# THE BROOKLYN NAVY YARD DEVELOPMENT CORPORATION

## ARCHITECTURAL DESIGN AND ENGINEERING SERVICES
## FOR THE
## SITE PLANNING, DESIGN AND CONSTRUCTION ADMINISTRATION
## OF A
## NEW INDUSTRIAL BUILDING

# REQUEST FOR PROPOSAL &
# SCOPE OF SERVICES

June 22, 2009

**REQUEST FOR PROPOSAL**

**FOR**

# ARCHITECTURAL DESIGN AND ENGINEERING SERVICES FOR THE SITE PLANNING, DESIGN AND CONSTRUCTION ADMINISTRATION OF A NEW INDUSTRIAL BUILDING

## I. INTRODUCTION

### A. Invitation

The Brooklyn Navy Yard Development Corporation ("BNYDC") seeks a consultant experienced in architectural design, structural engineering, site planning, all phases of program development, and coordination of services that will be required to develop a new 70,000 to 80,000 square foot, three-story, multi-tenanted, LEED Silver certified industrial building adjacent to the Sands Street Gate at the Brooklyn Navy Yard.

The services shall include:

1. Project development;
2. Preparation of Project design alternatives for submission to BNYDC including cost estimates for each design alternative proposed;
3. Preparation of construction documents and specifications for the design alternative chosen by BNYDC;
4. Preparation, submission, and approval of all requisite permits; and
5. Construction administration services during the Project implementation, pre-construction, and construction phases of the Project.

Your firm is invited to submit a proposal for undertaking the work described in this Request for Proposal (RFP). Locally Based Enterprises (LBE's) and Women- and minority-owned businesses (MWBE's) are encouraged to respond. Proposers must identify whether the proposer or any proposed sub-consultants are either LBE's or MWBE's in the proposal.

### B. Background

BNYDC is a not-for-profit corporation whose mission is to improve the economic potential of Brooklyn by developing and maintaining the former naval shipbuilding facility as a center for small and medium-sized business development on behalf of its owner, the City of New York. This Project will provide critically needed industrial space.

## C. Project Description

The project site is approximately two acres and is situated on the west side of the Yard (the "Site"). The Site is located at the intersection of Navy and Sands Street and abuts the Sands Street Gate, the only western entrance into the industrial park.

The Site is bisected by two 138kv electric feeders in 8" HPGF pipes supplying power from the Cogeneration Facility in the Yard to the Con Edison facility at Hudson Street. These feeders are buried in fluidized thermal backfill with a cover approximately 2 – 4 feet below grade and run diagonally in a northwesterly direction from Perry Avenue. These high voltage feeders may not be disturbed and must remain accessible.

The basic programming for the building, at a minimum, should be:

- First Floor
  - 10,000 sq.ft. units
  - 400 psf floor load
  - 25 ft. ceiling height
  - sprinkler, smoke detector and fire alarm systems
  - 400 amp, 3 phase, 208 volt electric service per unit
  - basic lighting and outlets
  - painted walls
  - lobby/elevator bank for access by upper floor tenants
  - loading docks and grade level bay doors for each 1st floor space and 1 loading dock for use by upper floor tenants

- Upper Floors
  - 1,500 sq.ft. units
  - 150 psf floor load
  - 18 ft. ceiling height
  - sprinkler, smoke detector and fire alarm systems
  - 100 amp, 3 phase, 208 volt electric service per unit
  - basic lighting and outlets
  - painted walls
  - 2 freight/passenger elevators with dedicated loading

The design of the building must incorporate environmentally sensitive elements and be constructed to meet or exceed the LEED Silver certification standards of the U.S. Green Building Council (USGBC). Furthermore, BNYDC intends to apply for a New Construction Program (NCP) grant through the New York State Energy and Research & Development Authority (NYSERDA). Proposers should consider subconsultants on NYSERDA's NCP Technical Assistance providers list to enable BNYDC to qualify for the program's Technical Assistance incentive. For a list of NYSERDA's Technical Assistance providers, go to http://www.nyserda.org/programs/New_Construction/faqs.asp then click on "Technical Assistance Services."

The Project work will include all phases of site planning, structural engineering, civil engineering, architectural design of exteriors and facades, interior fit out of public spaces,

heating and ventilating systems, electrical systems, life, health and safety systems, vertical transportation where required, access for loading, and telecommunications. The successful Proposer must conduct necessary soil and subsurface site investigations to determine the viability of the selected design.

The selected Proposer is required to recommend at least three design alternatives. The selected Proposer will subsequently develop the design alternative(s) selected by BNYDC.

Proposers will be required to configure the entire Site to accommodate vehicular circulation for building operations including truck turning, loading dock access, service access and parking areas.

## II. SCOPE OF WORK

The full and binding description of the scope of work is presented in Appendix A, Scope of Services, attached to this RFP.

## III. COST ESTIMATE

### A. Cost of the Project

The cost of the Project is projected to be $18 million, contingent upon alternatives. This cost estimate is presented only as a guideline for the Project design and construction and is not to be considered binding or a limitation on the design alternatives ("Guideline"). BNYDC encourages Proposers to explore any and all alternatives in design and construction that will reduce the cost of the Project. The estimated Project cost must be included in the firm's proposal and will be evaluated with the Technical Proposal Evaluation as described in Subsection B.

Estimates must be presented in a line item summary form. BNYDC recognizes that engineering estimates for the work can only be completed after completion of the design development phase of the project is completed. However, proposers must include an "order of magnitude" estimate as part of the firm's Proposal. If a proposer determines the Guideline inadequate, the proposer must document its findings then present them in the proposal along with proposer's estimate of the cost for the work.

## IV. PROPOSAL EVALUATION

### A. Selection Process

A BNYDC Evaluation Committee will review, evaluate and score all Technical Proposals in accordance with established qualitative and quantitative criteria (see attached

Technical Proposal Evaluation Chart and Subsection 2 below). This evaluation and scoring will determine the proposer's Technical Rating. Some proposers may be invited for interviews for the purpose of clarifying their Technical Proposals, after which their Technical Ratings will be reviewed. Proposers will be ranked in accordance with the Total Evaluation Score.

**B. Technical Proposal Evaluation Criteria**

The Technical Proposal evaluation criteria will be as follows:

1. Proposed concept/approach for site design;

2. Firm's conceptual understanding of the proposed Project, the adequacy of it's technical proposal, and adherence to the rules and regulations governing design and construction in the City of New York and all other provisions of this RFP;

3. Project-related experience; especially with design of new light industrial buildings;

4. Principal and Project Manager's Qualifications;

5. Experience with MWBE contracting;

6. Firm's general organization, experience and staff to be assigned to the project;

7. Estimated cost of the construction/Time schedule.

Each of the above evaluation criteria is weighted by a factor of importance ranging from 0 to 100 points. A BNYDC evaluation committee will review, evaluate and score all Technical Proposals in accordance with these criteria to determine the Proposer's Technical Rating.

**C. Fee Proposal**

The Fee Proposals of the firms with the highest Total Evaluation Scores will then be opened. The Proposer determined by BNYDC to have the best combination of Total Technical Score and Fee Proposal will be offered the Project.

**D. Selection**

Upon selection, the successful proposer must execute a Contract For Consultant Services substantially in the form as attached hereto. The contents of the selected proposal, together with this RFP and any formal questions and answers provided during the proposal process, may be incorporated into the final contract at BNYDC's discretion.

## V. PROPOSAL REQUIREMENTS

### A. Proposal Subdivisions

Each consultant responding to this request shall submit by the submission deadline date two sealed packages containing the following items:

1. Technical Proposal: The Technical Proposal shall be submitted in a separate sealed package and shall include the information outlined in Subsection B below. The Technical Proposal shall not include any fee or other consultant costs required for the performance of the project. The Technical Proposal shall also contain a Time Proposal for completion of the Project.

2. Fee Proposal: The Fee Proposal, as described in Subsection C below, shall be submitted in a separate sealed package.

### B. Technical Proposal

Each Technical Proposal must contain the following information:

1. A cover letter summarizing the respondent's understanding of the project, and including the company name and address, and the name, address and telephone number of the person authorized to represent the responding firm.

2. Previous Experience:

   a) Firm brochure;

   b) Documentation of the firm's experience in providing consulting services to clients with projects similar in size, cost and/or type. For each project, identify the design duration, construction cost versus budgeted cost, and a client reference with phone numbers;

   c) Indication of the proposed Principal-in-Charge and the Project Manager for the subject project.

3. Specific Requirements:

   a) Descriptive presentation of the proposer's concept of the Project in compliance with Appendix A, Scope of Services, of this RFP;

   b) Listing of proposed sub-consultants, if any. BNYDC expects that if a contract is awarded, the successful consultant will provide as

sub-consultants the same sub-consultants proposed in the RFP. Changes to the project team must meet with BNYDC's approval;

c) Completed Declaration of Understanding;

d) Confirmation of VENDEX Compliance;

e) Local Law 34 Doing Business Data Form.

### C. Fee Proposal and Staffing Schedule

Proposers must propose a lump sum fee for completion of this project in its entirety, including overhead, profit and staff. A staffing schedule, including overhead, profit, and staff must also be presented along with the lump sum fee. The consultants staffing schedule of hours and fees for the project must include: the number of hours at each salary level, total hours, overhead and profit multiplier used and the product of Direct Total Labor (DTL) times the multiplier for each employee to be assigned to the project. Note: Principals are not entitled to a multiplier. All sub-consultants must also submit a complete fee and staffing schedule.

The successful consultant will be required to provide a payment schedule for the Tasks indicated for BNYDC's approval and inclusion in the Contract.

## VI. PROPOSAL ADMINISTRATION AND CONDITIONS

### A. Proposal Administration

1. Submission Deadline:

a) Proposers shall deliver six (6) hard copies of the Technical Proposal plus any attachments, exhibits or appendices, one (1) PDF version of the Technical Proposal and one (1) hard copy of the Fee Proposal form on or before 12:00 noon, July 21, 2009. Any proposals received after the deadline will be considered for evaluation solely at the discretion of BNYDC.

b) The proposals shall be delivered to:

Kerry Keegan
Brooklyn Navy Yard Development Corporation
Building 292, 3rd Floor
63 Flushing Avenue, Unit 300
Brooklyn, N.Y. 11205

2. Inquiries: Any explanation desired by proposers regarding the meaning or interpretation of this RFP must be requested in writing by e-mail and received by BNYDC no later than one week prior to the submission date. Any information given to a prospective proposer will be furnished to all prospective proposers as an addendum to the RFP. No oral responses will be provided. Except as provided below, all questions must be directed ONLY to:

   Kerry Keegan, Senior Vice President Design and Construction
   Brooklyn Navy Yard Development Corporation
   Building 292, 3rd Floor
   63 Flushing Avenue, Unit 300
   Brooklyn, N.Y. 11205

   Tel: (718) 907-5997
   Fax: (718) 852-5492
   E-mail: kkeegan@brooklynnavyyard.com

3. Site Visit and Conference: Visitation arrangements can be made with the contact person indicated above.

**A MANDATORY pre-submission conference will be held at 10:00 a.m. on June 30, 2009. Please e-mail in advance the number of attendees from your firm. A reply e-mail will be sent with the location of the meeting. Any firm that fails to attend the conference will not be permitted to submit a proposal.**

4. Addenda: Receipt of an addendum to this RFP by a proposer must be acknowledged by attaching a signed copy of the addendum to the proposal. All addenda shall become a part of the requirements for this RFP.

5. RFP Schedule: The following is the estimated timetable for receipt, evaluation, and selection of proposals. This is only an estimate and is provided to assist responding firms in planning.

| | | |
|---|---|---|
| a) | Site Visit | By arrangement |
| b) | **Mandatory** Pre-submission Conference | June 30, 2009 10:00 a.m. |
| c) | Proposal Submission Deadline | July 21, 2009 12:00 noon |

   d) BNYDC to select Consultant within 4 weeks after Submission Deadline.

   e) Complete Contract processing within thirty (30) days from date of Consultant selection, pending VENDEX approval.

   f) Commence work immediately upon Contract signing.

## B. Conditions of Proposal Submissions

1. Non-Binding Acceptance of Proposals: This RFP does not commit BNYDC to award a contract for any services.

2. Incurring Proposal Costs: BNYDC is not liable for any costs incurred in the preparation of a response to this RFP.

3. Modifications: Proposers may be asked to make such revisions, additions, or deletions to their proposals as may be required by BNYDC.

4. Reserved Rights: All proposal material submitted becomes the property of BNYDC and BNYDC reserves the right at its sole discretion to:

   a) Reject any and all proposals received in response to this RFP;

   b) Award a contract to other than the lowest fee proposer;

   c) Waive, modify or correct any irregularities in proposals received, after notification to the respondent;

   d) Change the structure of the proposed fee, if such is in the interest of BNYDC;

   e) Revise the fee as BNYDC may require subsequent to receipt of a competitively bid proposal for the work of construction;

   f) Extend the time for submission of all proposals after notification to all prospective proposers;

   g) Terminate negotiations with a selected respondent and select the next most responsive respondent, or take such other action as deemed appropriate if negotiations fail to result in a signed contract within a reasonable amount of time from the commencement of negotiations;

   h) Terminate or modify the RFP process at any time and reissue the RFP;

   i) Approve or reject any sub-consultants proposed by the consultant; and

   j) Request a change of any sub-consultant at any time in the contract process.

5. Contractual Requirements:

a) Any firm awarded a contract as a result of this RFP will be required to sign a contract substantially in the form as attached hereto.

b) Any information which may have been released orally or in writing prior to the issuance of the RFP shall be deemed preliminary in nature and bind neither BNYDC nor the respondent.

c) Any firm awarded a contract as a result of this RFP will be required to obtain clearance through the City's Vendor Information Exchange System (VENDEX). Since VENDEX clearance is a pre-requisite to BNYDC's award of a contract, Proposers are urged to submit a completed VENDEX form to the Mayor's Office of Contract Services prior to submitting their response to this RFP.

d) Notice to Vendors**:** Pursuant to Local Law 34 of 2007, amending the City's Campaign Finance Law, the City is required to establish a computerized database containing the names of any "person" that has "business dealings with the city" as such terms are defined in the Local Law. In order for the City to obtain necessary information to establish the required database, vendors responding to this solicitation are required to complete the attached Doing Business Data Form and return it with this proposal. (If the responding vendor is a proposed joint venture, the entities that comprise the proposed joint venture must each complete a Data Form.) If the City determines that a vendor has failed to submit a Data Form or has submitted a Data Form that is not complete, the vendor will be notified by the agency and will be given four (4) calendar days from receipt of notification to cure the specified deficiencies and return a complete Data Form to the agency. Failure to do so will result in a determination that the proposal is non-responsive. Receipt of notification is defined as the day notice is e-mailed or faxed (if the vendor has provided an e-mail address or fax number), or no later than five (5) days from the date of mailing or upon delivery, if delivered. Required form attached hereto as Appendix B.

## DECLARATION OF UNDERSTANDING

By signing in the space provided below, the undersigned certifies that the respondent (i) has read and understands the scope and requirements of this project, as described in the RFP and all attachments; (ii) has the capacity to execute this project, (iii) agrees to accept payment in accordance with the requirements of this RFP and the standard Contract, attached hereto, and (iv) will, if its proposal is accepted, enter into the attached Contract with the Brooklyn Navy Yard Development Corporation.

The undersigned further stipulates that the information in his Proposal is, to the best of his/her knowledge, true and accurate.

_____ _____

Authorized Signature, Title Date

_____

Consultant Firm

_____

Business Address

_____

City State Zip

_____

Telephone Number Fax Number

_____

Federal Tax Identification Number

[ ] Corporation [ ] Partnership

[ ] Individual [ ] Other (State)

_____

(Seal, if a Corporation)

## CONFIRMATION OF VENDEX COMPLIANCE

The Proposer shall submit this Confirmation of Vendex Compliance

Name of Proposer: _____

Proposer's Address: _____

Proposer's Telephone Number: _____

Proposer's Fax Number: _____

Date of Proposal Submission: _____

Project ID: _____

**VENDEX Compliance:** To demonstrate compliance with VENDEX requirements, the Proposer shall complete either Section (1) or Section (2) below, whichever applies.

(1) **Submission of Questionnaires to MOCS**: By signing in the space provided below, the Proposer certifies that as of the date specified below, the Proposer has submitted VENDEX Questionnaires to the

Mayor's Office of Contract Services, Attn: VENDEX,

253 Broadway, 9th Floor, New York, New York 10007.

Date of Submission: _____

By: _____

(Signature of Partner or corporate officer)

Print Name: _____

(2) **Submission of Certification of No Change to BNYDC:** By signing in the space provided below, the Proposer certifies that they have read the instructions in a "Vendor's Guide to VENDEX" and that such instructions do not require the Proposer to submit VENDEX Questionnaires. The Proposer has completed **TWO ORIGINALS** of the Certification of No Change.

By: _____

(Signature of Partner or corporate officer)

Print Name: _____

## ARCHITECTURAL DESIGN AND ENGINEERING SERVICES FOR THE SITE PLANNING, DESIGN AND CONSTRUCTION ADMINISTRATION OF A NEW INDUSTRIAL BUILDING

### FEE PROPOSAL FORM

| | |
|---|---|
| Lump Sum Fee for completion of all Project Phases required in this Request For Proposal | $ _____ |
| Estimated Reimbursables | $ _____ |
| **Total Cost** | $ _____ |

Submitted by:

_____ _____

Authorized Signature, Title Date

_____

Consultant Firm

_____

Business Address

_____

City State Zip

_____

Telephone Number Fax Number

_____

Federal Tax Identification Number

**BROOKLYN NAVY YARD DEVELOPMENT CORPORATION**

**APPENDIX A**
**SCOPE OF SERVICES**

**FOR**

# ARCHITECTURAL DESIGN AND ENGINEERING SERVICES FOR THE SITE PLANNING, DESIGN AND CONSTRUCTION ADMINISTRATION OF A NEW INDUSTRIAL BUILDING

The result of the professional services obtained under this contract is completion of the Project. The work shall consist of: (1) Proposal Phase, (2) Programming and Design Phase, (3) Permitting Phase, (4) Construction Phase and (5) all necessary and required services to obtain a Certificate of Completion ("C of C") for the newly constructed building.

## I. THE PROJECT

### A. Proposal Phase/Submission Requirements

Each proposer shall submit his/her proposal for the design of the proposed Sands Building, including all associated site work. The submission shall consider the objectives and conditions indicated in the following Subsections and demonstrate an understanding of BNYDC's Project objectives. The proposal shall be presented in a descriptive manner that may be supported by exhibits that fully describe the proposer's concept. Proposals that present a more economical concept that still satisfies BNYDC's objectives are encouraged. Proposers should submit cost estimates for each design concept proposed.

### B. Basic Objectives

BNYDC's basic objective is to obtain a new fully-completed, permitted building that is ready for occupancy and/or fit-out by the tenants within the confines of the Site. While we are certain that this objective is achievable, we are looking to retain a firm with a proven track record of success that will complete the required tasks using the most efficient and economical means possible. BNYDC is seeking the services of an architectural/engineering firm with sub-consultant(s) who represent excellence in design, state-of-the-art engineering, technology and use of materials. The services for the Project will be from conceptual design and programming, through completion of construction. The Design Team shall be multi-disciplinary, as required to perform all of the architectural, programming, environmental, permitting, and engineering services as necessary for the Project. The design of the new building must incorporate environmentally sensitive elements. The Project must be able to meet or exceed LEED Silver standards and be certified by the U.S. Green Building Council.

## C. Funding

The Project will be privately financed. The Project will be constructed with a total estimated budget of $18 million dollars.

## D. LBE/MWBE Participation

Locally Based Enterprises (LBE's) and Women and Minority Owned Businesses (MWBE's) are encouraged to respond. Proposers must identify in the proposal whether the proposer or any proposed sub-consultants are either LBE's or MWBE's.

# II. Definitions

The following words shall have the following corresponding meanings:

| | | |
|---|---|---|
| "Agencies" | means | The Design Commission, BBPO, DSBS, DCP, DEP, DPR, DOB, NYCDOT, NYSDOS, NYFD, DOS, NYSDEC, and any other Agencies, bureaus, departments, offices, or other discreet entities of the City, New York State or the United States which have jurisdiction over any activities carried out in respect of the Services and/or the Project and the Brooklyn Community Board #2 which has an advisory role. |
| "Borough" | means | The Borough of Brooklyn |
| "BBPO" | means | The Office of the Brooklyn Borough President |
| "CEQR" | means | City Environmental Quality Review |
| "Design Commission" | means | The Design Commission of the City of New York |
| "DCP" | means | The New York City Department of City Planning |
| "DEP" | means | The New York City Department of Environmental Protection |
| "DOS" | means | The New York City Department of Sanitation |
| "DPR" | means | The New York City Department of Parks and Recreation |

| | | |
|---|---|---|
| "DSBS" | means | The New York City Department of Small Business Services |
| "EAS" | means | Environmental Assessment Survey |
| "DOB" | means | The New York City Department of Buildings |
| "DEIS and FEIS" | means | Draft and Final Environmental Impact Statement |
| "FDNY" | means | Fire Department of New York |
| "Notice to Proceed" | means | Notice from BNYDC to the Consultant to proceed with the Services |
| "NEPA" | means | National Environmental Protection Act |
| "NYSDEC" | means | The New York State Department of Environmental Conservation |
| "NYCDOT" | means | The Department of Transportation of the City of New York |
| "NYSDOS" | means | The New York State Department of State |
| "The Project" | means | Sands Building |
| "Reporting Period" | means | The thirty (30) day period following the Commencement Date and each thirty (30) day period thereafter during the term of the contract, for which period the Consultant shall report to BNYDC on the status of the Project |
| "Schedule" | means | The detailed Project Schedule |
| "Utilities" | means | Any and all private or public utilities affected by, or otherwise interested in, the Project |
| "ULURP" | means | Uniform Land Use Review Procedure |

## III. General Administrative Requirements

### A. Meetings and Correspondence

1. The Consultant shall initiate, and function as coordinator for, all meetings required in the performance of the Services and shall provide necessary data and prepare appropriate presentations for these meetings.

2. The Consultant and design team shall be available to meet with BNYDC, DSBS, DOB, FDNY, DEP, NYSDEC, Community Board, Design Commission and other involved agencies as often as is necessary to effectively perform the Services.

3. The Consultant shall manage its design team and coordinate the activities of all architects/engineers, experts or advisors (the "subconsultants") engaged by the Consultant to perform some portion of the Services.

4. The Consultant shall provide continuous liaison with BNYDC and, at the direction of BNYDC, initiate and coordinate contacts among the various City and other public Agencies, private utilities and other interested groups. The Consultant shall prepare, coordinate approval of and distribute all reports, minutes of meetings, correspondence, and related materials, as required in the performance of the Services or as directed by BNYDC. The minutes of meetings are to be formatted with the inclusion of columns labeled "Action Required by" and "Due Date," noting the firm/agency and person required to perform an action and the date that the action must be performed by for each item listed. The minutes are to be forwarded to BNYDC for review no later than two (2) working days after the meeting.

BNYDC's comments are to be incorporated and final minutes are to be distributed within two (2) working days to all meeting attendees.

### B. Scheduling and Project Management

1. Upon receipt of the Notice to Proceed, the Consultant shall prepare and submit to BNYDC, for approval, a detailed Project Work Plan (the "Work Plan") for all Services required in connection with the Project. The Work Plan shall include a bar chart schedule showing the planned progress of the project. The Work Plan shall include, but not be limited to, the following:

   a. a detailed listing of all Tasks, sub-tasks, including approvals and submittals, and milestones required in connection with the Project;

   b. the time necessary to complete the various Tasks, sub-tasks, including approvals and submittals, and milestones;

   c. projected completion/target dates for all required Services;

d. the interrelationship and dependency of the various elements of the Work Plan;

e. all Contract times.

2. The Consultant shall submit monthly progress reports (the "Progress Report") to BNYDC. On the date which is one month after the Commencement Date, and every month thereafter (each such month long period being a "Reporting Period"), the Consultant shall analyze the Project's progress as it relates to the approved work plan and shall file with BNYDC a Progress Report based on this analysis. The Progress Report and documentation shall be submitted to BNYDC, for approval, no later than two (2) working days following the close of the Reporting Period. The report shall include, but not be limited to, the following:

   a. A narrative description of the Services performed during the Reporting Period;

   b. The actual time used for each Task and sub-task of the work plan in relation to the Work Plan prepared as part of B. l. above;

   c. Reasons for any delays in the targeted completion dates;

   d. Changes in completion/target dates for the required Services;

   e. The need and justification for any extensions of time;

   f. A narrative description of the Services projected for the next Reporting Period;

   g. A revised work plan which reflects the Project's current status at the end of the Reporting Period;

   h. Activities requiring decision or action by BNYDC and other Agencies or groups shall be clearly indicated;

   i. Copies of Timesheets of all personnel billing time to this project during the Reporting Period shall be included.

3. The Consultant shall obtain and compile all pertinent specifications, laws, rules, ordinances, standards and constraints mandated for the Project by any Agencies or Utilities. All plans and specifications shall conform to the standards and specifications of any such Agencies and Utilities.

4. The Consultant shall produce all work in accordance with the requirements and regulations of the Federal Regulations for Americans

with Disabilities Act (ADA).

5. The Consultant shall plan and design the Project with reference to and in conformity with information and data as to existing site lines and grades (or approved changes in legal grade), approved drainage plans, sewers, subsurface structures and conditions and facilities, such as may be furnished by BNYDC or obtained from any Agencies, Utilities and other sources, as well as such information as may be obtained through site inspection of the Project Area and from topographical and utility surveys, subsurface investigation and all other relevant data. It shall be the Consultant's responsibility to secure all such data as may be required for informed planning and proper coordination of the Project including surveying, architectural and engineering entities to provide such data.

6. Drawings and specifications shall not violate Section 348 of the Charter of the City of New York or any provisions of the Administrative Code. In the event that the Consultant recommends a patented article, it shall notify BNYDC in writing of such designated article.

7. The Consultant shall revise and correct, without additional compensation, any and all surveys, profiles, drawings, specifications, reports, documents and other materials prepared by the Consultant in connection with the Services, including the Final Design and all elements incorporated into the Final Design, until the same shall receive final approval by BNYDC and by all other Agencies and Utilities whose approval is required. The Consultant shall initiate all actions for incremental review of proposed designs, including all follow-up meetings, as required, to expeditiously resolve all questions and concerns and to obtain required approvals. The Consultant shall not make any changes in the Scope of Services as outlined herein without prior written authorization from BNYDC.

8. The Consultant shall prepare, submit, assemble, and reproduce the documents required for construction portion of the Project (the "Contract Documents") to the extent provided below. The Contract Documents include: (1) relevant and necessary plans and drawings; (2) relevant and necessary forms for proposals or bids; (3) relevant and necessary specifications; (4) all addenda issued prior to the receipt of bids; (5) the form of construction contract; (6) all provisions required by law to be included in the construction contract; (7) payment and performance bonds; (8) the general provisions and conditions for the construction contracts; and (9) all other supplementary or special provisions or conditions. Items (1), (3), (4) and (6) shall be prepared in the first instance by the Consultant. Items (2), (5), (7), (8), and (9) shall be prepared in the first instance by BNYDC and/or the Construction Management/Build firm. The Consultant shall review all of the Contract Documents and make recommendations for any special conditions or other matters that it may

deem necessary or appropriate to include in the Contract Documents.

9. The final construction cost estimate for the improvements shall be eighteen million dollars. It shall be considered a change in the Scope if the approved final cost estimate varies significantly from this amount.

10. The Consultant shall retain the services of a code consultant/DSBS/Buildings Department expediter who shall insure the design abides by all applicable codes and who will file required applications, obtain required approvals, and expedite the permitting process.

## IV. Specific Requirements

A. The Services shall be organized into the following tasks (each "Task" and collectively the "Tasks"):

| | |
|---|---|
| Task No. 1 | Survey of Existing Conditions & Program Requirements |
| Task No. 2 | Subsurface Investigation |
| Task No. 3 | Utility Survey |
| Task No. 4 | Environmental Survey |
| Task No. 5 | Schematic Design |
| Task No. 6 | Design Development |
| Task No. 7 | Contract Documents |
| Task No. 8 | Review and Analysis of Bids |
| Task No. 9 | Consultant Services for Construction Phase |

B. The Consultant shall comply with the following detailed requirements specified for Tasks 1-9:

### TASK NO. 1: SURVEY OF EXISTING CONDITIONS AND PROGRAM REQUIREMENTS

A. The Consultant shall inspect the site and become familiar with its general condition.

B. The Consultant shall collect, organize, verify and review all pertinent information necessary to prepare the design including, but not limited to:

1. Existing topographic and utility surveys, studies, reports and proposals for improvements in or adjacent to the Project Area. This shall include the boring data, pile driving logs, reports and drawings prepared by BNYDC's consultants/contractors for the NYPD and Perry Buildings as well as a recent topographic survey of the site.

2. Specific information and data about the Project Area including: historic background, BNYDC's projected plans for development of the new building and parking areas, spatial quality, site relationships and linkages, pedestrian/vehicular circulation, proposed signage plans and street character.

3. The standards, guidelines, and requirements of community, governmental, public and private organizations with jurisdiction over various aspects of the Project Area including any DCP Waterfront Zoning.

4. NYSDEC requirements.

C. The Consultant shall verify the accuracy of any existing survey information and provide any additional survey information required to prepare the designs.

D. The Consultant shall obtain, and become familiar with and incorporate as appropriate, all applicable agency design directives, standard details, administrative procedural and guidelines for the prosecution of the work under the various elements of the Project.

E. The Consultant shall prepare and distribute a letter to all applicable Agencies and Utilities notifying them of the project intent and anticipated involvement required of that agency or utility.

F. The Consultant shall note any conditions encountered at the site, which may impact on the successful completion of the envisioned Final Design.

G. The Consultant shall review all documents assembled and shall note all data which will impact on the Project.

H. The Consultant shall work with BNYDC to determine program requirements for the Project Area as necessary. This shall include meeting with members of BNYDC's Planning, Operations, Utilities, Technology, Leasing, Security and Engineering staff and in addition with BNYDC's consultant and/or the future tenants of the spaces if directed by BNYDC.

I. The Consultant shall thoroughly investigate the functional needs of the site and develop a program through interviews and other appropriate means with BNYDC, and other agencies and/or groups as directed by BNYDC. The Consultant shall obtain additional programmatic information including, but not be limited to, the following:

1. space use in terms of function and square footage;

2. projected space requirements for each function;

3. adjacency requirements and spatial relationships between functions for any public areas;

4. circulation requirements, including access for the handicapped in accordance with ADA regulations;

5. security requirements;

6. technical standards;

7. special requirements of the buildings with regard to loading and truck facilities, electrical and exterior lighting, finishes and special equipment; and

8. building services.

J. The program for the building shall provide for the overall layout of the building including, but not be limited to, ingress and egress, vertical circulation, and public restrooms and separation of tenants' utilities in multi-tenanted areas. The program shall be reviewed and written approval granted by BNYDC and other agencies and/or groups as directed by BNYDC.

K. The data compiled and program developed during this phase of the Services shall be assembled into a coherent survey report (the "Report") in 8 1/2" X 11" format which shall include, as necessary (in addition to those items set forth in paragraph 3 above), descriptive text and graphic exhibits. The graphic exhibits may include photographs, sketches, diagrams, drawings, or any other methods deemed appropriate by the Consultant and BNYDC. The Consultant shall submit six (6) copies of the draft Report to BNYDC for review and comment by BNYDC and others as appropriate and shall be available to meet with BNYDC, and others as directed to discuss the draft Report's contents. After incorporation of all comments, the Consultant shall submit copies of the final Report to BNYDC in a quantity directed by BNYDC.

**TASK NO. 2: SUBSURFACE INVESTIGATION**

A. The Consultant shall conduct all necessary subsurface exploration within the Project Area for the purpose of developing design criteria for the new structures. The Consultant shall prepare and provide boring logs, pile test results, technical reports, and drawings as may be required by BNYDC and shall assess the results of the subsurface exploration and, as necessary or appropriate, integrate them into the Design. In this respect, the Consultant shall:

1. Obtain any existing boring information, and determine the need, if any, for additional borings. Obtain any existing foundation information, and

determine the need, if any, for pile testing. The depth of any borings shall be sufficient to satisfy foundation and regulatory agency requirements.

2. Prepare a boring plan and pile testing plan for the purposes of bidding, project control and coordination; the plan shall utilize the results of a plotted topographic survey as a base and shall indicate the required number and type of borings. The boring plan and/or pile testing plan shall be presented to DSBS and other required Agencies, and BNYDC for approval as appropriate. The Consultant shall contact all appropriate Agencies, Utilities and BNYDC staff in order to determine that the boring plan and/or pile testing plan does not interfere with any existing facilities, such as gas lines, telephone lines and other underground utility elements.

3. Obtain all approvals and make all necessary arrangements to retain a qualified Sub-consultant to obtain the required borings and/or pile testing, all while complying with all applicable City, State and Federal regulations. This aspect of the Services shall include the following tasks:

    a. Preparation of appropriate contract documents for provision of the boring services and/or pile testing by a Sub-consultant; print a minimum of six (6) copies of the contract documents;

    b. Distribution to prospective bidders, and print two (2) additional copies for use by BNYDC;

    c. Identification of qualified prospective boring bidders. The Consultant shall prepare and send a minimum of three (3) invitations to bid and, if at least three (3) bids to provide boring and/or pile testing services are not received, solicit additional qualified bidders in order to insure the receipt of at least three (3) responsible bids for the work unless otherwise approved by BNYDC; and

    d. Review and analyze bid proposals received for the boring and/or pile testing services to determine adequacy of the equipment, technique and staffing proposed by each bid; and award a contract, upon approval of BNYDC to the lowest responsible bidder.

4. The accepted bid price for a Sub-consultant to obtain the required borings and/or pile tests shall, subject to the approval of BNYDC, be an Allowable Additional Cost under the Contract.

    a. The selected Sub-consultant shall collect split-spoon samples of all soil borings for submission to BNYDC's independent Environmental Consultant for review and analysis.

5. While complying with all applicable City, State and Federal regulations, retain the services of a qualified soils laboratory to classify the soil obtained from all soil samples in accordance with the unified soil classification system.

6. Utilize the results of the subsurface exploration in preparing the design of all applicable phases of the Project work including but not limited to any foundations, loading docks and drainage facilities.

7. Obtain all Agency approvals.

**TASK NO. 3: UTILITY SURVEY**

A. The Consultant shall prepare and plot a utility survey (the "Utility Survey") for the Project. The Utility Survey shall be prepared within the framework of the following parameters:

1. The Utility Survey shall locate all existing surface and subsurface utilities, facilities and systems within the Project Area, including the identification and location of:

   a. storm, sanitary, combined and interceptor sewers;

   b. water mains, gas mains and steam mains;

   c. electric and telephone conduits;

   d. utility chambers and vaults;

   e. utility poles and overhead electric facilities;

   f. other surface and subsurface facilities and appurtenances, as required; and

   g. railroad and trolley tracks, rails, ties and foundations.

2. The Consultant shall review all data obtained from any Agencies, Utilities, governmental authorities and others, and shall coordinate/reconcile such data with the Topographic Survey.

3. The Consultant shall reconcile all discrepancies in the location and identification of all subsurface elements between the Topographic Survey and the utility records.

4. The Utility Survey shall extend to the same boundaries as the Topographic Survey.

5. All field notes shall be permanently bound, sharp, clear, crisp, clean and "fixed", dated, signed and sealed, and in a format as approved by BNYDC.

6. The Consultant shall submit to BNYDC original survey notes and survey computations, together with all public and private utility drawings, plans and plates, which shall become the property of BNYDC.

7. The Consultant shall plot the Utility Survey within the framework of the following parameters:

   a. The Utility Survey will be plotted on base maps, which have been photographically reproduced from the "clean" topographic base map. All Utilities shall be clearly delineated and identified.

   b. All plotting and drafting work shall conform to currently applicable NYCDOT standards. In general this shall include drawing in ink on an approved 24" x 36" reproducible drafting film, to a scale of 1" = 20', unless otherwise specified by BNYDC.

   c. All Utility drawings shall utilize standard NYCDOT format, notes and symbols.

   d. All printing and line work shall conform to current NYCDOT standards for the drafting of drawings.

   e. There shall be no overlapping of street plotting for the Utility Survey.

   f. The Utility Survey shall be plotted with utilities indicated by double lines with "to-scale" width.

8. The Consultant shall prepare and submit a report concerning the Utility Survey. The Utility Survey report shall include, but not be limited to, the following: a general description of major Utilities located within the Project Area; a description of proposed Utility improvements; description of any major Utility interference problems which can reasonably be expected based on existing data; and the impact that the Project will have on existing/proposed Utilities.

**TASK NO. 4: ENVIRONMENTAL SURVEY**

A. BNYDC will engage an Environmental Consultant through a separate contract to perform required Environmental tasks.

B. The Consultant will be required to coordinate with the Environmental Consultant

if and when such coordination is required in order to comply with NYSDEC requirements.

C. Such coordination will include keeping the Environmental Consultant advised of all subsurface testing plans, specifications for the testing and the schedule for implementation of testing plans. Coordination shall also include keeping the Environmental Consultant apprised of the design of the buildings, their foundations and site work; and preparing a limited number of drawings to be used in the Environmental Consultant's submission to NYSDEC.

D. As noted in Task No. 2, item A. 4, Sub-consultant shall submit split-spoon samples from all soils test borings for review and analysis by BNYDC's independent Environmental Consultant.

**TASK NO. 5: SCHEMATIC DESIGN**

A. The Consultant shall review and analyze the data and program requirements collected in the previous tasks as a basis for developing alternative design schemes.

B. The Consultant shall assess various basic design alternatives for the building. Consultant shall begin discussions with BNYDC, and other Agencies as necessary, as soon as feasible in the design process to evaluate the viability of the alternatives.

C. The Consultant shall determine basic architectural, landscape architectural and engineering design criteria for the Project and develop the schemes with respect to these factors and Project requirements, taking into account overall impact, cost, maintenance, and other relevant considerations:

1. The design for the building should be based on the programmatic information included in this Request for Proposals and from information gathered during the investigatory phase of the Project.

2. Three alternative design solutions to the programmatic requirements shall be developed that fully comply with building codes or other applicable laws in order to give BNYDC a wide range of solutions. The design shall reflect the interests and requirements of any public agencies with jurisdiction over the project, including BNYDC, and objectives of esthetics and context considerations should include, but not be limited to, efficient and functional space layout; heating, ventilation, plumbing, electrical, lighting and fire protection requirements; code compliance; security, interior and exterior finishes; and requirements of the Americans with Disabilities Act. In addition, the design must include features of an effective multi-user industrial facility serving different tenants and operations.

3. All ancillary work, such as truck docking facilities accommodating a variety of truck sizes, street drainage in the sidewalk area for crosswalks or for ramps to adjacent parking areas shall be included in the design.

D. The Consultant shall develop the Design within the overall constraints of a budget of $18 million dollars, for the proposed alternatives, or such other budget as designated by BNYDC.

E. The Consultant shall develop a minimum of three alternative Designs, each including cost estimates, and shall present each Design alternative to BNYDC and any other interested parties, including any Agencies, as requested by BNYDC.

F. The Consultant shall prepare schematic designs for the building and present them to BNYDC for approval. The Schematic Design Documents include, but not be limited to, roof/site plan, floor plans, structural layout, building sections as required, building elevations, schematic specifications, and a cost estimate. The Consultant shall verify that the designs comply with all applicable requirements including but not limited to, zoning requirements, Department of Small Business Services, New York City Fire Department and New York City Department of Buildings and any required Department of Transportation requirements. Where not practical to comply with Building Code, the Consultant shall identify required variances. The Consultant shall develop the building designs within the projects' building budget.

G. Following review, presentation and discussion of the alternatives, BNYDC, in consultation with the Consultant, shall select a single approach to proceed to Task No. 6, Design Development.

H. The Consultant shall identify in writing all Agency and utility approvals, regulations, ordinances, codes and permits required for approval and construction of the selected Design and develop a schedule noting the time frame for submissions and review.

I. The Consultant shall obtain all necessary approvals for the plans in respect of the selected Design from all necessary Agencies and Utility companies, including approvals for drainage, backfill and any other design features requiring such approvals. In cases where it is too early to obtain approvals, initial contacts and discussions shall be started. The Consultant shall make as many presentations of the Design to any person or group as deemed appropriate and necessary by BNYDC.

J. The Consultant shall obtain approval of the Design from the Design Commission.

K. Upon direction by BNYDC, the Consultant shall have rendering(s) prepared of the Schematic Design approved to proceed by BNYDC to Design Development.

The Consultant in consultation with BNYDC, shall determine the appropriate vantage point(s) from which the renderings) shall be taken. BNYDC is to be presented with the renderer's initial sketches for approval. The cost of this shall, subject to BNYDC's approval, be an Allowable Additional Cost.

L. Upon direction by BNYDC and upon completion of Tasks No. I through 5, the Consultant shall send out a mass mailing of all information gathered and design completed to all involved Agencies and Utilities.

M. Upon completion of this Task No. 5, the Consultant shall submit the approved Design, together with initial cost estimates, to BNYDC for written approval. The Consultant shall not proceed to Task No. 6 without formal BNYDC approval of the Consultant's work product produced in Task No. 5.

**TASK NO. 6: DESIGN DEVELOPMENT**

A. The Consultant shall prepare design development documents (the "Design Development Documents") for the Design after BNYDC's approval of the Consultant's work product produced during Task No. 5. The Design Development Documents, once approved in final form by BNYDC (the "Final Design"), shall be considered an "advance" version of the Contract Documents. The Design Development Documents shall consist of, but not be limited to, the following:

1. Designs for all necessary demolition and removal of existing substructures. All demolition and removal work must be designed in accordance with applicable City, State and Federal regulations, codes and policies, and must be coordinated with other construction and design activities in the Project Area.

2. All building elements must be designed in accordance with the design standard loadings, and expected project life as approved by BNYDC and other required agencies. In this respect, the Consultant shall:

   a. Design, proportion, and detail the new construction with regard for the surrounding site area.

3. Designs for utilities, which shall include, but not be limited to new or relocated lighting, drainage, gas, and water services.

4. Design of the curbs, sidewalks, other surface treatment, and lighting at the new structures. Drainage shall be accommodated as necessary.

5. Preparation of drawings, including but not limited to: site plan, demolition plans, construction phasing plan (if necessary), foundation plans, floor plans, roof plans, building elevations, building sections, interior elevations, typical and special sections, mechanical, sprinkler, heating and

ventilating plans, equipment and fixture schedules, finish schedule, typical and special details, sections, structural plans and details, electrical plans including lighting, communications, power and signal systems, drainage plans, plumbing plans, and paving details. The plans shall be at a scale approved by and acceptable to BNYDC.

6. Preparation of preliminary specifications for the work in respect to the Project in a format directed by BNYDC.

7. Preparation of a preliminary cost estimate of the Project. The estimate shall give item numbers, item descriptions, unit quantities, and unit prices based on the best available information, sub-totals and totals.

8. The Consultant shall identify and list any elements of the Design requiring maintenance and provide an estimate of anticipated costs to maintain each element.

9. The Consultant shall consider alternative materials, systems and equipment for the project based on their appropriateness, cost, ease of maintenance and esthetics and shall consider these elements in regard to the interests of BNYDC, other agency requirements and design objectives and local laws and regulations.

10. The Consultant shall design for optimum energy conservation and shall conform to the New York State Energy Conservation Code, latest edition. The Consultant's design should conform to the New York State Occupational Safety and Health Act.

11. The Consultant's design shall conform to the New York State Department of Conservation and Department of Environmental Protection guidelines for storm water discharge.

12. The Consultant's design shall conform to the requirements of Local Law 58, the Americans with Disabilities Act and all other relevant city, state and federal requirements.

13. The Consultant's design shall be able to achieve or exceed LEED Silver certification by the United States Green Building Council.

B. The Consultant shall process the Design Development documents for review or approval by all required Agencies, including the NYC Design Commission.

C. Two (2) sets of plans, cost estimates, and draft specifications shall be submitted to BNYDC for review and comments. Additional sets shall be submitted as required to all interested Agencies, any utility companies having affected facilities, and any interested groups as directed by BNYDC.

D. The Consultant shall make formal presentations of the Design to all interested Agencies and Utilities, including the NYC Design Commission, pursuant to notice from BNYDC. The Consultant shall make presentations to other interested groups as directed by BNYDC.

E. The Consultant shall retain a professional architectural renderer to produce a perspective rendering of the principal elevation of the buildings of the approved preliminary design. This rendering shall become the property of BNYDC. The cost of the rendering shall be reimbursed as an Allowable Additional Expense.

**TASK NO. 7: CONTRACT DOCUMENTS**

A. Following approval by BNYDC of the Design Development Documents, and after the Consultant has acquired the required written approvals from all required Agencies and Utilities, the Consultant shall prepare all Contract Documents that the Consultant is required to prepare in a manner and form that enables BNYDC to have a Construction Management/Build firm construct the Project. The Contract Documents shall include final drawings and specifications. The final drawings and specifications shall include, but shall not be limited to, drawings and specifications for all elements of the Project including any necessary equipment.

1. The Contract Documents shall be coordinated so as to preclude, insofar as possible, the necessity for design changes, adjustments or change orders during construction. It shall be the responsibility of the Consultant to fully coordinate the design of the architectural, landscape architectural, structural, subsurface and foundation, heating, ventilating, plumbing, sprinkler and electrical work so that construction conflicts among and within the trades will be avoided. The coordination shall ensure the maintenance of the integrity of the design. Where necessary for clarity, composite drawings shall be produced which shall show the work of each trade in areas involving the work of more than one trade.

2. The work included in the Contract Documents shall include fixtures or appliances, which shall become a fixed part of the project and shall be essential to render the project fit for the use intended. The Contract Documents shall also include moveable equipment and all necessary connections thereto, and all furnishings and finishes. These shall be fully scheduled in the drawings and specifications.

3. A color schedule, including paint color chips (the "Color Schedule'), shall be included in the Contract Documents. BNYDC shall advise the Consultant of the number of copies of the Color Schedule that are required.

B. As requested by BNYDC, the Consultant shall consolidate the Contract

Documents in a manner that allows the Construction Management/Build firm to perform all building construction and ancillary site work. All information necessary to construct the Project shall be included. The specifications shall include all addenda and bid sheets.

C. Drawings and specifications for subsurface abatement (if required) will be provided to the Consultant by BNYDC and either incorporated by the Consultant into the Final Contract Document Package or issued as a separate scope of work, as directed by BNYDC.

D. The Consultant shall prepare and submit to BNYDC, for its acceptance, a pre-final and final estimate (hereinafter referred to as the ("Final Estimate of Costs") of the total construction cost of the Project, based upon the final drawings and specifications for all work necessary for the complete construction of the Project. This shall include quantities, unit prices, and amounts for all items required for construction of the Project in a format approved by the Corp. The pre-final estimate shall be submitted to BNYDC approximately six (6) weeks prior to the securing of all final approvals. The pre-final estimate shall include all elements included in the Final Estimate of Costs and shall represent a level of completion of the Contract Documents of approximately 95%.

E. Upon completion of the Contract Documents, the Consultant shall prepare the Final estimate of Costs and shall submit (2) two copies of the Contract Documents and Final Estimate of Costs to BNYDC for review and comment.

F. Plans and drawings in final form shall be on 24" x 36" sheets, or such other size as may be approved by BNYDC. The specifications and proposal for bids shall be on 8 1/2" x 11" sheets.

G. Following BNYDC's review of the submitted Contract Documents, the Consultant shall make all modifications required by BNYDC and shall submit the consolidated Contract Documents for approval in writing to all required Agencies, including the Design Commission, DSBS/DOB, NYFD, DEP, DEC and any other applicable agencies.

H. Upon approval in writing of the Contract Documents by all required Agencies and Utilities, following the incorporation of all modifications as may be required in conjunction with these approvals, the Consultant shall submit the following items to BNYDC for signature:

1. The original of the Design title sheet, signed by the Consultant, prepared in a format as approved by BNYDC;

2. a set of paper prints of the contract drawings;

3. a copy of the Final Estimate of Costs; and

4. a set of specifications, including addenda and bid sheets.

I. The Consultant shall submit to all regulatory Agencies on a timely basis and at the proper time for such submissions, all materials necessary for any required permit applications.

J. The Consultant shall then prepare, submit, assemble and reproduce the Construction Documents required for construction of the Project by a Construction Management/Build firm to the extent provided below. The Construction Documents include: the plans and drawings; the proposal for bids; the specifications; all addenda issued prior to the receipt of bids; the form of construction contracts; all provisions required by law to be included in the construction contract; forms for the notice of award, the bid and performance and payment bonds; the general conditions; and all other supplementary or special provisions or conditions. Items (1), (3), (4) and (6) shall be prepared by the Consultant. Items (2), (5), (7), (8) and (9) shall be prepared by BNYDC and/or the Construction Management/Build firm (see paragraph B item 8 of Section III above General Administrative Requirements). The Consultant shall review and make recommendations for any special conditions to be included in the Construction Documents.

K. The Consultant shall prepare and deliver to BNYDC and/or the Construction Management/Build firm (6) six sets of the Contract Documents, reproduced in clear legible form acceptable to BNYDC. The documents shall bear all required seals signatures certificates, and/or permits required. The drawings shall be stapled with a paper binding; the specifications, proposal for bids, contract, and all other items listed in paragraph 9 of Section III above and shall be bound with a plastic spiral.

L If directed by BNYDC, the Consultant shall have a rendering(s) prepared of the Final Design. The Consultant in consultation with BNYDC shall determine the appropriate vantage point(s) from which the rendering(s) shall be taken. BNYDC is to be presented with the renderer's initial sketch for approval. The cost of this shall, subject to BNYDC's approval, be an Allowable Additional Cost.

**TASK 8: REVIEW AND ANALYSIS OF BIDS**

A. The Consultant shall review and analyze the bids for the ensuing construction contract(s) of the Project. In general, this will include attending all pre-bid conferences, answering questions from prospective bidders, preparing any required addenda to the construction contract documents, attending all bid openings, analyzing the received bids, recommending the award of any contract(s) and related matters.

B. The Consultant shall provide, to the satisfaction of BNYDC, all services required during the bidding period in order to ensure that questions from prospective bidders are answered in a uniform/timely fashion.

C. During the bidding period, BNYDC, the Consultant and the Construction Management/Build firm shall advise each other of any ambiguities or inconsistencies in the consolidated Contract Documents of which either BNYDC, the Consultant or the Construction Management/Build firm may become aware. The Consultant and Construction Management/Build firm shall investigate all such problems, and shall deliver to BNYDC an analysis and/or recommendation concerning the resolution of all such problems.

D. Where BNYDC deems that an addendum to the Contract Documents is necessary, the Consultant shall prepare and deliver said addendum within one business day of notification, unless otherwise approved by BNYDC.

E. The Consultant shall attend the opening of bids and immediately commence the review and analysis of the bids. In general, this shall include, but not be limited to, such elements as: preparing necessary memorandum of bid sheets, checking mathematical calculations, providing a breakdown of all items into proper Agency budget codes, analyzing unit prices to determine the appropriateness of costs with respect to the associated work items, determining apparent imbalances, and related matters.

F. The Consultant shall formally inform BNYDC, within one business day of the opening of bids, if an acceptable low bidder has been identified.

G. Within two business days of the opening of bids, the Consultant shall submit the completed memorandum of bids, in accordance with currently applicable procedures.

H. In the event that the lowest bid by a contractor found qualified and responsible by BNYDC is in excess of 10% more than the approved final estimate cost prepared by the Consultant, the Consultant shall, to the extent necessary, as determined by BNYDC, assist BNYDC in bringing the total construction cost of the work within the approved final cost. This may include the revision of all or any part of the Final Design that BNYDC may deem advisable after consulting with the Consultant. Notwithstanding any other provisions of this Contract, the Consultant without additional compensation shall provide the foregoing services.

## TASK 9: CONSULTANT SERVICES FOR CONSTRUCTION PHASE

A. CONSTRUCTION ADMINISTRATION SERVICES

1. Contract Document Interpretation: It shall be the responsibility of the Consultant to interpret contract documents, and make recommendations by drawing or in writing when required by job conditions or when requested by the Project Manager.

2. The Consultant shall:

   a. Attend the Construction kickoff meeting(s) and job conferences as required by the Project Manager on matters concerning the design of the project.

   b. Review the construction schedule and report to Project Manager any conditions that may cause delay in completion.

   c. Review field conditions and advise the Project Manager by letter or supplementary drawings to resolve design omissions, design errors, and unforeseen field conditions.

   d. Check and approve shop drawings, material samples, and catalog cuts.

   e. Review all construction change orders when requested and verify description of work. Report any discrepancies.

3. In addition, the Consultant is to provide periodic job supervision services by having a project representative on site to observe the progress and quality of the work for adherence to the contract documents, and submit advisory reports to the Project Manager.

4. Provide final inspection and sign-off on construction permits.

B. SHOP DRAWING SERVICES; APPROVAL OF SAMPLES

1. The Consultant shall act promptly and systematically on the checking of shop drawings and approval of material samples and catalog cuts submitted, determining whether they are in accordance with the contract drawings and specifications. The Consultant shall indicate changes necessary to conform to those contract drawings and specifications, and shall make no changes in the design, or changes requiring additional cost, without previous written approval from the Project Manager.

2. The Consultant shall submit the lists of shop drawings, samples, and catalog cuts that it previously prepared and incorporated into the specifications for presentation to the Construction Management/Build firm at the construction kickoff meeting. The Construction Management/Build

firm will be responsible for filling-in the submission and delivery dates for approval by the Project Manager. The Consultant shall receive copies of the approved schedules, and shall review the lists and submit comments to the Project Manager, including all information that may be necessary to clearly indicate the progress on processing these items of the Project.

3. The listed information shall include names of subcontractors; titles of shop drawings; dates due in accordance with approved schedules; dates of issue, receipt, checking, return for correction, resubmission, and final approval; and any other appropriate information. In addition to checking shop drawings, samples, and catalog cuts, the Consultant shall also check any required drawings of sheeting, bracing, and underpinning.

4. The Project Manager reserves the right to select samples for testing for approval of any or all materials required for construction of the Project.

## V. Scheduling and Completion of Services

The Consultant shall provide a schedule to perform the following tasks assuming a start date of 7/1/09:

| Tasks | Completion Date |
|---|---|
| Task No. 1 | Survey of Existing Conditions & Program Requirements |
| Task No. 2 | Subsurface Investigation |
| Task No. 3 | Utility Survey |
| Task No. 4 | Environmental Survey |
| Task No. 5 | Schematic Design |
| Task No. 6 | Design Development |
| Task No. 7 | Contract Documents |
| Task No. 8 | Review and Analysis of Bids |
| Task No. 9 | Construction Administration Services |

**Documents available for review at BNYDC's website (www.brooklynnavyyard.org/rfps2009/rfp_sands_street.pdf):**

- Topographical Survey of Site
- Pile Driving Logs – NYPD Building & Perry Building
- Boring Data
- Sub-surface Plates
- 138kv As-Built Drawings

General
Site
area
Approximate
Location
of 138 kv

**BROOKLYN NAVY YARD DEVELOPMENT CORPORATION**

**APPENDIX B**

**DOING BUSINESS DATA FORM**

The City of New York
Mayor's Office of Contract Services
Doing Business Accountability Project

# Doing Business Data Form

**To be completed prior to distribution**

Agency: _____ Transaction ID: _____

| Check One: | Transaction Type (check one): | | | |
|---|---|---|---|---|
| ☐ Proposal | ☐ Concession | ☐ Contract | ☐ Economic Development Agreement |
| ☐ Award | ☐ Franchise | ☐ Grant | ☐ Pension Investment Contract |

Any entity receiving, applying for or proposing on an award or agreement must complete a Doing Business Data Form (see Q&A sheet for more information). Please either type responses directly into this fillable form or print answers by hand in black ink, and be sure to fill out the certification box on the last page. **Submission of a complete and accurate form is required for a proposal to be considered responsive or for any entity to receive an award or enter into an agreement.**

This Data Form requires information to be provided on principal officers, owners and senior managers. The name, employer and title of each person identified on the Data Form will be included in a public database of people who do business with the City of New York; no other information reported on this form will be disclosed to the public. **This Data Form is not related to the City's VENDEX requirements.**

**Please return the completed Data Form to the City office that supplied it.** Please contact the Doing Business Accountability Project at DoingBusiness@cityhall.nyc.gov or 212-788-8104 with any questions regarding this Data Form. Thank you for your cooperation.

## Section 1: Entity Information

Entity Name: _____

Entity EIN/TIN: _____

**Entity Filing Status (select one):**

☐ Entity has never completed a Doing Business Data Form. *Fill out the entire form.*

☐ Change from previous Data Form dated _____. *Fill out only those sections that have changed, and indicate the name of the persons who no longer hold positions with the entity.*

☐ No Change from previous Data Form dated _____. *Skip to the bottom of the last page.*

Entity is a Non-Profit: ☐ Yes ☐ No

Entity Type: ☐ Corporation (any type) ☐ Joint Venture ☐ LLC ☐ Partnership (any type) ☐ Sole Proprietor ☐ Other (specify): _____

Address: _____

City: _____ State: _____ Zip: _____

Phone : _____ Fax : _____

E-mail: _____

Provide your e-mail address and/or fax number in order to receive notices regarding this form by e-mail or fax.

## Section 2: Principal Officers

Please fill in the required identification information for each officer listed below. If the entity has no such officer or its equivalent, please check "This position does not exist." If the entity is filing a Change Form and the person listed is replacing someone who was previously disclosed, please check "This person replaced..." and fill in the name of the person being replaced so his/her name can be removed from the *Doing Business Database*, and indicate the date that the change became effective.

### Chief Executive Officer (CEO) or equivalent officer

☐ This position does not exist

The highest ranking officer or manager, such as the President, Executive Director, Sole Proprietor or Chairperson of the Board.

First Name: _____ MI: ____ Last: _____

Office Title: _____

Employer (if not employed by entity): _____

Birth Date (mm/dd/yy): _____ Home Phone #: _____

Home Address: _____

☐ This person replaced former CEO: _____ on date: _____

### Chief Financial Officer (CFO) or equivalent officer

☐ This position does not exist

The highest ranking financial officer, such as the Treasurer, Comptroller, Financial Director or VP for Finance.

First Name: _____ MI: ____ Last: _____

Office Title: _____

Employer (if not employed by entity): _____

Birth Date (mm/dd/yy): _____ Home Phone #: _____

Home Address: _____

☐ This person replaced former CFO: _____ on date: _____

### Chief Operating Officer (COO) or equivalent officer

☐ This position does not exist

The highest ranking operational officer, such as the Chief Planning Officer, Director of Operations or VP for Operations.

First Name: _____ MI: ____ Last: _____

Office Title: _____

Employer (if not employed by entity): _____

Birth Date (mm/dd/yy): _____ Home Phone #: _____

Home Address: _____

☐ This person replaced former COO: _____ on date: _____

For information or assistance, call the Doing Business Accountability Project at 212-788-8104.

## Section 3: Principal Owners

Please fill in the required identification information for all individuals who, through stock shares, partnership agreements or other means, **own or control 10% or more of the entity**. If no individual owners exist, please check the appropriate box to indicate why and skip to the next page. If the entity is owned by other companies, those companies do **not** need to be listed. If an owner was identified on the previous page, fill in his/her name and write "See above." If the entity is filing a Change Form, list any individuals who are no longer owners at the bottom of this page. If more space is needed, attach additional pages labeled "Additional Owners."

**There are no owners listed because (select one):**

☐ The entity is not-for-profit ☐ There are no individual owners ☐ No individual owner holds 10% or more shares in the entity

☐ Other (explain): _____

**Principal Owners (who own or control 10% or more of the entity):**

First Name: _____ MI: _____ Last: _____

Office Title: _____

Employer (if not employed by entity): _____

Birth Date (mm/dd/yy): _____ Home Phone #: _____

Home Address: _____

First Name: _____ MI: _____ Last: _____

Office Title: _____

Employer (if not employed by entity): _____

Birth Date (mm/dd/yy): _____ Home Phone #: _____

Home Address: _____

First Name: _____ MI: _____ Last: _____

Office Title: _____

Employer (if not employed by entity): _____

Birth Date (mm/dd/yy): _____ Home Phone #: _____

Home Address: _____

**Remove the following previously-reported Principal Owners:**

Name: _____ Removal Date: _____

Name: _____ Removal Date: _____

Name: _____ Removal Date: _____

For information or assistance, call the Doing Business Accountability Project at 212-788-8104.

## Section 4: Senior Managers

Please fill in the required identification information for all senior managers who oversee any of the entity's relevant transactions with the City (e.g., contract managers if this form is for a contract award/proposal, grant managers if for a grant, etc.). Senior managers include anyone who, either by title or duties, has substantial discretion and high-level oversight regarding the solicitation, letting or administration of any transaction with the City. **At least one senior manager must be listed, or the Data Form will be considered incomplete.** If a senior manager has been identified on a previous page, fill in his/her name and write "See above." If the entity is filing a Change Form, list individuals who are no longer senior managers at the bottom of this section. If more space is needed, attach additional pages labeled "Additional Senior Managers."

**Senior Managers:**

First Name: _____ MI: _____ Last: _____

Office Title: _____

Employer (if not employed by entity): _____

Birth Date (mm/dd/yy): _____ Home Phone #: _____

Home Address: _____

First Name: _____ MI: _____ Last: _____

Office Title: _____

Employer (if not employed by entity): _____

Birth Date (mm/dd/yy): _____ Home Phone #: _____

Home Address: _____

First Name: _____ MI: _____ Last: _____

Office Title: _____

Employer (if not employed by entity): _____

Birth Date (mm/dd/yy): _____ Home Phone #: _____

Home Address: _____

**Remove the following previously-reported Senior Managers:**

Name: _____ Removal Date: _____

Name: _____ Removal Date: _____

### Certification

**I certify that the information submitted on these four pages and _____ additional pages is accurate and complete. I understand that willful or fraudulent submission of a materially false statement may result in the entity being found non-responsible and therefore denied future City awards.**

Name: _____

Signature: _____ Date: _____

Entity Name: _____

Title: _____ Work Phone #: _____

Return the completed Data Form to the agency that supplied it.

For information or assistance, call the Doing Business Accountability Project at 212-788-8104.

Printed on paper containing 30% post-consumer material

LMW Engineering Group, LLC
WWW.LMW-ENG.COM
2539 Brunswick Ave. Linden, NJ, 07036
Tel.(908) 862-7600 Fax(908) 862-8998

# PILE DRIVING SUMMARY REPORT

## PERRY AVENUE BUILDING, BROOKLYN NAVY YARD BROOKLYN, NEW YORK.

STATE OF NEW YORK
JIEMING WANG
074354
LICENSED PROFESSIONAL ENGINEER

SUBMITTED BY:
LMW ENGINEERING GROUP, LLC

JIEMING WANG, P.E. # 074354
August 10, 2007
JOB No.:07-1401

| Date | Pile # | Length in Leads (Ft.) | Ground Elevation (Ft.) | Length in Ground (Ft.) | Tip Elev. (Ft.) | Cut Off Elev. (Ft.) | Pile Length (Ft.) | Pile Capacity (Tons) | Remarks |
|---|---|---|---|---|---|---|---|---|---|
| 06/27/07 | 1 | 100.00 | 5.50 | 90.08 | -84.58 | 2.00 | 86.58 | 120(TONS) | |
| 05/09/07 | 2 | 110.00 | 5.50 | 109.83 | -104.33 | 2.00 | 106.33 | 120(TONS) | |
| 05/10/07 | 3 | 100.00 | 5.50 | 93.00 | -87.50 | 2.00 | 89.50 | 120(TONS) | |
| 05/09/07 | 4 | 100.00 | 5.50 | 97.83 | -92.33 | 2.00 | 94.33 | 120(TONS) | |
| 05/09/07 | 5 | 120.00 | 5.50 | 98.42 | -92.92 | 2.00 | 94.92 | 120(TONS) | |
| 05/09/07 | 6 | 100.00 | 5.50 | 99.00 | -93.50 | 2.00 | 95.50 | 120(TONS) | |
| 05/09/07 | 7 | 100.00 | 5.50 | 90.83 | -85.33 | 2.00 | 87.33 | 120(TONS) | |
| 05/09/07 | 8 | 100.00 | 5.50 | 97.17 | -91.67 | 2.00 | 93.67 | 120(TONS) | |
| 05/09/07 | 9 | 100.00 | 5.50 | 95.00 | -89.50 | 2.00 | 91.50 | 120(TONS) | |
| 05/09/07 | 10 | 100.00 | 5.50 | 92.17 | -86.67 | 2.00 | 88.67 | 120(TONS) | |
| 05/09/07 | 11 | 100.00 | 5.50 | 90.83 | -85.33 | 2.00 | 87.33 | 120(TONS) | |
| 05/04/07 | 12 | 100.00 | 5.50 | 80.42 | -74.92 | 3.00 | 77.92 | 120(TONS) | |
| 05/04/07 | 13 | 100.00 | 5.50 | 80.42 | -74.92 | 5.00 | 79.92 | 120(TONS) | |
| 05/04/07 | 14 | 100.00 | 5.50 | 80.08 | -74.58 | 2.00 | 76.58 | 120(TONS) | |
| 05/04/07 | 15 | 100.00 | 5.50 | 87.08 | -81.58 | 2.00 | 83.58 | 120(TONS) | |
| 05/04/07 | 16 | 100.00 | 5.50 | 82.58 | -77.08 | 2.00 | 79.08 | 120(TONS) | |
| 05/04/07 | 17 | 100.00 | 5.50 | 82.17 | -76.67 | 2.00 | 78.67 | 120(TONS) | |
| 05/03/07 | 18 | 100.00 | 5.50 | 76.17 | -70.67 | 2.00 | 72.67 | 120(TONS) | |
| 05/03/07 | 19 | 80.00 | 5.50 | 76.08 | -70.58 | 2.00 | 72.58 | 120(TONS) | |
| 05/03/07 | 20 | 100.00 | 5.50 | 97.83 | -92.33 | 2.00 | 94.33 | 120(TONS) | |
| 05/03/07 | 21 | 100.00 | 5.50 | 96.83 | -91.33 | 2.00 | 93.33 | 120(TONS) | |
| 06/27/07 | 22 | 95.00 | 5.50 | 85.08 | -79.58 | 2.00 | 81.58 | 120(TONS) | |
| 05/16/07 | 23 | 100.00 | 5.50 | 87.33 | -81.83 | 4.50 | 86.33 | 120(TONS) | |
| 05/16/07 | 24 | 95.00 | 5.50 | 87.25 | -81.75 | 4.50 | 86.25 | 120(TONS) | |
| 05/16/07 | 25 | 95.00 | 5.50 | 85.50 | -80.00 | 4.50 | 84.50 | 120(TONS) | |
| 05/10/07 | 26 | 100.00 | 5.50 | 92.75 | -87.25 | 4.50 | 91.75 | 120(TONS) | |
| 05/10/07 | 27 | 100.00 | 5.50 | 88.67 | -83.17 | 4.50 | 87.67 | 120(TONS) | |
| 05/10/07 | 28 | 100.00 | 5.50 | 91.83 | -86.33 | 4.50 | 90.83 | 120(TONS) | |
| 05/10/07 | 29 | 100.00 | 5.50 | 78.00 | -72.50 | 4.50 | 77.00 | 120(TONS) | |
| 05/10/07 | 30 | 100.00 | 5.50 | 83.58 | -78.08 | 4.50 | 82.58 | 120(TONS) | |
| 05/17/07 | 31 | 95.00 | 5.50 | 78.00 | -72.50 | 4.50 | 77.00 | 120(TONS) | |
| 05/11/07 | 32 | 100.00 | 5.50 | 77.67 | -72.17 | 4.50 | 76.67 | 120(TONS) | |
| 05/11/07 | 33 | 100.00 | 5.50 | 84.33 | -78.83 | 4.50 | 83.33 | 120(TONS) | |
| 05/11/07 | 34 | 100.00 | 5.50 | 76.00 | -70.50 | 4.50 | 75.00 | 120(TONS) | |
| 05/14/07 | 35 | 100.00 | 5.50 | 79.50 | -74.00 | 4.50 | 78.50 | 120(TONS) | |
| 05/03/07 | 36 | 100.00 | 5.50 | 88.17 | -82.67 | 2.00 | 84.67 | 120(TONS) | |
| 06/27/07 | 37 | 100.00 | 5.50 | 82.17 | -76.67 | 2.00 | 78.67 | 120(TONS) | |
| 06/27/07 | 38 | 100.00 | 5.50 | 83.08 | -77.58 | 2.00 | 79.58 | 120(TONS) | |
| 06/27/07 | 39 | 95.00 | 5.50 | 83.08 | -77.58 | 4.50 | 82.08 | 120(TONS) | |
| 06/01/07 | 40 | 95.00 | 5.50 | 89.08 | -83.58 | 2.50 | 86.08 | 120(TONS) | |

| Date | Pile # | Length in Leads (Ft.) | Ground Elevation (Ft.) | Length in Ground (Ft.) | Tip Elev. (Ft.) | Cut Off Elev. (Ft.) | Pile Length (Ft.) | Pile Capacity (Tons) | Remarks |
|---|---|---|---|---|---|---|---|---|---|
| 06/01/07 | 41 | 95.00 | 5.50 | 82.17 | -76.67 | 2.50 | 79.17 | 120(TONS) | |
| 06/05/07 | 42 | 50.00 | 5.50 | 34.17 | -28.67 | 2.50 | 31.17 | 120(TONS) | |
| 06/01/07 | 43 | 95.00 | 5.50 | 82.42 | -76.92 | 4.50 | 81.42 | 120(TONS) | |
| 05/01/07 | 44 | 100.00 | 5.50 | 81.75 | -76.25 | 2.50 | 78.75 | 120(TONS) | |
| 03/01/07 | 45 | 100.00 | 5.50 | 90.16 | -84.66 | 2.50 | 87.16 | 120(TONS) | |
| 05/01/07 | 46 | 100.00 | 5.50 | 33.08 | -27.58 | 2.50 | 30.08 | 120(TONS) | |
| 05/18/07 | 47 | 95.00 | 5.50 | 82.17 | -76.67 | 4.50 | 81.17 | 120(TONS) | |
| 05/10/07 | 48 | 100.00 | 5.50 | 77.42 | -71.92 | 2.50 | 74.42 | 120(TONS) | |
| 05/10/07 | 49 | 110.00 | 5.50 | 76.83 | -71.33 | 2.50 | 73.83 | 120(TONS) | |
| 05/10/07 | 50 | 100.00 | 5.50 | 77.33 | -71.83 | 2.50 | 74.33 | 120(TONS) | |
| 05/17/07 | 51 | 95.00 | 5.50 | 77.17 | -71.67 | 4.50 | 76.17 | 120(TONS) | |
| 05/01/07 | 52 | 100.00 | 5.50 | 76.33 | -70.83 | 2.50 | 73.33 | 120(TONS) | |
| 05/01/07 | 53 | 100.00 | 5.50 | 76.17 | -70.67 | 2.50 | 73.17 | 120(TONS) | |
| 05/01/07 | 54 | 100.00 | 5.50 | 85.25 | -79.75 | 2.50 | 82.25 | 120(TONS) | |
| 05/17/07 | 55 | 95.00 | 5.50 | 76.50 | -71.00 | 4.50 | 75.50 | 120(TONS) | |
| 05/14/07 | 56 | 100.00 | 5.50 | 76.33 | -70.83 | 2.50 | 73.33 | 120(TONS) | |
| 05/14/07 | 57 | 100.00 | 5.50 | 75.17 | -69.67 | 2.50 | 72.17 | 120(TONS) | |
| 05/14/07 | 58 | 75.00 | 5.50 | 74.25 | -68.75 | 2.50 | 71.25 | 120(TONS) | |
| 05/14/07 | 59 | 100.00 | 5.50 | 76.92 | -71.42 | 4.50 | 75.92 | 120(TONS) | |
| 05/02/07 | 60 | 100.00 | 5.50 | 72.83 | -67.33 | 2.50 | 69.83 | 120(TONS) | |
| 05/02/07 | 61 | 77.00 | 5.50 | 72.33 | -66.83 | 2.50 | 69.33 | 120(TONS) | |
| 03/05/07 | 62 | 100.00 | 5.50 | 83.16 | -77.66 | 2.50 | 80.16 | 120(TONS) | |
| 05/14/07 | 63 | 95.00 | 5.50 | 70.50 | -65.00 | 4.50 | 69.50 | 120(TONS) | |
| 05/03/07 | 64 | 100.00 | 5.50 | 78.17 | -72.67 | 2.00 | 74.67 | 120(TONS) | |
| 05/03/07 | 65 | 100.00 | 5.50 | 90.25 | -84.75 | 2.00 | 86.75 | 120(TONS) | |
| 06/28/07 | 66 | 100.00 | 5.50 | 90.00 | -84.50 | 2.00 | 86.50 | 120(TONS) | |
| 06/28/07 | 67 | 100.00 | 5.50 | 79.50 | -74.00 | 3.67 | 77.67 | 120(TONS) | |
| 06/01/07 | 68 | 95.00 | 5.50 | 81.75 | -76.25 | 3.67 | 79.92 | 120(TONS) | |
| 06/01/07 | 69 | 95.00 | 5.50 | 83.08 | -77.58 | 3.67 | 81.25 | 120(TONS) | |
| 05/18/07 | 70 | 95.00 | 5.50 | 81.00 | -75.50 | 4.50 | 80.00 | 120(TONS) | |
| 05/18/07 | 71 | 95.00 | 5.50 | 77.17 | -71.67 | 4.50 | 76.17 | 120(TONS) | |
| 05/17/07 | 72 | 95.00 | 5.50 | 77.00 | -71.50 | 4.50 | 76.00 | 120(TONS) | |
| 05/17/07 | 73 | 95.00 | 5.50 | 74.58 | -69.08 | 4.50 | 73.58 | 120(TONS) | |
| 05/17/07 | 74 | 73.00 | 5.50 | 75.00 | -69.50 | 4.50 | 74.00 | 120(TONS) | |
| 05/17/07 | 75 | 73.00 | 5.50 | 72.00 | -66.50 | 4.50 | 71.00 | 120(TONS) | |
| 05/14/07 | 76 | 75.00 | 5.50 | 75.83 | -70.33 | 4.50 | 74.83 | 120(TONS) | |
| 05/14/07 | 77 | 73.00 | 5.50 | 72.50 | -67.00 | 4.50 | 71.50 | 120(TONS) | |
| 05/14/07 | 78 | 72.00 | 5.50 | 63.92 | -58.42 | 4.50 | 62.92 | 120(TONS) | |
| 05/15/07 | 79 | 95.00 | 5.50 | 77.50 | -72.00 | 4.50 | 76.50 | 120(TONS) | |
| 05/15/07 | 80 | 95.00 | 5.50 | 82.42 | -76.92 | 2.00 | 78.92 | 120(TONS) | |
| 06/29/07 | 81 | 95.00 | 5.50 | 80.42 | -74.92 | 2.00 | 76.92 | 120(TONS) | |
| 06/29/07 | 82 | 95.00 | 5.50 | 77.25 | -71.75 | 2.00 | 73.75 | 120(TONS) | |
| 06/28/07 | 83 | 100.00 | 5.50 | 77.42 | -71.92 | 3.67 | 75.59 | 120(TONS) | |
| 05/31/07 | 84 | 95.00 | 5.50 | 80.92 | -75.42 | 1.67 | 77.09 | 120(TONS) | |
| 05/31/07 | 85 | 95.00 | 5.50 | 77.83 | -72.33 | 1.67 | 74.00 | 120(TONS) | |
| 05/31/07 | 86 | 95.00 | 5.50 | 75.08 | -69.58 | 1.67 | 71.25 | 120(TONS) | |
| 06/01/07 | 87 | 95.00 | 5.50 | 73.08 | -67.58 | 1.67 | 69.25 | 120(TONS) | |
| 06/01/07 | 88 | 95.00 | 5.50 | 78.75 | -73.25 | 3.67 | 76.92 | 120(TONS) | |

| Date | Pile # | Length in Leads (Ft.) | Ground Elevation (Ft.) | Length in Ground (Ft.) | Tip Elev. (Ft.) | Cut Off Elev. (Ft.) | Pile Length (Ft.) | Pile Capacity (Tons) | Remarks |
|---|---|---|---|---|---|---|---|---|---|
| 05/18/07 | 89 | 75.00 | 5.50 | 74.00 | -68.50 | 2.50 | 71.00 | 120(TONS) | |
| 05/18/07 | 90 | 95.00 | 5.50 | 75.58 | -70.08 | 2.50 | 72.58 | 120(TONS) | |
| 05/18/07 | 91 | 95.00 | 5.50 | 75.25 | -69.75 | 2.50 | 72.25 | 120(TONS) | |
| 05/18/07 | 92 | 100.00 | 5.50 | 75.25 | -69.75 | 2.50 | 72.25 | 120(TONS) | |
| 05/18/07 | 93 | 95.00 | 5.50 | 73.50 | -68.00 | 4.50 | 72.50 | 120(TONS) | |
| 05/01/07 | 94 | 76.00 | 5.50 | 72.17 | -66.67 | 2.50 | 69.17 | 120(TONS) | |
| 05/01/07 | 95 | 77.00 | 5.50 | 71.33 | -65.83 | 2.50 | 68.33 | 120(TONS) | |
| 05/01/07 | 96 | 100.00 | 5.50 | 73.08 | -67.58 | 2.50 | 70.08 | 120(TONS) | |
| 05/01/07 | 97 | 100.00 | 5.50 | 71.08 | -65.58 | 2.50 | 68.08 | 120(TONS) | |
| 05/17/07 | 98 | 95.00 | 5.50 | 71.50 | -66.00 | 4.50 | 70.50 | 120(TONS) | |
| 05/11/07 | 99 | 73.00 | 5.50 | 71.33 | -65.83 | 2.50 | 68.33 | 120(TONS) | |
| 05/11/07 | 100 | 72.00 | 5.50 | 70.00 | -64.50 | 2.50 | 67.00 | 120(TONS) | |
| 05/11/07 | 101 | 74.00 | 5.50 | 74.00 | -68.50 | 2.50 | 71.00 | 120(TONS) | |
| 05/11/07 | 102 | 100.00 | 5.50 | 71.00 | -65.50 | 2.50 | 68.00 | 120(TONS) | |
| 05/17/07 | 103 | 72.00 | 5.50 | 68.25 | -62.75 | 4.50 | 67.25 | 120(TONS) | |
| 04/30/07 | 104 | 100.00 | 5.50 | 72.42 | -66.92 | 2.50 | 69.42 | 120(TONS) | |
| 04/30/07 | 105 | 70.00 | 5.50 | 70.17 | -64.67 | 2.50 | 67.17 | 120(TONS) | |
| 03/15/07 | 106 | 105.00 | 5.50 | 85.17 | -79.67 | 2.50 | 82.17 | 120(TONS) | |
| 03/16/07 | 107 | 105.00 | 5.50 | 80.42 | -74.92 | 2.50 | 77.42 | 120(TONS) | |
| 05/14/07 | 108 | 75.00 | 5.50 | 70.67 | -65.17 | 4.50 | 69.67 | 120(TONS) | |
| 05/14/07 | 109 | 75.00 | 5.50 | 64.17 | -58.67 | 2.50 | 61.17 | 120(TONS) | |
| 05/11/07 | 110 | 70.00 | 5.50 | 63.83 | -58.33 | 2.50 | 60.83 | 120(TONS) | |
| 05/11/07 | 111 | 80.00 | 5.50 | 63.50 | -58.00 | 2.50 | 60.50 | 120(TONS) | |
| 05/11/07 | 112 | 100.00 | 5.50 | 63.83 | -58.33 | 2.50 | 60.83 | 120(TONS) | |
| 05/15/07 | 113 | 95.00 | 5.50 | 61.83 | -56.33 | 4.50 | 60.83 | 120(TONS) | |
| 05/15/07 | 114 | 83.00 | 5.50 | 60.25 | -54.75 | 2.00 | 56.75 | 120(TONS) | |
| 05/15/07 | 115 | 95.00 | 5.50 | 80.42 | -74.92 | 2.00 | 76.92 | 120(TONS) | |
| 06/29/07 | 116 | 100.00 | 5.50 | 75.33 | -69.83 | 2.00 | 71.83 | 120(TONS) | |
| 06/29/07 | 117 | 100.00 | 5.50 | 76.75 | -71.25 | 3.67 | 74.92 | 120(TONS) | |
| 05/31/07 | 118 | 95.00 | 5.50 | 74.08 | -68.58 | 3.67 | 72.25 | 120(TONS) | |
| 05/31/07 | 119 | 72.00 | 5.50 | 73.08 | -67.58 | 3.67 | 71.25 | 120(TONS) | |
| 05/23/07 | 120 | 95.00 | 5.50 | 71.25 | -65.75 | 4.50 | 70.25 | 120(TONS) | |
| 05/23/07 | 121 | 77.00 | 5.50 | 69.33 | -63.83 | 4.50 | 68.33 | 120(TONS) | |
| 05/21/07 | 122 | 73.00 | 5.50 | 69.25 | -63.75 | 4.50 | 68.25 | 120(TONS) | |
| 05/21/07 | 123 | 80.00 | 5.50 | 68.42 | -62.92 | 4.50 | 67.42 | 120(TONS) | |
| 05/24/07 | 124 | 95.00 | 5.50 | 70.08 | -64.58 | 4.50 | 69.08 | 120(TONS) | |
| 05/21/07 | 125 | 72.00 | 5.50 | 66.00 | -60.50 | 4.50 | 65.00 | 120(TONS) | |
| 05/21/07 | 126 | 77.00 | 5.50 | 65.92 | -60.42 | 4.50 | 64.92 | 120(TONS) | |
| 05/18/07 | 127 | 95.00 | 5.50 | 66.00 | -60.50 | 4.50 | 65.00 | 120(TONS) | |
| 05/16/07 | 128 | 70.00 | 5.50 | 65.08 | -59.58 | 4.50 | 64.08 | 120(TONS) | |
| 05/15/07 | 129 | 70.00 | 5.50 | 71.17 | -65.67 | 4.50 | 70.17 | 120(TONS) | |
| 05/15/07 | 130 | 95.00 | 5.50 | 76.08 | -70.58 | 2.00 | 72.58 | 120(TONS) | |
| 06/26/07 | 131 | 100.00 | 5.50 | 74.17 | -68.67 | 0.50 | 69.17 | 120(TONS) | |
| 06/26/07 | 132 | 75.00 | 5.50 | 74.08 | -68.58 | 0.50 | 69.08 | 120(TONS) | |
| 06/29/07 | 133 | 100.00 | 5.00 | 74.42 | -69.42 | 0.50 | 69.92 | 120(TONS) | |
| 05/30/07 | 134 | 95.00 | 5.50 | 72.17 | -66.67 | 2.50 | 69.17 | 120(TONS) | |
| 05/30/07 | 135 | 95.00 | 5.50 | 72.83 | -67.33 | 2.50 | 69.83 | 120(TONS) | |

| Date | Pile # | Length in Leads (Ft.) | Ground Elevation (Ft.) | Length in Ground (Ft.) | Tip Elev. (Ft.) | Cut Off Elev. (Ft.) | Pile Length (Ft.) | Pile Capacity (Tons) | Remarks |
|---|---|---|---|---|---|---|---|---|---|
| 05/30/07 | 136 | 72.00 | 5.50 | 71.75 | -66.25 | 2.50 | 68.75 | 120(TONS) | |
| 05/30/07 | 137 | 72.00 | 5.50 | 70.42 | -64.92 | 2.50 | 67.42 | 120(TONS) | |
| 05/31/07 | 138 | 95.00 | 5.50 | 71.08 | -65.58 | 2.50 | 68.08 | 120(TONS) | |
| 05/02/07 | 139 | 80.00 | 5.50 | 69.42 | -63.92 | 2.50 | 66.42 | 120(TONS) | |
| 05/02/07 | 140 | 100.00 | 5.50 | 69.33 | -63.83 | 2.50 | 66.33 | 120(TONS) | |
| 03/01/07 | 141 | 100.00 | 5.50 | 70.16 | -64.66 | 2.50 | 67.16 | 120(TONS) | |
| 05/02/07 | 142 | 100.00 | 5.50 | 69.25 | -63.75 | 2.50 | 66.25 | 120(TONS) | |
| 05/23/07 | 143 | 95.00 | 5.50 | 68.08 | -62.58 | 4.50 | 67.08 | 120(TONS) | |
| 05/23/07 | 144 | 95.00 | 5.50 | 66.25 | -60.75 | 2.50 | 63.25 | 120(TONS) | |
| 05/23/07 | 145 | 95.00 | 5.50 | 66.33 | -60.83 | 2.50 | 63.33 | 120(TONS) | |
| 05/23/07 | 146 | 88.00 | 5.50 | 66.33 | -60.83 | 2.50 | 63.33 | 120(TONS) | |
| 05/23/07 | 147 | 74.00 | 5.50 | 67.08 | -61.58 | 2.50 | 64.08 | 120(TONS) | |
| 05/21/07 | 148 | 95.00 | 5.50 | 65.42 | -59.92 | 4.50 | 64.42 | 120(TONS) | |
| 04/30/07 | 149 | 100.00 | 5.50 | 64.33 | -58.83 | 2.50 | 61.33 | 120(TONS) | |
| 04/30/07 | 150 | 100.00 | 5.50 | 64.33 | -58.83 | 2.50 | 61.33 | 120(TONS) | |
| 03/05/07 | 151 | 77.00 | 5.50 | 64.16 | -58.66 | 2.50 | 61.16 | 120(TONS) | |
| 03/05/07 | 152 | 100.00 | 5.50 | 68.16 | -62.66 | 2.50 | 65.16 | 120(TONS) | |
| 05/21/07 | 153 | 70.00 | 5.50 | 64.00 | -58.50 | 4.50 | 63.00 | 120(TONS) | |
| 05/21/07 | 154 | 64.00 | 5.50 | 61.50 | -56.00 | 2.50 | 58.50 | 120(TONS) | |
| 05/21/07 | 155 | 66.00 | 5.50 | 63.17 | -57.67 | 2.50 | 60.17 | 120(TONS) | |
| 05/21/07 | 156 | 70.00 | 5.50 | 61.17 | -55.67 | 2.50 | 58.17 | 120(TONS) | |
| 05/21/07 | 157 | 79.00 | 5.50 | 63.00 | -57.50 | 2.50 | 60.00 | 120(TONS) | |
| 05/18/07 | 158 | 72.00 | 5.50 | 73.00 | -67.50 | | | | REJECTED |
| 05/24/07 | 158-A | 95.00 | 5.50 | 63.17 | -57.67 | 4.50 | 62.17 | 120(TONS) | |
| 04/30/07 | 159 | 70.00 | 5.50 | 64.08 | -58.58 | 2.50 | 61.08 | 120(TONS) | |
| 04/30/07 | 160 | 70.00 | 5.50 | 64.08 | -58.58 | 2.50 | 61.08 | 120(TONS) | |
| 04/30/07 | 161 | 80.00 | 5.50 | 60.17 | -54.67 | 2.50 | 57.17 | 120(TONS) | |
| 03/05/07 | 162 | 100.00 | 5.50 | 72.16 | -66.66 | 2.50 | 69.16 | 120(TONS) | |
| 05/24/07 | 163 | 95.00 | 5.50 | 66.17 | -60.67 | 4.50 | 65.17 | 120(TONS) | |
| 05/16/07 | 164 | 90.00 | 5.50 | 56.08 | -50.58 | 2.00 | 52.58 | 120(TONS) | |
| 05/16/07 | 165 | 95.00 | 5.50 | 55.33 | -49.83 | 2.00 | 51.83 | 120(TONS) | |
| 06/26/07 | 166 | 100.00 | 5.50 | 71.08 | -65.58 | 2.00 | 67.58 | 120(TONS) | |
| 06/29/07 | 167 | 100.00 | 5.00 | 72.25 | -67.25 | 4.50 | 71.75 | 120(TONS) | |
| 07/03/07 | 168 | 73.00 | 5.00 | 70.33 | -65.33 | 4.50 | 69.83 | 120(TONS) | |
| 07/03/07 | 169 | 70.00 | 5.00 | 69.33 | -64.33 | 4.50 | 68.83 | 120(TONS) | |
| 05/30/07 | 170 | 70.00 | 5.50 | 67.08 | -61.58 | 4.50 | 66.08 | 120(TONS) | |
| 05/30/07 | 171 | 71.00 | 5.50 | 64.25 | -58.75 | 4.50 | 63.25 | 120(TONS) | |
| 05/30/07 | 172 | 70.00 | 5.50 | 62.17 | -56.67 | 4.50 | 61.17 | 120(TONS) | |
| 05/30/07 | 173 | 71.00 | 5.50 | 63.67 | -58.17 | 4.50 | 62.67 | 120(TONS) | |
| 05/30/07 | 174 | 70.00 | 5.50 | 64.08 | -58.58 | 4.50 | 63.08 | 120(TONS) | |
| 05/24/07 | 175 | 70.00 | 5.50 | 62.25 | -56.75 | 4.50 | 61.25 | 120(TONS) | |
| 05/24/07 | 176 | 71.00 | 5.50 | 62.17 | -56.67 | 4.50 | 61.17 | 120(TONS) | |
| 05/24/07 | 177 | 82.00 | 5.50 | 66.58 | -61.08 | 4.50 | 65.58 | 120(TONS) | |
| 05/24/07 | 178 | 74.00 | 5.50 | 61.67 | -56.17 | 4.50 | 60.67 | 120(TONS) | |

| Date | Pile # | Length in Leads (Ft.) | Ground Elevation (Ft.) | Length in Ground (Ft.) | Tip Elev. (Ft.) | Cut Off Elev. (Ft.) | Pile Length (Ft.) | Pile Capacity (Tons) | Remarks |
|---|---|---|---|---|---|---|---|---|---|
| 05/24/07 | 179 | 89.00 | 5.50 | 72.83 | -67.33 | 4.50 | 71.83 | 120(TONS) | |
| 05/15/07 | 180 | 100.00 | 5.50 | 75.50 | -70.00 | 2.00 | 72.00 | 120(TONS) | |
| 06/26/07 | 181 | 75.00 | 5.50 | 72.08 | -66.58 | 2.00 | 68.58 | 120(TONS) | |
| 06/29/07 | 182 | 100.00 | 5.50 | 68.33 | -62.83 | 2.00 | 64.83 | 120(TONS) | |
| 07/02/07 | 183 | 70.00 | 5.00 | 66.50 | -61.50 | 0.50 | 62.00 | 120(TONS) | |
| 07/02/07 | 184 | 70.00 | 5.00 | 66.42 | -61.42 | 0.50 | 61.92 | 120(TONS) | |
| 06/27/07 | 185 | 70.00 | 5.50 | 66.17 | -60.67 | 0.50 | 61.17 | 120(TONS) | |
| 06/26/07 | 186 | 70.00 | 5.50 | 66.17 | -60.67 | 2.00 | 62.67 | 120(TONS) | |
| 06/26/07 | 187 | 65.00 | 5.50 | 63.08 | -57.58 | 0.50 | 58.08 | 120(TONS) | |
| 06/26/07 | 188 | 65.00 | 5.50 | 65.17 | -59.67 | 0.50 | 60.17 | 120(TONS) | |
| 06/26/07 | 189 | 65.00 | 5.50 | 63.25 | -57.75 | 0.50 | 58.25 | 120(TONS) | |
| 06/06/07 | 190 | 70.00 | 5.50 | 61.08 | -55.58 | 2.00 | 57.58 | 120(TONS) | |
| 06/26/07 | 191 | 65.00 | 5.50 | 60.08 | -54.58 | 0.50 | 55.08 | 120(TONS) | |
| 06/26/07 | 192 | 65.00 | 5.50 | 62.17 | -56.67 | 0.50 | 57.17 | 120(TONS) | |
| 06/26/07 | 193 | 65.00 | 5.50 | 62.08 | -56.58 | 0.50 | 57.08 | 120(TONS) | |
| 06/06/07 | 194 | 65.00 | 5.50 | 61.50 | -56.00 | 2.00 | 58.00 | 120(TONS) | |
| 06/06/07 | 195 | 60.00 | 5.50 | 56.58 | -51.08 | 0.50 | 51.58 | 120(TONS) | |
| 06/06/07 | 196 | 68.00 | 5.50 | 57.08 | -51.58 | 0.50 | 52.08 | 120(TONS) | |
| 06/06/07 | 197 | 61.00 | 5.50 | 57.25 | -51.75 | 0.50 | 52.25 | 120(TONS) | |
| 06/06/07 | 198 | 89.00 | 5.50 | 56.50 | -51.00 | 2.00 | 53.00 | 120(TONS) | |
| 06/05/07 | 199 | 80.00 | 5.50 | 55.08 | -49.58 | 0.50 | 50.08 | 120(TONS) | |
| 06/05/07 | 200 | 88.00 | 5.50 | 57.08 | -51.58 | 2.00 | 53.58 | 120(TONS) | |
| 06/05/07 | 201 | 80.00 | 5.50 | 55.33 | -49.83 | 0.50 | 50.33 | 120(TONS) | |
| 06/05/07 | 202 | 75.00 | 5.50 | 55.58 | -50.08 | 2.00 | 52.08 | 120(TONS) | |
| 06/06/07 | 203 | 95.00 | 5.50 | 55.08 | -49.58 | 0.50 | 50.08 | 120(TONS) | |
| 06/06/07 | 204 | 100.00 | 5.50 | 55.42 | -49.92 | 0.50 | 50.42 | 120(TONS) | |
| 06/06/07 | 205 | 60.00 | 5.50 | 54.33 | -48.83 | 0.50 | 49.33 | 120(TONS) | |
| 06/06/07 | 206 | 65.00 | 5.50 | 54.08 | -48.58 | 2.00 | 50.58 | 120(TONS) | |
| 06/05/07 | 207 | 95.00 | 5.50 | 53.08 | -47.58 | 2.00 | 49.58 | 120(TONS) | |
| 06/05/07 | 208 | 95.00 | 5.50 | 53.08 | -47.58 | 2.00 | 49.58 | 120(TONS) | |

NYC BUILDINGS

# Technical Report: Pile Driving

**Please File 3 Copies**
**Report Must Be Typewritten**

| Internal Use |
|---|
| Job Number |

## 1 Filing Status

| | |
|---|---|
| Job Number | |
| Sheet Number | 1 of 4 Sheets |

## 2 Location

| | | | |
|---|---|---|---|
| Borough Brooklyn | Block 2023 | Lot(s) 1 | BIN 3852786 |
| House No.(s) 63 | Street Name: Flushing Avenue | | Apt/Condo No(s). |
| Special Place Name NYPD Tow Pound Building @ BNY | | | Floor(s) |

## 3 Applicant

| | | |
|---|---|---|
| Last Name Stier | First Name Mark | M.I. A |
| Business Name Tectonic Engineering & Surveying Consultants, P.C. | | Business Phone (845) 534-5959 |
| Address 70 Pleasant Hill Road | City Mountainville | State NY Zip 10953 |
| ✓ P.E. ☐ R.A. ☐ Other: | | Lic. No. 076154 |

## 4 Pile Driving Contractor

| | | |
|---|---|---|
| Last Name Ramamurthy | First Name Kay | M.I. |
| Business Name Falco Construction Corp. | | Business Phone (781) 241-2100 |
| Address 2300 East 69th Street | City Brooklyn | State NY Zip 11234 |

## 5 Pile Information

| |
|---|
| Type 12.75 in. diameter pipe |
| Material Steel |
| Load Capacity 30 tons |

## 6 Hammer Information

| |
|---|
| Make Vulcan |
| Model Number 08 |
| Energy 26,000 Ft-lbs. |

## 7 Statements and Signatures

I hereby state that the above information is correct and complete to the best of my knowledge and that the above tests were performed in accordance with all Administrative Code Provisions and Departmental Rules, Regulations and Directives, except where noted, and that I have personally supervised the installation of these piles.

Falsification of any statement is a misdemeanor under § 26-124 of the NYC Administrative Building Code and is punishable by a fine or imprisonment, or both.

It is unlawful to give to a city employee, or for a city employee to accept, any benefit, monetary or otherwise, either as a gratuity for properly performing the job or in exchange for special consideration. Violation is punishable by imprisonment or fine or both.

Mark A. Stier, P.E.
Applicant Name

Signature — Date 5/14/07

Seal (P.E. or R.A.)

STATE OF NEW YORK
MARK ANDREW STIER
076154
LICENSED PROFESSIONAL ENGINEER

## Approvals

| Examined and Recommended for Approval | Approved |
|---|---|
| Examiner Name | Borough Commissioner Signature Date |
| Signature Date | |

TR-5 PILE SUMMARY
W.O. 4745.01
NYPD TOW POUND BUILDING
BROOKLYN, NY

**8 Test Report**

| Column Number | Pile Number | Diameter: (O.D.) | | | Elevations: | | Pile Length from Tip to Cutoff (ft) | Assumed Elevation Good Bearing Material | Average Net Penetration for Last Five Blows (inches/Blow) | Calculated Bearing Capacity (Tons) | Deviated from Designed Location (N or S, E or W) | Variation from Plumb (%) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Tip (in) | Cutoff (in) | 2/3 up from Tip (in) | Tip | Cutoff | | | | | | |
| A-4 | 1 | 12.75 | 12.75 | 12.75 | -47.3 | 3.6 | 50.9 | -38 | 0.5 | 30 | 0.29N, OK | 0.00 |
| A-4 | 2 | 12.75 | 12.75 | 12.75 | -47.7 | 3.6 | 51.3 | -38 | 0.5 | 30 | OK, 0.21W | 0.00 |
| A-4 | 3 | 12.75 | 12.75 | 12.75 | -48.7 | 3.6 | 52.3 | -38 | 0.5 | 30 | 0.12S, 0.12W | 0.00 |
| B-4 | 4 | 12.75 | 12.75 | 12.75 | -48.3 | 3.6 | 51.9 | -38 | 0.5 | 30 | 0.12S, 0.21W | 0.00 |
| B-4 | 5 | 12.75 | 12.75 | 12.75 | -47.3 | 3.6 | 50.9 | -38 | 0.5 | 30 | 1.00S, 0.62W | 0.02 |
| B-4 | 6 | 12.75 | 12.75 | 12.75 | -47.3 | 3.6 | 50.9 | -38 | 0.5 | 30 | 0.08N, OK | 0.00 |
| C-4 | 7 | 12.75 | 12.75 | 12.75 | -47.0 | 3.6 | 50.6 | -38 | 0.5 | 30 | OK, 0.29E | 0.00 |
| C-4 | 8 | 12.75 | 12.75 | 12.75 | -48.5 | 3.6 | 52.1 | -38 | 0.5 | 30 | 0.12N, 0.12W | 0.01 |
| C-4 | 9 | 12.75 | 12.75 | 12.75 | -46.3 | 3.6 | 49.9 | -38 | 0.5 | 30 | 0.42N, OK | 0.00 |
| D-4 | 10 | 12.75 | 12.75 | 12.75 | -50.0 | 3.6 | 53.6 | -38 | 0.5 | 30 | 0.67N, 0.21W | 0.02 |
| D-4 | 11 | 12.75 | 12.75 | 12.75 | -42.5 | 3.6 | 46.1 | -38 | 0.5 | 30 | 0.67N, 0.21W | 0.01 |
| D-4 | 12 | 12.75 | 12.75 | 12.75 | -47.7 | 3.6 | 51.3 | -38 | 0.5 | 30 | OK, OK | 0.01 |
| E-4 | 13 | 12.75 | 12.75 | 12.75 | -43.5 | 3.6 | 47.1 | -38 | 0.5 | 30 | 0.12S, OK | 0.00 |
| E-4 | 14 | 12.75 | 12.75 | 12.75 | -48.8 | 3.6 | 52.4 | -38 | 0.5 | 30 | 0.29N, 0.50W | 0.01 |
| E-4 | 15 | 12.75 | 12.75 | 12.75 | -48.8 | 3.6 | 52.4 | -38 | 0.5 | 30 | 0.50N, 0.29W | 0.00 |
| A-3 | 16 | 12.75 | 12.75 | 12.75 | -46.3 | 3.6 | 49.9 | -38 | 0.5 | 30 | 0.25S, 2.25W | 0.00 |
| A-3 | 17 | 12.75 | 12.75 | 12.75 | -46.6 | 3.6 | 50.2 | -38 | 0.5 | 30 | 0.25N, 3.00W | 0.01 |
| A-3 | 18 | 12.75 | 12.75 | 12.75 | -47.3 | 3.6 | 50.9 | -38 | 0.5 | 30 | 0.50N, 2.75W | 0.00 |
| B-3 | 19 | 12.75 | 12.75 | 12.75 | -48.3 | 3.43 | 51.8 | -38 | 0.5 | 30 | 0.08N, 0.29W | 0.00 |
| B-3 | 20 | 12.75 | 12.75 | 12.75 | -48.3 | 3.43 | 51.7 | -38 | 0.5 | 30 | 0.17N, OK | 0.01 |
| B-3 | 21 | 12.75 | 12.75 | 12.75 | -48.0 | 3.43 | 51.4 | -38 | 0.5 | 30 | OK, 0.25W | 0.00 |
| B-3 | 22 | 12.75 | 12.75 | 12.75 | -47.8 | 3.43 | 51.2 | -38 | 0.5 | 30 | OK, 0.42W | 0.00 |
| B-3 | 23 | 12.75 | 12.75 | 12.75 | -47.8 | 3.43 | 51.3 | -38 | 0.5 | 30 | 0.21S, 0.12W | 0.00 |
| C-3 | 24 | 12.75 | 12.75 | 12.75 | -49.9 | 3.43 | 53.3 | -38 | 0.5 | 30 | 0.08N, 0.08W | 0.01 |
| C-3 | 25 | 12.75 | 12.75 | 12.75 | -49.8 | 3.43 | 53.3 | -38 | 0.5 | 30 | 0.17N, 0.04W | 0.00 |
| C-3 | 26 | 12.75 | 12.75 | 12.75 | -50.5 | 3.43 | 53.9 | -38 | 0.5 | 30 | 0.17N, 0.42W | 0.00 |
| C-3 | 27 | 12.75 | 12.75 | 12.75 | -49.5 | 3.43 | 52.9 | -38 | 0.5 | 30 | 0.12S, 0.42W | 0.00 |
| C-3 | 28 | 12.75 | 12.75 | 12.75 | -51.0 | 3.43 | 54.4 | -38 | 0.5 | 30 | 0.04N, 0.08W | 0.01 |
| D-3 | 29 | 12.75 | 12.75 | 12.75 | -49.9 | 3.43 | 53.3 | -38 | 0.5 | 30 | OK, 0.08W | 0.00 |
| D-3 | 30 | 12.75 | 12.75 | 12.75 | -47.8 | 3.43 | 51.2 | -38 | 0.5 | 30 | 0.21N, 0.42W | 0.01 |
| D-3 | 31 | 12.75 | 12.75 | 12.75 | -50.5 | 3.43 | 53.9 | -38 | 0.5 | 30 | 0.08N, 0.04W | 0.00 |
| D-3 | 32 | 12.75 | 12.75 | 12.75 | -52.0 | 3.43 | 55.4 | -38 | 0.5 | 30 | 0.33N, OK | 0.02 |
| D-3 | 33 | 12.75 | 12.75 | 12.75 | -51.8 | 3.43 | 55.3 | -38 | 0.5 | 30 | 0.21N, 0.21W | 0.00 |
| E-3 | 34 | 12.75 | 12.75 | 12.75 | -41.3 | 1.1 | 42.4 | -38 | 0.5 | 30 | OK, 0.21W | 0.00 |
| E-3 | 35 | 12.75 | 12.75 | 12.75 | -40.3 | 1.1 | 41.4 | -38 | 0.5 | 30 | 0.25N, OK | 0.01 |
| E-3 | 36 | 12.75 | 12.75 | 12.75 | -52.3 | 1.1 | 53.4 | -38 | 0.5 | 30 | 0.08S, 0.17W | 0.01 |
| A-2 | 37 | 12.75 | 12.75 | 12.75 | -48.3 | 3.6 | 51.9 | -38 | 0.5 | 30 | 0.08S, 1.25W | 0.00 |
| A-2 | 38 | 12.75 | 12.75 | 12.75 | -49.0 | 3.6 | 52.6 | -38 | 0.5 | 30 | 0.78S, 1.71W | 0.00 |

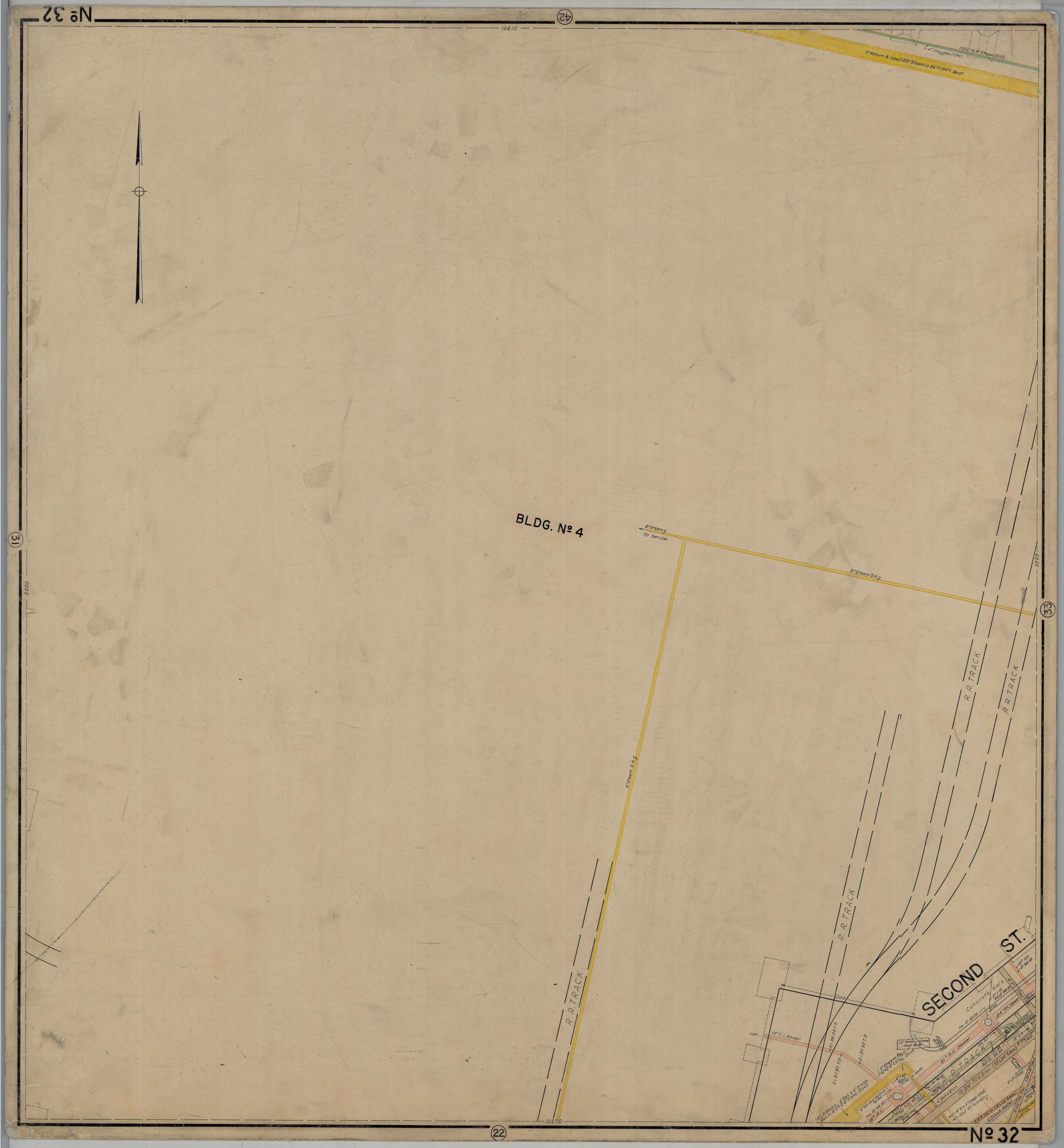
TR-5 PILE SUMMARY
W.O. 4745.01
NYPD TOW POUND BUILDING
BROOKLYN, NY

**8 Test Report**

| Column Number | Pile Number | Diameter: (O.D.) | | | Elevations: | | Pile Length from Tip to Cutoff (ft) | Assumed Elevation Good Bearing Material | Average Net Penetration for Last Five Blows (inches/Blow) | Calculated Bearing Capacity (Tons) | Deviated from Designed Location (N or S, E or W) | Variation from Plumb (%) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Tip (in) | Cutoff (in) | 2/3 up from Tip (in) | Tip | Cutoff | | | | | | |
| A-2 | 39 | 12.75 | 12.75 | 12.75 | -48.3 | 3.6 | 51.9 | -38 | 0.5 | 30 | OK, 1.83W | 0.00 |
| B-2 | 40 | 12.75 | 12.75 | 12.75 | -49.3 | 3.43 | 52.7 | -38 | 0.5 | 30 | 0.12W, OK | 0.00 |
| B-2 | 41 | 12.75 | 12.75 | 12.75 | -49.3 | 3.43 | 52.7 | -38 | 0.5 | 30 | 0.17N, OK | 0.00 |
| B-2 | 42 | 12.75 | 12.75 | 12.75 | -52.3 | 3.43 | 55.8 | -38 | 0.5 | 30 | OK, 0.33E | 0.01 |
| B-2 | 43 | 12.75 | 12.75 | 12.75 | -50.3 | 3.43 | 53.7 | -38 | 0.5 | 30 | 0.71S, 0.12E | 0.00 |
| B-2 | 44 | 12.75 | 12.75 | 12.75 | -49.8 | 3.43 | 53.2 | -38 | 0.5 | 30 | 0.33N, 0.29E | 0.01 |
| C-2 | 45 | 12.75 | 12.75 | 12.75 | -52.3 | 3.43 | 55.7 | -38 | 0.5 | 30 | 0.29N, 0.29W | 0.00 |
| C-2 | 46 | 12.75 | 12.75 | 12.75 | -47.3 | 3.43 | 50.7 | -38 | 0.5 | 30 | 0.17N, OK | 0.00 |
| C-2 | 47 | 12.75 | 12.75 | 12.75 | -53.3 | 3.43 | 56.8 | -38 | 0.5 | 30 | OK, 0.42W | 0.00 |
| C-2 | 48 | 12.75 | 12.75 | 12.75 | -52.3 | 3.43 | 55.8 | -38 | 0.5 | 30 | 0.17N, 0.42W | 0.00 |
| C-2 | 49 | 12.75 | 12.75 | 12.75 | -52.3 | 3.43 | 55.7 | -38 | 0.5 | 30 | 0.29N, 0.29E | 0.00 |
| D-2 | 50 | 12.75 | 12.75 | 12.75 | -48.3 | 3.43 | 51.8 | -38 | 0.5 | 30 | 0.04S, 0.21W | 0.02 |
| D-2 | 51 | 12.75 | 12.75 | 12.75 | -50.3 | 3.43 | 53.8 | -38 | 0.5 | 30 | 0.25N, OK | 0.00 |
| D-2 | 52 | 12.75 | 12.75 | 12.75 | -53.3 | 3.43 | 56.8 | -38 | 0.5 | 30 | 0.12S, 0.08E | 0.00 |
| D-2 | 53 | 12.75 | 12.75 | 12.75 | -50.8 | 3.43 | 54.2 | -38 | 0.5 | 30 | OK, 0.08W | 0.00 |
| D-2 | 54 | 12.75 | 12.75 | 12.75 | -50.8 | 3.43 | 54.3 | -38 | 0.5 | 30 | 0.17N, 0.37W | 0.00 |
| E-2 | 55 | 12.75 | 12.75 | 12.75 | -51.3 | 3.6 | 54.9 | -38 | 0.5 | 30 | 0.17S, 0.08W | 0.00 |
| E-2 | 56 | 12.75 | 12.75 | 12.75 | -50.0 | 3.6 | 53.6 | -38 | 0.5 | 30 | 0.08S, 0.08W | 0.01 |
| E-2 | 57 | 12.75 | 12.75 | 12.75 | -40.8 | 3.6 | 44.4 | -38 | 0.5 | 30 | OK, 0.25W | 0.00 |
| A-1 | 58 | 12.75 | 12.75 | 12.75 | -56.7 | 3.6 | 60.3 | -38 | 0.5 | 30 | 4.88N, 4.04W | 0.00 |
| A-1 | 59 | 12.75 | 12.75 | 12.75 | -57.3 | 3.6 | 60.9 | -38 | 0.5 | 30 | 4.58N, 0.29W | 0.00 |
| A-1 | 60 | 12.75 | 12.75 | 12.75 | -58.3 | 3.6 | 61.9 | -38 | 0.5 | 30 | 4.25S, 0.25W | 0.00 |
| B-1 | 61 | 12.75 | 12.75 | 12.75 | -52.3 | 3.6 | 55.9 | -38 | 0.5 | 30 | 0.33N, 1.12W | 0.00 |
| B-1 | 62 | 12.75 | 12.75 | 12.75 | -51.2 | 3.6 | 54.8 | -38 | 0.5 | 30 | 0.25S, 1.00E | 0.00 |
| B-1 | 63 | 12.75 | 12.75 | 12.75 | -52.3 | 3.6 | 55.9 | -38 | 0.5 | 30 | 3.29N, 1.37E | 0.00 |
| C-1 | 64 | 12.75 | 12.75 | 12.75 | -53.0 | 3.6 | 56.6 | -38 | 0.5 | 30 | 0.21S, 0.42W | 0.00 |
| C-1 | 65 | 12.75 | 12.75 | 12.75 | -51.9 | 3.6 | 55.5 | -38 | 0.5 | 30 | 0.33S, 0.42W | 0.01 |
| C-1 | 66 | 12.75 | 12.75 | 12.75 | -52.3 | 3.6 | 55.9 | -38 | 0.5 | 30 | OK, 0.92W | 0.01 |
| D-1 | 67 | 12.75 | 12.75 | 12.75 | -50.5 | 3.6 | 54.1 | -38 | 0.5 | 30 | 0.25N, 1.00E | 0.00 |
| D-1 | 68 | 12.75 | 12.75 | 12.75 | -50.8 | 3.6 | 54.4 | -38 | 0.5 | 30 | 0.42N, 0.25E | 0.00 |
| D-1 | 69 | 12.75 | 12.75 | 12.75 | -46.6 | 3.6 | 50.2 | -38 | 0.5 | 30 | 1.17N, 0.83E | 0.00 |
| E-1 | 70 | 12.75 | 12.75 | 12.75 | -49.0 | 3.6 | 52.6 | -38 | 0.5 | 30 | 0.33N, 0.42E | 0.00 |
| E-1 | 71 | 12.75 | 12.75 | 12.75 | -49.3 | 3.6 | 52.9 | -38 | 0.5 | 30 | OK, OK | 0.00 |
| E-1 | 72 | 12.75 | 12.75 | 12.75 | -48.4 | 3.6 | 52.0 | -38 | 0.5 | 30 | 0.29N, 0.08E | 0.00 |
| A-1 | 73 | 12.75 | 12.75 | 12.75 | -58.3 | 3.6 | 61.9 | -38 | 0.5 | 30 | 4.25S, 0.25W | 0.00 |
| B-1 | 74 | 12.75 | 12.75 | 12.75 | -49.8 | 3.6 | 53.4 | -38 | 0.5 | 30 | 2.79N, 2.12W | 0.00 |

TR-5 PILE SUMMARY
W.O. 4745.01
NYPD TOW POUND BUILDING
BROOKLYN, NY

| 9 Remarks |
| --- |
| |


42
10610
4" Oxygen (OH)
1-2½" H.P. Steam (O.H.)
8" Return & (Abd.) 2¼" Steam in 36"± x 24"± Duct
BLDG. Nº 4
6" Steam To Service
8" Steam O.H.
8" Steam O.H.
R.R. TRACK
R.R. TRACK
R.R. TRACK
R.R. TRACK
SECOND ST.
Concrete Walk
Dod
Ldr.
12" C.I. Sewer
21" R.C. Sewer
24" R.C. Sewer
10" Vit.
12" S.W.
31
33
22
3520
3205
10270

BLDG. No 4
BLDG. No 13
3 Story Brick
BLDG. No 15
BLDG. No 14
2 Story Brick
BLDG. No 122
3 Story Brick
FIRST AVE.
SECOND ST.
PERRY ST.
DECATUR AVE.
GATE ST.
R.R. TRACK
Steam Pit (Valve No 22) in Pit
SHELTER NO. 626
SHELTER NO. 630
Concrete Walk
Concrete Base for Street Light
Concrete Base
Lawn
Corr. Iron Garage
3 Story Brick
Bell Base
Cellar Stairs
Concrete Step
Concrete Stoop
Retaining Wall
Flagstone Walk
6" Fresh Water
10" Salt Water
6" Fresh Water
6" Salt Water
3-3" Fibre Elec. Ducts
8" Fresh Water
4" Fresh Water
2" Fresh Water
2" Gas
Valve (Not Visible)
2" Fresh Water (Approx. Location)
3" Fresh Water (Abd.)
8" Fresh Water (Approx. Location)
6-4" & 1-2½" Fibre Elec. Ducts
3-4" Fibre Elec Ducts
2-4" Fibre Tel. Ducts
2-4½" Wood Tel. Duct
3-3" Fibre Elec. Ducts
2-4" Fibre Tel. Ducts
8" Steam in 12" Vit.
4" Steam Ret. in 12" Vit.
Steps
Concrete (Approx. Loc.)
Curb
Dirt
Concrete Walk
Sec. A-A Typical for Mem. Bldg.

## INTRODUCTION

Vollmer Associates (VA) was requested by the Brooklyn Navy Yard Development Corporation (BNYDC) to coordinate and evaluate a program of subsurface investigations in the Navy Yard, as part of BNYDC's ongoing construction development planning. This report represents our evaluation of these investigations, and preliminary conceptual design and construction conclusions for alternative building foundations and slabs-on-grade. These investigations were planned as a response to the inferior soil conditions discovered at the Market/Paulding Street site. These conditions offered limited options for foundation design, resulting in restrictively high construction costs, or unacceptable levels of differential settlement. The primary objective of this report, therefore, is to determine the likelihood of other locations within the Navy Yard possessing more favorable conditions, allowing for more cost effective foundation solutions.

A total of ten exploratory borings were undertaken, at agreed locations as indicated on the attached plan. All borings were performed by Soil Mechanics Drilling, but only four were observed by VA - numbers 1,2,3 and 10. The other were observed by other consultants, through BNYDC. VA's logs for these four locations, and the driller's sheets (logs) for all ten borings are attached as part of this report.

## INVESTIGATIONS

The borings were located throughout the Navy Yard, but in an effort to rationalize these findings as part of an ongoing exploratory effort, we have identified three zones:

| | |
|---|---|
| **Zone A** (Borings 1-5): | The New York City Police Department (NYCPD) automobile pound area in the southwest corner of the Yard. |
| **Zone B** (Borings 6-8): | The proximity of Building 128. |
| **Zone C** (Boring 10): | The area east of the new Steiner Studios and north of the Navy Hospital complex at the east end of the Yard. |

Investigations in these zones were limited and the results cannot be assumed to be indicative of the soil conditions in that area. They enable a conceptual foundation design to be suggested, but detailed design would require further exploration in order to assess the subsurface conditions over a wider area. This is particularly relevant in Zone C, where the extent of exploration covered in this report was limited to a single boring. BNYDC is in the possession of further subsurface information on the Navy Yard, and we would recommend a comprehensive report be written, based on the data offered by these historical explorations in addition to these recent investigations and the evaluations included herein.

## FINDINGS

Typical to Zones A & B are man-made miscellaneous fill existing over soft compressible organic silt and clay. Little evidence of these organic soils was found from the investigation in boring 10, in Zone C, and based on these results the soil conditions would appear to be considerably more favorable in Zone C than those in the Zones A & B. However, having reviewed the historical information contained in the results of additional several borings in this zone, provided by BNYDC, we would consider the isolated results of boring 10 to be misleading. We would therefore recommend the evaluation of this zone is based on all of the available information, and the historical data evidences display conditions similar to those found elsewhere in the Navy Yard.

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The depth of the fill is relatively consistent across the site at about fifteen (15) feet, and the depth to the bottom of the layer of soft compressible organic silt and clay varies.

Loose to medium-dense fine sand and silt with zones of clay typically underlies the compressible organic layer, and denser sand with gravel continues the profile to a very dense silt sand and gravel soil with occasional cobbles and boulders. This stratigraphy is summarized below.

| | Approx. Depth to Bottom of Soil Horizon (feet) | | |
|---|---|---|---|
| | Misc. Fill | Organic Soil | Loose Sand |
| Zone A | 15 | 25 | 50 |
| Zone B | 15 | 30 | 65 |
| Zone C | 10 | 25* | 50* |

**Based on historical data*

Water levels as observed in the borings ranged randomly from depths of three (3) to eight (8) feet below the existing grades.

## COMMENTS AND CONCLUSIONS

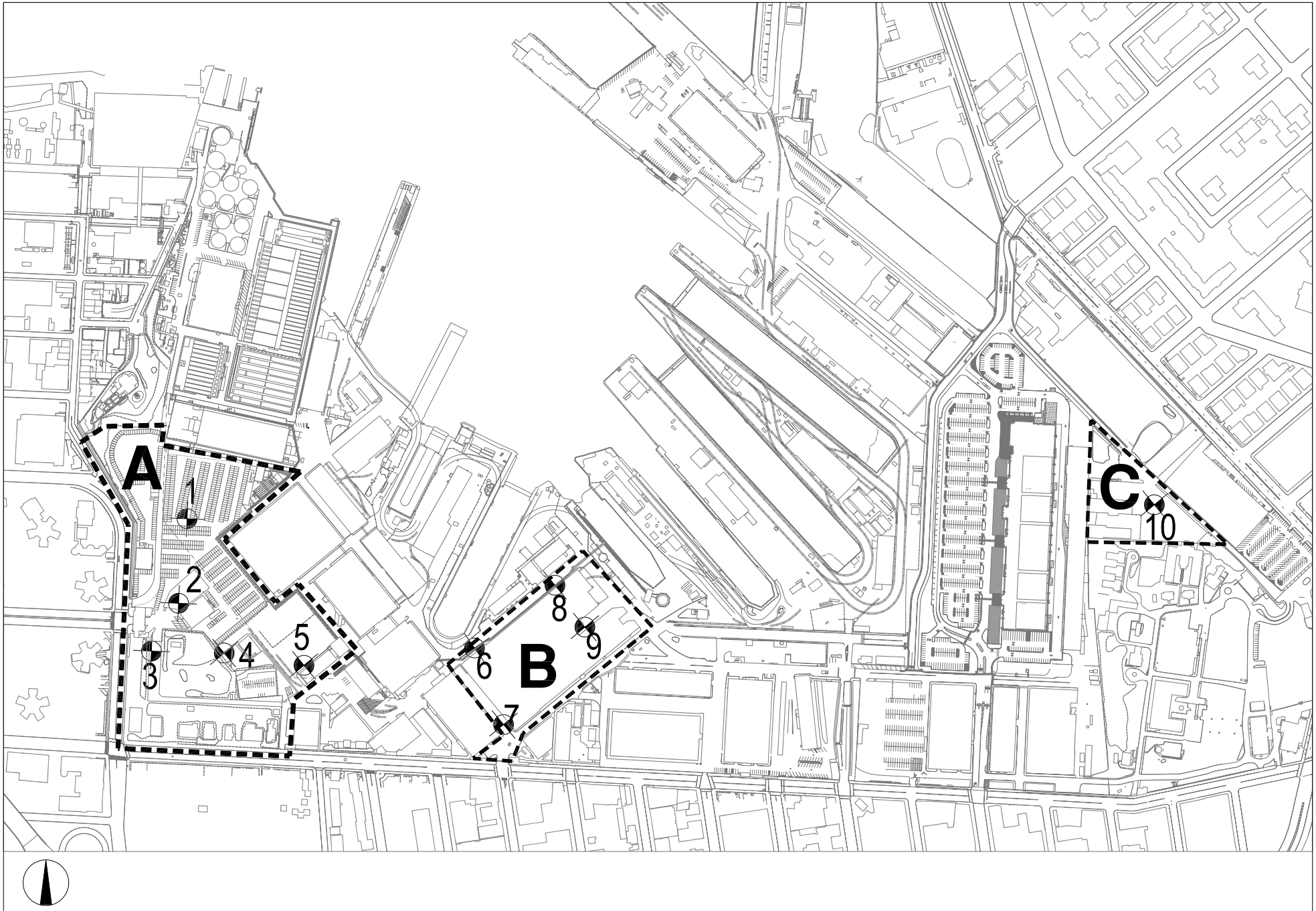
The conditions observed and interpreted from the information available indicate that the top of the soil profile for all site zones is not suitable for the support of building structures and slabs-on-grade, regardless of building type and loading. Deep foundations are, therefore, deemed appropriate and ground level slabs should be pile supported structural elements.

The deep foundations will have to penetrate below the soft compressible organic layer and miscellaneous fill to develop their capacity in the sand. Lightly loaded piles [less than twelve (12) tons] could develop their capacity in the loose to medium-dense sand as discussed above. However, efficient conventional pile capacities would require penetration to the deeper dense sand layer. Tabulated below are conceptual pile installation criteria. This information could be used to develop conceptual cost estimates.

| | Pile Length Estimates (ft from exist. grades) | |
|---|---|---|
| | Light Pile (<12 tons) | Conventional Pile |
| Zone A | 45 | 60 |
| Zone B | 50 | 75 |
| Zone C | 40 | 55 |

A floating slab, spanning between perimeter pile supported grade beams, may be possible by surcharging the site. Soil surcharging essentially consists of placing soil above the planned building elevation such that the additional soil weight causes the existing soil to consolidate and settle prior to building construction. However, under these conditions the weight of the surcharge would be substantial and it is possible that the surcharge may have to be in place for up to 12 months. Residual settlement may still occur, even with the benefits to the existing soil from the compressive surcharge.

It is therefore our conclusion that the soil conditions as observed do not support a typical foundation structure of footings and slabs-on-grade without taking measures that may be time and cost restrictive. As mentioned, we would recommend a more comprehensive report of the overall soil conditions within the Navy Yard, in order to refine the analysis and allow preliminary cost estimates to be prepared.

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Brooklyn Navy Yard - Subsurface Conditions Report 11/18/05

FIG. 01 BORING LOCATION PLAN

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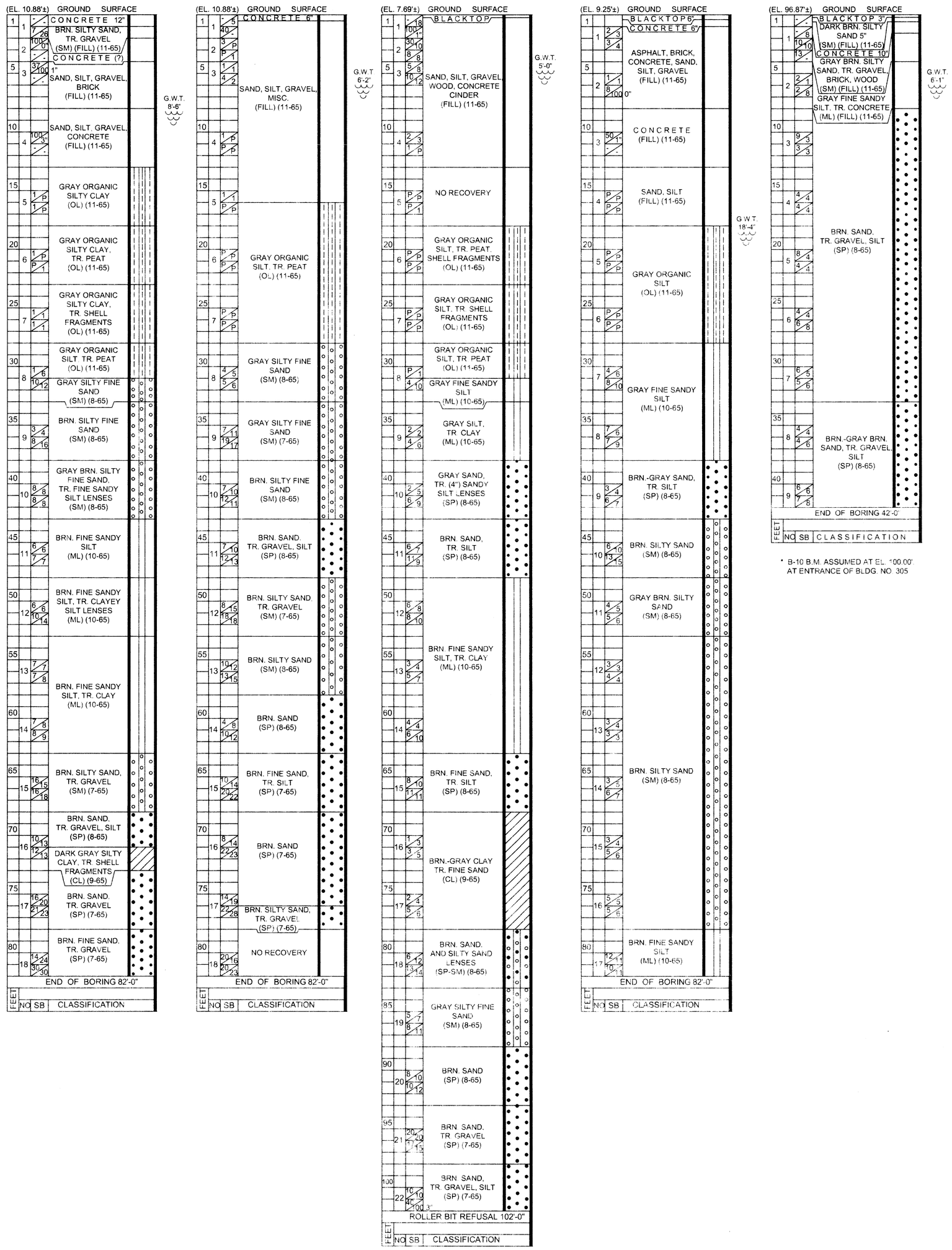
BROOKLYN NAVY YARD
TEST BORING LOCATION PLAN
BROOKLYN, NEW YORK

| DRAWING SCALE: | DRAWING DATE: | DRAWING NUMBER |
|---|---|---|
| AS PROVIDED | NOVEMBER 7, 2005 | 05L506•A10 |
| | REVISED: NAR | SHEET 3 OF 3 |




* B-10 B.M. ASSUMED AT EL. "00.00" AT ENTRANCE OF BLDG. NO. 305

## UNIFIED SOIL CLASSIFICATION

| SOIL GROUPS | TYPICAL NAMES AND SOIL SYMBOLS |
|---|---|
| GW | WELL GRADED GRAVELS, GRAVEL SAND MIXTURES, LITTLE OR NO FINES |
| GP | POORLY GRADED GRAVELS, GRAVEL SAND MIXTURES, LITTLE OR NO FINES |
| GM | SILTY GRAVELS, GRAVEL-SAND-SILT MIXTURES |
| GC | CLAYEY GRAVELS, GRAVEL-SAND-CLAY MIXTURES |
| SW | WELL GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES |
| SP | POORLY GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES |
| SM | SILTY SANDS, SAND-SILT MIXTURES |
| SC | CLAYEY SANDS, SAND-CLAY MIXTURES |
| ML | INORGANIC SILTS,VERY FINE SANDS,CLAYEY SILTS,SLIGHT PLASTICITY |
| CL | INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY,GRAVELLY,SANDY SILTY CLAYS |
| OL | ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY |
| MH | INORGANIC SILTS,MICACEOUS OR DIATOMACEOUS FINE SANDY OR SILTY SOILS ELASTIC SILTS |
| CH | INORGANIC CLAYS OF HIGH PLASTICITY,FAT CLAYS |
| OH | ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS |
| Pt | PEAT AND OTHER HIGHLY ORGANIC SOILS |

## ALLOWABLE SOIL BEARING PRESSURES
(N.Y.C. BUILDING CODE C26-1103)

| CLASS OF MATERIAL | DESCRIPTION | ALLOWABLE BEARING TONS/SQ.FT. |
|---|---|---|
| 1 - 65 | HARD SOUND ROCK | 60 |
| 2 - 65 | MEDIUM HARD ROCK | 40 |
| 3 - 65 | INTERMEDIATE ROCK | 20 |
| 4 - 65 | SOFT ROCK | 8 |
| 5 - 65 | HARDPAN | 8 - 12 |
| 6 - 65 | GRAVEL AND GRAVEL SOILS (SOIL GROUPS GW,GP,GM & GC AND GROUPS SW,SP & SM CONTAINING MORE THAN 10% GRAVEL) | 4 - 10 |
| 7 - 65 | SANDS (OTHER THAN FINE SANDS) (SOIL GROUPS SW,SP & SM BUT CONTAINING NOT MORE THAN 10% GRAVEL) | 3 - 6 |
| 8 - 65 | FINE SAND | 2 - 4 |
| 9 - 65 | CLAYS AND CLAY SOILS (SOIL GROUPS SC,CL & CH) HARD / MEDIUM / SOFT | (6 MAX) / (2 MAX) / BY TEST |
| 10 - 65 | SILTS AND SILT SOILS (SOIL GROUPS ML & MH) DENSE / MEDIUM / LOOSE | 3 / 1.5 / BY TEST |
| 11 - 65 | NOMINALLY UNSATISFACTORY BEARING MATERIALS | BY TEST |

## COMPACTION RELATED TO SPOON BLOWS/FOOT

| SAND | | SILT & CLAY | |
|---|---|---|---|
| LOOSE | 15 OR LESS | SOFT | 10 OR LESS |
| MEDIUM | 16 TO 39 | MEDIUM | 11 TO 29 |
| DENSE | 40 OR MORE | HARD | 30 OR MORE |

## "N"

N=17 BLOWS PER FOOT

## STANDARD PENETRATION TEST
(2"SPOON,140lb HAMMER,30"FALL)

SPOON BLOW COUNT IS GENERALLY SHOWN IN 6" INCREMENTS FOR 2DRIVE,TO OBTAIN BLOWS PER FOOT(N) USE 2ND & 3RD 6" INCREMENT

| | ROTARY CASING | X-HEAVY CASING | SPOON |
|---|---|---|---|
| SIZE, INCHES | 2.5 | | 2.0 |
| HAMMER WEIGHT, LBS. | —— | | 140 |
| HAMMER FALL, INCHES | —— | | 30 |

CB - CASING BLOWS PER 1 FOOT DRIVE
SB - SPOON BLOWS PER 6 INCH DRIVE
P - PUSHED BY WEIGHT OF HAMMER
UD - UNDISTURBED SOIL SAMPLE
NO - SAMPLE NUMBER
FEET - DEPTH FROM GND SUR. NOTED AT EACH 5

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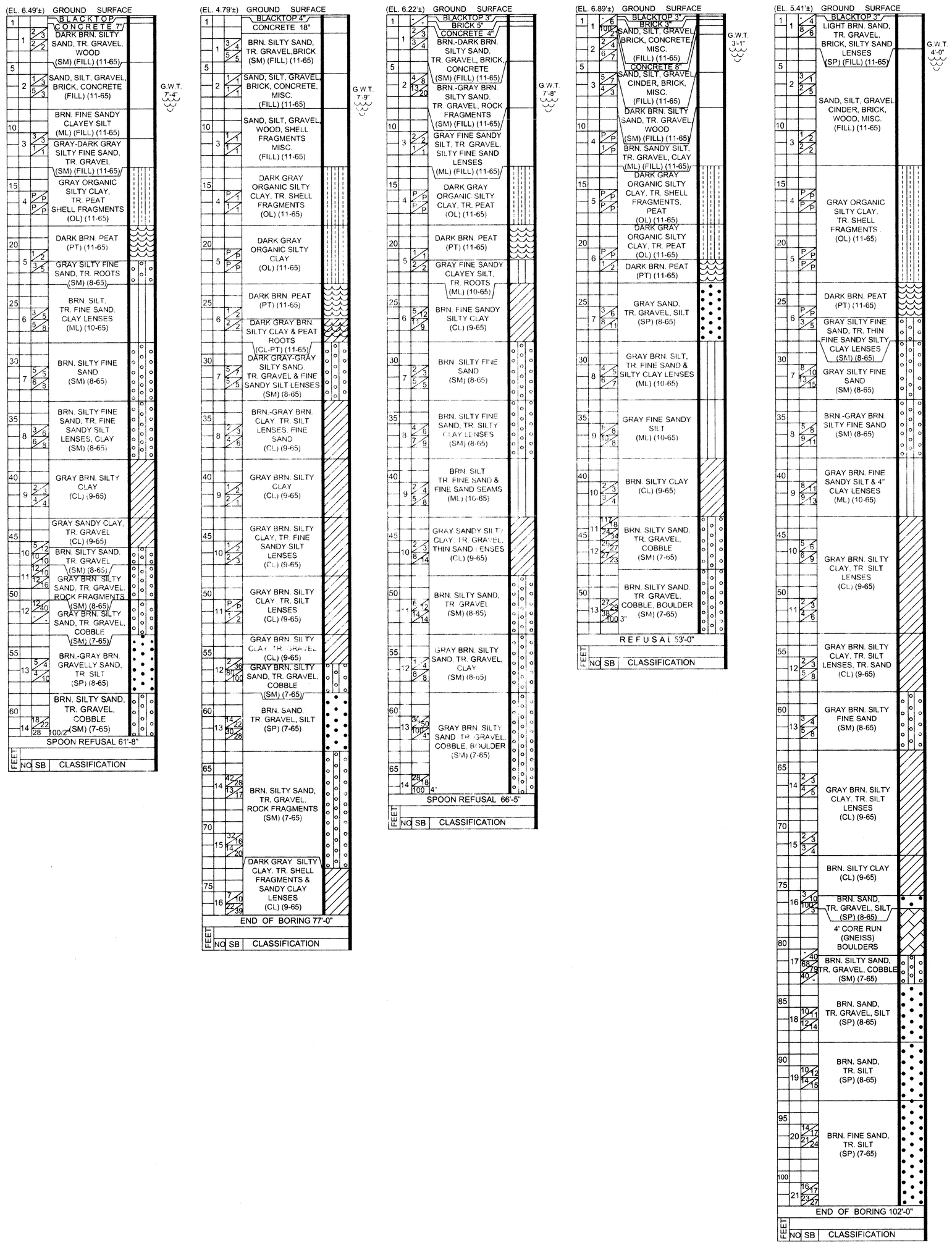
SUBSURFACE INVESTIGATION
BROOKLYN NAVY YARD
BROOKLYN, NEW YORK

| VERTICAL BORING SCALE: 1/4" = 1'-0" ± | DRAWING DATE: NOVEMBER 7, 2005 | | | DRAWING NUMBER |
|---|---|---|---|---|
| DATES OF BORINGS: OCTOBER 13, 14, 17, 18, 19, 20, 21 & 24, 2005 | DRAWN BY: NAR | CHECKED BY: CV | REVISED DATE | 05L506 •A10 SHEET 2 OF 3 |




## NOTES

1. SOIL DESCRIPTIONS ARE BY VISUAL EXAMINATION OF SOIL SAMPLES RECOVERED DURING DRILLING OPERATIONS.
2. SOIL DESCRIPTIONS ARE IN ACCORD WITH THE UNIFIED SOIL CLASSIFICATION SYSTEM.
3. GROUND WATER TABLE WAS MEASURED INSIDE THE DRILL CASING THE COMPLETION OF EACH BOREHOLE.
4. SOIL STRATIFICATIONS ARE ACCURATE TO WITHIN TWO FEET VERTICALLY.
5. SOIL SAMPLES WERE OBTAINED USING A CENTRAL MINE EQUIPMENT (CME) AUTOMATIC TRIP HAMMER.
6. ELEVATIONS SHOWN ARE REFERENCED TO TOP OF CURB LOCATED WEST END OF BUILDING NO. 77 AT GIVEN EL. 8.40'.
7. BORINGS DRILLED IN ACCORD WITH THE NEW YORK CITY BUILDING CODE

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| 8 - 65 | FINE SAND | 2 - 4 |
| 9 - 65 | CLAYS AND CLAY SOILS (SOIL GROUPS SC,CL & CH) | |
| | HARD | (6 MAX) |
| | MEDIUM | (2 MAX) |
| | SOFT | BY TEST |
| 10 - 65 | SILTS AND SILT SOILS (SOIL GROUPS ML & MH) | |
| | DENSE | 3 |
| | MEDIUM | 1.5 |
| | LOOSE | BY TEST |
| 11 - 65 | NOMINALLY UNSATISFACTORY BEARING MATERIALS | BY TEST |

### COMPACTION RELATED TO SPOON BLOWS/FOOT

| SAND | | SILT & CLAY | |
|---|---|---|---|
| LOOSE | 15 OR LESS | SOFT | 10 OR LESS |
| MEDIUM | 16 TO 39 | MEDIUM | 11 TO 29 |
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### "N" STANDARD PENETRATION TEST
(2"SPOON,140lb HAMMER,30"FALL)

S 6 12 — N=17 BLOWS PER FOOT

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|---|---|---|---|
| SIZE, INCHES | 2.5 | | 2.0 |
| HAMMER WEIGHT, LBS. | —— | | 140 |
| HAMMER FALL, INCHES | —— | | 30 |

CB - CASING BLOWS PER 1 FOOT DRIVE
SB - SPOON BLOWS PER 6 INCH DRIVE
P - PUSHED BY WEIGHT OF HAMMER
UD - UNDISTURBED SOIL SAMPLE
NO - SAMPLE NUMBER
FEET - DEPTH FROM GND.SUR. NOTED AT EACH 5'

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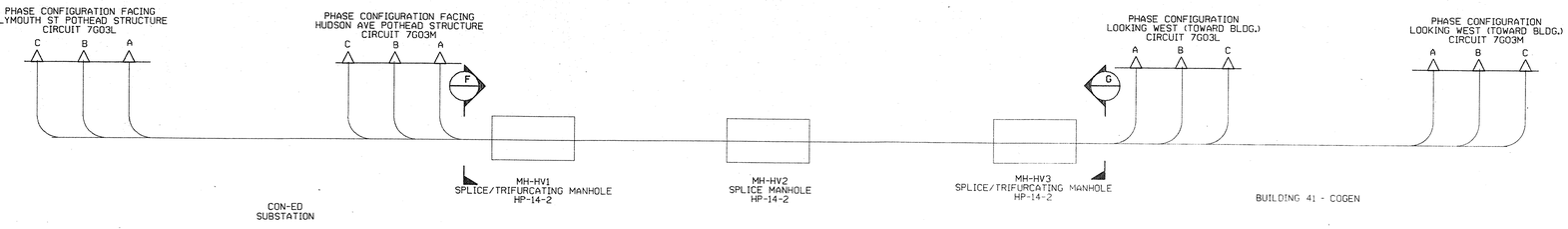
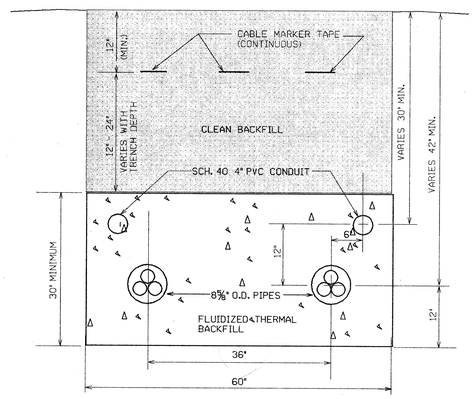
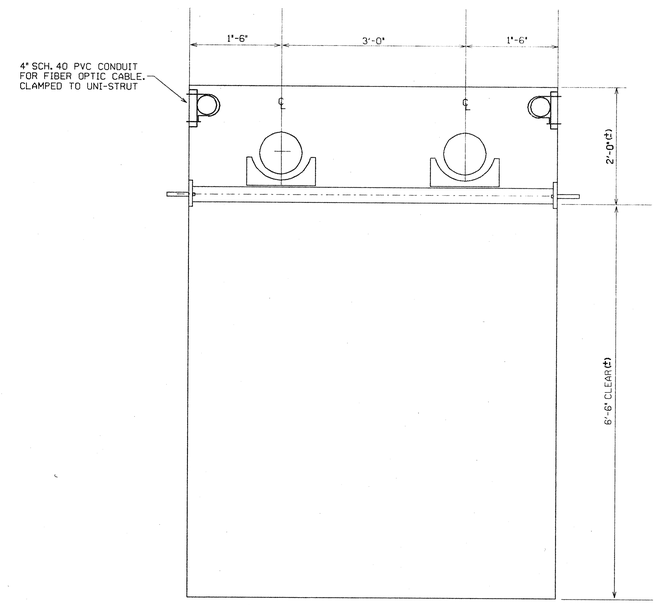
| | | | | SHEET 1 OF 3 |



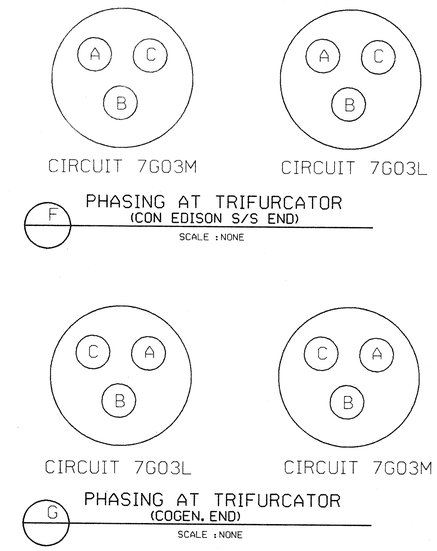

PHASING DIAGRAM
138KV H.P.G.F. PIPE
TWO CIRCUITS
SCALE: NONE

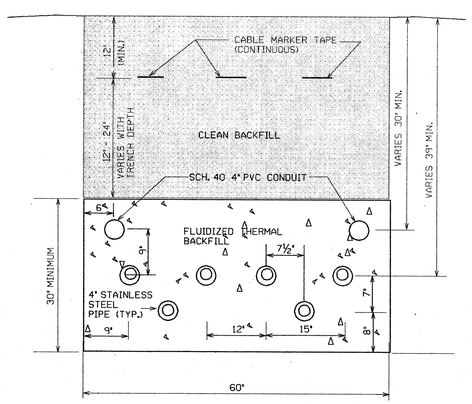



A TYPICAL DUCT BANK SECTION
SCALE : 1" = 1'-0"

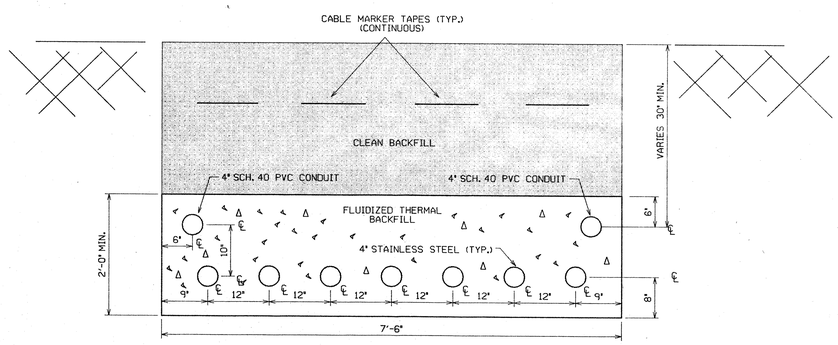



B TYPICAL TUNNEL SECTION
U01B
SCALE : 1" = 1'-0"




C TYPICAL TRIFURCATED SECTION
(PLYMOUTH STREET)
U01A
SCALE : 1" = 1'-0"




D TYPICAL TRIFURCATED SECTION
(IN STREET NEAR COGEN. SITE)
U02A
SCALE : 1" = 1'-0"

0' 4' 8' 16' 24'

AS BUILT

NOTES:

1 FOR GENERAL NOTES, LEGEND AND REFERENCE DRAWINGS SEE DRAWING 520698-U-01.

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| REV | DATE | DESCRIPTION | DRAWN | CHECKED | DES.SUPV. | RESP.ENGR. | DISC. ENG. | PROJ. MGR. | |
|---|---|---|---|---|---|---|---|---|---|
| 3 | 10/31/96 | AS BUILT | RTD | | | | | | |
| 2 | 10/17/96 | ADDED PHASING & ADDITIONAL DETAILS | JH | | | RSD | RSD | | |
| 1 | 09/17/96 | REVISED PHASING DIAGRAM AND ADDED SECTIONS A,B & C | RD | JGH | DJE | RSD | RSD | | |
| 0 | 05/31/96 | ISSUED FOR CONSTRUCTION | RD | | | | | | |

DRAWN BY RL.DAVIDSON
CHECKED BY RL.DAVIDSON
DESIGN SUPV. RL.DAVIDSON
RESP. ENGR. STAN ATKINSON
CHIEF DISC. ENGR. NIZOM GHANTOUS
MGR. OF ENGR. S.B. BARNES
PROJECT ENGINEERING MANAGER L.P. SULLIVAN
PROJECT MANAGER E.S. GHANTOUS
IN CHARGE S.B. BARNES

STATE OF NEW YORK · NIZOM S. GHANTOUS · No. 070230 · PROFESSIONAL ENGINEER

PMNC, A JOINT VENTURE
PARSONS MAIN
OF NEW YORK, INC.

CLIENT/PROJECT TITLE
BROOKLYN NAVY YARD
COGENERATION
PARTNERS, L.P.

B-7

ELECTRICAL
138KV HPGF CABLE
SECTIONS AND DETAILS

SCALE AS NOTED

MAIN'S DWG. NO. 520698-U-05A

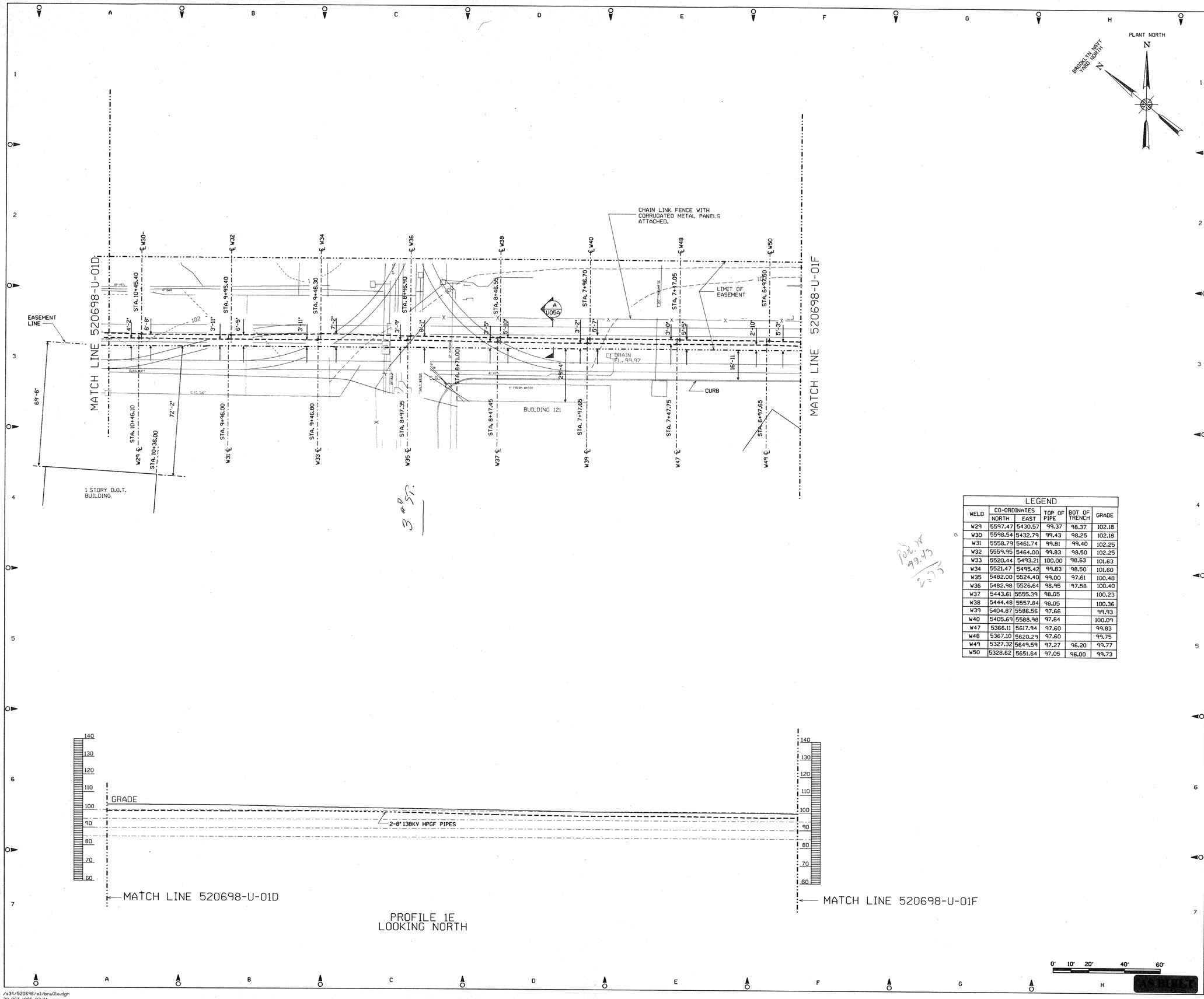
REV 3

/s34/520698/el/bnu05a.dgn
30-OCT-1996 08:00

ARCH HVAC I & C ELECT MECH CIVIL STRUC

ELECT JGH

STRUC BJK




| LEGEND | | | | | |
|---|---|---|---|---|---|
| WELD | CO-ORDINATES NORTH | CO-ORDINATES EAST | TOP OF PIPE | BOT OF TRENCH | GRADE |
| W29 | 5597.47 | 5430.57 | 99.37 | 98.37 | 102.18 |
| W30 | 5598.54 | 5432.79 | 99.43 | 98.25 | 102.18 |
| W31 | 5558.79 | 5461.74 | 99.81 | 99.40 | 102.25 |
| W32 | 5559.95 | 5464.00 | 99.83 | 98.50 | 102.25 |
| W33 | 5520.44 | 5493.21 | 100.00 | 98.63 | 101.63 |
| W34 | 5521.47 | 5495.42 | 99.83 | 98.50 | 101.60 |
| W35 | 5482.00 | 5524.40 | 99.00 | 97.61 | 100.48 |
| W36 | 5482.98 | 5526.64 | 98.95 | 97.58 | 100.40 |
| W37 | 5443.61 | 5555.39 | 98.05 | | 100.23 |
| W38 | 5444.48 | 5557.84 | 98.05 | | 100.36 |
| W39 | 5404.87 | 5586.56 | 97.66 | | 99.93 |
| W40 | 5405.69 | 5588.98 | 97.64 | | 100.09 |
| W47 | 5366.11 | 5617.94 | 97.60 | | 99.83 |
| W48 | 5367.10 | 5620.29 | 97.60 | | 99.75 |
| W49 | 5327.32 | 5649.59 | 97.27 | 96.20 | 99.77 |
| W50 | 5328.62 | 5651.64 | 97.05 | 96.00 | 99.73 |

NOTES:

1. FOR GENERAL NOTES, LEGEND AND REFERENCE DRAWINGS SEE DRAWING 520698-U-01.
3. LOCATION OF WELDS SHOULD BE DETERMINED FROM WRITTEN DIMENSIONS USING APPROPRIATE BASE LINES AND NOT BY SCALING.

## REFERENCE DRAWINGS

BNY DRAWING SHEET 22
BNY DRAWING SHEET 23
BNY DRAWING SHEET 25

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS HE IS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE SEAL OF AN ENGINEER IS ALTERED, THE ALTERING ENGINEER SHALL AFFIX TO THE ITEM HIS SEAL AND THE NOTATION "ALTERED BY" FOLLOWED BY HIS SIGNATURE AND THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

| REV | DATE | DESCRIPTION | DRAWN | CHECKED | DES.SUPV. | RESP.ENGR. | CHIEF. ENG. | PROJ. MGR. | |
|---|---|---|---|---|---|---|---|---|---|
| 3 | 10/31/96 | AS BUILT | RLD | | | | | | |
| 2 | 10/31/96 | MODIFIED PROFILE | JH | | | RSD | RSD | RSD | |
| 1 | 09/05/96 | REVISED SECTIONS, MODIFIED PROFILE | RB | JGH | DJE | SGA | RSD | RSD | |
| 0 | 05/06/96 | ISSUED FOR CONSTRUCTION | RJA | | | | | | |

DRAWN BY RLDAVIDSON
CHECKED BY RLDAVIDSON
DESIGN SUPV. RLDAVIDSON
RESP. ENGR. STAN ATKINSON
CHIEF DISC. ENGR. NIZOM GHANTOUS
MGR. OF ENGR. S.B. BARNES
PROJECT ENGINEERING MANAGER L.P. SULLIVAN
PROJECT MANAGER E.S. GHANTOUS
IN CHARGE S.B. BARNES

STATE OF NEW YORK — No. 07023 — LICENSED PROFESSIONAL ENGINEER

**PMNC, A JOINT VENTURE**
**PARSONS MAIN**
**OF NEW YORK, INC.**

CLIENT/PROJECT TITLE

**BROOKLYN NAVY YARD COGENERATION PARTNERS, L.P.**

B-7

ELECTRICAL
138KV HPGF CABLE PLAN
SHEET 5
NAVY YARD AREA

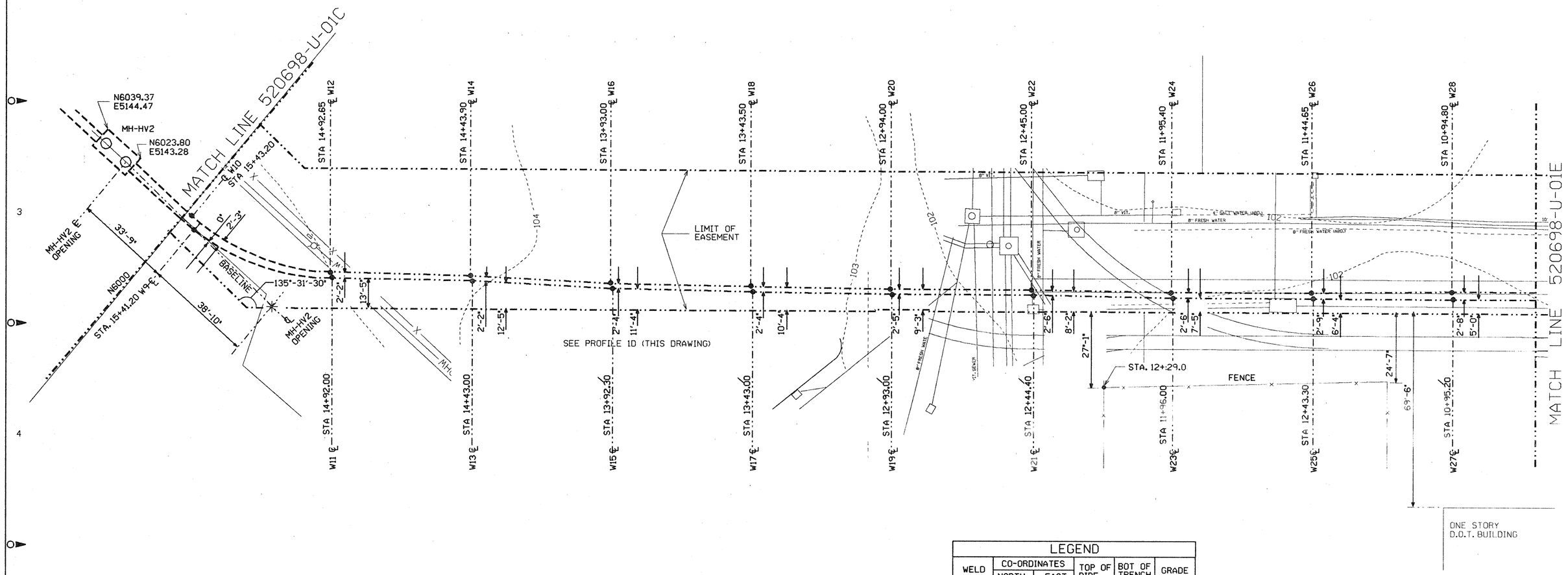
SCALE 1"=20'-0"

MAIN'S DWG. NO. 520698-U-01E

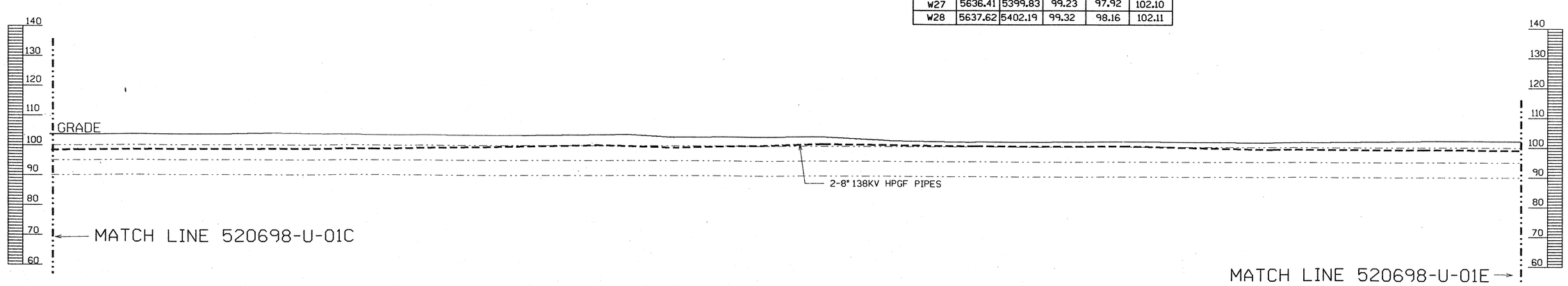
REV 3

/s34/520698/el/bnu01e.dgn
30-OCT-1996 07:34

ARCH HVAC I & C ELECT MECH CIVIL STRUC | ARCH HVAC I & C ELECT MECH CIVIL STRUC | ARCH HVAC I & C ELECT MECH CIVIL STRUC | ARCH HVAC I & C ELECT MECH CIVIL STRUC | ARCH HVAC I & C ELECT MECH CIVIL STRUC | ARCH HVAC I & C ELECT MECH CIVIL STRUC | ARCH HVAC I & C ELECT JGH MECH CIVIL STRUC BJK




| LEGEND | | | | | |
|---|---|---|---|---|---|
| WELD | CO-ORDINATES NORTH | CO-ORDINATES EAST | TOP OF PIPE | BOT OF TRENCH | GRADE |
| W9 | 5993.42 | 5136.94 | 99.90 | 98.50 | 103.78 |
| W10 | 5995.42 | 5139.27 | 99.90 | 98.50 | 103.78 |
| W11 | 5948.18 | 5155.52 | 101.25 | | 103.78 |
| W12 | 5950.11 | 5156.80 | 101.20 | | 103.78 |
| W13 | 5909.24 | 5186.44 | 101.42 | 100.05 | 104.22 |
| W14 | 5911.10 | 5187.56 | 101.38 | 100.07 | 104.18 |
| W15 | 5870.57 | 5216.61 | 101.39 | 100.03 | 103.75 |
| W16 | 5872.08 | 5218.40 | 101.42 | 100.00 | 103.71 |
| W17 | 5831.03 | 5247.77 | 101.60 | 100.22 | 103.50 |
| W18 | 5833.05 | 5249.15 | 101.65 | 100.22 | 103.50 |
| W19 | 5791.85 | 5278.39 | 100.75 | 99.63 | 103.00 |
| W20 | 5793.98 | 5279.75 | 100.92 | 99.62 | 103.16 |
| W21 | 5752.73 | 5309.02 | 100.20 | 98.98 | 101.67 |
| W22 | 5754.85 | 5310.40 | 100.36 | 98.97 | 101.68 |
| W23 | 5714.84 | 5338.87 | 100.27 | 98.90 | 102.07 |
| W24 | 5715.97 | 5341.14 | 100.25 | 98.96 | 101.95 |
| W25 | 5675.71 | 5369.41 | 99.55 | 98.25 | 101.93 |
| W26 | 5676.99 | 5371.86 | 99.48 | 98.10 | 101.85 |
| W27 | 5636.41 | 5399.83 | 99.23 | 97.92 | 102.10 |
| W28 | 5637.62 | 5402.19 | 99.32 | 98.16 | 102.11 |




PROFILE 1D
LOOKING NORTH
(THIS DRAWING)

0' 10' 20' 40' 60'

AS BUILT

NOTES:

1. FOR GENERAL NOTES, LEGEND AND REFERENCE DRAWINGS SEE DRAWING 520698-U-01.
2. REFER TO TYPICAL SECTION DRAWING 520698-U-05A FOR THERMAL FILL REQUIREMENTS.
3. LOCATION OF WELDS SHOULD BE DETERMINED FROM WRITTEN DIMENSIONS USING APPROPRIATE BASE LINES AND NOT BY SCALING.

REFERENCE DRAWINGS

BNY DRAWING SHEET 21
BNY DRAWING SHEET 22

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS HE IS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE SEAL OF AN ENGINEER IS ALTERED, THE ALTERING ENGINEER SHALL AFFIX TO THE ITEM HIS SEAL AND THE NOTATION "ALTERED BY" FOLLOWED BY HIS SIGNATURE AND THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

| REV | DATE | DESCRIPTION | DRAWN | CHECKED | DES.SUPV. | RESP.ENGR. | CHIEF DISC. ENG. | PROJ.MGR. | MF |
|---|---|---|---|---|---|---|---|---|---|
| 3 | 10/29/96 | AS BUILT | RLD | | | | | | |
| 2 | 10/15/96 | REVISED MANHOLE DIMENSIONS AND PROFILE | JBH | | | NGC | ESG | | |
| 1 | 06/20/96 | REVISED SECTIONS, ADDED NOTE 3, CORRECTED PROFILE | JGH | GDE | SGA | NGC | ESG | | |
| 0 | 05/20/96 | ISSUED FOR CONSTRUCTION | RA | | | | | | |

| | |
|---|---|
| DRAWN BY RLDAVIDSON | CHECKED BY RLDAVIDSON |
| DESIGN SUPV. RLDAVIDSON | RESP. ENGR. STAN ATKINSON |
| CHIEF DISC. ENGR. NIZOM GHANTOUS | MGR. OF ENGR. S.B. BARNES |
| PROJECT ENGINEERING MANAGER L.P. SULLIVAN | |
| PROJECT MANAGER E.S. GHANTOUS | |
| IN CHARGE S.B. BARNES | |

PMNC, A JOINT VENTURE
PARSONS MAIN
OF NEW YORK, INC.

CLIENT/PROJECT TITLE

BROOKLYN NAVY YARD
COGENERATION
PARTNERS, L.P.

B-7

ELECTRICAL
138KV HPGF CABLE PLAN
SHEET 4
NAVY YARD AREA

SCALE 1"=20'-0"

MAIN'S DWG. NO. 520698-U-01D

REV 3

/s34/520698/el/bnu01d.dgn
30-OCT-1996 07:31

ARCH HVAC I & C ELECT MECH CIVIL STRUC | ARCH HVAC I & C ELECT MECH CIVIL STRUC | ARCH HVAC I & C ELECT MECH CIVIL STRUC | ARCH HVAC I & C ELECT MECH CIVIL STRUC | ARCH 2 HVAC I & C ELECT MECH CIVIL STRUC | ARCH 1 HVAC I & C ELECT MECH JGH CIVIL STRUC | BJK ARCH HVAC I & C ELECT MECH CIVIL STRUC