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May 3, 2024

Patrick J. Van Rossem
Principal Program Manager
National Grid
Site Investigation & Remediation
Department
175 E. Old Country Road
Hicksville, NY 11801

Pre-Design Investigation Work Plan
Metropolitan Works Former Manufactured Gas Plant (MGP) Site
Brooklyn, New York
NYSDEC Site No. 224046

Dear Mr. Van Rossem:

As requested, attached is the Pre-Design Investigation (PDI) Work Plan that summarizes additional PDI work for the bulkhead/ barrier wall located along the Metropolitan former MGP Site. The PDI work is proposed to support development of additional design details for the bulkhead design. The planned work includes in water work within the 11th Street Turning Basin, and work on land adjacent to and inside the existing building formerly occupied by the Pathmark Supermarket. The goal of the PDI will be to collect structural, utility, and survey data and information to support the Interim Remedial Measure (IRM) design for the proposed bulkhead/ non-aqueous phase liquid (NAPL) barrier wall along the approximately 500-feet of alignment shown on the attached **Figure 1**. Additional design details will also be developed for the planned underpinning of the former Pathmark Building (the building) shown on **Figure 2**.

Background

A Remedial Investigation (RI) was conducted over multiple mobilizations between April 2010 and April 2012 and a Supplemental Remedial Investigation (SRI) was conducted during a single mobilization between March and April 2017. The final RI Report was submitted to and approved by the NYSDEC and NYSDOH in October 2014. The final SRI Report was submitted to and approved by NYSDEC and NYSDOH in May 2020.

The existing bulkhead at the Site exhibits signs of age/damage. Some timbers may have up to one inch of section loss, concrete shows some cracking and spalls, and there is corrosion of steel components. Upper areas of the bulkhead are heavily deteriorated. The concrete corner entering the 11th basin adjacent to the existing building shows signs of settlement. Along the portions of the Gowanus Canal adjacent to the Site, the bulkhead and associated retained fill and deck are missing. The proposed bulkhead/ NAPL barrier wall includes installation of a new bulkhead outboard of the existing bulkhead along the approximately 500 feet long alignment. To support the former Pathmark Building during installation of the wall, structural underpinning is proposed along the wall lengths identified in **Figure 1**.

Previous PDI Work

Previous PDI work was undertaken in accordance with PDI Work Plan dated May 11, 2021 and revised February 3, 2022 following review by NYCDEC and NYSDOH. This work included in-water and upland

work, including advancement of geotechnical borings in the water and on the site, completion of an obstruction evaluation via probing along the proposed bulkhead/ NAPL barrier wall alignment, a geophysical survey to locate buried utilities, and excavation of test pits along the western and southern exterior walls of the former Pathmark building. In-water work was completed in May and June 2021 for advancement of the geotechnical borings and in December 2021 and January 2022 for the probing investigation along the bulkhead/ NAPL barrier wall. The previous upland PDI work was completed in June through August 2022 following execution of an access agreement with the property owner. The results of these investigation activities have been incorporated into the design documents prepared by AECOM (i.e., the AECOM May 12, 2023 design drawings that were reviewed on the January 4, 2024 conference call).

PDI Work Plan Scope of Work

To further support development of the bulkhead/ NAPL barrier wall and underpinning design, additional data will be collected through the completion of additional PDI investigation of the building during the PDI. This work will be undertaken during the pre-mobilization activities prior to installation of the bulkhead/ NAPL barrier wall. During a conference call with the NYSDEC and the property owner on January 4, 2024, it was requested that this work be completed in advance of the construction phase of the work. An access agreement to implement the proposed PDI work is currently under review by the property owner.

Planned field work includes the following:

- Structural inspection of the building structure, the grounds, and the land-side features of the bulkhead that are accessible by walking,
- Geophysical survey to identify subsurface conditions and identify buried utilities or other features,
- Excavation of two test pits outside the building (along the wall facing the Gowanus Canal) and approximately four to five test pits inside the building (along wall facing the 11th Street Turning Basin),
- Sonic Echo Impulse Response (SE/IR) testing will be performed if possible (in locations where piles are detected and are accessible for use of the testing equipment) to determine pile lengths,
- Foundation pile investigation in turning basin utilizing a small boat during low tide,
- Stormwater outfall inspections of outfalls identified within the canal and turning basin,
- Upland survey to provide utility locations and locations of site features identified during this PDI work,
- Restoration of PDI locations,
- Management of Investigation Derived Waste (IDW) if applicable, and
- Community air monitoring in accordance with the project CAMP (to be updated based on the currently proposed PDI scope of work).

Pre-Work Notifications

Prior to accessing the building foundation along the turning basin by boat, AECOM's subcontractor will submit a Local Notice to Mariners (LNM) in accordance with the requirements of the United States Coast Guard (USCG). A blank copy of the USCG LNMs is included in Attachment 1. The LNMs will be submitted a minimum of two weeks prior to the start of work and updated if the dates of work change.

The geophysical survey subcontractor will submit a utility location request to New York 811 a minimum of 2 full working days and not more than 10 working days prior to the work start date. The New York 811 utility location request will also be submitted prior to the test pit excavation work.

Structural Inspection

AECOM will visually inspect the building structure, the grounds, and the land-side features of the bulkhead that are accessible by walking. A detailed inspection of the building will be completed, requiring access to interior and exterior areas and access to the building roof, and will include a camera/ video survey and photographs of key features. Access to the entire building footprint within the Sunbelt tenant space will be needed. AECOM will utilize a scissor lift, supplied by AECOM's subcontractor, to access the superstructure for this inspection, and will use a ladder (also supplied by AECOM subcontractor) on the mezzanine level. AECOM anticipates being able to work around the tenant's equipment and materials without the need for the tenant to move equipment or materials. The structural inspection will also require access to the tenant space occupied by Big Reuse, with use of a ladder or by making observations from the ground (the scissor lift will not be utilized in the Big Reuse space).

Utility Identification and Geophysical Survey

AECOM and its subcontractor will utilize geophysical survey equipment to identify subsurface conditions and identify buried utilities or other features. The survey will include locating utilities in the areas of the proposed test pits (interior and exterior) shown in **Figure 2** and the area along the land-side of the existing bulkhead (i.e., to identify or confirm the locations of utilities behind/ penetrating through the bulkhead). Test pit locations on land will be cleared for utilities following National Grid pre-clearance protocols involving geophysical practices and low energy excavation techniques.

Test Pit Excavation and Backfill

AECOM and its subcontractor will complete two test pits outside the building (along the wall facing the Gowanus Canal) and four to five test pits inside the building (along the wall facing the 11th Street Turning Basin) at locations shown in the attached **Figure 2**. At each test pit location, the concrete slab will be saw cut and surface materials (concrete slab) will be removed in an approximately 5-feet wide by 5-feet long area. Soils within the test pit will be removed by hand excavation or by using a small excavator to inspect the building foundation and determine the foundation type (i.e., shallow or pile supported), construction materials, and dimensions. The depth of excavation is anticipated to be approximately 4 to 6 feet to uncover the bottom of the building footings or pile caps. Following test pit observations and documentation (including SE/IR testing, if possible, as described below), soils will be returned to the excavation and compacted in 12-inch loose lifts and the building slab will be restored.

Safe work practices, including engineering controls, will be used during advancement of test pits to ensure worker safety and a clean work area. Dust, odor, and vapors during concrete removal will be controlled using exhaust ventilation, dust collection systems, and/or wet spraying. Soils removed from each test pit will be temporarily staged on plastic sheeting next to each test pit. At the end of each workday and following test pit restoration, the area will be swept to remove dust, soil, and debris resulting from the PDI activities.

If significantly impacted soils are identified during excavation of test pits (i.e., by visual observations), such impacted soils will be segregated from other soils, staged on plastic sheeting, and containerized and transported offsite for disposal at an approved disposal facility. Odor suppressants and/or an odor suppression system will be present on-site during test pit operations and will be utilized in the event significantly impacted soils are encountered. Impacted soils will also be covered. Granular backfill will then be obtained from an approved source and will be used to restore the test pit(s).

Sonic Echo Impulse Response (SE/IR) Testing

A representative from Olsen Engineering will be on site as a subcontractor to AECOM. If piles are encountered, Olsen will perform SE/IR testing if possible, to estimate pile lengths. This is a non-destructive test that requires the pile cap and pile to be exposed to perform the testing. The testing will be performed from the sides of the exposed piles if determined to be timber, using an accelerometer attached

to an aluminum block that is then mounted to the top of the pile cap or on another mounted metal block. This requires that the top 1 foot of the pile be exposed on one side. If the pile is found to be concrete, the testing can be performed from the top of the pile cap assuming good contact with the top of the pile. If multiple piles are exposed in the same test pit, an SE/IR test will be conducted at each identified and suitably exposed pile.

Foundation Pile Investigation in Turning Basin

AECOM and its subcontractor, utilizing a small boat during low tide, will attempt to investigate the exposed concrete blocks present below the building's concrete grade beam located along the turning basin. Rocks and soil will be moved away from the base of one or more of these blocks to determine whether a pile exists underneath. If piles are encountered, Olsen will perform SE/IR testing to determine pile lengths as described above. This task will not require internal access to the building.

Restoration

After backfilling the test pits the concrete or asphalt surface will also be restored to match pre-existing conditions to the extent feasible.

Site Surveying

An upland site survey will be conducted to provide locations of site features including utilities newly identified and test pit(s) advanced during the PDI. Surveying will be completed by a licensed New York surveyor. Horizontal locations will be reported in the New York State Plane Coordinate System, Long Island Zone (NAD83) in feet. Vertical measurements will be reported in NAVD88 in feet, to the nearest 0.1 feet.

Management of Investigation Derived Waste (IDW)

If significantly impacted soil is identified during test pit excavation, investigation derived waste (IDW) characterization analysis will be performed to support disposal of the impacted soil and personal protective equipment at an approved off-site facility.

Community Air Monitoring

Work will be conducted in accordance with a Community Air Monitoring Plan (CAMP) developed in accordance with the Generic CAMP protocols presented as Appendix 1A of the New York State Department of Environmental Conservation DER-10 Guidance Document (May 2015). Since test pitting will occur within 20 feet of the existing on-site building, special requirements will be implemented in addition to the general CAMP requirements to protect people and businesses potentially located within 20 feet of ground-intrusive work areas. These special requirements, as recommended by NYSDOH during the previous PDI work, via an email from NYSDEC on January 5, 2022, include the following:

An additional monitoring station will be placed between work area and walls of occupied structures (for the exterior test pit) or between the work area and the offices or work area of current tenants (for interior test pits). During exterior test pitting activities, the additional monitoring station will be placed adjacent to each test pit and against the wall (between the test pit and air intakes if present).

As noted above under Test Pit Excavation and Backfill, impacted soils, if encountered, will be staged on plastic sheeting and covered. Odor suppressants will be present onsite during test pitting and will be utilized if required.

If total volatile organic compounds near the outside walls of the building or between the test pit and the tenant's work area (as indicated by the additional monitoring station) are 1ppm above background, the field team will stop work, implement mitigation measures as needed, and continue monitoring at the

outside wall and near intakes if present. Test pits will be positioned away from intakes to the extent practicable.

If total particulate concentrations near the outside walls of the building or between the test pit and the tenant's work area reach 150 µg/m^3 above background, the field team will stop work, implement mitigation measures as needed, and continue monitoring.

Deliverables

Following completion of the investigation, the results of the PDI will be incorporated into the 90% design documents for the bulkhead/ NAPL barrier wall IRM.

Schedule

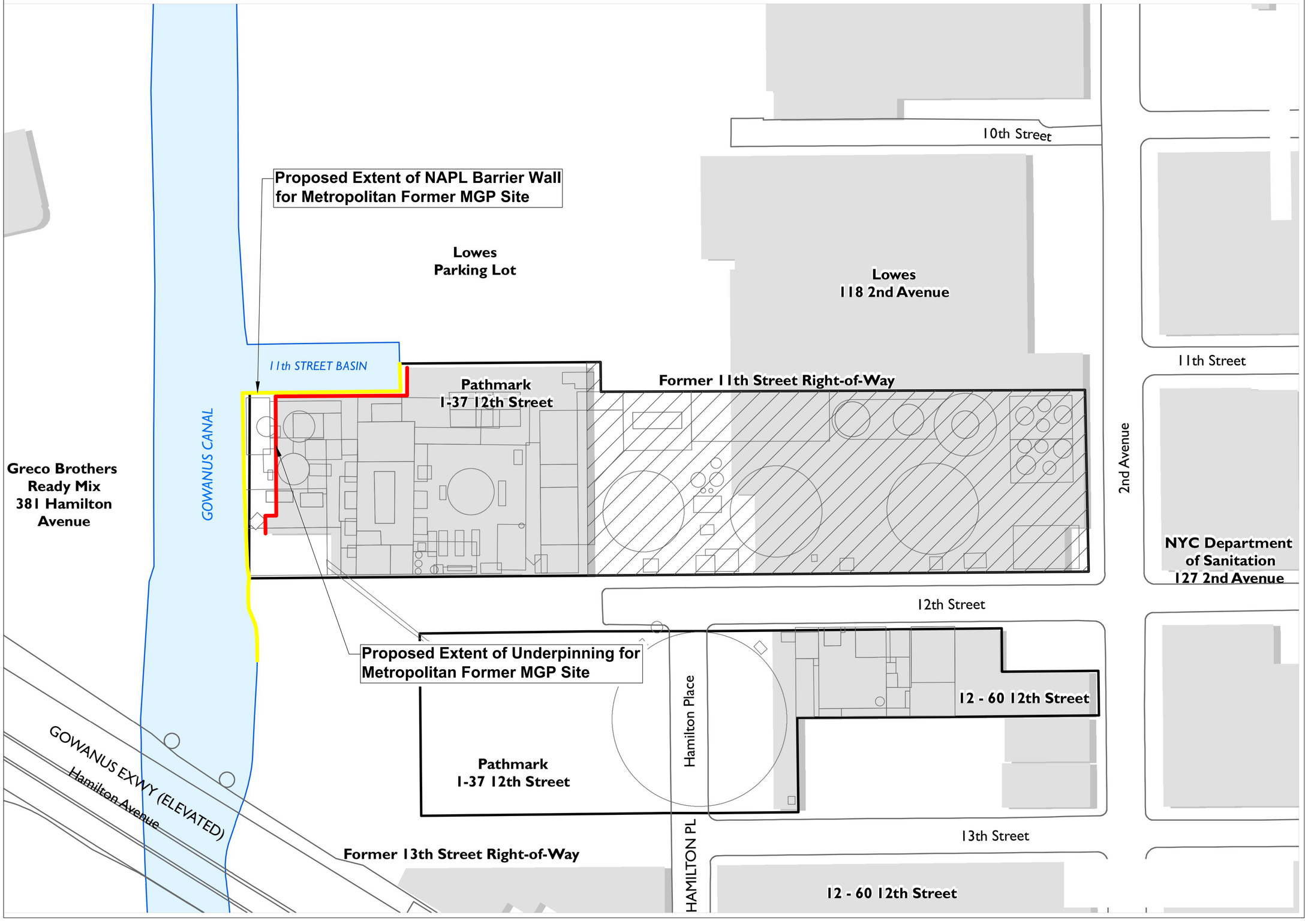
The field activities will be completed following the approval of this PDI Work Plan by NYSDEC and receipt of the access agreement that was requested from the property owner.

Sincerely,

Brenda D. McEver, PE
AVP, Senior Project Manager
AECOM
T: 412.808.1842
E: Brenda.McEver@aecom.com

enclosures: Figures
Attachment 1 - Local Notices to Mariners

cc: J. Alonzo, deMaximis
M. Gardner, AECOM



AECOM

PROJECT

BULKHEAD/NAPL BARRIER WALL
INTERIM REMEDIAL MEASURE
K-METROPOLITAN WORKS FORMER MANUFACTURED GAS PLANT SITE
NYSDEC SITE NO. 224046
ORDER ON CONSENT INDEX NO. A2-0552-0606

CLIENT

NATIONAL GRID
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CONSULTANT

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N E W S

25 0 50
GRAPHIC SCALE IN FEET

REGISTRATION

ISSUE/REVISION

I/R	DATE	DESCRIPTION
0	05/12/2023	90% DESIGN

PROJECT NUMBER

60655439

SHEET TITLE

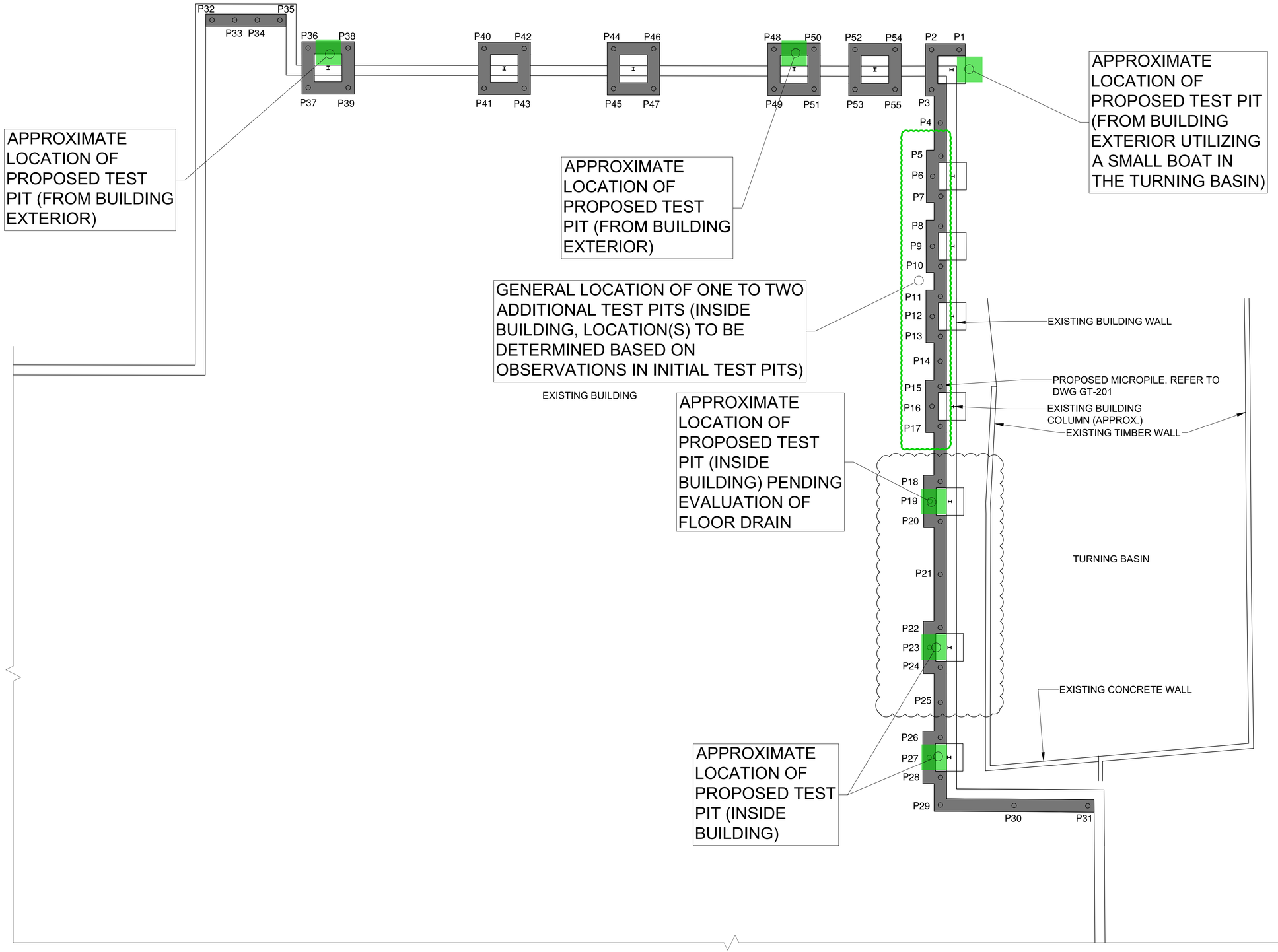
METROPOLITAN FORMER MGP SITE BULKHEAD AND UNDERPINNING

SHEET NUMBER

FIGURE 1

Project Management Initials: Designer: JTS Checked: BDM Approved: MJG ANSI D 22" x 34"

Last saved by: SIRVENTJ(2024-04-10) Last Plotted: 2022-10-12
Filename: C:\USERS\SIRVENTJ\AECOM\METRO - BULKHEAD BARRIER WALL DESIGN\900_CAD_GIS\910_CAD\25 SKETCHES\PDI FIGURES\FIGURE 1 - METROPOLITAN FORMER MGP SITE BULKHEAD.DWG



AECOM

PROJECT

BULKHEAD/NAPL BARRIER WALL
INTERIM REMEDIAL MEASURE
K-METROPOLITAN WORKS FORMER MANUFACTURED GAS PLANT SITE
NYSDEC SITE NO. 224046
ORDER ON CONSENT INDEX NO. A2-0552-0606

CLIENT

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5 0 10
GRAPHIC SCALE IN FEET

REGISTRATION

ISSUE/REVISION

I/R	DATE	DESCRIPTION
0	05/12/2023	90% DESIGN

PROJECT NUMBER

60655439

SHEET TITLE

UNDERPINNING STRUCTURE

SHEET NUMBER

S-102

Project Management Initials: Designer: JTS Checked: BDM Approved: MJG ANSI D 22" x 34"

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Attachment 1

Local Notices to Mariners

Homeland Security

U.S. COAST GUARD

First Coast Guard District

LNM Information Form

DATE: _____

NAME: _____

PHONE NUMBER: _____

EMAIL ADDRESS: _____

COMPANY NAME: _____

TYPE OF WORK: _____

_____

LOCATION (STATE AND WATERWAY) WHERE WORK WILL BE DONE: _____

_____

LAT/LONG: (degrees, minutes, seconds & thousandths) _____

_____

BEGINNING/ENDING DATES: _____

HOURS OF OPERATION (DAYS PER WEEK, HOURS PER DAY): _____

_____

EQUIPMENT ON SCENE: _____

_____

RADIO FREQUENCY VESSELS CAN BE CONTACTED ON (IF USED): _____

_____

PASSING ARRANGEMENTS/Time to move vessels to not impede navigation:

_____

Homeland Security

U.S. COAST GUARD

First Coast Guard District

Pease fax form two weeks before the work is to begin to: Mary Swanson @ 617-223-8094 or email: D01-SMB-LNM@uscg.mil . The LNM (Local Notice to Mariners) can be found on the following website: http://www.navcen.uscg.gov