INNOVATIVE | EXPERIENCED | RESPONSIVE

Periodic Review Report

Review Period July 2023 – July 2024

OCA LIC Fifth Street Mixed-Use Housing Site 5-20 46th Road,
Long Island City, Queens, New York 11101

NYSDEC BCP # C241098

Submitted to:
OCA LIC, LLC O'Connor Capital Partners
535 Madison Avenue, 23rd Floor
New York, New York 10022

Submitted by:
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August 2024

Project 209014
Volume 1 of 1

Prepared by Jacob M. Strauss, PE
Senior Project Engineer

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Certification

I, Jacob M. Strauss, certify that I am currently a New York State Registered Professional Engineer. In accordance with the DER Technical Guidance for Site Remediation (DER-10) Section 1.5 Certification Requirement 1.5(b)5, for each institutional or engineering control identified for the Site, I certify that all of the following statements are true:

(a) the institutional control and/or engineering control employed at this Site is unchanged from the date the control was put in place, or last approved by NYSDEC;

(b) nothing has occurred that would impair the ability of such control to protect public health and the environment;

(c) nothing has occurred that would constitute a violation or failure to comply with any Site Management Plan for this control;

(d) access to the Site will continue to be provided to NYSDEC to evaluate the remedy, including access to evaluate the continued maintenance of this control.

By: EWMA Engineering Services LLC

NYS Certificate of Authorization No. 0016891

Jacob M. Strauss, NYSPE No. 097765

EWMA Project No. 209014

8/12/2024

Note: It is a violation of Article 145 of New York State Education Law for any person, unless he is acting under the direction of a licensed professional engineer, to alter an item of this Periodic Review Report in any way. If an item 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.

1. Executive Summary

1.1 Containment Conditions and Remedial History

The Site is located within a formerly industrial portion of Long Island City, about ¼-mile to the east of the East River. Historically, it was almost entirely covered with buildings until surface demolition was completed in 2008. The approximately one-acre Site is currently divided into two parcels: Market Rate Housing (western side of the Site) and Student Housing (eastern side of Site). Construction is complete on the Market Rate Housing Parcel, while CUNY's site representative has informed EWMA that site development of the Student Housing Parcel is on hold. EWMA confirmed during their May 2024 site inspection that the cap on the Student Housing Parcel is in place and in good condition. Any changes in site development status will be noted in future PRR submittals.

The subsurface geologic conditions beneath the Site consist of layers of unconsolidated fill and natural deposits transitioning to underlying bedrock. The unconsolidated layers from shallow to deep include: historic fill, peat and clay, and sand with discontinuous seams of finer grained soils.

Two hydrogeologic units were defined for the purpose of designing and implementing remedies for groundwater beneath the Site. The uppermost unit consists of a perched groundwater zone in historic fill above the semi-confining peat and clay layer (Perched Unit). Beneath the semi-confining layer is a naturally occurring sand deposit (Lower Sand Unit).

During the remedial investigation, soil and groundwater contamination, including metals, SVOCs and VOCs, was detected above NYSDEC applicable standards. LNAPL was detected in the Perched Unit beneath the Market Rate Housing Parcel, and in the Lower Sand Unit beneath the Student Housing Parcel. The source of the Lower Sand Unit LNAPL appeared to be upgradient and off-site along the eastern border of the Site. The sources of the rest of the contaminants and the Perched Unit LNAPL appeared to be on and off-site historic manufacturing operations, on-site USTs, and site-wide historic fill materials.

The primary remedial effort consisted of site-wide excavation to an average depth of 7 feet below ground surface. Additional remedial efforts have included containment and extraction of Lower Sand Unit LNAPL, and containment and extraction of Perched Unit LNAPL. As of February 2015, remedial efforts in both Lower Sand and Perched Units are complete.

This Periodic Review Report (PRR) is issued for the July 2023 through July 2024 review period.

1.2 Effectiveness of the Remedial Program

LNAPL removal in the Lower Sand Unit was successfully completed with no significant measurable LNAPL remaining, and belt skimmer extraction was ceased per written authorization from NYSDEC in February 2015. As of March 2015, all removal area wells in the Lower Sand Unit previously containing LNAPL were abandoned and LNAPL removal work is complete.

LNAPL removal in the Perched Unit was successfully completed with no significant measurable LNAPL remaining, and vacuum extraction was ceased per written authorization from NYSDEC in January 2013. Only one Perched Unit perimeter monitoring well (PW-11) has measurable LNAPL. This well is both upgradient of the Market Rate Housing Parcel and has LNAPL with a different chemical fingerprint when compared to on-site LNAPL. Therefore, NYSDEC approved cessation of perimeter groundwater LNAPL gauging of PW-11 on August 5, 2014 via email, and the NYSDEC will undertake appropriate measures to address LNAPL in that well.

1.3 Compliance Status

The Site is being managed in compliance with the NYSDEC approved SMP.

1.4 Conclusions and Recommendations

During the review period from July 2023 through July 2024, the SMP has been implemented and the remedy, along with the institutional and engineering controls, continues to be protective of human health and the environment.

LNAPL Removal and Monitoring Efforts – Perched Unit LNAPL removal is complete, as approved by the NYSDEC in January 2013. Perched Unit groundwater monitoring, which consisted of quarterly perimeter well gauging and groundwater sampling for targeted dissolved contaminants, is also complete, as approved by the NYSDEC in August 2014. Lower Sand Unit LNAPL removal work is complete, as approved by the NYSDEC in February 2015. Lower Sand Unit groundwater monitoring, which consisted of quarterly perimeter well gauging and groundwater sampling for targeted dissolved contaminants, is also complete, as approved by the NYSDEC in February 2015.

Other SMP Elements – Operation and monitoring information as specified in the SMP for this PRR period is detailed in this document.

Periodic Review Report Schedule – The next PRR will be prepared to cover the July 2024 through July 2025 reporting period.

Site Management Plan Implementation – Based on the continued need for institutional controls and engineering controls, it is recommended that the SMP remain in effect.

2. Site Overview

2.1 Description

The approximately one-acre Site is an L-shape with about 300 feet of frontage along 46th Road, 200 feet of frontage along 5th Street, and 100 feet of frontage along 47th Avenue. The western portion of the Site is designated as the Market Rate Housing Parcel, while the eastern portion of the Site is designated as the Student Housing Parcel. Refer to **Figure 1** for a depiction of the Site and tax parcel boundaries. Additional information about re-configuration of the Site tax parcels from the designations existing at the time of the Remedial Action Work Plan and Final Engineering Report is provided in **Appendix 1**. Prior to remediation, buildings at the Site housed retail and commercial operations that included a varnish manufacturing operation, an electrical contractor, an art studio, furniture marble and granite works, sheet metal duct works, and others. By the end of 2008, all of the buildings had been razed and in 2009 the entire ground floor slab was demolished and removed. At present, construction of a multi-story residential building is complete on the Market Rate Housing Parcel, while CUNY's site representative has informed EWMA that site development of the Student Housing Parcel is on hold, and the temporary cap remains in place along with perimeter fencing that surrounds that area of the site. Any changes in site development status will be noted in future PRR submittals.

Prior to remediation, a historic fill layer at the Site varied from about 10-12 feet in thickness, underlain by a peat and clay layer varying from about 1-3 feet in thickness, and the underlying silty sand layer that is typically about 20-feet thick, and the underlying bedrock is at a typical depth of 32 feet below ground surface. The seasonal high water table during storm events may rise to within about 5 feet of adjoining pavement surface, and the typical water level is about 7 feet below adjoining pavement surface.

During the remedial investigation, and prior to Site remediation, soil and groundwater contamination, including metals, SVOCs and VOCs, was detected above NYSDEC applicable standards. LNAPL was detected in the Perched Unit above the peat and clay layer in the western half of the Site, and in the Lower Sand Unit beneath the peat and clay layer in the eastern half of the Site. The source of the Lower Sand Unit LNAPL was up-gradient and off-site. The sources of the rest of the contaminants and the Perched Unit LNAPL (other than in PW-11) appeared to be on and off-site historic manufacturing operations, on-site USTs, and site-wide historic fill materials.

2.2 Chronology, Remedy Components, Remediation Goals, and Remedy Changes

A chronology of significant site compliance milestones is provided as follows:

- The Site RIR was completed in December 2008;
- the RAWP was completed in July 2009;
- the site-wide excavation work was completed in the June 2010; and
- the Certificate of Completion was issued in December 2010.
- The December 2010 through July 2012 final PRR was submitted in October 2012;
- the August 2012 through July 2013 final PRR was submitted in August 2013;
- the August 2013 through July 2014 final PRR was submitted in August 2014;
- the August 2014 through July 2015 final PRR was submitted in July 2015;
- the August 2015 through July 2016 final PRR was submitted in July 2016;
- the August 2016 through July 2017 final PRR was submitted in August 2017;
- the August 2017 through July 2018 final PRR was submitted in August 2018;
- the July 2018 through July 2019 final PRR was submitted in August 2019;
- the July 2019 through July 2020 final PRR was submitted in August 2020;
- the July 2020 through July 2021 final PRR was submitted in August 2021;
- the July 2021 through July 2022 final PRR was submitted in August 2022; and
- the July 2022 through July 2023 final PRR was submitted in August 2023 (Revised per NYSDEC comments and resubmitted in September 2024).

The key components of the remedy were site-wide excavation with end-point soil sampling, backfilling with certified clean fill, an environmental easement including institutional controls, quarterly groundwater sampling and annual engineering inspections, engineering controls that include a composite cover system, vapor intrusion controls for all buildings to be constructed at the Site, LNAPL containment, removal and monitoring, and compliance with the SMP.

The goals of the remedy were: 1) to remove on-site sources of contamination to the extent practicable; 2) to remediate the soil contamination at the Site to achieve compliance with Site Specific Soil Cleanup Objectives (SSSCOs) comprised of Restricted Use Soil Cleanup Objectives RUSCOs for residential use (see Table 375-6.8(b), with the exception of lead which was remediated to the restricted commercial SCO and the Protection of Groundwater Standards for soils in the saturated zone; 3) to prevent exposure to residual contamination via construction and maintenance of a composite cover system; 4) to remediate LNAPL by containment, excavation, vacuum extraction supplemented with emulsifying agents as necessary, absorption, and well skimming; 5) to implement vapor intrusion controls for all buildings constructed at the Site; 6) to maintain engineering and institutional controls via an environmental easement that requires implementation of an SMP for long term management of residual contamination.

In summary, during the July 2023 through July 2024 PRR period, the following deliverables were submitted and the following activities occurred:

- A site-wide inspection was conducted in May 2024 and the findings confirmed that IC/ECs, including the sub-slab vapor intrusion (VIC) system, are performing properly and remain effective; and
- This PRR was prepared for the July 2023 – July 2024 period.

Perched Unit LNAPL extraction was completed in January 2013 and was reported in the previously submitted *Periodic Review Report – August 2012 - July 2013*.

Lower Sand Unit LNAPL extraction was completed in February 2015 and was reported in the previously submitted *Periodic Review Report – August 2014 - July 2015*. Two perimeter wells (PW-3 and PW-5) are currently maintained by NYSDEC to address off-site sources.
Refer to **Figures 1 and 2** for the remaining perimeter monitoring well locations as of the date of this PRR.

The sub-slab vapor intrusion control system (installed beneath the market rate building) was subjected to annual quality assurance testing and remains effective. The annual inspection results are provided in **Appendix 2**.

2.3 Remedy Performance, Effectiveness and Protectiveness

As of the date of this PRR submittal, the remedy has been performed as required and has been effective and protective in achieving the remedy goals as follows:

- On-site sources of contamination have been removed to the extent practicable;
- Soil contamination at the Site has been remediated to achieve compliance with SSSCOs as demonstrated by end-point sampling;
- A composite cover system, in the form of a minimum 2-foot thick cap of quarry process stone overlying a demarcation warning barrier has been maintained on the Student Housing Parcel portion of the Site;
- A composite cover system, comprised of a building foundation that contains an active VIC system has been installed on the Market Rate Housing Parcel portion of the Site and is planned for installation during development of the Student Housing Parcel portion of the Site (the Student Housing Parcel will also include an exterior paved courtyard area);
- LNAPL within the site-wide excavation zone has been removed by excavation and LNAPL extraction in the Lower Sand Unit removal area is complete;
- NYSDEC approved cessation of quarterly groundwater sampling activities in the first quarter 2015 and monitoring is now complete;
- Vapor intrusion controls were installed for the market rate housing building, and included sub-slab utilities and above-slab piping, suction blowers, and controls. The system was

tested and certified as operating according to plan specification. Vapor intrusion controls are planned for the remaining buildings to be constructed at the Site;

- An environmental easement including institutional controls is in place; and
- The SMP is being implemented for long-term management of residual low-level contamination per the environmental easement.

Supportive data is provided in the figures and appendices to this PRR for the purpose of demonstrating the remedy performance, effectiveness and protectiveness.

3. IC/EC Plan Compliance Report

3.1 IC/EC Requirements and Compliance

To address residual contaminated soil, groundwater and soil vapor beneath the Site, the SMP provided for several ECs and ICs to protect human health and the environment. ECs include a composite cover system, vapor intrusion controls, and two separate remediation systems for the removal of light non-aqueous phase liquid (LNAPL). ICs include implementation, maintenance and monitoring of all ECs, compliance with the SMP, inspections, media monitoring, and reporting of data.

3.1.1 Composite Cover System

The composite cover system is a permanent EC designed to prevent exposure to soil contamination. The cover consists of a minimum 24-inch thickness of clean fill underlain by a demarcation barrier on all landscaped areas, minimum 1-foot thick asphalt or concrete pavement on sidewalks and courtyard areas and minimum 6-inch thick concrete building slabs.

The composite cover system is inspected annually by a licensed professional engineer, including a Site walk, visual examination of cover integrity, and interviews with personnel familiar with Site operations.

As of July 2023, construction of the Student Housing building has not begun, and the composite cover system on that portion of the Site consists of 2 feet of certified clean quarry process backfill material placed over a geo-technical fabric demarcation barrier. On the Market Rate portion of the Site, the composite cover system was completed and is comprised of the building foundation. See Section 4.1.1 below, for a discussion of the recent inspection of the composite cover system.

3.1.2 Vapor Intrusion Controls

Vapor intrusion controls are designed to prevent exposure to soil vapor contamination in on-site buildings. The SMP requires installation of sub-slab depressurization systems and vapor barriers under the concrete slabs of all Site buildings.

Vapor intrusion controls are monitored annually after system installation and startup. Vapor intrusion controls beneath the Market Rate Housing building slab and above-slab mechanical portion of the system (piping, suction blowers, controls) have been installed, and the system is currently operational. See Section 4.1.6 below, for a discussion of the recent inspection of the

Market Rate Housing building VIC system. Vapor intrusion controls will be integrated with all future building construction at the Site.

3.1.3 Lower Sand Unit LNAPL Remediation System

The LNAPL Remediation System in the Lower Sand Unit was limited to the Student Housing Parcel and was designed to recover LNAPL. The system originally consisted of a capture wall and a total of 38 wells within the Lower Sand Unit. Details of the Lower Sand Unit LNAPL Remediation System were reported in the previously submitted *Periodic Review Report – August 2014 – July 2015.*

The Lower Sand Unit LNAPL removal was successfully completed in February 2015 with no significant measurable LNAPL remaining, per written authorization from NYSDEC. The capture wall is still intact and two perimeter wells (PW-3 and PW-5) are currently maintained by NYSDEC, in the event they are needed to address off-Site contamination. Refer to **Figure 2** for the current well locations as of the end of this reporting period.

3.1.4 Perched Unit LNAPL Remediation System

The LNAPL Remediation in the Perched Unit was successfully completed in January 2013 and removal operations ceased per written authorization from NYSDEC.

3.1.5 Institutional and Engineering Controls

- Composite Cover System
- Vapor Intrusion Control System

These ICs/ECs remain in place and are being implemented at the Site. The vapor intrusion control (VIC) system was installed as a part of the new building construction on the Market Rate Parcel, and annual testing was completed during this PRR period. Currently, the Market Rate Housing building is occupied and the VIC system is operating in accordance with the SMP.

3.2 IC/EC Certification

The required IC/EC Certifications are provided in **Appendix 1** of this PRR.

4. Monitoring Plan Compliance Report

4.1 Components of the Monitoring Plan

The components of the monitoring plan are set forth below. During this PRR reporting period, the Volunteer did not deviate from the monitoring requirements of the approved SMP. Several enhancements to the SMP were adopted through email correspondence, letters and work plans approved by the NYSDEC. A summary of the monitoring efforts specific to each monitoring plan component is provided below, along with the location of the associated monitoring data within this PRR:

- *Composite Cover System* – The cover was monitored visually for integrity during an annual inspection in May 2023 (see **Appendix 2** for annual inspection results);
- *Vapor Intrusion Control System* – The installation of Market Rate Building vapor intrusion control system components is complete and the system is currently operating. Monitoring is ongoing and inspections are conducted on an annual basis to ensure proper functionality (see **Appendix 2** for annual inspection results). A vapor intrusion control system will be installed on the Student Housing portion of the Site during construction;

Lower Sand Unit LNAPL Remediation System – LNAPL monitoring in the Lower Sand Unit ceased as of February 2015, per NYSDEC approval;

Perched Unit LNAPL Monitoring – LNAPL monitoring in the Perched Unit ceased as of August 2014, per NYSDEC approval;

Lower Sand Unit Perimeter & Interior Wells – Groundwater monitoring in the Perched Unit ceased as of February 2015, per NYSDEC approval.

Perched Unit Perimeter Wells – Groundwater monitoring in the Perched Unit ceased as of August 2014, per NYSDEC approval.

4.1.1 Composite Cover System Monitoring

The quality and integrity of the composite cover system was inspected (monitored) annually and deemed intact and protective by the EWMA Certifying Engineer of Record. The composite cover system is complete for the Market Rate Housing Parcel.

The Student Housing Parcel is covered with a clean fill (gravel) cover. Any changes in site development status will be noted in future PRR submittals.

4.1.2 Vapor Intrusion Control System Monitoring

The construction and effectiveness of the vapor intrusion control system installed beneath the Market Rate Building was inspected by qualified EWMA field technicians to ensure proper functionality. The system components and monitoring points have been inspected in 2023, vacuum and air flow measurements confirm that the system is operating in conformance with the design requirements (see **Appendix 2**), and the system has been certified.

4.2 Summary of Monitoring Completed During the Reporting Period

The monitoring during the reporting period was completed as set forth above. The monitoring data is presented in the figures and appendices of this PRR.

4.3 Comparison with Remedial Objectives

Based on the monitoring data collected during the reporting period and presented in the figures and appendices of this PRR, the remedial objectives are being met. LNAPL removal in the Perched and Lower Sand Units was successfully completed in January 2013 and February 2015, respectively. The composite cover system is effectively preventing exposure to residual contamination; and the VIC system is maintaining sub-slab de-pressurization and operating in conformance with the design and as required by NYSDOH and NYSDEC.

4.4 Monitoring Deficiencies

There are no known monitoring deficiencies.

4.5 Conclusions

The Volunteer successfully completed the LNAPL removal from both the Perched Unit and Lower Sand Units. All monitoring was performed in accordance with the NYSDEC approved SMP and pursuant to subsequent work plans and monitoring enhancements that have been approved by the NYSDEC. No significant deviations occurred while implementing the SMP during this review period.

5. Operation and Maintenance Plan (O&M) Compliance Report

5.1 Components of the O&M Plan

The components of the O&M Plan include inspections and completion of inspection forms.

5.1.1 Summary of O&M Activities and Data Collected During the Reporting Period

The inspection forms and records that were generated for the Site during the reporting period include the following:

- Annual Inspection of Composite Cover System and Market Rate Housing VIC System (**Appendix 2**).

5.1.2 O&M Deficiencies

There were no O&M compliance deficiencies during the course of the reporting period.

5.2 Conclusions and Recommendations for Improvements

LNAPL Removal and Monitoring Efforts – LNAPL removal in the Perched and Lower Sand Units was successfully completed in January 2013 and February 2015, respectively. NYSDEC approved cessation of all groundwater monitoring (LNAPL thickness gauging and groundwater sampling) in both Units in the first quarter 2015.

Project Review Report Schedule – The next PRR will be prepared to cover the July 2023 through July 2024 reporting period.

Site Management Plan Implementation – Based on the continued need for institutional controls and engineering controls, it is recommended that the June 2016 SMP remain in effect. It should be noted that the June 2016 SMP was updated from the original December 2010 SMP to address current site and compliance conditions.

6. Overall PRR Conclusions and Recommendations

6.1 Compliance with SMP

As of the date of this PRR, the remedy has been performed as required under the SMP and has been effective and protective in achieving the remedy goals as follows:

- On-site sources of contamination have been removed to the extent practicable;
- Soil contamination at the Site has been remediated to achieve compliance with site specific restricted residential SCOs, as demonstrated by end-point sampling;
- A composite cover system has been constructed over the Student Housing western portion of the Site in the form of a minimum 2-foot thick cap of quarry process stone overlying a demarcation warning barrier placed across the remedial excavation floor;
- A final composite cover system (clean fill and building foundation) has been installed over the Market Rate Housing eastern portion of the Site and will continue to be maintained in accordance with the SMP;
- LNAPL within the site-wide excavation zone (Perched Unit) was removed by excavation to an average depth of 7-feet below ground surface as required by the RAWP;
- LNAPL in the Perched Unit beneath the Market Rate Housing Parcel was successfully removed and cessation of these removal activities was approved by the NYSDEC in January 2013;
- LNAPL in the Lower Sand Unit beneath the Student Housing Parcel was successfully removed and cessation of these removal activities was approved by the NYSDEC in February 2015;
- Quarterly groundwater sampling was completed and cessation of all groundwater monitoring activities was approved by the NYSDEC in February 2015;
- Vapor intrusion controls have been installed beneath the Market Rate Housing building slab. The system is currently operating in accordance with design requirements. Vapor intrusion controls for the remaining buildings to be constructed at the Site are planned;
- An environmental easement including institutional controls is in place; and
- An SMP has been implemented for long-term management of low level residual contamination per the environmental easement.

Supportive data is provided in the tables, figures and appendices to this PRR for the purpose of demonstrating the remedy performance, effectiveness and protectiveness.

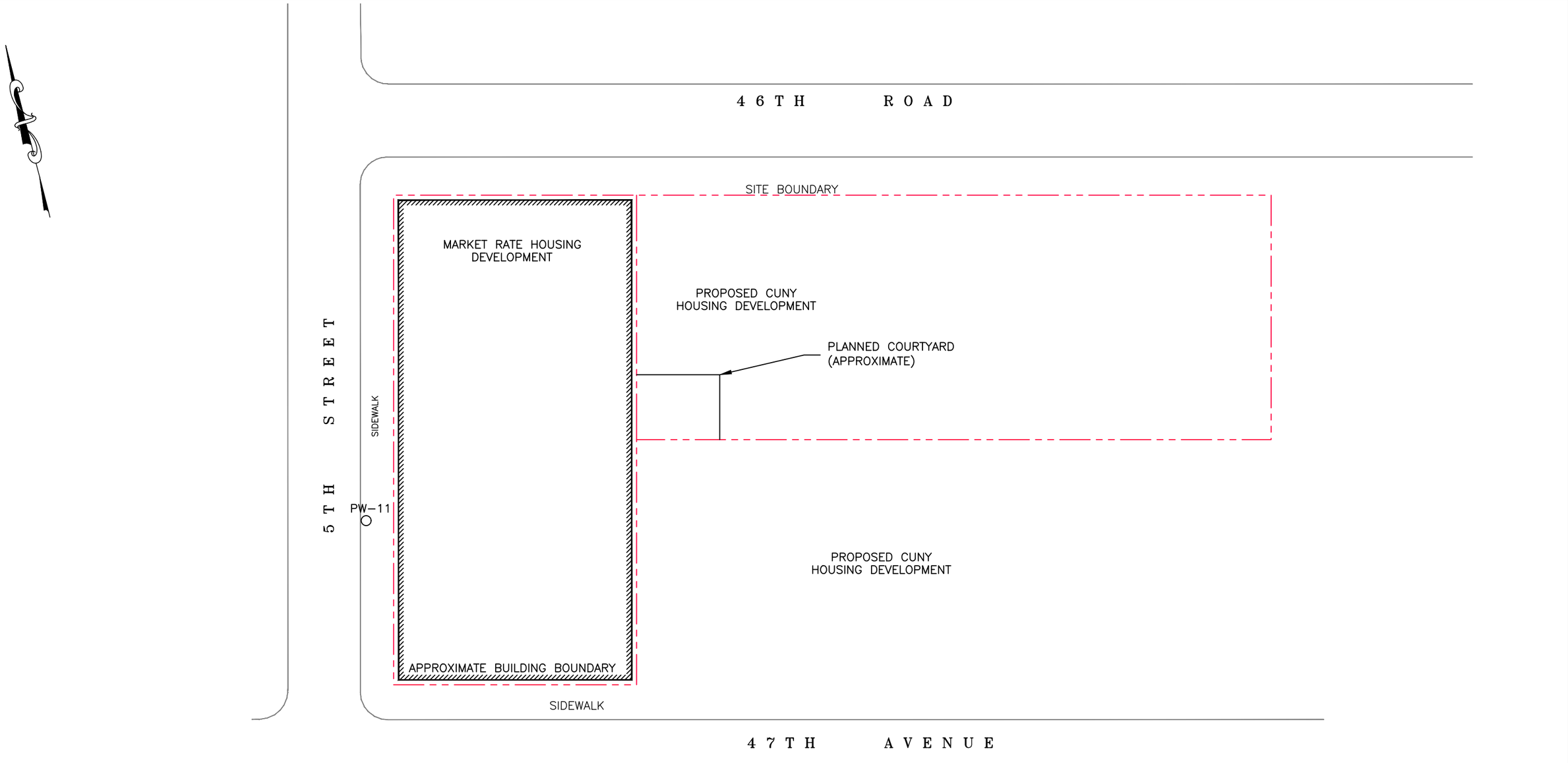
6.2 Performance and Effectiveness of the Remedy

The performance and effectiveness of the remedy are in conformance with the project objectives.

6.3 Future PRR Submittals

The next PRR to be prepared and submitted will cover the period from July 2024 through July 2025.

FIGURES



LEGEND

PW-11 ○ PERIMETER WELL LEFT IN PLACE FOR USE AT THE REQUEST OF NYSDEC

GRAPHIC SCALE

40 0 20 40 80

(IN FEET)

Environmental Consulting & Remediation
100 Misty Lane
P.O. Box 5430
Parsippany, NJ 07054

SCALE: AS SHOWN | PROJECT# 209014

DATE: 8/12/24

DRAWN BY: RR/JS

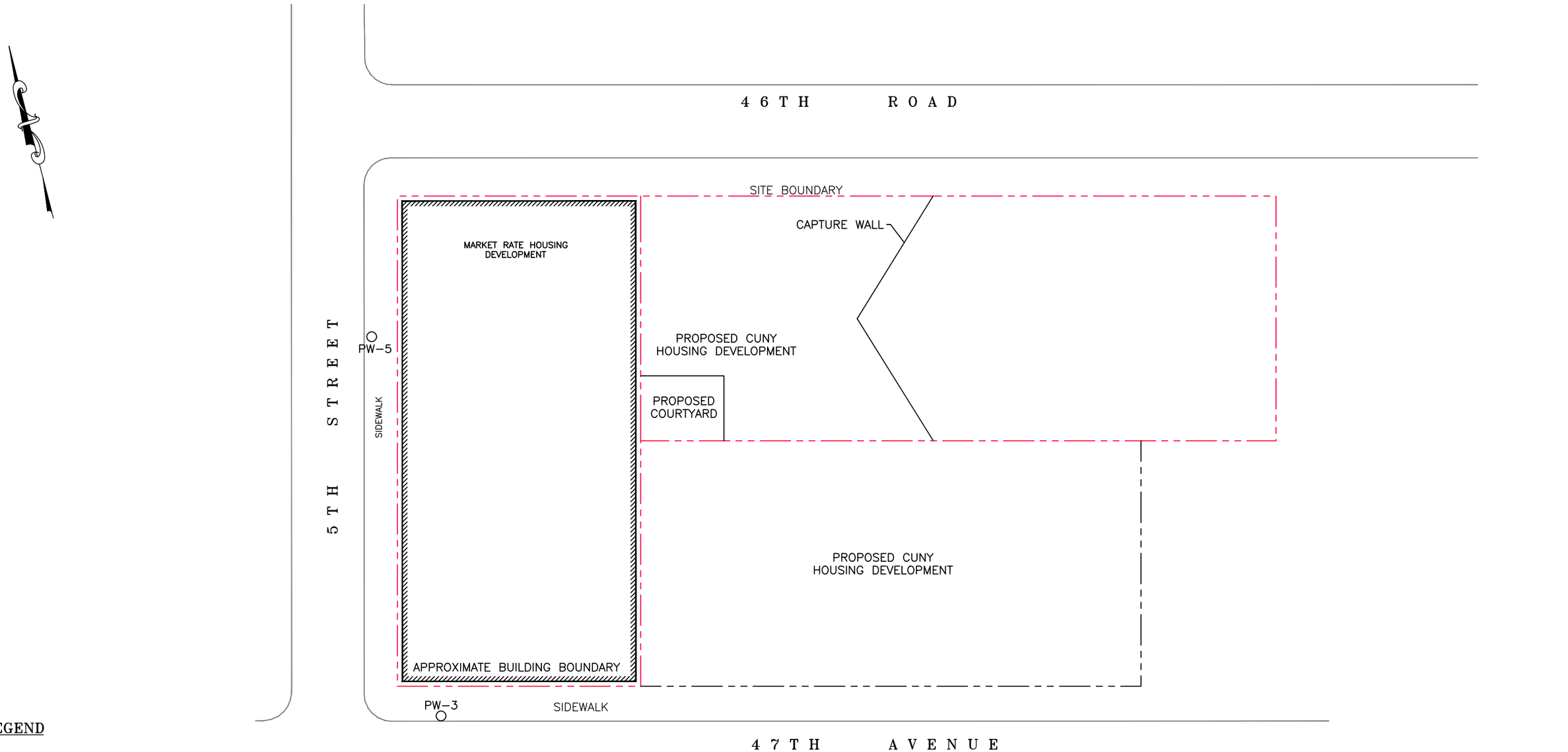
CHECKED BY: JS

A: k:\drawings\209000\209014\2024\209014f1.dwg

PERCHED UNIT WELL LOCATION MAP AS OF JULY 2024

5-20 47TH AVENUE
LONG ISLAND CITY, NEW YORK

FIGURE# 1



LEGEND

PW-3 ○ PERIMETER WELL LEFT IN PLACE FOR USE AT THE REQUEST OF NYSDEC –TYP.SS

GRAPHIC SCALE

40 0 20 40 80

(IN FEET)

Environmental Consulting & Remediation
100 Misty Lane
P.O. Box 5430
Parsippany, NJ 07054

SCALE: AS SHOWN	PROJECT# 209014
DATE: 8/12/24	
DRAWN BY: RR/JS	
CHECKED BY: JS	

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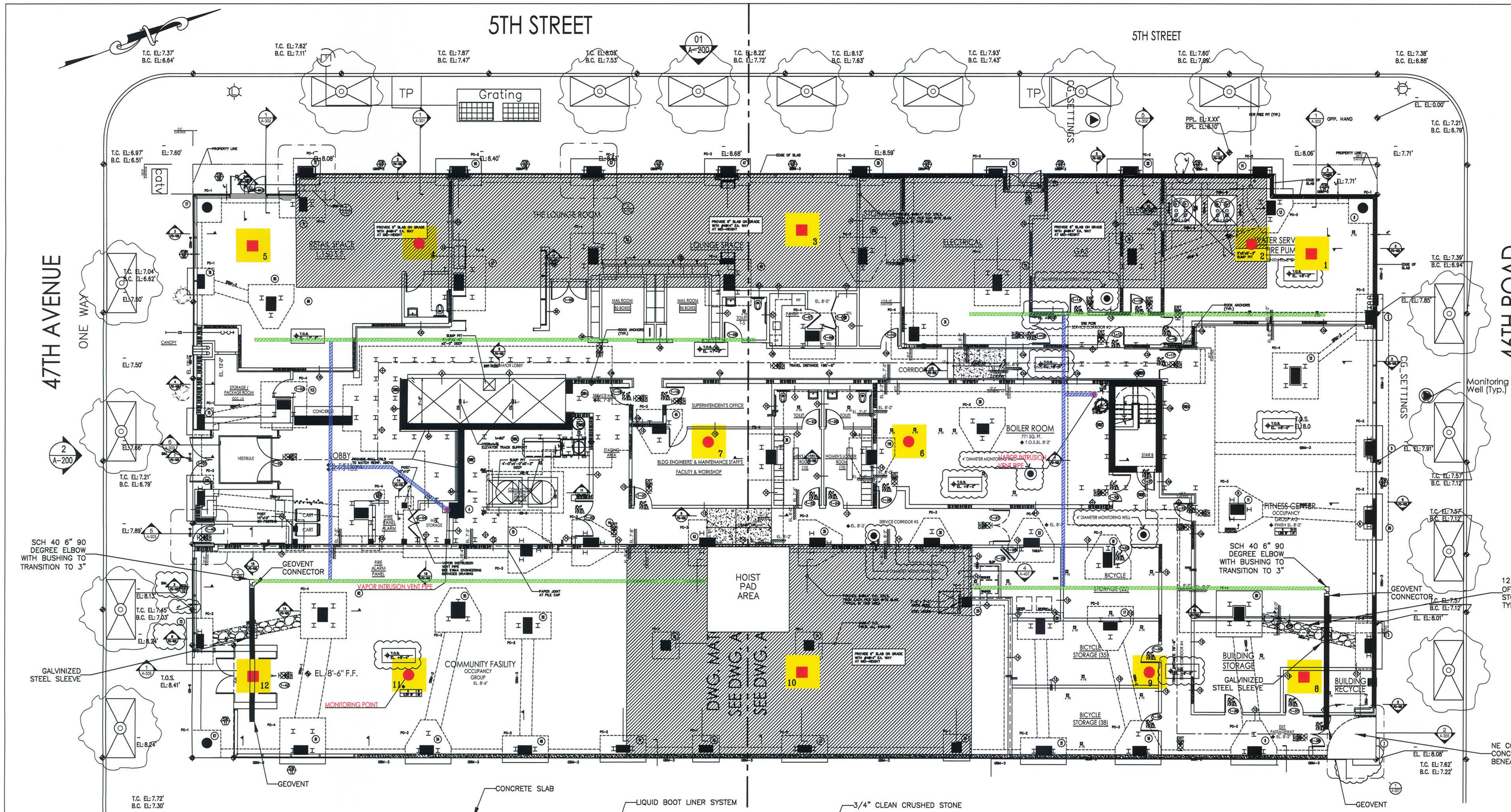
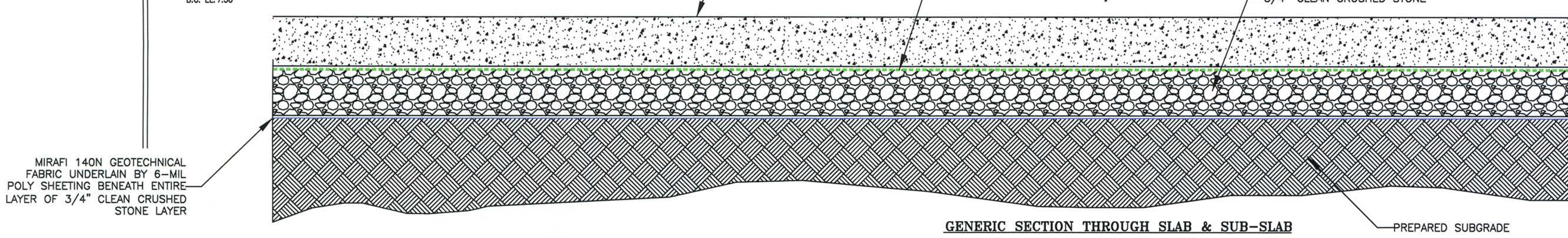
LOWER SAND UNIT WELL LOCATION MAP
AS OF JULY 2024
5-20 47TH AVENUE
LONG ISLAND CITY, NEW YORK

FIGURE# 2

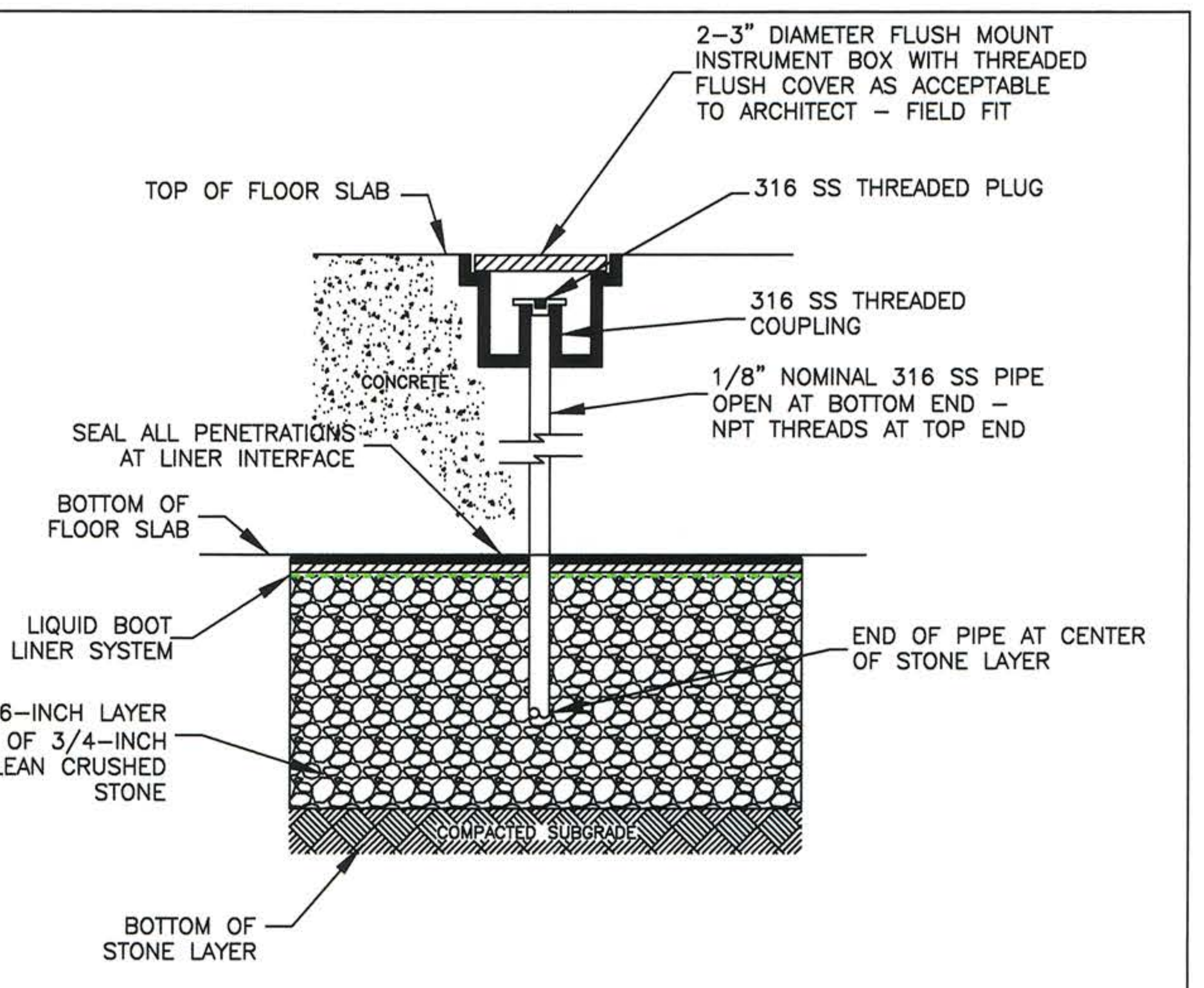




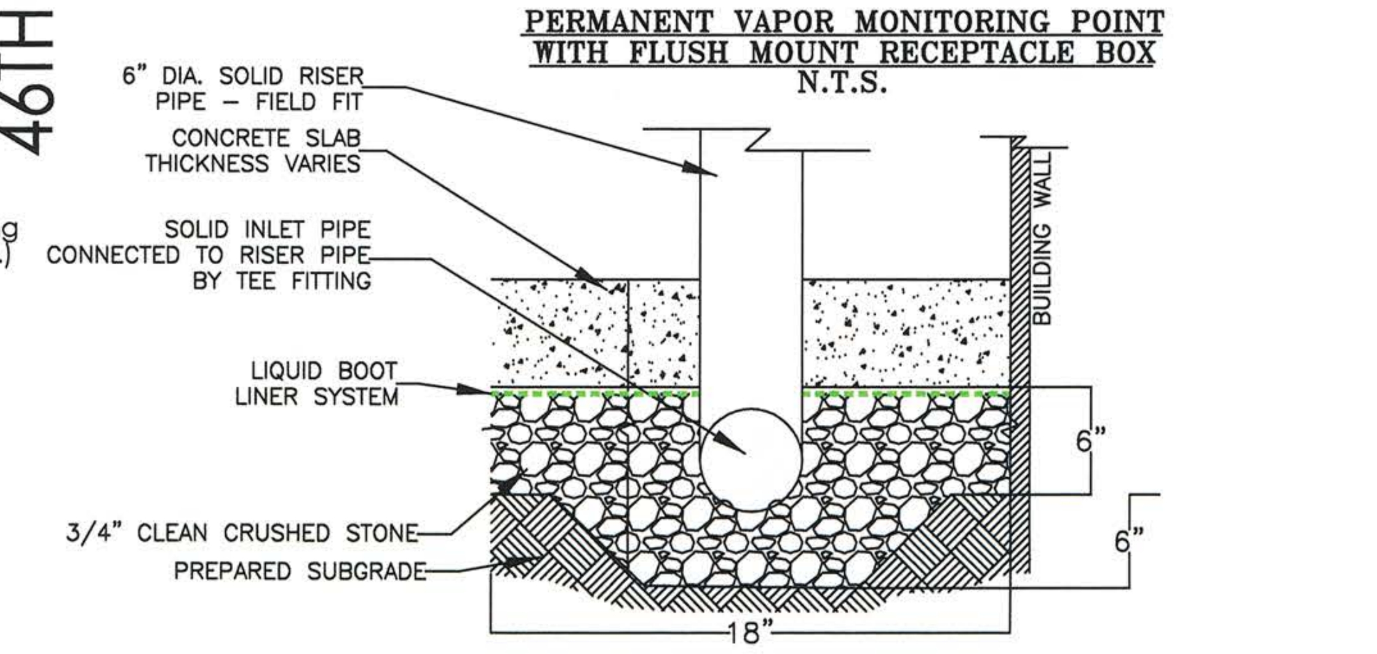
GENERIC SECTION THROUGH SLAB & SUB-SLAB

STRUCTURAL AND PIPE CROSSINGS NOT SHOWN

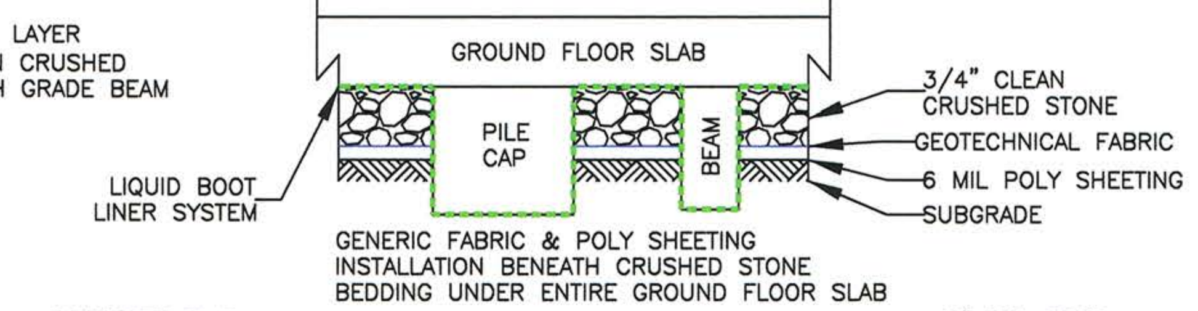
N.T.S.

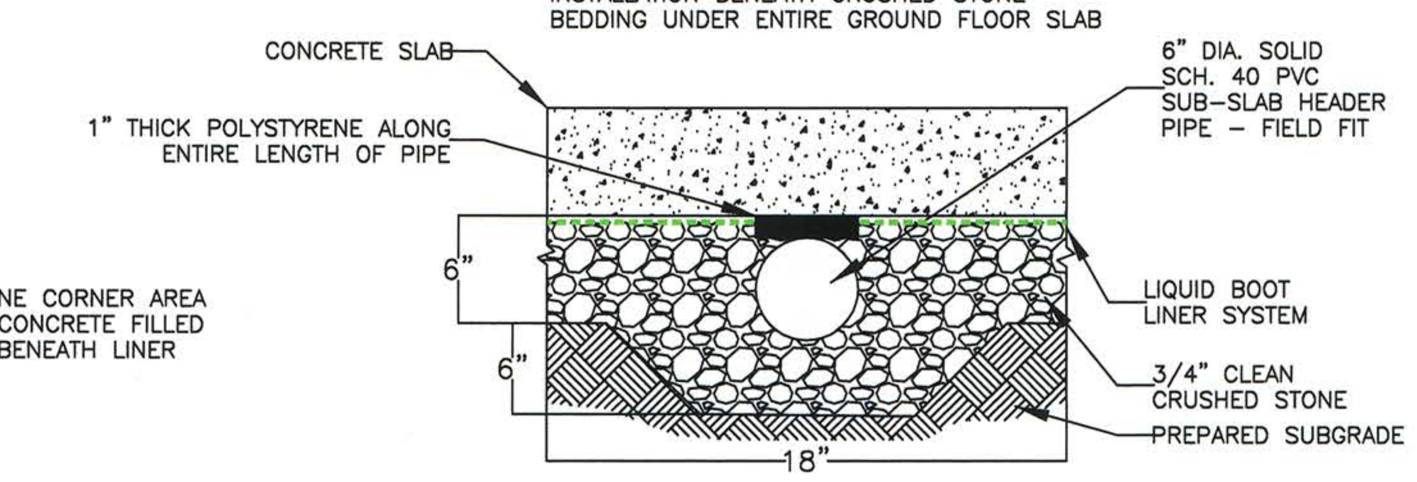


PERMANENT VAPOR MONITORING POINT WITH FLUSH MOUNT RECEPTACLE BOX
N.T.S.

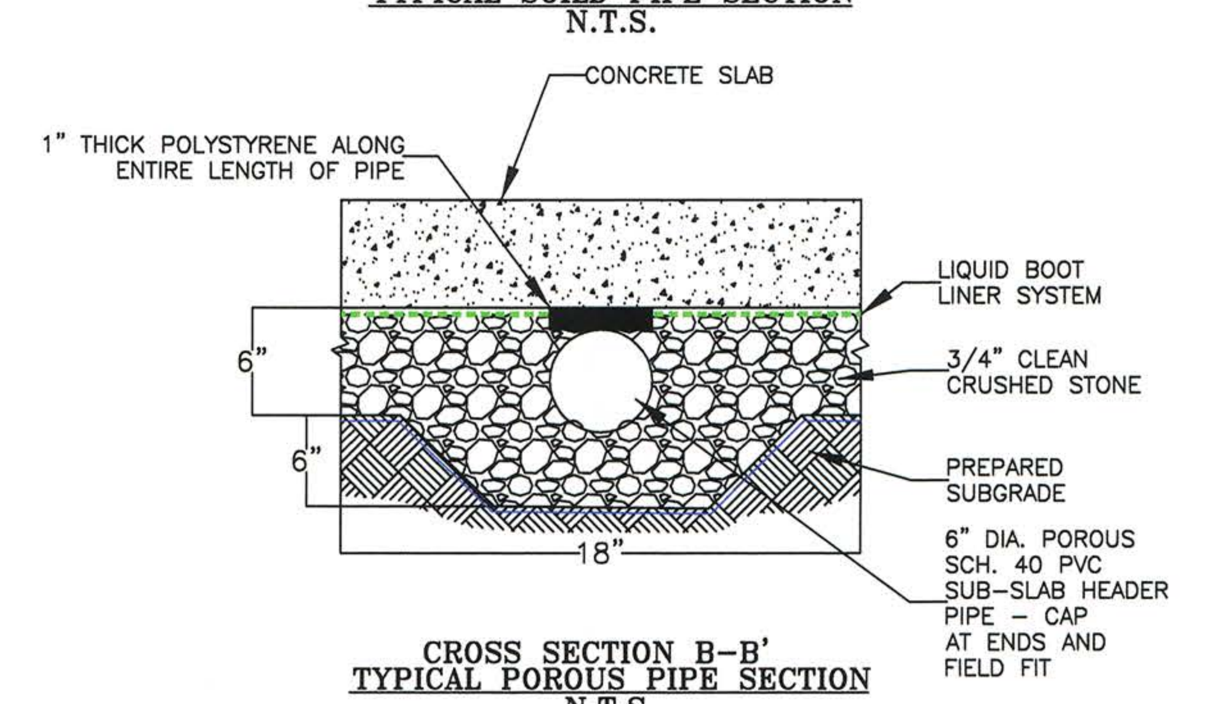


CROSS SECTION D-D'
TRANSFER PIPE CONNECTION TO RISER PIPE AT EXTRACTION PORT LOCATION
N.T.S.





CROSS SECTION C-C'
TYPICAL SOILD PIPE SECTION
N.T.S.



CROSS SECTION B-B'
TYPICAL POROUS PIPE SECTION
N.T.S.

GRAPHIC SCALE

(IN FEET)

LEGEND

- 6" POROUS PIPE – SCH. 35 PVC
- 6" SOLID PIPE – SCH. 40 PVC
- PERMANENT MONITORING POINT SMALL PIPES THROUGH SLAB ONLY
- TEMPORARY MONITORING POINTS CLOSED AS OF 7/31/14

SUMMARY OF AS-BUILT VAPOR INTRUSION CONTROL (VIC) INSTALLATION

CURRENT VIC OPERATING CONDITIONS

1. THE VIC SYSTEM FOR THE MARKET RATE HOUSING FACILITY IS FULLY OPERATIONAL IN COMPLIANCE WITH SMP REQUIREMENTS, NYDOH GUIDELINES, AND GOOD VAPOR INTRUSION CONTROL PRACTICES;
2. EFFECTIVE SYSTEM OPERATION WAS CONFIRMED BY SUB-SLAB VACUUM MEASUREMENTS OBTAINED WITH THE USE OF PERMANENT AND TEMPORARY MONITORING POINTS INSTALLED INTO THE SUB-SLAB AREA FOR THAT PURPOSE; (SEE ADJACENT TABLE):
3. AS-BUILT SYSTEM LOCATIONS AND DETAILS ARE PRESENTED WITHIN THIS DRAWING, AND ARE DESCRIBED BY THE NOTES PRESENTED BELOW;
4. THE KEY COMPONENTS OF THE VIC SYSTEM ARE: 1) TWO CONTINUOUSLY OPERATING ROOF MOUNTED SUCTION FANS WITH INFLUENT PIPING, STACK PIPING, AND MONITORING AND CONTROL APPURTENANCES; 2) TWO 6-INCH DIAMETER VENT RISER PIPES INSTALLED THROUGH THE BUILDING TO GROUND FLOOR SLAB CONNECTION PORTS; 3) SUB-SLAB VAPOR COLLECTION/DEPRESSURIZATION PIPING INSTALLED FROM THE CONNECTION PORTS BENEATH THE SLAB AND WITHIN A 6-INCH THICK LAYER OF CLEAN CRUSHED STONE; 4) 40-MIL CONTINUOUS LIQUID BOOT LINER INSTALLED DIRECTLY UNDER THE SLAB AND STRUCTURAL FOUNDATION ELEMENTS AND OVER THE CRUSHED STONE LAYER; AND 5) GEOTECHNICAL FABRIC INSTALLED DIRECTLY BENEATH THE CRUSHED STONE LAYER AND ON PREPARED SUBGRADE.

ABOVE-SLAB VIC UTILITY INSTALLATIONS

1. **SUCTION FANS** - TWO WEATHERPROOF FANAM CBI 200 SUCTION FANS WITH ¾-HP DAYTON EXPLOSION PROOF MOTORS WERE MOUNTED ON BRACKETS ABOVE THE ROOF, CONNECTED TO THE VIC VENT PIPES, AND CONNECTED TO EXHAUST STACKS THAT TERMINATED 6-FEET ABOVE TOP OF ROOF WITH 10-FEET OF CLEARANCE FROM FRESH AIR INTAKES IN ACCORDANCE WITH CODE;
2. **VENT PIPE AND FAN ACCESSORIES** - THE FANS WERE FITTED WITH ON-OFF ALARMS WIRED REMOTELY TO THE FACILITY MANAGERS OFFICE, AND WERE FITTED WITH LOW-PRESSURE BACKFLOW PREVENTERS TO PREVENT BACKFLOW RE-CIRCULATION IN THE EVENT OF SINGLE FAN STOPPAGE. IN ADDITION, THE INFLUENT VENT PIPES TO THE FANS WILL BE FITTED WITH MEASUREMENT PORTS, VACUUM PRESSURE MANOMETERS AND MANUAL DILUTION VALVES, TO PROVIDE EASY PERFORMANCE CONFIRMATION DURING FUTURE INSPECTION VISITS AND TO PROVIDE A MEANS OF ADJUSTING AND REDUCING LOAD TO THE FANS FOR THE PURPOSE OF EXTENDING THEIR USEFUL LIFE AND REDUCING LONG-TERM POWER CONSUMPTION, IF NECESSARY;
3. **VIC VENT PIPES** - TWO 6-INCH DIAMETER VIC VENT PIPES WERE BROUGHT DOWN THROUGH THE ROOF WITH APPROPRIATE ROOF FLASHING AND ROOF PENETRATION MANAGEMENT, AND DOWN THROUGH THE BUILDING TO CONNECTION PORT LOCATIONS;
4. **CONNECTION PORTS** - TWO 6-INCH DIAMETER VENT PIPE CONNECTION PORTS WERE CONSTRUCTED THROUGH THE GROUND FLOOR SLAB AND FIELD FITTED TO THE LOCATIONS SHOWN ON THE DRAWING. ONE PORT WAS CONSTRUCTED IN THE SOUTH HALF AND ONE IN THE NORTH HALF OF THE BUILDING.

SUBSLAB VIC UTILITY INSTALLATIONS

1. **SUB-SLAB PIPING** - TWO SETS OF 6-INCH DIAMETER SUB-SLAB VAPOR COLLECTION/DEPRESSURIZATION PIPING WERE INSTALLED FROM THE CONNECTION PORTS BENEATH THE SLAB AND WITHIN A CLEAN CRUSHED STONE LAYER BENEATH THE SLAB;
2. **LIQUID BOOT LINER** - A CONTINUOUS 40-MIL LIQUID BOOT LINER WAS INSTALLED DIRECTLY BENEATH THE GROUND FLOOR SLAB AND FOUNDATION ELEMENTS, AND BONDED TO THE CONCRETE SLAB AND FOUNDATION SURFACES;
3. **SUB-SLAB CRUSHED STONE LAYER** - A 6-INCH THICK ¾-INCH CLEAN CRUSHED STONE LAYER WAS INSTALLED DIRECTLY BENEATH THE LIQUID BOOT LINER AND ON A LAYER OF GEOTECHNICAL FABRIC THAT WAS IN TURN PLACED DIRECTLY ON PREPARED SUBGRADE;
4. **MONITORING PORTS** - SIX TEMPORARY MONITORING POINTS WERE INSTALLED AND ARE NOW CLOSED. SIX PERMANENT MONITORING POINTS WERE INSTALLED THROUGH THE GROUND FLOOR SLAB AND WERE FITTED WITHIN FLUSH MOUNTED INSTRUMENT BOXES THAT ARE ACCESSIBLE IN THE FUTURE FOR SUB-SLAB MONITORING IF REQUIRED.

PERFORMANCE STANDARDS

1. DURING TESTING AND MEASUREMENT, THE VIC DESIGN PERFORMANCE STANDARDS WERE CONFIRMED. FLOW RATES THROUGH THE EXTRACTION PIPING WERE FOUND TO BE GREATER THAN 200 FEET PER MINUTE, AND VACUUM LEVELS WITHIN THE EXTRACTION PIPING WERE FOUND TO BE GREATER THAN 4-INCHES OF WATER. SUB-SLAB VACUUM LEVELS WERE FOUND TO BE GREATER THAN THE NYSDOH STANDARD OF 4 PASCALS.

GENERAL INSTALLATION AND DRAWING NOTES:

1. THE BASE DRAWING FOR THE FACILITY PLAN VIEW DISPLAYED ON THIS DRAWING WAS PREPARED BY DESIMONE CONSULTING ENGINEERS, IS TITLED FOUNDATION/1ST FLOOR PLAN, AND IS NUMBERED FO-101.01.
2. THIS VIC DESIGN IS RESTRICTED TO AND SPECICALLY APPLICABLE TO SITE CONDITIONS AT THE MARKET RATE HOUSING PORTION OF THE OCA LIC BROWNFIELD SITE IN LONG ISLAND CITY, NEW YORK, AND IS NOT FOR USE AT OTHER OCA LIC BROWNFIELD SITE FACILITIES OR AT OTHER SITES.
3. THE VAPOR INTRUSION CONTROL SYSTEM COMPONENTS WERE INSTALLED BY EXPERIENCED, QUALIFIED CONTRACTORS WITH QUALIFICATIONS ACCEPTABLE TO THE OWNER, THE PROJECT MEP ENGINEER, AND THE UNDER-SLAB VIC SYSTEM DESIGN ENGINEER.
4. THE INSTALLING CONTRACTORS WERE RESPONSIBLE FOR INSTALLATION MEANS AND METHODS, INCLUDING THE CHOICE AND USE OF INSTALLATION ACCESSORIES, MATERIALS AND SUPPLIES THAT WERE NOT DIRECTLY SPECIFIED.
5. THE INSTALLING CONTRACTORS WERE RESPONSIBLE FOR PLANNING, FIELD FITTING AND INTERFACING THE VIC SYSTEM WITH THE BUILDING SYSTEM, AND FOR PROVIDING LABOR, EQUIPMENT AND MATERIALS AS NEEDED TO CONSTRUCT AN INTEGRATED, EFFECTIVE FINAL PRODUCT ACCEPTABLE TO THE OWNER, BUILDING DESIGN TEAM, AND UNDER-SLAB VIC SYSTEM DESIGN ENGINEER;
6. MINOR VARIANCE REQUESTS WERE SUBMITTED AND APPROVED.

Vapor Intrusion Control System Confirmation Test Data

Monitoring Points: Temporary (T) and Permanent (P)	Pre-Test Before Suction Fan Installation 8/22/2013		Continuous System Operational Measurements 2/3/2014
	South Vent	North Vent	South & North Vents
	Vacuum (inWC)	Vacuum (inWC)	Vacuum (inWC)
T-1	0.163	0.534	N/A
P-2	0.157	0.530	1.629
T-3	0.258	0.246	N/A
P-4	0.038	0.082	0.148
T-5	0.345	0.116	N/A
P-6	0.215	0.408	1.840
P-7	0.355	0.190	0.209
T-8	0.145	0.415	N/A
P-9	0.162	0.500	1.720
T-10	0.086	0.350	N/A
P-11	0.581	0.183	1.967
T-12	0.485	0.144	N/A

NYS Engineering Note:
It is a violation of Article 145 Section 7209(2) of New York State Education Law for any person, unless he is acting under the direction of a New York State licensed engineer, to alter an item of this document in any way. If an item 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.

EWMA ENGINEERING SERVICES, LLL – NYS ENG. CERT # 7617

RICHARD ARNOLD
7/31/2014
NYS PE # 076202

An Environmental Consulting & Remediation Firm
100 Misty Lane
P.O. Box 5430
Parsippany, NJ 07054

REVISIONS	
No./ID	DATE

SCALE: AS SHOWN
DATE: 7/31/14
PROJECT# 250689-05
DRAWN BY: RR
CHECKED BY: RA

CERTIFIED AS-BUILT VAPOR INTRUSION CONTROL INSTALLATION
OCA LIC MARKET RATE HOUSEING
5-11 47TH AVENUE
QUEENS, NEW YORK

FIGURE# VIC-1

APPENDICES

Enclosure 2

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
Site Management Periodic Review Report Notice
Institutional and Engineering Controls Certification Form

Site Details **Box 1**

Site No. **C241098**

Site Name OCA LIC Fifth Street Mixed-Use Housing

Site Address: 5-20 46th Road Zip Code: 11101
City/Town: Queens
County: Queens
Site Acreage: 1.000

Reporting Period: July 15, 2023 to July 15, 2024

	YES	NO
1. Is the information above correct?	☑	☐
If NO, include handwritten above or on a separate sheet.		
2. Has some or all of the site property been sold, subdivided, merged, or undergone a tax map amendment during this Reporting Period?	☐	☑
3. Has there been any change of use at the site during this Reporting Period (see 6NYCRR 375-1.11(d))?	☐	☑
4. Have any federal, state, and/or local permits (e.g., building, discharge) been issued for or at the property during this Reporting Period?	☐	☑
If you answered YES to questions 2 thru 4, include documentation or evidence that documentation has been previously submitted with this certification form.		
5. Is the site currently undergoing development?	☐	☑

Box 2

	YES	NO
6. Is the current site use consistent with the use(s) listed below? Restricted-Residential, Commercial, and Industrial	☑	☐
7. Are all ICs in place and functioning as designed?	☑	☐

IF THE ANSWER TO EITHER QUESTION 6 OR 7 IS NO, sign and date below and DO NOT COMPLETE THE REST OF THIS FORM. Otherwise continue.

A Corrective Measures Work Plan must be submitted along with this form to address these issues.

Signature of Owner, Remedial Party or Designated Representative Date

	Box 2A	
	YES	NO
8. Has any new information revealed that assumptions made in the Qualitative Exposure Assessment regarding offsite contamination are no longer valid?	☐	☑
If you answered YES to question 8, include documentation or evidence that documentation has been previously submitted with this certification form.		
9. Are the assumptions in the Qualitative Exposure Assessment still valid? (The Qualitative Exposure Assessment must be certified every five years)	☑	☐
If you answered NO to question 9, the Periodic Review Report must include an updated Qualitative Exposure Assessment based on the new assumptions.		

SITE NO. C241098 **Box 3**

Description of Institutional Controls

Parcel	Owner	Institutional Control
4-28-121	Graduate Center Foundation Housing Corp	Ground Water Use Restriction Soil Management Plan Monitoring Plan Site Management Plan O&M Plan IC/EC Plan

A Site Management Plan ("SMP")describe the Enigineering and insitutional controlls to be implemented following the completion of the Remeidal Action. The Eningineering controll consist of a compositie cover sytem, sub-slab depressurization system or a 20 mil vapor/water barrier to prevent vapor intrusion from occurring in any proposed on-site building, free product recovery systems.

The controlls and requirements apply to the use of the controlled property:
1) the controlled property may be use for Restricted Residential, Commerical, and industrial.
2) all Engineering controls must be operated and maintained as specified in the SMP
3) all Engineering controls must be inspected at a frequency and in a manner defined in the SMP
4) groundwater and other environmental or public health monitoring must be performed as defineed in the SMP
5) data and information pertinent to site managment of the controlled property must be reported at the frequency and in the manner defined in the SMP
6) all future activities on the proptery that will disturb remaining contaminated material must be conducted in accordance with the SMP
7) monitoring to assess the performance and effectiveness of the remedy must be preformed as defined in the SMP
8) operation, maintenance, monitoring, inspection, and reporting of any mechanical or physical components of the remedy shall be performed as defined int hte SMP
9) Accessto the site must be provided to agents, employees or other representatives of the state of New York with reasonable prior notice to the property owner to assure compliance with the restriction identified by the Environmental Easement.

- The controlled property shall not be used for raising livestock or producing animal products for human consumption, and the above-stated engineering controls may not be discontinued without an amendment or extiguishment of this enviromental Easement
- The SMP describe obligations that the grantor assumes on behalf of Grantor, its successors and assigns.
- Grantor must provide all persons who acquire any interest in the controlled property a true and complete copy of the SMP that the Department approves for the controlled property and all Department-approved amendments to that SMP
- Grantor covenants and agrees that until such time as the environmental easement is extiguished in accordance with the requirements of ECL Article 71, Title 36 of the ECL, the property deed and all subsequent instruments of conveyance relating to the controlled property shall state in at least fifteen-point bold-faced type: This property is subject to an Environmental Easement held by the New York State Department of Environmental Conservation pursuant to Title 36 of Article 71 of the Environmental Conservation Law.
- Grantor covenants and agrees that this environmental Easement shall be incorporated in full or by reference in any leases,licenses, or other instruments granting a right to use the controlled property.
- Grantor covenants and agrees that it shall annually, or such time as NYSDEC may allow, submitto NYSDEC a written statment by an expert the NYSDEC may find acceptable certifying under penalty or perjury, in such form and manner as the Department may require.

4-28-21	LIC RES LLC	IC/EC Plan Ground Water Use Restriction Soil Management Plan Landuse Restriction Monitoring Plan Site Management Plan O&M Plan

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sytem, sub-slab depressurization system or a 20 mil vapor/water barrier to prevent vapor intrusion from occurring in any proposed on-site building, free product recovery systems.

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6) all future activities on the proptery that will disturb remaining contaminated material must be conducted in accordance with the SMP
7) monitoring to assess the performance and effectiveness of the remedy must be preformed as defined in the SMP
8) operation, maintenance, monitoring, inspection, and reporting of any mechanical or physical components of the remedy shall be performed as defined int hte SMP
9) Accessto the site must be provided to agents, employees or other representatives of the state of New York with reasonable prior notice to the property owner to assure compliance with the restriction identified by the Environmental Easement.
• The controlled property shall not be used for raising livestock or producing animal products for human consumption, and the above-stated engineering controls may not be discontinued without an amendment or extiguishment of this enviromental Easement
• The SMP describe obligations that the grantor assumes on behalf of Grantor, its successors and assigns.
• Grantor must provide all persons who acquire any interest in the controlled property a true and complete copy of the SMP that the Department approves for the controlled property and all Department-approved amendments to that SMP
• Grantor covenants and agrees that until such time as the environmental easement is extiguished in accordance with the requirements of ECL Article 71, Title 36 of the ECL, the property deed and all subsequent instruments of conveyance relating to the controlled property shall state in at least fifteen-point bold-faced type: This property is subject to an Environmental Easement held by the New York State Department of Environmental Conservation pursuant to Title 36 of Article 71 of the Environmental Conservation Law.
• Grantor covenants and agrees that this environmental Easement shall be incorporated in full or by reference in any leases,licenses, or other instruments granting a right to use the controlled property.
• Grantor covenants and agrees that it shall annually, or such time as NYSDEC may allow, submitto NYSDEC a written statment by an expert the NYSDEC may find acceptable certifying under penalty or perjury, in such form and manner as the Department may require.

Box 4

Description of Engineering Controls

Parcel	Engineering Control
4-28-121	
	Cover System
	Subsurface Barriers

Composite cover system
upon completion of site development and construction, exposure to remaining contamination in soil/fill will b prevent by a composite cover system that will consist of the following componments:
a miminmum 24 inches of clean fill, a minmimum 1 foot thick asphalt or concrete pavement on roads, sidewalk, parking lots or a minimum 6-inches concrete building slab.
Vapor intrusion controls
in accordance with the requirement of the approved SMP, Vapor intrusion control features will be installed during the construction of all buildings and wil be certified operational prior to building occupancy.
LNAPL recover for both low sand unit and perch unit that opereate under the SMP.

4-28-21	
	Cover System
	Subsurface Barriers

Composite cover system
upon completion of site development and construction, exposure to remaining contamination in soil/fill will b prevent by a composite cover system that will consist of the following componments:

Parcel	Engineering Control
a miminmum 24 inches of clean fill, a minmimum 1 foot thick asphalt or concrete pavement on roads, sidewalk, parking lots or a minimum 6-inches concrete building slab. Vapor intrusion controls in accordance with the requirement of the approved SMP, Vapor intrusion control features will be installed during the construction of all buildings and wil be certified operational prior to building occupancy. LNAPL recover for both low sand unit and perch unit that opereate under the SMP.	

Box 5

Periodic Review Report (PRR) Certification Statements

1. I certify by checking "YES" below that:

   a) the Periodic Review report and all attachments were prepared under the direction of, and reviewed by, the party making the Engineering Control certification;

   b) to the best of my knowledge and belief, the work and conclusions described in this certification are in accordance with the requirements of the site remedial program, and generally accepted engineering practices; and the information presented is accurate and compete.

YES	NO
☑	☐

2. For each Engineering control listed in Box 4, I certify by checking "YES" below that all of the following statements are true:

   (a) The Engineering Control(s) employed at this site is unchanged since the date that the Control was put in-place, or was last approved by the Department;

   (b) nothing has occurred that would impair the ability of such Control, to protect public health and the environment;

   (c) access to the site will continue to be provided to the Department, to evaluate the remedy, including access to evaluate the continued maintenance of this Control;

   (d) nothing has occurred that would constitute a violation or failure to comply with the Site Management Plan for this Control; and

   (e) if a financial assurance mechanism is required by the oversight document for the site, the mechanism remains valid and sufficient for its intended purpose established in the document.

YES	NO
☑	☐

IF THE ANSWER TO QUESTION 2 IS NO, sign and date below and DO NOT COMPLETE THE REST OF THIS FORM. Otherwise continue.

A Corrective Measures Work Plan must be submitted along with this form to address these issues.

Signature of Owner, Remedial Party or Designated Representative

Date

IC CERTIFICATIONS
SITE NO. C241098

Box 6

SITE OWNER OR DESIGNATED REPRESENTATIVE SIGNATURE

I certify that all information and statements in Boxes 1,2, and 3 are true. I understand that a false statement made herein is punishable as a Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law.

I Jacob M. Strauss (print name) at EWMA 800 Lanidex Plaza, Suite 200 Parsippany, NJ 07054 (print business address),

am certifying as Designated Representative of (Owner) or Remedial Party)

for the Site named in the Site Details Section of this form.

Jacob M. Strauss
Signature of Owner, Remedial Party, or Designated Representative Rendering Certification

8/12/2024
Date

EC CERTIFICATIONS

Box 7

Professional Engineer Signature

I certify that all information in Boxes 4 and 5 are true. I understand that a false statement made herein is punishable as a Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law.

I Jacob M. Strauss (print name) at EWMA, LLC and EWMA Engineering Services, LLC 800 Lanidex Plaza, Suite 200 Parsippany, NJ 07054 (print business address),

am certifying as a Professional Engineer for the Owner (Owner or Remedial Party)

Jacob M. Strauss — 8/12/2024

Signature of Professional Engineer, for the Owner or Remedial Party, Rendering Certification (Required for PE) — Date

APPENDIX 2

OCA-LIC FIFTH STREET SITE (Site No. C241098)

SITE INSPECTION CHECKLIST

July 2023 – July 2024 Periodic Review Report

Date:	5/28/2024
Inspector:	Jacob Strauss, EWMA, Senior Project Engineer
Reason for Inspection:	Annual Composite Cover System Inspection

1. *Is the Site compliant with all Institutional Controls, including Site usage (yes/no)?* Yes.
   If no, describe:

2. *Provide a general evaluation of Site conditions:*
   The site was secure and in good condition. The Student Housing Parcel of the site continues to remain vacant.

3. *Provide a general evaluation of the condition and effectiveness of composite cover systems:*
   A minimum of two feet of quarry process stone is in place across the entire site. The Market Rate Housing Facility is constructed out to the site property boundaries and across the entire western end of the site. The Composite Cover System for that Facility consists of certified clean fill, the vapor intrusion control membrane, and the concrete ground floor slab. The Student Housing Parcel is not yet developed, and extends out to the site property boundaries across the entire eastern end of the site. The Composite Cover System for that Parcel consists of a 2-foot thick cap of certified clean quarry process stone. The entire Composite Cover System was found to be intact and functional during our site inspection visit.

4. *Provide a general evaluation of the condition of monitoring wells:*
   All monitoring wells located onsite have been abandoned in accordance with NYSDEC protocol.

5. *Are Site management activities being conducted according to Site Management Plan (yes/no)?* Yes.
   If no, describe:

6. *Is Site documentation as required by the Site Management Plan up to date (yes/no)?* Yes.
   If no, describe:

7. *Are any changes to the monitoring program recommended (yes/no)?* No.
   If yes, describe:

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Provided as Appendix 2 to the July 2023 – July 2024 Periodic Review Report

August 12, 2024

Andre Obligado, P.G., Professional Geologist 2
New York State Department of Environmental Conservation
Division of Environmental Remediation
47-40 21st Street
Long Island City, New York 11101

Re: Annual Inspection Report for Vapor Intrusion Control System & Composite Cover System
OCA LIC Fifth Street Mixed-Use Housing Site (Student Housing and MRH Parcels)
5-20 46th Road, Long Island City, Queens, New York 11101
BCP No C241098, EWMA Project No. 209014

Dear Mr. Wong:

EWMA is submitting this Annual Inspection Report, prepared in accordance with NYSDEC and Site Management Plan (SMP) requirements, for the Vapor Intrusion Control (VIC) System at the Market Rate Housing Facility and the Composite Cover System at the Market Rate Housing and Student Housing Parcels.

The VIC system for the MRH facility includes sub-slab de-pressurization and vapor intrusion control membrane design features, and is fully operational on continuous duty. Subsequent to initial commissioning of the system, as reported, it was fitted with control elements to allow reduction of the blower demand from 100% of capacity to about 50% of capacity to reduce power consumption and increase blower life.

The VIC system is performing in compliance with SMP requirements, NYSDOH guidelines, and good vapor intrusion control practices. During the May 28, 2024 inspection, evaluations and tests were subsequently performed at roof level for the vent stack tests and those results are provided below:

VIC System Vent Stack Test		
Parameter	**South Vent**	**North Vent**
Flow Rate (cfm)	213.40	301.60
Flow Velocity (fpm)	1087	1536
PID in Breathing Zone (ppm)	0.0	0.0
Vacuum (“WC)	2.1	2.3
Odor	None	None

Additionally, during the inspection, per the request of NYSDEC, vacuum measurements in inches of water column (inch wc) were obtained at permanent sub-slab monitoring points as follows:

VIC System Sub-Slab Vacuum Measurements	
Monitoring Point ID	**Vacuum (inch wc)**
P2	-0.056
P4	-1.482
P6	-1.566
P7	-0.087
P9	-0.010
P11	-1.628

The Market Rate Housing Facility is constructed out to the site property boundaries and across the entire western end of the site. The Composite Cover System for that Facility consists of certified clean fill, the vapor intrusion control membrane, and the concrete ground floor slab. The Student Housing Parcel is not yet developed, and extends out to the site property boundaries across the entire eastern end of the site. The Composite Cover System for that Parcel consists of a 2-foot thick cap of certified clean quarry process stone. The entire Composite Cover System was found to be intact and functional during our inspection.

If you have any questions or require any additional information please feel free to contact the undersigned at our Parsippany, New Jersey office, (973) 560-1400, Ext. 195, or Don Richardson at Ext. 186.

Sincerely,
EWMA

Jacob Strauss
Senior Project Engineer

Att: Site Inspection Checklist

Cc: Jane O'Connell, NYSDEC BCP
Stephen Lawrence, NYSDOH
Brett Buehrer, O'Connor Capital Partners
Tom Huth, O'Connor Capital Partners
Christine Leas, Esq., Sive, Paget, Riesel, PC
Don Richardson, VP, EWMA