain Pipe, 4 Inch Diameter
608.020102	Hot Mix Asphalt (HMA) Sidewalks, Driveways, Bicycle Paths, and Vegetation Control Strips
610.1403	Manufactured Topsoil – Lawns, BPCA Conservancy Group – Special Mix Design; Approved Suppliers
610.1602	Turf Establishment - Lans
610.19	Watering Vegetations
614.09	Tree Root Pruning
619.0101	Work Zone Safety / Traffic Control, WZSC
619.04	Type III Construction Barricades
623.12	Crushed Stone (In-Place Measure)
556.01	See Wall Expansion Joint Repairs