

Appendix 4-B: Methodology Statement for Trenching - Duct Bank - Tie-in

CONTAINS REDACTED INFORMATION IN CASE 10-T-0139



Risk Assessment & Method Statement-Trenching -Duct Bank - Tie-in

CHPE

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List of Terms and Abbreviations

1 Introduction

NKT has been appointed as the supply and install contractor for the Champlain Hudson Power Express (CHPE) project. NKT shall fulfil the role of Engineering, Procurement, and Construction (EPC) contractor for marine installation and transitions on behalf of CHPE. The project involves a high voltage direct current (HVDC) system to be installed, linking hydroelectric power from Quebec, Canada to New York City by way of overland and underwater cables.

2 Scope and purpose

This Risk Assessment Method Statement (RAMS) is to safeguard all personnel within the working party undertaking the task ensuring they do so in a safe and controlled manner. All operations shall be conducted following NKT policies and procedures, CHPE policy and procedures and current legislative requirements.

NKT via our civils sub-contractor will install a ducted system to allow installation of HVDC and fibre optic cables at the water-to-land cable transition at the shore of the Harlem River. The ducted system shall be installed from landfall at the bulkhead on the Waste Management site in Harlem, NY, through to the vault installed by Kiewit the same property. The works involve work across various terrains and will be carried out in line with principles and controls stated in the Soils and Materials Management Plan and the Spill Prevention, Control, and Countermeasure (SPCC) Plan both of which form part of the relevant Environmental Management and Construction Plan (EM&CP) package. Activities covered in this document include – excavation of trench, installation of bedding materials, installation of ducting, placement of surround and associated marker boards and tapes and backfill. NKT shall employ their civils contractor to carry out the works. It is expected that the civil sub-contractor will be a company local to the tri-state area, based in New Jersey, with valuable experience and expertise working the types of environment to be encountered in this specific location. This document sets out the methods and controls relevant to the excavation and installation of the ducted system.

3 Planned date and durations

Trench and duct installation is currently programmed to be undertaken from October 2024 through to December 2024.

3.1 Project working hours

| Monday – Friday | 0700-1900hrs | | |
|---|---|--|--|
| Saturday | 0800-1800hrs (no loud works until 0900) | | |
| Sunday | 0900-1800hrs (no loud works until 1000) | | |
| Construction may take place on public holidays. | | | |

Table 1- Project working hours

4 Logistics and traffic management

4.1 General

While working on or adjacent to any public highway New York State Department of Transportation (NYSDOT) requirements will be implemented. All site personnel need to be vigilant when driving onto or off public highways. If the line of sight is impaired then please report to site management to rectify.

Traffic control shall always be adhered.

Parking is only permitted within the designated areas as agreed with NKT / CHPE all vehicles shall be reversed parked.

A road sweeper may be used to clean the immediate roads if deemed necessary.

The speed limit of 15MPH for all vehicles with the approach areas, reduced to 5MPH in live work areas.

4.2 Deliveries Access and Egress to site

Involved staff shall utilize Lincoln Ave. as main access route to the site.

All deliveries / staff shall be briefed on agreed access points and restrictions prior to their arrival at site.

All deliveries shall be planned and coordinated with NKT and to ensure minimal impact to surrounding area and avoid any clashes or crowding at site.

All site traffic shall adhere to speed limits and restrictions in place on the NYC streets network.

Parking will be available to construction personnel on-site, within the work area and temporary easement.

5 Project contacts and responsibilities

5.1 Contacts

| # | Job Title | Print Name | Contact Telephone No. | | | | |
|------|--|-------------------|-----------------------|--|--|--|--|
| 1 | NKT Project installation Manager | Kyle Kingman | (908) 432-2728 | | | | |
| 2 | NKT Site Installation Manager | Martin Hall | (718) 316-5773 | | | | |
| 3 | NKT Health, Safety, and Environmental (HSE) Advisor | Daniel Barrientos | | | | | |
| 4 | NKT Environmental Manager | Dylan Hammond | (919) 561-2002 | | | | |
| CHPI | CHPE Contacts | | | | | | |
| 7 | CHPE Project Manager | Khan Peoples | (442) 322-5745 | | | | |
| 8 | CHPE VP Marine Operations | Neil Henderson | (832) 370-1106 | | | | |
| 9 | CHPE HSE Director | Tom Cerbarano | (229) 224-8261 | | | | |

Table 2 - Site contacts

5.2 Responsibilities

The Site Manager is responsible for the safe working of the site. The relevant site Supervisor / Works manager will ensure that the procedures described in this document are understood and followed by all site personnel, with the participants signing to confirm they have attended and understood the briefing. The Health and Safety advisor shall review and monitor all works and supervision processes including RAMS to ensure compliance with site and industry safety rules and procedures.

6 Site emergency details

All accidents, incidents and near misses including any confrontation from members of the public must be reported and recorded. All must be reported as soon as possible to the NKT site manager or Health and Safety advisor. An initial notification is also required to CHPE via email or text as soon as practicable. All accidents and emergencies shall be handed in line with the NKT Emergency Response Plan (ERP).

NKT lifesaving principles shall be conveyed during induction.



Figure 11 - NKT Life Saving Principles

6.1 First Aid

Suitable and sufficient facilities will be set up and available throughout the task and will comply with all applicable laws. This will be in the form of mobile sanitation units or fixed containers.

First aid kits will be available within NKT works areas. The main first aid station, complete with a defibrillator, will be available in the temporary jobsite office.

All first aid and life-saving equipment will be marked and clearly visible.

Nearest Hospital is located at:

NYC Health + Hospitals/Harlem 506 Lenox Ave, New York, NY 10037

Table 3 - Hospital locations

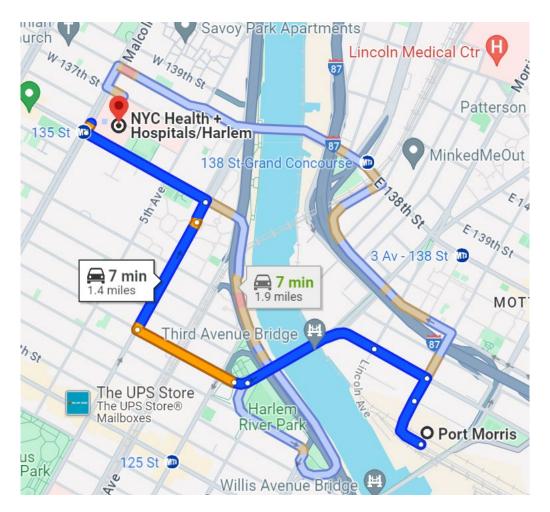


Figure 22 - Route to closest hospital

7 Sequence of works

7.1 Tools and Equipment

The following tools and equipment are anticipated to be utilized during this segment of construction:

- Layout tools (Tape measure, stringline, marking paint, stakes, hammer)
- Laser level, receiver, grade rod.
- Wrenches for flange connection, vault seals
- Hand tools (shovels)
- Ladders for trench access
- Fusing machine

- Lifting equipment (straps/slings/clevis's)
- Boards, nails, caution tape to create work zone
- Excavator
- Jumping jack compactor

7.2 Prestart commencement

- All members of staff and workforce MUST have a site induction specific to the site which will include welfare arrangements and emergency details as well as outlining minimum personal protective equipment (PPE) for the site. PPE will include gloves, safety glasses, hi-vis jacket, and lace up safety boots (no riggers), at a minimum.
- Any additional PPE stated in the relevant risk assessment must be worn if identified for a task.
- All those on site to carryout tasks shall provide a copy of their proof of competence via recognised card or certification, as required.
- A full briefing on this method statement/ risk assessment will be carried out where all briefed will be given the opportunity to raise any concerns or further clarifications which will lead to all inducted persons signing up to acknowledge they understand and shall adhere to the full context of the methods and controls within.
- A daily Take 5 risk/task assessment will be completed in advance of any works by the
 relevant Site Supervisor. This shall also be completed at the start of each working day.
 The site team shall be encouraged to engage in the creation of this briefing. The contents
 will change to reflect current site conditions and any changes in the working environment.
 This will be crucial if site is shared with other parties to ensure each are aware of the other
 tasks and deliveries.
- All methods of work and substances to be used should be assessed in line with HAZCOM standards. Where required, Safety Data Sheet (SDS) and HAZCOM standards shall be implemented and relevant control measures and limitations put in place prior to commencement of works.
- Only after all the above items are completed can any access to the work site be taken.

Safe Job Analysis

Doc. ID.: Classification: Method statement Prepared by: Gunn, Andrew

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Work Area Risk Assessment – Setting to Work Brief

| etting to Work Brief: the start of each shift or prior to the commencement of any ne | new work activity, the Supervisor / T | eam Lea | ader is | | As Supervisor / Team Leader members of the working part | | | | | |
|--|--|------------|-----------------|-----------------|--|--|-----------------------------------|--|---------------|------------------------|
| sponsible for ensuring: | | | | | Supervisor / Team Leader Name: | | Signed: | | Date: | |
| All members of the working party have been fully bri work, and any additional hazards that have been ide | | | | s of | Coportion / Foun Educativitation | | oigiiou. | | Date. | |
| Relevant paperwork and safety documentation is co | | | | ers of | All members of the working | party must si | an below or | nly following a brie | efing of this | Work Area |
| the working party. | | | | | Risk Assessment and Setting | | | , | • | |
| All visitors present are fully briefed regarding the work entering the work area. | ork activities and all site hazards pr | esent pri | or to the | m | Print Name: | | Posit (e.g. B | tion in Working Party: lanksman, Operative) | Da | ate: |
| All members of the working party have been assigned. | ed specific duties | | | | Signed: | | | | | |
| etting to Work Checklist: | | Yes | No | N/A | Print Name: | | Posit | tion in Working Party: | Di | ate: |
| as safe access & egress been achieved and maintained? | | - | \vdash | | | | (e.g. B | lanksman, Operative) | | |
| as the working party been briefed regarding the planned work e the RAMS/Safety Documents available and briefed to the w | | - | | _ | Signed: | | | | | |
| as the Working Party Register been completed / signed onto b | • • • | | \vdash | | Print Name: | | Posit (e.g. B | tion in Working Party: | Da | ate: |
| e Individuals trained & competent to carry out the required tas | | _ | | | Signed: | | | | | |
| all appropriate PPE available to all members of the working p | party? | | | | Print Name: | | Posit | tion in Working Party: | D: | ate: |
| bes the work area contain any asbestos containing material? | | | | | Tillicitatile. | | (e.g. B | lanksman, Operative) | | aic. |
| as safety from the system been achieved? e items of plant/equipment/machinery suitable to undertake th | he work estaly? | | | | Signed: | | | | | |
| ave daily pre-use checks been undertaken on all plant / equipr | | | | | Print Name: | | Posit | tion in Working Party: lanksman, Operative) | Da | ate: |
| as the work area been protected to prevent access from unaut | thorised persons? | | | | Signed: | | (e.g. b | ankaman, Operative) | | |
| far as reasonably practical, ensure Slips, Trips & Fall hazard | ds are minimised? | | | | | | D' | · · · · · · · · · · · · · · · · · · · | | |
| the level of housekeeping acceptable? | O. Treffic Ciene Menual2 | _ | | | Print Name: | | (e.g. B | tion in Working Party: lanksman, Operative) | Di | ate: |
| pes the Traffic Management comply with NRSWA & Chapter 8 ave the environmental impacts been identified & control measure. | | - | | | Signed: | | | | | |
| there an inspection and test plan in place for the works? | загоз арриоа : | | | | Print Name: | | Posit | tion in Working Party: | Di | ate: |
| the answer is NO to any of the above statements | then work must not comme | nce un | til it is | safe | Cianadi | | (e.g. B | lanksman, Operative) | | |
| do so. | | | | | Signed: | | | | | |
| ake 5, review and discuss the issues with your im | | | | | Print Name: | | Posit (e.g. B | tion in Working Party: lanksman, Operative) | Da | ate: |
| nsure that an agreed safe method of working is ag arty before recommencing a work activity. | greed for the safety of you a | na tne | workin | g | Signed: | | | | | |
| dditional Comments: | | | | | | | | | | |
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Figure 3 3- Take 5 Setting to Work Brief

TNM

7.3 Construction methodology

This segment of construction involves the installation of approximately 125 feet of high-density polyethylene (HDPE) conduits in preparation for later cable pull-in and landfall. These HDPE conduits will be installed between the end of the bulkhead penetration HPDE ducts and the Transition Vault (to be installed by others).

Construction involves stripping of topsoil, excavating trenches, installing the HDPE conduit, and backfilling to subsoil level. The works also include the laying of ducting into the cable trench at specified spacing as per NKT drawings and joining where required. Trenches will be backfilled and reinstated to original ground level. Plan and profile drawings are provided as Appendix A.

The work required to install this section of HDPE conduits is described as follows:

7.3.1 Topsoil Strip

- 1. Ahead of site works, the extent of the work area shall be marked out in white marking paint. A utility locate service shall be called in advance to mark out and confirm known and unknown underground utilities as required. Prior to any topsoil being excavated the area will be scanned using ground-penetrating radar (GPR) and utilities will be located. Any utilities located within the excavation area or within the proximity of the works will be exposed by use of hand digging, hydro excavation, or vacuum excavation method to expose existing utilities to determine line and level. Located utilities will be marked on a drawing and an as-built coordinate will be recorded for future reference.
- **2.** The construction area will be inspected by the Environmental Inspector (EI) for any signs of invasive or rare, threatened, or endangered species before works commence. Any signs of such species found by the EI will be cordoned off and guidance given. On completion of the survey the EI will give confirmation to proceed with the works
- **3.** The project will adhere to the cultural resource management plan and unanticipated discovery plan during excavations.
- **4**. During the topsoil strip the site supervisor will ensure that no site personnel enter into the area. If personnel have to approach the excavator, contact shall be made with the operator via radio contact. If no radio communication is available, the first contact will be by catching the operators eye by means of waving or thumbs up, the operator will lower the dipper arm and place the bucket on the ground and engaging the lock out lever, before giving the thumbs up to approach. Once the communication has been completed the person will retreat outside the radius of the excavators working swing zone plus an additional 2m (see people equipment interface below).
- **5**. The excavators will strip the topsoil using a toothless bucket within the areas that have been marked out and the topsoil will be stockpiled using the excavator or tracked skid-steer. The depth of the topsoil within each field will vary and will be recorded by the engineer.
- **6**. Safe work guidelines will be followed whilst working within the vicinity of overhead lines and the safety zone must always be followed. During operations, no soil or other materials will be stored within an OHL safety corridor.

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7. Once the trench section of the site has been stripped of all the topsoil, the contractor will seal the stockpile by tracking in with machine tracks or smoothing surface with bucket and cover it to reduce erosion during periods of wet weather. Proper sediment control devices shall be installed as required.

7.3.2 Trench Excavation

- **1.** A site work binder will be issued by NKT which will include a copy of the RAMS, service drawings, Temporary Works Designs, Daily TAKE 5, Permits and any other related drawings/information required.
- 2. The excavation workforce shall complete the daily risk assessment (TAKE 5), which will address daily hazards and controls at the works location. Toolbox Talk meetings will be held to discuss the work and the hazards that are present. This will discuss the location/limits of the work and confirm the depth of excavation.
- **3.** The location of the duct trench will be marked on the ground using either spray paint or marker pegs by the site engineer ahead of the working party. The position of all existing ditches will be recorded by the Site Engineer and will be reinstated back to their original state on completion of the works. The area to be excavated will be clearly laid out with paint lines. The area of excavation, including excavator swing area, will be cordoned off to prevent unauthorized persons from entering the work area. Required warning signage shall be placed to indicate the excavation work.
- **4**. An 811 survey and GPR scan will be carried out over the entire area to be excavated to identify any services prior to works proceeding.
- **5**. The flange end of the existing HDPE will be located and the depth required to enter the vault with the HDPE conduit shall be determined. Using this information, the grades along the excavation path will be established and set to the grade laser.
- **6**. Excavation shall start at the vault, exposing both conduit entrances, working back towards and past the flange connection of the existing conduit a suitable distance to allow the flange end to be lowered to the proper grade.
- **7.** Excavated material will be handled, stored, and disposed in accordance with the Soils and Materials Management Plan. Proper shoring/sloping methods shall be used if required. Ladders shall be used for ingress/egress from the trench if it is deeper than 4' and be withing 25' of any worker.

7.3.3 Installation of Conduits

1. When the excavation is complete and the trench bottom prepared according to specifications, the length of HDPE conduit required to go from flange to vault shall be determined and cut. The new HDPE conduit piece shall have a flange installed by fusion machine. An inspection will be made to ensure a proper fit. Modular flex seals will be installed between the cables and conduit.

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2. After the new section of conduit is prepared and ready to be installed, a lifting sling of suitable size and length shall be attached to the conduit near the vault end. The conduit will then be guided into the vault a distance in excess of its final position. The sling will then be attached to the flange end and the conduit will be pulled back to make the flange-to-flange connection.

7.3.4 Backfilling and Restoration

- 1. After the connections have been completed, backfilling and compaction to specifications will begin. A locator tape will be placed at the designed elevation during backfill. Trenches will be backfilled using suitable material that meets requirements as per NKT Thermal Resistivity properties.
- **2.** All spoils, if any, shall be loaded out and disposed of at the designated area in accordance with the Soils and Materials Management Plan.
- **3.** Final restoration of the disturbed area will then be completed.

8 Site Health and Safety Plan

PPE must be worn at all times, including a Safety Helmet, Hi-Vis Vest or Jacket, and safety footwear. Gloves, Light Eye Protection and Hearing protection shall be available if required.

The Project Manager is responsible for the safe working of the site; the Site Manager & Site supervisor will make sure that all operations are carried out in a safe manner.

Site Personnel will adhere to the Site Safety Policies at all times with the emphasis on wearing the correct safety clothing & equipment relative to the type of operation being performed. Any additional requirements for PPE will be identified in the relevant risk assessments.

Before commencement of works, the Foreman, supervisor and/or Operations Manager will review the working conditions, risk and techniques, to ensure that RAMS adequately cover the operations.

Safety precautions, i.e. Fences, barriers, and banksman, shall be of paramount importance to prevent any possible danger to personnel and the public.

Driver/Operators are to supply copies of valid plant/vehicle documentation and plant operator training certification. No Access or Vehicle Operations shall take place without this proof.

No Person / Driver shall be allowed to Work at Height from Equipment/ Vehicles unless a reliable Working at Height (WAH) safe system of work is employed. RAMS are required.

No Vehicle, Plant, Equipment, Lifting Tackle, etc. shall be used without proof of current certification / qualifications available on site - Including means of identification for entry into Site Registers.

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Manual handling – toolbox talk to be given to all operatives. Mechanical lifting to be used for all heavy items. No loads to be lifted that an operative cannot comfortably handle. As a guide, anything in excess of 45lbs should not be lifted.

8.1 People and equipment interface

All equipment must have 360-degree vision/detection, e.g. multiple mirrors, cameras or other means to eliminate potential blind spots. In the case of excavator's, dual mirror upper/lower positions to be advocated to ensure visibility when the dipper arm is in the raised or lowered position.

Fueling of the equipment via transferring fuel from one vehicle to another is prohibited.

Carrying of passengers is prohibited in equipment unless a specially designed seat and restraint system are provided.

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Revision: Α Project ID: G19009 Approved by: Carlson, Jonas TELEHANDLER Sant interface zones Plant interface zones Plant interface you

Classification: Method statement

Gunn, Andrew

Prepared by:

Figure 44 - Equipment exclusion zones

9 Environmental

A Health, Safety, and Environmental (HSE) Advisor will carry out regular checks before work starts and work areas will be surveyed prior to equipment working or accessing each area.

All environmental incidents will be reported to NKT and CHPE as soon as possible and within 30 minutes of the occurrence. All client requirements with respect to reporting of incidents will be complied with where applicable.

Drip trays and spill kits shall be available on site. Drip trays are to be placed under all stationary equipment including pumps and generators. Any spillages will be cleaned up and reported to the

site management team immediately. Spill kits will be available in all large equipment powered by fuel.

Storage of hazardous materials will be stored in compliance with all HAZMAT standards.

Fuelling of vehicles will be done in one central place if possible. Where this cannot be possible, the fuelling of vehicles will be in line with the SPCC Plan including using secondary containment, drip trays, spill kits and fire extinguishers.

Noise will be limited to the times set out in the schedule. Machines will have the latest noise reducing mechanisms and inspected/serviced at regular intervals to make sure noise levels are kept to a minimum.

Dust will be reduced to as low as is reasonably practicable, with use of cleaning methods of tires before leaving the limit of disturbance.

All works shall be carried out in line with the EM&CP and the relevant environmental management plans.

10 Quality

Throughout the work, the contractor shall follow and comply with NKT Quality Plans and Inspection & Test Plans (ITP).

Check sheets relevant to this task are listed below and referenced in the RAMS:

IR03-1 Dry Density Testing

IR09 – Duct installation -open cut

IR04 - Commencement of excavation works

IR11 – Duct installation trench

IR11:1 – Duct Proving

11 List of Appendices

Appendix A - Plan & profile drawings

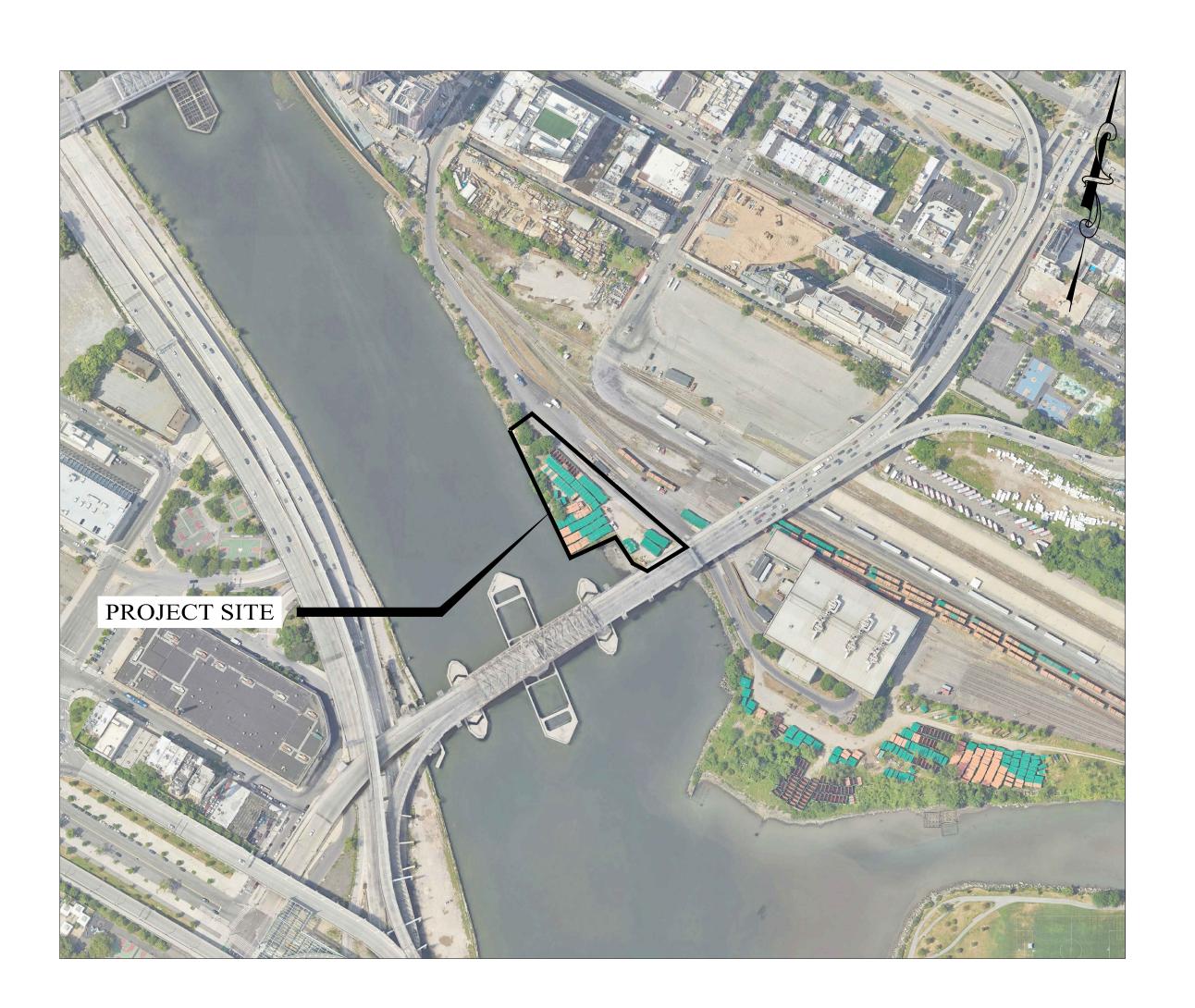
Appendix B - Site Briefing Register

Appendix A - Plan & profile drawings

This Appendix contains confidential commercial information, trade secrets, and/or proprietary information and as such is entitled to confidential treatment under Section 87(2) of the New York State Public Officers Law and the Commission's regulations (16 NYCRR 6-1). An unredacted version of this document has been submitted under separate cover to the Records Access Officer.

CHPE HARLEM RIVER BULKHEAD PENETRATION SITE

BOROUGH OF BRONX, NEW YORK MAY 2024



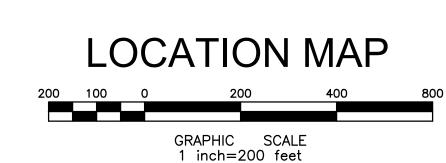
| | | INDEX OF SHEETS |
|-----|-------|---|
| NO. | SHEET | DESCRIPTION |
| 1 | G-001 | COVER SHEET |
| 2 | G-002 | NOTES |
| 3 | V-101 | EXISTING CONDITIONS PLAN |
| 4 | G-003 | PLAN AND PROFILE FOR 12-INCH HDPE PIPE OPTION A |
| 5 | G-901 | CONSTRUCTION DETAILS I |
| 6 | G-902 | CONSTRUCTION DETAILS II |
| | | |

NOTICE TO CONTRACTOR

ATTENTION OF THE CONTRACTOR IS DIRECTED TO THE FACT THAT THE APPROXIMATE LOCATIONS OF KNOWN UTILITY STRUCTURES AND FACILITIES THAT MAY BE ENCOUNTERED WITHIN AND ADJACENT TO THE LIMITS OF WORK AREA ARE SHOWN ON THE PLANS. THE ACCURACY AND COMPLETENESS OF THIS INFORMATION IS NOT GUARANTEED BY THE ENGINEER, AND THE CONTRACTOR IS ADVISED TO VERIFY, IN THE FIELD, ALL THE FACTS CONCERNING THE LOCATION OF THESE UTILITIES AND OTHER CONSTRUCTION OBSTACLES PRIOR TO THE START OF CONSTRUCTION. FURTHER, THE CONTRACTOR SHALL NOTIFY THE ENGINEER, IN WRITING, PRIOR TO THE START OF CONSTRUCTION, OF ANY DISCREPANCIES WHICH MAY EFFECT THE PROJECT DESIGN.

THE CONTRACTOR SHALL CONTACT THE RESPECTIVE AGENCIES OR DEPARTMENTS FOR UTILITY MARKOUT <u>PRIOR</u> TO THE START OF CONSTRUCTION.

NOTES:
1.— AERIAL OBTAINED FROM GOOGLE EARTH PRO IMAGERY ON DECEMBER 15, 2023.



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E HARLEM RIVER BULKHEAD PENETRATION SITE

PROJECT NUMBER: 23-1207

DATE: 05-07-2024

SCALE: AS SHOWN

G-001

 Doc. ID.:
 Classification:
 Method statement
 Prepared by:
 Gunn, Andrew

 Revision:
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 Project ID:
 G19009
 Approved by:
 Carlson, Jonas

Appendix B - Site briefing register

| NWT - I - I - I - I - I - I - I - I - I - | | | | | |
|---|-----------------|----------------|------------------------|--|--|
| NKT Briefing R | | Site: | | Project No: | |
| understand and | | the risk asses | | egister to confirm that they statements (where applicable) | |
| as co | ssessments shou | ld cover gene | ral hazards, hazards s | ent for all tasks and activities. Risk specific to the site, and details of the nethod statement is not a substitute for | |
| Activity: | | | Risk Assessm | ent or Method Statement Referenc | |
| Date | Operative Nan | ne (Print) | Operative Compan | y Operative Signature | |
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 Approved by:
 Carlson, Jonas

Table of Modifications

| Rev. | Date | Prepared by | Description |
|------|------------|----------------|-------------------------|
| Α | 04/29/2024 | Hammond, Dylan | First issue of document |